FCC RADIO TEST REPORT

according to

47 CFR FCC Part 15 Subpart E § 15.407

Equipment	:	**3Com® AirConnect 9550 11n 2.4+5GHz PoE Access Point**
Model No.	:	**WL-605, SS-300-AT**
Brand Name	:	**3Com, Airtight**
Filing Type	:	**New Application**
Applicant	:	**3Com Corporation** 350 Campus Drive, Marlborough, MA 01752-3064, USA
FCC ID	:	**O9C-WL605**
Manufacturer	:	**DONG GUAN G-COM COMPUTER CO., LTD** **1st Row Yin Shan Rd., Yin Hwu Industrial Area, Qingxi Town, DongGuan City, Guang Dong, China**
Received Date	:	May 01, 2008
Final Test Date	:	Jun. 01, 2008

Statement

Test result included is only for the 802.11a/n (5150 ~ 5250MHz) and Monopole Antenna (3CWE590) 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.

Testing Laboratory
1190
ILAC MRA

SPORTON International Inc.

6F, No. 106, Sec. 1, Hsin Tai Wu Rd., Hsi Chih, Taipei Hsien, Taiwan, R.O.C.

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History of This Test Report

Original Issue Date: Jun. 05, 2008

Report No.: FR843032-03AI

■ 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 E § 15.407

Equipment	:	**3Com® AirConnect 9550 11n 2.4+5GHz PoE Access Point**
Model No.	:	WL-605, SS-300-AT
Brand Name	:	3Com, Airtight
Applicant	:	3Com **Corporation** 350 Campus Drive, Marlborough, MA 01752-3064, USA

Sporton International as requested by the applicant to evaluate the EMC performance of the product sample received on May 01, 2008 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

SPORTON International Inc.

6F, No.106, Sec. 1, Hsin Tai Wu Rd., Hsi Chih, Taipei 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	8.22 dB
3.2	15.407(a)	26dB Spectrum Bandwidth	Complies	-
3.3	15.407(a)	Maximum Conducted Output Power	Complies	1.78 dB
3.4	15.407(a)	Power Spectral Density	Complies	0.37 dB
3.5	15.407(a)	Peak Excursion	Complies	6.71 dB
3.6	15.407(b)	Radiated Emissions	Complies	3.04 dB
3.7	15.407(b)	Band Edge Emissions	Complies	1.05 dB
3.8	15.407(g)	Frequency Stability	Complies	-
3.9	15.203	Antenna Requirements	Complies	-

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	$\pm 8.5 \times 10^{-8}$	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 of Monopole Antenna (3CWE590) is shown in the table below. For more detailed features description, please refer to the manufacturer's specifications or user's manual.

Items	Description
Modulation	OFDM for IEEE 802.11a/n
Data Modulation	OFDM (BPSK / QPSK / 16QAM / 64QAM)
Data Rate (Mbps)	OFDM (6/9/12/18/24/36/48/54)
Frequency Range	5150 ~ 5250MHz
Channel Number	11a: 6
Channel Band Width (99%)	1TX-11a Band 1: 17.28 MHz 1TX-11n Band 1 MCS 0 (20MHz): 18.24 MHz ; MCS 0 (40MHz): 36.64 MHz 2TX-11n Band 1 MCS 8 (20MHz): 17.92 MHz ; MCS 0 (40MHz): 36.48 MHz
Conducted Output Power	1TX-11a Band 1: 12.69 dBm 1TX-11n Band 1 MCS 0 (20MHz): 13.03dBm ; MCS 0 (40MHz): 16.65 dBm 2TX-11n Band 1 MCS 8 (20MHz): 14.98 dBm ; MCS 8 (40MHz): 15.22 dBm

2.2 Accessories

Power	Brand	Model	Rating
Switching Adapter	DVE	DSA-15P-12 US 120150	INPUT: 100-240V~ 50/60Hz 0.7A OUTPUT: 12V 1.25A
Switching Adapter	DVE	DSA-20D-12 3 120150	INPUT: 100-240V~ 50/60Hz 0.7A OUTPUT: 12V 1.25A

2.3 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 (5150~5250MHz)	V	X	X	X
802.11a (5725~5850MHz)	V	X	X	X
802.11n (5150~5250MHz)	V	V	V	V
802.11n (5725~5850MHz)	V	V	V	V

Ant.	Antenna Type	Model Name	Product description	2.4/5 GHz Gain (dBi)	Tx/Rx mode	REMARK
1	Omni Ant	3CWE591	3Com® 6/8dBi Dual-Band Omni Antenna	6/8	1T1R	Main Ant. for test
2	Omni Ant	S24513BPX	CUSHCRAFT 2.4~2.5& 4.9~5.9 GHz DUAL BAND OMNI ANTENNA	6/6.5	1T1R	-
3	Omni Ant	SS-200-AT-AN-30	Airtight 2.4~2.5& 4.9~5.9 GHz Dual-band Omnidirectional Indoor/outdoor antenna	6/6.5	1T1R	-
4	Omni Ant	TGX-102XNXXX	Joymax Base Station Antenna	6/6	1T1R	-
5	Panel Ant	3CWE596	3Com® 18/20dBi Dual-Band Panel Antenna	18/20	2T2R	Main Ant. for test
6	Panel Ant	3CWE598	3Com® 8/10dBi Dual-Band Panel Antenna	8/10	2T2R	-
7	Panel Ant	SL24513P12SMF	CUSHCRAFT Tri-mode, dual band 802.11b/a/g ceiling mounted Omnidirectional panel antenna	3/3	2T2R	-
8	Panel Ant	SS-200-AT-AN-10	Airtight dual band 802.11b/a/g Omnidirectional Indoor panel antenna	3/3	2T2R	-
9	Monopole Ant	3CWE590	3Com 2dBi Dual-Band Omni Antenna Kit	2/2	2T3R	Main Ant. for test
10	PCB Antenna	TFF-A015MPAX-361	Integrated PCB Antenna	3/3	2T3R	Main Ant. for test

* There are four types of antenna in this project. Antenna 1,5,9,10 are the main antenna for test, according to the standard, the same type antenna with the highest gain could choose to test.

Antenna Cable Model Name	Product description	2.4/5 GHz Cable Loss (dB)
3CWE580	3Com® Ultra Low Loss 6-Foot Antenna Cable	-0.6/-1.2
3CWE581	3Com® Ultra Low Loss 20-Foot Antenna Cable	-2/-4
3CWE582	3Com® Ultra Low Loss 50-Foot Antenna Cable	-5/-10

Monopole Antenna (3CWE590)

Ant.	Antenna Type	Connector	Gain (dBi)	Remark
			5G	
A	Monopole Antenna	Reversed-SMA	2	TX / RX
B	Monopole Antenna	Reversed-SMA	2	TX / RX
C	Monopole Antenna	Reversed-SMA	2	RX

Antenna: 2T3R Spatial Multiplexing MIMO configuration. 2 antennas are for signal transmitting and 3 antennas are for signal receiving. For IEEE 802.11a/b/g mode, the signals can be transmitted and receiver only by antenna

IEEE 802,11n Modulation Scheme

MCS Index	Nss	Modulation	R	NBPSC	NCBPS		NDBPS		Data rate(Mbps) 800nsGI	
					20MHz	40MHz	20MHz	40MHz	20MHz	40MHz
0	1	BPSK	1/2	1	52	108	26	54	6.5	13.5
1	1	QPSK	1/2	2	104	216	52	108	13.0	27.0
2	1	QPSK	3/4	2	104	216	78	162	19.5	40.5
3	1	16-QAM	1/2	4	208	432	104	216	26.0	54.0
4	1	16-QAM	3/4	4	208	432	156	324	39.0	81.0
5	1	64-QAM	2/3	6	312	648	208	432	52.0	108.0
6	1	64-QAM	3/4	6	312	648	234	486	58.5	121.5
7	1	64-QAM	5/6	6	312	648	260	540	65.0	135.0
8	2	BPSK	1/2	1	104	216	52	108	13.0	27.0
9	2	QPSK	1/2	2	208	432	104	216	26.0	54.0
10	2	QPSK	3/4	2	208	432	156	324	39.0	81.0
11	2	16-QAM	1/2	4	416	864	208	432	52.0	108.0
12	2	16-QAM	3/4	4	416	864	312	648	78.0	162.0
13	2	64-QAM	2/3	6	624	1296	416	864	104.0	216.0
14	2	64-QAM	3/4	6	624	1296	468	972	117.0	243.0
15	2	64-QAM	5/6	6	624	1296	520	1080	130.0	270.0

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

2.4 Table for Carrier Frequencies

Frequency Allocation

For 802.11a: use Channel 36, 40, 44, and 48.

For 802.11n:

There are two bandwidth systems for IEEE 802.11n.

For 20MHz bandwidth systems, use Channel 36, 40, 44, and 48.

For 40MHz bandwidth systems, use Channel 38, 46.

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

2.5 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 all the 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	See the note	Auto	-	-
Max. Conducted Output Power	11a Band 1/BPSK	6Mbps	36/40/48	A
	11n Band 1/BPSK MCS 0 (20MHz)	6.5Mbps	36/40/48	A
	11n Band 1/BPSK MCS 0 (40MHz)	13.5Mbps	38/46	A
	11n Band 1/BPSK MCS 8 (20MHz)	13Mbps	36/40/48	A/B/A+B
	11n Band 1/BPSK MCS 8 (40MHz)	27Mbps	38/46	A/B/A+B
26dB Spectrum Bandwidth 99% Occupied Bandwidth Measurement Power Spectral Density Peak Excursion	11a Band 1/BPSK	6Mbps	36/40/48	A
	11n Band 1/BPSK MCS 0 (20MHz)	6.5Mbps	36/40/48	A
	11n Band 1/BPSK MCS 0 (40MHz)	13.5Mbps	38/46	A
	11n Band 1/BPSK MCS 8 (20MHz)	13Mbps	36/40/48	A+B
	11n Band 1/BPSK MCS 8 (40MHz)	27Mbps	38/46	A+B
Radiated Emission Below 1GHz	See the note	Auto	-	-
Radiated Emission Above 1GHz Band Edge Emission	11a Band 1/BPSK	6Mbps	36/40/48	A
	11n Band 1/BPSK MCS 0 (20MHz)	6.5Mbps	36/40/48	A
	11n Band 1/BPSK MCS 0 (40MHz)	13.5Mbps	38/46	A
	11n Band 1/BPSK MCS 8 (20MHz)	13Mbps	36/40/48	A+B
	11n Band 1/BPSK MCS 8 (40MHz)	27Mbps	38/46	A+B
Frequency Stability	11a Band 1/BPSK	6Mbps	40	A
	11n Band 1/BPSK	6.5Mbps	40	A+B

Note: For EMI test, the following modes were MCS 8 (20MHz/40MHz) tested:
Conducted and Radiated Emissions Below 1GHz
LAN 100Mbps (Adapter: DSA-20D-12 3 120150)
LAN 1Gbps (Adapter: DSA-20D-12 3 120150)
LAN 1Gbps (Adapter: DSA-15P-12 US 120150)
Radiated Emissions Below 1GHz
Adapter: DSA-20D-12 3 120150
Adapter: DSA-15P-12 US 120150
Power Supply: POE20U-560(G) -R
There are performed the worst test result; it was reported as final data.

2.6 Table for Testing Locations

Test Site No.	Site Category	Location	FCC Reg. No.	IC File No.	VCCI Reg. No
03CH03-HY	SAC	Hwa Ya	101377	IC 4086B-1	-
CO01-LK	Conduction	Lin Kou	93596	IC 4086C-1	-
TH01-HY	OVEN Room	Hwa Ya	-	-	-

Open Area Test Site (OATS); Semi Anechoic Chamber (SAC); Fully Anechoic Chamber (FAC).

2.7 Table for Supporting Units

Support Unit	Brand	Model	FCC ID
P.C. (Remote Workstation)	COMPAQ	Evo D380mx	DoC
Notebook (Remote Workstation)	DELL	PP01L	DoC
Monitor (Remote Workstation)	COMPAQ	S510	DoC
Keyboard (PS2) (Remote Workstation)	COMPAQ	6511-VA	DoC
Mouse (PS2) (Remote Workstation)	COMPAQ	M-S69	JNZ211443
Notebook (Remote Workstation)	DELL	D400	DoC
Switching Power Supply	PHIHONG	POE20U-560(G) -R	-

2.8 Table for Parameters of Test Software Setting

During testing, Channel & Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

For Single Chain:

Power Parameters of IEEE 802.11a

Test Software Version	ART 0.5 BUILD#25		
Frequency	5180 MHz	5200 MHz	5240 MHz
IEEE 802.11a(20MHz)	13.5	13	13.5

Power Parameters of IEEE 802.11n

Test Software Version	ART 0.5 BUILD#25		
Frequency	5180 MHz	5200 MHz	5240 MHz
IEEE 802.11n(20MHz)	13.5	13.5	14
Frequency	5190 MHz	5230 MHz	-
IEEE 802.11n(40MHz)	10	17.5	-

For Two Chain:

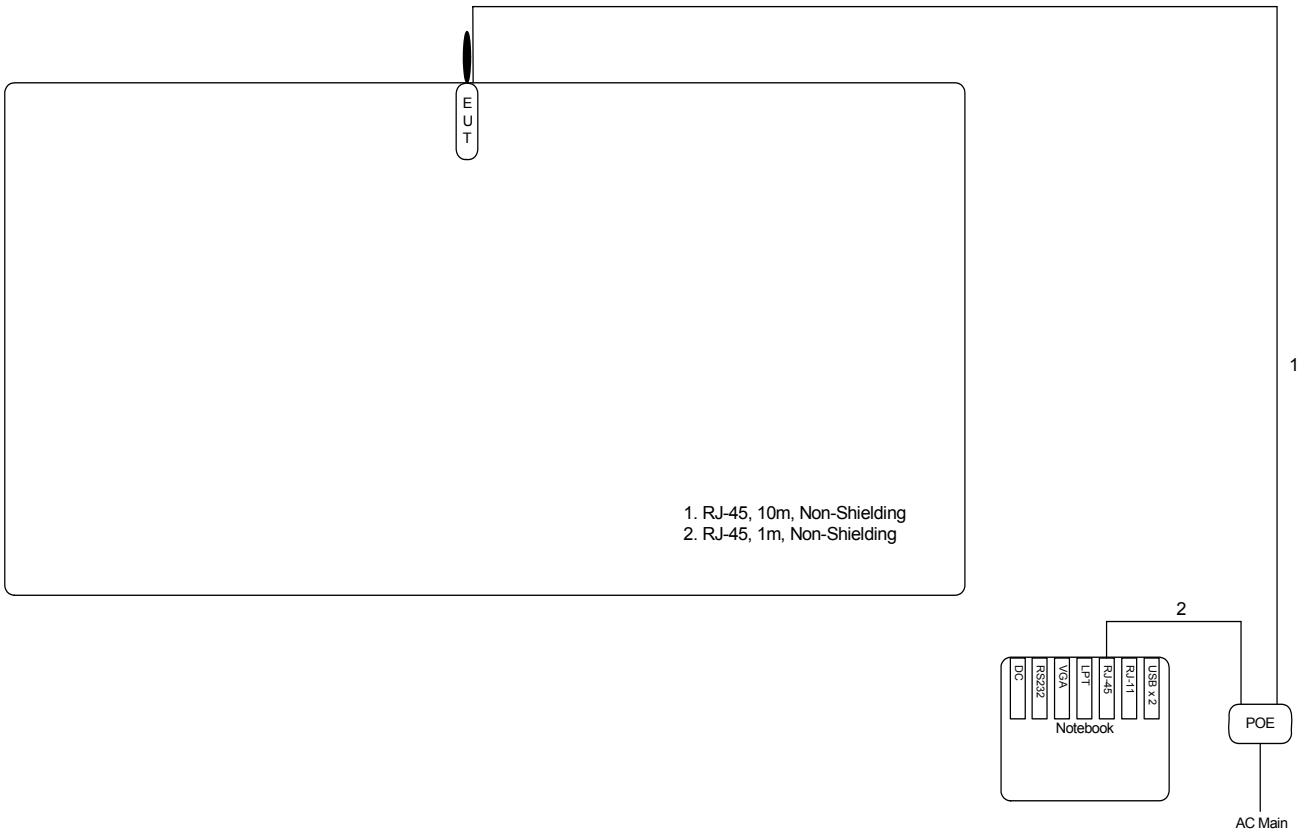
Power Parameters of IEEE 802.11n Ant. A & B

Test Software Version	ART 0.5 BUILD#25		
Frequency	5180 MHz	5200 MHz	5240 MHz
IEEE 802.11n(20MHz)	13.5	13.5	13.5
Frequency	5190 MHz	5230 MHz	-
IEEE 802.11n(40MHz)	8.5	13.5	-

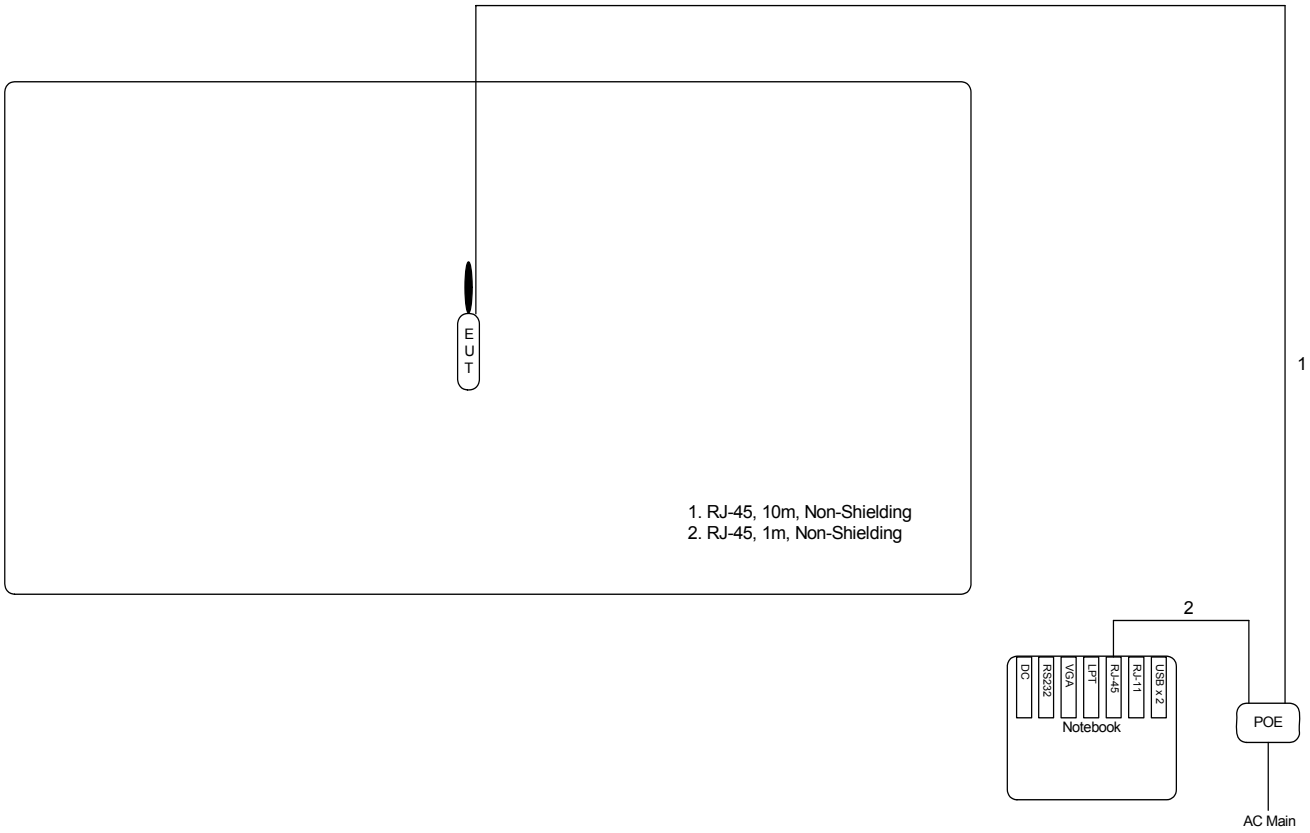
2.9 Test Configuration

2.9.1 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 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.

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

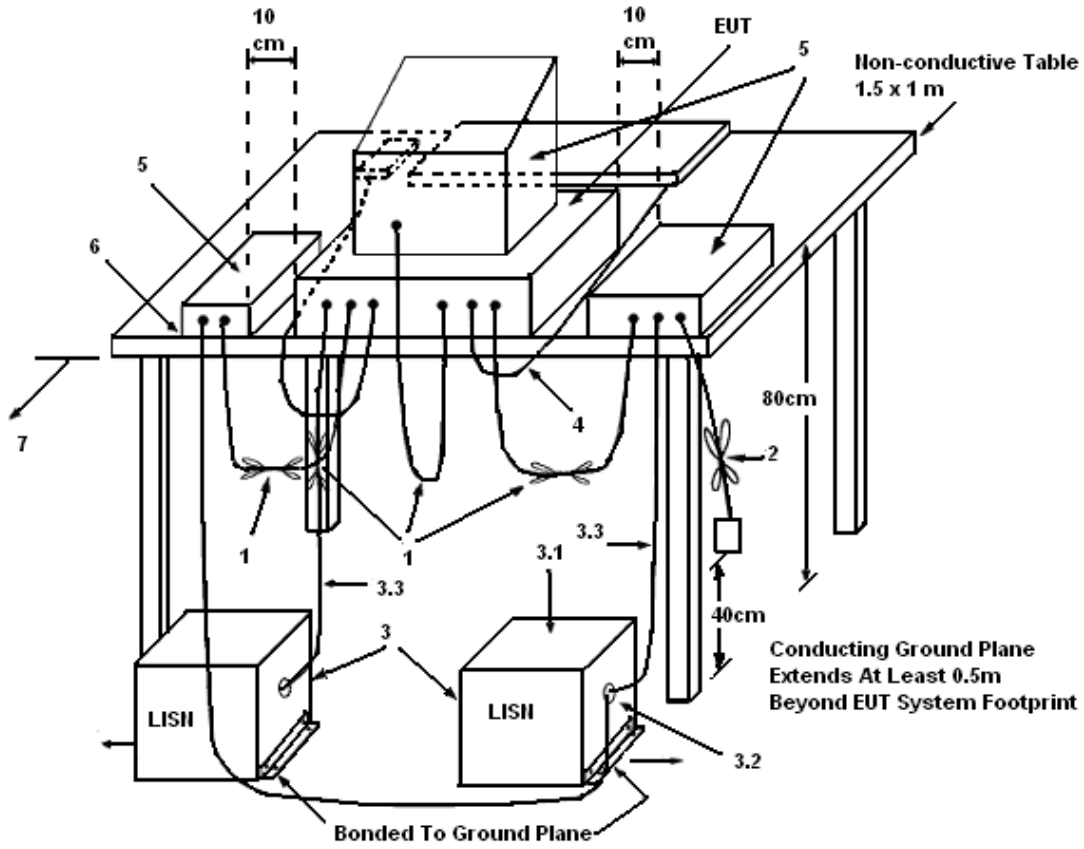
Please refer to section 4 of equipments list in this report. The following table is the setting of the receiver.

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. 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.
2. Connect EUT or host of EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connected to the other LISNs. The LISN should provide 50uH/50ohms coupling impedance.
4. The frequency range from 150 KHz to 30 MHz was searched.
5. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. 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

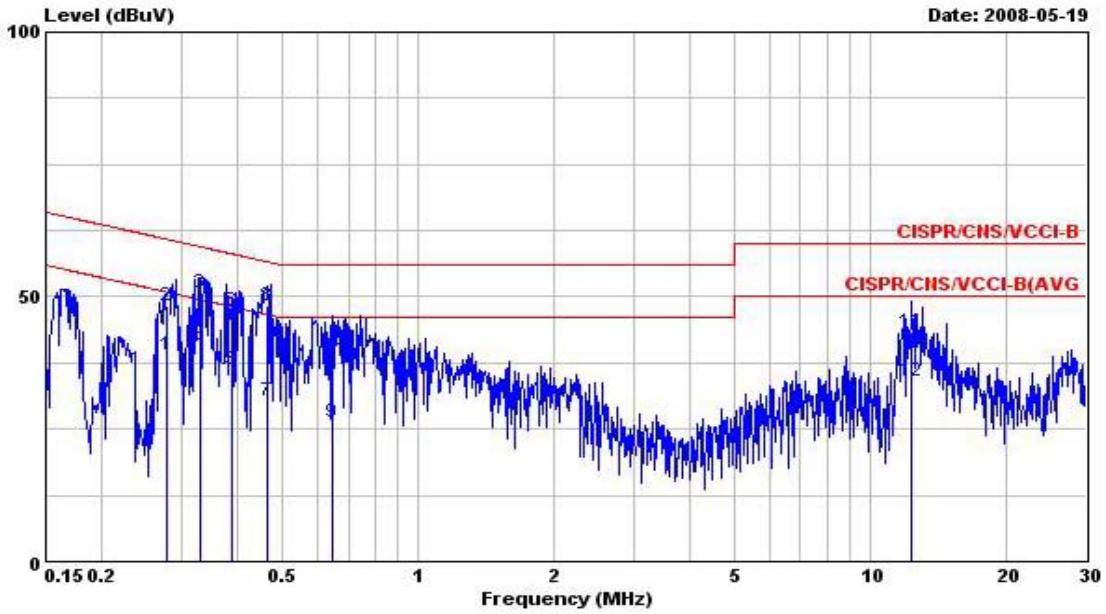
There is no deviation with the original standard.

3.1.6 EUT Operation during Test

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

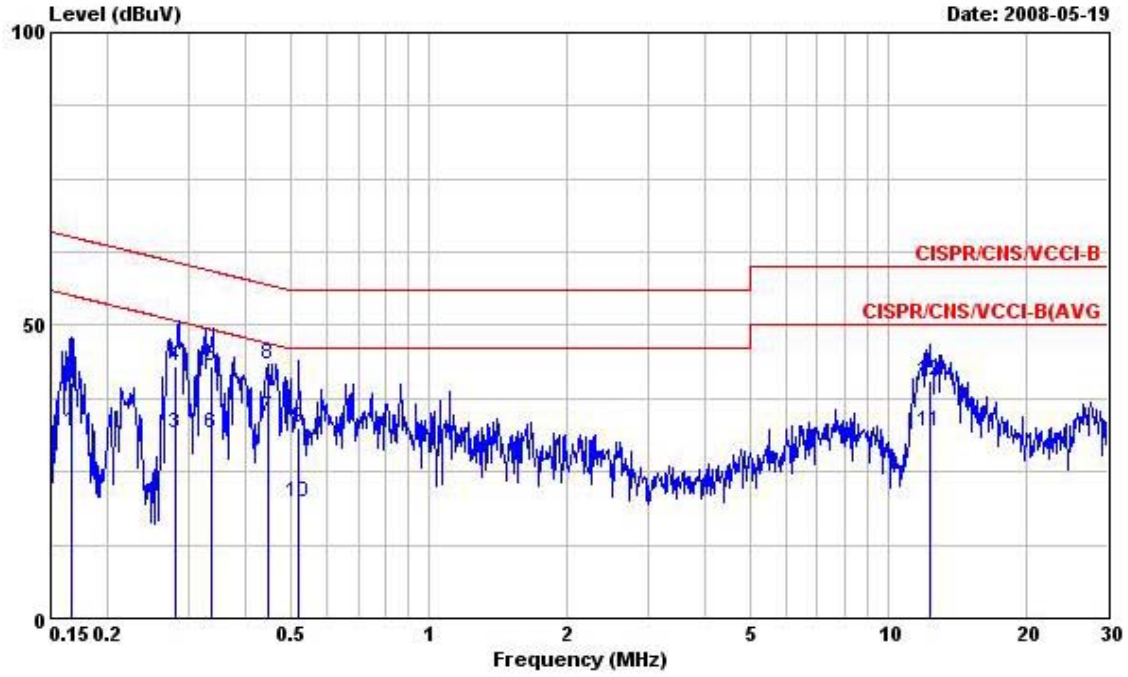
3.1.7 Results of AC Power Line Conducted Emissions Measurement

Test date	May 19, 2008	**Test Site No.**	CO01-LK
Temperature	25℃	**Humidity**	49%
Test Engineer	Peter	**Phase**	Line
Configuration	LAN 100Mbps (Adapter: DSA-20D-12 3 120150)		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.278	39.14	-11.75	50.89	38.99	0.10	0.05	Average
2	0.278	48.37	-12.52	60.89	48.22	0.10	0.05	QP
3	0.330	50.86	-8.59	59.45	50.72	0.10	0.04	QP
4	0.330	40.24	-9.21	49.45	40.10	0.10	0.04	Average
5	0.389	36.17	-11.92	48.09	36.03	0.10	0.04	Average
6	0.389	47.32	-10.77	58.09	47.18	0.10	0.04	QP
7	0.466	30.37	-16.22	46.59	30.22	0.10	0.05	Average
8	0.466	48.16	-8.43	56.59	48.01	0.10	0.05	QP
9	0.647	26.36	-19.64	46.00	26.18	0.10	0.08	Average
10	0.647	40.05	-15.95	56.00	39.87	0.10	0.08	QP
11	12.320	43.31	-16.69	60.00	42.40	0.55	0.36	QP
12	12.320	34.02	-15.98	50.00	33.11	0.55	0.36	Average

Test date	May 19, 2008	Test Site No.	CO01-LK
Temperature	21℃	Humidity	62%
Test Engineer	Steven	Phase	Neutral
Configuration	LAN 100Mbps (Adapter: DSA-20D-12 3 120150)		

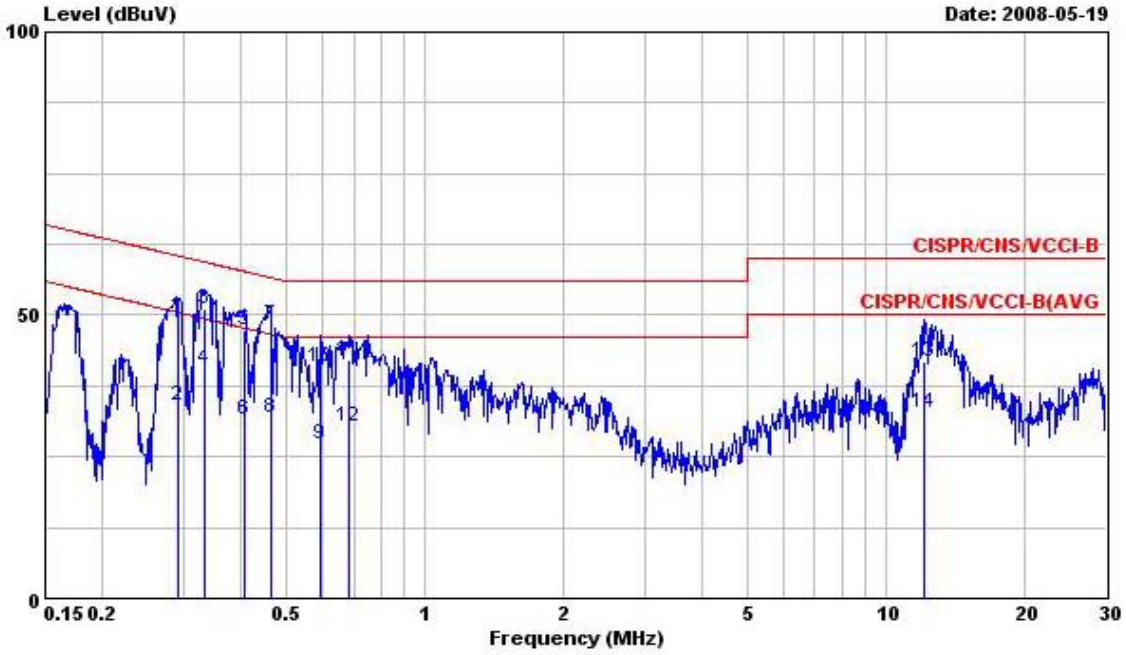


	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.166	31.73	-23.43	55.16	31.59	0.10	0.04	Average
2	0.166	40.22	-24.94	65.16	40.08	0.10	0.04	QP
3	0.281	31.65	-19.15	50.80	31.50	0.10	0.05	Average
4	0.281	43.08	-17.72	60.80	42.93	0.10	0.05	QP
5	0.336	42.93	-16.38	59.31	42.79	0.10	0.04	QP
6	0.336	31.60	-17.71	49.31	31.46	0.10	0.04	Average
7	0.447	34.25	-12.68	46.93	34.10	0.10	0.05	Average
8	0.447	43.42	-13.51	56.93	43.27	0.10	0.05	QP
9	0.521	32.54	-23.46	56.00	32.38	0.10	0.06	QP
10	0.521	19.91	-26.09	46.00	19.75	0.10	0.06	Average
11	12.250	32.02	-17.98	50.00	31.17	0.50	0.35	Average
12	12.250	40.49	-19.51	60.00	39.64	0.50	0.35	QP

Note:

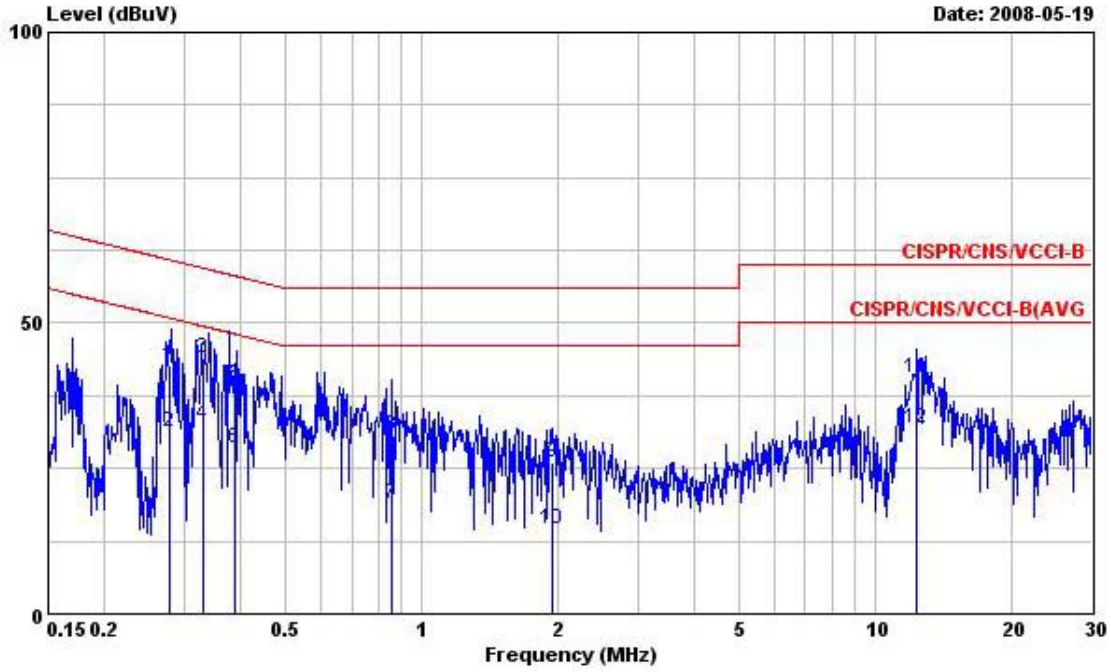
Level = Read Level + LISN Factor + Cable Loss.

