FCC TEST REPORT

REPORT NO.: RF920624R02D
MODEL NO.: WLL4030
RECEIVED: Nov. 10, 2004
TESTED: Nov. 10 ~ Dec. 08, 2004

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

ISSUED BY: Advance Data Technology Corporation
LAB ADDRESS: No. 47, 14th Ling, Chia Pau Tsuen, Lin Kou Hsiang 244, Taipei Hsien, Taiwan, R.O.C.
TEST LOCATION: No. 19, Hwa Ya 2nd Rd., Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

ACCREDITED
No. 2177-01

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1. CERTIFICATION

PRODUCT :	Mini- PCI CARD
BRAND NAME :	Askey
MODEL NO. :	WLL4030
APPLICANT :	ASKEY COMPUTER CORP.
TESTED :	Nov. 10 ~ Dec. 08, 2004
TEST SAMPLE :	ENGINEERING SAMPLE
STANDARDS :	FCC Part 15, Subpart C (Section 15.247), Subpart E (Section 15.407), ANSI C63.4-2003

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

PREPARED BY : Candice Chen , **DATE:** Dec. 10, 2004
Candice Chen

TECHNICAL ACCEPTANCE : Gary Chang , **DATE:** Dec. 10, 2004
Responsible for RF
Gary Chang

APPROVED BY : , **DATE:** Dec. 10, 2004
Cody Chang, Deputy Manager

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC 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 –11.98dB 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(d)	Radiated Emissions Limit: Table 15.209	PASS	Meet the requirement of limit. Minimum passing margin is –1.31dB at 795.89MHz
15.247(e)	Power Spectral Density Limit: max. 8dBm	PASS	Meet the requirement of limit.
15.247(d)	Band Edge Measurement Limit: 20dB less than the peak value of fundamental frequency	PASS	Meet the requirement of limit.

APPLIED STANDARD: FCC Part 15, Subpart E			
Standard Section	**Test Type**	**Result**	**Remark**
15.407(b)(5)	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is –15.02dB at 0.170MHz
15.407(b/1/2/3)(b)(5)	Electric Field Strength Spurious Emissions, 30MHz ~ 40000MHz	PASS	Meet the requirement of limit. Minimum passing margin is –1.25dB at 5725.00MHz
15.407(a/1/2/3)	Peak Transmit Power	PASS	Meet the requirement of limit.
15.407(a)(6)	Peak Power Excursion	PASS	Meet the requirement of limit.
15.407(a/1/2/3)	Peak Power Spectral Density	PASS	Meet the requirement of limit.
15.407(g)	Frequency Stability	PASS	Meet the requirement of limit.

2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4:

Measurement	Frequency	Uncertainty
Conducted emissions	9kHz~30MHz	2.44 dB
Radiated emissions	30MHz ~ 200MHz	3.55 dB
	200MHz ~1000MHz	3.58 dB
	1GHz ~ 18GHz	1.10 dB
	18GHz ~ 40GHz	0.91 dB

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Mini- PCI CARD
MODEL NO.	WLL4030
POWER SUPPLY	3.3Vdc from host equipment
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	802.11b:11/5.5/2/1Mbps 802.11g: 54/48/36/24/18/12/9/6Mbps 802.11a: 54/48/36/24/18/12/9/6Mbps
FREQUENCY RANGE	802.11b and 802.11g: 2412~2462MHz 802.11a: 5.15~5.35GHz and 5.725~5.825GHz
NUMBER OF CHANNEL	802.11b and 802.11g: 11 802.11a: 12
CHANNEL SPACING	802.11b and 802.11g: 5MHz 802.11a: 20MHz
OUTPUT POWER	802.11b and 802.11g: 40.664mW 802.11a: 65.013mW
DATA CABLE	NA
ANTENNA TYPE	Monopole antenna with 0.69 dBi gain for 2.4GHz Monopole antenna with 4.91 dBi gain for 5GHz
I/O PORTS	NA
ASSOCIATED DEVICES	NA

NOTE:

1. This report is issued as a supplementary report of ADT report no.: RF920624R02. The model in this report is identical to the original application one.
2. This report is prepared for FCC class II permissive change. The difference compared with the original design is adding one antenna.
3. The antenna type is monopole antenna which brand is Yokowo Co., Ltd and the part No. is YCE-5008(008L00197).
4. The EUT operates in both the 5GHz and 2.4GHz Bands and compatibility with 802.11a and 802.11b, 802.11g technology.
5. The above EUT information was declared by the manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3.2 DESCRIPTION OF TEST MODES

For 802.11b and 802.11g: 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. From our experience and technical viewpoint, we have chosen data rates, 11Mbps with CCK technique and 6Mbps with OFDM technique, as the worst cases for the test among other data rates.

For 802.11a: Twelve channels are provided to this EUT.

Channel	Frequency	Channel	Frequency
1	5180 MHz	8	5320 MHz
2	5200 MHz	9	5745 MHz
3	5220 MHz	10	5765 MHz
4	5240 MHz	11	5785 MHz
5	5260 MHz	12	5805 MHz
6	5280 MHz		
7	5300 MHz		

NOTE:

1. The EUT allows data rates of up to 54Mbps and was tested at 6Mbps data rate that produced the highest output power.
2. Channel 1, 4, 5, 8, 9 and 12 are the closest frequencies to the band edge, were chosen for final test.

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC Part 15, Subpart C. (15.247),
Subpart E (15.407). ANSI C63.4 : 2003

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

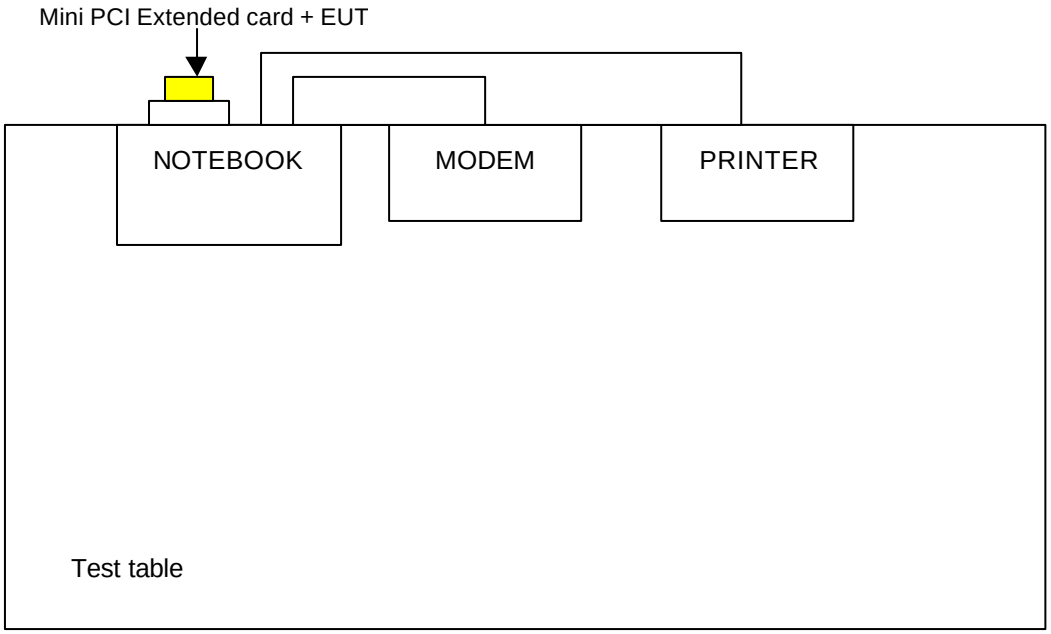
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

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).

3.5 CONFIGURATION OF SYSTEM UNDER TEST



4. TEST TYPES AND RESULTS (FOR PART 802.11b & 802.11g)

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dBμV)	
	Quasi-peak	Average
0.15-0.5	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
Test Receiver ROHDE & SCHWARZ	ESCS30	100288	Dec. 11, 2004
RF signal cable Woken	5D-FB	Cable-HyC02-01	Mar. 07, 2005
LISN ROHDE & SCHWARZ	ESH2-Z5	100100	Mar. 10, 2005
LISN ROHDE & SCHWARZ	ESH3-Z5	100311	Mar. 04, 2005
Software ADT	ADT_Cond_V3	NA	NA

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

2. The test was performed in HwaYa Shielded Room 2.
3. The VCCI Site Registration No. is C-2047.

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.

