Product Service

RF - TEST REPORT

Report Number	:	**68.850.10.098.01**	Date of Issue:	26 January 2011

Model	:	**NI3421-A01**
Product Type	:	Tablet PC
Applicant	:	Notion Ink Design Labs Pvt. Ltd.
Address	:	6th Block, D tower, Subramanya Arcade, Bannerghatta Road, Bangalore, Karnataka, India 560029
Production Facility	:	Wanlida Group Co., Ltd.
Address	:	Wanlida Industry Zone, Nanjing, Fujian, China 363601

Test Result	:	■ **Positive** ☐ **Negative**
Total pages including Appendices	:	50

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2 Details about the Test Laboratory

Details about the Test Laboratory

Test site1:

Company name: Jiangsu TÜV Product Service Ltd. – Shenzhen Branch
6th Floor, H Hall,
Century Craftwork Culture Square,
No. 4001, Fuqiang Road,
Futian District 518048,
Shenzhen,P.R.C.

Telephone: 86 755 8828 6998
Fax: 86 755 8828 5299

Test site2:

Company name: Audix Technology (shenzhen) Co.,Ltd
Block Shenzhen, Science & Industry Park,
Nantou, Shenzhen,
Guangdong,
China

Telephone: 86 755 2663 9496
Fax: 86 755 2663 2877

3 Description of the Equipment Under Test

Description of the Equipment Under Test

Product: Tablet PC

Model no.: NI3421-A01

Options and accessories: NIL

Rating: DC 19V, 2.1A
Test with adaptor:
Input: AC 100-240V, 50/60Hz, 1A
Output: DC 19V, 2.1A

RF Transmission Frequency: 2412-24621MHz

Description of the EUT: NIL

Auxiliary Equipment Used during Test:

DESCRIPTION	MANUFACTURER	MODEL NO.(SHIELD)	S/N(LENGTH)
Laptop	Lenovo	X61	L3-L3729 08/03

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4 Summary of Test Standards

Test Standards	
Part 15 Subpart C, Oct. 1, 2009	PART 15 - RADIO FREQUENCY DEVICES Subpart C - Intentional Radiators

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5 Summary of Test Results

Technical Requirements					
FCC Part 15 Subpart C					
Test Condition	Pages	Test Result			Test Location
		Pass	Fail	N/A	
15.207 Conducted Emission AC Power Port	8	☒	☐	☐	Test Site2
15.247 (b) (1) Conducted peak output power	12	☒	☐	☐	Test Site2
15.247(d) Band edge compliance of RF emissions	14	☒	☐	☐	Test Site2
15.247(d) Spurious RF conducted emissions	22	☒	☐	☐	Test Site2
15.247(d) 15.209 Spurious radiated emissions	29	☒	☐	☐	Test Site2
15.247(a)(2) 6dB bandwidth	34	☒	☐	☐	Test Site2
15.247(e) Power spectral density	42	☒	☐	☐	Test Site2

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6 General Remarks

Remarks
This submittal(s) (test report) is intended for FCC ID: Y2GNI3421A01 comply with Section 15.207, 15.209, 15.247 of the FCC Part 15, Subpart C Rules.

SUMMARY:

All tests according to the regulations cited on page 5 were

■ - Performed

☐ - **Not** Performed

The Equipment Under Test

■ - **Fulfills** the general approval requirements.

☐ - **Does not** fulfill the general approval requirements.

Sample Received Date: 5 December 2010

Testing Start Date: 6 December 2010

Testing End Date: 29 December 2010

- Jiangsu TÜV Product Service Ltd. – Shenzhen Branch -

Tested By	**2011-01-26**	**Sunny Lu**	
Test Lab Engineer	**Date**	**Name**	**Signature**
Prepared By	**2011-01-26**	**Ken Li**	
Project Engineer	**Date**	**Name**	**Signature**
Reviewed By	**2011-01-26**	**Paul Yu**	
Assistant EMC Manager	**Date**	**Name**	**Signature**

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7 Technical Requirement

7.1 Conducted Emission

Test Method

1 The EUT was placed on a table, which is 0.8m above ground plane
2 The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.).
3 Maximum procedure was performed to ensure EUT compliance
4 A EMI test receiver is used to test the emissions from both sides of AC line

Limit

Frequency MHz	QP Limit dBµV	AV Limit dBµV
0.150-0.500	66-56*	56-46*
0.500-5	56	46
5-30	60	50

Decreasing linearly with logarithm of the frequency

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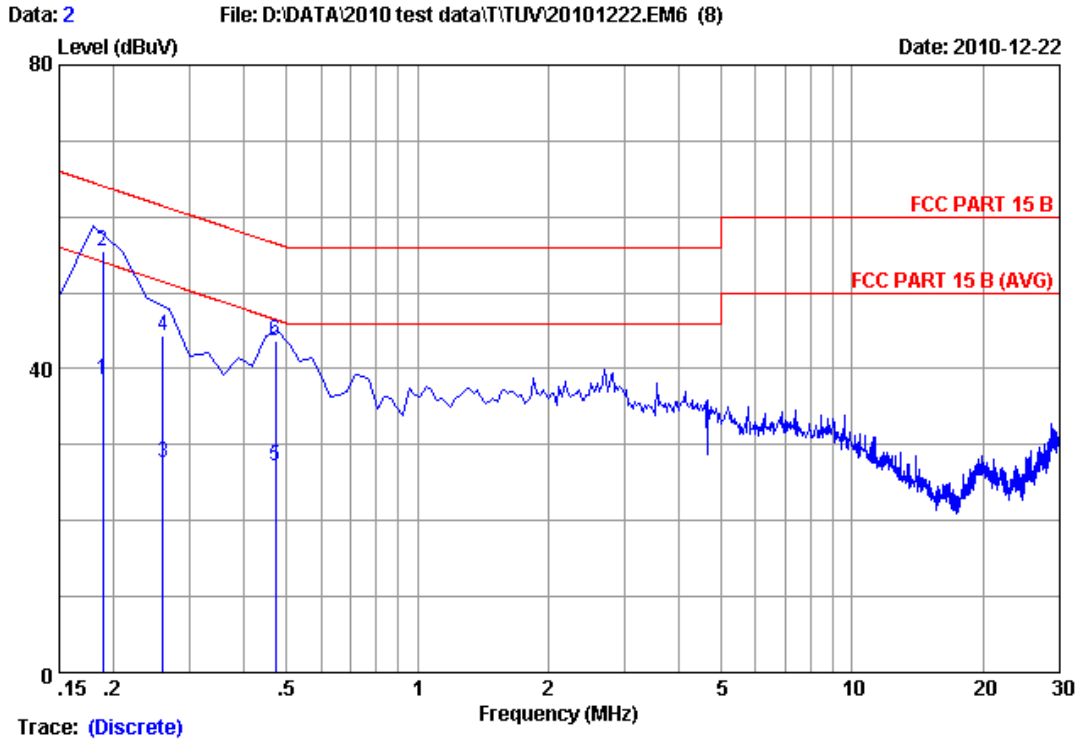
Conducted Emission



Trace: (Discrete)

Site no :1#conduction Data No :2
Dis./Ant. :** 2011 ESH2-Z5 LINE
Limit :FCC PART 15 B
Env./Ins. :29.5*C/55% Engineer :Restar
EUT :NI3421-A01
Power Rating :DC 19V Adapter Input 120V/60Hz
Test Mode :WIFI

No	Freq (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.18900	0.17	9.88	28.60	38.65	54.08	15.43	Average
2	0.18900	0.17	9.88	45.50	55.55	64.08	8.53	QP
3	0.26000	0.17	9.88	17.50	27.55	51.43	23.88	Average
4	0.26000	0.17	9.88	34.30	44.35	61.43	17.08	QP
5	0.47200	0.19	9.88	17.20	27.27	46.48	19.21	Average
6	0.47200	0.19	9.88	33.50	43.57	56.48	12.91	QP

Remarks: 1.Emission Level=LISN Factor+Cable Loss(Include 10dB pulse limit)
+Reading.
2.If the average limit is met when useing a quasi-peak detector.
the EUT shall be deemed to meet both limits and measurement
with average detector is unnecessary.

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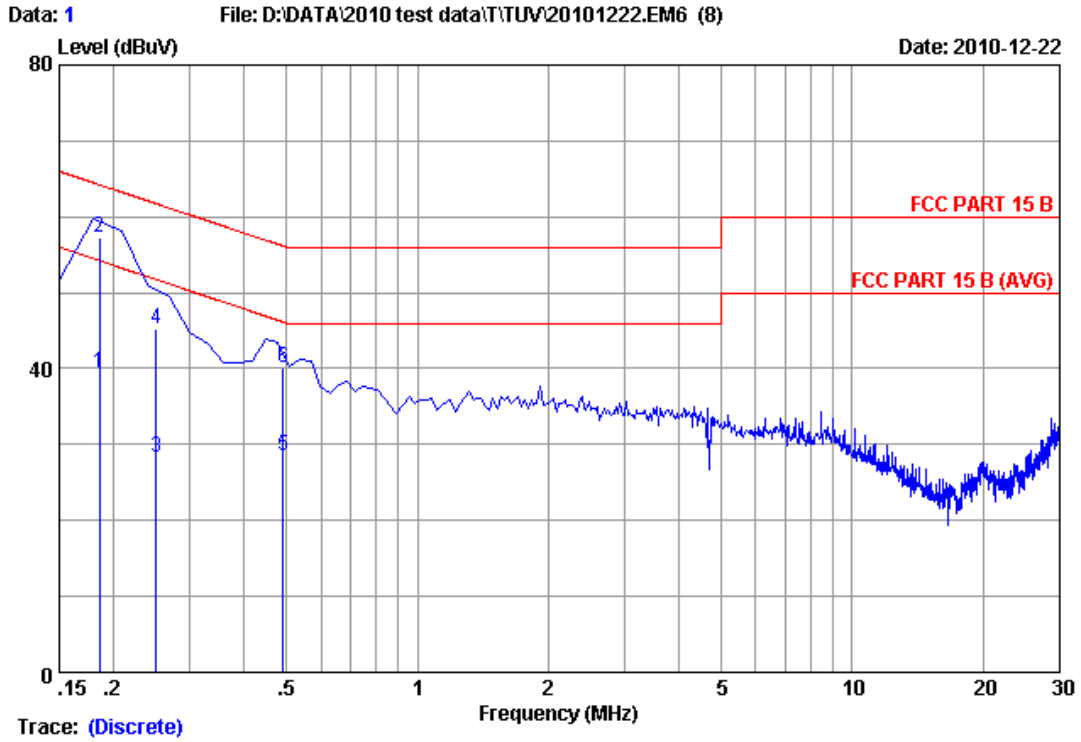
Conducted Emission



Trace: (Discrete)

Site no : 1#conduction
Data No : 1
Dis./Ant. : ** 2011 ESH2-Z5 NEUTRAL
Limit : FCC PART 15 B
Env./Ins. : 29.5*C/55%
Engineer : Restar
EUT : NI3421-A01
Power Rating : DC 19V Adapter Input 120V/60Hz
Test Mode : WIFI

No	Freq (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.18600	0.21	9.88	29.40	39.49	54.21	14.72	Average
2	0.18600	0.21	9.88	47.10	57.19	64.21	7.02	QP
3	0.25100	0.21	9.88	18.10	28.19	51.72	23.53	Average
4	0.25100	0.21	9.88	35.20	45.29	61.72	16.43	QP
5	0.49000	0.22	9.88	18.40	28.50	46.17	17.67	Average
6	0.49000	0.22	9.88	30.10	40.20	56.17	15.97	QP

Remarks: 1.Emission Level=LISN Factor+Cable Loss(Include 10dB pulse limit) +Reading.
2.If the average limit is met when useing a quasi-peak detector. the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

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Test Equipment List

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DUE DATE
Test Receiver	Rohde & Schwarz	ESHS10	838693/001	Dec.18, 10
L.I.S.N.#1	Rohde & Schwarz	ESH2-Z5	834066/011	Mar.30, 11
L.I.S.N.#3	Kyoritsu	KNW-242C	8-1920-1	May.08, 11
Terminator	Hubersuhner	50Ω	No. 1	May.08, 11
Terminator	Hubersuhner	50Ω	No. 2	May.08, 11
RF Cable	Fujikura	3D-2W	LISN Cable 1#	May.08, 11
Coaxial Switch	Anritsu	MP59B	M55367	May.08, 11
Passive Probe	Rohde & Schwarz	ESH2-Z3	299.7810.52	May.08, 11
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100341	May.08, 11

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7.2 Conducted peak output power

Test Method
The transmitter output is connected to the Spectrum analyzer. The Spectrum analyzer is set to the peak power detection.

Limits for conducted peak output power measurements

Frequency Range MHz	Limit W	Limit dBm
2400-2483	≤1	≤30

Conducted peak output power

WIFI Mode IEEE 802.11b modulation (1Mbps) Test Result

Frequency MHz	Conducted Peak Output Power dBm	Result
CH1 2412MHz	21.55	Pass
CH6 2437MHz	21.88	Pass
CH11 2462MHz	22.87	Pass

WIFI Mode IEEE 802.11g modulation (6Mbps) Test Result

Frequency MHz	Conducted Peak Output Power dBm	Result
CH1 2412MHz	20.41	Pass
CH6 2437MHz	20.94	Pass
CH11 2462MHz	21.04	Pass

WIFI Mode IEEE 802.11n HT20 modulation (6.5Mbps) Test Result

Frequency MHz	Conducted Peak Output Power dBm	Result
CH1 2412MHz	20.10	Pass
CH6 2437MHz	20.85	Pass
CH11 2462MHz	20.89	Pass

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Test Equipment

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL DUE DATE
Spectrum Analyzer	Agilent	E4446A	US44300459	May 08, 2011

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7.3 Band edge compliance of RF emissions

Test Method

The band edge compliance of RF radiated emission should be measured by following the guidance in ANSI C63.4 with respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization etc. Set RBW and VBW to 1MHz to measure the peak field strength and set RBW to 1MHz and VBW to 10Hz to measure the average radiated field strength.
The conducted RF band edge was measured by using a spectrum analyzer. Set span wide enough to capture the highest in-band emission and the emission at the band edge. Set RBW and VBW to 100kHz, to measure the conducted peak band edge.

