

# **FCC TEST REPORT**

REPORT NO.: RF900606R01 MODEL NO.: IWE1000A RECEIVED: June 6, 2001

**TESTED:** June 18 ~ June 20, 2001

**APPLICANT:** Interepoch Technology Inc.

ADDRESS: 7F No.3 Alley 6 Lane 235 Pao Chiao Rd., Hsin-Tien

City, Taipei Hsien, Taiwan, R.O.C.

**ISSUED BY:** Advance Data Technology Corporation

LAB LOCATION: No.47 14th Ling, Chia Pau Tsuen, Linkou

Hsiang, Taipei, Taiwan, R.O.C.

This test report consists of 49 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.



Lab Code: 200102-0

# FCC ID: PRL-IWE1000



# **Table of Contents**

1 2	CERTIFICATIONSUMMARY OF TEST RESULTS	
3	GENERAL INFORMATION	
3.1	GENERAL DESCRIPTION OF EUT	
3.2	DESCRIPTION OF TEST MODES	7
3.3	GENERAL DESCRIPTION OF APPLIED STANDARDS	7
3.4	DESCRIPTION OF SUPPORT UNITS	
4	TEST TYPES AND RESULTS	
4.1	CONDUCTED EMISSION MEASUREMENT	
4.1.1	LIMITS OF CONDUCTED EMISSION MEASUREMENT	
4.1.2	TEST INSTRUMENTS	
4.1.3	TEST PROCEDURES	
4.1.4	TEST SETUP	10
4.1.5	EUT OPERATING CONDITIONS	
4.1.6	TEST RESULTS	12
4.2	RADIATED EMISSION MEASUREMENT	18
4.2.1	LIMITS OF RADIATED EMISSION MEASUREMENT	18
4.2.2	TEST INSTRUMENTS	19
4.2.3	TEST PROCEDURES	20
4.2.4	TEST SETUP	21
4.2.5	EUT OPERATING CONDITIONS	
4.2.6	TEST RESULTS	22
4.3	6DB BANDWIDTH MEASUREMENT	27
4.3.1	LIMITS OF 6dB BANDWIDTH MEASUREMENT	27
4.3.2	TEST INSTRUMENTS	27
4.3.3	TEST PROCEDURE	28
4.3.4	TEST SETUP	28
4.3.5	EUT OPERATING CONDITIONS	28
4.3.6	TEST RESULTS	29
4.4	MAXIMUM PEAK OUTPUT POWER	33
4.4.1	LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT	33
4.4.2	TEST INSTRUMENTS	33
4.4.3	TEST PROCEDURES	34
4.4.4	TEST SETUP	34
4.4.5	EUT OPERATING CONDITIONS	34

# FCC ID: PRL-IWE1000



4.4.6	TEST RESULTS	35
4.5	POWER SPECTRAL DENSITY MEASUREMENT	36
4.5.1	LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT	36
4.5.2	TEST INSTRUMENTS	36
4.5.3	TEST PROCEDURE	37
4.5.4	TEST SETUP	37
4.5.5	EUT OPERATING CONDITIONS	37
4.5.6	TEST RESULTS	38
4.6	BAND EDGES MEASUREMENT	42
4.6.1	LIMITS OF BAND EDGES MEASUREMENT	
4.6.2	TEST INSTRUMENTS	42
4.6.3	TEST PROCEDURE	42
4.6.4	EUT OPERATING CONDITION	43
4.6.5	TEST RESULTS	43
4.7	ANTENNA REQUIREMENT	46
4.7.1	STANDARD APPLICABLE	46
4.7.2	ANTENNA CONNECTED CONSTRUCTION	
5	PHOTOGRAPHS OF THE TEST CONFIGURATION	
6	INFORMATION ON THE TESTING LABORATORIES	49



# 1 CERTIFICATION

**PRODUCT:** Wireless Access Point

**BRAND NAME**: InterEpoch **MODEL NO**.: IWE1000A

**APPLICANT:** Interepoch Technology Inc.

**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 June 18, 2001 to June 20, 2001. The test record, data evaluation and Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions herein specified.

Gary Chang, DATE: July 6, 200)

CHECKED BY: July 6, 200

Dr. Alan Lane
Manager



# **2 SUMMARY OF TEST RESULTS**

The EUT has been tested according to the following specifications:

APPLIED STANDARD: 47 CFR Part 15, Subpart C							
Standard Section	Test Type and Limit	Result	REMARK				
	AC Power Conducted Emission		Meet the requirement of limit				
15.107	Limit: 48dBuV	PASS	Minimum passing margin is –8.81dBuV at 0.55280 MHz				
15.247(a)(2)	Spectrum Bandwidth of a Direct Sequence Spread Spectrum System Limit: min. 500kHz	PASS	Meet the requirement of limit				
15.247(b)	15.247(b) Maximum Peak Output Power Limit: max. 30dBm PASS		Meet the requirement of limit				
	Transmitter Radiated Emissions		Meet the requirement of limit				
15.247(c)	Limit: Table 15.209	PASS	Minimum passing margin is –2.0dBuV at 2088.00 MHz				
15.247(d)	Power Spectral Density Limit: max. 8dBm PASS		Meet the requirement of limit				
15.247(c)	Band Edge Measurement Limit: 20 dB less than the peak value of fundamental frequency	PASS	Meet the requirement of limit				



# **3 GENERAL INFORMATION**

# 3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Wireless Access Point
MODEL NO.	IWE1000A
POWER SUPPLY	5VDC from AC Adapter
MODULATION TYPE	DSSS
RADIO TECHNOLOGY	BPSK/QPSK/CCK
TRANSFER RATE	1/2/5.5/11Mbps
FREQUENCY RANGE	2412MHz ~ 2462MHz
NUMBER OF CHANNEL	11
OUTPUT POWER	<20dBm
ANTENNA TYPE	Dipole antenna
DATA CABLE	1.5m (Shielded)
I/O PORTS	USB, RJ45
ASSOCIATED DEVICES	NA

**NOTE:** 1. For more detailed features description, please refer to the manufacturer's specifications or User's Manual.

2. The EUT was operated with an AC/DC Adapter in the following:

Product Name	AC/DC Adapter
Brand Name	KENTES
Model Name	WA15-050
Input Power	110V, 60Hz
Output Power	5VDC



#### 3.2 DESCRIPTION OF TEST MODES

Eleven channels are provided in this EUT.

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

#### NOTE:

- 1. Below 1 GHz, the channel 1, 6, and 11 were pre-tested in chamber. The channel 11, worst case, was chosen for the final test.
- 2. Above 1 GHz, the channel 1, 6, and 11 were tested individually.

