

FCC TEST REPORT

according to

FCC Rules and Regulations

Part 15 Subpart C

Applicant	Netgear Inc.
Address	4500 Great America Parkway Santa Clara California 95054 USA
Equipment	NETGEAR WG111v2 54Mbps Wireless USB 2.0 Adapter
Model No.	WG111v2
FCC ID	PY305100001
Trade Name	Netgear

Laboratory Accreditation



1332

ILAC MRA

- The test result refers exclusively to the test presented test model / sample.,
- Without written approval of **Exclusive Certification Corp.** the test report shall not be reproduced except in full.
- The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

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CERTIFICATE OF COMPLIANCE

according to

FCC Rules and Regulations

Part 15 Subpart C

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Model No.	WG111v2
FCC ID	PY305100001

I HEREBY CERTIFY THAT :

The measurements shown in this test report were made in accordance with the procedures given in **ANSI C63.4**. The equipment was **passed** the test performed according to **FCC Rules and Regulations Part 15 Subpart C (2003)**. The test was carried out on Jan. 28, 2005 at *Exclusive Certification Corp.*

Signature


Anson Chou / Manager Feb. 5, 2005

1. Report of Measurements and Examinations

1.1. List of Measurements and Examinations

FCC Rule	Description of Test	Result
15.203	. Antenna Requirement	Pass
15.207	. Conducted Emission	Pass
15.209	. Radiated Emission	Pass
15.247(a)(2)	. 6dB Bandwidth	Pass
15.247(b)	. Maximum Peak Output Power	Pass
15.247(c)	. 100kHz Bandwidth of Frequency Band Edges	Pass
15.247(d)	. Power Spectral Density	Pass
1.1307 1.1310 2.1091 2.1093	. RF Exposure Compliance	Pass

Test by: _____

Jerry Jan. 28. 2005.

1.2. Antenna Requirements

1.2.1. Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, 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.

And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

1.3. Test of Conducted Emission

Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 KHz on the 115 VAC power and return leads of the EUT according to the methods defined in ANSI C63.4-2003 Section 3.1. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane as shown in section 2.2. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position produced maximum conducted emissions.

1.3.1. Test Procedures

- a. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
- b. Connect EUT to the power mains through a line impedance stabilization network (LISN).
- c. All the support units are connecting to the other LISN.
- d. The LISN provides 50 ohm coupling impedance for the measuring instrument.
- e. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
- f. Both sides of AC line were checked for maximum conducted interference.
- g. The frequency range from 150 kHz to 30 MHz was searched.
- h. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

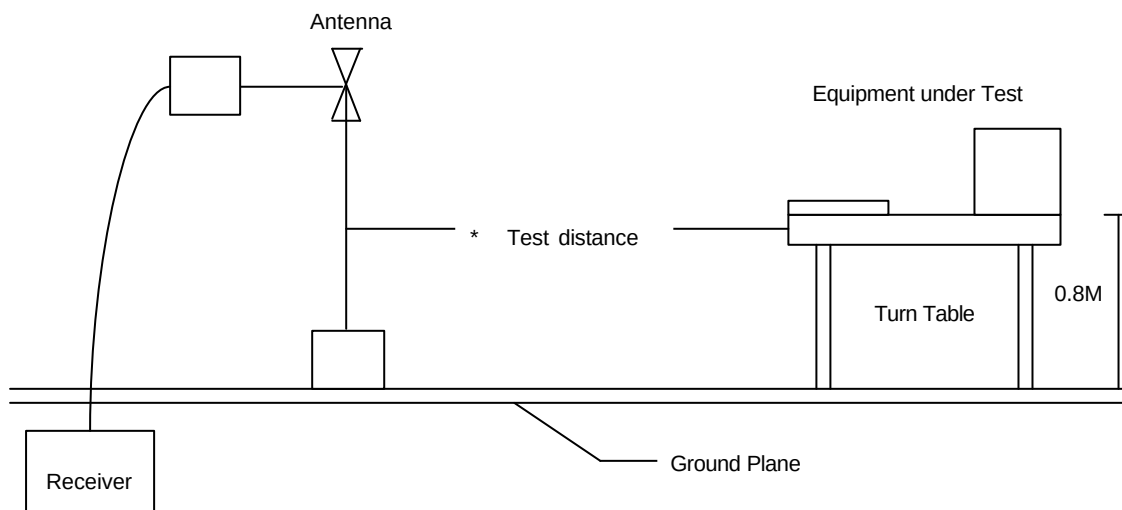
1.4. Test of Radiated Emission

Radiated emissions from 30 MHz to 25 GHz were measured according to the methods defines in ANSI C63.4-2003. The EUT was placed, 0.8 meter above the ground plane, as shown in section 5.6.3. The interface cables and equipment positions were varied within limits of reasonable applications to determine the positions producing maximum radiated emissions

1.4.1. Test Procedures

1. The EUT was placed on a rotatable table top 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna is a broadband antenna and its height is varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarization of the antenna are set to make the measurement.
5. For each suspected emission the EUT was arranged to its worst case and then tune the antenna tower (from 1 M to 4 M) and turn table (from 0 degree to 360 degrees) to find the maximum reading.
6. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function and specified bandwidth with Maximum Hold Mode.
7. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method and reported.
8. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

1.4.2. Typical Test Setup Layout of Radiated Emission

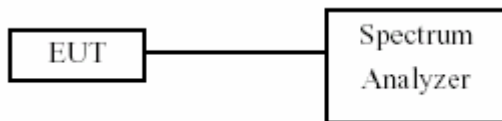


1.5. 6dB Bandwidth

1.5.1. 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.

1.5.2. Test Setup Layout :

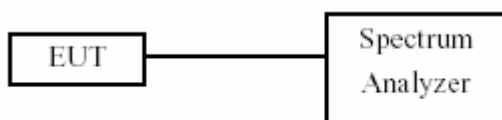


1.6. Maximum Peak Output Power

1.6.1. 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.

1.6.2. Test Setup Layout :



1.7. Band Edges Measurement

1.7.1. Test Procedure :

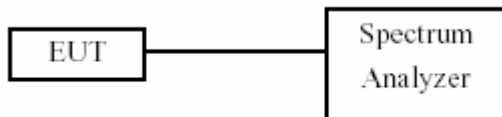
1. The transmitter output was connected to the spectrum analyzer via a low lose cable.
2. Set both RBW and VBW of spectrum analyzer to 100 KHz with convenient frequency span including 100 MHz bandwidth from band edge.
3. The band edges was measured and recorded.

1.8. Power Spectral Density

1.8.1. 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.

1.8.2. Test Setup Layout :



1.9. 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

1.10. 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.

1.11. RF Exposure

FCC Rules and Regulations Part 1.1307, 1.1310, 2.1091, 2.1093:

RF Exposure Compliance

1.11.1. Limit For Maximum Permissible Exposure (MPE)

(A) Limits for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f)*	6
30-300	61.4	0.163	1.0	6
300-1500			F/300	6
1500-100,000			5	6

(B) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1.0	30

F=frequency in MHz

*Plane-wave equivalent power density

1.11.2. MPE Calculations

$$E \text{ (V/m)} = \frac{\sqrt{30 \cdot P \cdot G}}{d} \quad \text{Power Density: } Pd \text{ (mW/cm}^2\text{)} = \frac{E^2}{3770}$$

E=Electric field (V/m)

P=Peak output power (W)

G=Antenna numeric gain (numeric)

d=Separation distance (m)

Because the EUT is belong to General Population/ Uncontrolled Exposure. So the Limit of Power Density is 10 W/m². We can change the formula to:

$$d = \sqrt{\frac{30 \cdot P \cdot G}{3770}}$$

1.11.3. FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20cm (8 inches) during normal operation. Proposed RF exposure safety information to include in User's Manual.

2. Test Configuration of Equipment under Test

2.1. Test Mode and Test Software

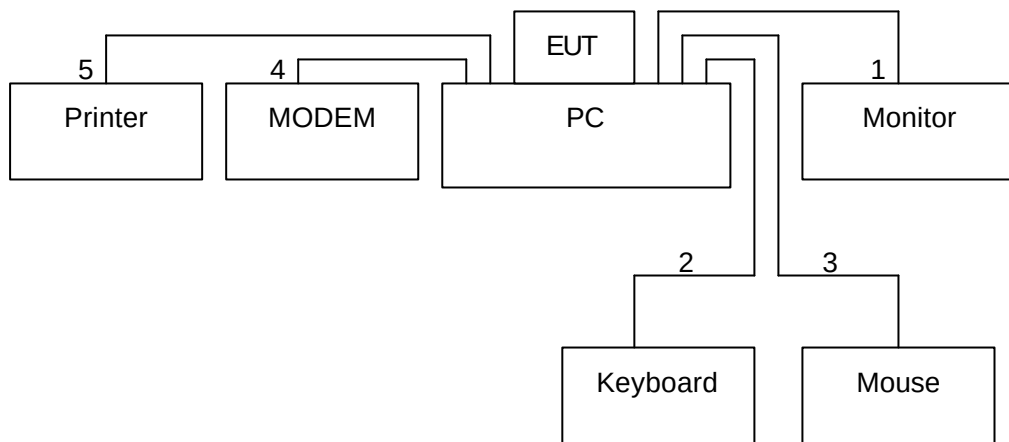
The following test mode and test software was performed for conduction and radiation test:

- 802.11b (CH LO: 2412MHz) • 802.11b (CH MID: 2437MHz) • 802.11b (CH HI: 2462MHz)
- 802.11g (CH LO: 2412MHz) • 802.11g (CH MID: 2437MHz) • 802.11g (CH HI: 2462MHz)
- An executive programs, "MP8187VC.EXE" Application under WIN XP.

2.2. Description of Test System

Device	Manufacturer	Model No.	Description
PC	IBM	IGV	Power Cable, Unshielding 1.8 m
Monitor	SlimAGE	510A	Power Cable, Adapter Unshielding 1.8 m Data Cable, VGA shielding 1.35 m
Keyboard	IBM	KB-0225	Data Cable, PS2 shielding 1.85 m
Mouse	IBM	MO28VO	Data Cable, USB shielding 1.85 m
Modem	ACEXX	DM-1414	Power Cable, Adapter Unshielding 1.8 m Data Cable, RS232 Unshielding 1.35 m
Printer	HP	Desk Jet400	Power Cable, Adapter Unshielding 1.8 m Data Cable, Shielding 1.6 m
AP Router (Remote Site)	Abocom	ARM-914	Power Cable, Adapter Unshielding 1.8 m

2.3. Connection Diagram of Test System



1. The I/O cable is connected from PC to the Monitor.
2. The I/O cable is connected from PC to the Keyboard.
3. The I/O cable is connected from PC to the Mouse.
4. The I/O cable is connected from PC to the MODEM
5. The I/O cable is connected from PC to the Printer.
6. These RJ 45 cables are floating.

2.4. Feature of Equipment under Test

Chipset:	RealTek RTL8187
RF Chip:	Realtek RTL8225
Bus Type:	USB 2.0
Data Rates :	54, 48, 36, 24, 18, 12, 9, and 6 Mbps (802.11g) 11, 5.5, 2, 1 Mbps (802.11b)
Frequency Band :	2.4GHz to 2.462GHz
Wireless Medium :	DSSS and OFDM
Media Access Protocol:	CSMA/CA
Operating Channels:	1-14(FCC:1-11、ETSI:1-13、Japan:1-14)
Operating Range:	- Indoors: Up to 328 ft (100 meters) - Outdoors: Up to 1312 ft (400 meters)
Receive Sensitivity :	
802.11g	54 Mbps: -71 dBm
	48 Mbps: -73 dBm
	36 Mbps: -77 dBm
	24 Mbps: -81 dBm
	18 Mbps: -83 dBm
	12 Mbps: -83 dBm
	9 Mbps: -83 dBm
	6 Mbps: -83 dBm
802.11b	11 Mbps: -84 dBm
	5.5 Mbps: -85 dBm
	2 Mbps: -86 dBm
	1 Mbps: -86 dBm
Wireless Medium:	DSSS (Direct Sequence Spread Spectrum)
Media Access Protocol:	CSMA/CA
Transmit Power:	
802.11g:	11±2 dBm
802.11b:	10±2 dBm
Security :	64/128-bit WEP WPA—Wi-Fi Protected Access
Standards	WPA certified, IEEE 802.11g, IEEE 802.11b
EMI:	FCC, CE
Environmental Range:	
Operating temperature:	0° to 40°C (32° to 104°F)
Operating humidity:	0 to 90% non-condensing
System Requirements	Notebook or desktop PC with USB port; USB 2.0 required for 54 Mbps data rate
	Notebook or desktop PC must be running Windows 98SE/ME/XP/ 2000

2.5. History of this test report

ORIGINAL.

3. General Information of Test

Test Site:	Exclusive Certification Corp. 4F-2, No. 28, Lane 78, Xing-Ai Rd. Nei-hu, Taipei City 114 Taiwan R.O.C.
Test Site Location (OATS1-SD):	No.68-1, Shihbachongsi, shihding Township, Taipei County 223, Taiwan, R.O.C.
Test Voltage:	AC 110V/ 60Hz
Test in Compliance with:	ANSI C63.4-2003 FCC Part 15 Subpart C
Frequency Range Investigated:	Conducted: from 150kHz to 30 MHz Radiation: from 30 MHz to 24620MHz
Test Distance:	The test distance of radiated emission from antenna to EUT is 3 M.

4. Test Result and Data

4.1. Antenna Requirement

4.1.1. Antenna Construction and Directional Gain

Antenna type: The antenna is designed to be permanently on PCB, No consideration of replacement.

Antenna Gain: 0 dBi.

4.2. Test Result of Conducted Emission

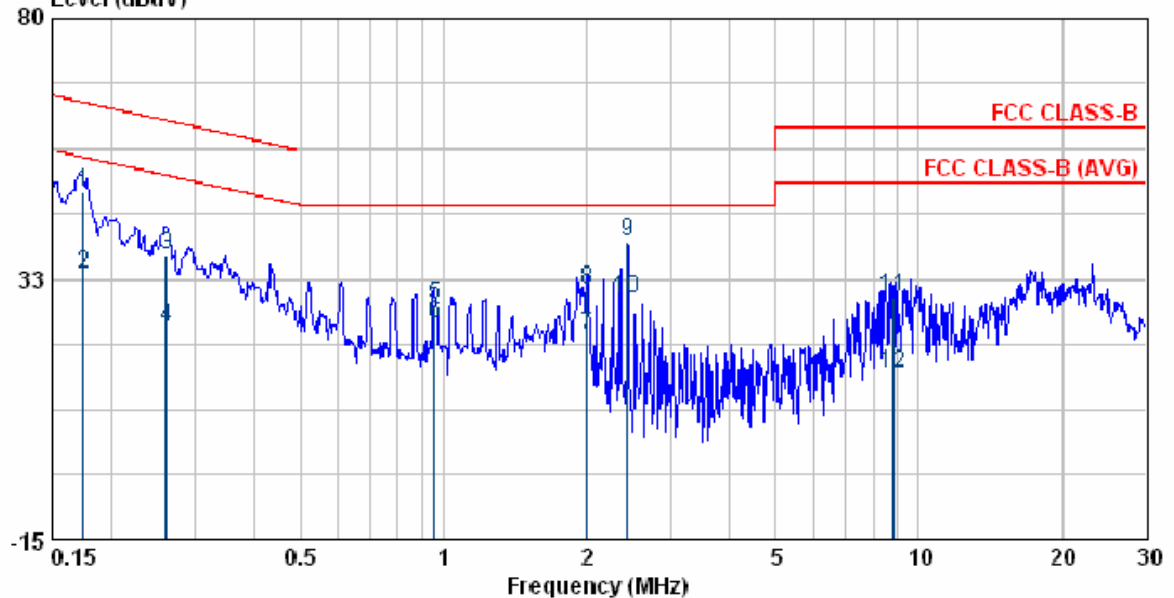
EUT : WGE111v2
 Power : 110V 60Hz
 Test Mode : 802.11b CH L0
 Memo :

Pol/Phase : NEUTRAL
 Temperature : 26 °C
 Humidity : 59 %

Data: 40

Level (dBuV)

Date: 2005-01-07



Freq	Read Level	Factor	Level	Limit	Over Limit	Remark
MHz	dBuV	dB	dBuV	dBuV	dBuV	
0.174	47.76	0.41	48.17	64.75	-16.58	QP
0.174	33.10	0.41	33.51	54.75	-21.24	AVERAGE
0.261	36.40	0.43	36.83	61.40	-24.57	QP
0.261	23.13	0.43	23.56	51.40	-27.84	AVERAGE
0.957	27.46	0.51	27.97	56.00	-28.03	QP
0.957	23.65	0.51	24.16	46.00	-21.84	AVERAGE
2.003	21.75	0.54	22.29	46.00	-23.71	AVERAGE
2.003	30.14	0.54	30.68	56.00	-25.32	QP
2.435	38.64	0.55	39.19	56.00	-16.81	QP
2.435	28.24	0.55	28.79	46.00	-17.21	AVERAGE
8.854	28.38	0.70	29.08	60.00	-30.92	QP
8.854	14.57	0.70	15.27	50.00	-34.73	AVERAGE

