



**FCC CFR47 CERTIFICATION
CLASS II PERMISSIVE CHANGE
TEST REPORT**

FOR

2.4 & 5 GHz 802.11 Minicard

MODEL NUMBER: AR5BXB72

FCC ID: PPD-AR5BXB72-L

REPORT NUMBER: 06U10634-2

ISSUE DATE: OCTOBER 23, 2006

Prepared for

**ATHEROS COMMUNICATIONS, INC.
5480 GREAT AMERICA PARKWAY
SANTA CLARA, CA 95054, USA**

Prepared by

**COMPLIANCE CERTIFICATION SERVICES
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Revision History

Rev.	Issue Date	Revisions	Revised By
--	10/23/06	Initial Issue	Thu

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: ATHEROS COMMUNICATIONS, INC.
5480 GREAT AMERICA PARKWAY
SANTA CLARA, CA 95054, USA

EUT DESCRIPTION: 2.4 & 5 GHZ 802.11 MINICARD

MODEL: AR5BXB72

DATE TESTED: OCTOBER 02 -10, 2006

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC PART 15 SUBPART E	NO NON-COMPLIANCE NOTED

Compliance Certification Services, Inc. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

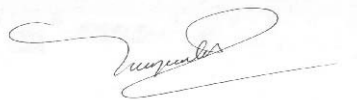
Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by Compliance Certification Services and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by Compliance Certification Services will constitute fraud and shall nullify the document. No part of this report may be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any government agency.

Approved & Released For CCS By:

Tested By:



THU CHAN
ENGINEERING SUPERVISOR
COMPLIANCE CERTIFICATION SERVICES



VIEN TRAN
EMC ENGINEER
COMPLIANCE CERTIFICATION SERVICES

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4-2003, FCC CFR 47 Part 2 and FCC CFR 47 Part 15.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 561F Monterey Road, Morgan Hill, California, USA. The sites are constructed in conformance with the requirements of ANSI C63.4, ANSI C63.7 and CISPR Publication 22. All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

CCS is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at <http://www.ccsemc.com>.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Radiated Emission, 30 to 200 MHz	+/- 3.3 dB
Radiated Emission, 200 to 1000 MHz	+4.5 / -2.9 dB
Radiated Emission, 1000 to 2000 MHz	+4.5 / -2.9 dB
Power Line Conducted Emission	+/- 2.9 dB

Uncertainty figures are valid to a confidence level of 95%.

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The AR5BXB72 is designed for 802.11a/b/g/n applications using the AR541X/51XX chipset. It has three receive chains and two transmit chains, implemented with two outside chains (Chain 0 and 2) as Tx/Rx and the middle chain (chain 1) as Rx only.

5.2. MANUFACTURER'S DESCRIPTION OF MODEL DIFFERENCES

Both models AR5BXB72 and AR5BXB72-L are identical product and same hardware configuration, the number difference is for marketing purposes only.

5.3. CLASS II PERMISSIVE CHANGE DESCRIPTION

Installed 2.4 & 5 GHz 802.11 Minicard (WLAN FCC ID: PPD-AR5BXB72-L) in LENOVO ThinkPad X60 Tablet_1.0 SIV A.

5.4. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a set of three identical PIFA antennas with maximum gain is 2.78 dBi from 5150 – 5350 MHz.

5.5. SOFTWARE AND FIRMWARE

The EUT driver software installed in the host support equipment during testing was AR5002, ANWI Diagnostic Kernel Drive.

The test utility software used during testing was Art Software Revision 4 Build # 7 Art 11n.

5.6. WORST-CASE CONFIGURATION AND MODE

The worst-case data rates are determined to be as follows for each mode, based on the investigations by measuring the average power, peak power and PPSD across all the data rates, bandwidths, modulations and spatial stream modes.

Thus all emissions tests were made with following data rates:

- 802.11a mode, 20 MHz Channel Bandwidth, 9 Mb/s, OFDM Modulation, Spatial Stream 1.
- 802.11n HT20 mode, 20 MHz Channel Bandwidth, MCS0, 6.5 Mb/s, OFDM Modulation, Spatial Stream 1.
- 802.11n HT40 mode, 40 MHz Channel Bandwidth, MCS0, 13.5 Mb/s, OFDM Modulation, Spatial Stream 1.

The worst-case configuration for tests below 1 GHz is the mode and channel with the highest power: 802.11b mode, mid channel.

The portable configuration at Z-Axis has the worst field strength emissions for both portable & mobile configurations. So, all radiated emissions tests were performed at Z-axis portable configuration.

Baseline testing demonstrated that the Power Spectral Density as measured through a combiner with both chains operating simultaneously is less than the sum of the Power Spectral Density of each individual chain when added linearly.

5.7. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adapter	Lenovo	ThinkPad X60 Tablet 1.0 SIV B	91B52	N/A
Laptop	Lenovo	ThinkPad X60 Tablet 1.0 SIV A	91A14	N/A

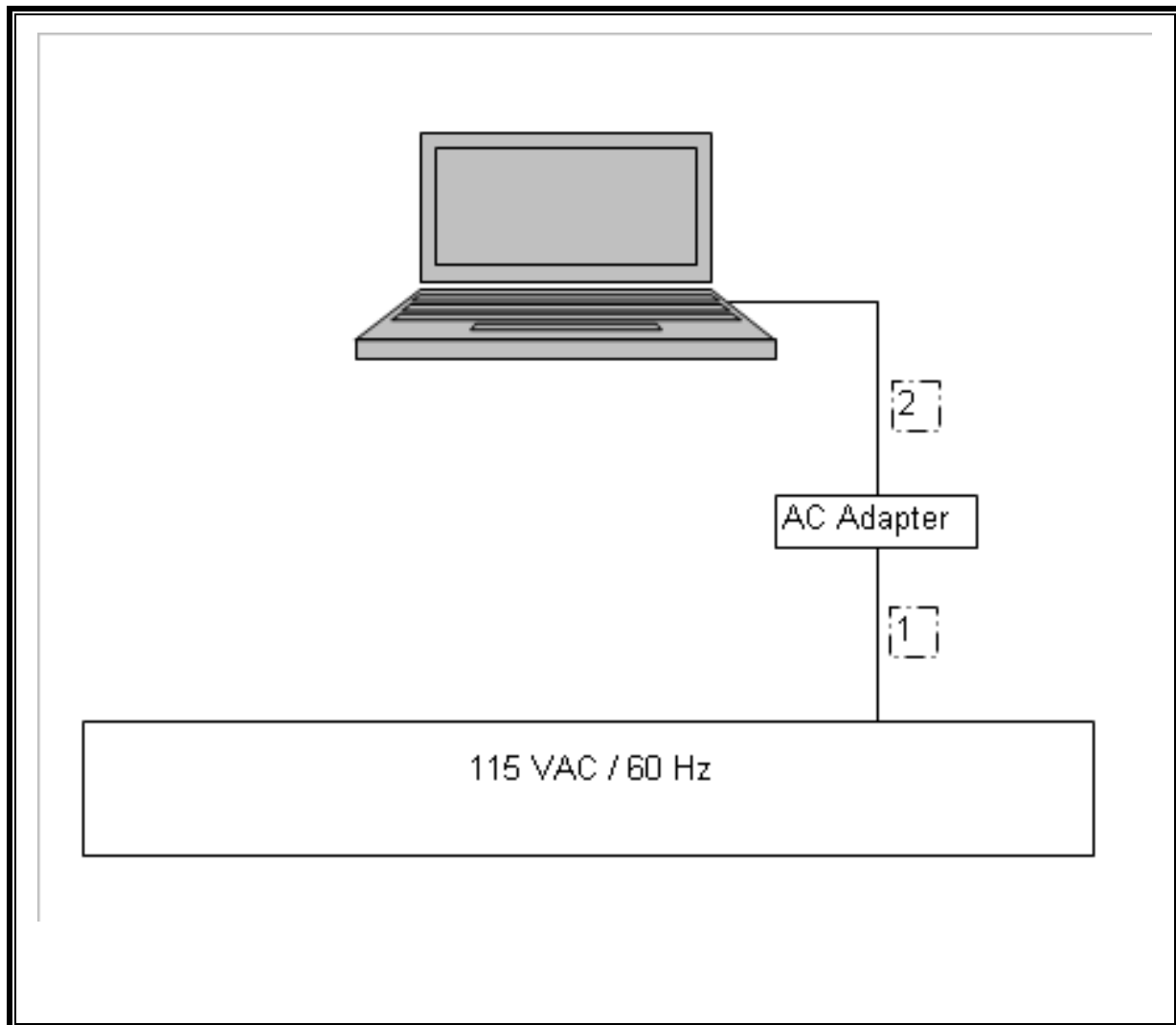
I/O CABLES

I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	AC	1	US115	Shielded	.50m	No
2	DC	2	DC	Shielded	1.0m	Ferrite on laptop's end

TEST SETUP

The EUT is installed in the host laptop computer during the tests. Test software exercised the radio card.

SETUP DIAGRAM FOR TESTS



6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

TEST EQUIPMENT LIST				
Description	Manufacturer	Model	Serial Number	Cal Due
Antenna, Bilog 30 MHz ~ 2 Ghz	Sunol Sciences	JB1	A121003	9/3/2007
RF Filter Section	Agilent / HP	85420E	3705A00256	2/4/2007
EMI Receiver, 9 kHz ~ 2.9 GHz	Agilent / HP	8542E	3942A00286	2/4/2007
Antenna, Horn 1 ~ 18 GHz	EMCO	3115	6717	4/22/2007
Antenna, Horn, 18 ~ 26 GHz	ARA	MWH-1826/B	1013	9/12/2007
Preamplifier, 1 ~ 26.5 GHz	Agilent / HP	8449B	3008A00369	8/17/2007
Antenna, Horn 26 ~ 40 GHz	ARA	MWH-2640/B	1029	4/13/2007
Preamplifier, 26 ~ 40 GHz	Miteq	NSP4000-SP2	924343	8/18/2007
Spectrum Analyzer 3 Hz ~ 44 GHz	Agilent / HP	E4446A	MY45300064	12/19/2006
Peak / Average Power Sensor	Agilent / HP	E9327A	US40440755	12/2/2007
Peak Power Meter	Agilent / HP	E4416A	GB41291160	12/2/2007
EMI Test Receiver	R & S	ESHS 20	827129/006	11/3/2006
LISN, 10 kHz ~ 30 MHz	FCC	LISN-50/250-25-2	2023	8/30/2007

7. LIMITS AND RESULTS

7.1. RADIATED EMISSIONS

7.1.1. TRANSMITTER RADIATED SPURIOUS EMISSIONS

LIMITS

§15.205 (a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	(²)
13.36 - 13.41			

¹ Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

² Above 38.6

§15.205 (b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

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

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

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

§15.209 (b) In the emission table above, the tighter limit applies at the band edges.