#### 3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a Wireless Access Point, according to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC CFR 47 Part 15, Subpart C. (15.247) ANSI C63.4: 1992

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	IBM	TYPE2635	97-84L54	FCC DoC Approved
2	LAN Card	3 Com	3CCFE575CT-D	6ZE1316B4E	FCC DoC Approved

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA
2	NA

**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

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

#### NOTE:

- 1. The lower limit shall apply at the transition frequencies.
- 2. All emanations from a class B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

#### 4.1.2 TEST INSTRUMENTS

<b>DESCRIPTION &amp; MANUFACTURER</b>	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
*ROHDE & SCHWARZ Test	ESHS30	828109/007	July 4, 2002
Receiver	E311330	020109/007	July 4, 2002
*ROHDE & SCHWARZ Artificial	ESH3-Z5	839135/006	July 2, 2002
Mains Network (for EUT)	ESH3-23	039135/000	July 3, 2002
ROHDE & SCHWARZ	ENY41	927022/046	Nov. 29, 2004
4-wire ISN	EN 141	837032/016	Nov. 28, 2001
ROHDE & SCHWARZ	FNY22	927407/046	Dog 2 2001
2-wire ISN	EN 1 22	837497/016	Dec. 3, 2001
*EMCO-L.I.S.N. (for peripheral)	3825/2	9204-1964	July 3, 2002
*Software	Cond-V2J	NA	NA
*RF cable (JYEBAO)	RG-58A/U	Cable-C02.01	July 9, 2001
HP Terminator (For EMCO LISN)	11593A	E1-01-298	Feb. 20, 2002
HP Terminator (For EMCO LISN)	11593A	E1-01-299	Feb. 20, 2002
Shielded Room	Site 2	ADT-C02	NA
VCCI Site Registration No.	Site 2	C-240	NA

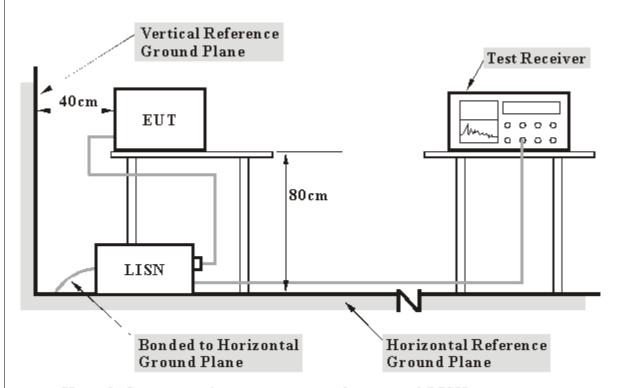
- 1. The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
- 2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
- 3. "\*" = These equipments are used for the final measurement.



#### 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 TEST SETUP



Note: 1. Support units were connected to second LISN.

2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

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



#### 4.1.5 EUT OPERATING CONDITIONS

- a. Placed the EUT on the testing table.
- b. Prepared a computer system to act as a communication partner and placed it outside of testing area.
- c. The communication partner run a test program to enable EUT under transmission/receiving condition continuously at specific channel frequency via an RJ 45 cable.
- d. The communication partner sent data to EUT by command "PIN".

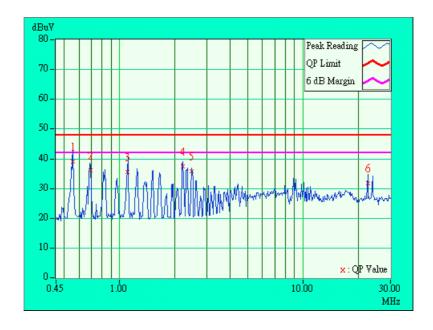


### 4.1.6 TEST RESULTS

EUT	Wireless Access Point	MODEL	IWE1000A	
MODE	Channel 1	6dB BANDWIDTH	10 kHz	
INPUT POWER	110Vac, 60 Hz	PHASE	Line (L)	
ENVIRONMENTAL 30 deg. C, 60%RH, TES		TESTED BY: Gary Chang		
CONDITIONS	1005 hPa			

No	Freq.	Corr.	Readin	g Value	Emission Level				Margin	
		Factor	[dB	(uV)]	[dB (	(uV)]	[dB (	(uV)]		(dB)
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.55520	0.20	38.97		39.17	-	48.00	-	-8.83	
2	0.69506	0.20	35.97		36.17		48.00		-11.83	
3	1.10492	0.20	35.63		35.83		48.00		-12.17	
4	2.21491	0.22	37.38		37.60		48.00		-10.40	
5	2.46935	0.25	35.82		36.07		48.00		-11.93	
6	22.57102	1.25	31.65		32.90		48.00		-15.10	

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

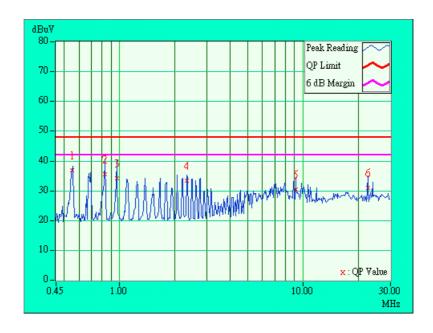




EUT	Wireless Access Point	MODEL	IWE1000A
MODE	Channel 1	6dB BANDWIDTH	10 kHz
INPUT POWER	110Vac, 60 Hz	PHASE	Neutral (N)
ENVIRONMENTAL	30 deg. C, 60%RH,	TESTED BY: Gary	Chang
CONDITIONS	1005 hPa		

No	Freq.	Corr.	Reading Value Emission Level		Limit		Margin			
		Factor	[dB	(uV)]	[dB (	(uV)]	[dB (	(uV)]	(	dB)
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.55237	0.20	36.85		37.05		48.00		-10.95	
2	0.83086	0.20	35.54		35.74		48.00		-12.26	
3	0.97103	0.20	34.18		34.38		48.00	-	-13.62	
4	2.33180	0.23	33.53		33.76		48.00		-14.24	
5	9.15293	0.57	30.47		31.04		48.00	-	-16.96	
6	22.56674	1.15	30.91		32.06		48.00	-	-15.94	

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

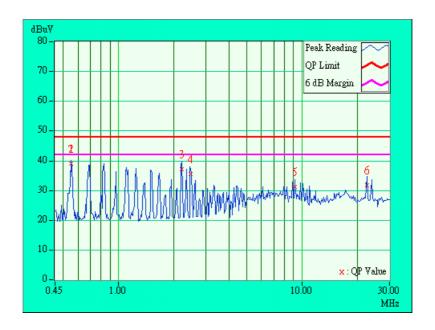




EUT	Wireless Access Point	MODEL	IWE1000A
MODE	Channel 6	6dB BANDWIDTH	10 kHz
INPUT POWER	110Vac, 60 Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	30 deg. C, 60%RH, 1005 hPa	TESTED BY: Gary Chang	

No	Freq.	Corr.	Readin	g Value	Emission Level		Limit		Margin	
		Factor	[dB	(uV)]	[dB (	(uV)]	[dB (	(uV)]	(	dB)
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.55280	0.20	38.99		39.19		48.00	-	-8.81	
2	0.55280	0.20	38.97		39.17		48.00		-8.83	
3	2.20842	0.22	37.26		37.48		48.00	-	-10.52	
4	2.47397	0.25	35.54		35.79		48.00		-12.21	
5	9.15297	0.66	31.15		31.81		48.00	-	-16.19	
6	22.56800	1.25	31.81		33.06		48.00		-14.94	

