



FCC TEST REPORT

REPORT NO.: RF910926R04

MODEL NO.: WX-5520A

RECEIVED: Aug. 28, 2002

TESTED: Aug. 30 ~ Oct. 23, 2002

APPLICANT: GEMTEK TECHNOLOGY CO., LTD.

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ISSUED BY: Advance Data Technology Corporation

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0528
ILAC MRA



Lab Code: 200102-0



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1 CERTIFICATION

PRODUCT : Wireless Dual-Band Access Point
BRAND NAME : Gemtek
MODEL NO. : WX-5520A
APPLICANT : GEMTEK TECHNOLOGY CO., LTD.
STANDARDS : 47 CFR Part 15, Subpart C (Section 15.247),
Subpart E (Section 15.407) and Subpart B,
ANSI C63.4-1992

We, **Advance Data Technology Corporation**, hereby certify that one sample of the designation has been tested in our facility from Aug. 30 ~ Oct. 23, 2002. 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.

CHECKED BY : Emily Lu , DATE : Oct. 30, 2002
Emily Lu

APPROVED BY : Dr. Alan Lane : DATE : Oct. 30, 2002
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
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit Minimum passing margin is -14.67dBuV at 11.043MHz
15.247(a)(2)	Spectrum Bandwidth of a Direct Sequence Spread Spectrum System Limit: min. 500kHz	PASS	Meet the requirement of limit
15.247(b)	Maximum Peak Output Power Limit: max. 30dBm	PASS	Meet the requirement of limit
15.247(c)	Radiated Emissions Limit: Table 15.209	PASS	Meet the requirement of limit Minimum passing margin is -2.90dBuV at 675.00MHz
15.247(d)	Power Spectral Density Limit: max. 8dBm	PASS	Meet the requirement of limit
15.247(c)	Band Edge Measurement Limit: 20dB less than the peak value of fundamental frequency	PASS	Meet the requirement of limit


APPLIED STANDARD: 47 CFR Part 15, Subpart E and Subpart B

Standard Section	Test Type	Result	REMARK
15.407(b)(5)	AC Power Conducted Emission	PASS	Meet the requirement of limit Minimum passing margin is -15.00dBuV at 11.627MHz
15.407(b/1/2/3)(b)(5)	Electric Field Strength Spurious Emissions, 30 MHz – 40000 MHz	PASS	Meet the requirement of limit Minimum passing margin is -2.90dBuV at 675.00MHz
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



3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Wireless Dual-Band Access Point
MODEL NO.	WX-5520A
POWER SUPPLY	5VDC from power adapter
MODULATION	802.11b: DSSS 802.11a: OFDM
TRANSFER RATE	802.11b: 1 / 2 / 5.5 / 11Mbps 802.11a: 6 to 54Mbps (Turbo mode: up to 72Mbps *see note 1)
FREQUENCY RANGE	802.11b: 2412MHz ~ 2462MHz 802.11a: 5.15GHz ~ 5.35GHz (*see note 2)
NUMBER OF CHANNEL	802.11b: 11 802.11a: 8 for Normal mode / 3 for Turbo mode
CHANNEL SPACING	802.11b: 5MHz 802.11a: 20MHz for Normal mode / 40MHz for Turbo mode
OUTPUT POWER	802.11b: 11.82dBm 802.11a: 9.91dBm
DATA CABLE	NA
ANTENNA TYPE	Dipole antenna
I/O PORTS	RJ45
ASSOCIATED DEVICES	NA

NOTE:

1. The EUT was powered by the following AC adapter:

BRAND :	Delta
MODEL :	ADP-10SB REV:H
INPUT :	100-240Vac 0.4A 50-60Hz
OUTPUT :	5Vdc 2A

2. The EUT operates in both the 5GHz and 2.4GHz Bands and compatibility with 802.11a and 802.11b technology.
3. This EUT is capable of providing data rates up to 72Mbps in turbo mode.
4. 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: Eleven channels are provided to this EUT.

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

NOTE:

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

For 802.11a: Eight channels are provided to this EUT for Normal mode.

Channel	Frequency	Channel	Frequency
1	5180 MHz	7	5300 MHz
2	5200 MHz	8	5320 MHz
3	5220 MHz		
4	5240 MHz		
5	5260 MHz		
6	5280 MHz		

Five channels are provided to this EUT for Turbo Mode.

Channel	Frequency	Channel	Frequency
1	5210 MHz	2	5250 MHz
3	5290 MHz		

NOTE:

1. The EUT was transmitting at full power on the specified channel with a duty cycle of 99% (maximum allowed). The EUT was tested in both normal mode (channel bandwidth of approximately 30MHz) and turbo mode (channel bandwidth of approximately 60MHz).
2. "Normal Mode" allows data rates of up to 54Mbps. The device was, therefore, tested in Normal mode at the data rate that produced the highest output power for normal mode (6Mbps).
3. "Turbo Mode" allows data rates of up to 72Mbps. At data rates higher than 12Mbps the PA gain is reduced to improve signal fidelity. The device was, therefore, tested in turbo mode at the data rate that produced the highest output power for turbo mode (12Mbps).
4. Channel 1, 4, 5 and 8 are the closest frequencies to the band edge, were chosen for final test of Normal Mode.
5. Channel 1 ~ 3 were chosen for final test of turbo mode.



3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a Wireless Dual-Band 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),
Subpart E (15.407) and Subpart B.
ANSI C63.4 : 1992**

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

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

3.4 DESCRIPTION OF SUPPORT UNITS

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

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK	DELL	PP01L	TW-09C748-12800-19O-B220	FCC DoC APPROVED
2	FAST ETHERNET PC CARD	D-Link	DFE-680TXD	RE1A044413	MQ4FE2K5MX

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 (FOR PART 802.11b)

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
ROHDE & SCHWARZ Test Receiver	ESCS30	834115/016	Mar. 3, 2003
ROHDE & SCHWARZ Artificial Mains Network (For EUT)	ESH3-Z5	847265/023	Jan. 10, 2003
* ROHDE & SCHWARZ 4-wire ISN	ENY41	838119/028	Dec. 10, 2002
* ROHDE & SCHWARZ 2-wire ISN	ENY22	837497/018	Dec. 10, 2002
EMCO L.I.S.N. (For peripherals)	3825/2	9504-2359	July 10, 2003
Software	Cond-V2L	NA	NA
RF cable (JYEBAO)	5D-FB	Cable-C03.01	July 11, 2003
Terminator (For EMCO LISN)	NA	E1-01-300	Feb. 20, 2003
Terminator (For EMCO LISN)	NA	E1-01-301	Feb. 20, 2003
Shielded Room	Site 3	ADT-C03	NA
VCCI Site Registration No.	Site 3	C-274	NA

- 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.
 3. “*”: These equipment are used for conducted telecom port test only (if tested).
 4. The test was performed in ADT Open Site No. 3.



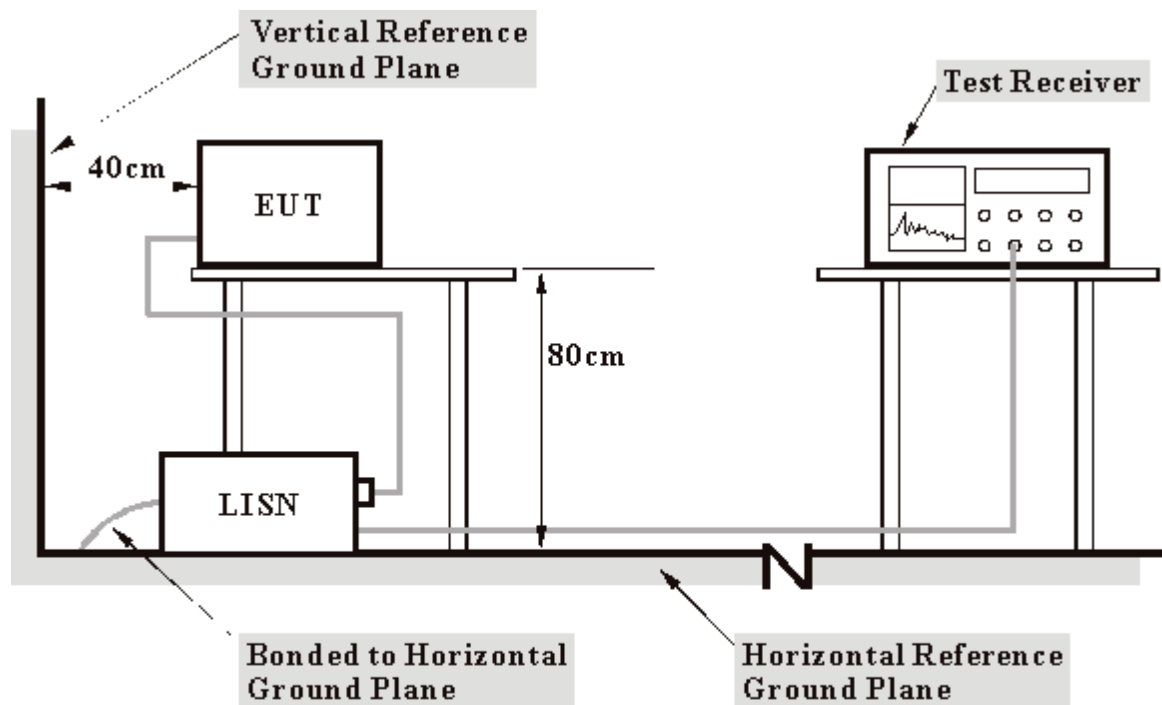
4.1.3 TEST PROCEDURES

- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- c. The frequency range from 150 kHz to 30 MHz was searched. Emission levels over 10dB under the prescribed limits could not be reported

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 TEST SETUP



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

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

4.1.6 EUT OPERATING CONDITIONS

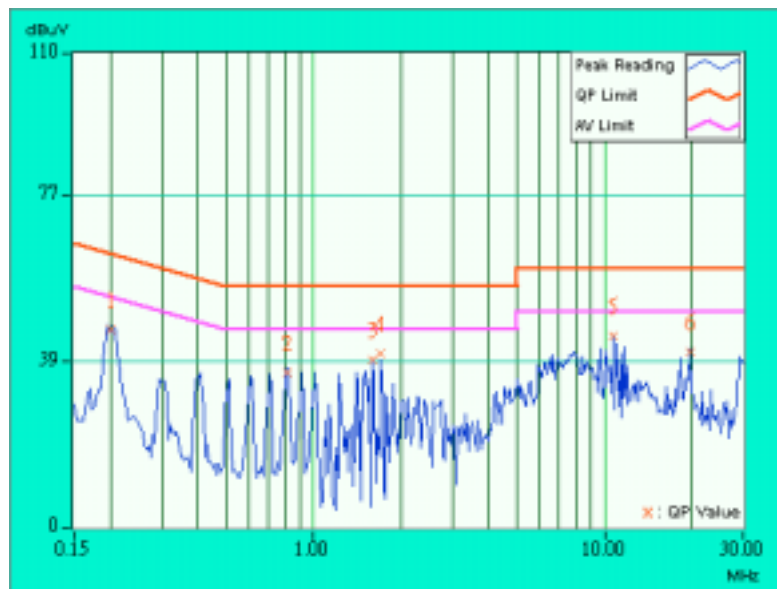
- a. Placed the EUT on the testing table.
- b. Prepared another computer system to act as a communication partner and placed it outside of testing area.
- c. The communication partner run a test program to enable EUT under transmission/receiving condition continuously at specific channel frequency via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

4.1.7 TEST RESULTS

EUT	Wireless Dual-Band Access Point	MODEL	WX-5520A
MODE	Channel 1	6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	25 deg. C, 52 %RH, 1005 hPa	TESTED BY: Cody Chang	

No	Freq. (MHz)	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			QP.	AV.	QP.	AV.	QP.	AV.	QP.	AV.
1	0.201	0.10	45.04	-	45.14	-	63.58	53.58	-18.44	-
2	0.814	0.17	35.13	-	35.30	-	56.00	46.00	-20.70	-
3	1.598	0.26	37.99	-	38.25	-	56.00	46.00	-17.75	-
4	1.690	0.27	39.52	-	39.79	-	56.00	46.00	-16.21	-
5	10.701	0.53	43.75	-	44.28	-	60.00	50.00	-15.72	-
6	19.707	0.79	40.03	-	40.82	-	60.00	50.00	-19.18	-

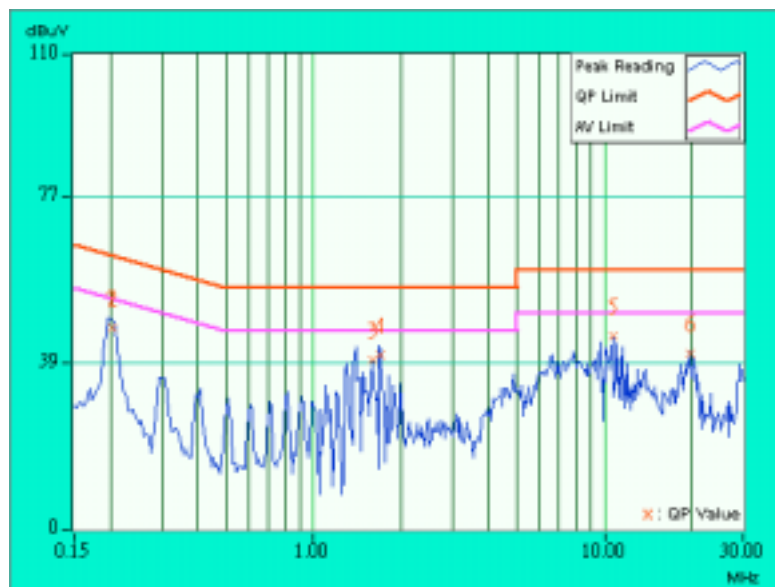
- Remarks:
1. "*": Undetectable
 2. QP. and AV. are abbreviations of quasi-peak and average individually.
 3. "-": NA
 4. The emission levels of other frequencies were very low against the limit.
 5. Margin value = Emission level - Limit value
 6. Emission Level = Correction Factor + Reading Value.