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.4. The EUT is set to transmit in a continuous mode.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 1 MHz for peak measurements and 10 Hz for average measurements.

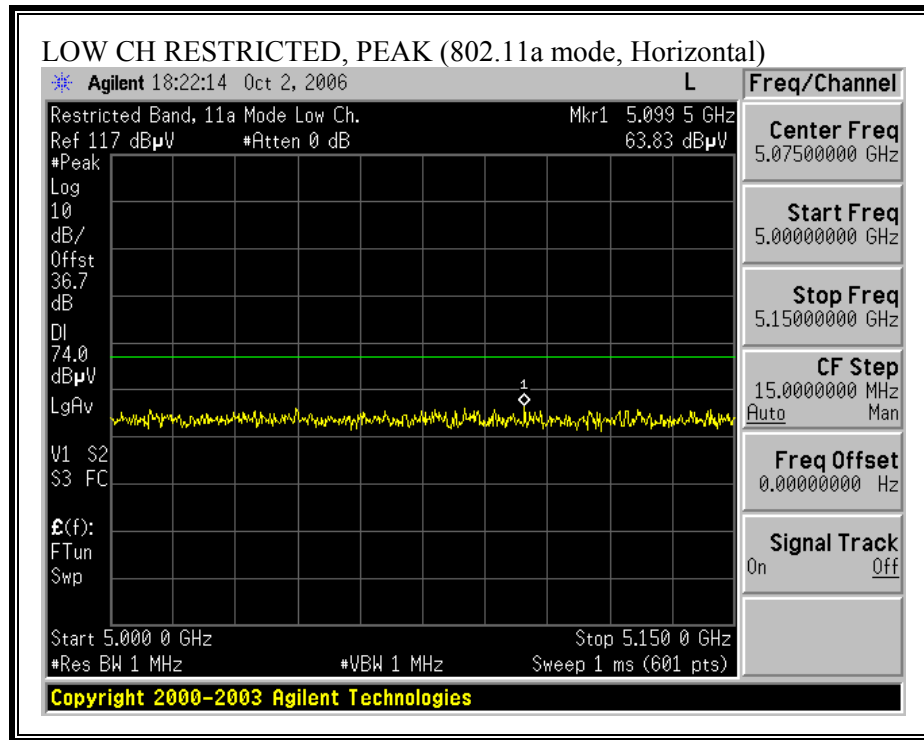
The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each band.

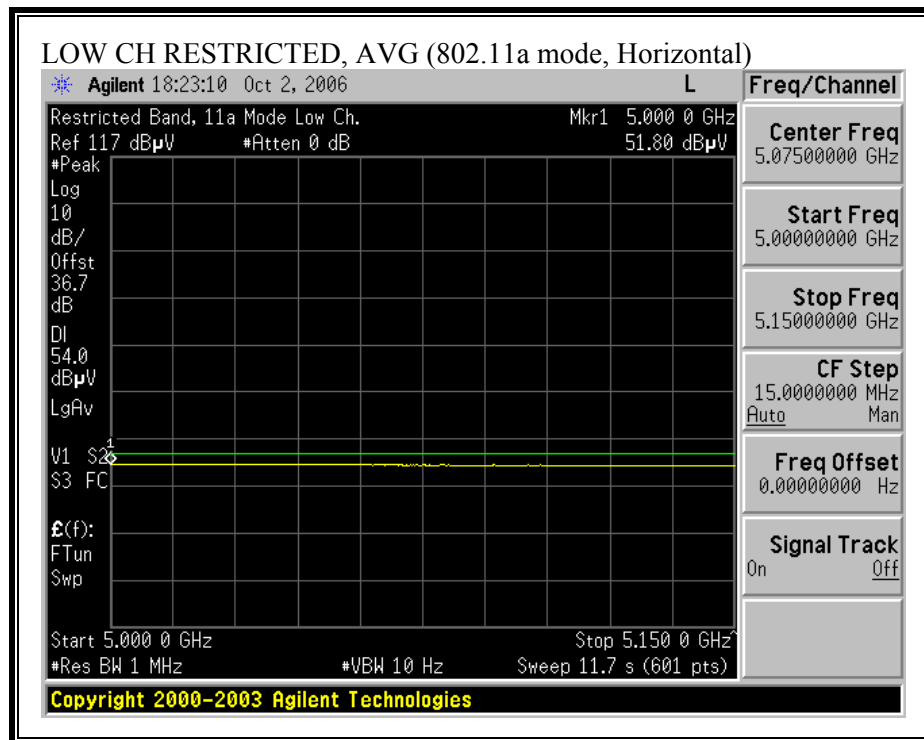
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

7.1.2. TRANSMITTER ABOVE 1 GHZ FOR 5150 TO 5350 MHz BAND

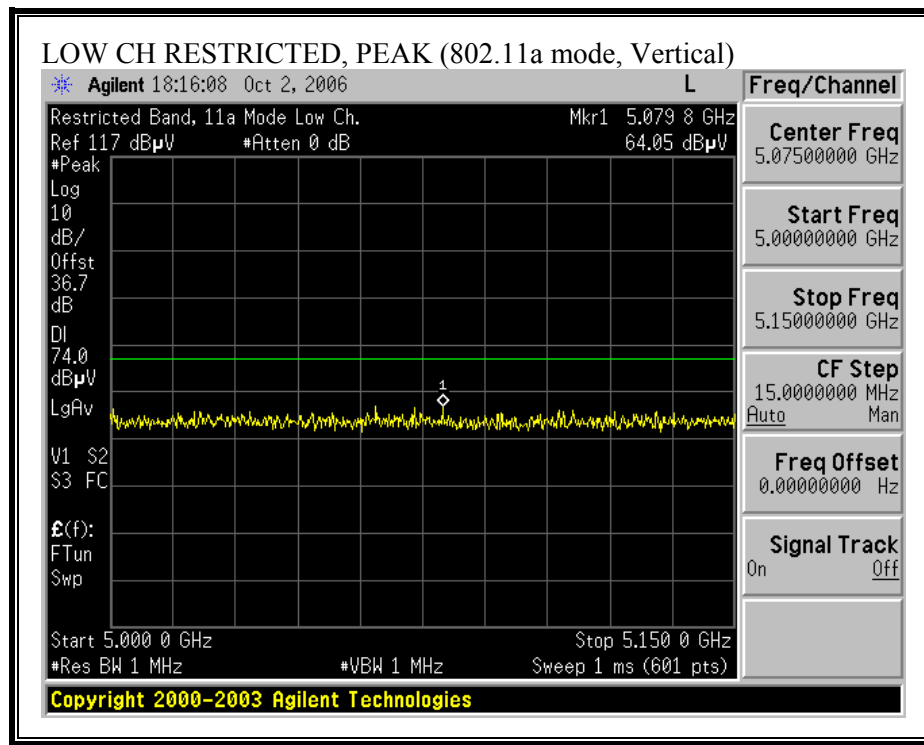
11a

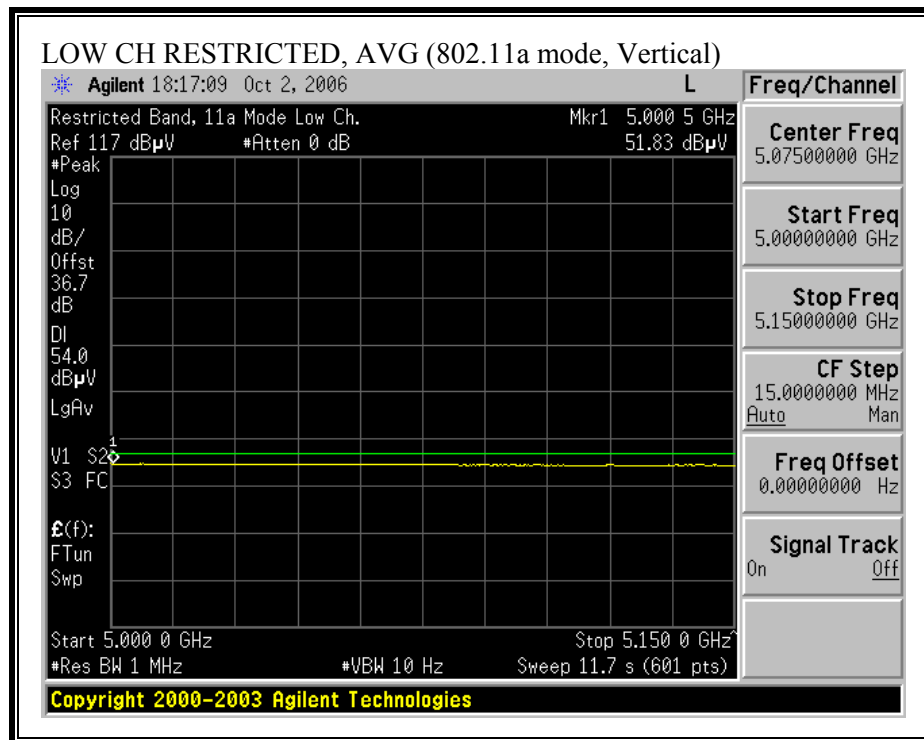
RESTRICTED BANDEDGE (802.11a MODE, LOW CHANNEL, HORIZONTAL)



