



FCC TEST REPORT

REPORT NO.: RF930715L14

MODEL NO.: 255xly (with wireless card: Intel
WM3B2200BG)

RECEIVED: July 15, 2004

TESTED: July 23 ~ July 28, 2004

APPLICANT: UNIWILL COMPUTER CORP.

ADDRESS: 5F, No. 9, Wu Chiuan Rd., Wu Gu Ind. Park,
Taipei, Taiwan, R.O.C.

ISSUED BY: Advance Data Technology Corporation

LAB LOCATION: No. 19, Hwa Ya 2nd Rd., Kueishan, Taoyuan,
Taiwan, R.O.C.

This test report consists of 74 pages in total. It may be duplicated completely for legal use with the approval of the applicant. It should not be reproduced except in full, without the written approval of our laboratory. The client should not use it to claim product endorsement by CNLA, or any government agencies. The test results in the report only apply to the tested sample.



0528
ILAC MRA



Table of Contents

1	CERTIFICATION	4
2	SUMMARY OF TEST RESULTS	5
2.1	GENERAL DESCRIPTION OF EUT	5
3	GENERAL INFORMATION	6
3.1	GENERAL DESCRIPTION OF EUT	6
3.2	DESCRIPTION OF TEST MODES	7
3.3	GENERAL DESCRIPTION OF APPLIED STANDARDS	7
3.4	DESCRIPTION OF SUPPORT UNITS	8
3.5	CONFIGURATION OF SYSTEM UNDER TEST	8
4	TEST TYPES AND RESULTS	9
4.1	CONDUCTED EMISSION MEASUREMENT	9
4.1.1	LIMITS OF CONDUCTED EMISSION MEASUREMENT	9
4.1.2	TEST INSTRUMENTS	9
4.1.3	TEST PROCEDURES	10
4.1.4	DEVIATION FROM TEST STANDARD	10
4.1.5	TEST SETUP	11
4.1.6	EUT OPERATING CONDITIONS	11
4.1.7	TEST RESULTS	12
4.2	RADIATED EMISSION MEASUREMENT	18
4.2.1	LIMITS OF RADIATED EMISSION MEASUREMENT	18
4.2.2	TEST INSTRUMENTS	19
4.2.3	TEST PROCEDURES	20
4.2.4	DEVIATION FROM TEST STANDARD	20
4.2.5	TEST SETUP	21
4.2.6	EUT OPERATING CONDITIONS	21
4.2.7	TEST RESULTS	22
4.3	6dB BANDWIDTH MEASUREMENT	36
4.3.1	LIMITS OF 6dB BANDWIDTH MEASUREMENT	36
4.3.2	TEST INSTRUMENTS	36
4.3.3	TEST PROCEDURE	37
4.3.4	DEVIATION FROM TEST STANDARD	37
4.3.5	TEST SETUP	37
4.3.6	EUT OPERATING CONDITIONS	37
4.3.7	TEST RESULTS	38
4.4	MAXIMUM PEAK OUTPUT POWER	46



4.4.1	LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT	46
4.4.2	TEST INSTRUMENTS	46
4.4.3	TEST PROCEDURES	47
4.4.4	DEVIATION FROM TEST STANDARD	47
4.4.5	TEST SETUP	47
4.4.6	EUT OPERATING CONDITIONS	47
4.4.7	TEST RESULTS	48
4.5	POWER SPECTRAL DENSITY MEASUREMENT	49
4.5.1	LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT	49
4.5.2	TEST INSTRUMENTS	49
4.5.3	TEST PROCEDURE	50
4.5.4	DEVIATION FROM TEST STANDARD	50
4.5.5	TEST SETUP	50
4.5.6	EUT OPERATING CONDITIONS	50
4.5.7	TEST RESULTS	51
4.6	BAND EDGES MEASUREMENT	59
4.6.1	LIMITS OF BAND EDGES MEASUREMENT	59
4.6.2	TEST INSTRUMENTS	59
4.6.3	TEST PROCEDURE	59
4.6.4	DEVIATION FROM TEST STANDARD	59
4.6.5	EUT OPERATING CONDITION	59
4.6.6	TEST RESULTS	60
4.7	ANTENNA REQUIREMENT	69
4.7.1	STANDARD APPLICABLE	69
4.7.2	ANTENNA CONNECTED CONSTRUCTION	69
5	PHOTOGRAPHS OF THE TEST CONFIGURATION	70
6	INFORMATION ON THE TESTING LABORATORIES	74



1 CERTIFICATION

PRODUCT : Notebook PC (with wireless card: Intel WM3B2200BG)
BRAND NAME : Uniwill (refer to page 6 for other brand names)
MODEL NO. : 255xly (with wireless card: Intel WM3B2200BG)
("x" may be as I or T to denote different CPU type, "y" may be as 0 ~ 9 or blank to denote different color of enclosure)
APPLICANT : UNIWILL COMPUTER CORP.
TESTED : July 23 ~ July 28, 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 : Windy Chou , **DATE:** July 27, 2004
(Windy Chou)

TECHNICAL
ACCEPTANCE : Gary Chang , **DATE:** July 27, 2004
Responsible for RF (Gary Chang)

APPROVED BY : Cody Chang , **DATE:** July 27, 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 -18.38dB at 0.201MHz
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 -1.03dB at 9748.00MHz
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.

2.1 GENERAL DESCRIPTION OF EUT

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4:

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9k~30MHz	2.44 dB
Radiated emissions	30MHz ~ 200MHz	3.55 dB
	200MHz ~1000MHz	3.58 dB
	1GHz ~ 18GHz	2.20 dB
	18GHz ~ 40GHz	1.88 dB

3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Notebook PC (with wireless card: Intel WM3B2200BG)
MODEL NO.	255xly (with wireless card: Intel WM3B2200BG)
POWER SUPPLY	18.5Vdc from AC Adapter
MODULATION TYPE	BPSK, QPSK, CCK, 16QAM, 64QAM
RADIO TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	802.11b: 11/5.5/2/1Mbps 802.11g: 54/48/36/24/18/12/9/6Mbps
FREQUENCY RANGE	2412MHz ~ 2462MHz
NUMBER OF CHANNEL	11
OUTPUT POWER	18.00dBm
ANTENNA TYPE	PIFA antenna with 1.36dBi gain for left antenna PIFA antenna with 0.53dBi gain for right antenna
DATA CABLE	NA
I/O PORTS	NA
ASSOCIATED DEVICES	NA

NOTE:

1. The EUT, operates in the 2.4GHz frequency range, lets you connect IEEE 802.11g or IEEE 802.11b devices to the network. With its high-speed data transmissions of up to 54Mbps.
2. The EUT was tested with the following adapter.

BRAND	LI SHIN INTERNATIONAL ENTERPRISE CORP.
MODEL	0335C2065
INPUT	100-240Vac , 50-60Hz , 1.7A
OUTPUT	18.5Vdc, 3.25A

3. The model name could be defined as the following:

- "x" may be as I or T to denote different CPU type.
- "y" may be as 0 ~ 9 or blank to denote different color of enclosure.

For the test, the model: 255II1 was selected as the representative for the test and its data was recorded in this report.

4. The following OEM model is provided to this EUT and identical to each other except for their brand and model name due to marketing requirement.

Brand	Model
Fujitsu Siemens Computer	AMILO M 7405

5. The above EUT information was declared by the 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 6Mbps for OFDM technique, as the worst cases for the test among other data rates.

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a *Notebook PC (with wireless card: Intel WM3B2200BG)*. 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

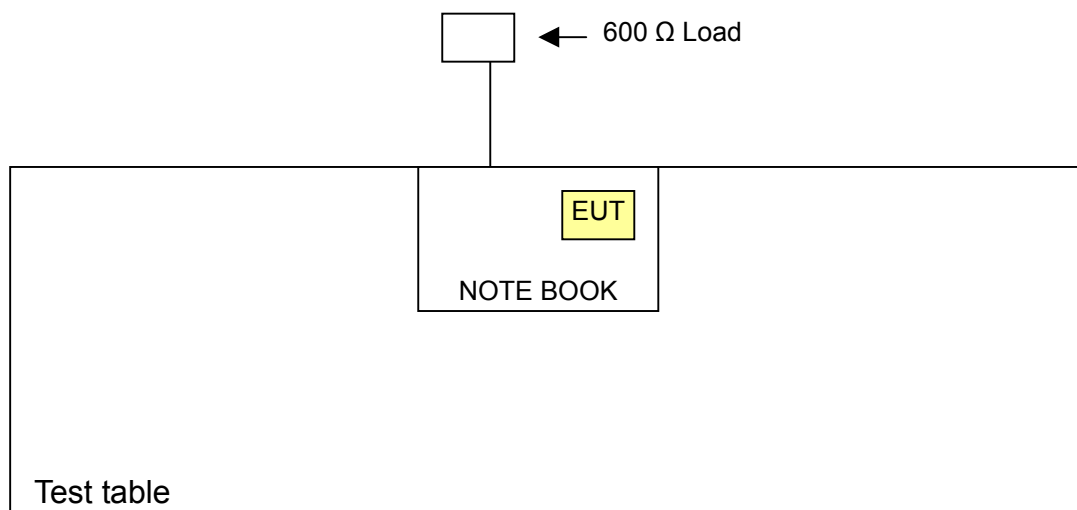
All test items have been performed and recorded as per the above standards.

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

NA

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	100291	Dec. 12, 2004
RF signal cable Woken	5D-FB	Cable-HYC01-01	Mar. 02, 2005
LISN ROHDE & SCHWARZ	ESH3-Z5	847265/023	Oct. 22, 2004
LISN ROHDE & SCHWARZ	ESH3-Z5	100220	Dec. 10, 2004
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 1.
 3. The VCCI Site Registration No. is C-2040.Hwa Ya Global Certification Office



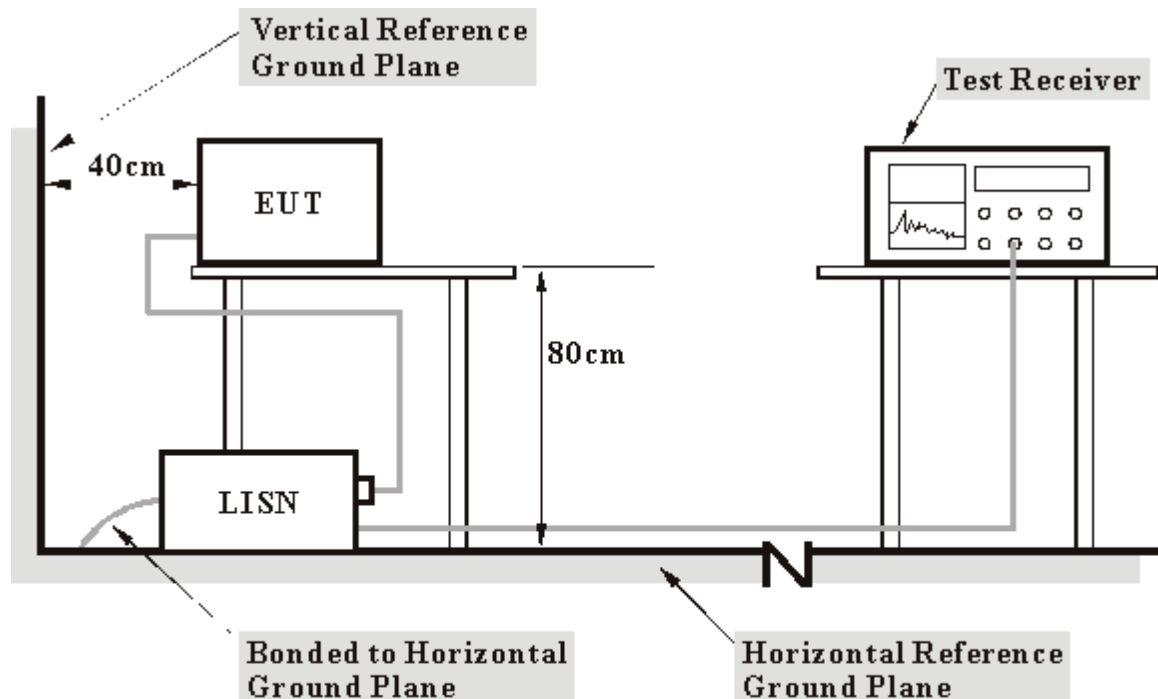
4.1.3 TEST PROCEDURES

- 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

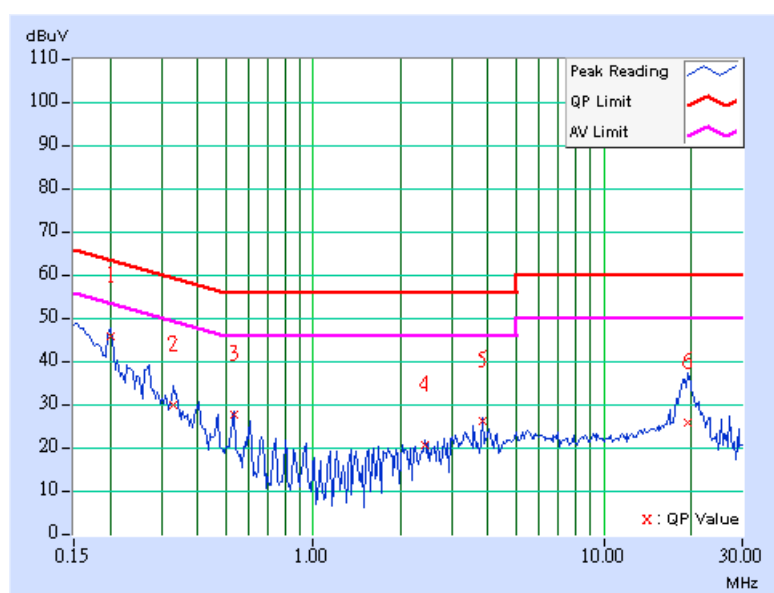
- a. Connected the EUT to a notebook system placed on a testing table.
- b. The notebook system ran a test program (provided by manufacturer) to enable EUT under transmission/receiving condition continuously at specific channel frequency.
- c. The notebook system sent "H" messages to its screen.
- d. Steps c were repeated.

4.1.7 TEST RESULTS

EUT	Notebook PC (with wireless card: Intel WM3B2200BG)	MODEL	255II1(with wireless card: Intel WM3B2200BG)
CHANNEL	1	6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	24 deg. C, 64% RH, 991 hPa	TESTED BY: Leo Hung	

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	0.201	0.12	45.08	-	45.20	-	63.58	53.58	-18.38	-
2	0.330	0.12	28.98	-	29.10	-	59.46	49.46	-30.35	-
3	0.537	0.13	26.78	-	26.91	-	56.00	46.00	-29.09	-
4	2.418	0.17	19.71	-	19.88	-	56.00	46.00	-36.12	-
5	3.828	0.20	25.37	-	25.57	-	56.00	46.00	-30.43	-
6	19.391	0.99	25.06	-	26.05	-	60.00	50.00	-33.95	-

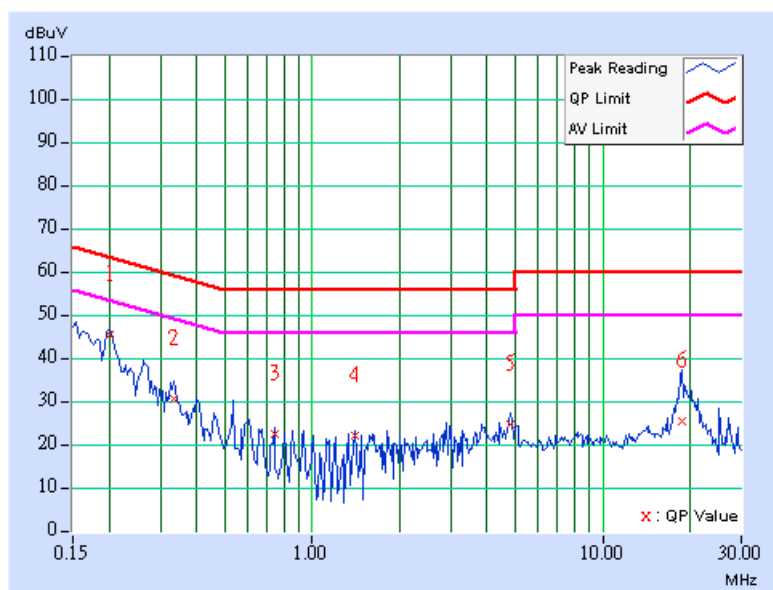
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value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



EUT	Notebook PC (with wireless card: Intel WM3B2200BG)	MODEL	255II1 (with wireless card: Intel WM3B2200BG)
CHANNEL	1	6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	PHASE	Neutral (N)
ENVIRONMENTAL CONDITIONS	24 deg. C, 64% RH, 991 hPa	TESTED BY: Leo Hung	

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	0.201	0.11	44.86	-	44.97	-	63.58	53.58	-18.61	-
2	0.334	0.11	29.97	-	30.08	-	59.36	49.36	-29.28	-
3	0.740	0.13	21.90	-	22.03	-	56.00	46.00	-33.97	-
4	1.410	0.15	21.43	-	21.58	-	56.00	46.00	-34.42	-
5	4.828	0.22	24.08	-	24.30	-	56.00	46.00	-31.70	-
6	18.746	0.69	24.82	-	25.51	-	60.00	50.00	-34.49	-

