FCC TEST REPORT

REPORT NO.: RF920922R02A
MODEL NO.: WUBI-100GW(For brand: Gemtek)
OEM MODEL NO.: WL-682(For brand: SparkLAN)
RECEIVED: January 14, 2004
TESTED: January 14 ~ January 15, 2004

APPLICANT: GEMTEK TECHNOLOGY CO.,LTD.

ADDRESS: No.1 Jen Ai Road, Hsinchu industrial Park
Hukou, Hsinchu, Taiwan, R.

ISSUED BY: Advance Data Technology Corporation

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

0528
ILAC MRA

Table of Contents

1 CERTIFICATION

PRODUCT :	Wireless 11g USB Adapter
MODEL NO.:	WUBI-100GW(For brand: Gemtek)
OEM MODEL NO.:	WL-682(For brand: SparkLAN)
TEST ITEMS :	ENGINEERING SAMPLE
APPLICANT :	GEMTEK TECHNOLOGY CO.,LTD.
STANDARDS :	FCC 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 January 14, 2004 to January 15, 2004. 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: Stacy Hsueh , **DATE:** January 20, 2004
Stacy Hsueh

APPROVED BY: Ellis Wu , **DATE:** January 20, 2004
Ellis Wu / Manager

2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC 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 –12.37dB at 0.174MHz
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 –0.96dB at 319.98MHz
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

3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Wireless 11g USB Adapter
MODEL NO	WUBI-100GW(For brand: Gemtek)
OEM MODEL NO	WL-682(For brand: SparkLAN)
POWER SUPPLY	5.0Vdc from host equipment
MODULATION TYPE	BPSK, QPSK, CCK,16QAM, 64QAM
RADIO TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	1/2/5.5/6/9/11/12/18/24/36/48/54Mbps
FREQUENCY RANGE	2412MHz ~ 2462MHz
CHANNEL SPACING	5MHz
NUMBER OF CHANNEL	11
OUTPUT POWER (OFDM)	16.00dBm
OUTPUT POWER (DSSS)	15.00dBm
ANTENNA TYPE	External antenna with 0.5dBi antenna gain
DATA CABLE	1.6m shielded cable without core
I/O PORTS	USB
ASSOCIATED DEVICES	NA

NOTE:

1. This report is issued as a supplementary report of ADT report no.: RF920922R02. The models in this report are identical to the original application one.
2. This report is prepared for FCC class II permissive change. The difference compared with the original design is changing the appearance and location of the antenna to this EUT for the test.
3. The EUT supports 802.11g standards to provide maximum data rates of 54Mbps.
4. Model WUBI-100GW, WL-682 are identical to each other except for their model number due and brand name to marketing requirement.

BRAND	Model
Gemtek	WUBI-100GW
SparkLAN	WL-682

5. 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 1 GHz, the channel 1, 6, and 11 were pre-tested in chamber. The channel 11, worst case one, was chosen for final test.
2. Above 1 GHz, the channel 1, 6, and 11 were tested individually.
3. Transfer rate, 11Mbps with CCK technique and 54Mbps with OFDM technique, the worst case, were chosen for final test.

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a Wireless 11g USB Adapter. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart C. (15.247)
ANSI C63.4 : 1992

All test items 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

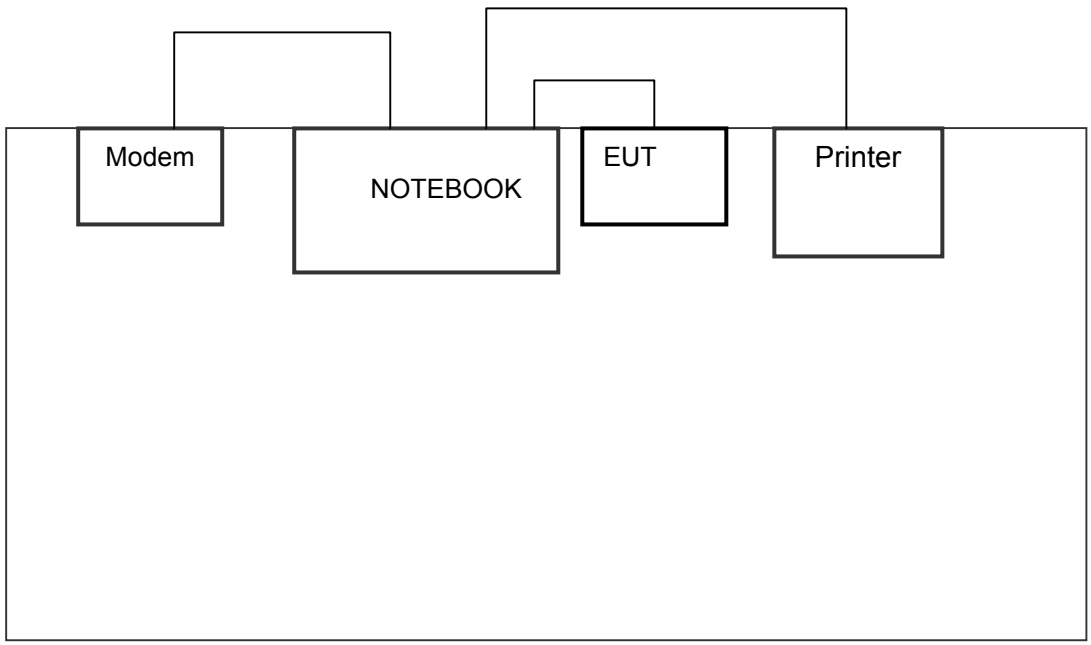
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK	DELL	PP01L	TW-0791UH-12800-123-5423	FCC DoC Approved
2	PRINTER	EPSON	LQ-300+	DCGY017058	FCC DoC Approved
3	MODEM	ACEEX	1414	980020516	IFAXDM1414

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA
2	1.2m braid shielded wire, terminated with DB25 and Centronics connector via metallic frame, w/o core
3	1.2 m braid shielded wire, terminated with DB25 and DB9 connector via metallic frame, w/o core.

