



# FCC TEST REPORT

**REPORT NO.:** RF89122808

**MODEL NO.:** WX-1560

**RECEIVED:** December 28, 2000

**TESTED:** February 9, 2001

**APPLICANT:** GemTek Technology Co., Ltd.

**ADDRESS:** No.1, Jen Ai Road, Hsinchu Industrial Park, Hukou,  
Hsinchu, Taiwan, R.O.C.

**ISSUED BY:** Advance Data Technology Corporation

**LAB LOCATION:** 13-1, Lane 19, Wen Shan 3<sup>rd</sup> St., Kweishan,  
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Accredited Laboratory



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ANNEX      PHOTOGRAPHS OF EUT



## 1 CERTIFICATION

**PRODUCT :** 2.4GHz Wireless Access Point  
**BRAND NAME :** GemTek  
**MODEL NO. :** WX-1560  
**APPLICANT :** GemTek Technolgy Co., Ltd.  
**OEM BRAND NAME :** Xircom  
**MODEL NO. :** APWE1100  
**STANDARDS :** 47 CFR Part 15, Subpart C (Section 15.247),  
ANSI C63.4-1992  
**SITE REGISTRATION NO. :** 90422 (FCC)  
IC 3789-5 (Canada IC)

We, **Advance Data Technology Corporation**, hereby certify that one sample WX-1560 of the designation has been tested in our facility on February 9, 2001.

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

Tested by	: <u>Steven Lu</u> Steven Lu	Date:	<u>Feb. 12, 2001</u>
Prepared by	: <u>Demi Chen</u> Demi Chen	Date:	<u>Feb. 12, 2001</u>
Approved by	: <u>Alan Lane</u> Dr. Alan Lane, Manager	Date:	<u>Feb. 12, 2001</u>



## 2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

<b>APPLIED STANDARD: 47 CFR Part 15, Subpart C</b>			
<b>STANDARD PARAGRAPH</b>	<b>TEST REQUIREMENTS</b>	<b>RESULT</b>	<b>REMARK</b>
15.107	AC Power Conducted Emissions Spec.: 48 dBuV	Yes	Minimum passing margin is -7.22dBuV At 13.65027MHz
15.247(a)(2)	Spectrum Bandwidth of a Direct Sequence Spread Spectrum System Spec.: min. 500 KHz	Yes	8.82 MHz > 500 kHz
15.247(b)	Maximum Peak Output Power Spec.: max. 30 dBm	Yes	17.64 dBm < 30 dBm
15.247(c)	Transmitter Radiated Emissions Spec.: Table 15.209	Yes	Minimum passing margin is -5.7 dBuV At 747.98 MHz
15.247(d)	Power Spectral Density Spec.: max. 8dBm	Yes	-10.56 dBm < 8 dBm
15.247(c)	Band Edge Measurement	Yes	N/A
15.247(e)	Processing Gain of Direct Sequence Spread Spectrum System Spec.: min. 10 dB	Yes	11.4dB $\geq$ 10dB

### NOTE:

The receiver portion of the EUT has been tested in ADT. The test result has been verified to comply with FCC Part 15, Subpart B, Class B – Computing Devices (FCC DoC). The engineering test report can be provided upon FCC requests.



### 3 GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT

<b>PRODUCT</b>	2.4GHz Wireless Access Point
<b>MODEL NO.</b>	WX-1560
<b>POWER SUPPLY</b>	5VDC from power adapter
<b>DATA CABLE</b>	RJ45 Cable(Nonshielded)
<b>I/O PORTS</b>	RJ45 Port
<b>MODULATION TYPE</b>	CCK, BPSK, QPSK
<b>RADIO TECHNOLOGY</b>	DSSS
<b>TRANSFER RATE</b>	1/2/5.5/11Mbps
<b>FREQUENCY RANGE</b>	2412MHz ~ 2462MHz
<b>NUMBER OF CHANNEL</b>	11
<b>OUTPUT POWER</b>	13dBm
<b>ANTENNA TYPE</b>	dual sleeve dipole
<b>ASSOCIATED DEVICES</b>	NA
<b>DESCRIPTION BETWEEN MODELS</b>	This device is connected with notebook through RJ45 port.

#### 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		



### 3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a 2.4GHz Wireless Access Point, according to the specifications of the manufacturers, it must comply with the requirements of the following standards:

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

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

### 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.	I/O Cable
1	NOTEBOOK	DELL	PPX	99125	Nonshielded Signal (10m)
3	WIRELESS LAN CARD	DELL	3CCFE575CT-D	NA	NA

### 3.5 TEST SETUP

Please refer to the photos of test configuration.



## 4 TEST PROCEDURES AND TEST RESULTS

### 4.1 CONDUCTED EMISSION MEASUREMENT

#### 4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

Notes:

1. The lower limit shall apply at the transition frequencies.
2. 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	ESHS30	828109/007	July 6, 2001
ROHDE & SCHWARZ Artificial Mains Network	ESH3-Z5	839135/006	July 9, 2001
ROHDE & SCHWARZ 4-wire ISN	ENY41	835154/007	Apr. 26, 2001
EMCO-L.I.S.N.	3825/2	9204-1964	July 9, 2001
Shielded Room	Site 2	ADT-C02	NA

Notes:

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.