Test date	May 19, 2008	**Test Site No.**	CO01-LK
Temperature	25℃	**Humidity**	49%
Test Engineer	Peter	**Phase**	Line
Configuration	LAN 1Gbps (Adapter: DSA-20D-12 3 120150)		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.292	49.69	-10.78	60.47	49.55	0.10	0.04	QP
2	0.292	33.92	-16.55	50.47	33.78	0.10	0.04	Average
3	0.333	51.04	-8.35	59.39	50.90	0.10	0.04	QP
4	0.333	40.54	-8.85	49.39	40.40	0.10	0.04	Average
5	0.406	47.49	-10.24	57.73	47.35	0.10	0.04	QP
6	0.406	31.60	-16.13	47.73	31.46	0.10	0.04	Average
7	0.464	48.40	-8.22	56.62	48.25	0.10	0.05	QP
8	0.464	31.92	-14.70	46.62	31.77	0.10	0.05	Average
9	0.592	27.26	-18.74	46.00	27.09	0.10	0.07	Average
10	0.592	41.01	-14.99	56.00	40.84	0.10	0.07	QP
11	0.686	42.10	-13.90	56.00	41.92	0.10	0.08	QP
12	0.686	30.32	-15.68	46.00	30.14	0.10	0.08	Average
13	12.120	41.88	-18.12	60.00	40.98	0.55	0.35	QP
14	12.120	32.93	-17.07	50.00	32.03	0.55	0.35	Average

Test date	May 19, 2008	**Test Site No.**	CO01-LK
Temperature	21℃	**Humidity**	62%
Test Engineer	Steven	**Phase**	Neutral
Configuration	LAN 1Gbps (Adapter: DSA-20D-12 3 120150)		

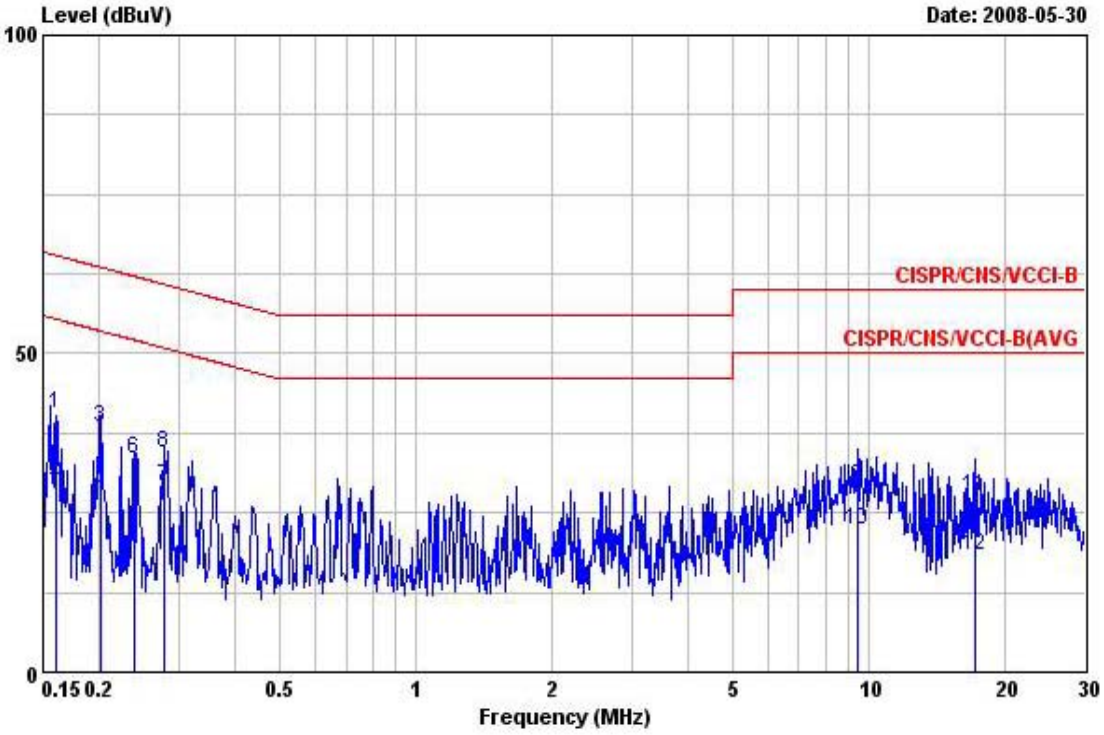


	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.279	42.61	-18.24	60.85	42.46	0.10	0.05	QP
2	0.279	31.28	-19.57	50.85	31.13	0.10	0.05	Average
3	0.330	43.90	-15.55	59.45	43.76	0.10	0.04	QP
4	0.330	32.40	-17.05	49.45	32.26	0.10	0.04	Average
5	0.386	39.37	-18.78	58.15	39.23	0.10	0.04	QP
6	0.386	28.33	-19.82	48.15	28.19	0.10	0.04	Average
7	0.862	18.91	-27.09	46.00	18.71	0.10	0.10	Average
8	0.862	30.63	-25.37	56.00	30.43	0.10	0.10	QP
9	1.940	25.86	-30.14	56.00	25.63	0.10	0.13	QP
10	1.940	14.62	-31.38	46.00	14.39	0.10	0.13	Average
11	12.320	40.46	-19.54	60.00	39.60	0.50	0.36	QP
12	12.320	31.97	-18.03	50.00	31.11	0.50	0.36	Average

Note:

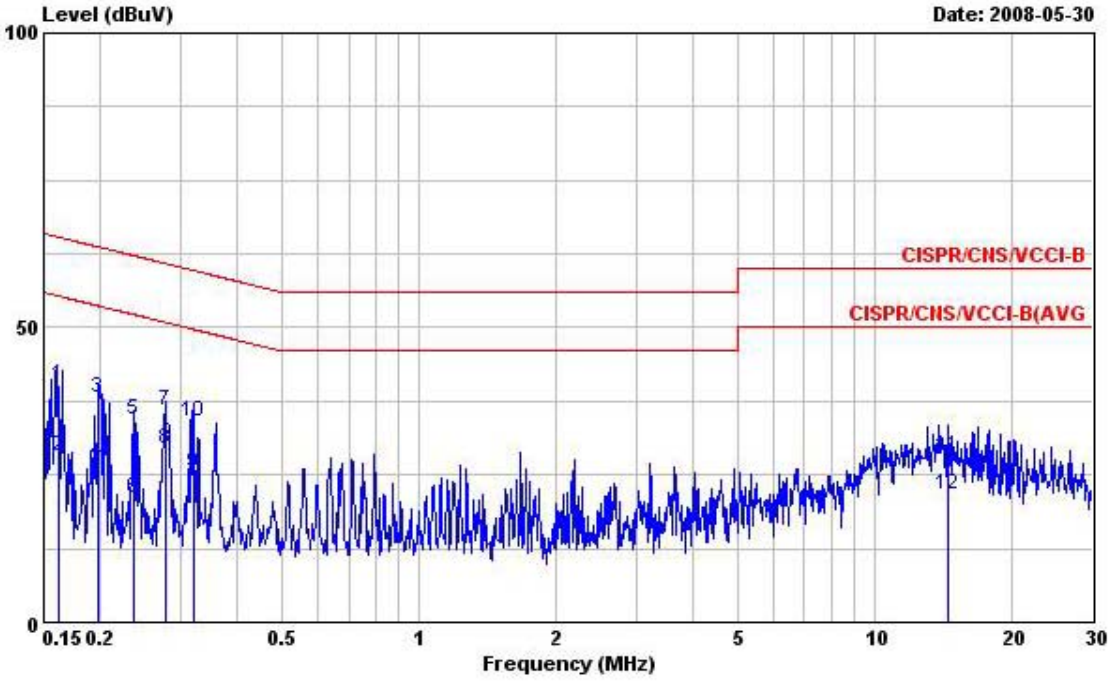
Level = Read Level + LISN Factor + Cable Loss.

Test date	May 30, 2008	**Test Site No.**	CO01-LK
Temperature	25℃	**Humidity**	49%
Test Engineer	Peter	**Phase**	Line
Configuration	LAN 1Gbps (Adapter: DSA-15P-12 US 120150)		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.160	40.52	-24.95	65.47	40.38	0.10	0.04	QP
2	0.160	29.94	-25.53	55.47	29.80	0.10	0.04	Average
3	0.201	38.37	-25.21	63.58	38.22	0.10	0.05	QP
4	0.201	28.26	-25.32	53.58	28.11	0.10	0.05	Average
5	0.239	21.97	-30.16	52.13	21.82	0.10	0.05	Average
6	0.239	33.31	-28.82	62.13	33.16	0.10	0.05	QP
7	0.279	29.02	-21.83	50.85	28.87	0.10	0.05	Average
8	0.279	34.22	-26.63	60.85	34.07	0.10	0.05	QP
9	9.404	29.22	-30.78	60.00	28.43	0.48	0.31	QP
10	9.404	22.43	-27.57	50.00	21.64	0.48	0.31	Average
11	17.139	27.41	-32.59	60.00	26.35	0.69	0.37	QP
12	17.139	18.41	-31.59	50.00	17.35	0.69	0.37	Average

Test date	May 30, 2008	Test Site No.	CO01-LK
Temperature	21℃	Humidity	62%
Test Engineer	Steven	Phase	Neutral
Configuration	LAN 1Gbps (Adapter: DSA-15P-12 US 120150)		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.161	40.28	-25.11	65.39	40.14	0.10	0.04	QP
2	0.161	28.05	-27.34	55.39	27.91	0.10	0.04	Average
3	0.197	38.21	-25.54	63.75	38.06	0.10	0.05	QP
4	0.197	27.36	-26.39	53.75	27.21	0.10	0.05	Average
5	0.237	34.35	-27.85	62.20	34.20	0.10	0.05	QP
6	0.237	21.01	-31.19	52.20	20.86	0.10	0.05	Average
7	0.277	35.93	-24.98	60.91	35.78	0.10	0.05	QP
8	0.277	29.38	-21.53	50.91	29.23	0.10	0.05	Average
9	0.319	25.28	-24.45	49.73	25.14	0.10	0.04	Average
10	0.319	34.12	-25.61	59.73	33.98	0.10	0.04	QP
11	14.505	28.03	-31.97	60.00	27.07	0.58	0.38	QP
12	14.505	21.52	-28.48	50.00	20.56	0.58	0.38	Average

Note:

Level = Read Level + LISN Factor + Cable Loss.

3.2 99% Occupied Bandwidth Measurement

3.2.1 Limit

No restriction limits. But resolution bandwidth within band edge measurement is 1% of the 99% occupied bandwidth.

3.2.2 Measuring Instruments and Setting

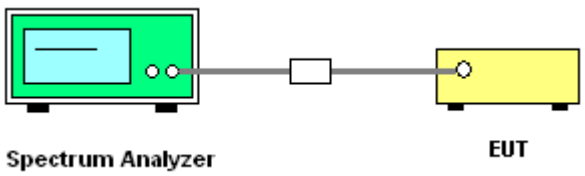
Please refer to section 4 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameters	Setting
Attenuation	Auto
Span Frequency	> 26dB Bandwidth
RB	300 kHz
VB	1000 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

3.2.3 Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyzer in peak hold mode.
2. The resolution bandwidth of 300 kHz and the video bandwidth of 1000 kHz were used.
3. Measured the spectrum width with power higher than 26dB below carrier.
4. Measuring multiple antennas, the connectors are required to link with Spectrum Analyzer through a combiner.

3.2.4 Test Setup Layout



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 Test Result of 99% Occupied Bandwidth

Test date	Jun. 01, 2008	**Test Site No.**	TH01-HY
Temperature	27℃	**Humidity**	55%
Test Engineer	Sam	**Configuration**	802.11a/n

For Single Chain:

Configuration of IEEE 802.11a

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
36	5180 MHz	23.20	17.12
40	5200 MHz	24.48	17.12
48	5240 MHz	23.84	17.28

Configuration IEEE 802.11n (20MHz)

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
36	5180 MHz	24.64	18.24
40	5200 MHz	25.12	18.24
48	5240 MHz	24.32	17.12

Configuration IEEE 802.11n (40MHz)

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
38	5190 MHz	46.24	36.64
46	5230 MHz	65.28	36.64

For Two Chain:

Configuration IEEE 802.11n Ant. A & B (20MHz)

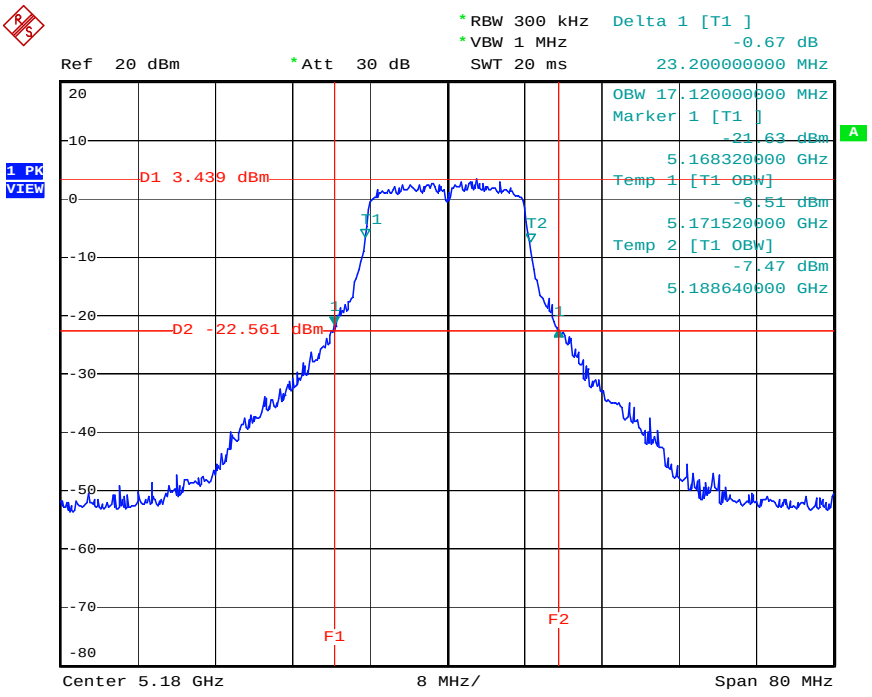
Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
36	5180 MHz	23.84	17.92
40	5200 MHz	23.52	17.92
48	5240 MHz	23.36	18.08

Configuration IEEE 802.11n Ant. A & B (40MHz)

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
38	5190 MHz	43.20	36.48
46	5230 MHz	43.20	36.48

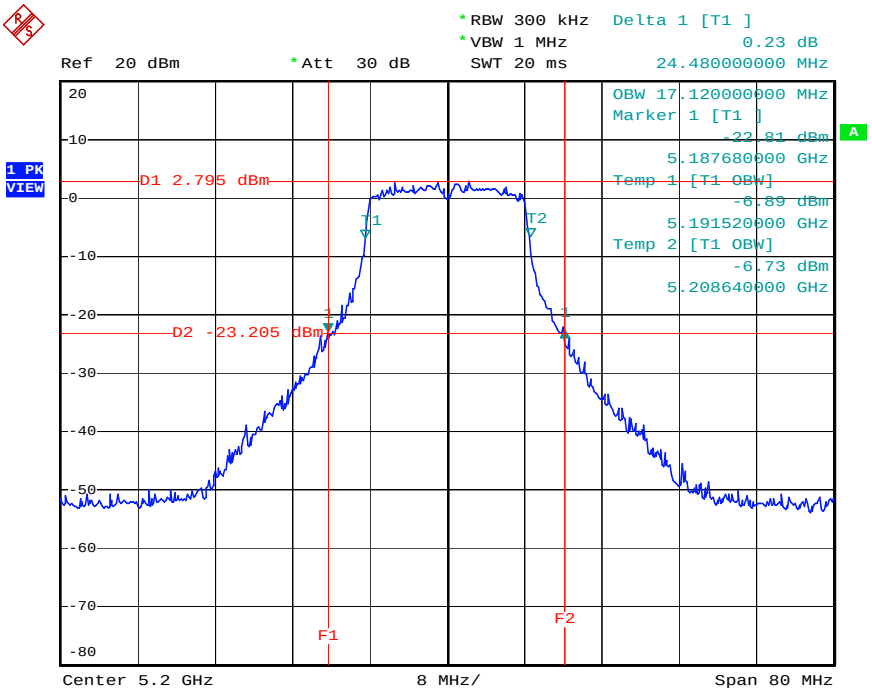
For Single Chain:

26 dB Bandwidth Plot on Configuration IEEE 802.11a / 5180 MHz



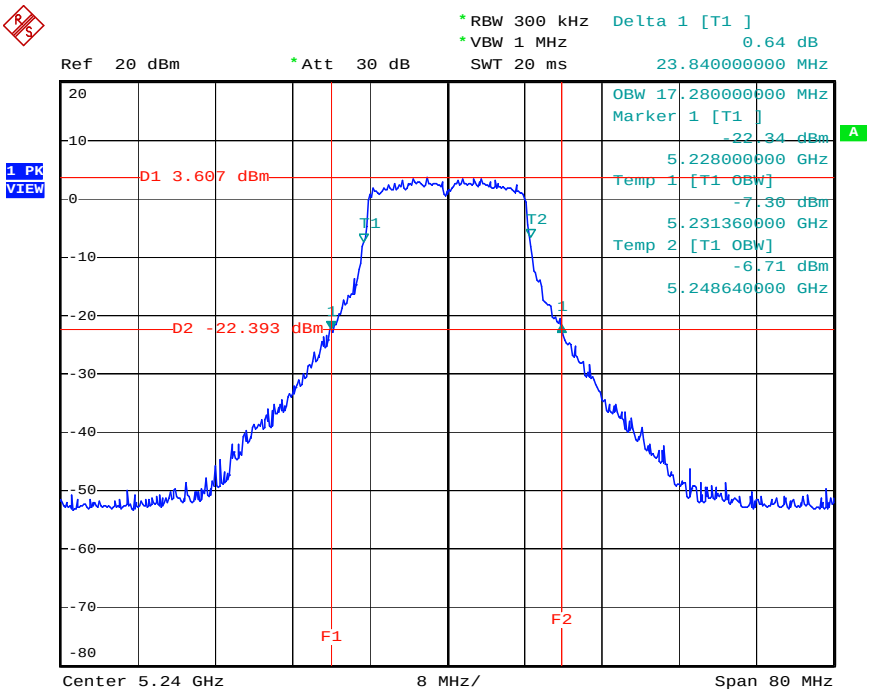
Date: 1.JUN.2008 03:40:45

26 dB Bandwidth Plot on Configuration IEEE 802.11a / 5200 MHz

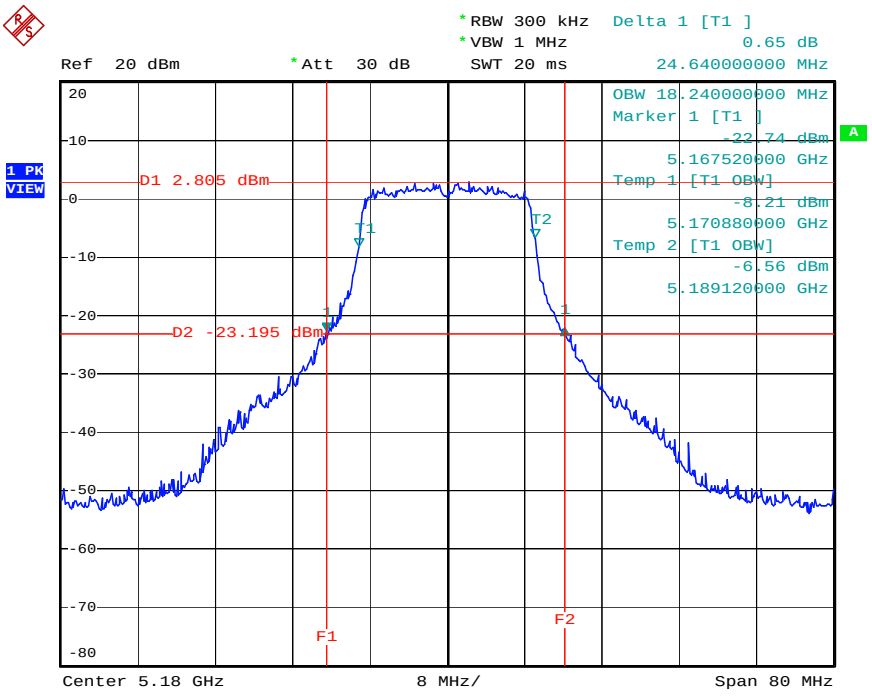


Date: 1.JUN.2008 03:42:23

26 dB Bandwidth Plot on Configuration IEEE 802.11a / 5240 MHz

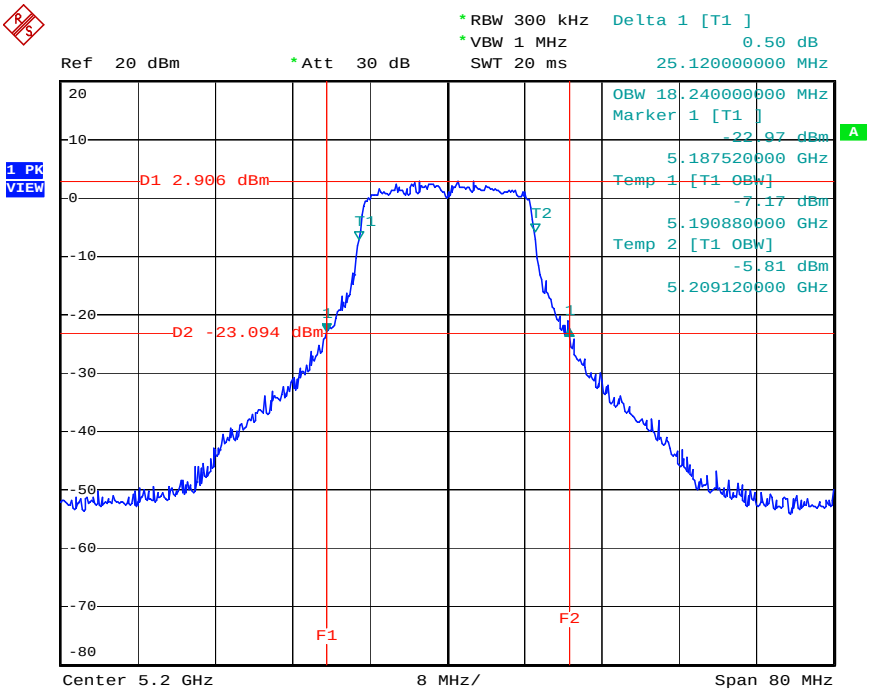


26 dB Bandwidth Plot on Configuration IEEE 802.11n (20MHz)/ 5180 MHz



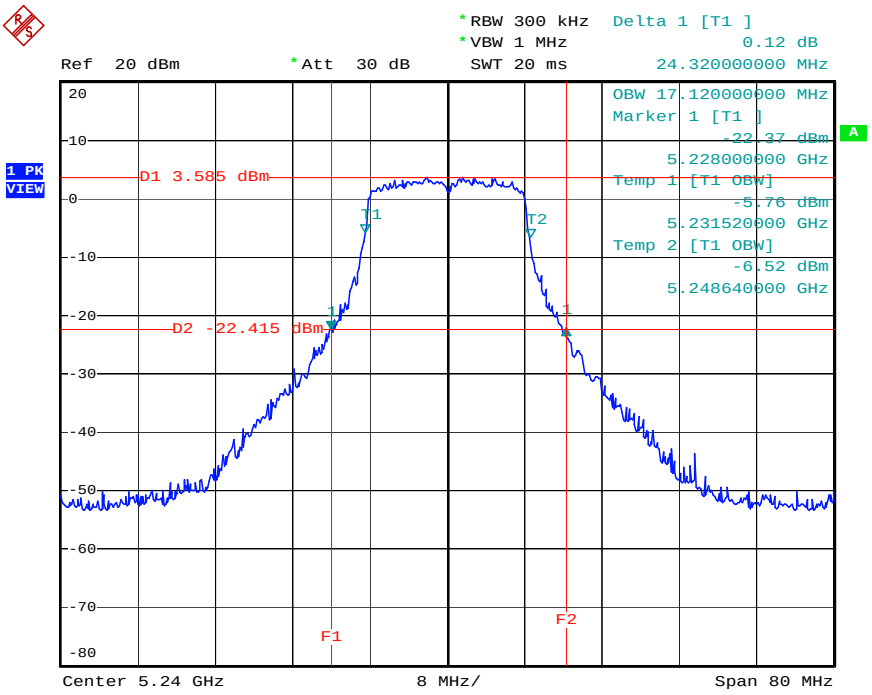
Date: 1.JUN.2008 03:52:38

26 dB Bandwidth Plot on Configuration IEEE 802.11n (20MHz) / 5200 MHz



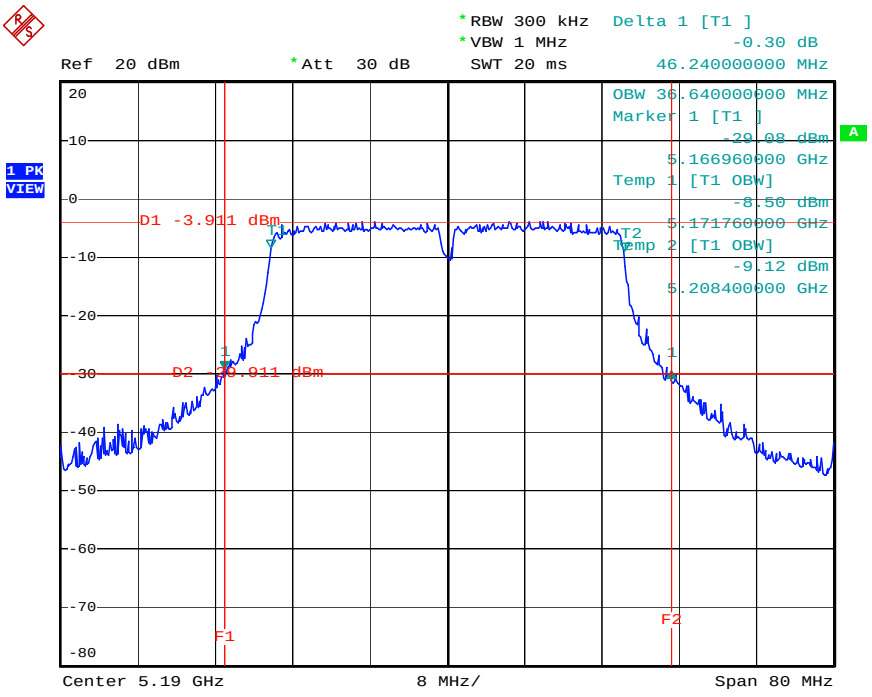
Date: 1.JUN.2008 03:51:20

26 dB Bandwidth Plot on Configuration IEEE 802.11n (20MHz)/ 5240 MHz



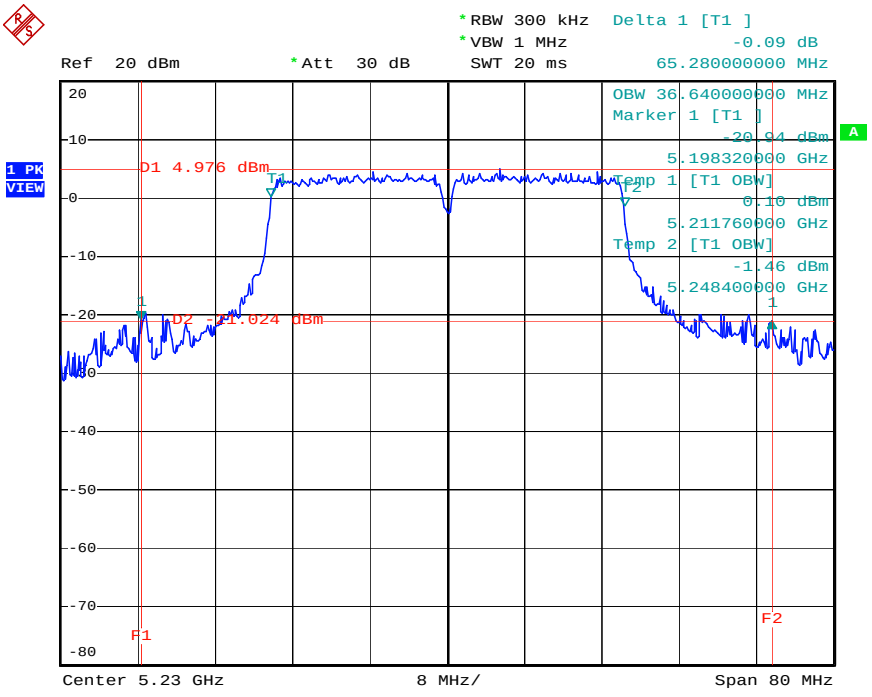
Date: 1.JUN.2008 03:49:45

26 dB Bandwidth Plot on Configuration IEEE 802.11n (40MHz)/ 5190 MHz



Date: 1.JUN.2008 03:54:15

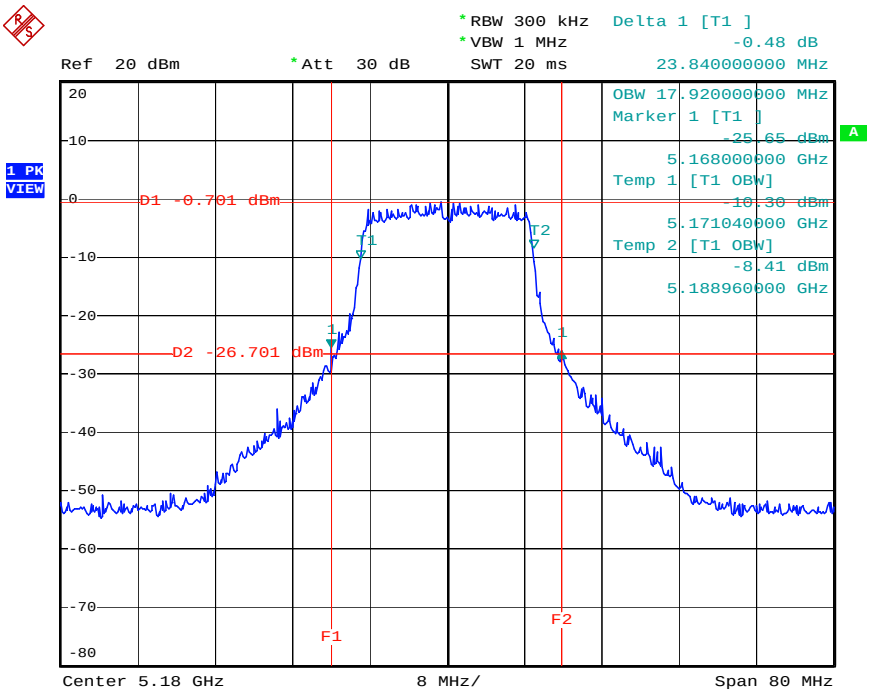
26 dB Bandwidth Plot on Configuration IEEE 802.11n (40MHz) / 5230 MHz



Date: 1.JUN.2008 03:58:29

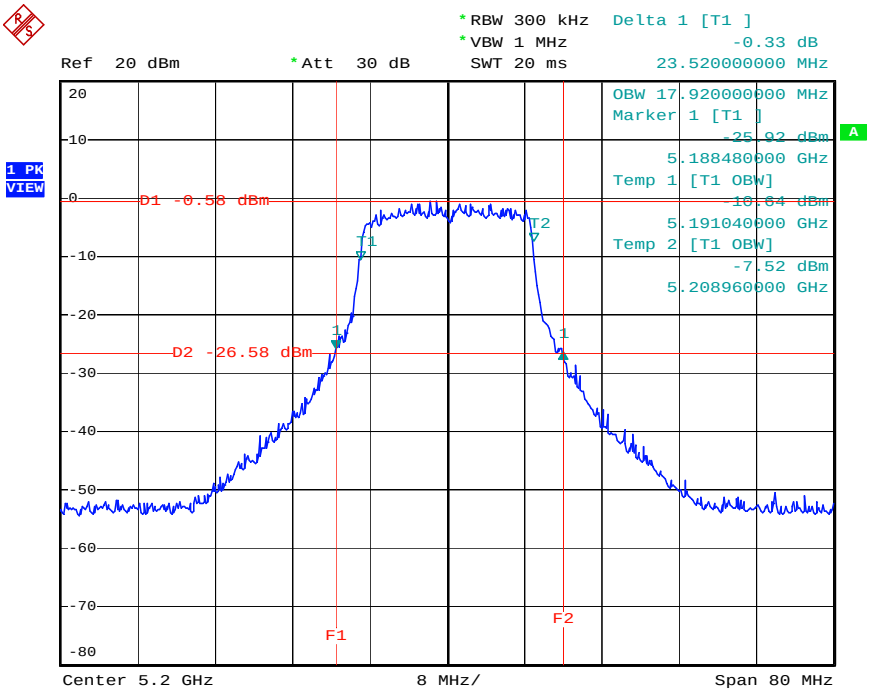
For Two Chain:

