FCC ID: KA2DWLG520A3

FCC TEST REPORT

REPORT NO.: RF920917R01
MODEL NO.: DWL-G520
RECEIVED: September 17, 2003
TESTED: September 17 ~ September 18, 2003

APPLICANT: D-Link Corporation
ADDRESS: No.8, Li-Hsin VII Road Science Based Industrial Park Hsin-Chu, Taiwan

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 :	2.4GHz 54Mbps PCI Card
MODEL NO. :	DWL-G520
BRAND NAME :	D-Link
APPLICANT :	D-Link Corporation
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 September 17, 2003 to September 18, 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: Wendy Liao , **DATE:** September. 23, 2003

Wendy Liao

APPROVED BY: for **DATE:** September. 23, 2003

Dr. Alan Lane

Manager

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 –15.84dB at 4.094MHz
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 –5.50dB at 712.87MHz
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	2.4GHz 54Mbps PCI Card
MODEL NO.	DWL-G520
POWER SUPPLY	3.3VDC from host equipment
MODULATION TYPE	DSSS, OFDM
TRANSFER RATE	Up to 54Mbps
FREQUENCY RANGE	2412MHz ~ 2462MHz
CHANNEL SPACING	5MHz
NUMBER OF CHANNEL	11
OUTPUT POWER	18.00dBm
ANTENNA TYPE	Dipole antenna with 2dBi gain
TEMPERATURE RANGE	0℃ ~ 55℃
DATA CABLE	NA
I/O PORTS	NA
ASSOCIATED DEVICES	NA

NOTE:

1. Fully compatible with the 802.11g standard to provide a wireless data rate of up to 54Mbps.
2. The EUT complies with IEEE 802.11g draft standards, and backward compatible with IEEE 802.11b products.
3. For more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3.2 DESCRIPTION OF TEST MODES

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, the worst case, 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 cases, were chosen for final test.

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a 2.4GHz 54Mbps PCI Card. 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)
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

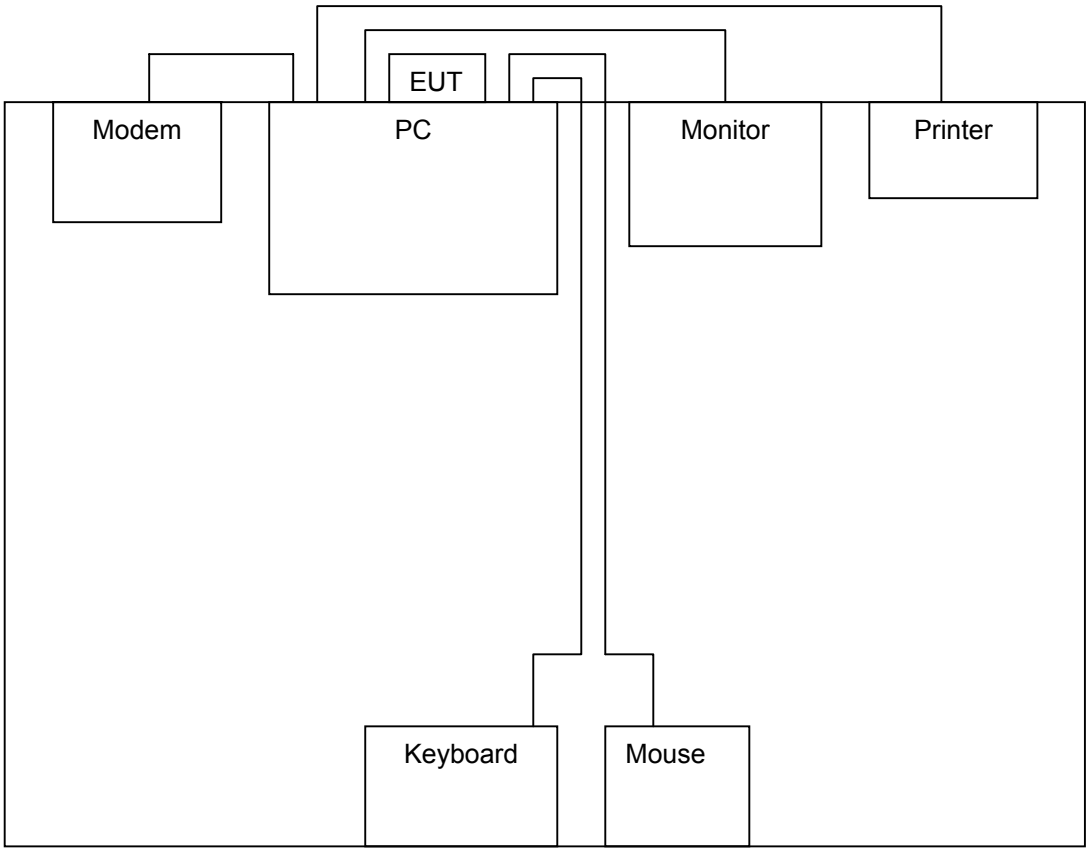
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	PERSONAL COMPUTER	HP	Brio BA410	SG12902766	FCC DoC Approved
2	COLOR MONITOR	ADI	CM100	026058T10200611 A	FCC DoC Approved
3	MODEM	ACEEX	1414	980020503	IFAXDM1414
4	PRINTER	EPSON	LQ-300+	DCGY017096	FCC DoC Approved
5	PS/2 KEYBOARD	FORWARD	FDA-104GA	FDKB8110111	F4ZDA-104G
6	USB MOUSE	Logitech	M-BB48	LZA00354277	DoC

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	1.2 m braid shielded wire, terminated with DB25 and DB9 connector via metallic frame, w/o core.
4	1.2m braid shielded wire, terminated with DB25 and Centronics connector via metallic frame, w/o core
5	1.5 m foil shielded wire, terminated with PS/2 connector via metallic frame, w/o core.
6	NA

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	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.

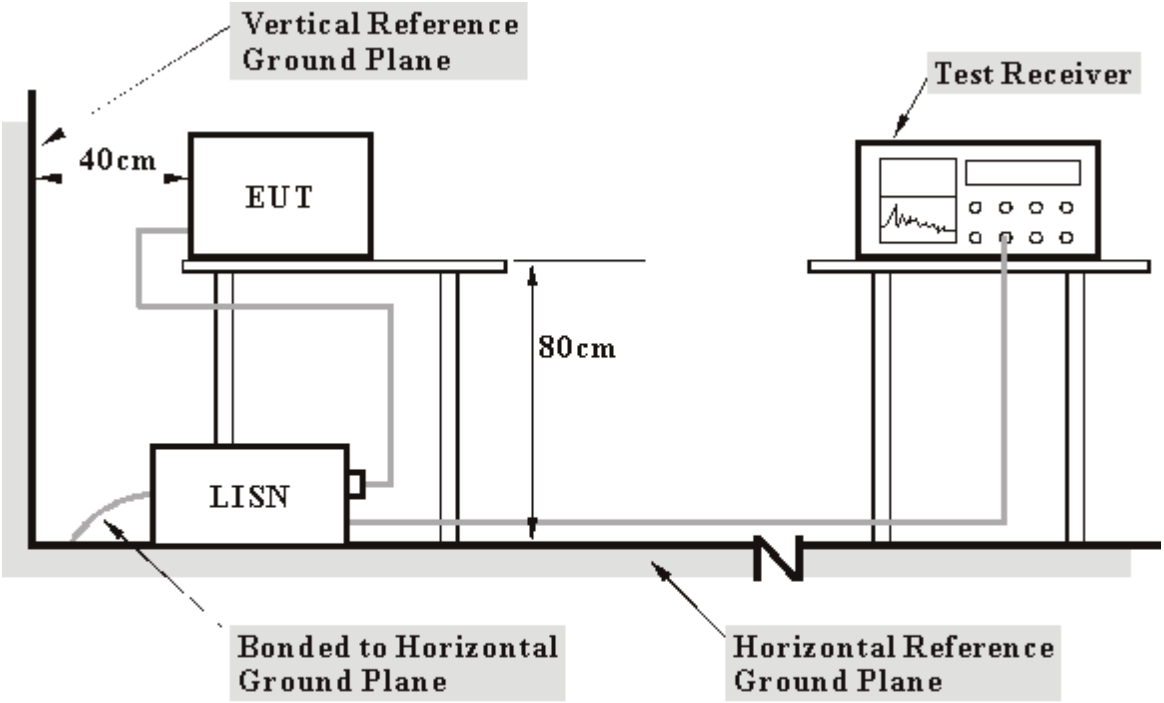
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

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

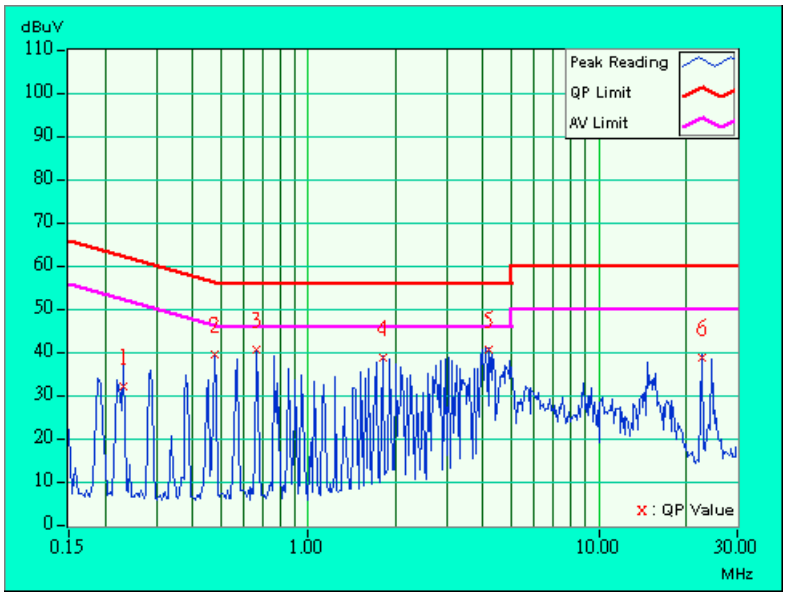
a. Connected the EUT to a computer system placed on a testing table.
b. The computer system ran a test program to enable EUT under transmission/receiving condition continuously at specific channel frequency.
c. The computer system sent "H" messages to its screen.
d. The computer system sent “H” messages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

4.1.7 TEST RESULTS

EUT	2.4GHz 54Mbps PCI Card	**MODEL**	DWL-G520
MODE	Channel 01	**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.	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	0.232	0.06	31.38	-	31.44	-	62.38	52.38	-30.94	-
2	0.474	0.07	38.72	-	38.79	-	56.44	46.44	-17.65	-
3	0.666	0.10	39.86	-	39.96	-	56.00	46.00	-16.04	-
4	1.809	0.18	38.21	-	38.39	-	56.00	46.00	-17.61	-
5	4.191	0.23	39.79	-	40.02	-	56.00	46.00	-15.98	-
6	22.570	0.77	38.19	-	38.96	-	60.00	50.00	-21.04	-

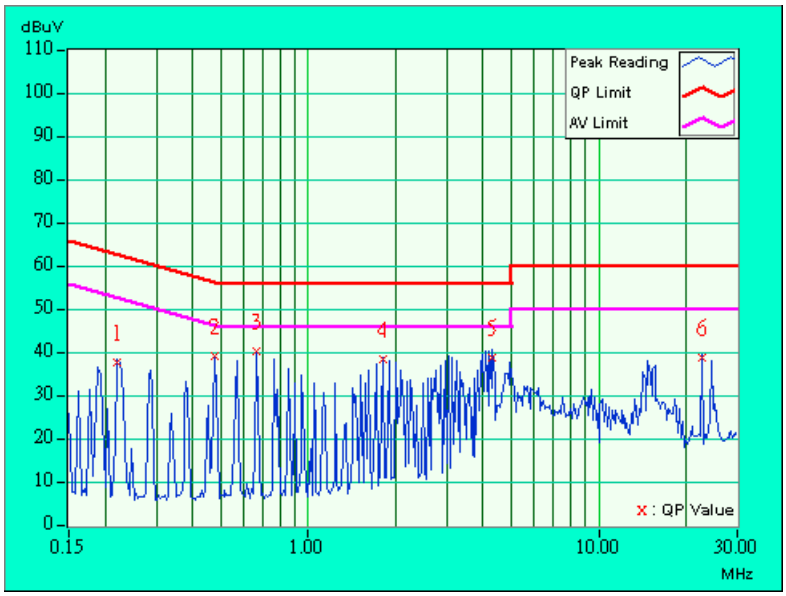
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	2.4GHz 54Mbps PCI Card	**MODEL**	DWL-G520
MODE	Channel 01	**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.	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	0.220	0.05	37.28	-	37.33	-	62.81	52.81	-25.48	-
2	0.474	0.06	38.64	-	38.70	-	56.44	46.44	-17.74	-
3	0.666	0.10	39.62	-	39.72	-	56.00	46.00	-16.28	-
4	1.809	0.18	37.95	-	38.13	-	56.00	46.00	-17.87	-
5	4.285	0.22	38.43	-	38.65	-	56.00	46.00	-17.35	-
6	22.570	0.62	38.15	-	38.77	-	60.00	50.00	-21.23	-

