FCC TEST REPORT

REPORT NO.: RF901205R03
MODEL NO.: LBP01
RECEIVED: December 5, 2001
TESTED: Dec. 22 ~ Dec. 27, 2001

APPLICANT: MITAC INTERNATIONAL CORP.
ADDRESS: 6th Fl., No. 187, Tiding Blvd., Sec. 2, Nei-Hu, Taipei, Taiwan, R.O.C.

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

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0528
ILAC MRA

Lab Code: 200102-0

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1 CERTIFICATION

PRODUCT :	802.11b WLAN PCMCIA
BRAND NAME :	Mitac
MODEL NO. :	LBP01
APPLICANT :	MITAC INTERNATIONAL CORP.
STANDARDS :	47 CFR Part 15, Subpart C (Section 15.247), ANSI C63.4-1992, Canada RSS 210, New Zealand RFS 29

We, **Advance Data Technology Corporation**, hereby certify that one sample of the designation has been tested in our facility from Dec. 22, 2001 to Dec. 27, 2001, The test record, data evaluation and Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions herein specified.

TESTED BY: Steven Lu , DATE: Dec. 27. 2001
Steven Lu

CHECKED BY: Demi Chen , DATE: Dec. 27, 2001
Demi Chen

APPROVED BY: Alan Lane , DATE: Dec. 27, 2001
Dr. Alan Lane
Manager

2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: 47 CFR Part 15, Subpart C			
Standard Section	**Test Type and Limit**	**Result**	**REMARK**
15.207	AC Power Conducted Emission Limit: 48dBuV	PASS	Meet the requirement of limit Minimum passing margin is –8.87dBuV at 2.535MHz
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 –2.9dBuV at 4874.00MHz
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	802.11b WLAN PCMCIA
MODEL NO.	LBP01
POWER SUPPLY	3.3VDC from notebook
MODULATION TYPE	CCK, BPSK, QPSK
RADIO TECHNOLOGY	DSSS
TRANSFER RATE	1/2/5.5/11Mbps
FREQUENCY RANGE	2412MHz ~ 2462MHz
NUMBER OF CHANNEL	11
OUTPUT POWER	16.68dBm
ANTENNA TYPE	Ceramic antenna
DATA CABLE	NA
I/O PORTS	NA
ASSOCIATED DEVICES	NA

NOTE: For a 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.

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a 802.11b WLAN PCMCIA. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC CFR 47 Part 15, Subpart C. (15.247)
ANSI C63.4 : 1992, Canada RSS 210, New Zealand RFS 29

All tests have been performed and recorded as per the above standards.

NOTE: The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

3.4 DESCRIPTION OF SUPPORT UNITS

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

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Notebook	Dell	PP01L	TW-09C748-12800-19O-B220	FCC DoC APPROVED
2	PRINTER	HP	2225C+	3123S97230	DSI6XU2225
3	MODEM	ACEEX	1414	980020510	IFAXDM1414

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

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

4 TEST TYPES AND RESULTS

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY (MHz)	Class B (dBuV)	
	Quasi-peak	Average
0.45 – 30	48	-

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	ESCS30	847793/022	Feb. 25, 2002
ROHDE & SCHWARZ Artificial Mains Network (for EUT)	ESH2-Z5	828075/003	July 19, 2002
*ROHDE & SCHWARZ 4-wire ISN	ENY41	838119/028	Dec. 2, 2002
*ROHDE & SCHWARZ 2-wire ISN	ENY22	837497/018	Dec. 2, 2002
EMCO-L.I.S.N. (for peripheral)	3825/2	90031627	July 19, 2002
Software	Cond-V2J	NA	NA
RF cable (JYEBAO)	RG-58A/U	Cable-C05.01	July 19, 2002
LYNICS Terminator (For EMCO LISN)	0900510	E1-01-305	Feb. 20, 2002
LYNICS Terminator (For EMCO LISN)	0900510	E1-01-306	Feb. 20, 2002
Shielded Room	Site 5	ADT-C05	NA
VCCI Site Registration No.	Site 5	C-1093	NA

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.

3. "*": These equipment are used for conducted telecom port test only (if tested).

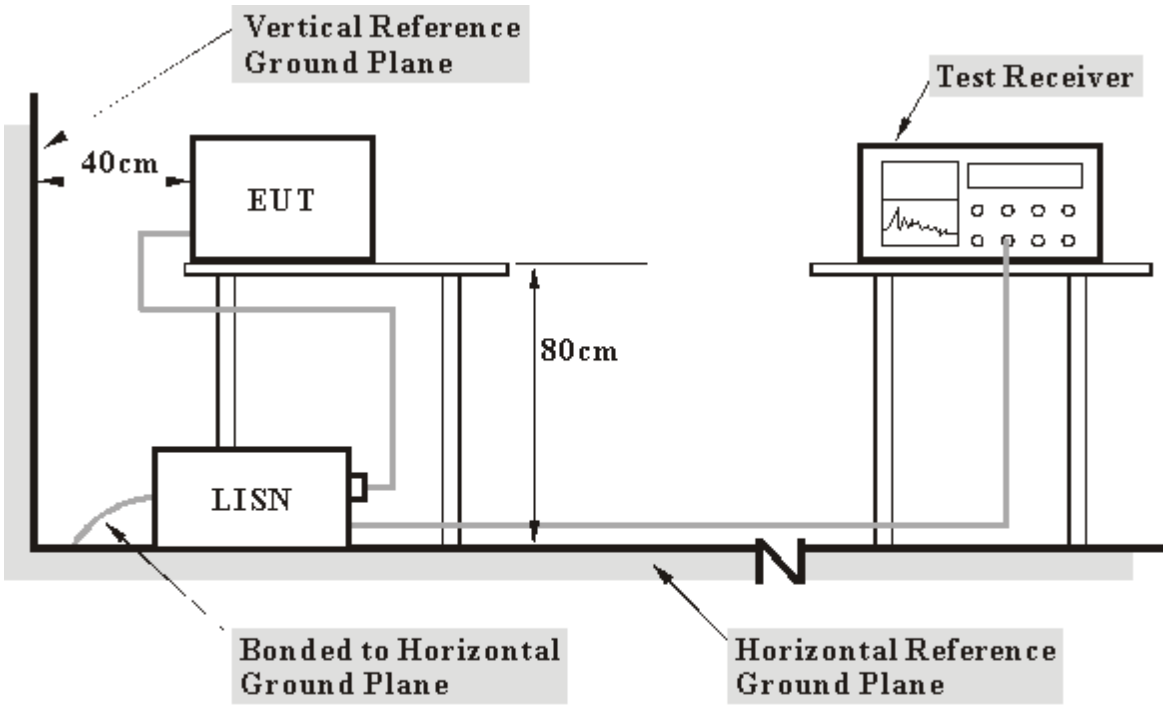
4.1.3 TEST PROCEDURES

a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.

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

c. The frequency range from 450 kHz to 30 MHz was searched. Emission levels over 10dB under the prescribed limits could not be reported

4.1.4 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.