Remarks: 1. Level = Read Level + Factor
 2. Factor = LISN(15N) Factor + Cable Loss

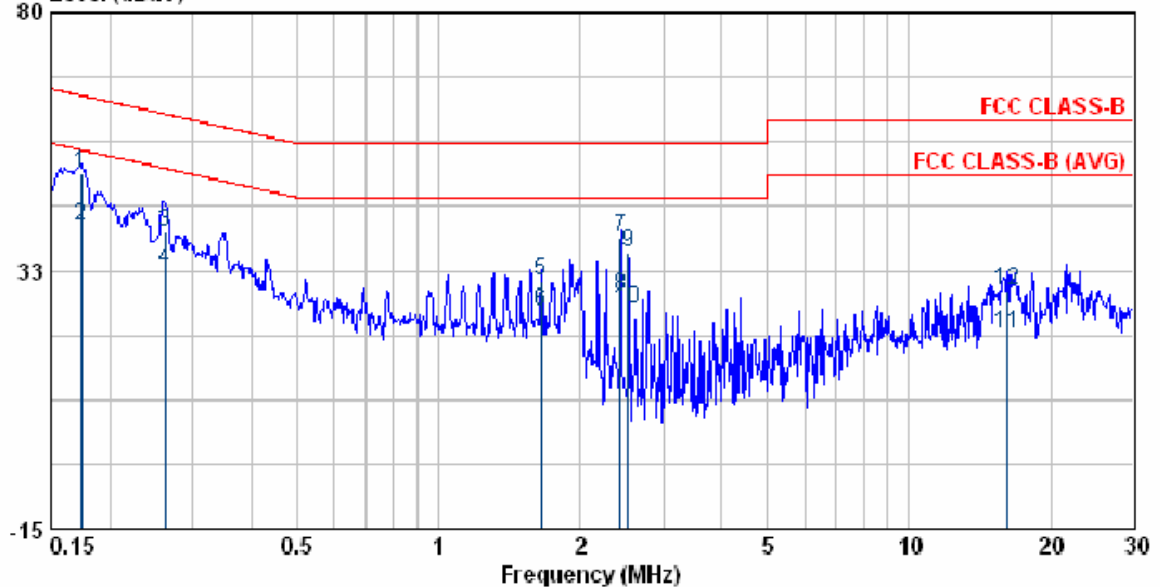
EUT : WGE11v2
 Power : 110V 60Hz
 Test Mode : 802.11b CH L0
 Memo :

Pol/Phase : LINE
 Temperature : 26 °C
 Humidity : 59 %

Data: 39

Level (dBuV)

Date: 2005-01-07



Freq	Read Level	Factor	Level	Limit	Over Limit	Remark
MHz	dBuV	dB	dBuV	dBuV	dBuV	
0.174	49.95	0.41	50.36	64.78	-14.42	QP
0.174	40.29	0.41	40.70	54.78	-14.08	AVERAGE
0.262	39.24	0.43	39.67	61.36	-21.69	QP
0.262	32.13	0.43	32.56	51.36	-18.80	AVERAGE
1.651	29.98	0.53	30.51	56.00	-25.49	QP
1.651	24.54	0.53	25.07	46.00	-20.93	AVERAGE
2.435	37.94	0.55	38.49	56.00	-17.51	QP
2.435	27.32	0.55	27.87	46.00	-18.13	AVERAGE
2.525	35.09	0.55	35.64	56.00	-20.36	QP
2.525	24.77	0.55	25.32	46.00	-20.68	AVERAGE
16.166	19.92	0.78	20.70	50.00	-29.30	AVERAGE
16.166	28.07	0.78	28.85	60.00	-31.15	QP

Remarks: 1. Level = Read Level + Factor
 2. Factor = LISN(ISN) Factor + Cable Loss

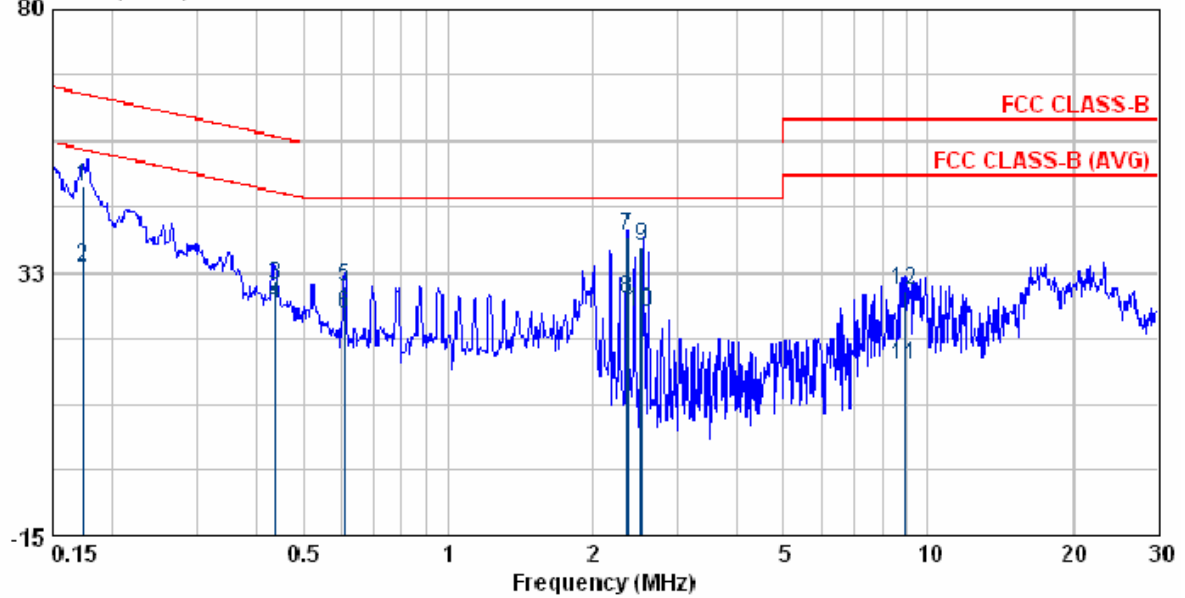
EUT : WGE111v2
 Power : 110V 60Hz
 Test Mode : 802.11b CH MID
 Memo :

Pol/Phase : NEUTRAL
 Temperature : 26 °C
 Humidity : 59 %

Data: 41

Level (dBuV)

Date: 2005-01-07



Freq	Read Level	Factor	Level	Limit	Over Limit	Remark
MHz	dBuV	dB	dBuV	dBuV	dBuV	
0.174	47.61	0.41	48.02	64.79	-16.77	QP
0.174	33.04	0.41	33.45	54.79	-21.34	AVERAGE
0.436	29.92	0.46	30.38	57.14	-26.76	QP
0.436	26.40	0.46	26.86	47.14	-20.28	AVERAGE
0.608	29.27	0.48	29.75	56.00	-26.25	QP
0.608	24.43	0.48	24.91	46.00	-21.09	AVERAGE
2.354	38.32	0.55	38.87	56.00	-17.13	QP
2.354	27.21	0.55	27.76	46.00	-18.24	AVERAGE
2.526	36.67	0.55	37.22	56.00	-18.78	QP
2.526	24.78	0.55	25.33	46.00	-20.67	AVERAGE
8.864	14.82	0.70	15.52	50.00	-34.48	AVERAGE
8.864	28.55	0.70	29.25	60.00	-30.75	QP

Remarks: 1. Level = Read Level + Factor
 2. Factor = LISN(ISN) Factor + Cable Loss

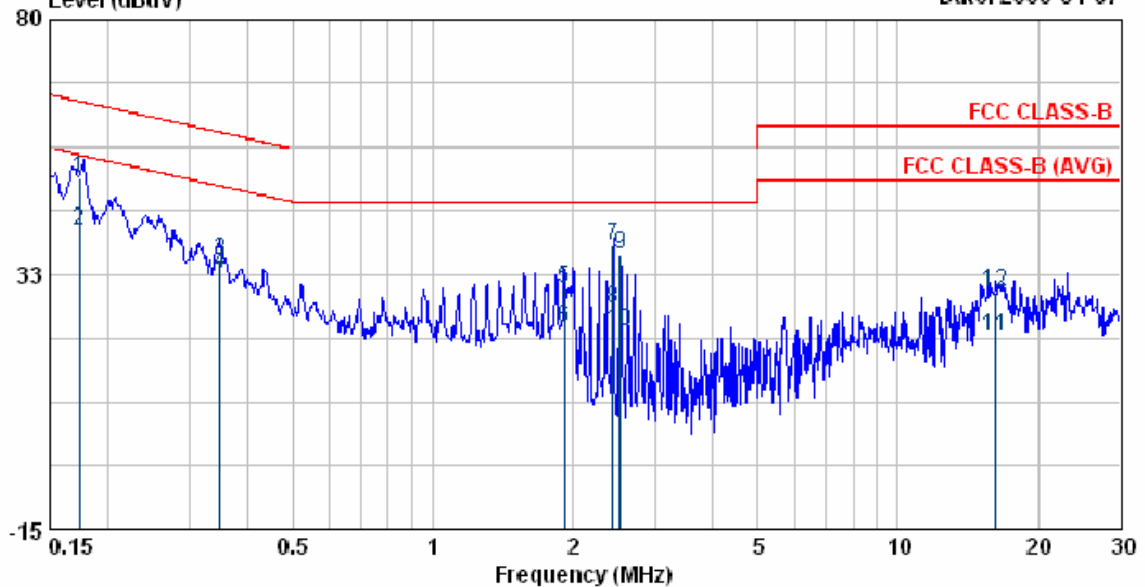
EUT : WGE111v2
 Power : 110W 60Hz
 Test Mode : 802.11b CH MID
 Memo :

Pol/Phase : LINE
 Temperature : 26 °C
 Humidity : 59 %

Data: 42

Level (dBuV)

Date: 2005-01-07



Freq	Read Level	Factor	Level	Limit	Over Limit	Remark
MHz	dBuV	dB	dBuV	dBuV	dBuV	
0.173	49.90	0.41	50.31	64.80	-14.49	QP
0.173	40.11	0.41	40.52	54.80	-14.28	AVERAGE
0.349	34.79	0.45	35.24	59.00	-23.76	QP
0.349	32.38	0.45	32.83	49.00	-16.17	AVERAGE
1.916	29.23	0.54	29.77	56.00	-26.23	QP
1.916	22.21	0.54	22.75	46.00	-23.25	AVERAGE
2.436	37.40	0.55	37.95	56.00	-18.05	QP
2.436	25.53	0.55	26.08	46.00	-19.92	AVERAGE
2.531	35.43	0.55	35.98	56.00	-20.02	QP
2.531	21.41	0.55	21.96	46.00	-24.04	AVERAGE
16.231	20.16	0.79	20.95	50.00	-29.05	AVERAGE
16.231	28.35	0.79	29.14	60.00	-30.86	QP

Remarks: 1. Level = Read Level + Factor
 2. Factor = LISN(ISN) Factor + Cable Loss

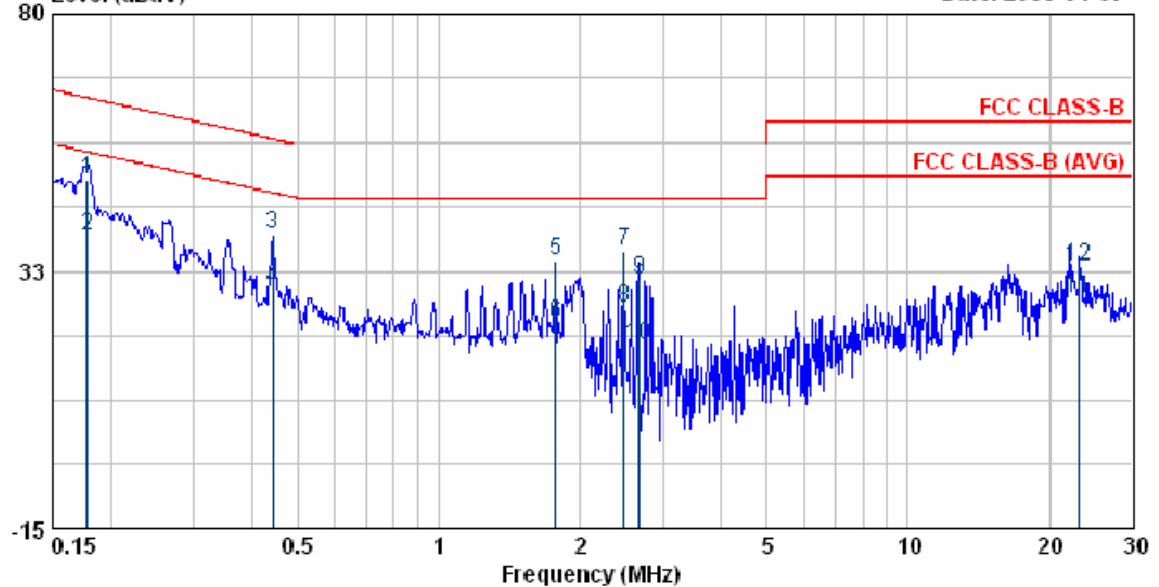
EUT : WGE111v2
 Power : 110V 60Hz
 Test Mode : 802.11b CH HI
 Memo :

Pol/Phase : NEUTRAL
 Temperature : 26 °C
 Humidity : 59 %

Data: 44

Level (dBuV)

Date: 2005-01-07



Freq	Read Level	Factor	Level	Limit	Over Limit	Remark
MHz	dBuV	dB	dBuV	dBuV	dBuV	
0.178	49.05	0.41	49.46	64.59	-15.13	QP
0.178	38.59	0.41	39.00	54.59	-15.59	AVERAGE
0.442	38.89	0.46	39.35	57.02	-17.66	QP
0.442	28.84	0.46	29.30	47.02	-17.71	AVERAGE
1.771	33.73	0.54	34.27	56.00	-21.73	QP
1.771	22.50	0.54	23.04	46.00	-22.96	AVERAGE
2.486	35.48	0.55	36.03	56.00	-19.97	QP
2.486	25.30	0.55	25.85	46.00	-20.15	AVERAGE
2.668	30.51	0.56	31.07	56.00	-24.93	QP
2.668	18.29	0.56	18.85	46.00	-27.15	AVERAGE
23.130	26.60	0.95	27.55	50.00	-22.45	AVERAGE
23.130	32.32	0.95	33.27	60.00	-26.73	QP

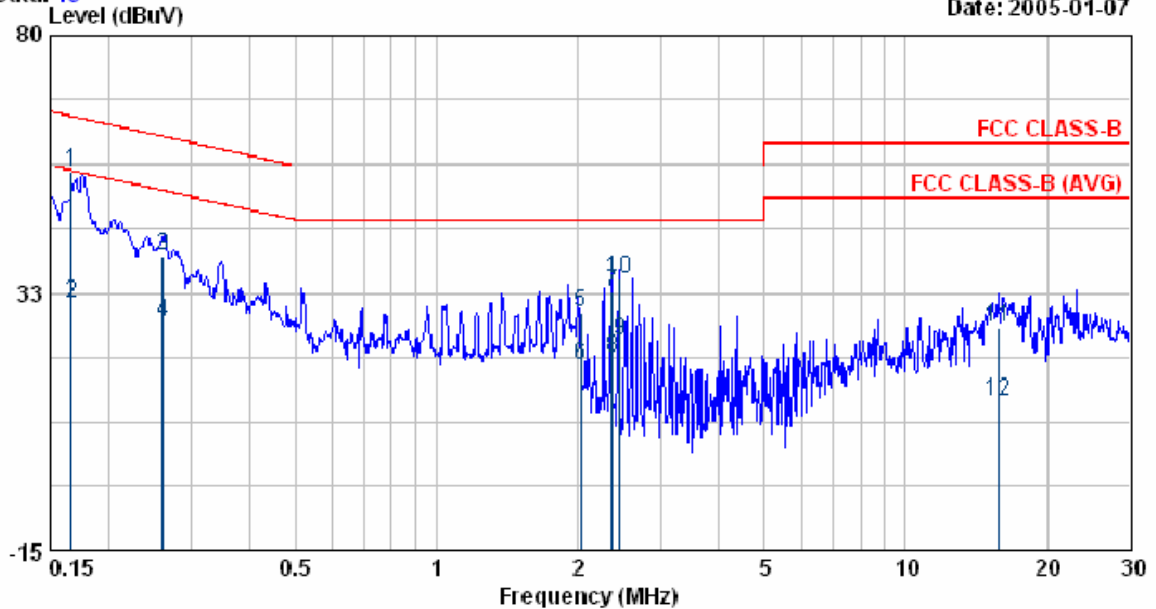
Remarks: 1. Level = Read Level + Factor
 2. Factor = LISN(ISN) Factor + Cable Loss

