



FCC TEST REPORT

REPORT NO.: RF930503L04

MODEL NO.: DWL-2200AP, WAP-D19, DWL-2100AP

RECEIVED: May 03, 2004

TESTED: May 03 to Jun. 07, 2004

APPLICANT: Alpha Networks Inc.

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

ISSUED BY: Advance Data Technology Corporation

LAB LOCATION: No. 81-1, Lu Liao Keng, 9 Ling, Wu Lung Tsuen,
Chiung Lin Hsiang, Hsin Chu Hsien,
Taiwan, R.O.C.

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1 CERTIFICATION

PRODUCT : IEEE802.11g Wireless Access Point
BRAND NAME : D-Link
MODEL NO. : DWL-2200AP, WAP-D19, DWL-2100AP
TESTED: May 03 to Jun. 07, 2004
APPLICANT : Alpha Networks Inc.
TEST ITEM: ENGINEERING SAMPLE
STANDARDS : 47 CFR Part 15, Subpart C (Section 15.247),
ANSI C63.4-1992

The above equipment (Model: DWL-2200AP) has been tested by **Advance Data Technology Corporation**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY: Carol Liao, **DATE:** Jun. 18, 2004
(Carol Liao)

APPROVED BY: Eric Lin, **DATE:** Jun. 18, 2004
(Eric Lin, 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 Limit: 48dBuV	PASS	Meet the requirement of limit Minimum passing margin is -12.05 dBuV at 0.513 MHz
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 -1.10 dBuV at 2483.50MHz
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	IEEE802.11g Wireless Access Point
MODEL NO.	DWL-2200AP, WAP-D19, DWL-2100AP
POWER SUPPLY	48VDC from Power adapter or POE
MODULATION TYPE	CCK, OFDM, DBPSK, DQPSK
RADIO TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	1/2/5.5/6/9/11/12/18/24/36/48/54Mbps (Turbo mode at channel 6: up to 108Mbps)
FREQUENCY RANGE	2412MHz ~ 2462MHz
NUMBER OF CHANNEL	11
OUTPUT POWER	20.8dBm
ANTENNA TYPE	Dipole antenna and Printed antenna
DATA CABLE	NA
I/O PORTS	RJ45 port x 1
ASSOCIATED DEVICES	NA

NOTE:

- The EUT has three model names which are identical to each other in all aspects except for the followings:

Brand	Model Name	description
D-Link	DWL-2200AP	only model name different
	WAP-D19	
	DWL-2100AP	

From the above models, model: **DWL-2200AP** was selected as representative model for the test and its data was recorded in this report.

2. There are five antennas provided to this EUT, please refer to the following table:

No.	Gain (dBi)	Antenna Type	Antenna Connector
1	2.0 dBi	Dipole antenna	R-SMA connector
2	3.0 dBi	Dipole antenna	R-SMA connector
3	5.0 dBi	Dipole antenna (*)	R-SMA connector
4	5.0 dBi	Dipole antenna (*)	R-SMA connector
5	0 dBi	Printed antenna on PCB board (only for RX function)	NA

*: Antenna 3&4 only the shapes are different.

From the above antennas, antenna 4 and 5 were selected as representative antennas for the test and their data were recorded in this report.

3. The EUT operates in the 2.4GHz frequency spectrum with throughput of up to 54Mbps.

4. The EUT complies with IEEE 802.11g draft standards, and backwards compatible with IEEE 802.11b products.

5. The EUT was powered either adapter or POE (Power Over Ethernet):

Adapter:	
Brand:	Bothand Enterprise Inc.
Model No.:	SA06L48-V
Input power :	100-240V ~ 0.6A, 50-60Hz
Output power :	48V==0.4A

POE:	
Brand:	Bothand Enterprise Inc.
Model No.:	EBU-101-T1
Input power :	100-240V ~ 0.6A, 50-60Hz
Output power :	48V==0.4A

6. The above EUT information was declared by the manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3.2 DESCRIPTION OF TEST MODES

Eleven channels are provided in 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		
6 (Turbo)	2437 MHz		

NOTE:

1. Below 1 GHz, the channel 1, 6, and 11 were pre-tested in chamber. The channel 11, worst case one, was chosen for final test.
2. Above 1 GHz, the channel 1, 6, and 11 were tested individually.
3. Transfer rate, 11Mbps with CCK technique and 6Mbps with OFDM technique, the worst case, were chosen for final test.
4. "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).

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is an IEEE802.11g Wireless Access Point . According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

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 47 CFR Part 15, Subpart B, Class B (DoC). The test report has been issued separately.



3.4 DESCRIPTION OF SUPPORT UNITS

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

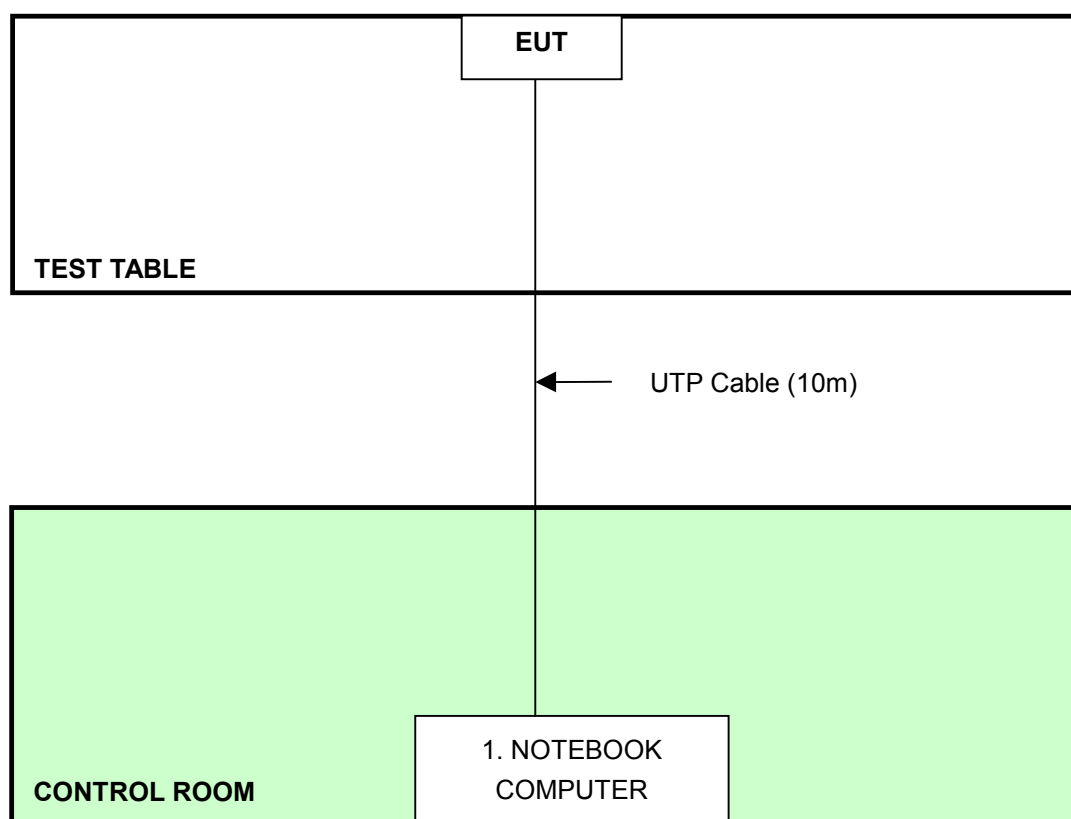
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Notebook Computer	DELL	PP01L	TW-0791UH-12800- 0CK-3735	FCC DoC

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

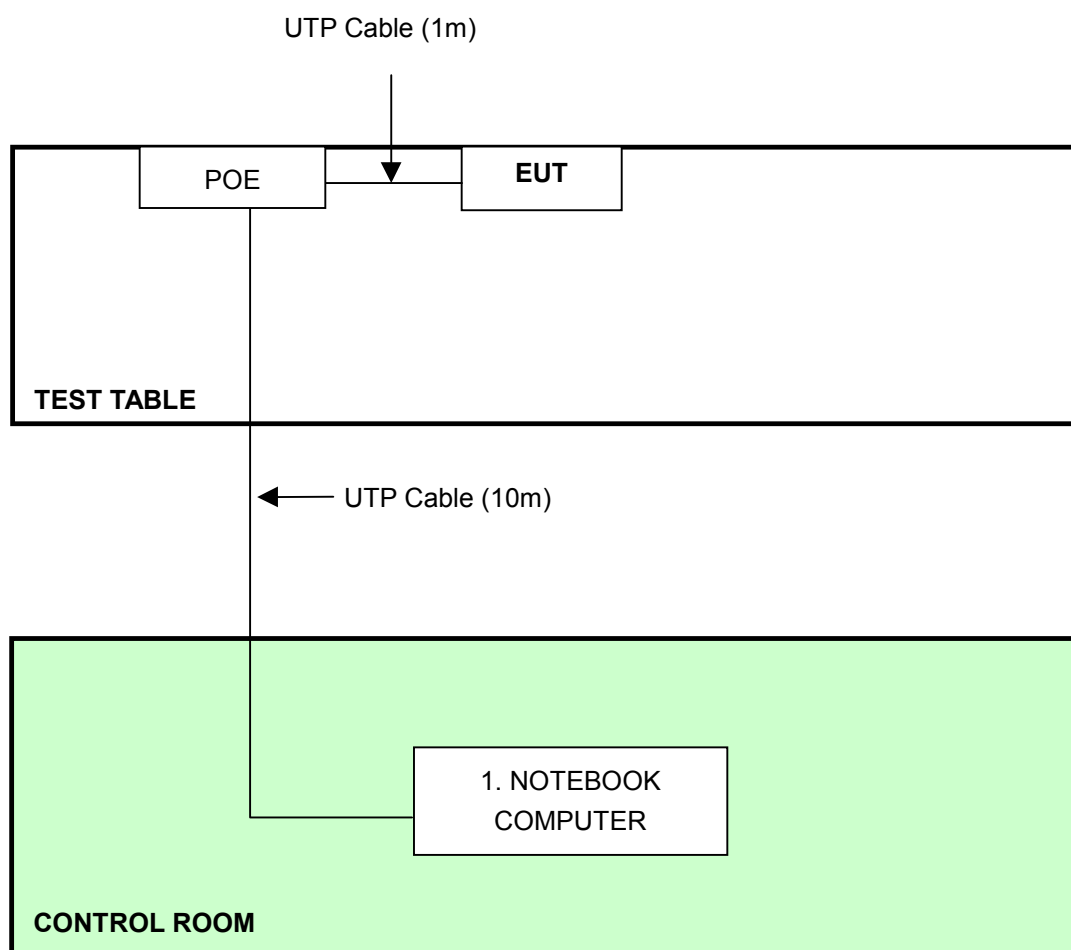
NOTE: All power cords of the above support units are non-shielded (1.8m).