4.1.5 EUT OPERATING CONDITIONS

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

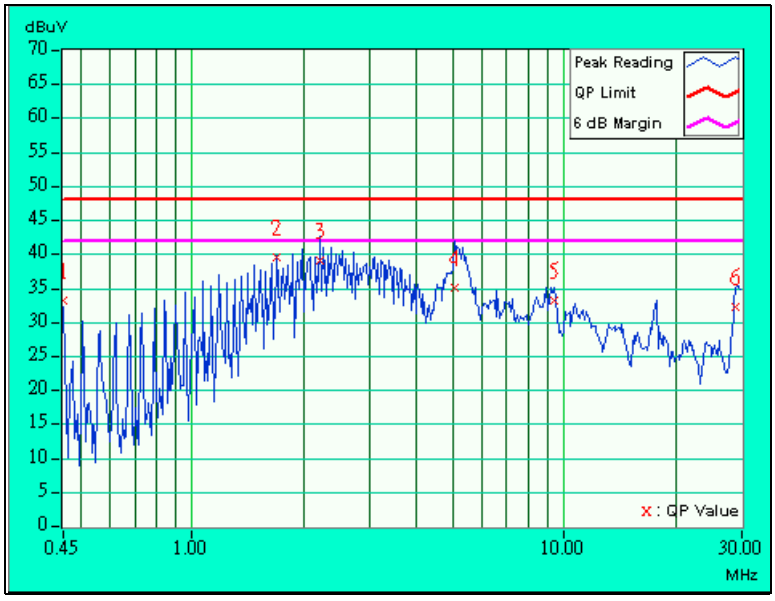
4.1.6 TEST RESULTS

EUT	802.11b WLAN PCMCIA	**MODEL**	LBP01
MODE	Channel 1	**6dB BANDWIDTH**	10 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**PHASE**	Line (L)
ENVIRONMENTAL CONDITIONS	15 deg. C, 60%RH, 1005 hPa	**TESTED BY**: Steven Lu	

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	0.450	0.11	32.04	-	32.15	-	48.00	-	-15.85	-
2	1.691	0.20	38.31	-	38.51	-	48.00	-	-9.49	-
3	2.199	0.22	37.91	-	38.13	-	48.00	-	-9.87	-
4	5.074	0.44	33.82	-	34.26	-	48.00	-	-13.74	-
5	9.406	0.58	31.90	-	32.48	-	48.00	-	-15.52	-
6	28.906	1.28	31.04	-	32.32	-	48.00	-	-15.68	-

NOTE:

1. QP. and AV. are abbreviations of quasi-peak and average individually.
2. "-": NA
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Emission Level = Reading Value + Correction Factor.

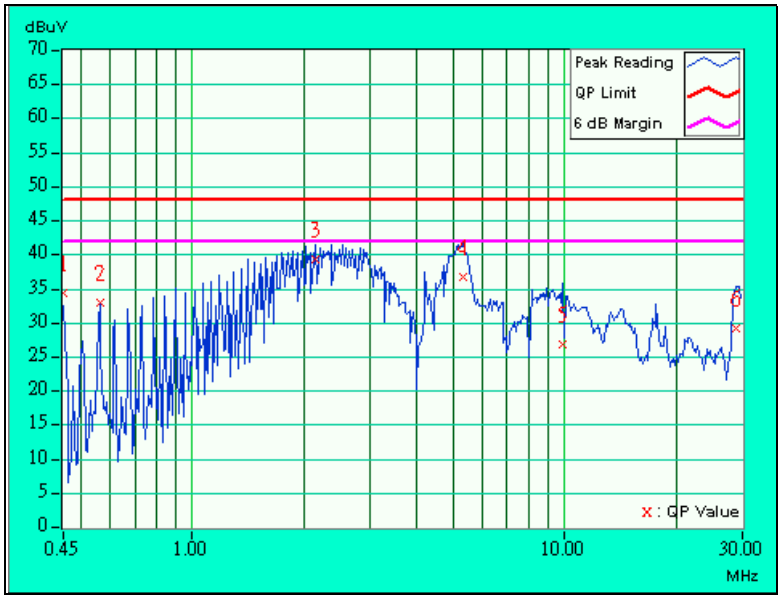


EUT	802.11b WLAN PCMCIA	MODEL	LBP01
MODE	Channel 1	6dB BANDWIDTH	10 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Neutral (N)
ENVIRONMENTAL CONDITIONS	15 deg. C, 60%RH, 1005 hPa	TESTED BY: Steven Lu	

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	0.450	0.11	33.55	-	33.66	-	48.00	-	-14.34	-
2	0.563	0.13	32.22	-	32.35	-	48.00	-	-15.65	-
3	2.137	0.21	38.60	-	38.81	-	48.00	-	-9.19	-
4	5.344	0.32	35.88	-	36.20	-	48.00	-	-11.80	-
5	9.902	0.40	26.05	-	26.45	-	48.00	-	-21.55	-
6	28.695	0.77	28.47	-	29.24	-	48.00	-	-18.76	-

NOTE:

1. QP. and AV. are abbreviations of quasi-peak and average individually.
2. "-": NA
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Emission Level = Reading Value + Correction Factor.

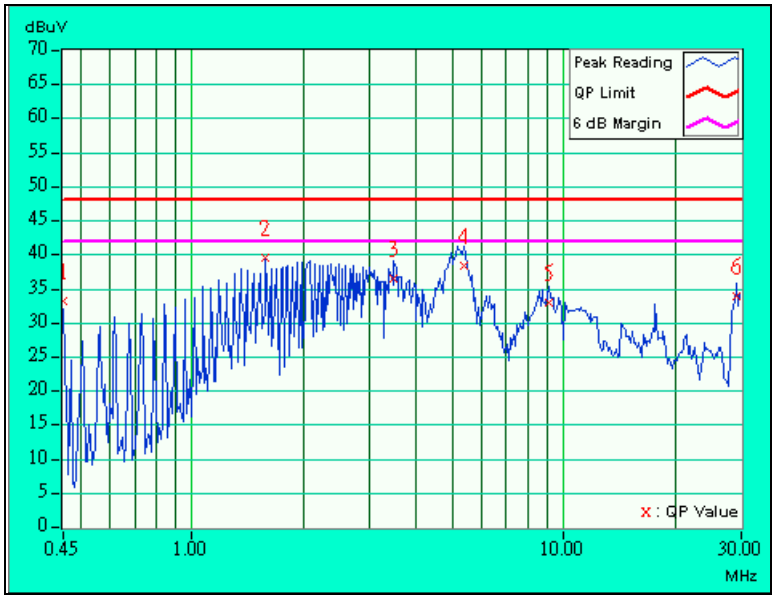


EUT	802.11b WLAN PCMCIA	MODEL	LBP01
MODE	Channel 6	6dB BANDWIDTH	10 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	15 deg. C, 60%RH, 1005 hPa	TESTED BY: Steven Lu	

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	0.450	0.11	31.90	-	32.01	-	48.00	-	-15.99	-
2	1.578	0.20	38.34	-	38.54	-	48.00	-	-9.46	-
3	3.492	0.35	35.26	-	35.61	-	48.00	-	-12.39	-
4	5.410	0.45	37.19	-	37.64	-	48.00	-	-10.36	-
5	9.125	0.57	31.82	-	32.39	-	48.00	-	-15.61	-
6	29.094	1.28	32.64	-	33.92	-	48.00	-	-14.08	-

NOTE:

1. QP. and AV. are abbreviations of quasi-peak and average individually.
2. "-": NA
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Emission Level = Reading Value + Correction Factor.

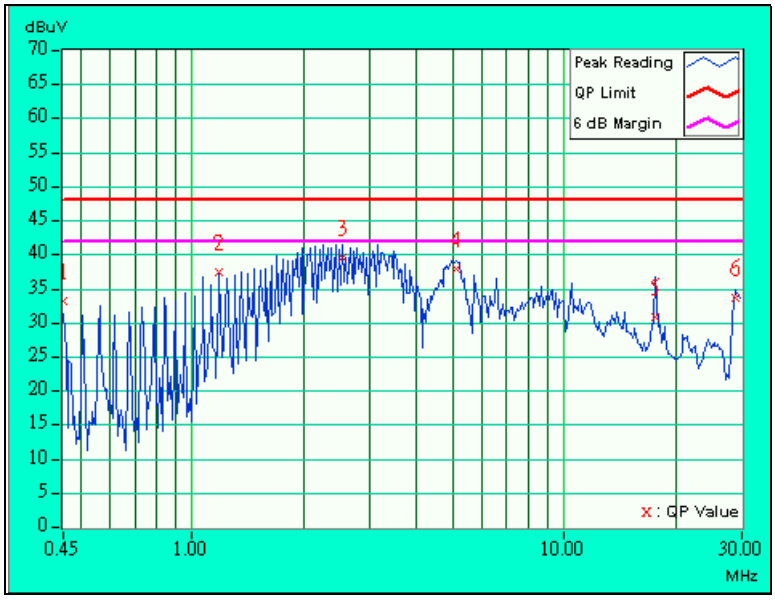


EUT	802.11b WLAN PCMCIA	MODEL	LBP01
MODE	Channel 6	6dB BANDWIDTH	10 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Neutral (N)
ENVIRONMENTAL CONDITIONS	15 deg. C, 60%RH, 1005 hPa	TESTED BY: Steven Lu	

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	0.450	0.11	32.48	-	32.59	-	48.00	-	-15.41	-
2	1.184	0.20	36.75	-	36.95	-	48.00	-	-11.05	-
3	2.535	0.23	38.90	-	39.13	-	48.00	-	-8.87	-
4	5.129	0.32	37.16	-	37.48	-	48.00	-	-10.52	-
5	17.625	0.66	29.98	-	30.64	-	48.00	-	-17.36	-
6	28.888	0.78	32.97	-	33.75	-	48.00	-	-14.25	-

NOTE:

1. QP. and AV. are abbreviations of quasi-peak and average individually.
2. "-": NA
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Emission Level = Reading Value + Correction Factor.

