



FCC TEST REPORT

REPORT NO.: RF920825R07

MODEL NO.: WUSB54G

BRAND: Linksys

RECEIVED: Aug. 25, 2003

TESTED: Aug. 25 ~ Sep. 1, 2003

APPLICANT: Cisco-Linksys, LLC

ADDRESS: 17401 Armstrong Ave., Irvine, CA 92614

ISSUED BY: Advance Data Technology Corporation

LAB LOCATION: 47 14th Lin, Chiapau Tsun, Linko, Taipei,
Taiwan, R.O.C.

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0528
ILAC MRA



Lab Code: 200102-0



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1 CERTIFICATION

PRODUCT : Wireless-G USB Network Adapter
MODEL NO.: WUSB54G
BRAND: Linksys
APPLICANT : Cisco-Linksys, LLC
TEST ITEM: Engineering Sample
STANDARDS : 47 CFR Part 15, Subpart C (Section 15.247),
ANSI C63.4-1992

We, **Advance Data Technology Corporation**, hereby certify that one sample of the designation has been tested in our facility from Aug. 25 ~ Sep. 1, 2003. The test record, data evaluation and Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions herein specified.

PREPARED BY: Landy Soong, **DATE:** Sep. 4, 2003
Landy Soong

APPROVED BY: Dr. Alan Lane / JYP, **DATE:** Sep. 4, 2003



2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: 47 CFR Part 15, Subpart C			
Standard Section	Test Type and Limit	Result	REMARK
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit Minimum passing margin is –19.39dB at 0.18125MHz
15.247(a)(2)	Spectrum Bandwidth of a Direct Sequence Spread Spectrum System Limit: min. 500kHz	PASS	Meet the requirement of limit
15.247(b)	Maximum Peak Output Power Limit: max. 30dBm	PASS	Meet the requirement of limit
15.247(c)	Transmitter Radiated Emissions Limit: Table 15.209	PASS	Meet the requirement of limit Minimum passing margin is –2.4dB at 400.01MHz
15.247(d)	Power Spectral Density Limit: max. 8dBm	PASS	Meet the requirement of limit
15.247(c)	Band Edge Measurement Limit: 20 dB less than the peak value of fundamental frequency	PASS	Meet the requirement of limit

NOTE: The information of measurement uncertainty is available upon the customer's request.

3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Wireless-G USB Network Adapter
MODEL NO.	WUSB54G
POWER SUPPLY	5VDC from host equipment
MODULATION TYPE	DSSS, OFDM
TRANSFER RATE	up to 54Mbps
FREQUENCY RANGE	2412MHz ~ 2462MHz
NUMBER OF CHANNEL	11
OUTPUT POWER	16.02dBm
ANTENNA TYPE	Dipole antenna with 1dBi gain
DATA CABLE	USB cable, Non-Shielded, 1.8m
I/O PORTS	RJ45
ASSOCIATED DEVICES	NA

NOTE:

1. Fully compatible with the 802.11g standard to provide a wireless data rate of up to 54Mbps.
2. For more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3.2 DESCRIPTION OF TEST MODES

Eleven channels are provided to this EUT.

Channel	Frequency	Channel	Frequency
1	2412 MHz	7	2442 MHz
2	2417 MHz	8	2447 MHz
3	2422 MHz	9	2452 MHz
4	2427 MHz	10	2457 MHz
5	2432 MHz	11	2462 MHz
6	2437 MHz		

NOTE:

1. Below 1GHz, the channel 1, 6, and 11 were pre-tested in chamber. The channel 11, worst case one, was chosen for final test.
2. Above 1GHz, the channel 1, 6, and 11 were tested individually.
3. Transfer rate, 11Mbps with CCK technique and 6Mbps with OFDM technique, the worst case, were chosen for final test.

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC 47 CFR Part 15, Subpart C. (15.247)

ANSI C63.4 : 1992

All tests have been performed and recorded as per the above standards.

NOTE: 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.



3.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK	COMPAQ	N800C	470048-515	DoC
2	PRINTER	EPSON	LQ-300+	DCGY017096	FCC DoC Approved

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA
2	NA

NOTE: All power cords of the above support units are non shielded (1.8m).