EUT	Wireless Dual-Band Access Point	MODEL	WX-5520A
MODE	Channel 1	6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	PHASE	Neutral (N)
ENVIRONMENTAL CONDITIONS	25 deg. C, 52 %RH, 1005 hPa	TESTED BY: Cody Chang	

No	Freq. (MHz)	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			QP.	AV.	QP.	AV.	QP.	AV.	QP.	AV.
1	0.202	0.10	46.23	-	46.33	-	63.51	53.51	-17.18	-
2	0.202	0.10	46.25	-	46.35	-	63.51	53.51	-17.16	-
3	1.602	0.26	38.64	-	38.90	-	56.00	46.00	-17.10	-
4	1.699	0.27	39.80	-	40.07	-	56.00	46.00	-15.93	-
5	10.683	0.41	44.08	-	44.49	-	60.00	50.00	-15.51	-
6	19.707	0.59	40.30	-	40.89	-	60.00	50.00	-19.11	-

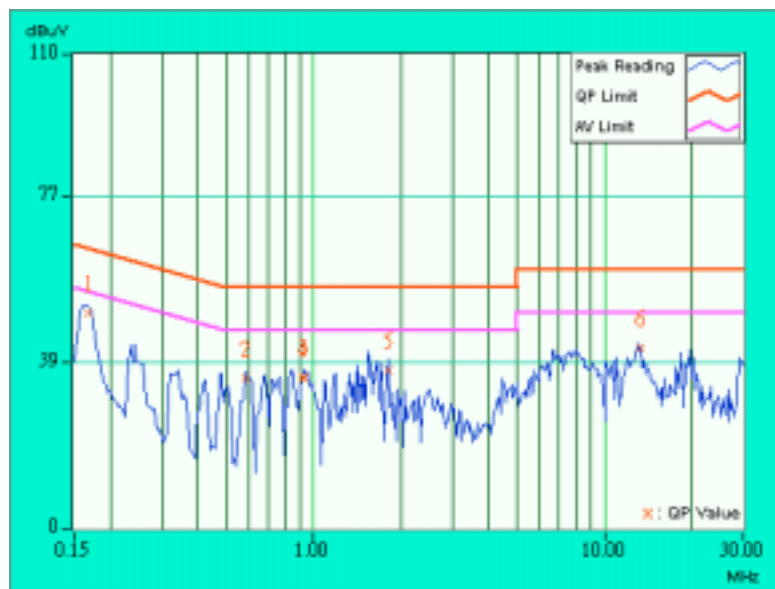
- Remarks:
1. "x": Undetectable
 2. QP. and AV. are abbreviations of quasi-peak and average individually.
 3. "-": NA
 4. The emission levels of other frequencies were very low against the limit.
 5. Margin value = Emission level - Limit value
 6. Emission Level = Correction Factor + Reading Value.



EUT	Wireless Dual-Band Access Point	MODEL	WX-5520A
MODE	Channel 6	6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	25 deg. C, 52 %RH, 1005 hPa	TESTED BY: Cody Chang	

No	Freq. (MHz)	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			QP.	AV.	QP.	AV.	QP.	AV.	QP.	AV.
1	0.168	0.10	49.44	-	49.54	-	65.06	55.06	-15.52	-
2	0.584	0.13	34.32	-	34.45	-	56.00	46.00	-21.55	-
3	0.920	0.19	34.50	-	34.69	-	56.00	46.00	-21.31	-
4	0.920	0.19	34.24	-	34.43	-	56.00	46.00	-21.57	-
5	1.801	0.28	36.11	-	36.39	-	56.00	46.00	-19.61	-
6	13.350	0.63	41.24	-	41.87	-	60.00	50.00	-18.13	-

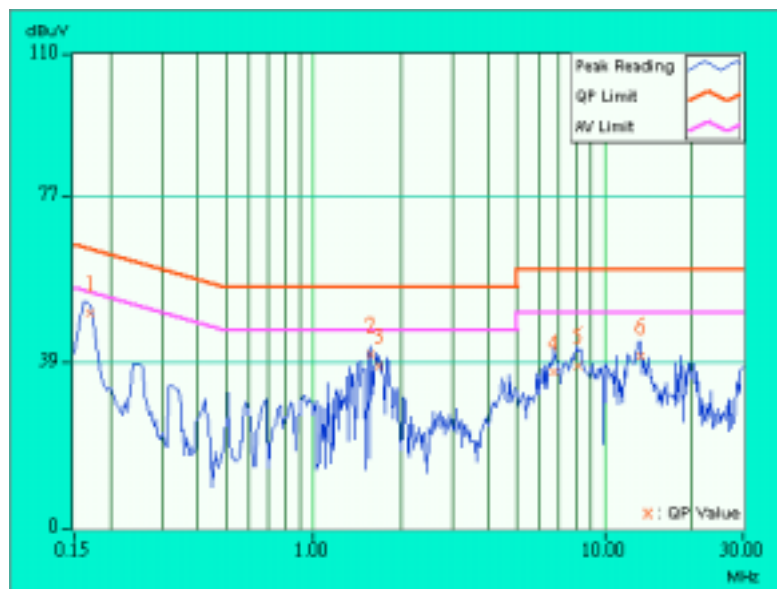
- Remarks:
1. "*": Undetectable
 2. QP. and AV. are abbreviations of quasi-peak and average individually.
 3. "-": NA
 4. The emission levels of other frequencies were very low against the limit.
 5. Margin value = Emission level - Limit value
 6. Emission Level = Correction Factor + Reading Value.



EUT	Wireless Dual-Band Access Point	MODEL	WX-5520A
MODE	Channel 6	6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	PHASE	Neutral (N)
ENVIRONMENTAL CONDITIONS	25 deg. C, 52 %RH, 1005 hPa	TESTED BY: Cody Chang	

No	Freq. (MHz)	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			QP.	AV.	QP.	AV.	QP.	AV.	QP.	AV.
1	0.169	0.10	49.62	-	49.72	-	64.99	54.99	-15.27	-
2	1.566	0.26	39.75	-	40.01	-	56.00	46.00	-15.99	-
3	1.680	0.27	37.26	-	37.53	-	56.00	46.00	-18.47	-
4	6.695	0.40	35.79	-	36.19	-	60.00	50.00	-23.81	-
5	8.098	0.40	37.34	-	37.74	-	60.00	50.00	-22.26	-
6	13.359	0.47	39.67	-	40.14	-	60.00	50.00	-19.86	-

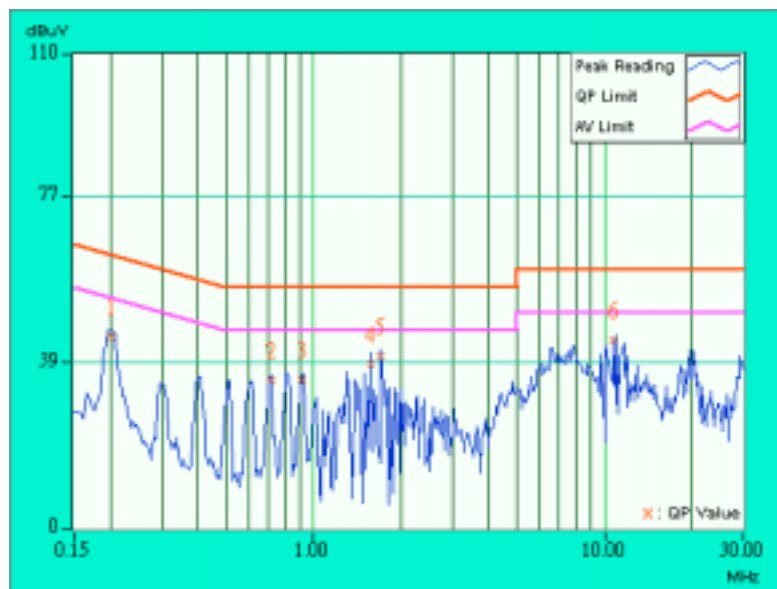
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 4. The emission levels of other frequencies were very low against the limit.
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EUT	Wireless Dual-Band Access Point	MODEL	WX-5520A
MODE	Channel 11	6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	25 deg. C, 52 %RH, 1005 hPa	TESTED BY: Cody Chang	

No	Freq. (MHz)	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			QP.	AV.	QP.	AV.	QP.	AV.	QP.	AV.
1	0.201	0.10	44.00	-	44.10	-	63.55	53.55	-19.45	-
2	0.713	0.15	34.05	-	34.20	-	56.00	46.00	-21.80	-
3	0.908	0.18	33.82	-	34.00	-	56.00	46.00	-22.00	-
4	1.578	0.26	37.51	-	37.77	-	56.00	46.00	-18.23	-
5	1.690	0.27	39.58	-	39.85	-	56.00	46.00	-16.15	-
6	10.714	0.53	43.29	-	43.82	-	60.00	50.00	-16.18	-

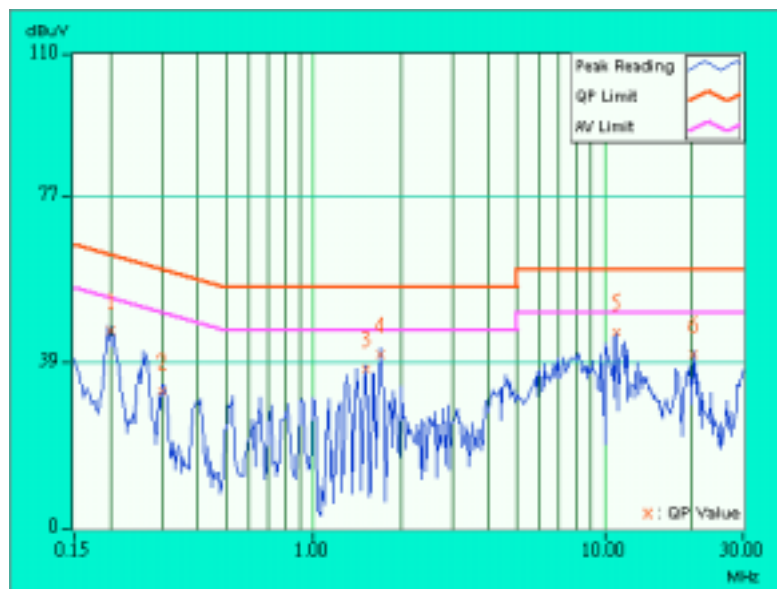
- Remarks:
1. "*": Undetectable
 2. QP. and AV. are abbreviations of quasi-peak and average individually.
 3. "-": NA
 4. The emission levels of other frequencies were very low against the limit.
 5. Margin value = Emission level - Limit value
 6. Emission Level = Correction Factor + Reading Value.



EUT	Wireless Dual-Band Access Point	MODEL	WX-5520A
MODE	Channel 11	6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	PHASE	Neutral (N)
ENVIRONMENTAL CONDITIONS	25 deg. C, 52 %RH, 1005 hPa	TESTED BY: Cody Chang	

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	QP.	AV.	QP.	AV.	QP.	AV.	QP.	AV.
1	0.200	0.10	45.33	-	45.43	-	63.61	53.61	-18.18	-
2	0.303	0.10	31.08	-	31.18	-	60.15	50.15	-28.97	-
3	1.512	0.25	36.26	-	36.51	-	56.00	46.00	-19.49	-
4	1.691	0.27	39.78	-	40.05	-	56.00	46.00	-15.95	-
5	11.043	0.42	44.91	-	45.33	-	60.00	50.00	-14.67	-
6	20.258	0.61	39.67	-	40.28	-	60.00	50.00	-19.72	-

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





4.2 RADIATED EMISSION MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

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

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

NOTE:

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

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
* HP Spectrum Analyzer	8590L	3544A01176	May 13, 2003
* HP Preamplifier	8447D	2944A08485	Oct. 30, 2002
* HP Preamplifier	8449B	3008A01201	Dec. 06, 2002
* HP Preamplifier	8449B	3008A01292	Aug. 7, 2003
* ROHDE & SCHWARZ TEST RECEIVER	ESMI	839013/007 839379/002	Jan. 27, 2003
SCHWARZBECK Tunable Dipole Antenna	VHA 9103 UHA 9105	E101051 E101055	Nov. 23, 2002
* CHASE BILOG Antenna	CBL6112A	2221	Aug. 2, 2003
* SCHWARZBECK Horn Antenna	BBHA9120-D1	D130	Jul. 3, 2003
* EMCO Horn Antenna	3115	9312-4192	Apr. 9, 2003
* EMCO Turn Table	1060	1115	NA
* SHOSHIN Tower	AP-4701	A6Y005	NA
* Software	AS61D4	NA	NA
* ANRITSU RF Switches	MP59B	M35046	Jan. 25, 2003
* TIMES RF cable	LMR-600	CABLE-ST5-01	Jul. 12, 2003
Open Field Test Site	Site 5	ADT-R05	Jul. 19, 2003
VCCI Site Registration No.	Site 5	R-1039	NA

- NOTE:** 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 equipment are used for the final measurement.
4. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
5. The test was performed in ADT Open Site No. 5.



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 the quasi-peak method or average method as specified and then reported in Data sheet peak mode and QP mode.

