

RF TEST REPORT

Test item : Handheld Terminal
Model No. : D3-POS
Order No. : 1006-00266
Date of receipt : 2010-06-21
Test duration : 2010-07-14 ~ 2010-09-09
Date of issue : 2010-09-15
Use of report : FCC Original Grant

Applicant : Partner Tech Corporation
10F, No. 233-2, Pao Chiao Road, Shin Tien, Taipei, Taiwan

Test laboratory : Digital EMC Co., Ltd.
683-3, Yubang-Dong, Cheoin-Gu, Yongin-Si, Kyunggi-Do, 449-080, Korea

Test specification : FCC Part 15.247 Subpart C
ANSI C63.4-2003

Test environment : See appended test report

Test result : ☒ Pass ☐ Fail

The test results presented in this test report are limited only to the sample supplied by applicant and the use of this test report is inhibited other than its purpose. This test report shall not be reproduced except in full, without the written approval of DIGITAL EMC CO., LTD.

Tested by:

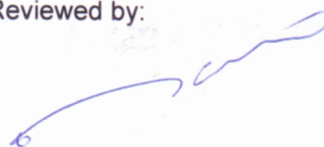


Engineer
D.C. Cha

Witnessed by:

N/A

Reviewed by:



Manager
W.J. Lee

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1. Equipment information

1.1 Equipment description

FCC Equipment Class	Digital Transmission System (DTS)
Equipment type	Handheld Terminal
Equipment model name	D3-POS
Equipment add model name	MF-2350
Equipment serial no.	Identical prototype
Frequency band	2412 ~ 2462 MHz
Modulation type	CCK, OFDM
Channel Access Protocol	CSMA/CA
Channel Spacing	5.0 MHz
Antenna type	Internal Type: PIFA Antenna (Max. peak gain: -0.315 dBi)
Power Supply	Li-ion polymer Battery: DC 7.4 V AC-DC Adaptor: AC 120 V 60 Hz

1.2 Ancillary equipment

Equipment	Model No.	Serial No.	Manufacturer	Note
Cradle	Cradle	AT10CIG00102	(주) ATID	-
Adaptor	KSAH0950300T1M2	N/A	Kuan tech(Shenzhen) Co., Ltd.	-

2. Information about test items

2.1 Test mode

This device was tested in continuous transmitting mode at maximum power.

Test Case 1	EUT
Test Case 2	EUT + Adaptor
Test Case 3	EUT + Cradle + Adaptor

2.2 Auxiliary equipment

Equipment	Model No.	Serial No.	Manufacturer	Note
-	-	-	-	-
-	-	-	-	-

2.3 Tested frequency

	TX Frequency (MHz)	RX Frequency (MHz)
Lowest Channel	2412	2412
Middle Channel	2437	2437
Highest Channel	2462	2462

2.4 Tested environment

Temperature	: 23 ~ 26 °C
Relative humidity content	: 33 ~ 51 % R.H.
Details of power supply	: Battery: DC 7.4 V AC-DC Adaptor: AC 120V 60Hz

2.5 EMI Suppression Device(s)/Modifications

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

→ The manufacturer carried out modifications to the EUT in order to meet the requirements of the standard applied.

- Below ferrites fitted to adapter cable.(refer to external photo.)
 - HFA187102-0A2
 - LFB259128-000

3. Test Report

3.1 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 Note 2
15.247(b)(3)	Transmitter Output Power	< 1Watt		C Note 2
15.247(c)	Out of Band Emissions / Band Edge	20dBc in any 100kHz BW		C Note 2
15.247(d)	Transmitter Power Spectral Density	< 8dBm / 3kHz		C Note 2
15.205 15.209	General Field Strength Limits (Restricted Bands and Radiated Emission Limits)	<FCC 15.209 Limits	Radiated	C Note 3
15.207	AC Conducted Emissions	EN 55022	AC Line Conducted	C Note 4
15.203	Antenna Requirements	FCC 15.203	-	C
Note 1: C=Comply NC=Not Comply NT=Not Tested NA=Not Applicable Note 2: The test item was performed at only test case 1. Note 3: The test item was performed in all the test cases. And the worst test results were reported. Note 4: This test item was performed in test cases 2, 3. And the worst test results were reported.				

The sample was tested according to the following specification:
ANSI C-63.4-2003

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 Frequencies

Span = 50 MHz (Greater than EBW)

RBW = 100 kHz

VBW = $\geq$ RBW

Trace = max hold

Sweep = auto

Detector function = peak

- Measurement Data: **Comply**

Test Mode	Frequency	Test Results (MHz)
802.11b	Lowest	12.30
	Middle	12.30
	Highest	12.30
802.11g	Lowest	16.60
	Middle	16.60
	Highest	16.60

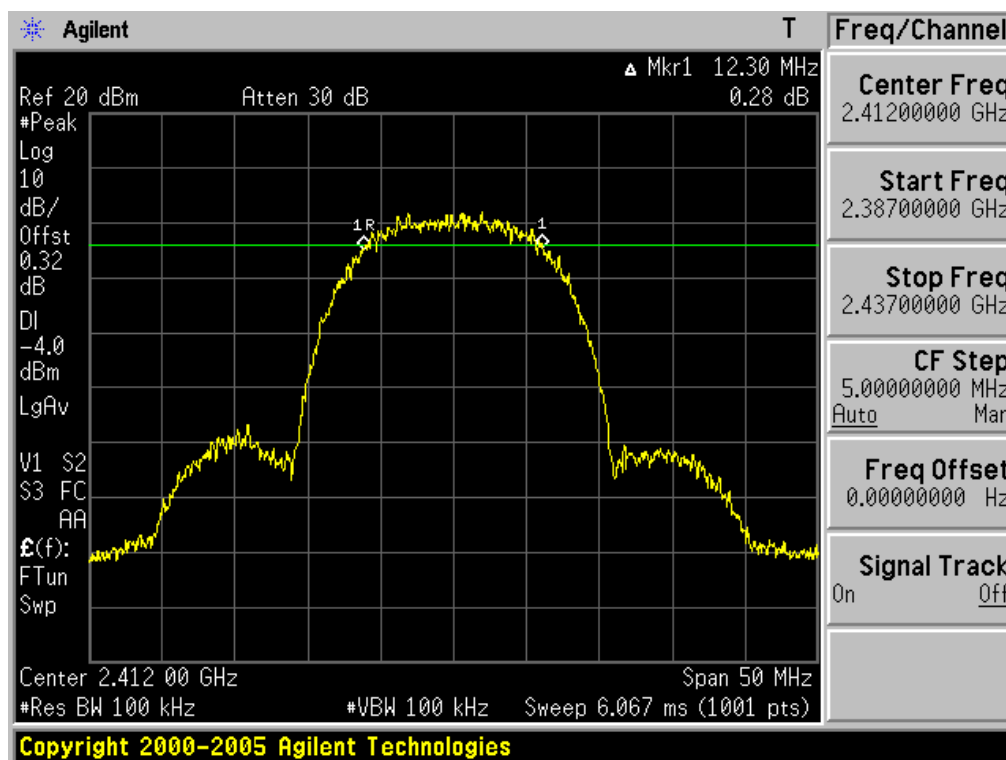
Note 1: See next pages for actual measured spectrum plots.

- Minimum Standard:

The minimum 6 dB bandwidth shall be at least 500 kHz

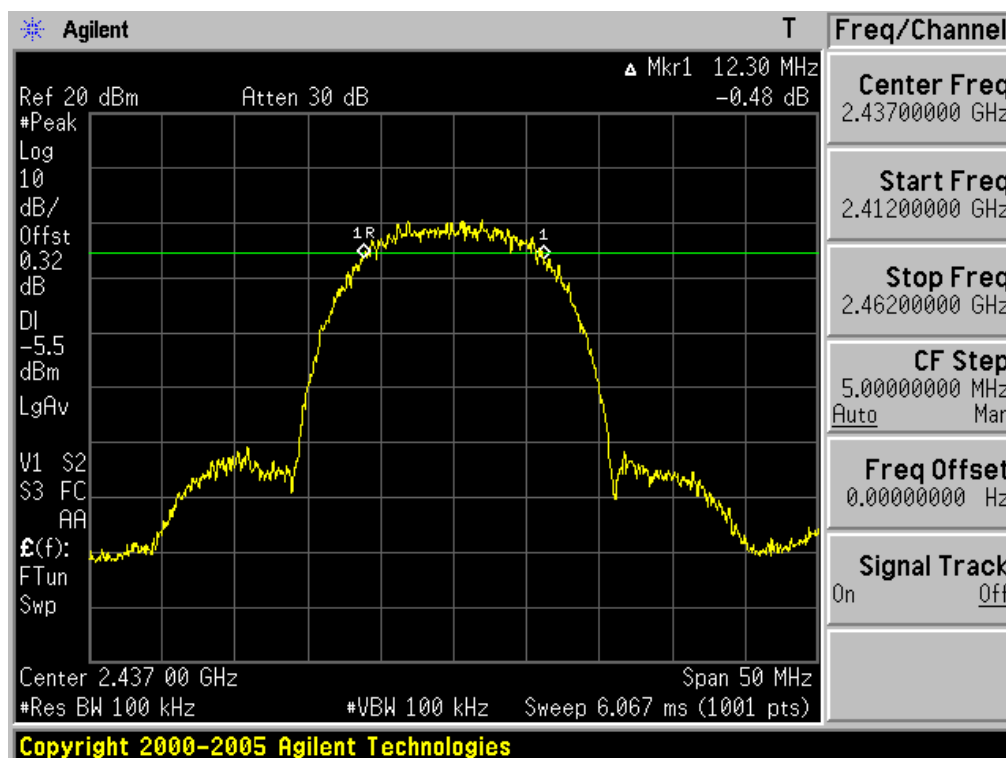
6 dB Bandwidth

Test Mode: 802.11b & Lowest Frequency



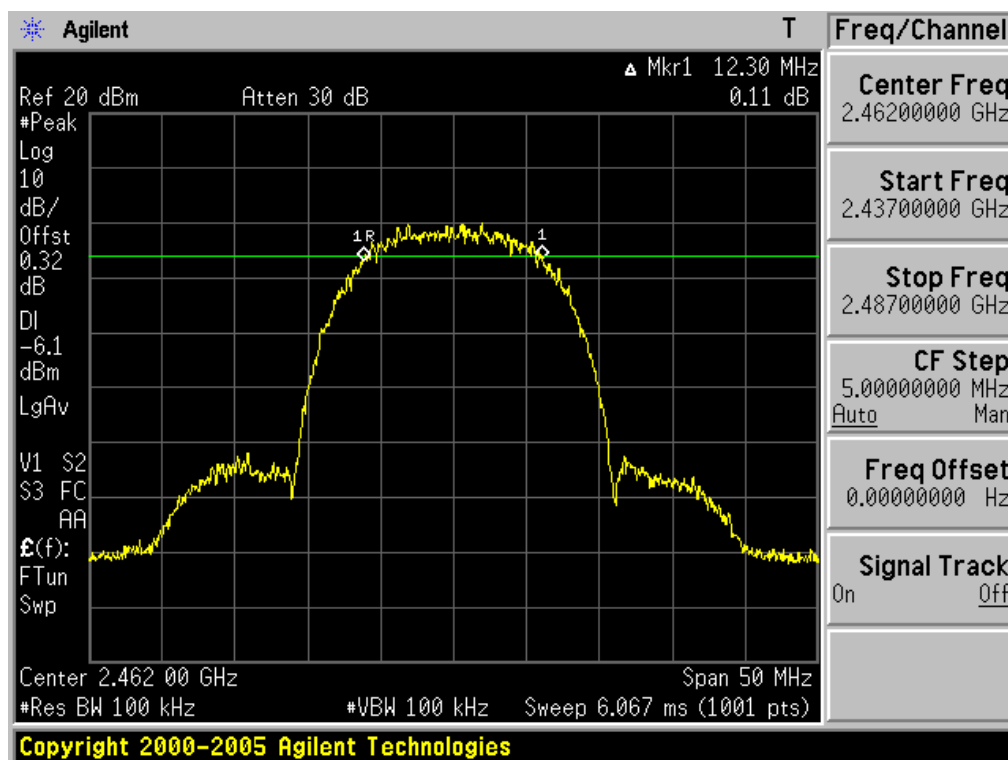
6 dB Bandwidth

Test Mode: 802.11b & Middle Frequency



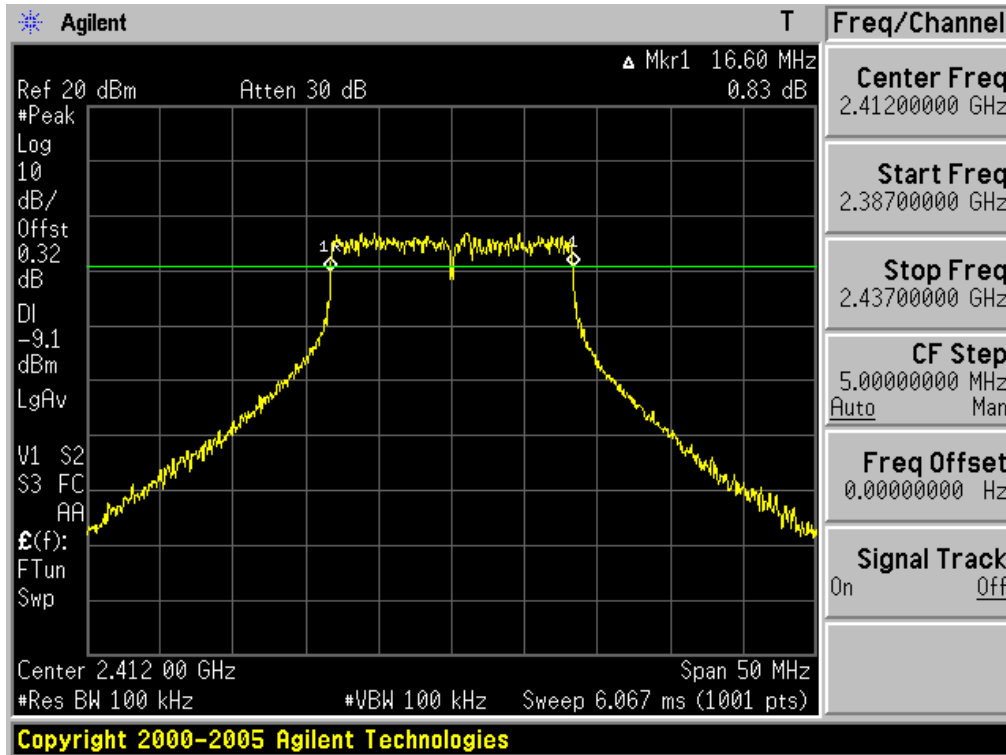
6 dB Bandwidth

Test Mode: 802.11b & Highest Frequency



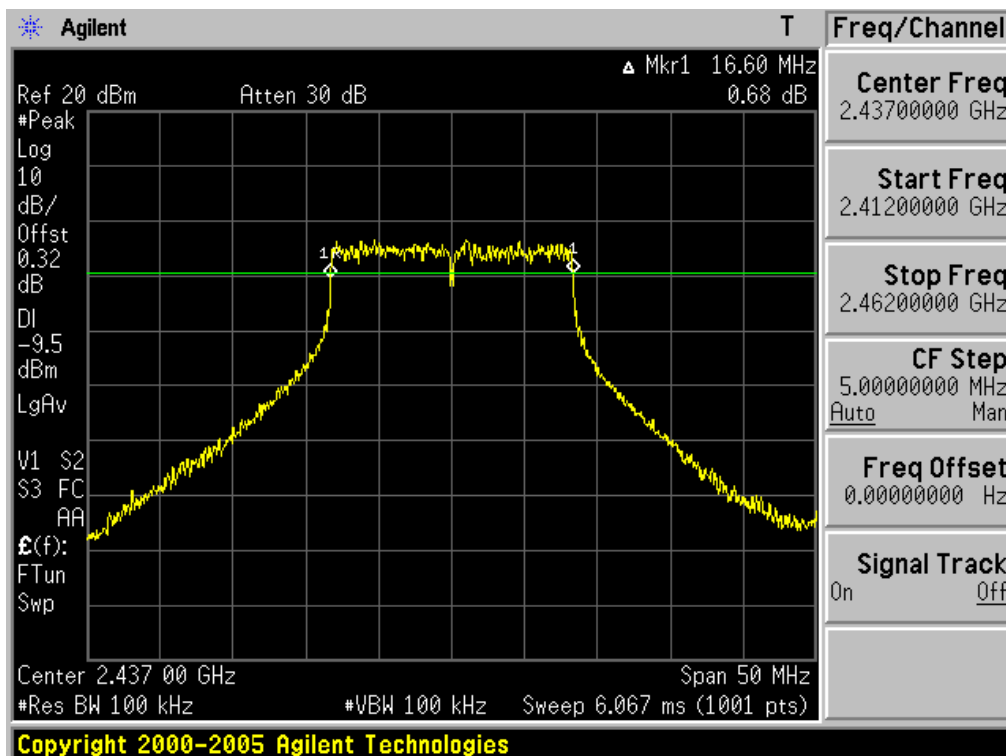
6 dB Bandwidth

Test Mode: 802.11g & Lowest Frequency



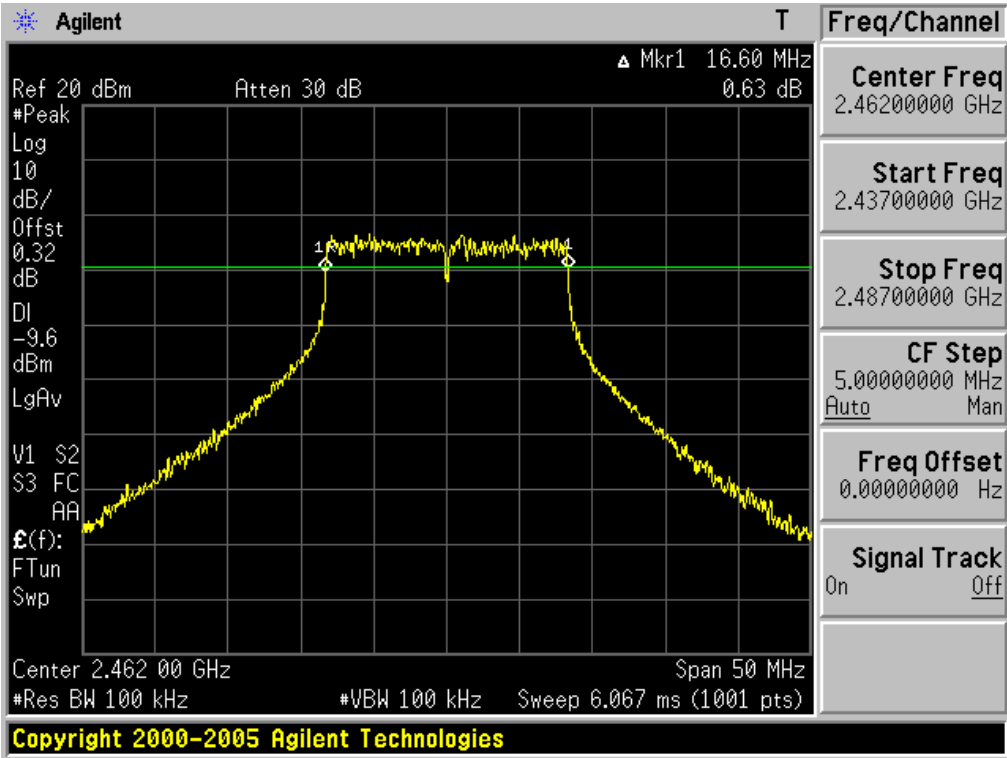
6 dB Bandwidth

Test Mode: 802.11g & Middle Frequency



6 dB Bandwidth

Test Mode: 802.11b & Highest Frequency



3.2.2 Peak Output Power

- Test Procedure: Power Output Option 1

The Transmitter antenna terminal is connected to the input of a RF peak power sensor.

- Measurement Data: **Comply**

Test Mode	Frequency	Test Results	
		dBm	W
802.11b	Lowest	14.984	0.0315
	Middle	14.649	0.0292
	Highest	14.465	0.0280
802.11g	Lowest	19.910	0.0979
	Middle	19.858	0.0968
	Highest	19.906	0.0979

Minimum Standard:	< 1W
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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.

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

Tested frequency = the highest and the lowest Frequencies

Center frequency = 2400 MHz, 2483.5 MHz

Span = 100 MHz

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

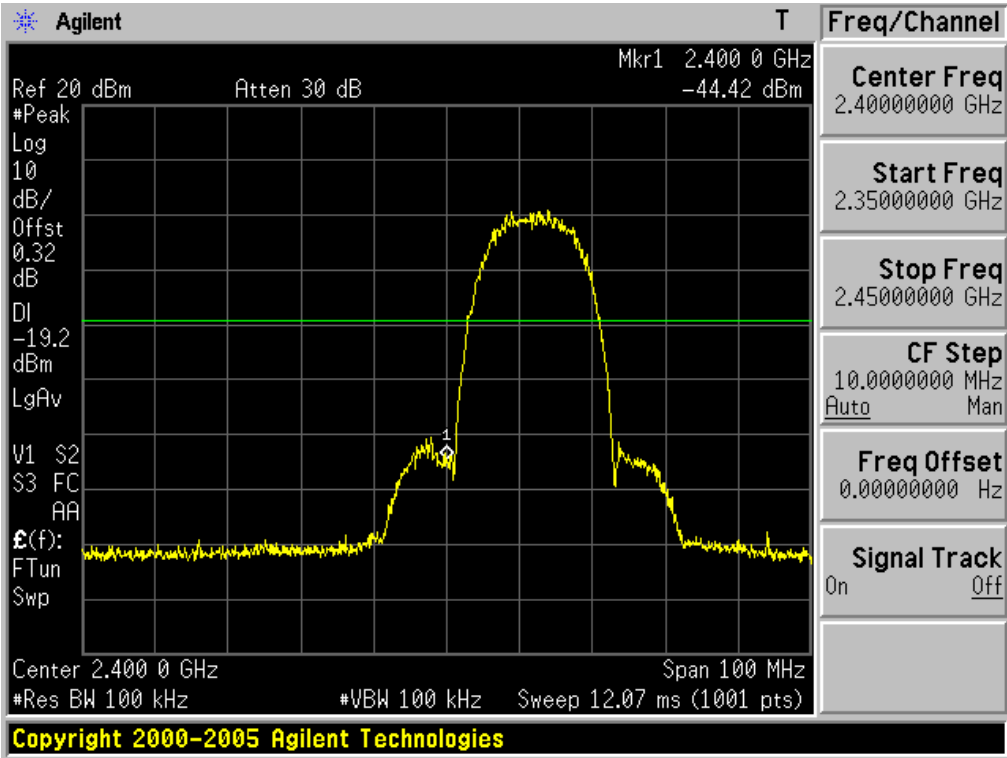
- Measurement Data: **Comply**

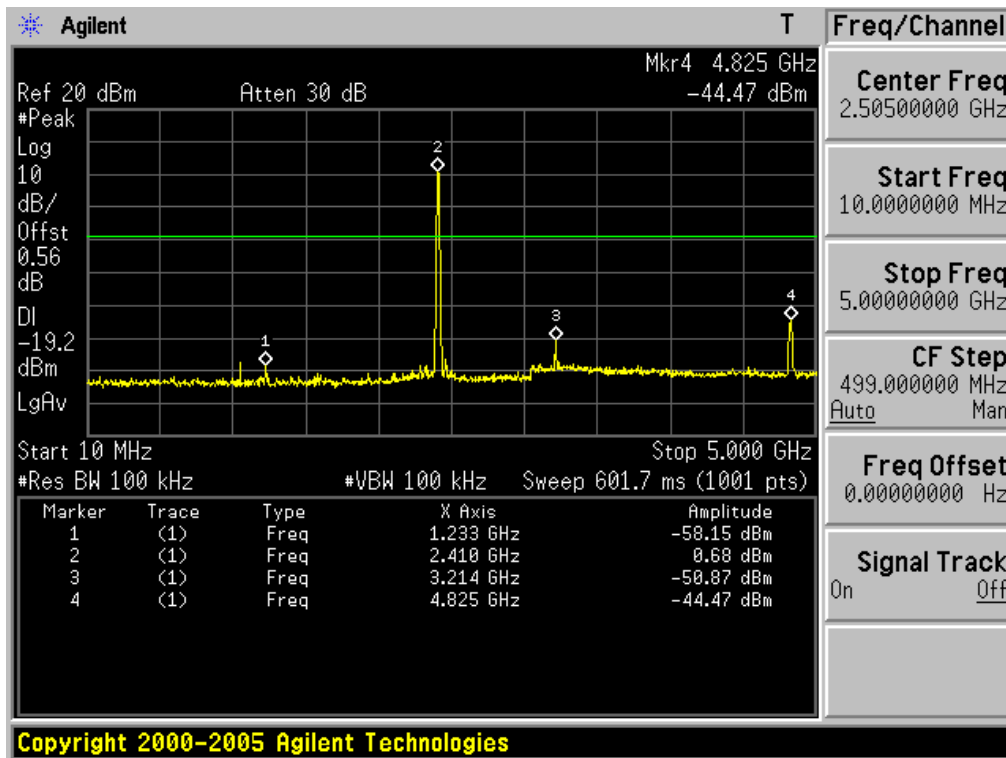
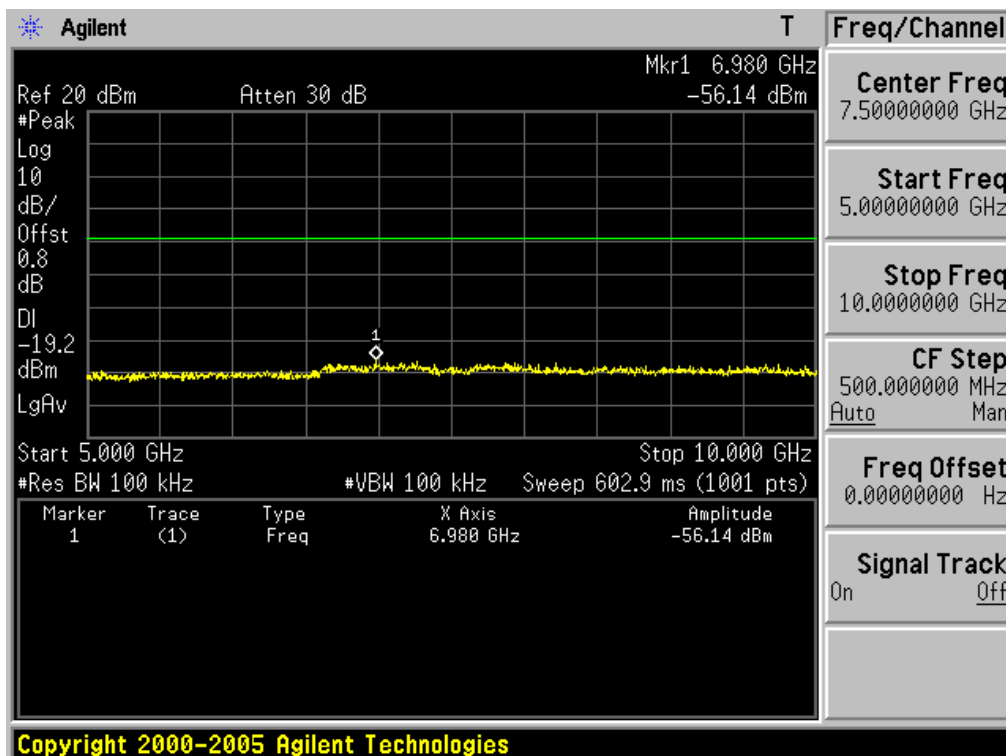
- Note 1: See next pages for actual measured spectrum plots.

