DIGITAL EMC CO., LTD.

683-3, Yubang-Dong, Yongin-Si, Kyunggi-Do, Korea. 449-080
Tel: +82-31-321-2664 Fax: +82-31-321-1664
http://www.digitalemc.com

CERTIFICATION OF COMPLIANCE

Infomark Co., Ltd.

#801, KINS Tower, 25-1, Jeongja-Dong, Bundang-gu, Seongnam-Si, Gyeonggi-Do, Korea, 137-130

Dates of Tests: April 09 ~ 17, 2010
Test Report S/N:DRTFCC1004-0017
Test Site : DIGITAL EMC CO., LTD.

FCC ID **YCO-IMW-C610W**

APPLICANT **Infomark Co., Ltd.**

Purpose	:	**Original Grant**
FCC Equipment Class	:	**Digital Transmission System (DTS)**
Device name	:	**WiMAX & WiFi Dual CPE**
Manufacturer	:	**Infomark Co., Ltd.**
FCC ID	:	**YCO-IMW-C610W**
Model name	:	**IMW-C610W**
Test Device Serial number	:	**Identical prototype**
FCC Rule Part(s)	:	**FCC Part 15.247 Subpart C** **ANSI C-63.4-2003**
Frequency Range	:	**2412 ~ 2442 MHz**
Max. Output power	:	**802.11b – 8.48 dBm Conducted** **802.11g – 8.49 dBm Conducted**
Data of issue	:	**April 20, 2010**

The Test results relate only to the tested sample. It is not allowed to copy this report even partly without the allowance of DIGITAL EMC CO., LTD.

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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
http://www.digitalemc.com E-mail: harveysung@digitalemc.com
Tel: +82-31-321-2664 Fax: +82-31-321-1664

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".

Tested by: ***Engineer***

Date	Name	Signature
April 20, 2010	D.C. Cha	

Reviewed by: ***Manager***

Date	Name	Signature
April 20, 2010	W.J. Lee	

Applicant:

Company name	:	Infomark Co., Ltd.
Address	:	#801, KINS Tower, 25-1, Jeongja-Dong, Bundang-Gu, Seongnam-Si, Gyonggi-Do, Korea, 137-130
Date of order	:	April 01, 2009

2. Equipment information

YCO-IMW-C610W

2.1 Equipment information

Equipment model no.	IMW-C610W
Equipment serial no.	Identical prototype
Type of equipment	WiMAX & WiFi Dual CPE
Frequency band	2412 ~ 2442 MHz
Type of Modulation	802.11b – CCK 802.11g – OFDM
Power	Li-ion polymer Battery: DC 3.7 V Adapter: AC 120V 60Hz
Type of antenna	☒ Internal Type: Chip Antenna (Max. Peak Gain: 2.48 dBi) ☐ External Type:

2.2 Ancillary equipment

Equipment	Model No.	Serial No.	Manufacturer	Note
Adaptor	PSAA10R-050	N/A	PHIHONGTECHNOLOGY CO., LTD.	-
USB Cable	N/A	N/A	N/A	-

3. Information about test items

YCO-IMW-C610W

3.1 Tested frequency

Frequency	TX	RX
Lowest frequency	2412MHz	2412MHz
Middle frequency	2427MHz	2427MHz
Highest frequency	2442MHz	2442MHz

3.2 Tested environment

Temperature	:	21 ~ 22 (°C)
Relative humidity content	:	36 ~ 44 % R.H.
Details of power supply	:	DC 3.7 V AC 120V 60Hz

3.3 Test mode

Test Case 1	EUT
Test Case 2	EUT + USB Cable + Notebook
Test Case 3	EUT + Adaptor

3.4 Auxiliary equipment

Equipment	Model No.	Serial No.	Manufacturer	Note
Notebook	HP520	CND73824M9	HP	DoC
Mouse	TGM-7000/U	N/A	PRIMAX ELECTRONICS LTD.	DoC

3.5 EMI Suppression Device(s)/Modifications

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

→ None

4. Test Report

4.1 Summary of tests

FCC Part Section(s)	Parameter	Limit (Using in 2400 ~ 2483.5MHz)	Test Condition	Status Note 1
I. Test Items				
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
				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	AC Line Conducted	C
15.203	Antenna Requirements	FCC 15.203	-	C

Note 1: **C**=Comply **NC**=Not Comply **NT**=Not Tested **NA**=Not Applicable

The sample was tested according to the following specification:

ANSI C-63.4-2003

4.2 Transmitter requirements

4.2.1 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 Frequencies

Span = 50 MHz (Greater than EBW)

RBW = 100 kHz

VBW = ≥ RBW

Trace = max hold

Sweep = auto

Detector function = peak

- Measurement Data: Comply

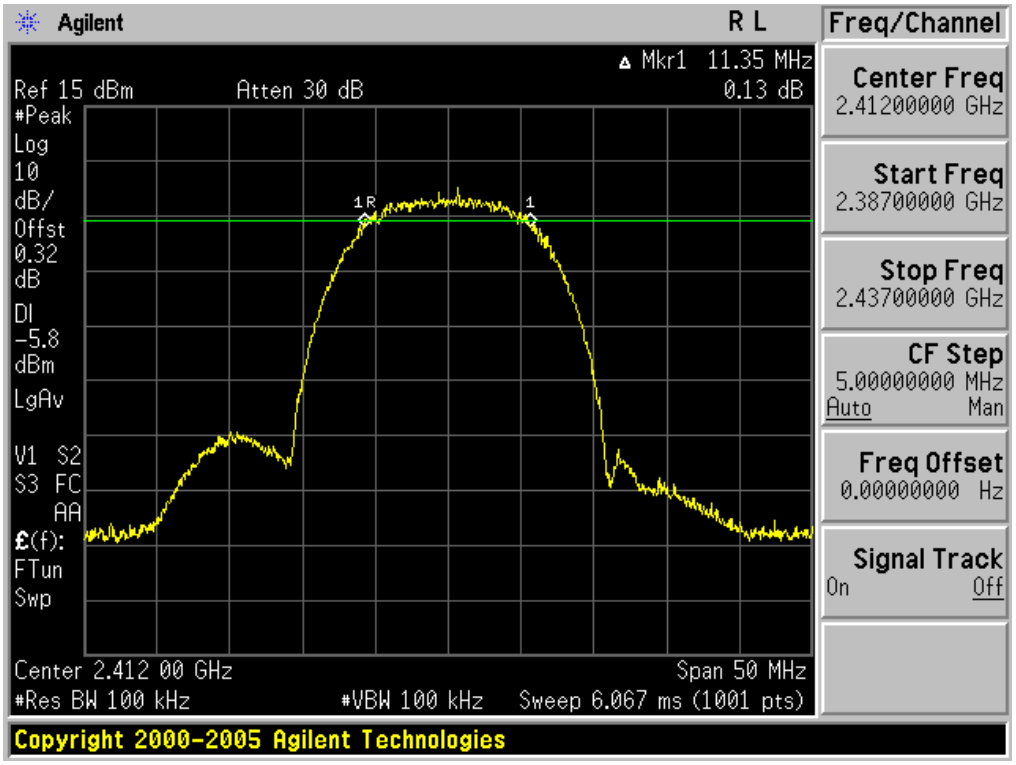
Test Mode	Frequency	Test Results (MHz)
802.11b	Lowest	11.35
	Middle	12.30
	Highest	11.85
802.11g	Lowest	16.55
	Middle	16.55
	Highest	16.55

Note 1: See next pages for actual measured spectrum plots.

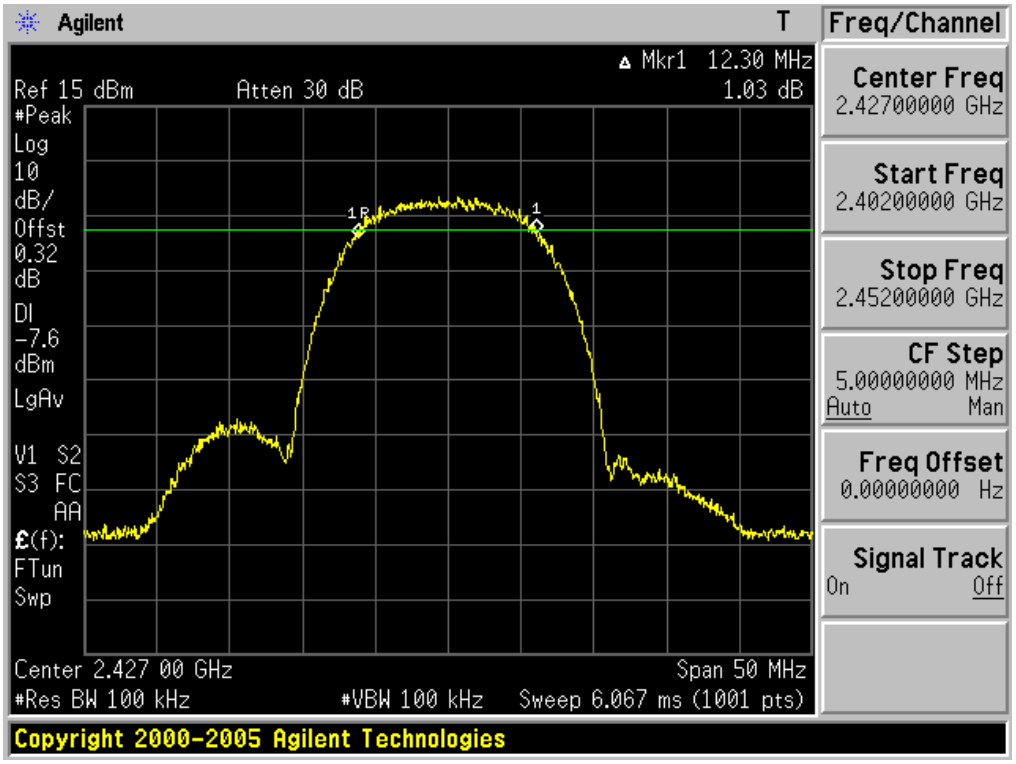
- Minimum Standard:

The minimum 6 dB bandwidth shall be at least 500 kHz

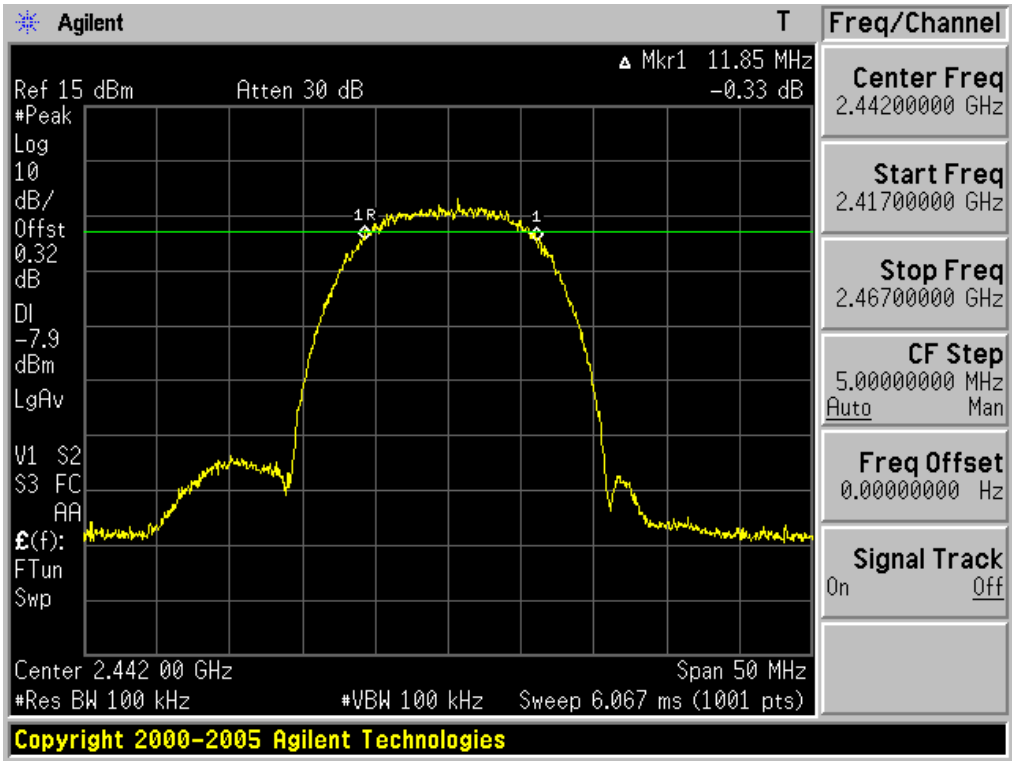
6 dB Bandwidth Test Mode: 802.11b & Lowest Frequency



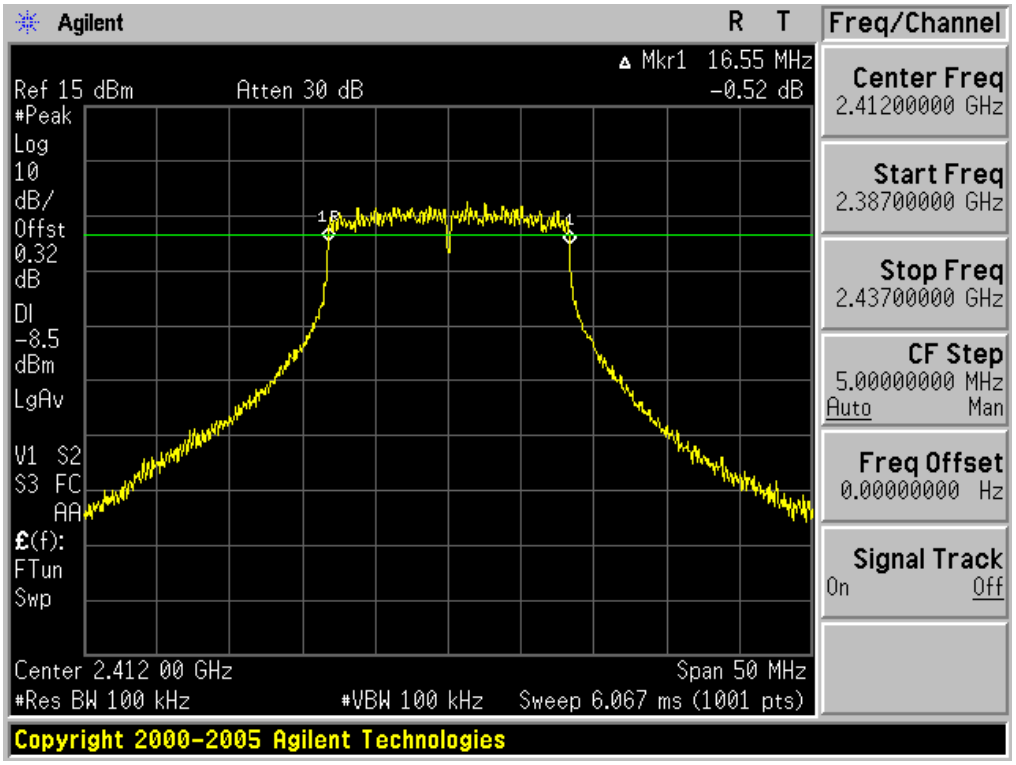
6 dB Bandwidth Test Mode: 802.11b & Middle Frequency



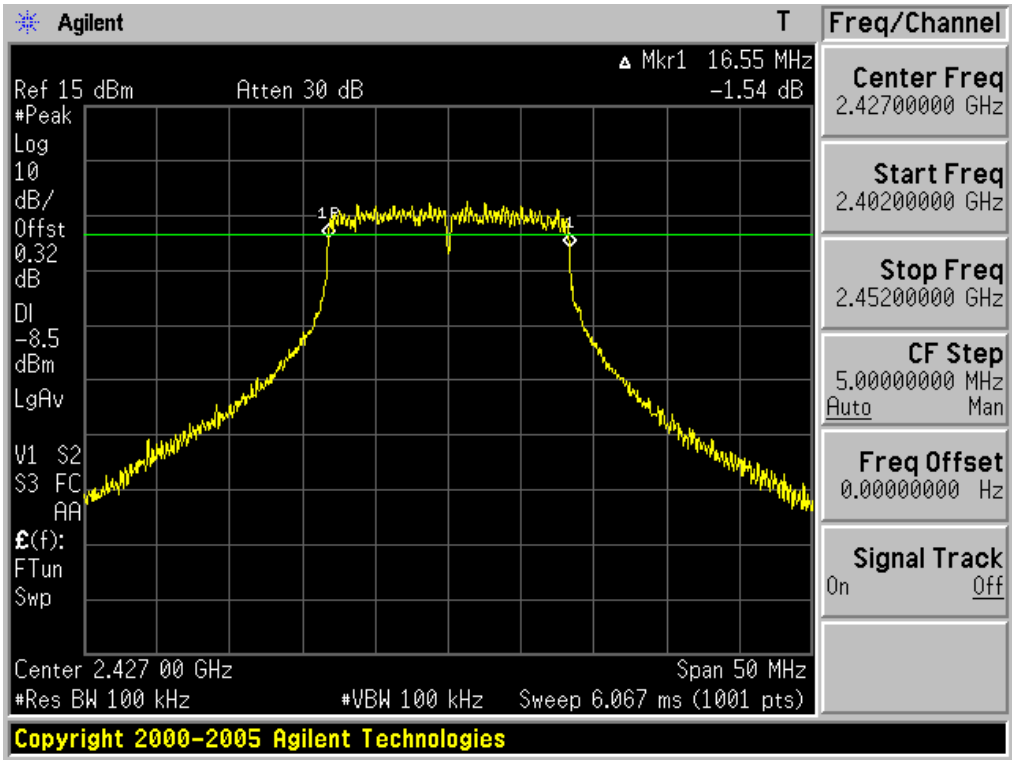
6 dB Bandwidth Test Mode: 802.11b & Highest Frequency



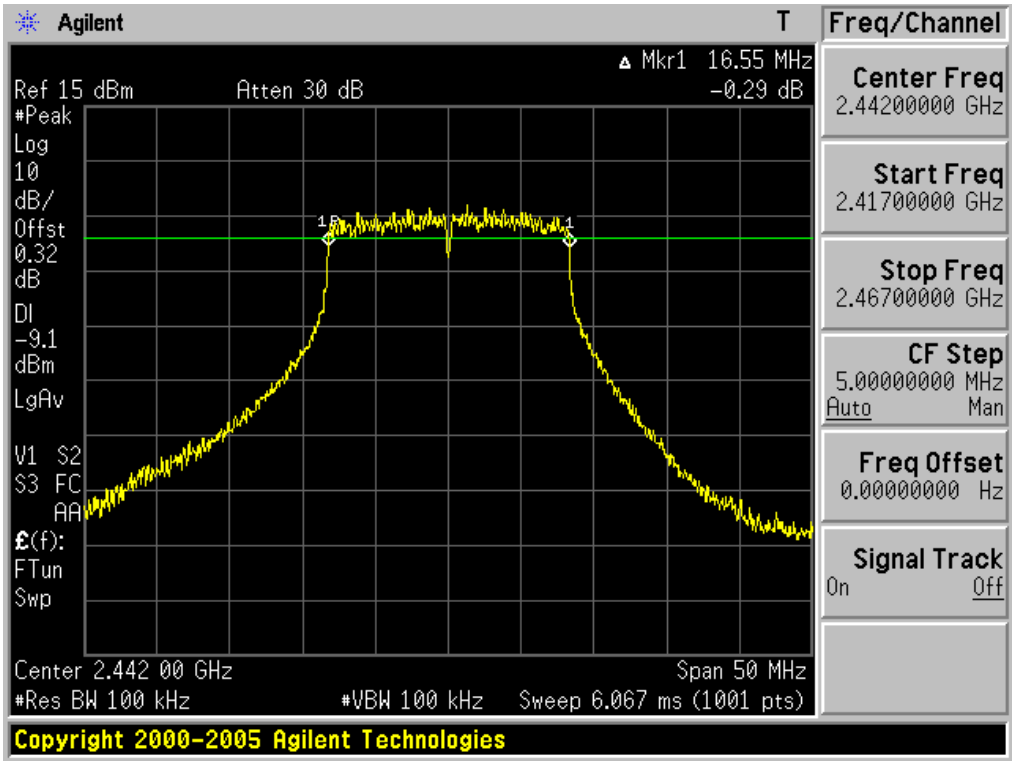
6 dB Bandwidth Test Mode: 802.11g & Lowest Frequency



6 dB Bandwidth Test Mode: 802.11g & Middle Frequency



6 dB Bandwidth Test Mode: 802.11g & Highest Frequency



4.2.2 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.