EUT : WGE111v2
 Power : 110V 60Hz
 Test Mode : 802.11b CH HI
 Memo :

Pol/Phase : LINE
 Temperature : 26 °C
 Humidity : 59 %

Data: 43

Date: 2005-01-07



Freq	Read Level	Factor	Level	Limit	Over Limit	Remark
MHz	dBuV	dB	dBuV	dBuV	dBuV	
0.167	54.63	0.41	55.04	65.11	-10.07	QP
0.167	30.30	0.41	30.71	55.11	-24.40	AVERAGE
0.261	38.97	0.43	39.40	61.39	-21.98	QP
0.261	26.83	0.43	27.26	51.39	-24.12	AVERAGE
2.029	28.25	0.54	28.79	56.00	-27.21	QP
2.029	18.70	0.54	19.24	46.00	-26.76	AVERAGE
2.370	32.14	0.55	32.69	56.00	-23.31	QP
2.370	19.93	0.55	20.48	46.00	-25.52	AVERAGE
2.458	23.01	0.55	23.56	46.00	-22.44	AVERAGE
2.458	34.63	0.55	35.18	56.00	-20.82	QP
15.727	25.45	0.77	26.22	60.00	-33.78	QP
15.727	11.78	0.77	12.55	50.00	-37.45	AVERAGE

Remarks: 1. Level = Read Level + Factor
 2. Factor = LISN(ISN) Factor + Cable Loss

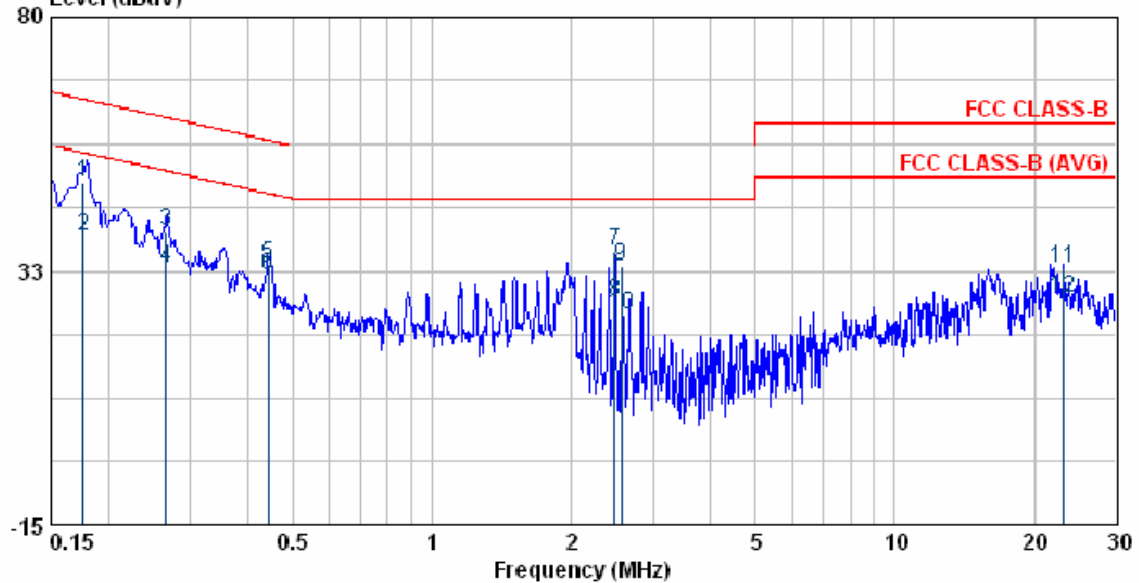
EUT : WGE111v2
 Power : 110W 60Hz
 Test Mode : 802.11g CH L0
 Memo :

Pol/Phase : NEUTRAL
 Temperature : 26 °C
 Humidity : 59 %

Data: 45

Level (dBuV)

Date: 2005-01-07



Freq	Read	Factor	Level	Limit	Over	Remark
MHz	dBuV	dB	dBuV	dBuV	dBuV	
0.176	48.76	0.41	49.17	64.65	-15.48	QP
0.176	38.47	0.41	38.88	54.65	-15.77	AVERAGE
0.266	39.45	0.43	39.88	61.25	-21.37	QP
0.266	32.46	0.43	32.89	51.25	-18.36	AVERAGE
0.443	33.22	0.46	33.68	57.01	-23.32	QP
0.443	31.23	0.46	31.69	47.01	-15.31	AVERAGE
2.482	35.51	0.55	36.06	56.00	-19.94	QP
2.482	26.17	0.55	26.72	46.00	-19.28	AVERAGE
2.567	32.84	0.55	33.39	56.00	-22.61	QP
2.567	23.73	0.55	24.28	46.00	-21.72	AVERAGE
23.130	32.11	0.95	33.06	60.00	-26.94	QP
23.130	26.63	0.95	27.58	50.00	-22.42	AVERAGE

Remarks: 1. Level = Read Level + Factor
 2. Factor = LISN(ISN) Factor + Cable Loss

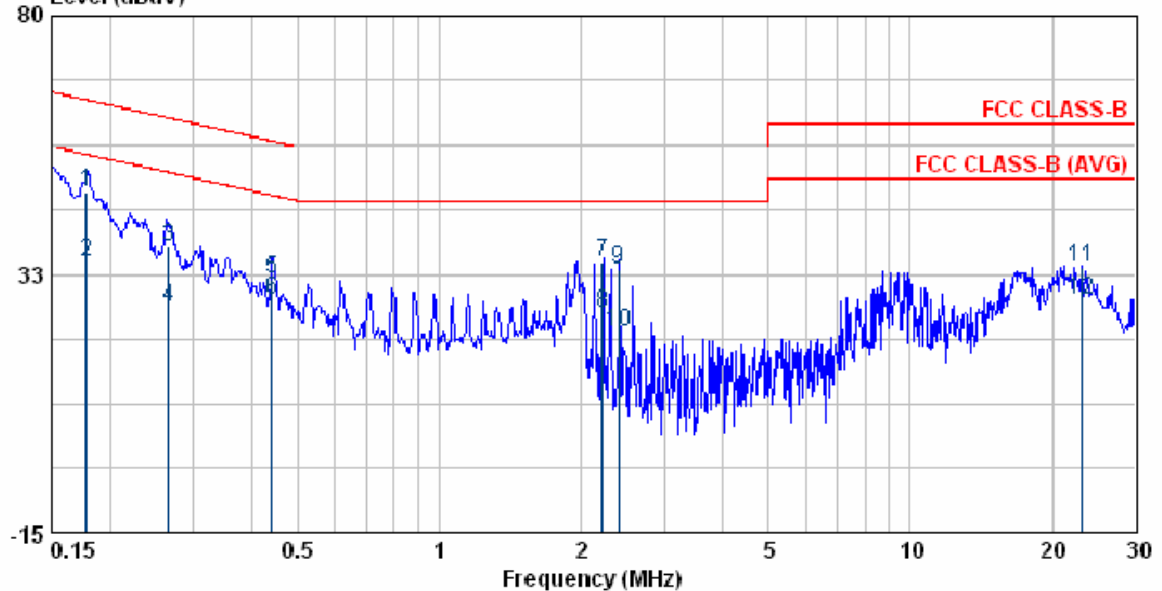
EUT : WGE111v2
 Power : 110W 60Hz
 Test Mode : 802.11g CH L0
 Memo :

Pol/Phase : LINE
 Temperature : 26 °C
 Humidity : 59 %

Data: 46

Level (dBuV)

Date: 2005-01-07



Freq	Read Level	Factor	Level	Limit	Over Limit	Remark
MHz	dBuV	dB	dBuV	dBuV	dBuV	
0.178	47.29	0.41	47.70	64.60	-16.90	QP
0.178	34.26	0.41	34.67	54.60	-19.93	AVERAGE
0.266	37.04	0.43	37.47	61.24	-23.77	QP
0.266	26.05	0.43	26.48	51.24	-24.76	AVERAGE
0.441	31.24	0.46	31.70	57.05	-25.34	QP
0.441	27.44	0.46	27.90	47.05	-19.14	AVERAGE
2.218	34.08	0.55	34.63	56.00	-21.37	QP
2.218	24.93	0.55	25.48	46.00	-20.52	AVERAGE
2.398	32.97	0.55	33.52	56.00	-22.48	QP
2.398	21.17	0.55	21.72	46.00	-24.28	AVERAGE
23.129	32.67	1.14	33.81	60.00	-26.19	QP
23.129	26.68	1.14	27.82	50.00	-22.18	AVERAGE

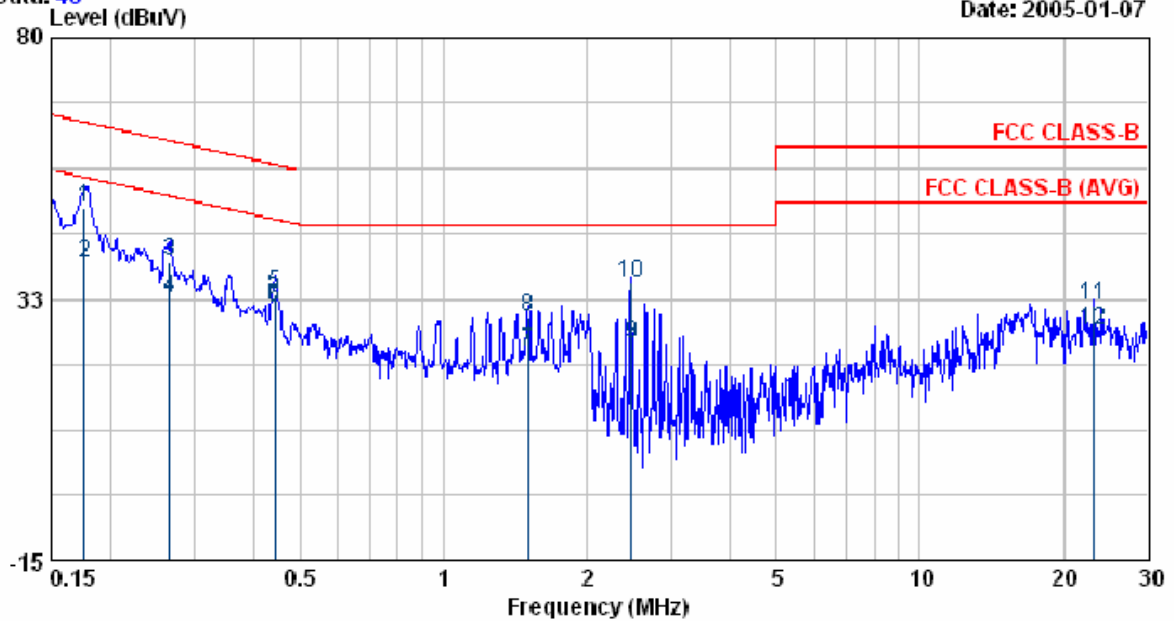
Remarks: 1. Level = Read Level + Factor
 2. Factor = LISN(ISN) Factor + Cable Loss

EUT : WGE111v2
 Power : 110V 60Hz
 Test Mode : 802.11g CH MID
 Memo :

Pol/Phase : NEUTRAL
 Temperature : 26 °C
 Humidity : 59 %

Data: 48

Date: 2005-01-07



Freq	Read Level	Factor	Level	Limit	Over Limit	Remark
MHz	dBuV	dB	dBuV	dBuV	dBuV	
0.176	48.72	0.41	49.13	64.66	-15.53	QP
0.176	38.51	0.41	38.92	54.66	-15.74	AVERAGE
0.265	38.98	0.43	39.41	61.26	-21.85	QP
0.265	32.28	0.43	32.71	51.26	-18.55	AVERAGE
0.443	32.74	0.46	33.20	57.01	-23.80	QP
0.443	30.41	0.46	30.87	47.01	-16.13	AVERAGE
1.505	22.35	0.53	22.88	46.00	-23.12	AVERAGE
1.505	28.77	0.53	29.30	56.00	-26.70	QP
2.480	23.87	0.55	24.42	46.00	-21.58	AVERAGE
2.480	34.79	0.55	35.34	56.00	-20.66	QP
23.130	30.48	0.95	31.43	60.00	-28.57	QP
23.130	25.93	0.95	26.88	50.00	-23.12	AVERAGE

Remarks: 1. Level = Read Level + Factor
 2. Factor = LISN(15N) Factor + Cable Loss

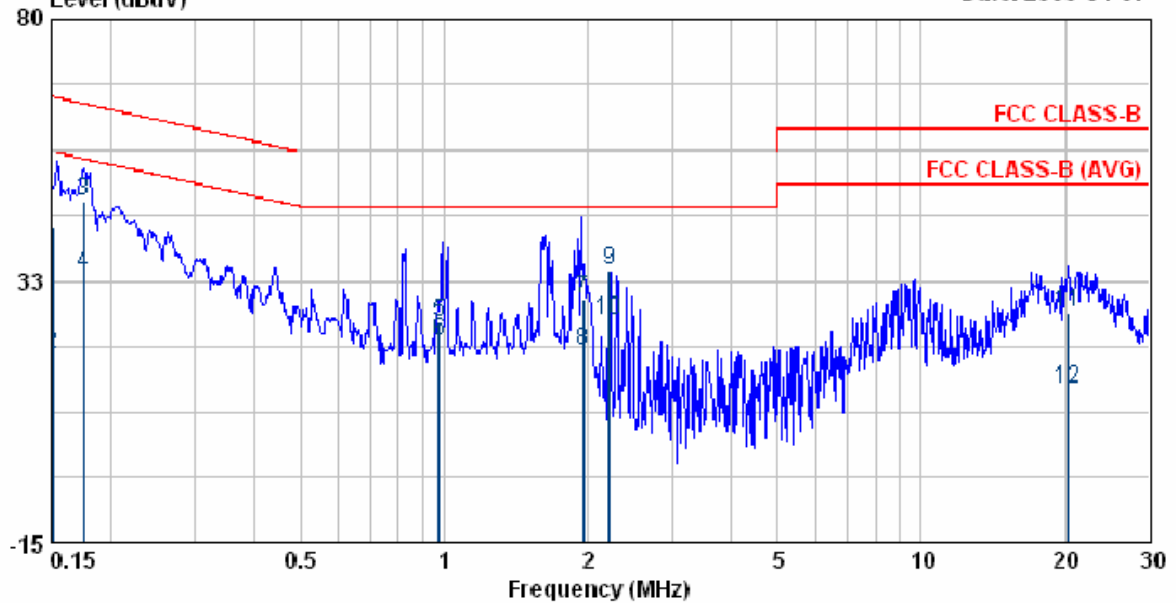
EUT : WGE111v2
 Power : 110W 60Hz
 Test Mode : 802.11g CH MID
 Memo :

Pol/Phase : LINE
 Temperature : 26 °C
 Humidity : 59 %

Data: 47

Level (dBuV)

Date: 2005-01-07



Freq	Read Level	Factor	Level	Limit	Over Limit	Remark
MHz	dBuV	dB	dBuV	dBuV	dBuV	
0.151	42.08	0.40	42.48	65.92	-23.44	QP
0.151	18.80	0.40	19.20	55.92	-36.72	AVERAGE
0.175	46.67	0.41	47.08	64.71	-17.63	QP
0.175	33.40	0.41	33.81	54.71	-20.90	AVERAGE
0.975	24.63	0.51	25.14	56.00	-30.86	QP
0.975	21.10	0.51	21.61	46.00	-24.39	AVERAGE
1.953	28.78	0.54	29.32	56.00	-26.68	QP
1.953	19.10	0.54	19.64	46.00	-26.36	AVERAGE
2.215	33.98	0.55	34.53	56.00	-21.47	QP
2.215	24.86	0.55	25.41	46.00	-20.59	AVERAGE
20.278	25.94	0.90	26.84	60.00	-33.16	QP
20.278	11.98	0.90	12.88	50.00	-37.12	AVERAGE

Remarks: 1. Level = Read Level + Factor
 2. Factor = LISN(ISN) Factor + Cable Loss

