



FCC TEST REPORT

REPORT NO.: RF920120R02B

MODEL NO.: WLL3011

RECEIVED: May 16, 2003

TESTED: May 19 ~ June 20, 2003

APPLICANT: ASKEY COMPUTER CORP.

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0528
ILAC MRA



Lab Code: 200102-0

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1 CERTIFICATION

PRODUCT : Wireless LAN Mini PCI Card
MODEL NO. : WLL3011
BRAND : Askey
APPLICANT : Askey Computer Corp.
STANDARDS : 47 CFR Part 15, Subpart C (Section 15.247),
ANSI C63.4-1992

We, **Advance Data Technology Corporation**, hereby certify that one sample of the designation has been tested in our facility from May 19 ~ June 20, 2003, The test record, data evaluation and Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions herein specified.

PREPARED BY: Rennie Wang, **DATE:** July 5, 2003
Rennie Wang
APPROVED BY: Dr. Alan Lane, JVP, **DATE:** July 5, 2003

2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: 47 CFR Part 15, Subpart C			
Standard Section	Test Type and Limit	Result	REMARK
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit Minimum passing margin is -13.97dBuV at 0.170MHz
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 -3.90dBuV at 200.20 MHz
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	Wireless LAN Mini PCI Card
MODEL NO.	WLL3011
POWER SUPPLY	3.3VDC from host equipment
MODULATION TYPE	BPSK, QPSK, CCK, 16QAM, 64QAM
RADIO TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	1/2/5.5/6/9/11/12/18/24/36/48/54Mbps
FREQUENCY RANGE	2412MHz ~ 2462MHz
BANDWIDTH OF EACH CHANNEL	22MHz
NUMBER OF CHANNEL	11
OUTPUT POWER	14.89dBm
ANTENNA TYPE	Please refer to NOTE 2
DATA CABLE	NA
I/O PORTS	NA
ASSOCIATED DEVICES	NA

NOTE:

1. This report is prepared for FCC class II permissive change. The difference compared with the original design was changing the layout, so the data had been re-tested.

2. Antenna details:

Item	Antenna Type		Antenna Gain (dBi)	
	Main	Aux.	Main	Aux.
1	Patch	Printed Dipole	3	3
2	Dipole	Patch	3	3
3	Dipole	Printed Dipole	3	3

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. 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 to this EUT.

Channel	Frequency	Channel	Frequency
1	2412 MHz	7	2442 MHz
2	2417 MHz	8	2447 MHz
3	2422 MHz	9	2452 MHz
4	2427 MHz	10	2457 MHz
5	2432 MHz	11	2462 MHz
6	2437 MHz		

NOTE:

1. Below 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. Data rate, 11Mbps with CCK technique and 6Mbps with OFDM technique, the worst case, were chosen for final test.
4. There are three test results presented for "Radiated Emission Measurement" test: The test result A was tested with antenna item 1 which mentioned on NOTE 2 of section 3.1, the test result B was tested with antenna item 2, and the test result C was tested with antenna item 3.

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a Wireless LAN Mini PCI Card. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC 47 CFR Part 15, Subpart C. (15.247)

ANSI C63.4 : 1992

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

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



3.4 DESCRIPTION OF SUPPORT UNITS

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

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK	Dell	PP01L	TW-09C748-12800-190-B220	FCC DoC Approved
2	PRINTER	EPSON	LQ-300+	DCGY017096	FCC DoC Approved
3	MODEM	ACEEX	1414	980020569	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 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	ESCS30	847793/022	Mar. 10, 2004
ROHDE & SCHWARZ Artificial Mains Network (for EUT)	ESH2-Z5	828075/003	July 23, 2003
ROHDE & SCHWARZ 200-A Four-line V-Network	ENV4200	830326/018	Oct. 30, 2003
* ROHDE & SCHWARZ 4-wire ISN	ENY41	838119/028	Nov. 29, 2003
* ROHDE & SCHWARZ 2-wire ISN	ENY22	837497/018	Nov. 29, 2003
EMCO-L.I.S.N. (for peripheral)	3825/2	90031627	July 23, 2003
Software	Cond-V2M1	NA	NA
RF cable (JYEBAO)	5D-FB	Cable-C05.01	July 19, 2003
LYNICS Terminator (For EMCO LISN)	0900510	E1-01-305	Feb. 23, 2004
LYNICS Terminator (For EMCO LISN)	0900510	E1-01-306	Feb. 23, 2004

- NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. “*”: These equipment are used for conducted telecom port test only (if tested).
3. The test was performed in ADT Shielded Room No. 5.
4. The VCCI Site Registration No. is C-1093.



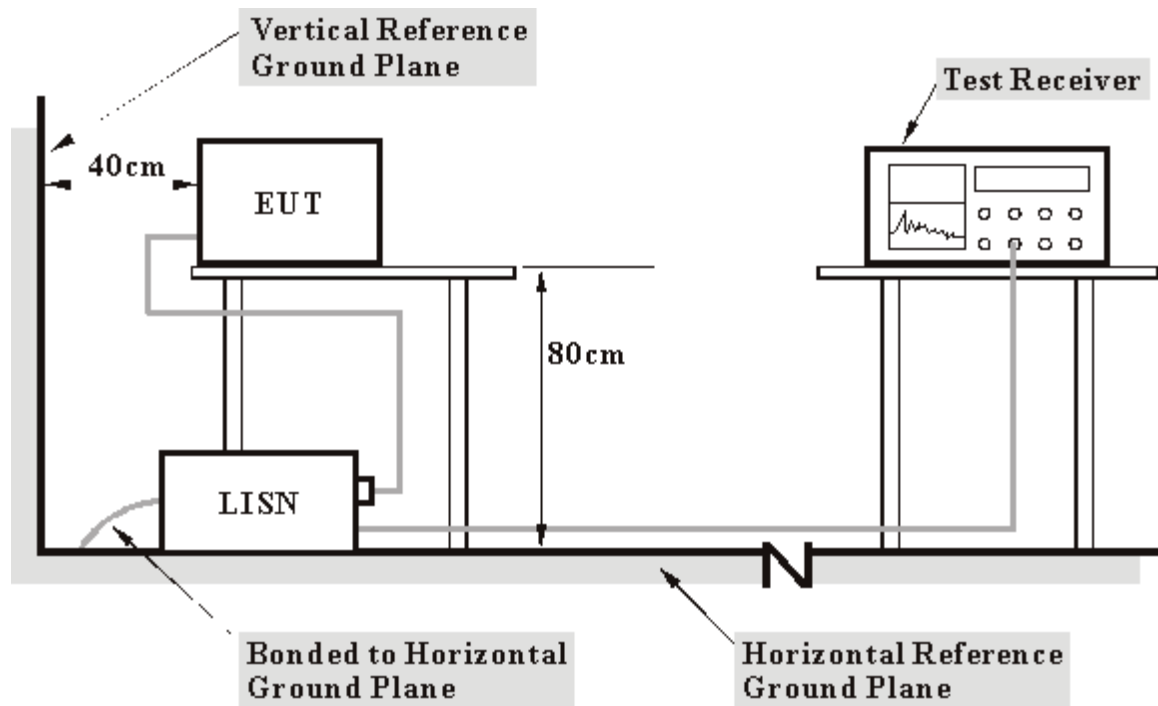
4.1.3 TEST PROCEDURES

- 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 150 kHz to 30 MHz was searched. Emission levels over 10dB under the prescribed limits could not be reported

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 TEST SETUP



- Note:**
1. Support units were connected to second LISN.
 2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

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



4.1.6 EUT OPERATING CONDITIONS

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

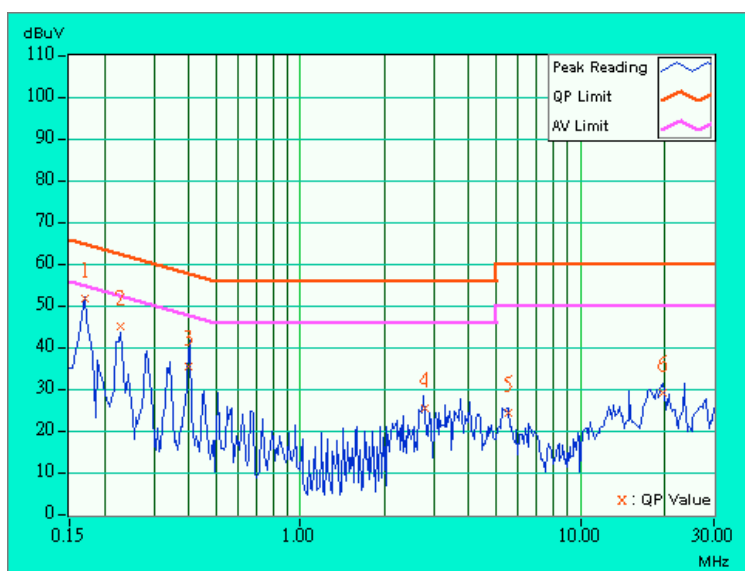
4.1.7 TEST RESULTS

EUT	Wireless LAN Mini PCI Card	MODEL	WLL3011
MODE	Channel 1	6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	25 deg. C, 60%RH, 991 hPa	TESTED BY: Gary Chang	

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	0.170	0.10	50.91	-	51.01	-	64.98	54.98	-13.97	-
2	0.228	0.10	44.05	-	44.15	-	62.52	52.52	-18.37	-
3	0.398	0.10	34.33	-	34.43	-	57.90	47.90	-23.47	-
4	2.774	0.28	24.53	-	24.81	-	56.00	46.00	-31.19	-
5	5.551	0.45	23.19	-	23.64	-	60.00	50.00	-36.36	-
6	19.652	1.08	28.08	-	29.16	-	60.00	50.00	-30.84	-

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.

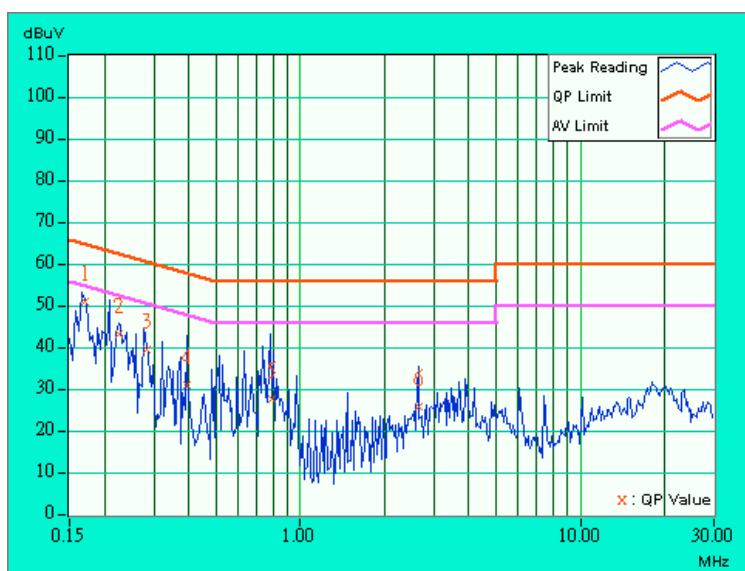


EUT	Wireless LAN Mini PCI Card	MODEL	WLL3011
MODE	Channel 1	6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Neutral (N)
ENVIRONMENTAL CONDITIONS	25 deg. C, 60%RH, 991 hPa	TESTED BY: Gary Chang	

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	0.170	0.10	50.89	-	50.99	-	64.98	54.98	-13.99	-
2	0.224	0.10	43.21	-	43.31	-	62.67	52.67	-19.36	-
3	0.284	0.10	39.26	-	39.36	-	60.70	50.70	-21.34	-
4	0.392	0.10	30.80	-	30.90	-	58.02	48.02	-27.12	-
5	0.792	0.17	27.49	-	27.66	-	56.00	46.00	-28.34	-
6	2.660	0.23	25.65	-	25.88	-	56.00	46.00	-30.12	-

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.

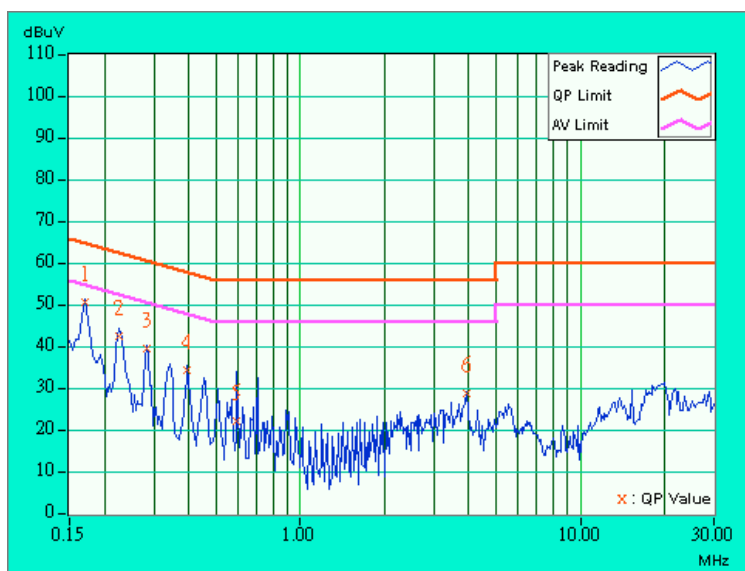


EUT	Wireless LAN Mini PCI Card	MODEL	WLL3011
MODE	Channel 6	6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	25 deg. C, 60%RH, 991 hPa	TESTED BY: Gary Chang	

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	0.170	0.10	50.18	-	50.28	-	64.98	54.98	-14.70	-
2	0.224	0.10	42.23	-	42.33	-	62.66	52.66	-20.33	-
3	0.283	0.10	39.10	-	39.20	-	60.73	50.73	-21.53	-
4	0.396	0.10	33.88	-	33.98	-	57.93	47.93	-23.95	-
5	0.595	0.13	21.95	-	22.08	-	56.00	46.00	-33.92	-
6	3.914	0.39	28.33	-	28.72	-	56.00	46.00	-27.28	-

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.

