



FCC TEST REPORT

REPORT NO.: RF930507L01

MODEL NO.: WAP11V28

RECEIVED: April 19, 2004

TESTED: April 19, 2004 ~ May 12, 2004

APPLICANT: Cisco-Linksys, LLC

ADDRESS: 121 Theory Drive, Irvine, CA 92612, U.S.A.

ISSUED BY: Advance Data Technology Corporation

LAB LOCATION: No. 19, Hwa Ya 2nd Rd., Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

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1 CERTIFICATION

PRODUCT : Wireless Network Access Point
BRAND NAME : Linksys
MODEL NO. : WAP11V28
APPLICANT : Cisco-Linksys, LLC
TESTED : April 19, 2004 ~ May 12, 2004
TEST ITEM : Engineering Sample
STANDARDS : FCC Part 15, Subpart C (Section 15.247),
ANSI C63.4-2001

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

PREPARED BY: Wendy Liao , **DATE:** May 13, 2004
Wendy Liao

APPROVED BY: Cody Chang for **DATE:** May 13, 2004
Cody Chang /
Supervisor



2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 15, Subpart C			
Standard Section	Test Type and Limit	Result	REMARK
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit Minimum passing margin is -19.17dB at 10.297MHz
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)	Transmitter Radiated Emissions Limit: Table 15.209	PASS	Meet the requirement of limit Minimum passing margin is -0.57dB at 2385.55MHz
15.247(d)	Power Spectral Density Limit: max. 8dBm	PASS	Meet the requirement of limit
15.247(c)	Band Edge Measurement Limit: 20 dB less than the peak value of fundamental frequency	PASS	Meet the requirement of limit

NOTE: The information of measurement uncertainty is available upon the customer's request.



3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Wireless Network Access Point
MODEL NO.	WAP11V28
POWER SUPPLY	12.0Vdc from power adapter
MODULATION TYPE	BPSK, QPSK, CCK
RADIO TECHNOLOGY	DSSS
TRANSFER RATE	11/5.5/2/1Mbps
FREQUENCY RANGE	2412MHz ~ 2462MHz
NUMBER OF CHANNEL	11
OUTPUT POWER	13.97dBm
ANTENNA TYPE	Dipole antenna with 4.5dBi and 7dBi gain
DATA CABLE	NA
I/O PORTS	RJ45
ASSOCIATED DEVICES	NA

NOTE:

1. The EUT was powered by the following adapter:

Brand:	Linksys
Model:	WD411200500
Input:	120Vac, 60Hz, 11W
Output:	12Vdc, 500mA

2. The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.



3.2 DESCRIPTION OF TEST MODES

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, the worst case, was chosen for final test.
2. Above 1GHz, the channel 1, 6, and 11 were tested individually.
3. From our experience and technical viewpoint, we have chosen data rates 11Mbps for CCK technique, as the worst case for the test among other data rates.
4. There are two test results presented in the following sections: The test result A is for antenna with 7dBi gain attached to EUT directly, and the test result B is for antenna with 4.5dBi gain separated from EUT (with antenna stand).

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC Part 15, Subpart C. (15.247)

ANSI C63.4:2001

All test items 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

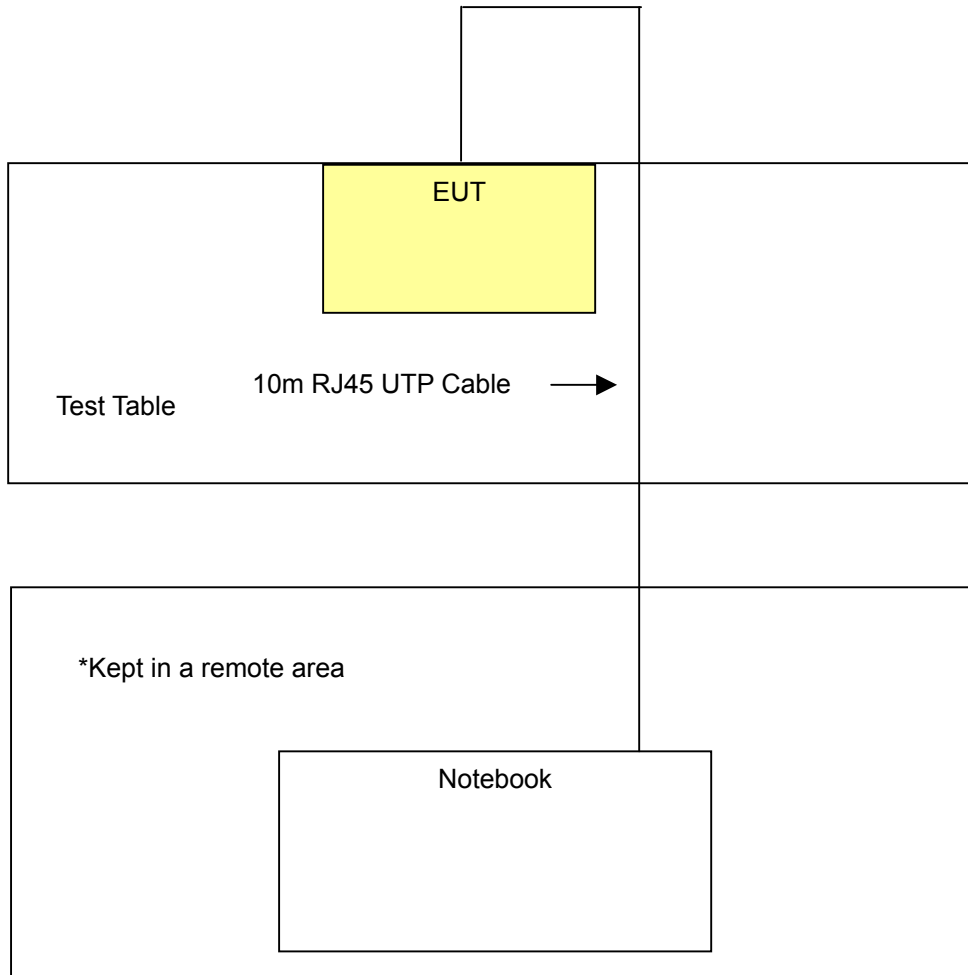
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK	COMPAQ	Evo N800c	PP2130	FCC DoC Approved

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

- NOTE:**
1. All power cords of the above support units are non shielded (1.8m).
 2. Item 1 act as a communication partner to transfer data.

3.5 CONFIGURATION OF SYSTEM UNDER TEST





4 TEST TYPES AND RESULTS

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

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

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS30	100288	Dec. 11, 2004
RF signal cable Woken	5D-FB	Cable-HyC02-01	Mar. 07, 2005
LISN ROHDE & SCHWARZ	ESH2-Z5	100100	Mar. 10, 2005
LISN ROHDE & SCHWARZ	ESH3-Z5	100311	Mar. 04, 2005
Software ADT	ADT_Cond_V3	NA	NA

- NOTE:**
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 2. The test was performed in HwaYa Shielded Room 2.



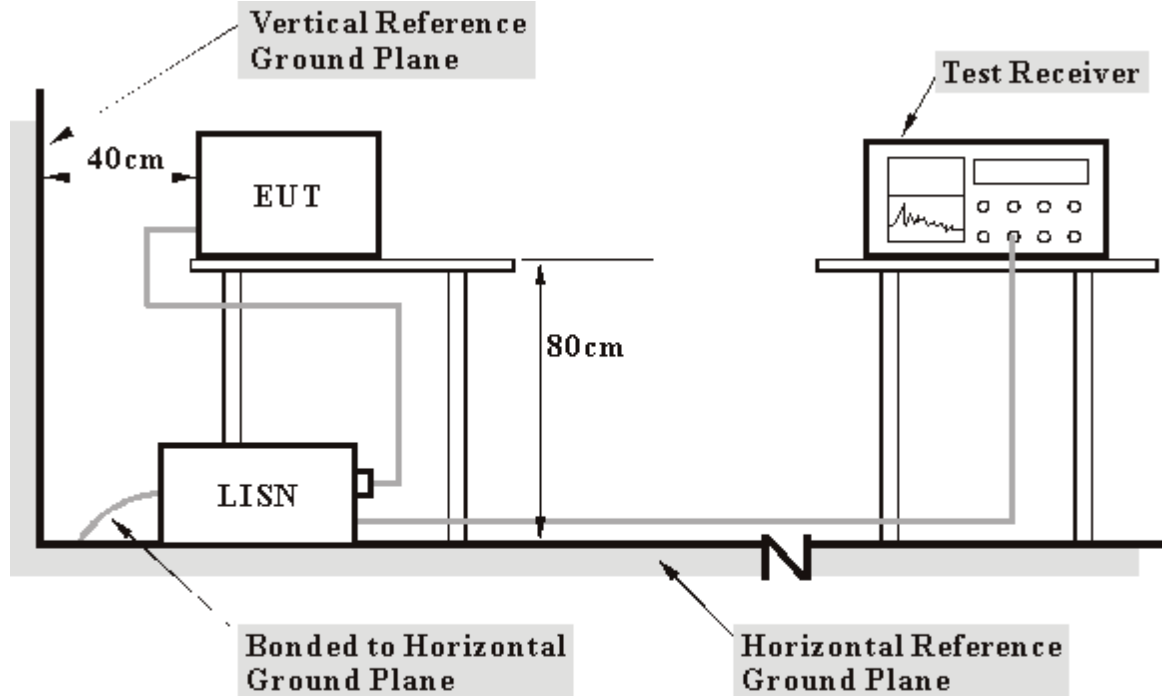
4.1.3 TEST PROCEDURES

- 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 Limit -20dB was not recorded.

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 TEST SETUP



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

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



4.1.6 EUT OPERATING CONDITIONS

- a. Placed the EUT on the testing table.
- b. Prepared another notebook system to act as a communication partner and placed it outside of testing area.
- c. The communication partner run a test program (provided by manufacturer) to enable EUT under transmission/receiving condition continuously at specific channel frequency via an RJ45 cable.
- d. The communication partner sent data to EUT by command "PING".

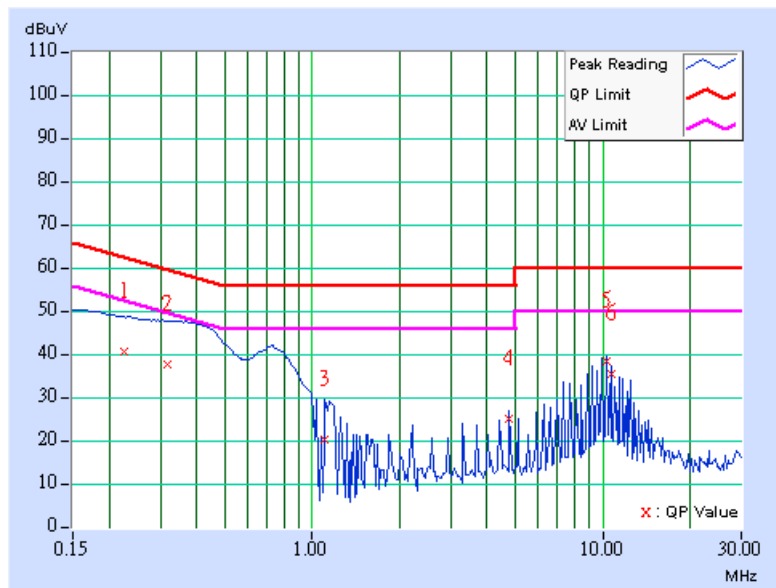


4.1.7 TEST RESULTS

EUT	Wireless Network Access Point	MODEL	WAP11V28
CHANNEL	1	6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	20deg. C, 60% RH, 991 hPa	TESTED BY: Allen Chang	

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.224	0.10	40.18	-	40.28	-	62.66
2	0.318	0.11	37.36	-	37.47	-	59.76	49.76	-22.29	-
3	1.109	0.25	19.89	-	20.14	-	56.00	46.00	-35.86	-
4	4.781	0.35	24.71	-	25.06	-	56.00	46.00	-30.94	-
5	10.297	0.54	37.81	-	38.35	-	60.00	50.00	-21.65	-
6	10.664	0.55	34.95	-	35.50	-	60.00	50.00	-24.50	-

- 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.

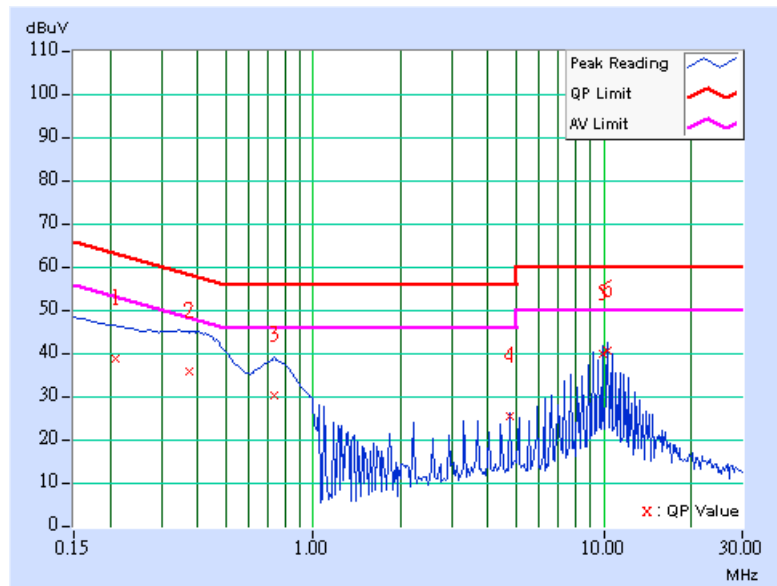




EUT	Wireless Network Access Point	MODEL	WAP11V28
CHANNEL	1	6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	PHASE	Neutral (N)
ENVIRONMENTAL CONDITIONS	20deg. C, 60% RH, 991 hPa	TESTED BY: Allen Chang	

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.209	0.10	38.55	-	38.65	-	63.26
2	0.373	0.11	35.53	-	35.64	-	58.44	48.44	-22.80	-
3	0.732	0.18	29.88	-	30.06	-	56.00	46.00	-25.94	-
4	4.781	0.34	24.92	-	25.26	-	56.00	46.00	-30.74	-
5	9.930	0.49	39.44	-	39.93	-	60.00	50.00	-20.07	-
6	10.297	0.49	40.22	-	40.71	-	60.00	50.00	-19.29	-

- 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.