4 TEST TYPES AND RESULTS

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dBμV)	
	Quasi-peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

- NOTE:**
1. The lower limit shall apply at the transition frequencies.
 2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.
 3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
ROHDE & SCHWARZ Test Receiver	ESCS 30	838251/021	Jan. 20, 2004
ROHDE & SCHWARZ Artificial Mains Network (for EUT)	ESH3-Z5	100218	Dec. 18, 2003
ROHDE & SCHWARZ Artificial Mains Network (for peripherals)	ESH3-Z5	100219	Dec. 18, 2003
ROHDE & SCHWARZ Artificial Mains Network (for peripherals)	ESH3-Z5	100220	Dec. 18, 2003
ROHDE & SCHWARZ 4-wire ISN	ENY41	837032/016	Nov. 29 2003
ROHDE & SCHWARZ 2-wire ISN	ENY22	837497/016	Nov. 29 2003
Software	Cond-V2M3	NA	NA
RF cable (JYEBAO)	5D-FB	Cable-C10.01	May. 01, 2004
SUHNER Terminator (For ROHDE & SCHWARZ LISN)	65BNC-5001	E1-010770	Mar. 24, 2004
SUHNER Terminator (For ROHDE & SCHWARZ LISN)	65BNC-5001	E1-010773	Apr. 06, 2004

- NOTE:**
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 2. “*”: These equipment are used for conducted telecom port test only (if tested).
 3. The test was performed in ADT Shielded Room No. 10.
 4. The VCCI Site Registration No. is C-1312.



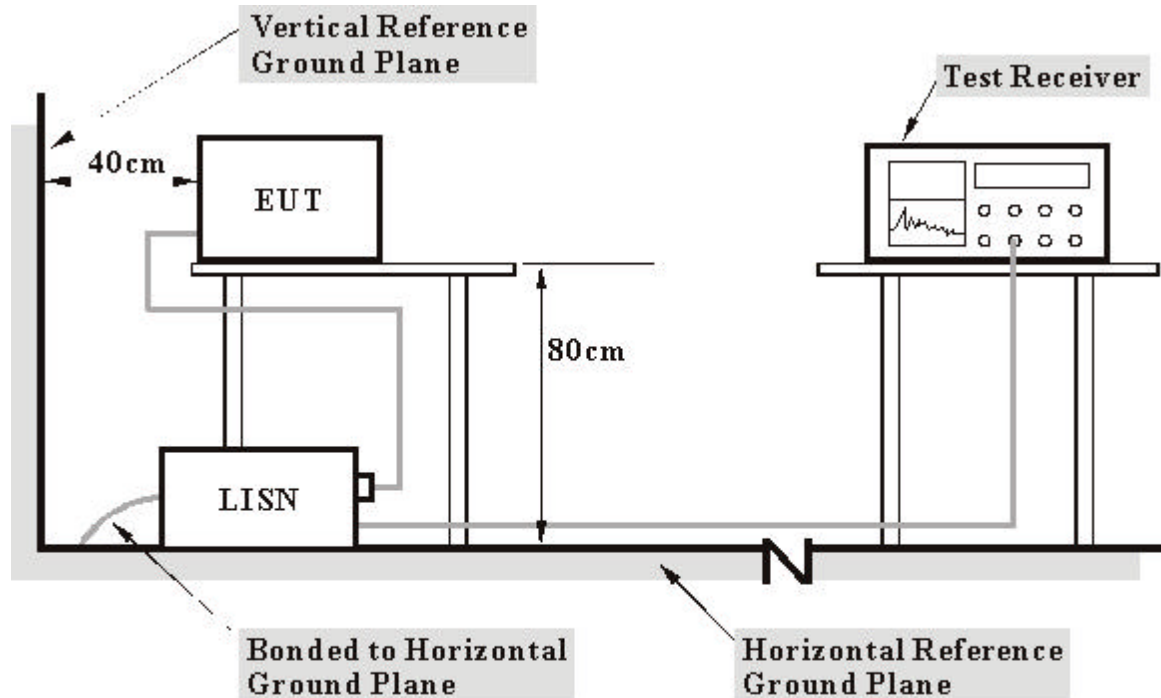
4.1.3 TEST PROCEDURES

- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- c. The frequency range from 150kHz to 30MHz was searched. Emission levels over 10dB under the prescribed limits could not be reported