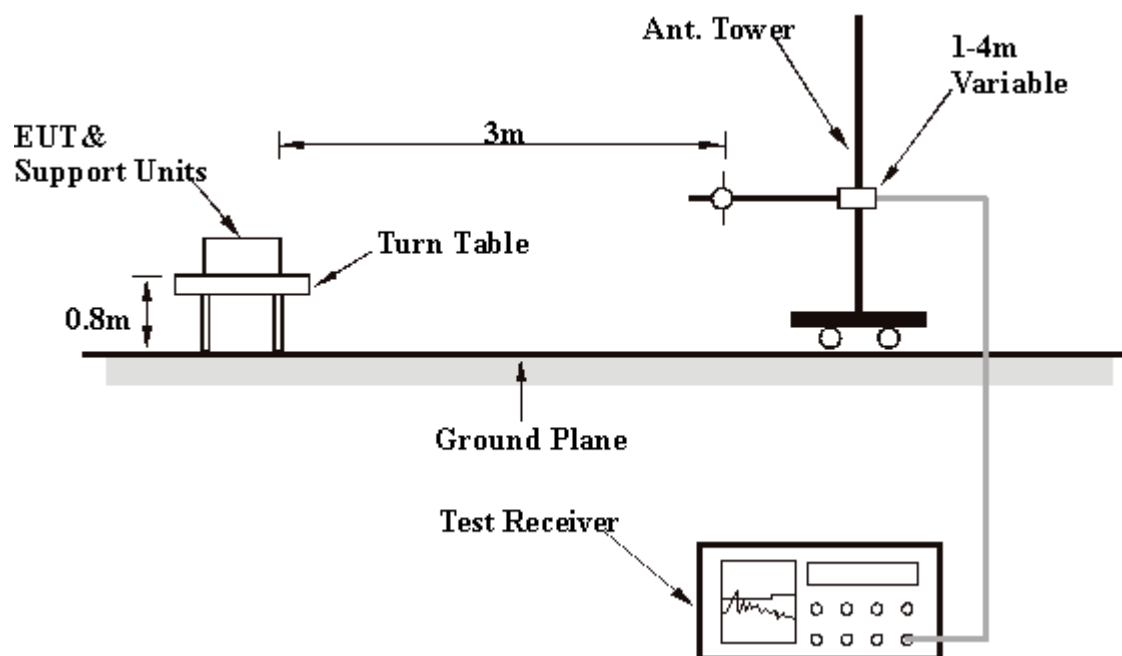
NOTE:

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 300 Hz for Average detection (AV) at frequency above 1GHz.

4.2.4 DEVIATION FROM TEST STANDARD

No deviation

4.2.5 TEST SETUP



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

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6



4.2.7 TEST RESULTS

EUT	Wireless Dual-Band Access Point	MODEL	WX-5520A
MODE	Channel 11	FREQUENCY RANGE	30-1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	35 deg. C, 50%RH, 1005 hPa	TESTED BY: Eric Lee	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB/m)
1	125.00	23.0 QP	43.50	-20.50	1.63H	181	10.56	11.47	0.97	0.00	-12.44
2	200.00	37.1 QP	43.50	-6.40	1.48H	114	26.72	8.98	1.40	0.00	-10.38
3	250.00	32.6 QP	46.00	-13.40	1.61H	108	19.29	12.02	1.29	0.00	-13.31
4	275.00	27.7 QP	46.00	-18.30	1.64H	66	13.74	12.59	1.37	0.00	-13.96
5	300.00	35.2 QP	46.00	-10.80	1.22H	133	20.57	13.18	1.45	0.00	-14.63
6	325.00	32.5 QP	46.00	-13.50	1.15H	141	17.33	13.72	1.45	0.00	-15.17
7	350.00	28.1 QP	46.00	-17.90	1.25H	251	12.44	14.21	1.45	0.00	-15.66
8	375.00	31.3 QP	46.00	-14.70	1.67H	182	14.67	15.13	1.50	0.00	-16.63
9	400.00	24.0 QP	46.00	-22.00	1.02H	122	6.34	16.11	1.55	0.00	-17.66
10	450.00	28.9 QP	46.00	-17.10	1.09H	94	10.93	16.37	1.60	0.00	-17.97
11	475.00	30.0 QP	46.00	-16.00	1.20H	99	11.49	16.83	1.68	0.00	-18.51
12	500.00	37.2 QP	46.00	-8.80	1.01H	119	18.19	17.26	1.75	0.00	-19.01
13	525.00	32.8 QP	46.00	-13.20	1.00H	145	13.38	17.59	1.79	0.00	-19.38
14	550.00	30.0 QP	46.00	-16.00	1.00H	242	10.25	17.93	1.83	0.00	-19.75
15	575.00	32.2 QP	46.00	-13.80	1.00H	191	12.04	18.28	1.88	0.00	-20.16
16	600.00	31.0 QP	46.00	-15.00	1.02H	201	10.46	18.61	1.93	0.00	-20.54
17	625.00	38.5 QP	46.00	-7.50	1.19H	194	17.62	18.91	1.97	0.00	-20.88
18	650.00	34.0 QP	46.00	-12.00	1.61H	134	12.76	19.23	2.01	0.00	-21.24
19	675.00	43.1 QP	46.00	-2.90	1.62H	145	21.80	19.27	2.02	0.00	-21.29
20	700.00	42.5 QP	46.00	-3.50	1.72H	144	21.20	19.31	2.03	0.00	-21.34
21	725.00	40.1 QP	46.00	-5.90	1.53H	111	18.20	19.76	2.11	0.00	-21.87
22	750.00	40.0 QP	46.00	-6.00	1.53H	128	17.64	20.18	2.18	0.00	-22.36
23	775.00	40.5 QP	46.00	-5.50	1.37H	240	17.84	20.43	2.23	0.00	-22.66
24	800.00	40.1 QP	46.00	-5.90	1.07H	229	17.12	20.69	2.29	0.00	-22.98
25	825.00	32.0 QP	46.00	-14.00	2.29H	108	9.09	20.58	2.33	0.00	-22.91
26	850.00	28.0 QP	46.00	-18.00	1.08H	73	5.16	20.48	2.36	0.00	-22.84
27	900.00	32.5 QP	46.00	-13.50	1.05H	107	9.26	20.80	2.44	0.00	-23.24

- NOTE:**
- 1 Emission level = Raw Value - Correction Factor
 - 2 Correction Factor = External Preamp. Gain - Ant. Factor - Cable loss
(External Preamp. Gain = 0, when the test receiver is used for the test.)
 - 3 The other emission levels were very low against the limit.
 - 4 Margin value = Emission level - Limit value



EUT	Wireless Dual-Band Access Point	MODEL	WX-5520A
MODE	Channel 11	FREQUENCY RANGE	30-1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	35 deg. C, 50%RH, 1005 hPa	TESTED BY: Eric Lee	

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M											
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB/m)
1	200.00	32.2 QP	43.50	-11.30	1.00V	5	21.82	8.98	1.40	0.00	-10.38
2	225.00	30.0 QP	46.00	-16.00	1.00V	97	18.25	10.41	1.35	0.00	-11.75
3	250.00	30.0 QP	46.00	-16.00	1.36V	167	16.69	12.02	1.29	0.00	-13.31
4	325.00	31.0 QP	46.00	-15.00	1.66V	80	15.83	13.72	1.45	0.00	-15.17
5	375.00	32.0 QP	46.00	-14.00	1.06V	244	15.37	15.13	1.50	0.00	-16.63
6	500.00	35.0 QP	46.00	-11.00	1.02V	33	15.99	17.26	1.75	0.00	-19.01
7	525.00	30.0 QP	46.00	-16.00	1.41V	96	10.62	17.59	1.79	0.00	-19.38
8	575.00	32.6 QP	46.00	-13.40	1.67V	175	12.44	18.28	1.88	0.00	-20.16
9	600.00	34.0 QP	46.00	-12.00	1.85V	258	13.46	18.61	1.93	0.00	-20.54
10	625.00	38.0 QP	46.00	-8.00	1.80V	190	17.12	18.91	1.97	0.00	-20.88
11	650.00	31.1 QP	46.00	-14.90	1.37V	61	9.86	19.23	2.01	0.00	-21.25
12	675.00	41.8 QP	46.00	-4.20	1.12V	191	20.51	19.27	2.02	0.00	-21.29
13	700.00	38.7 QP	46.00	-7.30	1.00V	191	17.36	19.31	2.03	0.00	-21.34
14	725.00	42.5 QP	46.00	-3.50	1.00V	208	20.63	19.76	2.11	0.00	-21.87
15	750.00	40.0 QP	46.00	-6.00	1.04V	182	17.64	20.18	2.18	0.00	-22.36
16	775.00	35.1 QP	46.00	-10.90	1.04V	90	12.44	20.43	2.23	0.00	-22.66
17	800.00	36.2 QP	46.00	-9.80	1.55V	72	13.22	20.69	2.29	0.00	-22.99
18	825.00	32.6 QP	46.00	-13.40	2.02V	261	9.69	20.58	2.33	0.00	-22.91
19	850.00	32.3 QP	46.00	-13.70	1.00V	202	9.46	20.48	2.36	0.00	-22.84
20	874.00	32.0 QP	46.00	-14.00	1.00V	87	8.97	20.63	2.40	0.00	-23.03
21	900.00	30.5 QP	46.00	-15.50	1.22V	358	7.26	20.80	2.44	0.00	-23.24
22	999.00	36.9 QP	54.00	-17.10	1.11V	97	12.87	21.36	2.67	0.00	-24.03

- NOTE:**
- 1 Emission level = Raw Value - Correction Factor
 - 2 Correction Factor = External Preamp. Gain - Ant. Factor - Cable loss
(External Preamp. Gain = 0, when the test receiver is used for the test.)
 - 3 The other emission levels were very low against the limit.
 - 4 Margin value = Emission level - Limit value



EUT	Wireless Dual-Band Access Point	MODEL	WX-5520A
MODE	Channel 1	FREQUENCY RANGE	Above 1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	35 deg. C, 50%RH, 1005 hPa	TESTED BY: Bunny Yao	

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)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB/m)
1	*2412.00	90.3 AV			1.35H	327	60.10	27.67	2.53	0.00	-30.20
2	*2412.00	96.2 PK			1.35H	327	66.00	27.67	2.53	0.00	-30.20
3	4824.00	30.8 AV	54.00	-23.20	1.16H	288	32.00	31.52	4.01	36.70	1.18
4	4824.00	37.8 PK	74.00	-36.20	1.16H	288	39.00	31.52	4.01	36.70	1.18

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)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB/m)
1	*2412.00	90.2 AV			1.11V	160	60.00	27.67	2.53	0.00	-30.20
2	*2412.00	96.7 PK			1.11V	160	66.50	27.67	2.53	0.00	-30.20
3	4824.00	37.0 PK	74.00	-37.00	1.48V	176	38.20	31.52	4.01	36.70	1.18
4	4824.00	29.8 AV	54.00	-24.20	1.48V	176	31.00	31.52	4.01	36.70	1.18

- NOTE:**
1. Emission level = Raw Value - Correction Factor
 2. Correction Factor = External Preamp. Gain - Ant. Factor - Cable loss
(External Preamp. Gain = 0, when the test receiver is used for the test.)
 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	Wireless Dual-Band Access Point	MODEL	WX-5520A
MODE	Channel 6	FREQUENCY RANGE	Above 1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	35 deg. C, 50%RH, 1005 hPa	TESTED BY: Bunny Yao	

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)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB/m)
1	*2437.00	94.5 PK			1.16H	245	64.00	27.81	2.66	0.00	-30.47
2	*2437.00	82.5 AV			1.16H	245	52.00	27.81	2.66	0.00	-30.47
3	4874.00	29.8 AV	54.00	-24.20	1.24H	225	30.90	31.59	4.03	36.70	1.08
4	4874.00	39.3 PK	74.00	-34.70	1.24H	225	40.40	31.59	4.03	36.70	1.08

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)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB/m)
1	*2437.00	85.5 AV			1.11V	325	55.00	27.81	2.66	0.00	-30.47
2	*2437.00	95.5 PK			1.11V	325	65.00	27.81	2.66	0.00	-30.47
3	4874.00	37.9 PK	74.00	-36.10	1.24V	300	39.00	31.59	4.03	36.70	1.08
4	4874.00	30.0 AV	54.00	-24.00	1.24V	300	31.10	31.59	4.03	36.70	1.08

- NOTE:**
1. Emission level = Raw Value - Correction Factor
 2. Correction Factor = External Preamp. Gain - Ant. Factor - Cable loss
(External Preamp. Gain = 0, when the test receiver is used for the test.)
 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	Wireless Dual-Band Access Point	MODEL	WX-5520A
MODE	Channel 11	FREQUENCY RANGE	Above 1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	35 deg. C, 50%RH, 1005 hPa	TESTED BY: Bunny Yao	

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)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB/m)
1	*2462.00	92.5AV			1.03H	309	62.00	27.81	2.66	0.00	-30.47
2	*2462.00	100.5PK			1.03H	309	70.00	27.81	2.66	0.00	-30.47
3	4924.00	29.0AV	54.00	-25.00	1.16H	288	30.00	31.66	4.06	36.70	0.99
4	4924.00	36.0PK	74.00	-38.00	1.16H	288	37.00	31.66	4.06	36.70	0.99

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)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB/m)
1	*2462.00	97.5PK			1.11V	160	67.00	27.81	2.66	0.00	-30.47
2	*2462.00	90.5AV			1.11V	160	60.00	27.81	2.66	0.00	-30.47
3	4924.00	29.0AV	54.00	-25.00	1.11V	160	30.00	31.66	4.06	36.70	0.99
4	4924.00	36.0PK	74.00	-38.00	1.11V	160	37.00	31.66	4.06	36.70	0.99

- NOTE:**
1. Emission level= Raw Value - Correction Factor
 2. Correction Factor = External Preamp. Gain - Ant. Factor - Cable loss
(External Preamp. Gain = 0, when the test receiver is used for the test.)
 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	FSEK30	100049	July 24, 2003

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.

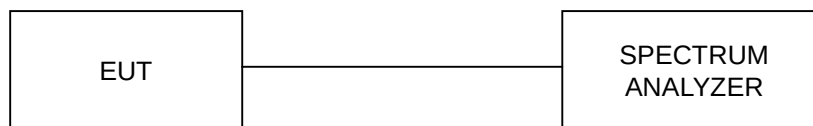
4.3.3 TEST PROCEDURE

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 6 dB.

