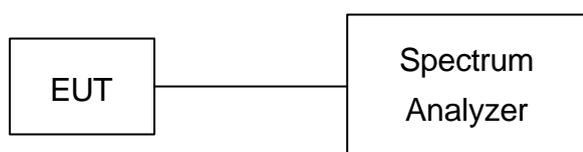# 6. 6dB Bandwidth Measurement

6.1. Test Procedure

1. The transmitter output was connected to the spectrum analyzer.

2. Set RBW of spectrum analyzer to 100 KHz and VBW to 100 KHz.

3. The 6 dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6 dB.

6.2. Test Setup Layout

6.3. Test Result and Data

(1) Modulation Standard: IEEE 802.11b (11Mbps)

Test Date: Jul. 26, 2005 Temperature: 27   Humidity: 64%   Atmospheric pressure: 1014mmHg

Channel	Frequency (MHz)	6dB Bandwidth (MHz)
01	2412	10.3
06	2437	10.1
11	2462	10.3

(2) Modulation Standard: IEEE 802.11g (54 Mbps)

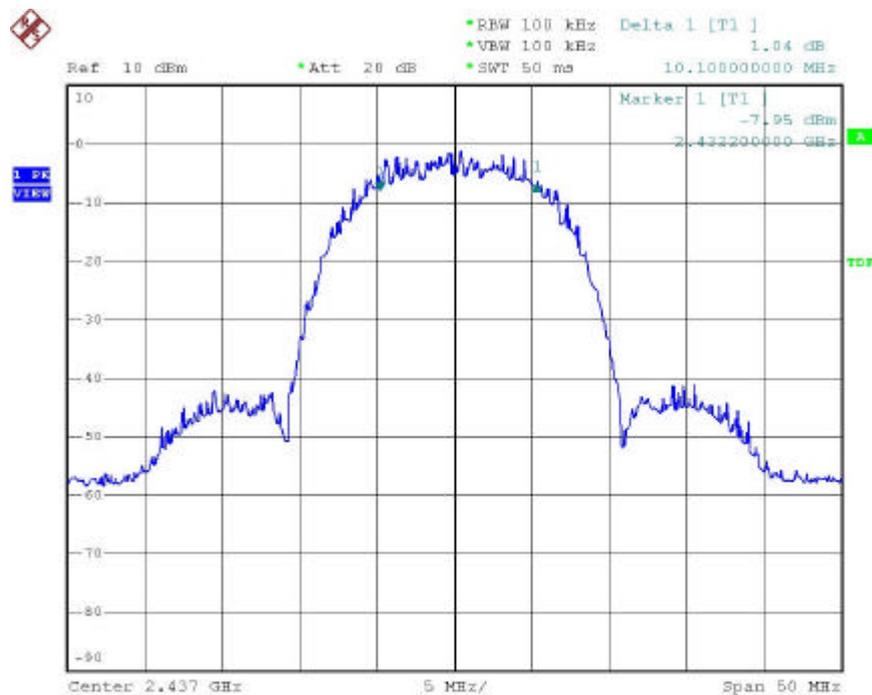Test Date: Jul. 26, 2005 Temperature: 27   Humidity: 64%   Atmospheric pressure: 1014mmHg

Channel	Frequency (MHz)	6dB Bandwidth (MHz)
01	2412	16.3
06	2437	16.4
11	2462	16.4

Modulation Standard: IEEE 802.11b (11Mbps)
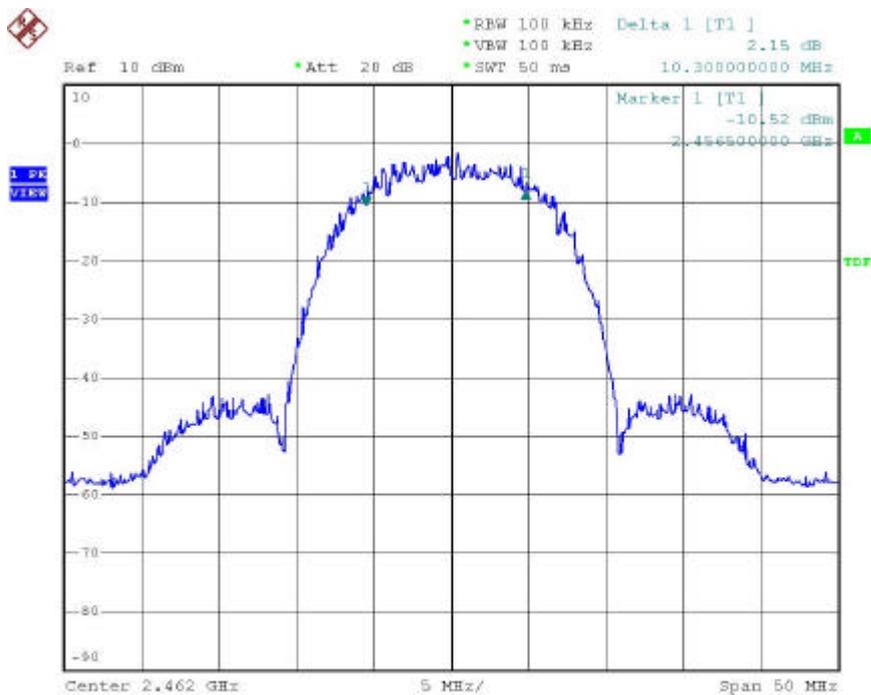Channel 01
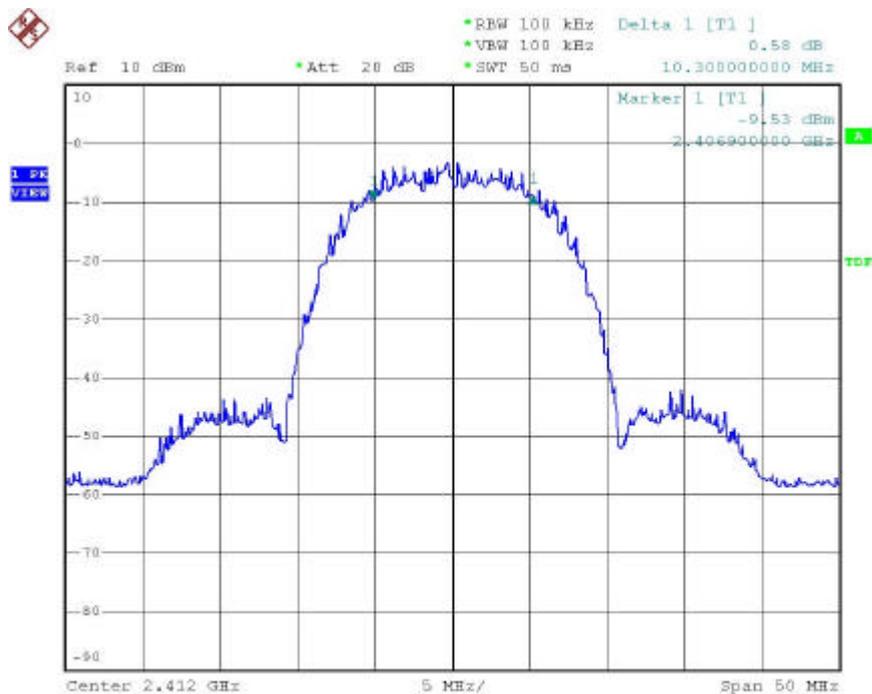
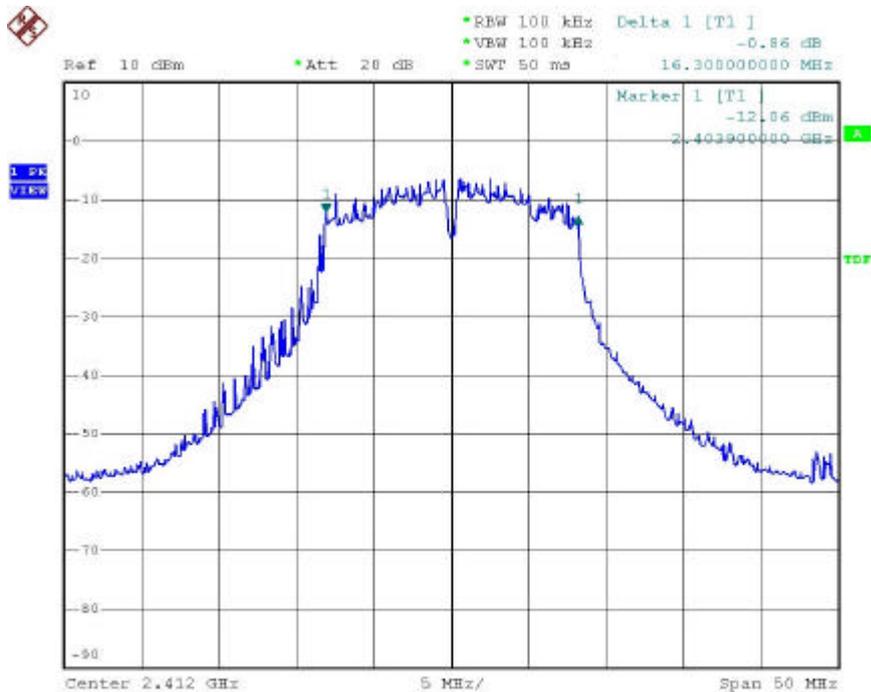Date: 26.JUL.2005 16:55:55