3.5 CONFIGURATION OF SYSTEM UNDER TEST

WITH ADAPTER:



NOTE: 1. Support unit 1 was kept in the control room during the test.
2. Please refer to the photos of test configuration in Item 5 also.

WITH POE:

NOTE: 1. Support unit 1 was kept in the control room during the test.
2. Please refer to the photos of test configuration in Item 5 also.

4 TEST TYPES AND RESULTS

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dB μ V)	
	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. All emanations from a class 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

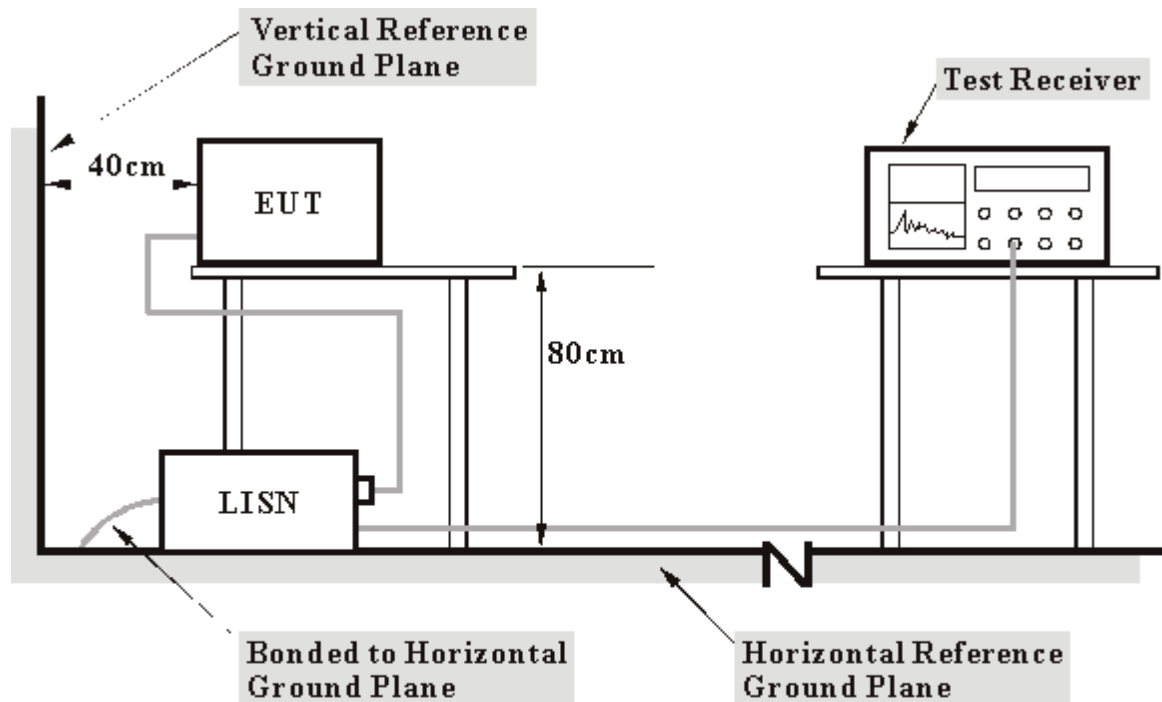
DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
ROHDE & SCHWARZ Test Receiver	ESCS 30	847124/029	Dec. 04, 2004
ROHDE & SCHWARZ LISN (for EUT)	ESHS-Z5	848773/004	Nov. 04, 2004
KYORITSU LISN (for peripheral)	KNW-407	8/1395/12	Jul. 27, 2004
RF Cable (JETBAO)	RG233/U	Cable_CA_01	Jul. 03, 2004
Terminator(for KYORITSU)	50	3	May 10, 2005
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.

3. TEST PROCEDURES

- The EUT/HOST was placed 0.4 meters from the conducting wall of the shielded room with EUT/HOST 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.
- Both lines of the power mains connected to the EUT/HOST were checked for maximum conducted interference.
- The frequency range from 150 kHz to 30 MHz was searched. Emission levels over 10dB under the prescribed limits could not be reported

4.1.3 TEST SETUP



- Note:**
- Support units were connected to second LISN.
 - 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.



4.1.4 EUT OPERATING CONDITIONS

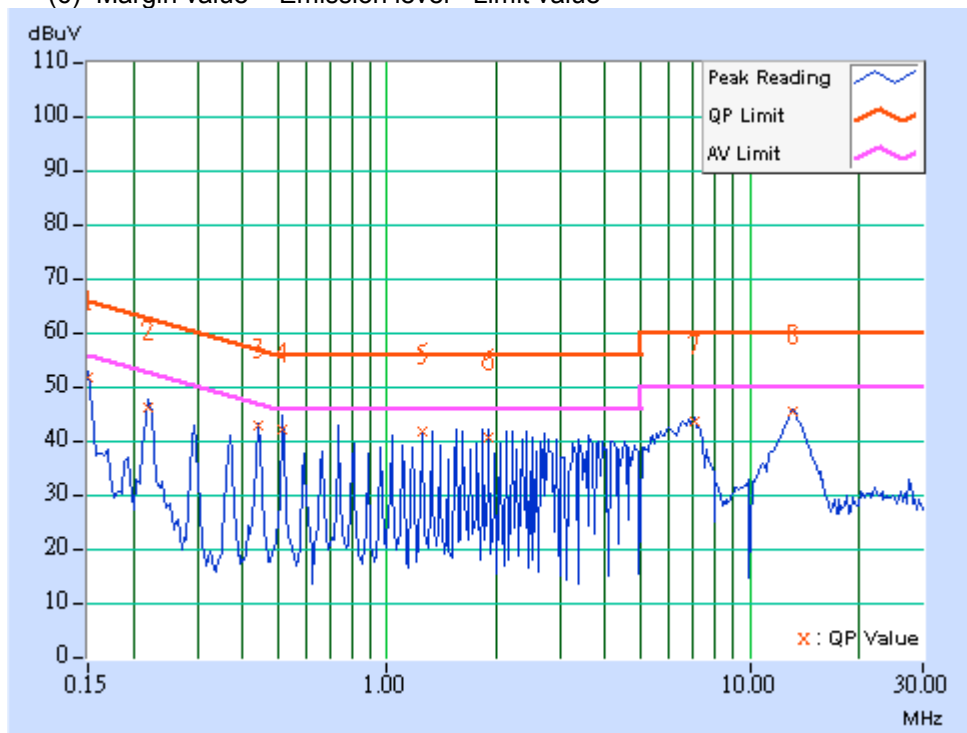
- a. Placed the EUT on the testing table.
- b. Prepared another computer system to act as a communication partner and placed it outside of testing area.
- c. The communication partner run "Art 485" test program to enable EUT under transmission/receiving condition continuously at specific channel frequency via UTP cable and wireless.

4.1.5 TEST RESULTS

EUT	IEEE802.11g Wireless Access Point	MODEL	DWL-2200AP
MODE	Channel 11, With Adapter	6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	27 deg. C, 57%RH, 968 hPa	TESTED BY	Tony Chen

No	Freq.	Corr.	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	0.150	0.20	50.69	-	50.89	-	66.00	56.00	-15.11	-
2	0.220	0.29	45.11	-	45.40	-	62.81	52.81	-17.41	-
3	0.443	0.21	41.93	-	42.14	-	57.01	47.01	-14.87	-
4	0.513	0.22	41.08	-	41.30	-	56.00	46.00	-14.70	-
5	1.252	0.30	40.70	-	41.00	-	56.00	46.00	-15.00	-
6	1.916	0.30	39.77	-	40.07	-	56.00	46.00	-15.93	-
7	7.064	0.60	42.70	-	43.30	-	60.00	50.00	-16.70	-
8	13.094	1.05	44.45	-	45.50	-	60.00	50.00	-14.50	-