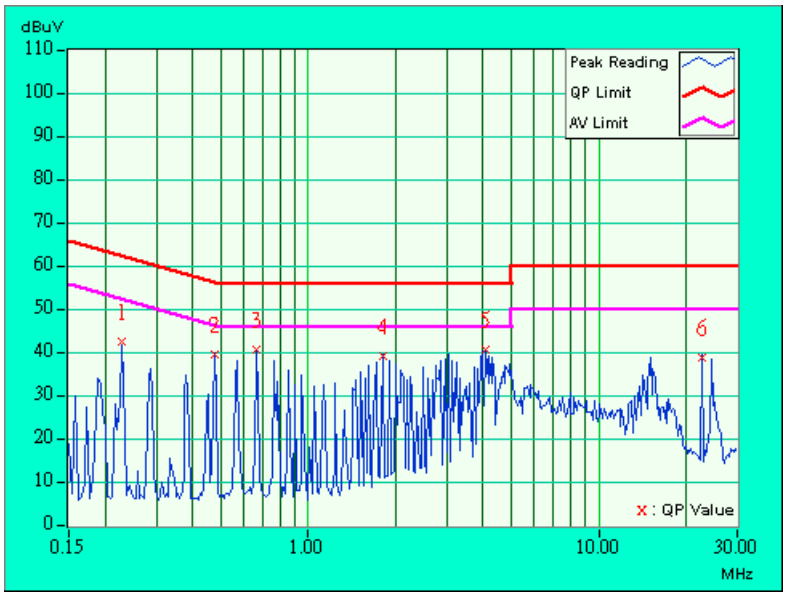
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	2.4GHz 54Mbps PCI Card	**MODEL**	DWL-G520
MODE	Channel 06	**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.	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	0.228	0.06	41.65	-	41.71	-	62.52	52.52	-20.81	-
2	0.474	0.07	38.80	-	38.87	-	56.44	46.44	-17.57	-
3	0.666	0.10	39.84	-	39.94	-	56.00	46.00	-16.06	-
4	1.809	0.18	38.36	-	38.54	-	56.00	46.00	-17.46	-
5	4.094	0.22	39.94	-	40.16	-	56.00	46.00	-15.84	-
6	22.570	0.77	38.07	-	38.84	-	60.00	50.00	-21.16	-

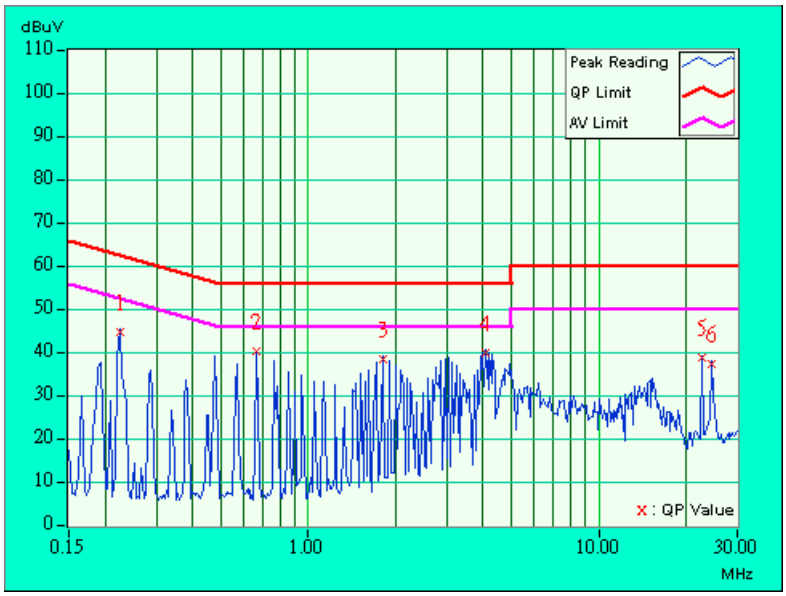
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	2.4GHz 54Mbps PCI Card	**MODEL**	DWL-G520
MODE	Channel 06	**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.	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	0.224	0.05	44.13	-	44.18	-	62.66	52.66	-18.48	-
2	0.666	0.10	39.68	-	39.78	-	56.00	46.00	-16.22	-
3	1.809	0.18	37.91	-	38.09	-	56.00	46.00	-17.91	-
4	4.094	0.21	39.46	-	39.67	-	56.00	46.00	-16.33	-
5	22.570	0.62	38.13	-	38.75	-	60.00	50.00	-21.25	-
6	24.578	0.71	36.74	-	37.45	-	60.00	50.00	-22.55	-

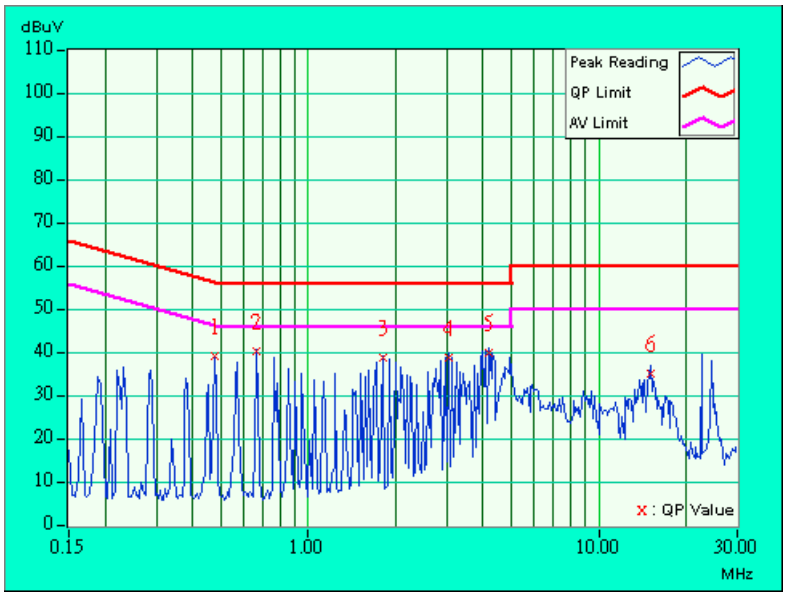
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	2.4GHz 54Mbps PCI Card	**MODEL**	DWL-G520
MODE	Channel 11	**6dB BANDWIDTH**	9kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**PHASE**	Line (L)
ENVIRONMENTAL CONDITIONS	30deg. C, 60%RH, 991hPa	**TESTED BY**: Haradaway Lee	

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	0.474	0.07	38.80	-	38.87	-	56.44	46.44	-17.57	-
2	0.666	0.10	39.82	-	39.92	-	56.00	46.00	-16.08	-
3	1.809	0.18	38.40	-	38.58	-	56.00	46.00	-17.42	-
4	3.047	0.20	38.41	-	38.61	-	56.00	46.00	-17.39	-
5	4.191	0.23	39.55	-	39.78	-	56.00	46.00	-16.22	-
6	15.043	0.56	34.55	-	35.11	-	60.00	50.00	-24.89	-

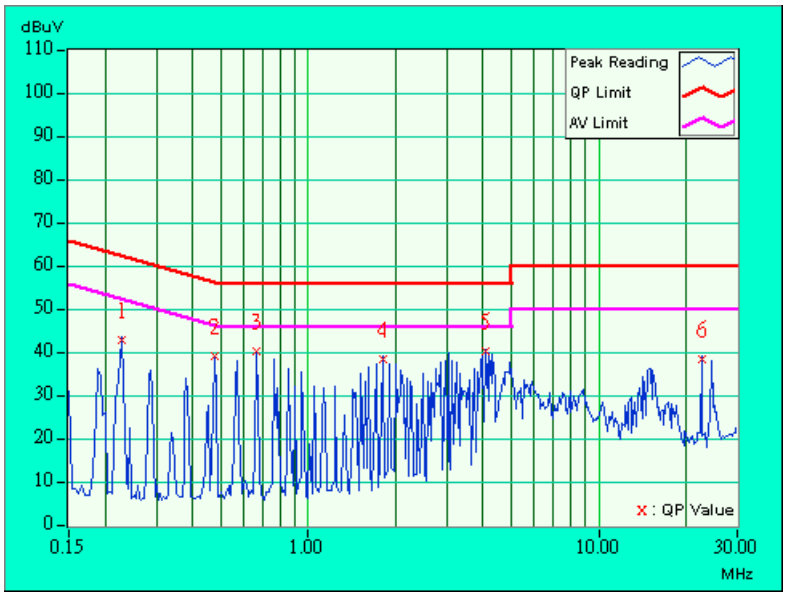
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	2.4GHz 54Mbps PCI Card	**MODEL**	DWL-G520
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.	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	0.228	0.05	42.20	-	42.25	-	62.52	52.52	-20.27	-
2	0.474	0.06	38.58	-	38.64	-	56.44	46.44	-17.80	-
3	0.666	0.10	39.72	-	39.82	-	56.00	46.00	-16.18	-
4	1.809	0.18	37.97	-	38.15	-	56.00	46.00	-17.85	-
5	4.094	0.21	39.70	-	39.91	-	56.00	46.00	-16.09	-
6	22.570	0.62	38.03	-	38.65	-	60.00	50.00	-21.35	-

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 SCHWARZBECK Tunable Dipole Antenna	VHBA 9123 UHA 9105	459 977	Nov. 22, 2003
* 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_V 5.14	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.

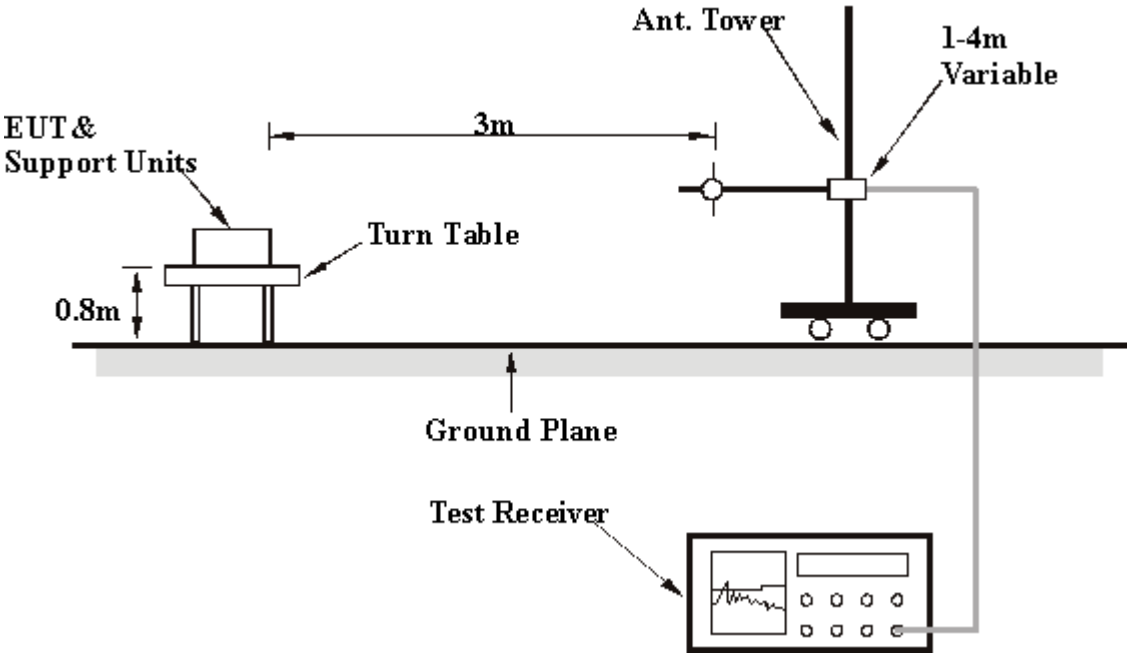
NOTE:

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	2.4GHz 54Mbps PCI Card	**MODEL**	DWL-G520
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	85.97	25.5 QP	40.00	-14.50	1.02 H	211	16.50	9.00
2	225.00	25.3 QP	46.00	-20.70	1.23 H	131	13.10	12.20
3	272.18	27.7 QP	46.00	-18.30	1.29 H	346	12.50	15.20
4	299.65	32.1 QP	46.00	-13.90	1.17 H	289	16.50	15.70
5	501.30	40.0 QP	46.00	-6.00	1.03 H	36	19.90	20.10
6	624.11	37.5 QP	46.00	-8.50	1.30 H	347	15.10	22.40
7	665.95	35.1 QP	46.00	-10.90	1.61 H	0	12.60	22.50
8	673.79	33.2 QP	46.00	-12.80	1.02 H	1	10.60	22.60
9	712.85	33.7 QP	46.00	-12.30	1.04 H	169	10.70	23.00
10	893.20	38.2 QP	46.00	-7.80	1.67 H	40	13.80	24.40

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.

