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CERTIFICATIO OF COMPLIANCE

Axis Communications AB

Emdalavagen 14, SE-223 69 LUND, Sweden

Dates of Tests: October 14 ~ 24, 2008

Test Report S/N: DR50110810AI

Test Site : DIGITAL EMC CO., LTD.

FCC ID

PNB-AXISM1031-W

APPLICANT

Axis Communications AB

FCC Classification	:	Digital Transmission System (DTS)
Device name	:	Network Camera
Manufacturer	:	Axis Communications AB
FCC ID	:	PNB-AXISM1031-W
IC ID	:	3919A-M1031-W
Model name	:	M1031-W
Test Device Serial number	:	Identical prototype
Standard(s)	:	FCC Part 15.247 Subpart C ANSI C-63.4-2003 RSS-210
Frequency Range	:	2412 ~ 2462 MHz
Max. Output power	:	802.11b – 11.10 dBm Conducted 802.11g – 11.86 dBm Conducted
Data of issue	:	October 28, 2008

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.



NVLAP LAB CODE 200559-0

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1. General information

This report contains the result of tests performed by:

DIGITAL EMC CO., LTD.

Address: 683-3, Yubang-Dong, Yongin-Si, Kyunggi-Do, Korea. 449-080

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Quality control in the testing laboratory is implemented as per ISO/IEC 17025 which is the "General requirements for the competent of calibration and testing laboratory". This laboratory is accredited by NVLAP and NVLAP Lab. Code is 200559-0.

Test operator: engineer

October 28, 2008

Won-Jung LEE



Data

Name

Signature

Report Reviewed By: manager

October 28, 2008

Harvey Sung



Data

Name

Signature

Ordering party:

Company name : Axis Communications AB

Address : Emdalavagen 14, SE-223 69, LUND

Country : Sweden

Date of order : September 25, 2008

2. Information about test item

PNB-AXISM1031-W

2.1 Equipment information

Equipment model no.	M1031-W
Type of equipment	Network Camera
Frequency band	2412 ~ 2462 MHz
Type of Modulation	802.11b – CCK, DQPSK, DBPSK 802.11g – OFDM
Type of antenna	Rufa SMD Antenna
Power	AC 120V, 60Hz

2.2 Tested frequency

Frequency	DSSS
Low frequency	2412MHz
Middle frequency	2437MHz
High frequency	2462MHz

2.3 Tested environment

Temperature	: 15 ~ 35 (°C)
Relative humidity content	: 20 ~ 75 %
Air pressure	: 86 ~ 103 kPa
Details of power supply	: 120 V / 60Hz (powered by power supply)

PNB-AXISM1031-W

2.4 EMI Suppression Device(s)/Modifications

EMI suppression device(s) added and/or modifications made during testing

-> none

2.5 Ancillary Equipment

Equipment	Model No.	Serial No.	Manufacturer
Adaptor(Black)	GT-41052-1506-0.9	N/A	SAMWON
Adaptor(White)	SA-A136LA	N/A	SUNLIN

3. Test Result

3.1 Summary of tests

FCC Section(s)	Parameter	Limit	Test Condition	Status (note 1)
I. Transmit mode(Tx)				
15.247(a)(2)	6 dB Bandwidth	> 500 kHz	Conducted	C
15.247(b)(3)	Transmitter Output Power	< 1Watt		C
15.247(c)	Out of Band Emissions / Band Edge	20dBc in any 100kHz BW		C
15.247(d)	Transmitter Power Spectral Density	< 8dBm / 3kHz		C
15.205 15.209	General Field Strength Limits (Restricted Bands and Radiated Emission Limits)	< FCC 15.209 limits	Radiated	C
15.207	AC Conducted Emissions	EN 55022	Line Conducted	C
II. Receive mode(Rx)				
15.207	AC Conducted Emissions	EN 55022	Line Conducted	C
15.209	Receiver Spurious Emissions	< FCC 15.209 limits	Radiated	C
Note 1: C=Comply NC=Not Comply NT=Not Tested NA=Not Applicable				

* The sample was tested according to the following specification:

- RSS-210; FCC Parts 15.247; ANSI C-63.4-2003

* This device was also tested and approved by FCC DOC

3.2 Transmitter requirements

3.2.1 6 dB Bandwidth

- Procedure:

The bandwidth at 6 dB below the highest inband spectral density was measured with a spectrum analyzer connected to the antenna terminal at the highest, middle and the lowest available channels.

After the trace being stable, Use the marker-to-peak function to set the marker to the peak of the emission. Use the marker-delta function to measure 6dB down one side of the emission. Reset the marker-delta function, and move the marker to the other side of the emission, until it is (as close as possible to) even with the reference marker level. The marker-delta reading at this point is the 6 dB bandwidth of the emission.

The spectrum analyzer is set to:

Center frequency = the highest, middle and the lowest channels

Span = 50 MHz (Greater than EBW)

RBW = 100 kHz

Sweep = auto

VBW = 100 kHz (VBW $\geq$ RBW)

Detector function = peak

Trace = max hold

- Measurement Data:

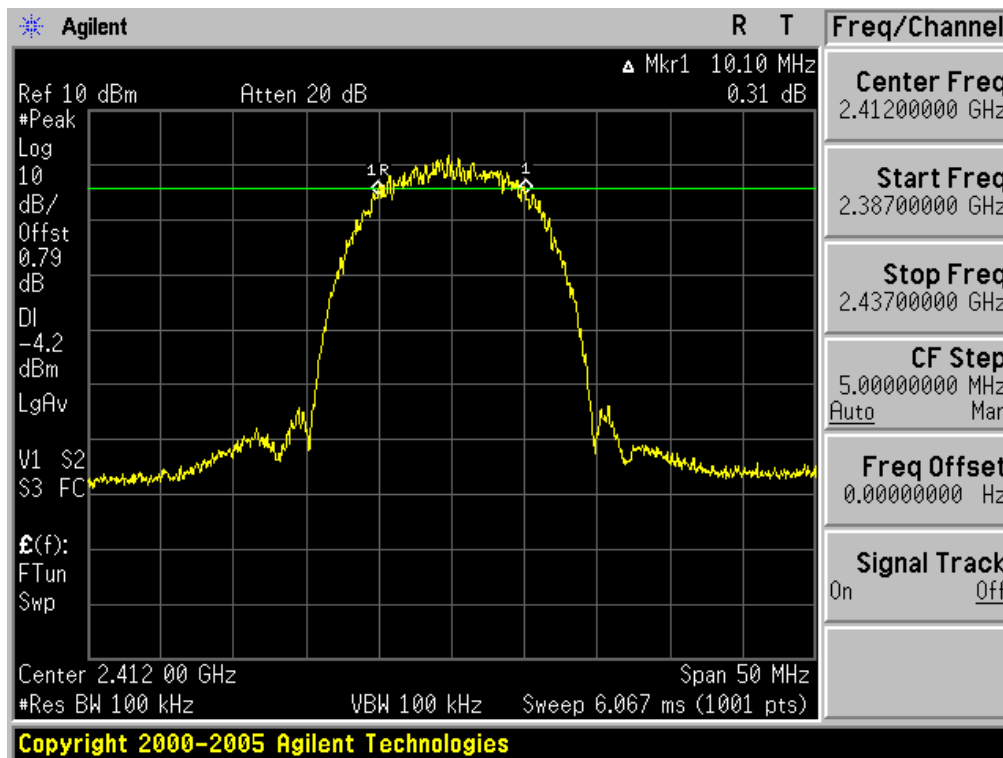
Test Mode	Frequency (MHz)	Channel No.	Test Results	
			Measured Bandwidth (MHz)	Result
802.11b	2412	1	10.10	Comply
	2437	6	10.10	Comply
	2462	11	10.05	Comply
802.11g	2412	1	16.60	Comply
	2437	6	16.60	Comply
	2462	11	16.60	Comply

- See next pages for actual measured spectrum plots.

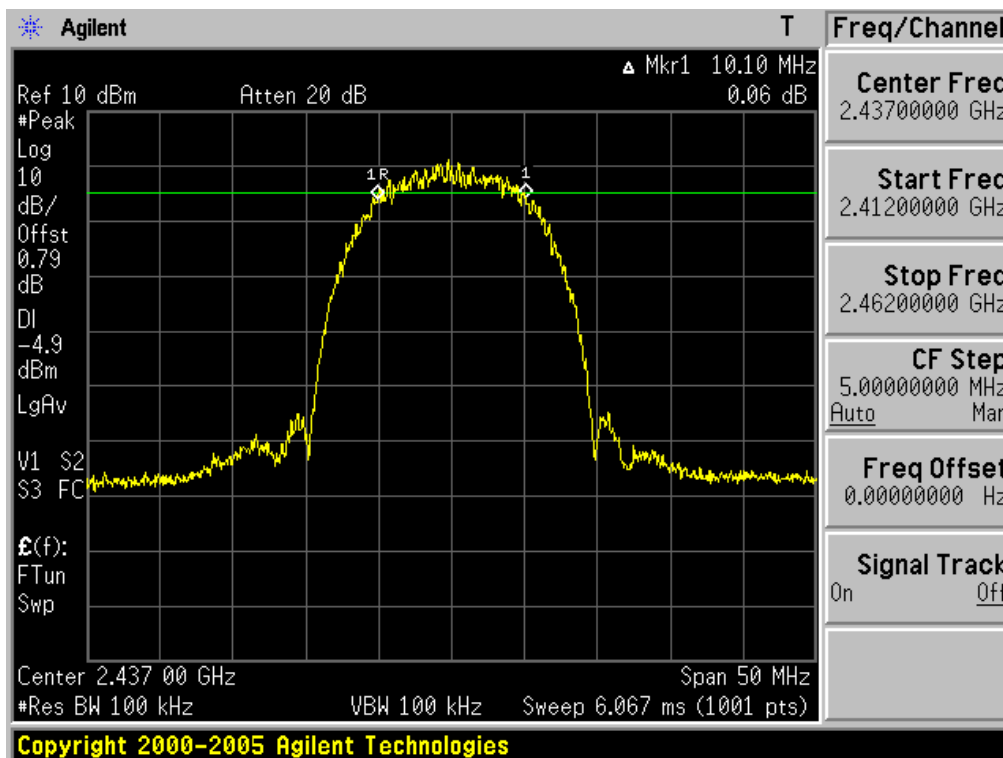
- Minimum Standard:

The minimum 6 dB bandwidth shall be at least 500 kHz

6 dB Bandwidth - 802.11b Mode -

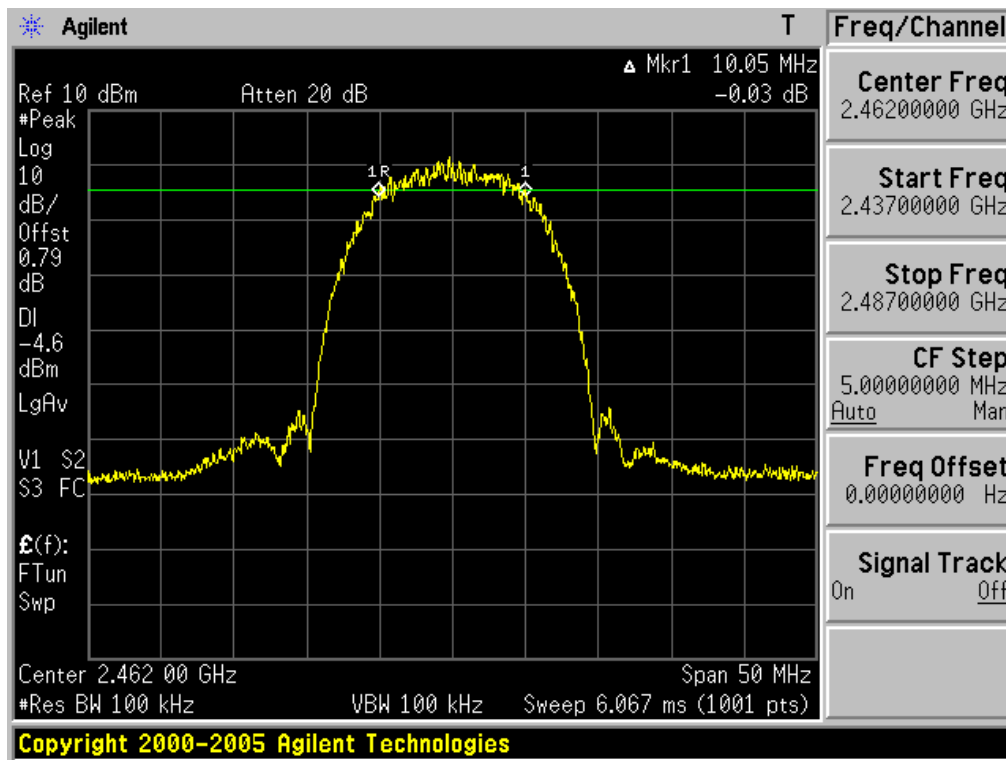


Low Channel



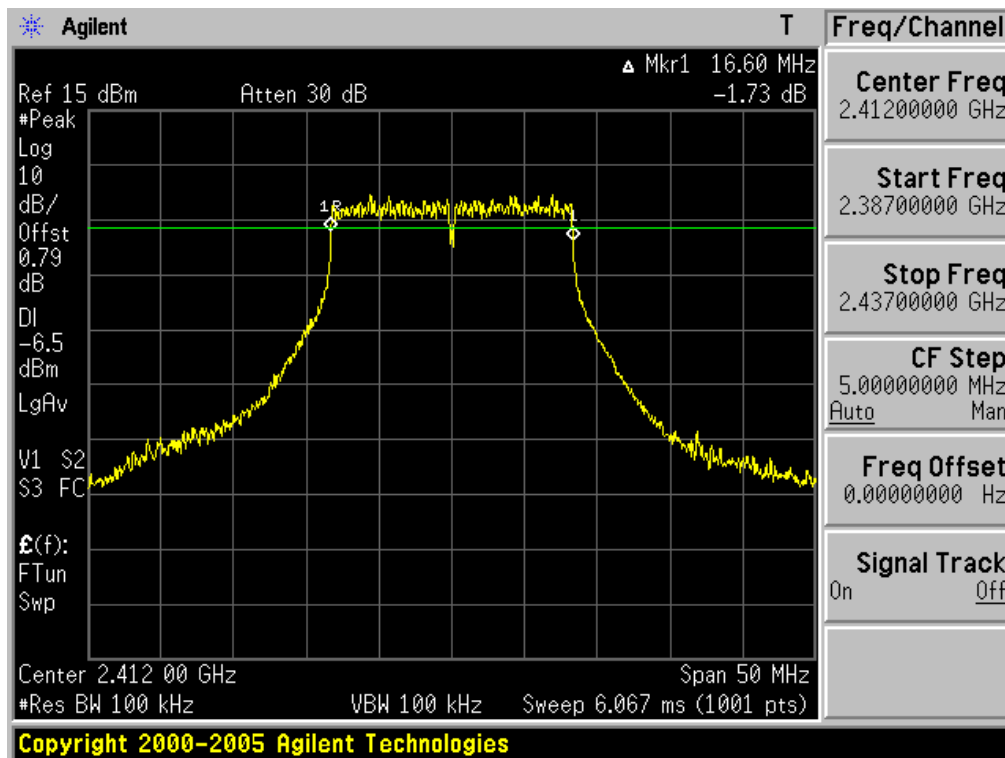
Middle Channel

6 dB Bandwidth - 802.11b Mode -

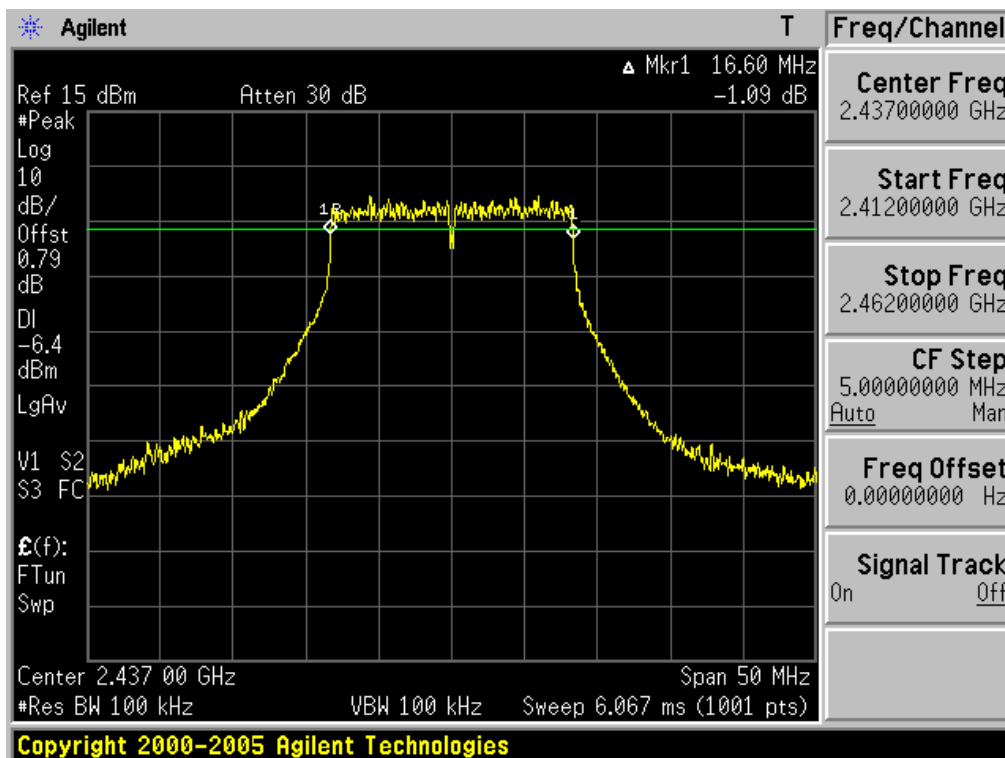


High Channel

6 dB Bandwidth - 802.11g Mode -

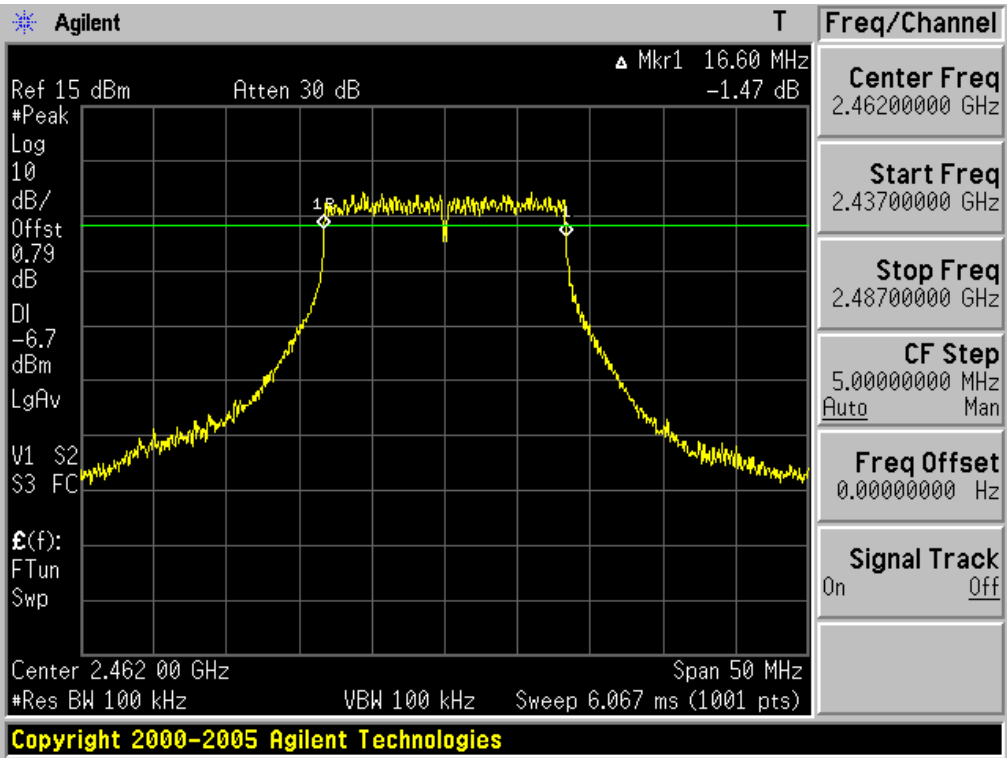


Low Channel



Middle Channel

6 dB Bandwidth - 802.11g Mode -



High Channel

3.2.2 Peak Output Power

- Test Procedure and Spectrum Analyzer setting:

The peak output power was measured with a spectrum analyzer connected to the antenna terminal at the highest, middle and the lowest available channels.

The transmitter output is connected to a spectrum analyzer and the analyzer's internal channel power integration function is used to integrate the power over a bandwidth greater than or equal to the 26dB EBW.

The test is performed in accordance with FCC document "Measurement of Digital Transmission Systems Operating under Section 15.247", March 23, 2005. The transmitter operates continuously therefore Power Output Option 2, Method #1 is used.

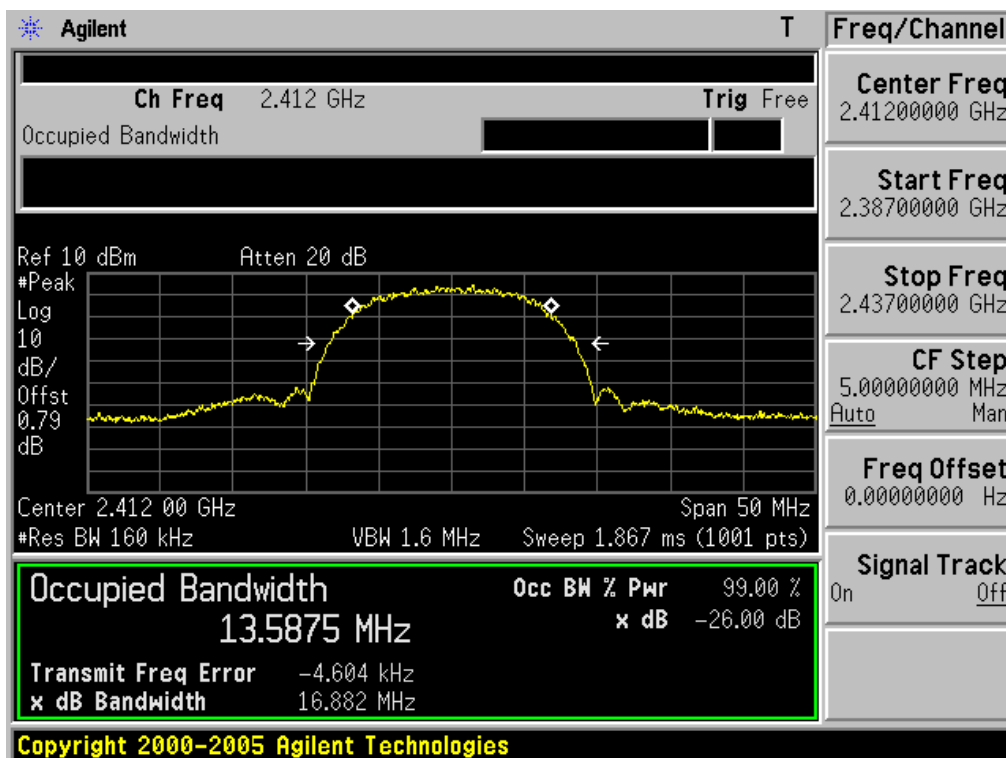
- Measurement Data:

Test Mode	Frequency (MHz)	Ch.	Test Results		
			dBm	W	Result
802.11b	2412	1	10.99	0.0126	Comply
	2437	6	11.10	0.0129	Comply
	2462	11	11.01	0.0126	Comply
802.11g	2412	1	11.39	0.0138	Comply
	2437	6	11.52	0.0142	Comply
	2462	11	11.86	0.0153	Comply

- See next pages for actual measured spectrum plots.

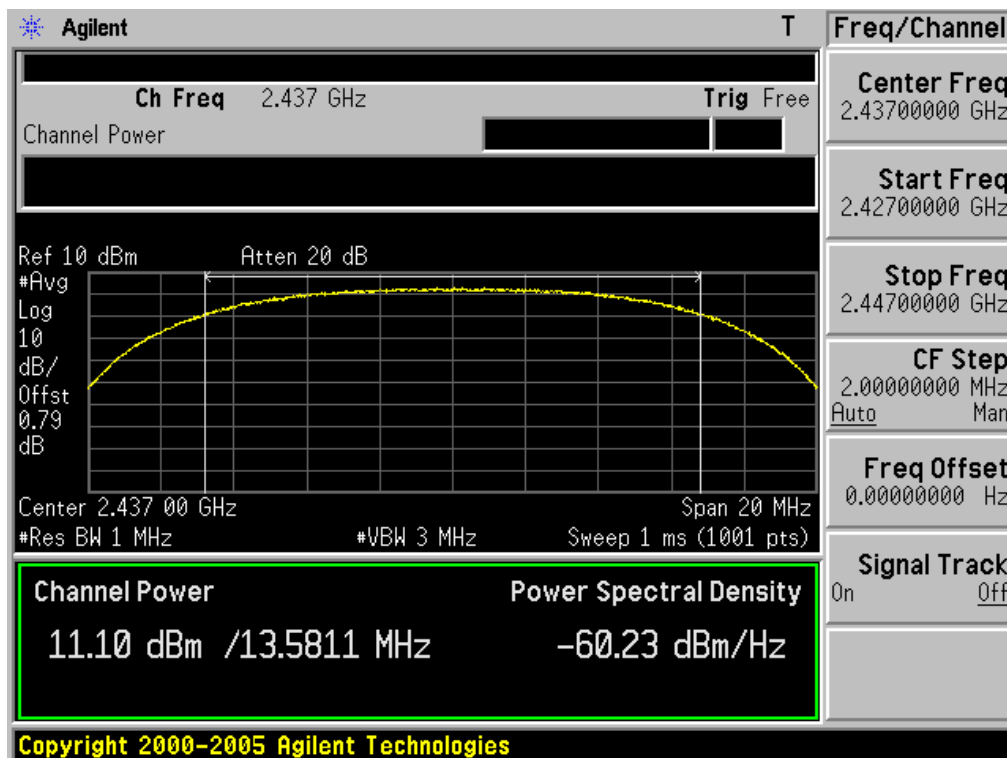
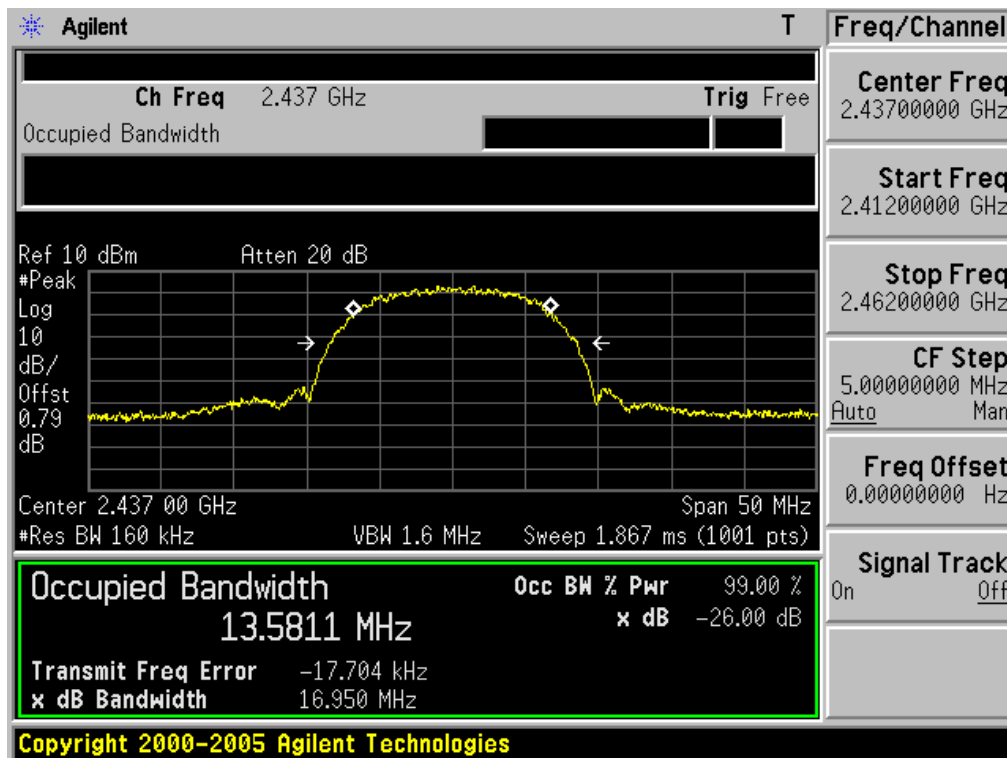
Minimum Standard:	< 1W
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26 dB Bandwidth and Peak Output Power - 802.11b Mode -



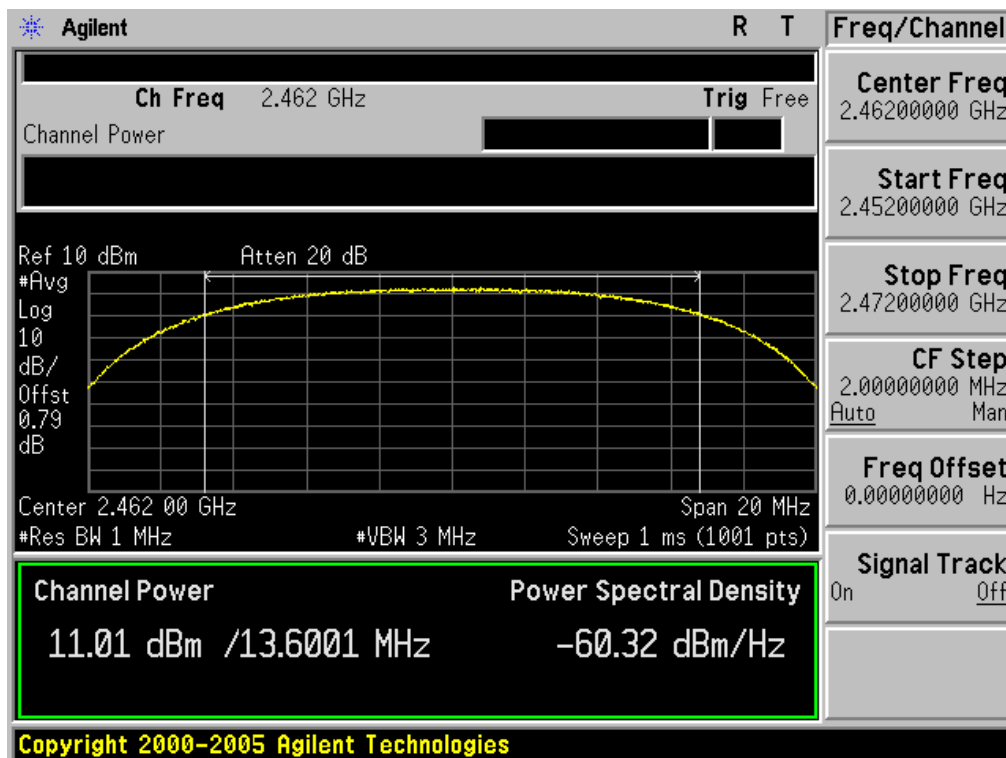
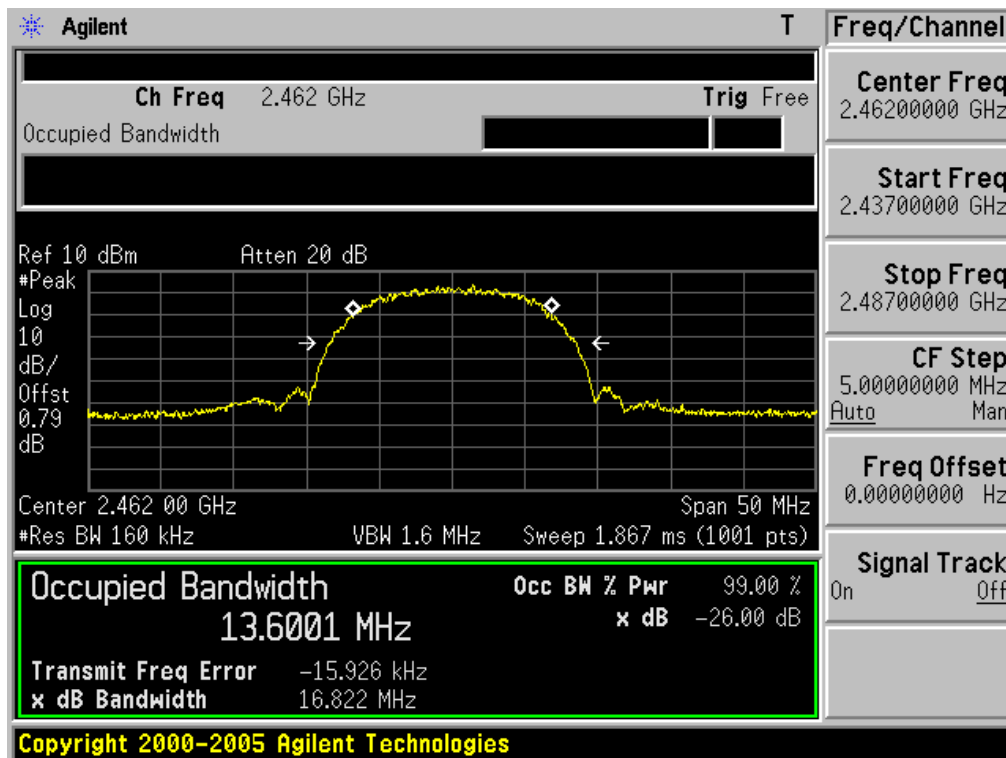
Low Channel