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

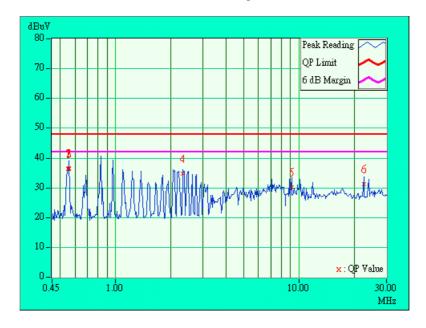




EUT	Wireless Access Point	MODEL	IWE1000A
MODE	Channel 6	6dB BANDWIDTH	10 kHz
INPUT POWER	110Vac, 60 Hz	PHASE	Neutral (N)
ENVIRONMENTAL	30 deg. C, 60%RH,	TESTED BY: Gary	Chang
CONDITIONS	1005 hPa		

No	Freq.	Corr.	Readin	Reading Value Emission Level		Limit		Margin		
		Factor	[dB	(uV)]	[dB	(uV)]	[dB (	(uV)]	(	dB)
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.55293	0.20	36.45		36.65		48.00		-11.35	
2	0.55420	0.20	36.69		36.89		48.00		-11.11	
3	0.55547	0.20	36.27		36.47		48.00	-	-11.53	
4	2.33231	0.23	34.75		34.98		48.00		-13.02	
5	9.15800	0.57	30.24		30.81		48.00	-	-17.19	
6	22.57100	1.15	31.25		32.40		48.00		-15.60	

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

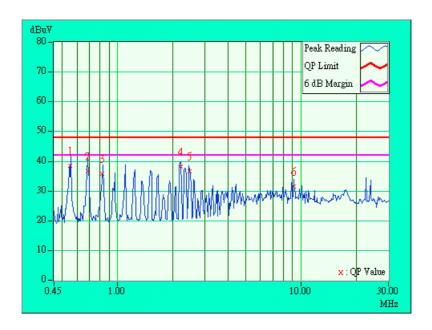




EUT	Wireless Access Point	MODEL	IWE1000A
MODE	Channel 11	6dB BANDWIDTH	10 kHz
INPUT POWER	110Vac, 60 Hz	PHASE	Line (L)
ENVIRONMENTAL	30 deg. C, 60%RH,	TESTED BY: Gary	Chang
CONDITIONS	1005 hPa		

No	Freq.	Corr.	Reading Value		Emissic	n Level	Lir	nit	M	argin
		Factor	[dB (	(uV)]	[dB (	(uV)]	[dB (	[uV)]	(	dB)
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.55036	0.20	38.61		38.81		48.00		-9.19	
2	0.69033	0.20	36.66		36.86		48.00		-11.14	
3	0.82691	0.20	35.78		35.98		48.00		-12.02	
4	2.20536	0.22	38.38		38.60		48.00		-9.40	
5	2.46107	0.25	36.53		36.78		48.00		-11.22	
6	9.15452	0.66	31.53		32.19		48.00		-15.81	

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

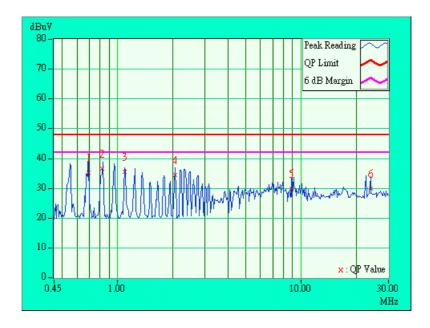




EUT	Wireless Access Point	MODEL	IWE1000A
MODE	Channel 11	6dB BANDWIDTH	10 kHz
INPUT POWER	110Vac, 60 Hz	PHASE	Netural (N)
ENVIRONMENTAL CONDITIONS	30 deg. C, 60%RH, 1005 hPa	TESTED BY: Gary Chang	

No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (	(uV)]	[dB (	(uV)]	[dB (	(uV)]	(	dB)
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.69046	0.20	35.21	I	35.41		48.00	-	-12.59	
2	0.82673	0.20	36.75		36.95		48.00		-11.05	
3	1.09628	0.20	35.69	I	35.89		48.00	-	-12.11	
4	2.05663	0.21	34.57		34.78		48.00		-13.22	
5	8.84892	0.56	30.02		30.58		48.00		-17.42	
6	24.02000	1.24	30.00		31.24		48.00		-16.76	

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





#### 4.2 RADIATED EMISSION MEASUREMENT

### 4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

Field strength limits are at the distance of 3 meters, emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

Frequencies	Field Strength of Fundamental					
(MHz)	uV/m	dBuV/m				
30-88	100	40.0				
88-216	150	43.5				
216-960	200	46.0				
Above 960	500	54.0				

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



# 4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL		
*HP Spectrum Analyzer	8590L	3544A01176	May 7, 2002		
*HP Preamplifier	8447D	2944A08485	Nov. 4, 2001		
* HP Preamplifier	8449B	3008A01201	Dec. 13, 2001		
* ROHDE & SCHWARZ TEST RECEIVER	ESMI	839013/007 839379/002	Jan. 25, 2002		
SCHWARZBECK Tunable Dipole Antenna	VHA 9103 UHA 9105	E101051 E101055	Nov. 23, 2001		
* CHASE BILOG Antenna	CBL6112A	2221	Aug. 4, 2001		
* EMCO Turn Table	1060	1115	NA		
* SHOSHIN Tower	AP-4701	A6Y005	NA		
* Software	AS61D	NA	NA		
* ANRITSU RF Switches	MP59B	M35046	Aug. 4, 2001		
* TIMES RF cable	LMR-600	CABLE-ST5-01	Aug. 4, 2001		
* Antenna (Horn)	BBHA9120-D	D130	July 10, 2001		
Open Field Test Site	Site 5	ADT-R05	July 28, 2001		
Site Registration No.	FCC: 90422 Canada IC: IC 3789 VCCI : R-1039				

- 1. The measurement uncertainty is less than +/- 3.0dB, which is calculated as per the NAMAS document NIS81.
- 2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
- 3. "\*" = These equipments are used for the final measurement.



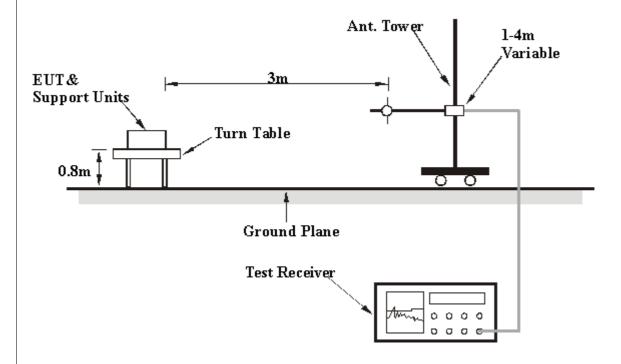
#### 4.2.3 TEST PROCEDURES

- 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.

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



# 4.2.4 TEST SETUP



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

# 4.2.5 EUT OPERATING CONDITIONS

Same as 4.1.5.