EUT	2.4GHz 54Mbps PCI Card	**MODEL**	DWL-G520
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	62.80	28.7 QP	40.00	-11.30	1.13 V	291	20.60	8.10
2	125.30	26.5 QP	43.50	-17.00	1.31 V	69	13.70	12.80
3	144.02	30.5 QP	43.50	-13.00	1.30 V	205	18.70	11.80
4	216.03	24.9 QP	46.00	-21.10	1.00 V	11	13.30	11.70
5	225.01	32.9 QP	46.00	-13.10	1.72 V	167	20.70	12.20
6	240.04	25.1 QP	46.00	-20.90	1.14 V	334	12.00	13.00
7	250.13	37.4 QP	46.00	-8.60	1.06 V	198	23.70	13.60
8	375.01	34.4 QP	46.00	-11.60	1.06 V	349	17.10	17.30
9	501.30	36.6 QP	46.00	-9.40	1.55 V	117	16.50	20.10
10	528.11	39.1 QP	46.00	-6.90	1.78 V	200	18.60	20.50
11	624.11	34.8 QP	46.00	-11.20	1.88 V	62	12.40	22.40
12	665.95	36.8 QP	46.00	-9.20	1.65 V	33	14.30	22.50
13	712.87	40.5 QP	46.00	-5.50	1.45 V	356	17.50	23.00
14	893.20	37.0 QP	46.00	-9.00	2.00 V	223	12.60	24.40

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.

EUT	2.4GHz 54Mbps PCI Card	**MODEL**	DWL-G520
MODE	CCK	**FREQUENCY RANGE**	Above 1000MHz
CHANNEL	Channel 01		
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	2390.00	50.7 PK	74.00	-23.30	1.00 H	216	21.10	29.60
2	*2412.00	108.9 PK			1.00 H	216	79.20	29.70
2	*2412.00	101.6 AV			1.00 H	216	71.90	29.70
3	4824.00	46.0 PK	74.00	-28.00	1.45 H	247	10.70	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	50.2 PK	74.00	-23.80	1.08 V	203	20.60	29.60
2	*2412.00	108.4 PK			1.08 V	203	78.80	29.70
2	*2412.00	101.8 AV			1.08 V	203	72.10	29.70
3	4824.00	46.6 PK	74.00	-27.40	1.06 V	45	11.30	35.30

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.
5. “ * “ : Fundamental frequency

EUT	2.4GHz 54Mbps PCI Card	**MODEL**	DWL-G520
MODE	CCK	**FREQUENCY RANGE**	Above 1000MHz
CHANNEL	Channel 06		
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	*2437.00	111.6 PK			1.30 H	150	81.90	29.70
1	*2437.00	104.2 AV			1.30 H	150	74.40	29.70
2	4874.00	49.6 PK	74.00	-24.40	1.10 H	165	14.20	35.50

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	109.7 PK			1.13 V	122	80.00	29.70
1	*2437.00	102.7 AV			1.13 V	122	73.00	29.70
2	4874.00	51.4 PK	74.00	-22.60	1.14 V	35	16.00	35.50
2	4874.00	36.8 AV	54.00	-17.20	1.14 V	35	1.30	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	2.4GHz 54Mbps PCI Card	**MODEL**	DWL-G520
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 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	108.2 PK			1.32 H	154	78.40	29.80
1	*2462.00	101.1 AV			1.32 H	154	71.20	29.80
2	2483.50	50.0 PK	74.00	-24.00	1.32 H	154	20.10	29.90
3	4924.00	47.1 PK	74.00	-26.90	1.31 H	144	11.50	35.70

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	109.5 PK			1.00 V	216	79.70	29.80
1	*2462.00	102.1 AV			1.00 V	216	72.30	29.80
2	2483.50	51.3 PK	74.00	-22.70	1.00 V	216	21.40	29.90
2	2483.50	43.9 AV	54.00	-10.10	1.00 V	216	14.00	29.90
3	4924.00	46.1 PK	74.00	-27.90	1.23 V	352	10.50	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	2.4GHz 54Mbps PCI Card	**MODEL**	DWL-G520
MODE	OFDM	**FREQUENCY RANGE**	Above 1000MHz
CHANNEL	Channel 01		
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	2390.00	60.4 PK	74.00	-13.60	1.00 H	216	30.80	29.60
1	2390.00	51.5 AV	54.00	-2.50	1.00 H	216	21.90	29.60
2	*2412.00	107.0 PK			1.00 H	216	77.30	29.70
2	*2412.00	98.1 AV			1.00 H	216	68.50	29.70
3	4824.00	45.8 PK	74.00	-28.20	1.23 H	247	10.50	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	59.0 PK	74.00	-15.00	1.00 V	205	29.40	29.60
1	2390.00	50.3 AV	54.00	-3.70	1.00 V	205	20.70	29.60
2	*2412.00	105.6 PK			1.00 V	205	76.00	29.70
2	*2412.00	96.9 AV			1.00 V	205	67.20	29.70
3	4824.00	46.6 PK	74.00	-27.40	1.08 V	324	11.30	35.30

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.
5. “ * “ : Fundamental frequency

EUT	2.4GHz 54Mbps PCI Card	**MODEL**	DWL-G520
MODE	OFDM	**FREQUENCY RANGE**	Above 1000MHz
CHANNEL	Channel 06		
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	*2437.00	106.6 PK			1.30 H	146	76.90	29.70
1	*2437.00	97.9 AV			1.30 H	146	68.10	29.70
2	4874.00	46.7 PK	74.00	-27.30	1.06 H	89	11.20	35.50

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	107.2 PK			1.13 V	123	77.40	29.70
1	*2437.00	97.9 AV			1.13 V	123	68.20	29.70
2	4874.00	46.1 PK	74.00	-27.90	1.00 V	360	10.60	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	2.4GHz 54Mbps PCI Card	**MODEL**	DWL-G520
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 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	105.5 PK			1.32 H	149	75.60	29.80
1	*2462.00	96.4 AV			1.32 H	149	66.60	29.80
2	2483.50	59.3 PK	74.00	-14.70	1.32 H	149	29.40	29.90
2	2483.50	50.2 AV	54.00	-3.80	1.32 H	149	20.30	29.90
3	4924.00	45.4 PK	74.00	-28.60	1.56 H	147	9.80	35.70

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	105.9 PK			1.03 V	158	76.10	29.80
1	*2462.00	96.6 AV			1.03 V	158	66.80	29.80
2	2483.50	59.7 PK	74.00	-14.30	1.03 V	158	29.80	29.90
2	2483.50	50.4 AV	54.00	-3.60	1.03 V	158	20.50	29.90
3	4924.00	45.8 PK	74.00	-28.20	1.00 V	215	10.10	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.

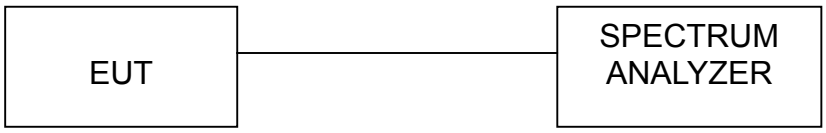
4.3.3 TEST PROCEDURE

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



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

4.3.6 EUT OPERATING CONDITIONS

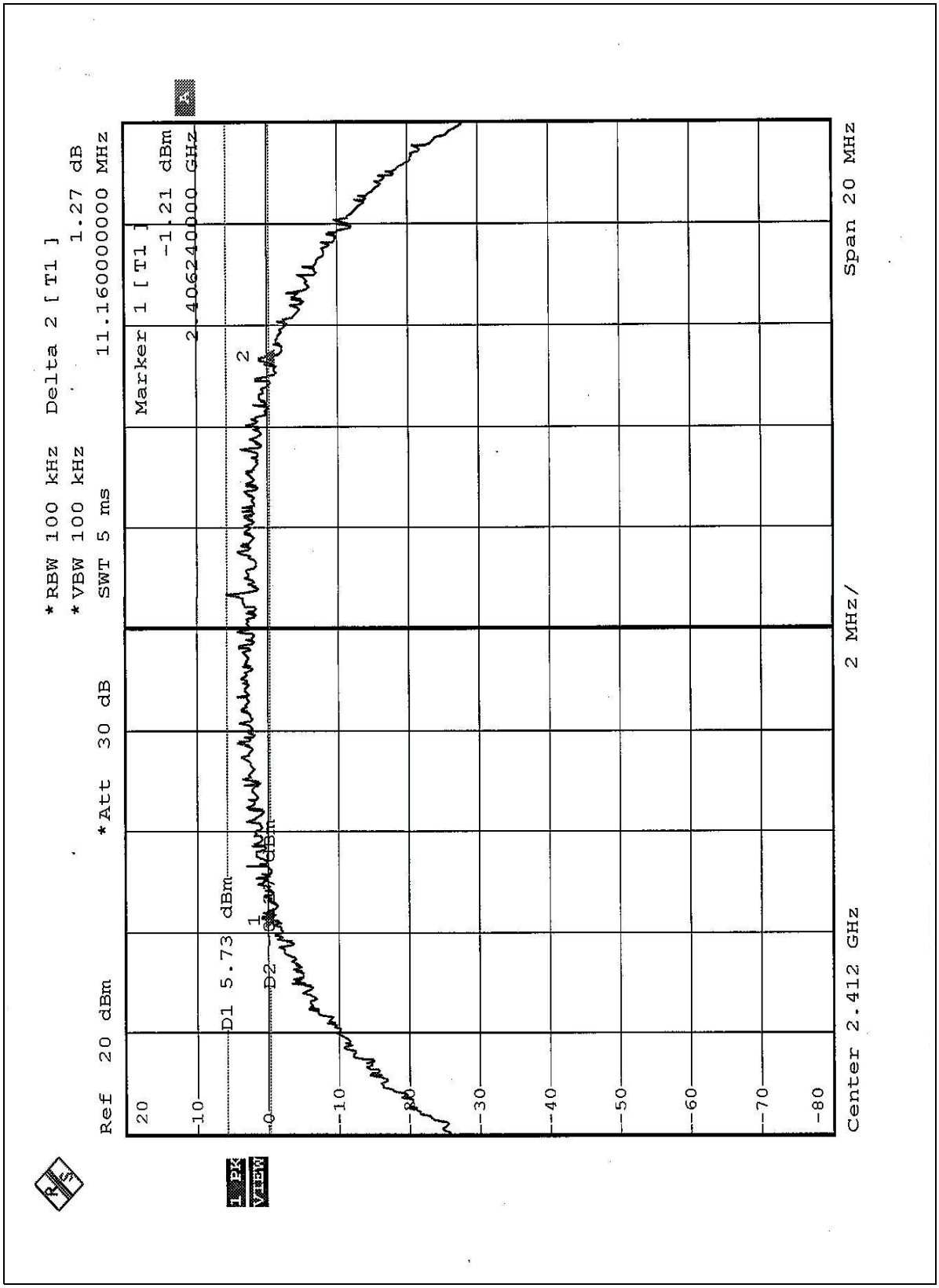
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.3.7 TEST RESULTS

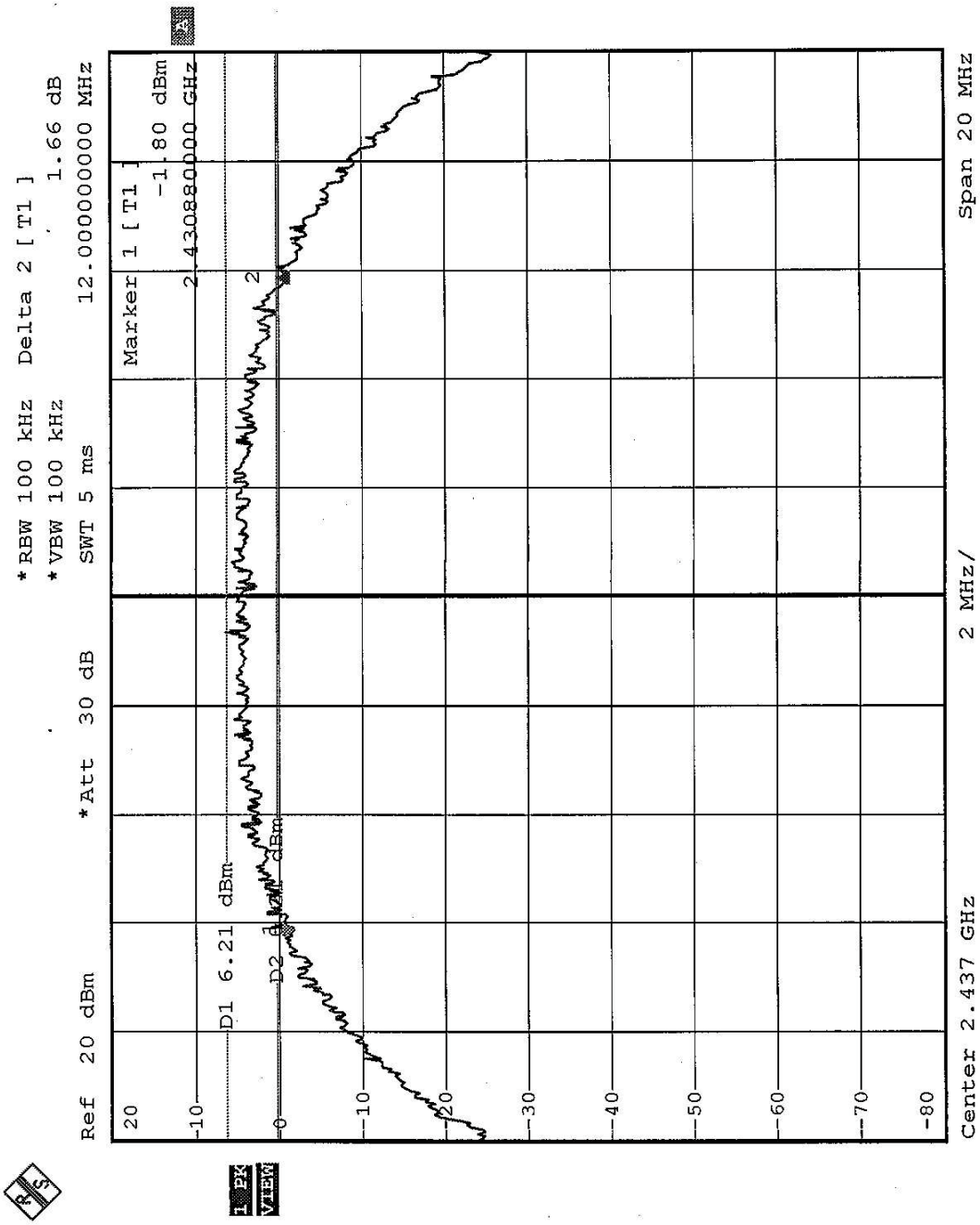
EUT	2.4GHz 54Mbps PCI Card	**MODEL**	DWL-G520
MODE	CCK	**ENVIRONMENTAL CONDITIONS**	29deg. C, 58%RH, 991hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**TESTED BY**: Steven Lu	