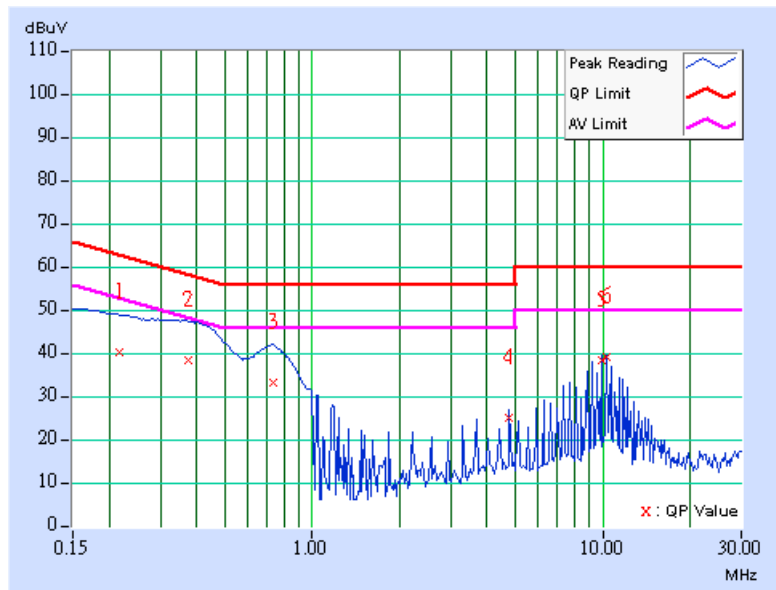




EUT	Wireless Network Access Point	MODEL	WAP11V28
CHANNEL	6	6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	20deg. C, 60% RH, 991 hPa	TESTED BY: Allen Chang	

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.216	0.10	39.76	-	39.86	-	62.96
2	0.373	0.11	37.83	-	37.94	-	58.44	48.44	-20.50	-
3	0.732	0.19	32.69	-	32.88	-	56.00	46.00	-23.12	-
4	4.781	0.35	24.69	-	25.04	-	56.00	46.00	-30.96	-
5	9.930	0.53	38.10	-	38.63	-	60.00	50.00	-21.37	-
6	10.297	0.54	38.79	-	39.33	-	60.00	50.00	-20.67	-

- 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.

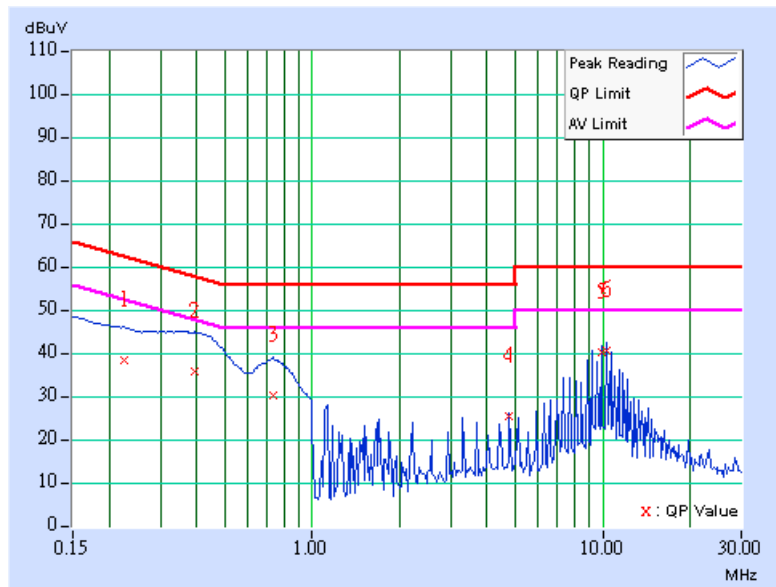




EUT	Wireless Network Access Point	MODEL	WAP11V28
CHANNEL	6	6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	PHASE	Neutral (N)
ENVIRONMENTAL CONDITIONS	20deg. C, 60% RH, 991 hPa	TESTED BY: Allen Chang	

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.224	0.10	37.90	-	38.00	-	62.66	52.66	-24.66	-
2	0.392	0.11	35.35	-	35.46	-	58.02	48.02	-22.55	-
3	0.732	0.18	29.80	-	29.98	-	56.00	46.00	-26.02	-
4	4.781	0.34	24.96	-	25.30	-	56.00	46.00	-30.70	-
5	9.930	0.49	39.89	-	40.38	-	60.00	50.00	-19.62	-
6	10.297	0.49	40.18	-	40.67	-	60.00	50.00	-19.33	-

- 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.

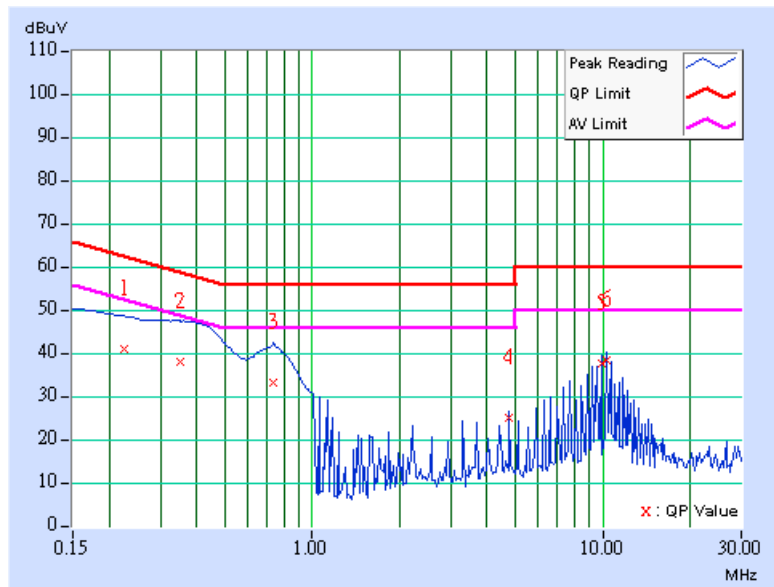




EUT	Wireless Network Access Point	MODEL	WAP11V28
CHANNEL	11	6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	20deg. C, 60% RH, 991 hPa	TESTED BY: Allen Chang	

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.224	0.10	40.44	-	40.54	-	62.66
2	0.349	0.11	37.66	-	37.77	-	58.98	48.98	-21.21	-
3	0.736	0.19	32.77	-	32.96	-	56.00	46.00	-23.04	-
4	4.781	0.35	24.59	-	24.94	-	56.00	46.00	-31.06	-
5	9.930	0.53	37.29	-	37.82	-	60.00	50.00	-22.18	-
6	10.297	0.54	37.99	-	38.53	-	60.00	50.00	-21.47	-

- 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.

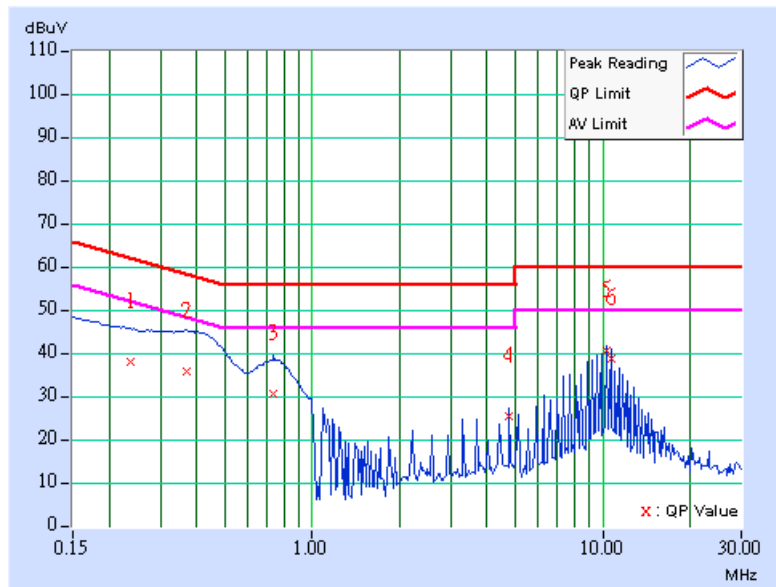




EUT	Wireless Network Access Point	MODEL	WAP11V28
CHANNEL	11	6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	PHASE	Netural (N)
ENVIRONMENTAL CONDITIONS	20deg. C, 60% RH, 991 hPa	TESTED BY: Allen Chang	

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.236	0.10	37.55	-	37.65	-	62.24	52.24	-24.59	-
2	0.369	0.11	35.59	-	35.70	-	58.53	48.53	-22.83	-
3	0.736	0.18	30.12	-	30.30	-	56.00	46.00	-25.70	-
4	4.781	0.34	24.92	-	25.26	-	56.00	46.00	-30.74	-
5	10.297	0.49	40.34	-	40.83	-	60.00	50.00	-19.17	-
6	10.664	0.50	38.51	-	39.01	-	60.00	50.00	-20.99	-

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





4.2 RADIATED EMISSION MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

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

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

NOTE:

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



4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESI7	838496/016	Feb. 09, 2005
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100041	Dec. 15, 2004
BILOG Antenna SCHWARZBECK	VULB9168	9168-155	Feb. 03, 2005
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-404	Feb. 03, 2005
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA 9170242	Feb. 23, 2005
Preamplifier Agilent	8447D	2944A10631	Jan. 15, 2005
Preamplifier Agilent	8449B	3008A01960	Jan. 22, 2005
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	219272/4	Mar. 04, 2005
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	219275/4	Mar. 04, 2005
Software ADT.	ADT_Radiated_V5.14	NA	NA
Antenna Tower inn-co GmbH	MA 4000	010303	NA
Antenna Tower Controller inn-co GmbH	CO2000	019303	NA
Turn Table ADT.	TT100.	TT93021704	NA
Turn Table Controller ADT.	SC100.	SC93021704	NA

- NOTE:**
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 2. The test was performed in HwaYa Chamber 3.
 3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
 4. The IC Site Registration No. is IC4924-4.



4.2.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 10 meter anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10 dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

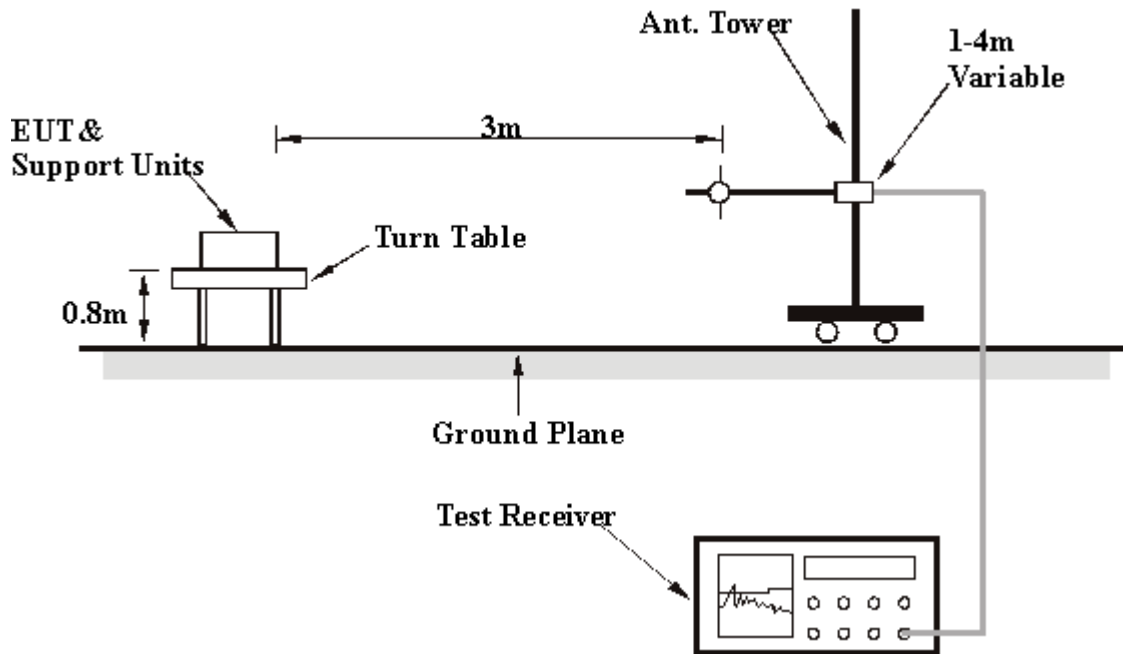
NOTE:

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

4.2.4 DEVIATION FROM TEST STANDARD

No deviation

4.2.5 TEST SETUP



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

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6



4.2.7 TEST RESULTS (A)

EUT	Wireless Network Access Point	MODEL	WAP11V28
CHANNEL	11	FREQUENCY RANGE	Below 1000 MHz
INPUT POWER (SYSTEM)	120 Vac, 60Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	24deg. C, 60% RH, 991 hPa	TESTED BY: Steven Lu	

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	131.97	27.51 QP	43.50	-15.99	1.18 H	119	15.21	12.30
2	150.00	34.73 QP	43.50	-8.77	1.11 H	106	23.53	11.20
3	219.97	34.53 QP	46.00	-11.47	1.63 H	243	23.00	11.53
4	250.00	44.70 QP	46.00	-1.30	1.52 H	102	31.87	13.37
5	300.00	40.41 QP	46.00	-5.59	1.51 H	191	24.99	15.42
6	375.00	39.95 QP	46.00	-6.05	1.09 H	97	22.80	17.16
7	500.00	37.67 QP	46.00	-8.33	1.94 H	65	17.75	19.92
8	525.00	38.34 QP	46.00	-7.66	1.00 H	58	18.11	20.23
9	600.00	39.06 QP	46.00	-6.94	1.74 H	290	17.30	21.76
10	659.99	39.13 QP	46.00	-6.87	1.53 H	137	17.06	22.07
11	703.99	34.27 QP	46.00	-11.73	1.23 H	88	11.90	22.37
12	748.00	37.48 QP	46.00	-8.52	1.30 H	204	14.20	23.28
13	836.00	39.09 QP	46.00	-6.91	1.22 H	97	15.25	23.84
14	924.00	43.51 QP	46.00	-2.49	1.14 H	103	18.97	24.54

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



EUT	Wireless Network Access Point	MODEL	WAP11V28
CHANNEL	11	FREQUENCY RANGE	Below 1000 MHz
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	24deg. C, 60% RH, 991 hPa	TESTED BY: Steven Lu	

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	132.00	35.08 QP	43.50	-8.42	1.03 V	141	22.78	12.30
2	150.00	34.54 QP	43.50	-8.96	1.38 V	6	23.34	11.20
3	175.99	32.19 QP	43.50	-11.31	1.00 V	111	22.09	10.10
4	220.00	33.41 QP	46.00	-12.59	1.13 V	90	21.88	11.53
5	249.99	44.46 QP	46.00	-1.54	1.07 V	68	31.09	13.37
6	300.00	35.96 QP	46.00	-10.04	1.34 V	293	20.54	15.42
7	375.00	44.03 QP	46.00	-1.97	1.67 V	202	26.87	17.16
8	483.98	33.51 QP	46.00	-12.49	1.34 V	257	14.05	19.46
9	525.00	34.85 QP	46.00	-11.15	1.12 V	136	14.62	20.23
10	571.98	34.00 QP	46.00	-12.00	1.88 V	176	12.92	21.08
11	625.00	38.32 QP	46.00	-7.68	1.25 V	162	16.43	21.89
12	659.98	33.01 QP	46.00	-12.99	1.22 V	144	10.94	22.07
13	675.03	37.68 QP	46.00	-8.32	1.05 V	215	15.53	22.15
14	747.98	33.22 QP	46.00	-12.78	1.03 V	87	9.94	23.28
15	835.98	33.31 QP	46.00	-12.69	1.72 V	300	9.47	23.84
16	923.98	35.55 QP	46.00	-10.45	1.69 V	28	11.02	24.53

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



EUT	Wireless Network Access Point	MODEL	WAP11V28
CHANNEL	1	FREQUENCY RANGE	1~25 GHz
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 60% RH, 991 hPa	TESTED BY: Steven Lu	

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	1012.00	49.13 PK	74.00	-24.87	1.42 H	56	21.34	27.78
1	1012.00	46.27 AV	54.00	-7.73	1.42 H	56	18.48	27.78
2	1100.00	46.03 PK	74.00	-27.97	1.20 H	96	18.16	27.87
2	1100.00	42.19 AV	54.00	-11.81	1.20 H	96	14.30	27.87
3	1188.00	46.57 PK	74.00	-27.43	1.20 H	62	18.57	28.00
3	1188.00	42.30 AV	54.00	-11.70	1.20 H	62	14.30	28.00
4	2038.00	47.86 PK	74.00	-26.14	1.35 H	154	17.52	30.34
4	2038.00	44.56 AV	54.00	-9.44	1.35 H	154	14.22	30.34
5	2385.80	41.60 PK	74.00	-32.40	1.40 H	316	9.85	31.75
5	2385.80	36.97 AV	54.00	-17.03	1.40 H	316	5.22	31.75
6	*2412.00	93.18 PK			1.40 H	316	61.32	31.86
6	*2412.00	88.55 AV			1.40 H	316	56.69	31.86
7	4076.00	49.43 PK	74.00	-24.57	1.02 H	203	12.48	36.95
7	4076.00	39.77 AV	54.00	-14.23	1.02 H	203	2.82	36.95
8	4824.00	51.96 PK	74.00	-22.04	1.13 H	152	13.25	38.71
8	4824.00	38.66 AV	54.00	-15.34	1.13 H	152	-0.05	38.71
9	7236.00	55.32 PK	74.00	-18.68	1.42 H	220	10.96	44.36
9	7236.00	43.32 AV	54.00	-10.68	1.42 H	220	-1.04	44.36

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. “ * “ : Fundamental frequency



EUT	Wireless Network Access Point	MODEL	WAP11V28
CHANNEL	1	FREQUENCY RANGE	1~25 GHz
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 60% RH, 991 hPa	TESTED BY: Steven Lu	

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	1012.00	47.53 PK	74.00	-26.47	1.00 V	167	19.74	27.78
1	1012.00	44.25 AV	54.00	-9.75	1.00 V	167	16.46	27.78
2	1100.00	44.01 PK	74.00	-29.99	1.33 V	175	16.14	27.87
2	1100.00	38.92 AV	54.00	-15.08	1.33 V	175	11.05	27.87
3	1188.00	42.80 PK	74.00	-31.20	1.21 V	184	14.80	28.00
3	1188.00	35.87 AV	54.00	-18.13	1.21 V	184	7.87	28.00
4	2038.00	48.85 PK	74.00	-25.15	1.03 V	225	18.51	30.34
4	2038.00	43.23 AV	54.00	-10.77	1.03 V	225	12.89	30.34
5	2385.80	56.88 PK	74.00	-17.12	1.02 V	10	25.13	31.75
5	2385.80	52.29 AV	54.00	-1.71	1.02 V	10	20.54	31.75
6	*2412.00	105.60 PK			1.02 V	10	73.74	31.86
6	*2412.00	100.20 AV			1.02 V	10	68.34	31.86
7	4076.00	49.13 PK	74.00	-24.87	1.21 V	222	12.18	36.95
7	4076.00	39.07 AV	54.00	-14.93	1.21 V	222	2.12	36.95
8	4824.00	52.19 PK	74.00	-21.81	1.35 V	204	13.48	38.71
8	4824.00	39.57 AV	54.00	-14.43	1.35 V	204	0.86	38.71
9	7236.00	56.39 PK	74.00	-17.61	1.35 V	300	12.03	44.36
9	7236.00	44.19 AV	54.00	-9.81	1.35 V	300	-0.17	44.36

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. “ * “ : Fundamental frequency



EUT	Wireless Network Access Point	MODEL	WAP11V28
CHANNEL	6	FREQUENCY RANGE	1~25 GHz
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 60% RH, 991 hPa	TESTED BY: Steven Lu	

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	1012.00	49.31 PK	74.00	-24.69	1.42 H	52	21.52	27.78
1	1012.00	46.43 AV	54.00	-7.57	1.42 H	52	18.64	27.78
2	1100.00	46.22 PK	74.00	-27.78	1.24 H	92	18.35	27.87
2	1100.00	42.23 AV	54.00	-11.77	1.24 H	92	14.36	27.87
3	1188.00	46.69 PK	74.00	-27.31	1.15 H	62	18.69	28.00
3	1188.00	42.70 AV	54.00	-11.30	1.15 H	62	14.70	28.00
4	2063.00	46.54 PK	74.00	-27.46	1.00 H	142	16.03	30.51
4	2063.00	41.24 AV	54.00	-12.76	1.00 H	142	10.73	30.51
5	2385.55	45.11 PK	74.00	-28.89	1.04 H	26	13.36	31.75
5	2385.55	40.32 AV	54.00	-13.68	1.04 H	26	8.57	31.75
6	*2437.00	97.19 PK			1.04 H	26	65.17	32.02
6	*2437.00	92.40 AV			1.04 H	26	60.38	32.02
7	4126.00	50.21 PK	74.00	-23.79	1.00 H	196	12.88	37.33
7	4126.00	42.85 AV	54.00	-11.15	1.00 H	196	5.52	37.33
8	4874.00	50.93 PK	74.00	-23.07	1.28 H	144	12.20	38.73
8	4874.00	40.32 AV	54.00	-13.68	1.28 H	144	1.59	38.73
9	7311.00	56.04 PK	74.00	-17.96	1.34 H	222	11.44	44.61
9	7311.00	44.83 AV	54.00	-9.17	1.34 H	222	0.23	44.61
10	9748.00	58.92 PK	77.19	-18.27	1.27 H	111	11.75	47.17
10	9748.00	50.03 AV	72.40	-22.37	1.27 H	111	2.86	47.17

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. “ * “ : Fundamental frequency



EUT	Wireless Network Access Point	MODEL	WAP11V28
CHANNEL	6	FREQUENCY RANGE	1~25 GHz
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 60% RH, 991 hPa	TESTED BY: Steven Lu	

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	1012.00	48.33 PK	74.00	-25.67	1.00 V	162	20.54	27.78
1	1012.00	44.75 AV	54.00	-9.25	1.00 V	162	16.96	27.78
2	1188.00	43.62 PK	74.00	-30.38	1.00 V	244	15.62	28.00
2	1188.00	38.12 AV	54.00	-15.88	1.00 V	244	10.12	28.00
3	2063.00	49.07 PK	74.00	-24.93	1.04 V	248	18.56	30.51
3	2063.00	44.78 AV	54.00	-9.22	1.04 V	248	14.27	30.51
4	2385.55	58.13 PK	74.00	-15.87	1.00 V	120	26.38	31.75
4	2385.55	53.43 AV	54.00	-0.57	1.00 V	120	21.68	31.75
5	*2437.00	110.51 PK			1.00 V	120	78.49	32.02
5	*2437.00	105.20 AV			1.00 V	120	73.18	32.02
6	4126.00	51.75 PK	74.00	-22.25	1.10 V	197	14.42	37.33
6	4126.00	43.93 AV	54.00	-10.07	1.10 V	197	6.60	37.33
7	4874.00	51.90 PK	74.00	-22.10	1.05 V	138	13.17	38.73
7	4874.00	41.74 AV	54.00	-12.26	1.05 V	138	3.01	38.73
8	7311.00	58.52 PK	74.00	-15.48	1.50 V	135	13.92	44.61
8	7311.00	48.04 AV	54.00	-5.96	1.50 V	135	3.44	44.61
9	9748.00	60.40 PK	90.51	-30.11	1.44 V	320	13.23	47.17
9	9748.00	53.13 AV	85.20	-32.07	1.44 V	320	5.96	47.17

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. “ * “ : Fundamental frequency



EUT	Wireless Network Access Point	MODEL	WAP11V28
CHANNEL	11	FREQUENCY RANGE	1~25 GHz
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 60% RH, 991 hPa	TESTED BY: Steven Lu	

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	1012.00	49.75 PK	74.00	-24.25	1.46 H	54	21.96	27.78
1	1012.00	46.16 AV	54.00	-7.84	1.46 H	54	18.37	27.78
2	1100.00	46.08 PK	74.00	-27.92	1.20 H	95	18.21	27.87
2	1100.00	41.88 AV	54.00	-12.12	1.20 H	95	14.01	27.87
3	1188.00	46.39 PK	74.00	-27.61	1.20 H	62	18.39	28.00
3	1188.00	42.28 AV	54.00	-11.72	1.20 H	62	14.28	28.00
4	2088.00	49.19 PK	74.00	-24.81	1.32 H	130	18.52	30.67
4	2088.00	45.19 AV	54.00	-8.81	1.32 H	130	14.52	30.67
5	*2462.00	93.68 PK			1.40 H	321	61.51	32.17
5	*2462.00	88.86 AV			1.40 H	321	56.69	32.17
6	2487.30	41.53 PK	74.00	-32.47	1.40 H	321	9.20	32.33
6	2487.30	36.71 AV	54.00	-17.29	1.40 H	321	4.38	32.33
7	4176.00	51.44 PK	74.00	-22.56	1.33 H	227	13.72	37.72
7	4176.00	40.84 AV	54.00	-13.16	1.33 H	227	3.12	37.72
8	4924.00	51.96 PK	74.00	-22.04	1.13 H	252	13.24	38.72
8	4924.00	38.96 AV	54.00	-15.04	1.13 H	252	0.24	38.72
9	7386.00	55.21 PK	74.00	-18.79	1.42 H	210	10.26	44.95
9	7386.00	43.24 AV	54.00	-10.76	1.42 H	210	-1.71	44.95