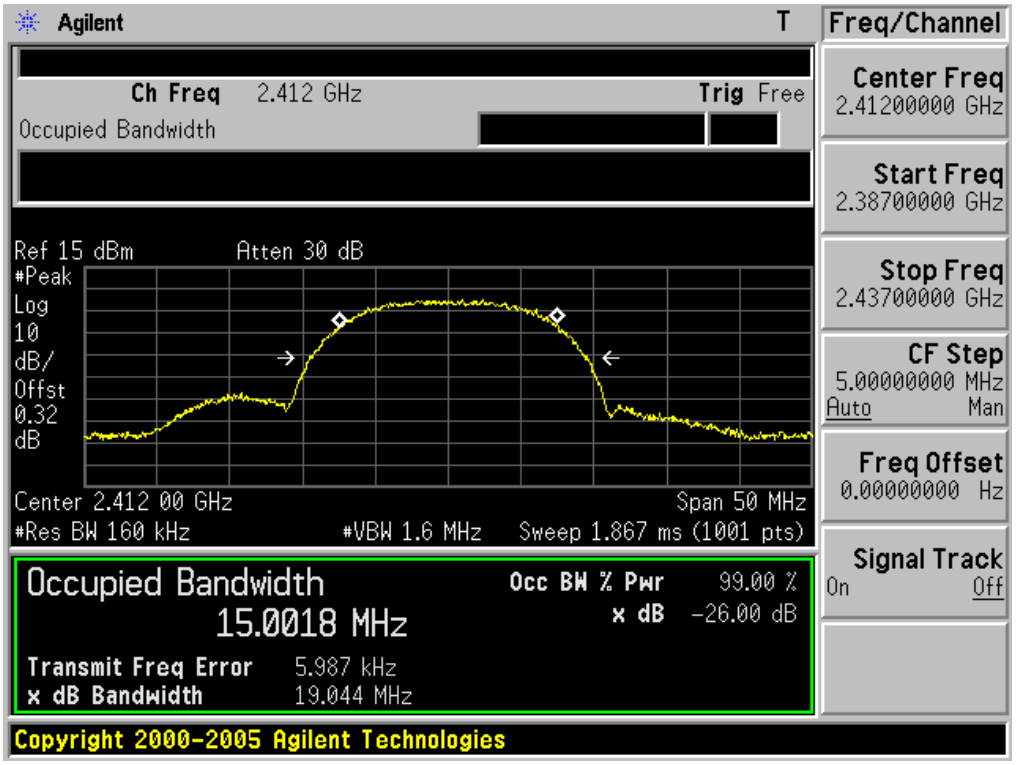
- Measurement Data: Comply

Test Mode	Frequency	Test Results	
		dBm	W
802.11b	**Lowest**	**8.48**	**0.0070**
	Middle	8.44	0.0070
	Highest	6.38	0.0043
802.11g	**Lowest**	**8.49**	**0.0071**
	Middle	8.39	0.0069
	Highest	7.65	0.0058

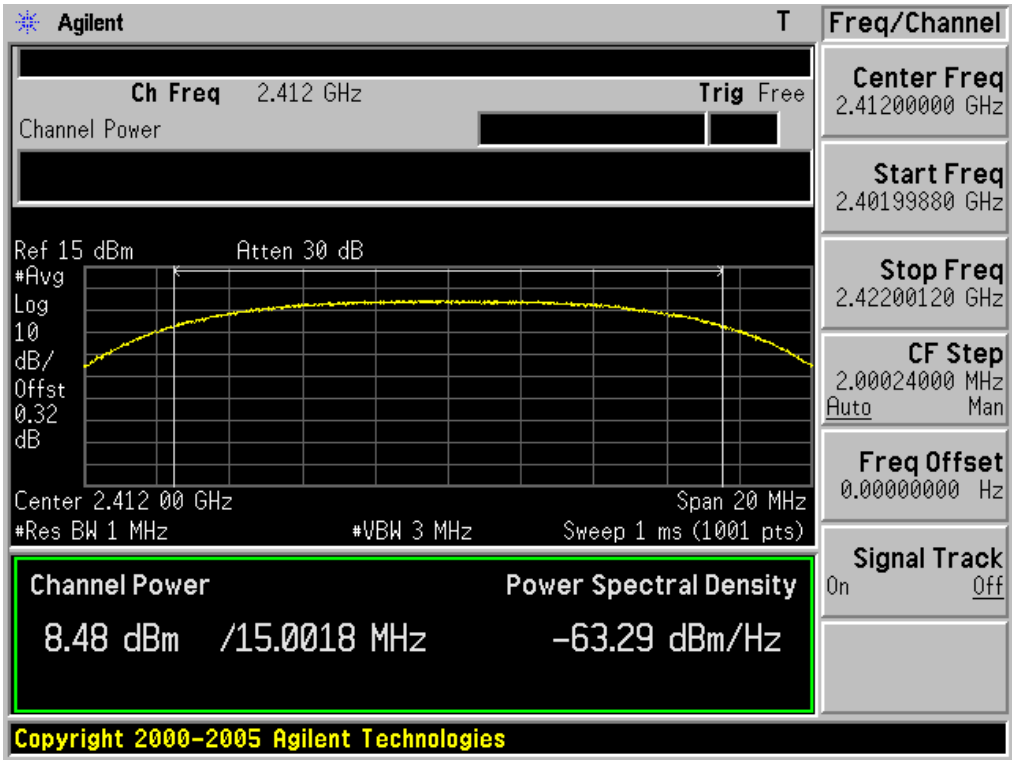
Note 1: See next pages for actual measured spectrum plots.

Minimum Standard:	< 1W

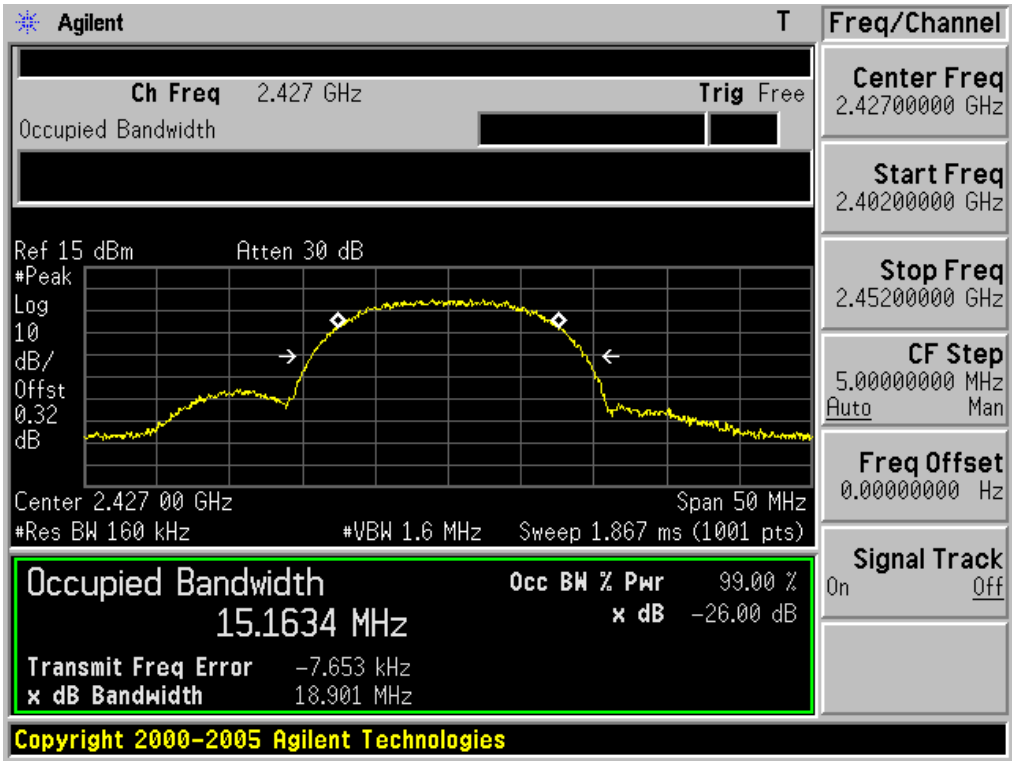
26 dB Bandwidth Test Mode: 802.11b & Lowest Frequency



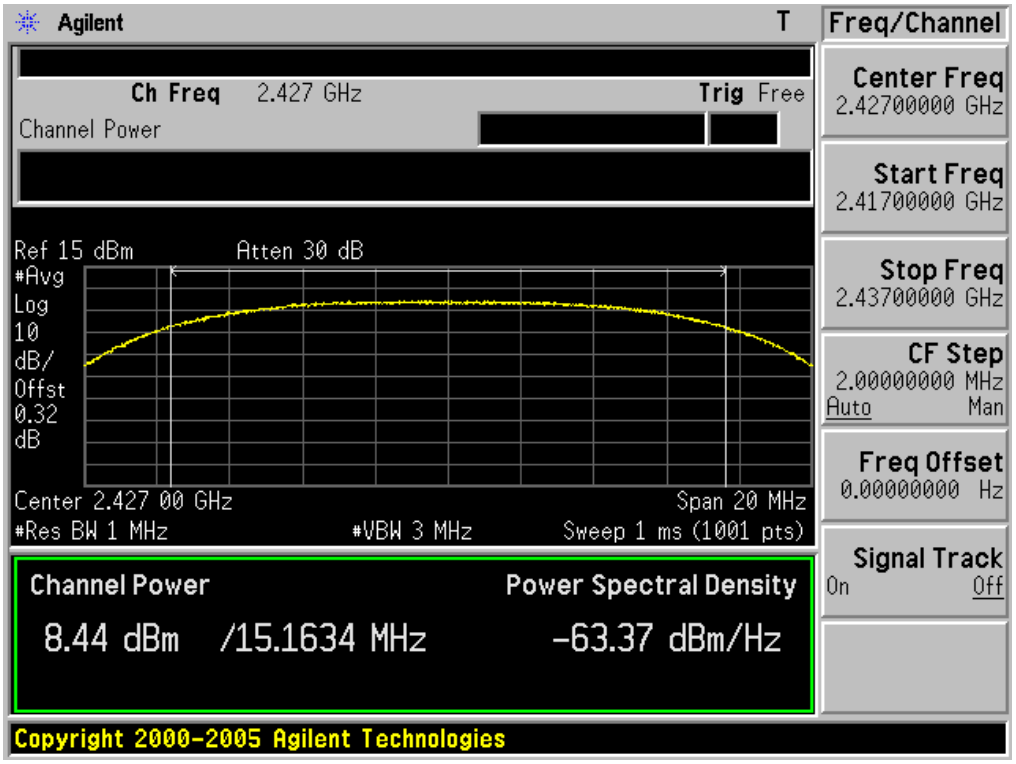
Peak Output Power Test Mode: 802.11b & Lowest Frequency



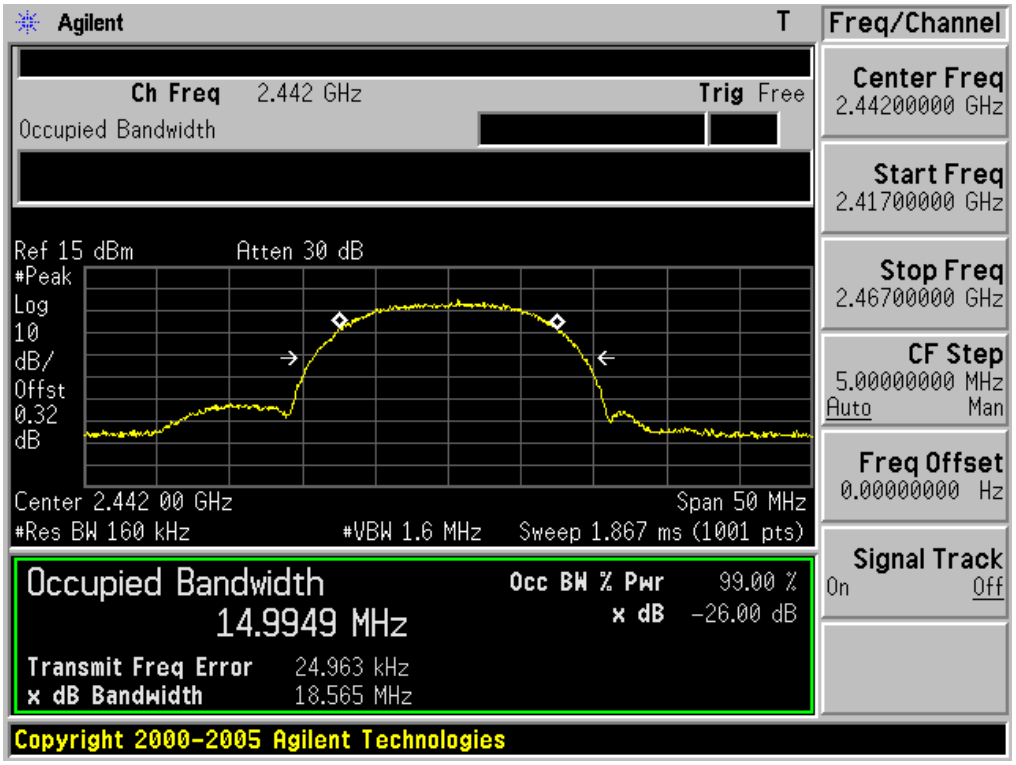
26 dB Bandwidth Test Mode: 802.11b & Middle Frequency



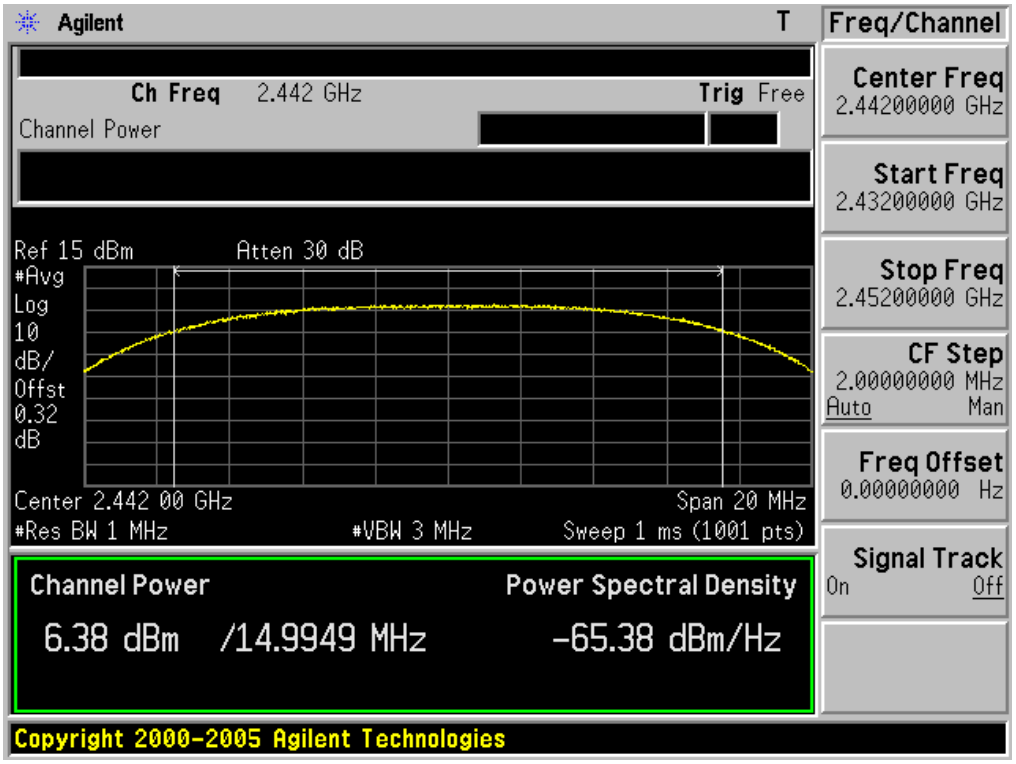
Peak Output Power Test Mode: 802.11b & Middle Frequency