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	11.16	0.5	PASS
6	2437	12.00	0.5	PASS
11	2462	12.16	0.5	PASS

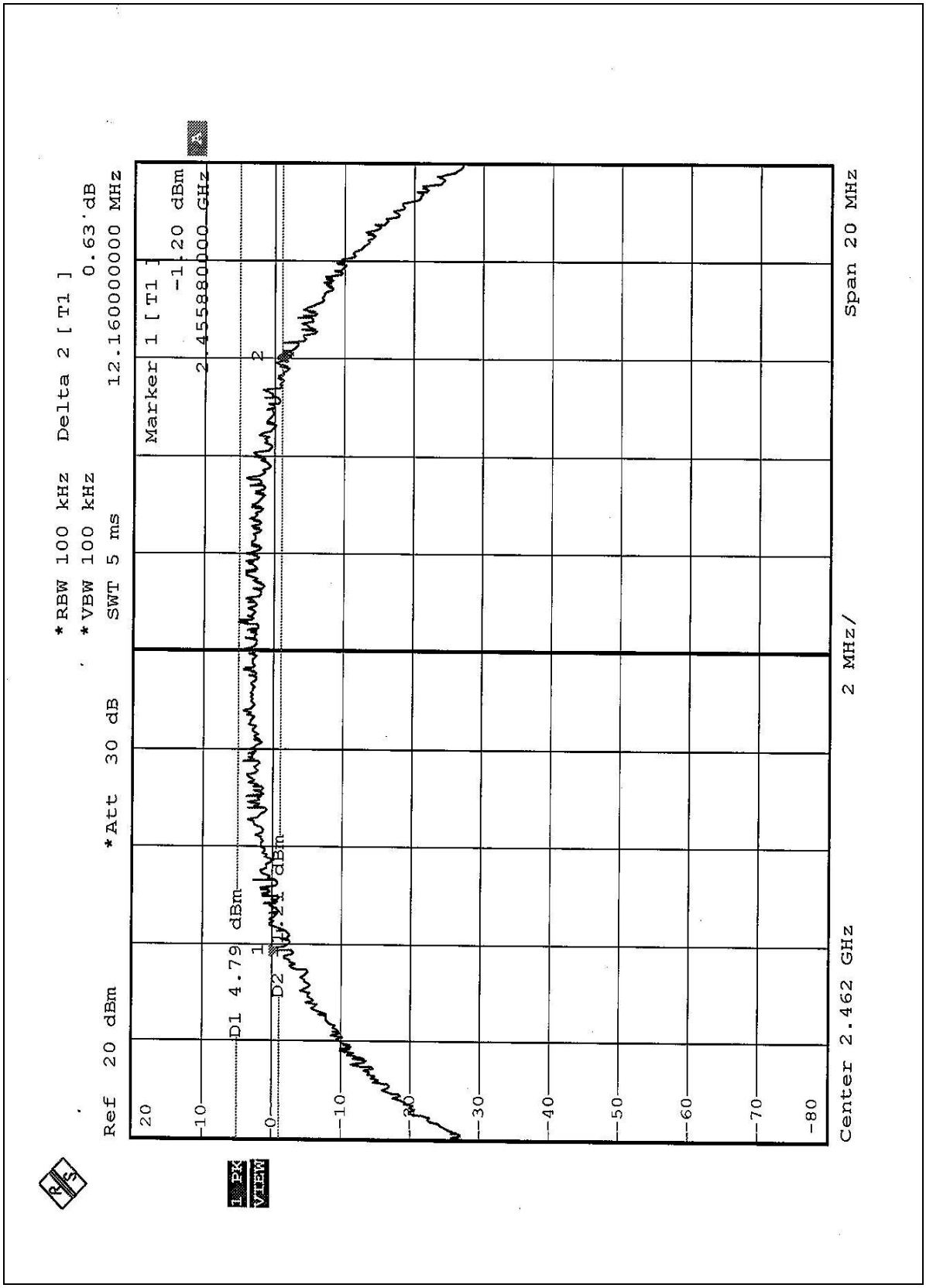
CH1


Ref 20 dBm
*Att 30 dB
SWT 5 ms
*RBW 100 kHz
*VBW 100 kHz
Delta 2 [T1]
1.27 dB
11.160000000 MHz
Marker 1 [T1]
-1.21 dBm
2.406240000 GHz
D1 5.73 dBm
D2
Center 2.412 GHz
2 MHz/
Span 20 MHz
1 PK
VIEW

CH6


Ref 20 dBm
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 5 ms
Delta 2 [T1]
1.66 dB
12.00000000 MHz
Marker 1 [T1]
-1.80 dBm
2.43080000 GHz
D1 6.21 dBm
D2 dBm
Center 2.437 GHz
2 MHz/
Span 20 MHz

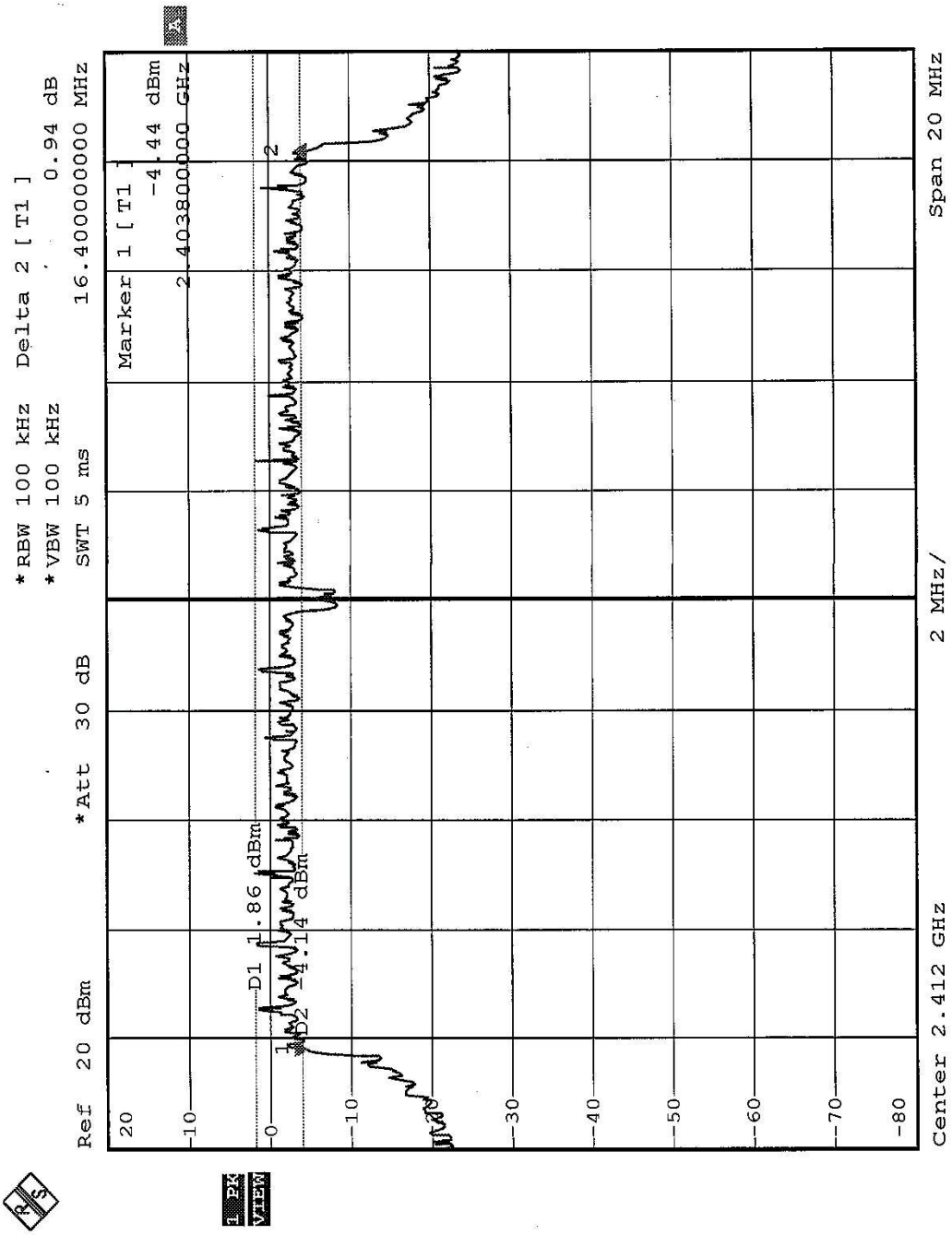
CH11


Ref 20 dBm
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 5 ms
Delta 2 [T1]
0.63 dB
12.160000000 MHz
D1 4.79 dBm
D2 dBm
Marker 1 [T1]
-1.20 dBm
2.455880000 GHz
Center 2.462 GHz
2 MHz/
Span 20 MHz

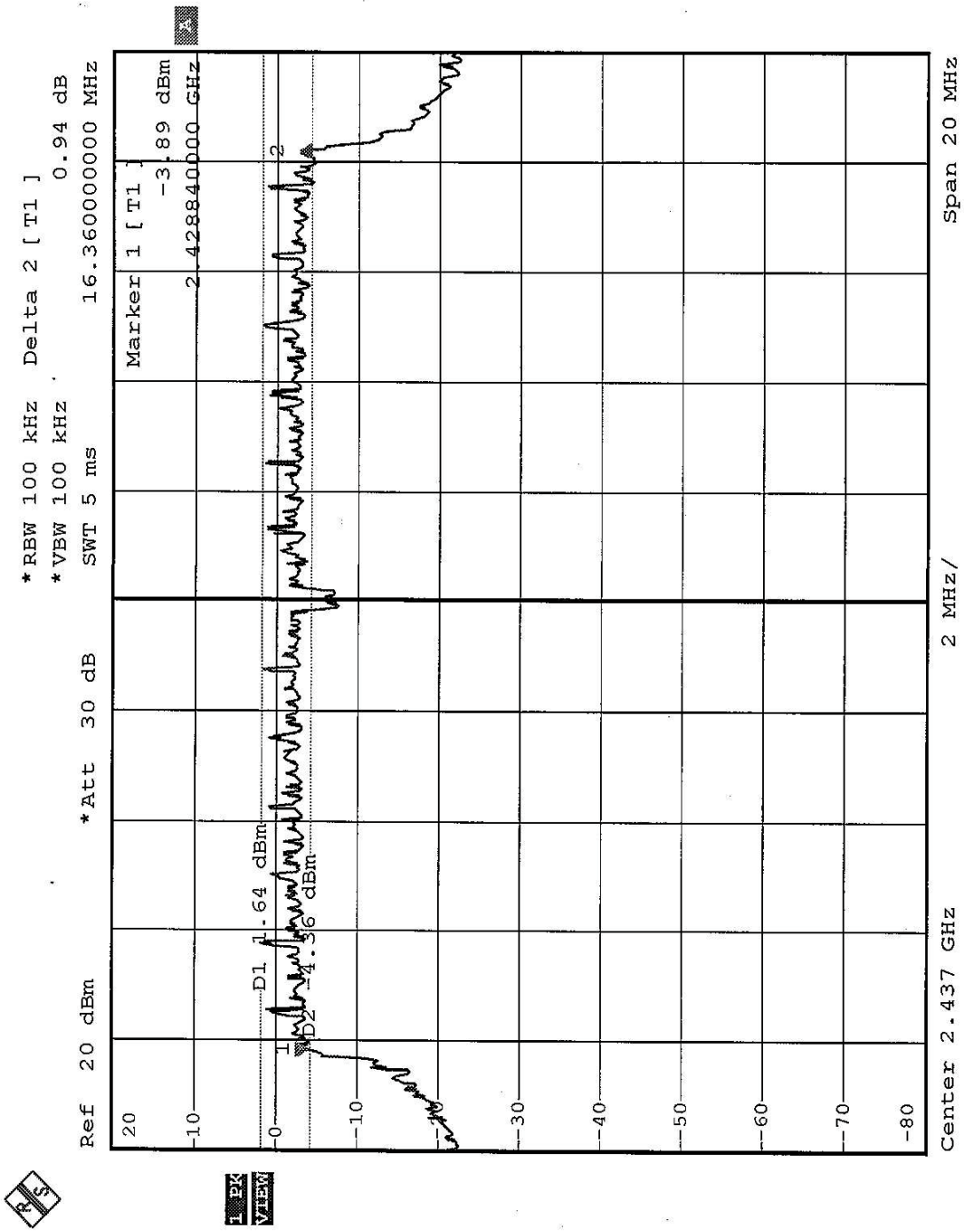
EUT	2.4GHz 54Mbps PCI Card	**MODEL**	DWL-G520
MODE	OFDM	**ENVIRONMENTAL CONDITIONS**	29deg. C, 60%RH, 991hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**TESTED BY**: Steven Lu	

