FCC TEST REPORT

REPORT NO.: RF930909L11
MODEL NO.: WMIA-123AG
RECEIVED: Aug. 16, 2004
TESTED: Aug. 16 ~ Aug. 19, 2004

APPLICANT: Gemtek Technology Co., Ltd.

ADDRESS: No.1, Jen Ai Road, Hsinchu Industrial Park, Hukou Hsinchu 303, Taiwan, R.O.C.

ISSUED BY: Advance Data Technology Corporation

LAB ADDRESS: 47 14th Ling, Chia Pau Tsuen, Lin Kou Hsiang 244, Taipei Hsien, Taiwan, R.O.C.

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

0528
ILAC MRA

No. 2177-01

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1. CERTIFICATION

PRODUCT:	Wireless A+G Mini PCI Card
BRAND NAME:	Gemtek
MODEL NO.:	WMIA-123AG
APPLICANT:	Gemtek Technology Co., Ltd.
TEST SAMPLE:	Engineering Sample
TESTED:	Aug. 16 ~ Aug. 19, 2004
STANDARDS:	FCC Part 15, Subpart C (Section 15.247), Subpart E (Section 15.407), ANSI C63.4-2001

The above equipment have 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:** Sep. 20, 2004
(Windy Chou)

TECHNICAL ACCEPTANCE : Gary Chang , **DATE:** Sep. 20, 2004
Responsible for RF (Gary Chang)

APPROVED BY : Cody Chang , **DATE:** Sep. 20, 2004
(Cody Chang, Deputy Manager)

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 15, Subpart C (Section 15.247)			
Standard Section	**Test Type and Limit**	**Result**	**Remark**
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is –18.16dB at 0.189MHz
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 –1.32dB at 177.74MHz
15.247(d)	Power Spectral Density Limit: max. 8dBm	PASS	Meet the requirement of limit.
15.247(c)	Band Edge Measurement Limit: 20dB less than the peak value of fundamental frequency	PASS	Meet the requirement of limit.

APPLIED STANDARD: FCC Part 15, Subpart E (Section 15.407)			
Standard Section	**Test Type**	**Result**	**Remark**
15.407(b)(5)	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is –18.18dB at 0.193MHz
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 –0.99dB at 5835.00MHz
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.

2.1 MEASUREMENT UNCERTAINTY

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	3.73 dB
	200MHz ~1000MHz	3.74 dB
	1GHz ~ 18GHz	2.20 dB
	18GHz ~ 40GHz	1.88 dB

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	Wireless A+G Mini PCI Card
MODEL NO.	WMIA-123AG
POWER SUPPLY	3.3Vdc from host equipment
MODULATION TYPE	DBPSK, DQPSK, CCK, 16QAM, 64QAM
MODULATION TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	802.11b:11/5.5/2/1Mbps 802.11g: 54/48/36/24/18/12/9/6Mbps 802.11a: 54/48/36/24/18/12/9/6Mbps (Turbo mode: up to 108Mbps *see Note 2)
FREQUENCY RANGE	802.11b & 802.11g: 2412 ~ 2462MHz 802.11a: 5.15 ~ 5.35GHz and 5.725 ~ 5.850GHz
NUMBER OF CHANNEL	802.11b & 802.11g: 11 for Normal mode / 1 for Turbo mode 802.11a: 13 for Normal mode / 5 for Turbo mode
CHANNEL SPACING	802.11b & 802.11g: 5MHz 802.11a: 20MHz for Normal mode / 40MHz for Turbo mode
OUTPUT POWER	802.11b: 41.687mW 802.11g: 26.303mW 802.11a: 16.069mW
DATA CABLE	NA
ANTENNA TYPE	External Antenna: Dipole antenna with 4.0dBi gain for 2.4GHz band Dipole antenna with 5.0dBi gain for 5GHz band Internal Antenna: Printed antenna with 2.44dBi gain for 2.4GHz band Printed antenna with 1.65dBi gain for 5GHz band
I/O PORTS	NA
ASSOCIATED DEVICES	NA

NOTE:

1. The EUT operates in both the 5GHz and 2.4GHz Bands and compatibility with 802.11a and 802.11b, 802.11g technology.
2. This EUT is capable of providing data rates of up to 108Mbps in Turbo Mode depending upon reception quality.
3. 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

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

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

NOTE:

1. Below 1GHz, the channel 1, 6, and 11 were pre-tested in chamber. The channel 11, worst case one, was chosen for final test. Above 1GHz, the channel 1, 6, and 11 were tested individually.
2. From our experience and technical viewpoint, we have chosen data rates, 11Mbps with CCK technique and 6Mbps with OFDM technique, as the worst cases for the test among other data rates.

One channel is provided to this EUT for Turbo Mode.

Channel	Frequency
6	2437 MHz

NOTE: One turbo mode at frequency 2437MHz.

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

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

Five channels are provided to this EUT for Turbo Mode.

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

NOTE:

1. 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).
3. Channel1, 4, 5, 8, 9 and 12 are the closest frequencies to the band edge, were chosen for final test of Normal Mode.
4. Channel 1~5 were chosen for final test of Turbo mode.

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a Wireless A+G Mini PCI Card. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart C. (15.247),
Subpart E (15.407). ANSI C63.4 : 2001

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

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

3.4 DESCRIPTION OF SUPPORT UNITS

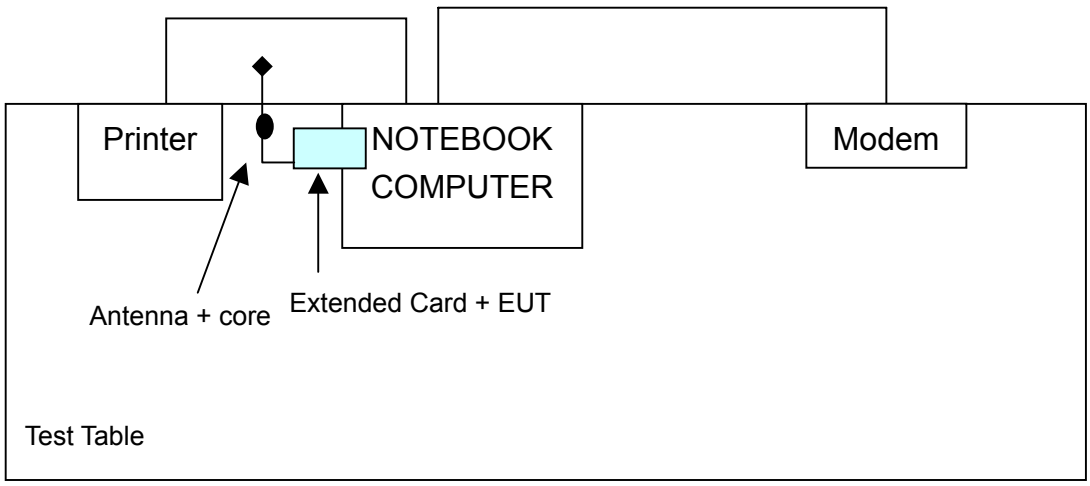
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK COMPUTER	DELL	PP05L	12130898320	E2K24CLNS
2	PRINTER	EPSON	LQ-300+	DCGY054147	FCC DoC Approved
3	MODEM	ACEEX	1414V/3	0401008269	IFAXDM1414

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA
2	1.2m braid shielded wire, terminated with DB25 and Centronics connector via metallic frame, w/o core
3	1.2m shielded without core

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

3.5 CONFIGURATION OF SYSTEM UNDER TEST



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

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

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

4.1.2 TEST INSTRUMENTS

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

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

2. The test was performed in HwaYa Shielded Room 2.

3. The VCCI Site Registration No. is C-2047.

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.

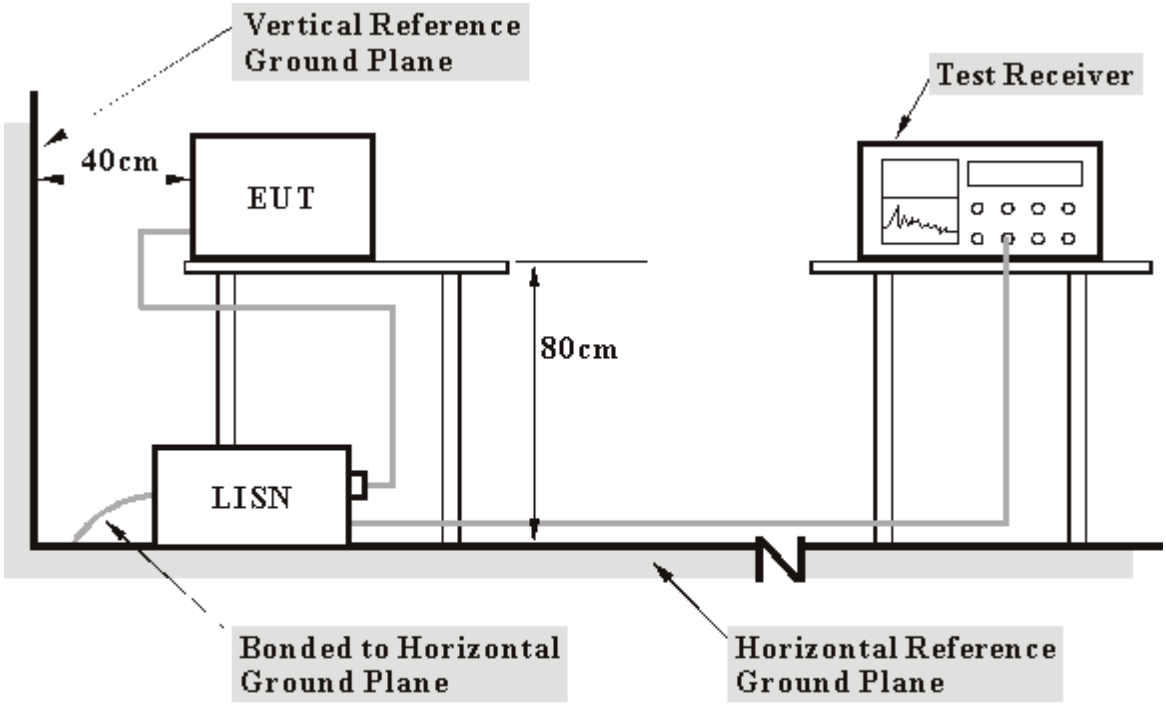
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (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

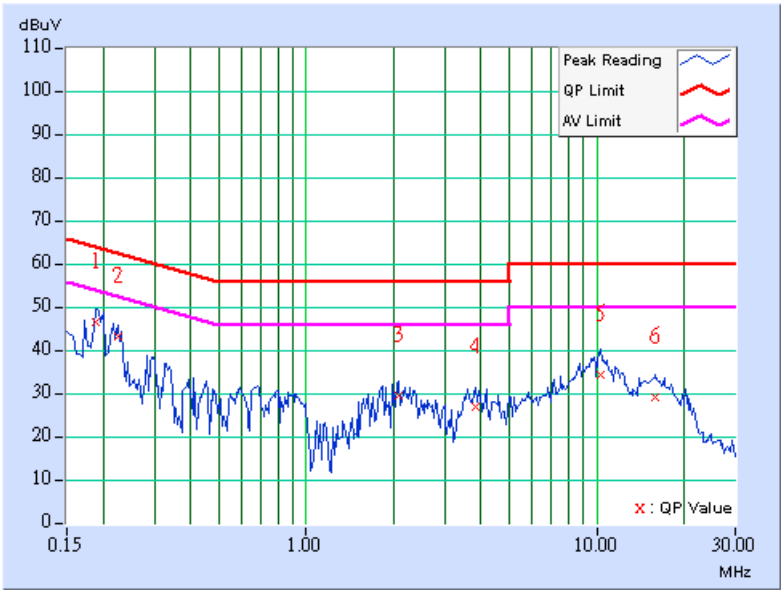
a. Connected the EUT to a notebook system placed on a testing table.
b. The notebook system ran a test program (provided by manufacturer) to enable EUT under transmission/receiving condition continuously at specific channel frequency.
c. The notebook system sent "H" messages to its screen.
d. The notebook system sent “H” messages to modem.
e. The notebook system sent "H" messages to printer, and the printer prints them on paper.
f. Steps c-e are repeated.

4.1.7 TEST RESULTS

EUT	Wireless A+G Mini PCI Card	MODEL	WMIA-123AG
MODE	Channel 1	6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	TESTED BY: Match Tsui	

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	**0.189**	**0.10**	**45.82**	**-**	**45.92**	**-**	**64.08**	**54.08**	**-18.16**	**-**
2	0.224	0.10	42.59	-	42.69	-	62.66	52.66	-19.97	-
3	2.082	0.26	29.05	-	29.31	-	56.00	46.00	-26.69	-
4	3.832	0.31	26.34	-	26.65	-	56.00	46.00	-29.35	-
5	10.375	0.54	33.57	-	34.11	-	60.00	50.00	-25.89	-
6	15.914	0.74	28.57	-	29.31	-	60.00	50.00	-30.69	-

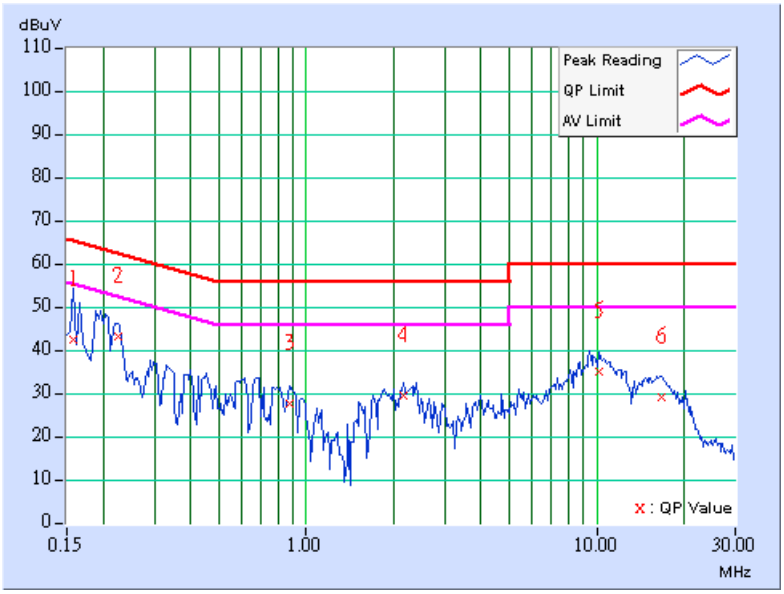
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Wireless A+G Mini PCI Card	**MODEL**	WMIA-123AG
MODE	Channel 1	**6dB BANDWIDTH**	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**PHASE**	Neutral (N)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	**TESTED BY**: Match Tsui	

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	0.158	0.10	41.99	-	42.09	-	65.58	55.58	-23.49	-
2	0.224	0.10	42.57	-	42.67	-	62.66	52.66	-19.99	-
3	0.873	0.21	27.22	-	27.43	-	56.00	46.00	-28.57	-
4	2.164	0.25	28.90	-	29.15	-	56.00	46.00	-26.85	-
5	10.203	0.49	34.58	-	35.07	-	60.00	50.00	-24.93	-
6	16.648	0.59	28.78	-	29.37	-	60.00	50.00	-30.63	-

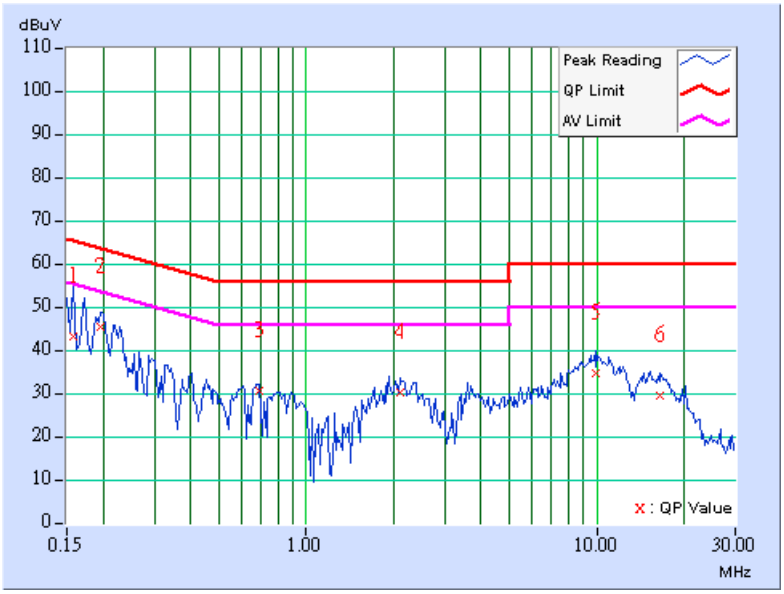
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Wireless A+G Mini PCI Card	MODEL	WMIA-123AG
MODE	Channel 6	6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	TESTED BY: Match Tsui	

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	0.158	0.10	42.39	-	42.49	-	65.58	55.58	-23.08	-
2	0.197	0.10	44.91	-	45.01	-	63.74	53.74	-18.73	-
3	0.685	0.18	29.91	-	30.09	-	56.00	46.00	-25.91	-
4	2.102	0.26	29.45	-	29.71	-	56.00	46.00	-26.29	-
5	9.941	0.53	34.17	-	34.70	-	60.00	50.00	-25.30	-
6	16.504	0.77	29.04	-	29.81	-	60.00	50.00	-30.19	-

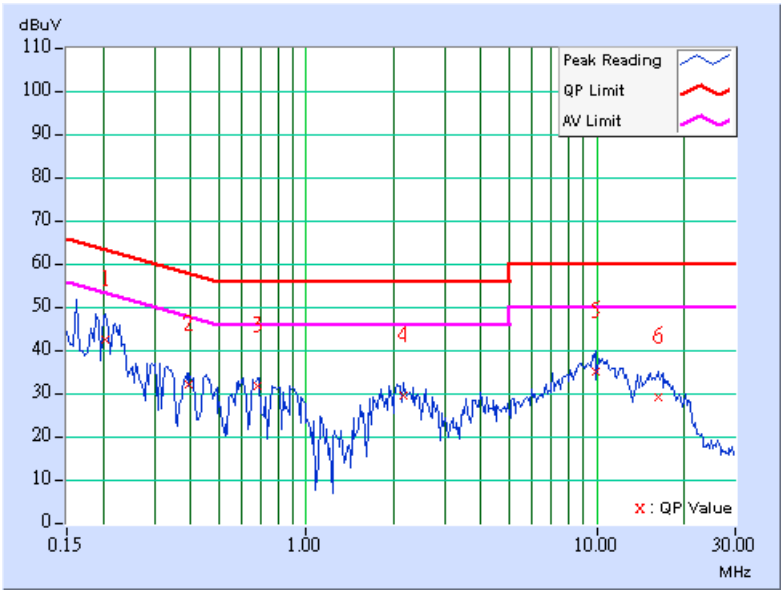
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Wireless A+G Mini PCI Card	**MODEL**	WMIA-123AG
MODE	Channel 6	**6dB BANDWIDTH**	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**PHASE**	Neutral (N)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	**TESTED BY**: Match Tsui	

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	0.205	0.10	42.12	-	42.22	-	63.42	53.42	-21.20	-
2	0.396	0.11	31.57	-	31.68	-	57.93	47.93	-26.25	-
3	0.681	0.17	31.18	-	31.35	-	56.00	46.00	-24.65	-
4	2.156	0.25	28.92	-	29.17	-	56.00	46.00	-26.83	-
5	9.984	0.49	34.53	-	35.02	-	60.00	50.00	-24.98	-
6	16.262	0.58	28.83	-	29.41	-	60.00	50.00	-30.59	-

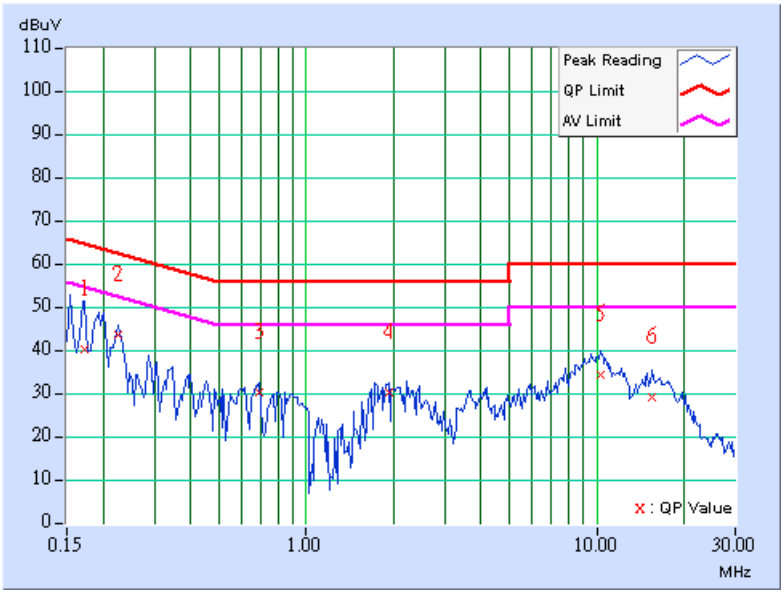
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Wireless A+G Mini PCI Card	**MODEL**	WMIA-123AG
MODE	Channel 11	**6dB BANDWIDTH**	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**PHASE**	Line (L)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	**TESTED BY**: Match Tsui	

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	0.173	0.10	39.55	-	39.65	-	64.79	54.79	-25.14	-
2	0.224	0.10	42.94	-	43.04	-	62.66	52.66	-19.62	-
3	0.689	0.18	29.53	-	29.71	-	56.00	46.00	-26.29	-
4	1.922	0.26	29.50	-	29.76	-	56.00	46.00	-26.24	-
5	10.293	0.54	33.76	-	34.30	-	60.00	50.00	-25.70	-
6	15.500	0.72	28.70	-	29.42	-	60.00	50.00	-30.58	-

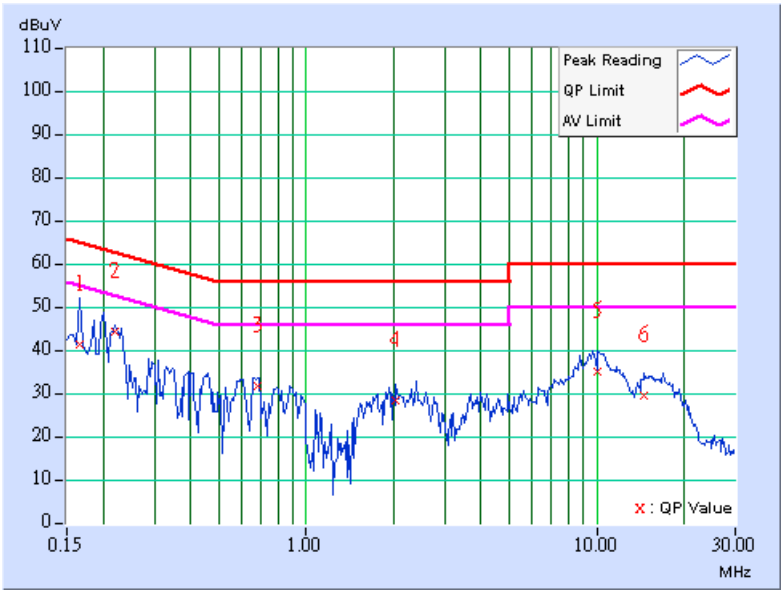
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Wireless A+G Mini PCI Card	**MODEL**	WMIA-123AG
MODE	Channel 11	**6dB BANDWIDTH**	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**PHASE**	Neutral (N)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	**TESTED BY**: Match Tsui	

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	0.166	0.10	41.01	-	41.11	-	65.18	55.18	-24.07	-
2	0.220	0.10	43.79	-	43.89	-	62.81	52.81	-18.92	-
3	0.677	0.17	31.22	-	31.39	-	56.00	46.00	-24.61	-
4	2.039	0.25	28.09	-	28.34	-	56.00	46.00	-27.66	-
5	10.070	0.49	34.67	-	35.16	-	60.00	50.00	-24.84	-
6	14.555	0.55	29.17	-	29.72	-	60.00	50.00	-30.28	-

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. The table was rotated 360 degrees to determine the position of the highest radiation.

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

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

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

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

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

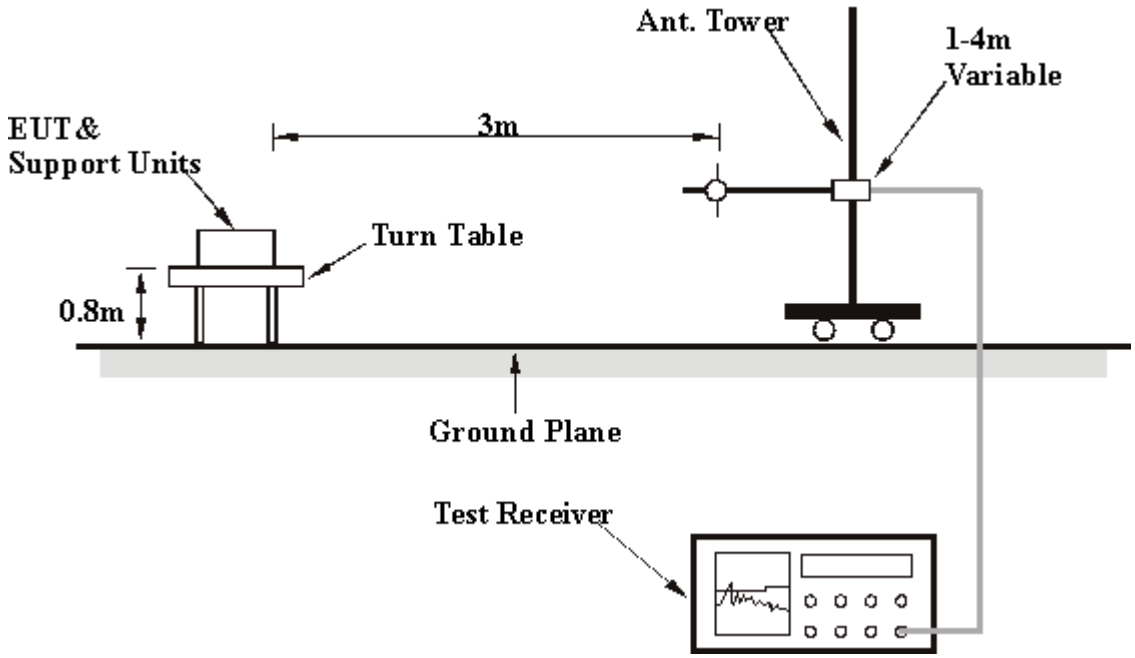
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 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	Wireless A+G Mini PCI Card	**MODEL**	WMIA-123AG
CHANNEL	Channel 11	**FREQUENCY RANGE**	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	**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	57.21	26.01 QP	40.00	-13.99	1.50 H	265	12.03	13.99
2	82.48	30.46 QP	40.00	-9.54	1.50 H	181	20.43	10.03
3	113.59	36.98 QP	43.50	-6.52	1.00 H	325	24.60	12.37
4	125.25	42.17 QP	43.50	-1.33	1.50 H	31	28.78	13.39
5	142.75	42.10 QP	43.50	-1.40	1.47 H	357	27.62	14.48
6	**177.74**	**42.18 QP**	**43.50**	**-1.32**	**1.50 H**	**357**	**29.00**	**13.18**
7	210.78	36.36 QP	43.50	-7.14	1.00 H	316	24.73	11.63
8	267.15	32.21 QP	46.00	-13.79	1.50 H	154	18.56	13.66
9	300.20	32.16 QP	46.00	-13.84	1.00 H	316	17.65	14.50
10	333.25	41.05 QP	46.00	-4.95	1.00 H	325	25.78	15.26
11	377.96	32.28 QP	46.00	-13.72	1.00 H	25	16.01	16.27
12	449.88	32.00 QP	46.00	-14.00	1.50 H	262	13.94	18.07
13	531.52	26.40 QP	46.00	-19.60	1.50 H	208	7.06	19.34
14	599.56	33.39 QP	46.00	-12.61	1.50 H	94	12.39	21.00
15	665.65	29.40 QP	46.00	-16.60	1.00 H	274	7.52	21.87
16	931.96	29.22 QP	46.00	-16.78	1.50 H	130	3.77	25.45

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

EUT	Wireless A+G Mini PCI Card	**MODEL**	WMIA-123AG
CHANNEL	Channel 11	**FREQUENCY RANGE**	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	**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	57.21	35.47 QP	40.00	-4.53	1.00 V	172	21.49	13.99
2	92.20	33.21 QP	43.50	-10.29	1.00 V	10	22.84	10.37
3	125.25	37.84 QP	43.50	-5.66	1.00 V	310	24.44	13.39
4	142.75	38.57 QP	43.50	-4.93	1.50 V	91	24.09	14.48
5	166.07	39.03 QP	43.50	-4.47	1.00 V	49	24.73	14.30
6	199.12	33.22 QP	43.50	-10.28	1.25 V	88	21.76	11.46
7	267.15	28.83 QP	46.00	-17.17	1.50 V	304	15.17	13.66
8	333.25	35.78 QP	46.00	-10.22	1.25 V	286	20.52	15.26
9	348.80	34.39 QP	46.00	-11.61	1.25 V	283	18.77	15.62
10	381.84	34.25 QP	46.00	-11.75	1.25 V	283	17.90	16.35
11	457.66	33.05 QP	46.00	-12.95	1.00 V	280	14.88	18.17
12	498.48	27.87 QP	46.00	-18.13	1.00 V	349	9.16	18.71
13	533.47	30.03 QP	46.00	-15.97	1.00 V	310	10.66	19.37
14	601.50	32.97 QP	46.00	-13.03	1.25 V	13	11.94	21.03
15	731.74	29.01 QP	46.00	-16.99	1.50 V	346	5.92	23.08
16	931.96	30.10 QP	46.00	-15.90	1.50 V	58	4.65	25.45

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

EUT	Wireless A+G Mini PCI Card	**MODEL**	WMIA-123AG
CHANNEL	Channel 1	**FREQUENCY RANGE**	1 ~ 25GHz
MODE	CCK		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	**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	2016.00	48.18 PK	74.00	-25.82	1.04 H	195	17.56	30.62
2	2360.00	58.43 PK	74.00	-15.57	1.18 H	187	26.72	31.71
2	2360.00	40.94 AV	54.00	-13.06	1.18 H	187	9.23	31.71
3	2390.00	47.65 PK	74.00	-26.35	1.14 H	191	15.85	31.80
4	*2412.00	104.69 PK			1.14 H	191	72.82	31.87
4	*2412.00	96.47 AV			1.14 H	191	64.60	31.87
5	2688.00	43.80 PK	74.00	-30.20	1.10 H	10	10.90	32.90
6	4824.00	49.01 PK	74.00	-24.99	1.21 H	242	10.90	38.11

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	2016.00	52.23 PK	74.00	-21.77	1.24 V	259	21.61	30.62
1	2016.00	49.49 AV	54.00	-4.51	1.24 V	259	18.87	30.62
2	2360.00	67.15 PK	74.00	-6.85	1.23 V	196	35.44	31.71
2	2360.00	49.57 AV	54.00	-4.43	1.23 V	196	17.86	31.71
3	2390.00	55.50 PK	74.00	-18.50	1.18 V	35	23.70	31.80
3	2390.00	47.21 AV	54.00	-6.79	1.18 V	35	15.41	31.80
4	*2412.00	112.59 PK			1.20 V	126	80.72	31.87
4	*2412.00	104.30 AV			1.20 V	126	72.43	31.87
5	2688.00	47.63 PK	74.00	-26.37	1.14 V	325	14.73	32.90
6	4824.00	55.09 PK	74.00	-18.91	1.18 V	35	16.98	38.11
6	4824.00	40.19 AV	54.00	-13.81	1.18 V	35	2.08	38.11

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

EUT	Wireless A+G Mini PCI Card	**MODEL**	WMIA-123AG
CHANNEL	Channel 6	**FREQUENCY RANGE**	1 ~ 25GHz
MODE	CCK		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	**TESTED BY**: Match Tsui	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3M

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	2016.00	47.51 PK	74.00	-26.49	1.10 H	139	16.89	30.62
2	2360.00	53.60 PK	74.00	-20.40	1.18 H	170	21.89	31.71
2	2360.00	41.88 AV	54.00	-12.12	1.18 H	170	10.17	31.71
3	*2437.00	103.51 PK			1.12 H	176	71.56	31.95
3	*2437.00	95.37 AV			1.12 H	176	63.42	31.95
4	4874.00	48.67 PK	74.00	-25.33	1.12 H	232	10.39	38.28

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3M

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	2016.00	51.49 PK	74.00	-22.51	1.00 V	358	20.87	30.62
1	2016.00	49.04 AV	54.00	-4.96	1.00 V	358	18.42	30.62
2	2360.00	48.89 PK	74.00	-25.11	1.00 V	146	17.18	31.71
3	*2437.00	111.96 PK			1.01 V	320	80.01	31.95
3	*2437.00	103.79 AV			1.01 V	320	71.84	31.95
4	2688.00	48.39 PK	74.00	-25.61	1.16 V	326	15.49	32.90
5	4874.00	55.24 PK	74.00	-18.76	1.01 V	2	16.96	38.28
5	4874.00	40.52 AV	54.00	-13.48	1.01 V	2	2.24	38.28

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

EUT	Wireless A+G Mini PCI Card	**MODEL**	WMIA-123AG
CHANNEL	Channel 11	**FREQUENCY RANGE**	1 ~ 25GHz
MODE	CCK		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	**TESTED BY**: Match Tsui	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3M

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	2016.00	50.36 PK	74.00	-23.64	1.06 H	193	19.74	30.62
1	2016.00	46.57 AV	54.00	-7.43	1.06 H	193	15.95	30.62
2	*2462.00	102.86 PK			1.00 H	360	70.84	32.02
2	*2462.00	94.94 AV			1.00 H	360	62.92	32.02
3	2488.00	46.04 PK	74.00	-27.96	1.00 H	360	13.94	32.10
4	2688.00	56.36 PK	74.00	-17.64	1.18 H	170	23.46	32.90
4	2688.00	43.34 AV	54.00	-10.66	1.18 H	170	10.44	32.90
5	4924.00	50.20 PK	74.00	-23.80	1.00 H	306	11.71	38.49
5	4924.00	35.77 AV	54.00	-18.23	1.00 H	306	-2.72	38.49

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3M

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	2016.00	53.33 PK	74.00	-20.67	1.23 V	260	22.71	30.62
1	2016.00	50.85 AV	54.00	-3.15	1.23 V	260	20.23	30.62
2	2360.00	61.46 PK	74.00	-12.54	1.22 V	180	29.75	31.71
2	2360.00	48.96 AV	54.00	-5.04	1.22 V	180	17.25	31.71
3	*2462.00	113.80 PK			1.11 V	205	81.78	32.02
3	*2462.00	105.53 AV			1.11 V	205	73.51	32.02
4	2488.00	56.98 PK	74.00	-17.02	1.11 V	205	24.88	32.10
4	2488.00	48.71 AV	54.00	-5.29	1.11 V	205	16.61	32.10
5	2688.00	47.33 PK	74.00	-26.67	1.15 V	13	14.43	32.90
6	4924.00	55.95 PK	74.00	-18.05	1.17 V	10	17.46	38.49
6	4924.00	41.25 AV	54.00	-12.75	1.17 V	10	2.76	38.49

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

Normal mode

EUT	Wireless A+G Mini PCI Card	**MODEL**	WMIA-123AG
CHANNEL	Channel 1	**FREQUENCY RANGE**	1 ~ 25GHz
MODE	OFDM		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	**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	2016.00	47.78 PK	74.00	-26.22	1.05 H	195	17.16	30.62
2	2360.00	54.33 PK	74.00	-19.67	1.08 H	315	22.62	31.71
2	2360.00	43.41 AV	54.00	-10.59	1.08 H	315	11.70	31.71
3	2390.00	52.24 PK	74.00	-21.76	1.00 H	347	20.44	31.80
3	2390.00	42.18 AV	54.00	-11.82	1.00 H	347	10.38	31.80
4	*2412.00	101.00 PK			1.00 H	347	69.13	31.87
4	*2412.00	90.94 AV			1.00 H	347	59.07	31.87
5	4824.00	48.13 PK	74.00	-25.87	1.05 H	12	10.02	38.11

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	2016.00	50.37 PK	74.00	-23.63	1.12 V	187	19.75	30.62
1	2016.00	46.92 AV	54.00	-7.08	1.12 V	187	16.30	30.62
2	2360.00	63.05 PK	74.00	-10.95	1.07 V	251	31.34	31.71
2	2360.00	49.80 AV	54.00	-4.20	1.07 V	251	18.09	31.71
3	2390.00	60.68 PK	74.00	-13.32	1.03 V	322	28.88	31.80
3	2390.00	49.10 AV	54.00	-4.90	1.03 V	322	17.30	31.80
4	*2412.00	109.44 PK			1.03 V	322	77.57	31.87
4	*2412.00	97.86 AV			1.03 V	322	65.99	31.87
5	2688.00	46.50 PK	74.00	-27.50	1.07 V	180	13.60	32.90
6	4824.00	52.28 PK	74.00	-21.72	1.10 V	12	14.17	38.11
6	4824.00	37.66 AV	54.00	-16.34	1.10 V	12	-0.45	38.11

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

EUT	Wireless A+G Mini PCI Card	**MODEL**	WMIA-123AG
CHANNEL	Channel 6	**FREQUENCY RANGE**	1 ~ 25GHz
MODE	OFDM		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	**TESTED BY**: Match Tsui	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3M

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	2016.00	49.36 PK	74.00	-24.64	1.00 H	14	18.74	30.62
2	2360.00	55.38 PK	74.00	-18.62	1.07 H	316	23.67	31.71
2	2360.00	42.97 AV	54.00	-11.03	1.07 H	316	11.26	31.71
3	*2437.00	99.35 PK			1.12 H	175	67.40	31.95
3	*2437.00	89.70 AV			1.12 H	175	57.75	31.95
4	4874.00	48.50 PK	74.00	-25.50	1.12 H	160	10.22	38.28

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3M

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	2016.00	50.09 PK	74.00	-23.91	1.11 V	185	19.47	30.62
1	2016.00	49.81 AV	54.00	-4.19	1.11 V	185	19.19	30.62
2	2360.00	61.47 PK	74.00	-12.53	1.07 V	250	29.76	31.71
2	2360.00	49.67 AV	54.00	-4.33	1.07 V	250	17.96	31.71
3	2437.00	107.85 PK			1.34 V	251	75.90	31.95
3	2437.00	97.96 AV			1.34 V	251	66.01	31.95
4	2688.00	47.10 PK	74.00	-26.90	1.08 V	181	14.20	32.90
5	4874.00	50.01 PK	74.00	-23.99	1.10 V	184	11.73	38.28
5	4874.00	38.01 AV	54.00	-15.99	1.10 V	184	-0.27	38.28

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

EUT	Wireless A+G Mini PCI Card	**MODEL**	WMIA-123AG
CHANNEL	Channel 11	**FREQUENCY RANGE**	1 ~ 25GHz
MODE	OFDM		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	**TESTED BY**: Match Tsui	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3M

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	2016.00	49.15 PK	74.00	-24.85	1.00 H	11	18.53	30.62
2	2360.00	54.61 PK	74.00	-19.39	1.03 H	342	22.90	31.71
2	2360.00	44.52 AV	54.00	-9.48	1.03 H	342	12.81	31.71
3	*2462.00	100.97 PK			1.28 H	47	68.95	32.02
3	*2462.00	90.78 AV			1.28 H	47	58.76	32.02
4	2483.50	52.62 PK	74.00	-21.38	1.28 H	47	20.53	32.09
4	2483.50	42.43 AV	54.00	-11.57	1.28 H	47	10.34	32.09
5	2688.00	44.19 PK	74.00	-29.81	1.24 H	0	11.29	32.90
6	4924.00	48.50 PK	74.00	-25.50	1.03 H	91	10.01	38.49

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3M

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	2016.00	49.58 PK	74.00	-24.42	1.00 V	6	18.96	30.62
2	2360.00	58.66 PK	74.00	-15.34	1.30 V	352	26.95	31.71
2	2360.00	49.55 AV	54.00	-4.45	1.30 V	352	17.84	31.71
3	*2462.00	108.45 PK			1.27 V	253	76.43	32.02
3	*2462.00	98.14 AV			1.27 V	253	66.12	32.02
4	2483.50	60.10 PK	74.00	-13.90	1.27 V	253	28.01	32.09
4	2483.50	49.79 AV	54.00	-4.21	1.27 V	253	17.70	32.09
5	2688.00	47.24 PK	74.00	-26.76	1.15 V	327	14.34	32.90
6	4924.00	50.79 PK	74.00	-23.21	1.04 V	206	12.30	38.49
6	4924.00	37.32 AV	54.00	-16.68	1.04 V	206	-1.17	38.49

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

Turbo mode

EUT	Wireless A+G Mini PCI Card	**MODEL**	WMIA-123AG
CHANNEL	Channel 6	**FREQUENCY RANGE**	1 ~ 25GHz
MODE	OFDM		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	**TESTED BY**: Match Tsui	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3M

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	2016.00	49.19 PK	74.00	-24.81	1.16 H	322	18.57	30.62
2	2360.00	51.61 PK	74.00	-22.39	1.08 H	195	19.90	31.71
2	2360.00	42.21 AV	54.00	-11.79	1.08 H	195	10.50	31.71
3	*2437.00	98.54 PK			1.05 H	315	66.59	31.95
3	*2437.00	89.14 AV			1.05 H	315	57.19	31.95
4	2483.50	51.61 PK	74.00	-22.39	1.05 H	315	19.52	32.09
4	2483.50	37.75 AV	54.00	-16.25	1.05 H	315	5.66	32.09
5	2688.00	44.14 PK	74.00	-29.86	1.05 H	12	11.24	32.90
6	4874.00	48.74 PK	74.00	-25.26	1.01 H	195	10.46	38.28

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3M

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	2016.00	50.10 PK	74.00	-23.90	1.00 V	315	19.48	30.62
1	2016.00	49.72 AV	54.00	-4.28	1.00 V	315	19.10	30.62
2	2360.00	59.27 PK	74.00	-14.73	1.15 V	325	27.56	31.71
2	2360.00	49.09 AV	54.00	-4.91	1.15 V	325	17.38	31.71
3	*2437.00	106.20 PK			1.10 V	317	74.25	31.95
3	*2437.00	96.02 AV			1.10 V	317	64.07	31.95
4	2483.50	54.81 PK	74.00	-19.19	1.10 V	317	22.72	32.09
4	2483.50	44.63 AV	54.00	-9.37	1.10 V	317	12.54	32.09
5	2688.00	47.14 PK	74.00	-26.86	1.01 V	35	14.24	32.90
6	4874.00	50.00 PK	74.00	-24.00	1.02 V	350	11.72	38.28
6	4874.00	39.24 AV	54.00	-14.76	1.02 V	350	0.96	38.28

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 0.5 MHz.

4.3.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SPECTRUM ANALYZER	FSEK30	100049	Aug. 12, 2005

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

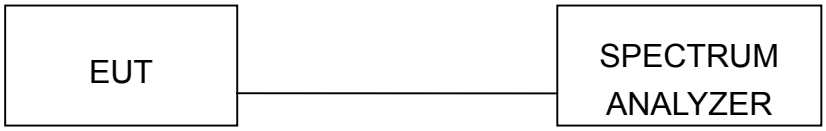
4.3.3 TEST PROCEDURE

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 6 dB.