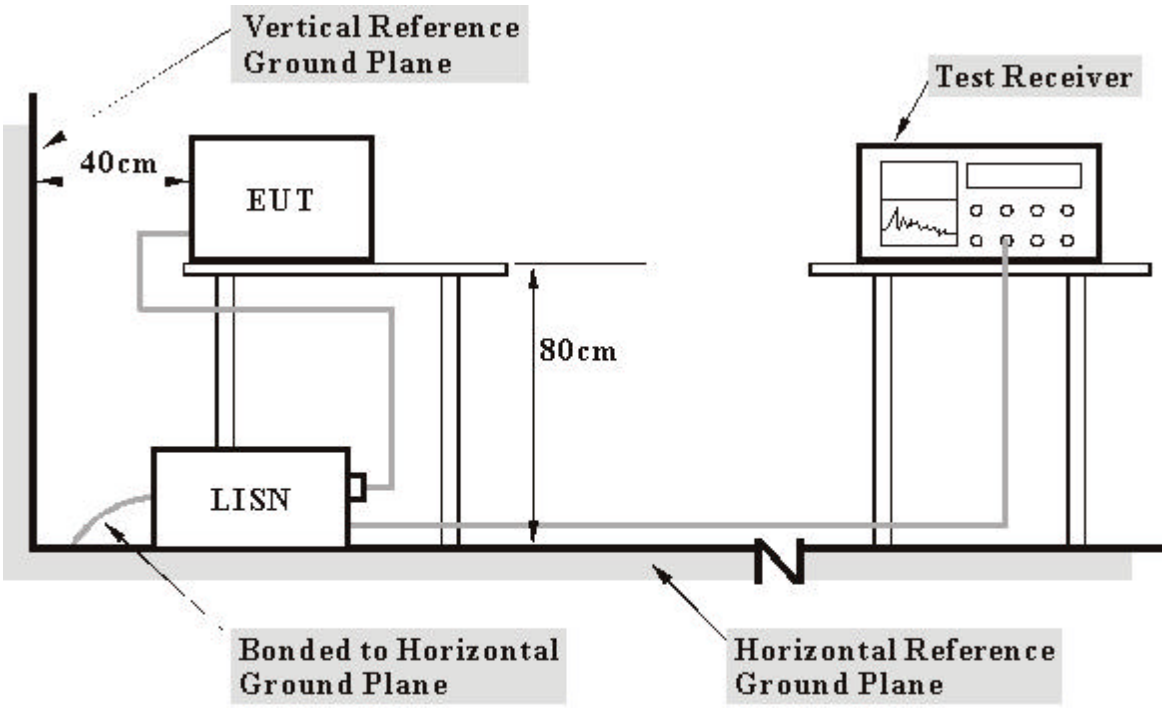
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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

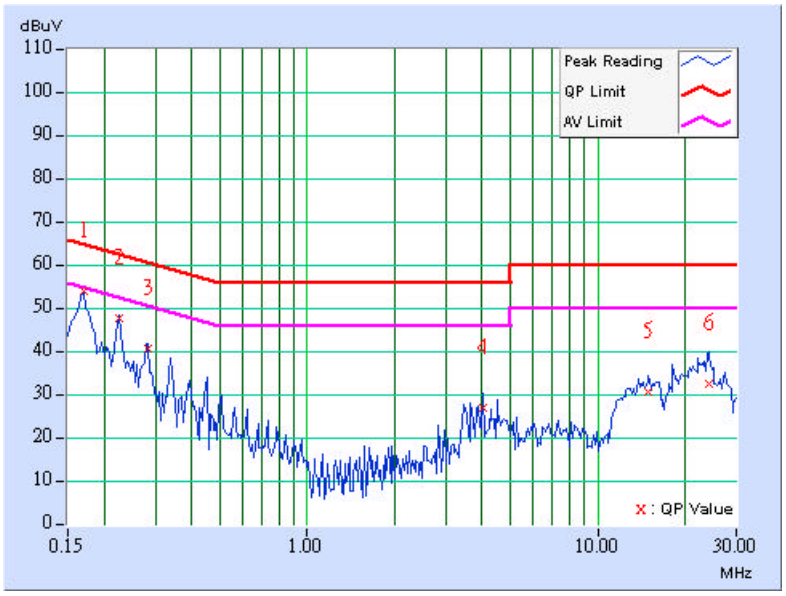
a. Connected the EUT to a notebook system placed on a testing table.
b. The notebook system ran a test program (provided by manufacturer) to enable EUT under transmission/receiving condition continuously at specific channel frequency.
c. The notebook system sent "H" messages to its screen.
d. The notebook system sent “H” messages to modem.
e. The notebook system sent "H" messages to printer, and the printer prints them on paper.
f. Steps c-e are repeated.

4.1.7 TEST RESULTS

EUT	Mini- PCI CARD	**MODEL**	WLL4030
MODE	Channel 1	**6dB BANDWIDTH**	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**PHASE**	Line (L)
ENVIRONMENTAL CONDITIONS	23deg. C, 65%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**	**52.90**	**-**	**53.00**	**-**	**64.98**	**54.98**	**-11.98**	**-**
2	0.224	0.10	46.53	-	46.63	-	62.66	52.66	-16.03	-
3	0.283	0.11	39.80	-	39.91	-	60.73	50.73	-20.83	-
4	4.047	0.32	25.99	-	26.31	-	56.00	46.00	-29.69	-
5	14.941	0.70	29.56	-	30.26	-	60.00	50.00	-29.74	-
6	24.051	1.11	31.52	-	32.63	-	60.00	50.00	-27.37	-

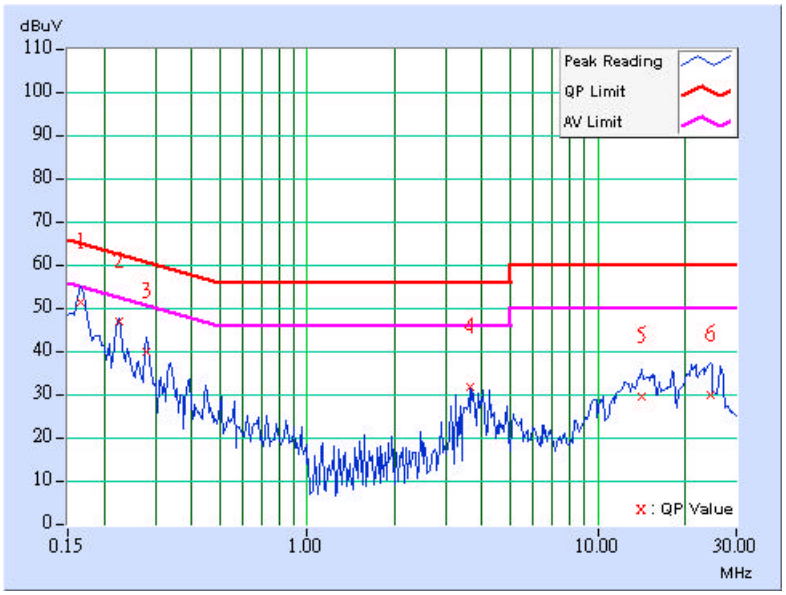
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Mini- PCI CARD	**MODEL**	WLL4030
MODE	Channel 1	**6dB BANDWIDTH**	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**PHASE**	Neutral (N)
ENVIRONMENTAL CONDITIONS	23deg. C, 65%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	0.166	0.10	50.75	-	50.85	-	65.18	55.18	-14.33	-
2	0.224	0.10	46.33	-	46.43	-	62.66	52.66	-16.23	-
3	0.279	0.11	39.40	-	39.51	-	60.85	50.85	-21.34	-
4	3.648	0.29	31.06	-	31.35	-	56.00	46.00	-24.65	-
5	14.121	0.55	28.90	-	29.45	-	60.00	50.00	-30.55	-
6	24.348	0.69	29.33	-	30.02	-	60.00	50.00	-29.98	-