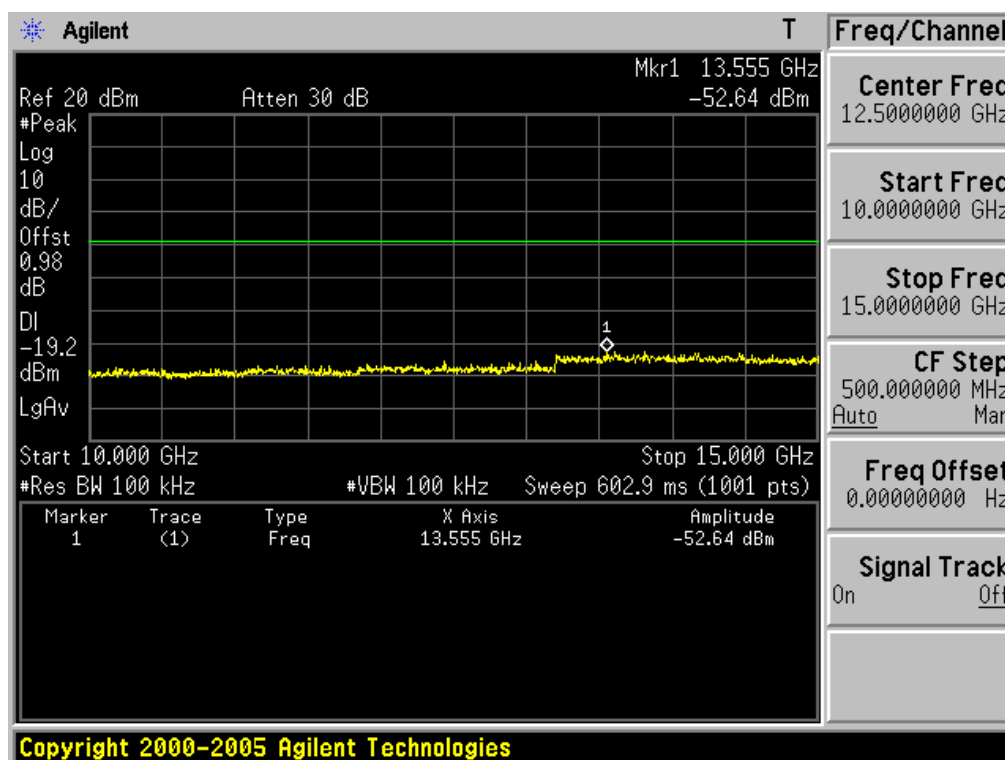
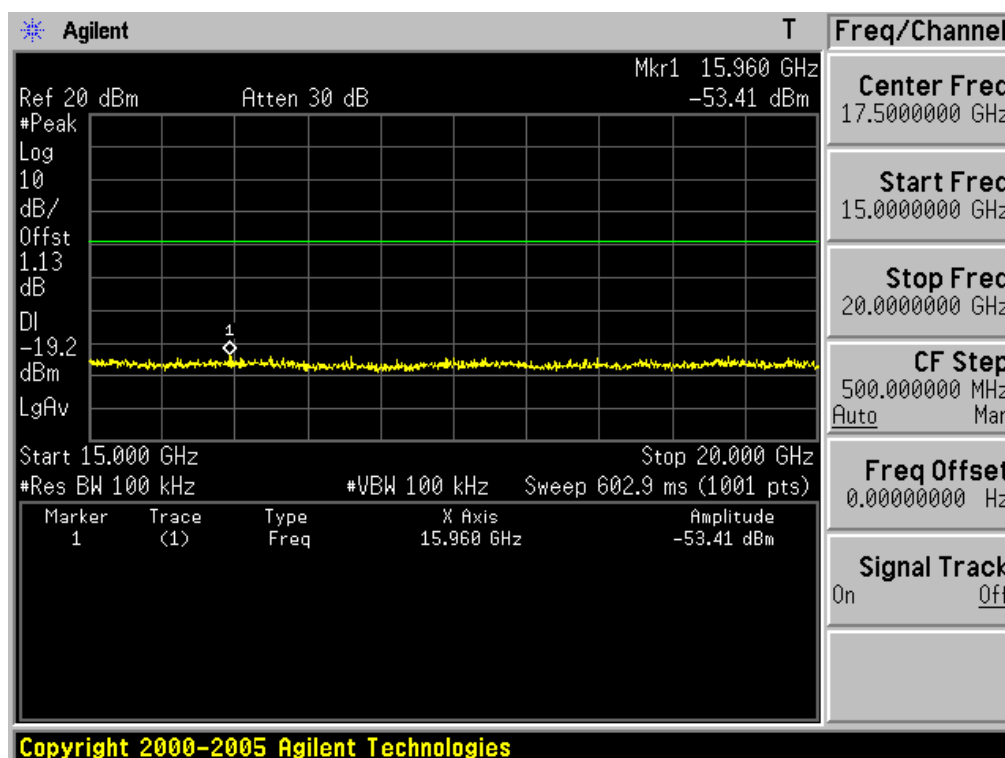
Minimum Standard:	> 20 dBc
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Low Band-edge at 20 dB blow

Test Mode: 802.11b

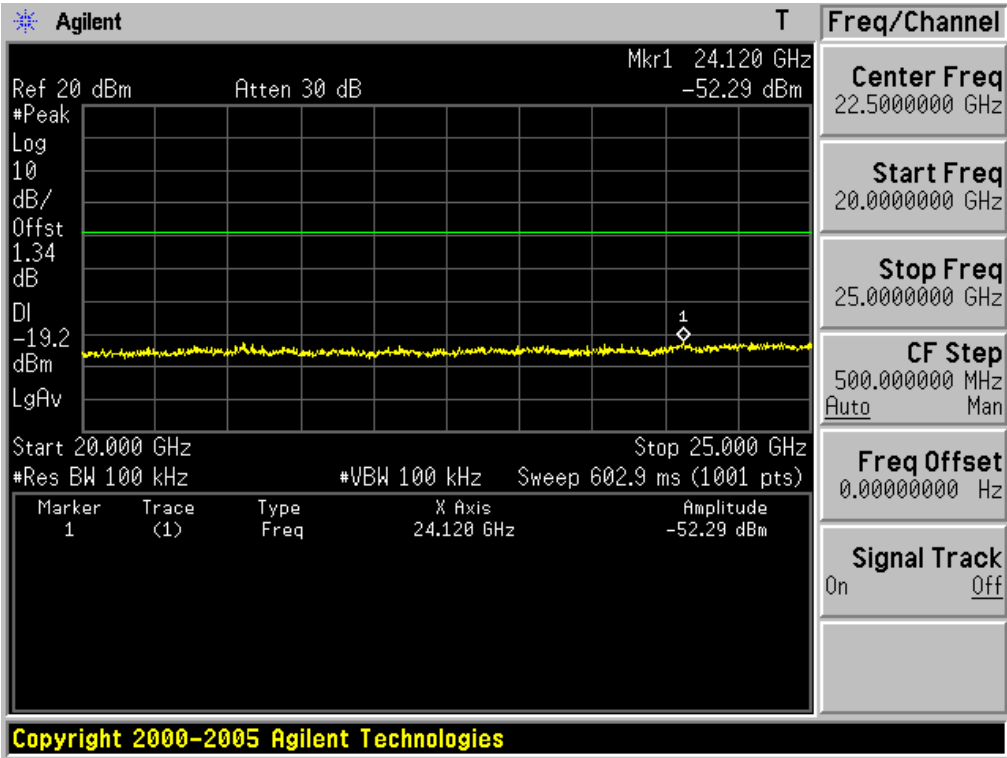


10MHz ~ 5GHz Conducted Spurious Emissions Test Mode: 802.11b & Lowest Frequency

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


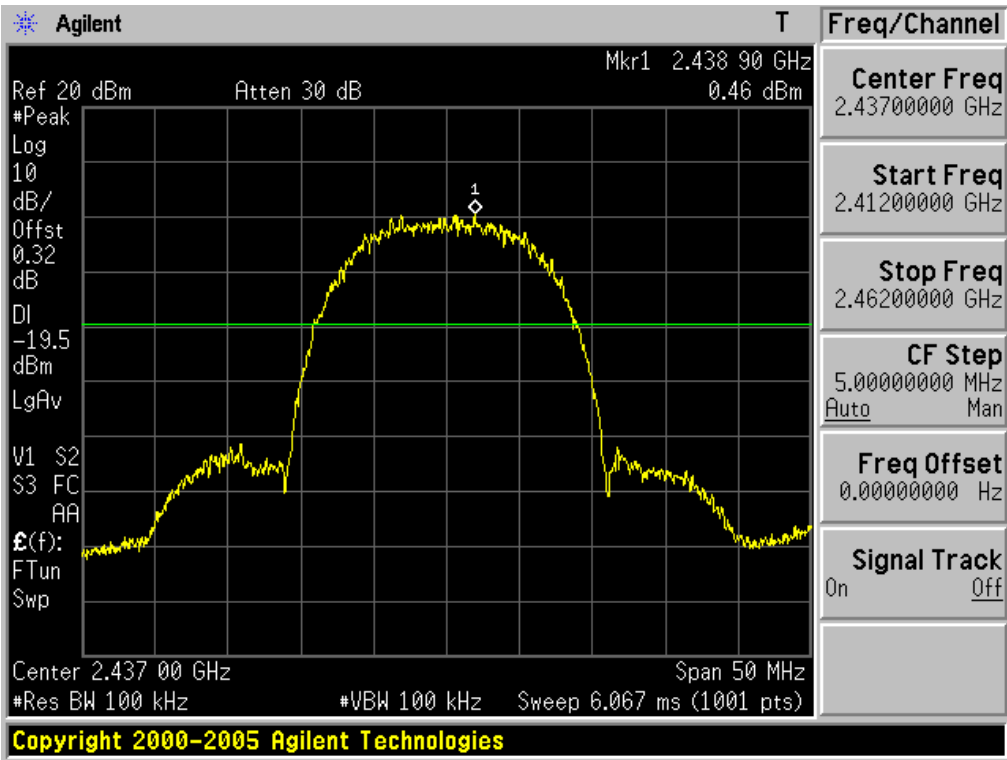
20GHz ~ 25GHz Conducted Spurious Emissions

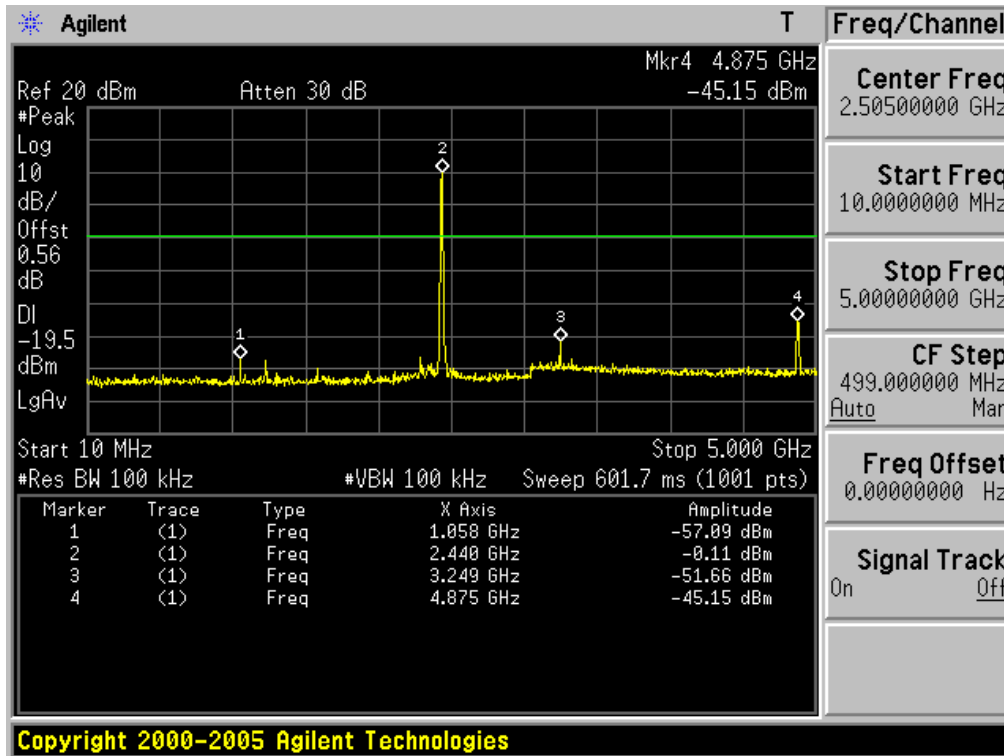
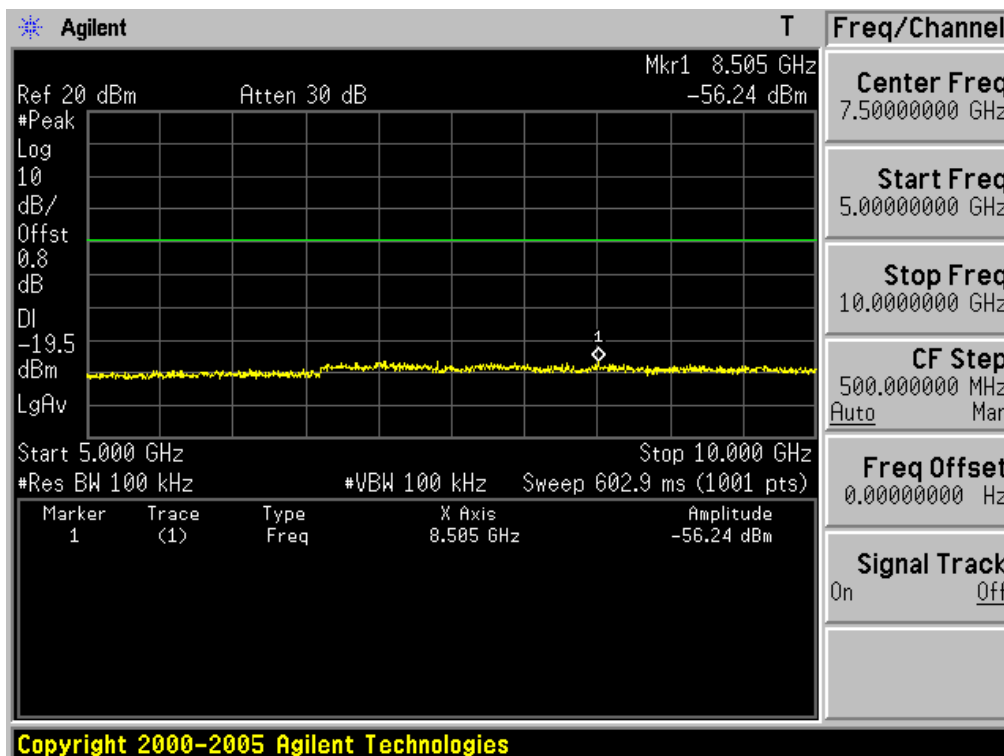
Test Mode: 802.11b & Lowest Frequency

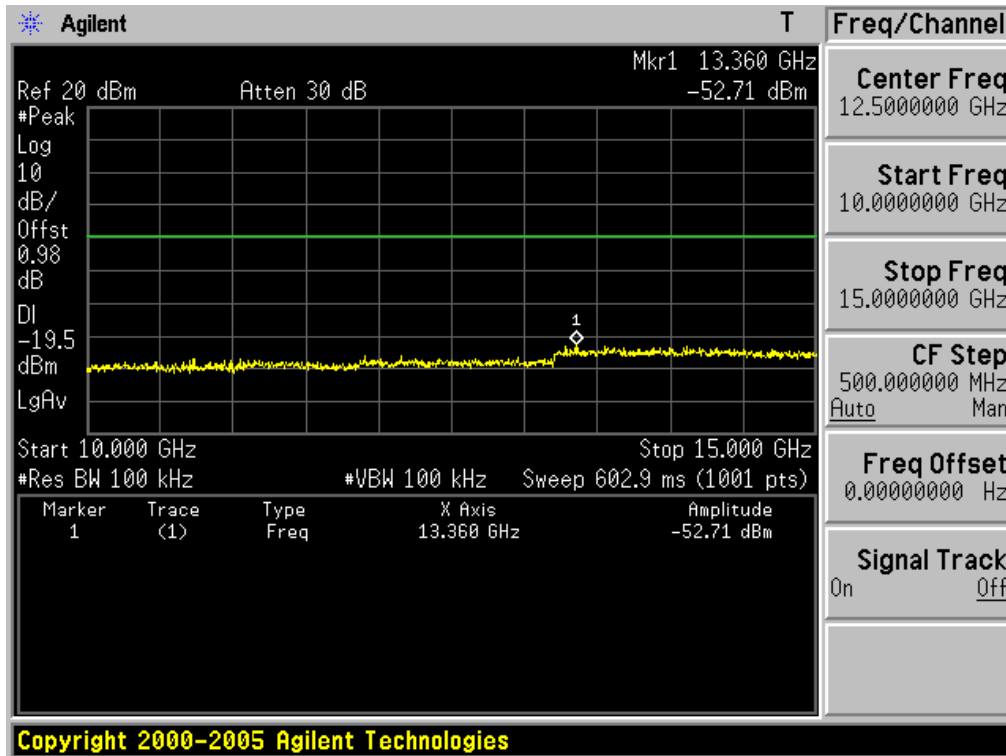
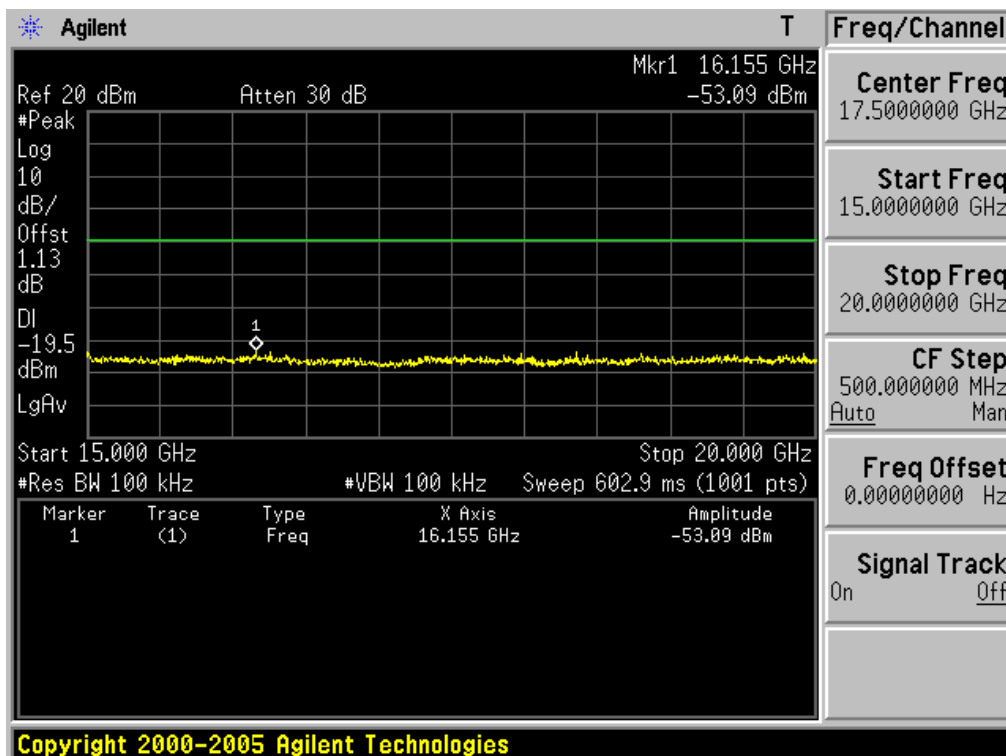


Reference for limit

Test Mode: 802.11b & Middle Frequency

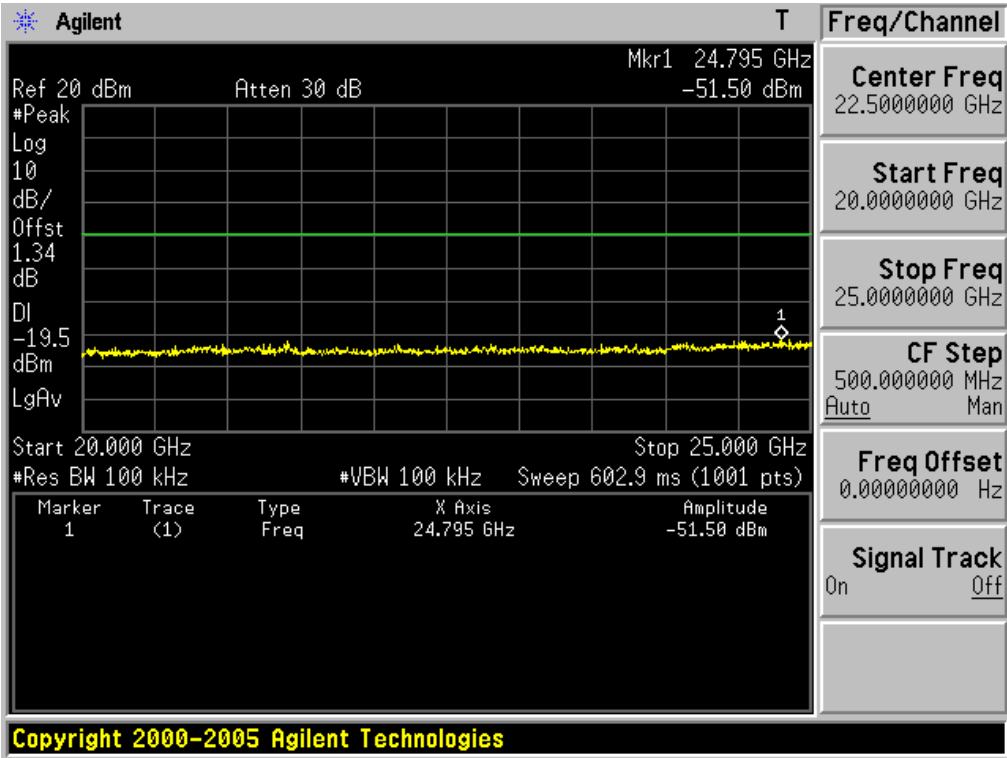


10MHz ~ 5GHz Conducted Spurious Emissions Test Mode: 802.11b & Middle Frequency

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


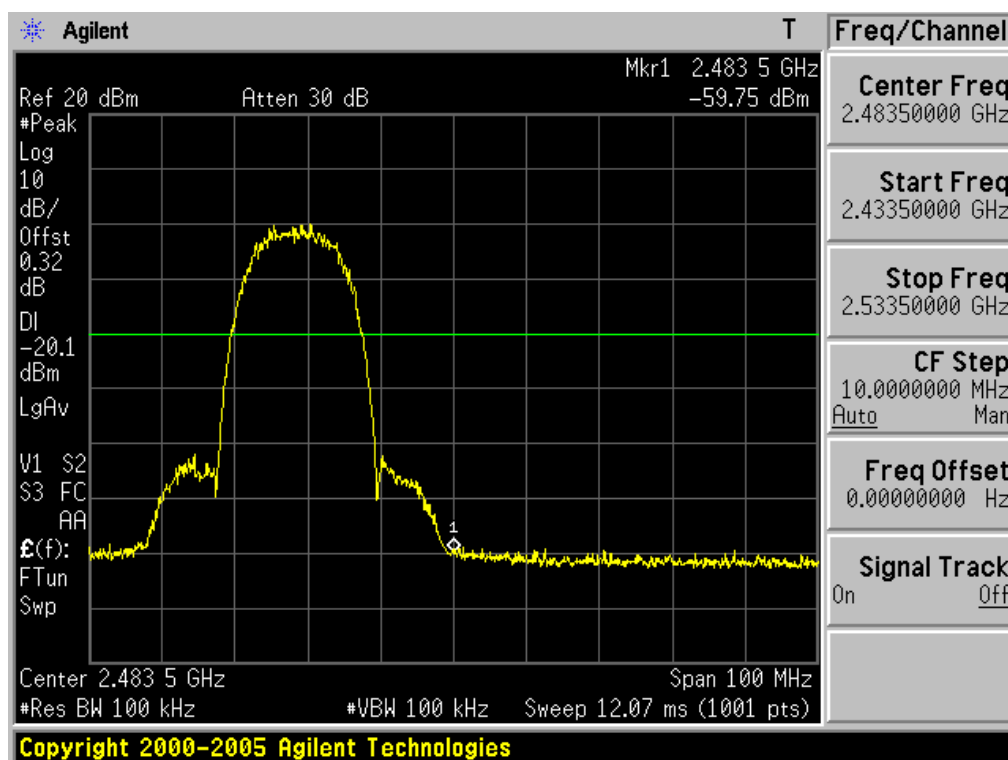
20GHz ~ 25GHz Conducted Spurious Emissions

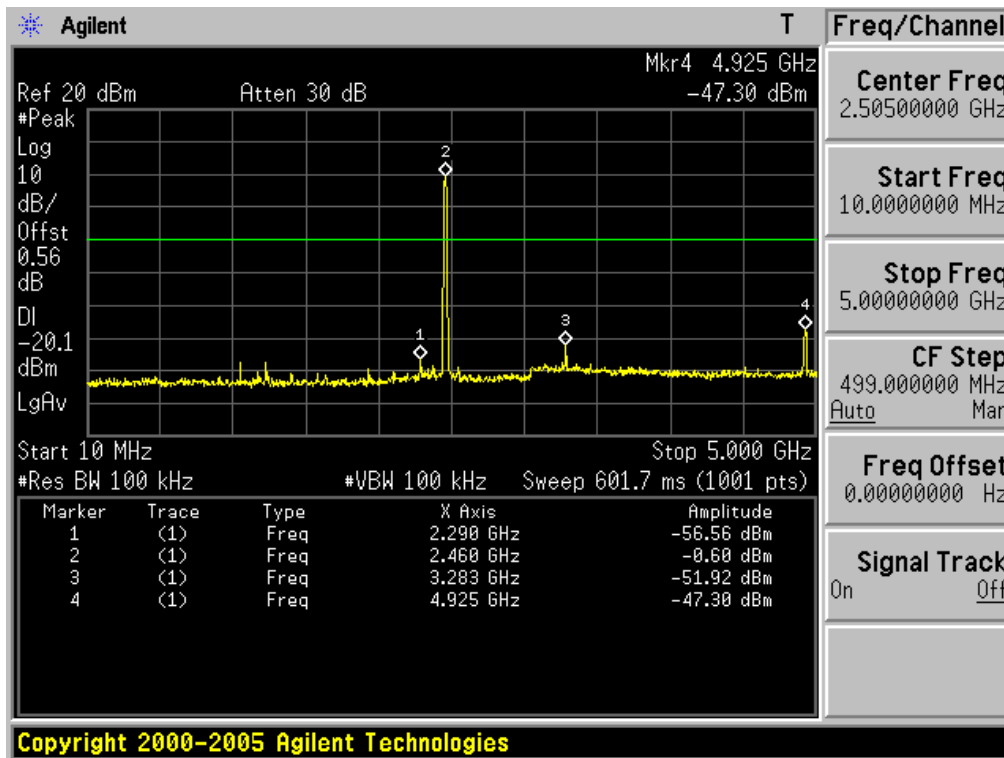
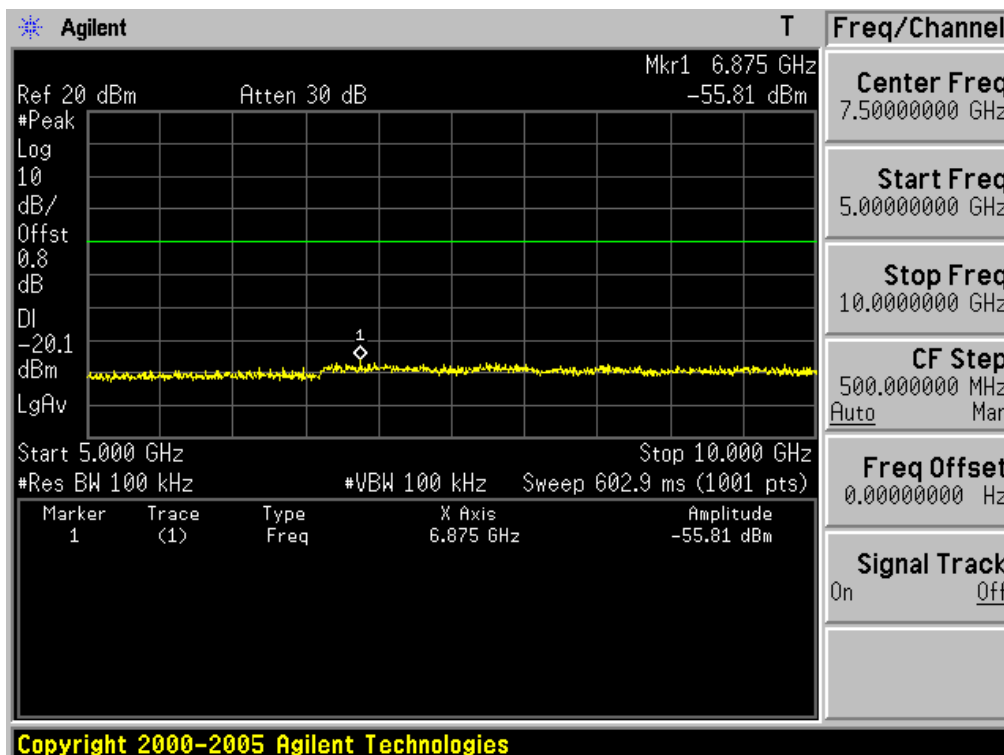
Test Mode: 802.11b & Middle Frequency