26 dB Bandwidth and Peak Output Power - 802.11b Mode -



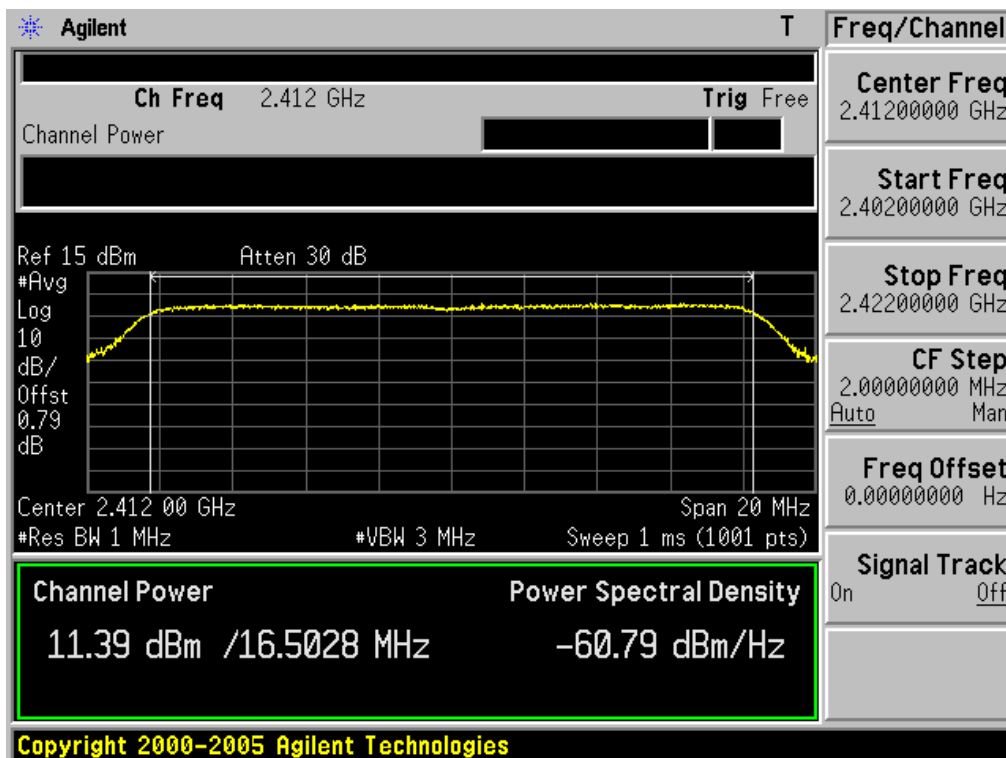
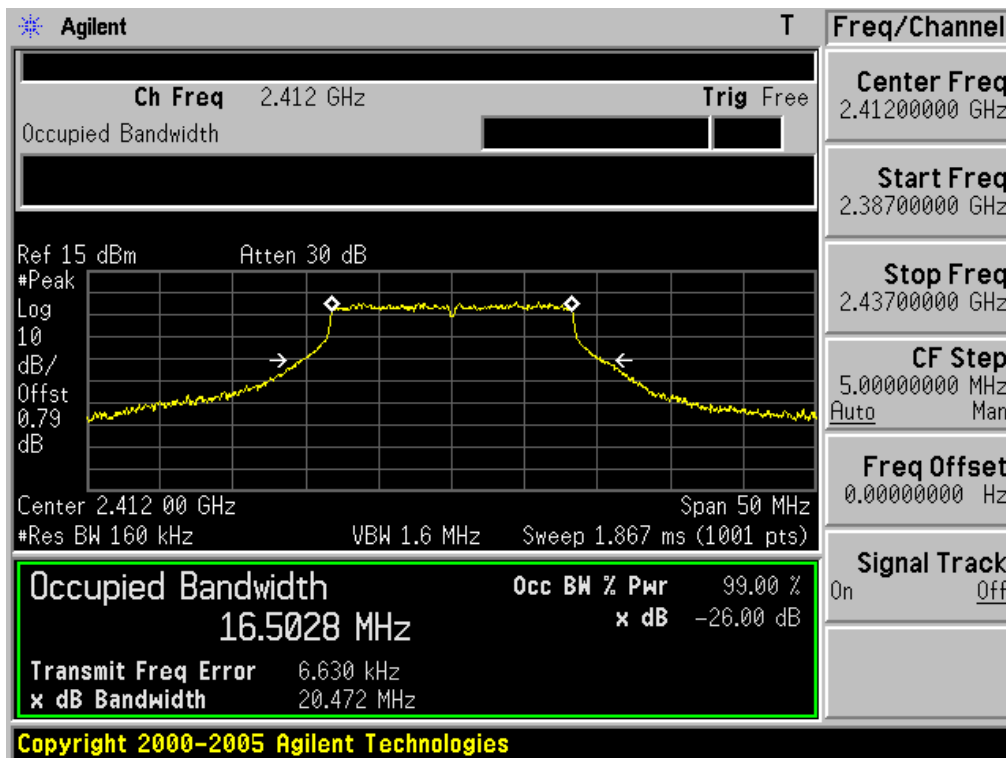
Middle Channel

26 dB Bandwidth and Peak Output Power - 802.11b Mode -



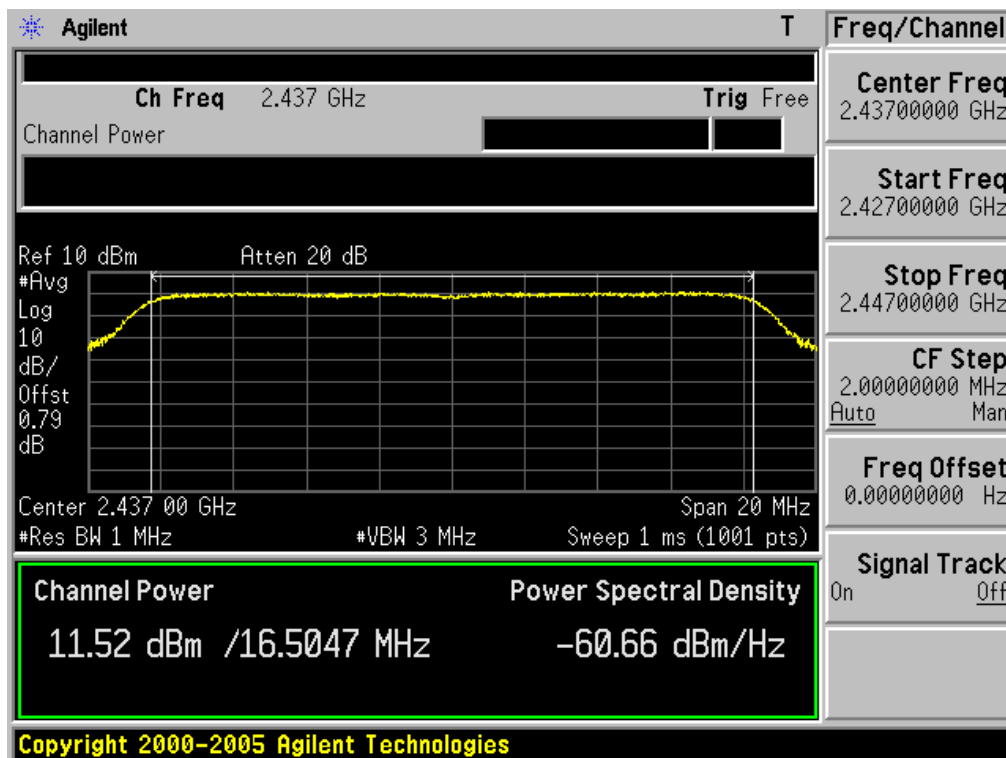
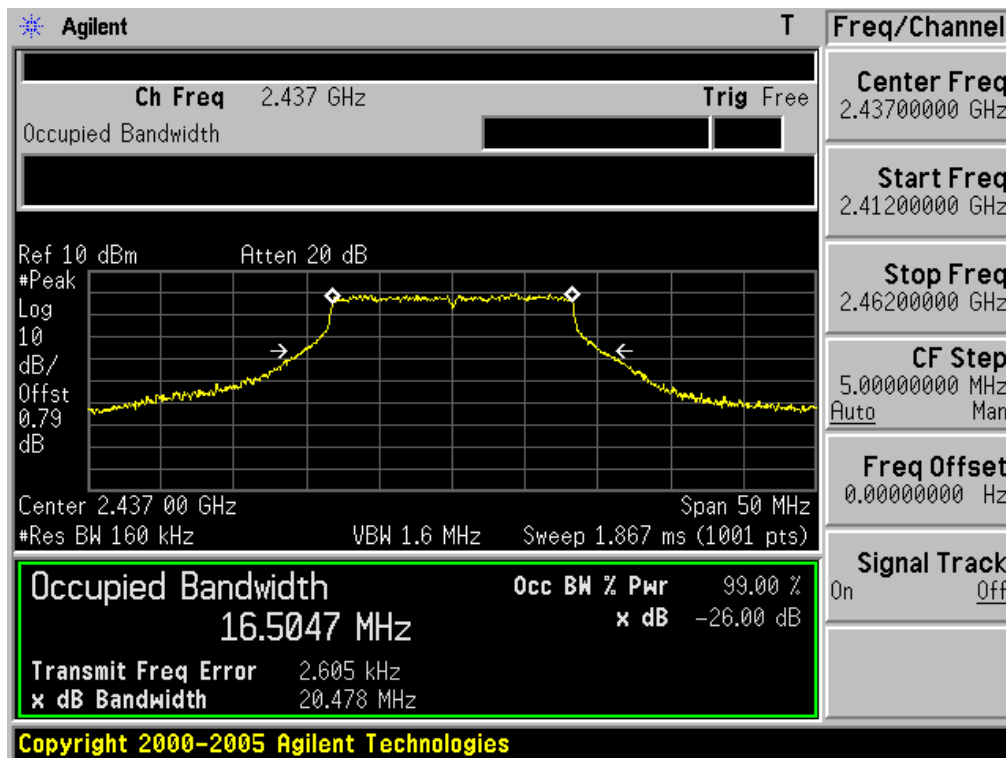
High Channel

26 dB Bandwidth and Peak Output Power - 802.11g Mode -



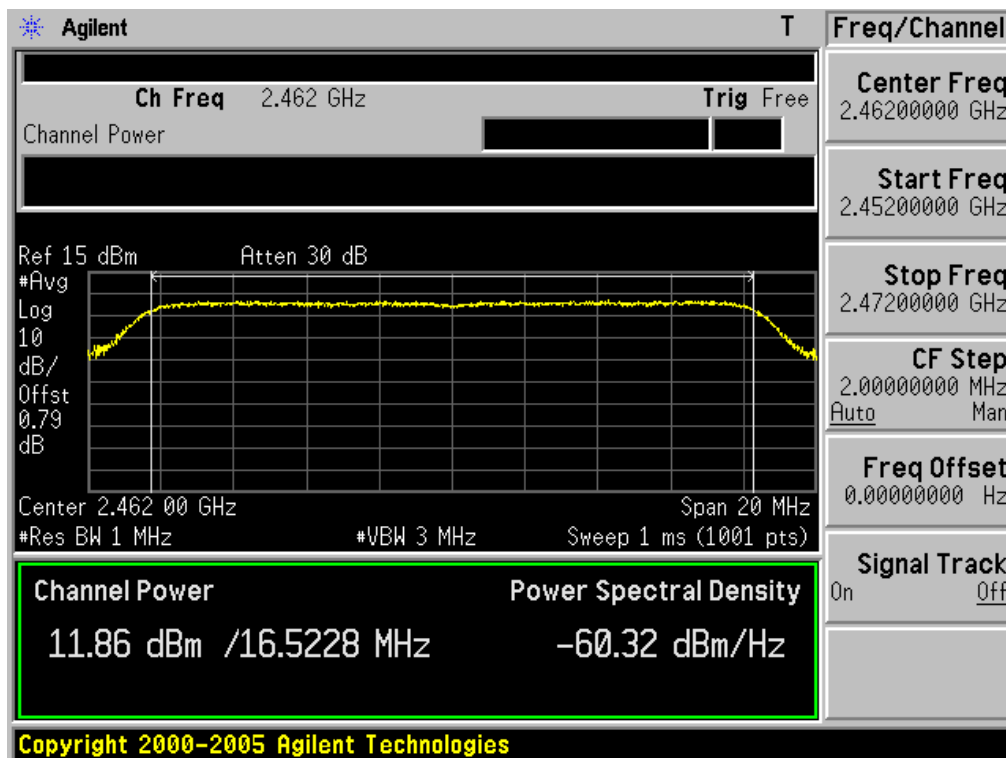
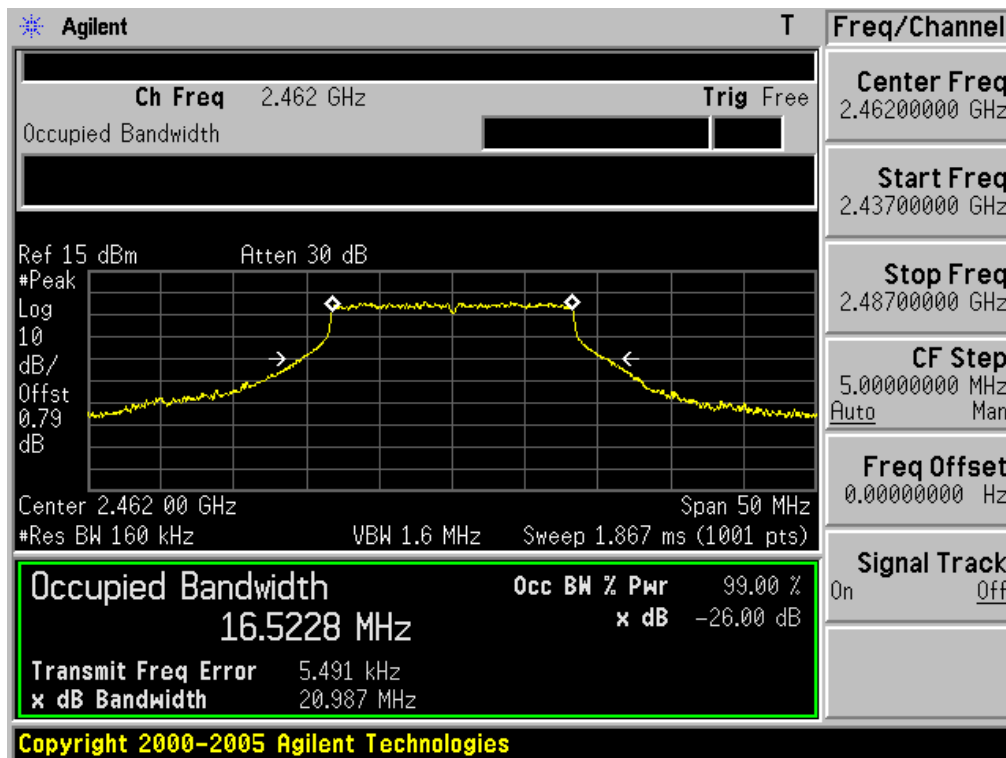
Low Channel

26 dB Bandwidth and Peak Output Power - 802.11g Mode -



Middle Channel

26 dB Bandwidth and Peak Output Power - 802.11g Mode -



High Channel

3.2.3 Out of Band Emissions / Band Edge

- Procedure:

The bandwidth at 20dB down from the highest inband spectral density is measured with a spectrum analyzer connected to the antenna terminal at the highest, middle and the lowest available channels.

After the trace being stable, Use the marker-to-peak function to measure 20 dB down both sides of the intentional emission.

This device complies with use of power option 2. The attenuation under this paragraph shall be 30dB instead of 20dB.

The spectrum analyzer is set to:

Center frequency = the highest, middle and the lowest channels

RBW = 100 kHz

VBW = 100 kHz

Detector function = peak

Trace = max hold

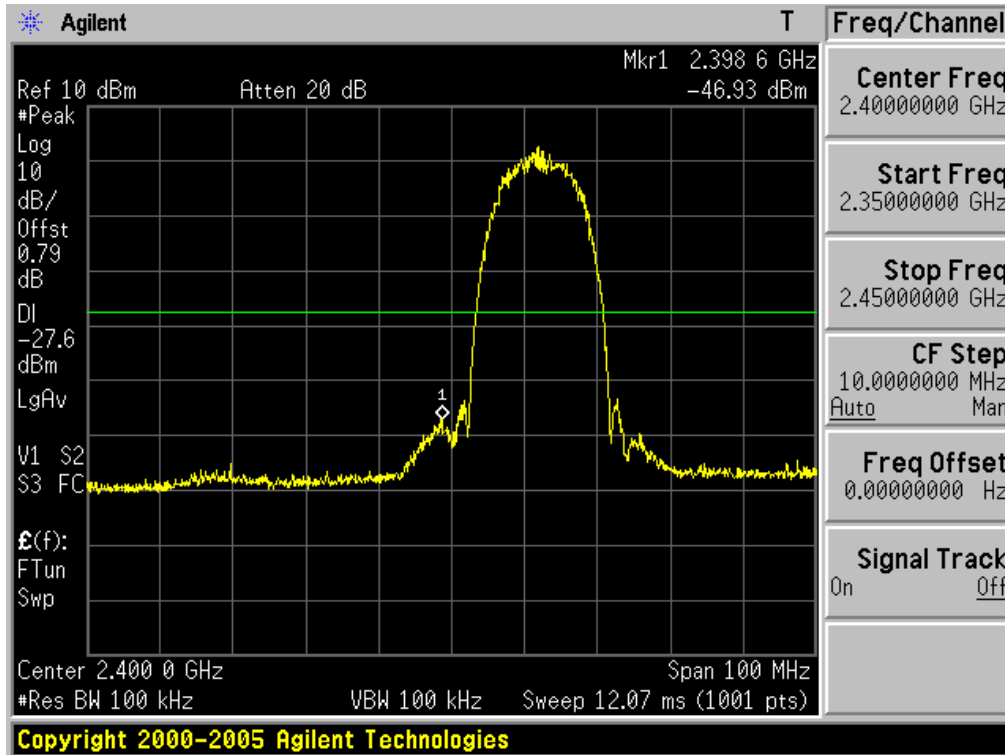
Sweep = auto

- Measurement Data: Comply

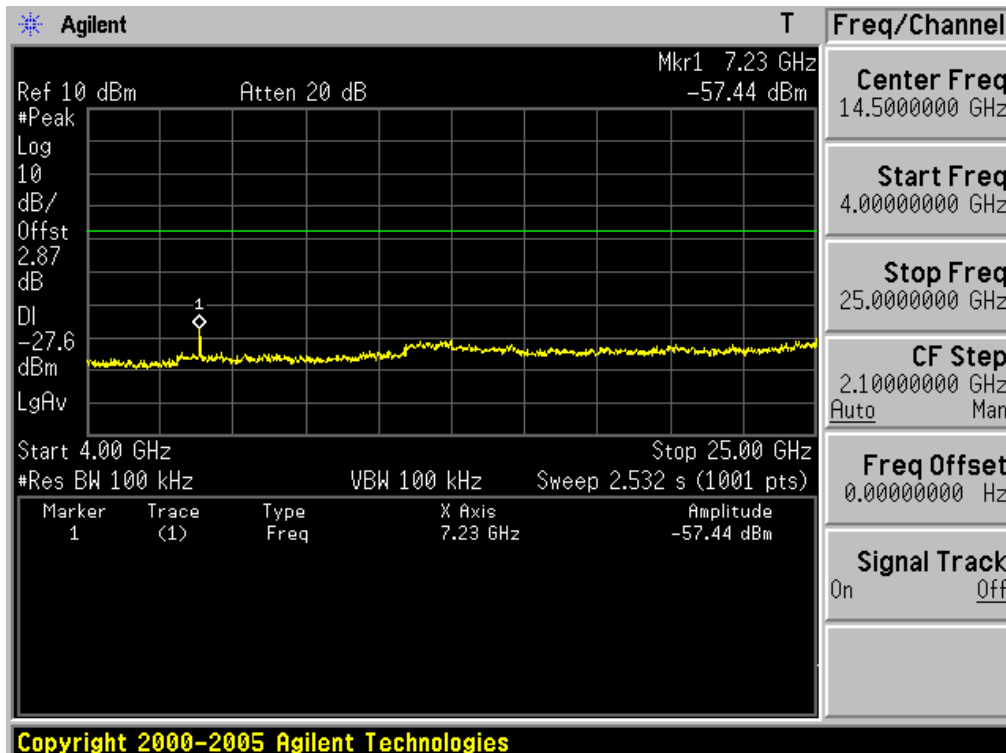
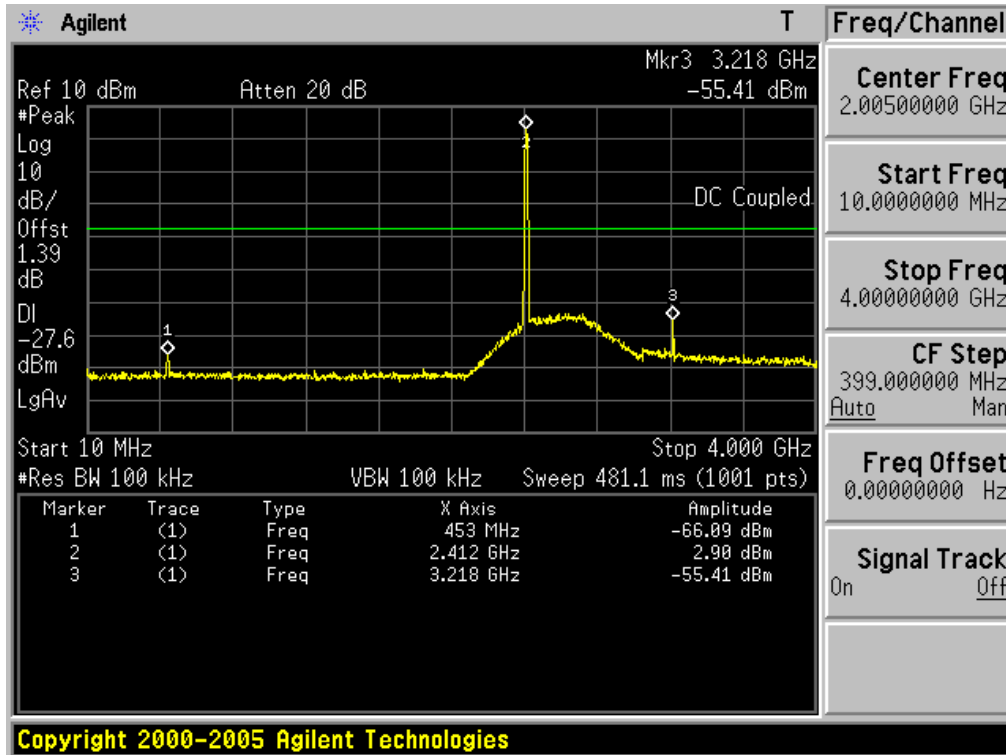
- All conducted emission in any 100 kHz bandwidth outside of the spread spectrum band was at least 30dB lower than the highest inband spectral density. Therefore the applying equipment meets the requirement.
- See next pages for actual measured spectrum plots.

Minimum Standard:	> 30 dBc
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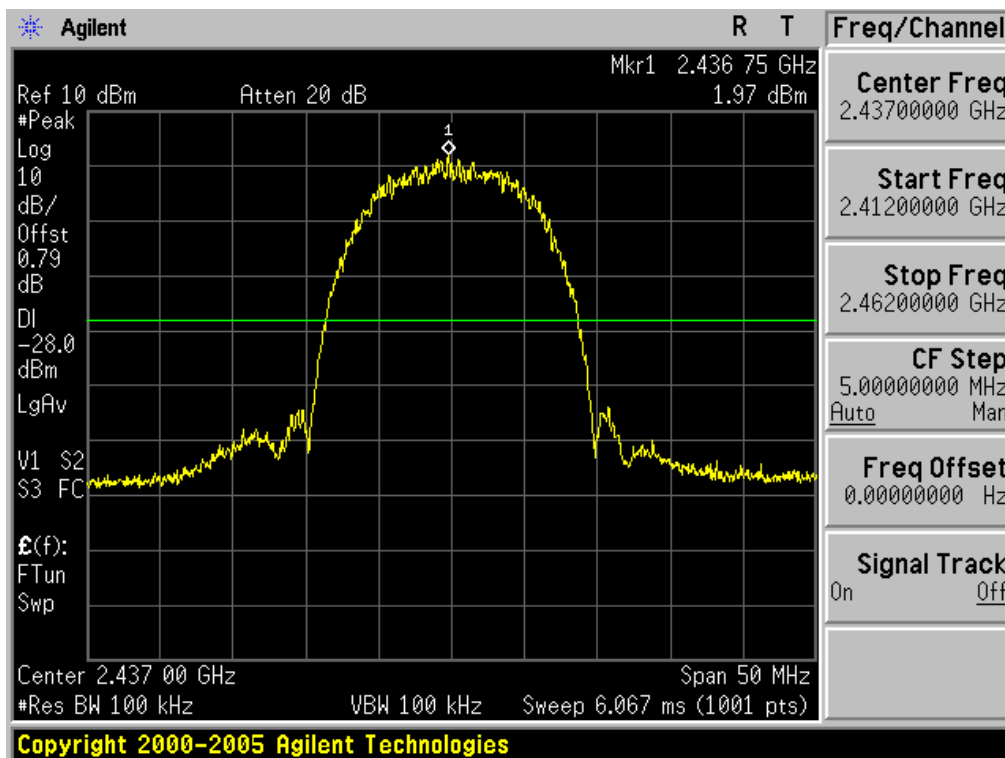
Band - edge (at 30 dB blow)
- 802.11b Mode -
Low Channel



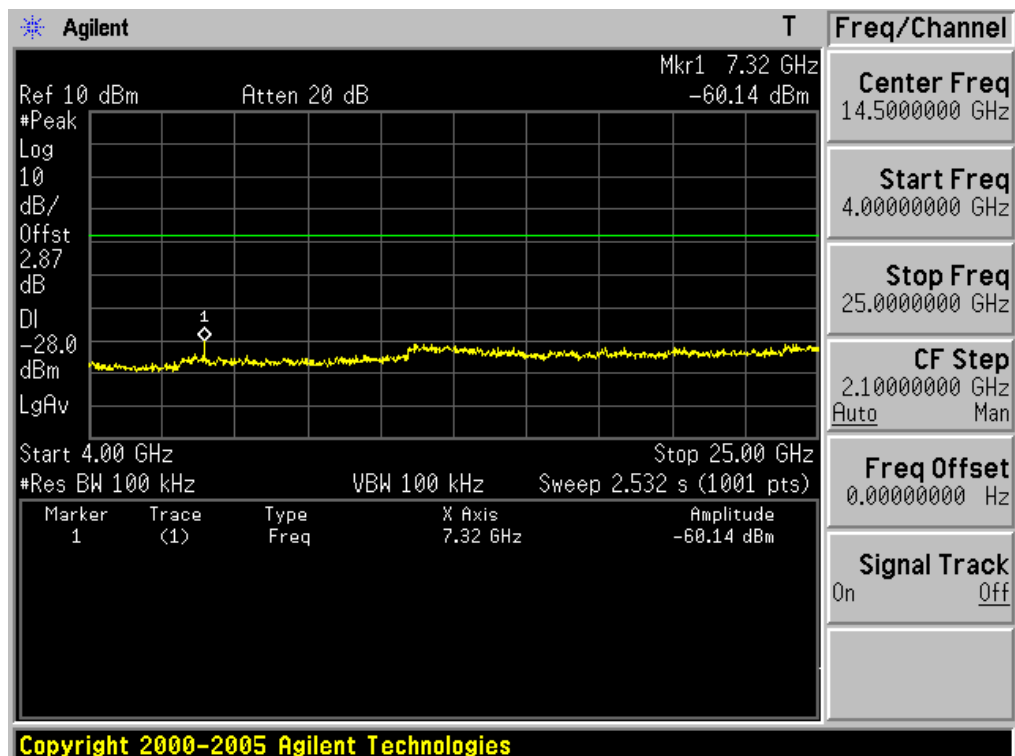
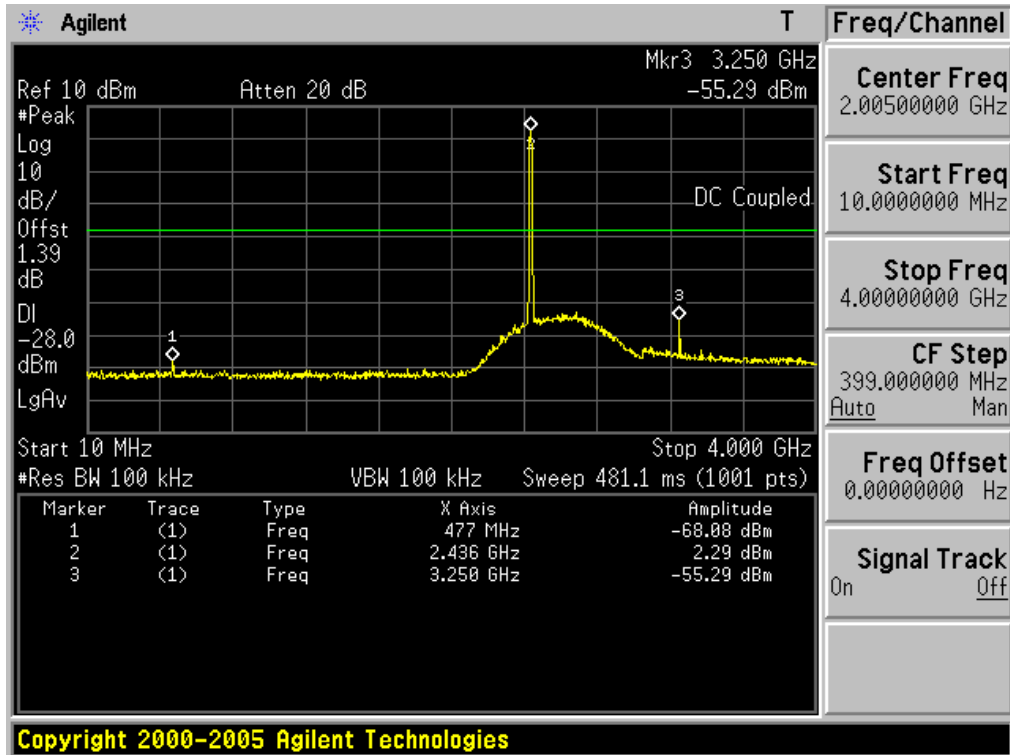
Spurious - 802.11b Mode - Low Channel



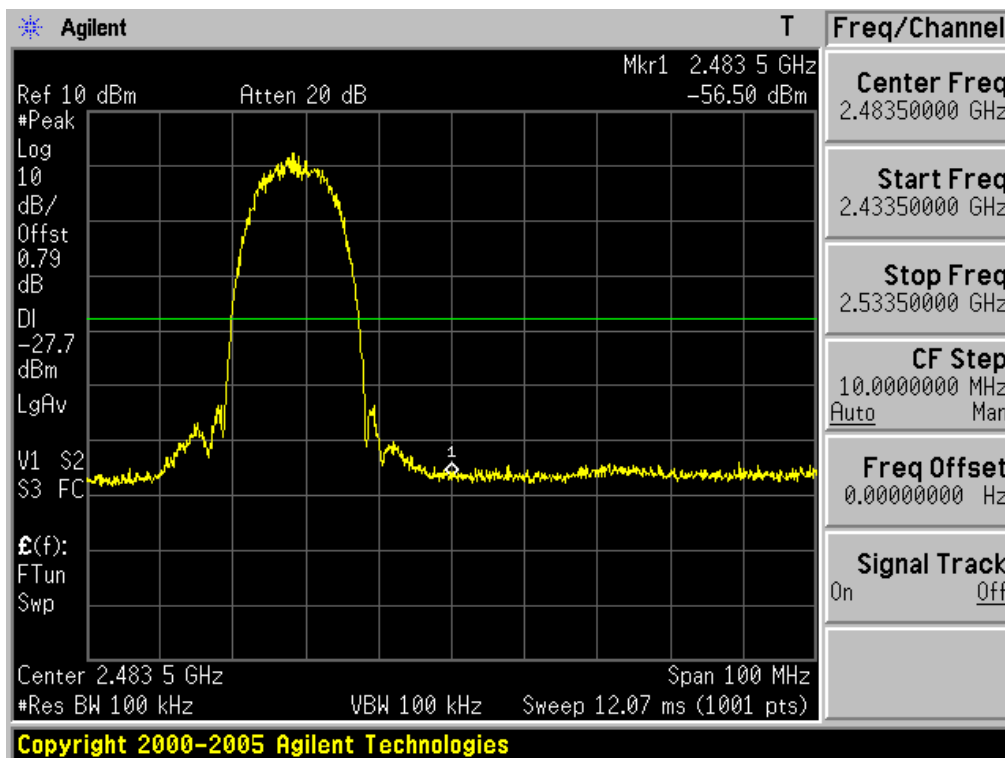
Reference for limit (at 30 dB blow)
 - 802.11b Mode -
 Mid Channel



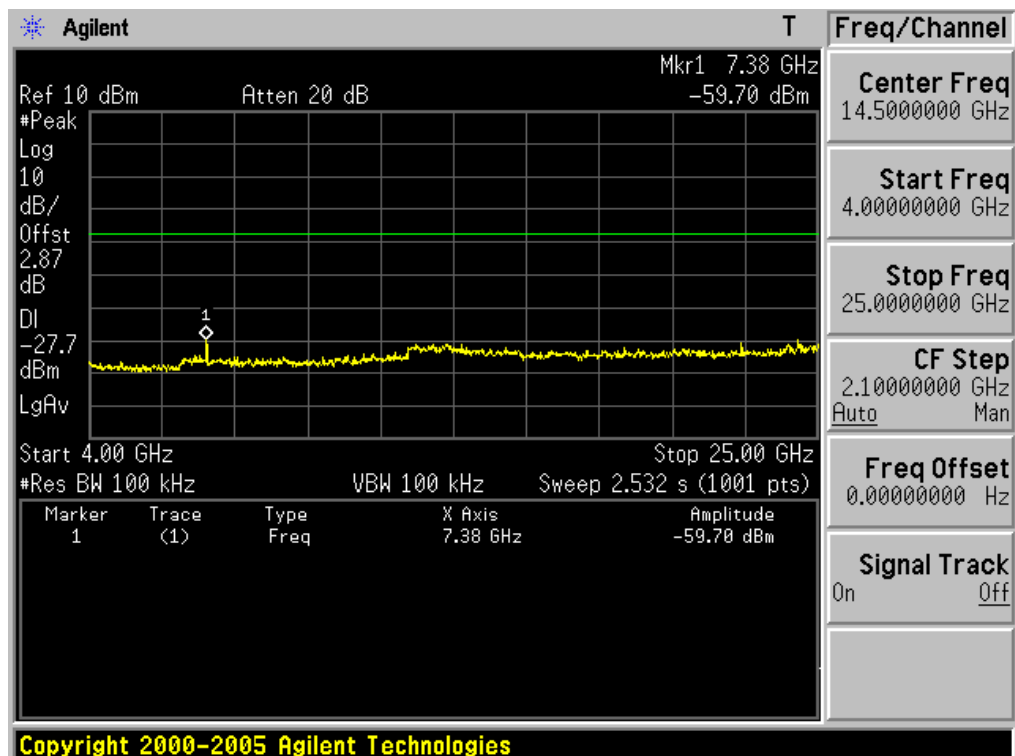
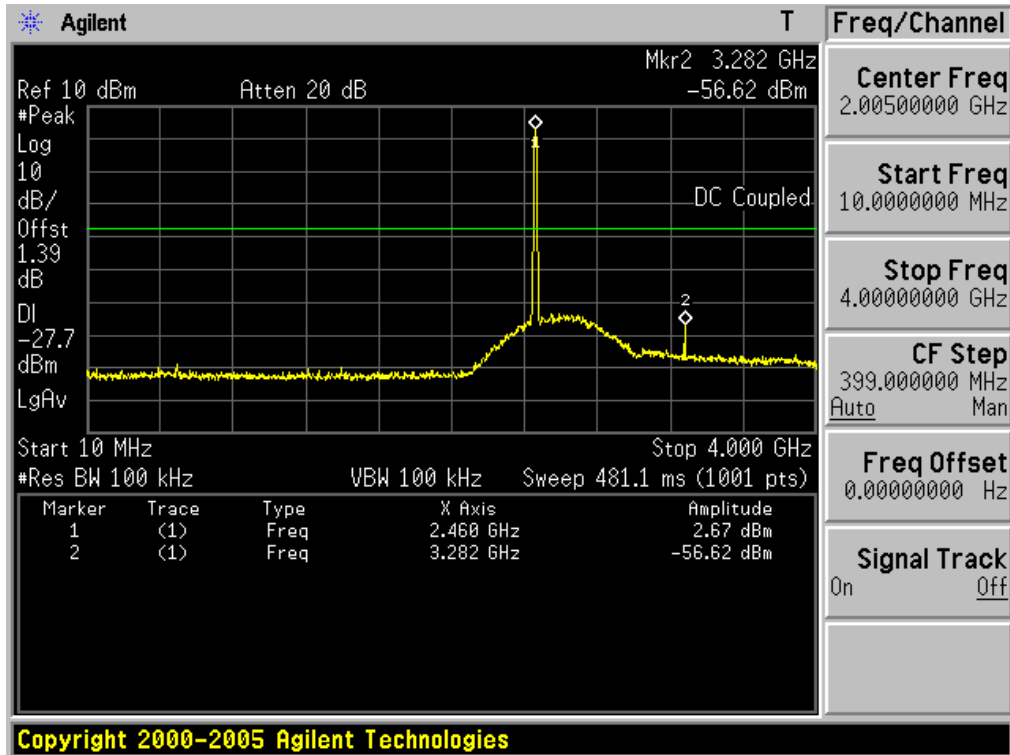
Spurious - 802.11b Mode - Mid Channel



