FCC TEST REPORT

REPORT NO.: RF930702L05
MODEL NO.: DWL-G122
RECEIVED: Jul. 02, 2004
TESTED: Jul. 07 to 19, 2004

APPLICANT: D-LINK CORPORATION

ADDRESS: No. 8, Li-shing Road VII, Science-based Industrial Park, Hsinchu Taiwan

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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Table of Contents

1 CERTIFICATION 4
2 SUMMARY OF TEST RESULTS 5
3 GENERAL INFORMATION 6
3.1 GENERAL DESCRIPTION OF EUT 6
3.2 DESCRIPTION OF TEST MODES 7
3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS 7
3.4 DESCRIPTION OF SUPPORT UNITS 8
3.5 CONFIGURATION OF SYSTEM UNDER TEST 9
4 TEST TYPES AND RESULTS 10
4.1 CONDUCTED EMISSION MEASUREMENT 10
4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT 10
4.1.2 TEST INSTRUMENTS 10
4.1.3 TEST SETUP 11
4.1.4 EUT OPERATING CONDITIONS 12
4.1.5 TEST RESULTS 13
4.2 Radiated Emission Measurement 15
4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT 15
4.2.2 TEST INSTRUMENTS 16
4.2.3 TEST PROCEDURES 17
4.2.4 TEST SETUP 18
4.2.5 EUT OPERATING CONDITIONS 18
4.2.6 TEST RESULTS 19
4.2.7 TEST RESULTS –DSSS 21
4.2.8 TEST RESULTS - OFDM 24
4.3 6dB BANDWIDTH MEASUREMENT 27
4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT 27
4.3.2 TEST INSTRUMENTS 27
4.3.3 TEST PROCEDURE 28
4.3.4 TEST SETUP 28
4.3.5 EUT OPERATING CONDITIONS 28
4.3.6 TEST RESULTS-DSSS 29
4.3.7 TEST RESULTS-OFDM 33
4.4 MAXIMUM PEAK OUTPUT POWER 37
4.4.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT 37
4.4.2 TEST INSTRUMENTS 37

4.4.3 TEST PROCEDURES 38
4.4.4 TEST SETUP 38
4.4.5 EUT OPERATING CONDITIONS 38
4.4.6 TEST RESULTS- DSSS 39
4.4.7 TEST RESULTS- OFDM 40
4.5 POWER SPECTRAL DENSITY MEASUREMENT 41
4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT 41
4.5.2 TEST INSTRUMENTS 41
4.5.3 TEST PROCEDURE 42
4.5.4 TEST SETUP 42
4.5.5 EUT OPERATING CONDITIONS 42
4.5.6 TEST RESULTS-DSSS 43
4.5.7 TEST RESULTS-OFDM 47
4.6 BAND EDGES MEASUREMENT 51
4.6.1 LIMITS OF BAND EDGES MEASUREMENT 51
4.6.2 TEST INSTRUMENTS 51
4.6.3 TEST PROCEDURE 51
4.6.4 EUT OPERATING CONDITION 51
4.6.5 TEST RESULTS –DSSS 52
4.6.6 TEST RESULTS- OFDM 55
4.7 ANTENNA REQUIREMENT 58
4.7.1 STANDARD APPLICABLE 58
4.7.2 ANTENNA CONNECTED CONSTRUCTION 58
5 PHOTOGRAPHS OF THE TEST CONFIGURATION 59
6 INFORMATION ON THE TESTING LABORATORIES 63

1 CERTIFICATION

PRODUCT :	802.11g/2.4GHz Wireless USB Adapter
BRAND NAME :	D-Link
MODEL NO. :	DWL-G122
TESTED:	Jul. 07 to 19, 2004
APPLICANT :	D-LINK CORPORATION
TEST ITEM:	ENGINEERING SAMPLE
STANDARDS :	47 CFR Part 15, Subpart C (Section 15.247), ANSI C63.4-2001

The above equipment (Model: DWL-G122) 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 : Amanda Chu , **DATE:** Jul. 19, 2004
(Amanda Chu)

TECHNICAL ACCEPTANCE : Hank Chung , **DATE:** Jul. 19, 2004
Responsible for RF
(Hank Chung)

APPROVED BY : , **DATE:** Jul. 19, 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 –12.14 dBuV at 0.161 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 –1.8 dBuV at 2786.00MHz
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	802.11g/2.4GHz Wireless USB Adapter
MODEL NO.	DWL-G122
POWER SUPPLY	5Vdc from host equipment
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
FREQUENCY RANGE	2412MHz ~ 2462MHz
NUMBER OF CHANNEL	11
OUTPUT POWER	11b: 18.35dBm 11g: 19.54dBm
ANTENNA TYPE	Chip antenna
DATA CABLE	USB cable (shielded, 1.5m)
I/O PORTS	USB port x 1
ASSOCIATED DEVICES	NA

NOTE:

1. The EUT, operates in the 2.4GHz frequency range, lets you connect IEEE 802.11g or IEEE 802.11b devices to the network. With its high-speed data transmissions of up to 54Mbps.

2. This product can be also programmed to operate in the frequency range allowed in France.

3. 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		

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.

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is an 802.11g/2.4GHz Wireless USB Adapter. 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 C63.4-2001

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.

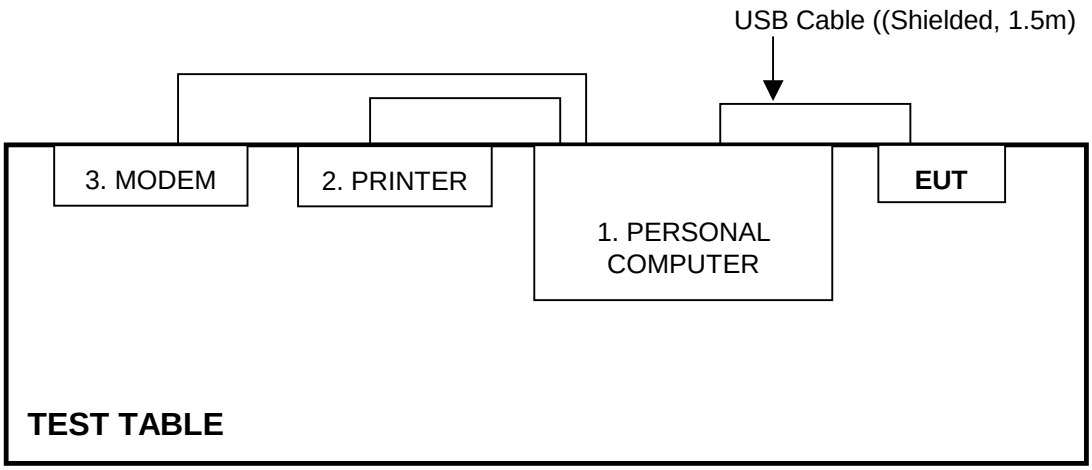
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK COMPUTER	Dell	PP01L	TW-09c748-12800-165-3171	FCC DoC
2	PRINTER	HP	C2642A	MY79F1C3MZ	B94C2642X
3	MODEM	ACEEX	1414	0206026776	IFAXDM1414

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA
2	1.9m braid shielded wire, terminated with DB25 and Centronics connector via metallic frame, w/o core
3	1.0 m braid shielded wire, terminated with DB25 and DB9 connector via metallic frame, w/o core.

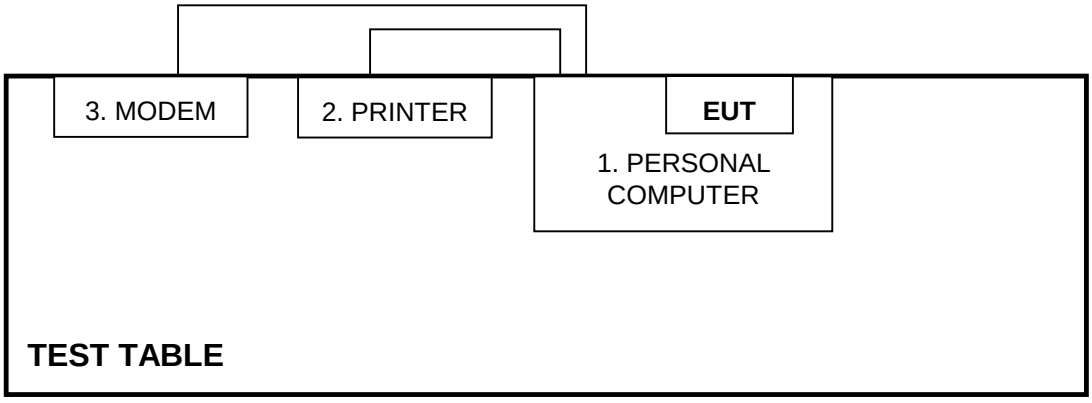
NOTE: All power cords of the above support units are non-shielded (1.8m).

3.5 CONFIGURATION OF SYSTEM UNDER TEST

WITH USB CABLE:



WITHOUT USB CABLE:



NOTE: 1. 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 (dBμV)	
	Quasi-peak	Average
0.15-0.5 0.5-5 5-30	66 to 56 56 60	56 to 46 46 50

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. 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. 02, 2005
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.

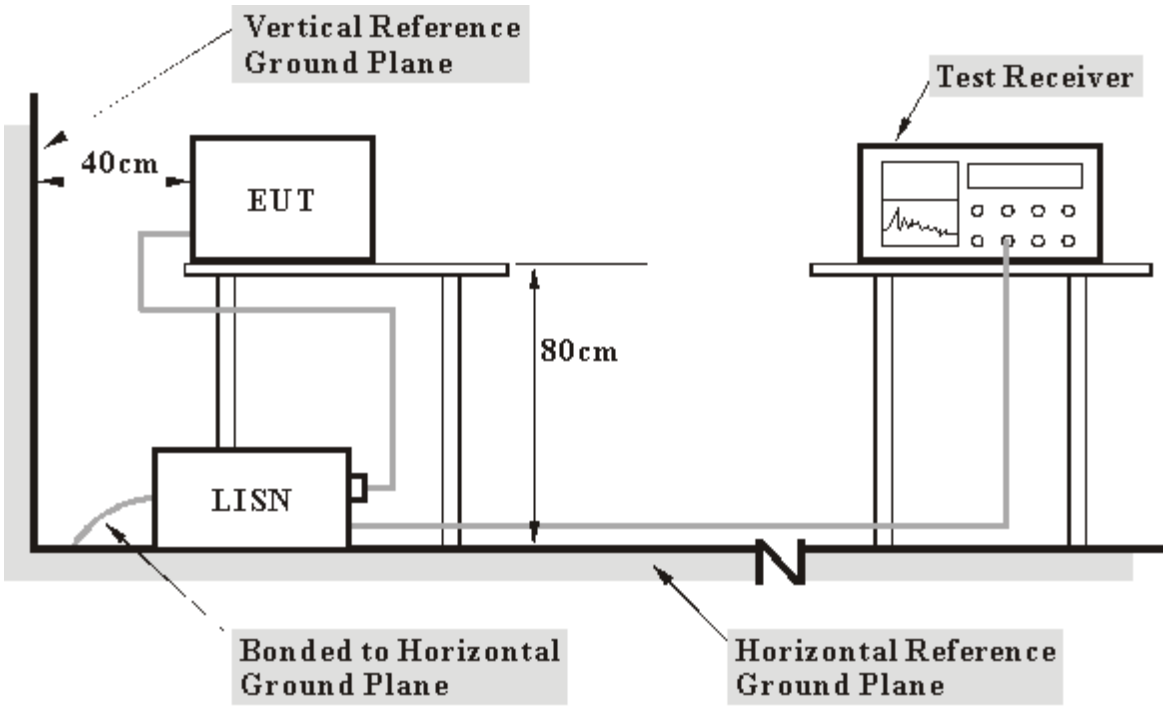
4. TEST PROCEDURES

a. 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.

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

c. 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: 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.

4.1.4 EUT OPERATING CONDITIONS

a. Plug the EUT into the support unit 1 (Notebook computer) which placed on a testing table.

b. The support unit 1 (Notebook computer) ran a test program “Configuration Utility-RT2500USB” to enable EUT under transmission condition continuously at specific channel frequency.

c. Notebook computer sends "H" messages to modem.

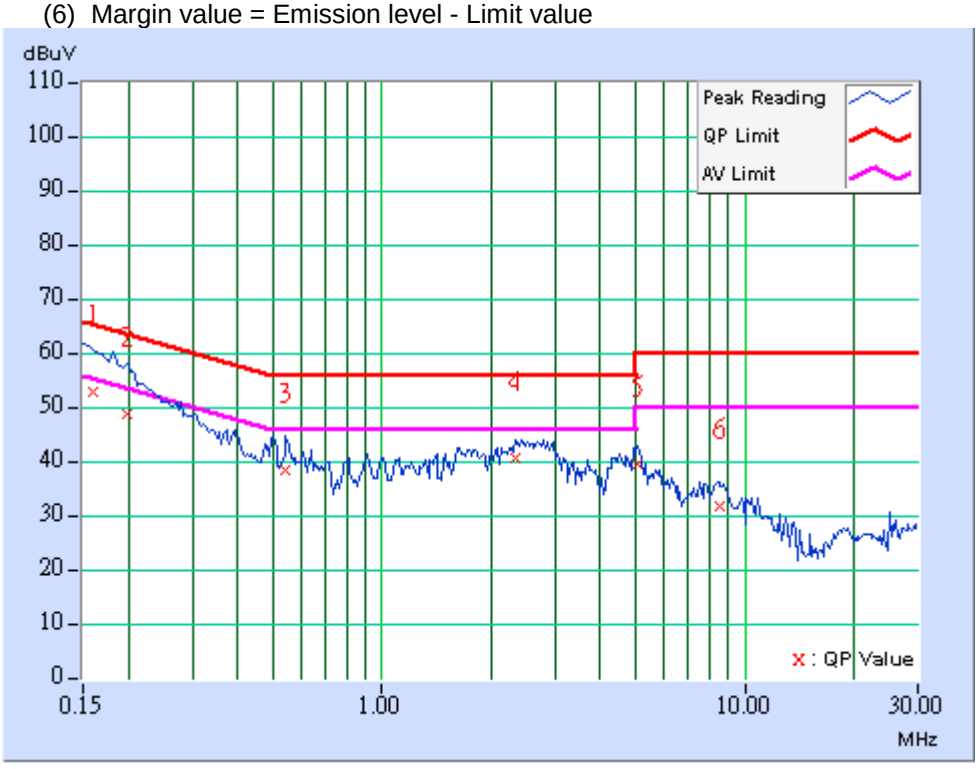
d. Notebook computer sends "H" messages to printer, and the printer prints them on paper.