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	Wireless Network Access Point	MODEL	WAP11V28
CHANNEL	11	FREQUENCY RANGE	1~25 GHz
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 60% RH, 991 hPa	TESTED BY: Steven Lu	

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	1012.00	48.93 PK	74.00	-25.07	1.00 V	165	21.14	27.78
1	1012.00	44.86 AV	54.00	-9.14	1.00 V	165	17.07	27.78
2	1100.00	44.12 PK	74.00	-29.88	1.32 V	177	16.25	27.87
2	1100.00	38.53 AV	54.00	-15.47	1.32 V	177	10.66	27.87
3	1188.00	42.64 PK	74.00	-31.36	1.23 V	165	14.64	28.00
3	1188.00	36.35 AV	54.00	-17.65	1.23 V	165	8.35	28.00
4	2088.00	54.12 PK	74.00	-19.88	1.03 V	206	23.45	30.67
4	2088.00	51.55 AV	54.00	-2.45	1.03 V	206	20.88	30.67
5	*2462.00	105.10 PK			1.10 V	10	72.93	32.17
5	*2462.00	100.10 AV			1.10 V	10	67.93	32.17
6	2487.30	57.55 PK	74.00	-16.45	1.10 V	10	25.22	32.33
6	2487.30	53.02 AV	54.00	-0.98	1.10 V	10	20.69	32.33
7	4176.00	51.30 PK	74.00	-22.70	1.11 V	195	13.58	37.72
7	4176.00	43.62 AV	54.00	-10.38	1.11 V	195	5.90	37.72
8	4924.00	50.63 PK	74.00	-23.37	1.48 V	258	11.91	38.72
8	4924.00	39.02 AV	54.00	-14.68	1.48 V	258	0.30	38.72
9	7386.00	57.25 PK	74.00	-16.75	1.33 V	360	12.30	44.95
9	7386.00	44.72 AV	54.00	-9.28	1.33 V	360	-0.23	44.95

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. “ * “ : Fundamental frequency



4.2.8 TEST RESULTS (B)

EUT	Wireless Network Access Point	MODEL	WAP11V28
CHANNEL	11	FREQUENCY RANGE	1~25 GHz
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 60% RH, 991 hPa	TESTED BY: Steven Lu	

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	131.99	29.38 QP	43.50	-14.12	1.69 H	107	17.08	12.30
2	150.00	33.66 QP	43.50	-9.84	1.25 H	124	22.46	11.20
3	176.00	32.99 QP	43.50	-10.51	1.14 H	274	22.89	10.10
4	220.00	33.20 QP	46.00	-12.80	1.54 H	311	21.67	11.53
5	225.00	29.49 QP	46.00	-16.51	1.83 H	212	17.65	11.84
6	250.00	44.92 QP	46.00	-1.08	1.50 H	95	32.25	13.37
7	263.99	30.27 QP	46.00	-15.73	1.00 H	286	15.50	14.77
8	300.00	37.27 QP	46.00	-8.73	1.25 H	166	21.85	15.42
9	307.99	31.33 QP	46.00	-14.67	1.03 H	247	15.78	15.55
10	375.00	39.19 QP	46.00	-6.81	1.38 H	282	22.04	17.15
11	395.99	32.57 QP	46.00	-13.43	1.00 H	101	14.64	17.93
12	484.04	34.22 QP	46.00	-11.78	1.69 H	137	14.76	19.46
13	500.00	40.68 QP	46.00	-5.32	1.66 H	158	20.76	19.92
14	525.02	38.56 QP	46.00	-7.44	1.00 H	153	18.33	20.23
15	527.99	30.56 QP	46.00	-15.44	1.04 H	85	10.29	20.27
16	571.99	38.92 QP	46.00	-7.08	1.87 H	121	17.84	21.08
17	600.02	34.42 QP	46.00	-11.58	1.47 H	343	12.66	21.76
18	625.02	40.95 QP	46.00	-5.05	1.00 H	208	19.06	21.89
19	659.99	38.90 QP	46.00	-7.10	1.43 H	258	16.83	22.07
20	675.02	37.41 QP	46.00	-8.59	1.57 H	113	15.26	22.15
21	747.99	39.69 QP	46.00	-6.31	1.33 H	115	16.41	23.28
22	750.02	35.79 QP	46.00	-10.21	1.39 H	251	12.47	23.32
23	825.02	35.97 QP	46.00	-10.03	1.33 H	262	12.28	23.69
24	835.99	37.86 QP	46.00	-8.14	1.13 H	144	14.02	23.84
25	923.99	41.92 QP	46.00	-4.08	1.06 H	230	17.38	24.54

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	Wireless Network Access Point	MODEL	WAP11V28
CHANNEL	11	FREQUENCY RANGE	1~25 GHz
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 60% RH, 991 hPa	TESTED BY: Steven Lu	

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	131.99	38.61 QP	43.50	-4.89	1.00 V	195	26.31	12.30
2	150.00	39.00 QP	43.50	-4.50	1.34 V	70	27.80	11.20
3	175.00	29.56 QP	43.50	-13.94	1.40 V	268	19.44	10.12
4	175.99	29.44 QP	43.50	-14.06	1.36 V	14	19.34	10.10
5	219.99	32.34 QP	46.00	-13.66	1.00 V	80	20.81	11.53
6	225.00	31.18 QP	46.00	-14.82	1.86 V	208	19.34	11.84
7	250.00	44.80 QP	46.00	-1.20	1.25 V	274	31.95	13.37
8	300.00	35.48 QP	46.00	-10.52	1.59 V	236	20.06	15.42
9	375.00	37.11 QP	46.00	-8.89	1.07 V	54	19.96	17.15
10	483.99	31.84 QP	46.00	-14.16	1.10 V	179	12.38	19.46
11	500.00	39.42 QP	46.00	-6.58	1.00 V	13	19.50	19.92
12	525.00	34.76 QP	46.00	-11.24	1.31 V	88	14.53	20.23
13	528.00	28.17 QP	46.00	-17.83	1.34 V	355	7.90	20.27
14	571.99	37.23 QP	46.00	-8.77	1.10 V	96	16.15	21.08
15	600.00	36.89 QP	46.00	-9.11	1.01 V	226	15.13	21.76
16	625.00	39.03 QP	46.00	-6.97	1.10 V	207	17.15	21.88
17	675.00	34.45 QP	46.00	-11.55	1.22 V	336	12.30	22.15
18	747.99	33.80 QP	46.00	-12.20	1.00 V	276	10.52	23.28
19	750.00	33.34 QP	46.00	-12.66	1.26 V	257	10.02	23.32
20	835.99	35.51 QP	46.00	-10.49	1.00 V	281	11.67	23.84
21	923.99	36.03 QP	46.00	-9.97	1.69 V	102	11.49	24.54

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



EUT	Wireless Network Access Point	MODEL	WAP11V28
CHANNEL	1	FREQUENCY RANGE	1~25 GHz
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 75% RH, 991 hPa	TESTED BY: Long Chen	

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	1012.00	48.70 PK	74.00	-25.30	1.25 H	167	21.44	27.26
2	1100.00	46.71 PK	74.00	-27.29	1.13 H	50	18.97	27.74
3	1188.00	47.31 PK	74.00	-26.69	1.62 H	318	18.93	28.38
4	2038.00	48.95 PK	74.00	-25.05	1.16 H	109	19.03	29.92
5	2385.80	44.80 PK	74.00	-29.20	1.96 H	236	13.67	31.13
6	*2412.00	92.85 PK			1.96 H	236	61.64	31.21
6	*2412.00	88.29 AV			1.96 H	236	57.08	31.21
7	4076.00	48.76 PK	74.00	-25.24	1.52 H	252	13.23	35.53
8	4824.00	47.02 PK	74.00	-26.98	1.19 H	80	9.15	37.88
9	7236.00	54.67 PK	74.00	-19.33	1.29 H	201	11.22	43.46
9	7236.00	41.48 AV	54.00	-12.52	1.29 H	201	-1.97	43.46

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. “ * “ : Fundamental frequency



EUT	Wireless Network Access Point	MODEL	WAP11V28
CHANNEL	1	FREQUENCY RANGE	1~25 GHz
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 75% RH, 991 hPa	TESTED BY: Long Chen	

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	1012.00	42.80 PK	74.00	-31.20	1.07 V	138	15.54	27.26
2	1100.00	40.40 PK	74.00	-33.60	1.25 V	335	12.66	27.74
3	1188.00	42.57 PK	74.00	-31.43	1.21 V	254	14.19	28.38
4	2038.00	45.67 PK	74.00	-28.33	1.35 V	136	15.75	29.92
5	2385.80	57.26 PK	74.00	-16.74	1.06 V	360	26.13	31.13
5	2385.80	52.25 AV	54.00	-1.75	1.06 V	360	21.12	31.13
6	*2412.00	105.31 PK			1.06 V	360	74.10	31.21
6	*2412.00	100.10 AV			1.06 V	360	68.89	31.21
7	4076.00	51.53 PK	74.00	-22.47	1.21 V	223	16.00	35.53
7	4076.00	42.13 AV	54.00	-11.87	1.21 V	223	6.60	35.53
8	4824.00	49.24 PK	74.00	-24.76	1.07 V	138	11.36	37.88
9	7236.00	55.24 PK	74.00	-18.76	1.94 V	122	11.79	43.46
9	7236.00	42.06 AV	54.00	-11.94	1.94 V	122	-1.39	43.46

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. “ * “ : Fundamental frequency



EUT	Wireless Network Access Point	MODEL	WAP11V28
CHANNEL	6	FREQUENCY RANGE	1~25 GHz
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 75% RH, 991 hPa	TESTED BY: Long Chen	

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	1012.00	48.71 PK	74.00	-25.29	1.40 H	22	21.45	27.26
2	1100.00	47.38 PK	74.00	-26.62	1.24 H	120	19.64	27.74
3	1188.00	47.23 PK	74.00	-26.77	1.25 H	62	18.85	28.38
4	2063.00	47.46 PK	74.00	-26.54	1.13 H	95	17.44	30.02
5	*2437.00	96.03 PK			1.09 H	204	64.70	31.34
5	*2437.00	91.22 AV			1.09 H	204	59.89	31.34
6	4126.00	51.13 PK	74.00	-22.87	1.17 H	166	15.32	35.81
6	4126.00	36.19 AV	54.00	-17.81	1.17 H	166	0.38	35.81
7	4874.00	49.64 PK	74.00	-24.36	1.00 H	130	11.65	37.99
8	7311.00	55.20 PK	74.00	-18.80	1.66 H	118	11.55	43.66
8	7311.00	42.28 AV	54.00	-11.72	1.66 H	118	-1.37	43.66
9	9748.00	57.53 PK	76.03	-18.50	1.14 H	136	11.15	46.38
9	9748.00	47.29 AV	71.22	-23.93	1.14 H	136	0.91	46.38

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. “ * “ : Fundamental frequency



EUT	Wireless Network Access Point	MODEL	WAP11V28
CHANNEL	6	FREQUENCY RANGE	1~25 GHz
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 75% RH, 991 hPa	TESTED BY: Long Chen	

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	1012.00	43.78 PK	74.00	-30.22	1.22 V	100	16.52	27.26
2	1100.00	43.63 PK	74.00	-30.37	1.35 V	258	15.89	27.74
3	1188.00	43.21 PK	74.00	-30.79	1.43 V	218	14.83	28.38
4	2063.00	46.09 PK	74.00	-27.91	1.42 V	307	16.07	30.02
5	2385.09	59.60 PK	74.00	-14.40	1.43 V	218	28.47	31.13
5	2385.09	49.67 AV	54.00	-4.33	1.43 V	218	18.54	31.13
6	*2437.00	109.75 PK	74.00	35.75	1.04 V	324	78.41	31.34
6	*2437.00	104.28 AV	54.00	50.28	1.04 V	324	72.94	31.34
7	4126.00	48.19 PK	74.00	-25.81	1.03 V	110	12.38	35.81
8	4874.00	51.25 PK	74.00	-22.75	1.00 V	132	13.26	37.99
8	4874.00	41.62 AV	54.00	-12.38	1.00 V	132	3.63	37.99
9	7311.00	57.26 PK	74.00	-16.74	1.50 V	320	13.60	43.66
9	7311.00	48.25 AV	54.00	-5.75	1.50 V	320	4.59	43.66
10	9748.00	59.38 PK	89.75	-30.37	1.00 V	112	13.00	46.38
10	9748.00	51.64 AV	84.28	-32.64	1.00 V	112	5.26	46.38

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. “ * “ : Fundamental frequency



EUT	Wireless Network Access Point	MODEL	WAP11V28
CHANNEL	11	FREQUENCY RANGE	1~25 GHz
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 75% RH, 991 hPa	TESTED BY: Long Chen	

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	1012.00	49.31 PK	74.00	-24.69	1.32 H	45	22.05	27.26
2	1100.00	45.89 PK	74.00	-28.11	1.25 H	258	18.15	27.74
3	1188.00	43.42 PK	74.00	-30.58	1.72 H	151	15.04	28.38
4	2088.00	47.71 PK	74.00	-26.29	1.00 H	291	17.58	30.13
5	*2462.00	91.96 PK			1.15 H	6	60.50	31.46
5	*2462.00	87.06 AV			1.15 H	6	55.60	31.46
6	2484.10	41.51 PK	74.00	-32.49	1.15 H	6	9.94	31.57
7	4176.00	52.38 PK	74.00	-21.62	1.31 H	144	16.28	36.10
7	4176.00	43.52 AV	54.00	-10.48	1.31 H	144	7.42	36.10
8	4924.00	49.07 PK	74.00	-24.93	1.22 H	184	10.96	38.11