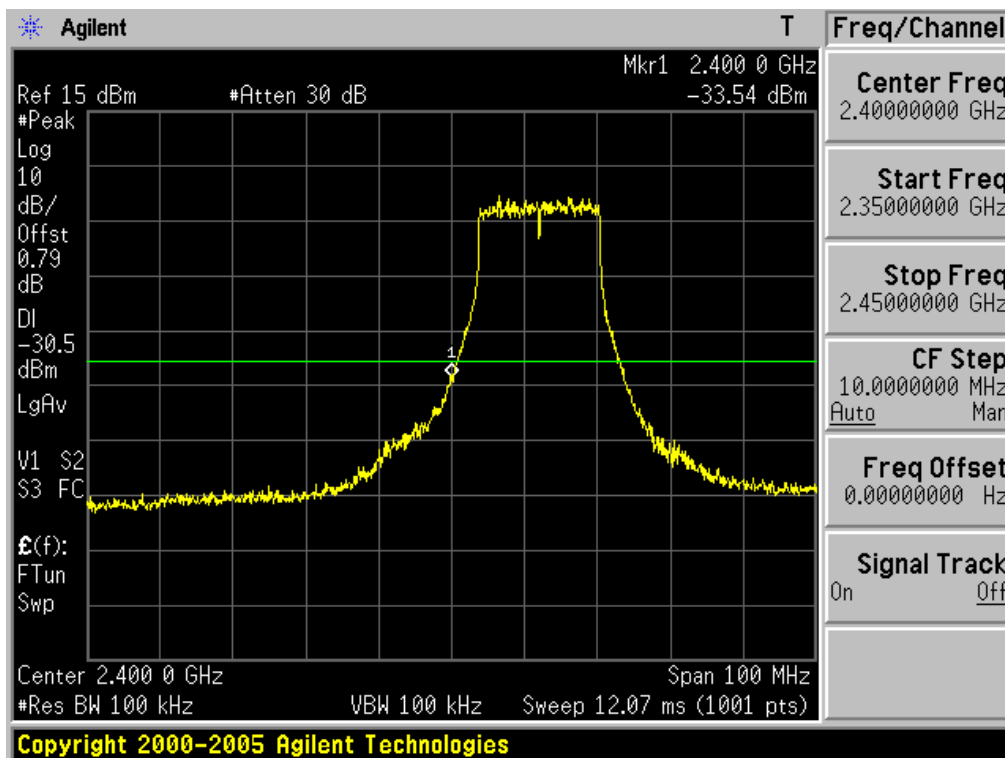
Band - edge (at 30 dB blow)
- 802.11b Mode -
High Channel



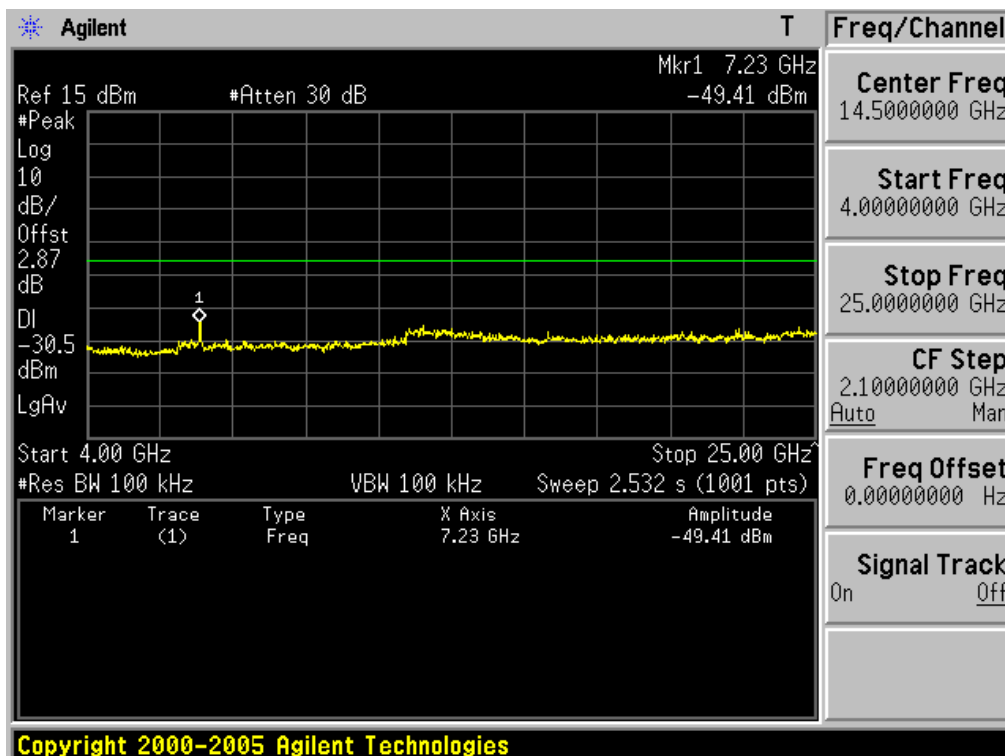
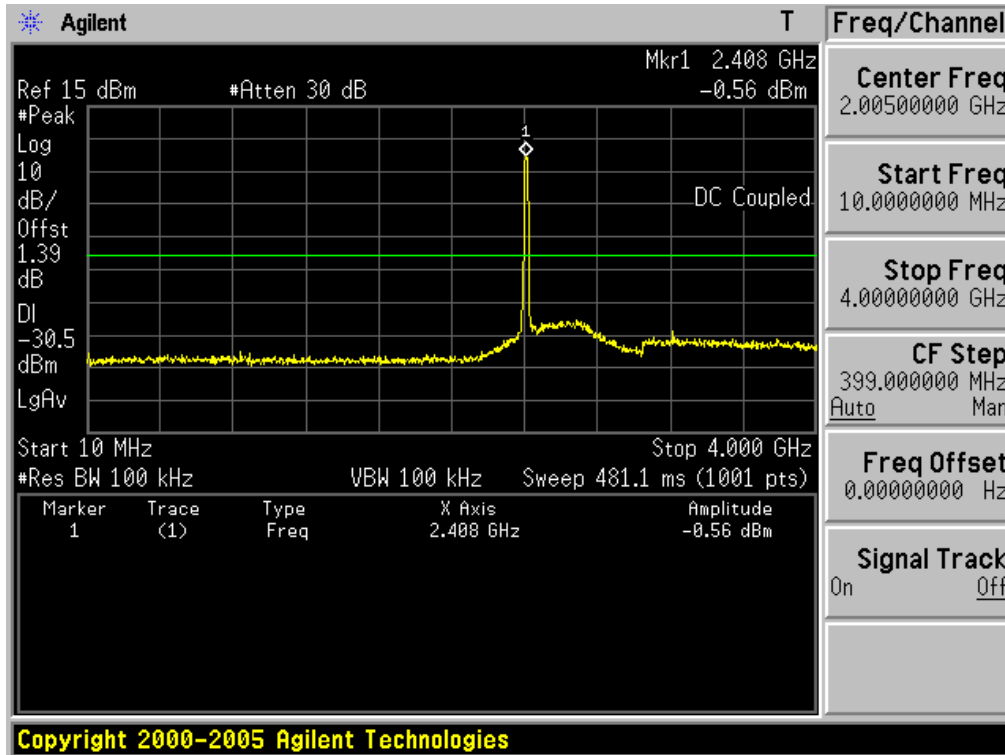
Spurious - 802.11b Mode - High Channel



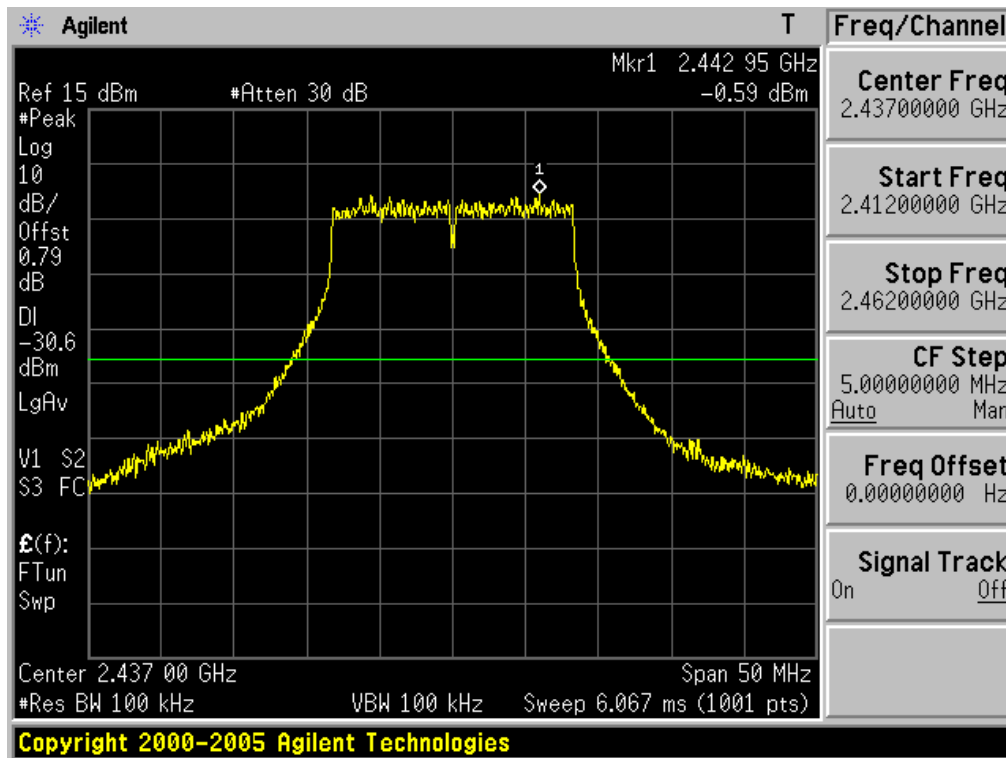
Band - edge (at 30 dB blow)
- 802.11g Mode -
Low Channel



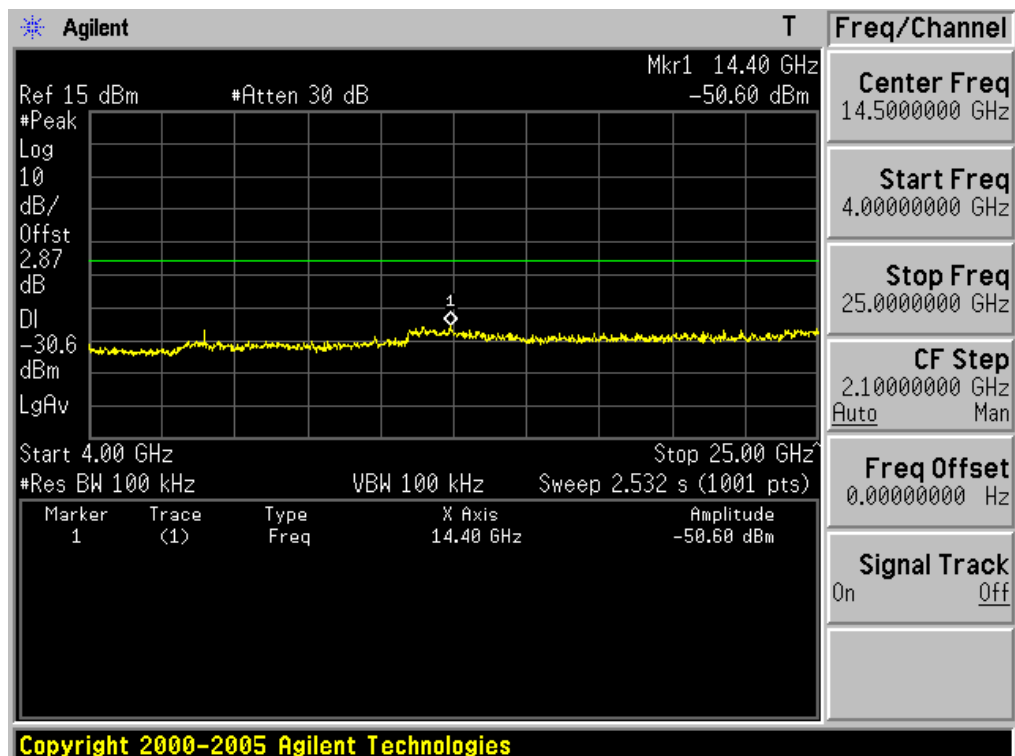
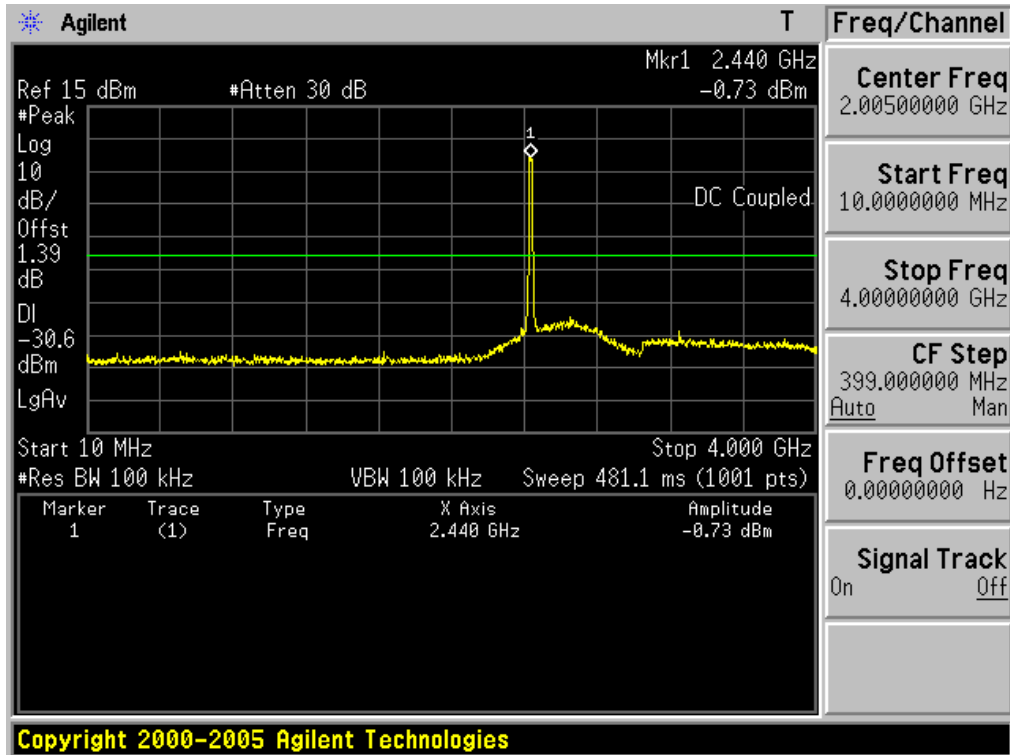
Spurious - 802.11g Mode - Low Channel



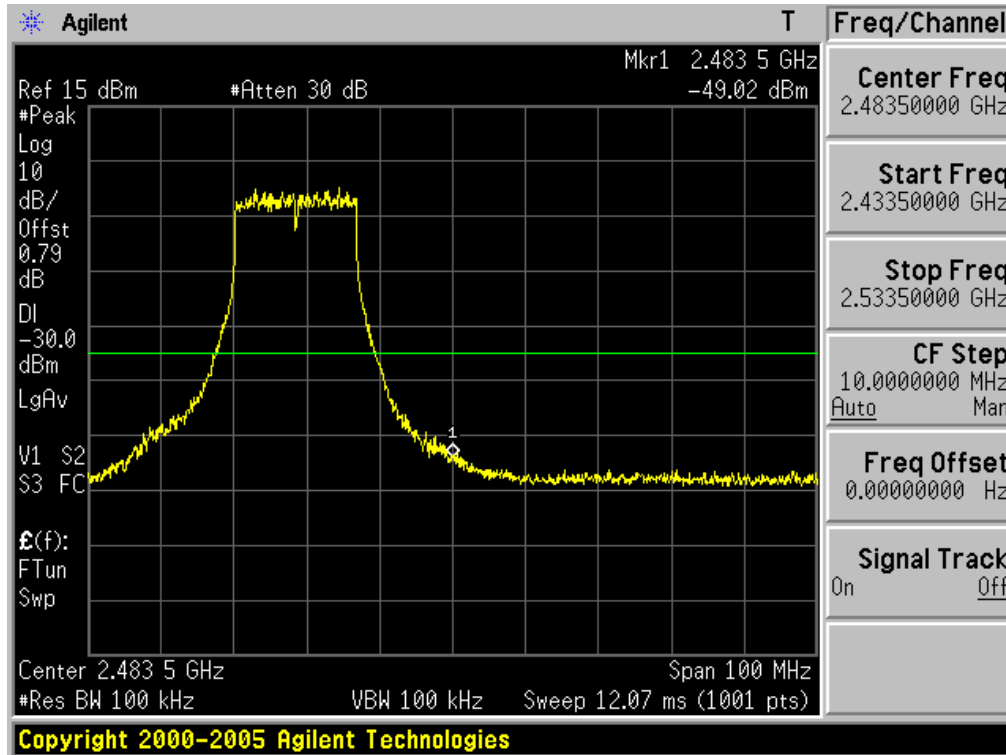
Reference for limit (at 30 dB blow)
- 802.11g Mode -
Mid Channel



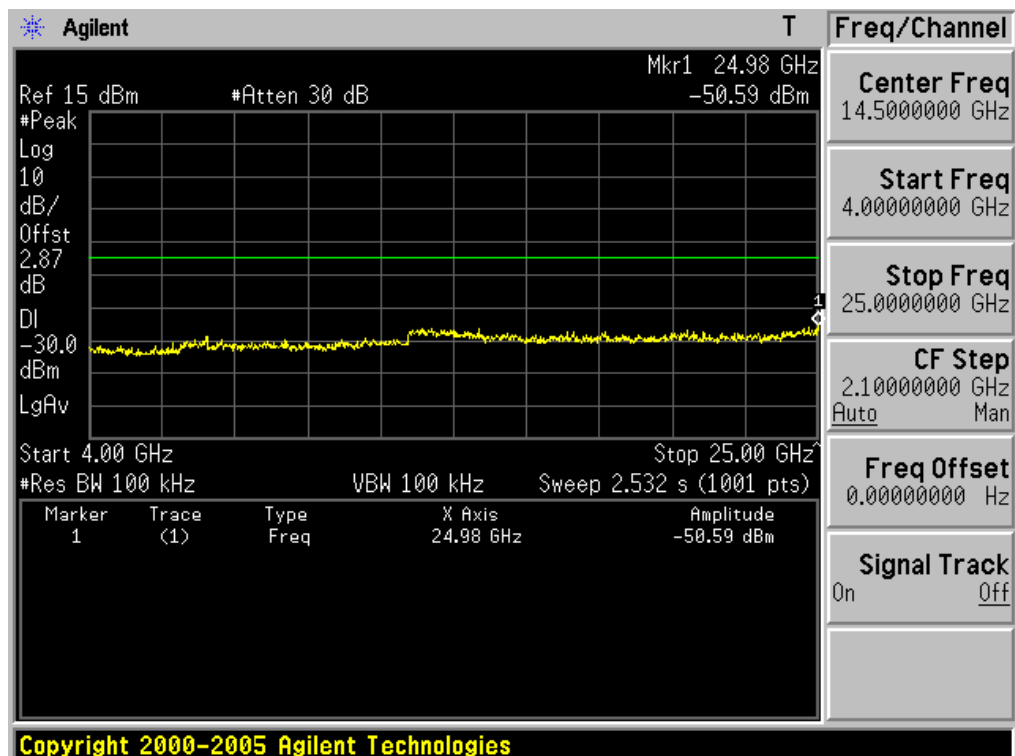
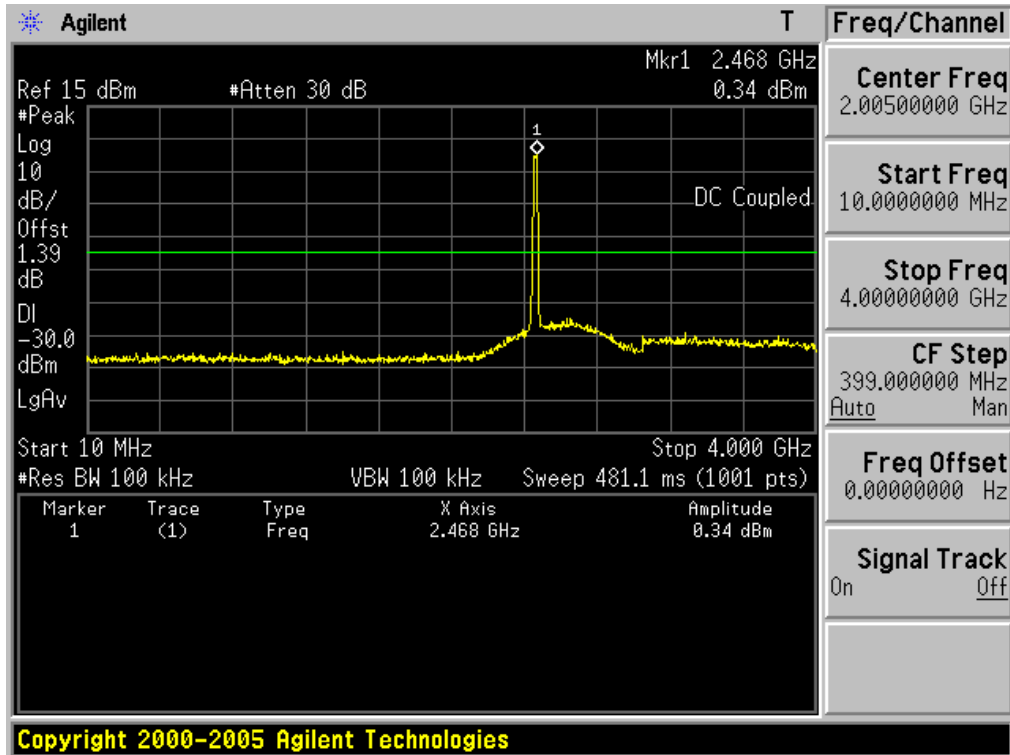
Spurious - 802.11g Mode - Mid Channel



Band - edge (at 30 dB blow)
- 802.11g Mode -
High Channel



Spurious - 802.11g Mode - High Channel



3.2.4 Out of band Emission - Radiated

- Procedure:

The EUT was placed on a 0.8m high wooden table inside a shielded enclosure. An antenna was placed near the EUT and measurements of frequencies and amplitudes of field strengths were recorded for reference during final measurements. For final radiated testing, measurements were performed in OATS. Measurements were performed with the EUT oriented in 3 orthogonal axis and rotated 360 degrees to determine worst-case orientation for maximum emissions.

The spectrum analyzer is set to:

Center frequency = the worst channel

Frequency Range = 30 MHz ~ 10th harmonic.

RBW = 120 kHz (30MHz ~ 1 GHz)

= 1 MHz (1 GHz ~ 10th harmonic)

Trace = max hold

VBW = 10Hz (Average), VBW ≥ RBW (Peak)

Sweep = auto

- Measurement Data: Comply (Refer to the next page.)

-Note 1 : This test item was performed with following 2 AC/DC Adaptors

.

1. Black Adaptor (GT-41052-1506-0.9)

2. White Adaptor (SA-A136LA)

- Note 2 : Marker 1's emissions of the low band edge test plots are emissions from WIMAX downlink signal in Korea. So it's not an emission from this device.

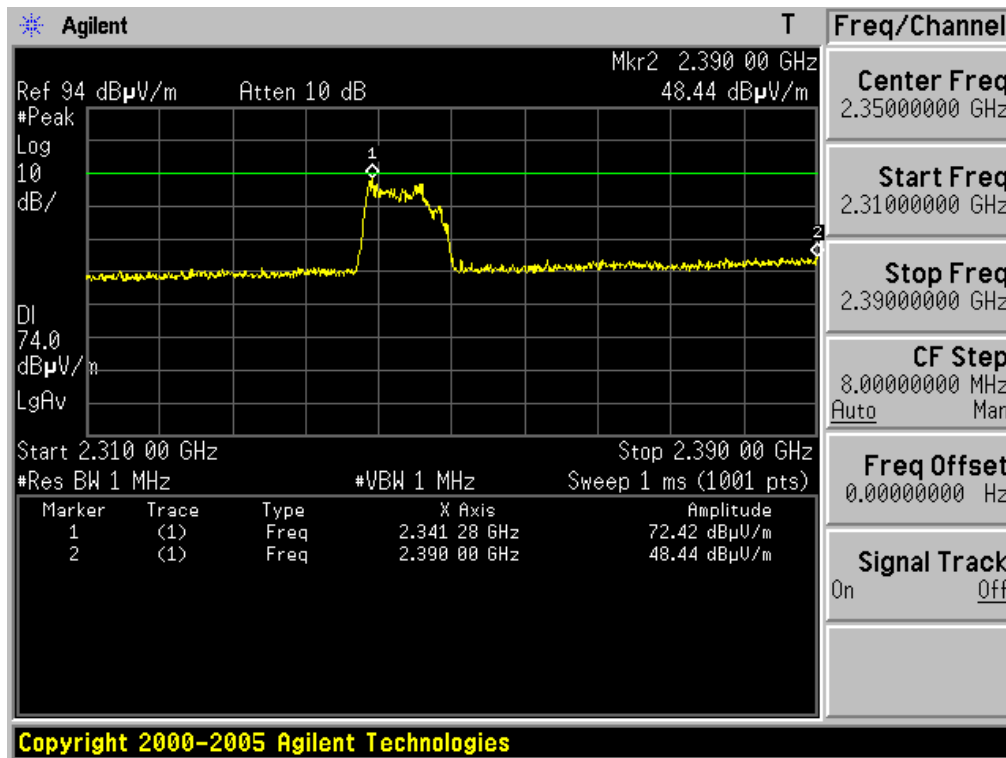
- Minimum Standard: FCC Part 15.205 (a), 15.205(b), 15.209(a) and (b)

- Limit: FCC P15.209 (a)

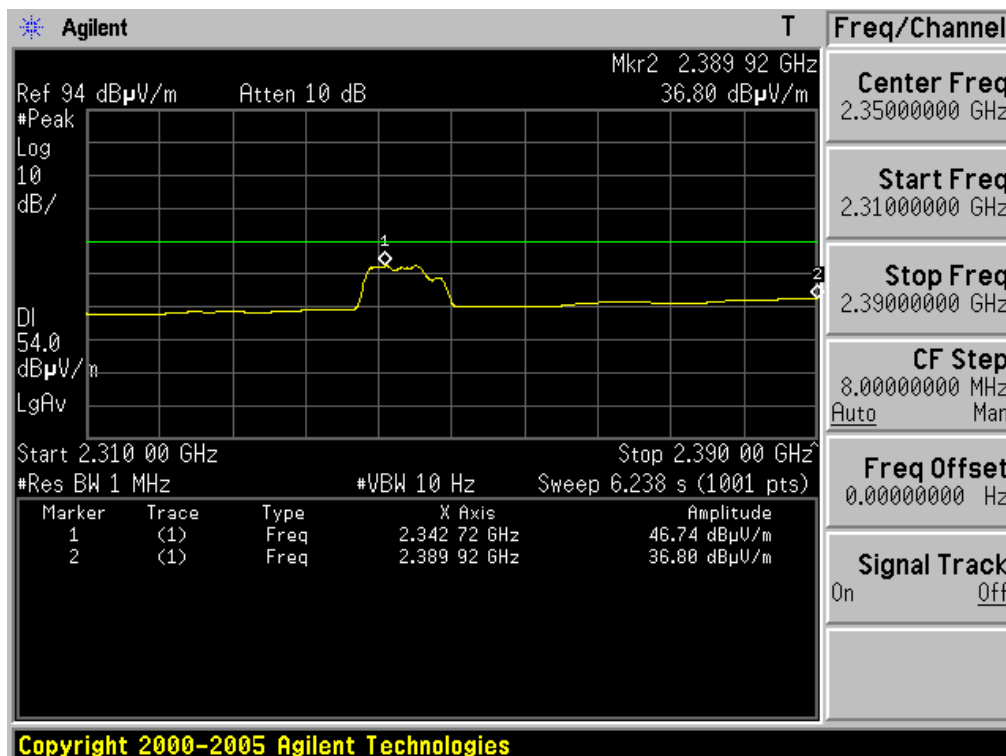
Frequency (MHz)	Limit (uV/m) @ 3m
30 ~ 88	100 **
88 ~ 216	150 **
216 ~ 960	200 **
Above 960	500

** Except as provided in 15.209(g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88MHz, 174-216MHz or 470-806MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g. 15.231 and 15.241.

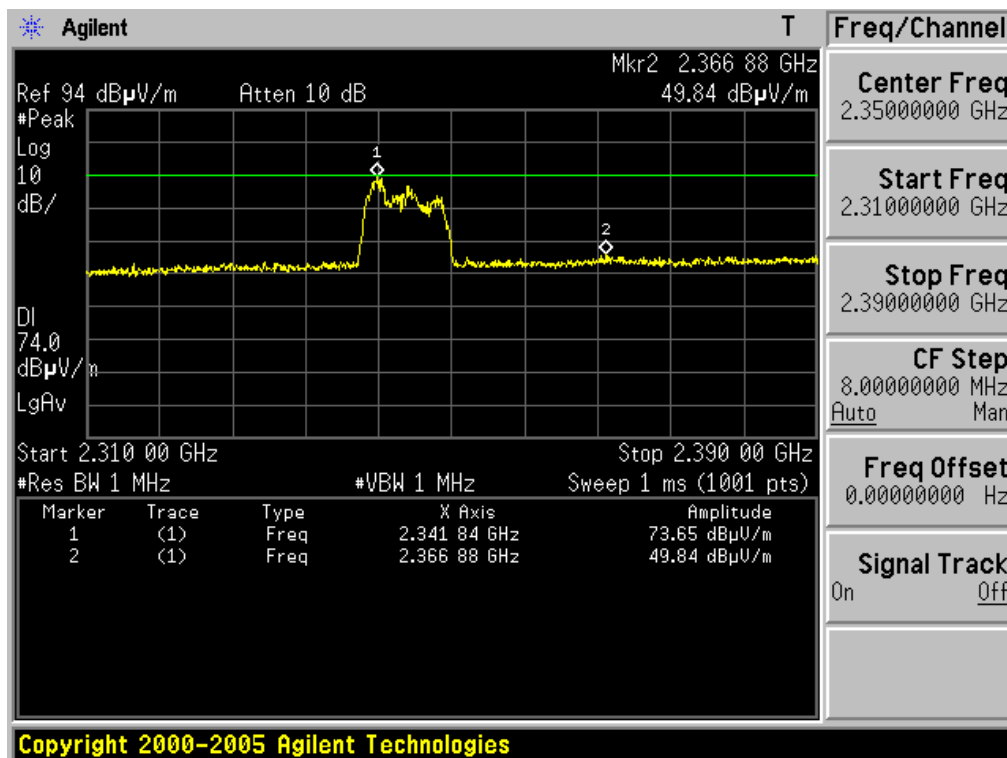
Restricted Band Edge: Low Channel (Peak, Horizontal) 802.11b Mode + Black Adaptor



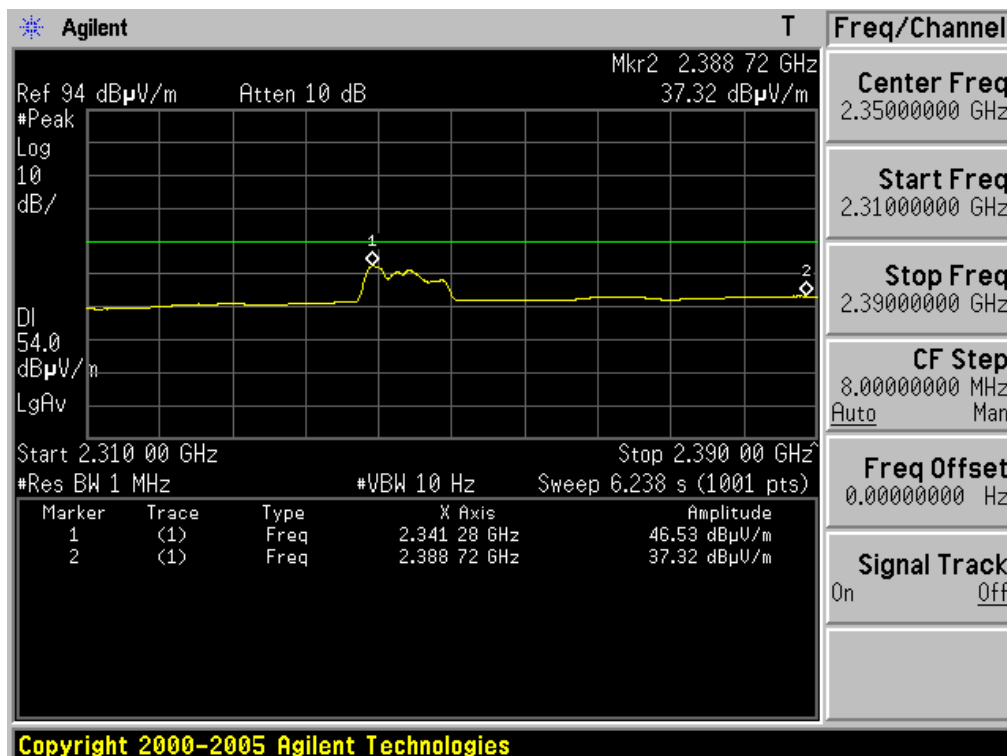
Restricted Band Edge: Low Channel (Average, Horizontal) 802.11b Mode + Black Adaptor



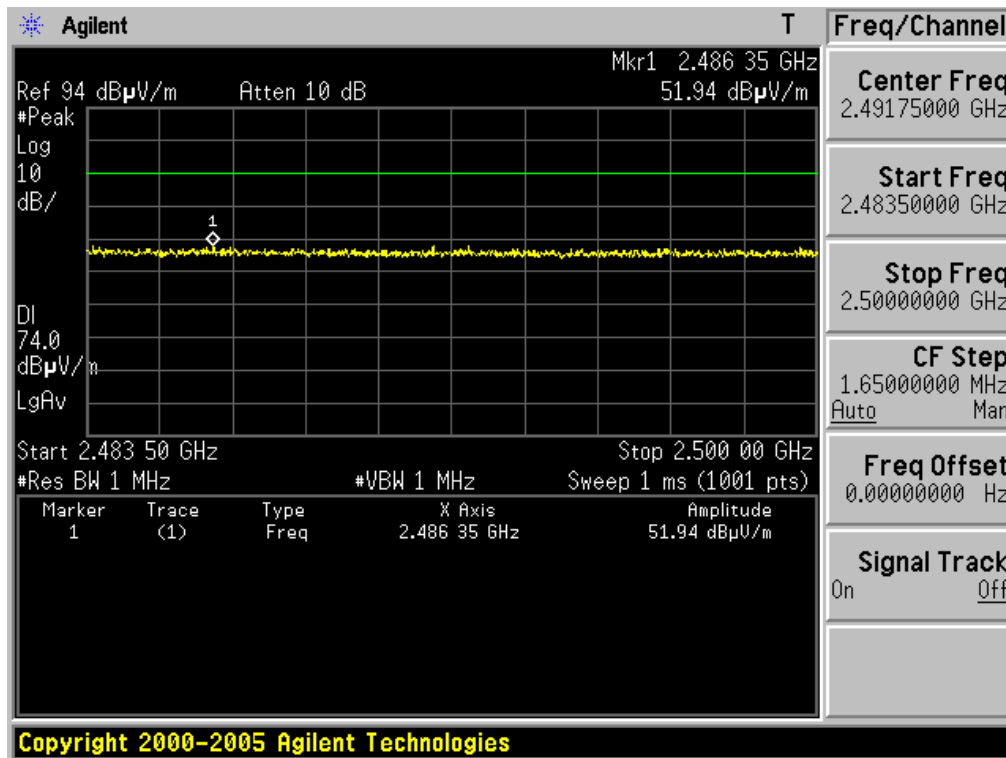
Restricted Band Edge: Low Channel (Peak, Vertical) 802.11b Mode + Black Adaptor