Limits

According to §15.247(d), in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in 15.209(a) (see Section 15.205(c)).

Frequency MHz	Limit Average dBuV/m	Limit Peak dBuV/m
Below 2390 Above 2483.5	54	74

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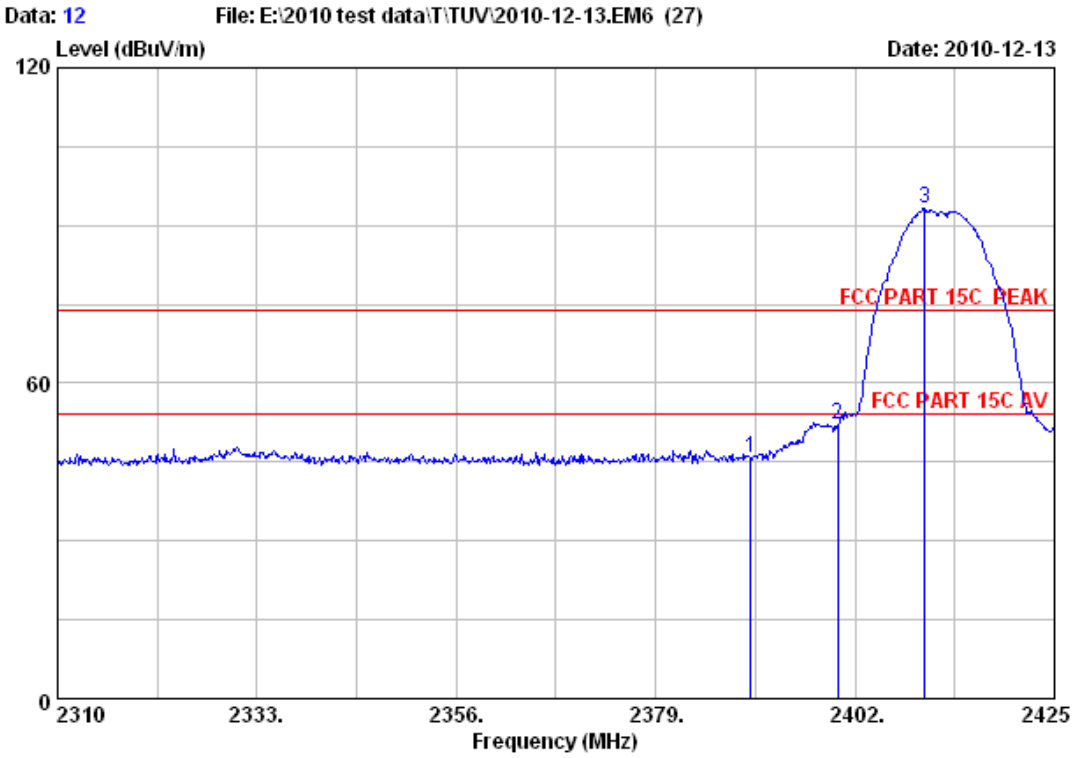
Band edge compliance of RF emissions

WIFI Mode IEEE 802.11b modulation (1 Mbps) Test Result

Lower Edge PK plot:



Site no. : RF Chamber Data no. : 12
Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23*C/54% Engineer : Sunny-lu
EUT : NI3421-A01
Power : DC 19V From Adapter input AC 120V/60Hz
Test mode : 11b CH1 Tx
M/N :

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2390.000	29.44	7.39	36.62	45.49	45.70	74.00	28.30	Peak
2	2400.000	29.44	7.43	36.62	51.79	52.04	74.00	21.96	Peak
3	2410.050	29.45	7.43	36.62	93.12	93.38	74.00	-19.38	Peak

Remarks:
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

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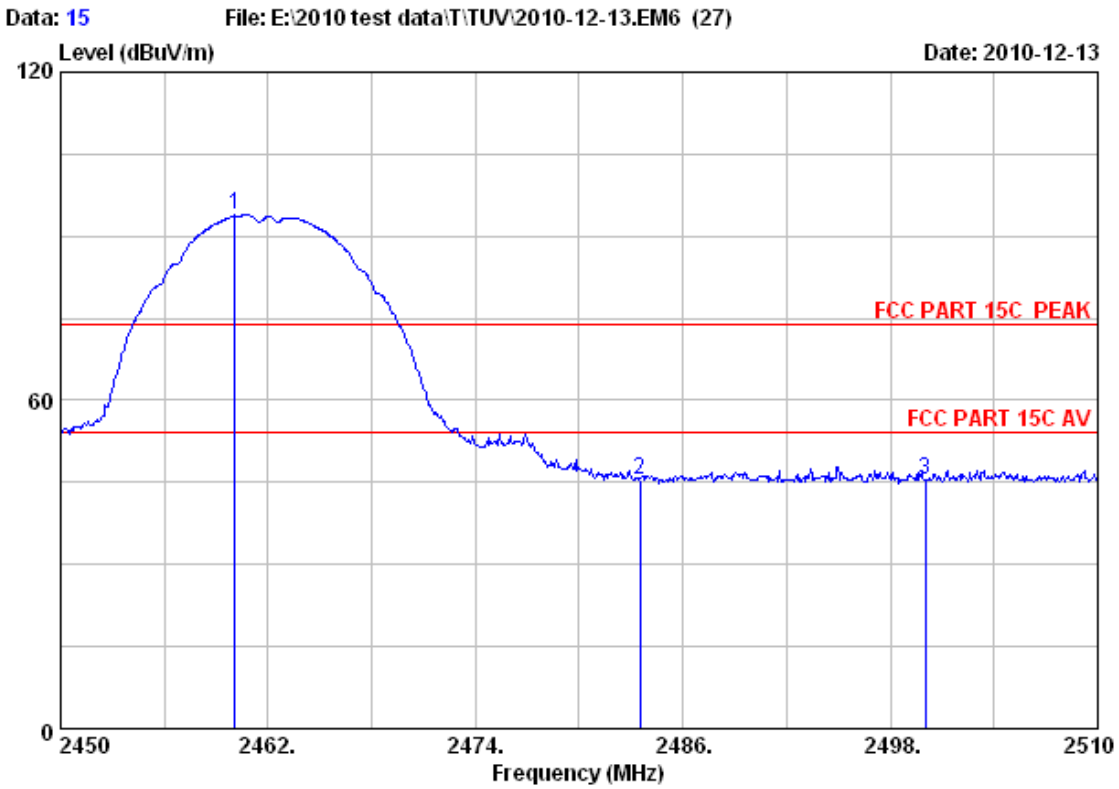
Upper Edge PK plot:



Site no. : RF Chamber Data no. : 15
Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23*C/54% Engineer : Sunny-lu
EUT : NI3421-A01
Power : DC 19V From Adapter input AC 120V/60Hz
Test mode : 11b CH11 Tx
M/N :

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2460.080	29.48	7.54	36.61	93.44	93.85	74.00	-19.85	Peak
2	2483.500	29.49	7.58	36.60	45.14	45.61	74.00	28.39	Peak
3	2500.000	29.50	7.62	36.60	45.10	45.62	74.00	28.38	Peak

Remarks:
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

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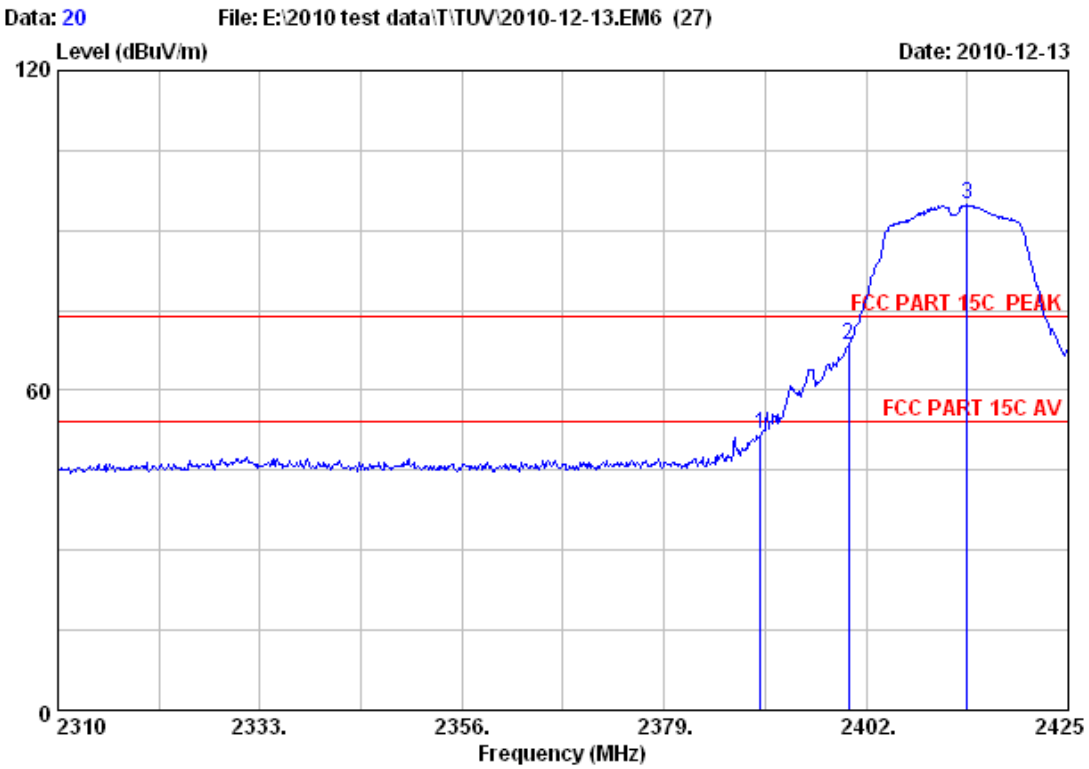
Band edge compliance of RF emissions

WIFI Mode IEEE 802.11g modulation (6 Mbps) Test Result

Lower Edge PK Plot:




```
Site no.      : RF Chamber                Data no. :  20
Dis. / Ant.   : 3m   3115(0911)           Ant. pol. : HORIZONTAL
Limit         : FCC PART 15C  PEAK
Env. / Ins.   : 23*C/54%                  Engineer  : Sunny-lu
EUT           : NI3421-A01
Power         : DC 19V From Adapter input AC 120V/60Hz
Test mode     : 11g  CH1  Tx
M/N           :
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2390.000	29.44	7.39	36.62	51.47	51.68	74.00	22.32	Peak
2	2400.000	29.44	7.43	36.62	68.13	68.38	74.00	5.62	Peak
3	2413.500	29.45	7.43	36.62	94.55	94.81	74.00	-20.81	Peak

Remarks:
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

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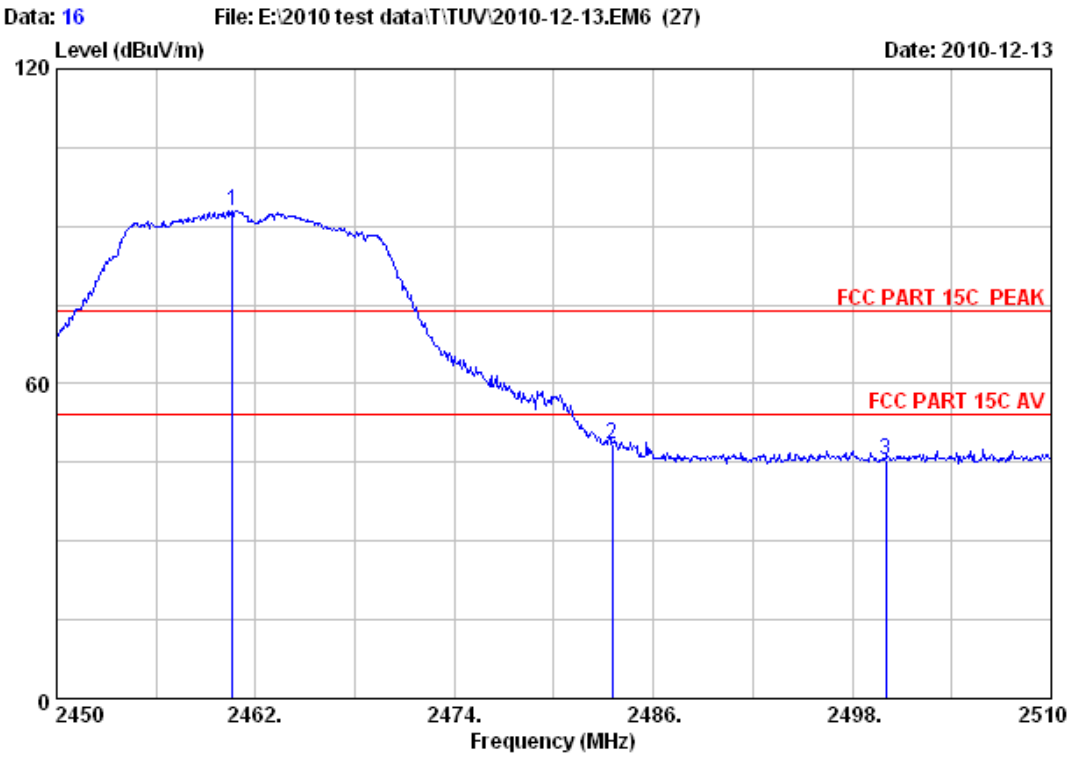
Upper Edge PK Plot:




```
Site no.      : RF Chamber                Data no. :  16
Dis. / Ant.   : 3m   3115(0911)           Ant. pol. : HORIZONTAL
Limit         : FCC PART 15C  PEAK
Env. / Ins.   : 23*C/54%                  Engineer  : Sunny-lu
EUT           : NI3421-A01
Power         : DC 19V From Adapter input AC 120V/60Hz
Test mode     : 11g  CH11  Tx
M/N           :
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2460.620	29.48	7.54	36.61	92.54	92.95	74.00	-18.95	Peak
2	2483.500	29.49	7.58	36.60	47.91	48.38	74.00	25.62	Peak
3	2500.000	29.50	7.62	36.60	44.81	45.33	74.00	28.67	Peak

Remarks:
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

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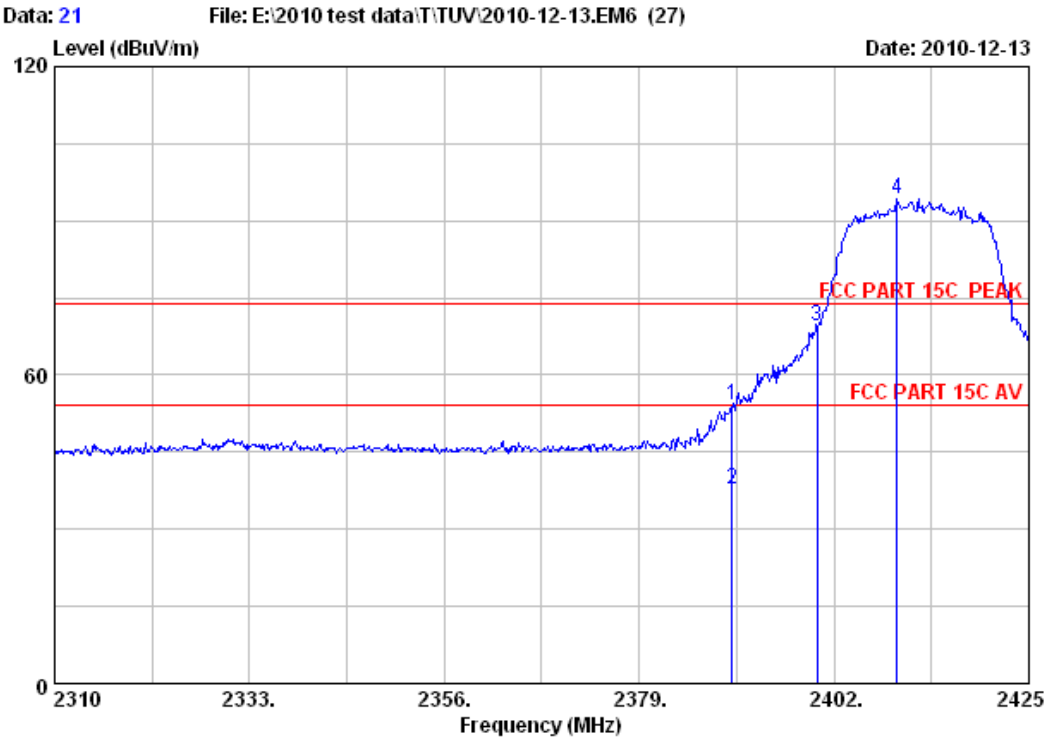
Band edge compliance of RF emissions