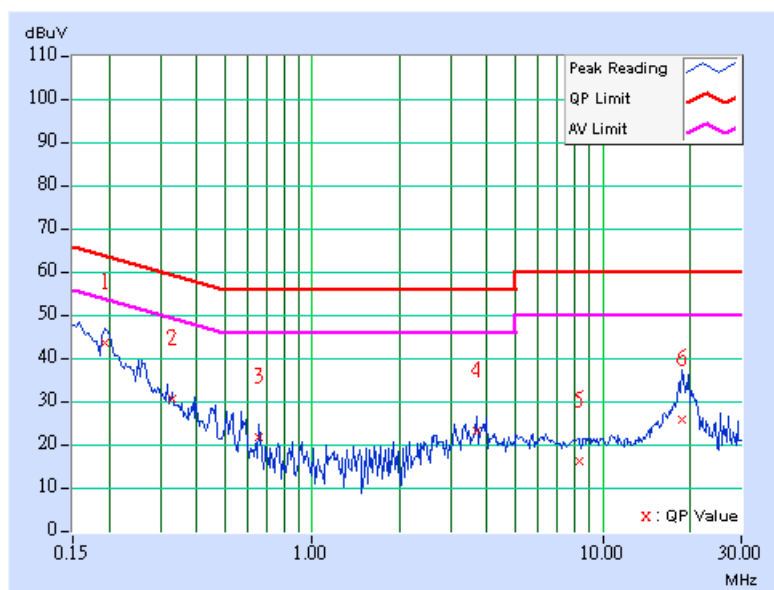
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value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



EUT	Notebook PC (with wireless card: Intel WM3B2200BG)	MODEL	255II1(with wireless card: Intel WM3B2200BG)
CHANNEL	6	6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	24 deg. C, 64% RH, 991 hPa	TESTED BY: Leo Hung	

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	0.193	0.12	42.66	-	42.78	-	63.91	53.91	-21.13	-
2	0.329	0.12	29.65	-	29.77	-	59.47	49.47	-29.70	-
3	0.658	0.13	20.98	-	21.11	-	56.00	46.00	-34.89	-
4	3.684	0.20	22.43	-	22.63	-	56.00	46.00	-33.37	-
5	8.285	0.30	15.21	-	15.51	-	60.00	50.00	-44.49	-
6	18.855	0.97	25.02	-	25.99	-	60.00	50.00	-34.01	-

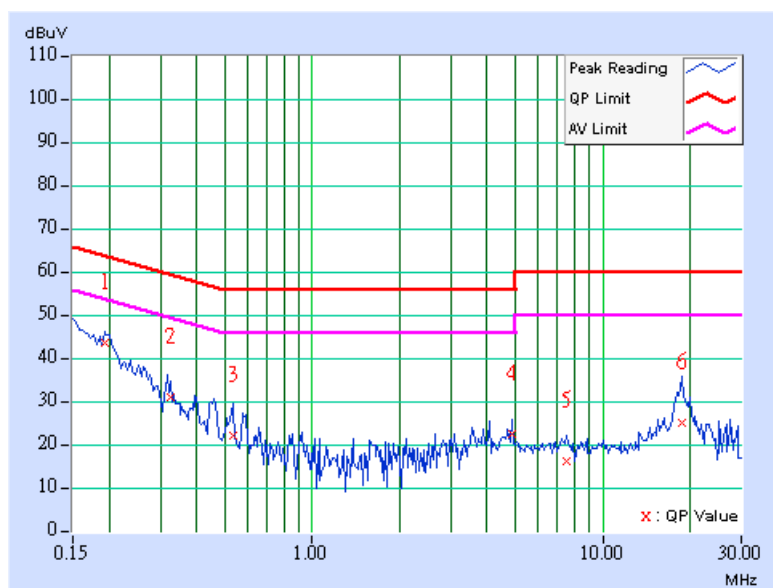
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value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



EUT	Notebook PC (with wireless card: Intel WM3B2200BG)	MODEL	255II1(with wireless card: Intel WM3B2200BG)
CHANNEL	6	6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	PHASE	Neutral (N)
ENVIRONMENTAL CONDITIONS	24 deg. C, 64% RH, 991 hPa	TESTED BY: Leo Hung	

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	0.193	0.11	43.02	-	43.13	-	63.91	53.91	-20.78	-
2	0.327	0.11	30.47	-	30.58	-	59.52	49.52	-28.93	-
3	0.531	0.12	21.70	-	21.82	-	56.00	46.00	-34.18	-
4	4.867	0.22	22.06	-	22.28	-	56.00	46.00	-33.72	-
5	7.496	0.28	15.51	-	15.79	-	60.00	50.00	-44.21	-
6	18.715	0.69	24.44	-	25.13	-	60.00	50.00	-34.87	-

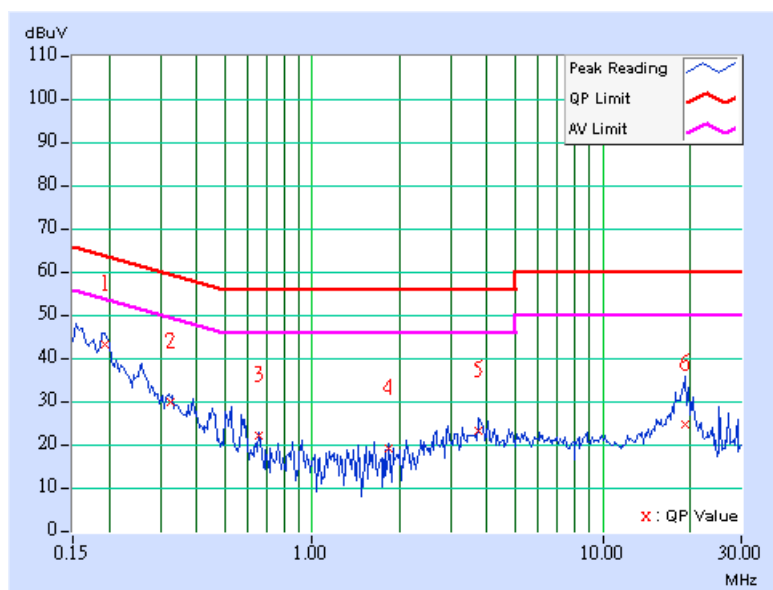
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value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



EUT	Notebook PC (with wireless card: Intel WM3B2200BG)	MODEL	255II1(with wireless card: Intel WM3B2200BG)
CHANNEL	11	6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	24 deg. C, 64% RH, 991 hPa	TESTED BY: Leo Hung	

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	0.193	0.12	42.34	-	42.46	-	63.91	53.91	-21.45	-
2	0.327	0.12	28.87	-	28.99	-	59.53	49.53	-30.53	-
3	0.658	0.13	21.06	-	21.19	-	56.00	46.00	-34.81	-
4	1.844	0.16	18.25	-	18.41	-	56.00	46.00	-37.59	-
5	3.754	0.20	22.47	-	22.67	-	56.00	46.00	-33.33	-
6	19.207	0.98	23.91	-	24.89	-	60.00	50.00	-35.11	-

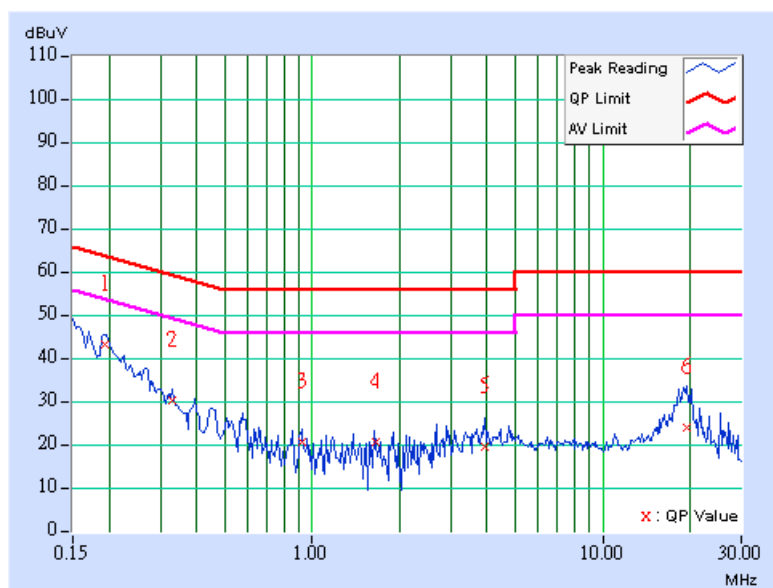
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value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



EUT	Notebook PC (with wireless card: Intel WM3B2200BG)	MODEL	255II1(with wireless card: Intel WM3B2200BG)
CHANNEL	11	6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	PHASE	Netural (N)
ENVIRONMENTAL CONDITIONS	24 deg. C, 64% RH, 991 hPa	TESTED BY: Leo Hung	

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	0.193	0.11	42.57	-	42.68	-	63.90	53.90	-21.22	-
2	0.330	0.11	29.71	-	29.82	-	59.46	49.46	-29.63	-
3	0.920	0.14	20.14	-	20.28	-	56.00	46.00	-35.72	-
4	1.646	0.16	20.08	-	20.24	-	56.00	46.00	-35.76	-
5	3.926	0.20	18.83	-	19.03	-	56.00	46.00	-36.97	-
6	19.566	0.70	23.21	-	23.91	-	60.00	50.00	-36.09	-

- 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	ESIB7	100188	Jan. 13, 2005
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100039	Dec. 15, 2004
BILOG Antenna SCHWARZBECK	VULB9168	9168-157	Feb. 03, 2005
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-407	Feb. 03, 2005
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA 9170241	Feb. 23, 2005
Preamplifier Agilent	8449B	3008A01961	Jan. 22, 2005
Preamplifier Agilent	8447D	2944A10629	Jan. 14, 2005
RF signal cable HUBER+SUHNER	SUCOFLEX 104	218182/4	Mar. 04, 2005
RF signal cable HUBER+SUHNER	SUCOFLEX 104	218194/4	Mar. 04, 2005
Software ADT.	ADT_Radiated_V5.14	NA	NA
Antenna Tower ADT.	AT100	AT93021702	NA
Turn Table ADT.	TT100.	TT93021702	NA
Controller ADT.	SC100.	SC93021702	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 1.
 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 IC4924-2.



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 3 meter semi-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.

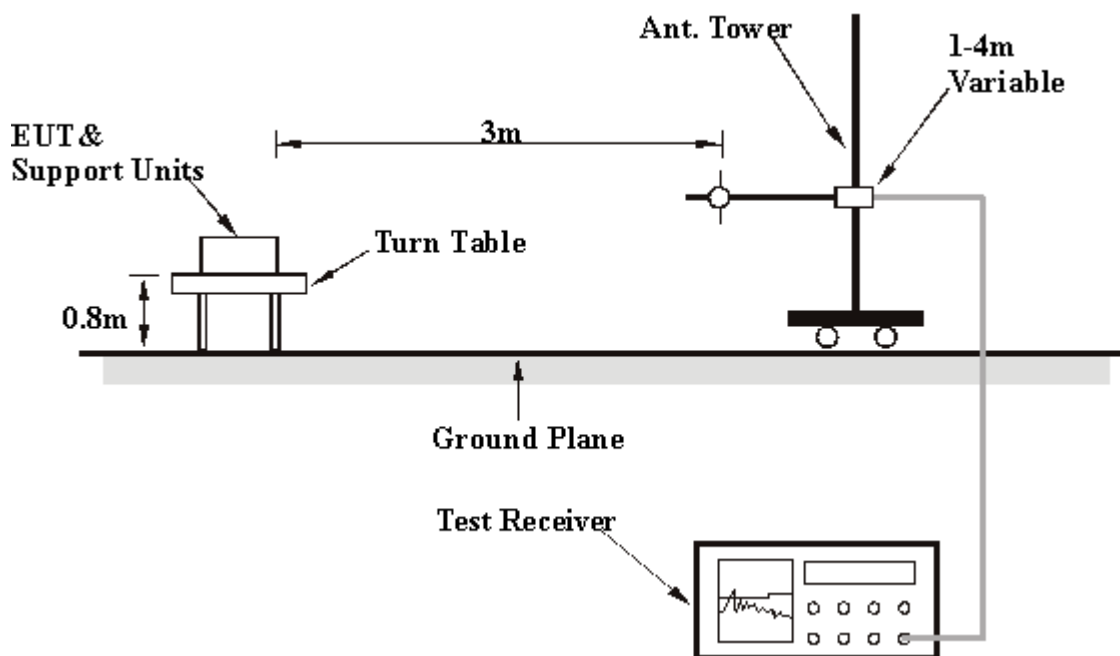
NOTE:

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

EUT	Notebook PC (with wireless card: Intel WM3B2200BG)	MODEL	255II1(with wireless card: Intel WM3B2200BG)
CHANNEL	11	FREQUENCY RANGE	Below 1000 MHz
INPUT POWER (SYSTEM)	120 Vac, 60Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	24 deg. C, 62% RH, 991 hPa	TESTED BY: Match Tsui	

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	35.83	31.90 QP	40.00	-8.10	1.50 H	340	17.33	14.57
2	66.93	37.69 QP	40.00	-2.31	1.00 H	298	24.76	12.93
3	119.42	35.00 QP	43.50	-8.50	1.25 H	136	22.03	12.97
4	197.17	32.74 QP	43.50	-10.76	1.25 H	148	21.13	11.61
5	319.64	37.59 QP	46.00	-8.41	1.25 H	313	22.64	14.95
6	387.68	35.46 QP	46.00	-10.54	1.00 H	328	18.98	16.48
7	445.99	39.85 QP	46.00	-6.15	1.00 H	310	21.89	17.96
8	453.77	40.31 QP	46.00	-5.69	1.00 H	346	22.19	18.12
9	494.59	38.70 QP	46.00	-7.30	1.00 H	307	20.04	18.66
10	527.64	33.84 QP	46.00	-12.16	1.00 H	298	14.58	19.26
11	560.68	33.75 QP	46.00	-12.25	1.00 H	307	13.77	19.97
12	593.73	35.20 QP	46.00	-10.80	1.75 H	304	14.36	20.84
13	803.67	33.83 QP	46.00	-12.17	1.25 H	259	9.98	23.85
14	858.10	33.25 QP	46.00	-12.75	1.00 H	253	8.91	24.34
15	906.69	36.57 QP	46.00	-9.43	1.25 H	16	11.39	25.18
16	924.19	38.39 QP	46.00	-7.61	1.00 H	259	13.02	25.37

- 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	Notebook PC (with wireless card: Intel WM3B2200BG)	MODEL	255II1(with wireless card: Intel WM3B2200BG)
CHANNEL	11	FREQUENCY RANGE	Below 1000 MHz
INPUT POWER (SYSTEM)	120 Vac, 60Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	24 deg. C, 62% RH, 991 hPa	TESTED BY: Match Tsui	

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	39.72	29.84 QP	40.00	-10.16	1.00 V	139	14.66	15.18
2	66.93	37.73 QP	40.00	-2.27	1.00 V	337	24.80	12.93
3	119.42	39.09 QP	43.50	-4.41	1.25 V	10	26.12	12.97
4	160.24	31.46 QP	43.50	-12.04	1.00 V	259	16.59	14.87
5	197.17	34.72 QP	43.50	-8.78	2.00 V	169	23.11	11.61
6	323.53	38.83 QP	46.00	-7.17	1.25 V	295	23.79	15.04
7	387.68	35.54 QP	46.00	-10.46	1.25 V	328	19.06	16.48
8	444.05	37.41 QP	46.00	-8.59	1.00 V	337	19.50	17.91
9	453.77	40.80 QP	46.00	-5.20	1.00 V	346	22.68	18.12
10	461.54	39.15 QP	46.00	-6.85	1.00 V	322	20.93	18.22
11	494.59	38.62 QP	46.00	-7.38	1.00 V	304	19.96	18.66
12	560.68	33.53 QP	46.00	-12.47	1.00 V	220	13.56	19.97
13	599.56	40.41 QP	46.00	-5.59	1.00 V	82	19.41	21.00
14	803.67	33.63 QP	46.00	-12.37	1.25 V	259	9.78	23.85
15	906.69	35.32 QP	46.00	-10.68	1.25 V	10	10.14	25.18
16	924.19	38.51 QP	46.00	-7.49	1.00 V	265	13.14	25.37

- 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	Notebook PC (with wireless card: Intel WM3B2200BG)	MODEL	255II1(with wireless card: Intel WM3B2200BG)
CHANNEL	1	TEST MODE	A
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	FREQUENCY RANGE	1~25 GHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 65% RH, 991 hPa	DETECTOR FUNCTION	Peak (PK) Average (AV)
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	2312.00	49.00 PK	74.00	-25.00	1.48 H	178	17.58	31.42
1	2312.00	42.64 AV	54.00	-11.36	1.48 H	178	11.22	31.42
2	2387.20	47.51 PK	74.00	-26.49	1.16 H	176	15.91	31.60
2	2387.20	38.80 AV	54.00	-15.20	1.16 H	176	7.20	31.60
3	*2412.00	105.33 PK			1.16 H	176	73.63	31.70
3	*2412.00	97.22 AV			1.16 H	176	65.52	31.70
4	4824.00	49.36 PK	74.00	-24.64	1.24 H	222	11.78	37.58
4	4824.00	38.69 AV	54.00	-15.31	1.24 H	222	1.11	37.58
5	9648.00	62.32 PK	74.00	-11.68	1.08 H	169	13.95	48.37
5	9648.00	52.00 AV	54.00	-2.00	1.08 H	169	3.63	48.37

