FCC TEST REPORT

REPORT NO.: RF920808R02
MODEL NO.: DWL-AG520
RECEIVED: Aug. 08, 2003
TESTED: Aug. 08 ~ Sep. 13, 2003

APPLICANT: D-LINK CORPORATION
ADDRESS: NO.8, Li Hsing Rd VII, SCIENCE-BASED INDUSTRIAL PARK, HSINCHU, TAIWAN, R.O.C.

ISSUED BY: Advance Data Technology Corporation
LAB LOCATION: 47 14th Lin, Chiapau Tsun, Linko, Taipei, Taiwan, R.O.C.

0528
ILAC MRA

Lab Code: 200102-0

Table of Contents

1. CERTIFICATION

PRODUCT :	802.11a/b/g Wireless PCI Adapter
BRAND NAME :	D-Link
MODEL NO. :	DWL-AG520
TEST ITEM:	ENGINEERING SAMPLE
APPLICANT :	D-LINK CORPORATION
STANDARDS :	47 CFR Part 15, Subpart C (Section 15.247), Subpart E (Section 15.407), 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. 08, 2003 to Sep. 13, 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: Stephanie Hung , **DATE:** September 15, 2003

APPROVED BY: Dr.Alan Lane JVP **DATE:** September 15, 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 –17.54dB at 0.209MHz
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)	Radiated Emissions Limit: Table 15.209	PASS	Meet the requirement of limit Minimum passing margin is –1.40dB at 2688.00MHz
15.247(d)	Power Spectral Density Limit: max. 8dBm	PASS	Meet the requirement of limit
15.247(c)	Band Edge Measurement Limit: 20dB less than the peak value of fundamental frequency	PASS	Meet the requirement of limit

APPLIED STANDARD: 47 CFR Part 15, Subpart E			
Standard Section	**Test Type**	**Result**	**REMARK**
15.407(b)(5)	AC Power Conducted Emission	PASS	Meet the requirement of limit Minimum passing margin is –18.02dB at 0.188MHz
15.407(b/1/2/3)(b)(5)	Electric Field Strength Spurious Emissions, 30MHz ~ 40000MHz	PASS	Meet the requirement of limit Minimum passing margin is –1.60dB at 11610.00MHz
15.407(a/1/2/3)	Peak Transmit Power	PASS	Meet the requirement of limit
15.407(a)(6)	Peak Power Excursion	PASS	Meet the requirement of limit
15.407(a/1/2/3)	Peak Power Spectral Density	PASS	Meet the requirement of limit
15.407(g)	Frequency Stability	PASS	Meet the requirement of limit

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	802.11a/b/g Wireless PCI Adapter
MODEL NO.	DWL-AG520
POWER SUPPLY	5VDC from host equipment
MODULATION TYPE	OFDM / CCK
TRANSFER RATE	up to 54Mbps *(Turbo mode : up to 72Mbps)
FREQUENCY RANGE	802.11b and 802.11g: 2412~2462MHz 802.11a: 5.15~5.35GHz and 5.725~5.825GHz
NUMBER OF CHANNEL	802.11b and 802.11g: 11 / 1 for Turbo mode 802.11a: 12 for Normal mode / 5 for Turbo mode
CHANNEL SPACING	802.11b and 802.11g: 5MHz 802.11a: 20MHz for Normal mode / 40MHz for Turbo mode
OUTPUT POWER	802.11b and 802.11g: 18.36dBm 802.11a: 18.13dBm
DATA CABLE	NA
ANTENNA TYPE	Dipole antenna with 5dBi gain
I/O PORTS	NA
ASSOCIATED DEVICES	NA

NOTE:

1. The EUT operates in both the 5GHz and 2.4GHz Bands and compatibility with 802.11a and 802.11b, 802.11g technology.
2. For more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3.2 DESCRIPTION OF TEST MODES

For 802.11b and 802.11g: 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 of 11Mbps with CCK technique and 6Mbps with OFDM technique, the worst case, was chosen for final test.
4. One turbo mode at frequency 2437MHz.
5. Test result A is for CCK technique, test result B is for OFDM technique and test result C is for OFDM technique in Turbo mode which presented in Section 4.

For 802.11a: Twelve channels are provided to this EUT for Normal mode.

Channel	Frequency	Channel	Frequency
1	5180 MHz	7	5300 MHz
2	5200 MHz	8	5320 MHz
3	5220 MHz	9	5745 MHz
4	5240 MHz	10	5765 MHz
5	5260 MHz	11	5785 MHz
6	5280 MHz	12	5805 MHz

Five channels are provided to this EUT for Turbo Mode.

Channel	Frequency	Channel	Frequency
1	5210 MHz	4	5760 MHz
2	5250 MHz	5	5800 MHz
3	5290 MHz		

NOTE:

1. The EUT was tested in both normal mode (channel bandwidth of approximately 30MHz) and turbo mode (channel bandwidth of approximately 60MHz).
2. “Normal Mode” allows data rates of up to 54Mbps. The device was, therefore, tested in Normal mode at the data rate that produced the highest output power for normal mode (6Mbps).
3. “Turbo Mode” allows data rates of up to 108Mbps. At data rates higher than 12Mbps the PA gain is reduced to improve signal fidelity. The device was, therefore, tested in turbo mode at the data rate that produced the highest output power for turbo mode (12Mbps).
4. Channel 1, 4, 5, 8, 9 and 12 are the closest frequencies to the band edge, were chosen for final test of Normal Mode.
5. Channel 1 ~ 5 were chosen for final test of turbo mode.

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a 802.11a/b/g Wireless PCI Adapter. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC 47 CFR Part 15, Subpart C. (15.247),
Subpart E (15.407). 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	PERSONAL COMPUTER	HP	DTPC 27	SG21103567	FCC DoC Approved
2	MONITOR	ADI	CM100	026058T10200531	FCC DoC Approve
3	MOUSE	DEXIN	A2R800A	80110020	NIYA2P800A
4	PS/2 KEYBOARD	FORWARD	FDA-104GA	FDKB 8110056	F4ZFDA-104G
5	MODEM	ACEEX	1414	0206026775	IFAXDM1414
6	MATRIX PRINTER	EPSON	LQ-300+	DCGY017079	FCC DoC Approve

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA
2	1.8 m braid shielded wire, terminated with VGA connector via metallic frame, w/o core
3	1.5 m foil shielded wire, terminated with PS2 connector via drain wire, w/o core.
4	NA
5	1.2 m braid shielded wire, terminated with DB25 and DB9 connector via metallic frame, w/o core.
6	NA

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

4. TEST TYPES AND RESULTS (FOR PART 802.11b & 802.11g)

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	ESCS 30	847124/029	Nov. 17, 2003
ROHDE & SCHWARZ LISN (for EUT)	ESHS-Z5	848773/004	Nov. 13, 2003
KYORITSU LISN (for peripheral)	KNW-407	8/1395/12	Jul. 23, 2004
RF Cable (JETBAO)	RG233/U	Cable_CA_01	Jul. 03, 2004
Terminator(for KYORITSU)	50	3	Apr. 11, 2004
Software	Cond-V2e	NA	NA

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. The test was performed in ADT Shielded Room No. A.
3. The VCCI Con A Registration No. is C-817.

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.

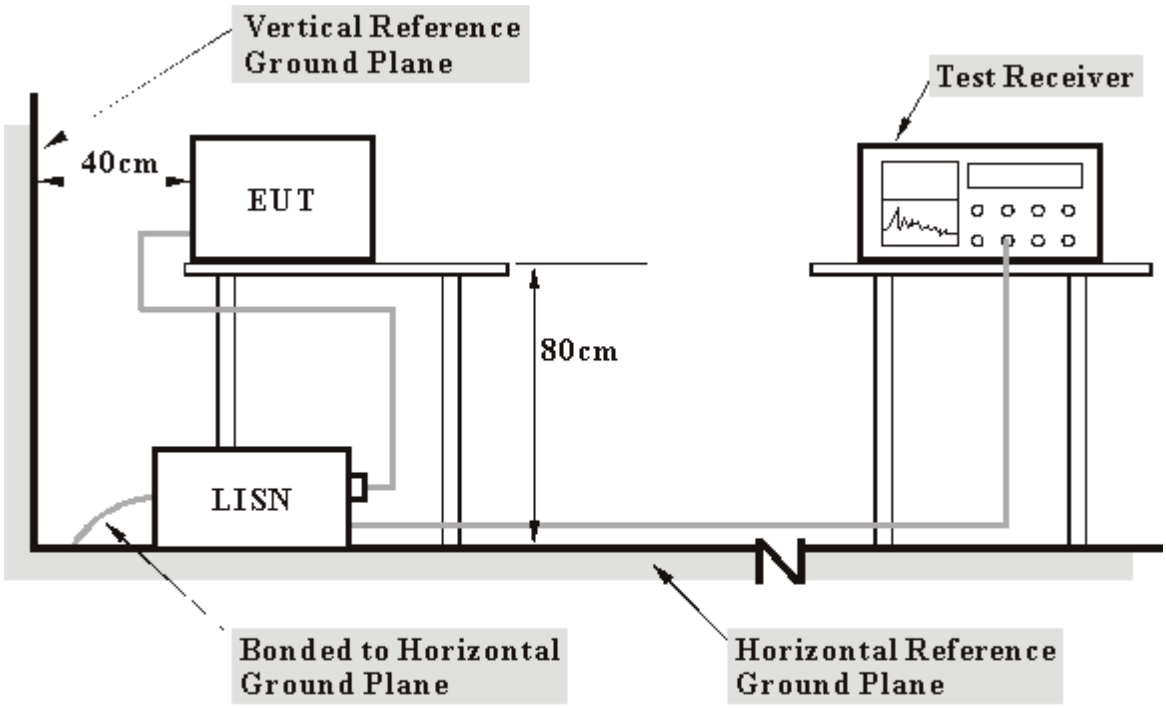
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

