



FCC TEST REPORT

REPORT NO.: RF920120R02A

MODEL NO.: WLL3010

RECEIVED: May 9, 2003

TESTED: May 9, 2003 ~ May 15, 2003

APPLICANT: ASKEY COMPUTER CORP.

ADDRESS: 10F, NO. 119, CHIENKANG RD.,
CHUNG-HO, TAIPEI TAIWAN R.O.C

ISSUED BY: Advance Data Technology Corporation

LAB LOCATION: 47 14th Lin, Chiapau Tsun, Linko, Taipei,
Taiwan, R.O.C.

This test report consists of 46 pages in total. It may be duplicated completely for legal use with the approval of the applicant. It should not be reproduced except in full, without the written approval of our laboratory. The client should not use it to claim product endorsement by CNLA, NVLAP or any government agencies. The test results in the report only apply to the tested sample.



0528
ILAC MRA



Lab Code: 200102-0

Table of Contents

1	CERTIFICATION	3
2	SUMMARY OF TEST RESULTS.....	4
3	GENERAL INFORMATION	5
3.1	GENERAL DESCRIPTION OF EUT	5
3.2	DESCRIPTION OF TEST MODES	6
3.3	GENERAL DESCRIPTION OF APPLIED STANDARDS.....	6
3.4	DESCRIPTION OF SUPPORT UNITS.....	7
4	TEST TYPES AND RESULTS	8
4.1	CONDUCTED EMISSION MEASUREMENT	8
4.1.1	LIMITS OF CONDUCTED EMISSION MEASUREMENT	8
4.1.2	TEST INSTRUMENTS	8
4.1.3	TEST PROCEDURES.....	9
4.1.4	DEVIATION FROM TEST STANDARD	9
4.1.5	TEST SETUP	10
4.1.6	EUT OPERATING CONDITIONS.....	10
4.1.7	TEST RESULTS.....	11
4.2	RADIATED EMISSION MEASUREMENT	17
4.2.1	LIMITS OF RADIATED EMISSION MEASUREMENT	17
4.2.2	TEST INSTRUMENTS	18
4.2.3	TEST PROCEDURES.....	19
4.2.4	DEVIATION FROM TEST STANDARD	19
4.2.5	TEST SETUP	20
4.2.6	EUT OPERATING CONDITIONS.....	20
4.2.7	TEST RESULTS (A).....	21
4.2.8	TEST RESULTS (B).....	28
4.3	BAND EDGES MEASUREMENT	35
4.3.1	LIMITS OF BAND EDGES MEASUREMENT	35
4.3.2	TEST INSTRUMENTS	35
4.3.3	TEST PROCEDURE	35
4.3.4	DEVIATION FROM TEST STANDARD	35
4.3.5	EUT OPERATING CONDITION	36
4.3.6	TEST RESULTS.....	36
5	PHOTOGRAPHS OF THE TEST CONFIGURATION	41
6	INFORMATION ON THE TESTING LABORATORIES.....	45



1 CERTIFICATION

PRODUCT : Wireless LAN Mini PCI Card
MODEL NO. : WLL3010
BRAND NAME : 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 9, 2003 to May 15, 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. This report is issued as a supplementary report of RF920120R02. This report shall be used combined together with its original report.

CHECKED BY : Emily Lu , **DATE :** May 26, 2003
Emily Lu

APPROVED BY : Dr. Alan Lane, JVP , **DATE :** May 26, 2003
Dr. Alan Lane, JVP

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 -16.75dBuV at 0.170MHz
15.247(c)	Transmitter Radiated Emissions Limit: Table 15.209	PASS	Meet the requirement of limit Minimum passing margin is -2.30dBuV at 2389.00MHz
15.247(c)	Band Edge Measurement Limit: 20 dB less than the peak value of fundamental frequency	PASS	Meet the requirement of limit

NOTE: This report is prepared for FCC class II permissive change. Only radiated emission, conducted emission and band edge measurement were presented in this test report.

3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Wireless LAN Mini PCI Card
MODEL NO.	WLL3010
POWER SUPPLY	3.3VDC from host equipment
MODULATION	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
CHANNEL SPACING	5MHz
NUMBER OF CHANNEL	11
OUTPUT POWER	14.96dBm
ANTENNA TYPE	Inverted F *see note
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 is four more antennas were added to this EUT for the test. Only radiated emission, conducted emission and band edge measurement were presented in this test report.
2. Four types of antenna are provided to this mini PCI card this time, the item remarked with “*” were worst cases which chosen for final test, please also refer to its eut photo.

	BRAND	MODEL NO.	GAIN
1	HIGH-TEK	Arima M7N	1.98dBi
*2	wgt	Arima W720	1.67dBi
3	Wistron NeWeb	CAL-R	2.77dBi
*4	SmartAnt	R0322-034-L / R0322-034-R	3.1274dBi

3. 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 1GHz, the channel 1, 6, and 11 were pre-tested in chamber. The channel 11, worst case one, was chosen for final test.
2. Above 1GHz, the channel 1, 6, and 11 were tested individually.
3. Transfer rate, 11Mbps with CCK technique and 6Mbps with OFDM technique, the worst cases, were chosen for final test.
4. For radiated emission measurement: test result A is for antenna #2 and test result B is for antenna #4, which were mentioned on note of section 3.1.

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-09C748-12800-19O-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. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.
 3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
ROHDE & SCHWARZ Test Receiver	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.