4.1.5 TEST RESULTS

EUT	802.11g/2.4GHz Wireless USB Adapter	**MODEL**	DWL-G122
MODE	Channel 11	**6dB BANDWIDTH**	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**PHASE**	Line (L)
ENVIRONMENTAL CONDITIONS	27 deg. C, 61%RH, 970 hPa	**TESTED BY**	Moris Lin

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	0.159	0.22	52.14	-	52.36	-	65.50	55.50	-13.14	-
2	0.198	0.30	48.13	-	48.43	-	63.68	53.68	-15.25	-
3	0.545	0.22	37.77	-	37.99	-	56.00	46.00	-18.01	-
4	2.338	0.32	40.04	-	40.36	-	56.00	46.00	-15.64	-
5	5.094	0.47	38.85	-	39.32	-	60.00	50.00	-20.68	-
6	8.488	0.70	31.30	-	32.00	-	60.00	50.00	-28.00	-

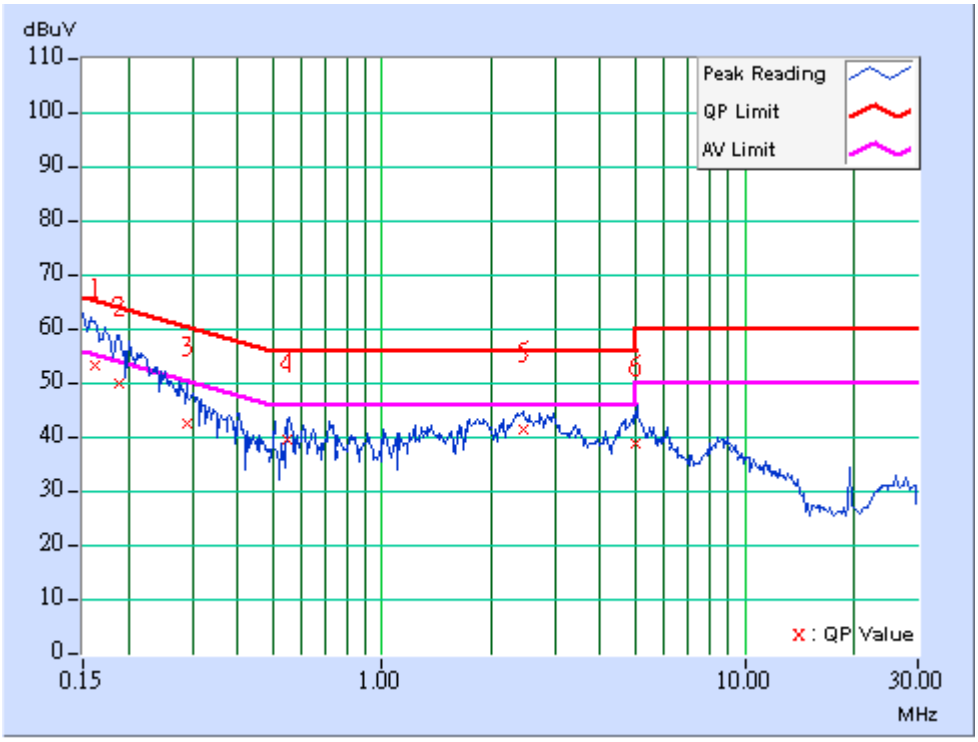
NOTES: (1) "*": Undetectable
(2) Q.P. and AV. are abbreviations of quasi-peak and average.
(3) "-": The Quasi-peak reading value also meets an average limit, thus measurement with the average detector is unnecessary.
(4) The emission levels of other frequencies were very low against the limit.
(5) Correction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



EUT	802.11g/2.4GHz Wireless USB Adapter	**MODEL**	DWL-G122
MODE	Channel 11	**6dB BANDWIDTH**	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**PHASE**	Neutral (N)
ENVIRONMENTAL CONDITIONS	27 deg. C, 61%RH, 970 hPa	**TESTED BY**	Moris Lin

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	**0.161**	**0.22**	**53.03**	**-**	**53.25**	**-**	**65.39**	**55.39**	**-12.14**	**-**
2	0.189	0.28	49.65	-	49.93	-	64.08	54.08	-14.15	-
3	0.291	0.25	42.17	-	42.42	-	60.51	50.51	-18.08	-
4	0.548	0.22	39.01	-	39.23	-	56.00	46.00	-16.77	-
5	2.459	0.32	41.14	-	41.46	-	56.00	46.00	-14.54	-
6	5.000	0.45	38.55	-	39.00	-	56.00	46.00	-17.00	-

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(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

NOTE:

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

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
HP Spectrum Analyzer	8594ER	3829U04676	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	Jun 16, 2005
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-1 GHz-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.

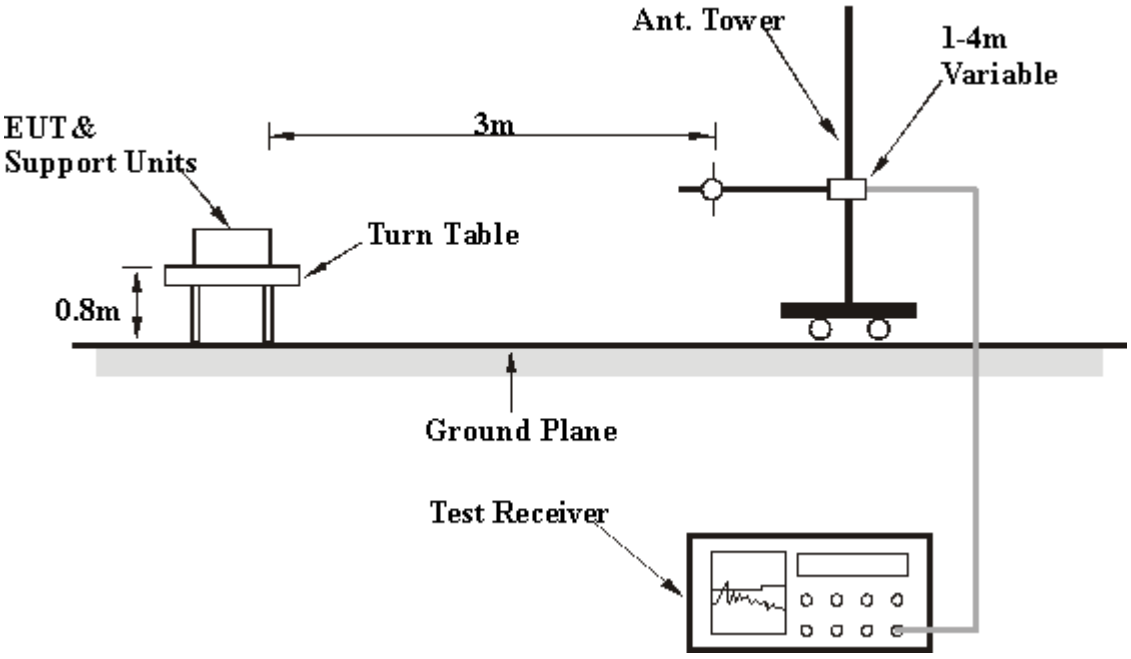
e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

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	802.11g/2.4GHz Wireless USB Adapter	**MODEL**	DWL-G122
MODE	With USB Cable, Channel 11	**FREQUENCY RANGE**	30-1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION & BANDWIDTH**	Quasi-Peak, 120kHz
ENVIRONMENTAL CONDITIONS	30 deg. C, 55%RH, 970 hPa	**TESTED BY**	Sky Liao

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	48.01	22.10 QP	40.00	-17.90	2.56 H	358	12.10	10.00
2	199.37	33.10 QP	43.50	-10.40	2.03 H	317	23.30	9.80
3	480.03	29.80 QP	46.00	-16.20	1.00 H	165	8.90	20.90
4	528.03	28.40 QP	46.00	-17.60	2.03 H	33	5.90	22.40
5	600.00	26.60 QP	46.00	-19.40	1.29 H	19	4.00	22.60
6	870.00	31.30 QP	46.00	-14.70	1.03 H	254	3.30	28.00
7	930.00	35.20 QP	46.00	-10.80	1.19 H	114	6.00	29.30
8	960.00	33.10 QP	54.00	-20.90	1.19 H	107	3.20	29.80

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	160.01	19.00 QP	43.50	-24.50	1.00 V	277	7.40	11.60
2	168.01	21.00 QP	43.50	-22.50	1.17 V	294	10.10	10.90
3	199.55	24.80 QP	43.50	-18.70	1.18 V	9	15.00	9.80
4	240.02	24.80 QP	46.00	-21.20	1.10 V	0	11.80	12.90
5	264.02	25.60 QP	46.00	-20.40	1.11 V	272	10.20	15.40
6	360.03	30.70 QP	46.00	-15.30	1.24 V	299	13.40	17.30
7	480.00	35.30 QP	46.00	-10.70	1.12 V	0	14.40	20.90
8	528.03	29.50 QP	46.00	-16.50	1.05 V	7	7.00	22.40
9	720.05	26.70 QP	46.00	-19.30	1.00 V	308	1.60	25.10
10	870.00	37.00 QP	46.00	-9.00	1.24 V	358	9.00	28.00
11	900.00	33.20 QP	46.00	-12.80	1.22 V	358	4.80	28.40
12	930.00	41.80 QP	46.00	-4.20	1.19 V	10	12.50	29.30
13	960.00	36.40 QP	46.00	-9.60	1.17 V	17	6.60	29.80

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	802.11g/2.4GHz Wireless USB Adapter	**MODEL**	DWL-G122
MODE	Without USB Cable, Channel 11	**FREQUENCY RANGE**	30-1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION & BANDWIDTH**	Quasi-Peak, 120kHz
ENVIRONMENTAL CONDITIONS	30 deg. C, 55%RH, 970 hPa	**TESTED BY**	Sky Liao

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	144.01	20.50 QP	43.50	-23.00	2.31 H	64	8.10	12.50
2	192.01	29.20 QP	43.50	-14.30	1.81 H	282	19.20	10.00
3	240.02	23.10 QP	46.00	-22.90	1.02 H	234	10.10	12.90
4	336.02	28.70 QP	46.00	-17.30	1.21 H	255	12.20	16.50
5	384.03	29.90 QP	46.00	-16.10	1.00 H	102	11.80	18.10
6	432.03	26.30 QP	46.00	-19.70	2.16 H	309	6.80	19.50
7	480.03	26.80 QP	46.00	-19.20	2.11 H	151	5.90	20.90
8	624.04	26.20 QP	46.00	-19.80	1.88 H	149	2.90	23.30
9	680.00	29.30 QP	46.00	-16.70	1.29 H	334	5.20	24.10
10	750.00	31.70 QP	46.00	-14.30	1.29 H	315	5.30	26.50
11	870.00	28.90 QP	46.00	-17.10	1.37 H	264	0.90	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	192.01	23.00 QP	43.50	-20.50	1.06 V	275	13.10	10.00
2	199.68	26.30 QP	43.50	-17.20	1.00 V	72	16.50	9.80
3	240.02	21.90 QP	46.00	-24.10	1.00 V	324	9.00	12.90
4	480.03	26.50 QP	46.00	-19.50	1.19 V	16	5.60	20.90
5	600.00	27.10 QP	46.00	-18.90	1.11 V	260	4.50	22.60
6	680.00	26.20 QP	46.00	-19.80	1.04 V	282	2.10	24.10
7	750.00	32.50 QP	46.00	-13.50	1.06 V	263	6.10	26.50
8	760.00	30.60 QP	46.00	-15.40	1.11 V	262	4.20	26.40
9	799.98	28.30 QP	46.00	-17.70	1.00 V	215	2.30	26.00
10	930.00	30.30 QP	46.00	-15.70	1.00 V	216	1.10	29.30

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

4.2.7 TEST RESULTS –DSSS

EUT	802.11g/2.4GHz Wireless USB Adapter	**MODEL**	DWL-G122
MODE	Channel 1	**FREQUENCY RANGE**	1000~25000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION & BANDWIDTH**	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	24 deg. C, 69%RH, 970 hPa	**TESTED BY**	Sky Liao

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	2366.00	45.50 PK	74.00	-28.50	1.27 H	237	14.80	30.70
2	2390.00	50.30 PK	74.00	-23.70	1.24 H	23	16.50	33.80
3	*2412.00	106.00 PK			1.38 H	4	76.10	29.90
3	*2412.00	98.60 AV			1.38 H	4	68.70	29.90
4	2786.00	48.10 PK	74.00	-25.90	1.04 H	259	17.00	31.10
5	4824.00	43.80 PK	74.00	-30.20	1.24 H	201	7.50	36.20
6	7236.00	51.40 PK	74.00	-22.60	1.04 H	114	9.80	41.70
6	7236.00	40.50 AV	54.00	-13.50	1.04 H	114	-1.10	41.70

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	2366.00	48.00 PK	74.00	-26.00	1.13 V	241	17.30	30.70
2	2390.00	48.60 PK	74.00	-25.40	1.41 V	114	14.80	33.80
3	*2412.00	103.10 PK			1.42 V	354	73.20	29.90
3	*2412.00	96.10 AV			1.42 V	354	66.20	29.90
4	2786.00	53.40 PK	74.00	-20.60	1.24 V	343	22.30	31.10
4	2786.00	51.90 AV	54.00	-2.10	1.24 V	343	20.80	31.10
5	4824.00	44.60 PK	74.00	-29.40	1.26 V	258	8.30	36.20
6	7236.00	52.60 PK	74.00	-21.40	1.14 V	201	10.90	41.70
6	7236.00	42.70 AV	54.00	-11.30	1.14 V	201	1.10	41.70