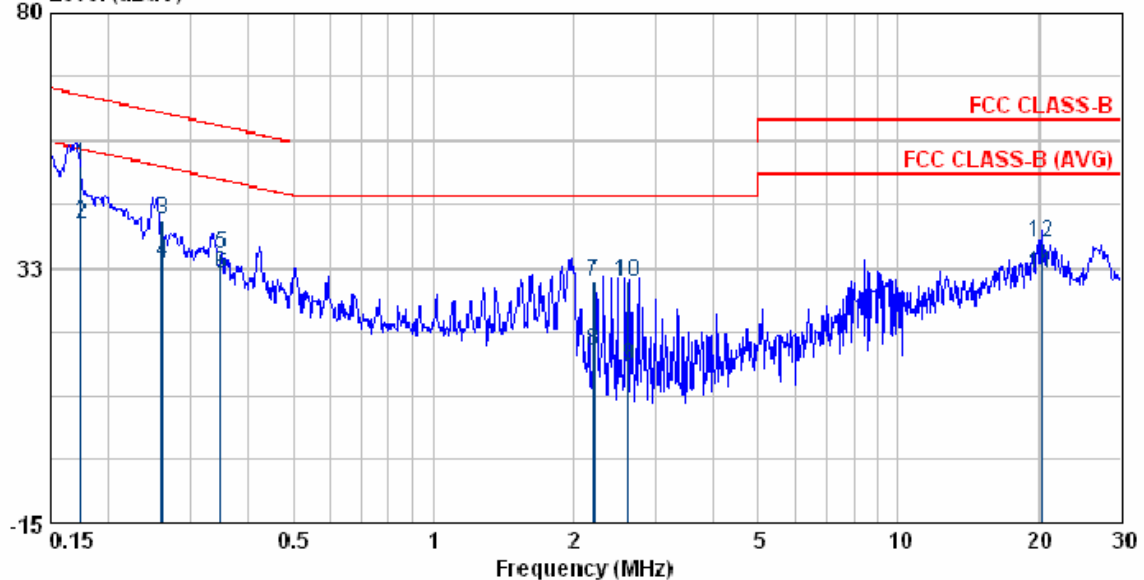
EUT : WGE111v2
 Power : 110W 60Hz
 Test Mode : 802.11g CH HI
 Memo :

Pol/Phase : NEUTRAL
 Temperature : 26 °C
 Humidity : 59 %

Data: 49

Level (dBuV)

Date: 2005-01-07



Freq	Read Level	Factor	Level	Limit	Over Limit	Remark
MHz	dBuV	dB	dBuV	dBuV	dBuV	
0.174	51.12	0.41	51.53	64.75	-13.22	QP
0.174	40.26	0.41	40.67	54.75	-14.08	AVERAGE
0.261	40.85	0.43	41.28	61.39	-20.11	QP
0.261	33.03	0.43	33.46	51.39	-17.93	AVERAGE
0.349	34.50	0.45	34.95	58.98	-24.03	QP
0.349	30.89	0.45	31.34	48.98	-17.64	AVERAGE
2.203	29.47	0.55	30.02	56.00	-25.98	QP
2.203	16.32	0.55	16.87	46.00	-29.13	AVERAGE
2.618	13.58	0.55	14.13	46.00	-31.87	AVERAGE
2.618	29.17	0.55	29.72	56.00	-26.28	QP
20.258	30.30	0.88	31.18	50.00	-18.82	AVERAGE
20.258	36.49	0.88	37.37	60.00	-22.63	QP

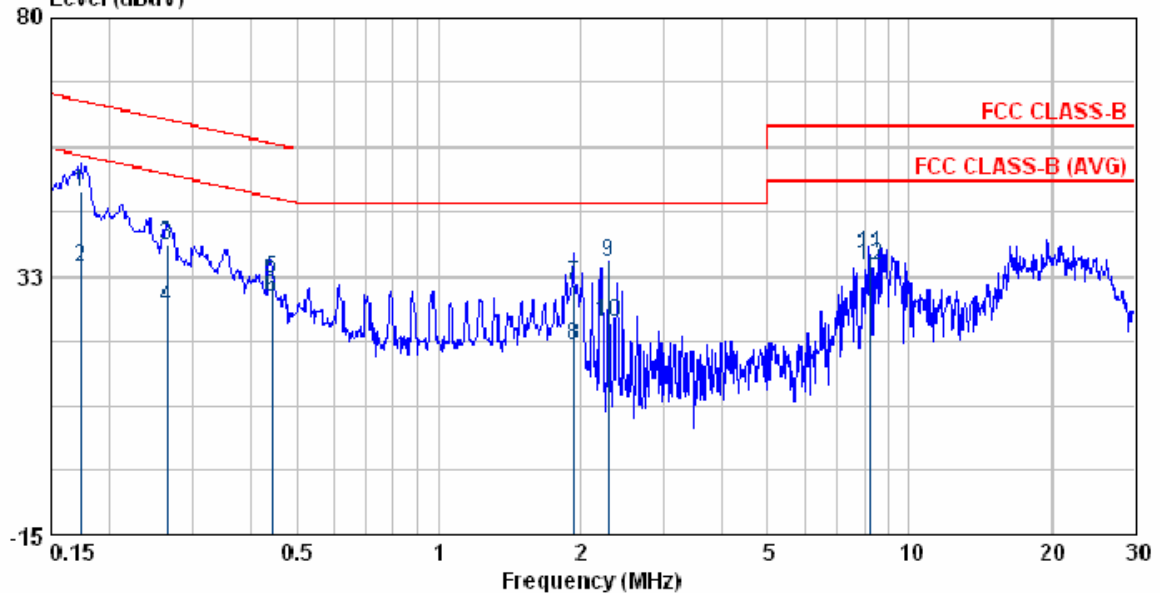
Remarks: 1. Level = Read Level + Factor
 2. Factor = LISN(ISN) Factor + Cable Loss

EUT : WGE111v2
 Power : 110V 60Hz
 Test Mode : 802.11g CH HI
 Memo :

Pol/Phase : LINE
 Temperature : 26 °C
 Humidity : 59 %

Data: 50
 Level (dBuV)

Date: 2005-01-07



Freq	Read Level	Factor	Level	Limit	Over Limit	Remark
MHz	dBuV	dB	dBuV	dBuV	dBuV	
0.174	47.44	0.41	47.85	64.78	-16.93	QP
0.174	33.58	0.41	33.99	54.78	-20.79	AVERAGE
0.264	37.71	0.43	38.14	61.29	-23.15	QP
0.264	26.42	0.43	26.85	51.29	-24.44	AVERAGE
0.442	31.50	0.46	31.96	57.03	-25.06	QP
0.442	28.15	0.46	28.61	47.03	-18.41	AVERAGE
1.939	30.40	0.54	30.94	56.00	-25.06	QP
1.939	19.15	0.54	19.69	46.00	-26.31	AVERAGE
2.294	34.67	0.55	35.22	56.00	-20.78	QP
2.294	23.32	0.55	23.87	46.00	-22.13	AVERAGE
8.233	35.86	0.61	36.47	60.00	-23.53	QP
8.233	33.71	0.61	34.32	50.00	-15.68	AVERAGE

Remarks: 1. Level = Read Level + Factor
 2. Factor = LISN(ISN) Factor + Cable Loss

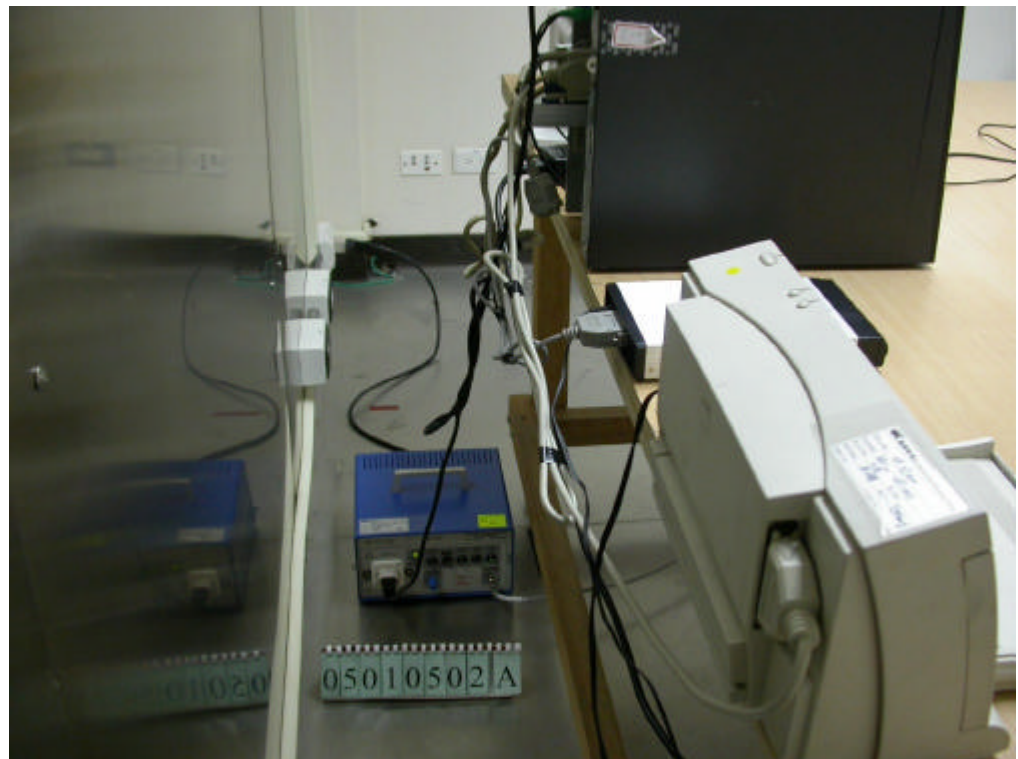
Test by: Caso | Jan. 07, 2005

4.2.1. Photographs of Conducted Emission Test

FRONT VIEW



REAR VIEW



4.2.2. Test Result of Radiated Emission

Emission frequencies below 1 GHz

Test Date: Jan. 25, 2005 Temperature: 24°C Humidity: 72% Atmospheric pressure: 1028 mmHg

Test Mode: transmit / Receive Channel HI

Frequency (MHz)	Ant-Pol H/V	Meter Reading (dBuV)	Corrected Factor (dB)	Result@3m (dBuV/m)	Limit@3m (dBuV/m)	Margin (dB)	Remark	Table Deg.	Ant High (m)
332.20	H	46.61	-11.42	35.19	46.0	-10.81	Peak	166	1.3
911.80	H	29.58	3.32	32.90	46.0	-13.10	Peak	192	1.3
240.68	H	54.08	-14.61	40.47	46.0	-5.53	Peak	160	1.3
135.73	V	53.27	-15.60	37.67	43.5	-5.83	Peak	123	1.2
240.60	V	55.45	-15.10	40.35	46.0	-5.65	Peak	162	1.2
418.30	V	49.58	-8.51	41.07	46.0	-4.93	Q.P	202	1.2
430.90	V	49.58	-8.26	41.33	46.0	-4.67	Peak	230	1.2
442.10	V	50.69	-8.15	42.54	46.0	-3.46	Peak	205	1.2

Notes:

1. The channel LO, MID, and HI were pre-tested in chamber. The Channel HI are worst case and chosen for final test.
2. Result = Meter Reading + Corrected Factor
3. Corrected Factor = Antenna Factor + Cable Loss – Amplifier
4. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120KHz for Peak detection at frequency below 1GHz.
5. The other emissions is too below to be measured.

Modulation Standard: IEEE 802.11b(11Mbps)

Emission frequencies above 1 GHz

Test Date: Jan. 25, 2005 Temperature: 24°C Humidity: 72% Atmospheric pressure: 1028 mmHg

Test Mode: transmit / Receive Channel LO

Frequency (MHz)	Ant-Pol H/V	Meter Reading (dBuV)	Corrected Factor (dB)	Result@3m (dBuV/m)	Limit@3m (dBuV/m)	Margin (dB)	Remark	Table Deg.	Ant High (m)
1585.00	H	56.20	-2.51	53.69	74	-20.31	Peak	250	1
1585.00	H	40.79	-2.51	38.28	54	-15.72	Ave	250	1
1669.50	H	56.05	-2.02	54.03	74	-19.97	Peak	248	1
1669.50	H	40.31	-2.02	38.29	54	-15.71	Ave	248	1
1981.50	H	48.86	-0.21	48.65	54	-5.35	Ave	348	1
4824.00	H	57.63	8.12	65.75	74	-8.25	Peak	160	1
4824.00	H	43.68	8.12	51.80	54	-2.2	Ave	160	1
7235.60	H	51.73	11.89	63.62	74	-10.38	Peak	160	1
7235.60	H	37.92	11.89	49.81	54	-4.19	Ave	160	1
9648.00	H	---	14.64	---	54	---	Ave	---	---
12060.00	H	---	15.84	---	54	---	Ave	---	---
1330.30	V	60.39	-4.69	55.70	74	-18.30	Peak	8	1
1330.30	V	40.40	-4.69	35.71	54	-18.29	Ave	8	1
1462.20	V	59.9	-3.77	56.13	74	-17.87	Peak	360	1
1462.20	V	39.59	-3.77	35.82	54	-18.18	Ave	360	1
1994.90	V	54.64	-0.83	53.81	74	-20.19	Peak	355	1
1994.90	V	37.52	-0.83	36.69	54	-17.31	Ave	355	1
4824.00	V	54.62	7.36	61.98	74	-12.02	Peak	153	1
4824.00	V	41.14	7.36	48.50	54	-5.50	Ave	153	1
7235.40	V	52.04	11.05	63.09	74	-10.91	Peak	158	1
7235.40	V	37.72	11.05	48.77	54	-5.23	Ave	158	1
9648.00	V	---	13.57	---	54	---	Ave	---	---
12060.00	V	---	15.93	---	54	---	Ave	---	---

Notes:

1. Result = Meter Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz 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.
5. The other emissions is too below to be measured.

Modulation Standard: IEEE 802.11b(11Mbps)

Emission frequencies above 1 GHz

Test Date: Jan. 25, 2005 Temperature: 24°C Humidity: 72% Atmospheric pressure: 1028 mmHg

Test Mode: transmit / Receive Channel MID

Frequency (MHz)	Ant-Pol H/V	Meter Reading (dBuV)	Corrected Factor (dB)	Result@3m (dBuV/m)	Limit@3m (dBuV/m)	Margin (dB)	Remark	Table Deg.	Ant High (m)
1591.5	H	52.12	-2.47	49.65	54	-4.35	Ave	255	1
1981.5	H	48.94	-0.21	48.73	54	-5.27	Ave	234	1
4874.0	H	55.4	8.32	63.72	74	-10.28	Peak	157	1
4874.0	H	40.85	8.32	49.17	54	-4.83	Ave	157	1
7312.8	H	49.12	12.05	61.17	74	-12.83	Peak	157	1
7312.8	H	34.98	12.05	47.03	54	-6.97	Ave	157	1
9748.0	H	---	14.71	---	54	---	Ave	---	---
12185.0	H	---	15.82	---	54	---	Ave	---	---
1329.4	V	59.06	-4.70	54.36	74	-19.64	Peak	255	1
1329.4	V	40.56	-4.70	35.86	54	-18.14	Ave	255	1
1465.1	V	59.80	-3.75	56.06	74	-17.95	Peak	271	1
1465.1	V	39.02	-3.75	35.28	54	-18.73	Ave	271	1
4874.0	V	57.45	7.54	64.99	74	-9.01	Peak	155	1
4874.0	V	44.53	7.54	52.07	54	-1.93	Ave	155	1
7310.5	V	54.48	11.14	65.62	74	-8.38	Peak	155	1
7310.5	V	40.60	11.14	51.74	54	-2.26	Ave	155	1
9748.0	V	---	13.66	---	54	---	Ave	---	---
12185.0	V	---	15.68	---	54	---	Ave	---	---

Notes:

1. Result = Meter Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz 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.
5. The other emissions is too below to be measured.

Modulation Standard: IEEE 802.11b(11Mbps)

Emission frequencies above 1 GHz

Test Date: Jan. 25, 2005 Temperature: 24°C Humidity: 72% Atmospheric pressure: 1028 mmHg

Test Mode: transmit / Receive Channel HI

Frequency (MHz)	Ant-Pol H/V	Meter Reading (dBuV)	Corrected Factor (dB)	Result@3m (dBuV/m)	Limit@3m (dBuV/m)	Margin (dB)	Remark	Table Deg.	Ant High (m)
1581.00	H	51.68	-2.51	49.71	54	-4.83	Ave	235	1
1981.50	H	49.02	-0.21	48.82	54	-5.18	Ave	262	1
2859.00	H	51.59	2.92	54.52	74	-19.48	Peak	352	1
2859.00	H	39.22	2.92	42.14	54	-11.86	Ave	352	1
4923.80	H	54.40	8.51	62.91	74	-11.09	Peak	162	1
4923.80	H	40.36	8.51	48.87	54	-5.13	Ave	162	1
7389.00	H	49.81	12.21	62.02	74	-11.98	Peak	156	1
7389.00	H	38.28	12.21	50.49	54	-3.51	Ave	156	1
9848.00	H	---	14.78	---	54	---	Ave	---	---
12310.00	H	---	15.79	---	54	---	Ave	---	---
1325.00	V	53.84	-4.73	49.11	54	-4.89	Ave	260	1
1455.00	V	53.79	-3.82	49.97	54	-4.03	Ave	270	1
1585.00	V	53.27	-3.04	50.23	54	-3.77	Ave	255	1
1981.50	V	52.67	-0.90	51.77	74	-22.23	Peak	238	1
1981.50	V	33.42	-0.90	32.52	54	-21.48	Ave	238	1
4924.00	V	58.04	7.72	65.76	74	-8.24	Peak	156	1
4924.00	V	43.90	7.72	51.62	54	-2.38	Ave	156	1
7387.20	V	53.21	11.22	64.43	74	-9.57	Peak	156	1
7387.20	V	39.58	11.22	50.80	54	-3.20	Ave	156	1
9848.00	V	---	13.75	---	54	---	Ave	---	---
12310.00	V	---	15.44	---	54	---	Ave	---	---

Notes:

1. Result = Meter Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz 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.
5. The other emissions is too below to be measured.