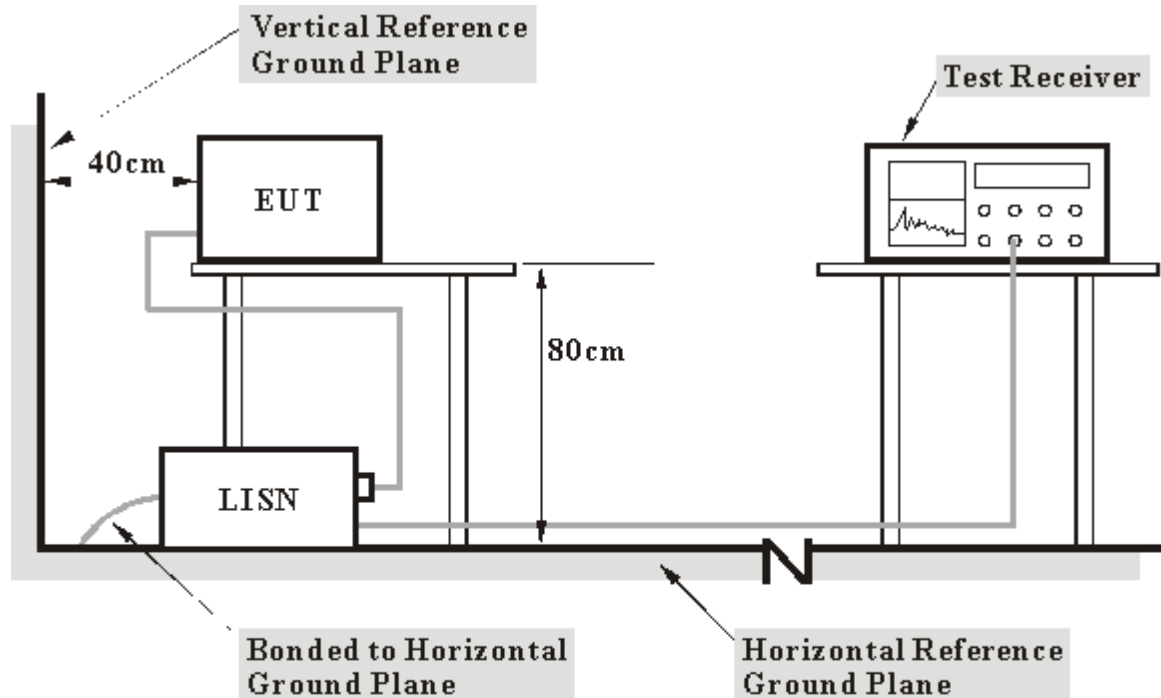
4.1.3 TEST PROCEDURES

- 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

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

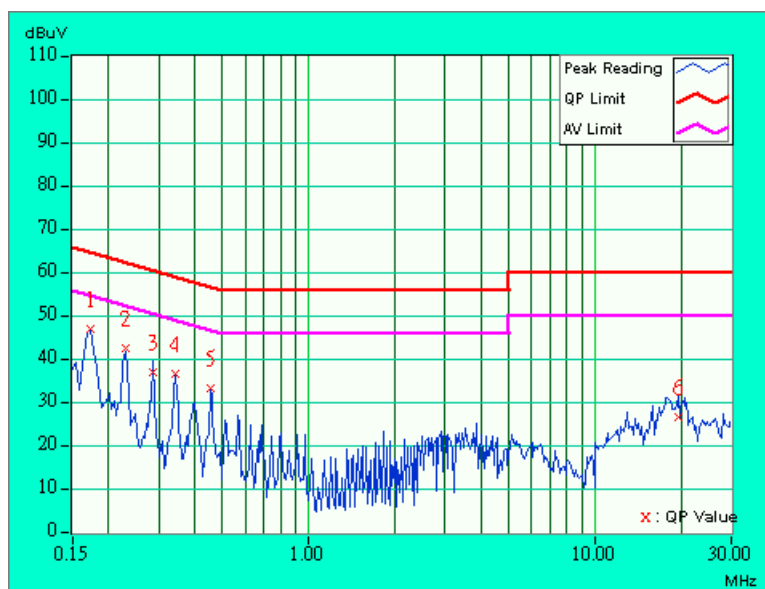
4.1.7 TEST RESULTS

EUT	Wireless LAN Mini PCI Card	MODEL	WLL3010
MODE	Channel 1	6dB BANDWIDTH	9kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	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	0.173	0.10	46.13	-	46.23	-	64.79	54.79	-18.56	-
2	0.228	0.10	41.42	-	41.52	-	62.52	52.52	-21.00	-
3	0.287	0.10	36.07	-	36.17	-	60.62	50.62	-24.45	-
4	0.341	0.10	35.72	-	35.82	-	59.17	49.17	-23.35	-
5	0.455	0.11	32.09	-	32.20	-	56.79	46.79	-24.59	-
6	19.484	1.07	25.46	-	26.53	-	60.00	50.00	-33.47	-

NOTE:

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

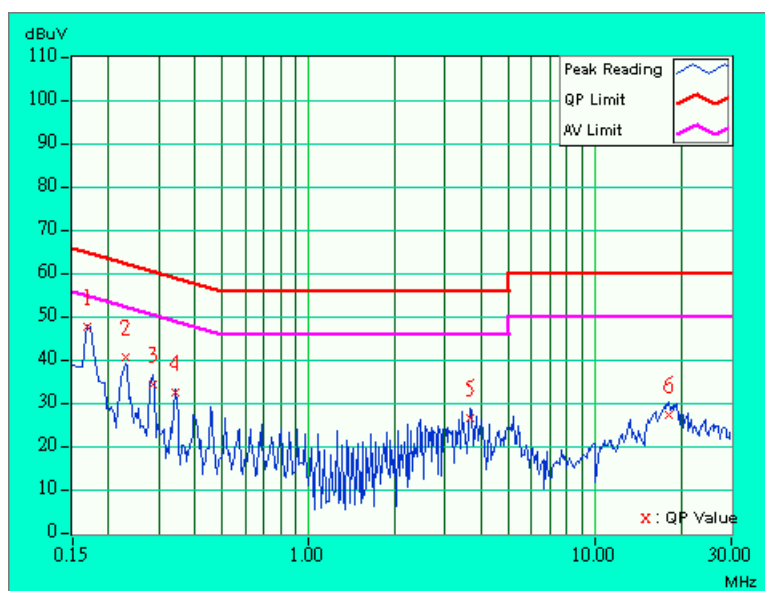


EUT	Wireless LAN Mini PCI Card	MODEL	WLL3010
MODE	Channel 1	6dB BANDWIDTH	9kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Neutral (N)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	TESTED BY: Gary Chang	

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	47.05	-	47.15	-	64.98	54.98	-17.83	-
2	0.228	0.10	39.89	-	39.99	-	62.52	52.52	-22.53	-
3	0.287	0.10	33.67	-	33.77	-	60.62	50.62	-26.85	-
4	0.341	0.10	32.06	-	32.16	-	59.17	49.17	-27.01	-
5	3.648	0.28	25.87	-	26.15	-	56.00	46.00	-29.85	-
6	18.211	0.69	26.85	-	27.54	-	60.00	50.00	-32.46	-

NOTE:

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

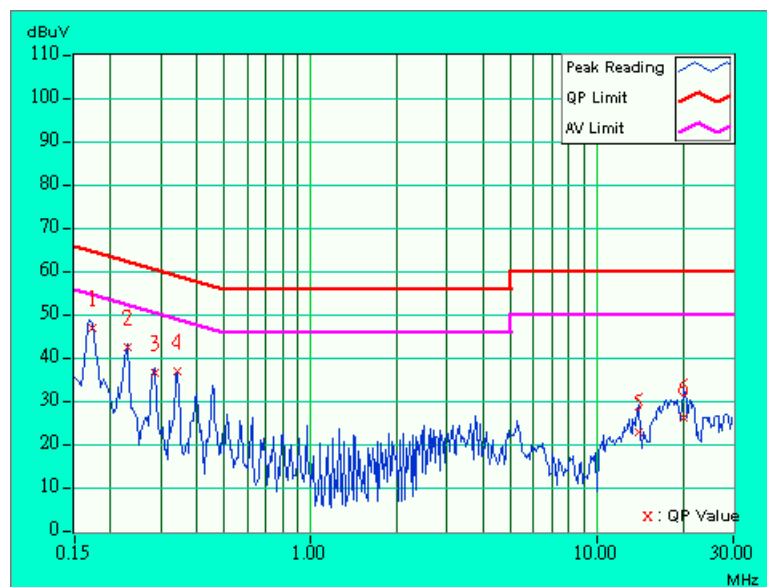


EUT	Wireless LAN Mini PCI Card	MODEL	WLL3010
MODE	Channel 6	6dB BANDWIDTH	9kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	TESTED BY: Gary Chang	

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	0.173	0.10	46.11	-	46.21	-	64.79	54.79	-18.58	-
2	0.228	0.10	41.36	-	41.46	-	62.52	52.52	-21.06	-
3	0.287	0.10	35.65	-	35.75	-	60.62	50.62	-24.87	-
4	0.341	0.10	35.78	-	35.88	-	59.17	49.17	-23.29	-
5	14.008	0.76	22.01	-	22.77	-	60.00	50.00	-37.23	-
6	20.227	1.10	25.10	-	26.20	-	60.00	50.00	-33.80	-

NOTE:

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

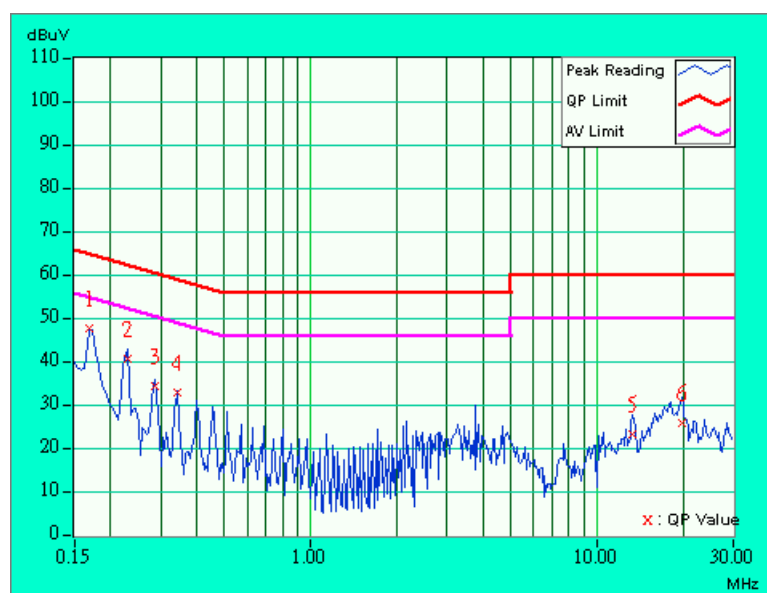


EUT	Wireless LAN Mini PCI Card	MODEL	WLL3010
MODE	Channel 6	6dB BANDWIDTH	9kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Neutral (N)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	TESTED BY: Gary Chang	

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	47.15	-	47.25	-	64.98	54.98	-17.73	-
2	0.228	0.10	40.01	-	40.11	-	62.52	52.52	-22.41	-
3	0.287	0.10	33.80	-	33.90	-	60.62	50.62	-26.72	-
4	0.341	0.10	32.14	-	32.24	-	59.17	49.17	-26.93	-
5	13.383	0.47	22.42	-	22.89	-	60.00	50.00	-37.11	-
6	19.773	0.79	25.17	-	25.96	-	60.00	50.00	-34.04	-