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

3.5 CONFIGURATION OF SYSTEM UNDER TEST



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 0.5-5 5-30	66 to 56 56 60	56 to 46 46 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	ESHS 30	828765/002	July 15, 2004
ROHDE & SCHWARZ Artificial Mains Network (for EUT)	ESH3-Z5	835239/001	Apr. 28, 2004
ROHDE & SCHWARZ Artificial Mains Network (for peripherals)	ESH3-Z5	835239/002	Apr. 28, 2004
ROHDE & SCHWARZ 4-wire ISN	ENY41	935154/007	Apr. 30, 2004
ROHDE & SCHWARZ 2-wire ISN	ENY22	833823/026	Apr. 30, 2004
Software	Cond-V2M3	NA	NA
RF cable (JYEBAO)	5D-FB	Cable-C09.01	May 23, 2004
SUHNER Terminator (For ROHDE & SCHWARZ LISN)	65BNC-5001	E1-010789	Jun. 04, 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. 9.
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.

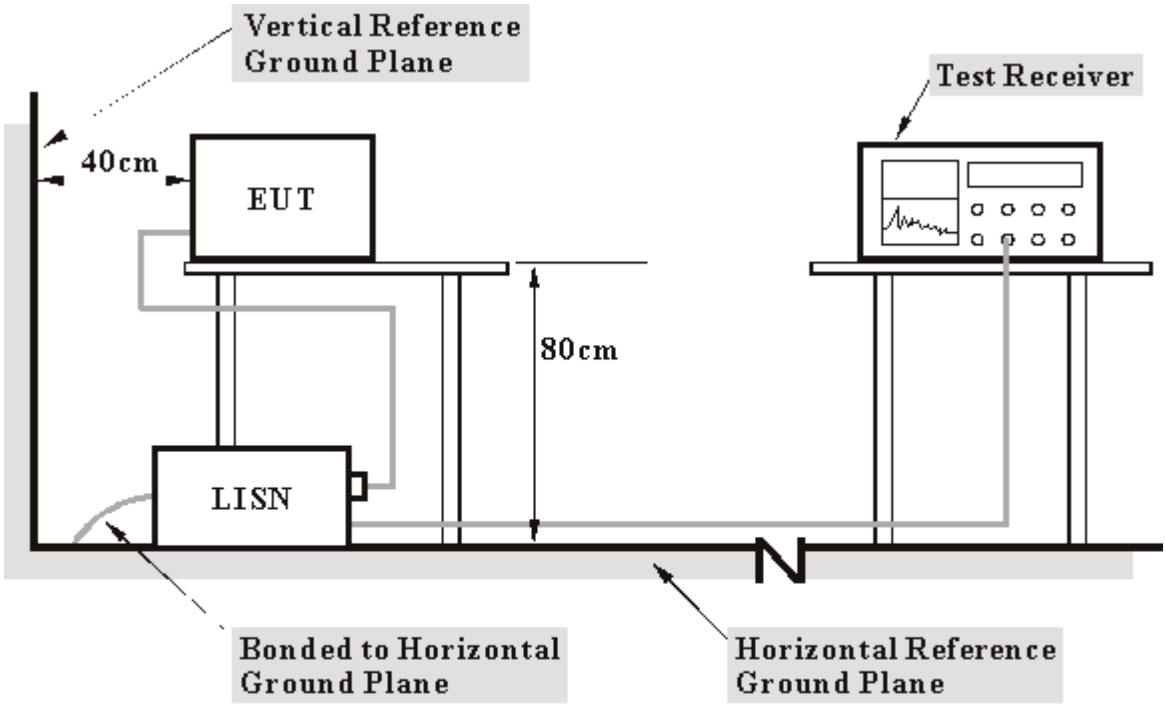
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

c. The frequency range from 150 kHz to 30 MHz was searched. Emission levels under Limit-20dB 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

a. Plug the EUT into a computer system placed on a testing table.
b. The computer system ran a test program to enable EUT under transmission/receiving condition continuously at specific channel frequency.
c. The computer system sent "H" messages to its screen.
d. The computer system sent “H” messages to modem.
e. The computer system sent "H" messages to printer, and the printer prints them on paper.
f. Repeat c ~ e.

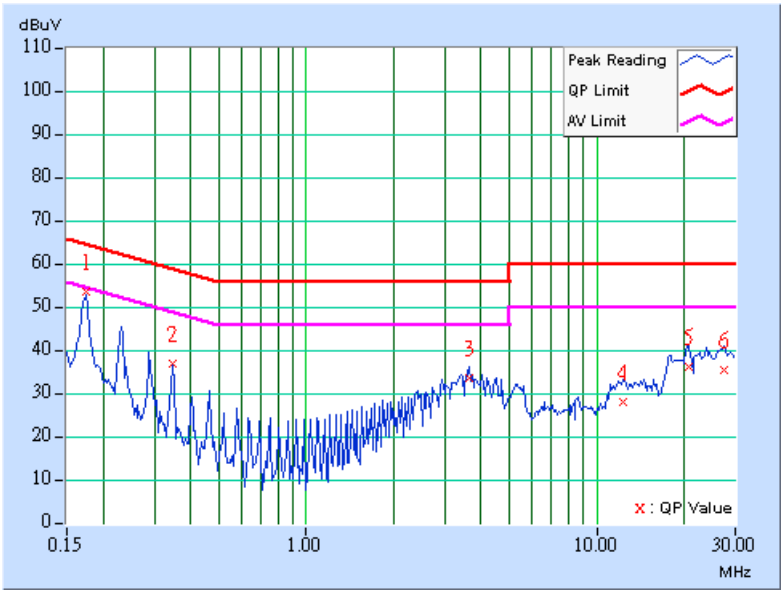
4.1.7 TEST RESULTS

EUT	Wireless 11g USB Adapter	MODEL	WUBI-100GW
MODE	Channel 1	6dB BANDWIDTH	10 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991 hPa	TESTED BY: Hardaway Lee	