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

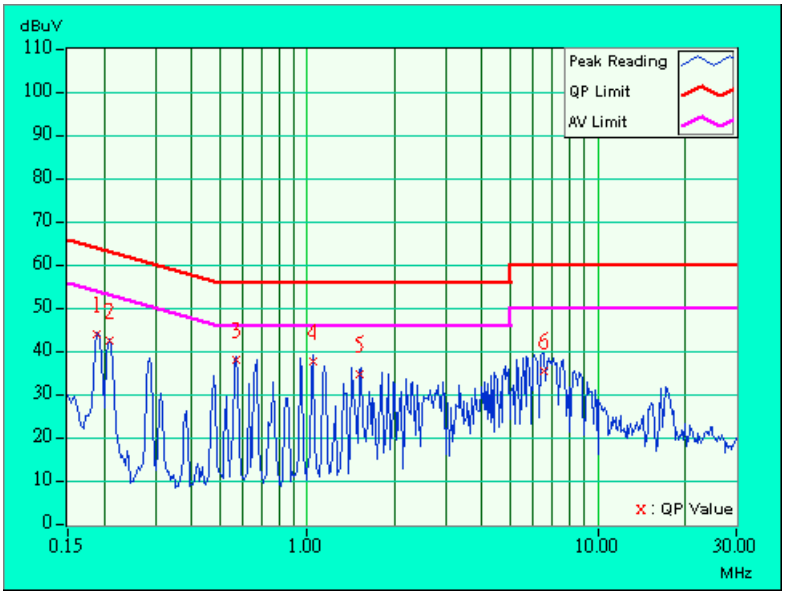
a. Plug the EUT into the computer system placed on a testing table.
b. The computer system ran a test program to enable EUT under transmission/receiving condition continuously at specific channel frequency.
c. The computer system sent "H" messages to its screen.
d. The computer system sent “H” messages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

4.1.7 TEST RESULTS

EUT	802.11a/b/g Wireless PCI Adapter	**MODEL**	DWL-AG520
MODE	Channel 1	**6dB BANDWIDTH**	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**PHASE**	Line (L)
ENVIRONMENTAL CONDITIONS	24deg. C, 57%RH, 991hPa	**TESTED BY**: Tony Chen	

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.189	0.20	43.57	-	43.77	-	64.08	54.08	-20.31	-
2	0.209	0.20	42.07	-	42.27	-	63.26	53.26	-20.99	-
3	0.568	0.23	37.69	-	37.92	-	56.00	46.00	-18.08	-
4	1.048	0.30	37.30	-	37.60	-	56.00	46.00	-18.40	-
5	1.524	0.30	34.24	-	34.54	-	56.00	46.00	-21.46	-
6	6.499	0.57	34.82	-	35.39	-	60.00	50.00	-24.61	-

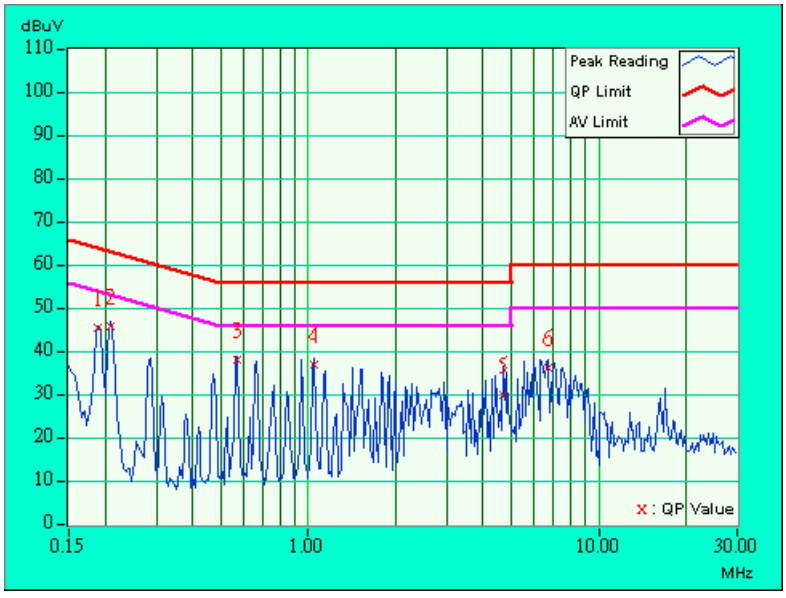
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	802.11a/b/g Wireless PCI Adapter	**MODEL**	DWL-AG520
MODE	Channel 1	**6dB BANDWIDTH**	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**PHASE**	Neutral (N)
ENVIRONMENTAL CONDITIONS	24deg. C, 57%RH, 991hPa	**TESTED BY**: Tony Chen	

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.189	0.20	44.90	-	45.10	-	64.08	54.08	-18.98	-
2	0.209	0.20	45.51	-	45.71	-	63.25	53.25	-17.54	-
3	0.567	0.23	37.61	-	37.84	-	56.00	46.00	-18.16	-
4	1.048	0.30	36.57	-	36.87	-	56.00	46.00	-19.13	-
5	4.723	0.44	29.55	-	29.99	-	56.00	46.00	-26.01	-
6	6.721	0.54	35.83	-	36.37	-	60.00	50.00	-23.63	-

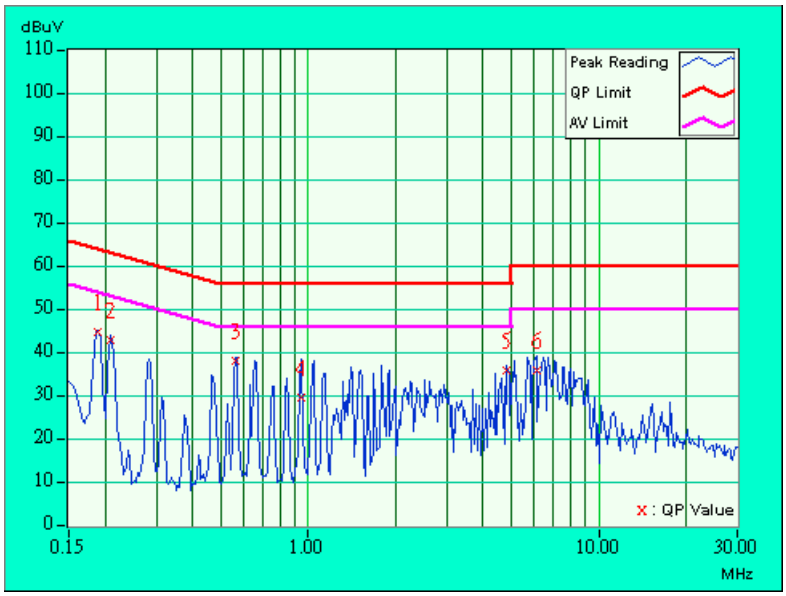
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	802.11a/b/g Wireless PCI Adapter	**MODEL**	DWL-AG520
MODE	Channel 6	**6dB BANDWIDTH**	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**PHASE**	Line (L)
ENVIRONMENTAL CONDITIONS	24deg. C, 57%RH, 991hPa	**TESTED BY**: Tony Chen	

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.189	0.20	44.31	-	44.51	-	64.08	54.08	-19.57	-
2	0.209	0.20	42.32	-	42.52	-	63.26	53.26	-20.74	-
3	0.563	0.23	37.43	-	37.66	-	56.00	46.00	-18.34	-
4	0.947	0.29	28.95	-	29.24	-	56.00	46.00	-26.76	-
5	4.840	0.46	35.57	-	36.03	-	56.00	46.00	-19.97	-
6	6.102	0.54	35.56	-	36.10	-	60.00	50.00	-23.90	-

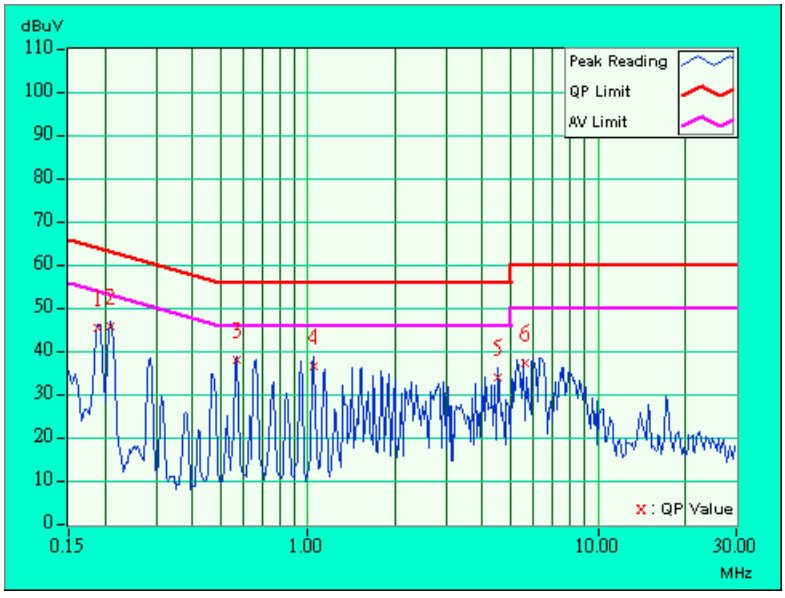
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	802.11a/b/g Wireless PCI Adapter	**MODEL**	DWL-AG520
MODE	Channel 6	**6dB BANDWIDTH**	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**PHASE**	Neutral (N)
ENVIRONMENTAL CONDITIONS	24deg. C, 57%RH, 991hPa	**TESTED BY**: Tony Chen	

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.189	0.20	45.12	-	45.32	-	64.08	54.08	-18.76	-
2	0.209	0.20	45.28	-	45.48	-	63.26	53.26	-17.78	-
3	0.568	0.23	37.65	-	37.88	-	56.00	46.00	-18.12	-
4	1.048	0.30	36.34	-	36.64	-	56.00	46.00	-19.36	-
5	4.520	0.43	33.46	-	33.89	-	56.00	46.00	-22.11	-
6	5.575	0.48	36.76	-	37.24	-	60.00	50.00	-22.76	-