4.3.4 DEVIATION FROM TEST STANDARD

No deviation

4.3.5 TEST SETUP



4.3.6 EUT OPERATING CONDITIONS

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

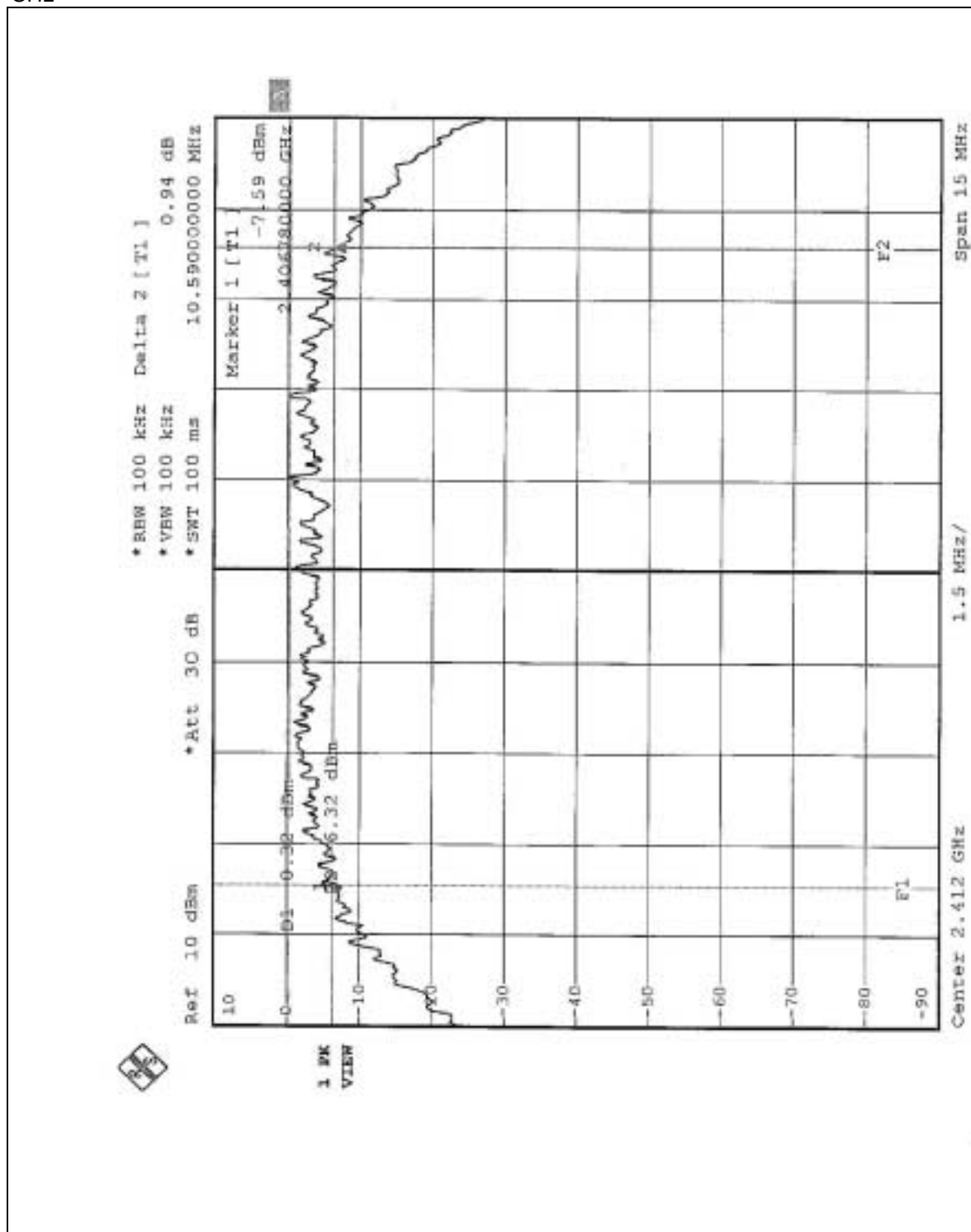


4.3.7 TEST RESULTS

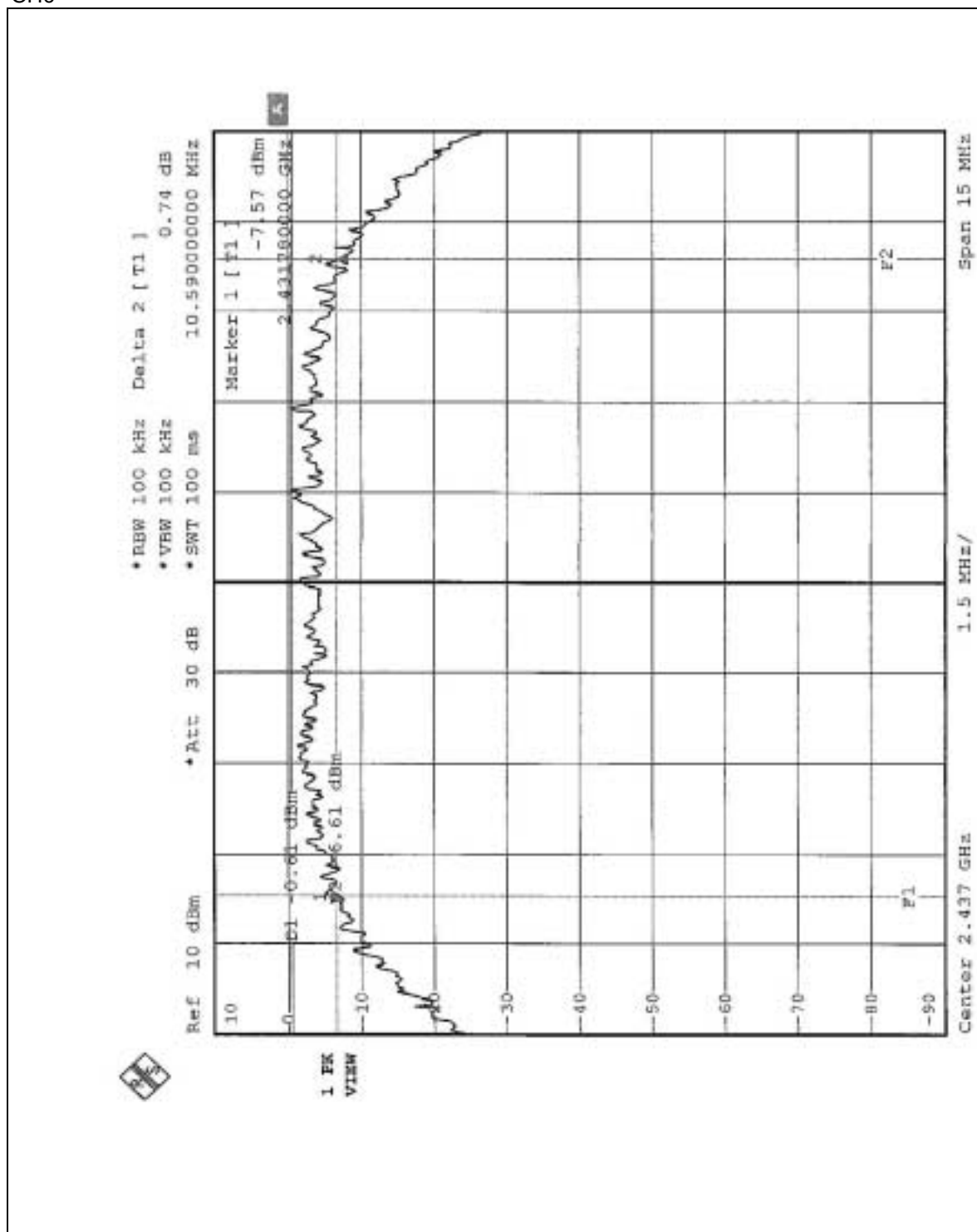
EUT	Wireless Dual-Band Access Point	MODEL	WX-5520A
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	26deg. C, 61%RH, 1005 hPa
TESTED BY: Ansen Lei			

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	10.59	0.5	PASS
6	2437	10.59	0.5	PASS
11	2462	10.59	0.5	PASS

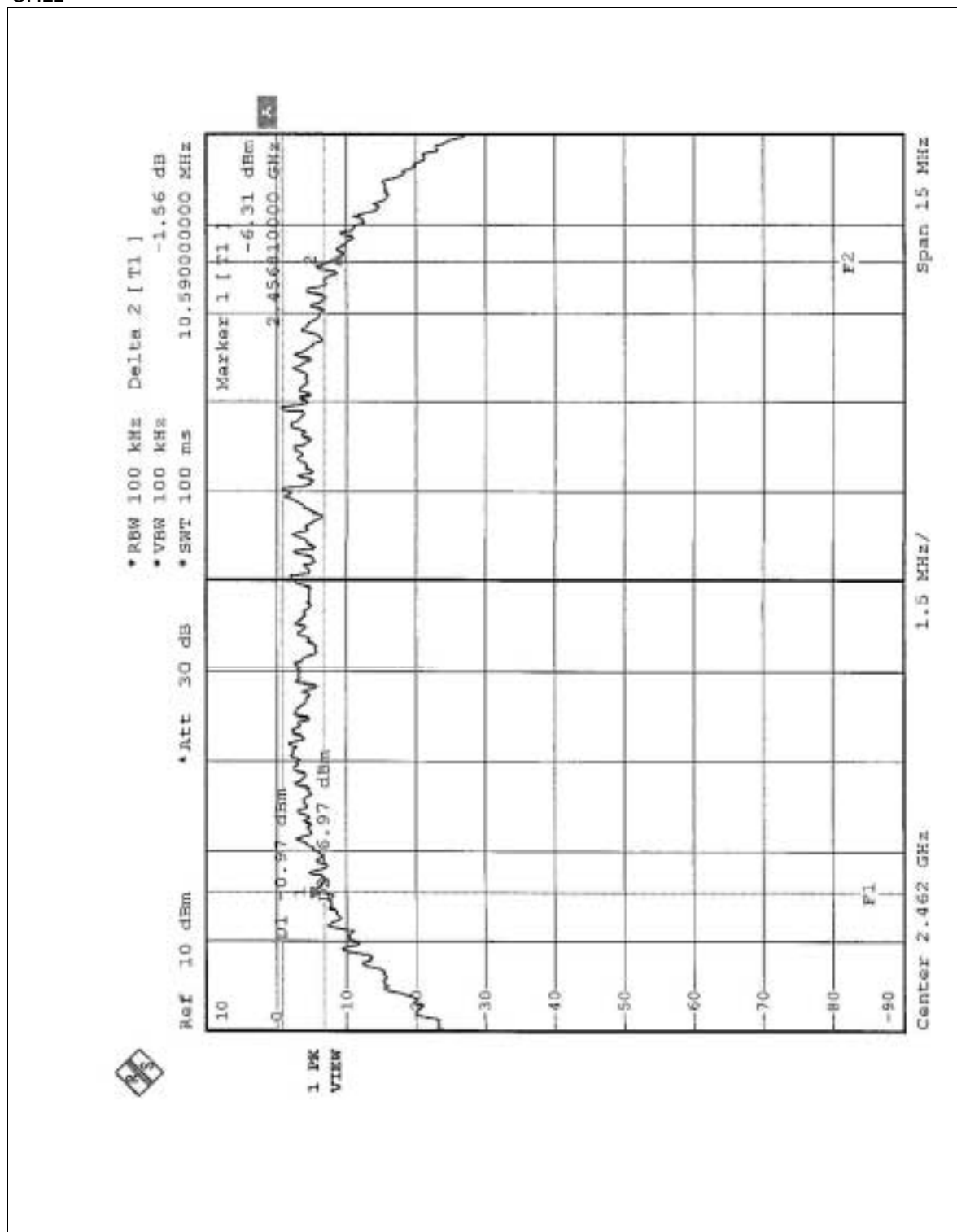
CH1



CH6



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 INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SINGLE CHANNEL POWER METER	NRVS	100026	Feb. 23, 2003
PEAK POWER SENSOR	NRV-Z32	100013	Feb. 23, 2003

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.

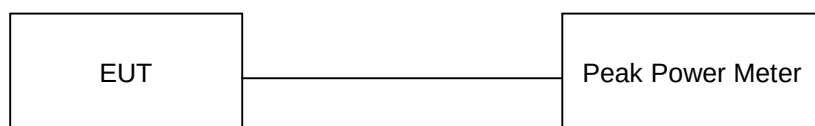
4.4.3 TEST PROCEDURES

The transmitter output was connected to the peak power meter.

4.4.4 DEVIATION FROM TEST STANDARD

No deviation

4.4.5 TEST SETUP



4.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6



4.4.7 TEST RESULTS

EUT	Wireless Dual-Band Access Point	MODEL	WX-5520A
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	26deg.C, 61%RH, 1005 hPa
TESTED BY: Ansen Lei			

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	11.16	30	PASS
6	2437	11.82	30	PASS
11	2462	11.31	30	PASS



4.5 POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

4.5.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SPECTRUM ANALYZER	FSEK30	100049	July 24, 2002

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.

4.5.3 TEST PROCEDURE

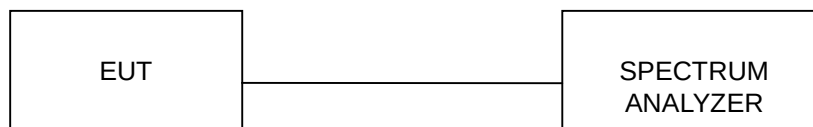
The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3 kHz RBW and 30 kHz VBW, set sweep time = span/3 kHz. The power spectral density was measured and recorded.

