



Test Report

Product Name : Wireless LAN CardBus Card
Model No. : WP233g
FCC ID. : PQP-WP233G

Applicant : PRIME ELECTRONICS & SATELLITICS INC.
Address : 69, Tung-Yuan Rd., Chung-Li Industrial Park,
Chung-Li City, Taoyuan, Taiwan.

Date of Receipt : 2004/11/02
Issued Date : 2004/11/15
Report No. : 04BH018-F-R02-T

The test results relate only to the samples tested.

The test report shall not be reproduced except in full without the written approval of Quietek Corporation.

This report must not be used to claim product endorsement by NVLAP any agency of the U.S. Government

Test Report Certification

Issued Date : 2004/11/15

Report No. : 04BH018-F-R02-T



Accredited by NIST (FCC)

Registration Number: 92195

Product Name : Wireless LAN CardBus Card
 Applicant : PRIME ELECTRONICS & SATELLITICS INC.
 Address : 69, Tung-Yuan Rd., Chung-Li Industrial Park,
 Chung-Li City, Taoyuan, Taiwan.
 Manufacturer : PRIME ELECTRONICS & SATELLITICS INC.
 Model No. : WP233g
 FCC ID. : PQP-WP233G
 Rated Voltage : AC 120 V / 60 Hz
 EUT Voltage : DC 3.3V
 Trade Name : PESI
 Measurement Standard : Part 15 Subpart C Paragraph 15.247: 2003
 Measurement Procedure : ANSI C63.4: 2001
 Test Result : Complied

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TABLE OF CONTENTS

Description	Page
1. General Information	5
1.1. EUT Description	5
1.2. Test Mode	7
1.3. Tested System Details.....	8
1.4. Configuration of tested System	9
1.5. EUT Exercise Software	9
1.6. Test Facility	10
2. Conducted Emission	11
2.1. Test Equipment	11
2.2. Test Setup	11
2.3. Limits.....	12
2.4. Test Procedure	12
2.5. Test Specification	12
2.6. Test Result	13
2.7. Test Photo	17
3. Peak Power Output	18
3.1. Test Equipment	18
3.2. Test Setup	18
3.3. Limits.....	18
3.4. Test Specification	18
3.5. Test Result	19
4. Radiated Emission	21
4.1. Test Equipment	21
4.2. Test Setup	21
4.3. Limits.....	22
4.4. Test Procedure	22
4.5. Test Specification	22
4.6. Test Result	23
4.7. Test Photo	47
5. Band Edge	49
5.1. Test Equipment	49
5.2. Test Setup	50
5.3. Limits.....	50
5.4. Test Procedure	51
5.5. Test Specification	51
5.6. Test Result	52
6. Occupied Bandwidth	58
6.1. Test Equipment	58
6.2. Test Setup	58
6.3. Limits.....	58
6.4. Test Specification	58
6.5. Test Result	59
7. Power Density	60
7.1. Test Equipment	61

7.2.	Test Setup	61
7.3.	Limits.....	61
7.4.	Test Specification	61
7.5.	Test Result	62
Attachement.....		63
	EUT Photograph	64

1. General Information

1.1. EUT Description

Product Name	Wireless LAN CardBus Card
Trade Name	PESI
Model No.	WP233g
FCC ID	PQP-WP233G
Frequency Range	2412~2462MHz
Channel Number	11
Type of Modulation (IEEE 802.11b)	Direct Sequence Spread Spectrum (DSSS)
Type of Modulation (IEEE 802.11g)	Orthogonal Frequency Division Multiplexing (OFDM)
Data Speed (IEEE 802.11b)	1Mbps, 2Mbps, 5.5Mbps, 11Mbps
Data Speed (IEEE 802.11g)	6Mbps, 9Mbps, 12Mbps, 18Mbps, 24Mbps, 36Mbps, 48Mbps, 54Mbps
Working Voltage	DC 3.3 V
Antenna Gain	0.76dBi
Channel Control	Auto
Antenna Type	Printed

Working Frequency of Each Channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
001	2412 MHz	002	2417 MHz	003	2422 MHz	004	2427 MHz
005	2432 MHz	006	2437 MHz	007	2442 MHz	008	2447 MHz
009	2452 MHz	010	2457 MHz	011	2462 MHz		

Note:

1. This device is a Wireless LAN CardBus Card included a 2.4GHz receiving function, and 2.4GHz transmitting function.
2. These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15 Subpart C Paragraph 15.247 for spread spectrum devices.
3. Regards to the frequency band operation; the highest rate that was included the lowest - middle and highest frequency of channel were selected to perform the test, and then shown on this report.
4. This device is a composite device in accordance with Part 15 regulations. The function receiving was measured and made a test report that the report number is 04BH018-F-R01-R under Declaration of Conformity.

1.2. Operational Description

EUT is a Wireless LAN CardBus Card with 11 channels. This device provided four kinds of transmitting speed 1, 2, 5.5 and 11Mbps for IEEE 802.11b and eight kinds of transmitting speed 6, 9, 12, 18, 24, 36, 48 and 54Mbps for IEEE 802.11g. The device of RF carrier is DQPSK, DBPSK and CCK.

The device adapts Digitally Modulation Spread Spectrum modulation. The Printed antenna was provides diversity function to improve the receiving function.

This Wireless LAN CardBus Card, compliant with IEEE 802.11b and IEEE 802.11g, is a high-efficiency Wireless LAN adapter. It allows your computer to connect to a wireless network and to share resources, such as files or printers without being bound to the network wires. Operation in 2.4GHz Direct Sequence Spread Spectrum (DSSS) radio transmission for IEEE 802.11b and Orthogonal Frequency Division Multiplexing (OFDM) for IEEE 802.11g, the Wireless LAN CardBus Card t Wired Equivalent Protection (WEP) algorithm is used. In addition, its standard compliance ensures that it can communicate with any IEEE 802.11b and IEEE 802.11g network.

1.3. Test Mode

QuieTek has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

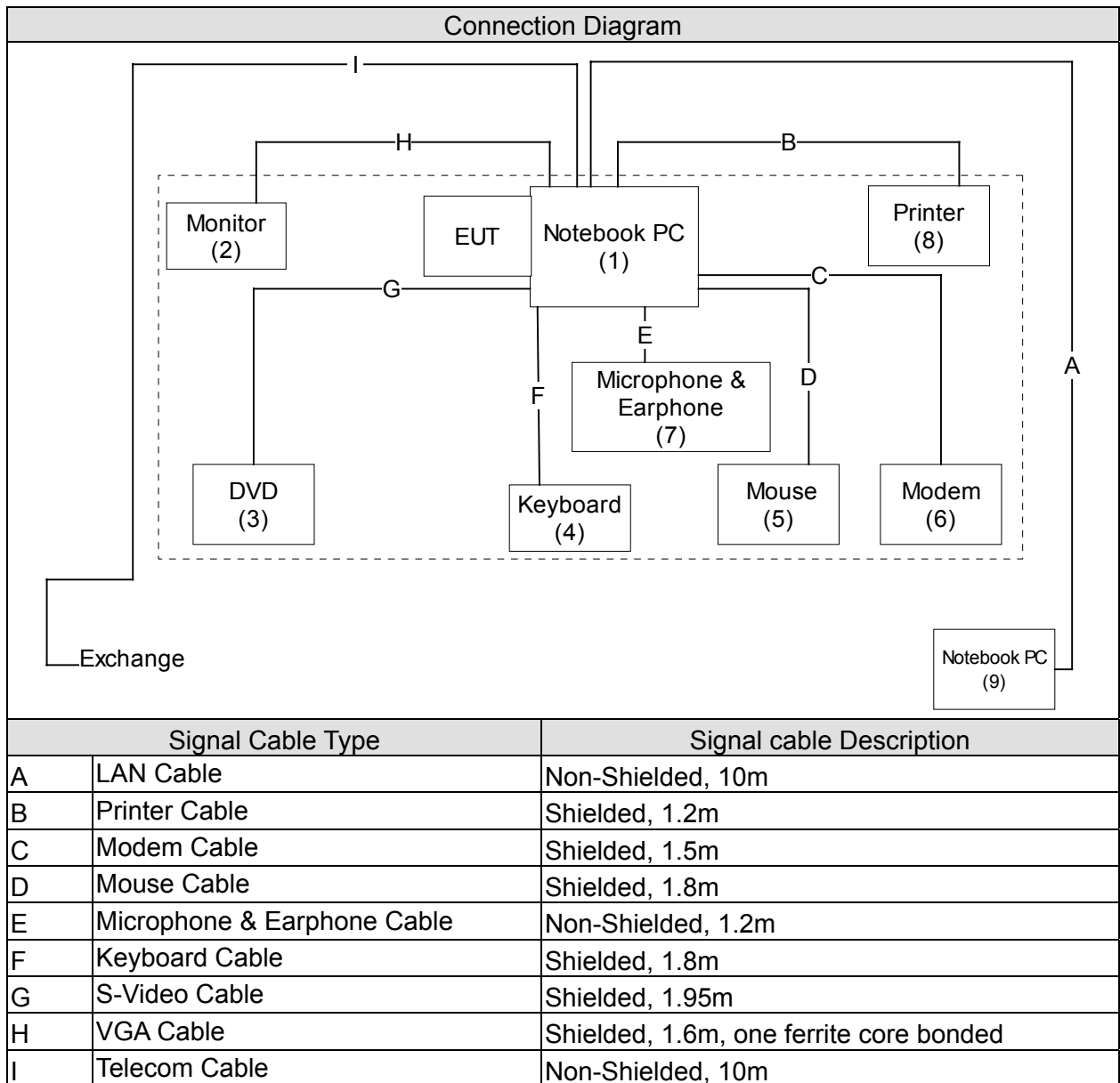
Pre-Test Mode	
TX	Mode 1: Data Transmit
Final Test Mode	
TX	Mode 1: Data Transmit

1.4. Tested System Details

The types for all equipments, plus descriptions of all cables used in the tested system (including inserted cards) are:

	Product	Manufacturer	Model No.	Serial No.	FCC ID	Power Cord
1	Notebook PC	DELL	Latitude 600	N/A	DoC	Non-Shielded, 1.7m, a ferrite core bonded
2	Monitor	GENUINE	G585	FK8B39883	DoC	Non-Shielded, 1.8m
3	DVD	PHILIPS	DVD 951	9542160	DoC	Non-Shielded, 1.5m
4	Keyboard	ACER	6311-TW2C	N/A	DoC	--
5	Mouse	IBM	M-SAU-IBM6	23-029372	DoC	--
6	Modem	ACEEX	DM-1414	960011397	DoC	Non-Shielded, 1.6m
7	Microphone & Earphone	TOKTO	SX-MI	N/A	DoC	--
8	Printer	HP	C2642A	MY75N1D2Y1	DoC	Non-Shielded, 0.7m
9	Notebook PC	DELL	Latitude 610	N/A	DoC	Non-Shielded, 1.7m, a ferrite core bonded

1.5. Configuration of tested System



1.6. EUT Exercise Software

1	Setup the EUT and simulators as shown on 1.4.
2	Turn on the power of all equipment.
3	Notebook PC reads data from disk.
4	Data will be transmitting and receiving through EUT.
5	The transmitting and received status will be shown on the monitor.
6	Repeat the above procedure (4) to (5).