4.3.4 DEVIATION FROM TEST STANDARD

No deviation

4.3.5 TEST SETUP



4.3.6 EUT OPERATING CONDITIONS

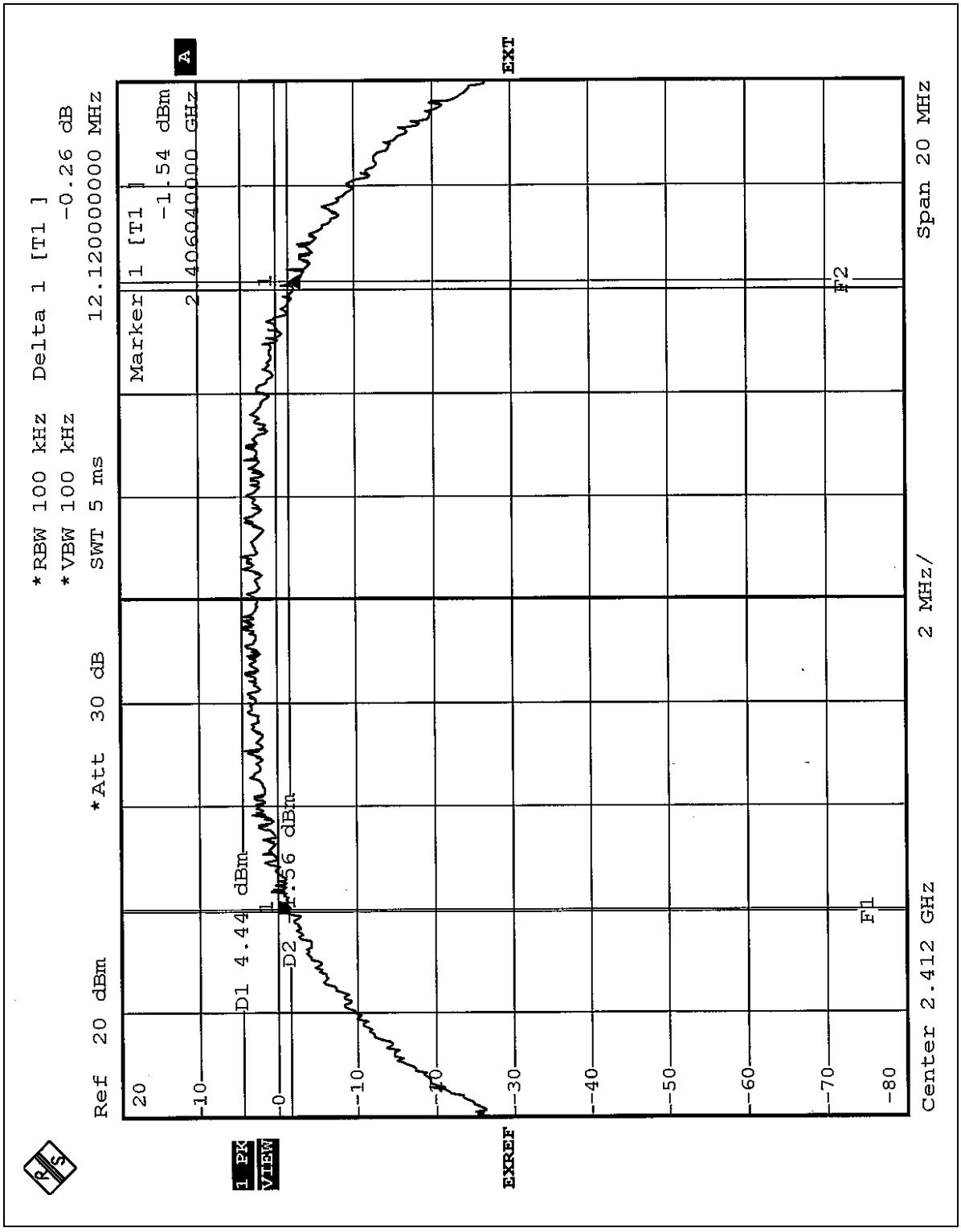
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.3.7 TEST RESULTS

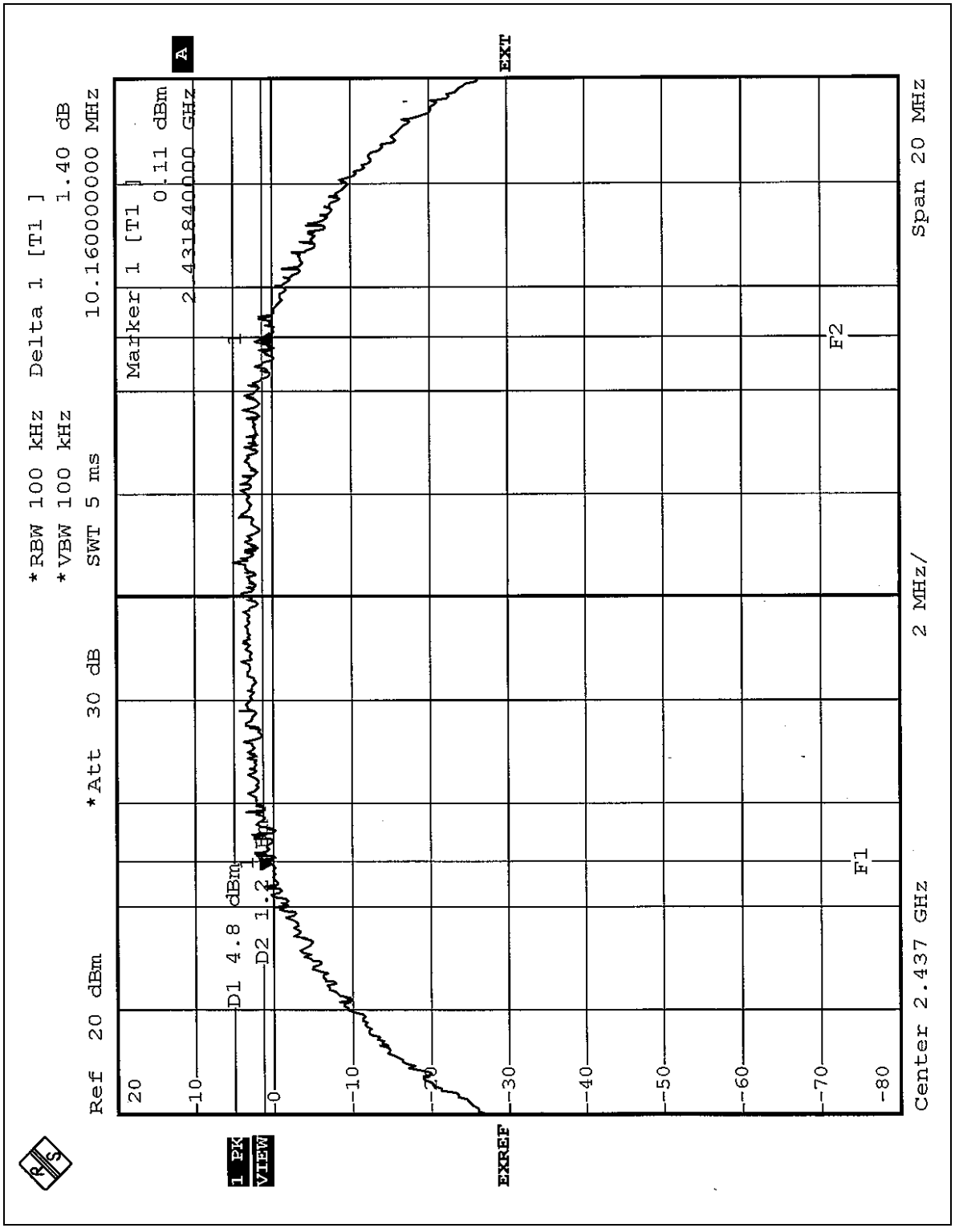
EUT	Wireless A+G Mini PCI Card	**MODEL**	WMIA-123AG
MODE	CCK	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	24deg. C, 65%RH, 991hPa	**TESTED BY**	Leo Huang

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	12.12	0.5	PASS
6	2437	10.16	0.5	PASS
11	2462	11.32	0.5	PASS

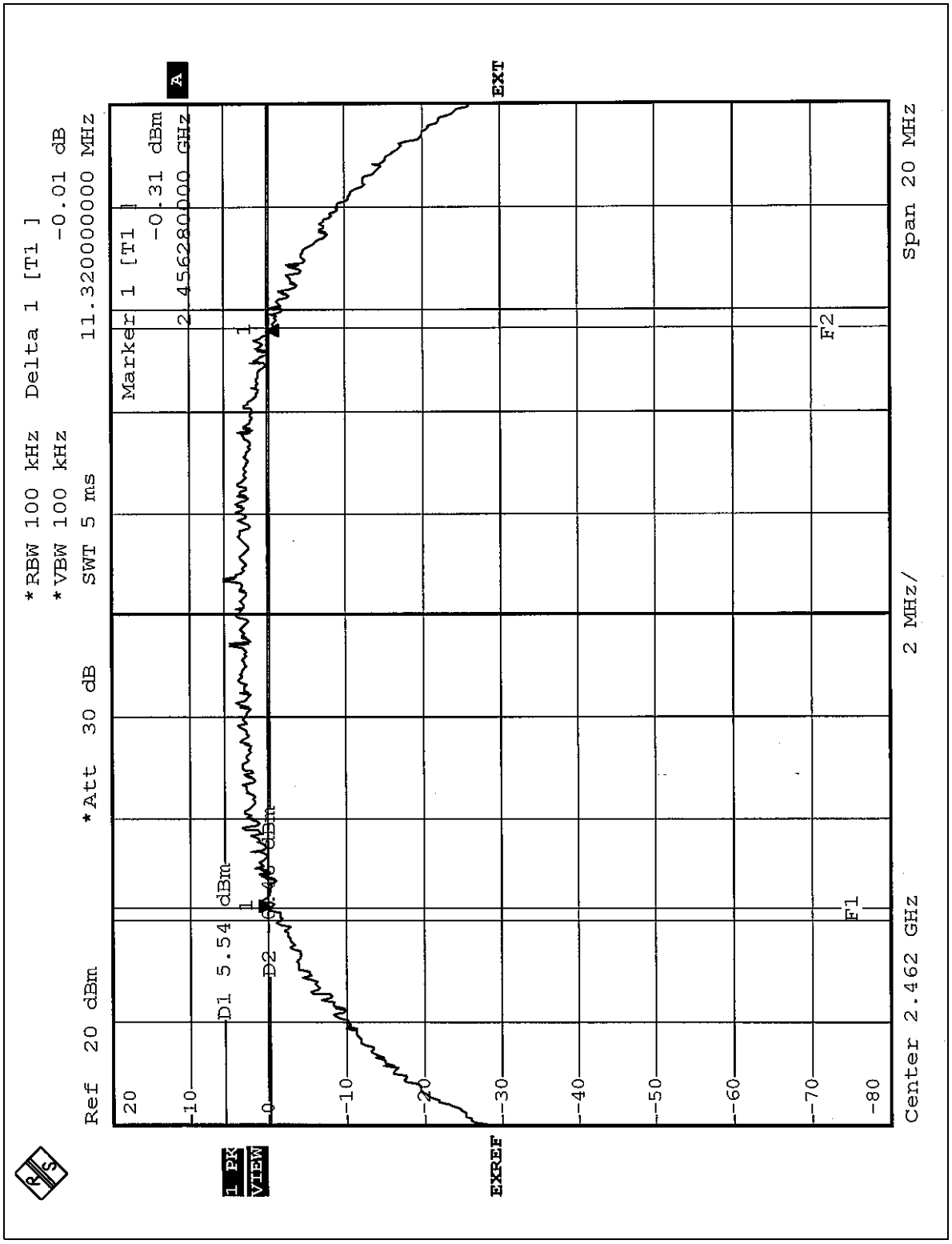
CH1


*RBW 100 kHz
*VBW 100 kHz
SWT 5 ms
Delta 1 [T1]
-0.26 dB
12.120000000 MHz
Marker 1 [T1]
-1.54 dBm
2.406040000 GHz
*Att 30 dB
Ref 20 dBm
D1 4.44 dBm
D2 -1.56 dBm
Center 2.412 GHz
2 MHz/
Span 20 MHz
EXT
EXREF
1 PK
VIEW

CH6


*RBW 100 kHz
*VBW 100 kHz
SWT 5 ms
*Att 30 dB
Ref 20 dBm
Delta 1 [T1]
1.40 dB
10.160000000 MHz
Marker 1 [T1]
0.11 dBm
2.431840000 GHz
D1 4.8 dBm
D2 1.2
Center 2.437 GHz
2 MHz/
Span 20 MHz
F1
F2
EXT
EXREF
1 PK
VIEW
A

CH11

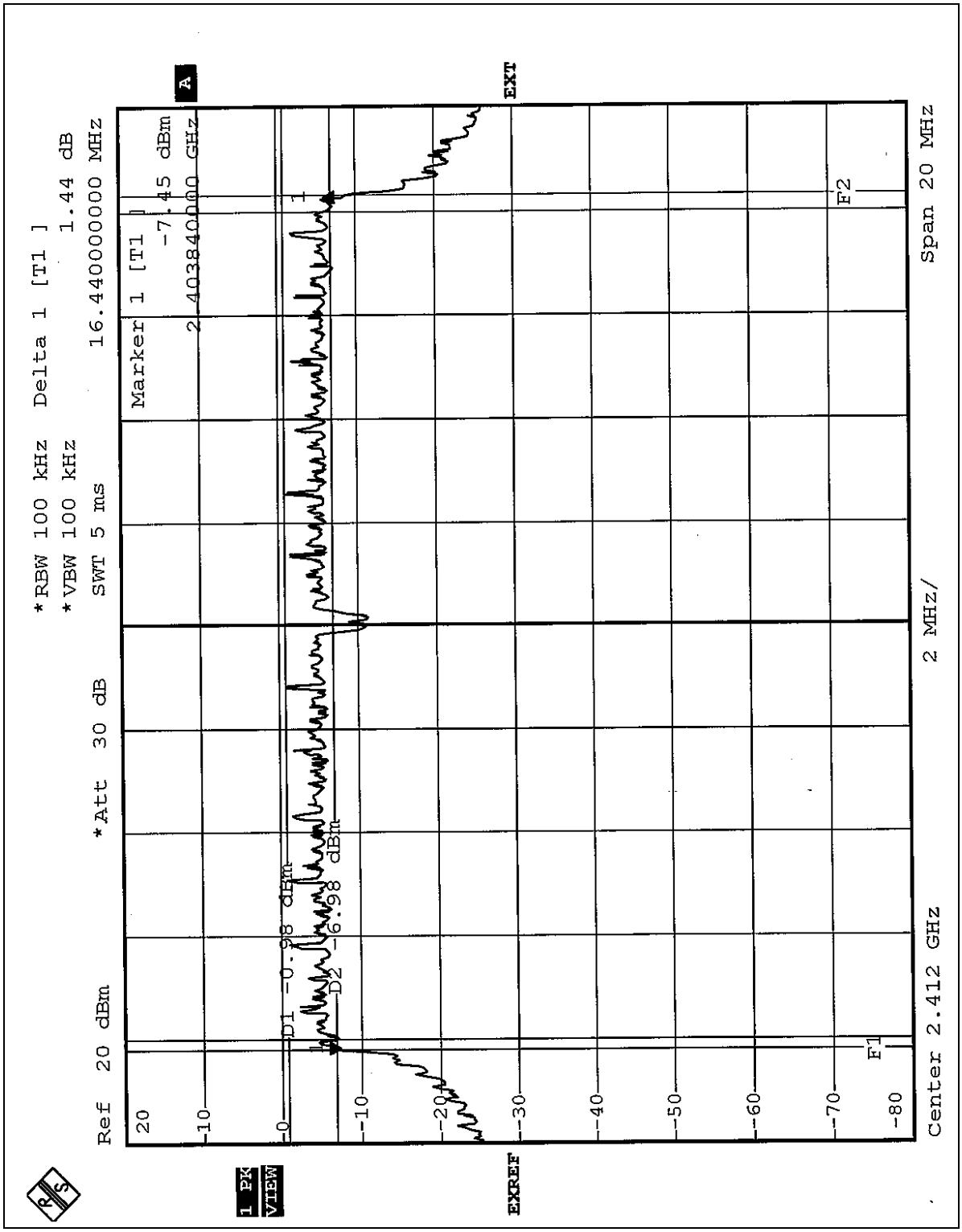

*RBW 100 kHz
*VBW 100 kHz
Ref 20 dBm
*Att 30 dB
SWT 5 ms
Delta 1 [T1]
-0.01 dB
11.32000000 MHz
Marker 1 [T1]
-0.31 dBm
2.45628000 GHz
D1 5.54 dBm
D2 -6.46 dBm
Center 2.462 GHz
2 MHz/
Span 20 MHz
F1
F2
EXT
EXREF
1 PK VIEW

Normal mode

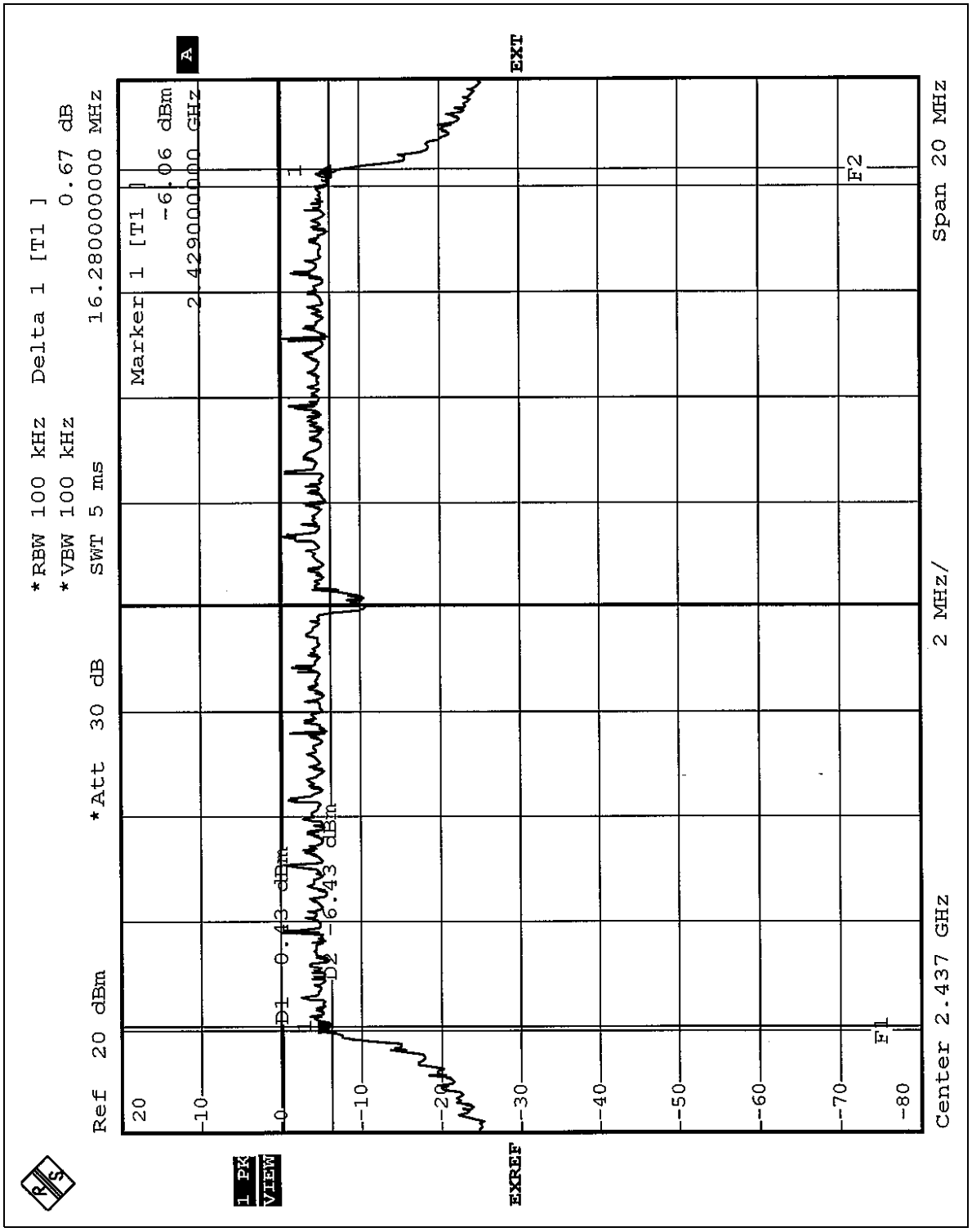
EUT	Wireless A+G Mini PCI Card	**MODEL**	WMIA-123AG
MODE	OFDM	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	24deg. C, 65%RH, 991hPa	**TESTED BY**	Leo Huang

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	16.44	0.5	PASS
6	2437	16.28	0.5	PASS
11	2462	16.32	0.5	PASS

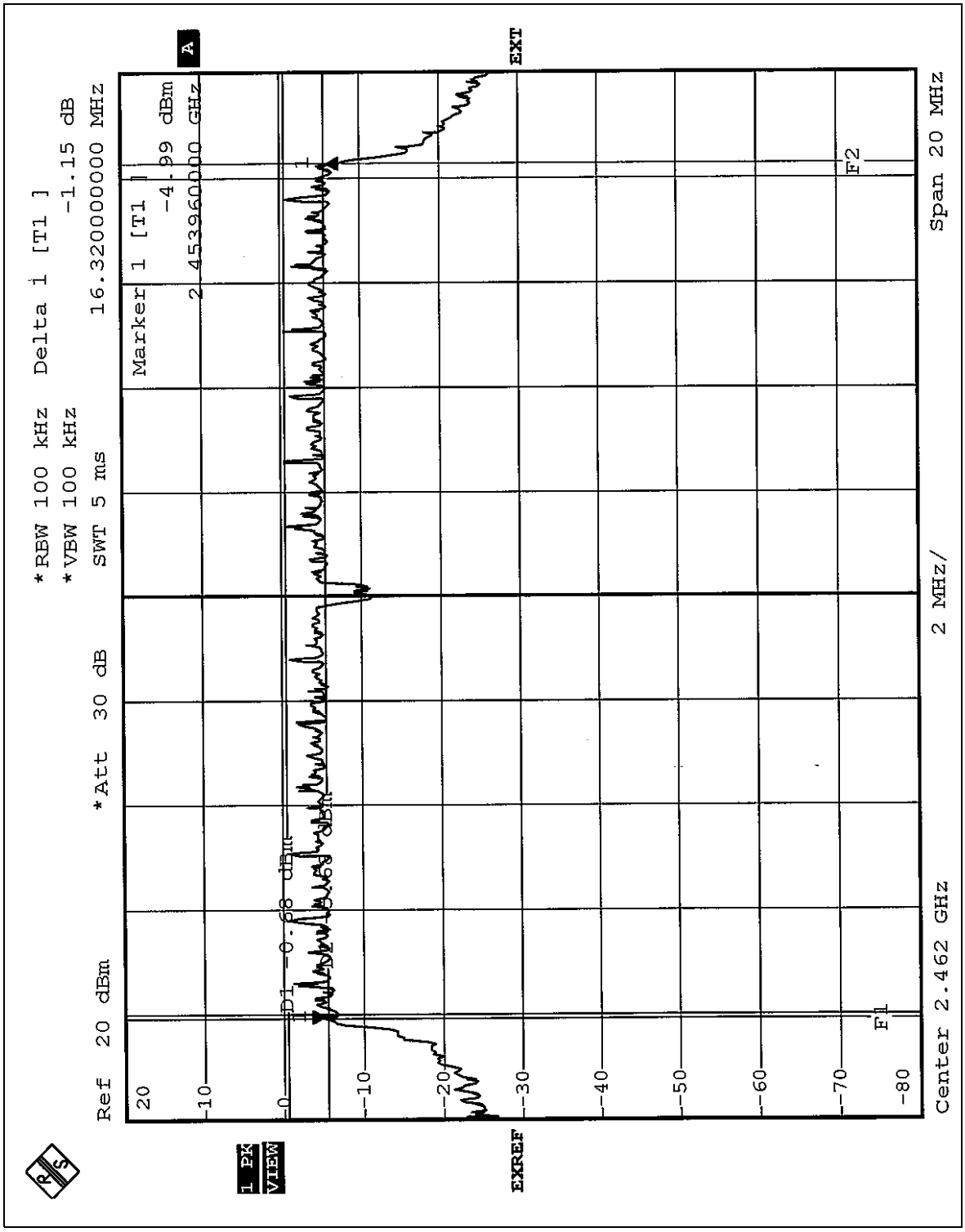
CH1


*RBW 100 kHz
*VBW 100 kHz
Ref 20 dBm
*Att 30 dB
SWT 5 ms
Delta 1 [T1]
1.44 dB
16.440000000 MHz
Marker 1 [T1]
-7.45 dBm
2.403840000 GHz
D1 -0.98 dBm
D2 -6.98 dBm
Center 2.412 GHz
2 MHz/
Span 20 MHz
1 PK VIEW
EXREF
EXT
A
F1
F2

CH6


RBW 100 kHz
VBW 100 kHz
SWT 5 ms
Delta 1 [T1]
0.67 dB
16.280000000 MHz
Marker 1 [T1]
-6.06 dBm
2.429000000 GHz
Ref 20 dBm
Att 30 dB
Center 2.437 GHz
2 MHz/
Span 20 MHz
D1 0.43 dBm
D2 -6.43 dBm
EXT
EXREF
1 PK VIEW

CH11

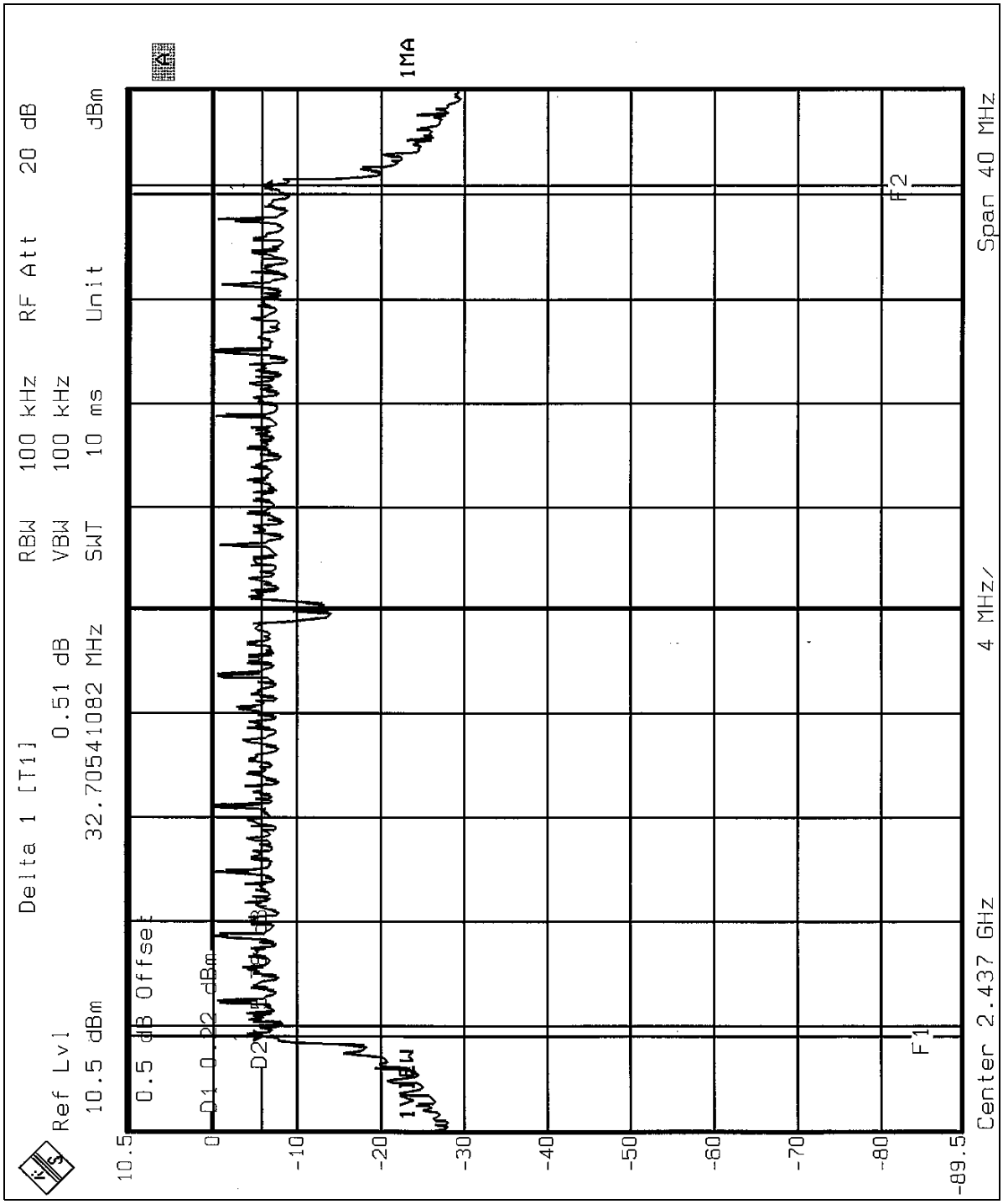

*RBW 100 kHz
*VBW 100 kHz
SWT 5 ms
Delta 1 [T1]
-1.15 dB
16.32000000 MHz
Marker 1 [T1]
-4.99 dBm
2.45396000 GHz
Ref 20 dBm
*Att 30 dB
D1 -0.68 dBm
Center 2.462 GHz
2 MHz/
Span 20 MHz
F1
F2
EXT
EXREF
1 PK VIEW

Turbo mode

EUT	Wireless A+G Mini PCI Card	**MODEL**	WMIA-123AG
MODE	OFDM	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	24deg. C, 65%RH, 991hPa	**TESTED BY**	Leo Huang

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
6	2437	32.71	0.5	PASS

CH6


Delta 1 [T1]
0.51 dB
32.70541082 MHz
RBW 100 kHz
VBW 100 kHz
SWT 10 ms
RF Att 20 dB
Unit dBm
1MA
Ref Lvl
10.5 dBm
0.5 dB Offset
D1 0.22 dBm
D2
F1
F2
Center 2.437 GHz
4 MHz/
Span 40 MHz
10.5
0
-10
-20
-30
-40
-50
-60
-70
-80
-89.5

4.4 MAXIMUM PEAK OUTPUT POWER

4.4.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

4.4.2 INSTRUMENTS

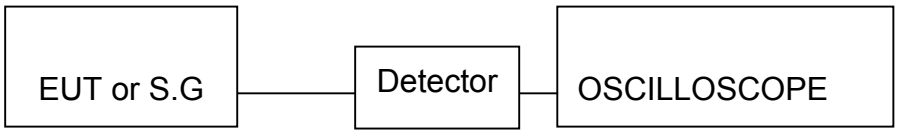
Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSEK30	100049	Aug. 12, 2005
AGILENT SIGNAL GENERATOR	E8257C	MY43320668	Dec. 31, 2004
TEKTRONIX OSCILLOSCOPE	TDS 1012	C019167	Feb. 01, 2005
NARDA DETECTOR	4503A	FSCM99899	NA

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

4.4.3 TEST PROCEDURES

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

4.4.4 TEST SETUP



4.4.5 EUT OPERATING CONDITIONS

Same as Item 4.3.6

4.4.6 TEST RESULTS

EUT	Wireless A+G Mini PCI Card	MODEL	WMIA-123AG
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	24deg.C, 65%RH, 991hPa
MODE	CCK	TESTED BY	Leo Huang

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	39.811	16.0	30	PASS
6	2437	40.738	16.1	30	PASS
11	2462	41.687	16.2	30	PASS

Normal mode

EUT	Wireless A+G Mini PCI Card	MODEL	WMIA-123AG
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	24deg.C, 65%RH, 991hPa
MODE	OFDM	TESTED BY	Leo Huang

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	25.704	14.1	30	PASS
6	2437	25.119	14.0	30	PASS
11	2462	26.303	14.2	30	PASS

Turbo mode

EUT	Wireless A+G Mini PCI Card	MODEL	WMIA-123AG
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	24deg.C, 65%RH, 991hPa
MODE	OFDM	TESTED BY	Leo Huang

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
6	2437	25.119	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, 2005

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

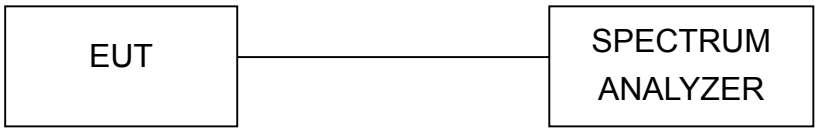
4.5.3 TEST PROCEDURE

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

4.5.4 DEVIATION FROM TEST STANDARD

No deviation

4.5.5 TEST SETUP



4.5.6 EUT OPERATING CONDITION

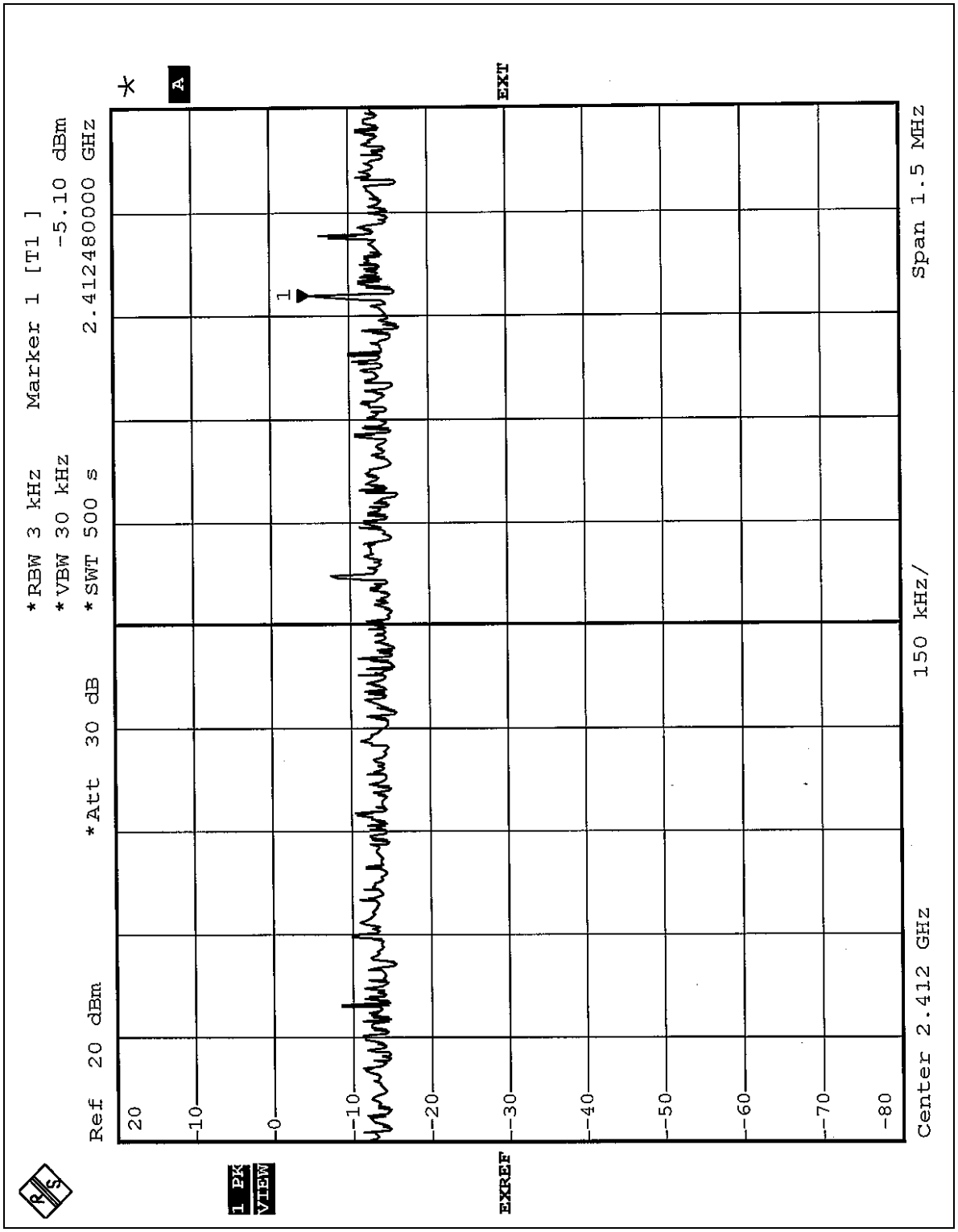
Same as Item 4.3.6

4.5.7 TEST RESULTS

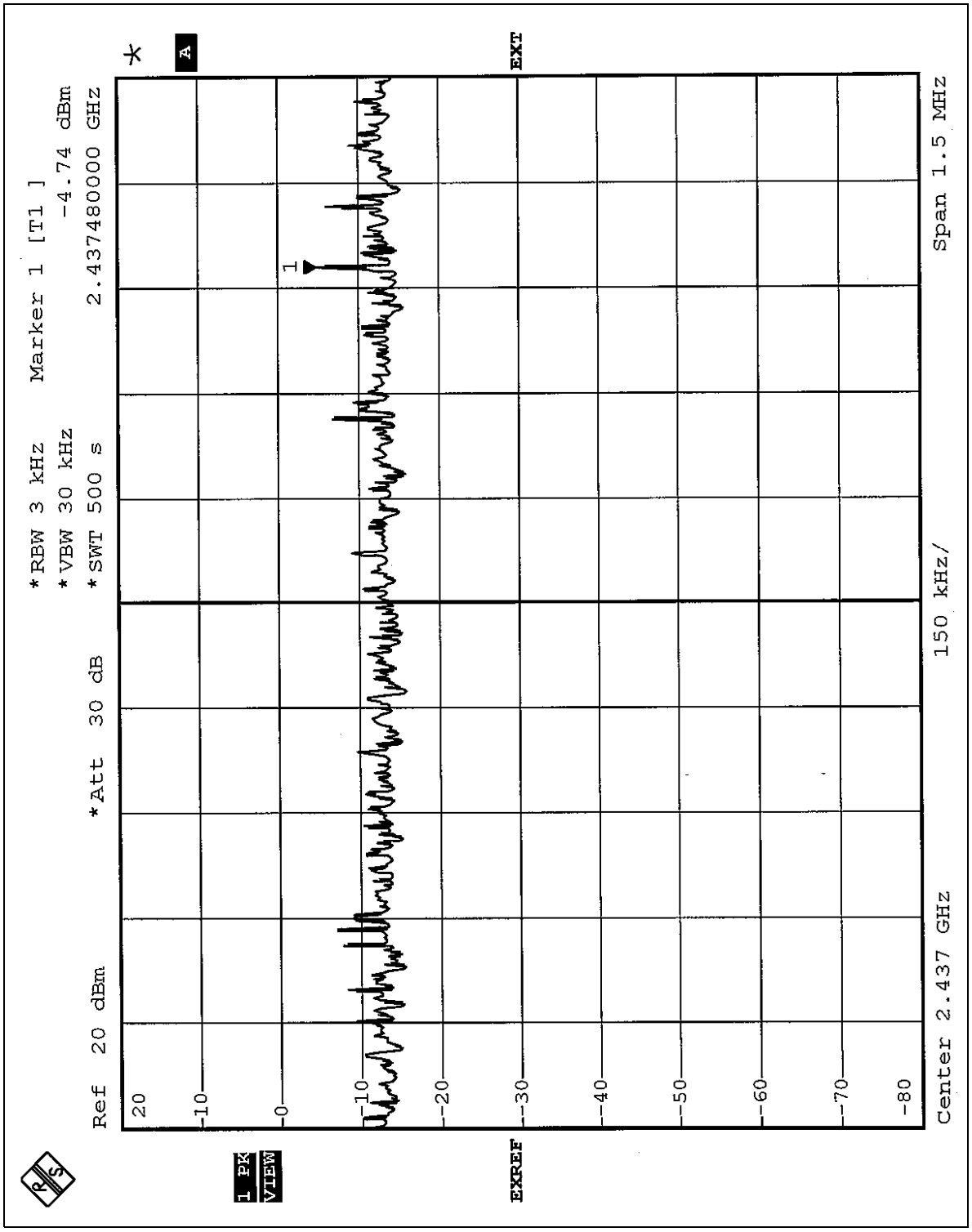
EUT	Wireless A+G Mini PCI Card	MODEL	WMIA-123AG
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	24deg.C, 65%RH, 991hPa
MODE	CCK	TESTED BY	Leo Huang

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-5.10	8	PASS
6	2437	-4.74	8	PASS
11	2462	-5.56	8	PASS

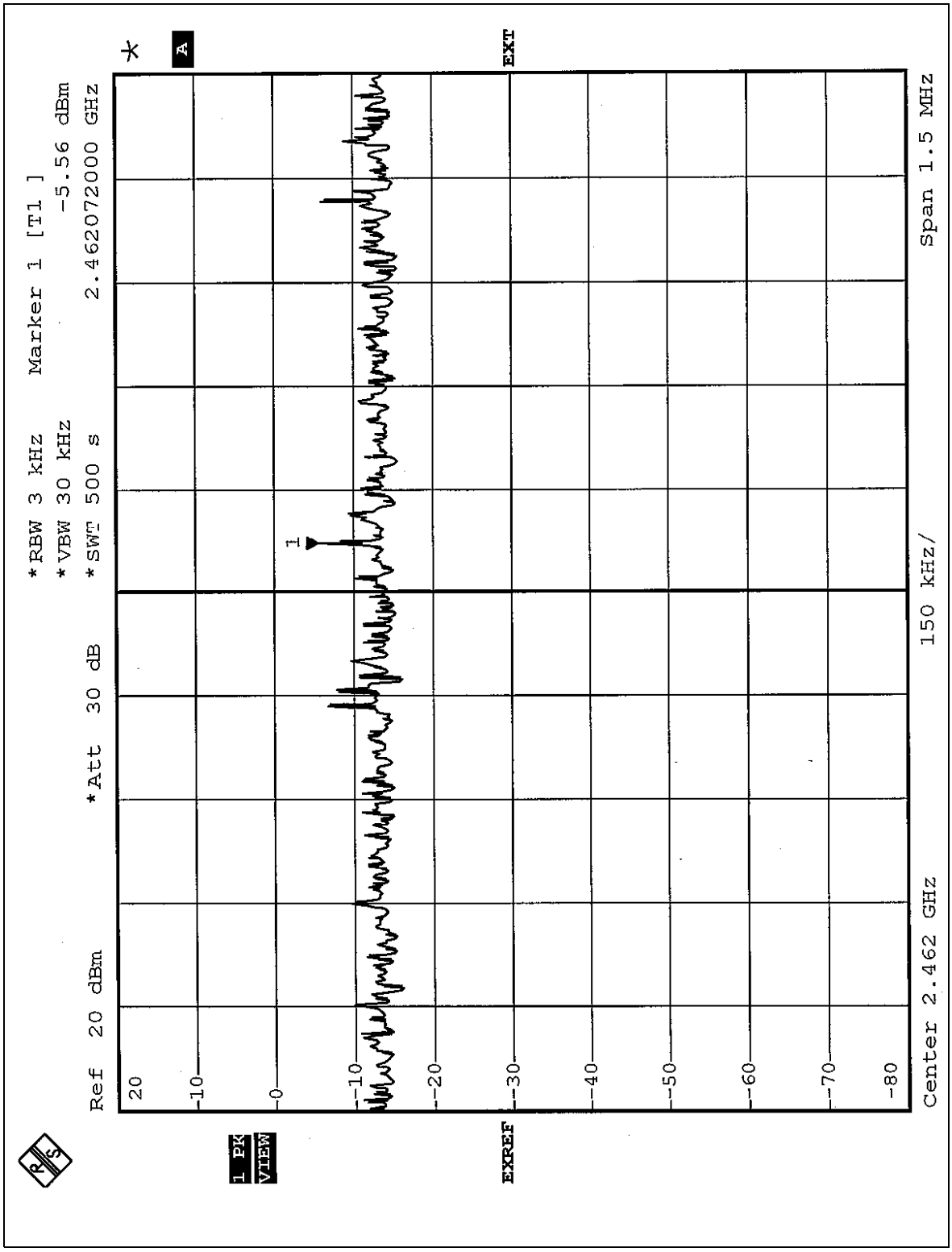
CH1


Ref 20 dBm
*Att 30 dB
*SWT 500 s
*VBW 30 kHz
*RBW 3 kHz
Marker 1 [T1]
-5.10 dBm
2.412480000 GHz
Center 2.412 GHz
150 kHz/
Span 1.5 MHz
EXT
EXREF
1 PK VIEW
A
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80

CH6


*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-4.74 dBm
2.437480000 GHz
Ref 20 dBm
*Att 30 dB
Center 2.437 GHz
150 kHz/
Span 1.5 MHz
1 PK VIEW
EXT
EXREF
A