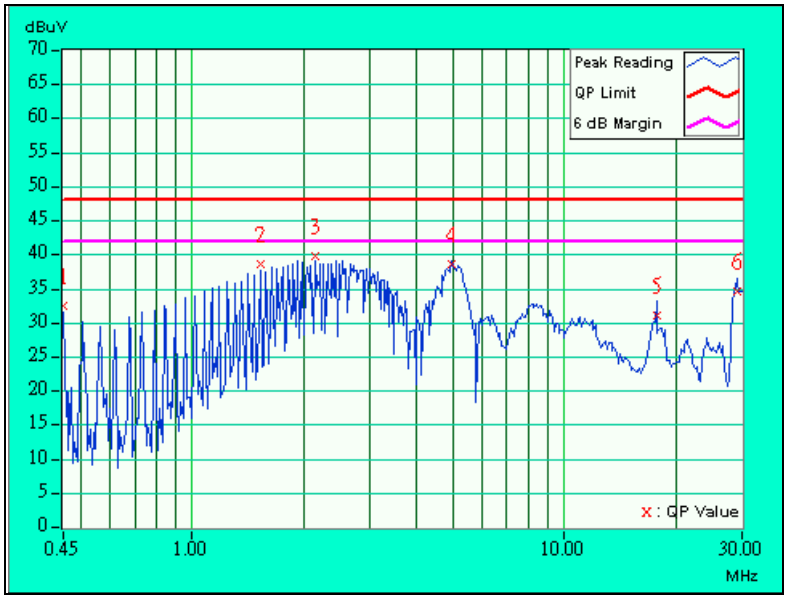


EUT	802.11b WLAN PCMCIA	MODEL	LBP01
MODE	Channel 11	6dB BANDWIDTH	10 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	15 deg. C, 60%RH, 1005 hPa	TESTED BY: Steven Lu	

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	0.450	0.11	31.36	-	31.47	-	48.00	-	-16.53	-
2	1.523	0.20	37.28	-	37.48	-	48.00	-	-10.52	-
3	2.145	0.21	38.48	-	38.69	-	48.00	-	-9.31	-
4	4.965	0.43	37.46	-	37.89	-	48.00	-	-10.11	-
5	17.656	0.86	29.83	-	30.69	-	48.00	-	-17.31	-
6	28.996	1.28	33.42	-	34.70	-	48.00	-	-13.30	-

NOTE:

1. QP. and AV. are abbreviations of quasi-peak and average individually.
2. "-": NA
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Emission Level = Reading Value + Correction Factor.

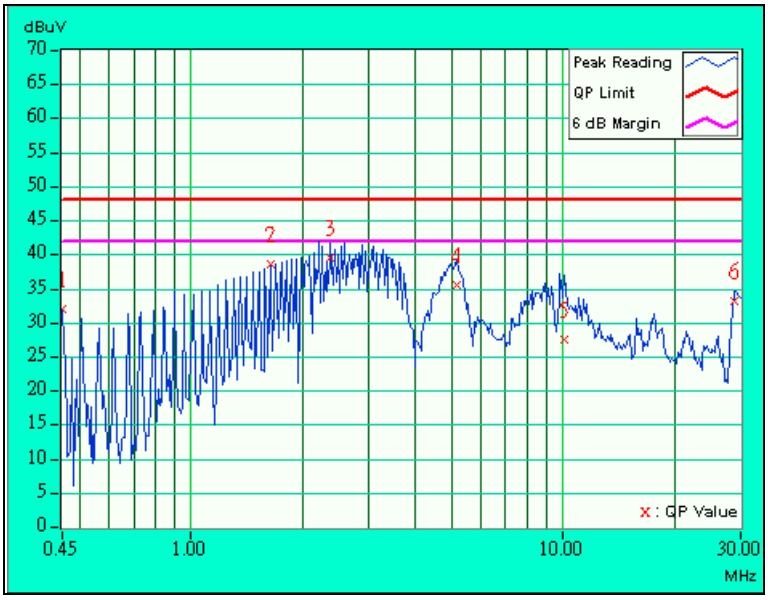


EUT	802.11b WLAN PCMCIA	MODEL	LBP01
MODE	Channel 11	6dB BANDWIDTH	10 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Netural (N)
ENVIRONMENTAL CONDITIONS	15 deg. C, 60%RH, 1005 hPa	TESTED BY: Steven Lu	

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	0.450	0.11	31.18	-	31.29	-	48.00	-	-16.71	-
2	1.637	0.20	37.88	-	38.08	-	48.00	-	-9.92	-
3	2.367	0.22	38.74	-	38.96	-	48.00	-	-9.04	-
4	5.184	0.32	34.80	-	35.12	-	48.00	-	-12.88	-
5	10.039	0.40	26.81	-	27.21	-	48.00	-	-20.79	-
6	28.887	0.78	32.45	-	33.23	-	48.00	-	-14.77	-

NOTE:

1. QP. and AV. are abbreviations of quasi-peak and average individually.
2. "-": NA
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Emission Level = Reading Value + Correction Factor.



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 of Fundamental	
	uV/m	dBuV/m
30-88	100	40.0
88-216	150	43.5
216-960	200	46.0
Above 960	500	54.0

NOTE:

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

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
* HP Spectrum Analyzer	8590L	3544A01176	May 7, 2002
* HP Preamplifier	8447D	2944A08485	May 7, 2002
* HP Preamplifier	8449B	3008A01201	Dec. 06, 2002
* HP Preamplifier	8449B	3008A01292	Aug. 21, 2002
* ROHDE & SCHWARZ TEST RECEIVER	ESMI	839013/007 839379/002	Jan. 25, 2002
SCHWARZBECK Tunable Dipole Antenna	VHA 9103 UHA 9105	E101051 E101055	Nov. 23, 2002
* CHASE BILOG Antenna	CBL6112A	2221	Aug. 2, 2002
* SCHWARZBECK Horn Antenna	BBHA9120-D1	D130	July 6, 2002
* EMCO Horn Antenna	3115	9312-4192	April 15, 2002
* EMCO Turn Table	1060	1115	NA
* SHOSHIN Tower	AP-4701	A6Y005	NA
* Software	AS61D4	NA	NA
* ANRITSU RF Switches	MP59B	M35046	Aug. 2, 2002
* TIMES RF cable	LMR-600	CABLE-ST5-01	Aug. 2, 2002
Open Field Test Site	Site 5	ADT-R05	July 28, 2002
VCCI Site Registration No.	Site 5	R-1039	NA

NOTE: 1. The measurement uncertainty is less than +/- 3.0dB, 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.

3. "*" = These equipment are used for the final measurement.

4. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz.

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.