26 dB Bandwidth Plot on Configuration IEEE 802.11n Ant. A & B (20MHz)/ 5180 MHz



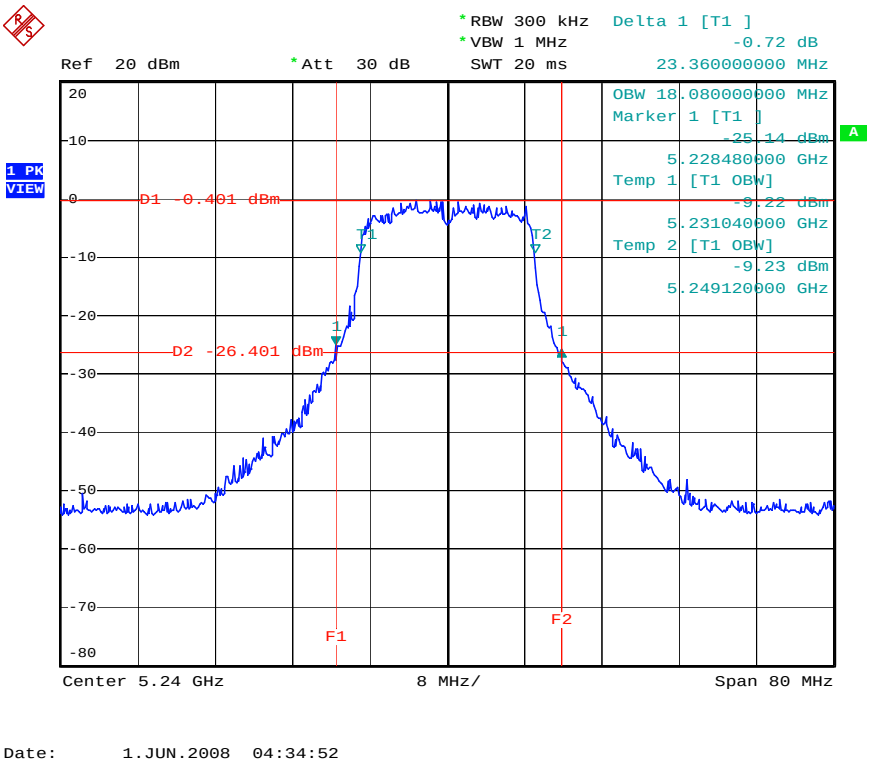
Date: 1.JUN.2008 04:32:02

26 dB Bandwidth Plot on Configuration IEEE 802.11n Ant. A & B (20MHz) / 5200 MHz

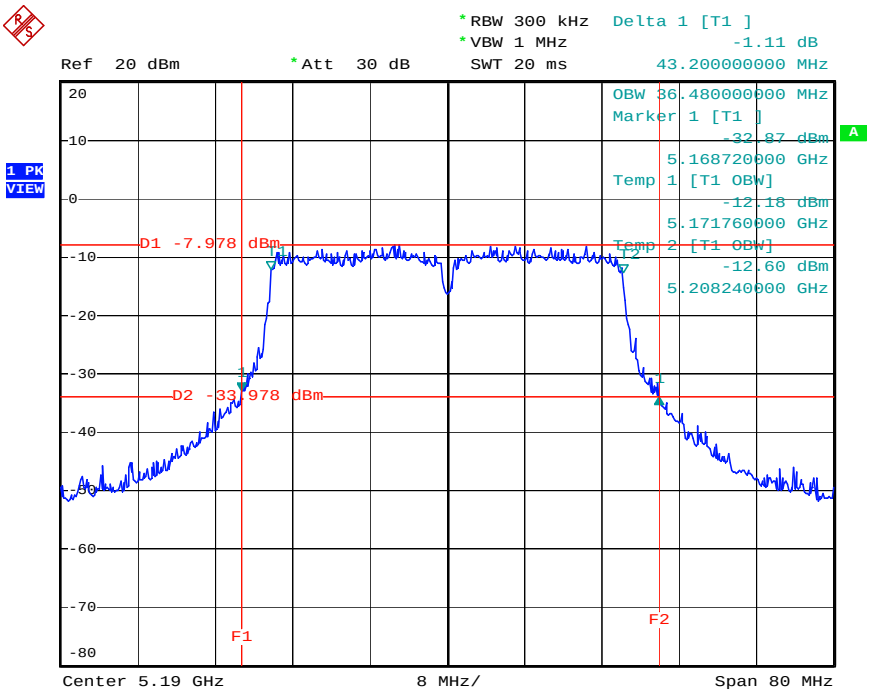


Date: 1.JUN.2008 04:33:28

26 dB Bandwidth Plot on Configuration IEEE 802.11n Ant. A & B (20MHz) / 5240 MHz

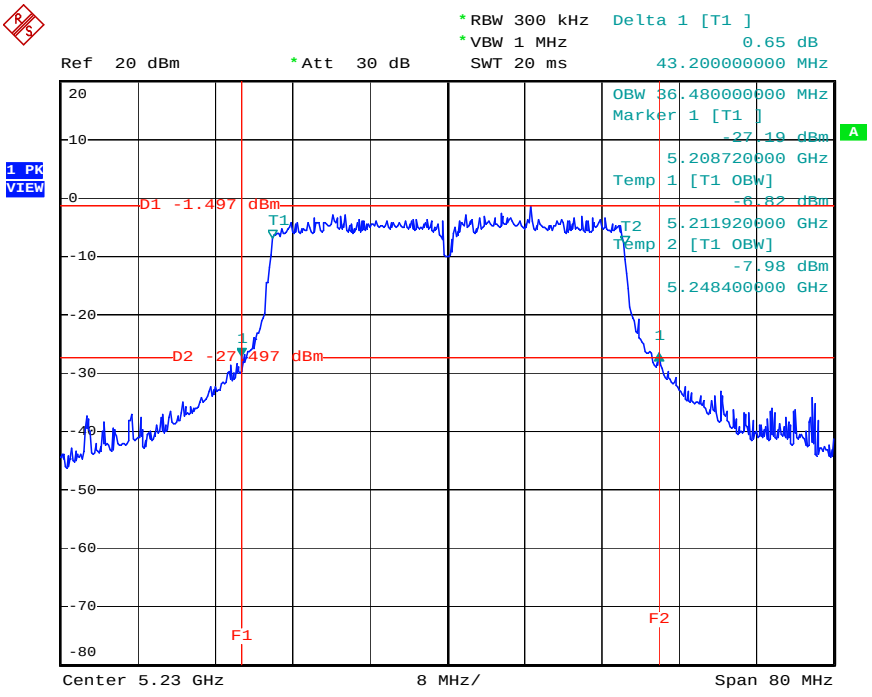


26 dB Bandwidth Plot on Configuration IEEE 802.11n Ant. A & B (40MHz) / 5190 MHz



Date: 1.JUN.2008 23:58:34

26 dB Bandwidth Plot on Configuration IEEE 802.11n Ant. A & B (40MHz) / 5230 MHz



Date: 1.JUN.2008 04:38:10

3.3 Maximum Conducted Output Power Measurement

3.3.1 Limit

For the band 5.15~5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 50 mW (17dBm) or 4 dBm + 10log B, where B is the 26 dB emissions bandwidth in MHz. If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power and power density from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.3.2 Measuring Instruments and Setting

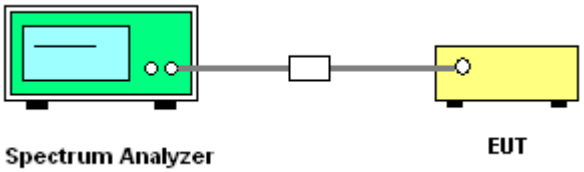
Please refer to section 4 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RB	1000 kHz
VB	300 kHz
Detector	Sample
Trace	Max Hold
Sweep Time	60s

3.3.3 Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. Test was performed in accordance with method #3 of FCC Public Notice DA-02-2138.
3. When measuring maximum conducted output power within multiple antenna systems, add every result of the values by mathematic formula.

3.3.4 Test Setup Layout



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 Maximum Conducted Output Power

Test date	Jun. 01, 2008	**Test Site No.**	TH01-HY
Temperature	27℃	**Humidity**	55%
Test Engineer	Sam	**Configuration**	802.11a/n

For Single Chain:

Configuration of IEEE 802.11a

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
36	5180 MHz	12.15	17.00	**Complies**
40	5200 MHz	11.79	17.00	**Complies**
48	5240 MHz	12.69	17.00	**Complies**

Configuration IEEE 802.11n (20MHz)

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
36	5180 MHz	11.82	17.00	**Complies**
40	5200 MHz	12.01	17.00	**Complies**
48	5240 MHz	13.03	17.00	**Complies**

Configuration IEEE 802.11n (40MHz)

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
38	5190 MHz	8.67	17.00	**Complies**
46	5230 MHz	16.65	17.00	**Complies**

For Two Chain:

Configuration IEEE 802.11n Ant. A (20MHz)

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
36	5180 MHz	11.12	17.00	**Complies**
40	5200 MHz	11.02	17.00	**Complies**
48	5240 MHz	11.51	17.00	**Complies**

Configuration IEEE 802.11n Ant. B (20MHz)

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
36	5180 MHz	10.83	17.00	**Complies**
40	5200 MHz	11.06	17.00	**Complies**
48	5240 MHz	12.38	17.00	**Complies**

Configuration IEEE 802.11n Ant. A & B (20MHz)

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
36	5180 MHz	13.99	17.00	**Complies**
40	5200 MHz	14.05	17.00	**Complies**
48	5240 MHz	14.98	17.00	**Complies**

Configuration IEEE 802.11n Ant. A (40MHz)

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
38	5190 MHz	5.71	17.00	**Complies**
46	5230 MHz	12.19	17.00	**Complies**

Configuration IEEE 802.11n Ant. B (40MHz)

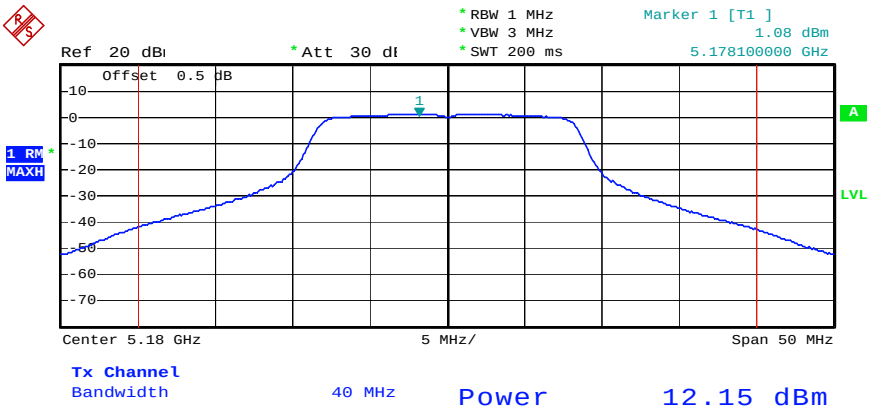
Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
38	5190 MHz	5.30	17.00	**Complies**
46	5230 MHz	12.23	17.00	**Complies**

Configuration IEEE 802.11n Ant. A & B (40MHz)

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
38	5190 MHz	8.52	17.00	**Complies**
46	5230 MHz	15.22	17.00	**Complies**

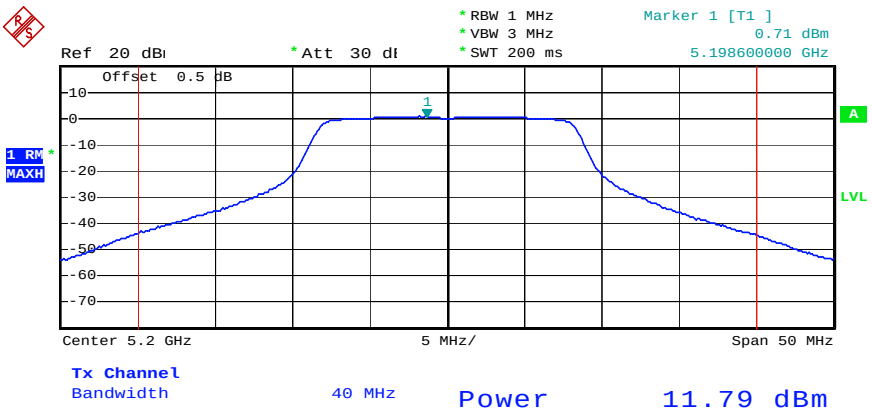
For Single Chain:

Channel Output Power Plot on Configuration IEEE 802.11a / 5180 MHz



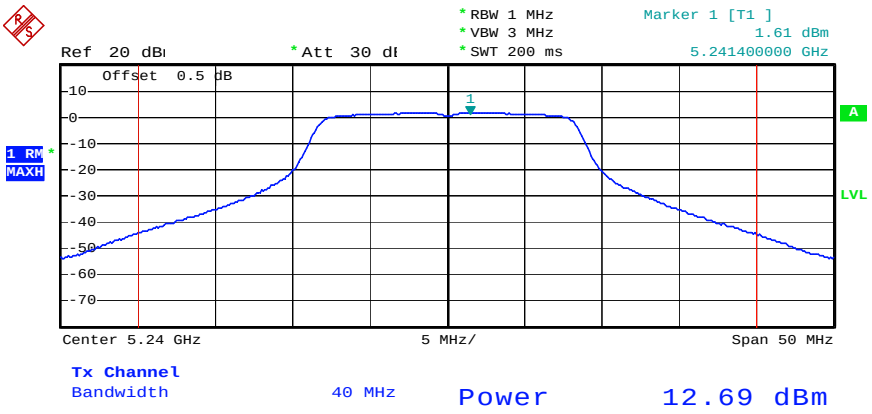
Date: 1.JUN.2008 03:41:34

Channel Output Power Plot on Configuration IEEE 802.11a / 5200 MHz



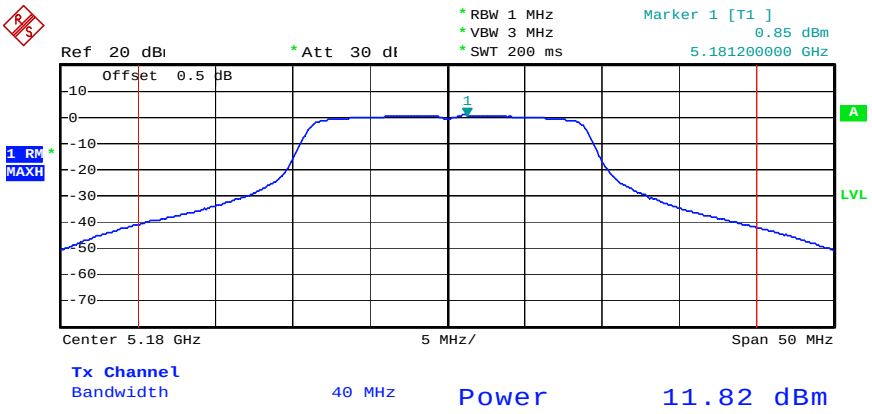
Date: 1.JUN.2008 03:43:12

Channel Output Power Plot on Configuration IEEE 802.11a / 5240 MHz



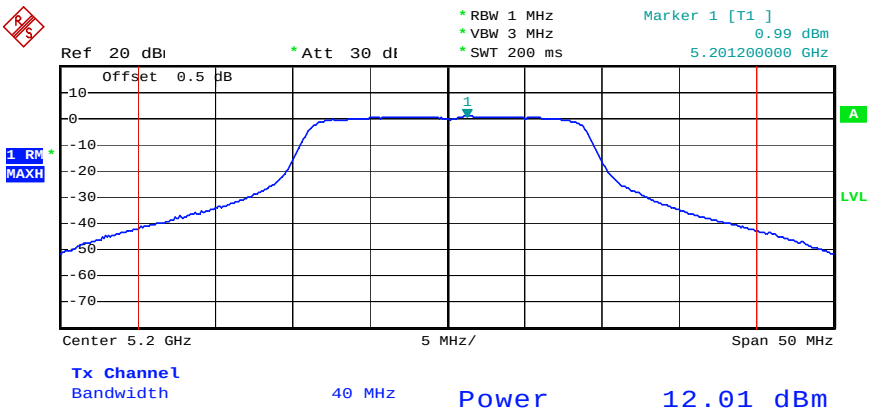
Date: 1.JUN.2008 03:45:13

Channel Output Power Plot on Configuration IEEE 802.11n (20MHz) / 5180 MHz



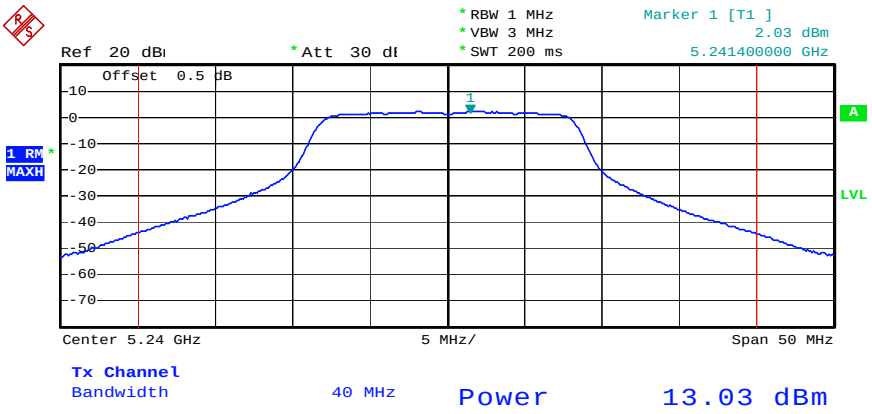
Date: 1.JUN.2008 03:53:27

Channel Output Power Plot on Configuration IEEE 802.11n (20MHz) / 5200 MHz

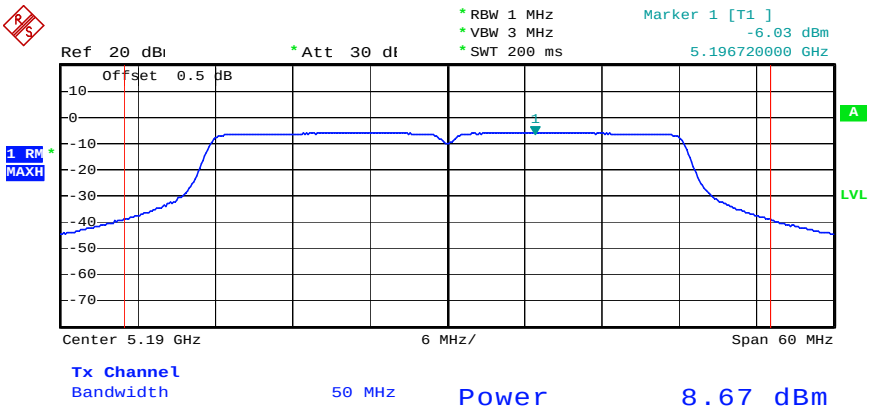


Date: 1.JUN.2008 03:52:09

Channel Output Power Plot on Configuration IEEE 802.11n (20MHz) / 5240 MHz

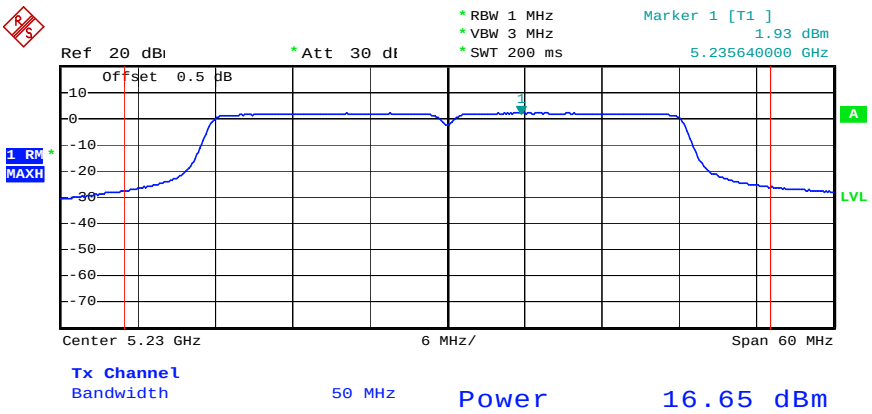


Channel Output Power Plot on Configuration IEEE 802.11n (40MHz) / 5190 MHz



Date: 1.JUN.2008 03:55:03

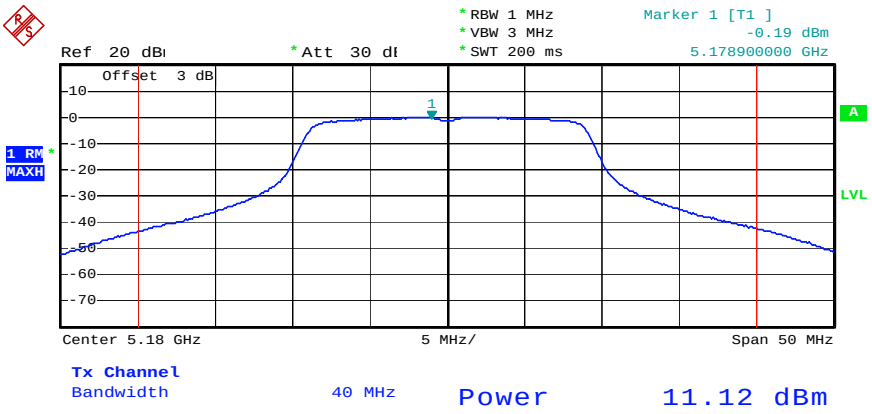
Channel Output Power Plot on Configuration IEEE 802.11n (40MHz) / 5230 MHz



Date: 1.JUN.2008 03:59:17

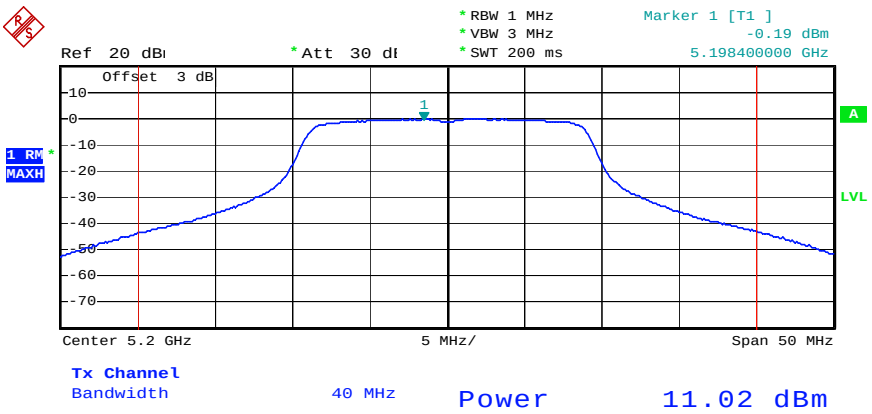
For Two Chain:

Channel Output Power Plot on Configuration IEEE 802.11n Ant. A (20MHz) / 5180 MHz



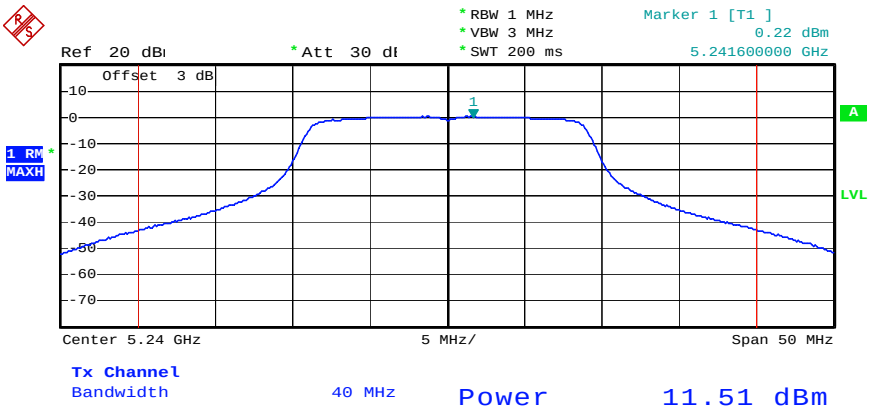
Date: 1.JUN.2008 05:06:10

Channel Output Power Plot on Configuration IEEE 802.11n Ant. A (20MHz) / 5200 MHz



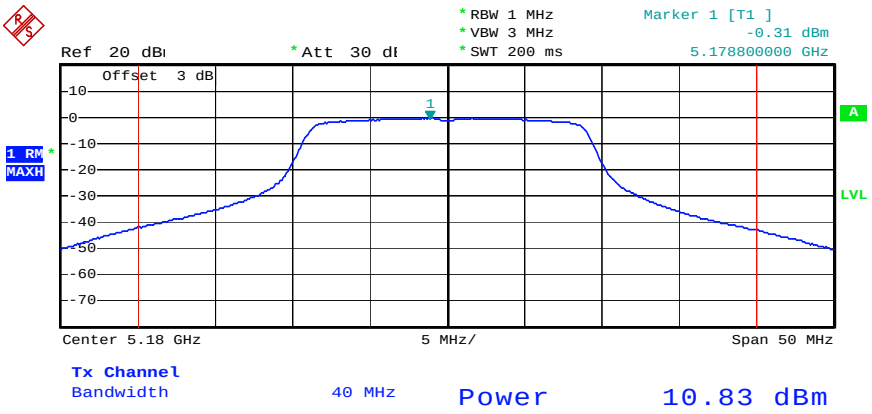
Date: 1.JUN.2008 05:05:19

Channel Output Power Plot on Configuration IEEE 802.11n Ant. A (20MHz) / 5240 MHz



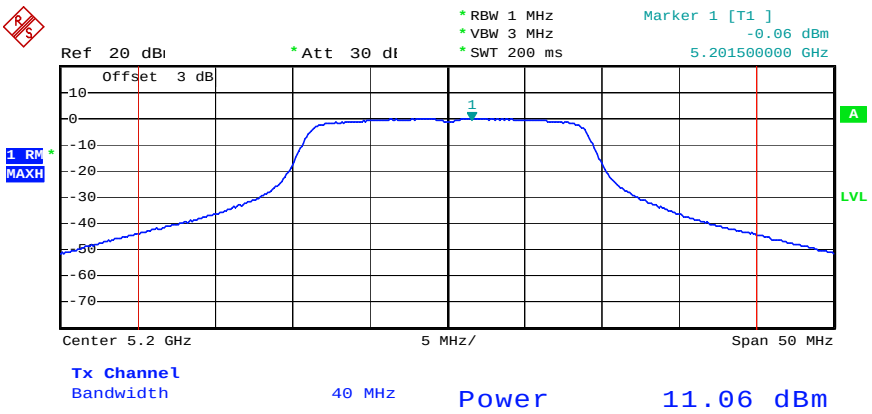
Date: 1.JUN.2008 05:04:33

Channel Output Power Plot on Configuration IEEE 802.11n Ant. B (20MHz) / 5180 MHz



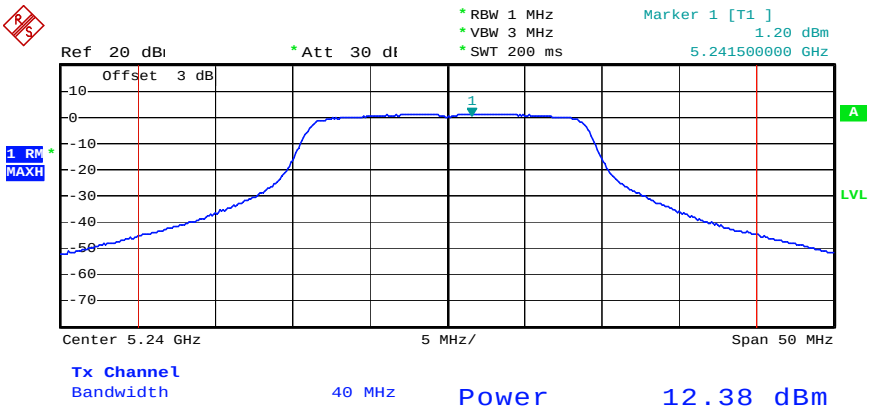
Date: 1.JUN.2008 05:00:03

Channel Output Power Plot on Configuration IEEE 802.11n Ant. B (20MHz) / 5200 MHz



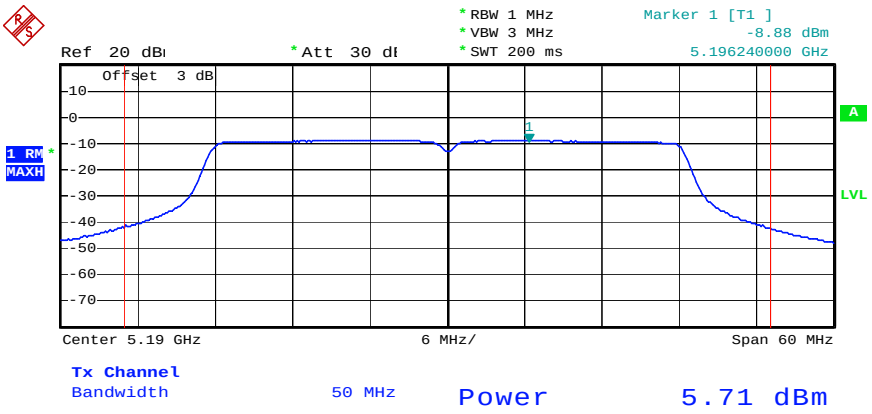
Date: 1.JUN.2008 05:00:54

Channel Output Power Plot on Configuration IEEE 802.11n Ant. B (20MHz) / 5240 MHz



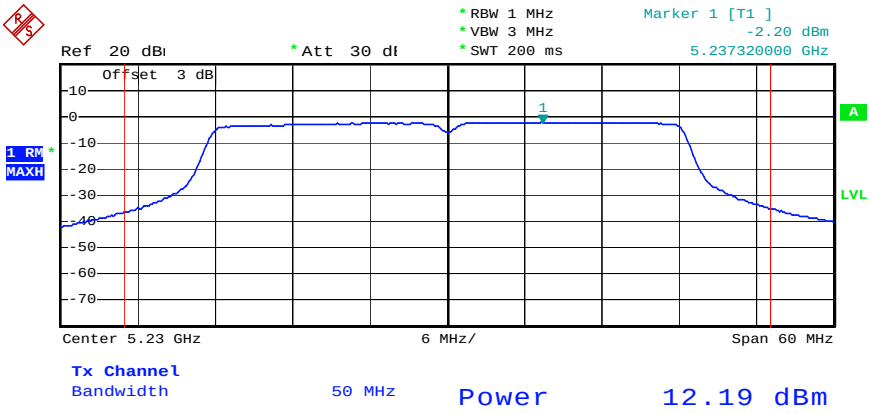
Date: 1.JUN.2008 05:01:56

Channel Output Power Plot on Configuration IEEE 802.11n Ant. A (40MHz) / 5190 MHz



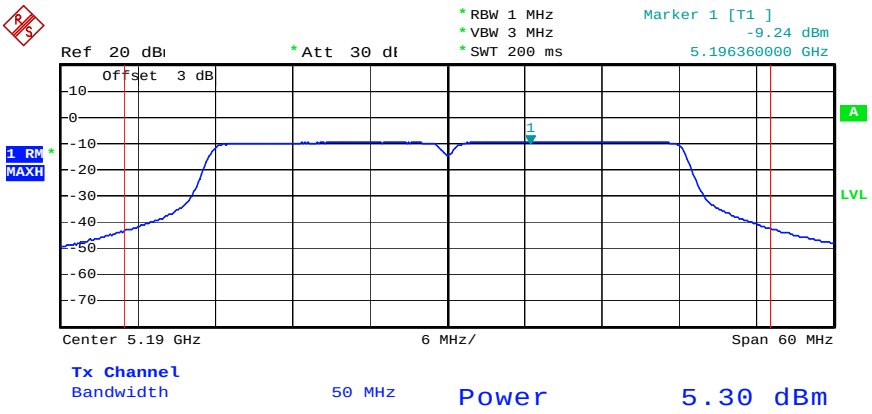
Date: 1.JUN.2008 23:51:34

Channel Output Power Plot on Configuration IEEE 802.11n Ant. A (40MHz) / 5230 MHz



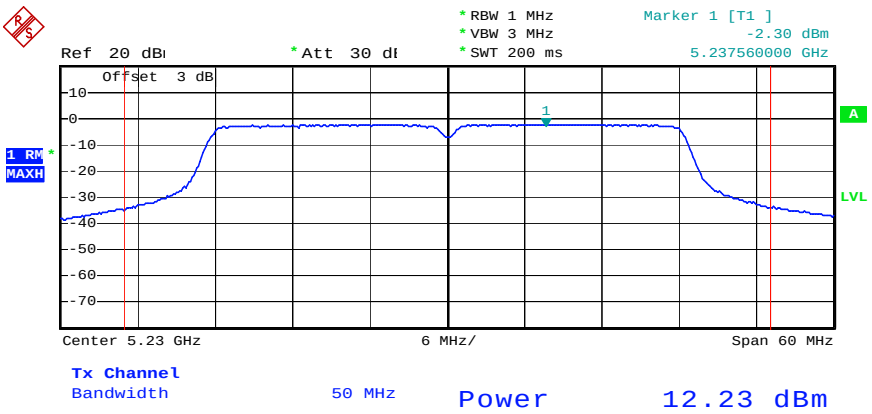
Date: 1.JUN.2008 04:58:22

Channel Output Power Plot on Configuration IEEE 802.11n Ant. B (40MHz) / 5190 MHz



Date: 1.JUN.2008 23:55:45

Channel Output Power Plot on Configuration IEEE 802.11n Ant. B (40MHz) / 5230 MHz



Date: 1.JUN.2008 05:07:46

3.4 Power Spectral Density Measurement

3.4.1 Limit

The power spectral density is defined as the highest level of power in dBm per MHz generated by the transmitter within the power envelope. The following table is power spectral density limits and decrease power density limit rule refer to section 3.3.1.