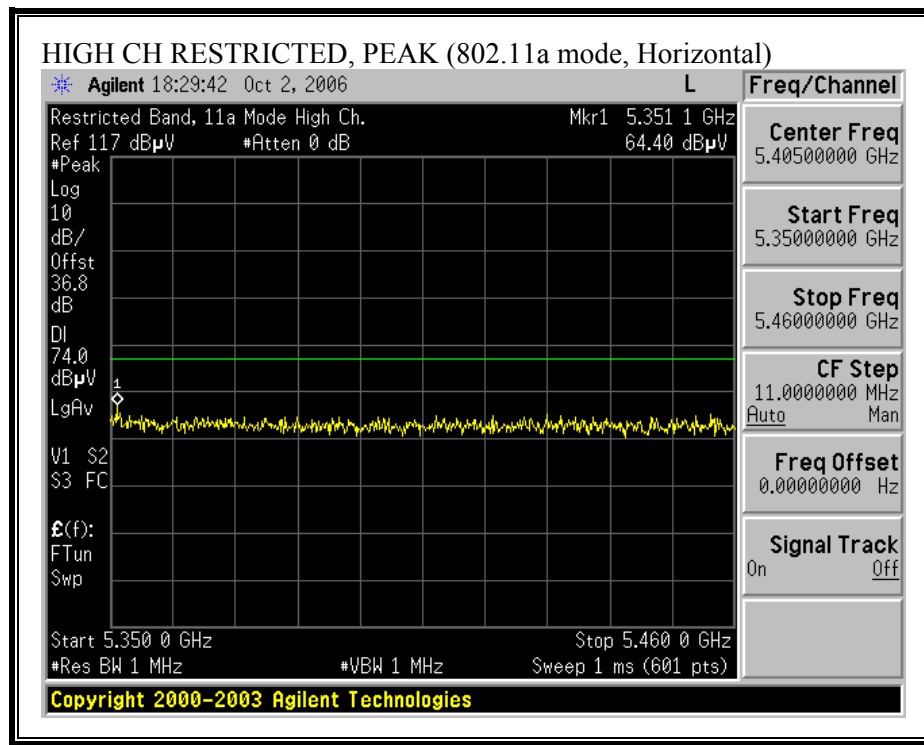


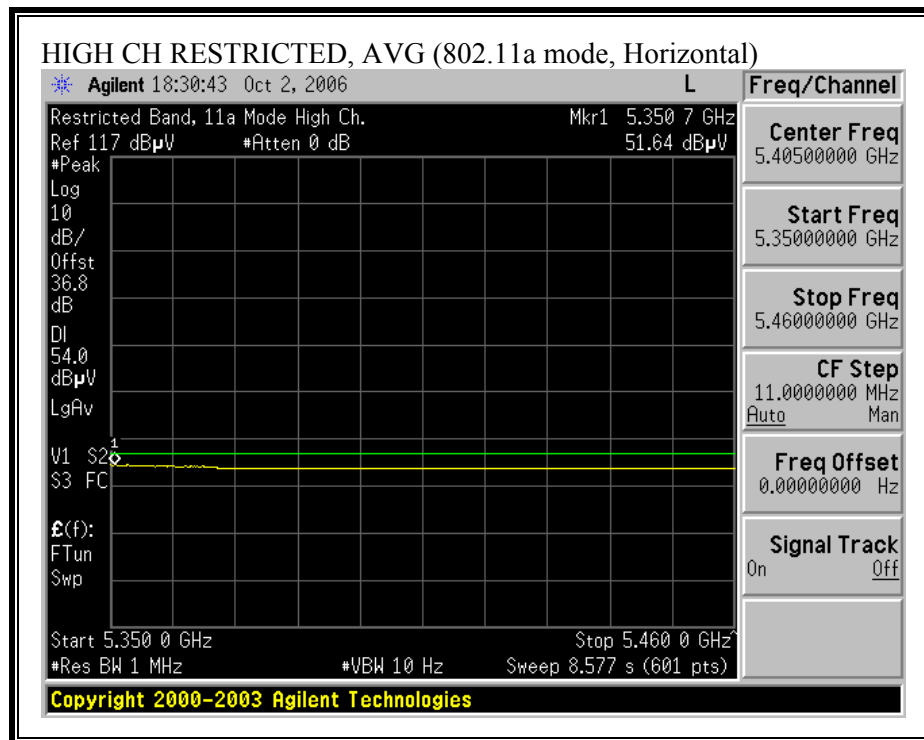
RESTRICTED BANDEDGE (802.11a MODE, LOW CHANNEL, VERTICAL)



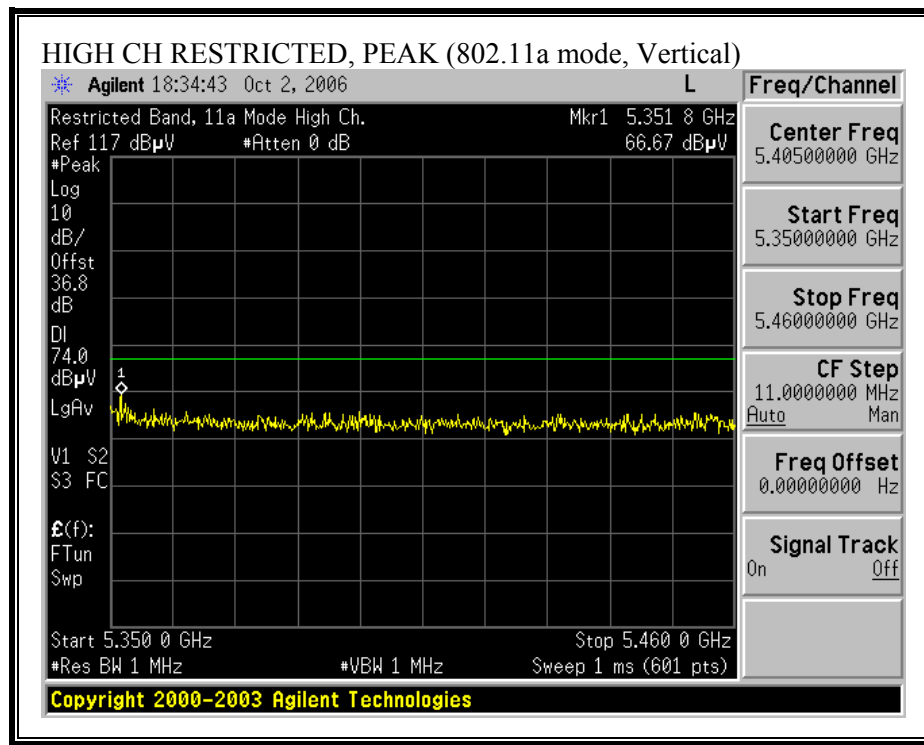


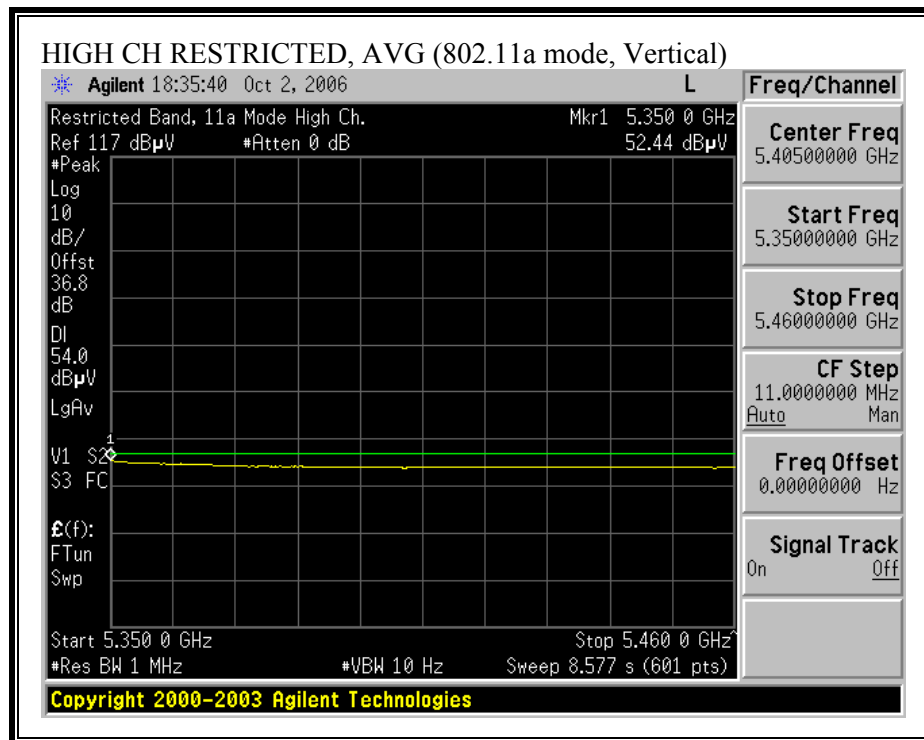
RESTRICTED BANDEDGE (802.11a MODE, HIGH CHANNEL, HORIZONTAL)





RESTRICTED BANDEDGE (802.11a MODE, HIGH CHANNEL, VERTICAL)