1.7. Test Facility

Ambient conditions in the laboratory:

Items	Test Item	Required (IEC 68-1)	Actual
Temperature (°C)	FCC PART 15 C 15.207 Conducted Emission	15 - 35	20
Humidity (%RH)		25 - 75	50
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Band Edge	15 - 35	20
Humidity (%RH)		25 - 75	55
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Occupied Bandwidth	15 - 35	22
Humidity (%RH)		25 - 75	50
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Peak Power Output	15 - 35	20
Humidity (%RH)		25 - 75	50
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Power Density	15 - 35	22
Humidity (%RH)		25 - 75	55
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Radiated Emission	15 - 35	22
Humidity (%RH)		25 - 75	55
Barometric pressure (mbar)		860 - 1060	950-1000

Site Description: June 18, 2004 File on
Federal Communications Commission
FCC Engineering Laboratory
7435 Oakland Mills Road
Columbia, MD 21046
Registration Number: 92195



July 03, 2001 Accreditation on NVLAP
NVLAP Lab Code: 200347-0
Effective through Sep. 30, 2005



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2. Conducted Emission

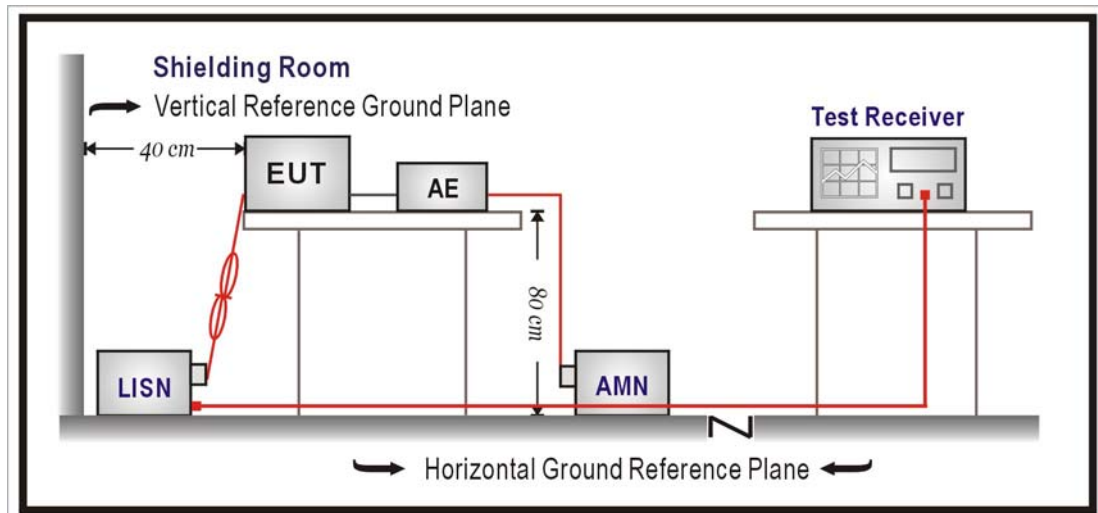
2.1. Test Equipment

The following test equipment are used during the test:

Item	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.	Remark
1	Test Receiver	R & S	ESCS 30/825442/018	Sep., 2004	
2	Artificial Mains Network	R & S	ENV4200/848411/10	Feb., 2004	Peripheral
3	LISN	R & S	ESH3-Z5/825562/002	Feb., 2004	EUT
4	Pulse Limiter	R & S	ESH3-Z2/357.8810.52	Feb., 2004	
5	No.2 Shielded Room			N/A	

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

2.2. Test Setup



2.3. Limits

FCC Part 15 Subpart C Paragraph 15.207 Limits (dBuV)		
Frequency MHz	QP	AV
0.15 - 0.50	66-56	56-46
0.50-5.0	56	46
5.0 - 30	60	50

Remarks : In the above table, the tighter limit applies at the band edges.

2.4. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2001 on conducted measurement.

Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

2.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.207: 2003

2.6. Test Result

Product	Wireless LAN CardBus Card		
Test Item	Conducted Emission		
Test Mode	Mode 1: Data Transmit		
Date of Test	2004/11/15	Test Site	No.2 Shielded Room

IEEE 802.11b

Frequency MHz	Cable Loss dB	LISN Factor dB	Reading Level dBuV	Emission Level dBuV	Limits dBuV
=====					
LINE 1					
Quasi-Peak					
* 0.170	0.10	0.11	47.10	47.31	64.96
0.342	0.10	0.18	30.80	31.08	59.15
0.741	0.11	0.25	24.10	24.46	56.00
1.771	0.12	0.33	21.20	21.65	56.00
3.713	0.15	0.40	30.50	31.05	56.00
15.611	0.31	0.54	25.30	26.15	60.00
Average					
* 0.170	0.10	0.11	36.90	37.11	54.96
0.342	0.10	0.18	22.30	22.58	49.15
0.741	0.11	0.25	21.90	22.26	46.00
1.771	0.12	0.33	19.70	20.15	46.00
3.713	0.15	0.40	21.60	22.15	46.00
15.611	0.31	0.54	17.60	18.45	50.00

Note:

1. All Reading Levels are Quasi-Peak and Average value.
2. “ * ”, means this data is the worst emission level.
3. Emission Level = Reading Level + LISN Factor + Cable Loss.

Product	Wireless LAN CardBus Card		
Test Item	Conducted Emission		
Test Mode	Mode 1: Data Transmit		
Date of Test	2004/11/15	Test Site	No.2 Shielded Room

IEEE 802.11b

Frequency MHz	Cable Loss dB	LISN Factor dB	Reading Level dBuV	Emission Level dBuV	Limits dBuV
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=====

LINE 2

Quasi-Peak

*	0.172	0.10	0.11	47.80	48.01	64.86
	0.341	0.10	0.18	33.50	33.78	59.18
	0.631	0.11	0.24	24.50	24.84	56.00
	1.314	0.12	0.31	20.60	21.02	56.00
	3.768	0.15	0.40	28.10	28.65	56.00
	14.911	0.30	0.53	32.30	33.13	60.00

Average

*	0.172	0.10	0.11	38.60	38.81	54.86
	0.341	0.10	0.18	26.70	26.98	49.18
	0.631	0.11	0.24	19.60	19.94	46.00
	1.314	0.12	0.31	17.90	18.32	46.00
	3.768	0.15	0.40	19.80	20.35	46.00
	14.911	0.30	0.53	27.60	28.43	50.00

Note:

1. All Reading Levels are Quasi-Peak and Average value.
2. " * ", means this data is the worst emission level.
3. Emission Level = Reading Level + LISN Factor + Cable Loss.

Product	Wireless LAN CardBus Card		
Test Item	Conducted Emission		
Test Mode	Mode 1: Data Transmit		
Date of Test	2004/11/15	Test Site	No.2 Shielded Room

IEEE 802.11g

Frequency MHz	Cable Loss dB	LISN Factor dB	Reading Level dBuV	Emission Level dBuV	Limits dBuV
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LINE 1

Quasi-Peak

*	0.170	0.10	0.11	47.20	47.41	64.96
	0.341	0.10	0.18	31.10	31.38	59.18
	0.513	0.10	0.22	26.20	26.52	56.00
	1.255	0.11	0.30	21.90	22.32	56.00
	3.771	0.15	0.41	28.50	29.05	56.00
	14.109	0.29	0.53	31.40	32.22	60.00

Average

*	0.170	0.10	0.11	36.80	37.01	54.96
	0.341	0.10	0.18	22.60	22.88	49.18
	0.513	0.10	0.22	24.00	24.32	46.00
	1.255	0.11	0.30	21.10	21.52	46.00
	3.771	0.15	0.41	20.70	21.25	46.00
	14.109	0.29	0.53	27.10	27.92	50.00

Note:

1. All Reading Levels are Quasi-Peak and Average value.
2. " * ", means this data is the worst emission level.
3. Emission Level = Reading Level + LISN Factor + Cable Loss.

Product	Wireless LAN CardBus Card		
Test Item	Conducted Emission		
Test Mode	Mode 1: Data Transmit		
Date of Test	2004/11/15	Test Site	No.2 Shielded Room

IEEE 802.11g

Frequency MHz	Cable Loss dB	LISN Factor dB	Reading Level dBuV	Emission Level dBuV	Limits dBuV
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=====

LINE 2

Quasi-Peak

*	0.171	0.10	0.11	48.00	48.21	64.91
	0.287	0.10	0.16	38.80	39.06	60.61
	0.457	0.10	0.21	31.50	31.81	56.75
	3.599	0.15	0.40	22.60	23.15	56.00
	13.262	0.28	0.52	25.20	26.00	60.00
	27.318	0.46	0.59	29.50	30.55	60.00

Average

*	0.171	0.10	0.11	38.80	39.01	54.91
	0.287	0.10	0.16	27.20	27.46	50.61
	0.457	0.10	0.21	27.30	27.61	46.75
	3.599	0.15	0.40	12.70	13.25	46.00
	13.262	0.28	0.52	20.40	21.20	50.00
	27.318	0.46	0.59	24.80	25.85	50.00

Note:

1. All Reading Levels are Quasi-Peak and Average value.
2. " * ", means this data is the worst emission level.
3. Emission Level = Reading Level + LISN Factor + Cable Loss.

3. Peak Power Output

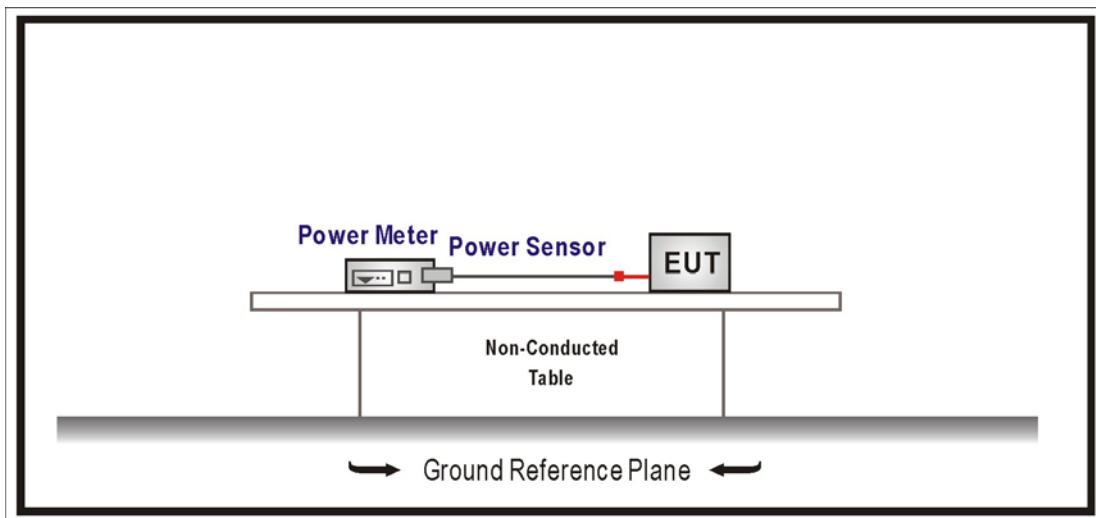
3.1. Test Equipment

The following test equipment are used during the test:

Item	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.
1	Power Meter	Agilent	E4416A / GB41291630	May, 2004
2	Power Sensor	Agilent	E9323A / US40411166	Apr., 2004
3	No.1 OATS			Sep., 2004

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

3.2. Test Setup



3.3. Limits

The maximum peak power shall be less 1 Watt.