NOTE:

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

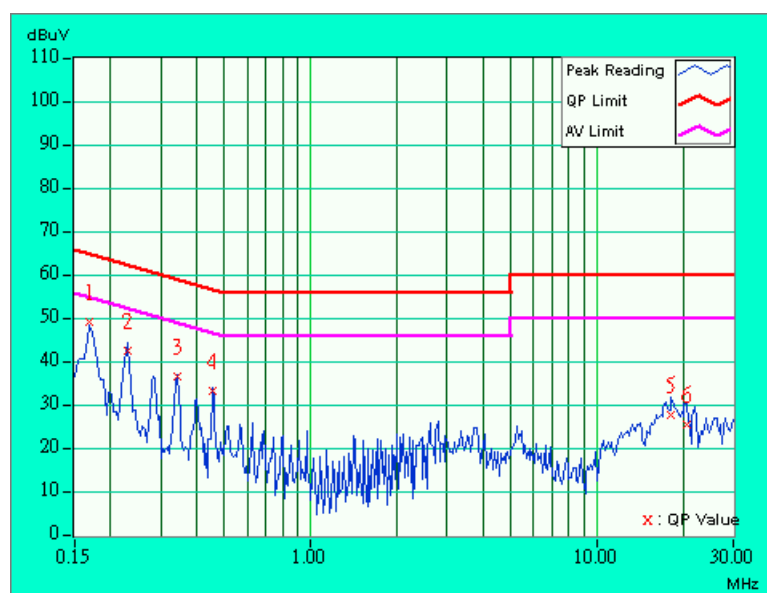


EUT	Wireless LAN Mini PCI Card	MODEL	WLL3010
MODE	Channel 11	6dB BANDWIDTH	9kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	TESTED BY: Gary Chang	

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	48.13	-	48.23	-	64.98	54.98	-16.75	-
2	0.228	0.10	41.38	-	41.48	-	62.52	52.52	-21.04	-
3	0.341	0.10	35.70	-	35.80	-	59.17	49.17	-23.37	-
4	0.455	0.11	32.29	-	32.40	-	56.79	46.79	-24.39	-
5	18.227	0.99	26.61	-	27.60	-	60.00	50.00	-32.40	-
6	20.543	1.11	24.41	-	25.52	-	60.00	50.00	-34.48	-

NOTE:

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

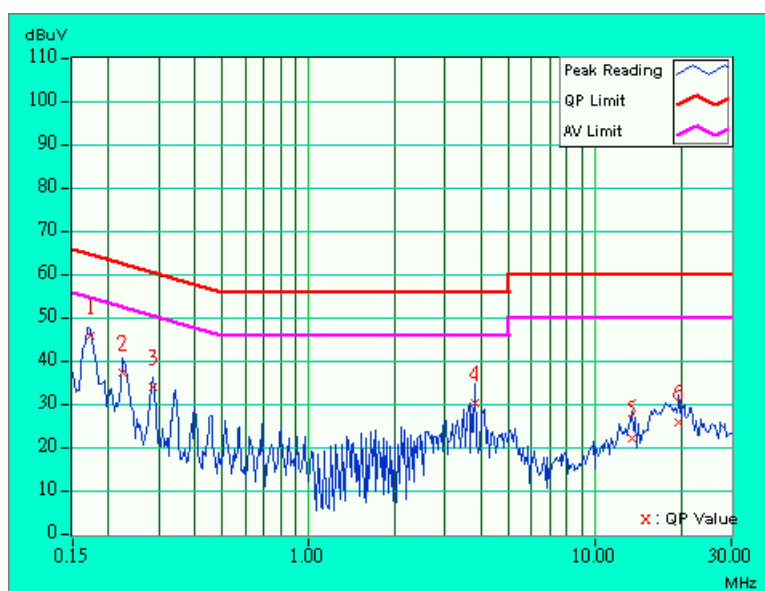


EUT	Wireless LAN Mini PCI Card	MODEL	WLL3010
MODE	Channel 11	6dB BANDWIDTH	9kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Neutral (N)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	TESTED BY: Gary Chang	

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	0.173	0.10	45.25	-	45.35	-	64.79	54.79	-19.44	-
2	0.224	0.10	36.80	-	36.90	-	62.66	52.66	-25.76	-
3	0.287	0.10	33.47	-	33.57	-	60.62	50.62	-27.05	-
4	3.813	0.29	29.43	-	29.72	-	56.00	46.00	-26.28	-
5	13.438	0.47	21.62	-	22.09	-	60.00	50.00	-37.91	-
6	19.695	0.78	25.16	-	25.94	-	60.00	50.00	-34.06	-

NOTE:

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



4.2 RADIATED EMISSION MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

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

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

NOTE:

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

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
* HP Spectrum Analyzer	8590L	3544A01176	May 13, 2004
* HP Preamplifier	8447D	2944A08485	May 01, 2004
* HP Preamplifier	8449B	3008A01201	Dec. 01, 2003
* HP Preamplifier	8449B	3008A01292	Aug. 07, 2003
* Spectrum Analyzer	8593E	3926A04191	Mar. 24, 2004
* Test Receiver	ESI7	838496/016	Feb. 23, 2004
SCHAFFNER Tunable Dipole Antenna	VHBA 9123	459	Nov. 22, 2003
SCHWARZBECK Tunable Dipole Antenna	UHA 9105	977	
* CHASE BILOG Antenna	CBL6112A	2221	Aug. 02, 2003
* SCHWARZBECK Horn Antenna	BBHA9120-D1	D130	July 03, 2003
* EMCO Horn Antenna	3115	9312-4192	Mar. 23, 2004
* EMCO Turn Table	1060	1115	NA
* SHOSHIN Tower	AP-4701	A6Y005	NA
* Software	ADT_Radiated_V5.09	NA	NA
* ANRITSU RF Switches	MP59B	M35046	Jul. 11. 2003
* TIMES RF cable	LMR-600	CABLE-ST5-01	Jul. 11. 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. 5.
5. The VCCI Site Registration No. is R-1039.



4.2.3 TEST PROCEDURES

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

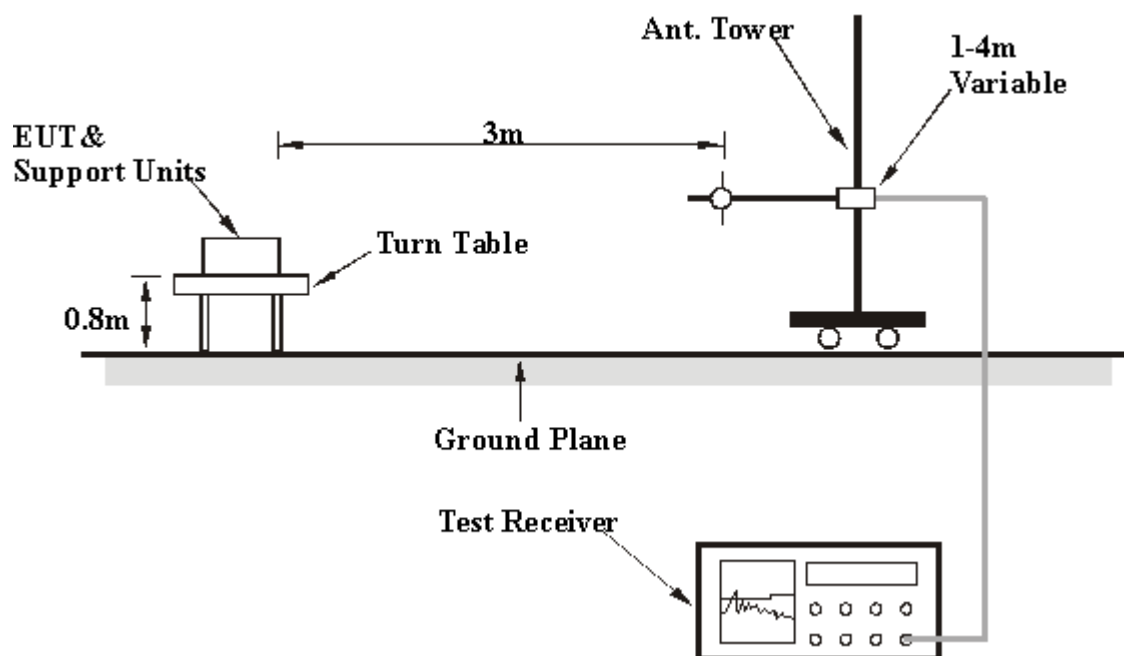
NOTE:

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

4.2.4 DEVIATION FROM TEST STANDARD

No deviation

4.2.5 TEST SETUP



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

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6

4.2.7 TEST RESULTS (A)

EUT	Wireless LAN Mini PCI Card	MODEL	WLL3010
CHANNEL	Channel 11	FREQUENCY RANGE	Below 1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	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	120.00	35.0 QP	43.50	-8.50	1.60 H	85	21.50	13.50
2	160.00	34.0 QP	43.50	-9.50	1.15 H	85	23.20	10.80
3	240.00	37.0 QP	46.00	-9.00	1.52 H	35	22.30	14.70
4	319.89	31.8 QP	46.00	-14.20	1.47 H	121	14.70	17.10
5	480.00	31.0 QP	46.00	-15.00	1.12 H	82	10.40	20.60
6	640.00	36.3 QP	46.00	-9.70	1.66 H	188	13.50	22.80
7	720.01	34.1 QP	46.00	-11.90	1.27 H	115	10.70	23.50
8	840.01	33.3 QP	46.00	-12.70	1.33 H	229	8.20	25.00
9	880.01	32.6 QP	46.00	-13.40	1.14 H	64	7.50	25.20

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	120.00	38.1 QP	43.50	-5.40	1.50 V	29	24.60	13.50
2	160.03	30.2 QP	43.50	-13.30	1.15 V	262	19.40	10.80
3	240.03	34.2 QP	46.00	-11.80	1.28 V	152	19.60	14.70
4	320.02	27.4 QP	46.00	-18.60	1.48 V	214	10.20	17.20
5	440.02	26.9 QP	46.00	-19.10	1.14 V	82	7.20	19.60
6	440.02	28.5 QP	46.00	-17.50	1.14 V	261	8.90	19.60
7	480.02	29.3 QP	46.00	-16.70	1.40 V	94	8.60	20.60
8	560.01	31.3 QP	46.00	-14.70	1.49 V	235	9.90	21.40
9	640.01	31.3 QP	46.00	-14.70	1.14 V	200	8.50	22.80
10	640.01	31.3 QP	46.00	-14.70	1.14 V	74	8.50	22.80
11	880.01	31.6 QP	46.00	-14.40	1.35 V	295	6.40	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. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.

EUT	Wireless LAN Mini PCI Card	MODEL	WLL3010
CHANNEL	Channel 1	FREQUENCY RANGE	Above 1000 MHz
MODE	CCK		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	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	1608.00	37.7 PK	74.00	-36.30	1.17 H	24	10.40	27.30
2	*2412.00	106.3 PK			1.17 H	24	76.70	29.70
2	*2412.00	88.5 AV			1.17 H	24	58.80	27.30
3	3216.00	48.4 PK	74.00	-25.60	1.04 H	274	16.80	31.50
4	4824.00	40.2 PK	74.00	-33.80	1.42 H	51	4.90	35.30
5	7236.00	49.2 PK	74.00	-24.80	1.35 H	54	8.10	41.10

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)	Correction Factor (dB/m)
1	1624.00	37.4 PK	74.00	-36.60	1.43 V	95	10.10	27.30
2	*2412.00	97.8 PK			1.04 V	211	68.20	29.70
2	*2412.00	81.5 AV			1.04 V	211	51.80	29.70
3	3216.00	48.5 PK	74.00	-25.50	1.31 V	115	16.90	31.50
4	4824.00	45.7 PK	74.00	-28.30	1.15 V	48	10.40	35.30
5	7236.00	49.0 PK	74.00	-25.00	1.13 V	65	7.90	41.10

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

EUT	Wireless LAN Mini PCI Card	MODEL	WLL3010
CHANNEL	Channel 6	FREQUENCY RANGE	Above 1000 MHz
MODE	CCK		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	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	1624.00	39.2 PK	74.00	-34.80	1.34 H	71	11.90	27.30
2	*2437.00	102.8 PK			1.50 H	14	73.00	29.70
2	*2437.00	86.4 AV			1.50 H	14	56.70	27.30
3	3249.00	47.4 PK	74.00	-26.60	1.12 H	274	15.80	31.60
4	4874.00	45.1 PK	74.00	-28.90	1.06 H	136	9.60	35.50
5	7311.00	51.4 PK	74.00	-22.60	1.14 H	241	10.20	41.30
5	7311.00	42.1 AV	54.00	-11.90	1.14 H	241	0.90	29.70

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1624.00	36.0 PK	74.00	-38.00	1.16 V	51	8.70	27.30
2	*2437.00	93.6 PK			1.70 V	154	63.90	29.70
2	*2437.00	79.0 AV			1.70 V	154	49.30	27.30
3	3249.00	46.6 PK	74.00	-27.40	1.42 V	87	15.00	31.60
4	4874.00	45.3 PK	74.00	-28.70	1.19 V	54	9.80	35.50
5	7311.00	50.4 PK	74.00	-23.60	1.40 V	5	9.20	41.30
5	7311.00	42.1 AV	54.00	-11.90	1.40 V	5	0.90	29.70

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

EUT	Wireless LAN Mini PCI Card	MODEL	WLL3010
CHANNEL	Channel 11	FREQUENCY RANGE	Above 1000 MHz
MODE	CCK		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	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	1641.00	38.8 PK	74.00	-35.20	1.15 H	84	11.40	27.40
2	*2462.00	106.1 PK			1.06 H	151	76.30	29.80
2	*2462.00	89.1 AV			1.06 H	151	59.30	27.40
3	3282.00	45.6 PK	74.00	-28.40	1.52 H	144	14.00	31.60
4	4924.00	46.1 PK	74.00	-27.90	1.18 H	24	10.40	35.70
5	7386.00	51.8 PK	74.00	-22.20	1.08 H	115	10.30	41.50
5	7386.00	43.1 AV	54.00	-10.90	1.08 H	115	1.60	29.80

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1641.00	37.8 PK	74.00	-36.20	1.15 V	24	10.40	27.40
2	*2462.00	96.3 PK			1.57 V	104	66.40	29.80
2	*2462.00	82.6 AV			1.57 V	104	52.80	27.40
3	3282.00	47.7 PK	74.00	-26.30	1.06 V	84	16.10	31.60
4	4924.00	46.1 PK	74.00	-27.90	1.13 V	360	10.40	35.70
5	7386.00	50.9 PK	74.00	-23.10	1.35 V	141	9.40	41.50
5	7386.00	42.3 AV	54.00	-11.70	1.35 V	141	0.80	29.80

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

EUT	Wireless LAN Mini PCI Card	MODEL	WLL3010
CHANNEL	Channel 1	FREQUENCY RANGE	Above 1000 MHz
MODE	OFDM		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	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	1608.00	38.7 PK	74.00	-35.30	1.15 H	304	11.40	27.30
2	2389.00	67.6 PK	74.00	-6.40	1.05 H	78	38.00	29.60
2	2389.00	51.7 AV	54.00	-2.30	1.05 H	78	22.10	27.30
3	*2412.00	106.4 PK			1.05 H	78	76.70	29.70
3	*2412.00	91.8 AV			1.05 H	78	62.10	29.60
4	3216.00	46.2 PK	74.00	-27.80	1.04 H	152	14.60	31.50
5	4824.00	44.6 PK	74.00	-29.40	1.12 H	251	9.30	35.30
6	7236.00	50.9 PK	74.00	-23.10	1.28 H	25	9.80	41.10
6	7236.00	41.0 AV	54.00	-13.00	1.28 H	25	-0.10	29.70

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1608.00	37.2 PK	74.00	-36.80	1.30 V	35	9.90	27.30
2	*2412.00	99.7 PK			1.05 V	78	70.00	29.70
2	*2412.00	81.8 AV			1.05 V	78	52.10	27.30
3	3216.00	47.4 PK	74.00	-26.60	1.12 V	195	15.80	31.50
4	4824.00	45.7 PK	74.00	-28.30	1.18 V	52	10.40	35.30
5	7236.00	50.5 PK	74.00	-23.50	1.17 V	225	9.40	41.10
5	7236.00	41.0 AV	54.00	-13.00	1.17 V	225	-0.10	29.70