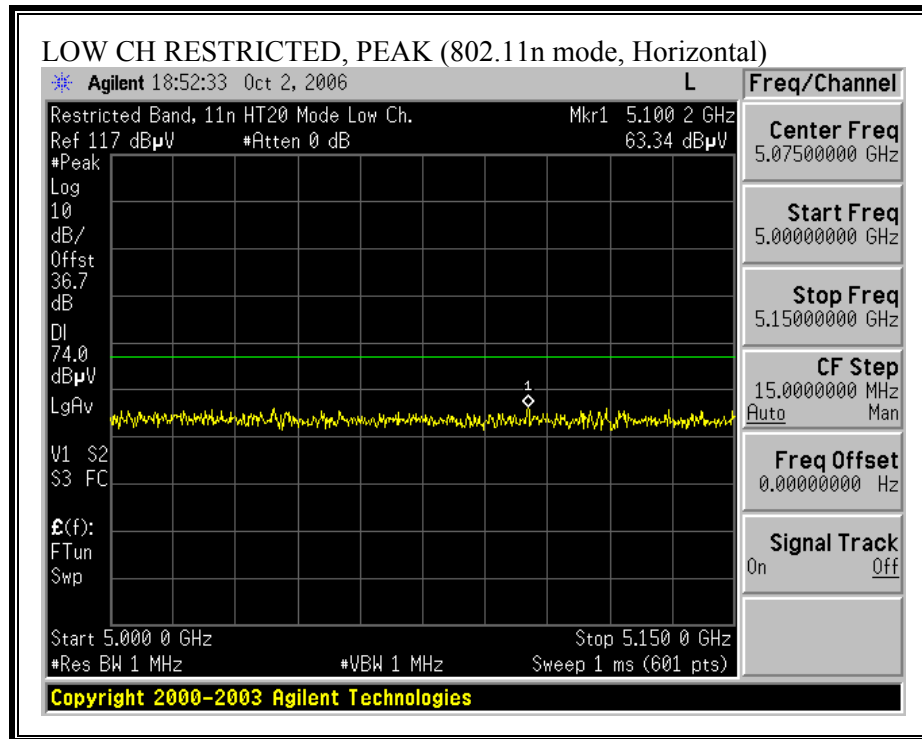


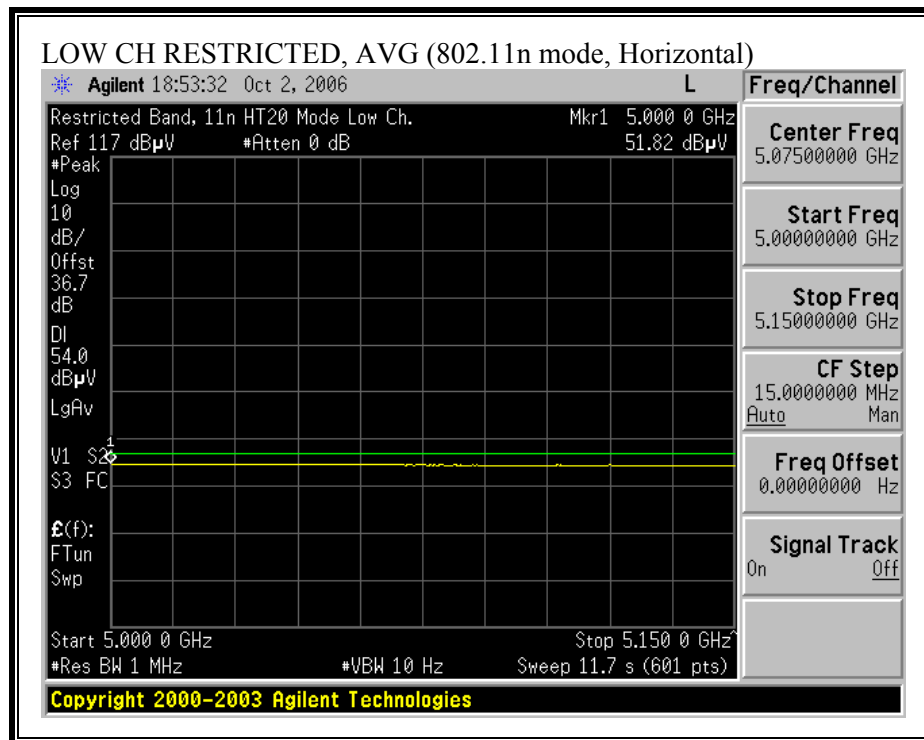
HARMONICS AND SPURIOUS EMISSIONS (802.11a MODE)

High Frequency Measurement																
Compliance Certification Services, Morgan Hill Open Field Site																
Company: Production Development Lab., Lenovo (Japan) Ltd																
Project #: 06U10634																
Date: 10/04/06																
Test Engineer: Chien Ho																
Configuration: EUT only																
Mode: Tx 5.2 GHz 11a																
Test Equipment:																
Horn 1-18GHz		Pre-amplifier 1-26GHz		Pre-amplifier 26-40GHz		Horn > 18GHz		Limit								
T120; S/N: 29310 @3m		T87 Miteq 924342						FCC 15.205								
Hi Frequency Cables																
2 foot cable		3 foot cable		12 foot cable		HPF		Reject Filter		Peak Measurements REW=VBW=1MHz Average Measurements RBW=1MHz ; VBW=10Hz						
		Vien 187215002		Vien 197209005		HPF_7.6GHz										
f GHz	Dist (m)	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Ftr dB	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes (V/H)	
LOW CH 5180 MHz																
15.540	3.0	49.6	38.2	39.0	5.8	-41.3	0.0	0.7	53.8	42.4	74	54	-20.2	-11.6	H	
15.540	3.0	51.4	38.3	39.0	5.8	-41.3	0.0	0.7	55.6	42.5	74	54	-18.4	-11.5	V	
MID CH 5260 MHz																
15.780	3.0	51.4	38.7	39.1	5.8	-41.2	0.0	0.7	55.9	43.2	74	54	-18.1	-10.8	H	
15.780	3.0	51.8	38.6	39.1	5.8	-41.2	0.0	0.7	56.3	43.1	74	54	-17.7	-10.9	V	
HIGH CH 5320 MHz																
10.640	3.0	49.0	36.1	37.5	4.8	-39.4	0.0	0.8	52.6	39.7	74	54	-21.4	-14.3	H	
15.960	3.0	50.6	38.5	39.3	5.9	-41.1	0.0	0.7	55.3	43.2	74	54	-18.7	-10.8	H	
10.640	3.0	50.2	37.8	37.5	4.8	-39.4	0.0	0.8	53.8	41.4	74	54	-20.2	-12.6	V	
15.960	3.0	50.6	38.4	39.3	5.9	-41.1	0.0	0.7	55.3	43.1	74	54	-18.7	-10.9	V	
No other emissions were detected above system noise floor.																
f	Measurement Frequency					Amp	Preamp Gain					Avg Lim	Average Field Strength Limit			
Dist	Distance to Antenna					D Corr	Distance Correct to 3 meters					Pk Lim	Peak Field Strength Limit			
Read	Analyzer Reading					Avg	Average Field Strength @ 3 m					Avg Mar	Margin vs. Average Limit			
AF	Antenna Factor					Peak	Calculated Peak Field Strength					Pk Mar	Margin vs. Peak Limit			
CL	Cable Loss					HPF	High Pass Filter									

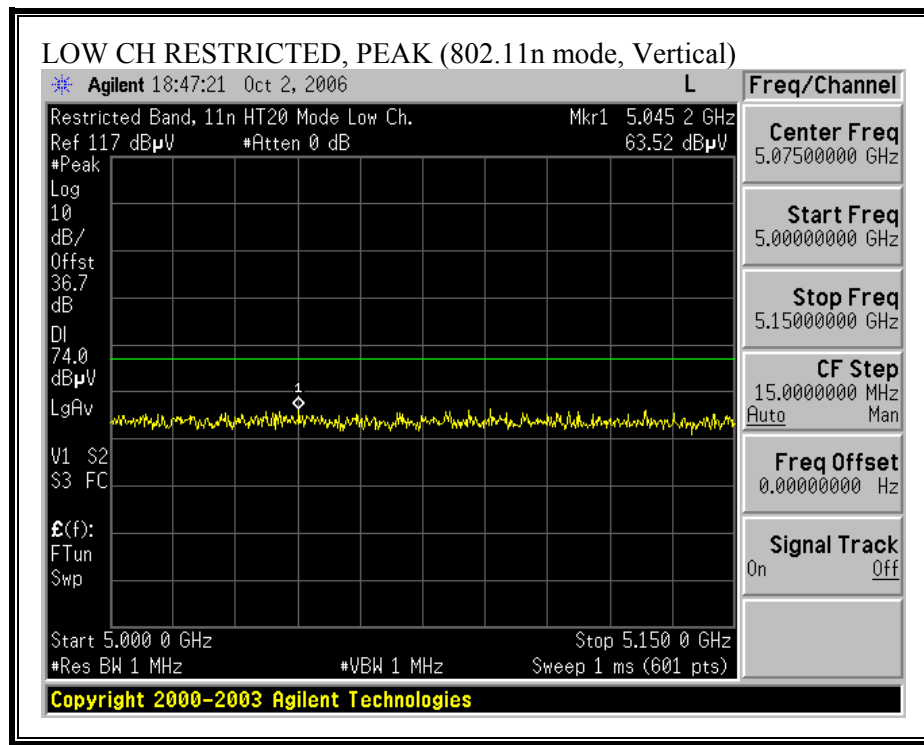
11n HT20

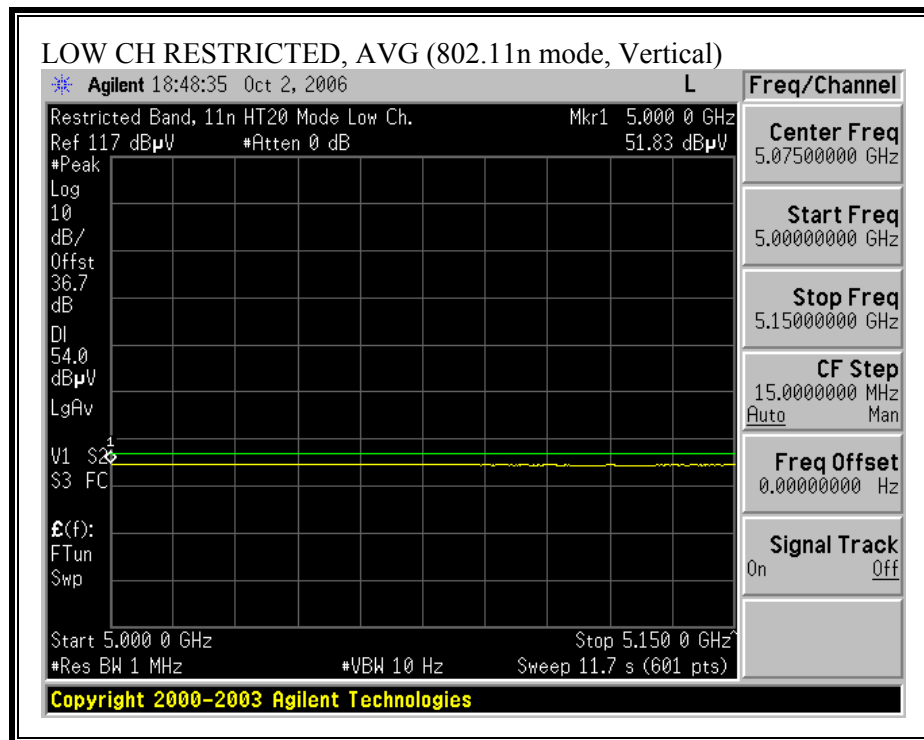
RESTRICTED BANDEDGE (n HT20 MODE, LOW CHANNEL, HORIZONTAL)