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	**0.174**	**0.10**	**52.30**	**-**	**52.40**	**-**	**64.77**	**54.77**	**-12.37**	**-**
2	0.345	0.17	35.64	-	35.81	-	59.08	49.08	-23.27	-
3	3.628	0.28	32.41	-	32.69	-	56.00	46.00	-23.31	-
4	12.326	0.74	26.85	-	27.59	-	60.00	50.00	-32.41	-
5	20.690	1.13	35.08	-	36.21	-	60.00	50.00	-23.79	-
6	27.419	1.35	34.18	-	35.53	-	60.00	50.00	-24.47	-

NOTE:

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.

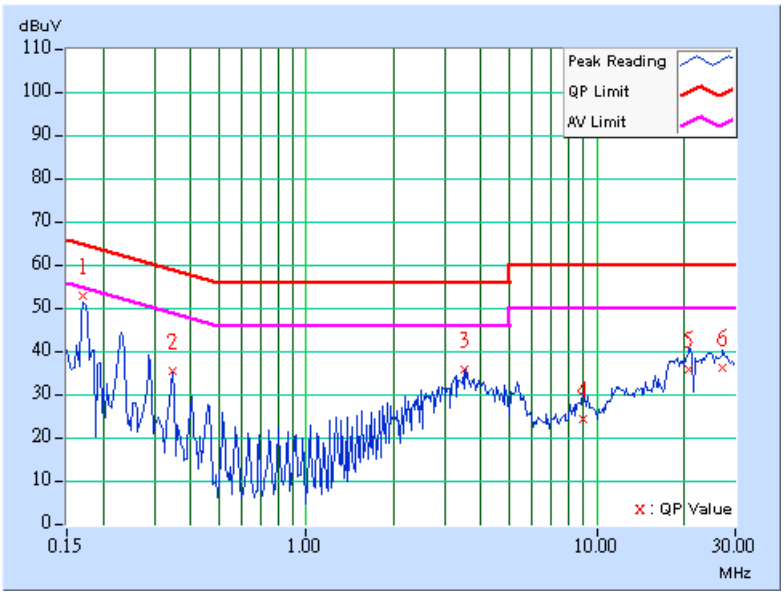


EUT	Wireless 11g USB Adapter	**MODEL**	WUBI-100GW
MODE	Channel 1	**6dB BANDWIDTH**	10 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**PHASE**	Neutral (N)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991 hPa	**TESTED BY**: Hardaway Lee	

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.171	0.10	51.85	-	51.95	-	64.91	54.91	-12.96	-
2	0.345	0.17	34.66	-	34.83	-	59.08	49.08	-24.25	-
3	3.508	0.20	34.79	-	34.99	-	56.00	46.00	-21.01	-
4	9.029	0.45	23.55	-	24.00	-	60.00	50.00	-36.00	-
5	20.849	0.92	35.04	-	35.96	-	60.00	50.00	-24.04	-
6	27.158	1.04	35.18	-	36.22	-	60.00	50.00	-23.78	-

NOTE:

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..

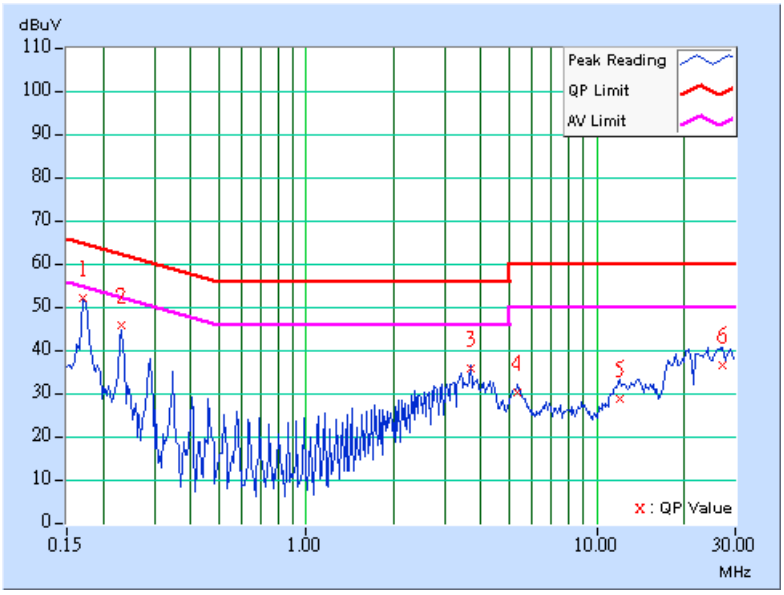


EUT	Wireless 11g USB Adapter	**MODEL**	WUBI-100GW
MODE	Channel 6	**6dB BANDWIDTH**	10 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**PHASE**	Line (L)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991 hPa	**TESTED BY**: Hardaway Lee	

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.171	0.10	50.70	-	50.80	-	64.91	54.91	-14.11	-
2	0.231	0.12	44.52	-	44.64	-	62.41	52.41	-17.78	-
3	3.691	0.28	34.54	-	34.82	-	56.00	46.00	-21.18	-
4	5.363	0.37	28.93	-	29.30	-	60.00	50.00	-30.70	-
5	11.996	0.72	27.59	-	28.31	-	60.00	50.00	-31.69	-
6	27.089	1.34	35.18	-	36.52	-	60.00	50.00	-23.48	-