#### 4.2.6 **TEST RESULTS**

EUT	Wireless Access Point	MODEL	IWE1000A		
MODE	Channel 11	FREQUENCY RANGE	30-1000 MHz		
INPUT POWER (SYSTEM)	110Vac, 60 Hz	<b>DETECTOR FUNCTION</b> Quasi-Peak			
ENVIRONMENTAL	30 deg. C, 65 % RH,	TESTED BY: Gary Chang	g		
CONDITIONS	1005 hPa				

	ANT	ENNA F	POLARI	TY &	TEST [	DISTAN	ICE: H	IORIZO	NTAL	_ AT 3 N	Λ
	Freg.	Emission	Limit	Margin	Antenna	Table	Raw	Antenna	Cable	Pre-Amp.	Correction
No.	(MHz)	Level	(dBuV/m)	(dB)	Height	Angle	Value	Factor	Factor	Factor	Factor
	(1011 12)	(dBuV/m)	(ubuv/iii)	(UD)	(m)	(Degree)	(dBuV)	(dB)	(dB)	(dB)	(dB)
1	132.01	23.1 QP	43.50	-20.40	1.83H	63	9.60	10.97	2.52	0.00	-13.49
2	176.01	22.6 QP	43.50	-20.90	1.55H	327	11.20	8.73	2.65	0.00	-11.38
3	220.01	25.6 QP	46.00	-20.40	1.74H	78	13.20	9.58	2.82	0.00	-12.42
4	250.00	30.3 QP	46.00	-15.70	1.05H	324	15.90	11.50	2.89	0.00	-14.39
5	308.01	25.7 QP	46.00	-20.30	1.19H	276	9.80	12.77	3.15	0.00	-15.93
6	352.00	31.8 QP	46.00	-14.20	1.06H	52	14.50	13.88	3.38	0.00	-17.26
7	395.98	33.2 QP	46.00	-12.80	1.06H	52	14.50	15.22	3.46	0.00	-18.69
8	400.00	36.0 QP	46.00	-10.00	1.32H	130	17.20	15.36	3.46	0.00	-18.82
9	440.01	34.2 QP	46.00	-11.80	1.00H	183	15.00	15.93	3.27	0.00	-19.20
10	499.96	38.9 QP	46.00	-7.10	1.32H	129	18.30	16.96	3.68	0.00	-20.64
11	704.00	32.0 QP	46.00	-14.00	1.30H	61	9.50	18.43	4.09	0.00	-22.53
12	748.00	31.5 QP	46.00	-14.50	1.00H	114	8.50	18.80	4.21	0.00	-23.02
13	792.05	31.9 QP	46.00	-14.10	1.32H	39	8.70	19.10	4.10	0.00	-23.21

- **REMARKS**: 1. Emission level(dBuV/m)=Raw Value(dBuV) Correction Factor(dB)
  - 2. Correction Factor(dB) = Pre-Amplifier Factor (dB) Antenna Factor (dB) - Cable Factor (dB)
  - 3. Pre-Amplifier Factor (dB) = 0, when the test receiver is used to read the value and because it did not use the Pre-Amplifier.
  - 4. The other emission levels were very low against the limit.
  - 5. Margin value = Emission level Limit value.



EUT	Wireless Access Point	MODEL	IWE1000A			
MODE	Channel 11	FREQUENCY RANGE	30-1000 MHz			
INPUT POWER (SYSTEM)	110Vac, 60 Hz	<b>DETECTOR FUNCTION</b> Quasi-Peak				
ENVIRONMENTAL	30 deg. C, 65 % RH,	TESTED BY: Gary Chang	g			
CONDITIONS	1005 hPa					

	A۱	ITENNA	POLA	RITY 8	& TEST	DIST	ANCE:	VERTI	CAL	AT 3 M	
	Freg.	Emission	Limit	Margin	Antenna	Table	Raw	Antenna	Cable	Pre-Amp.	Correction
No.	(MHz)	Level	(dBuV/m)	(dB)	Height	Angle	Value	Factor	Factor	Factor	Factor
	(1011 12)	(dBuV/m)	(ubuv/iii)	(ub)	(m)	(Degree)	(dBuV)	(dB)	(dB)	(dB)	(dB)
1	132.01	23.1 QP	43.50	-20.40	1.06V	333	9.60	10.97	2.52	0.00	-13.49
2	176.01	25.9 QP	43.50	-17.60	1.09V	193	14.50	8.73	2.65	0.00	-11.38
3	220.01	22.3 QP	46.00	-23.70	1.08V	215	9.90	9.58	2.82	0.00	-12.42
4	308.01	23.8 QP	46.00	-22.20	1.03V	151	7.90	12.77	3.15	0.00	-15.92
5	396.00	27.1 QP	46.00	-18.90	1.03V	306	8.40	15.22	3.46	0.00	-18.68
6	440.00	29.4 QP	46.00	-16.60	1.13V	47	10.20	15.93	3.27	0.00	-19.20
7	616.00	30.8 QP	46.00	-15.20	1.24V	61	9.50	17.68	3.61	0.00	-21.29
8	704.00	28.8 QP	46.00	-17.20	1.02V	239	6.30	18.43	4.09	0.00	-22.53
9	748.00	31.6 QP	46.00	-14.40	1.17V	134	8.60	18.80	4.21	0.00	-23.02
10	792.00	32.5 QP	46.00	-13.50	1.01V	129	9.30	19.10	4.10	0.00	-23.21

- **REMARKS**: 1. Emission level(dBuV/m)=Raw Value(dBuV) Correction Factor(dB)
  - 2. Correction Factor(dB) = Pre-Amplifier Factor (dB) Antenna Factor (dB) - Cable Factor (dB)
  - 3. Pre-Amplifier Factor (dB) = 0, when the test receiver is used to read the value and because it did not use the Pre-Amplifier.
  - 4. The other emission levels were very low against the limit.
  - 5. Margin value = Emission level Limit value.



EUT	Wireless Access Point	MODEL	IWE1000A
MODE	Channel 1	FREQUENCY RANGE	Above 1000 MHz
INPUT POWER	110Vac, 60 Hz	DETECTOR	Peak(PK)
(SYSTEM)	110 vac, 00 112	FUNCTION	Average (AV)
ENVIRONMENTAL	30 deg. C, 65 % RH,	TESTED BY: Gary C	hang
CONDITIONS	1005 hPa		

	ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M												
	Eroa	Emission	Limit	Margin	Antenna	Table	Raw	Antenna	Cable	Pre-Amp.	Correction		
No.	Freq. (MHz)	Level	(dBuV/m)	Margin (dB)	Height	Angle	Value	Factor	Factor	Factor	Factor		
	(IVITZ)	(dBuV/m)	(ubuv/III)	(ub)	(m)	(Degree)	(dBuV)	(dB)	(dB)	(dB)	(dB)		
1	2038.00	54.1 pk	74.00	-19.90	1.00H	22	24.50	26.31	3.29	0.00	-29.60		
2	2038.00	51.9 Av	54.00	-2.10	1.00H	22	22.30	26.31	3.29	0.00	-29.60		
*3	2412.40	97.4 pk	NA	NA	1.00H	148	66.30	27.45	3.62	0.00	-31.07		
*4	2412.40	92.6 Av	NA	NA	1.00H	148	61.50	27.45	3.62	0.00	-31.07		
5	4075.90	40.2 Av	54.00	-13.80	1.00H	308	5.39	30.03	4.77	0.00	-34.80		
6	4824.30	43.5 Av	54.00	-10.50	1.00H	202	6.93	31.35	5.21	0.00	-36.56		

	ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M											
	Freg.	Emission	Limit	Margin	Antenna	Table	Raw	Antenna	Cable	Pre-Amp.	Correction	
No.	(MHz)	Level	(dBuV/m)	(dB)	Height	Angle	Value	Factor	Factor	Factor	Factor	
	(IVIITZ)	(dBuV/m)	(ubuv/III)	(ub)	(m)	(Degree)	(dBuV)	(dB)	(dB)	(dB)	(dB)	
1	2038.00	47.4 Av	54.00	-6.60	1.04V	49	17.77	26.31	3.29	0.00	-29.60	
2	2038.00	49.4 pk	74.00	-24.60	1.04V	49	19.80	26.31	3.29	0.00	-29.60	
*3	2412.80	101.0 pk	NA	NA	1.01V	99	69.90	27.45	3.62	0.00	-31.08	
*4	2412.80	94.5 Av	NA	NA	1.01V	99	63.40	27.45	3.62	0.00	-31.08	
5	4076.00	50.5 pk	74.00	-23.50	1.05V	110	15.66	30.03	4.77	0.00	-34.80	
6	4076.00	43.6 Av	54.00	-10.40	1.05V	110	8.80	30.03	4.77	0.00	-34.80	
7	4826.00	45.1 Av	54.00	-8.90	1.05V	288	8.50	31.35	5.21	0.00	-36.56	
8	4826.00	54.1 pk	54.00	-19.90	1.05V	288	17.50	31.35	5.21	0.00	-36.56	

- **REMARKS**: 1. Emission level(dBuV/m)=Raw Value(dBuV) Correction Factor(dB)
  - 2. Correction Factor(dB) = Pre-Amplifier Factor (dB) Antenna Factor (dB) - Cable Factor (dB)
  - 3. Pre-Amplifier Factor (dB) = 0, when the test receiver is used to read the value and because it did not use the Pre-Amplifier.
  - 4. The other emission levels were very low against the limit.
  - 5. Margin value = Emission level Limit value.
  - 6. "\*": Fundamental frequency



EUT	Wireless Access Point	MODEL	IWE1000A
MODE	Channel 6	FREQUENCY RANGE	Above 1000 MHz
INPUT POWER	110Vac, 60 Hz	DETECTOR	Peak(PK)
(SYSTEM)	110 vac, 00 112	FUNCTION	Average (AV)
ENVIRONMENTAL	30 deg. C, 65 % RH,	TESTED BY: Gary	Chang
CONDITIONS	1005 hPa		

	ANT	ENNA F	POLARI	TY &	TEST [	DISTAN	ICE: H	IORIZO	NTAL	_ AT 3 N	/
	Freg.	Emission	Limit	Margin	Antenna	Table	Raw	Antenna	Cable	Pre-Amp.	Correction
No.	(MHz)	Level	(dBuV/m)	(dB)	Height	Angle	Value	Factor	Factor	Factor	Factor
	(IVIITZ)	(dBuV/m)	(ubuv/III)	(ub)	(m)	(Degree)	(dBuV)	(dB)	(dB)	(dB)	(dB)
1	2063.00	53.9 pk	74.00	-20.10	1.00H	64	24.20	26.37	3.31	0.00	-29.68
2	2063.00	51.0 Av	54.00	-3.00	1.00H	64	21.30	26.37	3.31	0.00	-29.68
*3	2437.90	90.8 Av	NA	NA	1.00H	81	59.60	27.52	3.64	0.00	-31.17
*4	2437.90	96.4 pk	NA	NA	1.00H	81	65.20	27.52	3.64	0.00	-31.17
5	4126.10	49.8 pk	74.00	-24.20	1.00H	296	14.90	30.10	4.79	0.00	-34.89
6	4126.10	40.1 Av	54.00	-13.90	1.00H	296	5.20	30.10	4.79	0.00	-34.89
7	4875.40	44.5 Av	54.00	-9.50	1.00H	158	7.80	31.44	5.25	0.00	-36.70

	ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M											
	Freg.	Emission	Limit	Margin	Antenna	Table	Raw	Antenna	Cable	Pre-Amp.	Correction	
No.	(MHz)	Level	(dBuV/m)	_	Height	Angle	Value	Factor	Factor	Factor	Factor	
	(IVITZ)	(dBuV/m)	(ubuv/III)	(dB)	(m)	(Degree)	(dBuV)	(dB)	(dB)	(dB)	(dB)	
1	2063.00	51.3 Av	54.00	-2.70	1.00V	29	21.60	26.37	3.31	0.00	-29.68	
2	2063.00	53.7 pk	74.00	-20.30	1.00V	29	24.00	26.37	3.31	0.00	-29.68	
*3	2438.40	93.7 Av	NA	NA	1.00V	143	62.50	27.52	3.64	0.00	-31.17	
*4	2438.40	101.1 pk	NA	NA	1.00V	143	69.90	27.52	3.64	0.00	-31.17	
5	4126.10	42.3 Av	54.00	-11.70	1.00V	106	7.40	30.10	4.79	0.00	-34.89	
6	4126.10	51.1 pk	74.00	-22.90	1.00V	106	16.20	30.10	4.79	0.00	-34.89	
7	4875.50	45.6 Av	54.00	-8.40	1.00V	291	8.90	31.44	5.25	0.00	-36.70	

- **REMARKS**: 1. Emission level(dBuV/m)=Raw Value(dBuV) Correction Factor(dB)
  - 2. Correction Factor(dB) = Pre-Amplifier Factor (dB) Antenna Factor (dB) - Cable Factor (dB)
  - 3. Pre-Amplifier Factor (dB) = 0, when the test receiver is used to read the value and because it did not use the Pre-Amplifier.
  - 4. The other emission levels were very low against the limit.
  - 5. Margin value = Emission level Limit value.
  - 6. "\*": Fundamental frequency



EUT	Wireless Access Point	MODEL	IWE1000A
MODE	Channel 11	FREQUENCY	Above 1000 MHz
WODL	Chamilei 11	RANGE	Above 1000 MHZ
INPUT POWER	110Vac, 60 Hz	DETECTOR	Peak(PK)
(SYSTEM)	110 vac, 00 112	FUNCTION	Average (AV)
ENVIRONMENTAL	30 deg. C, 65 % RH,	TESTED BY: Gar	y Chang
CONDITIONS	1005 hPa		

	ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3M											
	From	Emission	Limit	Margin	Antenna	Table	Raw	Antenna	Cable	Pre-Amp.	Correction	
No.	Freq. (MHz)	Level	(dBuV/m)	(dB)	Height	Angle	Value	Factor	Factor	Factor	Factor	
	(IVIITZ)	(dBuV/m)	(ubuv/III)	(ub)	(m)	(Degree)	(dBuV)	(dB)	(dB)	(dB)	(dB)	
1	2088.00	52.0 Av	54.00	-2.00	1.00H	221	22.20	26.44	3.33	0.00	-29.77	
*2	2463.40	94.8 pk	NA	NA	1.00H	337	63.51	27.59	3.66	0.00	-31.26	
*3	2463.40	88.1 Av	NA	NA	1.00H	337	56.87	27.59	3.66	0.00	-31.26	
4	2484.00	49.7 Av	54.00	-4.30	1.00H	328	18.40	27.66	3.68	0.00	-31.33	
5	4176.00	48.2 pk	74.00	-25.80	1.00H	48	13.20	30.18	4.81	0.00	-34.98	
6	4924.10	55.6 pk	74.00	-18.40	1.00H	345	18.76	31.53	5.28	0.00	-36.82	
7	4924.10	40.7 Av	54.00	-13.30	1.00H	345	3.89	31.53	5.28	0.00	-36.81	