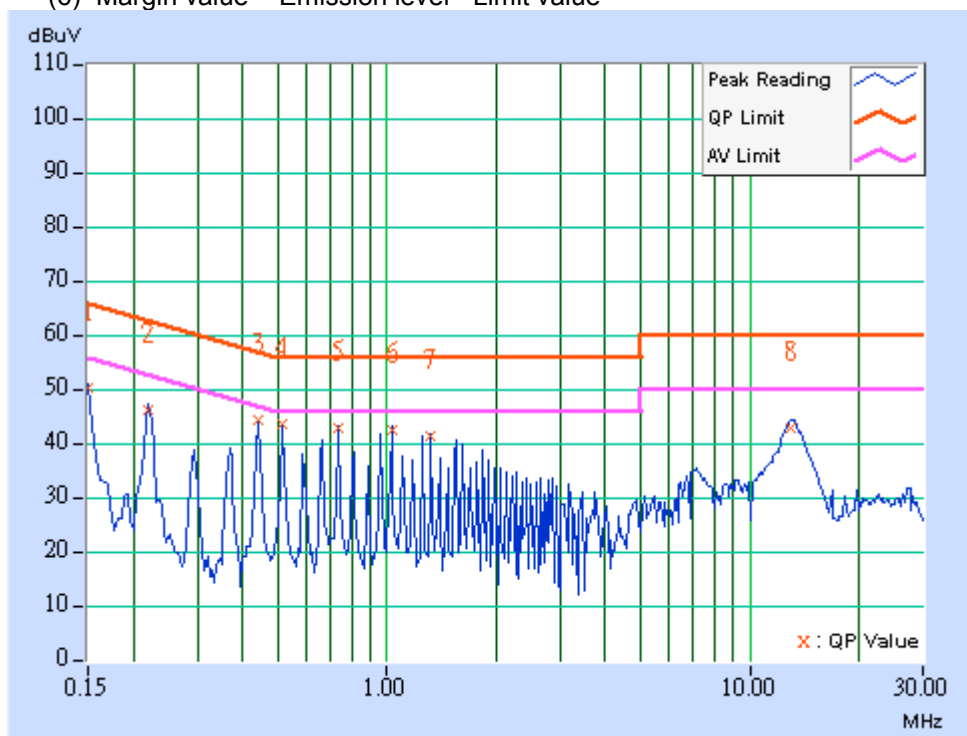
- NOTES:** (1) "-": Undetectable
(2) Q.P. and AV. are abbreviations of quasi-peak and average.
(3) "-": The Quasi-peak reading value also meets an average limit, thus measurement with the average detector is unnecessary.
(4) The emission levels of other frequencies were very low against the limit.
(5)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



EUT	IEEE802.11g Wireless Access Point	MODEL	DWL-2200AP
MODE	Channel 11, With Adapter	6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Neutral (N)
ENVIRONMENTAL CONDITIONS	27 deg. C, 57%RH, 968 hPa	TESTED BY	Tony Chen

No	Freq.	Corr.	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	0.150	0.20	49.30	-	49.50	-	66.00	56.00	-16.50	-
2	0.220	0.29	45.31	-	45.60	-	62.81	52.81	-17.21	-
3	0.443	0.21	43.34	-	43.55	-	57.01	47.01	-13.46	-
4	0.513	0.22	42.86	-	43.08	-	56.00	46.00	-12.92	-
5	0.736	0.26	42.08	-	42.34	-	56.00	46.00	-13.66	-
6	1.029	0.30	41.70	-	42.00	-	56.00	46.00	-14.00	-
7	1.322	0.30	40.69	-	40.99	-	56.00	46.00	-15.01	-
8	13.016	0.94	42.16	-	43.10	-	60.00	50.00	-16.90	-

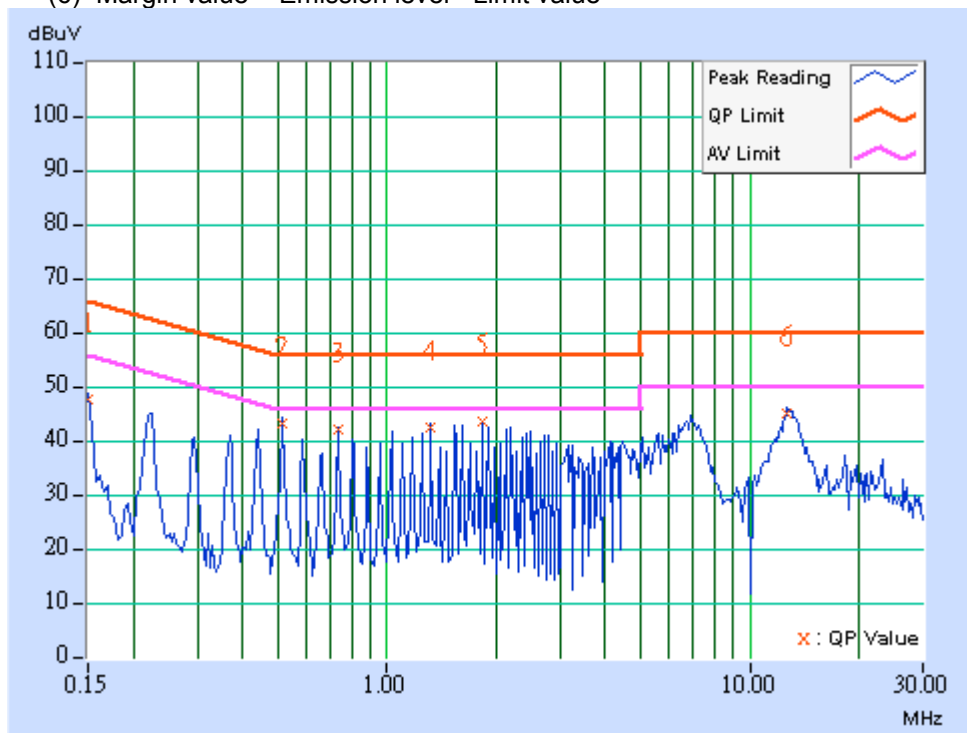
- NOTES:** (1) "-": Undetectable
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(3) "-": The Quasi-peak reading value also meets an average limit, thus measurement with the average detector is unnecessary.
(4) The emission levels of other frequencies were very low against the limit.
(5) Correction Factor = Insertion loss + Cable loss
(6) Margin value = Emission level - Limit value



EUT	IEEE802.11g Wireless Access Point	MODEL	DWL-2200AP
MODE	Channel 11, With POE	6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	27 deg. C, 57%RH, 968 hPa	TESTED BY	Tony Chen

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	0.20	46.76	-	46.96	-	66.00	56.00	-19.04	-
2	0.513	0.22	42.38	-	42.60	-	56.00	46.00	-13.40	-
3	0.732	0.26	41.34	-	41.60	-	56.00	46.00	-14.40	-
4	1.322	0.30	41.73	-	42.03	-	56.00	46.00	-13.97	-
5	1.834	0.30	42.66	-	42.96	-	56.00	46.00	-13.04	-
6	12.621	1.01	44.00	-	45.01	-	60.00	50.00	-14.99	-

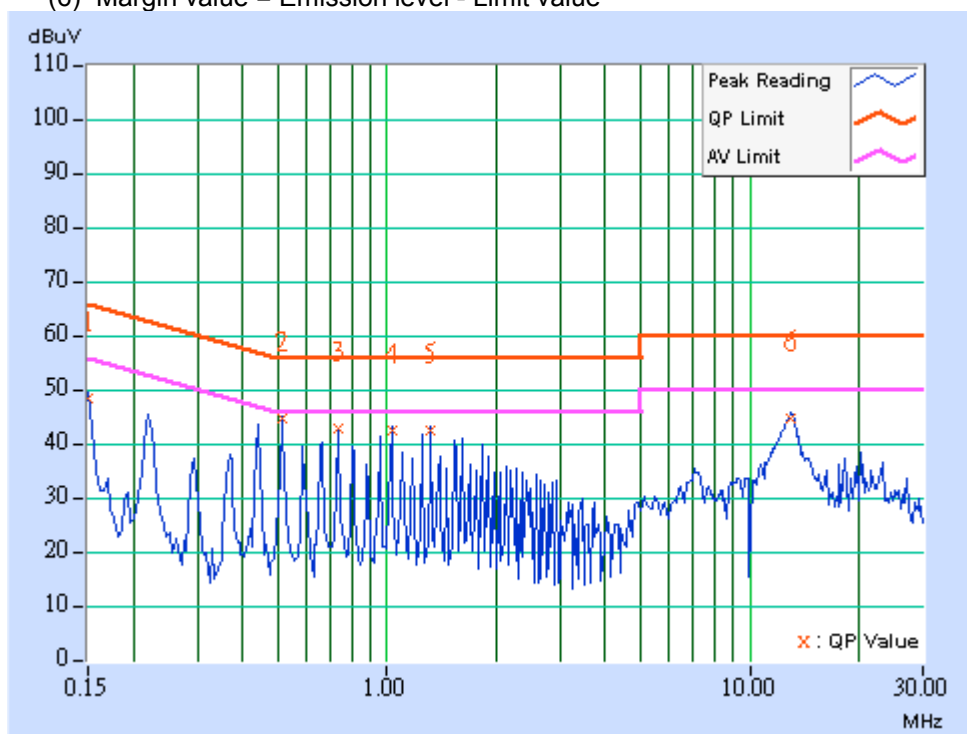
- NOTES:** (1) "***": Undetectable
(2) Q.P. and AV. are abbreviations of quasi-peak and average.
(3) "-": The Quasi-peak reading value also meets an average limit, thus measurement with the average detector is unnecessary.
(4) The emission levels of other frequencies were very low against the limit.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



EUT	IEEE802.11g Wireless Access Point	MODEL	DWL-2200AP
MODE	Channel 11, With POE	6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Neutral (N)
ENVIRONMENTAL CONDITIONS	27 deg. C, 57%RH, 968 hPa	TESTED BY	Tony Chen

No	Freq.	Corr.	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	0.150	0.20	47.40	-	47.60	-	66.00	56.00	-18.40	-
2	0.513	0.22	43.73	-	43.95	-	56.00	46.00	-12.05	-
3	0.732	0.26	41.92	-	42.18	-	56.00	46.00	-13.82	-
4	1.029	0.30	41.76	-	42.06	-	56.00	46.00	-13.94	-
5	1.322	0.30	41.69	-	41.99	-	56.00	46.00	-14.01	-
6	12.918	0.93	43.90	-	44.83	-	60.00	50.00	-15.17	-

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



4.2 RADIATED EMISSION MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

Field strength limits are at the distance of 3 meters, 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	$2400/F(\text{kHz})$	300
0.490-1.705	$24000/F(\text{kHz})$	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	Aug. 30, 2004
ADVANTEST Spectrum Analyzer	R3271A	85060311	Jun. 16, 2005
CHASE RF Pre_Amplifier	CPA9232	1057	May. 10, 2005
HP Pre_Amplifier	8449B	3008A01922	Oct. 13, 2004
ROHDE & SCHWARZ Test Receiver	ESVS 10	849231 /019	Sep. 30, 2004
CHASE Broadband Antenna	CBL6111c	2730	Jul 30, 2004
Schwarzbeck Horn_Antenna	3115	5619	Jul. 17, 2004
Schwarzbeck Horn_Antenna	BBHA 9170	BBHA9170192	Feb. 16, 2005
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, 2004
RF CABLE (Chaintek) 1GHz-20GHz	SF102	22054-2	Feb. 10. 2005
RF Cable(RICHTEC)	9913-30M	STCCAB-30M- 1GHz-021	Dec. 01, 2004
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 4824-3.