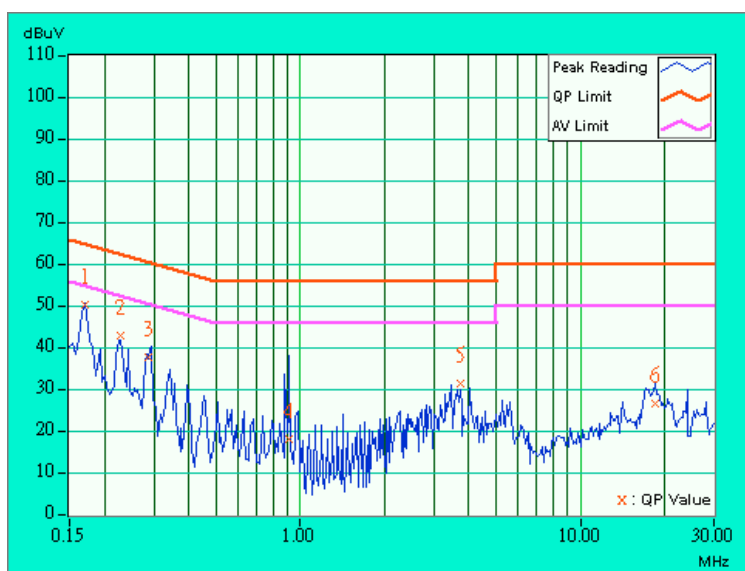


EUT	Wireless LAN Mini PCI Card	MODEL	WLL3011
MODE	Channel 6	6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Neutral (N)
ENVIRONMENTAL CONDITIONS	25 deg. C, 60%RH, 991 hPa	TESTED BY: Gary Chang	

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	0.170	0.10	49.74	-	49.84	-	64.98	54.98	-15.14	-
2	0.228	0.10	42.17	-	42.27	-	62.52	52.52	-20.25	-
3	0.286	0.10	36.96	-	37.06	-	60.65	50.65	-23.59	-
4	0.912	0.19	17.51	-	17.70	-	56.00	46.00	-38.30	-
5	3.742	0.29	30.95	-	31.24	-	56.00	46.00	-24.76	-
6	18.426	0.71	26.05	-	26.76	-	60.00	50.00	-33.24	-

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.

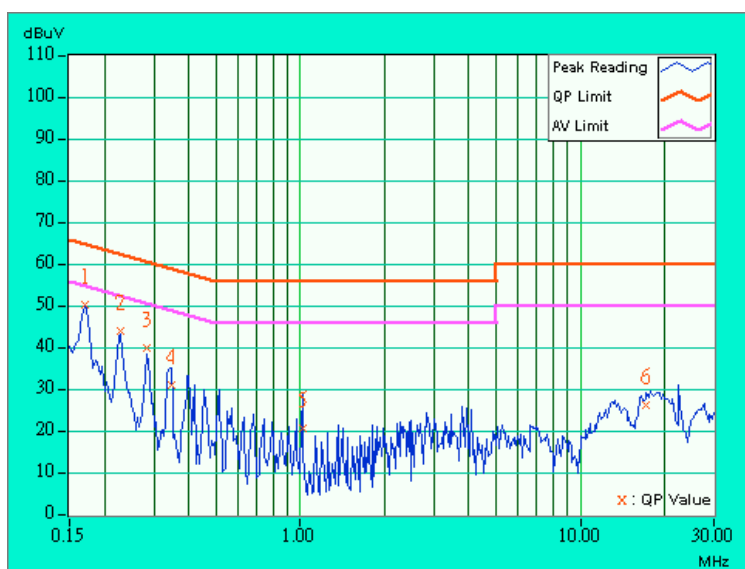


EUT	Wireless LAN Mini PCI Card	MODEL	WLL3011
MODE	Channel 11	6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	25 deg. C, 60%RH, 991 hPa	TESTED BY: Gary Chang	

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	0.170	0.10	49.54	-	49.64	-	64.98	54.98	-15.34	-
2	0.228	0.10	43.11	-	43.21	-	62.52	52.52	-19.31	-
3	0.283	0.10	38.97	-	39.07	-	60.73	50.73	-21.66	-
4	0.345	0.10	30.30	-	30.40	-	59.07	49.07	-28.67	-
5	1.023	0.20	19.98	-	20.18	-	56.00	46.00	-35.82	-
6	17.211	0.93	25.33	-	26.26	-	60.00	50.00	-33.74	-

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.

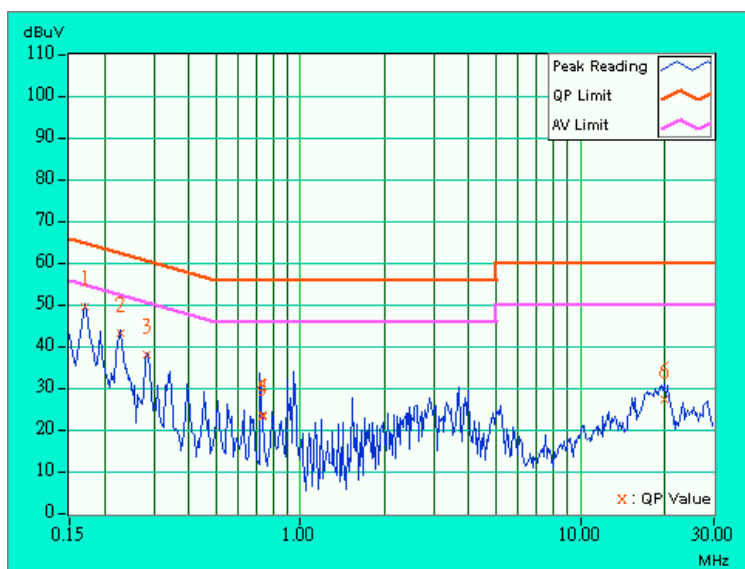


EUT	Wireless LAN Mini PCI Card	MODEL	WLL3011
MODE	Channel 11	6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Neutral (N)
ENVIRONMENTAL CONDITIONS	25 deg. C, 60%RH, 991 hPa	TESTED BY: Gary Chang	

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	0.170	0.10	48.86	-	48.96	-	64.98	54.98	-16.02	-
2	0.228	0.10	42.35	-	42.45	-	62.52	52.52	-20.07	-
3	0.283	0.10	37.27	-	37.37	-	60.73	50.73	-23.36	-
4	0.738	0.16	22.87	-	23.03	-	56.00	46.00	-32.97	-
5	0.738	0.16	22.58	-	22.74	-	56.00	46.00	-33.26	-
6	19.984	0.80	26.43	-	27.23	-	60.00	50.00	-32.77	-

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

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

Frequencies (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

NOTE:

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



4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
*HP Spectrum Analyzer	8590L	3520A00667	Aug. 26, 2003
*CHASE Preamplifier	CPA9231A/4	3215	Nov. 06, 2003
*HP Spectrum Analyzer	8593E	3926A04191	Mar. 24, 2004
* HP Preamplifier	8449B	3008A01201	Dec. 01, 2003
* HP Preamplifier	8449B	3008A01292	Aug. 07, 2003
* ROHDE & SCHWARZ TEST RECEIVER	ESVS10	846285/012	Sept. 16, 2003
* ROHDE & SCHWARZ TEST RECEIVER	ESMI	839013/007 839379/002	Feb. 13, 2004
SCHAFFNER Tunable Dipole Antenna	VHBA 9123	459	Nov. 22, 2003
SCHWARZBECK Tunable Dipole Antenna	UHA 9105	977	
* CHASE BILOG Antenna	CBL6112B	2751	Mar. 21, 2004
* SCHWARZBECK Horn Antenna	BBHA9120-D1	D130	Jul. 03, 2003
* EMCO Horn Antenna	3115	9312-4192	Mar. 23, 2004
* CHANCE Turn Table & Tower Controller	ACS-I	NA	NA
* Software	ADT_Radiated_V5.09	NA	NA
* ANRITSU RF Switches	MP59B	M51167	Aug. 21, 2003
* TIMES RF cable	LMR-600	CABLE-ST6-01	Aug. 21, 2003

- NOTE:** 1. The calibration interval of the above test instruments is 12 months. And the calibrations are traceable to NML/ROC and NIST/USA.
2. "*" = These equipment are used for the final measurement.
3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
4. The test was performed in ADT Open Site No. 6.
5. The VCCI Site Registration No. is R-728.



4.2.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10 dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

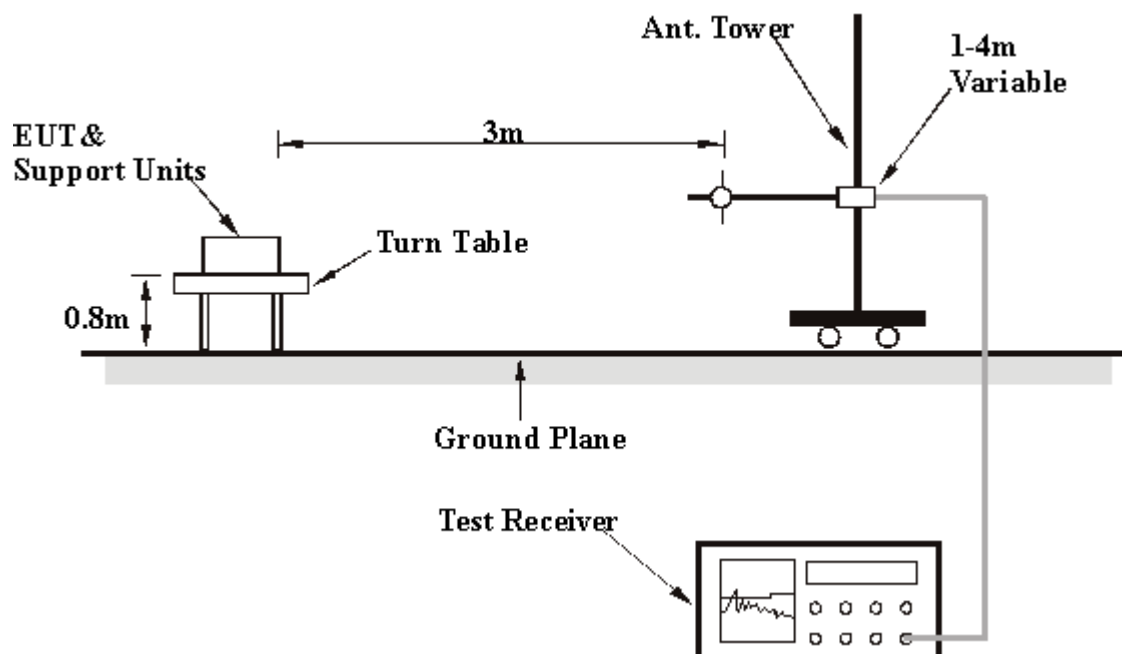
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 300 Hz for Average detection (AV) at frequency above 1GHz.

4.2.4 DEVIATION FROM TEST STANDARD

No deviation

4.2.5 TEST SETUP



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

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6

4.2.7 TEST RESULTS (A)

EUT	Wireless LAN Mini PCI Card	MODEL	WLL3011
CHANNEL	Channel 11	FREQUENCY RANGE	Below 1000 MHz
MODE	CCK & OFDM	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	22 deg. C, 66 % RH, 991 hPa	DETECTOR FUNCTION	Quasi-Peak
TESTED BY	Gary Chang		

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	39.92	29.2 QP	40.00	-10.80	1.00 H	145	14.10	15.10
2	80.84	33.6 QP	40.00	-6.40	1.00 H	0	25.50	8.10
3	120.36	33.2 QP	43.50	-10.30	1.88 H	117	19.80	13.50
4	159.19	38.3 QP	43.50	-5.20	1.34 H	84	27.40	10.90
5	199.36	37.0 QP	43.50	-6.50	1.23 H	114	26.10	11.00
6	239.31	28.5 QP	46.00	-17.50	1.25 H	132	13.90	14.60
7	280.00	26.8 QP	46.00	-19.20	1.00 H	195	10.30	16.50
8	320.00	31.8 QP	46.00	-14.20	1.00 H	139	14.70	17.20
9	360.00	34.8 QP	46.00	-11.20	1.08 H	39	16.80	18.00
10	440.00	30.6 QP	46.00	-15.40	1.76 H	25	10.90	19.60

REMARKS:

- Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB)
- Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
- Margin value = Emission level - Limit value
- The other emission levels were very low against the limit.

EUT	Wireless LAN Mini PCI Card	MODEL	WLL3011
CHANNEL	Channel 11	FREQUENCY RANGE	Below 1000 MHz
MODE	CCK & OFDM	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	22 deg. C, 66 % RH, 991 hPa	DETECTOR FUNCTION	Quasi-Peak
TESTED BY	Gary Chang		

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	119.99	36.1 QP	43.50	-7.40	1.71 V	104	22.60	13.50
2	159.16	28.8 QP	43.50	-14.70	1.71 V	160	18.00	10.90
3	200.20	39.6 QP	43.50	-3.90	1.18 V	67	28.70	11.00
4	240.01	34.0 QP	46.00	-12.00	1.70 V	206	19.40	14.70
5	240.01	34.0 QP	46.00	-12.00	1.70 V	207	19.40	14.70
6	280.01	26.8 QP	46.00	-19.20	1.79 V	62	10.30	16.50
7	360.59	39.5 QP	46.00	-6.50	1.78 V	207	21.50	18.00

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. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.

EUT	Wireless LAN Mini PCI Card	MODEL	WLL3011
CHANNEL	Channel 1	FREQUENCY RANGE	Above 1000 MHz
MODE	CCK	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	22 deg. C, 66 % RH, 991 hPa	DETECTOR FUNCTION	Peak / Average
TESTED BY	Gary Chang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3M

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	1608.00	44.1 PK	74.00	-29.90	1.28 H	82	16.20	27.90
2	*2412.00	101.9 PK			1.20 H	102	70.90	31.10
2	*2412.00	85.9 AV			1.20 H	102	54.80	27.90
3	3216.00	48.3 PK	74.00	-25.70	1.20 H	102	14.20	34.10
4	4824.00	48.0 PK	74.00	-26.00	1.00 H	259	10.50	37.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3M

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	1607.00	40.9 PK	74.00	-33.10	1.46 V	154	13.00	27.90
2	*2412.00	108.6 PK			1.00 V	33	77.60	31.10
2	*2412.00	91.9 AV			1.00 V	33	60.80	27.90
3	3215.00	48.6 PK	74.00	-25.40	1.00 V	59	14.50	34.10
4	4824.00	48.4 PK	74.00	-25.60	1.00 V	159	10.90	37.50

- 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. Margin value = Emission level – Limit value.
 4. “ * “ : Fundamental frequency.
 5. The other emission levels were very low against the limit.

EUT	Wireless LAN Mini PCI Card	MODEL	WLL3011
CHANNEL	Channel 6	FREQUENCY RANGE	Above 1000 MHz
MODE	CCK	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	22 deg. C, 66 % RH, 991 hPa	DETECTOR FUNCTION	Peak / Average
TESTED BY	Gary Chang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3M

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	1624.00	47.3 PK	74.00	-26.70	1.18 H	150	19.30	28.00
2	*2438.00	91.7 PK			1.28 H	184	60.60	31.20
2	*2438.00	85.4 AV			1.28 H	184	54.20	28.00
3	3489.00	46.9 PK	74.00	-27.10	1.80 H	150	12.10	34.80

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3M

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	1624.00	39.5 PK	74.00	-34.50	2.07 V	153	11.50	28.00
2	*2437.00	107.4 PK			1.00 V	97	76.30	31.10
2	*2437.00	91.4 AV			1.00 V	97	60.20	28.00
3	3249.00	49.5 PK	74.00	-24.50	1.17 V	113	15.40	34.10
4	4874.00	47.5 PK	74.00	-26.50	1.07 V	253	9.90	37.60

- 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. Margin value = Emission level – Limit value.
 4. “ * ” : Fundamental frequency.
 5. The other emission levels were very low against the limit.