CH11

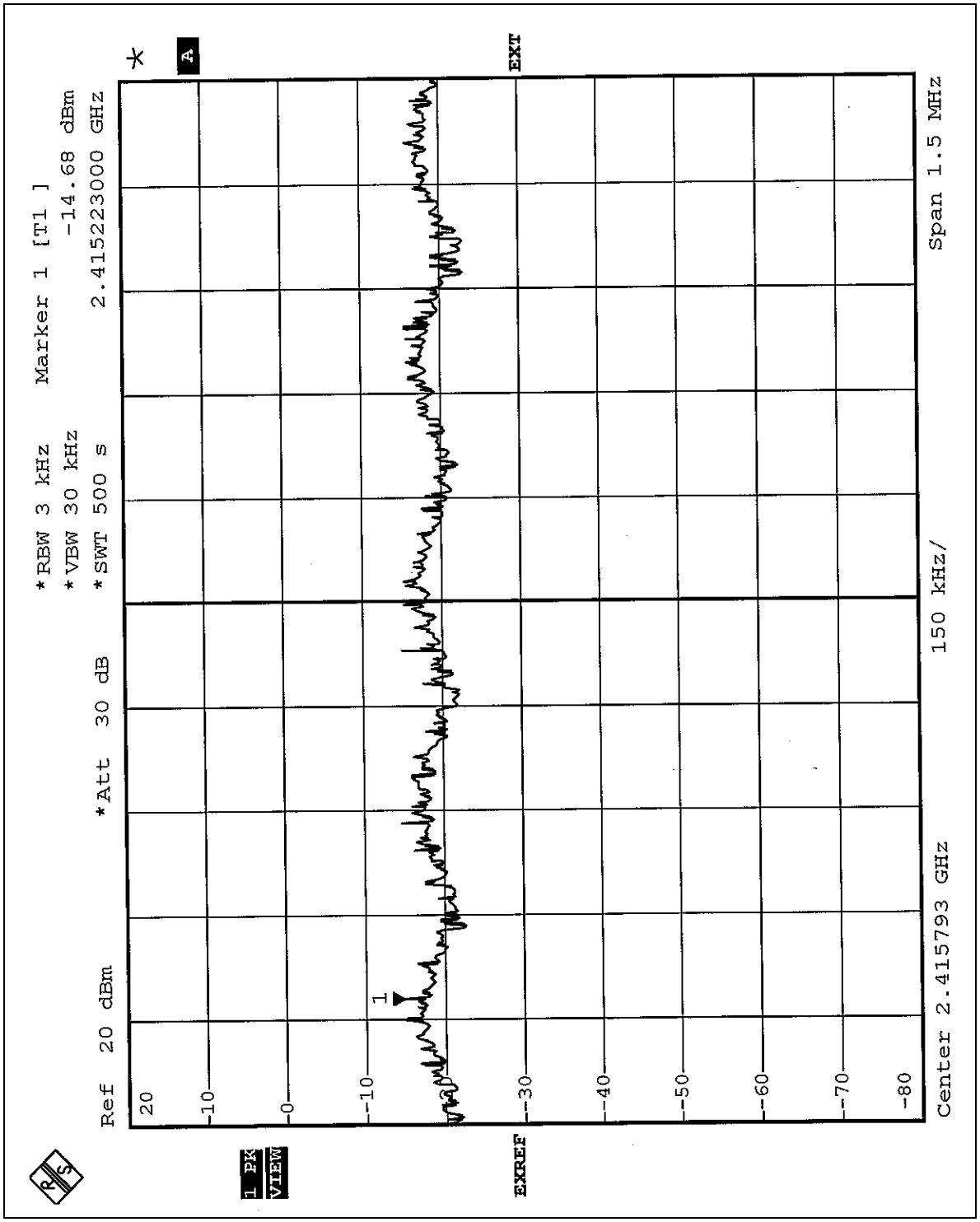

Ref 20 dBm
*Att 30 dB
*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-5.56 dBm
2.46207000 GHz
1 PK VIEW
EXT
EXREF
Center 2.462 GHz
150 kHz/
Span 1.5 MHz

Normal mode

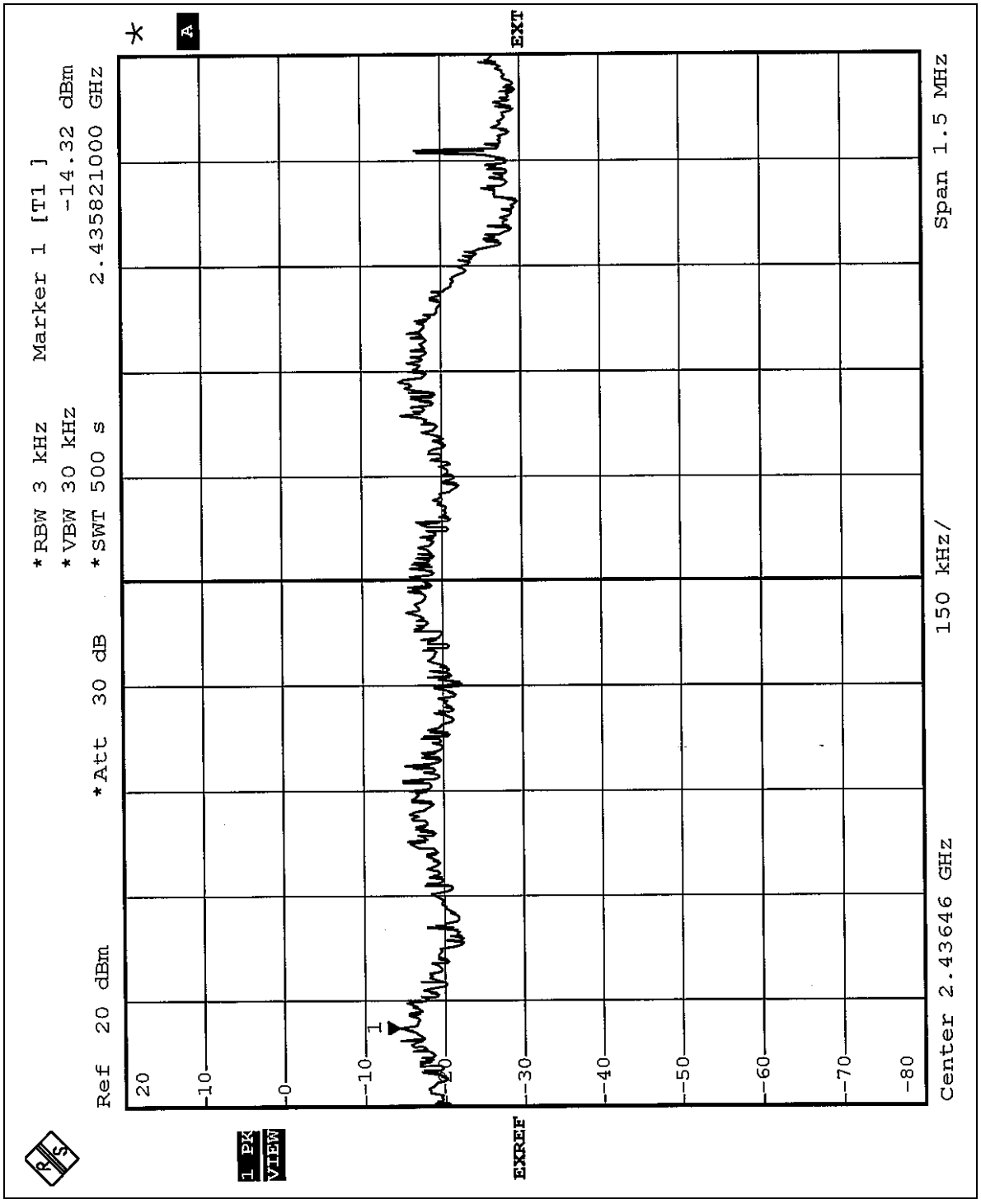
EUT	Wireless A+G Mini PCI Card	**MODEL**	WMIA-123AG
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	24deg.C, 65%RH, 991hPa
MODE	OFDM	**TESTED BY**	Leo Huang

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-14.68	8	PASS
6	2437	-14.32	8	PASS
11	2462	-14.48	8	PASS

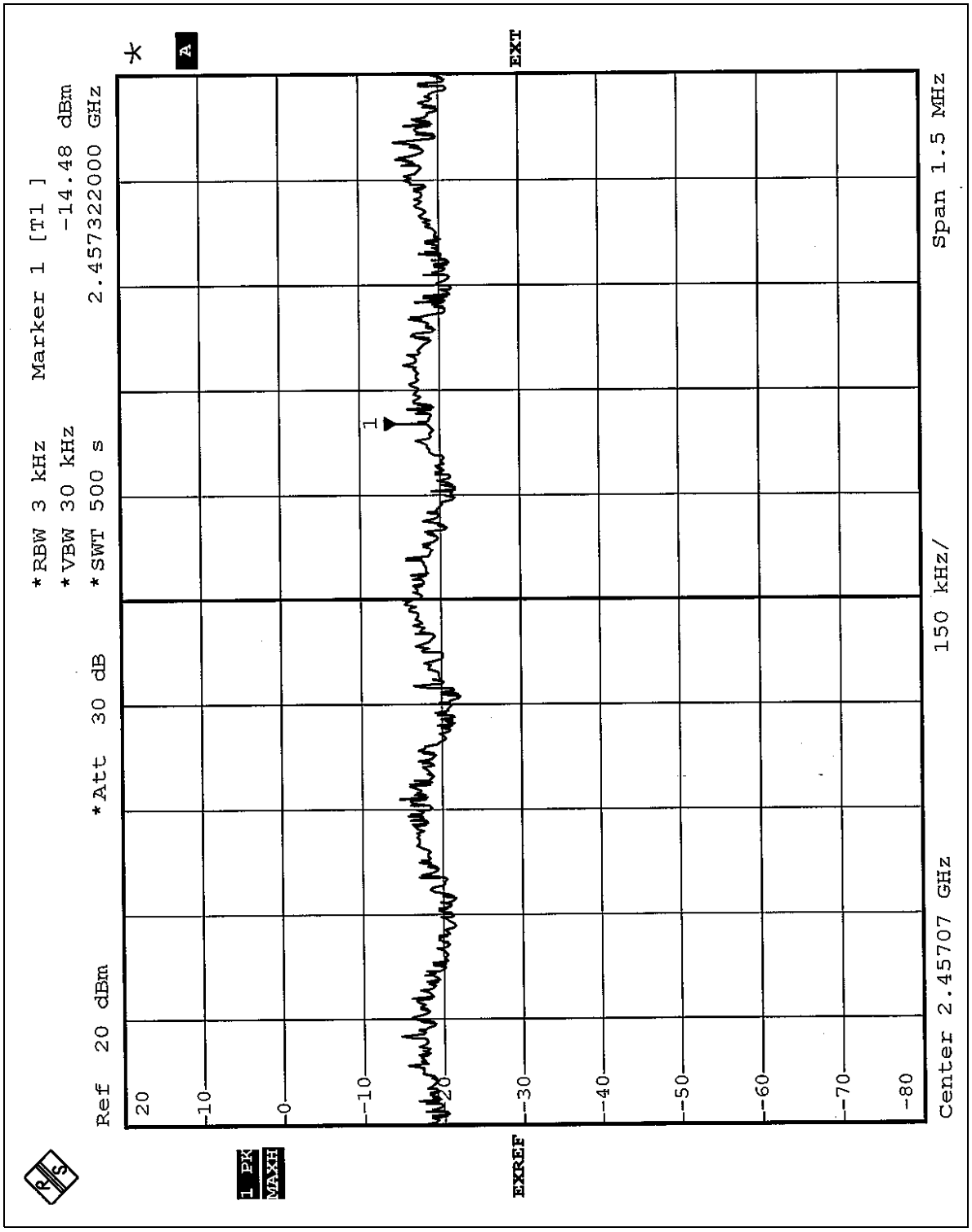
CH1


A
EXT
*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-14.68 dBm
2.415223000 GHz
Ref 20 dBm
*Att 30 dB
Span 1.5 MHz
150 kHz/
Center 2.415793 GHz
1 PK VIEW
EXREF

CH6


RBW 3 kHz
VBW 30 kHz
SWT 500 s
Marker 1 [T1]
-14.32 dBm
2.435821000 GHz
Att 30 dB
Ref 20 dBm
Center 2.43646 GHz
150 kHz/
Span 1.5 MHz
1 PK
VIEW
EXT
EXREF

CH11

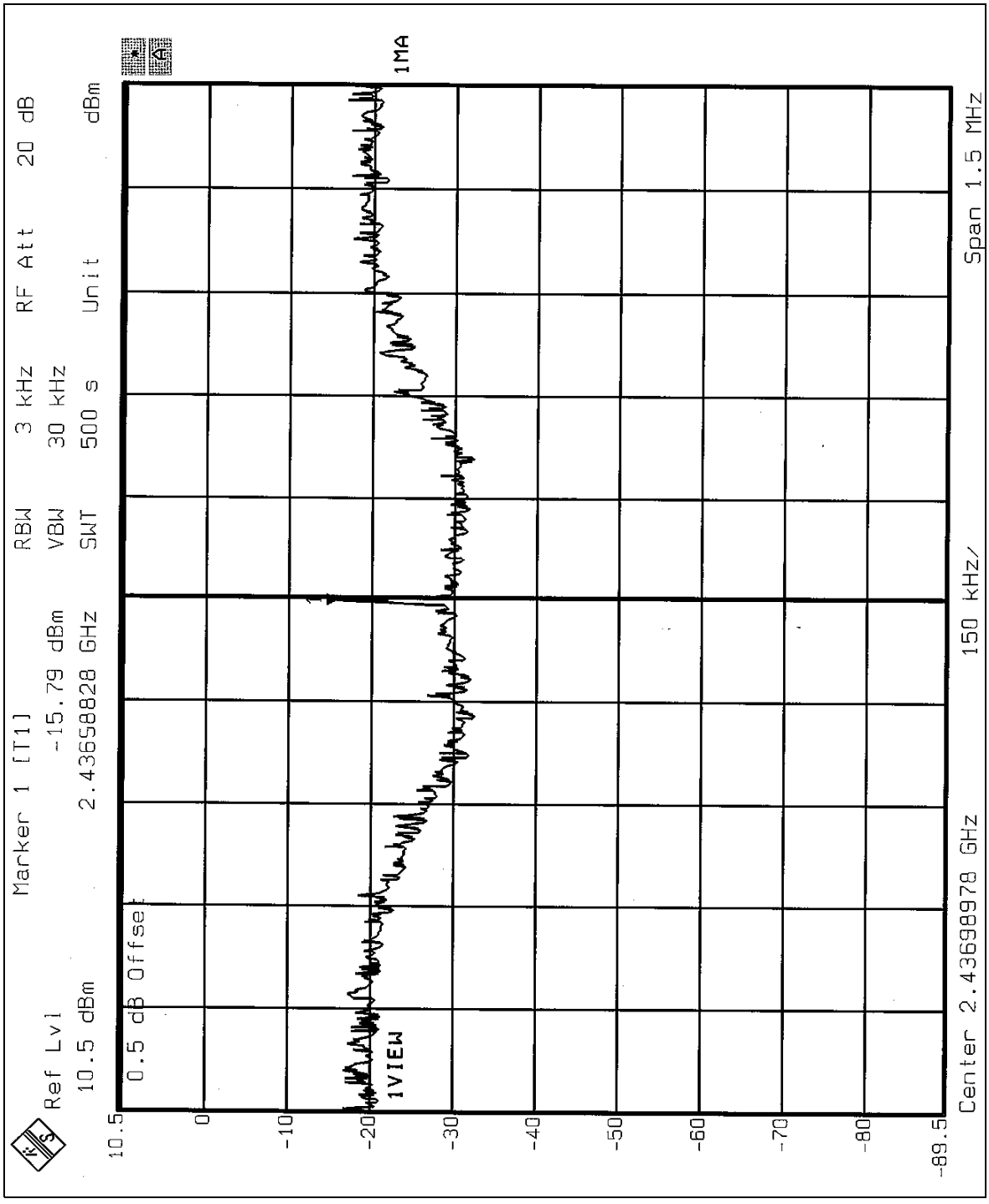

Ref 20 dBm
*Att 30 dB
*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-14.48 dBm
2.457322000 GHz
Center 2.45707 GHz
150 kHz/
Span 1.5 MHz
EXT
EXREF
1 PK
MAXH
A

Turbo mode

EUT	Wireless A+G Mini PCI Card	**MODEL**	WMIA-123AG
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	24deg.C, 65%RH, 991hPa
MODE	OFDM	**TESTED BY**	Leo Huang

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
6	2437	-15.79	8	PASS

CH6


Marker 1 [T1]
-15.79 dBm
2.43658828 GHz
RBW 3 kHz
VBW 30 kHz
SWT 500 s
RF Att 20 dB
Unit dBm
Ref Lvl
10.5 dBm
0.5 dB Offset
1VIEW
1MA
Center 2.43698978 GHz
150 kHz/
Span 1.5 MHz
10.5
0
-10
-20
-30
-40
-50
-60
-70
-80
-89.5

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, 2005

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

4.6.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer via a low lose cable. Set both RBW and VBW of spectrum analyzer to 1MHz and 10 Hz with suitable frequency span including 100 MHz 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 12 pages. D2 line indicates the highest level, and D1 line indicates the 20dB offset below D2. It shows compliance with the requirement in part 15.247(C).

NOTE 1: The band edge emission plot of CCK technique on page 64 show 53.28dB delta between carrier maximum power and local maximum emission in restrict band (2.3600GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 104.3dBuV/m, so the maximum field strength in restrict band is104.3-53.28=51.02dBuV/m which is under 54dBuV/m limit.

NOTE 2: The band edge emission plot of CCK technique on page 66 show 56.85dB 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 105.53dBuV/m, so the maximum field strength in restrict band is 105.53-56.58=48.68dBuV/m which is under 54dBuV/m limit.

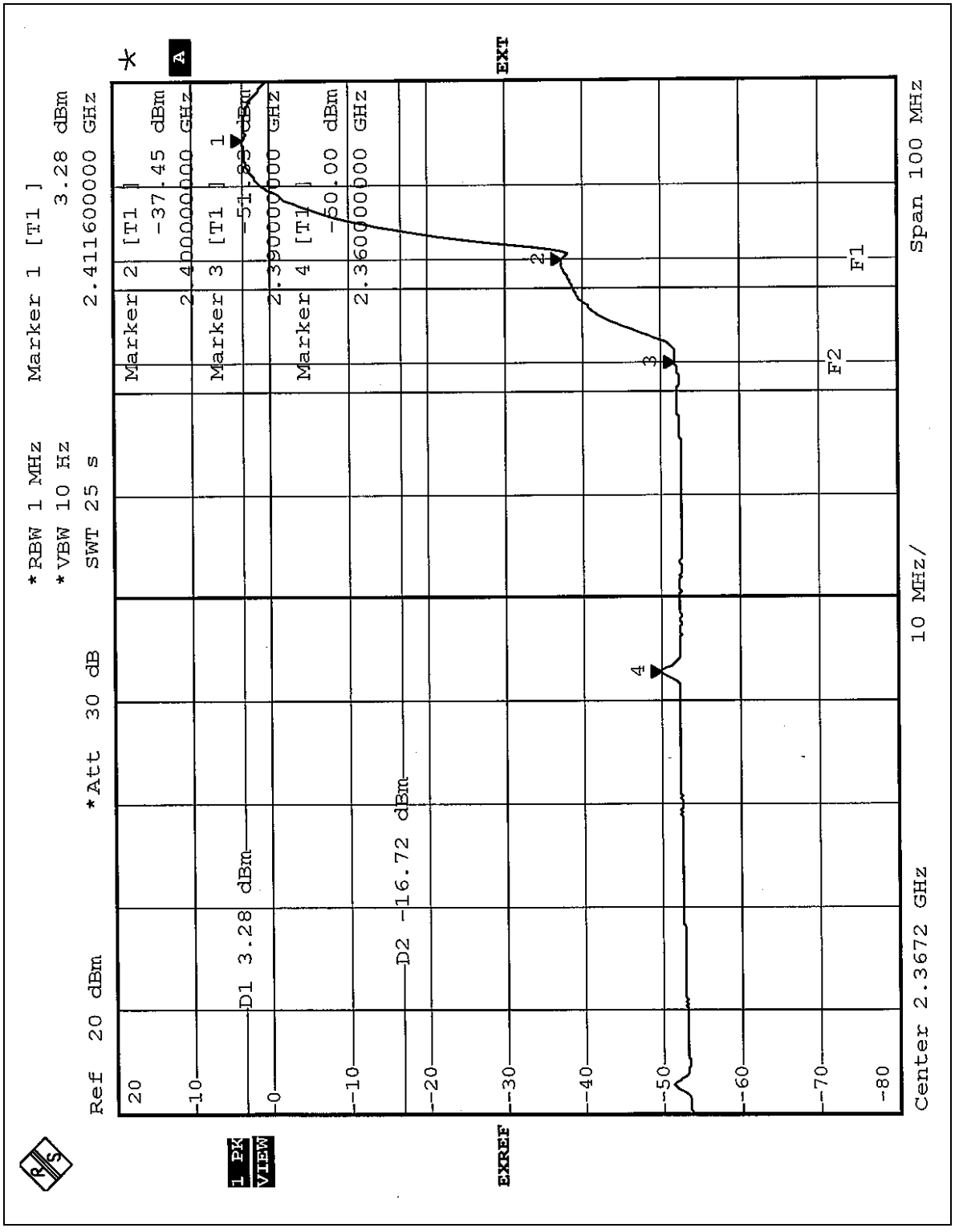
NOTE 3: The band edge emission plot of OFDM technique with Normal mode on page 68 show 48.09dB delta between carrier maximum power and local maximum emission in restrict band (2.3900GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 97.86dBuV/m, so the maximum field strength in restrict band is 97.86-48.09=49.77dBuV/m which is under 54dBuV/m limit.

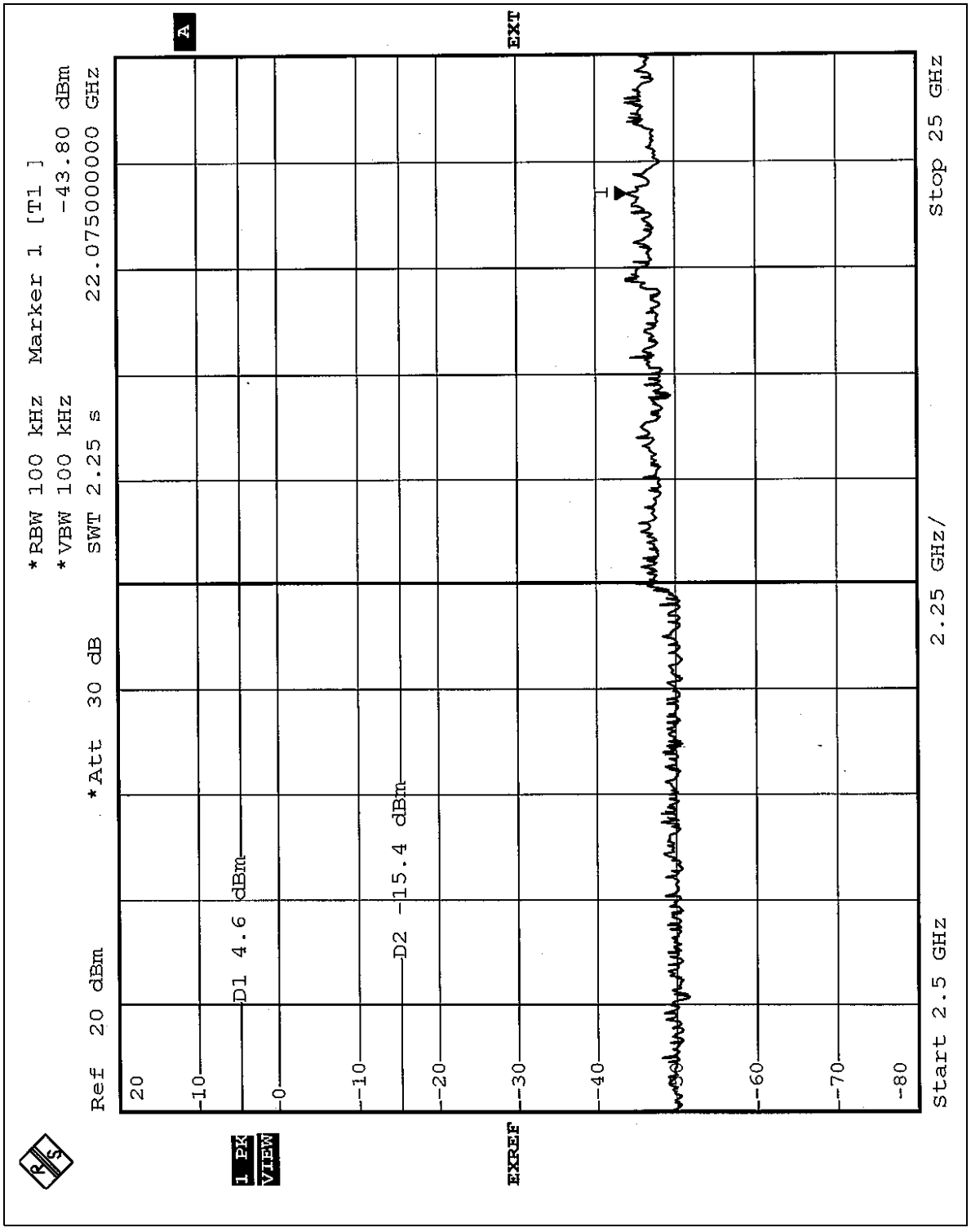
NOTE 4: The band edge emission plot of OFDM technique with Normal mode on page 70 show 48.64dB delta between carrier maximum power and local maximum emission in restrict band (2.4835GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 98.14dBuV/m, so the maximum field strength in restrict band is 98.14-48.64=49.50dBuV/m which is under 54dBuV/m limit.

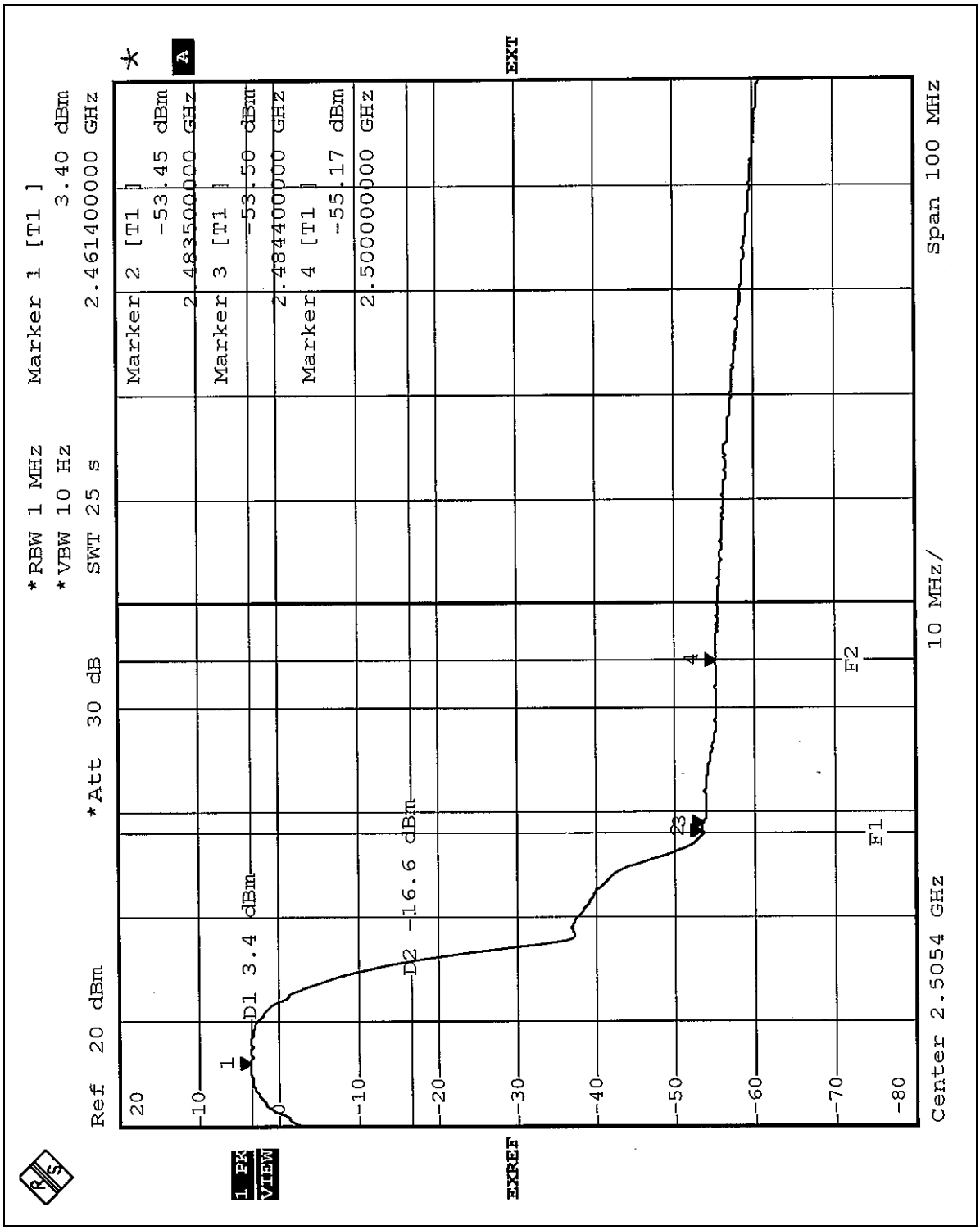
NOTE 5: The band edge emission plot of OFDM technique with Turbo mode on page 72 shows 46.93dB delta between carrier maximum power and local maximum emission in restrict band (2.3599GHz). The emission of carrier strength list in the test result of channel 6 at the item 4.2.7 is 89.14dBuV/m, so the maximum field strength in restrict band is 89.14-46.93=42.21dBuV/m which is under 54dBuV/m limit.

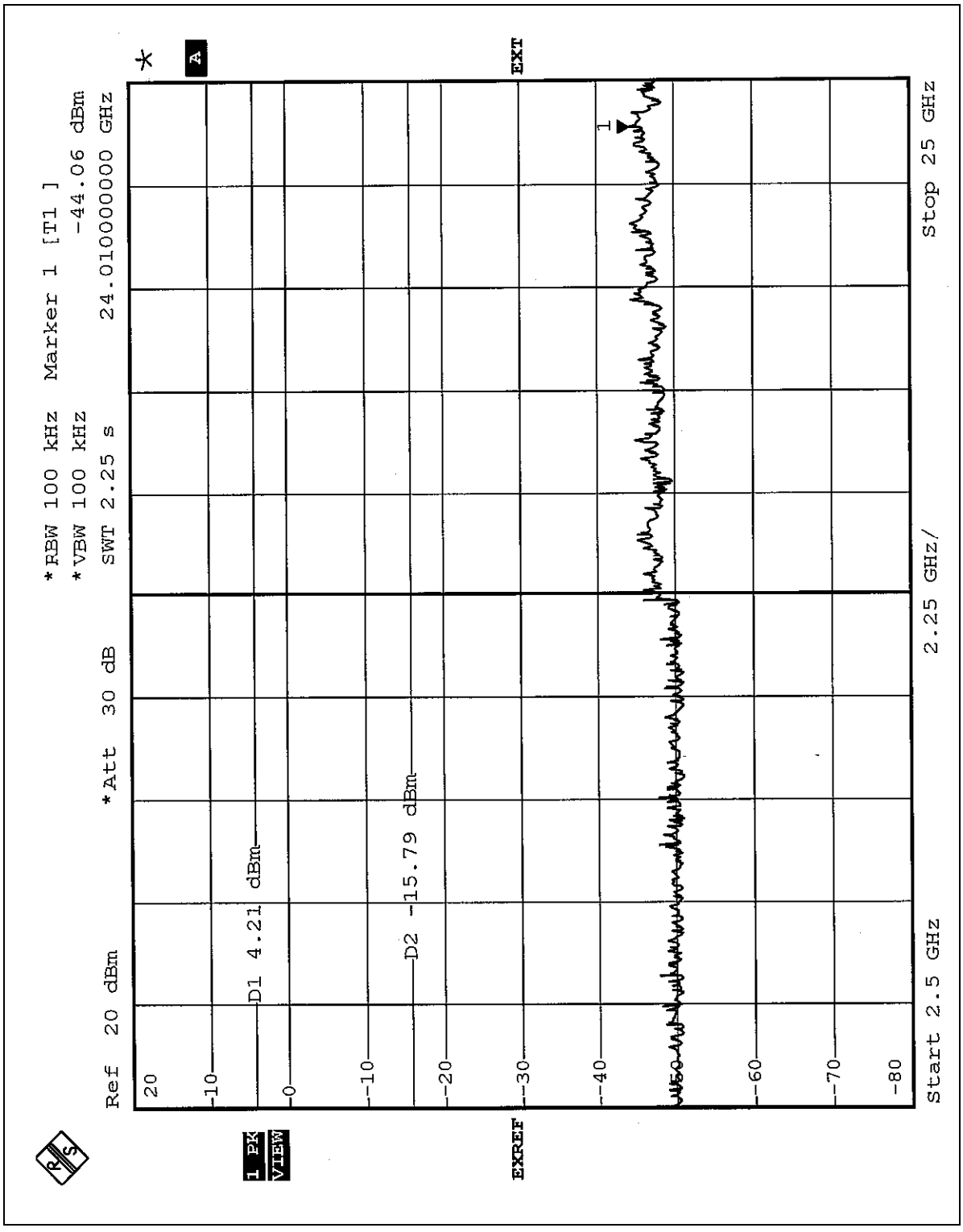
NOTE 6: The band edge emission plot of OFDM technique with Turbo mode on page 74 shows 51.39dB delta between carrier maximum power and local maximum emission in restrict band (2.4835GHz). The emission of carrier strength list in the test result of channel 6 at the item 4.2.7 is 96.02dBuV/m, so the maximum field strength in restrict band is 96.02-51.39=44.63dBuV/m which is under 54dBuV/m limit.

CCK mode:

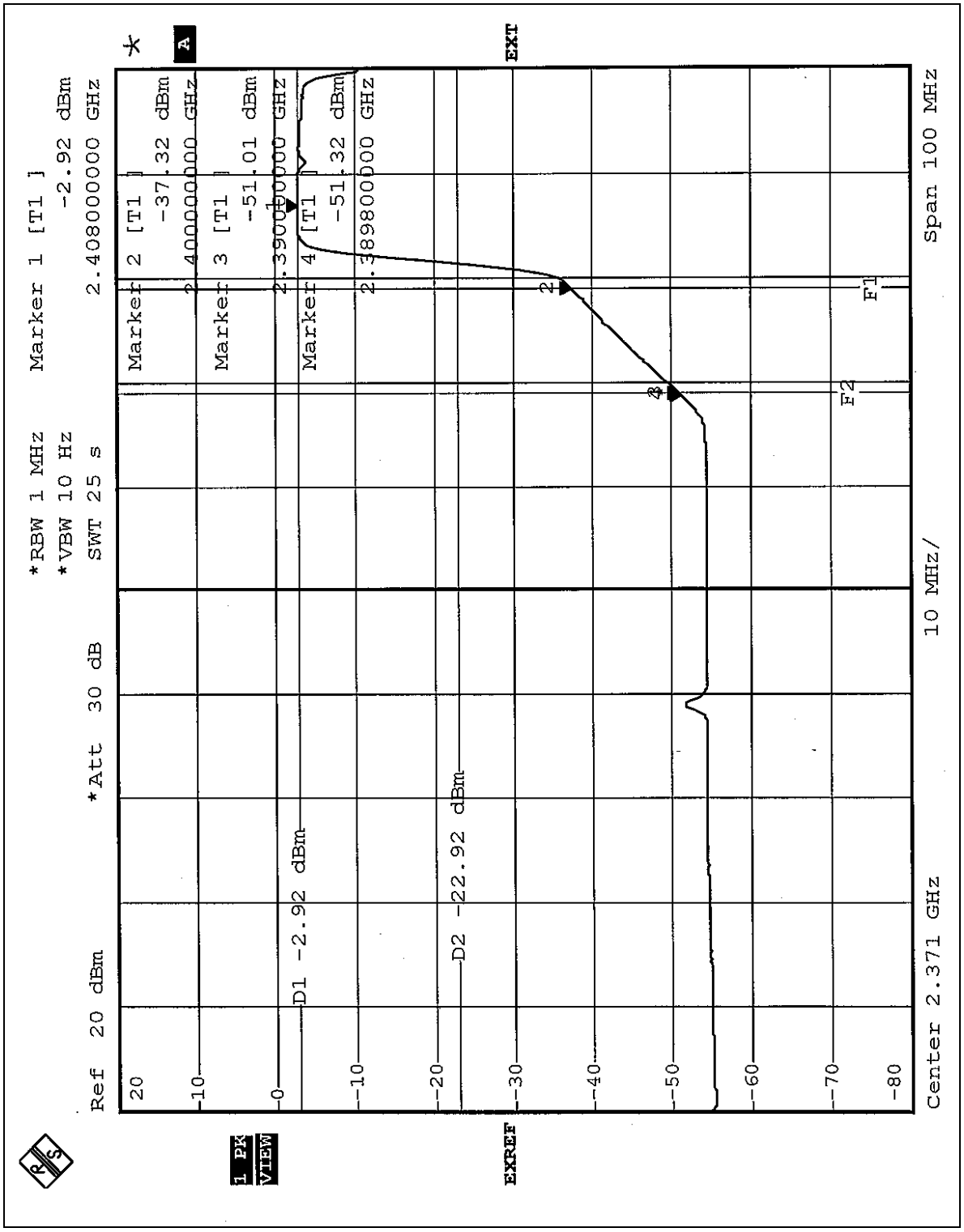

Marker 1 [T1]
3.28 dBm
2.411600000 GHz
*RBW 1 MHz
*VBW 10 Hz
SWT 25 s
*Att 30 dB
Ref 20 dBm
Marker 2 [T1]
-37.45 dBm
2.400000000 GHz
Marker 3 [T1]
-51.23 dBm
2.390000000 GHz
Marker 4 [T1]
-60.00 dBm
2.360000000 GHz
D1 3.28 dBm
D2 -16.72 dBm
EXT
EXREF
1 PK VIEW
F1
F2
Span 100 MHz
10 MHz/
Center 2.3672 GHz

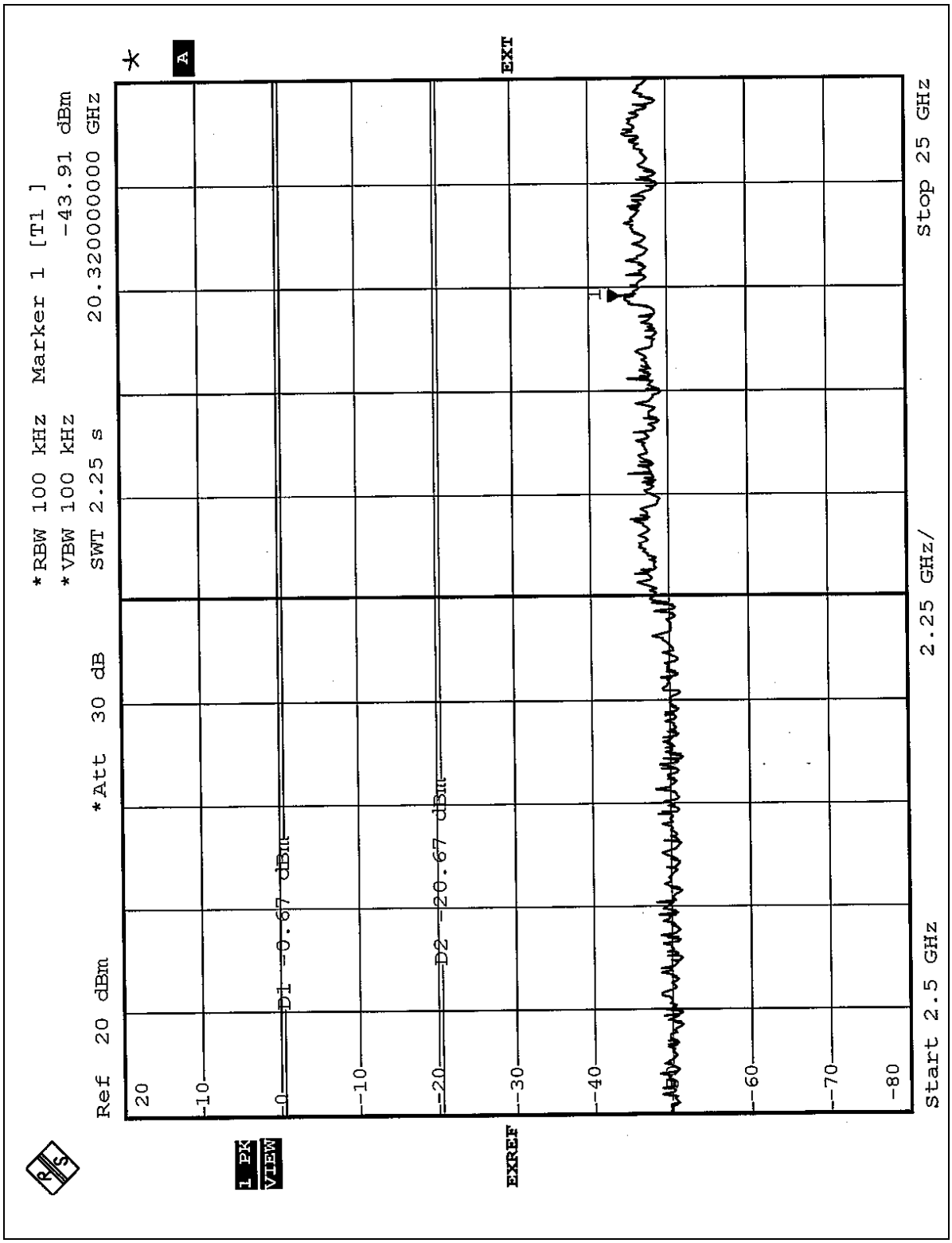

A
EXT
*RBW 100 kHz
*VBW 100 kHz
SWT 2.25 s
Marker 1 [T1]
-43.80 dBm
22.075000000 GHz
Ref 20 dBm
*Att 30 dB
D1 4.6 dBm
D2 -15.4 dBm
1 PK
VIEW
EXREF
Start 2.5 GHz
2.25 GHz/
Stop 25 GHz

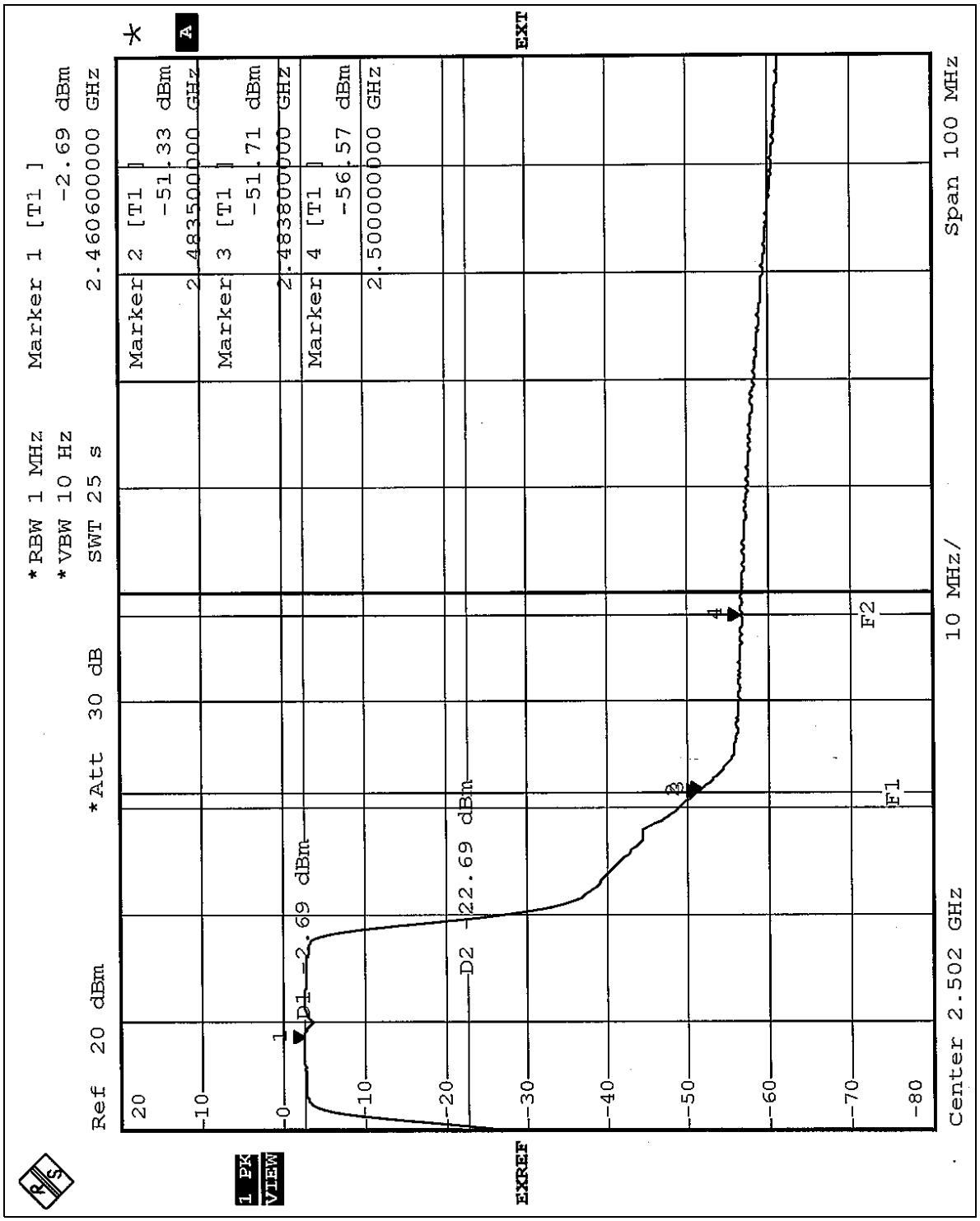

*RBW 1 MHz
*VBW 10 Hz
SWT 25 s
Marker 1 [T1]
3.40 dBm
2.46140000 GHz
Ref 20 dBm
*Att 30 dB
Marker 2 [T1]
-53.45 dBm
2.48350000 GHz
Marker 3 [T1]
-53.50 dBm
2.48440000 GHz
Marker 4 [T1]
-55.17 dBm
2.50000000 GHz
D1 3.4 dBm
D2 -16.6 dBm
F1
F2
Center 2.5054 GHz
10 MHz/
Span 100 MHz
1 PK VIEW
EXREF
EXT