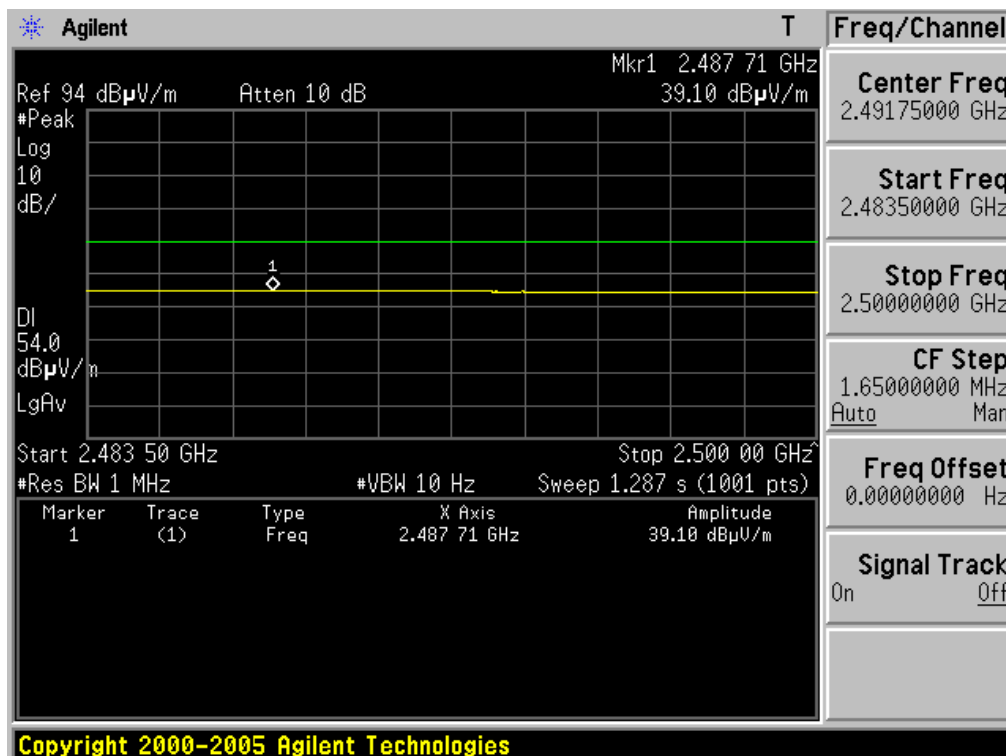
Restricted Band Edge: Low Channel (Average, Vertical) 802.11b Mode + Black Adaptor



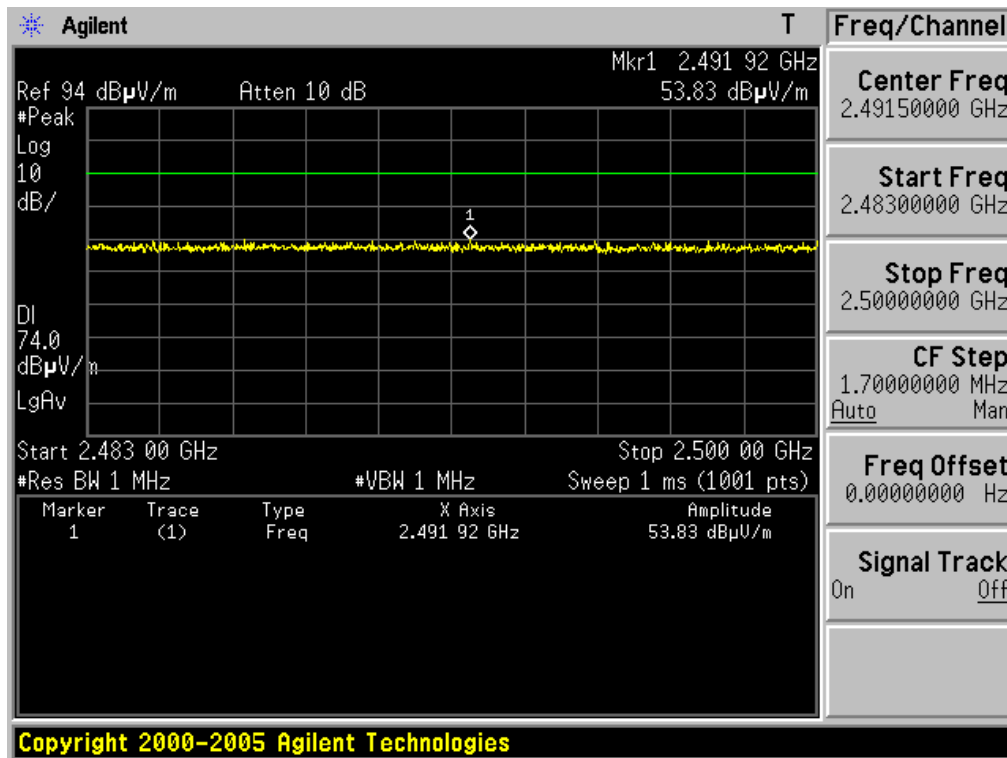
Restricted Band Edge: High Channel (Peak, Horizontal) 802.11b Mode + Black Adaptor



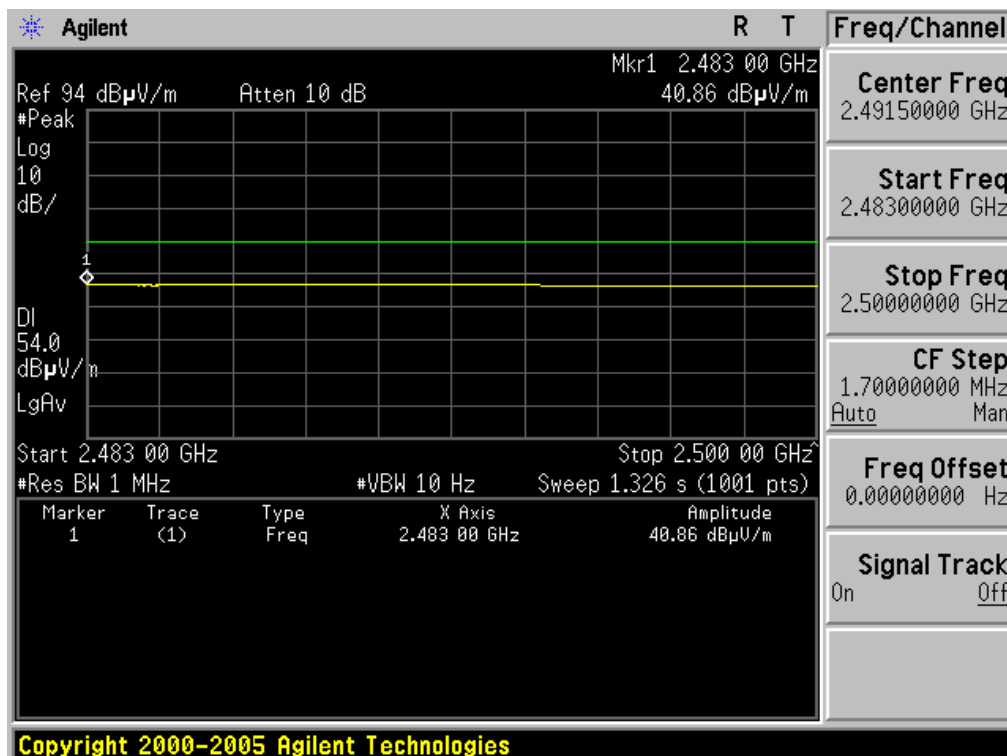
Restricted Band Edge: High Channel (Average, Horizontal) 802.11b Mode + Black Adaptor



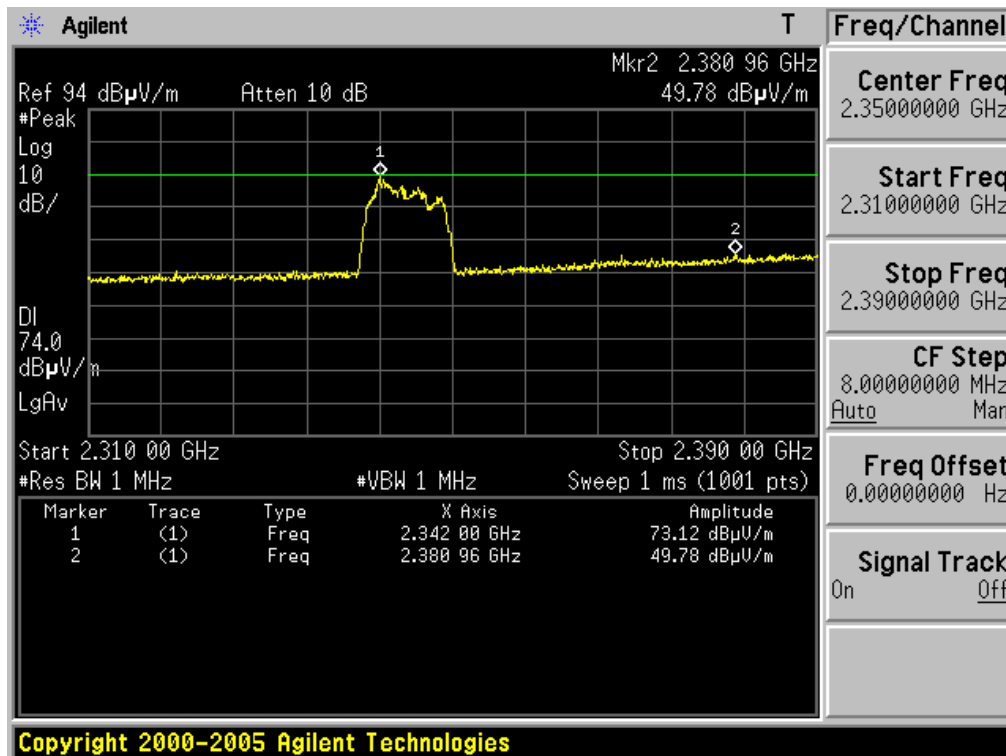
Restricted Band Edge: High Channel (Peak, Vertical) 802.11b Mode + Black Adaptor



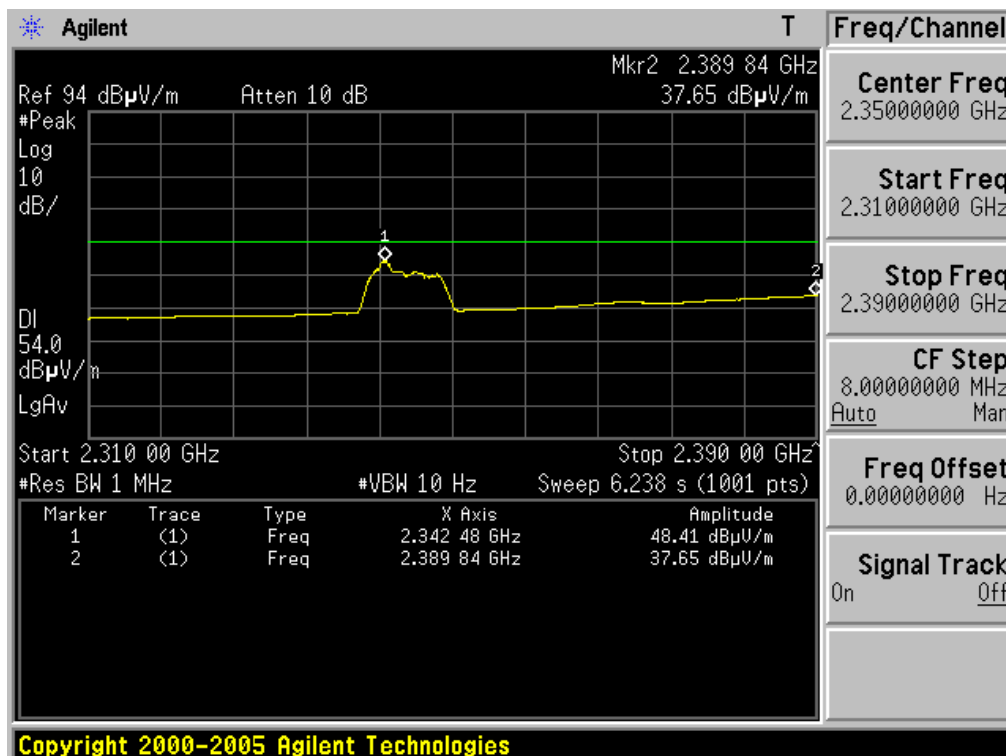
Restricted Band Edge: High Channel (Average, Vertical) 802.11b Mode + Black Adaptor



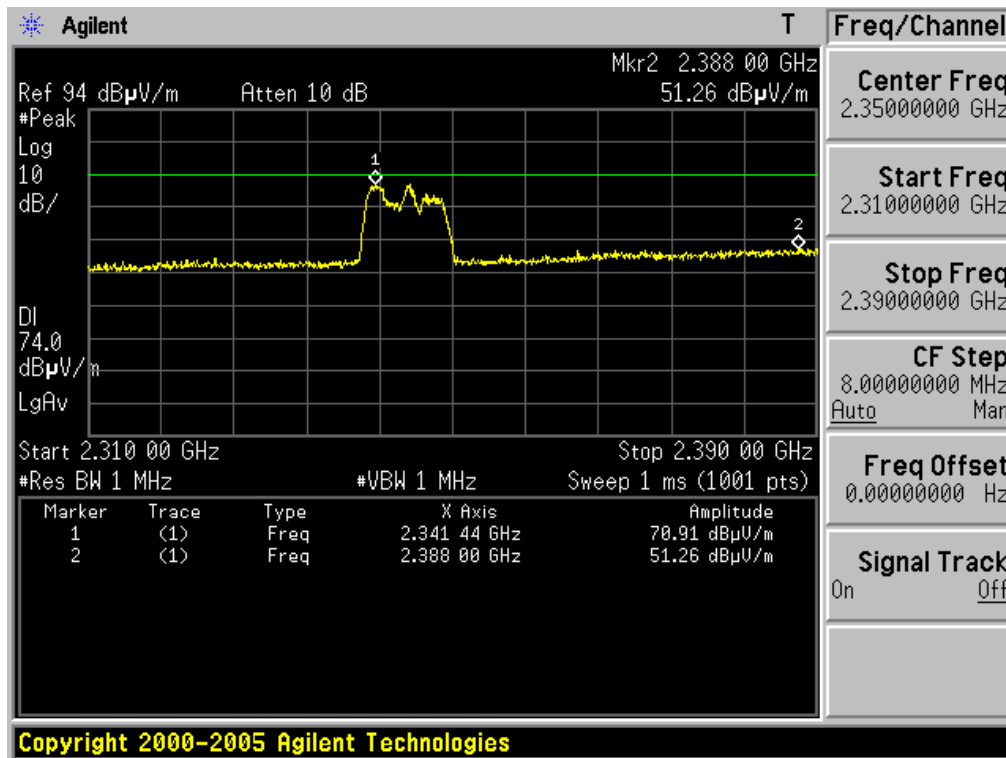
Restricted Band Edge: Low Channel (Peak, Horizontal) 802.11b Mode + White Adaptor



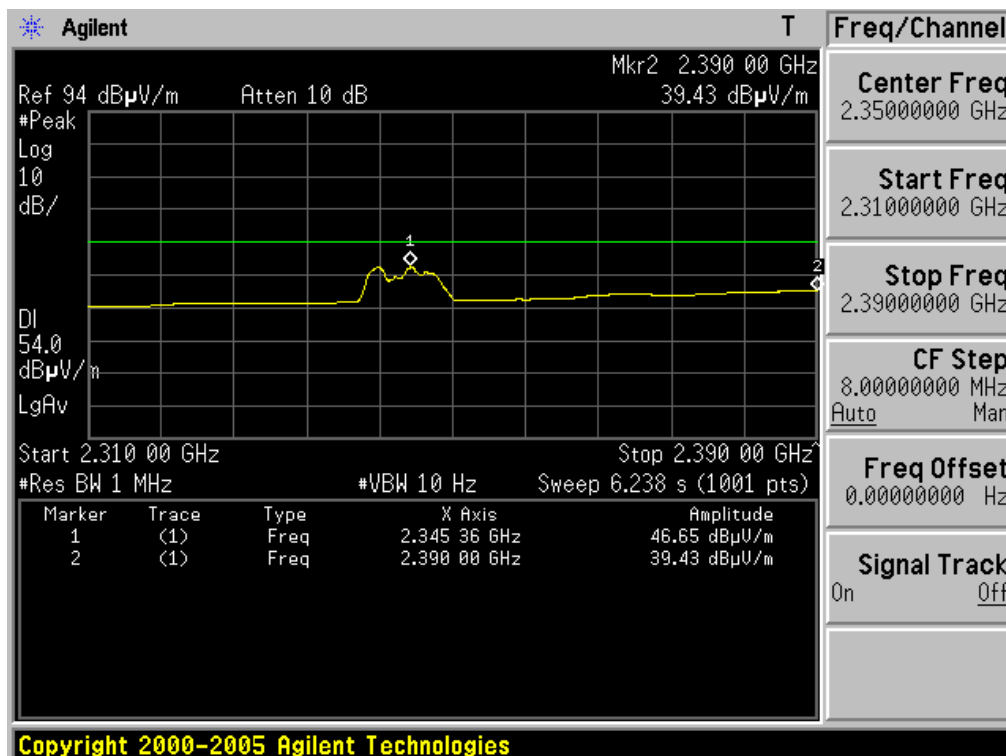
Restricted Band Edge: Low Channel (Average, Horizontal) 802.11b Mode + White Adaptor



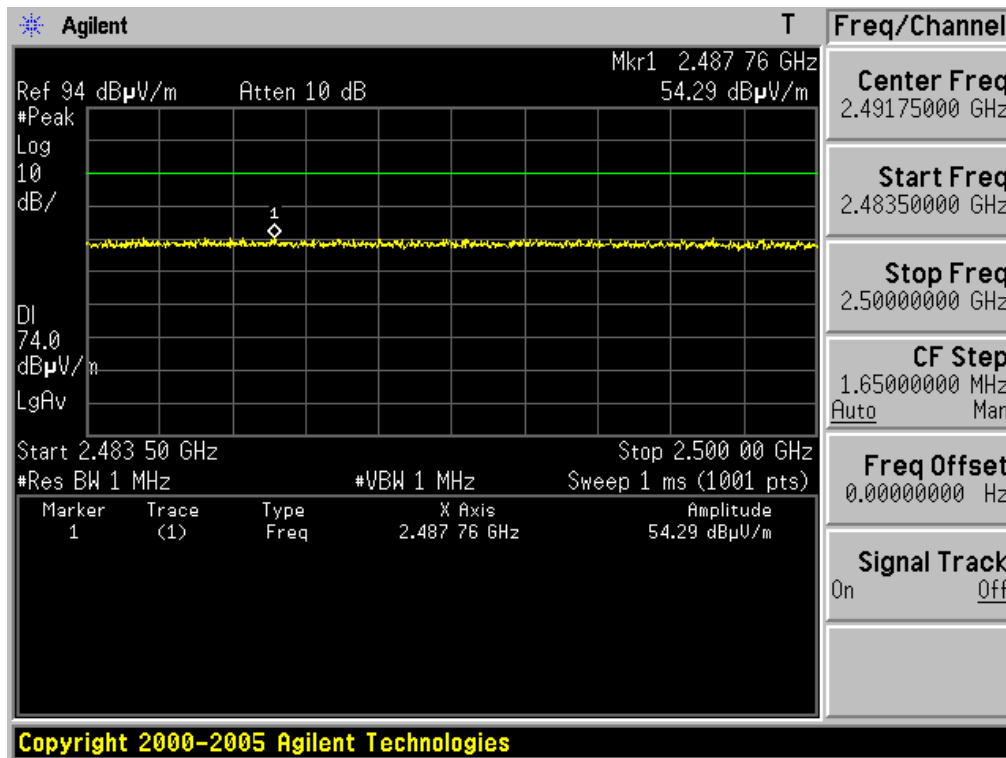
Restricted Band Edge: Low Channel (Peak, Vertical) 802.11b Mode + White Adaptor



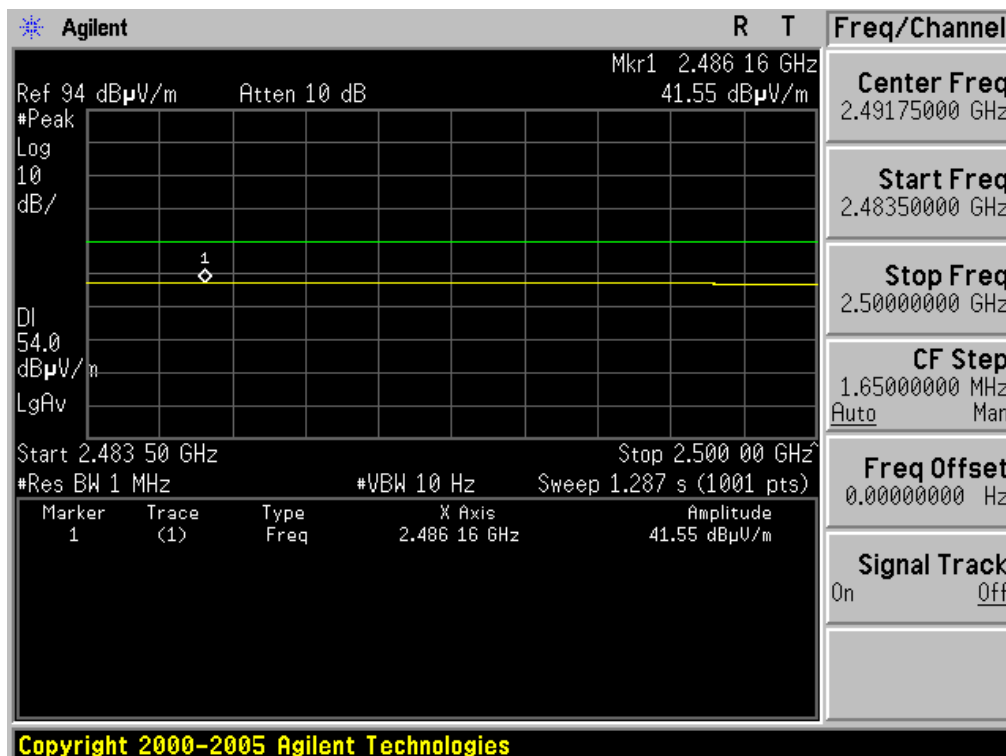
Restricted Band Edge: Low Channel (Average, Vertical) 802.11b Mode + White Adaptor



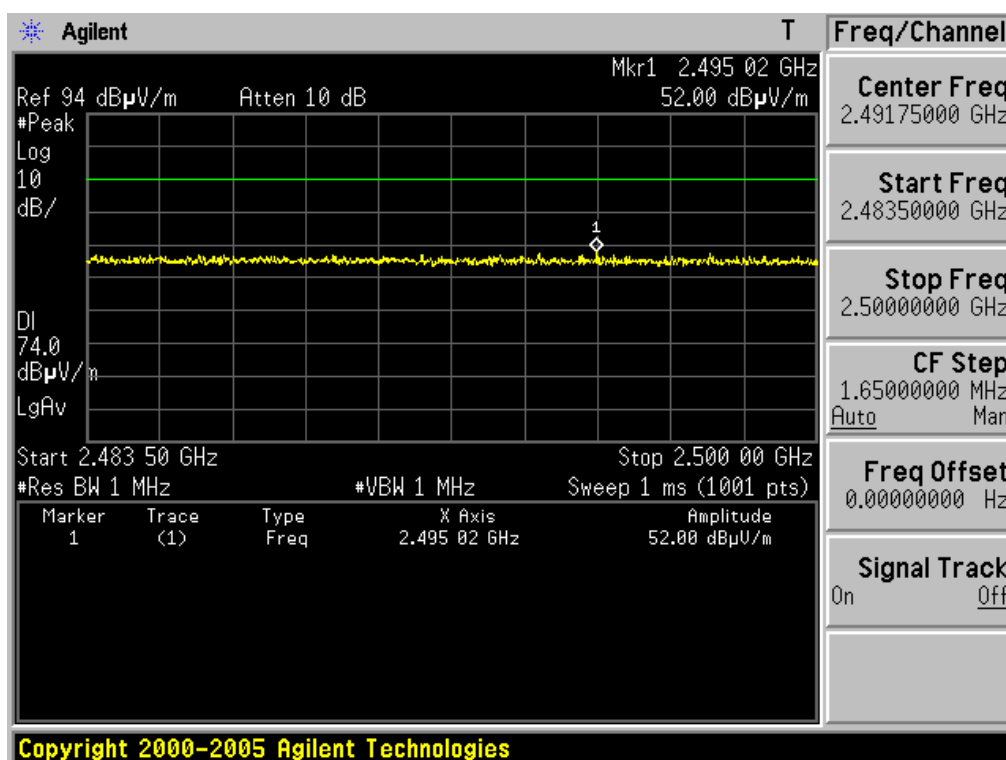
Restricted Band Edge: High Channel (Peak, Horizontal) 802.11b Mode + White Adaptor



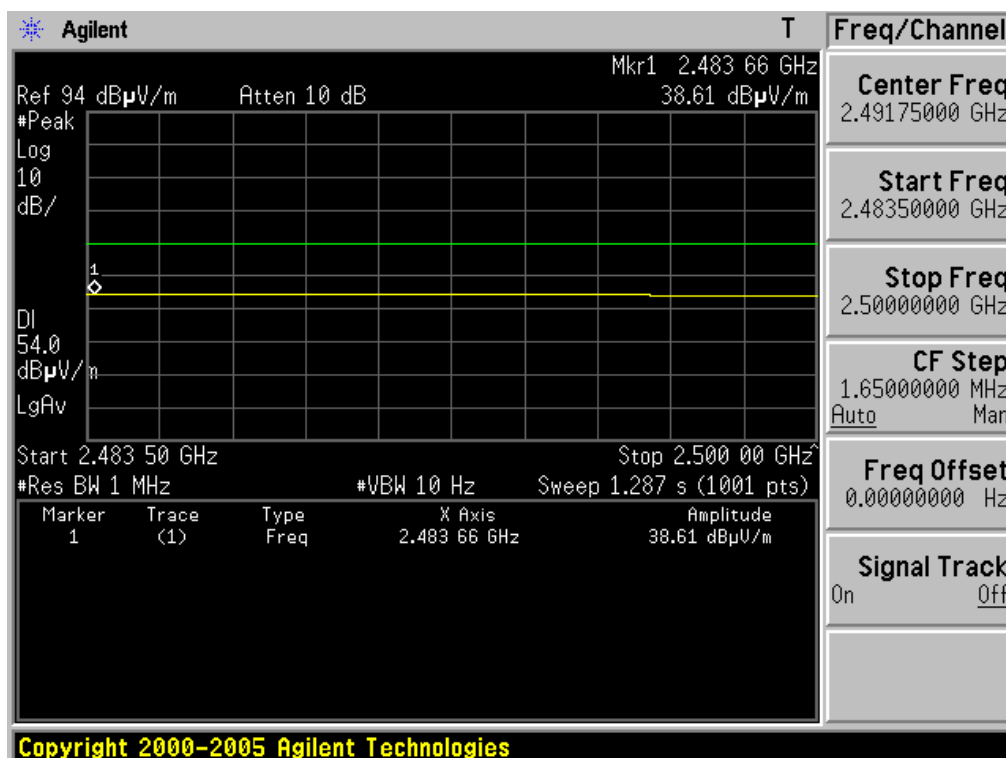
Restricted Band Edge: High Channel (Average, Horizontal) 802.11b Mode + White Adaptor



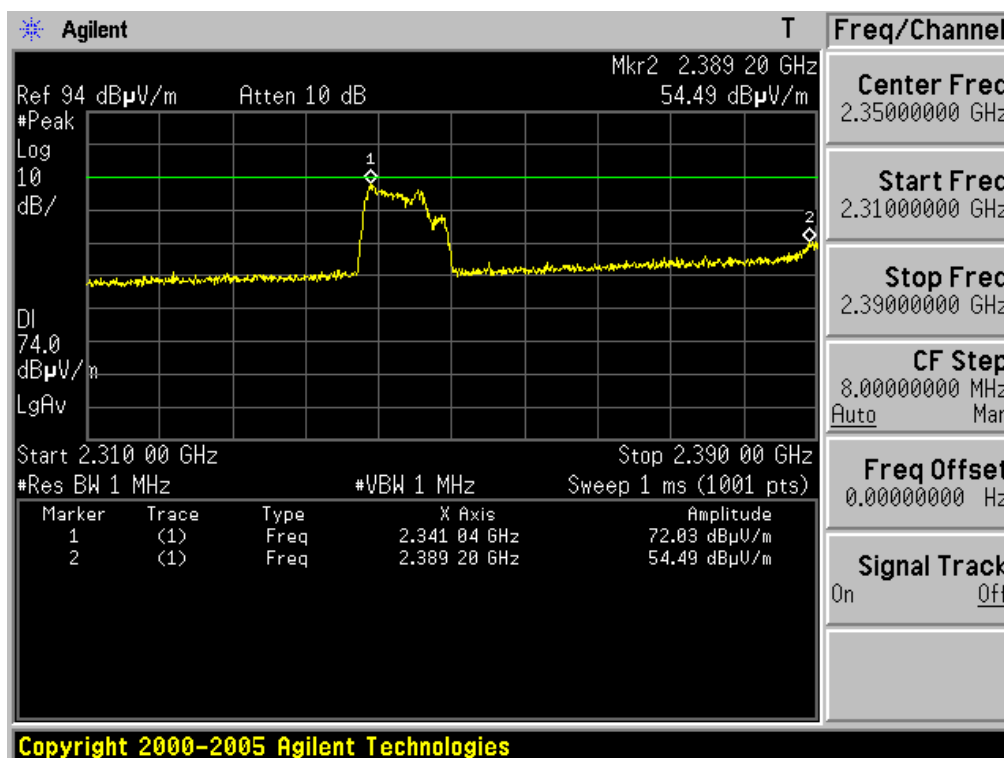
Restricted Band Edge: High Channel (Peak, Vertical) 802.11b Mode + White Adaptor



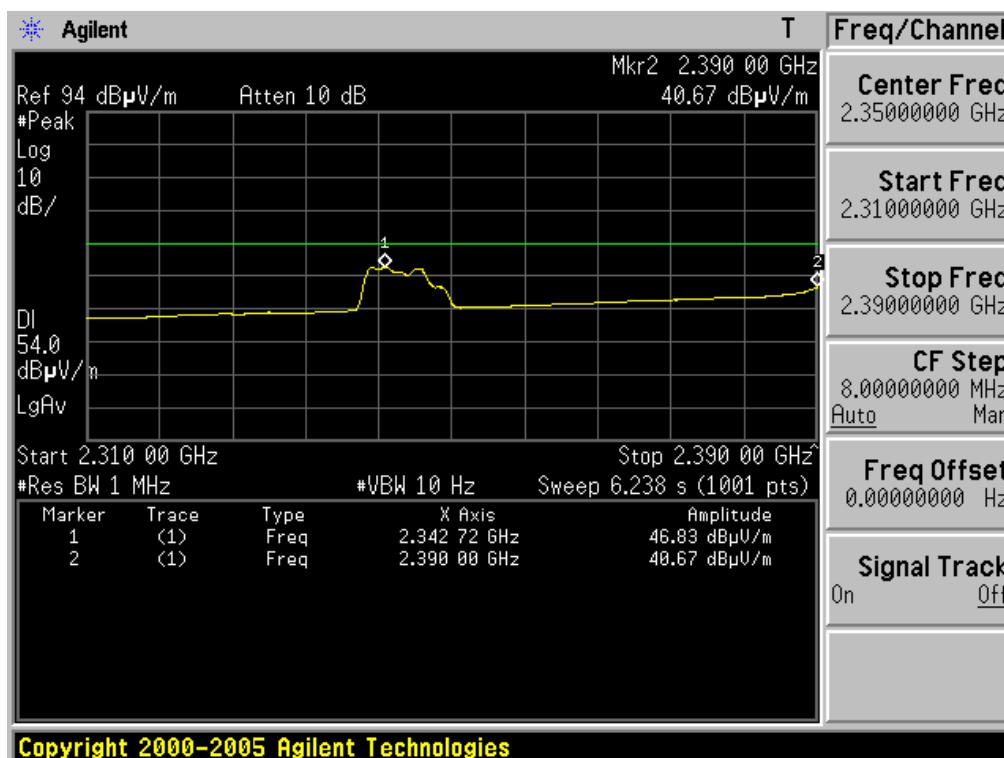
Restricted Band Edge: High Channel (Average, Vertical) 802.11b Mode + White Adaptor



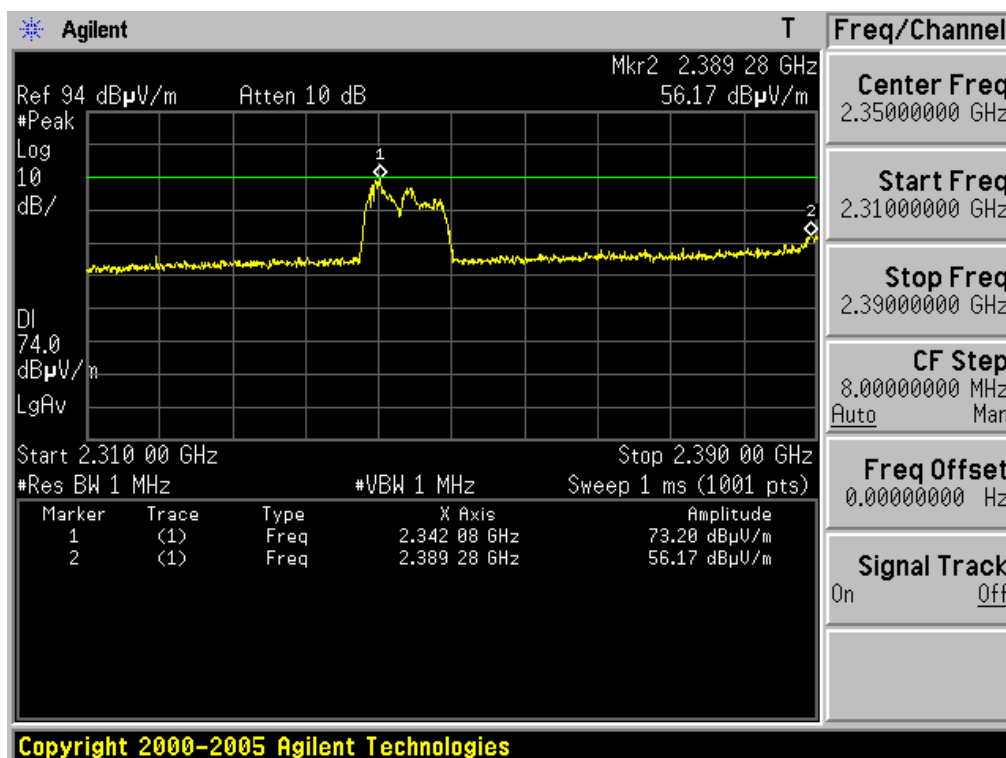
Restricted Band Edge: Low Channel (Peak, Horizontal) 802.11g Mode + Black Adaptor



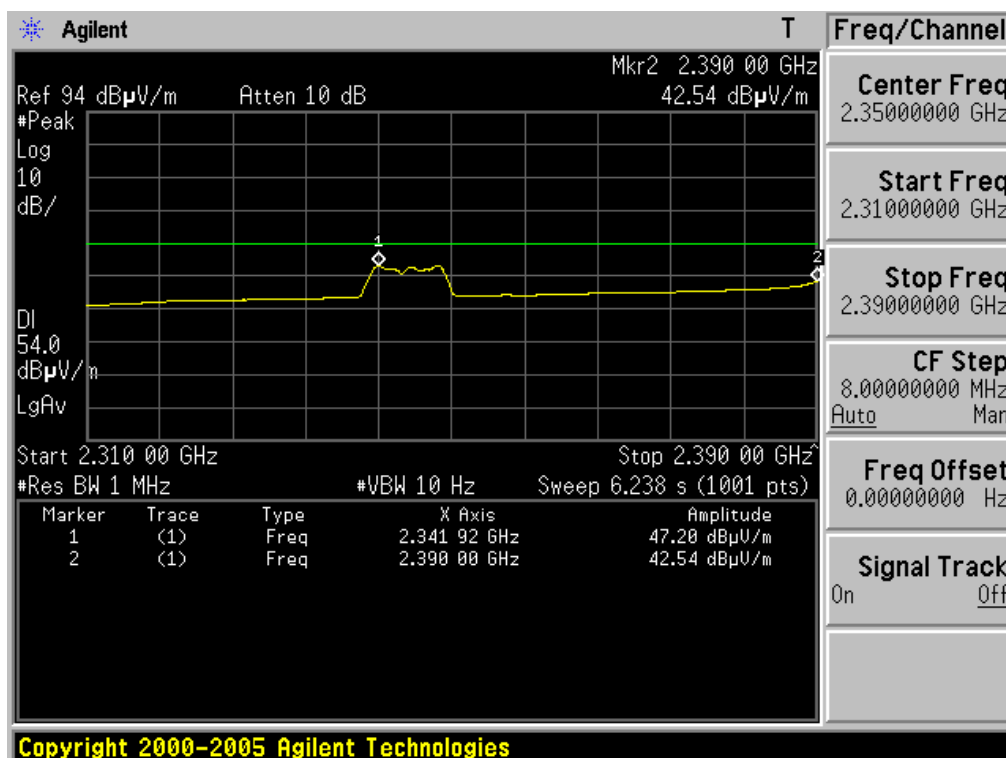
Restricted Band Edge: Low Channel (Average, Horizontal) 802.11g Mode + Black Adaptor