3.4. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2003

3.5. Test Result

Product	Wireless LAN CardBus Card		
Test Item	Peak Power Output		
Test Mode	Mode 1: Data Transmit		
Date of Test	2004/11/15	Test Site	No.1 OATS

IEEE 802.11b				
Channel No.	Frequency (MHz)	Measurement (dBm)	Limit (dBm)	Result
1	2412.00	12.88	1Watt = 30 dBm	Pass
6	2437.00	13.84	1Watt= 30 dBm	Pass
11	2462.00	13.95	1Watt= 30 dBm	Pass

Product	Wireless LAN CardBus Card		
Test Item	Peak Power Output		
Test Mode	Mode 1: Data Transmit		
Date of Test	2004/11/15	Test Site	No.1 OATS

IEEE 802.11g				
Channel No.	Frequency (MHz)	Measurement (dBm)	Limit (dBm)	Result
1	2412.00	11.11	1Watt = 30 dBm	Pass
6	2437.00	12.12	1Watt= 30 dBm	Pass
11	2462.00	12.15	1Watt= 30 dBm	Pass

4. Radiated Emission

4.1. Test Equipment

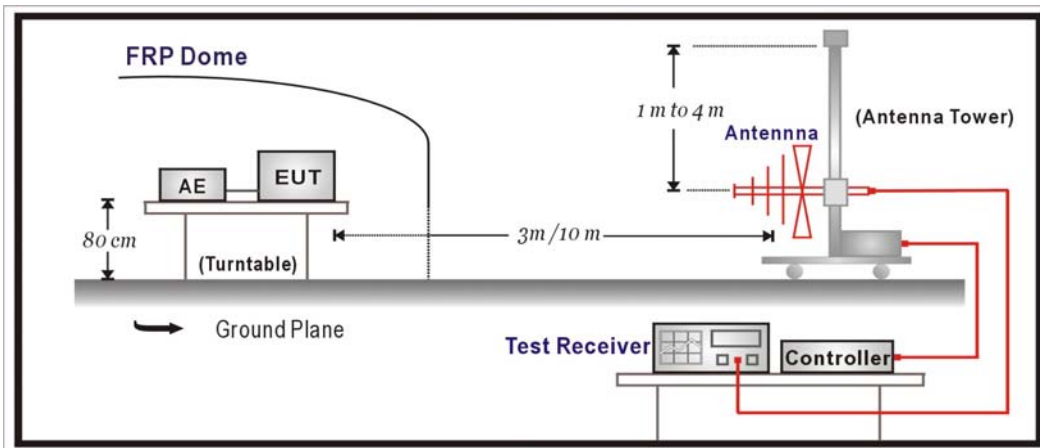
The following test equipment are used during the test:

Item	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.
1	X Test Receiver	R & S	ESCS 30 / 825442/017	Jan., 2004
2	X Spectrum Analyzer	Advantest	R3261C / 81720266	N/A
3	X Pre-Amplifier	HP	8447D / 2944A09276	N/A
4	X Bilog Antenna	Chase	CBL6112B / 2455	Sep., 2004
5	X Spectrum Analyzer	R & S	FSP40 / 100005	Aug., 2004
6	X Pre-Amplifier	HP	8449B / 3008A01123	Feb., 2004
7	X Horn Antenna	Schwarzbeck	BBHA 9120D / BBHA9120D312	Jul., 2004
8	No.1 OATS			Sep., 2004

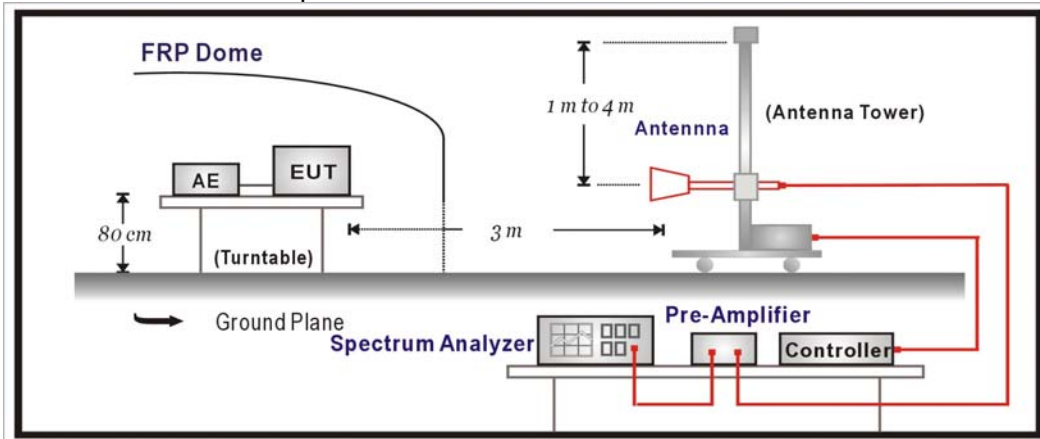
- Note: 1. All equipments that need to calibrate are with calibration period of 1 year.
 2. Mark "X" test instruments are used to measure the final test results.

4.2. Test Setup

Under 1GHz Test Setup:



Above 1GHz Test Setup:



4.3. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

FCC Part 15 Subpart C Paragraph 15.209 Limits		
Frequency MHz	uV/m	dBuV/m
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

- Remarks :
1. RF Voltage (dBuV) = 20 log RF Voltage (uV)
 2. In the Above Table, the tighter limit applies at the band edges.
 3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

4.4. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.4:2001 on radiated measurement.

On any frequency or frequencies below or equal to 1000 MHz, the limits shown are based on measuring equipment employing a quasi-peak detector function and on any frequency or frequencies above 1000 MHz the radiated limits shown are based upon the use of measurement instrumentation employing an average detector function. When average radiated emission measurement are included emission measurement below 1000 MHz, there also is a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit. The bandwidth below 1GHz setting on the field strength meter is 120 kHz and above 1GHz is 1MHz.

4.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.209: 2003

4.6. Test Result

Product	Wireless LAN CardBus Card		
Test Item	Radiated Emission		
Test Mode	Mode 1: Data Transmit		
Date of Test	2004/11/15	Test Site	No.1 OATS

IEEE 802.11b, Channel 1

Frequency	Cable Loss	Probe Factor	PreAMP	Reading Level	Emission Level	Margin	Limit
MHz	dB	dB/m	dB	dBuV	dBuV/m	dB	dBuV/m

=====

Horizontal

Peak

4824.040	4.24	31.31	31.95	37.64	< 41.24	32.76	74.00
7236.080	5.63	36.54	32.67	36.62	< 46.12	27.88	74.00
9648.000	7.01	37.98	31.88	35.54	< 48.66	25.34	74.00
12060.08	8.40	38.59	31.32	34.62	< 50.29	23.71	74.00

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz.
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz.
4. Emission Level = Reading Level + Probe Factor + Cable Loss – PreAMP.
5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product	Wireless LAN CardBus Card		
Test Item	Radiated Emission		
Test Mode	Mode 1: Data Transmit		
Date of Test	2004/11/15	Test Site	No.1 OATS

IEEE 802.11b, Channel 1

Frequency MHz	Cable Loss dB	Probe Factor dB/m	PreAMP dB	Reading Level dBuV	Emission Level dBuV/m	Margin dB	Limit dBuV/m
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Vertical

Peak

4824.100	4.24	31.31	31.95	37.66	< 41.26	32.74	74.00
7236.040	5.63	36.54	32.67	37.03	< 46.53	27.47	74.00
9648.000	7.01	37.98	31.88	35.37	< 48.49	25.51	74.00
12060.08	8.40	38.59	31.32	34.33	< 50.00	24.00	74.00

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz.
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz.
4. Emission Level = Reading Level + Probe Factor + Cable Loss – PreAMP.
5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product	Wireless LAN CardBus Card		
Test Item	Radiated Emission		
Test Mode	Mode 1: Data Transmit		
Date of Test	2004/11/15	Test Site	No.1 OATS

IEEE 802.11b, Channel 6

Frequency MHz	Cable Loss dB	Probe Factor dB/m	PreAMP dB	Reading Level dBuV	Emission Level dBuV/m	Margin dB	Limit dBuV/m
------------------	---------------------	-------------------------	--------------	--------------------------	-----------------------------	--------------	-----------------

=====

Horizontal

Peak

4874.100	4.27	31.37	31.95	37.26	< 40.95	33.05	74.00
7311.100	5.67	36.56	32.60	35.68	< 45.31	28.69	74.00
9748.200	7.07	38.13	31.66	36.08	< 49.62	24.38	74.00
12185.20	8.47	38.51	31.21	34.56	< 50.32	23.68	74.00

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz.
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz.
4. Emission Level = Reading Level + Probe Factor + Cable Loss – PreAMP.
5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product	Wireless LAN CardBus Card		
Test Item	Radiated Emission		
Test Mode	Mode 1: Data Transmit		
Date of Test	2004/11/15	Test Site	No.1 OATS

IEEE 802.11b, Channel 6

Frequency	Cable Loss	Probe Factor	PreAMP	Reading Level	Emission Level	Margin	Limit
MHz	dB	dB/m	dB	dBuV	dBuV/m	dB	dBuV/m

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Vertical

Peak

4874.000	4.27	31.37	31.95	37.18	< 40.87	33.13	74.00
7311.080	5.67	36.56	32.60	35.87	< 45.50	28.50	74.00
9748.080	7.07	38.13	31.66	35.57	< 49.11	24.89	74.00
12185.04	8.47	38.51	31.21	34.70	< 50.46	23.54	74.00 y

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz.
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz.
4. Emission Level = Reading Level + Probe Factor + Cable Loss – PreAMP.
5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product	Wireless LAN CardBus Card		
Test Item	Radiated Emission		
Test Mode	Mode 1: Data Transmit		
Date of Test	2004/11/15	Test Site	No.1 OATS

IEEE 802.11b, Channel 11

Frequency MHz	Cable Loss dB	Probe Factor dB/m	PreAMP dB	Reading Level dBuV	Emission Level dBuV/m	Margin dB	Limit dBuV/m
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Horizontal

Peak

4924.040	4.30	31.43	31.96	37.18	< 40.96	33.04	74.00
7386.120	5.72	36.58	32.51	35.66	< 45.45	28.55	74.00
9848.040	7.12	38.18	31.48	35.24	< 49.06	24.94	74.00
12310.04	8.54	38.42	31.09	34.12	< 49.99	24.01	74.00

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz.
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz.
4. Emission Level = Reading Level + Probe Factor + Cable Loss – PreAMP.
5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product	Wireless LAN CardBus Card		
Test Item	Radiated Emission		
Test Mode	Mode 1: Data Transmit		
Date of Test	2004/11/15	Test Site	No.1 OATS

IEEE 802.11b, Channel 11

Frequency MHz	Cable Loss dB	Probe Factor dB/m	PreAMP dB	Reading Level dBuV	Emission Level dBuV/m	Margin dB	Limit dBuV/m
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Vertical