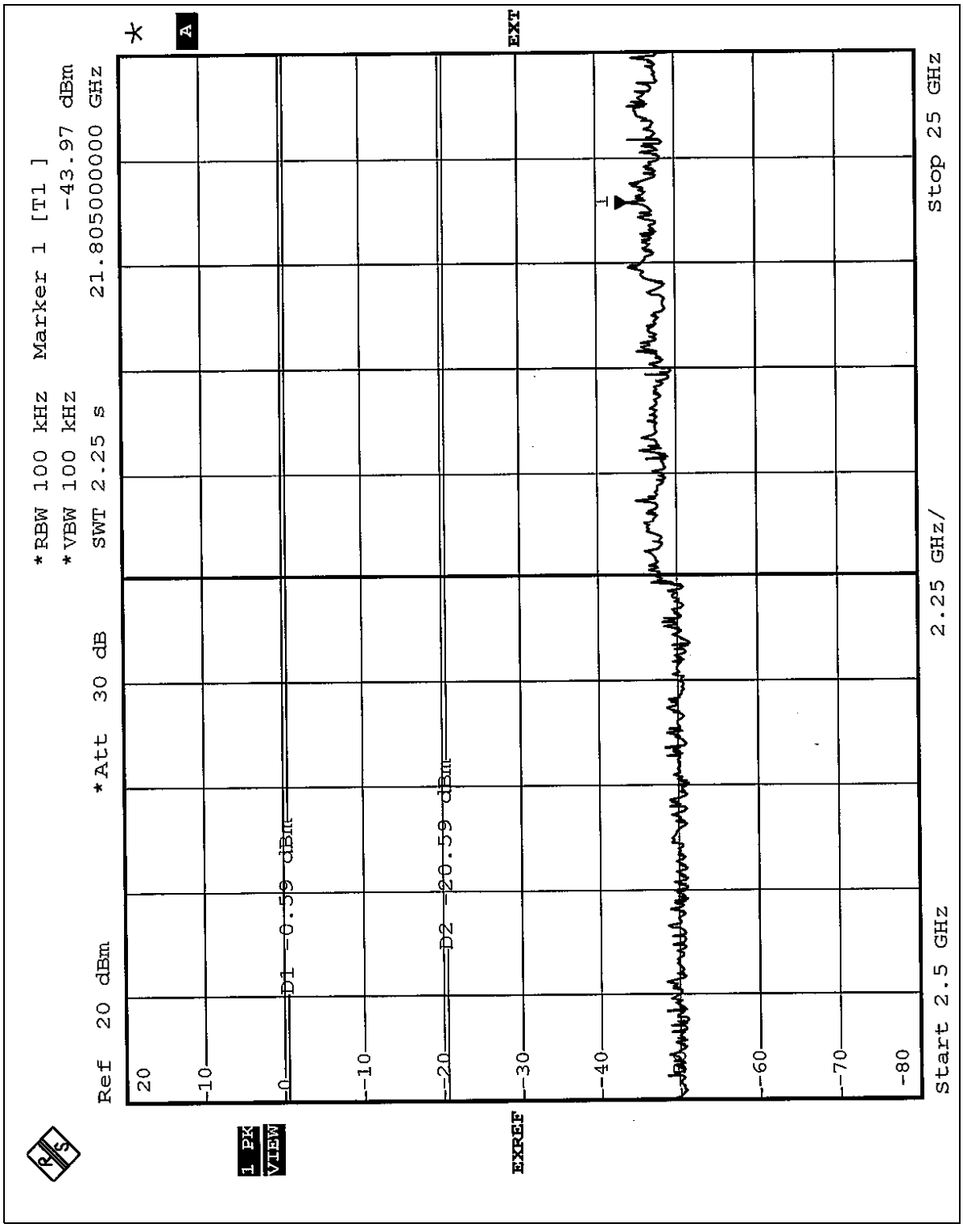

*RBW 100 kHz
*VBW 100 kHz
SWT 2.25 s
Marker 1 [T1]
-44.06 dBm
24.010000000 GHz
Ref 20 dBm
*Att 30 dB
D1 4.21 dBm
D2 -15.79 dBm
1 PK VIEW
EXT
EXREF
Start 2.5 GHz
2.25 GHz/
Stop 25 GHz

OFDM mode:

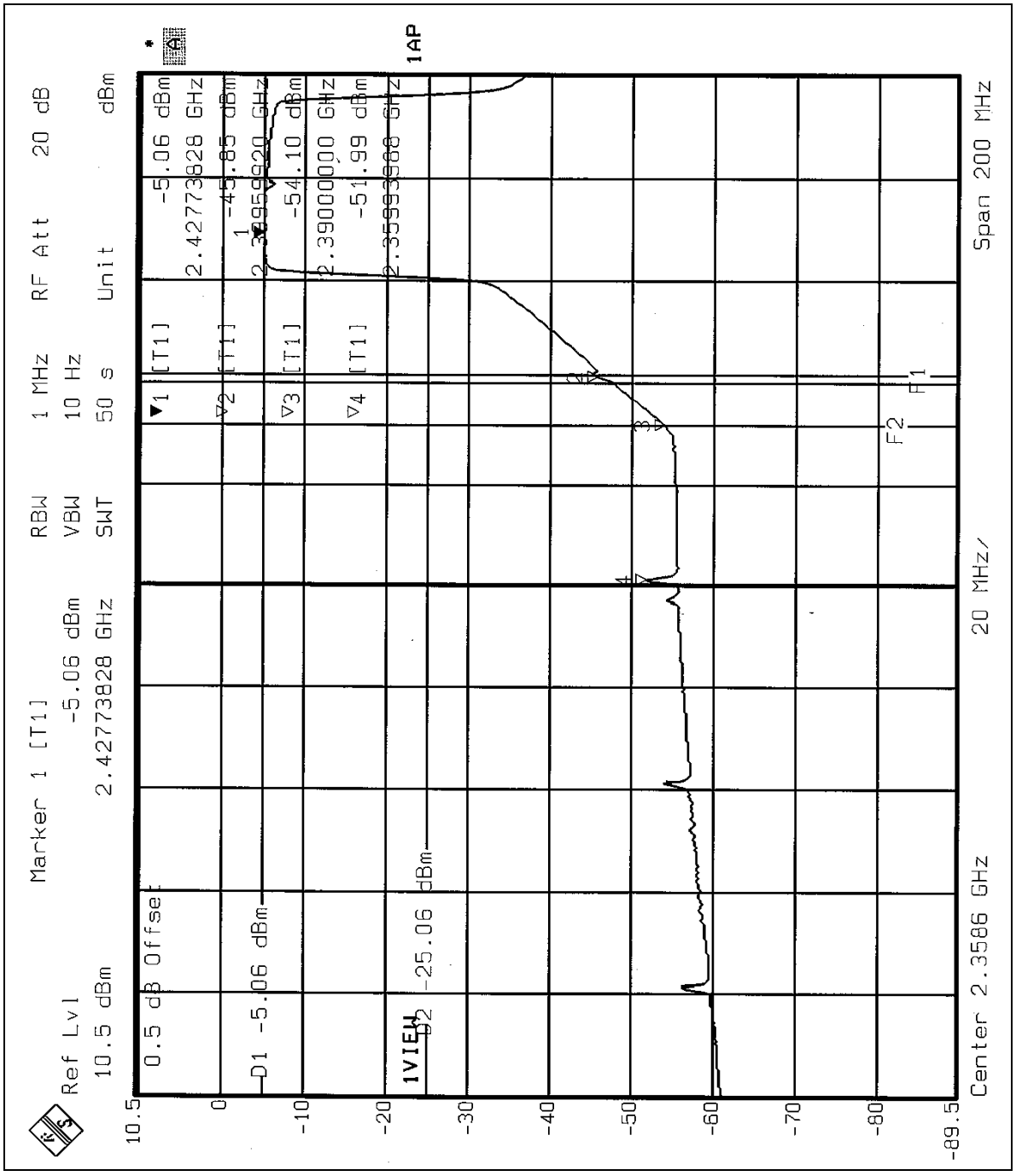

Marker 1 [T1]
-2.92 dBm
2.408000000 GHz
Marker 2 [T1]
-37.32 dBm
2.400000000 GHz
Marker 3 [T1]
-51.01 dBm
2.390000000 GHz
Marker 4 [T1]
-51.32 dBm
2.389800000 GHz
*RBW 1 MHz
*VBW 10 Hz
SWT 25 s
*Att 30 dB
Ref 20 dBm
D1 -2.92 dBm
D2 -22.92 dBm
EXT
EXREF
1 PK VIEW
Center 2.371 GHz
10 MHz/
Span 100 MHz
F1
F2

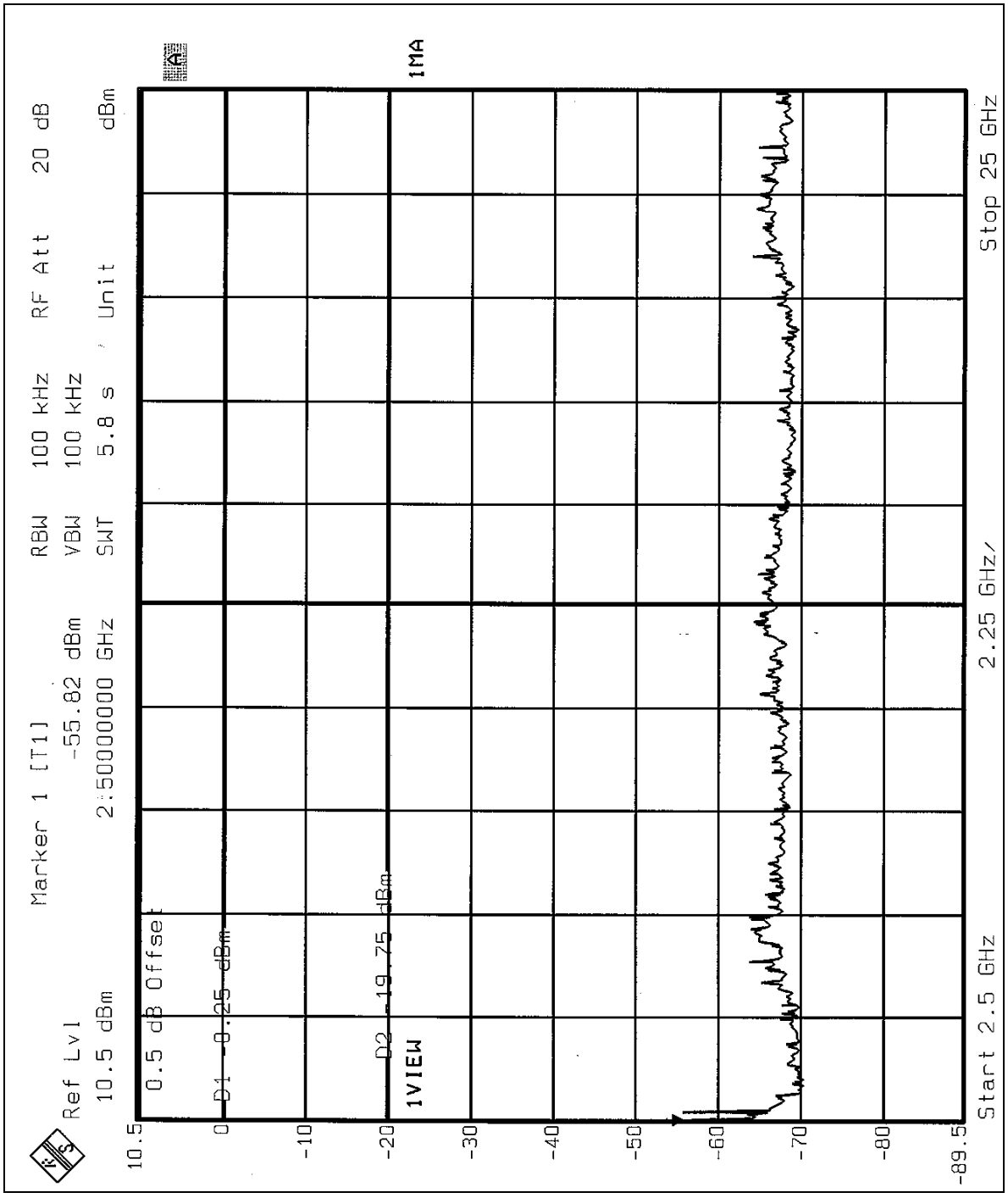

*RBW 100 kHz
*VBW 100 kHz
SWT 2.25 s
Marker 1 [T1]
-43.91 dBm
20.320000000 GHz
Ref 20 dBm
*Att 30 dB
D1 -0.67 dBm
D2 -20.67 dBm
Start 2.5 GHz
2.25 GHz/
Stop 25 GHz
1 PK VIEW
EXT
EXREF

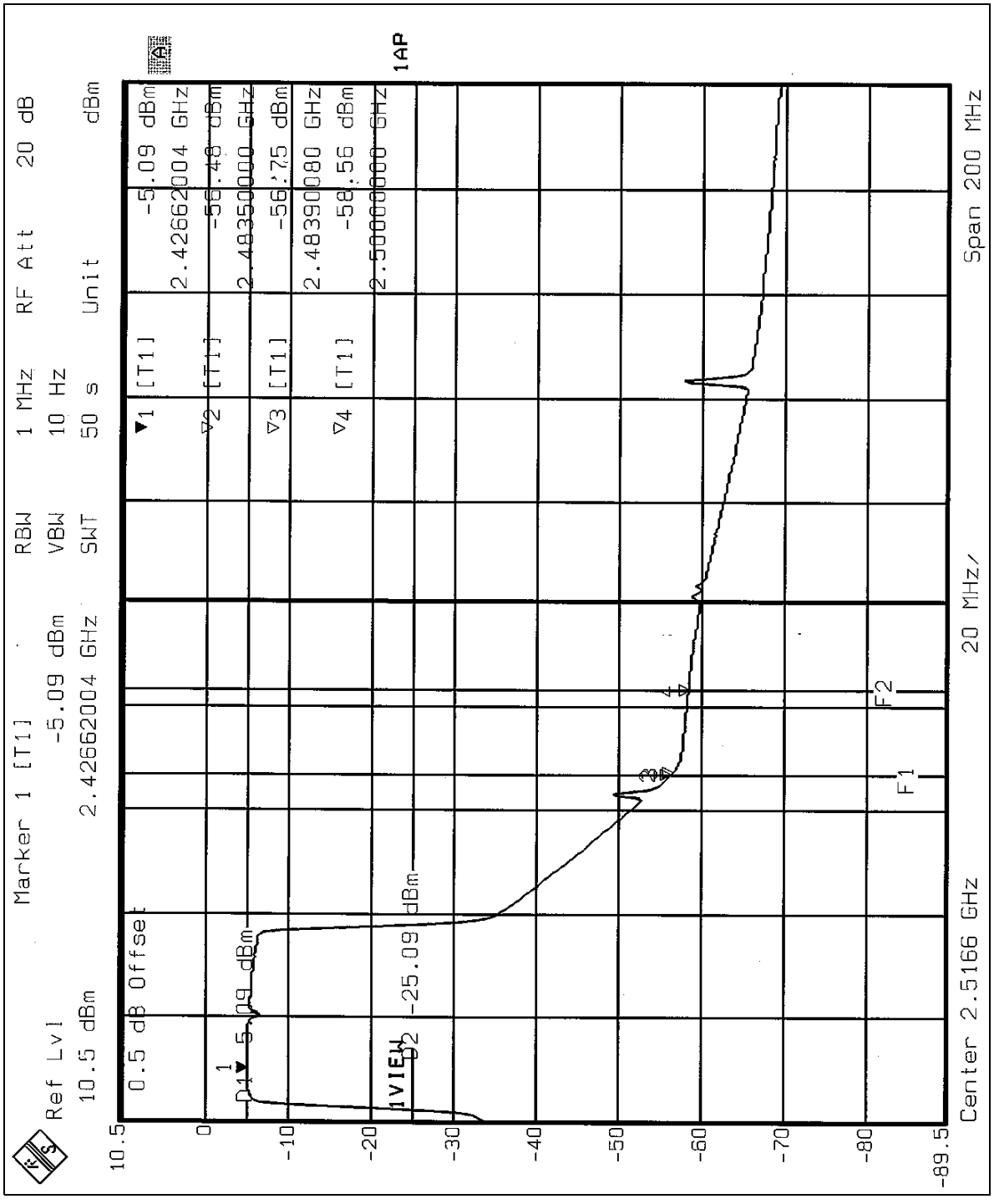

Marker 1 [T1]
-2.69 dBm
2.46060000 GHz
*RBW 1 MHz
*VBW 10 Hz
SWT 25 s
*Att 30 dB
Ref 20 dBm
Marker 2 [T1]
-51.33 dBm
2.48350000 GHz
Marker 3 [T1]
-51.71 dBm
2.48380000 GHz
Marker 4 [T1]
-56.57 dBm
2.50000000 GHz
D1 -2.69 dBm
D2 -22.69 dBm
F1
F2
Center 2.502 GHz
10 MHz/
Span 100 MHz
EXT
EXREF
1 PK VIEW

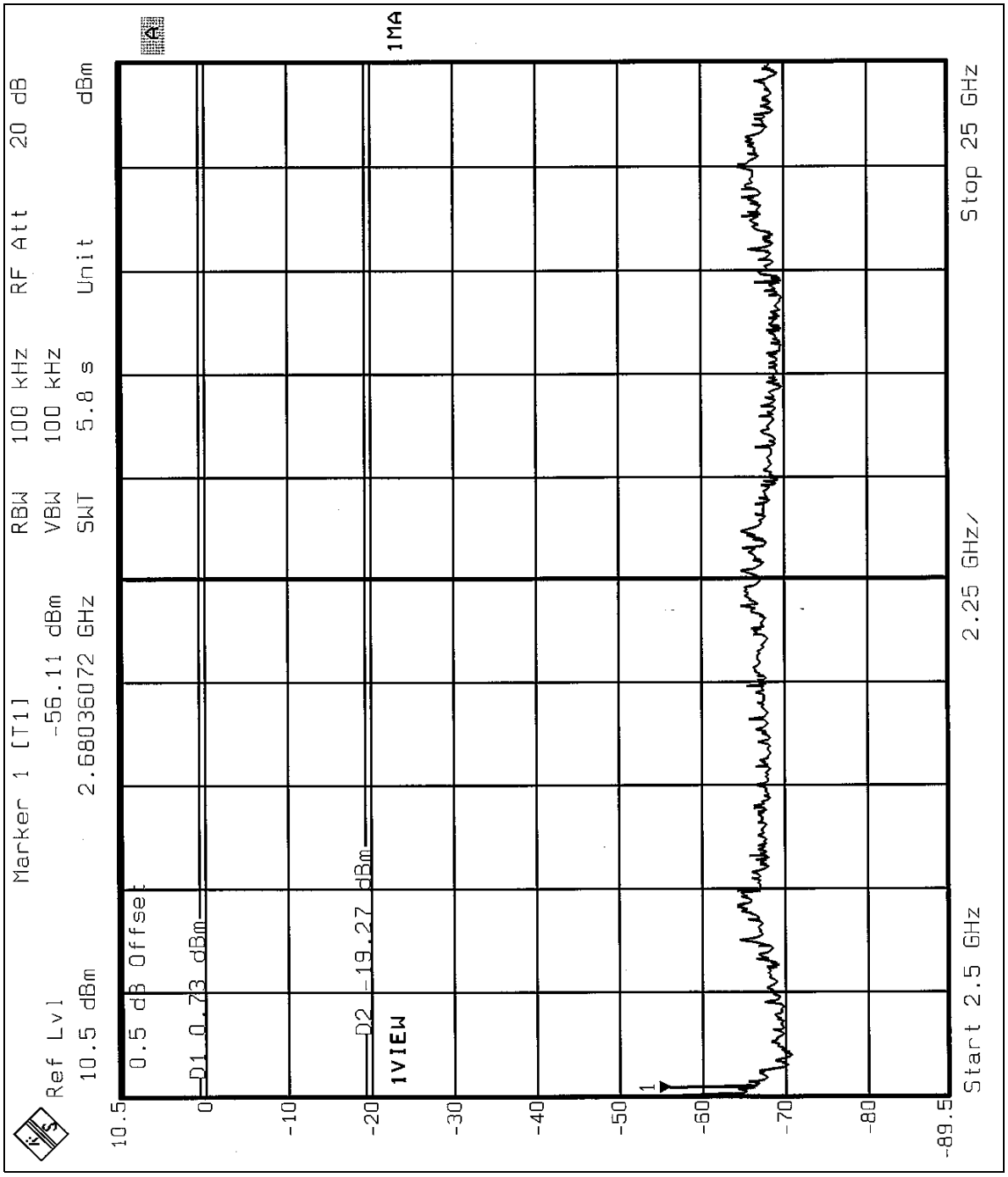

*RBW 100 kHz
*VBW 100 kHz
SWT 2.25 s
Marker 1 [T1]
-43.97 dBm
21.805000000 GHz
Ref 20 dBm
*Att 30 dB
D1 -0.59 dBm
D2 -20.59 dBm
1 PK VIEW
EXT
EXREF
Start 2.5 GHz
2.25 GHz/
Stop 25 GHz

OFDM Turbo mode:




Marker 1 [T1]
-55.82 dBm
2.50000000 GHz
RBW 100 kHz
VBW 100 kHz
SWT 5.8 s
RF Att 20 dB
Unit dBm
Ref Lvl
10.5 dBm
0.5 dB Offset
D1 -0.25 dBm
D2 -19.75 dBm
1VIEW
1MA
Start 2.5 GHz
2.25 GHz/
Stop 25 GHz
10.5
0
-10
-20
-30
-40
-50
-60
-70
-80
-89.5


Marker 1 [T1]
-5.09 dBm
2.42662004 GHz
RBW 1 MHz
VBW 10 Hz
SWT 50 s
RF Att 20 dB
Unit dBm
Ref Lvl
10.5 dBm
0.5 dB Offset
1 [T1] -5.09 dBm 2.42662004 GHz
2 [T1] -56.48 dBm 2.48350000 GHz
3 [T1] -56.75 dBm 2.48390080 GHz
4 [T1] -58.56 dBm 2.50000000 GHz
1AP
1VIEW
D2 -25.09 dBm
D1 -5.09 dBm
F1
F2
Center 2.5166 GHz
20 MHz/
Span 200 MHz
10.5
0
-10
-20
-30
-40
-50
-60
-70
-80
-89.5


Marker 1 [T1]
-56.11 dBm
2.68036072 GHz
RBW 100 kHz
VBW 100 kHz
SWT 5.8 s
RF Att 20 dB
Unit dBm
Ref Lvl
10.5 dBm
0.5 dB Offset
D1 0.73 dBm
D2 -19.27 dBm
1VIEW
1MA
Start 2.5 GHz
2.25 GHz/
Stop 25 GHz
10.5
0
-10
-20
-30
-40
-50
-60
-70
-80
-89.5

4.7 ANTENNA REQUIREMENT

4.7.1 STANDARD APPLICABLE

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

4.7.2 ANTENNA CONNECTED CONSTRUCTION

The antenna used in this product is Dipole antenna with UFL connector. The maximum Gain of the antenna is 4dBi.

5. TEST TYPES AND RESULTS (FOR PART 802.11a)

5.1 CONDUCTED EMISSION MEASUREMENT

5.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

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

5.1.2 TEST INSTRUMENTS

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

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

2. The test was performed in HwaYa Shielded Room 2.

3. The VCCI Site Registration No. is C-2047.

5.1.3 TEST PROCEDURES

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

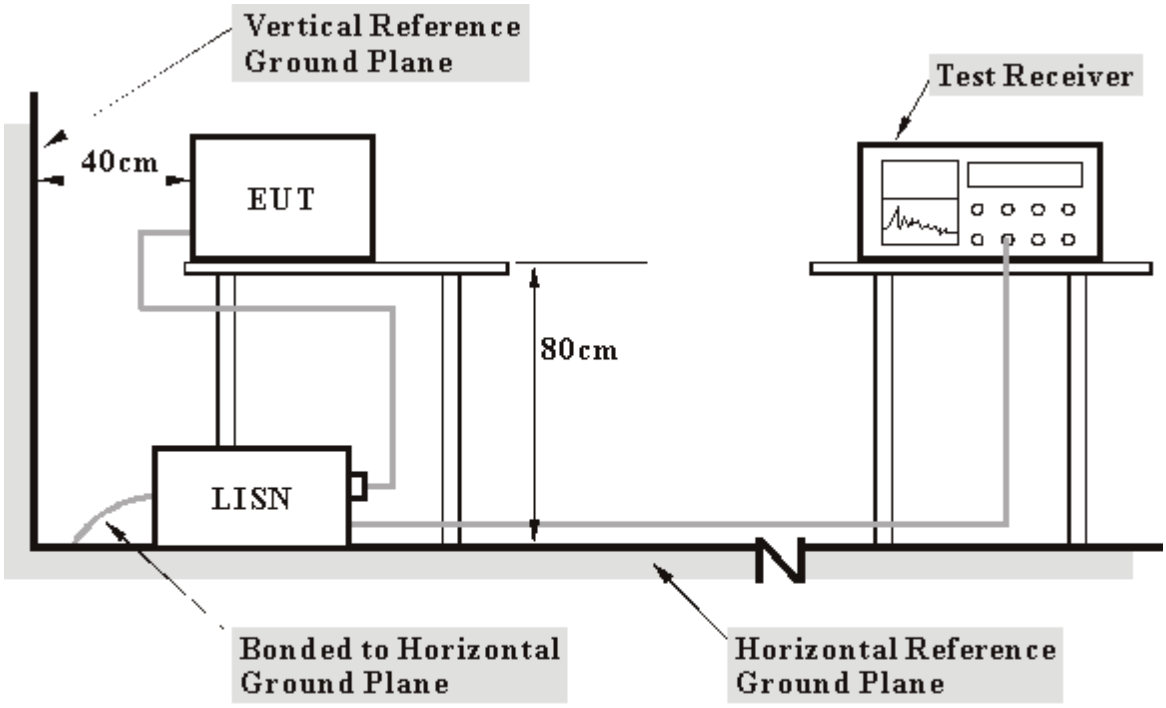
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

5.1.4 DEVIATION FROM TEST STANDARD

No deviation

5.1.5 TEST SETUP



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

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

5.1.6 EUT OPERATING CONDITIONS

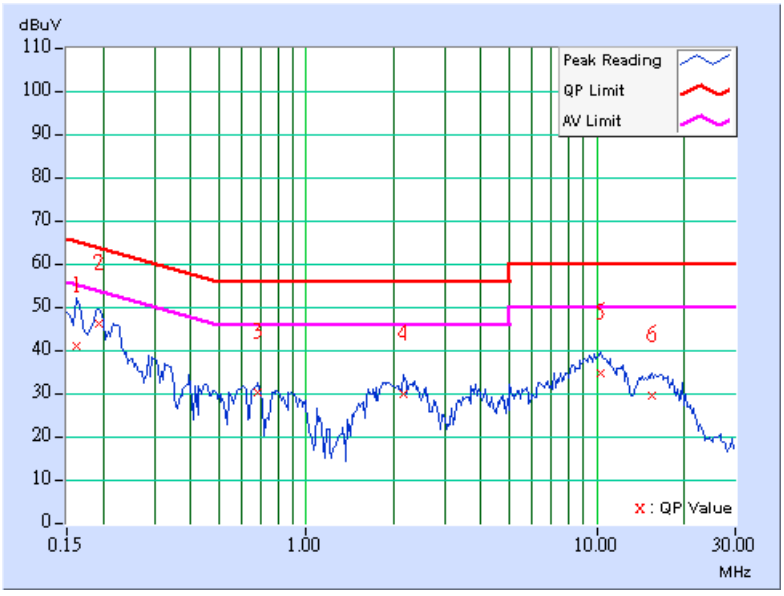
Same as 4.1.6

5.1.7 TEST RESULTS

EUT	Wireless A+G Mini PCI Card	**MODEL**	WMIA-123AG
		6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**PHASE**	Line (L)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	**TESTED BY**: Match Tsui	

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	0.162	0.10	40.34	-	40.44	-	65.38	55.38	-24.93	-
2	**0.193**	**0.10**	**45.63**	**-**	**45.73**	**-**	**63.91**	**53.91**	**-18.18**	**-**
3	0.681	0.18	29.65	-	29.83	-	56.00	46.00	-26.17	-
4	2.152	0.26	29.44	-	29.70	-	56.00	46.00	-26.30	-
5	10.340	0.54	33.96	-	34.50	-	60.00	50.00	-25.50	-
6	15.508	0.72	28.91	-	29.63	-	60.00	50.00	-30.37	-

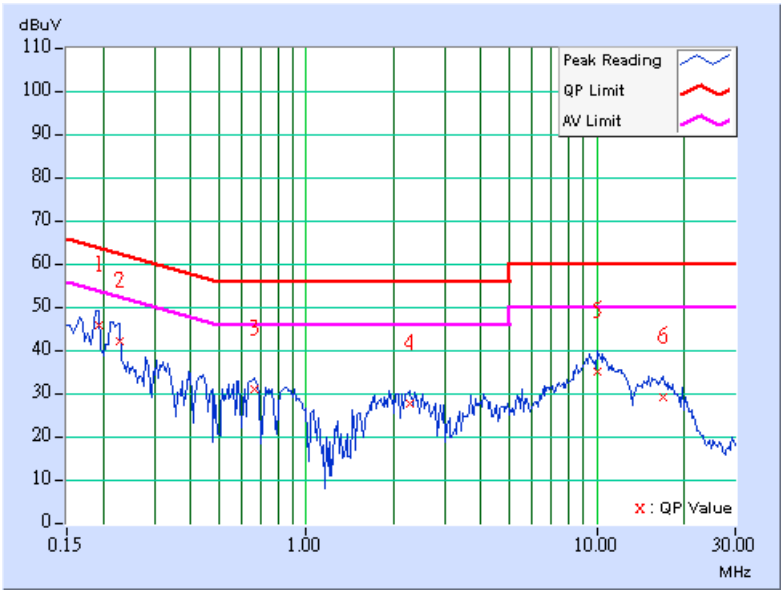
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Wireless A+G Mini PCI Card	**MODEL**	WMIA-123AG
		6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**PHASE**	Neutral (N)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	**TESTED BY**: Match Tsui	

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	0.193	0.10	45.17	-	45.27	-	63.91	53.91	-18.64	-
2	0.228	0.10	41.57	-	41.67	-	62.52	52.52	-20.85	-
3	0.662	0.16	30.54	-	30.70	-	56.00	46.00	-25.30	-
4	2.266	0.26	27.28	-	27.54	-	56.00	46.00	-28.46	-
5	10.102	0.49	34.55	-	35.04	-	60.00	50.00	-24.96	-
6	16.867	0.59	28.58	-	29.17	-	60.00	50.00	-30.83	-

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



5.2 RADIATED EMISSION MEASUREMENT

5.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

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

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

NOTE:

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

5.2.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

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

NOTE:

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

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

5.2.3 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.

5.2.4 TEST PROCEDURES

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. 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.

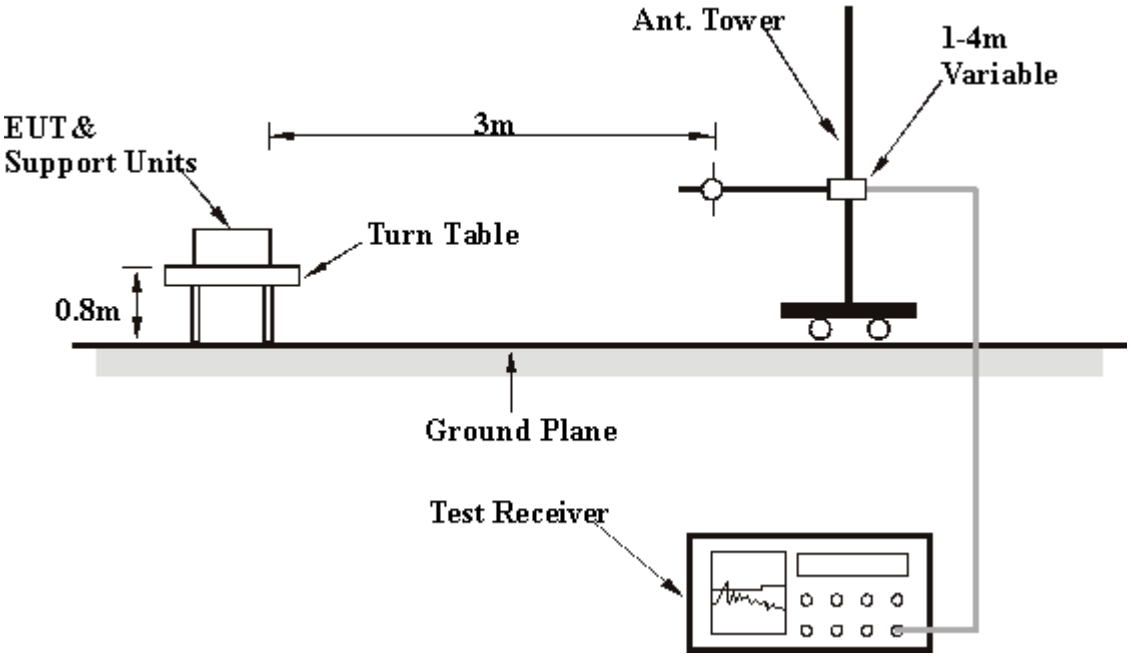
NOTE:

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

5.2.5 DEVIATION FROM TEST STANDARD

No deviation

5.2.6 TEST SETUP



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

5.2.7 EUT OPERATING CONDITIONS

Same as 4.1.6

5.2.8 TEST RESULTS

EUT	Wireless A+G Mini PCI Card	**MODEL**	WMIA-123AG
CHANNEL	Channel 11	**FREQUENCY RANGE**	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	**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	57.21	26.01 QP	40.00	-13.99	1.50 H	265	12.03	13.99
2	82.48	30.46 QP	40.00	-9.54	1.50 H	181	20.43	10.03
3	113.59	36.98 QP	43.50	-6.52	1.00 H	325	24.60	12.37
4	125.25	42.17 QP	43.50	-1.33	1.50 H	31	28.78	13.39
5	142.75	42.10 QP	43.50	-1.40	1.47 H	357	27.62	14.48
6	177.74	42.18 QP	43.50	-1.32	1.50 H	357	29.00	13.18
7	210.78	36.36 QP	43.50	-7.14	1.00 H	316	24.73	11.63
8	267.15	32.21 QP	46.00	-13.79	1.50 H	154	18.56	13.66
9	300.20	32.16 QP	46.00	-13.84	1.00 H	316	17.65	14.50
10	333.25	41.05 QP	46.00	-4.95	1.00 H	325	25.78	15.26
11	377.96	32.28 QP	46.00	-13.72	1.00 H	25	16.01	16.27
12	449.88	32.00 QP	46.00	-14.00	1.50 H	262	13.94	18.07
13	531.52	26.40 QP	46.00	-19.60	1.50 H	208	7.06	19.34
14	599.56	33.39 QP	46.00	-12.61	1.50 H	94	12.39	21.00
15	665.65	29.40 QP	46.00	-16.60	1.00 H	274	7.52	21.87
16	931.96	29.22 QP	46.00	-16.78	1.50 H	130	3.77	25.45

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

EUT	Wireless A+G Mini PCI Card	MODEL	WMIA-123AG
CHANNEL	Channel 11	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	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	57.21	35.47 QP	40.00	-4.53	1.00 V	172	21.49	13.99
2	92.20	33.21 QP	43.50	-10.29	1.00 V	10	22.84	10.37
3	125.25	37.84 QP	43.50	-5.66	1.00 V	310	24.44	13.39
4	142.75	38.57 QP	43.50	-4.93	1.50 V	91	24.09	14.48
5	166.07	39.03 QP	43.50	-4.47	1.00 V	49	24.73	14.30
6	199.12	33.22 QP	43.50	-10.28	1.25 V	88	21.76	11.46
7	267.15	28.83 QP	46.00	-17.17	1.50 V	304	15.17	13.66
8	333.25	35.78 QP	46.00	-10.22	1.25 V	286	20.52	15.26
9	348.80	34.39 QP	46.00	-11.61	1.25 V	283	18.77	15.62
10	381.84	34.25 QP	46.00	-11.75	1.25 V	283	17.90	16.35
11	457.66	33.05 QP	46.00	-12.95	1.00 V	280	14.88	18.17
12	498.48	27.87 QP	46.00	-18.13	1.00 V	349	9.16	18.71
13	533.47	30.03 QP	46.00	-15.97	1.00 V	310	10.66	19.37
14	601.50	32.97 QP	46.00	-13.03	1.25 V	13	11.94	21.03
15	731.74	29.01 QP	46.00	-16.99	1.50 V	346	5.92	23.08
16	931.96	30.10 QP	46.00	-15.90	1.50 V	58	4.65	25.45

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

EUT	Wireless A+G Mini PCI Card	MODEL	WMIA-123AG
MODE	Normal Mode	CHANNEL	1
FREQUENCY RANGE	1 ~ 40 GHz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	INPUT POWER (SYSTEM)	120Vac, 60Hz
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)
1	#5150.00	37.25 PK	74.00	-36.75	1.15 H	341	-1.85	39.10
2	*5180.00	100.09 PK			1.15 H	341	60.92	39.17
2	*5180.00	90.10 AV			1.15 H	341	50.93	39.17
3	10360.00	56.65 PK	68.30	-11.65	1.19 H	126	11.36	45.29

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)
1	#5150.00	45.02 PK	74.00	-28.98	1.00 V	350	5.92	39.10
2	*5180.00	107.86 PK			1.00 V	350	68.69	39.17
2	*5180.00	98.57 AV			1.00 V	350	59.40	39.17
3	10360.00	67.22 PK	68.30	-1.08	1.44 V	3	21.93	45.29

NOTE:

1. Emission level = Raw value + Correction Factor
2. Correction Factor = Ant. Factor + Cable loss
3. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.
5. "*" : Fundamental frequency
6. "#"The radiated frequency falling in the restricted band.

EUT	Wireless A+G Mini PCI Card	**MODEL**	WMIA-123AG
MODE	Normal Mode	**CHANNEL**	4
FREQUENCY RANGE	1 ~ 40 GHz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
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)
1	*5240.00	100.14 PK			1.23 H	21	60.96	39.18
1	*5240.00	90.65 AV			1.23 H	21	51.47	39.18
2	10480.00	57.09 PK	68.30	-11.21	1.25 H	211	11.00	46.08

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB)
1	*5240.00	108.15 PK			1.07 V	15	68.97	39.18
1	*5240.00	99.13 AV			1.07 V	15	59.95	39.18
2	10480.00	66.40 PK	68.30	-1.90	1.55 V	340	20.31	46.08

NOTE:

1. Emission level = Raw value + Correction Factor
2. Correction Factor = Ant. Factor + Cable loss
3. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.
5. “*” : Fundamental frequency

EUT	Wireless A+G Mini PCI Card	MODEL	WMIA-123AG
MODE	Normal Mode	CHANNEL	5
FREQUENCY RANGE	1 ~ 40 GHz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	INPUT POWER (SYSTEM)	120Vac, 60Hz
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)
1	*5260.00	97.84 PK			1.30 H	2	58.68	39.16
1	*5260.00	88.57 AV			1.30 H	2	49.41	39.16
2	10520.00	55.29 PK	68.30	-13.01	1.35 H	2	9.14	46.16

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)
1	*5260.00	107.11 PK			1.14 V	233	67.95	39.16
1	*5260.00	98.04 AV			1.14 V	233	58.88	39.16
2	10520.00	64.20 PK	68.30	-4.10	1.37 V	2	18.05	46.16

NOTE:

1. Emission level = Raw value + Correction Factor
2. Correction Factor = Ant. Factor + Cable loss
3. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.
5. “*” : Fundamental frequency

EUT	Wireless A+G Mini PCI Card	**MODEL**	WMIA-123AG
MODE	Normal Mode	**CHANNEL**	8
FREQUENCY RANGE	1 ~ 40 GHz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
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)	Antenna Factor (dB)
1	*5320.00	95.94 PK			1.03 H	47	56.79	39.15
1	*5320.00	86.72 AV			1.03 H	47	47.57	39.15
2	#5350.00	33.79 PK	74.00	-40.21	1.03 H	47	-5.41	39.20
3	#10640.00	56.16 PK	74.00	-17.84	1.02 H	135	9.93	46.23
3	#10640.00	44.95 AV	54.00	-9.05	1.02 H	135	-1.28	46.23

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)
1	*5320.00	104.80 PK			1.33 V	222	65.65	39.15
1	*5320.00	95.08 AV			1.33 V	222	55.93	39.15
2	#5350.00	42.65 PK	74.00	-31.35	1.33 V	222	3.45	39.20
3	#10640.00	65.54 PK	74.00	-8.46	1.33 V	360	19.31	46.23
3	#10640.00	52.91 AV	54.00	-1.09	1.33 V	360	6.68	46.23

NOTE:

1. Emission level = Raw value + Correction Factor
2. Correction Factor = Ant. Factor + Cable loss
3. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.
5. “*” : Fundamental frequency
6. “#”The radiated frequency falling in the restricted band.

EUT	Wireless A+G Mini PCI Card	**MODEL**	WMIA-123AG
MODE	Normal Mode	**CHANNEL**	9
FREQUENCY RANGE	1 ~ 40 GHz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
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	5715.00	65.00 PK	68.30	-3.30	1.25 H	339	24.21	40.79
2	5725.00	67.05 PK	78.30	-11.25	1.25 H	339	26.22	40.83
3	*5745.00	102.24 PK			1.25 H	339	61.34	40.90
3	*5745.00	92.46 AV			1.25 H	339	51.56	40.90

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	5715.00	66.08 PK	68.30	-2.22	1.01 V	316	25.29	40.79
2	5725.00	73.54 PK	78.30	-4.76	1.00 V	316	32.71	40.83
3	*5745.00	106.87 PK			1.00 V	316	65.97	40.90
3	*5745.00	95.89 AV			1.00 V	316	54.99	40.90

NOTE:

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.

EUT	Wireless A+G Mini PCI Card	MODEL	WMIA-123AG
MODE	Normal Mode	CHANNEL	12
FREQUENCY RANGE	1 ~ 40 GHz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	INPUT POWER (SYSTEM)	120Vac, 60Hz
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	*5805.00	100.45 PK			1.16 H	360	59.38	41.07
1	*5805.00	89.45 AV			1.16 H	360	48.38	41.07
2	5825.00	67.57 PK	78.30	-10.73	1.16 H	360	26.62	40.95
3	5835.00	67.24 PK	68.30	-1.06	1.16 H	360	26.36	40.88

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	*5805.00	107.68 PK			1.21 V	19	66.61	41.07
1	*5805.00	98.11 AV			1.21 V	19	57.04	41.07
2	5825.00	70.13 PK	78.30	-8.17	1.21 V	19	29.18	40.95
3	5835.00	66.90 PK	68.30	-1.40	1.21 V	19	26.02	40.88

NOTE:

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.