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 TEST SETUP



- Note:** 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

4.1.6 EUT OPERATING CONDITIONS

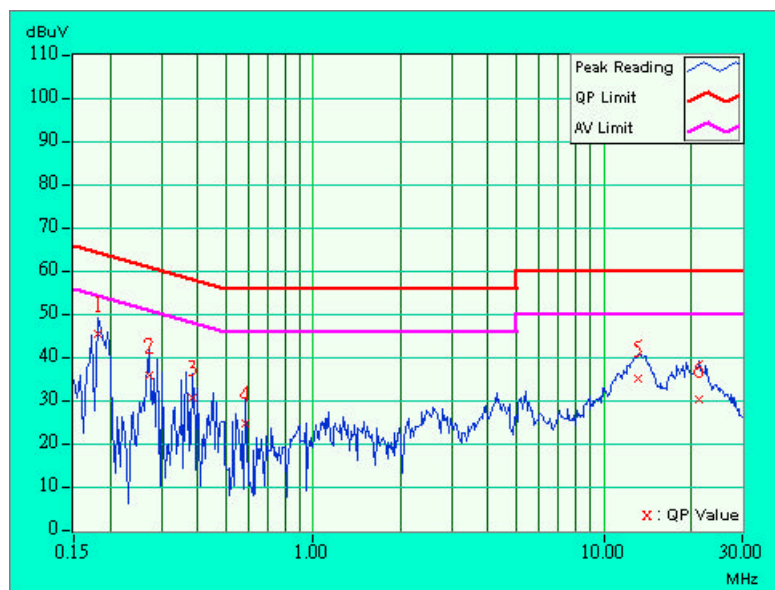
- Plug the EUT a notebook computer system placed on a testing table.
- The computer system ran a test program to enable EUT under transmission/receiving condition continuously at specific channel frequency.
- The computer system sent "H" messages to its screen.
- The computer system sent "H" messages to modem.
- The computer system sent "H" messages to printer, and the printer prints them on paper.

4.1.7 TEST RESULTS

EUT	Wireless-G USB Network Adapter	MODEL	WUSB54G
MODE	Channel 1	6dB BANDWIDTH	9kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	30deg. C, 60%RH, 991hPa	TESTED BY: Hardaway Lee	

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.181	0.06	44.98	-	45.04	-	64.43	54.43	-19.39	-
2	0.271	0.06	35.14	-	35.20	-	61.08	51.08	-25.88	-
3	0.384	0.06	29.92	-	29.98	-	58.18	48.18	-28.20	-
4	0.588	0.09	24.00	-	24.09	-	56.00	46.00	-31.91	-
5	13.059	0.50	34.63	-	35.13	-	60.00	50.00	-24.87	-
6	21.297	0.70	29.57	-	30.27	-	60.00	50.00	-29.73	-

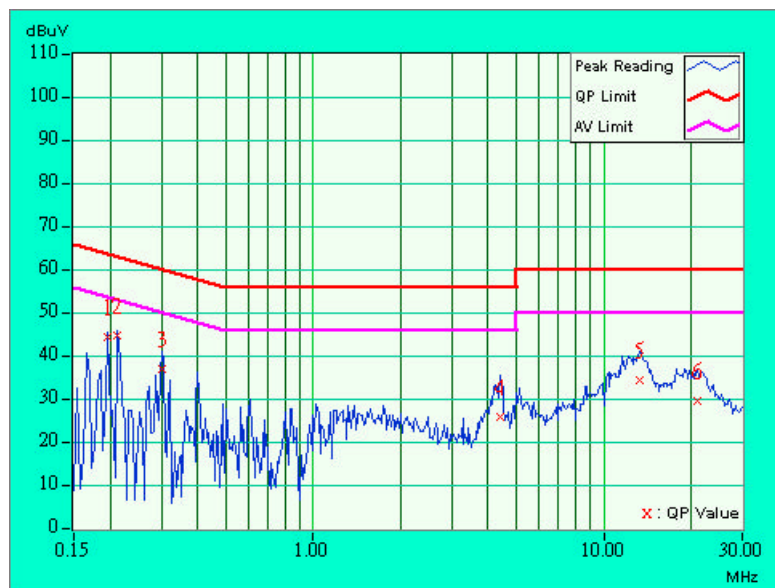
- REMARKS:** 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



EUT	Wireless-G USB Network Adapter	MODEL	WUSB54G
MODE	Channel 1	6dB BANDWIDTH	9kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Neutral (N)
ENVIRONMENTAL CONDITIONS	30deg. C, 60%RH, 991hPa	TESTED BY: Hardaway Lee	

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.197	0.05	43.99	-	44.04	-	63.74	53.74	-19.70	-
2	0.213	0.05	44.28	-	44.33	-	63.11	53.11	-18.78	-
3	0.302	0.05	36.49	-	36.54	-	60.18	50.18	-23.64	-
4	4.406	0.22	25.43	-	25.65	-	56.00	46.00	-30.35	-
5	13.313	0.46	33.94	-	34.40	-	60.00	50.00	-25.60	-
6	20.961	0.55	28.92	-	29.47	-	60.00	50.00	-30.53	-