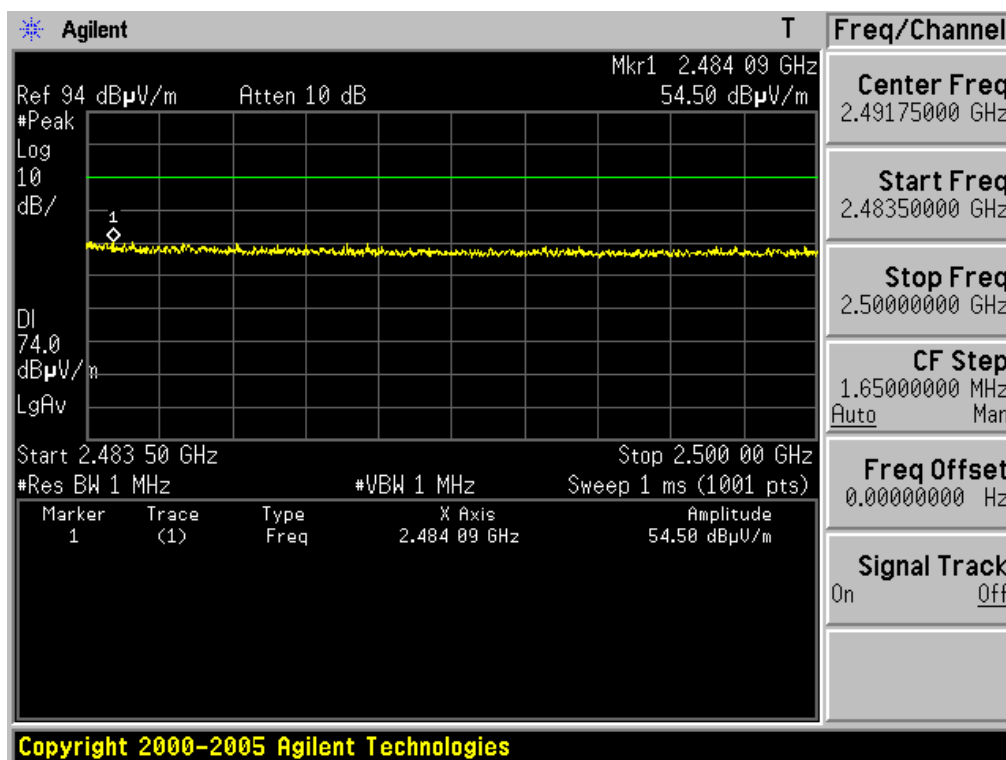
Restricted Band Edge: Low Channel (Peak, Vertical) 802.11g Mode + Black Adaptor



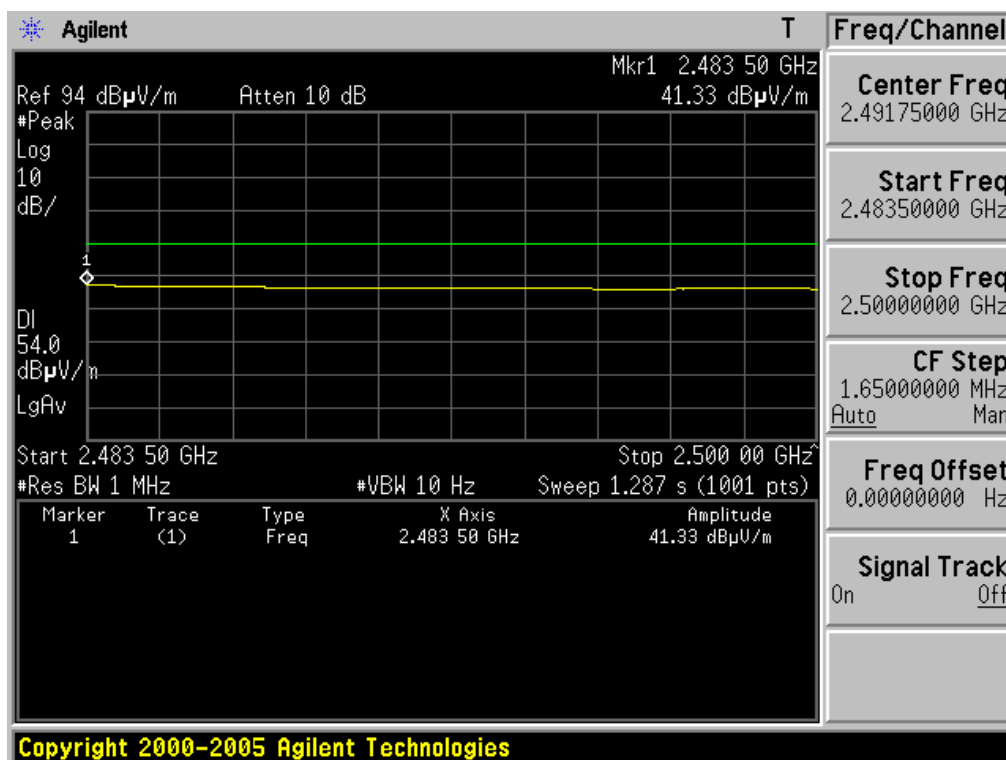
Restricted Band Edge: Low Channel (Average, Vertical) 802.11g Mode + Black Adaptor



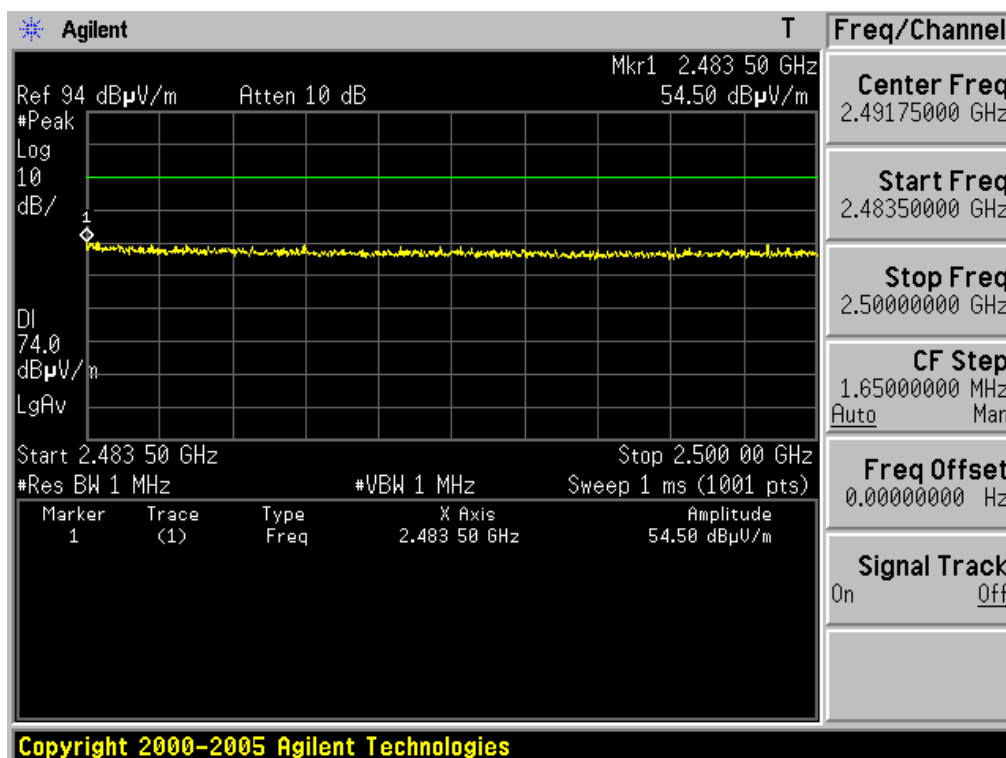
Restricted Band Edge: High Channel (Peak, Horizontal) 802.11g Mode + Black Adaptor



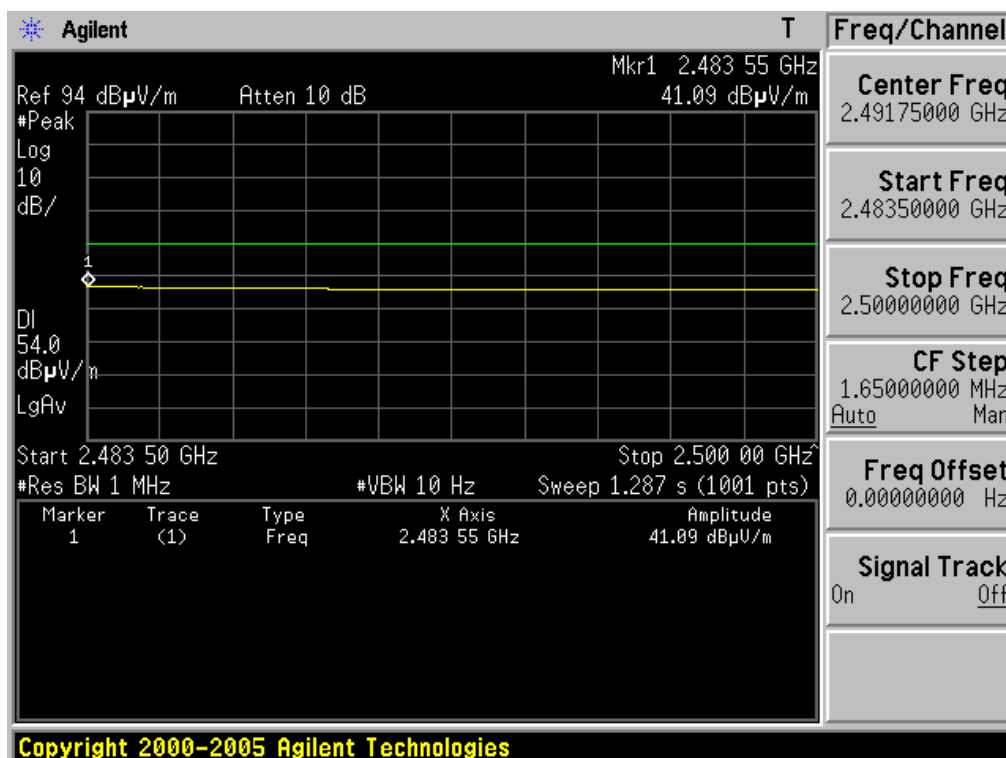
Restricted Band Edge: High Channel (Average, Horizontal) 802.11g Mode + Black Adaptor



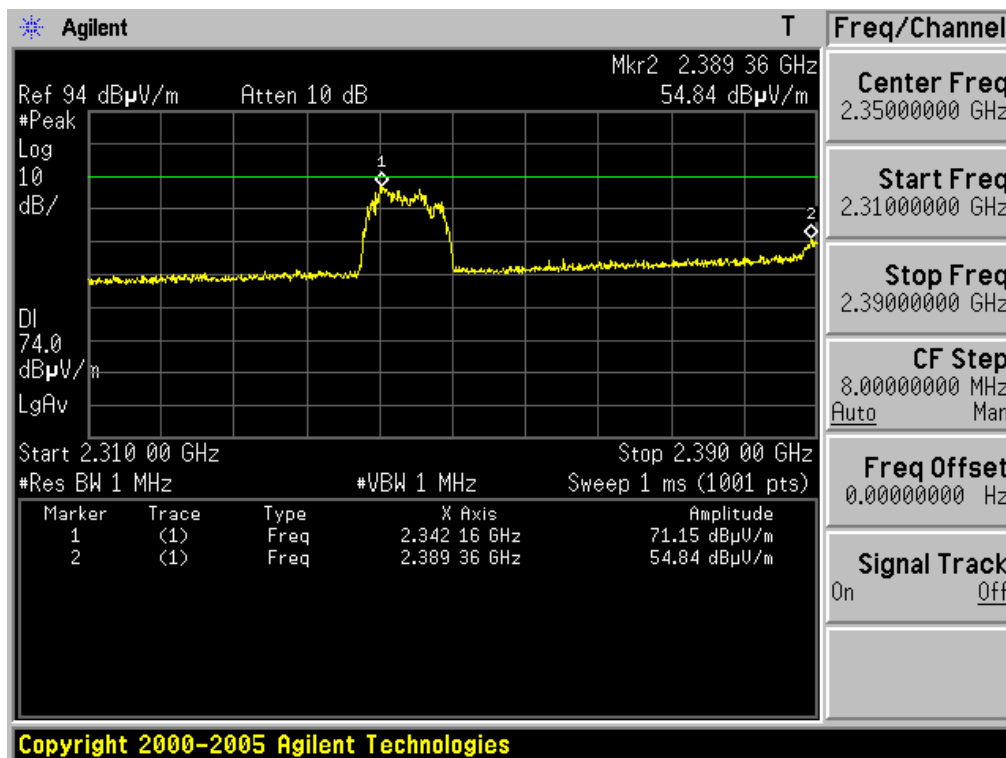
Restricted Band Edge: High Channel (Peak, Vertical) 802.11g Mode + Black Adaptor



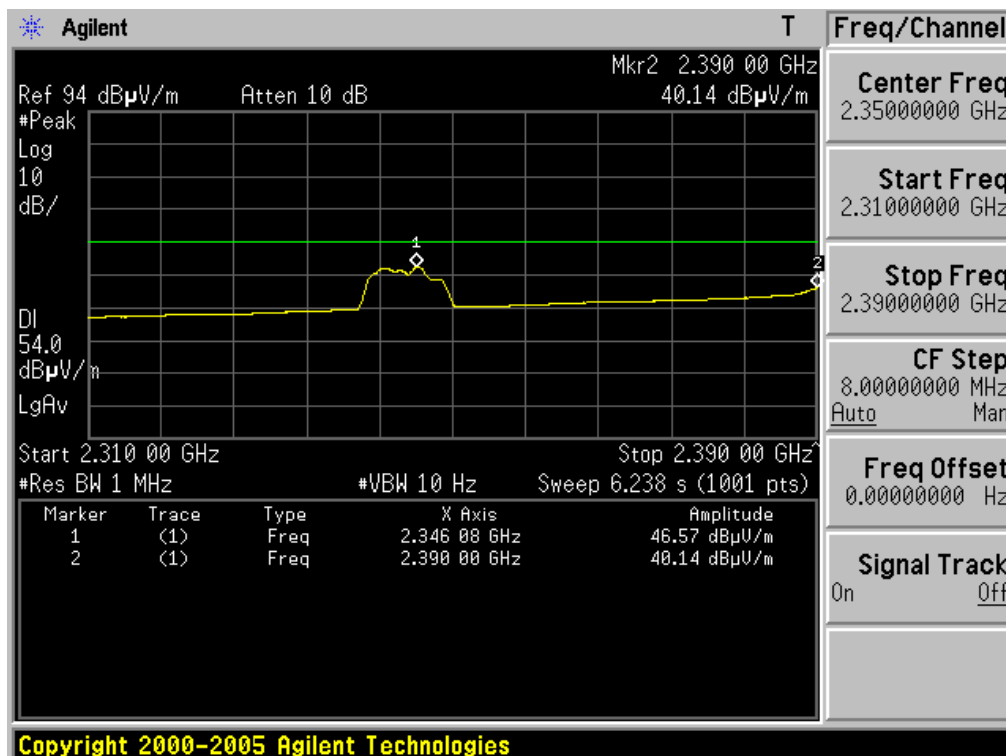
Restricted Band Edge: High Channel (Average, Vertical) 802.11g Mode + Black Adaptor



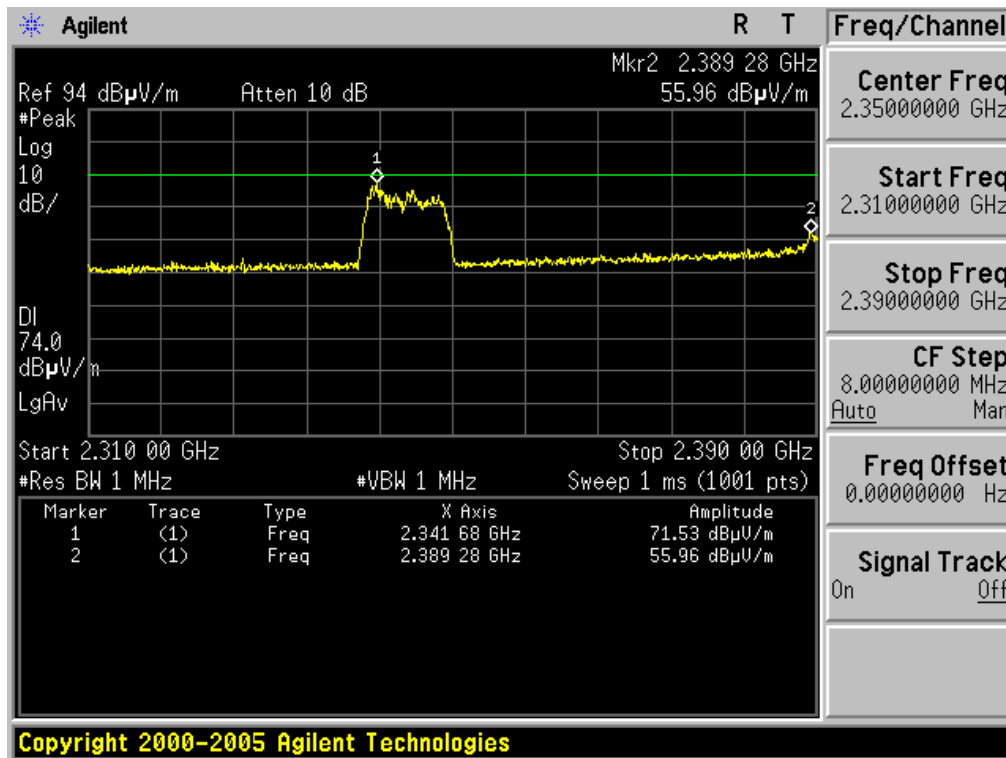
Restricted Band Edge: Low Channel (Peak, Horizontal) 802.11g Mode + White Adaptor



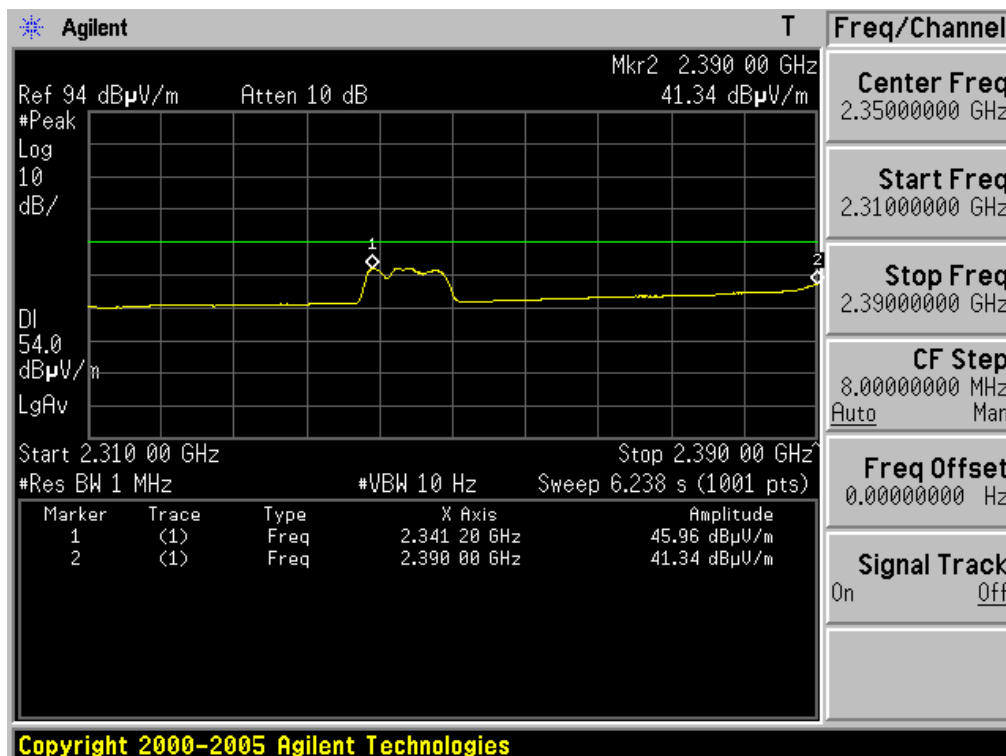
Restricted Band Edge: Low Channel (Average, Horizontal) 802.11g Mode + White Adaptor



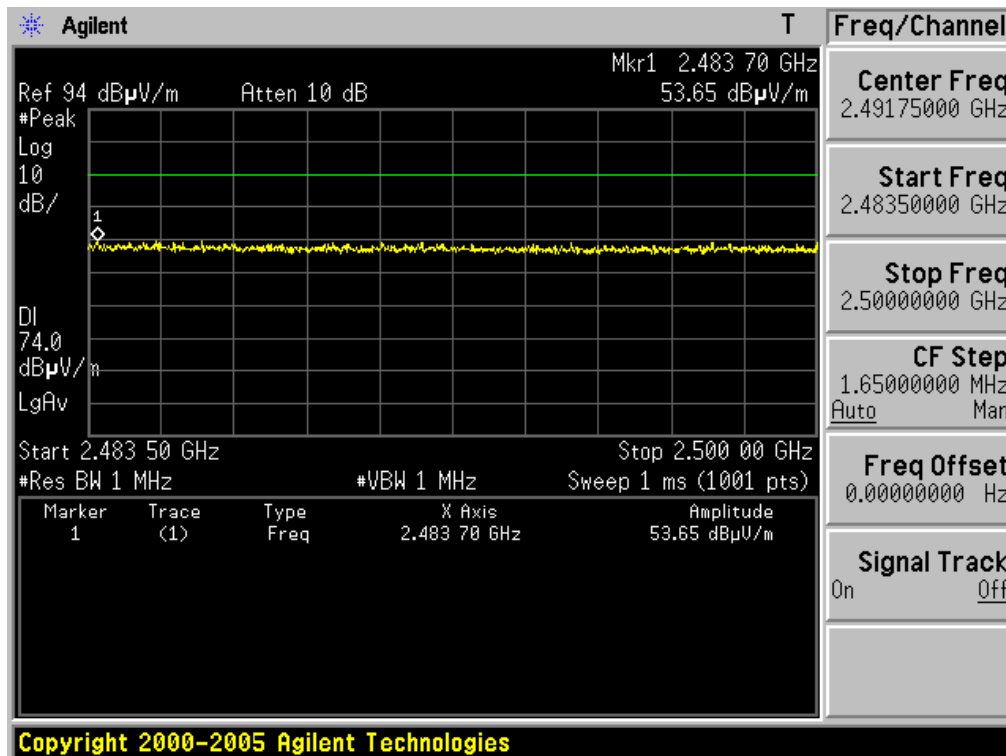
Restricted Band Edge: Low Channel (Peak, Vertical) 802.11g Mode + White Adaptor



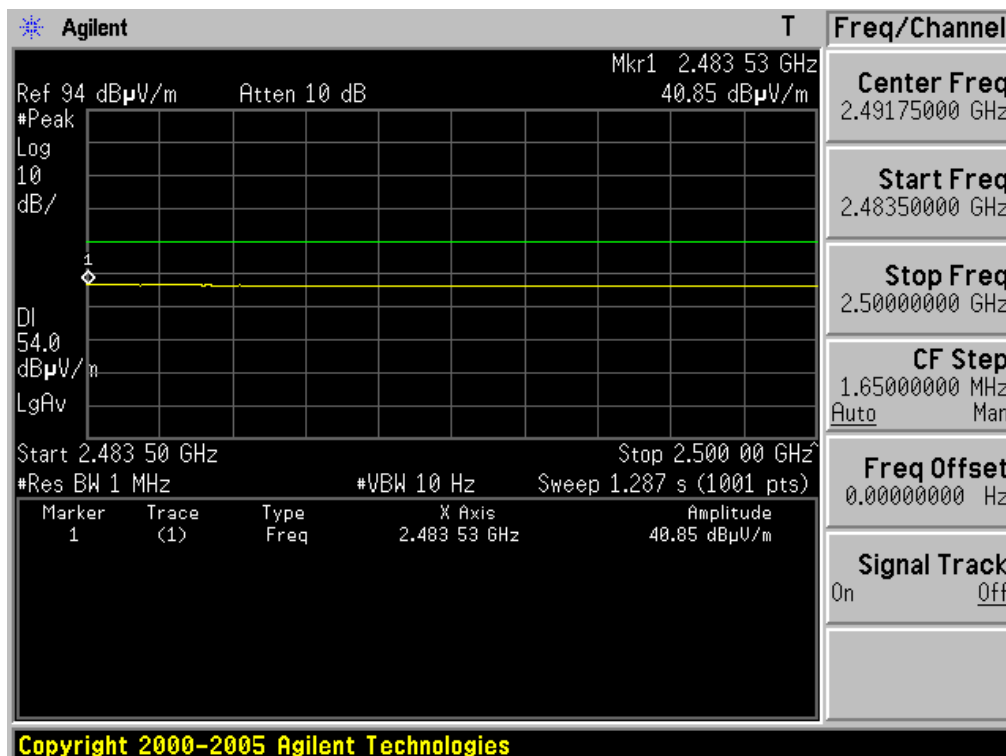
Restricted Band Edge: Low Channel (Average, Vertical) 802.11g Mode + White Adaptor



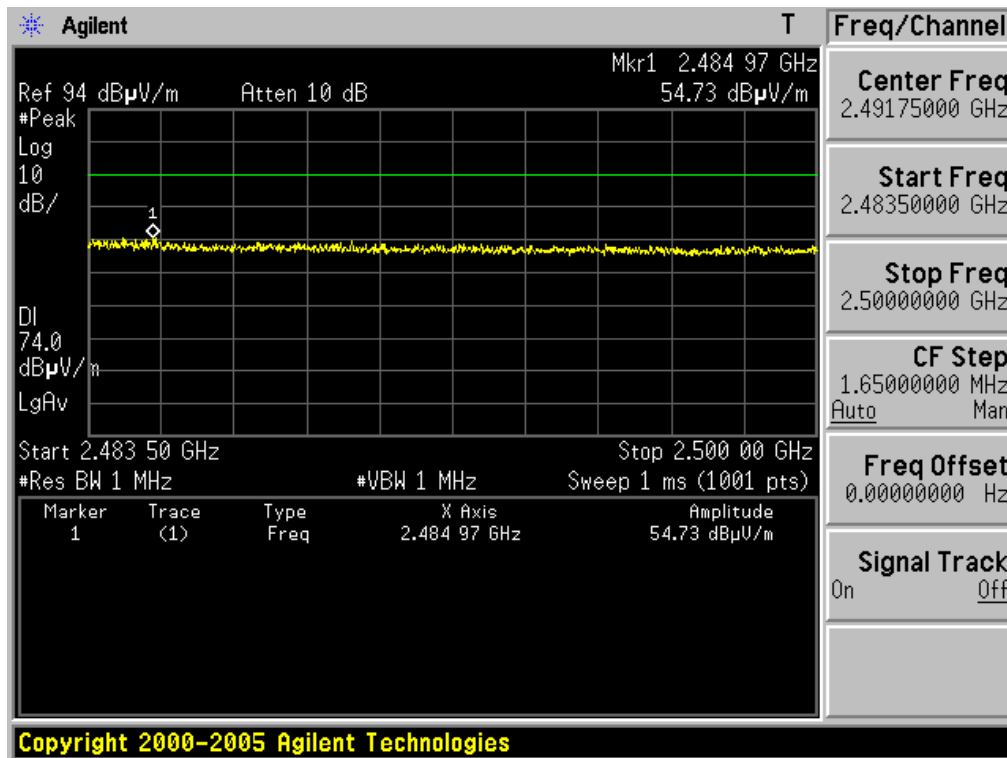
Restricted Band Edge: High Channel (Peak, Horizontal) 802.11g Mode + White Adaptor



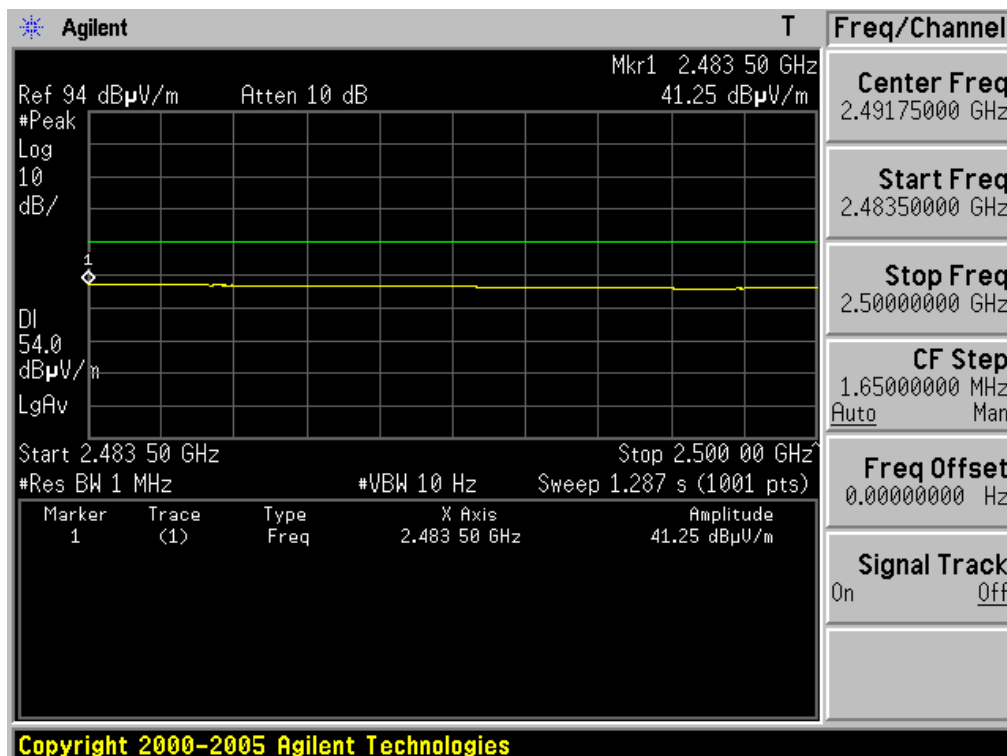
Restricted Band Edge: High Channel (Average, Horizontal) 802.11g Mode+ White Adaptor



Restricted Band Edge: High Channel (Peak, Vertical) 802.11g Mode + White Adaptor



Restricted Band Edge: High Channel (Average, Vertical) 802.11g Mode+ White Adaptor



- 802.11b Mode + Black Adaptor -

Harmonic and other emissions Measurement Data: Fundamental Frequency = 2412MHz

Frequency (MHz)	ANT Pol	Reading(dBuV)			T.F (dB)	Result(dBuV/m)			Limit(dBuV/m)			Margin(dB)		
		QP	PK	AV		QP	PK	AV	QP	PK	AV	QP	PK	AV
637.500	Ver	40.39	-	-	-1.42	38.97	-	-	46.00	-	-	7.03	-	-
637.500	Hor	41.59	-	-	-1.42	40.17	-	-	46.00	-	-	5.83	-	-
662.480	Hor	44.36	-	-	-1.08	43.28	-	-	46.00	-	-	2.72	-	-
662.500	Ver	42.45	-	-	-1.08	41.37	-	-	46.00	-	-	4.63	-	-
675.000	Ver	44.12	-	-	-0.90	43.22	-	-	46.00	-	-	2.78	-	-
675.010	Hor	43.58	-	-	-0.90	42.68	-	-	46.00	-	-	3.32	-	-
687.480	Ver	43.98	-	-	-0.73	43.25	-	-	46.00	-	-	2.75	-	-

- No other emissions were detected greater than below 10dB of the Limit.

Harmonic and other emissions Measurement Data: Fundamental Frequency = 2437MHz

Frequency (MHz)	ANT Pol	Reading(dBuV)			T.F (dB)	Result(dBuV/m)			Limit(dBuV/m)			Margin(dB)		
		QP	PK	AV		QP	PK	AV	QP	PK	AV	QP	PK	AV
637.500	Ver	41.64	-	-	-1.42	40.22	-	-	46.00	-	-	5.78	-	-
637.500	Hor	42.34	-	-	-1.42	40.92	-	-	46.00	-	-	5.08	-	-
662.480	Hor	43.98	-	-	-1.08	42.90	-	-	46.00	-	-	3.10	-	-
662.500	Ver	41.54	-	-	-1.08	40.46	-	-	46.00	-	-	5.54	-	-
675.000	Ver	43.78	-	-	-0.90	42.88	-	-	46.00	-	-	3.12	-	-
675.010	Hor	44.32	-	-	-0.90	43.42	-	-	46.00	-	-	2.58	-	-
687.480	Ver	42.98	-	-	-0.73	42.25	-	-	46.00	-	-	3.75	-	-

- No other emissions were detected greater than below 10dB of the Limit.

- 802.11b Mode + Black Adaptor -

(Continued...)

Harmonic and other emissions Measurement Data: Fundamental Frequency = 2462MHz

Frequency (MHz)	ANT Pol	Reading(dBuV)			T.F (dB)	Result(dBuV/m)			Limit(dBuV/m)			Margin(dB)		
		QP	PK	AV		QP	PK	AV	QP	PK	AV	QP	PK	AV
637.500	Ver	41.85	-	-	-1.42	40.43	-	-	46.00	-	-	5.57	-	-
637.500	Hor	44.02	-	-	-1.42	42.60	-	-	46.00	-	-	3.40	-	-
662.480	Hor	42.79	-	-	-1.08	41.71	-	-	46.00	-	-	4.29	-	-
662.500	Ver	41.55	-	-	-1.08	40.47	-	-	46.00	-	-	5.53	-	-
675.000	Ver	42.35	-	-	-0.90	41.45	-	-	46.00	-	-	4.55	-	-
675.010	Hor	43.85	-	-	-0.90	42.95	-	-	46.00	-	-	3.05	-	-
687.480	Ver	41.65	-	-	-0.73	40.92	-	-	46.00	-	-	5.08	-	-
4924	Hor	-	49.25	35.93	7.13	-	56.38	43.06	-	74.00	54.00	-	17.62	10.94
4924	Ver	-	49.28	35.97	7.13	-	56.41	43.10	-	74.00	54.00	-	17.59	10.90

- No other emissions were detected greater than below 10dB of the Limit.

Note.

1. No other spurious and harmonic emissions were detected at a level greater than 10dB below limit.
2. If peak result meet AV limit, AV measurement is omitted.
3. Sample Calculation.

$$\text{Margin} = \text{Limit} - \text{Result} \quad / \quad \text{Result} = \text{Reading} + \text{T.F} \quad / \quad \text{T.F} = \text{AF} + \text{CL} - \text{AG}$$

Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain

- 802.11g Mode + Black Adaptor -

Harmonic and other emissions Measurement Data: Fundamental Frequency = 2412MHz

Frequency (MHz)	ANT Pol	Reading(dBuV)			T.F (dB)	Result(dBuV/m)			Limit(dBuV/m)			Margin(dB)		
		QP	PK	AV		QP	PK	AV	QP	PK	AV	QP	PK	AV
637.500	Ver	43.24	-	-	-1.42	41.82	-	-	46.00	-	-	4.18	-	-
637.500	Hor	42.54	-	-	-1.42	41.12	-	-	46.00	-	-	4.88	-	-
662.480	Hor	42.78	-	-	-1.08	41.70	-	-	46.00	-	-	4.30	-	-
662.500	Ver	43.95	-	-	-1.08	42.87	-	-	46.00	-	-	3.13	-	-
675.000	Ver	43.11	-	-	-0.90	42.21	-	-	46.00	-	-	3.79	-	-
675.010	Hor	44.32	-	-	-0.90	43.42	-	-	46.00	-	-	2.58	-	-
687.480	Ver	43.25	-	-	-0.73	42.52	-	-	46.00	-	-	3.48	-	-

- No other emissions were detected greater than below 10dB of the Limit.