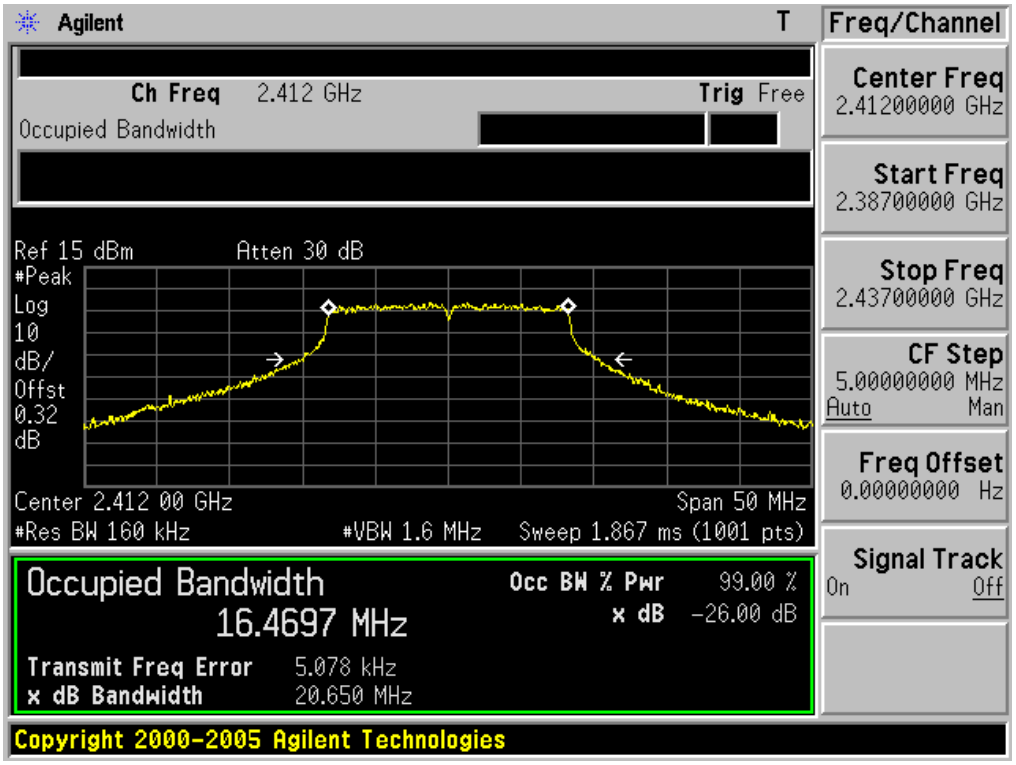
26 dB Bandwidth Test Mode: 802.11b & Highest Frequency



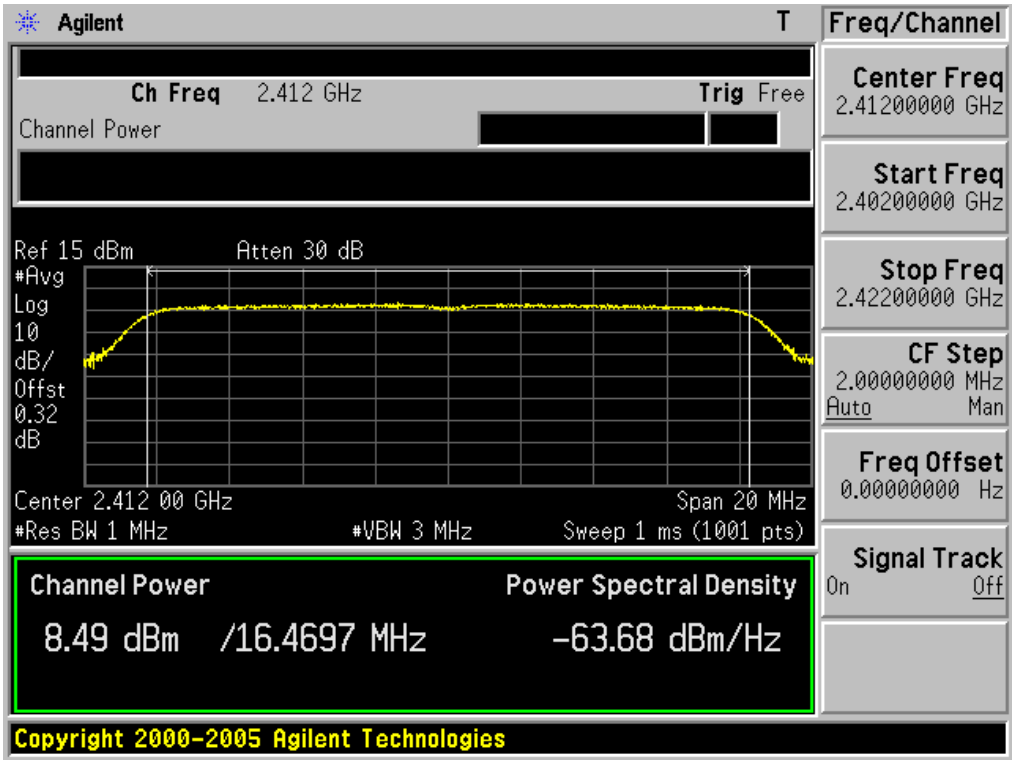
Peak Output Power Test Mode: 802.11b & Highest Frequency



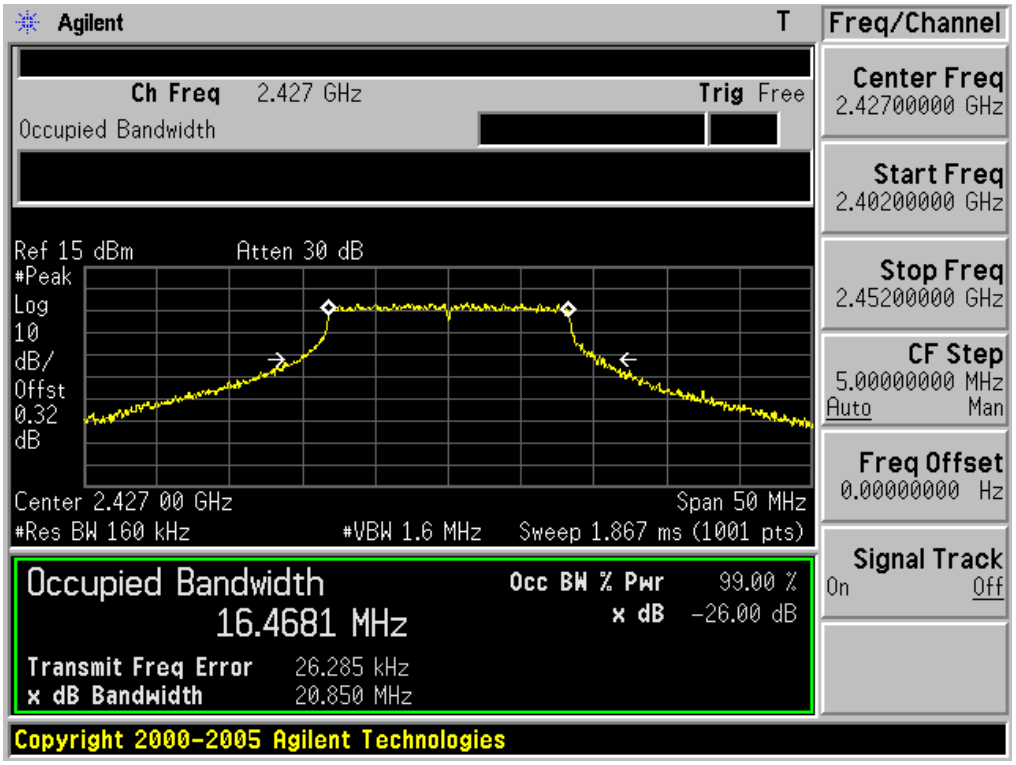
26 dB Bandwidth Test Mode: 802.11g & Lowest Frequency



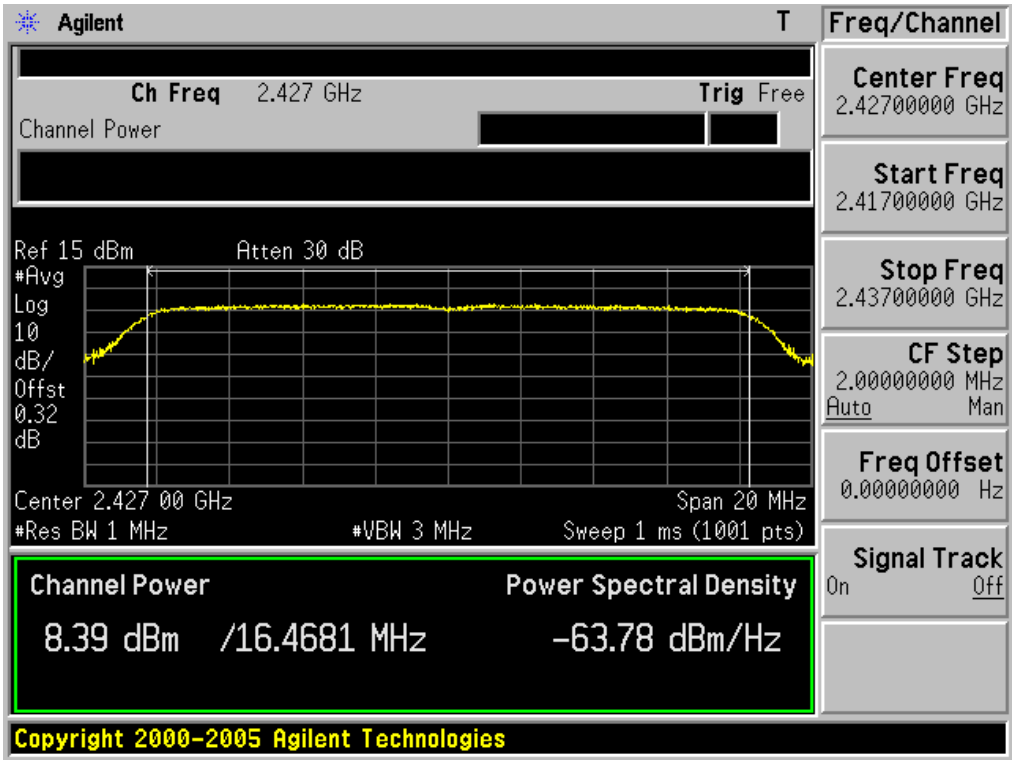
Peak Output Power Test Mode: 802.11g & Lowest Frequency



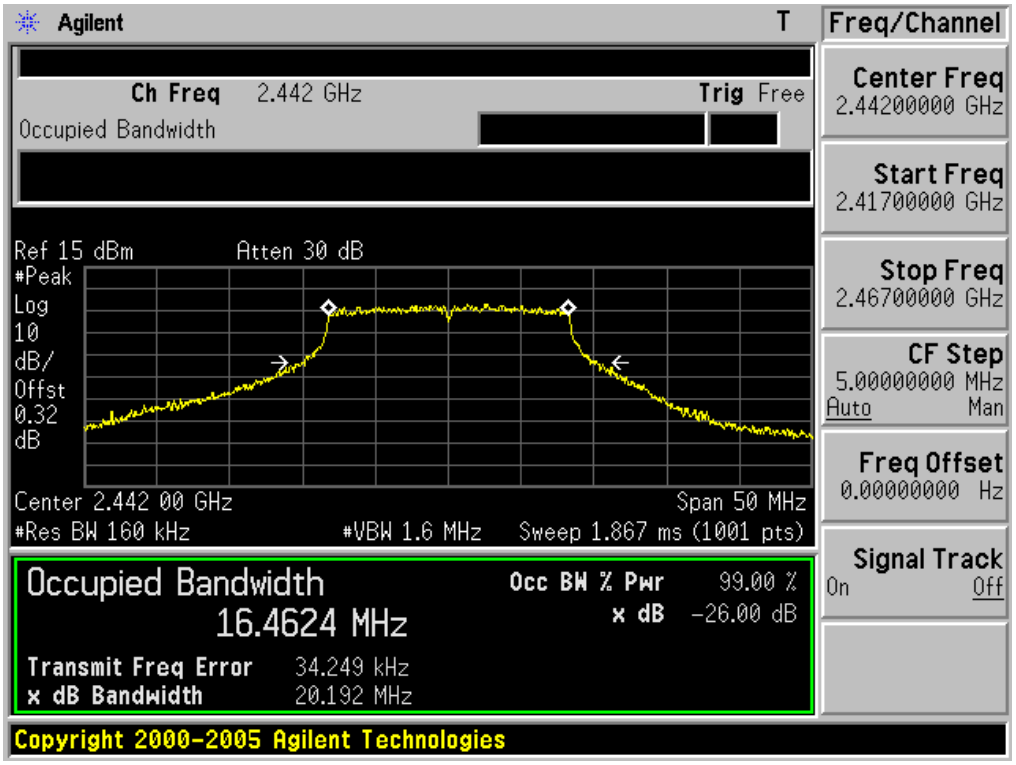
26 dB Bandwidth Test Mode: 802.11g & Middle Frequency



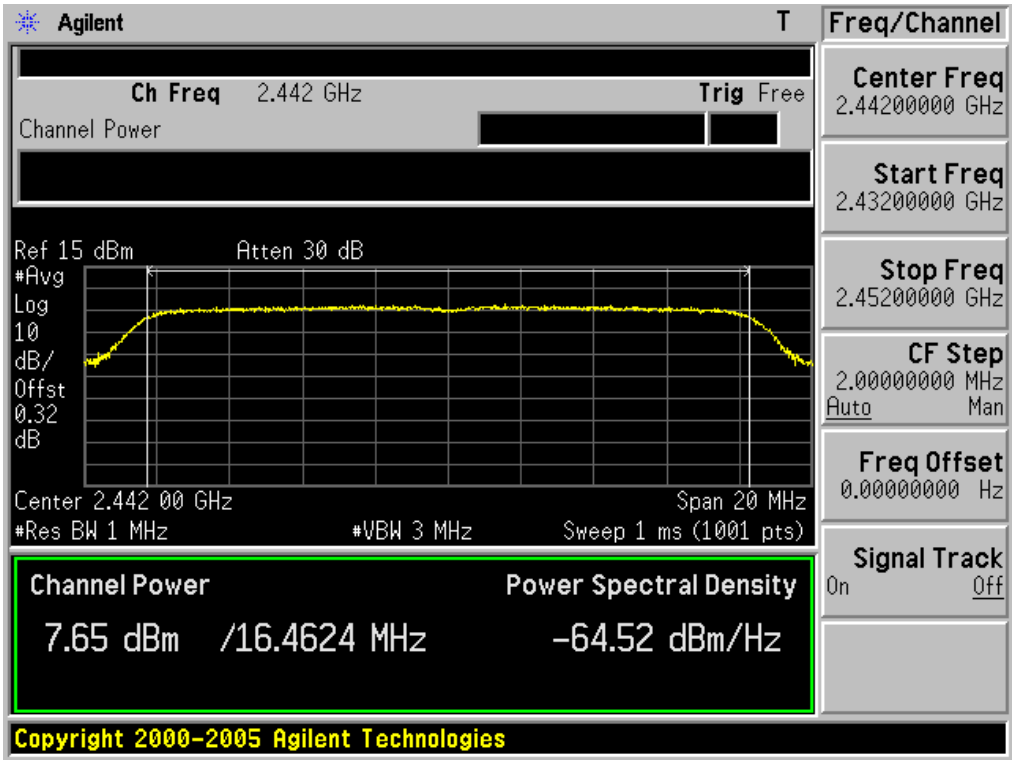
Peak Output Power Test Mode: 802.11g & Middle Frequency



26 dB Bandwidth Test Mode: 802.11g & Highest Frequency



Peak Output Power Test Mode: 802.11g & Highest Frequency



4.2.3 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.

For Band-edge testing the spectrum analyzer is set to:

Tested frequency = the highest and the lowest Frequencies

Center frequency = 2400MHz, 2483.5MHz

Span = 100MHz Detector function = peak

RBW = 1% of the span VBW = 100 kHz

Trace = max hold Sweep = auto

For spurious testing the spectrum analyzer is set to:

Tested frequency = the highest, middle and the lowest Frequencies

RBW = 100 kHz VBW = 100 kHz

Detector function = peak Sweep = auto

Trace = max hold

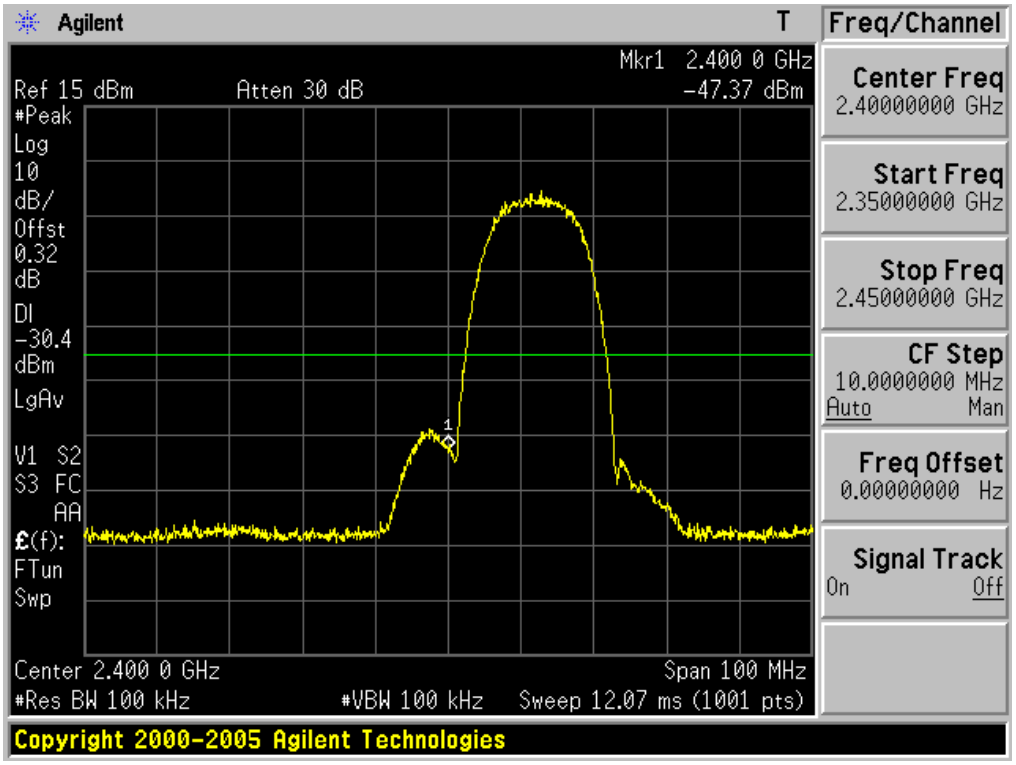
- Measurement Data: Comply

- 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.