NOTE:

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

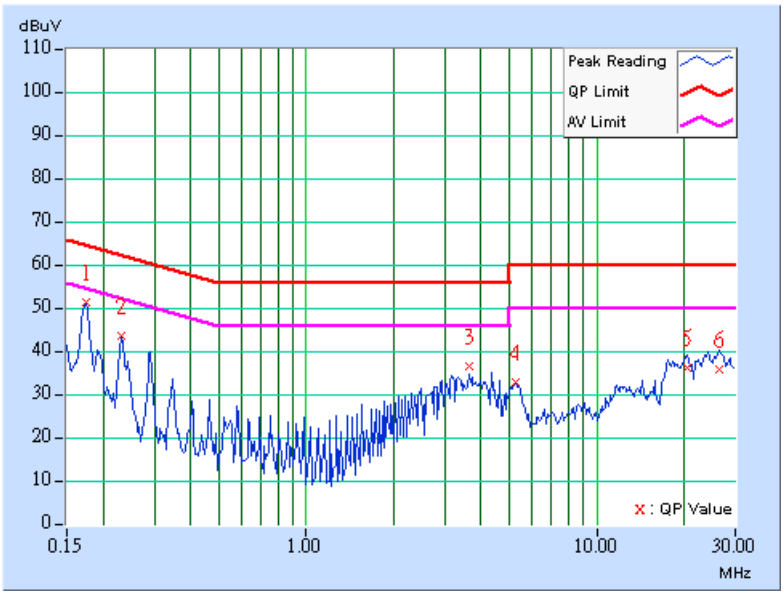


EUT	Wireless 11g USB Adapter	**MODEL**	WUBI-100GW
MODE	Channel 6	**6dB BANDWIDTH**	10 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**PHASE**	Neutral (N)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991 hPa	**TESTED BY**: Hardaway Lee	

No	Freq.	Corr. Factor	Reading Value [dB (Uv)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.174	0.10	50.42	-	50.52	-	64.77	54.77	-14.25	-
2	0.231	0.12	42.82	-	42.94	-	62.41	52.41	-19.48	-
3	3.637	0.20	35.61	-	35.81	-	56.00	46.00	-20.19	-
4	5.255	0.26	32.00	-	32.26	-	60.00	50.00	-27.74	-
5	20.558	0.91	35.17	-	36.08	-	60.00	50.00	-23.92	-
6	26.573	1.03	35.03	-	36.06	-	60.00	50.00	-23.94	-

NOTE:

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

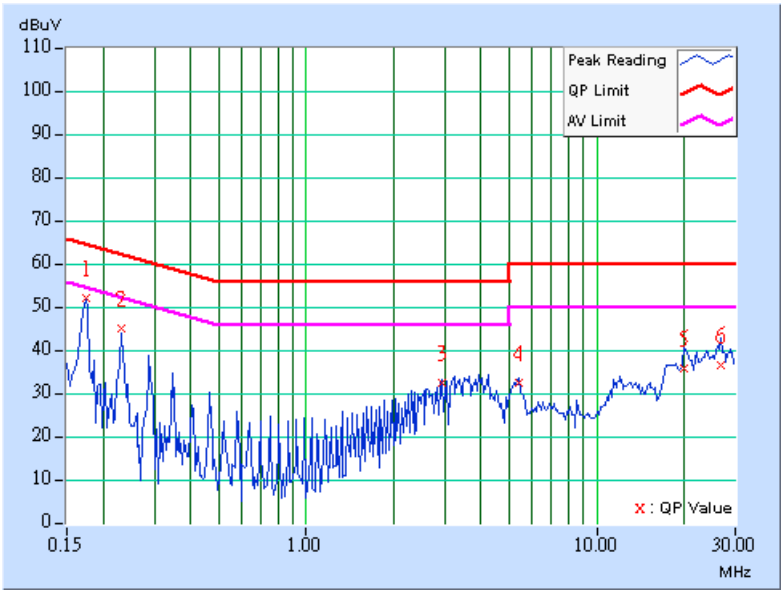


EUT	Wireless 11g USB Adapter	**MODEL**	WUBI-100GW
MODE	Channel 11	**6dB BANDWIDTH**	10 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**PHASE**	Line (L)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991 hPa	**TESTED BY**: Hardaway Lee	

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.174	0.10	50.92	-	51.02	-	64.77	54.77	-13.75	-
2	0.231	0.12	43.82	-	43.94	-	62.41	52.41	-18.48	-
3	2.947	0.25	31.35	-	31.60	-	56.00	46.00	-24.40	-
4	5.375	0.37	31.11	-	31.48	-	60.00	50.00	-28.52	-
5	20.054	1.10	34.44	-	35.54	-	60.00	50.00	-24.46	-
6	26.696	1.33	35.42	-	36.75	-	60.00	50.00	-23.25	-

NOTE:

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

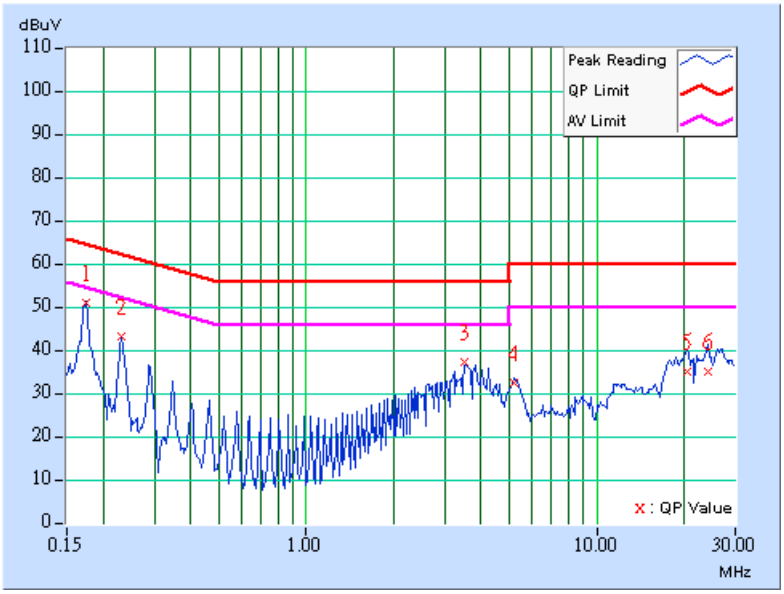


EUT	Wireless 11g USB Adapter	**MODEL**	WUBI-100GW
MODE	Channel 11	**6dB BANDWIDTH**	10 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**PHASE**	Neutral (N)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991 hPa	**TESTED BY**: Hardaway Lee	

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.174	0.10	50.24	-	50.34	-	64.77	54.77	-14.43	-
2	0.231	0.12	42.46	-	42.58	-	62.41	52.41	-19.84	-
3	3.523	0.20	36.37	-	36.57	-	56.00	46.00	-19.43	-
4	5.198	0.26	31.70	-	31.96	-	60.00	50.00	-28.04	-
5	20.459	0.91	34.23	-	35.14	-	60.00	50.00	-24.86	-
6	24.206	0.98	34.04	-	35.02	-	60.00	50.00	-24.98	-

NOTE:

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	8593E	3911A07465	July 07, 2004
* HP Preamplifier	8447D	2432A03504	June 10, 2004
* HP Preamplifier	8449B	3008A01201	Dec. 11, 2004
SCHAFFNER Tunable Dipole Antenna SCHWARZBECK Tunable Dipole Antenna	VHBA 9123 UHA 9105	459 977	Jun. 26, 2004
* ROHDE & SCHWARZ TEST RECEIVER	ESMI	839013/007 839379/002	Feb. 13, 2004
*Schwarzbeck Antenna	VULB9168	137	Apr. 03, 2004
* SCHWARZBECK Horn Antenna	BBHA9120-D1	D130	June 30, 2004
*ADT. Turn Table	TT100	0306	NA
*ADT. Tower	AT100	0306	NA
*Software	ADT_Radiated_V 5.14	NA	NA
*TIMES RF cable	LL142	CABLE-CH6-01	Apr. 30, 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 Chamber No. 6.

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.

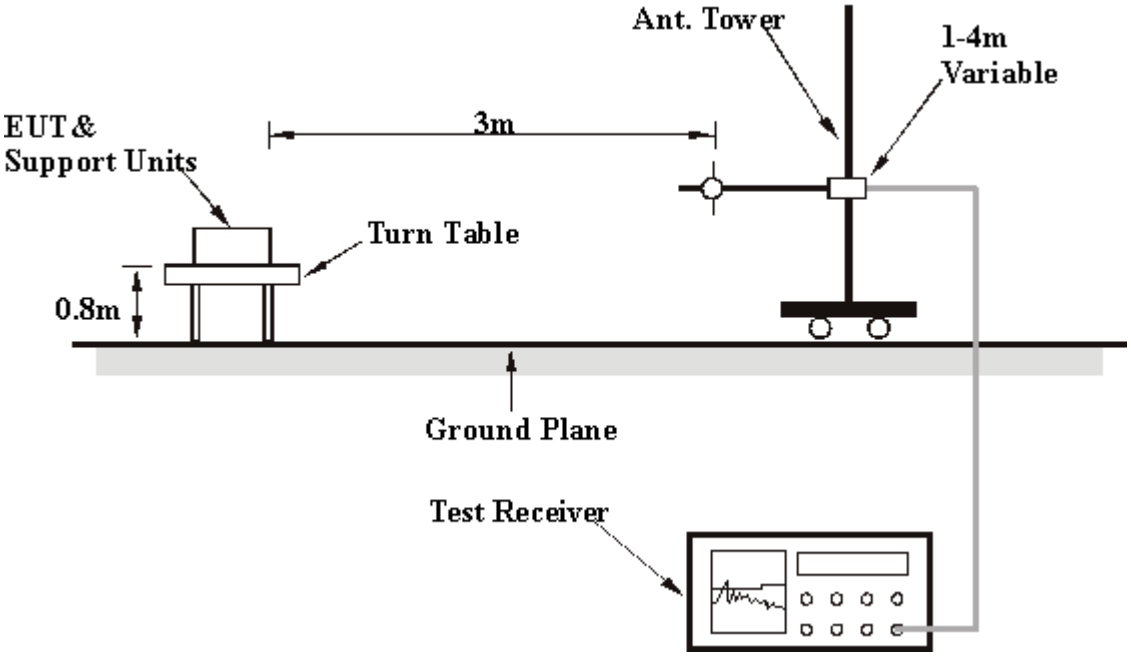
NOTE:

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 10Hz 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 11g USB Adapter	**MODEL**	WUBI-100GW
MODE	Channel 11	**FREQUENCY RANGE**	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Quasi-Peak
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	**TESTED BY**: Steven Lu	