The sweep time is allowed to be longer than span/3 kHz 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

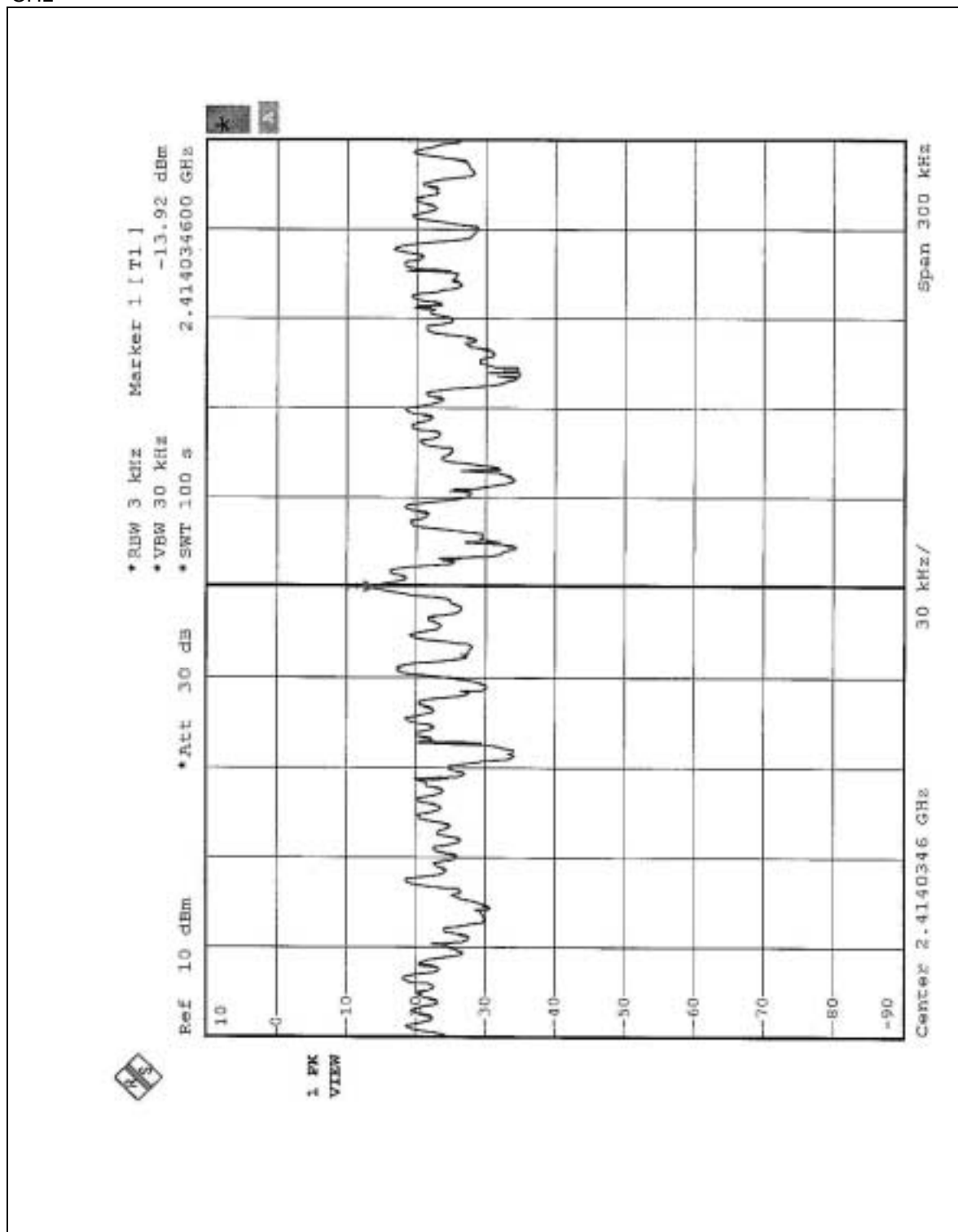


4.5.7 TEST RESULTS

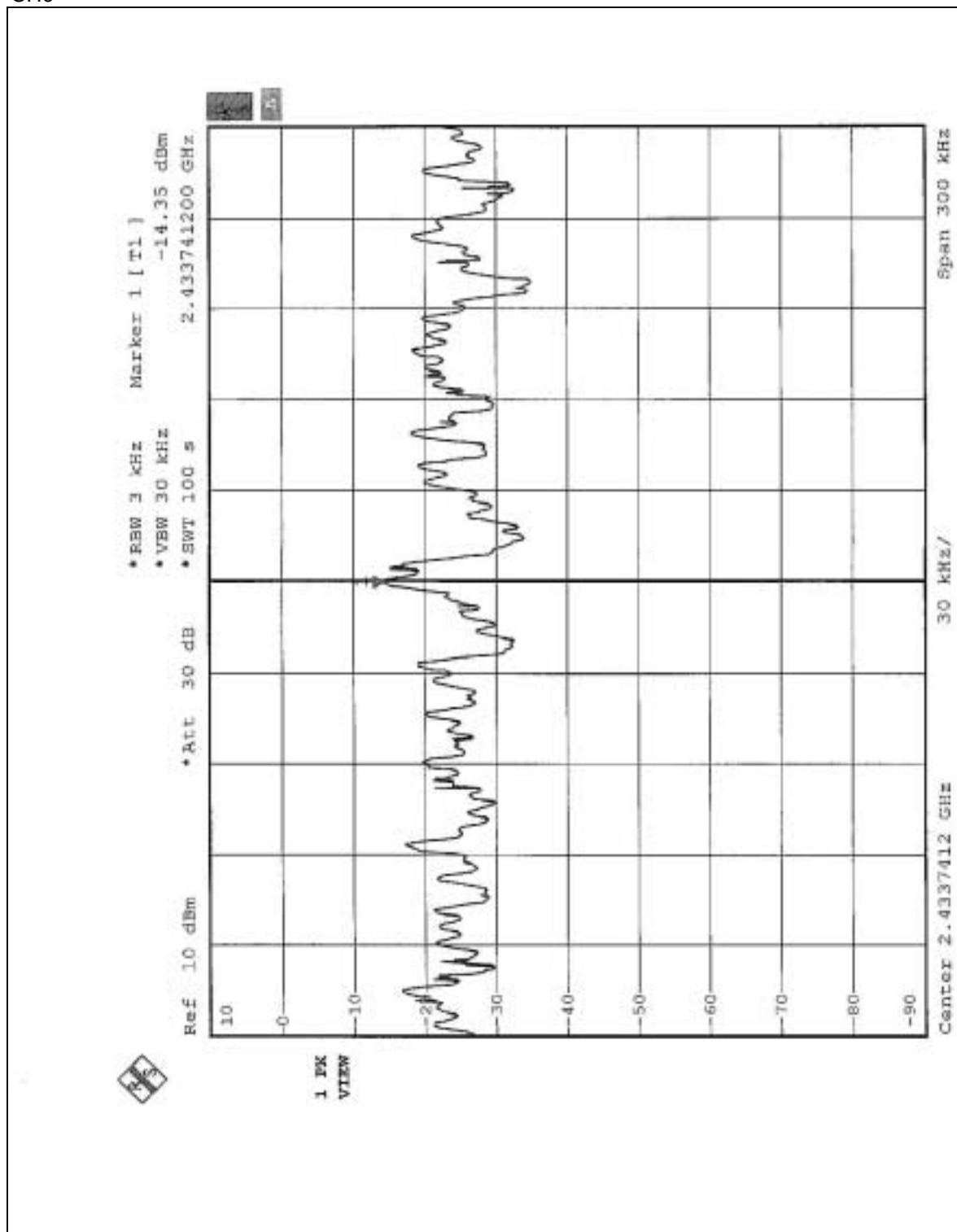
EUT	Wireless Dual-Band Access Point	MODEL	WX-5520A
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	26deg. C, 61%RH, 1005 hPa
TESTED BY: Ansen Lei			

CHANNEL NUMBER	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-13.92	8	PASS
6	2437	-14.35	8	PASS
11	2462	-15.29	8	PASS

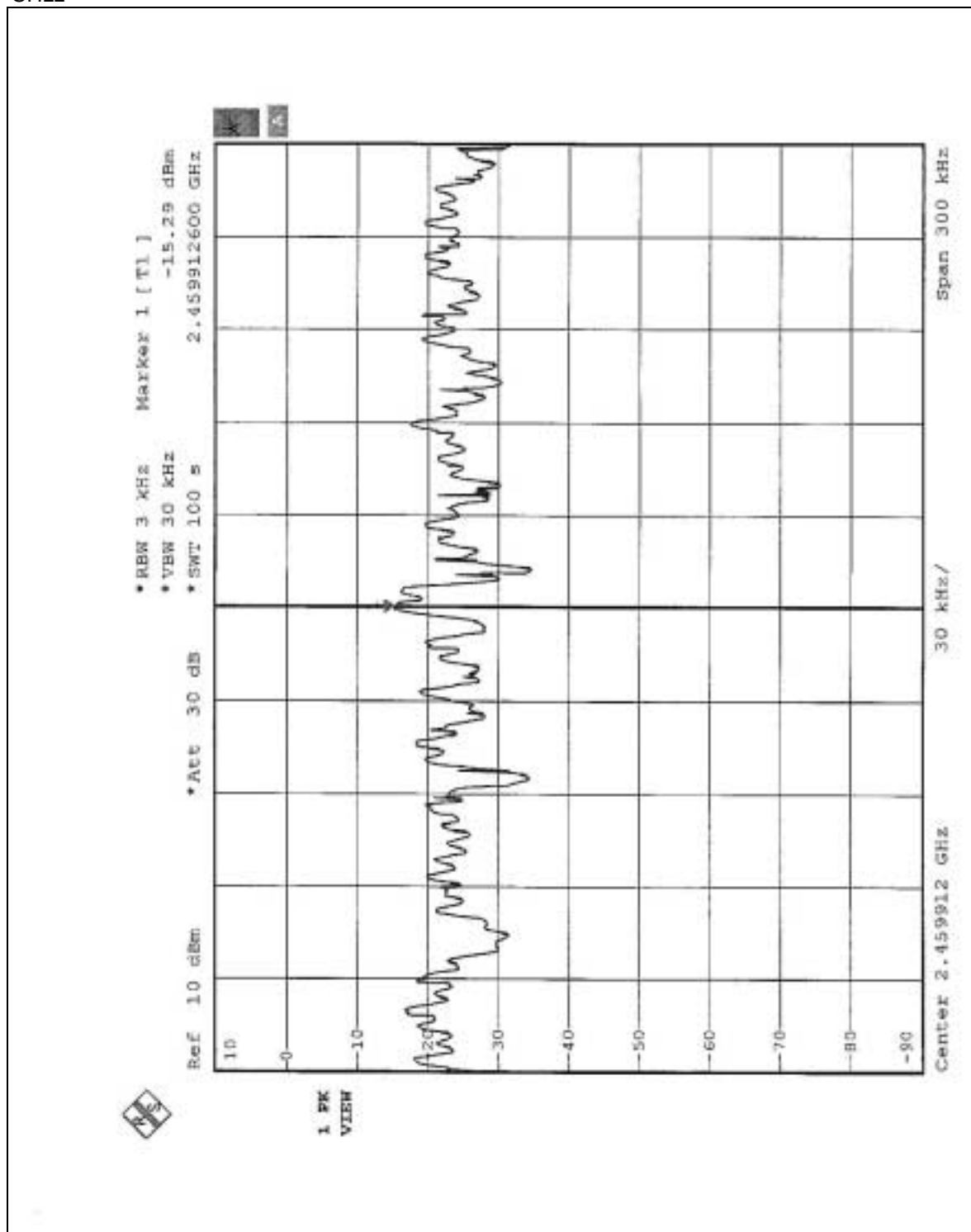
CH1



CH6



CH11



4.6 BAND EDGES MEASUREMENT

4.6.1 LIMITS OF BAND EDGES MEASUREMENT

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

4.6.2 TEST INSTRUMENTS

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

NOTE:

1. The 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 lose cable. Set both RBW and VBW of spectrum analyzer to 100 kHz with suitable frequency span including 100 kHz bandwidth from band edge. The band edges was measured and recorded.

