

FCC TEST REPORT

REPORT NO.: RF911128H07

MODEL NO.: A13QBF

PLATFORM: Alpha-1

RECEIVED: Nov. 28, 2002

TESTED: Jan. 1 ~ Jan. 25, 2003

APPLICANT: Proxim Corporation

ADDRESS: 935 Stewart Drive, Sunnyvale,
CA 94085, USA

ISSUED BY: Advance Data Technology Corporation

LAB LOCATION: 47 14th Lin, Chiapau Tsun, Linko, Taipei,
Taiwan, R.O.C.

This test report consists of 116 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, NVLAP or any government agencies. The test results in the report only apply to the tested sample.



0528
ILAC MRA



Lab Code: 200102-0

Table of Contents

1.	CERTIFICATION.....	5
2.	SUMMARY OF TEST RESULTS	6
3.	GENERAL INFORMATION	8
3.1	GENERAL DESCRIPTION OF EUT	8
3.2	DESCRIPTION OF TEST MODES	9
3.3	GENERAL DESCRIPTION OF APPLIED STANDARDS	10
3.4	DESCRIPTION OF SUPPORT UNITS.....	11
4.	TEST TYPES AND RESULTS	12
4.1	CONDUCTED EMISSION MEASUREMENT.....	12
4.1.1	LIMITS OF CONDUCTED EMISSION MEASUREMENT	12
4.1.2	TEST INSTRUMENTS	12
4.1.3	TEST PROCEDURES.....	13
4.1.4	DEVIATION FROM TEST STANDARD	13
4.1.5	TEST SETUP	14
4.1.6	EUT OPERATING CONDITIONS.....	14
4.1.7	TEST RESULTS	15
4.2	RADIATED EMISSION MEASUREMENT.....	17
4.2.1	LIMITS OF RADIATED EMISSION MEASUREMENT	17
4.2.2	LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS	17
4.2.3	TEST INSTRUMENTS	18
4.2.4	TEST PROCEDURES.....	19
4.2.5	DEVIATION FROM TEST STANDARD	19
4.2.6	TEST SETUP	20
4.2.7	EUT OPERATING CONDITIONS.....	20
4.2.8	TEST RESULTS	21
	FOR FREQUENCY 5.15~5.35GHz	34
4.3	PEAK TRANSMIT POWER MEASUREMENT.....	34
4.3.1	LIMITS OF PEAK TRANSMIT POWER MEASUREMENT	34
4.3.2	TEST INSTRUMENTS	34
4.3.3	TEST PROCEDURE	35
4.3.4	DEVIATION FROM TEST STANDARD	35
4.3.5	TEST SETUP	35
4.3.6	EUT OPERATING CONDITIONS.....	35
4.3.7	TEST RESULTS	36
4.4	PEAK POWER EXCURSION MEASUREMENT.....	52
4.4.1	LIMITS OF PEAK POWER EXCURSION MEASUREMENT	52
4.4.2	TEST INSTRUMENTS	52
4.4.3	TEST PROCEDURE	53
4.4.4	DEVIATION FROM TEST STANDARD	53

4.4.5	TEST SETUP	53
4.4.6	EUT OPERATING CONDITIONS.....	53
4.4.7	TEST RESULTS	54
4.5	PEAK POWER SPECTRAL DENSITY MEASUREMENT	63
4.5.1	LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT.....	63
4.5.2	TEST INSTRUMENTS	63
4.5.3	TEST PROCEDURES	64
4.5.4	DEVIATION FROM TEST STANDARD	64
4.5.5	TEST SETUP	64
4.5.6	EUT OPERATING CONDITIONS.....	64
4.5.7	TEST RESULTS	65
4.6	FREQUENCY STABILITY	74
4.6.1	LIMITS OF FREQUENCY STABILITY MEASUREMENT	74
4.6.2	TEST INSTRUMENTS	74
4.6.3	TEST PROCEDURE	74
4.6.4	DEVIATION FROM TEST STANDARD	75
4.6.5	TEST SETUP	75
4.6.6	EUT OPERATING CONDITION.....	75
4.6.7	TEST RESULTS	76
4.7	BAND EDGES MEASUREMENT	77
4.7.1	TEST INSTRUMENTS	77
4.7.2	TEST PROCEDURE	77
4.7.3	EUT OPERATING CONDITION	77
4.7.4	TEST RESULTS	77
	FOR FREQUENCY 5.725~5.850GHz	86
4.8	6dB BANDWIDTH MEASUREMENT	86
4.8.1	LIMITS OF 6dB BANDWIDTH MEASUREMENT	86
4.8.2	TEST INSTRUMENTS	86
4.8.3	TEST PROCEDURE	87
4.8.4	DEVIATION FROM TEST STANDARD	87
4.8.5	TEST SETUP	87
4.8.6	EUT OPERATING CONDITIONS.....	87
4.8.7	TEST RESULTS	88
4.9	MAXIMUM PEAK OUTPUT POWER.....	95
4.9.1	LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT	95
4.9.2	INSTRUMENTS.....	95
4.9.3	TEST PROCEDURES	96
4.9.4	DEVIATION FROM TEST STANDARD	96
4.9.5	TEST SETUP	96
4.9.6	EUT OPERATING CONDITIONS.....	96
4.9.7	TEST RESULTS	97
4.10	POWER SPECTRAL DENSITY MEASUREMENT	98
4.10.1	LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT	98
4.10.2	TEST INSTRUMENTS	98



4.10.3	TEST PROCEDURE	99
4.10.4	DEVIATION FROM TEST STANDARD	99
4.10.5	TEST SETUP	99
4.10.6	EUT OPERATING CONDITION	99
4.10.7	TEST RESULTS	100
4.11	BAND EDGES MEASUREMENT	107
4.11.1	LIMITS OF BAND EDGES MEASUREMENT	107
4.11.2	TEST INSTRUMENTS	107
4.11.3	TEST PROCEDURE	107
4.11.4	DEVIATION FROM TEST STANDARD	107
4.11.5	EUT OPERATING CONDITION	108
4.11.6	TEST RESULTS	108
4.12	ANTENNA REQUIREMENT	113
4.12.1	STANDARD APPLICABLE	113
4.12.2	ANTENNA CONNECTED CONSTRUCTION	113
5.	PHOTOGRAPHS OF THE TEST CONFIGURATION	114
6.	INFORMATION ON THE TESTING LABORATORIES	116



1. CERTIFICATION

PRODUCT : Wireless LAN and Mini PCI
MODEL NO. : A13QBF
PLATFORM : Alpha-1
BRAND NAME : Proxim
APPLICANT : Proxim Corporation
STANDARDS : 47 CFR Part 15, Subpart C (Section 15.247),
Subpart E (Section 15.407), ANSI C63.4-1992

We, **Advance Data Technology Corporation**, hereby certify that one sample of the designation has been tested in our facility from Jan. 1, 2003 ~ Jan. 25, 2003. The test record data evaluation and Equipment under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions herein specified.

CHECKED BY : Emily Lu , **DATE :** Jan. 27, 2003
Emily Lu

APPROVED BY : Dr. Alan Lane for , **DATE :** Jan. 27, 2003
Dr. Alan Lane, Manager

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

for freq. 5.15~5.35GHz :

APPLIED STANDARD: 47 CFR Part 15, Subpart E			
Standard Section	Test Type	Result	REMARK
15.407(b)(5)	AC Power Conducted Emission	PASS	Meet the requirement of limit Minimum passing margin is -11.98dBuV at 1.262MHz
15.407(b)(1/2/3) (b)(5)	Electric Field Strength Spurious Emissions, 30MHz ~ 40000MHz	PASS	Meet the requirement of limit Minimum passing margin is -2.6dBuV at 5150.00MHz
15.407(a)(1/2/3)	Peak Transmit Power	PASS	Meet the requirement of limit
15.407(a)(6)	Peak Power Excursion	PASS	Meet the requirement of limit
15.407(a)(1/2/3)	Peak Power Spectral Density	PASS	Meet the requirement of limit
15.407(g)	Frequency Stability	PASS	Meet the requirement of limit

for freq. 5.725~5.850GHz :

APPLIED STANDARD: 47 CFR Part 15, Subpart C			
Standard Section	Test Type and Limit	Result	REMARK
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit Minimum passing margin is -11.98dBuV at 1.262MHz
15.247(a)(2)	Spectrum Bandwidth of a Direct Sequence Spread Spectrum System Limit: min. 500kHz	PASS	Meet the requirement of limit
15.247(b)	Maximum Peak Output Power Limit: max. 30dBm	PASS	Meet the requirement of limit
15.247(c)	Radiated Emissions Limit: Table 15.209	PASS	Meet the requirement of limit Minimum passing margin is -1.20dBuV at 4628.00MHz
15.247(d)	Power Spectral Density Limit: max. 8dBm	PASS	Meet the requirement of limit
15.247(c)	Band Edge Measurement Limit: 20dB less than the peak value of fundamental frequency	PASS	Meet the requirement of limit

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Wireless LAN and Mini PCI
MODEL NO.	A13QBF
POWER SUPPLY	3.3VDC from host equipment
MODULATION	OFDM
TRANSFER RATE	6 to 54Mbps *(Turbo mode : up to 108Mbps)
FREQUENCY RANGE	5.15GHz ~ 5.85GHz
NUMBER OF CHANNEL	13 for Normal mode / 5 for Turbo mode
CHANNEL SPACING	20MHz for Normal mode / 40MHz for Turbo mode
OUTPUT POWER	20.87dBm
DATA CABLE	NA
ANTENNA TYPE	Omni Directional antenna
I/O PORTS	NA
ASSOCIATED DEVICES	NA

NOTE:

1. This EUT is capable of providing data rates of up to 108Mbps in Turbo Mode depending upon reception quality.
2. Platform Alpha-1 was powered by the following adapter:

BRAND	DVE
MODEL	DSA-0151F-12 A
INPUT	100-120V AC 50/60Hz 0.4A
OUTPUT	12V DC 1.5A

3. For more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3.2 DESCRIPTION OF TEST MODES

Thirteen channels are provided to this EUT for Normal mode.

Channel	Frequency	Channel	Frequency
1	5180 MHz	8	5320 MHz
2	5200 MHz	9	5745MHz
3	5220 MHz	10	5765MHz
4	5240 MHz	11	5785MHz
5	5260 MHz	12	5805MHz
6	5280 MHz	13	5825MHz
7	5300 MHz		

Five channels are provided to this EUT for Turbo Mode.

Channel	Frequency	Channel	Frequency
1	5210 MHz	4	5760MHz
2	5250 MHz	5	5800MHz
3	5290 MHz		

NOTE:

1. The EUT was transmitting at full power on the specified channel with a duty cycle of 99% (maximum allowed). The EUT was tested in both normal mode (channel bandwidth of approximately 30MHz) and turbo mode (channel bandwidth of approximately 60MHz).
2. "Normal Mode" allows data rates of up to 54Mbps. The device was, therefore, tested in Normal mode at the data rate that produced the highest output power for normal mode (6Mbps).
3. "Turbo Mode" allows data rates of up to 108Mbps. At data rates higher than 12Mbps the PA gain is reduced to improve signal fidelity. The device was, therefore, tested in turbo mode at the data rate that produced the highest output power for turbo mode (12Mbps).
4. Channel 1, 4, 5, 8, 9, 11 and 13 are the closest frequencies to the band edge, were chosen for final test of Normal Mode.
5. Channel 1 ~ 5 were chosen for final test of turbo mode.



3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a Wireless LAN and Mini PCI. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

**FCC 47CFR Part 15, Subpart C. (15.247),
Subpart E (15.407). ANSI C63.4 : 1992**

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

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

3.4 DESCRIPTION OF SUPPORT UNITS

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

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK	DELL	PP01L	TW-09C748-12800-19O-B220	FCC DoC APPROVED
2	USB 10/100 Fast Ethernet	D-Link	DU-E100	UR15001597	FCC DoC APPROVED

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

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

4. TEST TYPES AND RESULTS

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
ROHDE & SCHWARZ Test Receiver	ESCS30	847793/022	Mar. 12, 2003
ROHDE & SCHWARZ Artificial Mains Network (for EUT)	ESH2-Z5	828075/003	July 23, 2003
ROHDE & SCHWARZ 200-A Four-line V-Network	ENV4200	830326/018	Oct. 30, 2003
* ROHDE & SCHWARZ 4-wire ISN	ENY41	838119/028	Nov. 29, 2003
* ROHDE & SCHWARZ 2-wire ISN	ENY22	837497/018	Nov. 29, 2003
EMCO-L.I.S.N. (for peripheral)	3825/2	90031627	July 23, 2003
Software	Cond-V2M1	NA	NA
RF cable (JYEBAO)	5D-FB	Cable-C05.01	July 19, 2003
LYNICS Terminator (For EMCO LISN)	0900510	E1-01-305	Feb. 20, 2003
LYNICS Terminator (For EMCO LISN)	0900510	E1-01-306	Feb. 20, 2003

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



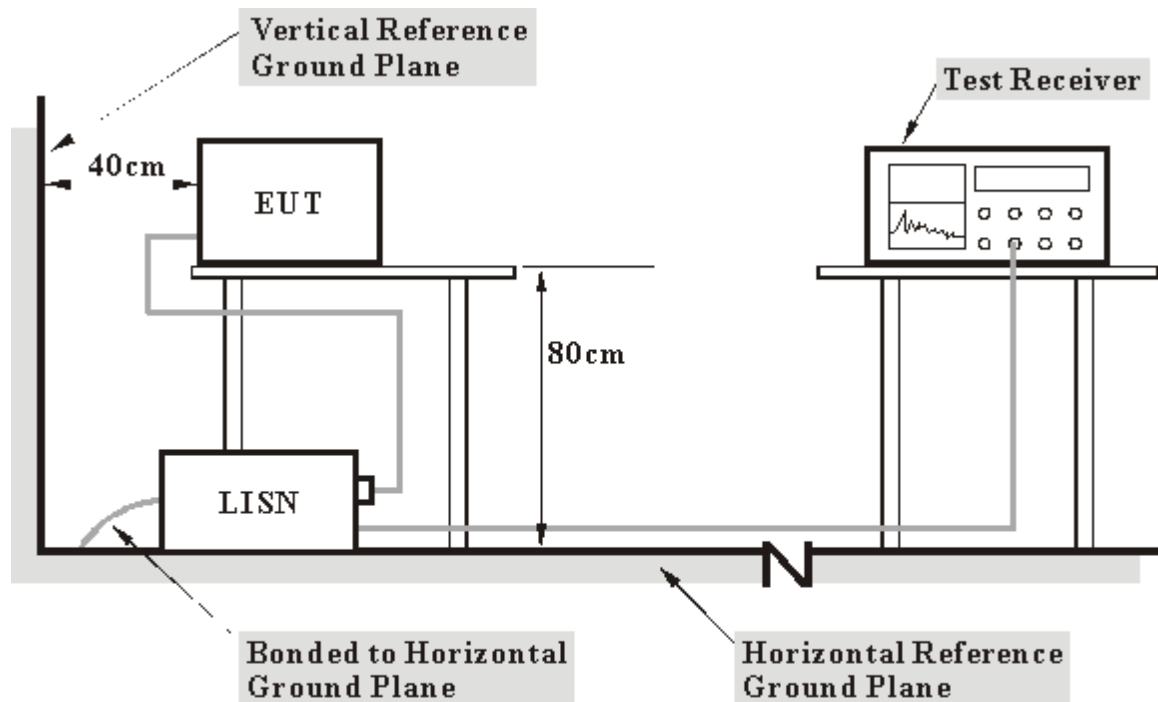
4.1.3 TEST PROCEDURES

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

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 TEST SETUP



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

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

4.1.6 EUT OPERATING CONDITIONS

- a. The EUT was installed into the access point which connected to a computer system placed on a testing table.
- b. The computer system ran a test program to enable EUT under transmission/receiving condition continuously at specific channel frequency.
- c. The computer system sent "H" messages to its screen.