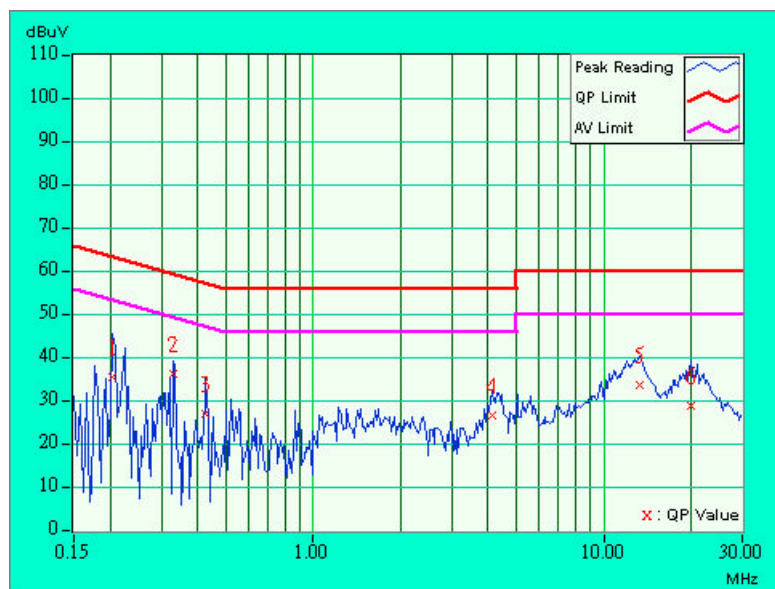
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value
 5. Correction factor = Insertion loss + Cable loss
 6. Emission Level = Correction Factor + Reading Value.



EUT	Wireless-G USB Network Adapter	MODEL	WUSB54G
MODE	Channel 6	6dB BANDWIDTH	9kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	30deg. C, 60%RH, 991hPa	TESTED BY: Hardaway Lee	

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.205	0.06	35.08	-	35.14	-	63.42	53.42	-28.28	-
2	0.330	0.06	35.70	-	35.76	-	59.46	49.46	-23.70	-
3	0.427	0.06	26.46	-	26.52	-	57.30	47.30	-30.78	-
4	4.109	0.22	26.08	-	26.30	-	56.00	46.00	-29.70	-
5	13.277	0.51	33.01	-	33.52	-	60.00	50.00	-26.48	-
6	19.867	0.64	28.17	-	28.81	-	60.00	50.00	-31.19	-

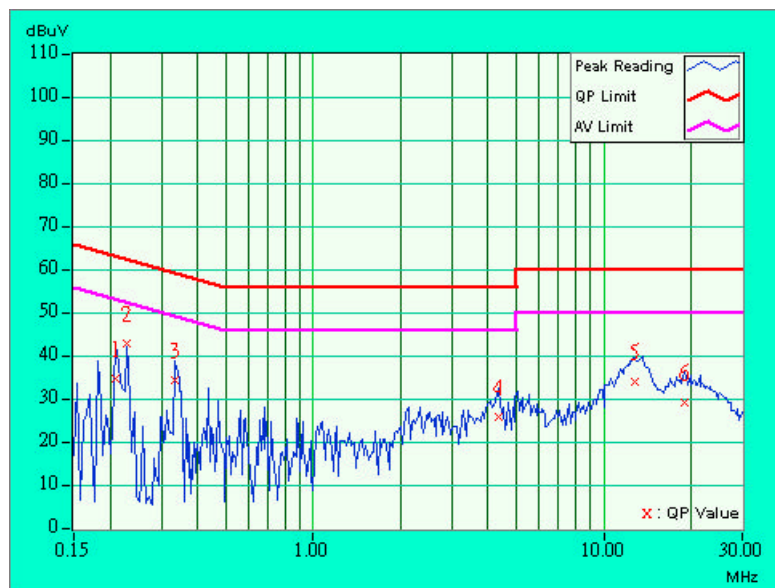
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value
 5. Correction factor = Insertion loss + Cable loss
 6. Emission Level = Correction Factor + Reading Value.



EUT	Wireless-G USB Network Adapter	MODEL	WUSB54G
MODE	Channel 6	6dB BANDWIDTH	9kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Neutral (N)
ENVIRONMENTAL CONDITIONS	30deg. C, 60%RH, 991hPa	TESTED BY: Hardaway Lee	

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.209	0.05	34.13	-	34.18	-	63.26	53.26	-29.08	-
2	0.228	0.05	42.55	-	42.60	-	62.52	52.52	-19.92	-
3	0.334	0.05	33.90	-	33.95	-	59.36	49.36	-25.41	-
4	4.336	0.22	25.32	-	25.54	-	56.00	46.00	-30.46	-
5	12.789	0.45	33.50	-	33.95	-	60.00	50.00	-26.05	-
6	19.090	0.51	28.68	-	29.19	-	60.00	50.00	-30.81	-