Modulation Standard: IEEE 802.11g(54Mbps)

Emission frequencies above 1 GHz

Test Date: Jan. 25, 2005 Temperature: 24°C Humidity: 72% Atmospheric pressure: 1028 mmHg

Test Mode: transmit / Receive Channel LO

Frequency (MHz)	Ant-Pol H/V	Meter Reading (dBuV)	Corrected Factor (dB)	Result@3m (dBuV/m)	Limit@3m (dBuV/m)	Margin (dB)	Remark	Table Deg.	Ant High (m)
1585.00	H	55.71	-2.51	53.20	74	-20.80	Peak	223	1
1585.00	H	42.63	-2.51	40.12	54	-13.88	Ave	223	1
2813.50	H	53.51	2.76	56.27	74	-17.73	Peak	165	1.
2813.50	H	41.12	2.76	43.88	54	-10.12	Ave	165	1
4827.00	H	55.39	8.14	63.53	74	-10.47	Peak	157	1
4827.00	H	40.55	8.14	48.69	54	-5.31	Ave	157	1
7240.80	H	54.85	11.90	66.75	74	-7.25	Peak	157	1
7240.80	H	36.62	11.90	48.52	54	-5.48	Ave	157	1
9648.00	H	---	14.64	---	54	---	Ave	---	---
12060.00	H	---	15.84	---	54	---	Ave	---	---
1325.00	V	57.94	-4.73	53.21	74	-20.79	Peak	265	1
1325.00	V	38.22	-4.73	33.49	54	-20.51	Ave	265	1
1455.00	V	56.82	-3.82	53.01	74	-20.99	Peak	272	1
1455.00	V	37.92	-3.82	34.10	54	-19.90	Ave	272	1
1591.00	V	53.19	-3.01	50.18	54	-3.82	Ave	232	1
1981.00	V	52.82	-0.90	51.92	74	-22.08	Peak	242	1
1981.00	V	34.82	-0.90	33.92	54	-20.08	Ave	242	1
4827.20	V	54.97	7.37	62.34	74	-11.66	Peak	149	1
4827.20	V	37.52	7.37	44.89	54	-9.11	Ave	149	1
7240.60	V	55.18	11.06	66.24	74	-7.76	Peak	149	1
7240.60	V	34.77	11.06	45.83	54	-8.17	Ave	149	1
9648.00	V	---	13.57	---	54	---	Ave	---	---
12060.00	V	---	15.93	---	54	---	Ave	---	---

Notes:

1. Result = Meter Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz 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.
5. The other emissions is too below to be measured.

Modulation Standard: IEEE 802.11g(54Mbps)

Emission frequencies above 1 GHz

Test Date: Jan. 25, 2005 Temperature: 24°C Humidity: 72% Atmospheric pressure: 1028 mmHg

Test Mode: transmit / Receive Channel MID

Frequency (MHz)	Ant-Pol H/V	Meter Reading (dBuV)	Corrected Factor (dB)	Result@3m (dBuV/m)	Limit@3m (dBuV/m)	Margin (dB)	Remark	Table Deg.	Ant High (m)
1585.00	H	54.36	-2.51	51.85	54	-2.15	Ave	230	1
1981.50	H	49.22	-0.21	49.02	54	-4.98	Ave	162	1
2859.00	H	49.75	2.92	52.67	74	-21.33	Peak	355	1
2859.00	H	36.92	2.92	39.84	54	-15.16	Ave	355	1
4879.00	H	34.68	8.34	63.02	74	-10.98	Peak	155	1
4879.00	H	39.78	8.34	48.12	54	-5.88	Ave	155	1
7311.20	H	52.95	12.05	65.00	74	-9.00	Peak	155	1
7311.20	H	35.38	12.05	47.43	54	-6.57	Ave	155	1
9748.00	H	---	14.71	---	54	---	Ave	---	---
12185.00	H	---	15.82	---	54	---	Ave	---	---
1325.00	V	55.50	-4.73	50.77	54	-3.23	Ave	262	1
1455.00	V	52.50	-3.82	48.68	54	-5.32	Ave	278	1
1585.00	V	52.60	-3.04	49.56	54	-4.44	Ave	225	1
1981.50	V	52.29	-0.90	51.39	54	-2.61	Ave	240	1
4877.00	V	56.67	7.55	64.22	74	-9.78	Peak	158	1
4877.00	V	56.29	7.55	43.84	54	-10.16	Ave	158	1
7311.00	V	59.04	11.14	70.18	74	-3.82	Peak	158	1
7311.00	V	35.54	11.14	46.68	54	-7.32	Ave	158	1
9748.00	V	---	13.66	---	54	---	Ave	---	---
12185.00	V	---	15.68	---	54	---	Ave	---	---

Notes:

1. Result = Meter Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz 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.
5. The other emissions is too below to be measured.

Modulation Standard: IEEE 802.11g(54Mbps)

Emission frequencies above 1 GHz

Test Date: Jan. 25, 2005 Temperature: 24°C Humidity: 72% Atmospheric pressure: 1028 mmHg

Test Mode: transmit / Receive Channel HI

Frequency (MHz)	Ant-Pol H/V	Meter Reading (dBuV)	Corrected Factor (dB)	Result@3m (dBuV/m)	Limit@3m (dBuV/m)	Margin (dB)	Remark	Table Deg.	Ant High (m)
1591.50	H	57.05	-2.47	54.58	74	-19.42	Peak	254	1
1591.50	H	38.76	-2.47	36.29	54	-17.71	Ave	254	1
2761.50	H	48.51	2.57	51.08	54	-2.92	Ave	351	1
4926.80	H	55.49	8.52	64.01	74	-9.99	Peak	154	1
4926.80	H	41.21	8.52	49.73	54	-4.27	Ave	154	1
7386.60	H	55.73	12.21	67.94	74	-6.06	Peak	154	1
7386.60	H	36.69	12.21	48.90	54	-5.10	Ave	154	1
9848.00	H	---	14.78	---	54	---	Ave	---	---
12310.00	H	---	15.79	---	54	---	Ave	---	---
1325.00	V	60.55	-4.73	55.82	74	-18.18	Peak	260	1
1325.00	V	41.74	-4.73	37.01	54	-16.99	Ave	260	1
1455.00	V	54.87	-3.82	51.06	54	-2.94	Ave	270	1
1591.50	V	53.27	-3.01	50.27	54	-3.73	Ave	230	1
1981.50	V	53.37	-0.90	52.47	74	-21.53	Peak	240	1
1981.50	V	37.37	-0.90	36.47	54	-17.53	Ave	240	1
2813.50	V	52.56	2.00	54.56	74	-19.44	Peak	230	1
2813.50	V	36.56	2.00	38.56	54	-15.44	Ave	230	1
4929.40	V	55.69	7.74	63.43	74	-10.57	Peak	151	1
4929.40	V	32.92	7.74	40.66	54	-13.34	Ave	151	1
7386.60	V	56.50	11.22	67.72	74	-6.28	Peak	151	1
7386.60	V	33.76	11.22	44.98	54	-9.02	Ave	151	1
9848.00	V	---	13.75	---	54	---	Ave	---	---
12310.00	V	---	15.44	---	54	---	Ave	---	---

Notes:

1. Result = Meter Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz 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.
5. The other emissions is too below to be measured.

Photographs of Radiated Emission Test

FRONT VIEW



REAR VIEW



4.3. 6dB Bandwidth Measurement Data

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

Test Date: Jan. 26, 2005 Temperature: 24°C Humidity: 70%

Atmospheric pressure: 1024mmHg

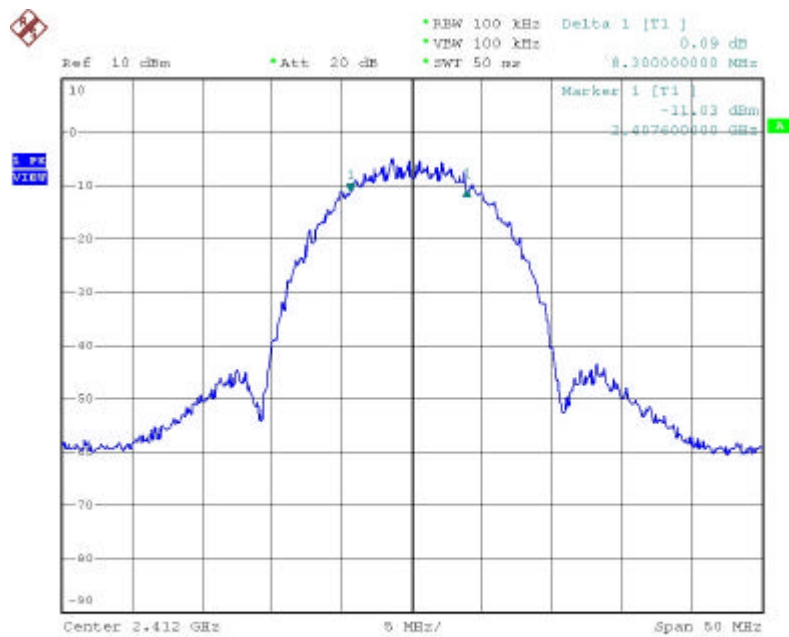
- a) Channel 01: 6dB Emission Bandwidth is 8.3 MHz
- b) Channel 06: 6dB Emission Bandwidth is 8.3 MHz
- c) Channel 11: 6dB Emission Bandwidth is 8.4 MHz

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

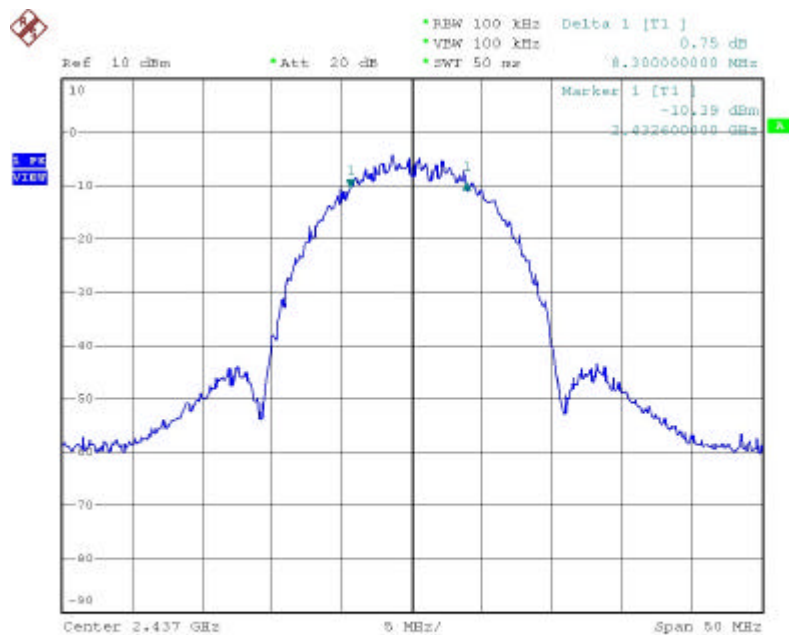
Test Date: Jan. 26, 2005 Temperature: 24°C Humidity: 70%

Atmospheric pressure: 1024mmHg

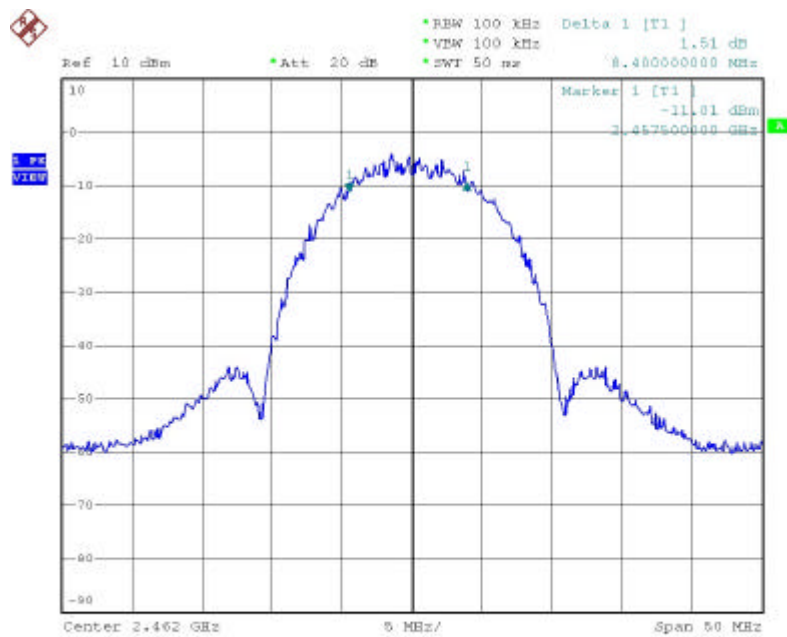
- a) Channel 01: 6dB Emission Bandwidth is 15.3 MHz
- b) Channel 06: 6dB Emission Bandwidth is 15.4 MHz
- c) Channel 11: 6dB Emission Bandwidth is 15.3 MHz