EUT	Wireless LAN Mini PCI Card	MODEL	WLL3011
CHANNEL	Channel 11	FREQUENCY RANGE	Above 1000 MHz
MODE	CCK	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	22 deg. C, 66 % RH, 991 hPa	DETECTOR FUNCTION	Peak / Average
TESTED BY	Gary Chang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3M

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	1640.00	41.5 PK	74.00	-32.50	2.25 H	142	13.40	28.10
2	*2462.00	107.1 PK			1.23 H	52	75.80	31.20
2	*2462.00	91.1 AV			1.23 H	52	59.80	28.10
3	3825.00	50.1 PK	74.00	-23.90	2.23 H	152	14.30	35.90
4	4924.00	49.7 PK	74.00	-24.30	1.23 H	42	12.10	37.60

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3M

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	1640.00	42.7 PK	74.00	-31.30	1.25 V	52	14.60	28.10
2	*2461.00	92.7 PK			1.00 V	68	61.50	31.20
2	*2461.00	85.7 AV			1.00 V	68	54.50	28.10
3	4923.00	47.8 PK	74.00	-26.20	2.00 V	168	10.20	37.60

- 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. Margin value = Emission level – Limit value.
 4. “ * ” : Fundamental frequency.
 5. The other emission levels were very low against the limit.

EUT	Wireless LAN Mini PCI Card	MODEL	WLL3011
CHANNEL	Channel 1	FREQUENCY RANGE	Above 1000 MHz
MODE	OFDM	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	22 deg. C, 66 % RH, 991 hPa	DETECTOR FUNCTION	Peak / Average
TESTED BY	Gary Chang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3M

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	*2412.00	91.4 PK			2.10 H	51	60.30	31.10
1	*2412.00	75.3 AV			2.10 H	51	44.20	31.10
2	3216.00	45.8 PK	74.00	-28.20	2.10 H	51	11.70	34.10
3	4828.00	47.3 PK	74.00	-26.70	2.10 H	51	9.80	37.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3M

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	2319.00	47.9 PK	74.00	-26.10	1.00 V	111	17.10	30.80
2	*2412.00	93.3 PK			2.10 V	51	62.20	31.10
2	*2412.00	77.0 AV			2.10 V	51	45.90	30.80
3	3216.00	46.5 PK	74.00	-27.50	1.00 V	111	12.50	34.10

- 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. Margin value = Emission level – Limit value.
 4. “ * ” : Fundamental frequency.
 5. The other emission levels were very low against the limit.

EUT	Wireless LAN Mini PCI Card	MODEL	WLL3011
CHANNEL	Channel 6	FREQUENCY RANGE	Above 1000 MHz
MODE	OFDM	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	22 deg. C, 66 % RH, 991 hPa	DETECTOR FUNCTION	Peak / Average
TESTED BY	Gary Chang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3M

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	1624.50	47.1 PK	74.00	-26.90	1.00 H	42	29.10	28.00
2	*2437.00	86.4 PK			1.93 H	62	55.30	31.10
2	*2437.00	80.0 AV			1.93 H	62	48.90	31.10
3	4874.00	46.4 PK	74.00	-27.60	2.93 H	162	8.80	37.60

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3M

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	85.6 PK			2.10 V	51	54.50	31.10
1	*2437.00	80.3 AV			2.10 V	51	49.20	31.10
2	3214.00	44.4 PK	74.00	-29.60	2.10 V	51	10.40	34.10
3	4850.00	45.7 PK	74.00	-28.30	2.10 V	51	8.20	37.50

- 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. Margin value = Emission level – Limit value.
 4. “ * ” : Fundamental frequency.
 5. The other emission levels were very low against the limit.

EUT	Wireless LAN Mini PCI Card	MODEL	WLL3011
CHANNEL	Channel 11	FREQUENCY RANGE	Above 1000 MHz
MODE	OFDM	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	22 deg. C, 66 % RH, 991 hPa	DETECTOR FUNCTION	Peak / Average
TESTED BY	Gary Chang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3M

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	1641.00	40.6 PK	74.00	-33.40	1.39 H	58	12.50	28.10
2	*2462.00	87.2 PK			1.78 H	158	56.00	31.20
2	*2462.00	82.3 AV			1.78 H	158	51.10	28.10
3	4924.00	46.8 PK	74.00	-27.20	1.78 H	158	9.20	37.60

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3M

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	1641.00	41.2 PK	74.00	-32.80	1.41 V	58	13.10	28.10
2	*2462.00	89.8 PK			1.13 V	102	58.60	31.20
2	*2462.00	85.3 AV			1.13 V	102	54.10	28.10
3	3282.00	46.3 PK	74.00	-27.70	1.48 V	158	12.00	34.20
4	4923.00	46.9 PK	74.00	-27.10	1.48 V	158	9.30	37.60

- 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. Margin value = Emission level – Limit value.
 4. “ * “ : Fundamental frequency.
 5. The other emission levels were very low against the limit.

4.2.8 TEST RESULTS (B)

EUT	Wireless LAN Mini PCI Card	MODEL	WLL3011
CHANNEL	Channel 11	FREQUENCY RANGE	Below 1000 MHz
MODE	CCK & OFDM	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25 deg. C, 60 % RH, 991 hPa	DETECTOR FUNCTION	Quasi-Peak
TESTED BY	Hardaway Lee		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	160.00	23.4 QP	43.50	-20.10	1.57 H	256	12.60	10.80
2	240.00	34.6 QP	46.00	-11.40	1.43 H	93	19.90	14.70
3	279.00	31.6 QP	46.00	-14.40	1.83 H	206	15.10	16.50
4	319.00	31.3 QP	46.00	-14.70	1.68 H	32	14.20	17.10
5	441.43	35.6 QP	46.00	-10.40	1.00 H	227	15.90	19.70
6	480.02	32.1 QP	46.00	-13.90	2.26 H	242	11.50	20.60
7	560.02	28.5 QP	46.00	-17.50	1.71 H	82	7.10	21.40
8	640.00	37.1 QP	46.00	-8.90	1.80 H	169	14.40	22.80
9	720.00	32.8 QP	46.00	-13.20	1.75 H	41	9.40	23.50
10	880.00	30.8 QP	46.00	-15.20	1.84 H	210	5.60	25.20

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. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.

EUT	Wireless LAN Mini PCI Card	MODEL	WLL3011
CHANNEL	Channel 11	FREQUENCY RANGE	Below 1000 MHz
MODE	CCK & OFDM	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25 deg. C, 60 % RH, 991 hPa	DETECTOR FUNCTION	Quasi-Peak
TESTED BY	Hardaway Lee		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	239.99	35.8 QP	46.00	-10.20	1.79 V	220	21.10	14.70
2	279.99	34.0 QP	46.00	-12.00	2.12 V	64	17.50	16.50
3	319.99	30.2 QP	46.00	-15.80	1.52 V	221	13.00	17.10
4	400.10	31.2 QP	46.00	-14.80	1.40 V	208	12.10	19.10
5	441.48	34.5 QP	46.00	-11.50	1.44 V	111	14.80	19.70
6	599.99	32.8 QP	46.00	-13.20	1.48 V	136	10.00	22.70
7	640.00	30.0 QP	46.00	-16.00	1.21 V	193	7.20	22.80
8	720.18	31.7 QP	46.00	-14.30	1.33 V	208	8.30	23.50
9	799.50	32.9 QP	46.00	-13.10	1.26 V	208	8.10	24.90
10	839.88	32.0 QP	46.00	-14.00	1.26 V	182	6.90	25.00

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. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.

EUT	Wireless LAN Mini PCI Card	MODEL	WLL3011
CHANNEL	Channel 1	FREQUENCY RANGE	Above 1000 MHz
MODE	CCK	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25 deg. C, 60 % RH, 991 hPa	DETECTOR FUNCTION	Peak / Average
TESTED BY	Gary Chang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3M

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	1608.00	42.5 PK	74.00	-31.50	1.13 H	85	12.00	30.50
2	*2412.00	98.4 PK			1.15 H	304	65.40	33.00
2	*2412.00	82.7 AV			1.15 H	304	49.70	30.50
3	4824.00	45.8 PK	74.00	-28.20	1.30 H	65	5.30	40.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3M

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	1608.00	42.2 PK	74.00	-31.80	1.30 V	85	11.70	30.50
2	*2412.00	108.1 PK			1.10 V	4	75.10	33.00
2	*2412.00	89.0 AV			1.10 V	4	56.00	30.50
3	3216.00	44.8 PK	74.00	-29.20	1.10 V	320	8.70	36.10
4	4824.00	45.2 PK	74.00	-28.80	1.08 V	32	4.70	40.50
5	7236.00	52.8 PK	74.00	-21.20	1.08 V	32	7.80	45.00
5	7236.00	44.7 AV	54.00	-9.30	1.08 V	32	-0.30	33.00

- 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. Margin value = Emission level – Limit value.
 4. “ * “ : Fundamental frequency.
 5. The other emission levels were very low against the limit.

EUT	Wireless LAN Mini PCI Card	MODEL	WLL3011
CHANNEL	Channel 6	FREQUENCY RANGE	Above 1000 MHz
MODE	CCK	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25 deg. C, 60 % RH, 991 hPa	DETECTOR FUNCTION	Peak / Average
TESTED BY	Gary Chang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3M

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	1624.20	42.5 PK	74.00	-31.50	1.14 H	352	11.90	30.60
2	*2437.00	98.3 PK			1.59 H	12	65.30	33.00
2	*2437.00	81.3 AV			1.59 H	12	48.30	30.60
3	4874.00	44.9 PK	74.00	-29.10	1.30 H	65	4.30	40.60

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3M

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	1624.50	43.1 PK	74.00	-30.90	1.30 V	8	12.50	30.60
2	*2437.00	106.3 PK			1.18 V	241	73.30	33.00
2	*2437.00	86.6 AV			1.18 V	241	53.60	30.60
3	4874.00	45.8 PK	74.00	-28.20	1.13 V	65	5.20	40.60
4	7311.00	49.5 PK	74.00	-24.50	1.52 V	34	4.00	45.50

- 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. Margin value = Emission level – Limit value.
 4. “ * ” : Fundamental frequency.
 5. The other emission levels were very low against the limit.

EUT	Wireless LAN Mini PCI Card	MODEL	WLL3011
CHANNEL	Channel 11	FREQUENCY RANGE	Above 1000 MHz
MODE	CCK	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25 deg. C, 60 % RH, 991 hPa	DETECTOR FUNCTION	Peak / Average
TESTED BY	Gary Chang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3M

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	1641.00	41.2 PK	74.00	-32.80	1.13 H	62	10.50	30.70
2	*2462.00	99.6 PK			1.49 H	309	66.50	33.10
2	*2462.00	82.3 AV			1.49 H	309	49.20	30.70
3	4924.00	44.2 PK	74.00	-29.80	1.02 H	335	3.60	40.60

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3M

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	1641.00	42.0 PK	74.00	-32.00	1.30 V	85	11.30	30.70
2	*2462.00	108.3 PK			1.15 V	37	75.20	33.10
2	*2462.00	89.9 AV			1.15 V	37	56.80	30.70
3	4924.00	45.8 PK	74.00	-28.20	1.30 V	85	5.20	40.60
4	7386.00	52.5 PK	74.00	-21.50	1.30 V	85	7.00	45.50
4	7386.00	44.2 AV	54.00	-9.80	1.30 V	85	-1.30	33.10

- 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. Margin value = Emission level – Limit value.
 4. “ * ” : Fundamental frequency.
 5. The other emission levels were very low against the limit.

EUT	Wireless LAN Mini PCI Card	MODEL	WLL3011
CHANNEL	Channel 1	FREQUENCY RANGE	Above 1000 MHz
MODE	OFDM	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25 deg. C, 60 % RH, 991 hPa	DETECTOR FUNCTION	Peak / Average
TESTED BY	Gary Chang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3M

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	1608.00	41.8 PK	74.00	-32.20	1.02 H	85	11.30	30.50
2	*2412.00	92.6 PK			1.18 H	305	59.60	33.00
2	*2412.00	79.2 AV			1.18 H	305	46.20	30.50
3	4824.00	45.8 PK	74.00	-28.20	1.30 H	62	5.30	40.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3M

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	1608.00	43.5 PK	74.00	-30.50	1.10 V	85	13.00	30.50
2	*2412.00	97.8 PK			1.63 V	80	64.80	33.00
2	*2412.00	82.4 AV			1.63 V	80	49.50	30.50
3	4824.00	46.2 PK	74.00	-27.80	1.52 V	74	5.70	40.50
4	7236.00	48.2 PK	74.00	-25.80	1.10 V	308	3.20	45.00

- 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. Margin value = Emission level – Limit value.
 4. “ * ” : Fundamental frequency.
 5. The other emission levels were very low against the limit.

EUT	Wireless LAN Mini PCI Card	MODEL	WLL3011
CHANNEL	Channel 6	FREQUENCY RANGE	Above 1000 MHz
MODE	OFDM	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25 deg. C, 60 % RH, 991 hPa	DETECTOR FUNCTION	Peak / Average
TESTED BY	Gary Chang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3M

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	1624.80	44.0 PK	74.00	-30.00	1.82 H	52	13.40	30.60
2	*2437.00	94.1 PK			1.62 H	322	61.10	33.00
2	*2437.00	79.8 AV			1.62 H	322	46.80	30.60
3	3249.20	46.2 PK	74.00	-27.80	1.30 H	224	9.90	36.20
4	4874.00	49.3 PK	74.00	-24.70	1.13 H	85	8.70	40.60
5	7311.00	55.8 PK	74.00	-18.20	1.30 H	85	10.40	45.50
5	7311.00	46.1 AV	54.00	-7.90	1.30 H	85	0.70	33.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3M

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	1608.00	43.9 PK	74.00	-30.10	1.49 V	142	13.40	30.50
2	*2437.00	99.7 PK			1.92 V	201	66.70	33.00
2	*2437.00	84.0 AV			1.92 V	201	51.00	30.50
3	3249.20	48.2 PK	74.00	-25.80	1.15 V	352	11.90	36.20
4	4874.00	49.4 PK	74.00	-24.60	1.30 V	85	8.80	40.60
5	7311.00	54.3 PK	74.00	-19.70	1.15 V	254	8.90	45.50
5	7311.00	45.3 AV	54.00	-8.70	1.15 V	254	-0.10	33.00

- 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. Margin value = Emission level – Limit value.
 4. “ * “ : Fundamental frequency.
 5. The other emission levels were very low against the limit.