Peak

4924.080	4.30	31.43	31.96	37.13	< 40.91	33.09	74.00
7386.080	5.72	36.58	32.51	35.40	< 45.19	28.81	74.00
9848.040	7.12	38.18	31.48	35.37	< 49.19	24.81	74.00
12310.08	8.54	38.42	31.09	34.86	< 50.73	23.27	74.00

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz.
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz.
4. Emission Level = Reading Level + Probe Factor + Cable Loss – PreAMP.
5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product	Wireless LAN CardBus Card		
Test Item	Radiated Emission		
Test Mode	Mode 1: Data Transmit		
Date of Test	2004/11/15	Test Site	No.1 OATS

IEEE 802.11g, Channel 1

Frequency MHz	Cable Loss dB	Probe Factor dB/m	PreAMP dB	Reading Level dBuV	Emission Level dBuV/m	Margin dB	Limit dBuV/m
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Horizontal

Peak

4824.080	4.24	31.31	31.95	37.71	< 41.31	32.69	74.00
7236.040	5.63	36.54	32.67	37.14	< 46.64	27.36	74.00
9648.000	7.01	37.98	31.88	35.88	< 49.00	25.00	74.00
12060.04	8.40	38.59	31.32	34.61	< 50.28	23.72	74.00

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz.
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz.
4. Emission Level = Reading Level + Probe Factor + Cable Loss – PreAMP.
5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product	Wireless LAN CardBus Card		
Test Item	Radiated Emission		
Test Mode	Mode 1: Data Transmit		
Date of Test	2004/11/15	Test Site	No.1 OATS

IEEE 802.11g, Channel 1

Frequency MHz	Cable Loss dB	Probe Factor dB/m	PreAMP dB	Reading Level dBuV	Emission Level dBuV/m	Margin dB	Limit dBuV/m
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Vertical

Peak

4824.040	4.24	31.31	31.95	37.45	< 41.05	32.95	74.00
7236.040	5.63	36.54	32.67	36.69	< 46.19	27.81	74.00
9648.040	7.01	37.98	31.88	35.84	< 48.96	25.04	74.00
12060.00	8.40	38.59	31.32	35.02	< 50.69	23.31	74.00

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz.
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz.
4. Emission Level = Reading Level + Probe Factor + Cable Loss – PreAMP.
5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product	Wireless LAN CardBus Card		
Test Item	Radiated Emission		
Test Mode	Mode 1: Data Transmit		
Date of Test	2004/11/15	Test Site	No.1 OATS

IEEE 802.11g, Channel 6

Frequency	Cable Loss	Probe Factor	PreAMP	Reading Level	Emission Level	Margin	Limit
MHz	dB	dB/m	dB	dBuV	dBuV/m	dB	dBuV/m

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Horizontal

Peak

4874.040	4.27	31.37	31.95	37.61	< 41.30	32.70	74.00
7311.080	5.67	36.56	32.60	36.58	< 46.21	27.79	74.00
9748.040	7.07	38.13	31.66	35.39	< 48.93	25.07	74.00
12185.04	8.47	38.51	31.21	34.53	< 50.29	23.71	74.00

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz.
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz.
4. Emission Level = Reading Level + Probe Factor + Cable Loss – PreAMP.
5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product	Wireless LAN CardBus Card		
Test Item	Radiated Emission		
Test Mode	Mode 1: Data Transmit		
Date of Test	2004/11/15	Test Site	No.1 OATS

IEEE 802.11g, Channel 6

Frequency	Cable Loss	Probe Factor	PreAMP	Reading Level	Emission Level	Margin	Limit
MHz	dB	dB/m	dB	dBuV	dBuV/m	dB	dBuV/m

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Vertical

Peak

4874.000	4.27	31.37	31.95	37.25	< 40.94	33.06	74.00
7311.000	5.67	36.56	32.60	37.13	< 46.76	27.24	74.00
9748.000	7.07	38.13	31.66	35.75	< 49.29	24.71	74.00
12185.04	8.47	38.51	31.21	35.50	< 51.26	22.74	74.00

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz.
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz.
4. Emission Level = Reading Level + Probe Factor + Cable Loss – PreAMP.
5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product	Wireless LAN CardBus Card		
Test Item	Radiated Emission		
Test Mode	Mode 1: Data Transmit		
Date of Test	2004/11/15	Test Site	No.1 OATS

IEEE 802.11g, Channel 11

Frequency MHz	Cable Loss dB	Probe Factor dB/m	PreAMP dB	Reading Level dBuV	Emission Level dBuV/m	Margin dB	Limit dBuV/m
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Horizontal

Peak

4924.040	4.30	31.43	31.96	37.08	< 40.86	33.14	74.00
7386.040	5.72	36.58	32.51	35.62	< 45.41	28.59	74.00
9848.040	7.12	38.18	31.48	34.90	< 48.72	25.28	74.00
12310.04	8.54	38.42	31.09	34.33	< 50.20	23.80	74.00

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz.
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz.
4. Emission Level = Reading Level + Probe Factor + Cable Loss – PreAMP.
5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product	Wireless LAN CardBus Card		
Test Item	Radiated Emission		
Test Mode	Mode 1: Data Transmit		
Date of Test	2004/11/15	Test Site	No.1 OATS

IEEE 802.11g, Channel 11

Frequency MHz	Cable Loss dB	Probe Factor dB/m	PreAMP dB	Reading Level dBuV	Emission Level dBuV/m	Margin dB	Limit dBuV/m
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Vertical

Peak

4924.040	4.30	31.43	31.96	37.55	< 41.33	32.67	74.00
7386.080	5.72	36.58	32.51	36.35	< 46.14	27.86	74.00
9848.080	7.12	38.18	31.48	35.69	< 49.51	24.49	74.00
12310.04	8.54	38.42	31.09	34.51	< 50.38	23.62	74.00

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz.
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz.
4. Emission Level = Reading Level + Probe Factor + Cable Loss – PreAMP.
5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product	Wireless LAN CardBus Card		
Test Item	Radiated Emission		
Test Mode	Mode 1: Data Transmit		
Date of Test	2004/11/15	Test Site	No.1 OATS

IEEE 802.11b, Channel 1

Frequency MHz	Cable Loss dB	Probe Factor dB/m	PreAMP dB	Reading Level dBuV	Emission Level dBuV/m	Margin dB	Limit dBuV/m
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Horizontal

Quasi-Peak

199.750	1.71	9.28	20.81	44.80	34.98	8.52	43.50
* 330.700	2.25	14.61	20.25	42.00	38.62	7.38	46.00
538.280	3.10	21.75	20.17	31.80	36.48	9.52	46.00
652.740	3.57	18.52	19.98	31.80	33.91	12.09	46.00
798.240	4.17	22.66	19.89	28.40	35.34	10.66	46.00
896.210	4.57	24.94	19.72	28.00	37.79	8.21	46.00

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. “ * ”, means this data is the worst emission level.
3. Emission Level = Reading Level + Probe Factor + Cable Loss – PreAMP.

Product	Wireless LAN CardBus Card		
Test Item	Radiated Emission		
Test Mode	Mode 1: Data Transmit		
Date of Test	2004/11/15	Test Site	No.1 OATS

IEEE 802.11b, Channel 1

Frequency	Cable Loss	Probe Factor	PreAMP	Reading Level	Emission Level	Margin	Limit
MHz	dB	dB/m	dB	dBuV	dBuV/m	dB	dBuV/m

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Vertical

Quasi-Peak

*	194.900	1.69	16.62	20.85	43.60	41.06	2.44	43.50
	331.670	2.26	15.85	20.24	38.60	36.46	9.54	46.00
	455.830	2.76	14.09	20.15	38.20	34.90	11.10	46.00
	583.870	3.29	18.17	20.16	33.20	34.50	11.50	46.00
	782.720	4.11	22.86	19.81	28.60	35.76	10.24	46.00
	899.120	4.58	22.66	19.66	25.20	32.79	13.21	46.00

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. “ * ”, means this data is the worst emission level.
3. Emission Level = Reading Level + Probe Factor + Cable Loss – PreAMP.

Product	Wireless LAN CardBus Card		
Test Item	Radiated Emission		
Test Mode	Mode 1: Data Transmit		
Date of Test	2004/11/15	Test Site	No.1 OATS

IEEE 802.11b, Channel 6

Frequency MHz	Cable Loss dB	Probe Factor dB/m	PreAMP dB	Reading Level dBuV	Emission Level dBuV/m	Margin dB	Limit dBuV/m
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**Horizontal
 Quasi-Peak**

185.200	1.65	9.33	20.94	42.20	32.23	11.27	43.50
331.670	2.26	14.59	20.24	39.20	35.80	10.20	46.00
* 453.890	2.76	15.52	20.17	38.00	36.11	9.89	46.00
538.280	3.10	21.75	20.17	31.40	36.08	9.92	46.00
695.420	3.75	17.21	20.15	30.00	30.80	15.20	46.00
877.780	4.50	24.87	19.88	25.60	35.09	10.91	46.00

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. “ * ”, means this data is the worst emission level.
3. Emission Level = Reading Level + Probe Factor + Cable Loss – PreAMP.

Product	Wireless LAN CardBus Card		
Test Item	Radiated Emission		
Test Mode	Mode 1: Data Transmit		
Date of Test	2004/11/15	Test Site	No.1 OATS

IEEE 802.11b, Channel 6

Frequency MHz	Cable Loss dB	Probe Factor dB/m	PreAMP dB	Reading Level dBuV	Emission Level dBuV/m	Margin dB	Limit dBuV/m
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Vertical

Quasi-Peak

* 193.930	1.69	17.01	20.86	42.60	40.44	3.06	43.50
332.640	2.26	15.81	20.24	36.80	34.63	11.37	46.00
454.860	2.76	14.07	20.17	38.20	34.86	11.14	46.00
582.900	3.29	18.27	20.18	33.40	34.77	11.23	46.00
782.720	4.11	22.86	19.81	26.20	33.36	12.64	46.00
862.260	4.44	24.58	19.66	25.20	34.55	11.45	46.00

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. “ * ”, means this data is the worst emission level.
3. Emission Level = Reading Level + Probe Factor + Cable Loss – PreAMP.

Product	Wireless LAN CardBus Card		
Test Item	Radiated Emission		
Test Mode	Mode 1: Data Transmit		
Date of Test	2004/11/15	Test Site	No.1 OATS

IEEE 802.11b, Channel 11

Frequency MHz	Cable Loss dB	Probe Factor dB/m	PreAMP dB	Reading Level dBuV	Emission Level dBuV/m	Margin dB	Limit dBuV/m
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Horizontal

Quasi-Peak

185.200	1.65	9.33	20.94	40.20	30.23	13.27	43.50
* 331.670	2.26	14.59	20.24	41.20	37.80	8.20	46.00
453.890	2.76	15.52	20.17	36.00	34.11	11.89	46.00
585.810	3.30	21.51	20.16	29.00	33.65	12.35	46.00
697.360	3.76	17.25	20.13	30.20	31.08	14.92	46.00
817.640	4.25	24.15	19.90	27.20	35.71	10.29	46.00

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. “ * ”, means this data is the worst emission level.
3. Emission Level = Reading Level + Probe Factor + Cable Loss – PreAMP.