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. “ * “ : Fundamental frequency



EUT	Wireless Network Access Point	MODEL	WAP11V28
CHANNEL	11	FREQUENCY RANGE	1~25 GHz
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 75% RH, 991 hPa	TESTED BY: Long Chen	

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	1012.00	47.58 PK	74.00	-26.42	1.40 V	155	20.32	27.26
2	1100.00	45.31 PK	74.00	-28.69	1.25 V	254	17.57	27.74
3	1188.00	42.57 PK	74.00	-31.43	1.13 V	285	14.19	28.38
4	2088.00	48.29 PK	74.00	-25.71	1.11 V	264	18.16	30.13
5	*2462.00	105.27 PK			1.12 V	151	73.81	31.46
5	*2462.00	100.10 AV			1.12 V	151	68.64	31.46
6	2484.10	54.82 PK	74.00	-19.18	1.12 V	151	23.25	31.57
6	2484.10	50.33 AV	54.00	-3.67	1.12 V	151	18.76	31.57
7	4176.00	50.38 PK	74.00	-23.62	1.86 V	177	14.28	36.10
7	4176.00	42.18 AV	54.00	-11.82	1.86 V	177	6.08	36.10
8	4924.00	49.36 PK	74.00	-24.64	1.27 V	156	11.25	38.11

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. “ * “ : Fundamental frequency



4.3 6dB BANDWIDTH MEASUREMENT

4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

4.3.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SPECTRUM ANALYZER	FSEK30	100049	Aug. 12, 2004

NOTE:

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

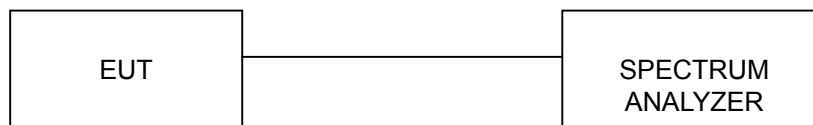
4.3.3 TEST PROCEDURE

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



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

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

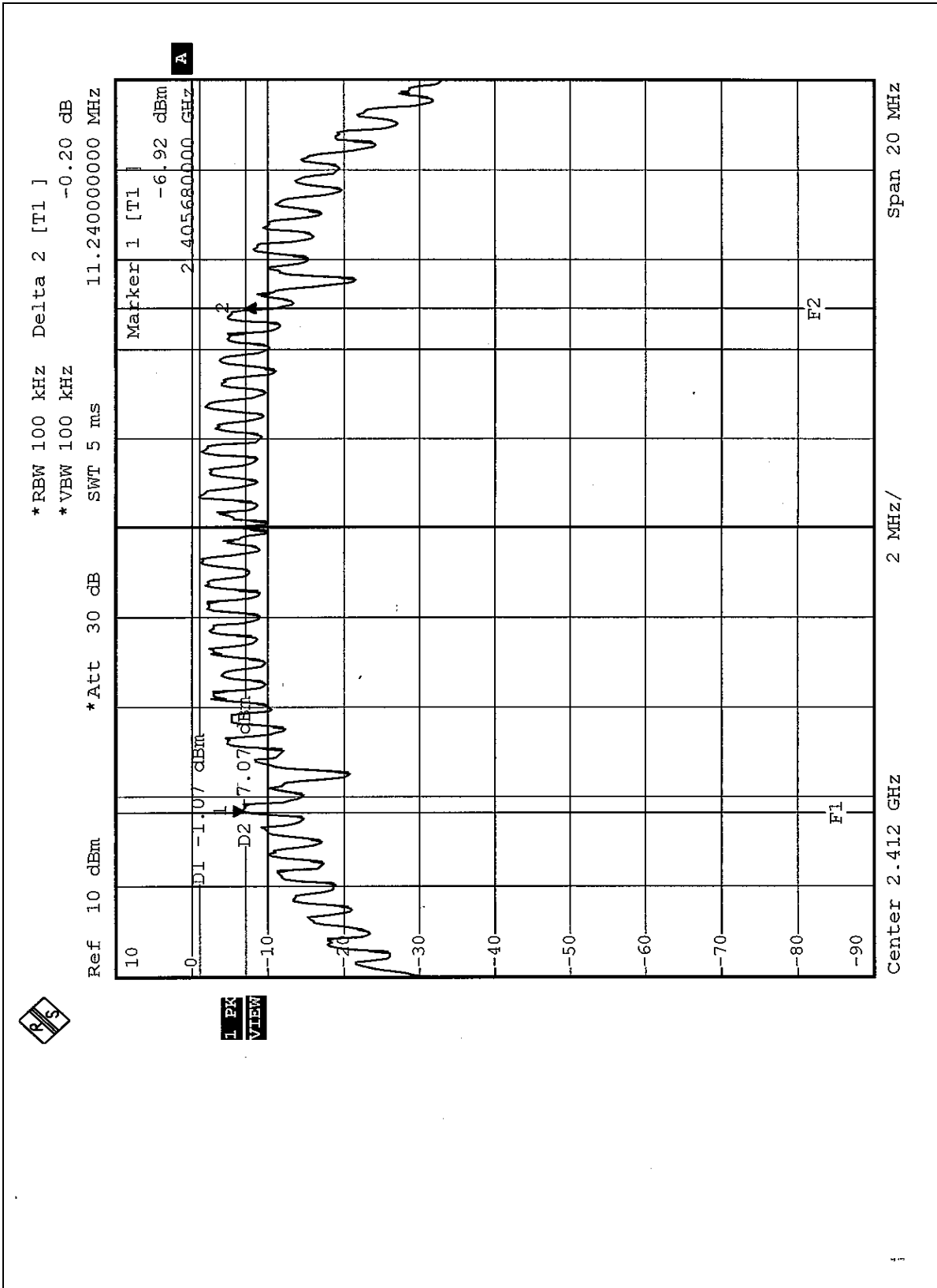
4.3.8 TEST RESULTS

EUT	Wireless Network Access Point	MODEL	WAP11V28
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25 deg. C, 60% RH, 991 hPa
TESTED BY	Gary Chang		

CHANNEL	CHANNEL FREQUENCY (MHz)	6 dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	11.24	0.5	PASS
6	2437	11.24	0.5	PASS
11	2462	11.24	0.5	PASS

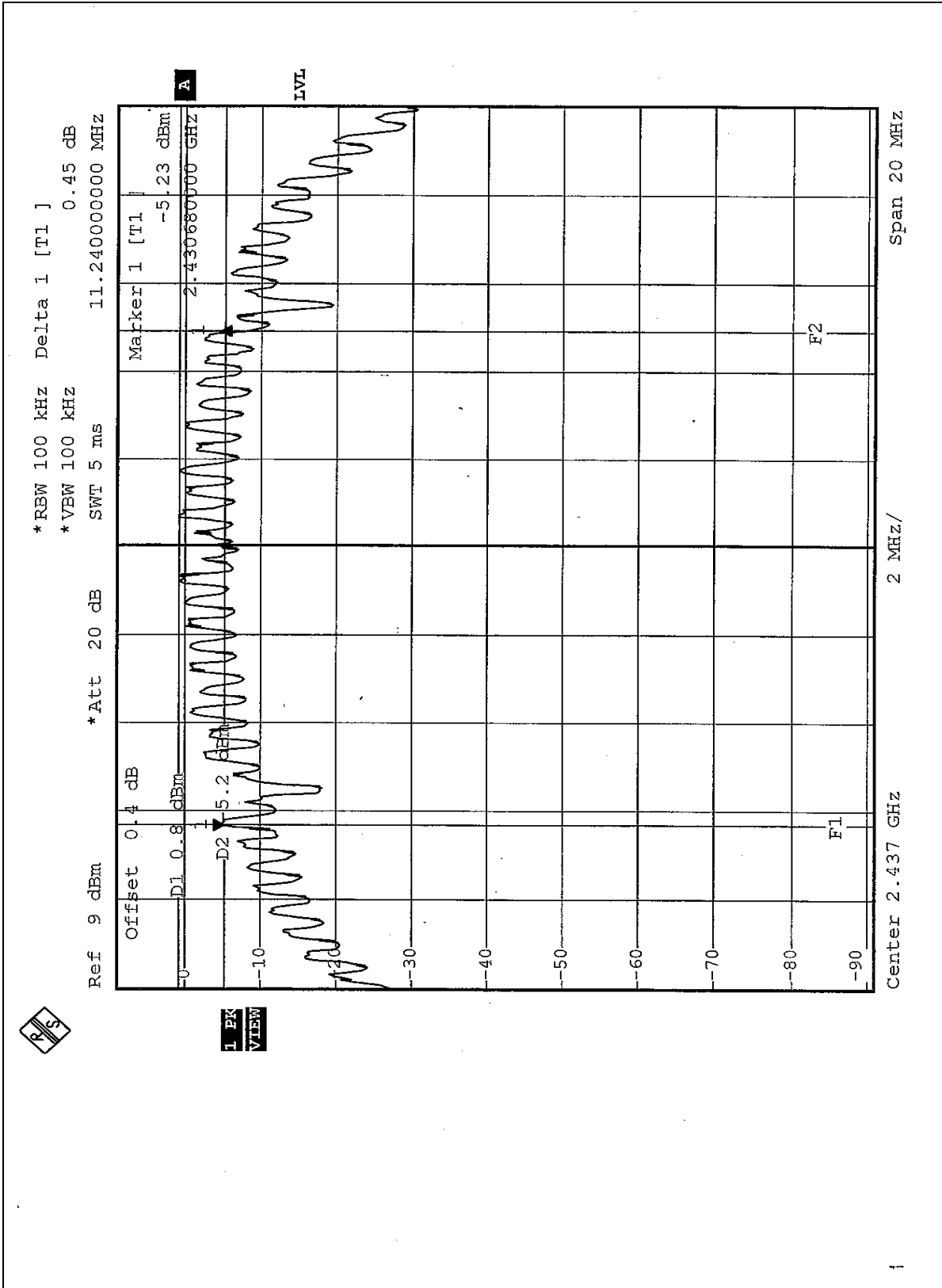


CH1



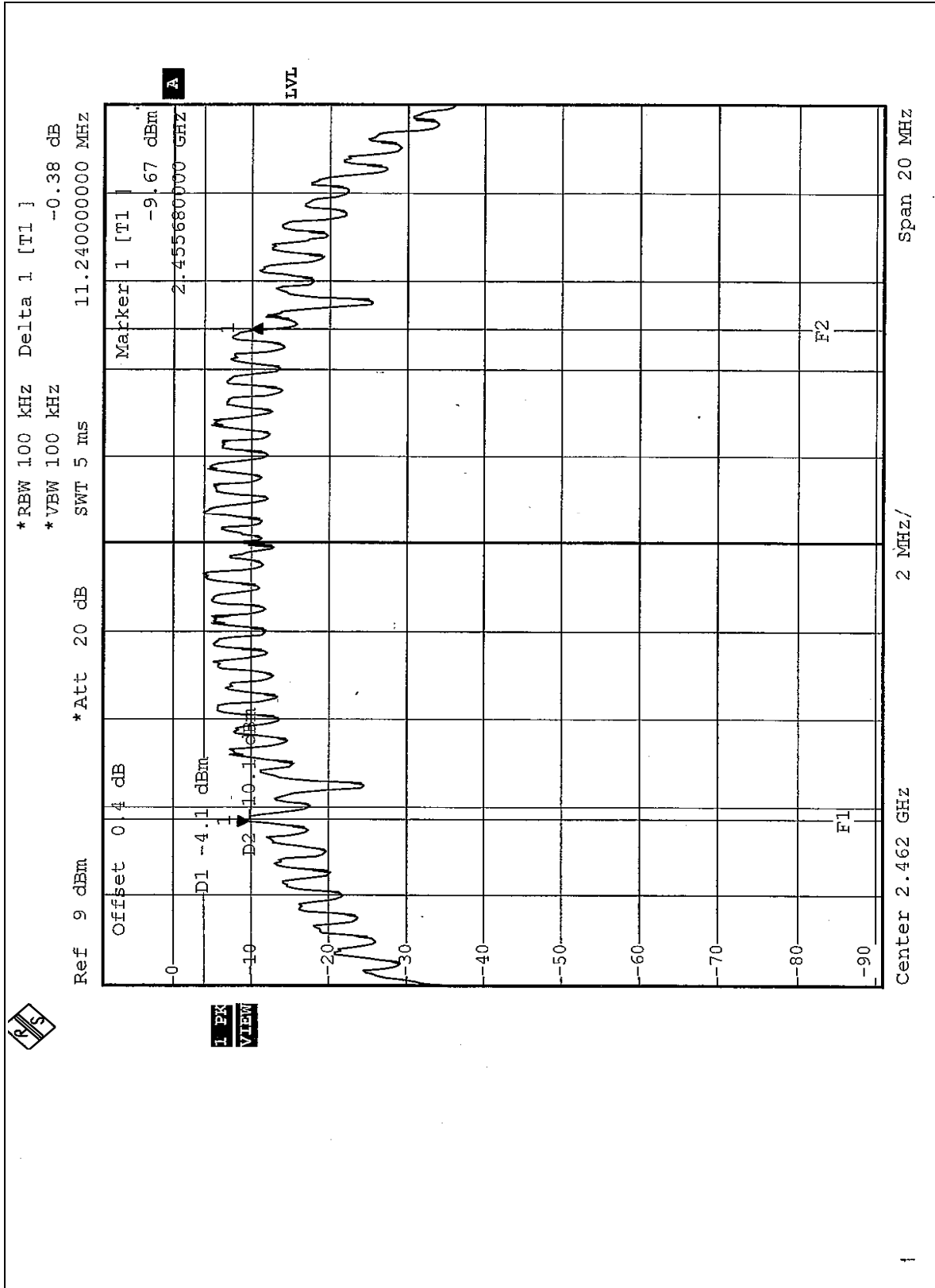


CH6





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 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSEK30	100049	Aug. 12, 2004
R&S SIGNAL GENERATOR	SMP04	100011	May 28, 2004
TEKTRONIX OSCILLOSCOPE	TDS 220	C019167	Feb. 01, 2005
NARDA DETECTOR	4503A	FSCM99899	NA

NOTE:

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

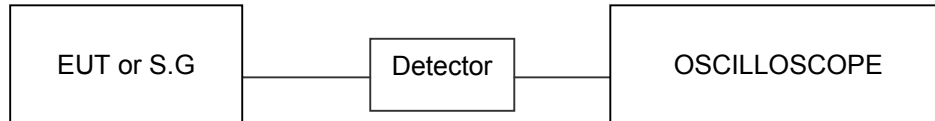
4.4.3 TEST PROCEDURES

1. A detector was used on the output port of the EUT. An oscilloscope was used to read the response of the detector.
2. Replaced the EUT by the signal generator. The center frequency of the S.G. was adjusted to the center frequency of the measured channel.
3. Adjusted the power to have the same reading on oscilloscope. Record the power level.