Channel 06

Date: 26.JUL.2005 17:10:27
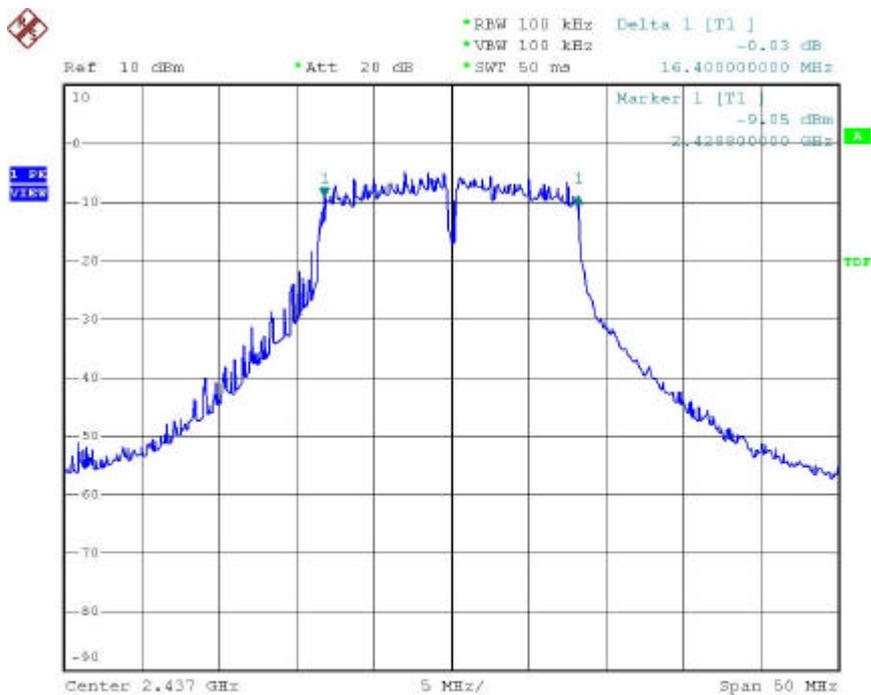
Channel 11

Date: 26.JUL.2005 17:19:58

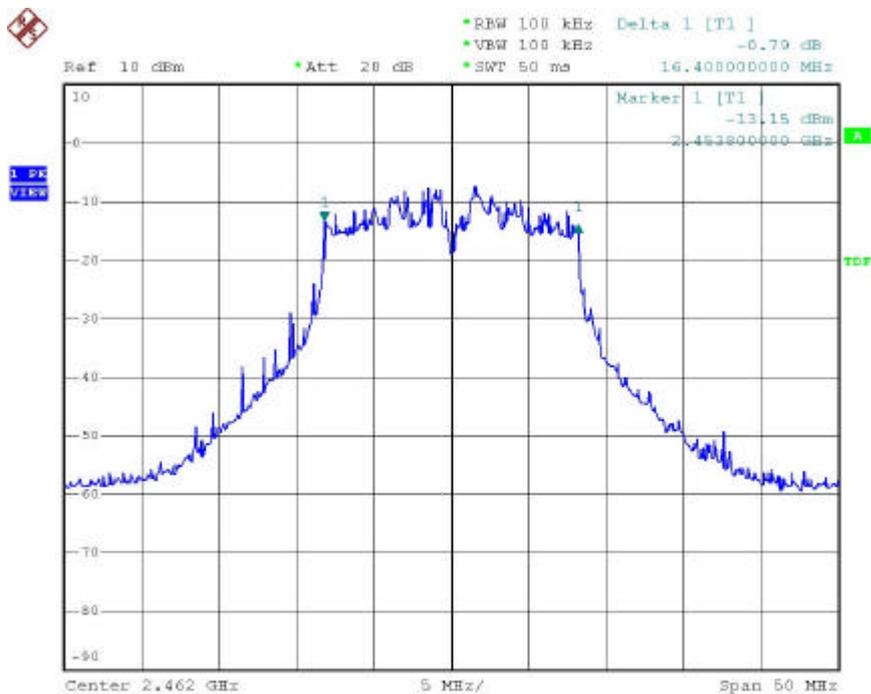Modulation Standard: IEEE 802.11g (6Mbps)
Channel 01

Date: 26.JUL.2005 18:17:38

Channel 06

Date: 26.JUL.2005 18:00:44

Channel 11

Date: 26.JUL.2005 18:22:49

7. Maximum Peak Output Power

7.1. Test Procedure

The antenna port RF output of the EUT was connected to the input RF input of a spectrum analyzer. Power was read directly from the spectrum analyzer and cable loss connection was added to the reading to obtain power at the EUT antenna terminal. The EUT Output Power was set to maximum to produce the worse case test result.