Product	Wireless LAN CardBus Card		
Test Item	Radiated Emission		
Test Mode	Mode 1: Data Transmit		
Date of Test	2004/11/15	Test Site	No.1 OATS

IEEE 802.11b, Channel 11

Frequency	Cable Loss	Probe Factor	PreAMP	Reading Level	Emission Level	Margin	Limit
MHz	dB	dB/m	dB	dBuV	dBuV/m	dB	dBuV/m

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Vertical

Quasi-Peak

* 193.930	1.69	17.01	20.86	41.60	39.44	4.06	43.50
331.670	2.26	15.85	20.24	38.60	36.46	9.54	46.00
453.890	2.76	14.06	20.17	37.80	34.44	11.56	46.00
559.620	3.19	20.49	20.20	33.20	36.68	9.32	46.00
696.390	3.75	18.20	20.13	26.60	28.43	17.57	46.00
800.180	4.18	23.99	19.89	28.20	36.48	9.52	46.00

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. “ * ”, means this data is the worst emission level.
3. Emission Level = Reading Level + Probe Factor + Cable Loss – PreAMP.

Product	Wireless LAN CardBus Card		
Test Item	Radiated Emission		
Test Mode	Mode 1: Data Transmit		
Date of Test	2004/11/15	Test Site	No.1 OATS

IEEE 802.11g, Channel 1

Frequency MHz	Cable Loss dB	Probe Factor dB/m	PreAMP dB	Reading Level dBuV	Emission Level dBuV/m	Margin dB	Limit dBuV/m
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Horizontal

Quasi-Peak

198.780	1.71	9.28	20.81	39.60	29.77	13.73	43.50
* 345.250	2.31	14.22	20.20	42.80	39.13	6.87	46.00
455.830	2.76	15.62	20.15	34.60	32.83	13.17	46.00
587.750	3.31	21.43	20.14	28.00	32.60	13.40	46.00
698.330	3.76	17.28	20.10	28.80	29.74	16.26	46.00
846.740	4.37	24.80	19.51	26.00	35.66	10.34	46.00

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. “ * ”, means this data is the worst emission level.
3. Emission Level = Reading Level + Probe Factor + Cable Loss – PreAMP.

Product	Wireless LAN CardBus Card		
Test Item	Radiated Emission		
Test Mode	Mode 1: Data Transmit		
Date of Test	2004/11/15	Test Site	No.1 OATS

IEEE 802.11g, Channel 1

Frequency	Cable Loss	Probe Factor	PreAMP	Reading Level	Emission Level	Margin	Limit
MHz	dB	dB/m	dB	dBuV	dBuV/m	dB	dBuV/m

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Vertical

Quasi-Peak

*	165.800	1.58	20.76	20.96	35.80	37.17	6.33	43.50
	331.670	2.26	15.85	20.24	39.20	37.06	8.94	46.00
	455.830	2.76	14.09	20.15	37.00	33.70	12.30	46.00
	587.750	3.31	17.83	20.14	32.80	33.80	12.20	46.00
	731.310	3.90	19.55	19.90	25.20	28.74	17.26	46.00
	856.440	4.41	24.78	19.56	26.00	35.63	10.37	46.00

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. “ * ”, means this data is the worst emission level.
3. Emission Level = Reading Level + Probe Factor + Cable Loss – PreAMP.

Product	Wireless LAN CardBus Card		
Test Item	Radiated Emission		
Test Mode	Mode 1: Data Transmit		
Date of Test	2004/11/15	Test Site	No.1 OATS

IEEE 802.11g, Channel 6

Frequency MHz	Cable Loss dB	Probe Factor dB/m	PreAMP dB	Reading Level dBuV	Emission Level dBuV/m	Margin dB	Limit dBuV/m
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**Horizontal
 Quasi-Peak**

185.200	1.65	9.33	20.94	42.60	32.63	10.87	43.50
* 301.600	2.13	13.60	20.48	42.20	37.45	8.55	46.00
396.660	2.52	16.14	20.20	37.80	36.26	9.74	46.00
539.250	3.11	21.77	20.20	28.40	33.08	12.92	46.00
695.420	3.75	17.21	20.15	29.60	30.40	15.60	46.00
841.890	4.35	24.75	19.57	25.60	35.13	10.87	46.00

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. “ * ”, means this data is the worst emission level.
3. Emission Level = Reading Level + Probe Factor + Cable Loss – PreAMP.

Product	Wireless LAN CardBus Card		
Test Item	Radiated Emission		
Test Mode	Mode 1: Data Transmit		
Date of Test	2004/11/15	Test Site	No.1 OATS

IEEE 802.11g, Channel 6

Frequency MHz	Cable Loss dB	Probe Factor dB/m	PreAMP dB	Reading Level dBuV	Emission Level dBuV/m	Margin dB	Limit dBuV/m
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Vertical

Quasi-Peak

* 165.800	1.58	20.76	20.96	36.20	37.57	5.93	43.50
301.600	2.13	17.42	20.48	36.40	35.48	10.52	46.00
498.510	2.94	16.94	20.17	36.00	35.71	10.29	46.00
580.960	3.28	18.45	20.20	32.00	33.53	12.47	46.00
732.280	3.90	19.60	19.90	26.20	29.80	16.20	46.00
847.710	4.38	24.72	19.51	25.20	34.78	11.22	46.00

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. “ * ”, means this data is the worst emission level.
3. Emission Level = Reading Level + Probe Factor + Cable Loss – PreAMP.

Product	Wireless LAN CardBus Card		
Test Item	Radiated Emission		
Test Mode	Mode 1: Data Transmit		
Date of Test	2004/11/15	Test Site	No.1 OATS

IEEE 802.11g, Channel 11

Frequency MHz	Cable Loss dB	Probe Factor dB/m	PreAMP dB	Reading Level dBuV	Emission Level dBuV/m	Margin dB	Limit dBuV/m
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=====
Horizontal
Quasi-Peak

185.200	1.65	9.33	20.94	42.20	32.23	11.27	43.50
* 330.700	2.25	14.61	20.25	39.80	36.42	9.58	46.00
453.890	2.76	15.52	20.17	34.40	32.51	13.49	46.00
582.900	3.29	21.63	20.18	29.00	33.74	12.26	46.00
697.360	3.76	17.25	20.13	29.20	30.08	15.92	46.00
818.610	4.26	24.23	19.90	27.20	35.79	10.21	46.00

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. “ * ”, means this data is the worst emission level.
3. Emission Level = Reading Level + Probe Factor + Cable Loss – PreAMP.

Product	Wireless LAN CardBus Card		
Test Item	Radiated Emission		
Test Mode	Mode 1: Data Transmit		
Date of Test	2004/11/15	Test Site	No.1 OATS

IEEE 802.11g, Channel 11

Frequency	Cable Loss	Probe Factor	PreAMP	Reading Level	Emission Level	Margin	Limit
MHz	dB	dB/m	dB	dBuV	dBuV/m	dB	dBuV/m

=====

Vertical

Quasi-Peak

*	160.950	1.56	19.89	20.91	38.20	38.73	4.77	43.50
	299.660	2.12	17.53	20.50	35.60	34.75	11.25	46.00
	455.830	2.76	14.09	20.15	34.40	31.10	14.90	46.00
	585.810	3.30	17.99	20.16	32.00	33.13	12.87	46.00
	731.310	3.90	19.55	19.90	26.40	29.94	16.06	46.00
	847.710	4.38	24.72	19.51	25.20	34.78	11.22	46.00

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. “ * ”, means this data is the worst emission level.
3. Emission Level = Reading Level + Probe Factor + Cable Loss – PreAMP.

5. Band Edge

5.1. Test Equipment

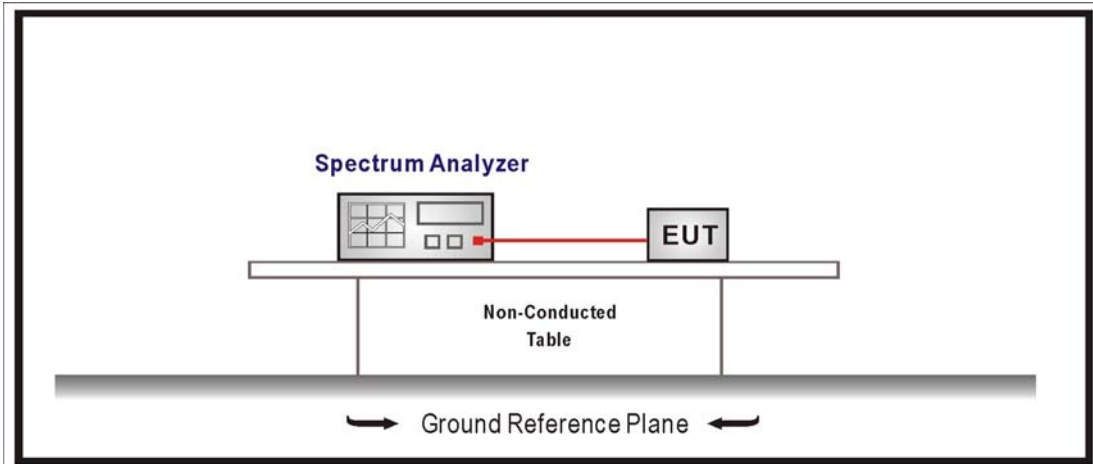
The following test equipment are used during the test:

RF Conducted Measurement:					
Item	Equipment		Manufacturer	Model No. / Serial No.	Last Cal.
1	Spectrum Analyzer		R & S	FSP / 100561	Mar., 2004
2	No.1 OATS				Sep., 2004
RF Radiated Measurement:					
Item		Equipment	Manufacturer	Model No. / Serial No.	Last Cal.
1	X	Spectrum Analyzer	R & S	FSP40 / 100005	Aug., 2004
2	X	Pre-Amplifier	HP	8449B / 3008A01123	Feb., 2004
3		Loop Antenna	R & S	HFH2-Z2 / 833799/004	Sep., 2004
4		BiconiLog Antenna	Schwarzbeck	VULB 9166 / 1061	Sep., 2004
5		Bilog Antenna	Chase	CBL6112B / 2455	Sep., 2004
6	X	Horn Antenna	Schwarzbeck	BBHA 9120D / BBHA9120D312	Sep., 2004
7	No.1 OATS				Sep., 2004

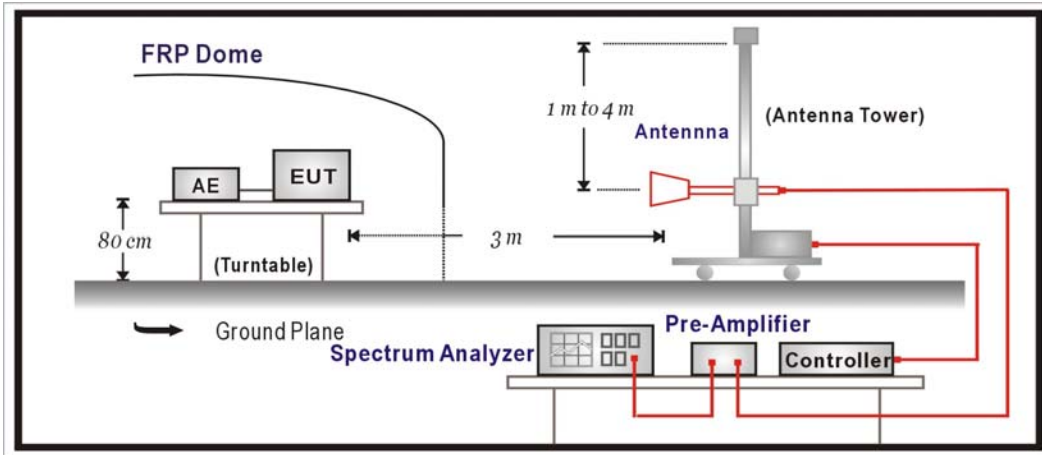
- Note:
1. All equipments that need to calibrate are with calibration period of 1 year.
 2. Mark "X" test instruments are used to measure the final test results.