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	119.42	36.23 QP	43.50	-7.27	2.50 H	313	23.96	12.26
2	160.24	41.28 QP	43.50	-2.22	1.75 H	280	27.02	14.26
3	208.84	37.77 QP	43.50	-5.73	1.50 H	271	26.14	11.63
4	239.94	38.63 QP	46.00	-7.37	1.25 H	316	25.46	13.17
5	294.37	44.63 QP	46.00	-1.37	1.25 H	340	29.67	14.96
6	**319.98**	**45.04 QP**	**46.00**	**-0.96**	**1.00 H**	**87**	**29.42**	**15.62**
7	399.34	42.98 QP	46.00	-3.02	1.00 H	175	25.29	17.69
8	449.88	42.25 QP	46.00	-3.75	1.00 H	292	22.95	19.30
9	510.14	40.97 QP	46.00	-5.03	1.75 H	193	20.73	20.24
10	570.40	44.22 QP	46.00	-1.78	1.50 H	196	22.50	21.72
11	630.66	42.15 QP	46.00	-3.85	1.50 H	265	19.15	23.00
12	690.92	44.22 QP	46.00	-1.78	1.25 H	199	20.37	23.85
13	720.08	38.21 QP	46.00	-7.79	1.00 H	190	13.68	24.53
14	751.18	45.03 QP	46.00	-0.97	1.00 H	193	19.67	25.36
15	801.72	40.88 QP	46.00	-5.12	1.00 H	202	15.25	25.64
16	811.44	44.98 QP	46.00	-1.02	1.00 H	199	19.24	25.74
17	840.60	37.24 QP	46.00	-8.76	1.00 H	196	11.20	26.04
18	871.70	36.69 QP	46.00	-9.31	1.00 H	256	10.12	26.57

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 11g USB Adapter	**MODEL**	WUBI-100GW
MODE	Channel 11	**FREQUENCY RANGE**	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Quasi-Peak
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	**TESTED BY**: Steven Lu	

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	74.71	31.95 QP	40.00	-8.05	1.50 V	262	21.27	10.68
2	160.24	33.50 QP	43.50	-10.00	1.00 V	58	19.24	14.26
3	222.44	35.12 QP	46.00	-10.88	1.50 V	334	22.82	12.30
4	294.37	43.08 QP	46.00	-2.92	1.25 V	199	28.12	14.96
5	300.20	38.85 QP	46.00	-7.15	1.25 V	184	23.76	15.10
6	319.64	43.64 QP	46.00	-2.36	1.00 V	199	28.03	15.61
7	399.34	37.25 QP	46.00	-8.75	1.00 V	223	19.55	17.69
8	570.40	41.52 QP	46.00	-4.48	1.50 V	190	19.79	21.72
9	630.66	41.69 QP	46.00	-4.31	1.00 V	148	18.69	23.00
10	690.16	43.84 QP	46.00	-2.16	1.24 V	195	20.00	23.84
11	751.18	40.37 QP	46.00	-5.63	1.00 V	208	15.02	25.36
12	766.73	38.04 QP	46.00	-7.96	1.00 V	52	12.60	25.44
13	811.44	41.66 QP	46.00	-4.34	1.25 V	202	15.92	25.74
14	966.95	37.95 QP	54.00	-16.05	1.00 V	277	10.17	27.78

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.

4.2.8 TEST RESULTS (FOR CCK)

EUT	Wireless 11g USB Adapter	**MODEL**	WUBI-100GW
CHANNEL	Channel 1	**FREQUENCY RANGE**	Above 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	**TESTED BY**: Steven Lu	

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	2375.00	37.11 PK	74.00	-36.89	1.19 H	161	5.65	31.46
1	2375.00	28.02 AV	54.00	-25.98	1.19 H	161	-3.44	31.46
2	*2412.00	96.69 PK			1.19 H	161	65.18	31.51
2	*2412.00	87.60 AV			1.19 H	161	56.09	31.51
3	4824.00	49.65 PK	74.00	-24.35	1.18 H	182	11.80	37.86
3	4824.00	39.98 AV	54.00	-14.02	1.18 H	182	2.13	37.86
4	9648.00	53.62 PK	74.00	-20.38	1.00 H	36	9.15	44.47
4	9648.00	40.63 AV	54.00	-13.37	1.00 H	36	-3.84	44.47

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	2375.20	47.86 PK	74.00	-26.14	1.43 V	325	16.40	31.46
1	2375.20	39.94 AV	54.00	-14.06	1.43 V	325	8.48	31.46
2	*2412.00	107.44 PK			1.43 V	325	75.93	31.51
2	*2412.00	99.52 AV			1.43 V	325	68.01	31.51
3	4824.00	50.64 PK	74.00	-23.36	1.41 V	104	12.79	37.86
3	4824.00	44.13 AV	54.00	-9.87	1.41 V	104	6.28	37.86
4	9648.00	55.46 PK	74.00	-18.54	1.41 V	104	10.99	44.47
4	9648.00	44.53 AV	54.00	-9.47	1.41 V	104	0.06	44.47

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 11g USB Adapter	**MODEL**	WUBI-100GW
CHANNEL	Channel 6	**FREQUENCY RANGE**	Above 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	**TESTED BY**: Steven Lu	

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	*2437.00	97.84 PK			1.00 H	219	66.30	31.54
1	*2437.00	89.53 AV			1.00 H	219	57.99	31.54
2	4874.00	50.32 PK	74.00	-23.68	1.18 H	333	12.38	37.94
2	4874.00	41.90 AV	54.00	-12.10	1.18 H	333	3.96	37.94
3	9748.00	53.81 PK	74.00	-20.19	1.12 H	89	8.99	44.82
3	9748.00	41.12 AV	54.00	-12.88	1.12 H	89	-3.70	44.82

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	*2437.00	108.44 PK			1.37 V	66	76.90	31.54
1	*2437.00	100.41 AV			1.37 V	66	68.87	31.54
2	4874.00	53.77 PK	74.00	-20.23	1.00 V	100	15.83	37.94
2	4874.00	48.98 AV	54.00	-5.02	1.00 V	100	11.04	37.94
3	9748.00	55.60 PK	74.00	-18.40	1.36 V	5	10.78	44.82
3	9748.00	46.20 AV	54.00	-7.80	1.36 V	5	1.38	44.82

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 11g USB Adapter	MODEL	WUBI-100GW
CHANNEL	Channel 11	FREQUENCY RANGE	Above 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	TESTED BY: Steven Lu	