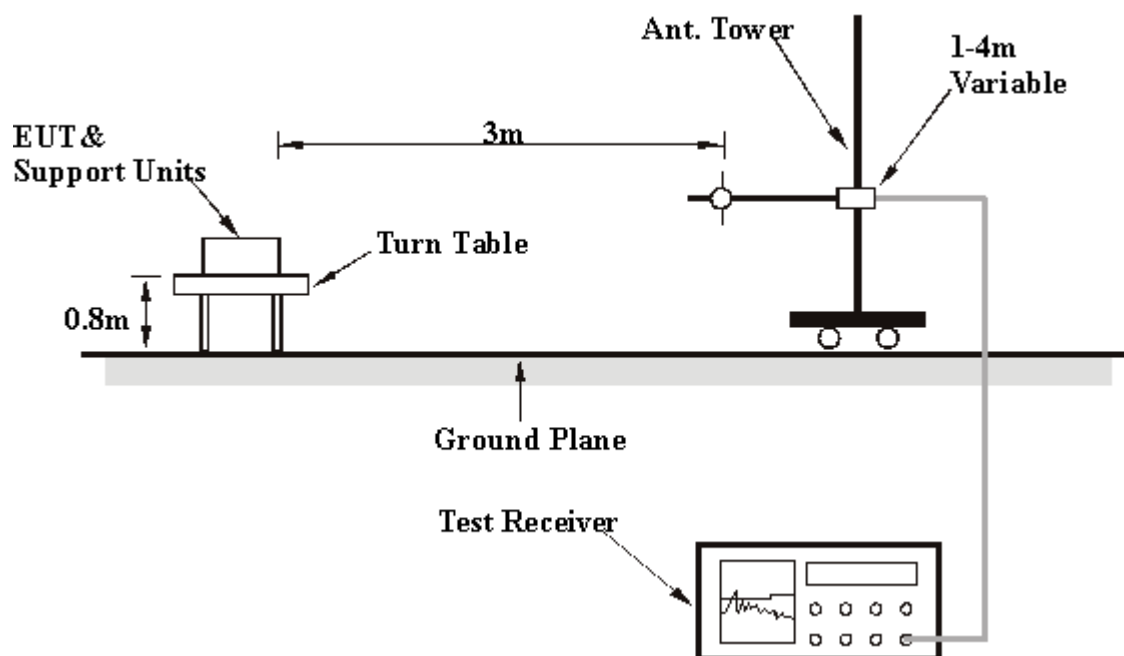
4.2.3 TEST PROCEDURES

- 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 TEST SETUP



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

4.2.5 EUT OPERATING CONDITIONS

Same as 4.1.5.

4.2.6 TEST RESULTS

EUT	IEEE802.11g Wireless Access Point	MODEL	DWL-2200AP
MODE	Channel 11, With Adapter	FREQUENCY RANGE	30-1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak, 120kHz
ENVIRONMENTAL CONDITIONS	27 deg. C, 59%RH, 968 hPa	TESTED BY	Tony Chen

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	125.01	23.00 QP	43.50	-20.50	1.53 H	3	10.80	12.10
2	175.01	35.30 QP	43.50	-8.20	1.47 H	346	22.00	13.20
3	200.01	31.30 QP	43.50	-12.20	1.48 H	323	20.00	11.20
4	225.01	31.40 QP	46.00	-14.60	1.46 H	52	19.20	12.20
5	249.99	25.30 QP	46.00	-20.70	1.53 H	330	12.00	13.20
6	275.02	30.40 QP	46.00	-15.60	1.22 H	126	16.10	14.30
7	300.02	21.40 QP	46.00	-24.60	1.04 H	324	6.10	15.30
8	400.00	29.30 QP	46.00	-16.70	1.05 H	81	11.20	18.10
9	500.03	32.60 QP	46.00	-13.40	1.00 H	3	11.70	21.00
10	630.00	32.20 QP	46.00	-13.80	1.36 H	214	8.60	23.60
11	750.05	40.40 QP	46.00	-5.60	1.11 H	307	15.10	25.30
12	769.00	29.30 QP	46.00	-16.70	1.48 H	64	3.60	25.70

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	125.00	31.30 QP	43.50	-12.20	1.00 V	2	19.10	12.10
2	175.01	34.60 QP	43.50	-8.90	1.29 V	6	21.40	13.20
3	199.99	32.30 QP	43.50	-11.20	1.00 V	175	21.10	11.20
4	225.01	32.70 QP	46.00	-13.30	1.00 V	0	20.50	12.20
5	249.99	30.10 QP	46.00	-15.90	1.00 V	3	16.90	13.20
6	274.99	32.10 QP	46.00	-13.90	1.08 V	306	17.80	14.30
7	299.99	28.10 QP	46.00	-17.90	1.00 V	345	12.80	15.20
8	450.00	31.10 QP	46.00	-14.90	1.19 V	357	11.70	19.40
9	500.03	31.60 QP	46.00	-14.40	1.07 V	283	10.60	21.00
10	630.00	31.30 QP	46.00	-14.70	1.00 V	257	7.70	23.60
11	750.05	32.10 QP	46.00	-13.90	1.00 V	250	6.80	25.30
12	769.00	33.00 QP	46.00	-13.00	1.00 V	199	7.40	25.70

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

EUT	IEEE802.11g Wireless Access Point	MODEL	DWL-2200AP
MODE	Channel 11, With POE	FREQUENCY RANGE	30-1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak, 120kHz
ENVIRONMENTAL CONDITIONS	27 deg. C, 59%RH, 968 hPa	TESTED BY	Tony Chen

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	125.01	41.50 QP	43.50	-2.00	1.56 H	22	29.30	12.10
2	200.00	33.20 QP	43.50	-10.30	1.36 H	20	22.00	11.20
3	225.01	37.20 QP	46.00	-8.80	1.50 H	7	25.00	12.20
4	250.00	32.30 QP	46.00	-13.70	1.46 H	164	19.10	13.20
5	275.00	33.90 QP	46.00	-12.10	1.29 H	4	19.60	14.30
6	500.03	27.90 QP	46.00	-18.10	1.92 H	12	7.00	21.00
7	625.03	27.00 QP	46.00	-19.00	1.59 H	337	3.60	23.50
8	630.00	27.60 QP	46.00	-18.40	1.76 H	168	4.00	23.60
9	750.04	33.10 QP	46.00	-12.90	1.55 H	152	7.80	25.30
10	900.00	34.00 QP	46.00	-12.00	1.61 H	59	6.00	28.00

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	51.80	31.00 QP	40.00	-9.00	1.33 V	7	18.90	12.10
2	125.00	39.40 QP	43.50	-4.10	1.12 V	8	27.30	12.10
3	150.00	25.60 QP	43.50	-17.90	1.12 V	76	11.80	13.70
4	175.00	35.90 QP	43.50	-7.60	1.00 V	9	22.70	13.20
5	225.00	30.90 QP	46.00	-15.10	1.00 V	145	18.70	12.20
6	250.00	32.70 QP	46.00	-13.30	1.09 V	185	19.50	13.20
7	375.00	26.90 QP	46.00	-19.10	1.00 V	200	9.50	17.40
8	500.03	30.70 QP	46.00	-15.30	1.08 V	0	9.70	21.00
9	630.00	27.90 QP	46.00	-18.10	1.25 V	144	4.40	23.60
10	875.05	27.90 QP	46.00	-18.10	1.22 V	354	0.40	27.50

- 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.