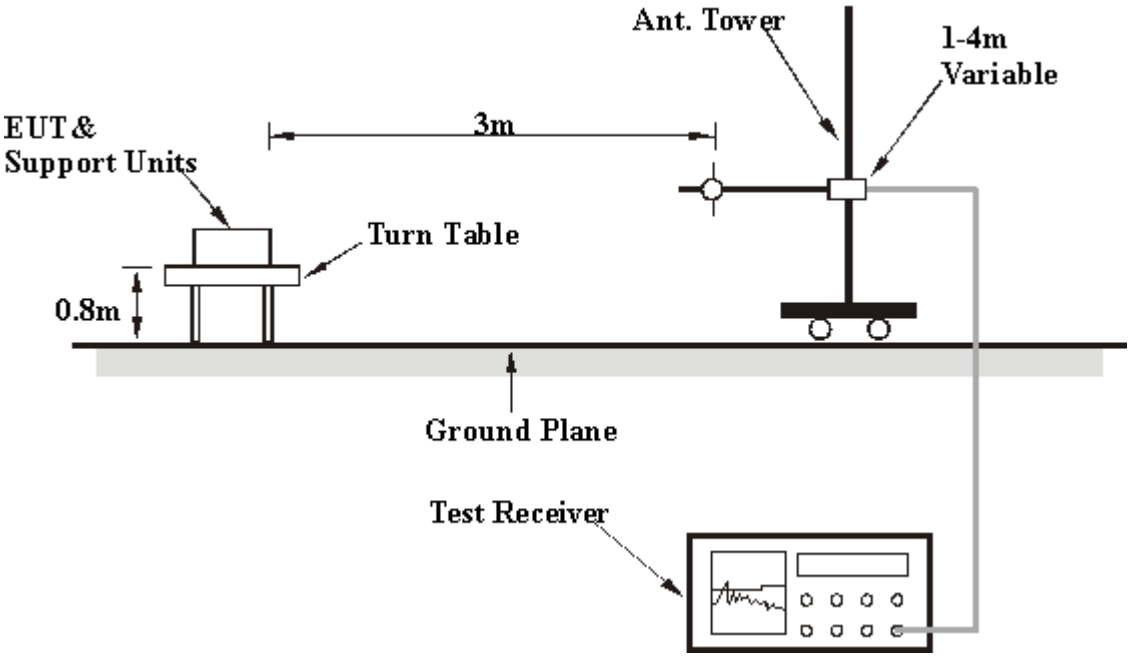
e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

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	802.11b WLAN PCMCIA	**MODEL**	LBP01
MODE	Channel 11	**FREQUENCY RANGE**	30-1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Quasi-Peak
ENVIRONMENTAL CONDITIONS	15 deg. C, 55 % RH, 1050 hPa	**TESTED BY**: Steven Lu	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	220.00	23.4 QP	46.00	-22.6	1.05H	29	11.80	10.12	1.51	0.00	-11.63
2	264.00	27.1 QP	46.00	-18.9	1.29H	135	12.50	12.89	1.70	0.00	-14.58
3	396.00	30.6 QP	46.00	-15.4	1.21H	269	12.40	15.96	2.22	0.00	-18.18
4	440.00	33.2 QP	46.00	-12.8	1.21H	363	14.52	16.32	2.38	0.00	-18.69
5	528.00	33.8 QP	46.00	-12.2	1.15H	281	13.58	17.62	2.60	0.00	-20.22
6	616.00	33.5 QP	46.00	-12.5	1.36H	159	11.74	18.82	2.89	0.00	-21.71
7	748.00	35.8 QP	46.00	-10.2	1.06H	163	12.40	20.14	3.26	0.00	-23.40

NOTE:

1. Emission level = Raw value - Correction Factor
2. Correction Factor = Pre-Amp. Factor - Ant. Factor - Cable loss
   (Pre-Amp. Factor = 0, when a Pre-Amplifier is not used for the test.)
3. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.

EUT	802.11b WLAN PCMCIA	**MODEL**	LBP01
MODE	Channel 11	**FREQUENCY RANGE**	30-1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Quasi-Peak
ENVIRONMENTAL CONDITIONS	15 deg. C, 55 % RH, 1050 hPa	**TESTED BY**: Steven Lu	

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	220.00	23.4 QP	46.00	-22.6	1.08V	254	11.80	10.12	1.51	0.00	-11.63
2	264.00	26.9 QP	46.00	-19.1	1.09V	352	12.30	12.89	1.70	0.00	-14.58
3	396.00	30.8 QP	46.00	-15.2	0.99V	292	12.60	15.96	2.22	0.00	-18.18
4	440.00	32.7 QP	46.00	-13.3	1.02V	118	13.96	16.32	2.38	0.00	-18.69
5	528.00	32.6 QP	46.00	-13.4	1.24V	277	12.40	17.62	2.60	0.00	-20.22
6	616.00	33.3 QP	46.00	-12.7	1.31V	206	11.58	18.82	2.89	0.00	-21.71
7	748.00	37.6 QP	46.00	-8.4	1.04V	154	14.20	20.14	3.26	0.00	-23.40

NOTE:

1. Emission level = Raw value - Correction Factor
2. Correction Factor = Pre-Amp. Factor - Ant. Factor - Cable loss
   (Pre-Amp. Factor = 0, when a Pre-Amplifier is not used for the test.)
3. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.

EUT	802.11b WLAN PCMCIA	**MODEL**	LBP01
MODE	Channel 1	**FREQUENCY RANGE**	Above 1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	15 deg. C, 55 % RH, 1050 hPa	**TESTED BY**: Steven Lu	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	2038.00	50.2 PK	74.00	-23.80	1.03H	17	55.00	25.20	4.86	34.90	4.84
2	*2413.30	107.1 PK	-	-	1.32H	158	74.86	27.11	5.10	0.00	-32.21
3	*2413.30	98.9 AV	-	-	1.32H	158	66.70	27.11	5.10	0.00	-32.21
4	2580.60	47.3 AV	54.00	-6.70	1.01H	55	49.34	27.75	5.14	34.91	2.03
5	2580.60	53.3 PK	74.00	-20.70	1.01H	55	55.30	27.75	5.14	34.91	2.03
6	4076.00	50.6 PK	74.00	-23.40	1.08H	102	48.20	30.13	6.78	34.52	-2.39
7	4824.20	53.0 PK	74.00	-21.00	1.16H	178	49.00	31.43	7.23	34.63	-4.02

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)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	2038.10	48.2 PK	74.00	-25.80	1.13V	13	53.00	25.20	4.86	34.90	4.84
2	*2413.10	106.5 PK	-	-	1.24V	143	74.30	27.11	5.10	0.00	-32.21
3	*2413.10	97.7 AV	-	-	1.24V	143	65.50	27.11	5.10	0.00	-32.21
4	2580.00	55.0 PK	74.00	-19.00	1.03V	52	57.00	27.75	5.14	34.91	2.03
5	2580.00	50.9 AV	54.00	-3.10	1.03V	52	52.96	27.75	5.14	34.91	2.03
6	4076.00	49.4 PK	74.00	-24.60	1.16V	179	47.00	30.13	6.78	34.52	-2.39
7	4824.00	53.0 PK	74.00	-21.00	1.12V	291	49.00	31.43	7.23	34.63	-4.02
8	4824.00	49.0 AV	54.00	-5.00	1.12V	291	45.00	31.43	7.23	34.63	-4.02

NOTE:

1. Emission level = Raw value - Correction Factor
2. Correction Factor = Pre-Amp. Factor - Ant. Factor - Cable loss
   (Pre-Amp. Factor = 0, when a Pre-Amplifier is not used for the test.)
3. Margin value = Emission level - Limit value
4. " * " : Fundamental frequency
5. The other emission levels were very low against the limit.