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

EUT	Wireless LAN Mini PCI Card	MODEL	WLL3010
CHANNEL	Channel 6	FREQUENCY RANGE	Above 1000 MHz
MODE	OFDM		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	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	1624.00	42.2 PK	74.00	-31.80	1.07 H	245	14.90	27.30
2	*2437.00	106.1 PK			1.39 H	241	76.40	29.70
2	*2437.00	90.5 AV			1.39 H	241	60.80	27.30
3	3248.00	47.1 PK	74.00	-26.90	1.16 H	190	15.50	31.60
4	4874.00	45.4 PK	74.00	-28.60	1.52 H	51	9.90	35.50
5	7310.00	51.1 PK	74.00	-22.90	1.39 H	221	9.90	41.30
5	7310.00	42.3 AV	54.00	-11.70	1.39 H	221	1.10	29.70

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1624.00	37.6 PK	74.00	-36.40	1.06 V	128	10.30	27.30
2	*2437.00	98.3 PK			1.25 V	153	68.60	29.70
2	*2437.00	83.5 AV			1.25 V	153	53.80	27.30
3	3249.00	45.2 PK	74.00	-28.80	1.50 V	38	13.60	31.60
4	4874.00	45.9 PK	74.00	-28.10	1.15 V	85	10.40	35.50
5	7312.00	49.3 PK	74.00	-24.70	1.50 V	38	8.10	41.30

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

EUT	Wireless LAN Mini PCI Card	MODEL	WLL3010
CHANNEL	Channel 11	FREQUENCY RANGE	Above 1000 MHz
MODE	OFDM		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	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	1641.00	41.5 PK	74.00	-32.50	1.15 H	74	14.10	27.40
2	*2462.00	98.8 PK			1.17 H	45	69.00	29.80
2	*2462.00	83.9 AV			1.17 H	45	54.10	27.40
3	2483.60	65.9 PK	74.00	-8.10	1.17 H	45	36.00	29.90
3	2483.60	51.1 AV	54.00	-2.90	1.17 H	45	21.20	29.80
4	3282.00	48.7 PK	74.00	-25.30	1.19 H	73	17.10	31.60
5	4924.00	45.4 PK	74.00	-28.60	1.28 H	119	9.70	35.70
6	7386.00	49.3 PK	74.00	-24.70	1.14 H	85	7.80	41.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1641.00	39.9 PK	74.00	-34.10	1.14 V	85	12.50	27.40
2	*2462.00	94.8 PK			1.52 V	45	65.00	29.80
2	*2462.00	79.8 AV			1.52 V	45	50.00	27.40
3	2483.60	64.9 PK	74.00	-9.10	1.52 V	45	35.00	29.90
3	2483.60	51.1 AV	54.00	-2.90	1.52 V	45	21.20	29.80
4	4924.00	47.3 PK	74.00	-26.70	1.46 V	132	11.60	35.70
5	7386.00	52.5 PK	74.00	-21.50	1.17 V	21	11.00	41.50
5	7386.00	44.3 AV	54.00	-9.70	1.17 V	21	2.80	29.90

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

4.2.8 TEST RESULTS (B)

EUT	Wireless LAN Mini PCI Card	MODEL	WLL3010
CHANNEL	Channel 11	FREQUENCY RANGE	Below 1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	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	160.06	30.9 QP	43.50	-12.60	1.22 H	51	20.00	10.80
2	240.04	40.8 QP	46.00	-5.20	1.26 H	48	26.10	14.70
3	320.04	34.6 QP	46.00	-11.40	1.34 H	42	17.40	17.20
4	440.10	30.1 QP	46.00	-15.90	1.03 H	135	10.40	19.60
5	640.01	33.3 QP	46.00	-12.70	1.76 H	41	10.50	22.80
6	720.08	33.5 QP	46.00	-12.50	1.36 H	136	10.10	23.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	120.05	33.4 QP	43.50	-10.10	1.17 V	241	19.90	13.50
2	159.79	25.4 QP	43.50	-18.10	1.58 V	294	14.50	10.90
3	240.03	33.0 QP	46.00	-13.00	1.48 V	254	18.30	14.70
4	480.03	30.5 QP	46.00	-15.50	1.19 V	218	9.90	20.60
5	640.03	33.0 QP	46.00	-13.00	1.49 V	110	10.20	22.80
6	720.03	31.2 QP	46.00	-14.80	1.42 V	139	7.70	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. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.

EUT	Wireless LAN Mini PCI Card	MODEL	WLL3010
CHANNEL	Channel 1	FREQUENCY RANGE	Above 1000 MHz
MODE	CCK		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	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	1608.00	37.2 PK	74.00	-36.80	1.38 H	15	9.90	27.30
2	*2412.00	98.6 PK			1.19 H	250	68.90	29.70
2	*2412.00	80.9 AV			1.19 H	250	51.20	27.30
3	3216.00	42.0 PK	74.00	-32.00	1.52 H	74	10.40	31.50
4	4824.00	45.2 PK	74.00	-28.80	1.46 H	24	9.90	35.30
5	7236.00	49.4 PK	74.00	-24.60	1.78 H	213	8.30	41.10

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)	Correction Factor (dB/m)
1	1608.00	37.8 PK	74.00	-36.20	1.42 V	251	10.40	27.40
2	*2412.00	96.6 PK			1.10 V	303	66.80	29.80
2	*2412.00	82.3 AV			1.10 V	303	52.50	27.40
3	3282.00	41.6 PK	74.00	-32.40	1.15 V	54	10.00	31.60
4	4924.00	44.1 PK	74.00	-29.90	1.35 V	62	8.40	35.70
5	7386.00	49.5 PK	74.00	-24.50	1.42 V	84	8.00	41.50

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

EUT	Wireless LAN Mini PCI Card	MODEL	WLL3010
CHANNEL	Channel 6	FREQUENCY RANGE	Above 1000 MHz
MODE	CCK		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	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	1624.00	36.7 PK	74.00	-37.30	1.21 H	251	9.40	27.30
2	*2437.00	97.9 PK			1.15 H	315	68.10	29.70
2	*2437.00	80.4 AV			1.15 H	315	50.60	27.30
3	3248.00	48.0 PK	74.00	-26.00	1.18 H	360	16.40	31.60
4	4874.00	45.4 PK	74.00	-28.60	1.16 H	316	9.90	35.50
5	7311.00	51.1 PK	74.00	-22.90	1.25 H	31	9.90	41.30
5	7311.00	42.1 AV	54.00	-11.90	1.25 H	31	0.90	29.70

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1624.00	38.7 PK	74.00	-35.30	1.14 V	35	11.40	27.30
2	*2437.00	96.5 PK			1.10 V	218	66.80	29.70
2	*2437.00	80.0 AV			1.10 V	218	50.20	27.30
3	3282.00	42.3 PK	74.00	-31.70	1.08 V	334	10.70	31.60
4	4874.00	44.4 PK	74.00	-29.60	1.31 V	12	8.90	35.50
5	7310.00	51.1 PK	74.00	-22.90	1.36 V	328	9.90	41.30
5	7310.00	42.3 AV	54.00	-11.70	1.36 V	328	1.10	29.70

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

EUT	Wireless LAN Mini PCI Card	MODEL	WLL3010
CHANNEL	Channel 11	FREQUENCY RANGE	Above 1000 MHz
MODE	CCK		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	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	1641.00	39.8 PK	74.00	-34.20	1.36 H	25	12.40	27.40
2	*2462.00	101.2 PK			1.14 H	288	71.50	29.70
2	*2462.00	83.0 AV			1.14 H	288	53.30	27.40
3	3282.00	47.1 PK	74.00	-26.90	1.40 H	51	15.50	31.60
4	4924.00	44.6 PK	74.00	-29.40	1.07 H	352	8.90	35.70
5	7387.00	49.7 PK	74.00	-24.30	1.19 H	24	8.20	41.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1641.00	37.3 PK	74.00	-36.70	1.23 V	152	9.90	27.40
2	*2462.00	98.4 PK			1.10 V	241	68.60	29.80
2	*2462.00	84.5 AV			1.10 V	241	54.70	27.40
3	3282.00	47.5 PK	74.00	-26.50	1.28 V	20	15.90	31.60
4	4924.00	44.6 PK	74.00	-29.40	1.13 V	275	8.90	35.70
5	7386.00	49.5 PK	74.00	-24.50	1.20 V	115	8.00	41.50