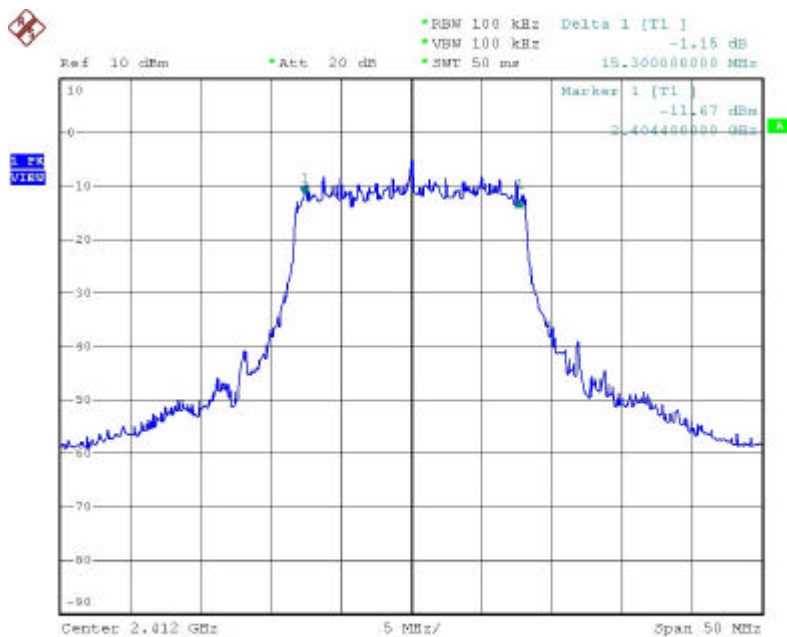
Date: 26.JAN.2005 16:35:44



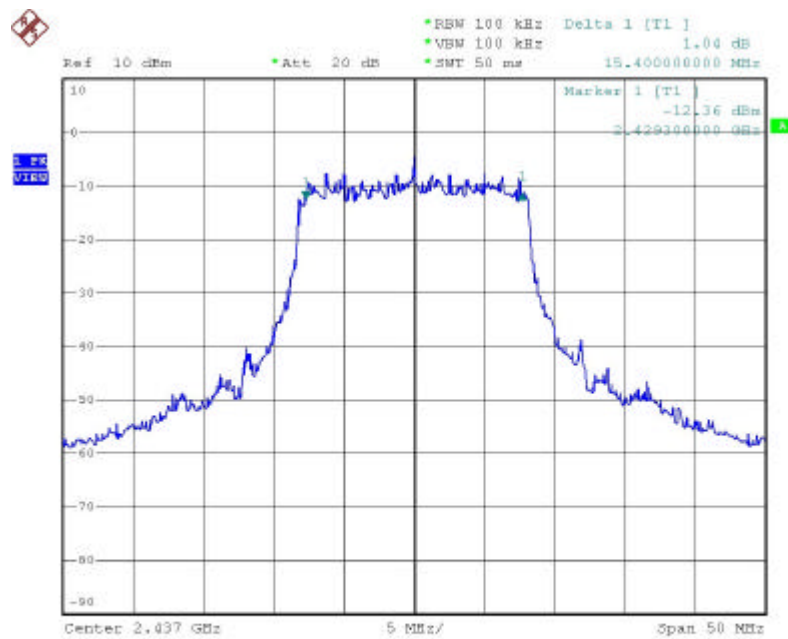
Date: 26.JAN.2005 16:38:01



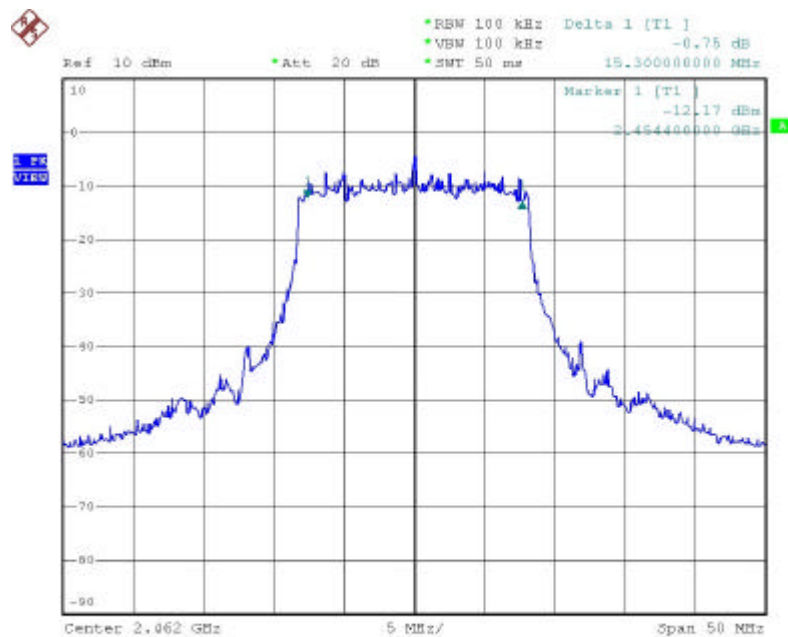
Date: 26.JAN.2005 16:39:45



Date: 26.JAN.2005 12:26:42



Date: 26.JAN.2005 12:28:49



Date: 26.JAN.2005 12:30:41

4.4. Peak Output Power Measurement Data

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

Test Date: Jan. 26, 2005 Temperature: 24°C Humidity: 70%

Atmospheric pressure: 1024mmHg

a) Channel 01: Output Peak Power is	<u>10.62</u>	dBm or	<u>11.535</u>	mW
b) Channel 06: Output Peak Power is	<u>11.10</u>	dBm or	<u>12.883</u>	mW
c) Channel 11: Output Peak Power is	<u>11.18</u>	dBm or	<u>13.122</u>	mW

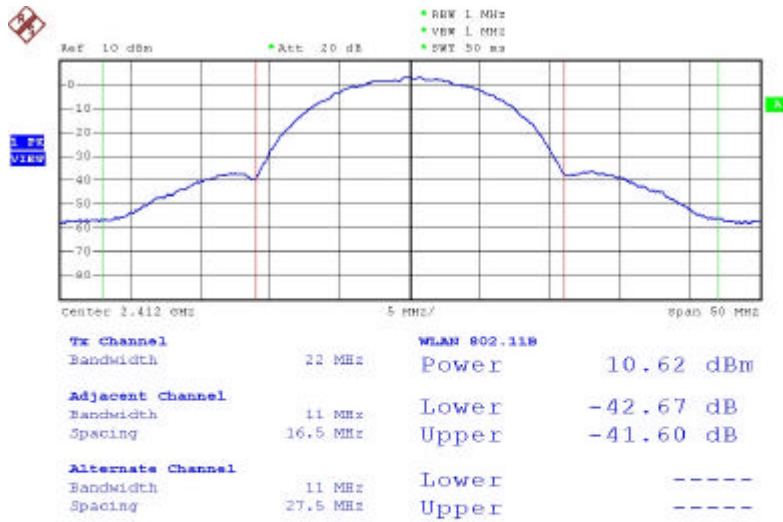
(2) Modulation Standard: IEEE 802.11g(54Mbps)

Test Date: Jan. 26, 2005 Temperature: 24°C Humidity: 70%

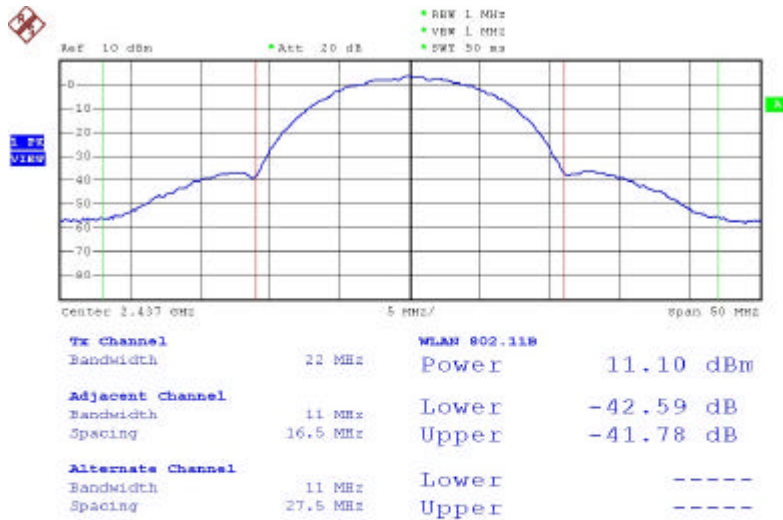
Atmospheric pressure: 1024mmHg

a) Channel 01: Output Peak Power is	<u>11.59</u>	dBm or	<u>14.421</u>	mW
b) Channel 06: Output Peak Power is	<u>12.09</u>	dBm or	<u>16.181</u>	mW
c) Channel 11: Output Peak Power is	<u>12.14</u>	dBm or	<u>16.368</u>	mW

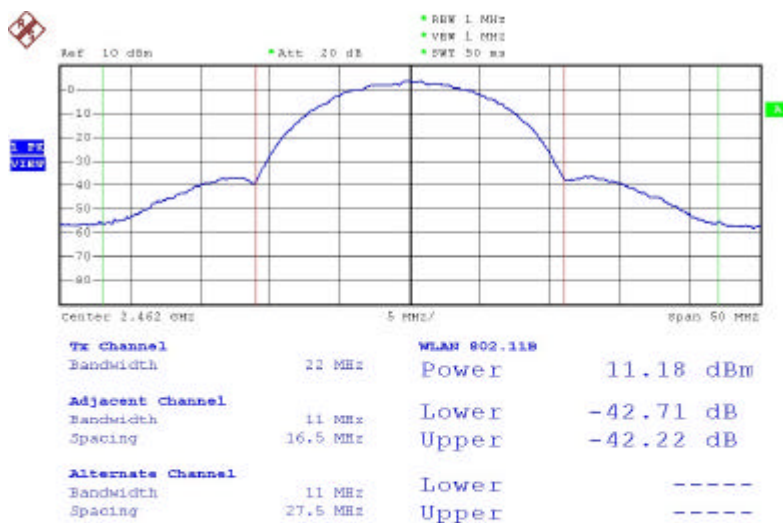
Note: Conducted Power = Reading Value + Cable Loss



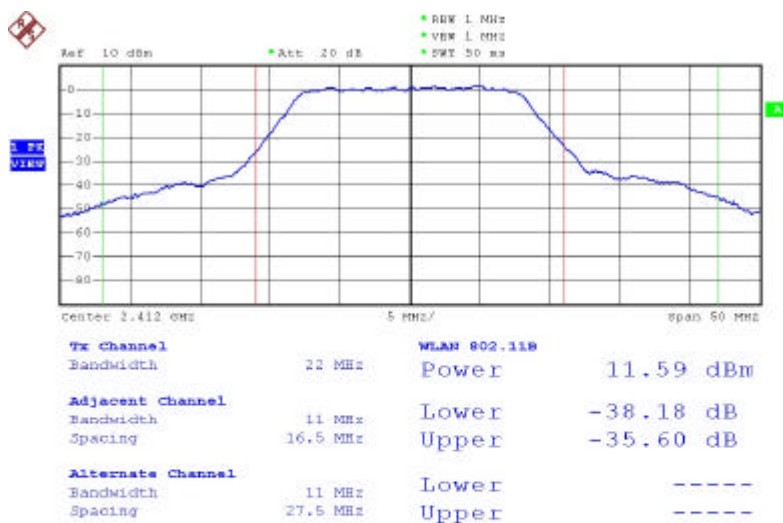
Date: 26.JAN.2005 16:16:37



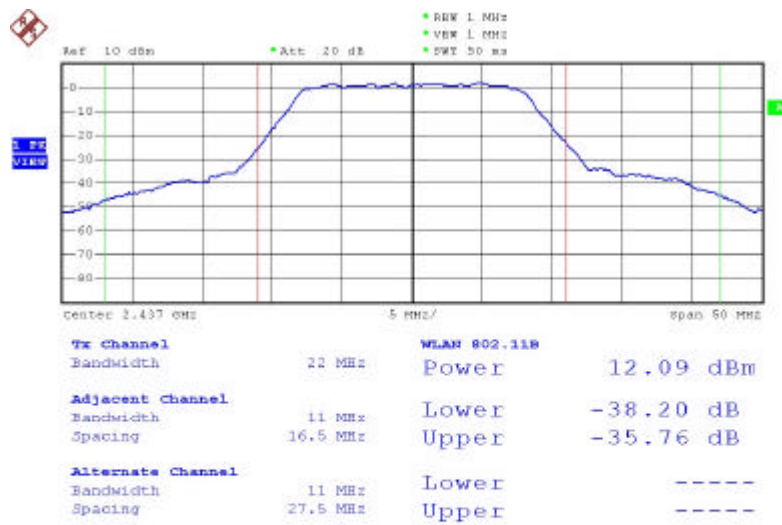
Date: 26.JAN.2005 16:17:46



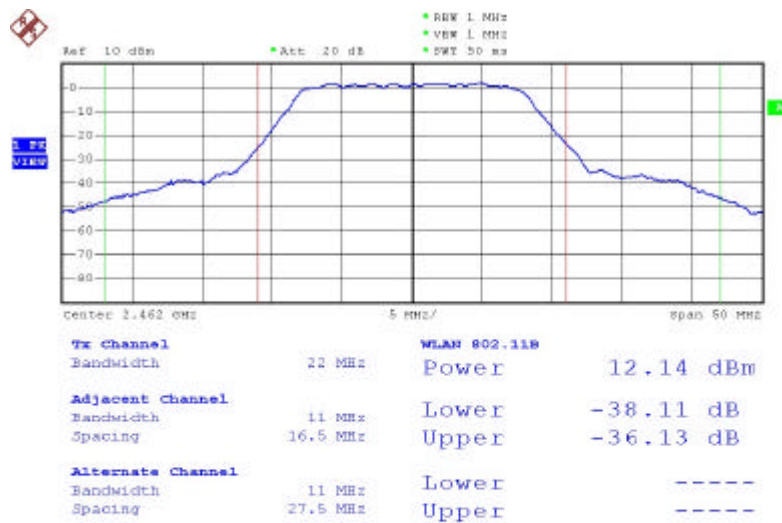
Date: 26.JAN.2005 16:18:44



Date: 26.JAN.2005 16:20:24



Date: 26.JAN.2005 16:21:56



Date: 26.JAN.2005 16:23:27

4.5. Band Edges Measurement Data

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

Test Date: Jan. 26, 2005 Temperature: 24°C Humidity: 70%

Atmospheric pressure: 1024mmHg

a) Lower Band Edge: maximum value is -44.32 dBm that is attenuated more than 20dB

b) Upper Band Edge: maximum value is -57.48 dBm that is attenuated more than 20dB

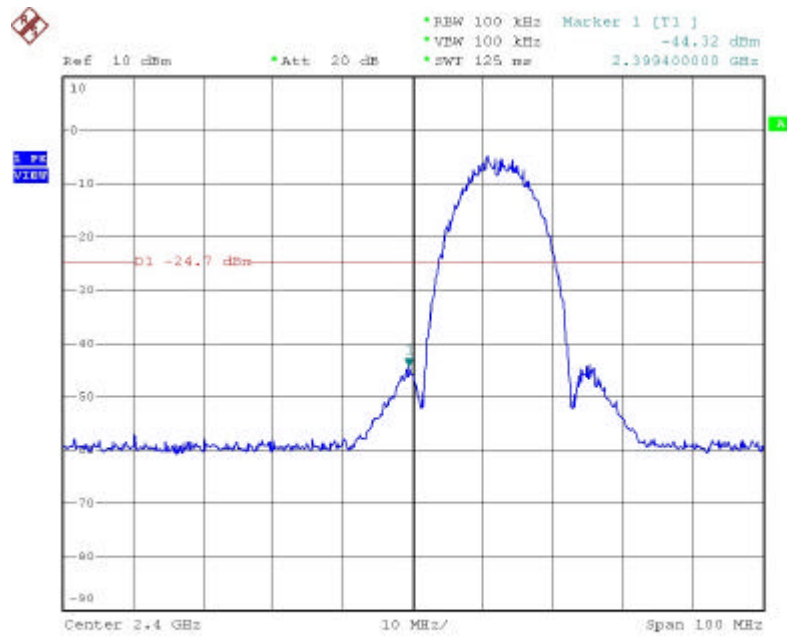
(2) Modulation Standard: IEEE 802.11g(54Mbps)

Test Date: Jan. 26, 2005 Temperature: 24°C Humidity: 70%

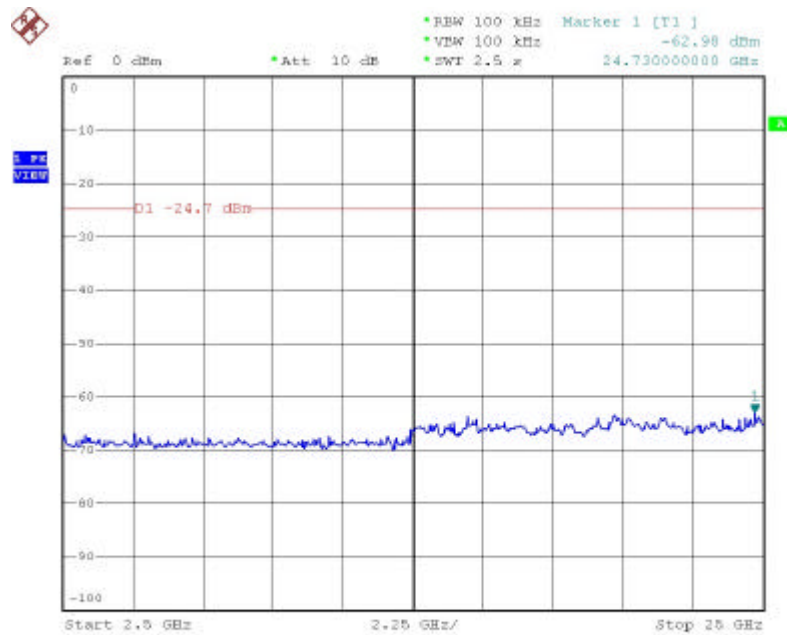
Atmospheric pressure: 1024mmHg

a) Lower Band Edge: maximum value is -41.67 dBm that is attenuated more than 20dB

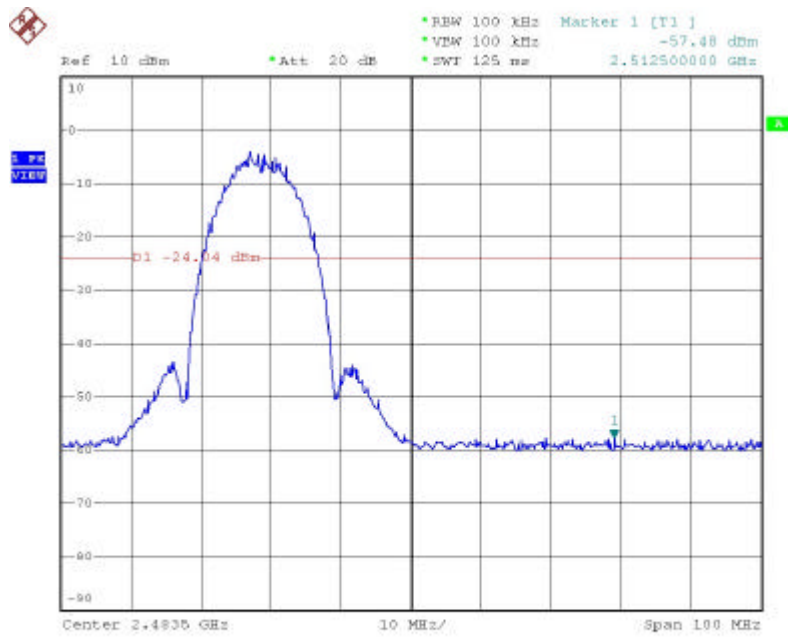
b) Upper Band Edge: maximum value is -56.53 dBm that is attenuated more than 20dB