4.6.4 DEVIATION FROM TEST STANDARD

No deviation



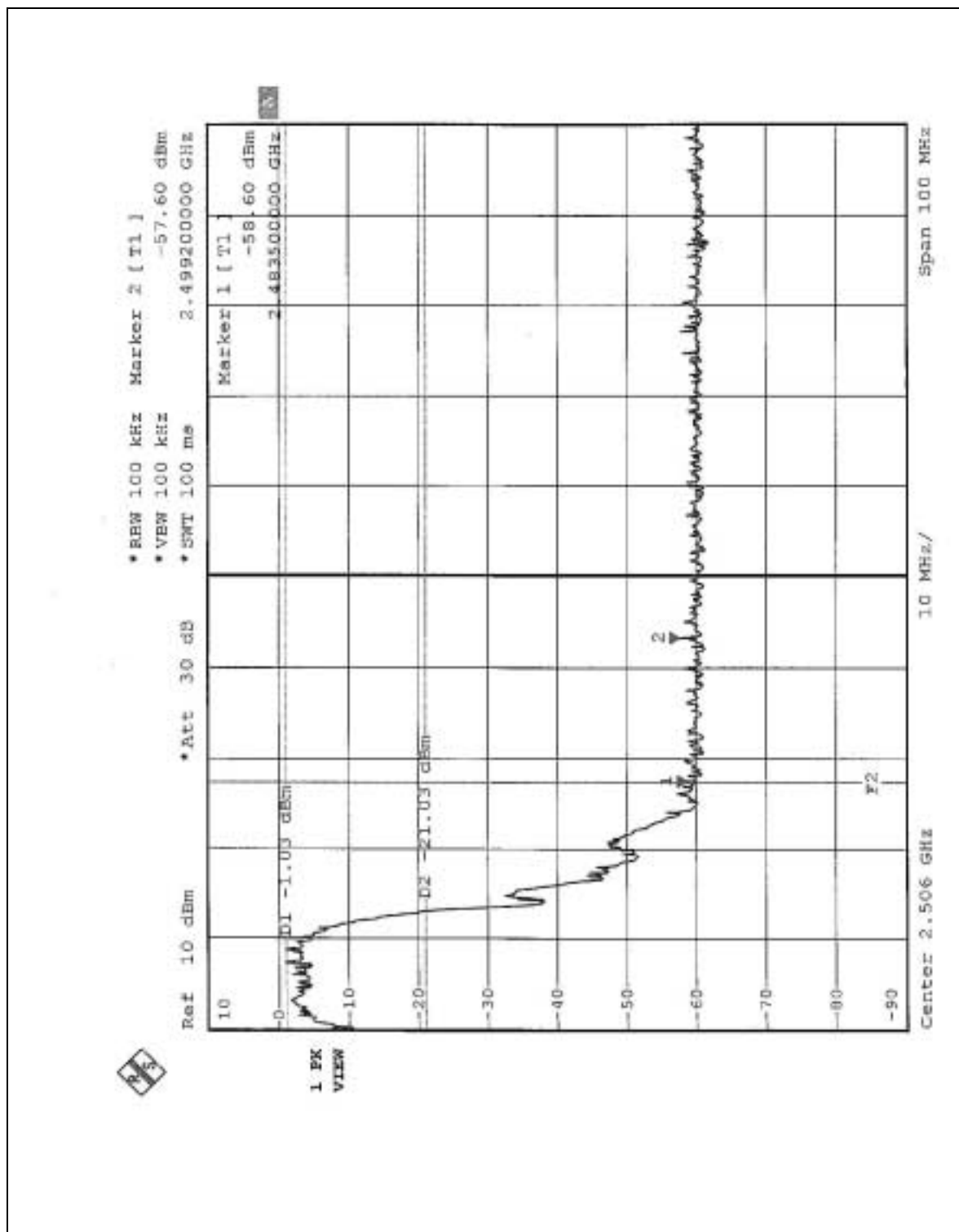
4.6.5 EUT OPERATING CONDITION

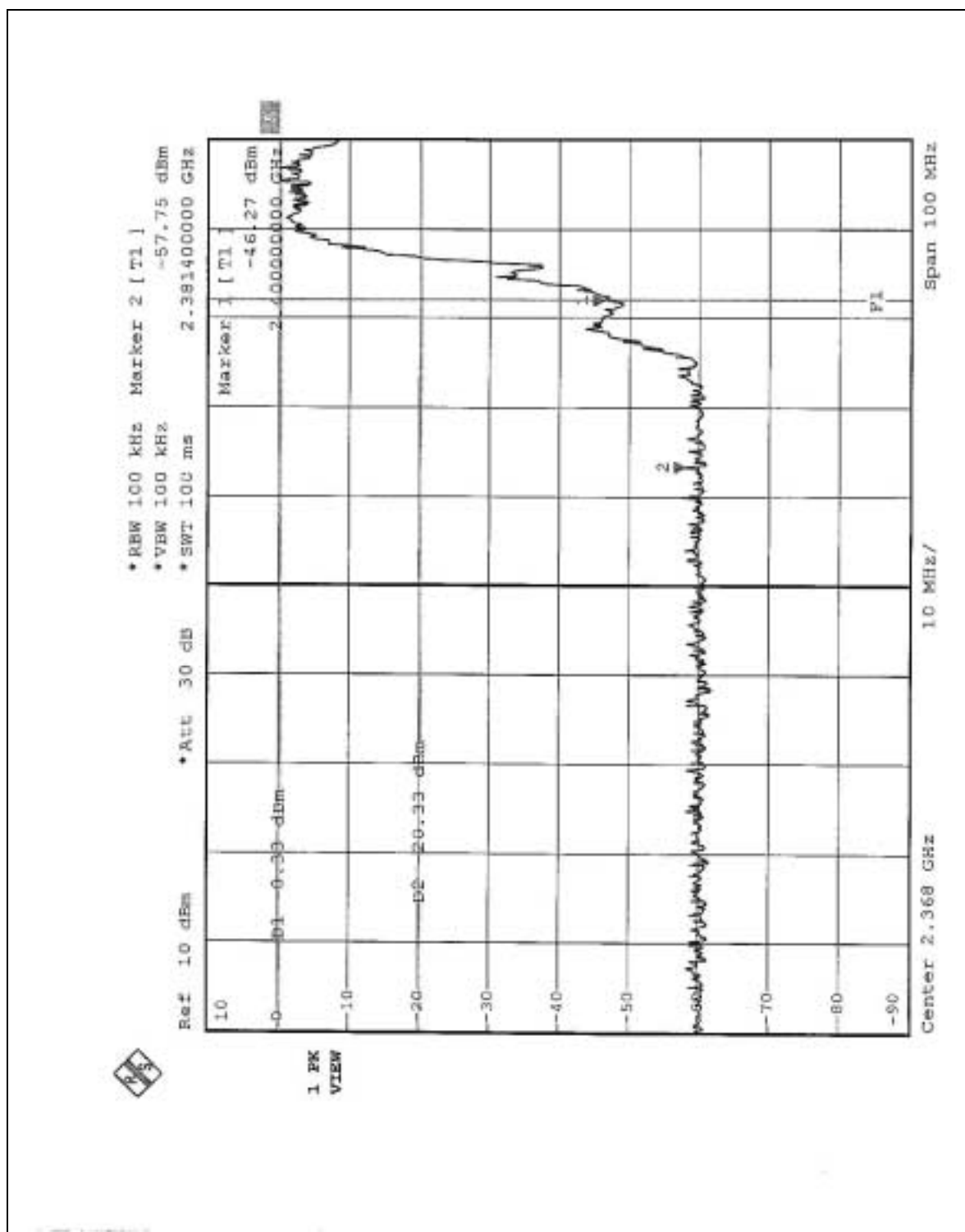
Same as Item 4.3.6

4.6.6 TEST RESULTS

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

NOTE: The band edge emission plot on the following 2 pages shows 56.57dB/ 58.08dB delta between carrier maximum power and local maximum emission in restrict band (2.4992GHz / 2.3814GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 (Page 28) is 92.5dBuV/m, so the maximum field strength in restrict band is $92.5 - 56.57 = 35.93$ dBuV/m which is under 54dBuV/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 in this product is Dipole antenna without connector. The maximum Gain of the antenna is 1dBi only.

5 TEST TYPES AND RESULTS (FOR PART 802.11a)

5.1 CONDUCTED EMISSION MEASUREMENT

5.1.1 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.

5.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
ROHDE & SCHWARZ Test Receiver	ESCS30	847793/022	Mar. 12, 2003
ROHDE & SCHWARZ Artificial Mains Network (for EUT)	ESH2-Z5	828075/003	Jul. 23, 2003
ROHDE & SCHWARZ 200-A Four-line V-Network	ENV4200	830326/018	Oct. 25, 2002
* ROHDE & SCHWARZ 4-wire ISN	ENY41	838119/028	Dec. 2, 2002
* ROHDE & SCHWARZ 2-wire ISN	ENY22	837497/018	Dec. 2, 2002
EMCO-L.I.S.N. (for peripheral)	3825/2	90031627	Jul. 23, 2003
Software	Cond-V2L	NA	NA
RF cable (JYEBAO)	5D-FB	Cable-C05.01	Jul. 23, 2003
LYNICS Terminator (For EMCO LISN)	0900510	E1-01-305	Feb. 20, 2003
LYNICS Terminator (For EMCO LISN)	0900510	E1-01-306	Feb. 20, 2003
Shielded Room	Site 5	ADT-C05	NA
VCCI Site Registration No.	Site 5	C-1093	NA

- 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.
 3. “*”: These equipment are used for conducted telecom port test only (if tested).
 4. The test was performed in ADT Open Site No. 5.



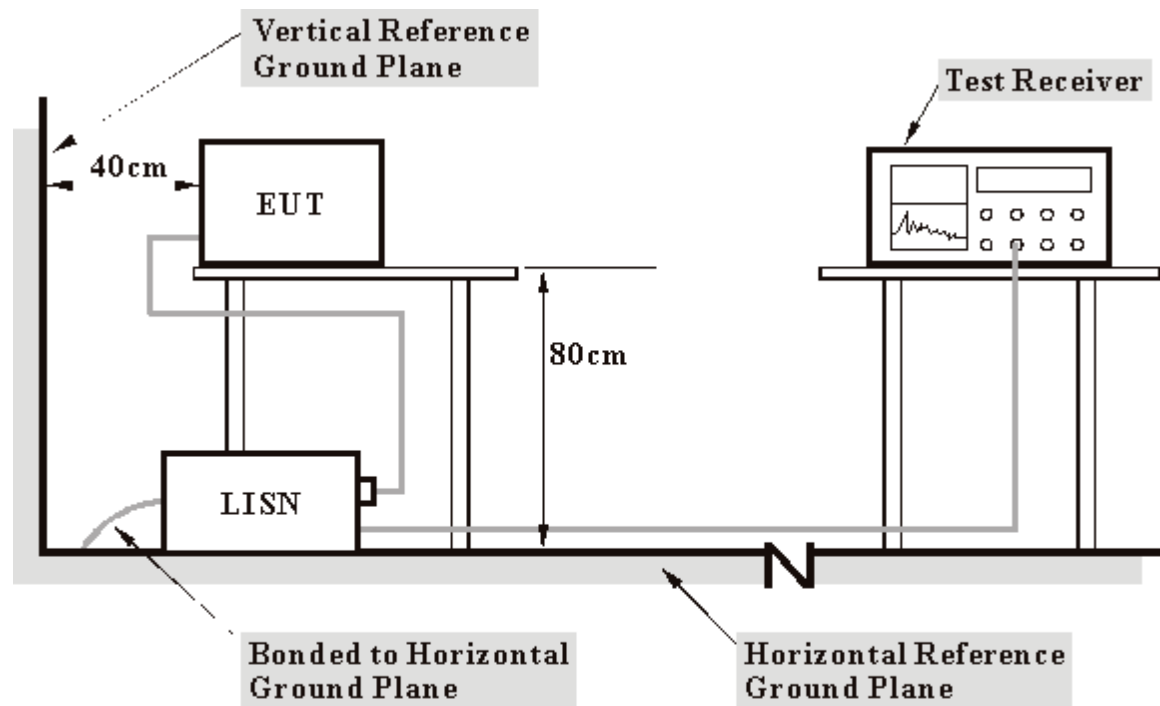
5.1.3 TEST PROCEDURES

- 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

5.1.4 DEVIATION FROM TEST STANDARD

No deviation

5.1.5 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.

5.1.6 EUT OPERATING CONDITIONS

Same as 4.1.6.

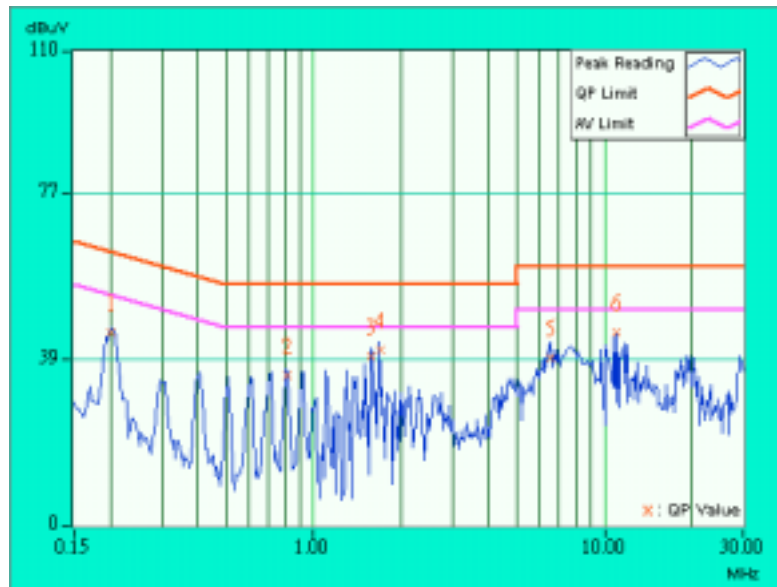
5.1.7 TEST RESULTS (TRANSMITTING)

EUT	Wireless Dual-Band Access Point	MODEL	WX-5520A
		6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	25deg. C, 53%RH, 1005 hPa	TESTED BY: Cody 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	0.201	0.10	44.16	-	44.26	-	63.58	53.58	-19.32	-
2	0.815	0.17	34.13	-	34.30	-	56.00	46.00	-21.70	-
3	1.582	0.26	38.89	-	39.15	-	56.00	46.00	-16.85	-
4	1.690	0.27	40.02	-	40.29	-	56.00	46.00	-15.71	-
5	6.500	0.50	38.39	-	38.89	-	60.00	50.00	-21.11	-
6	11.043	0.54	44.25	-	44.79	-	60.00	50.00	-15.21	-

NOTE:

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

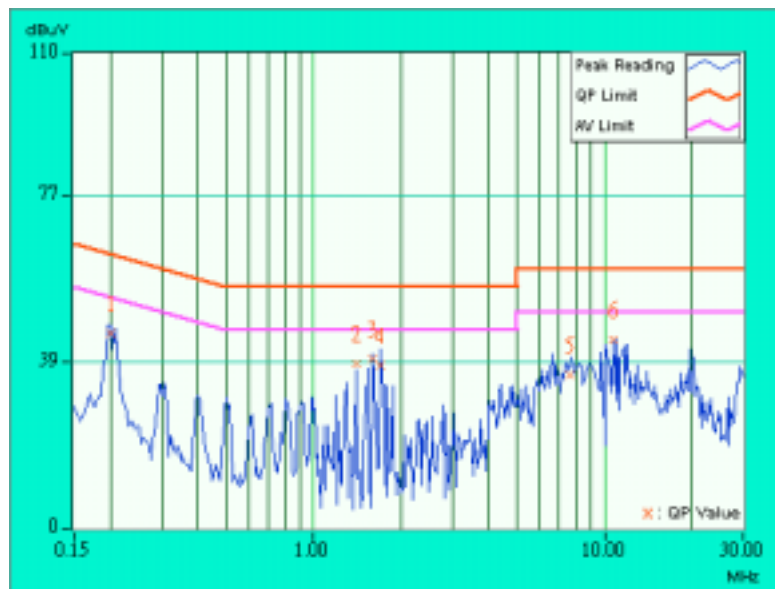


EUT	Wireless Dual-Band Access Point	MODEL	WX-5520A
		6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Neutral (N)
ENVIRONMENTAL CONDITIONS	25deg. C, 53%RH, 1005 hPa	TESTED BY: Cody Chang	