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	16.40	0.5	PASS
6	2437	16.36	0.5	PASS
11	2462	16.40	0.5	PASS

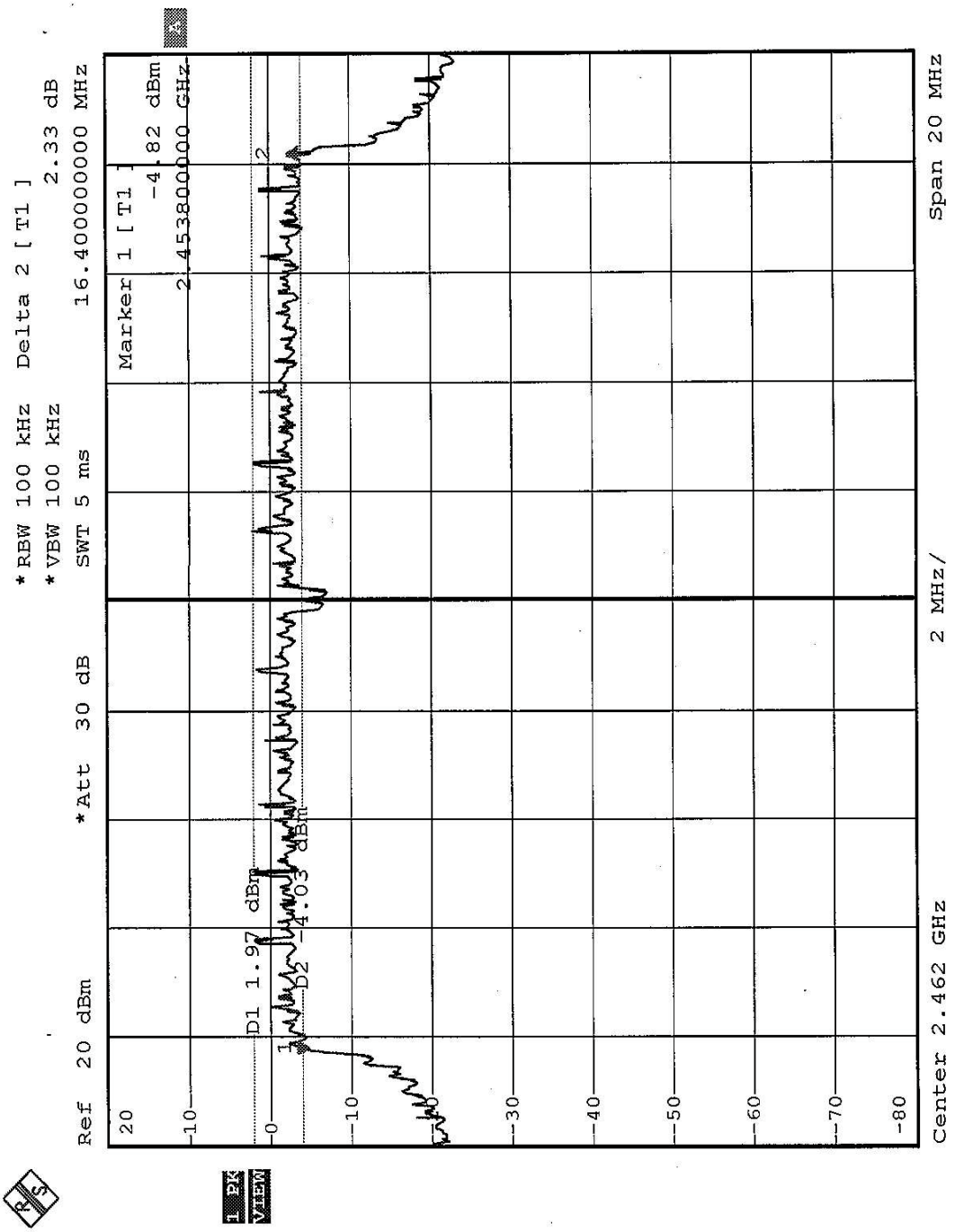
CH1


Ref 20 dBm
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 5 ms
Delta 2 [T1]
0.94 dB
16.400000000 MHz
Marker 1 [T1]
-4.44 dBm
2.403800000 GHz
D1 1.86 dBm
D2 -1.14 dBm
1 PK VIEW
Center 2.412 GHz
2 MHz/
Span 20 MHz

CH6


Ref 20 dBm
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 5 ms
Delta 2 [T1]
0.94 dB
16.360000000 MHz
Marker 1 [T1]
-3.89 dBm
2.428840000 GHz
D1 1.64 dBm
D2 -4.36 dBm
Center 2.437 GHz
2 MHz/
Span 20 MHz
1 PK
VIEW

CH11


Ref 20 dBm
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 5 ms
Delta 2 [T1]
2.33 dB
16.400000000 MHz
Marker 1 [T1]
-4.82 dBm
2.453800000 GHz
D1 1.97 dBm
D2 -4.03 dBm
Center 2.462 GHz
2 MHz/
Span 20 MHz

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 TEST 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.

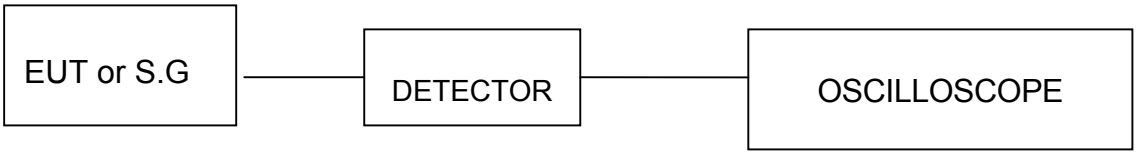
4.4.3 TEST PROCEDURES

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.

4.4.4 DEVIATION FROM TEST STANDARD

No deviation

4.4.5 TEST SETUP



4.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6

4.4.7 TEST RESULTS

EUT	2.4GHz 54Mbps PCI Card	**MODEL**	DWL-G520
MODE	CCK	**ENVIRONMENTAL CONDITIONS**	29deg. C, 58%RH, 991hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**TESTED BY**: Steven Lu	

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	16.20	30	PASS
6	2437	17.50	30	PASS
11	2462	16.25	30	PASS

EUT	2.4GHz 54Mbps PCI Card	**MODEL**	DWL-G520
MODE	OFDM	**ENVIRONMENTAL CONDITIONS**	29deg. C, 60%RH, 991hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**TESTED BY**: Steven Lu	

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	17.25	30	PASS
6	2437	18.00	30	PASS
11	2462	17.50	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	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.

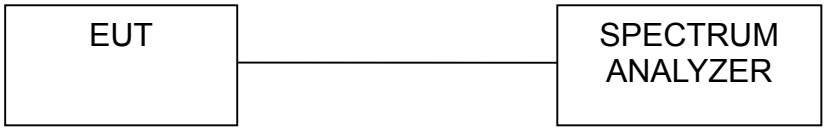
4.5.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3kHz RBW and 30kHz VBW, set sweep time=span/3kHz. The power spectral density was measured and recorded.
The sweep time is allowed to be longer than span/3KHz for a full response of the mixer in the spectrum analyzer.