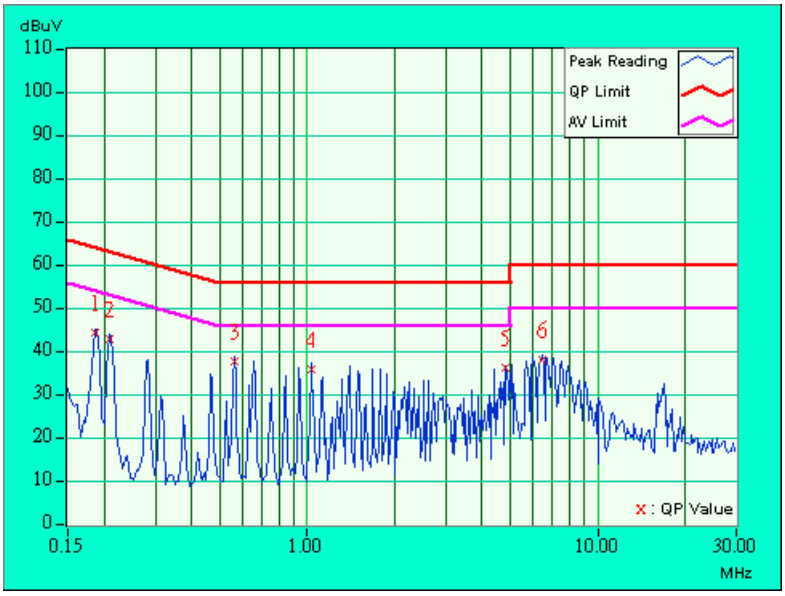
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	802.11a/b/g Wireless PCI Adapter	**MODEL**	DWL-AG520
MODE	Channel 11	**6dB BANDWIDTH**	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**PHASE**	Line (L)
ENVIRONMENTAL CONDITIONS	24deg. C, 57%RH, 991hPa	**TESTED BY**: Tony Chen	

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.185	0.20	43.83	-	44.03	-	64.25	54.25	-20.22	-
2	0.209	0.20	42.42	-	42.62	-	63.26	53.26	-20.64	-
3	0.565	0.23	37.31	-	37.54	-	56.00	46.00	-18.46	-
4	1.035	0.30	35.34	-	35.64	-	56.00	46.00	-20.36	-
5	4.844	0.46	35.61	-	36.07	-	56.00	46.00	-19.93	-
6	6.426	0.56	37.74	-	38.30	-	60.00	50.00	-21.70	-

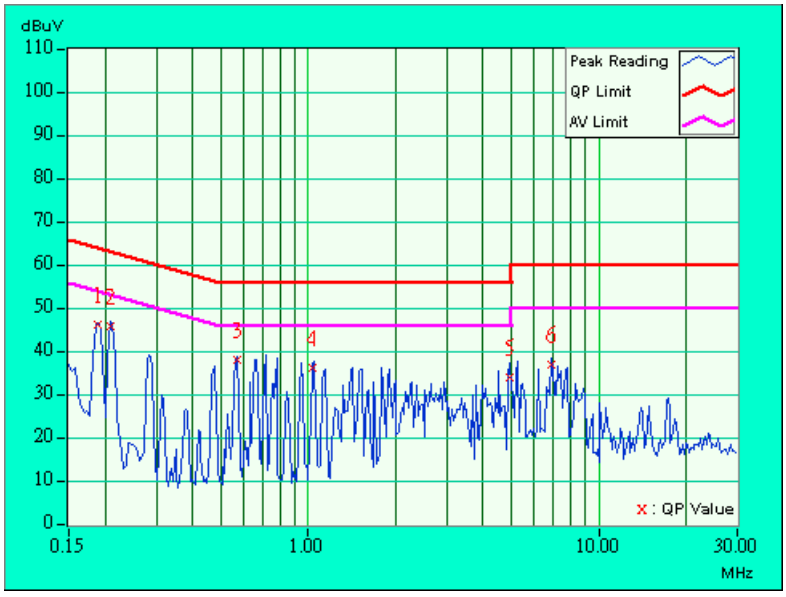
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	802.11a/b/g Wireless PCI Adapter	**MODEL**	DWL-AG520
MODE	Channel 11	**6dB BANDWIDTH**	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**PHASE**	Neutral (N)
ENVIRONMENTAL CONDITIONS	24deg. C, 57%RH, 991hPa	**TESTED BY**: Tony Chen	

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.189	0.20	45.57	-	45.77	-	64.08	54.08	-18.31	-
2	0.209	0.20	45.24	-	45.44	-	63.26	53.26	-17.82	-
3	0.568	0.23	37.59	-	37.82	-	56.00	46.00	-18.18	-
4	1.034	0.30	35.60	-	35.90	-	56.00	46.00	-20.10	-
5	4.949	0.45	33.52	-	33.97	-	56.00	46.00	-22.03	-
6	6.848	0.54	36.49	-	37.03	-	60.00	50.00	-22.97	-

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	8594ER	3829U04676	Jul. 14, 2004
ADVANTEST Spectrum Analyzer	R3271A	85060311	May 21, 2004
CHASE RF Pre_Amplifier	CPA9232	1057	Apr. 24, 2004
HP Pre_Amplifier	8449B	3008A01281	June 27, 2004
ROHDE & SCHWARZ Test Receiver	ESVS 10	849231 /019	Nov. 03, 2003
CHASE Broadband Antenna	CBL6111c	2730	Jul 17, 2004
Schwarzbeck Horn_Antenna	3115	5619	Jul. 17, 2004
SCHWARZBECK Tunable Dipole Antenna	UHAP	897	Mar. 07, 2005
SCHWARZBECK Tunable Dipole Antenna	VHAP	880	Mar. 07, 2005
RF Switches (ARNITSU)	CS-201	1565157	Dec. 01, 2003
RF CABLE (Chaintek) 1GHz-20GHz	SF102	22054-2	Feb. 10. 2004
RF Cable(RICHTEC)	9913-30M	STCCAB-30M-1GHz-021	Nov. 5, 2003
Software	AS60P8	NA	NA
CHANCE MOST Antenna Tower	AT-100	0203	NA
CHANCE MOST Turn Table	TT-100	0203	NA

Note: 1. The calibration interval of the above test instruments is 12 months (36 months for Tunable Dipole Antenna)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. C.

5. The FCC Site Registration No. is 656396.

6. The VCCI Site Registration No. is R-1626.

7. The CANADA Site Registration No. is IC 3789-C.

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 the quasi-peak method or average method as specified and then reported in Data sheet peak mode and QP mode.

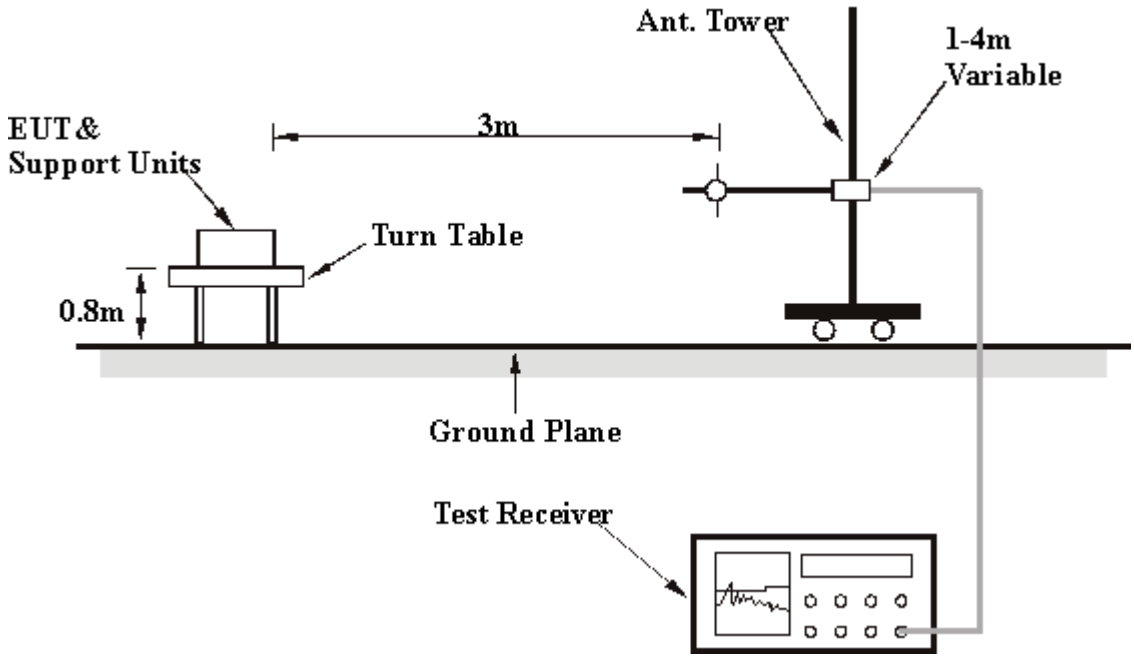
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz for Peak detection (PK) 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	802.11a/b/g Wireless PCI Adapter	**MODEL**	DWL-AG520
MODE	Channel 11	**FREQUENCY RANGE**	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**DETECTOR FUNCTION**	Quasi-Peak
ENVIRONMENTAL CONDITIONS	26deg. C, 59%RH, 991hPa	**TESTED BY**: Eric 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	40.00	27.0 QP	40.00	-13.00	1.49 H	241	13.20	13.80
2	66.12	26.5 QP	40.00	-13.50	1.22 H	351	21.10	5.40
3	122.68	25.0 QP	43.50	-18.50	1.66 H	182	13.20	11.80
4	133.42	28.9 QP	43.50	-14.60	1.20 H	159	17.20	11.70
5	165.27	28.7 QP	43.50	-14.80	1.68 H	57	18.80	10.00
6	200.00	30.0 QP	43.50	-13.50	1.52 H	19	21.00	9.00
7	266.00	31.4 QP	46.00	-14.60	1.02 H	100	17.60	13.80
8	352.10	24.3 QP	46.00	-21.70	1.89 H	5	8.80	15.50
9	425.66	29.1 QP	46.00	-16.90	1.09 H	63	11.20	17.90
10	480.01	26.9 QP	46.00	-19.10	1.50 H	268	8.00	18.90
11	499.99	31.5 QP	46.00	-14.50	1.47 H	80	12.20	19.30