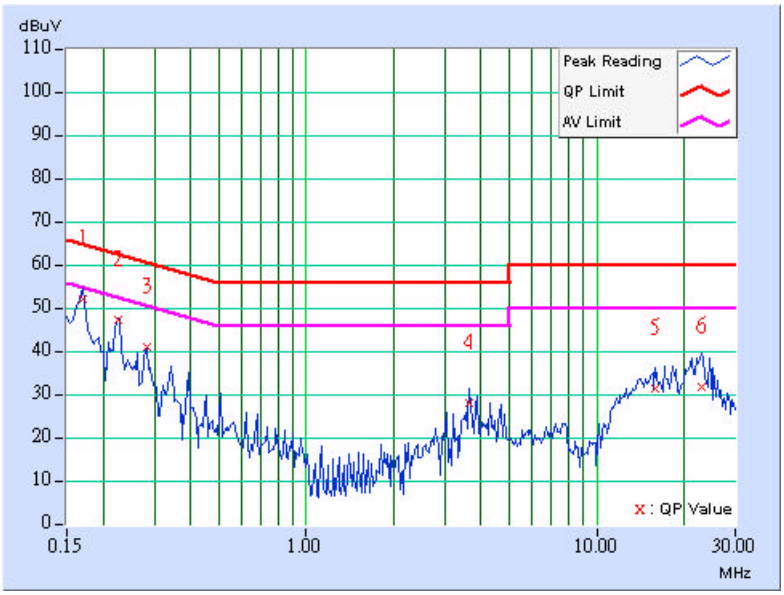
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Mini- PCI CARD	MODEL	WLL4030
MODE	Channel 6	6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	23deg. C, 65%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	51.34	-	51.44	-	64.98	54.98	-13.54	-
2	0.224	0.10	46.23	-	46.33	-	62.66	52.66	-16.33	-
3	0.283	0.11	39.94	-	40.05	-	60.73	50.73	-20.69	-
4	3.656	0.30	27.12	-	27.42	-	56.00	46.00	-28.58	-
5	15.984	0.74	30.60	-	31.34	-	60.00	50.00	-28.66	-
6	23.016	1.06	30.75	-	31.81	-	60.00	50.00	-28.19	-

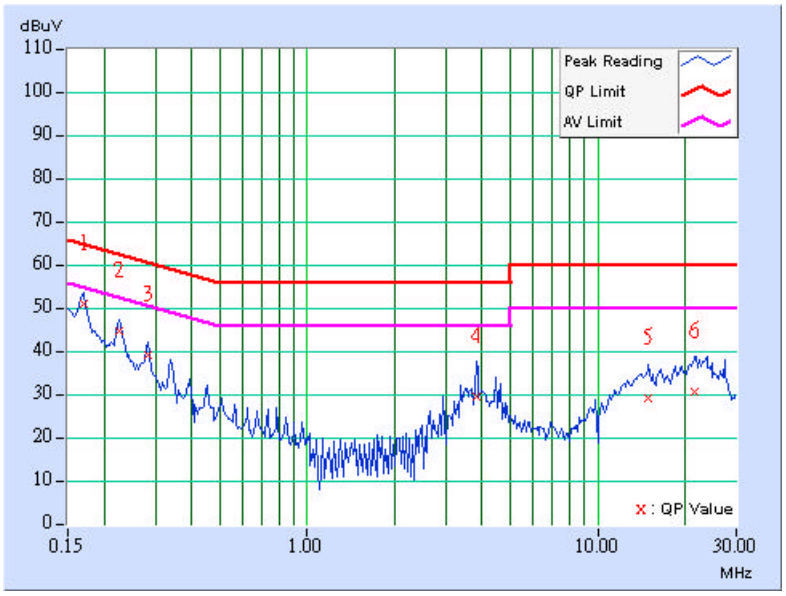
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Mini- PCI CARD	MODEL	WLL4030
MODE	Channel 6	6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	PHASE	Neutral (N)
ENVIRONMENTAL CONDITIONS	23deg. C, 65%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	50.60	-	50.70	-	64.98	54.98	-14.29	-
2	0.224	0.10	44.30	-	44.40	-	62.66	52.66	-18.26	-
3	0.283	0.11	38.46	-	38.57	-	60.73	50.73	-22.17	-
4	3.832	0.30	29.11	-	29.41	-	56.00	46.00	-26.59	-
5	14.961	0.56	28.66	-	29.22	-	60.00	50.00	-30.78	-
6	21.605	0.67	30.05	-	30.72	-	60.00	50.00	-29.28	-

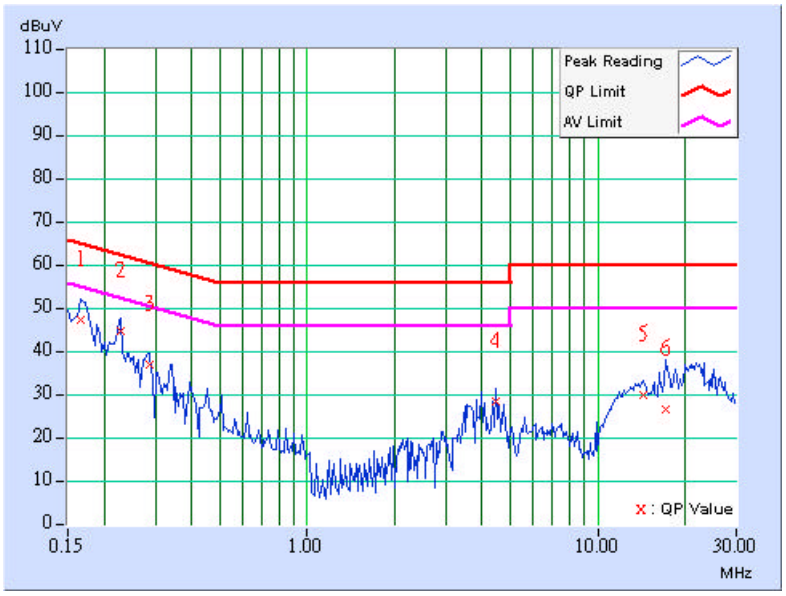
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Mini- PCI CARD	MODEL	WLL4030
MODE	Channel 11	6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	23deg. C, 65%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	0.166	0.10	46.75	-	46.85	-	65.18	55.18	-18.32	-
2	0.228	0.10	44.04	-	44.14	-	62.52	52.52	-18.38	-
3	0.287	0.11	36.19	-	36.30	-	60.62	50.62	-24.32	-
4	4.465	0.33	27.78	-	28.11	-	56.00	46.00	-27.89	-
5	14.371	0.68	29.19	-	29.87	-	60.00	50.00	-30.13	-
6	17.180	0.80	25.85	-	26.65	-	60.00	50.00	-33.35	-

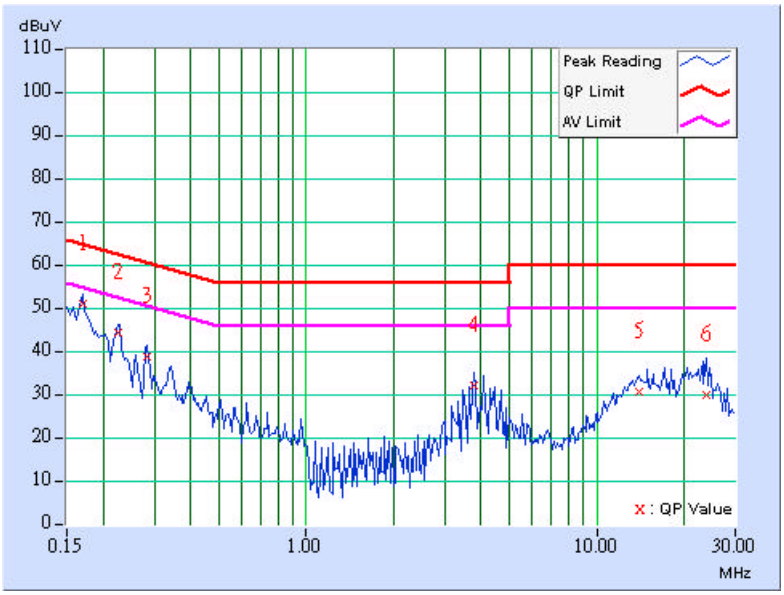
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Mini- PCI CARD	**MODEL**	WLL4030
MODE	Channel 11	**6dB BANDWIDTH**	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**PHASE**	Neutral (N)
ENVIRONMENTAL CONDITIONS	23deg. C, 65%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	50.34	-	50.44	-	64.98	54.98	-14.55	-
2	0.224	0.10	43.73	-	43.83	-	62.66	52.66	-18.83	-
3	0.283	0.11	38.20	-	38.31	-	60.73	50.73	-22.43	-
4	3.785	0.30	31.48	-	31.78	-	56.00	46.00	-24.22	-
5	14.059	0.55	30.00	-	30.55	-	60.00	50.00	-29.45	-
6	23.746	0.69	29.30	-	29.99	-	60.00	50.00	-30.01	-

REMARKS: 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
Test Receiver ROHDE & SCHWARZ	ESI7	100033	Jun. 08, 2005
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100040	Jun. 03, 2005
BILOG Antenna SCHWARZBECK	VULB9168	9168-153	Feb. 03, 2005
HORN Antenna SCHWARZBECK	9120D	9120D-408	Feb. 03, 2005
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA 9170243	Feb. 23, 2005
Preamplifier Agilent	8447D	2944A10633	Nov. 09, 2005
Preamplifier Agilent	8449B	3008A01964	Nov. 06, 2005
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	218183/4	Mar. 05, 2005
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	218195/4	Mar. 05, 2005
Software ADT.	ADT_Radiated_V5.14	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA
Antenna Tower Controller inn-co GmbH	CO2000	017303	NA
Turn Table ADT.	TT100.	TT93021703	NA
Turn Table Controller ADT.	SC100.	SC93021703	NA

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

2. The test was performed in HwaYa Chamber 2.

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

4. The IC Site Registration No. is IC4924-3.

4.2.3 TEST PROCEDURES

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. 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 the quasi-peak method or average method as specified and then reported in Data sheet peak mode and QP mode.