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

EUT	Wireless LAN Mini PCI Card	MODEL	WLL3010
CHANNEL	Channel 1	FREQUENCY RANGE	Above 1000 MHz
MODE	OFDM		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	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	1608.00	37.7 PK	74.00	-36.30	1.10 H	4	10.40	27.30
2	2389.00	64.6 PK	74.00	-9.40	1.26 H	93	35.00	29.60
2	2389.00	50.8 AV	54.00	-3.20	1.26 H	93	21.20	27.30
3	*2412.00	96.1 PK			1.26 H	93	66.40	29.70
3	*2412.00	82.1 AV			1.26 H	93	52.50	29.60
4	3216.00	47.2 PK	74.00	-26.80	1.45 H	248	15.60	31.50
5	4824.00	44.4 PK	74.00	-29.60	1.25 H	135	9.10	35.30
6	7236.00	49.5 PK	74.00	-24.50	1.16 H	32	8.40	41.10

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)	Correction Factor (dB/m)
1	1608.00	37.7 PK	74.00	-36.30	1.62 V	117	10.40	27.30
2	2389.00	64.3 PK	74.00	-9.70	1.62 V	117	34.70	29.60
2	2389.00	50.9 AV	54.00	-3.10	1.62 V	117	21.30	27.30
3	*2412.00	94.4 PK			1.62 V	117	64.70	29.70
3	*2412.00	81.0 AV			1.62 V	117	51.30	29.60
4	3216.00	46.6 PK	74.00	-27.40	1.57 V	284	15.00	31.50
5	4824.00	45.7 PK	74.00	-28.30	1.13 V	214	10.40	35.30
6	7236.00	53.5 PK	74.00	-20.50	1.51 V	54	12.40	41.10
6	7236.00	44.0 AV	54.00	-10.00	1.51 V	54	2.90	29.70

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

EUT	Wireless LAN Mini PCI Card	MODEL	WLL3010
CHANNEL	Channel 6	FREQUENCY RANGE	Above 1000 MHz
MODE	OFDM		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	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	1624.00	38.0 PK	74.00	-36.00	1.91 H	105	10.70	27.30
2	*2437.00	100.0 PK			1.14 H	288	70.30	29.70
2	*2437.00	86.3 AV			1.14 H	288	56.60	27.30
3	3248.00	47.7 PK	74.00	-26.30	1.54 H	262	16.10	31.60
4	4874.00	45.9 PK	74.00	-28.10	1.26 H	14	10.40	35.50
5	7311.00	51.1 PK	74.00	-22.90	1.08 H	337	9.90	41.30
5	7311.00	41.1 AV	54.00	-12.90	1.08 H	337	-0.10	29.70

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1624.00	38.2 PK	74.00	-35.80	1.13 V	324	10.90	27.30
2	*2437.00	95.9 PK			1.37 V	7	66.20	29.70
2	*2437.00	80.2 AV			1.37 V	7	50.50	27.30
3	3248.00	47.2 PK	74.00	-26.80	1.52 V	310	15.60	31.60
4	4874.00	46.6 PK	74.00	-27.40	1.62 V	62	11.10	35.50
5	7312.00	51.1 PK	74.00	-22.90	1.21 V	25	9.90	41.30
5	7312.00	43.1 AV	54.00	-10.90	1.21 V	25	1.90	29.70

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

EUT	Wireless LAN Mini PCI Card	MODEL	WLL3010
CHANNEL	Channel 11	FREQUENCY RANGE	Above 1000 MHz
MODE	OFDM		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	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	1641.00	39.9 PK	74.00	-34.10	1.31 H	52	12.50	27.40
2	*2462.00	98.4 PK			1.31 H	52	68.60	29.80
2	*2462.00	83.6 AV			1.31 H	52	53.80	27.40
3	2483.60	66.9 PK	74.00	-7.10	1.31 H	52	37.00	29.90
3	2483.60	51.7 AV	54.00	-2.30	1.31 H	52	21.80	29.80
4	3282.00	44.0 PK	74.00	-30.00	1.46 H	186	12.40	31.60
5	4924.00	44.8 PK	74.00	-29.20	1.27 H	34	9.10	35.70
6	7386.00	51.8 PK	74.00	-22.20	1.21 H	185	10.30	41.50
6	7386.00	41.9 AV	54.00	-12.10	1.21 H	185	0.40	29.90

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1641.00	38.0 PK	74.00	-36.00	1.15 V	24	10.60	27.40
2	*2462.00	99.3 PK			1.37 V	224	69.50	29.80
2	*2462.00	83.9 AV			1.37 V	224	54.10	27.40
3	2483.60	66.6 PK	74.00	-7.40	1.37 V	224	36.70	29.90
3	2483.60	51.7 AV	54.00	-2.30	1.37 V	224	21.80	29.80
4	3282.00	46.6 PK	74.00	-27.40	1.10 V	304	15.00	31.60
5	4924.00	46.1 PK	74.00	-27.90	1.17 V	304	10.40	35.70
6	7386.00	54.2 PK	74.00	-19.80	1.53 V	188	12.70	41.50
6	7386.00	44.7 AV	54.00	-9.30	1.53 V	188	3.20	29.90

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

4.3 BAND EDGES MEASUREMENT

4.3.1 LIMITS OF BAND EDGES MEASUREMENT

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

4.3.2 TEST INSTRUMENTS

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

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

4.3.3 TEST PROCEDURE

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

4.3.4 DEVIATION FROM TEST STANDARD

No deviation

4.3.5 EUT OPERATING CONDITION

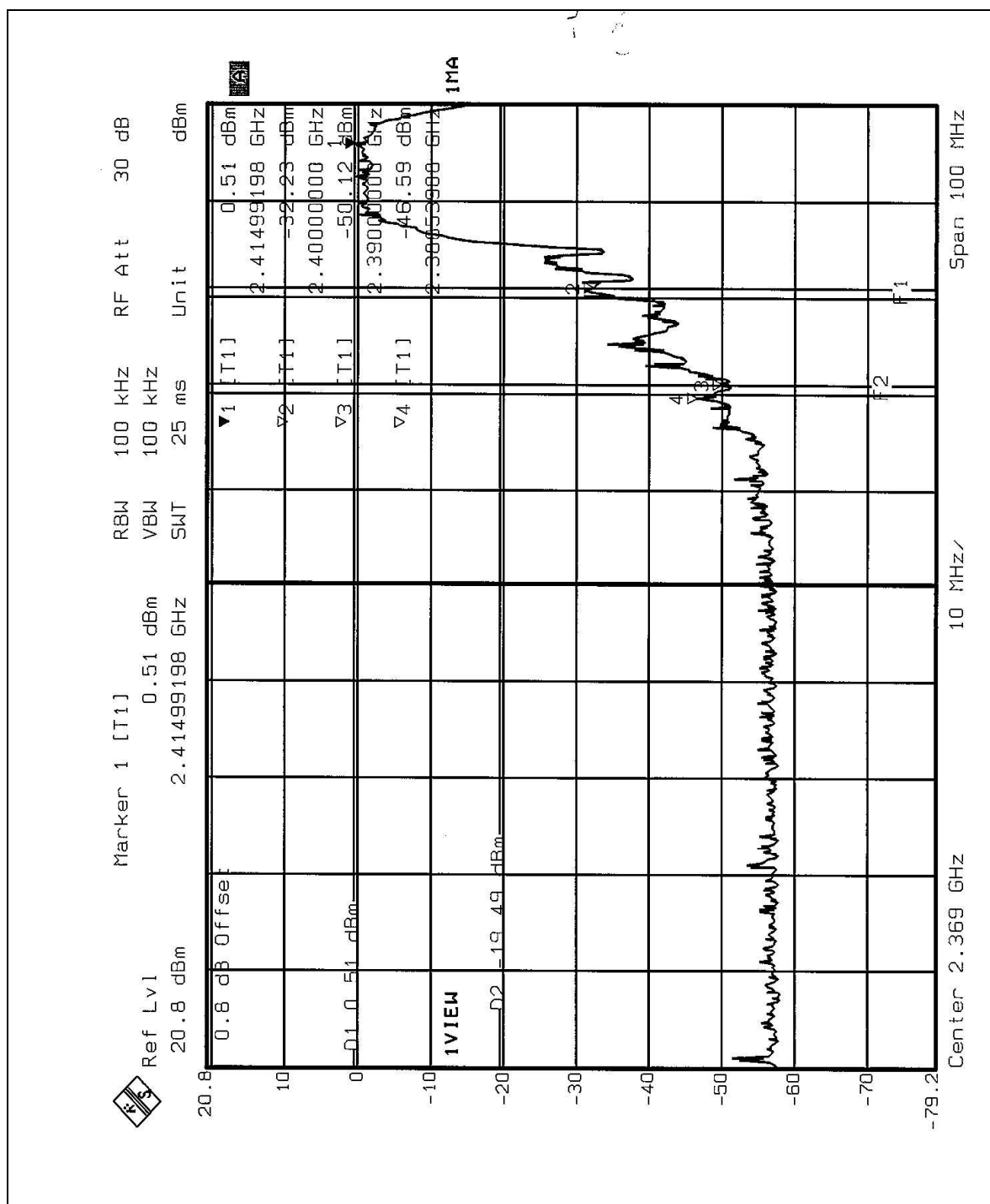
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

