FCC TEST REPORT

REPORT NO.: RF910808R02B
MODEL NO.: WAP55AG
RECEIVED: Feb. 27, 2003
TESTED: Mar. 2 ~ Mar. 12, 2003

APPLICANT: The Linksys Group, Inc.

ADDRESS: 17401 Armstrong Ave., Irvine, CA 92614

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0528
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1. CERTIFICATION

PRODUCT : Dual-Band Wireless A+G Access Point

BRAND NAME : Linksys

MODEL NO. : WAP55AG

APPLICANT : The Linksys Group, Inc.

STANDARDS : 47 CFR Part 15, Subpart C (Section 15.247), Subpart E (Section 15.407), ANSI C63.4-1992

We, **Advance Data Technology Corporation**, hereby certify that one sample of the designation has been tested in our facility from Mar. 2 ~ Mar. 12, 2003. The test record, data evaluation and Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions herein specified.

CHECKED BY : Emily Lu, **DATE** : Mar. 13, 2003

Emily Lu

APPROVED BY : Chris Wu for, **DATE** : Mar. 13, 2003

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 –11.24dBuV at 1.758MHz
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 –1.00dBuV at 748.80MHz
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			
Standard Section	**Test Type**	**Result**	**REMARK**
15.407(b)(5)	AC Power Conducted Emission	PASS	Meet the requirement of limit Minimum passing margin is –11.10dBuV at 1.691MHz
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 ma748.80MHz
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	Dual-Band Wireless A+G Access Point
MODEL NO.	WAP55AG
POWER SUPPLY	5VDC from power adapter
MODULATION	DSSS, OFDM
TRANSFER RATE	up to 54Mbps (Turbo mode: up to 72Mbps)
FREQUENCY RANGE	802.11b and draft 802.11g: 2412~2462MHz 802.11a: 5.15~5.35GHz and 5.725~5.825GHz
NUMBER OF CHANNEL	802.11b and draft 802.11g: 11 802.11a: 8 for Normal mode / 3 for Turbo mode
CHANNEL SPACING	802.11b and draft 802.11g: 5MHz 802.11a: 20MHz for Normal mode / 40MHz for Turbo mode
OUTPUT POWER	802.11b and draft 802.11g: 20.60dBm 802.11a: 15.00dBm
DATA CABLE	NA
ANTENNA TYPE	Dipole
I/O PORTS	RJ45
ASSOCIATED DEVICES	NA

NOTE:

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

BRAND :	Linksys
MODEL :	MS15-050250-A1D
INPUT :	100-240Vac 50/60Hz 0.5A
OUTPUT :	5.0Vdc 2.5A

2. Dual-band, tri-standard Access Point communicates with Wireless-A (802.11a), Wireless-B (802.11b), and Wireless-G (draft 802.11g) wireless networks.
3. For more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3.2 DESCRIPTION OF TEST MODES

For 802.11b and draft 802.11g: Eleven channels are provided to this EUT.

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

NOTE:

1. Below 1GHz, the channel 1, 6, and 11 were pre-tested in chamber. The channel 11, worst case one, was chosen for final test.
2. Above 1GHz, the channel 1, 6, and 11 were tested individually.
3. Transfer rate of 11Mbps with CCK technique and 6Mbps with OFDM technique, the worst case, was chosen for final test.
4. Test result A is for CCK technique and test result B is for OFDM technique which presented in Section 4.

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		

Three 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 Dual-Band Wireless Access Point. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC CFR 47 Part 15, Subpart C. (15.247),
Subpart E (15.407). 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	USB 10/100 FAST ETHERNET	D-LINK	DU-E100	UR15001597	FCC DoC APPROVED

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

NOTE: All power cords of the above support units are non shielded (1.8m).

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

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dBμV)	
	Quasi-peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

NOTE:
1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.
3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
ROHDE & SCHWARZ Test Receiver	ESCS30	847793/022	Mar. 10, 2004
ROHDE & SCHWARZ Artificial Mains Network (for EUT)	ESH2-Z5	828075/003	July 23, 2003
ROHDE & SCHWARZ 200-A Four-line V-Network	ENV4200	830326/018	Oct. 30, 2003
* ROHDE & SCHWARZ 4-wire ISN	ENY41	838119/028	Nov. 29, 2003
* ROHDE & SCHWARZ 2-wire ISN	ENY22	837497/018	Nov. 29, 2003
EMCO-L.I.S.N. (for peripheral)	3825/2	90031627	July 23, 2003
Software	Cond-V2M1	NA	NA
RF cable (JYEBAO)	5D-FB	Cable-C05.01	July 19, 2003
LYNICS Terminator (For EMCO LISN)	0900510	E1-01-305	Feb. 23, 2004
LYNICS Terminator (For EMCO LISN)	0900510	E1-01-306	Feb. 23, 2004

NOTE:
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. "*": These equipment are used for conducted telecom port test only (if tested).
3. The test was performed in ADT Shielded Room No. 5.
4. The VCCI Site Registration No. is C-1093.

4.1.3 TEST PROCEDURES

a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.

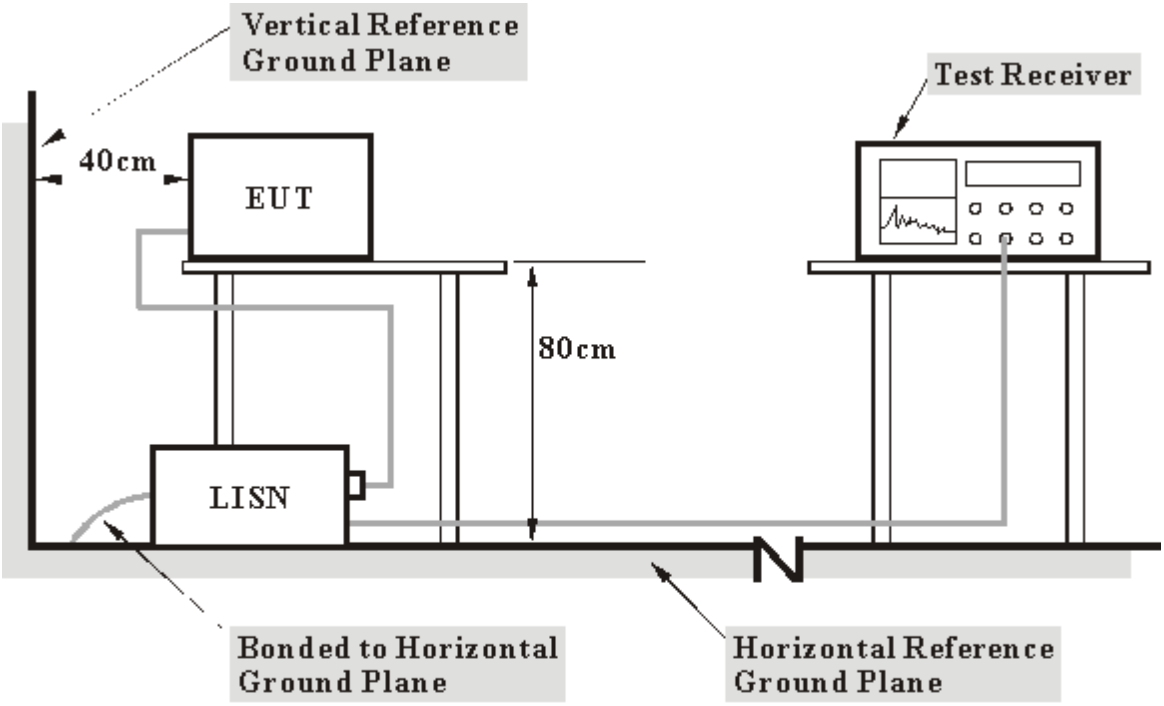
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

c. The frequency range from 150 kHz to 30 MHz was searched. Emission levels over 10dB under the prescribed limits could not be reported

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 TEST SETUP



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

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

4.1.6 EUT OPERATING CONDITIONS

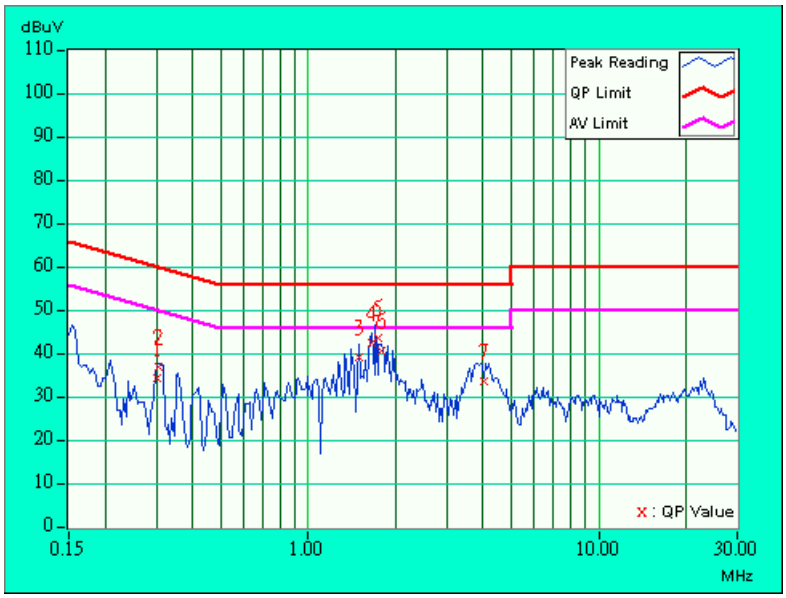
a. Placed the EUT on the testing table.
b. Prepared another computer system to act as a communication partner and placed it outside of testing area.
c. The communication partner run a test program to enable EUT under transmission/receiving condition continuously at specific channel frequency via an RJ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

4.1.7 TEST RESULTS

EUT	Dual-Band Wireless A+G Access Point	**MODEL**	WAP55AG
MODE	Channel 1	**6dB BANDWIDTH**	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**PHASE**	Line (L)
ENVIRONMENTAL CONDITIONS	24deg. C, 55%RH, 1005hPa	**TESTED BY**: Bunny Yao	

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.302	0.10	34.21	-	34.31	-	60.18	50.18	-25.87	-
2	0.306	0.10	36.46	-	36.56	-	60.07	50.07	-23.51	-
3	1.496	0.20	39.02	-	39.22	-	56.00	46.00	-16.78	-
4	1.652	0.20	42.03	-	42.23	-	56.00	46.00	-13.77	-
5	1.738	0.20	43.12	-	43.32	-	56.00	46.00	-12.68	-
6	1.777	0.20	40.42	-	40.62	-	56.00	46.00	-15.38	-
7	4.035	0.40	33.46	-	33.86	-	56.00	46.00	-22.14	-

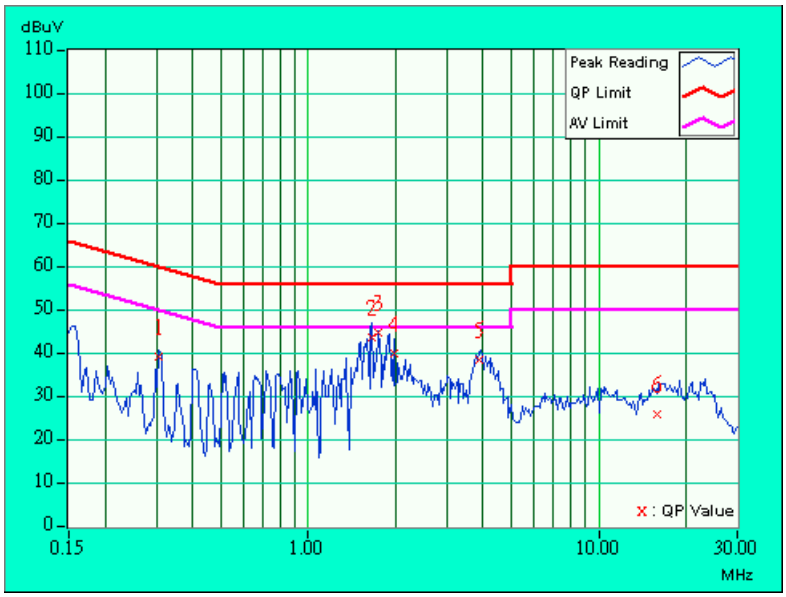
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Dual-Band Wireless A+G Access Point	**MODEL**	WAP55AG
MODE	Channel 1	**6dB BANDWIDTH**	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**PHASE**	Neutral (N)
ENVIRONMENTAL CONDITIONS	24deg. C, 55%RH, 1005hPa	**TESTED BY**: Bunny Yao	

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.306	0.10	38.54	-	38.64	-	60.07	50.07	-21.43	-
2	1.660	0.20	43.27	-	43.47	-	56.00	46.00	-12.53	-
3	1.738	0.20	44.08	-	44.28	-	56.00	46.00	-11.72	-
4	1.973	0.20	39.52	-	39.72	-	56.00	46.00	-16.28	-
5	3.863	0.29	37.84	-	38.13	-	56.00	46.00	-17.87	-
6	15.871	0.55	25.25	-	25.80	-	60.00	50.00	-34.20	-

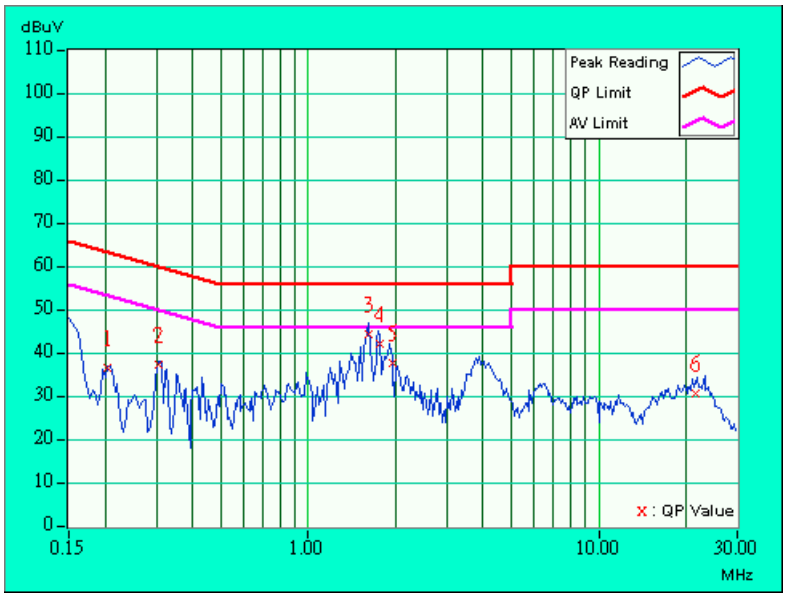
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Dual-Band Wireless A+G Access Point	**MODEL**	WAP55AG
MODE	Channel 6	**6dB BANDWIDTH**	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**PHASE**	Line (L)
ENVIRONMENTAL CONDITIONS	24deg. C, 55%RH, 1005hPa	**TESTED BY**: Bunny Yao	

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.205	0.10	35.65	-	35.75	-	63.42	53.42	-27.67	-
2	0.306	0.10	36.16	-	36.26	-	60.07	50.07	-23.81	-
3	1.617	0.20	43.13	-	43.33	-	56.00	46.00	-12.67	-
4	1.773	0.20	41.02	-	41.22	-	56.00	46.00	-14.78	-
5	1.949	0.20	36.61	-	36.81	-	56.00	46.00	-19.19	-
6	21.645	1.13	29.64	-	30.77	-	60.00	50.00	-29.23	-

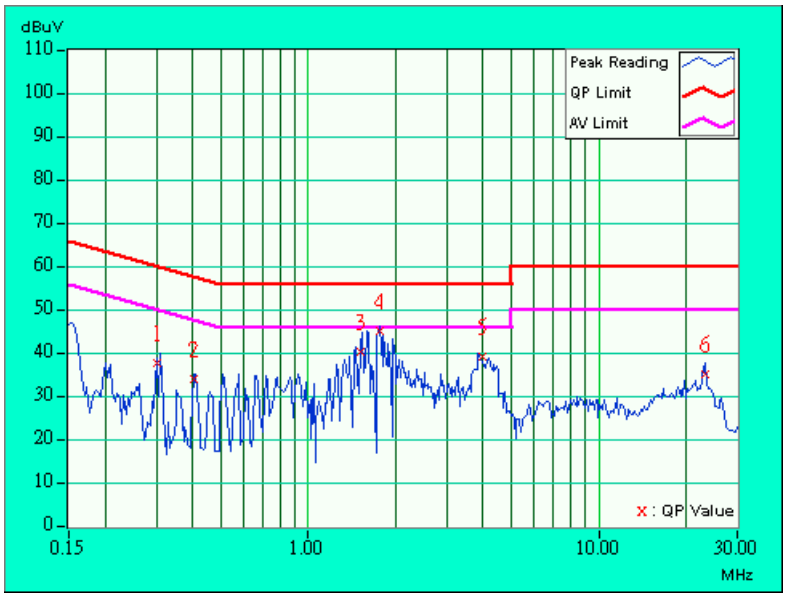
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Dual-Band Wireless A+G Access Point	**MODEL**	WAP55AG
MODE	Channel 6	**6dB BANDWIDTH**	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**PHASE**	Neutral (N)
ENVIRONMENTAL CONDITIONS	24deg. C, 55%RH, 1005hPa	**TESTED BY**: Bunny Yao	