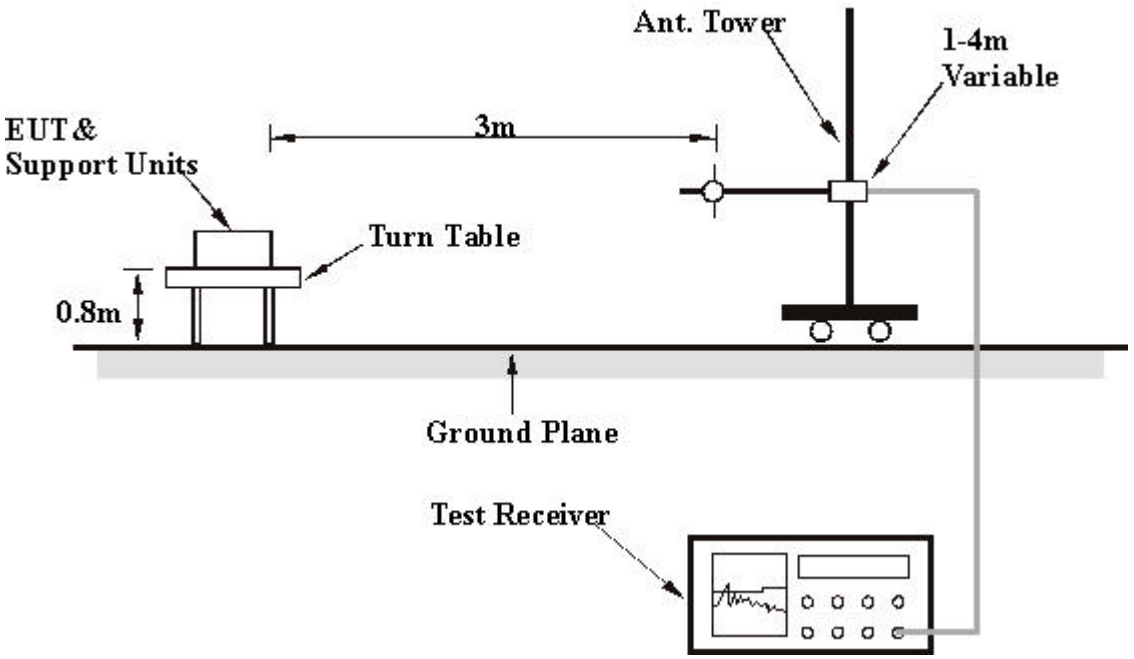
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 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

EUT	Mini- PCI CARD	**MODEL**	WLL4030
MODE	Channel 11	**FREQUENCY RANGE**	Below 1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH, 991hPa	**TESTED BY**	Leo Hung

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	173.85	38.53 QP	43.50	-4.97	2.50 H	40	25.00	13.53
2	232.16	39.46 QP	46.00	-6.54	1.75 H	136	26.72	12.74
3	397.39	39.74 QP	46.00	-6.26	2.50 H	208	22.84	16.90
4	500.42	35.58 QP	46.00	-10.42	1.50 H	40	16.86	18.72
5	665.65	42.79 QP	46.00	-3.21	1.00 H	46	20.67	22.12
6	**795.89**	**44.69 QP**	**46.00**	**-1.31**	**1.00 H**	**52**	**20.93**	**23.76**

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	98.04	31.47 QP	43.50	-12.03	1.50 V	310	20.45	11.02
2	397.39	34.11 QP	46.00	-11.89	1.25 V	172	17.21	16.90
3	496.53	34.81 QP	46.00	-11.19	1.00 V	100	16.14	18.67
4	531.52	39.97 QP	46.00	-6.03	1.00 V	115	20.57	19.40
5	663.71	43.56 QP	46.00	-2.44	1.00 V	307	21.47	22.10
6	797.84	40.81 QP	46.00	-5.19	1.25 V	262	17.04	23.77

REMARKS: 1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
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	Mini- PCI CARD	**MODEL**	WLL4030
CHANNEL	Channel 1	**FREQUENCY RANGE**	1 ~ 25GHz
MODE	CCK		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH, 991hPa	**TESTED BY**: Leo Hung	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	56.24 PK	74.00	-17.76	1.00 H	219	24.63	31.61
1	2390.00	48.93 AV	54.00	-5.07	1.00 H	219	17.32	31.61
2	*2412.00	108.62 PK			1.00 H	219	76.92	31.70
2	*2412.00	100.64 AV			1.00 H	219	68.94	31.70
3	2688.00	41.76 PK	74.00	-32.24	1.00 H	240	9.06	32.70
3	2688.00	32.04 AV	54.00	-21.96	1.00 H	240	-0.66	32.70
4	4824.00	48.46 PK	74.00	-25.54	1.19 H	112	10.88	37.58
4	4824.00	37.65 AV	54.00	-16.35	1.19 H	112	0.07	37.58

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	48.40 PK	74.00	-25.60	1.30 V	342	16.79	31.61
1	2390.00	40.90 AV	54.00	-13.10	1.30 V	342	9.29	31.61
2	*2412.00	100.78 PK			1.30 V	342	69.08	31.70
2	*2412.00	93.28 AV			1.30 V	342	61.58	31.70
3	2688.00	40.69 PK	74.00	-33.31	1.13 V	360	7.99	32.70
3	2688.00	29.51 AV	54.00	-24.49	1.13 V	360	-3.19	32.70
4	4874.00	48.29 PK	74.00	-25.71	1.02 V	11	10.63	37.66
4	4874.00	40.76 AV	54.00	-13.24	1.02 V	11	3.10	37.66

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

EUT	Mini- PCI CARD	**MODEL**	WLL4030
CHANNEL	Channel 6	**FREQUENCY RANGE**	1 ~ 25GHz
MODE	CCK		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH, 991hPa	**TESTED BY**: Leo Hung	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	109.47 PK			1.00 H	221	77.62	31.85
1	*2437.00	101.14 AV			1.00 H	221	69.29	31.85
2	2688.00	41.68 PK	74.00	-32.32	1.13 H	315	8.98	32.70
2	2688.00	29.66 AV	54.00	-24.34	1.13 H	315	-3.04	32.70
3	4874.00	52.54 PK	74.00	-21.46	1.13 H	315	14.88	37.66
3	4874.00	45.97 AV	54.00	-8.03	1.13 H	315	8.31	37.66

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	100.74 PK			1.10 V	322	68.89	31.85
1	*2437.00	93.37 AV			1.10 V	322	61.52	31.85
2	2688.00	38.22 PK	74.00	-35.78	1.00 V	211	5.52	32.70
2	2688.00	28.11 AV	54.00	-25.89	1.00 V	211	-4.59	32.70
3	4874.00	50.21 PK	74.00	-23.79	1.02 V	112	12.55	37.66
3	4874.00	44.20 AV	54.00	-9.80	1.02 V	112	6.54	37.66

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

EUT	Mini- PCI CARD	**MODEL**	WLL4030
CHANNEL	Channel 11	**FREQUENCY RANGE**	1 ~ 25GHz
MODE	CCK		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH, 991hPa	**TESTED BY**: Leo Hung	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	108.75 PK			1.00 H	221	76.75	32.00
1	*2462.00	100.37 AV			1.00 H	221	68.37	32.00
2	2483.50	57.04 PK	74.00	-16.96	1.00 H	221	24.91	32.13
2	2483.50	48.66 AV	54.00	-5.34	1.00 H	221	16.53	32.13
3	2688.00	44.62 PK	74.00	-29.38	1.10 H	260	11.92	32.70
3	2688.00	37.43 AV	54.00	-16.57	1.10 H	260	4.73	32.70
4	4924.00	50.11 PK	74.00	-23.89	1.06 H	348	12.37	37.74
4	4924.00	35.88 AV	54.00	-18.12	1.06 H	348	-1.86	37.74