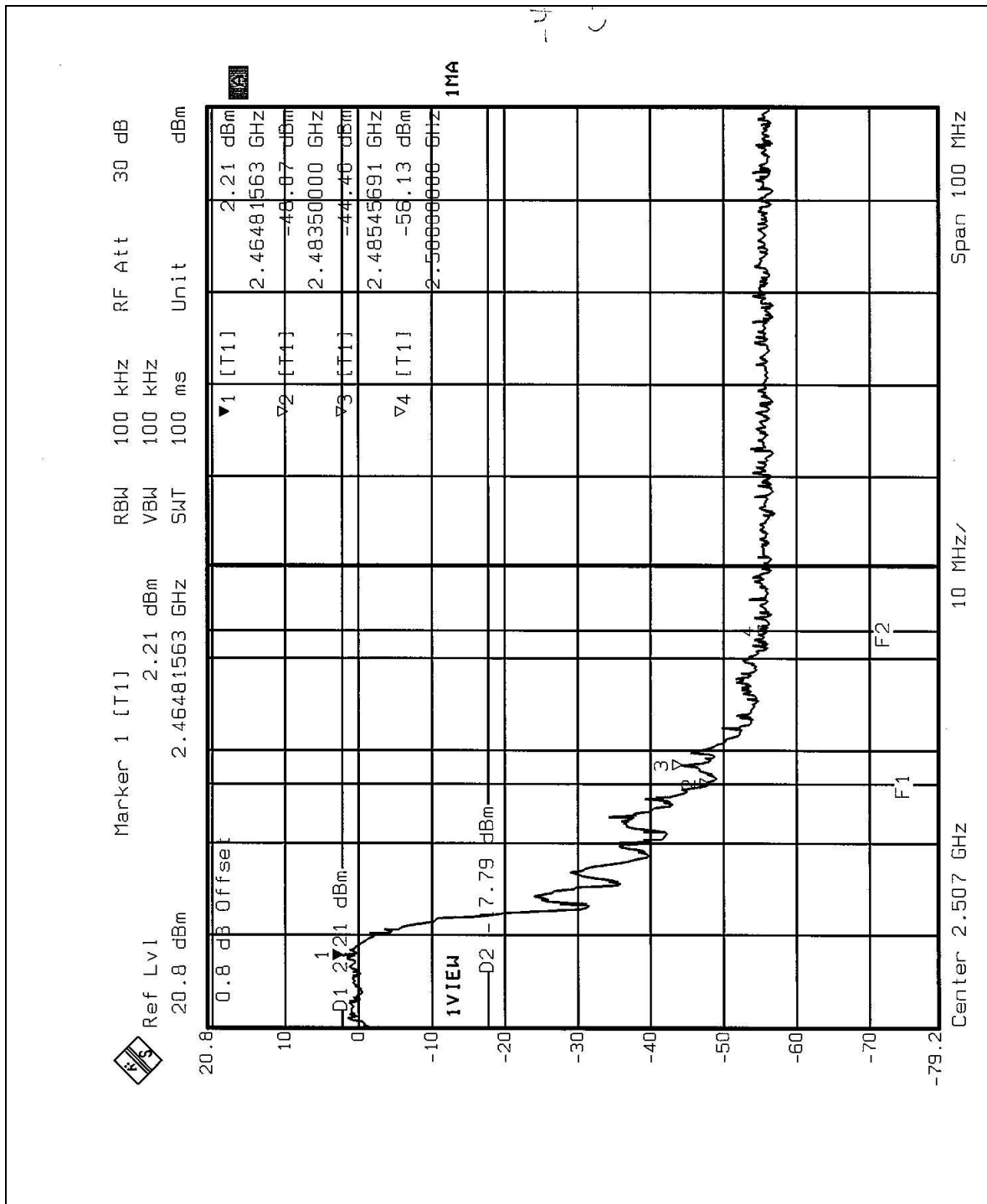
4.3.6 TEST RESULTS

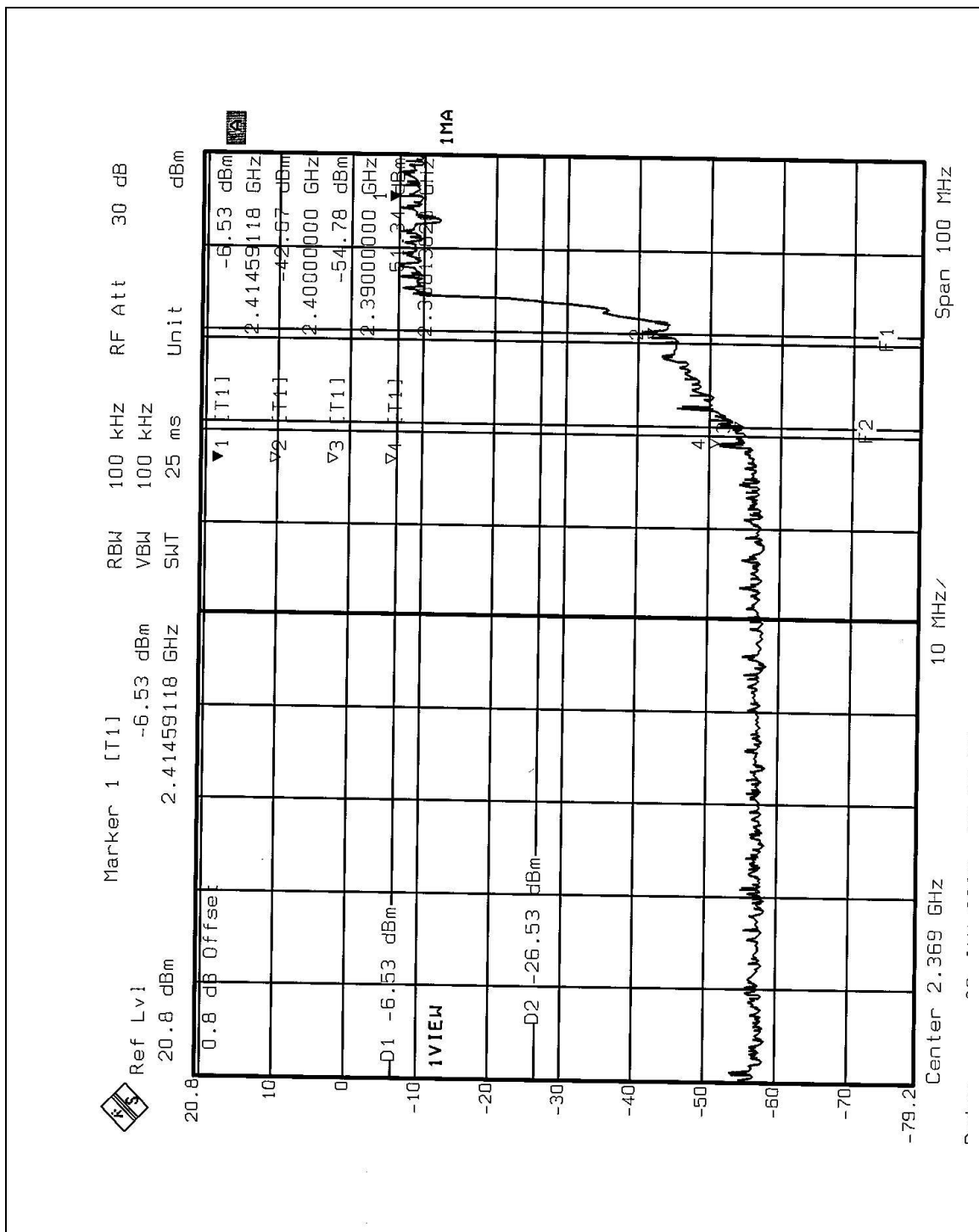
The spectrum plots are attached on the following 2 pages. D2 line indicates the highest level, D1 line indicates the 20dB offset below D2. It shows compliance with the requirement in part 15.247(C).