EUT	Wireless LAN Mini PCI Card	MODEL	WLL3011
CHANNEL	Channel 11	FREQUENCY RANGE	Above 1000 MHz
MODE	OFDM	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25 deg. C, 60 % RH, 991 hPa	DETECTOR FUNCTION	Peak / Average
TESTED BY	Gary Chang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3M

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	1641.00	41.2 PK	74.00	-32.80	1.52 H	34	10.50	30.70
2	*2462.00	95.9 PK			1.15 H	34	62.80	33.10
2	*2462.00	80.9 AV			1.15 H	34	47.80	30.70
3	3282.00	45.2 PK	74.00	-28.80	1.04 H	85	8.90	36.30
4	4924.00	46.2 PK	74.00	-27.80	1.15 H	35	5.60	40.60
5	7386.00	52.8 PK	74.00	-21.20	1.07 H	334	7.30	45.50
5	7386.00	45.2 AV	54.00	-8.80	1.07 H	334	-0.30	33.10

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3M

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	1641.00	40.8 PK	74.00	-33.20	1.10 V	52	10.10	30.70
2	*2462.00	102.7 PK			1.00 V	18	69.60	33.10
2	*2462.00	87.2 AV			1.00 V	18	54.10	30.70
3	3282.00	45.2 PK	74.00	-28.80	1.62 V	85	8.90	36.30
4	4924.00	45.8 PK	74.00	-28.20	1.32 V	55	5.20	40.60
5	7386.00	53.8 PK	74.00	-20.20	1.04 V	305	8.30	45.50
5	7386.00	46.2 AV	54.00	-7.80	1.04 V	305	0.70	33.10

- 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. Margin value = Emission level – Limit value.
 4. “ * ” : Fundamental frequency.
 5. The other emission levels were very low against the limit.

4.2.9 TEST RESULTS (C)

EUT	Wireless LAN Mini PCI Card	MODEL	WLL3011
CHANNEL	Channel 11	FREQUENCY RANGE	Below 1000 MHz
MODE	CCK & OFDM	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25 deg. C, 60 % RH, 991 hPa	DETECTOR FUNCTION	Quasi-Peak
TESTED BY	Hardaway Lee		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	240.00	35.7 QP	46.00	-10.30	1.14 H	229	21.00	14.70
2	280.00	31.2 QP	46.00	-14.80	1.47 H	76	14.70	16.50
3	319.49	33.1 QP	46.00	-12.90	1.59 H	200	15.90	17.10
4	401.17	29.4 QP	46.00	-16.60	1.37 H	71	10.30	19.10
5	441.41	35.8 QP	46.00	-10.20	1.00 H	55	16.10	19.70
6	480.03	33.4 QP	46.00	-12.60	1.03 H	248	12.70	20.60
7	558.39	28.3 QP	46.00	-17.70	1.00 H	103	7.00	21.30
8	640.01	28.6 QP	46.00	-17.40	1.04 H	156	5.80	22.80
9	758.39	26.8 QP	46.00	-19.20	1.20 H	41	2.50	24.30
10	838.39	28.3 QP	46.00	-17.70	1.20 H	64	3.30	25.00

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. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.

EUT	Wireless LAN Mini PCI Card	MODEL	WLL3011
CHANNEL	Channel 11	FREQUENCY RANGE	Below 1000 MHz
MODE	CCK & OFDM	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25 deg. C, 60 % RH, 991 hPa	DETECTOR FUNCTION	Quasi-Peak
TESTED BY	Hardaway Lee		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	160.02	31.0 QP	43.50	-12.50	1.28 V	79	20.20	10.80
2	240.02	32.5 QP	46.00	-13.50	1.06 V	210	17.80	14.70
3	320.02	31.4 QP	46.00	-14.60	1.25 V	43	14.30	17.20
4	441.30	27.9 QP	46.00	-18.10	1.85 V	85	8.30	19.70
5	640.01	29.1 QP	46.00	-16.90	1.11 V	243	6.30	22.80
6	640.02	33.7 QP	46.00	-12.30	1.04 V	206	10.90	22.80
7	720.01	31.3 QP	46.00	-14.70	1.75 V	113	7.90	23.50

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. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.

EUT	Wireless LAN Mini PCI Card	MODEL	WLL3011
CHANNEL	Channel 1	FREQUENCY RANGE	Above 1000 MHz
MODE	CCK	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25 deg. C, 60 % RH, 991 hPa	DETECTOR FUNCTION	Peak / Average
TESTED BY	Gary Chang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3M

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	1608.00	40.8 PK	74.00	-33.20	1.32 H	85	10.30	30.50
2	*2412.00	98.7 PK			1.81 H	232	65.70	33.00
2	*2412.00	81.8 AV			1.81 H	232	48.80	30.50
3	4824.00	43.8 PK	74.00	-30.20	1.14 H	304	3.30	40.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3M

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	1608.00	44.2 PK	74.00	-29.80	1.15 V	87	13.70	30.50
2	*2412.00	106.3 PK			1.03 V	15	73.30	33.00
2	*2412.00	88.0 AV			1.03 V	15	55.00	30.50
3	4824.00	45.2 PK	74.00	-28.80	1.30 V	65	4.70	40.50
4	7236.00	47.2 PK	74.00	-26.80	1.82 V	352	2.20	45.00

- 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. Margin value = Emission level – Limit value.
 4. “ * “ : Fundamental frequency.
 5. The other emission levels were very low against the limit.

EUT	Wireless LAN Mini PCI Card	MODEL	WLL3011
CHANNEL	Channel 6	FREQUENCY RANGE	Above 1000 MHz
MODE	CCK	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25 deg. C, 60 % RH, 991 hPa	DETECTOR FUNCTION	Peak / Average
TESTED BY	Gary Chang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3M

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	1624.50	41.5 PK	74.00	-32.50	1.30 H	285	10.90	30.60
2	*2437.00	98.7 PK			1.10 H	84	65.60	33.00
2	*2437.00	82.8 AV			1.10 H	84	49.80	30.60
3	4874.00	44.2 PK	74.00	-29.80	1.14 H	84	3.60	40.60

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3M

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	1624.50	43.5 PK	74.00	-30.50	1.15 V	85	12.90	30.60
2	*2437.00	107.3 PK			1.04 V	85	74.30	33.00
2	*2437.00	88.4 AV			1.04 V	85	55.40	30.60
3	4874.00	45.5 PK	74.00	-28.50	1.30 V	32	4.90	40.60
4	7311.00	48.4 PK	74.00	-25.60	1.13 V	62	2.90	45.50

- 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. Margin value = Emission level – Limit value.
 4. “ * ” : Fundamental frequency.
 5. The other emission levels were very low against the limit.

EUT	Wireless LAN Mini PCI Card	MODEL	WLL3011
CHANNEL	Channel 11	FREQUENCY RANGE	Above 1000 MHz
MODE	CCK	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25 deg. C, 60 % RH, 991 hPa	DETECTOR FUNCTION	Peak / Average
TESTED BY	Gary Chang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3M

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	1641.00	42.2 PK	74.00	-31.80	1.32 H	85	11.50	30.70
2	*2462.00	97.5 PK			1.04 H	85	64.40	33.10
2	*2462.00	81.5 AV			1.04 H	85	48.40	30.70
3	4924.00	44.2 PK	74.00	-29.80	1.52 H	7	3.60	40.60

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3M

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	1641.00	43.2 PK	74.00	-30.80	1.10 V	85	12.50	30.70
2	*2462.00	103.9 PK			1.12 V	52	70.80	33.10
2	*2462.00	88.4 AV			1.12 V	52	55.30	30.70
3	4924.00	45.8 PK	74.00	-28.20	1.30 V	2	5.20	40.60
4	7386.00	49.1 PK	74.00	-24.90	1.02 V	117	3.60	45.50

- 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. Margin value = Emission level – Limit value.
 4. “ * ” : Fundamental frequency.
 5. The other emission levels were very low against the limit.

EUT	Wireless LAN Mini PCI Card	MODEL	WLL3011
CHANNEL	Channel 1	FREQUENCY RANGE	Above 1000 MHz
MODE	OFDM	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25 deg. C, 60 % RH, 991 hPa	DETECTOR FUNCTION	Peak / Average
TESTED BY	Gary Chang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3M

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	1608.00	41.0 PK	74.00	-33.00	1.18 H	81	10.50	30.50
2	*2412.00	90.5 PK			1.33 H	227	57.50	33.00
2	*2412.00	78.6 AV			1.33 H	227	45.60	30.50
3	4824.00	44.2 PK	74.00	-29.80	1.18 H	81	3.70	40.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3M

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	1608.00	42.1 PK	74.00	-31.90	1.12 V	35	11.60	30.50
2	*2412.00	98.5 PK			1.92 V	248	65.50	33.00
2	*2412.00	82.7 AV			1.92 V	248	49.70	30.50
3	4824.00	45.2 PK	74.00	-28.80	1.30 V	65	4.70	40.50
4	7236.00	47.5 PK	74.00	-26.50	1.10 V	52	2.50	45.00

- 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. Margin value = Emission level – Limit value.
 4. “ * ” : Fundamental frequency.
 5. The other emission levels were very low against the limit.

EUT	Wireless LAN Mini PCI Card	MODEL	WLL3011
CHANNEL	Channel 6	FREQUENCY RANGE	Above 1000 MHz
MODE	OFDM	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25 deg. C, 60 % RH, 991 hPa	DETECTOR FUNCTION	Peak / Average
TESTED BY	Gary Chang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3M

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	1624.00	40.5 PK	74.00	-33.50	1.12 H	352	9.90	30.60
2	*2437.00	93.7 PK			1.75 H	224	60.70	33.00
2	*2437.00	79.8 AV			1.75 H	224	46.80	30.60
3	4874.00	45.0 PK	74.00	-29.00	1.02 H	65	4.40	40.60

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3M

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	1624.50	41.5 PK	74.00	-32.50	1.30 V	85	10.90	30.60
2	*2437.00	99.4 PK			1.12 V	52	66.40	33.00
2	*2437.00	85.4 AV			1.12 V	52	52.40	30.60
3	4874.00	45.8 PK	74.00	-28.20	1.82 V	45	5.20	40.60
4	7311.00	49.5 PK	74.00	-24.50	1.38 V	62	4.00	45.50

- 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. Margin value = Emission level – Limit value.
 4. “ * ” : Fundamental frequency.
 5. The other emission levels were very low against the limit.

EUT	Wireless LAN Mini PCI Card	MODEL	WLL3011
CHANNEL	Channel 11	FREQUENCY RANGE	Above 1000 MHz
MODE	OFDM	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25 deg. C, 60 % RH, 991 hPa	DETECTOR FUNCTION	Peak / Average
TESTED BY	Gary Chang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3M

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	1641.00	40.8 PK	74.00	-33.20	1.15 H	84	10.10	30.70
2	*2462.00	92.7 PK			1.84 H	291	59.60	33.10
2	*2462.00	79.9 AV			1.84 H	291	46.80	30.70
3	4924.00	44.2 PK	74.00	-29.80	1.01 H	74	3.60	40.60

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3M

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	1641.00	41.5 PK	74.00	-32.50	1.15 V	35	10.80	30.70
2	*2462.00	99.4 PK			1.02 V	313	66.30	33.10
2	*2462.00	86.0 AV			1.02 V	313	52.90	30.70
3	4924.00	46.2 PK	74.00	-27.80	1.30 V	35	5.60	40.60
4	7386.00	48.1 PK	74.00	-25.90	1.15 V	84	2.60	45.50

- 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. 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 24, 2003

NOTE:

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

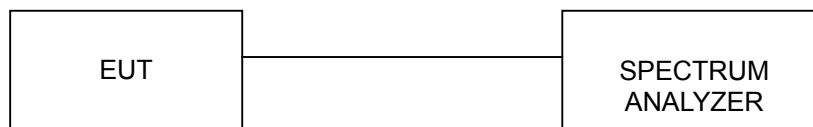
4.3.3 TEST PROCEDURE

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 DEVIATION FROM TEST STANDARD

No deviation

4.3.5 TEST SETUP



4.3.6 EUT OPERATING CONDITIONS

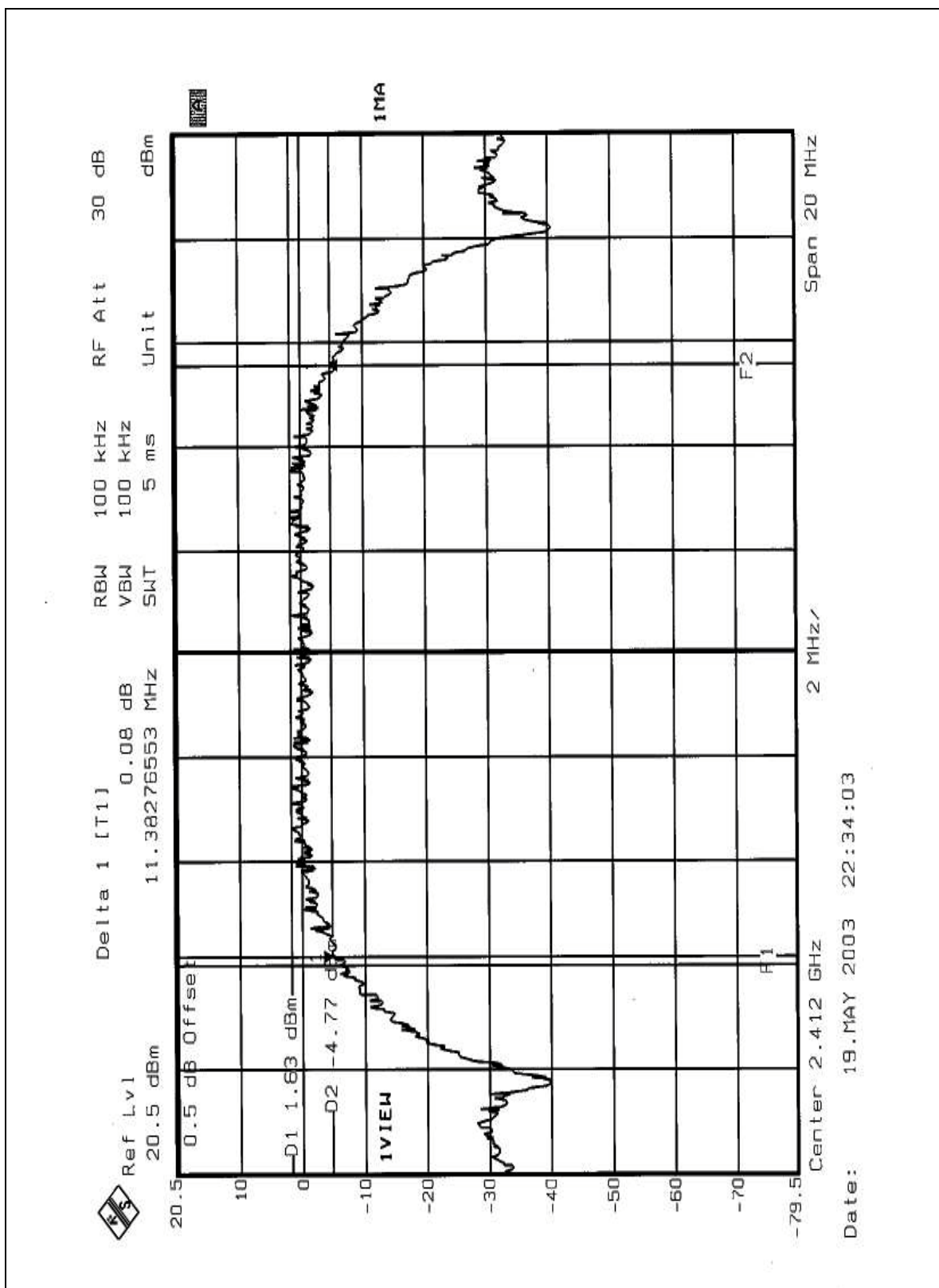
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.3.7 TEST RESULTS