7.2. Test Setup Layout
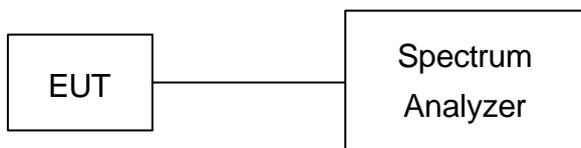
7.3. Test Result and Data

(1) Modulation Standard: IEEE 802.11b (11Mbps)

Test Date: Jul. 26, 2005 Temperature: 27 Humidity: 64% Atmospheric pressure: 1014mmHg

Channel	Frequency (MHz)	Peak Power Output (dBm)	Peak Power Output (mW)
01	2412	13.58	22.803
06	2437	14.72	29.648
11	2462	13.60	22.909

(2) Modulation Standard: IEEE 802.11g (12Mbps)

Test Date: Jul. 26, 2005 Temperature: 27 Humidity: 64% Atmospheric pressure: 1014mmHg

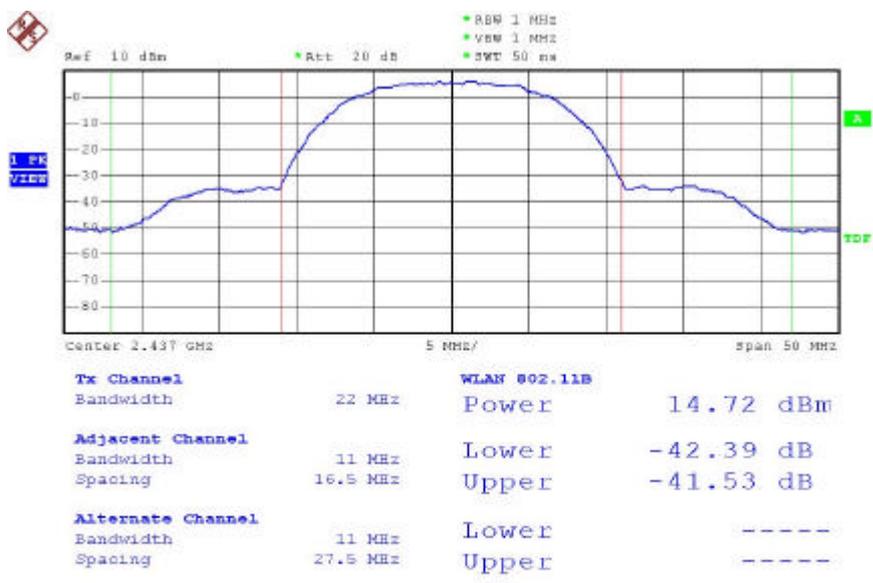| Channel	Frequency (MHz)	Peak Power Output (dBm)	Peak Power Output (mW)
01	2412	12.22	16.672
06	2437	14.27	26.730
11	2462	12.72	18.707

Note: Conducted Power = Reading Value + Cable Loss

Modulation Standard: IEEE 802.11b (11Mbps)
Channel 01

Tx Channel		WLAN 802.11B	
Bandwidth	22 MHz	Power	13.58 dBm
Adjacent Channel			
Bandwidth	11 MHz	Lower	-43.27 dB
Spacing	16.5 MHz	Upper	-42.73 dB
Alternate Channel			
Bandwidth	11 MHz	Lower	- - - - -
Spacing	27.5 MHz	Upper	- - - - -
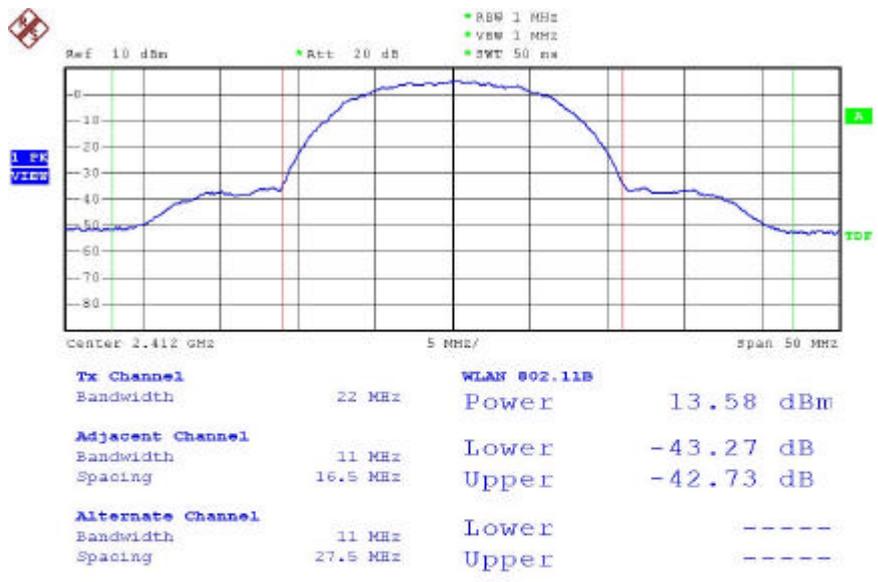
Date: 26.JUL.2005 13:51:19

Channel 06

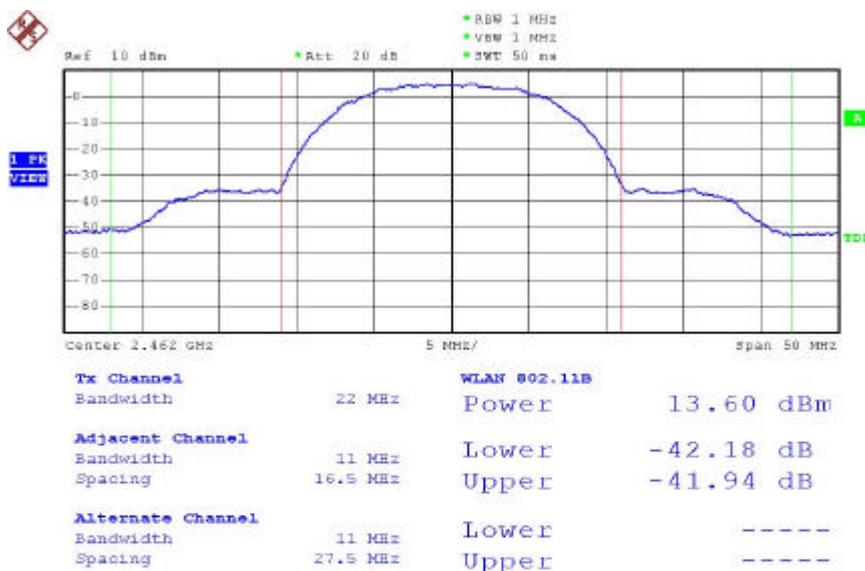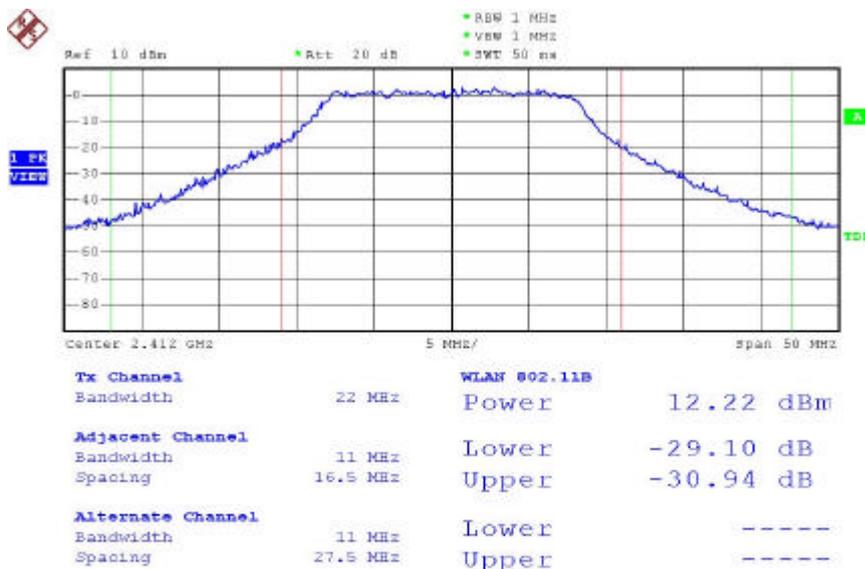| Tx Channel		WLAN 802.11B	
Bandwidth	22 MHz	Power	14.72 dBm
Adjacent Channel			
Bandwidth	11 MHz	Lower	-42.39 dB
Spacing	16.5 MHz	Upper	-41.53 dB
Alternate Channel			
Bandwidth	11 MHz	Lower	- - - - -
Spacing	27.5 MHz	Upper	- - - - -