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	Notebook PC (with wireless card: Intel WM3B2200BG)	MODEL	255II1(with wireless card: Intel WM3B2200BG)
CHANNEL	1	TEST MODE	A
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	FREQUENCY RANGE	1~25 GHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 65% RH, 991 hPa	DETECTOR FUNCTION	Peak (PK) Average (AV)
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	2312.00	48.68 PK	74.00	-25.32	1.16 V	37	17.26	31.42
1	2312.00	42.85 AV	54.00	-11.15	1.16 V	37	11.43	31.42
2	2387.20	51.86 PK	74.00	-22.14	1.10 V	146	20.26	31.60
2	2387.20	43.82 AV	54.00	-10.18	1.10 V	146	12.22	31.60
3	*2412.00	110.28 PK			1.10 V	146	78.58	31.70
3	*2412.00	102.24 AV			1.10 V	146	70.54	31.70
4	4824.00	48.56 PK	74.00	-25.44	1.00 V	130	10.98	37.58
4	4824.00	36.98 AV	54.00	-18.02	1.00 V	130	-0.60	37.58
5	9648.00	61.90 PK	74.00	-12.10	1.25 V	190	13.53	48.37
5	9648.00	51.50 AV	54.00	-2.50	1.25 V	190	3.13	48.37

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	Notebook PC (with wireless card: Intel WM3B2200BG)	MODEL	255II1(with wireless card: Intel WM3B2200BG)
CHANNEL	6	TEST MODE	A
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	FREQUENCY RANGE	1~25 GHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 65% RH, 991 hPa	DETECTOR FUNCTION	Peak(PK) Average (AV)
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	2336.00	48.64 PK	74.00	-25.36	1.00 H	210	17.16	31.48
1	2336.00	42.21 AV	54.00	-11.79	1.00 H	210	10.73	31.48
2	*2437.00	105.53 PK			1.16 H	176	73.68	31.85
2	*2437.00	97.36 AV			1.16 H	176	65.51	31.85
3	4874.00	49.31 PK	74.00	-24.69	1.05 H	273	11.65	37.66
3	4874.00	38.56 AV	54.00	-15.44	1.05 H	273	0.90	37.66
4	9748.00	61.97 PK	74.00	-12.03	1.08 H	192	13.53	48.44
4	9748.00	52.97 AV	54.00	-1.03	1.08 H	192	4.53	48.44

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	Notebook PC (with wireless card: Intel WM3B2200BG)	MODEL	255II1(with wireless card: Intel WM3B2200BG)
CHANNEL	6	TEST MODE	A
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	FREQUENCY RANGE	1~25 GHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 65% RH, 991 hPa	DETECTOR FUNCTION	Peak(PK) Average (AV)
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	2336.00	51.44 PK	74.00	-22.56	1.09 V	178	19.96	31.48
1	2336.00	45.75 AV	54.00	-8.25	1.09 V	178	14.27	31.48
2	*2437.00	110.17 PK			1.07 V	146	78.32	31.85
2	*2437.00	102.68 AV			1.07 V	146	70.83	31.85
3	4874.00	51.52 PK	74.00	-22.48	1.00 V	150	13.86	37.66
3	4874.00	38.94 AV	54.00	-15.06	1.00 V	150	1.28	37.66
4	9748.00	63.66 PK	90.17	-26.51	1.10 V	193	15.22	48.44
4	9748.00	55.47 AV	82.68	-27.21	1.10 V	193	7.03	48.44

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	Notebook PC (with wireless card: Intel WM3B2200BG)	MODEL	255II1(with wireless card: Intel WM3B2200BG)
CHANNEL	11	TEST MODE	A
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	FREQUENCY RANGE	1~25 GHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 65% RH, 991 hPa	DETECTOR FUNCTION	Peak (PK) Average (AV)
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	2200.00	45.36 PK	74.00	-28.64	1.35 H	244	14.55	30.81
1	2200.00	34.44 AV	54.00	-19.56	1.35 H	244	3.63	30.81
2	2288.00	46.25 PK	74.00	-27.75	1.20 H	198	14.93	31.32
2	2288.00	37.64 AV	54.00	-16.36	1.20 H	198	6.32	31.32
3	2360.00	46.36 PK	74.00	-27.64	1.17 H	200	14.83	31.53
3	2360.00	36.88 AV	54.00	-17.12	1.17 H	200	5.35	31.53
4	*2462.00	105.49 PK			1.13 H	171	73.49	32.00
4	*2462.00	97.66 AV			1.13 H	171	65.66	32.00
5	2483.50	48.08 PK	74.00	-25.92	1.13 H	171	15.95	32.13
5	2483.50	40.25 AV	54.00	-13.75	1.13 H	171	8.12	32.13
6	4924.00	49.62 PK	74.00	-24.38	1.10 H	205	11.88	37.74
6	4924.00	38.04 AV	54.00	-15.96	1.10 H	205	0.30	37.74
7	9848.00	61.73 PK	85.49	-23.76	1.00 H	244	13.07	48.66
7	9848.00	54.19 AV	77.66	-23.47	1.00 H	244	5.53	48.66

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	Notebook PC (with wireless card: Intel WM3B2200BG)	MODEL	255II1(with wireless card: Intel WM3B2200BG)
CHANNEL	11	TEST MODE	A
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	FREQUENCY RANGE	1~25 GHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 65% RH, 991 hPa	DETECTOR FUNCTION	Peak (PK) Average (AV)
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	2200.00	47.42 PK	74.00	-26.58	1.47 V	154	16.61	30.81
1	2200.00	37.97 AV	54.00	-16.03	1.47 V	154	7.16	30.81
2	2287.80	48.89 PK	74.00	-25.11	1.68 V	155	17.57	31.32
2	2287.80	40.15 AV	54.00	-13.85	1.68 V	155	10.56	31.32
3	2360.00	48.97 PK	74.00	-25.03	1.38 V	152	17.44	31.53
3	2360.00	42.09 AV	54.00	-11.91	1.38 V	152	10.56	31.53
4	*2462.00	111.29 PK			1.04 V	156	79.29	32.00
4	*2462.00	102.46 AV			1.04 V	156	70.46	32.00
5	2483.50	53.88 PK	74.00	-20.12	1.04 V	156	21.75	32.13
5	2483.50	45.05 AV	54.00	-8.95	1.04 V	156	12.92	32.13
6	4924.00	52.09 PK	74.00	-21.91	1.06 V	136	14.35	37.74
6	4924.00	40.04 AV	54.00	-13.96	1.06 V	136	2.30	37.74
7	9848.00	64.56 PK	91.29	-26.73	1.36 V	194	15.90	48.66
7	9848.00	56.77 AV	82.46	-25.69	1.36 V	194	8.11	48.66

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	Notebook PC (with wireless card: Intel WM3B2200BG)	MODEL	255II1(with wireless card: Intel WM3B2200BG)
CHANNEL	1	TEST MODE	B
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	FREQUENCY RANGE	1~25 GHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 65% RH, 991 hPa	DETECTOR FUNCTION	Peak (PK) Average (AV)
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	1000.00	44.67 PK	74.00	-29.33	1.48 H	313	17.12	27.55
1	1000.00	34.84 AV	54.00	-19.16	1.48 H	313	7.29	27.55
2	1056.25	40.63 PK	74.00	-33.37	1.38 H	100	12.87	27.76
2	1056.25	30.74 AV	54.00	-23.26	1.38 H	100	2.98	27.76
3	1122.12	41.98 PK	74.00	-32.02	1.28 H	241	13.93	28.04
3	1122.12	33.30 AV	54.00	-20.70	1.28 H	241	5.25	28.04
4	2210.66	45.03 PK	74.00	-28.97	1.05 H	152	14.16	30.87
4	2210.66	37.07 AV	54.00	-16.93	1.05 H	152	6.20	30.87
5	2312.00	51.33 PK	74.00	-22.67	1.50 H	181	19.91	31.42
5	2312.00	46.25 AV	54.00	-7.75	1.50 H	181	14.83	31.42
6	2390.00	55.07 PK	74.00	-18.93	1.24 H	225	23.46	31.61
6	2390.00	43.65 AV	54.00	-10.35	1.24 H	225	12.04	31.61
7	*2412.00	100.44 PK			1.24 H	225	68.74	31.70
7	*2412.00	89.82 AV			1.24 H	225	58.12	31.70
8	3216.00	48.24 PK	74.00	-25.76	1.06 H	179	14.46	33.78
8	3216.00	41.10 AV	54.00	-12.90	1.06 H	179	7.32	33.78

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	Notebook PC (with wireless card: Intel WM3B2200BG)	MODEL	255II1(with wireless card: Intel WM3B2200BG)
CHANNEL	1	TEST MODE	B
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	FREQUENCY RANGE	1~25 GHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 65% RH, 991 hPa	DETECTOR FUNCTION	Peak (PK) Average (AV)
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	1000.00	49.56 PK	74.00	-24.44	1.13 V	69	22.01	27.55
1	1000.00	33.61 AV	54.00	-30.39	1.13 V	69	6.06	27.55
2	1056.16	42.07 PK	74.00	-31.93	1.14 V	75	14.31	27.76
2	1056.16	32.04 AV	54.00	-21.96	1.14 V	75	4.28	27.76
3	1122.18	41.72 PK	74.00	-32.28	1.26 V	342	13.67	28.04
3	1122.18	32.42 AV	54.00	-21.58	1.26 V	342	4.37	28.04
4	2210.64	47.34 PK	74.00	-26.66	1.21 V	44	16.47	30.87
4	2210.64	40.70 AV	54.00	-13.30	1.21 V	44	9.83	30.87
5	2312.00	51.85 PK	74.00	-22.15	1.11 V	49	20.43	31.42
5	2312.00	47.94 AV	54.00	-6.06	1.11 V	49	16.52	31.42
6	2390.00	60.50 PK	74.00	-13.50	1.04 V	169	28.89	31.61
6	2390.00	50.62 AV	54.00	-3.38	1.04 V	169	19.01	31.61
7	*2412.00	105.87 PK			1.04 V	169	74.17	31.70
7	*2412.00	95.99 AV			1.04 V	169	64.29	31.70
8	3216.00	50.91 PK	74.00	-23.09	1.25 V	179	17.13	33.78
8	3216.00	46.92 AV	54.00	-7.08	1.25 V	179	13.14	33.78

REARKS:

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	Notebook PC (with wireless card: Intel WM3B2200BG)	MODEL	255II1(with wireless card: Intel WM3B2200BG)
CHANNEL	6	TEST MODE	B
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	FREQUENCY RANGE	1~25 GHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 65% RH, 991 hPa	DETECTOR FUNCTION	Peak (PK) Average (AV)
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	1122.17	42.63 PK	74.00	-31.37	1.26 H	122	14.58	28.04
1	1122.17	35.11 AV	54.00	-18.89	1.26 H	122	7.06	28.04
2	2229.30	47.78 PK	74.00	-26.22	1.07 H	269	16.80	30.98
2	2229.30	42.66 AV	54.00	-11.34	1.07 H	269	11.68	30.98
3	2330.64	54.57 PK	74.00	-19.43	1.01 H	212	23.11	31.46
3	2330.64	51.02 AV	54.00	-2.98	1.01 H	212	19.56	31.46
4	*2437.00	103.62 PK			1.40 H	197	71.77	31.85
4	*2437.00	93.52 AV			1.40 H	197	61.67	31.85
5	3242.74	48.91 PK	74.00	-25.09	1.04 H	177	15.07	33.84
5	3242.74	41.57 AV	54.00	-12.43	1.04 H	177	7.73	33.84

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	Notebook PC (with wireless card: Intel WM3B2200BG)	MODEL	255II1(with wireless card: Intel WM3B2200BG)
CHANNEL	6	TEST MODE	B
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	FREQUENCY RANGE	1~25 GHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 65% RH, 991 hPa	DETECTOR FUNCTION	Peak (PK) Average (AV)
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	1122.00	42.23 PK	74.00	-31.77	1.27 V	345	14.19	28.04
1	1122.00	33.81 AV	54.00	-20.19	1.27 V	345	5.77	28.04
2	2229.30	49.21 PK	74.00	-24.79	1.41 V	174	18.23	30.98
2	2229.30	44.89 AV	54.00	-9.11	1.41 V	174	13.91	30.98
3	2330.64	55.67 PK	74.00	-18.33	1.34 V	169	24.21	31.46
3	2330.64	52.55 AV	54.00	-1.45	1.34 V	169	21.09	31.46
4	*2437.00	110.14 PK			1.06 V	155	78.29	31.85
4	*2437.00	99.76 AV			1.06 V	155	67.91	31.85
5	3242.74	52.15 PK	74.00	-21.85	1.34 V	169	18.31	33.84
5	3242.74	48.34 AV	54.00	-5.66	1.34 V	169	14.50	33.84

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	Notebook PC (with wireless card: Intel WM3B2200BG)	MODEL	255II1(with wireless card: Intel WM3B2200BG)
CHANNEL	11	TEST MODE	B
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	FREQUENCY RANGE	1~25 GHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 65% RH, 991 hPa	DETECTOR FUNCTION	Peak (PK) Average (AV)
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	1000.00	46.87 PK	74.00	-27.13	1.34 H	119	19.32	27.55
1	1000.00	31.88 AV	54.00	-22.12	1.34 H	119	4.33	27.55
2	1056.20	41.11 PK	74.00	-32.89	1.31 H	100	13.35	27.76
2	1056.20	31.47 AV	54.00	-22.53	1.31 H	100	3.71	27.76
3	1122.22	42.78 PK	74.00	-31.22	1.28 H	240	14.73	28.04
3	1122.22	34.56 AV	54.00	-19.44	1.28 H	240	6.51	28.04
4	2257.00	47.41 PK	74.00	-26.59	1.40 H	272	16.27	31.14
4	2257.00	40.69 AV	54.00	-13.31	1.40 H	272	9.55	31.14
5	2288.00	49.84 PK	74.00	-24.16	1.22 H	193	18.52	31.32
5	2288.00	43.96 AV	54.00	-10.04	1.22 H	193	12.64	31.32
6	2360.00	50.45 PK	74.00	-23.55	1.01 H	217	18.92	31.53
6	2360.00	44.32 AV	54.00	-9.68	1.01 H	217	12.79	31.53
7	*2462.00	97.74 PK			1.20 H	210	65.74	32.00
7	*2462.00	87.67 AV			1.20 H	210	55.67	32.00
8	2483.50	53.86 PK	74.00	-20.14	1.20 H	210	21.73	32.13
8	2483.50	43.79 AV	54.00	-10.21	1.20 H	210	11.66	32.13
9	3282.66	48.52 PK	74.00	-25.48	1.03 H	182	14.59	33.94
9	3282.66	41.35 AV	54.00	-12.65	1.03 H	182	7.42	33.94

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	Notebook PC (with wireless card: Intel WM3B2200BG)	MODEL	255II1(with wireless card: Intel WM3B2200BG)
CHANNEL	11	TEST MODE	B
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	FREQUENCY RANGE	1~25 GHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 65% RH, 991 hPa	DETECTOR FUNCTION	Peak (PK) Average (AV)
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	1000.00	50.91 PK	74.00	-23.09	1.12 V	77	23.36	27.55
1	1000.00	33.81 AV	54.00	-20.19	1.12 V	77	6.26	27.55
2	1066.94	42.73 PK	74.00	-31.27	1.05 V	258	14.93	27.80
2	1066.94	35.48 AV	54.00	-18.52	1.05 V	258	7.68	27.80
3	2257.24	48.73 PK	74.00	-25.27	1.13 V	166	17.59	31.14
3	2257.24	43.01 AV	54.00	-10.99	1.13 V	166	11.87	31.14
4	2288.04	50.77 PK	74.00	-23.23	1.08 V	169	19.45	31.32
4	2288.04	44.82 AV	54.00	-9.18	1.08 V	169	13.50	31.32
5	2360.00	52.89 PK	74.00	-21.11	1.05 V	168	21.36	31.53
5	2360.00	47.11 AV	54.00	-6.89	1.05 V	168	15.58	31.53
6	*2462.00	104.88 PK			1.05 V	160	72.88	32.00
6	*2462.00	94.97 AV			1.05 V	160	62.97	32.00
7	2483.50	61.00 PK	74.00	-13.00	1.05 V	160	28.87	32.13
7	2483.50	61.09 AV	54.00	-2.91	1.05 V	160	18.96	32.13
8	3282.66	50.44 PK	74.00	-23.56	1.02 V	191	16.51	33.94
8	3282.66	45.28 AV	54.00	-8.726	1.02 V	191	11.35	33.94

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.