Frequency Range	Power Spectral Density limit (dBm/MHz)
5.15~5.25 GHz	4
5.25-5.35 GHz	11
5.725-5.825	17

3.4.2 Measuring Instruments and Setting

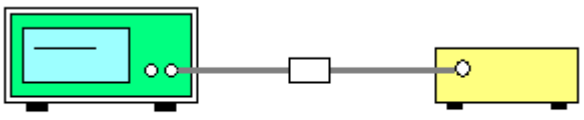
Please refer to section 4 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RB	1000 kHz
VB	3000 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

3.4.3 Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. Set RBW of spectrum analyzer to 1000kHz and VBW to 3000kHz. Set Detector to Peak, Trace to Max Hold. Mark the frequency with maximum peak power as the center of the display of the spectrum.
3. Measuring multiple antennas, the connectors are required to link with Spectrum Analyzer through a combiner.

3.4.4 Test Setup Layout



3.4.5 Test Deviation

There is no deviation with the original standard.

3.4.6 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

3.4.7 Test Result of Power Spectral Density

Test date	Jun. 01, 2008	**Test Site No.**	TH01-HY
Temperature	27℃	**Humidity**	55%
Test Engineer	Sam	**Configuration**	802.11a/n

For Single Chain:

Configuration of IEEE 802.11a

Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
5180 MHz	1.55	4.00	**Complies**
5200 MHz	1.14	4.00	**Complies**
5240 MHz	2.13	4.00	**Complies**

Configuration IEEE 802.11n (20MHz)

Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
5180 MHz	1.06	4.00	**Complies**
5200 MHz	1.19	4.00	**Complies**
5240 MHz	2.39	4.00	**Complies**

Configuration IEEE 802.11n (40MHz)

Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
5190 MHz	-5.35	4.00	**Complies**
5230 MHz	2.75	4.00	**Complies**

For Two Chain:

Configuration IEEE 802.11n Ant. A & B (20MHz)

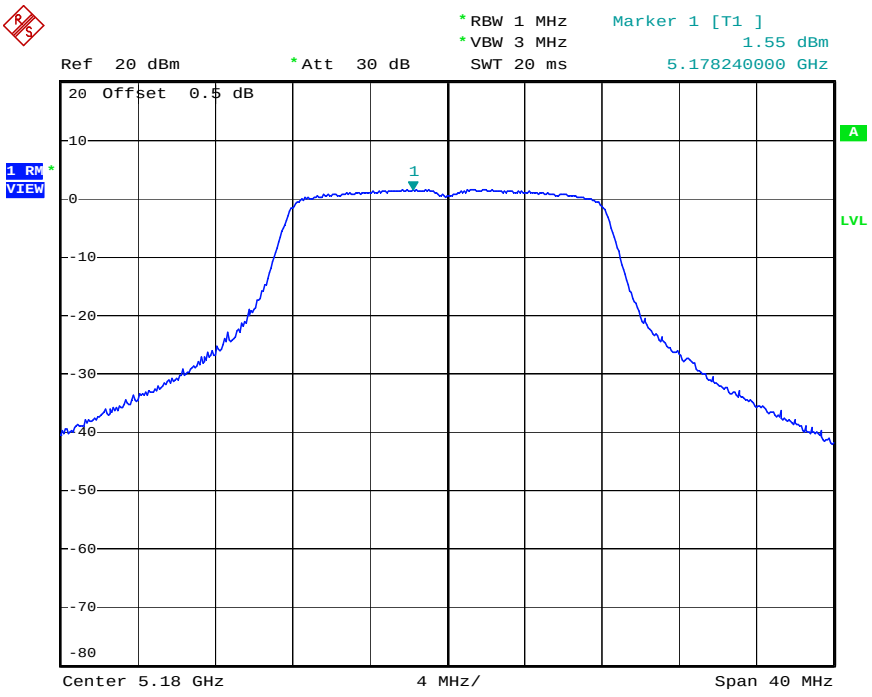
Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
5180 MHz	3.61	4.00	**Complies**
5200 MHz	3.49	4.00	**Complies**
5240 MHz	3.63	4.00	**Complies**

Configuration IEEE 802.11n Ant. A & B (40MHz)

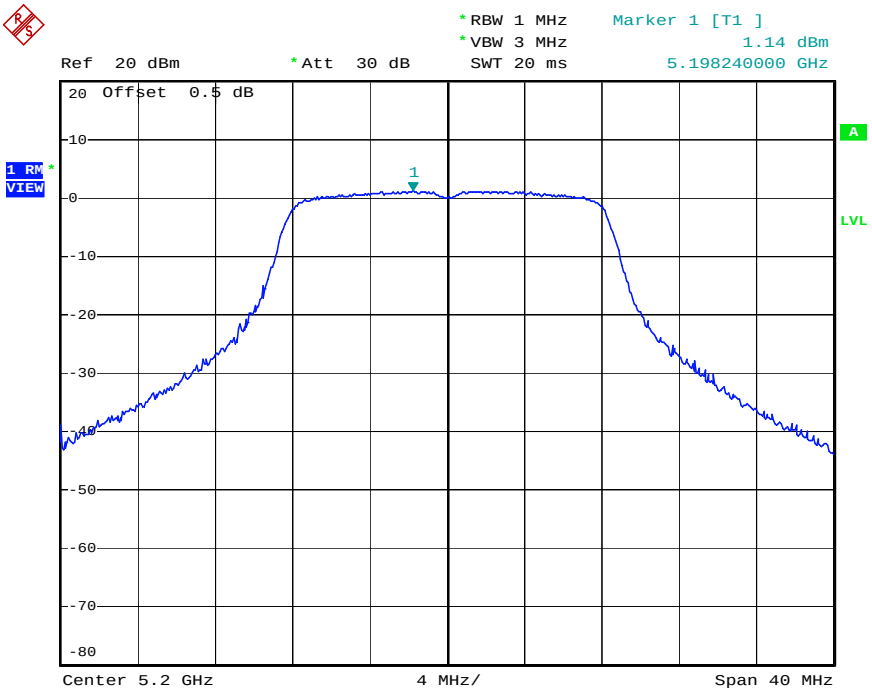
Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
5190 MHz	-4.04	4.00	**Complies**
5230 MHz	1.33	4.00	**Complies**

For Single Chain:

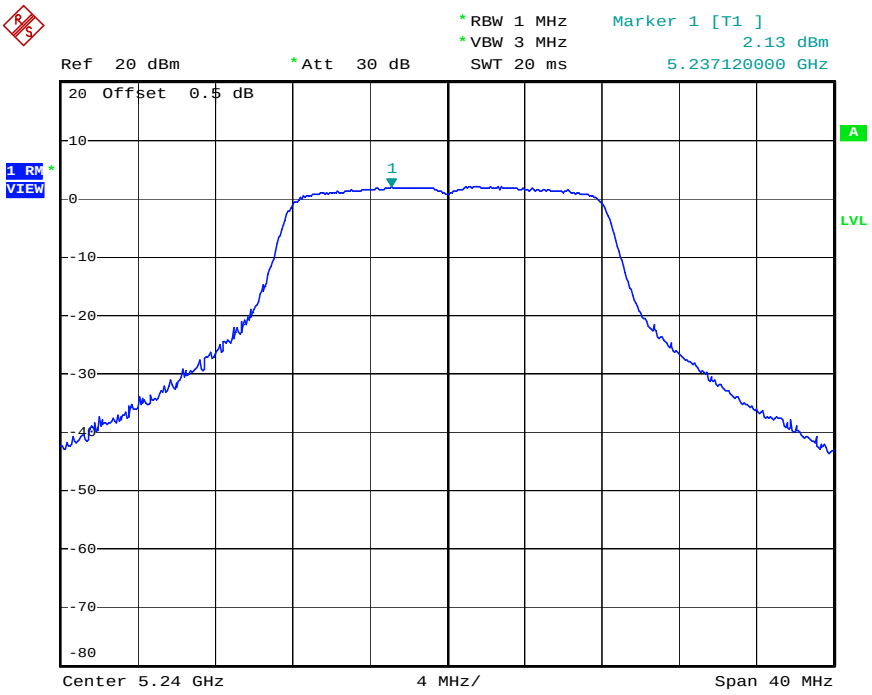
Power Density Plot on Configuration IEEE 802.11a / 5180 MHz



Power Density Plot on Configuration IEEE 802.11a / 5200 MHz

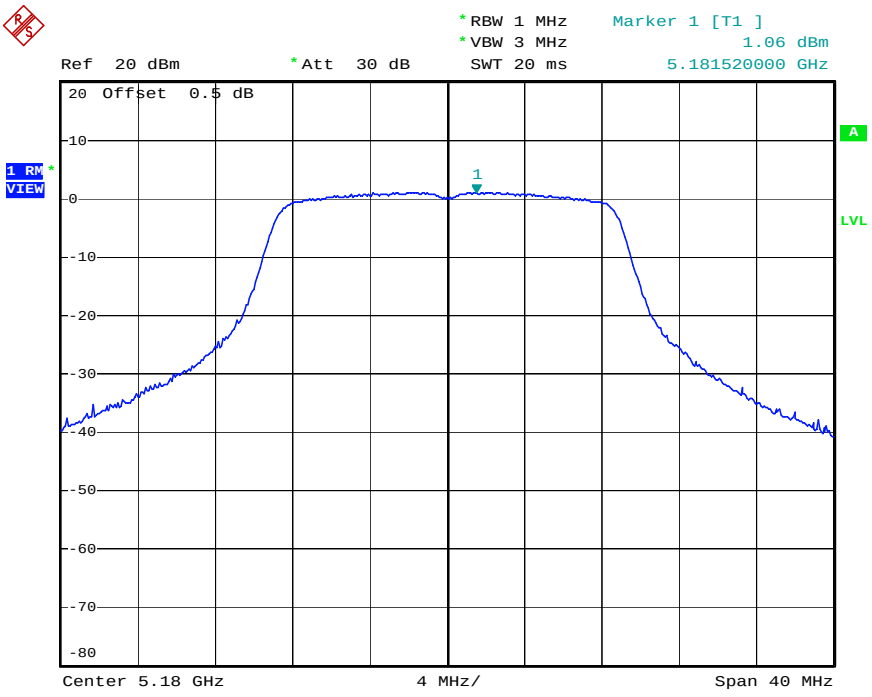


Power Density Plot on Configuration IEEE 802.11a / 5240 MHz

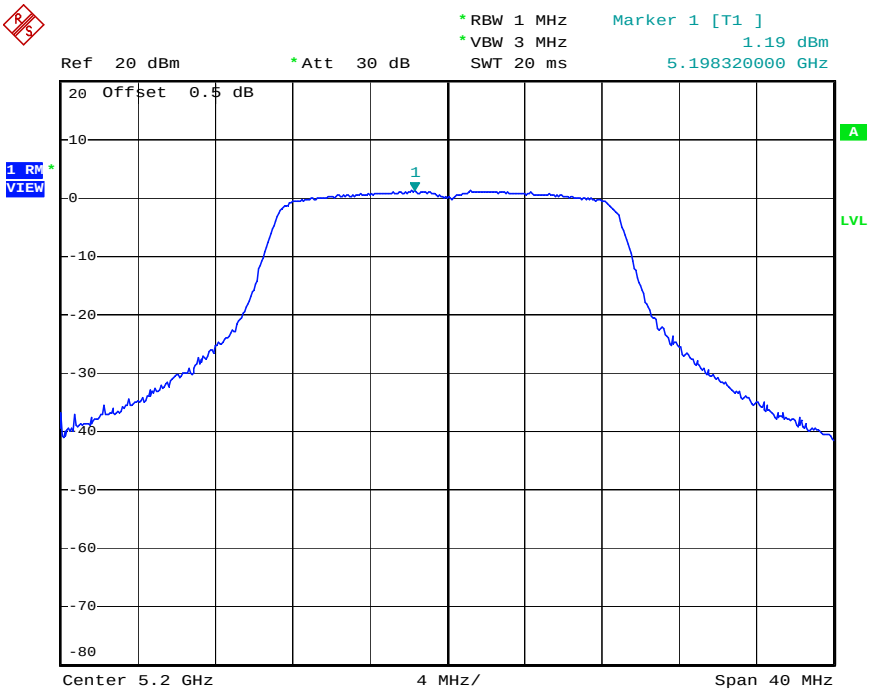


Date: 1.JUN.2008 03:44:38

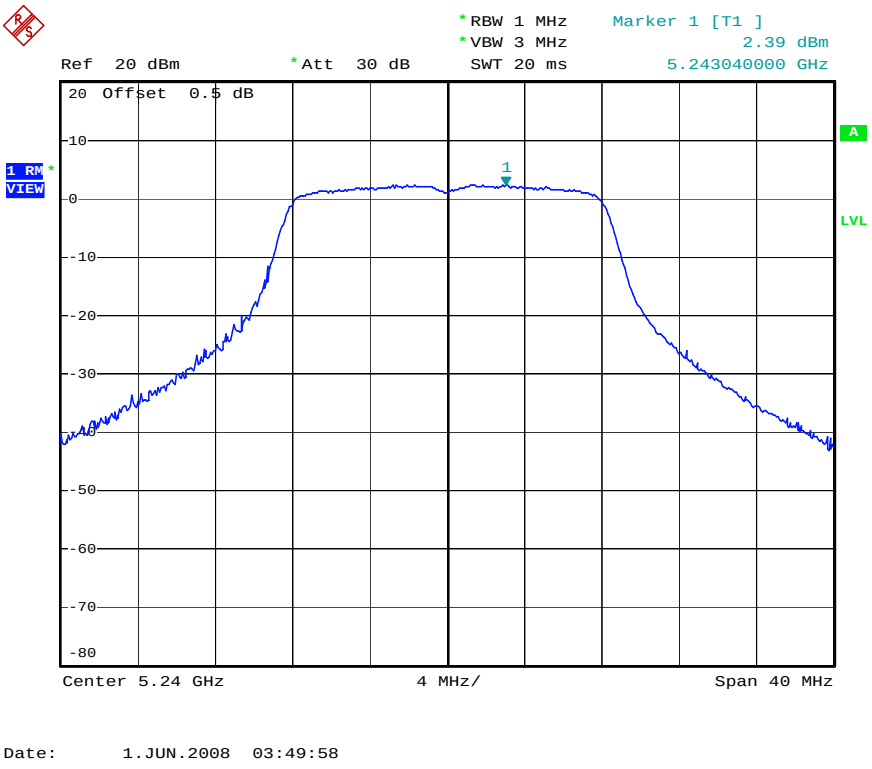
Power Density Plot on Configuration IEEE 802.11n (20MHz) / 5180 MHz



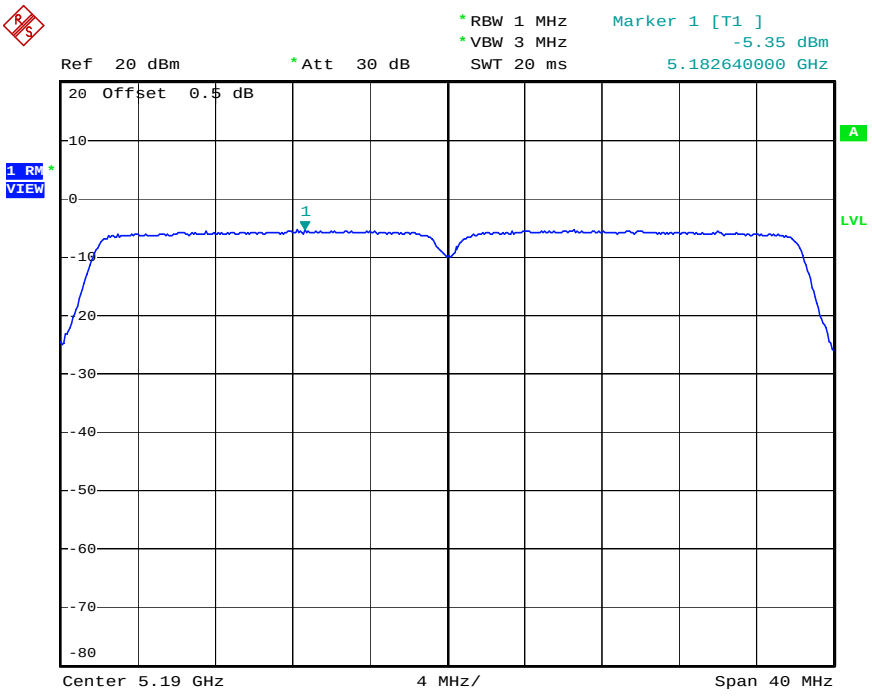
Power Density Plot on Configuration IEEE 802.11n (20MHz) / 5200 MHz



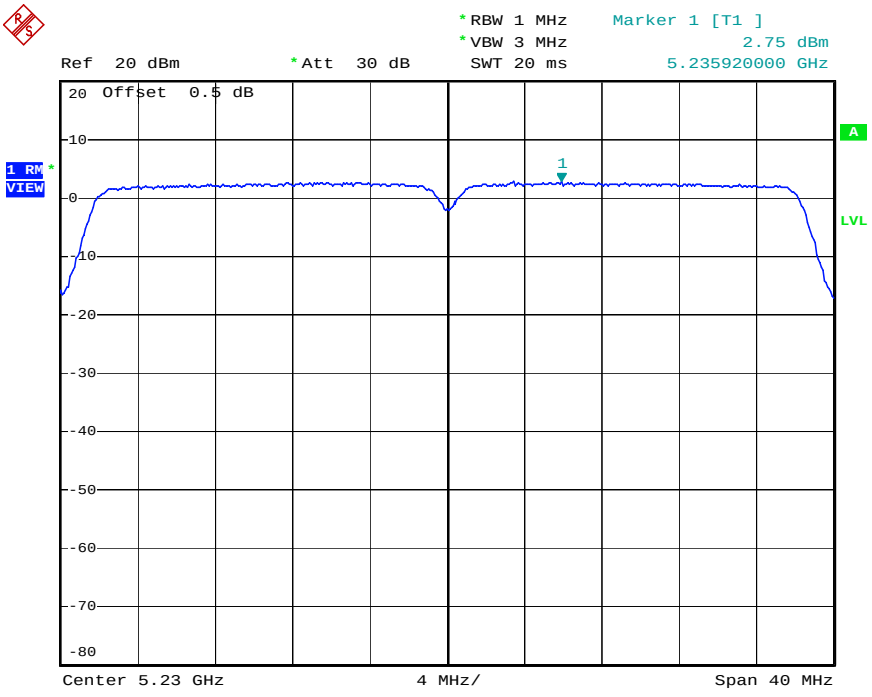
Power Density Plot on Configuration IEEE 802.11n (20MHz) / 5240 MHz



Power Density Plot on Configuration IEEE 802.11n (40MHz) / 5190 MHz

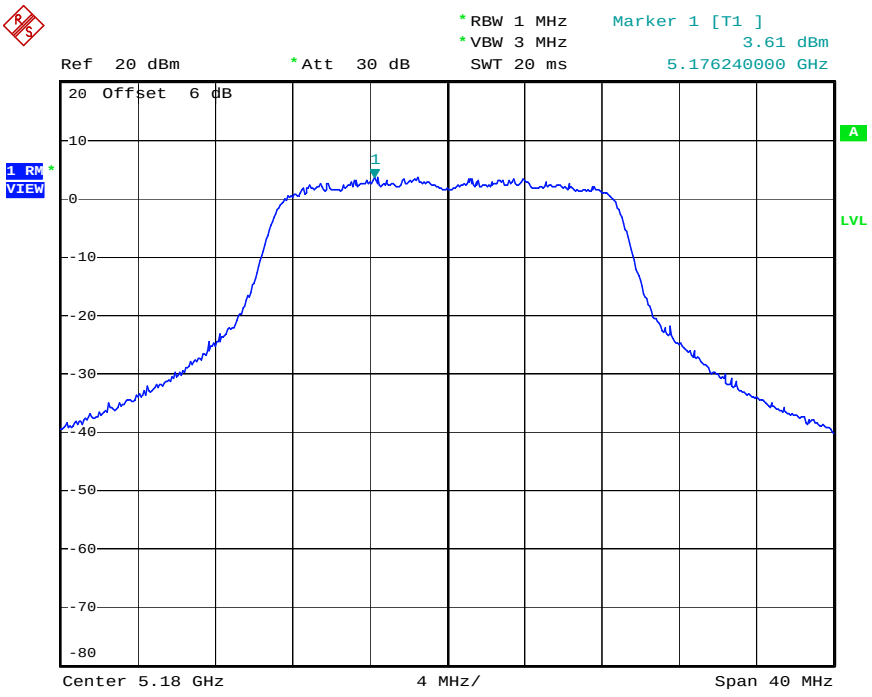


Power Density Plot on Configuration IEEE 802.11n (40MHz) / 5230 MHz

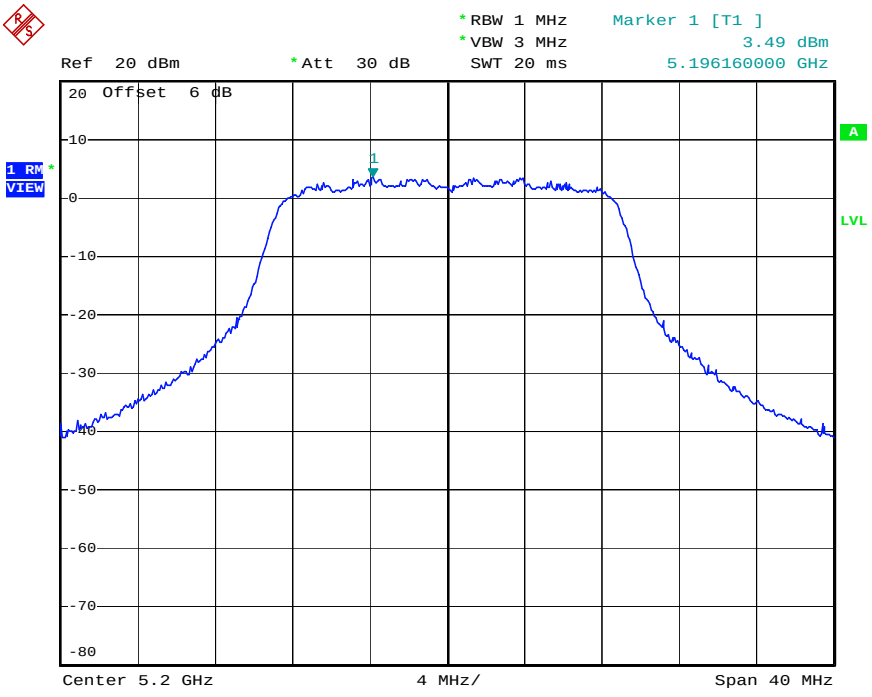


For Two Chain:

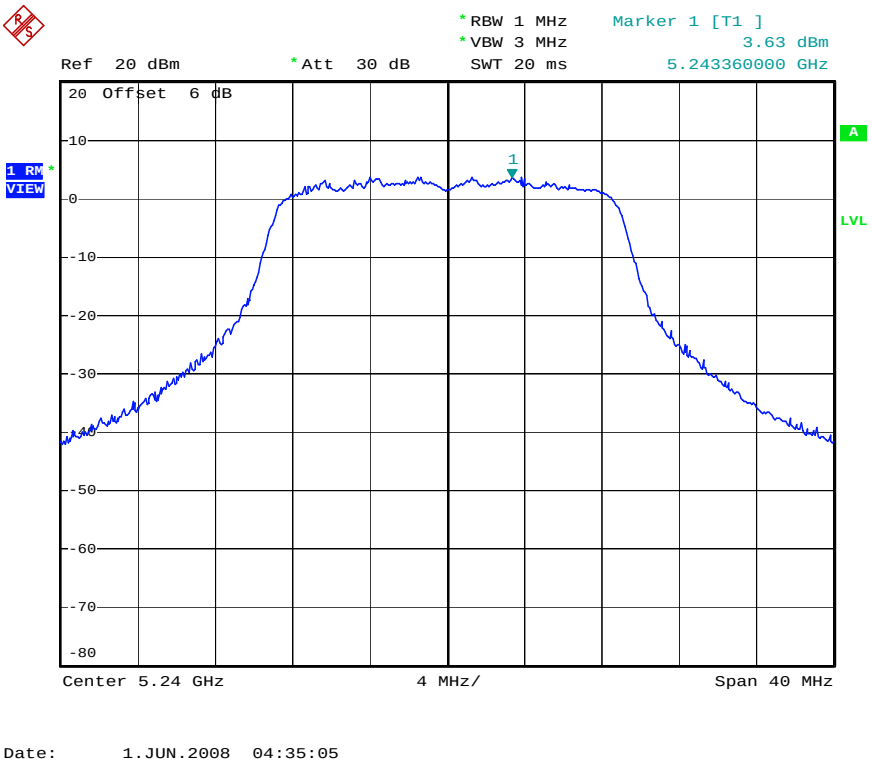
Power Density Plot on Configuration IEEE 802.11n Ant. A & B (20MHz) / 5180 MHz



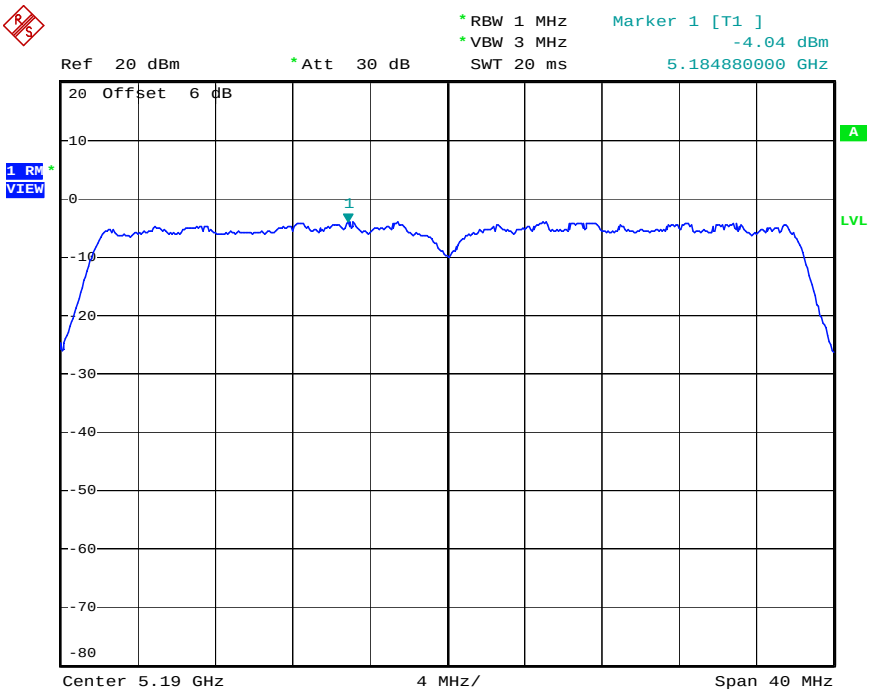
Power Density Plot on Configuration IEEE 802.11n Ant. A & B (20MHz) / 5200 MHz



Power Density Plot on Configuration IEEE 802.11n Ant. A & B (20MHz) / 5240 MHz

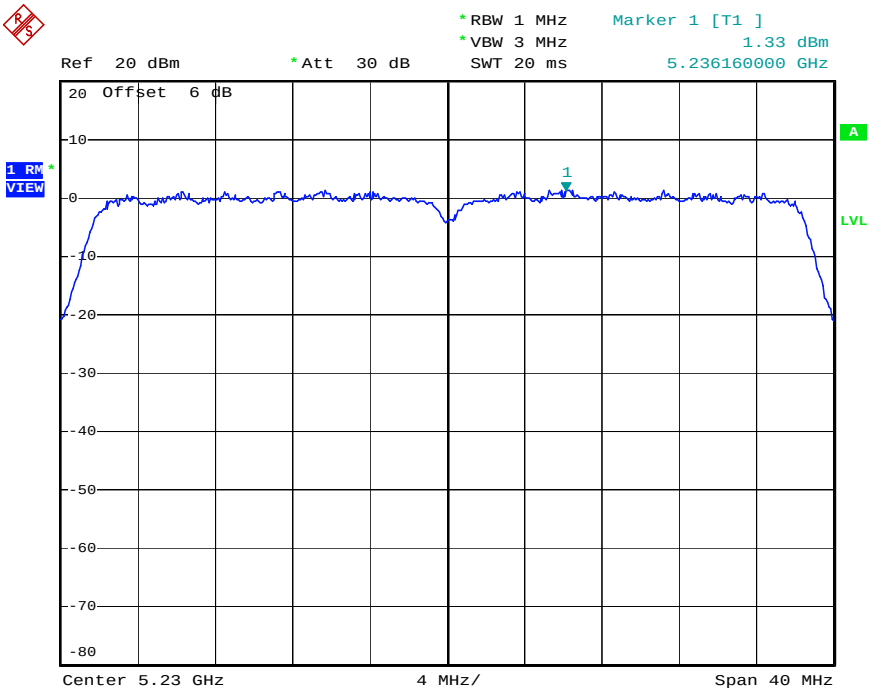


Power Density Plot on Configuration IEEE 802.11n Ant. A & B (40MHz) / 5190 MHz



Date: 1.JUN.2008 23:58:47

Power Density Plot on Configuration IEEE 802.11n Ant. A & B (40MHz) / 5230 MHz



Date: 1.JUN.2008 04:38:23

3.5 Peak Excursion Measurement

3.5.1 Limit

The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the maximum conducted output power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emissions bandwidth whichever is less.

3.5.2 Measuring Instruments and Setting

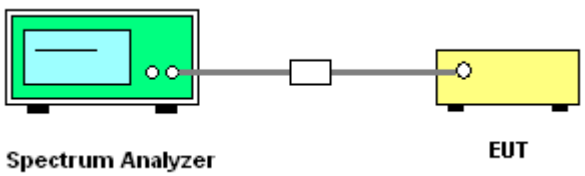
Please refer to section 4 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RB	1000 kHz (Peak Trace) / 1000 kHz (Average Trace)
VB	3000 kHz (Peak Trace) / 300 kHz (Average Trace)
Detector	Peak (Peak Trace) / Sample (Average Trace)
Trace	Max Hold
Sweep Time	60s

3.5.3 Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. Set the spectrum analyzer span to view the entire emissions bandwidth. The largest difference between the following two traces (Peak Trace and Average Trace) must be ≤ 13 dB for all frequencies across the emissions bandwidth. Submit a plot.
3. Peak Trace: Set RBW = 1 MHz, VBW ≥ 3 MHz with peak detector and max-hold settings.
4. Average Trace: Method #3—video averaging with max hold--and sum power across the band. Set span to encompass the entire emissions bandwidth (EBW) of the signal. Set sweep trigger to “free run”. Set RBW = 1 MHz. Set VBW ≥ 1/T (IEEE 802.11a VBW = 300kHz ≥ 1/4 μs). Use sample detector mode if bin width (i.e., span/number of points in spectrum) < 0.5 RBW. Otherwise use peak detector mode. Set max hold. Allow max hold to run for 60 seconds.
5. Measuring multiple antennas, the connectors are required to link with Spectrum Analyzer through a combiner.

3.5.4 Test Setup Layout



3.5.5 Test Deviation

There is no deviation with the original standard.