Harmonic and other emissions Measurement Data: Fundamental Frequency = 2437MHz

Frequency (MHz)	ANT Pol	Reading(dBuV)			T.F (dB)	Result(dBuV/m)			Limit(dBuV/m)			Margin(dB)		
		QP	PK	AV		QP	PK	AV	QP	PK	AV	QP	PK	AV
637.500	Ver	41.53	-	-	-1.42	40.11	-	-	46.00	-	-	5.89	-	-
637.500	Hor	42.64	-	-	-1.42	41.22	-	-	46.00	-	-	4.78	-	-
662.480	Hor	42.55	-	-	-1.08	41.47	-	-	46.00	-	-	4.53	-	-
662.500	Ver	43.47	-	-	-1.08	42.39	-	-	46.00	-	-	3.61	-	-
675.000	Ver	42.25	-	-	-0.90	41.35	-	-	46.00	-	-	4.65	-	-
675.010	Hor	43.00	-	-	-0.90	42.10	-	-	46.00	-	-	3.90	-	-
687.480	Ver	40.00	-	-	-0.73	39.27	-	-	46.00	-	-	6.73	-	-

- No other emissions were detected greater than below 10dB of the Limit.

- 802.11g Mode + Black Adaptor -

(Continued...)

Harmonic and other emissions Measurement Data: Fundamental Frequency = 2462MHz

Frequency (MHz)	ANT Pol	Reading(dBuV)			T.F (dB)	Result(dBuV/m)			Limit(dBuV/m)			Margin(dB)		
		QP	PK	AV		QP	PK	AV	QP	PK	AV	QP	PK	AV
637.500	Ver	42.84	-	-	-1.42	41.42	-	-	46.00	-	-	4.58	-	-
637.500	Hor	43.24	-	-	-1.42	41.82	-	-	46.00	-	-	4.18	-	-
662.480	Hor	43.25	-	-	-1.08	42.17	-	-	46.00	-	-	3.83	-	-
662.500	Ver	42.74	-	-	-1.08	41.66	-	-	46.00	-	-	4.34	-	-
675.000	Ver	43.35	-	-	-0.90	42.45	-	-	46.00	-	-	3.55	-	-
675.010	Hor	44.00	-	-	-0.90	43.10	-	-	46.00	-	-	2.90	-	-
687.480	Ver	41.00	-	-	-0.73	40.27	-	-	46.00	-	-	5.73	-	-
4924	Hor	-	49.33	35.99	7.13	-	56.46	43.12	-	74.00	54.00	-	17.54	10.88
4924	Ver	-	50.13	35.96	7.13	-	57.26	43.09	-	74.00	54.00	-	16.74	10.91

- No other emissions were detected greater than below 10dB of the Limit.

Note.

1. No other spurious and harmonic emissions were detected at a level greater than 10dB below limit.
2. If peak result meet AV limit, AV measurement is omitted.
3. Sample Calculation.

$$\text{Margin} = \text{Limit} - \text{Result} \quad / \quad \text{Result} = \text{Reading} + \text{T.F} \quad / \quad \text{T.F} = \text{AF} + \text{CL} - \text{AG}$$

Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain

- 802.11b Mode + White Adaptor -

Harmonic and other emissions Measurement Data: Fundamental Frequency = 2412MHz

Frequency (MHz)	ANT Pol	Reading(dBuV)			T.F (dB)	Result(dBuV/m)			Limit(dBuV/m)			Margin(dB)		
		QP	PK	AV		QP	PK	AV	QP	PK	AV	QP	PK	AV
359.900	Hor	44.70	-	-	-6.62	38.08	-	-	46.00	-	-	7.92	-	-
637.460	Hor	41.59	-	-	-1.42	40.17	-	-	46.00	-	-	5.83	-	-
662.500	Ver	44.60	-	-	-1.08	43.52	-	-	46.00	-	-	2.48	-	-
662.500	Hor	43.40	-	-	-1.08	42.32	-	-	46.00	-	-	3.68	-	-
675.000	Ver	42.45	-	-	-0.90	41.55	-	-	46.00	-	-	4.45	-	-
687.490	Ver	42.41	-	-	-0.73	41.68	-	-	46.00	-	-	4.32	-	-

- No other emissions were detected greater than below 10dB of the Limit.

Harmonic and other emissions Measurement Data: Fundamental Frequency = 2437MHz

Frequency (MHz)	ANT Pol	Reading(dBuV)			T.F (dB)	Result(dBuV/m)			Limit(dBuV/m)			Margin(dB)		
		QP	PK	AV		QP	PK	AV	QP	PK	AV	QP	PK	AV
359.900	Hor	45.95	-	-	-6.62	39.33	-	-	46.00	-	-	6.67	-	-
637.460	Hor	40.34	-	-	-1.42	38.92	-	-	46.00	-	-	7.08	-	-
662.500	Ver	44.10	-	-	-1.08	43.02	-	-	46.00	-	-	2.98	-	-
662.500	Hor	44.12	-	-	-1.08	43.04	-	-	46.00	-	-	2.96	-	-
675.000	Hor	42.65	-	-	-0.90	41.75	-	-	46.00	-	-	4.25	-	-
675.000	Ver	43.67	-	-	-0.90	42.77	-	-	46.00	-	-	3.23	-	-
687.490	Ver	42.91	-	-	-0.73	42.18	-	-	46.00	-	-	3.82	-	-

- No other emissions were detected greater than below 10dB of the Limit.

- 802.11b Mode + White Adaptor -

(Continued...)

Harmonic and other emissions Measurement Data: Fundamental Frequency = 2462MHz

Frequency (MHz)	ANT Pol	Reading(dBuV)			T.F (dB)	Result(dBuV/m)			Limit(dBuV/m)			Margin(dB)		
		QP	PK	AV		QP	PK	AV	QP	PK	AV	QP	PK	AV
359.900	Hor	45.66	-	-	-6.62	39.04	-	-	46.00	-	-	6.96	-	-
637.460	Hor	41.64	-	-	-1.42	40.22	-	-	46.00	-	-	5.78	-	-
662.500	Ver	44.65	-	-	-1.08	43.57	-	-	46.00	-	-	2.43	-	-
662.500	Hor	44.35	-	-	-1.08	43.27	-	-	46.00	-	-	2.73	-	-
675.000	Hor	41.65	-	-	-0.90	40.75	-	-	46.00	-	-	5.25	-	-
675.000	Ver	44.32	-	-	-0.90	43.42	-	-	46.00	-	-	2.58	-	-
687.490	Ver	41.66	-	-	-0.73	40.93	-	-	46.00	-	-	5.07	-	-
4924	Hor	-	49.48	36.11	7.13	-	56.61	43.24	-	74.00	54.00	-	17.39	10.76
4924	Ver	-	49.38	36.10	7.13	-	56.51	43.23	-	74.00	54.00	-	17.49	10.77

- No other emissions were detected greater than below 10dB of the Limit.

Note.

1. No other spurious and harmonic emissions were detected at a level greater than 10dB below limit.
2. If peak result meet AV limit, AV measurement is omitted.
3. Sample Calculation.

$$\text{Margin} = \text{Limit} - \text{Result} \quad / \quad \text{Result} = \text{Reading} + \text{T.F} \quad / \quad \text{T.F} = \text{AF} + \text{CL} - \text{AG}$$

Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain

- 802.11g Mode + White Adaptor -

Harmonic and other emissions Measurement Data: Fundamental Frequency = 2412MHz

Frequency (MHz)	ANT Pol	Reading(dBuV)			T.F (dB)	Result(dBuV/m)			Limit(dBuV/m)			Margin(dB)		
		QP	PK	AV		QP	PK	AV	QP	PK	AV	QP	PK	AV
359.900	Hor	45.60	-	-	-6.62	38.98	-	-	46.00	-	-	7.02	-	-
637.460	Hor	40.54	-	-	-1.42	39.12	-	-	46.00	-	-	6.88	-	-
662.500	Ver	43.95	-	-	-1.08	42.87	-	-	46.00	-	-	3.13	-	-
662.500	Hor	44.45	-	-	-1.08	43.37	-	-	46.00	-	-	2.63	-	-
675.000	Hor	43.60	-	-	-0.90	42.70	-	-	46.00	-	-	3.30	-	-
675.000	Ver	42.55	-	-	-0.90	41.65	-	-	46.00	-	-	4.35	-	-
687.490	Ver	42.89	-	-	-0.73	42.16	-	-	46.00	-	-	3.84	-	-

- No other emissions were detected greater than below 10dB of the Limit.

Harmonic and other emissions Measurement Data: Fundamental Frequency = 2437MHz

Frequency (MHz)	ANT Pol	Reading(dBuV)			T.F (dB)	Result(dBuV/m)			Limit(dBuV/m)			Margin(dB)		
		QP	PK	AV		QP	PK	AV	QP	PK	AV	QP	PK	AV
359.900	H	44.95	-	-	-6.62	38.33	-	-	46.00	-	-	7.67	-	-
637.460	H	42.12	-	-	-1.42	40.70	-	-	46.00	-	-	5.30	-	-
662.500	V	43.65	-	-	-1.08	42.57	-	-	46.00	-	-	3.43	-	-
662.500	H	43.98	-	-	-1.08	42.90	-	-	46.00	-	-	3.10	-	-
675.000	H	42.99	-	-	-0.90	42.09	-	-	46.00	-	-	3.91	-	-
675.000	V	42.78	-	-	-0.90	41.88	-	-	46.00	-	-	4.12	-	-
687.490	V	42.46	-	-	-0.73	41.73	-	-	46.00	-	-	4.27	-	-

- No other emissions were detected greater than below 10dB of the Limit.

- 802.11g Mode + White Adaptor -

(Continued...)

Harmonic and other emissions Measurement Data: Fundamental Frequency = 2462MHz

Frequency (MHz)	ANT Pol	Reading(dBuV)			T.F (dB)	Result(dBuV/m)			Limit(dBuV/m)			Margin(dB)		
		QP	PK	AV		QP	PK	AV	QP	PK	AV	QP	PK	AV
359.000	H	44.34	-	-	-6.64	37.70	-	-	46.00	-	-	8.30	-	-
637.460	H	40.24	-	-	-1.42	38.82	-	-	46.00	-	-	7.18	-	-
662.500	H	44.18	-	-	-1.08	43.10	-	-	46.00	-	-	2.90	-	-
662.500	V	44.32	-	-	-1.08	43.24	-	-	46.00	-	-	2.76	-	-
675.000	H	42.65	-	-	-0.90	41.75	-	-	46.00	-	-	4.25	-	-
675.000	V	44.26	-	-	-0.90	43.36	-	-	46.00	-	-	2.64	-	-
687.490	V	42.34	-	-	-0.73	41.61	-	-	46.00	-	-	4.39	-	-
4924	Hor	-	49.90	35.99	7.13	-	57.03	43.12	-	74.00	54.00	-	16.97	10.88
4924	Ver	-	49.25	35.95	7.13	-	56.38	43.08	-	74.00	54.00	-	17.62	10.92

- No other emissions were detected greater than below 10dB of the Limit.

Note.

1. No other spurious and harmonic emissions were detected at a level greater than 10dB below limit.
2. If peak result meet AV limit, AV measurement is omitted.
3. Sample Calculation.

$$\text{Margin} = \text{Limit} - \text{Result} \quad / \quad \text{Result} = \text{Reading} + \text{T.F} \quad / \quad \text{T.F} = \text{AF} + \text{CL} - \text{AG}$$

Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain

3.2.5 Transmitter Power Spectral Density

- Procedure:

The transmitter output is connected to a spectrum analyzer. Locate and zoom in on emission peak within the passband. The maximum level in a 3 kHz bandwidth is measured with the spectrum analyzer using RBW = 3kHz and VBW > 9kHz, sweep time= auto, video averaging is turned off. Trace average 100 traces in power averaging mode. The PPSD is the highest level found across the emission in any 3kHz band. The test is performed in accordance with FCC document “Measurement of Digital Transmission Systems Operating under Section 15.247”, March 23, 2005. The transmitter output power was measured with power output option #2. Therefore, PSD was measured with PSD option #2.

- Measurement Data:

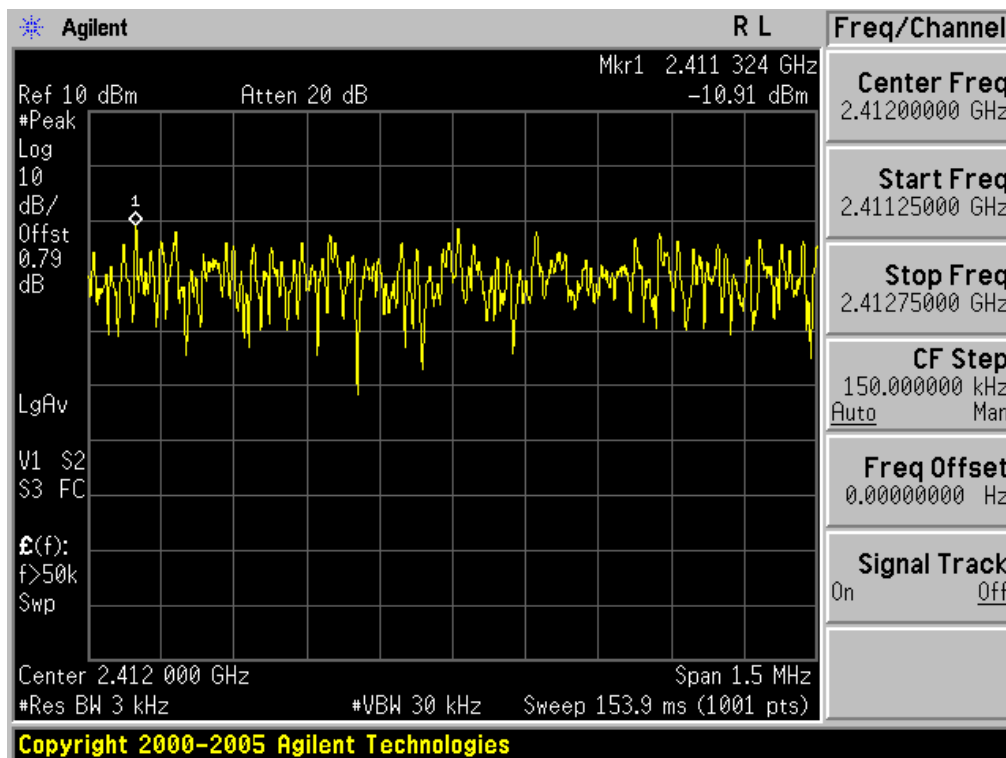
Test Mode	Frequency (MHz)	Channel No.	Test Results	
			Power Density (dBm)	Result
802.11b	2412	1	-10.91	Comply
	2437	6	-12.28	Comply
	2462	11	-11.00	Comply
802.11g	2412	1	-12.68	Comply
	2437	6	-12.93	Comply
	2462	11	-11.88	Comply

- See next pages for actual measured spectrum plots.

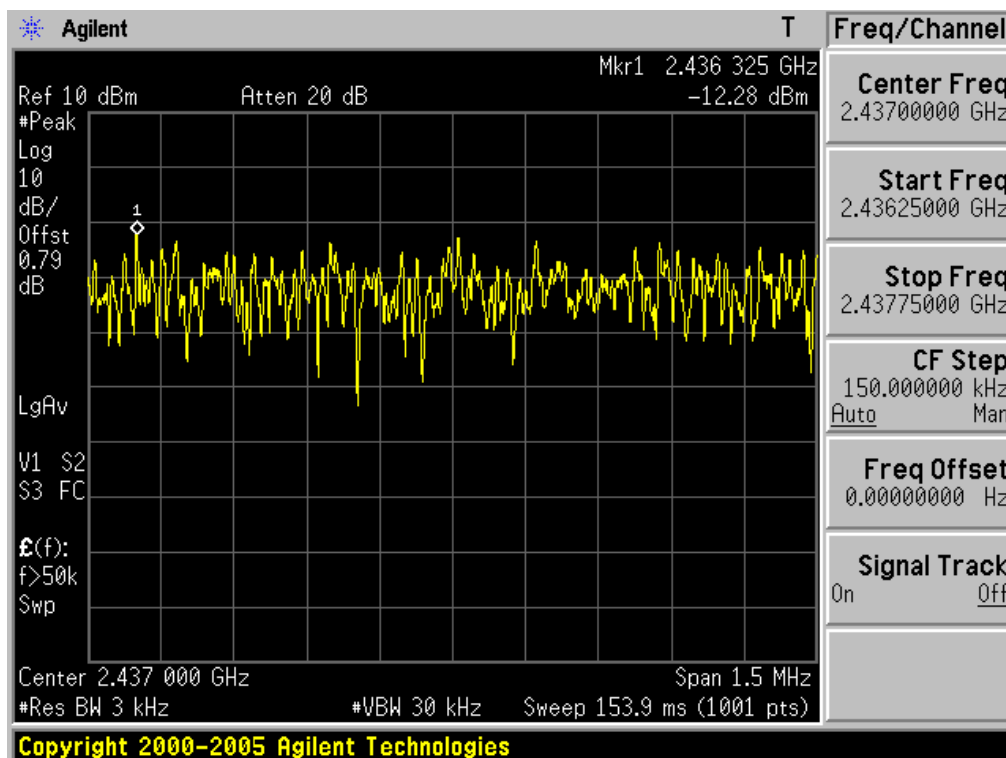
- Minimum Standard:

The transmitter power density average over 1-second interval shall not be greater than 8 dBm in any 3kHz BW.

Transmitter Power Spectral Density - 802.11b Mode -

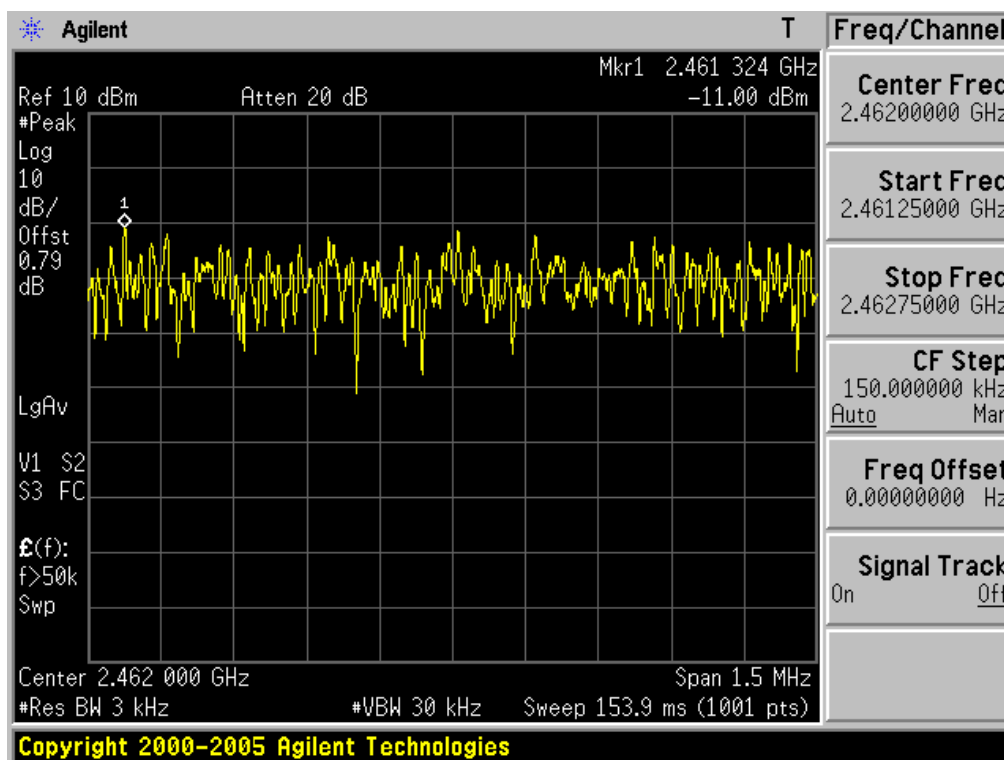


Low Channel



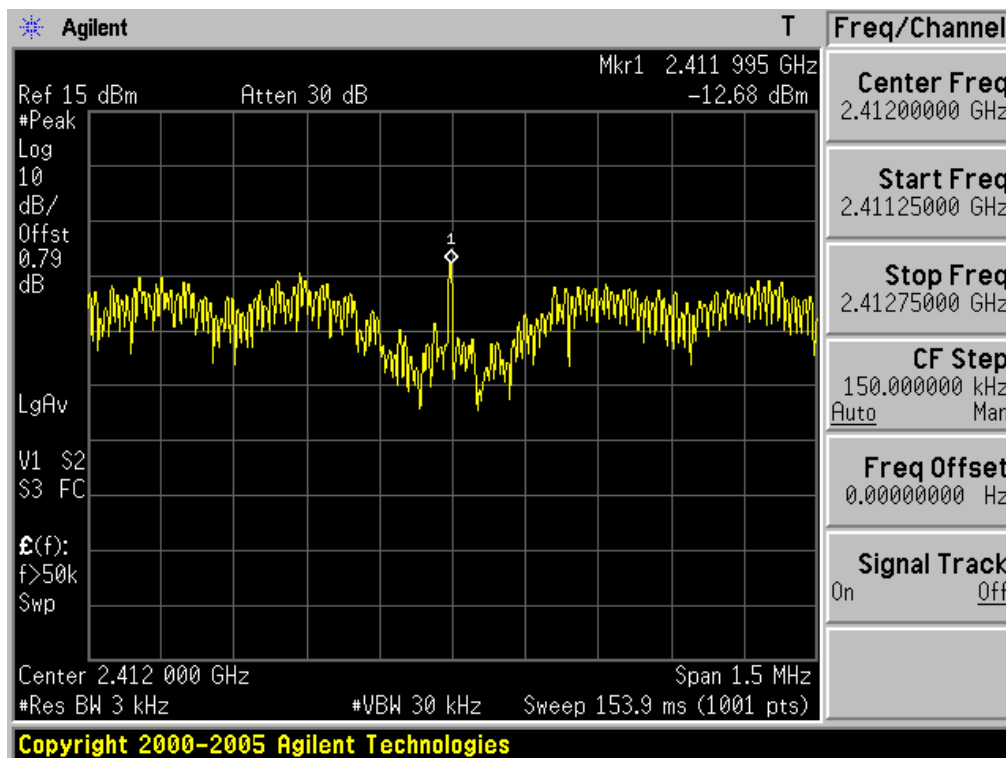
Middle Channel

Transmitter Power Spectral Density - 802.11b Mode -

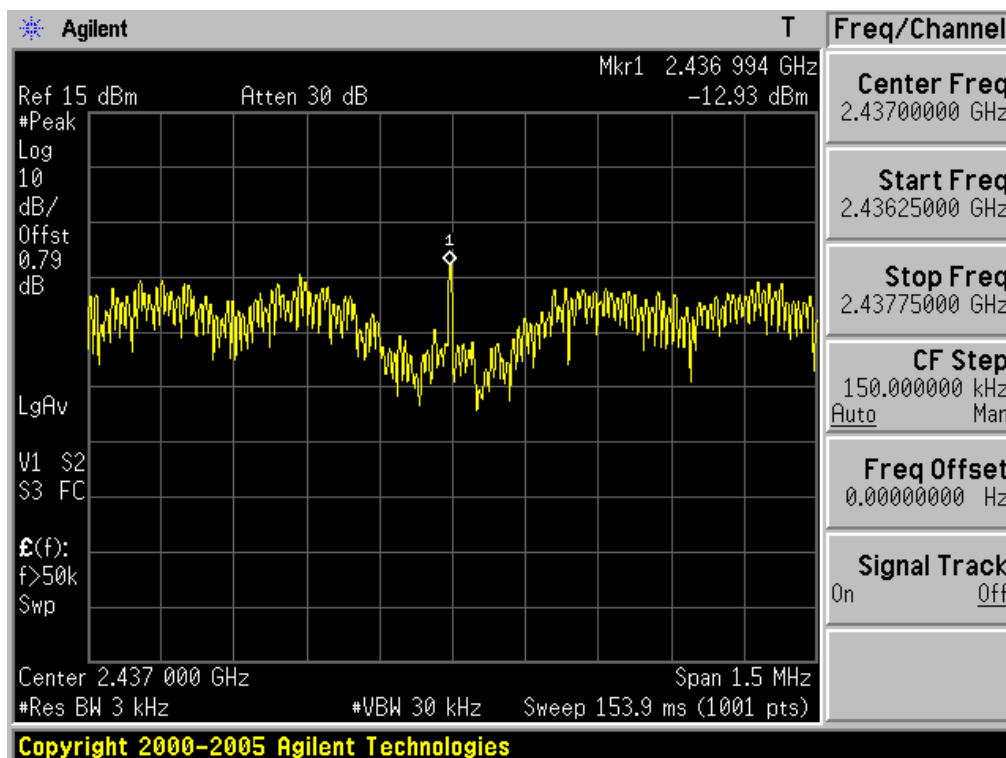


High Channel

Transmitter Power Spectral Density - 802.11g Mode -

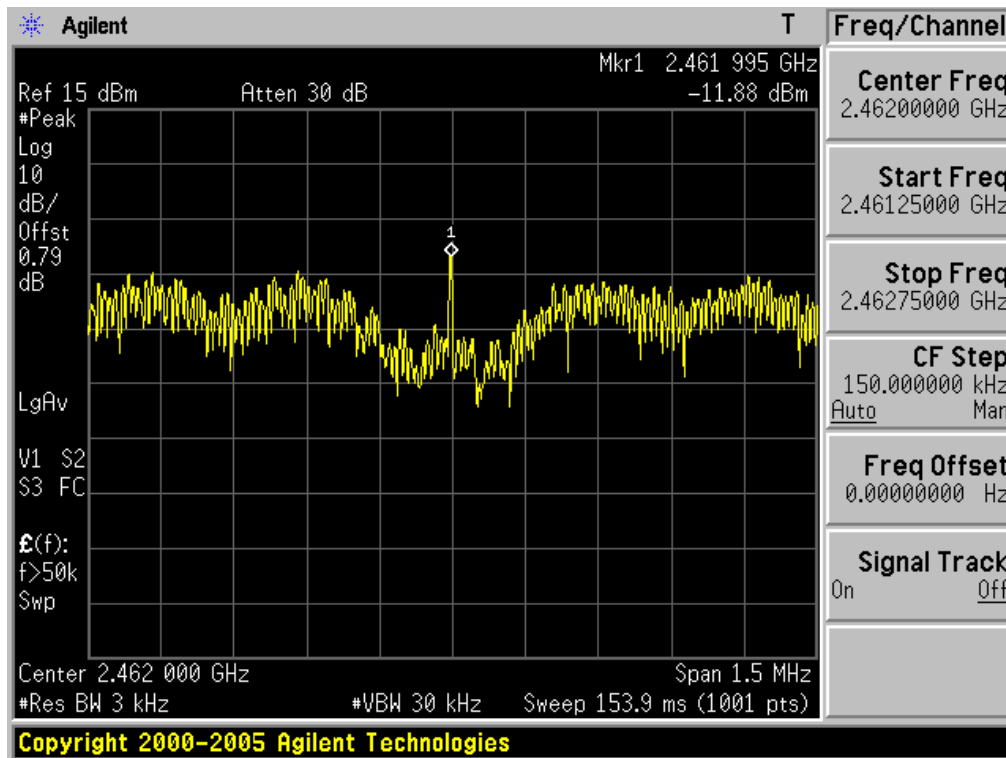


Low Channel



Middle Channel

Transmitter Power Spectral Density - 802.11g Mode -



High Channel

3.2.6 AC Conducted Emissions

- Procedure:

The conducted emissions are measured in the shielded room with a spectrum analyzer in peak hold. Emissions closest to the limit are measured in the quasi-peak mode (QP) and average mode (AV) with the tuned receiver using a bandwidth of 9 kHz. The emissions are maximized further by cable manipulation and Exerciser operation. The highest emissions relative to the limit are listed.

- Measurement Data: **Comply**

- See next pages for actual measured spectrum plots.
- This test item was performed with following 2 AC/DC Adaptors

1. Black Adaptor (GT-41052-1506-0.9)
2. White Adaptor (SA-A136LA)

- Minimum Standard: FCC Part 15.207(a)/EN 55022

Frequency Range (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

-Measurement Setup

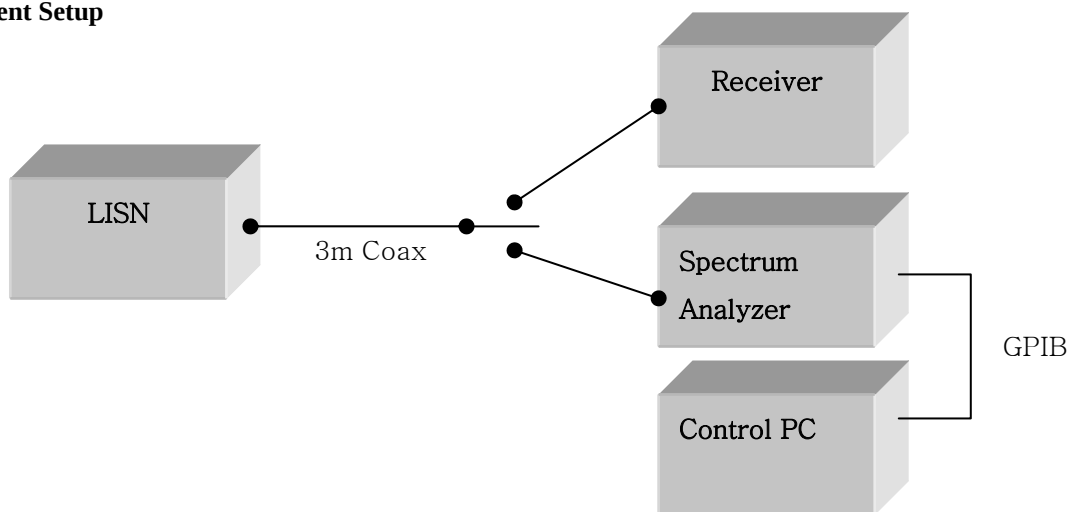
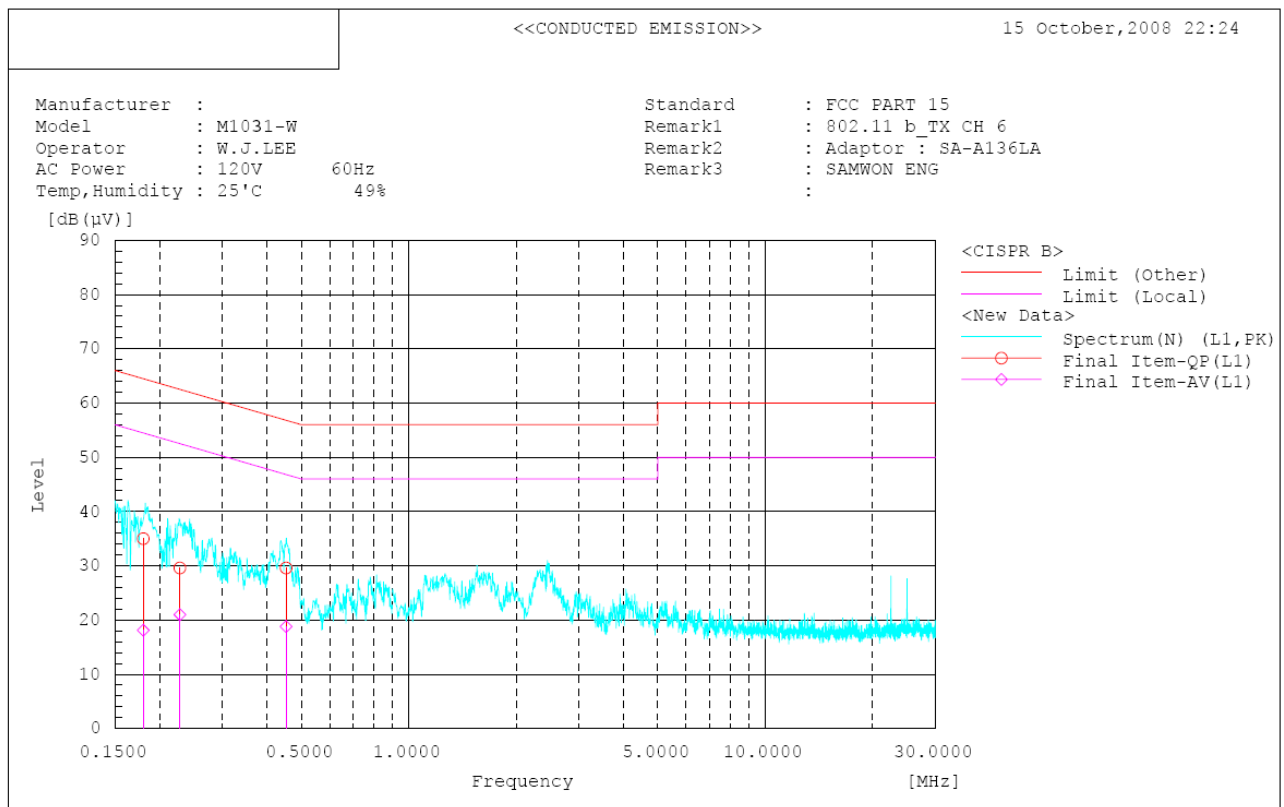
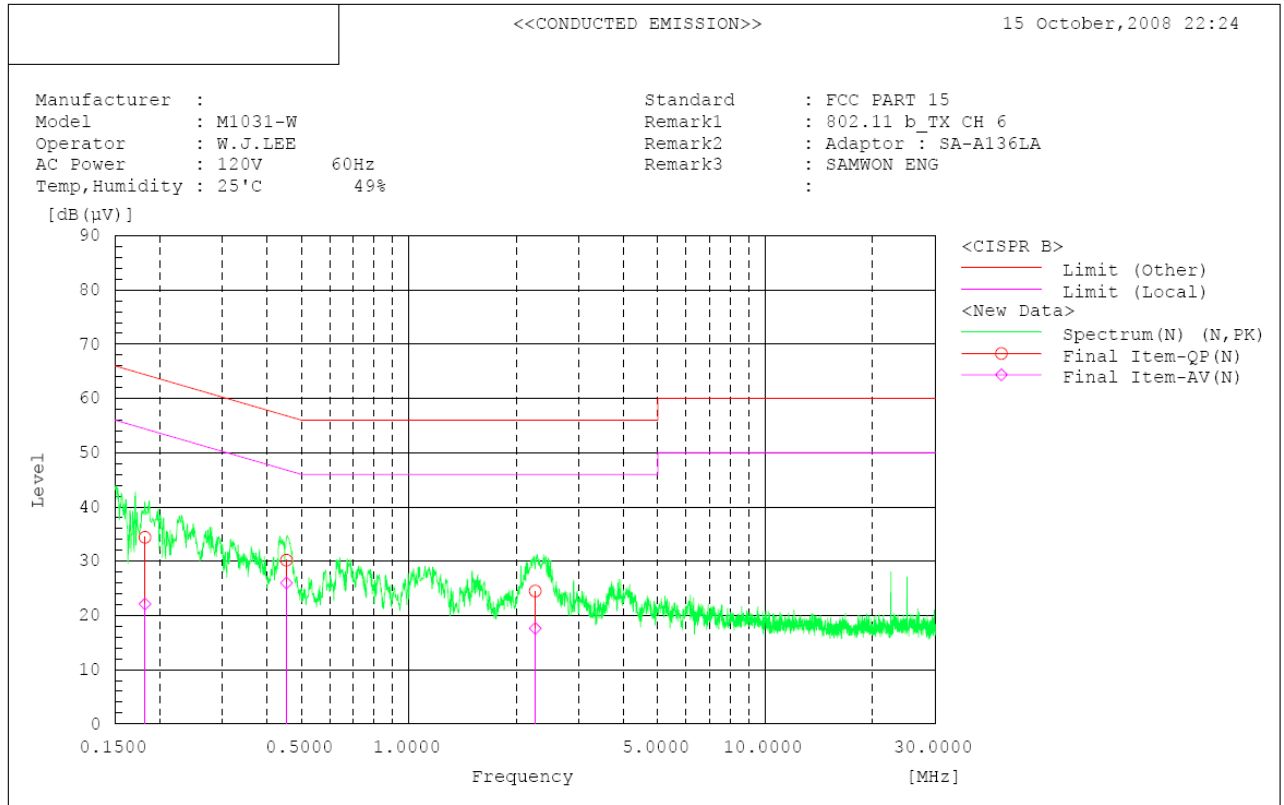