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	99.96 PK			1.22 V	314	67.96	32.00
1	*2462.00	92.61 AV			1.22 V	314	60.61	32.00
2	2483.50	48.25 PK	74.00	-25.75	1.22 V	314	16.12	32.13
2	2483.50	40.93 AV	54.00	-13.07	1.22 V	314	8.80	32.13
3	2688.00	40.17 PK	74.00	-33.83	1.00 V	255	7.47	32.70
3	2688.00	29.22 AV	54.00	-24.78	1.00 V	255	-3.48	32.70
4	4924.00	54.99 PK	74.00	-19.01	1.01 V	360	17.24	37.74
4	4924.00	47.75 AV	54.00	-6.25	1.01 V	360	10.00	37.74

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

EUT	Mini- PCI CARD	**MODEL**	WLL4030
CHANNEL	Channel 1	**FREQUENCY RANGE**	1 ~ 25GHz
MODE	OFDM		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH, 991hPa	**TESTED BY**: Leo Hung	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	62.10 PK	74.00	-11.90	1.00 H	217	30.49	31.61
1	2390.00	50.65 AV	54.00	-3.35	1.00 H	217	19.04	31.61
2	*2412.00	108.68 PK			1.00 H	217	76.98	31.70
2	*2412.00	97.23 AV			1.00 H	217	65.53	31.70
3	2688.00	42.21 PK	74.00	-31.79	1.00 H	238	9.51	32.70
3	2688.00	32.30 AV	54.00	-21.70	1.00 H	238	-0.40	32.70
4	4824.00	46.64 PK	74.00	-27.36	1.05 H	110	9.06	37.58
4	4824.00	34.65 AV	54.00	-19.35	1.05 H	110	-2.93	37.58

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	51.51 PK	74.00	-22.49	1.09 V	140	19.90	31.61
1	2390.00	40.90 AV	54.00	-13.10	1.09 V	140	9.29	31.61
2	*2412.00	98.17 PK			1.09 V	140	66.47	31.70
2	*2412.00	87.56 AV			1.09 V	140	55.86	31.70
3	2688.00	42.09 PK	74.00	-31.91	1.16 V	359	9.39	32.70
3	2688.00	29.64 AV	54.00	-24.36	1.16 V	359	-3.06	32.70
4	4824.00	47.91 PK	74.00	-26.09	1.09 V	140	10.33	37.58
4	4824.00	35.06 AV	54.00	-18.94	1.09 V	140	-2.52	37.58

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

EUT	Mini- PCI CARD	**MODEL**	WLL4030
CHANNEL	Channel 6	**FREQUENCY RANGE**	1 ~ 25GHz
MODE	OFDM		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH, 991hPa	**TESTED BY**: Leo Hung	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	106.72 PK			1.00 H	225	74.87	31.85
1	*2437.00	96.71 AV			1.00 H	225	64.86	31.85
2	2688.00	44.52 PK	74.00	-29.48	1.11 H	121	11.82	32.70
2	2688.00	38.02 AV	54.00	-15.98	1.11 H	121	5.32	32.70
3	4874.00	45.77 PK	74.00	-28.23	1.15 H	331	8.11	37.66
3	4874.00	32.82 AV	54.00	-21.18	1.15 H	331	-4.84	37.66

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	97.24 PK			1.24 V	321	65.39	31.85
1	*2437.00	87.03 AV			1.24 V	321	55.18	31.85
2	2688.00	43.55 PK	74.00	-30.45	1.24 V	321	10.85	32.70
2	2688.00	31.22 AV	54.00	-22.78	1.24 V	321	-1.48	32.70
3	4874.00	48.55 PK	74.00	-25.45	1.00 V	211	10.89	37.66
3	4874.00	35.54 AV	54.00	-18.46	1.00 V	211	-2.12	37.66

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

EUT	Mini- PCI CARD	**MODEL**	WLL4030
CHANNEL	Channel 11	**FREQUENCY RANGE**	1 ~ 25GHz
MODE	OFDM		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH, 991hPa	**TESTED BY**: Leo Hung	

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	2360.00	51.47 PK	74.00	-22.53	1.00 H	122	19.94	31.53
1	2360.00	40.88 AV	54.00	-13.12	1.00 H	122	9.35	31.53
2	*2462.00	107.01 PK			1.00 H	223	75.01	32.00
2	*2462.00	97.03 AV			1.00 H	223	65.03	32.00
3	2483.50	60.43 PK	74.00	-13.57	1.00 H	223	28.30	32.13
3	2483.50	50.45 AV	54.00	-3.55	1.00 H	223	18.32	32.13
4	2688.00	44.07 PK	74.00	-29.93	1.03 H	238	11.37	32.70
4	2688.00	38.69 AV	54.00	-15.31	1.03 H	238	5.99	32.70
5	4924.00	47.17 PK	74.00	-26.83	1.06 H	89	9.43	37.74
5	4924.00	33.89 AV	54.00	-20.11	1.06 H	89	-3.85	37.74

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	2360.00	45.54 PK	74.00	-28.46	1.05 V	358	14.01	31.53
1	2360.00	34.53 AV	54.00	-19.47	1.05 V	358	3.00	31.53
2	*2462.00	97.71 PK			1.00 V	221	65.71	32.00
2	*2462.00	85.83 AV			1.00 V	221	53.83	32.00
3	2483.50	51.13 PK	74.00	-22.87	1.00 V	221	19.00	32.13
3	2483.50	39.25 AV	54.00	-14.75	1.00 V	221	7.12	32.13
4	2688.00	42.05 PK	74.00	-31.95	1.05 V	358	9.35	32.70
4	2688.00	33.25 AV	54.00	-20.75	1.05 V	358	0.55	32.70
5	4924.00	54.57 PK	74.00	-19.43	1.23 V	256	16.82	37.74
5	4924.00	40.60 AV	54.00	-13.40	1.23 V	256	2.85	37.74

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

4.3 6dB BANDWIDTH MEASUREMENT

4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SPECTRUM ANALYZER	FSEK 30	100049	Aug. 12, 2005

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

4.3.4 DEVIATION FROM TEST STANDARD

No deviation

4.3.5 TEST SETUP

4.3.6 EUT OPERATING CONDITIONS

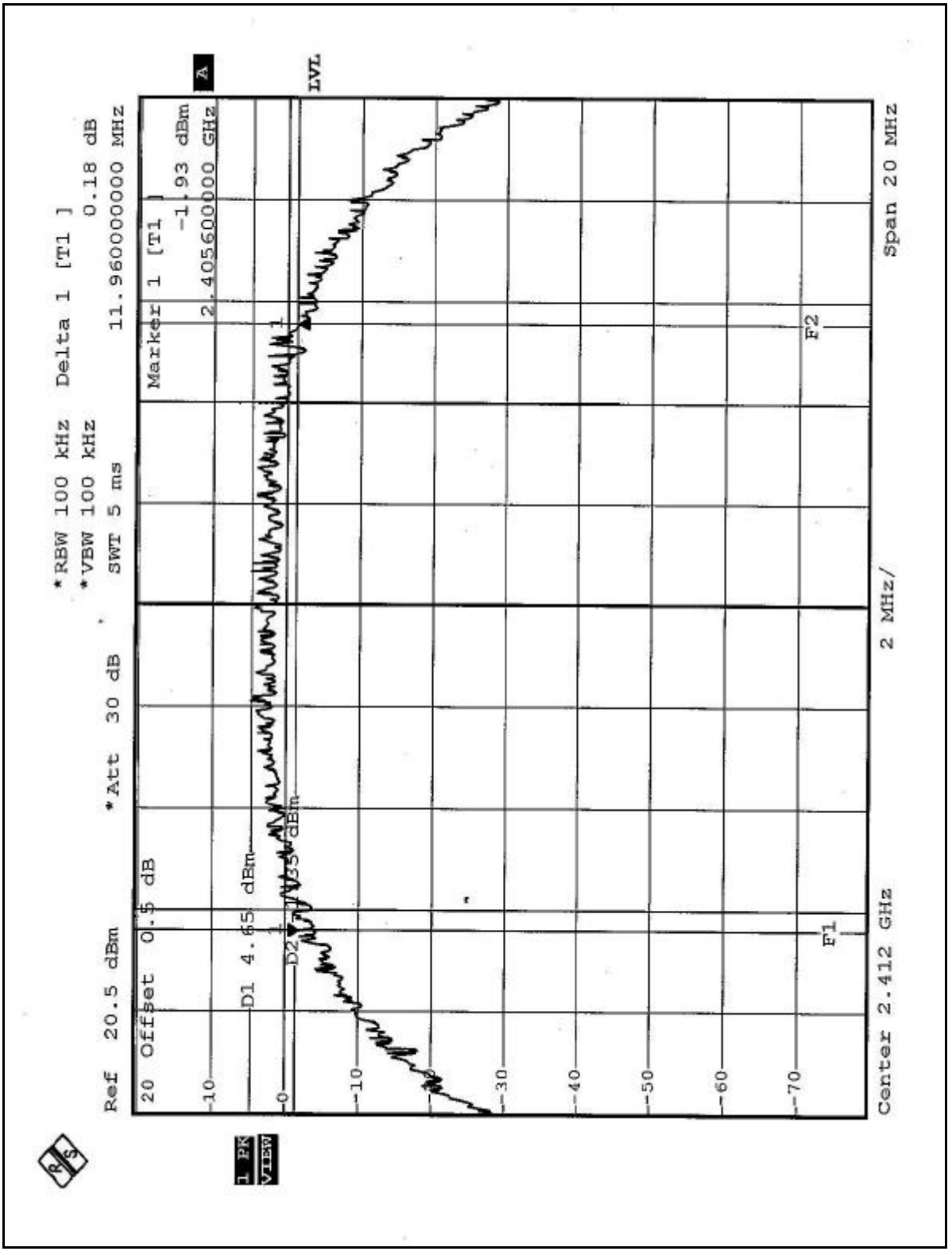
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.3.7 TEST RESULTS