High Band-edge at 20 dB blow

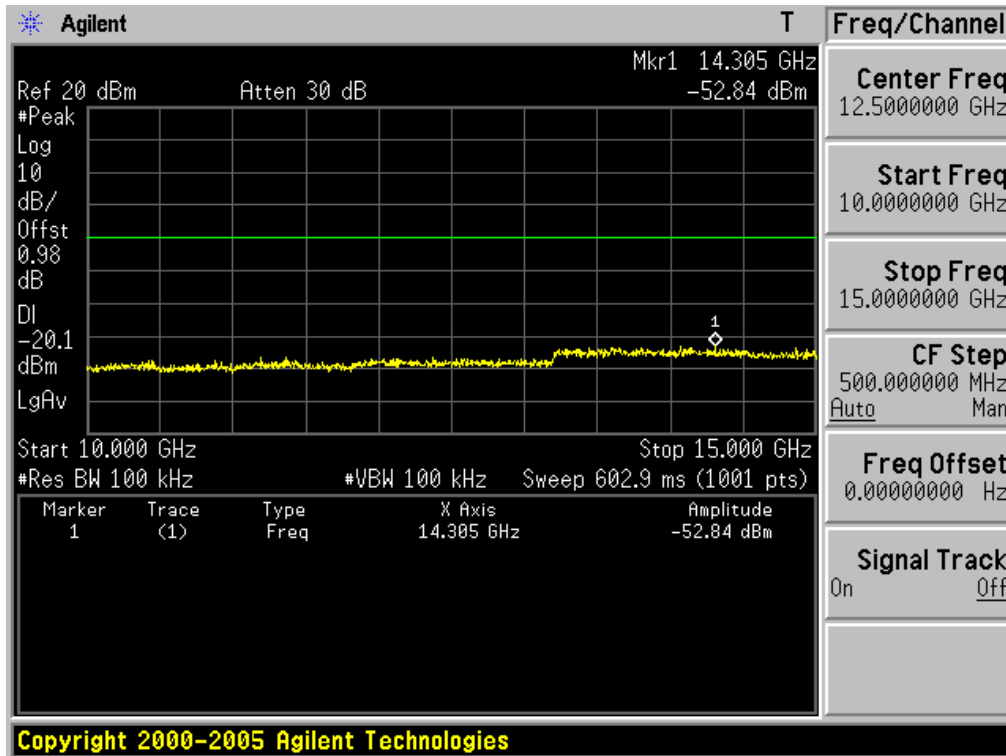
Test Mode: 802.11b & Highest Frequency



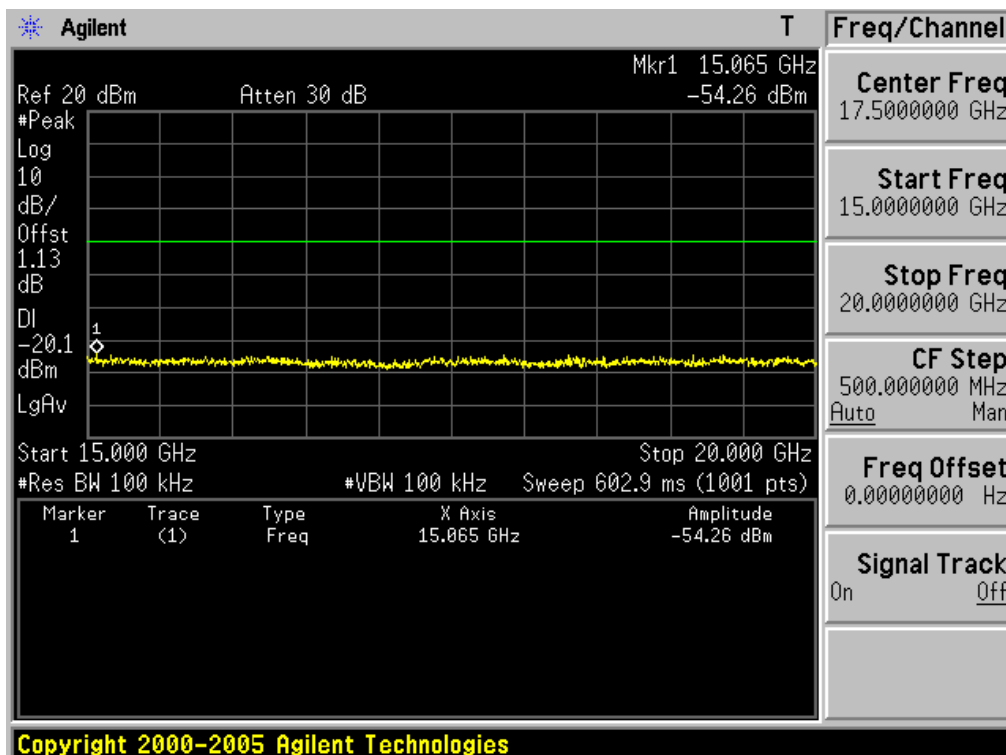
10MHz ~ 5GHz Conducted Spurious Emissions Test Mode: 802.11b & Highest Frequency

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


10GHz ~ 15GHz Conducted Spurious Emissions

Test Mode: 802.11b & Highest Frequency

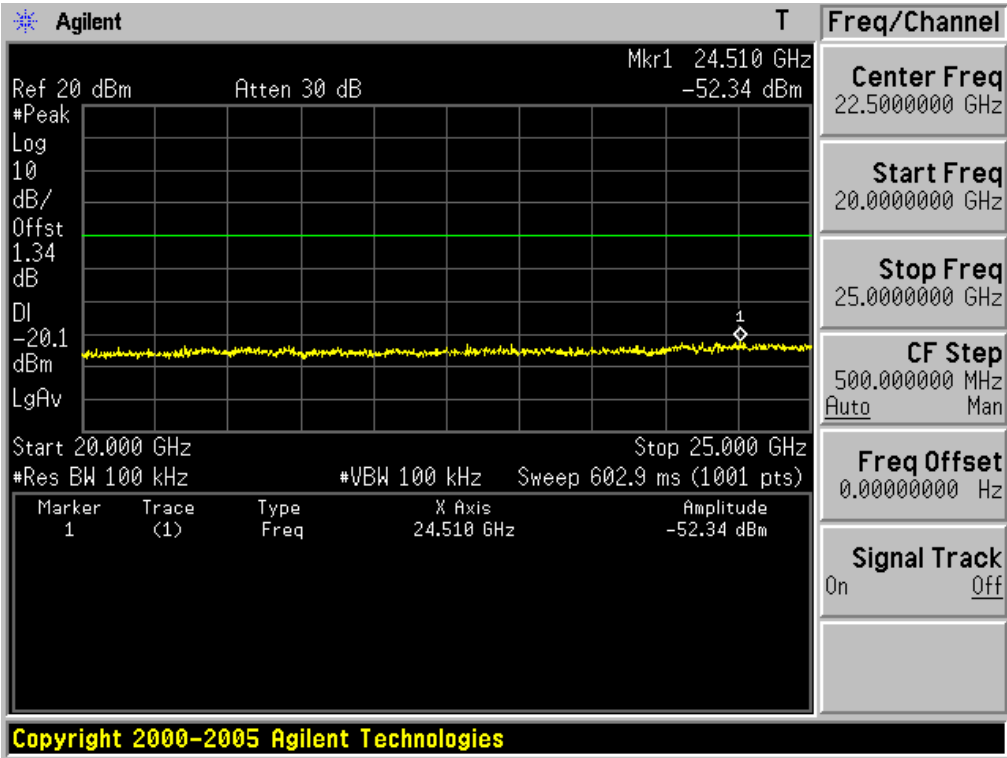
**15GHz ~ 20GHz Conducted Spurious Emissions**

Test Mode: 802.11b & Highest Frequency



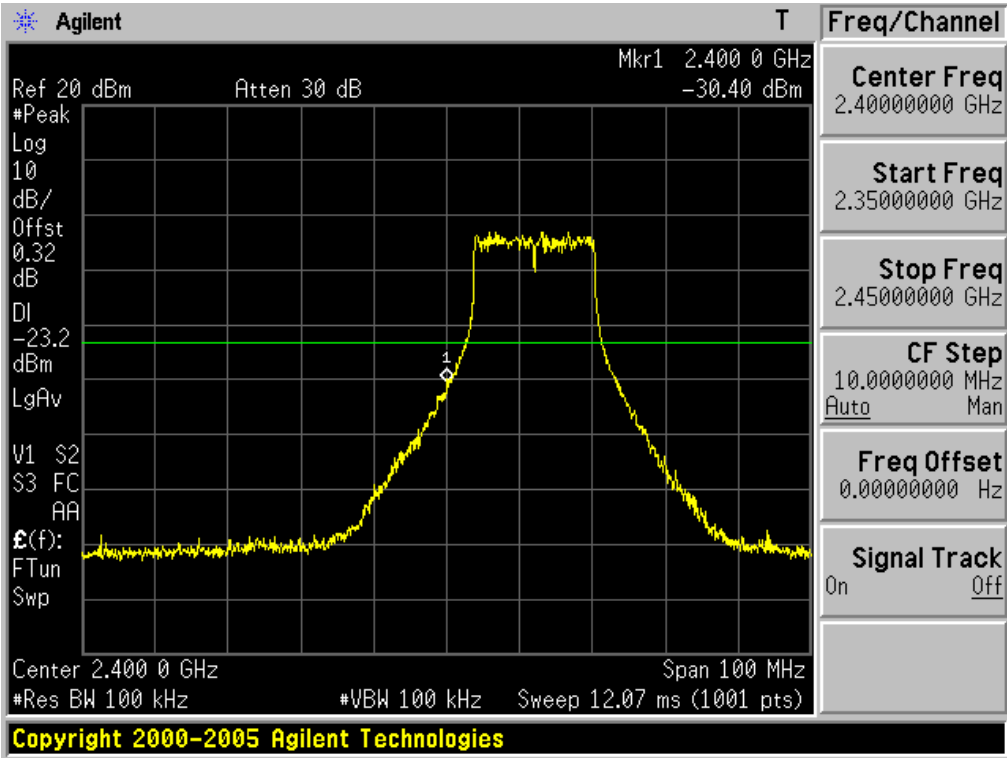
20GHz ~ 25GHz Conducted Spurious Emissions

Test Mode: 802.11b & Highest Frequency

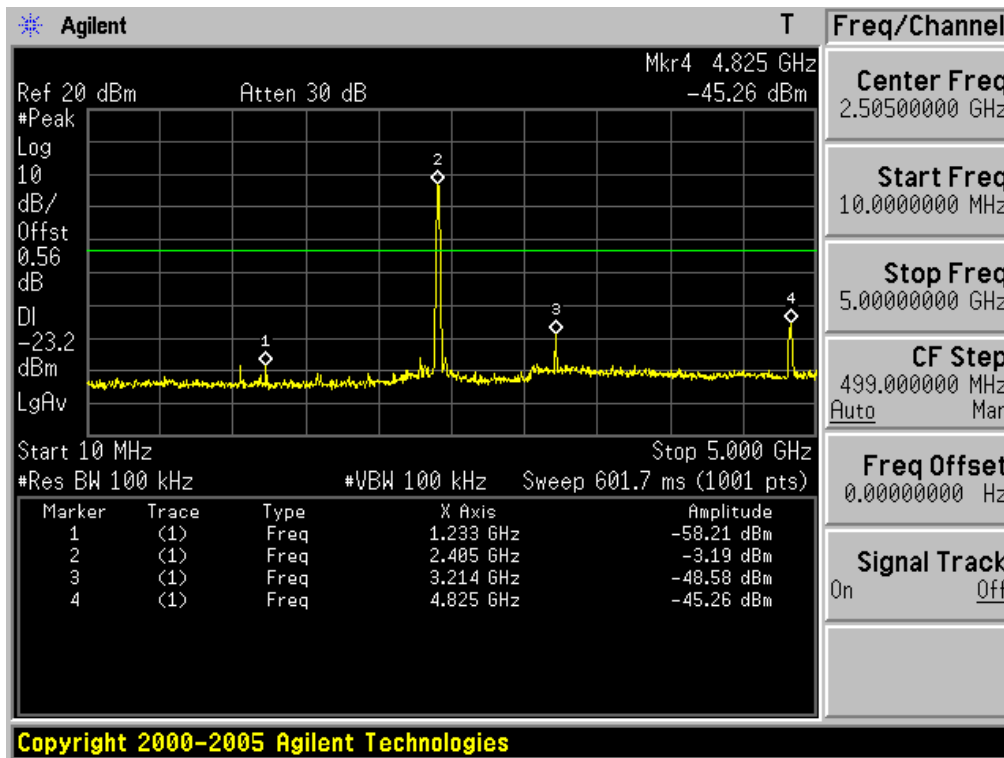


Low Band-edge at 20 dB blow

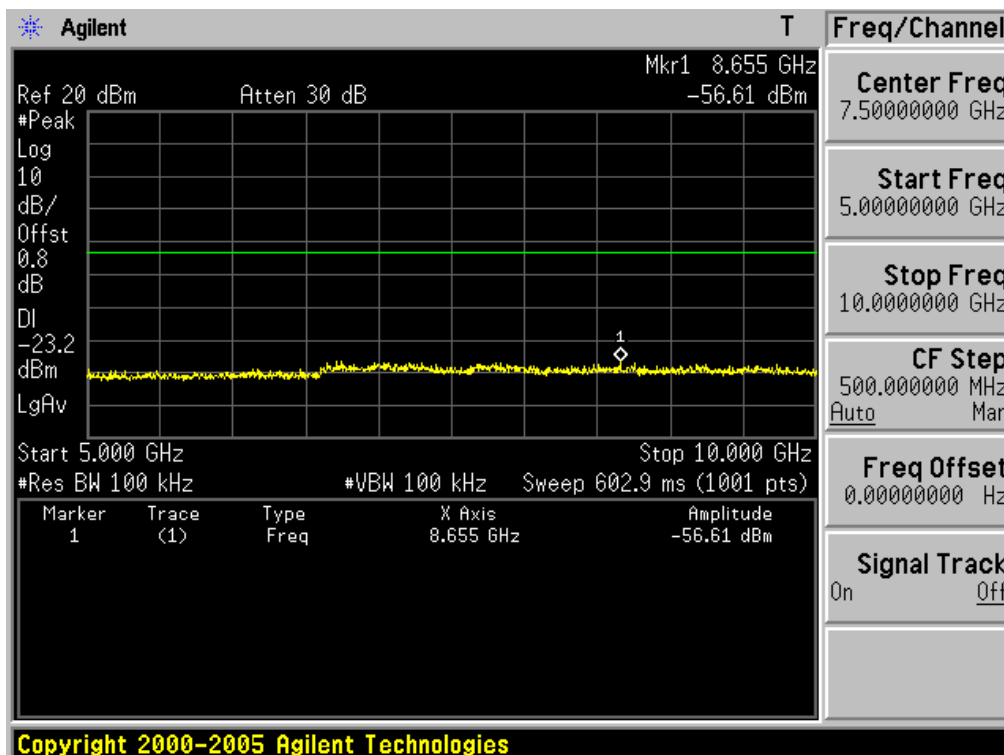
Test Mode: 802.11g

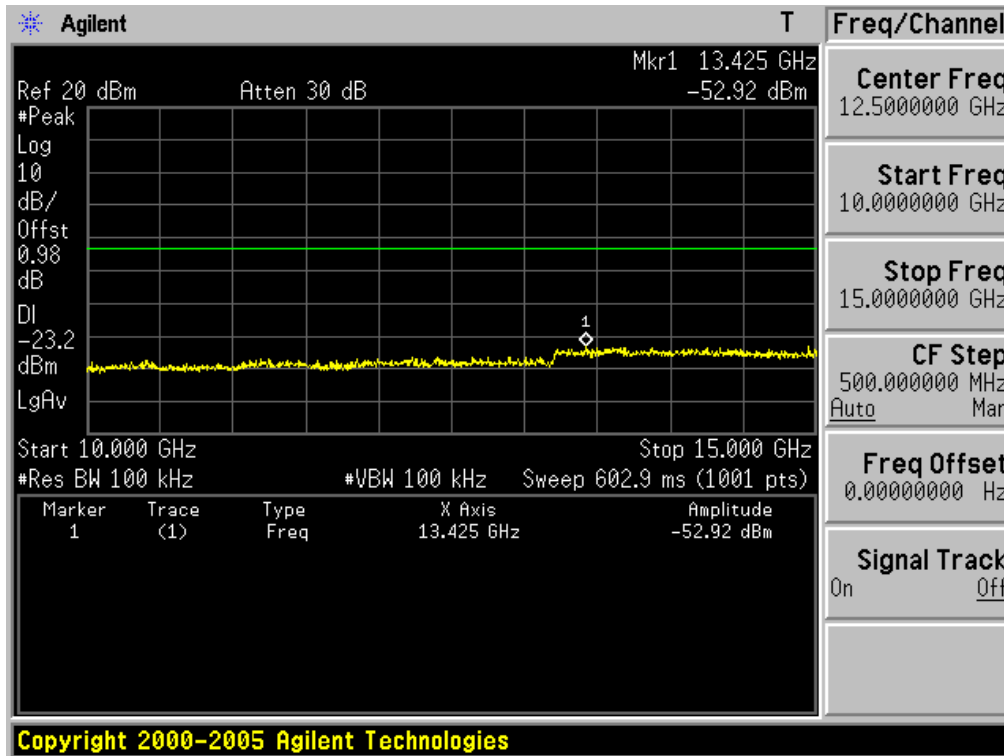
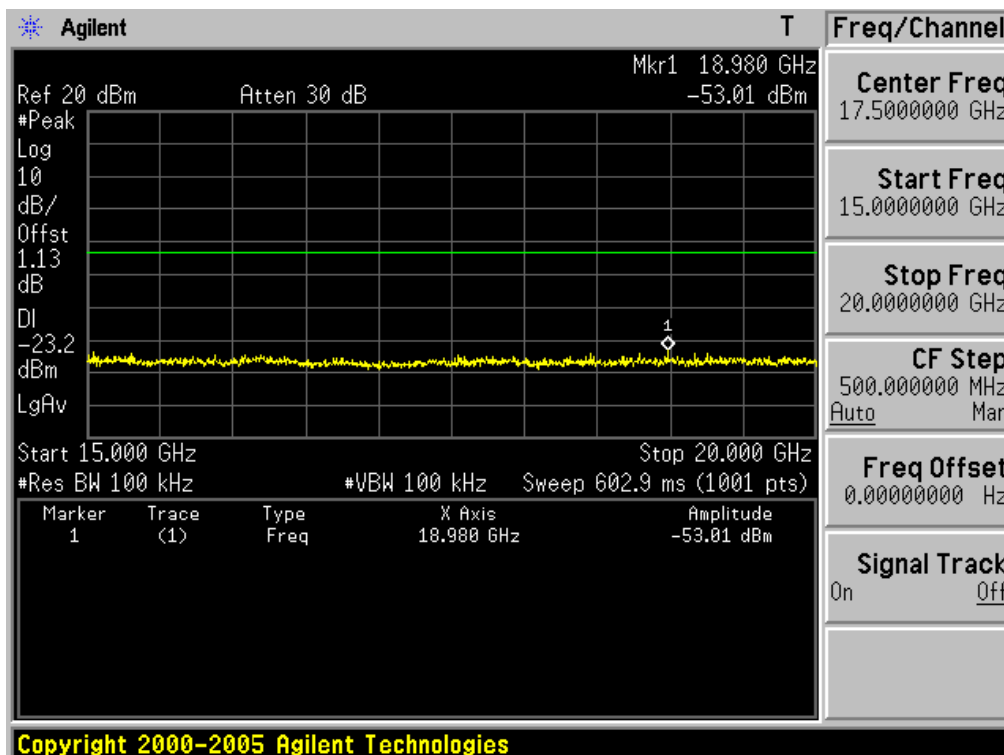


10MHz ~ 5GHz Conducted Spurious Emissions Test Mode: 802.11g & Lowest Frequency



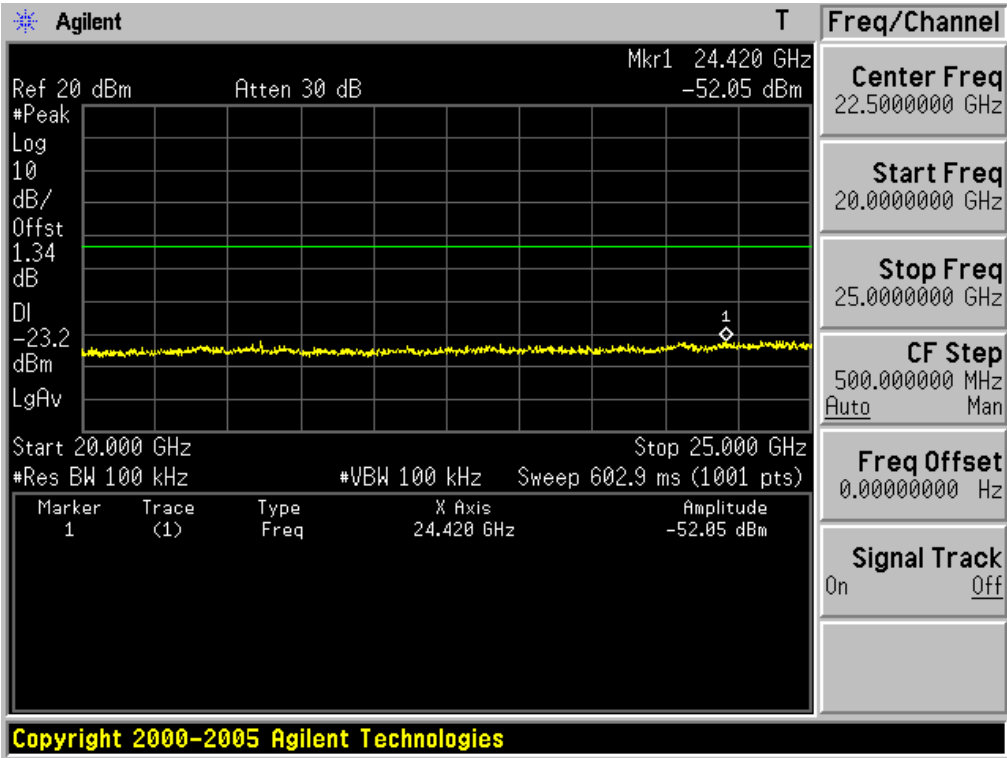
5GHz ~ 10GHz Conducted Spurious Emissions Test Mode: 802.11g & Lowest Frequency



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

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


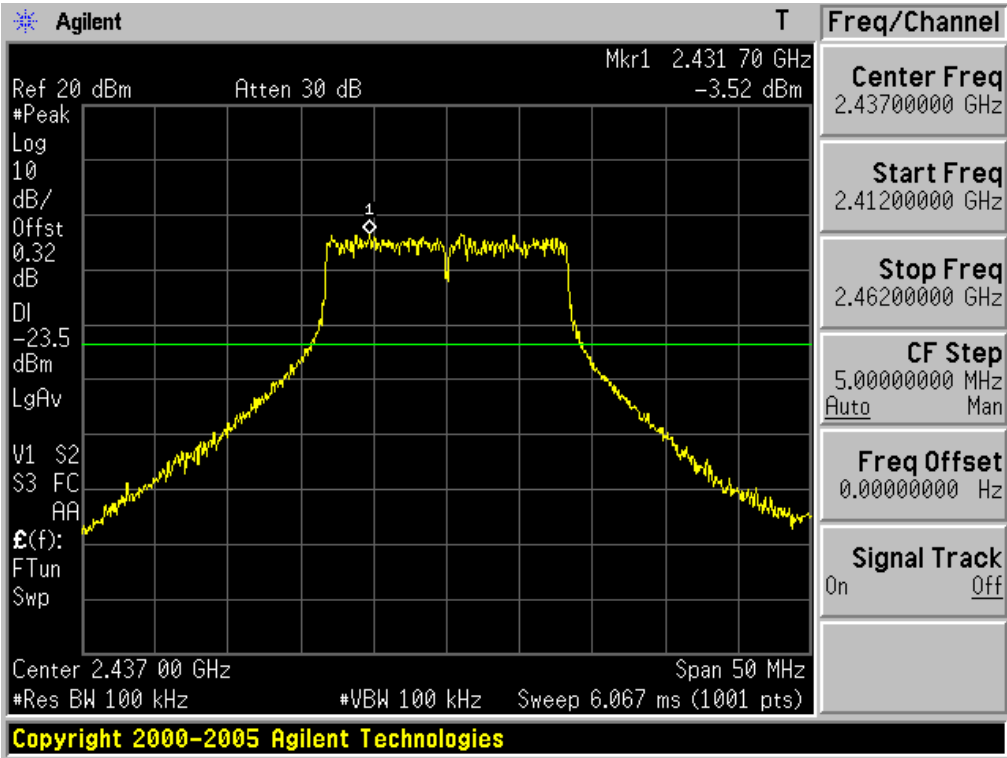
20GHz ~ 25GHz Conducted Spurious Emissions