Date: 26.JUL.2005 13:54:33
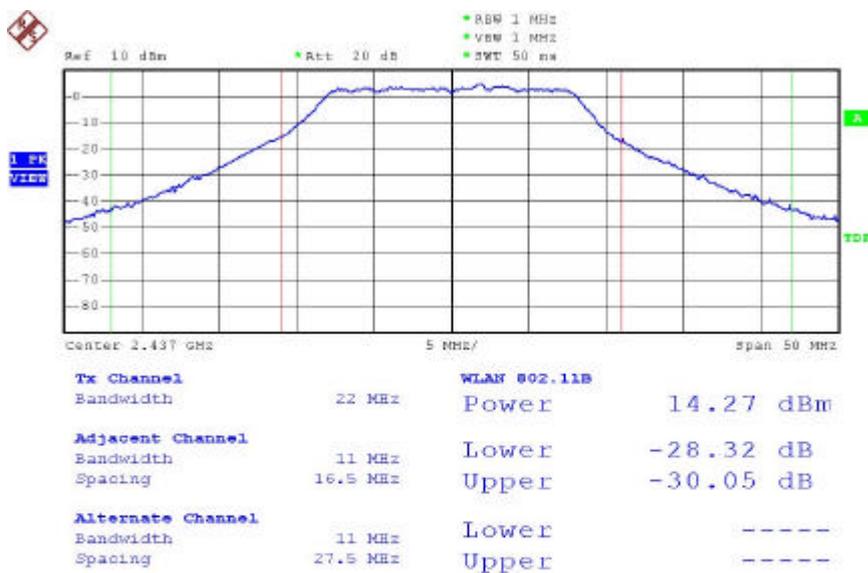
Channel 11

Date: 26.JUL.2005 13:57:34

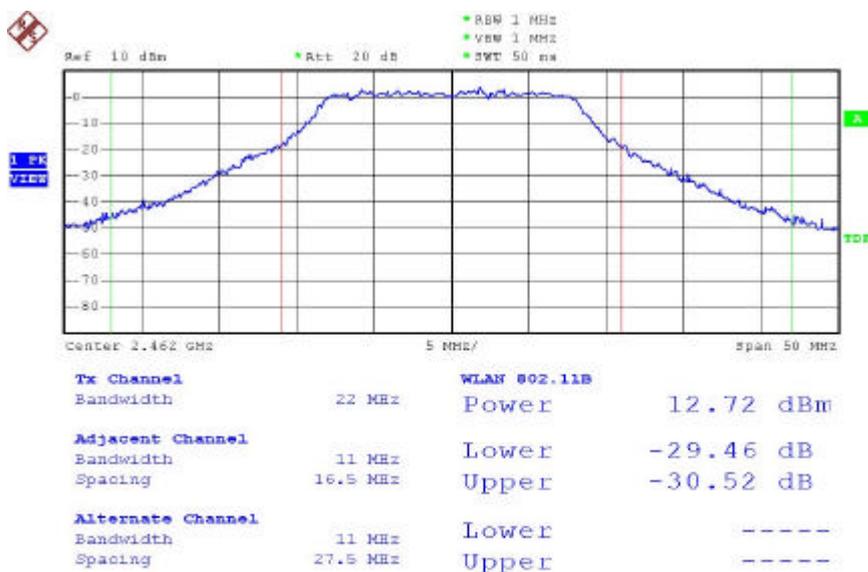Modulation Standard: IEEE 802.11g (6Mbps)
Channel 01

Date: 26.JUL.2005 14:12:25

Channel 06

Date: 26.JUL.2005 14:07:45

Channel 11

Date: 26.JUL.2005 14:00:40

8. Band Edges Measurement

8.1. Test Procedure

1. The transmitter output was connected to the spectrum analyzer via a low lose cable.
2. Set both RBW and VBW of spectrum analyzer to 100 KHz with convenient frequency span including 100 MHz bandwidth from band edge.
3. The band edges was measured and recorded.

8.2. Test Result and Data

(1) Modulation Standard: IEEE 802.11b (11Mbps)

Test Date: Jul. 26, 2005   Temperature: 27   Humidity: 64%   Atmospheric pressure: 1014mmHg

Channel	Frequency	maximum value in frequency (MHz)	maximum value is (dBm)
01	2412	2400.0	-43.53
11	2462	2520.1	-55.58

(2) Modulation Standard: IEEE 802.11g (54Mbps)

Test Date: Jul. 26, 2005   Temperature: 27   Humidity: 64%   Atmospheric pressure: 1014mmHg

Channel	Frequency	maximum value in frequency (MHz)	maximum value is (dBm)
01	2412	2400.0	-41.85
11	2462	2520.1	-56.32

Modulation Standard: IEEE 802.11b (11Mbps)
Channel 01
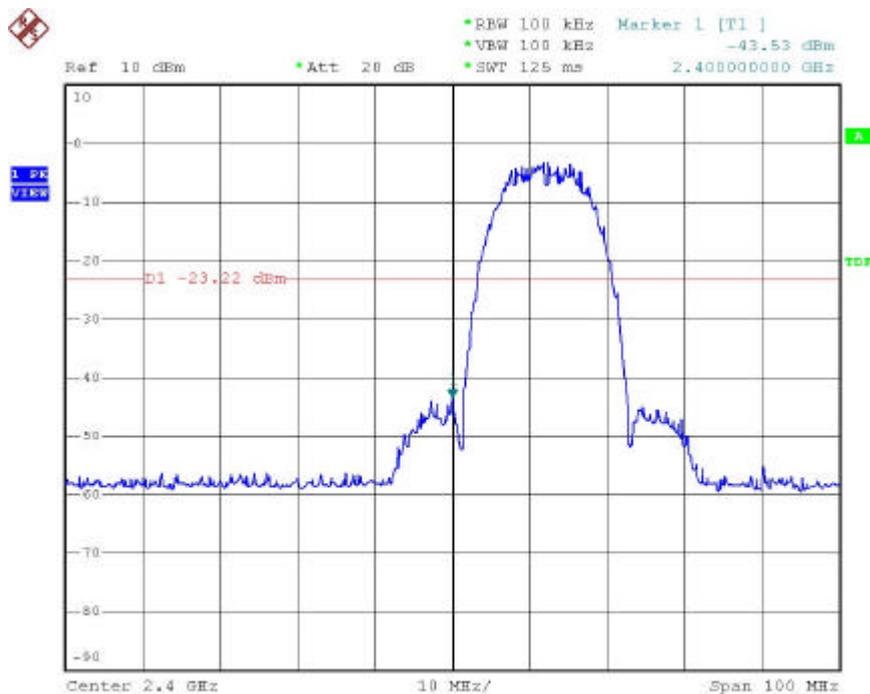
Date: 26.JUL.2005   17:01:36
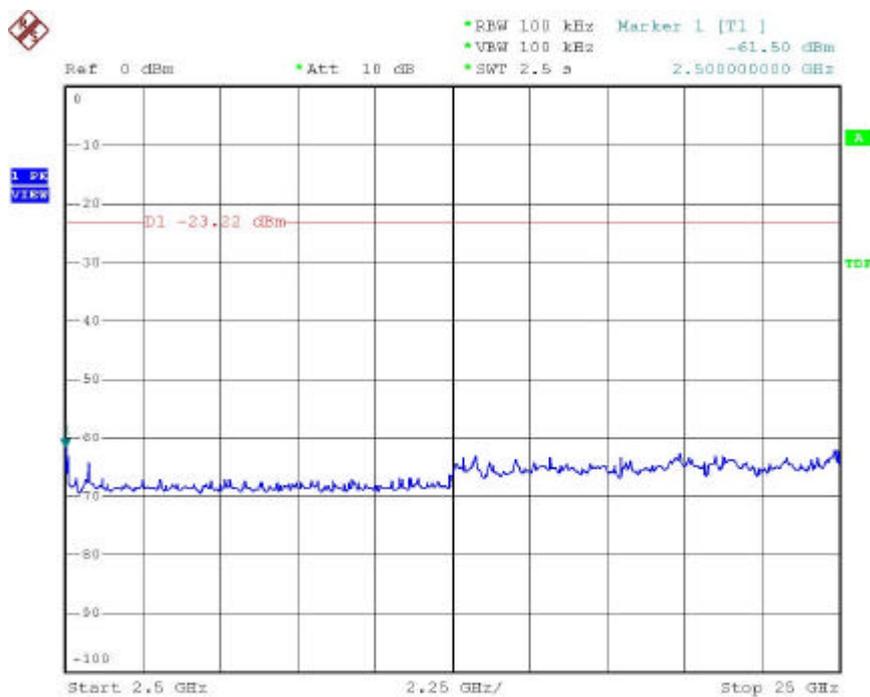
Date: 26.JUL.2005   17:02:25