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	0.201	0.10	44.90	-	45.00	-	63.58	53.58	-18.58	-
2	1.402	0.24	37.55	-	37.79	-	56.00	46.00	-18.21	-
3	1.590	0.26	38.98	-	39.24	-	56.00	46.00	-16.76	-
4	1.707	0.27	37.34	-	37.61	-	56.00	46.00	-18.39	-
5	7.570	0.40	34.98	-	35.38	-	60.00	50.00	-24.62	-
6	10.719	0.41	43.39	-	43.80	-	60.00	50.00	-16.20	-

NOTE:

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



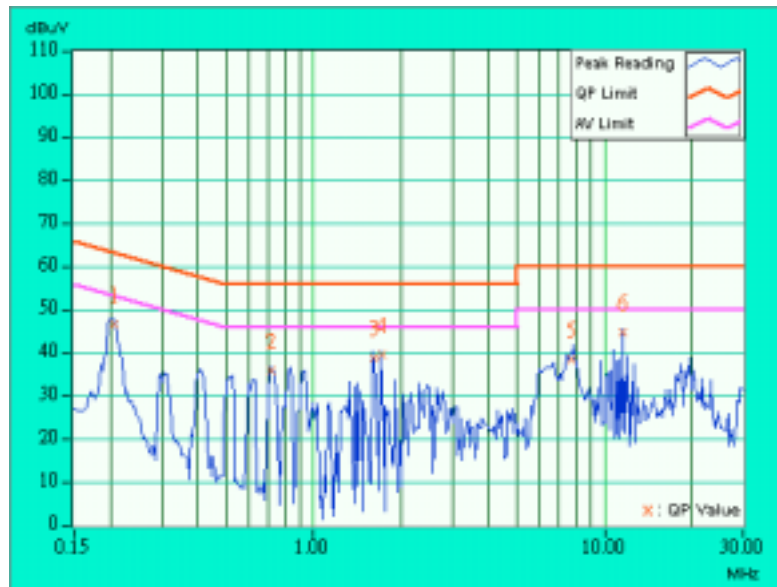
5.1.8 TEST RESULTS (RECEIVING)

EUT	Wireless Dual-Band Access Point	MODEL	WX-5520A
		6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 1005 hPa	TESTED BY: Cody 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	0.206	0.10	46.15	-	46.25	-	63.37	53.37	-17.12	-
2	0.718	0.15	35.38	-	35.53	-	56.00	46.00	-20.47	-
3	1.613	0.26	38.23	-	38.49	-	56.00	46.00	-17.51	-
4	1.717	0.27	39.00	-	39.27	-	56.00	46.00	-16.73	-
5	7.664	0.50	37.97	-	38.47	-	60.00	50.00	-21.53	-
6	11.632	0.57	44.07	-	44.64	-	60.00	50.00	-15.36	-

NOTE:

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

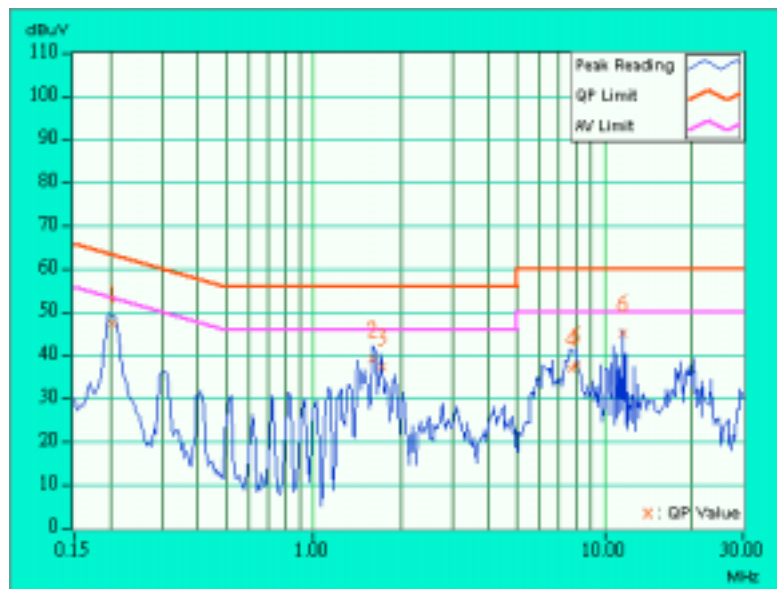


EUT	Wireless Dual-Band Access Point	MODEL	WX-5520A
		6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Neutral (N)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 1005 hPa	TESTED BY: Cody Chang	

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	0.203	0.10	46.93	-	47.03	-	63.47	53.47	-16.44	-
2	1.598	0.26	38.86	-	39.12	-	56.00	46.00	-16.88	-
3	1.730	0.27	36.83	-	37.10	-	56.00	46.00	-18.90	-
4	7.668	0.40	36.55	-	36.95	-	60.00	50.00	-23.05	-
5	7.957	0.40	37.37	-	37.77	-	60.00	50.00	-22.23	-
6	11.627	0.43	44.57	-	45.00	-	60.00	50.00	-15.00	-

NOTE:

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





5.2 RADIATED EMISSION MEASUREMENT

5.2.1 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.



5.2.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

Frequencies (MHz)	EIRP Limit (dBm)	Equivalent Field Strength at 3m (dBμV/m) *note 3
5150~5250	-27	68.3
5250~5350	-27	68.3
5725~5825	-27 *note 1	68.3
	-17 *note 2	78.3

NOTE:

1. For frequencies 10MHz or greater above or below the band edge.
2. All emissions within the frequency range from the band edge to 10MHz above or below the band edge.
3. The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength

$$E = \frac{1000000\sqrt{30P}}{3} \mu\text{V/m, where } P \text{ is the eirp (Watts)}$$

5.2.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
* HP Spectrum Analyzer	8590L	3544A01176	May 13, 2003
* HP Preamplifier	8447D	2944A08485	Oct. 30, 2002
* HP Preamplifier	8449B	3008A01201	Dec. 06, 2002
* HP Preamplifier	8449B	3008A01292	Aug. 7, 2003
* ROHDE & SCHWARZ TEST RECEIVER	ESMI	839013/007 839379/002	Jan. 27, 2003
SCHWARZBECK Tunable Dipole Antenna	VHA 9103 UHA 9105	E101051 E101055	Nov. 23, 2002
* CHASE BILOG Antenna	CBL6112A	2221	Aug. 2, 2003
* SCHWARZBECK Horn Antenna	BBHA9120-D1	D130	Jul. 3, 2003
* EMCO Horn Antenna	3115	9312-4192	Apr. 9, 2003
* EMCO Turn Table	1060	1115	NA
* SHOSHIN Tower	AP-4701	A6Y005	NA
* Software	AS61D4	NA	NA
* ANRITSU RF Switches	MP59B	M35046	Jan. 25, 2003
* TIMES RF cable	LMR-600	CABLE-ST5-01	Jul. 12, 2003
Open Field Test Site	Site 5	ADT-R05	Jul. 19, 2003
VCCI Site Registration No.	Site 5	R-1039	NA

- NOTE:** 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 equipment are used for the final measurement.
4. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
5. The test was performed in ADT Open Site No. 5.



5.2.4 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 10dB 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 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

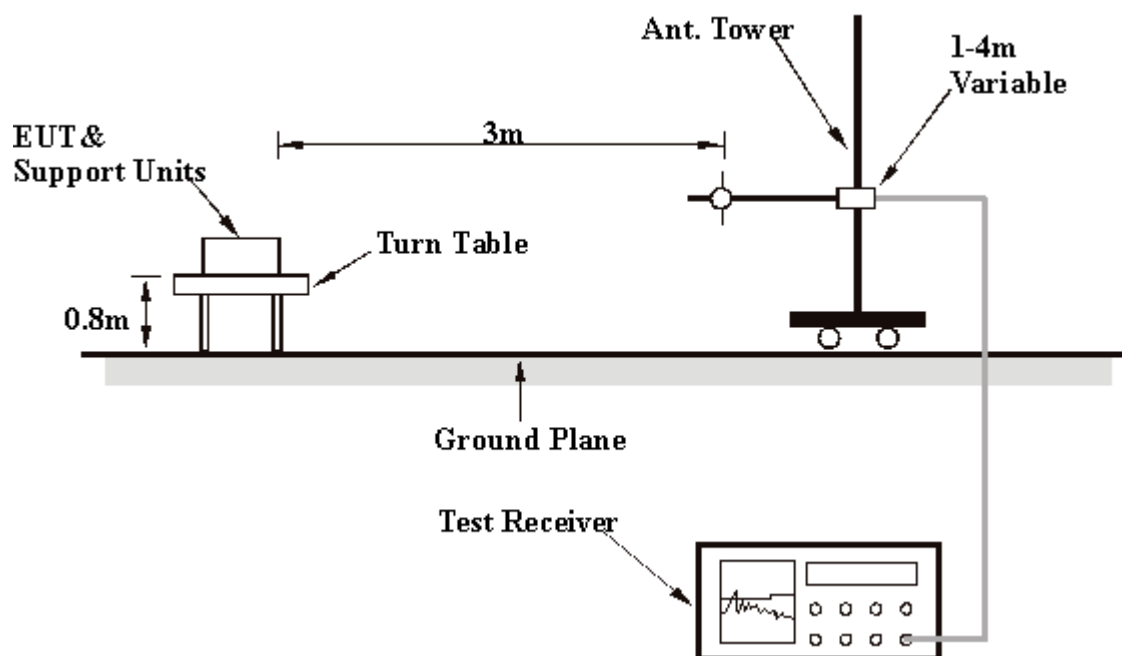
NOTE:

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

5.2.5 DEVIATION FROM TEST STANDARD

No deviation

5.2.6 TEST SETUP



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

5.2.7 EUT OPERATING CONDITIONS

Same as 4.1.6.



5.2.8 TEST RESULTS

EUT	Wireless Dual-Band Access Point	MODEL	WX-5520A
FREQUENCY RANGE	30-1000 MHz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	35 deg. C, 70%RH, 1050 hPa	INPUT POWER (SYSTEM)	120Vac, 60Hz
TESTED BY	Eric Lee		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M											
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	125.00	23.0 QP	43.50	-20.50	1.63H	181	10.56	11.47	0.97	0.00	-12.44
2	200.00	37.1 QP	43.50	-6.40	1.48H	114	26.72	8.98	1.40	0.00	-10.38
3	250.00	32.6 QP	46.00	-13.40	1.61H	108	19.29	12.02	1.29	0.00	-13.31
4	275.00	27.7 QP	46.00	-18.30	1.64H	66	13.74	12.59	1.37	0.00	-13.96
5	300.00	35.2 QP	46.00	-10.80	1.22H	133	20.57	13.18	1.45	0.00	-14.63
6	325.00	32.5 QP	46.00	-13.50	1.15H	141	17.33	13.72	1.45	0.00	-15.17
7	350.00	28.1 QP	46.00	-17.90	1.25H	251	12.44	14.21	1.45	0.00	-15.66
8	375.00	31.3 QP	46.00	-14.70	1.67H	182	14.67	15.13	1.50	0.00	-16.63
9	400.00	24.0 QP	46.00	-22.00	1.02H	122	6.34	16.11	1.55	0.00	-17.66
10	450.00	28.9 QP	46.00	-17.10	1.09H	94	10.93	16.37	1.60	0.00	-17.97
11	475.00	30.0 QP	46.00	-16.00	1.20H	99	11.49	16.83	1.68	0.00	-18.51
12	500.00	37.2 QP	46.00	-8.80	1.01H	119	18.19	17.26	1.75	0.00	-19.01
13	525.00	32.8 QP	46.00	-13.20	1.00H	145	13.38	17.59	1.79	0.00	-19.38
14	550.00	30.0 QP	46.00	-16.00	1.00H	242	10.25	17.93	1.83	0.00	-19.75
15	575.00	32.2 QP	46.00	-13.80	1.00H	191	12.04	18.28	1.88	0.00	-20.16
16	600.00	31.0 QP	46.00	-15.00	1.02H	201	10.46	18.61	1.93	0.00	-20.54
17	625.00	38.5 QP	46.00	-7.50	1.19H	194	17.62	18.91	1.97	0.00	-20.88
18	650.00	34.0 QP	46.00	-12.00	1.61H	134	12.76	19.23	2.01	0.00	-21.24
19	675.00	43.1 QP	46.00	-2.90	1.62H	145	21.80	19.27	2.02	0.00	-21.29
20	700.00	42.5 QP	46.00	-3.50	1.72H	144	21.20	19.31	2.03	0.00	-21.34
21	725.00	40.1 QP	46.00	-5.90	1.53H	111	18.20	19.76	2.11	0.00	-21.87
22	750.00	40.0 QP	46.00	-6.00	1.53H	128	17.64	20.18	2.18	0.00	-22.36
23	775.00	40.5 QP	46.00	-5.50	1.37H	240	17.84	20.43	2.23	0.00	-22.66
24	800.00	40.1 QP	46.00	-5.90	1.07H	229	17.12	20.69	2.29	0.00	-22.98
25	825.00	32.0 QP	46.00	-14.00	2.29H	108	9.09	20.58	2.33	0.00	-22.91
26	850.00	28.0 QP	46.00	-18.00	1.08H	73	5.16	20.48	2.36	0.00	-22.84
27	900.00	32.5 QP	46.00	-13.50	1.05H	107	9.26	20.80	2.44	0.00	-23.24

NOTE:

1. Emission level = Raw value - Correction Factor
2. Correction Factor = Pre-Amp. Factor - Ant. Factor - Cable loss
(Pre-Amp. Factor = 0, when a Pre-Amplifier is not used for the test.)
3. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.