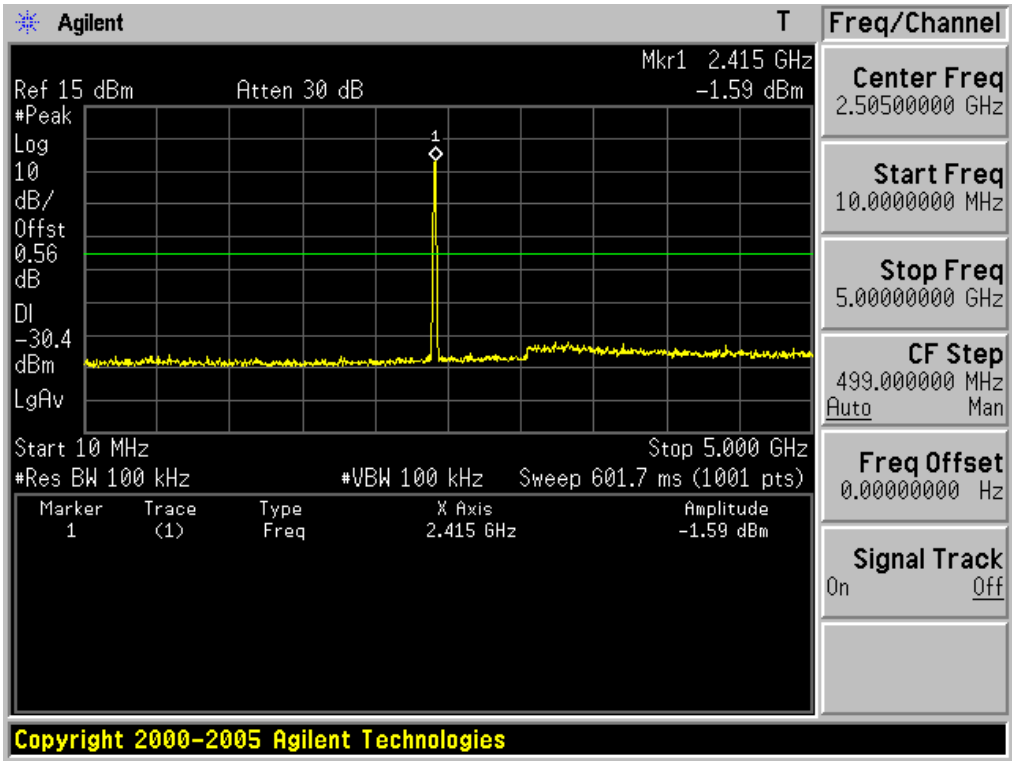
Note 1: See next pages for actual measured spectrum plots.

Minimum Standard:	> 30 dBc

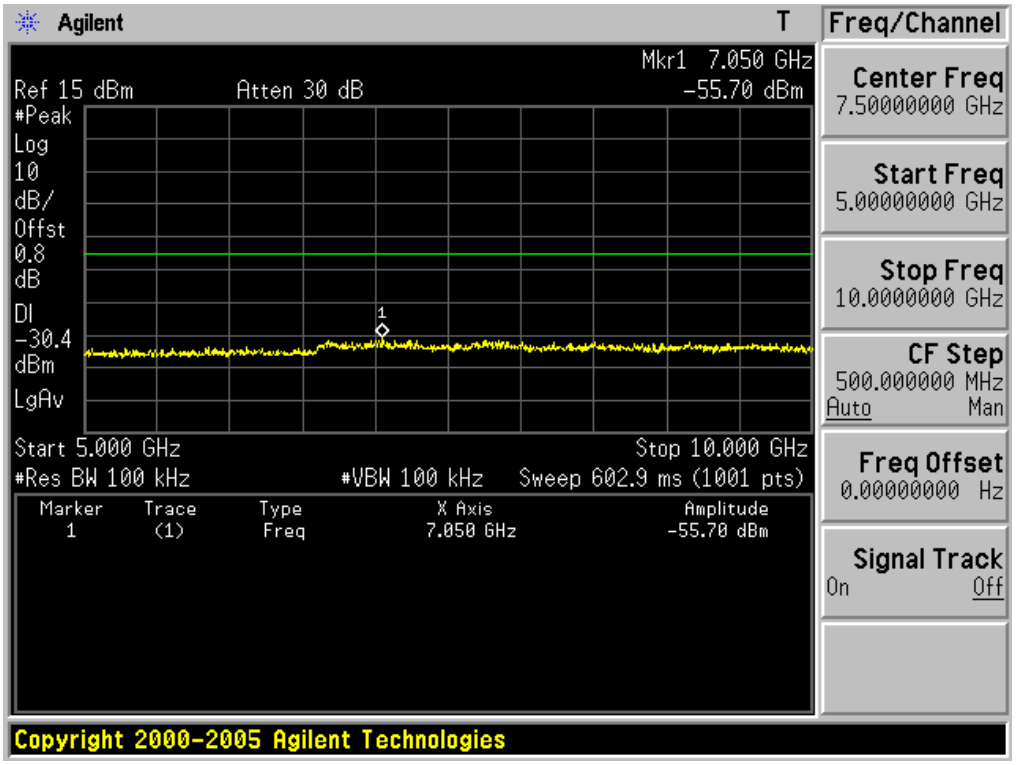
Low Band-edge at 30 dB blow Test Mode: 802.11b



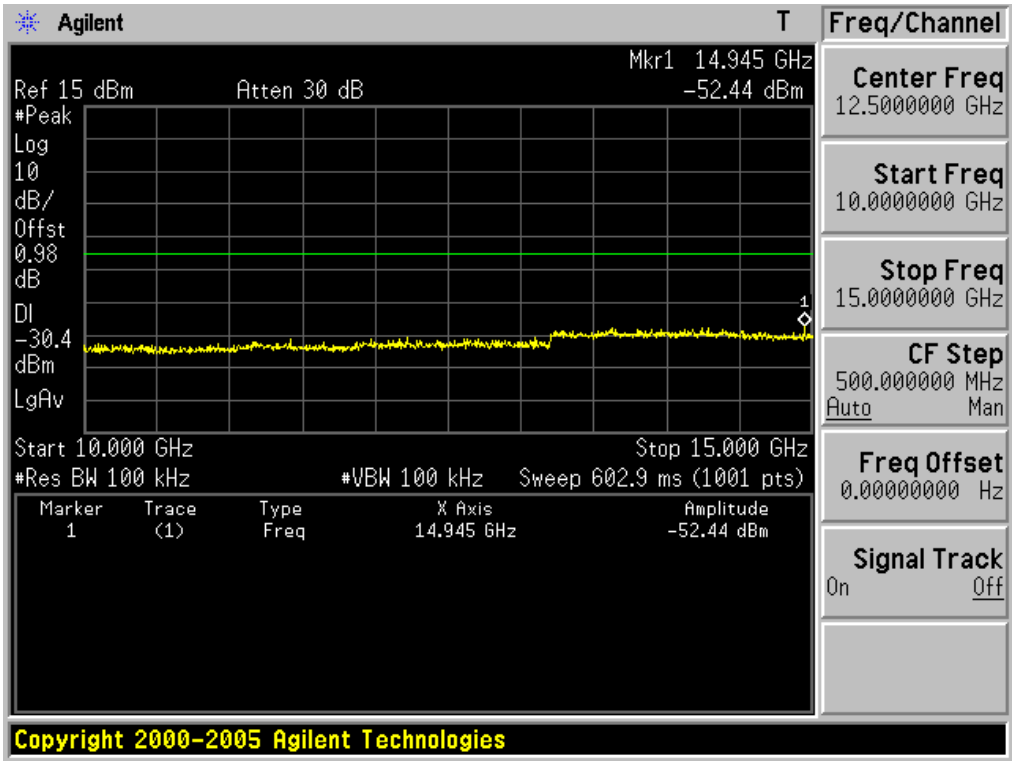
10MHz ~ 5GHz Conducted Spurious Emissions Test Mode: 802.11b & Lowest Frequency



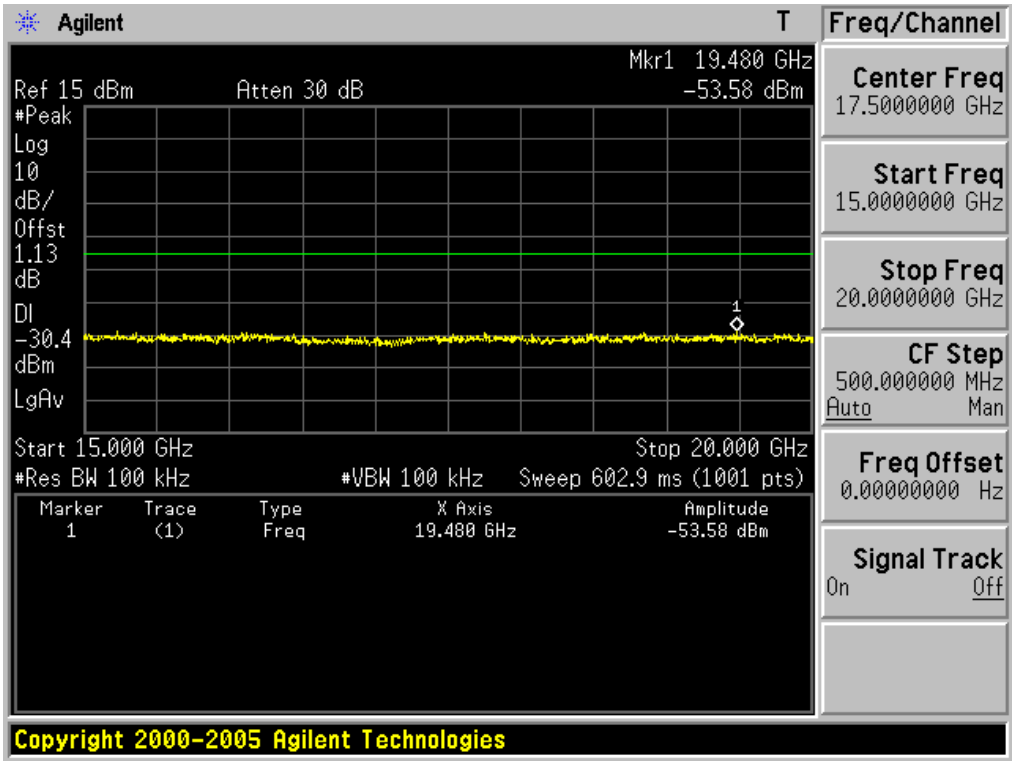
5GHz ~ 10GHz Conducted Spurious Emissions Test Mode: 802.11b & Lowest Frequency



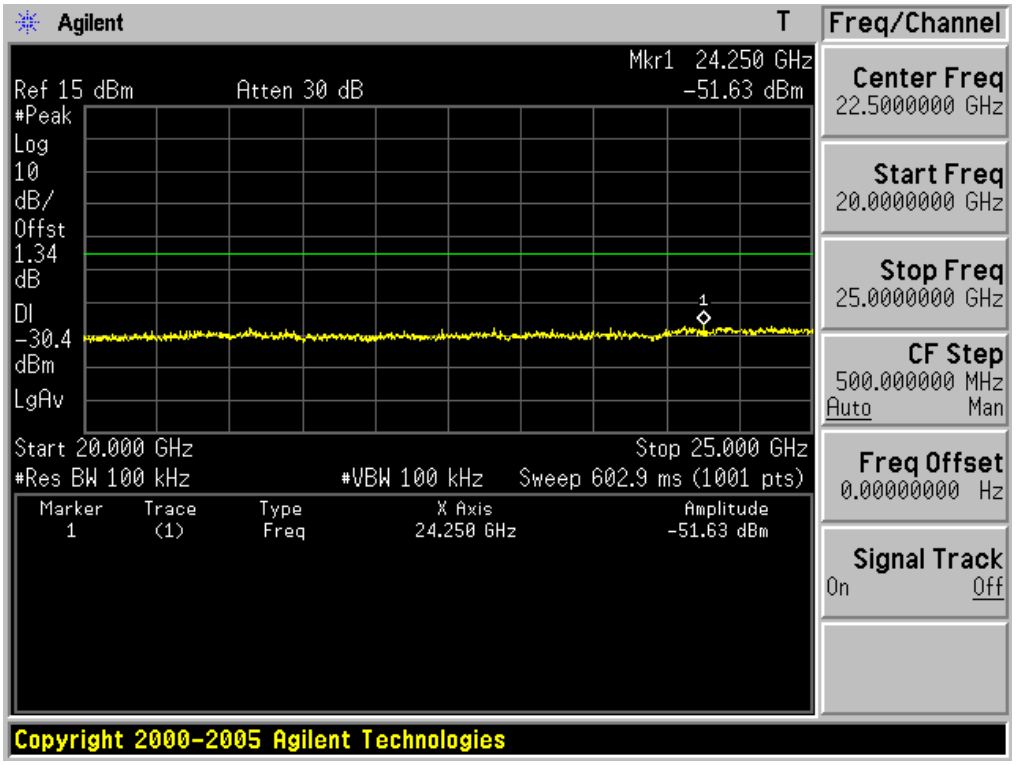
10GHz ~ 15GHz Conducted Spurious Emissions Test Mode: 802.11b & Lowest Frequency



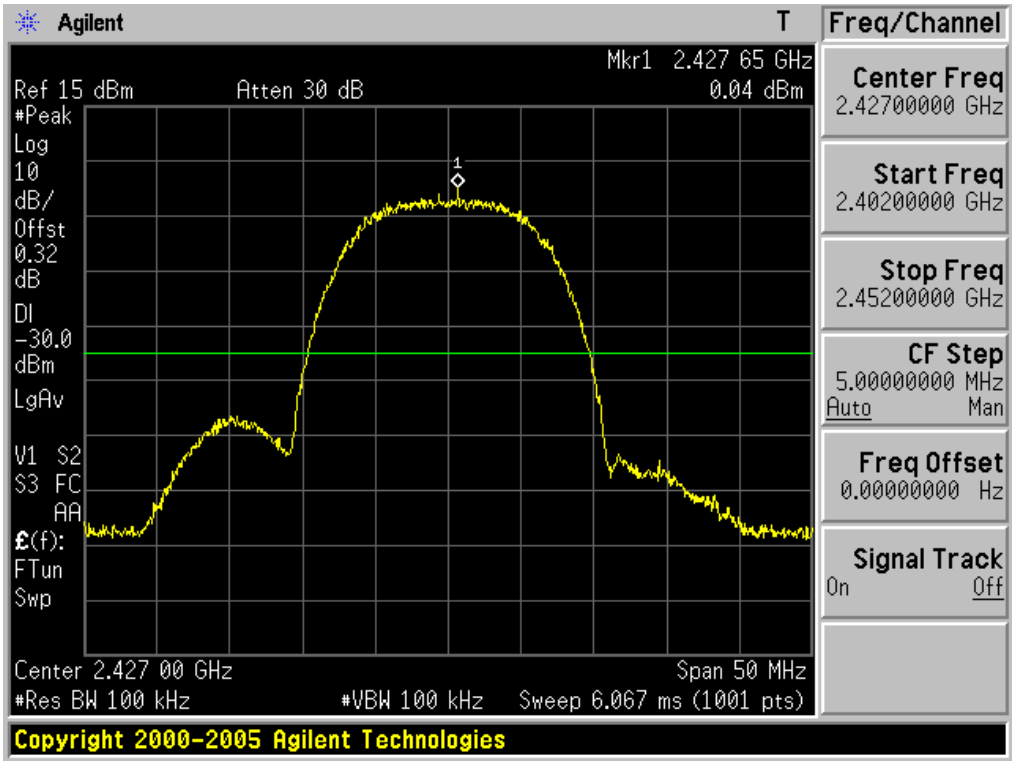
15GHz ~ 20GHz Conducted Spurious Emissions Test Mode: 802.11b & Lowest Frequency



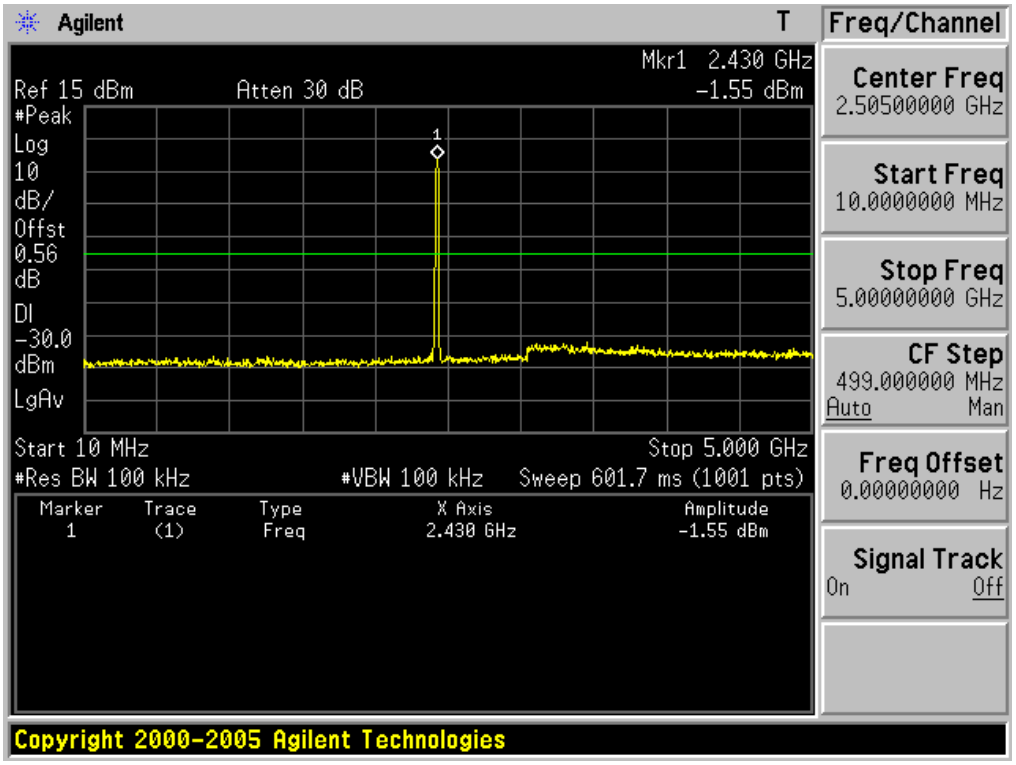
20GHz ~ 25GHz Conducted Spurious Emissions Test Mode: 802.11b & Lowest Frequency