	A۱	ITENNA	POLAF	RITY 8	& TEST	DISTA	ANCE:	VERTI	CAL	AT 3 M	
	Freq.	Emission	Limit	Margin	Antenna	Table	Raw	Antenna	Cable	Pre-Amp.	Correction
No.	(MHz)	Level	(dBuV/m)	(dB)	Height	Angle	Value	Factor	Factor	Factor	Factor
	(IVIITZ)	(dBuV/m)	(ubuv/III)	(ub)	(m)	(Degree)	(dBuV)	(dB)	(dB)	(dB)	(dB)
1	2088.00	48.1 Av	54.00	-5.90	1.00V	276	18.30	26.44	3.33	0.00	-29.77
2	2088.00	49.9 pk	74.00	-24.10	1.00V	276	20.10	26.44	3.33	0.00	-29.77
*3	2462.80	99.0 pk	NA	NA	1.00V	27	67.80	27.59	3.66	0.00	-31.25.
*4	2462.80	93.0 pk	NA	NA	1.00V	27	61.80	27.59	3.66	0.00	-31.25.
5	2484.10	59.7 pk	74.00	-14.30	1.00V	243	28.40	27.66	3.68	0.00	-31.33.
6	2484.10	51.7 Av	54.00	-2.30	1.00V	243	20.40	27.66	3.68	0.00	-31.33
7	4176.20	40.9 Av	54.00	-13.10	1.00V	146	5.90	30.18	4.81	0.00	-34.98
8	4176.20	49.5 pk	74.00	-24.50	1.00V	146	14.50	30.18	4.81	0.00	-34.98
9	4924.00	42.0 Av	54.00	-12.00	1.00V	272	5.20	31.53	5.28	0.00	-36.81

- **REMARKS**: 1. Emission level(dBuV/m)=Raw Value(dBuV) Correction Factor(dB)
  - 2. Correction Factor(dB) = Pre-Amplifier Factor (dB) Antenna Factor (dB) - Cable Factor (dB)
  - 3. Pre-Amplifier Factor (dB) = 0, when the test receiver is used to read the value and because it did not use the Pre-Amplifier.
  - 4. The other emission levels were very low against the limit.
  - 5. Margin value = Emission level Limit value.
  - 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
ROHDE & SCHWARZ TEST RECEIVER	ESMI	839379/002	Dec. 28, 2001
HP ATTENUATOR	8496B	3247A18505	Cal. on use
HP PLOTTER	7475A	2641V27755	N/A

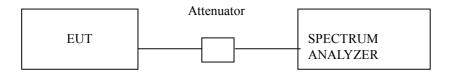
- 1.The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
- 2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.



#### 4.3.3 TEST PROCEDURE

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

#### 4.3.4 TEST SETUP



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

#### 4.3.5 EUT OPERATING CONDITIONS

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



# 4.3.6 TEST RESULTS

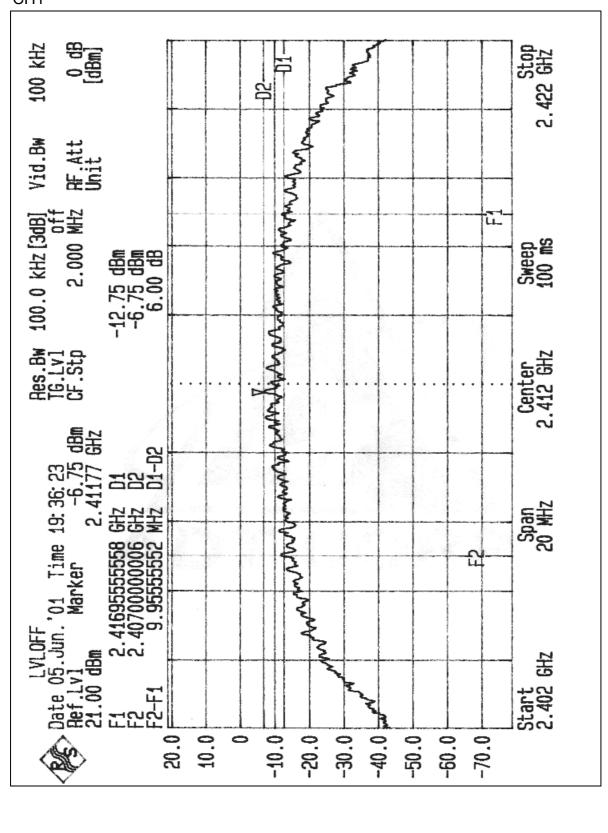
EUT	Wireless Access Point	MODEL	IWE1000A
INPUT POWER (SYSTEM)	110Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	30 deg. C, 65%RH, 1005 hPa

TESTED BY: Gary Chang

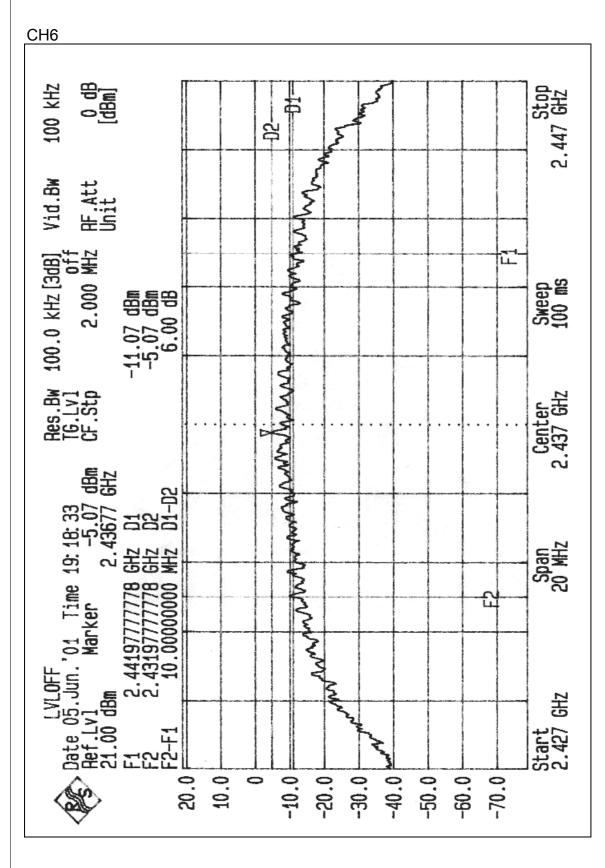
CHANNEL	CHANNEL FREQUENCY (MHz)	6 dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	9.96	0.5	PASS
6	2437	10.00	0.5	PASS
11	2462	9.96	0.5	PASS