EUT	Mini- PCI CARD	**MODEL**	WLL4030
MODE	CCK	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH, 991hPa	**TESTED BY**	Leo Hung

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	11.96	0.5	PASS
6	2437	11.80	0.5	PASS
11	2462	11.76	0.5	PASS

CH1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*VBW 100 kHz
SWT 5 ms
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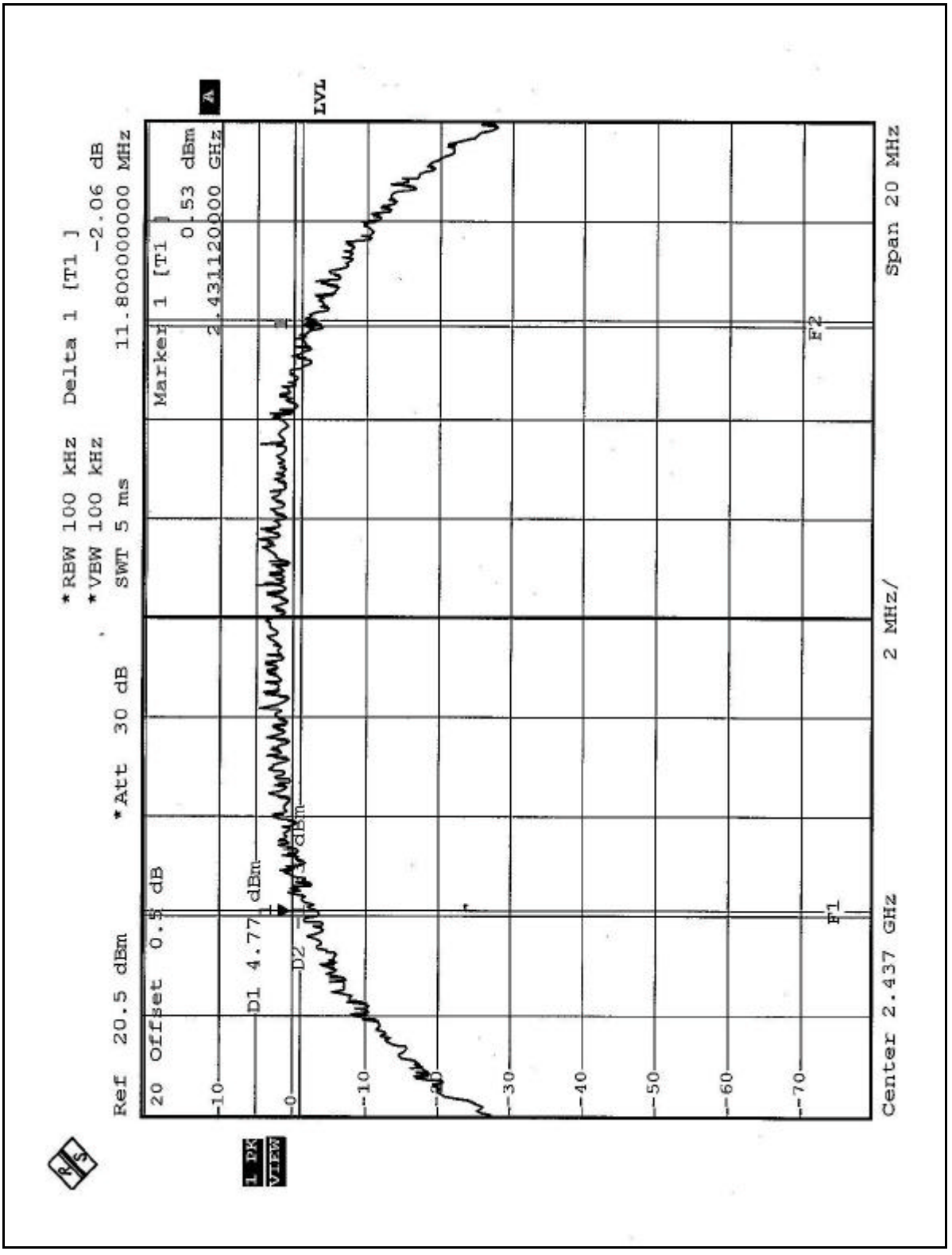
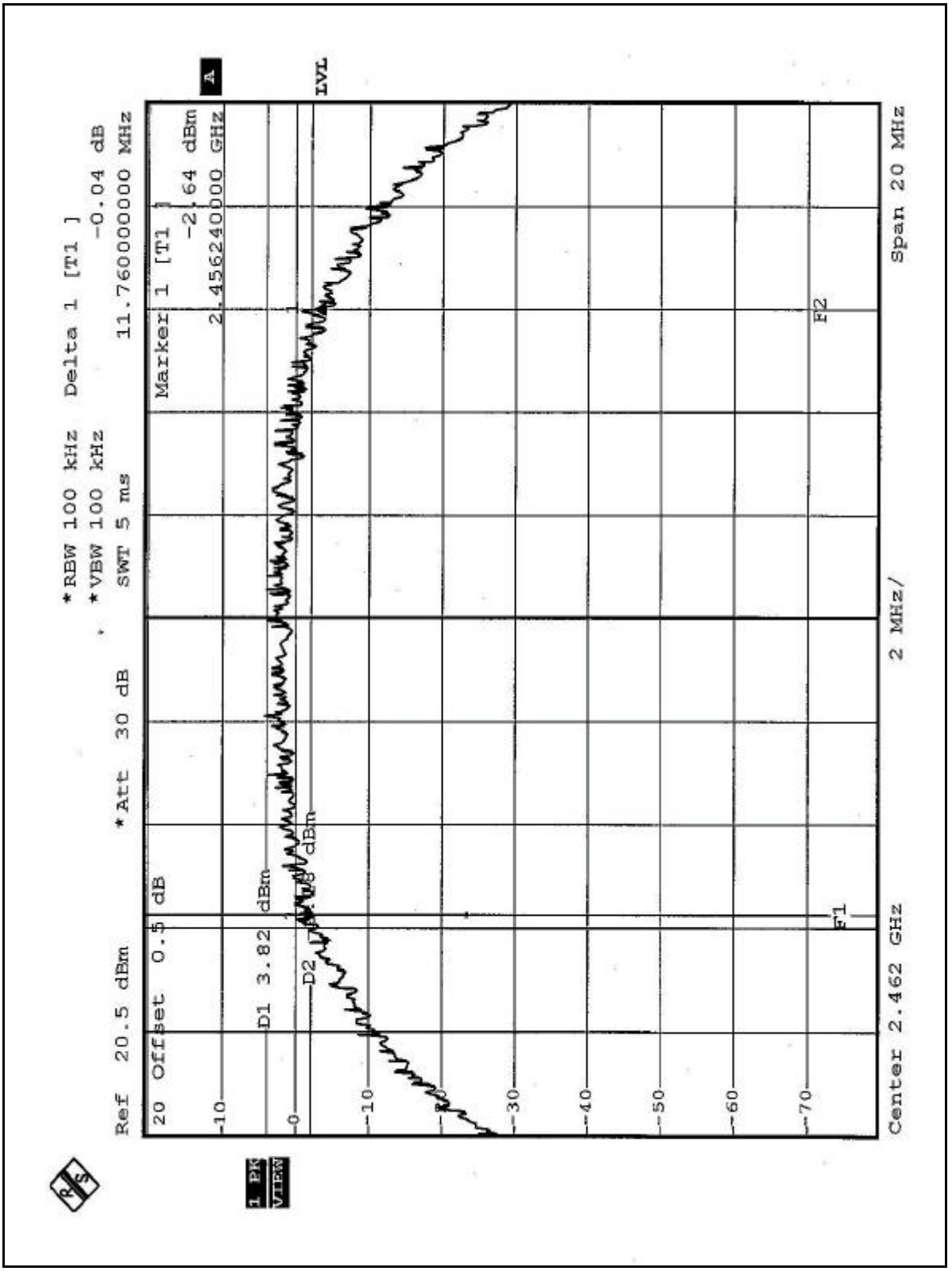
Marker 1 [T1]
-1.93 dBm
2.405600000 GHz
Ref 20.5 dBm
20 Offset 0.5 dB
*Att 30 dB
D1 4.65 dBm
D2 dBm
Center 2.412 GHz
2 MHz/
Span 20 MHz
F1
F2
1 PK VIEW