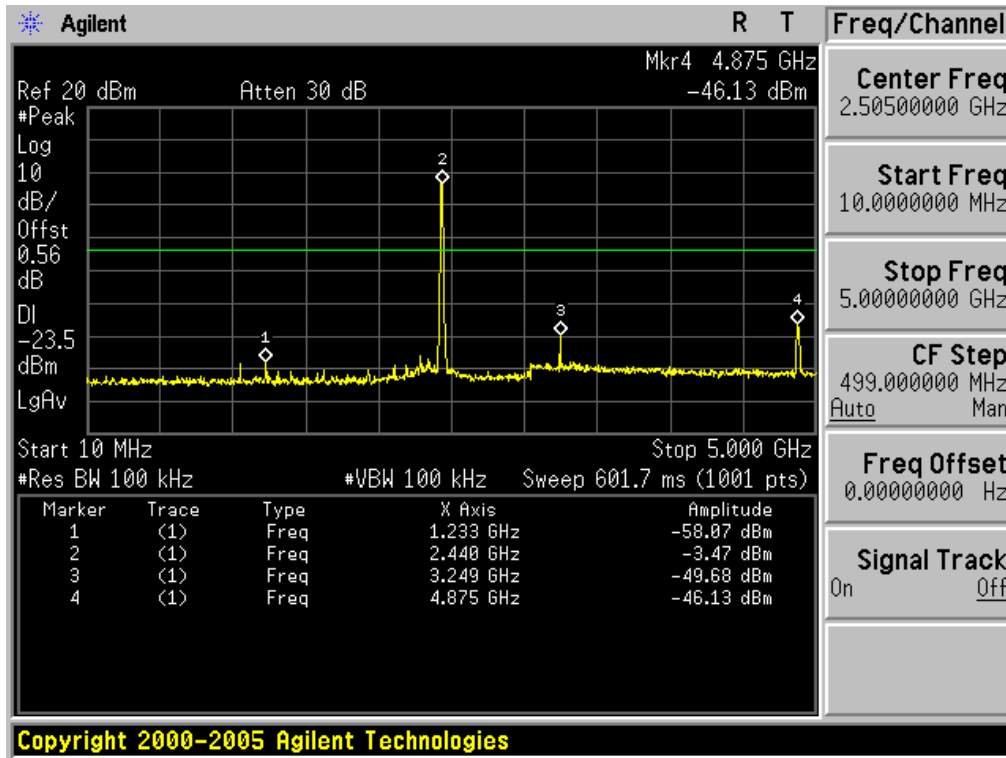
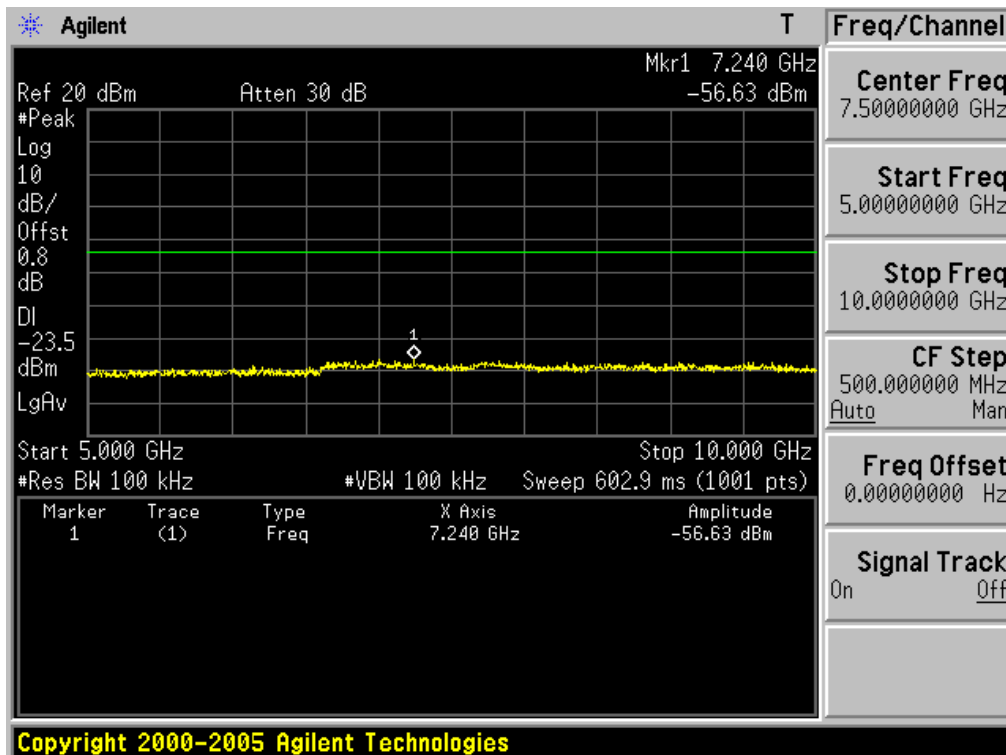
Test Mode: 802.11g & Lowest Frequency

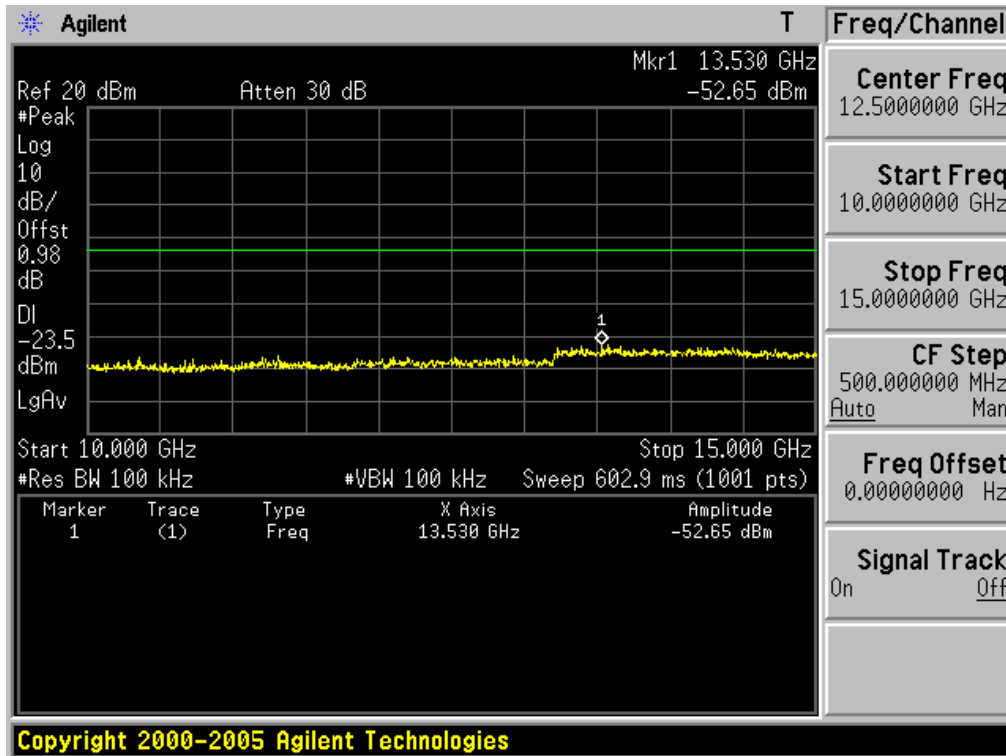
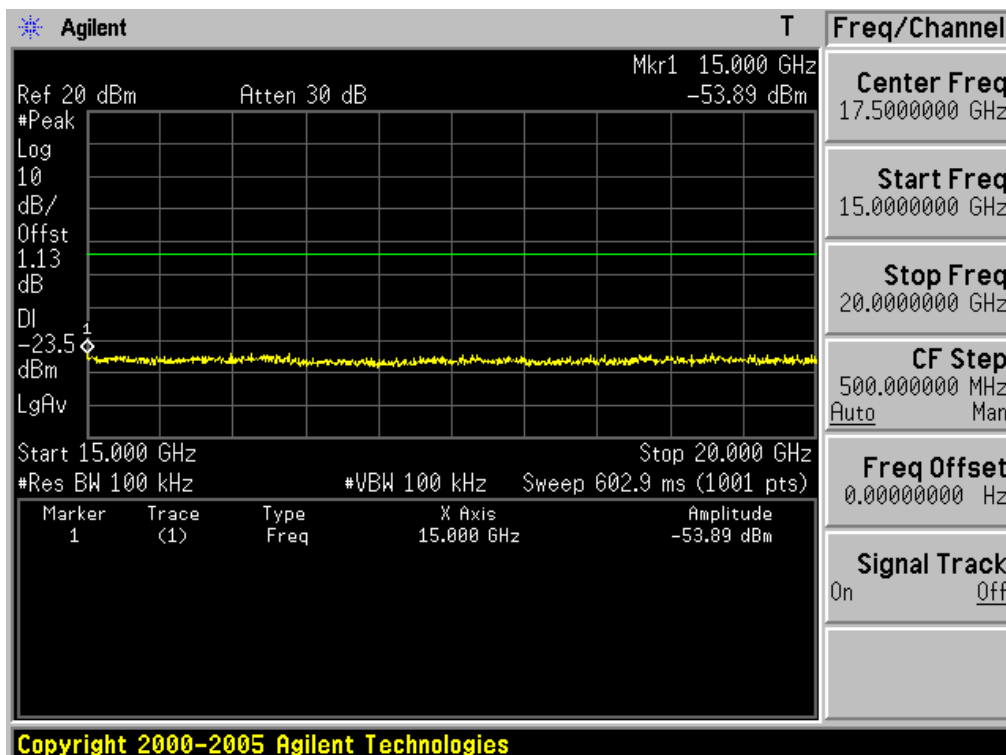


Reference for limit

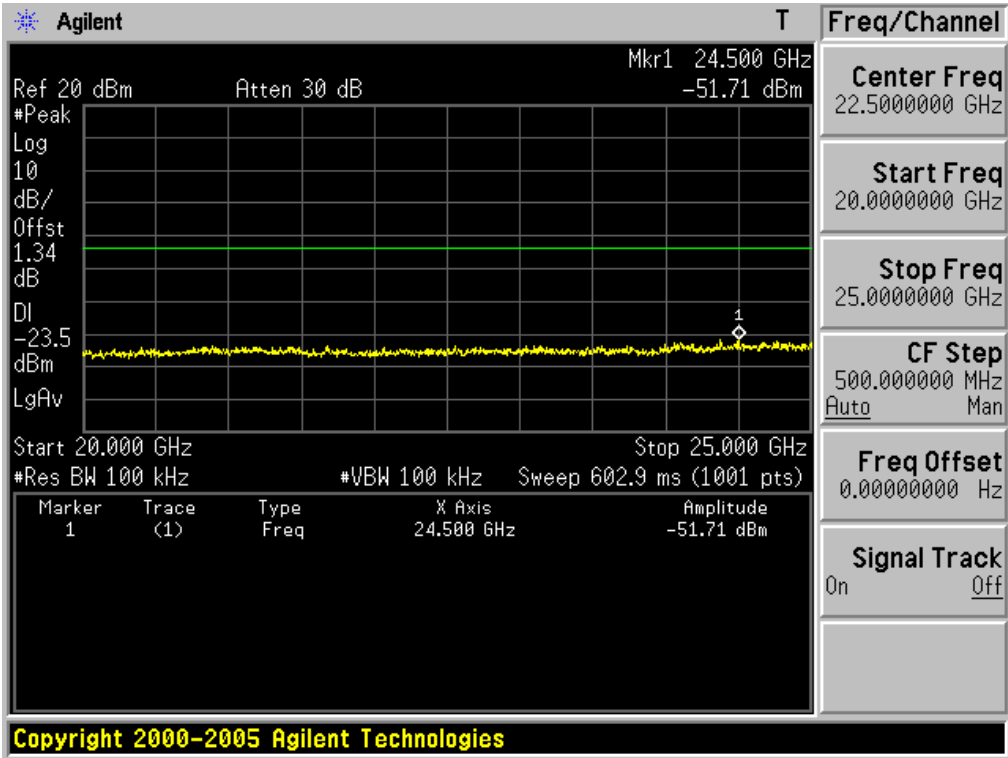
Test Mode: 802.11g & Middle Frequency



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

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


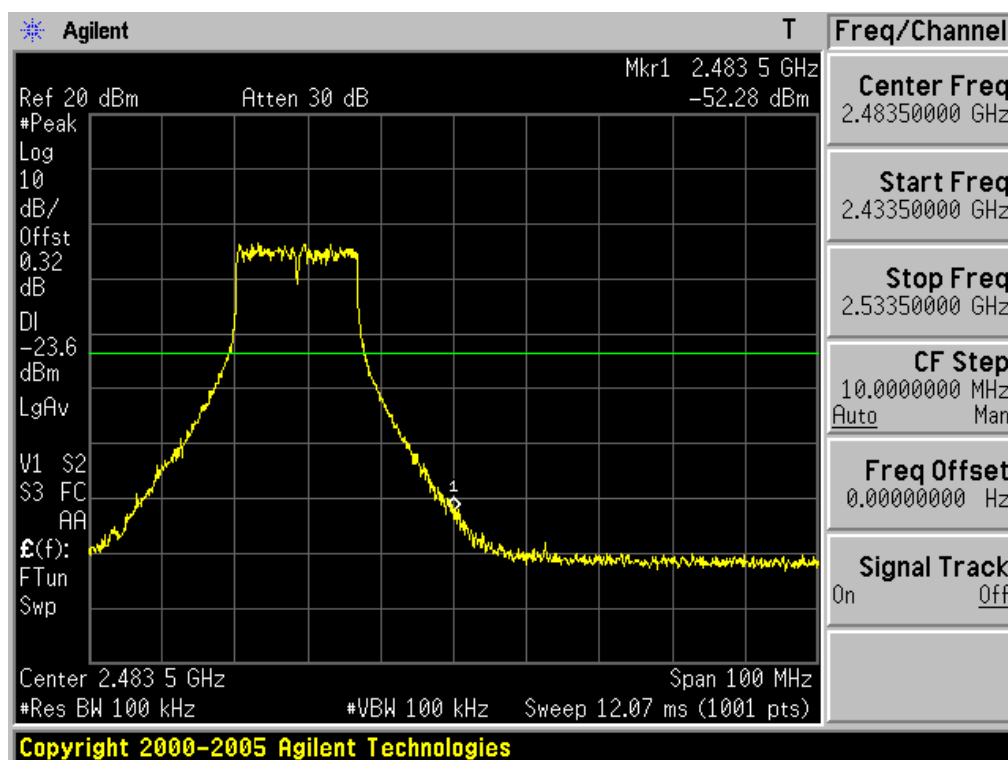
10GHz ~ 15GHz Conducted Spurious Emissions Test Mode: 802.11g & Middle Frequency

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


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

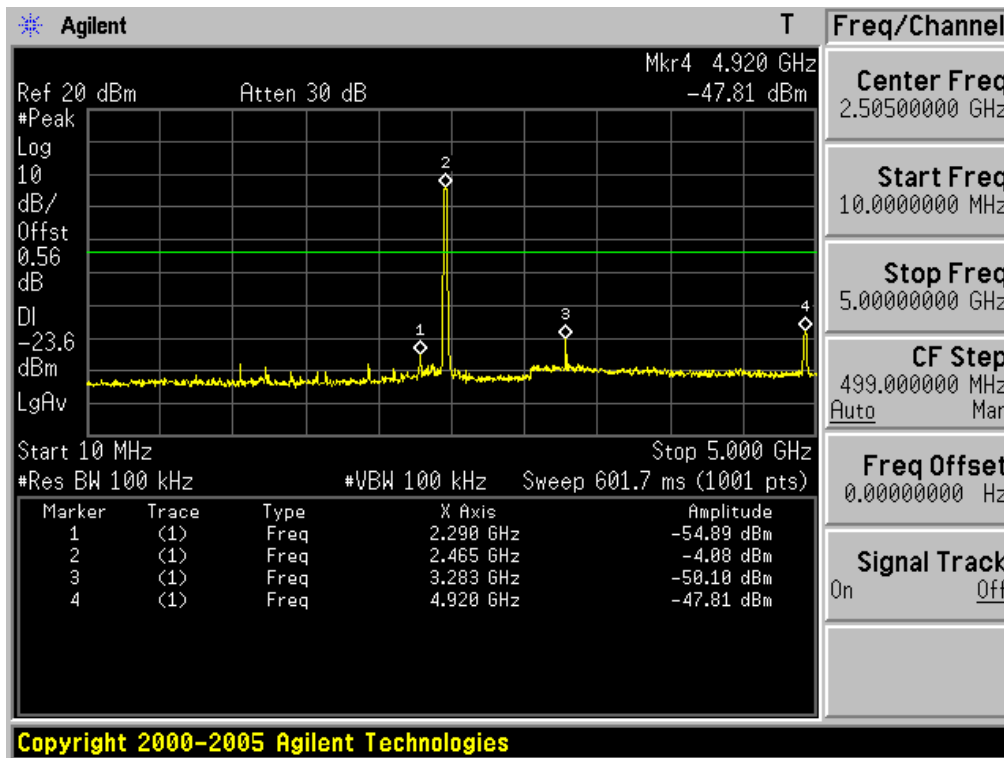


High Band-edge at 20 dB blow

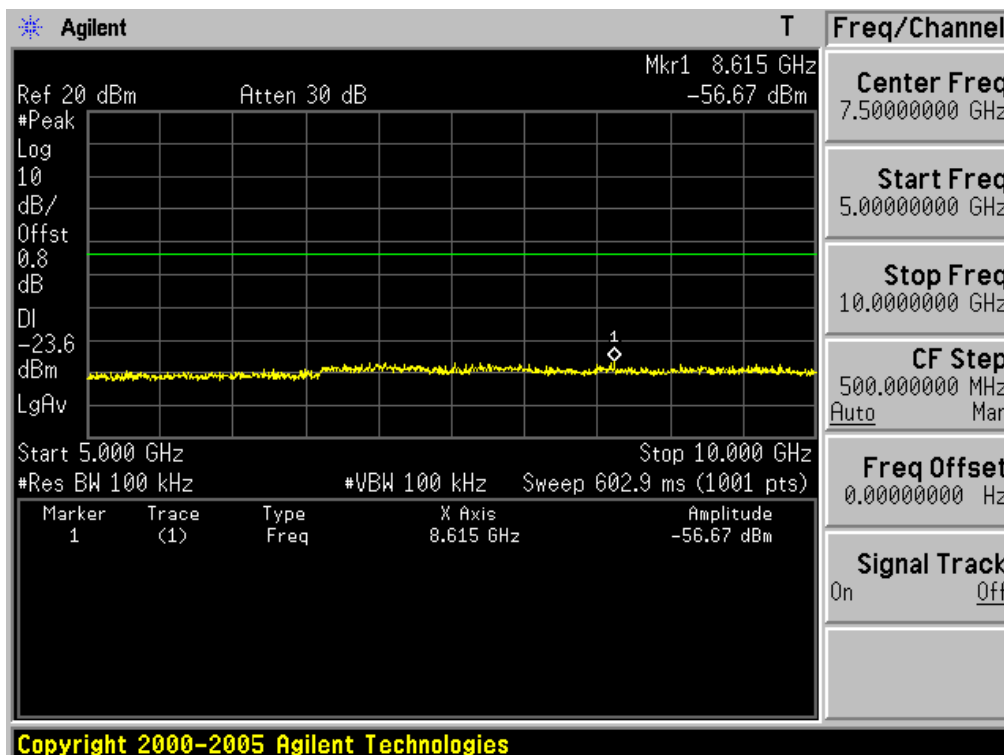
Test Mode: 802.11g & Highest Frequency



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

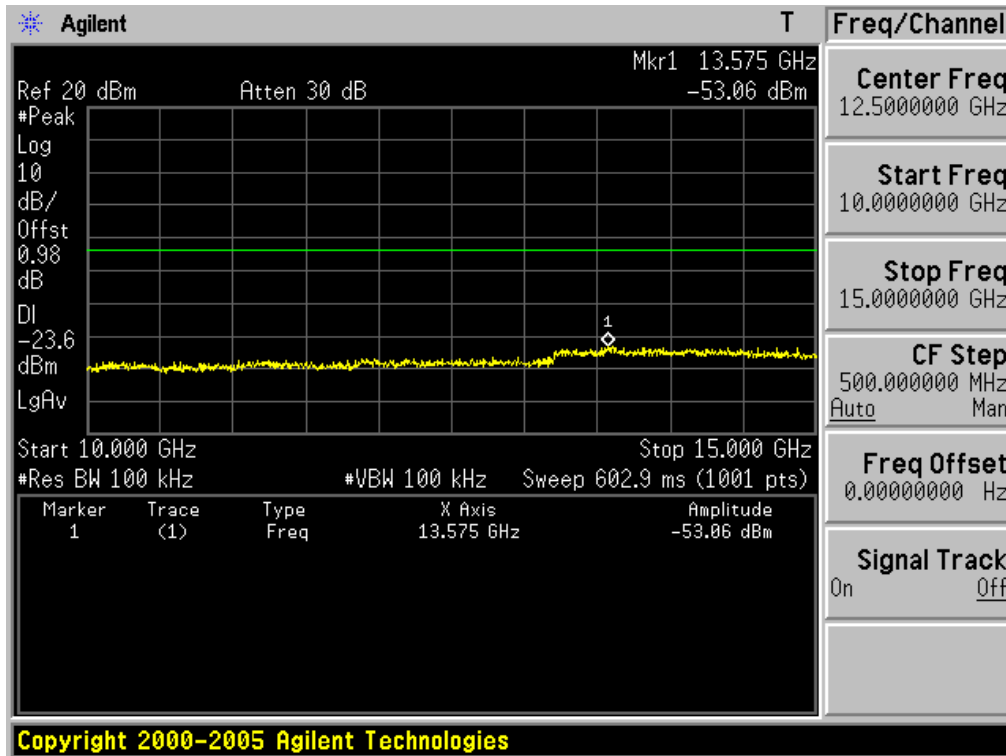


5GHz ~ 10GHz Conducted Spurious Emissions Test Mode: 802.11g & Highest Frequency

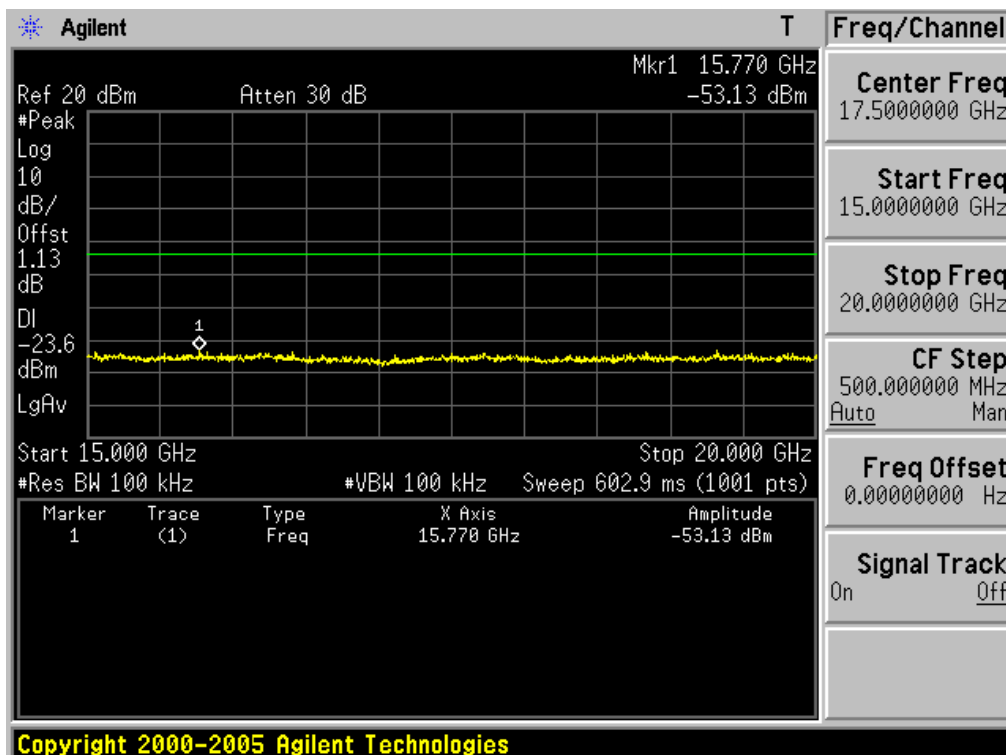


10GHz ~ 15GHz Conducted Spurious Emissions

Test Mode: 802.11g & Highest Frequency

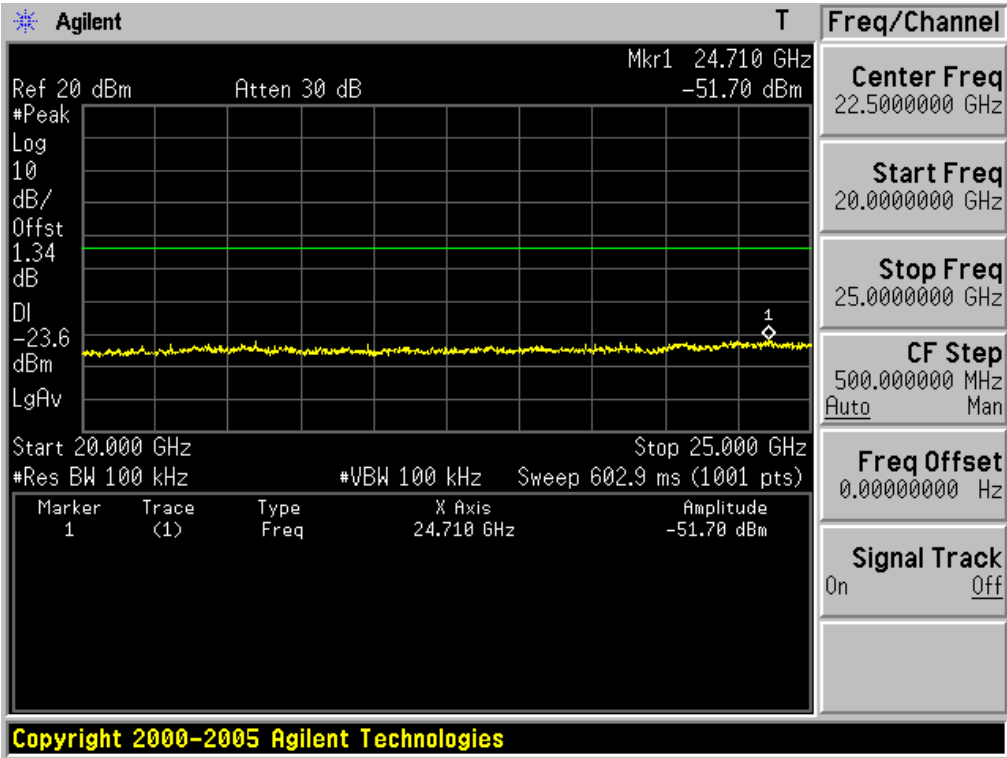
**15GHz ~ 20GHz Conducted Spurious Emissions**

Test Mode: 802.11g & Highest Frequency



20GHz ~ 25GHz Conducted Spurious Emissions

Test Mode: 802.11g & Highest Frequency



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:

Tested frequency = Low, Middle, High Frequencies

Frequency Range = 30 MHz ~ 10th harmonic.