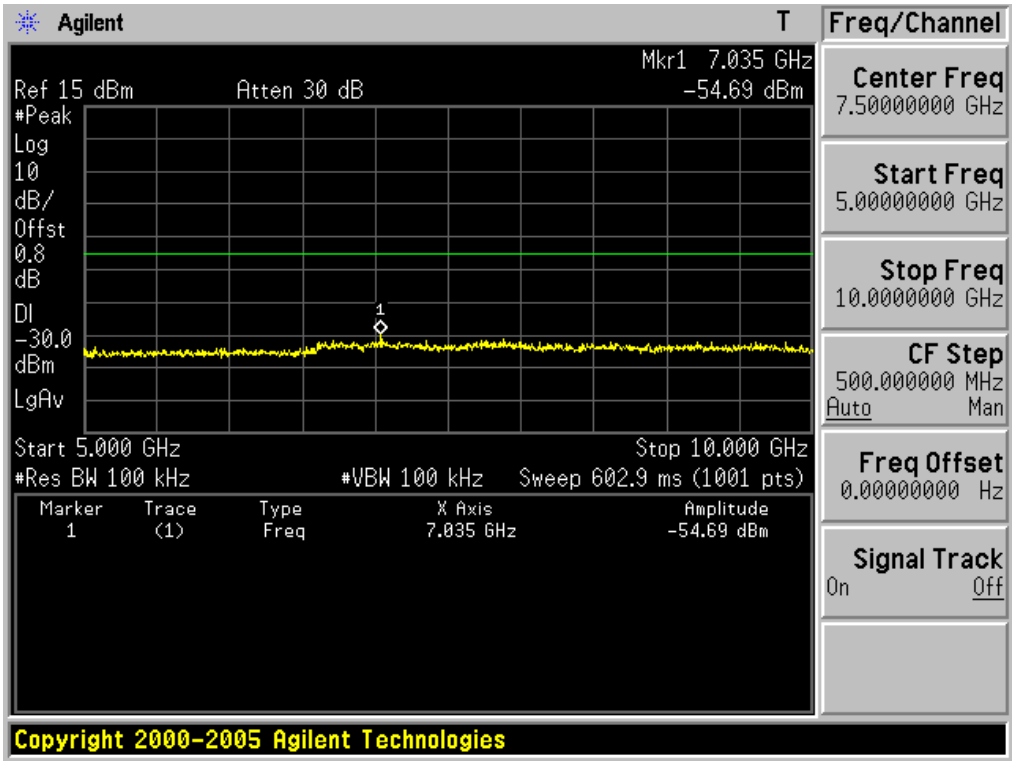
Reference for limit Test Mode: 802.11b & Middle Frequency



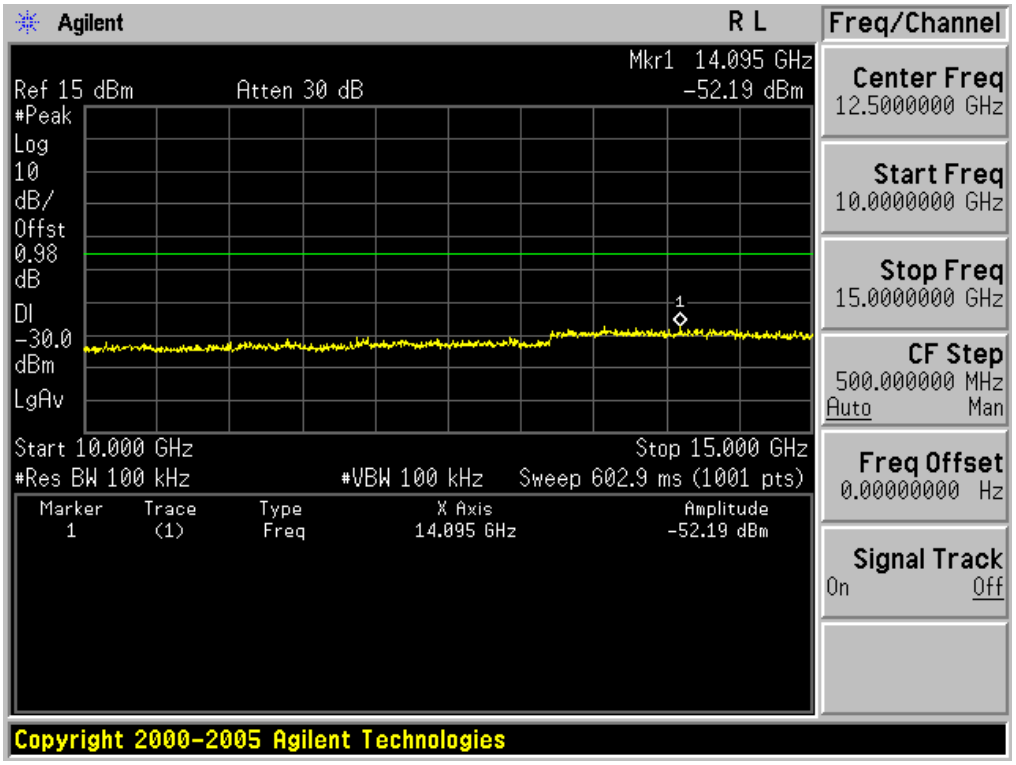
10MHz ~ 5GHz Conducted Spurious Emissions Test Mode: 802.11b & Middle Frequency



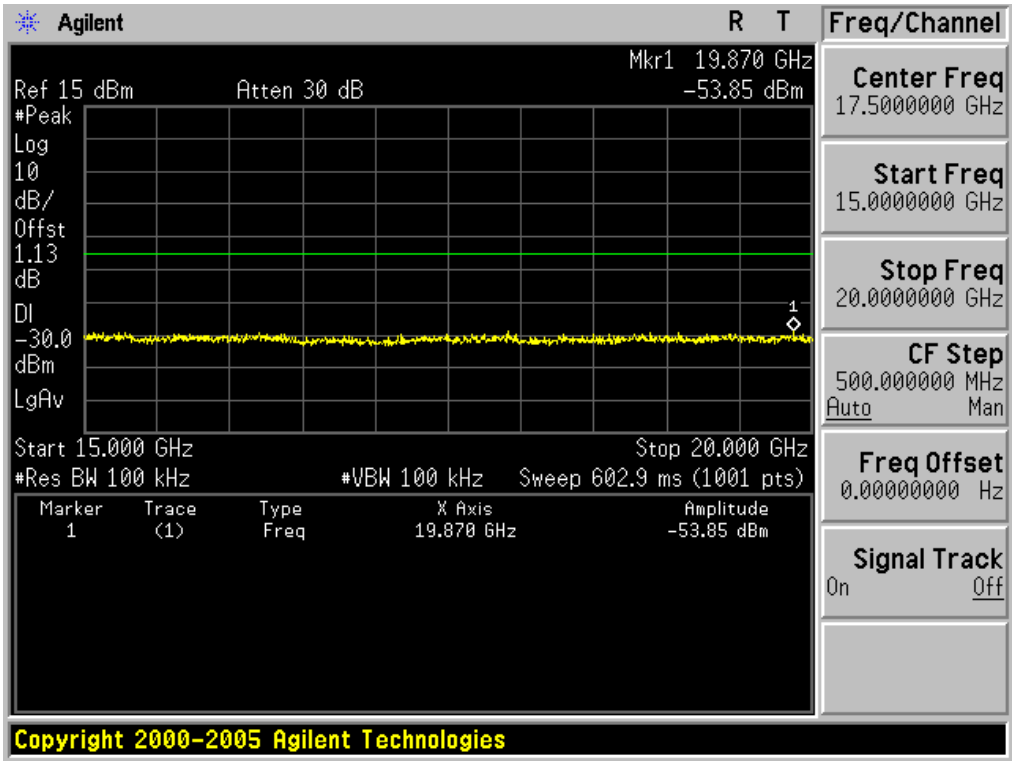
5GHz ~ 10GHz Conducted Spurious Emissions Test Mode: 802.11b & Middle Frequency



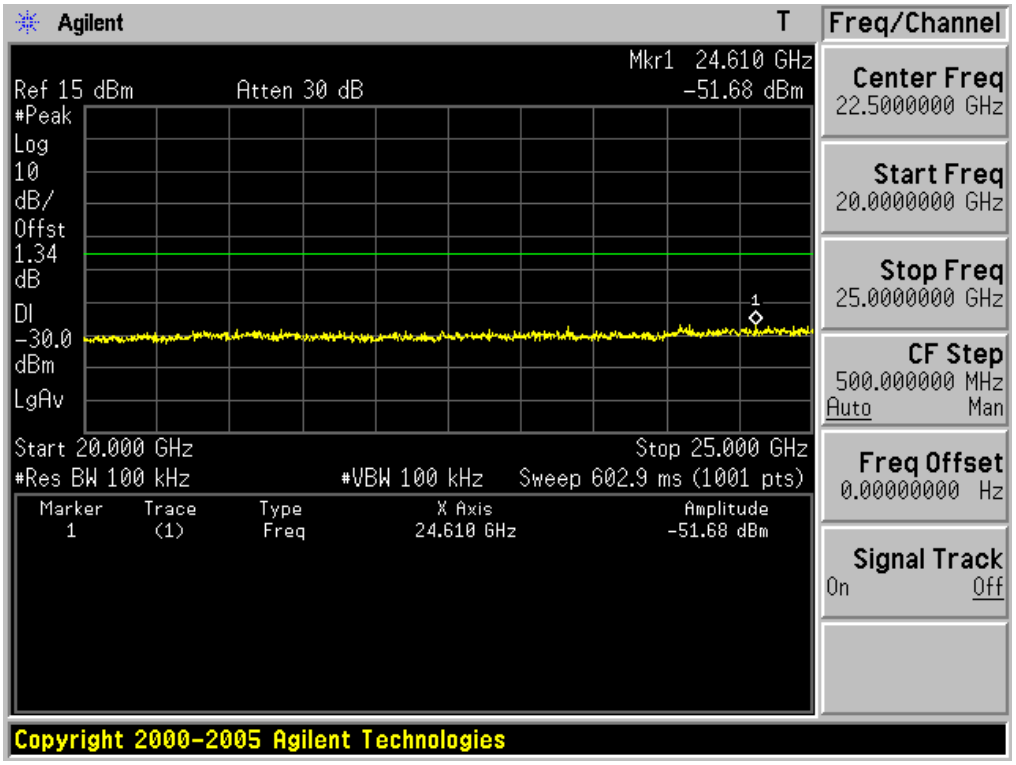
10GHz ~ 15GHz Conducted Spurious Emissions Test Mode: 802.11b & Middle Frequency



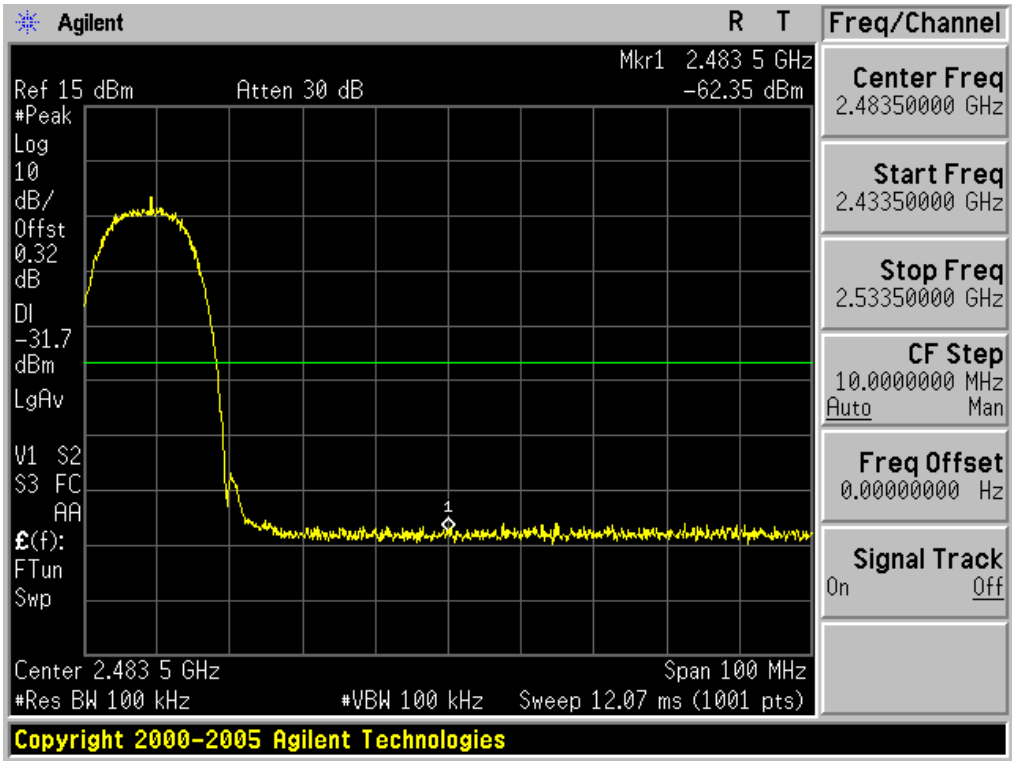
15GHz ~ 20GHz Conducted Spurious Emissions Test Mode: 802.11b & Middle Frequency



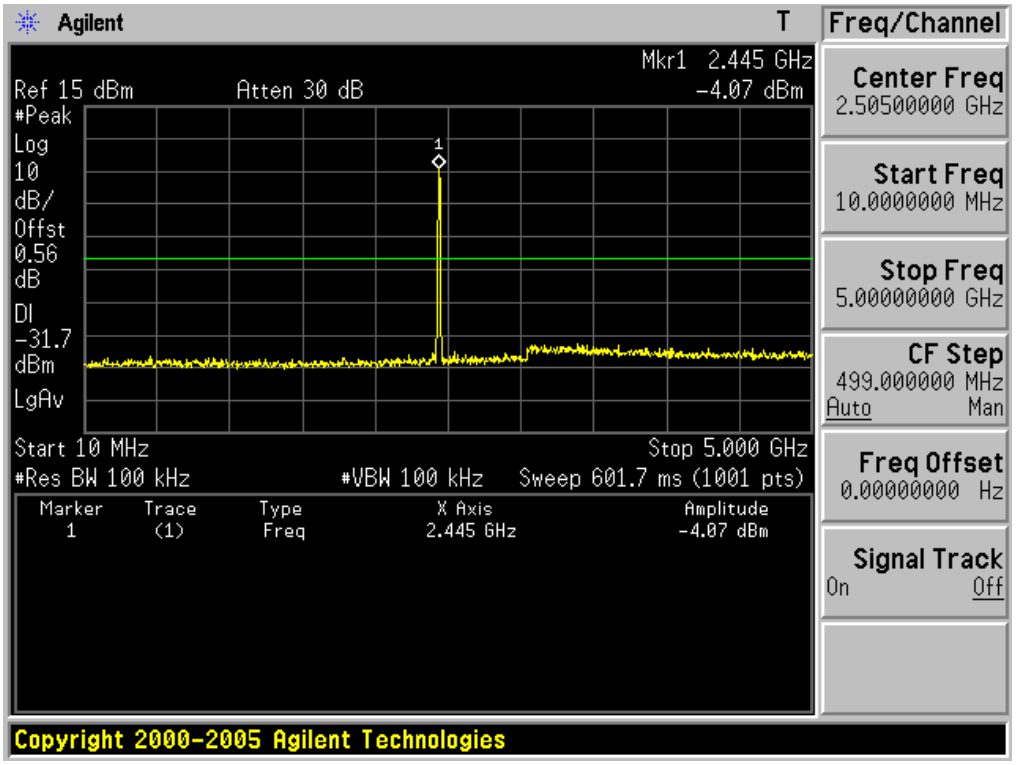
20GHz ~ 25GHz Conducted Spurious Emissions Test Mode: 802.11b & Middle Frequency