5.2. Test Setup

RF Conducted Measurement:



RF Radiated Measurement:



5.3. Limits

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

5.4. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.4:2001 on radiated measurement.

The bandwidth below 1GHz setting on the field strength meter is 120 kHz, above 1GHz are 1 MHz.

5.5. Test Specification

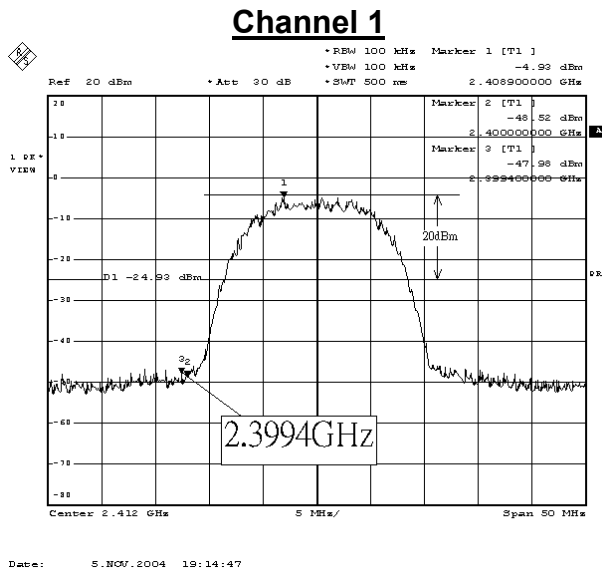
According to FCC Part 15 Subpart C Paragraph 15.247: 2003

5.6. Test Result

Product	Wireless LAN CardBus Card		
Test Item	Band Edge		
Test Mode	Mode 1: Data Transmit		
Date of Test	2004/11/15	Test Site	No.1 OATS

RF Conducted Measurement:

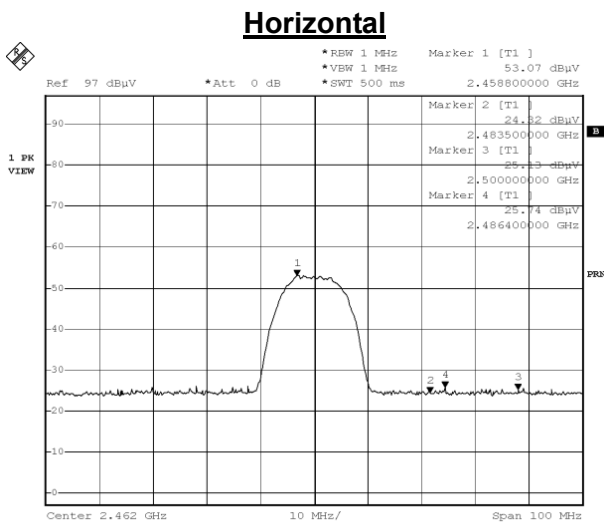
IEEE 802.11b			
Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
1	<2400	>20	Pass



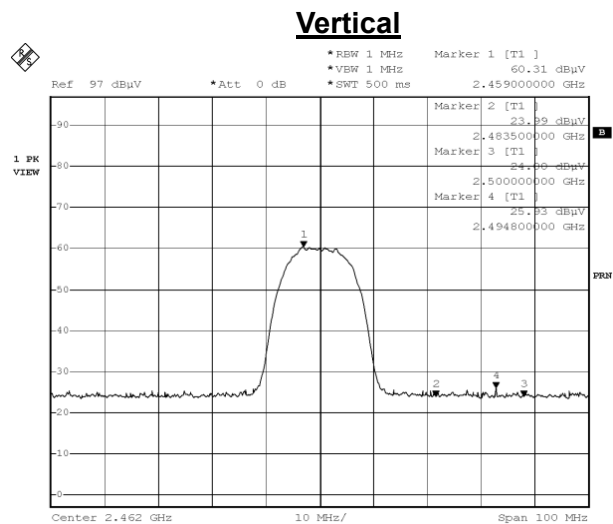
Product	Wireless LAN CardBus Card		
Test Item	Band Edge		
Test Mode	Mode 1: Data Transmit		
Date of Test	2004/11/15	Test Site	No.1 OATS

RF Radiated Measurement: (Peak Detector)

IEEE 802.11b								
Channel No.	Frequency (MHz)	Reading Level (dBuV)	Probe Factor (dB/m)	Cable Loss (dB)	PreAMP (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Result
11(Horizontal)	2486.400	25.74	27.58	2.91	0.00	56.23	74	Pass
11(Vertical)	2494.800	25.93	27.58	2.91	0.00	56.42	74	Pass



Date: 14.NOV.2004 14:11:50



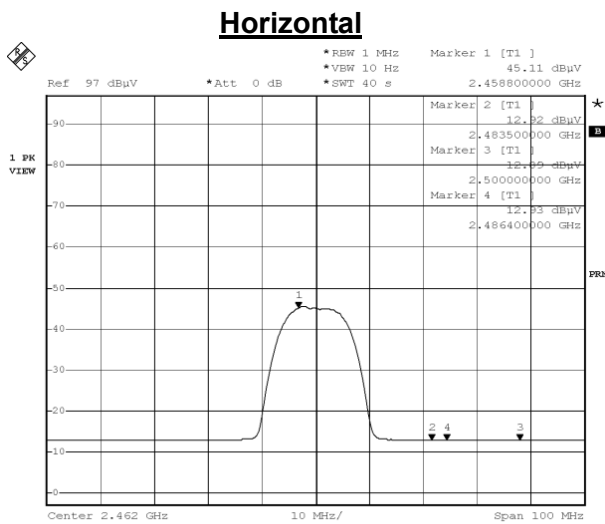
Date: 14.NOV.2004 14:16:17

Note: The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

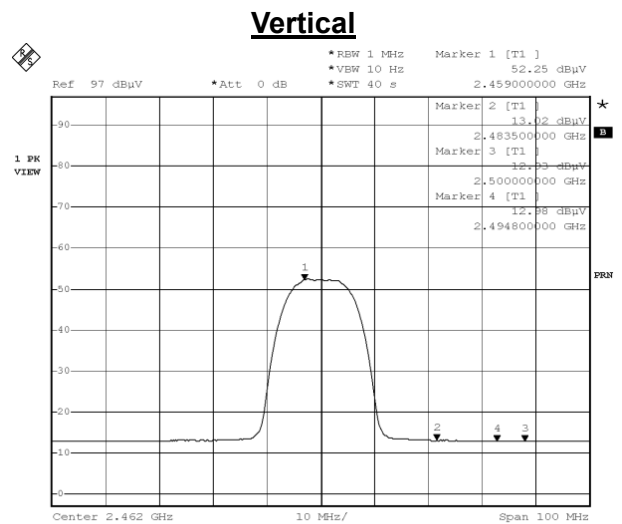
Product	Wireless LAN CardBus Card		
Test Item	Band Edge		
Test Mode	Mode 1: Data Transmit		
Date of Test	2004/11/15	Test Site	No.1 OATS

RF Radiated Measurement: (Average Detector)

IEEE 802.11b								
Channel No.	Frequency (MHz)	Reading Level (dBuV)	Probe Factor (dB/m)	Cable Loss (dB)	PreAMP (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Result
11(Horizontal)	2486.400	12.93	27.58	2.91	0.00	43.42	54	Pass
11(Vertical)	2494.800	12.98	27.58	2.91	0.00	43.47	54	Pass



Date: 14.NOV.2004 14:13:12



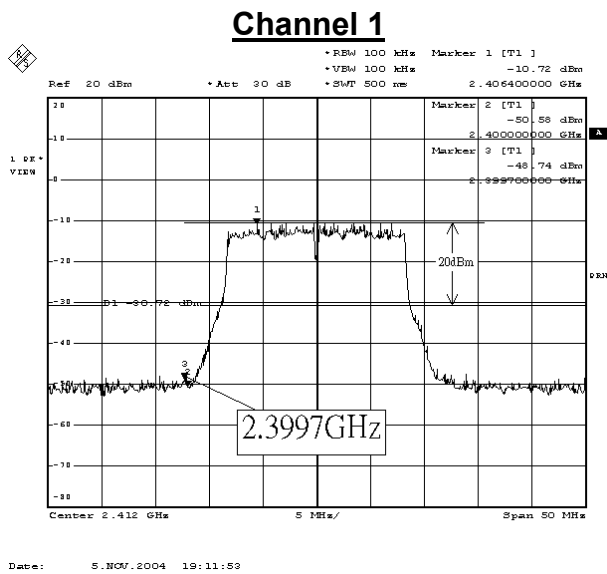
Date: 14.NOV.2004 14:17:17

Note: The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product	Wireless LAN CardBus Card		
Test Item	Band Edge		
Test Mode	Mode 1: Data Transmit		
Date of Test	2004/11/15	Test Site	No.1 OATS

RF Conducted Measurement:

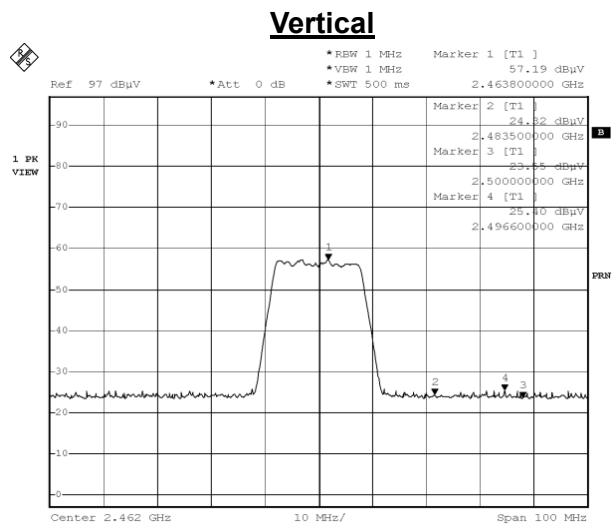
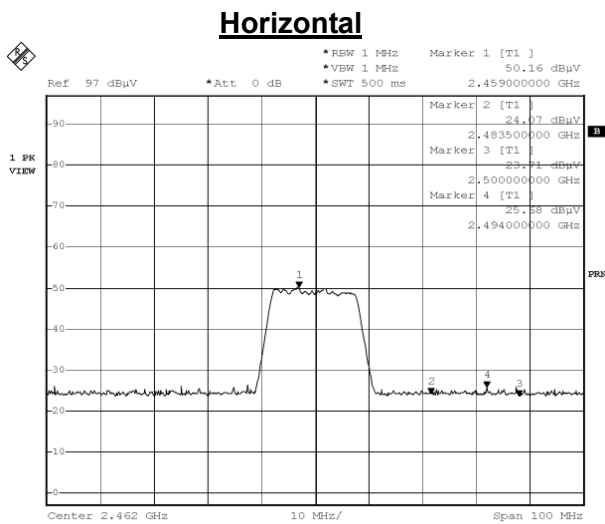
IEEE 802.11g			
Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
1	<2400	>20	Pass