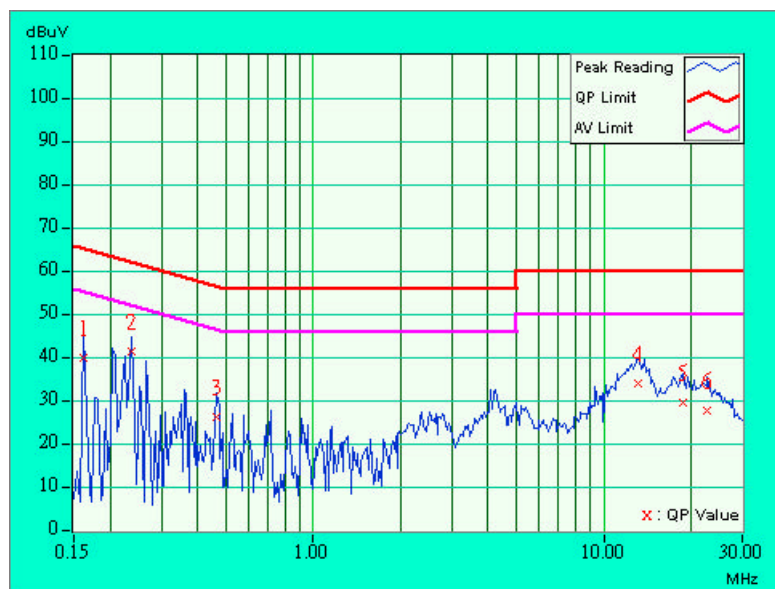
- REMARKS:** 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



EUT	Wireless-G USB Network Adapter	MODEL	WUSB54G
MODE	Channel 11	6dB BANDWIDTH	9kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	30deg. C, 60%RH, 991hPa	TESTED BY: Hardaway Lee	

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.162	0.06	39.34	-	39.40	-	65.38	55.38	-25.98	-
2	0.236	0.06	40.71	-	40.77	-	62.24	52.24	-21.47	-
3	0.463	0.07	25.41	-	25.48	-	56.65	46.65	-31.17	-
4	13.195	0.51	33.39	-	33.90	-	60.00	50.00	-26.10	-
5	18.695	0.62	28.83	-	29.45	-	60.00	50.00	-30.55	-
6	22.813	0.78	26.93	-	27.71	-	60.00	50.00	-32.29	-

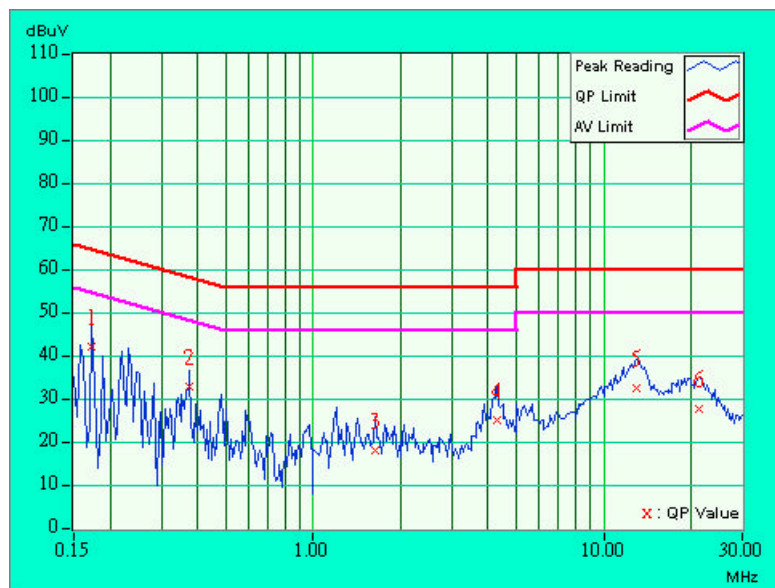
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value
 5. Correction factor = Insertion loss + Cable loss
 6. Emission Level = Correction Factor + Reading Value.



EUT	Wireless-G USB Network Adapter	MODEL	WUSB54G
MODE	Channel 11	6dB BANDWIDTH	9kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Neutral (N)
ENVIRONMENTAL CONDITIONS	30deg. C, 60%RH, 991hPa	TESTED BY: Hardaway Lee	

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.173	0.05	41.79	-	41.84	-	64.79	54.79	-22.95	-
2	0.377	0.05	32.41	-	32.46	-	58.35	48.35	-25.89	-
3	1.645	0.17	17.43	-	17.60	-	56.00	46.00	-38.40	-
4	4.313	0.22	24.47	-	24.69	-	56.00	46.00	-31.31	-
5	12.922	0.45	32.13	-	32.58	-	60.00	50.00	-27.42	-
6	21.246	0.56	27.37	-	27.93	-	60.00	50.00	-32.07	-

- REMARKS:** 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.