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.302	0.10	36.90	-	37.00	-	60.18	50.18	-23.18	-
2	0.404	0.10	33.26	-	33.36	-	57.77	47.77	-24.41	-
3	1.516	0.20	39.70	-	39.90	-	56.00	46.00	-16.10	-
4	1.758	0.20	44.56	-	44.76	-	56.00	46.00	-11.24	-
5	4.004	0.30	38.38	-	38.68	-	56.00	46.00	-17.32	-
6	23.129	0.74	34.39	-	35.13	-	60.00	50.00	-24.87	-

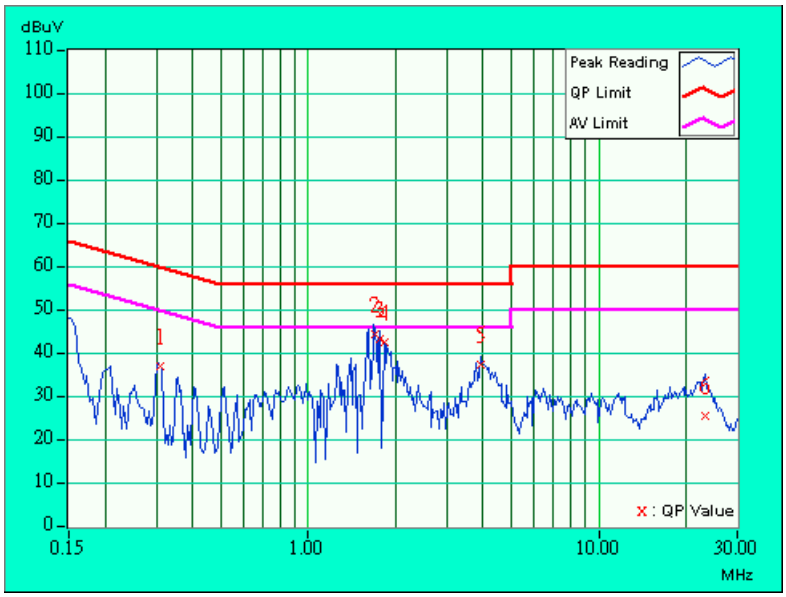
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Dual-Band Wireless A+G Access Point	**MODEL**	WAP55AG
MODE	Channel 11	**6dB BANDWIDTH**	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**PHASE**	Line (L)
ENVIRONMENTAL CONDITIONS	24deg. C, 55%RH, 1005hPa	**TESTED BY**: Bunny Yao	

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.310	0.10	36.04	-	36.14	-	59.97	49.97	-23.83	-
2	1.695	0.20	43.13	-	43.33	-	56.00	46.00	-12.67	-
3	1.770	0.20	42.02	-	42.22	-	56.00	46.00	-13.78	-
4	1.832	0.20	41.41	-	41.61	-	56.00	46.00	-14.39	-
5	3.922	0.39	36.42	-	36.81	-	56.00	46.00	-19.19	-
6	23.129	1.16	24.54	-	25.70	-	60.00	50.00	-34.30	-

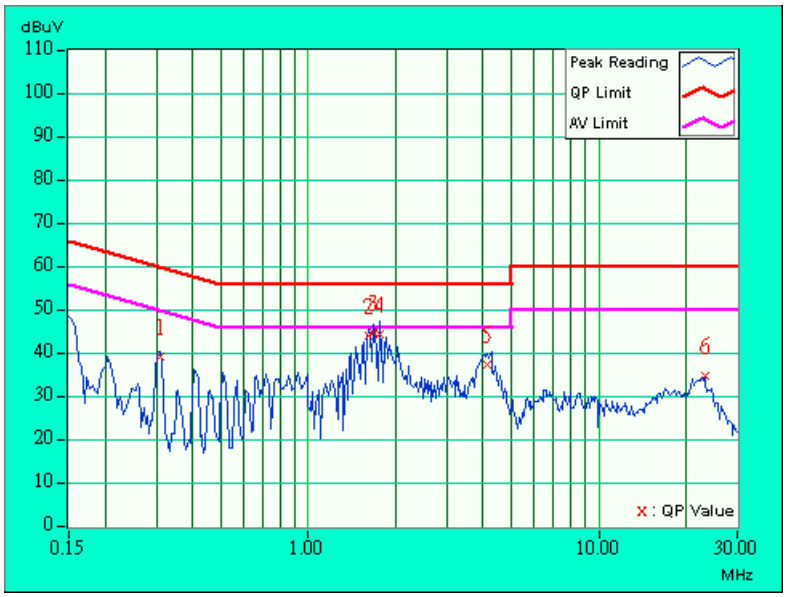
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Dual-Band Wireless A+G Access Point	**MODEL**	WAP55AG
MODE	Channel 11	**6dB BANDWIDTH**	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**PHASE**	Neutral (N)
ENVIRONMENTAL CONDITIONS	24deg. C, 55%RH, 1005hPa	**TESTED BY**: Bunny Yao	

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.310	0.10	38.44	-	38.54	-	59.97	49.97	-21.43	-
2	1.609	0.20	43.45	-	43.65	-	56.00	46.00	-12.35	-
3	1.680	0.20	44.04	-	44.24	-	56.00	46.00	-11.76	-
4	1.758	0.20	43.76	-	43.96	-	56.00	46.00	-12.04	-
5	4.145	0.30	36.79	-	37.09	-	56.00	46.00	-18.91	-
6	23.125	0.74	34.03	-	34.77	-	60.00	50.00	-25.23	-

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



4.2 RADIATED EMISSION MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

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

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

NOTE:

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

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
* HP Spectrum Analyzer	8590L	3544A01176	May 13, 2003
* HP Preamplifier	8447D	2944A08485	Apr. 29, 2003
* HP Preamplifier	8449B	3008A01201	Dec. 01, 2003
* HP Preamplifier	8449B	3008A01292	Aug. 07, 2003
*Spectrum Analyzer	8593E	3926A04191	Mar. 28, 2003
*Test Receiver	ESI7	838496/016	Feb. 23, 2004
SCHAFFNER Tunable Dipole Antenna SCHWARZBECK Tunable Dipole Antenna	VHBA 9123 UHA 9105	459 977	Nov. 22, 2003
* CHASE BILOG Antenna	CBL6112A	2221	Aug. 02, 2003
* SCHWARZBECK Horn Antenna	BBHA9120-D1	D130	July 03, 2003
* EMCO Horn Antenna	3115	9312-4192	Apr. 09, 2003
* EMCO Turn Table	1060	1115	NA
* SHOSHIN Tower	AP-4701	A6Y005	NA
* Software	ADT_Radiated_V5.09	NA	NA
* ANRITSU RF Switches	MP59B	M35046	Jul. 11. 2003
* TIMES RF cable	LMR-600	CABLE-ST5-01	Jul. 11. 2003

NOTE: 1. The calibration interval of the above test instruments is 12 months. And the calibrations are traceable to NML/ROC and NIST/USA.
2. "*" = These equipment are used for the final measurement.
3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
4. The test was performed in ADT Open Site No. 5.
5. The VCCI Site Registration No. is R-1039.

4.2.3 TEST PROCEDURES

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10 dB margin would be re-tested one by one using the quasi-peak method or average method as specified and then reported in Data sheet peak mode and QP mode.

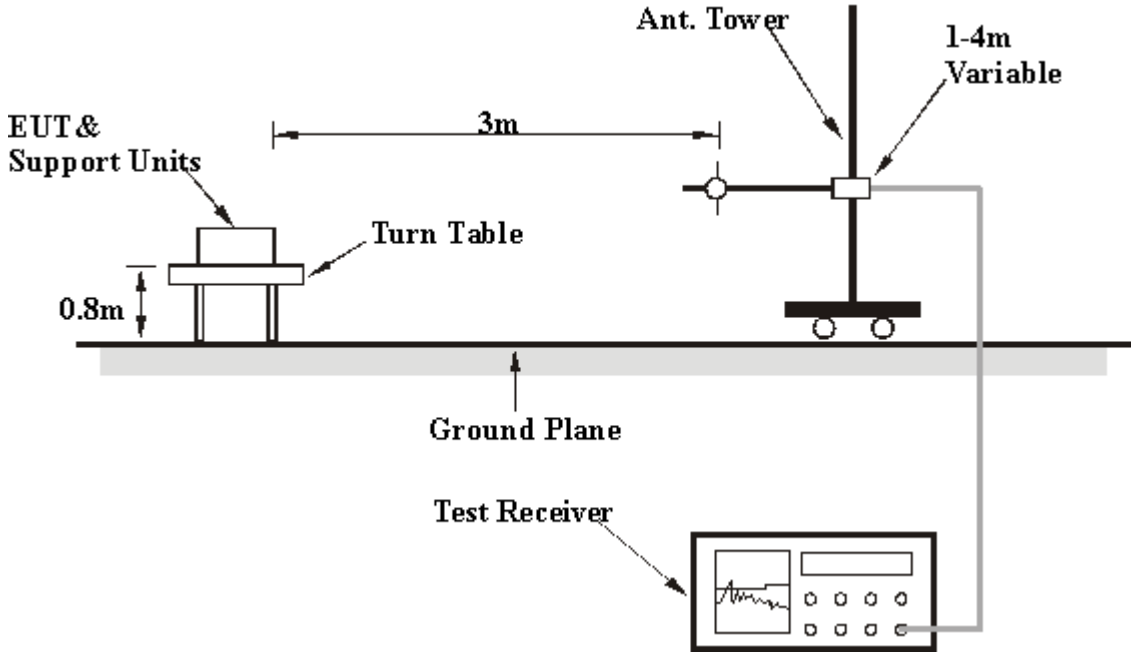
NOTE:

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	Dual-Band Wireless A+G Access Point	**MODEL**	WAP55AG
MODE	Channel 11	**FREQUENCY RANGE**	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**DETECTOR FUNCTION**	Quasi-Peak
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 1005hPa	**TESTED BY**: Gary Chang	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	58.00	31.5 QP	40.00	-8.50	1.42 H	37	23.50	8.00
2	150.00	32.0 QP	43.50	-11.50	1.22 H	41	20.50	11.50
3	250.00	33.2 QP	46.00	-12.80	1.52 H	74	17.60	15.60
4	269.00	36.0 QP	46.00	-10.00	1.28 H	325	19.60	16.40
5	276.00	40.7 QP	46.00	-5.30	1.10 H	117	24.20	16.50
6	280.82	32.1 QP	46.00	-13.90	1.00 H	46	15.60	16.50
7	375.00	34.0 QP	46.00	-12.00	1.52 H	33	15.60	18.40
8	400.00	30.5 QP	46.00	-15.50	1.52 H	62	11.40	19.10
9	500.00	36.0 QP	46.00	-10.00	1.12 H	75	14.80	21.20
10	561.00	31.0 QP	46.00	-15.00	1.13 H	54	9.60	21.40
11	624.00	42.0 QP	46.00	-4.00	1.00 H	235	19.20	22.80
12	669.24	37.3 QP	46.00	-8.70	1.00 H	337	14.40	22.90
13	686.00	41.1 QP	46.00	-4.90	1.24 H	74	18.20	22.90
14	720.00	33.5 QP	46.00	-12.50	1.44 H	87	10.00	23.50
15	748.80	45.0 QP	46.00	-1.00	1.00 H	119	20.90	24.10
16	811.00	38.5 QP	46.00	-7.50	1.24 H	52	13.60	24.90
17	873.00	45.0 QP	46.00	-1.00	1.00 H	119	19.90	25.10

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

EUT	Dual-Band Wireless A+G Access Point	**MODEL**	WAP55AG
MODE	Channel 11	**FREQUENCY RANGE**	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**DETECTOR FUNCTION**	Quasi-Peak
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 1005hPa	**TESTED BY**: Gary Chang	

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	138.00	37.0 QP	43.50	-6.50	1.33 V	36	24.70	12.30
2	156.00	32.0 QP	43.50	-11.50	1.42 V	74	20.90	11.10
3	200.00	34.5 QP	43.50	-9.00	1.30 V	41	23.50	11.00
4	218.00	31.1 QP	46.00	-14.90	1.21 V	24	18.50	12.60
5	225.00	32.0 QP	46.00	-14.00	1.22 V	354	18.70	13.30
6	250.00	32.4 QP	46.00	-13.60	1.18 V	62	16.80	15.60
7	269.80	31.5 QP	46.00	-14.50	1.28 V	54	15.10	16.40
8	276.60	36.5 QP	46.00	-9.50	1.51 V	74	20.00	16.50
9	374.00	35.2 QP	46.00	-10.80	1.12 V	74	16.80	18.40
10	468.00	32.0 QP	46.00	-14.00	1.38 V	54	11.70	20.30
11	625.00	34.0 QP	46.00	-12.00	1.19 V	3	11.20	22.80
12	655.00	38.4 QP	46.00	-7.60	1.18 V	74	15.60	22.80
13	686.00	42.0 QP	46.00	-4.00	1.02 V	31	19.10	22.90
14	720.00	31.3 QP	46.00	-14.70	1.02 V	31	7.80	23.50
15	873.00	41.5 QP	46.00	-4.50	1.42 V	37	16.40	25.10

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

4.2.8 TEST RESULTS (A)

EUT	Dual-Band Wireless A+G Access Point	**MODEL**	WAP55AG
MODE	Channel 1	**FREQUENCY RANGE**	Above 1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 60%RH, 1005hPa	**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)	Correction Factor (dB/m)
1	1608.00	44.4 PK	74.00	-29.60	1.88 H	45	16.90	27.50
2	2390.00	51.5 PK	74.00	-22.50	1.36 H	6	21.90	29.60
2	2390.00	42.4 AV	54.00	-11.60	1.36 H	6	12.80	27.50
3	*2412.00	104.0 PK			1.36 H	6	74.40	29.60
3	*2412.00	95.5 AV			1.36 H	6	65.90	29.60
4	3216.00	49.8 PK	74.00	-24.20	1.16 H	354	18.30	31.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1608.00	44.9 PK	74.00	-29.10	1.11 V	58	17.40	27.50
2	2390.00	57.8 PK	74.00	-16.20	1.55 V	54	28.20	29.60
2	2390.00	47.2 AV	54.00	-6.80	1.55 V	54	17.60	27.50
3	*2412.00	110.5 PK			1.55 V	54	80.90	29.60
3	*2412.00	101.8 AV			1.55 V	54	72.10	29.60
4	3216.00	52.6 PK	74.00	-21.40	1.03 V	4	21.10	31.50
4	3216.00	49.8 AV	54.00	-4.20	1.03 V	4	18.30	29.60
5	7236.00	50.2 PK	74.00	-23.80	1.50 V	44	9.80	40.40
5	7236.00	40.8 AV	54.00	-13.20	1.50 V	44	0.40	31.50

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

EUT	Dual-Band Wireless A+G Access Point	**MODEL**	WAP55AG
MODE	Channel 6	**FREQUENCY RANGE**	Above 1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 1005hPa	**TESTED BY**: Gary Chang	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1624.00	44.4 PK	74.00	-29.60	1.33 H	5	11.50	32.90
2	*2437.00	106.7 PK			1.04 H	200	72.60	34.20
2	*2437.00	98.1 AV			1.04 H	200	64.00	32.90
3	3249.00	53.1 PK	74.00	-20.90	1.15 H	54	16.90	36.20
3	3249.00	42.1 AV	54.00	-11.90	1.15 H	54	5.90	34.20
4	4874.00	47.5 PK	74.00	-26.50	1.35 H	112	8.70	38.70

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1624.00	48.1 PK	74.00	-25.90	1.21 V	50	16.50	31.60
2	*2437.00	97.7 PK			1.25 V	215	64.90	32.80
2	*2437.00	87.7 AV			1.25 V	215	54.90	31.60
3	3249.00	48.8 PK	74.00	-25.20	1.65 V	54	14.90	33.90
4	4874.00	46.4 PK	74.00	-27.60	1.37 V	342	9.20	37.10