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	44.26	26.2 QP	40.00	-13.80	1.54 V	269	14.50	11.60
2	54.86	24.3 QP	40.00	-15.70	1.79 V	92	17.60	6.70
3	60.73	26.5 QP	40.00	-13.50	1.06 V	249	21.30	5.20
4	133.23	20.0 QP	43.50	-23.50	1.45 V	222	8.30	11.70
5	265.14	29.0 QP	46.00	-17.00	1.20 V	159	15.10	13.90
6	299.90	29.4 QP	46.00	-16.60	1.29 V	176	15.20	14.20
7	352.20	30.2 QP	46.00	-15.80	1.24 V	1	14.70	15.50
8	440.00	31.0 QP	46.00	-15.00	1.00 V	237	13.00	18.00
9	482.11	32.9 QP	46.00	-13.10	1.33 V	267	13.90	18.90
10	500.13	22.4 QP	46.00	-23.60	1.45 V	173	3.10	19.30

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 (A)

EUT	802.11a/b/g Wireless PCI Adapter	**MODEL**	DWL-AG520
MODE	Channel 1	**FREQUENCY RANGE**	Above 1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 56%RH, 991hPa	**TESTED BY**: Eric 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	2360.00	42.6 PK	74.00	-31.40	1.00 H	251	12.30	30.30
2	2390.00	51.9 PK	74.00	-22.10	1.49 H	262	21.50	30.40
2	2390.00	41.2 AV	54.00	-12.80	1.49 H	262	10.80	30.40
3	*2412.00	101.2 PK			1.08 H	51	70.70	30.50
3	*2412.00	93.2 AV			1.08 H	51	62.70	30.50
4	2688.00	40.3 PK	74.00	-33.70	1.01 H	20	9.00	31.30
5	4824.00	48.0 PK	74.00	-26.00	1.57 H	44	11.80	36.20
6	7236.00	44.0 PK	74.00	-30.00	1.54 H	23	2.30	41.70
7	9648.00	49.0 PK	74.00	-25.00	1.39 H	262	4.10	44.90

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	2360.00	48.8 PK	74.00	-25.20	1.01 V	323	18.50	30.30
2	2390.00	60.4 PK	74.00	-13.60	1.36 V	62	30.00	30.40
2	2390.00	48.7 AV	54.00	-5.30	1.36 V	62	18.30	30.40
3	*2412.00	109.8 PK			1.05 V	5	79.20	30.50
3	*2412.00	102.9 AV			1.05 V	5	72.30	30.50
4	2688.00	48.5 PK	74.00	-25.50	1.01 V	20	17.30	31.30
5	4824.00	53.8 PK	74.00	-20.20	1.12 V	2	17.60	36.20
5	4824.00	43.4 AV	54.00	-10.60	1.12 V	2	7.20	36.20
6	7236.00	48.4 PK	74.00	-25.60	1.08 V	13	6.80	41.70
7	9648.00	53.2 PK	74.00	-20.80	1.03 V	21	8.30	44.90
7	9648.00	44.0 AV	54.00	-10.00	1.03 V	21	-0.90	44.90

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. The limit value is defined as per 15.247
6. " * " : Fundamental frequency

EUT	802.11a/b/g Wireless PCI Adapter	**MODEL**	DWL-AG520
MODE	Channel 6	**FREQUENCY RANGE**	Above 1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 56%RH, 991hPa	**TESTED BY**: Eric 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	2360.00	43.0 PK	74.00	-31.00	1.09 H	3	12.70	30.30
2	2390.00	49.8 PK	74.00	-24.20	1.63 H	26	19.40	30.40
3	*2437.00	102.2 PK			1.11 H	61	71.60	30.70
3	*2437.00	94.0 AV			1.11 H	61	63.30	30.70
4	2483.50	52.2 PK	74.00	-21.80	1.36 H	62	21.20	31.00
4	2483.50	40.1 AV	54.00	-13.90	1.36 H	62	9.10	31.00
5	2688.00	42.4 PK	74.00	-31.60	1.01 H	20	11.10	31.30
6	4874.00	47.2 PK	74.00	-26.80	1.36 H	9	10.70	36.50
7	7311.00	44.2 PK	74.00	-29.80	1.53 H	333	2.50	41.80
8	9748.00	49.2 PK	74.00	-24.80	1.37 H	222	4.60	44.60

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	2356.00	49.0 PK	74.00	-25.00	1.01 V	318	18.70	30.30
2	2390.00	56.7 PK	74.00	-17.30	1.54 V	22	26.30	30.40
2	2390.00	45.7 AV	54.00	-8.30	1.54 V	22	15.20	30.40
3	*2437.00	110.1 PK			1.02 V	10	79.40	30.70
3	*2437.00	103.4 AV			1.02 V	10	72.70	30.70
4	2483.50	57.3 PK	74.00	-16.70	1.69 V	32	26.30	31.00
4	2483.50	45.2 AV	54.00	-8.80	1.69 V	32	14.20	31.00
5	2688.00	48.6 PK	74.00	-25.40	1.72 V	45	17.40	31.30
6	4874.00	52.4 PK	74.00	-21.60	1.19 V	58	15.90	36.50
6	4874.00	43.7 AV	54.00	-10.30	1.19 V	58	7.20	36.50
7	7311.00	48.5 PK	74.00	-25.50	1.08 V	53	6.70	41.80
8	9748.00	54.4 PK	74.00	-19.60	1.51 V	249	9.80	44.60
8	9748.00	43.3 AV	54.00	-10.70	1.51 V	249	-1.30	44.60

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. The limit value is defined as per 15.247
6. " * " : Fundamental frequency

EUT	802.11a/b/g Wireless PCI Adapter	**MODEL**	DWL-AG520
MODE	Channel 11	**FREQUENCY RANGE**	Above 1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 56%RH, 991hPa	**TESTED BY**: Eric 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	2360.00	44.0 PK	74.00	-30.00	1.04 H	55	13.70	30.30
2	*2462.00	103.9 PK			1.16 H	352	73.10	30.80
2	*2462.00	95.0 AV			1.16 H	352	64.20	30.80
3	2483.50	56.9 PK	74.00	-17.10	1.49 H	63	25.90	31.00
3	2483.50	42.2 AV	54.00	-11.80	1.49 H	63	11.30	31.00
4	2688.00	44.2 PK	74.00	-29.80	1.57 H	84	12.90	31.30
5	4924.00	48.2 PK	74.00	-25.80	1.36 H	9	11.50	36.70
6	7386.00	43.0 PK	74.00	-31.00	1.57 H	26	1.20	41.80
7	9848.00	49.0 PK	74.00	-25.00	1.48 H	208	4.60	44.40

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	2360.00	48.6 PK	74.00	-25.40	1.20 V	215	18.30	30.30
2	*2462.00	110.8 PK			1.03 V	12	80.00	30.80
2	*2462.00	103.9 AV			1.03 V	12	73.00	30.80
3	2483.50	60.6 PK	74.00	-13.40	1.35 V	26	29.60	31.00
3	2483.50	49.5 AV	54.00	-4.50	1.35 V	26	18.60	31.00
4	2688.00	52.6 PK	74.00	-21.40	1.78 V	54	21.40	31.30
4	2688.00	51.7 AV	54.00	-2.30	1.78 V	54	20.40	31.30
5	4924.00	54.4 PK	74.00	-19.60	1.21 V	48	17.70	36.70
5	4924.00	43.9 AV	54.00	-10.10	1.21 V	48	7.20	36.70
6	7386.00	48.5 PK	74.00	-25.50	1.27 V	84	6.60	41.80
7	9848.00	53.1 PK	74.00	-20.90	1.11 V	62	8.70	44.40
7	9848.00	42.4 AV	54.00	-11.60	1.11 V	62	-2.00	44.40

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. The limit value is defined as per 15.247
6. " * " : Fundamental frequency

4.2.9 TEST RESULTS (B)

EUT	802.11a/b/g Wireless PCI Adapter	**MODEL**	DWL-AG520
MODE	Channel 1	**FREQUENCY RANGE**	Above 1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 56%RH, 991hPa	**TESTED BY**: Eric 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	2360.00	36.8 PK	74.00	-37.20	1.08 H	79	6.50	30.30
2	2390.00	56.8 PK	74.00	-17.20	1.36 H	52	26.40	30.40
2	2390.00	45.7 AV	54.00	-8.30	1.36 H	52	15.30	30.40
3	*2412.00	99.8 PK			1.36 H	260	69.20	30.50
3	*2412.00	90.5 AV			1.36 H	260	60.00	30.50
4	2688.00	43.6 PK	74.00	-30.40	1.56 H	69	12.40	31.30
5	4824.00	43.5 PK	74.00	-30.50	1.65 H	24	7.20	36.20
6	7236.00	46.2 PK	74.00	-27.80	1.04 H	54	4.50	41.70
7	9648.00	49.5 PK	74.00	-24.50	1.05 H	215	4.60	44.90

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	2359.00	37.9 PK	74.00	-36.10	4.00 V	10	7.50	30.30
2	2390.00	60.4 PK	74.00	-13.60	1.57 V	45	30.00	30.40
2	2390.00	50.3 AV	54.00	-3.70	1.57 V	45	19.90	30.40
3	*2412.00	105.5 PK			1.08 V	309	75.00	30.50
3	*2412.00	96.6 AV			1.08 V	309	66.10	30.50
4	2688.00	50.8 PK	74.00	-23.20	1.17 V	352	19.60	31.30
5	4824.00	44.8 PK	74.00	-29.20	1.11 V	15	8.50	36.20
6	7236.00	47.4 PK	74.00	-26.60	1.64 V	213	5.70	41.70
7	9648.00	49.5 PK	74.00	-24.50	1.10 V	50	4.60	44.90