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

EUT	802.11g/2.4GHz Wireless USB Adapter	**MODEL**	DWL-G122
MODE	Channel 6	**FREQUENCY RANGE**	1000~25000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION & BANDWIDTH**	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	24 deg. C, 69%RH, 970 hPa	**TESTED BY**	Sky Liao

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	107.50 PK			1.37 H	6	77.50	30.00
1	*2437.00	100.30 AV			1.37 H	6	70.30	30.00
2	2811.00	49.10 PK	74.00	-24.90	1.18 H	348	18.00	31.10
3	4874.00	45.10 PK	74.00	-28.90	1.24 H	201	8.70	36.50
4	7311.00	51.70 PK	74.00	-22.30	1.11 H	104	10.00	41.80
4	7311.00	41.90 AV	54.00	-12.10	1.11 H	104	0.20	41.80

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	104.20 PK			1.19 V	7	74.20	30.00
1	*2437.00	97.20 AV			1.19 V	7	67.20	30.00
2	2811.00	53.10 PK	74.00	-20.90	1.18 V	345	22.00	31.10
2	2811.00	51.60 AV	54.00	-2.40	1.18 V	345	20.50	31.10
3	4874.00	45.70 PK	74.00	-28.30	1.27 V	236	9.30	36.50
4	7311.00	51.90 PK	74.00	-22.10	1.02 V	214	10.20	41.80
4	7311.00	42.00 AV	54.00	-12.00	1.02 V	214	0.30	41.80

REMARKS:
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. The limit value is defined as per 15.247
6. " * " : Fundamental frequency

EUT	802.11g/2.4GHz Wireless USB Adapter	**MODEL**	DWL-G122
MODE	Channel 11	**FREQUENCY RANGE**	1000~25000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION & BANDWIDTH**	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	24 deg. C, 69%RH, 970 hPa	**TESTED BY**	Sky Liao

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	106.90 PK			1.11 H	4	76.80	30.10
1	*2462.00	99.90 AV			1.11 H	4	69.80	30.10
2	2483.50	51.30 PK	74.00	-22.70	1.24 H	12	21.20	30.10
2	2483.50	40.90 AV	54.00	-13.10	1.24 H	12	10.80	30.10
3	2498.00	41.60 PK	74.00	-32.40	1.05 H	347	10.00	31.60
4	2836.00	48.00 PK	74.00	-26.00	1.16 H	347	16.80	31.20
5	4924.00	45.90 PK	74.00	-28.10	1.25 H	258	9.20	36.70
6	7386.00	56.10 PK	74.00	-17.90	1.24 H	114	14.30	41.80
6	7386.00	42.50 AV	54.00	-11.50	1.24 H	114	0.60	41.80

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	105.10 PK			1.35 V	2	75.00	30.10
1	*2462.00	98.10 AV			1.35 V	2	68.00	30.10
2	2483.50	48.60 PK	74.00	-25.40	1.47 V	254	18.50	30.10
3	2498.00	43.50 PK	74.00	-30.50	1.30 V	360	11.80	31.60
4	2836.00	50.90 PK	74.00	-23.10	1.03 V	5	19.70	31.20
5	4924.00	44.80 PK	74.00	-29.20	1.04 V	123	8.10	36.70
6	7386.00	53.00 PK	74.00	-21.00	1.19 V	147	11.10	41.80
6	7386.00	41.50 AV	54.00	-12.50	1.19 V	147	-0.40	41.80

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	802.11g/2.4GHz Wireless USB Adapter	**MODEL**	DWL-G122
MODE	Channel 1	**FREQUENCY RANGE**	1000~25000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION & BANDWIDTH**	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	24 deg. C, 69%RH, 970 hPa	**TESTED BY**	Sky Liao

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	2366.00	45.70 PK	74.00	-28.30	1.70 H	222	15.00	30.70
2	2390.00	54.30 PK	74.00	-19.70	1.24 H	231	20.50	33.80
2	2390.00	45.20 AV	54.00	-8.80	1.24 H	231	11.40	33.80
3	*2412.00	102.60 PK			1.37 H	6	72.70	29.90
3	*2412.00	94.10 AV			1.37 H	6	64.20	29.90
4	2786.00	50.10 PK	74.00	-23.90	1.19 H	354	19.00	31.10
5	4824.00	43.20 PK	74.00	-30.80	1.46 H	2	7.00	36.20
6	7236.00	46.90 PK	74.00	-27.10	1.08 H	280	5.20	41.70

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	2038.00	37.20 PK	74.00	-36.80	1.03 V	52	8.20	28.90
2	2366.00	46.50 PK	74.00	-27.50	1.10 V	228	15.80	30.70
3	2390.00	52.40 PK	74.00	-21.60	1.24 V	237	18.60	33.80
3	2390.00	43.70 AV	54.00	-10.30	1.24 V	237	9.90	33.80
4	*2412.00	101.40 PK			1.18 V	230	71.50	29.90
4	*2412.00	92.60 AV			1.18 V	230	62.70	29.90
5	2786.00	53.90 PK	74.00	-20.10	1.23 V	347	22.80	31.10
5	**2786.00**	**52.20 AV**	**54.00**	**-1.80**	**1.23 V**	**347**	**21.10**	**31.10**
6	4824.00	43.90 PK	74.00	-30.10	1.37 V	2	7.60	36.20
7	7236.00	47.40 PK	74.00	-26.60	1.37 V	2	5.80	41.70

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

EUT	802.11g/2.4GHz Wireless USB Adapter	**MODEL**	DWL-G122
MODE	Channel 6	**FREQUENCY RANGE**	1000~25000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION & BANDWIDTH**	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	24 deg. C, 69%RH, 970 hPa	**TESTED BY**	Sky Liao

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	1920.00	38.70 PK	74.00	-35.30	1.05 H	312	10.20	28.50
2	*2437.00	105.20 PK			1.23 H	204	75.20	30.00
2	*2437.00	94.60 AV			1.23 H	204	64.60	30.00
3	2811.00	47.30 PK	74.00	-26.70	1.07 H	360	16.20	31.10
4	4874.00	45.20 PK	74.00	-28.80	1.51 H	37	8.70	36.50
5	7311.00	48.40 PK	74.00	-25.60	1.10 H	121	6.70	41.80

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	1920.00	43.70 PK	74.00	-30.30	1.33 V	11	15.20	28.50
2	*2437.00	104.30 PK			1.10 V	232	74.30	30.00
2	*2437.00	94.50 AV			1.10 V	232	64.50	30.00
3	2811.00	54.00 PK	74.00	-20.00	1.62 V	13	22.80	31.10
3	2811.00	51.30 AV	54.00	-2.70	1.62 V	13	20.20	31.10
4	4874.00	46.00 PK	74.00	-28.00	1.13 V	48	9.60	36.50
5	7311.00	46.80 PK	74.00	-27.20	1.19 V	133	5.10	41.80

REMARKS:
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. The limit value is defined as per 15.247
6. " * " : Fundamental frequency

EUT	802.11g/2.4GHz Wireless USB Adapter	**MODEL**	DWL-G122
MODE	Channel 11	**FREQUENCY RANGE**	1000~25000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION & BANDWIDTH**	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	24 deg. C, 69%RH, 970 hPa	**TESTED BY**	Sky Liao

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	102.60 PK			1.11 H	208	72.50	30.10
1	*2462.00	93.70 AV			1.11 H	208	63.70	30.10
2	2483.50	51.20 PK	74.00	-22.80	1.24 H	124	21.10	30.10
2	2483.50	42.50 AV	54.00	-11.50	1.24 H	124	12.40	30.10
3	2498.00	42.60 PK	74.00	-31.40	1.24 H	358	11.00	31.60
4	2836.00	47.70 PK	74.00	-26.30	1.00 H	8	16.50	31.20
5	4924.00	45.10 PK	74.00	-28.90	1.09 H	103	8.40	36.70
6	7386.00	50.30 PK	74.00	-23.70	1.25 H	69	8.50	41.80

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	102.20 PK			1.11 V	228	72.20	30.10
1	*2462.00	93.70 AV			1.11 V	228	63.60	30.10
2	2483.50	52.30 PK	74.00	-21.70	1.14 V	247	22.20	30.10
2	2483.50	42.50 AV	54.00	-11.50	1.14 V	247	12.40	30.10
3	2498.00	42.80 PK	74.00	-31.20	1.12 V	323	11.20	31.60
4	2836.00	53.00 PK	74.00	-21.00	1.62 V	344	21.80	31.20
4	2836.00	51.00 AV	54.00	-3.00	1.62 V	344	19.80	31.20
5	4924.00	44.60 PK	74.00	-29.40	1.00 V	54	7.90	36.70
6	7386.00	47.00 PK	74.00	-27.00	1.21 V	43	5.10	41.80

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

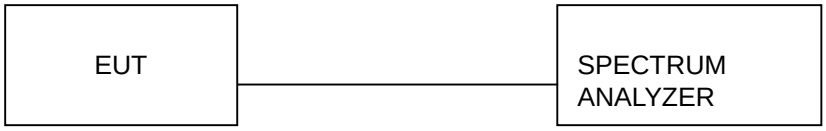
NOTE:

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

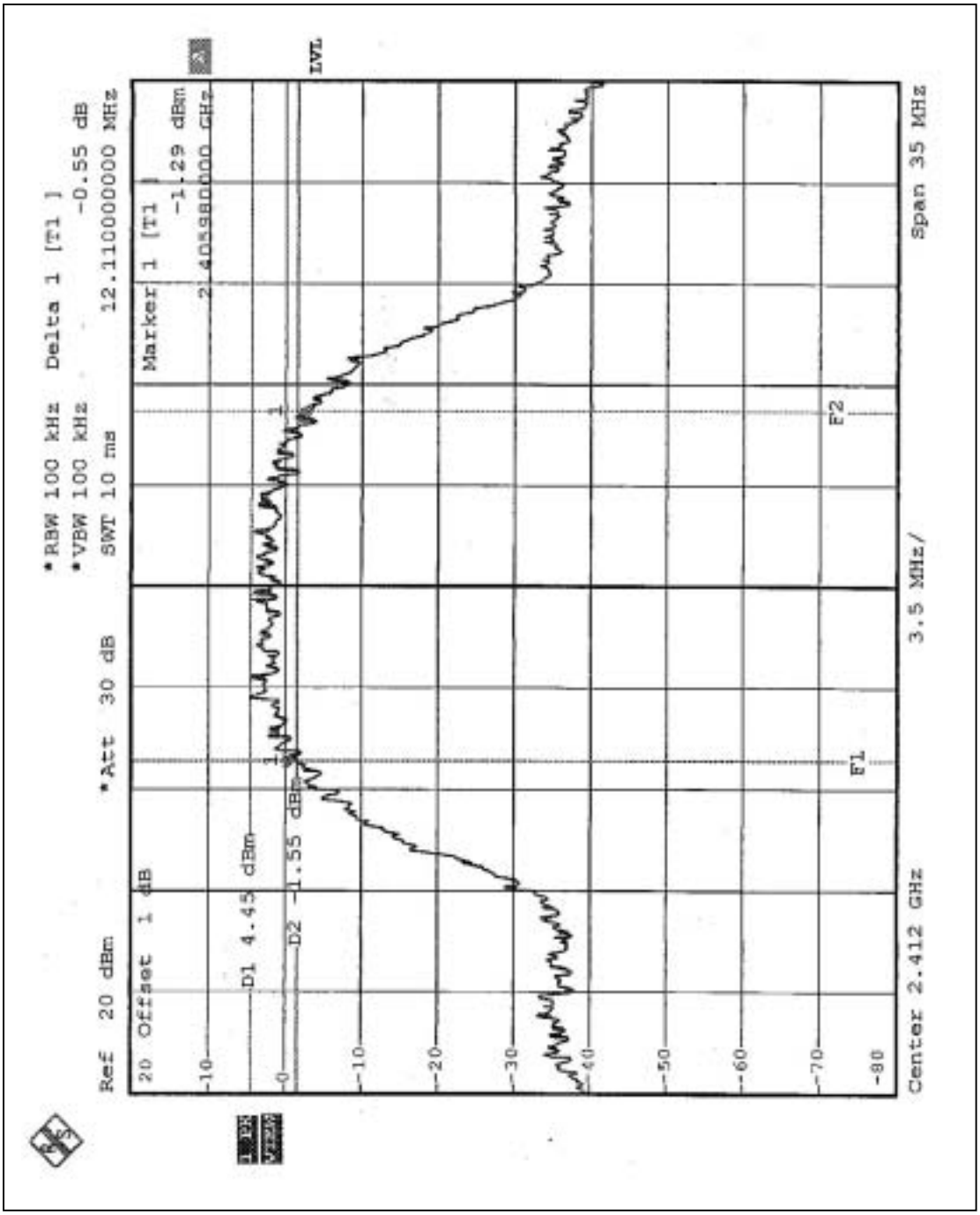
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.3.6 TEST RESULTS-DSSS