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

EUT	Dual-Band Wireless A+G Access Point	**MODEL**	WAP55AG
MODE	Channel 11	**FREQUENCY RANGE**	Above 1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 60%RH, 1005hPa	**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)	Correction Factor (dB/m)
1	1641.00	46.7 PK	74.00	-27.30	1.44 H	41	19.10	27.50
2	*2462.00	103.3 PK			1.51 H	268	73.50	29.80
2	*2462.00	94.1 AV			1.51 H	268	64.30	27.50
3	2484.00	56.1 PK	74.00	-17.90	1.51 H	268	26.20	29.90
3	2484.00	44.2 AV	54.00	-9.80	1.51 H	268	14.30	29.80
4	3282.00	47.8 PK	74.00	-26.20	1.84 H	168	16.30	31.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1641.00	44.5 PK	74.00	-29.50	1.36 V	31	16.90	27.50
2	*2462.00	109.7 PK			1.36 V	40	79.90	29.80
2	*2462.00	100.8 AV			1.36 V	40	71.00	27.50
3	2484.00	59.2 PK	74.00	-14.80	1.36 V	40	29.30	29.90
3	2484.00	49.1 AV	54.00	-4.90	1.36 V	40	19.20	29.80
4	3282.00	52.9 PK	74.00	-21.10	1.16 V	332	21.40	31.50
4	3282.00	50.3 AV	54.00	-3.70	1.16 V	332	18.80	29.90
5	7386.00	52.4 PK	74.00	-21.60	1.75 V	284	11.70	40.60
5	7386.00	40.5 AV	54.00	-13.50	1.75 V	284	-0.20	31.50

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

4.2.9 TEST RESULTS (B)

EUT	Dual-Band Wireless A+G Access Point	**MODEL**	WAP55AG
MODE	Channel 1	**FREQUENCY RANGE**	Above 1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 60%RH, 1005hPa	**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)	Correction Factor (dB/m)
1	1608.00	41.6 PK	74.00	-32.40	1.23 H	125	14.10	27.50
2	2390.00	56.9 PK	74.00	-17.10	1.68 H	64	27.30	29.60
2	2390.00	45.2 AV	54.00	-8.80	1.68 H	64	15.60	27.50
3	*2412.00	101.0 PK			1.68 H	64	71.40	29.60
3	*2412.00	84.0 AV			1.68 H	64	54.40	29.60
4	3216.00	50.7 PK	74.00	-23.30	1.44 H	54	19.20	31.50
4	3216.00	47.9 AV	54.00	-6.10	1.44 H	54	16.40	29.60

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1608.00	39.4 PK	74.00	-34.60	1.56 V	45	11.90	27.50
2	2390.00	62.8 PK	74.00	-11.20	1.23 V	46	33.20	29.60
2	2390.00	51.7 AV	54.00	-2.30	1.23 V	46	22.10	27.50
3	*2412.00	108.8 PK			1.23 V	46	79.20	29.60
3	*2412.00	91.8 AV			1.23 V	46	62.20	29.60
4	3216.00	51.8 PK	74.00	-22.20	1.55 V	6	20.30	31.50
4	3216.00	48.9 AV	54.00	-5.10	1.55 V	6	17.40	29.60
5	7236.00	50.8 PK	74.00	-23.20	1.40 V	360	10.40	40.40
5	7236.00	42.2 AV	54.00	-11.80	1.40 V	360	1.80	31.50

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

EUT	Dual-Band Wireless A+G Access Point	**MODEL**	WAP55AG
MODE	Channel 6	**FREQUENCY RANGE**	Above 1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 1005hPa	**TESTED BY**: Gary Chang	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1608.00	49.1 PK	74.00	-24.90	1.25 H	74	16.20	32.90
2	*2437.00	104.0 PK			1.15 H	43	69.80	34.20
2	*2437.00	87.0 AV			1.15 H	43	52.80	32.90
3	3249.00	55.0 PK	74.00	-19.00	1.12 H	54	18.80	36.20
3	3249.00	45.0 AV	54.00	-9.00	1.12 H	54	8.80	34.20
4	4874.00	46.7 PK	74.00	-27.30	1.52 H	47	8.00	38.70

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1608.00	47.2 PK	74.00	-26.80	1.35 V	62	15.60	31.60
2	*2437.00	110.0 PK			1.62 V	45	77.20	32.80
2	*2437.00	94.0 AV			1.62 V	45	61.20	31.60
3	3249.00	52.0 PK	74.00	-22.00	1.32 V	74	18.10	33.90
3	3249.00	43.0 AV	54.00	-11.00	1.32 V	74	9.10	32.80
4	4874.00	56.4 PK	74.00	-17.60	1.12 V	64	19.30	37.10
4	4874.00	43.0 AV	54.00	-11.00	1.12 V	64	5.90	33.90

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

EUT	Dual-Band Wireless A+G Access Point	**MODEL**	WAP55AG
MODE	Channel 11	**FREQUENCY RANGE**	Above 1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 60%RH, 1005hPa	**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)	Correction Factor (dB/m)
1	1641.00	41.5 PK	74.00	-32.50	1.36 H	22	13.90	27.50
2	*2462.00	100.9 PK			1.74 H	140	71.10	29.80
2	*2462.00	83.9 AV			1.74 H	140	54.10	27.50
3	2484.00	58.0 PK	74.00	-16.00	1.74 H	140	28.10	29.90
3	2484.00	46.5 AV	54.00	-7.50	1.74 H	140	16.60	29.80
4	3282.00	49.2 PK	74.00	-24.80	1.50 H	168	17.70	31.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1647.00	41.5 PK	74.00	-32.50	1.47 V	90	14.00	27.60
2	*2462.00	107.8 PK			1.14 V	64	78.00	29.80
2	*2462.00	90.8 AV			1.14 V	64	61.00	27.60
3	2484.00	61.7 PK	74.00	-12.30	1.14 V	64	31.80	29.90
3	2484.00	50.2 AV	54.00	-3.80	1.14 V	64	20.30	29.80
4	3282.00	51.9 PK	74.00	-22.10	1.34 V	54	20.40	31.50
4	3282.00	50.0 AV	54.00	-4.00	1.34 V	54	18.50	29.90
5	7386.00	50.8 PK	74.00	-23.20	1.84 V	273	10.10	40.60
5	7386.00	41.5 AV	54.00	-12.50	1.84 V	273	0.80	31.50

REMARKS:
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. 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: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.3.3 TEST PROCEDURE

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

4.3.4 DEVIATION FROM TEST STANDARD

No deviation

4.3.5 TEST SETUP

4.3.6 EUT OPERATING CONDITIONS

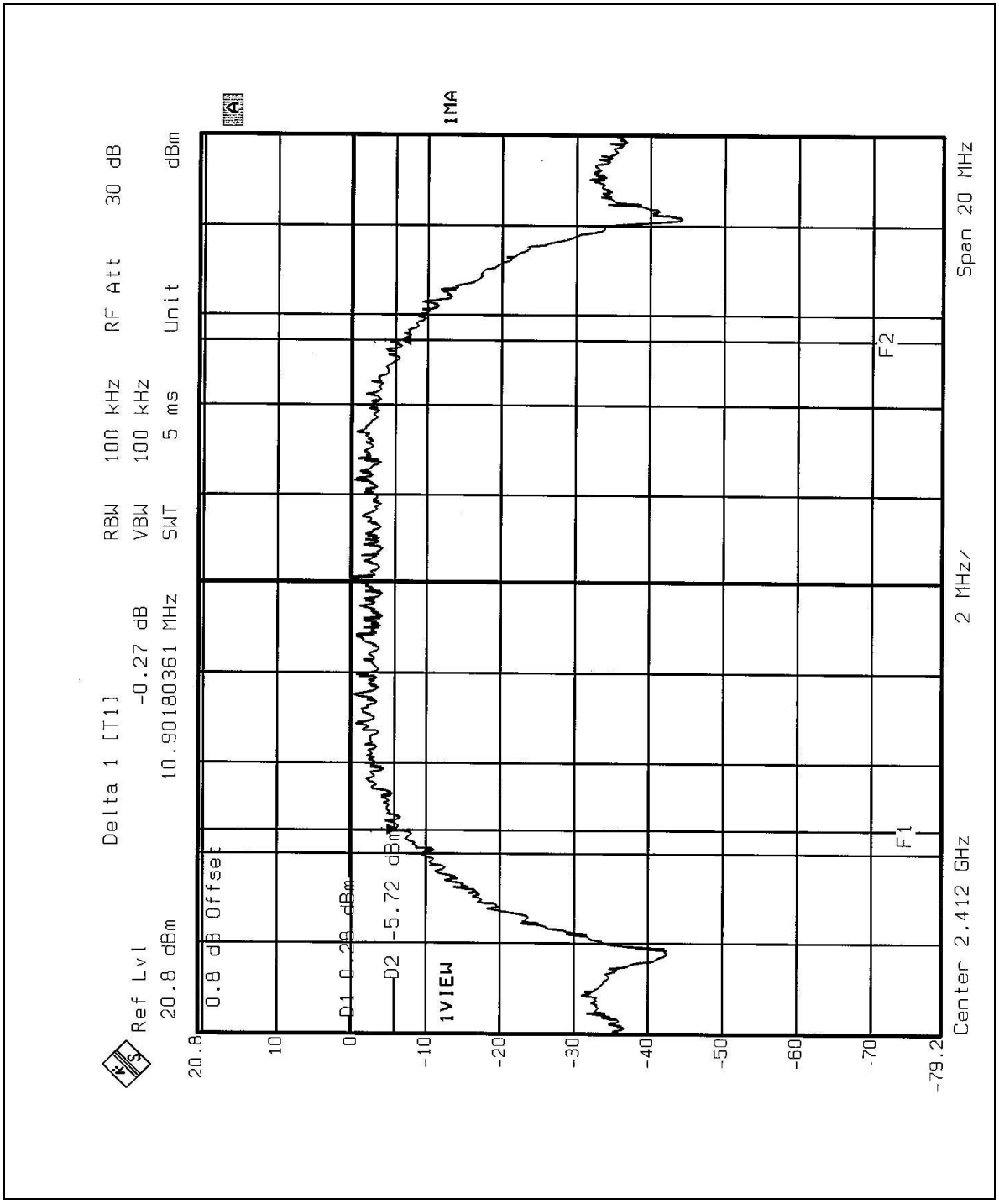
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.3.7 TEST RESULTS (A)

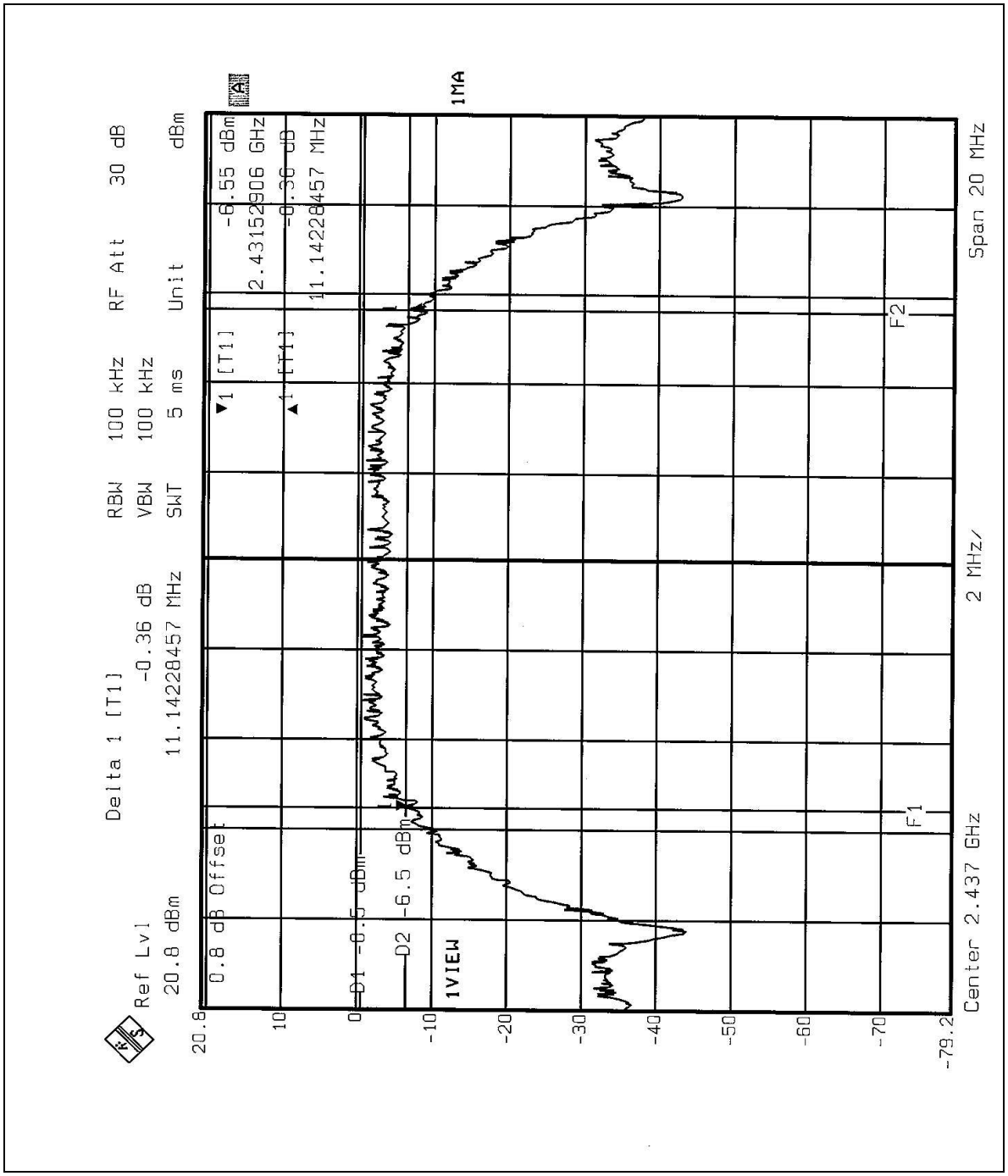
EUT	Dual-Band Wireless A+G Access Point	**MODEL**	WAP55AG
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	20deg. C, 70%RH, 1005hPa
TESTED BY: Steven Lu			

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	10.90	0.5	PASS
6	2437	11.14	0.5	PASS
11	2462	11.10	0.5	PASS

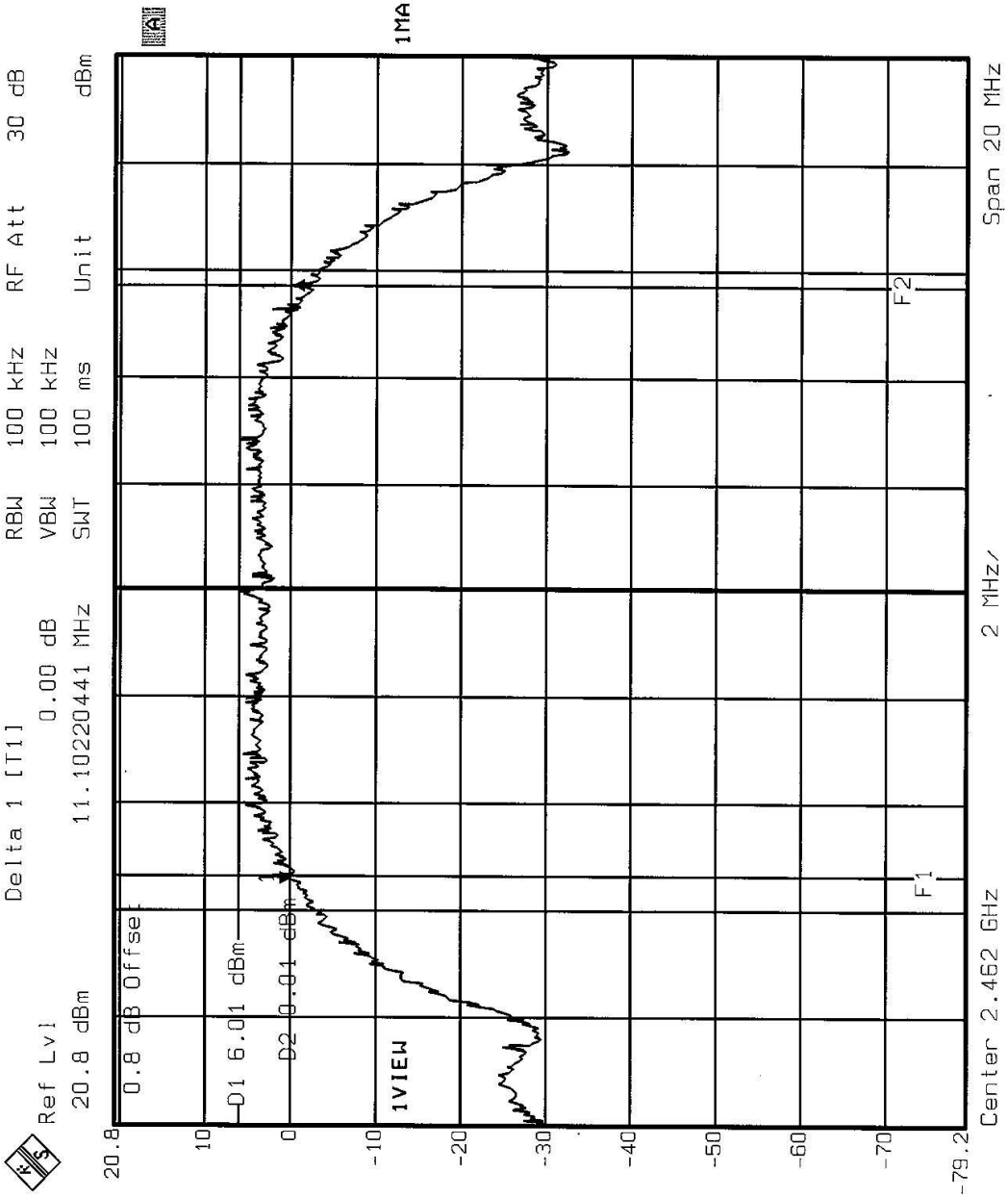
CH1


Ref Lvl
20.8 dBm
0.8 dB Offset
Delta 1 [T1]
-0.27 dB
10.90180361 MHz
RBW 100 kHz
VBW 100 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
D1 0.28 dBm
D2 -5.72 dBm
1VIEW
1MA
F1
F2
Center 2.412 GHz
2 MHz/
Span 20 MHz
20.8
10
0
-10
-20
-30
-40
-50
-60
-70
-79.2