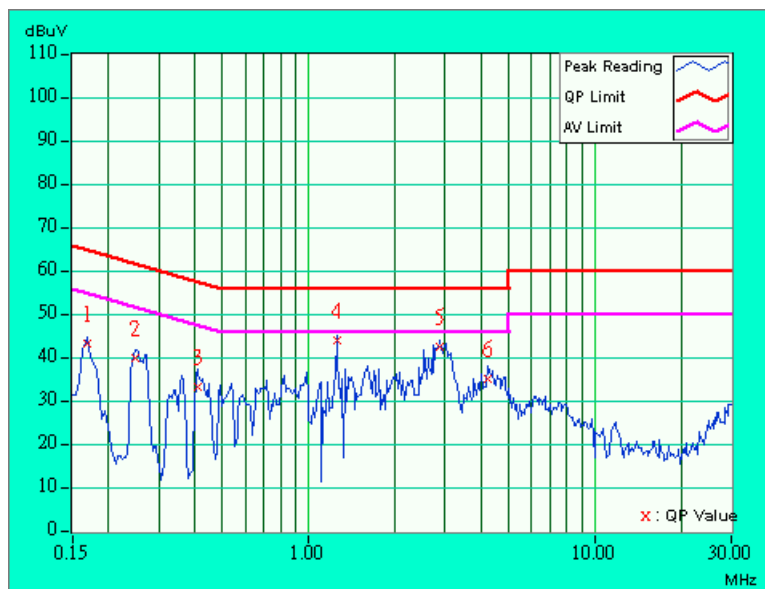
4.1.7 TEST RESULTS

EUT	Wireless LAN and Mini PCI	MODEL	A13QBF
		6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	25deg. C, 60RH, 1005 hPa	TESTED BY: Bunny Yao	

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.170	0.10	42.95	-	43.05	-	64.98	54.98	-21.93	-
2	0.248	0.10	39.54	-	39.64	-	61.84	51.84	-22.20	-
3	0.408	0.10	32.87	-	32.97	-	57.69	47.69	-24.72	-
4	1.262	0.20	43.62	-	43.82	-	56.00	46.00	-12.18	-
5	2.875	0.29	42.01	-	42.30	-	56.00	46.00	-13.70	-
6	4.238	0.41	34.84	-	35.25	-	56.00	46.00	-20.75	-

NOTE:

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.

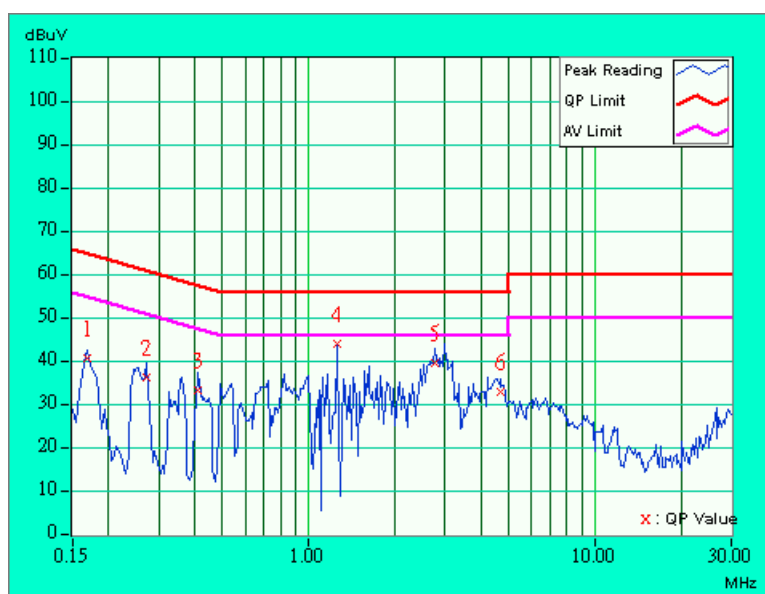


EUT	Wireless LAN and Mini PCI	MODEL	A13QBF
		6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Neutral (N)
ENVIRONMENTAL CONDITIONS	25deg. C, 60RH, 1005 hPa	TESTED BY: Bunny Yao	

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.170	0.10	40.35	-	40.45	-	64.98	54.98	-24.53	-
2	0.271	0.10	36.13	-	36.23	-	61.08	51.08	-24.85	-
3	0.412	0.10	33.15	-	33.25	-	57.61	47.61	-24.36	-
4	1.262	0.20	43.82	-	44.02	-	56.00	46.00	-11.98	-
5	2.746	0.24	39.25	-	39.49	-	56.00	46.00	-16.51	-
6	4.664	0.31	32.79	-	33.10	-	56.00	46.00	-22.90	-

NOTE:

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 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

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

NOTE:

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

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

4.2.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
* HP Spectrum Analyzer	8590L	3544A01176	May 13, 2003
* HP Preamplifier	8447D	2944A08485	Apr. 29, 2003
* HP Preamplifier	8449B	3008A01201	Dec. 01, 2003
* HP Preamplifier	8449B	3008A01292	Aug. 07, 2003
* ROHDE & SCHWARZ TEST RECEIVER	ESMI	839013/007 839379/002	Jan. 27, 2003
SCHAFFNER Tunable Dipole Antenna	VHBA 9123	459	Nov. 22, 2003
SCHWARZBECK Tunable Dipole Antenna	UHA 9105	977	
* CHASE BILOG Antenna	CBL6112A	2221	Aug. 2, 2003
* SCHWARZBECK Horn Antenna	BBHA9120-D1	D130	July 3, 2003
* EMCO Horn Antenna	3115	9312-4192	April 9, 2003
* EMCO Turn Table	1060	1115	NA
* SHOSHIN Tower	AP-4701	A6Y005	NA
* Software	ADT_Radiated_V5.09	NA	NA
* ANRITSU RF Switches	MP59B	M35046	July 11, 2003
* TIMES RF cable	LMR-600	CABLE-ST5-01	July. 11. 2003

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

4.2.4 TEST PROCEDURES

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

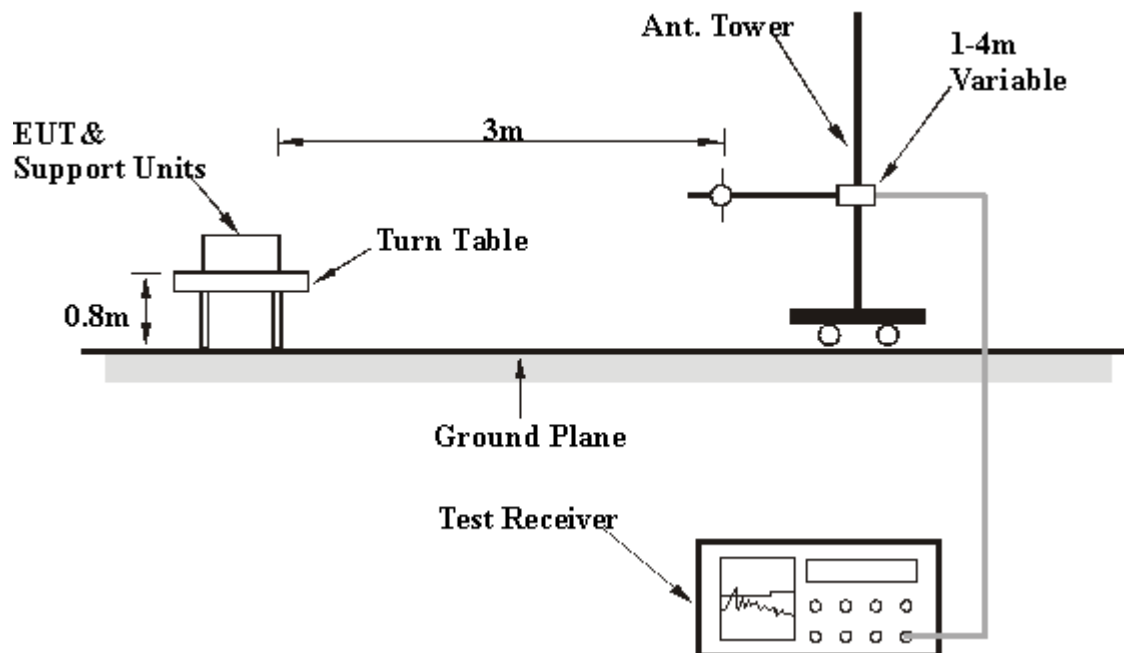
NOTE:

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

4.2.5 DEVIATION FROM TEST STANDARD

No deviation

4.2.6 TEST SETUP



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

4.2.7 EUT OPERATING CONDITIONS

Same as 4.1.6.

4.2.8 TEST RESULTS

EUT	Wireless LAN and Mini PCI	MODEL	A13QBF
FREQUENCY RANGE	Below 1000MHz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	16deg. C, 75%RH, 1050 hPa	INPUT POWER (SYSTEM)	120Vac, 60Hz
TESTED BY	Bunny Yao		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	128.00	25.6 QP	43.50	-17.90	1.14 H	58	10.70	14.90
2	224.00	26.3 QP	46.00	-19.70	1.52 H	20	10.60	15.70
3	256.00	41.9 QP	46.00	-4.10	1.30 H	30	22.60	19.30
4	320.00	38.0 QP	46.00	-8.00	1.56 H	128	17.50	20.50
5	416.00	34.3 QP	46.00	-11.70	2.00 H	102	11.00	23.30
6	436.00	27.6 QP	46.00	-18.40	1.25 H	3	4.00	23.60
7	480.00	44.0 QP	46.00	-2.00	1.09 H	36	19.40	24.60
8	512.00	30.0 QP	46.00	-16.00	1.24 H	158	4.70	25.30
9	672.00	38.5 QP	46.00	-7.50	1.02 H	25	10.60	27.90
10	736.00	38.8 QP	46.00	-7.20	1.05 H	1	9.80	29.00
11	768.00	43.3 QP	46.00	-2.70	1.48 H	76	13.40	29.90
12	864.00	43.3 QP	46.00	-2.70	1.39 H	284	12.10	31.20

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	128.00	30.0 QP	43.50	-13.50	1.42 V	55	15.10	14.90
2	224.00	26.8 QP	46.00	-19.20	1.55 V	55	11.10	15.70
3	256.00	27.2 QP	46.00	-18.80	1.14 V	247	7.90	19.30
4	320.00	30.5 QP	46.00	-15.50	1.58 V	354	10.00	20.50
5	416.00	41.1 QP	46.00	-4.90	1.38 V	241	17.80	23.30
6	436.00	33.8 QP	46.00	-12.20	1.67 V	174	10.20	23.60
7	512.00	30.9 QP	46.00	-15.10	1.48 V	145	5.60	25.30
8	672.00	31.1 QP	46.00	-14.90	1.40 V	12	3.20	27.90
9	736.00	37.2 QP	46.00	-8.80	1.02 V	86	8.20	29.00
10	768.00	43.8 QP	46.00	-2.20	1.35 V	45	13.90	29.90
11	864.00	44.0 QP	46.00	-2.00	1.22 V	221	12.80	31.20

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

Standard section 15.407

EUT	Wireless LAN and Mini PCI	MODEL	A13QBF
MODE	Normal Mode	CHANNEL	1
FREQUENCY RANGE	Above 1000 MHz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 60%RH, 1050 hPa	INPUT POWER (SYSTEM)	120Vac, 60Hz
TESTED BY	Bunny Yao		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)	Remark
1	4144.00	49.2 PK	74.00	-24.80	1.26 H	56	13.90	35.30	NOTE 6
2	5150.00	54.2 PK	74.00	-19.80	1.38 H	10	16.50	37.70	NOTE 6
2	5150.00	44.3 AV	54.00	-9.70	1.38 H	10	6.60	35.30	NOTE 6
3	*5180.00	98.7 PK			1.38 H	10	61.00	37.70	
3	*5180.00	90.5 AV			1.38 H	10	52.80	37.70	
4	10360.00	51.9 PK	68.30	-16.40	1.99 H	69	7.40	44.50	

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)	Remark
1	4144.00	52.9 PK	74.00	-21.10	1.58 V	55	17.60	35.30	NOTE 6
1	4144.00	46.3 AV	54.00	-7.70	1.58 V	55	11.00	35.30	NOTE 6
2	5150.00	58.6 PK	74.00	-15.40	1.16 V	55	20.90	37.70	NOTE 6
2	5150.00	48.4 AV	54.00	-5.60	1.16 V	55	10.70	37.70	NOTE 6
3	*5180.00	104.3 PK			1.16 V	55	66.60	37.70	
3	*5180.00	96.9 AV			1.16 V	55	59.20	37.70	
4	10360.00	52.9 PK	68.30	-15.40	1.89 V	2	8.40	44.50	
5	15540.00	56.6 PK	74.00	-17.40	1.67 V	25	9.50	47.10	NOTE 6
5	15540.00	47.2 AV	54.00	-6.80	1.67 V	25	0.10	47.10	NOTE 6

- 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.
 6. The radiated frequency falling in the restricted band.

Standard section 15.407

EUT	Wireless LAN and Mini PCI	MODEL	A13QBF
MODE	Normal Mode	CHANNEL	4
FREQUENCY RANGE	Above 1000 MHz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 60%RH, 1050 hPa	INPUT POWER (SYSTEM)	120Vac, 60Hz
TESTED BY	Bunny Yao		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M									
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)	Remark
1	4192.00	58.2 PK	74.00	-15.80	1.26 H	5	22.90	35.30	NOTE 6
1	4192.00	49.1 AV	54.00	-4.90	1.26 H	5	13.80	35.30	NOTE 6
2	*5240.00	110.8 PK			1.85 H	158	73.10	37.70	
2	*5240.00	101.4 AV			1.85 H	158	63.70	37.70	
3	10480.00	57.3 PK	68.30	-11.00	1.78 H	125	12.30	45.00	
4	15720.00	53.9 PK	74.00	-20.10	2.22 H	122	7.30	46.60	NOTE 6
4	15720.00	44.3 AV	54.00	-9.70	2.22 H	122	-2.30	46.60	NOTE 6

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M									
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)	Remark
1	4192.00	58.2 PK	74.00	-15.80	1.11 V	59	22.90	35.30	NOTE 6
1	4192.00	48.4 AV	54.00	-5.60	1.11 V	59	13.10	35.30	NOTE 6
2	*5240.00	116.2 PK			1.69 V	100	78.50	37.70	
2	*5240.00	106.5 AV			1.69 V	100	68.80	37.70	
3	10480.00	61.5 PK	68.30	-6.80	1.90 V	258	16.50	45.00	
4	15720.00	59.3 PK	74.00	-14.70	2.15 V	122	12.70	46.60	NOTE 6
4	15720.00	48.5 AV	54.00	-5.50	2.15 V	122	1.90	45.00	NOTE 6

- 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.
 6. The radiated frequency falling in the restricted band.

Standard section 15.407

EUT	Wireless LAN and Mini PCI	MODEL	A13QBF
MODE	Normal Mode	CHANNEL	5
FREQUENCY RANGE	Above 1000 MHz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 60%RH, 1050 hPa	INPUT POWER (SYSTEM)	120Vac, 60Hz
TESTED BY	Bunny Yao		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M									
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)	Remark
1	4208.00	55.6 PK	74.00	-18.40	1.39 H	52	20.30	35.40	NOTE 6
1	4208.00	46.4 AV	54.00	-7.60	1.39 H	52	11.10	35.40	NOTE 6
2	*5260.00	109.3 PK			1.49 H	48	71.60	37.70	
2	*5260.00	99.4 AV			1.49 H	48	61.70	37.70	
3	10520.00	54.8 PK	68.30	-13.50	1.80 H	266	9.70	45.10	

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)	Remark
1	4208.00	56.0 PK	74.00	-18.00	1.51 V	174	20.70	35.40	NOTE 6
1	4208.00	46.8 AV	54.00	-7.20	1.51 V	174	11.50	35.40	NOTE 6
2	*5260.00	116.2 PK			1.56 V	26	78.50	37.70	
2	*5260.00	106.3 AV			1.56 V	26	68.60	37.70	
3	10520.00	62.5 PK	68.30	-5.80	1.89 V	55	17.40	45.10	
4	15720.00	58.3 PK	74.00	-15.70	1.76 V	265	11.70	46.60	NOTE 6
4	15720.00	49.2 AV	54.00	-4.80	1.76 V	265	2.60	46.60	NOTE 6

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.
6. The radiated frequency falling in the restricted band.

Standard section 15.407

EUT	Wireless LAN and Mini PCI	MODEL	A13QBF
MODE	Normal Mode	CHANNEL	8
FREQUENCY RANGE	Above 1000 MHz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 60%RH, 1050 hPa	INPUT POWER (SYSTEM)	120Vac, 60Hz
TESTED BY	Bunny Yao		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)	Remark
1	4256.00	47.5 PK	74.00	-26.50	1.55 H	26	12.10	35.40	NOTE 6
2	*5320.00	96.6 PK			1.39 H	18	58.90	37.70	
2	*5320.00	88.2 AV			1.39 H	18	50.50	35.40	
3	5350.00	54.2 PK	74.00	-19.80	1.88 H	66	16.50	37.70	NOTE 6
3	5350.00	43.9 AV	54.00	-10.10	1.88 H	66	6.20	37.70	NOTE 6
4	10640.00	52.0 PK	74.00	-22.00	1.78 H	56	6.70	45.20	NOTE 6
4	10640.00	41.7 AV	54.00	-12.30	1.78 H	56	-3.60	37.70	NOTE 6

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)	Remark
1	4256.00	52.7 PK	74.00	-21.30	1.11 V	55	17.30	35.40	NOTE 6
1	4256.00	42.0 AV	54.00	-12.00	1.11 V	55	6.60	35.40	NOTE 6
2	*5320.00	104.9 PK			1.25 V	80	67.20	37.70	
2	*5320.00	96.1 AV			1.25 V	80	58.40	37.70	
3	5350.00	55.9 PK	74.00	-18.10	1.25 V	80	18.20	37.70	NOTE 6
3	5350.00	45.7 AV	54.00	-8.30	1.25 V	80	8.00	37.70	NOTE 6
4	10640.00	55.1 PK	74.00	-18.90	1.35 V	58	9.80	45.20	NOTE 6
4	10640.00	44.8 AV	54.00	-9.20	1.35 V	58	-0.50	45.20	NOTE 6

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.
6. The radiated frequency falling in the restricted band.