4.2.7 TEST RESULTS –DSSS

EUT	IEEE802.11g Wireless Access Point	MODEL	DWL-2200AP
MODE	Channel 1	FREQUENCY RANGE	1000~25000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION & BANDWIDTH	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	30 deg. C, 55%RH, 968 hPa	TESTED BY	Tony Chen

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	45.80 PK	74.00	-28.20	1.42 H	25	15.40	30.40
2	*2412.00	99.60 PK			1.14 H	0	69.10	30.50
2	*2412.00	93.40 AV			1.14 H	0	62.80	30.50
3	4824.00	43.70 PK	74.00	-30.30	1.57 H	331	7.40	36.20
4	7236.00	45.50 PK	74.00	-28.50	1.18 H	337	3.80	41.70
5	9648.00	47.50 PK	74.00	-26.50	1.44 H	310	2.60	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	2390.00	59.40 PK	74.00	-14.60	1.09 V	2	29.00	30.40
1	2390.00	50.20 AV	54.00	-3.80	1.09 V	2	19.80	30.40
2	*2412.00	114.80 PK			1.07 V	3	84.30	30.50
2	*2412.00	107.50 AV			1.07 V	3	77.00	30.50
3	4824.00	47.80 PK	74.00	-26.20	1.70 V	312	11.60	36.20
4	7236.00	50.70 PK	74.00	-23.30	1.60 V	306	9.10	41.70
5	9648.00	51.60 PK	74.00	-22.40	1.64 V	264	6.70	44.90
5	9648.00	43.20 AV	54.00	-10.80	1.64 V	264	-1.70	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	IEEE802.11g Wireless Access Point	MODEL	DWL-2200AP
MODE	Channel 6	FREQUENCY RANGE	1000~25000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION & BANDWIDTH	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	30 deg. C, 55%RH, 968 hPa	TESTED BY	Tony Chen

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	100.30 PK			1.08 H	3	69.60	30.70
1	*2437.00	93.40 AV			1.08 H	3	62.70	30.70
2	4874.00	40.50 PK	74.00	-33.50	1.58 H	49	4.10	36.50
3	7311.00	47.20 PK	74.00	-26.80	1.36 H	134	5.40	41.80
4	9748.00	46.40 PK	74.00	-27.60	1.29 H	360	1.80	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	*2437.00	115.20 PK			1.16 V	17	84.60	30.70
1	*2437.00	107.70 AV			1.16 V	17	77.00	30.70
2	4874.00	49.20 PK	74.00	-24.80	1.37 V	334	12.80	36.50
3	7311.00	49.60 PK	74.00	-24.40	1.78 V	334	7.90	41.80
4	9748.00	49.60 PK	74.00	-24.40	1.52 V	315	4.90	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	IEEE802.11g Wireless Access Point	MODEL	DWL-2200AP
MODE	Channel 11	FREQUENCY RANGE	1000~25000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION & BANDWIDTH	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	30 deg. C, 55%RH, 968 hPa	TESTED BY	Tony Chen

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	98.50 PK			1.85 H	25	67.70	30.80
1	*2462.00	91.90 AV			1.85 H	25	61.10	30.80
2	2483.50	43.80 PK	74.00	-30.20	1.27 H	27	12.80	31.00
3	4924.00	45.60 PK	74.00	-28.40	1.24 H	69	8.90	36.70
4	7386.00	52.60 PK	74.00	-21.40	1.30 H	131	10.80	41.80
4	7386.00	45.20 AV	54.00	-8.80	1.30 H	131	3.40	41.80
5	9848.00	48.30 PK	74.00	-25.70	1.45 H	217	4.00	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	*2462.00	116.10 PK			1.12 V	353	85.30	30.80
1	*2462.00	108.80 AV			1.12 V	353	78.00	30.80
2	2483.50	61.30 PK	74.00	-12.70	1.24 V	325	30.30	31.00
2	2483.50	51.00 AV	54.00	-3.00	1.24 V	325	20.00	31.00
3	4924.00	48.00 PK	74.00	-26.00	1.15 V	208	11.30	36.70
4	7386.00	52.60 PK	74.00	-21.40	1.48 V	360	10.80	41.80
4	7386.00	44.90 AV	54.00	-9.10	1.48 V	360	3.00	41.80
5	9848.00	51.20 PK	74.00	-22.80	1.65 V	247	6.80	44.40
5	9848.00	42.10 AV	54.00	-11.90	1.65 V	247	-2.20	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

4.2.8 TEST RESULTS -OFDM

EUT	IEEE802.11g Wireless Access Point	MODEL	DWL-2200AP
MODE	Channel 1	FREQUENCY RANGE	1000~25000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION & BANDWIDTH	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	30 deg. C, 55%RH, 968 hPa	TESTED BY	Tony Chen

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	48.70 PK	74.00	-25.30	1.24 H	231	18.30	30.40
2	*2412.00	96.70 PK			1.50 H	85	66.20	30.50
2	*2412.00	88.90 AV			1.50 H	85	58.30	30.50
3	4824.00	39.80 PK	74.00	-34.20	1.69 H	41	3.50	36.20
4	7236.00	46.20 PK	74.00	-27.80	1.80 H	16	4.50	41.70
5	9648.00	48.20 PK	74.00	-25.80	1.45 H	93	3.30	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	2390.00	60.40 PK	74.00	-13.60	1.47 V	251	30.00	30.40
1	2390.00	51.90 AV	54.00	-2.10	1.47 V	251	21.50	30.40
2	*2412.00	110.70 PK			1.11 V	360	80.20	30.50
2	*2412.00	102.60 AV			1.11 V	360	72.10	30.50
3	4824.00	40.90 PK	74.00	-33.10	1.53 V	316	4.70	36.20
4	7236.00	47.80 PK	74.00	-26.20	1.40 V	328	6.20	41.70
5	9648.00	48.50 PK	74.00	-25.50	1.25 V	78	3.60	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	IEEE802.11g Wireless Access Point	MODEL	DWL-2200AP
MODE	Channel 6	FREQUENCY RANGE	1000~25000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION & BANDWIDTH	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	30 deg. C, 55%RH, 968 hPa	TESTED BY	Tony Chen

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	99.50 PK			1.61 H	101	68.80	30.70
1	*2437.00	91.80 AV			1.61 H	101	61.10	30.70
2	4874.00	41.10 PK	74.00	-32.90	1.88 H	41	4.70	36.50
3	7311.00	53.20 PK	74.00	-20.80	1.05 H	107	11.50	41.80
3	7311.00	42.00 AV	54.00	-12.00	1.05 H	107	0.20	41.80
4	9746.00	46.30 PK	74.00	-27.70	1.17 H	111	1.70	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	*2437.00	110.50 PK			1.20 V	325	79.80	30.70
1	*2437.00	102.60 AV			1.20 V	325	71.90	30.70
2	4874.00	45.60 PK	74.00	-28.40	1.06 V	337	9.10	36.50
3	7311.00	55.80 PK	74.00	-18.20	1.32 V	140	14.10	41.80
3	7311.00	43.50 AV	54.00	-10.50	1.32 V	140	1.80	41.80
4	9746.00	46.00 PK	74.00	-28.00	1.38 V	62	1.40	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	IEEE802.11g Wireless Access Point	MODEL	DWL-2200AP
MODE	Channel 11	FREQUENCY RANGE	1000~25000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION & BANDWIDTH	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	30 deg. C, 55%RH, 968 hPa	TESTED BY	Tony Chen

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	96.20 PK			1.93 H	29	65.30	30.80
1	*2462.00	88.70 AV			1.93 H	29	57.80	30.80
2	2483.50	47.60 PK	74.00	-26.40	1.27 H	360	16.60	31.00
3	4924.00	41.30 PK	74.00	-32.70	1.64 H	86	4.60	36.70
4	7386.00	46.10 PK	74.00	-27.90	1.50 H	64	4.20	41.80
5	9848.00	46.40 PK	74.00	-27.60	1.13 H	147	2.00	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	*2462.00	110.80 PK			1.07 V	3	80.00	30.80
1	*2462.00	102.80 AV			1.07 V	3	72.00	30.80
2	2483.50	61.30 PK	74.00	-12.70	1.04 V	31	30.30	31.00
2	2483.50	52.90 AV	54.00	-1.10	1.04 V	31	21.90	31.00
3	4924.00	40.40 PK	74.00	-33.60	1.77 V	41	3.70	36.70
4	7386.00	47.70 PK	74.00	-26.30	1.18 V	43	5.80	41.80
5	9848.00	48.40 PK	74.00	-25.60	1.57 V	6	4.00	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

EUT	IEEE802.11g Wireless Access Point	MODEL	DWL-2200AP
MODE	Turbo Channel 6	FREQUENCY RANGE	1000~25000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION & BANDWIDTH	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 60%RH, 968 hPa	TESTED BY	Tony Chen

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	95.30 PK			1.17 H	41	65.30	30.00
1	*2437.00	87.30 AV			1.17 H	41	57.30	30.00
2	4874.00	43.90 PK	74.00	-30.10	1.08 H	50	7.40	36.50
3	7311.00	45.80 PK	74.00	-28.20	1.75 H	74	4.00	41.80
4	9746.00	49.10 PK	74.00	-24.90	1.36 H	172	4.40	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	*2437.00	110.00 PK			1.15 V	360	80.00	30.00
1	*2437.00	101.20 AV			1.15 V	360	71.20	30.00
2	2969.00	40.60 PK	74.00	-33.40	1.06 V	20	9.10	31.50
3	4864.00	48.70 PK	74.00	-25.30	1.24 V	40	12.30	36.40
4	7311.00	50.10 PK	74.00	-23.90	1.93 V	46	8.30	41.80
5	9746.00	50.00 PK	74.00	-24.00	1.08 V	143	5.40	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
R&S SPECTRUM ANALYZER	FSP40	100036	Nov. 27, 2004

NOTE:

- 1.The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
- 2.The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.3.3 TEST PROCEDURE