CH6


Ref Lvl
20.8 dBm
0.8 dB Offset
D1 -8.5 dBm
D2 -6.5 dBm
1VIEW
Delta 1 [T1]
-0.36 dB
11.14228457 MHz
RBW 100 kHz
VBW 100 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
▼1 [T1]
-6.55 dBm
2.43152906 GHz
▲1 [T1]
-0.36 dB
11.14228457 MHz
1MA
F1
F2
20.8
10
0
-10
-20
-30
-40
-50
-60
-70
-79.2
Center 2.437 GHz
2 MHz/
Span 20 MHz

CH11

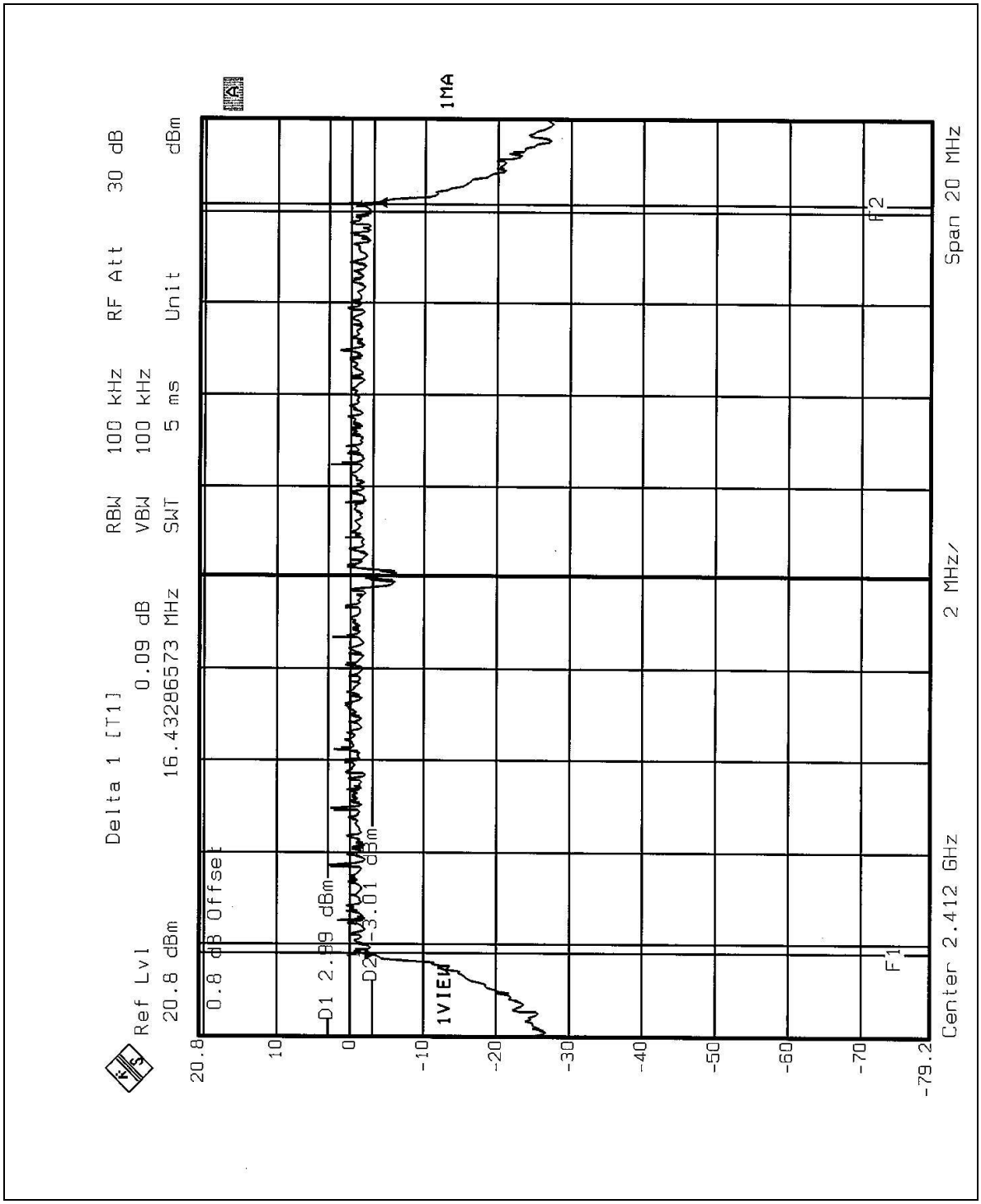

Ref Lvl
20.8 dBm
0.8 dB Offset
Delta 1 [T1]
0.00 dB
11.10220441 MHz
RBW 100 kHz
VBW 100 kHz
SWT 100 ms
RF Att 30 dB
Unit dBm
D1 6.01 dBm
D2 0.01 dBm
1VIEW
1MA
F1
F2
20.8
10
0
-10
-20
-30
-40
-50
-60
-70
-79.2
Center 2.462 GHz
2 MHz/
Span 20 MHz

4.3.8 TEST RESULTS (B)

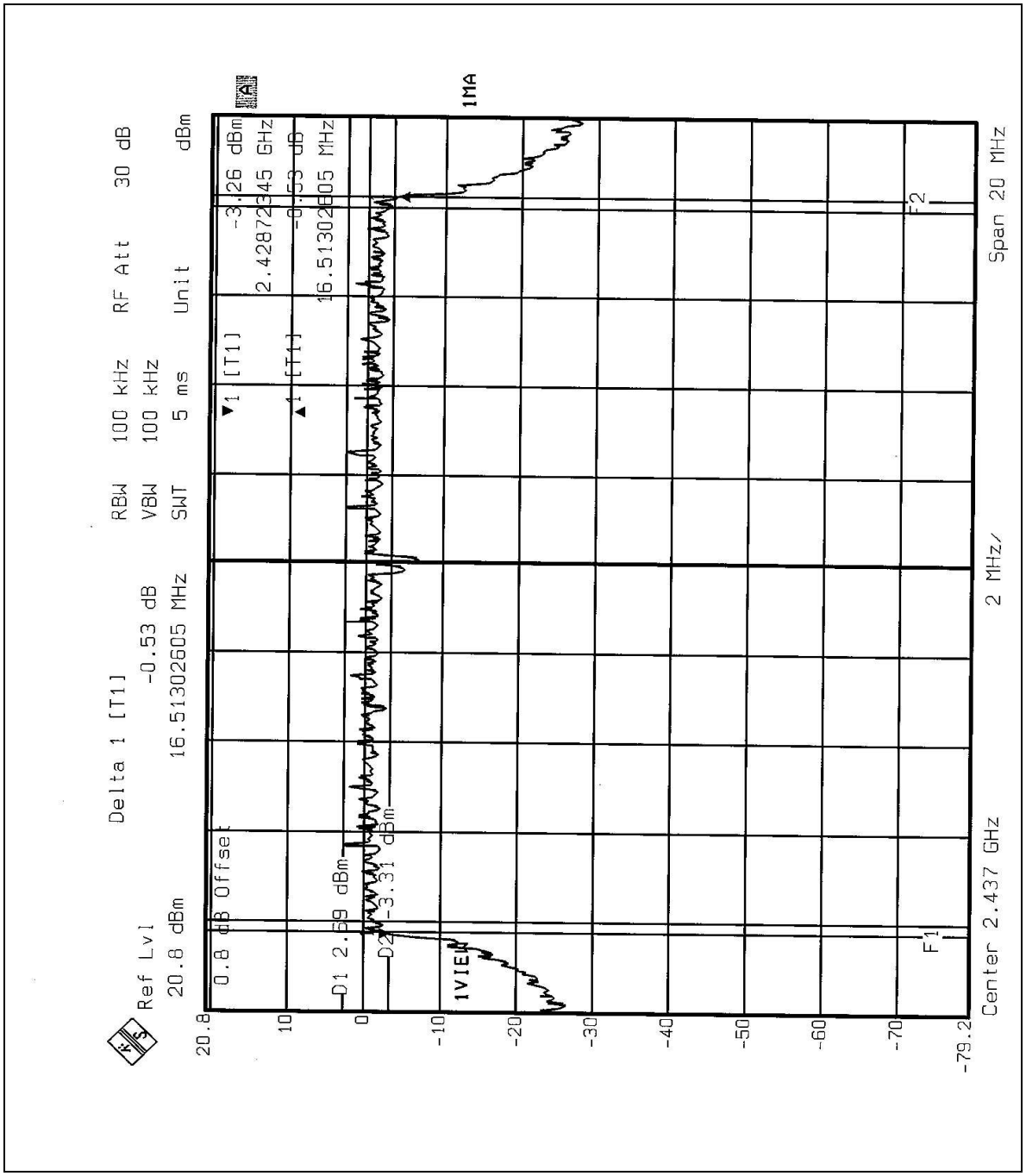
EUT	Dual-Band Wireless A+G Access Point	**MODEL**	WAP55AG
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	20deg. C, 70%RH, 1005hPa
TESTED BY: Steven Lu			

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	16.43	0.5	PASS
6	2437	16.51	0.5	PASS
11	2462	16.43	0.5	PASS

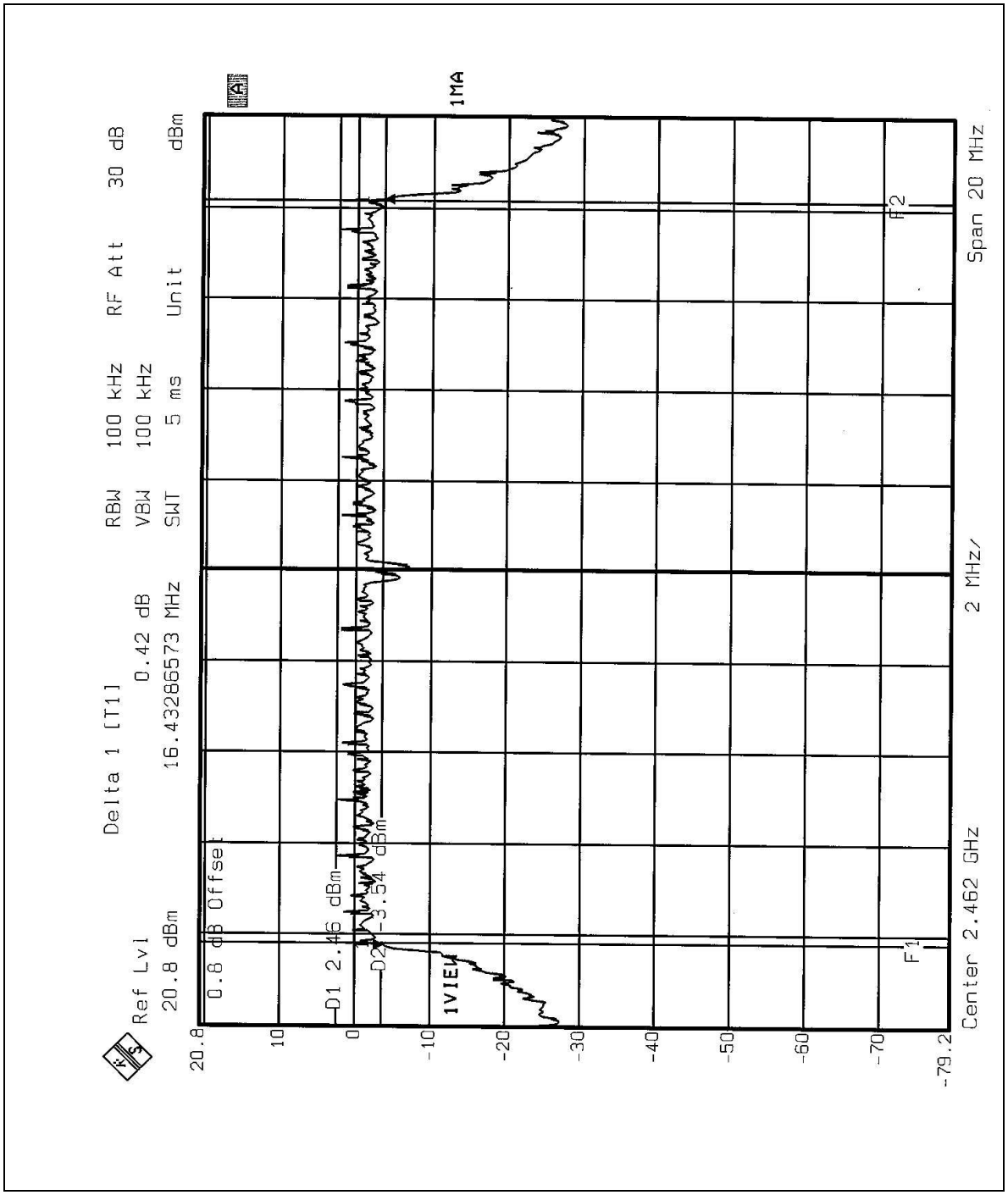
CH1


Ref Lvl
20.8 dBm
0.8 dB Offset
Delta 1 [T1]
0.09 dB
16.43286573 MHz
RBW 100 kHz
VBW 100 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
D1 2.89 dBm
D2 -3.01 dBm
1VIEW
1MA
F1
F2
Center 2.412 GHz
2 MHz/
Span 20 MHz
20.8
10
0
-10
-20
-30
-40
-50
-60
-70
-79.2

CH6


Ref Lvl
20.8 dBm
0.8 dB Offset
Delta 1 [T1]
-0.53 dB
16.51302605 MHz
RBW 100 kHz
VBW 100 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
1 [T1]
-3.26 dBm
2.42872345 GHz
-0.53 dB
16.51302605 MHz
D1 2.69 dBm
D2 -3.31 dBm
1MA
1VIEW
F1
F2
Center 2.437 GHz
2 MHz/
Span 20 MHz
20.8
10
0
-10
-20
-30
-40
-50
-60
-70
-79.2

CH11


Ref Lvl
20.8 dBm
0.8 dB Offset
Delta 1 [T1]
0.42 dB
16.43286573 MHz
RBW 100 kHz
VBW 100 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
D1 2.46 dBm
D2 -3.54 dBm
1MA
1VIEW
F1
F2
Center 2.462 GHz
2 MHz/
Span 20 MHz
20.8
10
0
-10
-20
-30
-40
-50
-60
-70
-79.2

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
PEAK POWER SENSOR	E9327A	US40440722	July 30, 2003
POWER METER	E4416A	GB41291118	July 30, 2003

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

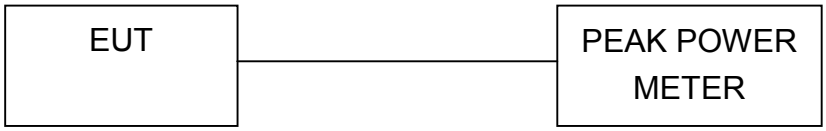
4.4.3 TEST PROCEDURES

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 (A)

EUT	Dual-Band Wireless A+G Access Point	**MODEL**	WAP55AG
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	20deg.C, 70%RH, 1005hPa
TESTED BY: Steven Lu			

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	13.5	30	PASS
6	2437	13.5	30	PASS
11	2462	16.4	30	PASS

4.4.8 TEST RESULTS (B)

EUT	Dual-Band Wireless A+G Access Point	**MODEL**	WAP55AG
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	20deg.C, 70%RH, 1005hPa
TESTED BY: Steven Lu			

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	20.6	30	PASS
6	2437	20.6	30	PASS
11	2462	20.5	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, 2003

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

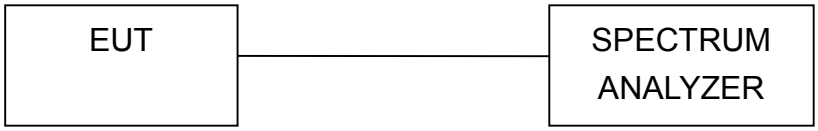
4.5.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3kHz RBW and 30kHz VBW, set sweep time = span/3kHz. The power spectral density was measured and recorded.
The sweep time is allowed to be longer than span/3kHz for a full response of the mixer in the spectrum analyzer.