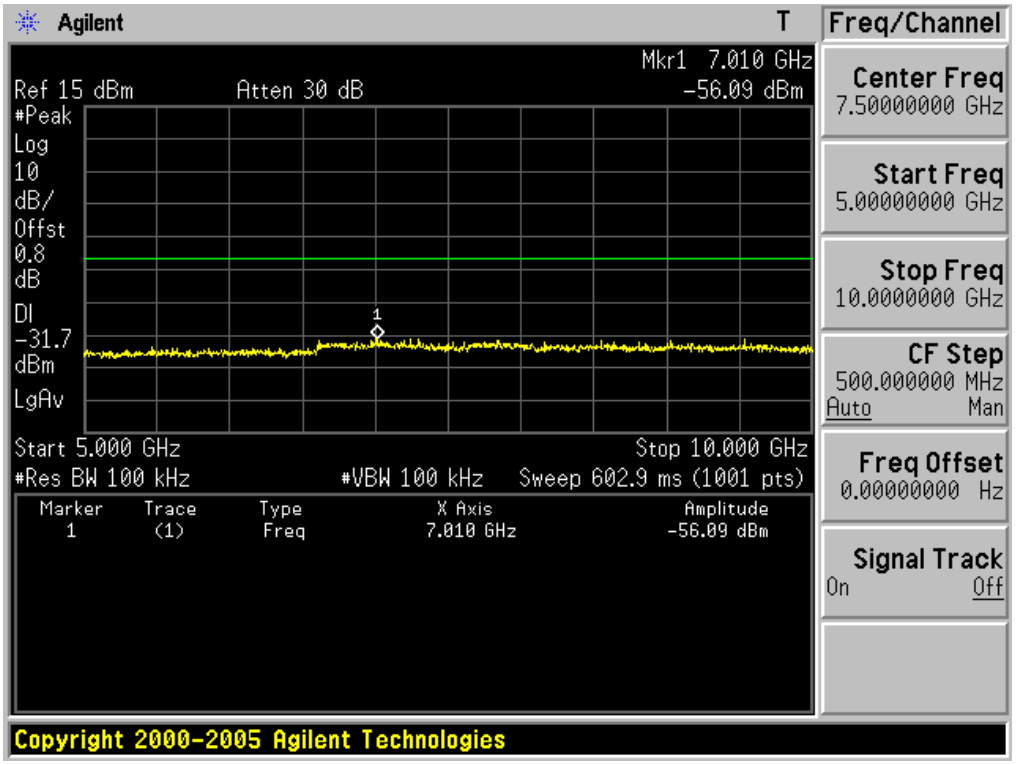
High Band-edge at 30 dB blow Test Mode: 802.11b & Highest Frequency



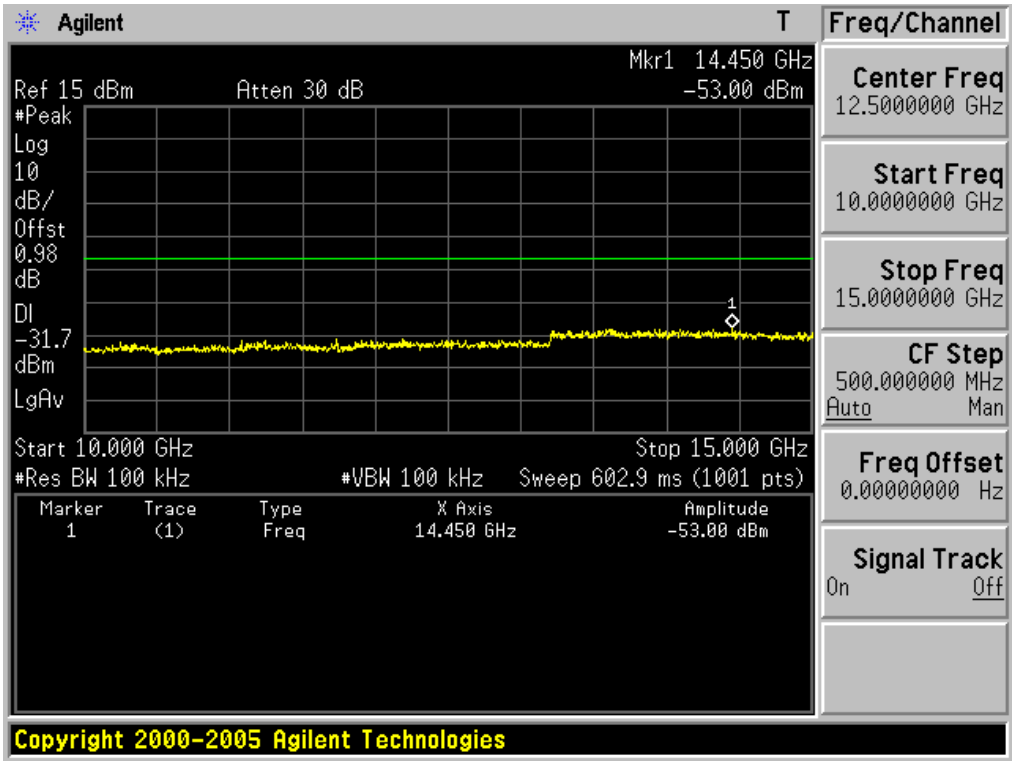
10MHz ~ 5GHz Conducted Spurious Emissions Test Mode: 802.11b & Highest Frequency



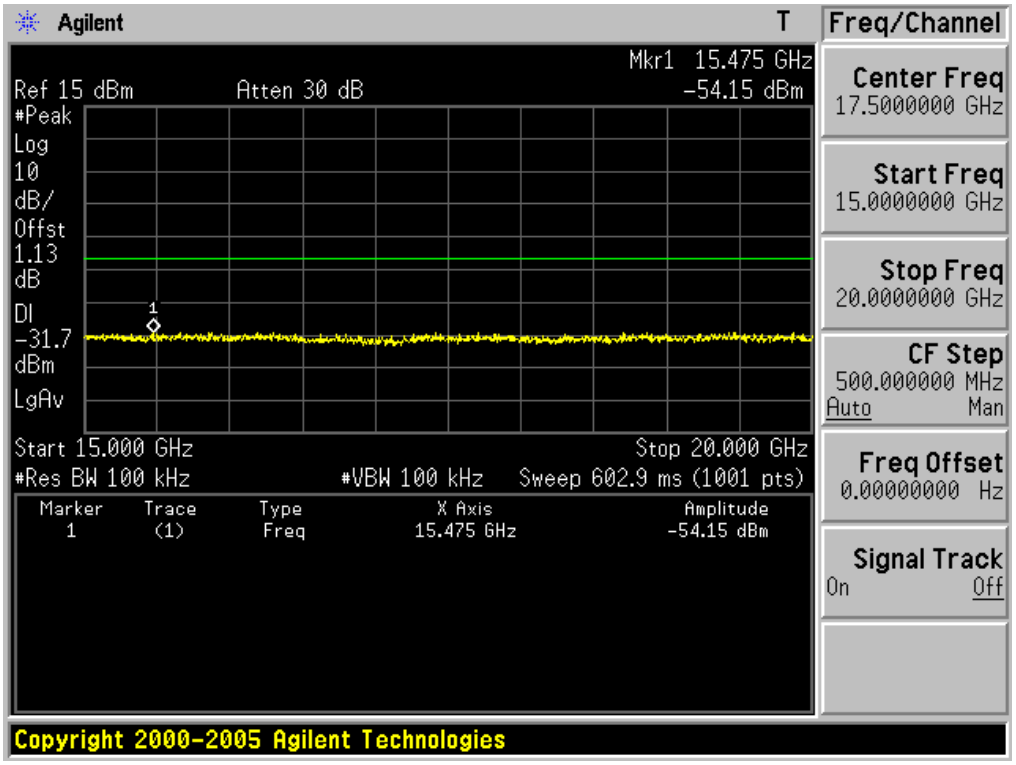
5GHz ~ 10GHz Conducted Spurious Emissions Test Mode: 802.11b & Highest Frequency



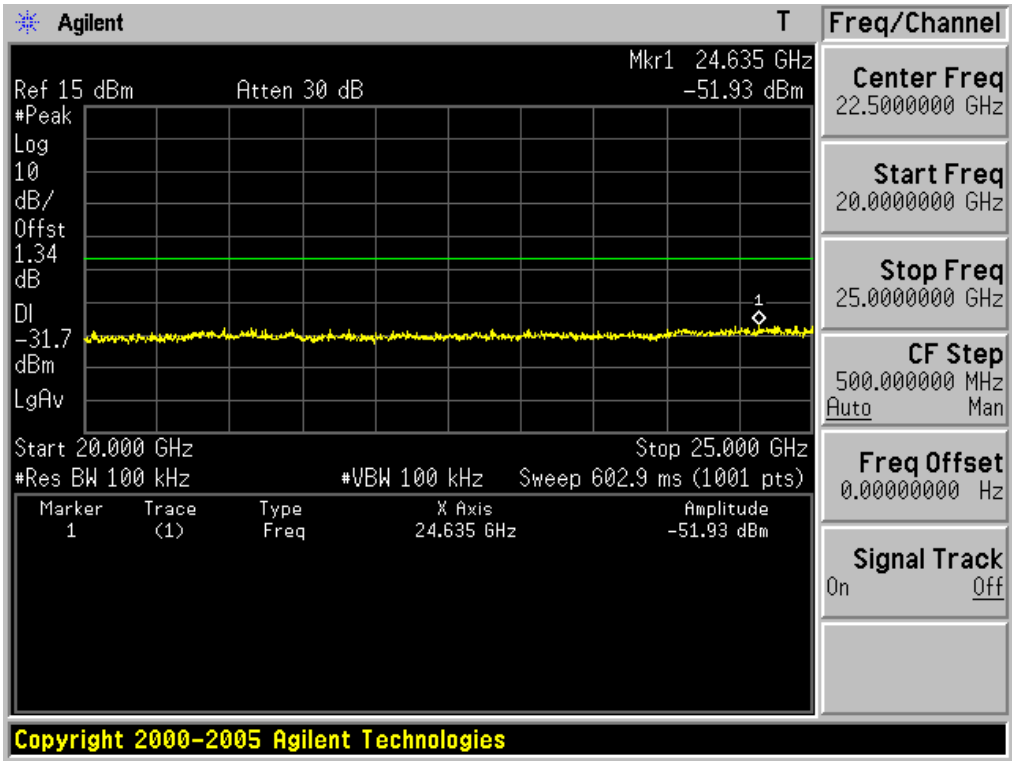
10GHz ~ 15GHz Conducted Spurious Emissions Test Mode: 802.11b & Highest Frequency



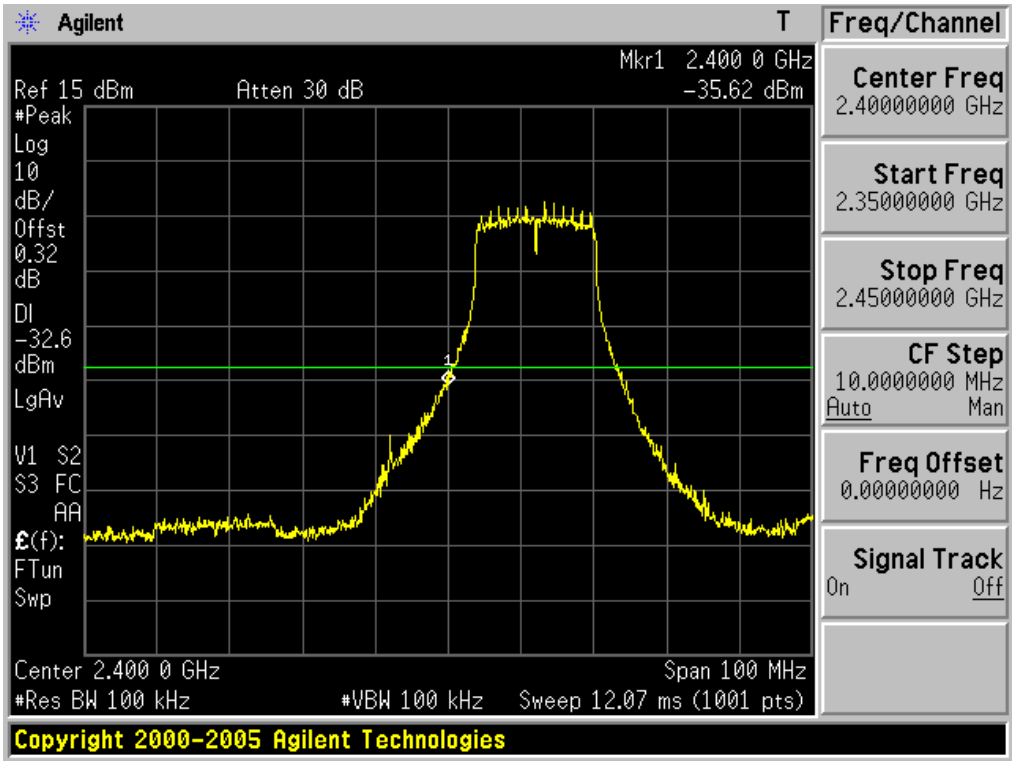
15GHz ~ 20GHz Conducted Spurious Emissions Test Mode: 802.11b & Highest Frequency



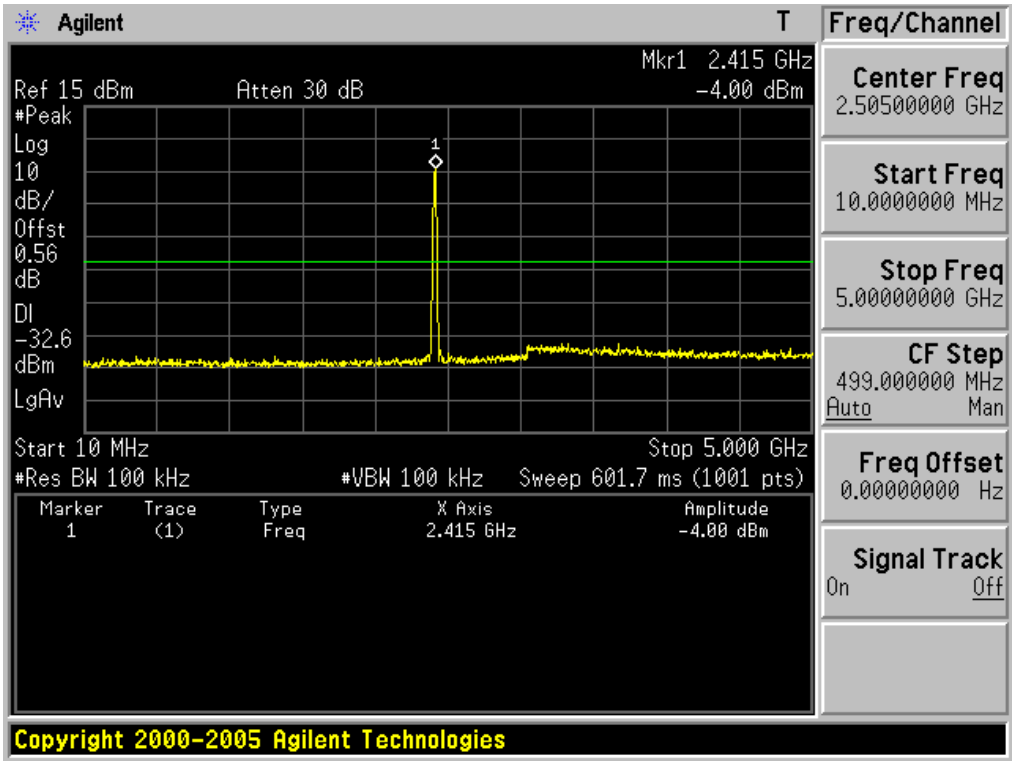
20GHz ~ 25GHz Conducted Spurious Emissions Test Mode: 802.11b & Highest Frequency



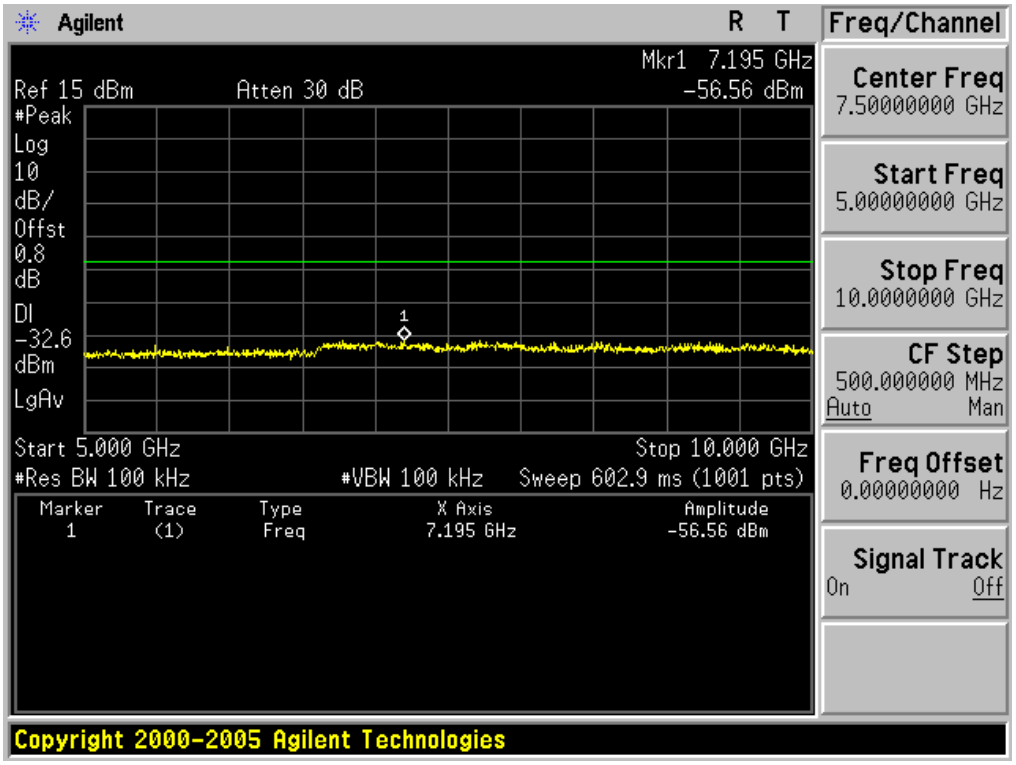
Low Band-edge at 30 dB blow Test Mode: 802.11g