Standard section 15.247

EUT	Wireless LAN and Mini PCI	MODEL	A13QBF
MODE	Normal Mode	CHANNEL	9
FREQUENCY RANGE	Above 1000 MHz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 60%RH, 1050 hPa	INPUT POWER (SYSTEM)	120Vac, 60Hz
TESTED BY	Bunny Yao		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	4596.00	52.3 PK	74.00	-21.70	1.68 H	147	16.20	36.00
1	4596.00	50.6 AV	54.00	-3.40	1.68 H	147	14.50	36.00
2	*5745.00	102.4 PK			1.20 H	58	64.50	37.90
2	*5745.00	94.2 AV			1.20 H	58	56.30	37.90
3	11490.00	57.1 PK	74.00	-16.90	1.58 H	45	11.60	45.50
3	11490.00	48.1 AV	54.00	-5.90	1.58 H	45	2.60	45.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	4596.00	54.1 PK	74.00	-19.90	1.22 V	20	18.00	36.00
1	4596.00	52.7 AV	54.00	-1.30	1.22 V	20	16.60	36.00
2	*5745.00	108.2 PK			1.06 V	222	70.30	37.90
2	*5745.00	99.1 AV			1.06 V	222	61.20	37.90
3	11490.00	58.7 PK	74.00	-15.30	2.02 V	247	13.20	45.50
3	11490.00	50.0 AV	54.00	-4.00	2.02 V	247	4.50	45.50
4	17235.00	59.8 PK	74.00	-14.20	1.78 V	56	8.80	50.90
4	17235.00	50.6 AV	54.00	-3.40	1.78 V	56	-0.40	50.90

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

Standard section 15.247

EUT	Wireless LAN and Mini PCI	MODEL	A13QBF
MODE	Normal Mode	CHANNEL	11
FREQUENCY RANGE	Above 1000 MHz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 60%RH, 1050 hPa	INPUT POWER (SYSTEM)	120Vac, 60Hz
TESTED BY	Bunny Yao		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	4628.00	54.2 PK	74.00	-19.80	1.60 H	248	18.00	36.20
1	4628.00	52.8 AV	54.00	-1.20	1.60 H	248	16.60	36.20
2	*5785.00	102.2 PK			1.74 H	6	64.20	38.00
2	*5785.00	93.8 AV			1.74 H	6	55.80	38.00
3	11570.00	56.7 PK	74.00	-17.30	1.48 H	56	11.20	45.50
3	11570.00	47.9 AV	54.00	-6.10	1.48 H	56	2.40	45.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	4628.00	49.7 PK	74.00	-24.30	1.20 V	234	13.50	36.20
2	*5785.00	108.9 PK			1.96 V	65	70.90	38.00
2	*5785.00	99.4 AV			1.96 V	65	61.40	36.20
3	11570.00	57.8 PK	74.00	-16.20	1.84 V	132	12.30	45.50
3	11570.00	49.4 AV	54.00	-4.60	1.84 V	132	3.90	38.00
4	17355.00	60.5 PK	74.00	-13.50	1.68 V	5	8.80	51.80
4	17355.00	50.8 AV	54.00	-3.20	1.68 V	5	-0.90	45.50

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

Standard section 15.247

EUT	Wireless LAN and Mini PCI	MODEL	A13QBF
MODE	Normal Mode	CHANNEL	13
FREQUENCY RANGE	Above 1000 MHz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 60%RH, 1050 hPa	INPUT POWER (SYSTEM)	120Vac, 60Hz
TESTED BY	Bunny Yao		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	4660.00	54.3 PK	74.00	-19.70	1.09 H	110	18.00	36.30
1	4660.00	52.7 AV	54.00	-1.30	1.09 H	110	16.40	36.30
2	*5825.00	100.8 PK			1.42 H	30	62.80	38.00
2	*5825.00	93.7 AV			1.42 H	30	55.70	38.00
3	11650.00	56.5 PK	74.00	-17.50	1.17 H	5	10.90	45.50
3	11650.00	47.7 AV	54.00	-6.30	1.17 H	5	2.10	45.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	4660.00	54.7 PK	74.00	-19.30	1.39 V	287	18.40	36.30
1	4660.00	53.3 AV	54.00	-0.70	1.39 V	287	17.00	36.30
2	*5825.00	108.2 PK			1.88 V	348	70.20	38.00
2	*5825.00	98.8 AV			1.88 V	348	60.80	38.00
3	11650.00	59.8 PK	74.00	-14.20	2.01 V	307	14.20	45.50
3	11650.00	50.5 AV	54.00	-3.50	2.01 V	307	4.90	45.50
4	17475.00	60.7 PK	74.00	-13.30	1.48 V	23	8.10	52.60
4	17475.00	51.9 AV	54.00	-2.10	1.48 V	23	-0.70	52.60

- 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.

Standard section 15.407

EUT	Wireless LAN and Mini PCI	MODEL	A13QBF
MODE	Turbo Mode	CHANNEL	1
FREQUENCY RANGE	Above 1000 MHz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 60%RH, 1050 hPa	INPUT POWER (SYSTEM)	120Vac, 60Hz
TESTED BY	Bunny Yao		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)	Remark
1	4168.00	43.8 PK	74.00	-30.20	1.89 H	68	8.50	35.30	NOTE 6
2	5150.00	56.2 PK	74.00	-17.80	1.50 H	258	18.50	37.70	NOTE 6
2	5150.00	47.6 AV	54.00	-6.40	1.50 H	258	9.90	35.30	NOTE 6
3	*5210.00	95.2 PK			1.56 H	260	57.50	37.70	
3	*5210.00	86.9 AV			1.56 H	260	49.20	37.70	
4	10420.00	50.9 PK	68.30	-17.40	1.88 H	360	6.10	44.80	

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)	Remark
1	4168.00	41.6 PK	74.00	-32.40	1.36 V	65	6.30	35.30	NOTE 6
2	5150.00	60.0 PK	74.00	-14.00	1.09 V	288	22.30	37.70	NOTE 6
2	5150.00	51.4 AV	54.00	-2.60	1.09 V	288	13.70	35.30	NOTE 6
3	*5210.00	101.9 PK			1.02 V	275	64.20	37.70	
3	*5210.00	93.2 AV			1.02 V	275	55.50	37.70	
4	10420.00	57.1 PK	68.30	-11.20	1.86 V	124	12.30	44.80	

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.
6. The radiated frequency falling in the restricted band.

Standard section 15.407

EUT	Wireless LAN and Mini PCI	MODEL	A13QBF
MODE	Turbo Mode	CHANNEL	2
FREQUENCY RANGE	Above 1000 MHz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 60%RH, 1050 hPa	INPUT POWER (SYSTEM)	120Vac, 60Hz
TESTED BY	Bunny Yao		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)	Remark
1	4200.00	41.5 PK	74.00	-32.50	1.63 H	34	6.20	35.40	NOTE 6
2	*5250.00	96.5 PK			1.24 H	242	58.80	37.70	
2	*5250.00	87.7 AV			1.24 H	242	50.00	35.40	
3	10500.00	52.1 PK	68.30	-16.20	2.00 H	3	7.10	45.10	

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)	Remark
1	4200.00	43.3 PK	74.00	-30.70	1.68 V	25	8.00	35.40	NOTE 6
2	*5250.00	102.2 PK			1.06 V	268	64.50	37.70	
2	*5250.00	93.9 AV			1.06 V	268	56.20	35.40	
3	10500.00	53.1 PK	68.30	-15.20	1.85 V	5	8.10	45.10	

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB).
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * ” : Fundamental frequency.
 6. The radiated frequency falling in the restricted band.

Standard section 15.407

EUT	Wireless LAN and Mini PCI	MODEL	A13QBF
MODE	Turbo Mode	CHANNEL	3
FREQUENCY RANGE	Above 1000 MHz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 60%RH, 1050 hPa	INPUT POWER (SYSTEM)	120Vac, 60Hz
TESTED BY	Bunny Yao		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)	Remark
1	4232.00	42.5 PK	74.00	-31.50	1.00 H	56	7.10	35.40	NOTE 6
2	*5290.00	97.1 PK			1.24 H	78	59.40	37.70	
2	*5290.00	88.0 AV			1.24 H	78	50.30	35.40	
3	5350.00	55.7 PK	74.00	-18.30	1.24 H	78	18.00	37.70	NOTE 6
3	5350.00	46.1 AV	54.00	-7.90	1.24 H	78	8.40	37.70	NOTE 6
4	10580.00	52.0 PK	68.30	-16.30	2.21 H	269	6.80	45.10	

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)	Remark
1	4232.00	42.6 PK	74.00	-31.40	1.61 V	51	7.20	35.40	NOTE 6
2	*5290.00	99.0 PK			1.12 V	280	61.30	37.70	
2	*5290.00	90.1 AV			1.12 V	280	52.40	35.40	
3	5350.00	58.1 PK	74.00	-15.90	1.12 V	280	20.40	37.70	NOTE 6
3	5350.00	48.8 AV	54.00	-5.20	1.12 V	280	11.10	37.70	NOTE 6
4	10580.00	57.3 PK	68.30	-11.00	1.78 V	72	12.10	45.10	

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB).
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * ” : Fundamental frequency.
 6. The radiated frequency falling in the restricted band.

Standard section 15.247

EUT	Wireless LAN and Mini PCI	MODEL	A13QBF
MODE	Turbo Mode	CHANNEL	4
FREQUENCY RANGE	Above 1000 MHz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 60%RH, 1050 hPa	INPUT POWER (SYSTEM)	120Vac, 60Hz
TESTED BY	Bunny Yao		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	4608.00	50.3 PK	74.00	-23.70	1.33 H	3	14.20	36.10
1	4608.00	47.9 AV	54.00	-6.10	1.33 H	3	11.80	36.10
2	*5760.00	96.3 PK			1.63 H	158	58.40	37.90
2	*5760.00	88.1 AV			1.63 H	158	50.20	37.90
3	11520.00	52.7 PK	74.00	-21.30	1.76 H	265	7.20	45.50
3	11520.00	42.5 AV	54.00	-11.50	1.76 H	265	-3.00	45.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	4608.00	52.4 PK	74.00	-21.60	1.35 V	100	16.30	36.10
1	4608.00	49.8 AV	54.00	-4.20	1.35 V	100	13.70	36.10
2	*5760.00	99.3 PK			1.36 V	6	61.40	37.90
2	*5760.00	90.1 AV			1.36 V	6	52.20	37.90
3	11520.00	54.0 PK	74.00	-20.00	1.94 V	75	8.50	45.50
3	11520.00	43.8 AV	54.00	-10.20	1.94 V	75	-1.70	45.50

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

Standard section 15.247

EUT	Wireless LAN and Mini PCI	MODEL	A13QBF
MODE	Turbo Mode	CHANNEL	5
FREQUENCY RANGE	Above 1000 MHz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 60%RH, 1050 hPa	INPUT POWER (SYSTEM)	120Vac, 60Hz
TESTED BY	Bunny Yao		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	4640.00	52.7 PK	74.00	-21.30	1.02 H	39	16.50	36.20
1	4640.00	50.7 AV	54.00	-3.30	1.02 H	39	14.50	36.20
2	*5800.00	95.2 PK			1.64 H	290	57.20	38.00
2	*5800.00	86.7 AV			1.64 H	290	48.70	38.00
3	11600.00	52.4 PK	74.00	-21.60	1.84 H	328	6.90	45.50
3	11600.00	42.9 AV	54.00	-11.10	1.84 H	328	-2.60	45.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	4640.00	54.3 PK	74.00	-19.70	1.99 V	59	18.10	36.20
1	4640.00	51.4 AV	54.00	-2.60	1.99 V	59	15.20	36.20
2	*5800.00	100.8 PK			1.36 V	20	62.80	38.00
2	*5800.00	91.4 AV			1.36 V	20	53.40	38.00
3	11600.00	54.7 PK	74.00	-19.30	1.74 V	146	9.20	45.50
3	11600.00	45.5 AV	54.00	-8.50	1.74 V	146	0.00	45.50

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

FOR FREQUENCY 5.15~5.35GHz

4.3 PEAK TRANSMIT POWER MEASUREMENT

4.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT

Frequency Band	Limit
5.15 – 5.25 GHz	The lesser of 50mW (17dBm) or 4dBm + 10logB
5.25 – 5.35 GHz	The lesser of 250mW (24dBm) or 11dBm + 10logB
5.725 – 5.825 GHz	The lesser of 1W (30dBm) or 17dBm + 10logB

Note: Where B is the 26dB emission bandwidth in MHz.

4.3.2 TEST INSTRUMENTS

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

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

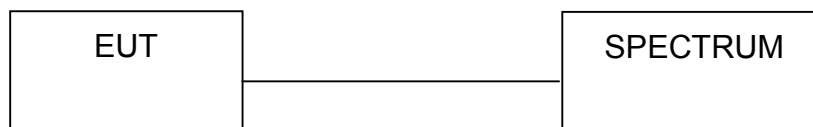
4.3.3 TEST PROCEDURE

1. The transmitter output was connected to the spectrum analyzer.
2. Set span to encompass the entire emission bandwidth of the signal.
3. Set RBW to 1MHz, VBW to 300kHz.
4. Using the spectrum analyzer's channel power measurement function to measure the output power.

4.3.4 DEVIATION FROM TEST STANDARD

No deviation

4.3.5 TEST SETUP



4.3.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

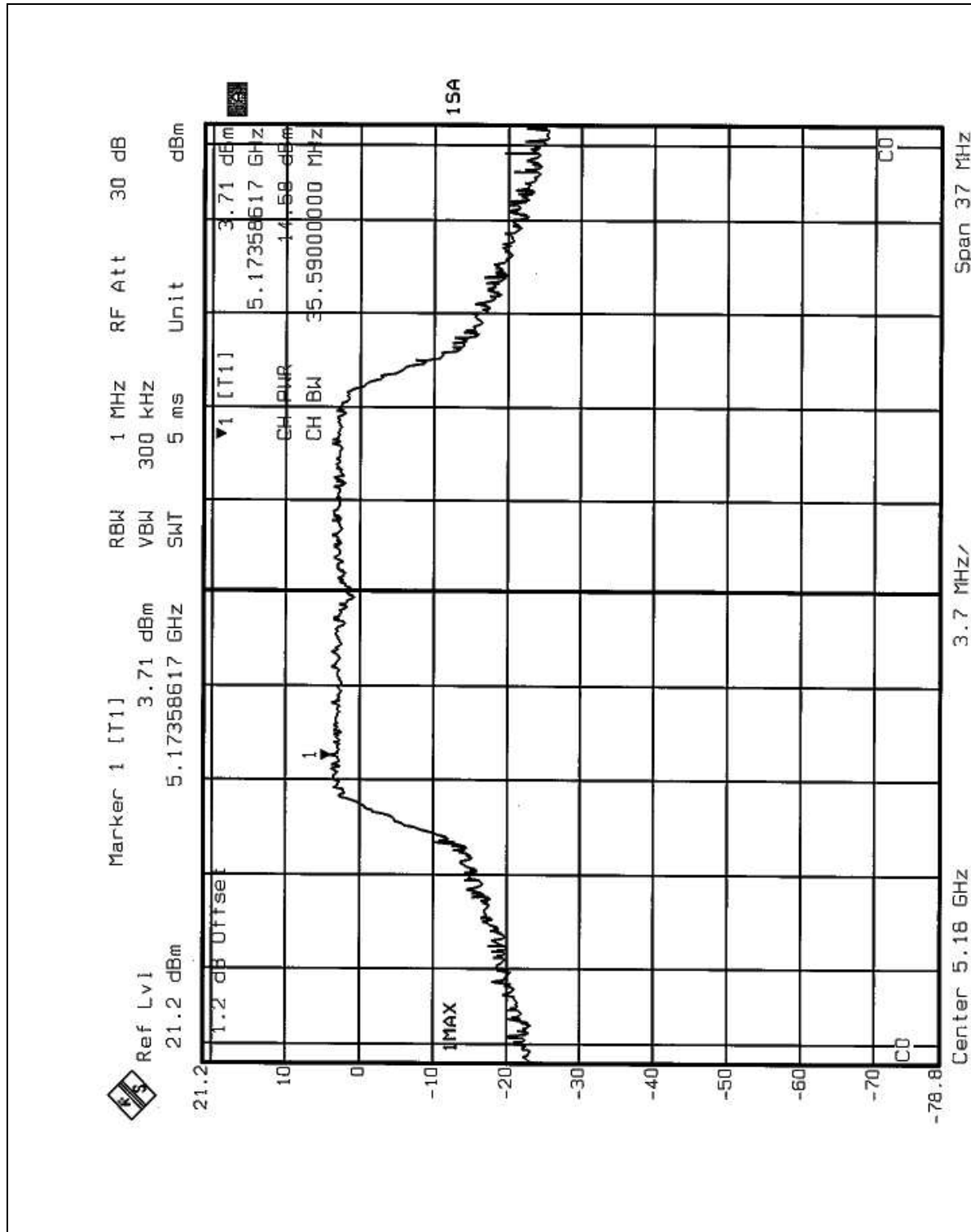
4.3.7 TEST RESULTS

EUT	Wireless LAN and Mini PCI	MODEL	A13QBF
MODE	Normal	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	26deg. C, 66%RH, 1005 hPa	TESTED BY	Ansen Lei