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. The limit value is defined as per 15.247
6. " * " : Fundamental frequency

EUT	802.11a/b/g Wireless PCI Adapter	**MODEL**	DWL-AG520
MODE	Channel 6	**FREQUENCY RANGE**	Above 1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 56%RH, 991hPa	**TESTED BY**: Eric 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	2356.00	41.9 PK	74.00	-32.10	1.29 H	276	11.60	30.30
2	2390.00	50.1 PK	74.00	-23.90	1.69 H	66	19.70	30.40
3	*2437.00	99.0 PK			1.40 H	150	68.40	30.70
3	*2437.00	90.8 AV			1.40 H	150	60.10	30.70
4	2483.50	50.2 PK	74.00	-23.80	1.40 H	113	19.20	31.00
5	2688.00	43.2 PK	74.00	-30.80	1.44 H	52	11.90	31.30
6	4874.00	44.5 PK	74.00	-29.50	1.65 H	352	8.00	36.50
7	7311.00	43.1 PK	74.00	-30.90	1.26 H	36	1.30	41.80
8	9748.00	47.7 PK	74.00	-26.30	1.09 H	333	3.10	44.60

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	2356.00	48.1 PK	74.00	-25.90	1.29 V	276	17.80	30.30
2	2390.00	57.5 PK	74.00	-16.50	1.05 V	24	27.10	30.40
2	2390.00	46.9 AV	54.00	-7.10	1.05 V	24	16.40	30.40
3	*2437.00	106.6 PK			1.44 V	356	75.90	30.70
3	*2437.00	97.2 AV			1.44 V	356	66.50	30.70
4	2483.50	57.3 PK	74.00	-16.70	1.30 V	263	26.40	31.00
4	2483.50	46.4 AV	54.00	-7.60	1.30 V	263	15.50	31.00
5	2688.00	50.9 PK	74.00	-23.10	1.16 V	326	19.60	31.30
6	4874.00	48.5 PK	74.00	-25.50	1.10 V	67	12.00	36.50
7	7311.00	48.5 PK	74.00	-25.50	1.01 V	36	6.70	41.80
8	9748.00	49.4 PK	74.00	-24.60	1.16 V	99	4.80	44.60

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. The limit value is defined as per 15.247
6. " * " : Fundamental frequency

EUT	802.11a/b/g Wireless PCI Adapter	**MODEL**	DWL-AG520
MODE	Channel 11	**FREQUENCY RANGE**	Above 1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 56%RH, 991hPa	**TESTED BY**: Eric 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	2360.00	41.9 PK	74.00	-32.10	1.29 H	276	11.60	30.30
2	*2462.00	99.5 PK			1.35 H	245	68.70	30.80
2	*2462.00	90.8 AV			1.35 H	245	60.00	30.80
3	2483.50	56.3 PK	74.00	-17.70	1.12 H	69	25.40	31.00
3	2483.50	45.2 AV	54.00	-8.80	1.12 H	69	14.20	31.00
4	2688.00	43.8 PK	74.00	-30.20	1.44 H	52	12.60	31.30
5	4924.00	44.2 PK	74.00	-29.80	1.63 H	265	7.60	36.70
6	7386.00	43.4 PK	74.00	-30.60	1.11 H	58	1.60	41.80
7	9848.00	47.3 PK	74.00	-26.70	1.08 H	78	3.00	44.40

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	2360.00	50.8 PK	74.00	-23.20	1.44 V	316	20.50	30.30
2	*2462.00	105.9 PK			1.09 V	311	75.00	30.80
2	*2462.00	96.9 AV			1.09 V	311	66.10	30.80
3	2483.50	63.0 PK	74.00	-11.00	1.56 V	358	32.00	31.00
3	2483.50	52.2 AV	54.00	-1.80	1.56 V	358	21.20	31.00
4	2688.00	55.0 PK	74.00	-19.00	1.20 V	328	23.80	31.30
4	2688.00	52.6 AV	54.00	-1.40	1.20 V	328	21.40	31.30
5	4924.00	49.6 PK	74.00	-24.40	1.36 V	320	12.90	36.70
6	7386.00	47.9 PK	74.00	-26.10	1.65 V	246	6.10	41.80
7	9848.00	50.4 PK	74.00	-23.60	1.36 V	26	6.00	44.40

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. The limit value is defined as per 15.247
6. " * " : Fundamental frequency

4.2.10 TEST RESULTS (C)

EUT	802.11a/b/g Wireless PCI Adapter	**MODEL**	DWL-AG520
MODE	Channel 6	**FREQUENCY RANGE**	Above 1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 56%RH, 991hPa	**TESTED BY**: Eric 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	2356.00	37.6 PK	74.00	-36.40	1.60 H	219	7.30	30.30
2	2390.00	53.7 PK	74.00	-20.30	1.45 H	214	23.30	30.40
2	2390.00	41.6 AV	54.00	-12.40	1.45 H	214	11.20	30.40
3	*2437.00	93.9 PK			1.63 H	69	63.20	30.70
3	*2437.00	87.3 AV			1.63 H	69	56.60	30.70
4	2483.50	53.2 PK	74.00	-20.80	1.54 H	89	22.20	31.00
4	2483.50	43.3 AV	54.00	-10.70	1.54 H	89	12.40	31.00
5	2688.00	43.6 PK	74.00	-30.40	1.08 H	221	12.40	31.30
6	4874.00	44.5 PK	74.00	-29.50	1.08 H	297	8.10	36.50
7	7311.00	44.2 PK	74.00	-29.80	1.08 H	98	2.50	41.80
8	9748.00	45.4 PK	74.00	-28.60	1.57 H	98	0.80	44.60

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	2356.00	46.8 PK	74.00	-27.20	1.31 V	269	16.50	30.30
2	2390.00	57.7 PK	74.00	-16.30	1.36 V	62	27.30	30.40
2	2390.00	46.9 AV	54.00	-7.10	1.36 V	62	16.50	30.40
3	*2437.00	102.8 PK			1.25 V	243	72.10	30.70
3	2437.00	95.3 AV			1.25 V	243	64.60	30.70
4	2483.50	59.3 PK	74.00	-14.70	1.36 V	65	28.40	31.00
4	2483.50	48.0 AV	54.00	-6.00	1.36 V	65	17.00	31.00
5	2688.00	48.9 PK	74.00	-25.10	1.18 V	20	17.60	31.30
6	4874.00	47.2 PK	74.00	-26.80	1.00 V	66	10.70	36.50
7	7311.00	47.1 PK	74.00	-26.90	1.06 V	326	5.40	41.80
8	9748.00	48.9 PK	74.00	-25.10	1.54 V	24	4.30	44.60

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. The limit value is defined as per 15.247
6. " * " : 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	FSP 40	100035	April 14, 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 100kHz RBW and 100kHz VBW. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

4.3.4 DEVIATION FROM TEST STANDARD

No deviation

4.3.5 TEST SETUP

4.3.6 EUT OPERATING CONDITIONS

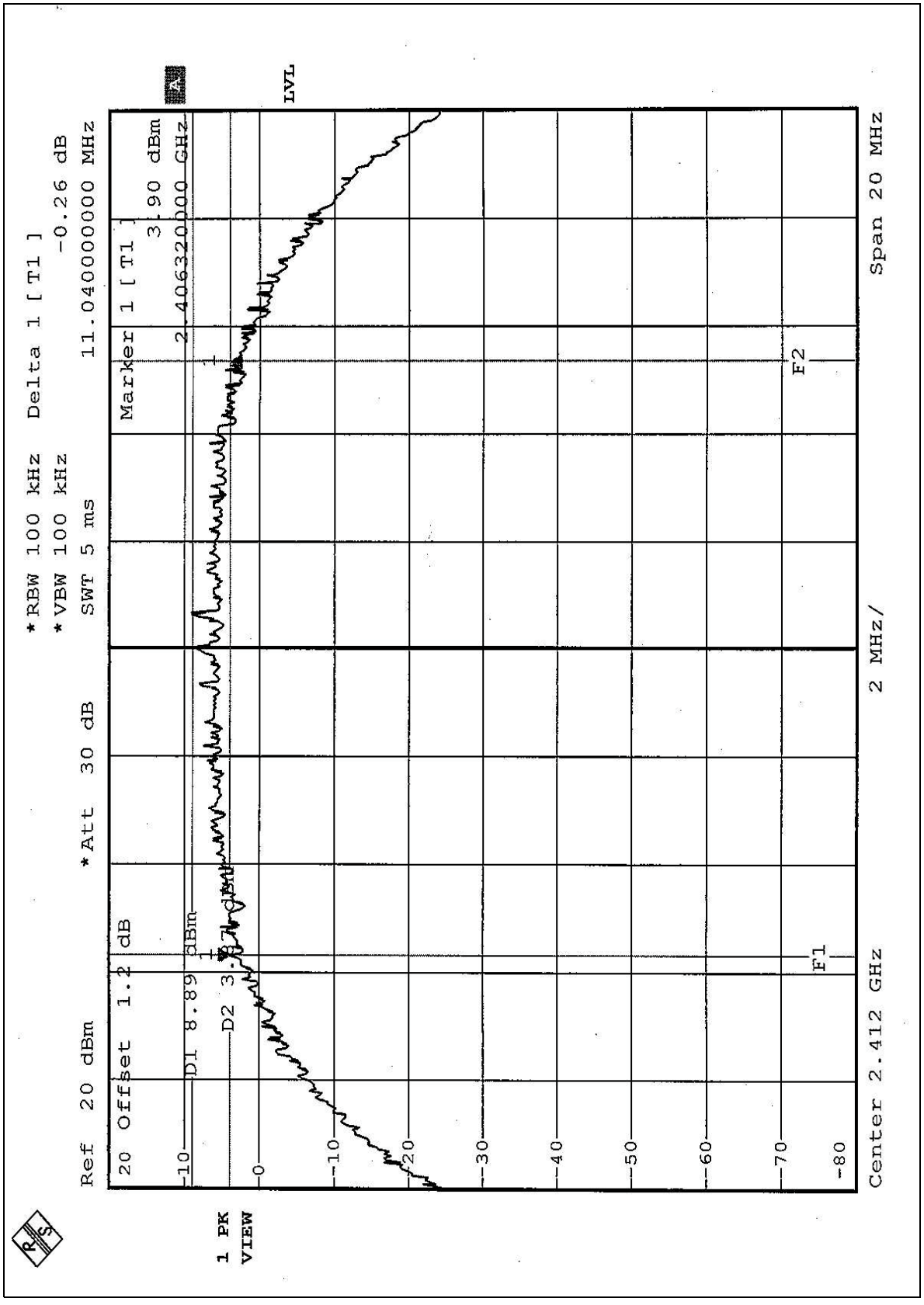
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.3.7 TEST RESULTS (A)