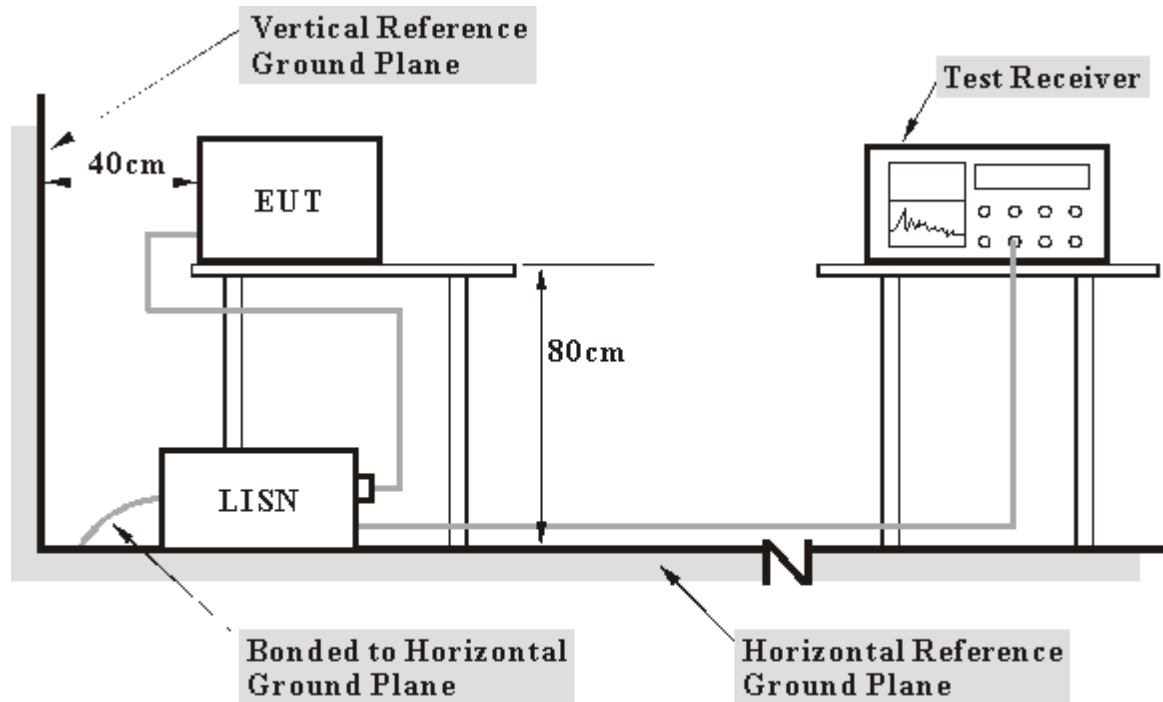




#### 4.1.3 TEST PROCEDURES

1. Place the EUT at 0.4 meter away from the conduction wall of the shielded room.
2. Connect the EUT to the power mains through a Line Impedance Stabilization Network (LISN).
3. Connect the other support units to the other LISN too.
4. Make sure the  $50\Omega/ 50\mu\text{H}$  coupling impedance is provided to the measurement instrument by the LISNs.
5. Measure the maximum conducted interference on both lines of the power mains connects to the EUT, within frequency range 450KHz ~ 30MHz.
6. The emission level under limit by 10dB is not needed to 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.

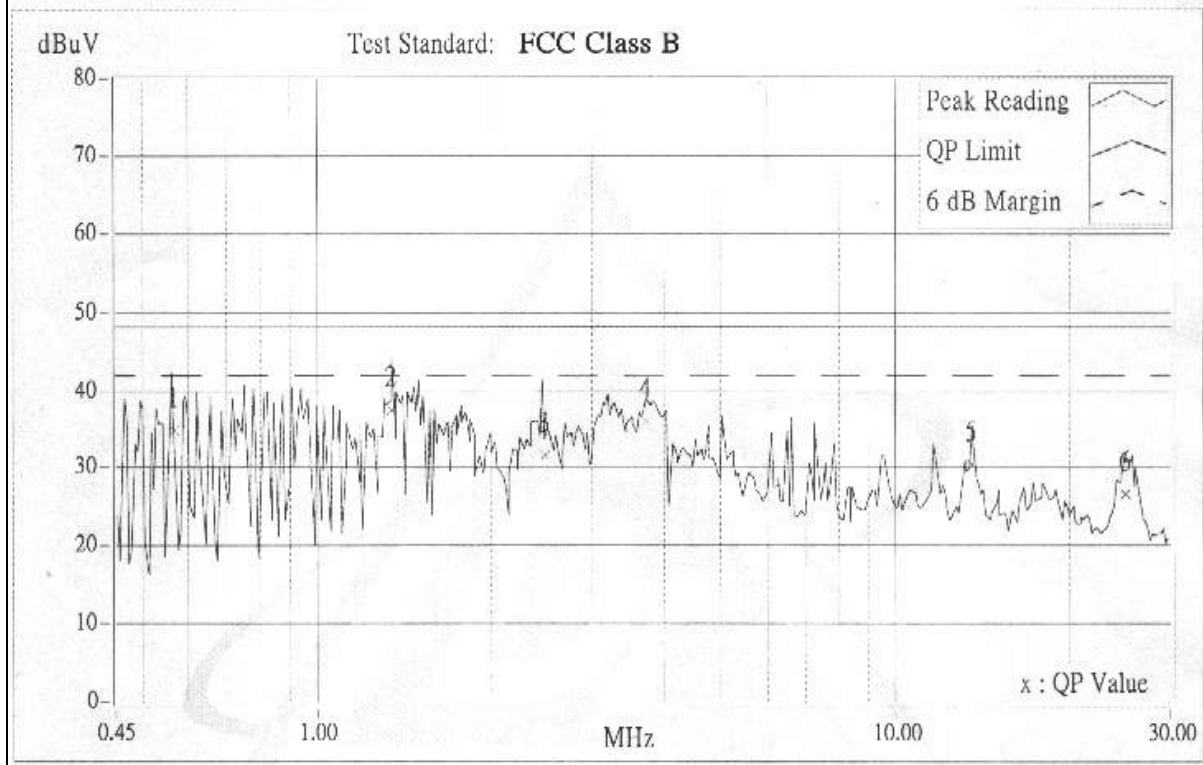
For the actual test configuration, please refer to the related Item in this test report (**Photographs of the Test Configuration**).



### 4.1.5 TEST RESULTS

Brand / Model : WX-1560  
 Test Mode : CH1  
 Power Source :  
 Remark :  
 Tested by : STEVEN

Location: Conduction 2      Date: 2001/2/9      Time: PM 04:57:10      Phase: L1  
 Temperaturer (C): 20      Humidity (%): 60      Approved by:

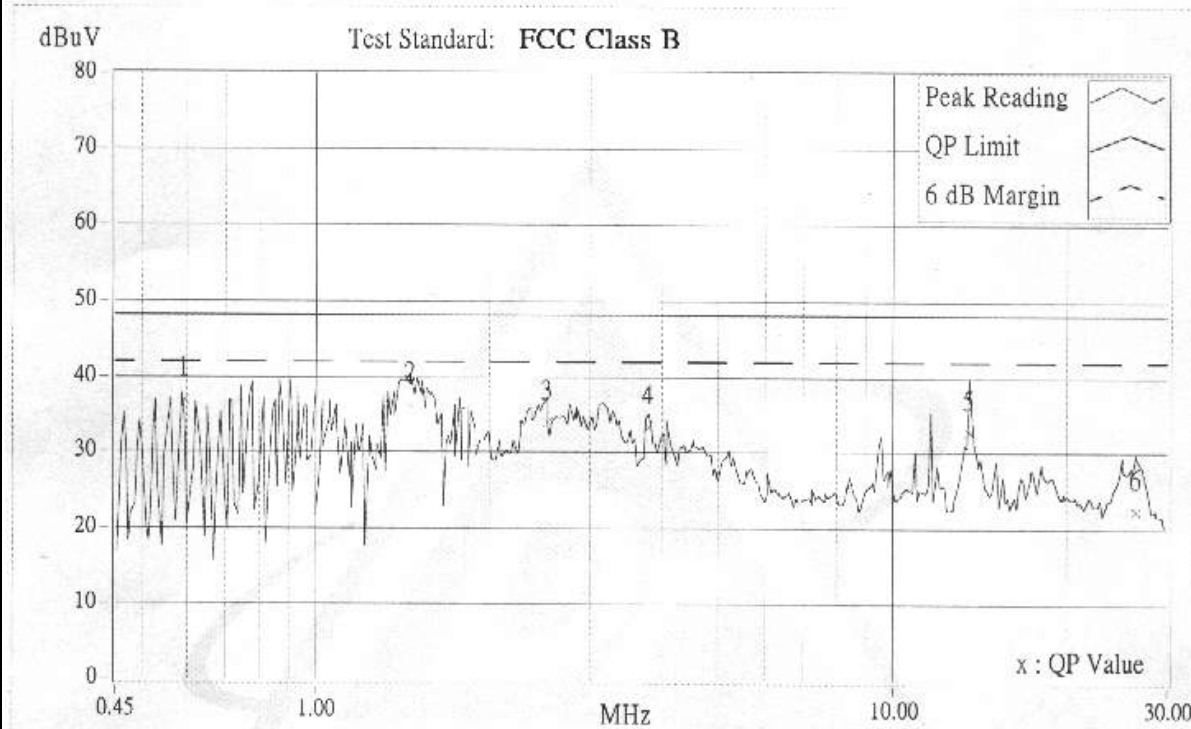


	Frequency	Corr. Factor	Reading dBuV	Emission dBuV	Limit dBuV	Margins dB	Notes
No.	MHz	dB	QP	QP	QP	QP	
1	0.56638	0.20	34.79	34.99	48.00	-13.01	
+2	1.34065	0.20	37.63	37.83	48.00	-10.17	
3	2.46554	0.25	31.46	31.71	48.00	-16.29	
4	3.72037	0.37	35.92	36.29	48.00	-11.71	
5	13.65155	0.92	30.45	31.37	48.00	-16.63	
6	25.00653	1.40	26.57	27.97	48.00	-20.03	



Brand / Model : WX-1560  
 Test Mode :CH1  
 Power Source :  
 Remark :  
 Tested by : STEVEN

Location: Conduction 2      Date: 2001/2/9      Time: PM 04:48:33      Phase: N  
 Temperatuer (C): 20      Humidity (%): 60      Approved by:

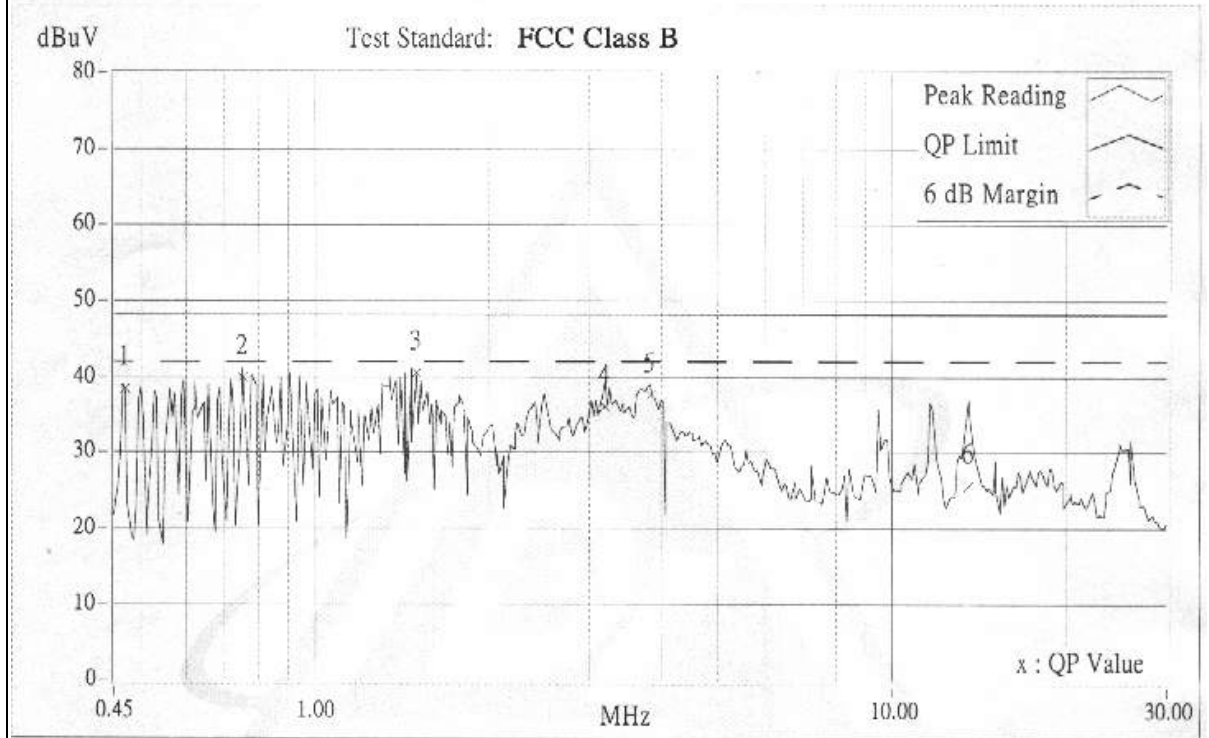


	Frequency	Corr. Factor	Reading dBuV	Emission dBuV	Limit dBuV	Margins dB	Notes
No.	MHz	dB	QP	QP	QP	QP	
+1	0.59227	0.20	36.81	37.01	48.00	-10.99	
2	1.46100	0.20	36.19	36.39	48.00	-11.61	
3	2.52591	0.25	33.82	34.07	48.00	-13.93	
4	3.77007	0.38	33.26	33.64	48.00	-14.36	
5	13.64998	0.82	32.80	33.62	48.00	-14.38	
6	26.36806	1.33	22.47	23.80	48.00	-24.20	



Brand / Model : WX-1560  
 Test Mode : CH6  
 Power Source :  
 Remark :  
 Tested by : STEVEN

Location: Conduction 2      Date: 2001/2/9      Time: PM 05:01:04      Phase: L1  
 Temperaturer (C): 20      Humidity (%): 60      Approved by:



	Frequency	Corr. Factor	Reading dBuV	Emission dBuV	Limit dBuV	Margins dB	Notes
No.	MHz	dB	QP	QP	QP	QP	
1	0.47054	0.20	38.24	38.44	48.00	-9.56	
2	0.75252	0.20	39.88	40.08	48.00	-7.92	
+3	1.50001	0.20	40.50	40.70	48.00	-7.30	
4	3.19029	0.32	36.03	36.35	48.00	-11.65	
5	3.81300	0.38	37.40	37.78	48.00	-10.22	
6	13.64010	0.92	25.67	26.59	48.00	-21.41	