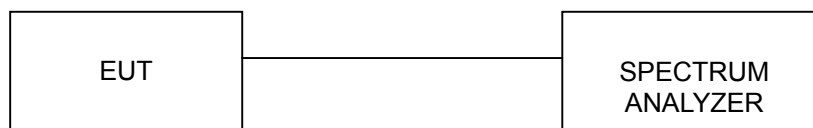
4.3.3 TEST PROCEDURE

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

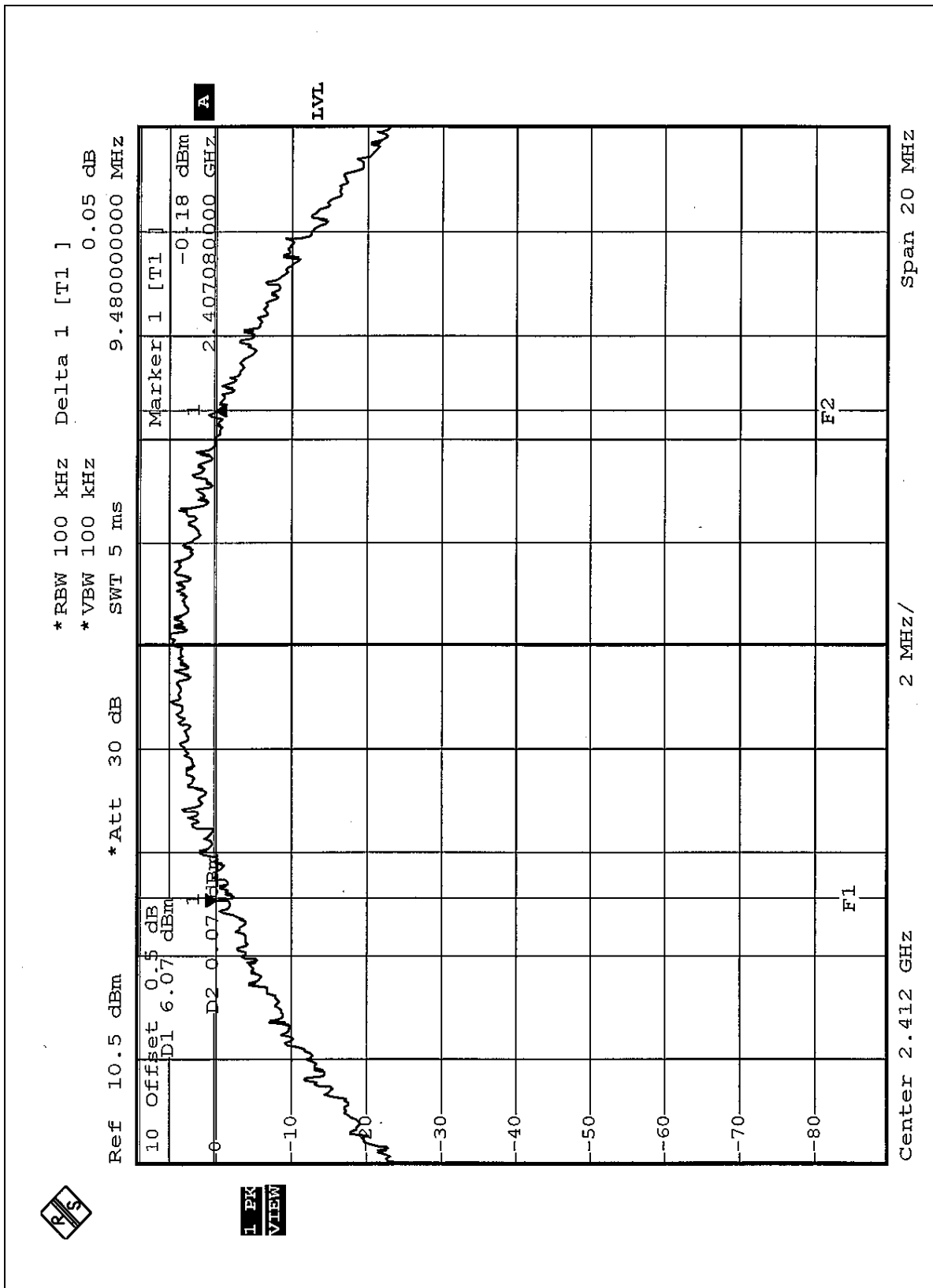
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.3.7 TEST RESULTS

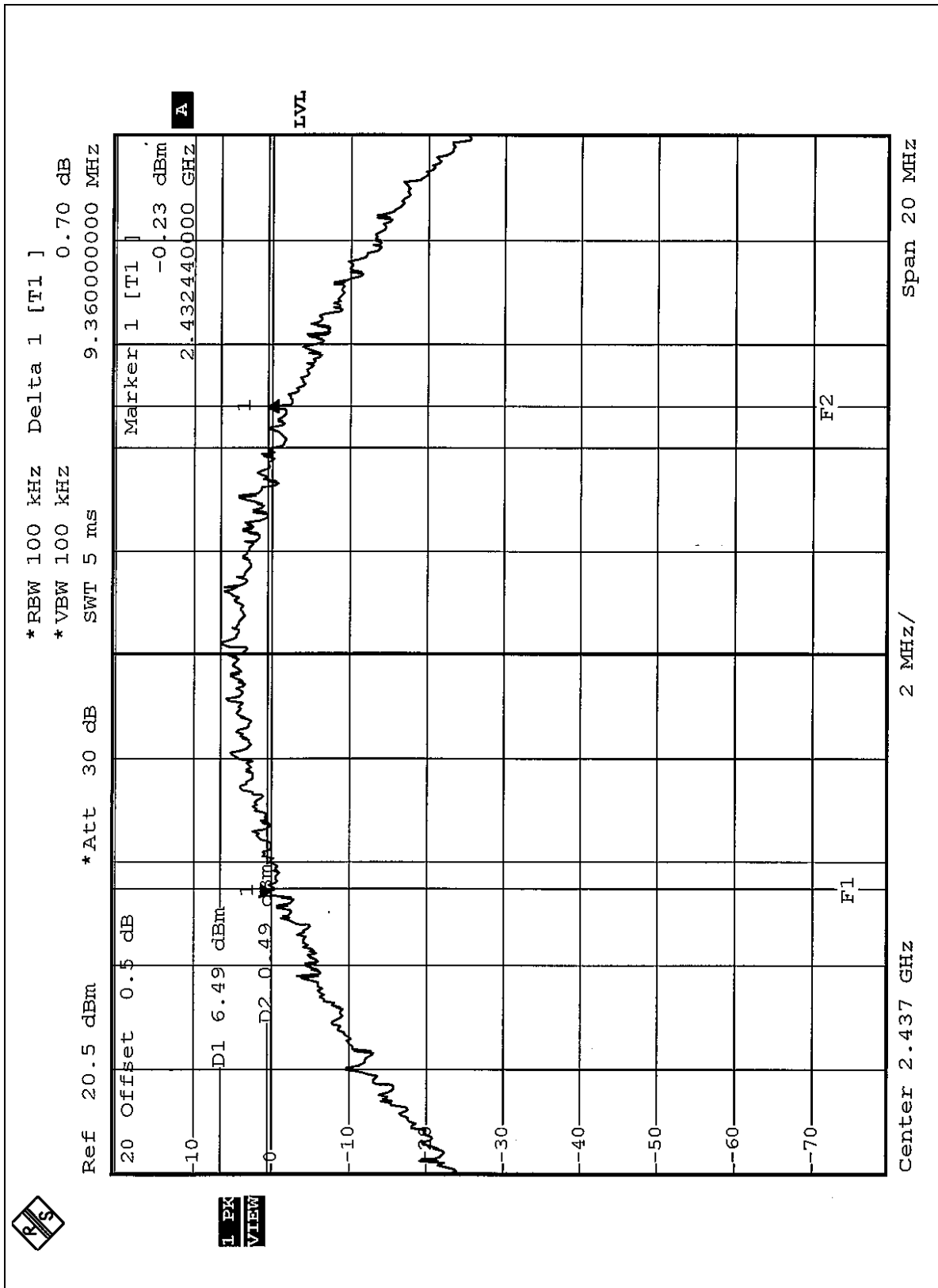
EUT	Notebook PC (with wireless card: Intel WM3B2200BG)	MODEL	255II1(with wireless card: Intel WM3B2200BG)
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	TEST MODE	A
ENVIRONMENTAL CONDITIONS	24 deg. C, 65% RH, 991 hPa	TESTED BY	Steven Lu

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	9.48	0.5	PASS
6	2437	9.36	0.5	PASS
11	2462	9.68	0.5	PASS

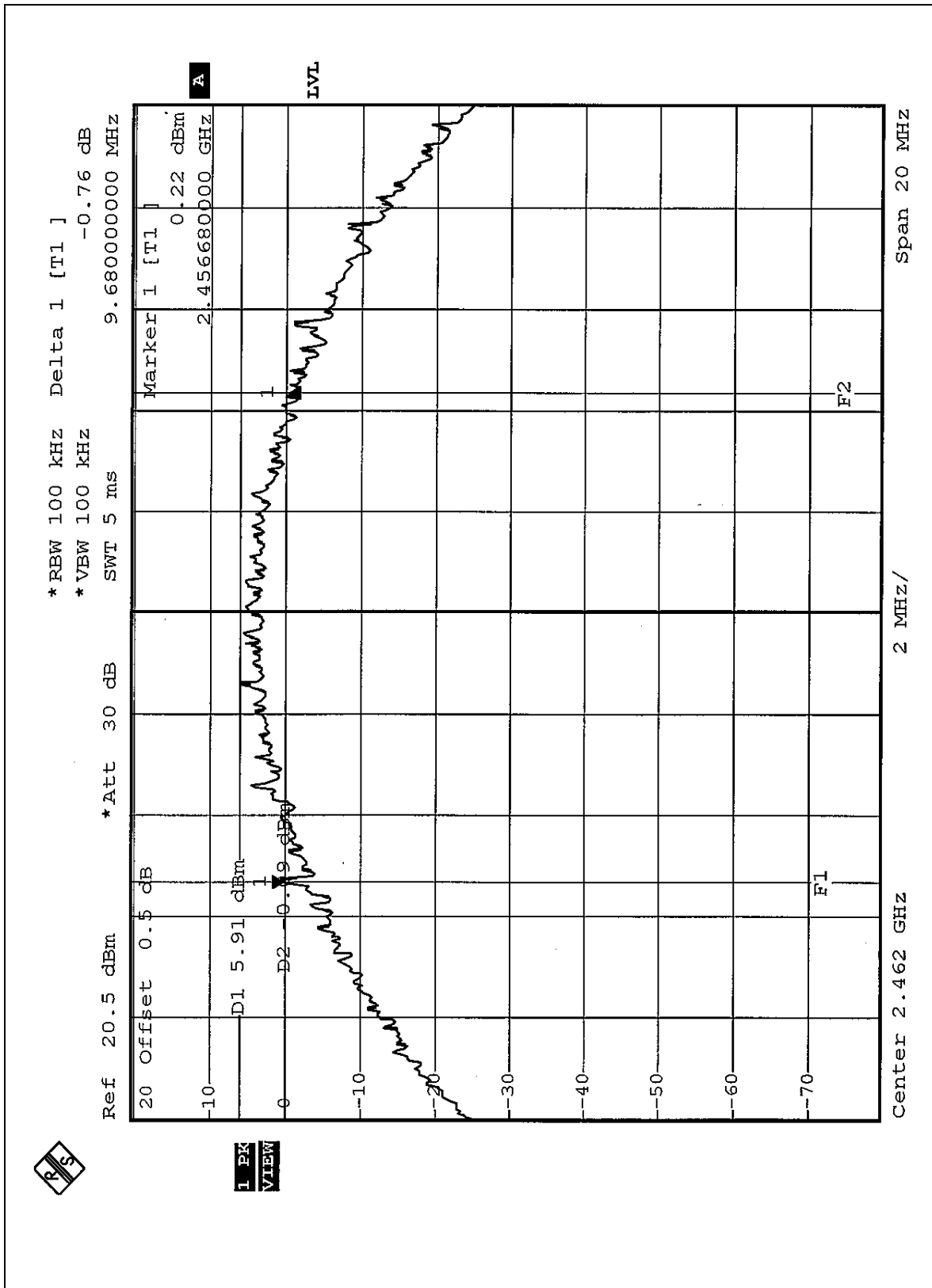
CH1



CH6



CH11

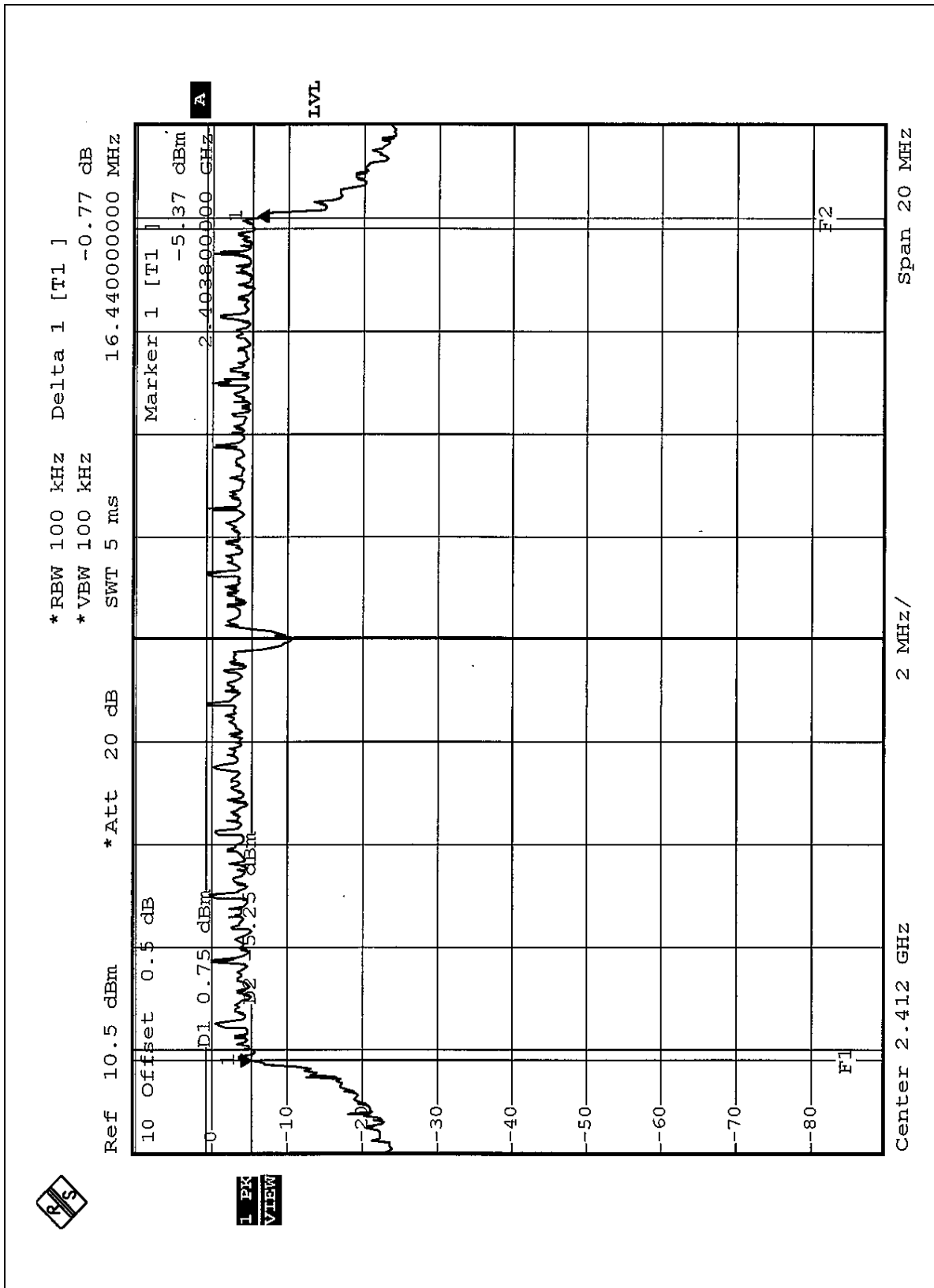




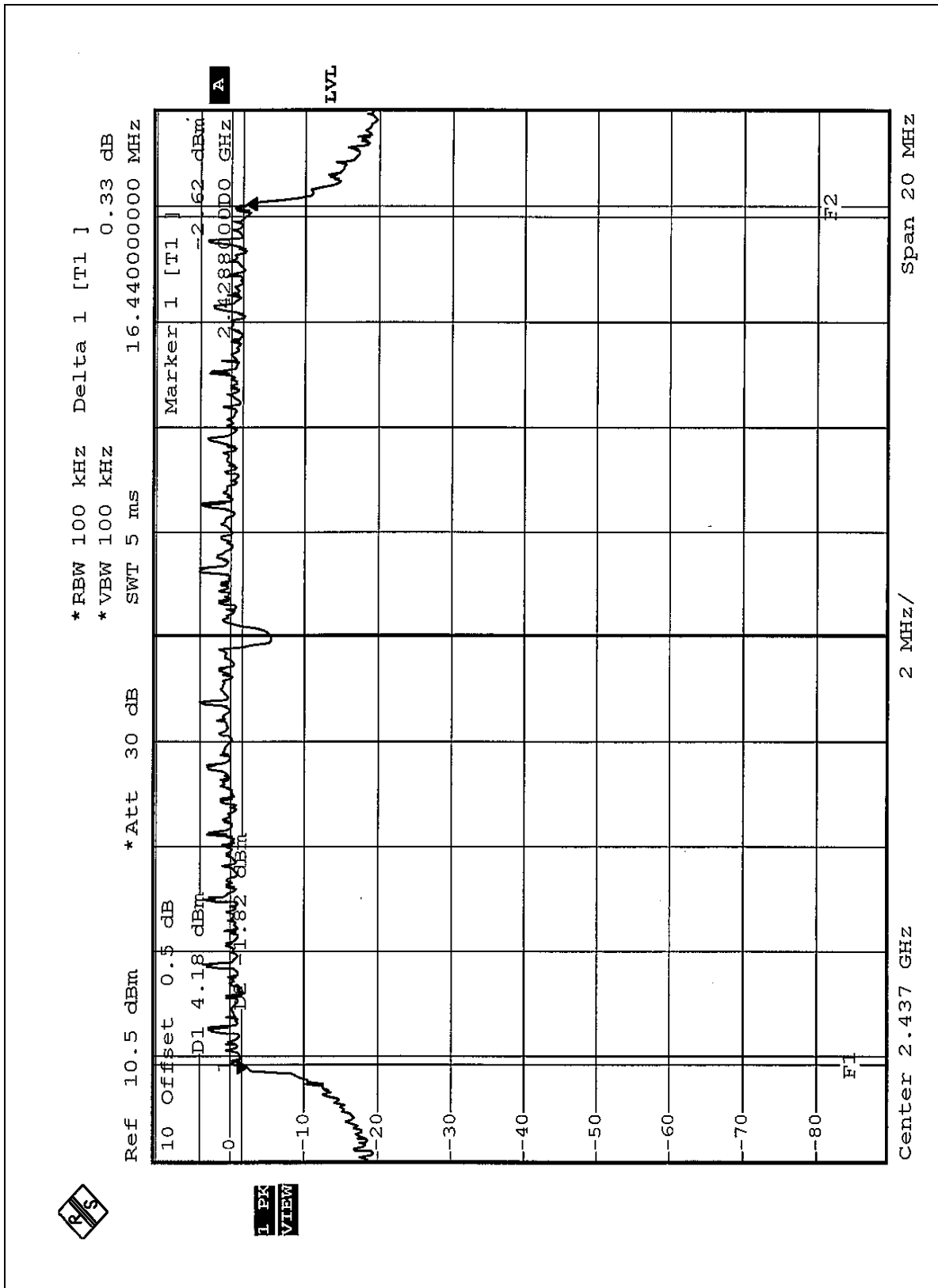
EUT	Notebook PC (with wireless card: Intel WM3B2200BG)	MODEL	255II1(with wireless card: Intel WM3B2200BG)
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	TEST MODE	B
ENVIRONMENTAL CONDITIONS	24 deg. C, 65% RH, 991 hPa	TESTED BY	Steven Lu