EUT	Wireless A+G Mini PCI Card	**MODEL**	WMIA-123AG
MODE	Turbo Mode	**CHANNEL**	1
FREQUENCY RANGE	1 ~ 40 GHz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
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)
1	#5150.00	50.74 PK	74.00	-23.26	1.16 H	18	11.64	39.10
1	#5150.00	42.32 AV	54.00	-11.68	1.16 H	18	11.64	39.10
2	*5210.00	96.22 PK			1.16 H	18	57.01	39.21
2	*5210.00	87.80 AV			1.16 H	18	48.59	39.21
3	10420.00	55.49 PK	68.30	-12.81	1.32 H	7	9.72	45.77

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)
1	#5150.00	59.68 PK	74.00	-14.32	1.14 V	27	20.58	39.10
1	#5150.00	50.99 AV	54.00	-3.01	1.14 V	27	11.89	39.10
2	*5210.00	105.16 PK			1.14 V	27	65.95	39.21
2	*5210.00	96.47 AV			1.14 V	27	57.26	39.21
3	10420.00	66.72 PK	68.30	-1.58	1.31 V	3	20.95	45.77

NOTE:

1. Emission level = Raw value+ Correction Factor
2. Correction Factor = Ant. Factor + Cable loss
3. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.
5. "*" : Fundamental frequency
6."#"The radiated frequency falling in the restricted band.

EUT	Wireless A+G Mini PCI Card	**MODEL**	WMIA-123AG
MODE	Turbo Mode	**CHANNEL**	2
FREQUENCY RANGE	1 ~ 40 GHz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
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)
1	*5250.00	97.02 PK			1.23 H	21	57.85	39.17
1	*5250.00	87.94 AV			1.23 H	21	48.77	39.17
2	10500.00	55.75 PK	68.30	-12.55	1.24 H	221	9.56	46.19

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB)
1	*5250.00	105.23 PK			1.06 V	351	66.06	39.17
1	*5250.00	96.23 AV			1.06 V	351	57.06	39.17
2	10500.00	63.21 PK	68.30	-5.09	1.24 V	5	17.02	46.19

NOTE:

1. Emission level = Raw value + Correction Factor
2. Correction Factor = Ant. Factor + Cable loss
3. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.
5. “#”The radiated frequency falling in the restricted band.

EUT	Wireless A+G Mini PCI Card	**MODEL**	WMIA-123AG
MODE	Turbo Mode	**CHANNEL**	3
FREQUENCY RANGE	1 ~ 40 GHz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
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)
1	*5290.00	96.69 PK			1.02 H	19	57.56	39.13
1	*5290.00	88.09 AV			1.02 H	19	48.96	39.13
2	#5350.00	46.00 PK	74.00	-28.00	1.02 H	19	6.80	39.20
3	10580.00	56.24 PK	68.30	-12.06	1.24 H	91	10.17	46.07

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)
1	*5290.00	104.18 PK			1.22 V	232	65.05	39.13
1	*5290.00	95.44 AV			1.22 V	232	56.31	39.13
2	#5350.00	53.49 PK	74.00	-20.51	1.22 V	232	14.29	39.20
2	#5350.00	44.75 AV	54.00	-9.25	1.22 V	232	5.55	39.20
3	10580.00	65.55 PK	68.30	-2.75	1.23 V	360	19.48	46.07

NOTE:

1. Emission level = Raw value + Correction Factor
2. Correction Factor = Ant. Factor + Cable loss
3. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.
5. "*" : Fundamental frequency
6. "#"The radiated frequency falling in the restricted band.

EUT	Wireless A+G Mini PCI Card	**MODEL**	WMIA-123AG
MODE	Turbo Mode	**CHANNEL**	4
FREQUENCY RANGE	1 ~40 GHz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
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)
1	5715.00	66.45 PK	68.30	-1.85	1.04 H	342	25.66	40.79
2	5725.00	71.37 PK	78.30	-6.93	1.04 H	342	30.54	40.83
3	*5760.00	99.18 PK			1.04 H	342	58.22	40.96
3	*5760.00	88.18 AV			1.04 H	342	47.22	40.96

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)
1	5715.00	67.24 PK	68.30	-1.06	1.07 V	345	26.45	40.79
2	5725.00	75.80 PK	78.30	-2.50	1.07 V	345	34.97	40.83
3	*5760.00	104.36 PK			1.07 V	345	63.40	40.96
3	*5760.00	93.37 AV			1.07 V	345	52.41	40.96

NOTE:

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.

EUT	Wireless A+G Mini PCI Card	MODEL	WMIA-123AG
MODE	Turbo Mode	CHANNEL	5
FREQUENCY RANGE	1 ~ 40 GHz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	INPUT POWER (SYSTEM)	120Vac, 60Hz
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)
1	*5800.00	99.59 PK			1.09 H	339	58.48	41.11
1	*5800.00	88.62 AV			1.09 H	339	47.51	41.11
2	5825.00	73.15 PK	78.30	-5.15	1.09 H	339	32.20	40.95
3	5835.00	67.20 PK	68.30	-1.10	1.09 H	339	26.32	40.88

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)
1	*5800.00	103.97 PK			1.04 V	347	62.86	41.11
1	*5800.00	92.99 AV			1.04 V	347	51.88	41.11
2	5825.00	76.37 PK	78.30	-1.93	1.04 V	347	35.42	40.95
3	5835.00	67.31 PK	68.30	-0.99	1.04 V	347	26.43	40.88

NOTE:

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.

5.3 PEAK TRANSMIT POWER MEASUREMENT

5.3.1 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.

5.3.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SPECTRUM ANALYZER	FSEK30	100049	Aug. 12, 2005

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

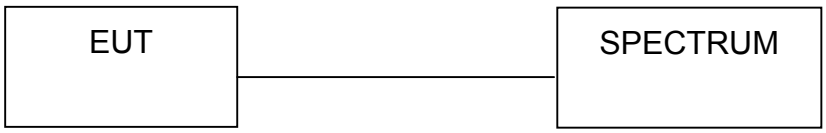
5.3.3 TEST PROCEDURE

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.

5.3.4 DEVIATION FROM TEST STANDARD

No deviation

5.3.5 TEST SETUP



5.3.6 EUT OPERATING CONDITIONS

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

5.3.7 TEST RESULTS

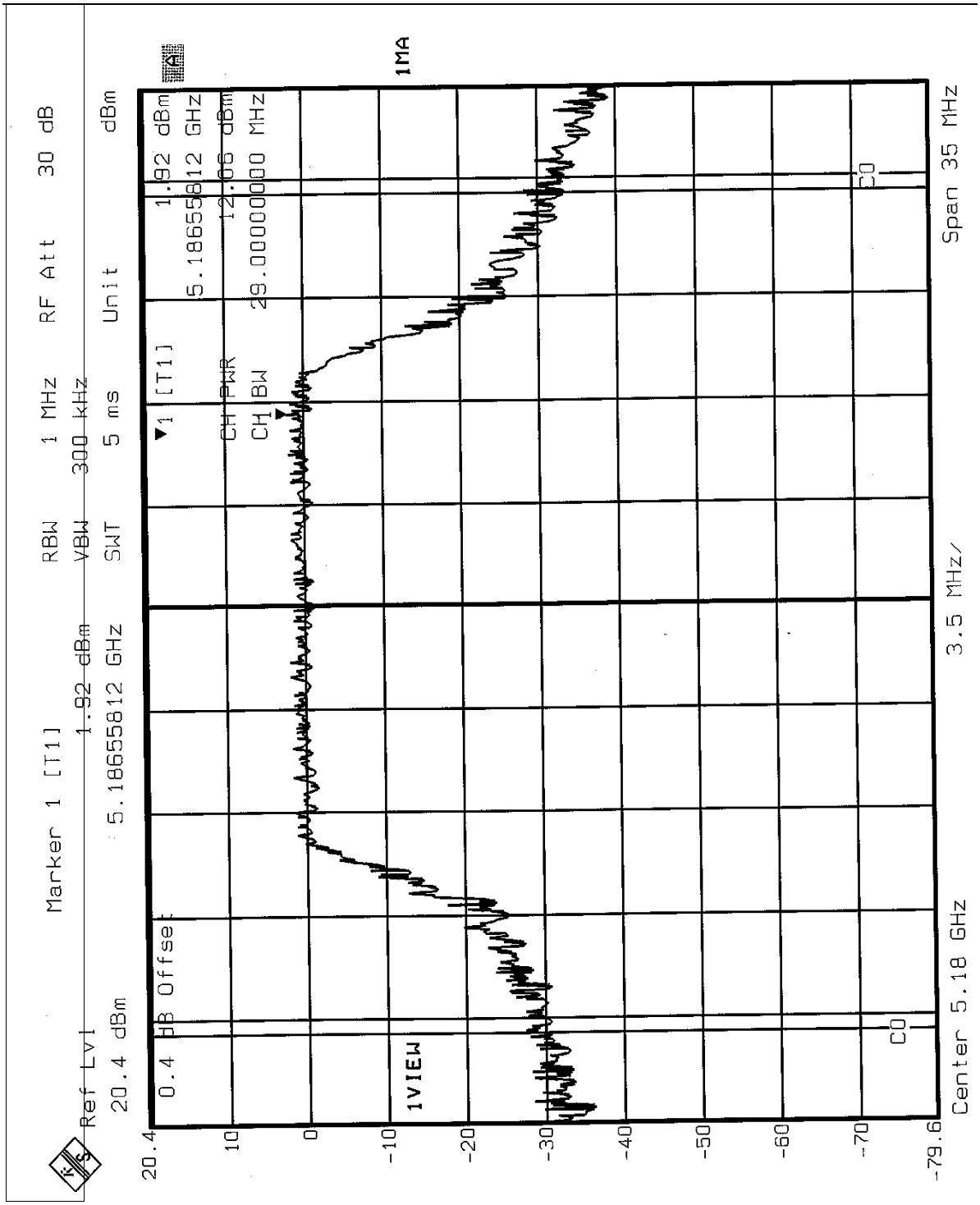
EUT	Wireless A+G Mini PCI Card	**MODEL**	WMIA-123AG
MODE	Normal	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	24deg. C, 65%RH, 991hPa	**TESTED BY**	Match Tsui

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	26dBc Occupied Bandwidth (MHz)	PASS/FAIL
1	5180	16.069	12.06	17.00	29.05	PASS
4	5240	16.144	12.08	17.00	26.60	PASS
5	5260	15.885	12.01	24.00	26.11	PASS
8	5320	9.016	9.55	24.00	25.41	PASS
9	5745	15.959	12.03	30.00	26.88	PASS
12	5805	16.144	12.08	30.00	26.95	PASS

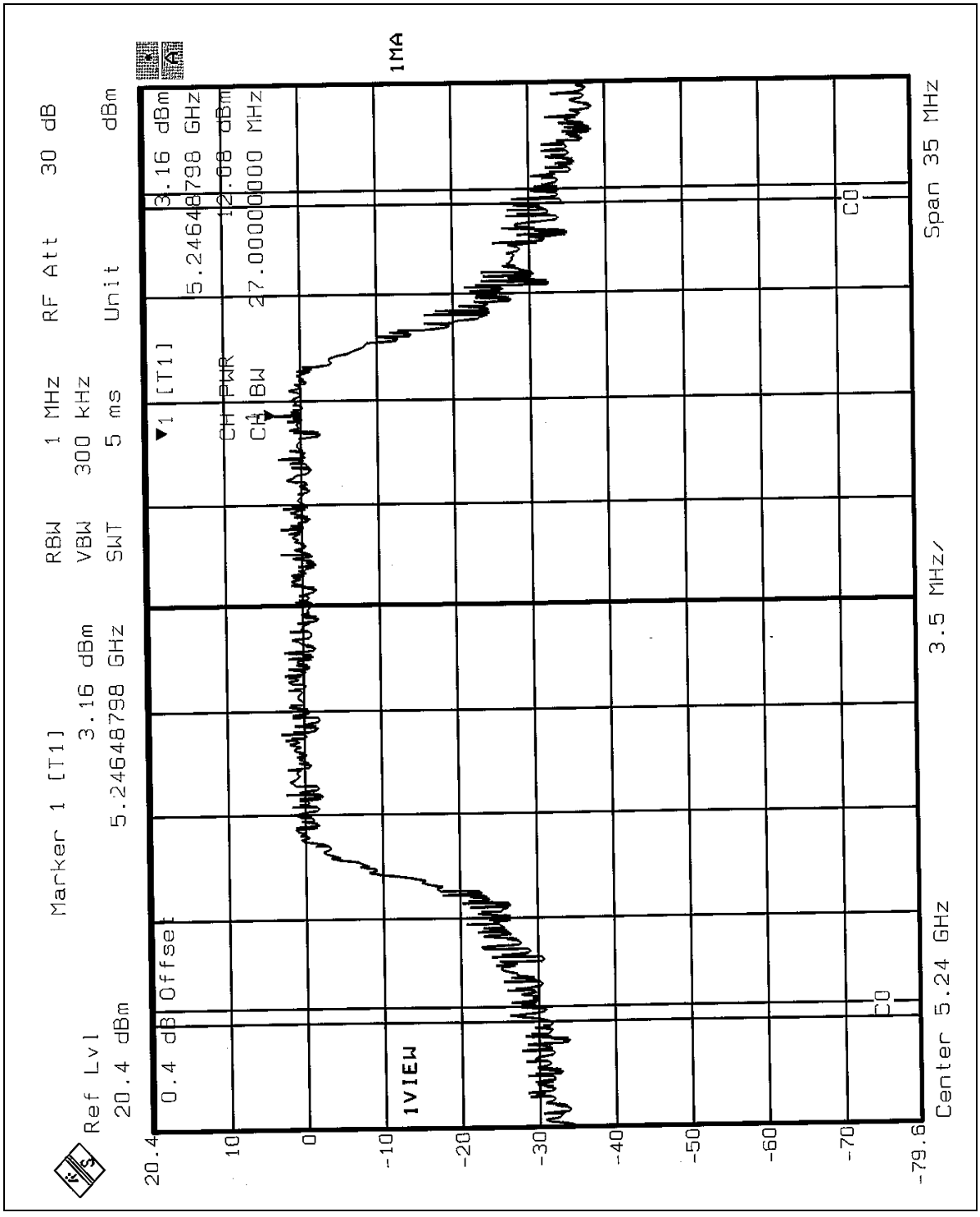
NOTE: The 26dBc Occupied Bandwidth plot, please refer to the following pages.

Peak Power Output:

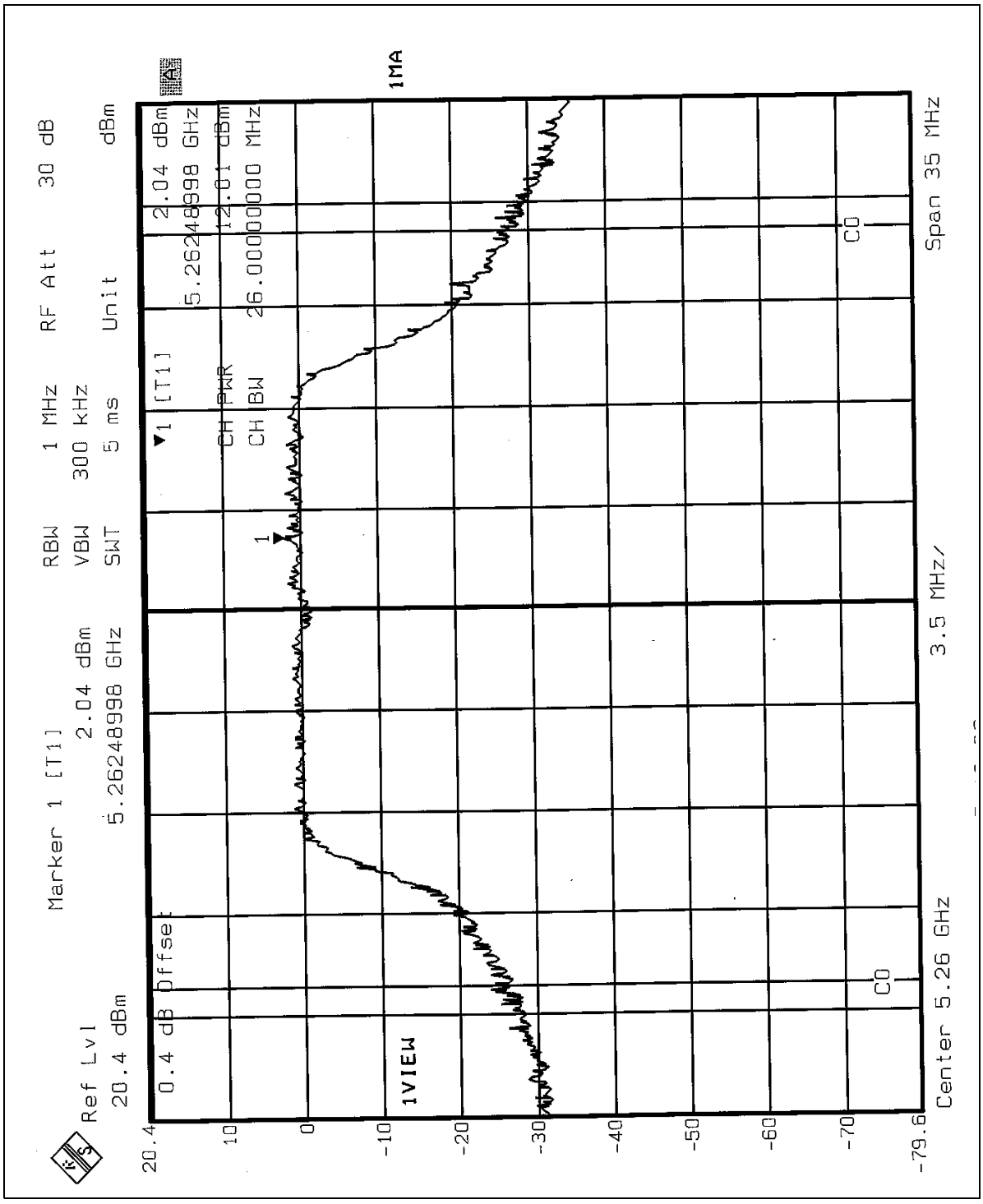
CH 1



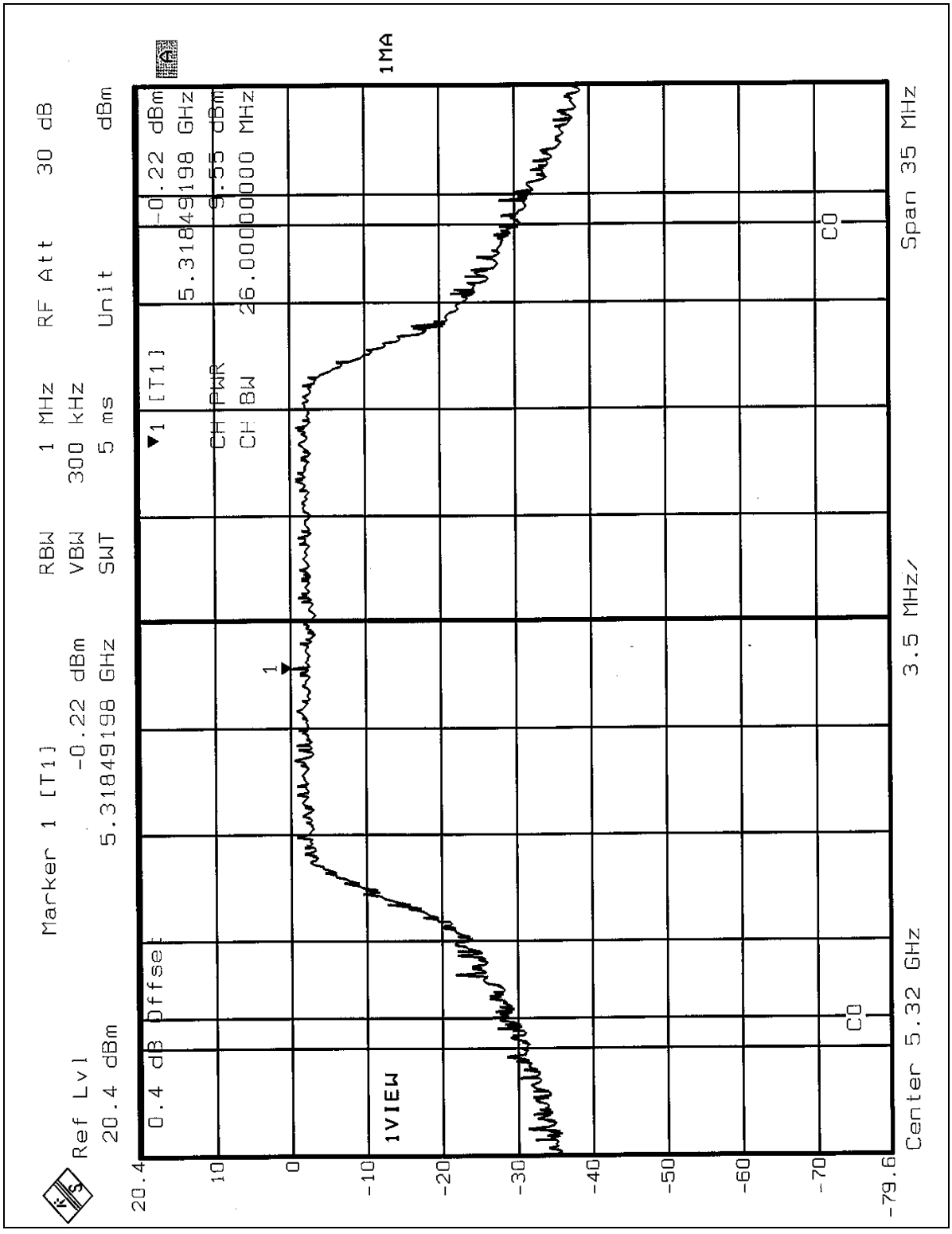
CH 4


Marker 1 [T1]
3.16 dBm
5.24648798 GHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
Ref Lvl
20.4 dBm
0.4 dB Offset
1VIEW
1MA
1 [T1]
3.16 dBm
5.24648798 GHz
CH PWR 12.08 dBm
CH BW 27.000000000 MHz
Center 5.24 GHz
3.5 MHz/
Span 35 MHz
20.4
10
0
-10
-20
-30
-40
-50
-60
-70
-79.6

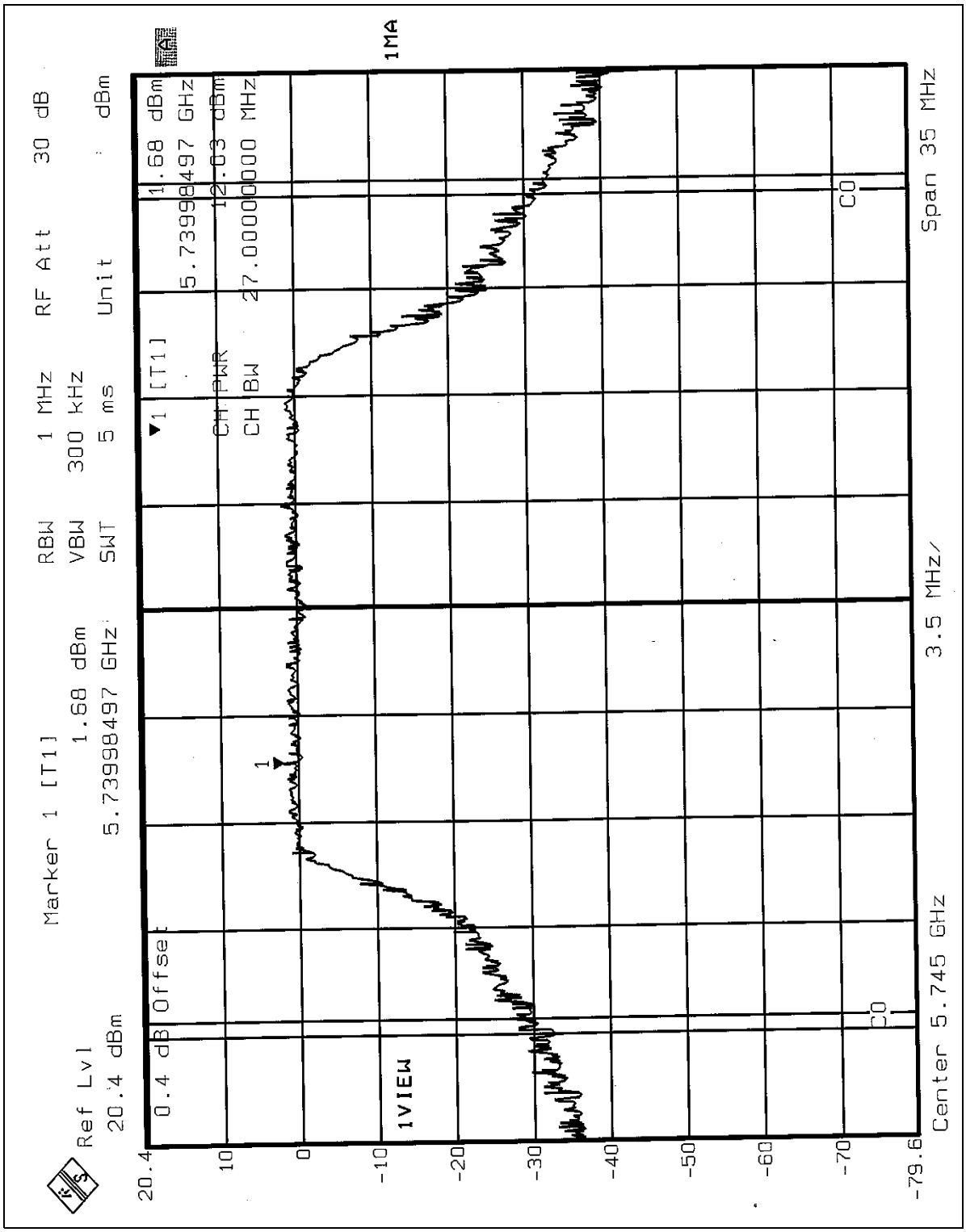
CH 5


Marker 1 [T1]
2.04 dBm
5.26248998 GHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
Ref Lvl
20.4 dBm
0.4 dB Offset
1VIEW
1MA
CH PWR 12.01 dBm
CH BW 26.000000000 MHz
Center 5.26 GHz
3.5 MHz/
Span 35 MHz
CO

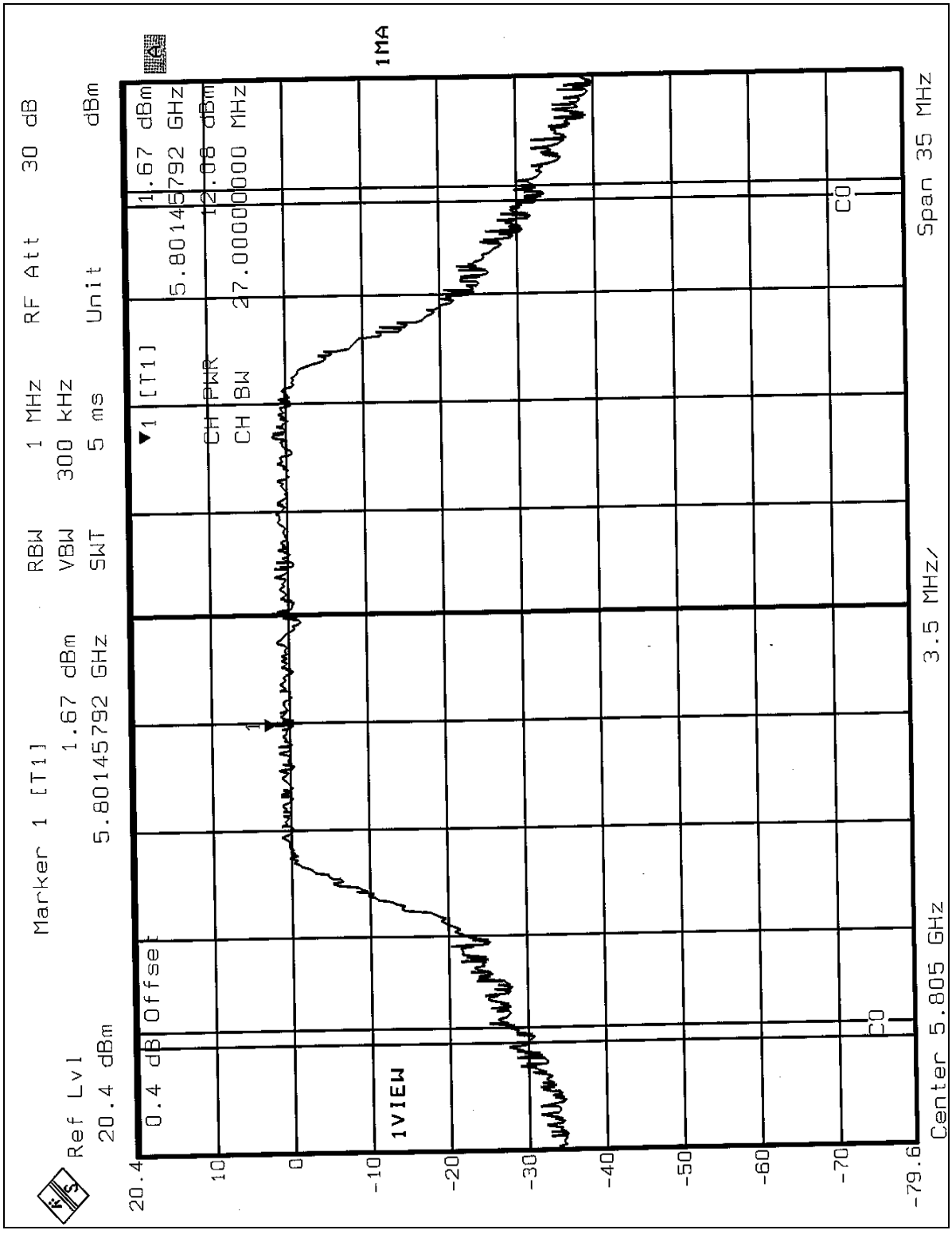
CH 8


Marker 1 [T1]
-0.22 dBm
5.3184198 GHz
Ref Lvl
20.4 dBm
0.4 dB Offset
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
1VIEW
1MA
CH PWR
CH BW
5.3184198 GHz
9.55 dBm
26.000000000 MHz
Center 5.32 GHz
3.5 MHz/
Span 35 MHz

CH 9

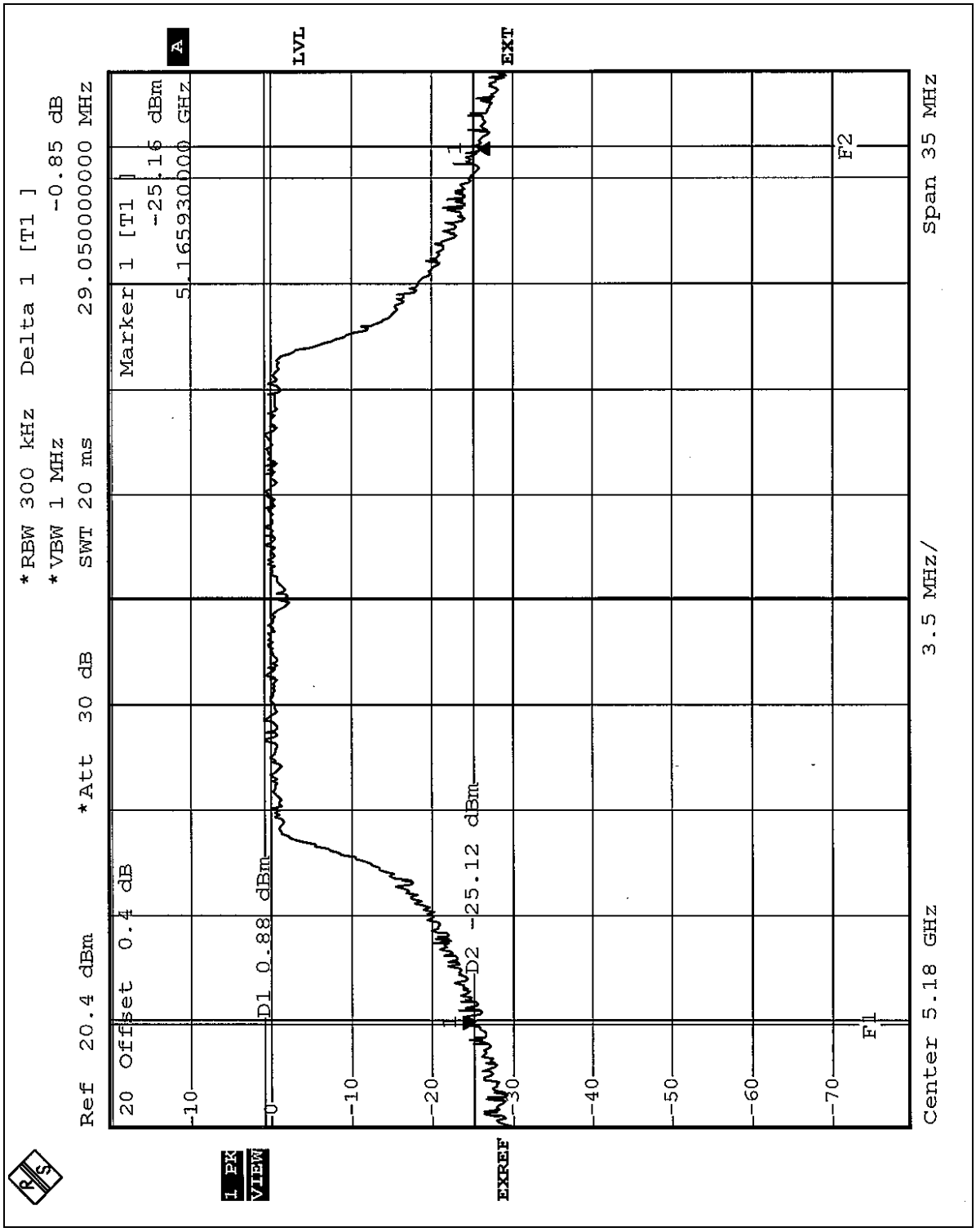

Ref Lvl
20.4 dBm
0.4 dB Offset
Marker 1 [T1]
1.68 dBm
5.73998497 GHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
1VIEW
1MA
▼1 [T1]
1.68 dBm
5.73998497 GHz
CH PWR 12.63 dBm
CH BW 27.000000000 MHz
Center 5.745 GHz
3.5 MHz/
Span 35 MHz
20.4
10
0
-10
-20
-30
-40
-50
-60
-70
-79.6

CH 12

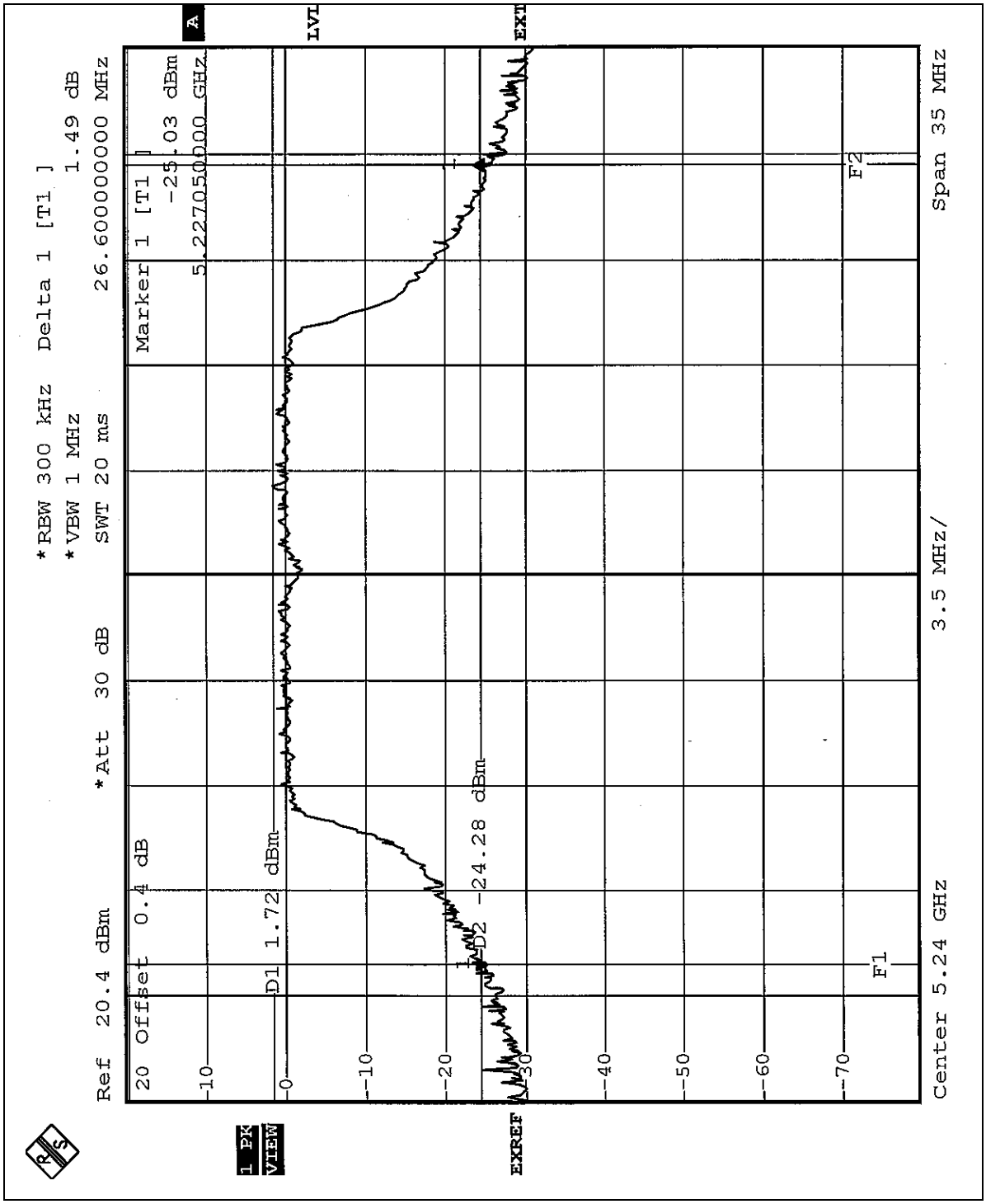

Marker 1 [T1]
1.67 dBm
5.80145792 GHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
Ref Lvl
20.4 dBm
0.4 dB Offset
1VIEW
1MA
1 [T1]
1.67 dBm
5.80145792 GHz
CH PWR 12.08 dBm
CH BW 27.000000000 MHz
Span 35 MHz
3.5 MHz/
Center 5.805 GHz
20.4
10
0
-10
-20
-30
-40
-50
-60
-70
-79.6

26dB Occupied Bandwidth:

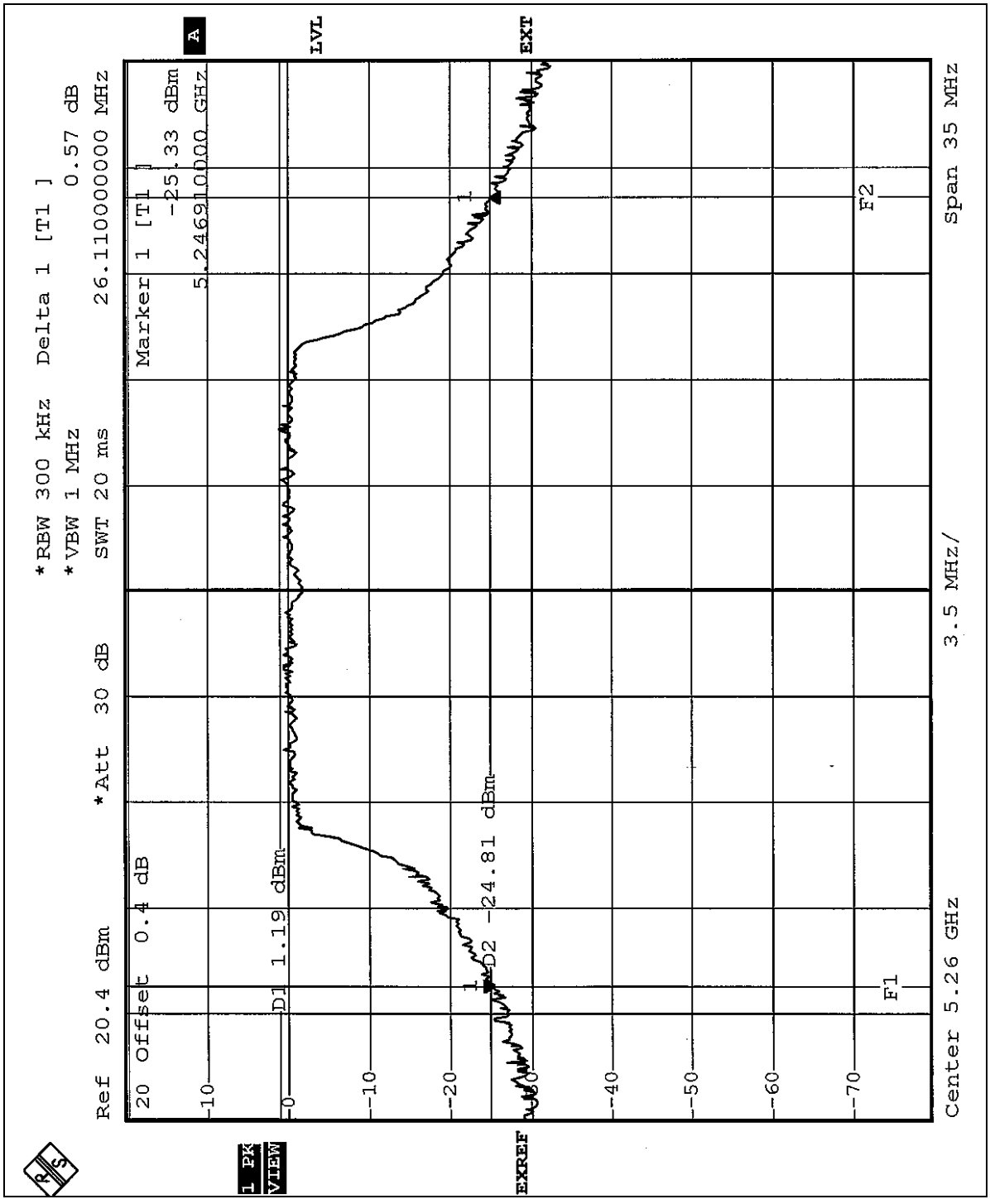
CH 1



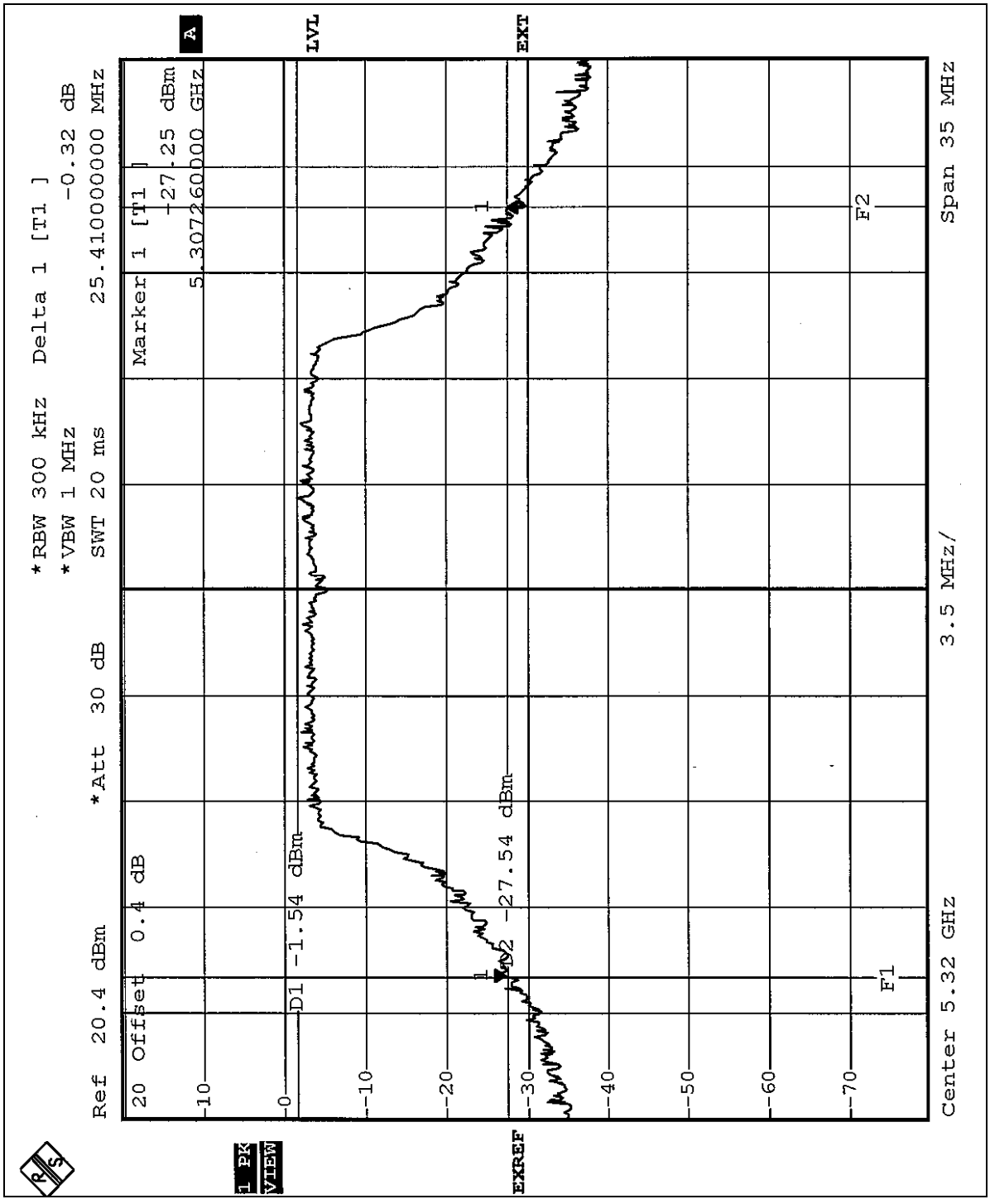
CH 4


RBW 300 kHz
VBW 1 MHz
SWT 20 ms
Delta 1 [T1]
1.49 dB
26.600000000 MHz
Marker 1 [T1]
-25.03 dBm
5.227050000 GHz
Ref 20.4 dBm
Offset 0.4 dB
Att 30 dB
D1 1.72 dBm
D2 -24.28 dBm
Center 5.24 GHz
3.5 MHz/
Span 35 MHz
F1
F2
LVL
EXT
EXREF
1 PK VIEW