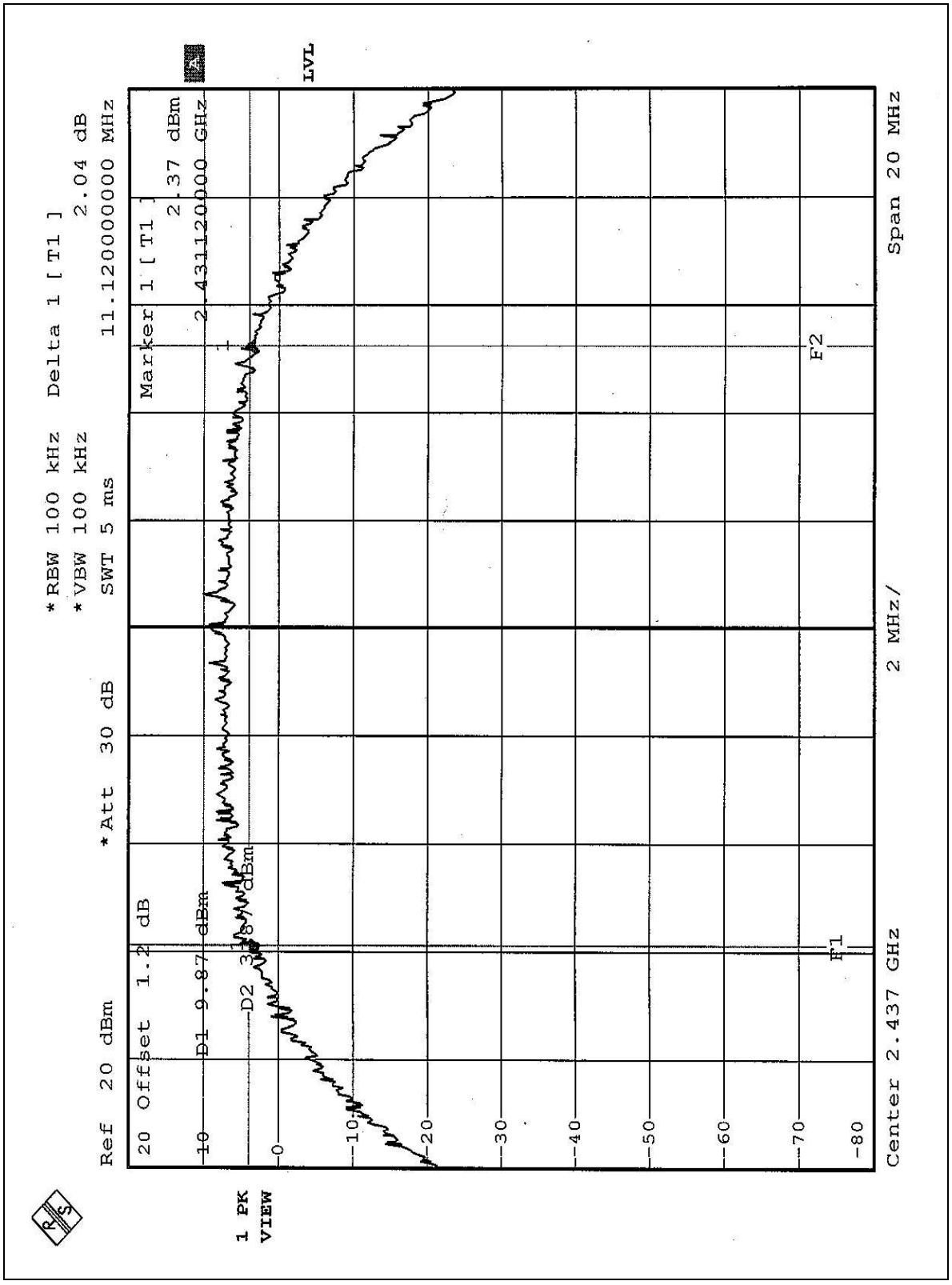
EUT	802.11a/b/g Wireless PCI Adapter	**MODEL**	DWL-AG520
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	21deg. C, 58%RH, 991hPa
TESTED BY: Hank Chung			

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	11.04	0.5	PASS
6	2437	11.12	0.5	PASS
11	2462	11.64	0.5	PASS

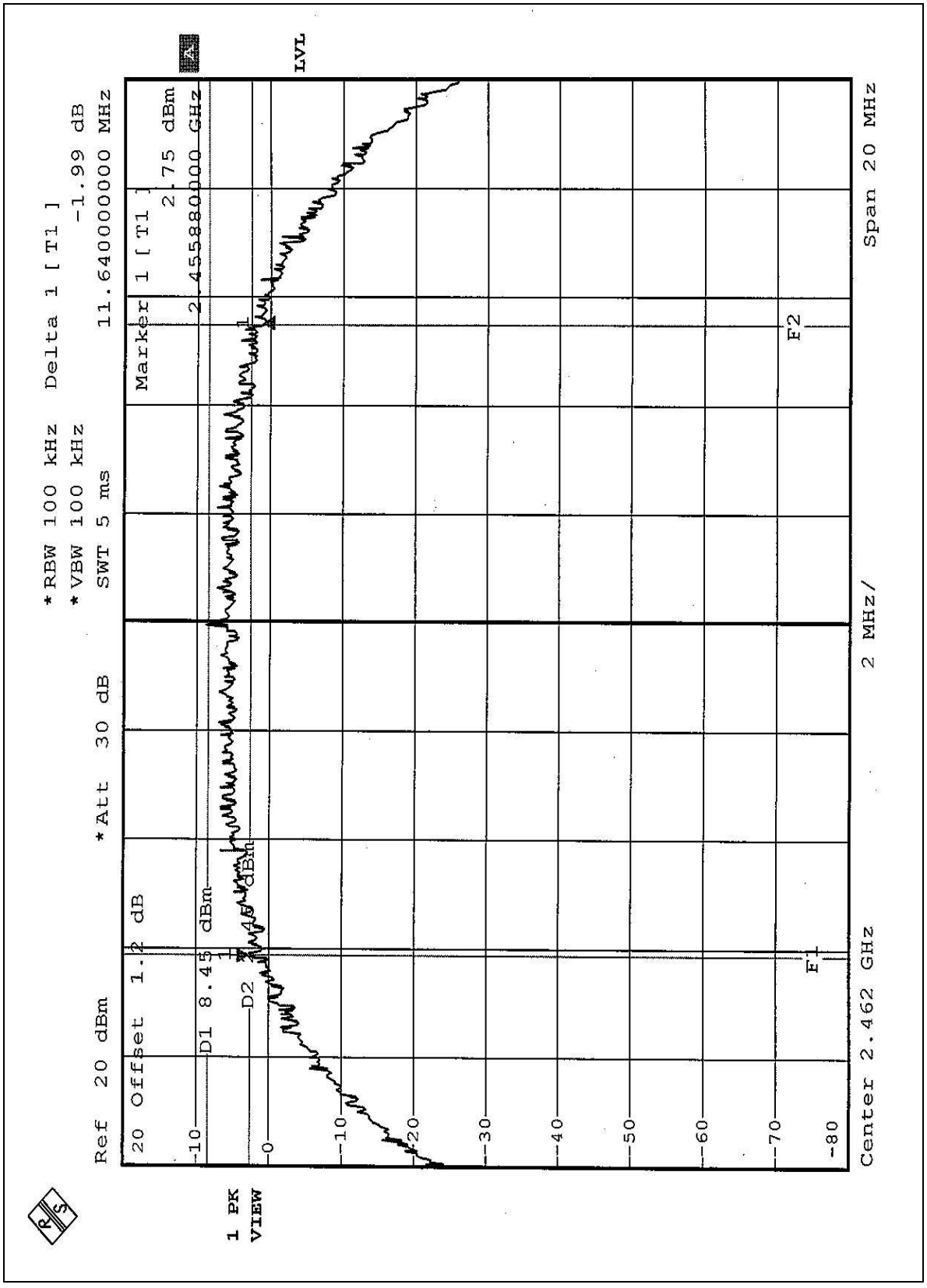
CH1


RBW 100 kHz
VBW 100 kHz
SWT 5 ms
Delta 1 [T1]
-0.26 dB
11.040000000 MHz
Marker 1 [T1]
3.90 dBm
2.406320000 GHz
Ref 20 dBm
Offset 1.2 dB
Att 30 dB
Center 2.412 GHz
2 MHz/
Span 20 MHz
F1
F2
1 PK
VIEW

CH6


RBW 100 kHz
VBW 100 kHz
SWT 5 ms
Delta 1 [T1]
2.04 dB
11.120000000 MHz
Att 30 dB
Marker 1 [T1]
2.37 dBm
2.431120000 GHz
LVL
Ref 20 dBm
20 Offset 1.2 dB
D1 9.87 dBm
D2 3.8 dBm
F1
F2
Center 2.437 GHz
2 MHz/
Span 20 MHz
1 PK
VIEW