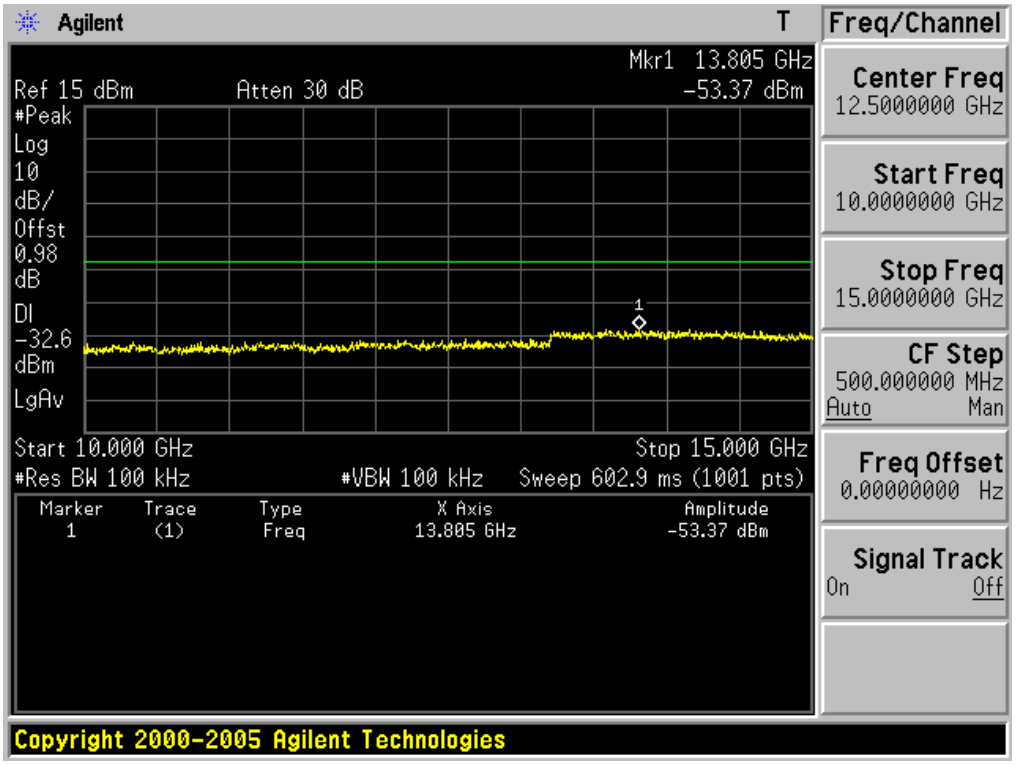
10MHz ~ 5GHz Conducted Spurious Emissions Test Mode: 802.11g & Lowest Frequency



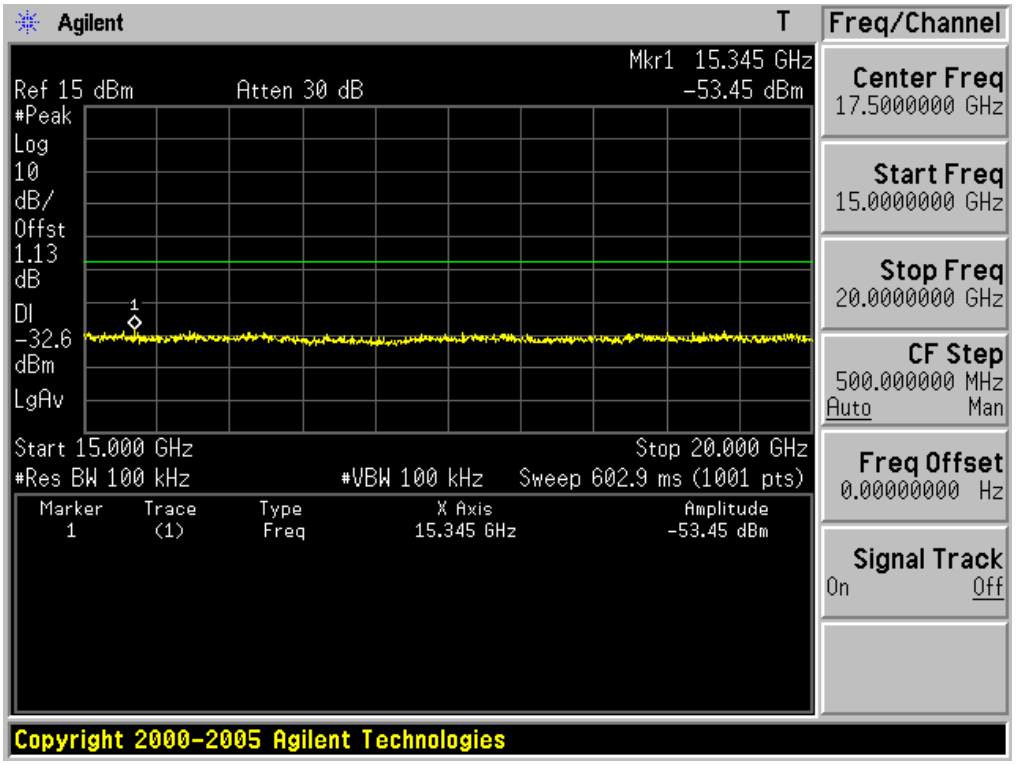
5GHz ~ 10GHz Conducted Spurious Emissions Test Mode: 802.11g & Lowest Frequency



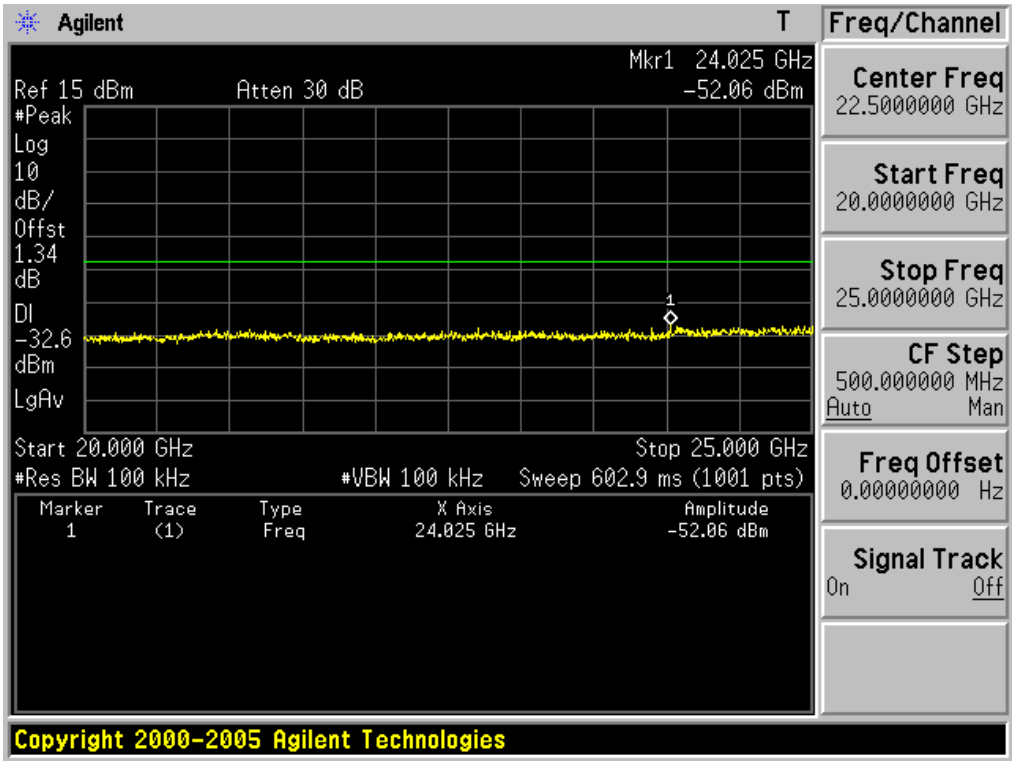
10GHz ~ 15GHz Conducted Spurious Emissions Test Mode: 802.11g & Lowest Frequency



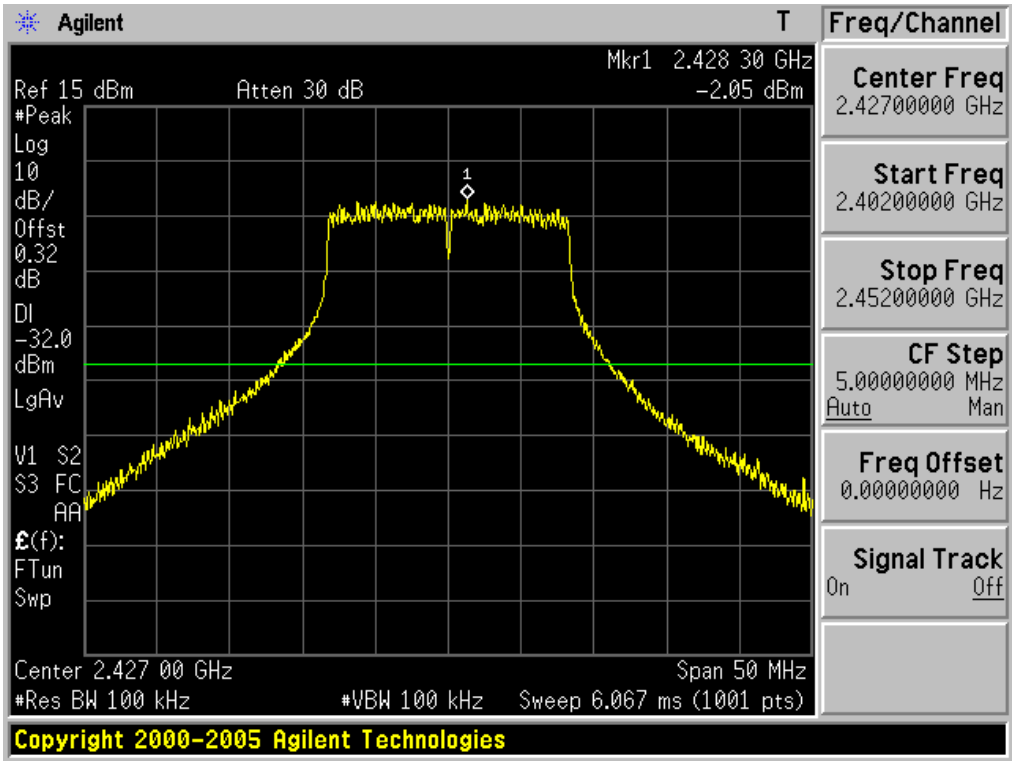
15GHz ~ 20GHz Conducted Spurious Emissions Test Mode: 802.11g & Lowest Frequency



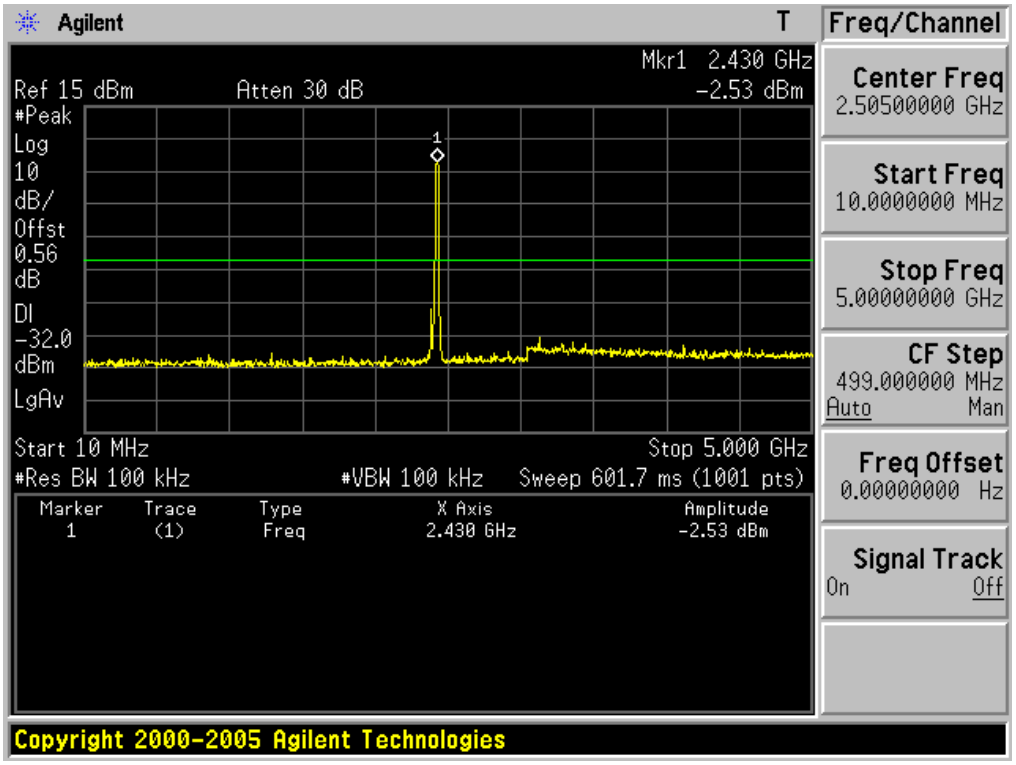
20GHz ~ 25GHz Conducted Spurious Emissions Test Mode: 802.11g & Lowest Frequency



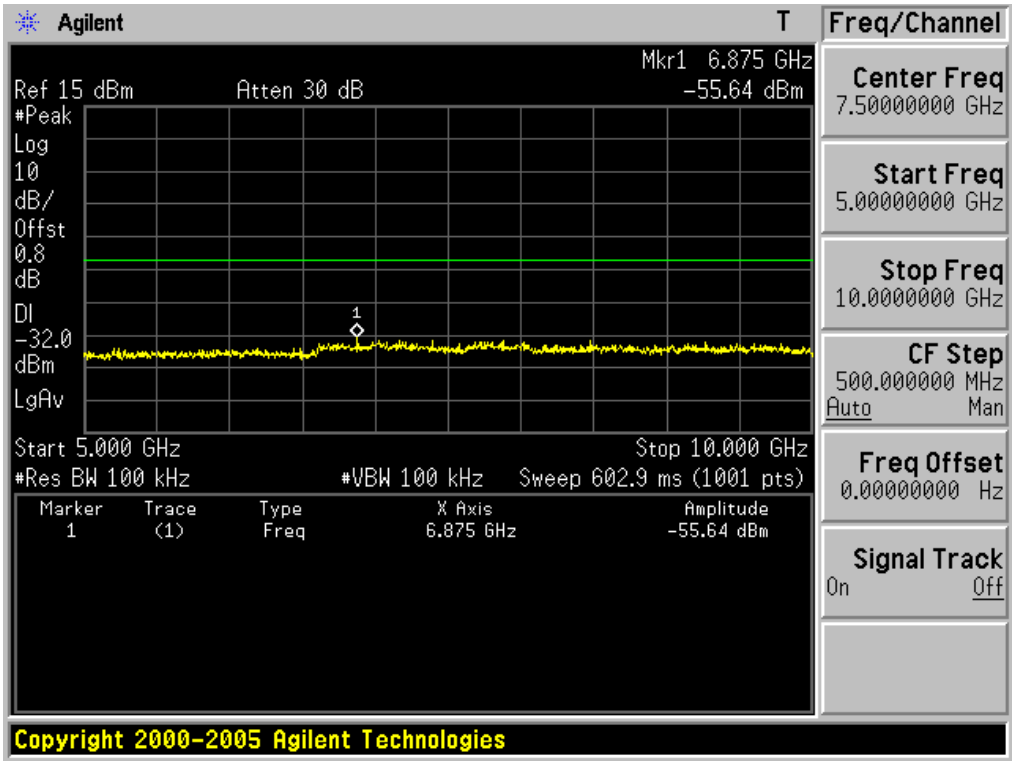
Reference for limit Test Mode: 802.11g & Middle Frequency



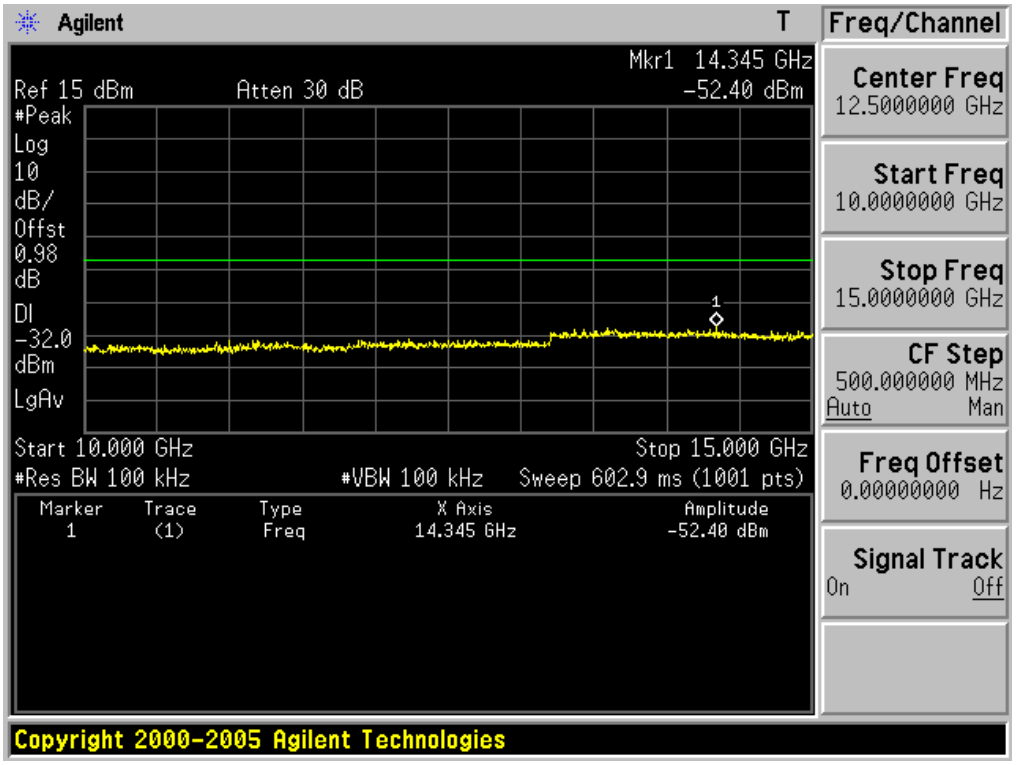
10MHz ~ 5GHz Conducted Spurious Emissions Test Mode: 802.11g & Middle Frequency