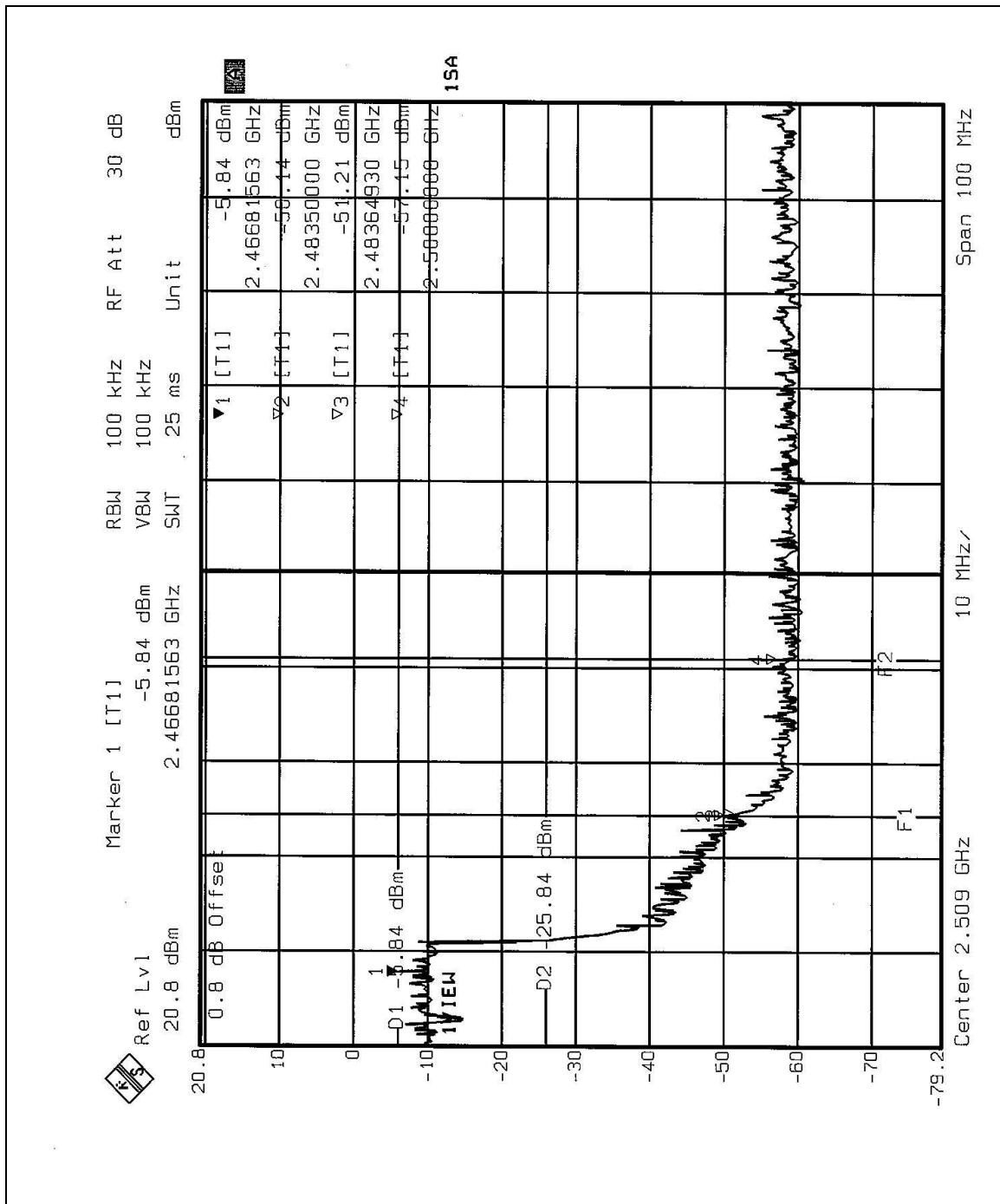
NOTE 1: The band edge emission plot of CCK technique on the following first two page shows 47.10dB/ 46.61dB delta between carrier maximum power and local maximum emission in restrict band (2.3885GHz/ 2.4855GHz). The emission of carrier strength list in the test result of channel 11 of CCK technique at the item 4.2.7 is 89.10dBuV/m, so the maximum field strength in restrict band is $89.1 - 46.61 = 42.49\text{dBuV/m}$ which is under 54dBuV/m limit.

NOTE 2: The band edge emission plot of OFDM technique on the following first two page shows 57.87dB/ 57.05dB delta between carrier maximum power and local maximum emission in restrict band (2.3881GHz/ 2.4836GHz). The emission of carrier strength list in the test result of channel 1 of OFDM technique at the item 4.2.7 is 91.80dBuV/m, so the maximum field strength in restrict band is $91.8 - 57.87 = 33.93\text{dBuV/m}$ which is under 54dBuV/m limit.



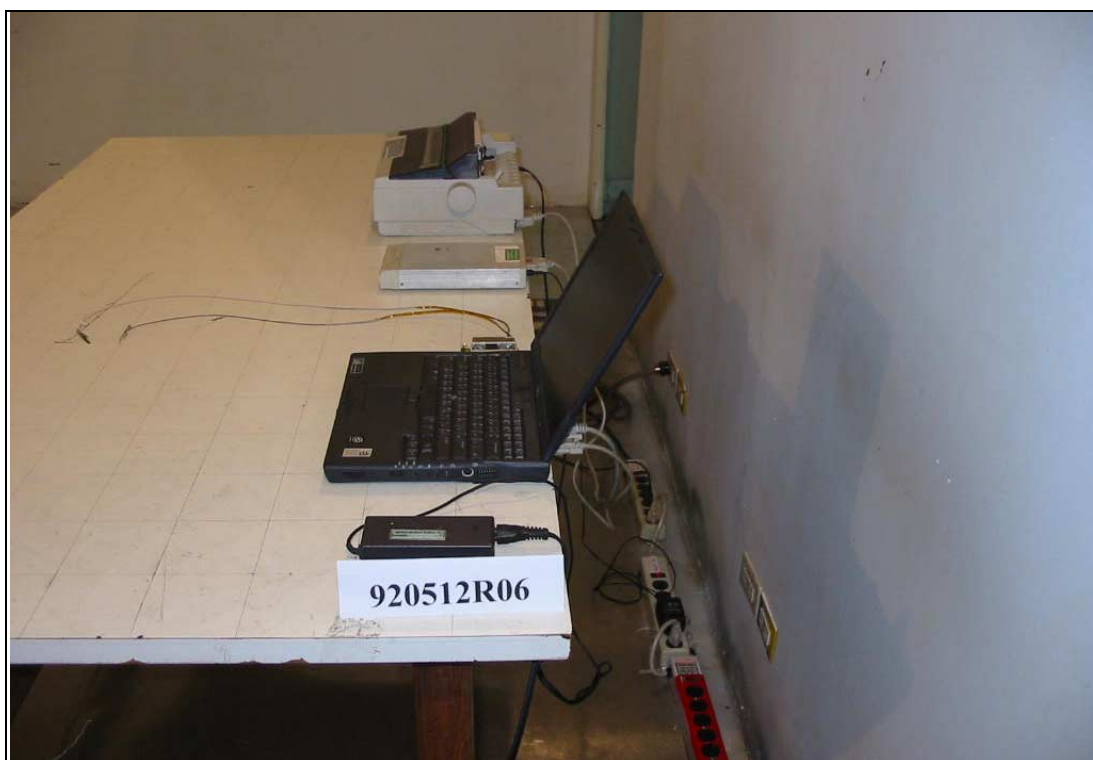






5 PHOTOGRAPHS OF THE TEST CONFIGURATION

CONDUCTED EMISSION TEST





RADIATED EMISSION TEST





6 INFORMATION ON THE TESTING LABORATORIES

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

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

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

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

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

Lin Kou EMC Lab:

Tel: 886-2-26052180

Fax: 886-2-26052943

Hsin Chu EMC Lab:

Tel: 886-35-935343

Fax: 886-35-935342

Lin Kou Safety Lab:

Tel: 886-2-26093195

Fax: 886-2-26093184

Lin Kou RF&Telecom Lab

Tel: 886-3-3270910

Fax: 886-3-3270892

Email: service@mail.adt.com.tw

Web Site: www.adt.com.tw

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