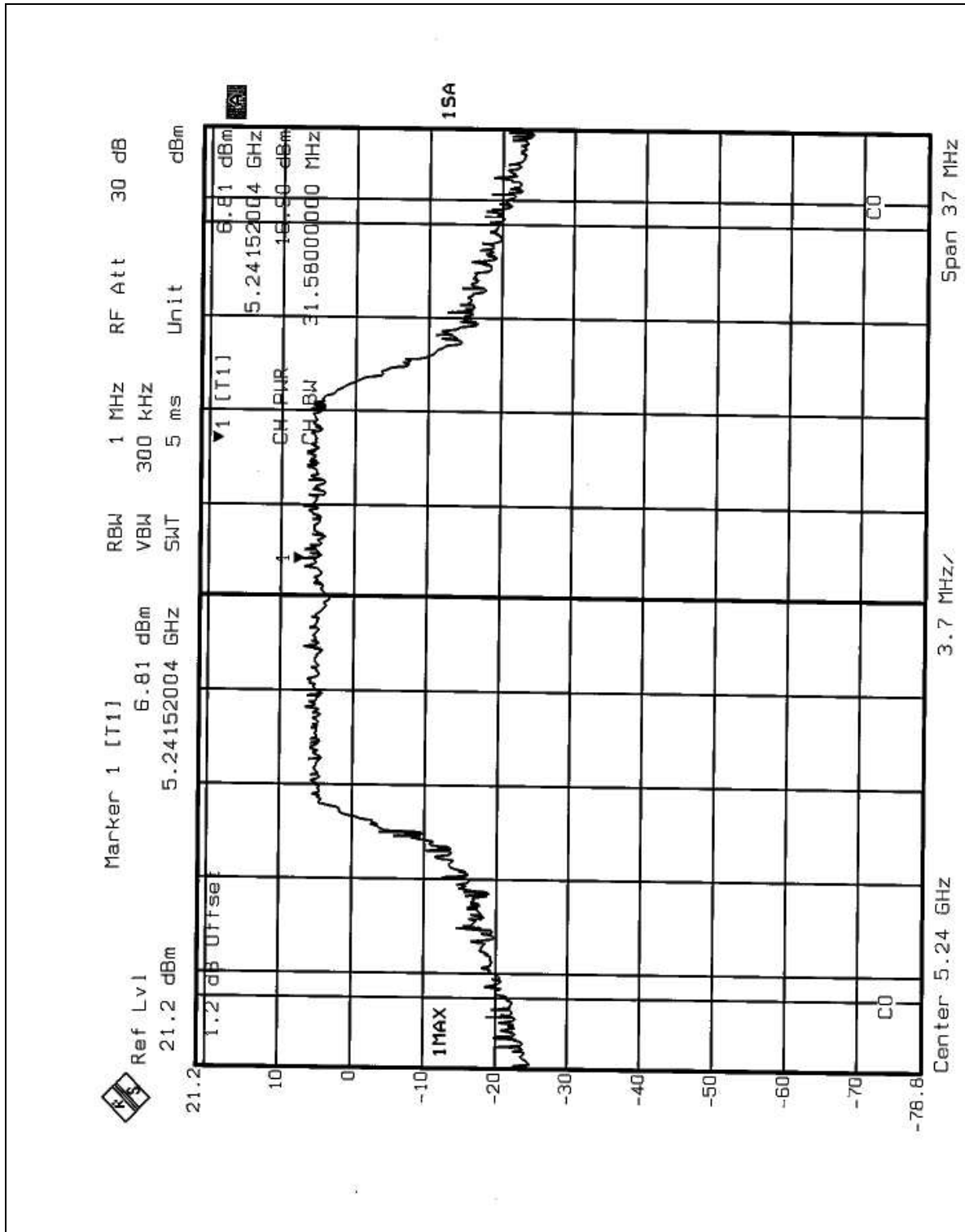
CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	26dBc Occupied Bandwidth (MHz)	PASS/FAIL
1	5180	14.58	17.00	35.591	PASS
4	5240	16.90	17.00	31.583	PASS
5	5260	17.37	24.00	32.865	PASS
8	5320	14.86	24.00	32.625	PASS

NOTE: The 26dBc Occupied Bandwidth plot, please refer to the following pages.

CHANNEL 1

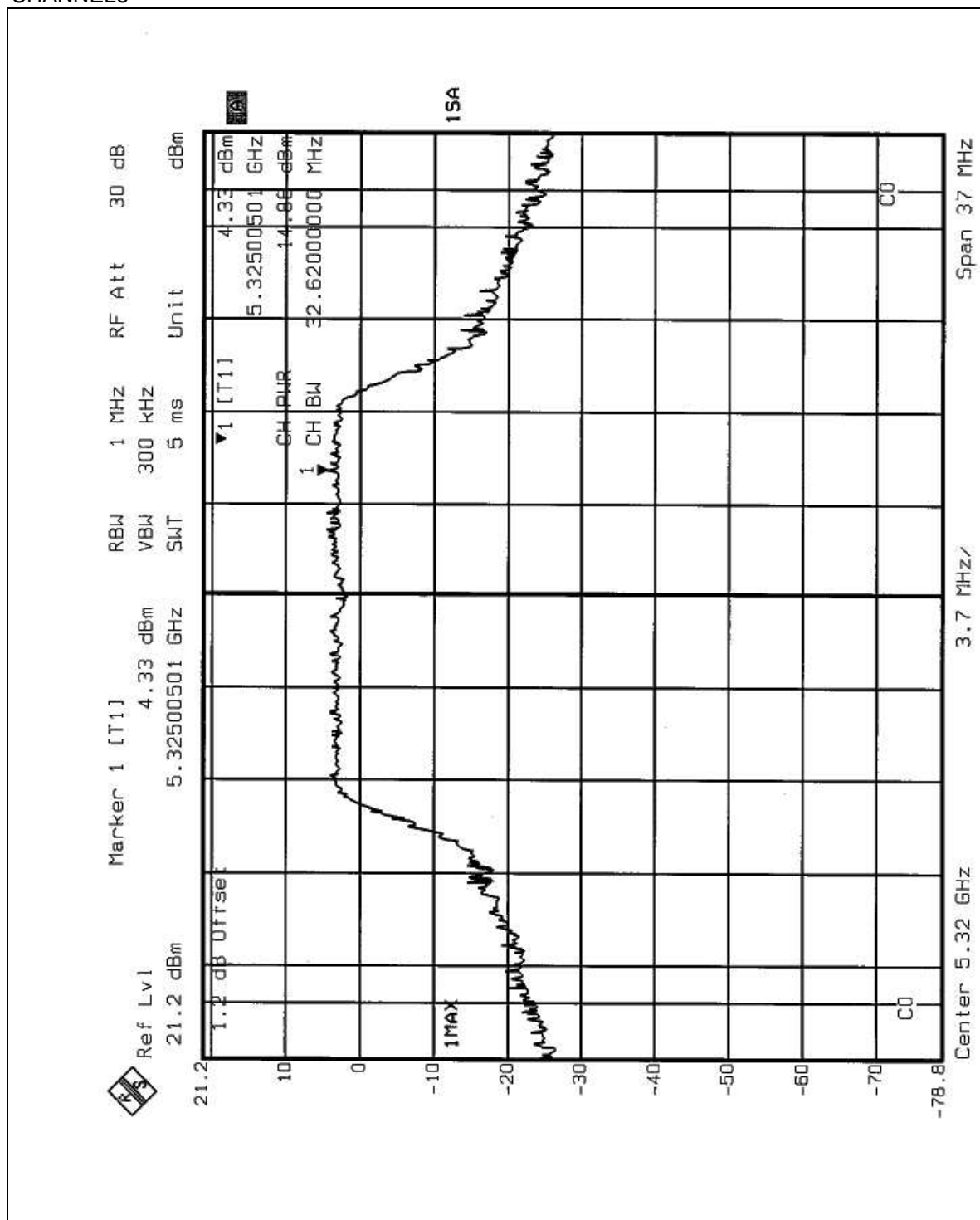


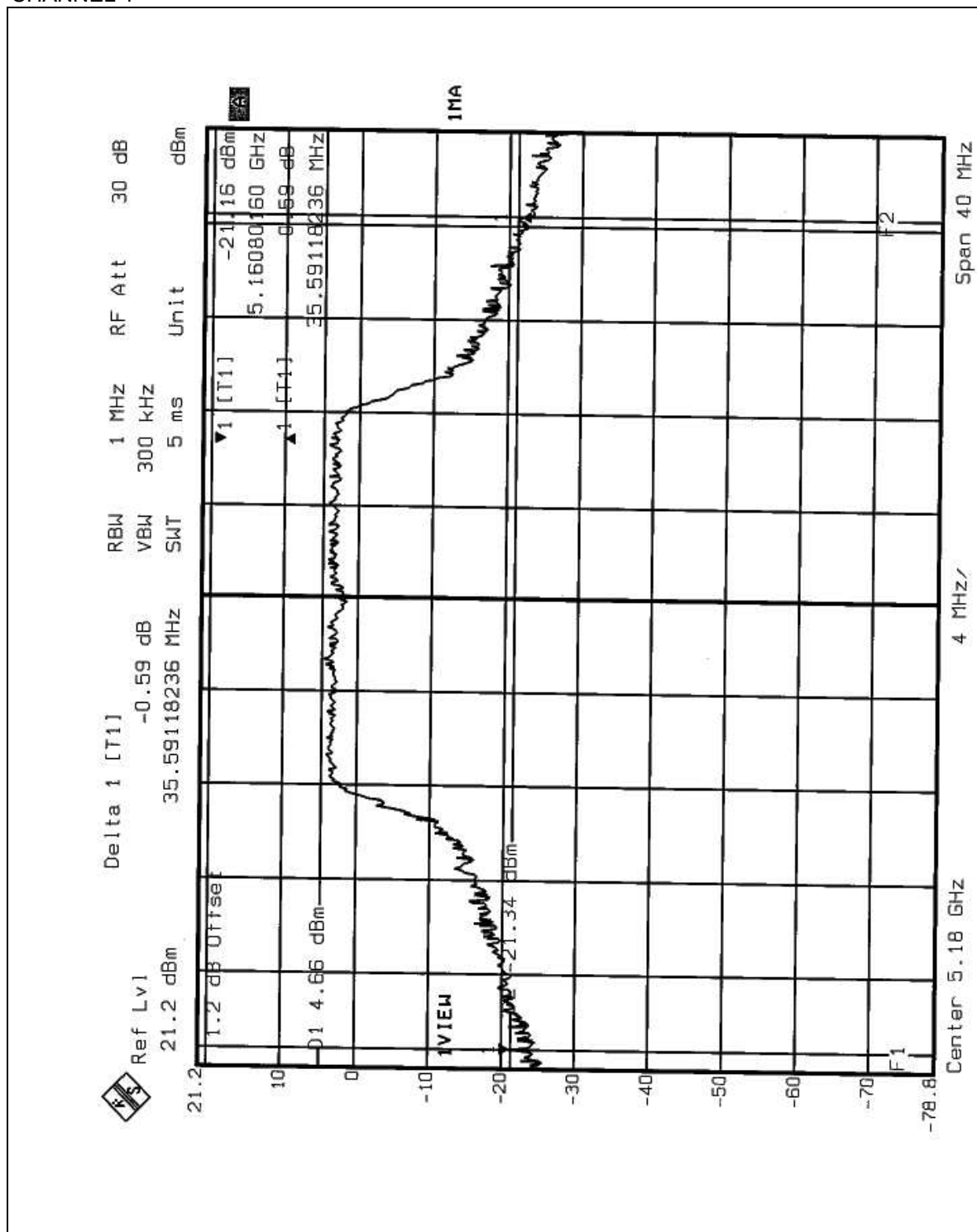
CHANNEL 4



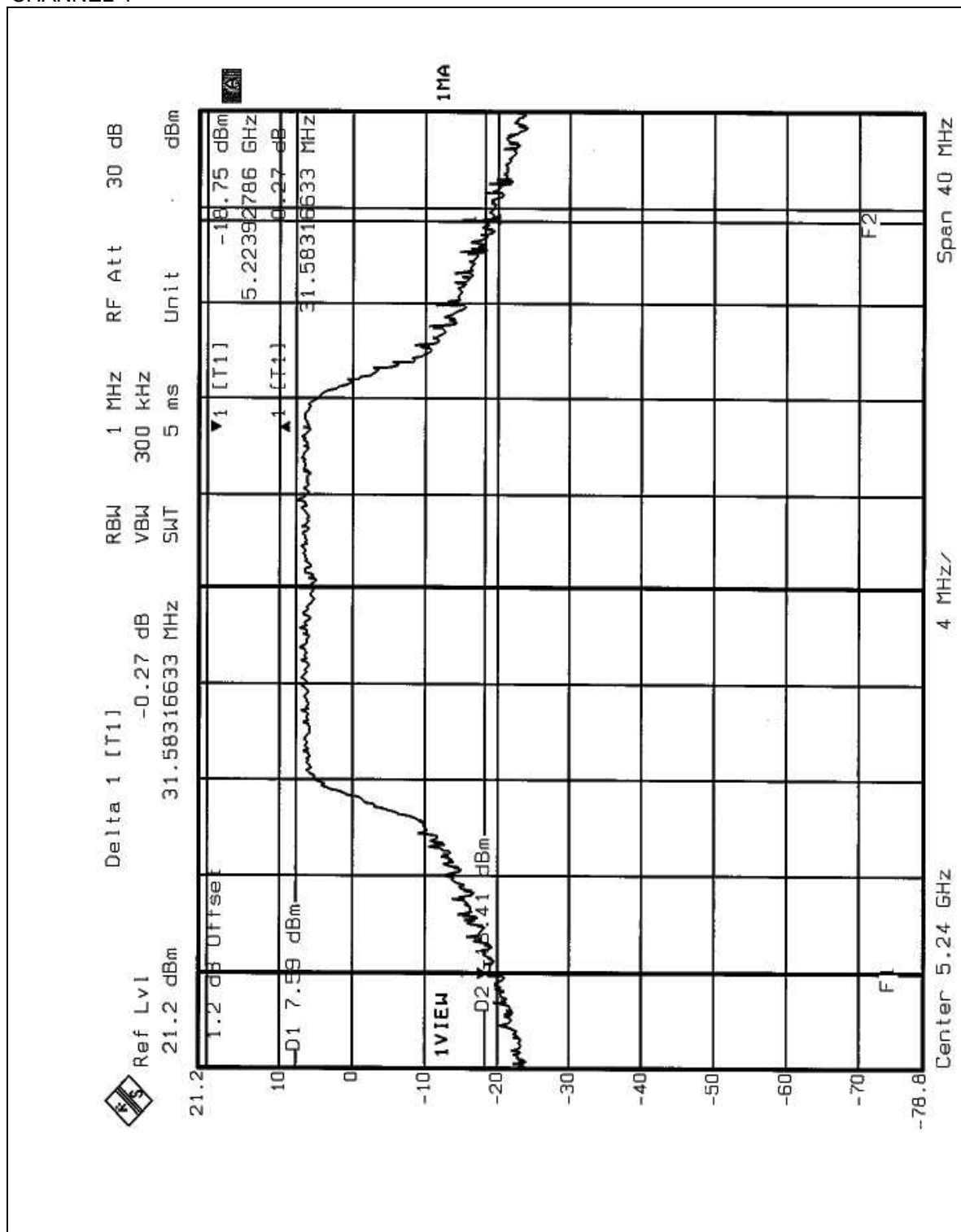
Marker 1 [T1]
 Ref Lvl 21.2 dBm
 5.26300301 GHz
 RBW 1 MHz
 VBW 300 kHz
 SWT 5 ms
 Unit dBm
 30 dB
 1SA
 1MAX
 1.2 dB Offset
 6.91 dBm
 5.26300301 GHz
 17.37 dBm
 32.86000000 MHz
 Center 5.26 GHz
 Span 37 MHz