Product	Wireless LAN CardBus Card		
Test Item	Band Edge		
Test Mode	Mode 1: Data Transmit		
Date of Test	2004/11/15	Test Site	No.1 OATS

RF Radiated Measurement: (Peak Detector)

IEEE 802.11g								
Channel No.	Frequency (MHz)	Reading Level (dBuV)	Probe Factor (dB/m)	Cable Loss (dB)	PreAMP (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Result
11(Horizontal)	2494.000	25.68	27.58	2.91	0.00	56.17	74	Pass
11(Vertical)	2496.600	25.40	27.58	2.91	0.00	55.89	74	Pass



Date: 14.NOV.2004 14:23:23

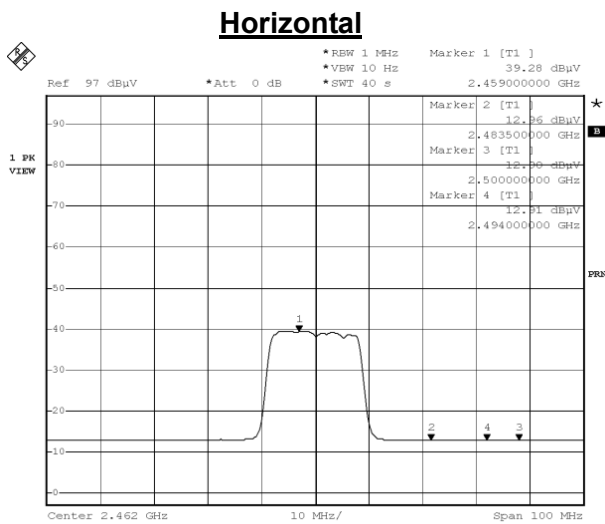
Date: 14.NOV.2004 14:19:30

Note: The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

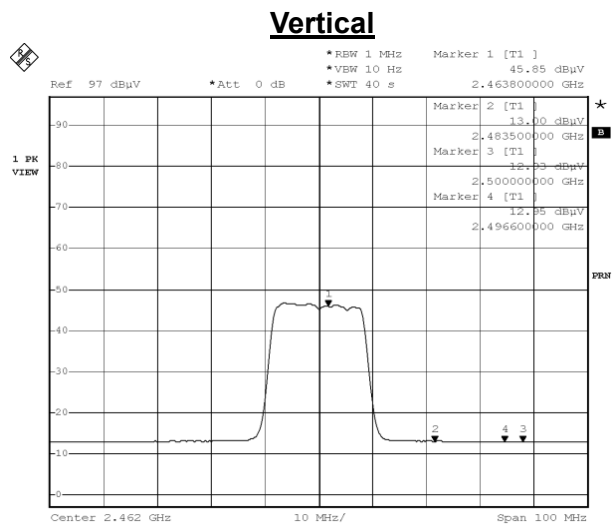
Product	Wireless LAN CardBus Card		
Test Item	Band Edge		
Test Mode	Mode 1: Data Transmit		
Date of Test	2004/11/15	Test Site	No.1 OATS

RF Radiated Measurement: (Average Detector)

IEEE 802.11g								
Channel No.	Frequency (MHz)	Reading Level (dBuV)	Probe Factor (dB/m)	Cable Loss (dB)	PreAMP (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Result
11(Horizontal)	2494.000	12.91	27.58	2.91	0.00	43.40	54	Pass
11(Vertical)	2496.600	12.95	27.58	2.91	0.00	43.44	54	Pass



Date: 14.NOV.2004 14:24:20



Date: 14.NOV.2004 14:20:39

Note: The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

6. Occupied Bandwidth

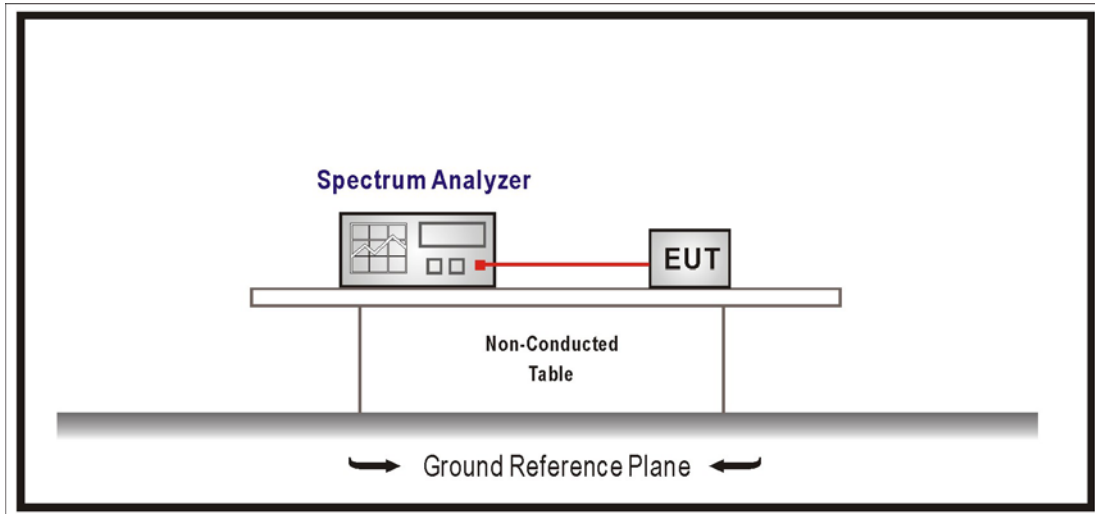
6.1. Test Equipment

The following test equipment are used during the test:

Item	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.
1	Spectrum Analyzer	R & S	FSP / 100561	Mar.,2004
2	No.1 OATS			Sep.,2004

Note: 1. All equipments that need to calibrate are with calibration period of 1 year.

6.2. Test Setup



6.3. Limits

The minimum 6dB bandwidth shall be at least 500kHz.

6.4. Test Specification

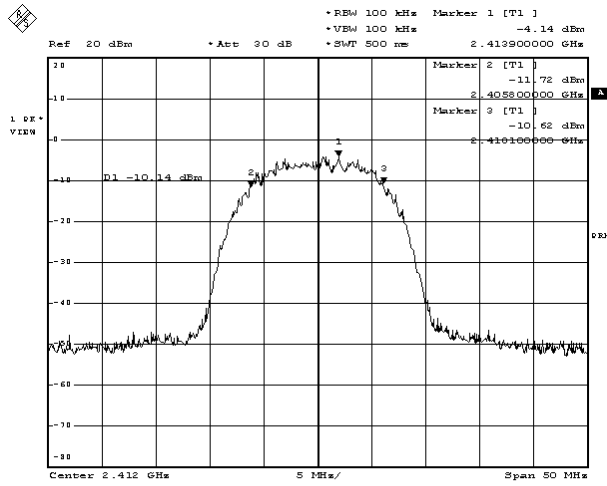
According to FCC Part 15 Subpart C Paragraph 15.247: 2003

6.5. Test Result

Product	Wireless LAN CardBus Card		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1: Data Transmit		
Date of Test	2004/11/15	Test Site	No.1 OATS

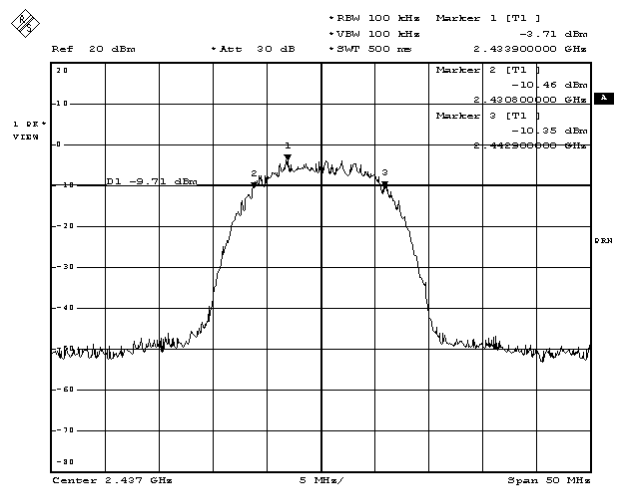
IEEE 802.11b				
Channel No.	Frequency (MHz)	Measure Level (kHz)	Limit (kHz)	Result
1	2412	12300	>500	Pass
6	2437	12100	>500	Pass
11	2462	12400	>500	Pass

Channel 1



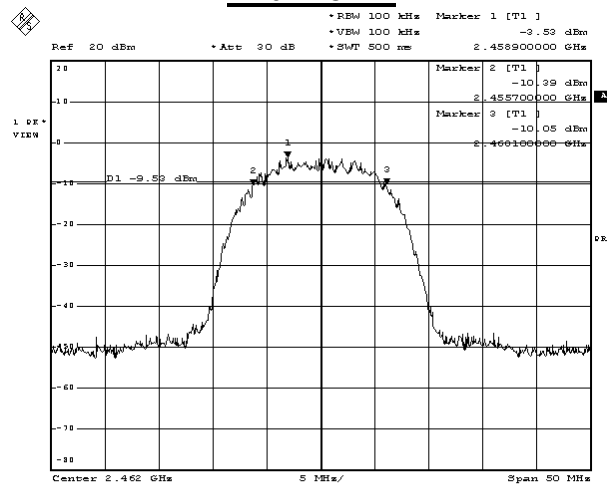
Date: 5.NOV.2004 19:47:06

Channel 6



Date: 5.NOV.2004 19:18:59

Channel 11

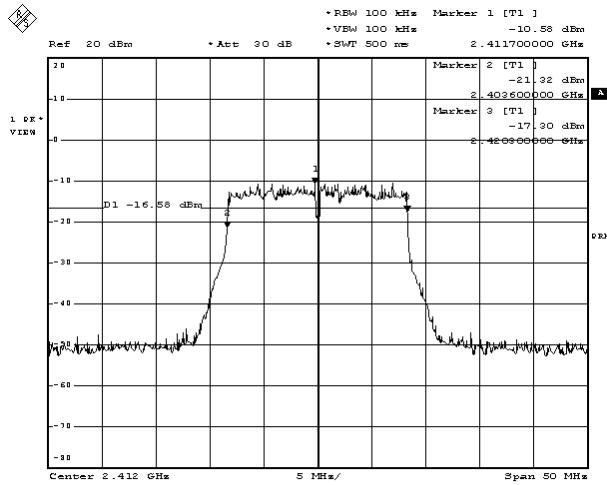


Date: 5.NOV.2004 19:20:14

Product	Wireless LAN CardBus Card		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1: Data Transmit		
Date of Test	2004/11/15	Test Site	No.1 OATS