4.4.4 DEVIATION FROM TEST STANDARD

No deviation

4.4.5 TEST SETUP



4.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6



4.4.7 TEST RESULTS

EUT	Wireless Network Access Point	MODEL	WAP11V28
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25 deg. C, 60% RH, 991 hPa
TESTED BY	Steven Lu		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	11.10	29	PASS
6	2437	13.97	29	PASS
11	2462	9.70	29	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	Aug. 12, 2004

NOTE:

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

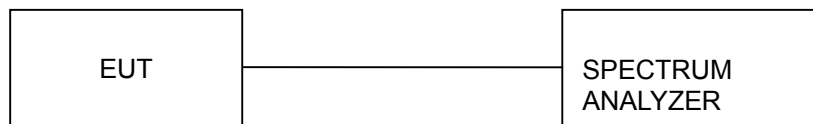
4.5.3 TEST PROCEDURE

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 3 kHz RBW and 30 kHz VBW, set sweep time=span/3kHz. The power spectral density was measured and recorded. The sweep time is allowed to be longer than span/3kHz for a full response of the mixer in the spectrum analyzer.

4.5.4 DEVIATION FROM TEST STANDARD

No deviation

4.5.5 TEST SETUP



4.5.6 EUT OPERATING CONDITIONS

Same as 4.3.6



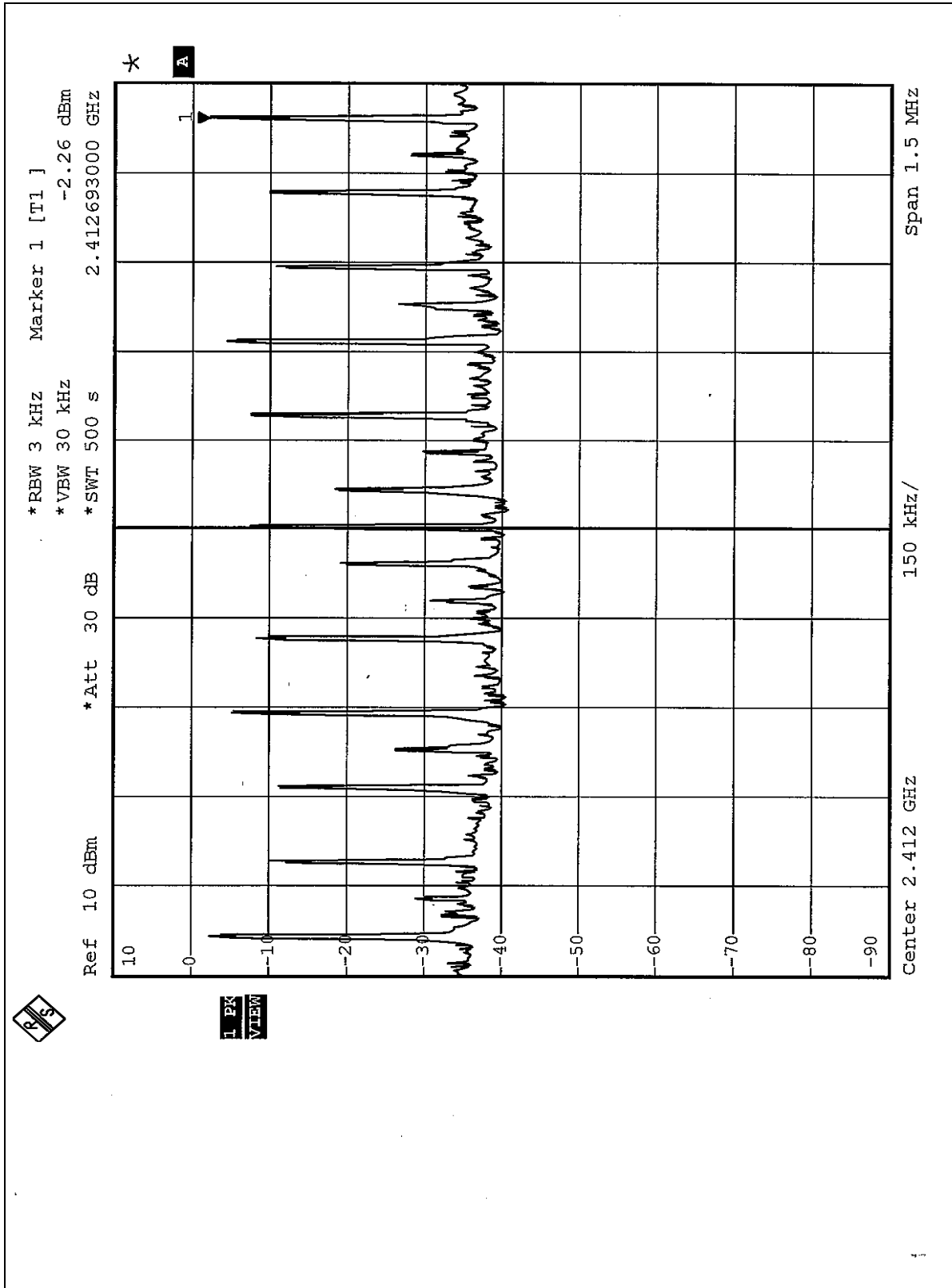
4.5.7 TEST RESULTS

EUT	Wireless Network Access Point	MODEL	WAP11V28
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25 deg. C, 60% RH, 991 hPa
TESTED BY	Steven Lu		

CHANNEL NUMBER	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3KHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-2.26	8	PASS
6	2437	-0.81	8	PASS
11	2462	-5.43	8	PASS

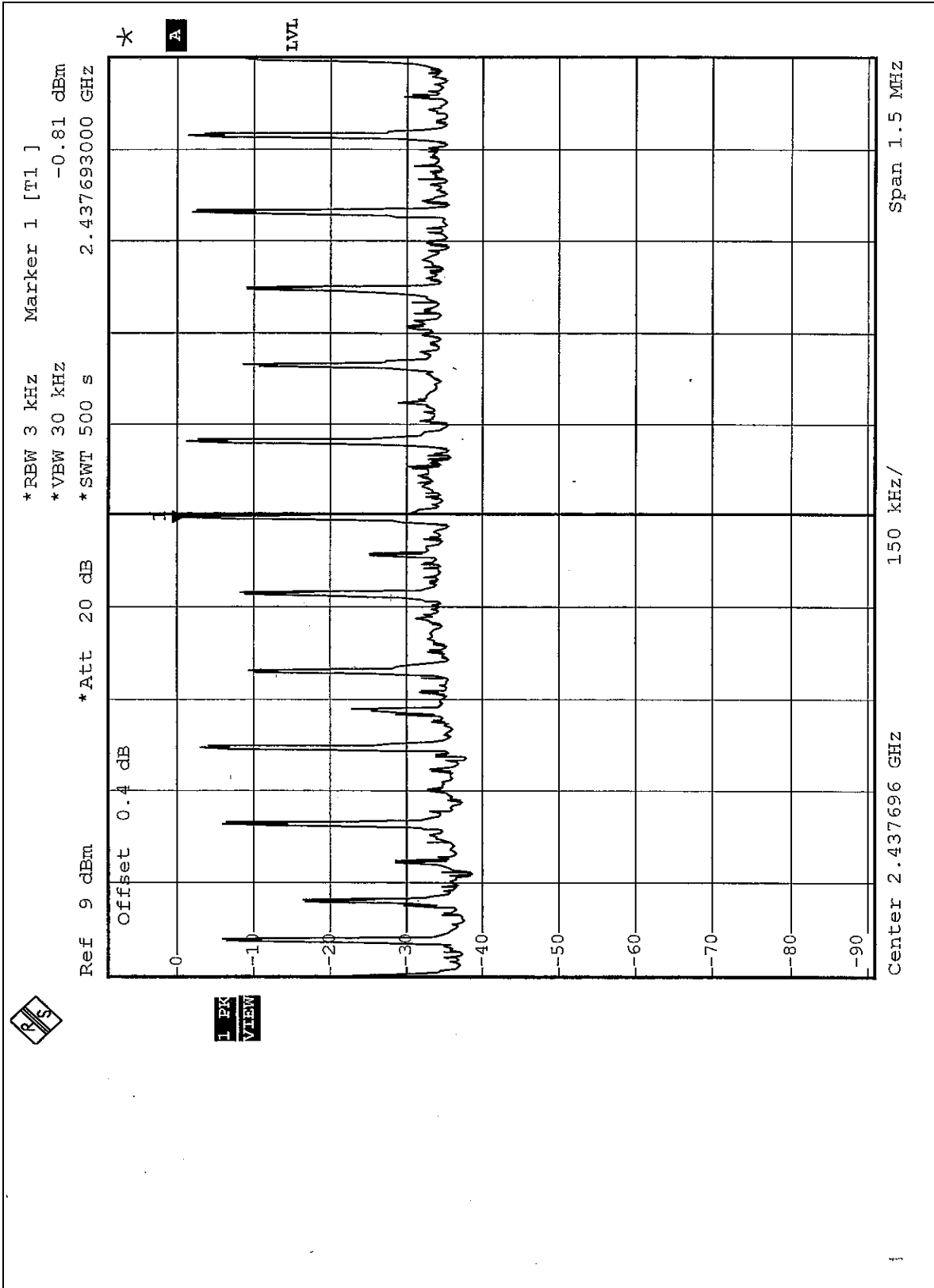


CH1



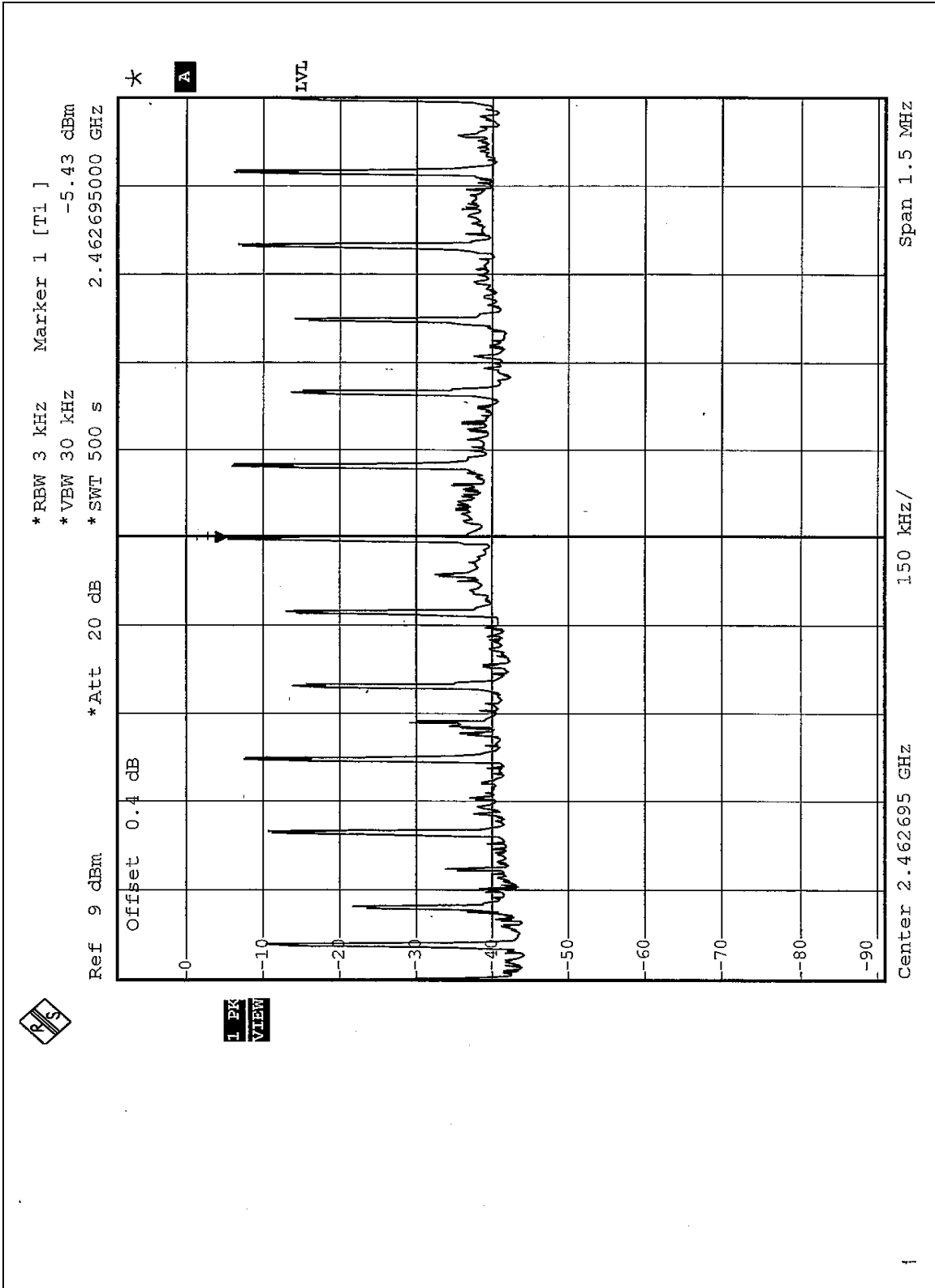


CH6





CH11



1 PK VIEW



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	Aug. 12, 2004

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 1MHz and 10Hz with suitable frequency span including 1MHz and 10Hz 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