WIFI Mode IEEE 802.11n HT20 modulation (6.5Mbps) Test Result

Lower Edge PK Plot:




```
Site no.      : RF Chamber                Data no. :  21
Dis. / Ant.   : 3m   3115(0911)           Ant. pol. : HORIZONTAL
Limit         : FCC PART 15C  PEAK
Env. / Ins.   : 23*C/54%                  Engineer  : Sunny-lu
EUT           : NI3421-A01
Power         : DC 19V From Adapter input AC 120V/60Hz
Test mode     : 11nHT20  CH1  Tx
M/N           :
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2390.000	29.44	7.39	36.62	53.96	54.17	74.00	19.83	Peak
2	2390.000	29.44	7.39	36.62	37.48	37.69	54.00	16.31	Average
3	2400.000	29.44	7.43	36.62	69.39	69.64	74.00	4.36	Peak
4	2409.475	29.45	7.43	36.62	94.13	94.39	74.00	-20.39	Peak

Remarks:
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

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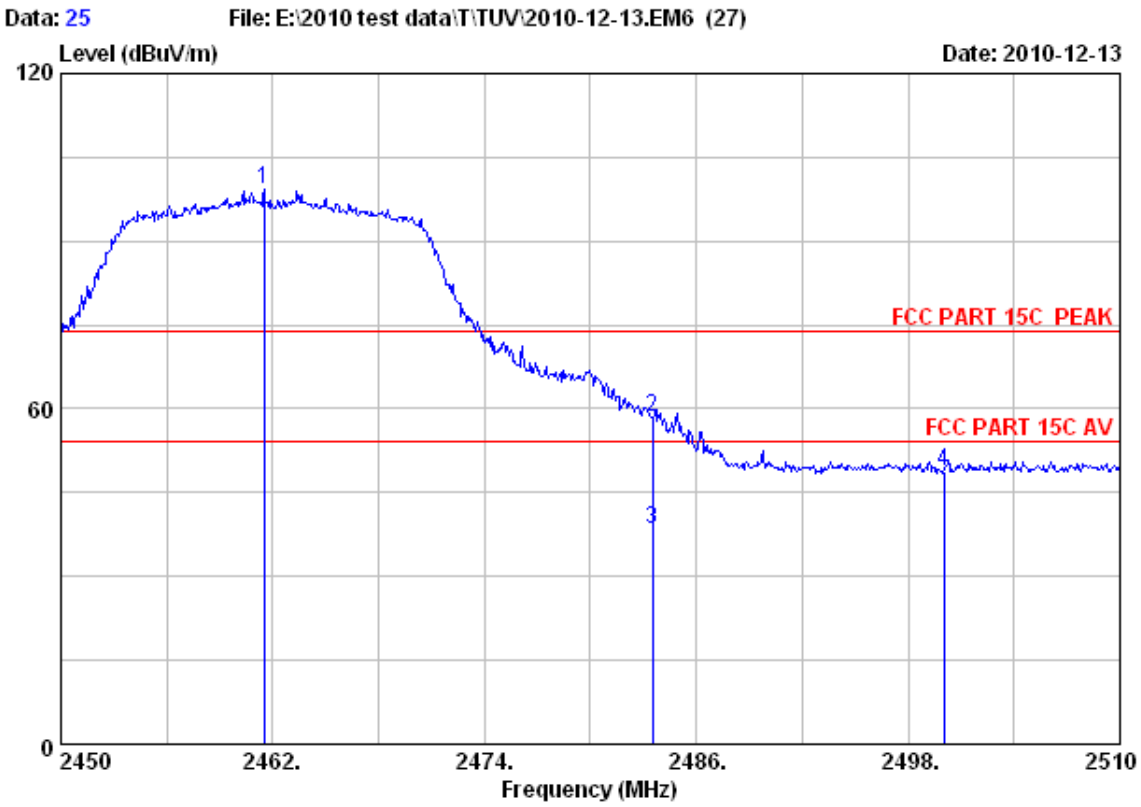
Upper Edge PK Plot:



Site no. : RF Chamber Data no. : 25
Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23*C/54% Engineer : Sunny-lu
EUT : NI3421-A01
Power : DC 19V From Adapter input AC 120V/60Hz
Test mode : 11nHT20 CH11 Tx
M/N :

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2461.520	29.48	7.54	36.61	99.03	99.44	74.00	-25.44	Peak
2	2483.500	29.49	7.58	36.60	57.90	58.37	74.00	15.63	Peak
3	2483.500	29.49	7.58	36.60	37.81	38.28	54.00	15.72	Average
4	2500.000	29.50	7.62	36.60	48.42	48.94	74.00	25.06	Peak

Remarks:
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

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Test Equipment List

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL DUE DATE
Spectrum	Agilent	E4446A	US44300459	May 08, 2011
Amp	HP	8449B	3008A02495	May 08, 2011
Antenna	EMCO	3115	9607-4877	May 17, 2011
Bilog Antenna	Schaffner	CBL6111C	2598	Dec.14, 2010
HF Cable	Hubersuhne	Sucoflex104	---	May 08, 2011

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7.4 Spurious RF conducted emissions

Test Method

The transmitter output is connected to the Spectrum analyzer. The Spectrum analyzer is set to the peak power detection.
Conducted RF measurements of the transmitter output were made to confirm that the EUT antenna port conducted emissions meet the specified limit and to identify any spurious signals that require further investigation or measurements on the radiated emissions site.

The resolution bandwidth(RBW) and the video bandwidth (VBW) of the spectrum analyzer were respectively set to 100kHz and 100kHz.

Limit

Frequency Range MHz	Limit (dBc)
1000-25000	-20

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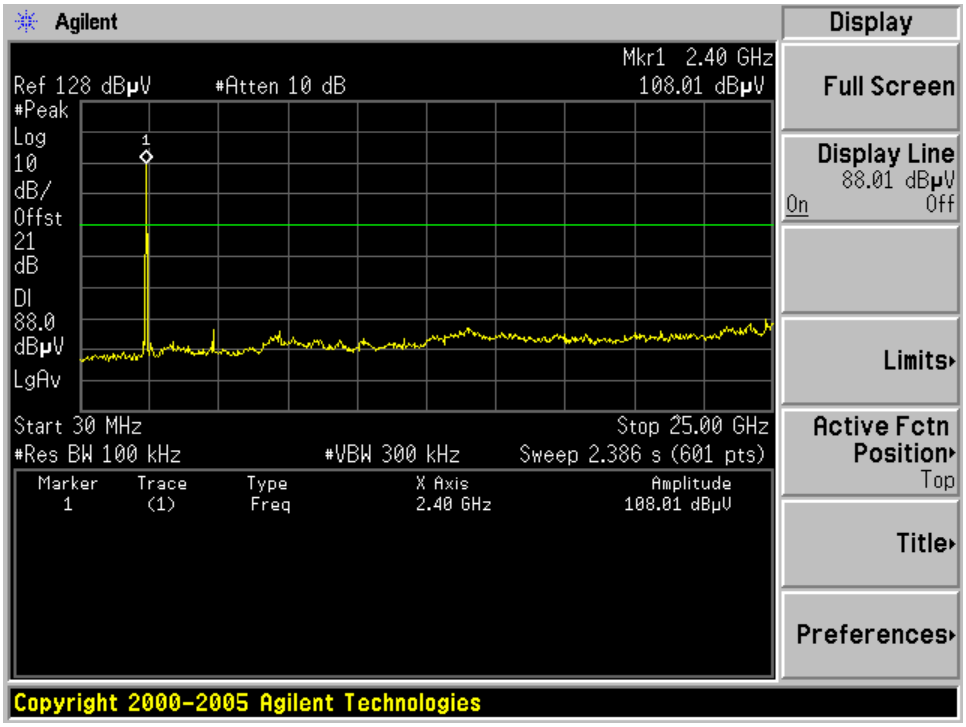
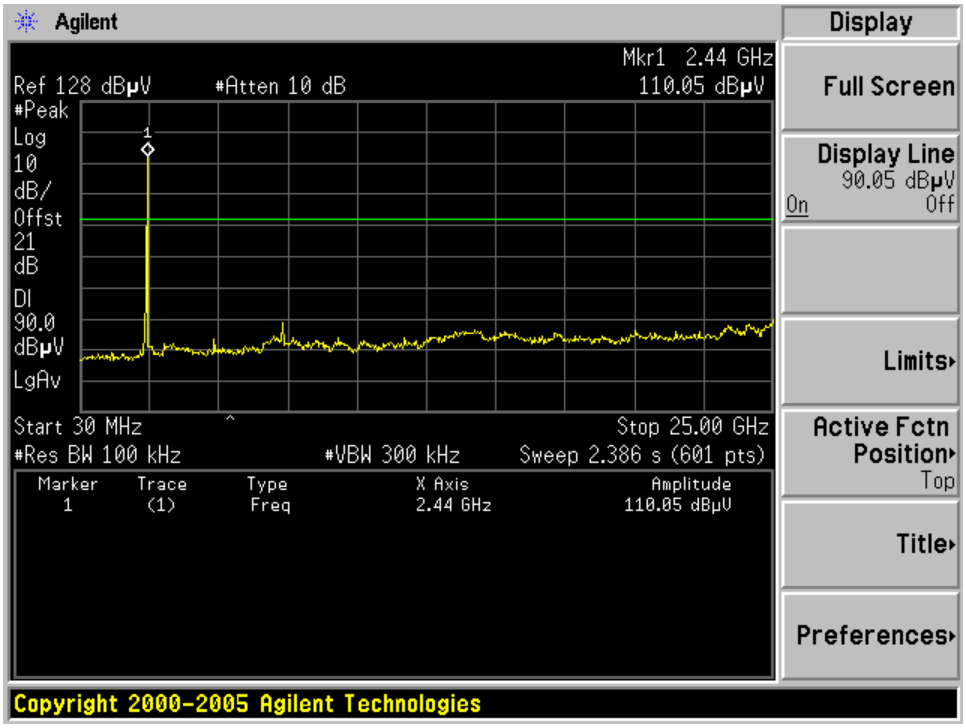
Spurious RF conducted emissions

WIFI Mode IEEE 802.11b modulation (1 Mbps) Test Result

2412MHz



2437MHz