RBW and VBW = 1. Frequency range: 30 MHz ~ 1G Hz

RBW = 120 KHz / VBW = $\geq$ RBW

2. Frequency range: 1GHz ~ 10th harmonics

Peak mode: RBW = 1 MHz / VBW = $\geq$ RBW

Average mode: RBW = 1 MHz / VBW = 10 Hz

Detector function = Peak

Sweep = auto

Trace = max hold

- Measurement Data: **Comply**

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

- Minimum Standard:

• FCC Part 15.209(a) and (b)

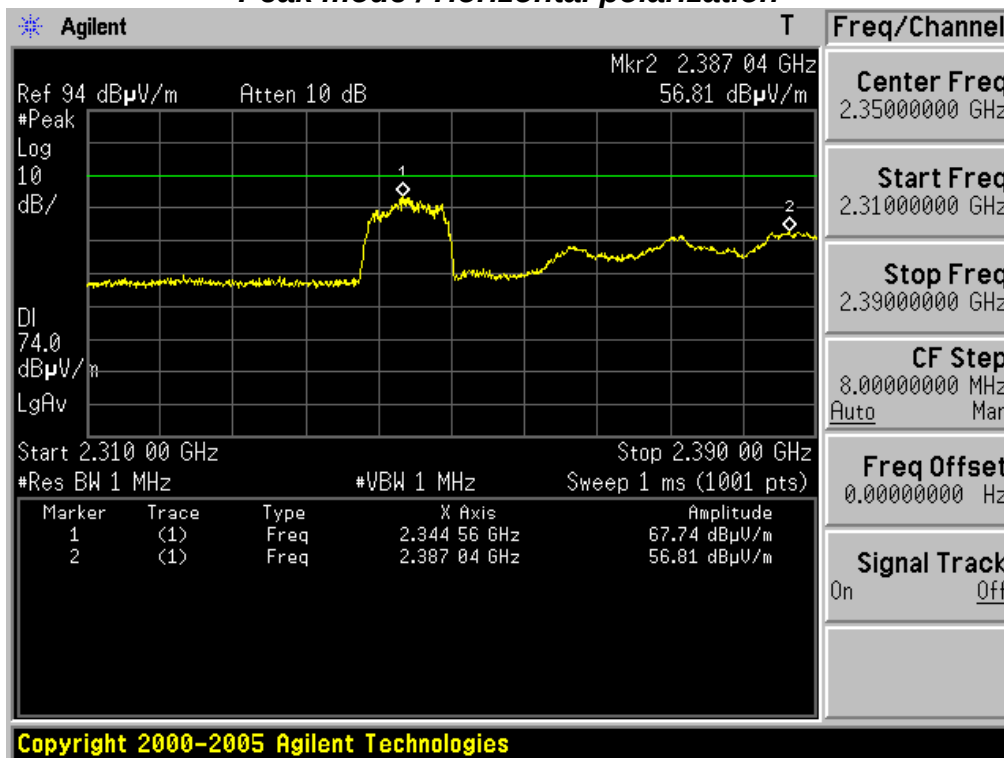
Frequency (MHz)	Limit (uV/m) @ 3m
30 ~ 88	100 **
88 ~ 216	150 **
216 ~ 960	200 **
Above 960	500

** 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.

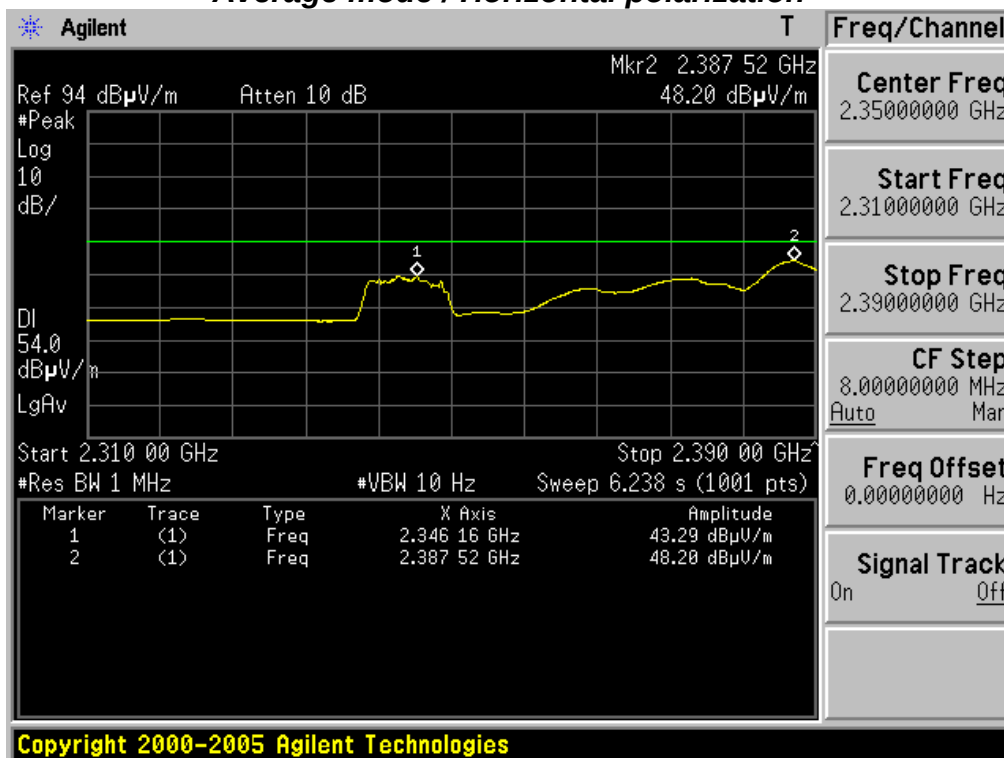
• FCC Part 15.205 (a): Only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	MHz	GHz	GHz
0.009 ~ 0.110	8.41425 ~ 8.41475	108 ~ 121.94	1300 ~ 1427	3600 ~ 4400	14.47 ~ 14.5
0.495 ~ 0.505	12.29 ~ 12.293	123 ~ 138	1435 ~ 1626.5	4.5 ~ 5.15	15.35 ~ 16.2
2.1735 ~ 2.1905	12.51975 ~	149.9 ~ 150.05	1645.5 ~ 1646.5	5.35 ~ 5.46	17.7 ~ 21.4
4.125 ~ 4.128	12.52025	156.52475 ~	1660 ~ 1710	7.25 ~ 7.75	22.01 ~ 23.12
4.17725 ~ 4.17775	12.57675 ~	156.52525	1718.8 ~ 1722.2	8.025 ~ 8.5	23.6 ~ 24.0
4.20725 ~ 4.20775	12.57725	156.7 ~ 156.9	2200 ~ 2300	9.0 ~ 9.2	31.2 ~ 31.8
6.215 ~ 6.218	13.36 ~ 13.41	162.0125 ~ 167.17	2310 ~ 2390	9.3 ~ 9.5	36.43 ~ 36.5
6.26775 ~ 6.26825	16.42 ~ 16.423	167.72 ~ 173.2	2483.5 ~ 2500	10.6 ~ 12.7	Above 38.6
6.31175 ~ 6.31225	16.69475 ~	240 ~ 285	2655 ~ 2900	13.25 ~ 13.4	
8.291 ~ 8.294	16.69525	322 ~ 335.4	3260 ~ 3267		
8.362 ~ 8.366	16.80425 ~	399.90 ~ 410	3332 ~ 3339		
8.37625 ~ 8.38675	16.80475	608 ~ 614	3345.8 ~ 3358		
	25.5 ~ 25.67	960 ~ 1240			
	37.5 ~ 38.25				
	73 ~ 74.6				
	74.8 ~ 75.2				

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

Restricted Band Edge Test Mode: 802.11b & Lowest Frequency & Test Case 2**Peak mode / Horizontal polarization**

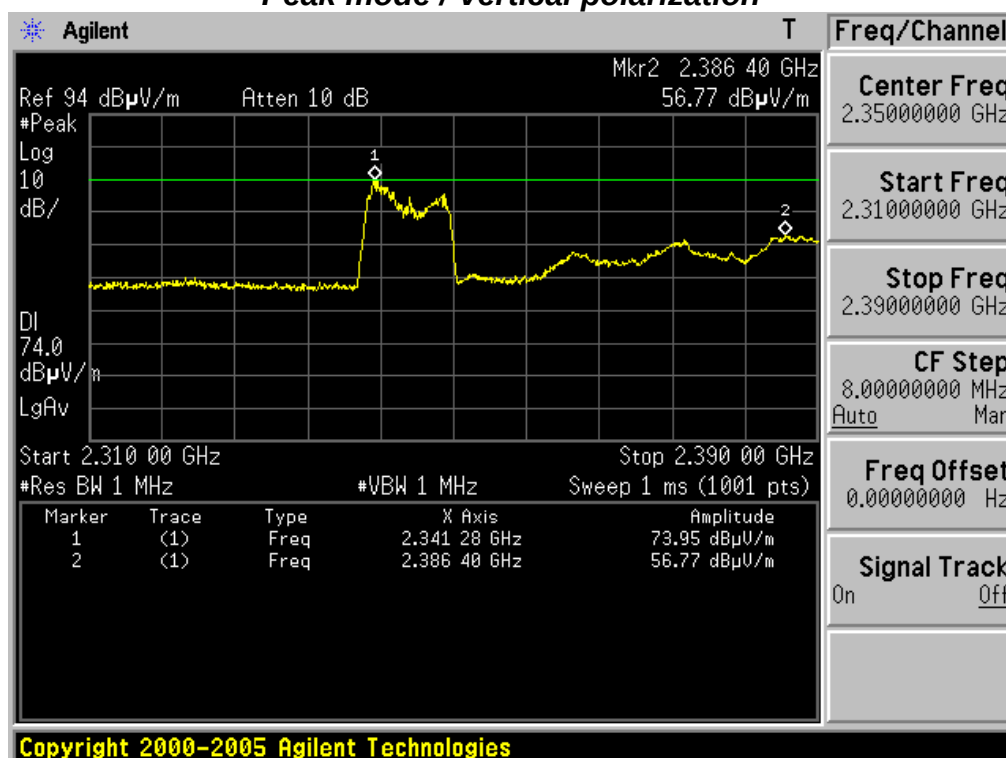
Marker 1's emissions of the low band edge test plots are emissions from WIMAX downlink signal in Korea.

Restricted Band Edge Test Mode: 802.11b & Lowest Frequency & Test Case 2**Average mode / Horizontal polarization**

Marker 1's emissions of the low band edge test plots are emissions from WIMAX downlink signal in Korea.

Restricted Band Edge Test Mode: 802.11b & Lowest Frequency & Test Case 2

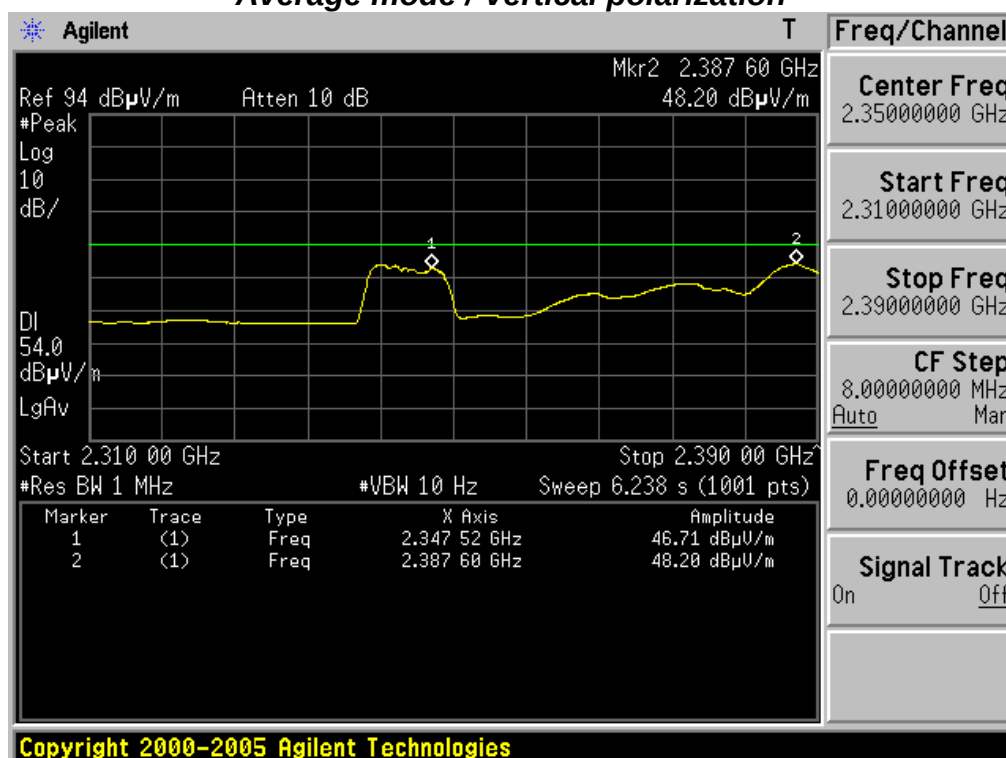
Peak mode / Vertical polarization



Marker 1's emissions of the low band edge test plots are emissions from WIMAX downlink signal in Korea.

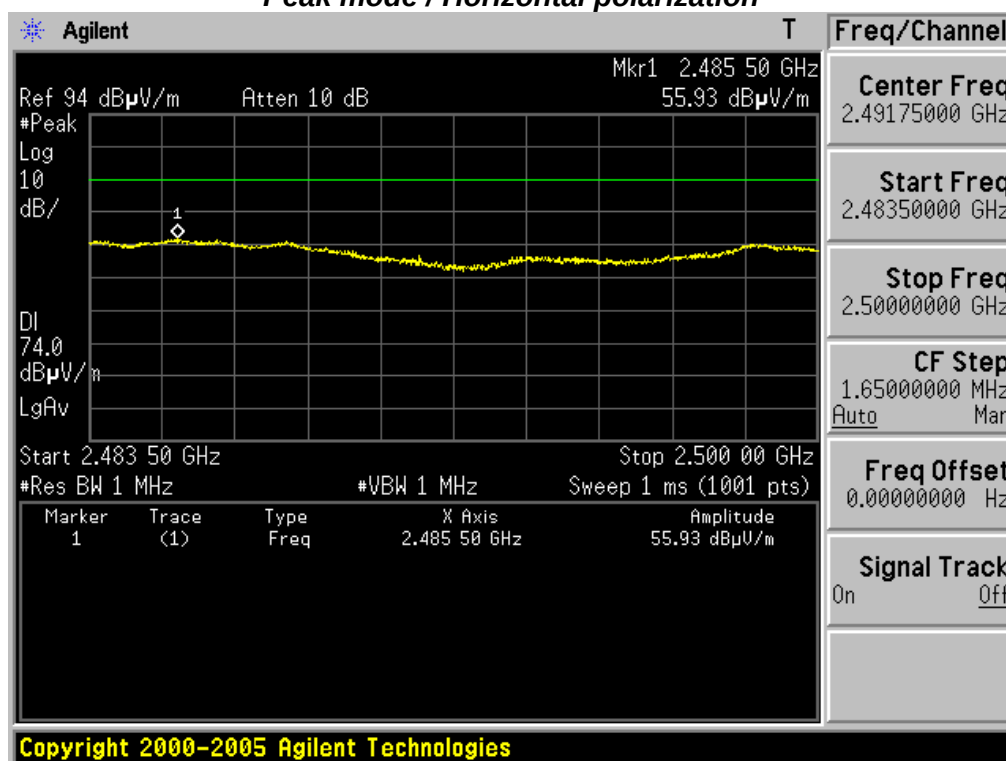
Restricted Band Edge Test Mode: 802.11b & Lowest Frequency & Test Case 2

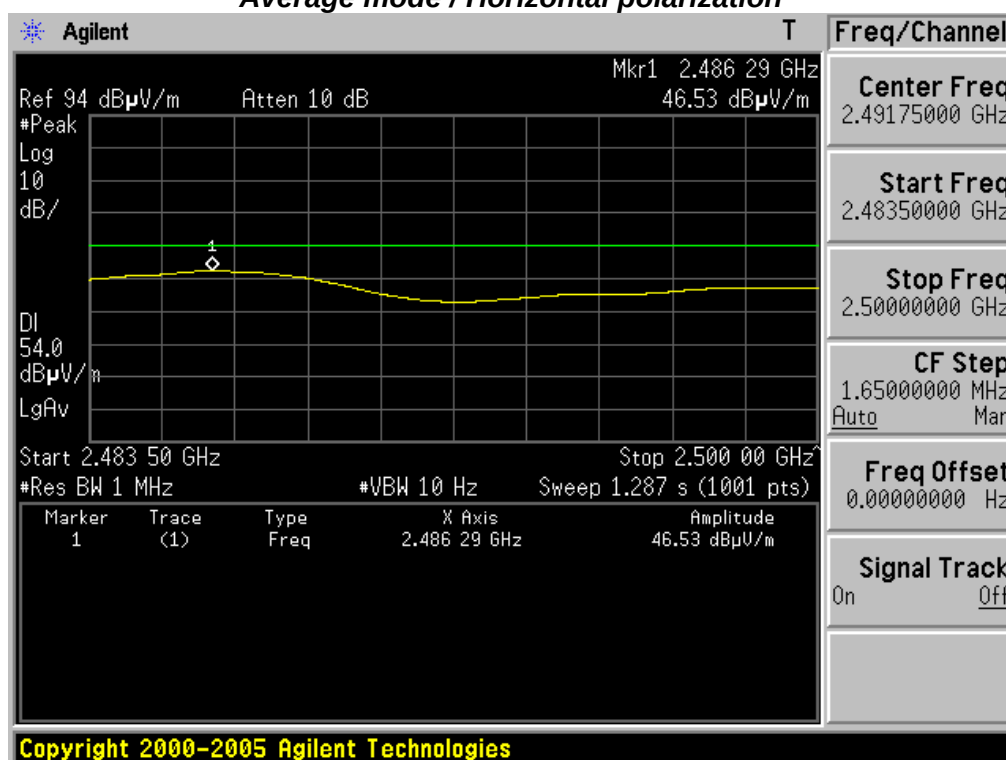
Average mode / Vertical polarization



Marker 1's emissions of the low band edge test plots are emissions from WIMAX downlink signal in Korea.

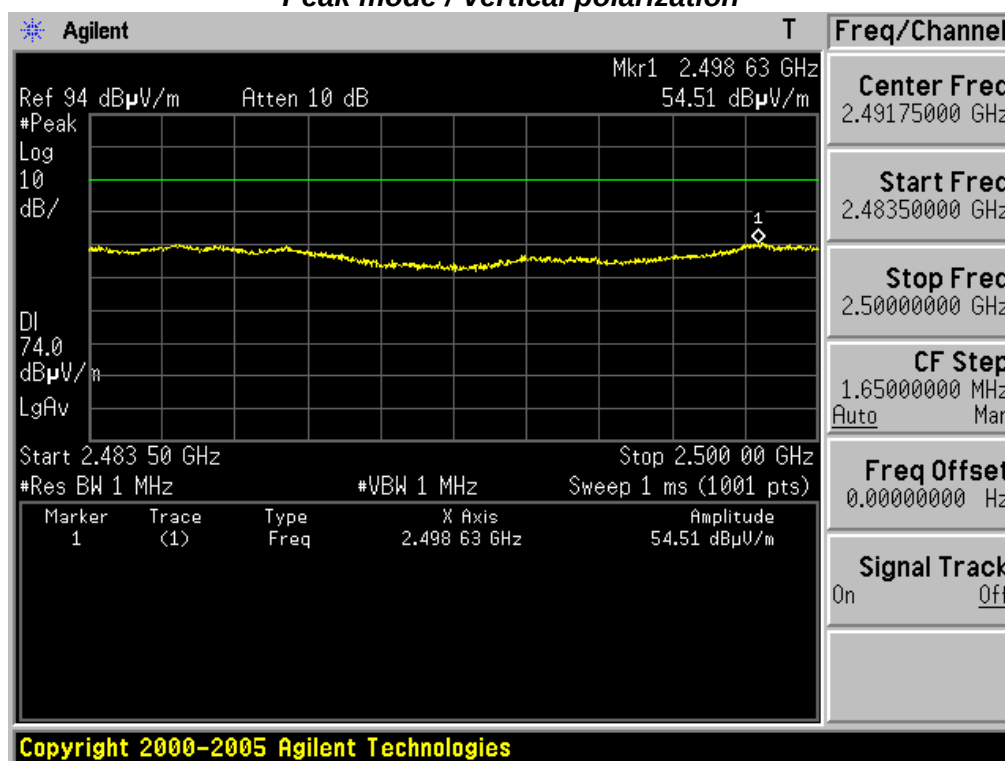
Restricted Band Edge Test Mode: 802.11b & Highest Frequency & Test Case 2

Peak mode / Horizontal polarization

Restricted Band Edge Test Mode: 802.11b & Highest Frequency & Test Case 2

Average mode / Horizontal polarization


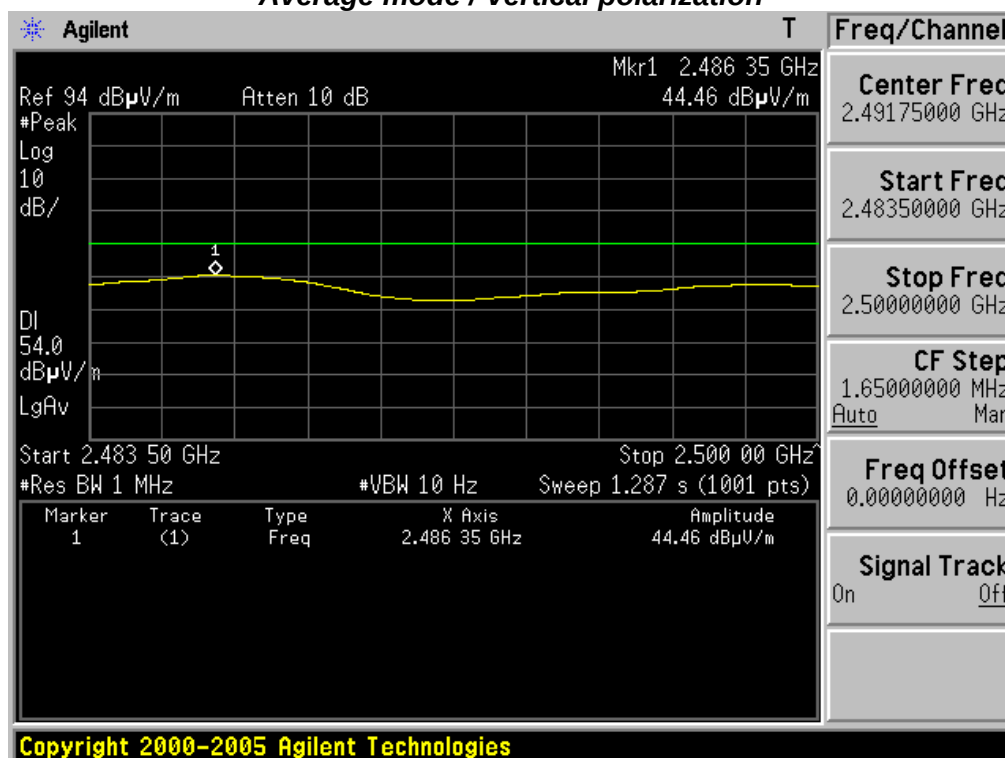
Restricted Band Edge Test Mode: 802.11b & Highest Frequency & Test Case 2

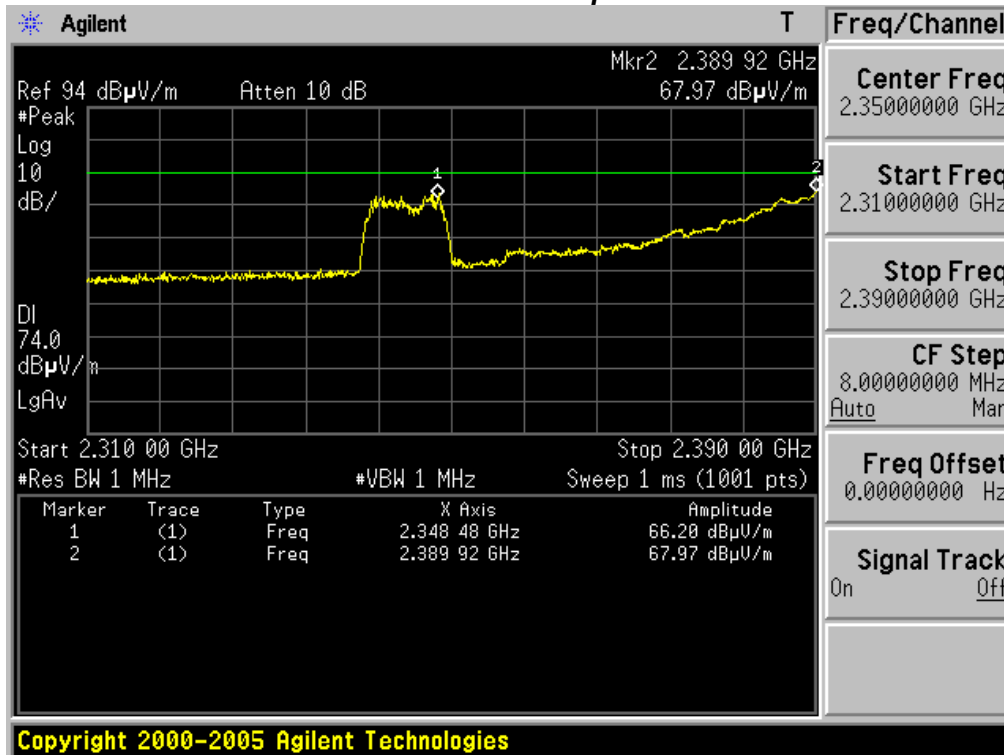
Peak mode / Vertical polarization



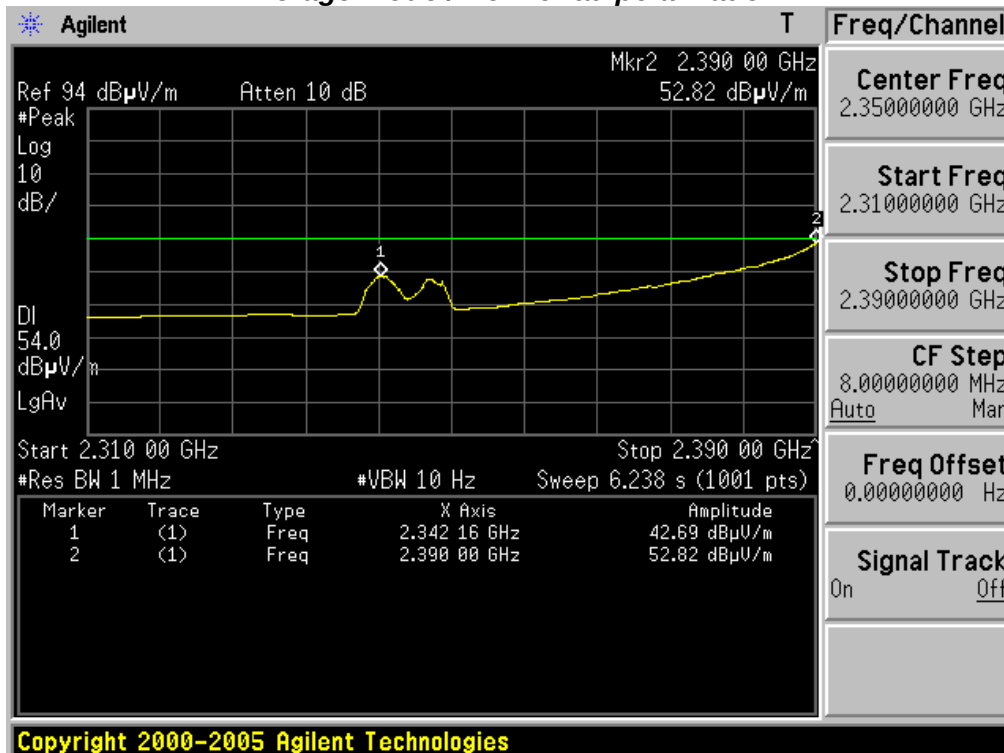
Restricted Band Edge Test Mode: 802.11b & Highest Frequency & Test Case 2

Average mode / Vertical polarization



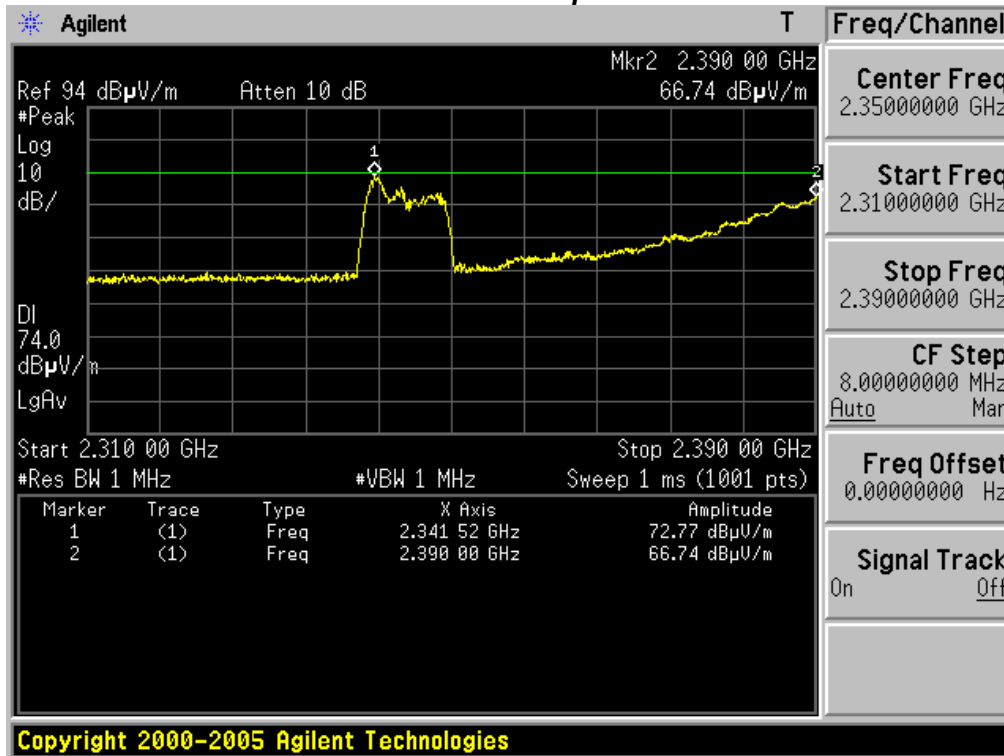
Restricted Band Edge Test Mode: 802.11g & Lowest Frequency & Test Case 2**Peak mode / Horizontal polarization**

Marker 1's emissions of the low band edge test plots are emissions from WIMAX downlink signal in Korea.