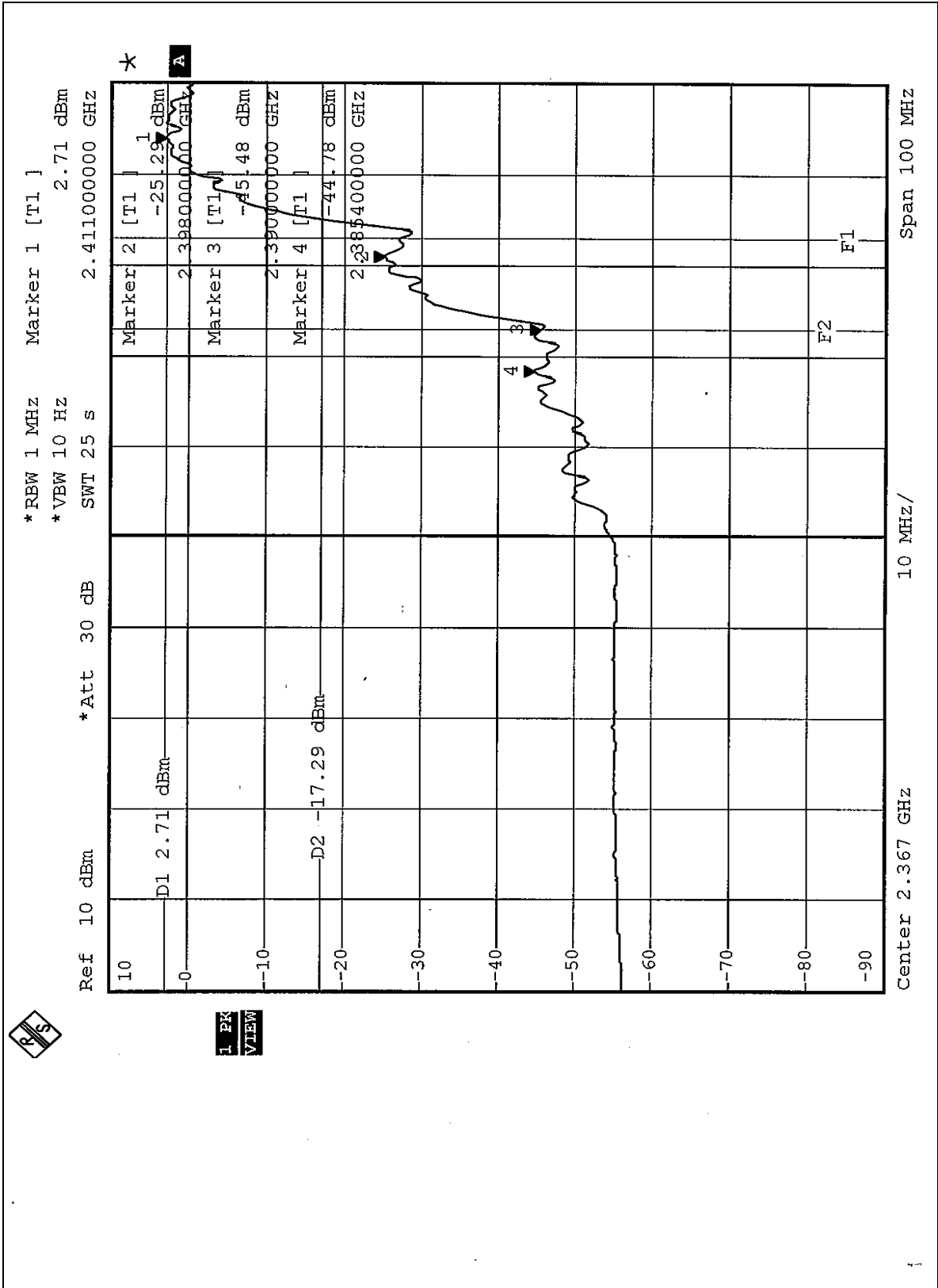
4.6.6 TEST RESULTS

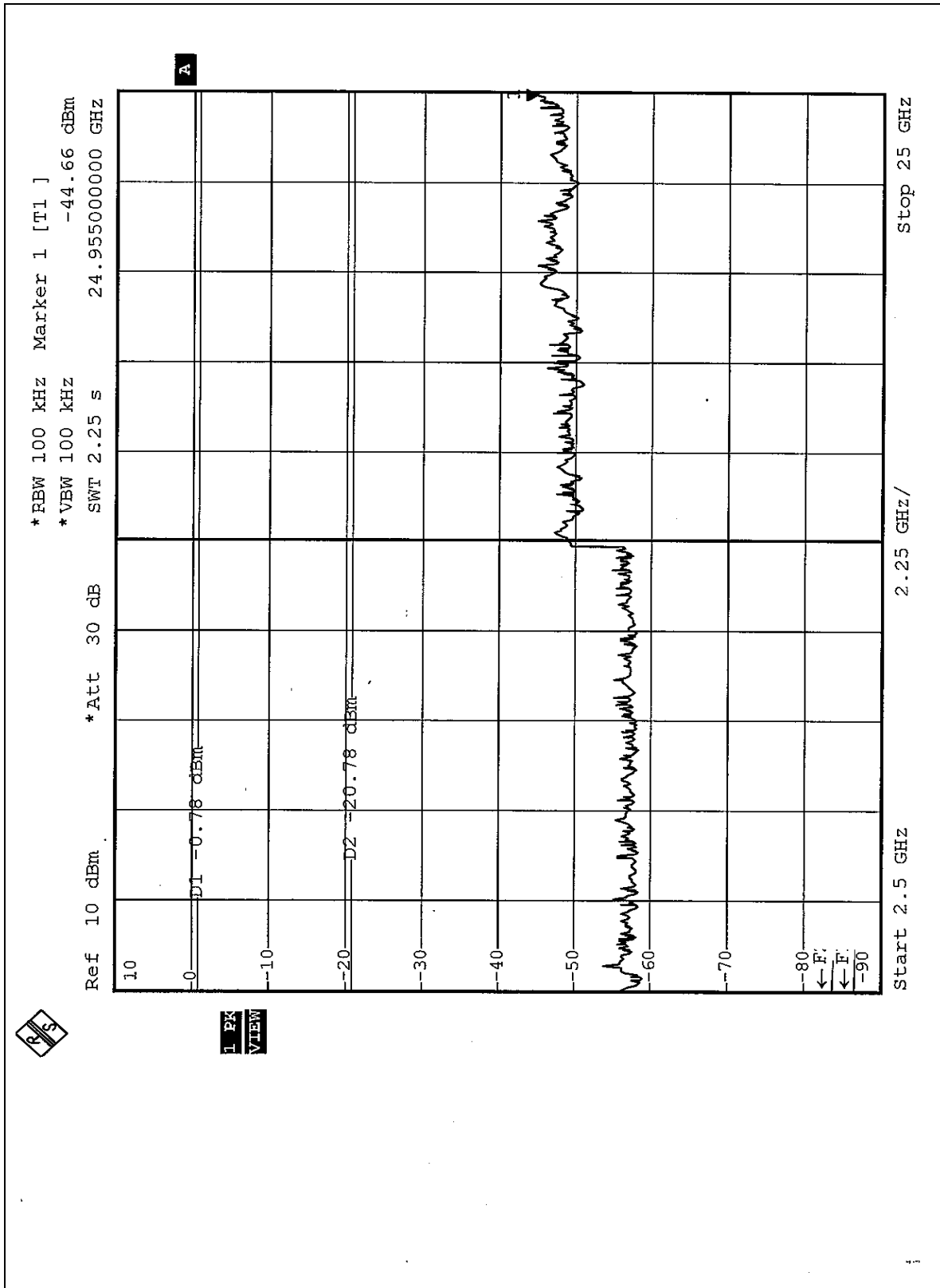
The spectrum plots are attached on the following 4 pages. D2 line indicates the highest level, D1 line indicates the 20dB offset below D2. It shows compliance with the requirement in part 15.247(C).

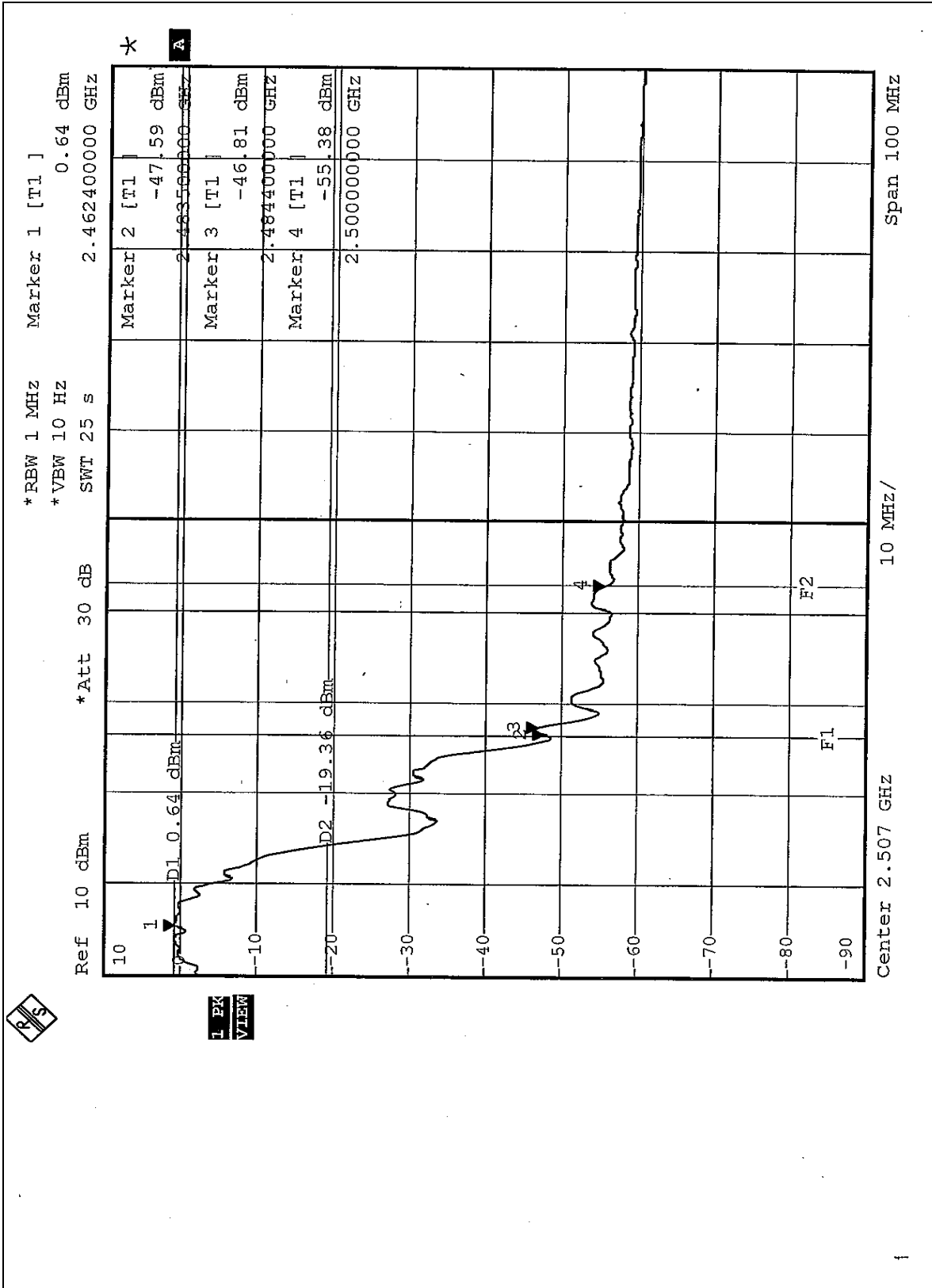
NOTE:

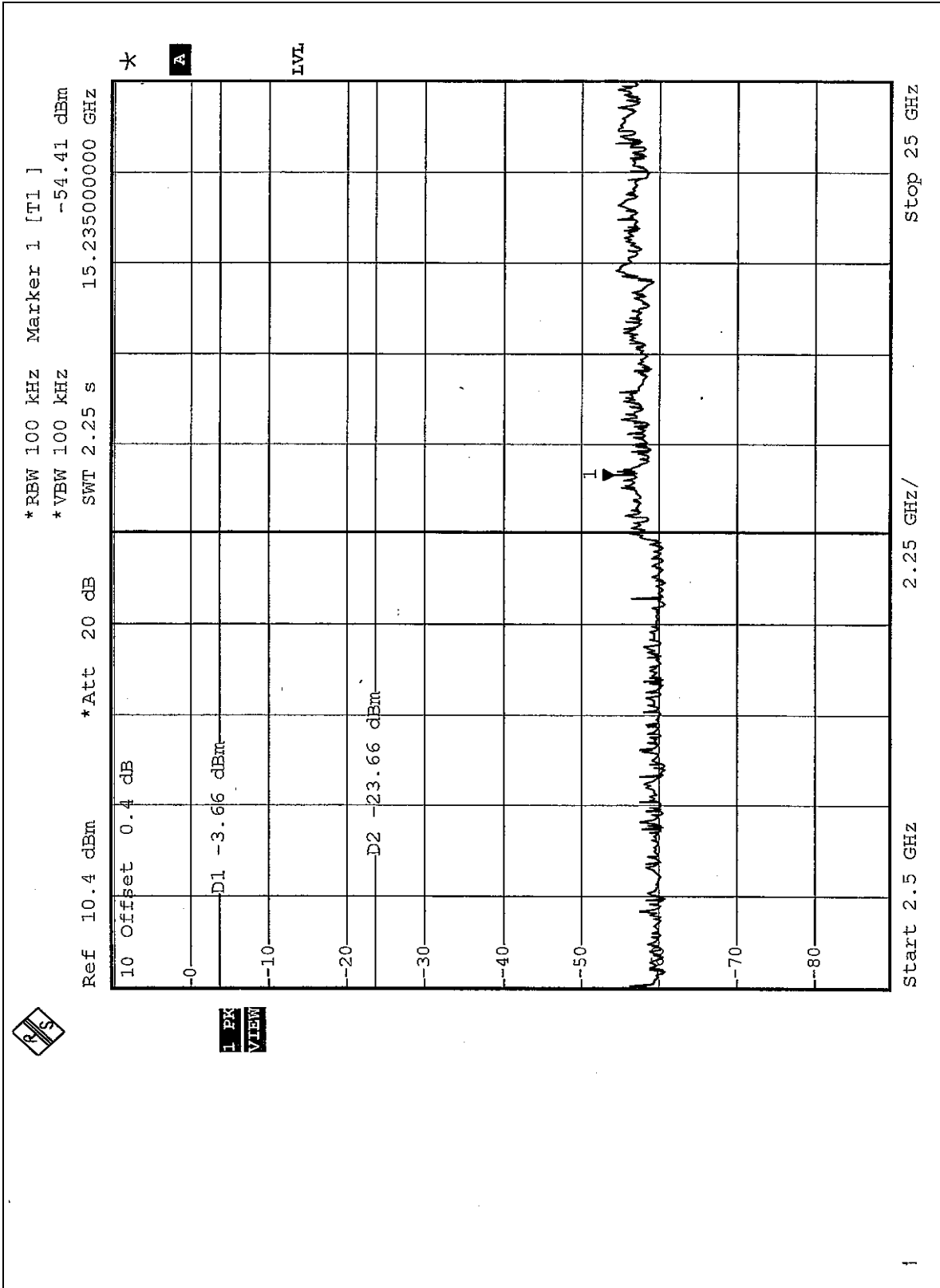
The band edge emission plot on the following 1~2 pages show 47.49dB delta between carrier maximum power and local maximum emission in restrict band (2.3854GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.8 is 100.10dBuV/m, so the maximum field strength in restrict band is $100.10 - 47.49 = 52.61$ dBuV/m which is under 54dBuV/m limit.

The band edge emission plot on the following 3~4 pages show 47.45dB delta between carrier maximum power and local maximum emission in restrict band (2.4844GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.8 is 100.10dBuV/m, so the maximum field strength in restrict band is $100.10 - 47.45 = 52.65$ 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

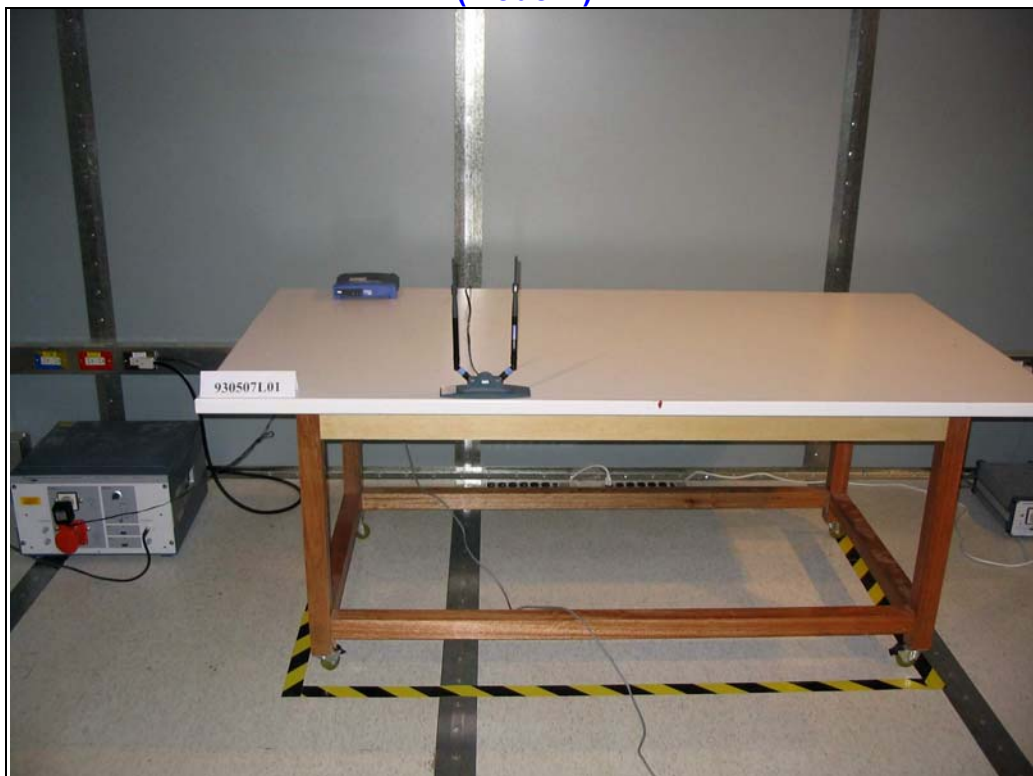
The antenna used in this product is Dipole antenna with Reversed TNC connector. And the maximum Gain of this antenna is 7dBi.

5 PHOTOGRAPHS OF THE TEST CONFIGURATION

CONDUCTED EMISSION TEST
(Mode A)



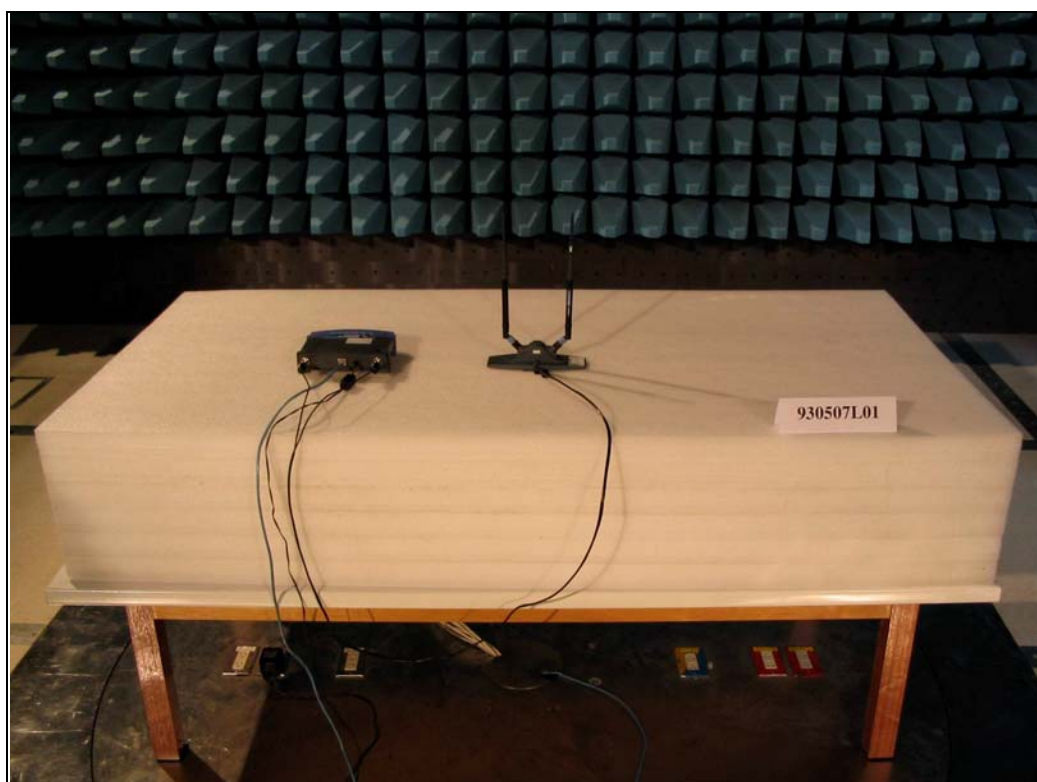
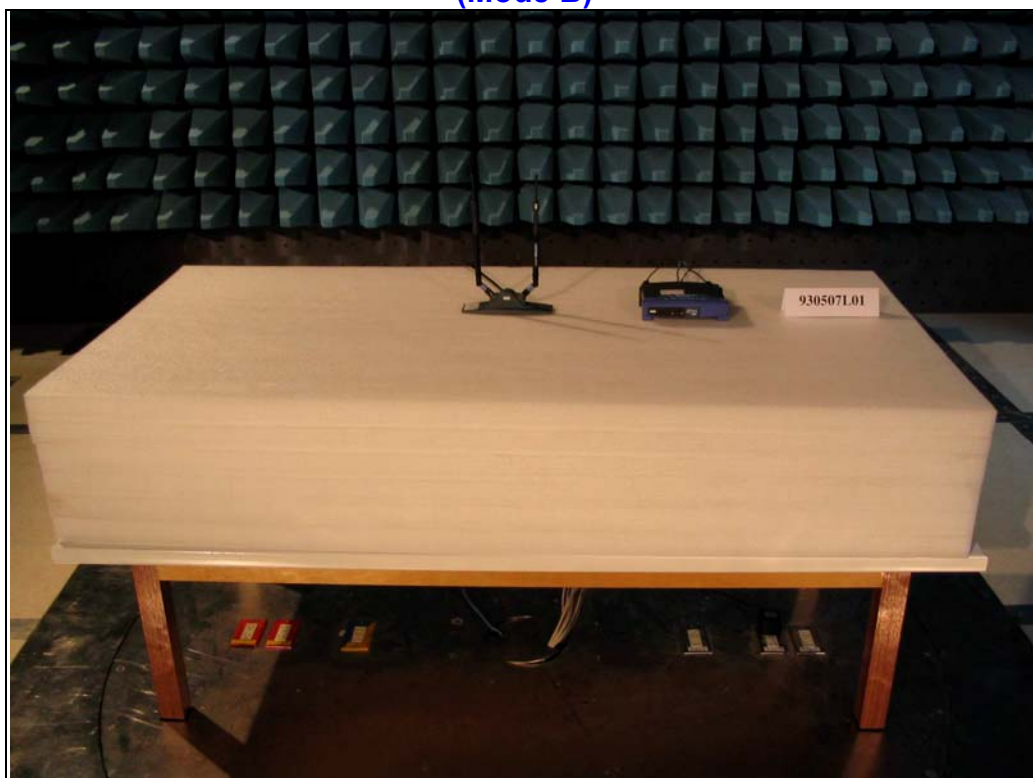
(Mode B)



RADIATED EMISSION TEST (Mode A)



(Mode B)





6 INFORMATION ON THE TESTING LABORATORIES

We, ADT Corp., were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025, Guide 25 or EN 45001:

USA	FCC, NVLAP, UL
Germany	TUV Rheinland
Japan	VCCI
Norway	NEMKO
Canada	INDUSTRY CANADA , CSA
R.O.C.	CNLA, BSMI, DGT
Netherlands	Telefication
Singapore	PSB , GOST-ASIA(MOU)
Russia	CERTIS(MOU)

Copies of accreditation certificates of our laboratories obtained from approval agencies can be downloaded from our web site:

www.adt.com.tw/index.5/phtml. If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab:

Tel: 886-2-26052180

Fax: 886-2-26052943

Hsin Chu EMC/RF Lab:

Tel: 886-3-5935343

Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety/Telecom Lab:

Tel: 886-3-3183232

Fax: 886-3-3185050

Linko RF Lab.

Tel: 886-3-3270910

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Email: service@mail.adt.com.tw

Web Site: www.adt.com.tw

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

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