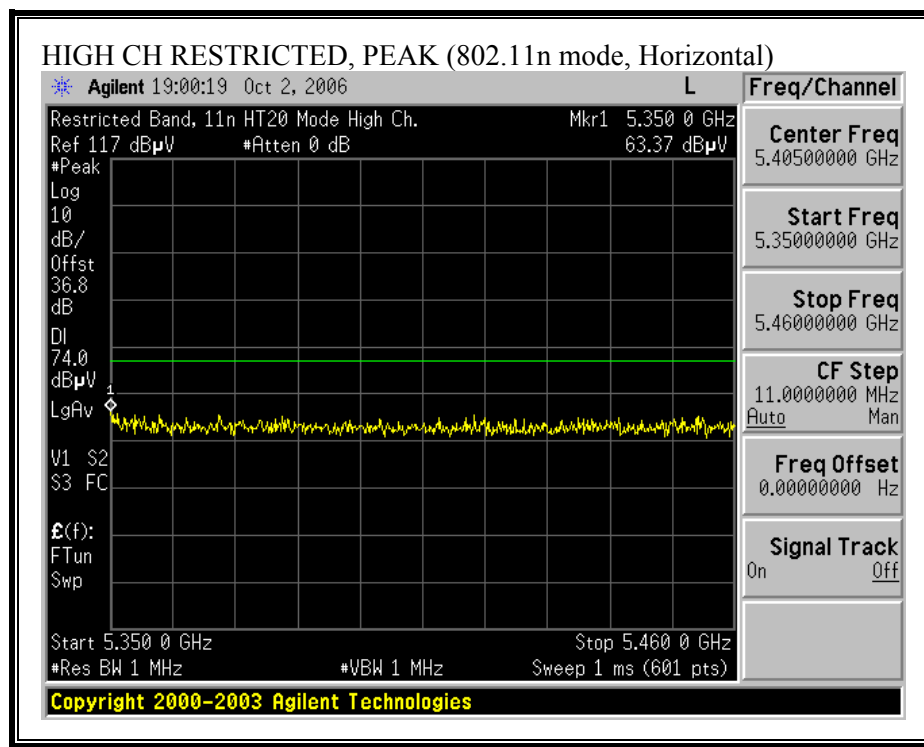


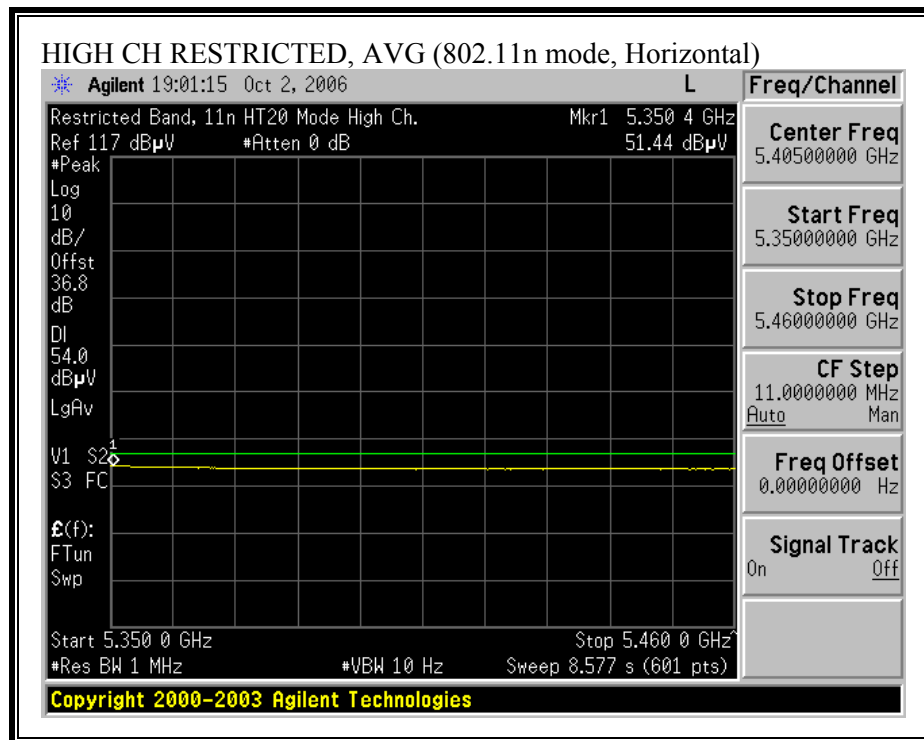
RESTRICTED BANDEDGE (n HT20 MODE, LOW CHANNEL, VERTICAL)



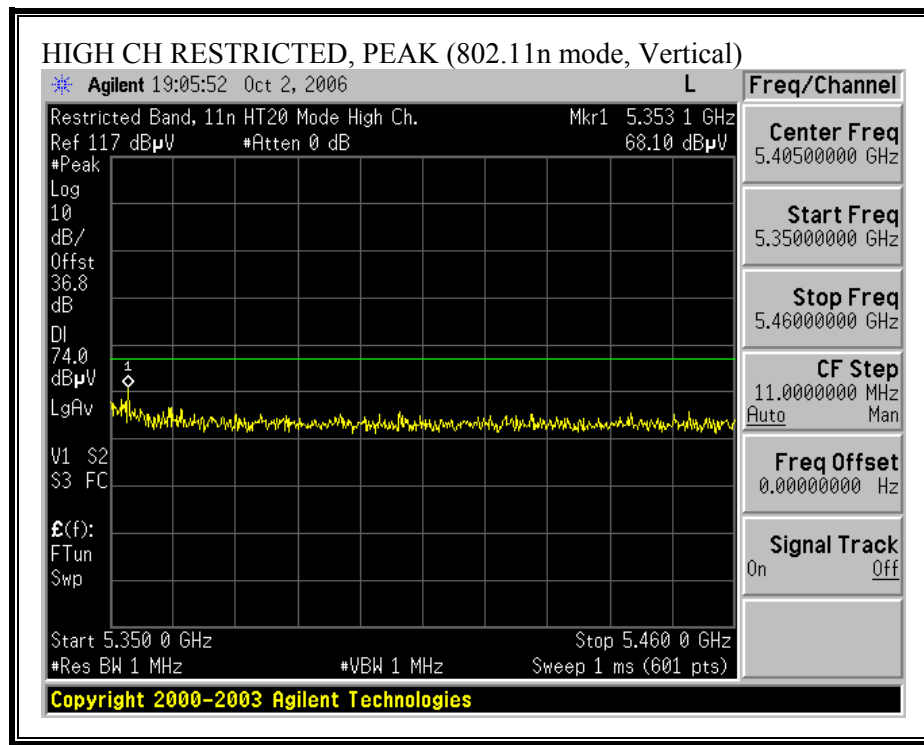


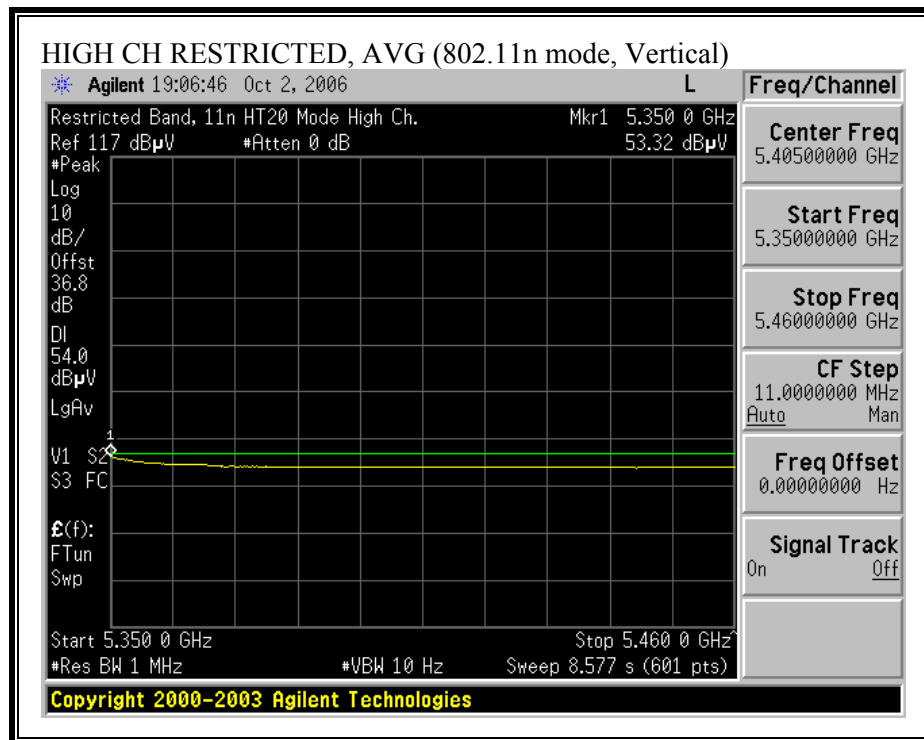
RESTRICTED BANDEDGE (n HT20 MODE, HIGH CHANNEL, HORIZONTAL)





RESTRICTED BANDEDGE (11n HT20 MODE, HIGH CHANNEL, VERTICAL)