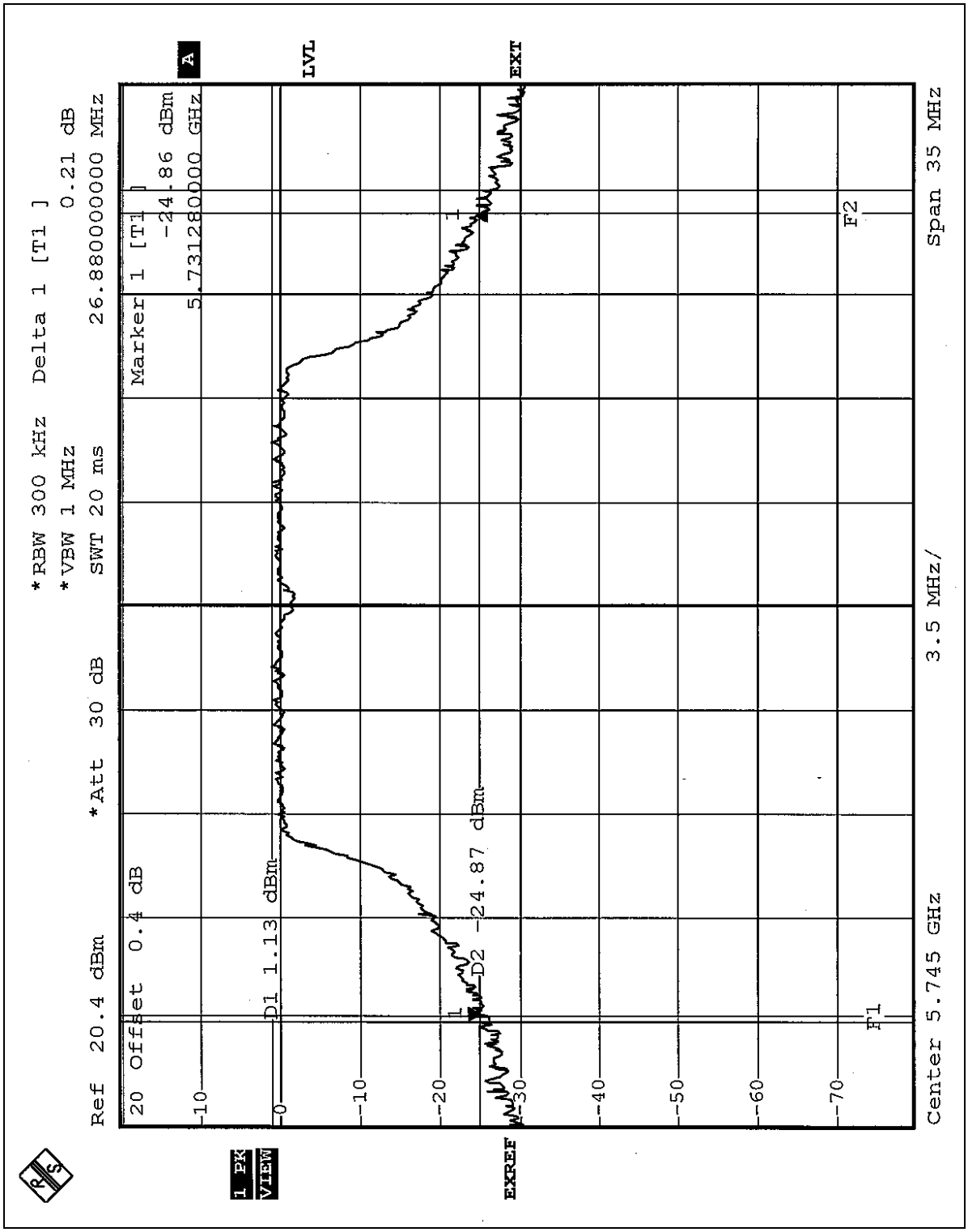
CH 5


*RBW 300 kHz
*VBW 1 MHz
SWT 20 ms
Delta 1 [T1]
0.57 dB
26.110000000 MHz
*Att 30 dB
Ref 20.4 dBm
20 Offset 0.4 dB
Marker 1 [T1]
-25.33 dBm
5.246910000 GHz
D1 1.19 dBm
D2 -24.81 dBm
F1
F2
LVL
EXT
A
1 PK VIEW
EXREF
Center 5.26 GHz
3.5 MHz/
Span 35 MHz

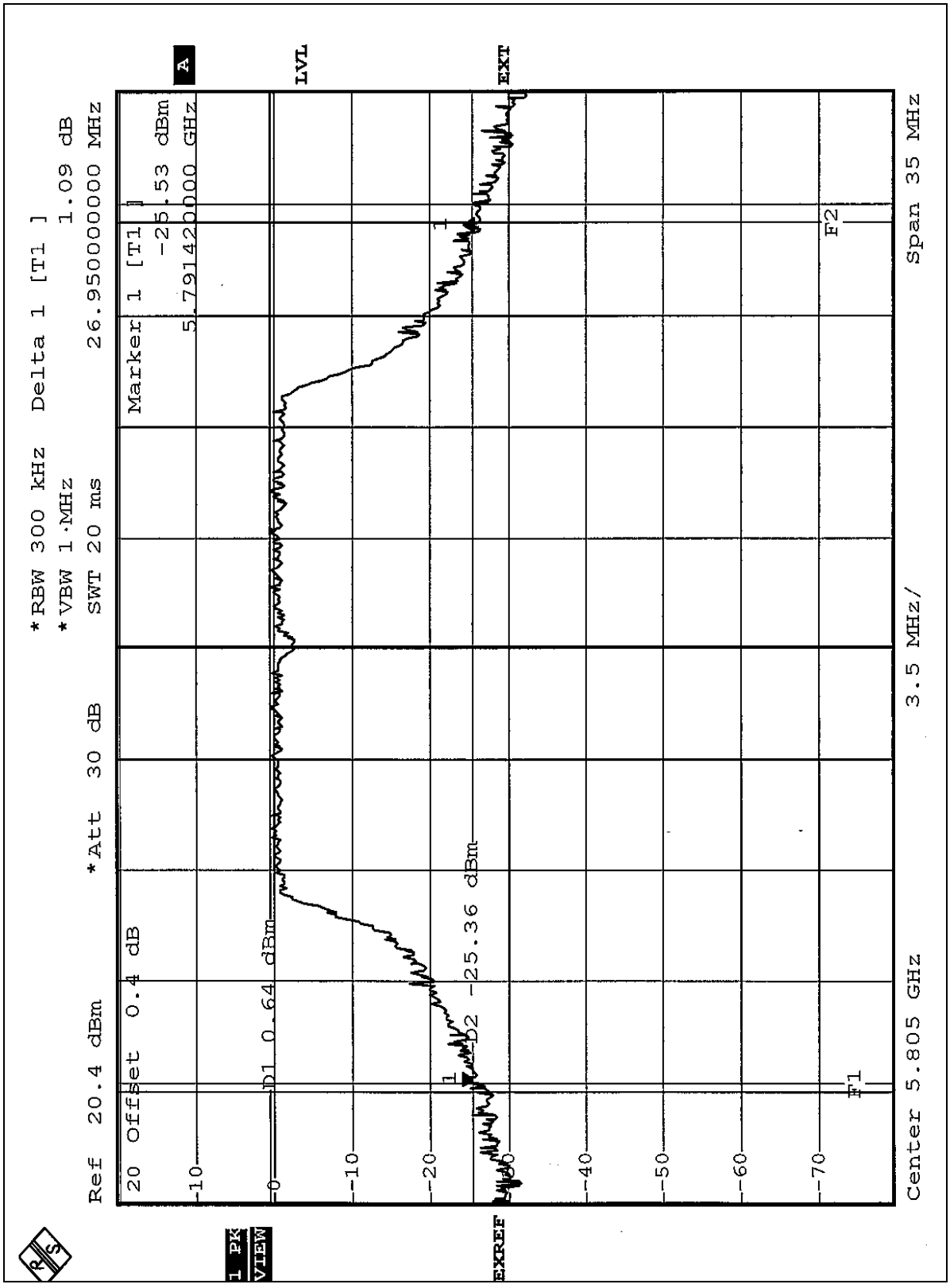
CH 8


*RBW 300 kHz
*VBW 1 MHz
SWT 20 ms
Delta 1 [T1]
-0.32 dB
25.410000000 MHz
*Att 30 dB
Ref 20.4 dBm
20 Offset 0.4 dB
Marker 1 [T1]
-27.25 dBm
5.307260000 GHz
D1 -1.54 dBm
D2 -27.54 dBm
F1
F2
Center 5.32 GHz
3.5 MHz/
Span 35 MHz
LVL
EXT
EXREF
1 PK VIEW

CH 9


*RBW 300 kHz
*VBW 1 MHz
Ref 20.4 dBm
20 Offset 0.4 dB
*Att 30 dB
SWT 20 ms
Delta 1 [T1]
0.21 dB
26.880000000 MHz
Marker 1 [T1]
-24.86 dBm
5.731280000 GHz
D1 1.13 dBm
D2 -24.87 dBm
Center 5.745 GHz
3.5 MHz/
Span 35 MHz
LVL
EXT
EXREF
1 PK VIEW
F1
F2

CH 12


RBW 300 kHz
VBW 1 MHz
SWT 20 ms
Delta 1 [T1]
1.09 dB
26.950000000 MHz
Marker 1 [T1]
-25.53 dBm
5.791420000 GHz
Ref 20.4 dBm
Offset 0.4 dB
Att 30 dB
D1 0.64 dBm
D2 -25.36 dBm
Center 5.805 GHz
3.5 MHz/
Span 35 MHz
LVL
EXT
A
1 PK VIEW
EXREF
F1
F2

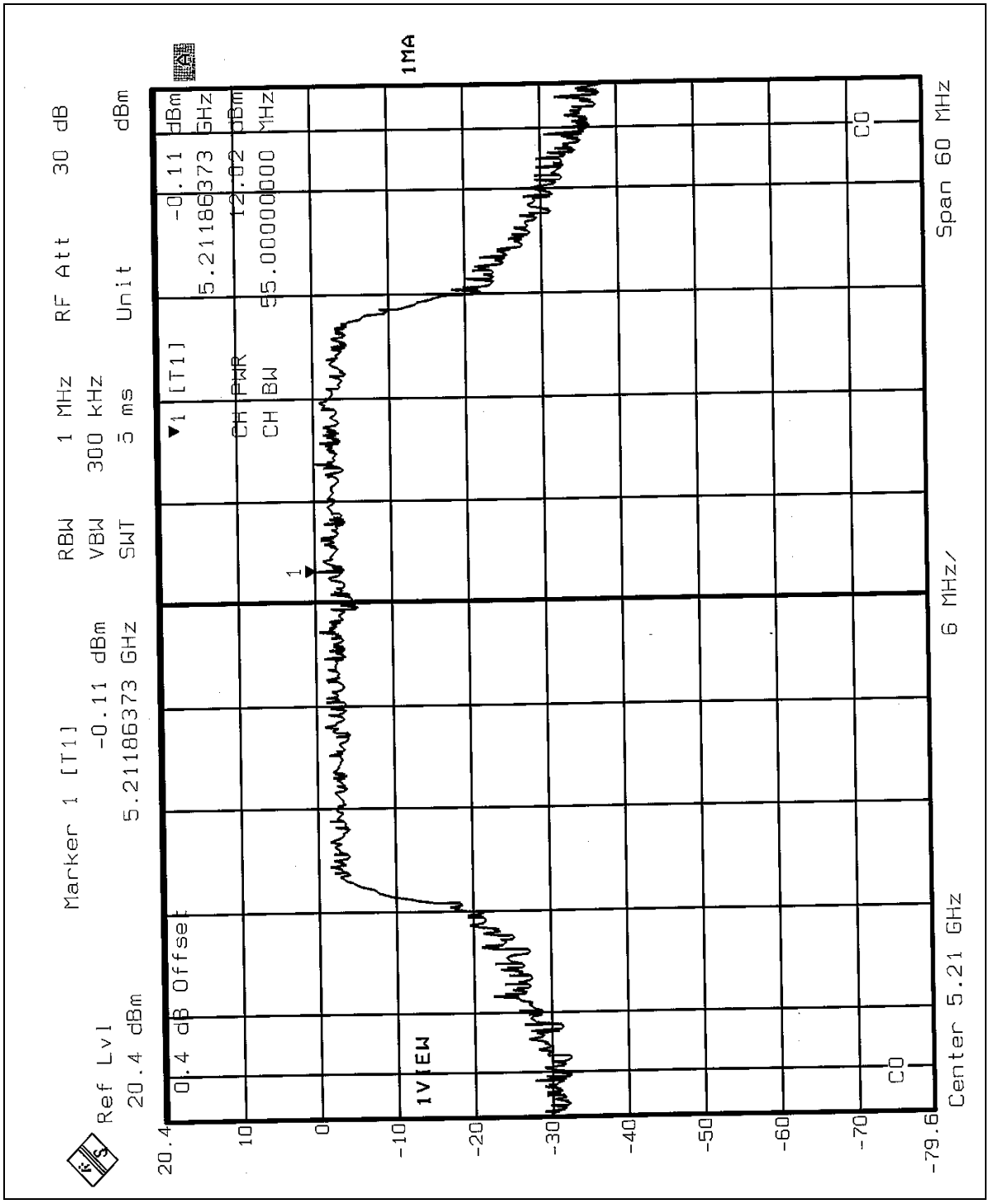
EUT	Wireless A+G Mini PCI Card	**MODEL**	WMIA-123AG
MODE	Turbo	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	24deg. C, 65%RH, 991hPa	**TESTED BY**	Match Tsui

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	26dBc Occupied Bandwidth (MHz)	PASS/FAIL
1	5210	15.922	12.02	17.00	54.96	PASS
2	5250	16.069	12.00	17.00	50.28	PASS
3	5290	15.922	12.02	24.00	47.40	PASS
4	5760	16.069	12.06	30.00	52.56	PASS
5	5800	15.922	12.02	30.00	52.80	PASS

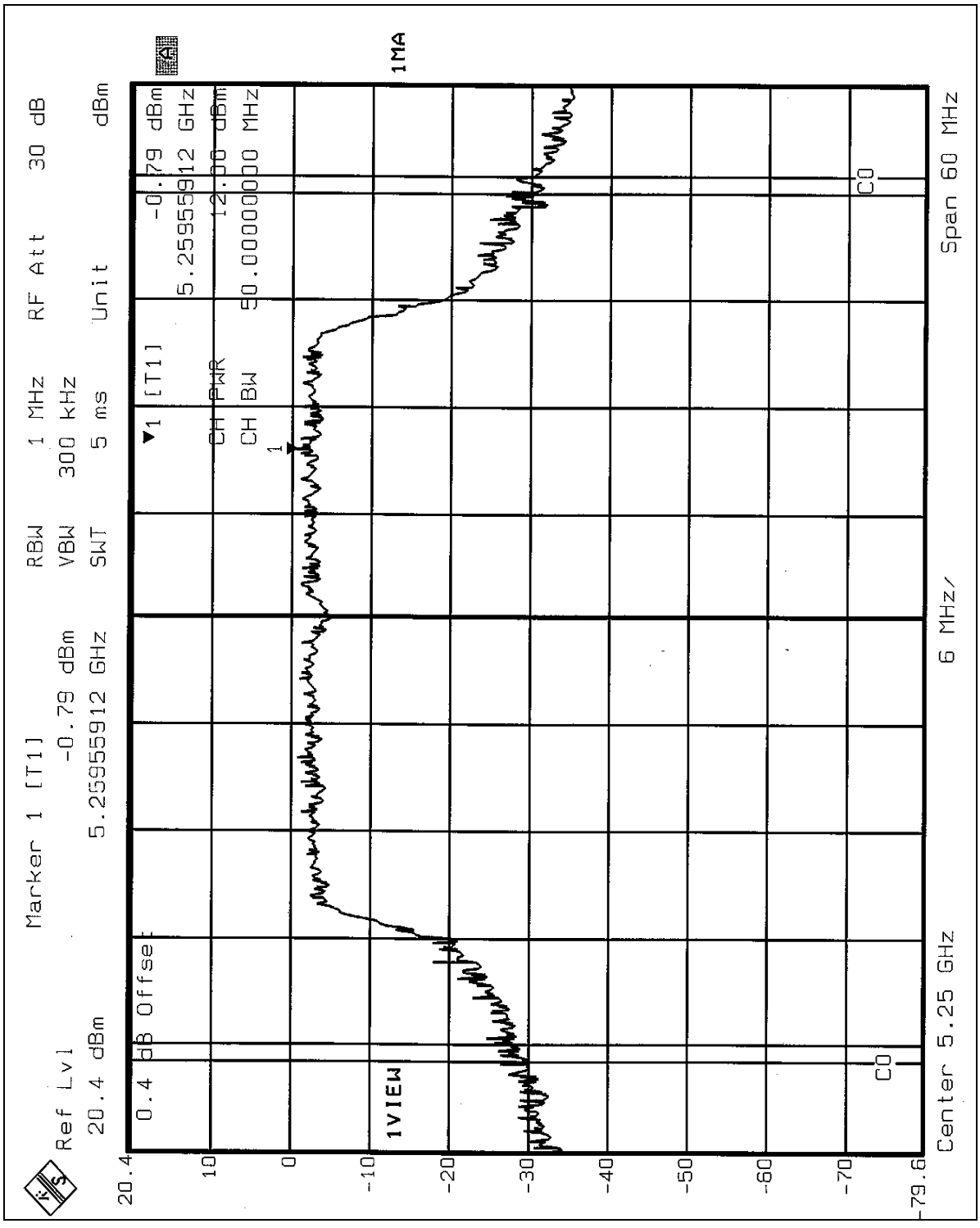
NOTE: The 26dBc Occupied Bandwidth plot, please refer to the following pages.

Peak Power Output:

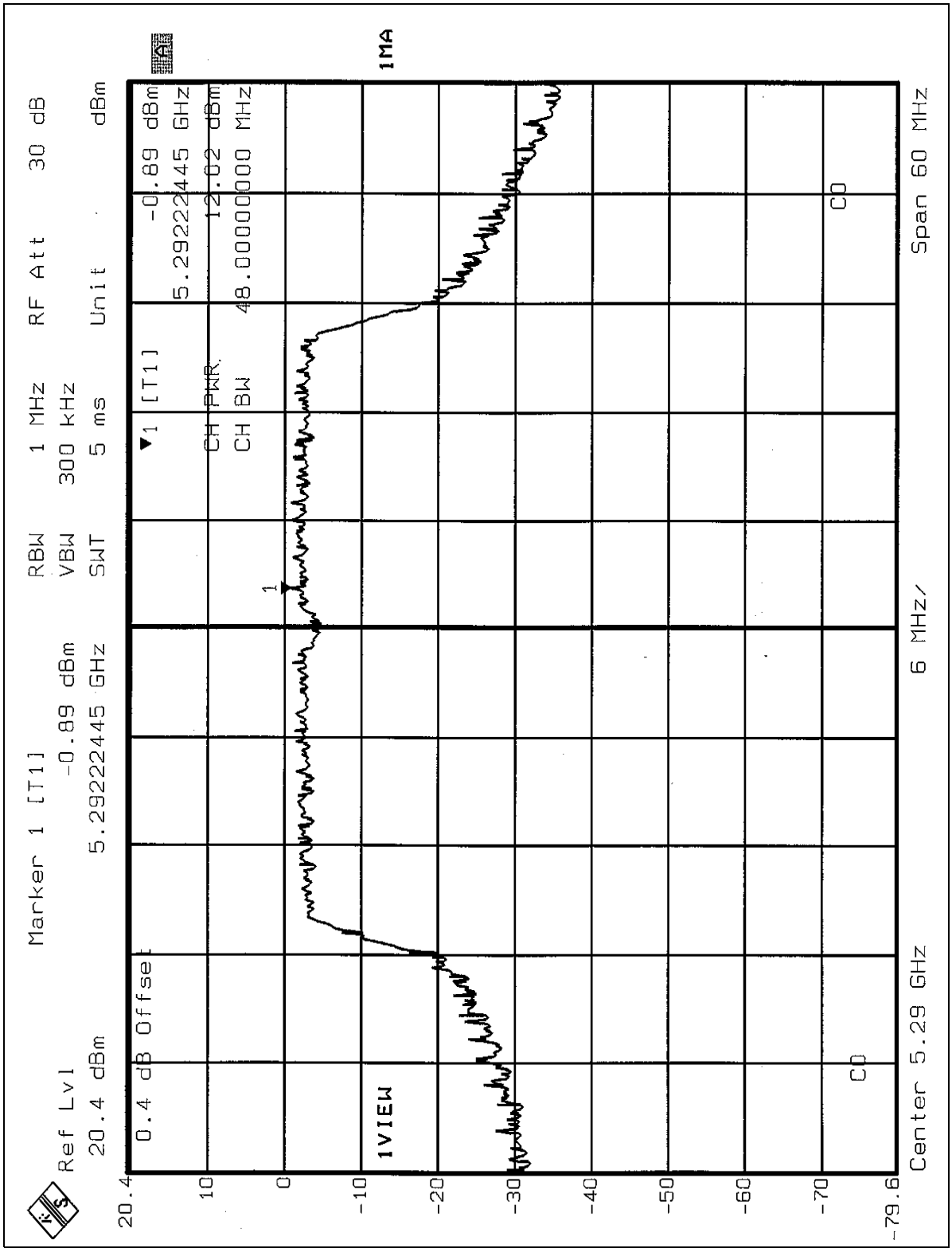
CH 1



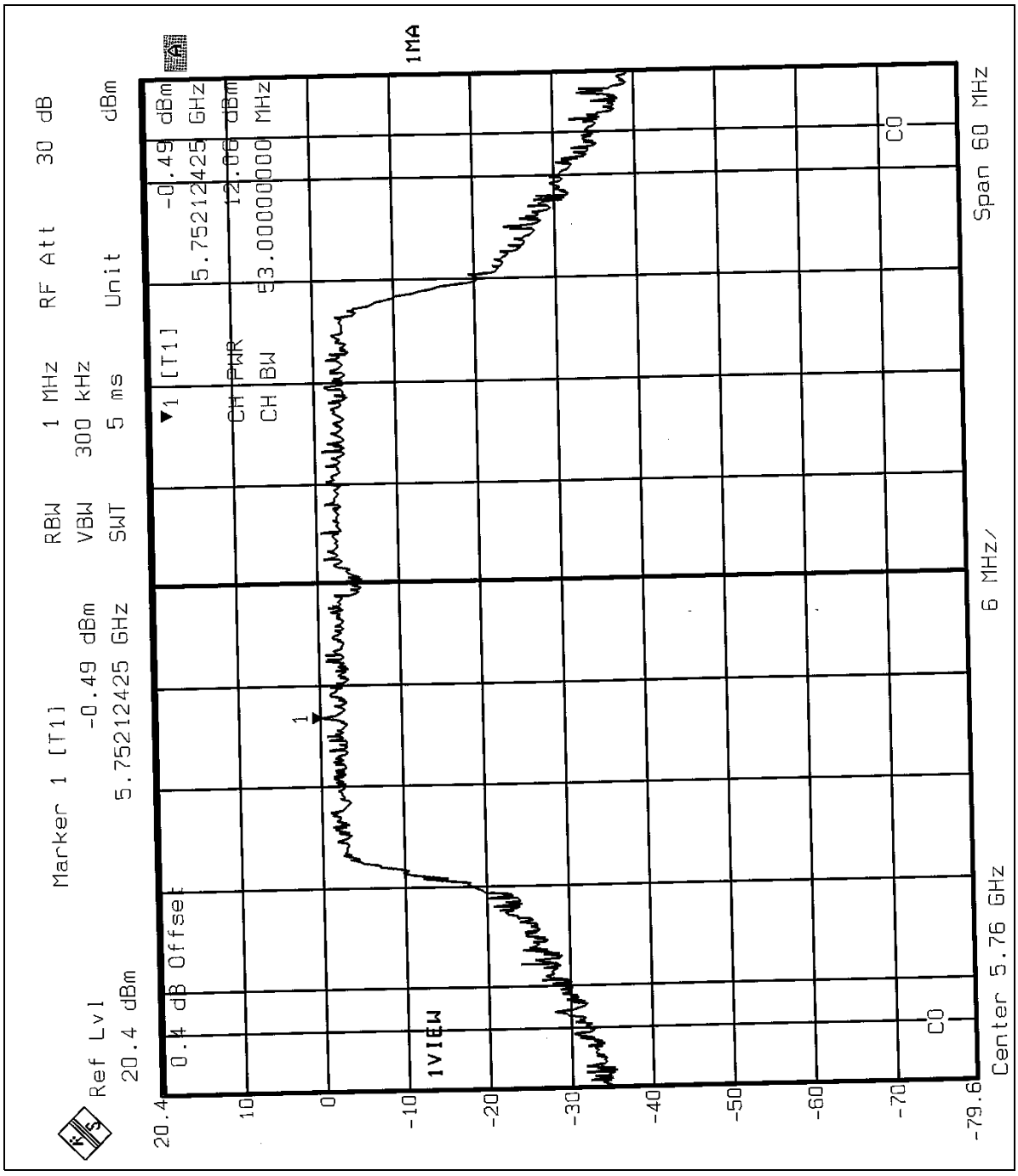
CH 2


Marker 1 [T1]
-0.79 dBm
5.25955912 GHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
Ref Lvl
20.4 dBm
0.4 dB Offset
1VIEW
1MA
[T1]
CH PWR
CH BW
-0.79 dBm
5.25955912 GHz
12.00 dBm
90.00000000 MHz
Center 5.25 GHz
6 MHz/
Span 60 MHz
20.4
10
0
-10
-20
-30
-40
-50
-60
-70
-79.6

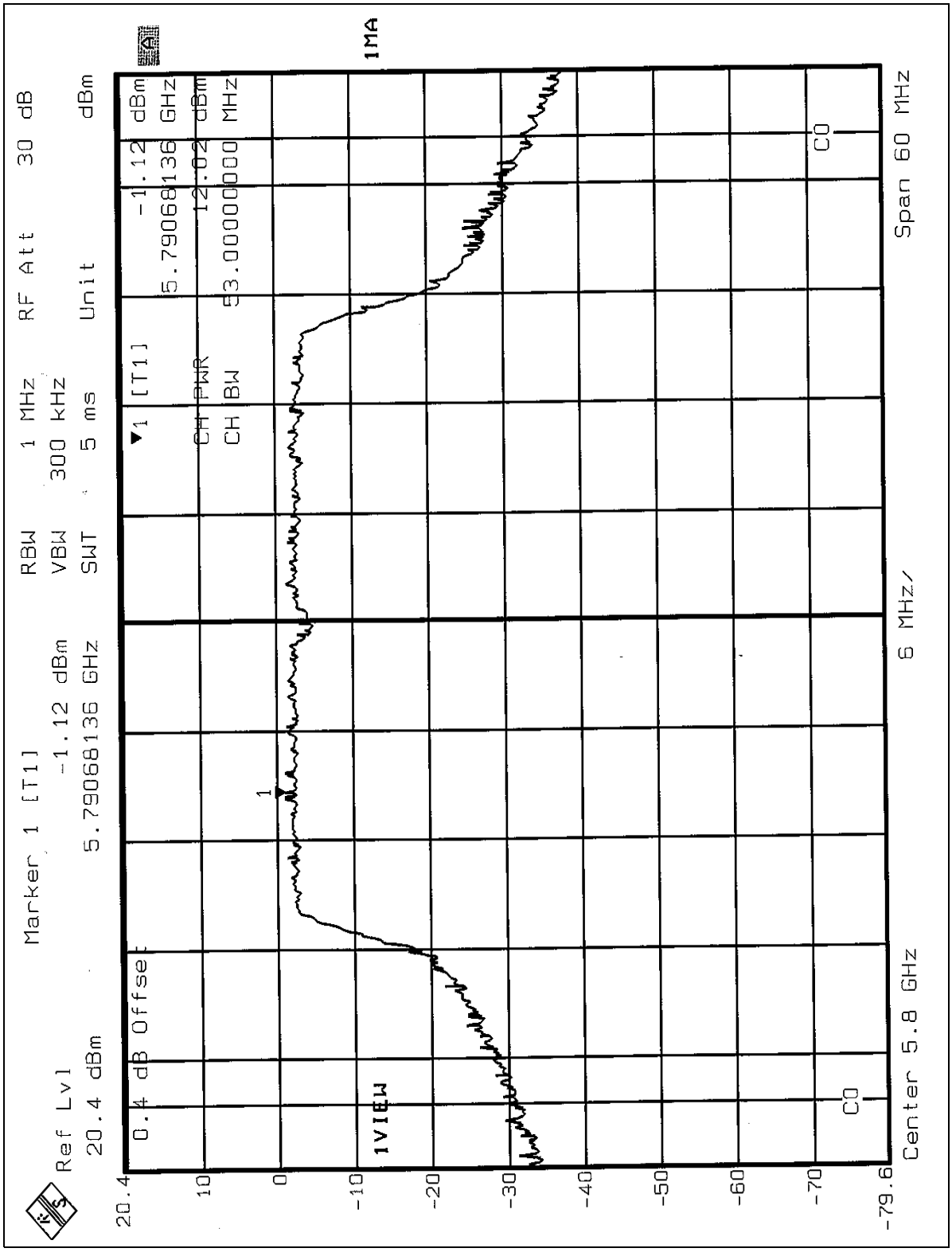
CH 3


Marker 1 [T1]
-0.89 dBm
5.29222445 GHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
Ref Lvl
20.4 dBm
0.4 dB Offset
1VIEW
1MA
▼1 [T1]
CH PWR -0.89 dBm
CH BW 5.29222445 GHz
12.02 dBm
48.00000000 MHz
Center 5.29 GHz
6 MHz/
Span 60 MHz
20.4
10
0
-10
-20
-30
-40
-50
-60
-70
-79.6

CH 4

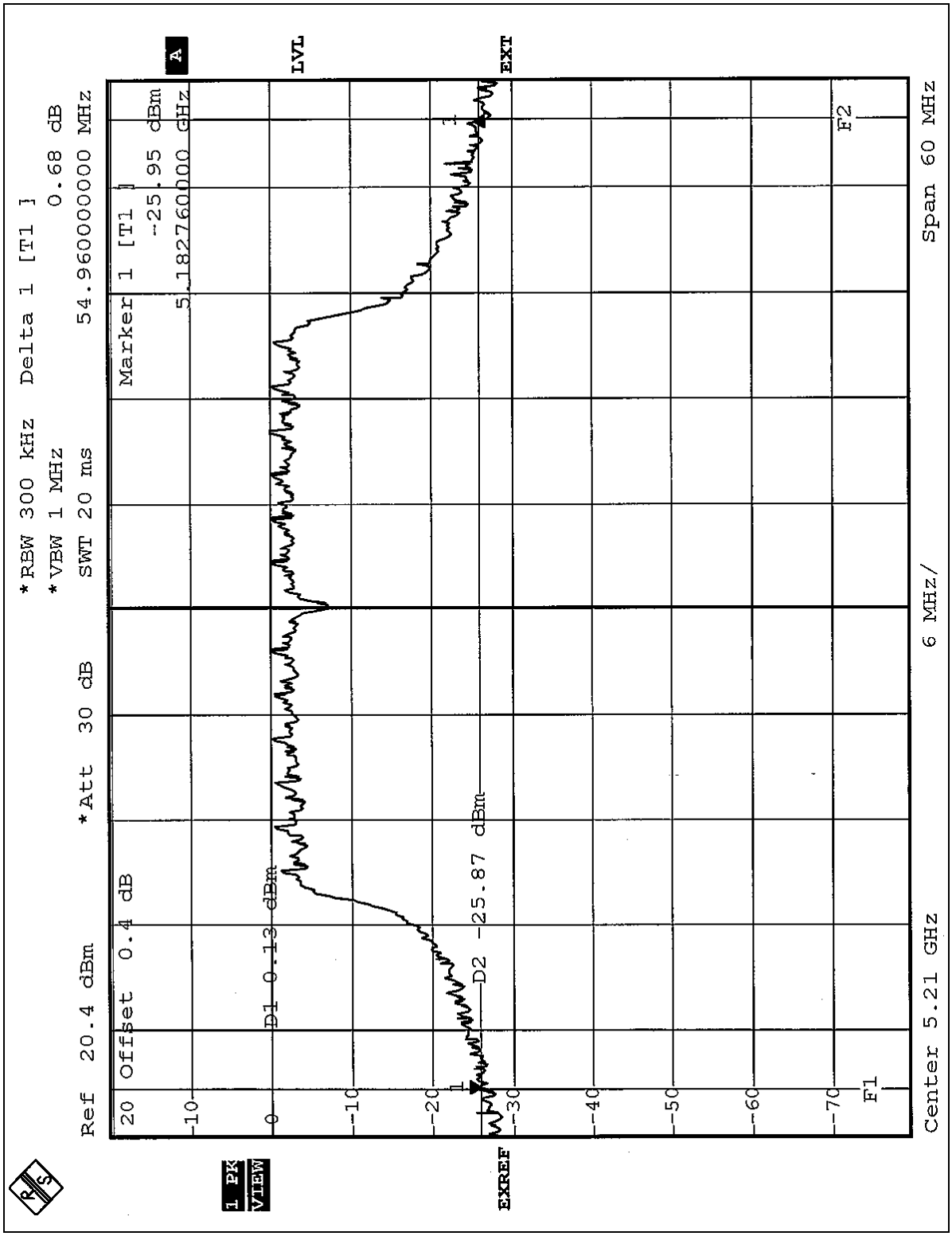

Marker 1 [T1]
-0.49 dBm
5.75212425 GHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
Ref Lvl
20.4 dBm
0.4 dB Offset
1VIEW
1MA
[T1]
-0.49 dBm
5.75212425 GHz
CH PWR 12.06 dBm
CH BW 3.00000000 MHz
Center 5.76 GHz
6 MHz/
Span 60 MHz
20.4
10
0
-10
-20
-30
-40
-50
-60
-70
-79.6

CH 5

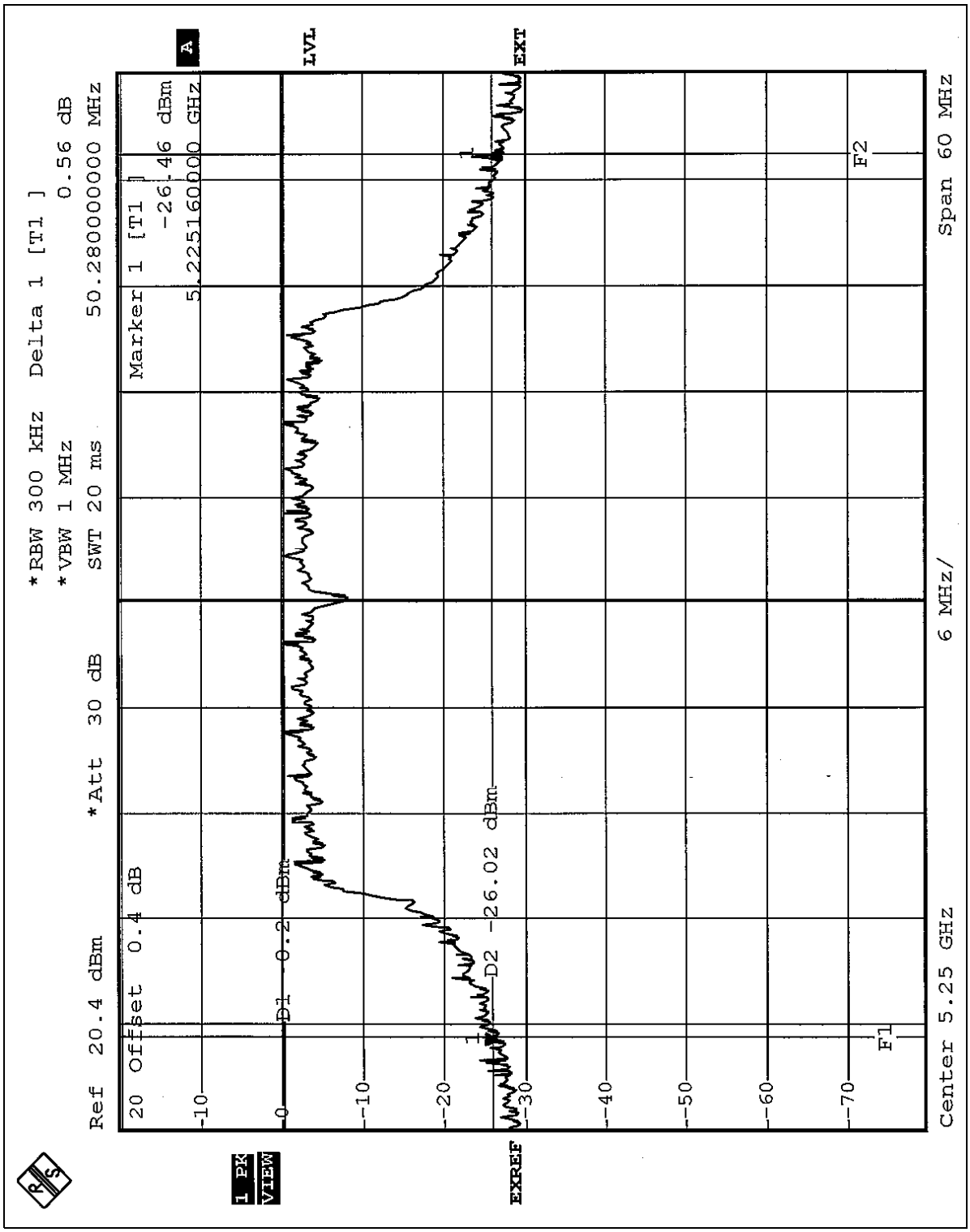

Marker 1 [T1]
-1.12 dBm
5.790681360 GHz
Ref Lvl
20.4 dBm
0.4 dB Offset
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
1 [T1]
-1.12 dBm
5.790681360 GHz
CH PWR 12.02 dBm
CH BW 3.000000000 MHz
1MA
1VIEW
Center 5.8 GHz
6 MHz/
Span 60 MHz
20.4
10
0
-10
-20
-30
-40
-50
-60
-70
-79.6

26dB Occupied Bandwidth:

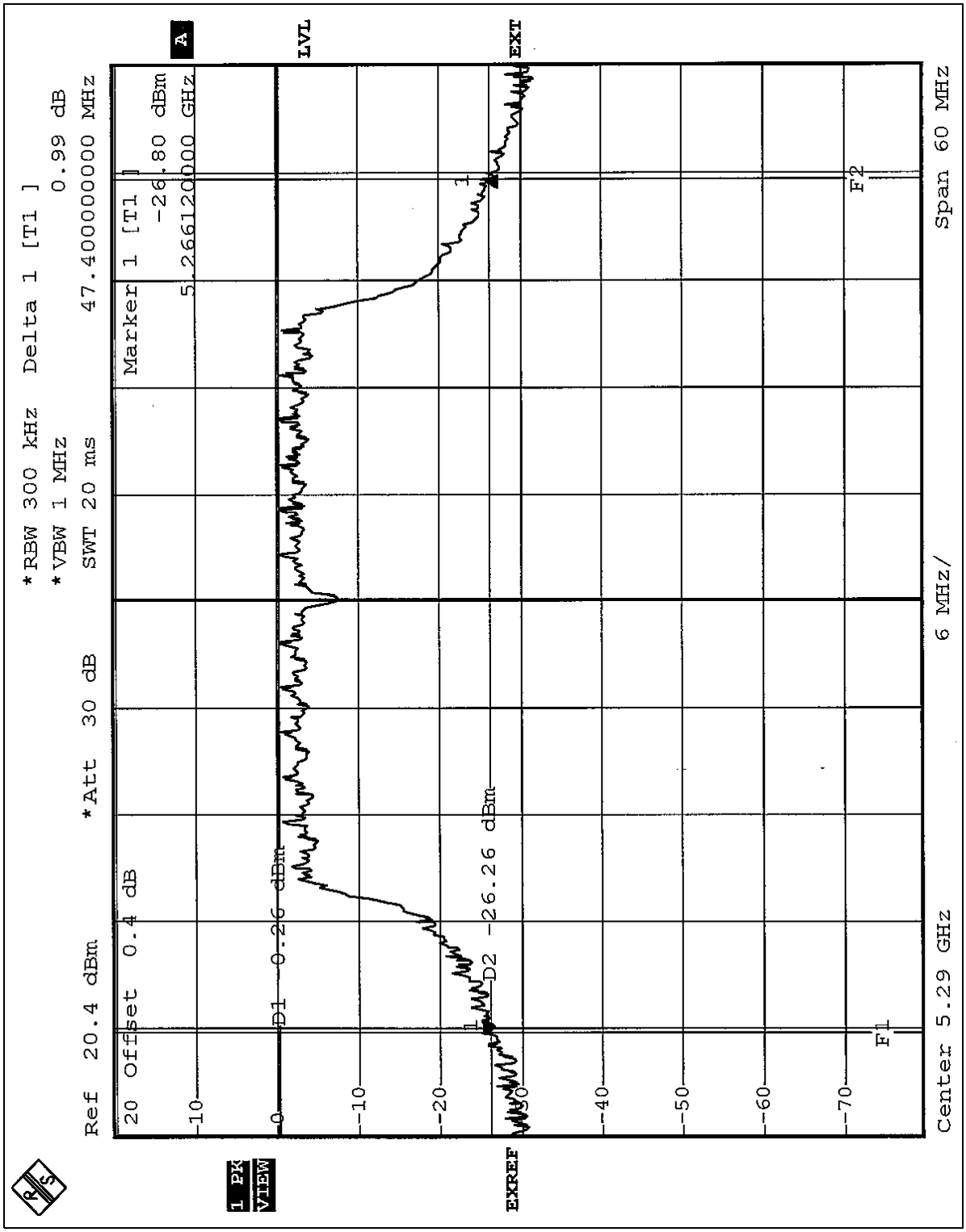
CH 1



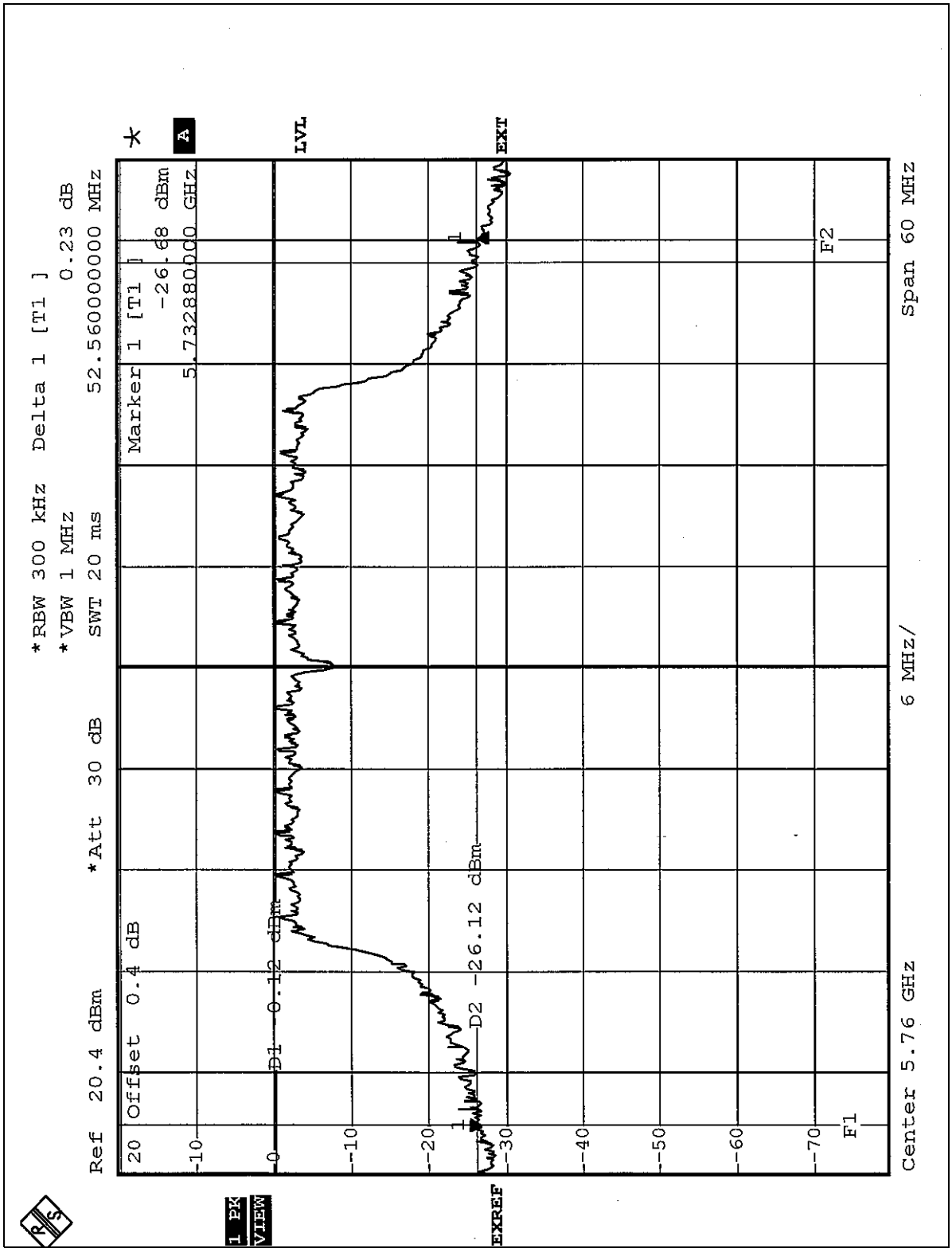
CH 2


*RBW 300 kHz
*VBW 1 MHz
*Att 30 dB
SWT 20 ms
Delta 1 [T1]
0.56 dB
50.280000000 MHz
Marker 1 [T1]
-26.46 dBm
5.225160000 GHz
Ref 20.4 dBm
20 Offset 0.4 dB
D1 0.2 dBm
D2 -26.02 dBm
Center 5.25 GHz
6 MHz/
Span 60 MHz
F1
F2
1 PK VIEW
EXREF
LVL
EXT