EUT	802.11b WLAN PCMCIA	**MODEL**	LBP01
MODE	Channel 6	**FREQUENCY RANGE**	Above 1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	15 deg. C, 55 % RH, 1050 hPa	**TESTED BY**: Steven Lu	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	2063.00	50.0 PK	74.00	-24.00	1.12H	291	54.50	25.41	4.96	34.90	4.53
2	*2438.30	99.6 AV	-	-	1.11H	145	67.20	27.33	5.08	0.00	-32.40
3	*2438.30	106.4 PK	-	-	1.11H	145	74.00	27.33	5.08	0.00	-32.40
4	2630.00	51.1 PK	74.00	-22.90	1.07H	307	53.00	27.83	5.17	34.92	1.93
5	4126.00	53.5 PK	74.00	-20.50	1.13H	190	51.00	30.32	6.70	34.56	-2.46
6	4126.00	48.1 AV	54.00	-5.90	1.13H	190	45.60	30.32	6.70	34.56	-2.46
7	4874.00	55.1 PK	74.00	-18.90	1.08H	167	51.00	31.47	7.21	34.63	-4.05.
8	4874.00	51.1 AV	54.00	-2.90	1.08H	167	47.00	31.47	7.21	34.63	-4.05

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)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	2063.00	48.5 PK	74.00	-25.50	1.14V	226	53.00	25.41	4.96	34.90	4.53
2	*2438.30	105.6 PK	-	-	1.19V	169	73.20	27.33	5.08	0.00	-32.40
3	*2438.30	98.7 AV	-	-	1.19V	169	66.30	27.33	5.08	0.00	-32.40
4	2630.20	50.1 PK	54.00	-23.90	1.19V	249	52.00	27.83	5.17	34.92	1.93
5	4126.00	53.5 PK	54.00	-20.50	1.28V	196	51.00	30.32	6.70	34.56	-2.46
6	4126.00	46.5 AV	54.00	-7.50	1.28V	196	44.00	30.32	6.70	34.56	-2.46
7	4874.00	56.1 PK	74.00	-17.90	1.19V	180	52.00	31.47	7.21	34.63	-4.05.
8	4874.00	49.1 AV	54.00	-4.90	1.19V	180	45.00	31.47	7.21	34.63	-4.05

NOTE:

1. Emission level = Raw value - Correction Factor
2. Correction Factor = Pre-Amp. Factor - Ant. Factor - Cable loss
   (Pre-Amp. Factor = 0, when a Pre-Amplifier is not used for the test.)
3. Margin value = Emission level - Limit value
4. " * " : Fundamental frequency
5. The other emission levels were very low against the limit.

EUT	802.11b WLAN PCMCIA	MODEL	LBP01
MODE	Channel 11	FREQUENCY RANGE	Above 1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	15 deg. C, 55 % RH, 1050 hPa	TESTED BY: Steven Lu	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	2088.00	51.7 PK	74.00	-22.30	1.12H	273	56.00	25.62	5.02	34.90	4.26
2	*2463.30	106.2 PK	-	-	1.15H	67	73.80	27.33	5.08	0.00	-32.40
3	*2463.30	98.7 AV	-	-	1.15H	67	66.30	27.33	5.08	0.00	-32.40
4	2483.50	50.7 PK	74.00	-23.30	1.20H	228	53.00	27.54	5.06	34.90	2.31
5	2680.00	48.2 PK	74.00	-25.80	1.12H	155	50.00	28.00	5.15	34.94	1.79
6	4176.20	47.4 AV	54.00	-6.60	1.09H	82	44.90	30.41	6.68	34.58	-2.51
7	4176.20	53.5 PK	74.00	-20.50	1.09H	82	51.00	30.41	6.68	34.58	-2.51
8	4924.50	56.1 PK	74.00	-17.90	1.04H	60	52.00	31.51	7.21	34.62	-4.10.
9	4924.50	50.9 AV	54.00	-3.10	1.04H	60	46.80	31.51	7.21	34.62	-4.10

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)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	2088.00	49.7 PK	74.00	-24.30	1.28V	153	54.00	25.62	5.02	34.90	4.26
2	*2463.30	106.6 PK	-	-	1.11V	92	74.20	27.33	5.08	0.00	-32.40
3	*2463.30	99.6 AV	-	-	1.11V	92	67.20	27.33	5.08	0.00	-32.40
4	2483.50	48.7 PK	74.00	-25.30	1.22V	173	51.00	27.54	5.06	34.90	2.31
5	2680.00	49.2 PK	74.00	-24.80	1.15V	116	51.00	28.00	5.15	34.94	1.79
6	4176.10	53.5 PK	74.00	-20.50	1.07V	72	51.00	30.41	6.68	34.58	-2.51
7	4176.10	47.7 AV	54.00	-6.30	1.07V	72	45.20	30.41	6.68	34.58	-2.51
8	4924.20	55.5 PK	74.00	-18.50	1.12V	107	51.40	31.51	7.21	34.62	-4.11
9	4924.20	48.2 AV	54.00	-5.80	1.12V	107	44.10	31.51	7.21	34.62	-4.10

NOTE:

1. Emission level = Raw value - Correction Factor
2. Correction Factor = Pre-Amp. Factor - Ant. Factor - Cable loss
   (Pre-Amp. Factor = 0, when a Pre-Amplifier is not used for the test.)
3. Margin value = Emission level - Limit value
4. " * " : Fundamental frequency
5. The other emission levels were very low against the limit.

4.3 6DB BANDWIDTH MEASUREMENT

4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SPECTRUM ANALYZER	FSEK30	100049	July 17, 2002

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

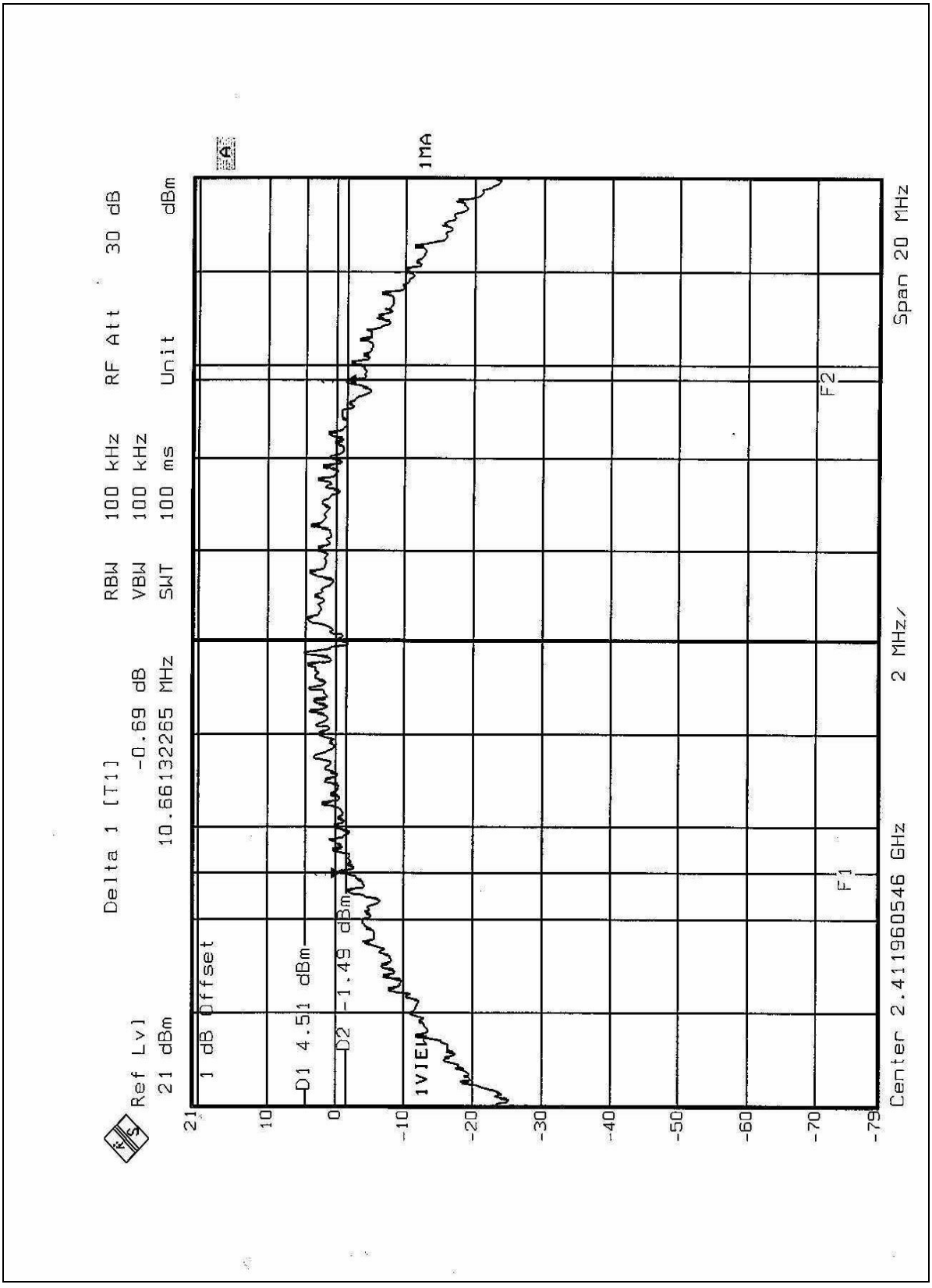
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.3.6 TEST RESULTS