CHANNEL	CHANNEL FREQUENCY (MHz)	6 dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	16.44	0.5	PASS
6	2437	16.44	0.5	PASS
11	2462	16.44	0.5	PASS

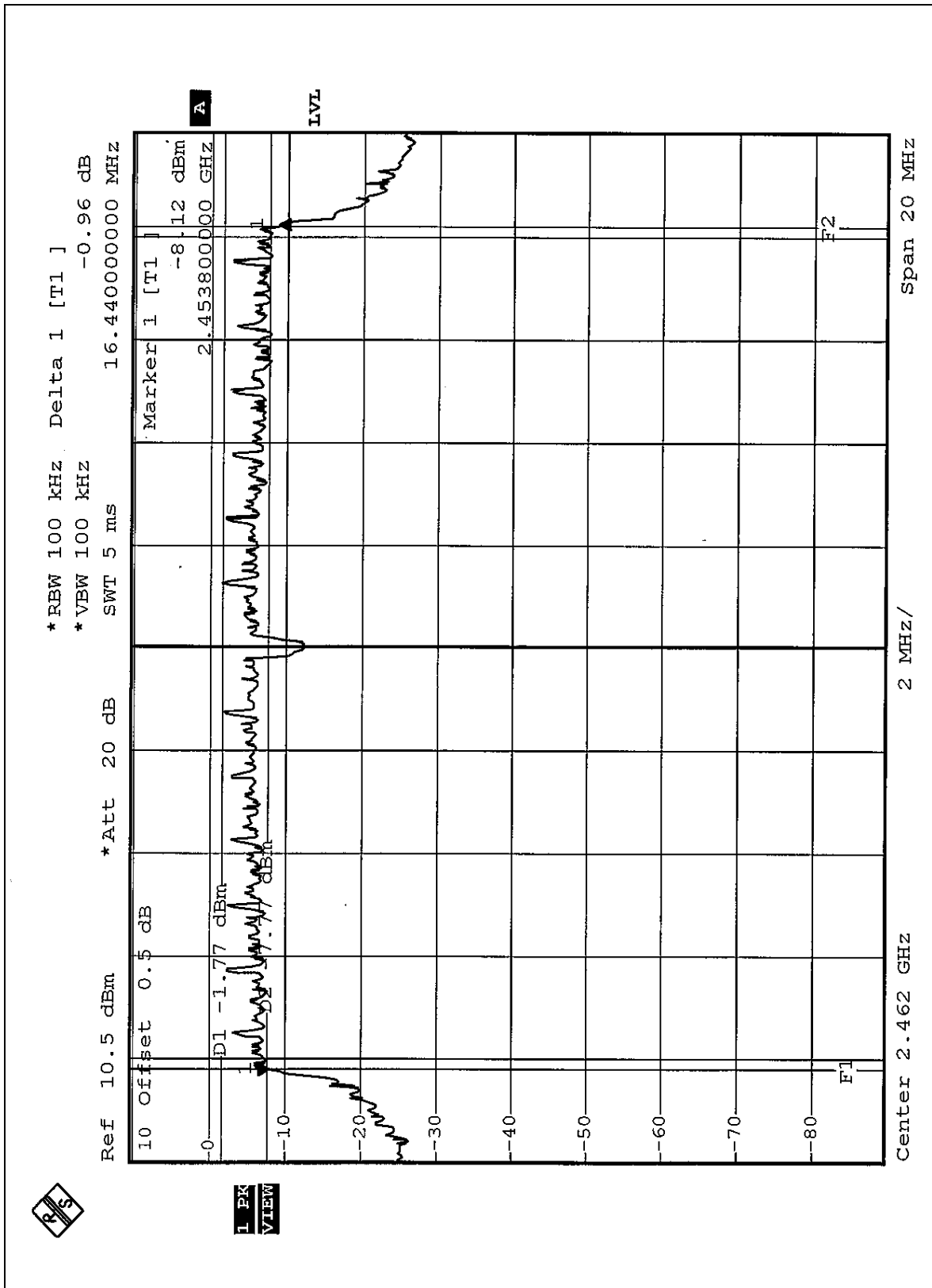
CH1



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
AGILENT SIGNAL GENERATOR	E8257C	MY43320668	Dec. 31, 2004
TEKTRONIX OSCILLOSCOPE	TDS 220	C019167	Feb. 1, 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.

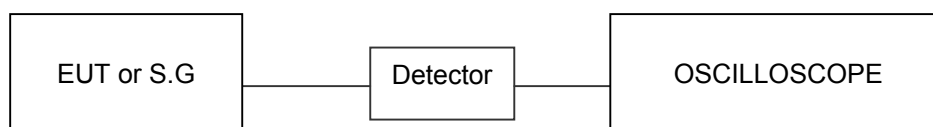
4.4.3 TEST PROCEDURES

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	Notebook PC (with wireless card: Intel WM3B2200BG)	MODEL	255II1(with wireless card: Intel WM3B2200BG)
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	TEST MODE	A
ENVIRONMENTAL CONDITIONS	24 deg. C, 65% RH, 991 hPa	TESTED BY	Steven Lu

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	16.00	30	PASS
6	2437	16.00	30	PASS
11	2462	16.00	30	PASS

EUT	Notebook PC (with wireless card: Intel WM3B2200BG)	MODEL	223II0(with wireless card : Intel WM3B2200BG)
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	TEST MODE	B
ENVIRONMENTAL CONDITIONS	24 deg. C, 65% RH, 991 hPa	TESTED BY	Steven Lu

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	16.00	30	PASS
6	2437	18.00	30	PASS
11	2462	14.00	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	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.

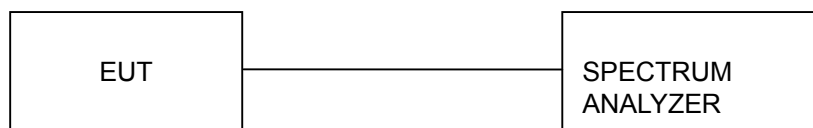
4.5.3 TEST PROCEDURE

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

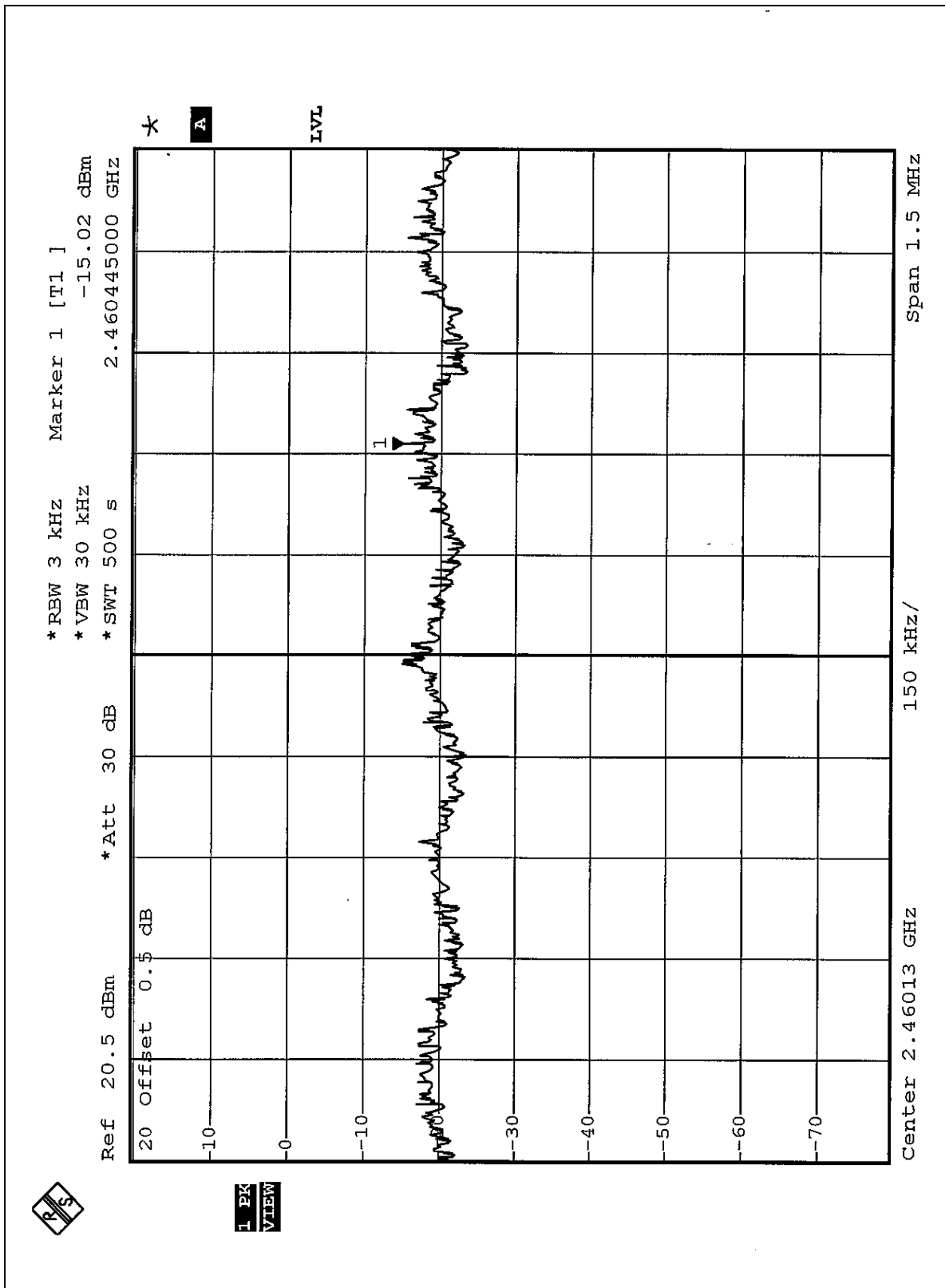
Same as 4.3.6

4.5.7 TEST RESULTS

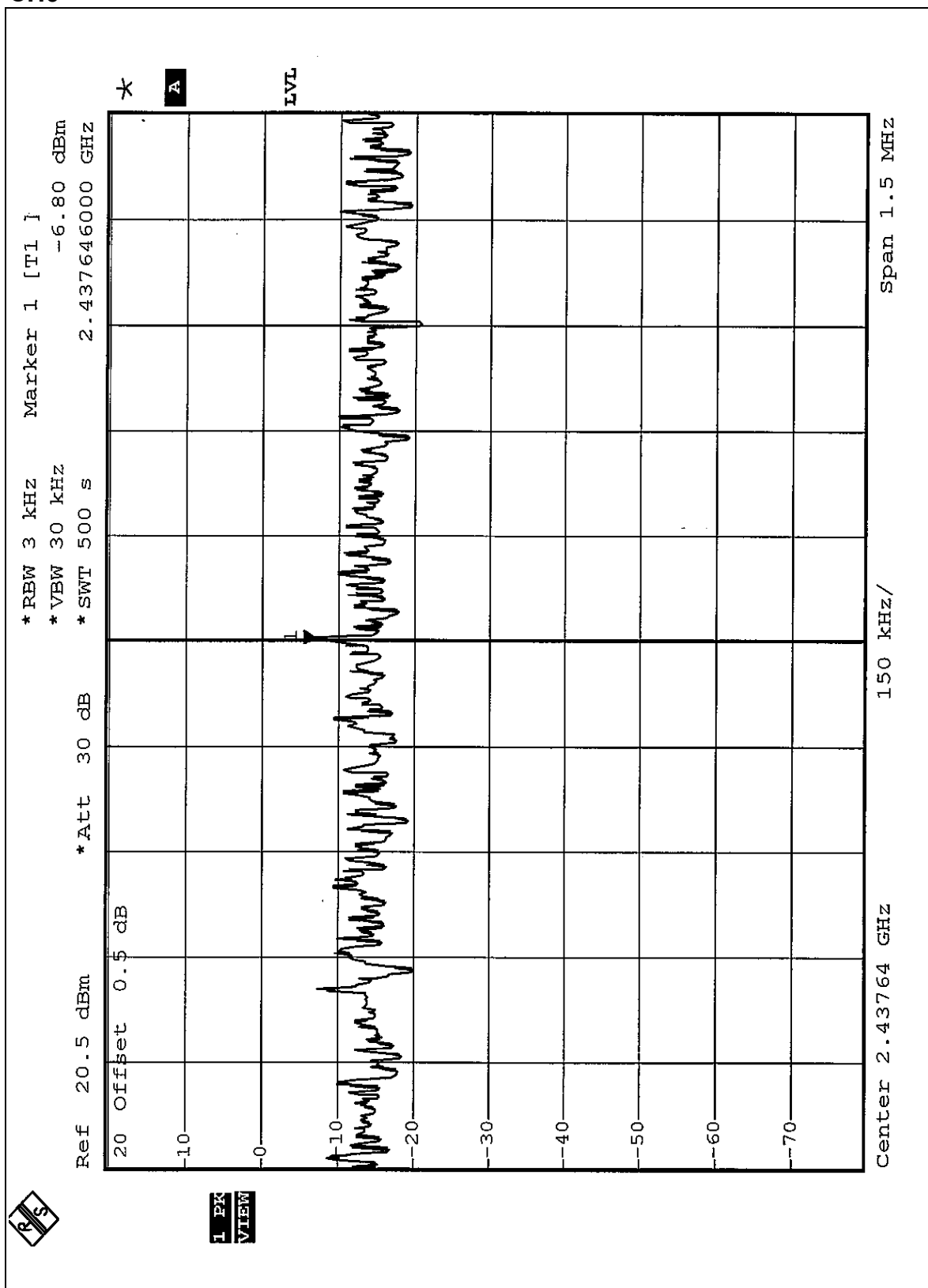
EUT	Notebook PC (with wireless card: Intel WM3B2200BG)	MODEL	255II1 (with wireless card: Intel WM3B2200BG)
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	TEST MODE	A
ENVIRONMENTAL CONDITIONS	24 deg. C, 65% RH, 991 hPa	TESTED BY	Steven Lu

CHANNEL NUMBER	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3KHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-6.92	8	PASS
6	2437	-6.80	8	PASS
11	2462	-7.22	8	PASS