3.5.6 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

3.5.7 Test Result of Peak Excursion

Test date	Jun. 01, 2008	**Test Site No.**	TH01-HY
Temperature	27℃	**Humidity**	55%
Test Engineer	Sam	**Configuration**	802.11a/n

For Single Chain:

Configuration of IEEE 802.11a

Frequency	Peak Excursion (dB)	Max. Limit (dB)	Result
5180 MHz	6.14	13	**Complies**
5200 MHz	4.04	13	**Complies**
5240 MHz	5.95	13	**Complies**

Configuration IEEE 802.11n (20MHz)

Frequency	Peak Excursion (dB)	Max. Limit (dB)	Result
5180 MHz	6.29	13	**Complies**
5200 MHz	5.89	13	**Complies**
5240 MHz	5.27	13	**Complies**

Configuration IEEE 802.11n (40MHz)

Frequency	Peak Excursion (dB)	Max. Limit (dB)	Result
5190 MHz	5.20	13	**Complies**
5230 MHz	5.16	13	**Complies**

For Two Chain:

Configuration IEEE 802.11n Ant. A & B (20MHz)

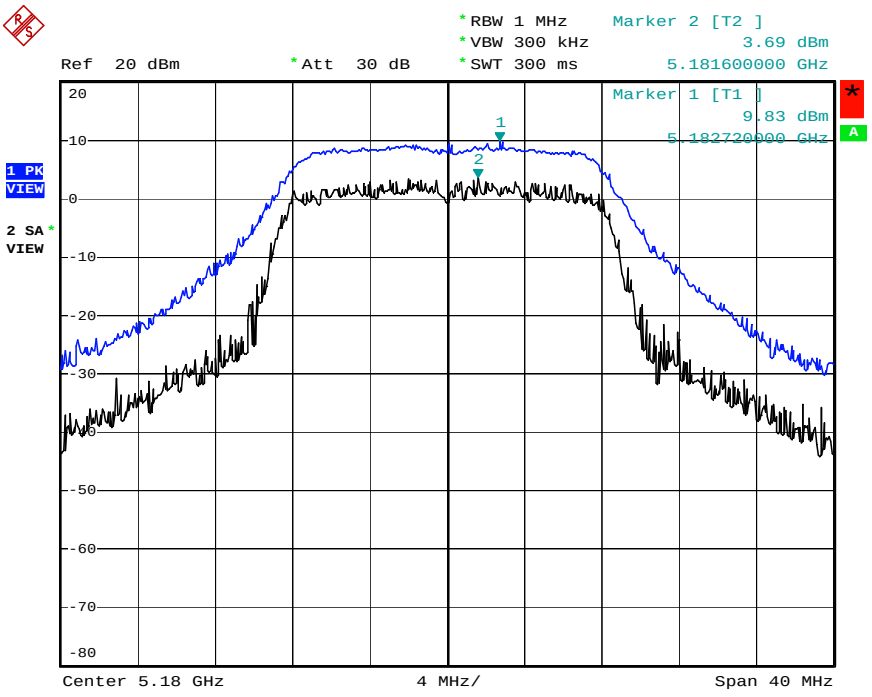
Frequency	Peak Excursion (dB)	Max. Limit (dB)	Result
5180 MHz	5.07	13	**Complies**
5200 MHz	6.19	13	**Complies**
5240 MHz	5.38	13	**Complies**

Configuration IEEE 802.11n Ant. A & B (40MHz)

Frequency	Peak Excursion (dB)	Max. Limit (dB)	Result
5190 MHz	5.33	13	**Complies**
5230 MHz	4.65	13	**Complies**

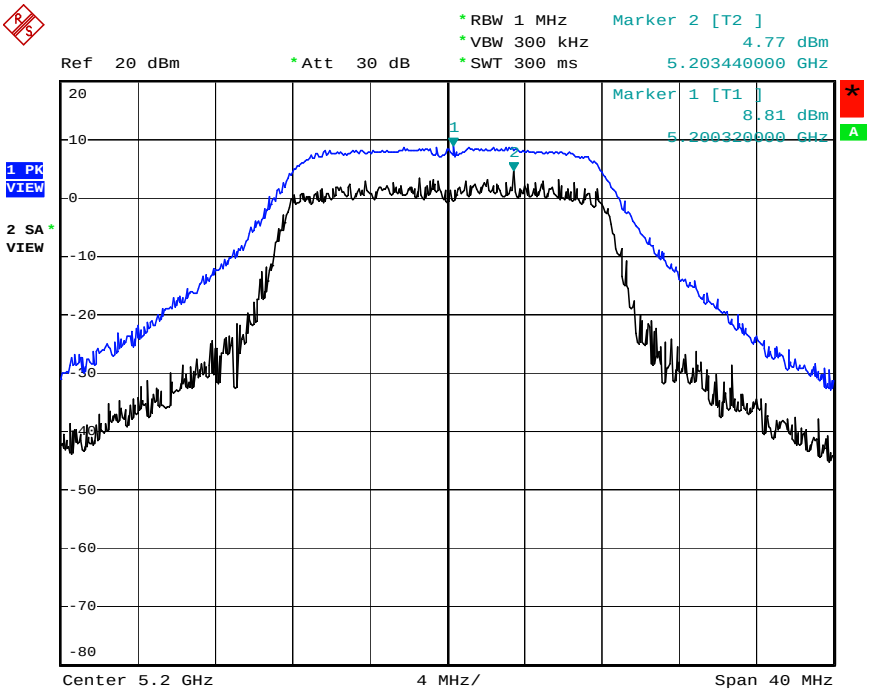
For Single Chain:

Peak Excursion Plot on Configuration IEEE 802.11a / 5180 MHz



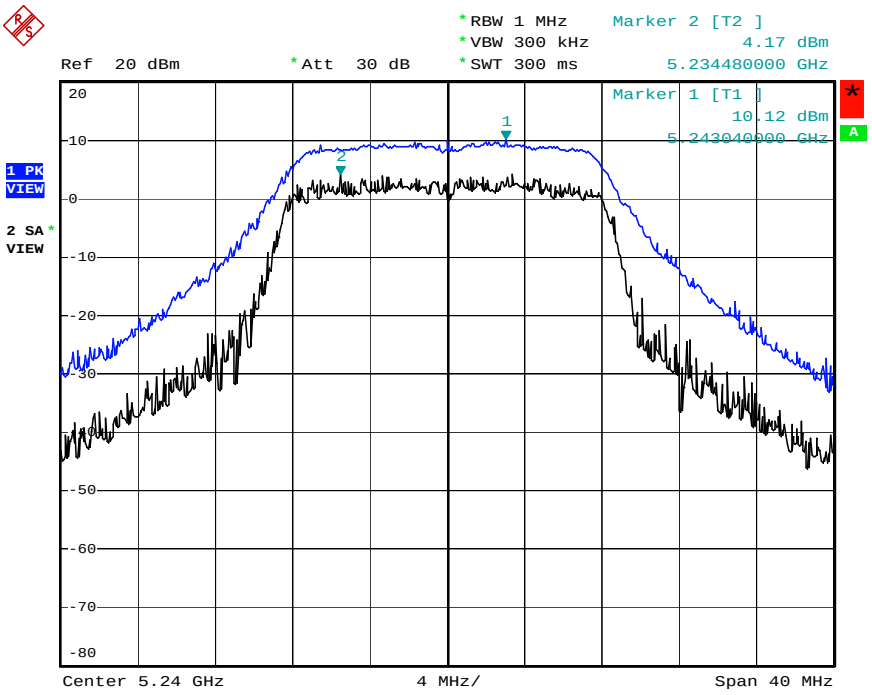
Date: 1.JUN.2008 03:41:46

Peak Excursion Plot on Configuration IEEE 802.11a / 5200 MHz

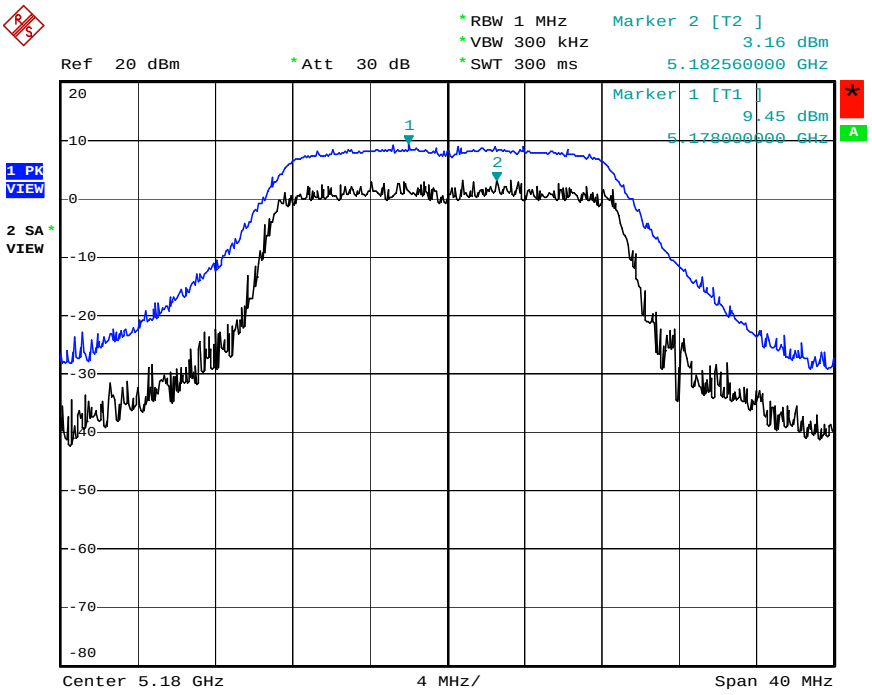


Date: 1.JUN.2008 03:43:24

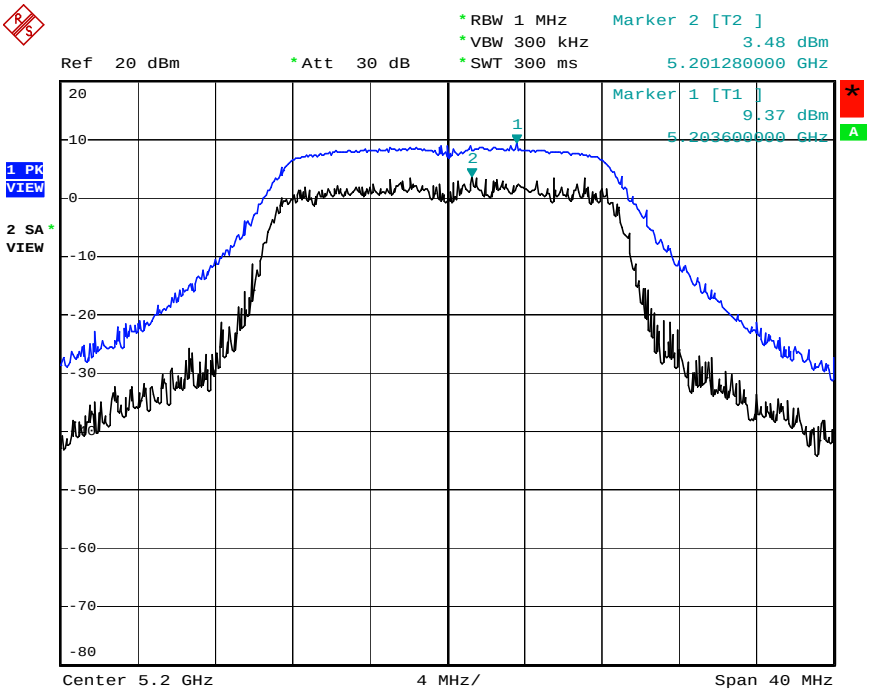
Peak Excursion Plot on Configuration IEEE 802.11a / 5240 MHz



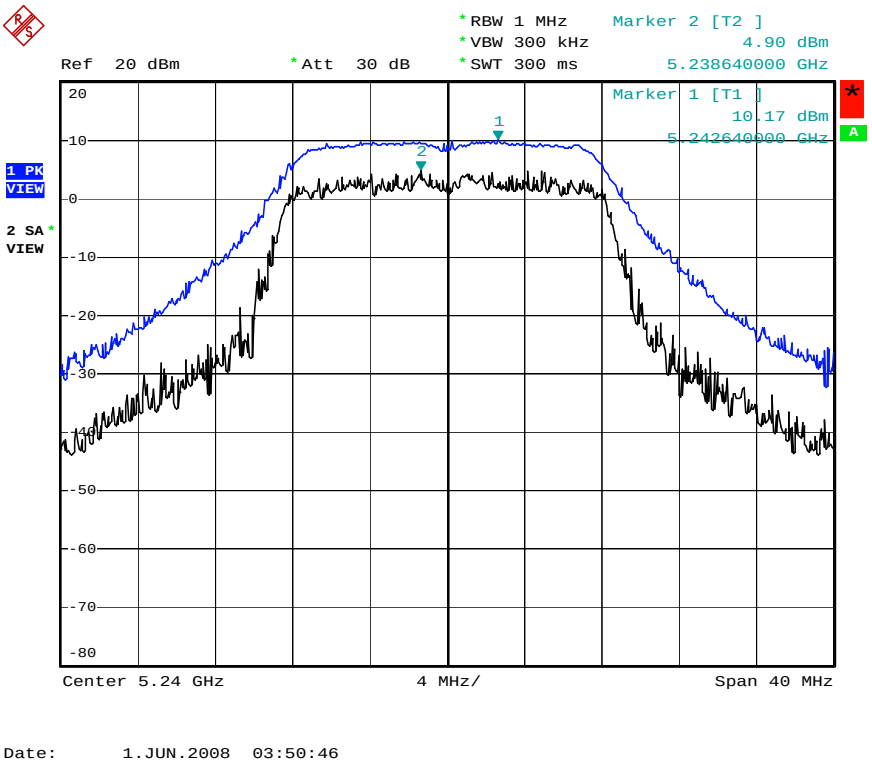
Peak Excursion Plot on Configuration IEEE 802.11n (20MHz) / 5180 MHz



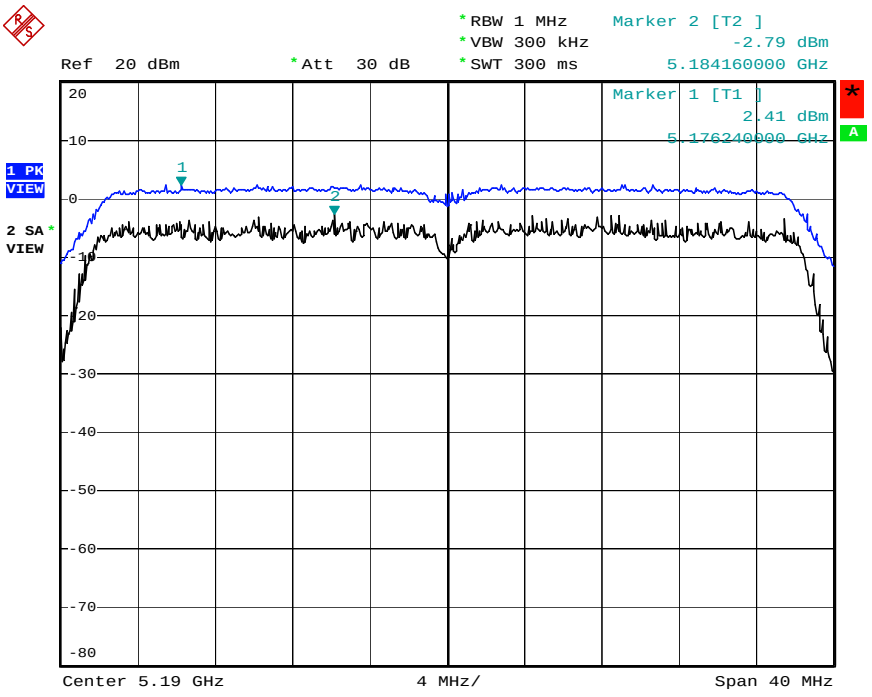
Peak Excursion Plot on Configuration IEEE 802.11n (20MHz) / 5200 MHz



Peak Excursion Plot on Configuration IEEE 802.11n (20MHz) / 5240 MHz

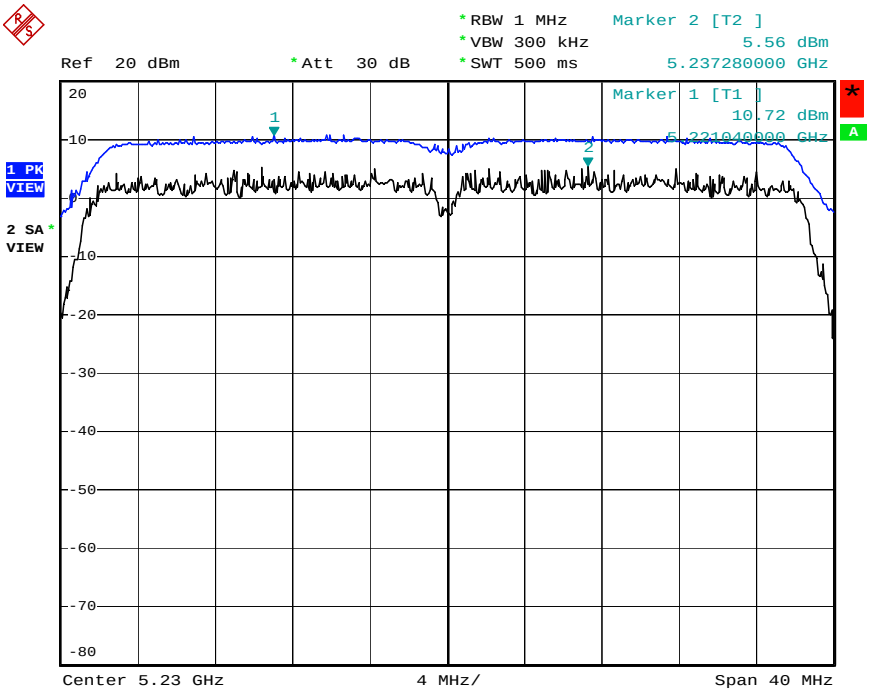


Peak Excursion Plot on Configuration IEEE 802.11n (40MHz) / 5190 MHz



Date: 1.JUN.2008 03:55:16

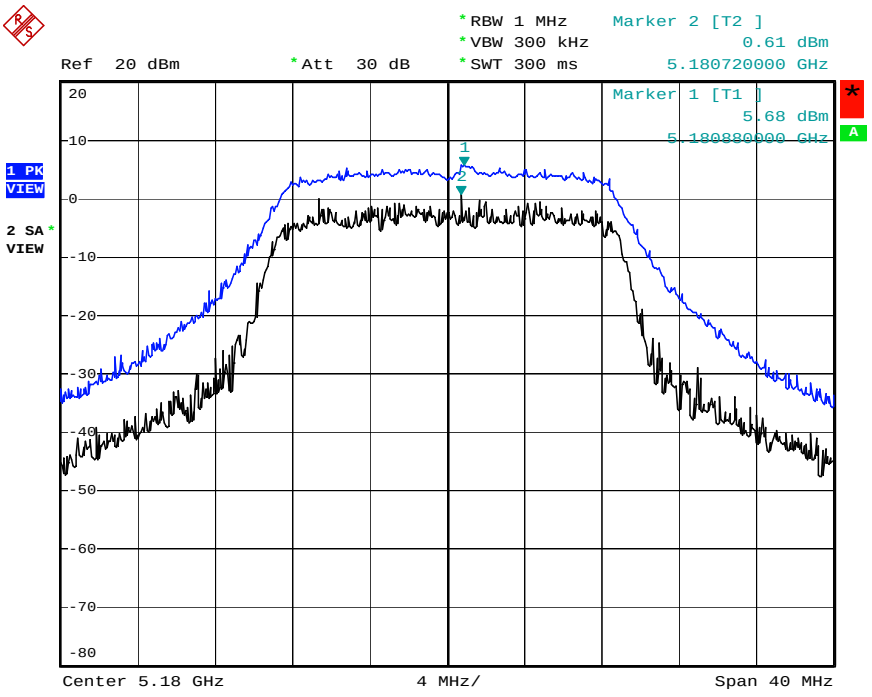
Peak Excursion Plot on Configuration IEEE 802.11n (40MHz) / 5230 MHz



Date: 1.JUN.2008 03:59:29

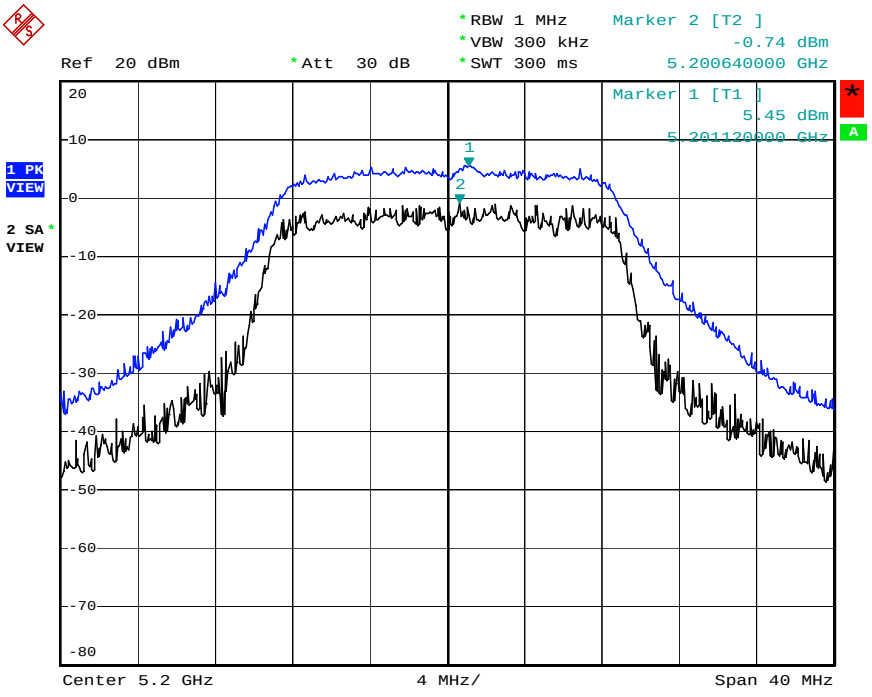
For Two Chain:

Peak Excursion Plot on Configuration IEEE 802.11n Ant. A & B (20MHz) / 5180 MHz



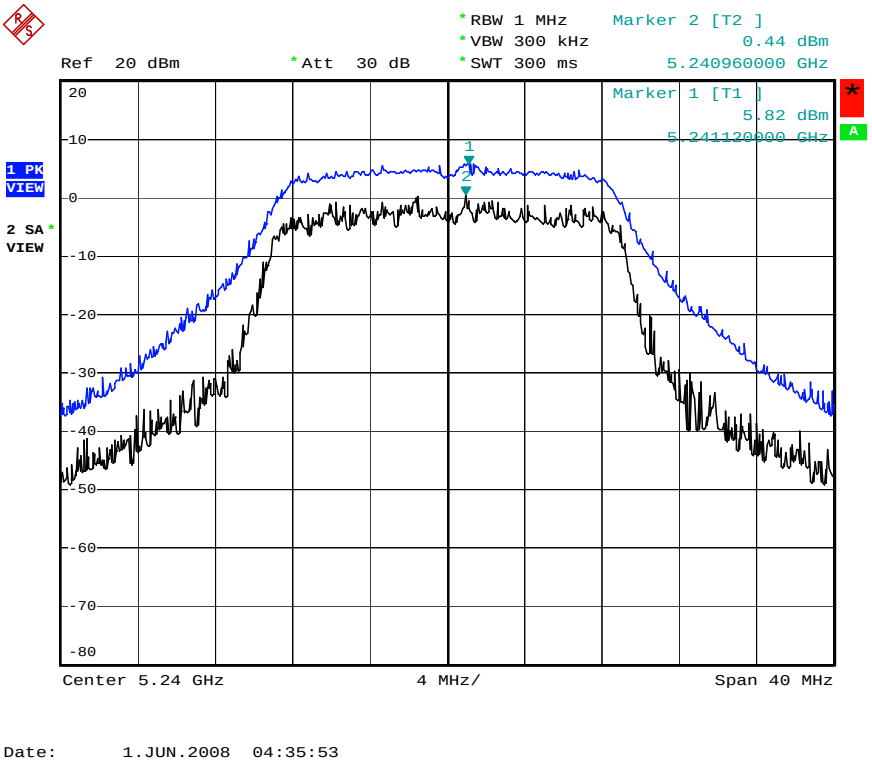
Date: 1.JUN.2008 04:33:03

Peak Excursion Plot on Configuration IEEE 802.11n Ant. A & B (20MHz) / 5200 MHz

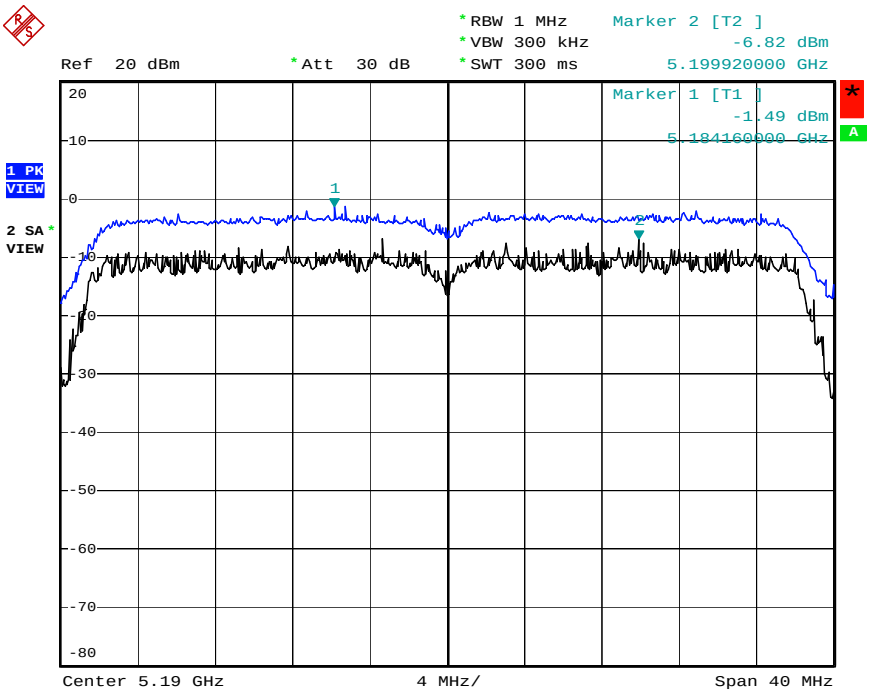


Date: 1.JUN.2008 04:34:29

Peak Excursion Plot on Configuration IEEE 802.11n Ant. A & B (20MHz) / 5240 MHz

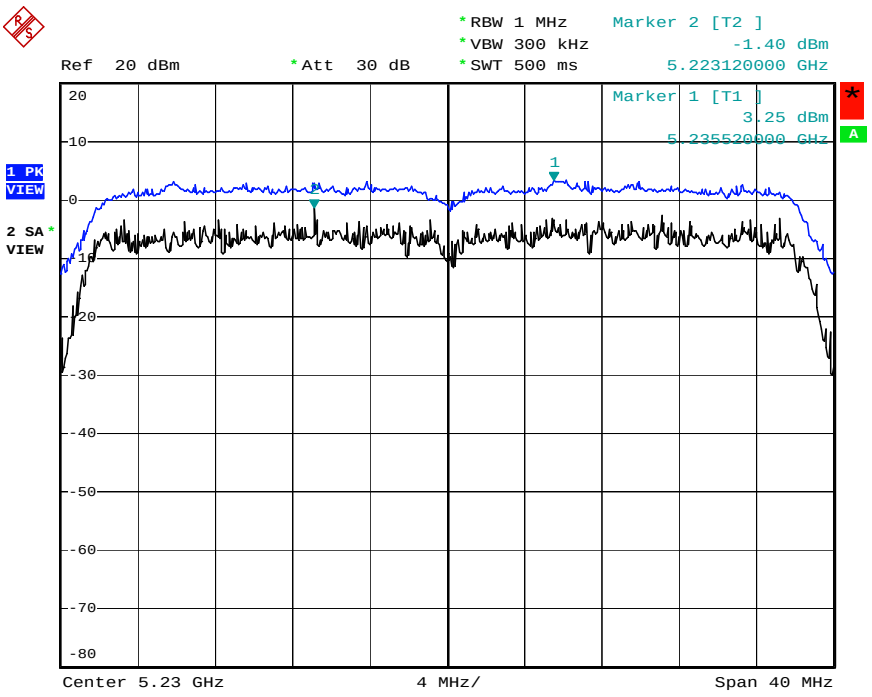


Peak Excursion Plot on Configuration IEEE 802.11n Ant. A & B (40MHz) / 5190 MHz



Date: 1.JUN.2008 23:59:35

Peak Excursion Plot on Configuration IEEE 802.11n Ant. A & B (40MHz) / 5230 MHz



Date: 1.JUN.2008 04:39:10

3.6 Radiated Emissions Measurement

3.6.1 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

3.6.2 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)	1000KHz / 1000KHz for peak

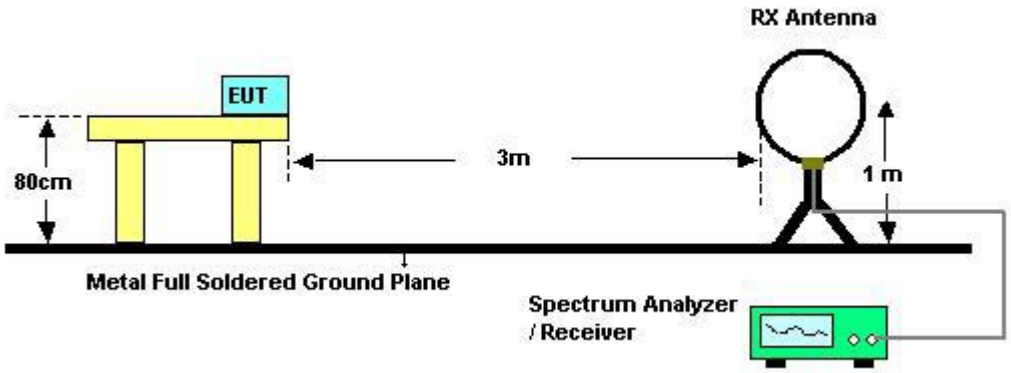
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

3.6.3 Test Procedures

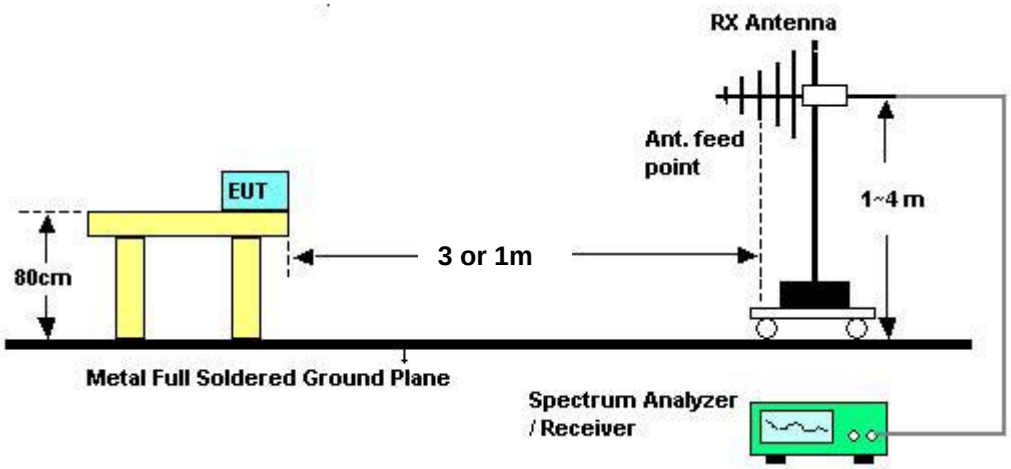
1. Configure the EUT according to ANSI C63.4. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting 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.

3.6.4 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 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].

3.6.5 Test Deviation

There is no deviation with the original standard.

3.6.6 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

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

Test date	May 30, 2008	**Test Site No.**	03CH03-HY
Temperature	26℃	**Humidity**	54%
Test Engineer	Duncan		

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.