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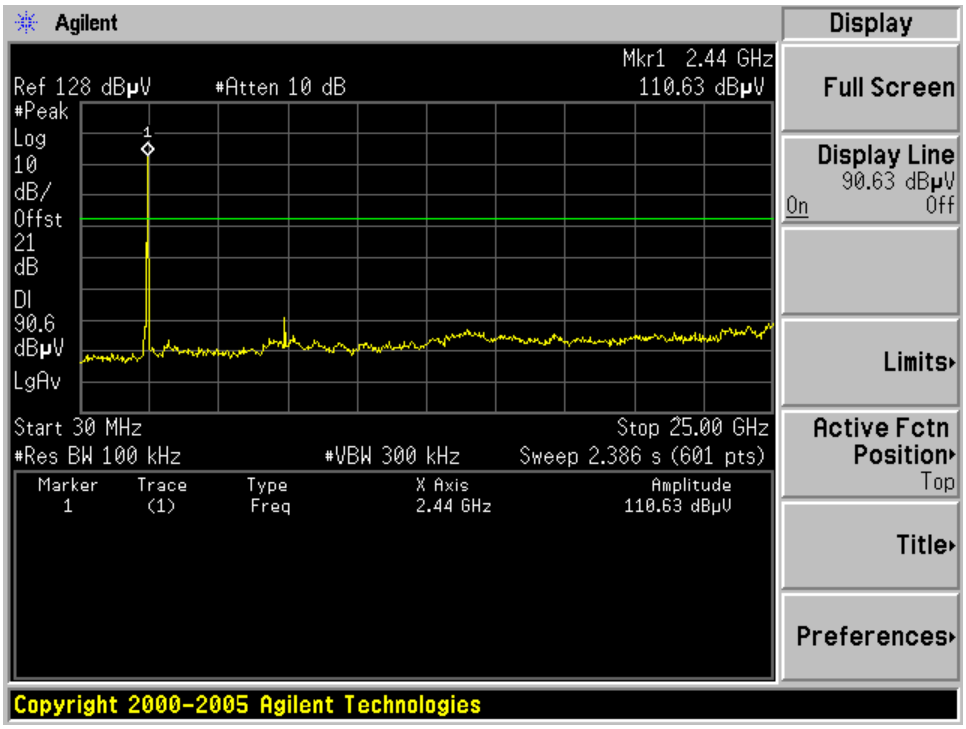
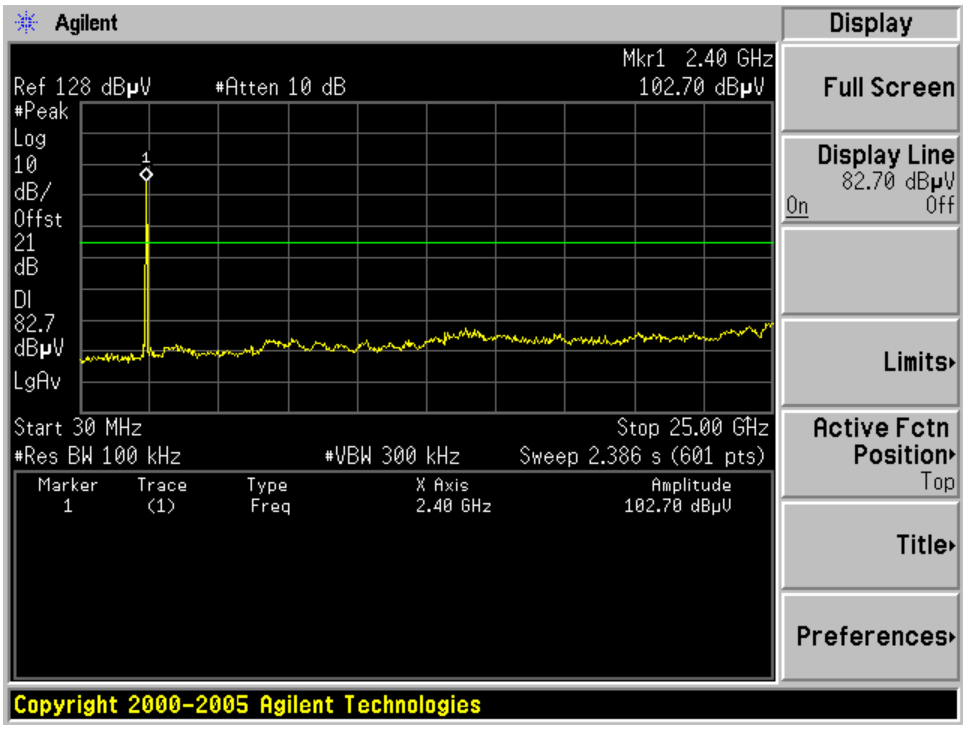
Spurious RF conducted emissions

2462MHz



WIFI Mode IEEE 802.11g modulation (6 Mbps) Test Result

2412MHz



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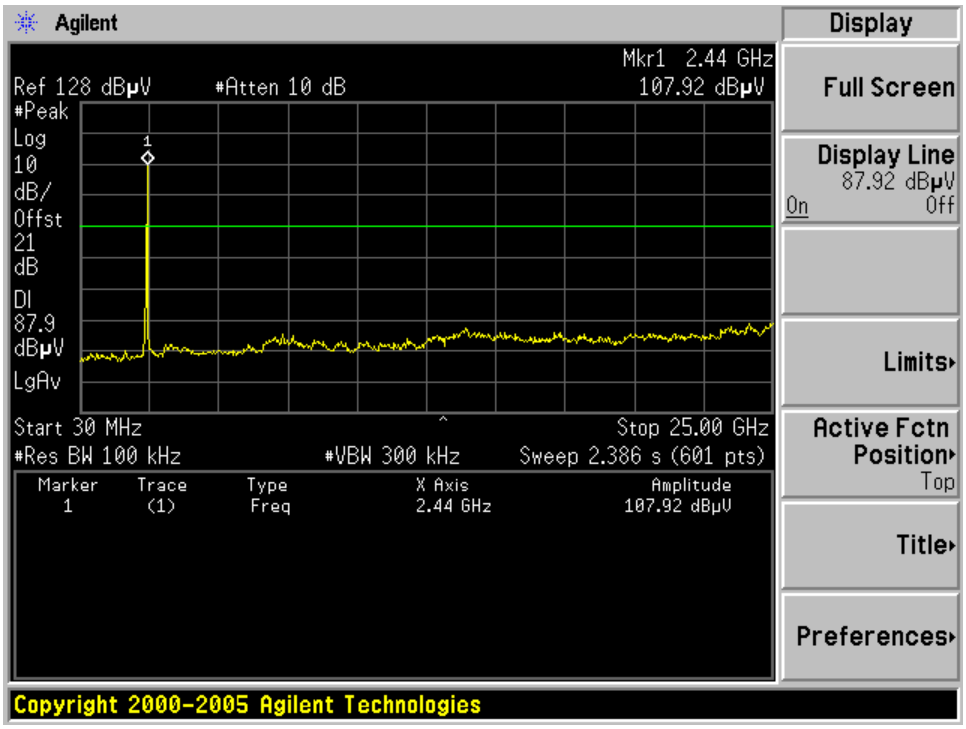
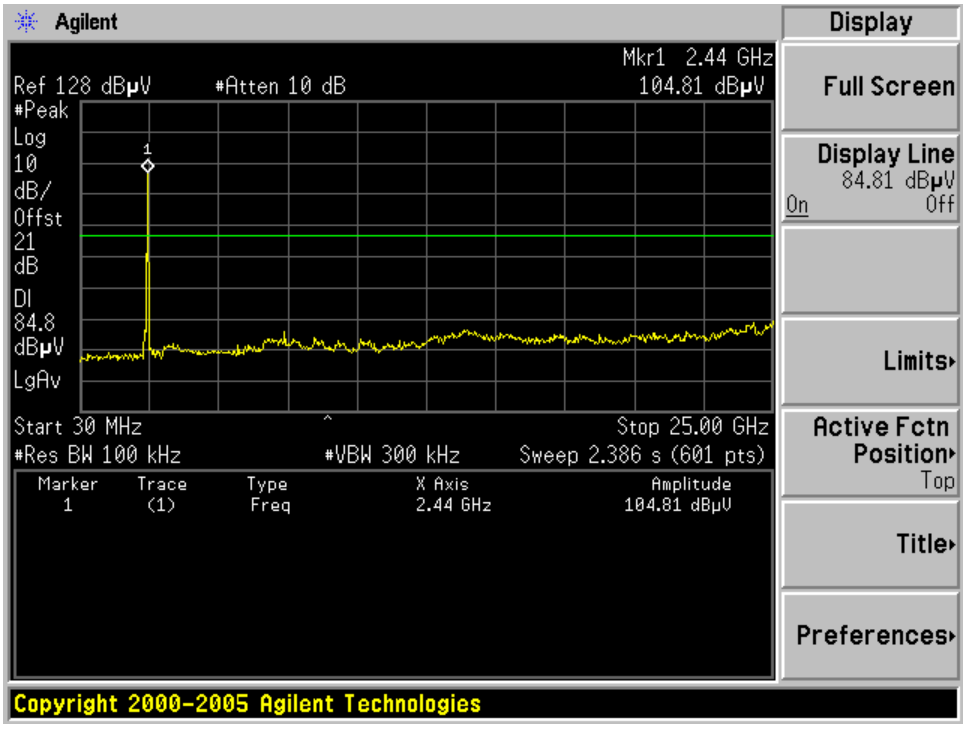
Spurious RF conducted emissions

2437MHz



2462MHz



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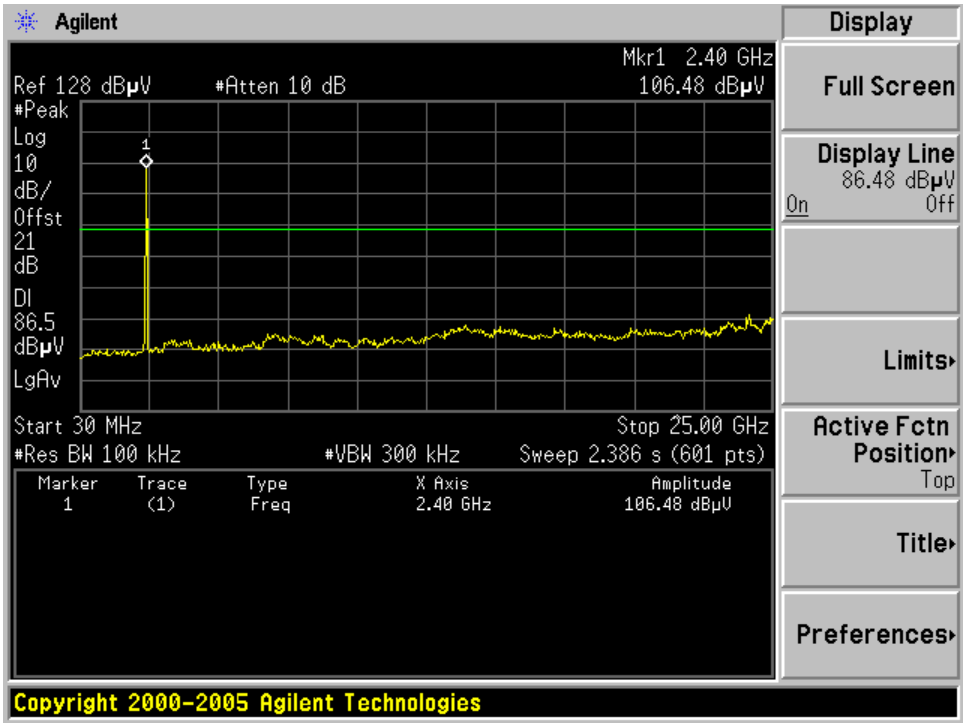
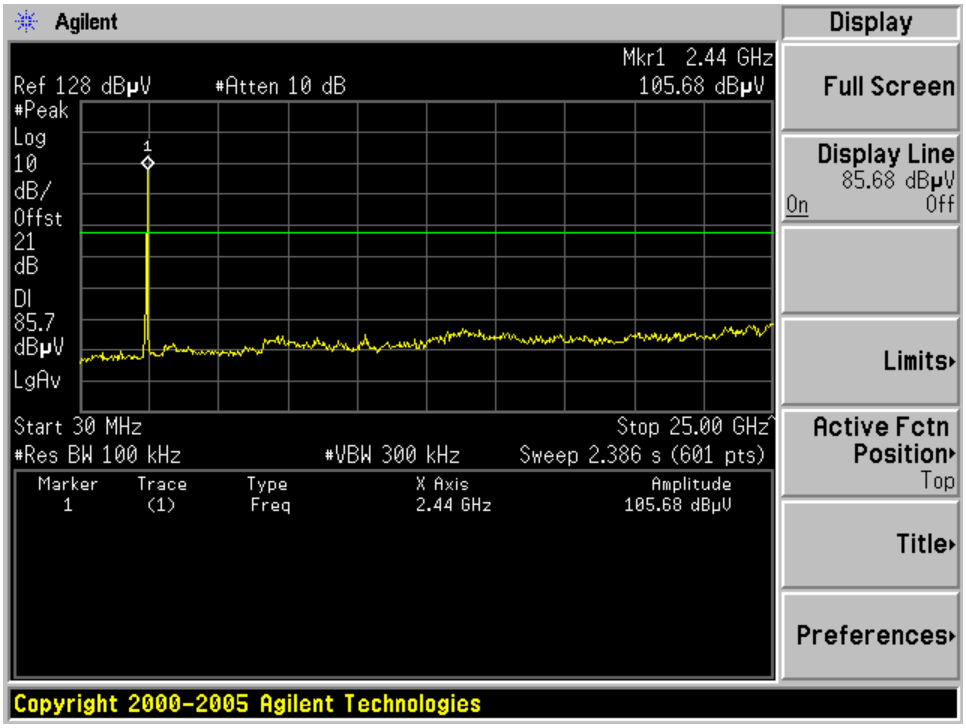
Spurious RF conducted emissions

WIFI Mode IEEE 802.11n HT20 modulation (6.5 Mbps) Test Result

2412MHz



2437MHz



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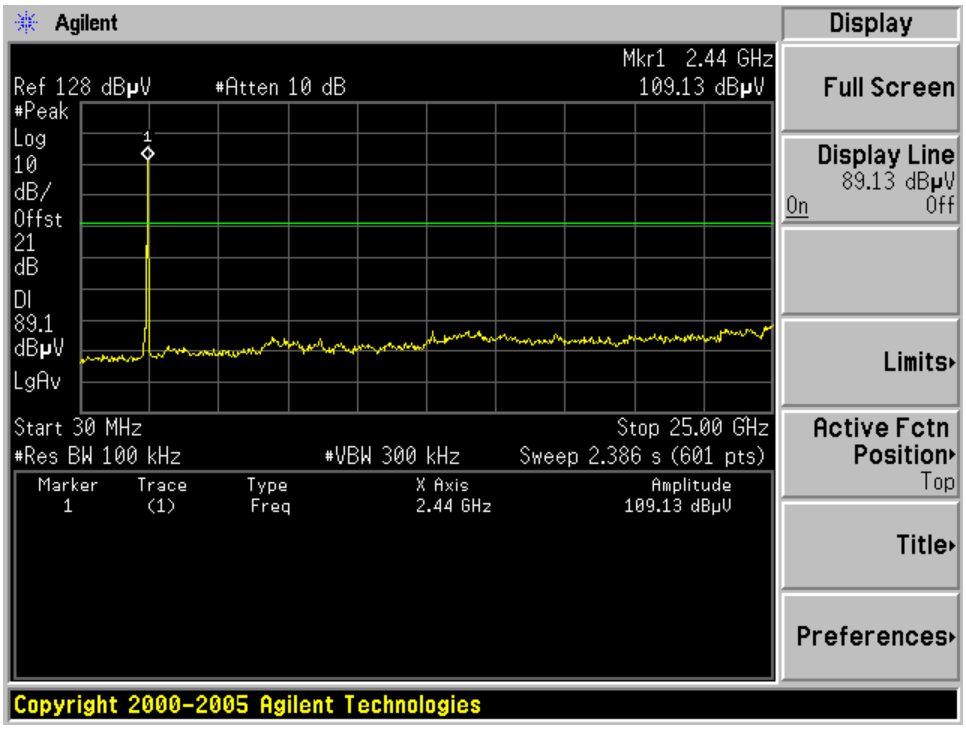
Spurious RF conducted emissions

2462MHz



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Test Equipment List

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL.DUE.DATE
Spectrum Analyzer	Agilent	E4446A	US44300459	May 08, 2011

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7.5 Spurious radiated emissions

Test Method

1 The EUT is placed on a turntable, which is 0.8m above ground plane.
2 The turntable shall be rotated for 360 degrees to determine the position of maximum emission level
3 EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
4 Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5 Each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.

Limit

Frequency MHz	Field Strength uV/m	Field Strength dBµV/m	Detector
30-88	100	40	QP
88-216	150	43.5	QP
216-960	200	46	QP
960-1000	500	54	QP
Above 1000	500	54	AV
Above 1000	5000	74	PK

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Radiated Emission

WIFI Mode IEEE 802.11b modulation (1 Mbps) CH1 2412MHz Test Result

Frequency	Antenna Factor	Cable Loss	Amp. Factor	Reading	Emission Level	Polarization	Limit	Detector	Result
MHz	dB/m	dB	dB	dBuV	dBuV/m		dBµV/m		
371.250	9.88	1.14	0	24.78	36.07	Horizontal	43.50	QP	Pass
519.750	17.90	3.66	0	19.30	40.86	Horizontal	46.00	QP	Pass
594.540	19.05	4.09	27.16	16.09	39.23	Horizontal	46.00	QP	Pass
4824.000	34.32	10.64	35.08	43.80	53.68	Horizontal	74	PK	Pass
4824.000	34.32	10.64	35.08	37.09	46.97	Horizontal	54	AV	Pass
7236.000	-	-		-	-	-	-	-	-
7236.000	-	-		-	-	-	-	-	-

WIFI Mode IEEE 802.11b modulation (1 Mbps) CH6 2437MHz Test Result

Frequency	Antenna Factor	Cable Loss	Amp. Factor	Reading	Emission Level	Polarization	Limit	Detector	Result
MHz	dB/m	dB	dB	dBuV	dBuV/m		dBµV/m		
4874.000	34.41	10.69	35.03	44.38	54.45	Horizontal	74	PK	Pass
4874.000	34.41	10.69	35.03	33.88	43.95	Horizontal	54	AV	Pass
7311.000	-	-		-	-	-	-	-	-
7311.000	-	-		-	-	-	-	-	-

WIFI Mode IEEE 802.11b modulation (1 Mbps) CH11 2462MHz Test Result