Channel 11

Date: 26.JUL.2005 17:24:02

Date: 26.JUL.2005 17:25:28

Modulation Standard: IEEE 802.11g (6Mbps)
Channel 01

Date: 26.JUL.2005 17:40:09

Date: 26.JUL.2005 17:41:02

Channel 11

Date: 26.JUL.2005   17:54:12

Date: 26.JUL.2005   17:55:03

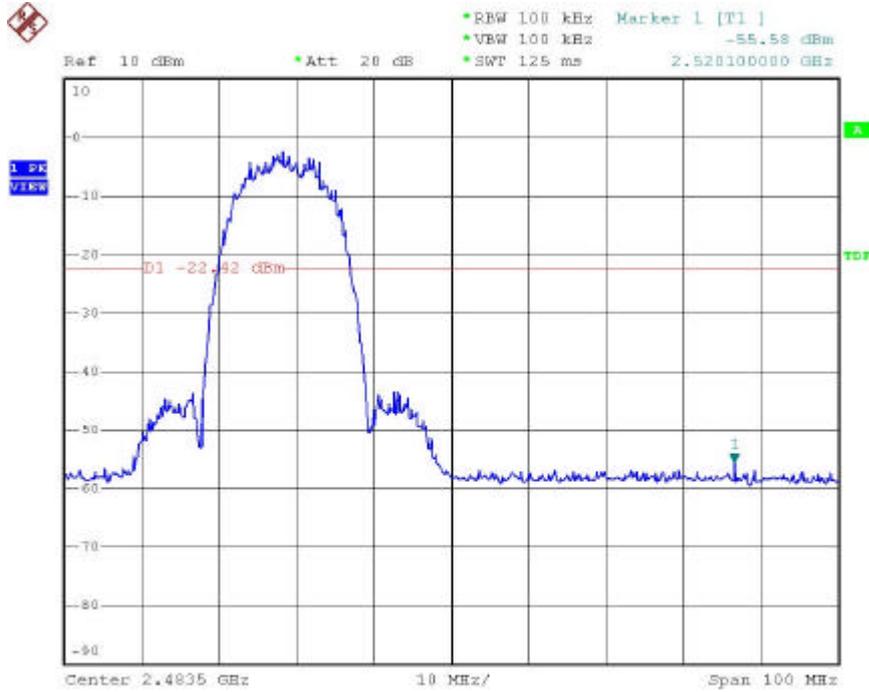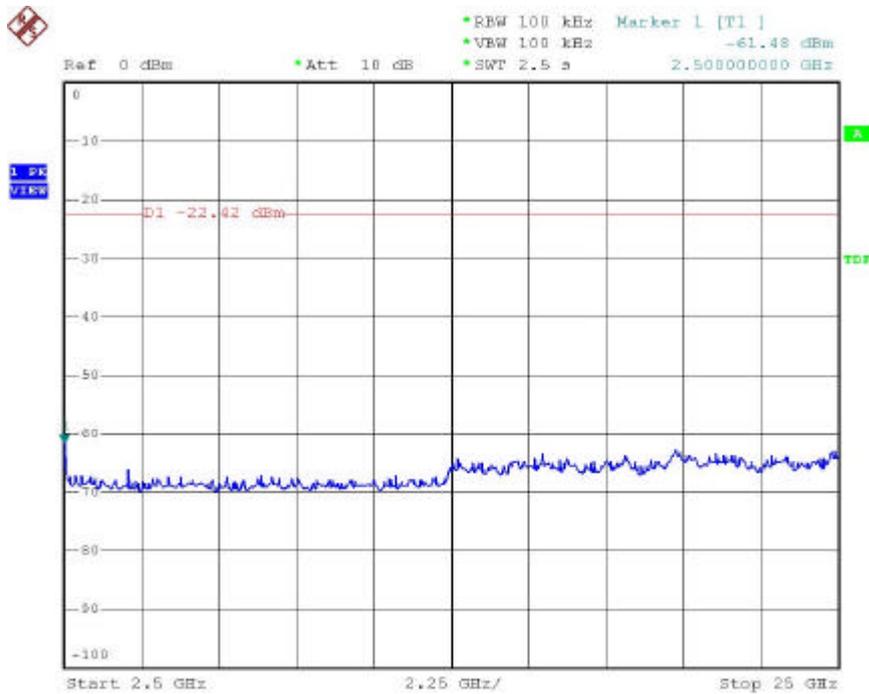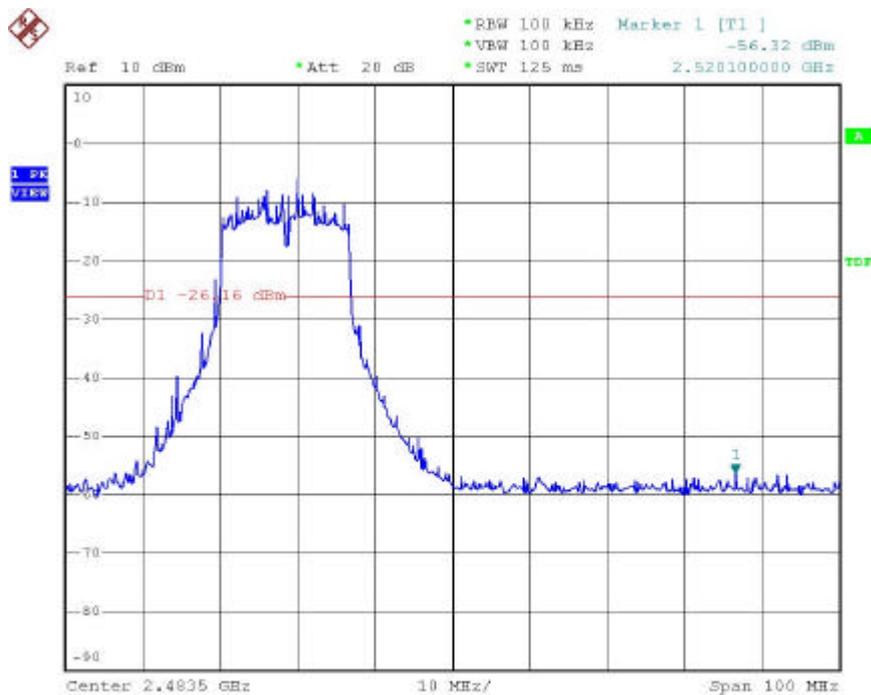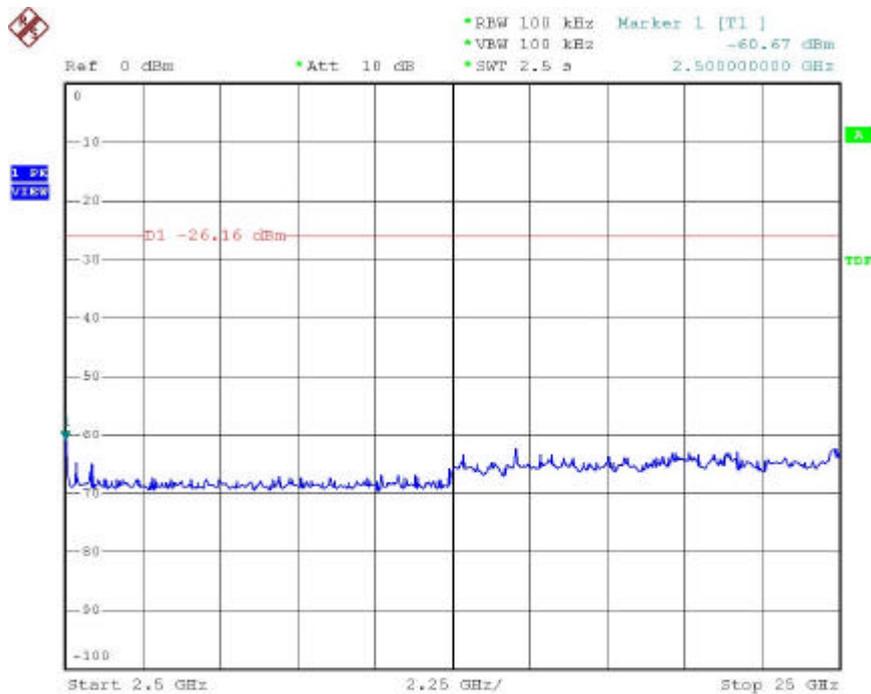## 8.3. Restrict band emission Measurement Data