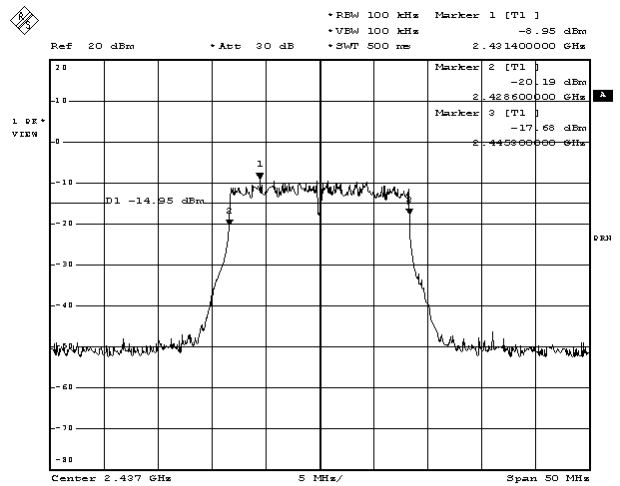
IEEE 802.11g				
Channel No.	Frequency (MHz)	Measure Level (kHz)	Limit (kHz)	Result
1	2412	16700	>500	Pass
6	2437	16700	>500	Pass
11	2462	16700	>500	Pass

Channel 1



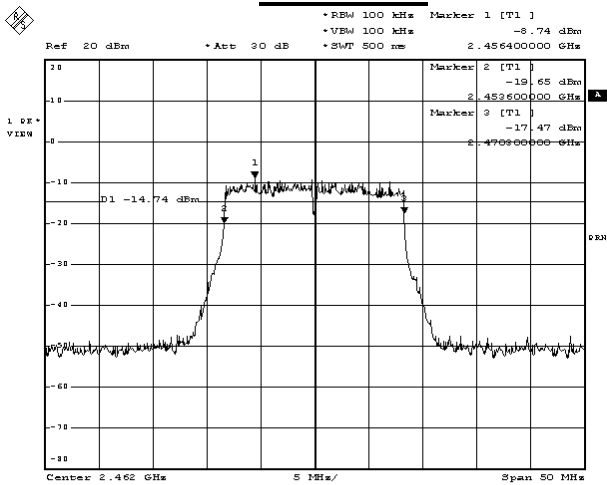
Date: 5.NOV.2004 19:24:41

Channel 6



Date: 5.NOV.2004 19:58:38

Channel 11



Date: 5.NOV.2004 19:21:31

7. Power Density

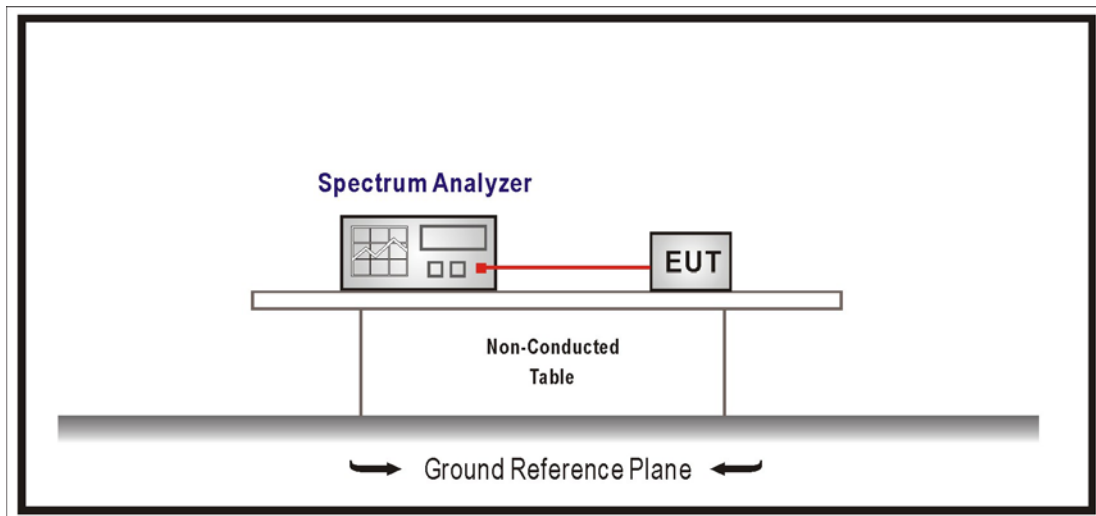
7.1. Test Equipment

The following test equipment are used during the test:

Item	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.
1	Spectrum Analyzer	R & S	FSP / 100561	Mar.,2004
2	No.1 OATS			Sep.,2004

Note: 1. All equipments that need to calibrate are with calibration period of 1 year.

7.2. Test Setup



7.3. Limits

The transmitted power density averaged over any 1 second interval shall not be greater +8dBm in any 3kHz bandwidth.

7.4. Test Specification

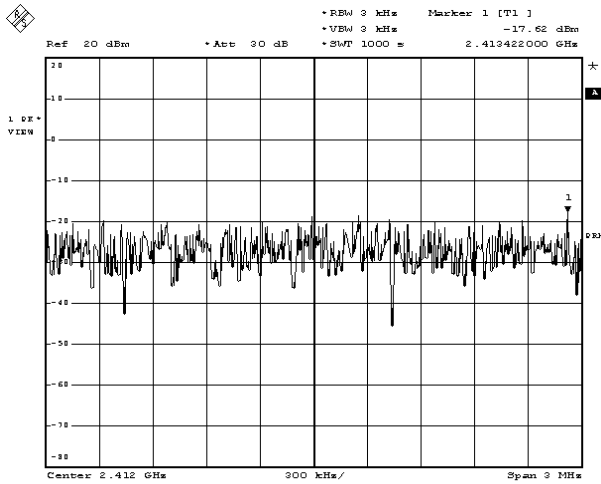
According to FCC Part 15 Subpart C Paragraph 15.247: 2003

7.5. Test Result

Product	Wireless LAN CardBus Card		
Test Item	Power Density		
Test Mode	Mode 1: Data Transmit		
Date of Test	2004/11/15	Test Site	No.1 OATS

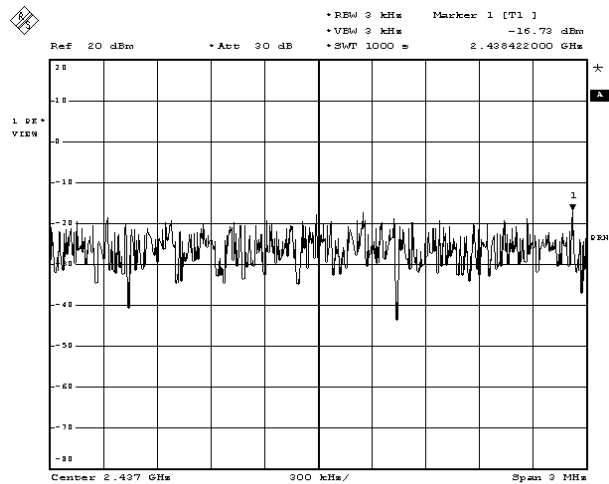
IEEE 802.11b				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2413.422	-17.62	< 8dBm	Pass
6	2438.422	-16.73	< 8dBm	Pass
11	2463.422	-16.56	< 8dBm	Pass

Channel 1



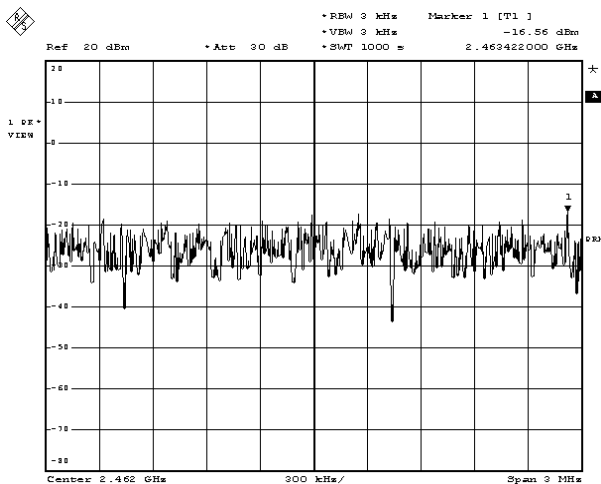
Date: 5.NOV.2004 19:02:39

Channel 6



Date: 5.NOV.2004 19:03:34

Channel 11

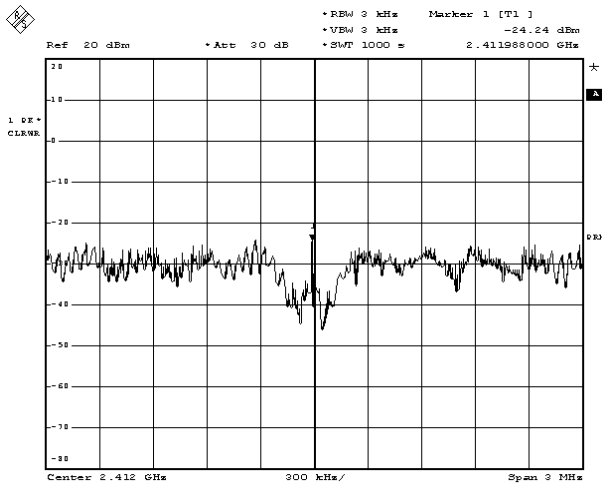


Date: 5.NOV.2004 18:59:14

Product	Wireless LAN CardBus Card		
Test Item	Power Density		
Test Mode	Mode 1: Data Transmit		
Date of Test	2004/11/15	Test Site	No.1 OATS

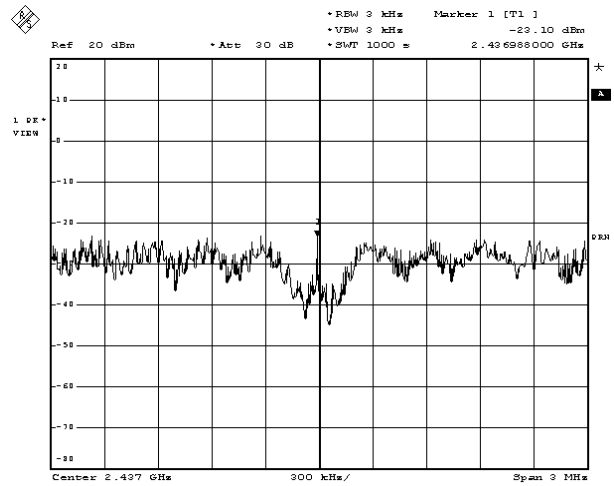
IEEE 802.11g				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2411.988	-24.24	< 8dBm	Pass
6	2436.988	-23.10	< 8dBm	Pass
11	2461.988	-23.08	< 8dBm	Pass

Channel 1



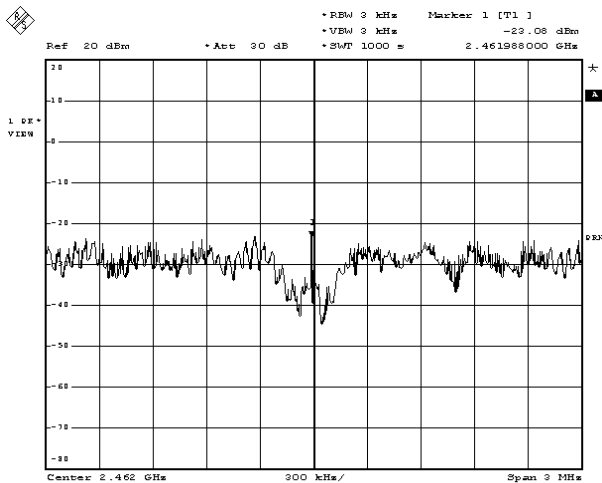
Date: 5.NOV.2004 19:04:51

Channel 6



Date: 5.NOV.2004 19:49:41

Channel 11



Date: 5.NOV.2004 19:06:49