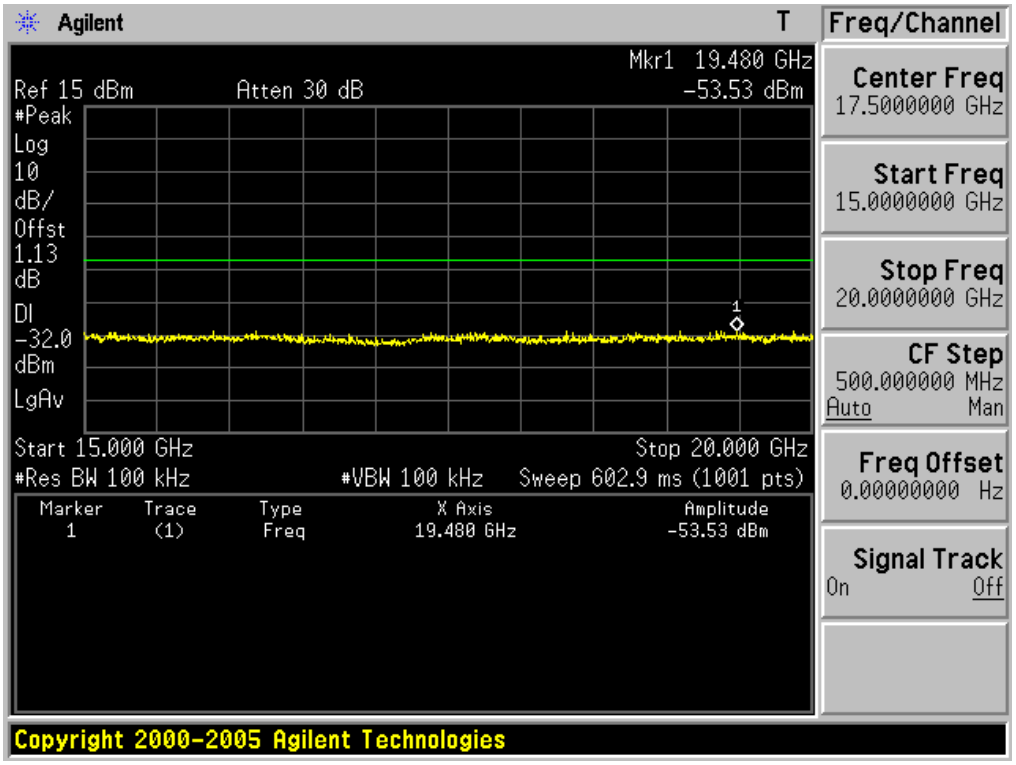
5GHz ~ 10GHz Conducted Spurious Emissions Test Mode: 802.11g & Middle Frequency



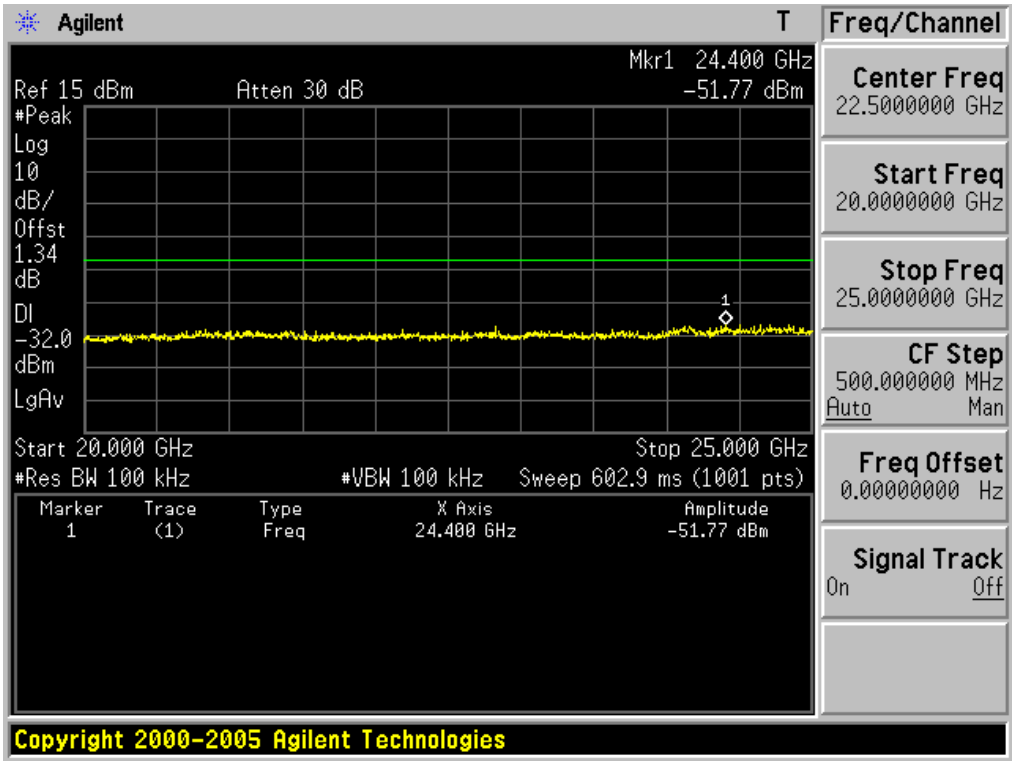
10GHz ~ 15GHz Conducted Spurious Emissions Test Mode: 802.11g & Middle Frequency



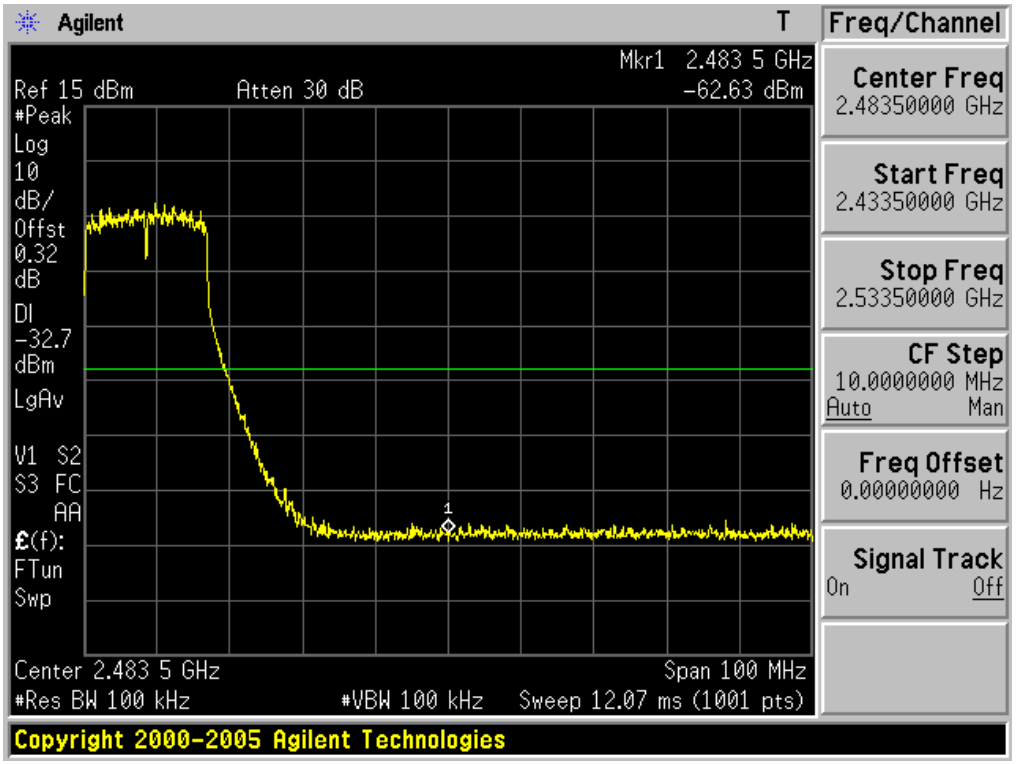
15GHz ~ 20GHz Conducted Spurious Emissions Test Mode: 802.11g & Middle Frequency



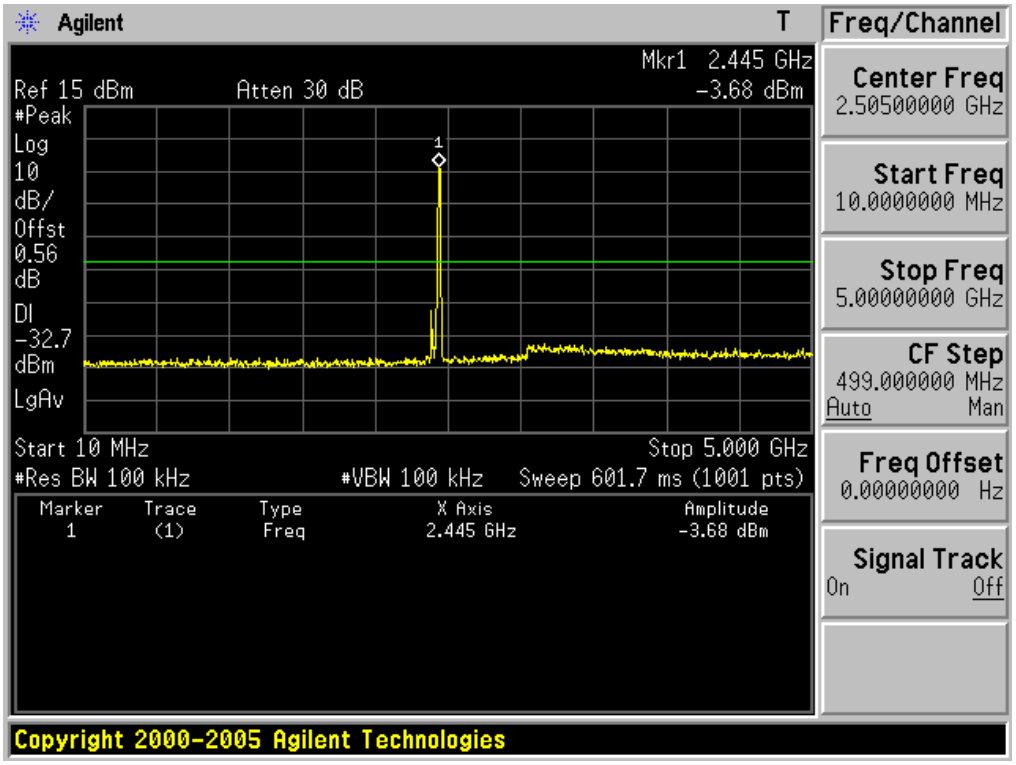
20GHz ~ 25GHz Conducted Spurious Emissions Test Mode: 802.11g & Middle Frequency



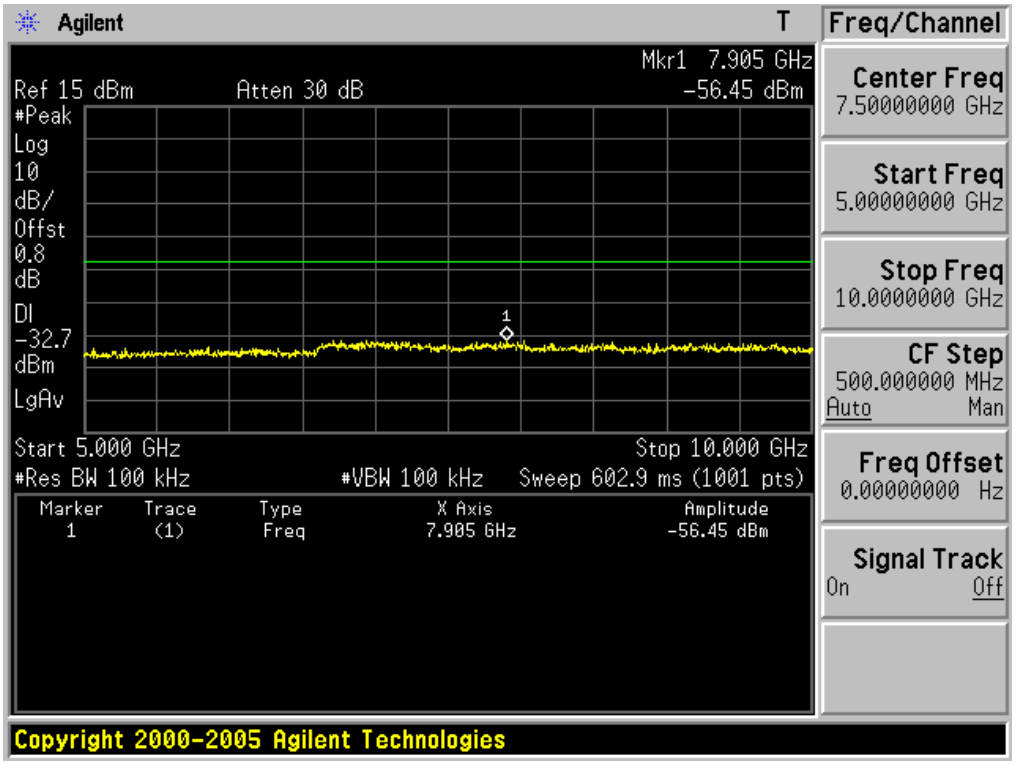
High Band-edge at 30 dB blow Test Mode: 802.11g & Highest Frequency



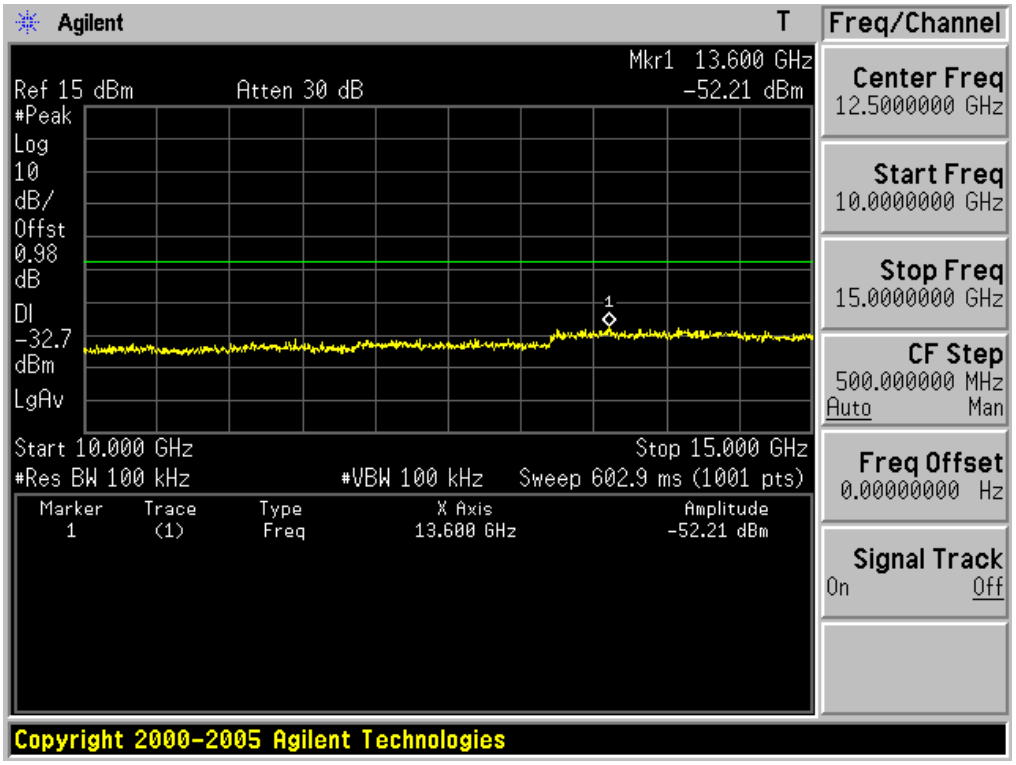
10MHz ~ 5GHz Conducted Spurious Emissions Test Mode: 802.11g & Highest Frequency



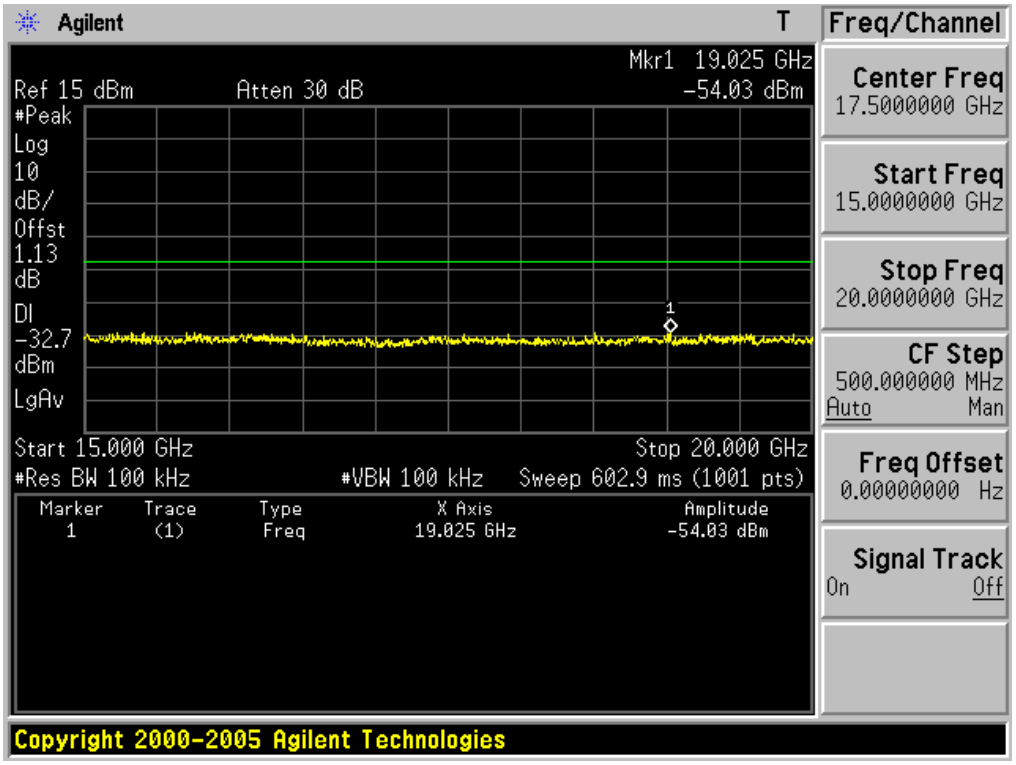
5GHz ~ 10GHz Conducted Spurious Emissions Test Mode: 802.11g & Highest Frequency



10GHz ~ 15GHz Conducted Spurious Emissions Test Mode: 802.11g & Highest Frequency



15GHz ~ 20GHz Conducted Spurious Emissions Test Mode: 802.11g & Highest Frequency



20GHz ~ 25GHz Conducted Spurious Emissions Test Mode: 802.11g & Highest Frequency