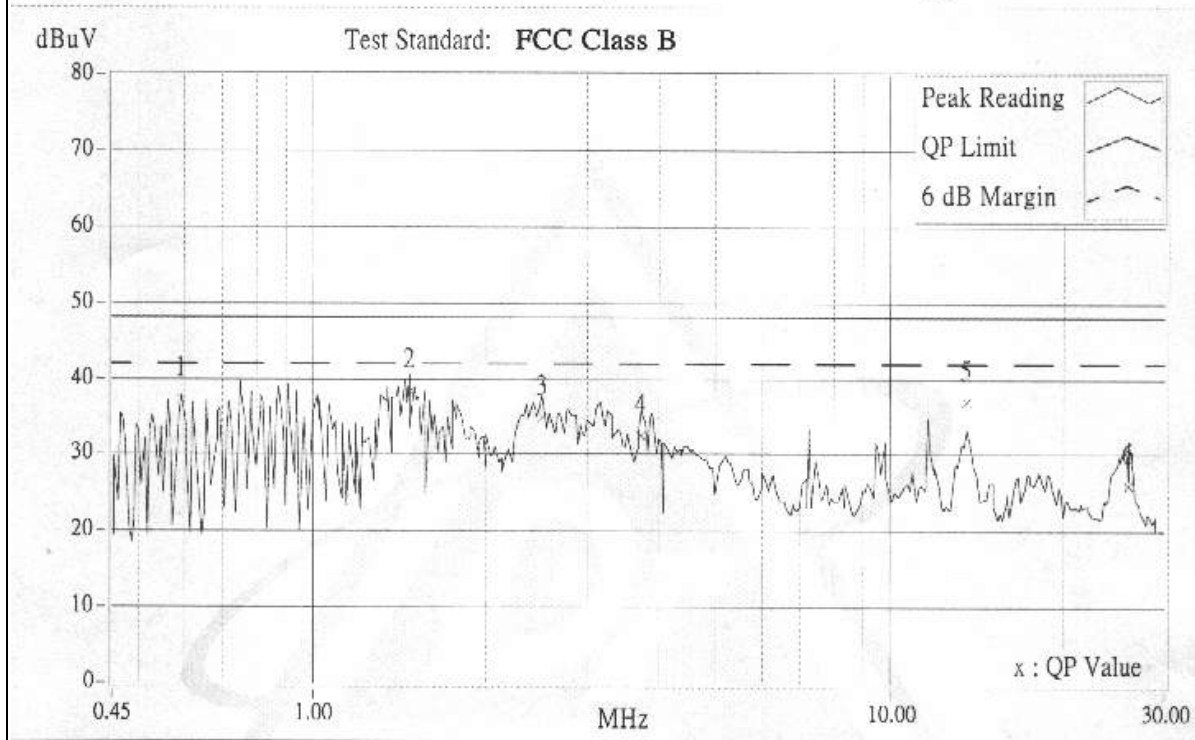




Brand / Model : WX-1560  
 Test Mode : CH6  
 Power Source :  
 Remark :  
 Tested by : STEVEN

Location: Conduction 2      Date: 2001/2/9      Time: PM 05:04:24      Phase: N

\*\*\* This data is for evaluation purposes only. It cannot be used for EMC approvals \*\*\*

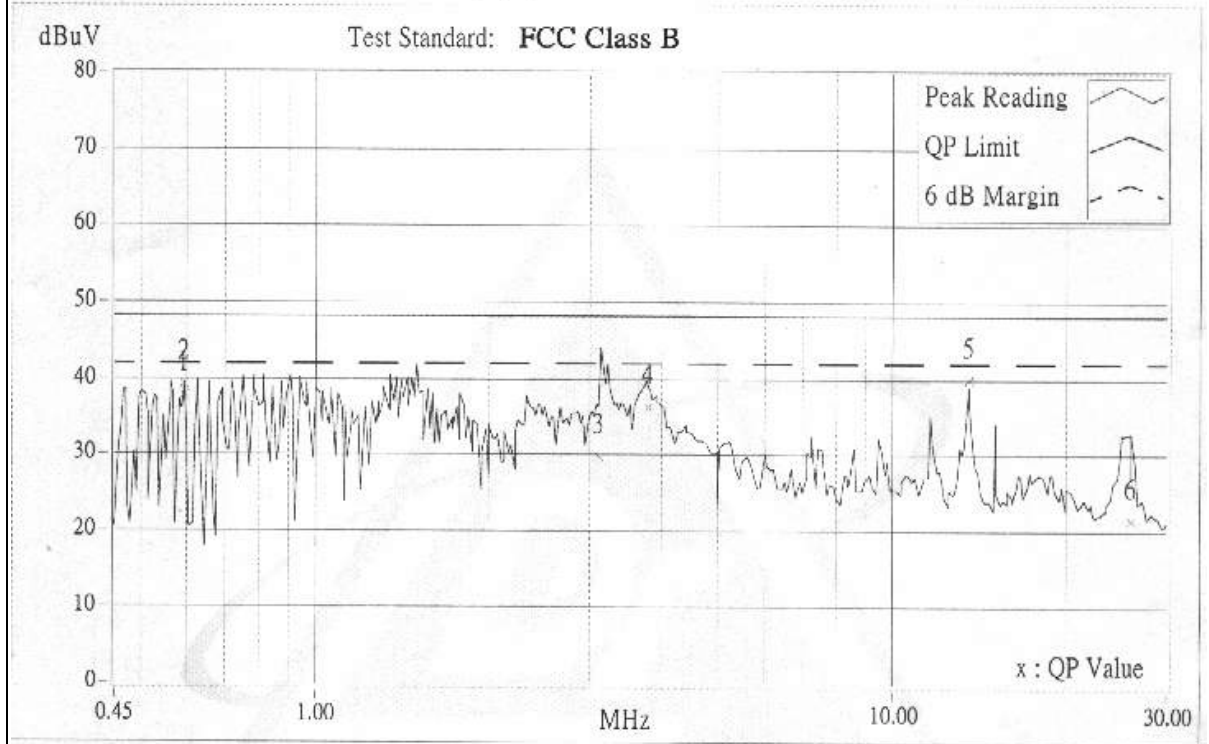


	Frequency	Corr. Factor	Reading dBuV	Emission dBuV	Limit dBuV	Margins dB	Notes
No.	MHz	dB	QP	QP	QP	QP	
1	0.59527	0.20	37.25	37.45	48.00	-10.55	
+2	1.46765	0.20	38.27	38.47	48.00	-9.53	
3	2.50454	0.25	34.70	34.95	48.00	-13.05	
4	3.71936	0.37	32.50	32.87	48.00	-15.13	
5	13.65069	0.82	36.98	37.80	48.00	-10.20	
6	25.97385	1.32	26.02	27.34	48.00	-20.66	



Brand / Model : WX-1560  
 Test Mode : CH11  
 Power Source :  
 Remark :  
 Tested by : STEVEN

Location: Conduction 2                      Date: 2001/2/9                      Time: PM 05:12:57                      Phase: L1  
 Temperatur (C): 20                      Humidity (%): 60                      Approved by:

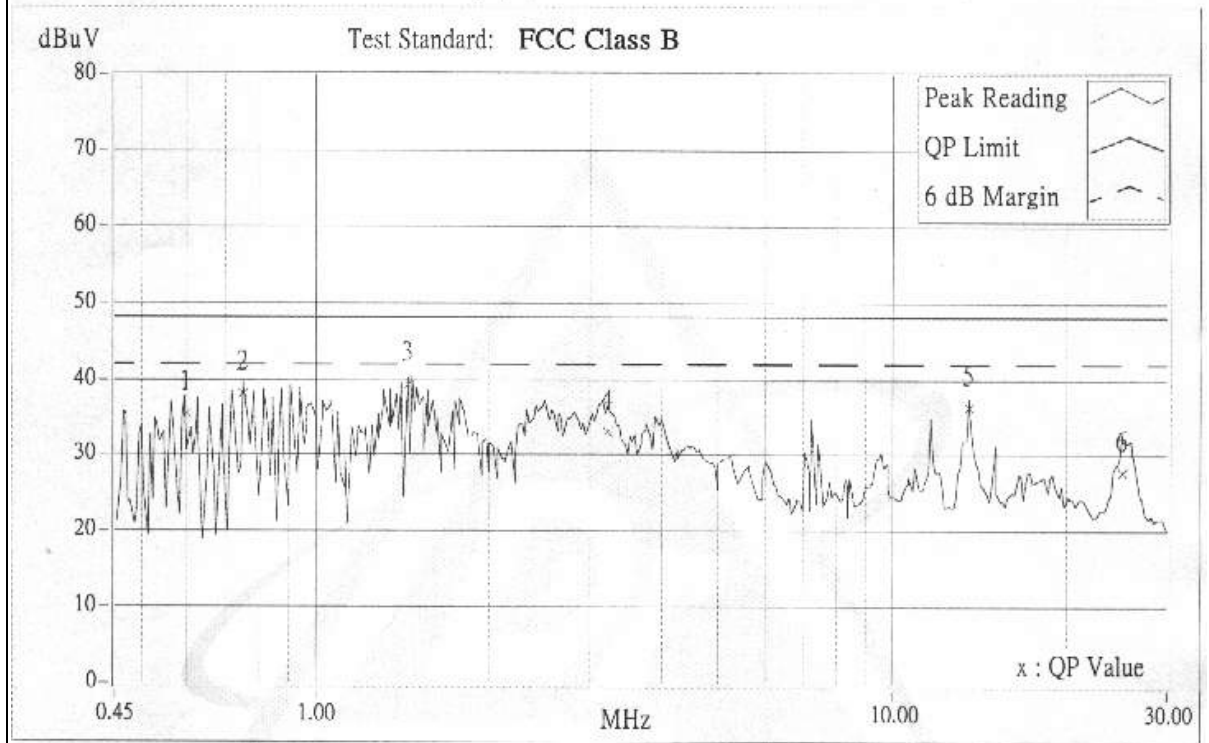


	Frequency	Corr. Factor	Reading dBuV	Emission dBuV	Limit dBuV	Margins dB	Notes
No.	MHz	dB	QP	QP	QP	QP	
1	0.59266	0.20	37.89	38.09	48.00	-9.91	
2	0.59522	0.20	39.31	39.51	48.00	-8.49	
3	3.10470	0.31	29.78	30.09	48.00	-17.91	
4	3.75982	0.38	36.22	36.60	48.00	-11.40	
+5	13.65027	0.92	39.86	40.78	48.00	-7.22	
6	25.93928	1.44	21.44	22.88	48.00	-25.12	



Brand / Model : WX-1560  
 Test Mode : CH11  
 Power Source :  
 Remark :  
 Tested by : STEVEN

Location: Conduction 2                      Date: 2001/2/9                      Time: PM 05:09:19                      Phase: N  
 Temperatur (C): 20                      Humidity (%): 60                      Approved by:



	Frequency	Corr. Factor	Reading dBuV	Emission dBuV	Limit dBuV	Margins dB	Notes
No.	MHz	dB	QP	QP	QP	QP	
1	0.59780	0.20	35.53	35.73	48.00	-12.27	
2	0.75380	0.20	38.12	38.32	48.00	-9.68	
+3	1.44128	0.20	39.37	39.57	48.00	-8.43	
4	3.22404	0.32	33.06	33.38	48.00	-14.62	
5	13.65028	0.82	36.38	37.20	48.00	-10.80	
6	25.00656	1.30	27.79	29.09	48.00	-18.91	





## 4.2 RADIATED EMISSION MEASUREMENT

### 4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

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

Frequencies (MHz)	Field Strength of Fundamental	
	$\mu\text{V}/\text{meter}$	$\text{dB}\mu\text{V}/\text{meter}$
30-88	100	40.0
88-216	150	43.5
216-960	200	46.0
Above 960	500	54.0

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.

### LIMIT OF RADIATED EMISSION OF FCC PART 15, SUBPART B FOR FREQUENCY ABOVE 1000 MHz

FREQUENCY (MHz)	Class A (at 10m)		Class B (at 3m)	
	$\text{uV}/\text{m}$	$\text{dBuV}/\text{m}$	$\text{uV}/\text{m}$	$\text{dBuV}/\text{m}$
Above 1000	300	49.5	500	54.0

- Note: 1 The lower limit shall apply at the transition frequencies.  
 2 Emission level ( $\text{dBuV}/\text{m}$ ) =  $20 \log$  Emission level ( $\text{uV}/\text{m}$ ).  
 3 All emanation 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.



#### 4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
HP Spectrum Analyzer	8590L	3544A01176	Apr. 18, 2001
HP Preamplifier	8447D	2944A08485	Apr. 27, 2001
HP Preamplifier	8347A	3307A01088	Sep. 04, 2001
ROHDE & SCHWARZ TEST RECEIVER	ESMI	839013/007 839379/002	Aug. 3, 2001
SCHWARZBECK Tunable Dipole Antenna	VHA 9103 UHA 9105	E101051 E101055	N/A
CHASE BILOG Antenna	CBL6112A	2221	Aug. 4, 2001
SCHWARZBECK Horn Antenna	BBHA9120-D	D130	Jul. 9, 2001
SCHWARZBECK Horn Antenna	BBHA9170	123	Jan. 30, 2001
EMCO Turn Table	1060	1115	N/A
SHOSHIN Tower	AP-4701	A6Y005	N/A
Open Field Test Site	Site 5	ADT-R05	Aug. 08, 2001

#### Notes:

- 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.