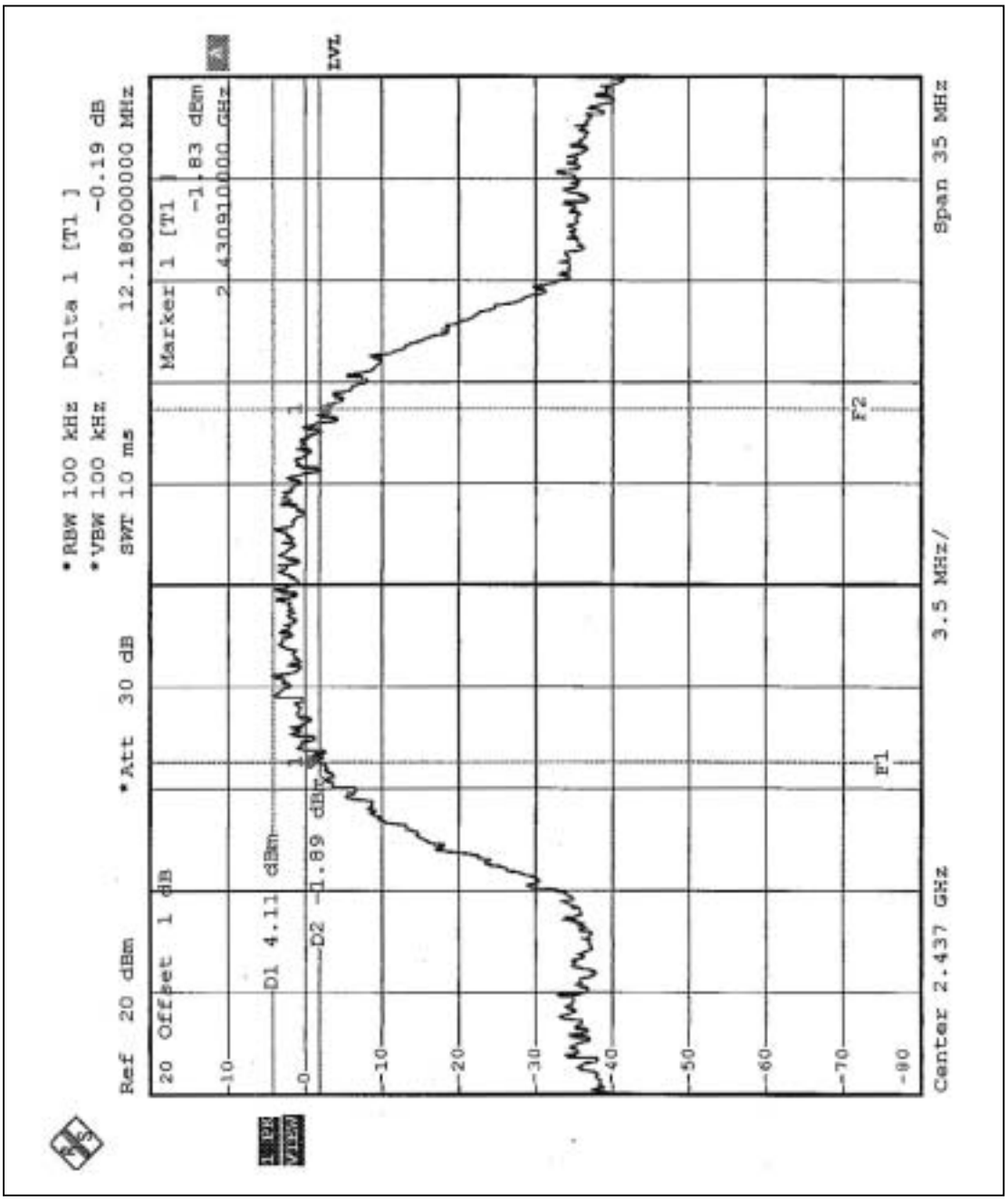
EUT	802.11g/2.4GHz Wireless USB Adapter		
MODEL	DWL-G122	**ENVIRONMENTAL CONDITIONS**	27 deg. C, 63%RH, 970 hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**TESTED BY**	Sky Liao

CHANNEL	CHANNEL FREQUENCY (MHz)	6 dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	12.11	0.5	PASS
6	2437	12.18	0.5	PASS
11	2462	11.97	0.5	PASS

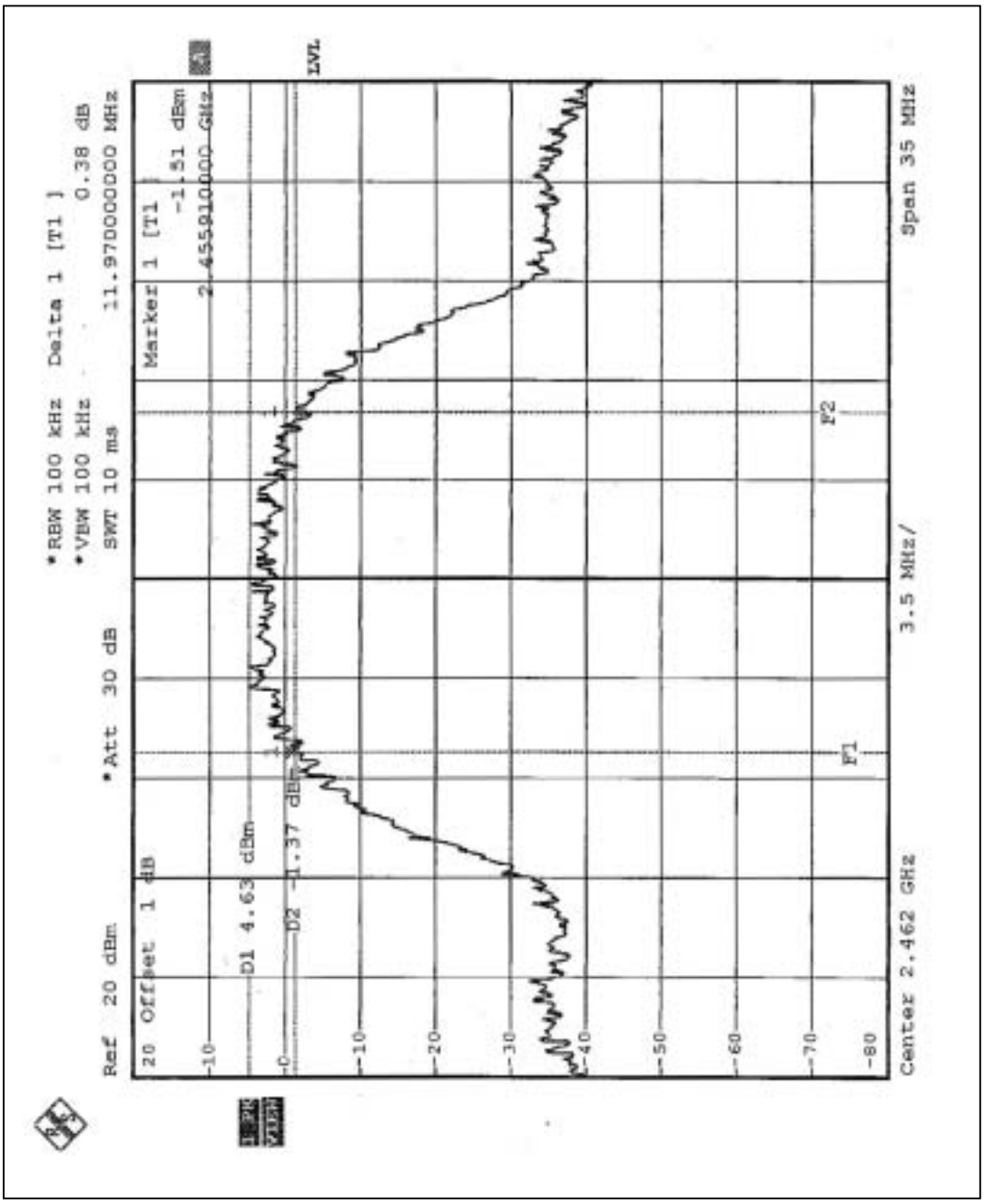
CH1


Ref 20 dBm
20 Offset 1 dB
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 10 ms
Delta 1 [T1]
-0.55 dB
12.110000000 MHz
Marker 1 [T1]
-1.29 dBm
2.405980000 GHz
D1 4.45 dBm
D2 -1.55 dBm
F1
F2
Center 2.412 GHz
3.5 MHz/
Span 35 KHz

CH6


*RBW 100 kHz
*VBW 100 kHz
SWT 10 ms
Delta 1 [T1]
-0.19 dB
12.180000000 MHz
Marker 1 [T1]
-1.83 dBm
2.430910000 GHz
Ref 20 dBm
Offset 1 dB
*Att 30 dB
D1 4.11 dBm
D2 -1.89 dBm
F1
F2
Center 2.437 GHz
3.5 MHz/
Span 35 MHz

CH11

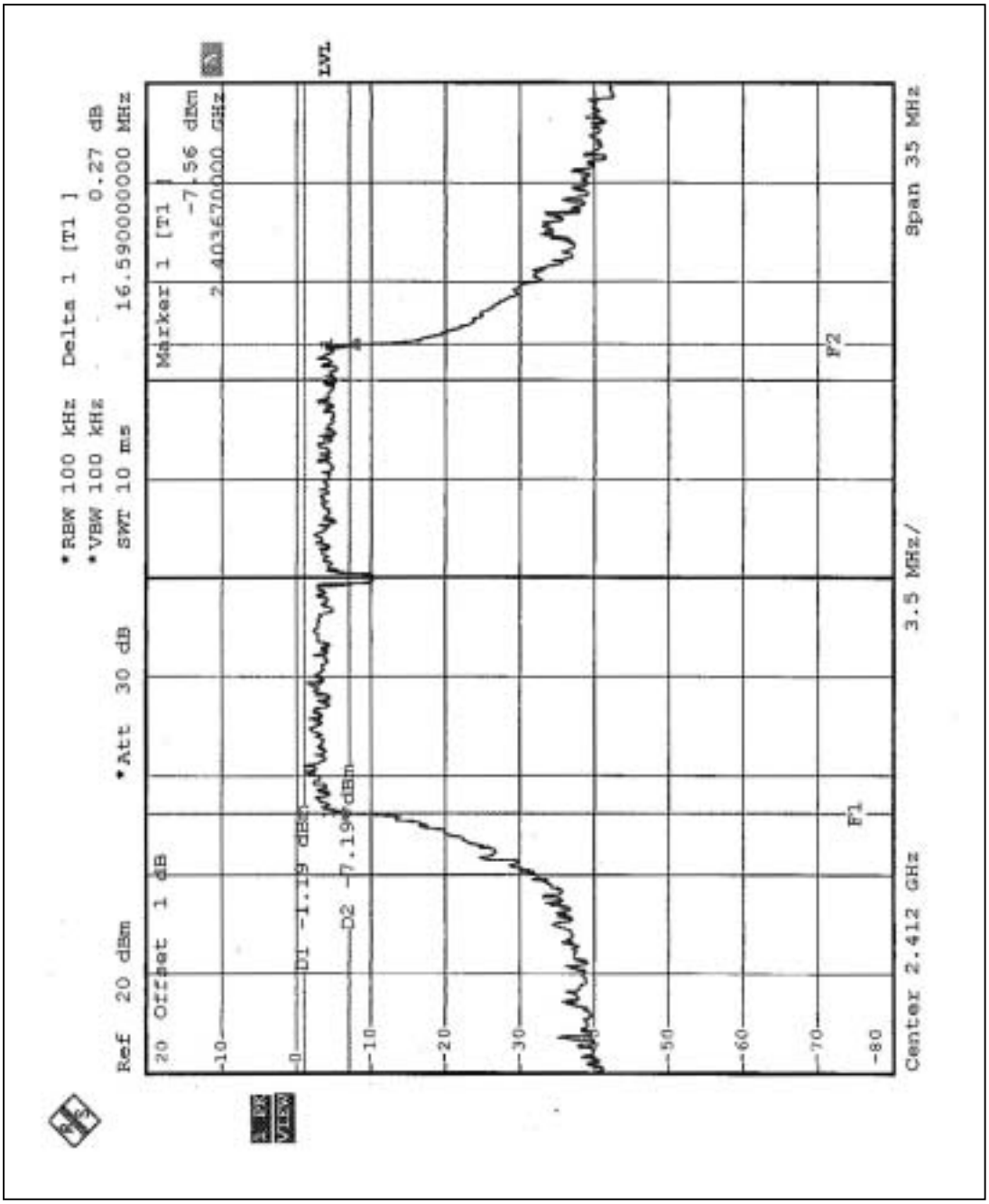

*RBW 100 kHz Delta 1 [T1]
0.38 dB
*VBW 100 kHz
11.97000000 MHz
*Att 30 dB SWT 10 ms
Marker 1 [T1
-1.51 dBm
2.45581000 GHz
Ref 20 dBm
20 Offset 1 dB
D1 4.63 dBm
D2 -1.37 dBm
F1
F2
Center 2.462 GHz
3.5 MHz/
Span 35 MHz