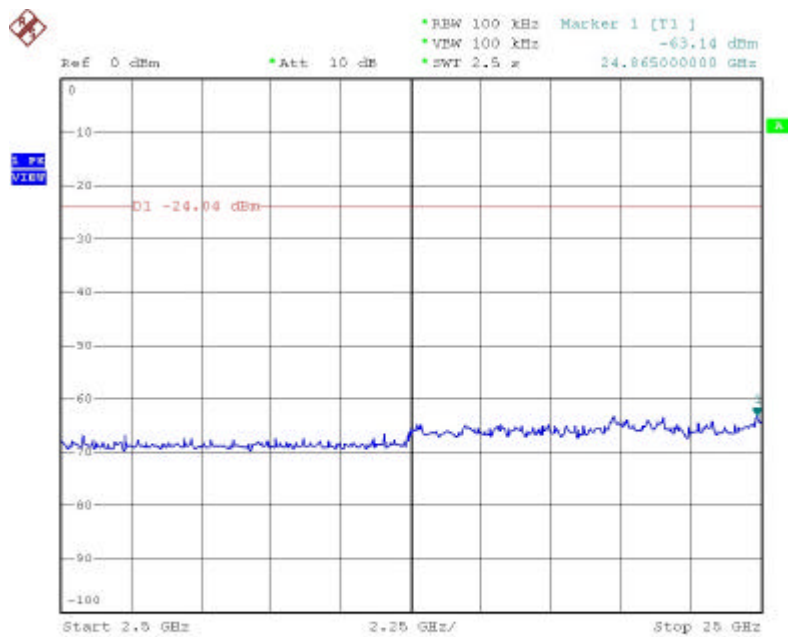
Date: 26.JAN.2005 16:54:42



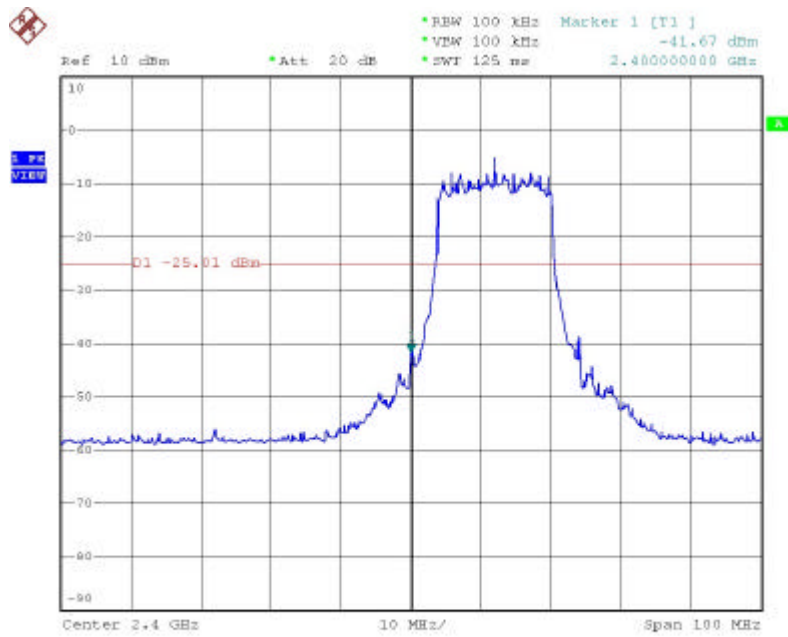
Date: 26.JAN.2005 16:55:58



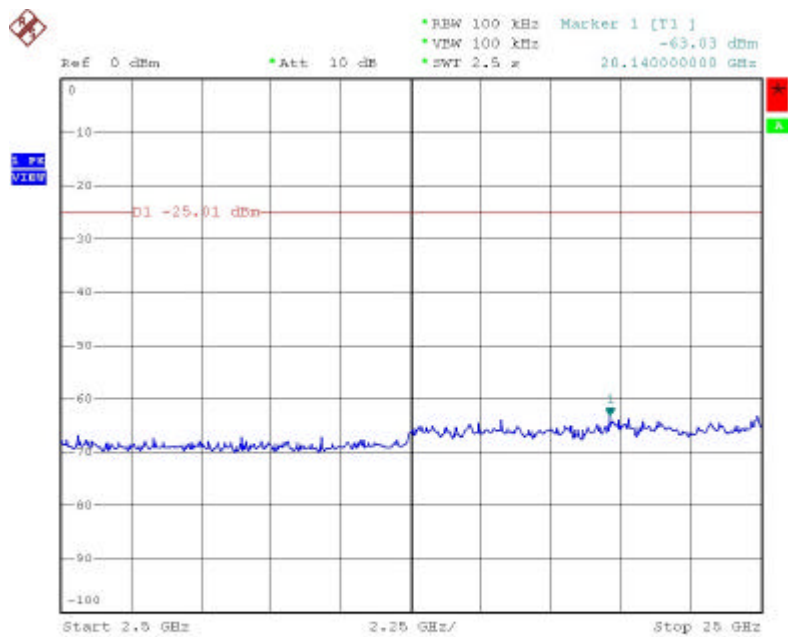
Date: 26.JAN.2005 17:04:22



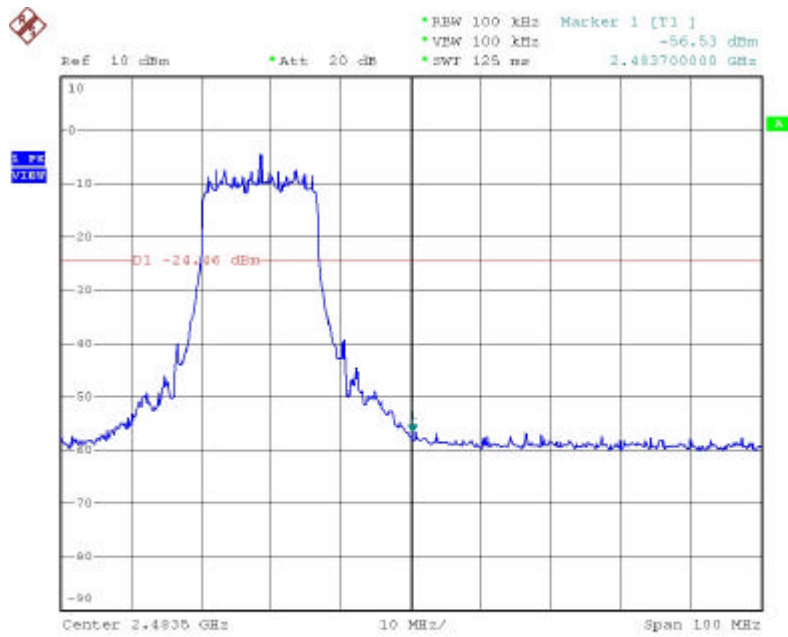
Date: 26.JAN.2005 17:05:33



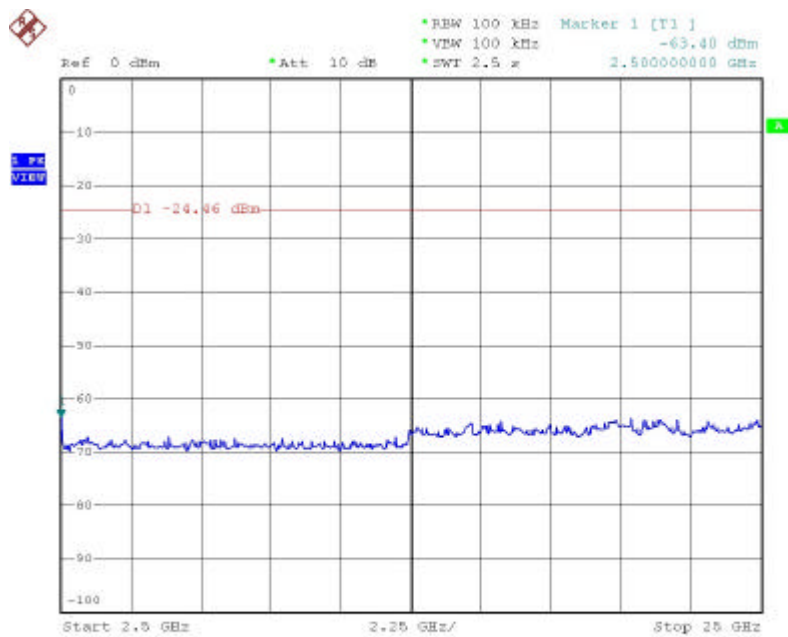
Date: 26.JAN.2005 17:00:37



Date: 26.JAN.2005 17:01:43



Date: 26.JAN.2005 17:08:08



Date: 26.JAN.2005 17:10:59

4.6. Restrict band emission Measurement Data

Modulation Standard: IEEE 802.11b(11Mbps)

Test Date: Jan. 28, 2005 Temperature: 23°C Humidity: 73%

a) Channel 1

Fundamental Frequency: 2412 MHz

Atmospheric pressure: 1029mmHg

Frequency (MHz)	Meter Reading (dBUV)	Corrected Factor(dB)	Result (dBUV/m)	Ant-Pol H/N	Remark	Limit (dBUV/m)		Margin (dB)	Table Deg.	Ant Hight (m)
						Peak	Ave.			
2389.764	---	1.25	---	H	Peak	74	54	---	---	---
2389.764	48.22	1.25	49.47	H	Ave.	74	54	-4.53	305	1.1
2389.764	---	0.54	---	V	Peak	74	54	---	---	---
2386.092	49.03	0.54	49.57	V	Ave.	74	54	-4.43	309	1.1

b) Channel 11

Fundamental Frequency: 2462 MHz

Frequency (MHz)	Meter Reading (dBUV)	Corrected Factor(dB)	Result (dBUV/m)	Ant-Pol H/N	Remark	Limit (dBUV/m)		Margin (dB)	Table Deg.	Ant Hight (m)
						Peak	Ave.			
2483.660	49.92	1.57	51.49	H	Peak	74	54	-22.51	308	1.1
2483.584	35.57	1.57	37.14	H	Ave.	74	54	-16.86	308	1.1
2483.584	---	0.87	---	V	Peak	74	54	---	304	1.1
2483.584	47.29	0.87	48.16	V	Ave.	74	54	-5.84	304	1.1

Modulation Standard: IEEE 802.11g(54Mbps)

Test Date: Jan. 28, 2005 Temperature: 23°C Humidity: 73%

a) Channel 1

Fundamental Frequency: 2412 MHz

Atmospheric pressure: 1029mmHg

Frequency (MHz)	Meter Reading	Corrected Factor(dB)	Result (dBUV/m)	Ant-Pol H/N	Remark	Limit (dBUV/m)		Margin (dB)	Table Deg.	Ant Hight (m)
						Peak	Ave.			
2389.764	53.44	1.25	54.69	H	Peak	74	54	-19.31	305	1.1
2389.764	36.52	1.25	37.77	H	Ave.	74	54	-16.23	305	1.1
2389.764	55.80	0.55	56.35	V	Peak	74	54	-17.65	306	1.1
2389.764	38.79	0.55	39.34	V	Ave.	74	54	-14.66	306	1.1

b) Channel 11

Fundamental Frequency: 2462 MHz

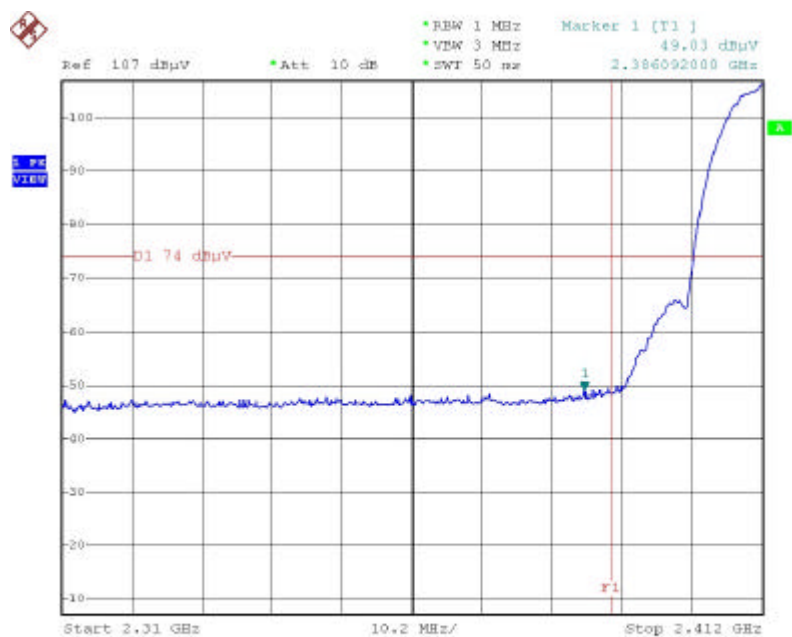
Frequency (MHz)	Meter Reading	Corrected Factor(dB)	Result (dBUV/m)	Ant-Pol H/N	Remark	Limit (dBUV/m)		Margin (dB)	Table Deg.	Ant Hight (m)
						Peak	Ave.			
2483.584	58.76	1.57	60.33	H	Peak	74	54	-13.67	311	1.1
2483.584	39.82	1.57	41.39	H	Ave.	74	54	-12.61	311	1.1
2483.584	54.57	0.87	55.44	V	Peak	74	54	-18.56	310	1.1
2483.584	37.14	0.87	38.01	V	Ave.	74	54	-15.99	310	1.1

Notes:

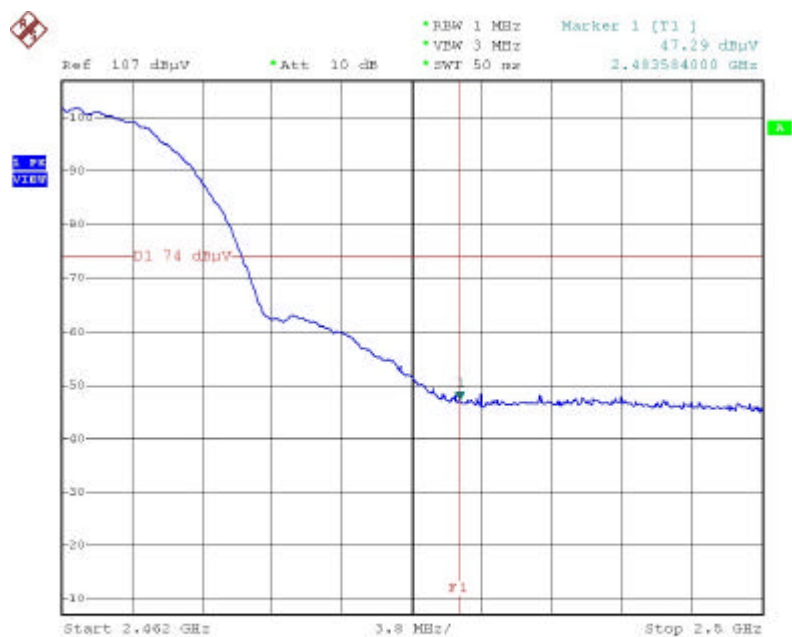
1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz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

Modulation Standard: IEEE 802.11b(11Mbps)