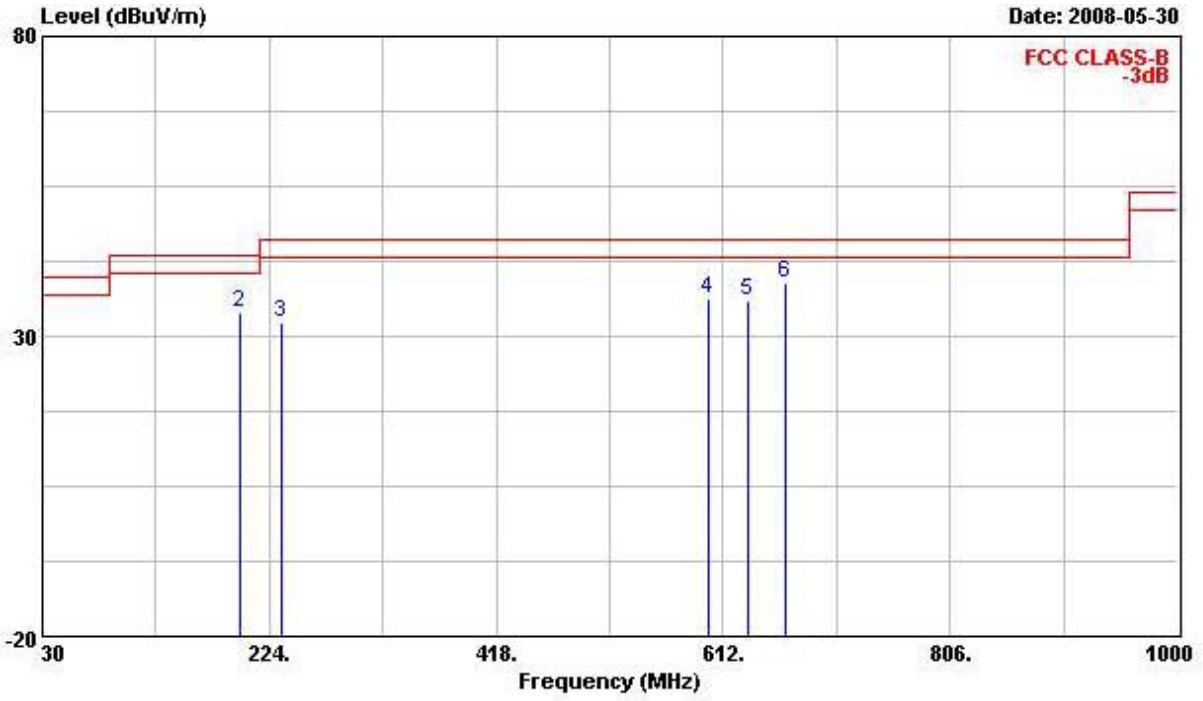
Distance extrapolation factor = 40 log (specific distance / test distance) (dB);

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

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

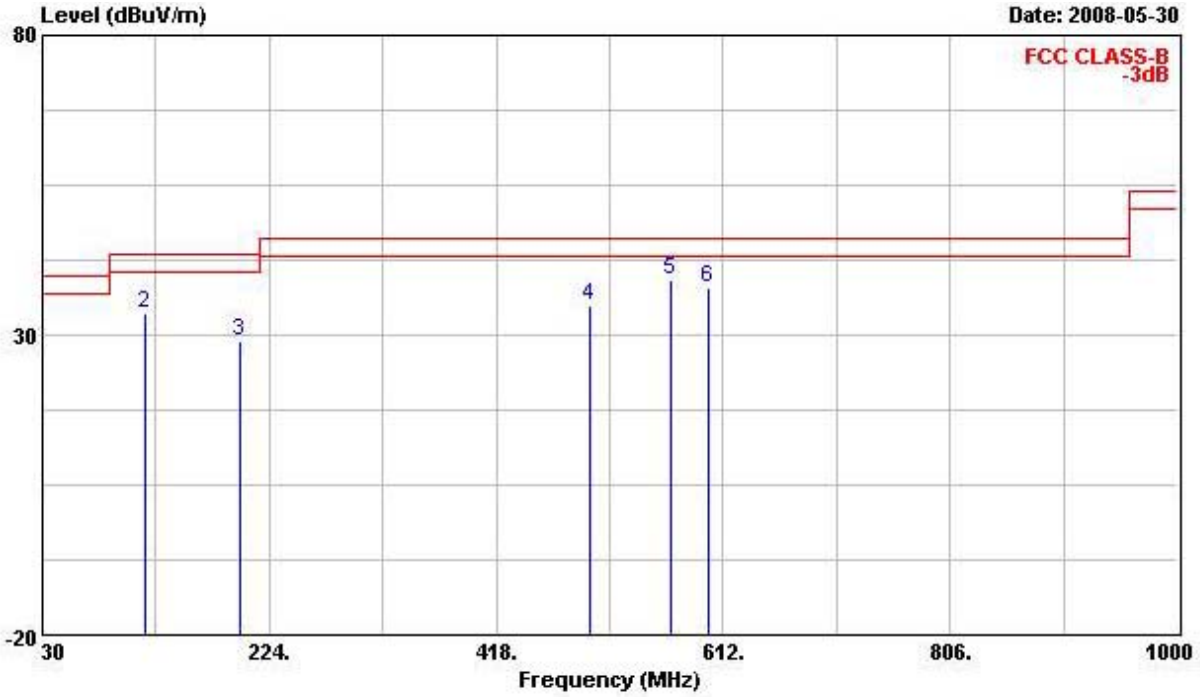
Test date	May 30, 2008	**Test Site No.**	03CH03-HY
Temperature	26℃	**Humidity**	54%
Test Engineer	Duncan	**Configuration**	(Adapter: DSA-20D-12 3 120150)

Horizontal



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1 @	30.010	33.63	-6.37	40.00	41.82	18.48	1.01	27.68	Peak
2	198.780	33.97	-9.53	43.50	50.05	9.61	2.38	28.07	Peak
3	233.700	32.43	-13.57	46.00	47.21	10.84	2.62	28.23	Peak
4	599.390	36.29	-9.71	46.00	41.67	19.30	4.45	29.14	Peak
5	633.340	36.07	-9.93	46.00	41.76	19.52	4.28	29.49	Peak
6	665.350	38.85	-7.15	46.00	44.21	19.73	4.45	29.55	Peak

Vertical



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1 @	30.010	34.65	-5.35	40.00	42.84	18.48	1.01	27.68	QP
2	118.270	33.69	-9.81	43.50	47.09	12.61	1.83	27.84	Peak
3	198.780	29.05	-14.45	43.50	45.13	9.61	2.38	28.07	Peak
4	498.510	34.94	-11.06	46.00	42.01	18.09	3.76	28.92	Peak
5	567.380	39.30	-6.70	46.00	44.80	19.30	4.09	28.90	Peak
6	599.390	37.87	-8.13	46.00	43.25	19.30	4.45	29.14	Peak

Note:

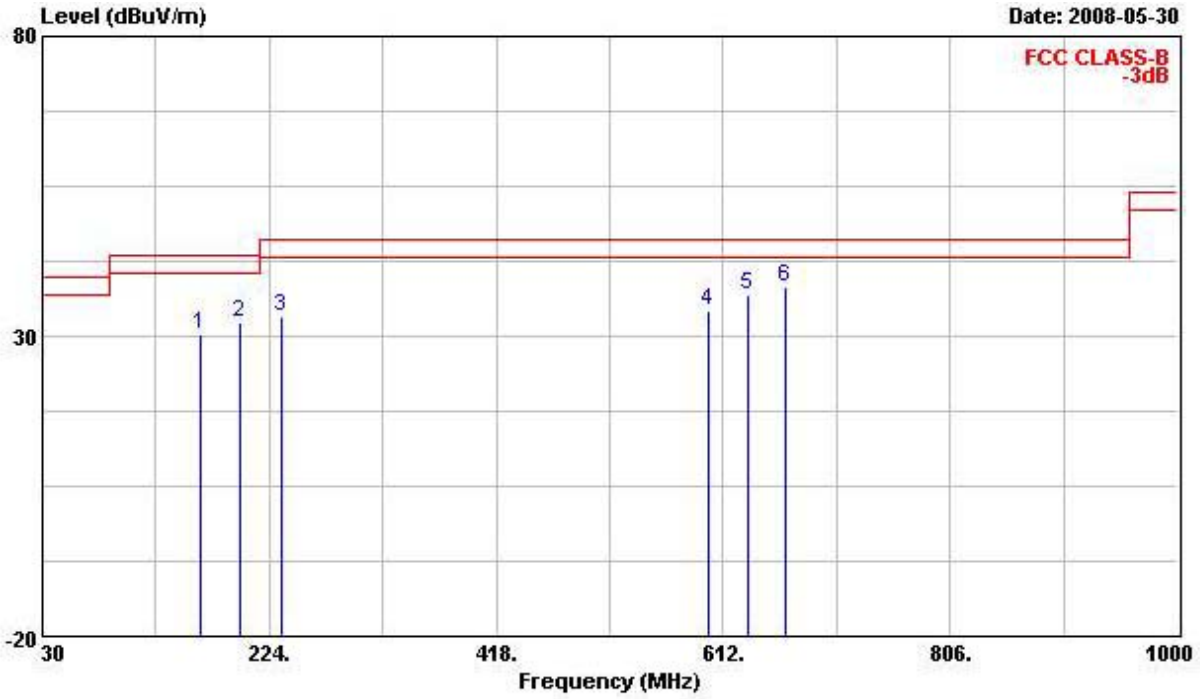
The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

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

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

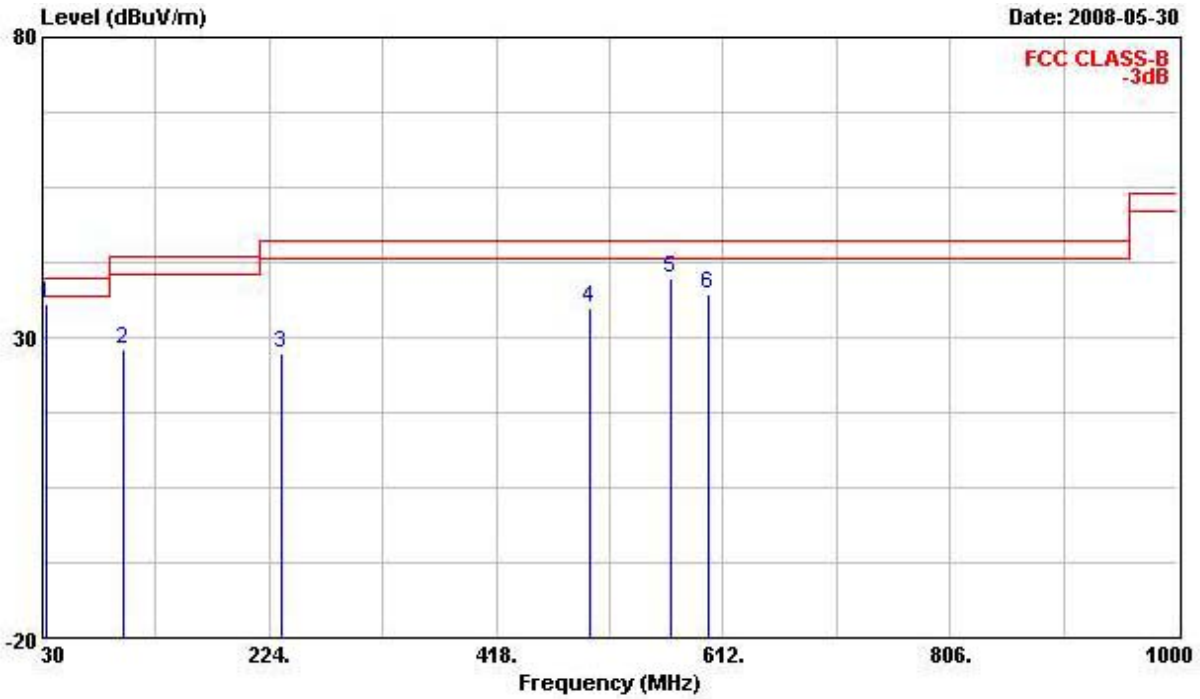
Test date	May 30, 2008	**Test Site No.**	03CH03-HY
Temperature	26℃	**Humidity**	54%
Test Engineer	Duncan	**Configuration**	(Adapter: DSA-15P-12 US 120150)

Horizontal



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	164.830	30.31	-13.19	43.50	46.23	9.89	2.17	27.98	Peak
2	198.780	32.14	-11.36	43.50	48.22	9.61	2.38	28.07	Peak
3	233.700	33.44	-12.56	46.00	48.22	10.84	2.62	28.23	Peak
4	599.390	34.32	-11.68	46.00	39.70	19.30	4.45	29.14	Peak
5	633.340	37.04	-8.96	46.00	42.73	19.52	4.28	29.49	Peak
6	665.350	38.16	-7.84	46.00	43.52	19.73	4.45	29.55	Peak

Vertical



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1 @	32.910	35.43	-4.57	40.00	45.39	16.71	1.03	27.70	QP
2	98.870	28.17	-15.33	43.50	43.24	11.03	1.72	27.82	Peak
3	233.700	27.46	-18.54	46.00	42.24	10.84	2.62	28.23	Peak
4	498.510	34.95	-11.05	46.00	42.02	18.09	3.76	28.92	Peak
5 @	567.380	39.80	-6.20	46.00	45.30	19.30	4.09	28.90	Peak
6	599.390	37.24	-8.76	46.00	42.62	19.30	4.45	29.14	Peak

Note:

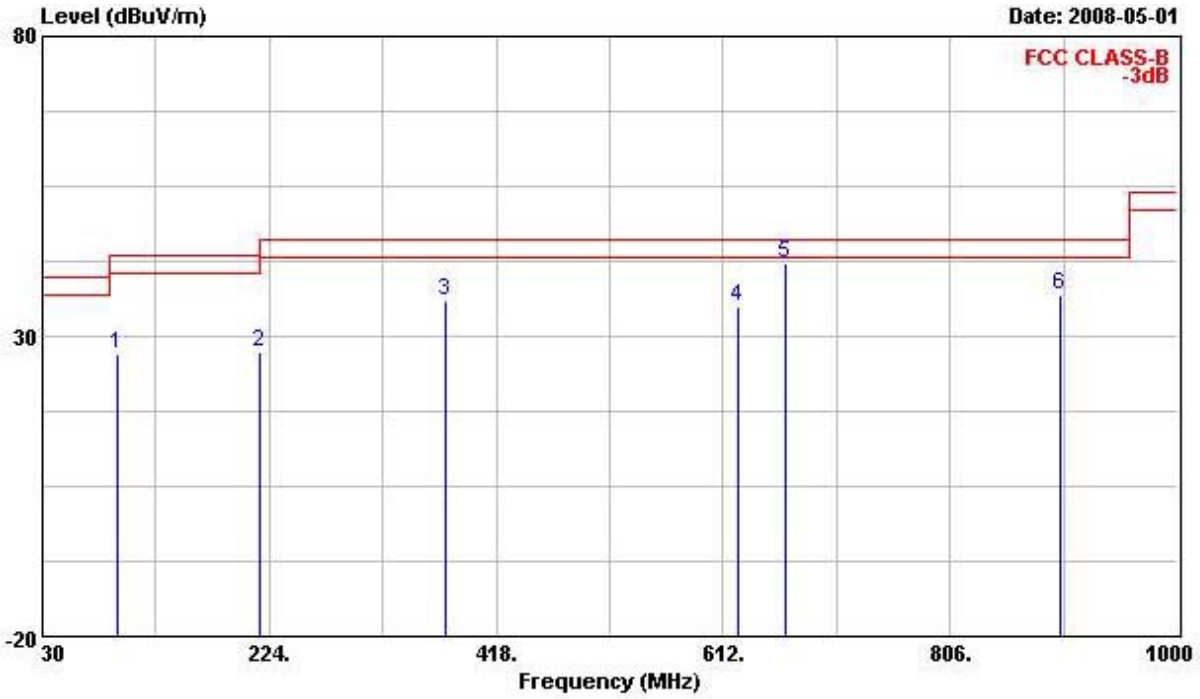
The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

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

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

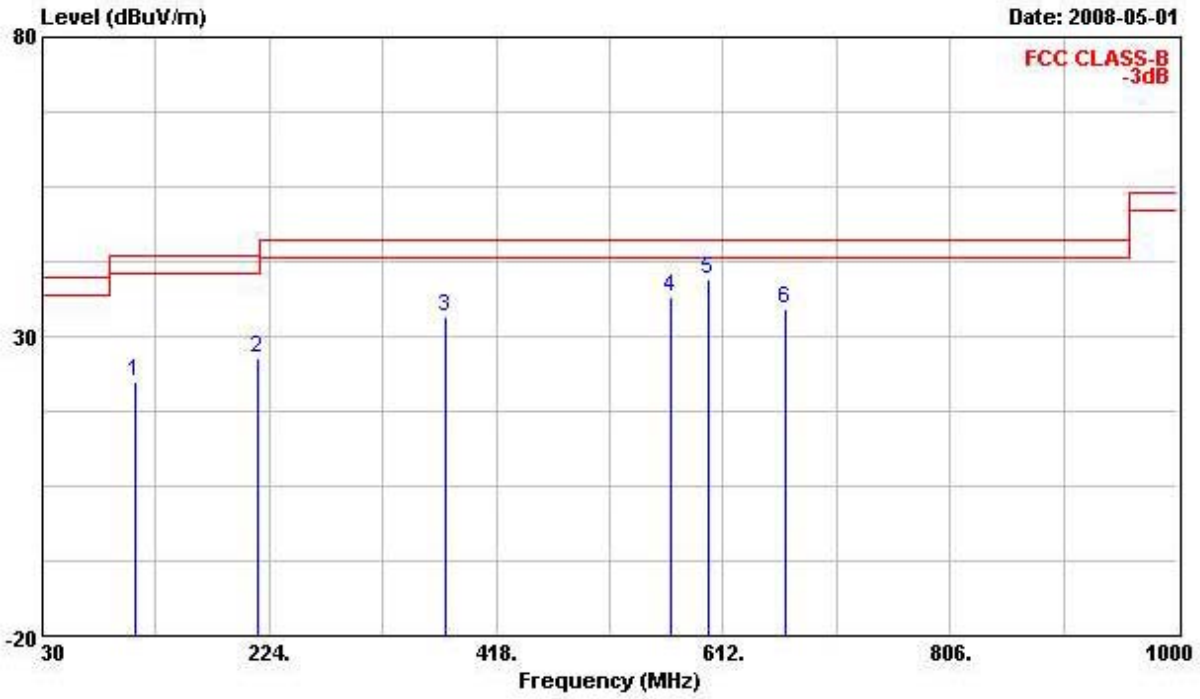
Test date	May 01, 2008	**Test Site No.**	03CH03-HY
Temperature	26℃	**Humidity**	54%
Test Engineer	Duncan	**Configuration**	(Power Supply: POE20U-560(G) -R)

Horizontal



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	94.990	27.16	-16.34	43.50	42.95	10.35	1.68	27.81	Peak
2	215.270	27.24	-16.26	43.50	43.61	9.27	2.52	28.15	Peak
3	374.350	36.00	-10.00	46.00	45.72	15.62	3.42	28.76	Peak
4	625.580	34.80	-11.20	46.00	40.54	19.47	4.29	29.50	Peak
5 @	665.350	42.26	-3.74	46.00	47.62	19.73	4.45	29.55	Peak
6	901.060	36.81	-9.19	46.00	39.85	21.04	5.25	29.33	Peak

Vertical



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	109.540	22.36	-21.14	43.50	36.00	12.40	1.76	27.80	Peak
2	214.300	26.38	-17.12	43.50	42.71	9.29	2.53	28.15	Peak
3	374.350	33.36	-12.64	46.00	43.08	15.62	3.42	28.76	Peak
4	567.380	36.47	-9.53	46.00	41.97	19.30	4.09	28.90	Peak
5 @	599.390	39.62	-6.38	46.00	45.00	19.30	4.45	29.14	Peak
6	665.350	34.75	-11.25	46.00	40.11	19.73	4.45	29.55	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).

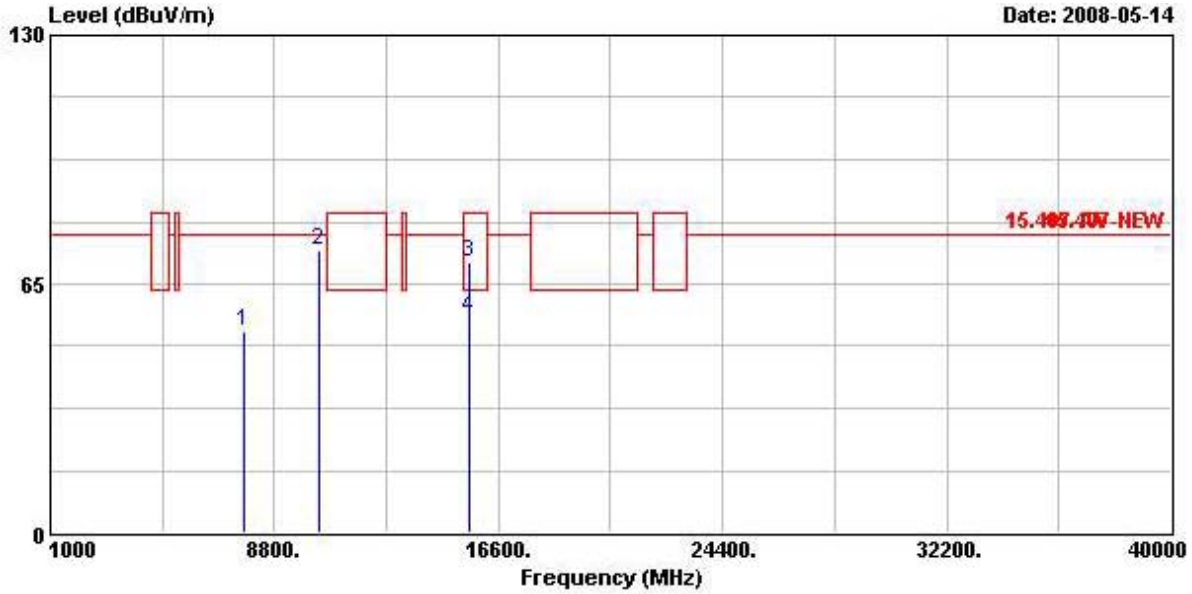
Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

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

For Single Chain:

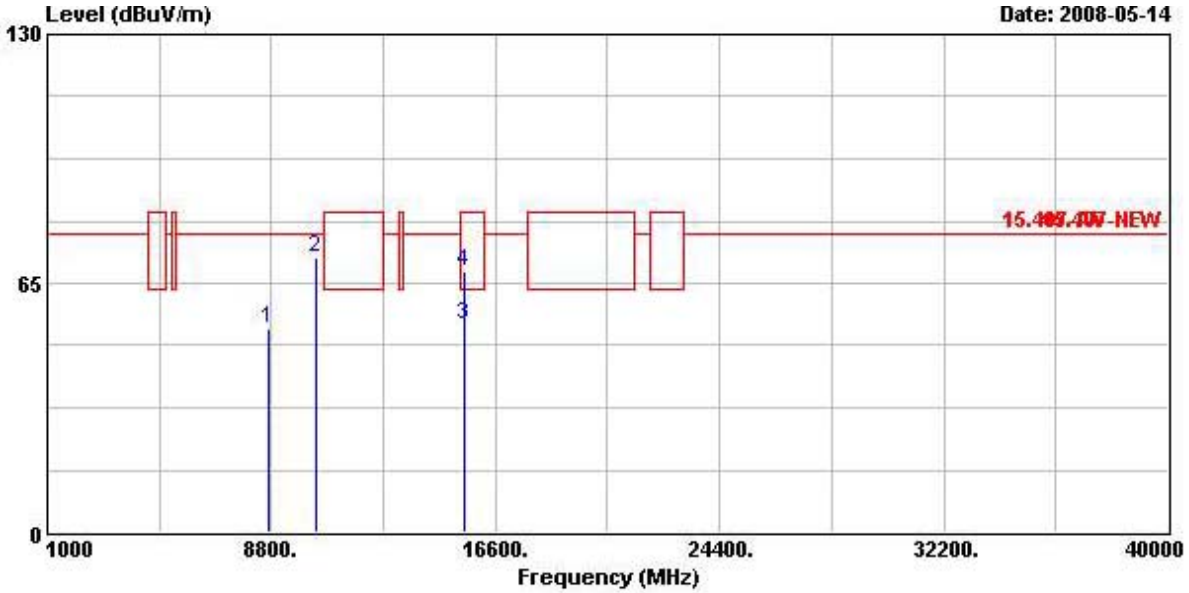
Test date	May 14, 2008	**Test Site No.**	03CH03-HY
Temperature	26℃	**Humidity**	54%
Test Engineer	Duncan	**Configuration**	802.11a CH 36

Horizontal



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	7756.000	52.53	-25.31	77.84	43.25	37.55	4.61	32.89	PEAK
2 @	10361.000	74.00	-3.84	77.84	60.26	39.33	6.09	31.67	PEAK
3	15547.800	70.51	-13.03	83.54	55.30	37.52	7.37	29.68	PEAK
4	15547.800	56.19	-7.35	63.54	40.98	37.52	7.37	29.68	Average

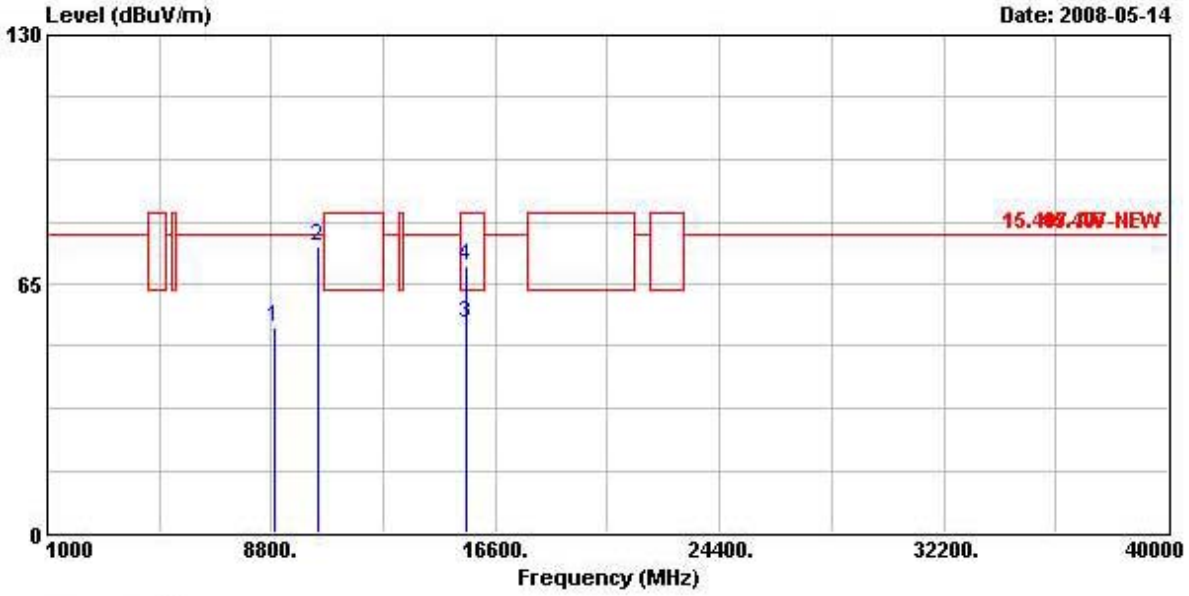
Vertical



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	8732.000	53.18	-24.66	77.84	42.46	38.44	5.08	32.81	PEAK
2	10360.900	71.87	-5.97	77.84	58.13	39.33	6.09	31.67	PEAK
3	15547.300	54.20	-9.34	63.54	39.00	37.52	7.37	29.69	Average
4	15547.300	68.26	-15.28	83.54	53.06	37.52	7.37	29.69	PEAK

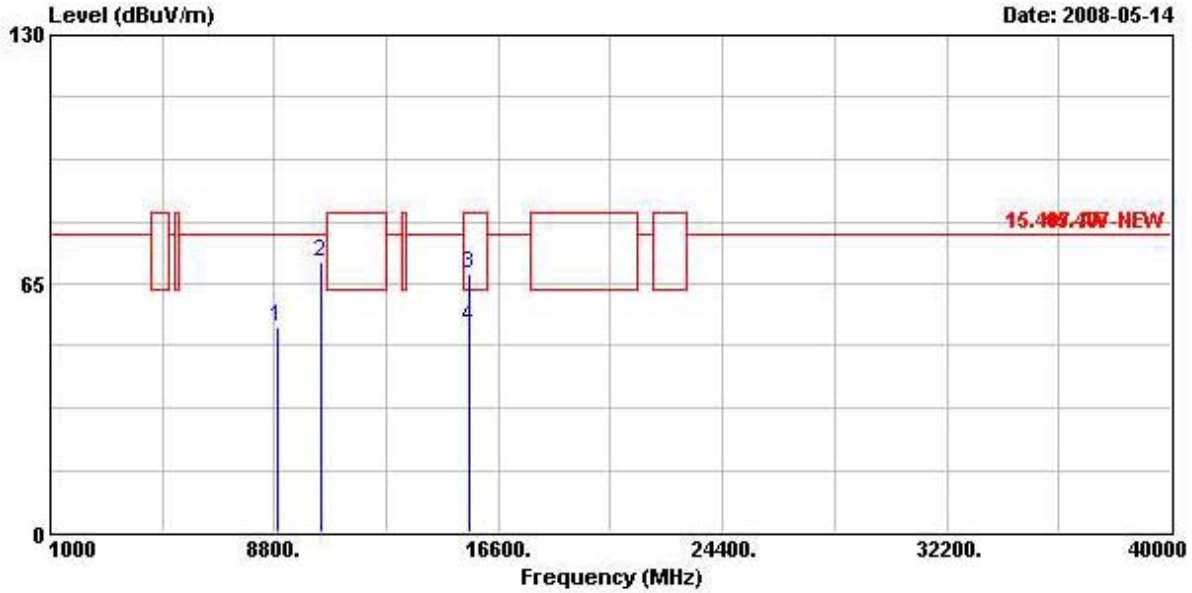
Test date	May 14, 2008	**Test Site No.**	03CH03-HY
Temperature	26℃	**Humidity**	54%
Test Engineer	Duncan	**Configuration**	802.11a CH 40

Horizontal



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	8892.000	53.42	-24.42	77.84	42.89	38.53	4.81	32.81	PEAK
2 @	10400.900	74.80	-3.04	77.84	60.85	39.32	6.14	31.51	PEAK
3	15606.800	54.70	-8.84	63.54	39.42	37.54	7.39	29.65	Average
4	15606.800	69.44	-14.10	83.54	54.16	37.54	7.39	29.65	PEAK

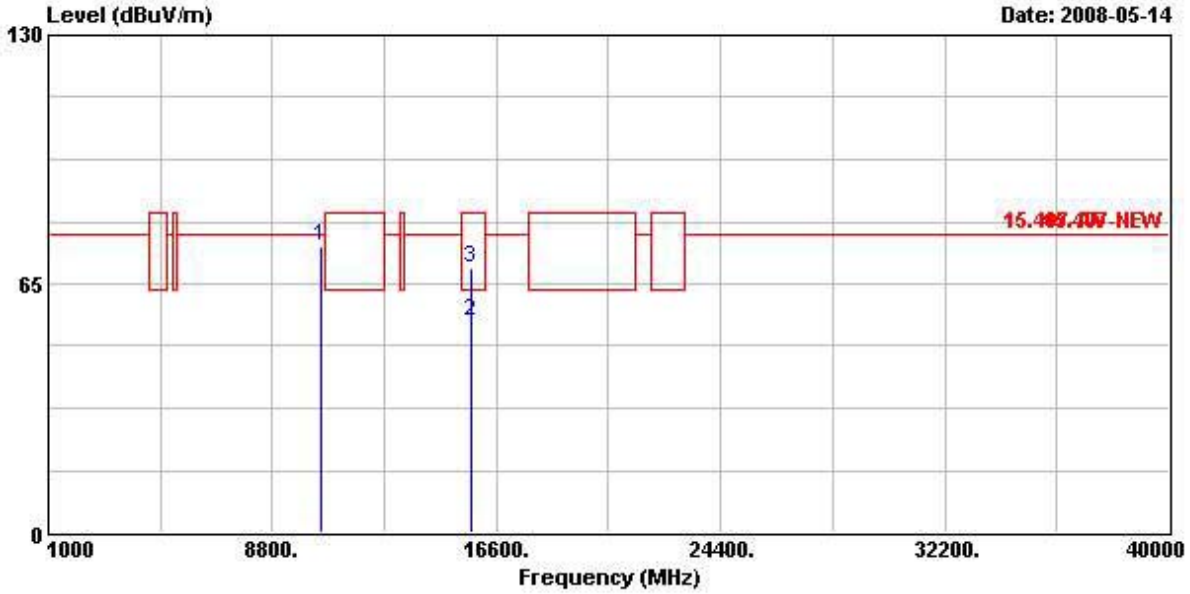
Vertical



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	8892.000	53.42	-24.42	77.84	42.89	38.53	4.81	32.81	PEAK
2	10400.900	70.64	-7.20	77.84	56.69	39.32	6.14	31.51	PEAK
3	15607.400	67.46	-16.08	83.54	52.18	37.54	7.39	29.65	PEAK
4	15607.400	53.75	-9.79	63.54	38.47	37.54	7.39	29.65	Average

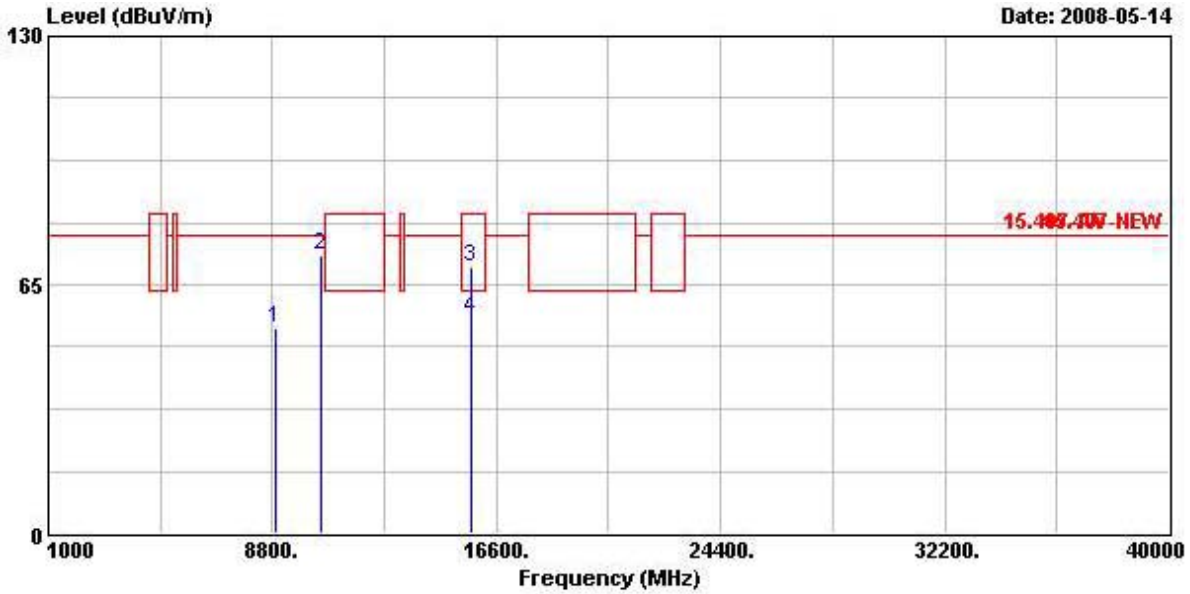
Test date	May 14, 2008	**Test Site No.**	03CH03-HY
Temperature	26℃	**Humidity**	54%
Test Engineer	Duncan	**Configuration**	802.11a CH 48

Horizontal



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1 @	10481.000	74.60	-3.24	77.84	60.32	39.30	6.23	31.25	PEAK
2	15711.900	55.01	-8.53	63.54	39.62	37.58	7.40	29.60	Average
3	15711.900	69.04	-14.50	83.54	53.66	37.58	7.40	29.60	PEAK