4.2 RADIATED EMISSION MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

Frequencies (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
* HP Spectrum Analyzer	8590L	3544A01176	Jun. 10, 2004
* HP Preamplifier	8447D	2944A08485	May. 01, 2004
* HP Preamplifier	8449B	3008A01201	Dec. 01, 2003
* HP Preamplifier	8449B	3008A01292	Aug. 13, 2004
ROHDE & SCHWARZ TEST RECEIVER	ESI7	838496/016	Feb. 23, 2004
* ROHDE & SCHWARZ TEST RECEIVER	ESMI	839013/007 839379/002	Feb. 13, 2004
SCHAFFNER Tunable Dipole Antenna	VHBA 9123	459	Nov. 22, 2003
SCHWARZBECK Tunable Dipole Antenna	UHA 9105	977	
* CHASE BILOG Antenna	CBL6112A	2221	July 26, 2004
* SCHWARZBECK Horn Antenna	BBHA9120-D1	D130	Jun 30, 2004
* EMCO Horn Antenna	3115	9312-4192	Mar. 23 2004
* EMCO Turn Table	1060	1115	NA
* CHANCE Tower	CM-AT40	CM-A010	NA
* Software	ADT_Radiated_V5.14	NA	NA
* ANRITSU RF Switches	MP59B	M35046	Jan. 05. 2004
* TIMES RF cable	LMR-600	CABLE-ST5-01	Jan. 05. 2004

NOTE: 1. The calibration interval of the above test instruments is 12 months. And the calibrations are traceable to NML/ROC and NIST/USA.

2. "*" = These equipment are used for the final measurement.
3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
4. The test was performed in ADT Open Site No. 5.
5. The VCCI Site Registration No. is R-1039.



4.2.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10 dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

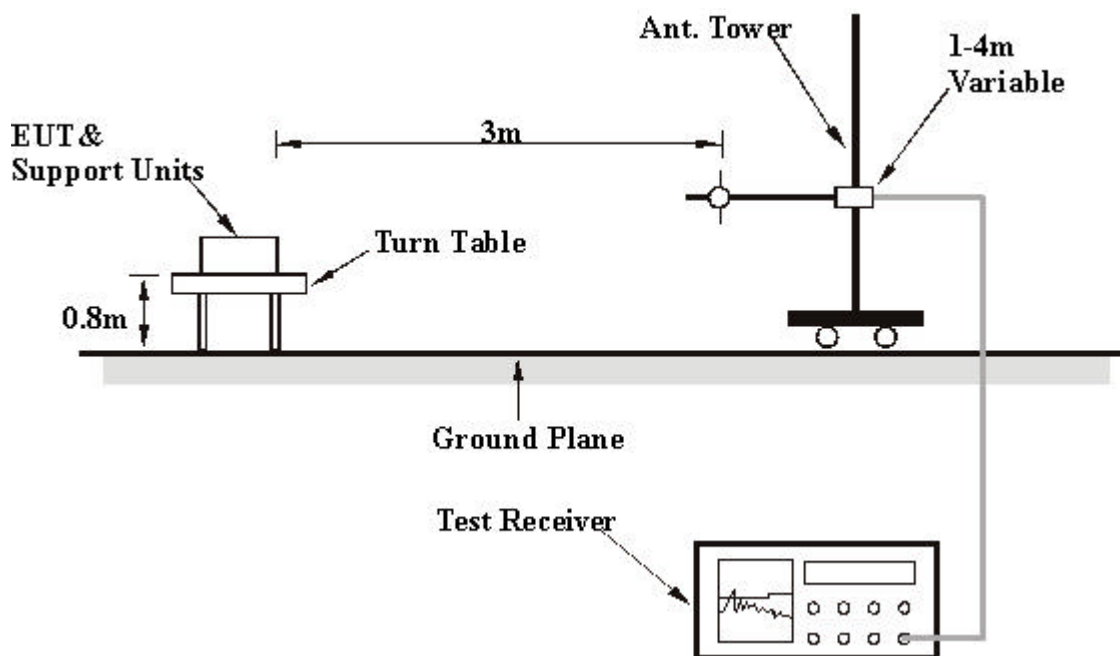
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 300 Hz for Average detection (AV) at frequency above 1GHz.