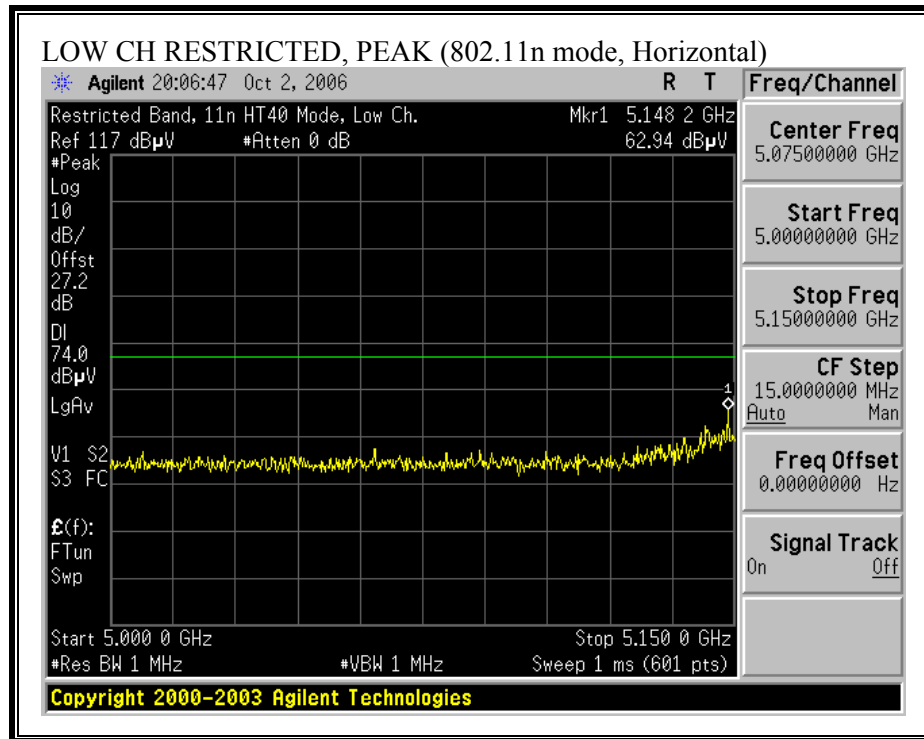


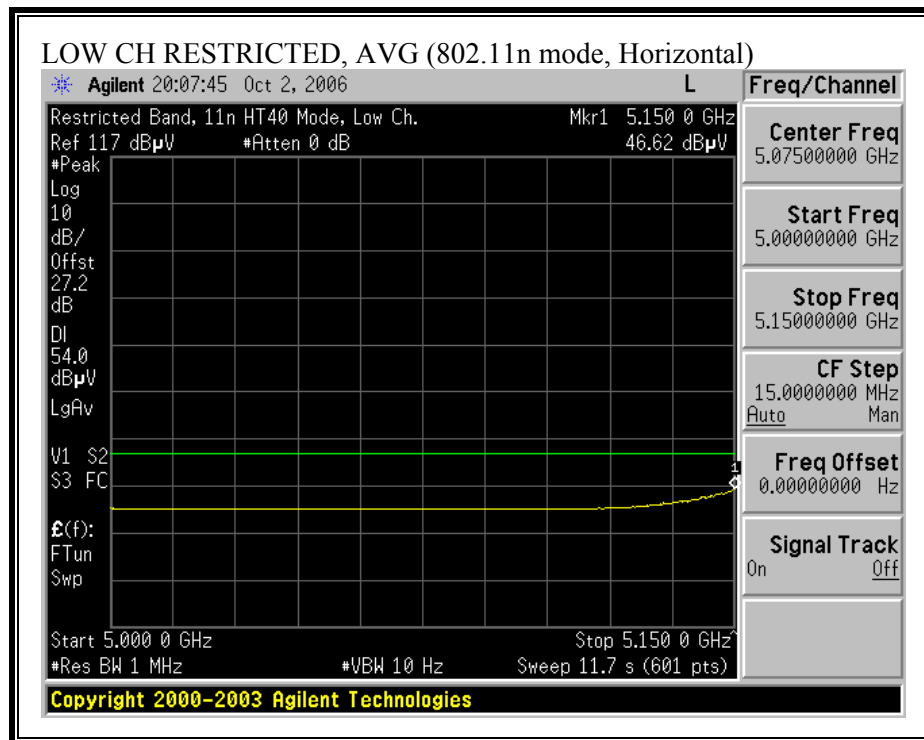
HARMONICS AND SPURIOUS EMISSIONS (11n HT 20 MODE)

High Frequency Measurement																
Compliance Certification Services, Morgan Hill Open Field Site																
Company: Production Development Lab., Lenovo (Japan) Ltd																
Project #: 06U10634																
Date: 10/04/06																
Test Engineer: Chien Ho																
Configuration: EUT only																
Mode: Tx 5.2 GHz 11n HT20																
Test Equipment:																
Horn 1-18GHz			Pre-amplifier 1-26GHz			Pre-amplifier 26-40GHz			Horn > 18GHz			Limit				
T120; S/N: 29310 @3m			T87 Miteq 924342									FCC 15.205				
Hi Frequency Cables																
2 foot cable			3 foot cable			12 foot cable			HPF			Reject Filter			Peak Measurements RBW=VBW=1MHz Average Measurements RBW=1MHz ; VBW=10Hz	
			Vien 187215002			Vien 197209005			HPF_7.6GHz							
f GHz	Dist (m)	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fln dB	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes (V/H)	
LOW CH 5180 MHz																
15.540	3.0	50.5	38.4	39.0	5.8	-41.3	0.0	0.7	54.7	42.6	74	54	-19.3	-11.4	H	
15.540	3.0	49.1	37.8	39.0	5.8	-41.3	0.0	0.7	53.3	42.0	74	54	-20.7	-12.0	V	
MID CH 5260 MHz																
15.780	3.0	50.5	38.7	39.1	5.8	-41.2	0.0	0.7	55.0	43.2	74	54	-19.0	-10.8	H	
15.780	3.0	50.8	38.6	39.1	5.8	-41.2	0.0	0.7	55.3	43.1	74	54	-18.7	-10.9	V	
HIGH CH 5320 MHz																
10.640	3.0	50.0	37.4	37.5	4.8	-39.4	0.0	0.8	53.6	41.0	74	54	-20.4	-13.0	H	
15.960	3.0	51.7	38.5	39.3	5.9	-41.1	0.0	0.7	56.4	43.2	74	54	-17.6	-10.8	H	
10.640	3.0	49.0	36.5	37.5	4.8	-39.4	0.0	0.8	52.6	40.1	74	54	-21.4	-13.9	V	
15.960	3.0	50.2	38.5	39.3	5.9	-41.1	0.0	0.7	54.9	43.2	74	54	-19.1	-10.8	V	
No other emissions were detected above system noise floor.																
f	Measurement Frequency					Amp	Preamp Gain					Avg Lim	Average Field Strength Limit			
Dist	Distance to Antenna					D Corr	Distance Correct to 3 meters					Pk Lim	Peak Field Strength Limit			
Read	Analyzer Reading					Avg	Average Field Strength @ 3 m					Avg Mar	Margin vs. Average Limit			
AF	Antenna Factor					Peak	Calculated Peak Field Strength					Pk Mar	Margin vs. Peak Limit			
CL	Cable Loss					HPF	High Pass Filter									

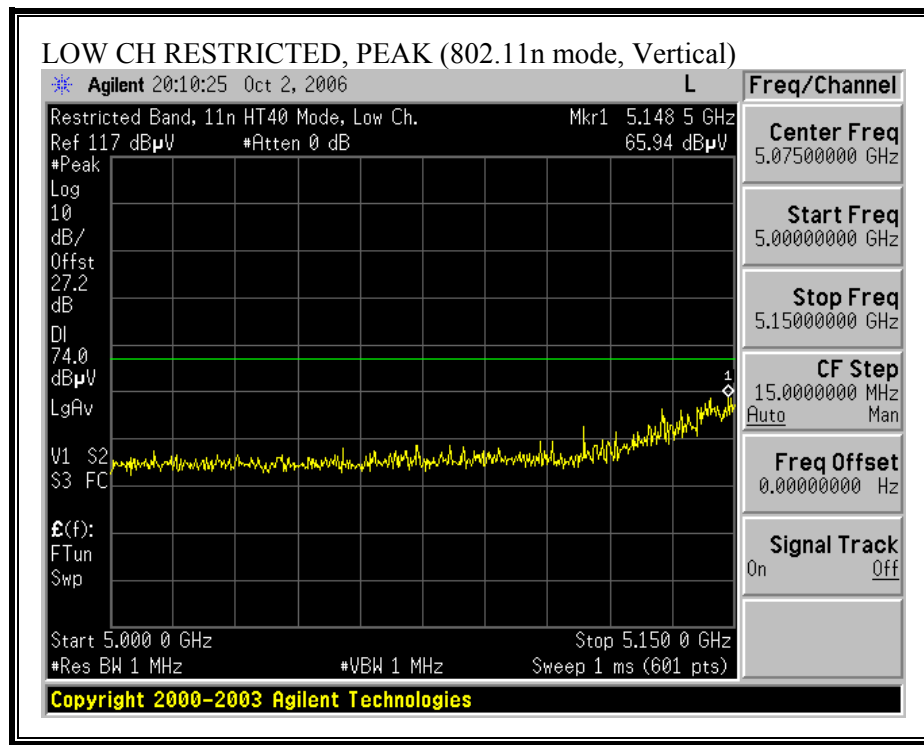
11n HT40

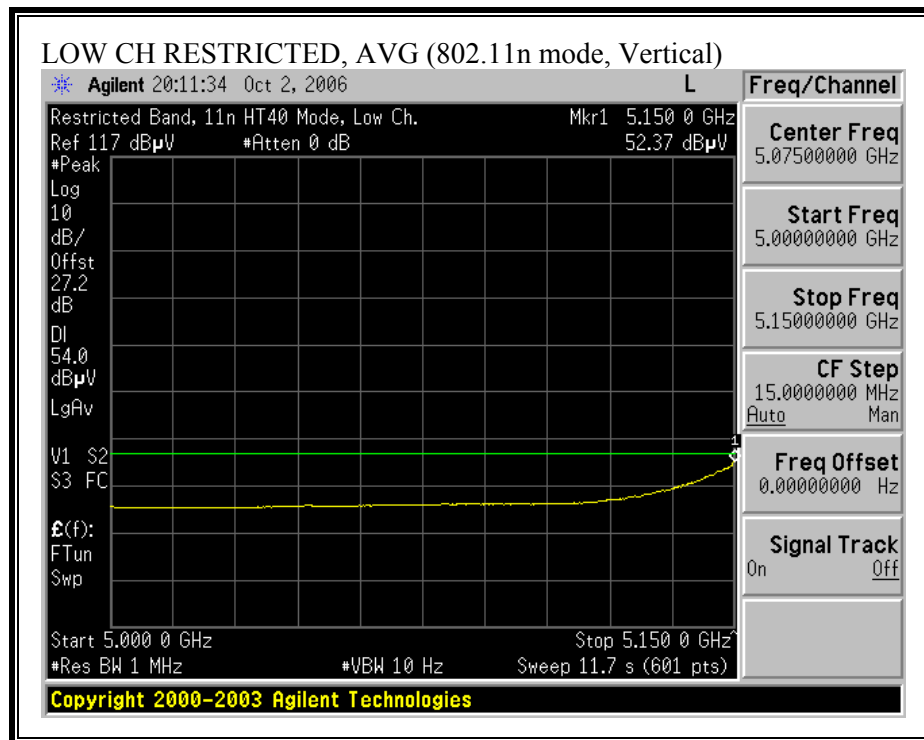
RESTRICTED BANDEDGE (n HT40 MODE, LOW CHANNEL, HORIZONTAL)