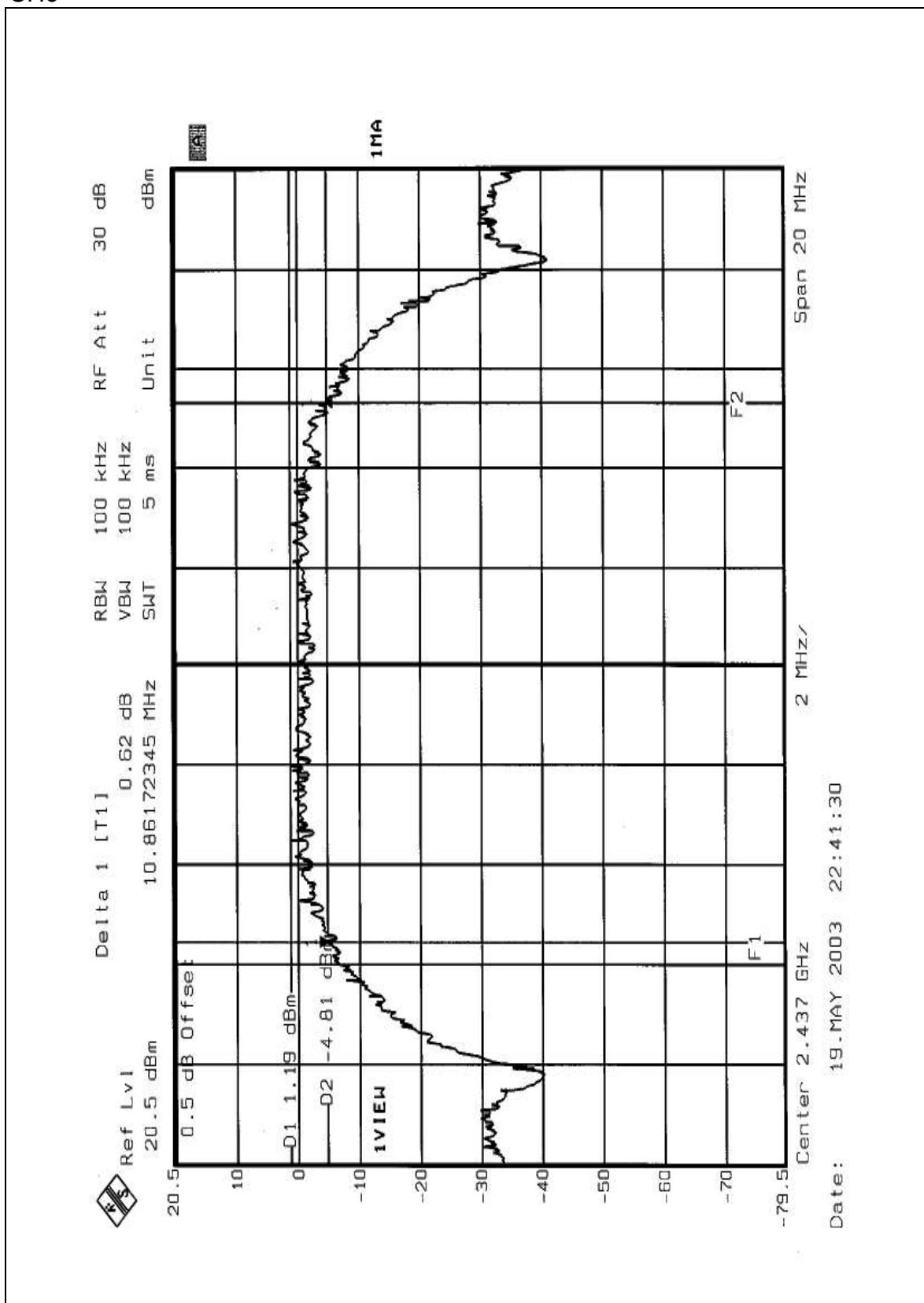
EUT	Wireless LAN Mini PCI Card	MODEL	WLL3011
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25 deg. C, 68%RH, 991 hPa
MODE	CCK	TESTED BY	Ansen Lei

CHANNEL	CHANNEL FREQUENCY (MHz)	6 dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	11.38	0.5	PASS
6	2437	10.86	0.5	PASS
11	2462	10.86	0.5	PASS

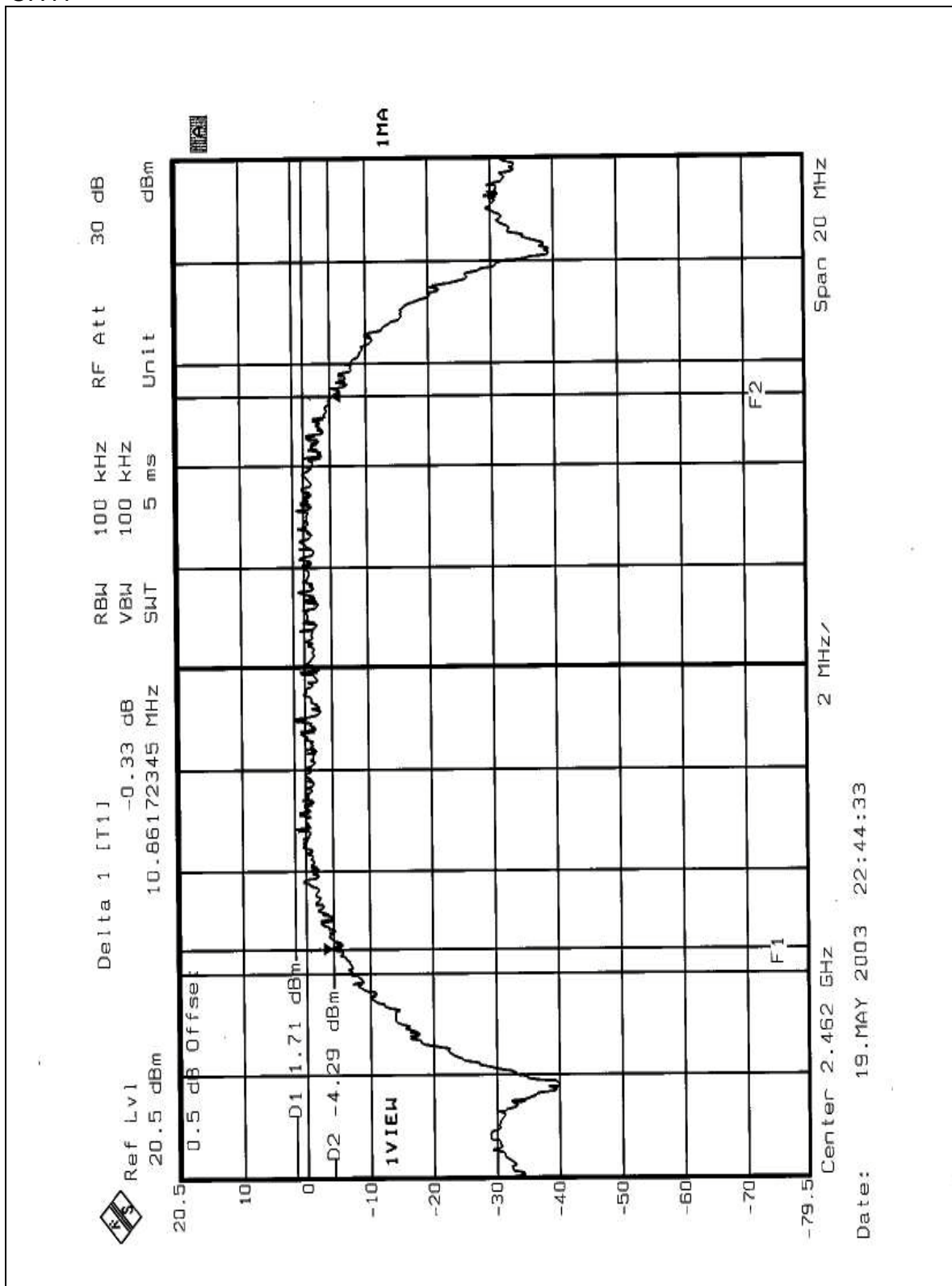
CH1



CH6



CH11

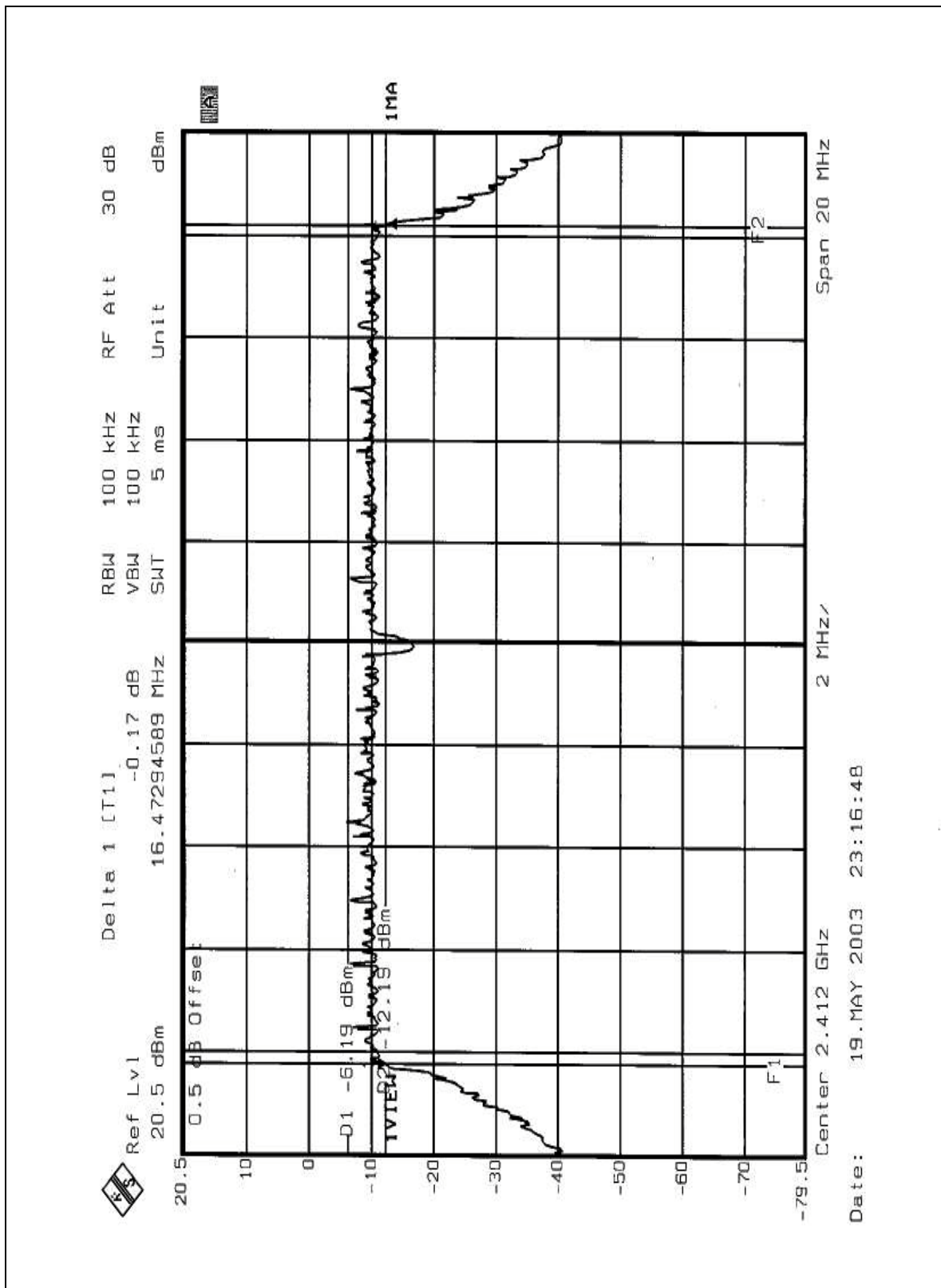




EUT	Wireless LAN Mini PCI Card	MODEL	WLL3011
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25 deg. C, 68%RH, 991 hPa
MODE	OFDM	TESTED BY	Ansen Lei

CHANNEL	CHANNEL FREQUENCY (MHz)	6 dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	16.47	0.5	PASS
6	2437	16.47	0.5	PASS
11	2462	16.51	0.5	PASS

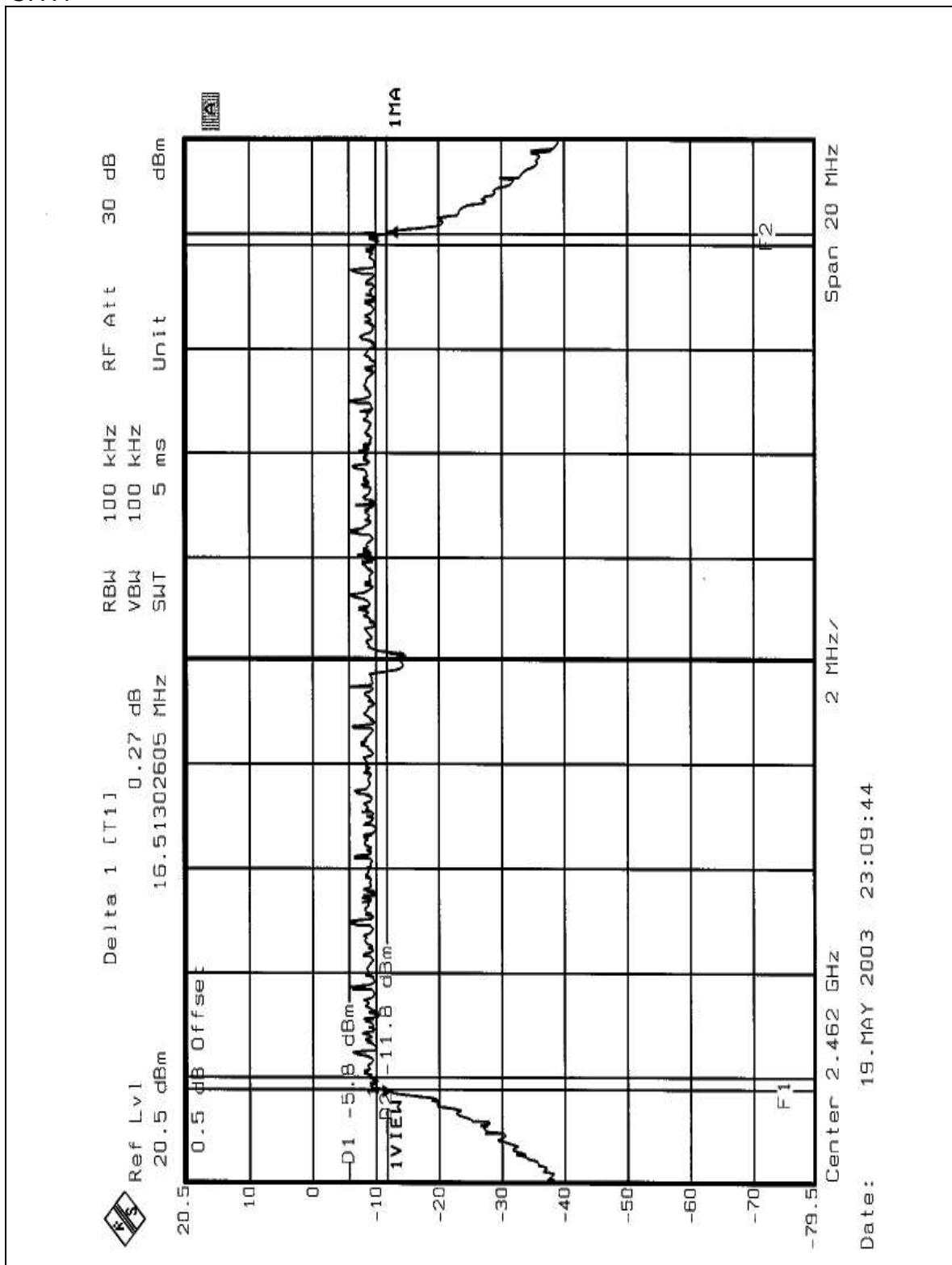
CH1



Delta 1 [T1]
Ref Lvl 20.5 dBm
1.08 dB
16.47294589 MHz
RBW 100 kHz
VBW 100 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm

0.5 dB Offset
-12.23 dBm
F1
F2
Center 2.437 GHz
Span 20 MHz
Date: 19.MAY 2003 23:14:53

CH11



4.4 MAXIMUM PEAK OUTPUT POWER

4.4.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

4.4.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSEK30	100049	Jul. 24, 2003
R&S SIGNAL GENERATOR	SMP04	100011	May 28, 2004
TEKTRONIX OSCILLOSCOPE	TDS 220	B048470	Mar. 05, 2004
NARDA DETECTOR	4503A	FSCM99899	NA

NOTE:

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

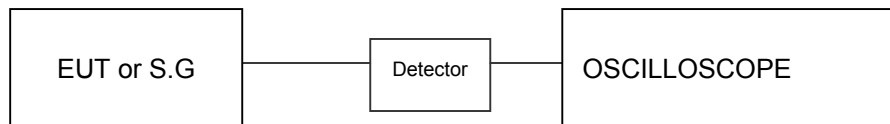
4.4.3 TEST PROCEDURES

1. A detector was used on the output port of the EUT. An oscilloscope was used to read the response of the detector.
2. Replaced the EUT by the signal generator . The center frequency of the S.G was adjusted to the center frequency of the measured channel.
3. Adjusted the power to have the same reading on oscilloscope. Record the power level.

4.4.4 DEVIATION FROM TEST STANDARD

No deviation

4.4.5 TEST SETUP



4.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6

4.4.7 TEST RESULTS

EUT	Wireless LAN Mini PCI Card	MODEL	WLL3011
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25 deg. C, 68%RH, 991 hPa
MODE	CCK	TESTED BY	Ansen Lei

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	14.78	30	PASS
6	2437	14.48	30	PASS
11	2462	14.72	30	PASS

EUT	Wireless LAN Mini PCI Card	MODEL	WLL3011
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25 deg. C, 68%RH, 991 hPa
MODE	OFDM	TESTED BY	Ansen Lei

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	14.68	30	PASS
6	2437	14.61	30	PASS
11	2462	14.89	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 24, 2003

NOTE:

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

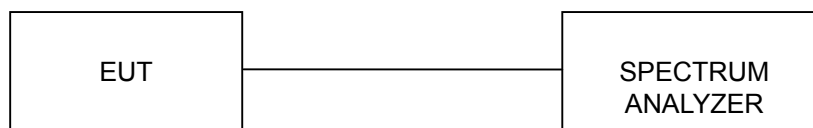
4.5.3 TEST PROCEDURE

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 DEVIATION FROM TEST STANDARD

No deviation

4.5.5 TEST SETUP



4.5.6 EUT OPERATING CONDITIONS

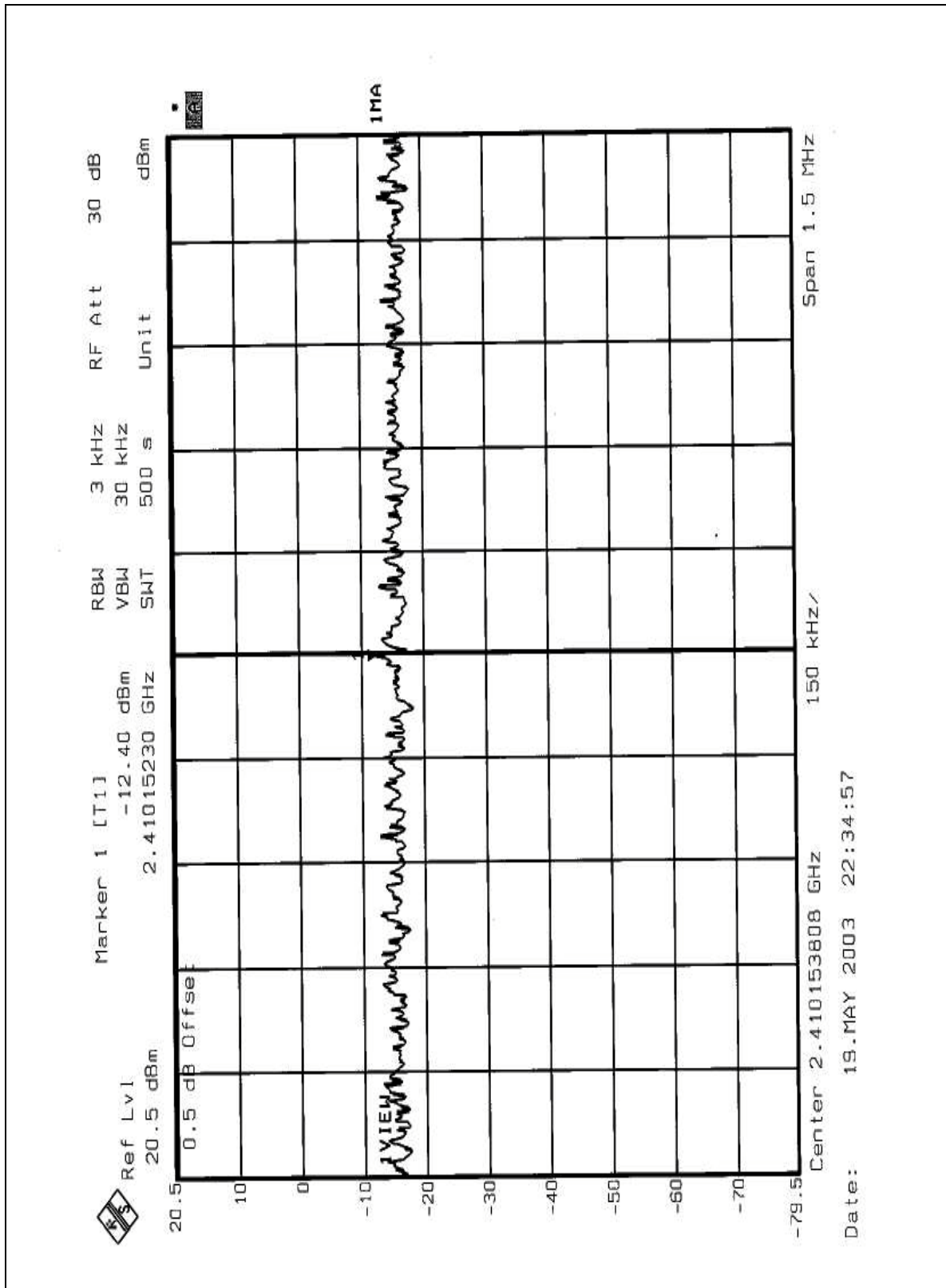
Same as 4.3.6

4.5.7 TEST RESULTS

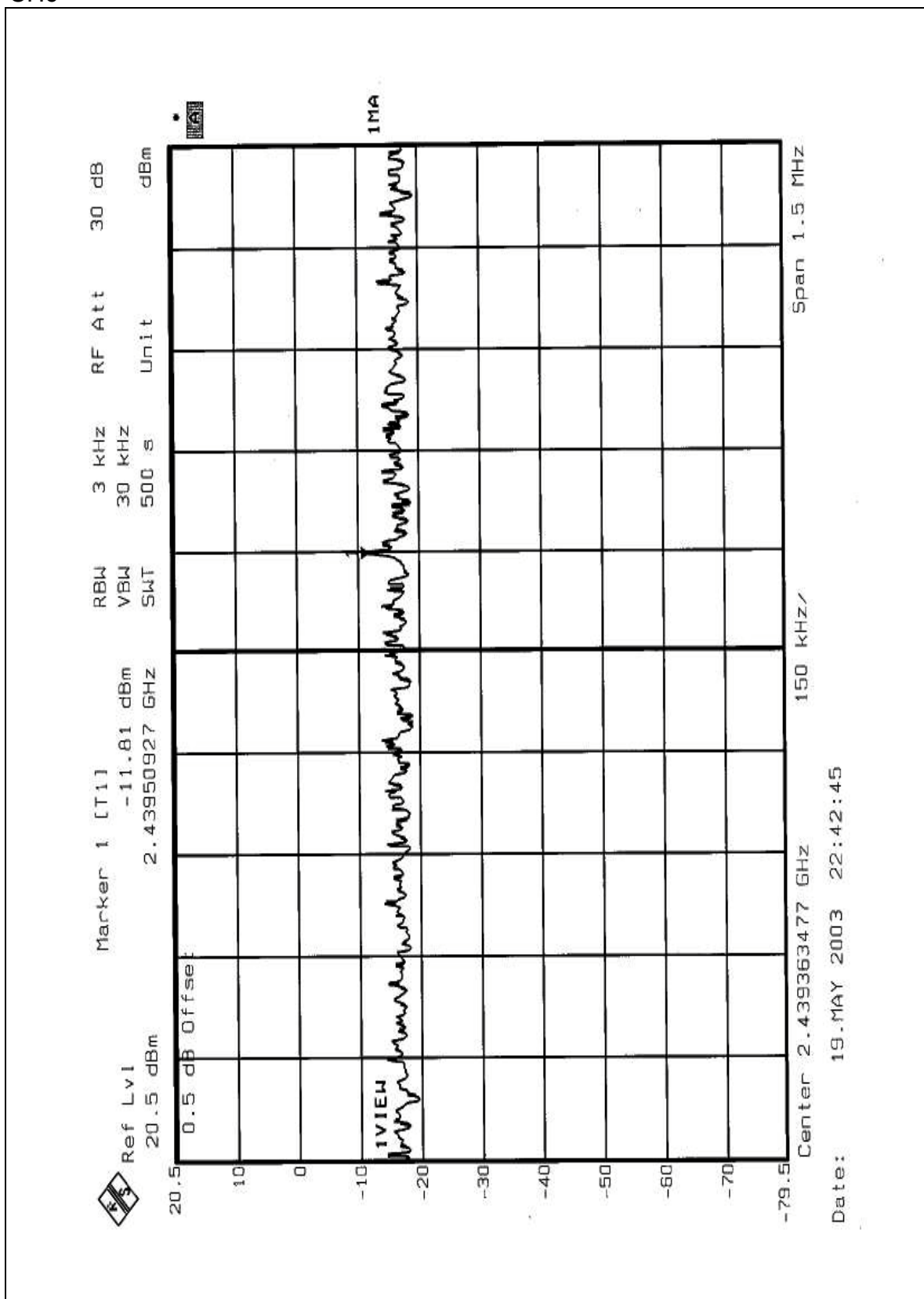
EUT	Wireless LAN Mini PCI Card	MODEL	WLL3011
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25 deg. C, 68%RH, 991 hPa
MODE	CCK	TESTED BY	Ansen Lei

CHANNEL NUMBER	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 KHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-12.40	8	PASS
6	2437	-11.81	8	PASS
11	2462	-13.08	8	PASS