CH11

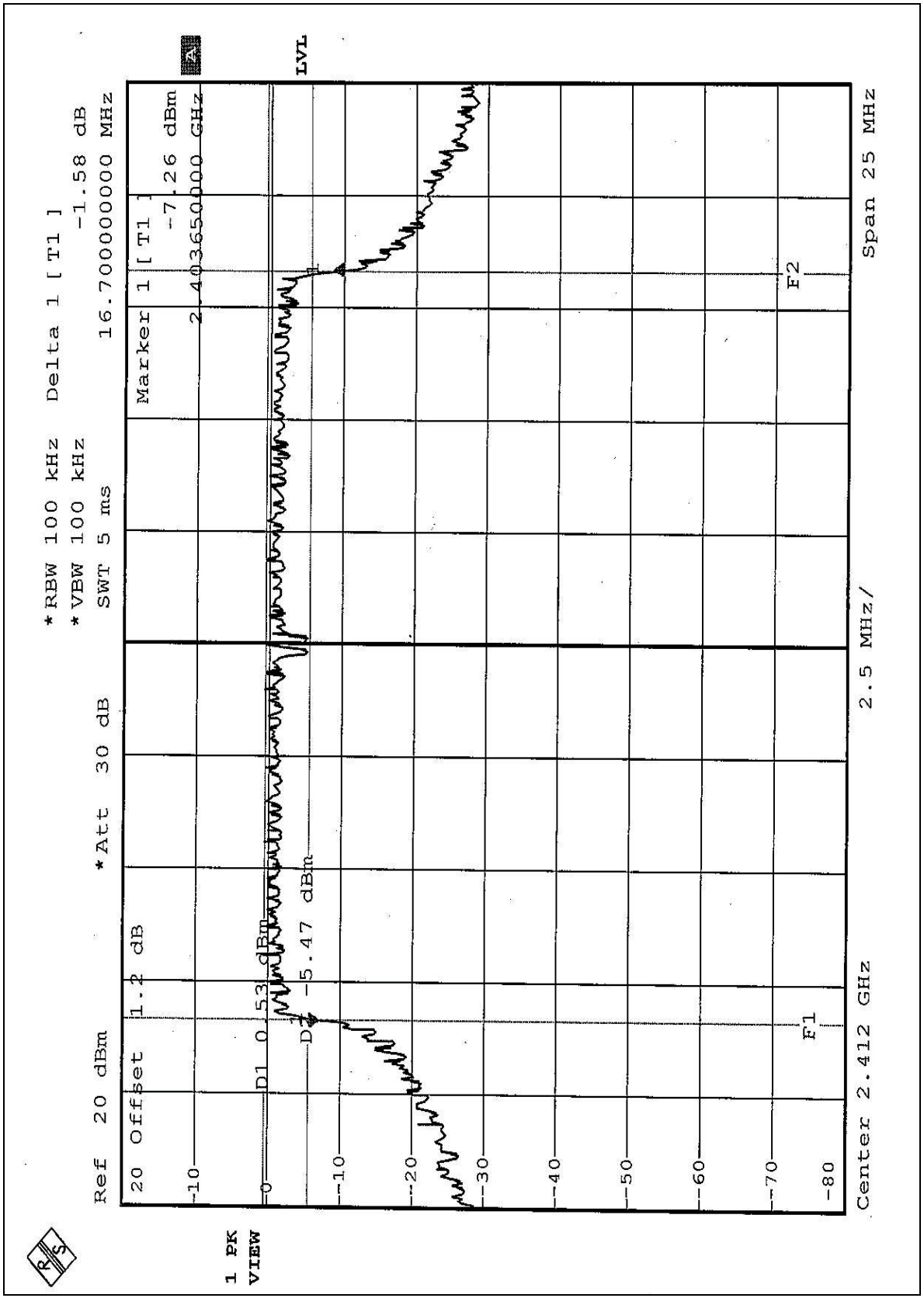

RBW 100 kHz
VBW 100 kHz
SWT 5 ms
Delta 1 [T1]
-1.99 dB
11.640000000 MHz
Marker 1 [T1]
2.75 dBm
2.455880000 GHz
Ref 20 dBm
Offset 1.2 dB
Att 30 dB
D1 8.45 dBm
D2
Center 2.462 GHz
2 MHz/
Span 20 MHz
F1
F2
LVL
1 PK
VIEW

4.3.8 TEST RESULTS (B)

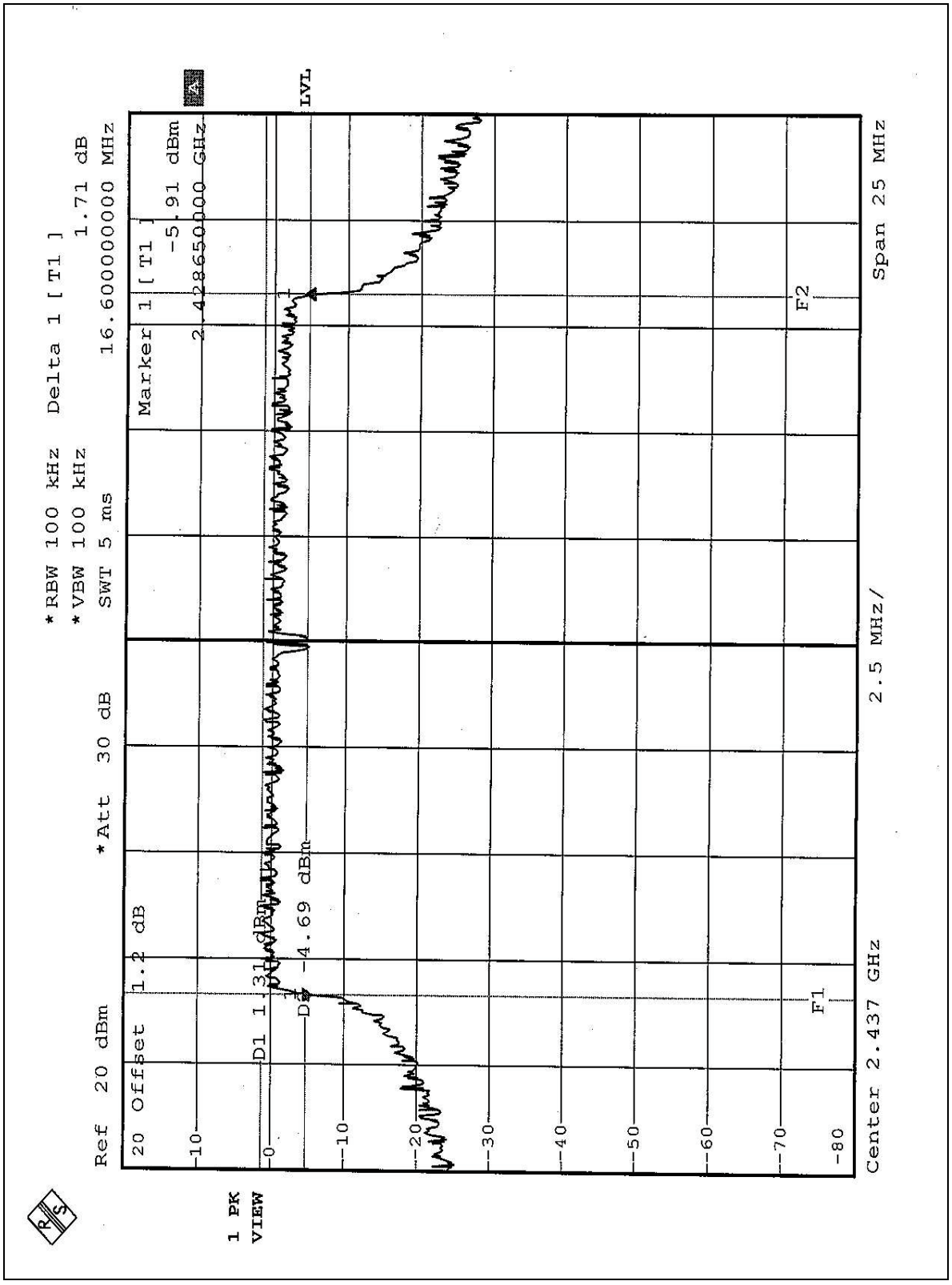
EUT	802.11a/b/g Wireless PCI Adapter	**MODEL**	DWL-AG520
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	21deg. C, 88%RH, 991hPa
TESTED BY: Hank Chung			

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	16.70	0.5	PASS
6	2437	16.60	0.5	PASS
11	2462	16.55	0.5	PASS