Restricted Band Edge Test Mode: 802.11g & Lowest Frequency & Test Case 2**Average mode / Horizontal polarization**

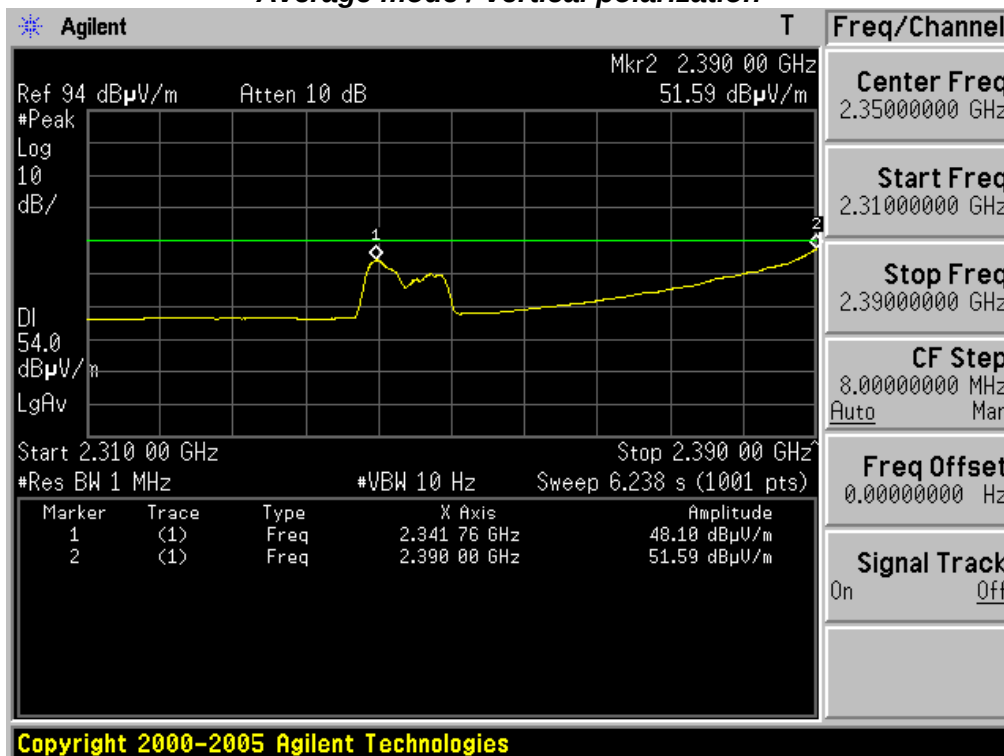
Marker 1's emissions of the low band edge test plots are emissions from WIMAX downlink signal in Korea.

Restricted Band Edge Test Mode: 802.11g & Lowest Frequency & Test Case 2

Peak mode / Vertical polarization


Marker 1's emissions of the low band edge test plots are emissions from WIMAX downlink signal in Korea.

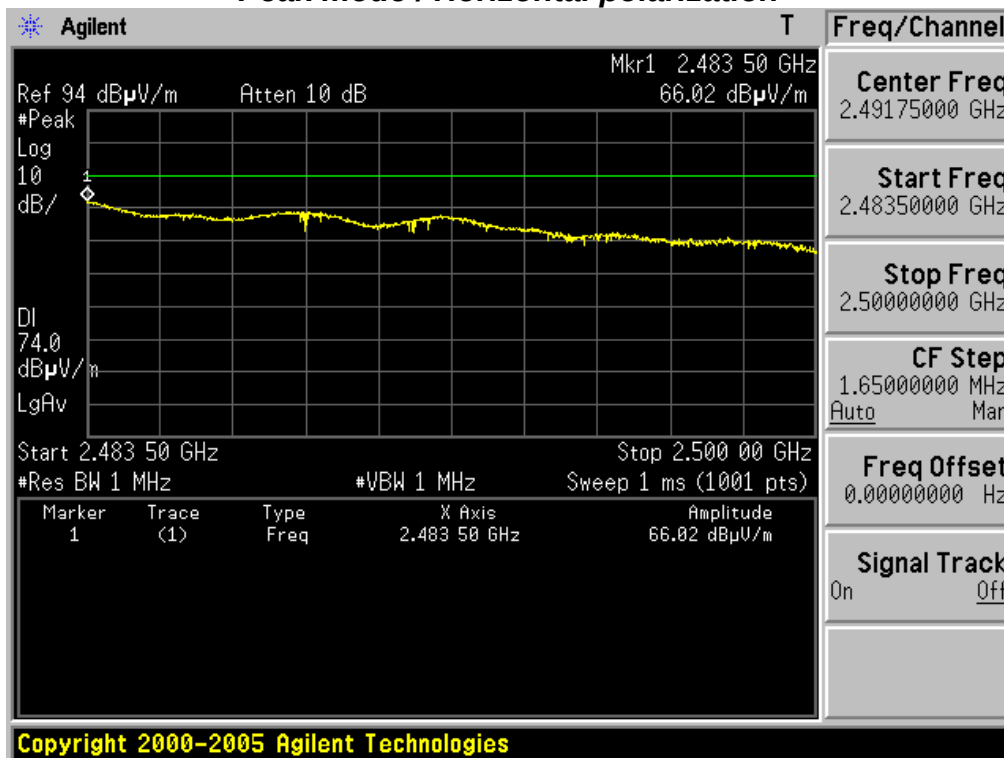
Restricted Band Edge Test Mode: 802.11g & Lowest Frequency & Test Case 2

Average mode / Vertical polarization


Marker 1's emissions of the low band edge test plots are emissions from WIMAX downlink signal in Korea.

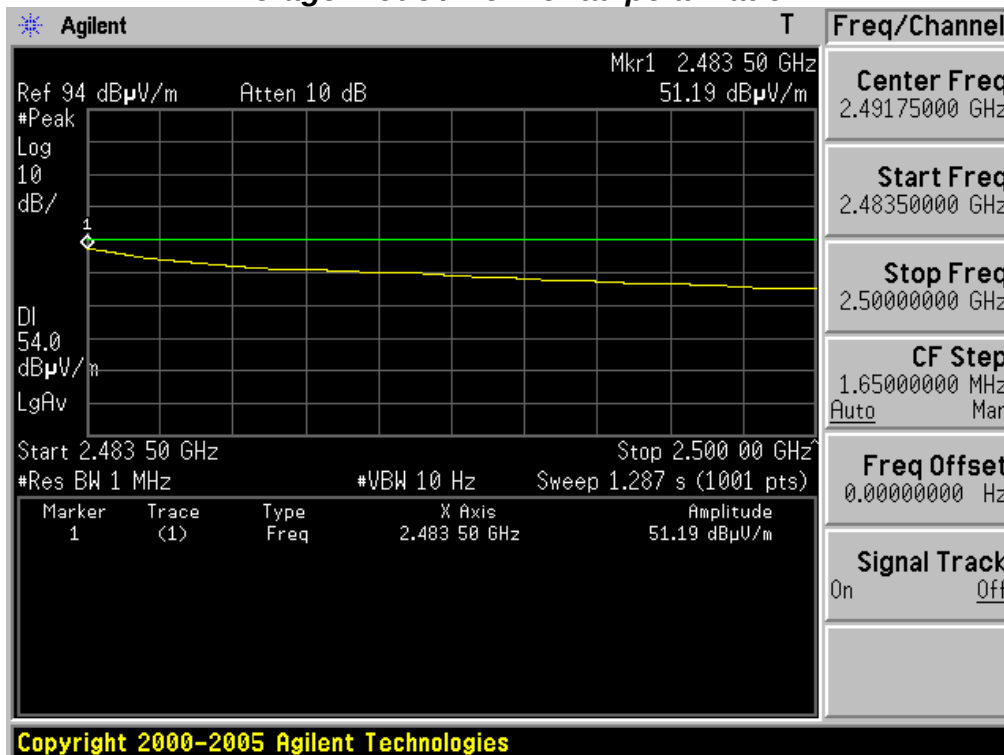
Restricted Band Edge Test Mode: 802.11g & Highest Frequency & Test Case 2

Peak mode / Horizontal polarization



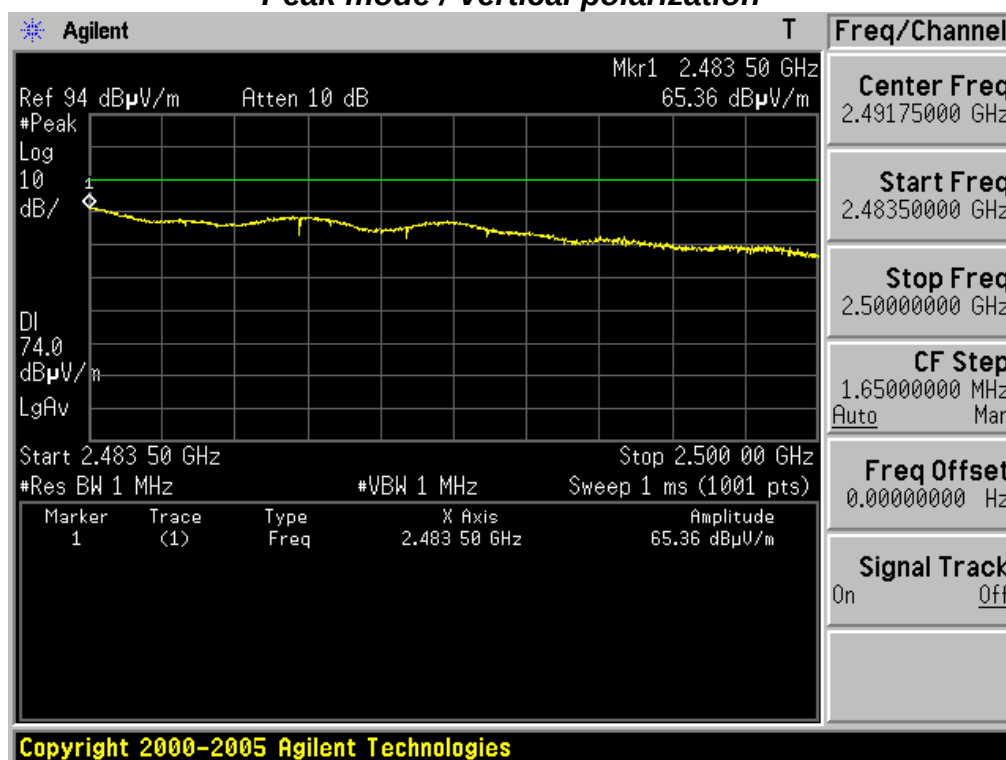
Restricted Band Edge Test Mode: 802.11g & Highest Frequency & Test Case 2

Average mode / Horizontal polarization



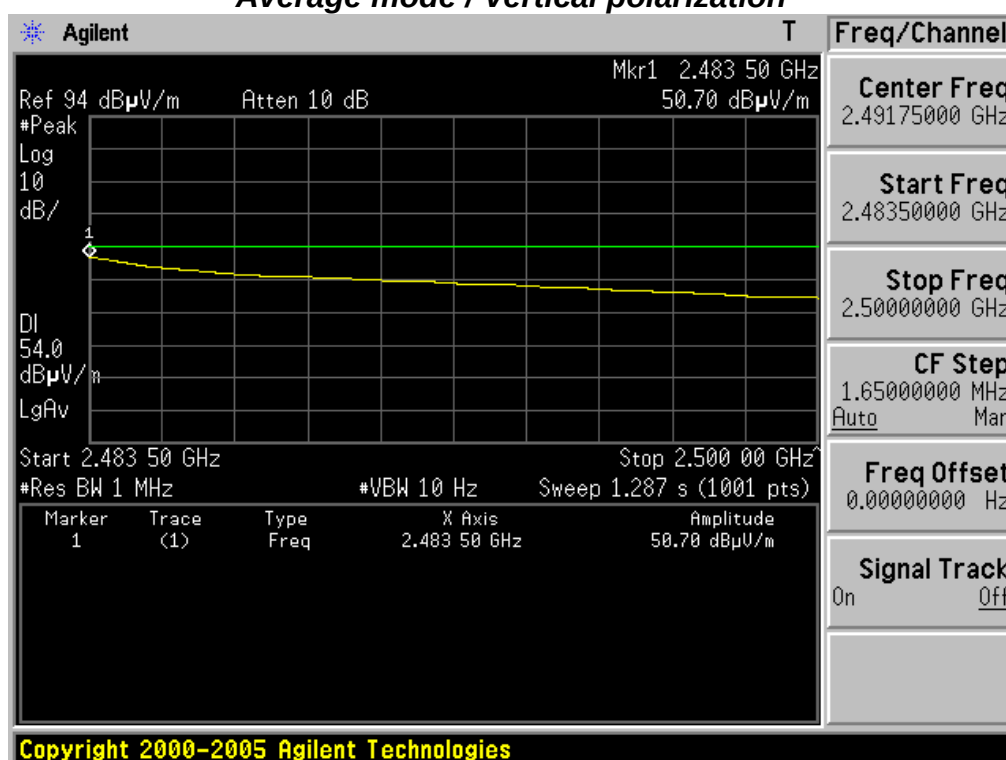
Restricted Band Edge Test Mode: 802.11g & Highest Frequency & Test Case 2

Peak mode / Vertical polarization



Restricted Band Edge Test Mode: 802.11g & Highest Frequency & Test Case 2

Average mode / Vertical polarization



30MHz ~ 1GHz Radiated Spurious Emissions

Test Mode: 802.11b & Lowest Frequency & Test Case 1



RADIATED EMISSION

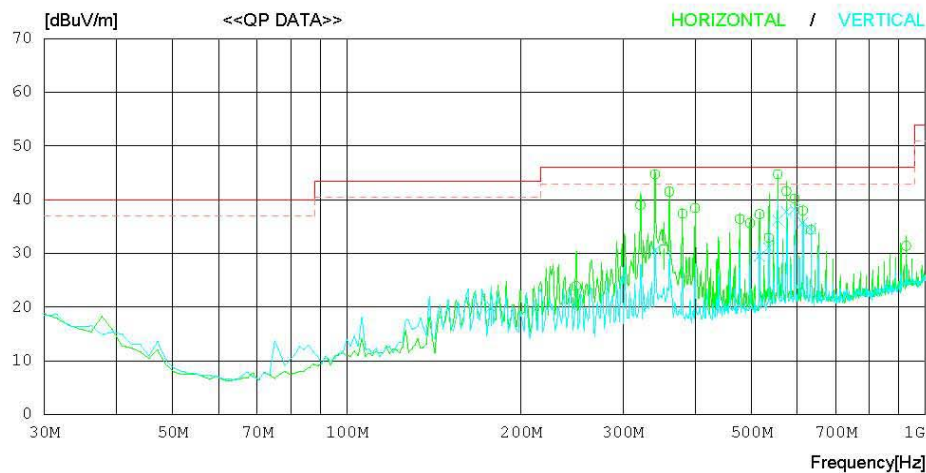
Date : 2010-07-28

Model Name : D3-POS
Model No. : #1
Serial No. : Identical prototype
Test Condition : 2412 MHz (802.11b)

Reference No. :
Power Supply : DC 7.4 V
Temp/Humi : 23 °C 33 % R.H.
Operator : D.C.CHA

Memo : Test Case 1

LIMIT : FCC Part15 Subpart.B Class B (3m)
MARGIN: 3 dB



NO.	FREQ [MHz]	READING QP [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal -----										
1	249.054	32.3	13.3	1.8	23.5	23.9	46.0	22.1	110	147
2	321.714	46.4	14.4	2.1	23.9	39.0	46.0	7.0	100	258
3	341.233	51.7	14.8	2.2	24.0	44.7	46.0	1.3	104	321
4	353.060	37.7	15.0	2.2	24.1	30.8	46.0	15.2	100	156
5	360.740	48.2	15.2	2.2	24.1	41.5	46.0	4.5	100	297
6	380.231	43.7	15.6	2.3	24.2	37.4	46.0	8.6	100	247
7	399.726	44.6	16.0	2.3	24.4	38.5	46.0	7.5	102	99
8	477.739	41.0	17.3	2.6	24.5	36.4	46.0	9.6	180	290
9	497.225	40.0	17.6	2.6	24.5	35.7	46.0	10.3	170	130
10	516.737	41.2	17.9	2.7	24.5	37.3	46.0	8.7	185	124
11	536.216	36.6	18.1	2.7	24.5	32.9	46.0	13.1	105	344
12	555.727	48.0	18.3	2.8	24.4	44.7	46.0	1.3	164	277
13	575.231	44.6	18.5	2.9	24.4	41.6	46.0	4.4	157	313
14	594.718	43.0	18.7	2.9	24.4	40.2	46.0	5.8	148	310
15	614.221	40.5	18.8	3.0	24.3	38.0	46.0	8.0	144	300
16	633.725	36.9	18.8	3.0	24.3	34.4	46.0	11.6	120	210
17	926.212	30.0	20.8	3.7	23.1	31.4	46.0	14.6	110	258
----- Vertical -----										
18	177.911	31.4	10.2	1.6	23.2	20.0	43.5	23.5	100	168
19	341.225	37.6	14.8	2.2	24.0	30.6	46.0	15.4	103	85
20	516.376	33.4	17.9	2.7	24.5	29.5	46.0	16.5	100	210
21	536.220	34.7	18.1	2.7	24.5	31.0	46.0	15.0	102	320
22	555.701	39.5	18.3	2.8	24.4	36.2	46.0	9.8	135	174
23	575.624	40.8	18.5	2.9	24.4	37.8	46.0	8.2	116	96
24	594.734	41.0	18.7	2.9	24.4	38.2	46.0	7.8	100	140
25	614.189	38.2	18.8	3.0	24.3	35.7	46.0	10.3	100	341
26	633.725	37.1	18.8	3.0	24.3	34.6	46.0	11.4	102	110

30MHz ~ 1GHz Radiated Spurious Emissions

Test Mode: 802.11b & Middle Frequency & Test Case 1



RADIATED EMISSION

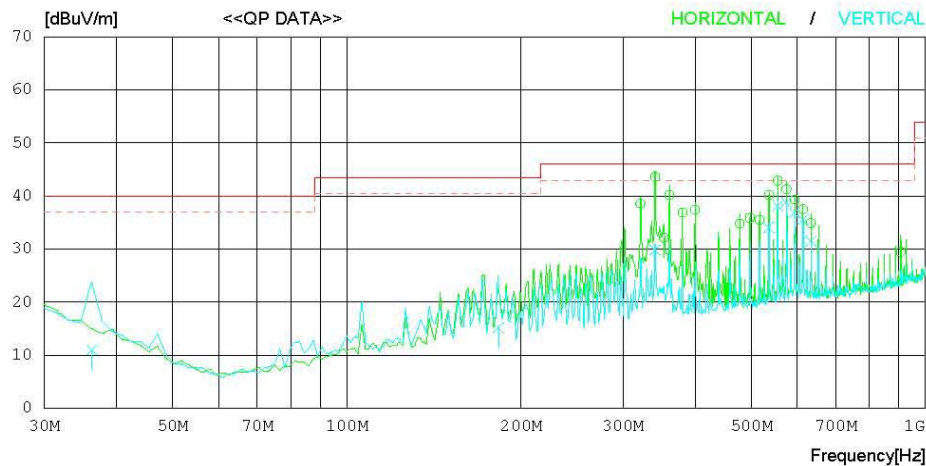
Date : 2010-07-28

Model Name : D3-POS
Model No. : #1
Serial No. : Identical prototype
Test Condition : 2437 MHz (802.11b)

Reference No. :
Power Supply : DC 7.4 V
Temp/Humi : 23 °C 33 % R.H.
Operator : D.C.CHA

Memo : Test Case 1

LIMIT : FCC Part15 Subpart.B Class B (3m)
MARGIN: 3 dB



NO.	FREQ [MHz]	READING QP [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal -----										
1	321.698	46.0	14.4	2.1	23.9	38.6	46.0	7.4	100	123
2	341.225	50.6	14.8	2.2	24.0	43.6	46.0	2.4	100	245
3	353.200	39.0	15.0	2.2	24.1	32.1	46.0	13.9	101	89
4	360.744	46.9	15.2	2.2	24.1	40.2	46.0	5.8	105	245
5	380.239	43.2	15.6	2.3	24.2	36.9	46.0	9.1	100	110
6	399.750	43.5	16.0	2.3	24.4	37.4	46.0	8.6	102	320
7	477.738	39.4	17.3	2.6	24.5	34.8	46.0	11.2	168	322
8	497.257	40.2	17.6	2.6	24.5	35.9	46.0	10.1	116	169
9	516.713	39.4	17.9	2.7	24.5	35.5	46.0	10.5	142	185
10	536.224	43.9	18.1	2.7	24.5	40.2	46.0	5.8	142	171
11	555.735	46.2	18.3	2.8	24.4	42.9	46.0	3.1	135	358
12	575.231	44.3	18.5	2.9	24.4	41.3	46.0	4.7	114	319
13	594.750	42.1	18.7	2.9	24.4	39.3	46.0	6.7	165	244
14	614.213	40.0	18.8	3.0	24.3	37.5	46.0	8.5	133	325
15	633.741	37.4	18.8	3.0	24.3	34.9	46.0	11.1	144	214
16	906.709	28.6	20.5	3.6	23.2	29.5	46.0	16.5	102	303
----- Vertical -----										
17	36.266	17.5	15.3	0.8	22.6	11.0	40.0	29.0	102	100
18	182.916	26.5	10.3	1.6	23.2	15.2	43.5	28.3	100	180
19	341.241	36.8	14.8	2.2	24.0	29.8	46.0	16.2	140	245
20	536.224	37.8	18.1	2.7	24.5	34.1	46.0	11.9	148	309
21	555.711	41.4	18.3	2.8	24.4	38.1	46.0	7.9	140	269
22	575.191	41.8	18.5	2.9	24.4	38.8	46.0	7.2	136	96
23	594.742	39.6	18.7	2.9	24.4	36.8	46.0	9.2	102	22
24	614.259	38.1	18.8	3.0	24.3	35.6	46.0	10.4	100	91
25	633.749	34.0	18.8	3.0	24.3	31.5	46.0	14.5	101	120

30MHz ~ 1GHz Radiated Spurious Emissions

Test Mode: 802.11b & Highest Frequency & Test Case 1



RADIATED EMISSION

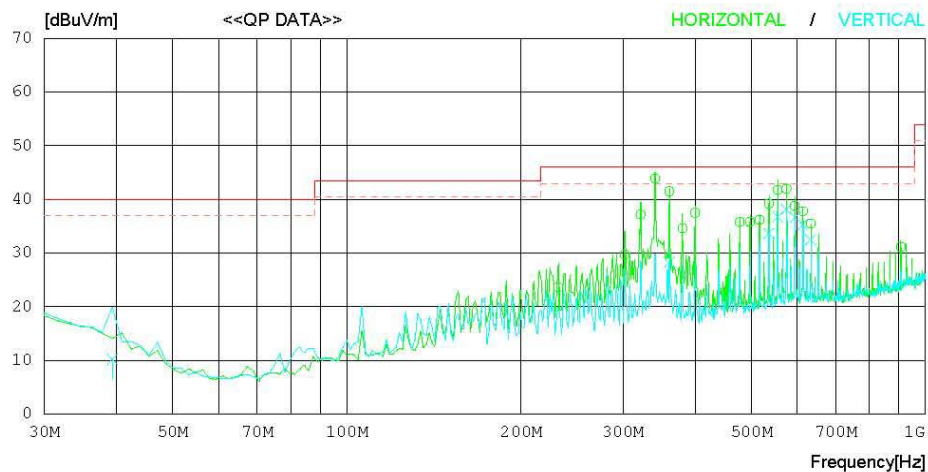
Date : 2010-07-28

Model Name : D3-POS
Model No. : #1
Serial No. : Identical prototype
Test Condition : 2462 MHz (802.11b)

Reference No. :
Power Supply : DC 7.4 V
Temp/Humi : 23 'C 33 % R.H.
Operator : D.C.CHA

Memo : Test Case 1

LIMIT : FCC Part15 Subpart.B Class B (3m)
MARGIN: 3 dB



No.	FREQ [MHz]	READING QP [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal -----										
1	232.084	32.9	12.4	1.8	23.5	23.6	46.0	22.4	100	100
2	302.283	37.4	14.0	2.0	23.7	29.7	46.0	16.3	101	269
3	321.754	44.6	14.4	2.1	23.9	37.2	46.0	8.8	105	113
4	341.233	50.9	14.8	2.2	24.0	43.9	46.0	2.1	101	119
5	360.720	48.2	15.2	2.2	24.1	41.5	46.0	4.5	101	282
6	380.215	40.9	15.6	2.3	24.2	34.6	46.0	11.4	101	259
7	399.742	43.6	16.0	2.3	24.4	37.5	46.0	8.5	101	110
8	477.739	40.4	17.3	2.6	24.5	35.8	46.0	10.2	134	150
9	497.217	40.1	17.6	2.6	24.5	35.8	46.0	10.2	144	169
10	516.745	40.1	17.9	2.7	24.5	36.2	46.0	9.8	165	240
11	536.216	42.9	18.1	2.7	24.5	39.2	46.0	6.8	142	110
12	555.719	45.1	18.3	2.8	24.4	41.8	46.0	4.2	130	325
13	575.207	45.0	18.5	2.9	24.4	42.0	46.0	4.0	116	99
14	594.702	41.6	18.7	2.9	24.4	38.8	46.0	7.2	120	116
15	614.254	40.3	18.8	3.0	24.3	37.8	46.0	8.2	156	358
16	633.701	38.0	18.8	3.0	24.3	35.5	46.0	10.5	130	358
17	906.741	30.2	20.5	3.6	23.2	31.1	46.0	14.9	102	210
----- Vertical -----										
18	39.320	18.1	13.9	0.8	22.6	10.2	40.0	29.8	100	110
19	360.736	35.0	15.2	2.2	24.1	28.3	46.0	17.7	132	321
20	536.232	37.4	18.1	2.7	24.5	33.7	46.0	12.3	120	214
21	555.703	40.0	18.3	2.8	24.4	36.7	46.0	9.3	133	85
22	575.231	41.2	18.5	2.9	24.4	38.2	46.0	7.8	145	116
23	595.925	39.5	18.7	2.9	24.4	36.7	46.0	9.3	103	187
24	614.229	37.8	18.8	3.0	24.3	35.3	46.0	10.7	100	310
25	633.709	35.0	18.8	3.0	24.3	32.5	46.0	13.5	102	210

30MHz ~ 1GHz Radiated Spurious Emissions

Test Mode: 802.11g & Lowest Frequency & Test Case 1



RADIATED EMISSION

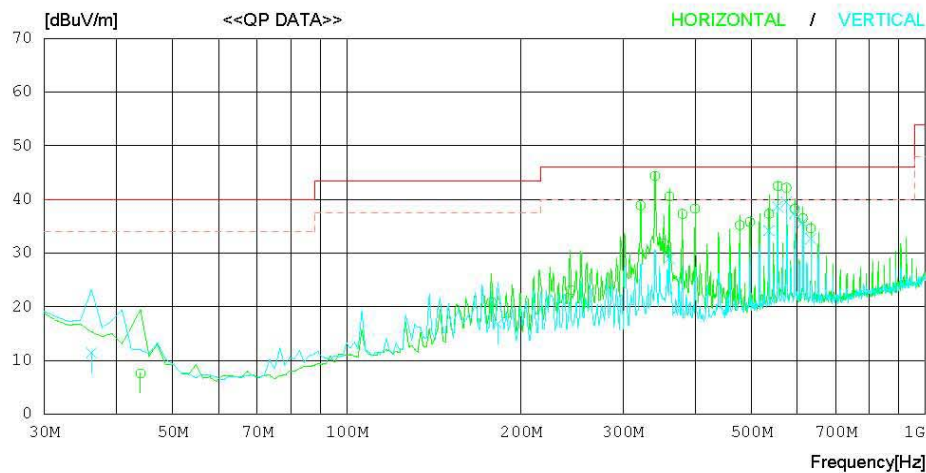
Date : 2010-08-23

Model Name : D3-POS
Model No. : #1
Serial No. : Identical prototype
Test Condition : 2412 MHz (802.11g)

Reference No. :
Power Supply : DC 7.4 V
Temp/Humi : 23 °C 33 %
Operator : D.C.CHA