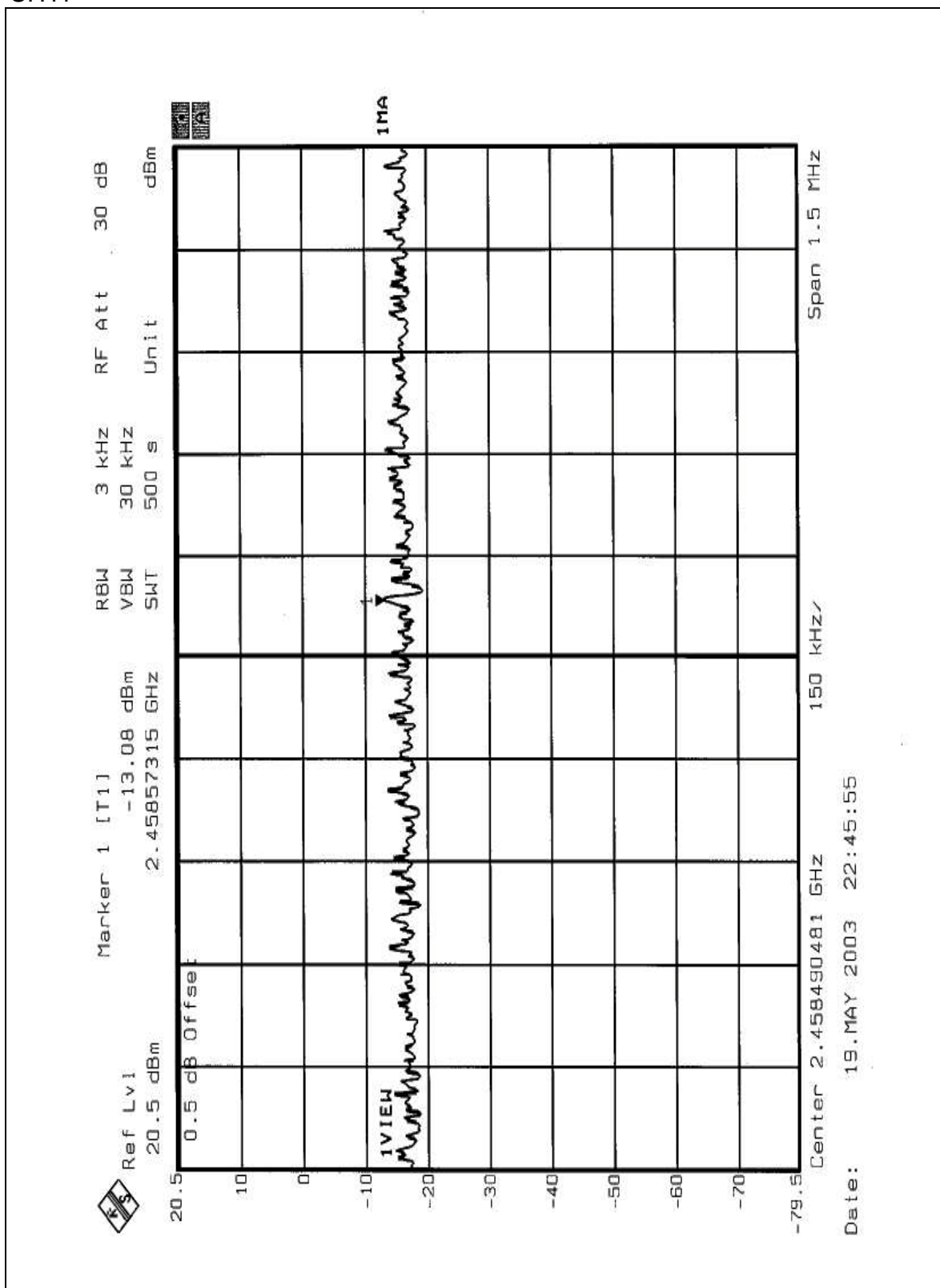
CH1



CH6



CH11

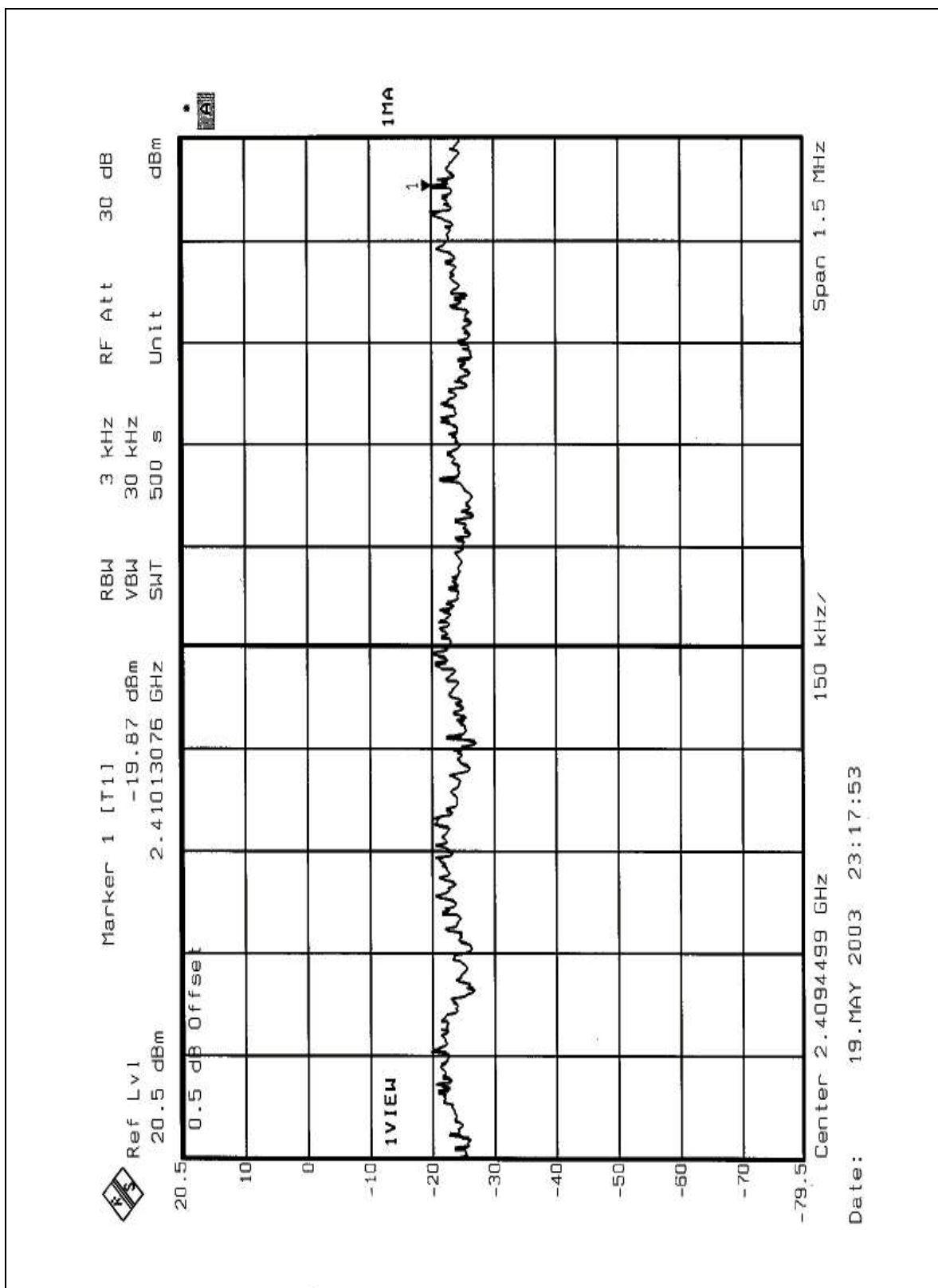




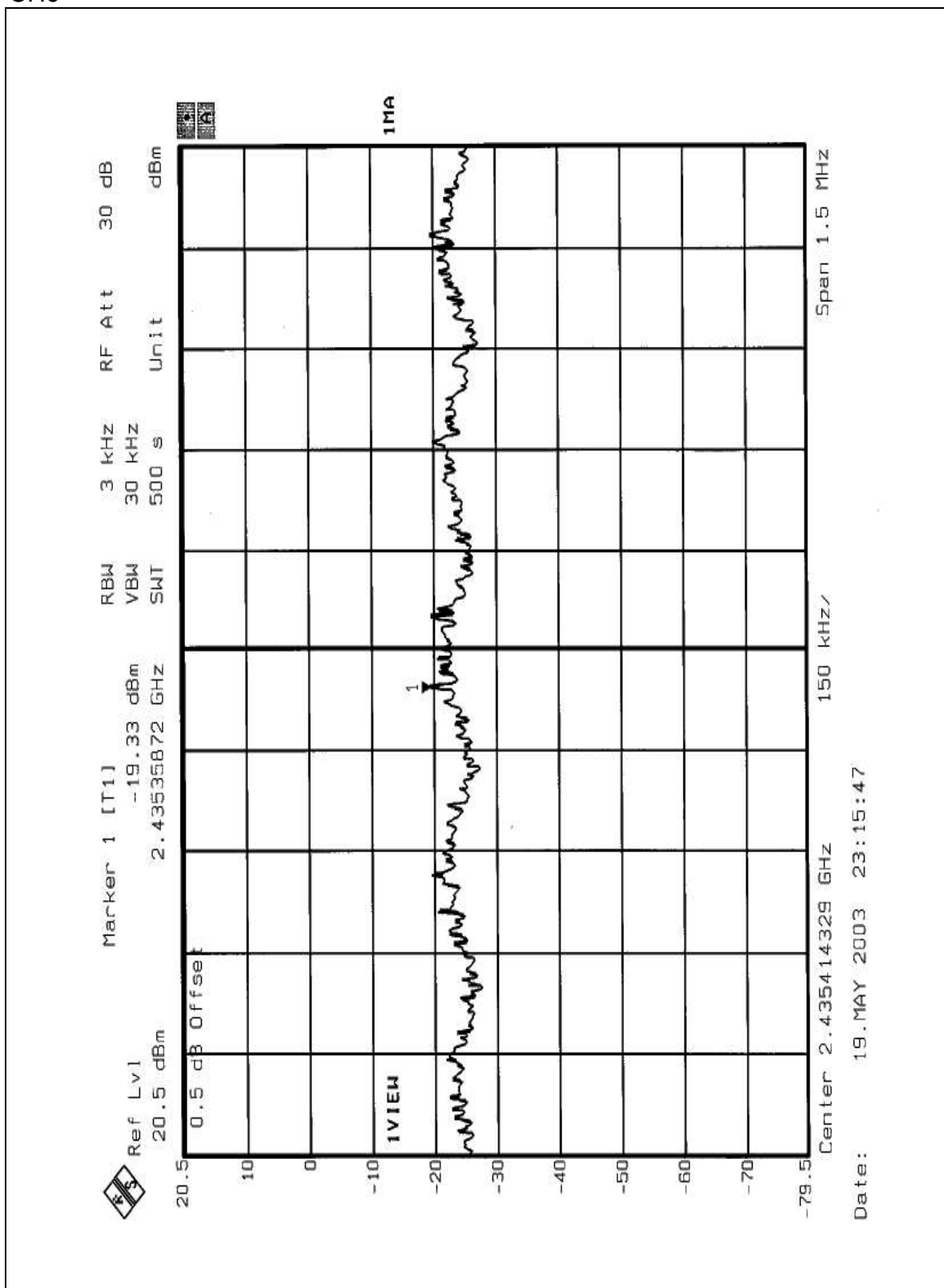
EUT	Wireless LAN Mini PCI Card	MODEL	WLL3011
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25 deg. C, 68%RH, 991 hPa
MODE	OFDM	TESTED BY	Ansen Lei

CHANNEL NUMBER	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 KHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-19.87	8	PASS
6	2437	-19.33	8	PASS
11	2462	-18.56	8	PASS

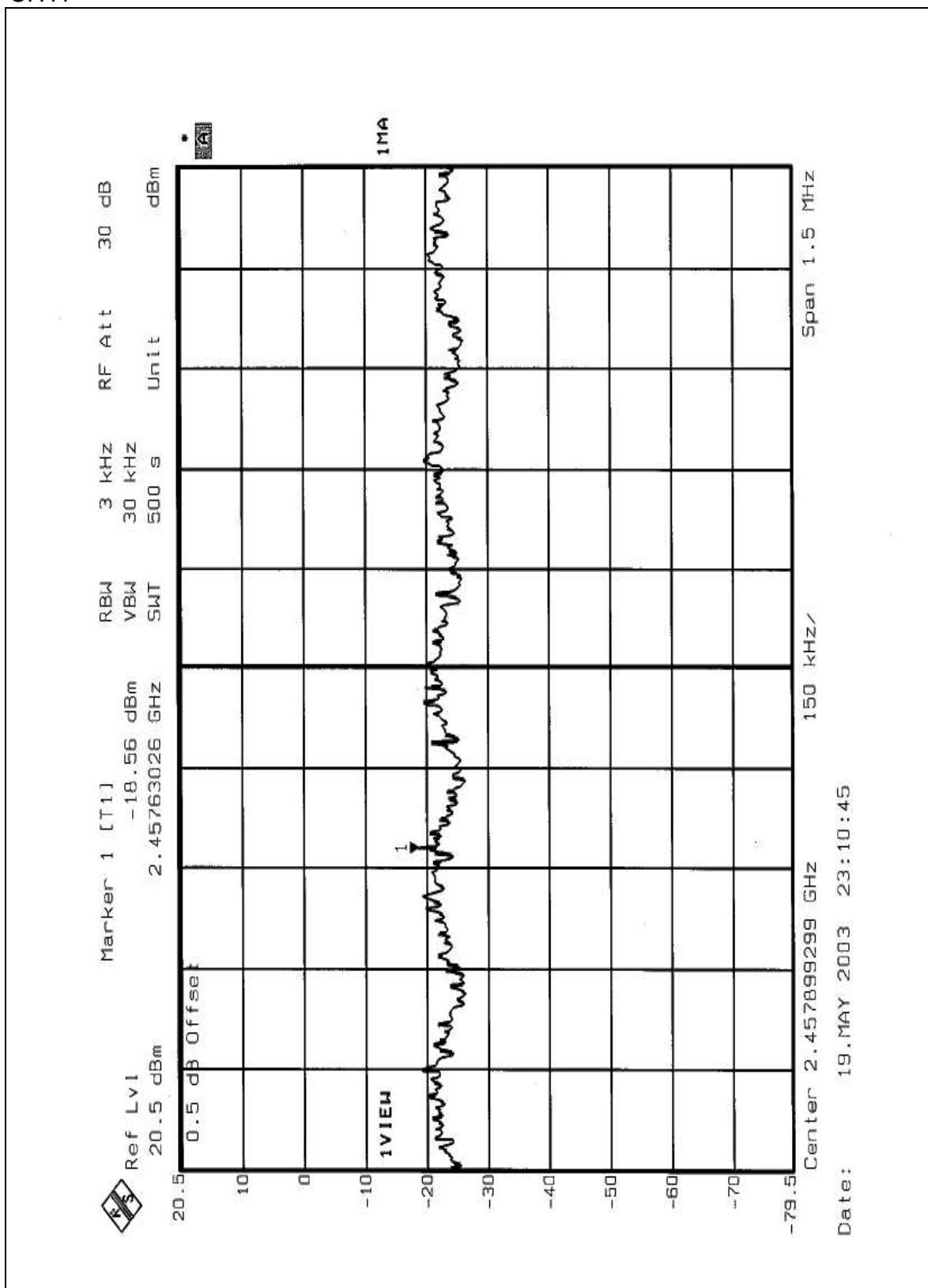
CH1



CH6



CH11



4.6 BAND EDGES MEASUREMENT

4.6.1 LIMITS OF BAND EDGES MEASUREMENT

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

4.6.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SPECTRUM ANALYZER	FSEK30	100049	July 24, 2003

NOTE:

1. 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 DEVIATION FROM TEST STANDARD