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	*2462.00	96.12 PK			1.47 H	160	64.55	31.57
1	*2462.00	87.86 AV			1.47 H	160	56.29	31.57
2	2483.50	36.83 PK	74.00	-37.17	1.47 H	160	5.23	31.60
2	2483.50	28.57 AV	54.00	-25.43	1.47 H	160	-3.03	31.60
3	4924.00	50.55 PK	74.00	-23.45	1.30 H	163	12.53	38.02
3	4924.00	42.53 AV	54.00	-11.47	1.30 H	163	4.51	38.02
4	9848.00	53.42 PK	74.00	-20.58	1.26 H	354	8.39	45.03
4	9848.00	41.55 AV	54.00	-12.45	1.26 H	354	-3.48	45.03

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	*2462.00	107.70 PK			1.40 V	265	76.13	31.57
1	*2462.00	99.42 AV			1.40 V	265	67.85	31.57
2	2483.50	48.41 PK	74.00	-25.59	1.40 V	265	16.81	31.60
2	2483.50	40.13 AV	54.00	-13.87	1.40 V	265	8.53	31.60
3	4924.00	51.72 PK	74.00	-22.28	1.10 V	132	13.70	38.02
3	4924.00	44.36 AV	54.00	-9.64	1.10 V	132	6.34	38.02
4	9848.00	55.32 PK	74.00	-18.68	1.49 V	88	10.29	45.03
4	9848.00	44.85 AV	54.00	-9.15	1.49 V	88	-0.18	45.03

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.

4.2.9 TEST RESULTS (FOR OFDM)

EUT	Wireless 11g USB Adapter	**MODEL**	WUBI-100GW
CHANNEL	Channel 1	**FREQUENCY RANGE**	Above 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	**TESTED BY**: Steven Lu	

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	2376.20	40.80 PK	74.00	-33.20	1.14 H	62	9.34	31.46
1	2376.20	32.00 AV	54.00	-22.00	1.14 H	62	0.54	31.46
2	*2412.00	94.41 PK			1.14 H	62	62.90	31.51
2	*2412.00	85.61 AV			1.14 H	62	54.10	31.51
3	4824.00	51.35 PK	74.00	-22.65	1.03 H	178	13.50	37.86
3	4824.00	43.82 AV	54.00	-10.18	1.03 H	178	5.97	37.86
4	9648.00	53.33 PK	74.00	-20.67	1.62 H	143	8.86	44.47
4	9648.00	40.38 AV	54.00	-13.62	1.62 H	143	-4.09	44.47

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	2376.20	50.45 PK	74.00	-23.55	1.48 V	192	18.99	31.46
1	2376.20	40.90 AV	54.00	-13.10	1.48 V	192	9.44	31.46
2	*2412.00	104.06 PK			1.80 V	328	72.55	31.51
2	*2412.00	94.51 AV			1.80 V	328	63.00	31.51
3	4824.00	52.88 PK	74.00	-21.12	1.14 V	102	15.03	37.86
3	4824.00	48.31 AV	54.00	-5.69	1.14 V	102	10.46	37.86
4	9648.00	54.03 PK	74.00	-19.97	1.48 V	192	9.56	44.47
4	9648.00	44.60 AV	54.00	-9.40	1.48 V	192	0.13	44.47

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 11g USB Adapter	MODEL	WUBI-100GW
CHANNEL	Channel 6	FREQUENCY RANGE	Above 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	**TESTED BY**: Steven Lu	

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	92.84 PK			1.88 H	255	61.30	31.54
1	*2437.00	82.89 AV			1.88 H	255	51.35	31.54
2	4874.00	49.35 PK	74.00	-24.65	1.77 H	320	11.41	37.94
2	4874.00	40.02 AV	54.00	-13.98	1.77 H	320	2.08	37.94
3	9748.00	53.31 PK	74.00	-20.69	1.25 H	274	8.49	44.82
3	9748.00	41.31 AV	54.00	-12.69	1.25 H	274	-3.51	44.82

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	104.94 PK			1.38 V	68	73.40	31.54
1	*2437.00	95.28 AV			1.38 V	68	63.74	31.54
2	4874.00	51.55 PK	74.00	-22.45	2.06 V	265	13.61	37.94
2	4874.00	45.50 AV	54.00	-8.50	2.06 V	265	7.56	37.94
3	9748.00	55.11 PK	74.00	-18.89	1.45 V	7	10.29	44.82
3	9748.00	46.43 AV	54.00	-7.57	1.45 V	7	1.61	44.82

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 11g USB Adapter	MODEL	WUBI-100GW
CHANNEL	Channel 11	FREQUENCY RANGE	Above 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	TESTED BY: Steven Lu	

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	94.57 PK			1.72 H	240	63.00	31.57
1	*2462.00	85.62 AV			1.72 H	240	54.05	31.57
2	2498.00	42.30 PK	74.00	-31.70	1.72 H	240	10.68	31.62
2	2498.00	33.35 AV	54.00	-20.65	1.72 H	240	1.73	31.62
3	4924.00	51.19 PK	74.00	-22.81	1.30 H	180	13.17	38.02
3	4924.00	44.23 AV	54.00	-9.77	1.30 H	180	6.21	38.02
4	9848.00	53.90 PK	74.00	-20.10	1.62 H	277	8.87	45.03
4	9848.00	41.27 AV	54.00	-12.73	1.62 H	277	-3.76	45.03

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	104.73 PK			1.43 V	69	73.16	31.57
1	*2462.00	94.97 AV			1.43 V	69	63.40	31.57
2	2498.00	52.46 PK	74.00	-21.54	1.43 V	69	20.84	31.62
2	2498.00	42.67 AV	54.00	-11.33	1.43 V	69	11.05	31.62
3	4924.00	53.36 PK	74.00	-20.64	1.00 V	105	15.34	38.02
3	4924.00	47.37 AV	54.00	-6.63	1.00 V	105	9.35	38.02
4	9848.00	55.26 PK	74.00	-18.74	1.73 V	80	10.23	45.03
4	9848.00	46.89 AV	54.00	-7.11	1.73 V	80	1.86	45.03

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	August 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.