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

4.3.4 TEST SETUP



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

4.3.5 EUT OPERATING CONDITIONS

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

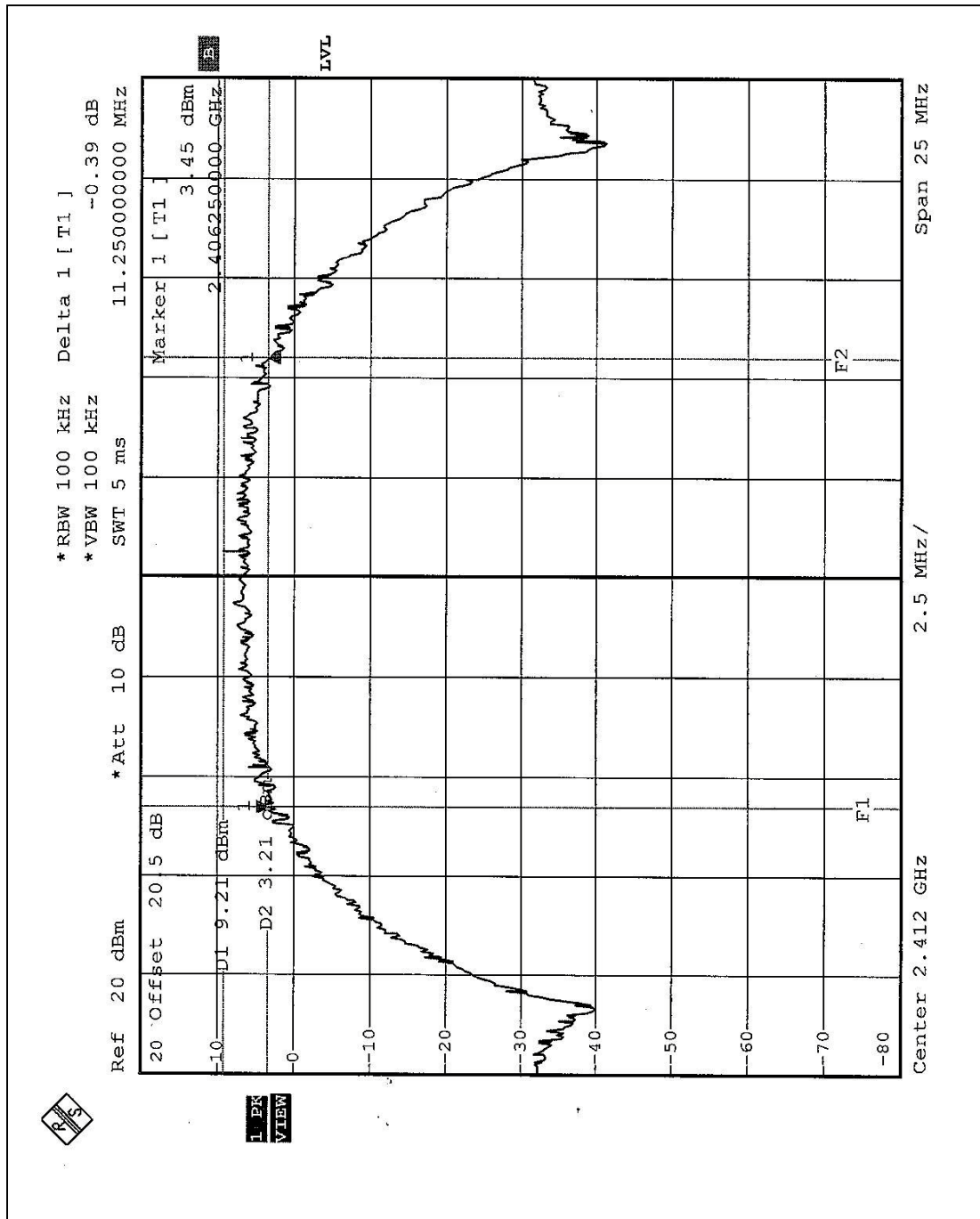


4.3.6 TEST RESULTS-DSSS

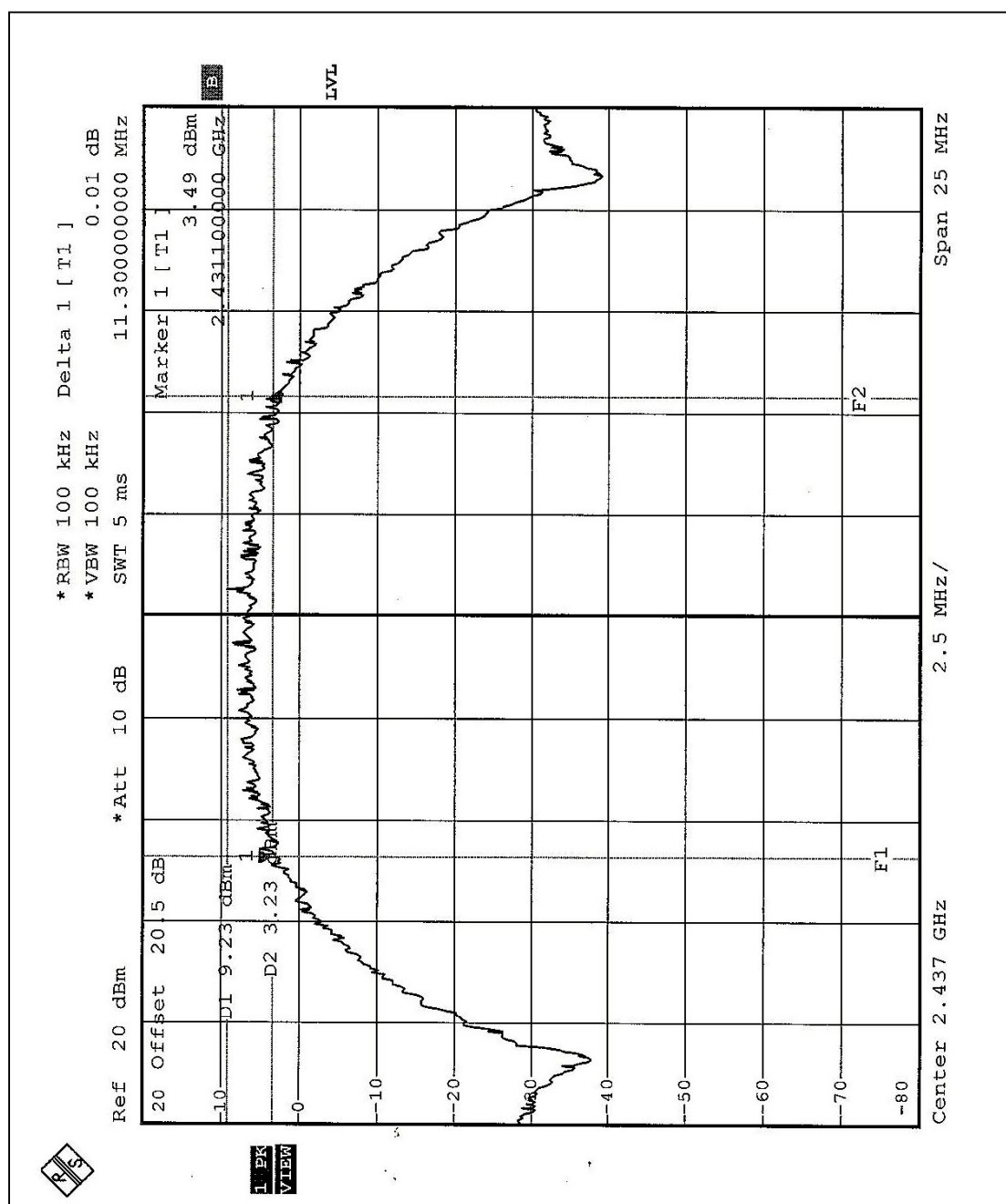
EUT	IEEE802.11g Wireless Access Point		
MODEL	DWL-2200AP	ENVIRONMENTAL CONDITIONS	27 deg. C, 59%RH, 968 hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	TESTED BY	Tony Chen

CHANNEL	CHANNEL FREQUENCY (MHz)	6 dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	11.25	0.5	PASS
6	2437	11.30	0.5	PASS
11	2462	11.50	0.5	PASS