CH6


*RBW 100 kHz
*VBW 100 kHz
SWT 5 ms
Delta 1 [T1]
-2.06 dB
11.800000000 MHz
Marker 1 [T1]
0.53 dBm
2.431120000 GHz
A
LVL
Ref 20.5 dBm
20 Offset 0.5 dB
*Att 30 dB
D1 4.77 dBm
D2 dBm
F1
F2
Center 2.437 GHz
2 MHz/
Span 20 MHz
1 PK
VIEW

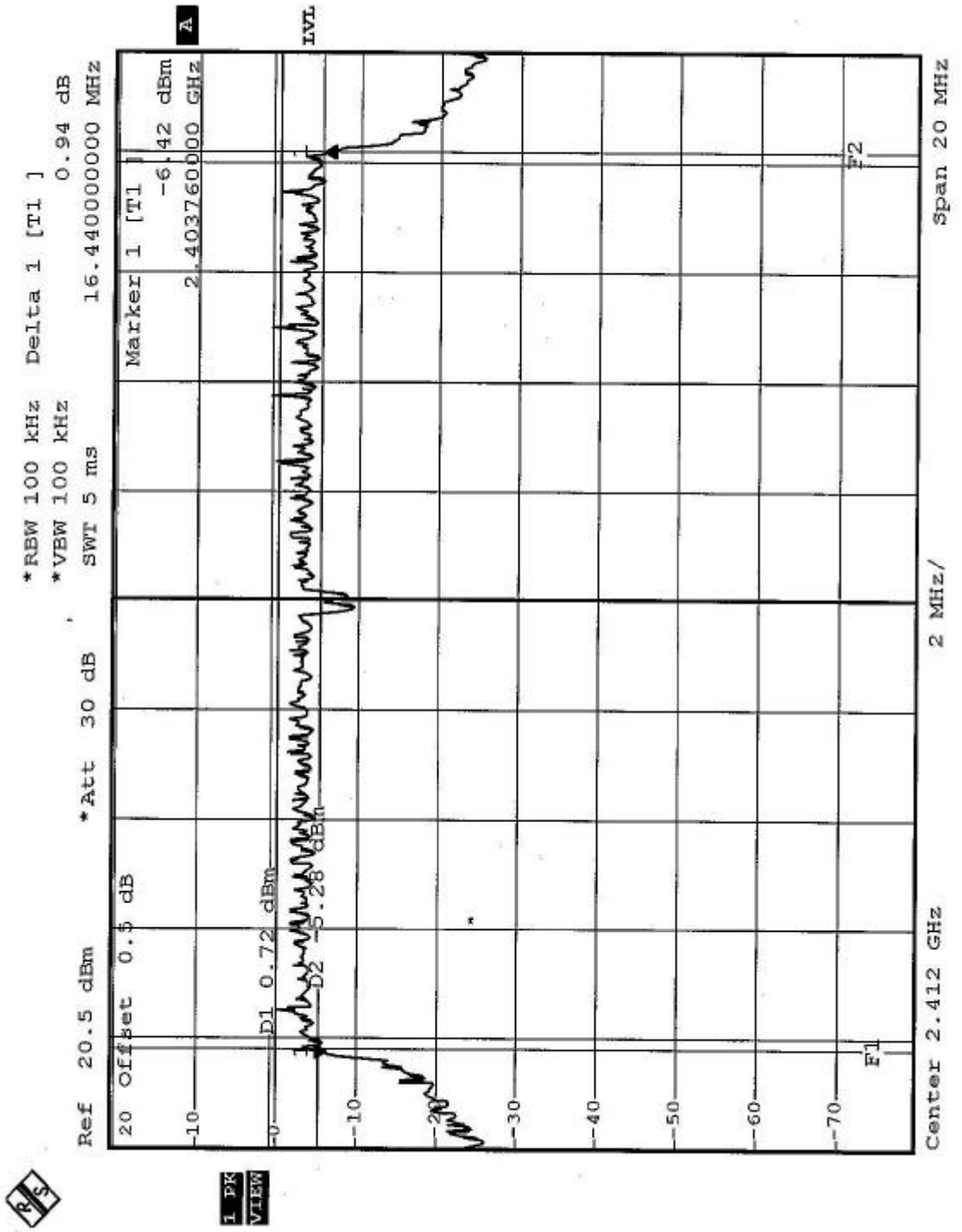
CH11


RBW 100 kHz
VBW 100 kHz
SWT 5 ms
Delta 1 [T1]
-0.04 dB
11.760000000 MHz
Marker 1 [T1]
-2.64 dBm
2.456240000 GHz
Ref 20.5 dBm
Offset 0.5 dB
Att 30 dB
D1 3.82 dBm
D2 dBm
Center 2.462 GHz
2 MHz/
Span 20 MHz
F1
F2
1 PK
VIEW

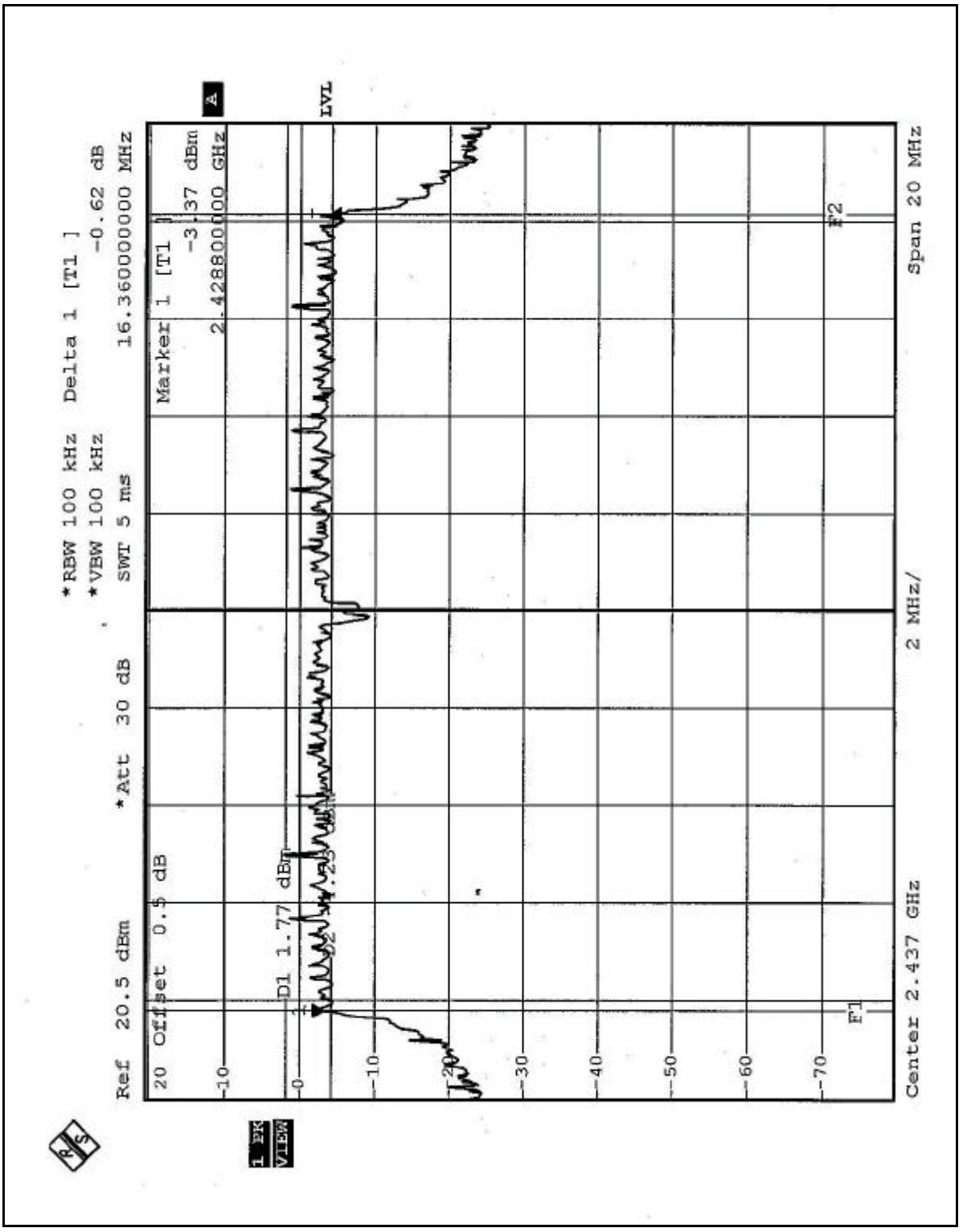
EUT	Mini- PCI CARD	**MODEL**	WLL4030
MODE	OFDM	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH, 991hPa	**TESTED BY**	Leo Hung