EUT	Wireless Dual-Band Access Point	MODEL	WX-5520A
FREQUENCY RANGE	30-1000 MHz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	35 deg. C, 70%RH, 1050 hPa	INPUT POWER (SYSTEM)	120Vac, 60Hz
TESTED BY	Eric Lee		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M											
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	200.00	32.2 QP	43.50	-11.30	1.00V	5	21.82	8.98	1.40	0.00	-10.38
2	225.00	30.0 QP	46.00	-16.00	1.00V	97	18.25	10.41	1.35	0.00	-11.75
3	250.00	30.0 QP	46.00	-16.00	1.36V	167	16.69	12.02	1.29	0.00	-13.31
4	325.00	31.0 QP	46.00	-15.00	1.66V	80	15.83	13.72	1.45	0.00	-15.17
5	375.00	32.0 QP	46.00	-14.00	1.06V	244	15.37	15.13	1.50	0.00	-16.63
6	500.00	35.0 QP	46.00	-11.00	1.02V	33	15.99	17.26	1.75	0.00	-19.01
7	525.00	30.0 QP	46.00	-16.00	1.41V	96	10.62	17.59	1.79	0.00	-19.38
8	575.00	32.6 QP	46.00	-13.40	1.67V	175	12.44	18.28	1.88	0.00	-20.16
9	600.00	34.0 QP	46.00	-12.00	1.85V	258	13.46	18.61	1.93	0.00	-20.54
10	625.00	38.0 QP	46.00	-8.00	1.80V	190	17.12	18.91	1.97	0.00	-20.88
11	650.00	31.1 QP	46.00	-14.90	1.37V	61	9.86	19.23	2.01	0.00	-21.25
12	675.00	41.8 QP	46.00	-4.20	1.12V	191	20.51	19.27	2.02	0.00	-21.29
13	700.00	38.7 QP	46.00	-7.30	1.00V	191	17.36	19.31	2.03	0.00	-21.34
14	725.00	42.5 QP	46.00	-3.50	1.00V	208	20.63	19.76	2.11	0.00	-21.87
15	750.00	40.0 QP	46.00	-6.00	1.04V	182	17.64	20.18	2.18	0.00	-22.36
16	775.00	35.1 QP	46.00	-10.90	1.04V	90	12.44	20.43	2.23	0.00	-22.66
17	800.00	36.2 QP	46.00	-9.80	1.55V	72	13.22	20.69	2.29	0.00	-22.99
18	825.00	32.6 QP	46.00	-13.40	2.02V	261	9.69	20.58	2.33	0.00	-22.91
19	850.00	32.3 QP	46.00	-13.70	1.00V	202	9.46	20.48	2.36	0.00	-22.84
20	874.00	32.0 QP	46.00	-14.00	1.00V	87	8.97	20.63	2.40	0.00	-23.03
21	900.00	30.5 QP	46.00	-15.50	1.22V	358	7.26	20.80	2.44	0.00	-23.24
22	999.00	36.9 QP	54.00	-17.10	1.11V	97	12.87	21.36	2.67	0.00	-24.03

NOTE:

1. Emission level = Raw value - Correction Factor
2. Correction Factor = Pre-Amp. Factor - Ant. Factor - Cable loss
(Pre-Amp. Factor = 0, when a Pre-Amplifier is not used for the test.)
3. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.



5.2.9 TEST RESULTS (TRANSMITTING)

EUT	Wireless Dual-Band Access Point	MODEL	WX-5520A
MODE	Normal Mode	CHANNEL	1
FREQUENCY RANGE	Above 1000 MHz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	35 deg. C, 70%RH, 1050 hPa	INPUT POWER (SYSTEM)	120Vac, 60Hz
TESTED BY	Eric Lee		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)	Remark
1	5150.00	30.5 AV	54.00	-23.50	1.51H	210	31.30	31.87	3.95	36.63	0.82	NOTE 6
2	5150.00	40.4 PK	74.00	-33.60	1.51H	210	41.20	31.87	3.95	36.63	0.82	NOTE 6
3	*5180.00	87.7 PK			1.38H	235	88.50	31.87	3.95	36.63	0.82.	
4	*5180.00	77.3 AV			1.38H	235	78.10	31.87	3.95	36.63	0.82.	
5	10360.00	59.3 PK	68.30	-9.00	1.02H	225	50.90	39.16	6.69	37.42	-8.43.	

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)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)	Remark
1	5150.00	31.2 AV	54.00	-22.80	1.22V	270	32.00	31.87	3.95	36.63	0.82	NOTE 6
2	5150.00	38.2 PK	74.00	-35.80	1.22V	270	39.00	31.87	3.95	36.63	0.82	NOTE 6
3	*5180.00	85.6 AV			1.09V	295	86.40	31.87	3.95	36.63	0.82.	
4	*5180.00	94.2 PK			1.09V	295	95.00	31.87	3.95	36.63	0.82.	
5	10360.00	50.4 PK	68.30	-17.90	1.38V	235	42.00	39.16	6.69	37.42	-8.43	

NOTE:

1. Emission level = Raw value - Correction Factor
2. Correction Factor = Pre-Amp. Factor - Ant. Factor - Cable loss
(Pre-Amp. Factor = 0, when a Pre-Amplifier is not used for the test.)
3. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.
5. “*” : Fundamental frequency
6. The radiated frequency falling in the restricted band.



EUT	Wireless Dual-Band Access Point	MODEL	WX-5520A
MODE	Normal Mode	CHANNEL	4
FREQUENCY RANGE	Above 1000 MHz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	35 deg. C, 70%RH, 1050 hPa	INPUT POWER (SYSTEM)	120Vac, 60Hz
TESTED BY	Eric Lee		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	*5240.00	95.7 PK			1.12H	210	96.50	31.90	3.86	36.60	0.84
2	*5240.00	86.2 AV			1.12H	210	87.00	31.90	3.86	36.60	0.84
3	10480.00	60.2 PK	68.30	-8.10	1.12H	210	51.00	39.36	7.14	37.32	-9.19

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)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	*5240.00	87.2 AV			1.02V	225	88.00	31.90	3.86	36.60	0.84
2	*5240.00	96.8 PK			1.02V	225	97.60	31.90	3.86	36.60	0.84
3	10480.00	63.2 PK	68.30	-5.10	1.27V	272	54.00	39.36	7.14	37.32	-9.19

NOTE:

1. Emission level = Raw value - Correction Factor
2. Correction Factor = Pre-Amp. Factor - Ant. Factor - Cable loss
(Pre-Amp. Factor = 0, when a Pre-Amplifier is not used for the test.)
3. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.
5. "*" : Fundamental frequency



EUT	Wireless Dual-Band Access Point	MODEL	WX-5520A
MODE	Normal Mode	CHANNEL	5
FREQUENCY RANGE	Above 1000 MHz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	35 deg. C, 70%RH, 1050 hPa	INPUT POWER (SYSTEM)	120Vac, 60Hz
TESTED BY	Eric Lee		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	*5260.00	84.2 AV			1.70H	122	85.00	31.90	3.86	36.60	0.84
2	*5260.00	89.2 PK			1.70H	122	90.00	31.90	3.86	36.60	0.84
3	10520.00	52.4 PK	68.30	-15.90	1.28H	99	43.00	39.43	7.22	37.28	-9.36

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)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	*5260.00	96.2 PK			1.35V	240	97.00	31.90	3.86	36.60	0.84
2	*5260.00	87.2 AV			1.35V	240	88.00	31.90	3.86	36.60	0.84
3	10520.00	56.4 PK	68.30	-11.90	1.58V	207	47.00	39.43	7.22	37.28	-9.36

NOTE:

1. Emission level = Raw value - Correction Factor
2. Correction Factor = Pre-Amp. Factor - Ant. Factor - Cable loss
(Pre-Amp. Factor = 0, when a Pre-Amplifier is not used for the test.)
3. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.
5. "*" : Fundamental frequency



EUT	Wireless Dual-Band Access Point	MODEL	WX-5520A
MODE	Normal Mode	CHANNEL	8
FREQUENCY RANGE	Above 1000 MHz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	35 deg. C, 70%RH, 1050 hPa	INPUT POWER (SYSTEM)	120Vac, 60Hz
TESTED BY	Eric Lee		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)	Remark
1	*5320.00	79.1 AV			1.77H	236	80.00	31.93	3.77	36.57	0.86	
2	*5320.00	88.1 PK			1.77H	236	89.00	31.93	3.77	36.57	0.86	
3	10640.00	53.4 PK	74.00	-20.60	1.33H	82	43.80	39.61	7.22	37.18	-9.64	NOTE 6
4	10640.00	44.6 AV	54.00	-9.40	1.33H	82	35.00	39.61	7.22	37.18	-9.64	NOTE 6

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)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)	Remark
1	*5320.00	88.1 AV			1.33V	82	89.00	31.93	3.77	36.57	0.86	
2	*5320.00	97.1 PK			1.33V	82	98.00	31.93	3.77	36.57	0.86	
3	10640.00	59.6 PK	74.00	-14.40	1.70V	122	50.00	39.61	7.22	37.18	-9.64	NOTE 6
4	10640.00	50.6 AV	54.00	-3.40	1.70V	122	41.00	39.61	7.22	37.18	-9.64	NOTE 6

NOTE:

1. Emission level = Raw value - Correction Factor
2. Correction Factor = Pre-Amp. Factor - Ant. Factor - Cable loss
(Pre-Amp. Factor = 0, when a Pre-Amplifier is not used for the test.)
3. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.
5. "*" : Fundamental frequency
6. The radiated frequency falling in the restricted band.



EUT	Wireless Dual-Band Access Point	MODEL	WX-5520A
MODE	Turbo Mode	CHANNEL	1
FREQUENCY RANGE	Above 1000 MHz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	35 deg. C, 70%RH, 1050 hPa	INPUT POWER (SYSTEM)	120Vac, 60Hz
TESTED BY	Eric Lee		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	*5210.00	73.6 AV			1.94H	78	74.40	31.88	3.90	36.62	0.83
2	*5210.00	80.8 PK			1.94H	78	81.60	31.88	3.90	36.62	0.83
3	10420.00	50.7 PK	68.30	-17.60	1.40H	115	41.80	39.30	6.99	37.35	-8.94

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)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	*5210.00	93.2 PK			1.36V	225	94.00	31.88	3.90	36.62	0.83
2	*5210.00	81.2 AV			1.36V	225	82.00	31.88	3.90	36.62	0.83
4	10420.00	60.9 PK	68.30	-7.40	1.37V	223	52.00	39.30	6.99	37.35	-8.94

NOTE:

1. Emission level = Raw value - Correction Factor
2. Correction Factor = Pre-Amp. Factor - Ant. Factor - Cable loss
(Pre-Amp. Factor = 0, when a Pre-Amplifier is not used for the test.)
3. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.
5. "*" : Fundamental frequency



EUT	Wireless Dual-Band Access Point	MODEL	WX-5520A
MODE	Turbo Mode	CHANNEL	2
FREQUENCY RANGE	Above 1000 MHz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	35 deg. C, 70%RH, 1050 hPa	INPUT POWER (SYSTEM)	120Vac, 60Hz
TESTED BY	Eric Lee		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	*5250.00	70.7 AV			2.20H	113	71.50	31.90	3.86	36.60	0.84
2	*5250.00	75.5 PK			2.19H	113	76.30	31.90	3.86	36.60	0.84
3	10500.00	51.4 PK	68.30	-16.90	1.12H	1	42.00	39.43	7.22	37.28	-9.37

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)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	*5250.00	84.5 AV			1.33V	60	85.30	31.90	3.86	36.60	0.84
2	*5250.00	90.8 PK			1.33V	80	91.60	31.90	3.86	36.60	0.84
3	10500.00	57.4 PK	68.30	-10.90	1.33V	147	48.00	39.43	7.22	37.28	-9.36

NOTE:

1. Emission level = Raw value - Correction Factor
2. Correction Factor = Pre-Amp. Factor - Ant. Factor - Cable loss
(Pre-Amp. Factor = 0, when a Pre-Amplifier is not used for the test.)
3. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.



EUT	Wireless Dual-Band Access Point	MODEL	WX-5520A
MODE	Turbo Mode	CHANNEL	3
FREQUENCY RANGE	Above 1000 MHz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	35 deg. C, 70%RH, 1050 hPa	INPUT POWER (SYSTEM)	120Vac, 60Hz
TESTED BY	Eric Lee		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	*5290.00	73.2 AV			1.77H	244	74.00	31.92	3.82	36.58	0.85
2	*5290.00	78.1 PK			1.77H	244	78.90	31.92	3.82	36.58	0.85
3	10580.00	51.8 PK	68.30	-16.50	2.21H	113	42.30	39.49	7.22	37.25	-9.47

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)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	*5290.00	85.2 AV			1.55V	99	86.00	31.92	3.82	36.58	0.85
2	*5290.00	92.2 PK			1.55V	99	93.00	31.92	3.82	36.58	0.85
3	10580.00	61.3 PK	68.30	-7.00	1.32V	110	51.80	39.49	7.22	37.25	-9.46.

NOTE:

1. Emission level = Raw value - Correction Factor
2. Correction Factor = Pre-Amp. Factor - Ant. Factor - Cable loss
(Pre-Amp. Factor = 0, when a Pre-Amplifier is not used for the test.)
3. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.
5. "*" : Fundamental frequency



5.2.10 TEST RESULTS (RECEIVING)

EUT	Wireless Dual-Band Access Point	MODEL	WX-5520A
MODE	Normal Mode	CHANNEL	1
FREQUENCY RANGE	Above 1000 MHz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	35 deg. C, 70%RH, 1050 hPa	INPUT POWER (SYSTEM)	120Vac, 60Hz
TESTED BY	Gary Chang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	4114.00	44.5 PK	74.00	-29.50	1.02H	347	47.00	30.44	3.64	36.54	2.45

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)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	2402.00	38.5 PK	74.00	-35.50	1.07V	248	45.00	27.67	2.53	36.72	6.52
2	3202.00	50.9 PK	74.00	-23.10	1.06V	87	55.00	28.95	3.78	36.82	4.09
3	4111.00	45.5 PK	74.00	-28.50	1.01V	7	48.00	30.44	3.64	36.54	2.46

NOTE:

1. Emission level = Raw value - Correction Factor
2. Correction Factor = Pre-Amp. Factor - Ant. Factor - Cable loss
(Pre-Amp. Factor = 0, when a Pre-Amplifier is not used for the test.)
3. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.
5. "*" : Fundamental frequency