Modulation Standard: IEEE 802.11b (11Mbps)
Test Date: Jul. 25, 2005   Temperature: 30   Humidity: 70%   Atmospheric pressure: 1018mmHg
a)   Channel 1

Frequency (MHz)	Ant-Pol H/V	Meter Reading	Corrected Factor	Result (dBuV/m)	Remark	Limit@3m (dBuV/m)		Margin (dB)	Table (Deg.)	Ant High (m)
						Peak	Ave.			
2362.734	H	50.24	1.16	51.40	Peak	74	54	-2.60	293	1.0
2387.418	H	38.16	1.24	39.40	Ave.	74	54	-14.60	293	1.0
2319.984	V	53.82	0.31	54.13	Peak	74	54	-19.87	237	1.0
2321.628	V	41.60	0.31	41.91	Ave.	74	54	-12.09	237	1.0

b)   Channel 11

Frequency (MHz)	Ant-Pol H/V	Meter Reading	Corrected Factor	Result (dBuV/m)	Remark	Limit@3m (dBuV/m)		Margin (dB)	Table (Deg.)	Ant High (m)
						Peak	Ave.			
2499.886	H	48.81	1.63	50.44	Peak	74	54	-23.56	293	1.0
2483.508	H	36.82	1.57	38.39	Ave.	74	54	-15.61	293	1.0
2497.872	V	52.08	0.92	53.00	Peak	74	54	-21.00	237	1.0
2483.508	V	40.32	0.87	41.19	Ave.	74	54	-12.81	237	1.0

Modulation Standard: IEEE 802.11g (54 Mbps)
Test Date: Jul. 25, 2005   Temperature: 30   Humidity: 70%   Atmospheric pressure: 1018mmHg
a)   Channel 1

Frequency (MHz)	Ant-Pol H/V	Meter Reading	Corrected Factor	Result (dBuV/m)	Remark	Limit@3m (dBuV/m)		Margin (dB)	Table (Deg.)	Ant High (m)
						Peak	Ave.			
2385.888	H	49.38	1.24	50.62	Peak	74	54	-23.38	293	1.0
2388.948	H	37.28	1.25	38.53	Ave.	74	54	-15.47	293	1.0
2319.984	V	54.23	0.31	54.54	Peak	74	54	-19.46	237	1.0
2321.628	V	42.29	0.31	42.60	Ave.	74	54	-11.40	237	1.0

b)   Channel 11

| Frequency (MHz)	Ant-Pol H/V	Meter Reading	Corrected Factor	Result (dBuV/m)	Remark	Limit@3m (dBuV/m)		Margin (dB)	Table (Deg.)	Ant High (m)
						Peak	Ave.			
2486.776	H	49.30	1.58	50.88	Peak	74	54	-23.12	293	1.0
2483.508	H	37.81	1.57	39.38	Ave.	74	54	-14.62	293	1.0
2483.508	V	54.80	0.87	55.68	Peak	74	54	-18.32	237	1.0
2483.508	V	42.17	0.87	43.04	Ave.	74	54	-11.96	237	1.0

Notes:
1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and video bandwidth is 3 MHz for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.

9. Power Spectral Density Measurement

9.1. Test Procedure

1. The transmitter output was connected to spectrum analyzer.
2. The spectrum analyzer's resolution bandwidth were set at 3KHz RBW and 30KHz VBW as that of the fundamental frequency. Set the sweep time=span/3KHz.
3. The power spectral density was measured and recorded.
4. The Sweep time is allowed to be longer than span/3KHz for a full response of the mixer in the spectrum analyzer.