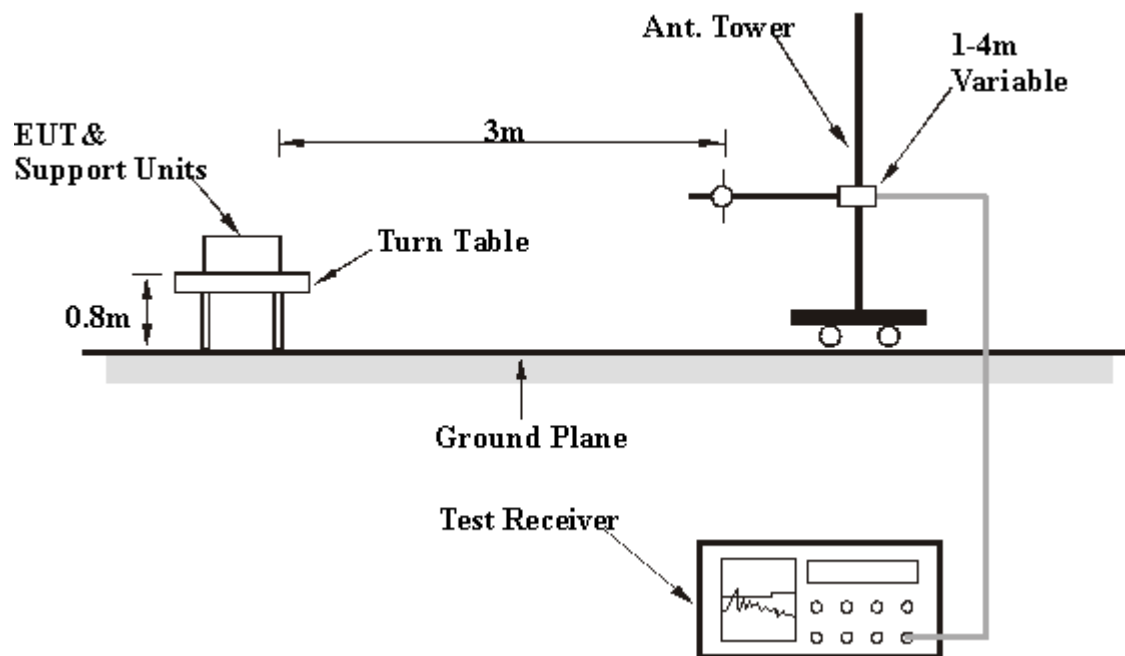
### 4.2.3 TEST PROCEDURES

1. The EUT was placed on the turn table 0.8 meter above ground in 3 meter open area test site.
2. Set the resolution bandwidth to 120KHz in the test receiver and select Peak function to scan the frequency below 1 GHz.
3. Shift the interference-receiving antenna located in antenna tower upwards and downwards between 1 and 4 meters above ground and find out the local peak emission on frequency domain.
4. Locate the interference-receiving antenna at the position where the local peak reach the maximum emission.
5. Rotate the turn table and stop at the angle where the measurement device has maximum reading
6. Shift the interference-receiving antenna again to detect the maximum emission of the local peak
7. If the reading of the local peak under Peak function is lower than limit by 6dB, then Quasi Peak detection is not needed and this reading should be recorded. And if it is higher than Peak limit, then the test is fail. Others, switch the receiver to Quasi Peak function, set the resolution bandwidth to 100kHz and repeat the procedures C ~ F. If the reading is lower than limit, this reading should be recorded, otherwise, the test is fail.
8. Set the resolution and video bandwidth of the spectrum analyzer to 1MHz and repeat procedures C ~ F for frequency band from 1 GHz to 10 times carrier frequency.
9. If the reading for the local peak is lower than the Average limit, no further testing is needed in this local peak and this reading should be recorded. If it is higher than Average limit but lower than Peak limit, then set the resolution bandwidth to 1MHz and video bandwidth to 300Hz. Repeat procedures C ~ F. If the maximum reading is lower than Average limit, then this reading should be recorded. If it is higher, then the test is fail.

#### Notes:

1. The frequency range of verification is either from 30 MHz to 1GHz or from 30 MHz up to 10 times carrier frequency of EUT (whichever is the highest frequency range).
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for frequency below 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 300 Hz for frequency above 1GHz.

#### 4.2.4 TEST SETUP



For the actual test configuration, please refer to the related Item in this test report (**Photographs of the Test Configuration**).



## 4.2.5 TEST RESULTS

### Digital Portion

<b>EUT</b>	2.4GHz Wireless Access Point	<b>Model</b>	WX-1560
<b>Mode</b>	Channel 11	<b>Detector Function</b>	Quasi-Peak
<b>Frequency Range</b>	30-1000 MHz	<b>Test Distance</b>	3M
<b>Environmental Conditions</b>	20°C, 60%RH	<b>Tested By</b>	Steven Lu

ANTENNA POLARITY: VERTICAL							
Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)
275.00	11.87	24.13	36.0	46.0	-10.0	100	271
325.00	10.56	24.44	35.0	46.0	-11.0	104	61
350.00	9.83	28.37	38.2	46.0	-7.8	132	281
400.02	8.18	30.92	39.1	46.0	-6.9	117	287
792.16	3.79	32.31	36.1	46.0	-9.9	140	40
880.14	2.83	32.57	35.4	46.0	-10.6	132	357

ANTENNA POLARITY: HORIZONTAL							
Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)
395.99	8.32	25.98	34.3	46.0	-11.7	103	357
400.02	8.18	31.22	39.4	46.0	-6.6	100	265
600.04	5.75	29.05	34.8	46.0	-11.2	100	245
747.98	3.98	36.32	40.3	46.0	-5.7	137	74
792.17	3.79	33.71	37.5	46.0	-8.5	145	326
880.17	2.83	32.17	35.0	46.0	-11.0	110	201

- Notes:
- 1 Emission level (dBuV/m) = Correction Factor (dB) + Reading value (dBuV).
  - 2 Correction Factor (dB) = Ant. Factor (dB)+Cable loss (dB)
  - 3 The other emission levels were very low against the limit.
  - 4 Margin value = Emission level - Limit value



**RF Portion**

<b>EUT</b>	2.4GHz Wireless Access Point	<b>Model</b>	WX-1560
<b>Mode</b>	Channel 1	<b>Detector Function</b>	Peak Average
<b>Frequency Range</b>	Above 1000 MHz	<b>Test Distance</b>	3M
<b>Environmental Conditions</b>	20°C , 60%RH	<b>Tested By</b>	Steven Lu

<b>ANTENNA POLARITY: Vertical</b>		<b>Detector Function :</b>				<b>6dB Bandwidth : 1MHz</b>				<b>Frequency Range : Above 1GHz</b>	
Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)		Antenna Height (cm)	Table Angle (Degree)
		P.K.	A.V.	P.K.	A.V.	P.K.	A.V.	P.K.	A.V.		
2038.0	34.57	12.43	-	47.0	-	74.0	54.0	-27.0	-	100	219
*2412.9	36.09	69.41	61.6	105.5	97.7	-	-	-	-	135	285
4076.0	43.10	10.9	-0.3	54.0	42.8	74.0	54.0	-20.0	-11.2	105	326
4824.0	43.73	8.87	-	52.6	-	74.0	54.0	-21.4	-	100	285