Figure 2: Measurement setup for AC Conducted Emission

AC Conducted Emissions - Graph (802.11b Mode + Black Adaptor)



AC Conducted Emissions – DATA (802.11b Mode + Black Adaptor)

```

*****
<<CONDUCTED EMISSION>>
15 October, 2008 22:24

Standard       : FCC PART 15
Manufacturer   :
Model          : M1031-W
Operator       : W.J.LEE
AC Power       : 120V      60Hz
Temp, Humidity : 25°C      49%
Remark1        : 802.11 b_TX CH 6
Remark2        : Adaptor : SA-A136LA
Remark3        : SAMWON ENG
:

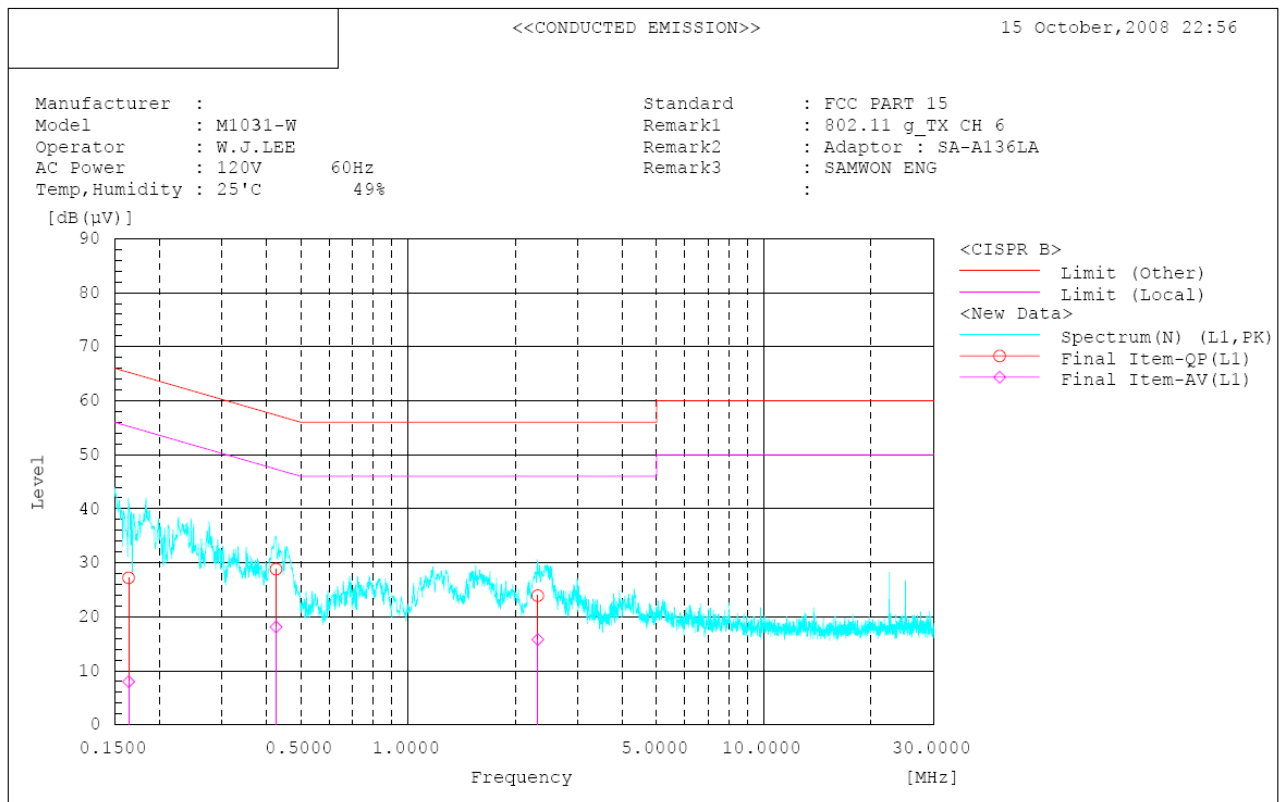
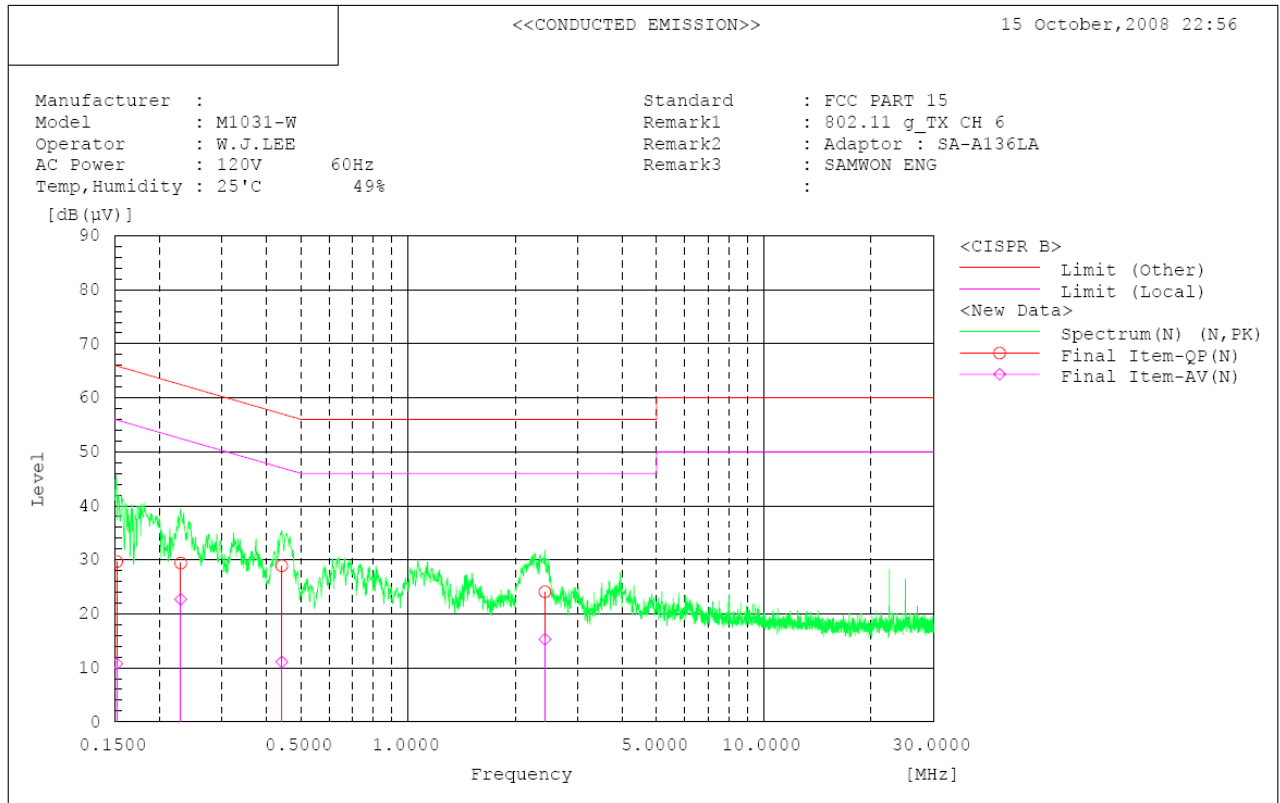
*****
Final Result

--- N Phase ---
No.  Frequency  Reading  Reading  c.f  Result  Result  Limit  Limit  Margin  Margin  Remark
      [MHz]     [dB(µV)] [dB(µV)] [dB] [dB(µV)] [dB(µV)] [dB(µV)] [dB(µV)] [dB] [dB]
1     0.182     34.2     21.9   0.2   34.4     22.1   64.4   54.4   30.0   32.3
2     0.454     30.0     25.8   0.2   30.2     26.0   56.8   46.8   26.6   20.8
3     2.264     24.1     17.2   0.4   24.5     17.6   56.0   46.0   31.5   28.4

--- L1 Phase ---
No.  Frequency  Reading  Reading  c.f  Result  Result  Limit  Limit  Margin  Margin  Remark
      [MHz]     [dB(µV)] [dB(µV)] [dB] [dB(µV)] [dB(µV)] [dB(µV)] [dB(µV)] [dB] [dB]
1     0.180     34.8     17.9   0.2   35.0     18.1   64.5   54.5   29.5   36.4
2     0.228     29.4     20.8   0.2   29.6     21.0   62.5   52.5   32.9   31.5
3     0.452     29.4     18.6   0.2   29.6     18.8   56.8   46.8   27.2   28.0

```

AC Conducted Emissions - Graph (802.11g Mode + Black Adaptor)



AC Conducted Emissions – DATA (802.11g Mode + Black Adaptor)

```

*****
<<CONDUCTED EMISSION>>
15 October, 2008 22:56

Standard      : FCC PART 15
Manufacturer  :
Model         : M1031-W
Operator      : W.J.LEE
AC Power      : 120V      60Hz
Temp, Humidity : 25°C      49%
Remark1       : 802.11 g_TX CH 6
Remark2       : Adaptor : SA-A136LA
Remark3       : SAMWON ENG
:

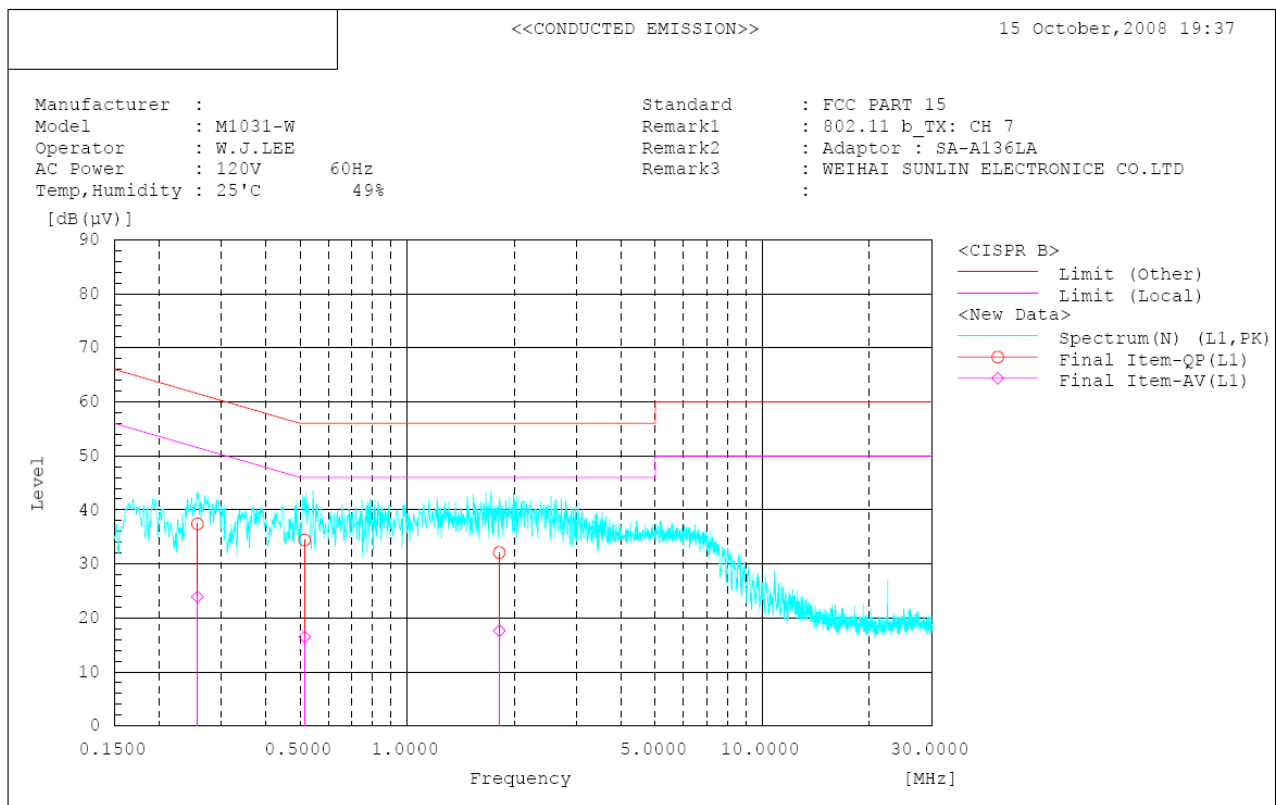
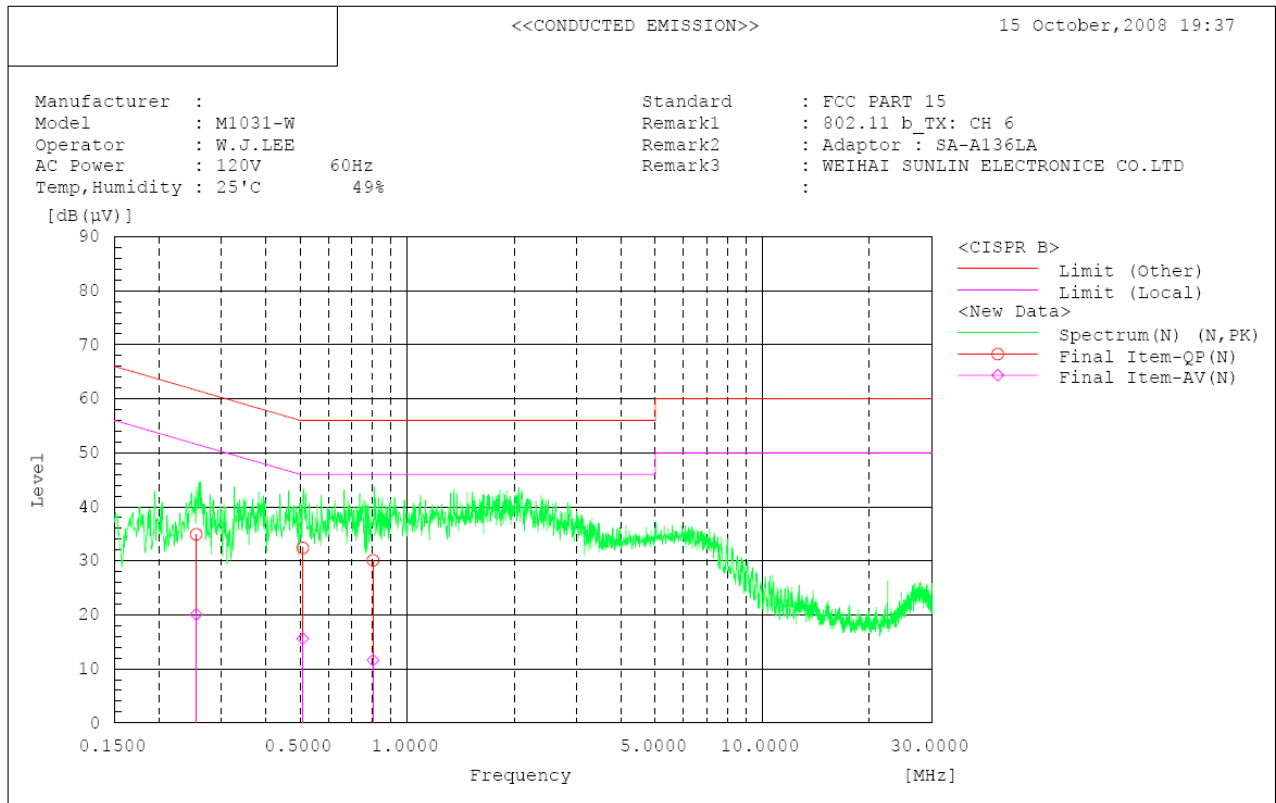
*****
Final Result

--- N Phase ---
No.  Frequency  Reading  Reading  c.f  Result  Result  Limit  Limit  Margin  Margin  Remark
      [MHz]     [dB(µV)] [dB(µV)] [dB] [dB(µV)] [dB(µV)] [dB(µV)] [dB(µV)] [dB] [dB]
1     0.152     29.5     10.6   0.2   29.7     10.8   65.9   55.9   36.2   45.1
2     0.230     29.2     22.5   0.2   29.4     22.7   62.4   52.4   33.0   29.7
3     0.442     28.7     10.9   0.2   28.9     11.1   57.0   47.0   28.1   35.9
4     2.425     23.7     14.9   0.4   24.1     15.3   56.0   46.0   31.9   30.7

--- L1 Phase ---
No.  Frequency  Reading  Reading  c.f  Result  Result  Limit  Limit  Margin  Margin  Remark
      [MHz]     [dB(µV)] [dB(µV)] [dB] [dB(µV)] [dB(µV)] [dB(µV)] [dB(µV)] [dB] [dB]
1     0.164     27.0       7.8   0.2   27.2       8.0   65.3   55.3   35.1   47.3
2     0.426     28.6     17.9   0.2   28.8     18.1   57.3   47.3   28.5   29.2
3     2.316     23.5     15.4   0.4   23.9     15.8   56.0   46.0   32.1   30.2

```

AC Conducted Emissions - Graph (802.11b Mode + White Adaptor)



AC Conducted Emissions – DATA (802.11b Mode + White Adaptor)

```

*****
<<CONDUCTED EMISSION>>
15 October,2008 19:37

Standard       : FCC PART 15
Manufacturer   : 
Model          : M1091-W
Operator       : W.J.LEE
AC Power       : 120V      60Hz
Temp, Humidity : 25°C      49%
Remark1        : 802.11 b TX: CH 6
Remark2        : Adaptor : SA-A1361A
Remark3        : WEIHAI SUNLIN ELECTRONICE CO.LTD
                :
*****

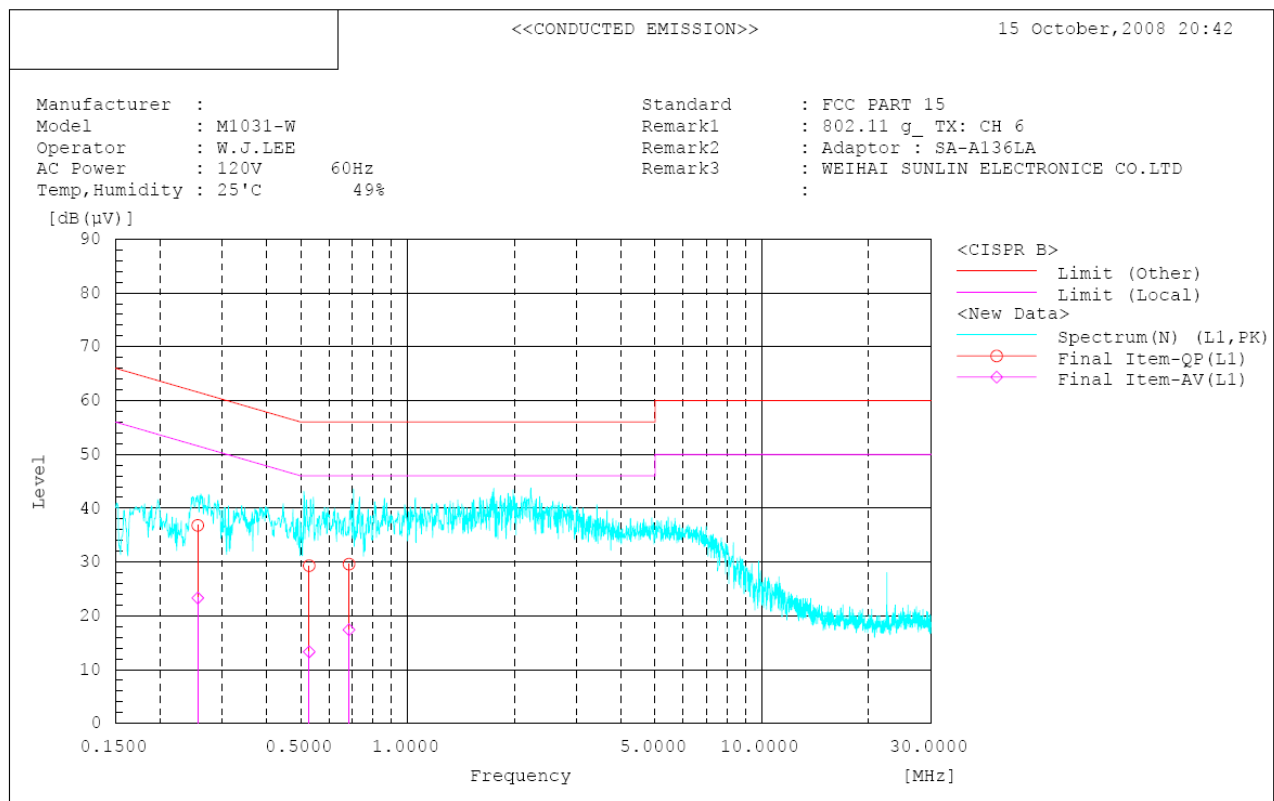
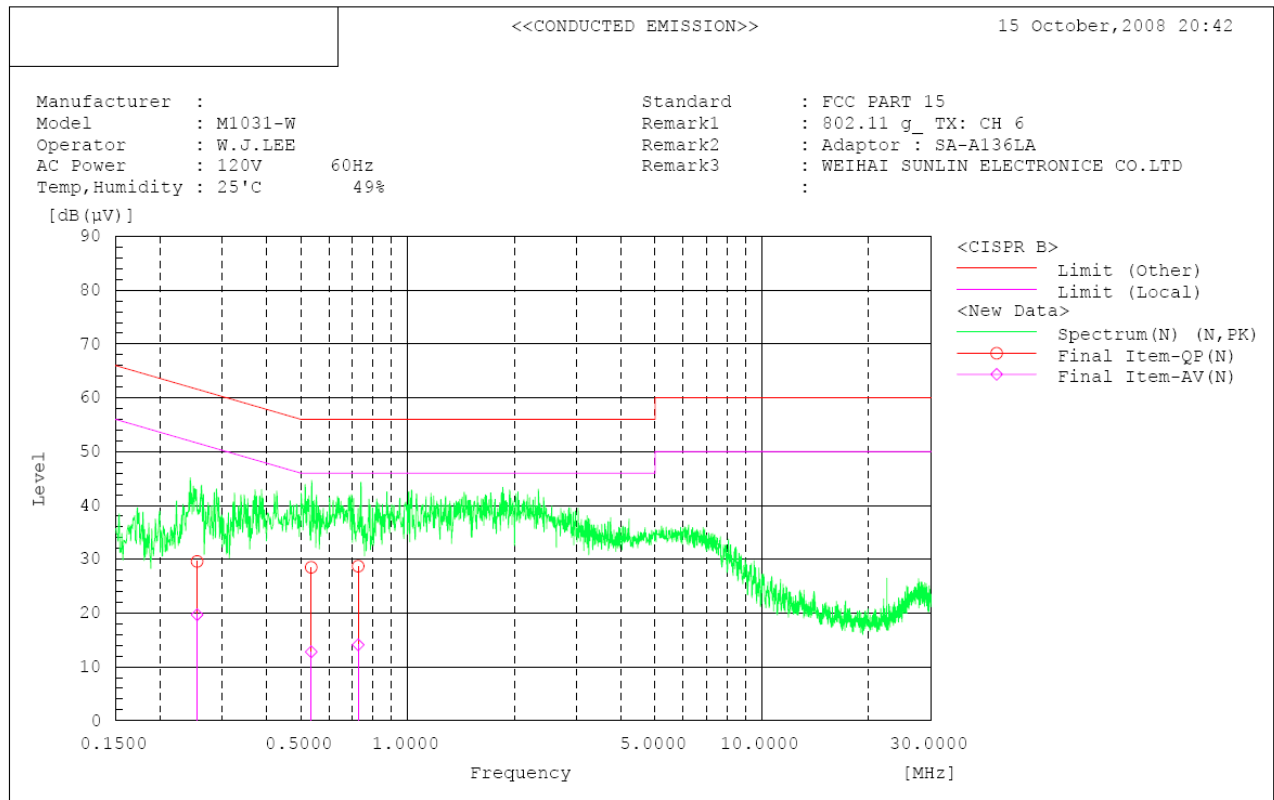
Final Result

--- N Phase ---
No.  Frequency  Reading  Reading  c.f  Result  Result  Limit  Limit  Margin  Margin  Remark
      [MHz]     [dB(µV)] [dB(µV)] [dB] [dB(µV)] [dB(µV)] [dB(µV)] [dB(µV)] [dB] [dB]
1    0.255      34.7      19.9    0.2   34.9      20.1    61.6    51.6    26.7    31.5
2    0.509      32.2      15.4    0.2   32.4      15.6    56.0    46.0    23.6    30.4
3    0.802      29.9      11.4    0.2   30.1      11.6    56.0    46.0    25.9    34.4

--- L1 Phase ---
No.  Frequency  Reading  Reading  c.f  Result  Result  Limit  Limit  Margin  Margin  Remark
      [MHz]     [dB(µV)] [dB(µV)] [dB] [dB(µV)] [dB(µV)] [dB(µV)] [dB(µV)] [dB] [dB]
1    0.257      37.2      23.7    0.2   37.4      23.9    61.5    51.5    24.1    27.6
2    0.515      34.2      16.3    0.2   34.4      16.5    56.0    46.0    21.6    29.5
3    1.818      31.7      17.2    0.4   32.1      17.6    56.0    46.0    23.9    28.4

```

AC Conducted Emissions - Graph (802.11g Mode + White Adaptor)



AC Conducted Emissions – DATA (802.11g Mode + White Adaptor)

```

*****
<<CONDUCTED EMISSION>>
15 October, 2008 20:42

Standard      : FCC PART 15
Manufacturer  :
Model         : M1031-W
Operator      : W.J.LEE
AC Power      : 120V      60Hz
Temp, Humidity : 25'C      49%
Remark1       : 802.11 g_ TX: CH 6
Remark2       : Adaptor : SA-A136LA
Remark3       : WEIHAI SUNLIN ELECTRONICE CO.LTD
*****

Final Result

--- N Phase ---
No.  Frequency  Reading  Reading  c.f  Result  Result  Limit  Limit  Margin  Margin  Remark
      [MHz]      [dB(µV)] [dB(µV)] [dB] [dB(µV)] [dB(µV)] [dB(µV)] [dB(µV)] [dB] [dB]
1    0.255      29.4      19.5    0.2   29.6      19.7    61.6    51.6    32.0    31.9
2    0.535      28.3      12.6    0.2   28.5      12.8    56.0    46.0    27.5    33.2
3    0.726      28.5      13.9    0.2   28.7      14.1    56.0    46.0    27.3    31.9

--- L1 Phase ---
No.  Frequency  Reading  Reading  c.f  Result  Result  Limit  Limit  Margin  Margin  Remark
      [MHz]      [dB(µV)] [dB(µV)] [dB] [dB(µV)] [dB(µV)] [dB(µV)] [dB(µV)] [dB] [dB]
1    0.256      36.6      23.1    0.2   36.8      23.3    61.6    51.6    24.8    28.3
2    0.528      29.1      13.1    0.2   29.3      13.3    56.0    46.0    26.7    32.7
3    0.684      29.4      17.2    0.2   29.6      17.4    56.0    46.0    26.4    28.6

```

3.3 Receiver requirements

3.3.1 AC Conducted Emissions (Receiver Mode)

- Procedure:

The conducted emissions are measured in the shielded room with a spectrum analyzer in peak hold. While the measurement, EUT had its receiving function. Emissions closest to the limit are measured in the quasi-peak mode (QP) and average mode (AV) with the tuned receiver using a bandwidth of 9 kHz. The emissions are maximized further by cable manipulation and Exerciser operation. The highest emissions relative to the limit are listed.

- Measurement Data: Comply

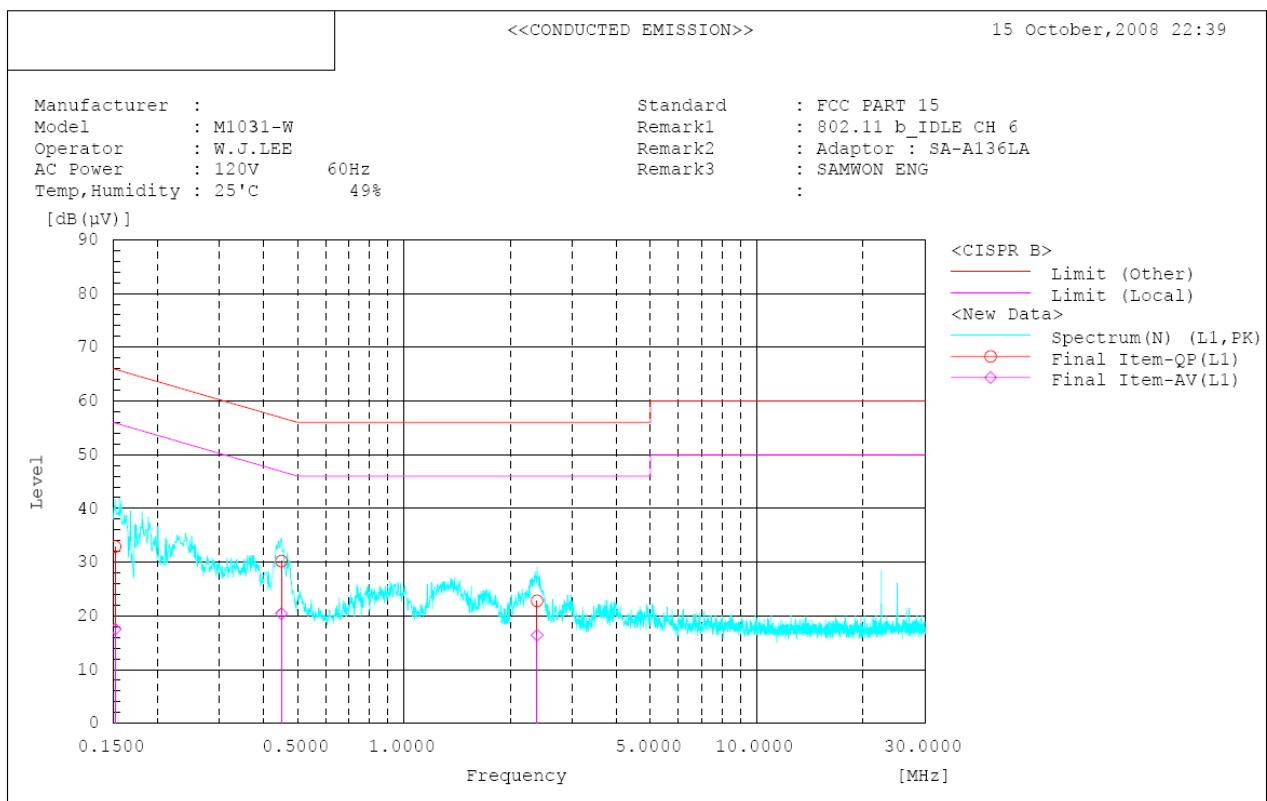
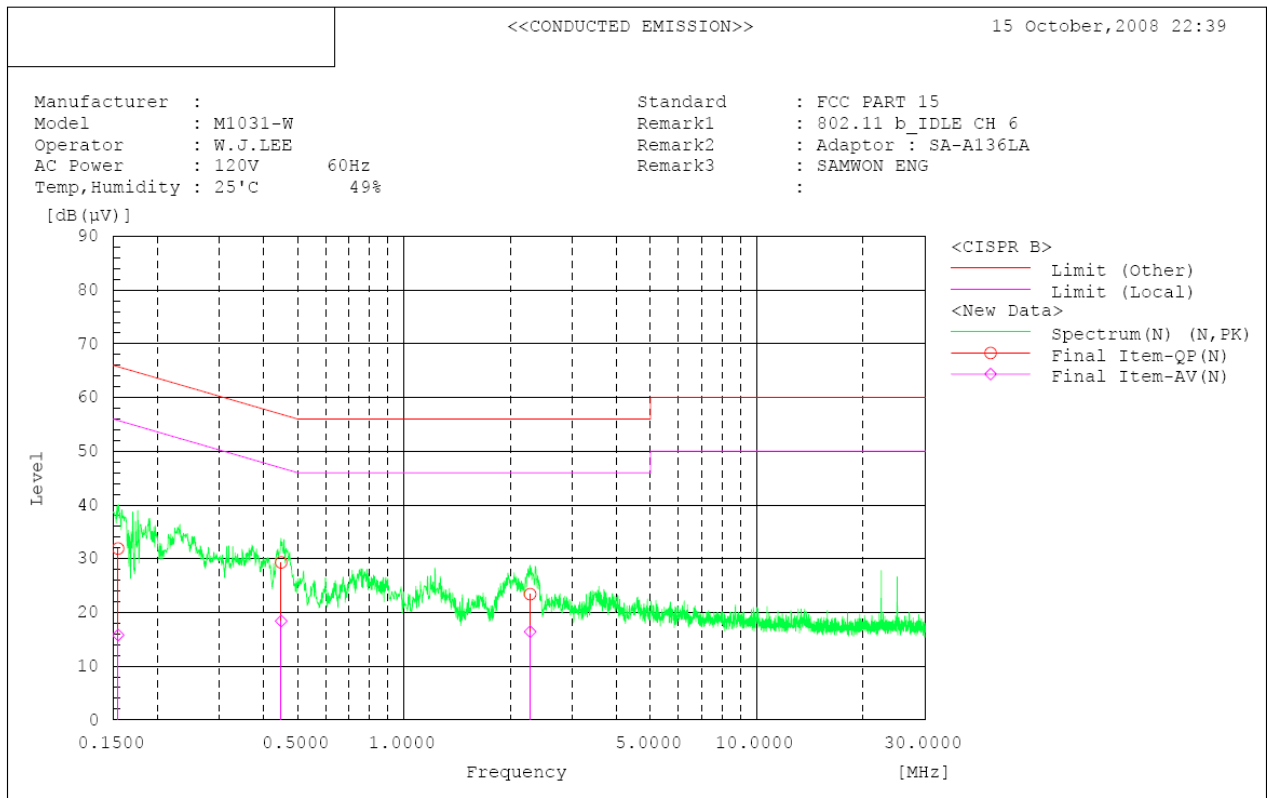
- See next pages for actual measured spectrum plots.