CHANNEL8

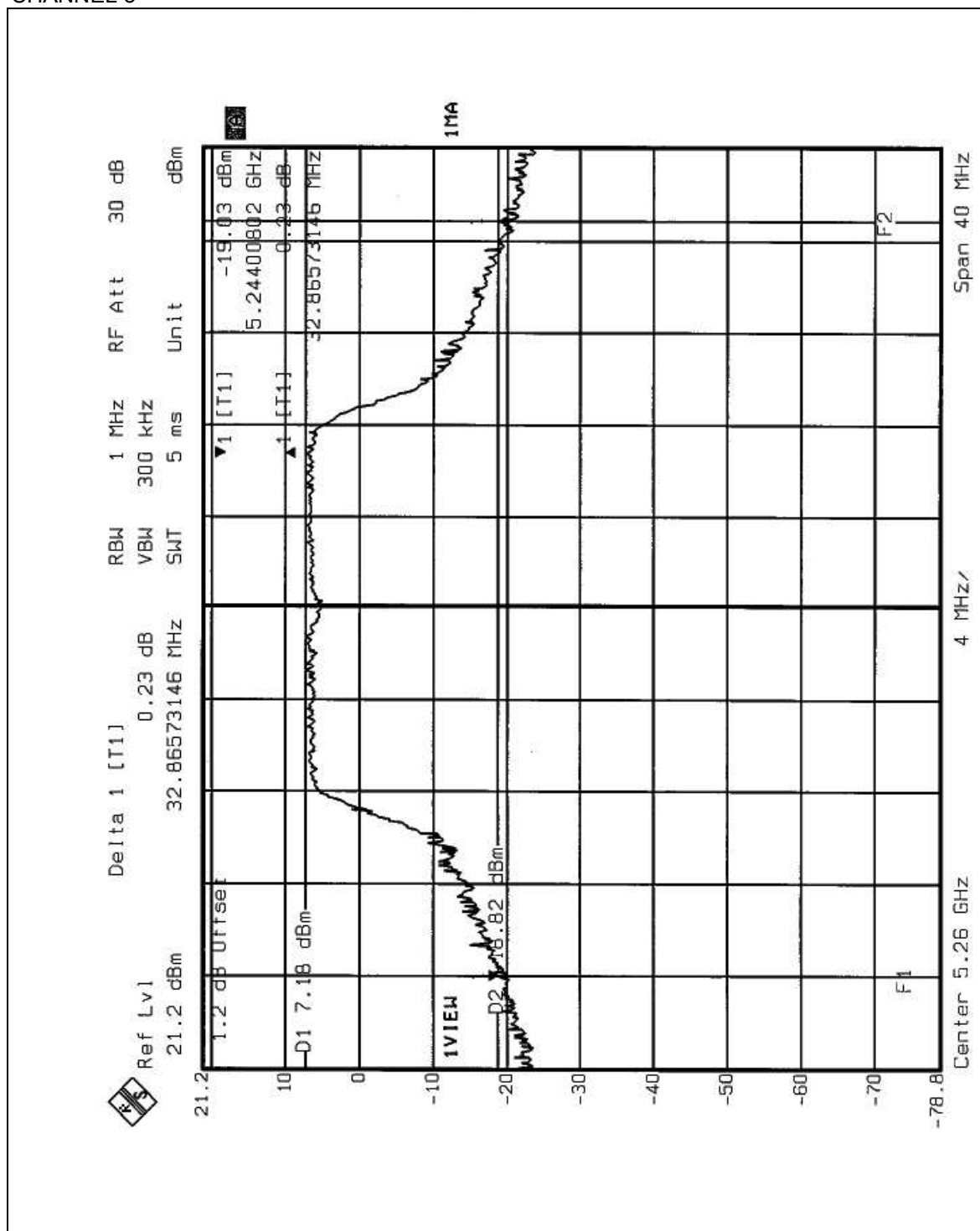




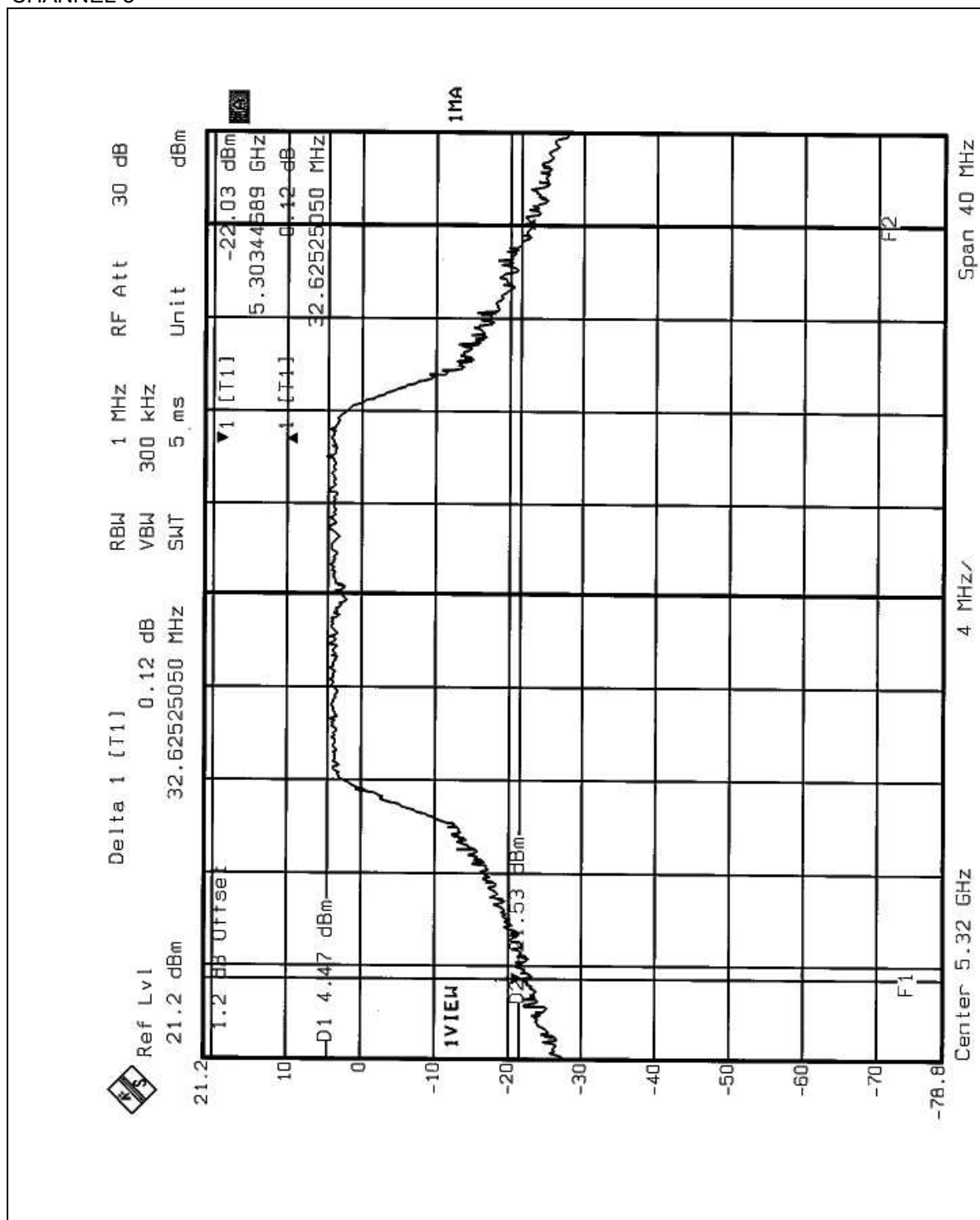
CHANNEL 4



CHANNEL 5



CHANNEL 8



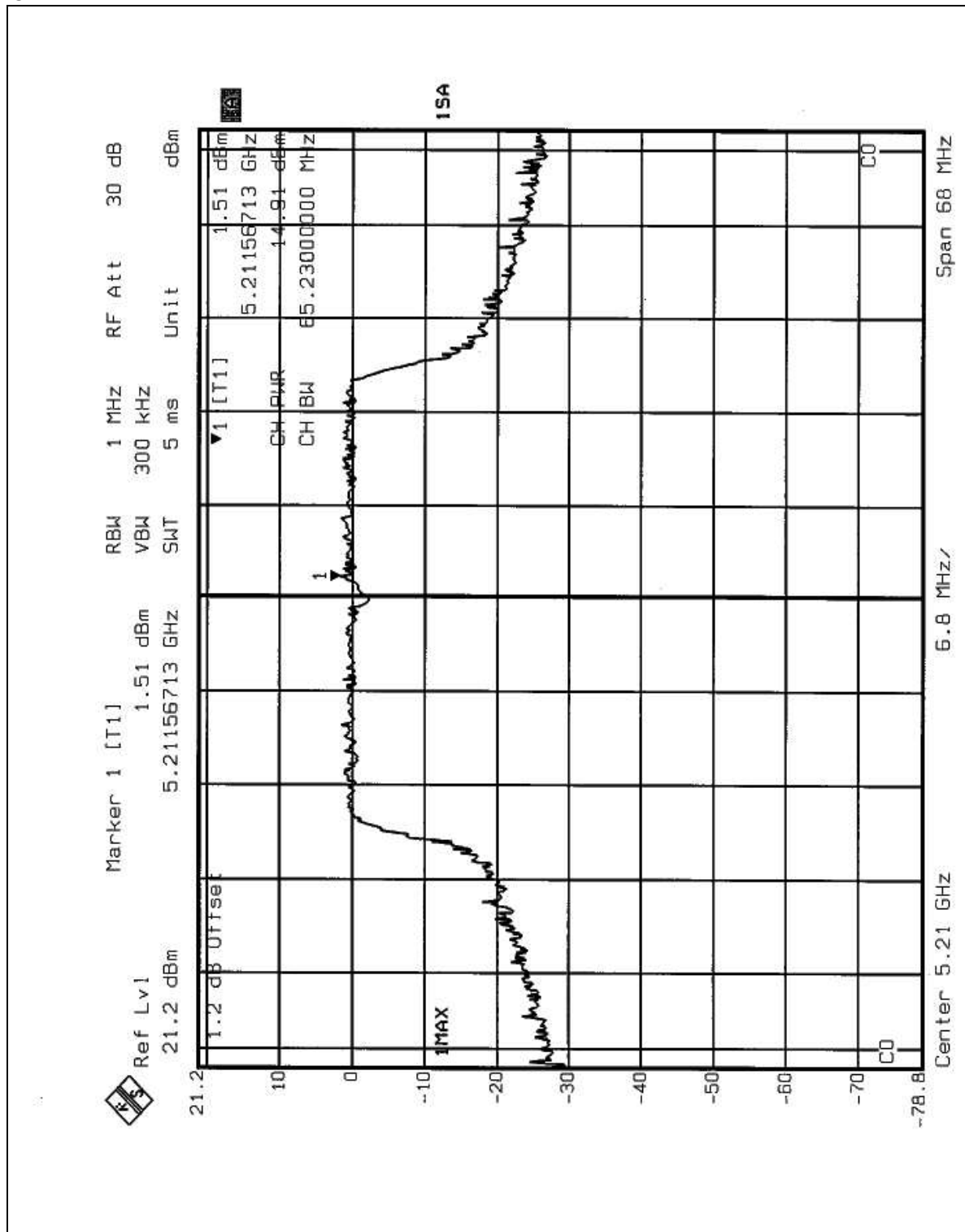


EUT	Wireless LAN and Mini PCI	MODEL	A13QBF
MODE	Turbo	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	26deg. C, 66%RH, 1005 hPa	TESTED BY	Ansen Lei

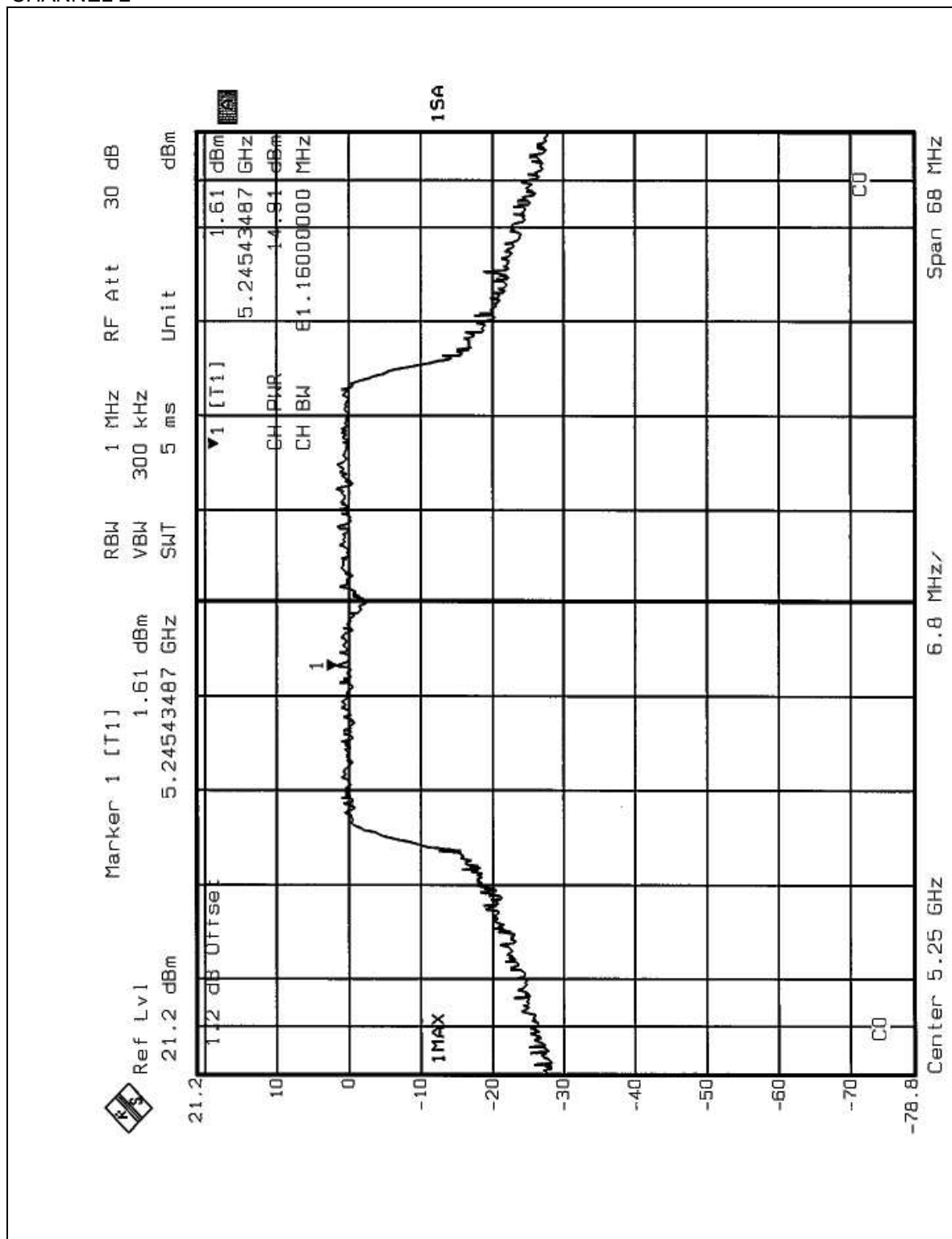
CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	26dBc Occupied Bandwidth (MHz)	PASS/FAIL
1	5210	14.91	17.00	65.23	PASS
2	5250	14.91	24.00	61.16	PASS
3	5290	14.96	24.00	61.16	PASS

NOTE: The 26dBc Occupied Bandwidth plot, please refer to the following pages.