<b>ANTENNA POLARITY: Horizontal</b>		<b>Detector Function :</b>				<b>6dB Bandwidth:1MHz</b>				<b>Frequency Range: Above 1GHz</b>	
Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)		Antenna Height (cm)	Table Angle (Degree)
		P.K.	A.V.	P.K.	A.V.	P.K.	A.V.	P.K.	A.V.		
2038.2	34.57	13.88	-	48.5	-	74.0	54.0	-25.5	-	114	167
*2410.1	36.09	59.11	51.9	95.2	88.0	-	-	-	-	106	144
4075.9	43.10	10.70	-	53.8	-	74.0	54.0	-20.2	-	105	227
4824.5	43.73	8.47	-	52.2	-	74.0	54.0	-21.8	-	104	249

- NOTES:**
1. Emission level (dBuV/m) = Correction Factor (dB) + Reading value (dBuV).
  2. Correction Factor (dB) = Ant. Factor (dB)+Cable loss (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



<b>EUT</b>	2.4GHz Wireless Access Point	<b>Model</b>	WX-1560
<b>Mode</b>	Channel 6	<b>Detector Function</b>	Peak Average
<b>Frequency Range</b>	Above 1000 MHz	<b>Test Distance</b>	3M
<b>Environmental Conditions</b>	20°C , 60%RH	<b>Tested By</b>	Steven Lu

<b>ANTENNA POLARITY: Vertical</b>		<b>Detector Function :</b>				<b>6dB Bandwidth:1MHz</b>				<b>Frequency Range: Above 1GHz</b>	
Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)		Antenna Height (cm)	Table Angle (Degree)
		P.K.	A.V.	P.K.	A.V.	P.K.	A.V.	P.K.	A.V.		
2063.0	34.78	13.55	-	48.3	-	74.0	54.0	-25.7	-	100	105
*2436.9	36.37	66.13	59.0	102.5	95.4	-	-	-	-	112	325
4126.0	42.71	11.54	1.29	54.2	44.0	74.0	54.0	-19.8	-10	107	135
4874.9	43.75	8.95	-	52.7	-	74.0	54.0	-21.3	-	118	269

<b>ANTENNA POLARITY: Horizontal</b>		<b>Detector Function :</b>				<b>6dB Bandwidth:1MHz.</b>				<b>Frequency Range: Above 1GHz.</b>	
Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)		Antenna Height (cm)	Table Angle (Degree)
		P.K.	A.V.	P.K.	A.V.	P.K.	A.V.	P.K.	A.V.		
2063.1	34.78	14.28	-	49.1	-	74.0	54.0	-24.9	-	113	342
*2437.8	36.37	56.33	48.5	92.7	84.9	-	-	-	-	105	197
4126.0	42.71	9.99	-	52.7	-	74.0	54.0	-21.3	-	124	362
4874.2	43.75	7.88	-	51.6	-	74.0	54.0	-22.4	-	99	284

- NOTES:**
1. Emission level (dBuV/m) = Correction Factor (dB) + Reading value (dBuV).
  2. Correction Factor (dB) = Ant. Factor (dB)+Cable loss (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



<b>EUT</b>	2.4GHz Wireless Access Point	<b>Model</b>	WX-1560
<b>Mode</b>	Channel 11	<b>Detector Function</b>	Peak Average
<b>Frequency Range</b>	Above 1000 MHz	<b>Test Distance</b>	3M
<b>Environmental Conditions</b>	20°C , 60%RH	<b>Tested By</b>	Steven Lu

<b>ANTENNA POLARITY: Vertical</b>		<b>Detector Function :</b>				<b>6dB Bandwidth:1MHz.</b>				<b>Frequency Range: Above 1GHz</b>	
Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)		Antenna Height (cm)	Table Angle (Degree)
		P.K.	A.V.	P.K.	A.V.	P.K.	A.V.	P.K.	A.V.		
2088.1	35.07	12.8	-	47.9	-	74.0	54.0	-26.1	-	99	85
*2462.9	36.44	63.7	56.1	100.1	92.5	-	-	-	-	104	243
4176.0	42.76	9.99	-	52.8	-	74.0	54.0	-21.2	-	100	317
4924.8	43.27	6.93	-	50.2	-	74.0	54.0	-23.8	-	100	337

<b>ANTENNA POLARITY: Horizontal</b>		<b>Detector Function :</b>				<b>6dB Bandwidth:1MHz.</b>				<b>Frequency Range: Above 1GHz</b>	
Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)		Antenna Height (cm)	Table Angle (Degree)
		P.K.	A.V.	P.K.	A.V.	P.K.	A.V.	P.K.	A.V.		
2088.1	35.07	13.93	-	49.0	-	74.0	54.0	-25.0	-	116	180
*2461.8	36.44	54.26	44.7	90.7	81.1	-	-	-	-	112	168
4176.0	42.76	10.58	-	53.3	-	74.0	54.0	-20.7	-	111	4
4924.8	43.27	7.91	-	51.2	-	74.0	54.0	-22.8	-	100	186

- NOTES:**
1. Emission level (dBuV/m) = Correction Factor (dB) + Reading value (dBuV).
  2. Correction Factor (dB) = Ant. Factor (dB)+Cable loss (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 Limit 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	846839/018 848926/005	Mar. 03, 2001
HP ATTENUATOR	8496B	3247A18505	Cal. on use
HP PLOTTER	7475A	2641V27755	N/A

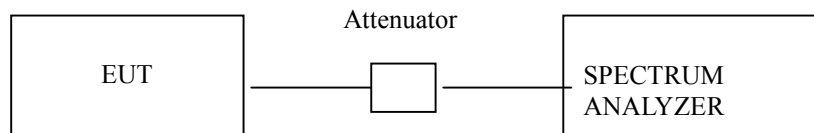
Notes:

- 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 CONDITION

The software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel frequencies individually.