4.5.4 DEVIATION FROM TEST STANDARD

No deviation

4.5.5 TEST SETUP



4.5.6 EUT OPERATING CONDITIONS

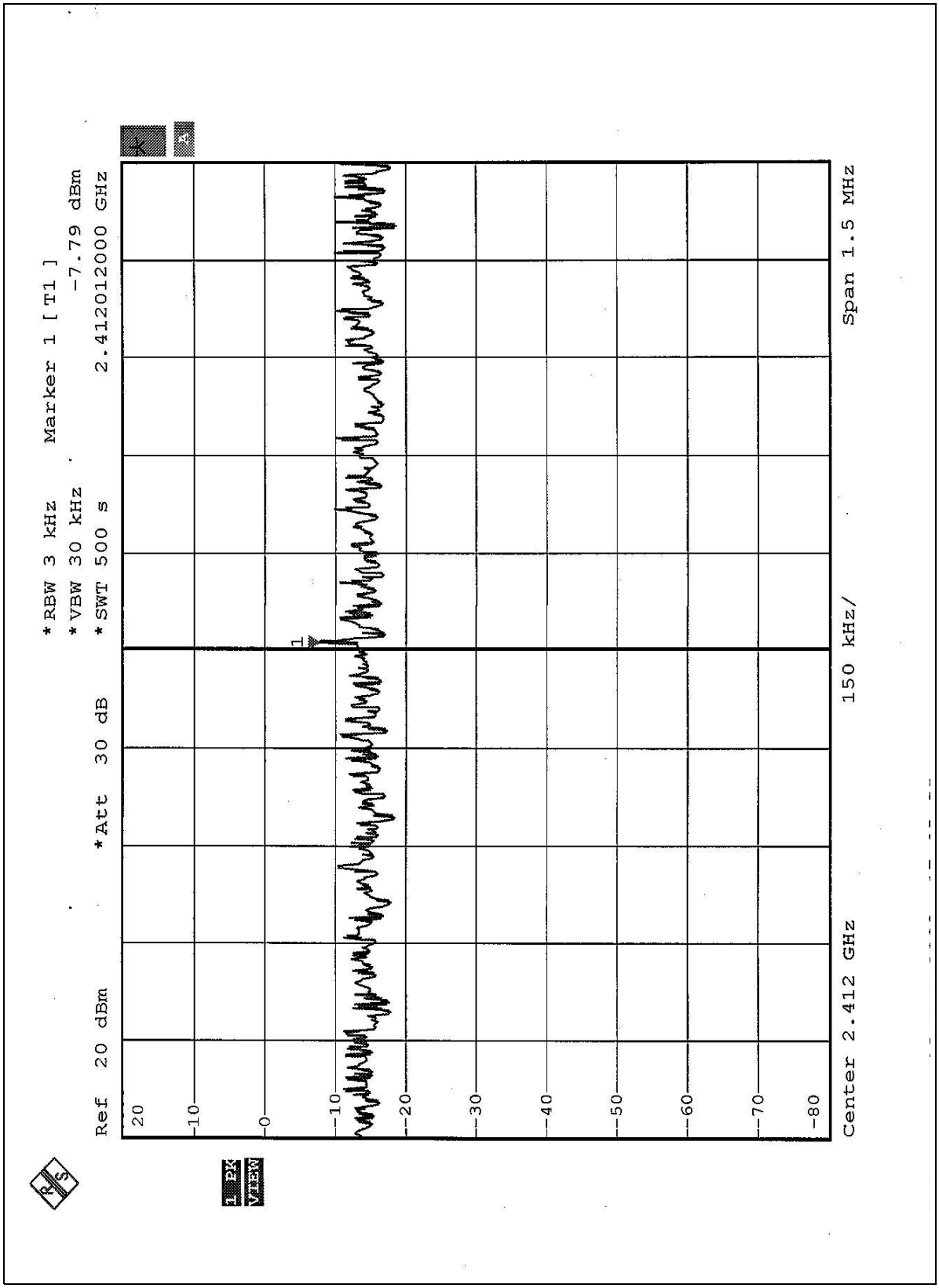
Same as 4.3.6

4.5.7 TEST RESULTS

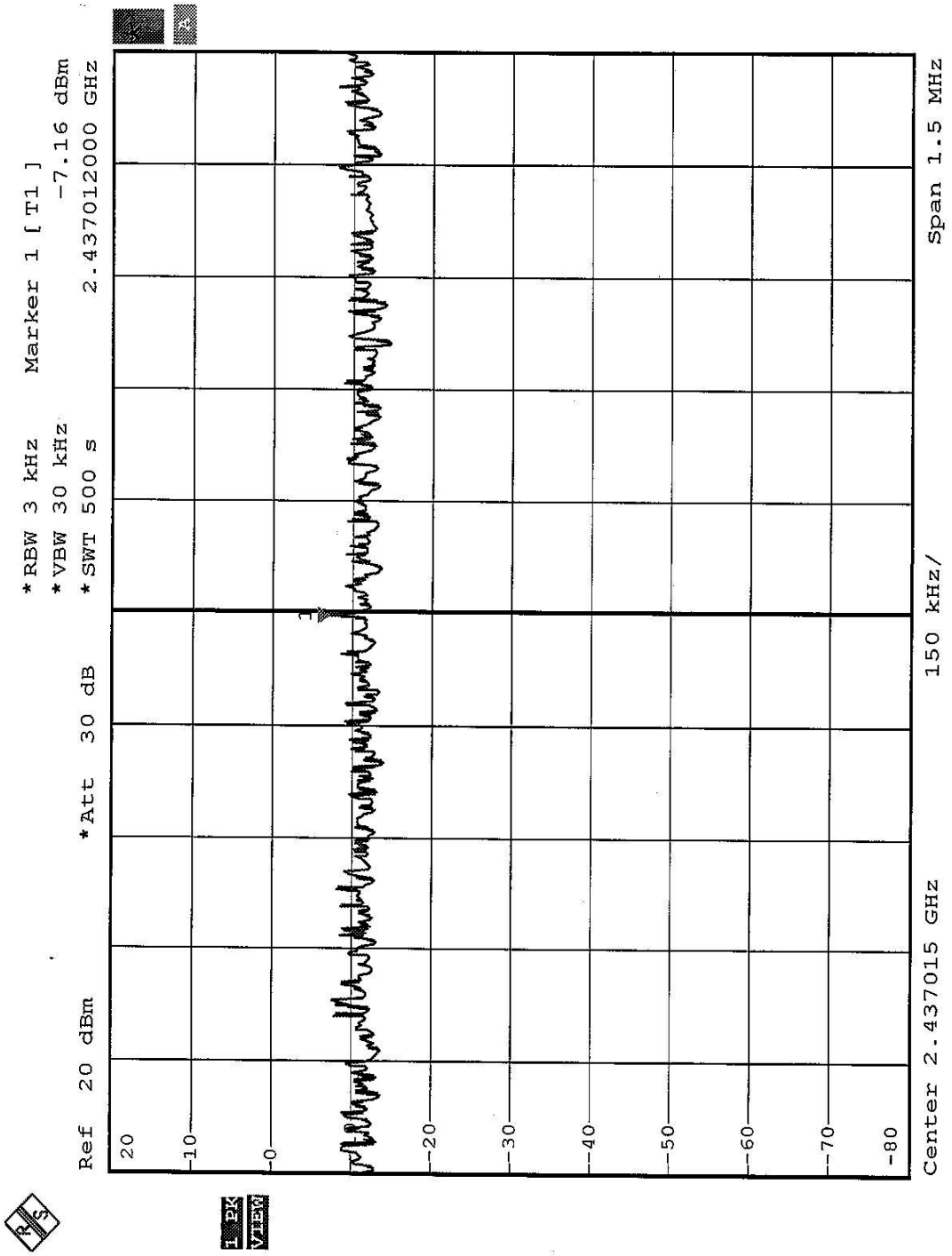
EUT	2.4GHz 54Mbps PCI Card	**MODEL**	DWL-G520
MODE	CCK	**ENVIRONMENTAL CONDITIONS**	29deg. C, 58%RH, 991hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**TESTED BY**: Steven Lu	

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-7.79	8	PASS
6	2437	-7.16	8	PASS
11	2462	-7.69	8	PASS

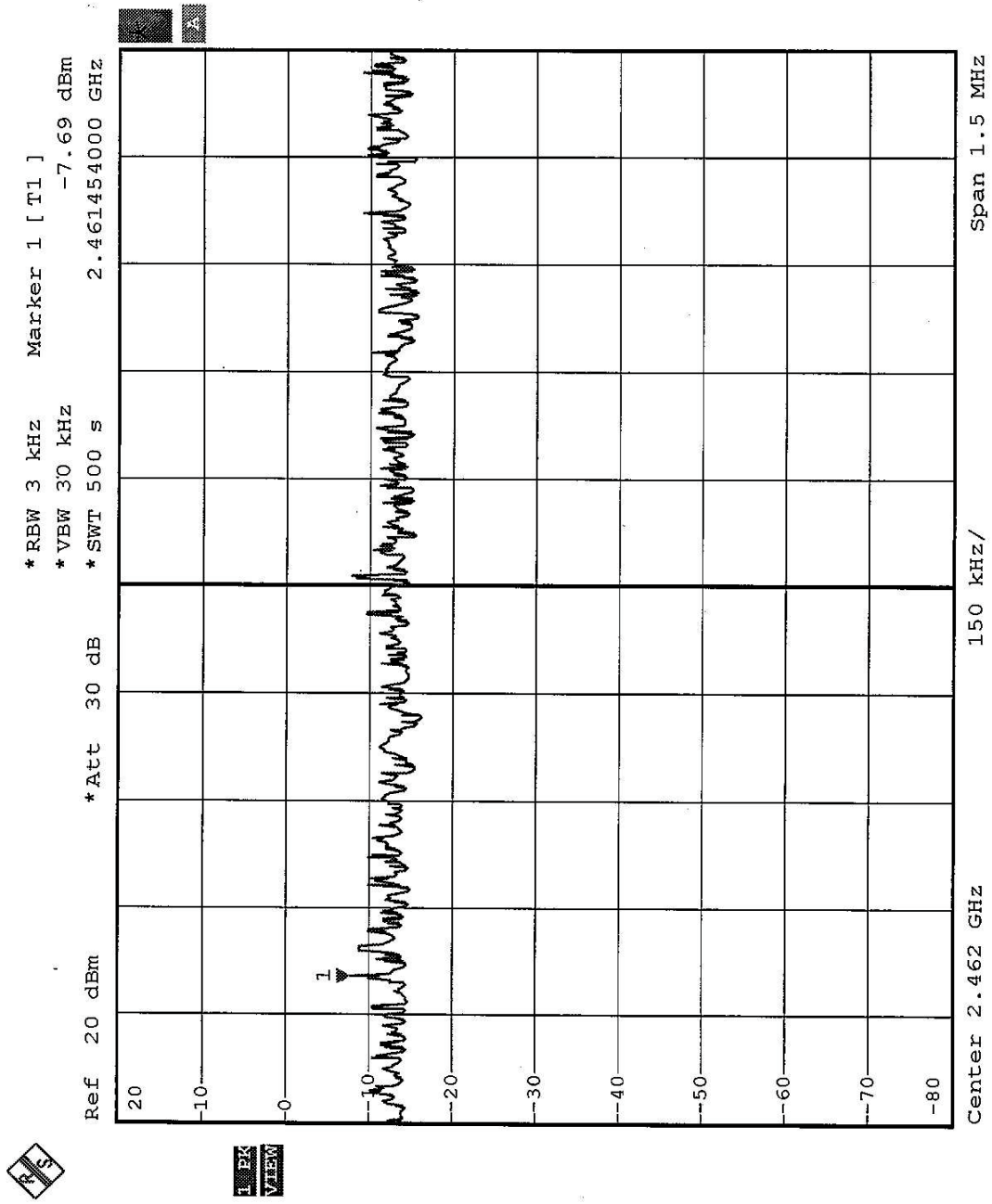
CH1


Ref 20 dBm
*Att 30 dB
*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-7.79 dBm
2.412012000 GHz
1 PK
VIEW
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
Center 2.412 GHz
150 kHz/
Span 1.5 MHz

CH6


Ref 20 dBm
*Att 30 dB
*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-7.16 dBm
2.437012000 GHz
1 PK
MAXH
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
Center 2.437015 GHz
150 kHz/
Span 1.5 MHz

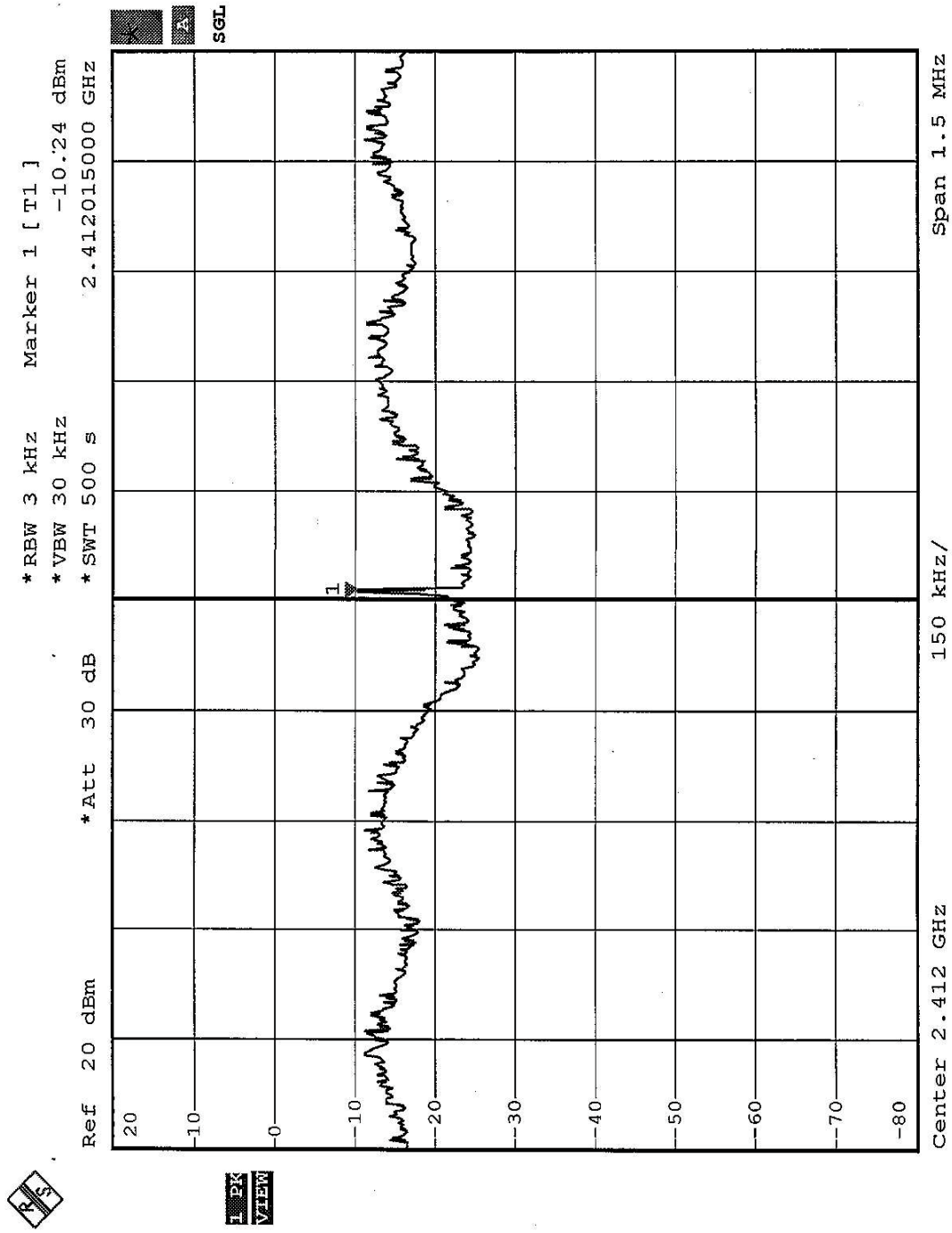
CH11


Ref 20 dBm
*Att 30 dB
*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-7.69 dBm
2.461454000 GHz
Center 2.462 GHz
150 kHz/
Span 1.5 MHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
PK
VIEW

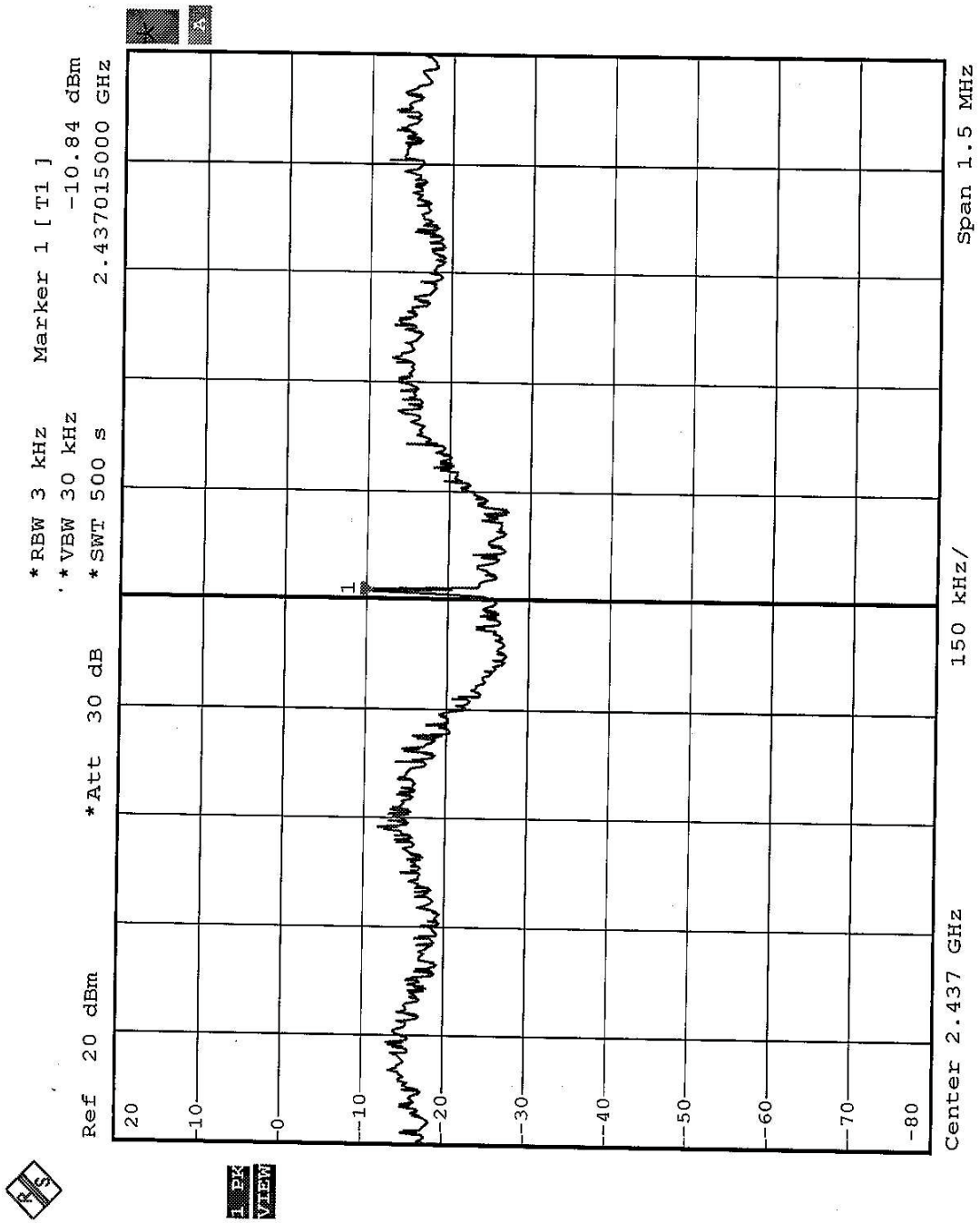
EUT	2.4GHz 54Mbps PCI Card	**MODEL**	DWL-G520
MODE	OFDM	**ENVIRONMENTAL CONDITIONS**	29deg. C, 60%RH, 991hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**TESTED BY**: Steven Lu	