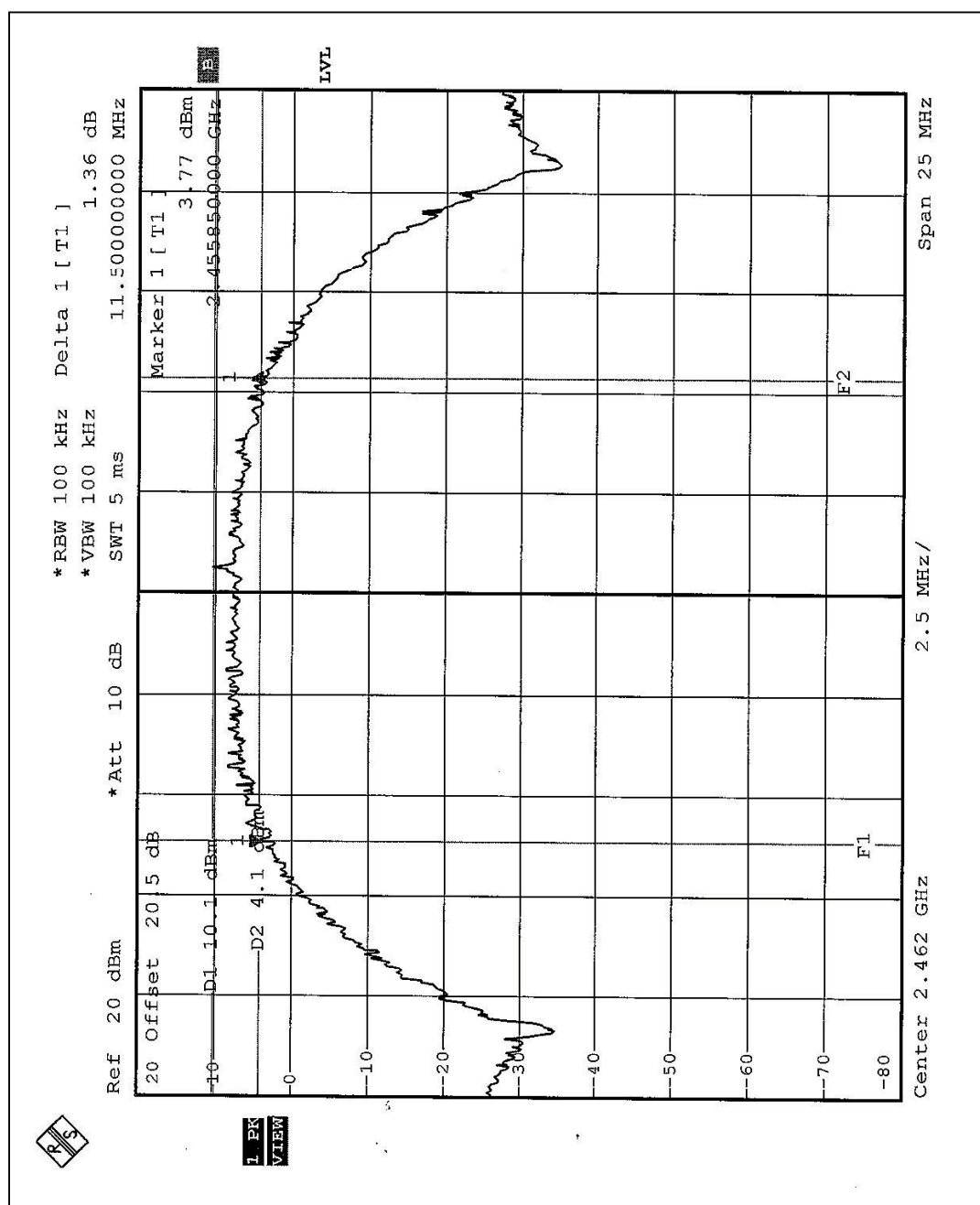
CH1



CH6



CH11

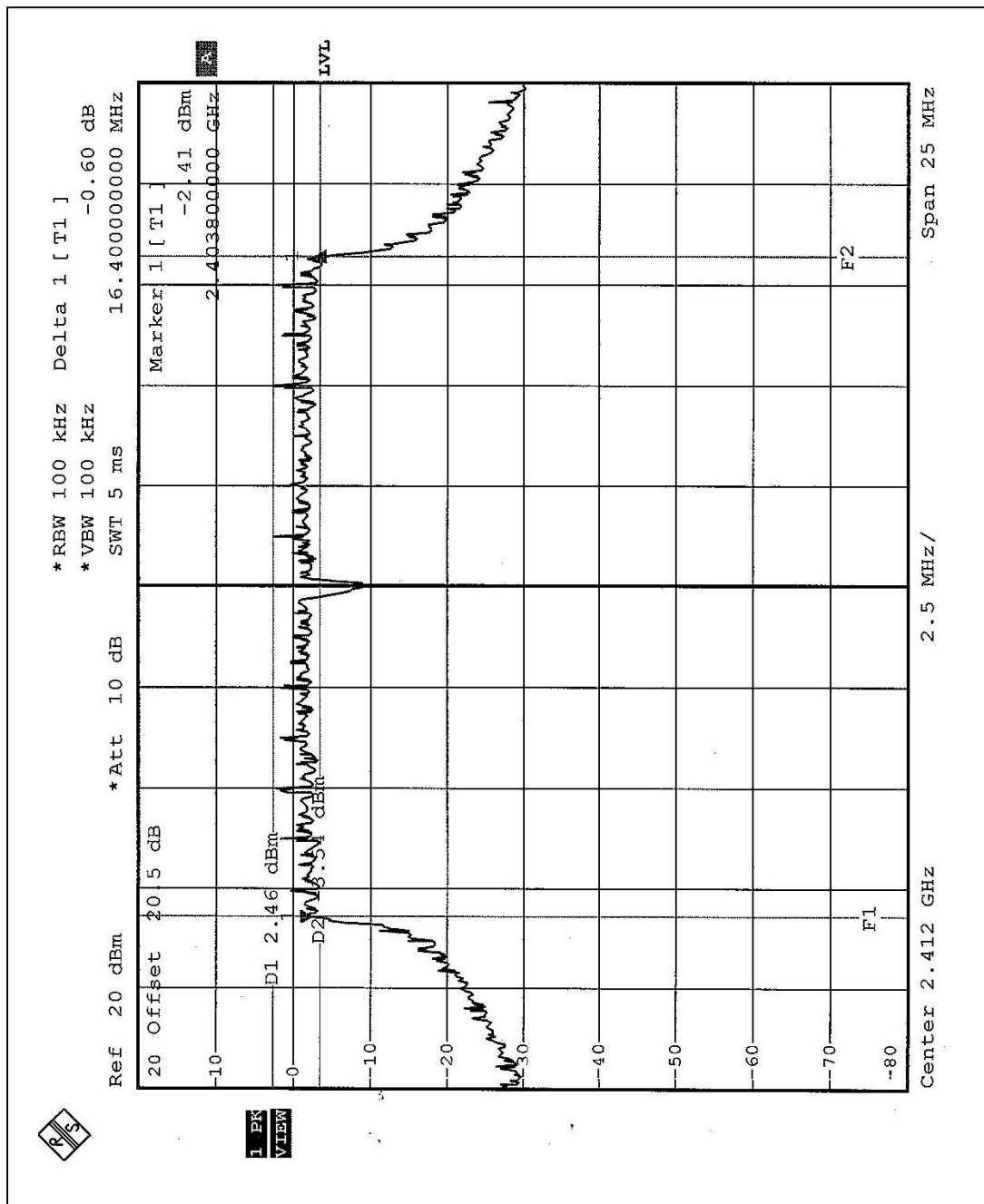


4.3.7 TEST RESULTS-OFDM

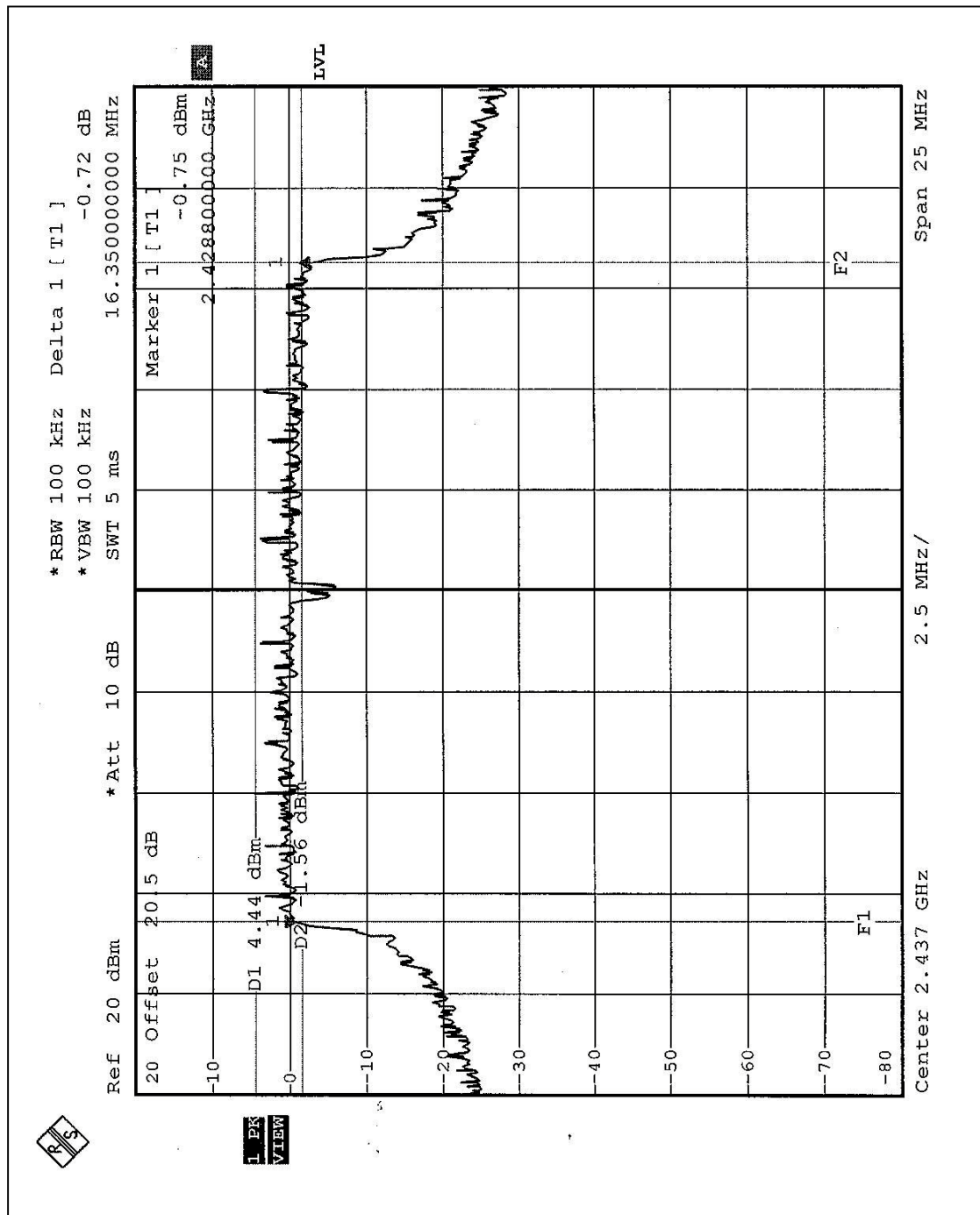
EUT	IEEE802.11g Wireless Access Point		
MODEL	DWL-2200AP	ENVIRONMENTAL CONDITIONS	27 deg. C, 59%RH, 968 hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	TESTED BY	Tony Chen

CHANNEL	CHANNEL FREQUENCY (MHz)	6 dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	16.40	0.5	PASS
6	2437	16.35	0.5	PASS
11	2462	16.40	0.5	PASS
Turbo 6	2437	31.30	0.5	PASS