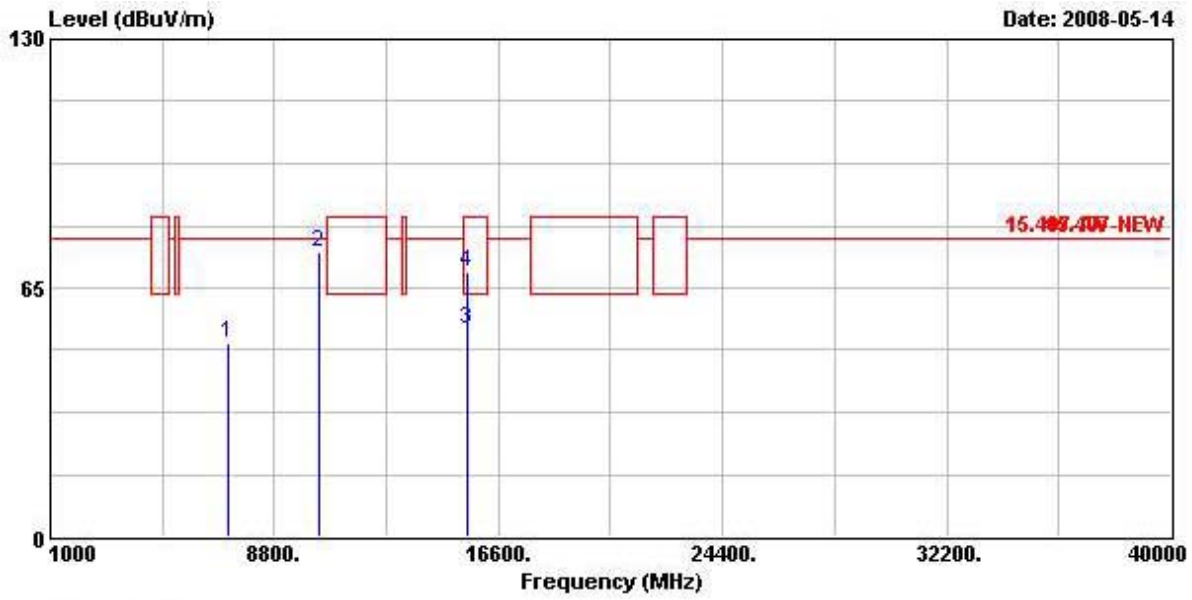
Vertical



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	8904.000	53.46	-24.38	77.84	42.99	38.54	4.74	32.81	PEAK
2	10480.700	72.56	-5.28	77.84	58.28	39.30	6.23	31.25	PEAK
3	15717.500	69.56	-13.98	83.54	54.16	37.59	7.40	29.60	PEAK
4	15717.500	56.00	-7.54	63.54	40.61	37.59	7.40	29.60	Average

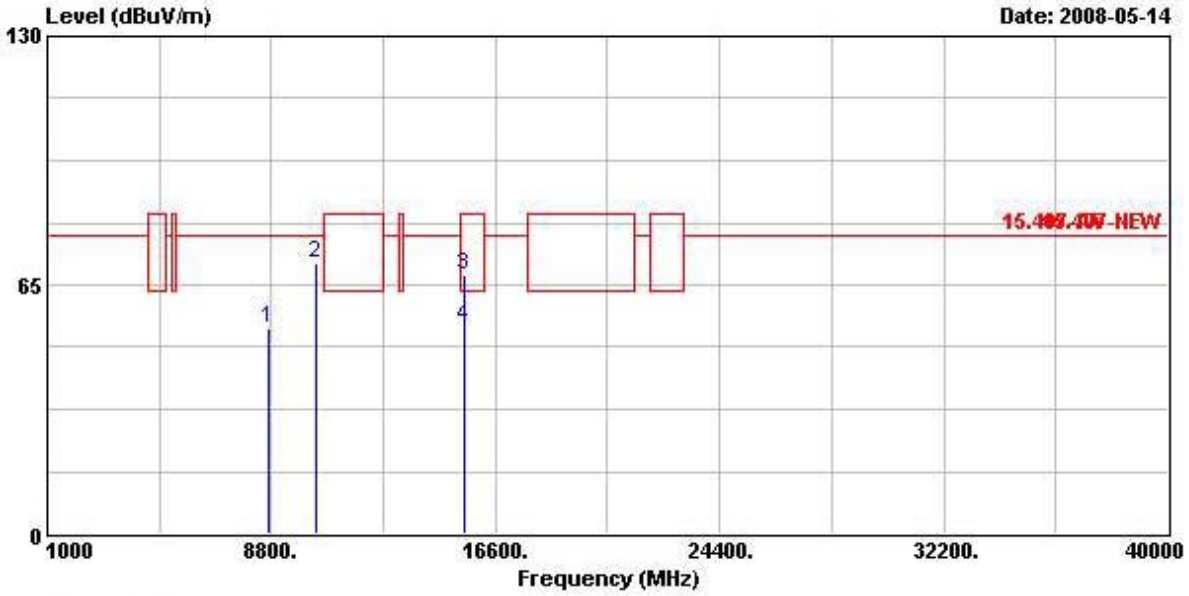
Test date	May 14, 2008	**Test Site No.**	03CH03-HY
Temperature	26℃	**Humidity**	54%
Test Engineer	Duncan	**Configuration**	802.11n CH 36 (20MHz)

Horizontal



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	7180.000	50.35	-27.49	77.84	43.01	36.56	3.55	32.77	PEAK
2 @	10360.300	74.05	-3.79	77.84	60.31	39.33	6.09	31.67	PEAK
3	15545.600	54.38	-9.16	63.54	39.18	37.52	7.37	29.69	Average
4	15545.600	68.94	-14.60	83.54	53.74	37.52	7.37	29.69	PEAK

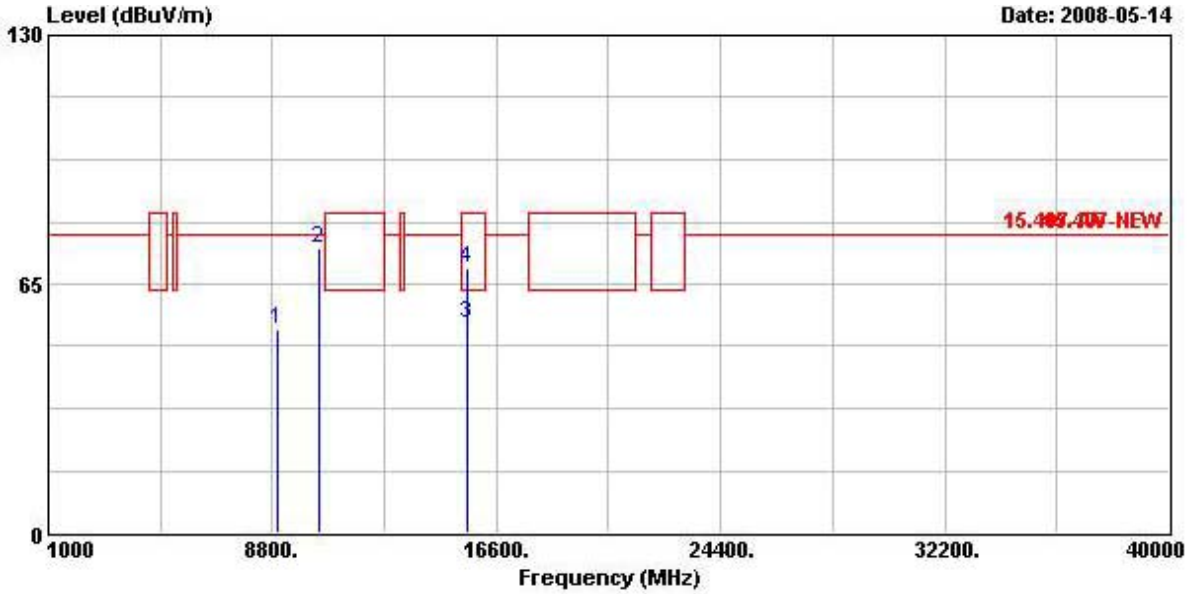
Vertical



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	8724.000	53.83	-24.01	77.84	43.13	38.43	5.08	32.81	PEAK
2	10360.600	70.62	-7.22	77.84	56.88	39.33	6.09	31.67	PEAK
3	15541.600	67.61	-15.93	83.54	52.41	37.51	7.37	29.69	PEAK
4	15541.600	53.92	-9.62	63.54	38.73	37.51	7.37	29.69	Average

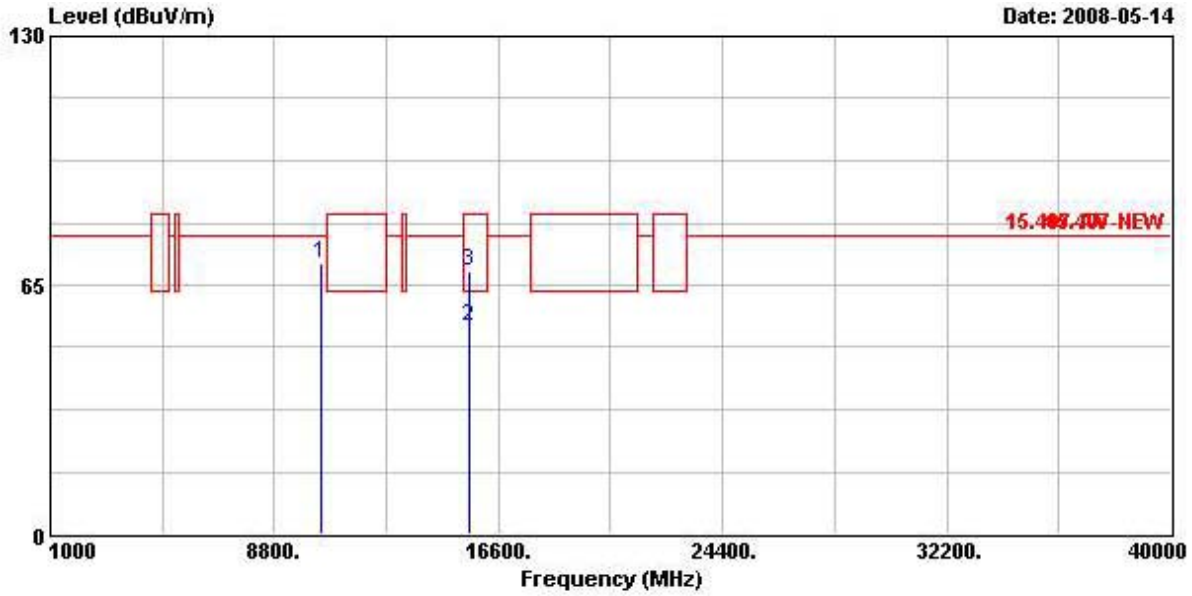
Test date	May 14, 2008	**Test Site No.**	03CH03-HY
Temperature	26℃	**Humidity**	54%
Test Engineer	Duncan	**Configuration**	802.11n CH 40 (20MHz)

Horizontal



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	8960.000	52.97	-24.87	77.84	42.53	38.57	4.67	32.81	PEAK
2 @	10400.300	74.37	-3.47	77.84	60.42	39.32	6.14	31.51	PEAK
3	15602.500	54.77	-8.77	63.54	39.49	37.54	7.39	29.65	Average
4	15602.500	69.04	-14.50	83.54	53.76	37.54	7.39	29.65	PEAK

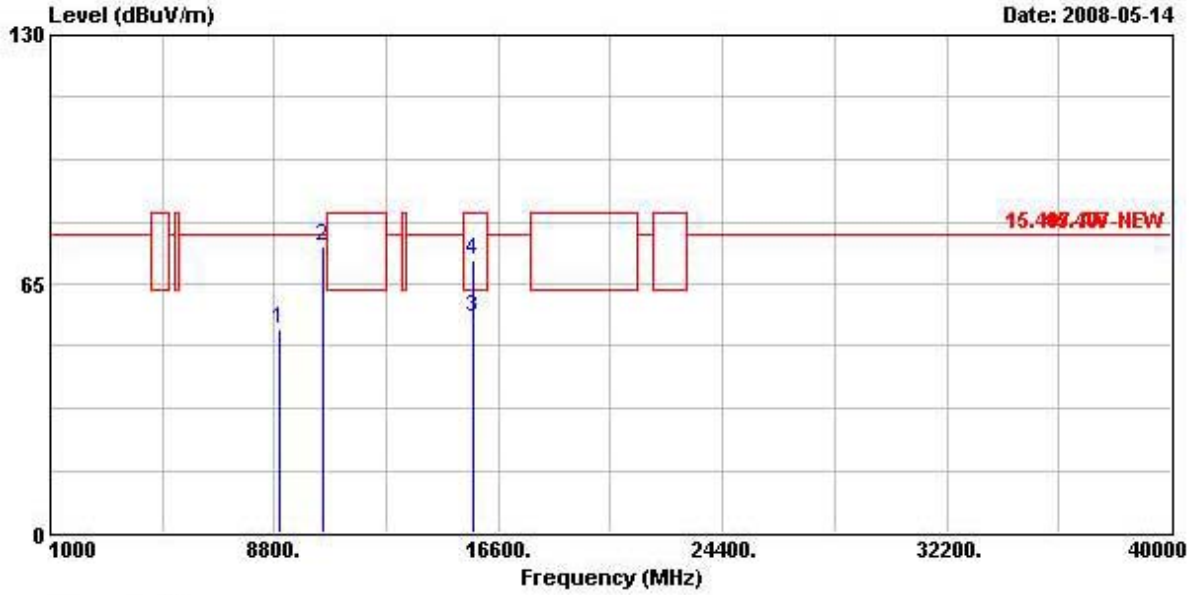
Vertical



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	10400.800	70.83	-7.01	77.84	56.88	39.32	6.14	31.51	PEAK
2	15601.800	54.17	-9.37	63.54	38.89	37.54	7.39	29.65	Average
3	15601.800	68.85	-14.69	83.54	53.57	37.54	7.39	29.65	PEAK

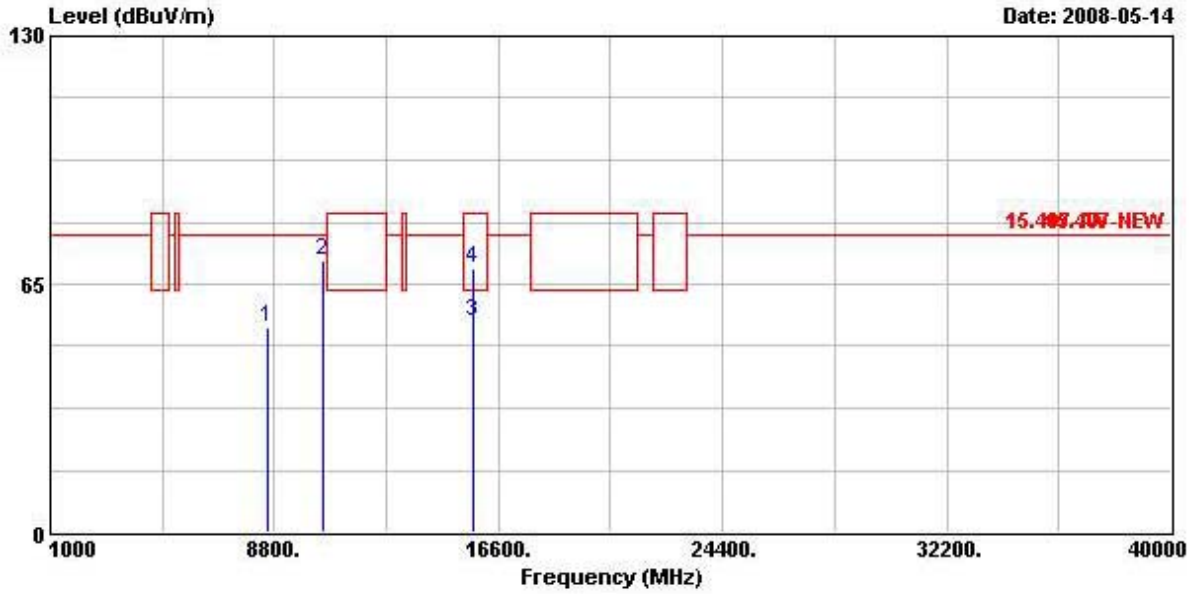
Test date	May 14, 2008	**Test Site No.**	03CH03-HY
Temperature	26℃	**Humidity**	54%
Test Engineer	Duncan	**Configuration**	802.11n CH 48 (20MHz)

Horizontal



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	8996.000	53.06	-24.78	77.84	42.67	38.59	4.60	32.81	PEAK
2 @	10480.700	74.72	-3.12	77.84	60.44	39.30	6.23	31.25	PEAK
3	15717.400	56.19	-7.35	63.54	40.80	37.59	7.40	29.60	Average
4	15717.400	71.18	-12.36	83.54	55.78	37.59	7.40	29.60	PEAK

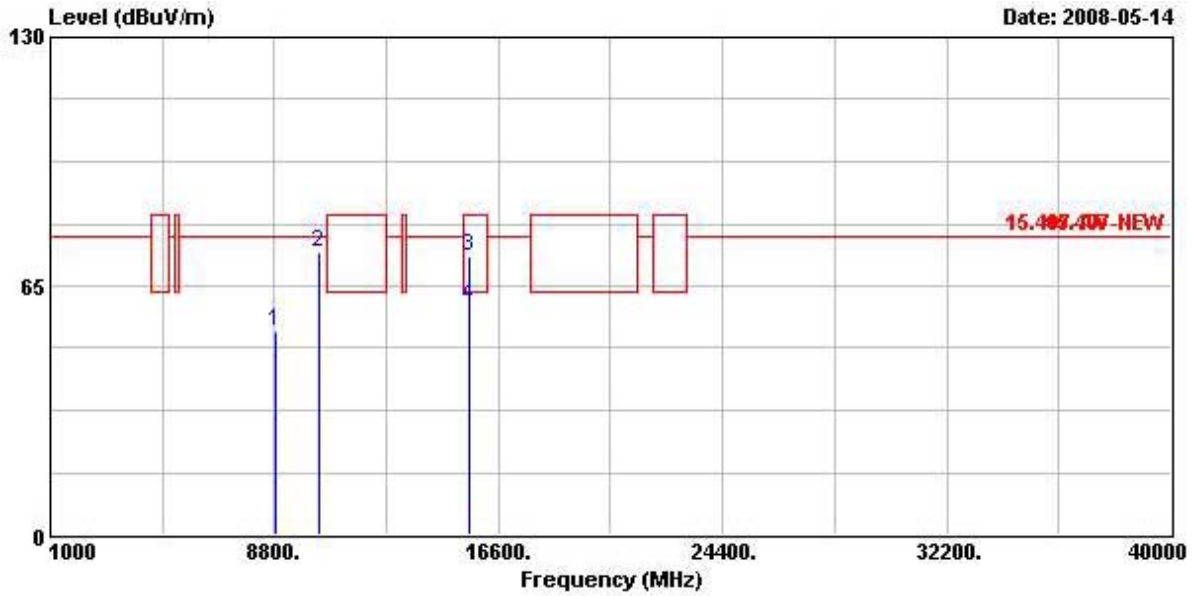
Vertical



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	8576.000	53.44	-24.40	77.84	42.55	38.35	5.35	32.81	PEAK
2	10481.100	71.22	-6.62	77.84	56.94	39.30	6.23	31.25	PEAK
3	15713.300	55.30	-8.24	63.54	39.91	37.58	7.40	29.60	Average
4	15713.300	69.09	-14.45	83.54	53.70	37.58	7.40	29.60	PEAK

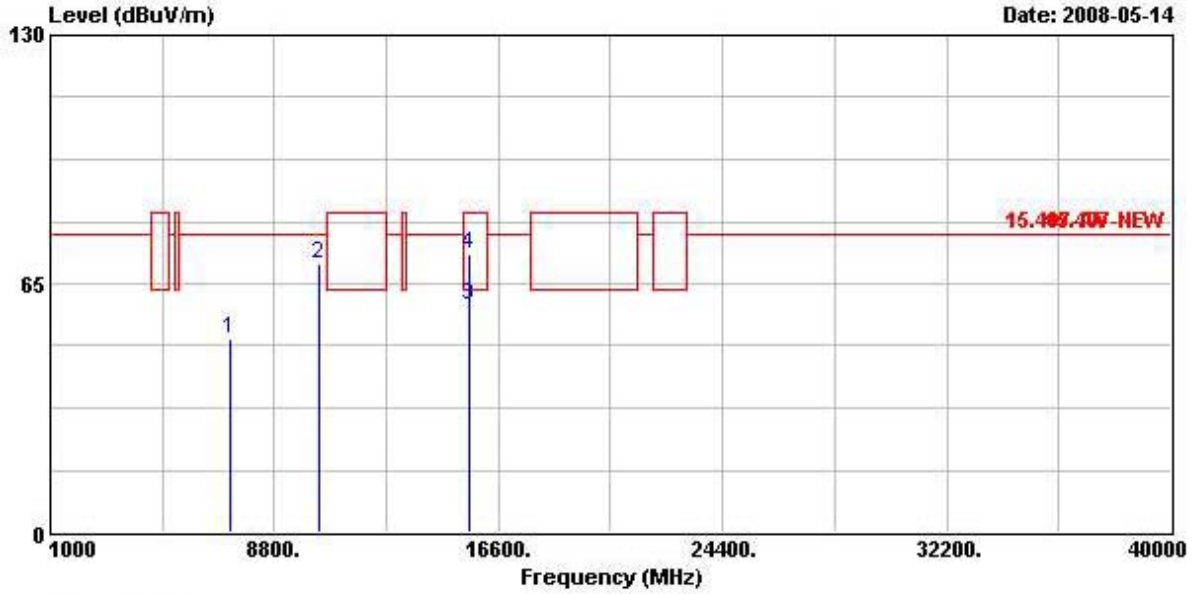
Test date	May 14, 2008	Test Site No.	03CH03-HY
Temperature	26℃	Humidity	54%
Test Engineer	Duncan	Configuration	802.11n CH 38 (40MHz)

Horizontal



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	8816.000	53.02	-24.82	77.84	42.40	38.49	4.94	32.81	PEAK
2 @	10384.000	73.82	-4.02	77.84	59.95	39.32	6.14	31.59	PEAK
3	15584.000	72.74	-10.80	83.54	57.49	37.53	7.38	29.67	Peak
4 @	15584.000	60.03	-3.51	63.54	44.79	37.53	7.38	29.67	AVERAGE

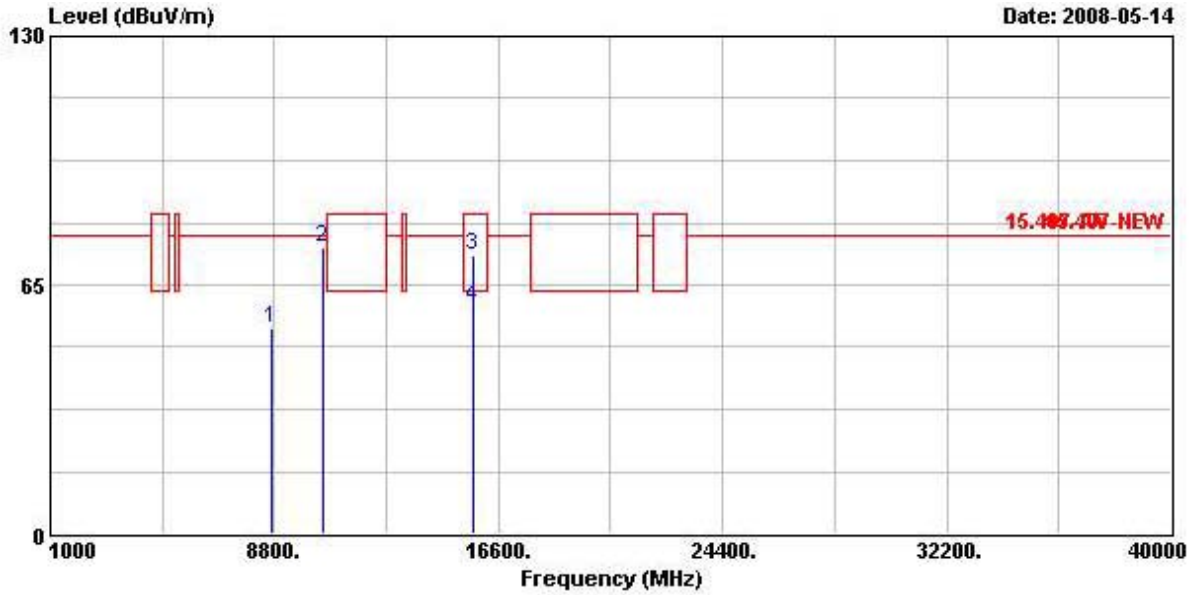
Vertical



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	7248.000	50.54	-27.30	77.84	42.96	36.72	3.67	32.82	PEAK
2	10376.000	70.41	-7.43	77.84	56.59	39.32	6.09	31.59	PEAK
3 @	15570.400	59.40	-4.14	63.54	44.17	37.53	7.38	29.68	AVERAGE
4	15570.400	72.86	-10.68	83.54	57.63	37.53	7.38	29.68	Peak

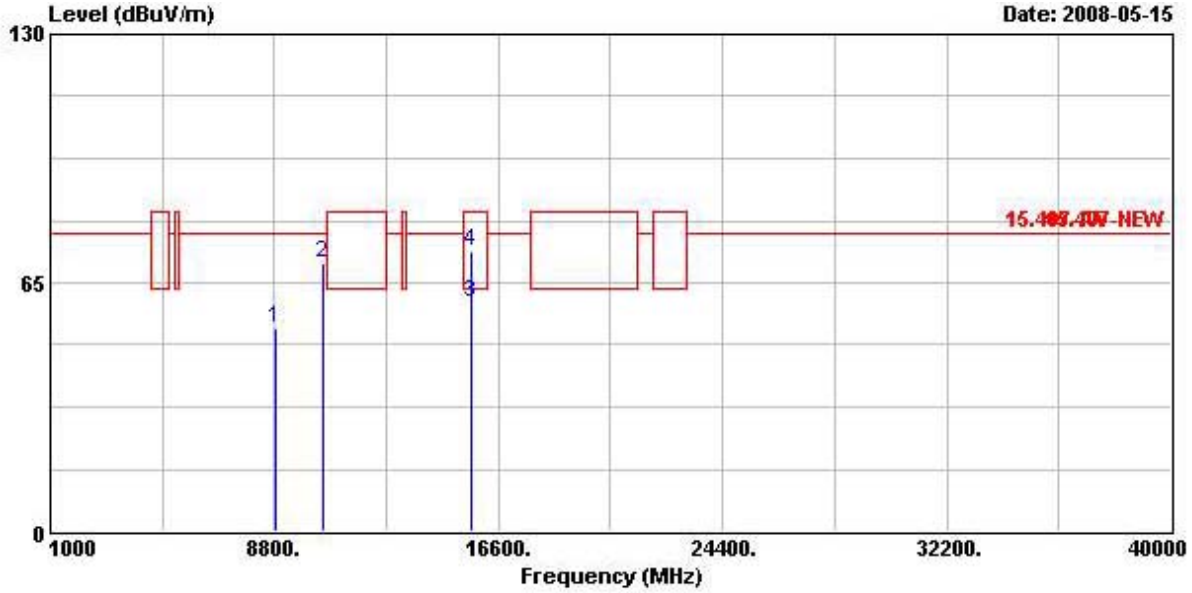
Test date	May 15, 2008	Test Site No.	03CH03-HY
Temperature	26℃	Humidity	54%
Test Engineer	Duncan	Configuration	802.11n CH 46 (40MHz)

Horizontal



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	8736.000	53.74	-24.10	77.84	43.03	38.44	5.08	32.81	PEAK
2 @	10460.000	74.64	-3.20	77.84	60.44	39.31	6.23	31.34	PEAK
3	15690.800	72.64	-10.90	83.54	57.27	37.58	7.40	29.61	Peak
4 @	15690.800	59.58	-3.96	63.54	44.22	37.58	7.40	29.61	AVERAGE

Vertical

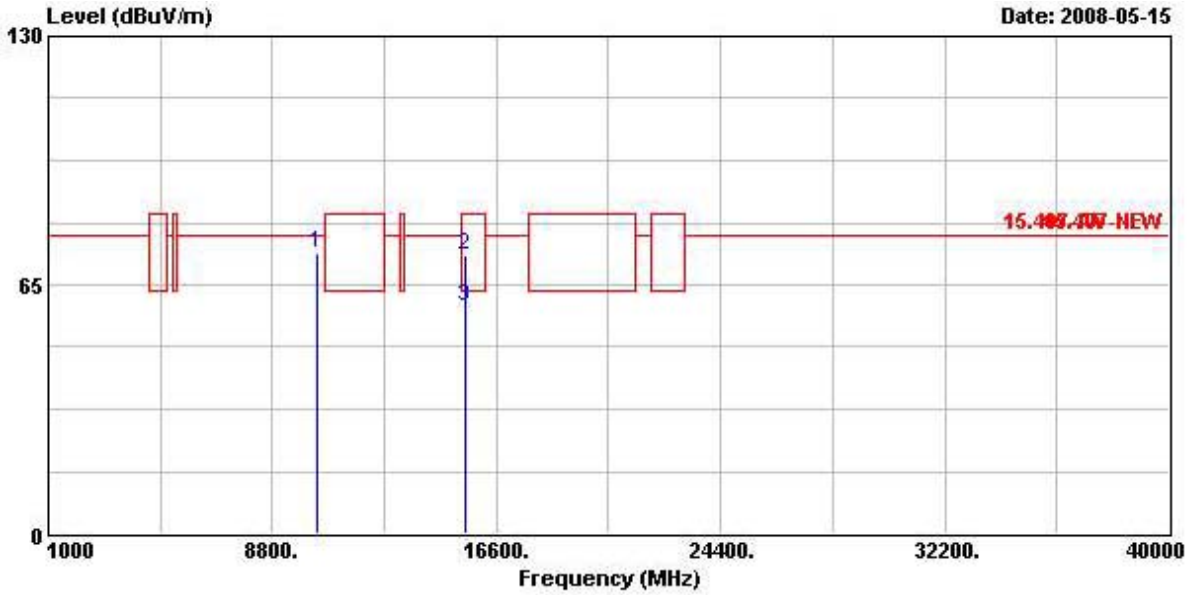


	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	8836.000	53.11	-24.73	77.84	42.54	38.50	4.88	32.81	PEAK
2	10460.000	70.36	-7.48	77.84	56.16	39.31	6.23	31.34	PEAK
3 @	15683.200	59.91	-3.63	63.54	44.54	37.58	7.40	29.61	AVERAGE
4	15683.200	73.36	-10.18	83.54	57.99	37.58	7.40	29.61	Peak

For Two Chain:

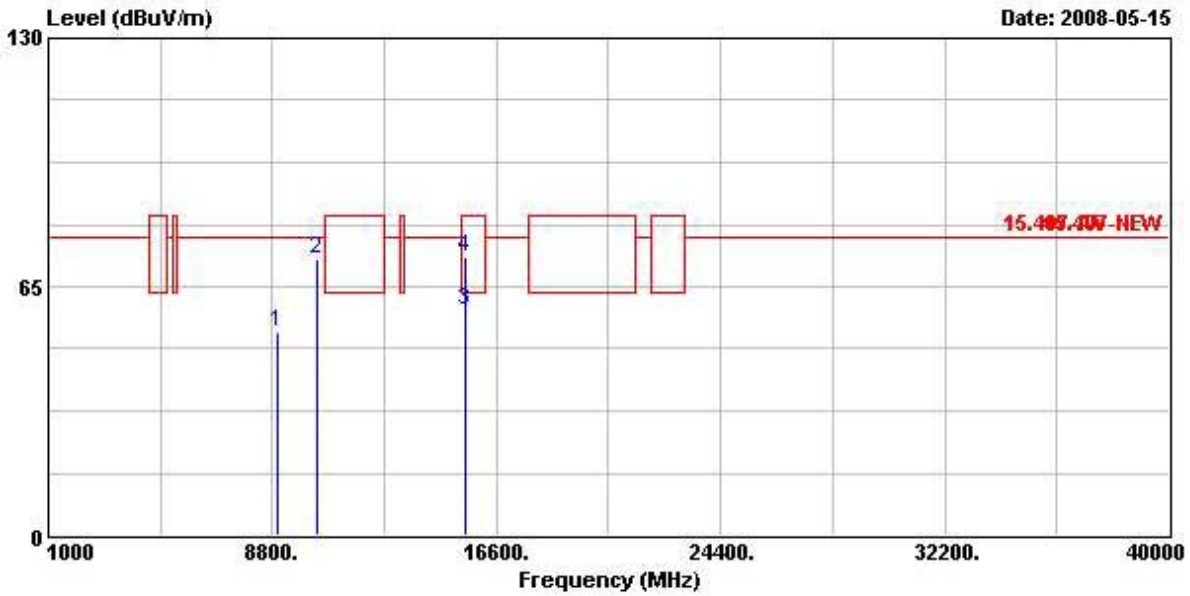
Test date	May 15, 2008	**Test Site No.**	03CH03-HY
Temperature	26℃	**Humidity**	54%
Test Engineer	Duncan	**Configuration**	802.11n CH 36 (20MHz)

Horizontal



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1 @	10356.000	73.00	-4.84	77.84	59.26	39.33	6.09	31.67	PEAK
2	15540.200	72.64	-10.90	83.54	57.45	37.51	7.37	29.69	Peak
3 @	15540.200	59.57	-3.97	63.54	44.38	37.51	7.37	29.69	AVERAGE