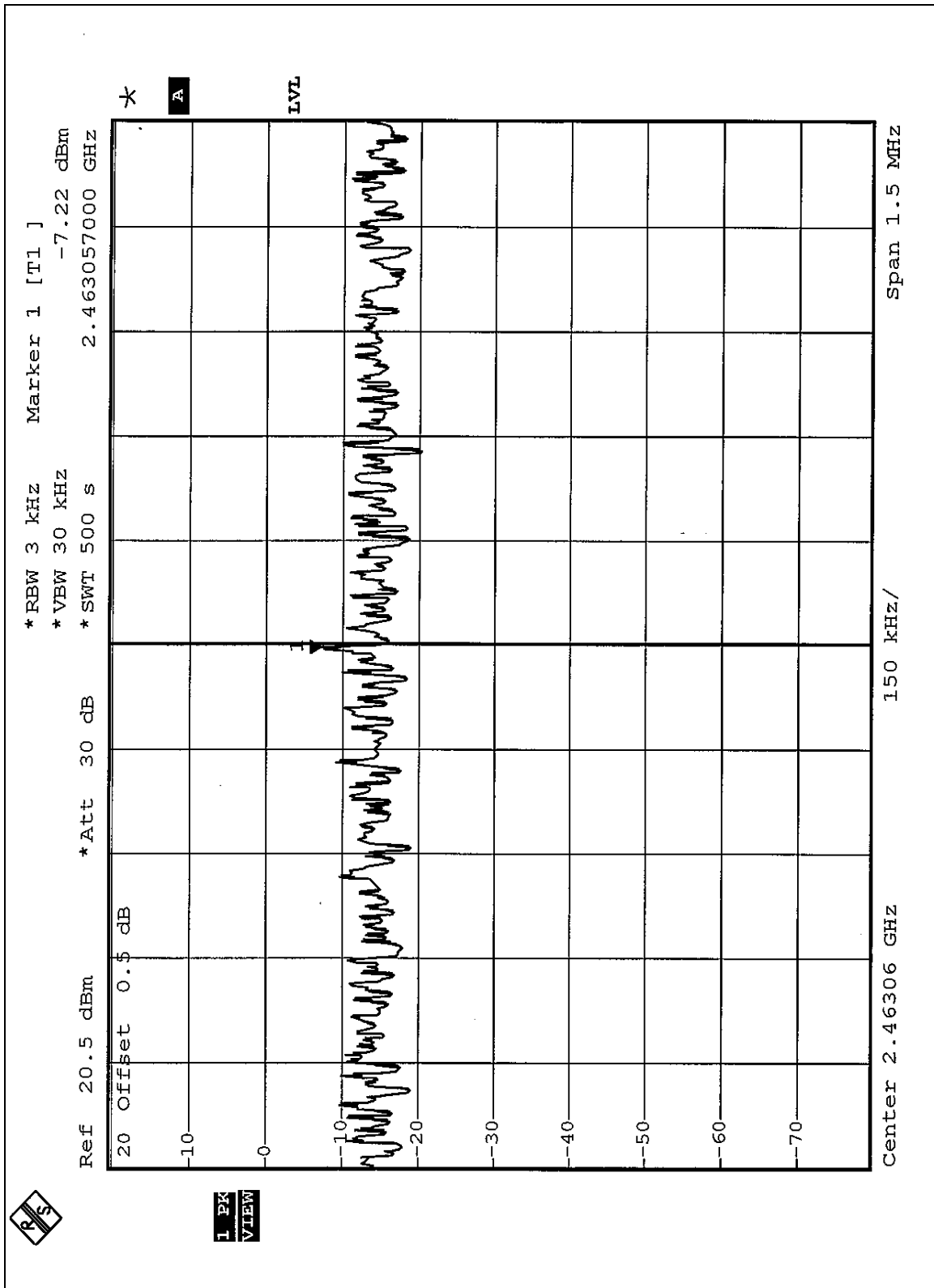
CH1



CH6



CH11

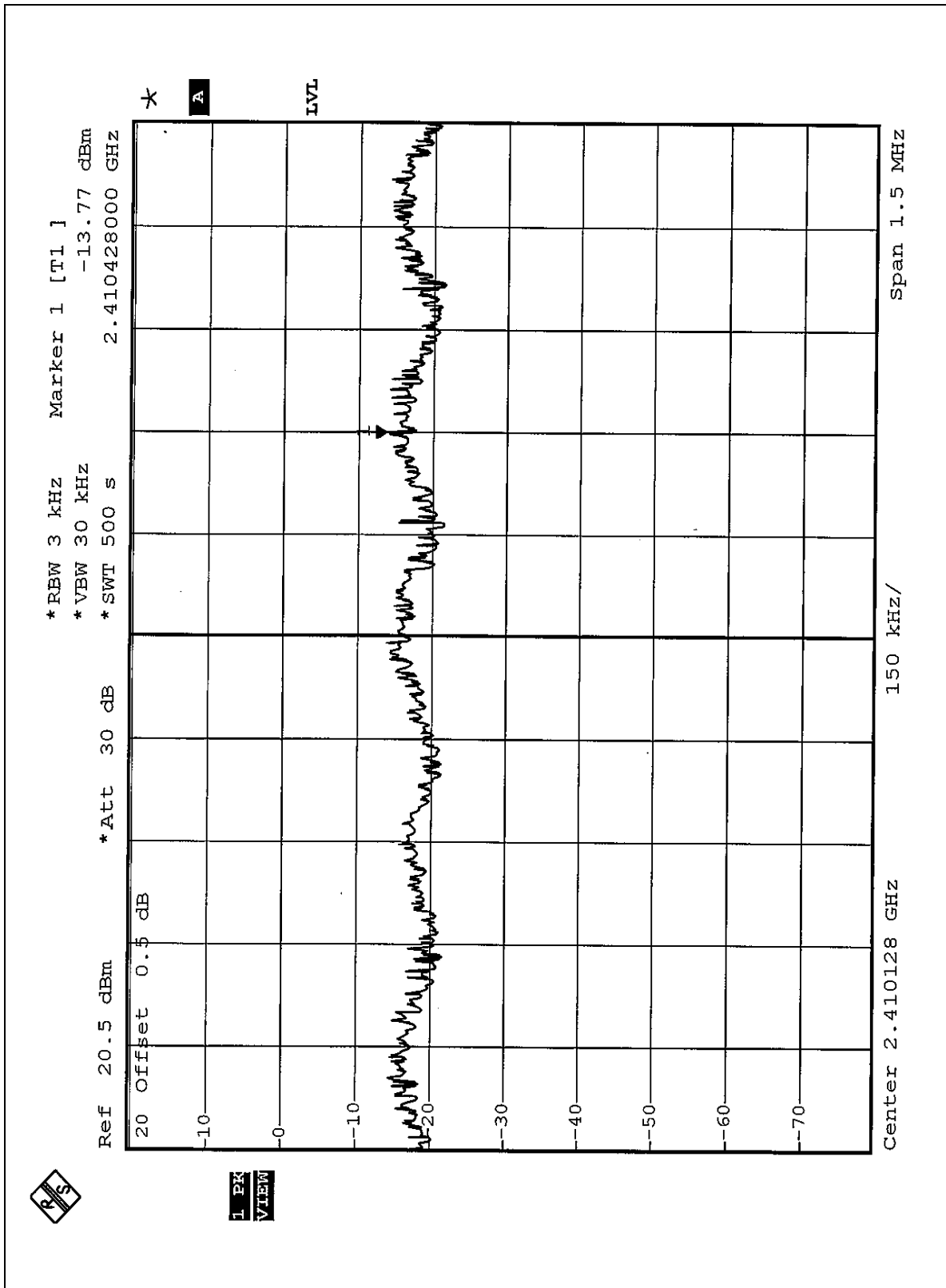




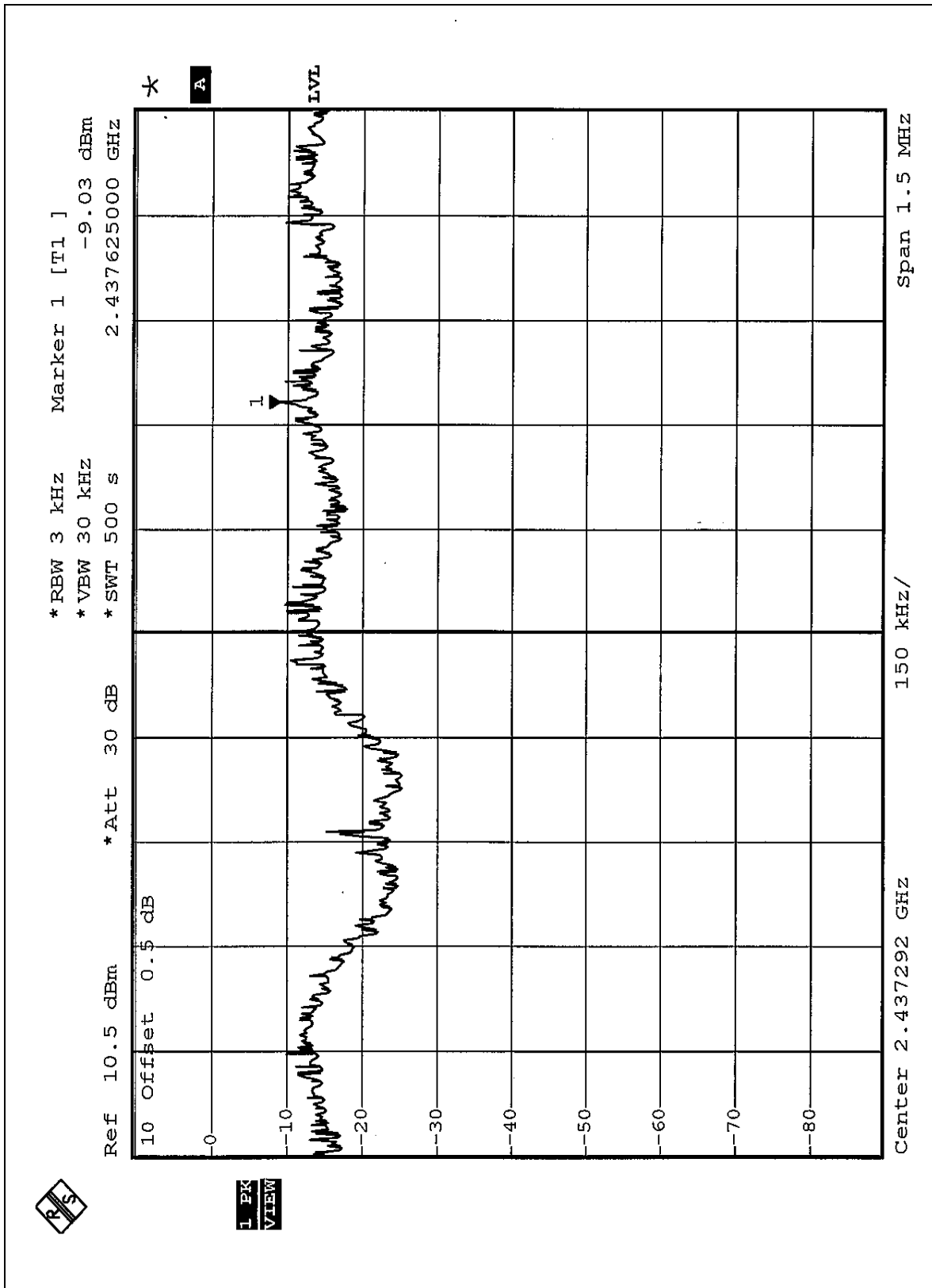
EUT	Notebook PC (with wireless card: Intel WM3B2200BG)	MODEL	255II1 (with wireless card: Intel WM3B2200BG)
INPUT POWER (SYSTEM)	120 Vac, 60 Hz	TEST MODE	B
ENVIRONMENTAL CONDITIONS	24 deg. C, 65% RH, 991 hPa	TESTED BY	Steven Lu

CHANNEL NUMBER	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3KHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-13.77	8	PASS
6	2437	-9.03	8	PASS
11	2462	-15.02	8	PASS

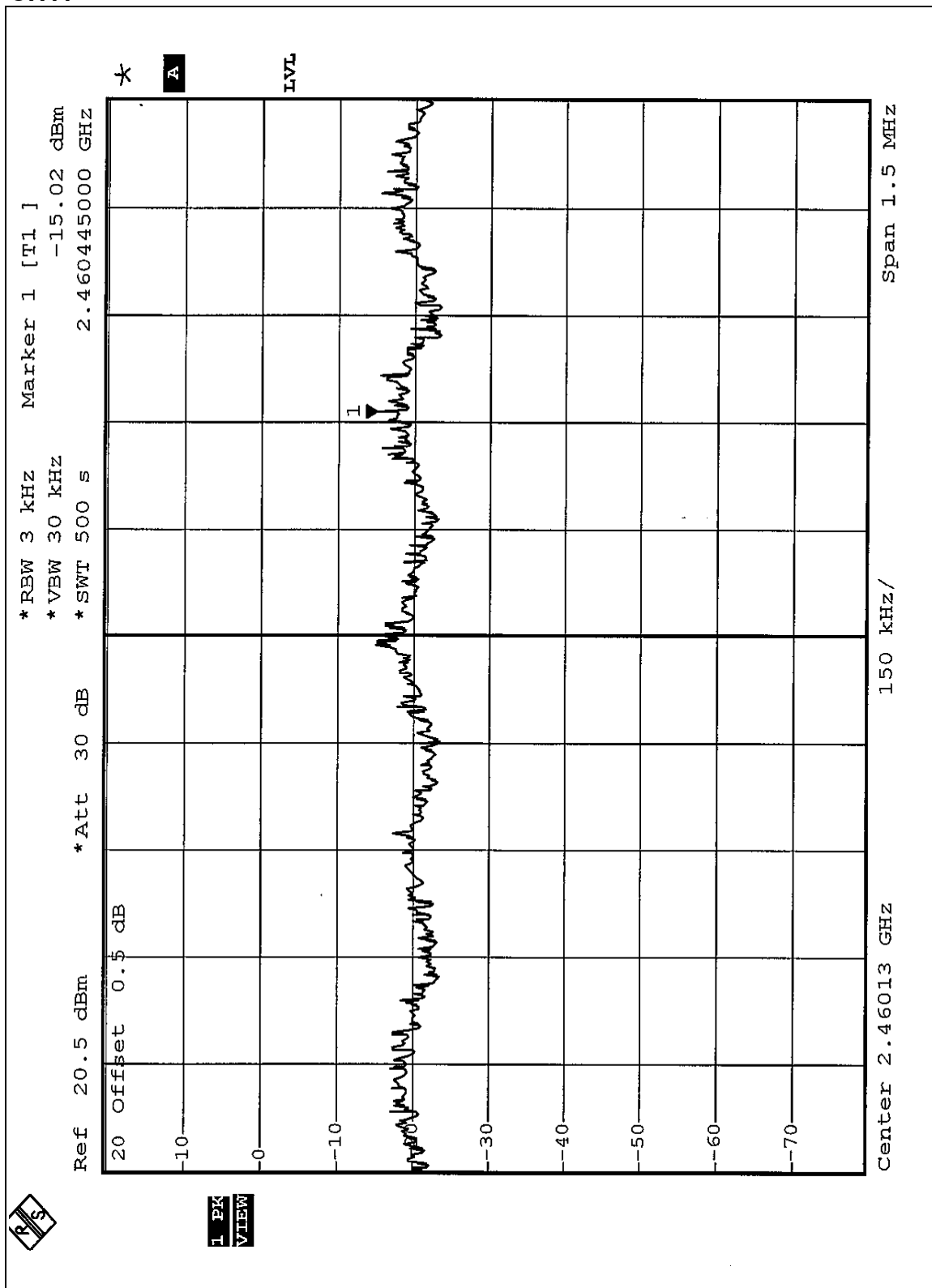
CH1



CH6



CH11



4.6 BAND EDGES MEASUREMENT

4.6.1 LIMITS OF BAND EDGES MEASUREMENT

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

4.6.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SPECTRUM ANALYZER	FSEK30	100049	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 loss cable. Set both RBW and VBW of spectrum analyzer to 100kHz with suitable frequency span including 100MHz 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 8 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 (TEST MODE A):

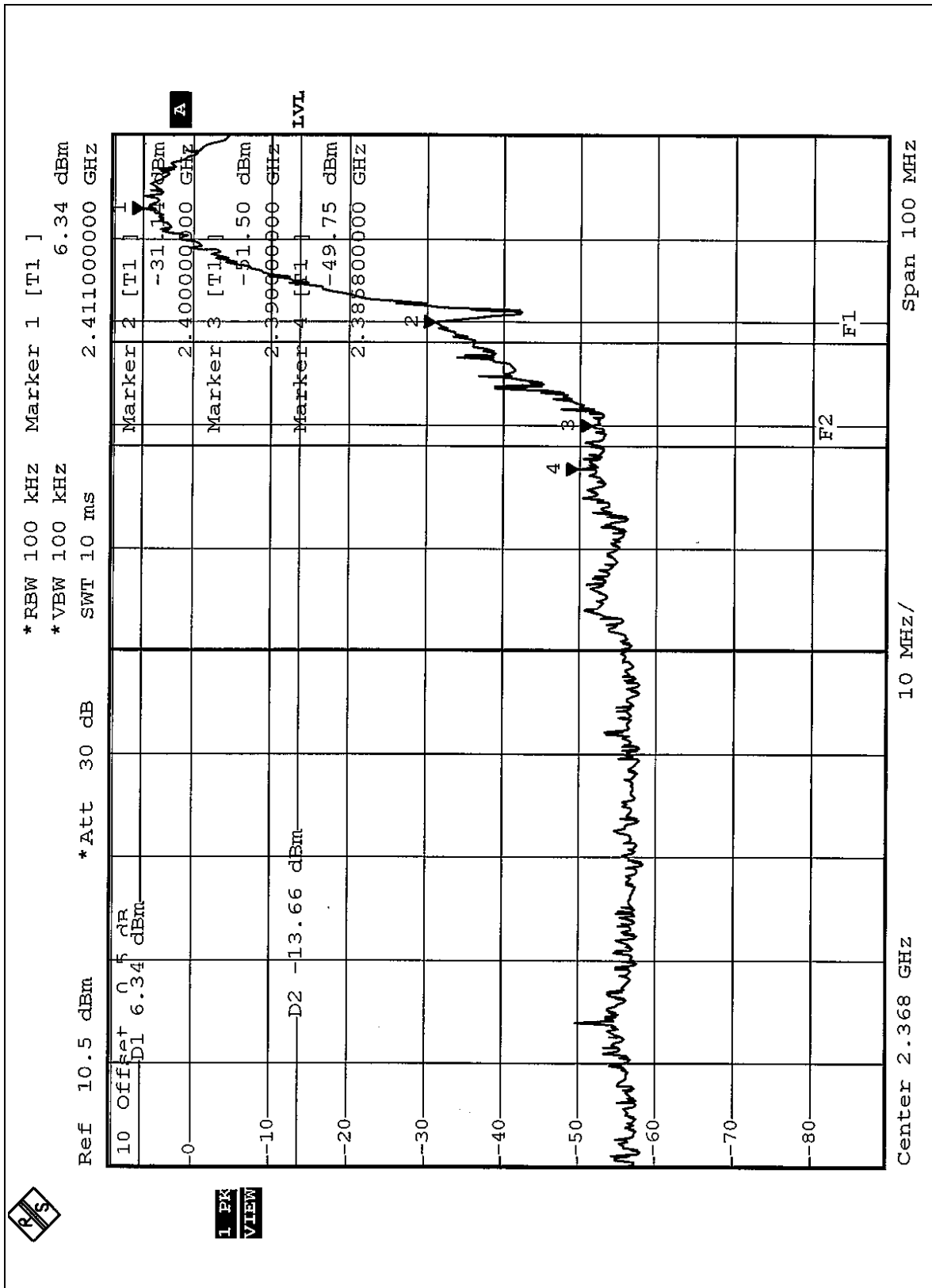
The band edge emission plot on the following 1~2 pages show 56.09dB delta between carrier maximum power and local maximum emission in restrict band (2.3858GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 102.24dBuV/m, so the maximum field strength in restrict band is $102.24 - 56.09 = 46.15$ dBuV/m which is under 54dBuV/m limit.