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-10.24	8	PASS
6	2437	-10.84	8	PASS
11	2462	-9.97	8	PASS

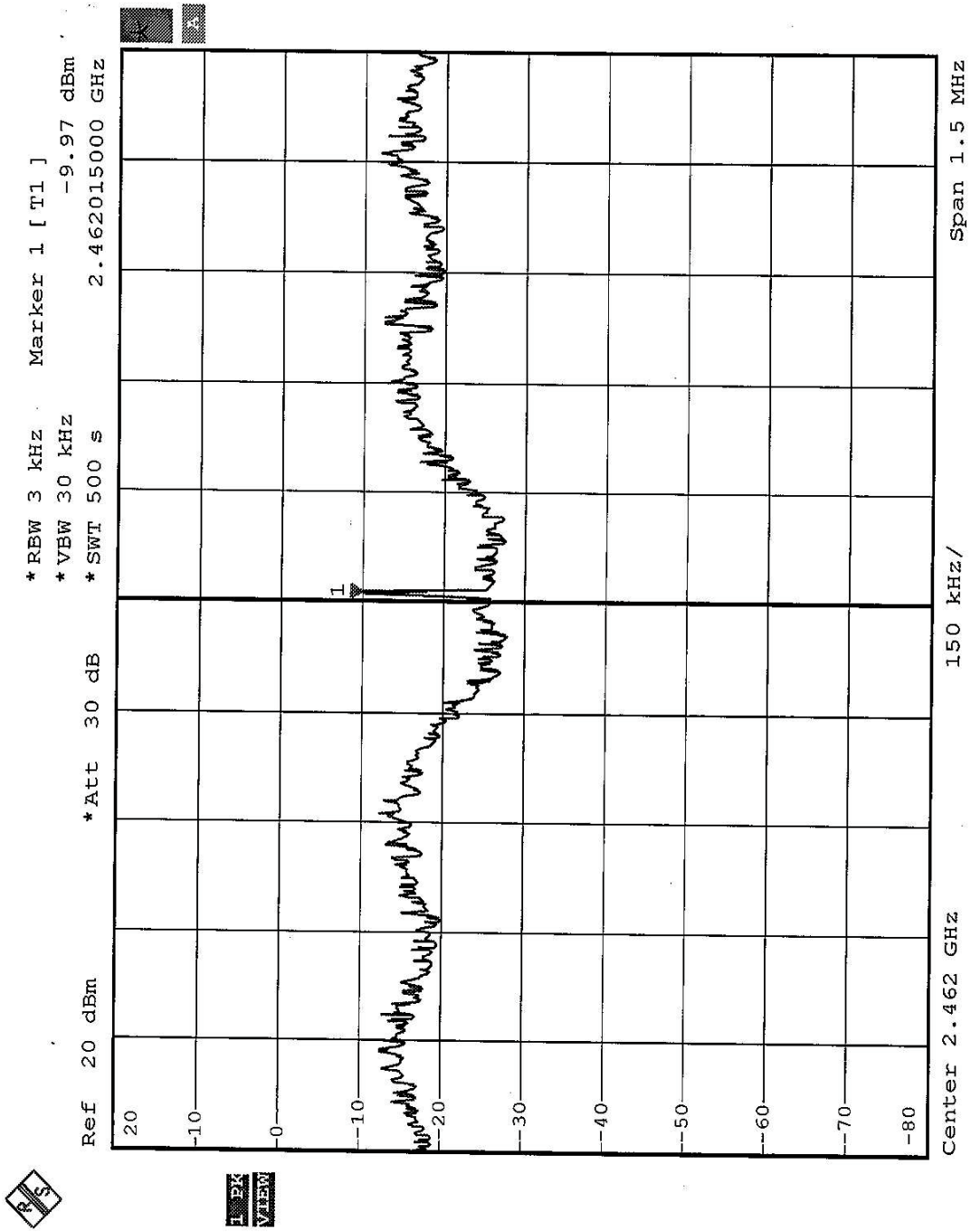
CH1


Ref 20 dBm
*Att 30 dB
*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-10.24 dBm
2.412015000 GHz
1 PK
VIEW
SGL
Center 2.412 GHz
150 kHz/
Span 1.5 MHz

CH6


Ref 20 dBm
*Att 30 dB
*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-10.84 dBm
2.437015000 GHz
1 PK
VIEW
Center 2.437 GHz
150 kHz/
Span 1.5 MHz

CH11


Ref 20 dBm
*Att 30 dB
*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-9.97 dBm
2.462015000 GHz
Center 2.462 GHz
150 kHz/
Span 1.5 MHz
20
-10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
PK
VIEW

4.6 BAND EDGES MEASUREMENT

4.6.1 LIMITS OF BAND EDGES MEASUREMENT

Below –20dB of the highest emission level of operating band (in 100KHz Resolution Bandwidth).

4.6.2 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.

4.6.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer via a low lose cable. Set both RBW and VBW of spectrum analyzer to 1MHz and 300Hz with suitable frequency span including 100MHz bandwidth from band edge. The band edges was measured and recorded.

4.6.4 DEVIATION FROM TEST STANDARD

No deviation

4.6.5 EUT OPERATING CONDITION

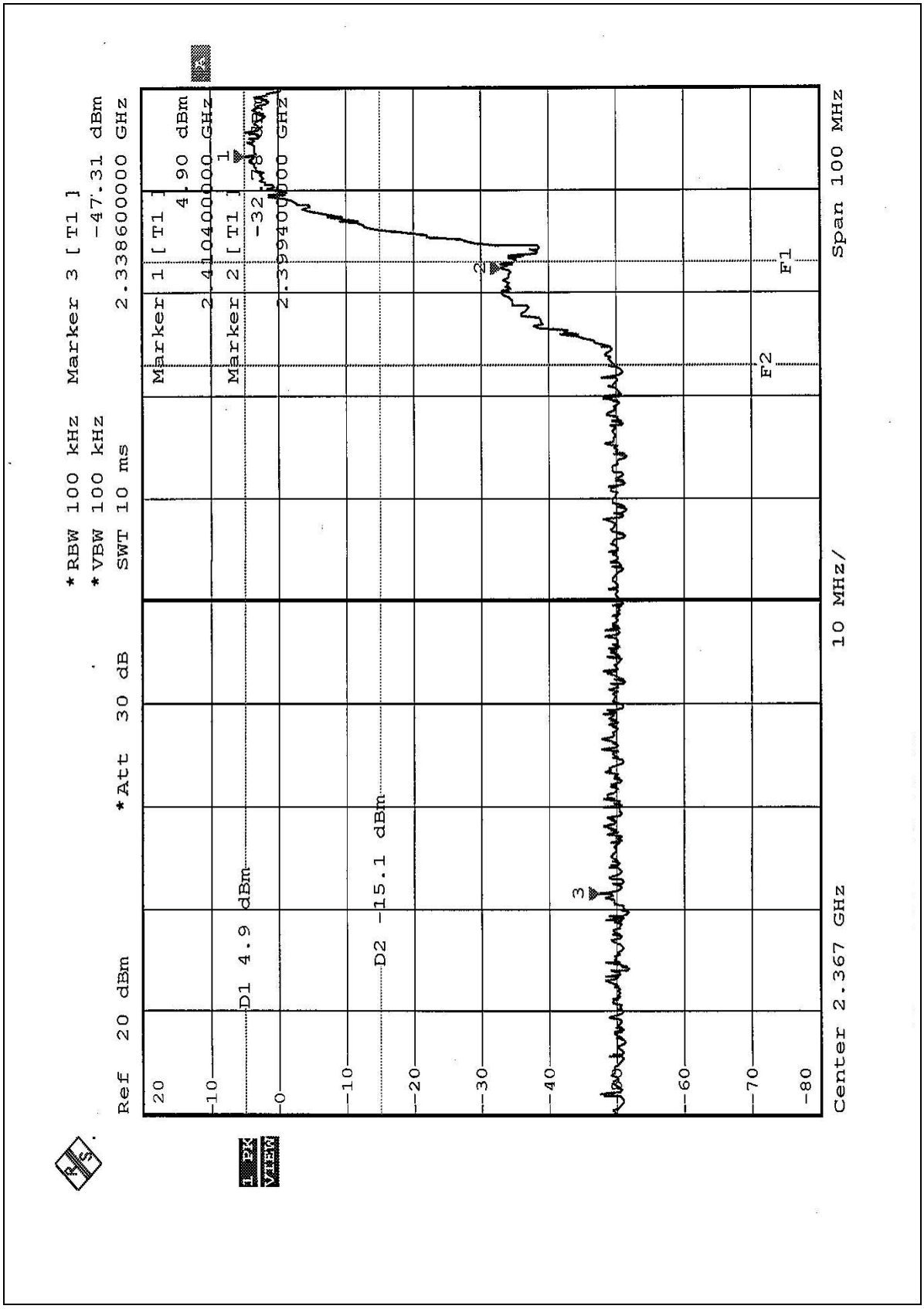
Same as Item 4.3.6

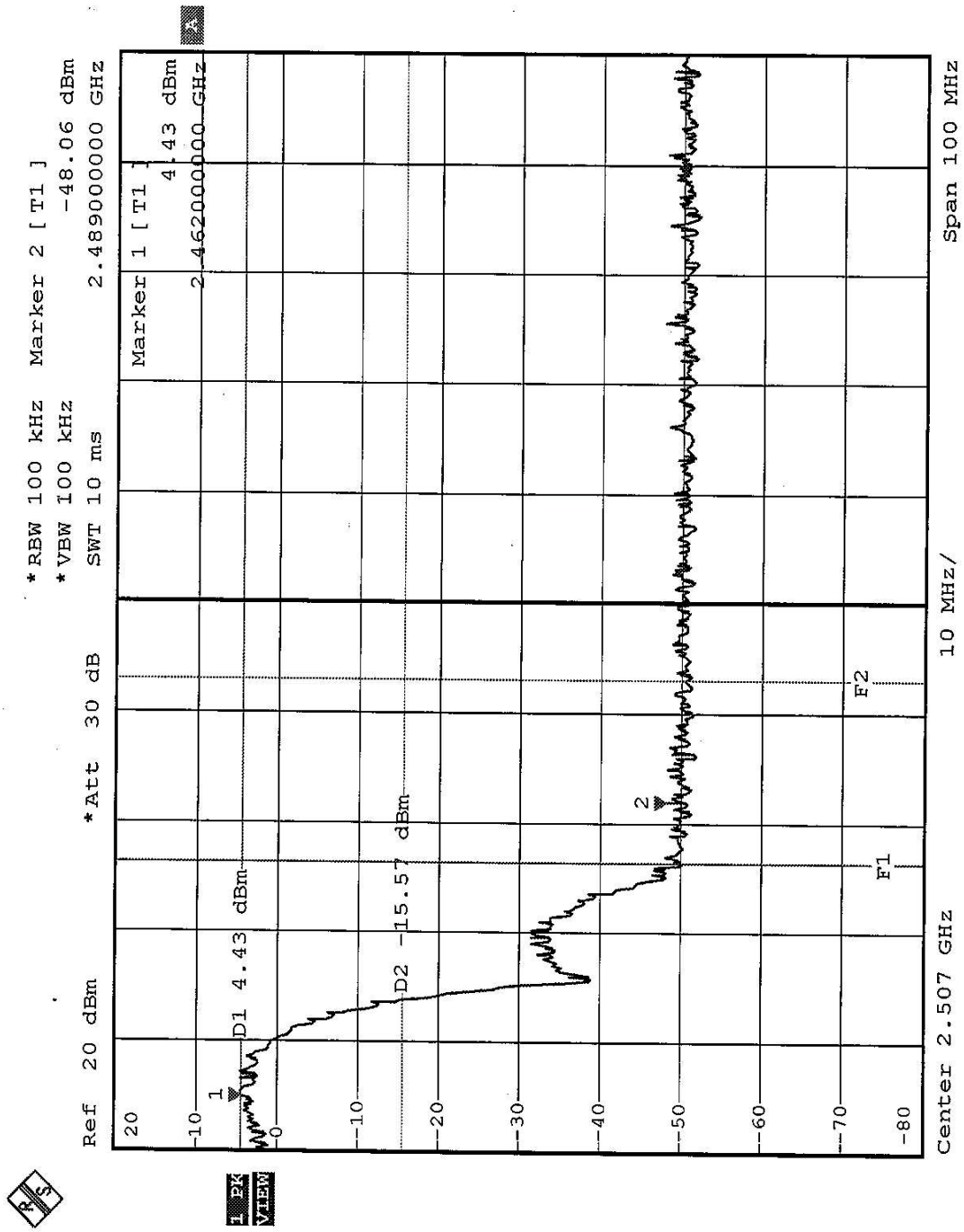
4.6.6 TEST RESULTS(For CCK)

The spectrum plots are attached on the following 2 pages. D2 line indicates the highest level, D1 line indicates the 20dB offset below D2. It shows compliance with the requirement in part 15.247(C).