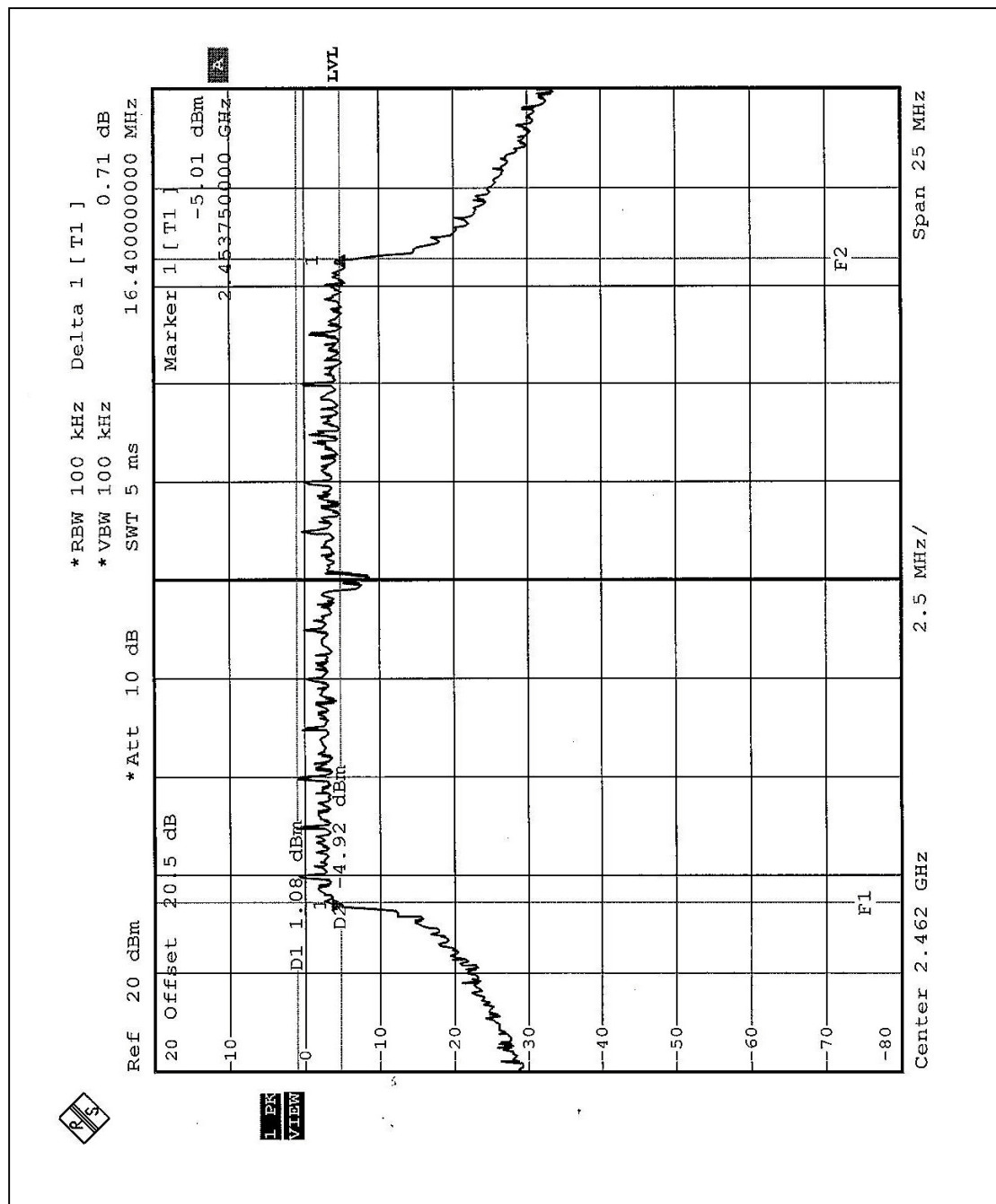
CH1



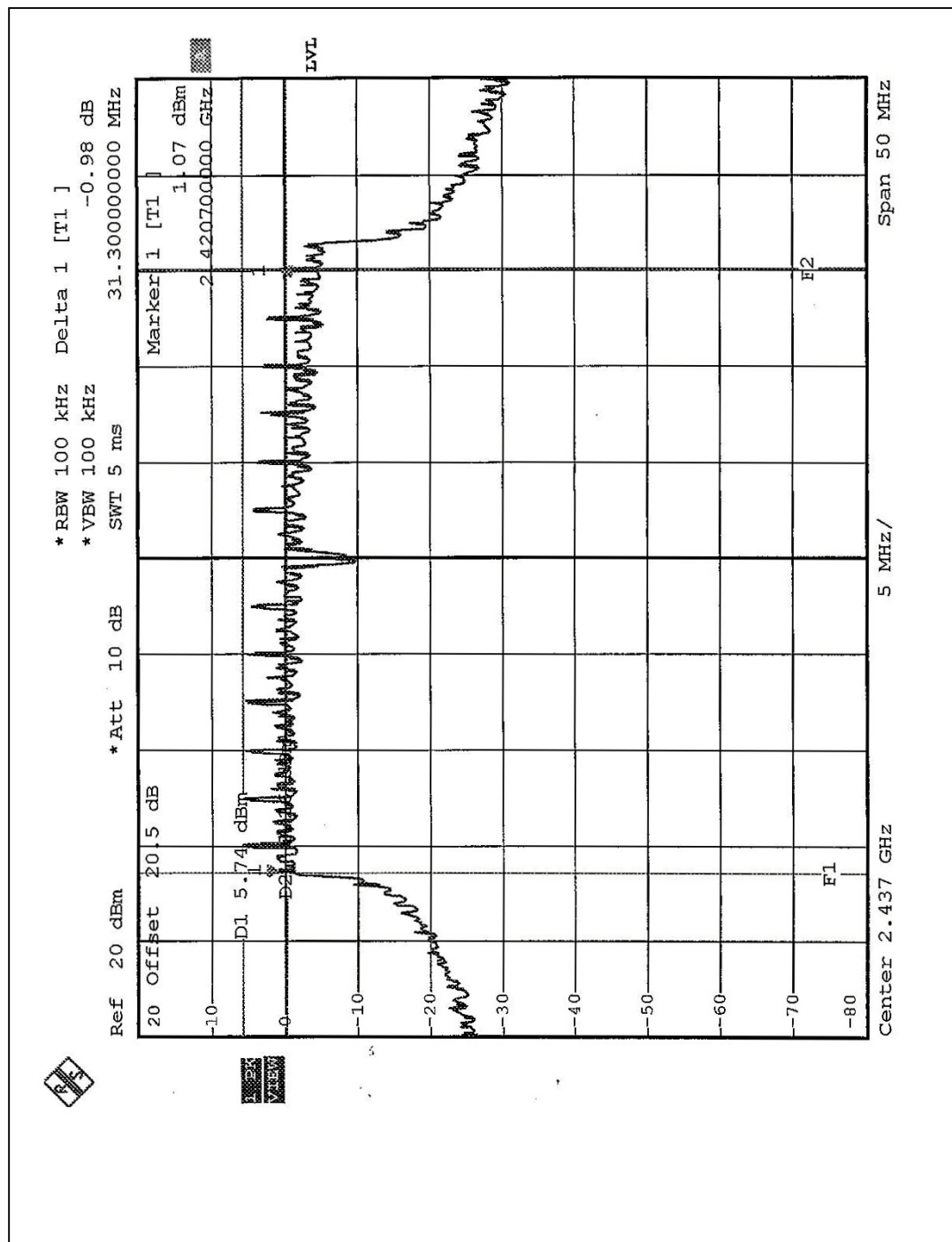
CH6



CH11



Turbo CH6



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	FSP40	100036	Nov. 27, 2004
Agilent SIGNAL GENERATOR	E8257C	MY43320668	Jan. 1, 2005
TEKTRONIX OSCILLOSCOPE	TDS 220	B027241	Jun. 30, 2005
NARDA DETECTOR	4503A	FSCM99899	NA

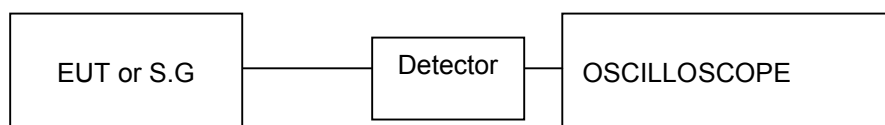
NOTE:

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 peak 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 peak reading on oscilloscope. Record the power level.

4.4.4 TEST SETUP



4.4.5 EUT OPERATING CONDITIONS

Same as Item 4.3.5

4.4.6 TEST RESULTS- DSSS

EUT	IEEE802.11g Wireless Access Point		
MODEL	DWL-2200AP	ENVIRONMENTAL CONDITIONS	27 deg. C, 59%RH, 968 hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	TESTED BY	Tony Chen

Antenna Gain 5.0dBi

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	20.09	30	PASS
6	2437	20.12	30	PASS
11	2462	20.50	30	PASS

4.4.7 TEST RESULTS- OFDM

EUT	IEEE802.11g Wireless Access Point		
MODEL	DWL-2200AP	ENVIRONMENTAL CONDITIONS	27 deg. C, 59%RH, 968 hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	TESTED BY	Tony Chen

Antenna Gain 5.0dBi

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	19.60	30	PASS
6	2437	20.80	30	PASS
11	2462	19.20	30	PASS
Turbo 6	2437	20.62	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
R&S SPECTRUM ANALYZER	FSP40	100036	Nov. 27, 2004

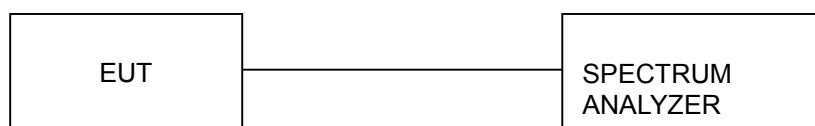
NOTE:

- 1.The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
- 2.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 3 kHz RBW and 30 kHz 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 TEST SETUP



4.5.5 EUT OPERATING CONDITIONS

Same as 4.3.5

4.5.6 TEST RESULTS-DSSS

EUT	IEEE802.11g Wireless Access Point		
MODEL	DWL-2200AP	ENVIRONMENTAL CONDITIONS	27 deg. C, 59%RH, 968 hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	TESTED BY	Tony Chen

CHANNEL NUMBER	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 KHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-5.0	8	PASS
6	2437	-4.58	8	PASS
11	2462	-4.8	8	PASS

CH1