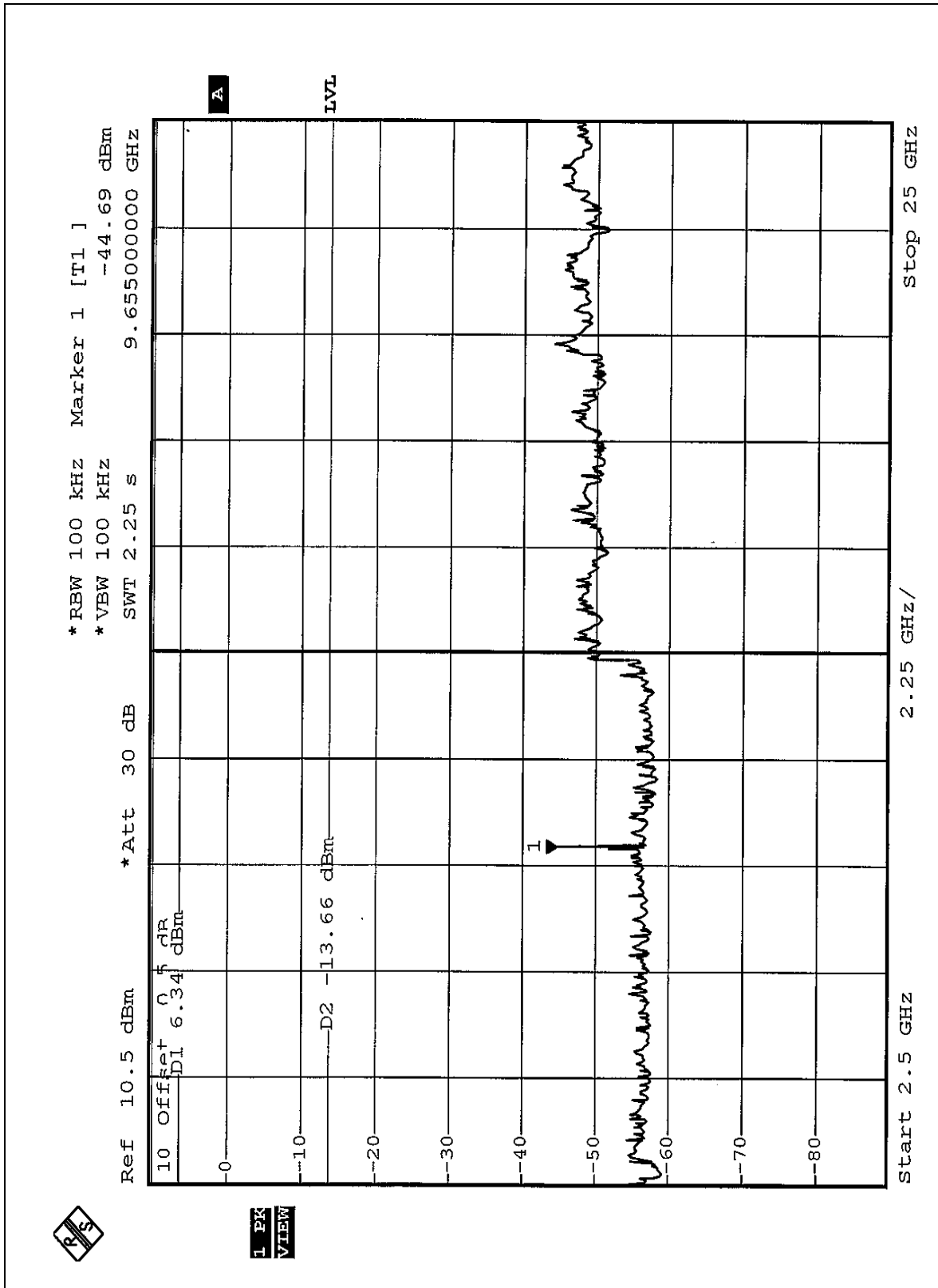
The band edge emission plot on the following 3~4 pages show 55.91dB delta between carrier maximum power and local maximum emission in restrict band (2.4885GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 102.46dBuV/m, so the maximum field strength in restrict band is $102.46 - 55.91 = 46.55$ dBuV/m which is under 54dBuV/m limit.

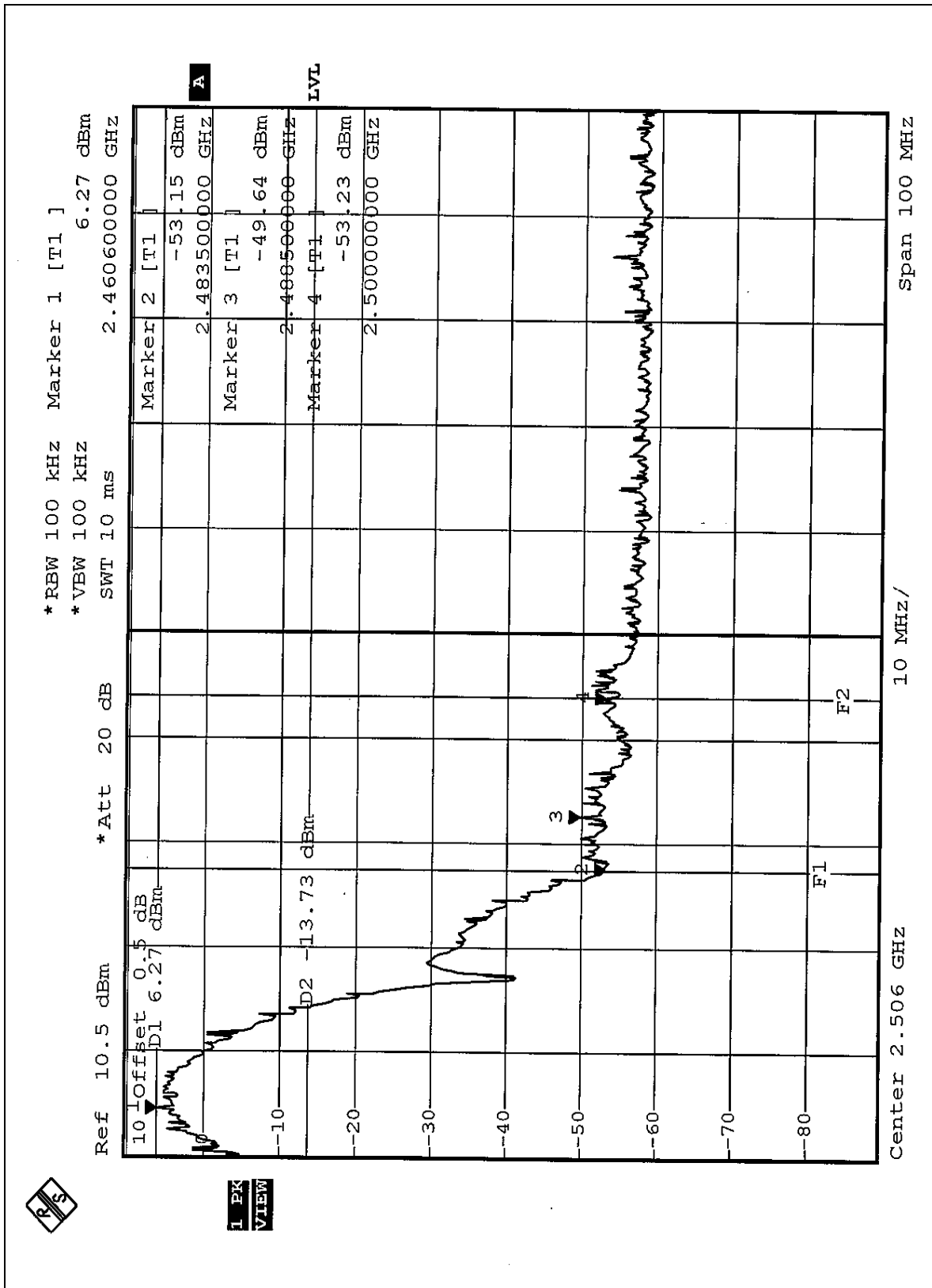
NOTE (TEST MODE B):

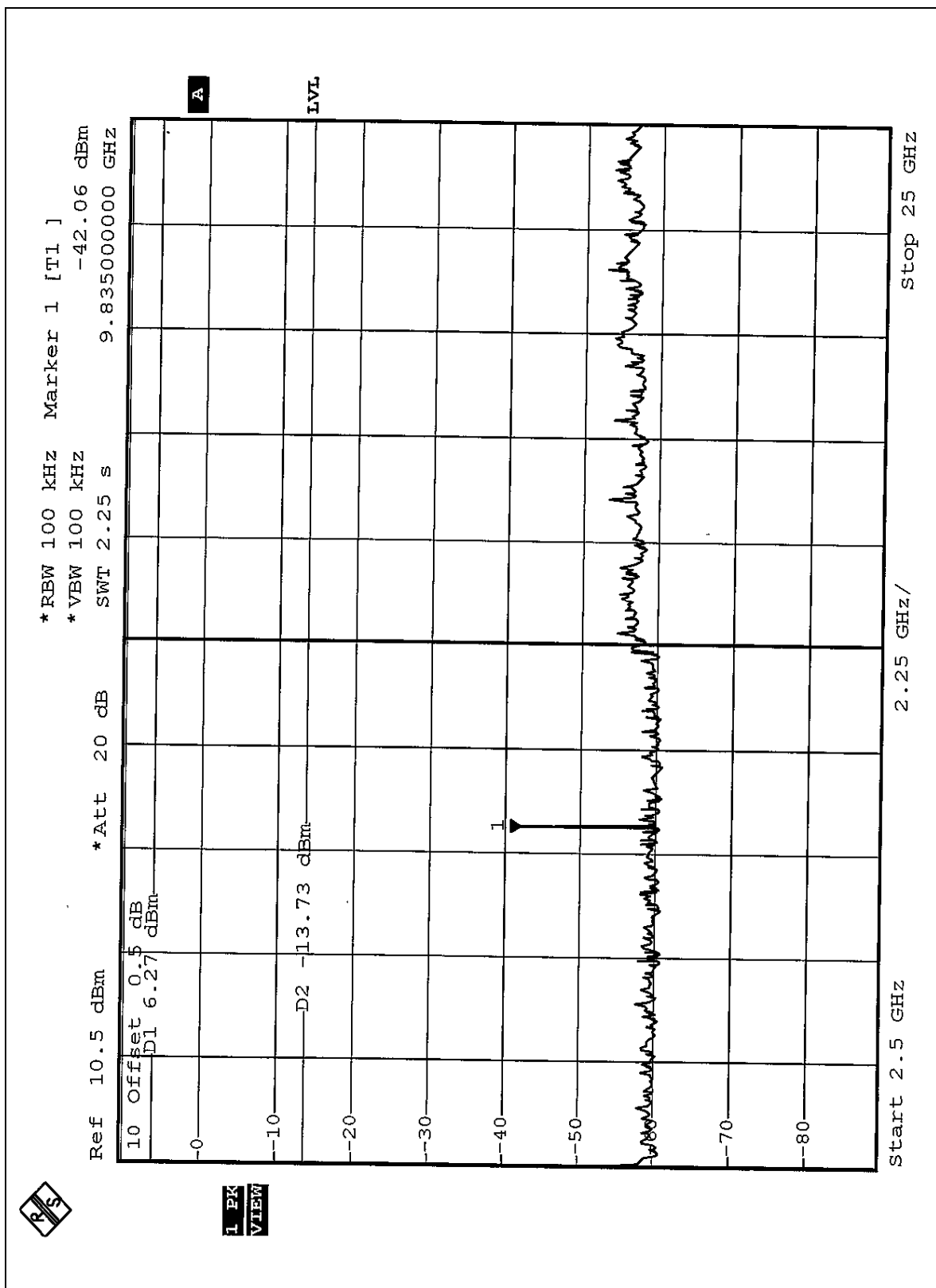
The band edge emission plot on the following 5~6 pages show 44.20dB delta between carrier maximum power and local maximum emission in restrict band (2.3896GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 95.99dBuV/m, so the maximum field strength in restrict band is $95.99 - 44.20 = 51.79$ dBuV/m which is under 54dBuV/m limit.

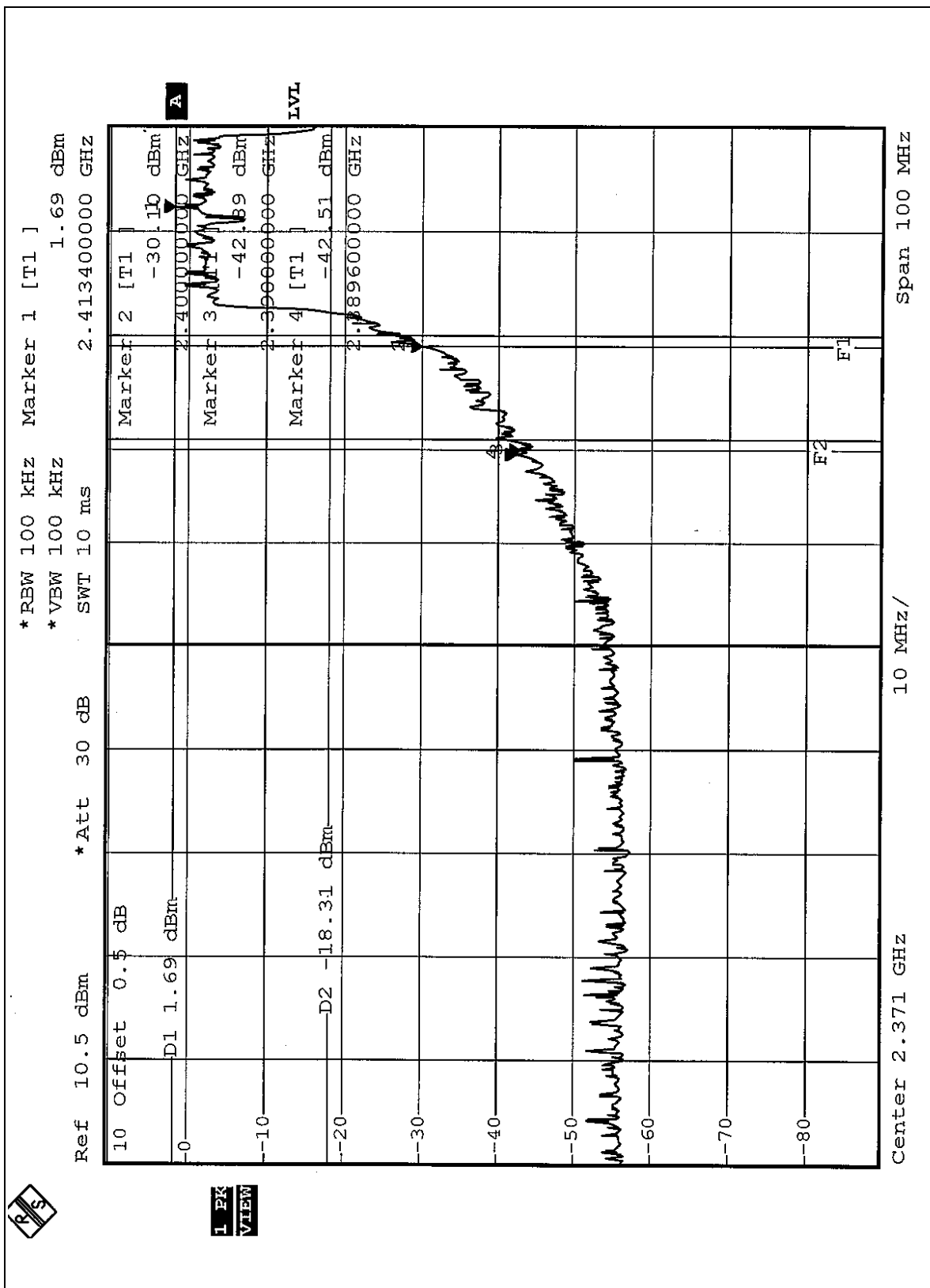
The band edge emission plot on the following 7~8 pages show 41.73dB delta between carrier maximum power and local maximum emission in restrict band (2.4835GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 94.97dBuV/m, so the maximum field strength in restrict band is $94.97 - 41.73 = 53.24$ dBuV/m which is under 54dBuV/m limit.