EUT	802.11b WLAN PCMCIA	**MODEL**	LBP01
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	17 deg. C, 55%RH, 1005 hPa
TESTED BY: Bruce Shiau			

CHANNEL	CHANNEL FREQUENCY (MHz)	6 dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	10.66	0.5	PASS
6	2437	10.66	0.5	PASS
11	2462	10.66	0.5	PASS

CH1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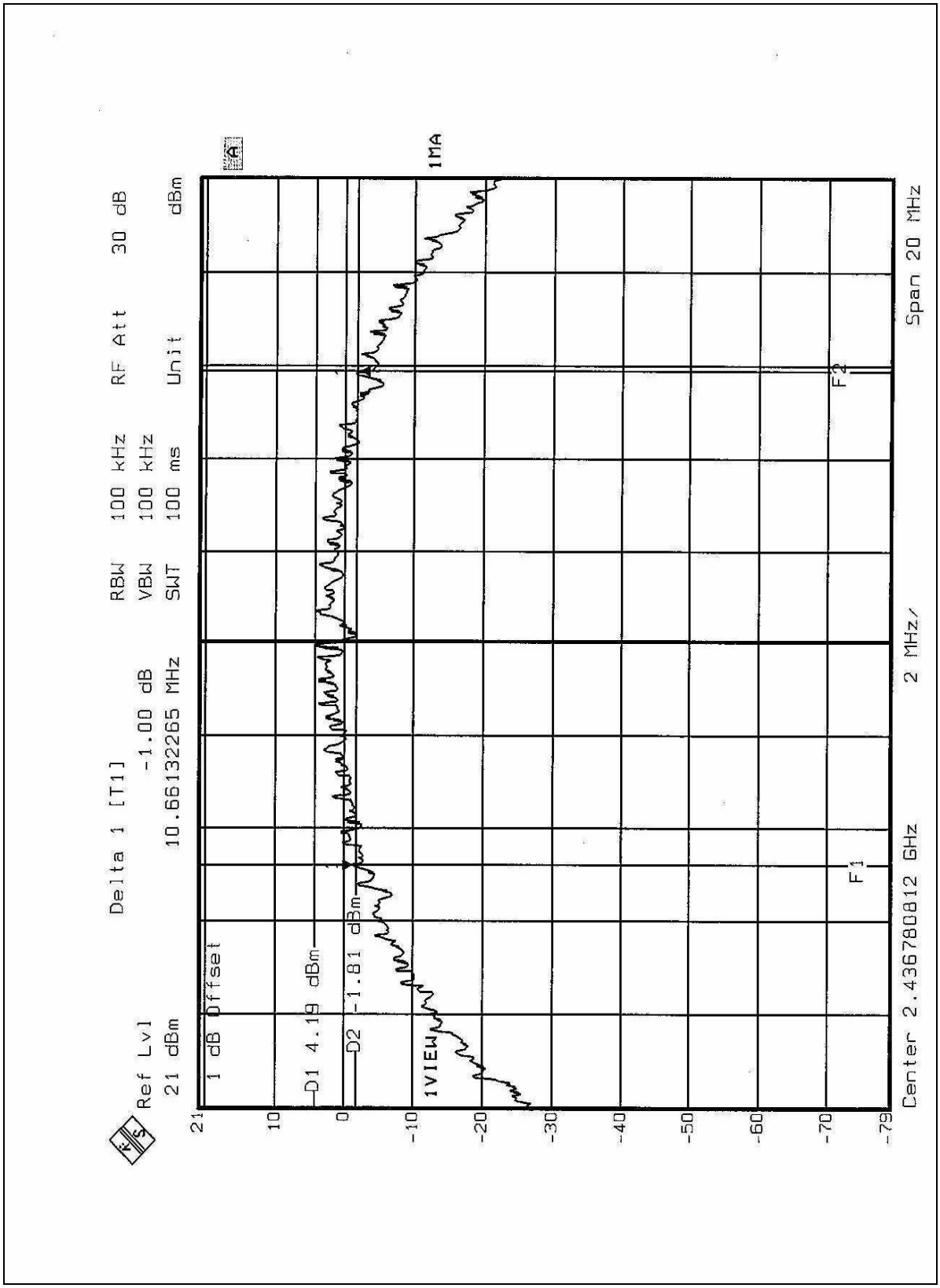
-0.69 dB
10.66132265 MHz
RBW 100 kHz
VBW 100 kHz
SWT 100 ms
RF Att 30 dB
Unit dBm
Ref Lvl
21 dBm
1 dB Offset
D1 4.51 dBm
D2 -1.49 dBm
1VIEW
1MA
F1
F2
Center 2.411960546 GHz
2 MHz/
Span 20 MHz

CH6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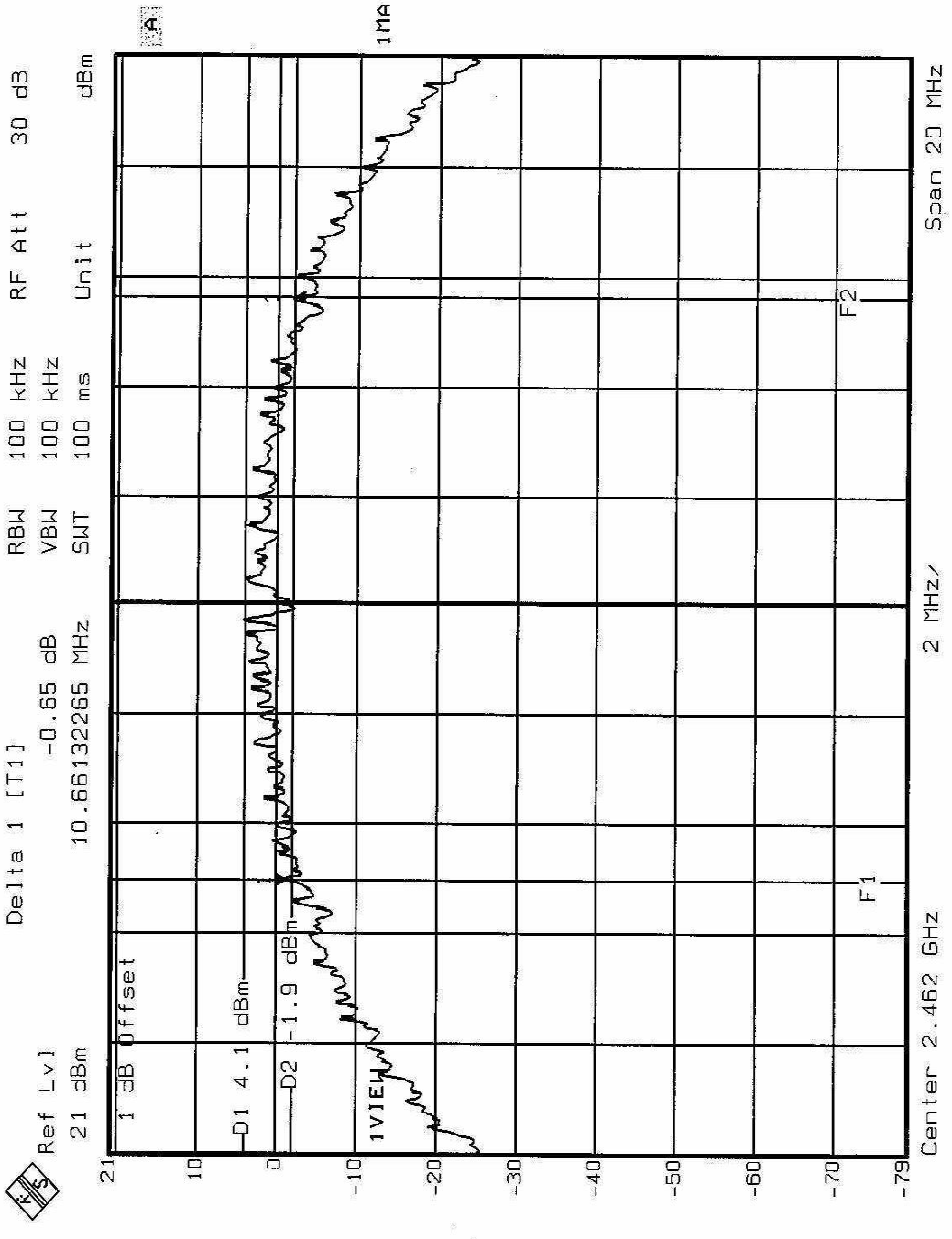
10.66132265 MHz
RBW 100 kHz
VBW 100 kHz
SWT 100 ms
RF Att 30 dB
Unit dBm
Ref Lvl
21 dBm
1 dB Offset
D1 4.19 dBm
D2 -1.81 dBm
1VIEW
1MA
F1
F2
Center 2.436780812 GHz
2 MHz/
Span 20 MHz