CHANNEL 1

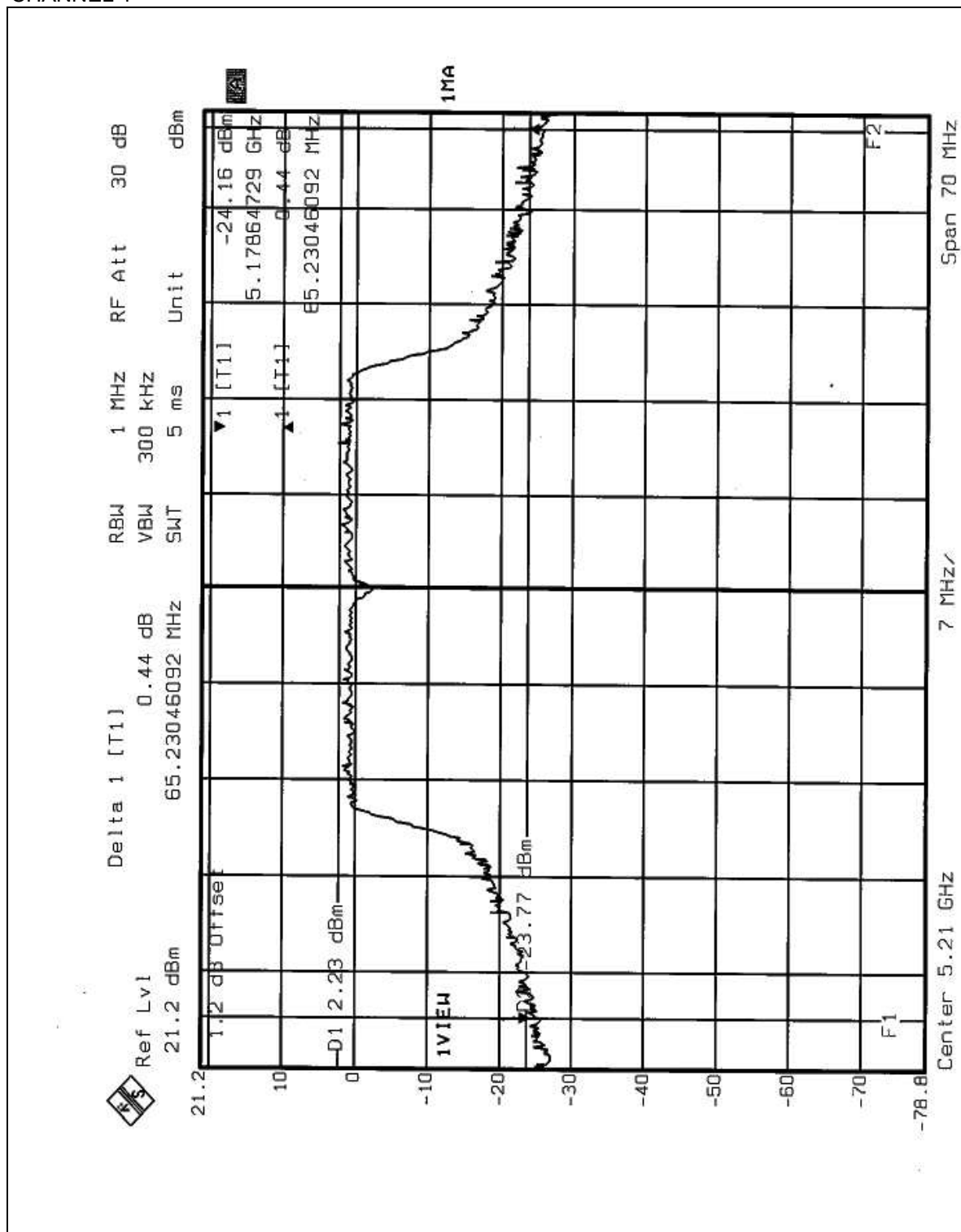


CHANNEL 2

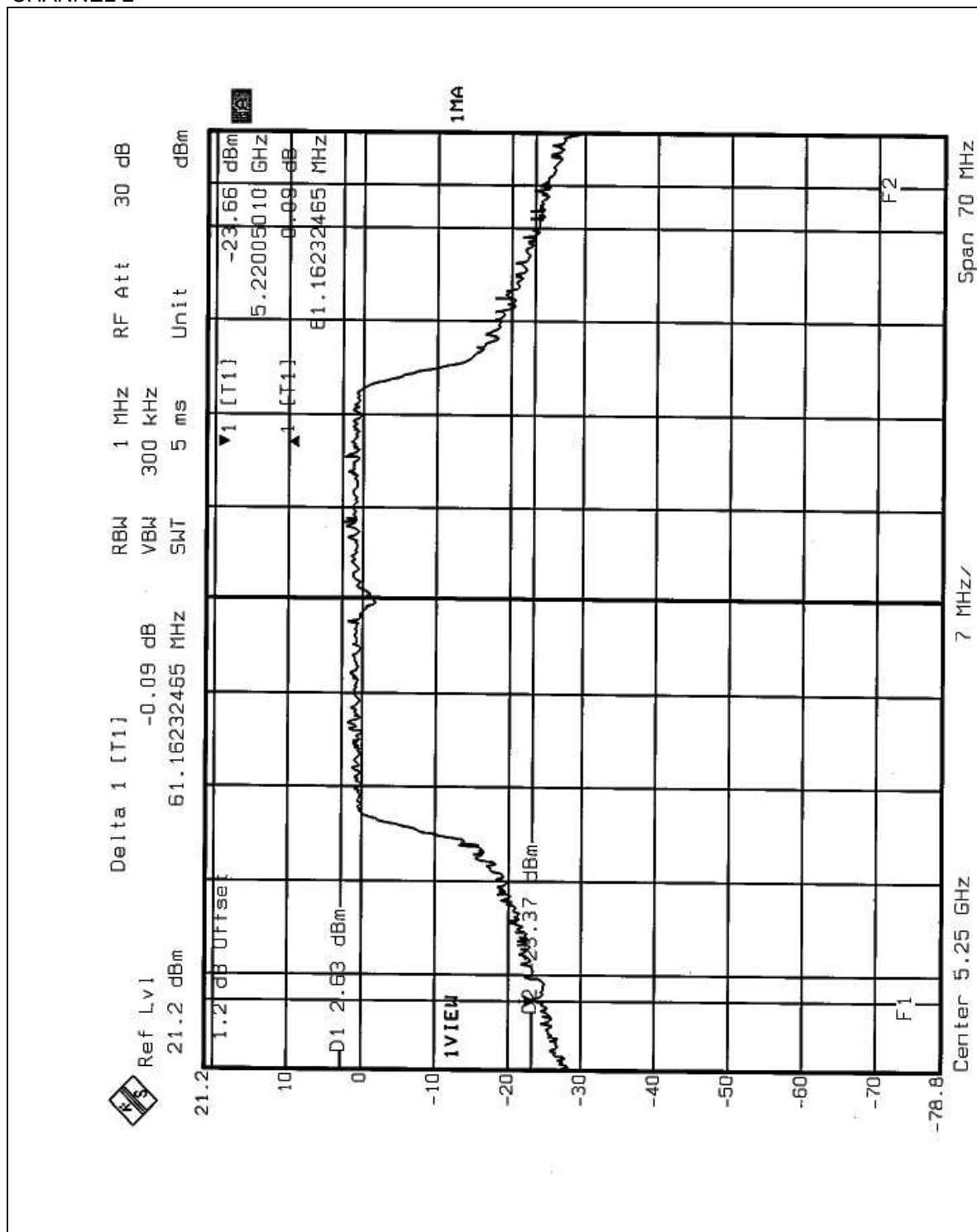


[illegible]

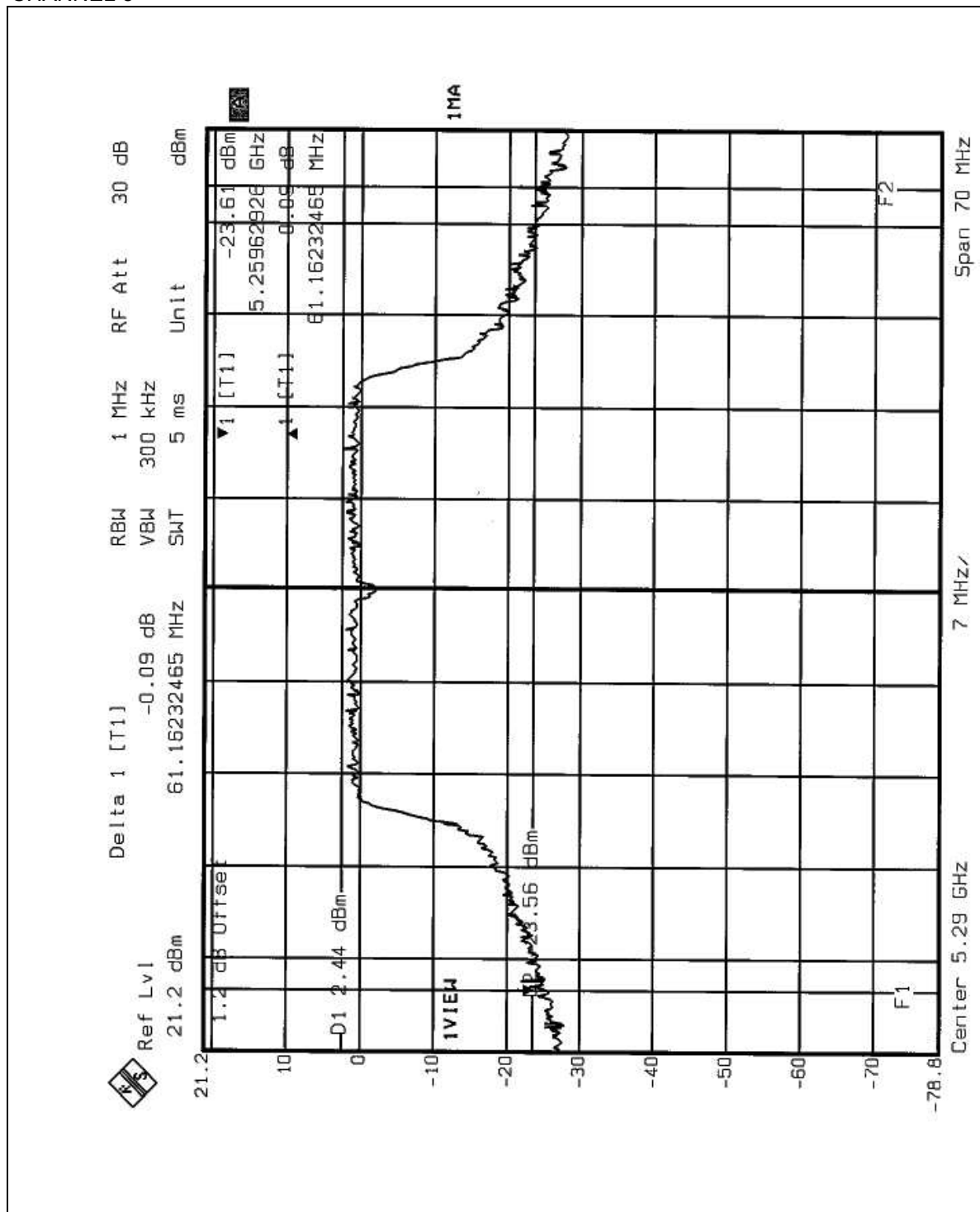
CHANNEL 1



CHANNEL 2



CHANNEL 3



4.4 PEAK POWER EXCURSION MEASUREMENT

4.4.1 LIMITS OF PEAK POWER EXCURSION MEASUREMENT

Frequency Band	Limit
5.15 – 5.25 GHz	13dB
5.25 – 5.35 GHz	13dB
5.725 – 5.825 GHz	13dB

4.4.2 TEST INSTRUMENTS

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

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

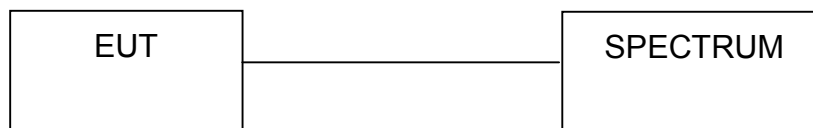
4.4.3 TEST PROCEDURE

1. The transmitter output was connected to the spectrum analyzer.
2. Set the spectrum bandwidth span to view the entire spectrum.
3. Using peak detector and Max-hold function for Trace 1 (RB=1MHz, VB=3MHz) and 2 (RB=1MHz, VB=300KHz).
4. The largest difference between Trace 1 and Trace 2 in any 1MHz band on any frequency was recorded.

4.4.4 DEVIATION FROM TEST STANDARD

No deviation

4.4.5 TEST SETUP



4.4.6 EUT OPERATING CONDITIONS

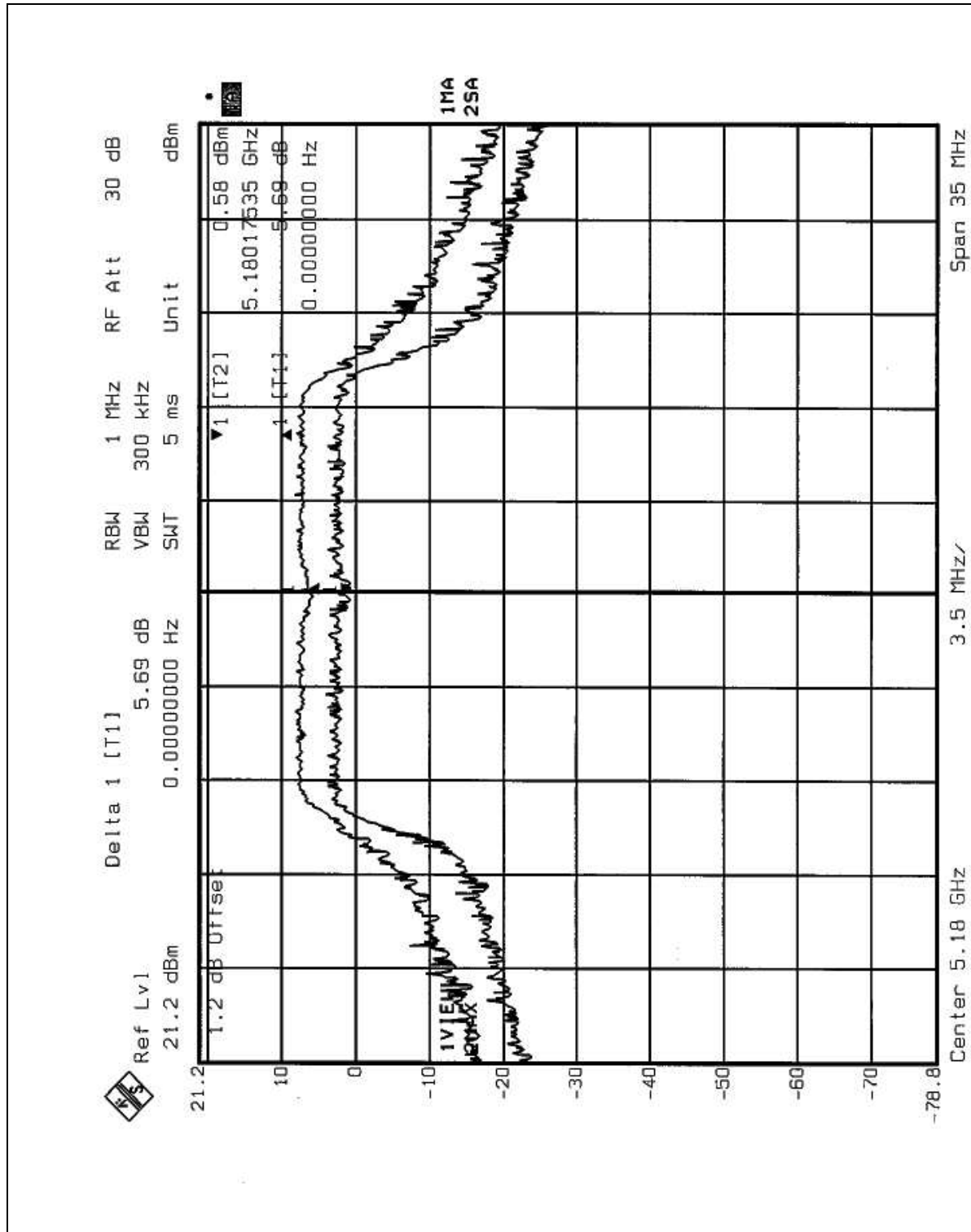
The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

4.4.7 TEST RESULTS

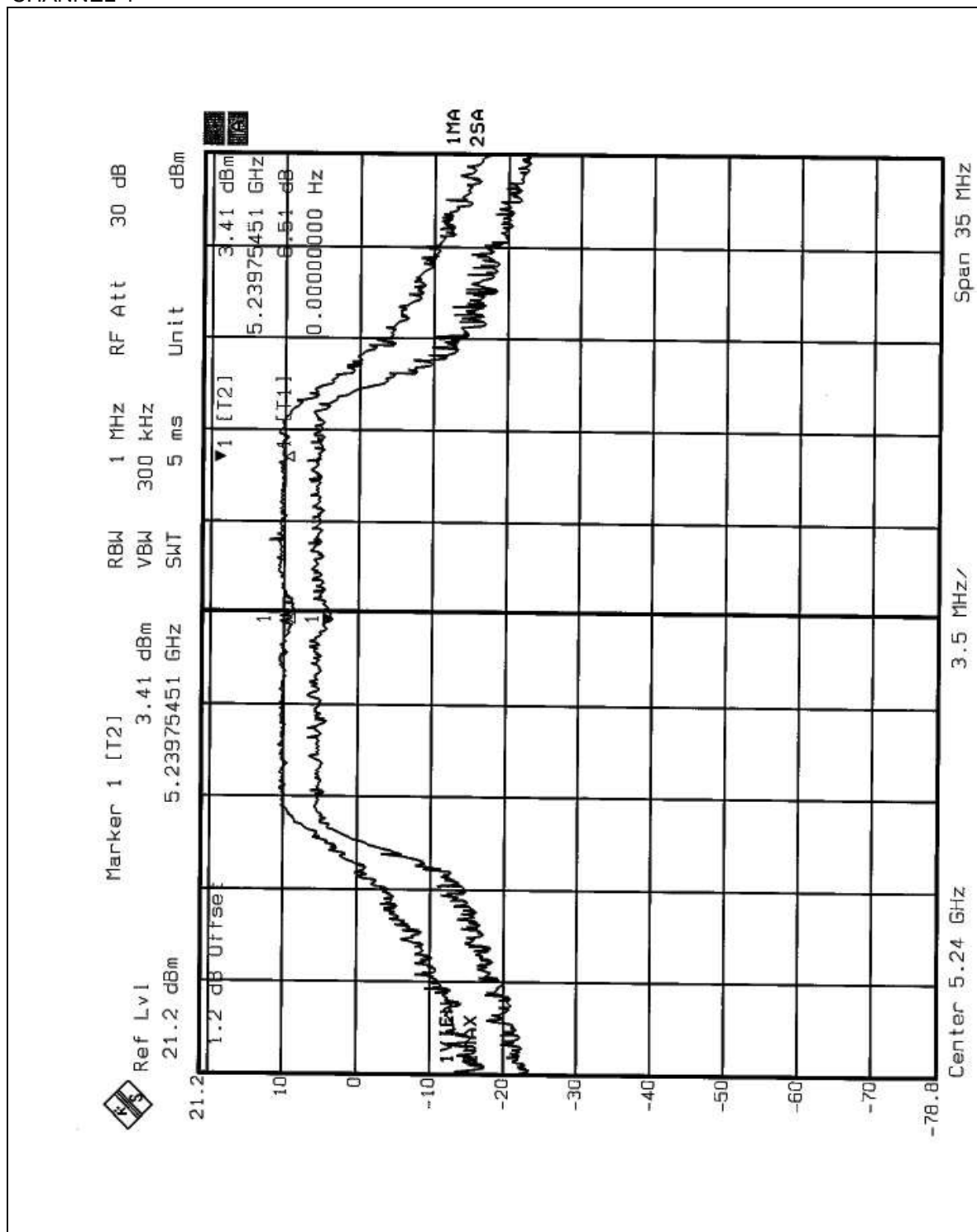
EUT	Wireless LAN and Mini PCI	MODEL	A13QBF
MODE	Normal	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	26deg. C, 66%RH, 1005 hPa	TESTED BY	Ansen Lei