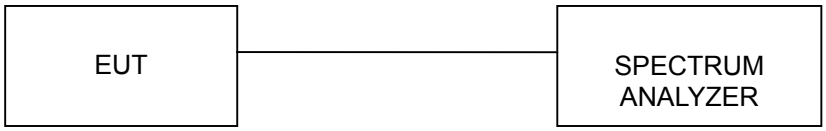
4.3.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 100 kHz RBW and 100 kHz VBW. The 6 dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6 dB.

4.3.4 DEVIATION FROM TEST STANDARD

No deviation

4.3.5 TEST SETUP



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

4.3.6 EUT OPERATING CONDITIONS

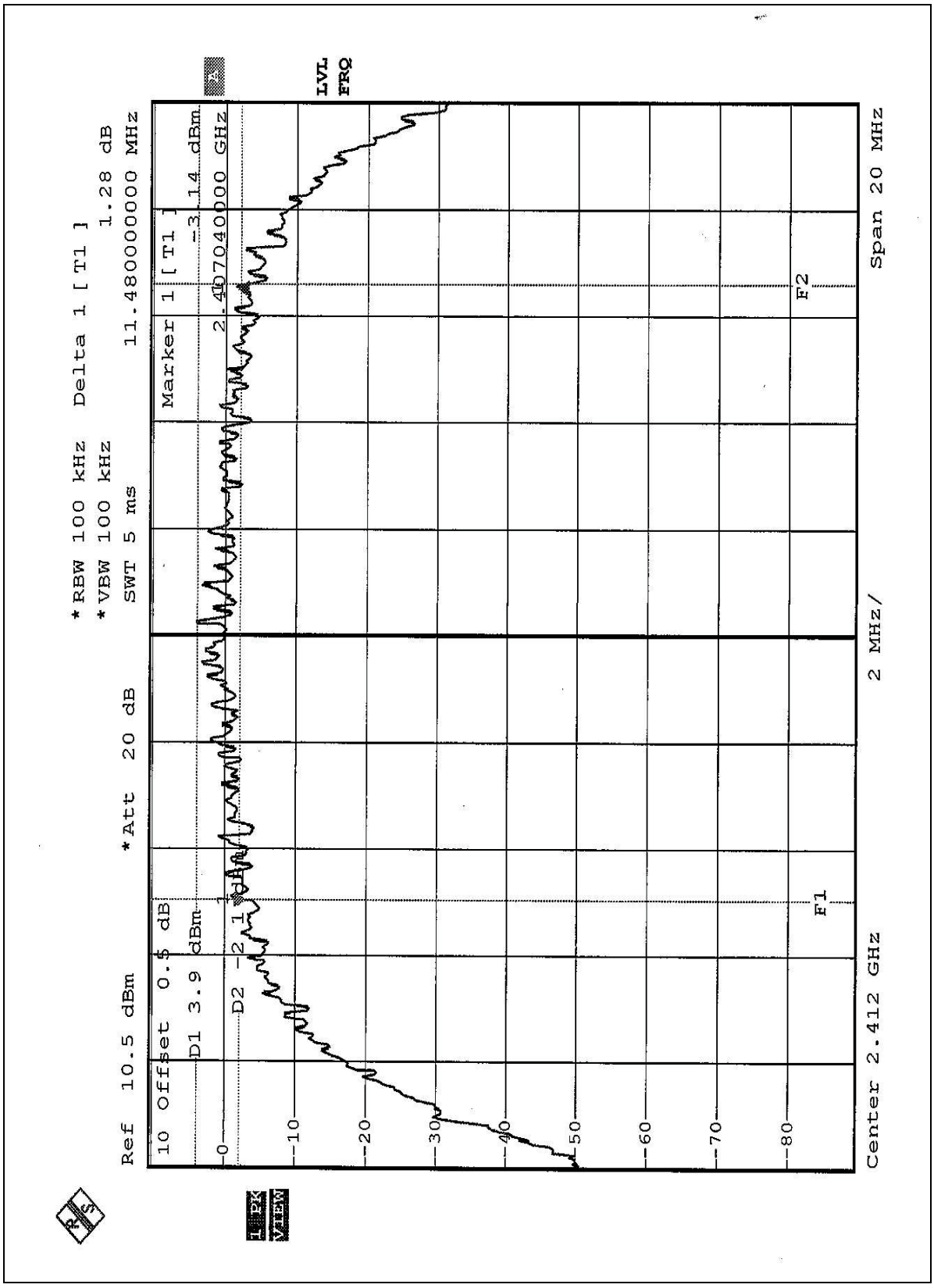
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.3.7 TEST RESULTS (FOR CCK)

EUT	Wireless 11g USB Adapter	MODEL	WUBI-100GW
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	22eg. C, 65RH, 991a
TESTED BY: Steven Lu			

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	11.48	0.5	PASS
6	2437	11.60	0.5	PASS
11	2462	11.56	0.5	PASS

CH1


Ref 10.5 dBm
10 Offset 0.5 dB
D1 3.9 dBm
D2 -2.1 dBm
*Att 20 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 5 ms
Delta 1 [T1]
1.28 dB
11.480000000 MHz
Marker 1 [T1]
-3.14 dBm
2.407040000 GHz
LVL
FRQ
F1
F2
Center 2.412 GHz
2 MHz/
Span 20 MHz
1 PK
VIEW