4.5.4 DEVIATION FROM TEST STANDARD

No deviation

4.5.5 TEST SETUP



4.5.6 EUT OPERATING CONDITION

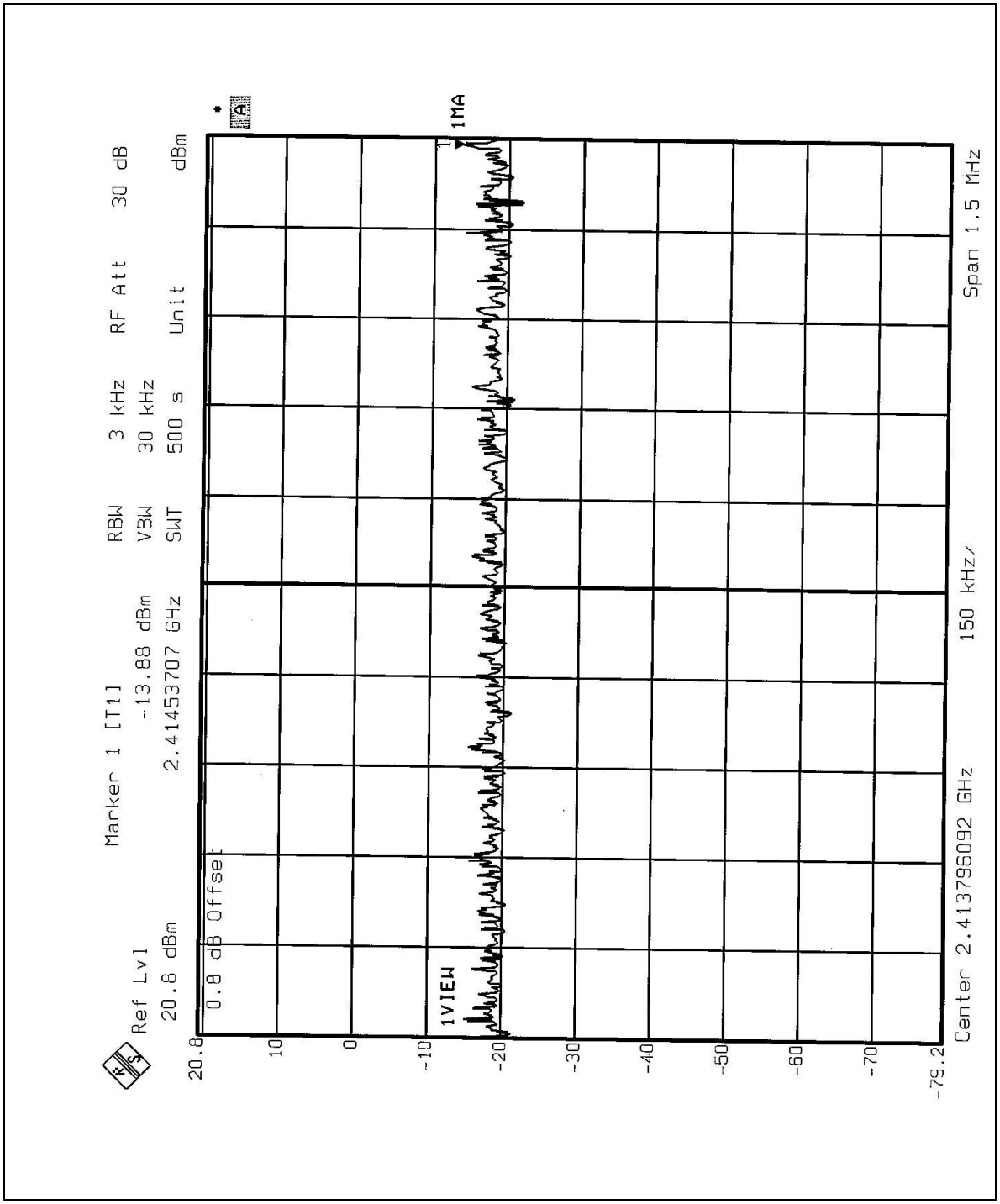
Same as Item 4.3.6

4.5.7 TEST RESULTS (A)

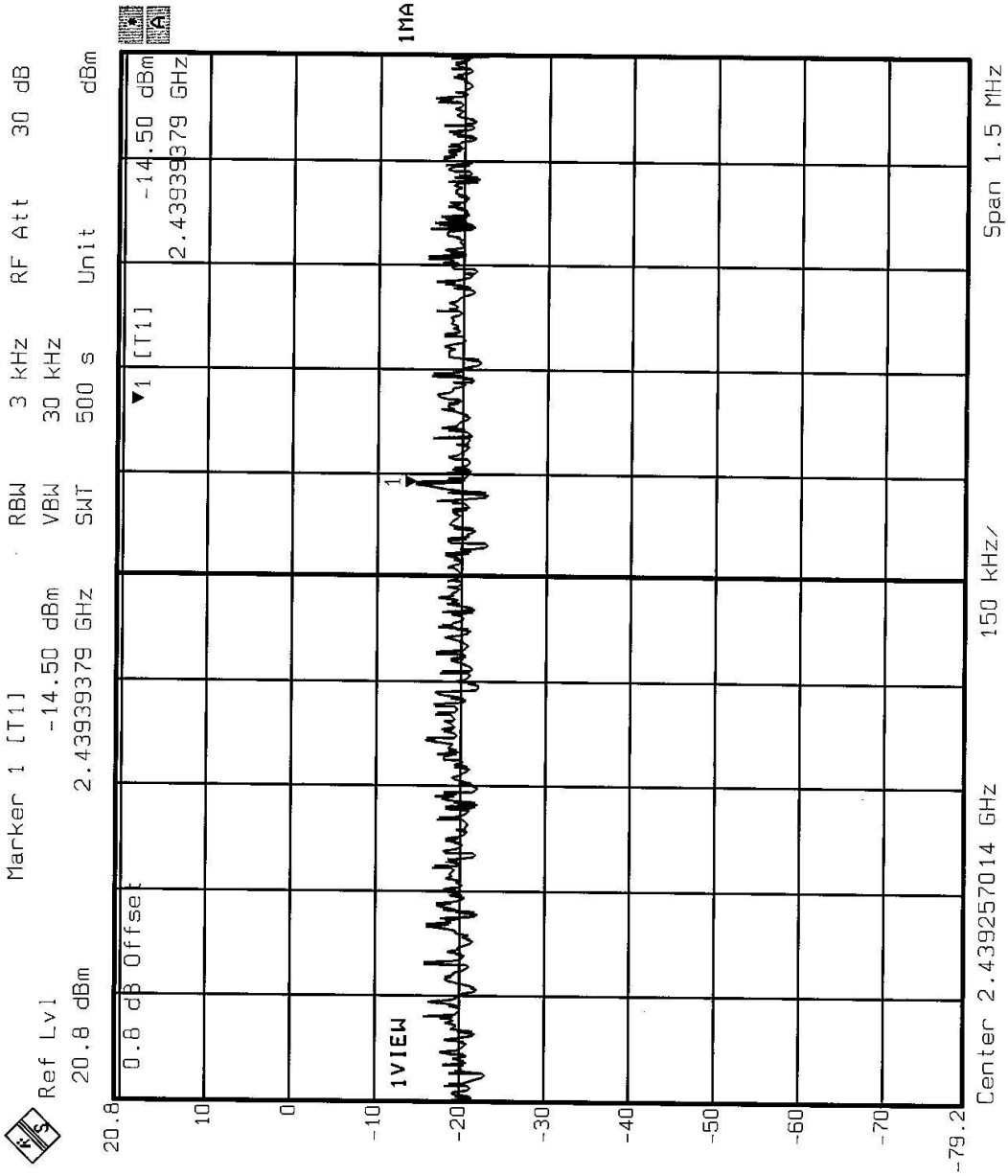
EUT	Dual-Band Wireless A+G Access Point	**MODEL**	WAP55AG
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	20deg. C, 70%RH, 1005hPa
TESTED BY: Steven Lu			

CHANNEL NUMBER	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-13.88	8	PASS
6	2437	-14.50	8	PASS
11	2462	-2.51	8	PASS

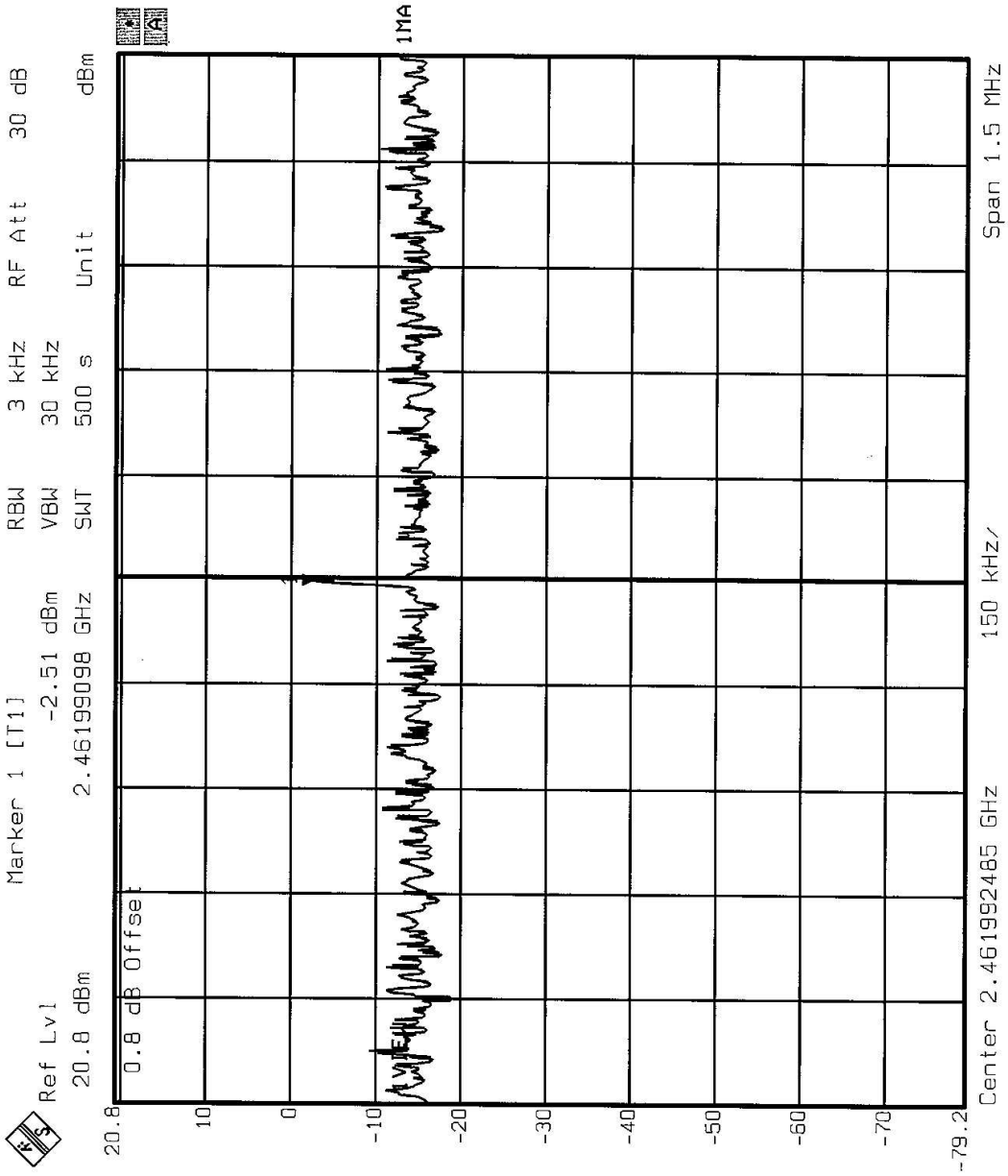
CH1


Ref Lvl
20.8 dBm
0.8 dB Offset
Marker 1 [T1]
-13.88 dBm
2.41453707 GHz
RBW 3 kHz
VBW 30 kHz
SWT 500 s
RF Att 30 dB
Unit dBm
1VIEW
1MA
Center 2.413796092 GHz
150 kHz/
Span 1.5 MHz
20.8
10
0
-10
-20
-30
-40
-50
-60
-70
-79.2

CH6


Ref Lvl
20.8 dBm
0.8 dB Offset
Marker 1 [T1]
-14.50 dBm
2.43939379 GHz
RBW 3 kHz
VBW 30 kHz
SWT 500 s
RF Att 30 dB
Unit dBm
1 [T1]
-14.50 dBm
2.43939379 GHz
1VIEW
1MA
Center 2.439257014 GHz
150 kHz/
Span 1.5 MHz
20.8
10
0
-10
-20
-30
-40
-50
-60
-70
-79.2

CH11

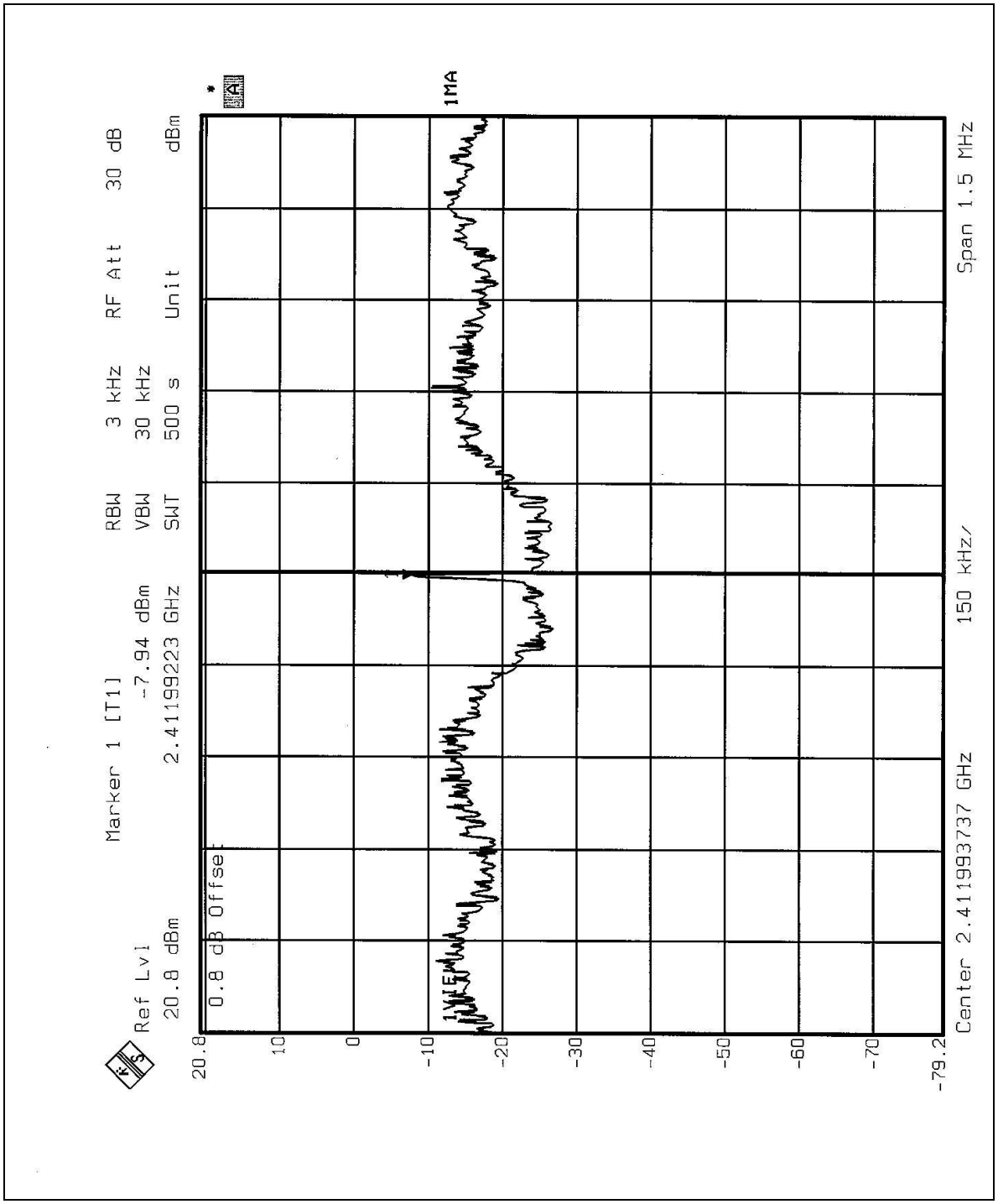

Ref Lvl
20.8 dBm
0.8 dB Offset
Marker 1 [T1]
-2.51 dBm
2.4619098 GHz
RBW 3 kHz
VBW 30 kHz
SWT 500 s
RF Att 30 dB
Unit dBm
1MA
20.8
10
0
-10
-20
-30
-40
-50
-60
-70
-79.2
Center 2.461992485 GHz
150 kHz/
Span 1.5 MHz