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
1	5180	5.69	13	PASS
4	5240	6.51	13	PASS
5	5260	4.71	13	PASS
8	5320	6.17	13	PASS

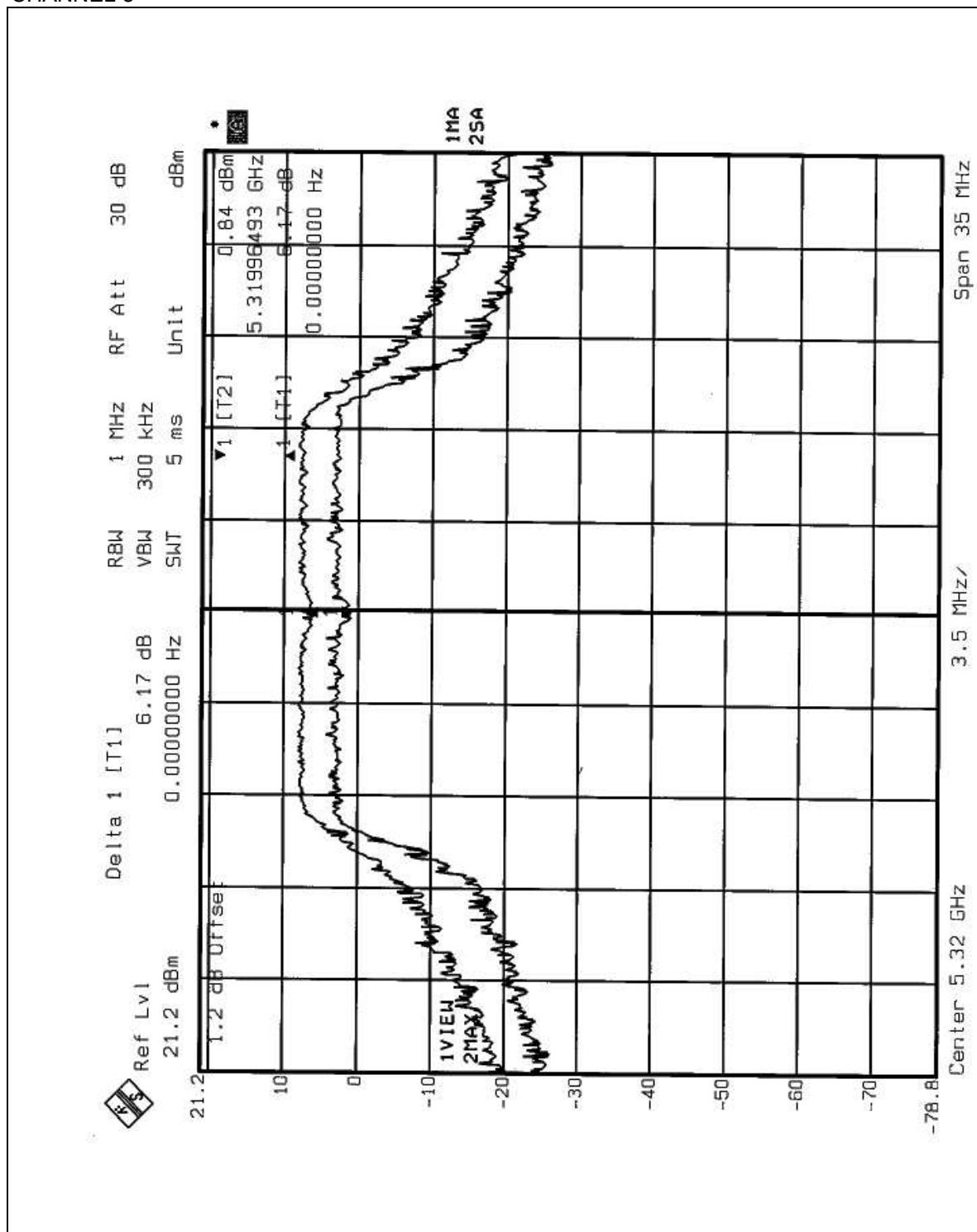
CHANNEL 1



CHANNEL 4



CHANNEL 8

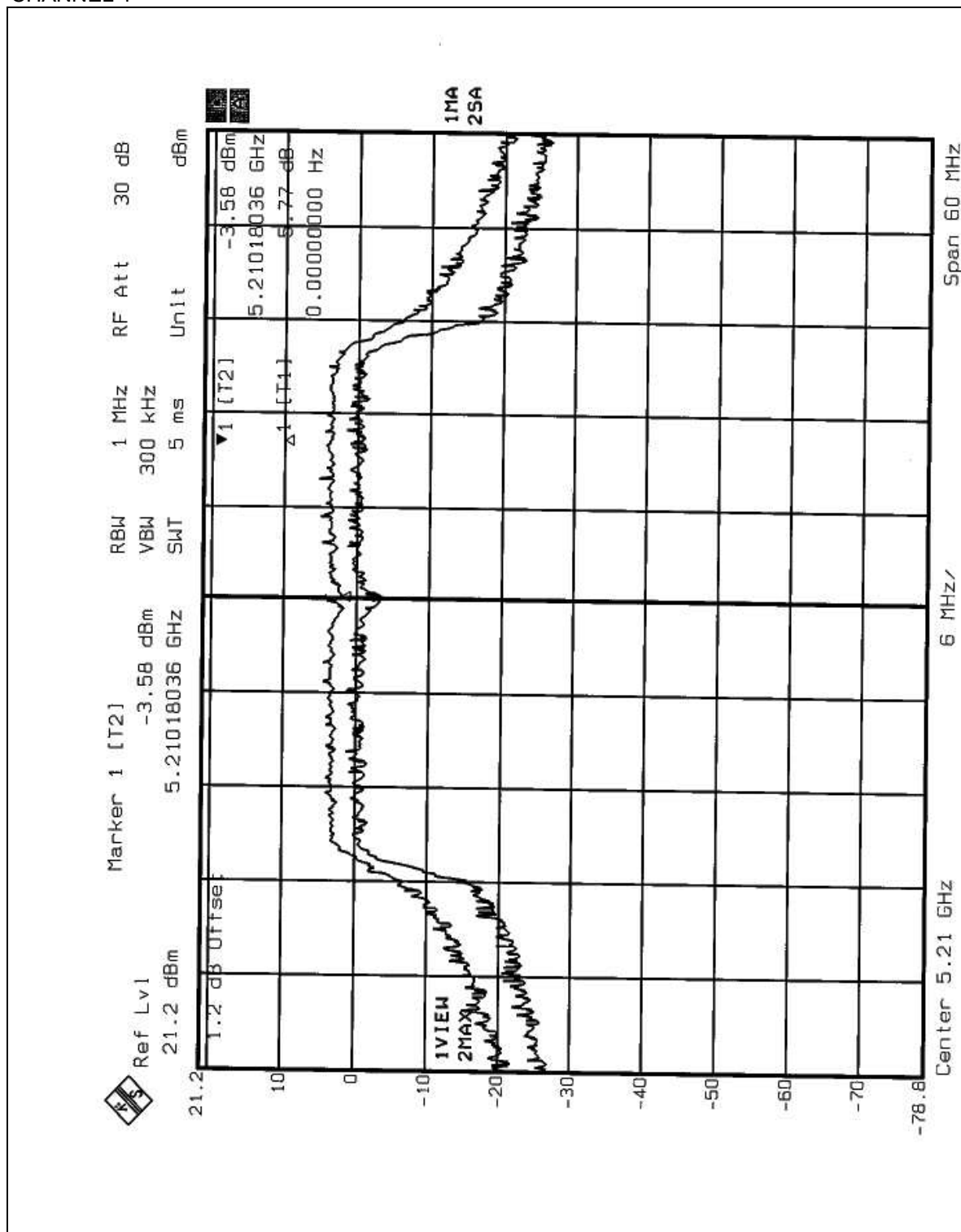




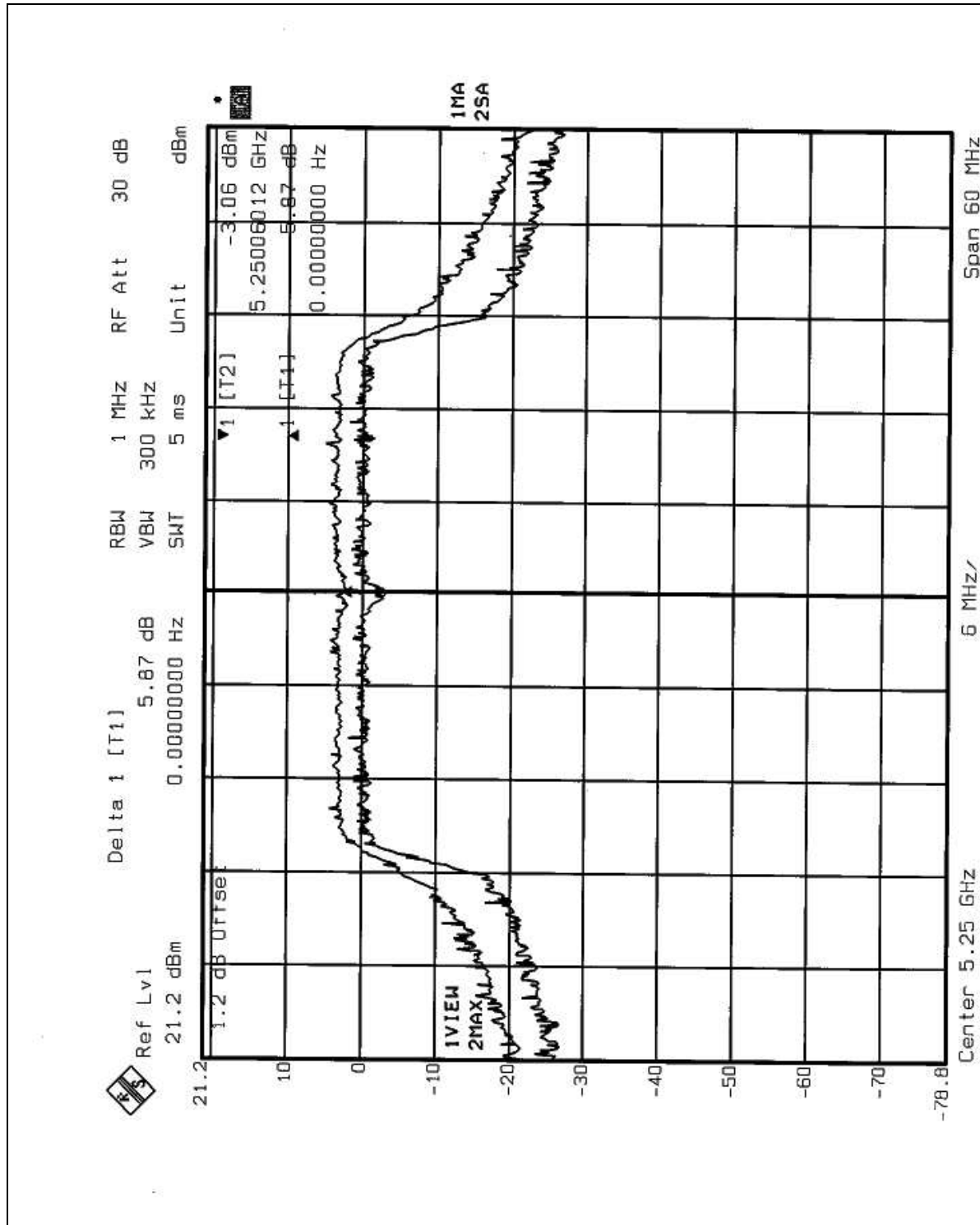
EUT	Wireless LAN and Mini PCI	MODEL	A13QBF
MODE	Turbo	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	26deg. C, 66%RH, 1005 hPa	TESTED BY	Ansen Lei

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
1	5210	5.77	13	PASS
2	5250	5.87	13	PASS
3	5290	5.76	13	PASS

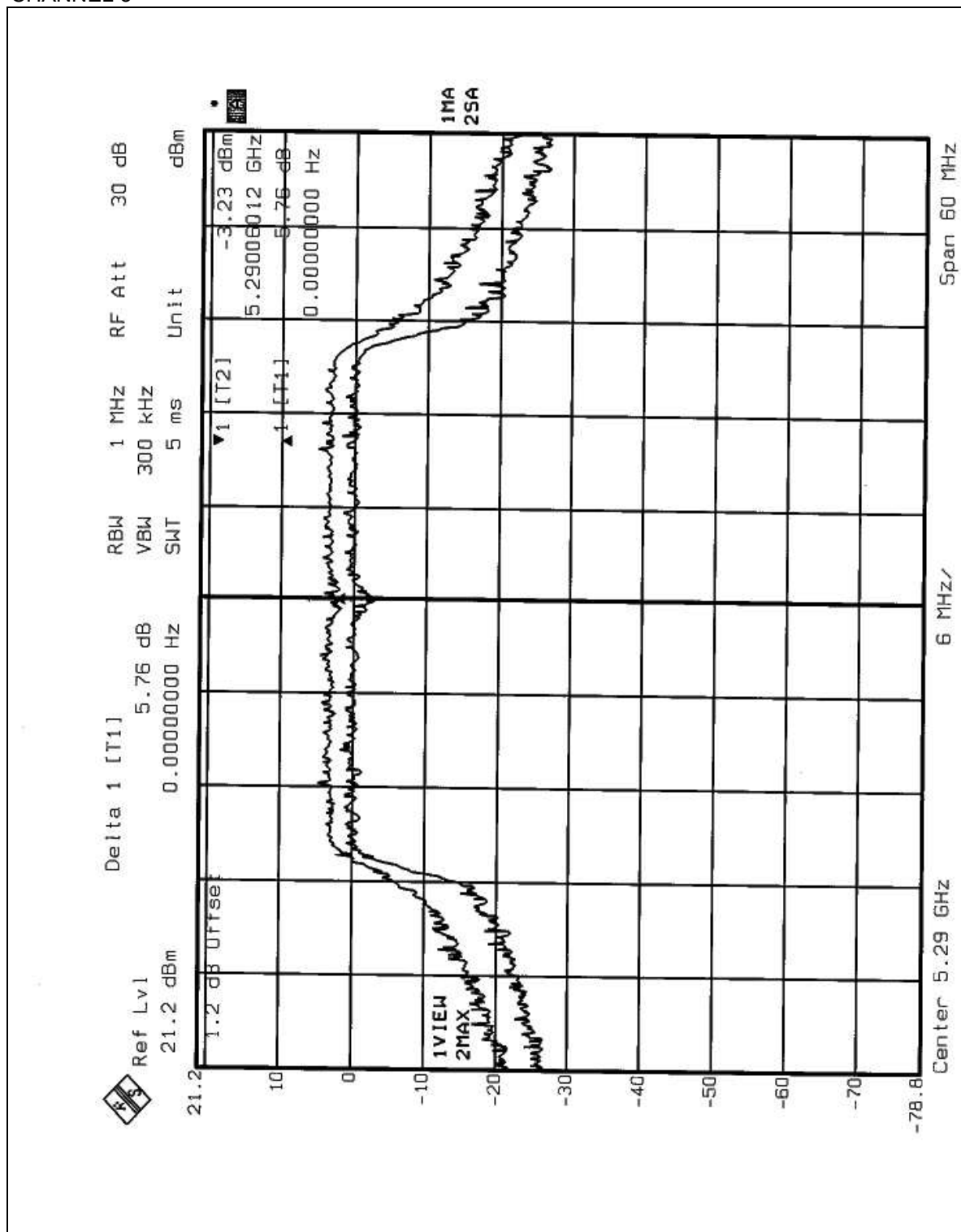
CHANNEL 1



CHANNEL 2



CHANNEL 3



4.5 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

Frequency Band	Limit
5.15 – 5.25 GHz	4dBm
5.25 – 5.35 GHz	11dBm
5.725 – 5.825 GHz	17dBm

4.5.2 TEST INSTRUMENTS

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

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

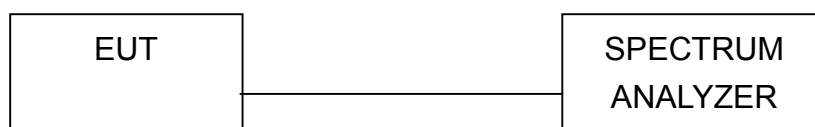
4.5.3 TEST PROCEDURES

1. The transmitter output was connected to the spectrum analyzer.
2. Set RBW=1MHz, VBW=3MHz. The PPSD is the highest level found across the emission in any 1MHz band.