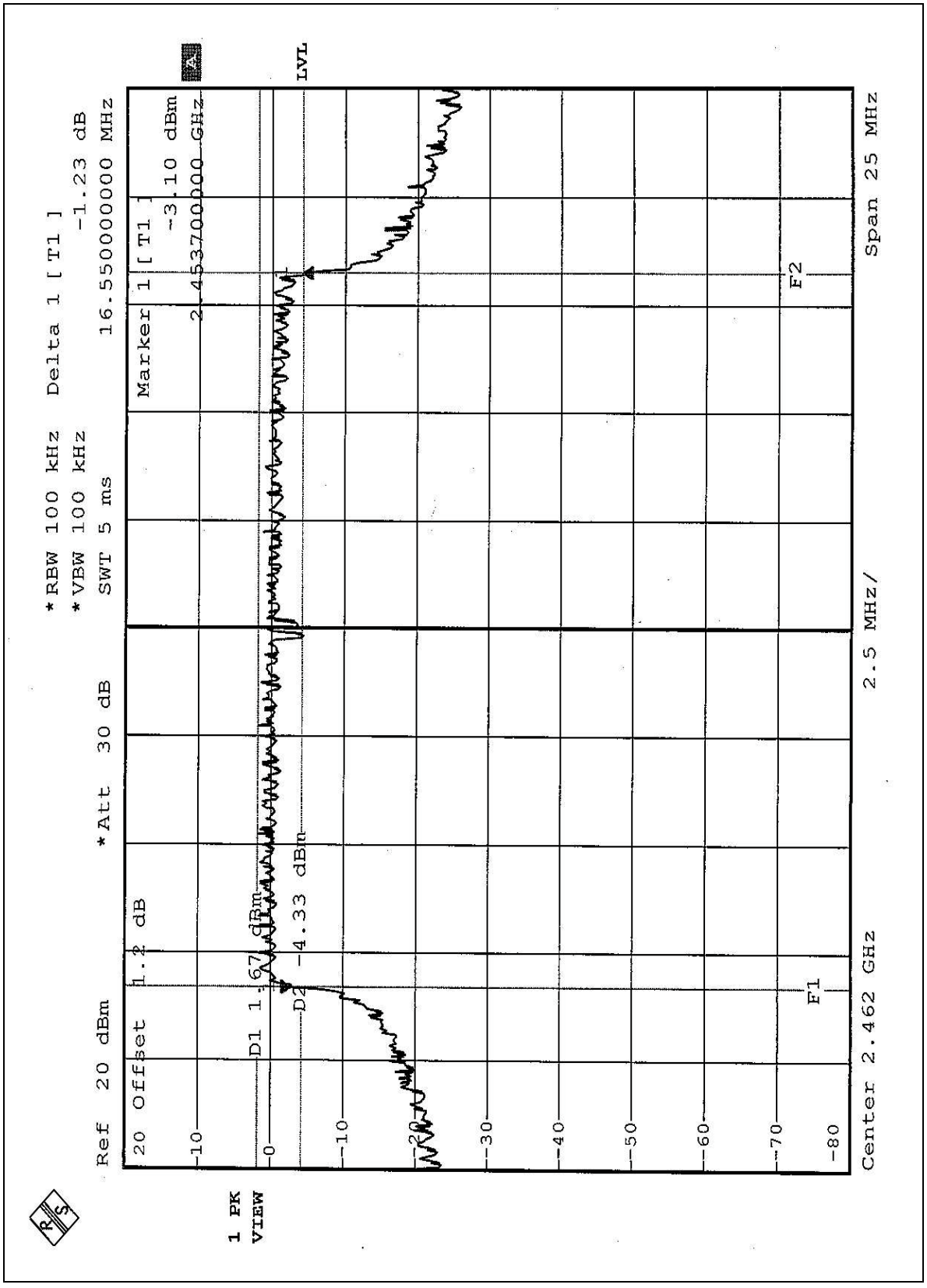
CH1


RBW 100 kHz
VBW 100 kHz
SWT 5 ms
Delta 1 [T1]
-1.58 dB
16.700000000 MHz
Marker 1 [T1]
-7.26 dBm
2.403650000 GHz
Ref 20 dBm
Offset 1.2 dB
Att 30 dB
D1 0.53 dBm
D2 -5.47 dBm
F1
F2
Center 2.412 GHz
2.5 MHz/
Span 25 MHz
1 PK VIEW
LVL

CH6


RBW 100 kHz
VBW 100 kHz
SWT 5 ms
Delta 1 [T1]
1.71 dB
16.600000000 MHz
Marker 1 [T1]
-5.91 dBm
2.428650000 GHz
Ref 20 dBm
Offset 1.2 dB
Att 30 dB
LVL
D1 1.31 dBm
D2 -4.69 dBm
F1
F2
Center 2.437 GHz
2.5 MHz/
Span 25 MHz
1 PK
VIEW

CH11

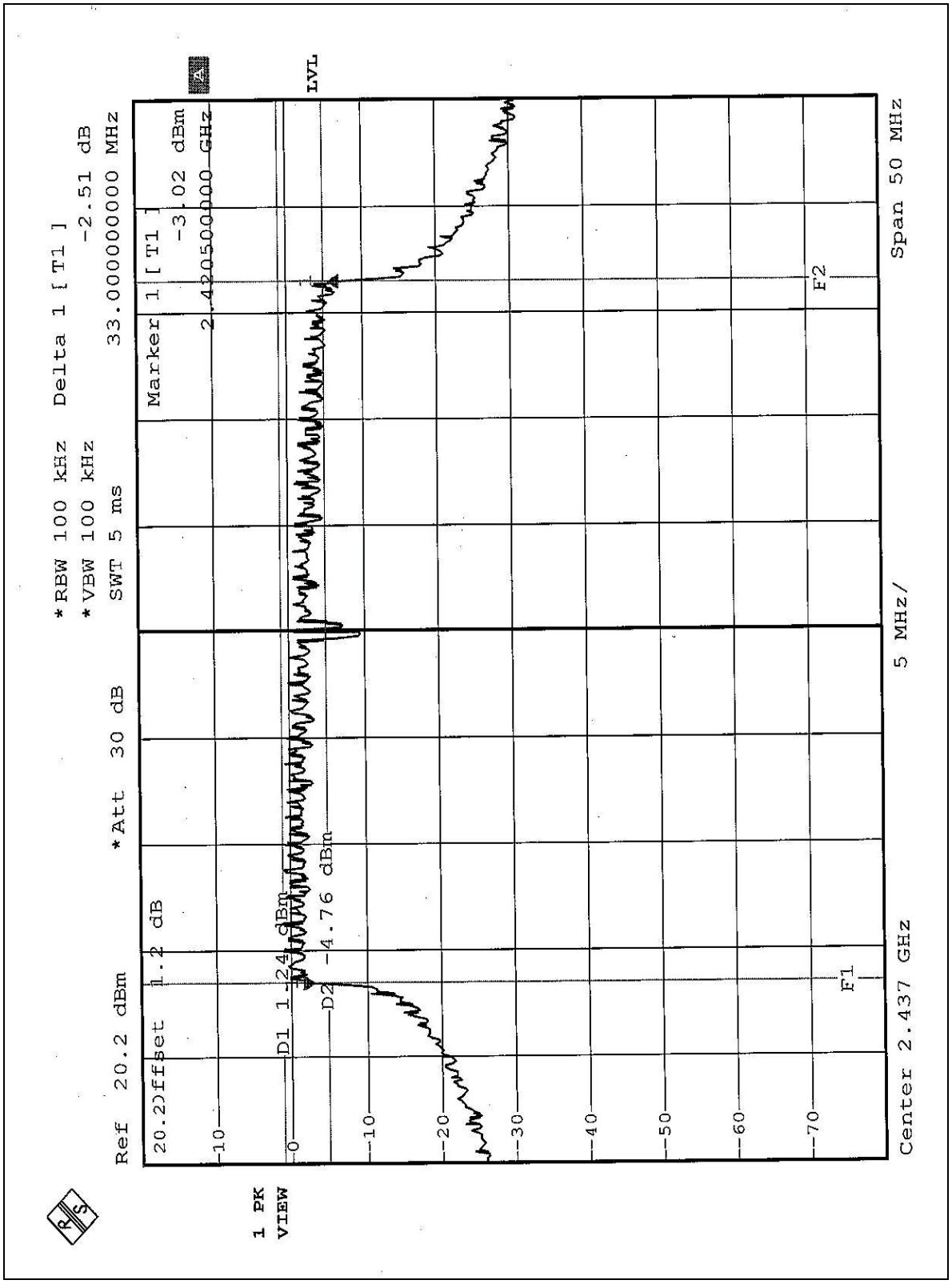

RBW 100 kHz
VBW 100 kHz
SWT 5 ms
Delta 1 [T1]
-1.23 dB
16.550000000 MHz
Marker 1 [T1]
-3.10 dBm
2.453700000 GHz
Ref 20 dBm
Offset 1.2 dB
Att 30 dB
D1 1.67 dBm
D2 -4.33 dBm
F1
F2
Center 2.462 GHz
2.5 MHz/
Span 25 MHz
1 PK
VIEW

4.3.9 TEST RESULTS (C)

EUT	802.11a/b/g Wireless PCI Adapter	**MODEL**	DWL-AG520
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	28deg. C, 64%RH, 991hPa
TESTED BY: Hank Chung			

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
6	2437	33.00	0.5	PASS

CH6


RBW 100 kHz
VBW 100 kHz
SWT 5 ms
Delta 1 [T1]
-2.51 dB
33.000000000 MHz
Marker 1 [T1]
-3.02 dBm
2.42050000 GHz
Ref 20.2 dBm
Att 30 dB
Offset 1.2 dB
20.2
10
0
10
20
30
40
50
60
70
D1 1.24 dBm
D2 -4.76 dBm
F1
F2
LVL
Center 2.437 GHz
5 MHz/
Span 50 MHz
1 PK
VIEW

4.4 MAXIMUM PEAK OUTPUT POWER

4.4.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

4.4.2 INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSEK30	100049	Aug. 12, 2004
R&S SIGNAL GENERATOR	SMP04	100011	May 28, 2004
TEKTRONIX OSCILLOSCOPE	TDS 220	B048470	Mar. 05, 2004
NARDA DETECTOR	4503A	FSCM99899	NA

NOTE:

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

.

4.4.1 TEST PROCEDURES

1.A detector was used on the output port of the EUT. An oscilloscope was used to read the response of the detector.

2.Replaced the EUT by the signal generator . The center frequency of the S.G was adjusted to the center frequency of the measured channel.

3.Adjusted the power to have the same reading on oscilloscope. Record the power level.

4.4.2 DEVIATION FROM TEST STANDARD

No deviation

4.4.3 TEST SETUP

4.4.4 EUT OPERATING CONDITIONS

Same as Item 4.3.6

4.4.3 TEST RESULTS (A)

EUT	802.11a/b/g Wireless PCI Adapter	MODEL	DWL-AG520
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	28deg.C, 56%RH, 991hPa
TESTED BY: Eric Lee			

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	18.10	30	PASS
6	2437	18.24	30	PASS
11	2462	18.22	30	PASS

4.4.4 TEST RESULTS (B)

EUT	802.11a/b/g Wireless PCI Adapter	MODEL	DWL-AG520
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	28deg.C, 56%RH, 991hPa
TESTED BY: Eric Lee			

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	18.11	30	PASS
6	2437	18.31	30	PASS
11	2462	18.36	30	PASS

4.4.5 TEST RESULTS (C)

EUT	802.11a/b/g Wireless PCI Adapter	MODEL	DWL-AG520
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	28deg.C, 56%RH, 991hPa
TESTED BY: Eric Lee			

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
6	2437	18.09	30	PASS

4.5 POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

4.5.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SPECTRUM ANALYZER	FSP 40	100035	April 14, 2004

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