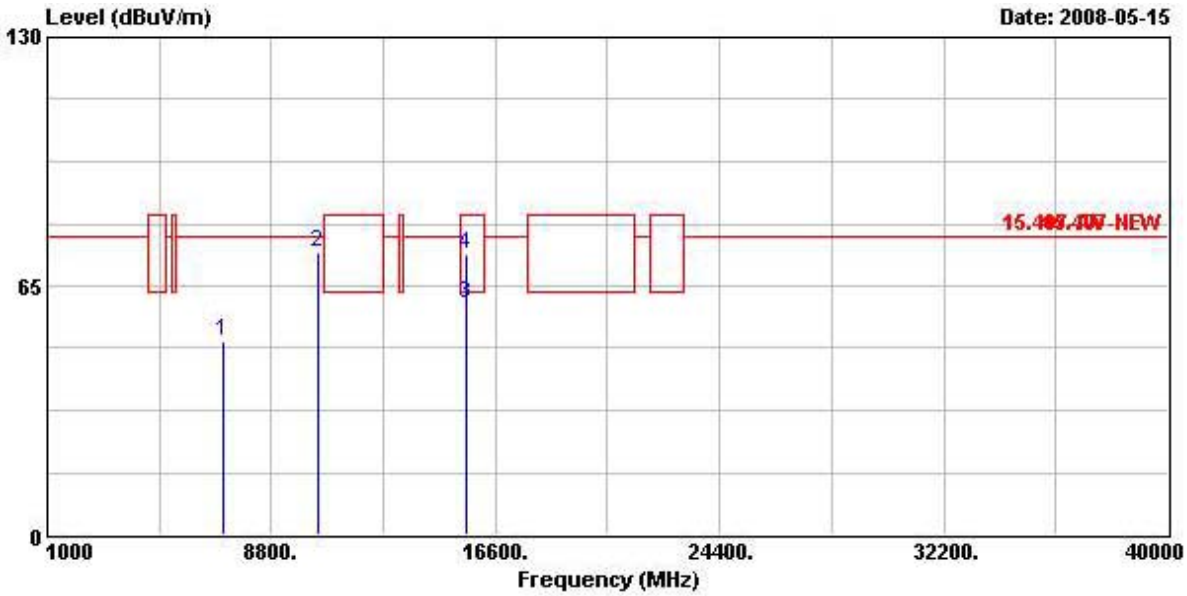
Vertical



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	8968.000	52.95	-24.89	77.84	42.51	38.58	4.67	32.81	PEAK
2	10356.000	72.40	-5.44	77.84	58.65	39.33	6.09	31.67	PEAK
3 @	15539.600	58.93	-4.61	63.54	43.74	37.51	7.37	29.69	AVERAGE
4	15539.600	72.49	-11.05	83.54	57.30	37.51	7.37	29.69	Peak

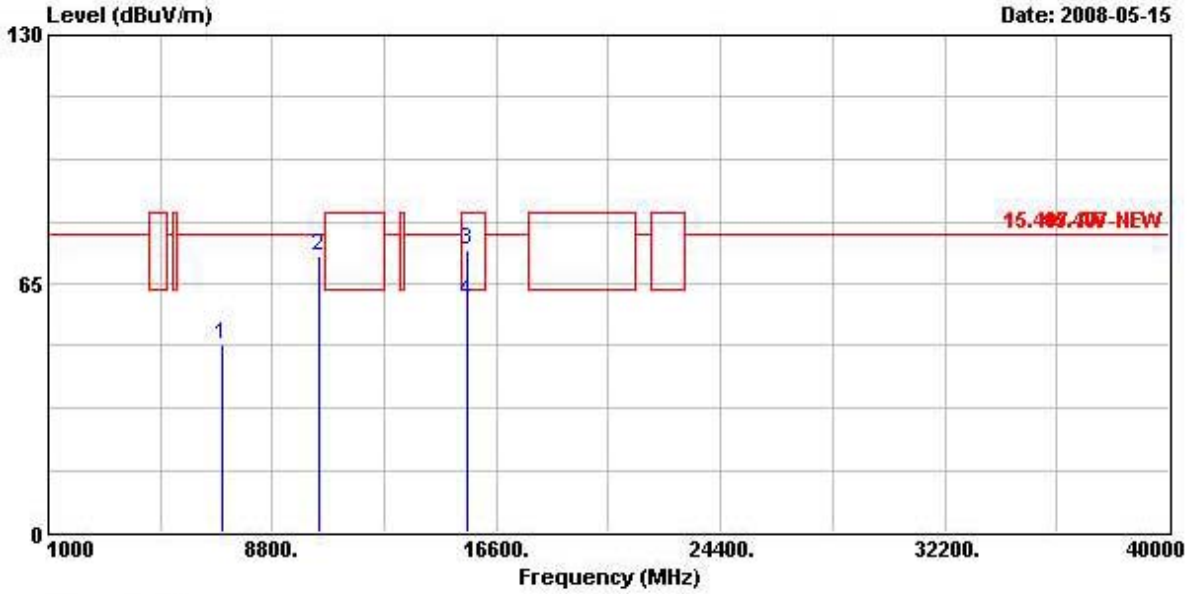
Test date	May 15, 2008	**Test Site No.**	03CH03-HY
Temperature	26℃	**Humidity**	54%
Test Engineer	Duncan	**Configuration**	802.11n CH 40 (20MHz)

Horizontal



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	7132.000	50.68	-27.16	77.84	43.68	36.43	3.30	32.73	PEAK
2 @	10400.000	74.01	-3.83	77.84	60.06	39.32	6.14	31.51	PEAK
3 @	15601.000	60.19	-3.35	63.54	44.92	37.54	7.38	29.65	AVERAGE
4	15601.000	73.35	-10.19	83.54	58.08	37.54	7.38	29.65	Peak

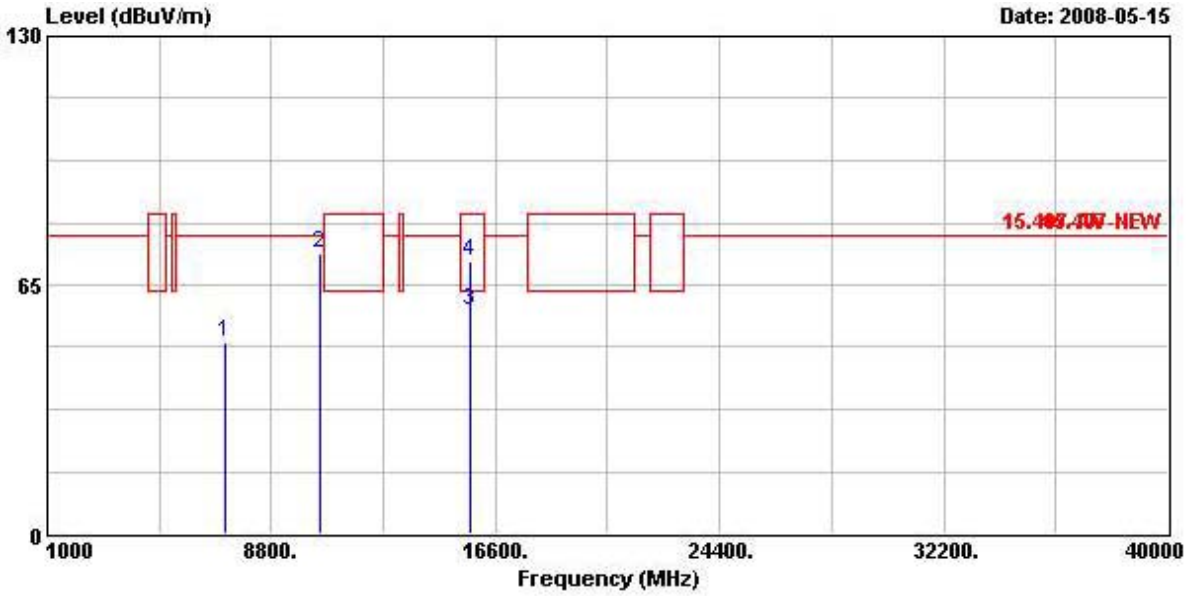
Vertical



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	7048.000	48.99	-28.85	77.84	42.39	36.22	3.06	32.68	PEAK
2	10400.000	72.21	-5.63	77.84	58.26	39.32	6.14	31.51	PEAK
3	15602.400	73.68	-9.86	83.54	58.40	37.54	7.39	29.65	Peak
4 @	15602.400	60.43	-3.11	63.54	45.16	37.54	7.39	29.65	AVERAGE

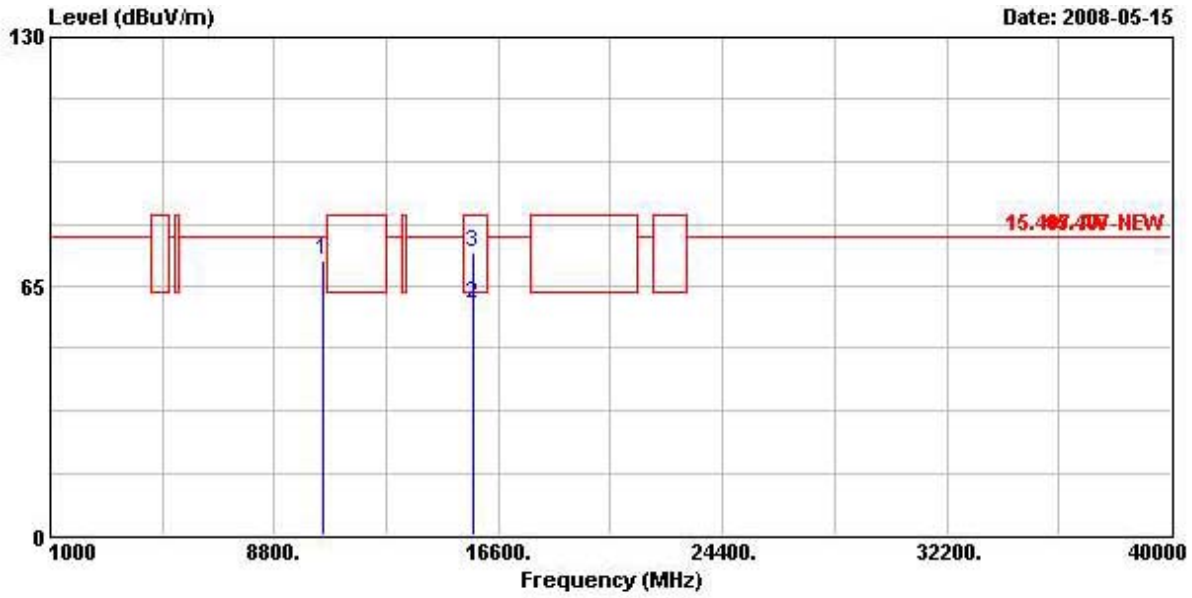
Test date	May 15, 2008	Test Site No.	03CH03-HY
Temperature	26℃	Humidity	54%
Test Engineer	Duncan	Configuration	802.11n CH 48 (20MHz)

Horizontal



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	7172.000	50.17	-27.67	77.84	43.00	36.51	3.42	32.77	PEAK
2 @	10488.000	73.48	-4.36	77.84	59.20	39.30	6.23	31.25	PEAK
3	15721.300	58.30	-5.24	63.54	42.89	37.59	7.41	29.60	AVERAGE
4	15721.300	71.31	-12.23	83.54	55.91	37.59	7.41	29.60	Peak

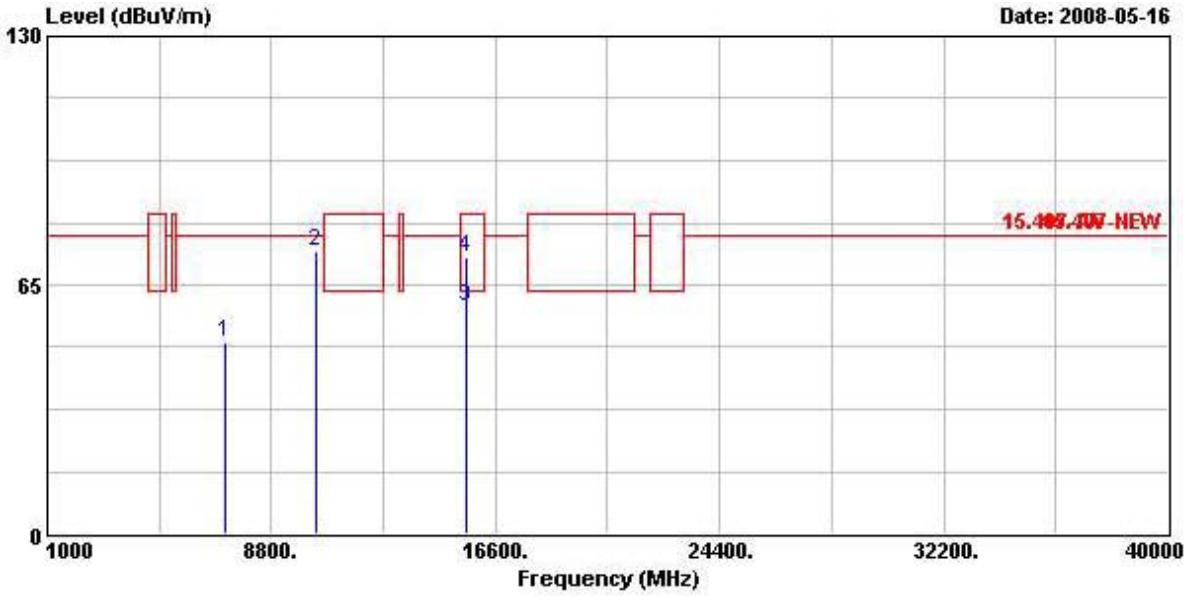
Vertical



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	10484.000	71.59	-6.25	77.84	57.32	39.30	6.23	31.25	PEAK
2 @	15720.400	60.25	-3.29	63.54	44.85	37.59	7.41	29.60	AVERAGE
3	15720.400	73.85	-9.69	83.54	58.45	37.59	7.41	29.60	Peak

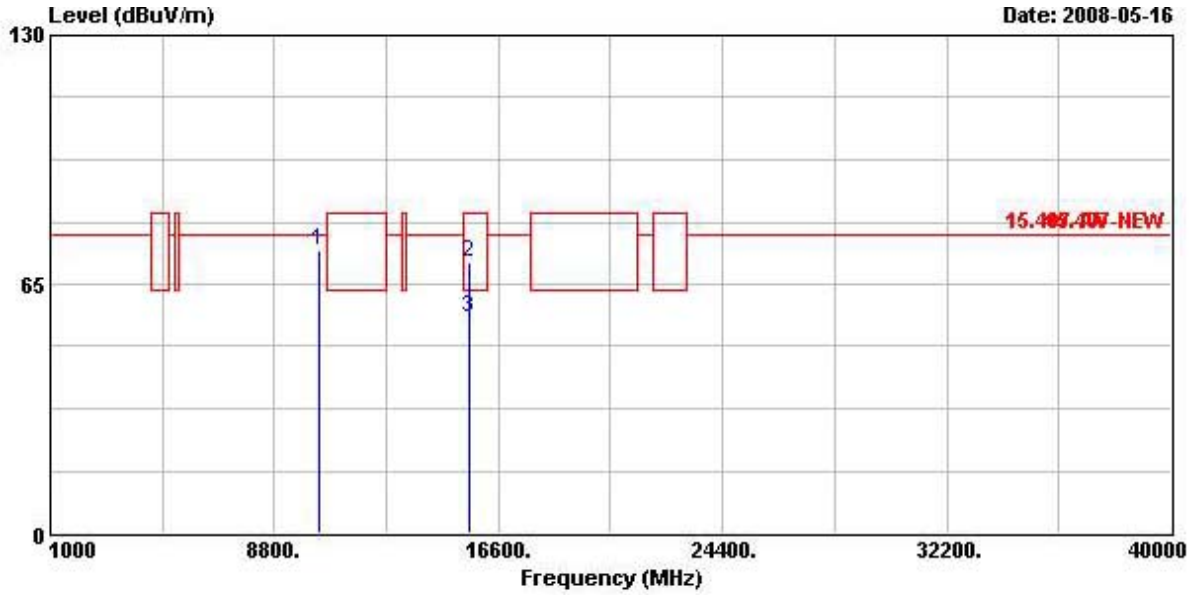
Test date	May 16, 2008	Test Site No.	03CH03-HY
Temperature	26℃	Humidity	54%
Test Engineer	Duncan	Configuration	802.11n CH 38 (40MHz)

Horizontal



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	7172.000	50.15	-27.69	77.84	42.98	36.51	3.42	32.77	PEAK
2 @	10376.000	73.78	-4.06	77.84	59.96	39.32	6.09	31.59	PEAK
3 @	15576.400	59.34	-4.20	63.54	44.10	37.53	7.38	29.67	AVERAGE
4	15576.400	72.41	-11.13	83.54	57.17	37.53	7.38	29.67	Peak

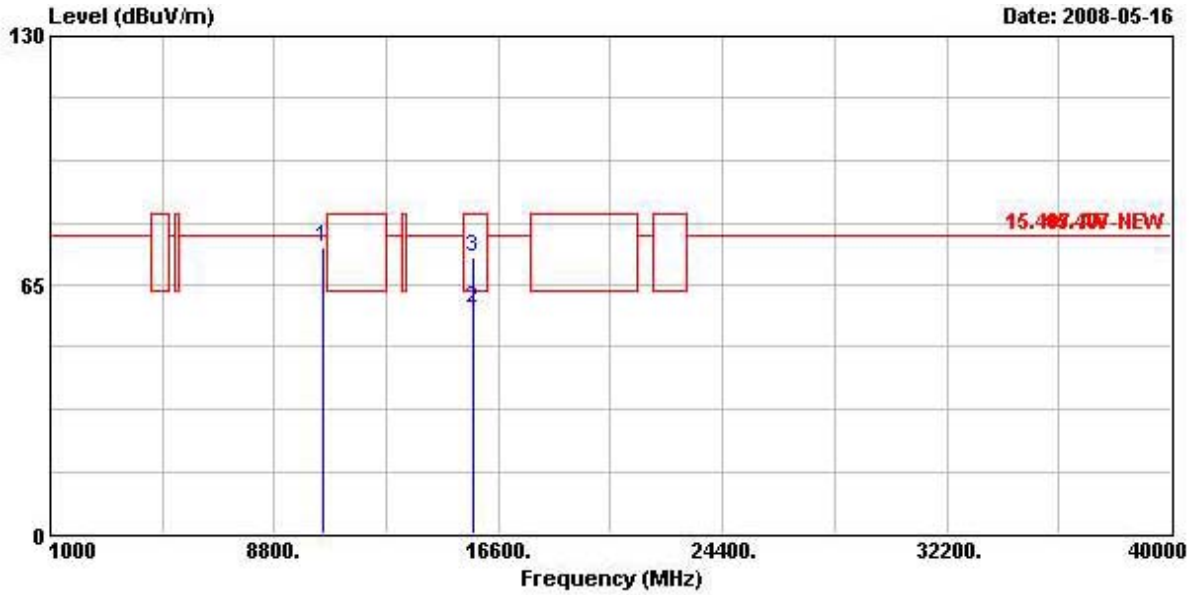
Vertical



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1 @	10380.000	73.86	-3.98	77.84	59.99	39.32	6.14	31.59	PEAK
2	15565.400	70.73	-12.81	83.54	55.50	37.53	7.38	29.68	Peak
3	15565.400	56.19	-7.35	63.54	40.97	37.53	7.38	29.68	AVERAGE

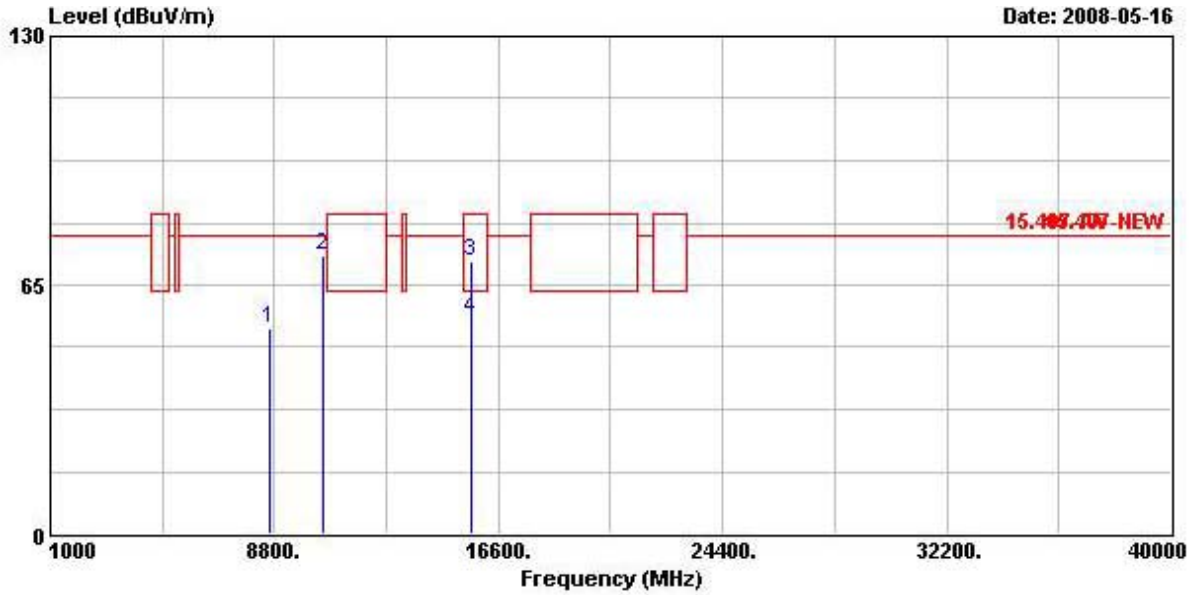
Test date	May 16, 2008	**Test Site No.**	03CH03-HY
Temperature	26℃	**Humidity**	54%
Test Engineer	Duncan	**Configuration**	802.11n CH 46 (40MHz)

Horizontal



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1 @	10460.000	74.63	-3.21	77.84	60.42	39.31	6.23	31.34	PEAK
2 @	15687.400	58.56	-4.98	63.54	43.19	37.58	7.40	29.61	AVERAGE
3	15687.400	72.18	-11.36	83.54	56.81	37.58	7.40	29.61	Peak

Vertical



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	8648.000	53.48	-24.36	77.84	42.68	38.39	5.21	32.81	PEAK
2 @	10460.000	72.98	-4.86	77.84	58.78	39.31	6.23	31.34	PEAK
3	15685.000	71.10	-12.44	83.54	55.73	37.58	7.40	29.61	Peak
4	15685.000	56.45	-7.09	63.54	41.09	37.58	7.40	29.61	AVERAGE

Note:

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

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

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

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

3.7 Band Edge Emissions Measurement

3.7.1 Limit

For transmitters operating in the 5.15-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz (68.3dBuV/m at 3m). For transmitters operating in the 5.47-5.725 GHz band: all emissions outside of the 5.47-5.725 GHz band shall not exceed an EIRP of -27 dBm/MHz (68.3dBuV/m at 3m). 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

3.7.2 Measuring Instruments and Setting

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

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

3.7.3 Test Procedures

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

3.7.4 Test Setup Layout

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

3.7.5 Test Deviation

There is no deviation with the original standard.

3.7.6 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

3.7.7 Test Result of Band Edge

For Single Chain:

Test date	May 13, 2008	**Test Site No.**	03CH03-HY
Temperature	26℃	**Humidity**	54%
Test Engineer	Duncan	**Configuration**	802.11a CH 36, 40, 48

Channel 36

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1 @	5149.900	62.09	-1.45	63.54	23.80	34.35	3.94	0.00	Average
1 @	5149.100	79.46	-4.08	83.54	41.17	34.35	3.94	0.00	Peak

Channel 40

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	5122.100	70.96	-12.58	83.54	32.70	34.32	3.94	0.00	Peak
1 @	5133.300	58.77	-4.77	63.54	20.49	34.33	3.94	0.00	Average

Channel 48

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	5129.200	70.90	-12.64	83.54	32.62	34.33	3.94	0.00	Peak
3	5401.200	71.31	-12.23	83.54	32.91	34.60	3.80	0.00	Peak
1 @	5106.400	58.75	-4.79	63.54	20.47	34.32	3.96	0.00	Average
3 @	5406.000	58.71	-4.83	63.54	20.31	34.60	3.80	0.00	Average

Test date	May 13, 2008	Test Site No.	03CH03-HY
Temperature	26℃	Humidity	54%
Test Engineer	Duncan	Configuration	802.11n CH 36, 40, 48 (20MHz)

Channel 36

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1 @	5149.900	61.79	-1.75	63.54	23.50	34.35	3.94	0.00	Average
1 @	5149.900	80.92	-2.62	83.54	42.63	34.35	3.94	0.00	Peak

Channel 40

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	5146.300	70.51	-13.03	83.54	32.22	34.35	3.94	0.00	Peak
1	5123.100	58.01	-5.53	63.54	19.73	34.33	3.94	0.00	Average

Channel 48

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	5122.800	71.40	-12.14	83.54	33.12	34.33	3.94	0.00	Peak
3	5385.200	70.70	-12.84	83.54	32.30	34.58	3.82	0.00	Peak
1 @	5122.800	59.00	-4.54	63.54	20.72	34.33	3.94	0.00	Average
3 @	5425.200	58.62	-4.92	63.54	20.21	34.62	3.80	0.00	Average

Test date	May 14, 2008	Test Site No.	03CH03-HY
Temperature	26℃	Humidity	54%
Test Engineer	Duncan	Configuration	802.11n CH 38, 46 (40MHz)

Channel 38

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	5149.500	76.92	-6.62	83.54	38.63	34.35	3.94	0.00	Peak
1 @	5149.900	61.63	-1.91	63.54	23.34	34.35	3.94	0.00	Average

Channel 46

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	5141.250	73.47	-10.07	83.54	35.18	34.35	3.94	0.00	Peak
1 @	5148.900	59.48	-4.06	63.54	21.19	34.35	3.94	0.00	Average

For Two Chain:

Test date	May 13, 2008	**Test Site No.**	03CH03-HY
Temperature	26℃	**Humidity**	54%
Test Engineer	Duncan	**Configuration**	802.11n CH 36, 40, 48 (20MHz)

Channel 36

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1 @	5149.900	79.52	-4.02	83.54	41.23	34.35	3.94	0.00	Peak
1 @	5149.900	62.49	-1.05	63.54	24.20	34.35	3.94	0.00	Average

Channel 40

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	5149.800	77.48	-6.06	83.54	39.19	34.35	3.94	0.00	Peak
1 @	5149.900	60.58	-2.96	63.54	22.29	34.35	3.94	0.00	Average

Channel 48

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	5102.000	70.35	-13.19	83.54	32.09	34.30	3.96	0.00	Peak
3	5385.200	70.66	-12.88	83.54	32.26	34.58	3.82	0.00	Peak
1 @	5100.800	58.64	-4.90	63.54	20.38	34.30	3.96	0.00	Average
3 @	5414.000	58.45	-5.09	63.54	20.04	34.62	3.80	0.00	Average

Test date	May 14, 2008	**Test Site No.**	03CH03-HY
Temperature	26℃	**Humidity**	54%
Test Engineer	Duncan	**Configuration**	802.11n CH 38, 46 (40MHz)

Channel 38

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	5149.880	76.02	-7.52	83.54	37.73	34.35	3.94	0.00	Peak
1 @	5149.880	62.34	-1.20	63.54	24.05	34.35	3.94	0.00	Average

Channel 46

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	5146.000	77.20	-6.34	83.54	38.91	34.35	3.94	0.00	Peak
1 @	5149.840	62.25	-1.29	63.54	23.96	34.35	3.94	0.00	Average

Note:

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].

3.8 Frequency Stability Measurement

3.8.1 Limit

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

3.8.2 Measuring Instruments and Setting

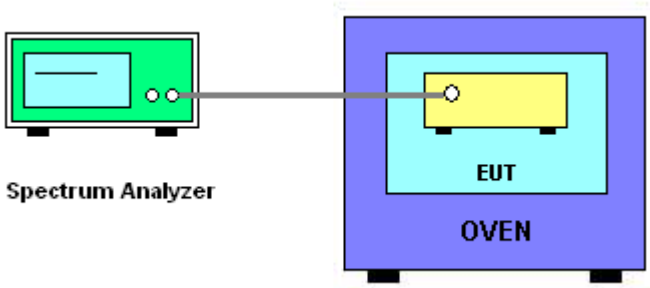
Please refer to section 4 of equipments list in this report. The following table is the setting of the spectrum analyzer.

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

3.8.3 Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyser.
2. EUT have transmitted absence of modulation signal and fixed channelize.
3. Set the spectrum analyzer span to view the entire absence of modulation emissions bandwidth.
4. Set RBW = 10 kHz, VBW = 10 kHz with peak detector and maxhold settings.
5. fc is declaring of channel frequency. Then the frequency error formula is (fc-f)/fc × 10^6 ppm and the limit is less than ±20ppm (IEEE 802.11a specification).
6. The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value
7. Extreme temperature rule is -30°C~50°C.

3.8.4 Test Setup Layout



3.8.5 Test Deviation

There is no deviation with the original standard.

3.8.6 EUT Operation during Test

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

3.8.7 Test Result of Frequency Stability

Voltage vs. Frequency Stability

For Single Chain

Voltage	Measurement Frequency (MHz)
(V)	**IEEE 802.11a 5200**
126.5	5199.998700
110	5199.998400
93.5	5199.996900
Max. Deviation (MHz)	0.003100
Max. Deviation (ppm)	0.60

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)
(℃)	**IEEE 802.11a 5200**
-30	5199.988700
-20	5199.991700
-10	5199.994200
0	5199.997400
10	5199.998700
20	5199.998400
30	5199.999200
40	5200.009400
50	5200.015700
Max. Deviation (MHz)	0.015700
Max. Deviation (ppm)	3.02

For Two Chain

Voltage	Measurement Frequency (MHz)	
(V)	**IEEE 802.11n 5200 (20MHz)**	**IEEE 802.11n 5230 (40MHz)**
126.5	5219.9988	5229.9988
110	5219.9978	5229.9978
93.5	5219.9974	5229.9974
Max. Deviation (MHz)	0.0026	0.002600
Max. Deviation (ppm)	0.50	0.50

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)	
(℃)	**IEEE 802.11n 5200 (20MHz)**	**IEEE 802.11n 5230 (40MHz)**
-30	5219.991700	5229.991700
-20	5219.988400	5229.988400
-10	5219.989700	5229.989700
0	5219.992800	5229.992800
10	5219.994100	5229.994100
20	5219.997800	5229.998800
30	5219.998800	5229.998800
40	5220.001100	5230.007500
50	5220.009200	5230.010400
Max. Deviation (MHz)	0.011600	0.011600
Max. Deviation (ppm)	2.22	2.2180

3.9 Antenna Requirements

3.9.1 Limit

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

3.9.2 Antenna Connector Construction

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

4 LIST OF MEASURING EQUIPMENTS

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Receiver	R&S	ESCS 30	836858/024	9 kHz - 2.75 GHz	Sep. 11, 2007	Conduction (CO01-LK)
LISN	SCHAFFNER	NNB-41	98087	9 kHz - 30 MHz	Sep. 21, 2007	Conduction (CO01-LK)
RF Cable-CON	Suhner Switzerland	RG223/U	CB017	9 kHz - 30 MHz	Nov. 30, 2007	Conduction (CO01-LK)

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

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Spectrum Analyzer	R&S	FSP30	100023	9kHz ~ 30GHz	Jan. 10, 2008	Conducted (TH01-HY)
Power Meter	R&S	NRVS	100444	DC ~ 40GHz	Jun. 27, 2007	Conducted (TH01-HY)
Power Sensor	R&S	NRV-Z51	100458	DC ~ 30GHz	Jun. 27, 2007	Conducted (TH01-HY)
Power Sensor	R&S	NRV-Z32	100057	30MHz ~ 6GHz	Jun. 27, 2007	Conducted (TH01-HY)
DC Power Source	G.W.	GPC-6030D	C671845	DC 1V ~ 60V	Mar. 13, 2008	Conducted (TH01-HY)
Temp. and Humidity Chamber	KSON	THS-C3L	612	N/A	Oct. 01, 2007	Conducted (TH01-HY)
RF CABLE-1m	Jye Bao	RG142	CB034-1m	20MHz ~ 7GHz	Dec. 01, 2007	Conducted (TH01-HY)
RF CABLE-2m	Jye Bao	RG142	CB035-2m	20MHz ~ 1GHz	Dec. 01, 2007	Conducted (TH01-HY)
Vector Signal Generator	R&S	SMU200A	102098	100kHz ~ 6GHz	Nov. 14, 2007	Conducted (TH01-HY)
Signal Generator	R&S	SMR40	100116	10MHz ~ 40GHz	Mar. 10, 2008	Conducted (TH01-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. 14, 2007	Radiation (03CH03-HY)
Amplifier	SCHAFFNER	COA9231A	18667	9 kHz - 2 GHz	Jan. 14, 2008	Radiation (03CH03-HY)
Amplifier	Agilent	8449B	3008A02120	1 GHz - 26.5 GHz	Jun. 07, 2007	Radiation (03CH03-HY)
Spectrum Analyzer	R&S	FSP40	100305	9 kHz - 40 GHz	Sep. 27, 2007	Radiation (03CH03-HY)
Bilog Antenna	SCHAFFNER	CBL 6112D	22237	30 MHz – 1 GHz	Jul. 21, 2007	Radiation (03CH03-HY)
Horn Antenna	EMCO	3115	6741	1GHz ~ 18GHz	Mar. 04, 2008	Radiation (03CH03-HY)
Horn Antenna	SCHWARZBECK	BBHA9170	BBHA9170154	15 GHz - 40 GHz	Jan.18, 2008	Radiation (03CH03-HY)
RF Cable-R03m	Jye Bao	RG142	CB021	30 MHz - 1 GHz	Dec. 03, 2007	Radiation (03CH03-HY)
RF Cable-HIGH	SUHNER	SUCOFLEX 106	03CH03-HY	1 GHz - 40 GHz	Dec. 03, 2007	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
AC Power Source	HPC	HPA-500W	HPA-9100024	AC 0 ~ 300V	May 04, 2007*	Conducted (TH01-HY)
Amplifier	MITEQ	AMF-6F-260400	9121372	26.5 GHz - 40 GHz	Jan. 22, 2007*	Radiation (03CH03-HY)
Loop Antenna	R&S	HFH2-Z2	860004/001	9 kHz - 30 MHz	May 22, 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 2nd 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. : L1190-070110

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, 2007 to January 09, 2010
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

Jay-San Chen
President, Taiwan Accreditation Foundation
Date : January 10, 2007

P1, total 9 pages

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