### CH1

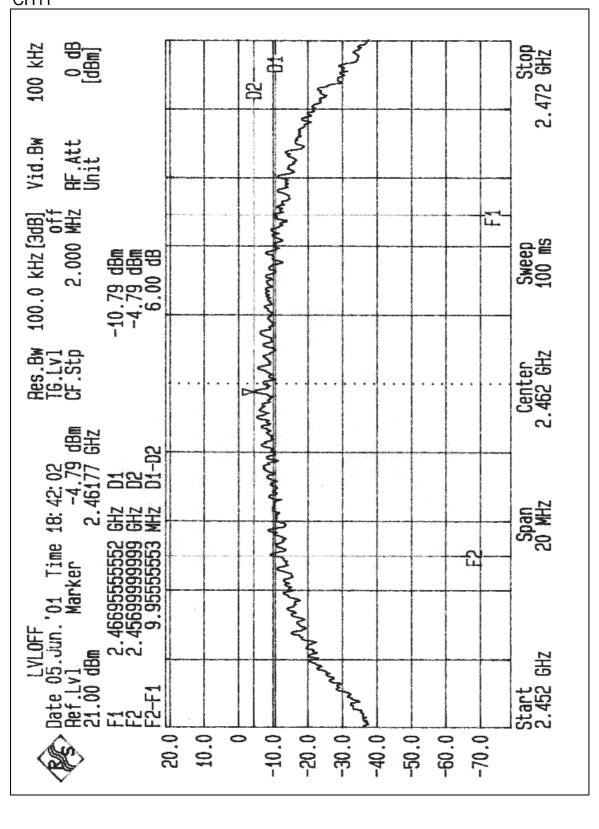








### **CH11**





## 4.4 MAXIMUM PEAK OUTPUT POWER

### 4.4.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

# 4.4.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
ROHDE & SCHWARZ TEST RECEIVER	ESMI	839379/002	Dec. 28, 2001
HP ATTENUATOR	8496B	3247A18505	Cal. on use
HP PLOTTER	7475A	2641V27755	N/A

- 1. The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
- 2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

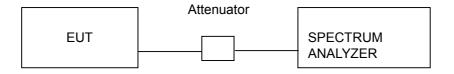


#### 4.4.3 TEST PROCEDURES

- a. The transmitter output was connected to the spectrum analyzer through an attenuator.
- b. The center frequency of the spectrum analyzer was set to the fundamental frequency and using 3 MHz RBW and 3 MHz VBW.
- c. The span of the spectrum analyzer should be larger than 6dB BandWidth plus 10MHz.
- d. Used Peak Search to read the peak power after Maximum Hold function was activated.
- e. Shifted the marker to +/- 3MHz and +/-6MHz, and recorded the reading.
- f. The Maximum Peak Output Power was the linear summation of the 5 readings in (4) and (5).

**NOTE:** This measurement is the total power of 15MHz bandwidth which is far more wider than 6dB bandwidth.

#### 4.4.4 TEST SETUP



#### 4.4.5 EUT OPERATING CONDITIONS

Same as Item 4.3.5



# 4.4.6 TEST RESULTS

EUT	Wireless Access Point	MODEL	IWE1000A
INPUT POWER (SYSTEM)	110Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	30 deg. C, 65%RH, 1005 hPa

TESTED BY: Gary Chang

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	8.52	30	PASS
6	2437	10.25	30	PASS
11	2462	10.58	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
ROHDE & SCHWARZ TEST RECEIVER	ESMI	839379/002	Dec. 28, 2001
HP ATTENUATOR	8496B	3247A18505	Cal. on use
HP PLOTTER	7475A	2641V27755	N/A

- 1. The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
- 2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

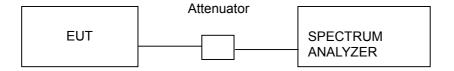


### 4.5.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3 kHz RBW and 30 kHz VBW, set sweep time=span/3kHz. The power spectral density was measured and recorded.

The sweep time is allowed to be longer than span/3KHz for a full response of the mixer in the spectrum analyzer.

#### 4.5.4 TEST SETUP



### 4.5.5 EUT OPERATING CONDITIONS

Same as 4.3.5



# 4.5.6 TEST RESULTS

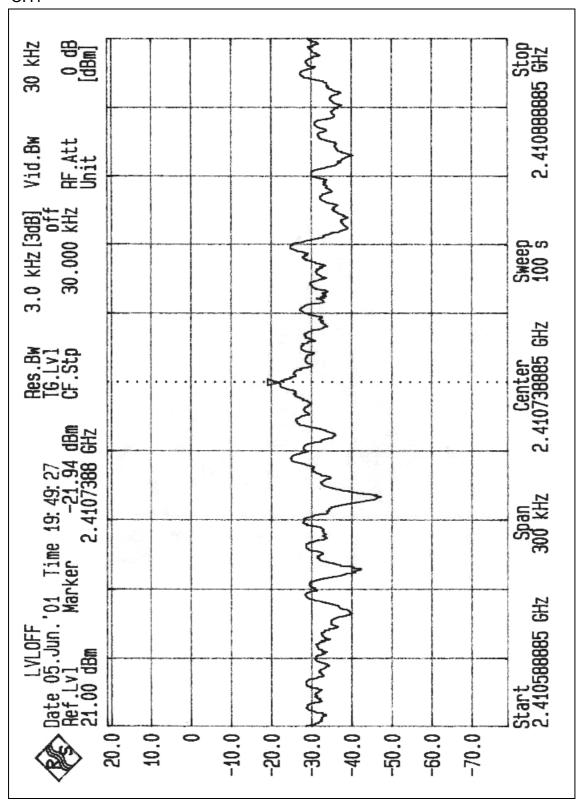
EUT	Wireless Access Point	MODEL	IWE1000A
INPUT POWER (SYSTEM)	110Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	30 deg. C, 65%RH, 1005 hPa

TESTED BY: Gary Chang

CHANNEL NUMBER	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 KHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-21.94	8	PASS
6	2437	-19.93	8	PASS
11	2462	-19.60	8	PASS