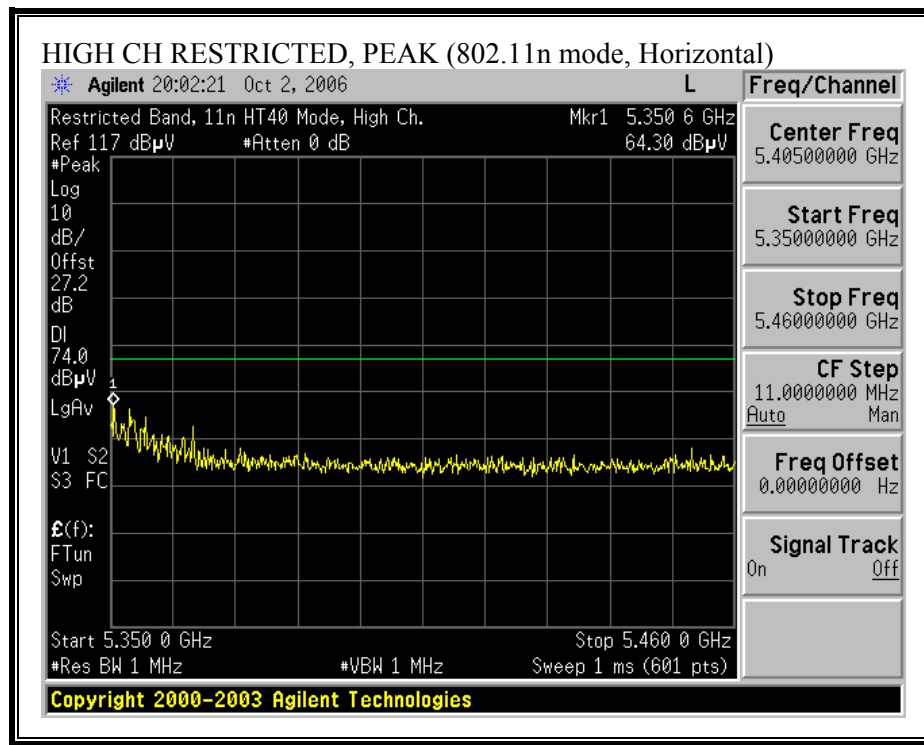


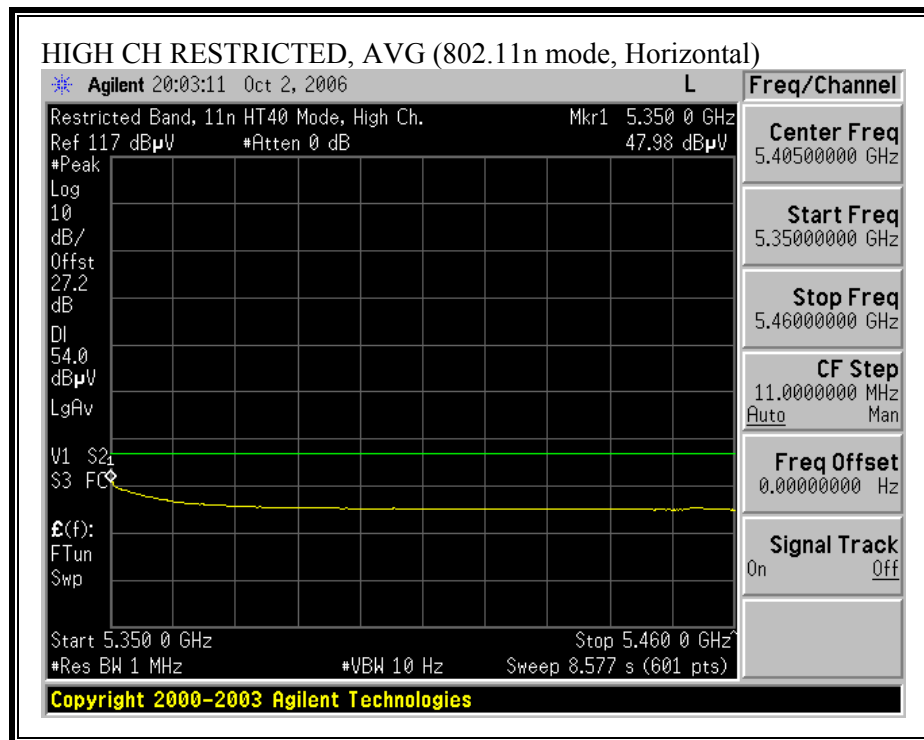
RESTRICTED BANDEDGE (n HT40 MODE, LOW CHANNEL, VERTICAL)



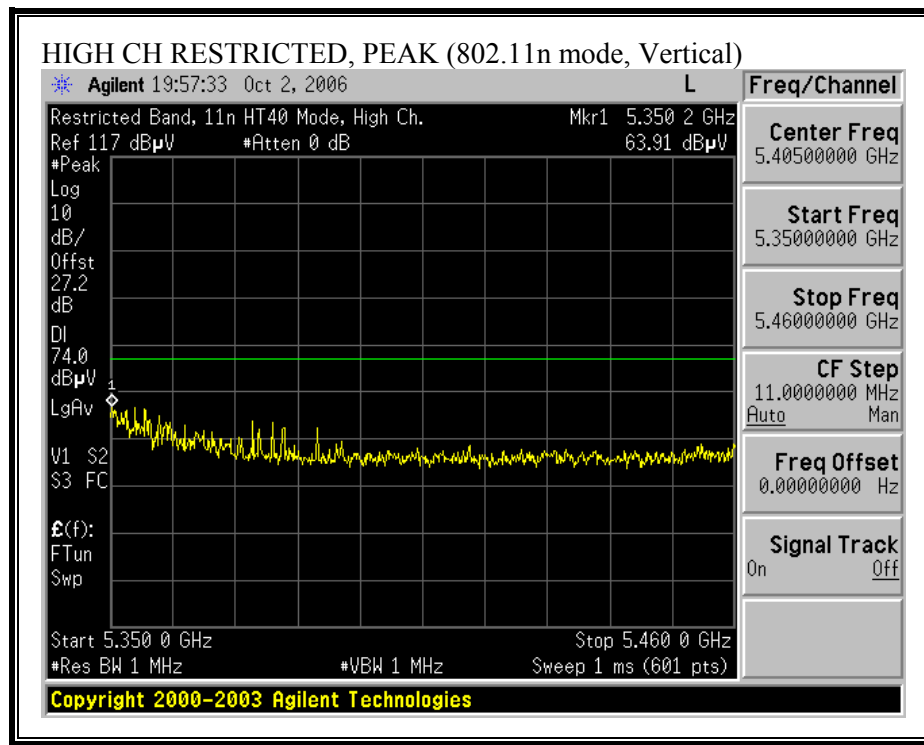


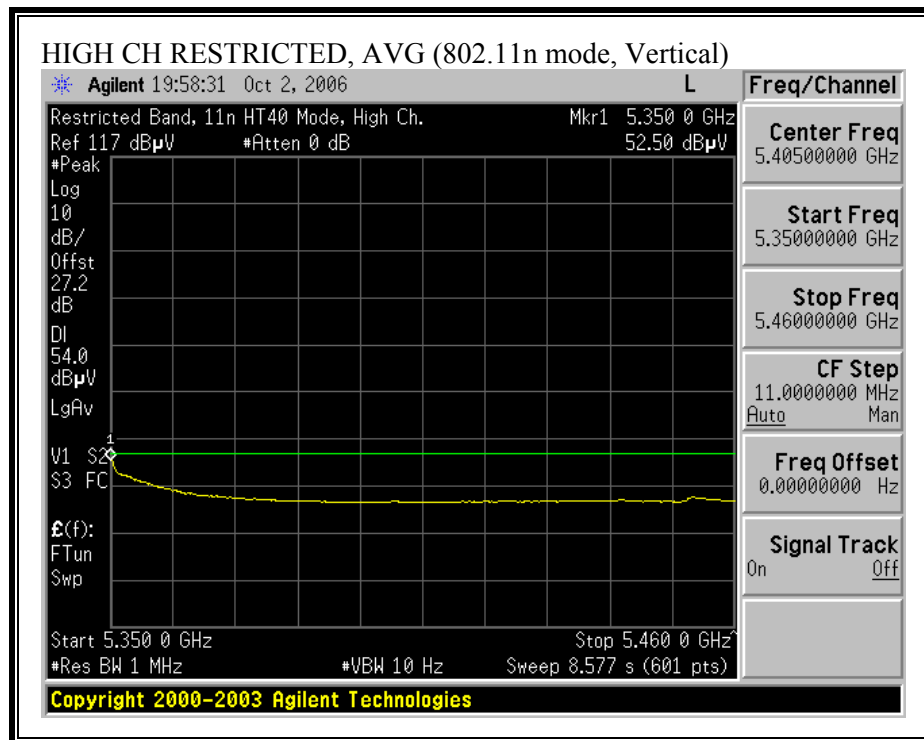
RESTRICTED BANDEDGE (n HT40 MODE, HIGH CHANNEL, HORIZONTAL)





RESTRICTED BANDEDGE (11n HT40 MODE, HIGH CHANNEL, VERTICAL)