CH11


Delta 1 [T1]
-0.65 dB
10.66132265 MHz
RBW 100 kHz
VBW 100 kHz
SWT 100 ms
RF Att 30 dB
Unit dBm
Ref Lvl
21 dBm
1 dB Offset
D1 4.1 dBm
D2 -1.9 dBm
1MA
1VIEW
F1
F2
Center 2.462 GHz
2 MHz/
Span 20 MHz

4.4 MAXIMUM PEAK OUTPUT POWER

4.4.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

4.4.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SINGLE CHANNEL POWER METER	NRVS	100026	Feb. 21, 2002
PEAK POWER SENSOR	NRV-Z32	100013	May 23,2002

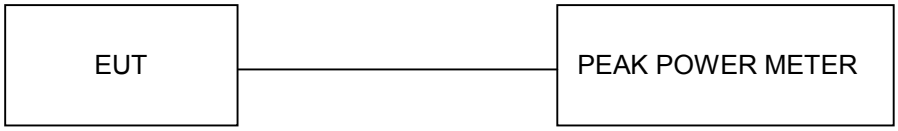
NOTE:

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.

4.4.3 TEST PROCEDURES

The transmitter output was connected to the peak power meter.

4.4.4 TEST SETUP



4.4.5 EUT OPERATING CONDITIONS

Same as Item 4.3.5

4.4.6 TEST RESULTS

EUT	802.11b WLAN PCMCIA	**MODEL**	LBP01
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	16 deg. C, 55%RH, 1005 hPa
TESTED BY: Bruce Shiau			

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	16.57	30	PASS
6	2437	16.25	30	PASS
11	2462	16.68	30	PASS

4.5 POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

4.5.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SPECTRUM ANALYZER	FSEK30	100049	July 17, 2002

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

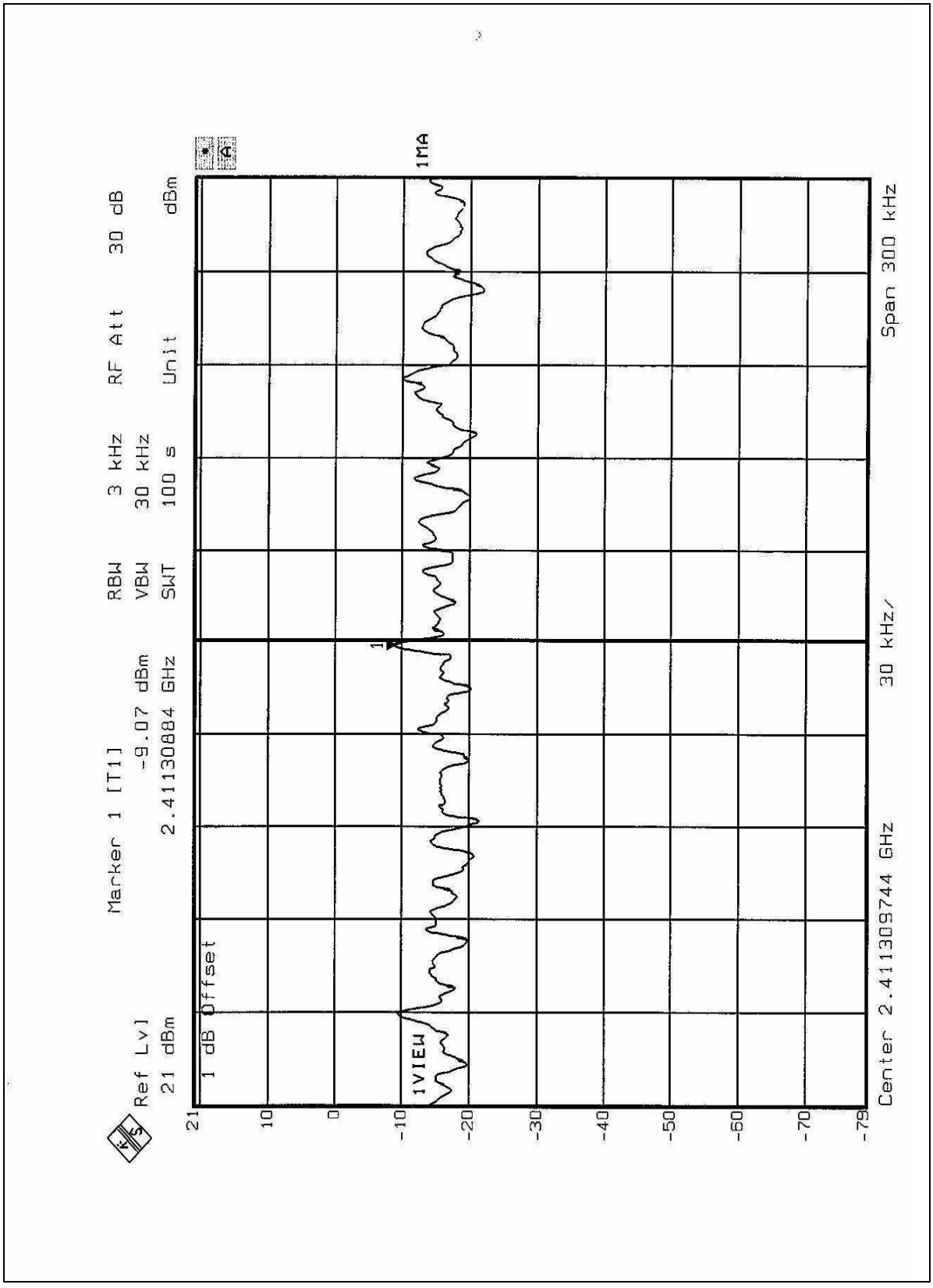
Same as 4.3.5

4.5.6 TEST RESULTS

EUT	802.11b WLAN PCMCIA	MODEL	LBP01
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	16 deg. C, 55%RH, 1005 hPa
TESTED BY: Bruce Shiau			

CHANNEL NUMBER	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 KHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-9.07	8	PASS
6	2437	-9.39	8	PASS
11	2462	-9.58	8	PASS