4.3.7 TEST RESULTS-OFDM

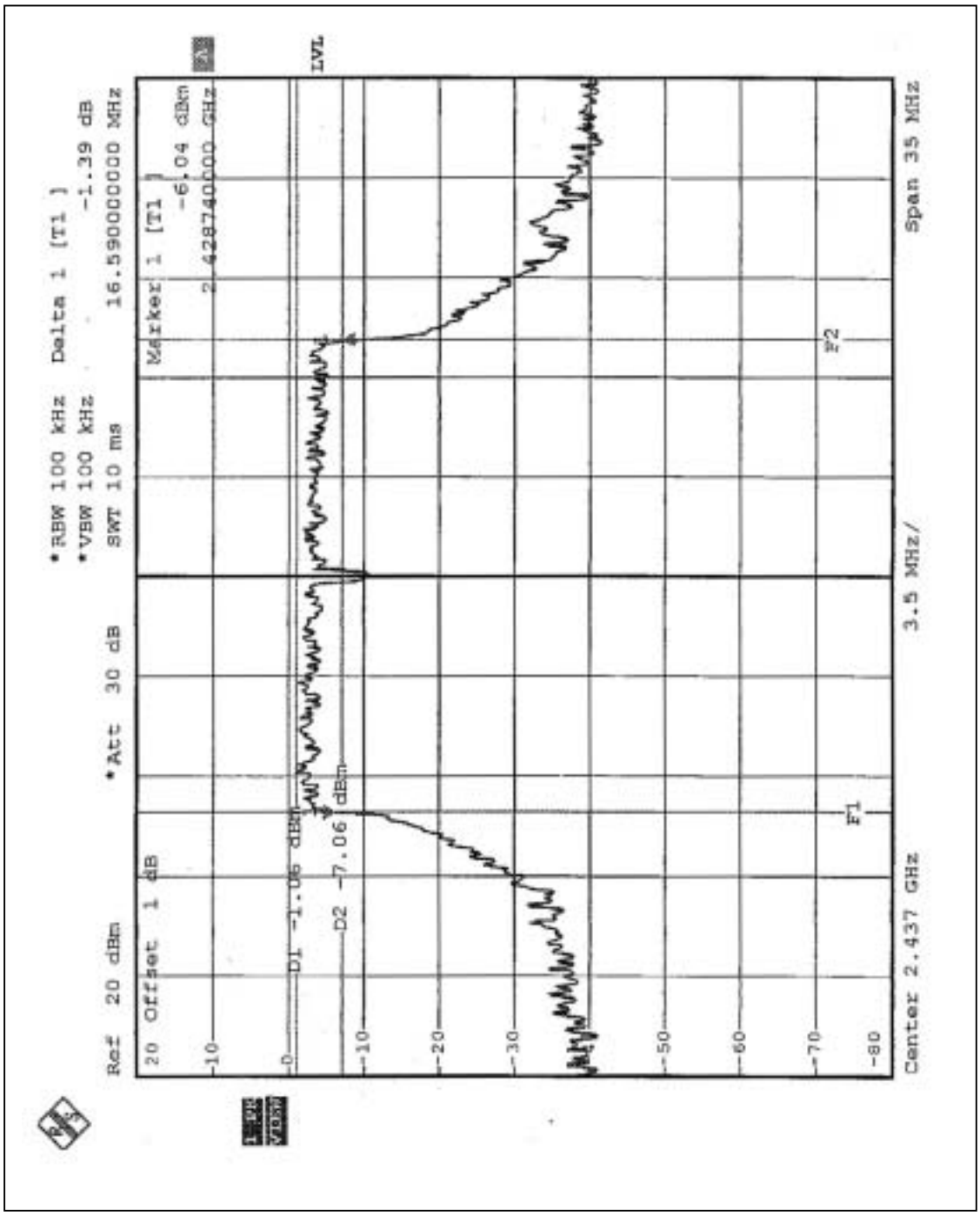
EUT	802.11g/2.4GHz Wireless USB Adapter		
MODEL	DWL-G122	**ENVIRONMENTAL CONDITIONS**	27 deg. C, 63%RH, 970 hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**TESTED BY**	Sky Liao

CHANNEL	CHANNEL FREQUENCY (MHz)	6 dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	16.59	0.5	PASS
6	2437	16.59	0.5	PASS
11	2462	16.66	0.5	PASS

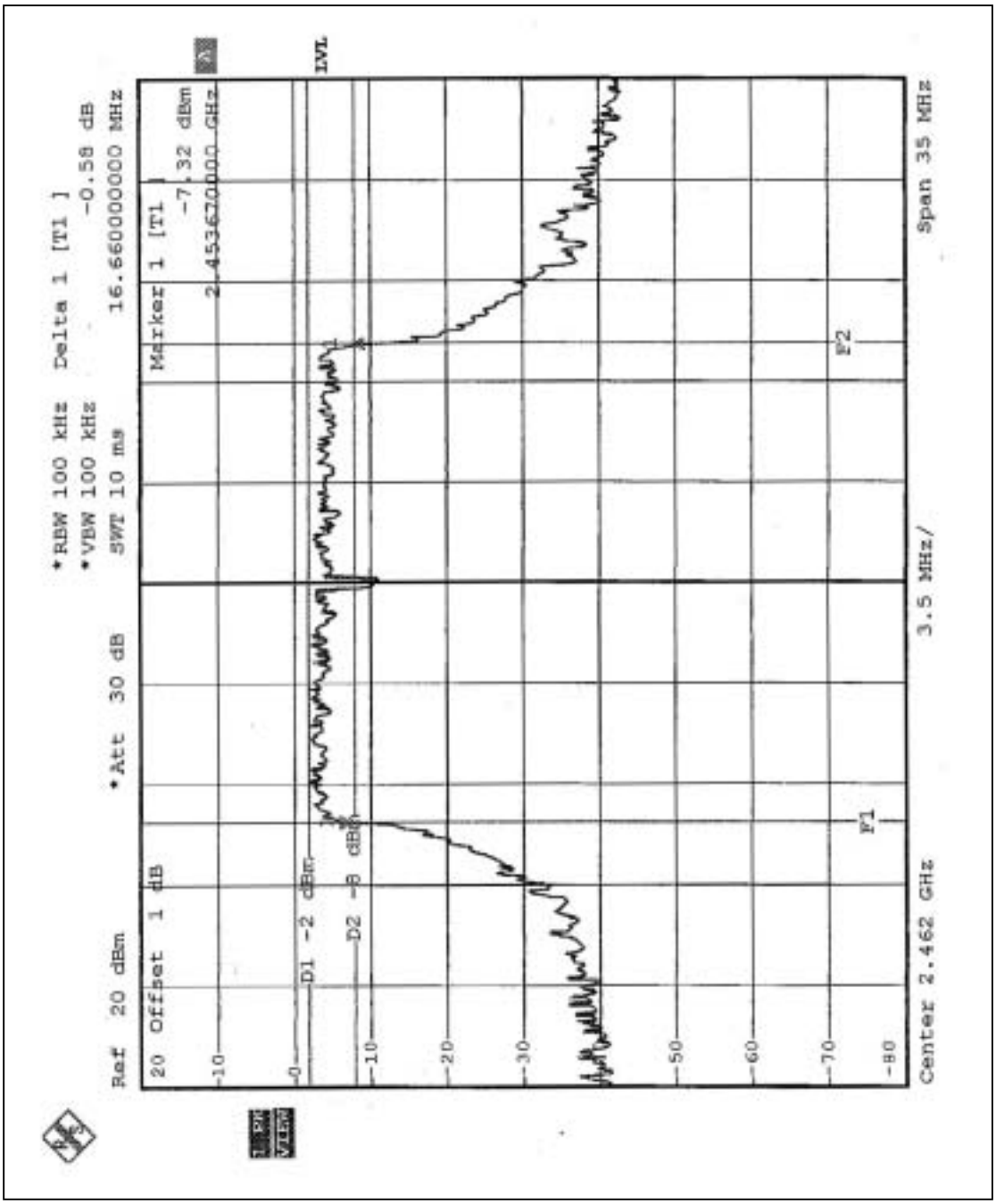
CH1


RBW 100 kHz
VBW 100 kHz
SWT 10 ms
Att 30 dB
Offset 1 dB
Ref 20 dBm
Delta 1 [T1]
0.27 dB
16.590000000 MHz
Marker 1 [T1]
-7.56 dBm
2.403670000 GHz
D1 -1.19 dBm
D2 -7.19 dBm
F1
F2
Center 2.412 GHz
3.5 MHz/
Span 35 MHz

CH6


*RBW 100 kHz
*VBW 100 kHz
SWT 10 ms
Delta 1 [T1]
-1.39 dB
16.59000000 MHz
Marker 1 [T1]
-6.04 dBm
2.42874000 GHz
Ref 20 dBm
Offset 1 dB
*Att 30 dB
D1 -1.06 dBm
D2 -7.06 dBm
Center 2.437 GHz
3.5 MHz/
Span 35 MHz
F1
F2

CH11


RBW 100 kHz
VBW 100 kHz
SWT 10 ms
Att 30 dB
Offset 1 dB
Ref 20 dBm
Delta 1 [T1]
-0.58 dB
16.66000000 MHz
Marker 1 [T1]
-7.32 dBm
2.45367000 GHz
D1 -2 dBm
D2 -8 dB
F1
F2
Center 2.462 GHz
3.5 MHz/
Span 35 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

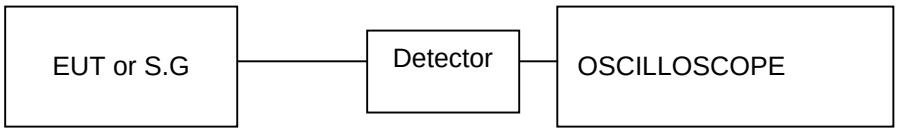
Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSP40	100036	Nov. 27, 2004
Agilent SIGNAL GENERATOR	E8257C	MY43320668	Jan. 1, 2005
TEKTRONIX OSCILLOSCOPE	TDS 220	B027241	Jun. 30, 2005
NARDA DETECTOR	4503A	FSCM99899	NA

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	802.11g/2.4GHz Wireless USB Adapter		
MODEL	DWL-G122	**ENVIRONMENTAL CONDITIONS**	27 deg. C, 63%RH, 970 hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**TESTED BY**	Sky Liao

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	18.42	30	PASS
6	2437	18.35	30	PASS
11	2462	18.50	30	PASS

4.4.7 TEST RESULTS- OFDM

EUT	802.11g/2.4GHz Wireless USB Adapter		
MODEL	DWL-G122	**ENVIRONMENTAL CONDITIONS**	27 deg. C, 63%RH, 970 hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**TESTED BY**	Sky Liao

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	19.54	30	PASS
6	2437	19.28	30	PASS
11	2462	19.13	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

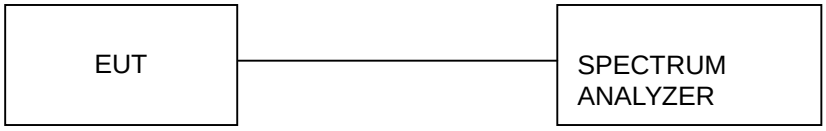
NOTE:

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

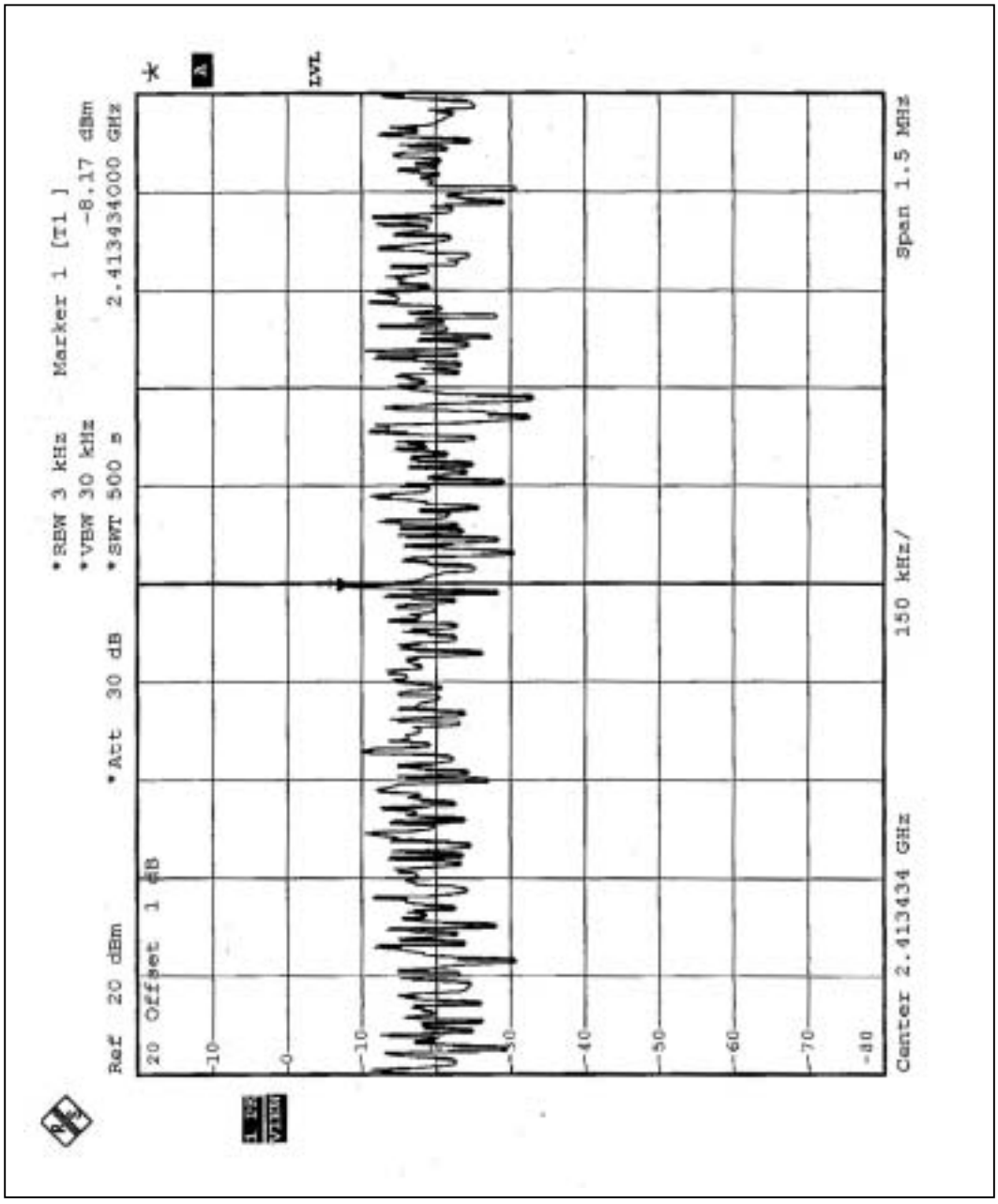
Same as 4.3.5

4.5.6 TEST RESULTS-DSSS

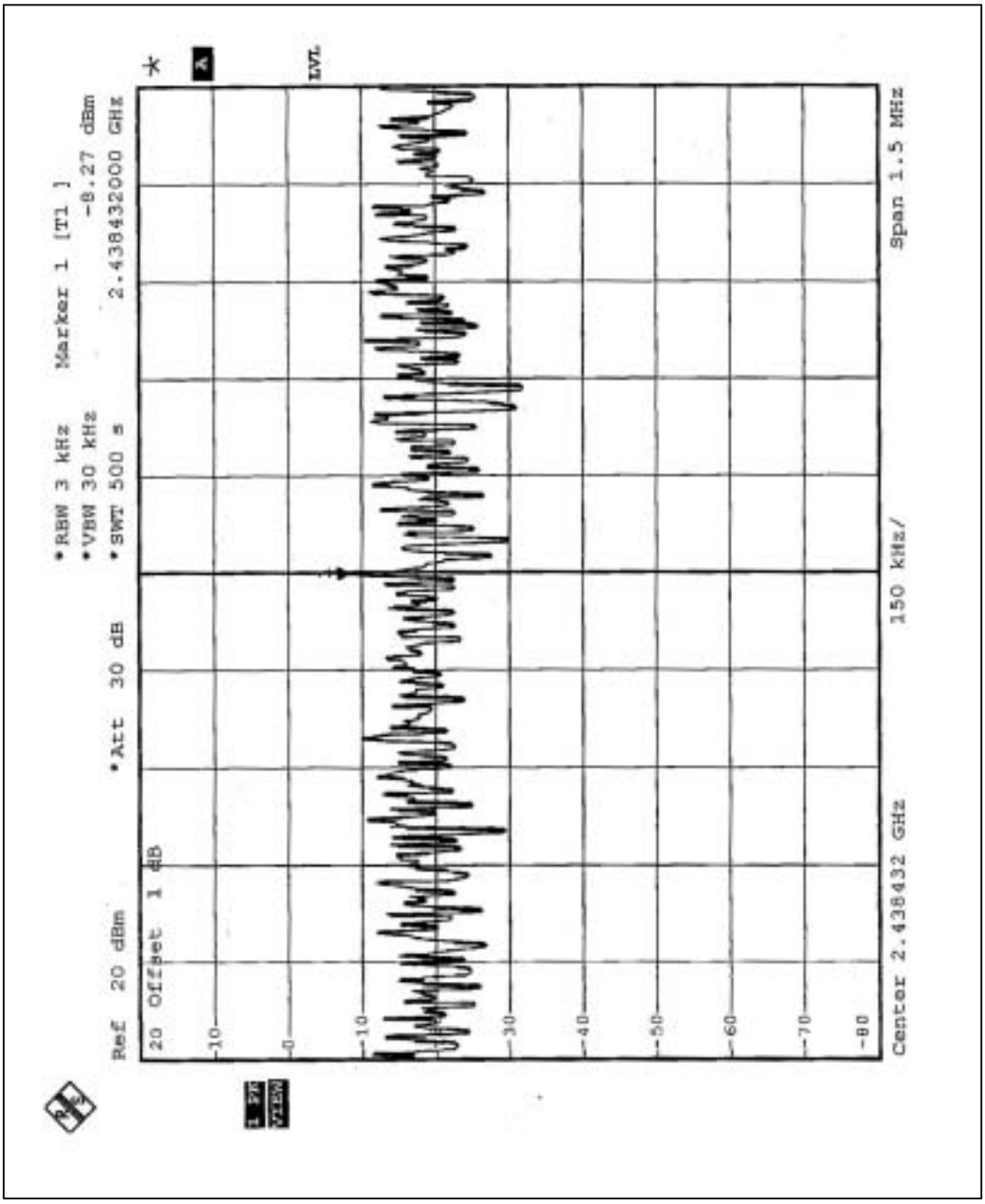
EUT	802.11g/2.4GHz Wireless USB Adapter		
MODEL	DWL-G122	**ENVIRONMENTAL CONDITIONS**	27 deg. C, 63%RH, 970 hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**TESTED BY**	Sky Liao

CHANNEL NUMBER	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 KHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-8.17	8	PASS
6	2437	-8.27	8	PASS
11	2462	-7.75	8	PASS

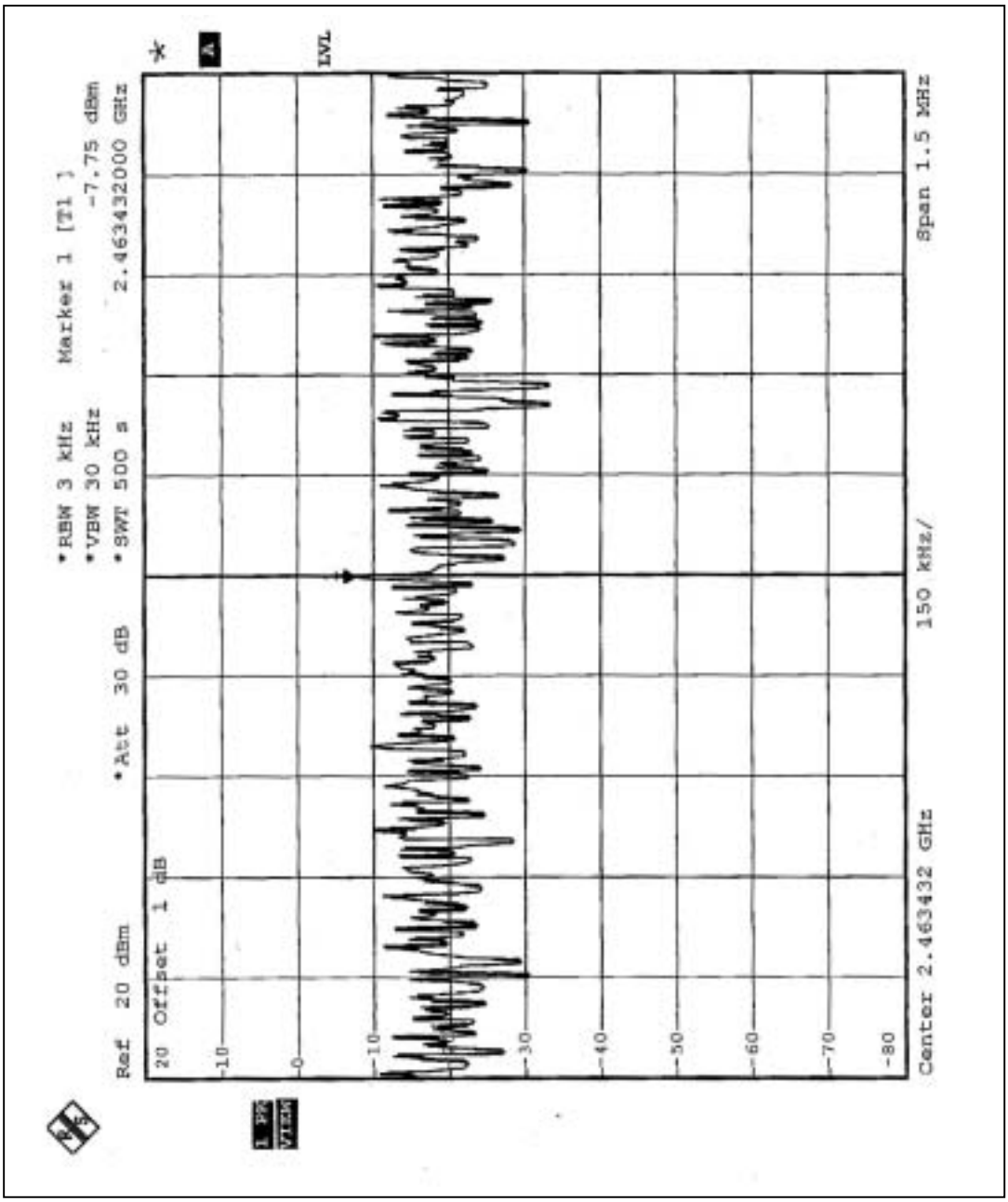
CH1


RBW 3 kHz
VBW 30 kHz
SWT 500 s
Marker 1 [T1]
-8.17 dBm
2.41334000 GHz
Act 30 dB
Ref 20 dBm
Offset 1 dB
Span 1.5 MHz
150 kHz/
Center 2.413434 GHz

CH6


Marker 1 [T1]
-8.27 dBm
2.438432000 GHz
*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
*Att 30 dB
Ref 20 dBm
20 Offset 1 dB
Span 1.5 MHz
150 kHz/
Center 2.438432 GHz
LVL
MAXA
VIEW

CH11

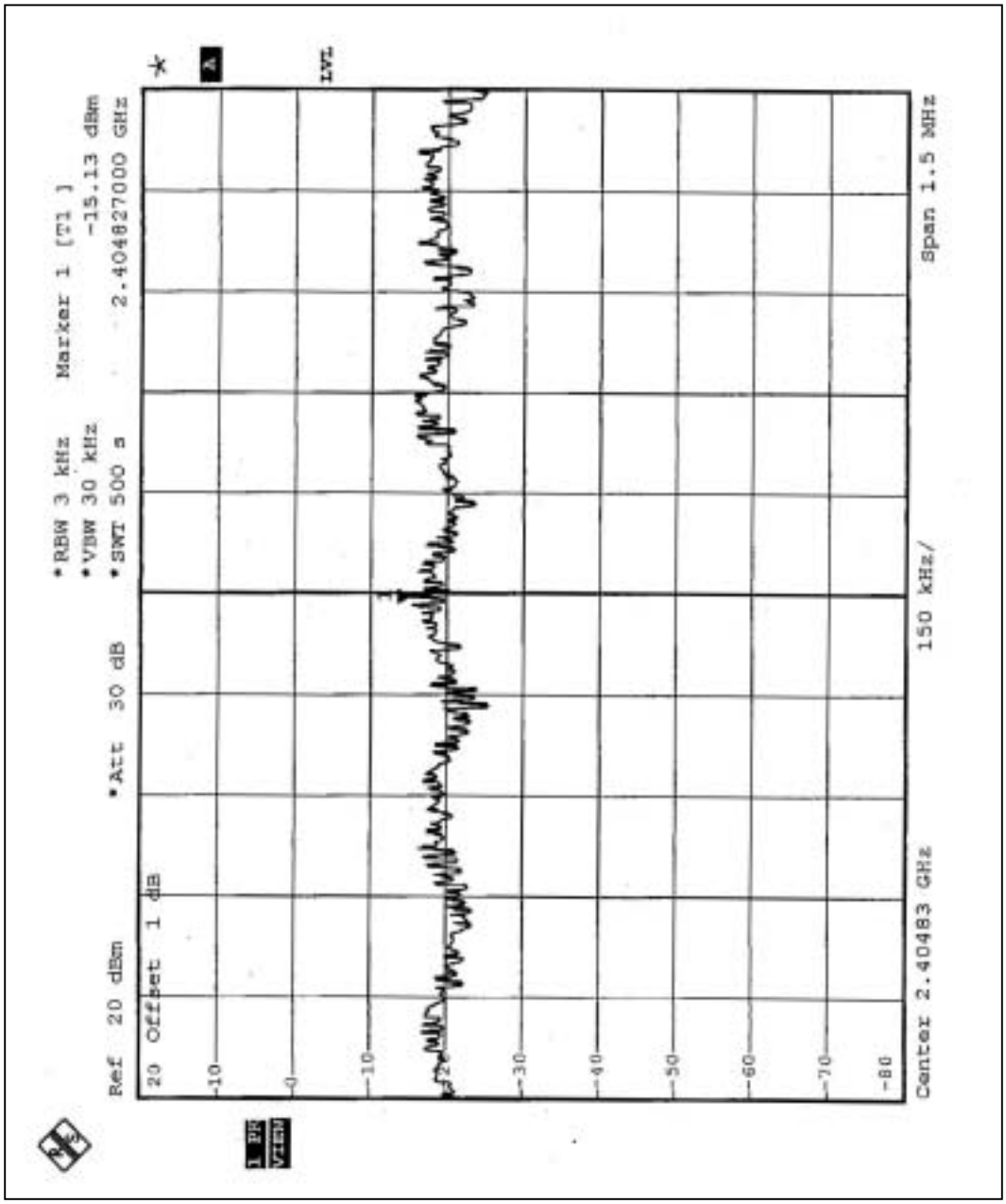

RBW 3 kHz
VBW 30 kHz
SWT 500 s
Marker 1 [T1]
-7.75 dBm
2.463432000 GHz
Att 30 dB
Ref 20 dBm
Offset 1 dB
Center 2.463432 GHz
150 kHz/
Span 1.5 MHz
LVL