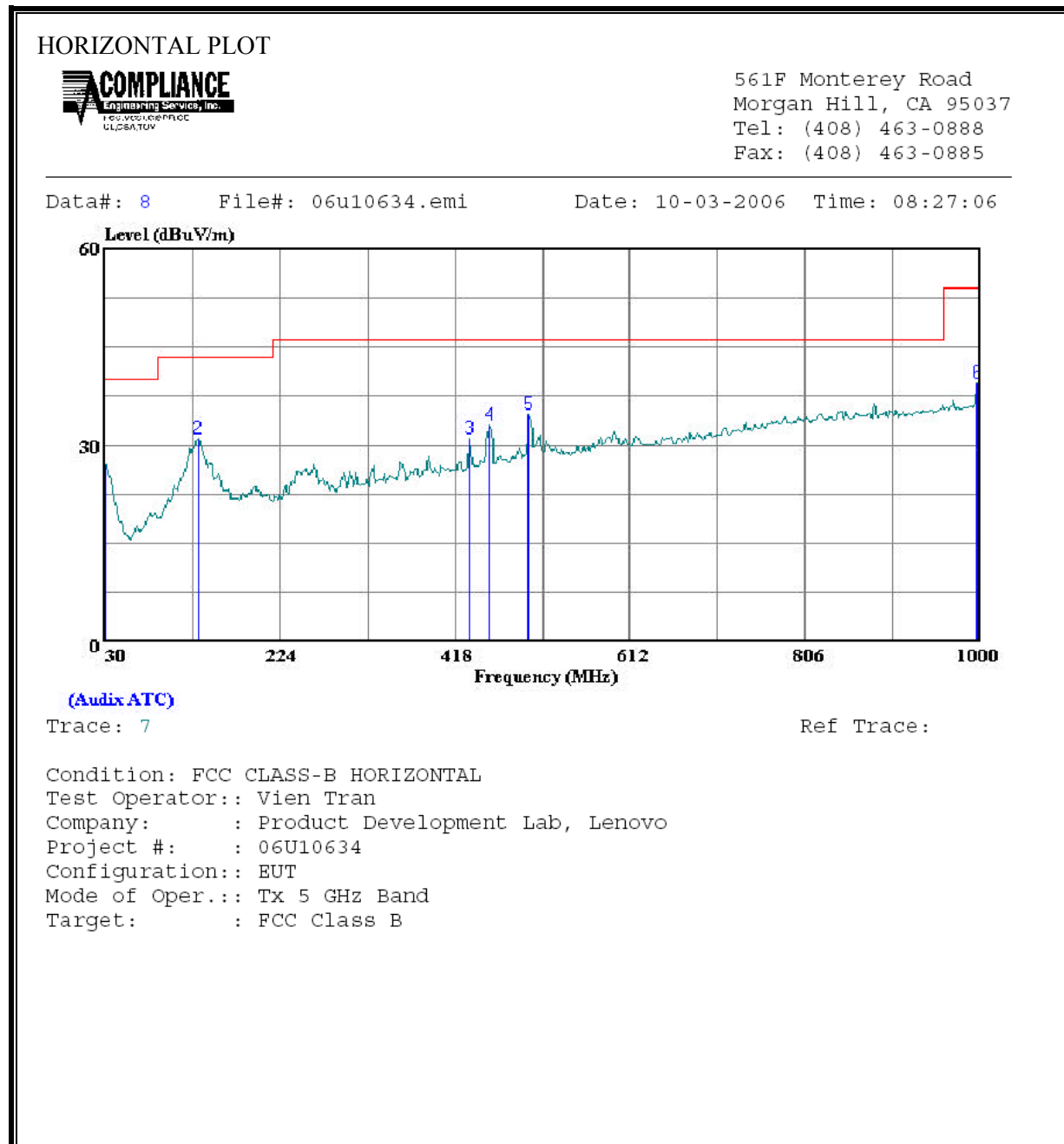
HARMONICS AND SPURIOUS EMISSIONS (11n HT 40 MODE)

High Frequency Measurement																
Compliance Certification Services, Morgan Hill Open Field Site																
Company: Production Development Lab., Lenovo (Japan) Ltd																
Project #: 06U10634																
Date: 10/04/06																
Test Engineer: Chien Ho																
Configuration: EUT only																
Mode: Tx 5.2 GHz 11n HT40																
Test Equipment:																
Horn 1-18GHz		Pre-amplifier 1-26GHz		Pre-amplifier 26-40GHz		Horn > 18GHz		Limit								
T120; S/N: 29310 @3m		T87 Miteq 924342						FCC 15.205								
Hi Frequency Cables																
2 foot cable		3 foot cable		12 foot cable		HPF		Reject Filter		Peak Measurements RBW=VBW=1MHz Average Measurements RBW=1MHz ; VBW=10Hz						
		Vien 187215002		Vien 197209005		HPF_7.6GHz										
f GHz	Dist (m)	Read Pk dBuV	Read Avg dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fln dB	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes (V/H)	
LOW CH 5190 MHz																
15.570	3.0	51.6	38.4	39.0	5.8	-41.3	0.0	0.7	55.8	42.6	74	54	-18.2	-11.4	H	
15.570	3.0	51.0	38.0	39.0	5.8	-41.3	0.0	0.7	55.2	42.2	74	54	-18.8	-11.8	V	
MID CH 5260 MHz																
15.780	3.0	50.5	38.6	39.1	5.8	-41.2	0.0	0.7	55.0	43.1	74	54	-19.0	-10.9	H	
15.780	3.0	50.1	38.0	39.1	5.8	-41.2	0.0	0.7	54.6	42.5	74	54	-19.4	-11.5	V	
HIGH CH 5310 MHz																
10.620	3.0	49.6	37.8	37.5	4.8	-39.4	0.0	0.8	53.2	41.4	74	54	-20.8	-12.6	H	
15.930	3.0	50.3	38.4	39.2	5.9	-41.2	0.0	0.7	55.0	43.1	74	54	-19.0	-10.9	H	
10.620	3.0	48.6	37.1	37.5	4.8	-39.4	0.0	0.8	52.2	40.7	74	54	-21.8	-13.3	V	
15.930	3.0	51.3	38.4	39.2	5.9	-41.2	0.0	0.7	56.0	43.1	74	54	-18.0	-10.9	V	
No other emissions were detected above system noise floor.																
f	Measurement Frequency					Amp	Preamp Gain					Avg Lim	Average Field Strength Limit			
Dist	Distance to Antenna					D Corr	Distance Correct to 3 meters					Pk Lim	Peak Field Strength Limit			
Read	Analyzer Reading					Avg	Average Field Strength @ 3 m					Avg Mar	Margin vs. Average Limit			
AF	Antenna Factor					Peak	Calculated Peak Field Strength					Pk Mar	Margin vs. Peak Limit			
CL	Cable Loss					HPF	High Pass Filter									

7.1.3. WORST-CASE RADIATED EMISSIONS BELOW 1 GHz

SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, VERTICAL)

5 GHz BAND



HORIZONTAL DATA

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	30.000	6.54	20.45	26.99	40.00	-13.01	Peak
2	133.790	15.94	15.02	30.96	43.50	-12.54	Peak
3	434.490	12.12	18.84	30.96	46.00	-15.04	Peak
4	455.830	13.77	19.33	33.10	46.00	-12.90	Peak
5	499.480	14.43	20.22	34.65	46.00	-11.35	Peak
6	997.090	12.60	26.91	39.51	54.00	-14.49	Peak

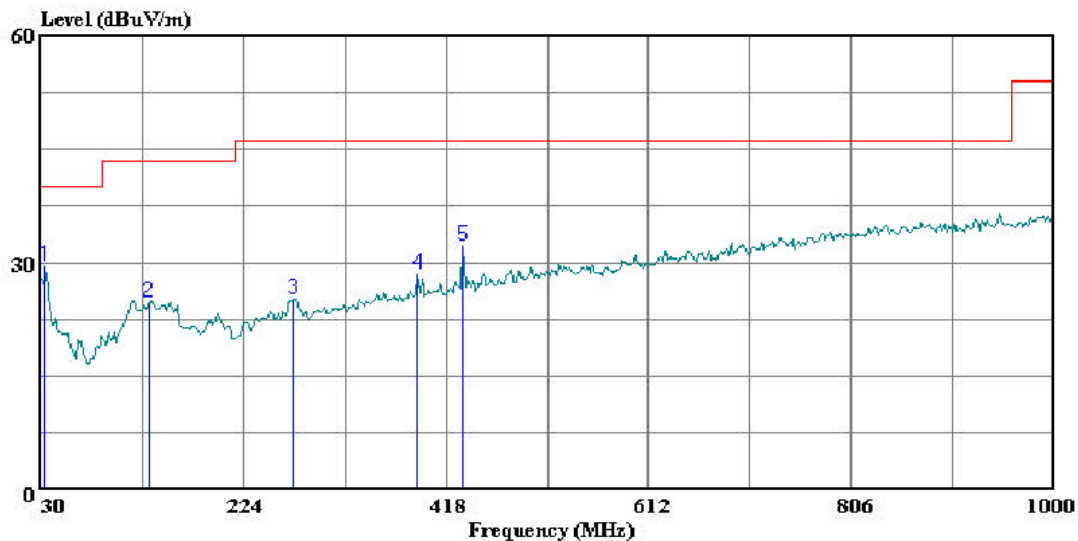
SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, VERTICAL)

VERTICAL PLOT



561F Monterey Road
Morgan Hill, CA 95037
Tel: (408) 463-0888
Fax: (408) 463-0885

Data#: 6 File#: 06U10634.EMI Date: 10-03-2006 Time: 08:12:38



(Audix ATC)

Trace: 5

Ref Trace:

Condition: FCC CLASS-B VERTICAL
Test Operator:: Vien Tran
Company: : Product Development Lab, Lenovo
Project #: : 06U10634
Configuration:: EUT
Mode of Oper.: Tx 5 GHz Band
Target: : FCC Class B

VERTICAL DATA

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	33.880	10.41	19.05	29.46	40.00	-10.54	Peak
2	133.790	9.68	15.02	24.70	43.50	-18.80	Peak
3	271.530	10.45	14.65	25.10	46.00	-20.90	Peak
4	390.840	10.60	17.83	28.43	46.00	-17.57	Peak
5	434.490	13.25	18.84	32.09	46.00	-13.91	Peak

7.2. POWERLINE CONDUCTED EMISSIONS

LIMIT

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

The lower limit applies at the boundary between the frequency ranges.

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 [*]	56 to 46 [*]
0.5-5	56	46
5-30	60	50

^{*} Decreases with the logarithm of the frequency.

TEST PROCEDURE

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.4.

The resolution bandwidth is set to 9 kHz for both peak detection and quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

Line conducted data is recorded for both NEUTRAL and HOT lines.

RESULTS

No non-compliance noted:

6 WORST EMISSIONS

CONDUCTED EMISSIONS DATA (115VAC 60Hz)									
Freq.	Reading			Closs	Limit	FCC_B	Margin		Remark
(MHz)	PK (dBuV)	QP (dBuV)	AV (dBuV)	(dB)	QP	AV	QP (dB)	AV (dB)	L1 / L2
0.19	52.93	--	40.69	0.00	63.91	53.91	-10.98	-13.22	L1
0.26	46.36	--	34.85	0.00	61.46	51.46	-15.10	-16.61	L1
3.76	45.68	--	34.40	0.00	56.00	46.00	-10.32	-11.60	L1
0.19	52.06	--	37.41	0.00	63.91	53.91	-11.85	-16.50	L2
0.26	46.04	--	32.20	0.00	61.46	51.46	-15.42	-19.26	L2
3.24	43.98	--	32.12	0.00	56.00	46.00	-12.02	-13.88	L2
6 Worst Data									

LINE 1 RESULTS