Memo : Test Case 1

LIMIT : FCC Part15 Subpart.B Class B (3m)
MARGIN: 6 dB



NO.	FREQ	READING	C.FACTOR	RESULT	LIMIT	MARGIN	ANTENNA	TABLE	COMMENT
	[MHz]	[dBuV]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[cm]	[DEG]	
----- Horizontal -----									
1	43.994	18.2	-10.6	7.6	40.0	32.4	100	100	
2	177.677	32.3	-11.4	20.9	43.5	22.6	102	87	
3	243.742	31.8	-8.7	23.1	46.0	22.9	140	110	
4	321.754	46.3	-7.4	38.9	46.0	7.1	102	196	
5	341.233	51.4	-7.0	44.4	46.0	1.6	100	152	
6	353.333	38.7	-6.9	31.8	46.0	14.2	102	316	
7	360.704	47.2	-6.7	40.5	46.0	5.5	105	86	
8	380.239	43.6	-6.3	37.3	46.0	8.7	100	225	
9	399.726	44.4	-6.1	38.3	46.0	7.7	100	300	
10	477.755	39.8	-4.6	35.2	46.0	10.8	211	300	
11	497.209	40.1	-4.3	35.8	46.0	10.2	193	150	
12	536.761	41.0	-3.7	37.3	46.0	8.7	193	325	
13	555.735	45.8	-3.3	42.5	46.0	3.5	184	165	
14	575.247	45.2	-3.0	42.2	46.0	3.8	174	310	
15	594.702	41.0	-2.8	38.2	46.0	7.8	140	136	
16	614.213	39.0	-2.5	36.5	46.0	9.5	165	170	
17	633.749	37.1	-2.5	34.6	46.0	11.4	142	126	
----- Vertical -----									
18	36.217	17.9	-6.5	11.4	40.0	28.6	100	155	
19	182.340	28.1	-11.3	16.8	43.5	26.7	102	261	
20	360.728	35.6	-6.7	28.9	46.0	17.1	120	226	
21	536.208	37.9	-3.7	34.2	46.0	11.8	136	110	
22	555.743	42.0	-3.3	38.7	46.0	7.3	144	155	
23	575.231	42.5	-3.0	39.5	46.0	6.5	145	214	
24	594.710	40.1	-2.8	37.3	46.0	8.7	102	201	
25	614.213	38.2	-2.5	35.7	46.0	10.3	100	310	
26	633.757	35.2	-2.5	32.7	46.0	13.3	105	358	

30MHz ~ 1GHz Radiated Spurious Emissions

Test Mode: 802.11g & Middle Frequency & Test Case 1



RADIATED EMISSION

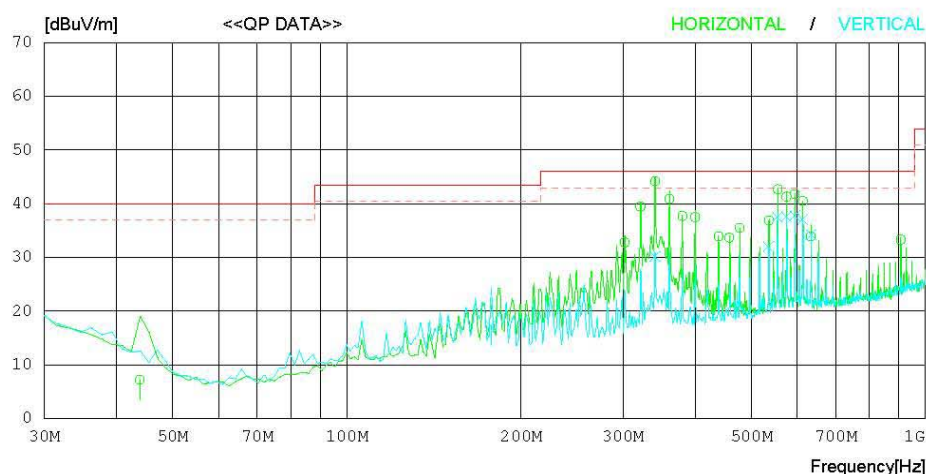
Date : 2010-07-28

Model Name : D3-POS
Model No. : #1
Serial No. : Identical prototype
Test Condition : 2437 MHz (802.11g)

Reference No. :
Power Supply : DC 7.4 V
Temp/Humi : 23 °C 33 % R.H.
Operator : D.C.CHA

Memo : Test Case 1

LIMIT : FCC Part15 Subpart.B Class B (3m)
MARGIN: 3 dB



No.	FREQ [MHz]	READING QP [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal -----										
1	43.890	17.8	11.2	0.8	22.6	7.2	40.0	32.8	102	101
2	302.219	40.5	14.0	2.0	23.7	32.8	46.0	13.2	100	165
3	321.730	46.9	14.4	2.1	23.9	39.5	46.0	6.5	103	197
4	341.241	51.2	14.8	2.2	24.0	44.2	46.0	1.8	100	106
5	360.728	47.6	15.2	2.2	24.1	40.9	46.0	5.1	103	288
6	380.215	44.0	15.6	2.3	24.2	37.7	46.0	8.3	100	298
7	399.718	43.6	16.0	2.3	24.4	37.5	46.0	8.5	105	302
8	438.723	39.1	16.7	2.5	24.4	33.9	46.0	12.1	100	358
9	458.219	38.7	17.0	2.5	24.5	33.7	46.0	12.3	103	358
10	477.699	40.1	17.3	2.6	24.5	35.5	46.0	10.5	100	248
11	536.200	40.6	18.1	2.7	24.5	36.9	46.0	9.1	113	147
12	555.711	46.0	18.3	2.8	24.4	42.7	46.0	3.3	104	321
13	575.215	44.3	18.5	2.9	24.4	41.3	46.0	4.7	103	316
14	594.734	44.6	18.7	2.9	24.4	41.8	46.0	4.2	103	298
15	614.229	43.0	18.8	3.0	24.3	40.5	46.0	5.5	105	110
16	633.701	36.4	18.8	3.0	24.3	33.9	46.0	12.1	102	287
17	906.740	32.4	20.5	3.6	23.2	33.3	46.0	12.7	102	199
----- Vertical -----										
18	177.500	28.7	10.2	1.6	23.2	17.3	43.5	26.2	100	77
19	341.217	37.2	14.8	2.2	24.0	30.2	46.0	15.8	100	110
20	536.216	35.7	18.1	2.7	24.5	32.0	46.0	14.0	103	160
21	555.759	40.8	18.3	2.8	24.4	37.5	46.0	8.5	140	170
22	575.247	40.6	18.5	2.9	24.4	37.6	46.0	8.4	112	236
23	594.734	40.6	18.7	2.9	24.4	37.8	46.0	8.2	100	188
24	614.229	39.6	18.8	3.0	24.3	37.1	46.0	8.9	102	183
25	634.690	36.7	18.8	3.0	24.3	34.2	46.0	11.8	101	200

30MHz ~ 1GHz Radiated Spurious Emissions

Test Mode: 802.11g & Highest Frequency & Test Case 1



RADIATED EMISSION

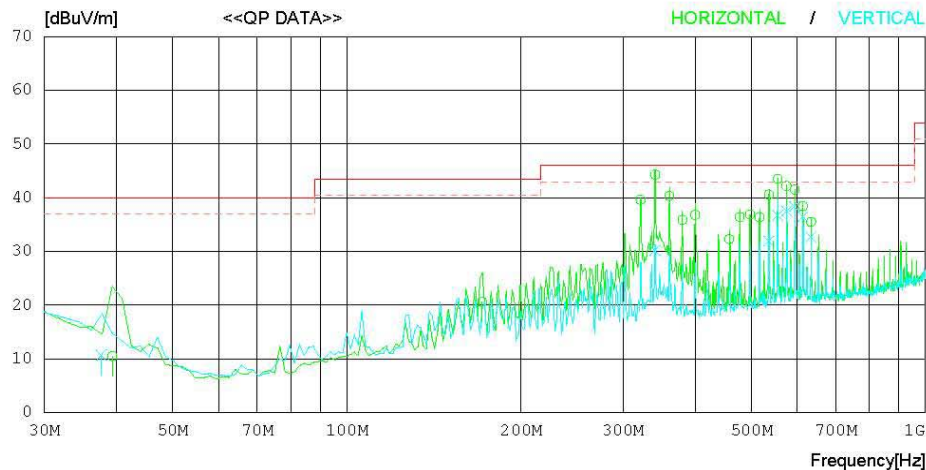
Date : 2010-07-28

Model Name : D3-POS
Model No. : #1
Serial No. : Identical prototype
Test Condition : 2462 MHz (802.11g)

Reference No. :
Power Supply : DC 7.4 V
Temp/Humi : 23 'C 33 % R.H.
Operator : D.C.CHA

Memo : Test Case 1

LIMIT : FCC Part15 Subpart.B Class B (3m)
MARGIN: 3 dB



No.	FREQ [MHz]	READING QP [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal -----										
1	39.330	18.4	13.9	0.8	22.6	10.5	40.0	29.5	102	116
2	171.471	32.0	10.2	1.5	23.1	20.6	43.5	22.9	102	198
3	321.746	47.0	14.4	2.1	23.9	39.6	46.0	6.4	100	165
4	341.217	51.3	14.8	2.2	24.0	44.3	46.0	1.7	100	302
5	360.728	47.0	15.2	2.2	24.1	40.3	46.0	5.7	102	286
6	380.223	42.2	15.6	2.3	24.2	35.9	46.0	10.1	105	258
7	399.726	42.9	16.0	2.3	24.4	36.8	46.0	9.2	100	156
8	458.219	37.3	17.0	2.5	24.5	32.3	46.0	13.7	105	99
9	477.747	41.0	17.3	2.6	24.5	36.4	46.0	9.6	106	187
10	497.241	41.2	17.6	2.6	24.5	36.9	46.0	9.1	109	247
11	516.737	40.3	17.9	2.7	24.5	36.4	46.0	9.6	132	189
12	536.224	44.3	18.1	2.7	24.5	40.6	46.0	5.4	116	169
13	555.711	46.8	18.3	2.8	24.4	43.5	46.0	2.5	105	322
14	575.223	45.2	18.5	2.9	24.4	42.2	46.0	3.8	110	187
15	594.734	44.3	18.7	2.9	24.4	41.5	46.0	4.5	120	98
16	614.237	40.9	18.8	3.0	24.3	38.4	46.0	7.6	114	119
17	634.697	38.0	18.8	3.0	24.3	35.5	46.0	10.5	105	214
----- Vertical -----										
18	37.670	17.9	14.6	0.8	22.6	10.7	40.0	29.3	103	78
19	341.241	37.2	14.8	2.2	24.0	30.2	46.0	15.8	106	165
20	536.240	35.6	18.1	2.7	24.5	31.9	46.0	14.1	102	112
21	555.735	40.0	18.3	2.8	24.4	36.7	46.0	9.3	105	298
22	575.624	40.5	18.5	2.9	24.4	37.5	46.0	8.5	138	164
23	594.710	41.2	18.7	2.9	24.4	38.4	46.0	7.6	140	322
24	614.221	39.0	18.8	3.0	24.3	36.5	46.0	9.5	100	202
25	634.688	35.2	18.8	3.0	24.3	32.7	46.0	13.3	103	214

1GHz ~ 25GHz Radiated Spurious Emissions

▪ Test Mode: 802.11b & Lowest Frequency & Test Case 3

Frequency (MHz)	ANT Pol	Reading(dBuV)		T.F (dB)	Result(dBuV/m)		Limit(dBuV/m)		Margin(dB)	
		PK	AV		PK	AV	PK	AV	PK	AV
4823.850	H	53.20	40.29	5.28	58.48	45.57	74.00	54.00	15.52	8.43
4822.050	V	53.28	41.16	5.28	58.56	46.44	74.00	54.00	15.44	7.56
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-

▪ Test Mode: 802.11b & Middle Frequency & Test Case 3

Frequency (MHz)	ANT Pol	Reading(dBuV)		T.F (dB)	Result(dBuV/m)		Limit(dBuV/m)		Margin(dB)	
		PK	AV		PK	AV	PK	AV	PK	AV
4875.900	H	51.06	37.97	5.27	56.33	43.24	74.00	54.00	17.67	10.76
4874.320	V	51.28	38.17	5.27	56.55	43.44	74.00	54.00	17.45	10.56
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-

▪ Test Mode: 802.11b & Highest Frequency & Test Case 3

Frequency (MHz)	ANT Pol	Reading(dBuV)		T.F (dB)	Result(dBuV/m)		Limit(dBuV/m)		Margin(dB)	
		PK	AV		PK	AV	PK	AV	PK	AV
4925.900	H	51.24	38.33	5.64	56.88	43.97	74.00	54.00	17.12	10.03
4924.000	V	51.15	38.13	5.64	56.79	43.77	74.00	54.00	17.21	10.23
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-

Note.

1. No other spurious and harmonic emissions were detected at a level greater than 20dB below limit.
2. 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

1GHz ~ 25GHz Radiated Spurious Emissions

▪ Test Mode: 802.11g & Lowest Frequency & Test Case 3

Frequency (MHz)	ANT Pol	Reading(dBuV)		T.F (dB)	Result(dBuV/m)		Limit(dBuV/m)		Margin(dB)	
		PK	AV		PK	AV	PK	AV	PK	AV
4826.400	H	49.63	37.19	5.28	54.91	42.47	74.00	54.00	19.09	11.53
4823.700	V	50.24	37.37	5.28	55.52	42.65	74.00	54.00	18.48	11.35
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-

▪ Test Mode: 802.11g & Middle Frequency & Test Case 3

Frequency (MHz)	ANT Pol	Reading(dBuV)		T.F (dB)	Result(dBuV/m)		Limit(dBuV/m)		Margin(dB)	
		PK	AV		PK	AV	PK	AV	PK	AV
4873.550	H	47.38	34.21	5.27	52.65	39.48	74.00	54.00	21.35	14.52
4873.750	V	47.28	34.05	5.27	52.55	39.32	74.00	54.00	21.45	14.68
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-

▪ Test Mode: 802.11g & Highest Frequency & Test Case 3

Frequency (MHz)	ANT Pol	Reading(dBuV)		T.F (dB)	Result(dBuV/m)		Limit(dBuV/m)		Margin(dB)	
		PK	AV		PK	AV	PK	AV	PK	AV
4923.900	H	48.62	35.48	5.64	54.26	41.12	74.00	54.00	19.74	12.88
4917.800	V	47.71	35.03	5.64	53.35	40.67	74.00	54.00	20.65	13.33
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-

Note.

1. No other spurious and harmonic emissions were detected at a level greater than 25dB below limit.
2. 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 = 3 kHz and VBW $\geq$ RBW, sweep time = (RBW / SPAN), The PSD is the highest level found across the emission in any 3 kHz 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 #1.

The spectrum analyzer is set to:

Center frequency = the highest, middle and the lowest Frequencies

Span = 500 KHz

RBW = 3 KHz

VBW = $\geq$ RBW

Trace = max hold

Detector function = peak

Sweep = auto

- Measurement Data: **Comply**

Test Mode	Frequency	Test Results (dBm)
802.11b	Lowest	-14.540
	Middle	-12.980
	Highest	-13.000
802.11g	Lowest	-16.620
	Middle	-17.470
	Highest	-17.720

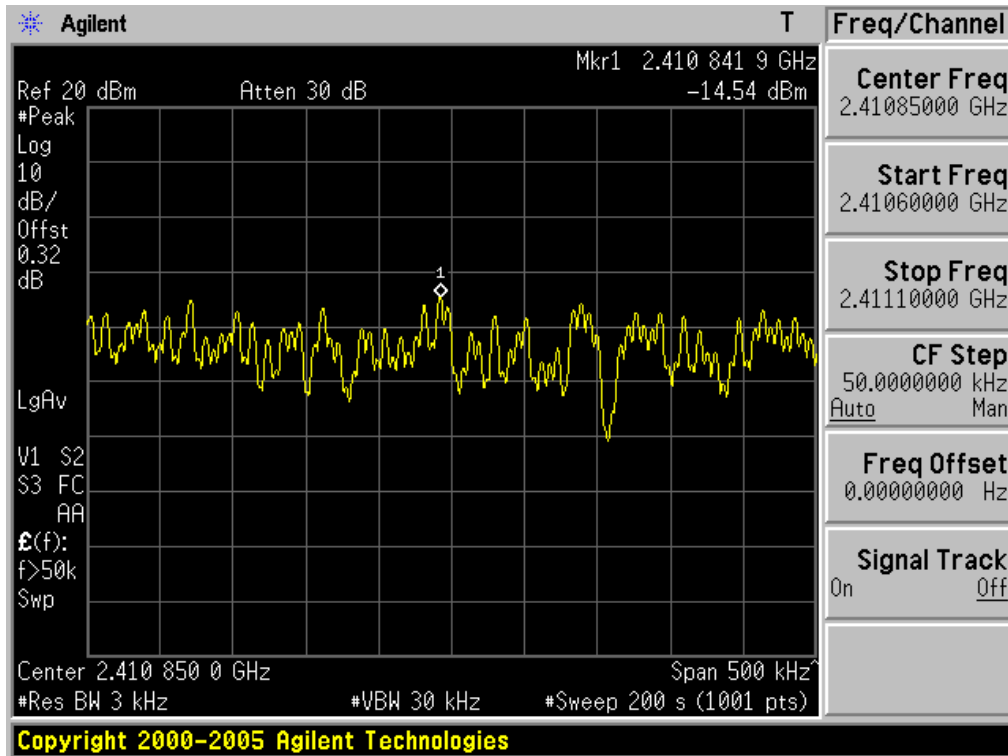
Note 1: See next pages for actual measured spectrum plots.

- Minimum Standard:

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

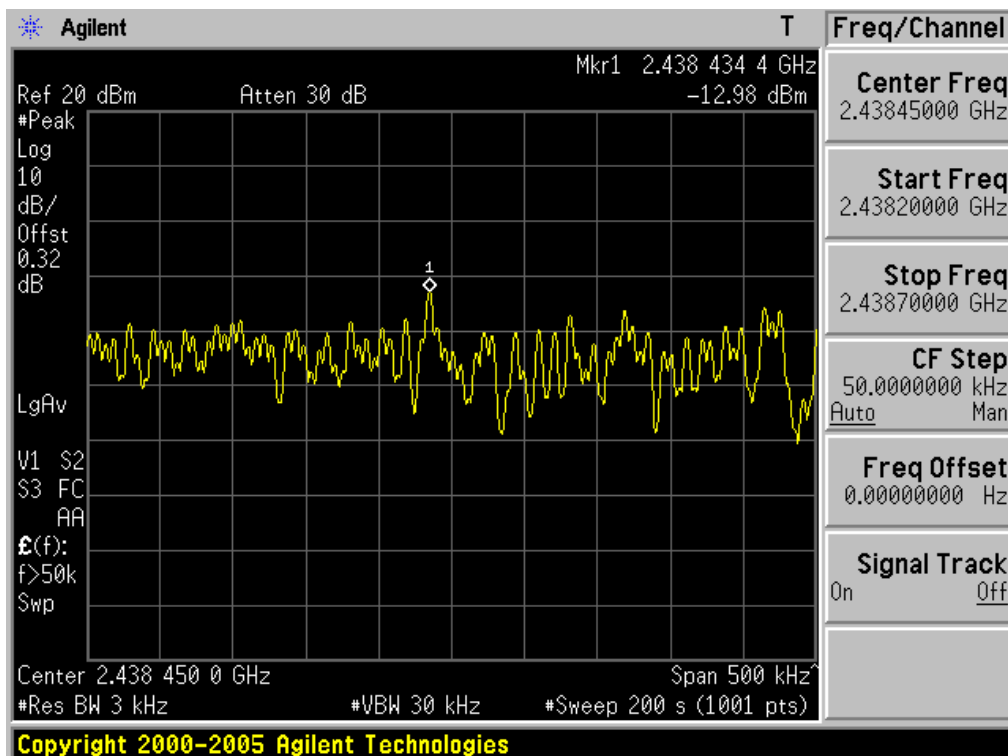
Transmitter Power Spectral Density

Test Mode: 802.11b & Lowest Frequency



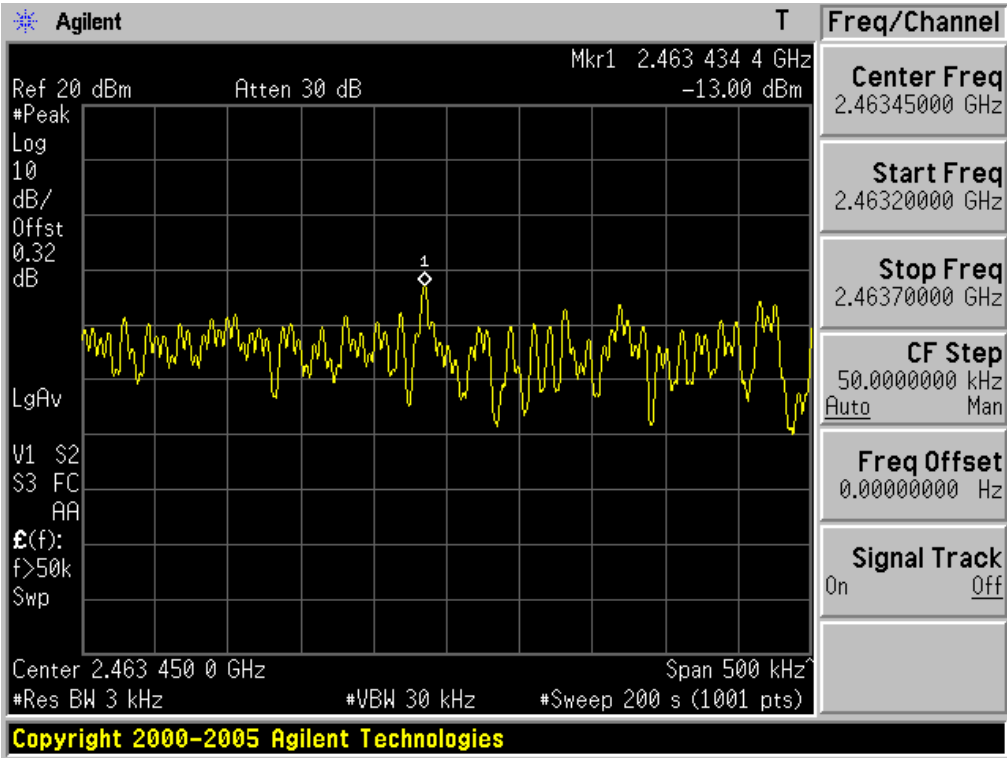
Transmitter Power Spectral Density

Test Mode: 802.11b & Middle Frequency



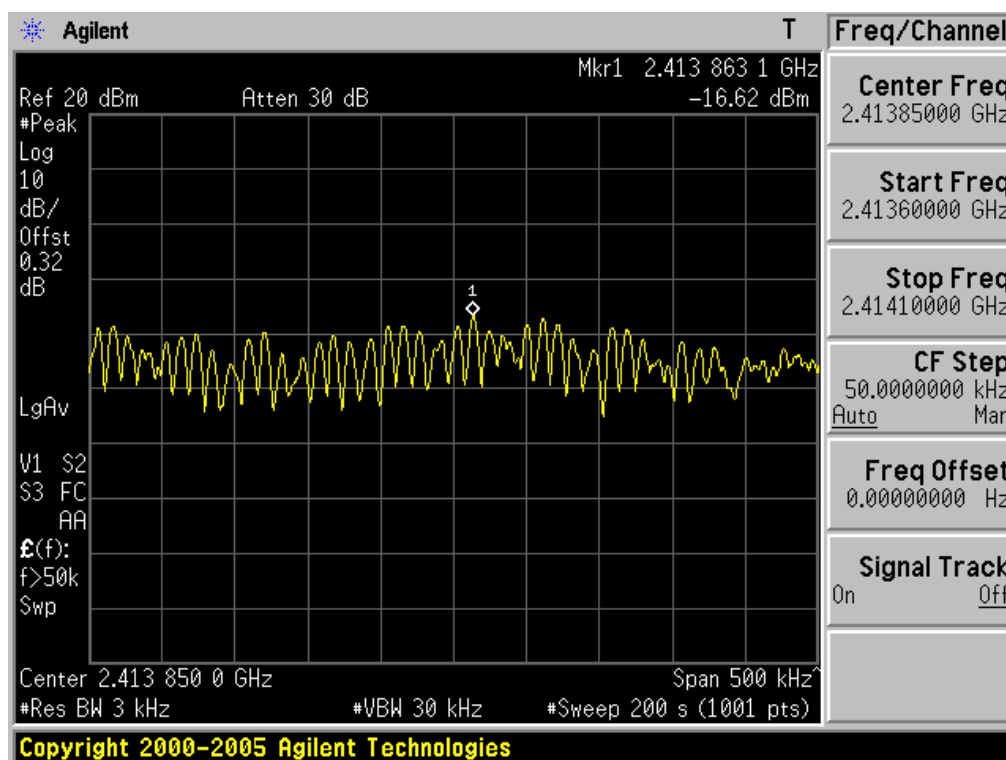
Transmitter Power Spectral Density

Test Mode: 802.11b & Highest Frequency



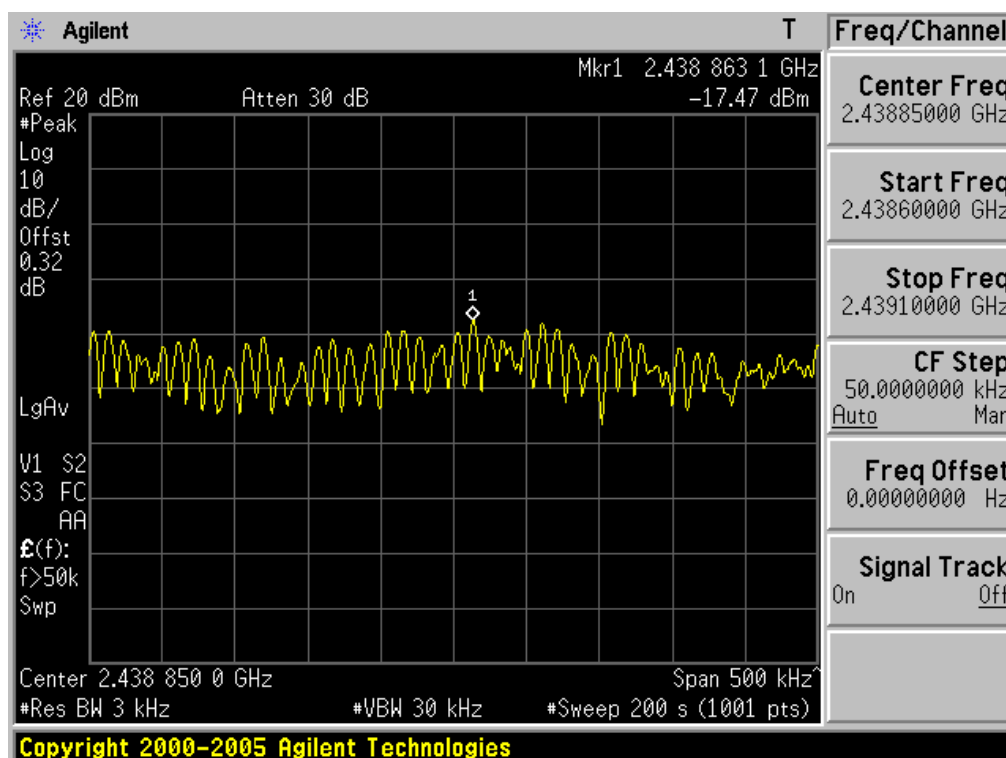
Transmitter Power Spectral Density

Test Mode: 802.11g & Lowest Frequency



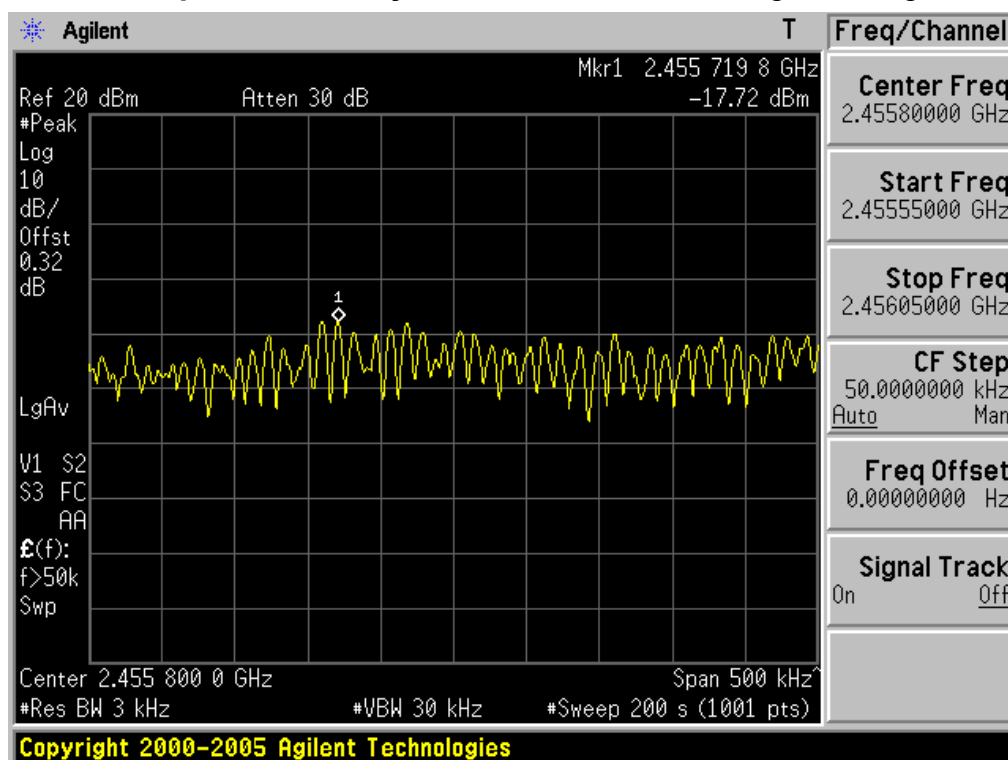
Transmitter Power Spectral Density

Test Mode: 802.11g & Middle Frequency



Transmitter Power Spectral Density

Test Mode: 802.11g & Highest Frequency



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

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

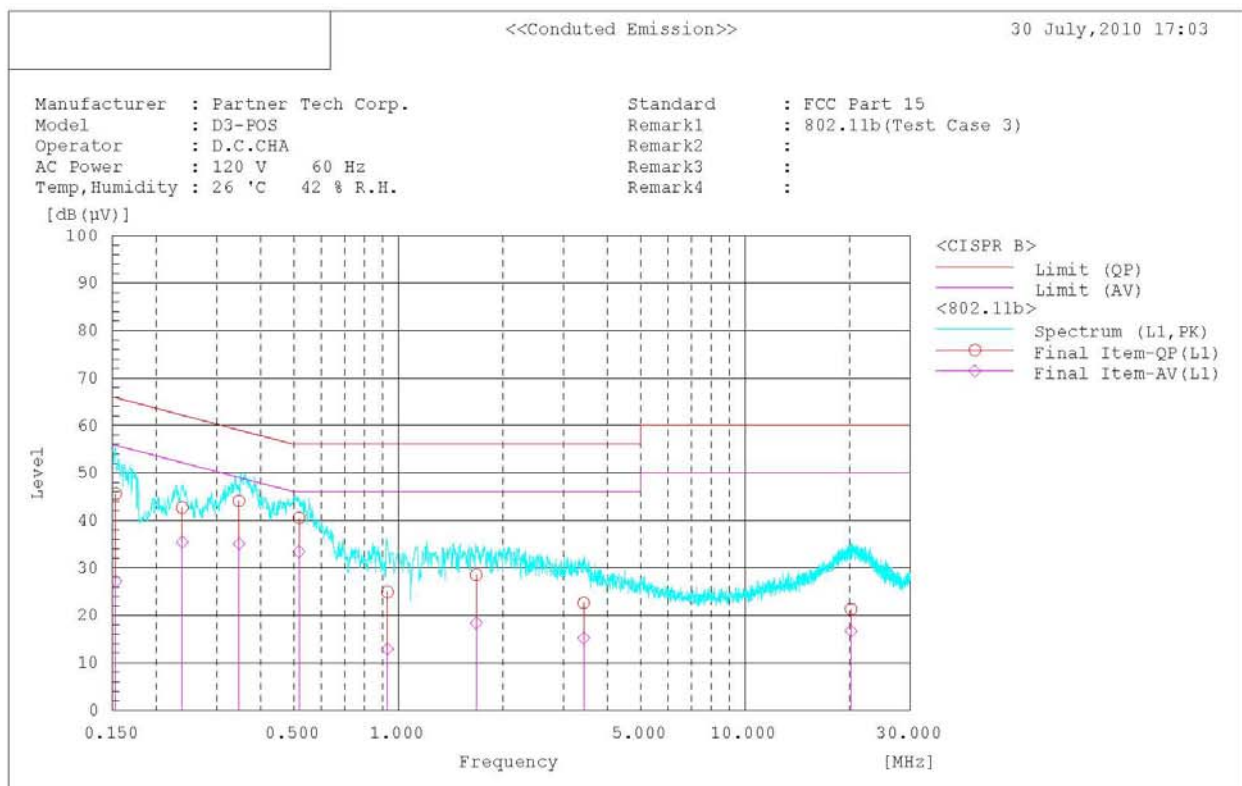
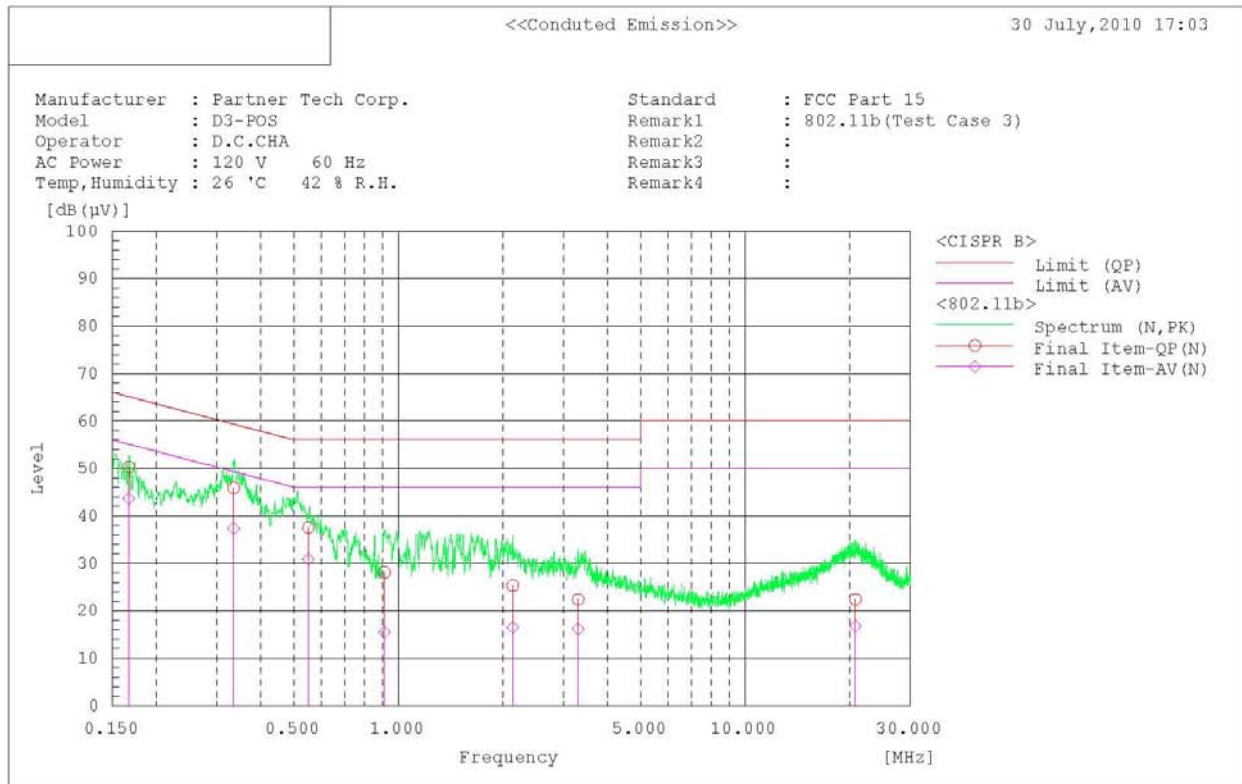
- Minimum Standard: FCC Part 15.207(a)/EN 55022

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 Line Conducted Emissions (Graph)

Test Mode: 802.11b & Test case 3



AC Line Conducted Emissions (Data List)

Test Mode: 802.11b & Test case 3

```
*****
                                  <<Conducted Emission>>
                                  30 July, 2010 17:03

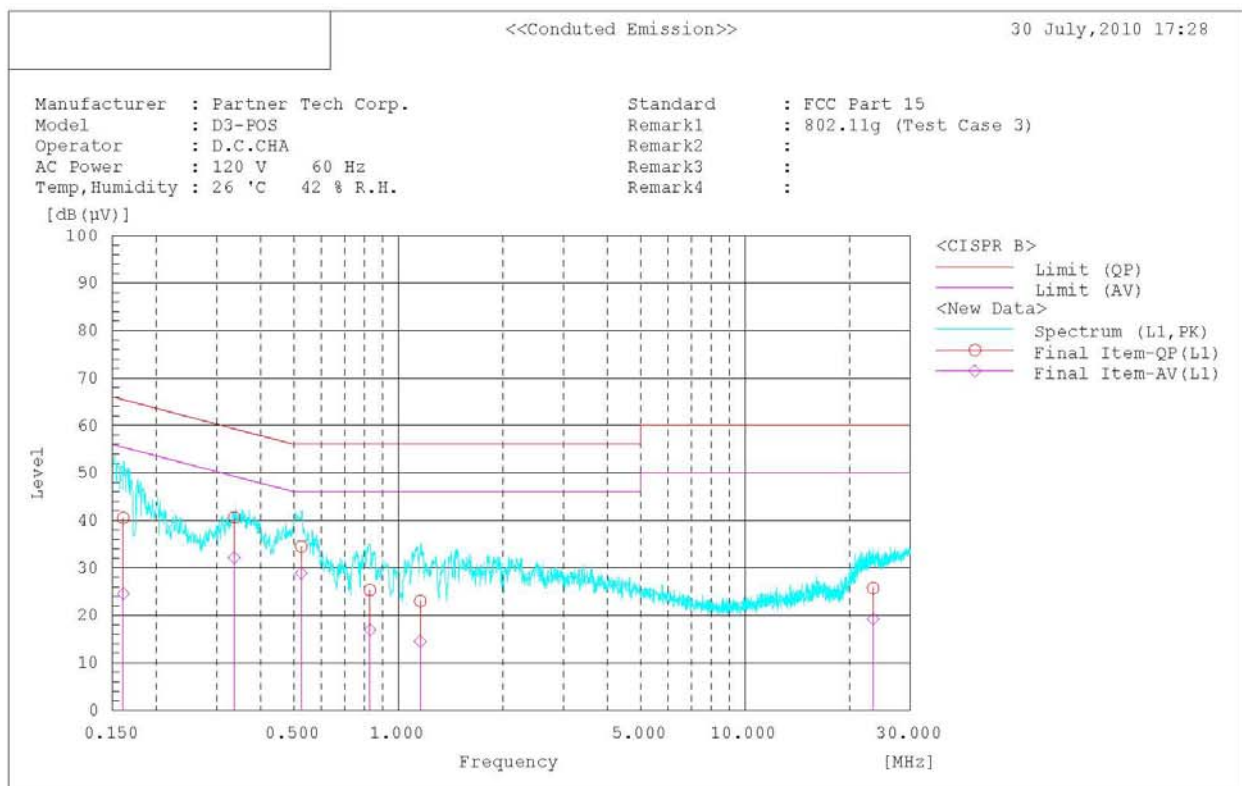
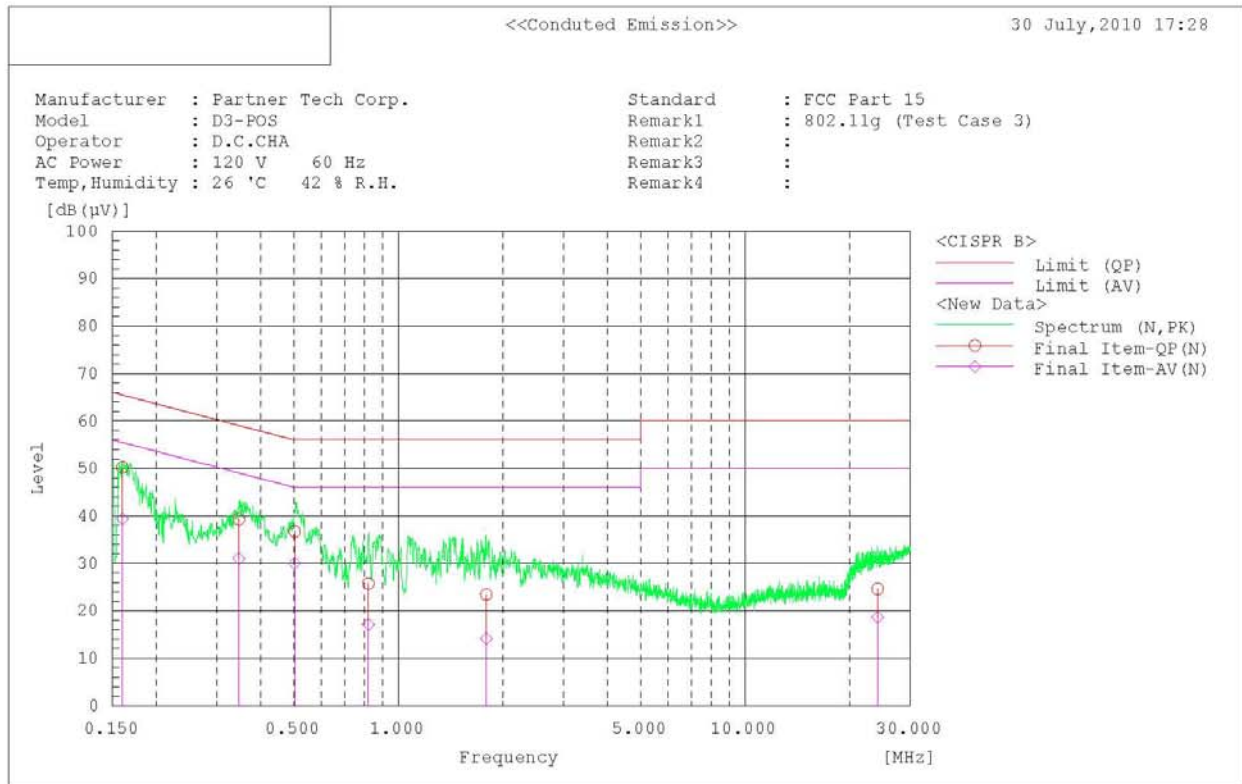
Standard      : FCC Part 15
Manufacturer  : Partner Tech Corp.
Model         : D3-POS
Operator      : D.C.CHA
AC Power      : 120 V   60 Hz
Temp, Humidity : 26 °C  42 % R.H.
Remark1       : 802.11b(Test Case 3)
Remark2       :
Remark3       :
Remark4       :
*****
Final Result

--- N Phase ---
No.  Frequency  Reading  Reading  c.f  Result  Result  Limit  Limit  Margin  Margin  Remark
      [MHz]      QP      AV      [dB]  QP      AV      QP      AV      QP      AV
      [dB(µV)]  [dB(µV)]  [dB]  [dB(µV)] [dB(µV)] [dB(µV)] [dB(µV)] [dB]  [dB]
1     0.167     50.2     43.6     0.1   50.3     43.7     65.1     55.1     14.8     11.4
2     0.335     45.8     37.3     0.1   45.9     37.4     59.3     49.3     13.4     11.9
3     0.550     37.4     30.8     0.1   37.5     30.9     56.0     46.0     18.5     15.1
4     0.912     28.0     15.4     0.1   28.1     15.5     56.0     46.0     27.9     30.5
5     2.136     25.1     16.3     0.2   25.3     16.5     56.0     46.0     30.7     29.5
6     3.299     22.1     15.9     0.3   22.4     16.2     56.0     46.0     33.6     29.8
7    20.779     21.1     15.5     1.3   22.4     16.8     60.0     50.0     37.6     33.2

--- L1 Phase ---
No.  Frequency  Reading  Reading  c.f  Result  Result  Limit  Limit  Margin  Margin  Remark
      [MHz]      QP      AV      [dB]  QP      AV      QP      AV      QP      AV
      [dB(µV)]  [dB(µV)]  [dB]  [dB(µV)] [dB(µV)] [dB(µV)] [dB(µV)] [dB]  [dB]
1     0.153     45.3     26.9     0.3   45.6     27.2     65.8     55.8     20.2     28.6
2     0.238     42.4     35.1     0.3   42.7     35.4     62.2     52.2     19.5     16.8
3     0.347     43.8     34.8     0.3   44.1     35.1     59.0     49.0     14.9     13.9
4     0.517     40.2     33.1     0.3   40.5     33.4     56.0     46.0     15.5     12.6
5     0.930     24.6     12.6     0.3   24.9     12.9     56.0     46.0     31.1     33.1
6     1.677     28.2     18.1     0.3   28.5     18.4     56.0     46.0     27.5     27.6
7     3.423     22.2     14.8     0.4   22.6     15.2     56.0     46.0     33.4     30.8
8    20.200     20.1     15.5     1.2   21.3     16.7     60.0     50.0     38.7     33.3
```

AC Line Conducted Emissions (Graph)

Test Mode: 802.11g & Test case 3



AC Line Conducted Emissions (Data List)

Test Mode: 802.11g & Test case 3

<<Conducted Emission>>

30 July, 2010 17:28

Standard : FCC Part 15
Manufacturer : Partner Tech Corp.
Model : D3-POS
Operator : D.C.CHA
AC Power : 120 V 60 Hz
Temp, Humidity : 26 °C 42 % R.H.
Remark1 : 802.11g (Test Case 3)
Remark2 :
Remark3 :
Remark4 :

Final Result

--- N Phase ---

No.	Frequency	Reading QP	Reading AV	c.f	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV	Remark
	[MHz]	[dB (μV)]	[dB (μV)]		[dB (μV)]	[dB (μV)]	[dB (μV)]	[dB (μV)]	[dB]	[dB]	
1	0.160	50.1	39.3	0.1	50.2	39.4	65.5	55.5	15.3	16.1	
2	0.347	39.2	30.9	0.1	39.3	31.0	59.0	49.0	19.7	18.0	
3	0.502	36.6	29.9	0.1	36.7	30.0	56.0	46.0	19.3	16.0	
4	0.819	25.6	17.0	0.1	25.7	17.1	56.0	46.0	30.3	28.9	
5	1.793	23.2	13.9	0.2	23.4	14.1	56.0	46.0	32.6	31.9	
6	24.106	23.2	17.2	1.4	24.6	18.6	60.0	50.0	35.4	31.4	

--- L1 Phase ---

No.	Frequency	Reading QP	Reading AV	c.f	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV	Remark
	[MHz]	[dB (μV)]	[dB (μV)]		[dB (μV)]	[dB (μV)]	[dB (μV)]	[dB (μV)]	[dB]	[dB]	
1	0.161	40.2	24.3	0.3	40.5	24.6	65.4	55.4	24.9	30.8	
2	0.336	40.3	31.8	0.3	40.6	32.1	59.3	49.3	18.7	17.2	
3	0.525	34.2	28.6	0.3	34.5	28.9	56.0	46.0	21.5	17.1	
4	0.828	25.0	16.6	0.3	25.3	16.9	56.0	46.0	30.7	29.1	
5	1.157	22.7	14.2	0.3	23.0	14.5	56.0	46.0	33.0	31.5	
6	23.399	24.3	17.8	1.4	25.7	19.2	60.0	50.0	34.3	30.8	

3.2.7 Antenna Requirements

- Procedure:

Describe how the EUT complies with the requirement that either its antenna is permanently attached, or that it employs a unique antenna connector, for every antenna proposed for use with the EUT.

- Conclusion: Comply

The antenna is permanently attached by soldering. (Refer to Internal Photo file.)

- Minimum Standard:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions.

APPENDIX

TEST EQUIPMENT 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
☒	Spectrum Analyzer	Agilent	E4440A	25/09/09	25/09/10	MY45304199
☐	Spectrum Analyzer	Rohde Schwarz	FSQ26	25/02/10	25/02/11	200445
☐	Spectrum Analyzer(RE)	H.P	8563E	13/10/09	13/10/10	3551A04634
☐	Power Meter	H.P	EPM-442A	01/07/10	01/07/11	GB37170413
☐	Power Sensor	H.P	8481A	01/07/10	01/07/11	3318A96332
☒	Peak power Sensor	Rohde Schwarz	NRP-Z81	17/10/09	17/10/10	100036
☐	Power Divider	Agilent	11636B	13/10/09	13/10/10	56471
☐	Power Splitter	Anritsu	K241B	13/10/09	13/10/10	20611
☐	Power Splitter	Anritsu	K241B	01/07/10	01/07/11	017060
☐	Frequency Counter	H.P	5342A	01/07/10	01/07/11	2119A04450
☐	TEMP & HUMIDITY Chamber	JISCO	KR-100/J-RHC2	10/10/09	10/10/10	30604493/021031
☒	Digital Multimeter	H.P	34401A	12/03/10	12/03/11	3146A13475, US36122178
☐	Multifunction Synthesizer	HP	8904A	06/10/09	06/10/10	3633A08404
☒	Signal Generator	Rohde Schwarz	SMR20	12/03/10	12/03/11	101251
☐	Signal Generator	H.P	ESG-3000A	01/07/10	01/07/11	US37230529
☐	Vector Signal Generator	Rohde Schwarz	SMJ100A	11/01/10	11/01/11	100148
☐	Vector Signal Generator	Rohde Schwarz	SMBV100A	23/02/10	23/02/11	255571
☐	Audio Analyzer	H.P	8903B	02/07/10	02/07/11	3011A09448
☐	Modulation Analyzer	H.P	8901B	01/07/10	01/07/11	3028A03029
☐	8960 Series 10 Wireless Comms. Test Set	Agilent	E5515C	02/07/10	02/07/11	GB43461134
☐	Universal Radio communication Tester	Rohde Schwarz	CMU 200	12/03/10	12/03/11	106760
☐	Bluetooth Tester	TESCOM	TC-3000B	01/07/10	01/07/11	3000B000268
☐	Thermo hygrometer	BODYCOM	BJ5478	28/01/10	28/01/11	090205-3
☒	Thermo hygrometer	BODYCOM	BJ5478	28/01/10	28/01/11	090205-2
☐	Thermo hygrometer	BODYCOM	BJ5478	28/01/10	28/01/11	090205-4
☐	AC Power supply	DAEKWANG	5KVA	12/03/10	12/03/11	20060321-1
☒	DC Power Supply	HP	6622A	12/03/10	12/03/11	3448A03760
☐	DC Power Supply	HP	6633A	12/03/10	12/03/11	3524A06634
☐	BAND Reject Filter	Microwave Circuits	N0308372	06/10/09	06/10/10	3125-01DC0352
☐	BAND Reject Filter	Wainwright	WRCG1750	06/10/09	06/10/10	2
☐	High-Pass Filter	ANRITSU	MP526D	06/10/09	06/10/10	M27756
☐	High-pass filter	Wainwright	WHNX2.1	N/A	N/A	1
☒	High-pass filter	Wainwright	WHNX3.0	N/A	N/A	9
☐	High-pass filter	Wainwright	WHNX5.0	N/A	N/A	8
☐	High-Pass Filter	Wainwright	WHKX8.5	N/A	N/A	1
☐	Tunable Notch Filter	Wainwright	WRCT800.0 /960.0-0.2/40-8SSK	N/A	N/A	32
☐	Tunable Notch Filter	Wainwright	WRCD1700.0 /2000.0-0.2/40-10SSK	N/A	N/A	53
☐	Tunable Notch Filter	Wainwright	WRCT1900.0/ 2200.0-5/40-10SSK	N/A	N/A	30
☒	HORN ANT	ETS	3115	23/09/09	23/09/10	21097
☐	HORN ANT	ETS	3115	14/07/10	14/07/11	6419
☒	HORN ANT	A.H.Systems	SAS-574	10/06/10	10/06/11	154
☐	HORN ANT	A.H.Systems	SAS-574	10/06/10	10/06/11	155

	Type	Manufacturer	Model	Cal.Due.Date (dd/mm/yy)	Next.Due.Date (dd/mm/yy)	S/N
☐	Dipole Antenna	Schwarzbeck	VHA9103	06/10/09	06/10/10	2116
☐	Dipole Antenna	Schwarzbeck	VHA9103	06/10/09	06/10/10	2117
☐	Dipole Antenna	Schwarzbeck	UHA9105	05/10/09	05/10/10	2261
☐	Dipole Antenna	Schwarzbeck	UHA9105	05/10/09	05/10/10	2262
☐	LOOP Antenna	ETS	6502	05/11/09	05/11/10	3471
☐	Coaxial Fixed Attenuators	Agilent	8491B	01/07/10	01/07/11	MY39260700
☐	Attenuator (3dB)	WEINSCHTEL	56-3	16/12/09	16/12/10	Y2342
☐	Attenuator (3dB)	WEINSCHTEL	56-3	16/12/09	16/12/10	Y2370
☐	Attenuator (10dB)	WEINSCHTEL	23-10-34	01/10/09	01/10/10	BP4386
☐	Attenuator (10dB)	WEINSCHTEL	23-10-34	11/01/10	11/01/11	BP4387
☒	Attenuator (10dB)	WEINSCHTEL	31696	06/10/09	06/10/10	446
☐	Attenuator (10dB)	WEINSCHTEL	31696	06/10/09	06/10/10	408
☐	Attenuator (20dB)	WEINSCHTEL	86-20-11	06/10/09	06/10/10	432
☐	Attenuator (30dB)	JFW	50FH-030-300	12/03/10	12/03/11	060320-1
☐	Attenuator (40dB)	WEINSCHTEL	57-40-33	01/10/09	01/10/10	NN837
☐	Termination	H.P	HP-909D	02/07/10	02/07/11	02750
☐	Termination	H.P	HP-909D	02/07/10	02/07/11	02702
☐	Type N Coaxial CIRCULATOR	NOVA MICROWAVE	0088CAN	01/07/10	01/07/11	788
☐	Type N Coaxial CIRCULATOR	NOVA MICROWAVE	0185CAN	01/07/10	01/07/11	790
☐	Type N Coaxial CIRCULATOR	NOVA MICROWAVE	0215CAN	01/07/10	01/07/11	112
☒	Amplifier (30dB)	Agilent	8449B	23/04/10	23/04/11	3008A01590
☐	Amplifier (30dB)	H.P	8449B	13/05/10	13/05/11	3008A00370
☐	Amplifier	EMPOWER	BBS3Q7ELU	02/11/09	02/11/10	1020
☐	RF Power Amplifier	OPHIRRF	5069F	01/07/10	01/07/11	1006
☒	EMI TEST RECEIVER	R&S	ESU	29/01/10	29/01/11	100014
☒	BILOG ANTENNA	SCHAFFNER	CBL 6112D	28/10/09	28/10/10	22609
☒	Amplifier (22dB)	H.P	8447E	29/01/10	29/01/11	2945A02865
☐	EMI TEST RECEIVER	R&S	ESCI	12/05/10	12/05/11	100364
☐	LOG-PERIODIC ANT.	Schwarzbeck	UHALP 9108 A-1	07/10/09	07/10/10	1098
☐	BICONICAL ANT.	Schwarzbeck	VHA 9103	06/10/09	06/10/10	91031946
☐	LOG-PERIODIC ANT.	Schwarzbeck	UHALP9108A	07/07/10	07/07/11	590
☐	BICONICAL ANT.	Schwarzbeck	VHA 9103	07/07/10	07/07/11	2233
☐	Low Noise Pre Amplifier	TSJ	MLA-100K01-B01-2	12/03/10	12/03/11	1252741
☐	Amplifier (25dB)	Agilent	8447D	12/03/10	12/03/11	2944A10144
☐	Amplifier (25dB)	Agilent	8447D	01/07/10	01/07/11	2648A04922
☒	Spectrum Analyzer(CE)	H.P	8591E	12/03/10	12/03/11	3649A05889
☒	LISN	Kyoritsu	KNW-407	29/01/10	29/01/11	8-317-8
☒	LISN	Kyoritsu	KNW-242	29/01/10	29/01/11	8-654-15
☒	CVCFC	NF Electronic	4420	12/03/10	12/03/11	304935/337980
☒	50 ohm Terminator	HME	CT-01	12/01/10	12/01/11	N/A
☒	RFI/FIELD Intensity Meter	Kyoritsu	KNM-2402	02/07/10	02/07/11	4N-170-3