4.5.7 TEST RESULTS-OFDM

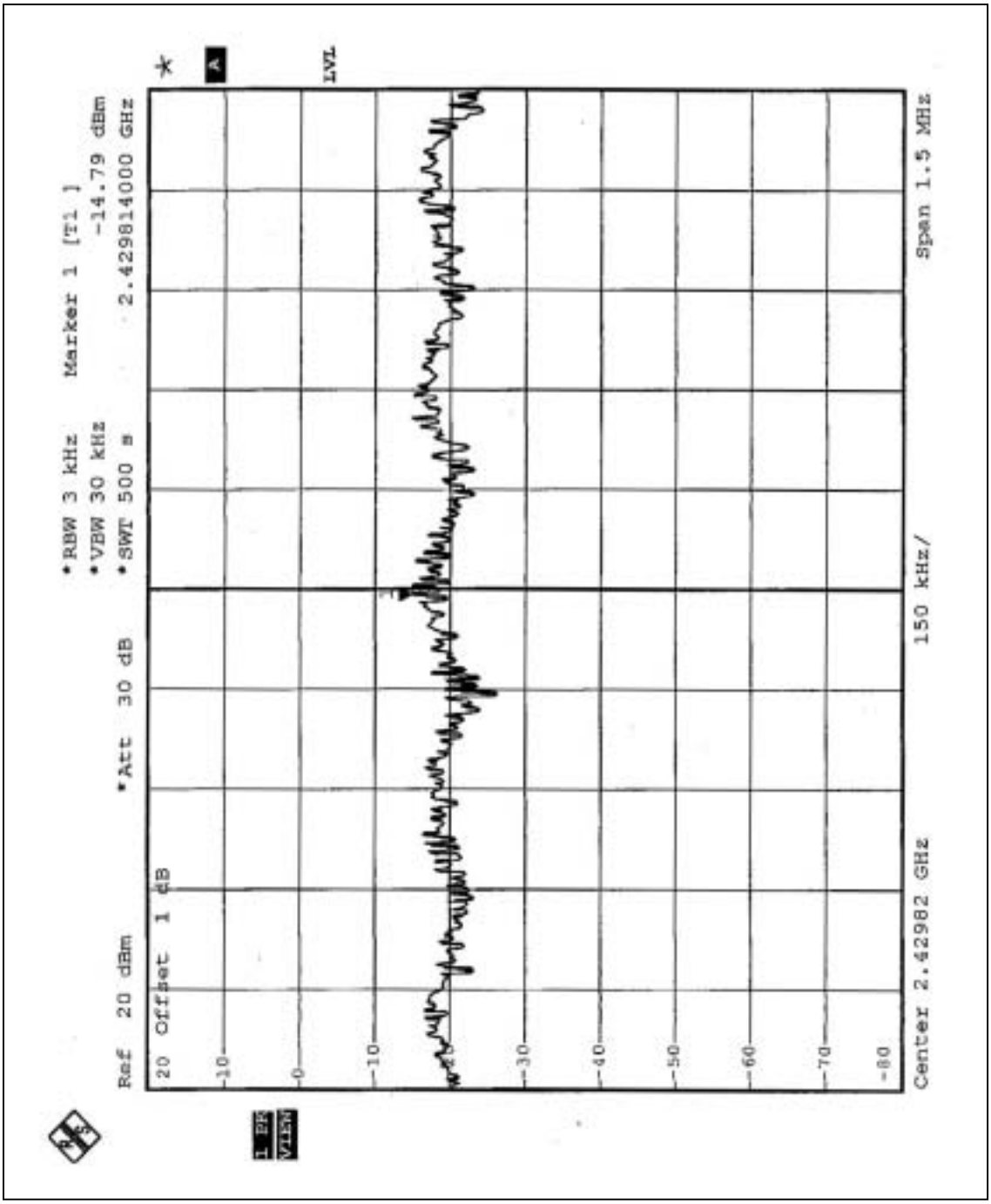
EUT	802.11g/2.4GHz Wireless USB Adapter		
MODEL	DWL-G122	**ENVIRONMENTAL CONDITIONS**	27 deg. C, 63%RH, 970 hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**TESTED BY**	Sky Liao

CHANNEL NUMBER	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 KHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-15.13	8	PASS
6	2437	-14.79	8	PASS
11	2462	-15.58	8	PASS

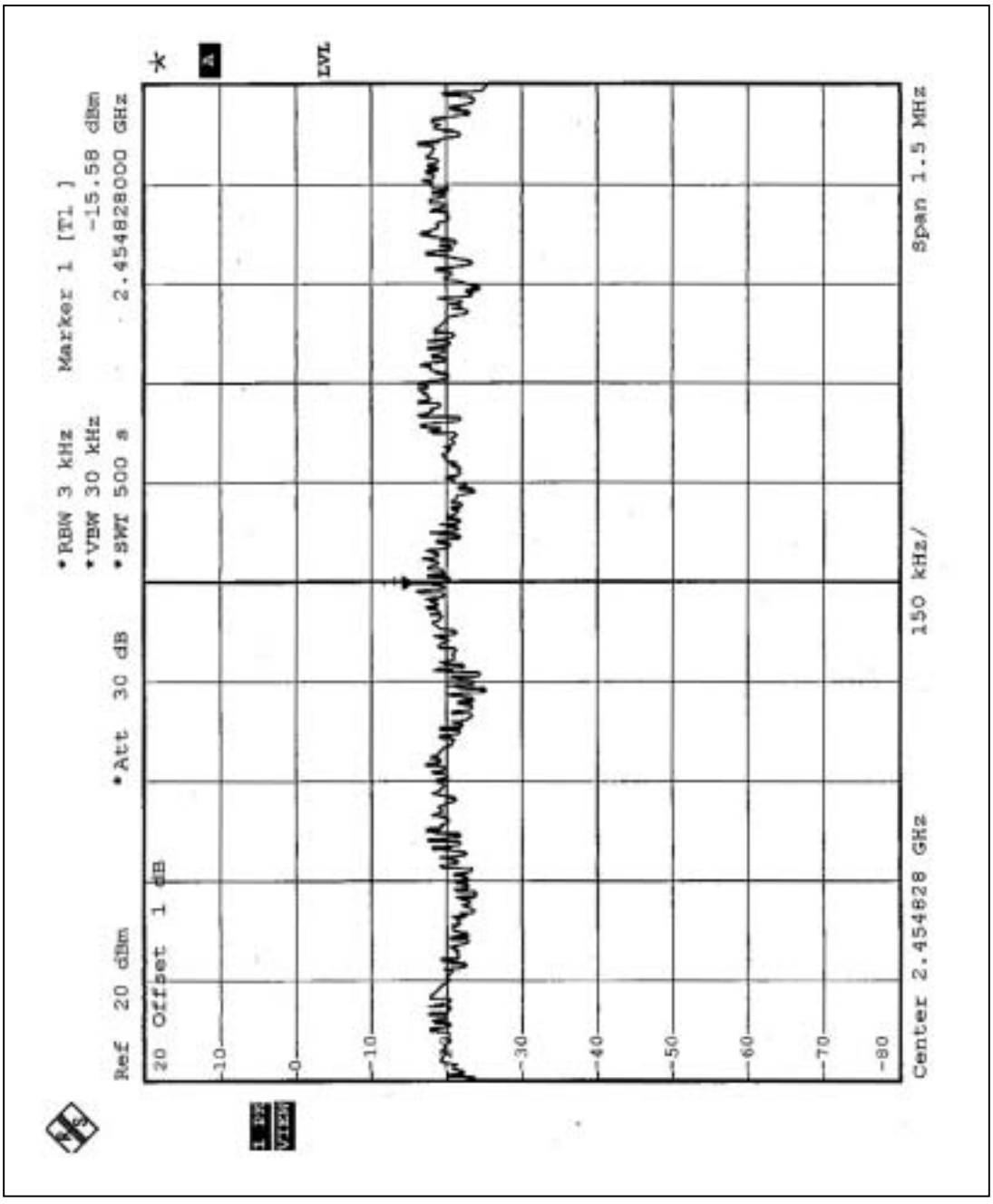
CH1


Ref 20 dBm
20 Offset 1 dB
*Att 30 dB
*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-15.13 dBm
2.404827000 GHz
Center 2.40483 GHz
150 kHz/
Span 1.5 MHz
1 PK
VIEW

CH6


Ref 20 dBm
Offset 1 dB
*Att 30 dB
*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-14.79 dBm
2.429814000 GHz
LVL
Center 2.42982 GHz
150 kHz/
Span 1.5 MHz

CH11


RBW 3 kHz
VBW 30 kHz
SWT 500 s
Marker 1 [T1]
-15.58 dBm
2.454828000 GHz
Att 30 dB
Ref 20 dBm
Offset 1 dB
Center 2.454828 GHz
150 kHz/
Span 1.5 MHz
LVL

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
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.

4.6.3 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 100 kHz with suitable frequency span including 100 kHz bandwidth from band edge. The band edges was measured and recorded.

4.6.4 EUT OPERATING CONDITION

Same as Item 4.3.5

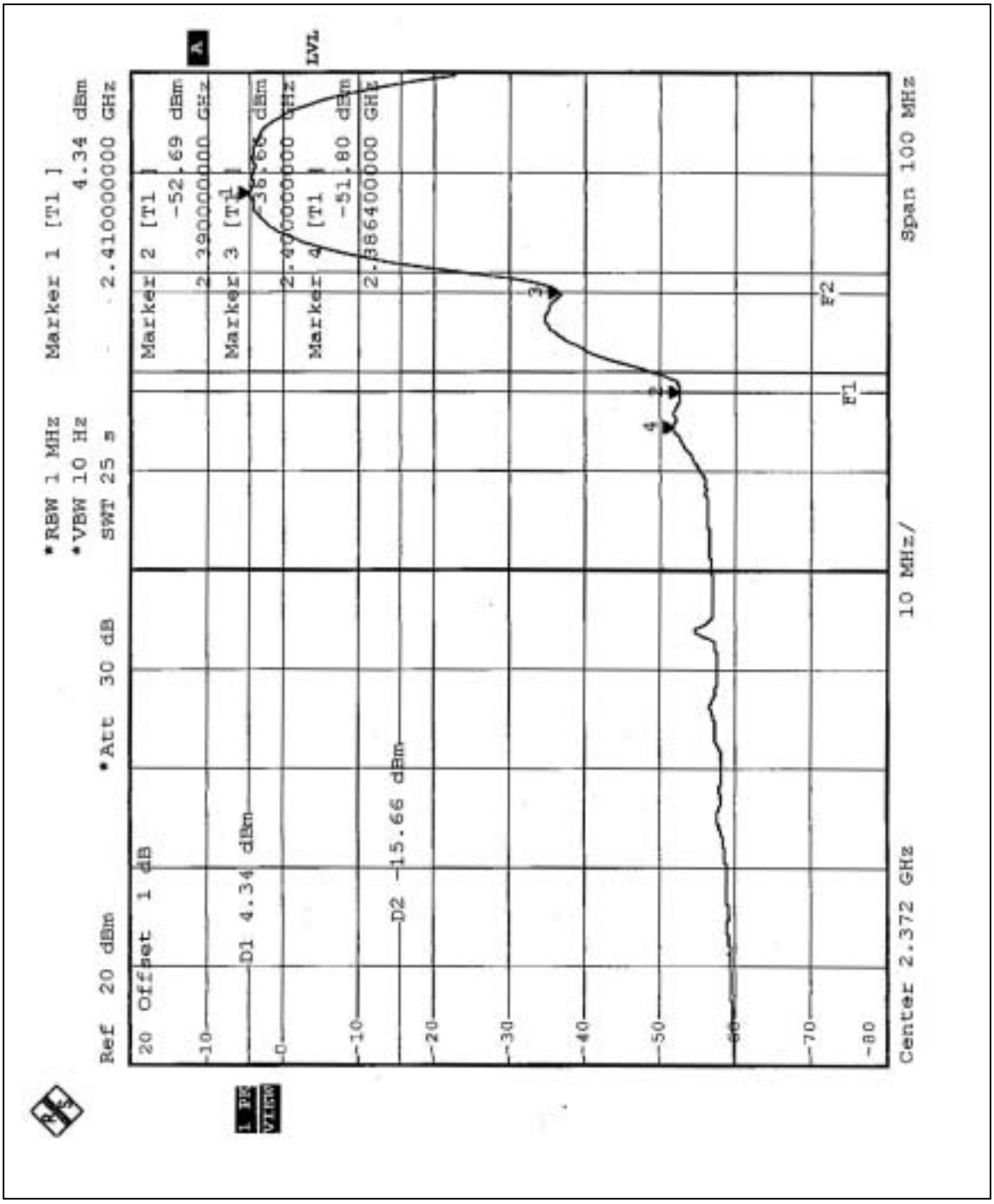
4.6.5 TEST RESULTS –DSSS

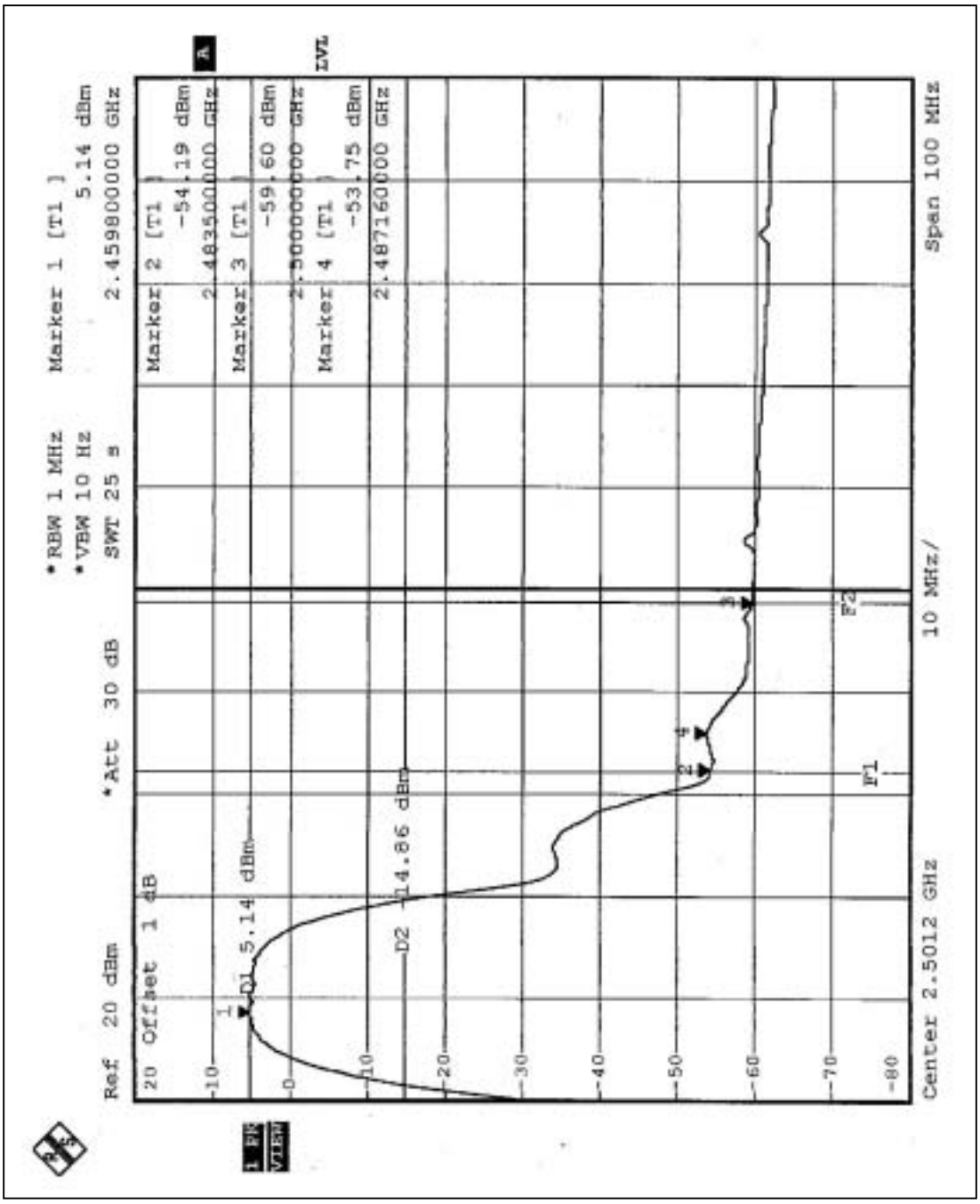
The spectrum plots are attached on the following 2 pages. D1 line indicates the highest level, D2 line indicates the 20dB offset below D1. It shows compliance with the requirement in part 15.247(C).