4.2.4 DEVIATION FROM TEST STANDARD

No deviation

4.2.5 TEST SETUP



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6

4.2.7 TEST RESULTS

EUT	Wireless-G USB Network Adapter	MODEL	WUSB54G
MODE	Channel 11	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	30deg. C, 60%RH, 991hPa	TESTED BY: Hardaway Lee	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	109.95	29.4 QP	43.50	-14.10	1.55 H	303	17.10	12.30
2	160.00	27.9 QP	43.50	-15.60	1.46 H	72	17.20	10.70
3	200.05	28.9 QP	43.50	-14.60	1.39 H	170	18.10	10.80
4	240.01	38.1 QP	46.00	-7.90	1.23 H	271	25.10	13.00
5	250.07	32.5 QP	46.00	-13.50	1.25 H	186	18.90	13.60
6	280.01	34.2 QP	46.00	-11.80	1.28 H	180	18.90	15.30
7	320.01	43.2 QP	46.00	-2.80	1.36 H	161	27.20	16.00
8	360.02	35.3 QP	46.00	-10.70	1.00 H	149	18.50	16.80
9	390.10	33.1 QP	46.00	-12.90	1.27 H	299	15.20	17.90
10	400.01	43.6 QP	46.00	-2.40	1.01 H	192	25.40	18.20
11	480.04	40.7 QP	46.00	-5.30	1.00 H	265	21.10	19.60
12	520.01	32.2 QP	46.00	-13.80	1.01 H	254	11.80	20.40
13	800.05	35.4 QP	46.00	-10.60	1.40 H	140	11.70	23.70

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.



EUT	Wireless-G USB Network Adapter	MODEL	WUSB54G
MODE	Channel 11	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	30deg. C, 60%RH, 991hPa	TESTED BY: Hardaway Lee	

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	84.92	25.6 QP	40.00	-14.40	1.33 V	57	16.70	8.90
2	120.02	33.3 QP	43.50	-10.20	1.29 V	178	20.20	13.10
3	122.89	33.1 QP	43.50	-10.40	1.39 V	330	20.10	12.90
4	150.03	34.7 QP	43.50	-8.80	1.16 V	85	23.30	11.40
5	160.01	33.9 QP	43.50	-9.60	1.14 V	263	23.30	10.70
6	200.03	33.3 QP	43.50	-10.20	1.03 V	61	22.50	10.80
7	225.01	34.9 QP	46.00	-11.10	1.06 V	261	22.70	12.20
8	240.00	34.0 QP	46.00	-12.00	1.09 V	89	21.00	13.00
9	250.01	36.5 QP	46.00	-9.50	1.07 V	58	22.90	13.60
10	320.01	38.6 QP	46.00	-7.40	1.04 V	104	22.60	16.00
11	375.00	32.6 QP	46.00	-13.40	1.75 V	169	15.30	17.30
12	400.01	38.8 QP	46.00	-7.20	1.64 V	114	20.50	18.20
13	480.03	35.2 QP	46.00	-10.80	1.62 V	270	15.50	19.60
14	540.05	30.6 QP	46.00	-15.40	1.28 V	282	9.90	20.70
15	588.85	33.4 QP	46.00	-12.60	1.00 V	336	11.50	22.00
16	625.04	31.4 QP	46.00	-14.60	1.00 V	122	9.00	22.40
17	720.02	34.0 QP	46.00	-12.00	1.00 V	277	10.80	23.20

REMARKS:

1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.



EUT	Wireless-G USB Network Adapter	MODEL	WUSB54G
MODE	CCK	FREQUENCY RANGE	Above 1000MHz
CHANNEL	Channel 1		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	30deg. C, 60%RH, 991hPa	TESTED BY: Hardaway Lee	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2412.00	100.9 PK			1.50 H	125	71.20	29.70
1	*2412.00	92.3 AV			1.50 H	125	62.70	29.70
2	4824.00	46.2 PK	74.00	-27.80	1.43 H	279	10.90	35.30

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	46.1 PK	74.00	-27.90	1.12 V	204	16.50	29.60
2	*2412.00	106.1 PK			1.12 V	204	76.40	29.70
2	*2412.00	99.7 AV			1.12 V	204	70.00	29.70
3	4824.00	48.2 PK	74.00	-25.80	1.10 V	247	13.00	35.30
4	9648.00	55.8 PK	74.00	-18.20	1.24 V	183	12.30	43.60
4	9648.00	44.9 AV	54.00	-9.10	1.24 V	183	1.30	43.60

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * ” : Fundamental frequency.



EUT	Wireless-G USB Network Adapter	MODEL	WUSB54G
MODE	CCK	FREQUENCY RANGE	Above 1000MHz
CHANNEL	Channel 6		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	30deg. C, 60%RH, 991hPa	TESTED BY: Hardaway Lee	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	100.9 PK			1.50 H	125	71.20	29.70
1	*2437.00	93.1 AV			1.50 H	125	63.30	29.70
2	4874.00	46.8 PK	74.00	-27.20	1.52 H	168	11.30	35.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	107.1 PK			1.00 V	226	77.40	29.70
1	*2437.00	100.6 AV			1.00 V	226	70.80	29.70
2	4874.00	49.5 PK	74.00	-24.50	1.32 V	223	14.00	35.50

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * ” : Fundamental frequency.