- Minimum Standard: FCC Part 15.207(a)/EN 55022

Frequency Range (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

AC Conducted Emissions - Graph (802.11b Receiver Mode + Black Adaptor)



AC Conducted Emissions – DATA (802.11b Receiver Mode + Black Adaptor)

```

*****
<<CONDUCTED EMISSION>>
15 October, 2008 22:39

Standard      : FCC PART 15
Manufacturer  :
Model         : M1031-W
Operator      : W.J.LEE
AC Power      : 120V      60Hz
Temp, Humidity : 25°C      49%
Remark1       : 802.11 b_IDLE CH 6
Remark2       : Adaptor : SA-A136LA
Remark3       : SAMWON ENG
:

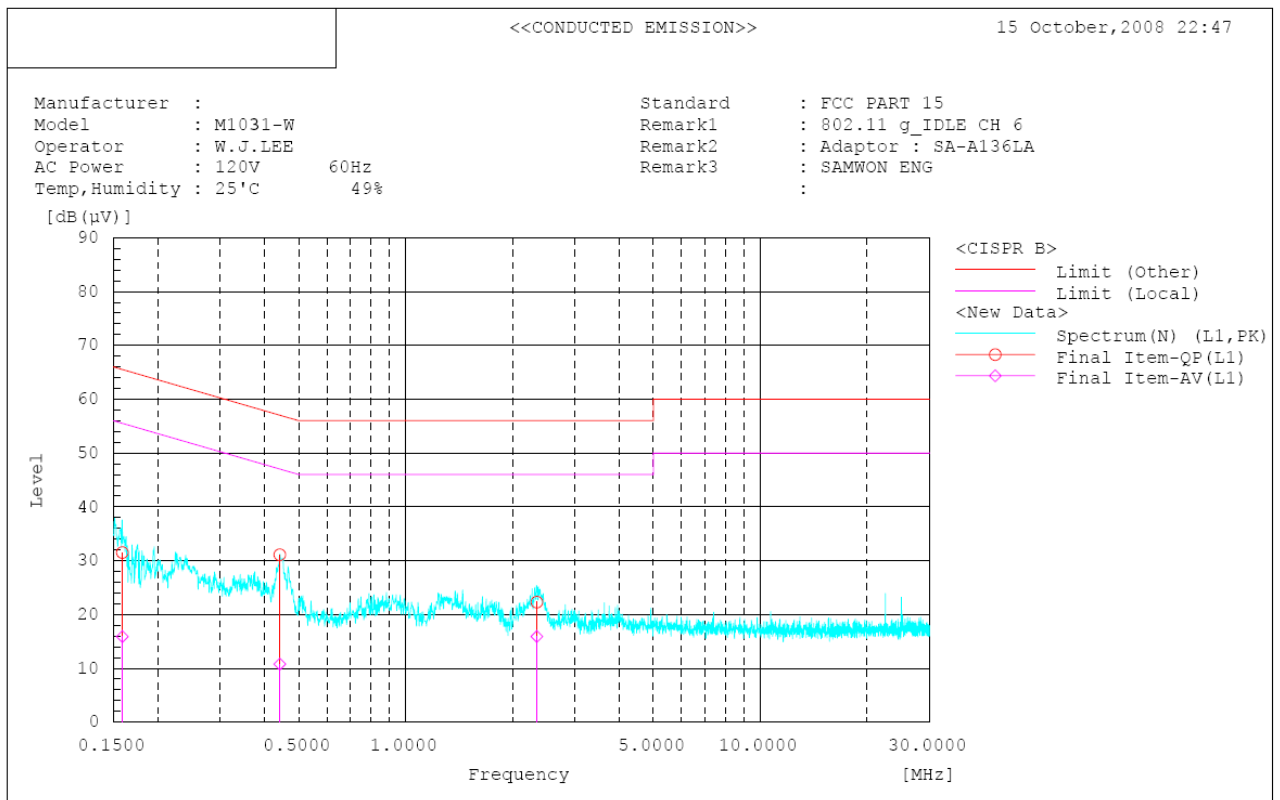
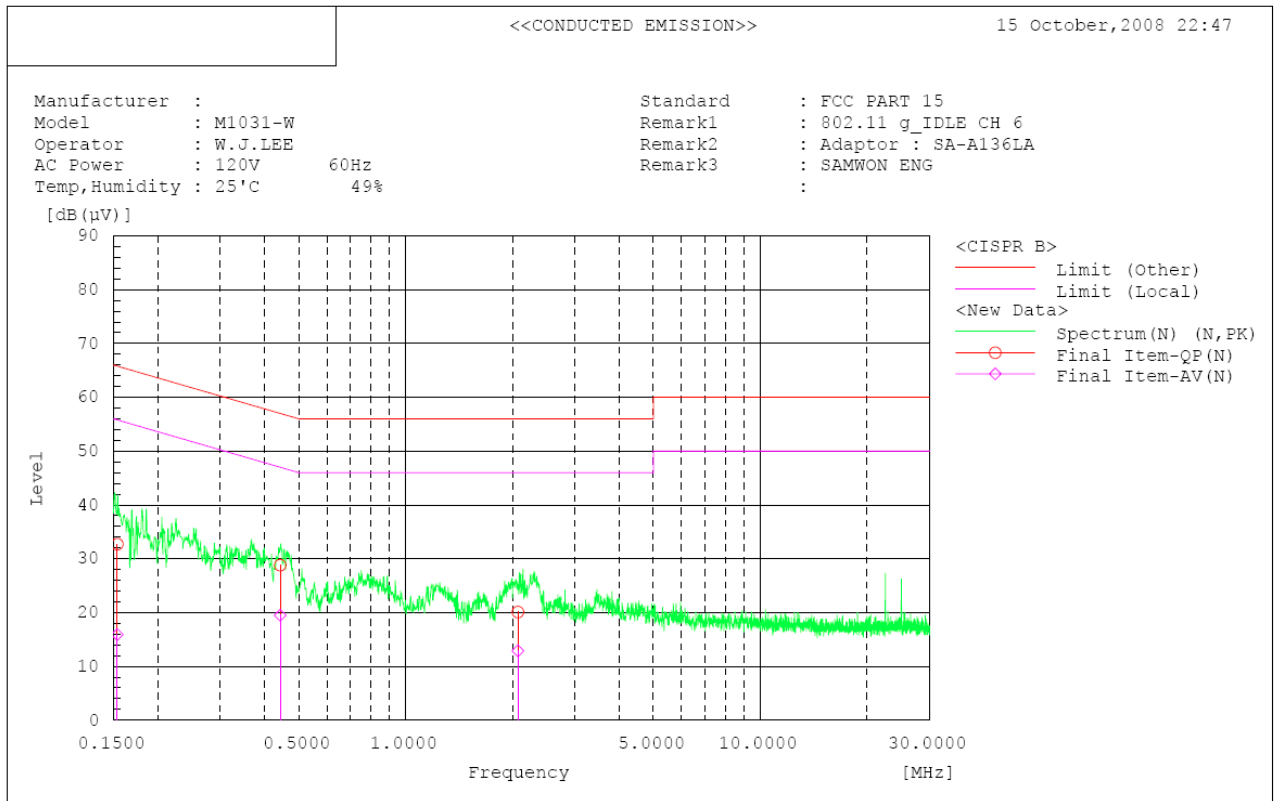
*****
Final Result

--- N Phase ---
No.  Frequency  Reading  Reading  c.f  Result  Result  Limit  Limit  Margin  Margin  Remark
      [MHz]     QP      AV      [dB]  [dB(µV)] [dB(µV)] [dB(µV)] [dB(µV)] [dB]    [dB]
1     0.155     31.7     18.6     0.2   31.9     15.8     65.7     55.7     33.8     39.9
2     0.449     29.1     18.2     0.2   29.3     18.4     56.9     46.9     27.6     28.5
3     2.280     22.0     16.0     0.4   22.4     16.4     56.0     46.0     32.6     29.6

--- L1 Phase ---
No.  Frequency  Reading  Reading  c.f  Result  Result  Limit  Limit  Margin  Margin  Remark
      [MHz]     QP      AV      [dB]  [dB(µV)] [dB(µV)] [dB(µV)] [dB(µV)] [dB]    [dB]
1     0.152     32.7     17.3     0.2   32.9     17.5     65.9     55.9     33.0     38.4
2     0.450     30.0     20.2     0.2   30.2     20.4     56.9     46.9     26.7     26.5
3     2.385     22.4     16.0     0.4   22.8     16.4     56.0     46.0     33.2     29.6

```

AC Conducted Emissions - Graph (802.11g Receiver Mode + Black Adaptor)



AC Conducted Emissions – DATA (802.11g Receiver Mode + Black Adaptor)

```

*****
<<CONDUCTED EMISSION>>
15 October,2008 22:47

Standard      : FCC PART 15
Manufacturer  :
Model         : M1031-W
Operator      : W.J.LEE
AC Power      : 120V      60Hz
Temp, Humidity : 25°C      49%
Remark1       : 802.11 g_IDLE CH 6
Remark2       : Adaptor : SA-A136LA
Remark3       : SAMWON ENG
:

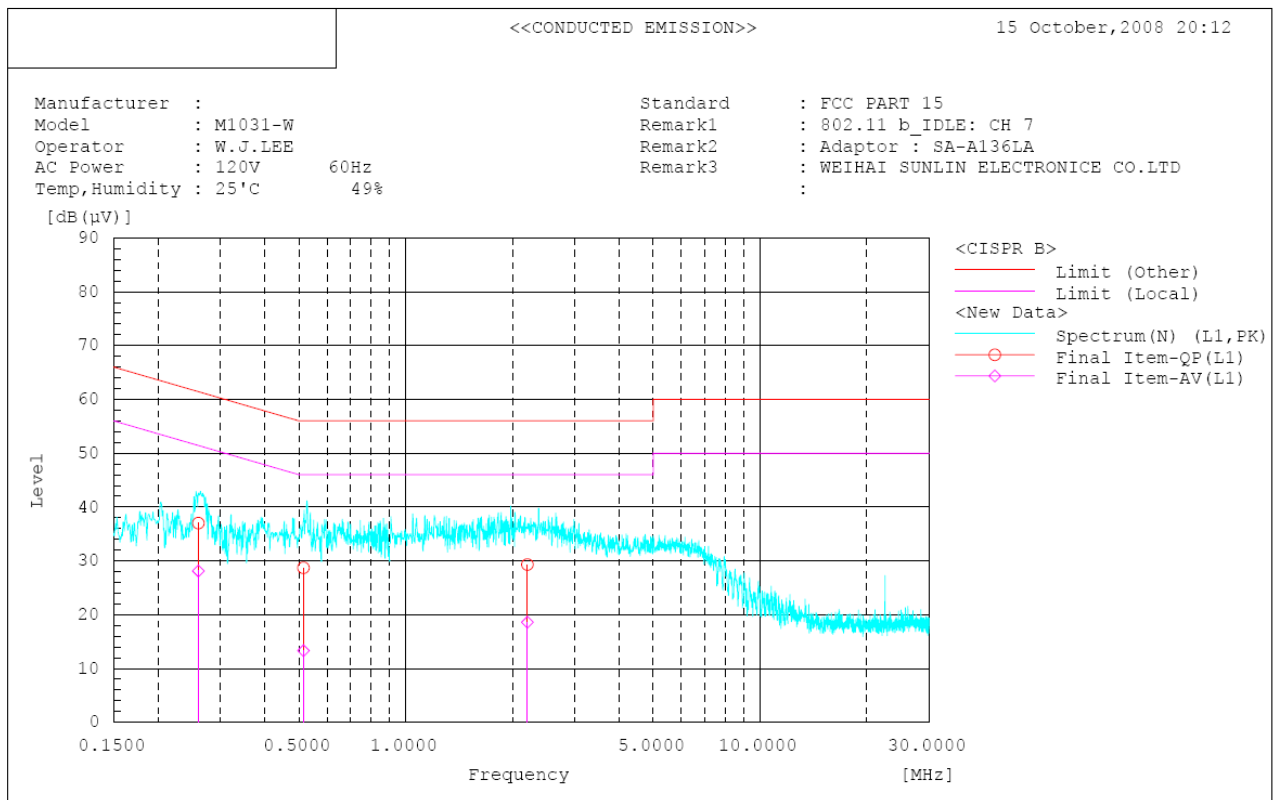
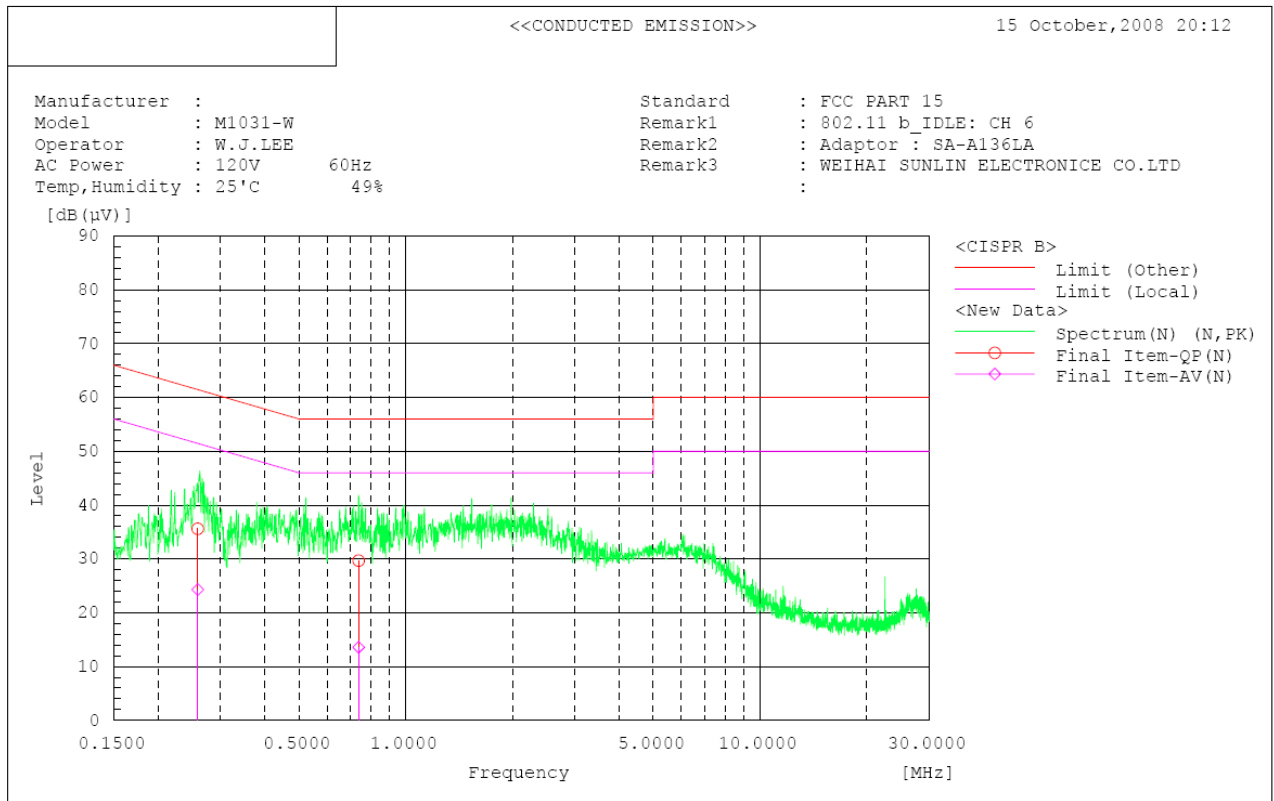
*****
Final Result

--- N Phase ---
No.  Frequency  Reading  Reading  c.f  Result  Result  Limit  Limit  Margin  Margin  Remark
      [MHz]     QP      AV      [dB]  [dB(µV)] [dB(µV)] [dB(µV)] [dB(µV)] [dB]    [dB]
1    0.154      22.5     18.7     0.2   22.7     18.9     65.8     55.8     33.1     39.9
2    0.443      28.6     19.3     0.2   28.8     19.5     57.0     47.0     28.2     27.5
3    2.074      19.7     12.5     0.4   20.1     12.9     56.0     46.0     35.9     33.1

--- L1 Phase ---
No.  Frequency  Reading  Reading  c.f  Result  Result  Limit  Limit  Margin  Margin  Remark
      [MHz]     QP      AV      [dB]  [dB(µV)] [dB(µV)] [dB(µV)] [dB(µV)] [dB]    [dB]
1    0.159      31.3     15.7     0.2   31.5     15.9     65.5     55.5     34.0     39.6
2    0.442      30.9     10.6     0.2   31.1     10.8     57.0     47.0     25.9     36.2
3    2.245      21.9     15.5     0.4   22.3     15.9     56.0     46.0     33.7     30.1

```

AC Conducted Emissions - Graph (802.11b Receiver Mode + White Adaptor)



AC Conducted Emissions – DATA (802.11b Receiver Mode + White Adaptor)

```

*****
<<CONDUCTED EMISSION>>
15 October, 2008 20:12

Standard      : FCC PART 15
Manufacturer  :
Model         : M1031-W
Operator      : W.J.LEE
AC Power      : 120V      60Hz
Temp, Humidity : 25°C      49%
Remark1       : 802.11 b_IDLE: CH 6
Remark2       : Adaptor : SA-A136LA
Remark3       : WEIHAI SUNLIN ELECTRONICE CO.LTD
:

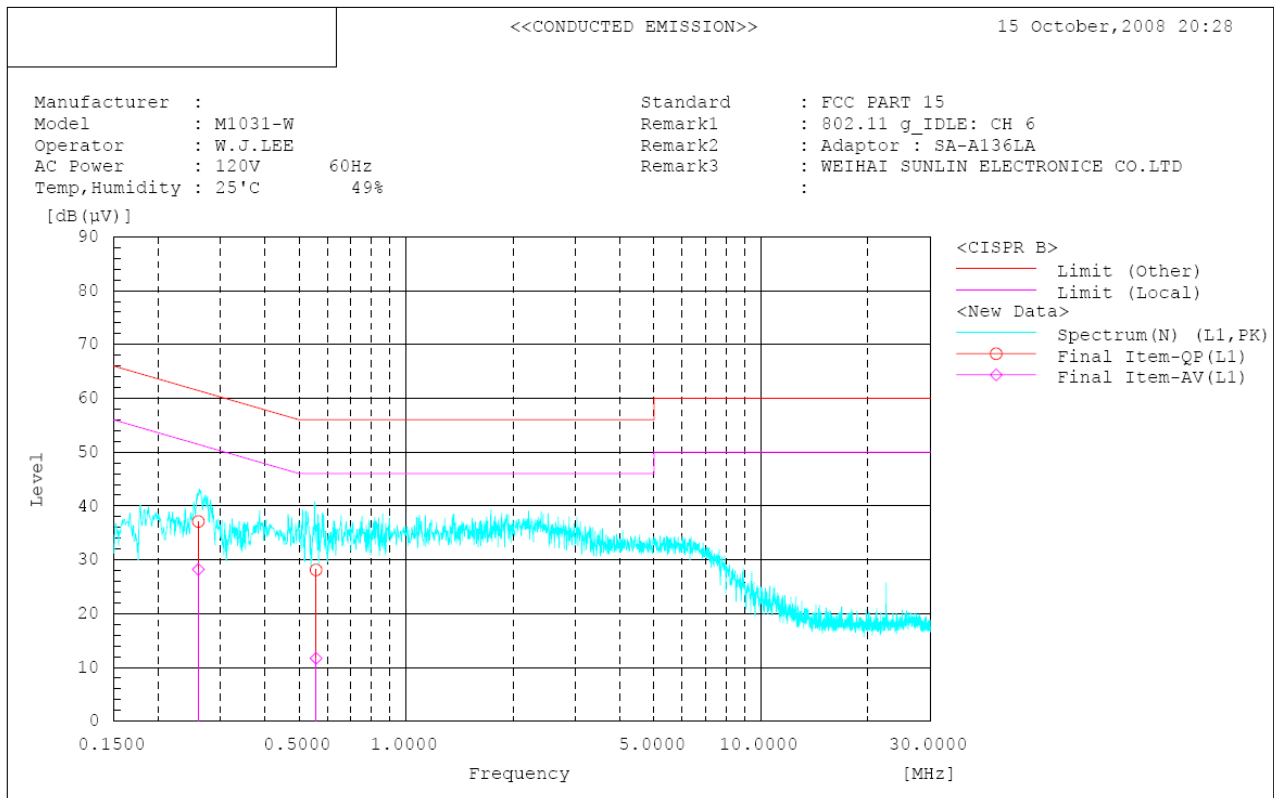
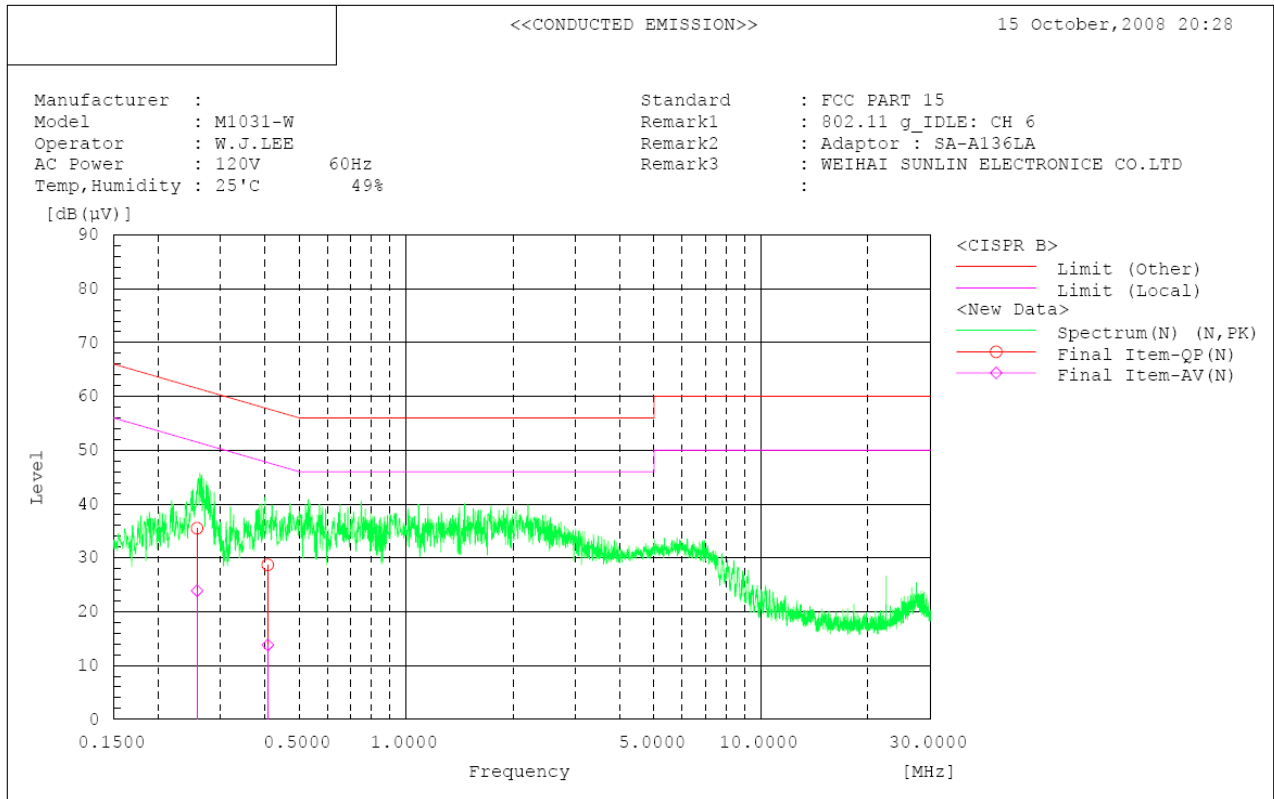
*****
Final Result

--- N Phase ---
No.  Frequency  Reading  Reading  c.f  Result  Result  Limit  Limit  Margin  Margin  Remark
      [MHz]     [dB(µV)]  [dB(µV)] [dB]  [dB(µV)] [dB(µV)] [dB(µV)] [dB(µV)] [dB]  [dB]
1     0.259     25.4     24.1   0.2   25.6     24.2   61.5   51.5   25.9   27.2
2     0.727     29.5     12.4   0.2   29.7     12.6   56.0   46.0   26.2   32.4

--- L1 Phase ---
No.  Frequency  Reading  Reading  c.f  Result  Result  Limit  Limit  Margin  Margin  Remark
      [MHz]     [dB(µV)]  [dB(µV)] [dB]  [dB(µV)] [dB(µV)] [dB(µV)] [dB(µV)] [dB]  [dB]
1     0.260     26.8     27.9   0.2   27.0     28.1   61.4   51.4   24.4   23.3
2     0.515     28.5     13.1   0.2   28.7     13.3   56.0   46.0   27.3   32.7
3     2.206     28.9     18.2   0.4   29.3     18.6   56.0   46.0   26.7   27.4

```

AC Conducted Emissions - Graph (802.11g Receiver Mode + White Adaptor)



AC Conducted Emissions – DATA (802.11g Receiver Mode + White Adaptor)

```

*****
<<CONDUCTED EMISSION>>
15 October, 2008 20:28

Standard      : FCC PART 15
Manufacturer  :
Model         : M1031-W
Operator      : W.J.LEE
AC Power      : 120V      60Hz
Temp, Humidity : 25'C      49%
Remark1       : 802.11 g_IDLE: CH 6
Remark2       : Adaptor : SA-A136LA
Remark3       : WEIHAI SUNLIN ELECTRONICS CO.LTD
:
*****

Final Result

--- N Phase ---
No.  Frequency  Reading  Reading  c.f  Result  Result  Limit  Limit  Margin  Margin  Remark
      [MHz]    [dB(µV)] [dB(µV)] [dB]  [dB(µV)] [dB(µV)] [dB(µV)] [dB(µV)] [dB]    [dB]
1     0.250     35.3     23.7   0.2   35.5     23.9   61.5   51.5   26.0   27.6
2     0.408     28.5     13.6   0.2   28.7     13.8   57.7   47.7   29.0   33.9

--- L1 Phase ---
No.  Frequency  Reading  Reading  c.f  Result  Result  Limit  Limit  Margin  Margin  Remark
      [MHz]    [dB(µV)] [dB(µV)] [dB]  [dB(µV)] [dB(µV)] [dB(µV)] [dB(µV)] [dB]    [dB]
1     0.260     36.9     28.0   0.2   37.1     28.2   61.4   51.4   24.3   23.2
2     0.558     27.9     11.5   0.2   28.1     11.7   56.0   46.0   27.9   34.3

```

3.3.2 Out of Band Emissions – Radiated (Receiver Mode)

- Procedure:

The EUT was placed on a 0.8m high wooden table inside a shielded enclosure. An antenna was placed near the EUT and measurements of frequencies and amplitudes of field strengths were recorded for reference during final measurements. For final radiated testing, measurements were performed in a OATS. Measurements were performed with the EUT oriented in 3 orthogonal axis and rotated 360 degrees to determine worst-case orientation for maximum emissions.

The spectrum analyzer is set to:

Frequency Range = 30 MHz ~ 10th harmonic.

RBW = 120 kHz (30MHz ~ 1 GHz)

= 1 MHz (1 GHz ~ 10th harmonic)

VBW = 10Hz (Average), VBW ≥ RBW (Peak)

Trace = max hold

Detector function = peak

Sweep = auto

- Measurement Data: Comply (Refer to the Next page)

- Minimum Standard: FCC Part 15.209(a)

Frequency (MHz)	Limit (uV/m) @ 3m
30 ~ 88	100 **
88 ~ 216	150 **
216 ~ 960	200 **
Above 960	500

** Except as provided in 15.209(g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88MHz, 174-216MHz or 470-806MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g. 15.231 and 15.241.

Measurement Data: 802.11b Receiver + Black Adaptor

Frequency	P	Reading	C.F	Result	Limit	Margin
65.000	V	51.33	-18.33	33.00	40.00	7.00
177.490	V	35.14	-7.64	27.50	43.50	16.00
201.000	V	32.62	-7.12	35.50	43.50	18.00
298.490	V	35.29	-3.19	32.10	46.00	13.90
311.490	V	38.70	-7.90	30.80	46.00	15.20
333.990	V	37.41	-7.31	30.10	46.00	15.90
427.500	H	36.48	-5.08	31.40	46.00	14.60
565.490	V	38.09	-2.59	35.50	46.00	10.50
566.000	H	34.48	-2.58	31.90	46.00	14.10
633.490	V	34.68	-1.48	33.20	46.00	12.80
670.490	H	32.66	-0.96	31.70	46.00	14.30
790.490	V	33.63	0.07	33.70	46.00	12.30

Note. No other emissions were detected at a level greater than 20dB below limit.

Measurement Data: 802.11g Receiver + Black Adaptor

Frequency	P	Reading	C.F	Result	Limit	Margin
67.490	V	50.40	-18.50	31.90	40.00	8.10
175.000	V	35.39	-7.69	27.70	43.50	15.80
202.490	V	32.97	-7.07	25.90	43.50	17.60
292.500	V	35.39	-3.49	31.90	46.00	14.10
314.990	V	38.41	-7.81	30.60	46.00	15.40
337.500	V	39.12	-7.22	31.90	46.00	14.10
427.490	H	36.28	-5.08	31.20	46.00	14.80
562.490	H	34.26	-2.66	31.60	46.00	14.40
562.500	V	37.74	-2.64	35.10	46.00	10.90
637.500	V	35.12	-1.42	33.70	46.00	12.30
662.490	H	32.98	-1.08	31.90	46.00	14.10
787.490	V	34.85	0.05	34.90	46.00	11.10

Note. No other emissions were detected at a level greater than 20dB below limit.

Measurement Data: 802.11b Receiver + White Adaptor

Frequency	P	Reading	C.F	Result	Limit	Margin
67.500	V	49.50	-18.50	31.00	40.00	9.00
112.500	V	40.39	-13.09	27.30	43.50	16.20
292.490	H	35.99	-3.49	32.50	46.00	13.50
292.500	V	32.99	-3.49	29.50	46.00	16.50
300.000	H	37.38	-5.68	31.70	46.00	14.30
337.500	V	40.52	-7.22	33.30	46.00	12.70
499.990	H	37.91	-3.81	34.10	46.00	11.90
562.500	V	36.64	-2.64	34.00	46.00	12.00

Note. No other emissions were detected at a level greater than 20dB below limit.

Measurement Data: 802.11g Receiver + White Adaptor

Frequency	P	Reading	C.F	Result	Limit	Margin
69.000	V	50.10	-18.60	31.50	40.00	8.50
112.700	V	40.56	-13.06	27.50	43.50	16.00
292.500	H	35.79	-3.49	32.30	46.00	13.70
294.200	V	33.60	-3.40	30.20	46.00	15.80
300.100	H	36.43	-5.93	30.50	46.00	15.50
339.200	V	41.07	-7.17	33.90	46.00	12.10
500.000	H	38.51	-3.81	34.70	46.00	11.30
561.000	V	36.78	-2.68	34.10	46.00	11.90

Note. No other emissions were detected at a level greater than 20dB below limit.

APPENDIX

TEST EQUIPMENT USED FOR TESTS

To facilitate inclusion on each page of the test equipment used for related tests, each item of test equipment.

	Type	Manufacturer	Model	Cal.Due.Date (dd/mm/yy)	Next.Due.Date (dd/mm/yy)	S/N
01	Spectrum Analyzer	Agilent	E4404B	21/03/08	21/03/09	US41061134
02	Spectrum Analyzer	Agilent	E4440A	06/11/08	06/11/09	MY45304199
03	Spectrum Analyzer	H.P	8563E	13/10/08	13/10/09	3551A04634
04	Spectrum Analyzer	H.P	8591E	26/04/08	26/04/09	3649A05889
05	Spectrum Analyzer	Rohde Schwarz	FSP	09/09/08	09/09/09	100385
06	EMI TEST RECEIVER	R&S	ESU	11/01/08	11/01/09	100014
07	EMI TEST RECEIVER	R&S	ESCI	13/05/08	13/05/09	100364
08	Power Meter	H.P	EMP-442A	10/07/08	10/07/09	GB37170413
09	Power Sensor	H.P	8481A	11/03/08	11/03/09	3318A96566
10	Power Divider	Agilent	11636B	04/12/08	04/12/09	56471
11	Frequency Counter	H.P	5342A	16/09/08	16/09/09	2119A04450
12	Signal Generator	Rohde Schwarz	SMR20	02/04/08	02/04/09	101251
13	Signal Generator	H.P	ESG-3000A	09/07/08	09/07/09	US37230529
14	Vector Signal Generator	Rohde Schwarz	SMJ100A	17/01/08	17/01/09	100148
15	Audio Analyzer	H.P	8903B	09/07/08	09/07/09	3011A09448
16	Modulation Analyzer	H.P	8901B	18/07/08	18/07/09	3028A03029
17	Oscilloscope	Tektronix	TDS3052	07/10/08	07/10/09	B016821
18	8960 Series 10 Wireless Comms. Test Set	Agilent	E5515C	31/07/08	31/07/09	GB43461134
19	Universal Radio communication Tester	Rohde Schwarz	CMU 200	02/04/08	02/04/09	107631
20	Power Splitter	Anritsu	K241B	14/10/08	14/10/09	020611
21	BAND Reject Filter	Microwave Circuits	N0308372	06/10/08	06/10/09	3125-01DC0352
22	BAND Reject Filter	Wainwright	WRCG1750	06/10/08	06/10/09	2
23	AC Power supply	DAEKWANG	5KVA	20/03/08	20/03/09	20060321-1
24	DC Power Supply	H.P	6622A	20/03/08	20/03/09	3448A03760
25	DC Power Supply	HP	6633A	20/03/08	20/03/09	3524A06634
26	HORN ANT	ETS	3115	13/06/08	13/06/09	6419
27	HORN ANT	ETS	3115	10/09/08	10/09/09	21097
28	HORN ANT	A.H.Systems	SAS-574	13/06/08	13/06/09	154
29	HORN ANT	A.H.Systems	SAS-574	13/06/08	13/06/09	155
30	Dipole Antenna	Schwarzbeck	VHA9103	25/11/08	25/11/09	2116

	Type	Manufacturer	Model	Cal.Due.Date (dd/mm/yy)	Next.Due.Date (dd/mm/yy)	S/N
31	Dipole Antenna	Schwarzbeck	VHA9103	25/11/08	25/11/09	2117
32	Dipole Antenna	Schwarzbeck	UHA9105	25/11/08	25/11/09	2261
33	Dipole Antenna	Schwarzbeck	UHA9105	25/11/08	25/11/09	2262
34	TEMP & HUMIDITY Chamber	JISCO	J-RHC2	10/10/08	10/10/09	021031
35	Log Periodic Antenna	Schwarzbeck	UHALP9108A1	30/09/08	30/09/09	1098
36	Biconical Antenna	Schwarzbeck	VHA9103	13/06/08	13/06/09	2233
37	Digital Multimeter	H.P	34401A	20/03/08	20/03/09	3146A13475,US36122178
38	Attenuator (10dB)	WEINSCHTEL	23-10-34	01/10/08	01/10/09	BP4386
39	Attenuator (10dB)	WEINSCHTEL	23-10-34	30/01/08	30/01/09	BP4387
40	High-Pass Filter	ANRITSU	MP526D	06/10/08	06/10/09	MP27756
41	Attenuator (3dB)	Agilent	8491B	01/08/08	01/08/09	MY39260700
42	Attenuator (20dB)	Aeroflex/Weinschel	86-20-11	06/10/08	06/10/09	432
43	Attenuator (10dB)	Aeroflex/Weinschel	86-10-11	06/10/08	06/10/09	446
44	Attenuator (10dB)	Aeroflex/Weinschel	86-10-11	06/10/08	06/10/09	408
45	Attenuator(40dB)	WEINSCHTEL	57-40-33	01/10/08	01/10/09	NN837
46	Type N Coaxial CIRCULATOR	NOVA MICROWAVE	0088CAN	11/07/08	11/07/09	788
47	Type N Coaxial CIRCULATOR	NOVA MICROWAVE	0185CAN	11/07/08	11/07/09	790
48	Type N Coaxial CIRCULATOR	NOVA MICROWAVE	0215CAN	11/07/08	11/07/09	112
49	Amplifier (25dB)	Agilent	8447D	21/05/08	21/05/09	2944A10144
50	Amplifier (30dB)	Agilent	8449B	13/10/08	13/10/09	3008A01590
51	Amplifier (22dB)	H.P	8447E	27/02/08	27/02/09	2945A02865
52	Position Controller	TOKIN	5901T	N/A	N/A	14173
53	Driver	TOKIN	5902T2	N/A	N/A	14174
54	LISN	Kyorits	KNW-407	04/08/08	04/08/09	8-317-8
55	LISN	Kyorits	KNW-242	13/10/08	13/10/09	8-654-15
56	CVCF	NF Electronic	4420	21/03/08	21/03/09	304935/337980
57	Software	ToYo EMI	EP5/RE	N/A	N/A	Ver 2.0.800
58	Software	ToYo EMI	EP5/CE	N/A	N/A	Ver 2.0.801
59	Software	AUDIX	e3	N/A	N/A	Ver 3.0
60	Software	Agilent	Benchlink	N/A	N/A	A.01.09 021211
61	RFI/FIELD Intensity Meter	Kyorits	KNW-2402	11/09/08	11/09/09	4N-170-3