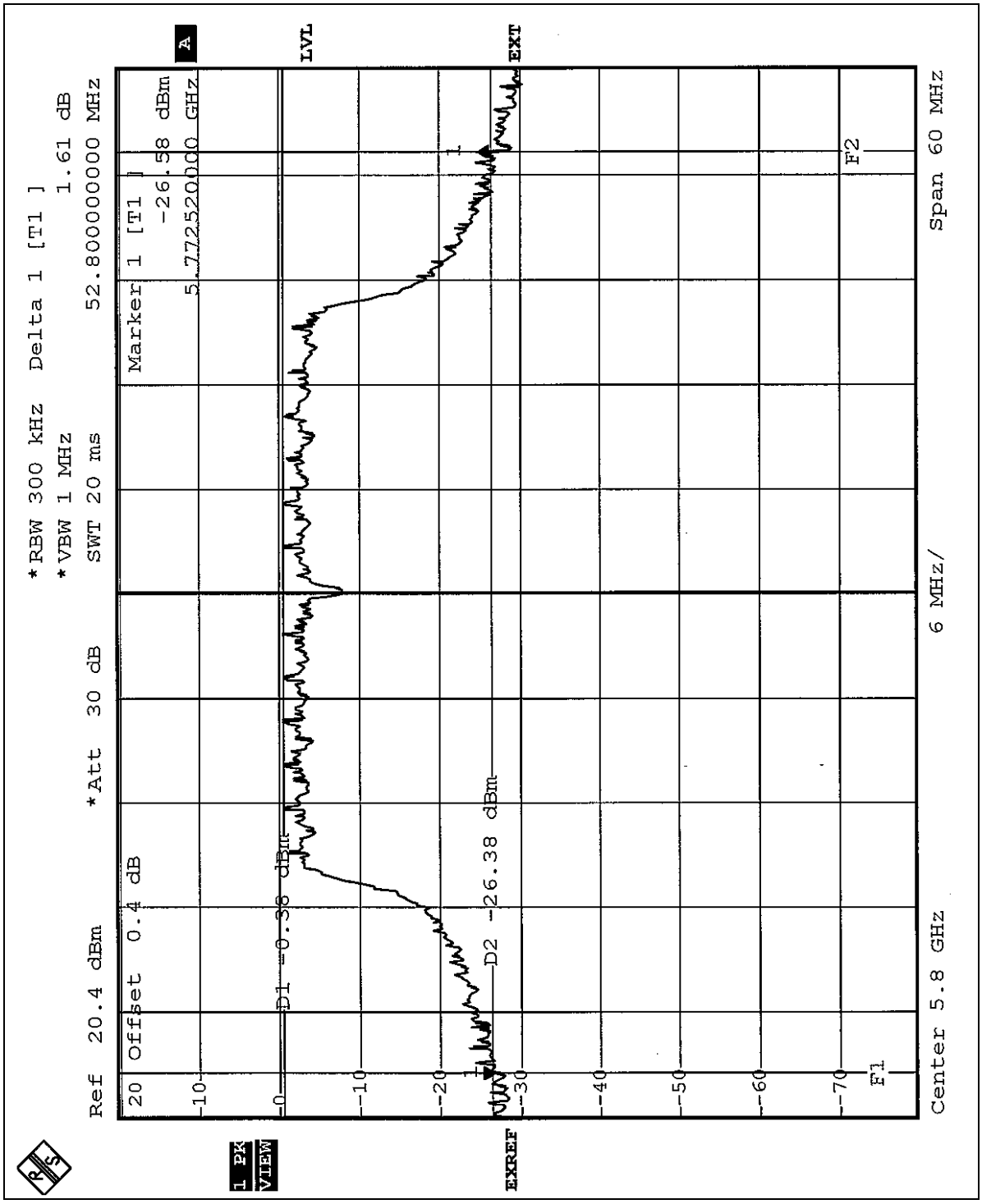
CH 3


*RBW 300 kHz
*VBW 1 MHz
Ref 20.4 dBm
20 Offset 0.4 dB
*Att 30 dB
SWT 20 ms
Delta 1 [T1]
0.99 dB
47.40000000 MHz
Marker 1 [T1]
-26.80 dBm
5.26612000 GHz
D1 0.26 dBm
D2 -26.26 dBm
Center 5.29 GHz
6 MHz/
Span 60 MHz
LVL
EXT
EXREF
1 PK VIEW

CH 4


RBW 300 kHz
VBW 1 MHz
SWT 20 ms
Delta 1 [T1]
0.23 dB
52.560000000 MHz
Marker 1 [T1]
-26.68 dBm
5.732880000 GHz
Ref 20.4 dBm
Offset 0.4 dB
Att 30 dB
D1 -0.12 dBm
D2 -26.12 dBm
LVL
EXT
EXREF
1 PK VIEW
F1
F2
Center 5.76 GHz
6 MHz/
Span 60 MHz

CH 5


*RBW 300 kHz
*VBW 1 MHz
*Att 30 dB
SWT 20 ms
Ref 20.4 dBm
Offset 0.4 dB
Delta 1 [T1]
1.61 dB
52.800000000 MHz
Marker 1 [T1]
-26.58 dBm
5.772520000 GHz
D1 -0.38 dBm
D2 -26.38 dBm
Center 5.8 GHz
6 MHz/
Span 60 MHz
1 PK VIEW
EXREF
LVL
EXT
F1
F2

5.4 PEAK POWER EXCURSION MEASUREMENT

5.4.1 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

5.4.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
ROHDE&SCHWARZ SPECTRUM ANALYZER	FSEK30	100049	Aug. 12, 2005

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

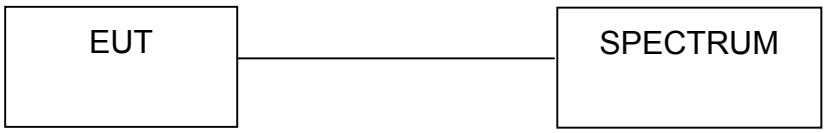
5.4.3 TEST PROCEDURE

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.

5.4.4 DEVIATION FROM TEST STANDARD

No deviation

5.4.5 TEST SETUP



5.4.6 EUT OPERATING CONDITIONS

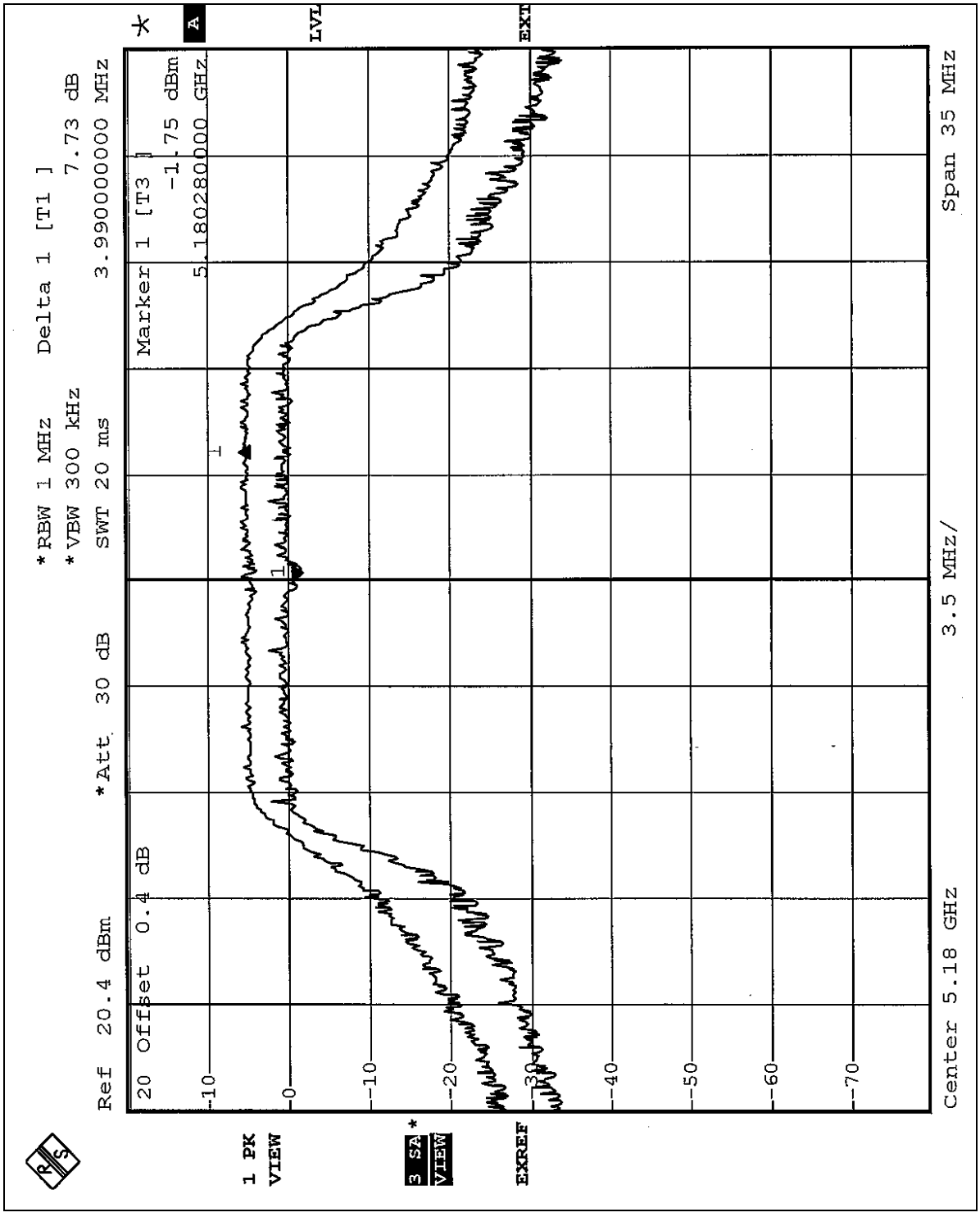
The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

5.4.7 TEST RESULTS

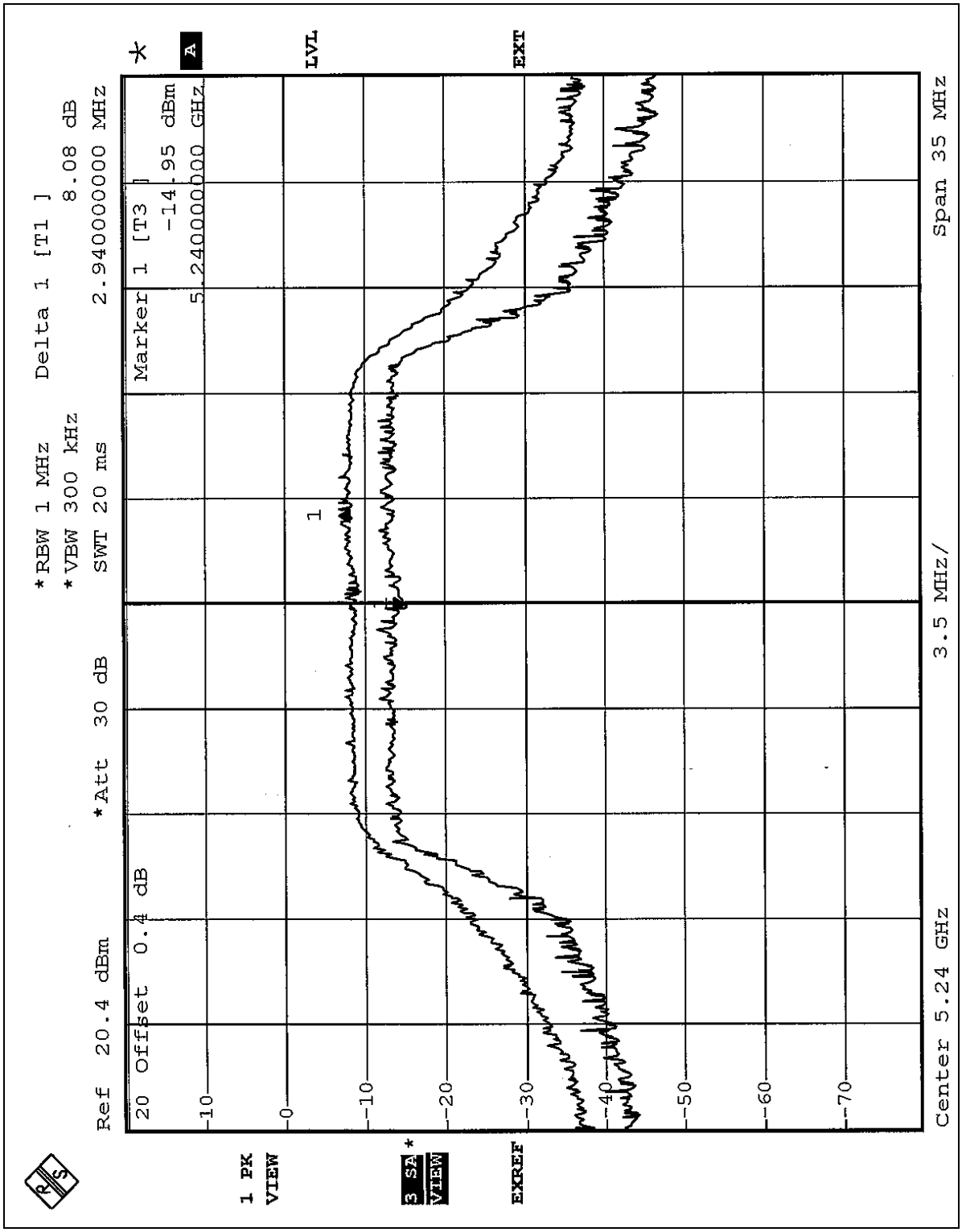
EUT	Wireless A+G Mini PCI Card	**MODEL**	WMIA-123AG
MODE	Normal	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	24deg. C, 65%RH, 991hPa	**TESTED BY**	Match Tsui

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
1	5180	7.73	13	PASS
4	5240	8.08	13	PASS
5	5260	5.97	13	PASS
8	5320	7.87	13	PASS
9	5745	8.22	13	PASS
12	5805	7.56	13	PASS

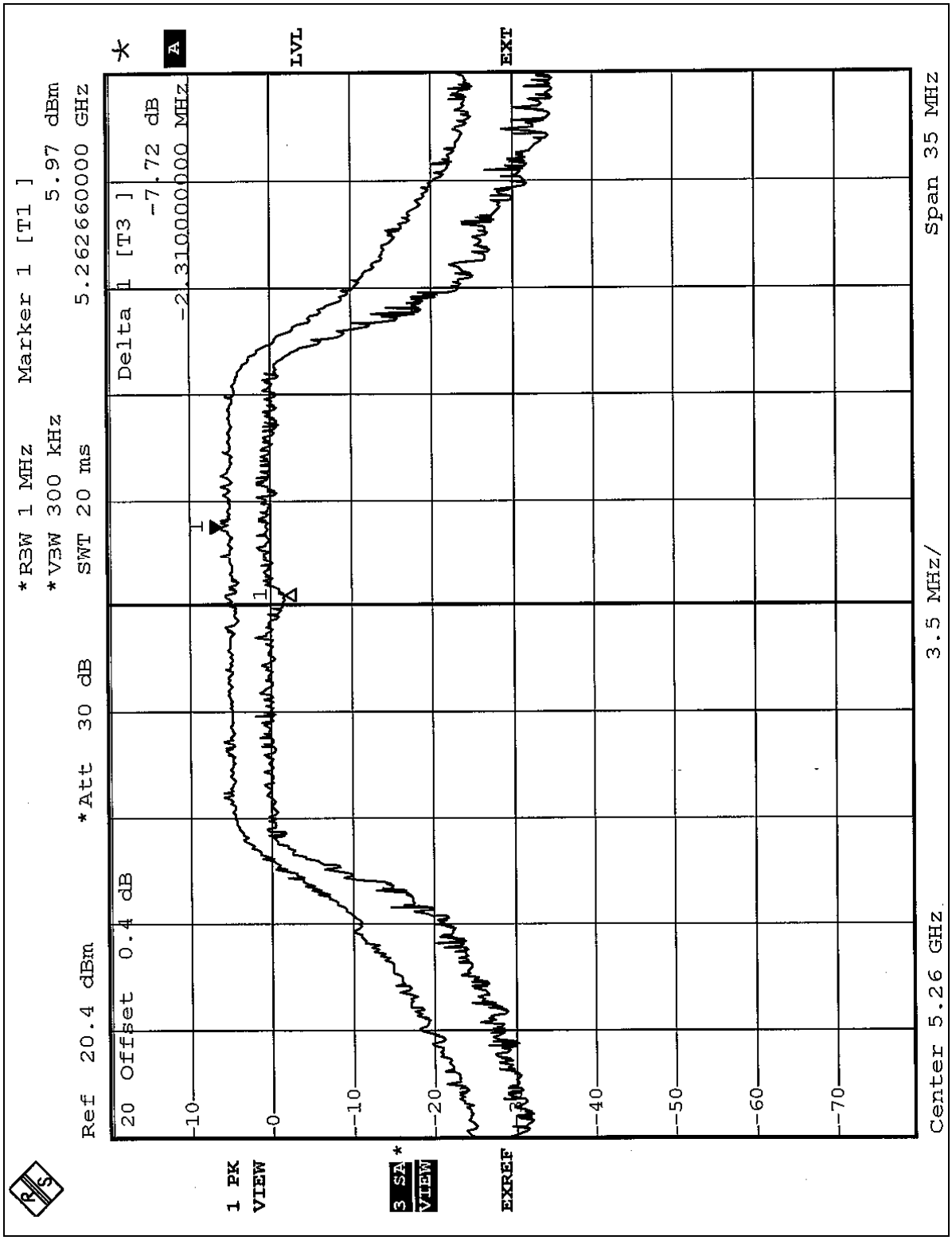
CH 1


RBW 1 MHz
VBW 300 kHz
SWT 20 ms
Delta 1 [T1]
7.73 dB
3.99000000 MHz
Marker 1 [T3]
-1.75 dBm
5.18028000 GHz
Ref 20.4 dBm
20 Offset 0.4 dB
Att 30 dB
Center 5.18 GHz
3.5 MHz/
Span 35 MHz
1 PK VIEW
3 SA VIEW
EXREF
LVL
EXT

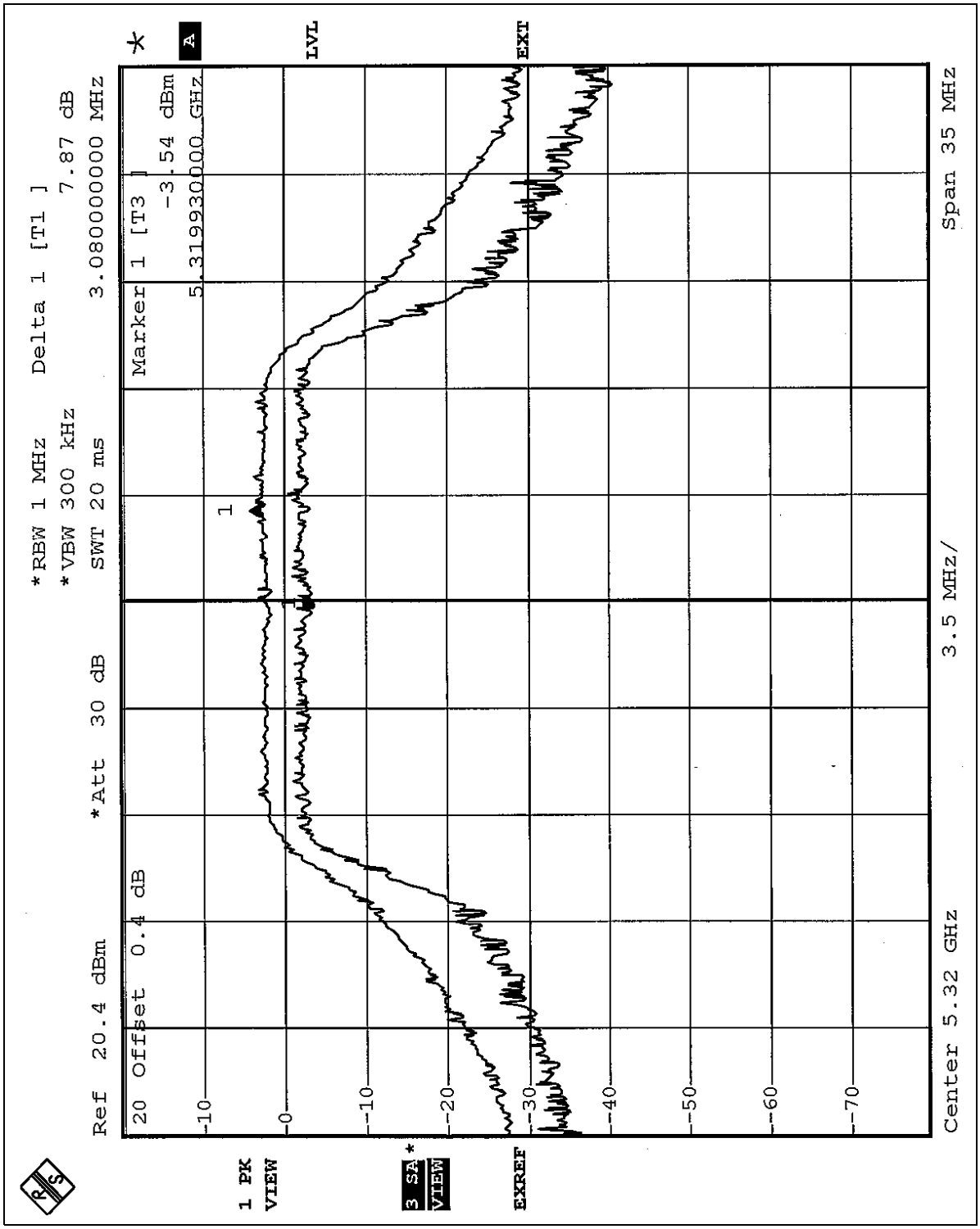
CH 4


RBW 1 MHz
VBW 300 kHz
SWT 20 ms
Delta 1 [T1]
8.08 dB
2.94000000 MHz
Marker 1 [T3]
-14.95 dBm
5.24000000 GHz
Ref 20.4 dBm
20 Offset 0.4 dB
Att 30 dB
LVL
EXT
Center 5.24 GHz
3.5 MHz/
Span 35 MHz
1 PK
VIEW
3 SA
VIEW
EXREF

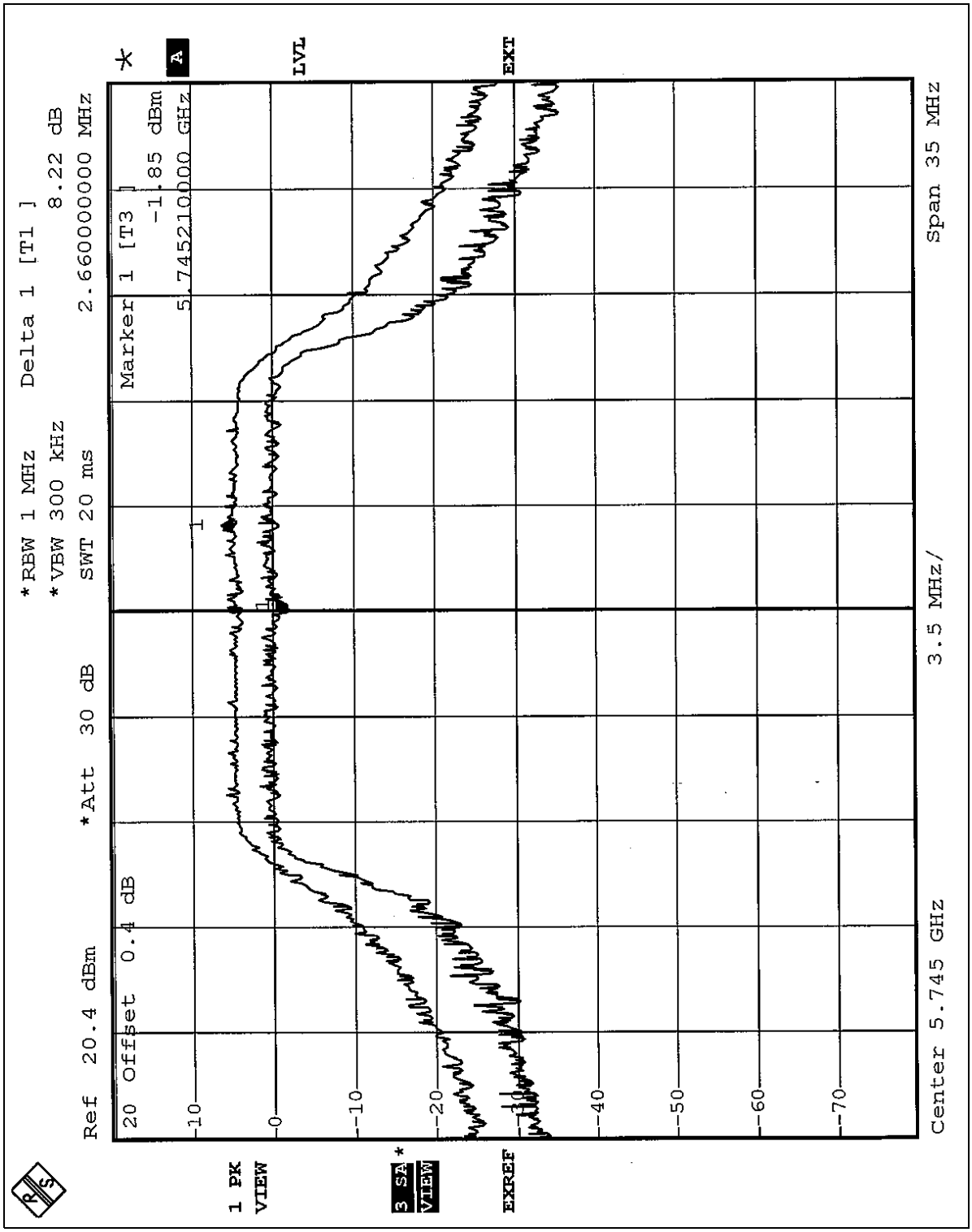
CH 5


*RBW 1 MHz
*VBW 300 kHz
SWT 20 ms
Marker 1 [T1]
5.97 dBm
5.262660000 GHz
Delta 1 [T3]
-7.72 dB
-2.310000000 MHz
Ref 20.4 dBm
20 Offset 0.4 dB
*Att 30 dB
LVL
EXT
Center 5.26 GHz
3.5 MHz/
Span 35 MHz
1 PK
VIEW
3 SA *
VIEW
EXREF

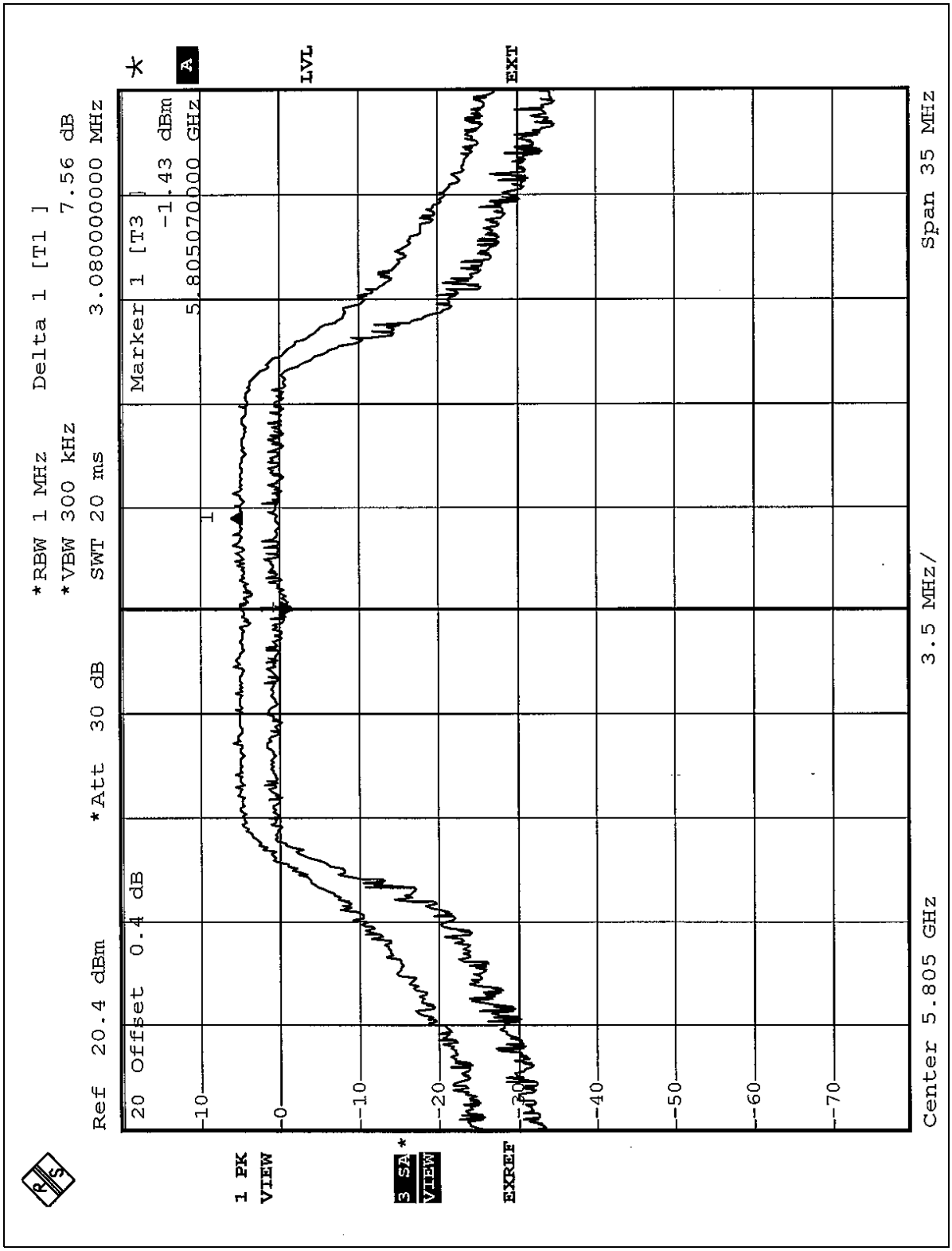
CH 8


*RBW 1 MHz
*VBW 300 kHz
SWT 20 ms
Delta 1 [T1]
7.87 dB
3.080000000 MHz
Marker 1 [T3]
-3.54 dBm
5.319930000 GHz
Ref 20.4 dBm
20 Offset 0.4 dB
*Att 30 dB
LVL
EXT
Center 5.32 GHz
3.5 MHz/
Span 35 MHz
1 PK VIEW
3 SA VIEW
EXREF

CH 9


*RBW 1 MHz
*VBW 300 kHz
SWT 20 ms
Delta 1 [T1]
8.22 dB
2.660000000 MHz
Marker 1 [T3]
-1.85 dBm
5.745210000 GHz
Ref 20.4 dBm
20 Offset 0.4 dB
*Att 30 dB
LVL
EXT
A
Center 5.745 GHz
3.5 MHz/
Span 35 MHz
1 PK
VIEW
3 SA
VIEW
EXREF

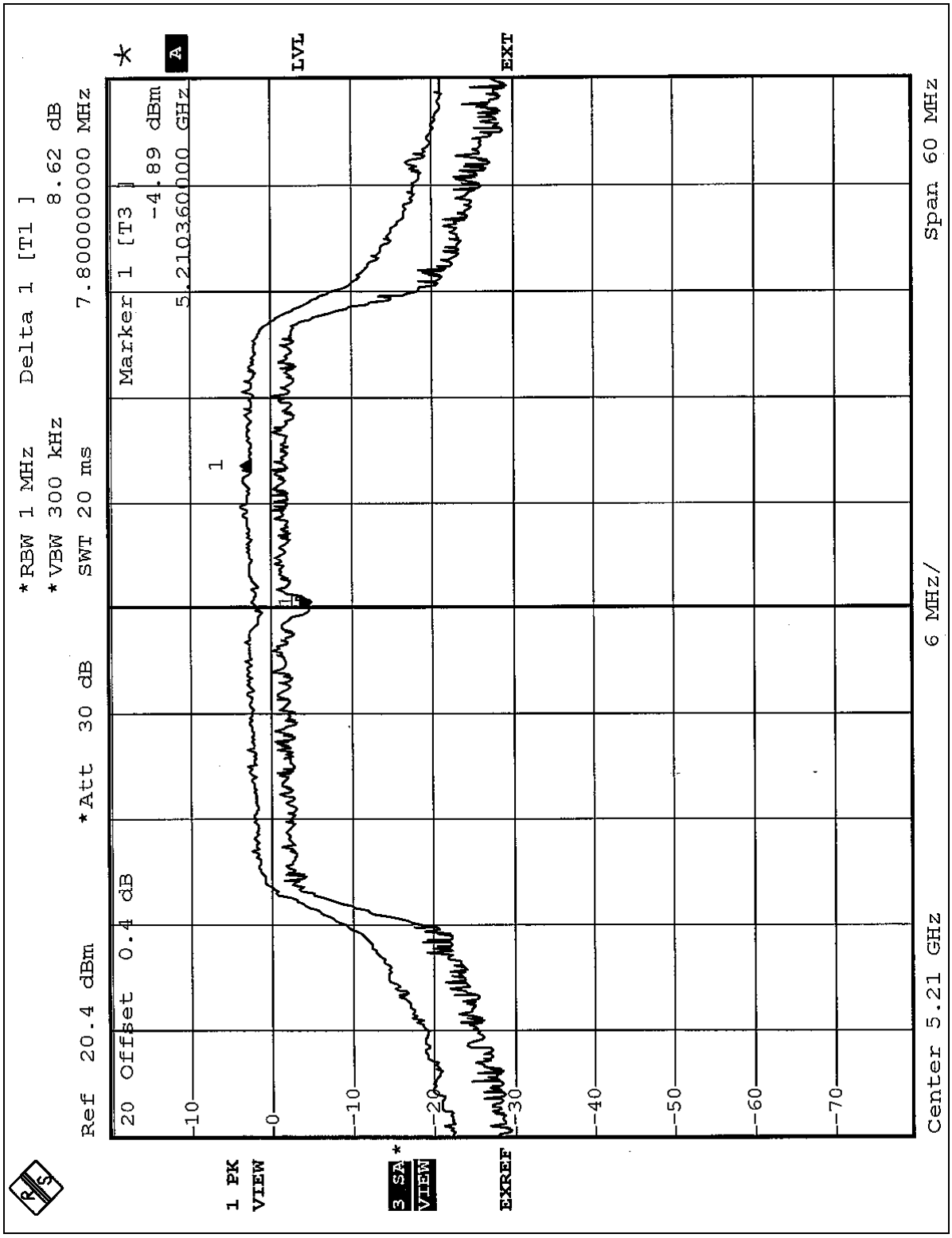
CH 12


*RBW 1 MHz
*VBW 300 kHz
SWT 20 ms
Delta 1 [T1]
7.56 dB
3.080000000 MHz
Marker 1 [T3]
-1.43 dBm
5.805070000 GHz
Ref 20.4 dBm
20 Offset 0.4 dB
*Att 30 dB
LVL
EXT
Center 5.805 GHz
3.5 MHz/
Span 35 MHz
1 PK VIEW
3 SA VIEW
EXREF

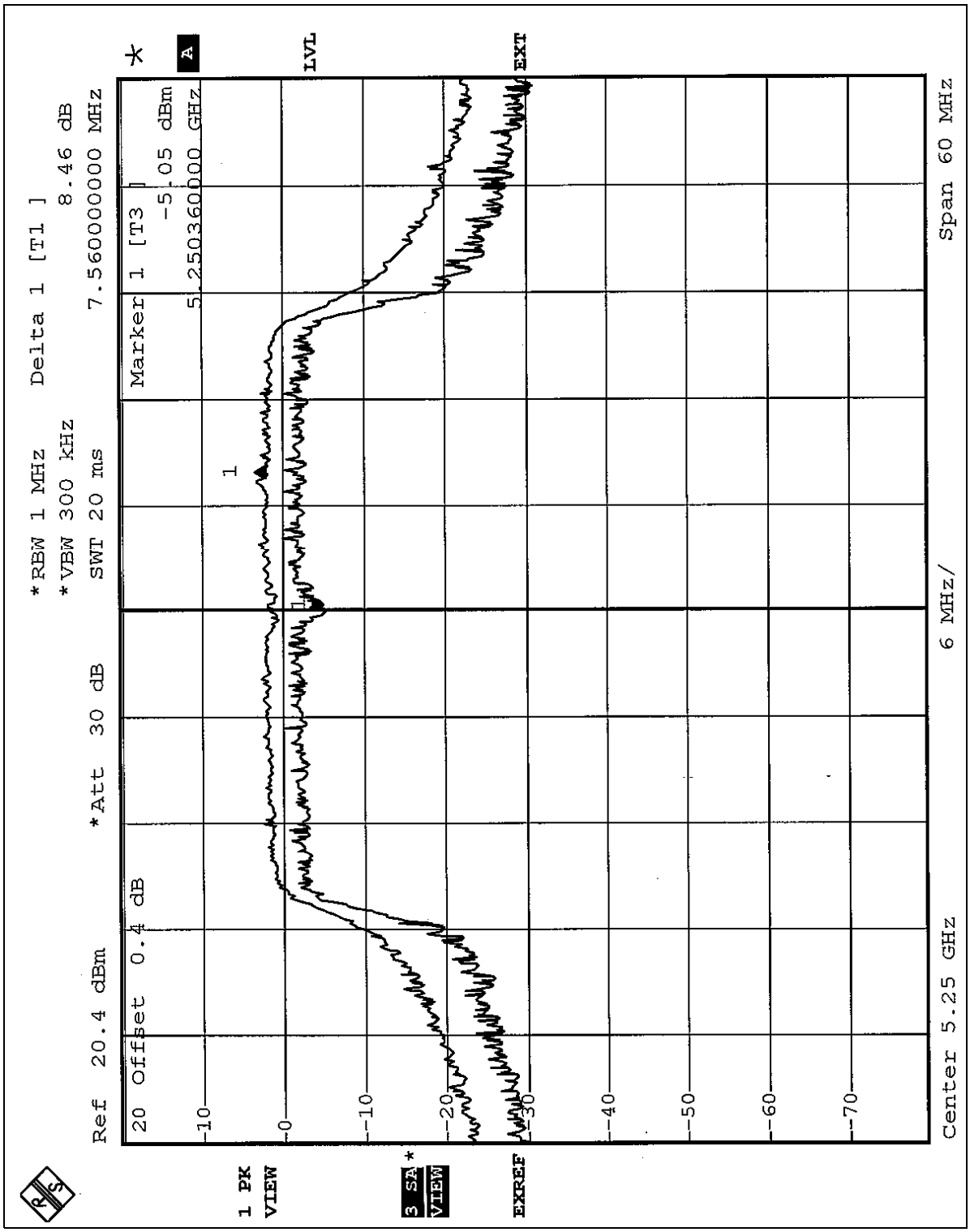
EUT	Wireless A+G Mini PCI Card	**MODEL**	WMIA-123AG
MODE	Turbo	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	24deg. C, 65%RH, 991hPa	**TESTED BY**	Match Tsui

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
1	5210	8.62	13	PASS
2	5250	8.46	13	PASS
3	5290	8.76	13	PASS
4	5760	8.03	13	PASS
5	5800	8.76	13	PASS

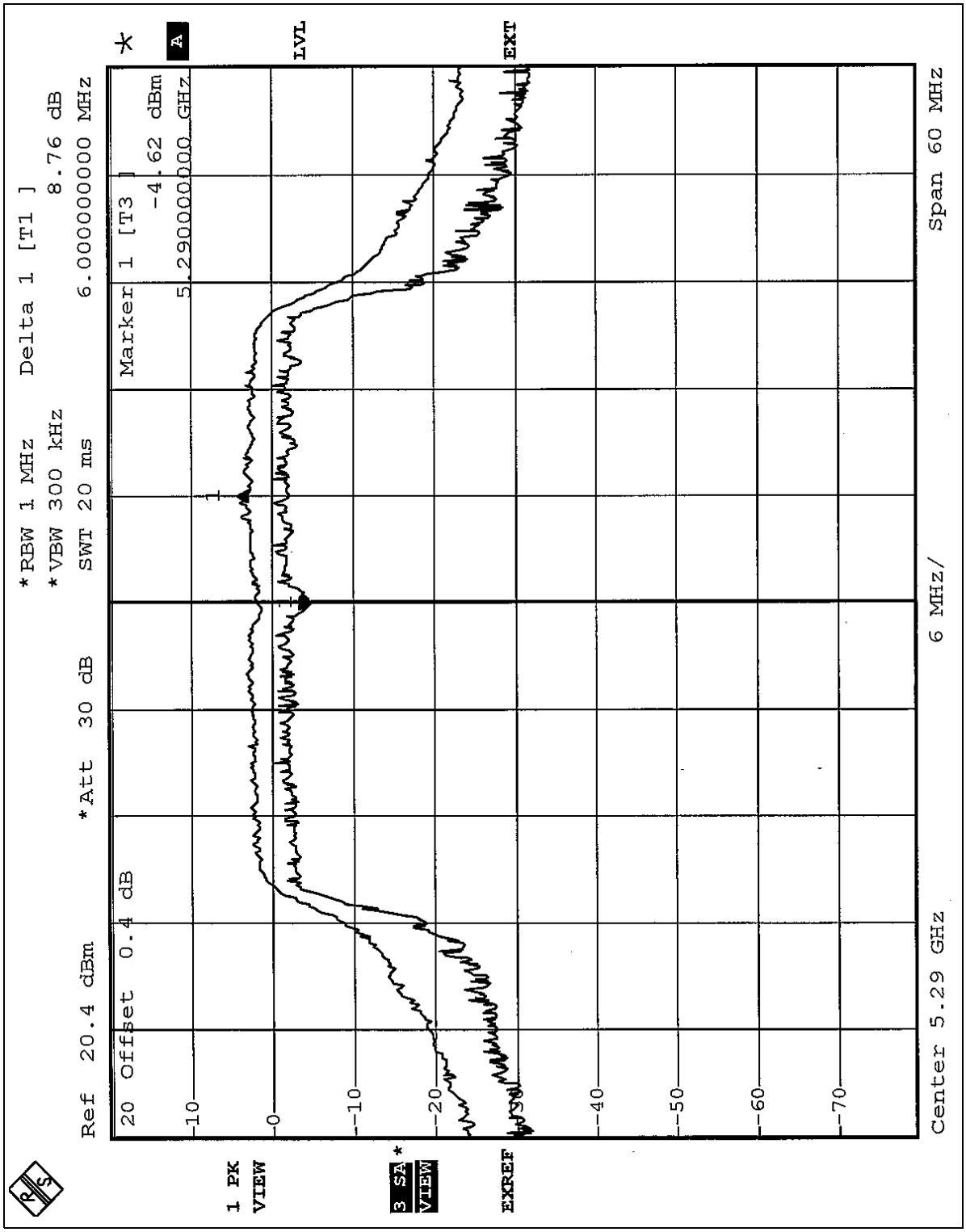
CH 1


*RBW 1 MHz
*VBW 300 kHz
SWT 20 ms
Delta 1 [T1]
8.62 dB
7.80000000 MHz
Marker 1 [T3]
-4.89 dBm
5.21036000 GHz
Ref 20.4 dBm
20 Offset 0.4 dB
*Att 30 dB
LVL
EXT
A
Center 5.21 GHz
6 MHz/
Span 60 MHz
1 PK
VIEW
3 SA
VIEW
EXREF