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	16.44	0.5	PASS
6	2437	16.36	0.5	PASS
11	2462	16.48	0.5	PASS

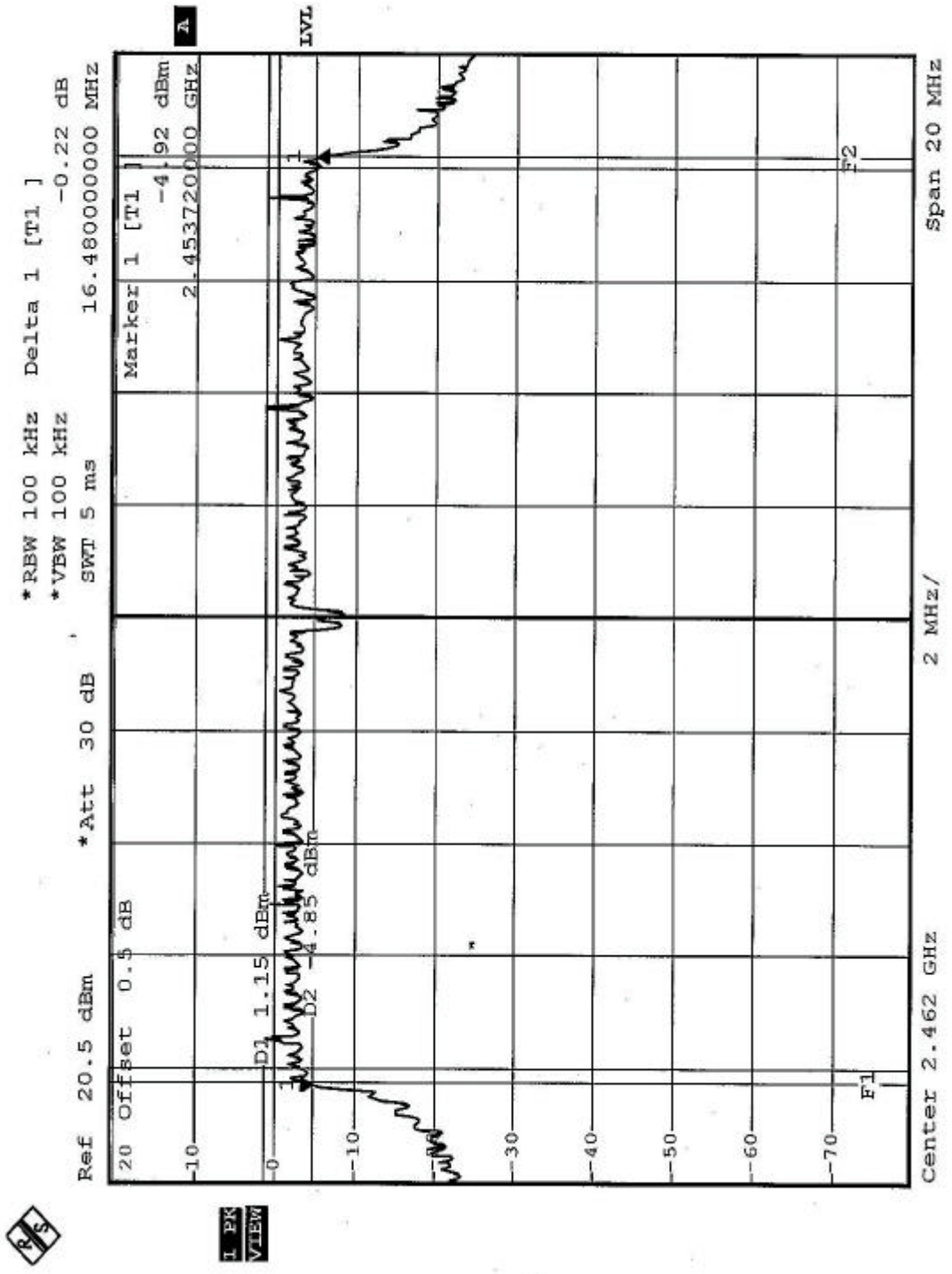
CH1


RBW 100 kHz
VBW 100 kHz
SWT 5 ms
Delta 1 [T1]
0.94 dB
16.440000000 MHz
Marker 1 [T1]
-6.42 dBm
2.403760000 GHz
Ref 20.5 dBm
Offset 0.5 dB
Att 30 dB
D1 0.72 dBm
D2 -5.28 dBm
Center 2.412 GHz
2 MHz/
Span 20 MHz
F1
F2
1 PK
VIEW

CH6


Ref 20.5 dBm
20 Offset 0.5 dB
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 5 ms
Delta 1 [T1]
-0.62 dB
16.360000000 MHz
Marker 1 [T1]
-3.37 dBm
2.428800000 GHz
D1 1.77 dBm
Center 2.437 GHz
2 MHz/
Span 20 MHz
1 PK
VIEW

CH11


Ref 20.5 dBm
Offset 0.5 dB
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 5 ms
Delta 1 [T1]
-0.22 dB
16.48000000 MHz
Marker 1 [T1]
-4.92 dBm
2.45372000 GHz
D1 1.15 dBm
D2 -4.85 dBm
Center 2.462 GHz
2 MHz/
Span 20 MHz
1 PK VIEW

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	Aug. 12, 2005
AGILENT SIGNAL GENERATOR	E8257C	MY43320668	Dec. 31, 2004
TEKTRONIX OSCILLOSCOPE	TDS 1012	C019167	Feb. 01, 2005
NARDA DETECTOR	4503A	FSCM99899	NA

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

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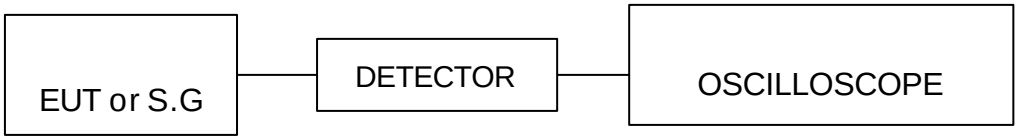
4.4.3 TEST PROCEDURES

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	Mini- PCI CARD	MODEL	WLL4030
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	24deg.C, 64%RH, 991hPa
MODE	CCK	TESTED BY	Leo Hung

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	40.664	16.09	30	PASS
6	2437	40.272	16.05	30	PASS
11	2462	40.272	16.05	30	PASS

EUT	Mini- PCI CARD	MODEL	WLL4030
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	24deg.C, 64%RH, 991hPa
MODE	OFDM	TESTED BY	Leo Hung

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	40.272	16.05	30	PASS
6	2437	40.551	16.08	30	PASS
11	2462	40.365	16.06	30	PASS

4.5 POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

4.5.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSEK30	100049	Aug. 12, 2005

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

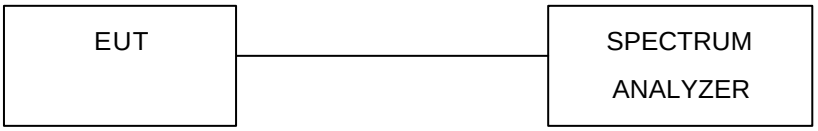
4.5.3 TEST PROCEDURE

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 3kHz RBW and 30kHz 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 CONDITION

Same as Item 4.3.6