No deviation



4.6.5 EUT OPERATING CONDITION

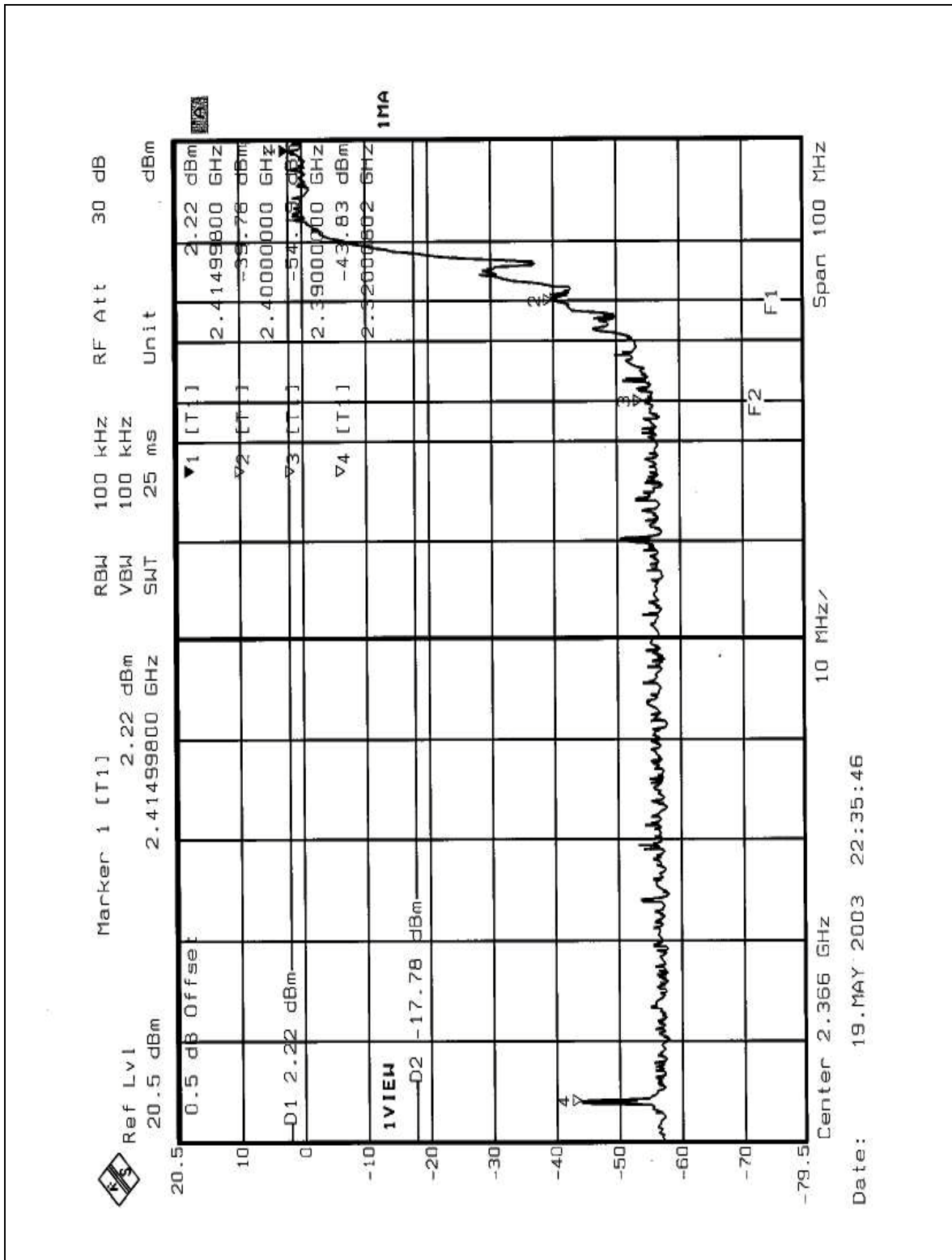
Same as Item 4.3.6

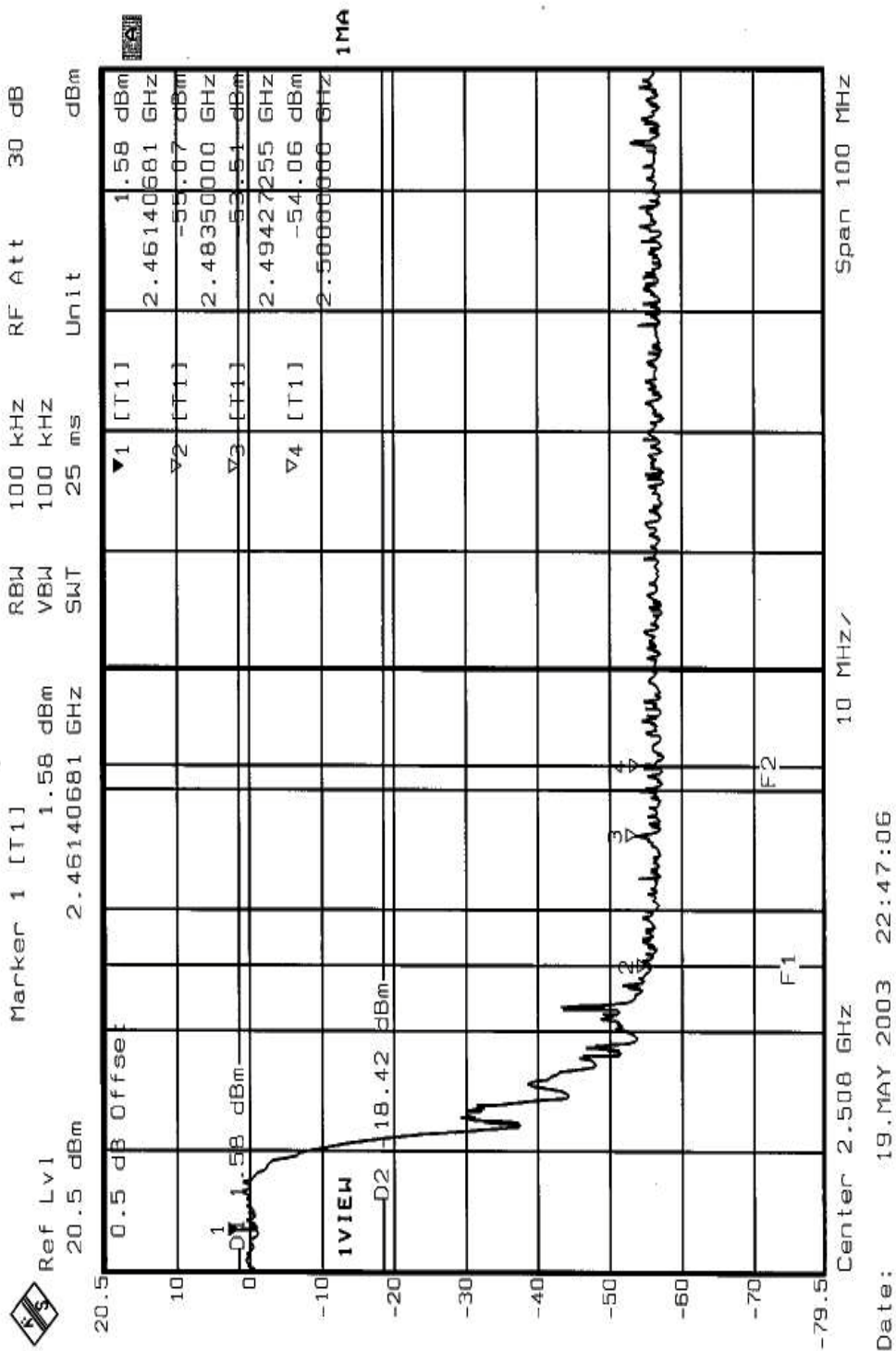
4.6.6 TEST RESULTS

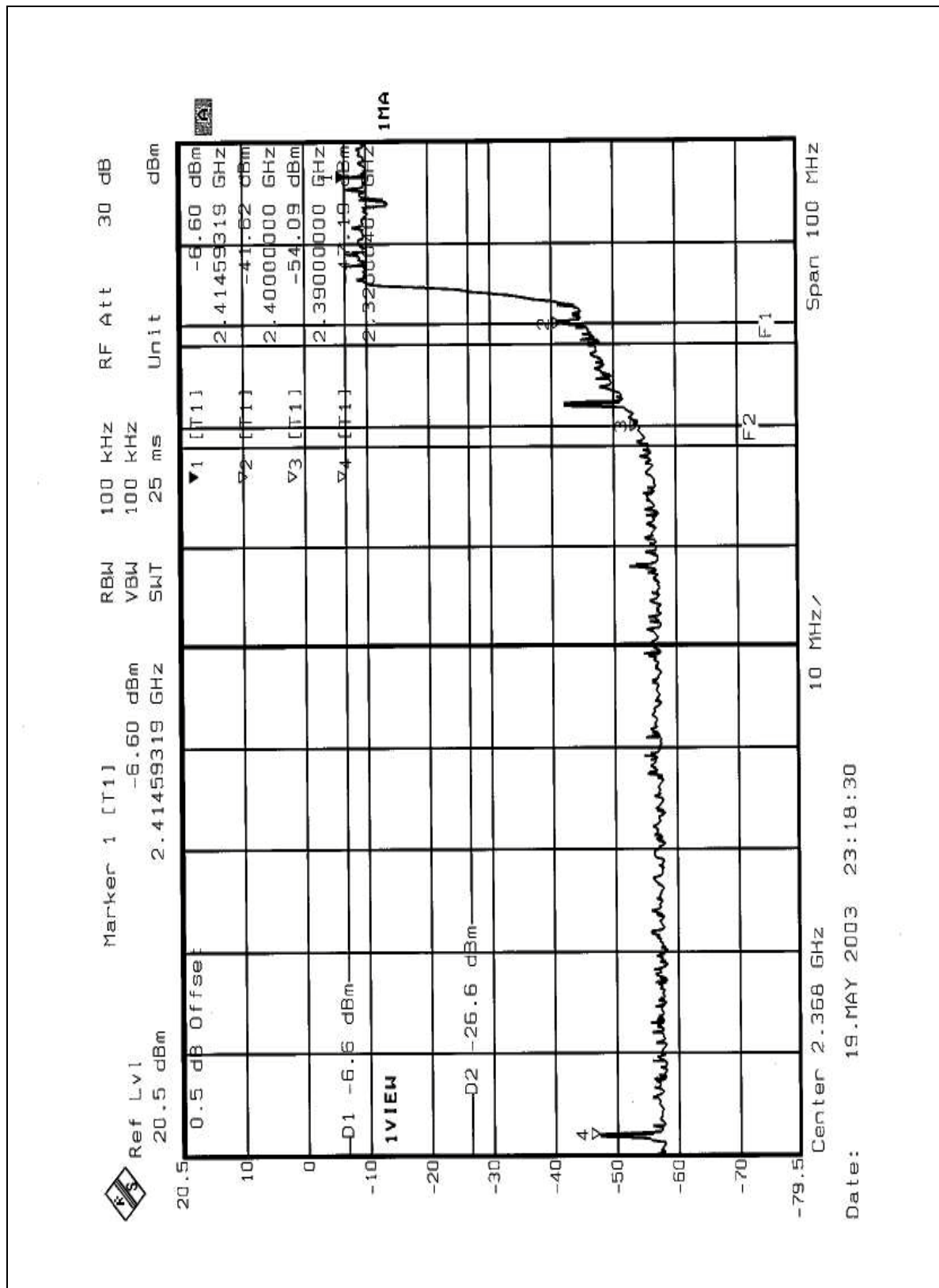
The spectrum plots are attached on the following 2 pages. D2 line indicates the highest level, D1 line indicates the 20dB offset below D2. It shows compliance with the requirement in part 15.247(C).

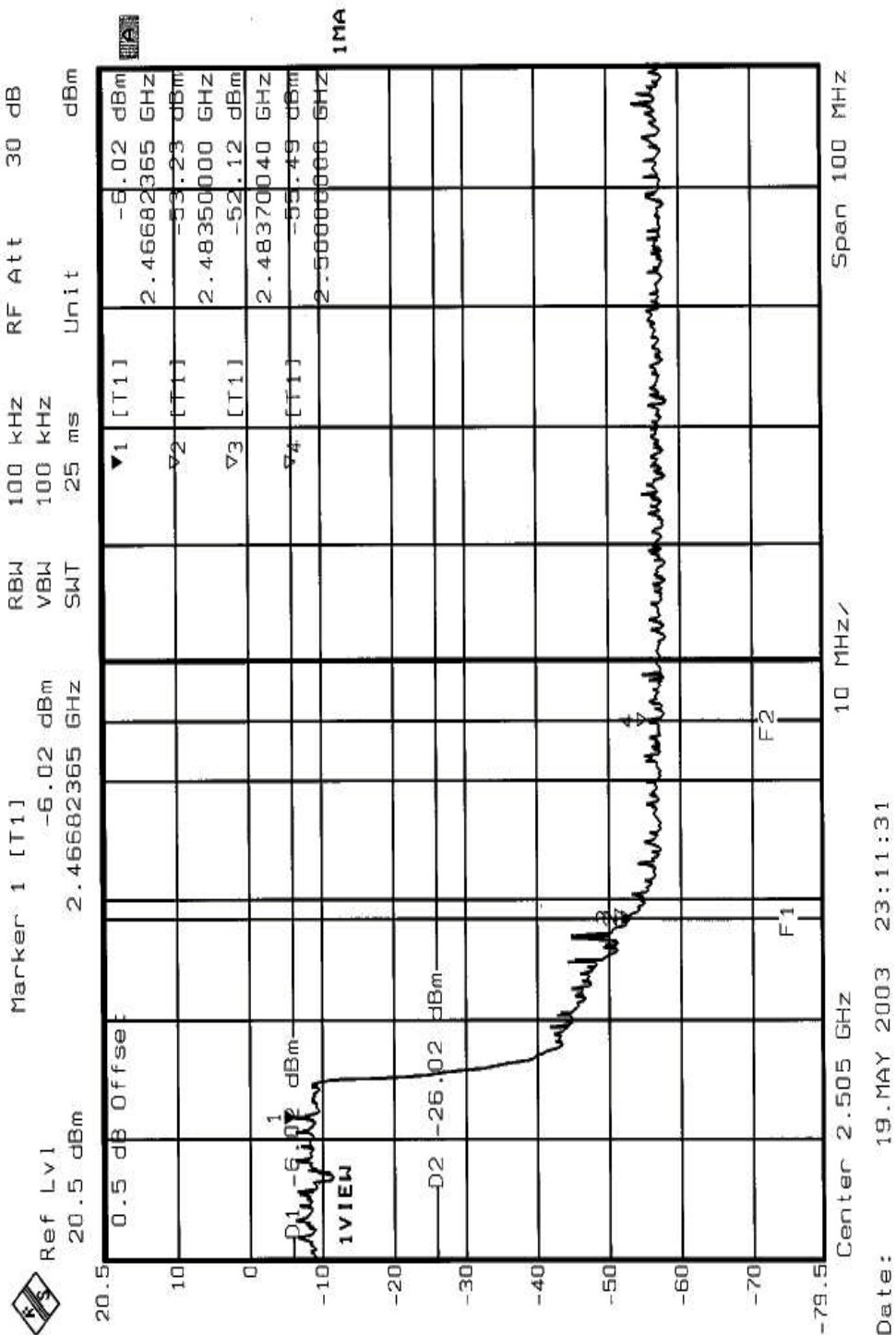
NOTE1: The band edge emission plot on the following 1-2 page shows 46.05dB / 55.09dB delta between carrier maximum power and local maximum emission in restrict band (2.3200GHz / 2.4943GHz). The emission of carrier strength list in the test result of channel 1 of CCK mode at the item 4.2.7 (page 25) is 91.9dBuV/m, so the maximum field strength in restrict band is $91.9 - 46.05 = 45.85$ dBuV/m which is under 54 dBuV/m limit.

NOTE2: The band edge emission plot on the following 3-4 page shows 40.59dB / 46.10dB delta between carrier maximum power and local maximum emission in restrict band (2.3200GHz / 2.4837GHz). The emission of carrier strength list in the test result of channel 11 of OFDM mode at the item 4.2.8 (page 38) is 87.2dBuV/m, so the maximum field strength in restrict band is $87.2 - 46.10 = 41.10$ dBuV/m which is under 54 dBuV/m limit.











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 antennas used in this product are Patch Antenna, Printed Dipole antenna, and Dipole antenna. The antenna connector is UFL. The maximum Gain of this antenna is 3dBi.

5 PHOTOGRAPHS OF THE TEST CONFIGURATION

CONDUCTED EMISSION TEST





RADIATED EMISSION TEST







6 INFORMATION ON THE TESTING LABORATORIES

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

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

Copies of accreditation certificates of our laboratories obtained from approval agencies can be downloaded from our web site:

www.adt.com.tw/index.5/phtml.

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Fax: 886-2-26052943

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Fax: 886-35-935342

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Tel: 886-3-3270910

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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.