4.5.8 TEST RESULTS (B)

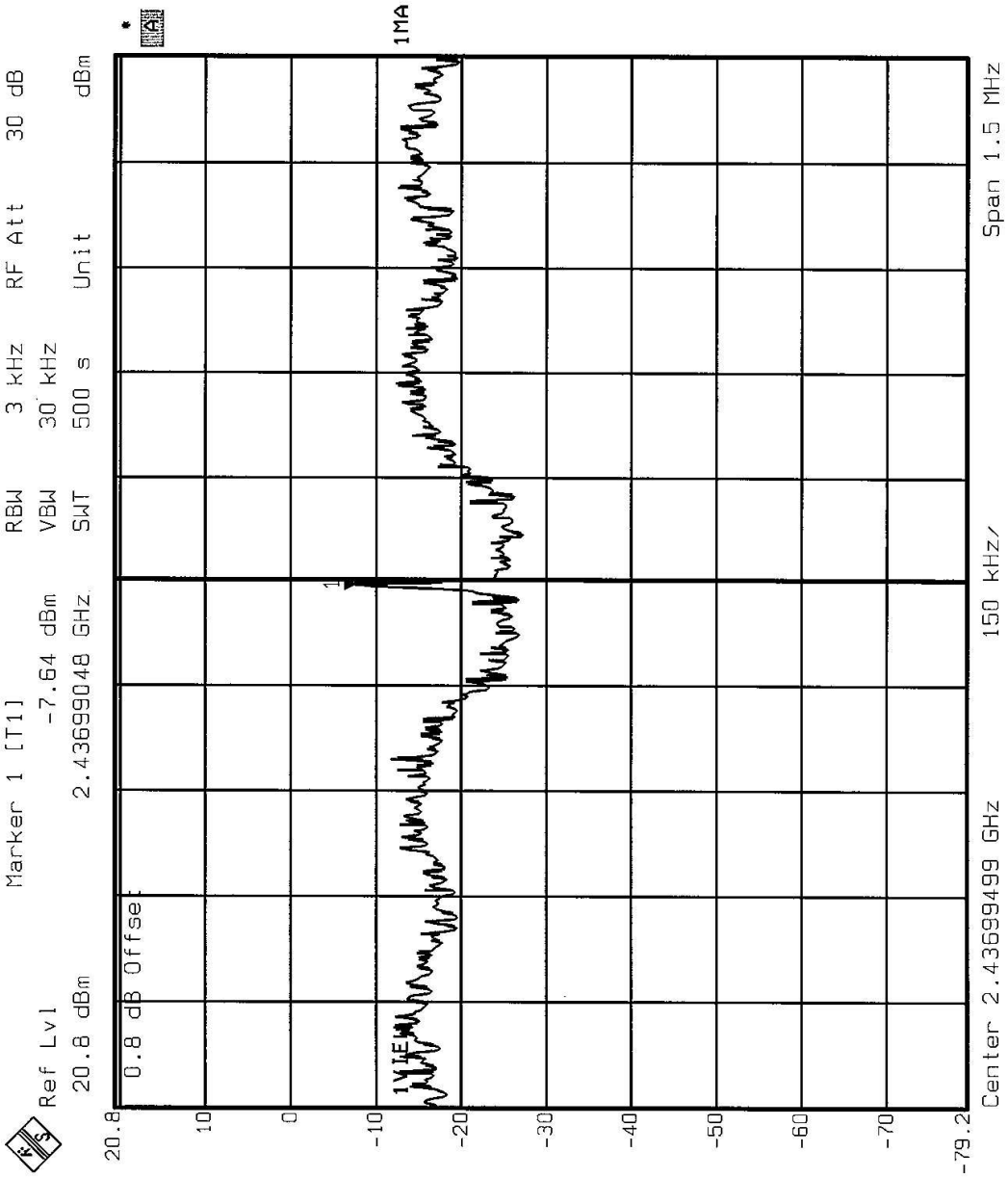
EUT	Dual-Band Wireless A+G Access Point	**MODEL**	WAP55AG
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	20deg. C, 70%RH, 1005hPa
TESTED BY: Steven Lu			

CHANNEL NUMBER	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-7.94	8	PASS
6	2437	-7.64	8	PASS
11	2462	-6.96	8	PASS

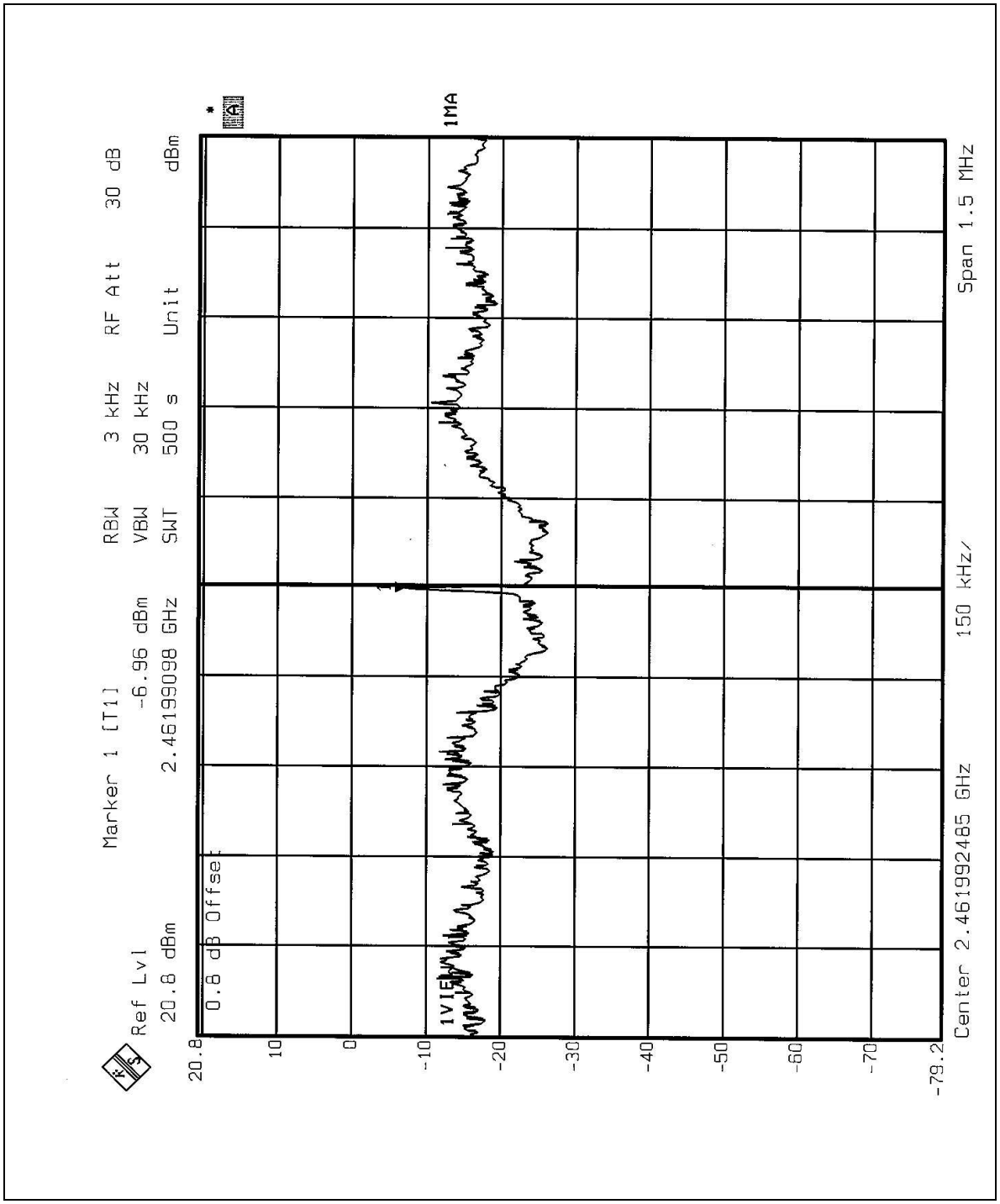
CH1


Ref Lvl
20.8 dBm
0.8 dB Offset
Marker 1 [T1]
-7.94 dBm
2.41199223 GHz
RBW 3 kHz
VBW 30 kHz
SWT 500 s
RF Att 30 dB
Unit dBm
1MA
20.8
10
0
-10
-20
-30
-40
-50
-60
-70
-79.2
Center 2.411993737 GHz
150 kHz/
Span 1.5 MHz

CH6


Ref Lvl
20.8 dBm
0.8 dB Offset
Marker 1 [T1]
-7.64 dBm
2.43699048 GHz
RBW 3 kHz
VBW 30 kHz
SWT 500 s
RF Att 30 dB
Unit dBm
1MA
1VIEW
20.8
10
0
-10
-20
-30
-40
-50
-60
-70
-79.2
Center 2.43699499 GHz
150 kHz/
Span 1.5 MHz

CH11


Ref Lvl
20.8 dBm
0.8 dB Offset
Marker 1 [T1]
-6.96 dBm
2.46199098 GHz
RBW 3 kHz
VBW 30 kHz
SWT 500 s
RF Att 30 dB
Unit dBm
1MA
1VIEW
20.8
10
0
-10
-20
-30
-40
-50
-60
-70
-79.2
Center 2.461992485 GHz
150 kHz/
Span 1.5 MHz

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: 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 100kHz with suitable frequency span including 100kHz 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