Frequency	Antenna Factor	Cable Loss	Amp. Factor	Reading	Emission Level	Polarization	Limit	Detector	Result
MHz	dB/m	dB	dB	dBuV	dBuV/m		dBµV/m		
4924.000	34.49	10.76	34.98	45.38	55.65	Horizontal	74	PK	Pass
4924.000	34.49	10.76	34.98	30.24	40.51	Horizontal	54	AV	Pass
7386.000	-	-		-	-	-	-	-	-
7386.000	-	-		-	-	-	-	-	-

Remark:

(1) Emission Level= Antenna Factor +Cable Loss - Amp. factor + Reading

(2) Data of measurement within this frequency range shown “-” in the table above means the reading of emissions are attenuated more than 20db below the permissible limits or the field strength is too small to be measured.

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Radiated Emission

WIFI Mode IEEE 802.11g modulation (6 Mbps) CH1 2412MHz Test Result

Frequency	Antenna Factor	Cable Loss	Amp. Factor	Reading	Emission Level	Polarization	Limit	Detector	Result
MHz	dB/m	dB	dB	dBuV	dBuV/m		dBµV/m		
371.440	15.52	2.79	0	49.00	38.60	Horizontal	43.50	QP	Pass
519.850	17.90	3.66	0	47.22	39.98	Horizontal	46.00	QP	Pass
4824.000	34.32	10.64	35.08	44.69	54.57	Horizontal	74	PK	Pass
4824.000	34.32	10.64	35.08	32.80	42.68	Horizontal	54	AV	Pass
7236.000	-	-		-	-	-	-	-	-
7236.000	-	-		-	-	-	-	-	-

WIFI Mode IEEE 802.11g modulation (6 Mbps) CH6 2437MHz Test Result

Frequency	Antenna Factor	Cable Loss	Amp. Factor	Reading	Emission Level	Polarization	Limit	Detector	Result
MHz	dB/m	dB	dB	dBuV	dBuV/m		dBµV/m		
4874.000	34.41	10.69	35.03	43.96	54.03	Horizontal	74	PK	Pass
4874.000	34.41	10.69	35.03	31.52	41.59	Horizontal	54	AV	Pass
7311.000	-	-		-	-	-	-	-	-
7311.000	-	-		-	-	-	-	-	-

WIFI Mode IEEE 802.11g modulation (6 Mbps) CH11 2462MHz Test Result

Frequency	Antenna Factor	Cable Loss	Amp. Factor	Reading	Emission Level	Polarization	Limit	Detector	Result
MHz	dB/m	dB	dB	dBuV	dBuV/m		dBµV/m		
4924.000	34.49	10.76	34.98	43.68	53.95	Horizontal	74	PK	Pass
4924.000	34.49	10.76	34.98	33.41	43.68	Horizontal	54	AV	Pass
7386.000	-	-		-	-	-	-	-	-
7386.000	-	-		-	-	-	-	-	-

Remark:

(1) Emission Level= Antenna Factor +Cable Loss - Amp. factor + Reading

(2) Data of measurement within this frequency range shown “-” in the table above means the reading of emissions are attenuated more than 20db below the permissible limits or the field strength is too small to be measured.

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Radiated Emission

WIFI Mode IEEE 802.11n HT20 modulation (6.5 Mbps) CH1 2412MHz Test Result

Frequency	Antenna Factor	Cable Loss	Amp. Factor	Reading	Emission Level	Polarization	Limit	Detector	Result
MHz	dB/m	dB	dB	dBuV	dBuV/m		dBµV/m		
224.600	10.78	1.94	0	20.53	33.25	Horizontal	46.00	QP	Pass
519.750	17.90	3.66	0	20.50	42.06	Horizontal	46.00	QP	Pass
4824.000	34.32	10.64	35.08	43.99	53.87	Horizontal	74	PK	Pass