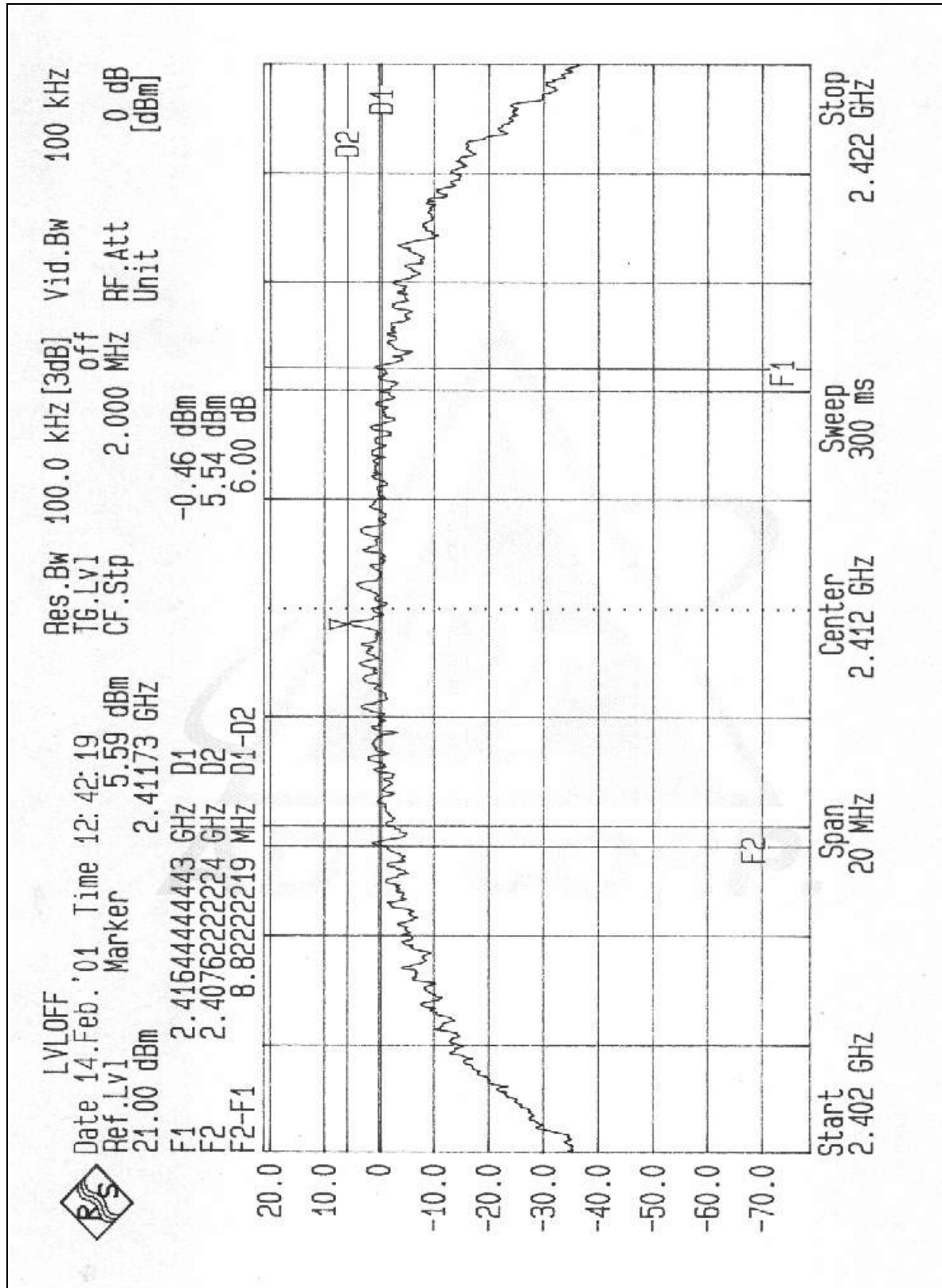
## 4.3.6 TEST RESULTS

<b>EUT</b>	2.4GHz Wireless Access Point	<b>Model</b>	WX-1560
<b>Environmental Conditions</b>	20°C, 60%RH	<b>Tested By</b>	Steven Lu

CHANNEL	CHANNEL FREQUENCY (MHz)	6 dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	8.82	0.5	PASS
6	2437	9.42	0.5	PASS
11	2462	9.47	0.5	PASS

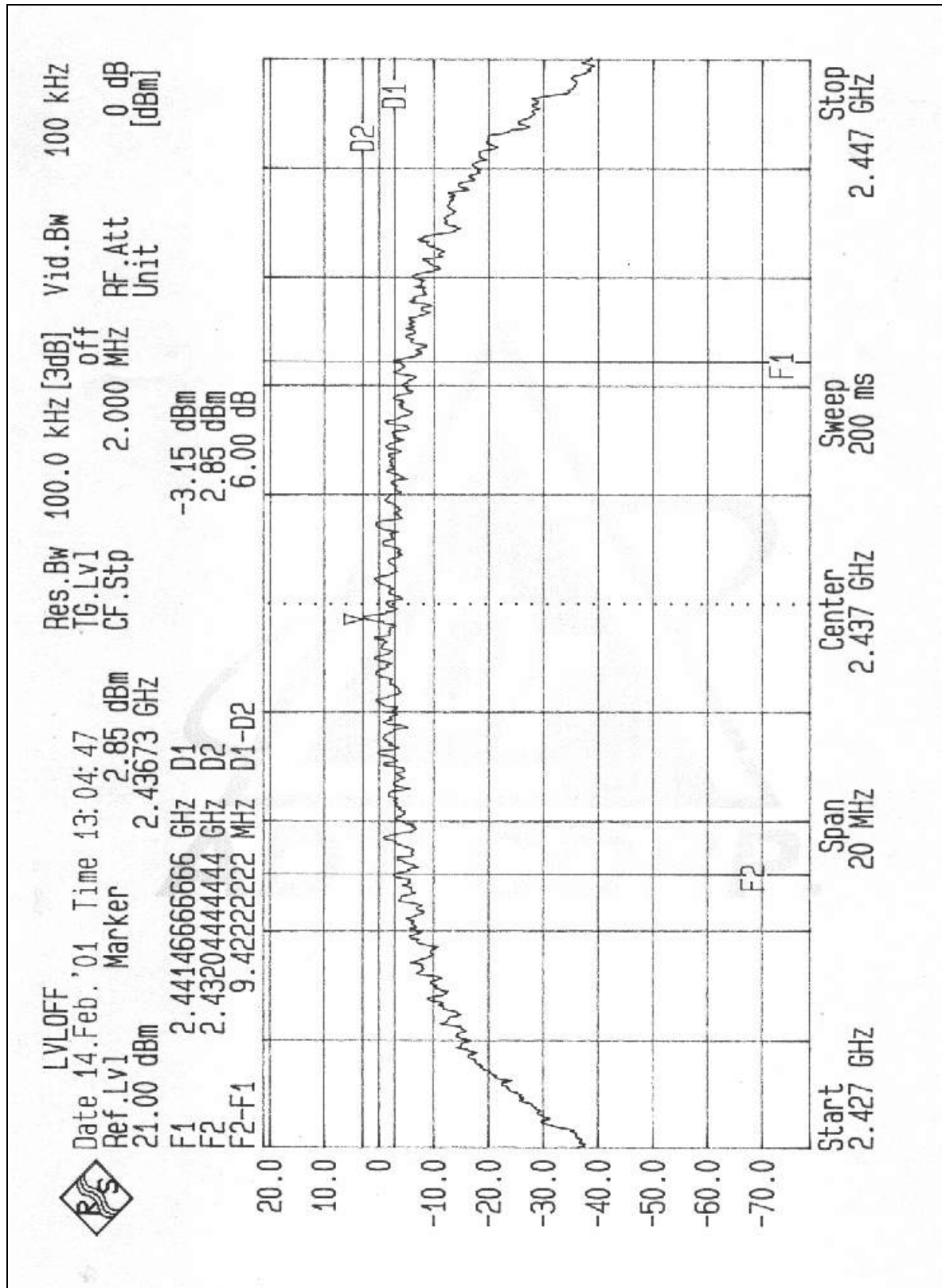


CH1





CH6





CH11