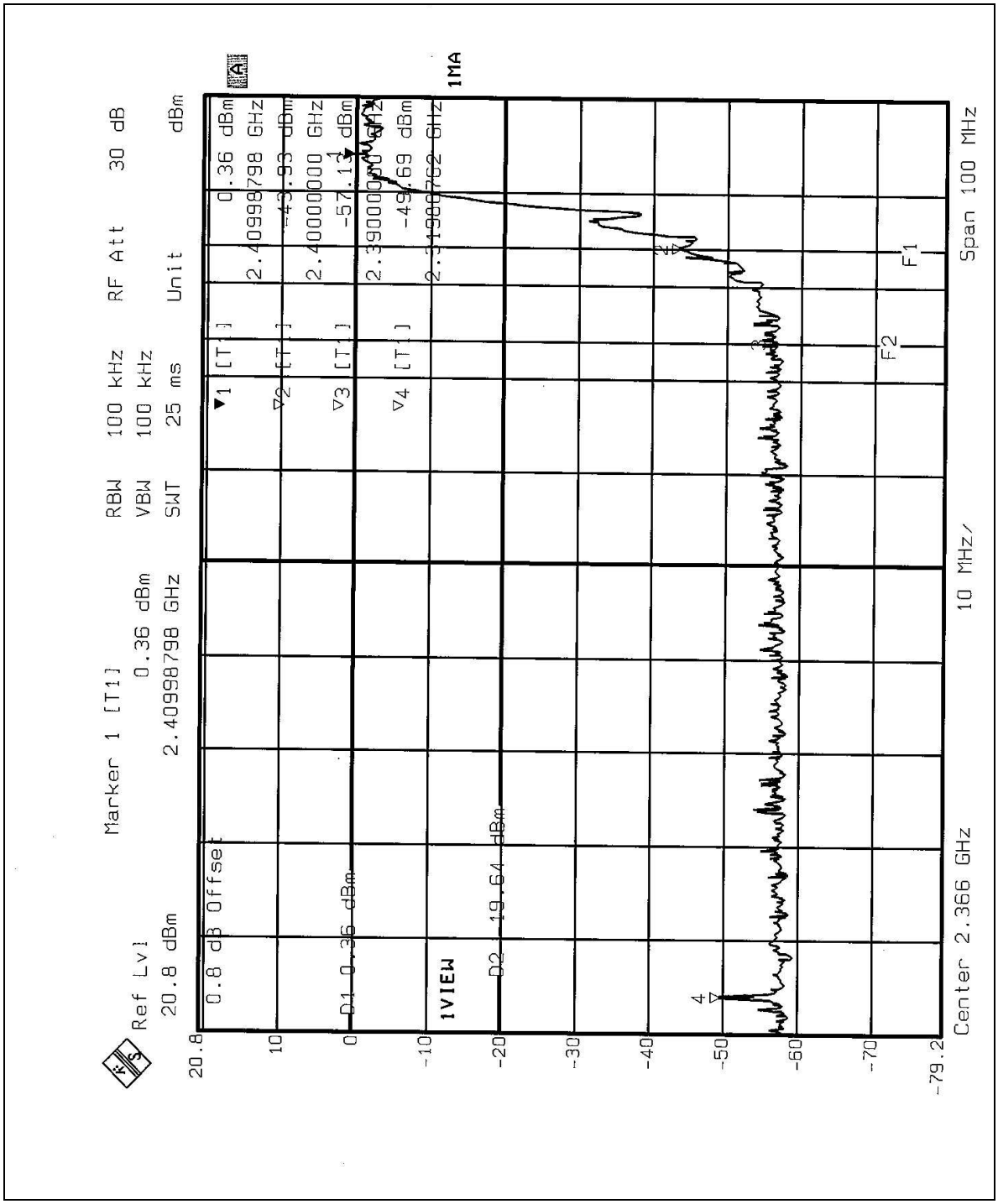
Same as Item 4.3.6

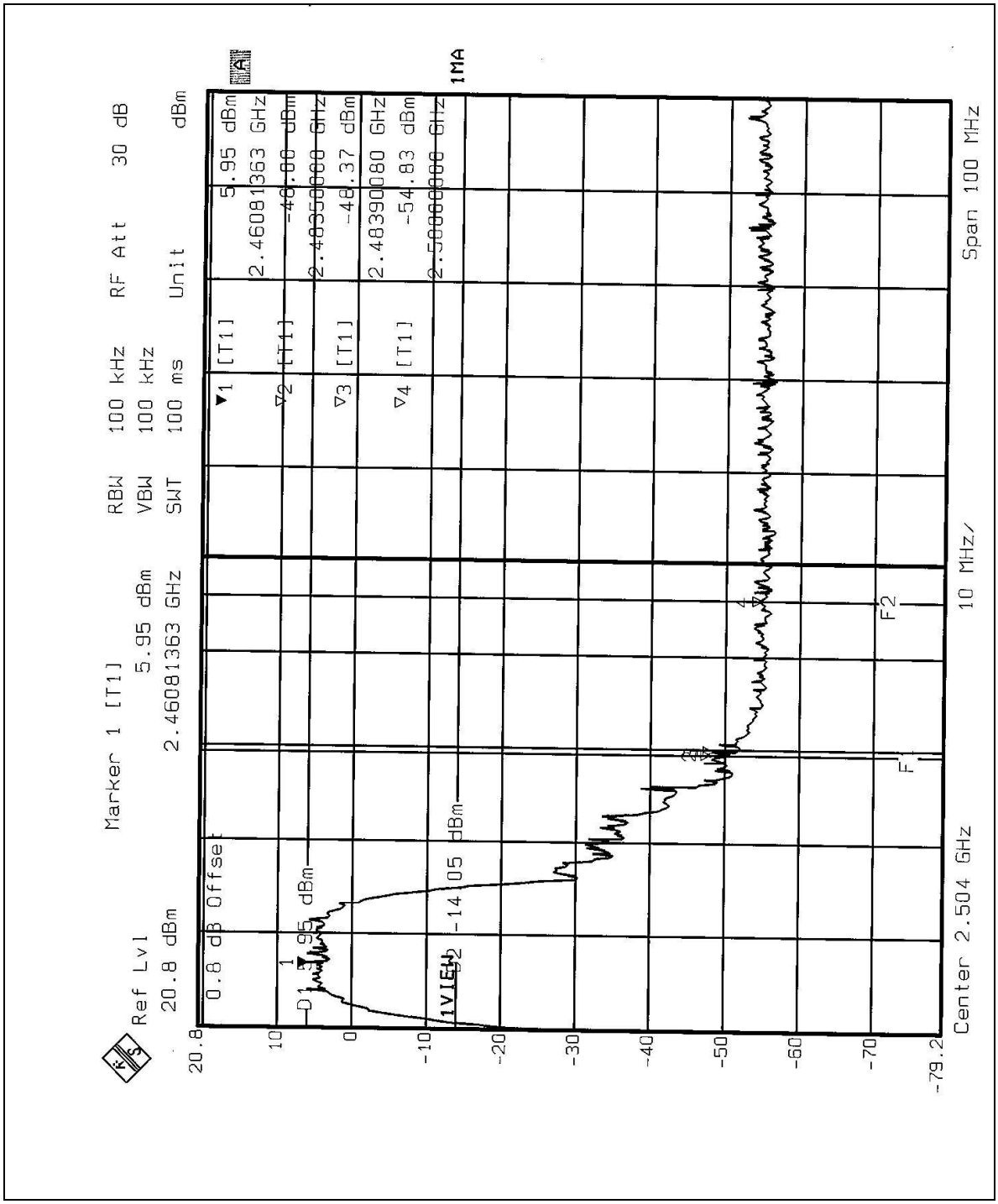
4.6.6 TEST RESULTS

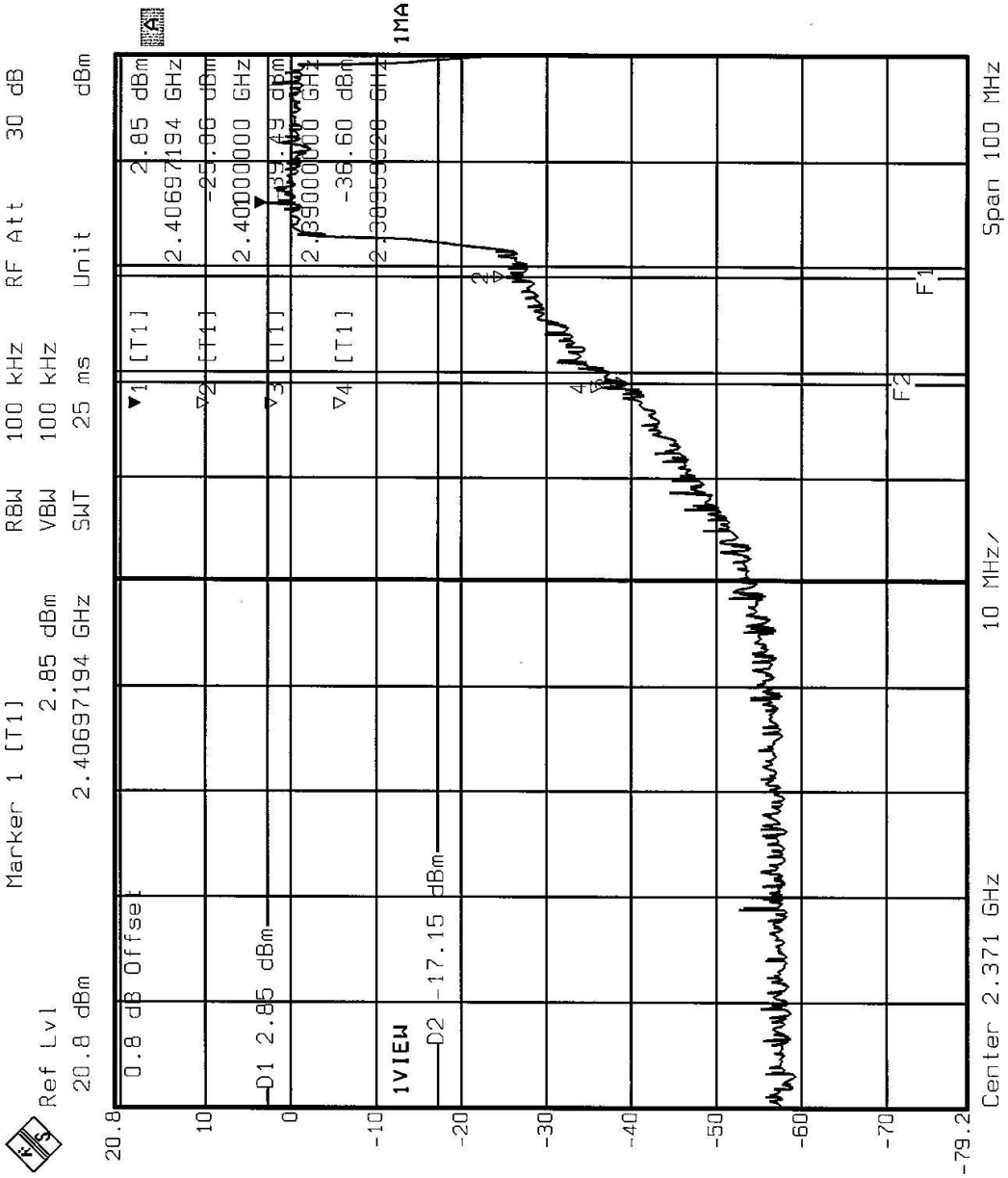
The spectrum plots are attached on the following 2 pages. D2 line indicates the highest level, and D1 line indicates the 20dB offset below D2. It shows compliance with the requirement in part 15.247(C).

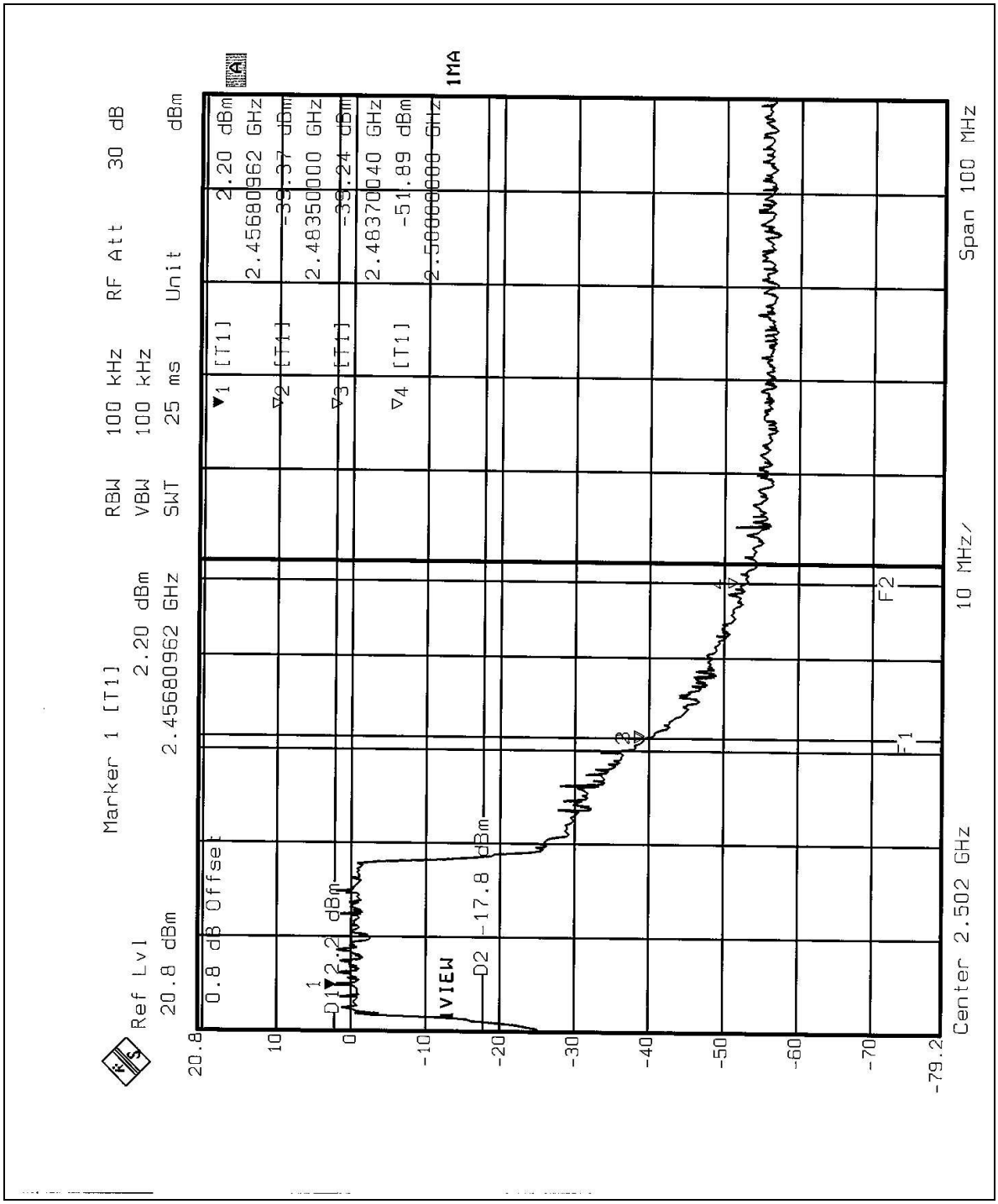
NOTE A: The band edge emission plot of CCK technique on the following 2 pages shows 50.05dB/ 53.95dB delta between carrier maximum power and local maximum emission in restrict band (2.3198GHz / 2.4835GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.8 is 101.8dBuV/m, so the maximum field strength in restrict band is 101.8-50.05=51.75dBuV/m which is under 54dBuV/m limit.

NOTE B: The band edge emission plot of OFDM technique on the following 3-4 pages shows 39.45dB/ 41.44dB delta between carrier maximum power and local maximum emission in restrict band (2.3896GHz / 2.4837GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.9 is 91.8dBuV/m, so the maximum field strength in restrict band is 91.8-39.45=52.35dBuV/m which is under 54dBuV/m limit.


Ref Lvl
20.8 dBm
0.8 dB Offset
D1 0.36 dBm
1VIEW
D2 19.64 dBm
Marker 1 [T1]
0.36 dBm
2.40998798 GHz
RBW 100 kHz
VBW 100 kHz
SWT 25 ms
RF Att 30 dB
Unit dBm
1MA
Center 2.366 GHz
10 MHz/
Span 100 MHz


Ref Lvl
20.8 dBm
0.8 dB Offset
Marker 1 [T1]
5.95 dBm
2.46081363 GHz
RBW 100 kHz
VBW 100 kHz
SWT 100 ms
RF Att 30 dB
Unit dBm
1 [T1] 5.95 dBm 2.46081363 GHz
2 [T1] -46.00 dBm 2.48350000 GHz
3 [T1] -48.37 dBm 2.48390080 GHz
4 [T1] -54.83 dBm 2.50000000 GHz
1MA
1VIEW
-14.05 dBm
20.8
10
0
-10
-20
-30
-40
-50
-60
-70
-79.2
Center 2.504 GHz
10 MHz/
Span 100 MHz


Ref Lvl
20.8 dBm
0.8 dB Offset
D1 2.85 dBm
1VIEW
D2 -17.15 dBm
Marker 1 [T1]
2.85 dBm
2.40697194 GHz
RBW 100 kHz
VBW 100 kHz
SWT 25 ms
RF Att 30 dB
Unit dBm
1MA
Center 2.371 GHz
10 MHz/
Span 100 MHz


Ref Lvl
20.8 dBm
0.8 dB Offset
Marker 1 [T1]
2.20 dBm
2.45680962 GHz
RBW 100 kHz
VBW 100 kHz
SWT 25 ms
RF Att 30 dB
Unit dBm
1 [T1] 2.20 dBm 2.45680962 GHz
2 [T1] -39.37 dBm 2.48350000 GHz
3 [T1] -39.24 dBm 2.48370040 GHz
4 [T1] -51.89 dBm 2.50000000 GHz
1MA
VIEW
D1 2.2 dBm
D2 -17.8 dBm
F1
F2
Center 2.502 GHz
10 MHz/
Span 100 MHz
20.8
10
0
-10
-20
-30
-40
-50
-60
-70
-79.2

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 antenna connector. The maximum Gain of the antenna is 2dBi.

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. 10, 2004
ROHDE & SCHWARZ Artificial Mains Network (for EUT)	ESH2-Z5	828075/003	July 23, 2003
ROHDE & SCHWARZ 200-A Four-line V-Network	ENV4200	830326/018	Oct. 30, 2003
* ROHDE & SCHWARZ 4-wire ISN	ENY41	838119/028	Nov. 29, 2003
* ROHDE & SCHWARZ 2-wire ISN	ENY22	837497/018	Nov. 29, 2003
EMCO-L.I.S.N. (for peripheral)	3825/2	90031627	July 23, 2003
Software	Cond-V2M1	NA	NA
RF cable (JYEBAO)	5D-FB	Cable-C05.01	July 19, 2003
LYNICS Terminator (For EMCO LISN)	0900510	E1-01-305	Feb. 23, 2004
LYNICS Terminator (For EMCO LISN)	0900510	E1-01-306	Feb. 23, 2004

NOTE:
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. "*": These equipment are used for conducted telecom port test only (if tested).
3. The test was performed in ADT Shielded Room No. 5.
4. The VCCI Site Registration No. is C-1093.

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.

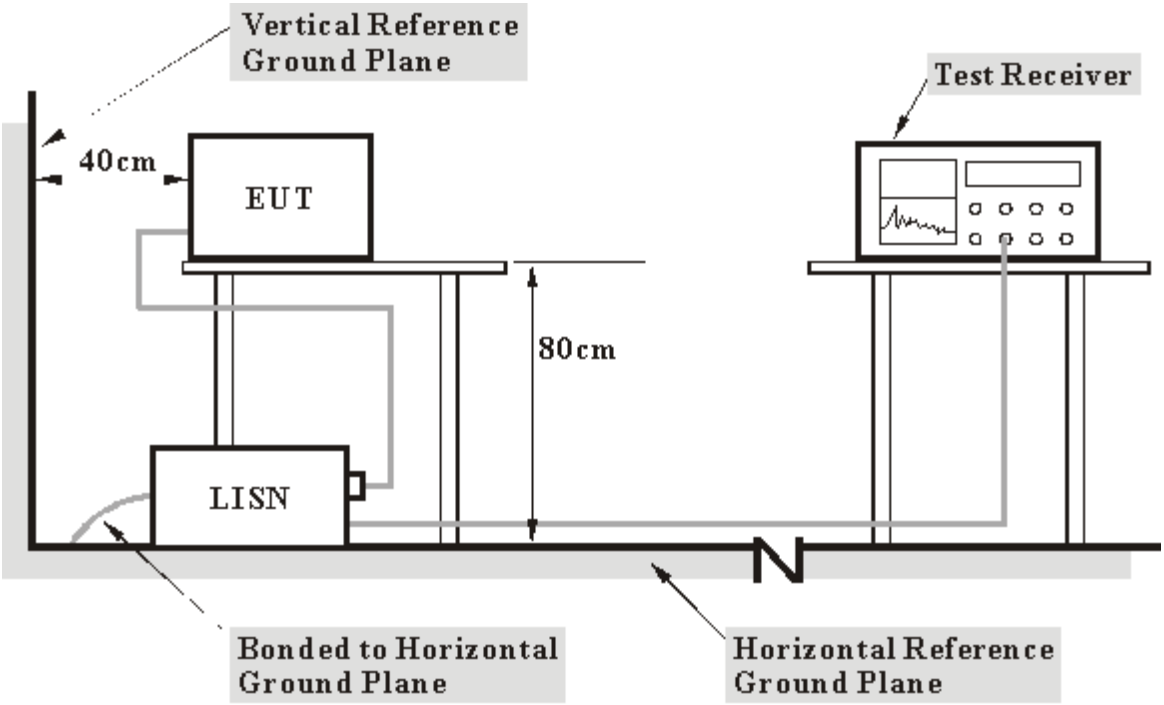
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

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

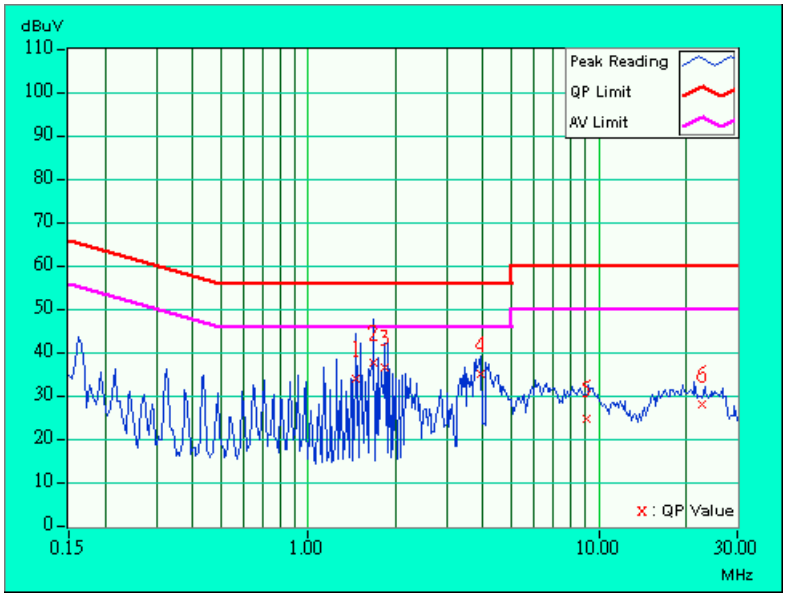
Same as 4.1.6.