9.2. Test Setup Layout

EUT —— Spectrum Analyzer
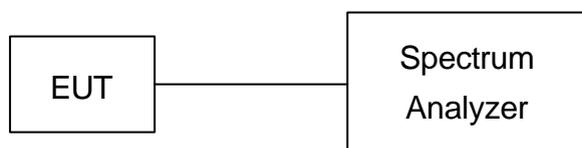
9.3. Test Result and Data

(1) Modulation Standard: IEEE 802.11b (11Mbps)

Test Date: Jul. 26, 2005 Temperature: 27   Humidity: 64%   Atmospheric pressure: 1014mmHg

Channel	Frequency	Maximum Power Density of 3 kHz Bandwidth (dBm)
01	2412	-17.41
06	2437	-15.83
11	2462	-17.02

(2) Modulation Standard: IEEE 802.11g (12Mbps)

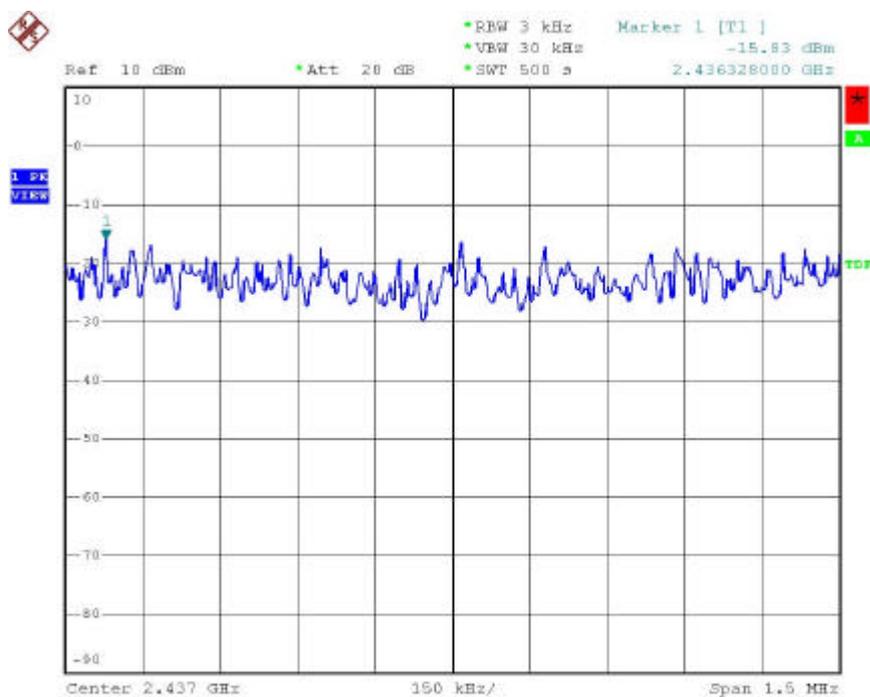Test Date: Jul. 26, 2005 Temperature: 27   Humidity: 64%   Atmospheric pressure: 1014mmHg

Channel	Frequency	Maximum Power Density of 3 kHz Bandwidth (dBm)
01	2412	-21.02
06	2437	-20.51
11	2462	-21.11

Modulation Standard: IEEE 802.11b (11Mbps)
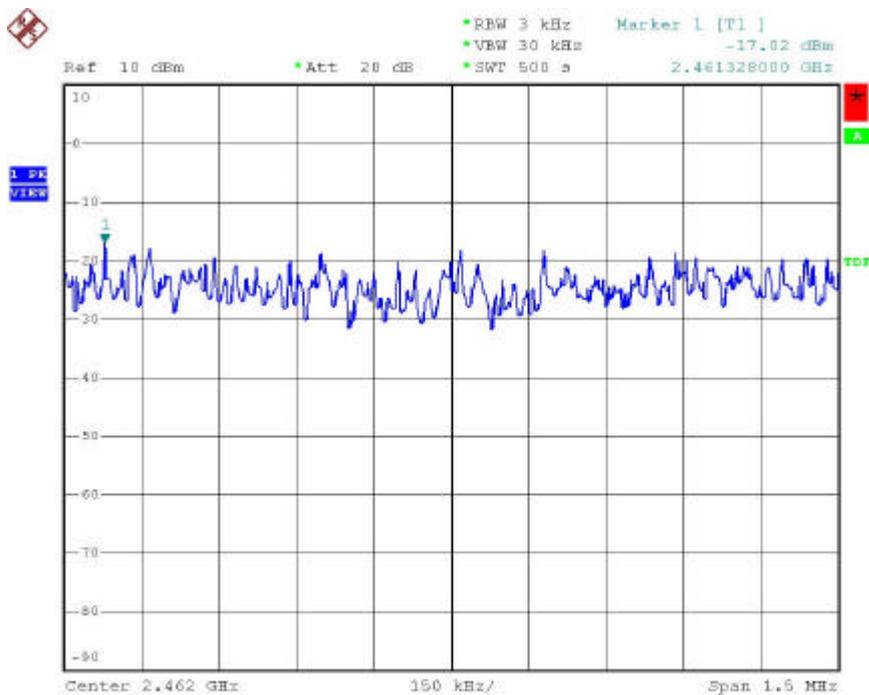Channel 01
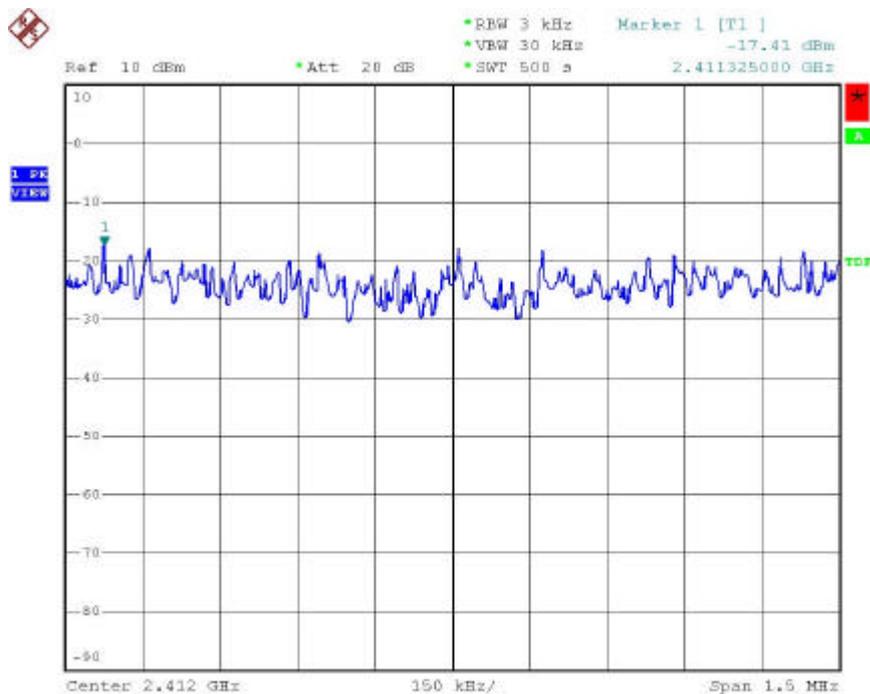
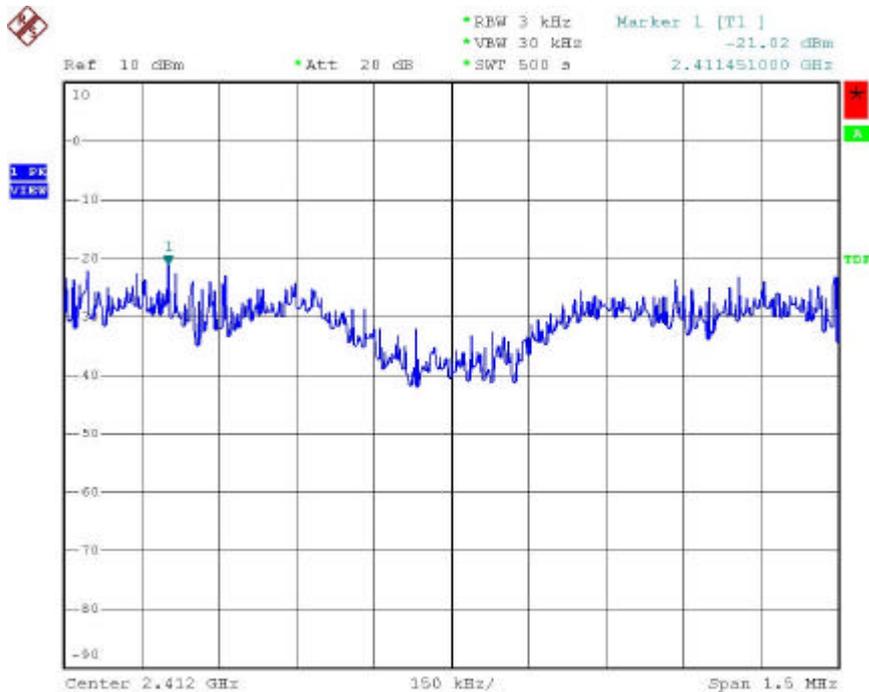Date: 26.JUL.2005   16:58:48