Pol/Phase: Vertical



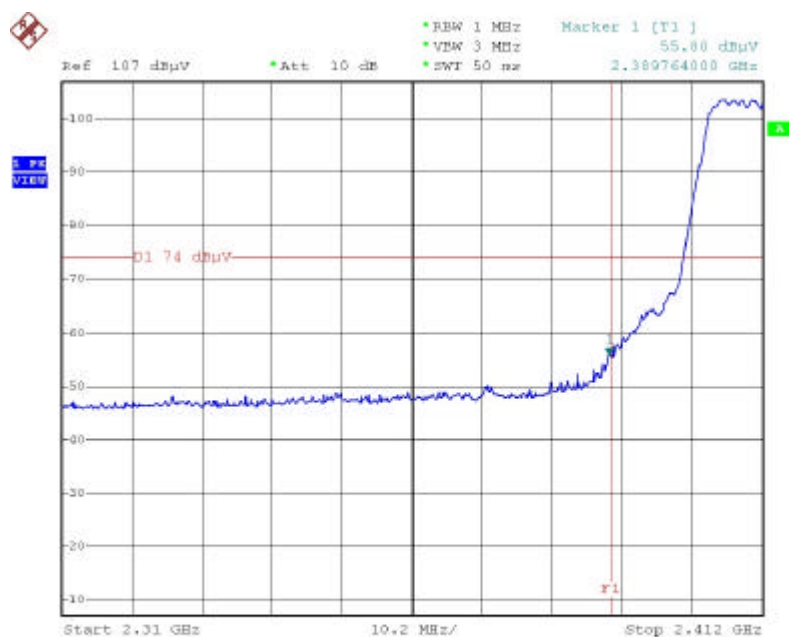
Date: 28.JAN.2005 19:37:44



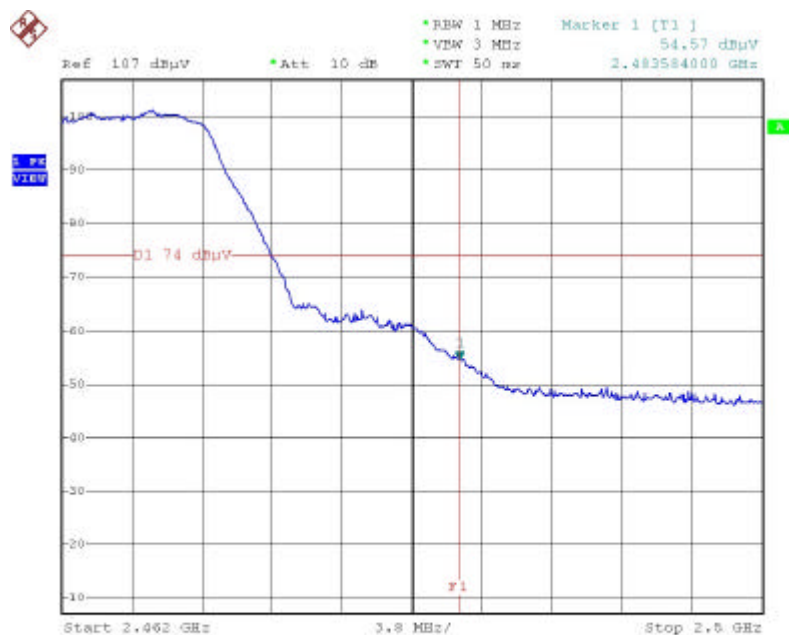
Date: 28.JAN.2005 19:39:43

Modulation Standard: IEEE 802.11g(54Mbps)

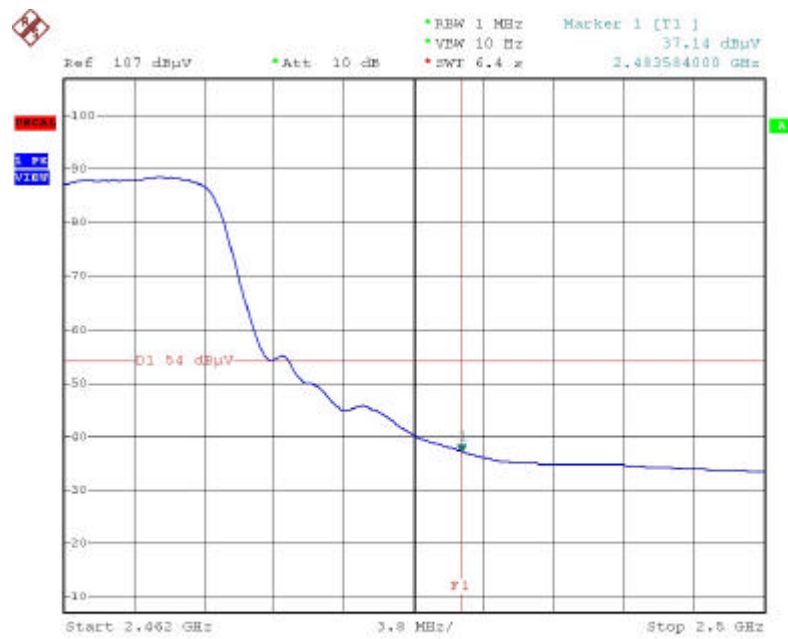
Pol/Phase: Vertical



Date: 28.JAN.2005 19:35:23



Date: 28.JAN.2005 19:40:42



Date: 28.JAN.2005 19:41:41

4.7. Power Spectral Density Measurement Data

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

Test Date: Jan. 26, 2005 Temperature: 24°C Humidity: 70%

Atmospheric pressure: 1024mmHg

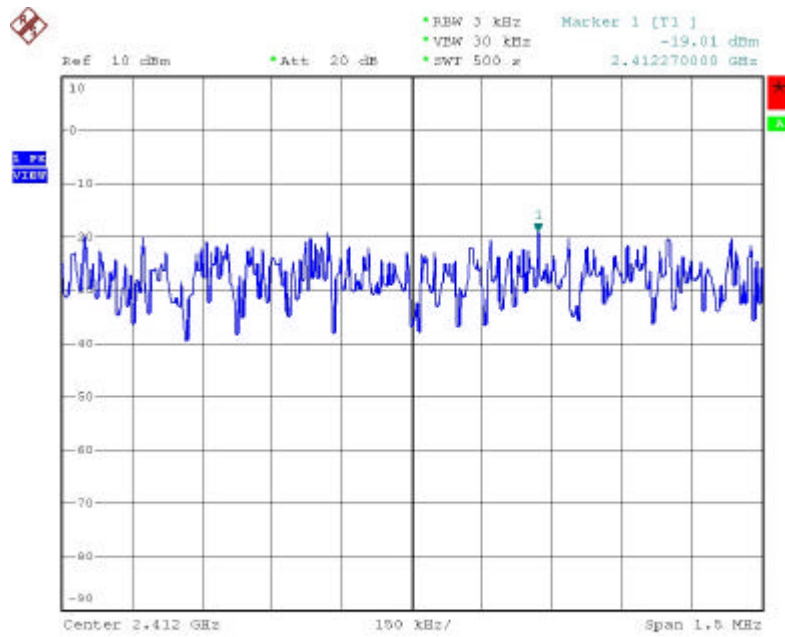
- a) Channel 01: Maximum Power Density of 3 kHz Bandwidth is -19.01 dBm
- b) Channel 06: Maximum Power Density of 3 kHz Bandwidth is -18.57 dBm
- c) Channel 11: Maximum Power Density of 3 kHz Bandwidth is -18.49 dBm

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

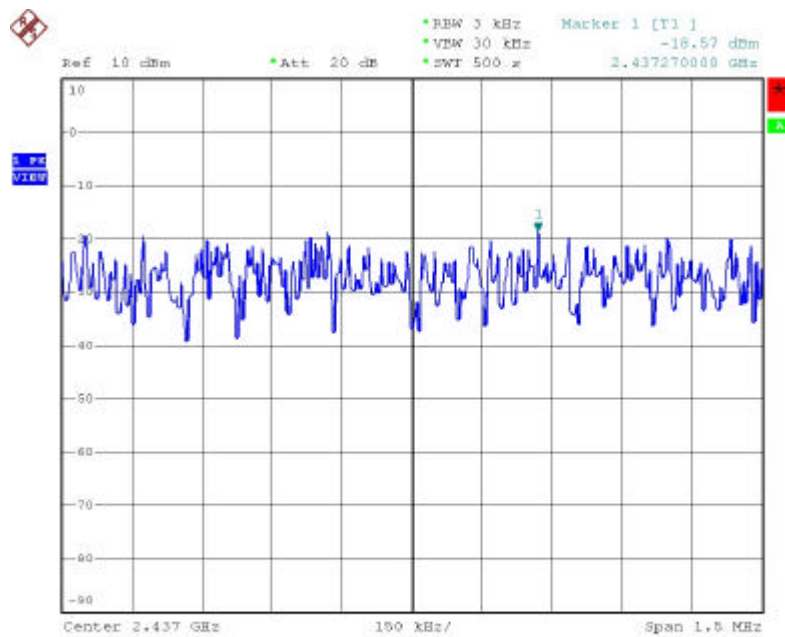
Test Date: Jan. 26, 2005 Temperature: 24°C Humidity: 70%

Atmospheric pressure: 1024mmHg

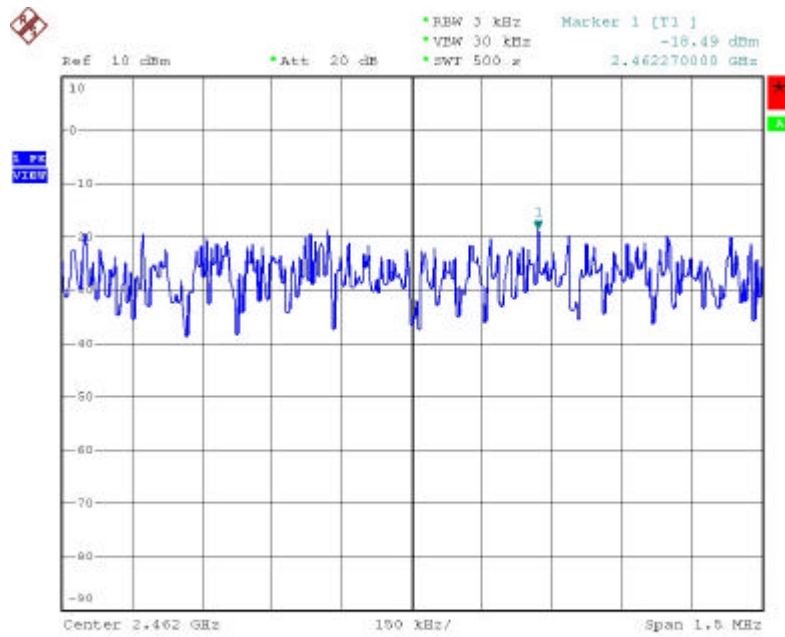
- a) Channel 01: Maximum Power Density of 3 kHz Bandwidth is -20.14 dBm
- b) Channel 06: Maximum Power Density of 3 kHz Bandwidth is -19.86 dBm
- c) Channel 11: Maximum Power Density of 3 kHz Bandwidth is -19.37 dBm



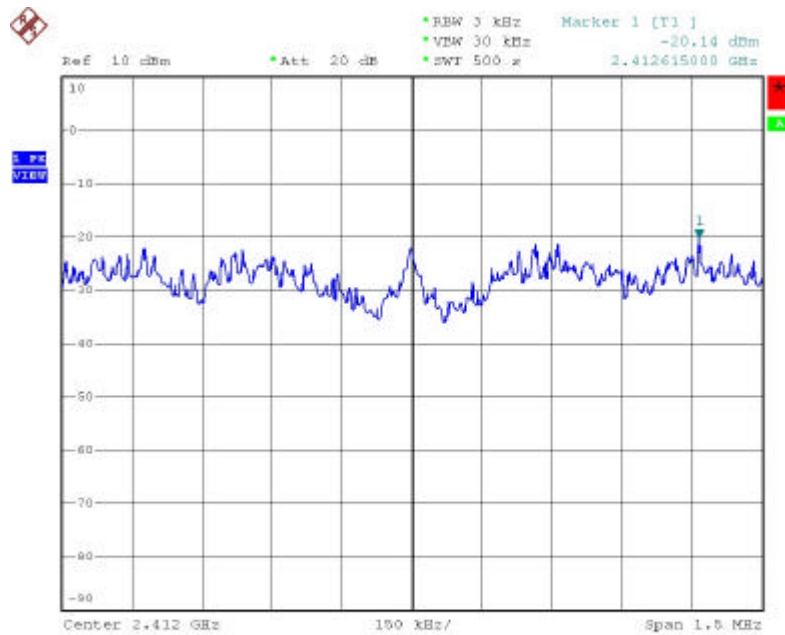
Date: 26.JAN.2005 17:21:32



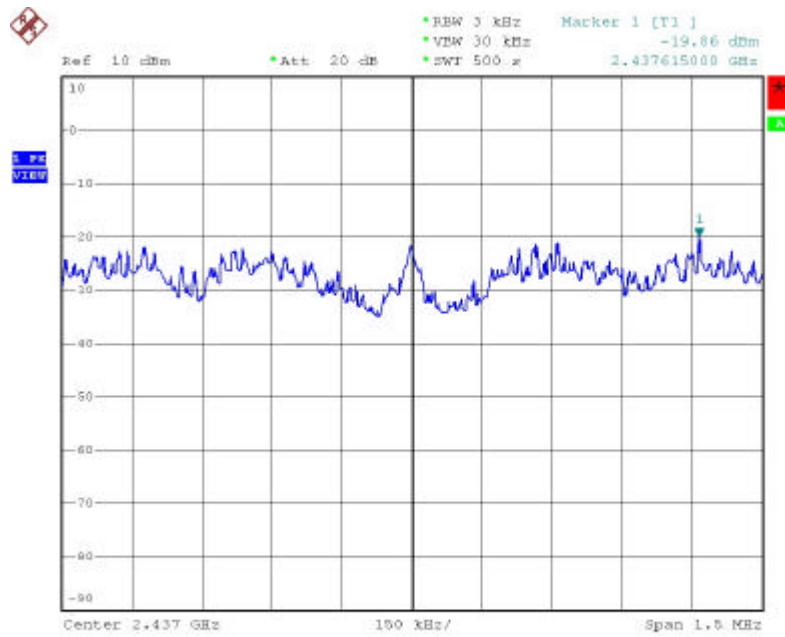
Date: 26.JAN.2005 17:31:41



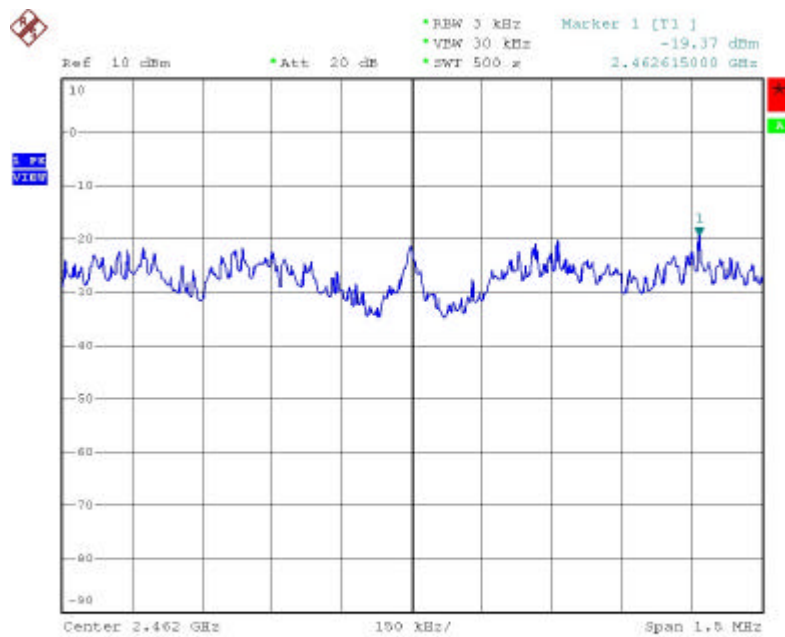
Date: 26.JAN.2005 17:39:42



Date: 26.JAN.2005 17:49:57



Date: 26.JAN.2005 17:59:58



Date: 26.JAN.2005 18:12:29

5. List of Measuring Equipment Used

No	Instrument/Ancillary	Type	Manufacturer	Serial No.	Valid Date.
1	Bilog Antenna	CBL6112B	Schaffner	2762	2005/04/08
2	Preamplifier	RFP4002	Schaffner	010	2005/11/03
3	Receiver	SCR3501	Schaffner	437	2005/11/03
4	Signal Generator	8648B	HP	3629U00612	2006/02/09
5	Amplifier	8447D	Agilent	2443A04650	2005/02/02
6	Amplifier	8447D	Agilent	2944A10531	2005/06/30
7	Series Power Meter	E4416A	Agilent	GB41292146	2005/10/11
8	Power Sensor	E9327A	Agilent	US40441392	2005/10/11
9	Dipole Antenna	AD-100	COM-Power	721011	2005/12/02
10	Dipole Antenna	AD-100	COM-Power	721010	2005/12/02
11	PRE-AMPLIFIER	PA-840	COM-POWER	711885	2005/8/10
12	Spectrum Analyzer	FSP40	R&S	100047	2005/12/28
13	Preamplifier	8449B	Agilent	3008A01954	2005/12/27
14	Horn Antenna	3115	EMCO	31601	2006/01/31
15	Horn Antenna	3115	EMCO	31589	2006/01/31
16	Horn Antenna	3116	EMCO	31970	2006/01/30
17	Horn Antenna	3116	EMCO	31974	2006/01/30
18	EMI Receiver	8546A	HP	3807A00454	2005/02/12
19	RF Filter Section	85460A	HP	3704A00386	2005/02/12
20	Signal Generator	83640A	HP	2927A00107	2006/04/02
21	Attenuator	8491B	Agilent	50703	2005/12/27
22	Attenuator	8491B	Agilent	50705	2005/12/27
22	Temperature Chamber	TMJ-9712	T Machine	T-12-040111	2005/02/05
24	High Pass Filter	84300-80038	HP	002	N/A
25	High Pass Filter	84300-80038	HP	006	N/A
26	DC Power Supply	GPD-3030	GM	7020936	N/A
27	AC Power Converter	AFC-11005	APC	F103120008	N/A