4.5.4 DEVIATION FROM TEST STANDARD

No deviation

4.5.5 TEST SETUP



4.5.6 EUT OPERATING CONDITIONS

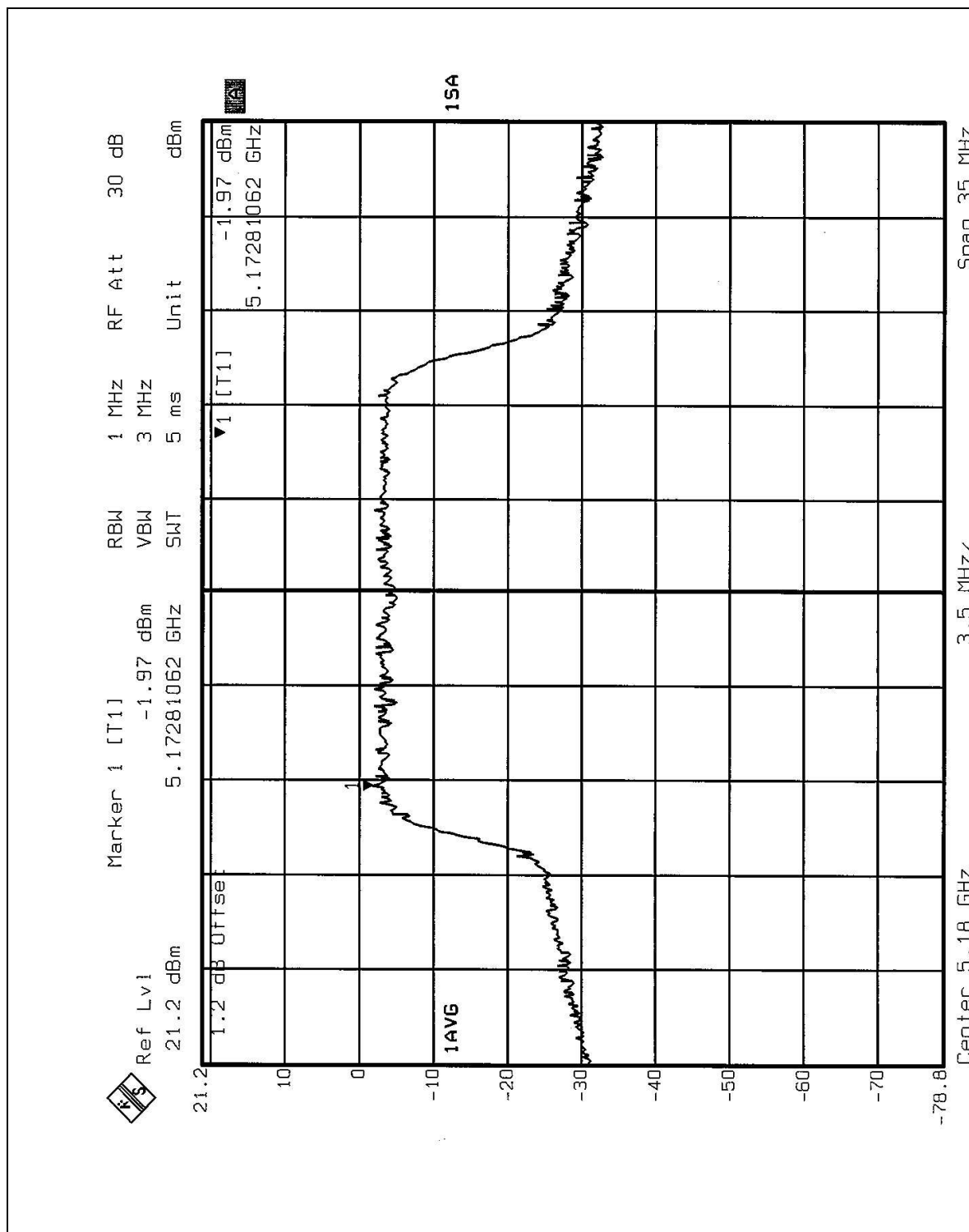
Same as 4.3.6

4.5.7 TEST RESULTS

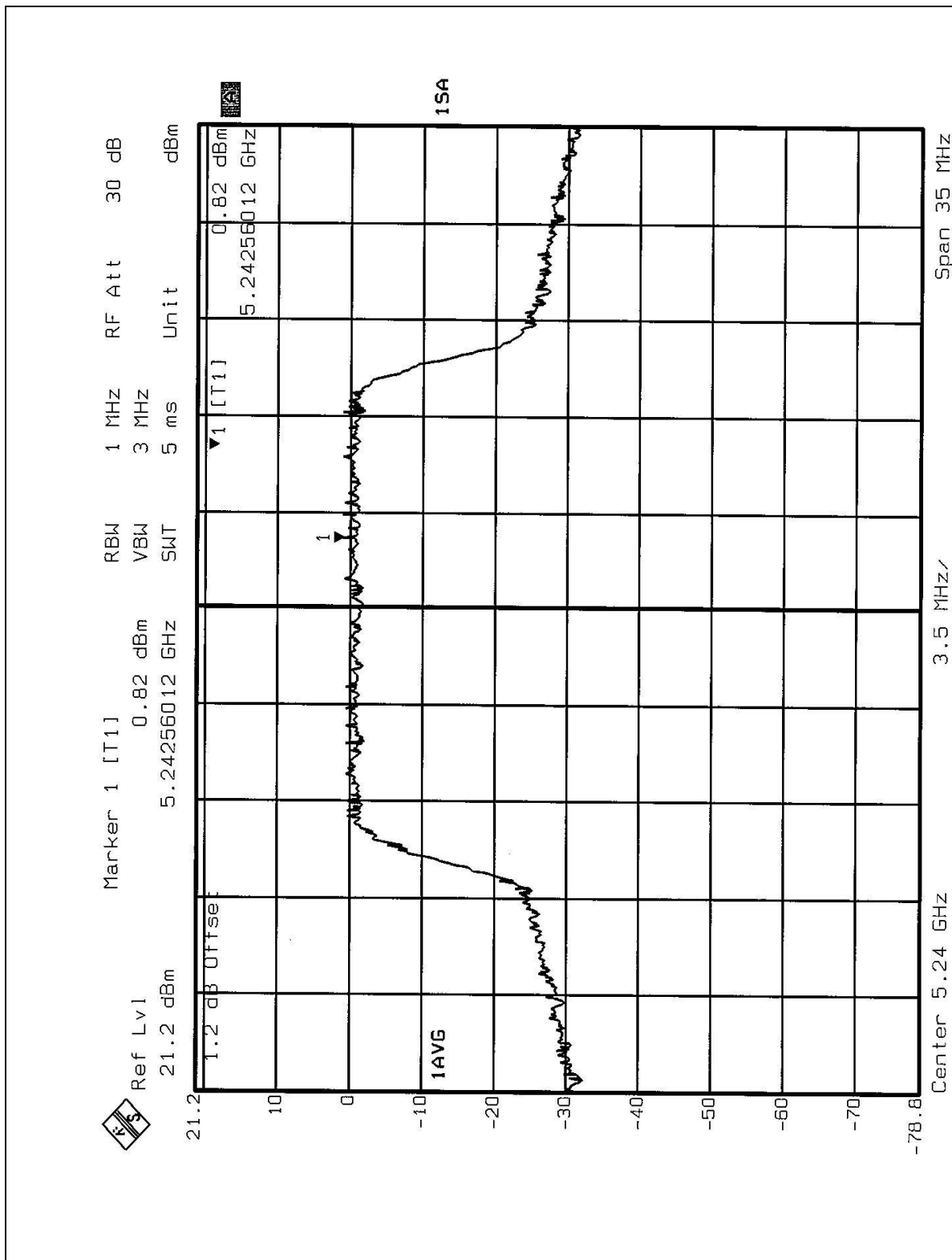
EUT	Wireless LAN and Mini PCI	MODEL	A13QBF
MODE	Normal	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	26deg. C, 66%RH, 1005 hPa	TESTED BY	Ansen Lei

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	5180	-1.97	4	PASS
4	5240	0.82	4	PASS
5	5260	0.64	11	PASS
8	5320	-2.02	11	PASS

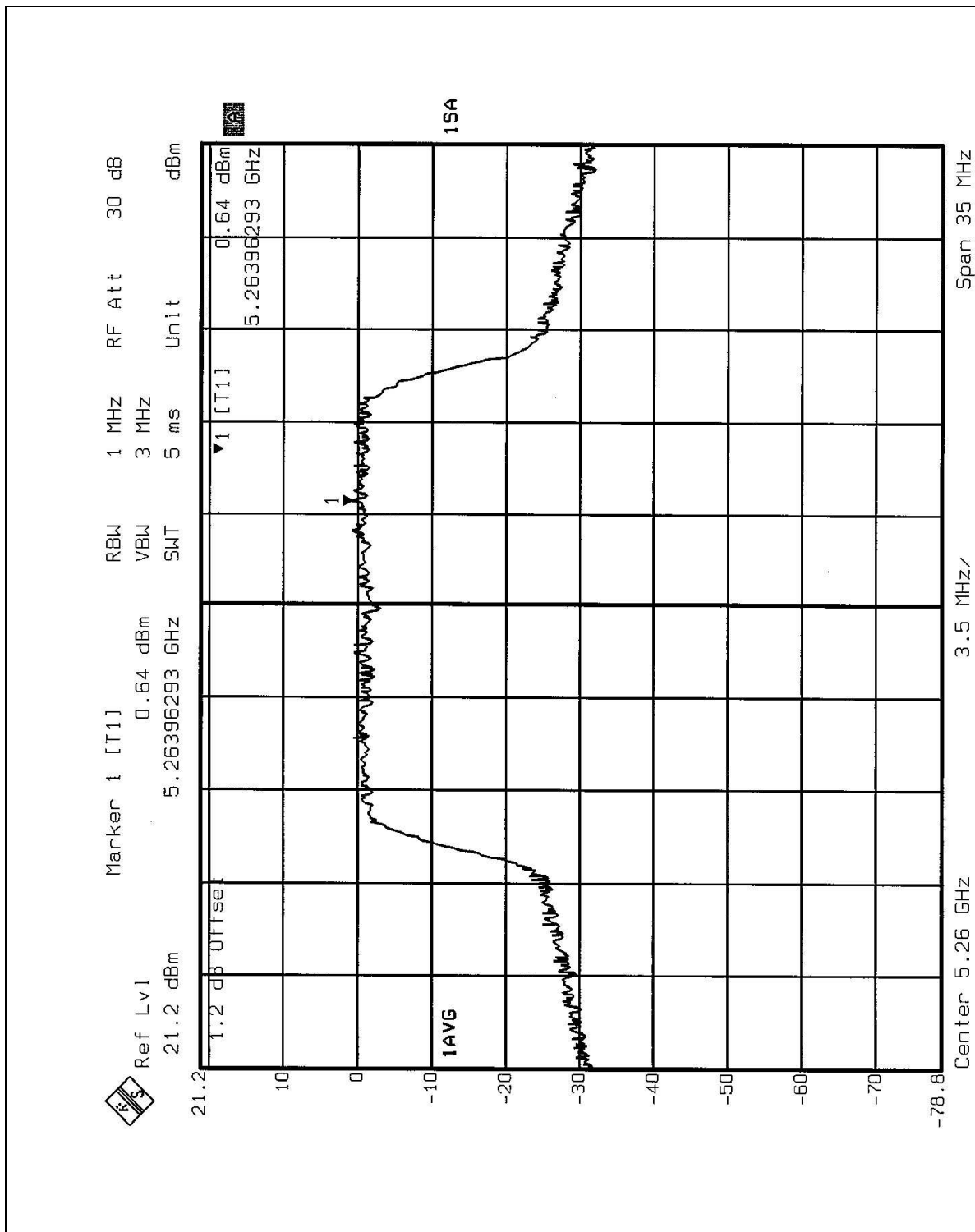
CHANNEL 1



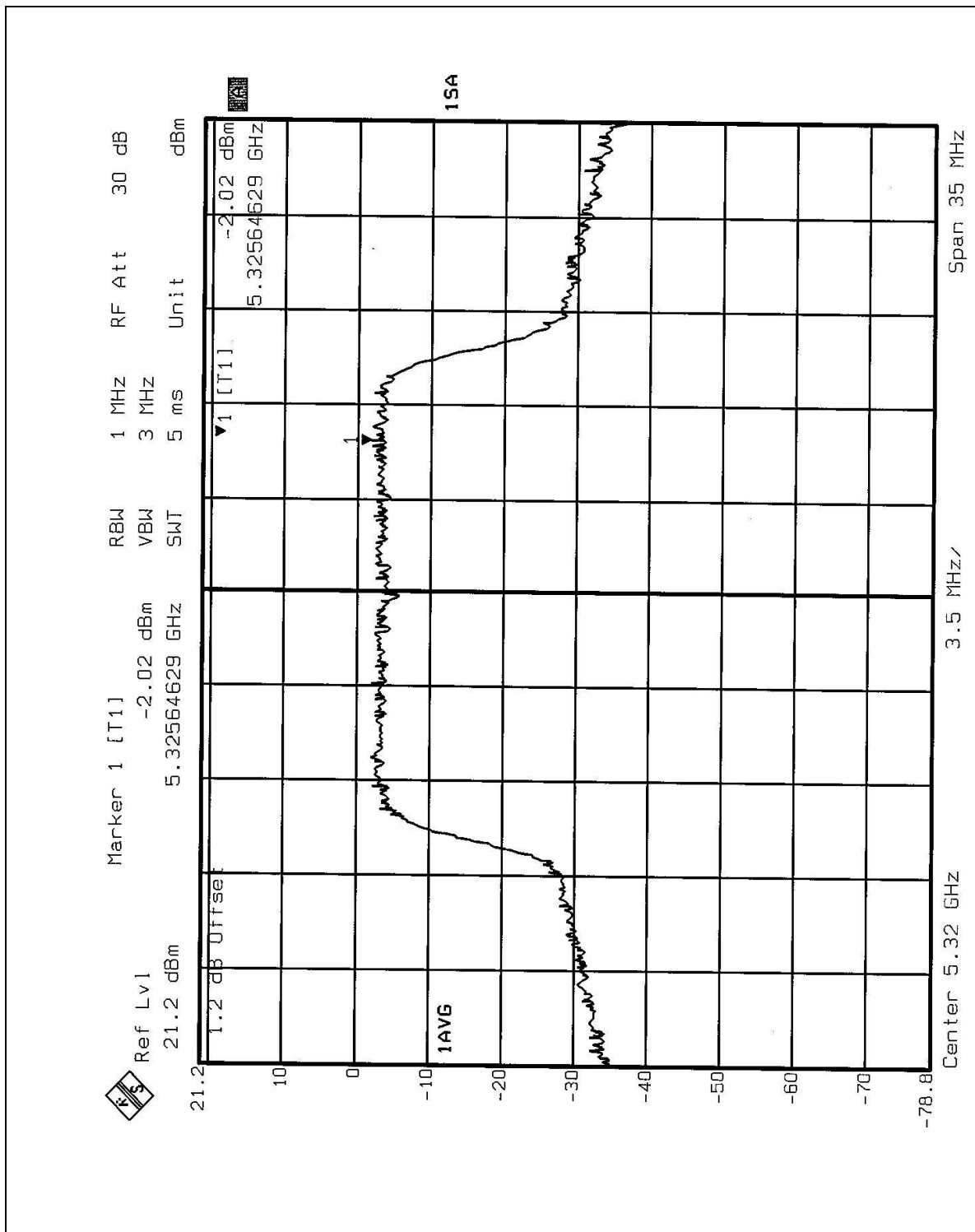
CHANNEL 4



CHANNEL 5



CHANNEL 8



EUT	Wireless LAN and Mini PCI	MODEL	A13QBF
MODE	Turbo	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	26deg. C, 66%RH, 1005 hPa	TESTED BY	Ansen Lei

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	5210	-5.36	4	PASS
2	5250	-4.55	4	PASS
3	5290	-4.86	11	PASS