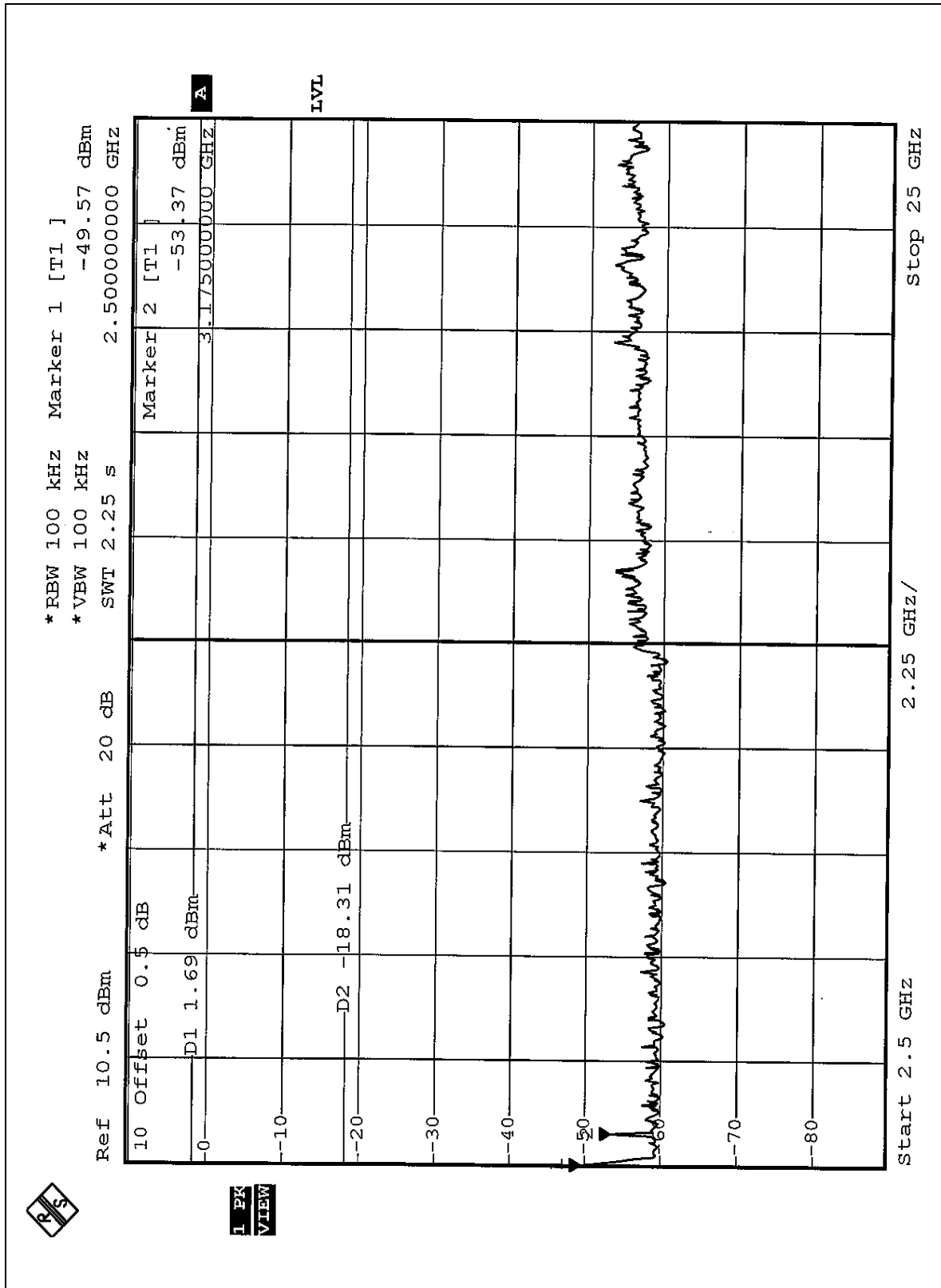


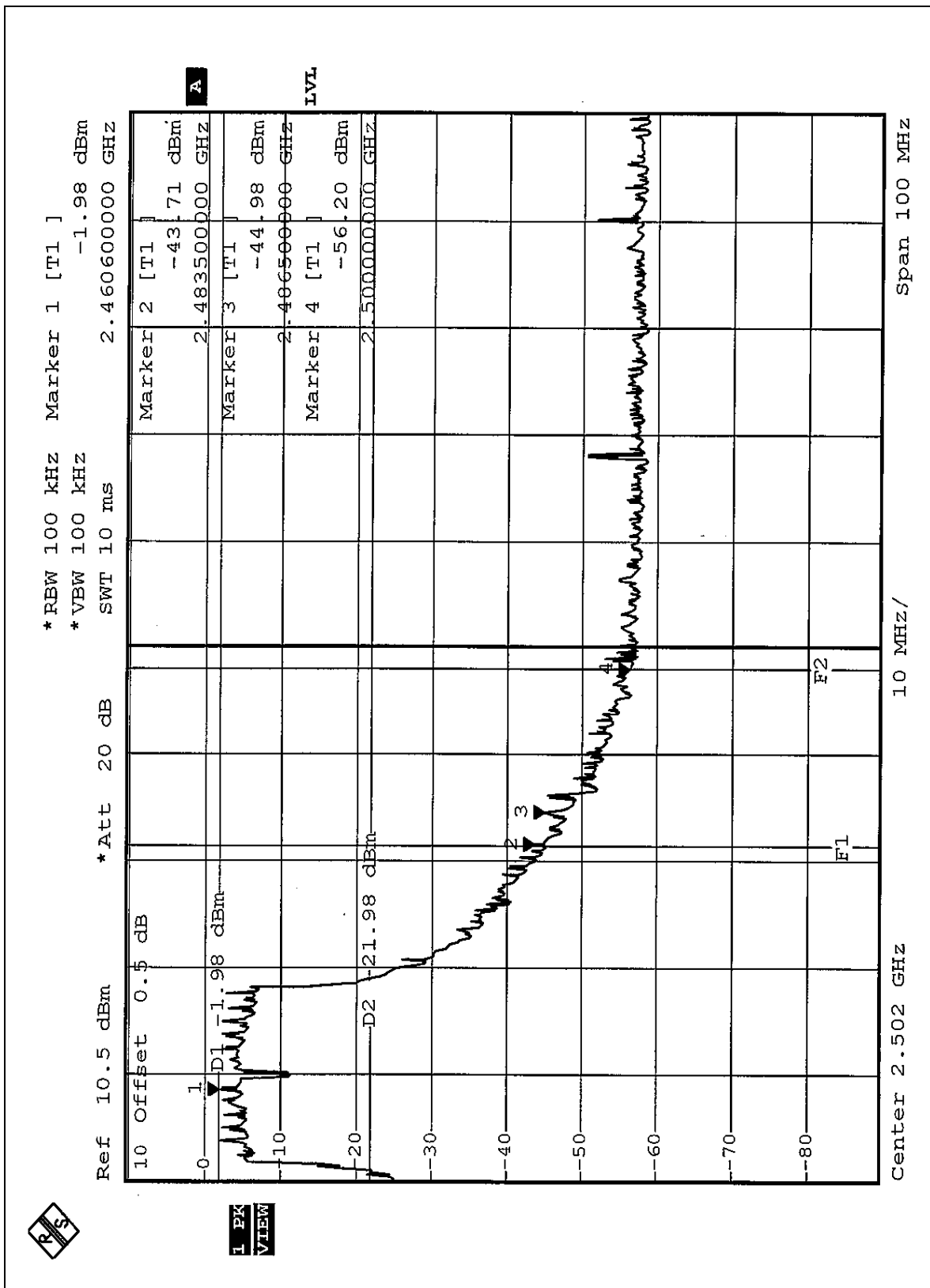


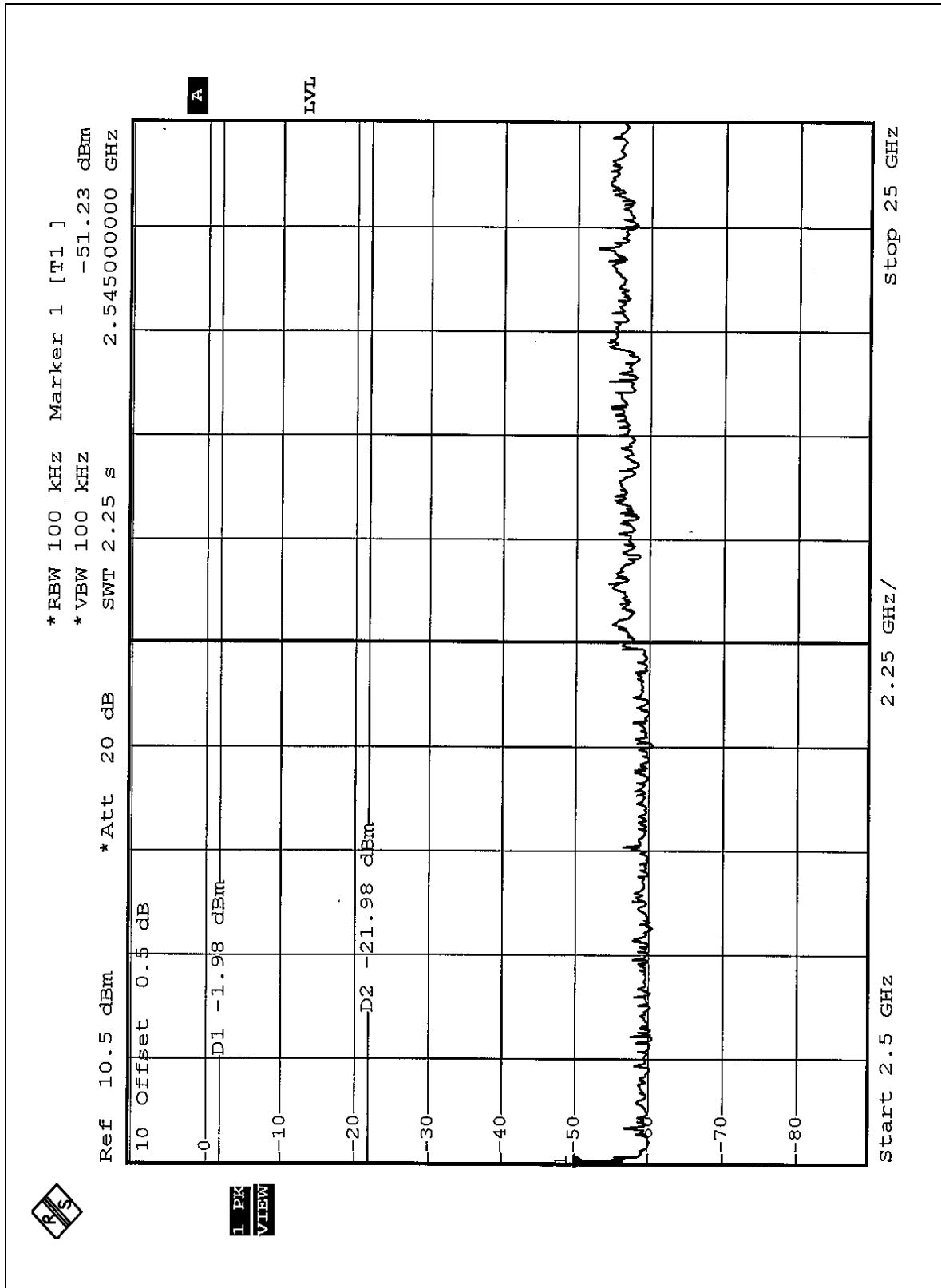














4.7 ANTENNA REQUIREMENT

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 PIFA antenna with UFL connector. And the maximum Gain of this antenna is 1.36dBi.

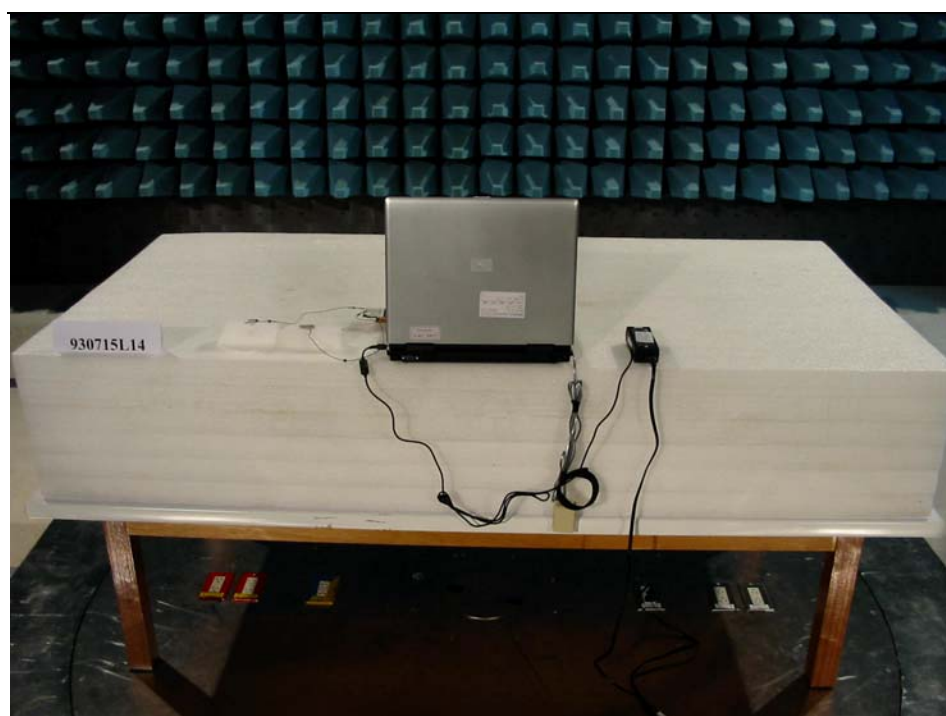
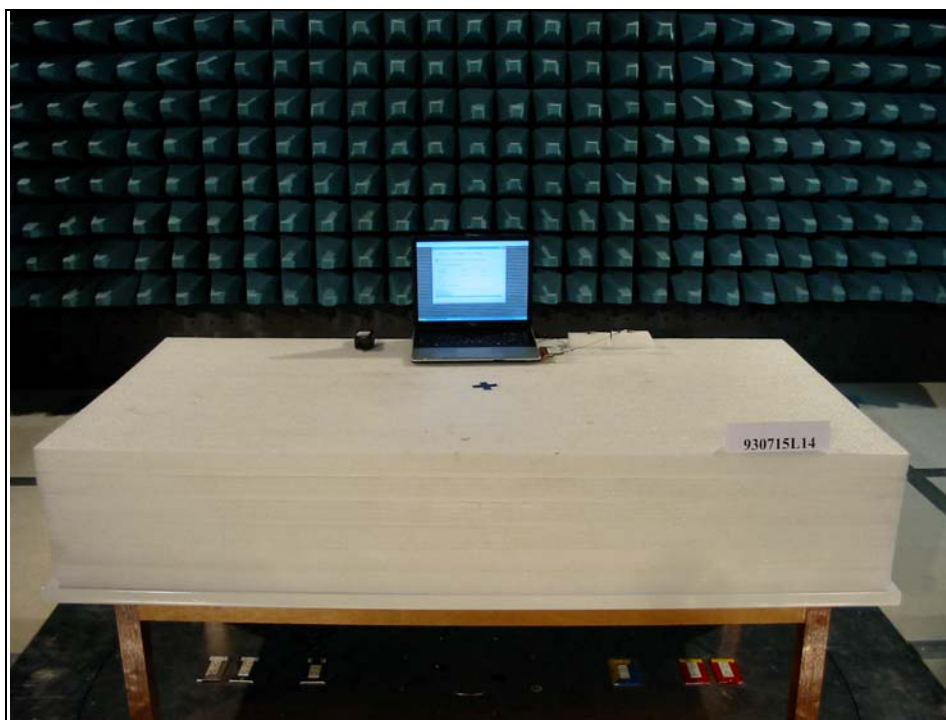
5 PHOTOGRAPHS OF THE TEST CONFIGURATION

CONDUCTED EMISSION TEST





RADIATED EMISSION TEST







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

Fax: 886-3-3270892

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.

Report Format Version 1.2