Note - The delta method is only used up to 2 MHz away from the restricted bandage, The radiated emissions which located in other restricted frequency band, the result, please refer to 4.2.

NOTE (1): The band edge emission plot on the following first page shows 57.03dB delta between carrier maximum power and local maximum emission in restrict band (2.3900GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2 is 98.6dBuV/m, so the maximum field strength in restrict band is 98.6-57.03=41.57dBuV/m which is under 54 dBuV/m limit.

NOTE (2): The band edge emission plot on the following second page shows 59.33dB delta between carrier maximum power and local maximum emission in restrict band (2.4835GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2. is 99.9dBuV/m, so the maximum field strength in restrict band is 99.9-59.33=40.57dBuV/m which is under 54 dBuV/m limit.


RBW 1 MHz
VBW 10 Hz
SWT 25 s
Marker 1 [T1]
4.34 dBm
2.410000000 GHz
Att 30 dB
Ref 20 dBm
Offset 1 dB
D1 4.34 dBm
D2 -15.66 dBm
Marker 2 [T1]
-52.69 dBm
2.390000000 GHz
Marker 3 [T1]
-36.66 dBm
2.400000000 GHz
Marker 4 [T1]
-51.80 dBm
2.386400000 GHz
Center 2.372 GHz
10 MHz/
Span 100 MHz
F1
F2
1 PK
VIEW


RBW 1 MHz
VBW 10 Hz
SWT 25 s
Marker 1 [T1]
5.14 dBm
2.459800000 GHz
Ref 20 dBm
Offset 1 dB
Att 30 dB
Marker 2 [T1]
-54.19 dBm
2.483500000 GHz
Marker 3 [T1]
-59.60 dBm
2.500000000 GHz
Marker 4 [T1]
-53.75 dBm
2.487160000 GHz
D1 5.14 dBm
D2 -14.86 dBm
F1
F2
Center 2.5012 GHz
10 MHz/
Span 100 MHz

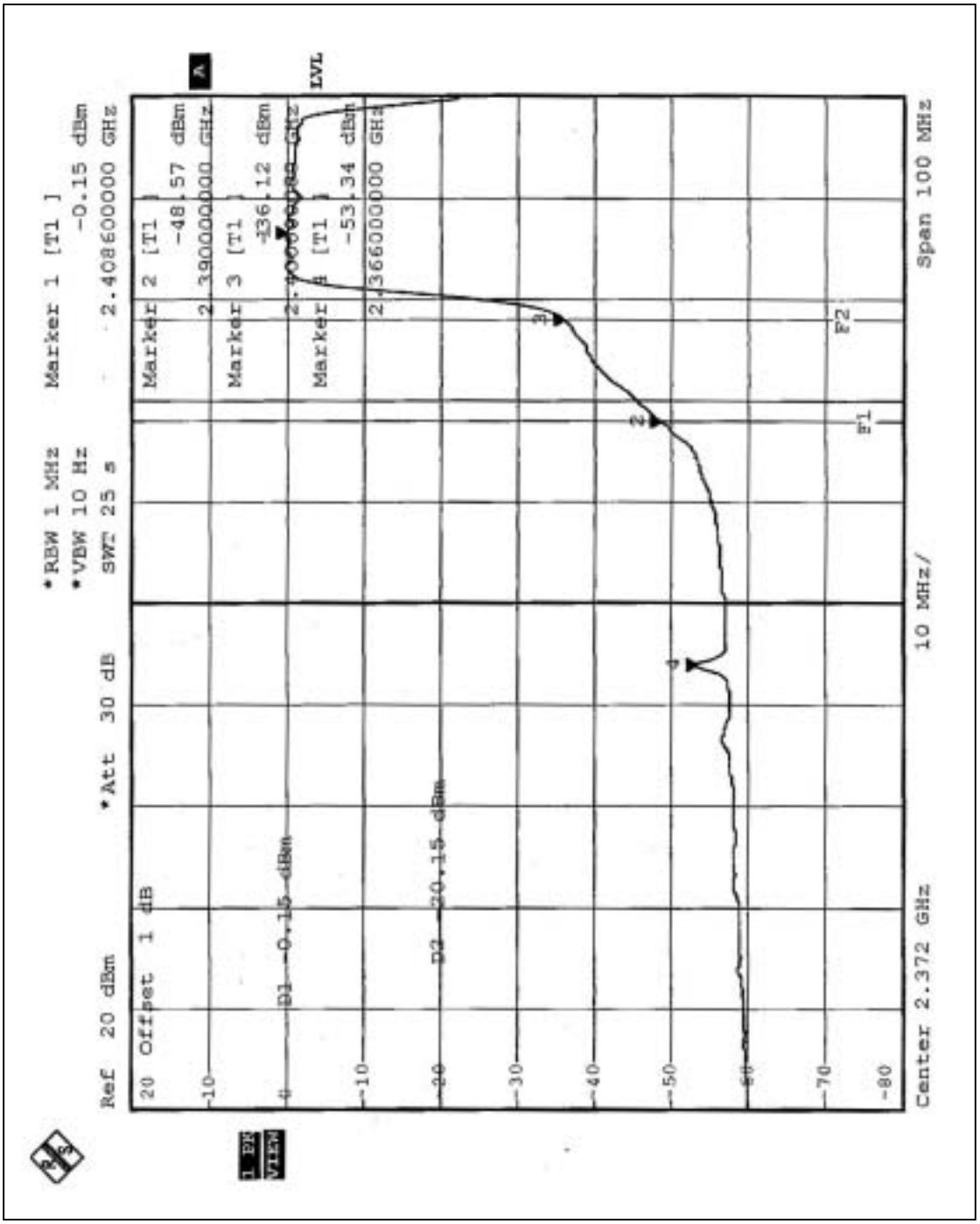
4.6.6 TEST RESULTS- OFDM

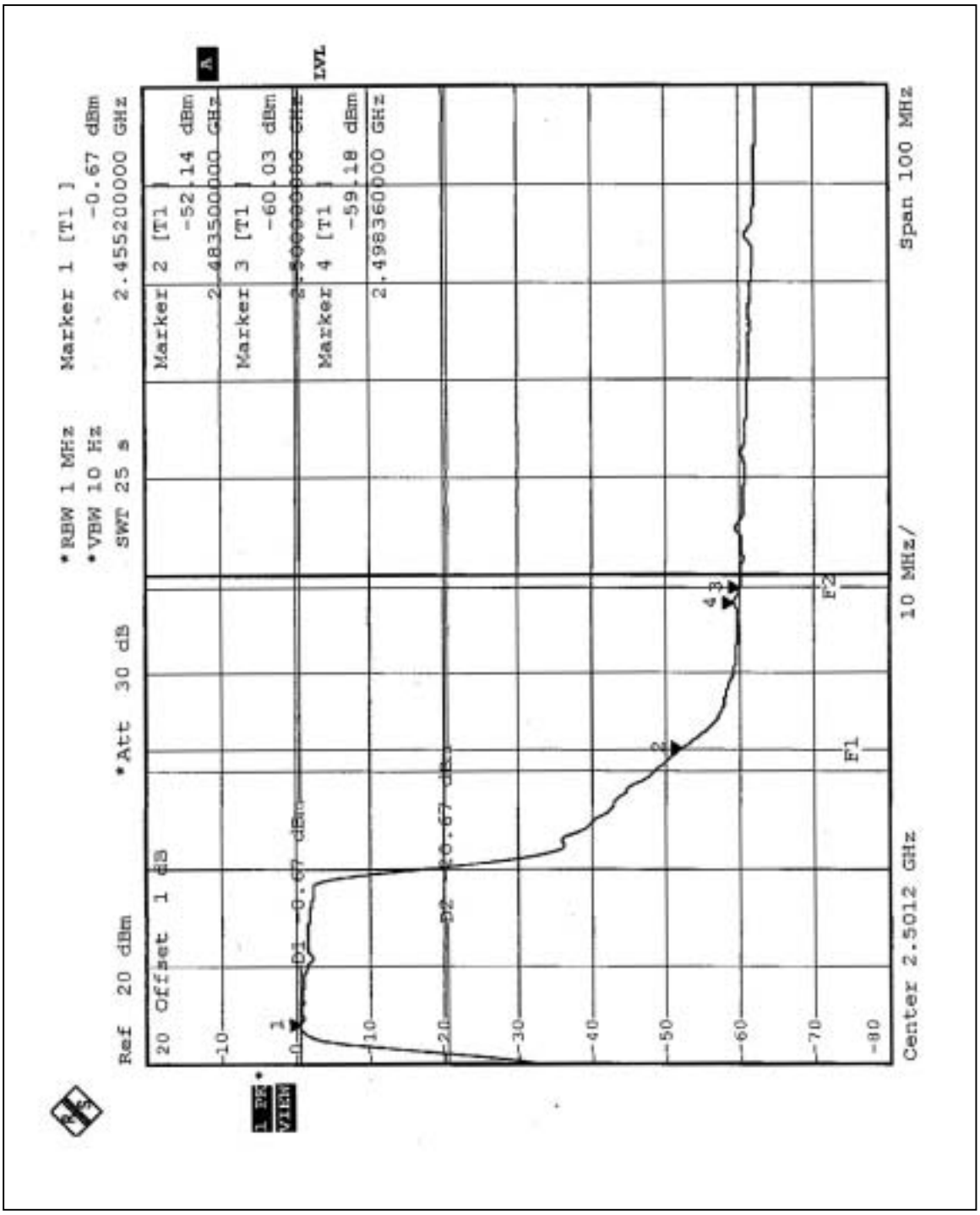
The spectrum plots are attached on the following 2 pages. D1 line indicates the highest level, D2 line indicates the 20dB offset below D1. It shows compliance with the requirement in part 15.247(C).

Note - The delta method is only used up to 2 MHz away from the restricted bandage, The radiated emissions which located in other restricted frequency band, the result, please refer to 4.2.

NOTE (1): The band edge emission plot on the following first page shows 48.42dB delta between carrier maximum power and local maximum emission in restrict band (2.3900GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2. is 94.1dBuV/m, so the maximum field strength in restrict band is 94.1-48.42=45.68dBuV/m which is under 54 dBuV/m limit.

NOTE (2): The band edge emission plot on the following second page shows 51.47dB delta between carrier maximum power and local maximum emission in restrict band (2.4835GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2. is 93.7dBuV/m, so the maximum field strength in restrict band is 93.7-51.47=42.23dBuV/m which is under 54 dBuV/m limit.


Marker 1 [T1]
-0.15 dBm
2.408600000 GHz
*RBW 1 MHz
*VBW 10 Hz
SWT 25 s
*Att 30 dB
Ref 20 dBm
Offset 1 dB
Marker 2 [T1]
-48.57 dBm
2.390000000 GHz
Marker 3 [T1]
-36.12 dBm
Marker 4 [T1]
-53.34 dBm
2.366000000 GHz
LVL
D1 -0.15 dBm
D2 -20.15 dBm
F1
F2
Center 2.372 GHz
10 MHz/
Span 100 MHz


RBW 1 MHz
VBW 10 Hz
SWT 25 s
Marker 1 [T1]
-0.67 dBm
2.455200000 GHz
Att 30 dB
Offset 1 dB
Ref 20 dBm
Marker 2 [T1]
-52.14 dBm
2.483500000 GHz
Marker 3 [T1]
-60.03 dBm
Marker 4 [T1]
-59.18 dBm
2.498360000 GHz
LVL
Center 2.5012 GHz
10 MHz/
Span 100 MHz
F1
F2
D1 -0.67 dBm
D2 -20.67 dB

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 used in this product is Chip Antenna without connector. The maximum Gain of the antenna is 0dBi.

5 PHOTOGRAPHS OF THE TEST CONFIGURATION

CONDUCTED EMISSION TEST (With USB Cable)

CONDUCTED EMISSION TEST (Without USB Cable)

RADIATED EMISSION TEST (With USB Cable)

RADIATED EMISSION TEST (Without USB Cable)

6 INFORMATION ON THE TESTING LABORATORIES

We, ADT Corp., were founded in 1988 to provide our best service in EMC, Radio, Telecom 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, UL
Germany	TUV Rheinland
Japan	VCCI
Norway	NEMKO
Canada	INDUSTRY CANADA , CSA
R.O.C.	CNLA, BSMI, DGT
Netherlands	Telefication
Singapore	PSB , GOST-ASIA(MOU)
Russia	CERTIS(MOU)

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:

Linko EMC/RF Lab:
Tel: 886-2-26052180
Fax: 886-2-26052943

Hsin Chu EMC/RF Lab:
Tel: 886-3-5935343
Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety/Telecom Lab:
Tel: 886-3-3183232
Fax: 886-3-3185050

Linko RF Lab.
Tel: 886-3-3270910
Fax: 886-3-3270892

Email: service@mail.adt.com.tw
Web Site: www.adt.com.tw

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