4824.000	34.32	10.64	35.08	32.28	42.16	Horizontal	54	AV	Pass
7236.000	-	-		-	-	-	-	-	-
7236.000	-	-		-	-	-	-	-	-

WIFI Mode IEEE 802.11n HT20 modulation (6.5 Mbps) CH6 2437MHz Test Result

Frequency	Antenna Factor	Cable Loss	Amp. Factor	Reading	Emission Level	Polarization	Limit	Detector	Result
MHz	dB/m	dB	dB	dBuV	dBuV/m		dBµV/m		
4874.000	34.41	10.69	35.03	44.61	54.68	Horizontal	74	PK	Pass
4874.000	34.41	10.69	35.03	32.79	42.86	Horizontal	54	AV	Pass
7311.000	-	-		-	-	-	-	-	-
7311.000	-	-		-	-	-	-	-	-

WIFI Mode IEEE 802.11n HT20 modulation (6.5 Mbps) CH11 2462MHz Test Result

Frequency	Antenna Factor	Cable Loss	Amp. Factor	Reading	Emission Level	Polarization	Limit	Detector	Result
MHz	dB/m	dB	dB	dBuV	dBuV/m		dBµV/m		
4924.000	34.49	10.76	34.98	43.86	54.13	Horizontal	74	PK	Pass
4924.000	34.49	10.76	34.98	32.51	42.78	Horizontal	54	AV	Pass
7386.000	-	-		-	-	-	-	-	-
7386.000	-	-		-	-	-	-	-	-

Remark:

(1) Emission Level= Antenna Factor +Cable Loss - Amp. factor + Reading

(2) Data of measurement within this frequency range shown “-” in the table above means the reading of emissions are attenuated more than 20db below the permissible limits or the field strength is too small to be measured.

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Test Equipment List

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL DUE DATE
Spectrum	Agilent	E4446A	US44300459	May 08, 2011
Amp	HP	8449B	3008A02495	May 08, 2011
Antenna	EMCO	3115	9607-4877	May 17, 2011
Bilog Antenna	Schaffner	CBL6111C	2598	Dec.14, 2010
HF Cable	Hubersuhne	Sucoflex104	---	May 08, 2011

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7.6 6 dB bandwidth

Test Method

1 Place the EUT on the table and set it in the transmitting mode.
2 Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3 Mark the peak frequency and –6dB (upper and lower) frequency.

Limit

Limit [kHz]
≥ 500

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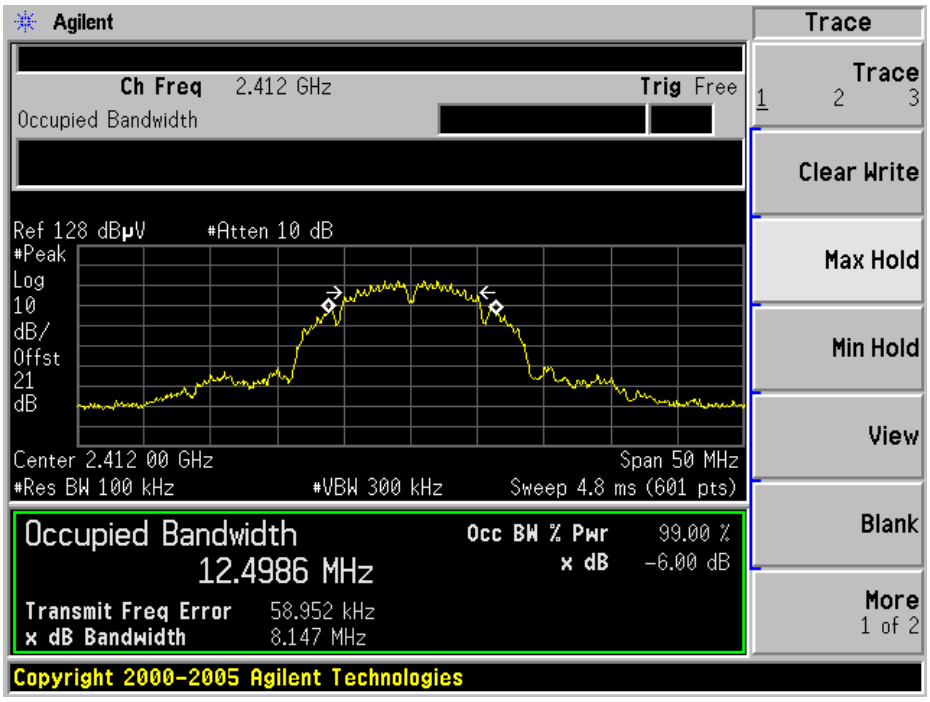
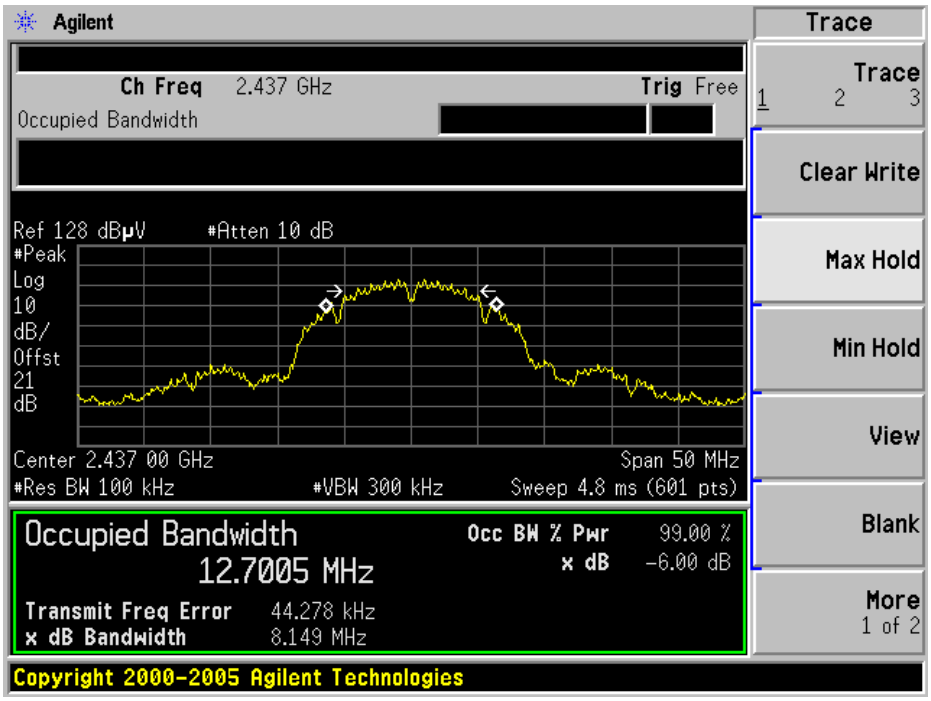
6 dB bandwidth

WIFI Mode IEEE 802.11b modulation (1Mbps) Test Result

Frequency MHz	Bandwidth kHz	Limit kHz	Result
2412	8147	≥ 500	Pass
2437	8149	≥ 500	Pass
2462	8148	≥ 500	Pass





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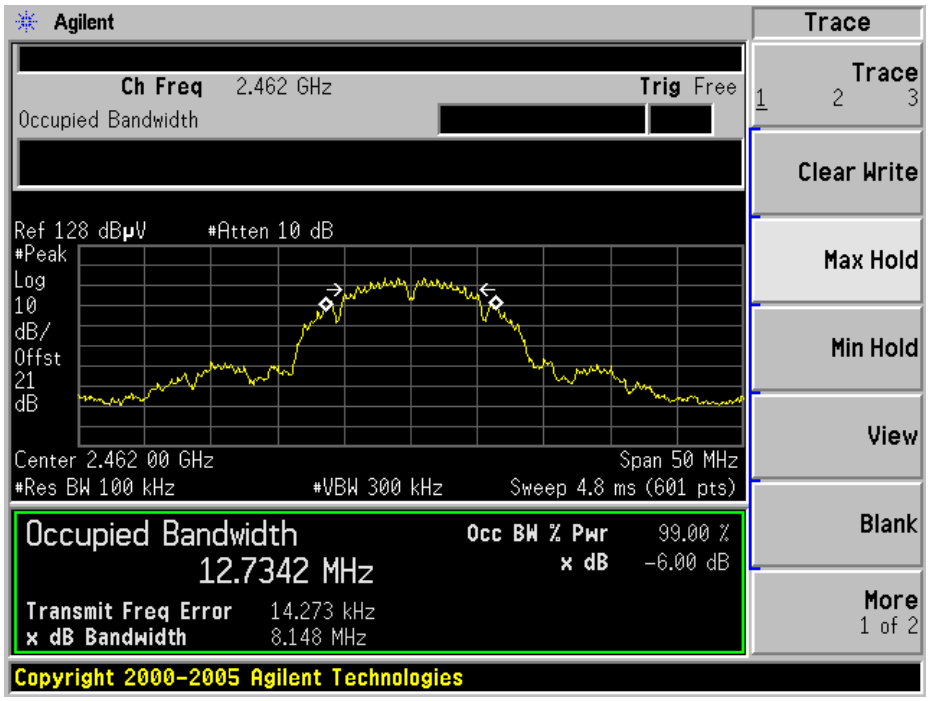
6 dB bandwidth



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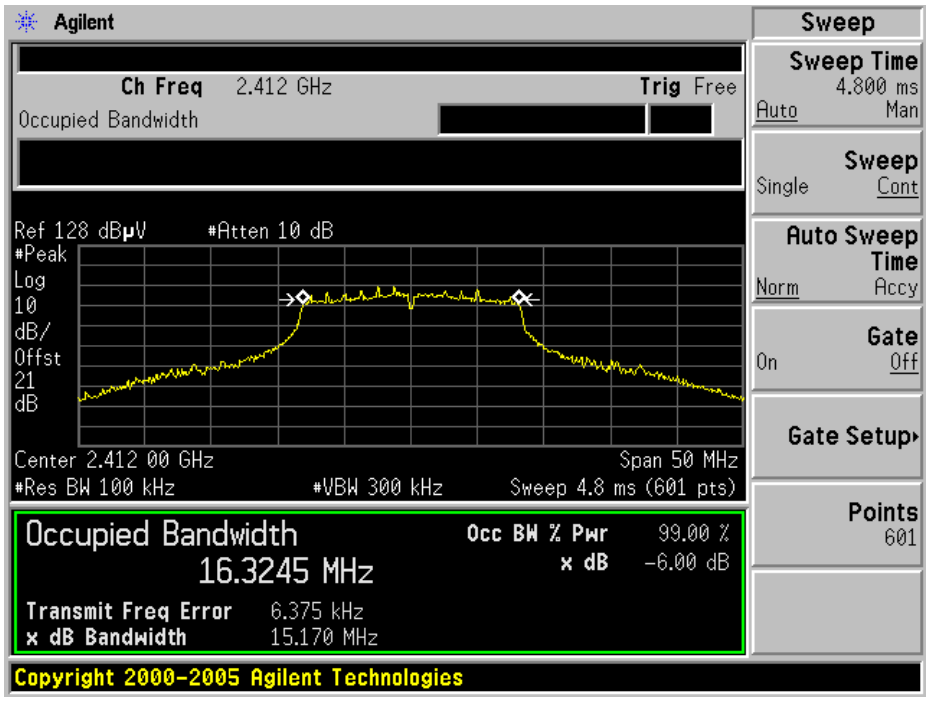
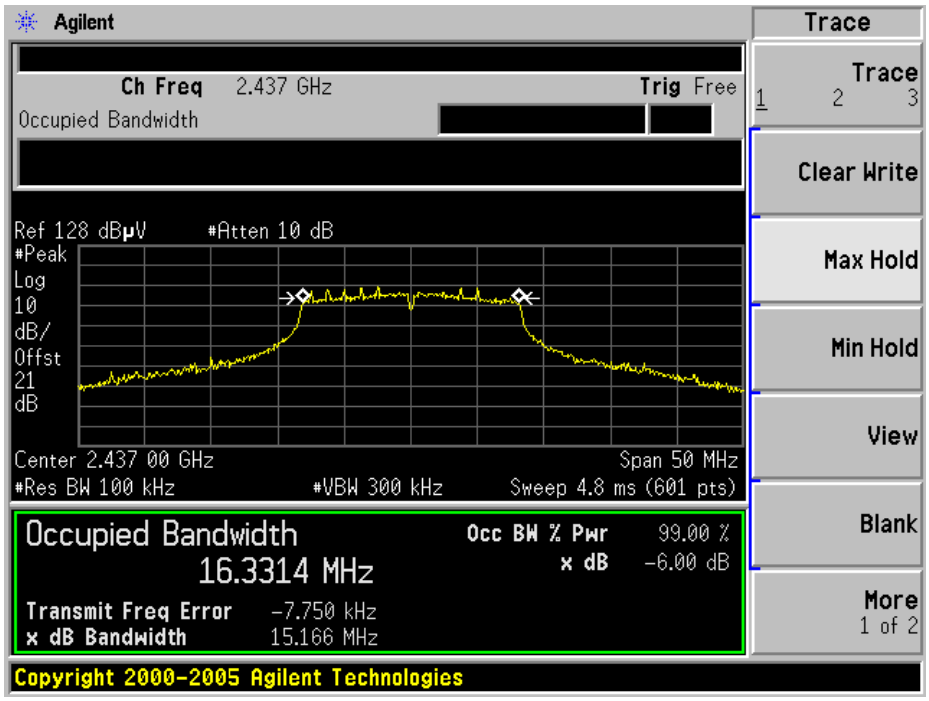
6 dB bandwidth

WIFI Mode IEEE 802.11g modulation (6Mbps) Test Result

Frequency MHz	Bandwidth kHz	Limit kHz	Result
2412	15170	≥ 500	Pass
2437	15166	≥ 500	Pass
2462	15189	≥ 500	Pass





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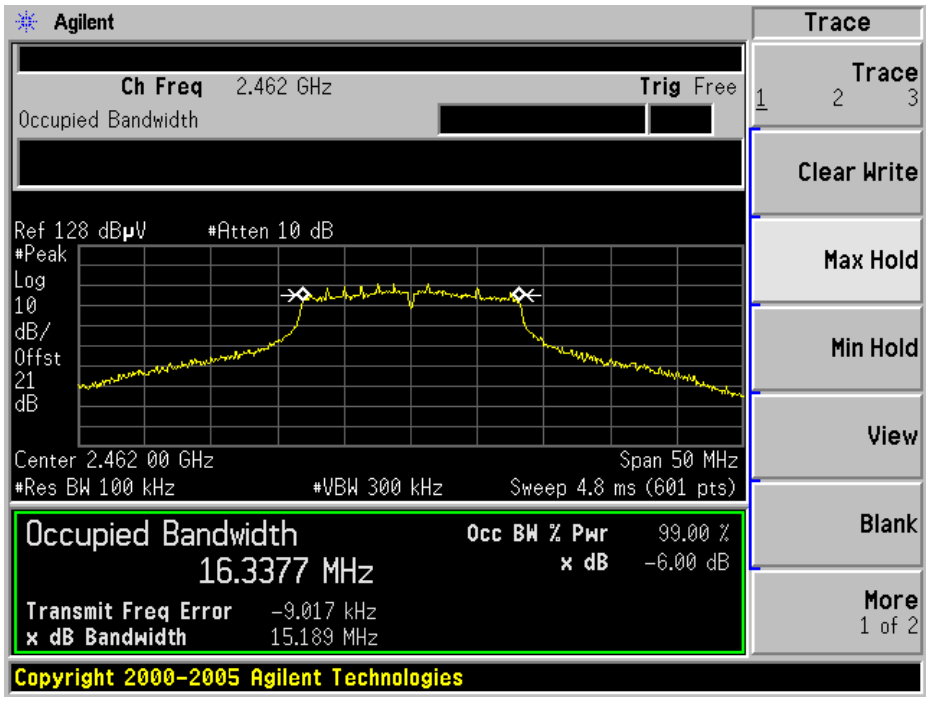
6 dB bandwidth