CH1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21 dBm
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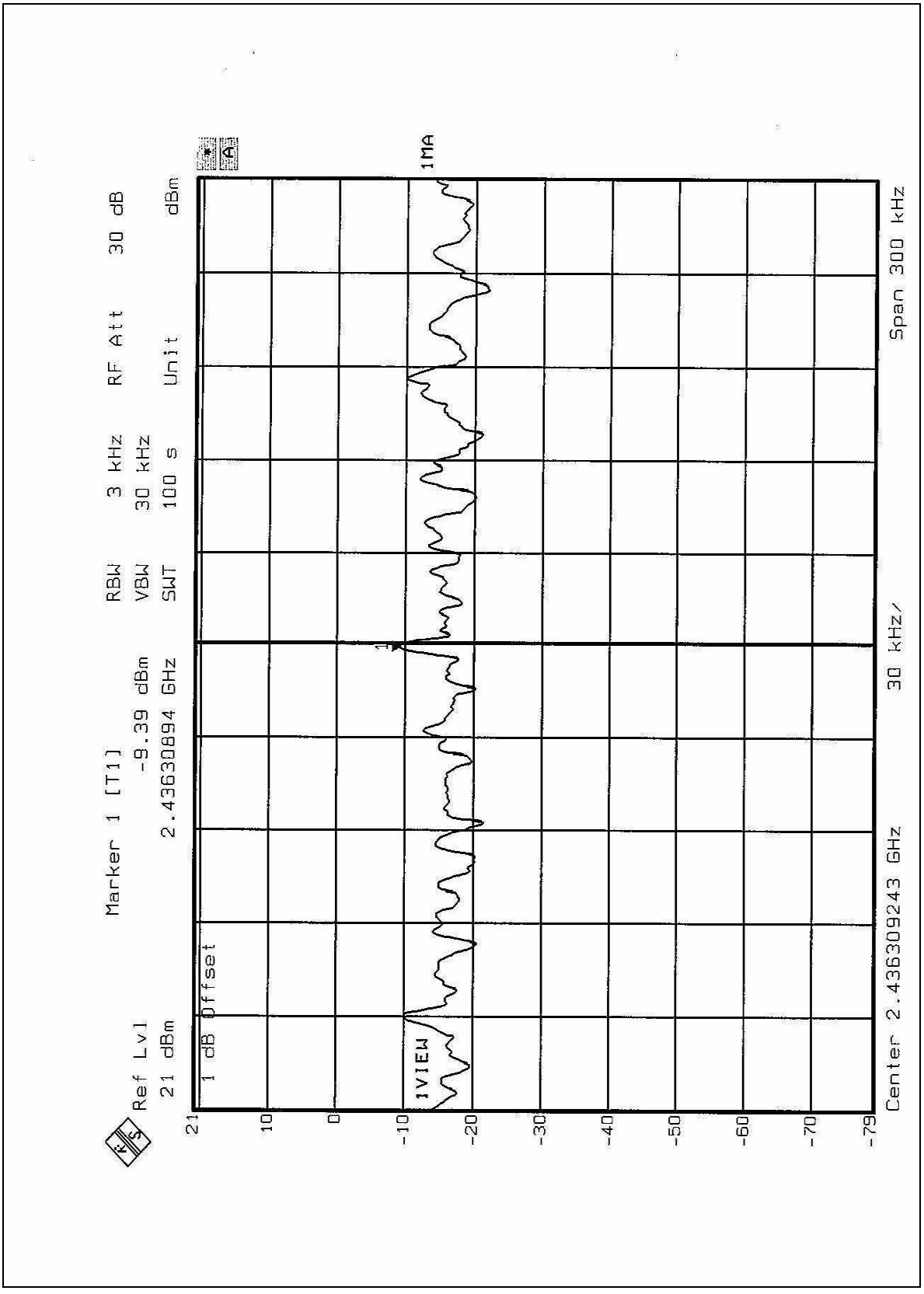
-9.07 dBm
2.41130884 GHz
RBW 3 kHz
VBW 30 kHz
SWT 100 s
RF Att 30 dB
Unit dBm
1MA
1VIEW
Center 2.411309744 GHz
30 kHz/
Span 300 kHz
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79

CH6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21 dBm
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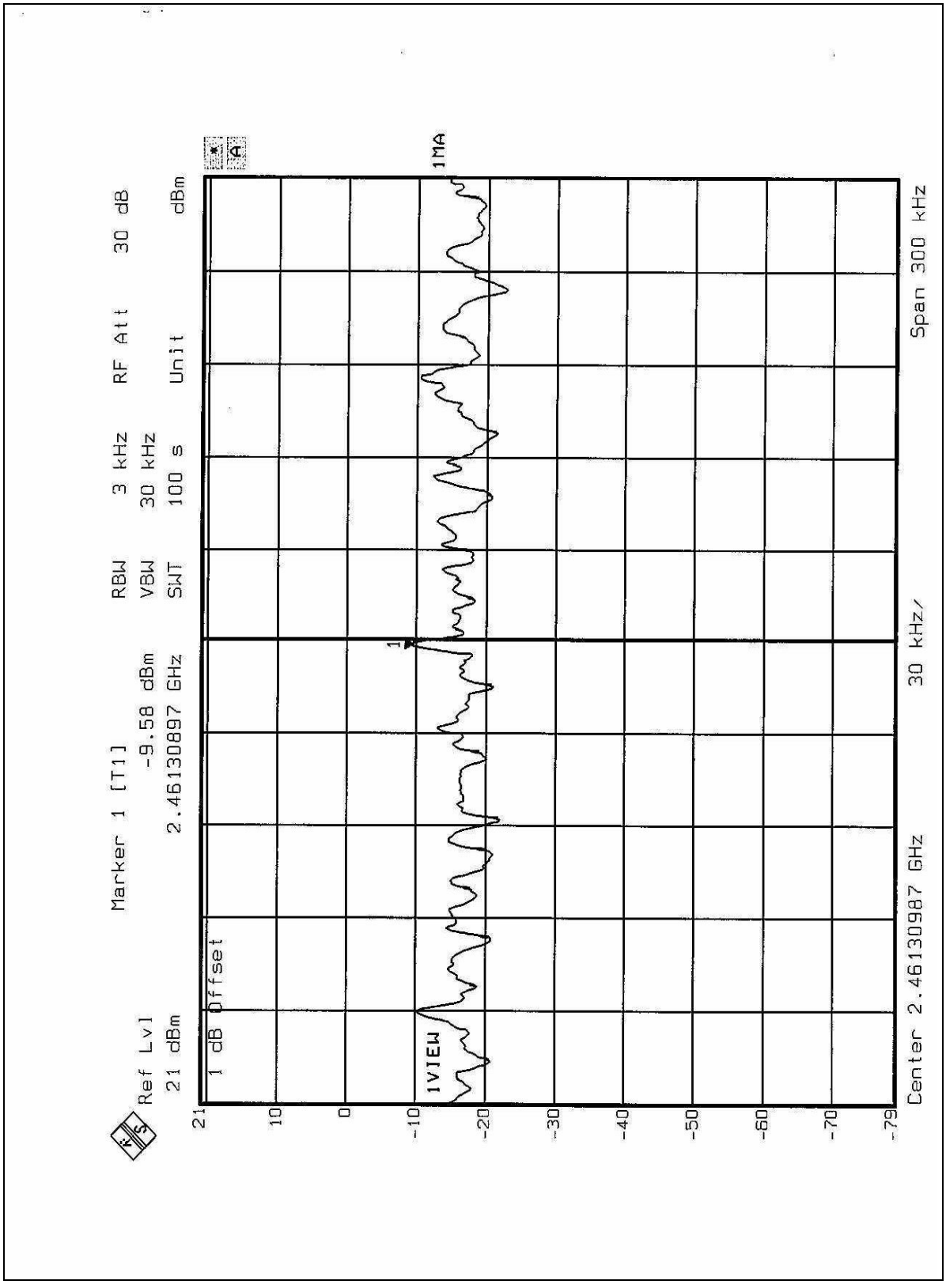
-9.39 dBm
2.43630894 GHz
RBW 3 kHz
VBW 30 kHz
SWT 100 s
RF Att 30 dB
Unit dBm
1MA
1VIEW
Center 2.436309243 GHz
30 kHz/
Span 300 kHz
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79

CH11


Ref Lvl
21 dBm
1 dB Offset
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-9.58 dBm
2.46130897 GHz
RBW 3 kHz
VBW 30 kHz
SWT 100 s
RF Att 30 dB
Unit dBm
1VIEW
1MA
Center 2.46130987 GHz
30 kHz/
Span 300 kHz
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79