Channel 06

Date: 26.JUL.2005   17:12:17
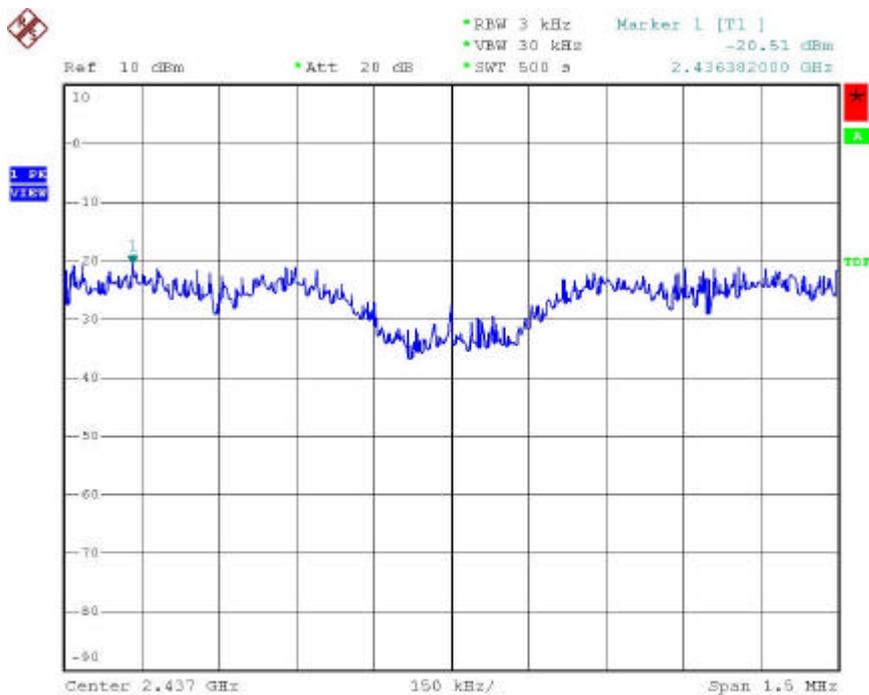
Channel 11

Date: 26.JUL.2005 17:22:01

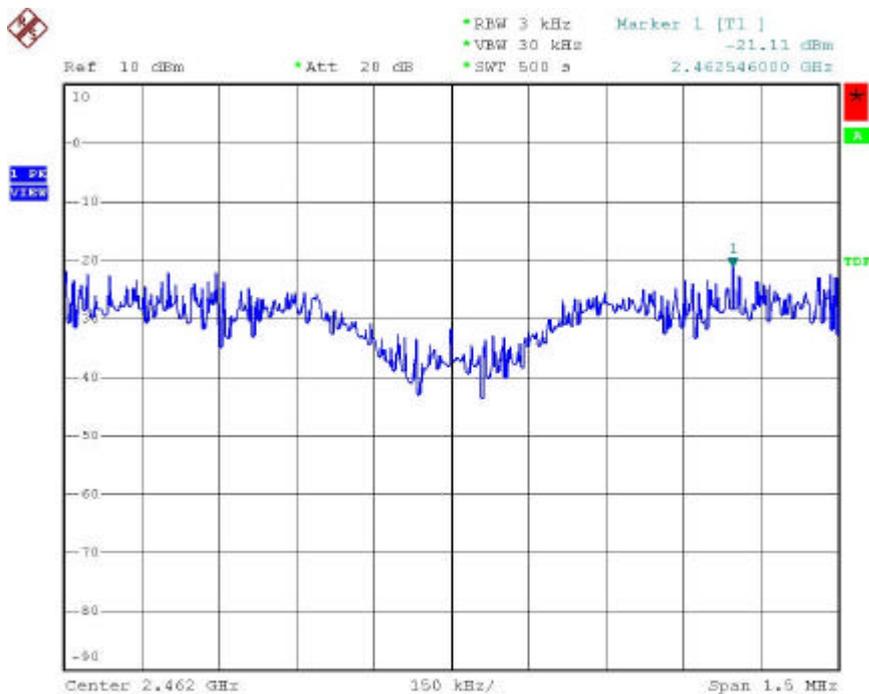Modulation Standard: IEEE 802.11g (6Mbps)
Channel 01

Date: 26.JUL.2005 17:37:35

Channel 06

Date: 26.JUL.2005 18:03:33

Channel 11

Date: 26.JUL.2005 17:52:04

10. Restricted Bands of Operation

Only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.09000 – 0.11000	16.42000 – 16.42300	399.9 – 410.0	4.500 – 5.250
0.49500 – 0.505**	16.69475 – 16.69525	608.0 – 614.0	5.350 – 5.460
2.17350 – 2.19050	16.80425 – 16.80475	960.0 – 1240.0	7.250 – 7.750
4.12500 – 4.12800	25.50000 – 25.67000	1300.0 – 1427.0	8.025 – 8.500
4.17725 – 4.17775	37.50000 – 38.25000	1435.0 – 1626.5	9.000 – 9.200
4.20725 – 4.20775	73.00000 – 74.60000	1645.5 – 1646.5	9.300 – 9.500
6.21500 – 6.21800	74.80000 – 75.20000	1660.0 – 1710.0	10.600 – 12.700
6.26775 – 6.26825	108.00000 – 121.94000	1718.8 – 1722.2	13.250 – 13.400
6.31175 – 6.31225	123.00000 – 138.00000	2200.0 – 2300.0	14.470 – 14.500
8.29100 – 8.29400	149.90000 – 150.05000	2310.0 – 2390.0	15.350 – 16.200
8.36200 – 8.36600	156.52475 – 156.52525	2483.5 – 2500.0	17.700 – 21.400
8.37625 – 8.38675	156.70000 – 156.90000	2655.0 – 2900.0	22.010 – 23.120
8.41425 – 8.41475	162.01250 – 167.17000	3260.0 – 3267.0	23.600 – 24.000
12.29000 – 12.29300	167.72000 – 173.20000	3332.0 – 3339.0	31.200 – 31.800
12.51975 – 12.52025	240.00000 – 285.00000	3345.8 – 3358.0	36.430 – 36.500
12.57675 – 12.57725	322.00000 – 335.40000	3600.0 – 4400.0	Above 38.6
13.36000 – 13.41000			

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

10.1. Labeling Requirement

The device shall bear the following statement in a conspicuous location on the device:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.