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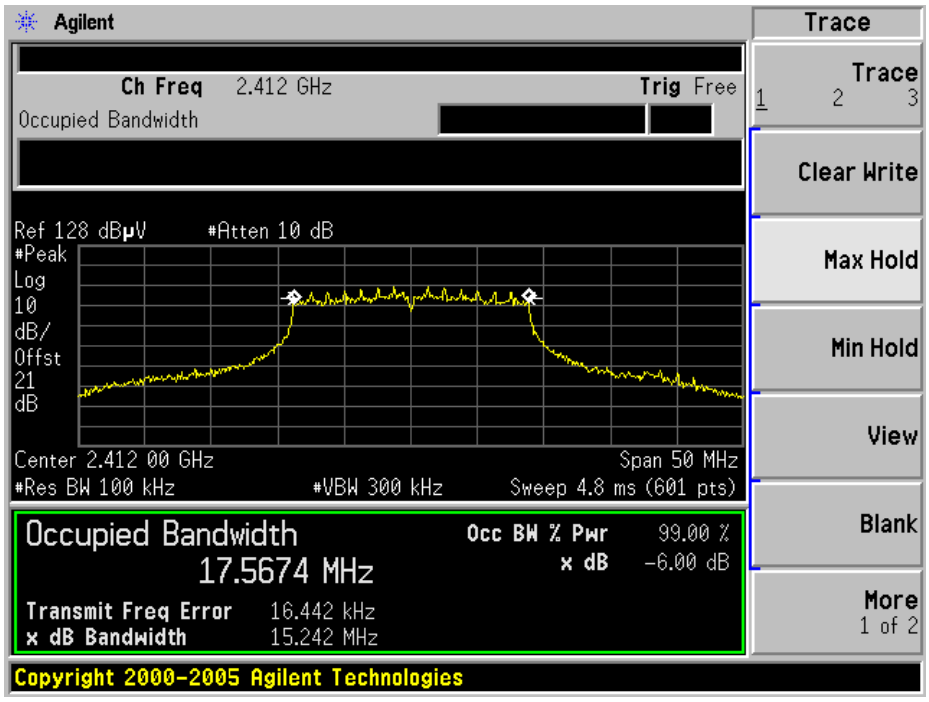
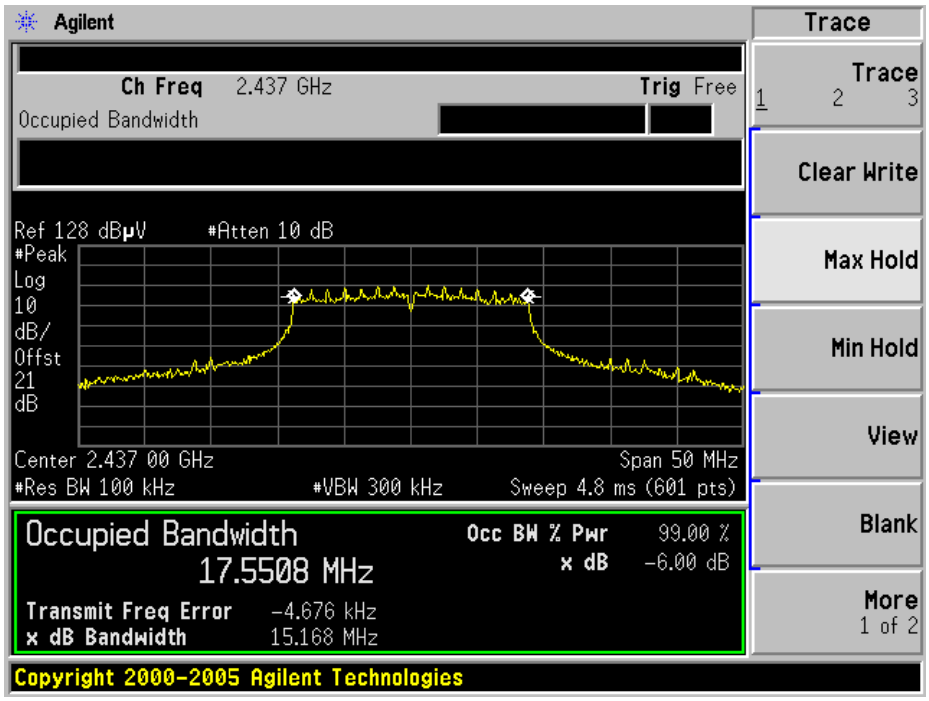
6 dB bandwidth

WIFI Mode IEEE 802.11n HT20 modulation (6.5Mbps) Test Result

Frequency MHz	Bandwidth kHz	Limit kHz	Result
2412	15242	≥ 500	Pass
2437	15168	≥ 500	Pass
2462	15273	≥ 500	Pass





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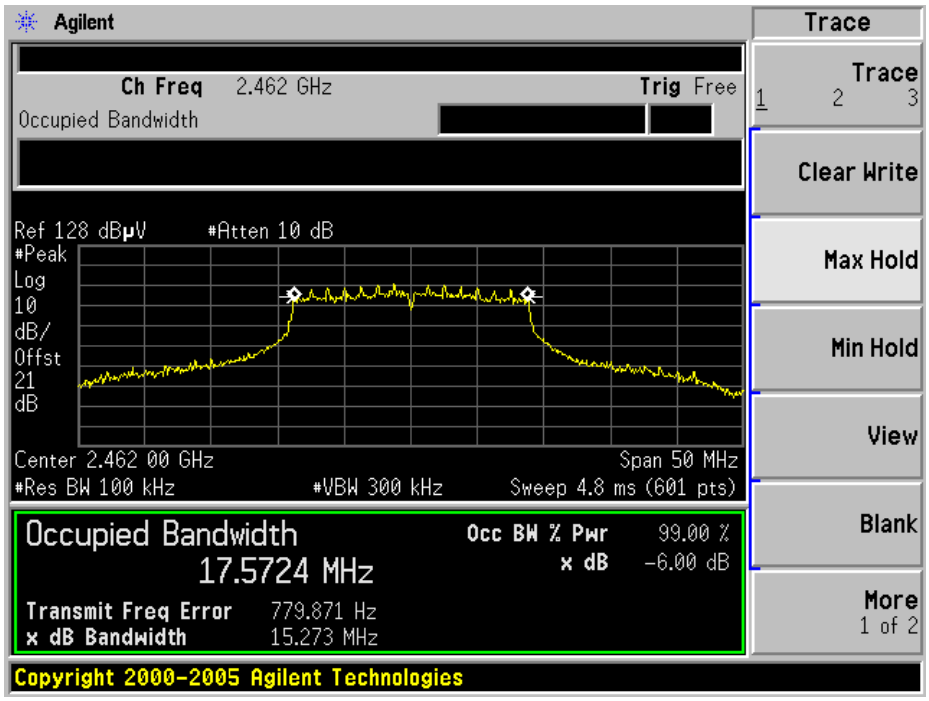
6 dB bandwidth



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Test Equipment

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL.DUE.DATE
Spectrum Analyzer	Agilent	E4446A	MY41440292	May 08, 2011

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7.7 Power spectral density

Test Method

1 Place the EUT on the table and set it in transmitting mode. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
2 Set the spectrum analyzer as RBW = 3 kHz, VBW = 10 kHz, Span = 300kHz, Sweep = 100 s
3 Record the max reading.

Limit

Limit dBm / 3 kHz
8

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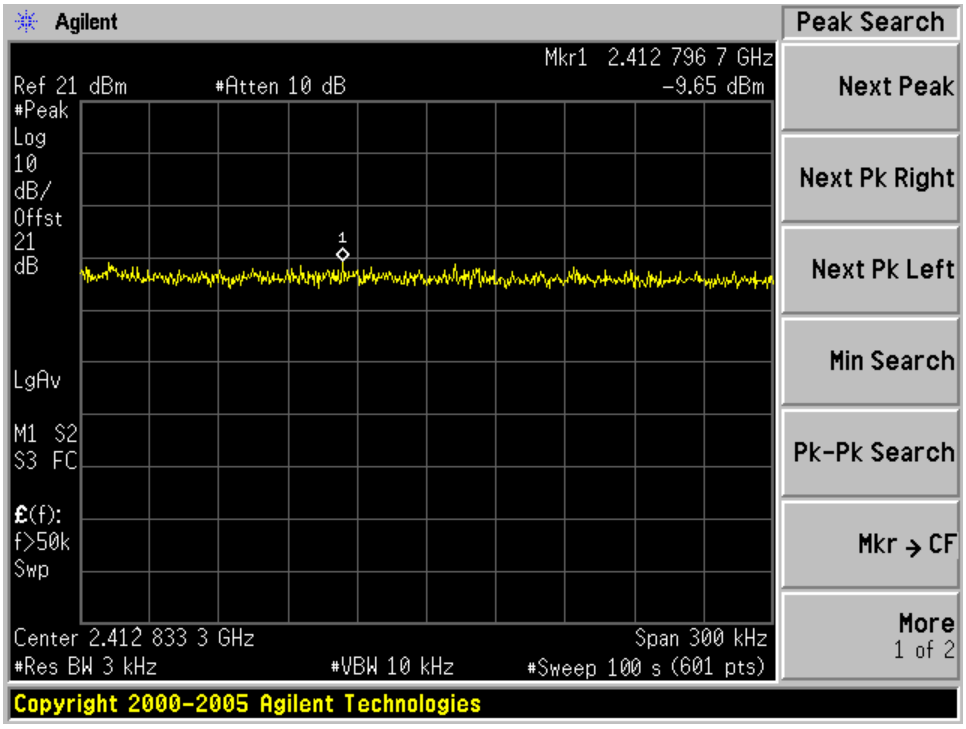
Power spectral density

WIFI Mode IEEE 802.11b modulation (1Mbps) Test Result

Frequency	P	Result
MHz	dBm	
2412	-5.84	Pass
2437	-5.01	Pass
2462	-3.89	Pass



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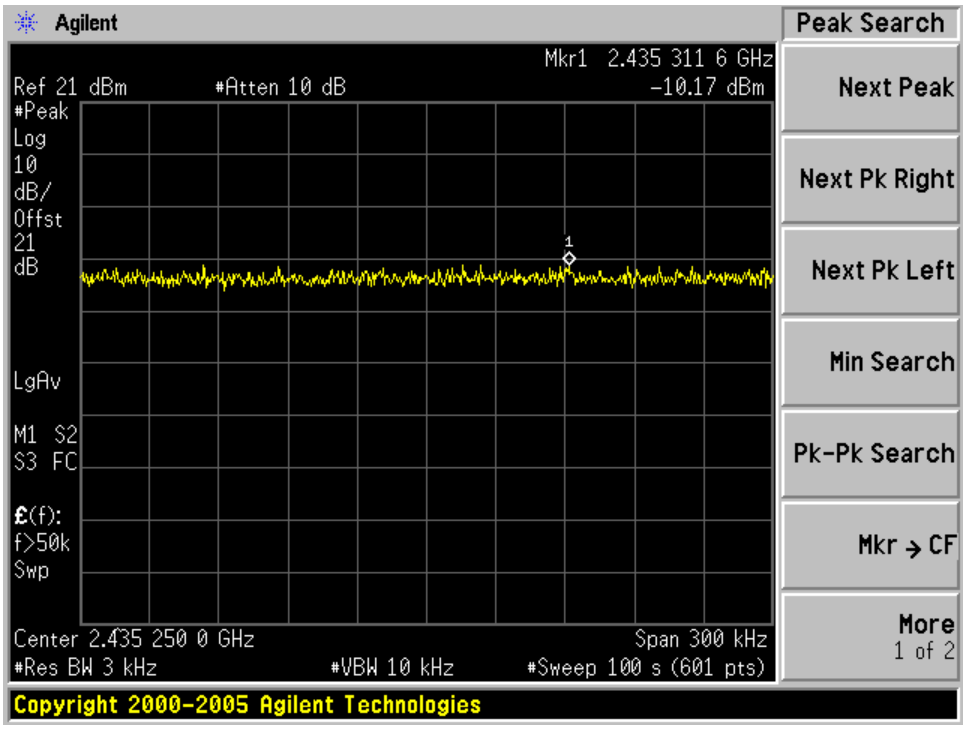
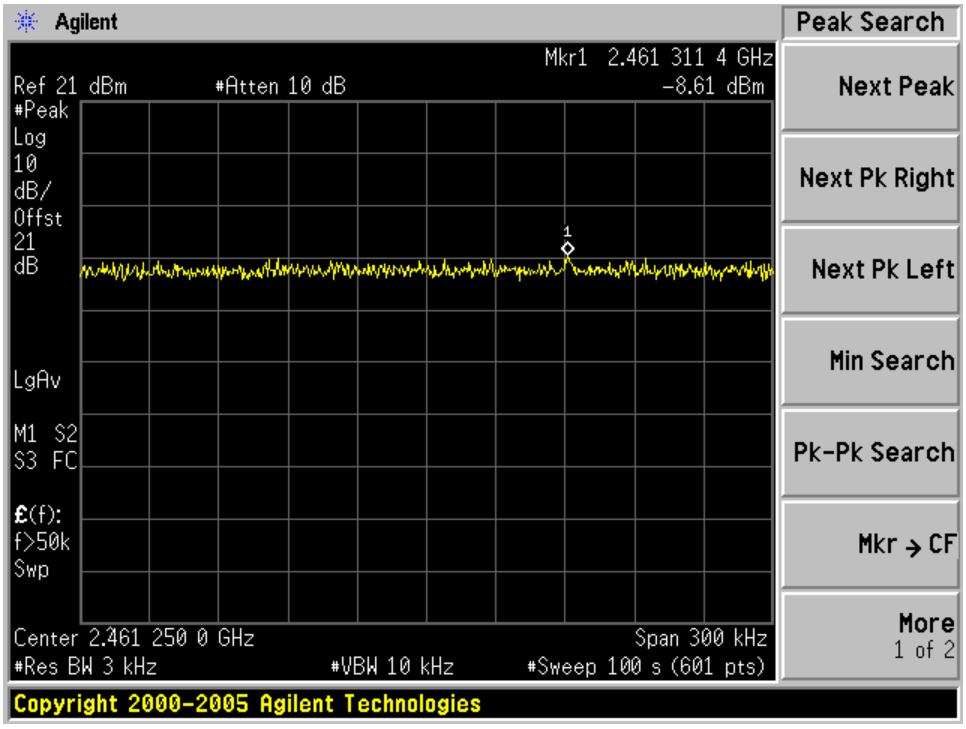
Power spectral density





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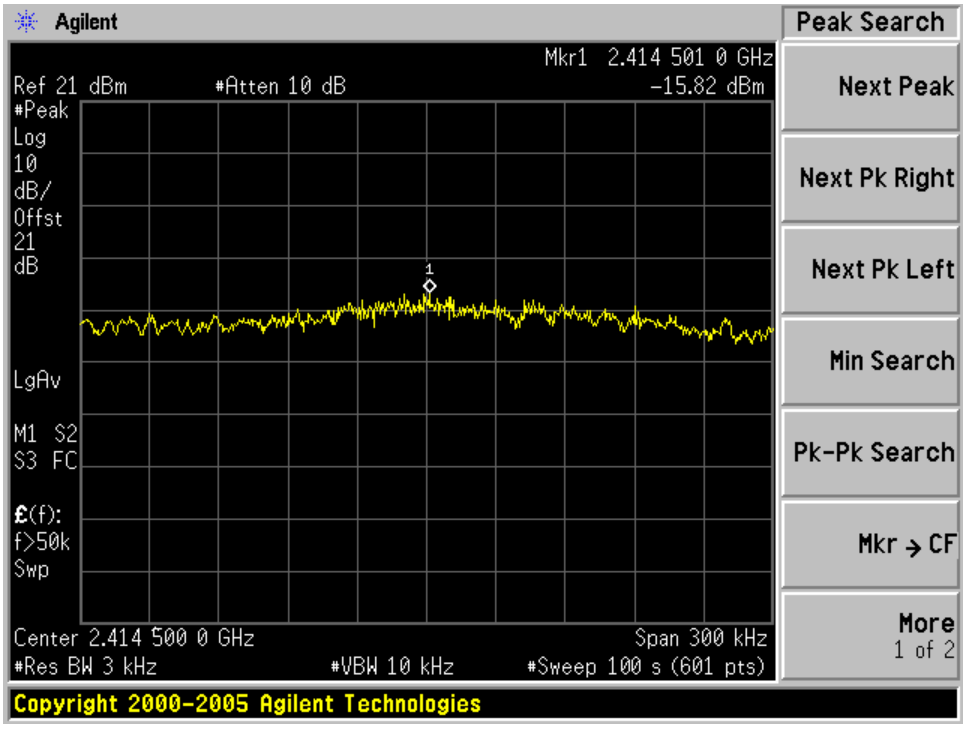
Power spectral density

WIFI Mode IEEE 802.11g modulation (6Mbps) Test Result

Frequency	P	Result
MHz	dBm	
2412	-11.75	Pass
2437	-10.39	Pass
2462	-9.76	Pass



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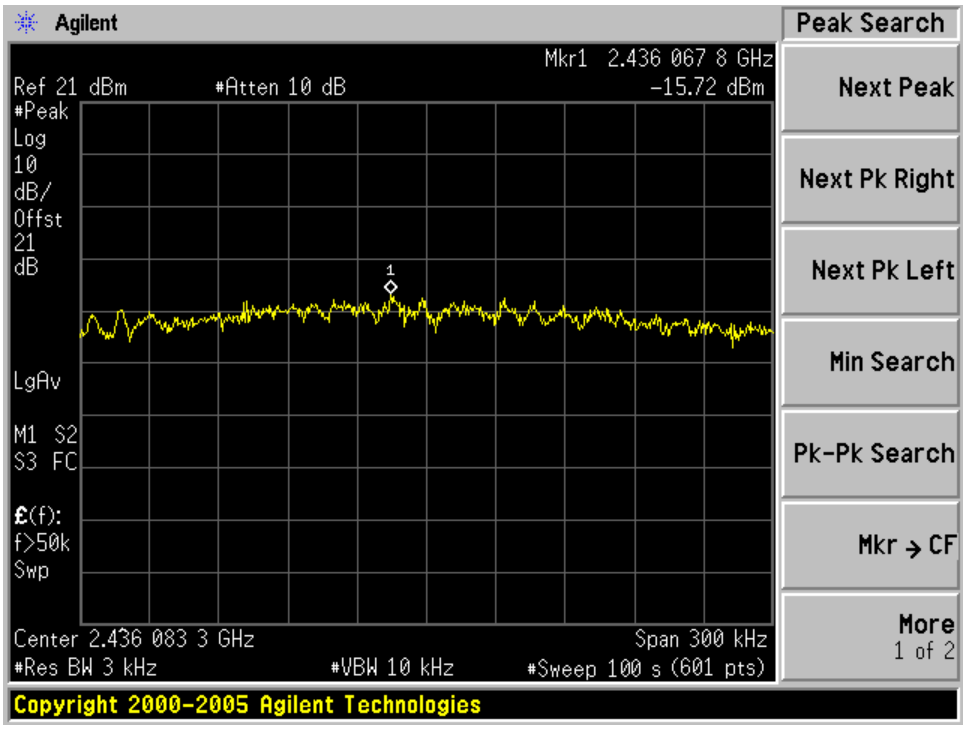
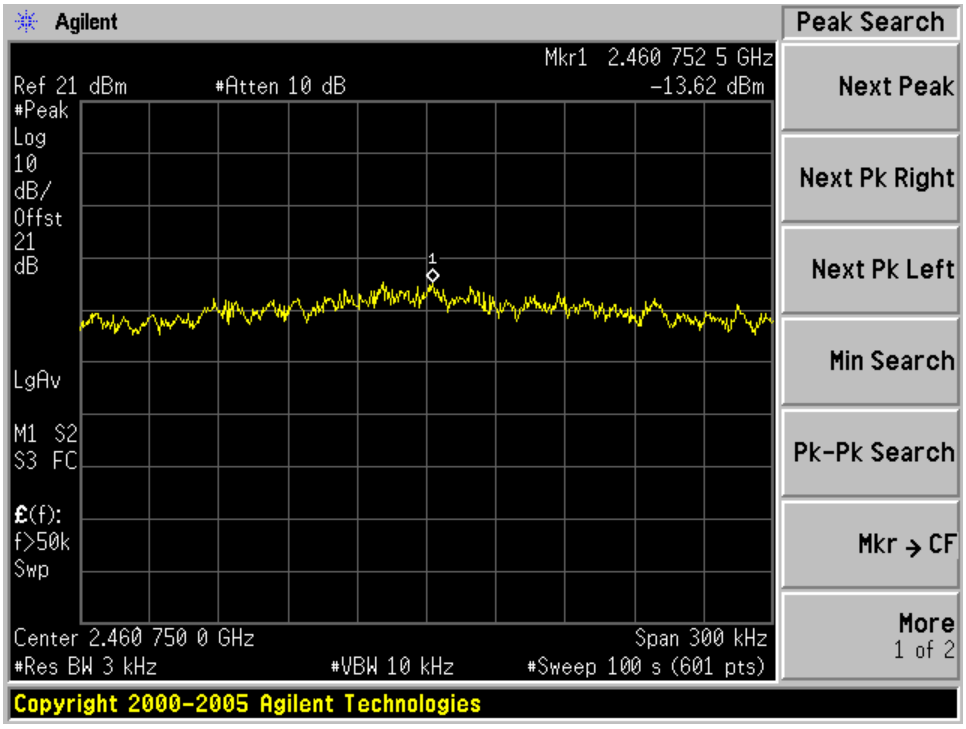
Power spectral density





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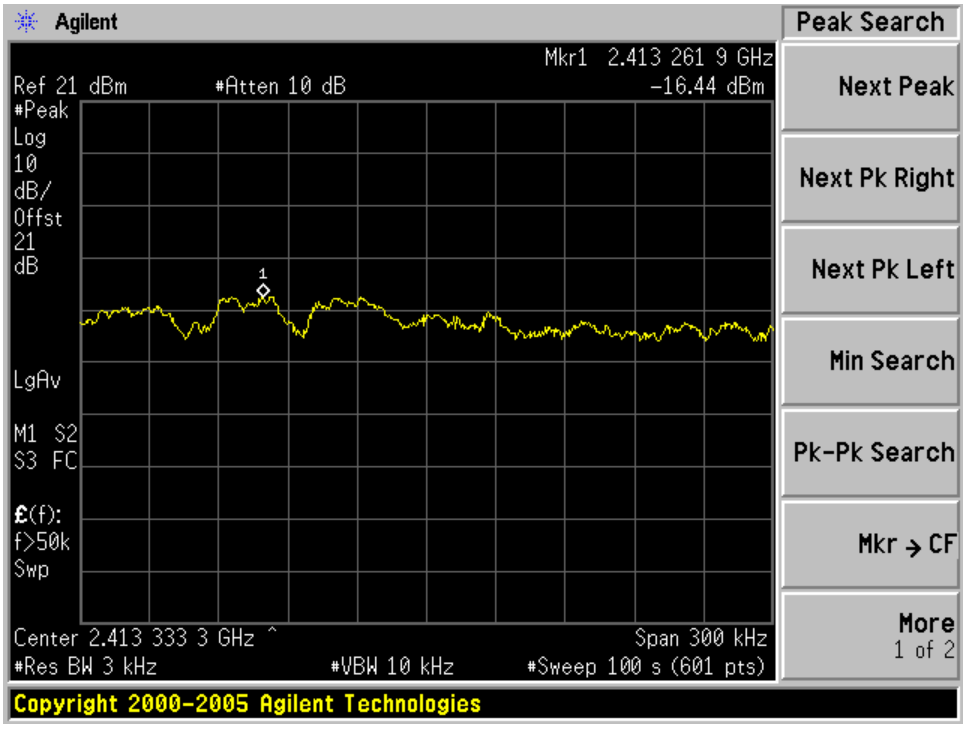
Power spectral density

WIFI Mode IEEE 802.11n HT20 modulation (6.5Mbps) Test Result

Frequency	P	Result
MHz	dBm	
2412	-10.02	Pass
2437	-10.27	Pass
2462	-8.74	Pass



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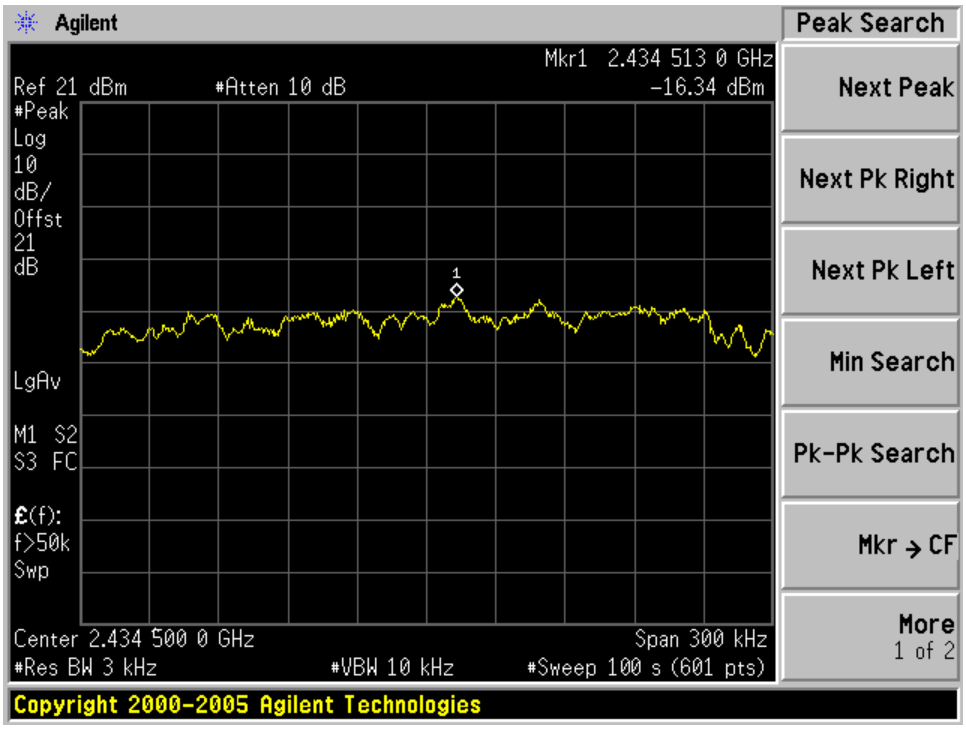
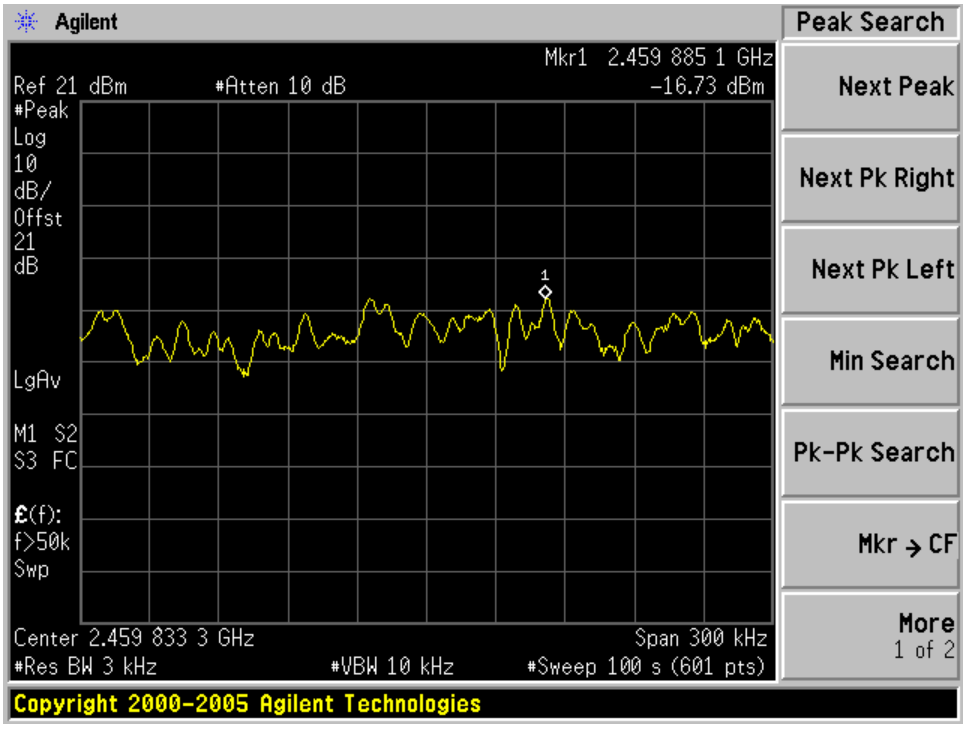
Power spectral density





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Test Equipment

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL.DUE.DATE
Spectrum Analyzer	Agilent	E4446A	MY41440292	May 08, 2011

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8 System Measurement Uncertainty

For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 were:

System Measurement Uncertainty

Items		Extended Uncertainty
RE	Field strength (dBμV/m)	U=4.32dB (30MHz-25GHz)
CE	Disturbance Voltage (dBμV)	U=2.40dB(150KHz-30MHz)

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