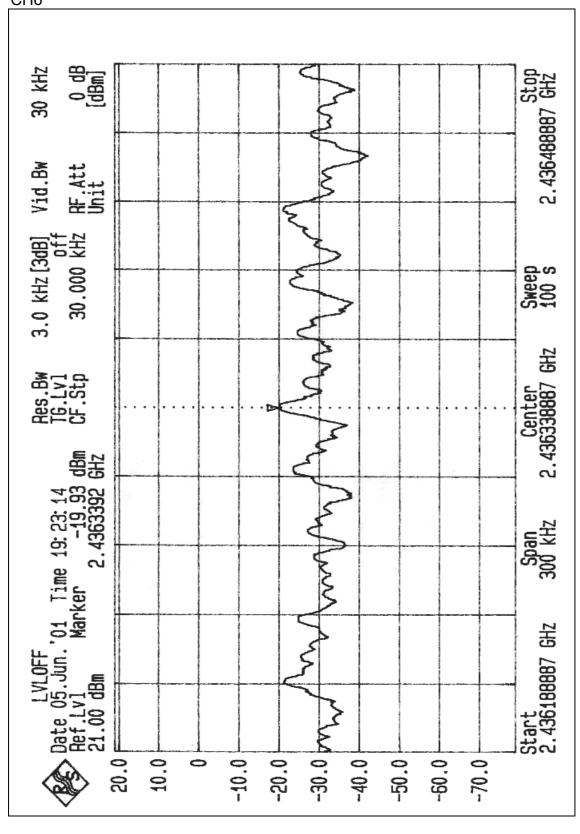


# CH1



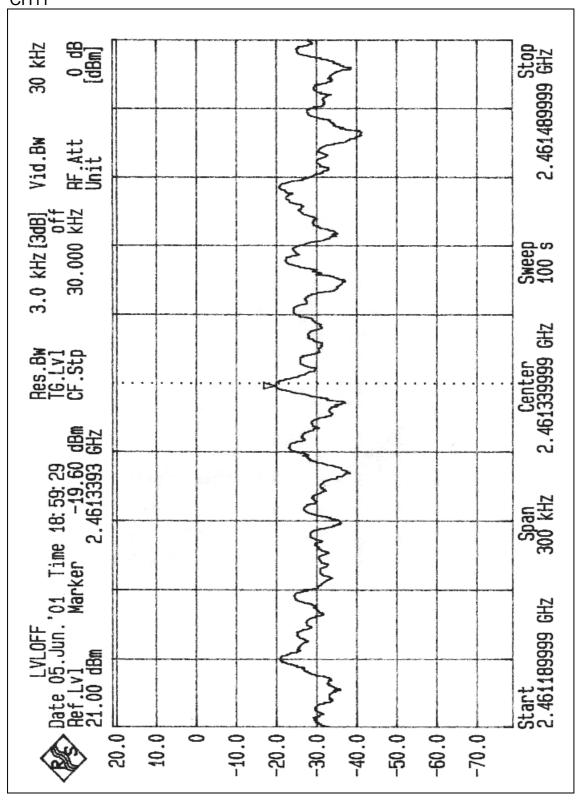








# **CH11**





#### 4.6 BAND EDGES MEASUREMENT

#### 4.6.1 LIMITS OF BAND EDGES MEASUREMENT

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

#### 4.6.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
ROHDE & SCHWARZ TEST RECEIVER		848926/005 846839/018	Dec 28, 2001
HP ATTENUATOR	8496B	3247A18505	Cal. on use
HP PLOTTER	7475A	2641V27755	N/A

#### NOTE:

- 1. The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
- 2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

#### 4.6.3 TEST PROCEDURE

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



#### 4.6.4 EUT OPERATING CONDITION

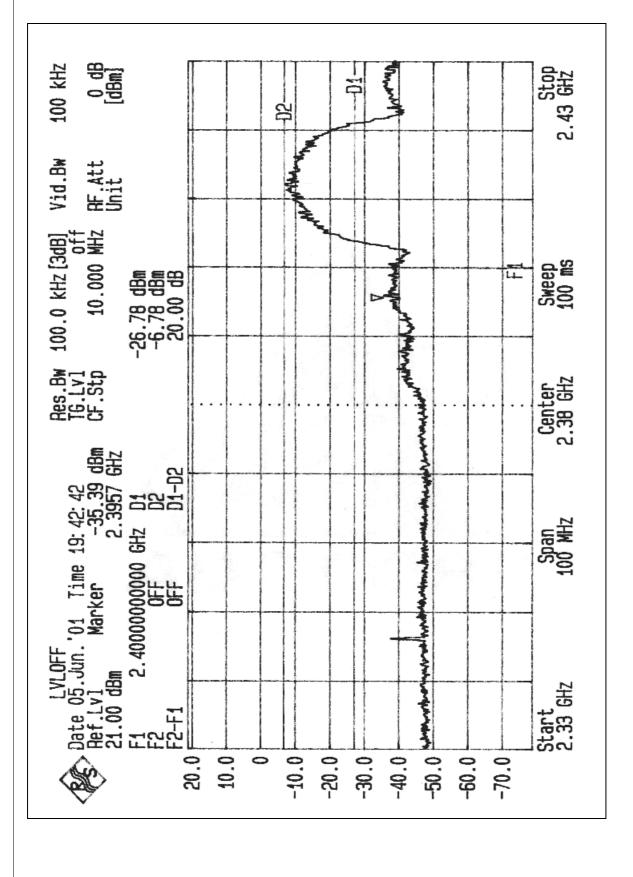
Same as Item 4.3.5

### 4.6.5 TEST RESULTS

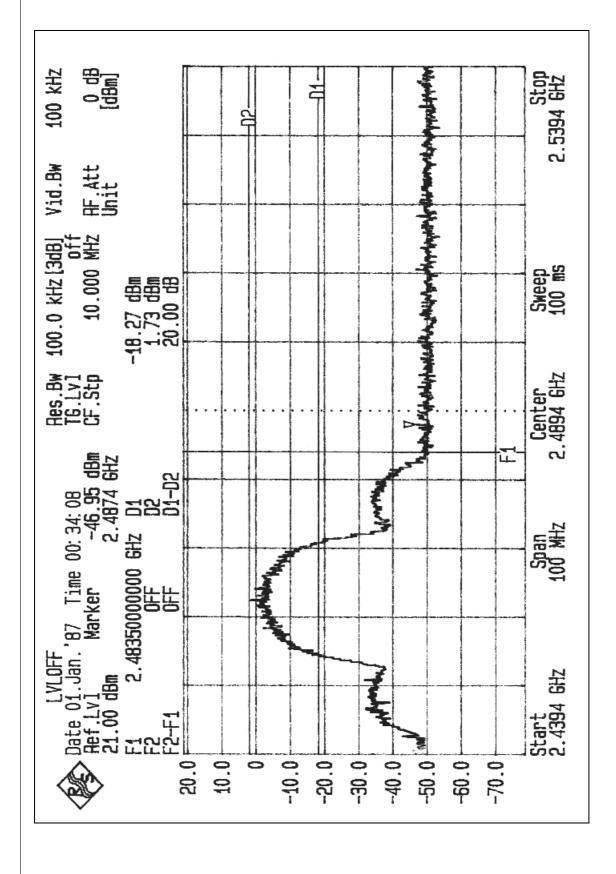
The spectrum plots are attached on the following 2 pages. D2 line indicates the highest level, D1 line indicates the 20dB offset below D2. It shows compliance with the requirement in part 15.247(C).

**NOTE:** The band edge emission plot on the following 2 pages shows 48.68dB delta between carrier maximum power and local maximum emission in restrict band (2487.40MHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.6 (Page 25) is 93.0dBuV/m, so the maximum field strength in restrict band is 93.0-48.68=44.32 dBuV/m which is under 54 dBuV/m limit.











### 4.7 ANTENNA REQUIREMENT

#### 4.7.1 STANDARD APPLICABLE

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

#### 4.7.2 ANTENNA CONNECTED CONSTRUCTION

The	antenna	used i	n this	product	is dipole	antenna.	There is	no a	antenna	conne	ctor.
And	the maxi	mum (	Gain c	of this ar	ntenna is	only 1dBi	-				



### 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 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: <a href="https://www.adt.com.tw/index.5/phtml">www.adt.com.tw/index.5/phtml</a>.

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

 Lin Kou EMC Lab:
 Hsin Chu EMC Lab:

 Tel: 886-2-26052180
 Tel: 886-35-935343

 Fax: 886-2-26052943
 Fax: 886-35-935342

Lin Kou Safety Lab: Lin Kou RF&Telecom Lab

Tel: 886-2-26093195 Tel: 886-3-3270910 Fax: 886-2-26093184 Fax: 886-3-3270892

Email: <a href="mail.adt.com.tw">service@mail.adt.com.tw</a>
Web Site: <a href="mail.adt.com.tw">www.adt.com.tw</a>

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