EUT	Wireless-G USB Network Adapter	MODEL	WUSB54G
MODE	CCK	FREQUENCY RANGE	Above 1000MHz
CHANNEL	Channel 11		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	30deg. C, 60%RH, 991hPa	TESTED BY: Hardaway Lee	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	99.5 PK			1.32 H	157	69.70	29.80
1	*2462.00	92.8 AV			1.32 H	157	63.00	29.80
2	4924.00	47.6 PK	74.00	-26.40	1.29 H	172	11.90	35.70

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	106.0 PK			1.00 V	231	76.20	29.80
1	*2462.00	99.3 AV			1.00 V	231	69.50	29.80
2	2483.50	49.0 PK	74.00	-25.00	1.00 V	231	19.10	29.90
3	4924.00	49.0 PK	74.00	-25.00	1.17 V	298	13.40	35.70

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * ” : Fundamental frequency.



EUT	Wireless-G USB Network Adapter	MODEL	WUSB54G
MODE	OFDM	FREQUENCY RANGE	Above 1000MHz
CHANNEL	Channel 1		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	30deg. C, 60%RH, 991hPa	TESTED BY: Hardaway Lee	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2412.00	97.3 PK			1.00 H	88	67.60	29.70
1	*2412.00	90.0 AV			1.00 H	88	60.30	29.70
2	4824.00	47.1 PK	74.00	-26.90	1.00 H	88	11.90	35.30
3	9648.00	54.0 PK	74.00	-20.00	1.09 H	6	10.40	43.60
3	9648.00	42.7 AV	54.00	-11.30	1.09 H	6	-0.80	43.60

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	49.3 PK	74.00	-24.70	1.00 V	176	19.70	29.60
2	*2412.00	101.8 PK			1.00 V	176	72.10	29.70
2	*2412.00	93.3 AV			1.00 V	176	63.70	29.70
3	4924.00	50.0 PK	74.00	-24.00	1.22 V	88	14.30	35.70
4	9647.00	55.4 PK	74.00	-18.60	1.13 V	275	11.80	43.60
4	9647.00	43.8 AV	54.00	-10.20	1.13 V	275	0.30	43.60

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * ” : Fundamental frequency.



EUT	Wireless-G USB Network Adapter	MODEL	WUSB54G
MODE	OFDM	FREQUENCY RANGE	Above 1000MHz
CHANNEL	Channel 6		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	30deg. C, 60%RH, 991hPa	TESTED BY: Hardaway Lee	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	97.0 PK			1.11 H	116	67.20	29.70
1	*2437.00	89.0 AV			1.11 H	116	59.30	29.70
2	4873.00	47.4 PK	74.00	-26.60	1.52 H	75	12.00	35.50
3	9748.00	53.5 PK	74.00	-20.50	1.00 H	25	9.80	43.70
3	9748.00	41.8 AV	54.00	-12.20	1.00 H	25	-1.90	43.70

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	103.1 PK			1.13 V	148	73.40	29.70
1	*2437.00	94.9 AV			1.13 V	148	65.10	29.70
2	4874.00	50.2 PK	74.00	-23.80	1.03 V	186	14.70	35.50
3	9748.00	54.5 PK	74.00	-19.50	1.43 V	144	10.80	43.70
3	9748.00	42.8 AV	54.00	-11.20	1.43 V	144	-0.90	43.70

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * ” : Fundamental frequency.



EUT	Wireless-G USB Network Adapter	MODEL	WUSB54G
MODE	OFDM	FREQUENCY RANGE	Above 1000MHz
CHANNEL	Channel 11		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	30deg. C, 60%RH, 991hPa	TESTED BY: Hardaway Lee	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	95.7 PK			1.31 H	152	65.80	29.80
1	*2462.00	87.4 AV			1.31 H	152	57.50	29.80
2	4924.00	45.6 PK	74.00	-28.40	1.09 H	252	9.90	35.70

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	103.5 PK			1.13 V	181	73.70	29.80
1	*2462.00	95.6 AV			1.13 V	181	65.80	29.80
2	2483.50	52.2 PK	74.00	-21.80	1.13 V	181	22.30	29.90
2	2483.50	44.3 AV	54.00	-9.70	1.13 V	181	14.40	29.90
3	4937.00	46.2 PK	74.00	-27.80	1.00 V	258	10.40	35.70

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * ” : Fundamental frequency.



4.3 6dB BANDWIDTH MEASUREMENT

4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SPECTRUM ANALYZER	FSEK30	100049	Aug. 12, 2004

NOTE: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.