NOTE1: The band edge emission plot of CCK technique on the following page shows 52.21dB delta between carrier maximum power and local maximum emission in restrict band (2.3386GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 (Page 25) is 101.80dBuV/m, so the maximum field strength in restrict band is 101.80 – 52.21 = 49.59dBuV/m which is under 54dBuV/m limit.

NOTE2: The band edge emission plot of CCK on the following page shows 52.49dB delta between carrier maximum power and local maximum emission in restrict band (2. 4890GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 (Page 27) is 102.10dBuV/m, so the maximum field strength in restrict band is 102.10 –52.49 = 49.61dBuV/m which is under 54 dBuV/m limit.


Ref 20 dBm
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 10 ms
Marker 3 [T1]
-47.31 dBm
2.338600000 GHz
Marker 1 [T1]
4.90 dBm
2.410400000 GHz
Marker 2 [T1]
-32.78 dBm
2.359400000 GHz
D1 4.9 dBm
D2 -15.1 dBm
Center 2.367 GHz
10 MHz/
Span 100 MHz
F1
F2
1 PK
VIEW

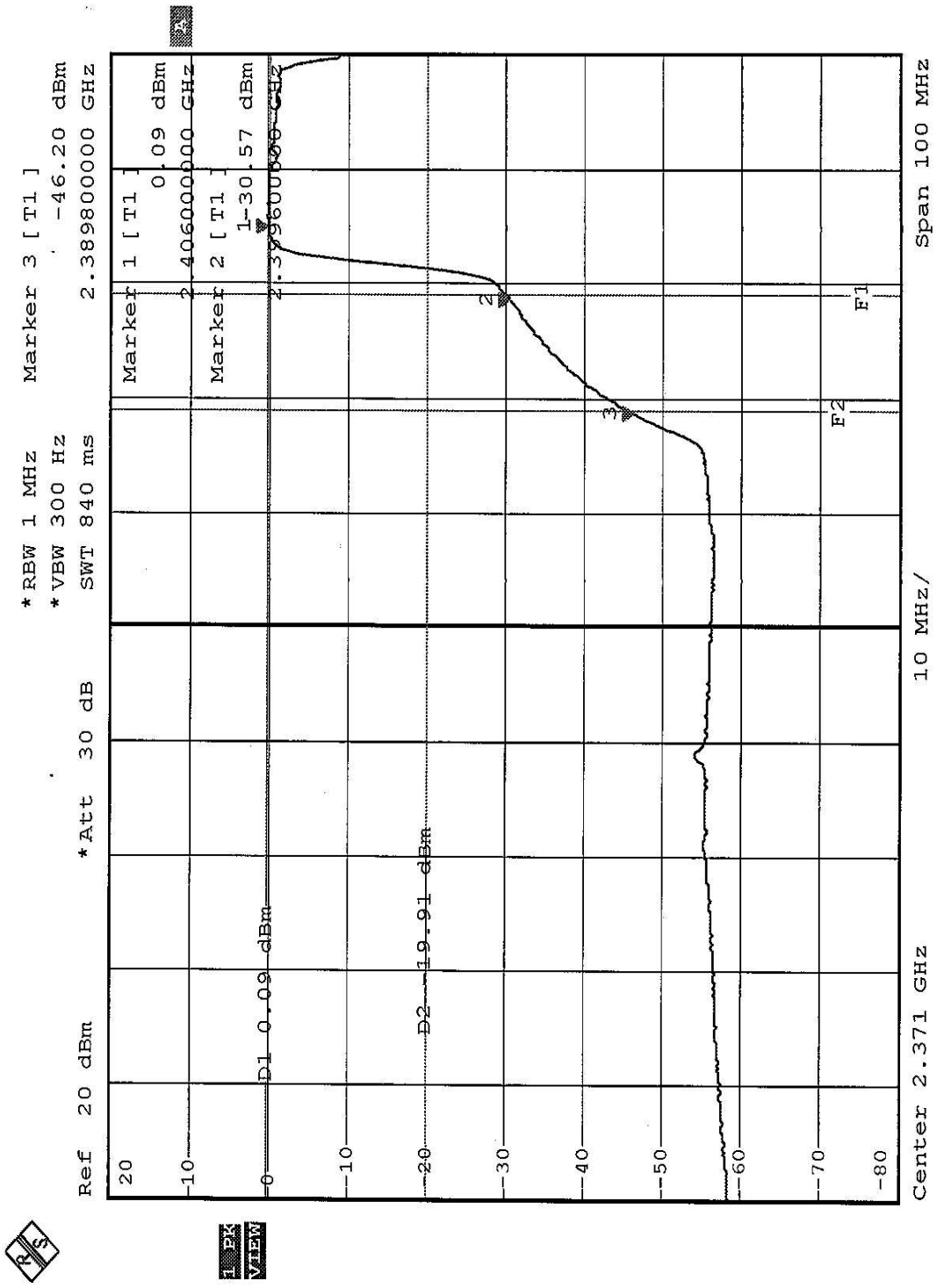

Ref 20 dBm
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 10 ms
Marker 2 [T1]
-48.06 dBm
2.489000000 GHz
Marker 1 [T1]
4.43 dBm
2.462000000 GHz
D1 4.43 dBm
D2 -15.57 dBm
F1
F2
1 PK
VIEW
Center 2.507 GHz
10 MHz/
Span 100 MHz

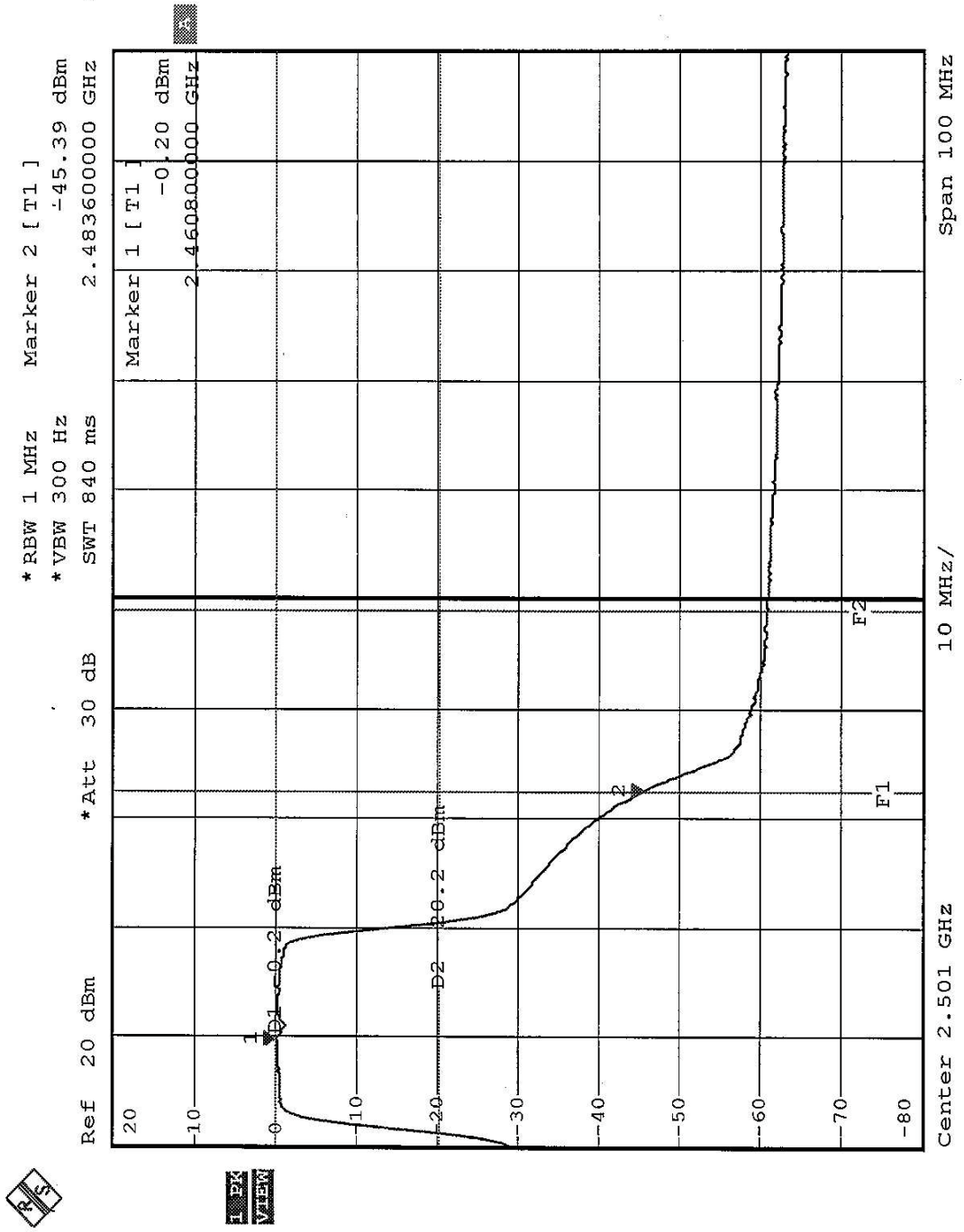
4.6.7 TEST RESULTS (For OFDM)

The spectrum plots are attached on the following 2 pages. D2 line indicates the highest level, D1 line indicates the 20dB offset below D2. It shows compliance with the requirement in part 15.247(C).

NOTE1:
The band edge emission plot on the following first pages shows 46.29dB delta between carrier maximum power and local maximum emission in restrict band (2.3898GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 (Page 28) is 98.10dBuV/m, so the maximum field strength in restrict band is 98.10-46.29=51.81dBuV/m which is under 54 dBuV/m limit.

NOTE2:
The band edge emission plot on the following second pages shows 45.19dB delta between carrier maximum power and local maximum emission in restrict band (2.4836GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.9 (Page 30) is 96.60dBuV/m, so the maximum field strength in restrict band is 96.60-53.05=51.41dBuV/m which is under 54 dBuV/m limit.


Ref 20 dBm
*Att 30 dB
*RBW 1 MHz
*VBW 300 Hz
SWT 840 ms
Marker 3 [T1]
-46.20 dBm
2.389800000 GHz
Marker 1 [T1]
0.09 dBm
2.406000000 GHz
Marker 2 [T1]
-30.57 dBm
D1 0.09 dBm
D2 -19.91 dBm
Center 2.371 GHz
10 MHz/
Span 100 MHz
F1
F2
1 PK
VIEW


Ref 20 dBm
*Att 30 dB
*RBW 1 MHz
*VBW 300 Hz
SWT 840 ms
Marker 2 [T1]
-45.39 dBm
2.483600000 GHz
Marker 1 [T1]
-0.20 dBm
2.460800000 GHz
D1 -0.2 dBm
D2 -10.2 dBm
F1
F2
Center 2.501 GHz
10 MHz/
Span 100 MHz

4.7 ANTENNA REQUIREMENT

4.7.1 STANDARD APPLICABLE

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.
And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

4.7.2 ANTENNA CONNECTED CONSTRUCTION

The antenna type used in this product is Dipole antenna with no antenna connector.
The maximum Gain of this antenna is 2dBi.

5 PHOTOGRAPHS OF THE TEST CONFIGURATION

CONDUCTED EMISSION TEST

RADIATED EMISSION TEST

6 INFORMATION ON THE TESTING LABORATORIES

We, ADT Corp., were founded in 1988 to provide our best service in EMC and Safety consultation. Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025, Guide 25 or EN 45001:

USA	FCC, NVLAP
Germany	TUV Rheinland
Japan	VCCI
New Zealand	MoC
Norway	NEMKO
R.O.C.	BSMI, DGT, CNLA

Copies of accreditation certificates of our laboratories obtained from approval agencies can be downloaded from our web site: www.adt.com.tw/index.5/phtml.

If you have any comments, please feel free to contact us at the following:

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The address and road map of all our labs can be found in our web site also.