5.1.7 TEST RESULTS

EUT	Dual-Band Wireless A+G Access Point	**MODEL**	WAP55AG
		6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**PHASE**	Line (L)
ENVIRONMENTAL CONDITIONS	24deg. C, 55%RH, 1005hPa	**TESTED BY**: Bunny Yao	

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	1.461	0.20	33.03	-	33.23	-	56.00	46.00	-22.77	-
2	1.668	0.20	36.55	-	36.75	-	56.00	46.00	-19.25	-
3	1.824	0.20	35.37	-	35.57	-	56.00	46.00	-20.43	-
4	3.934	0.39	34.07	-	34.46	-	56.00	46.00	-21.54	-
5	9.094	0.57	23.69	-	24.26	-	60.00	50.00	-35.74	-
6	22.566	1.15	26.88	-	28.03	-	60.00	50.00	-31.97	-

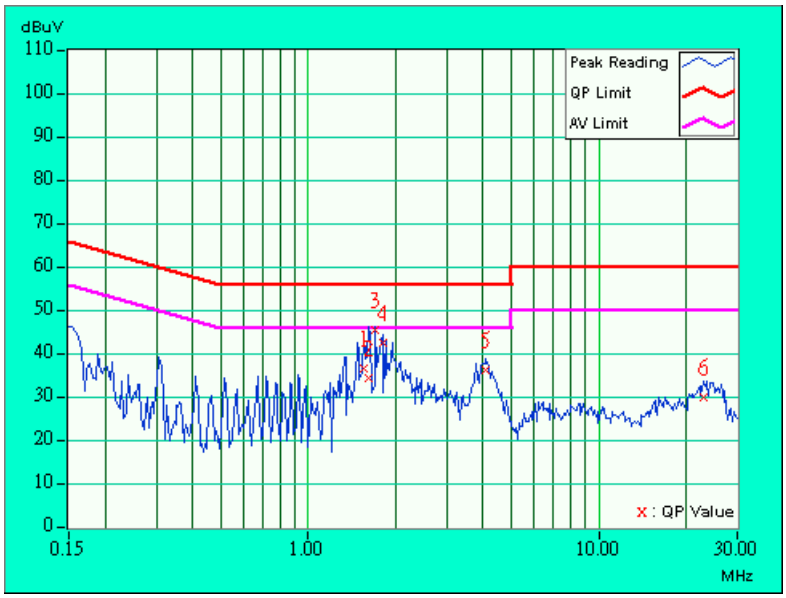
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Dual-Band Wireless A+G Access Point	**MODEL**	WAP55AG
		6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**PHASE**	Neutral (N)
ENVIRONMENTAL CONDITIONS	24deg. C, 55%RH, 1005hPa	**TESTED BY**: Bunny Yao	

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	1.563	0.20	35.88	-	36.08	-	56.00	46.00	-19.92	-
2	1.621	0.20	33.53	-	33.73	-	56.00	46.00	-22.27	-
3	1.691	0.20	44.70	-	44.90	-	56.00	46.00	-11.10	-
4	1.801	0.20	42.03	-	42.23	-	56.00	46.00	-13.77	-
5	4.059	0.30	35.71	-	36.01	-	56.00	46.00	-19.99	-
6	22.926	0.74	29.35	-	30.09	-	60.00	50.00	-29.91	-

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



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

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

5.2.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
HP Spectrum Analyzer	8594ER	3829U04676	Jul. 14, 2003
ADVANTEST Spectrum Analyzer	R3271A	85060311	May 21, 2003
CHASE RF Pre_Amplifier	CPA9232	1057	Apr. 24, 2003
HP Pre_Amplifier	8449B	3008A01281	Jun. 27, 2003
ROHDE & SCHWARZ Test Receiver	ESVS 10	849231 /019	Nov. 03, 2003
CHASE Broadband Antenna	CBL6111c	2730	Jul 17, 2003
Schwarzbeck Horn_Antenna	BBHA9120-D1	D123	Jul. 31, 2003
SCHWARZBECK Tunable Dipole Antenna	UHAP	896	Mar. 07, 2003
SCHWARZBECK Tunable Dipole Antenna	VHAP	879	Mar. 07, 2003
RF Switches (ARNITSU)	CS-201	1565157	Jul. 29, 2003
RF CABLE (Chaintek) 1GHz-20GHz	Ak 9515-D	001	Aug, 20.2003
RF Cable(RICHTEC)	9913-30M	STCCAB-30M-1GHz-021	Nov. 5, 2003
Software	AS60P8	NA	NA
CHANCE MOST Antenna Tower	AT-100	0203	NA
CHANCE MOST Turn Table	TT-100	0203	NA

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

2. * = These equipment are used for the final measurement.

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

4. The test was performed in ADT Open Site No. C.

5. The FCC Site Registration No. is 656396.

6. The VCCI Site Registration No. is R-1626.

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.

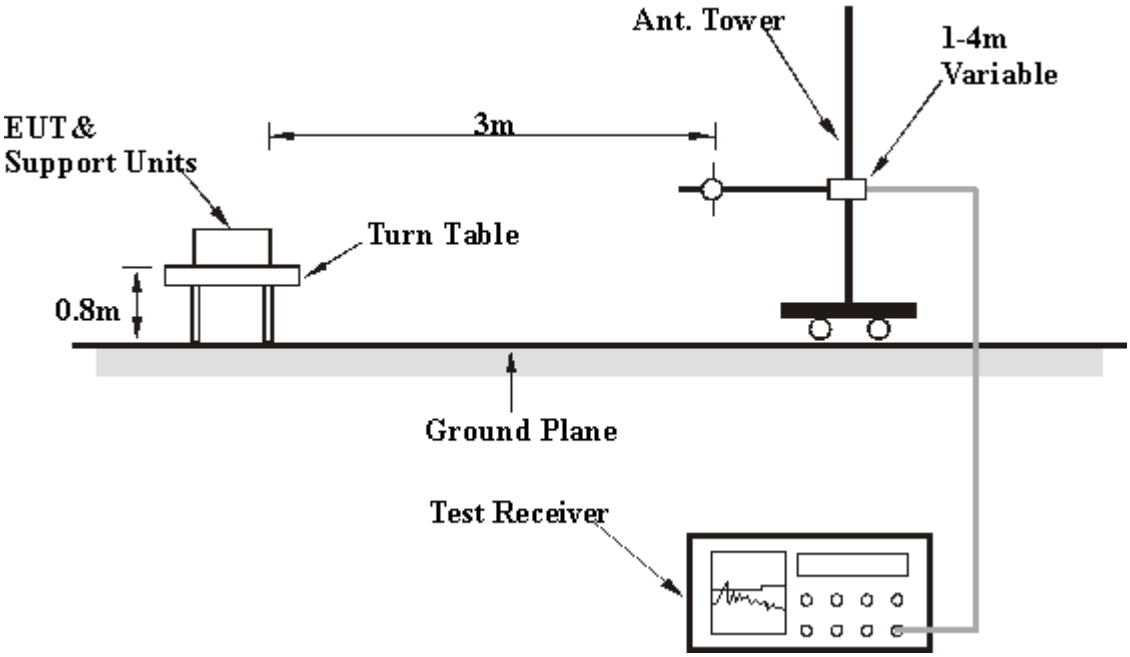
NOTE:

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	Dual-Band Wireless A+G Access Point	**MODEL**	WAP55AG
MODE	Channel 11	**FREQUENCY RANGE**	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**DETECTOR FUNCTION**	Quasi-Peak
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 1005hPa	**TESTED BY**: Gary Chang	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	58.00	31.5 QP	40.00	-8.50	1.42 H	37	23.50	8.00
2	150.00	32.0 QP	43.50	-11.50	1.22 H	41	20.50	11.50
3	250.00	33.2 QP	46.00	-12.80	1.52 H	74	17.60	15.60
4	269.00	36.0 QP	46.00	-10.00	1.28 H	325	19.60	16.40
5	276.00	40.7 QP	46.00	-5.30	1.10 H	117	24.20	16.50
6	280.82	32.1 QP	46.00	-13.90	1.00 H	46	15.60	16.50
7	375.00	34.0 QP	46.00	-12.00	1.52 H	33	15.60	18.40
8	400.00	30.5 QP	46.00	-15.50	1.52 H	62	11.40	19.10
9	500.00	36.0 QP	46.00	-10.00	1.12 H	75	14.80	21.20
10	561.00	31.0 QP	46.00	-15.00	1.13 H	54	9.60	21.40
11	624.00	42.0 QP	46.00	-4.00	1.00 H	235	19.20	22.80
12	669.24	37.3 QP	46.00	-8.70	1.00 H	337	14.40	22.90
13	686.00	41.1 QP	46.00	-4.90	1.24 H	74	18.20	22.90
14	720.00	33.5 QP	46.00	-12.50	1.44 H	87	10.00	23.50
15	748.80	45.0 QP	46.00	-1.00	1.00 H	119	20.90	24.10
16	811.00	38.5 QP	46.00	-7.50	1.24 H	52	13.60	24.90
17	873.00	45.0 QP	46.00	-1.00	1.00 H	119	19.90	25.10

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

EUT	Dual-Band Wireless A+G Access Point	**MODEL**	WAP55AG
MODE	Channel 11	**FREQUENCY RANGE**	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**DETECTOR FUNCTION**	Quasi-Peak
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 1005hPa	**TESTED BY**: Gary Chang	

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	138.00	37.0 QP	43.50	-6.50	1.33 V	36	24.70	12.30
2	156.00	32.0 QP	43.50	-11.50	1.42 V	74	20.90	11.10
3	200.00	34.5 QP	43.50	-9.00	1.30 V	41	23.50	11.00
4	218.00	31.1 QP	46.00	-14.90	1.21 V	24	18.50	12.60
5	225.00	32.0 QP	46.00	-14.00	1.22 V	354	18.70	13.30
6	250.00	32.4 QP	46.00	-13.60	1.18 V	62	16.80	15.60
7	269.80	31.5 QP	46.00	-14.50	1.28 V	54	15.10	16.40
8	276.60	36.5 QP	46.00	-9.50	1.51 V	74	20.00	16.50
9	374.00	35.2 QP	46.00	-10.80	1.12 V	74	16.80	18.40
10	468.00	32.0 QP	46.00	-14.00	1.38 V	54	11.70	20.30
11	625.00	34.0 QP	46.00	-12.00	1.19 V	3	11.20	22.80
12	655.00	38.4 QP	46.00	-7.60	1.18 V	74	15.60	22.80
13	686.00	42.0 QP	46.00	-4.00	1.02 V	31	19.10	22.90
14	720.00	31.3 QP	46.00	-14.70	1.02 V	31	7.80	23.50
15	873.00	41.5 QP	46.00	-4.50	1.42 V	37	16.40	25.10

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

5.2.9 TEST RESULTS

EUT	Dual-Band Wireless Access Point	**MODEL**	WAP55AG
MODE	Normal Mode	**CHANNEL**	1
FREQUENCY RANGE	Above 1000 MHz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 1005hPa	**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)	Remark
1	5150.00	54.2 PK	74.00	-19.80	1.04H	133	55.02	31.87	3.95	36.63	0.82	NOTE 6
2	5150.00	41.0 AV	54.00	-13.00	1.04H	133	41.82	31.87	3.95	36.63	0.82	NOTE 6
3	*5180.00	93.2 PK			1.07H	141	57.38	31.87	3.95	0.00	-35.82	
4	*5180.00	83.0 AV			1.07H	141	47.18	31.87	3.95	0.00	-35.82	
5	10360.00	61.4 PK	68.30	-6.90	1.00H	150	52.97	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	69.2 PK	74.00	-4.80	1.01V	105	70.02	31.87	3.95	36.63	0.82	NOTE 6
2	5150.00	49.0 AV	54.00	-5.00	1.01V	105	49.82	31.87	3.95	36.63	0.82	NOTE 6
3	*5180.00	91.2 AV			1.13V	91	55.38	31.87	3.95	0.00	-35.82	
4	*5180.00	101.2 PK			1.13V	91	65.38	31.87	3.95	0.00	-35.82	
5	10360.00	65.4 PK	68.30	-2.90	1.11V	78	56.97	39.16	6.69	37.42	-8.44	

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	Dual-Band Wireless Access Point	**MODEL**	WAP55AG
MODE	Normal Mode	**CHANNEL**	4
FREQUENCY RANGE	Above 1000 MHz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 1005hPa	**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	*5240.00	97.2 PK			1.18H	75	61.44	31.90	3.86	0.00	-35.76
2	*5240.00	87.2 AV			1.18H	75	51.44	31.90	3.86	0.00	-35.76
3	10480.00	61.2 PK	68.30	-7.10	1.15H	40	52.04	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	101.2 PK			1.09V	66	65.44	31.90	3.86	0.00	-35.76
2	*5240.00	92.2 AV			1.09V	66	56.44	31.90	3.86	0.00	-35.76
3	10480.00	65.2 PK	68.30	-3.10	1.13V	53	56.01	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	Dual-Band Wireless Access Point	**MODEL**	WAP55AG
MODE	Normal Mode	**CHANNEL**	5
FREQUENCY RANGE	Above 1000 MHz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 1005hPa	**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	*5260.00	84.5 AV			1.16H	87	48.74	31.90	3.86	0.00	-35.76
2	*5260.00	92.2 PK			1.16H	87	56.44	31.90	3.86	0.00	-35.76
3	10518.00	63.4 PK	68.30	-4.90	1.10H	75	54.04	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)	Remark
1	*5260.00	99.9 PK			1.03V	83	64.14	31.90	3.86	0.00	-35.76	
2	*5260.00	92.1 AV			1.03V	83	56.34	31.90	3.86	0.00	-35.76	
3	10518.00	66.2 PK	68.30	-2.10	1.06V	90	56.84	39.43	7.22	37.28	-9.36	
4	15782.00	45.2 AV	54.00	-8.80	1.07V	93	36.97	38.23	7.29	37.29	-8.23	NOTE 6
5	15782.00	54.2 PK	74.00	-19.80	1.07V	93	45.97	38.23	7.29	37.29	-8.23.	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	Dual-Band Wireless Access Point	**MODEL**	WAP55AG
MODE	Normal Mode	**CHANNEL**	8
FREQUENCY RANGE	Above 1000 MHz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 1005hPa	**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)	Remark
1	*5320.00	93.6 PK			1.08H	87	57.90	31.93	3.77	0.00	-35.70	
2	*5320.00	84.5 AV			1.08H	87	48.80	31.93	3.77	0.00	-35.70	
3	5352.00	42.1 AV	54.00	-11.90	1.03H	71	42.96	31.93	3.77	36.57	0.86	NOTE 6
4	5352.00	59.5 PK	74.00	-14.50	1.03H	71	60.36	31.93	3.77	36.57	0.86	NOTE 6
5	10640.00	48.6 AV	54.00	-5.40	1.06H	84	38.96	39.61	7.22	37.18	-9.64	NOTE 6
6	10640.00	60.6 PK	74.00	-13.40	1.06H	84	50.96	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	100.1 PK			1.07V	93	64.40	31.93	3.77	0.00	-35.70	
2	*5320.00	91.1 AV			1.07V	93	55.40	31.93	3.77	0.00	-35.70	
3	5352.00	42.1 AV	54.00	-11.90	1.04V	80	42.96	31.93	3.77	36.57	0.86	NOTE 6
4	5352.00	67.2 PK	74.00	-6.80	1.04V	80	68.06	31.93	3.77	36.57	0.86.	NOTE 6
5	10640.00	63.6 PK	74.00	-10.40	1.01V	99	53.96	39.61	7.22	37.18	-9.64.	NOTE 6
6	10640.00	51.5 AV	54.00	-2.50	1.01V	99	41.86	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	Dual-Band Wireless Access Point	**MODEL**	WAP55AG
MODE	Turbo Mode	**CHANNEL**	1
FREQUENCY RANGE	Above 1000 MHz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 1005hPa	**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	*5205.00	90.2 PK			1.00H	235	54.42	31.88	3.90	0.00	-35.78
2	*5205.00	82.2 AV			1.00H	235	46.42	31.88	3.90	0.00	-35.78
3	10422.00	57.9 PK	68.30	-10.40	1.08H	252	48.96	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	*5205.00	101.4 PK			1.21V	216	65.62	31.88	3.90	0.00	-35.78
2	*5205.00	90.2 AV			1.21V	216	54.42	31.88	3.90	0.00	-35.78
3	10422.00	65.3 PK	68.30	-3.00	1.05V	240	56.36	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	Dual-Band Wireless Access Point	**MODEL**	WAP55AG
MODE	Turbo Mode	**CHANNEL**	2
FREQUENCY RANGE	Above 1000 MHz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 1005hPa	**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	*5250.00	84.4 AV			1.26H	206	48.64	31.90	3.86	0.00	-35.76
2	*5250.00	92.2 PK			1.26H	206	56.44	31.90	3.86	0.00	-35.76
3	10498.00	65.9 PK	68.30	-2.40	1.21H	197	56.71	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	*5250.00	101.2 PK			1.09V	175	65.44	31.90	3.86	0.00	-35.76
2	*5250.00	91.3 AV			1.09V	175	55.54	31.90	3.86	0.00	-35.76
3	10498.00	62.7 PK	68.30	-5.60	1.18V	184	53.51	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.

EUT	Dual-Band Wireless Access Point	**MODEL**	WAP55AG
MODE	Turbo Mode	**CHANNEL**	3
FREQUENCY RANGE	Above 1000 MHz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 1005hPa	**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	*5290.00	83.4 AV			1.10H	186	47.66	31.92	3.82	0.00	-35.74
2	*5290.00	93.2 PK			1.10H	186	57.46	31.92	3.82	0.00	-35.74
3	10578.00	60.5 PK	68.30	-7.80	1.16H	195	51.04	39.49	7.22	37.25	-9.46

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	*5285.00	100.4 PK			1.08V	198	64.66	31.92	3.82	0.00	-35.74
2	*5285.00	90.6 AV			1.08V	198	54.86	31.92	3.82	0.00	-35.74
3	10578.00	66.2 PK	68.30	-2.10	1.13V	211	56.74	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