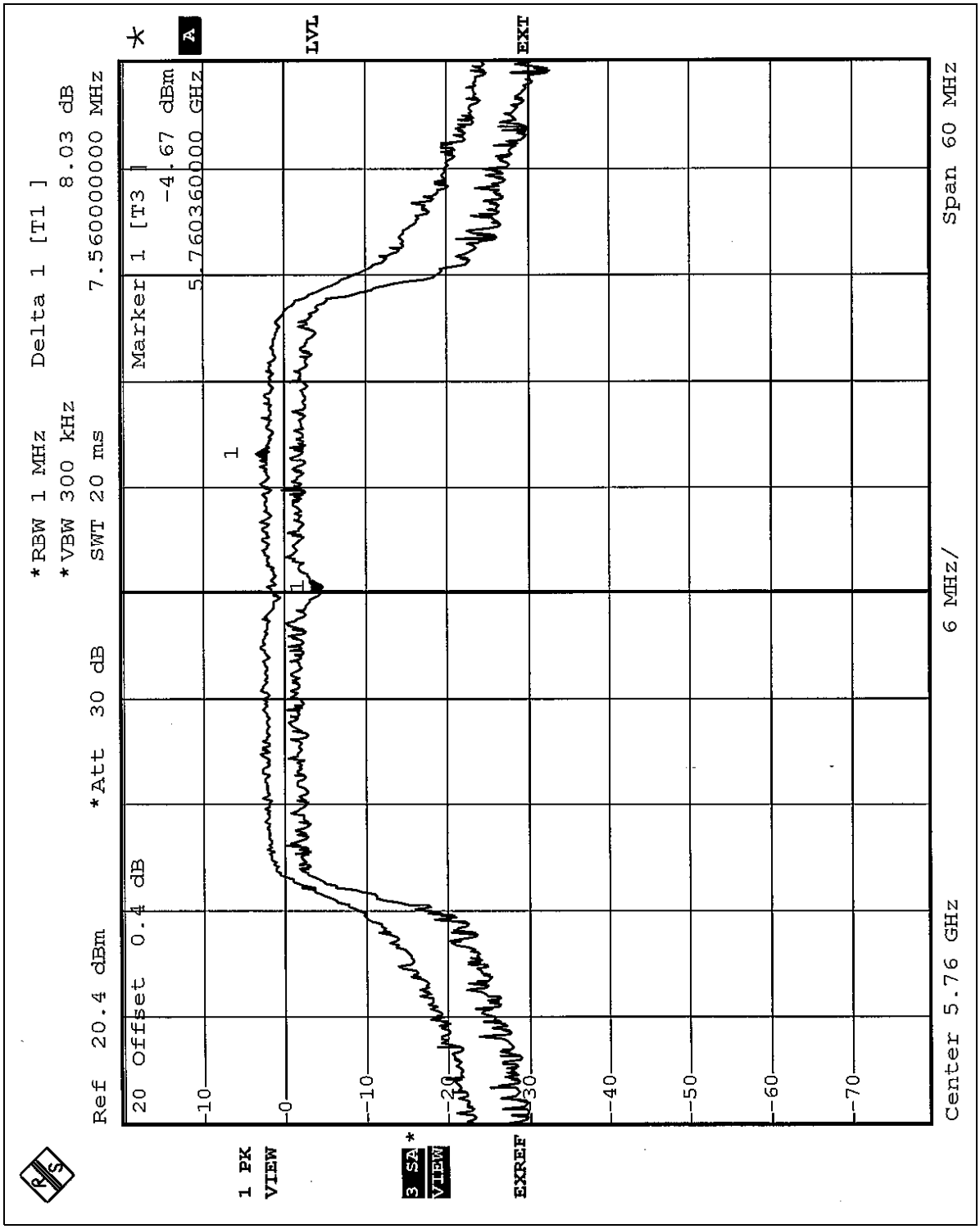
CH 2


*RBW 1 MHz
*VBW 300 kHz
SWT 20 ms
Delta 1 [T1]
8.46 dB
7.560000000 MHz
Ref 20.4 dBm
Offset 0.4 dB
*Att 30 dB
Marker 1 [T3]
-5.05 dBm
5.250360000 GHz
LVL
EXT
Center 5.25 GHz
6 MHz/
Span 60 MHz
1 PK VIEW
3 SA VIEW
EXREF

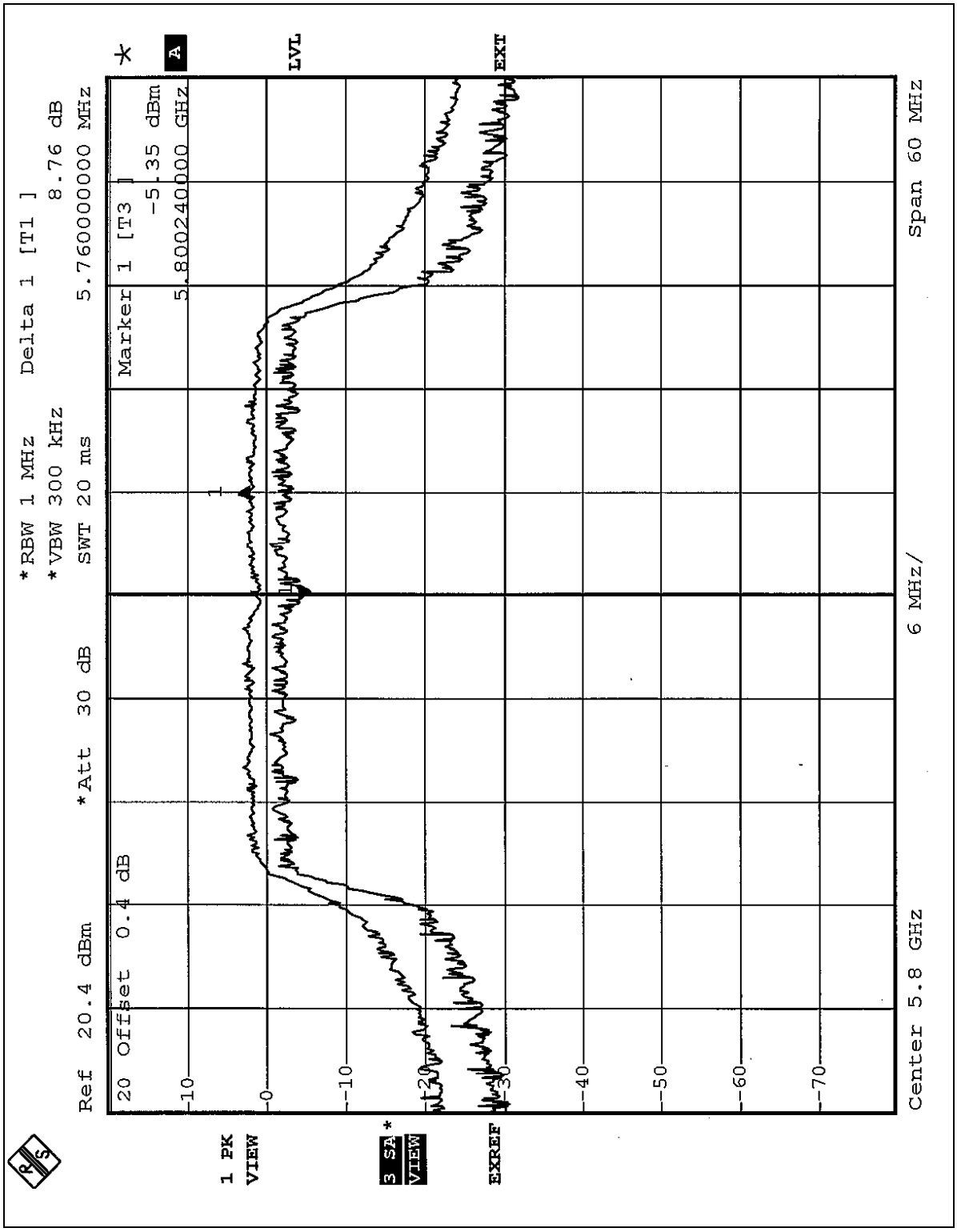
CH 3


RBW 1 MHz
VBW 300 kHz
SWT 20 ms
Delta 1 [T1] 8.76 dB
6.000000000 MHz
Marker 1 [T3] -4.62 dBm
5.290000000 GHz
Ref 20.4 dBm
Offset 0.4 dB
Att 30 dB
Center 5.29 GHz
6 MHz/
Span 60 MHz
LVL
EXT
1 PK VIEW
3 SA VIEW
EXREF

CH 4


*RBW 1 MHz
*VBW 300 kHz
SWT 20 ms
Delta 1 [T1]
8.03 dB
7.560000000 MHz
Ref 20.4 dBm
Offset 0.4 dB
*Att 30 dB
Marker 1 [T3]
-4.67 dBm
5.760360000 GHz
LVL
EXT
Center 5.76 GHz
6 MHz/
Span 60 MHz
1 PK VIEW
3 SA VIEW
EXREF

CH 5


*RBW 1 MHz
*VBW 300 kHz
SWT 20 ms
Delta 1 [T1]
8.76 dB
5.76000000 MHz
Marker 1 [T3]
-5.35 dBm
5.80024000 GHz
Ref 20.4 dBm
20 Offset 0.4 dB
*Att 30 dB
LVL
EXT
Center 5.8 GHz
6 MHz/
Span 60 MHz
1 PK VIEW
3 SA * VIEW
EXREF

5.5 PEAK POWER SPECTRAL DENSITY MEASUREMENT

5.5.1 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

5.5.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
ROHDE&SCHWARZ SPECTRUM ANALYZER	FSEK30	100049	Aug. 12, 2005

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

5.5.3 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.

5.5.4 DEVIATION FROM TEST STANDARD

No deviation

5.5.5 TEST SETUP

5.5.6 EUT OPERATING CONDITIONS

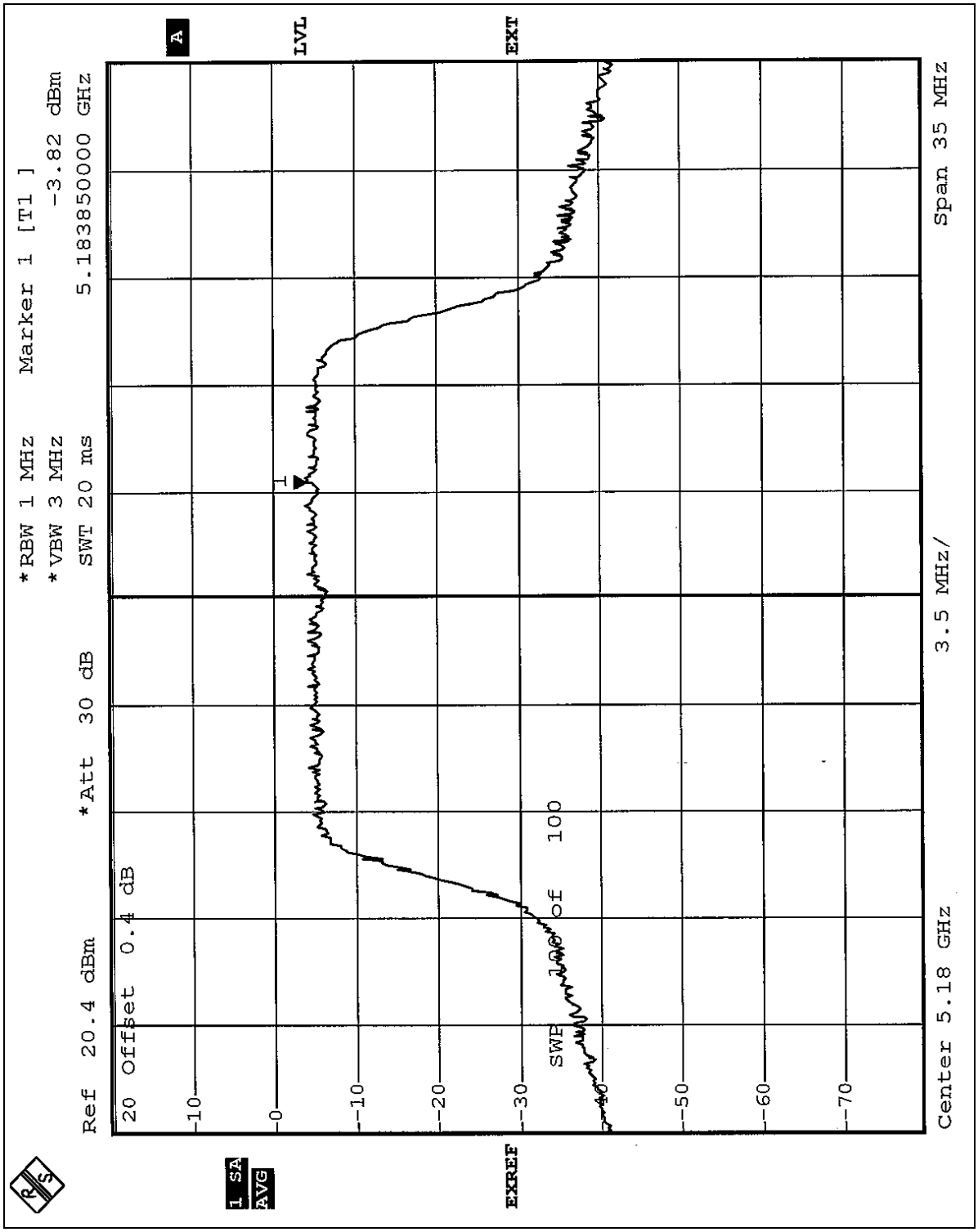
Same as 5.3.6

5.5.7 TEST RESULTS

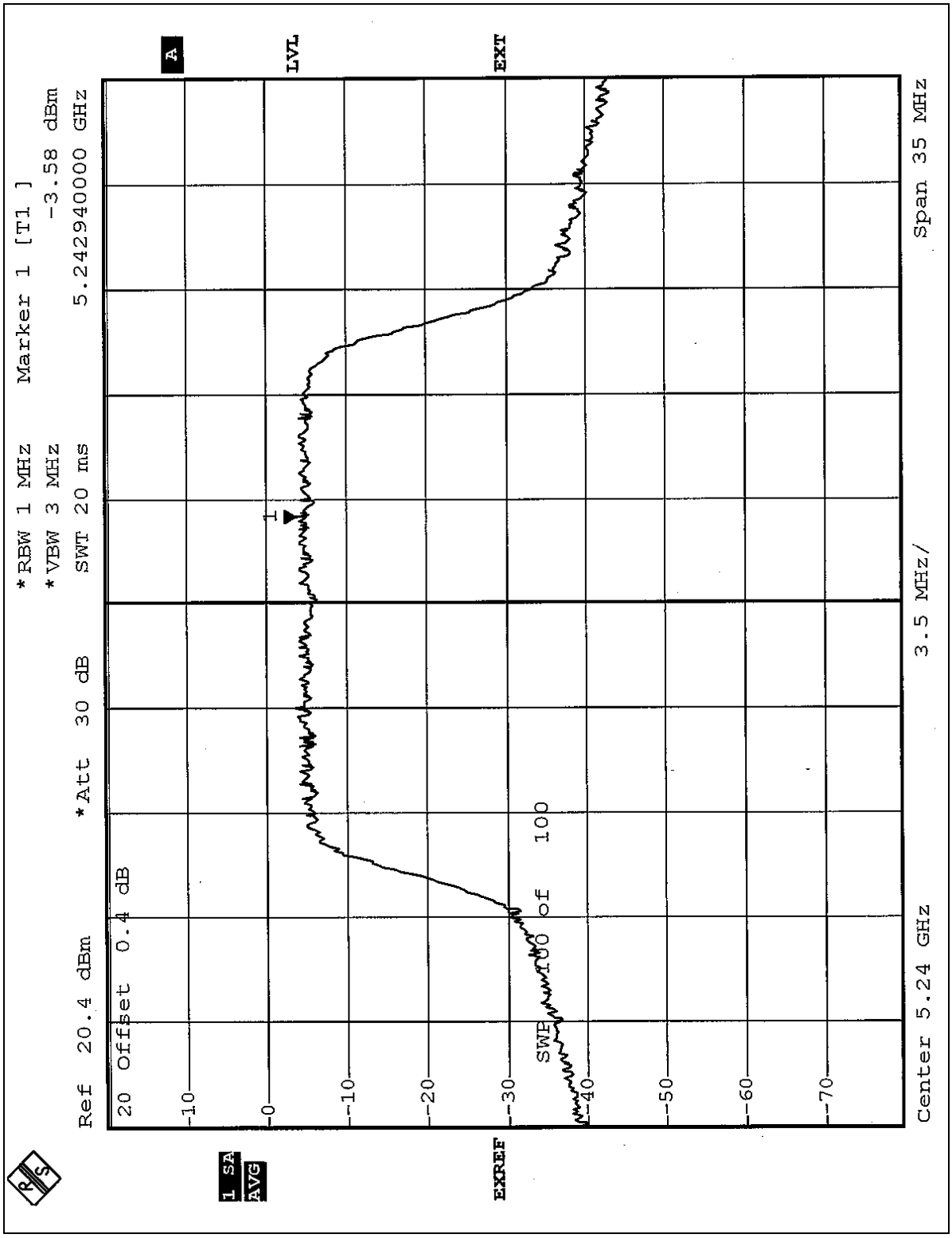
EUT	Wireless A+G Mini PCI Card	**MODEL**	WMIA-123AG
MODE	Normal	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	24deg. C, 65%RH, 991hPa	**TESTED BY**	Match Tsui

CHANNEL NUMBER	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1 MHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	5180	-3.82	4	PASS
4	5240	-3.58	4	PASS
5	5260	-4.77	11	PASS
8	5320	-7.03	11	PASS
9	5745	-4.38	17	PASS
12	5805	-3.97	17	PASS

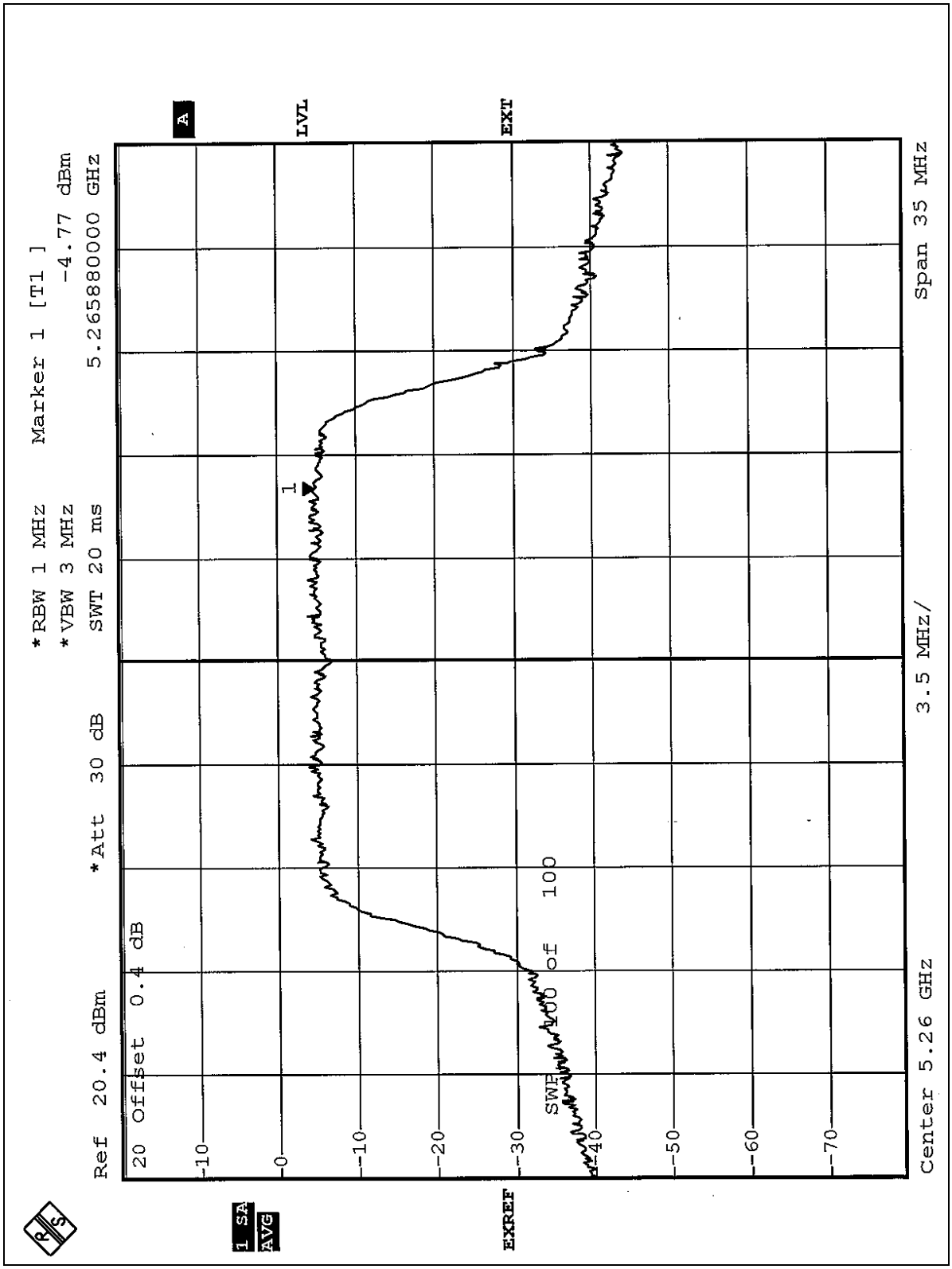
CH 1


A
LVL
EXT
*RBW 1 MHz
*VBW 3 MHz
SWT 20 ms
Marker 1 [T1]
-3.82 dBm
5.183850000 GHz
Ref 20.4 dBm
Offset 0.4 dB
*Att 30 dB
Span 35 MHz
3.5 MHz/
Center 5.18 GHz
SWP 100 of 100
1 SA
AVG
EXREF

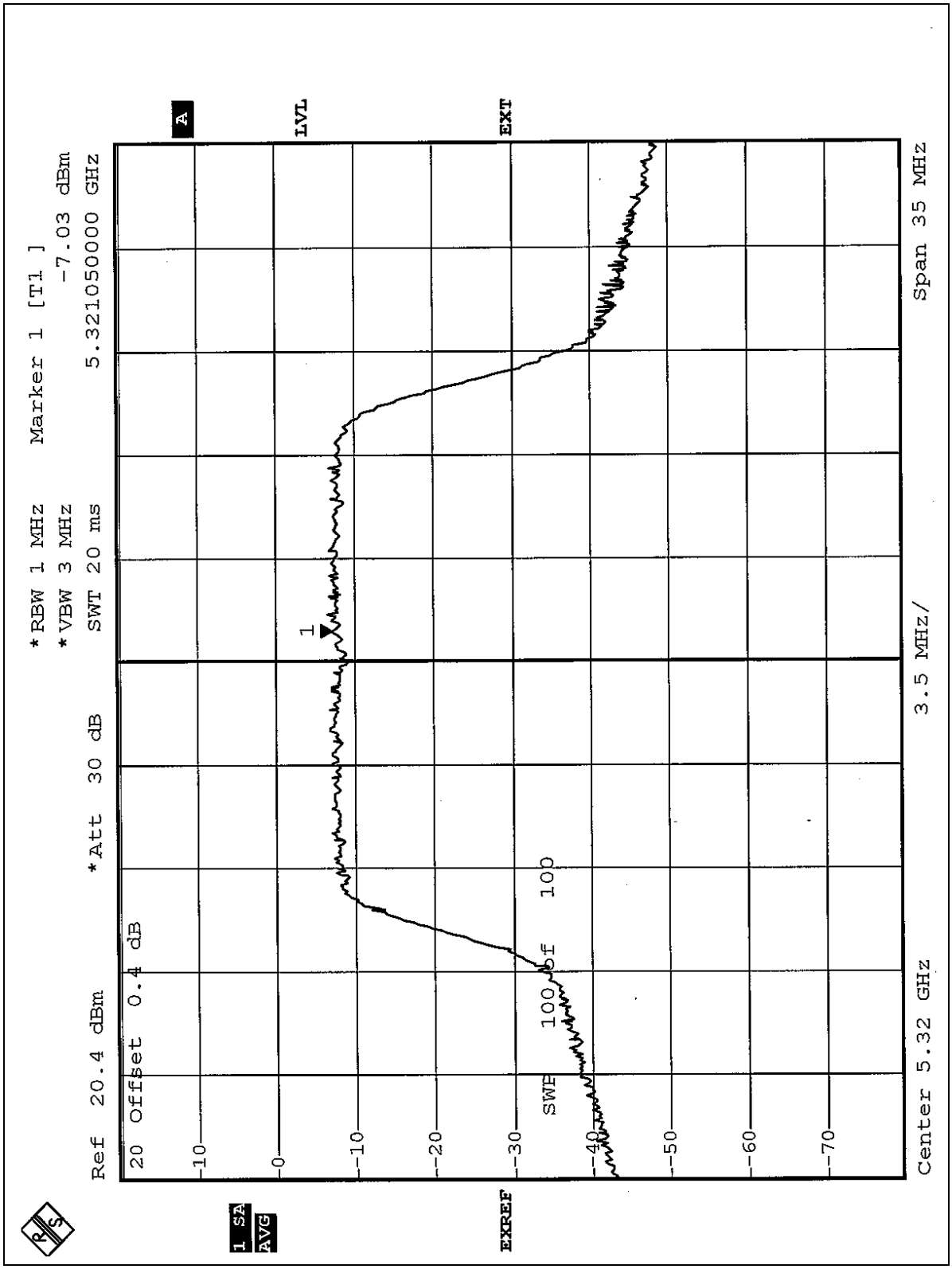
CH 4


Ref 20.4 dBm
20 Offset 0.4 dB
*Att 30 dB
*RBW 1 MHz
*VBW 3 MHz
SWT 20 ms
Marker 1 [T1]
-3.58 dBm
5.242940000 GHz
Center 5.24 GHz
3.5 MHz/
Span 35 MHz
SWP 100 of 100
1 SA
AVG
LVL
EXT
EXREF

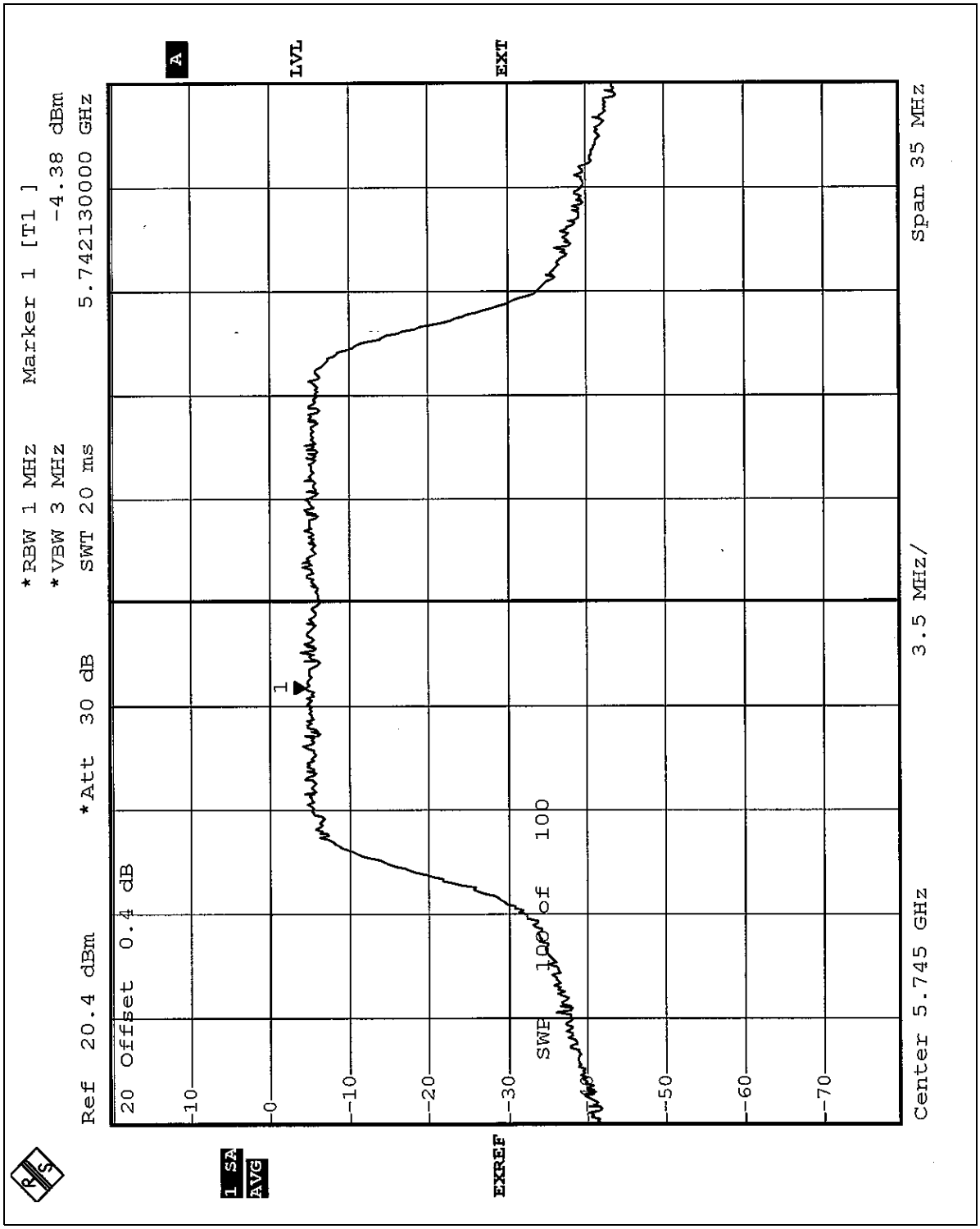
CH 5


Ref 20.4 dBm
20 Offset 0.4 dB
*Att 30 dB
*RBW 1 MHz
*VBW 3 MHz
SWT 20 ms
Marker 1 [T1]
-4.77 dBm
5.26588000 GHz
Center 5.26 GHz
3.5 MHz/
Span 35 MHz
LVL
EXT
EXREF
1 SA
AVG
SWP 100 of 100

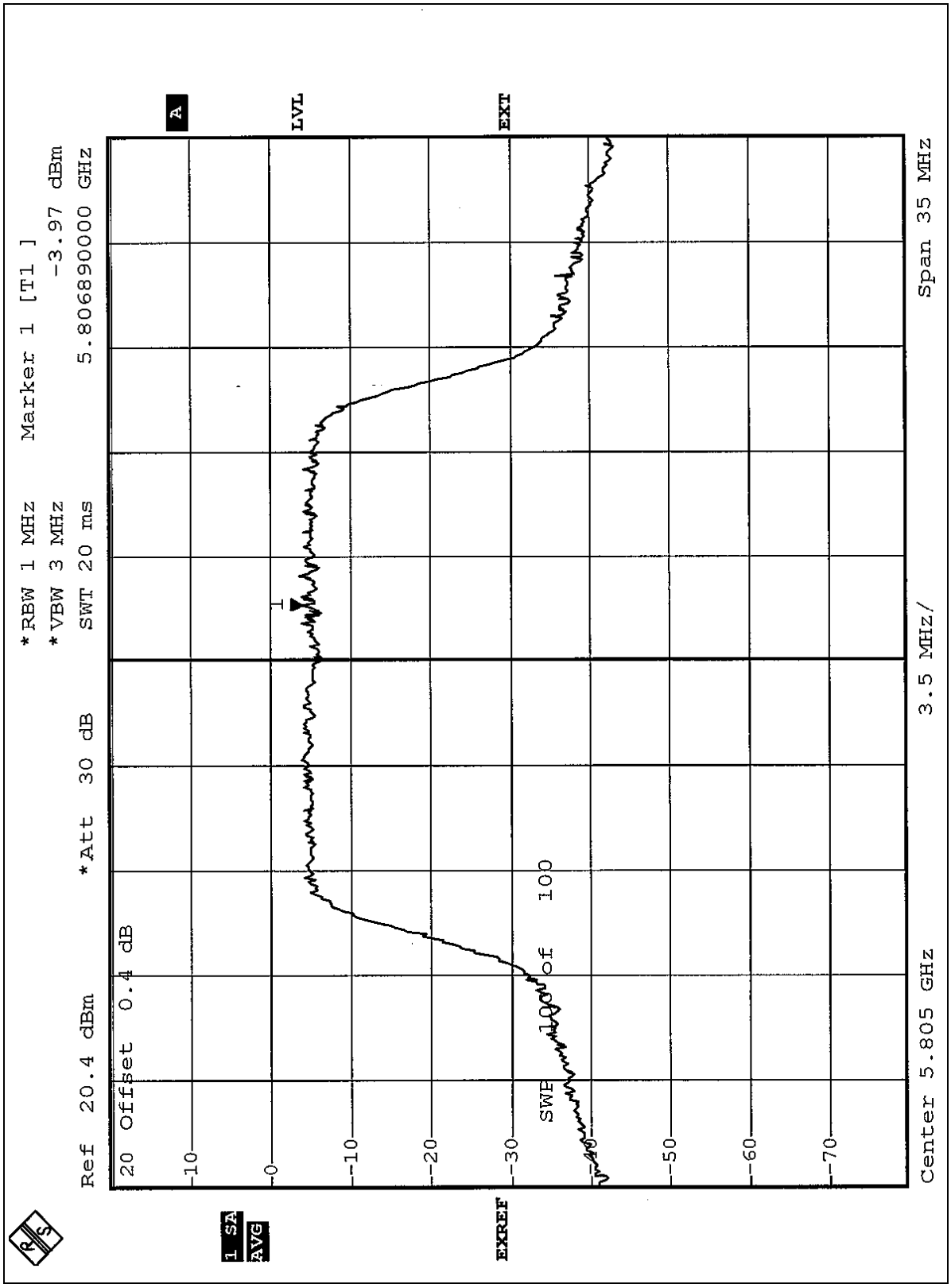
CH 8


Ref 20.4 dBm
20 Offset 0.4 dB
*Att 30 dB
*RBW 1 MHz
*VBW 3 MHz
SWT 20 ms
Marker 1 [T1]
-7.03 dBm
5.321050000 GHz
Center 5.32 GHz
3.5 MHz/
Span 35 MHz
SWP 100 of 100
1 SA
AVG
LVL
EXT
EXREF

CH 9


Marker 1 [T1]
-4.38 dBm
5.742130000 GHz
*RBW 1 MHz
*VBW 3 MHz
SWT 20 ms
*Att 30 dB
Offset 0.4 dB
Ref 20.4 dBm
Center 5.745 GHz
3.5 MHz/
Span 35 MHz
SWP 100 of 100
1 SA
AVG
EXREF
LVL
EXT
A

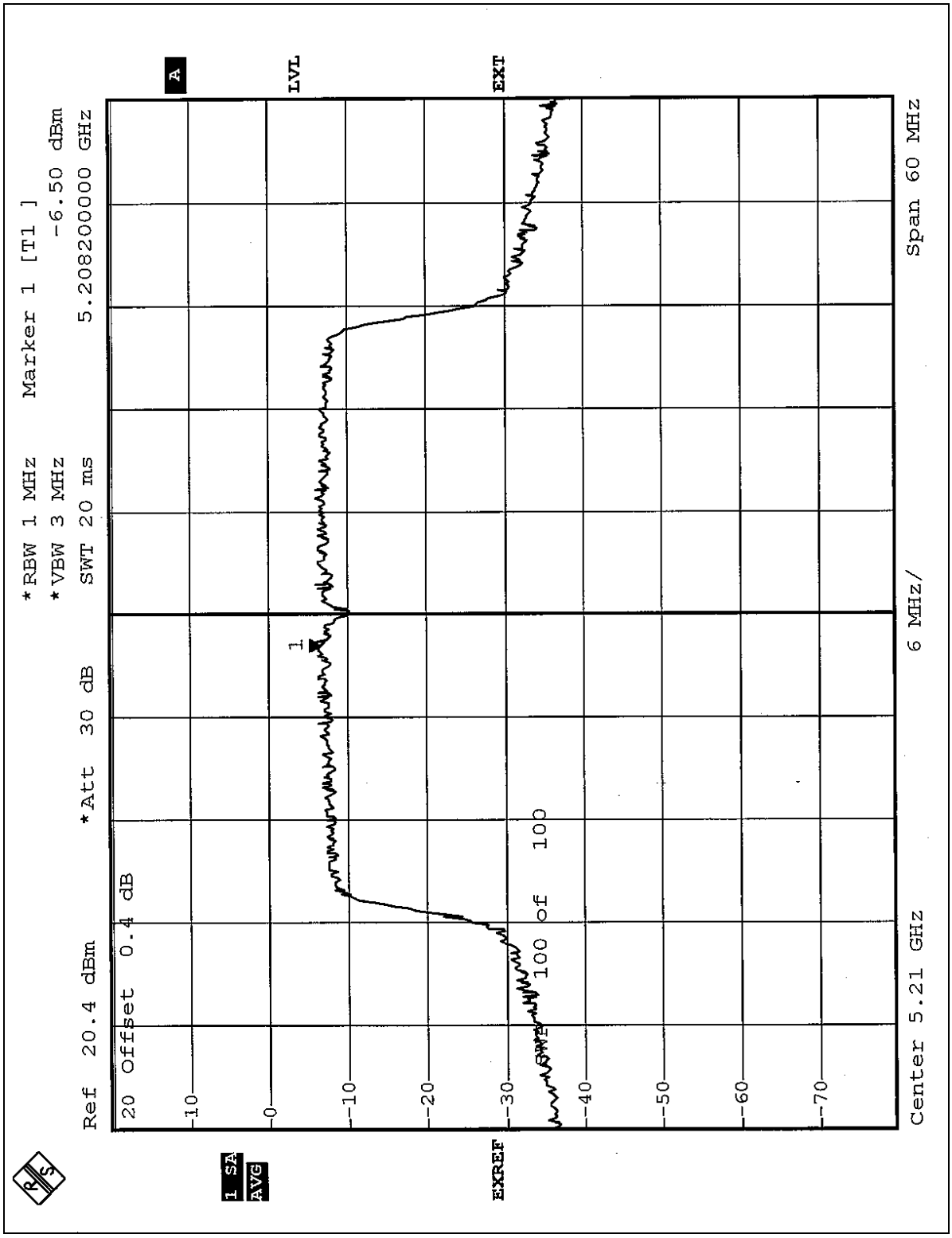
CH 12


Ref 20.4 dBm
20 Offset 0.4 dB
*Att 30 dB
*RBW 1 MHz
*VBW 3 MHz
SWT 20 ms
Marker 1 [T1]
-3.97 dBm
5.806890000 GHz
Center 5.805 GHz
3.5 MHz/
Span 35 MHz
SWP 100 of 100
LVL
EXT
EXREF
1 SA
AVG
-10
0
-10
-20
-30
-40
-50
-60
-70

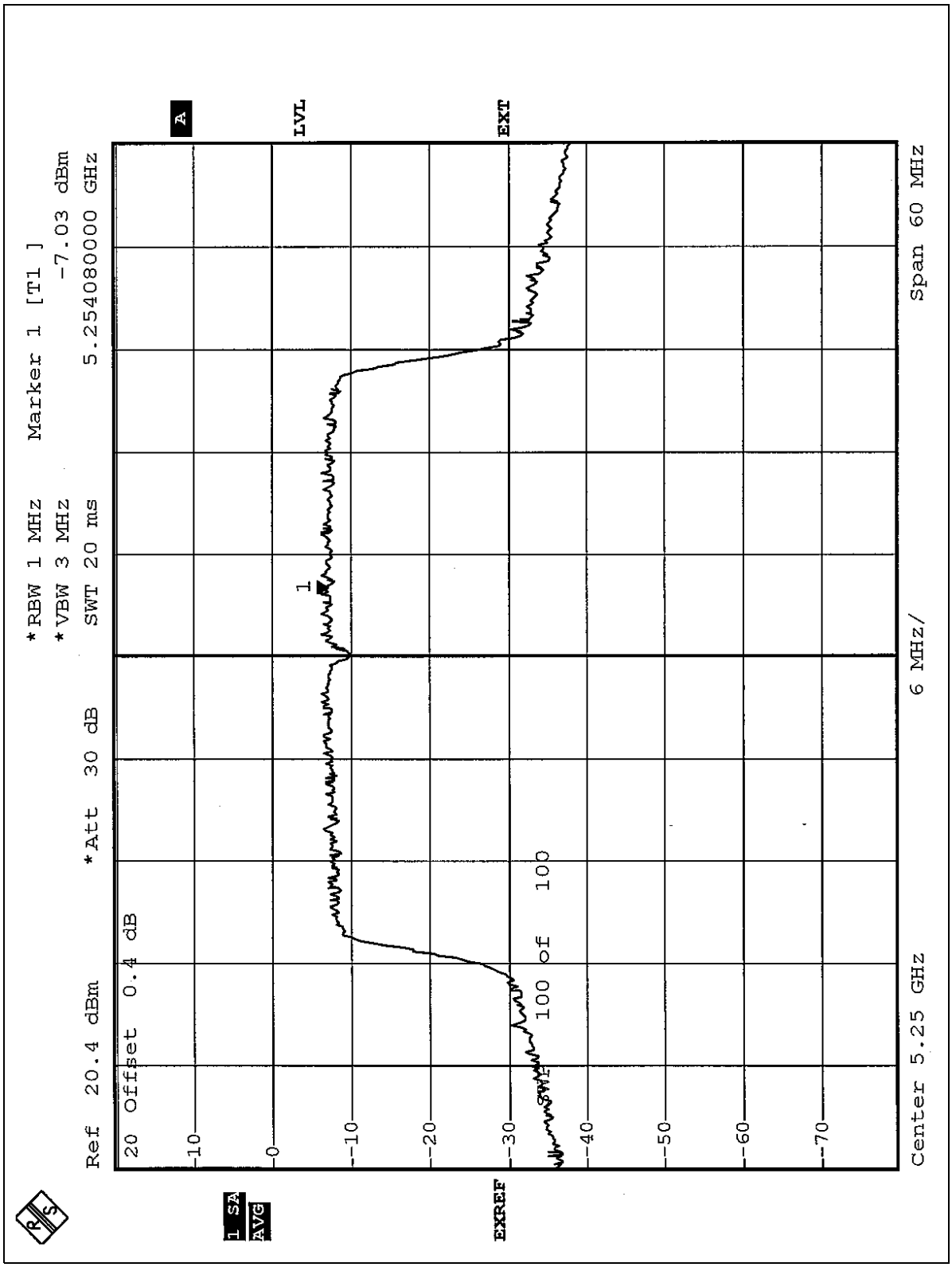
EUT	Wireless A+G Mini PCI Card	**MODEL**	WMIA-123AG
MODE	Turbo	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	24deg. C, 65%RH, 991hPa	**TESTED BY**	Match Tsui

CHANNEL NUMBER	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1 MHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	5210	-6.50	4	PASS
2	5250	-7.03	4	PASS
3	5290	-6.58	11	PASS
4	5760	-6.60	17	PASS
5	5800	-7.17	17	PASS

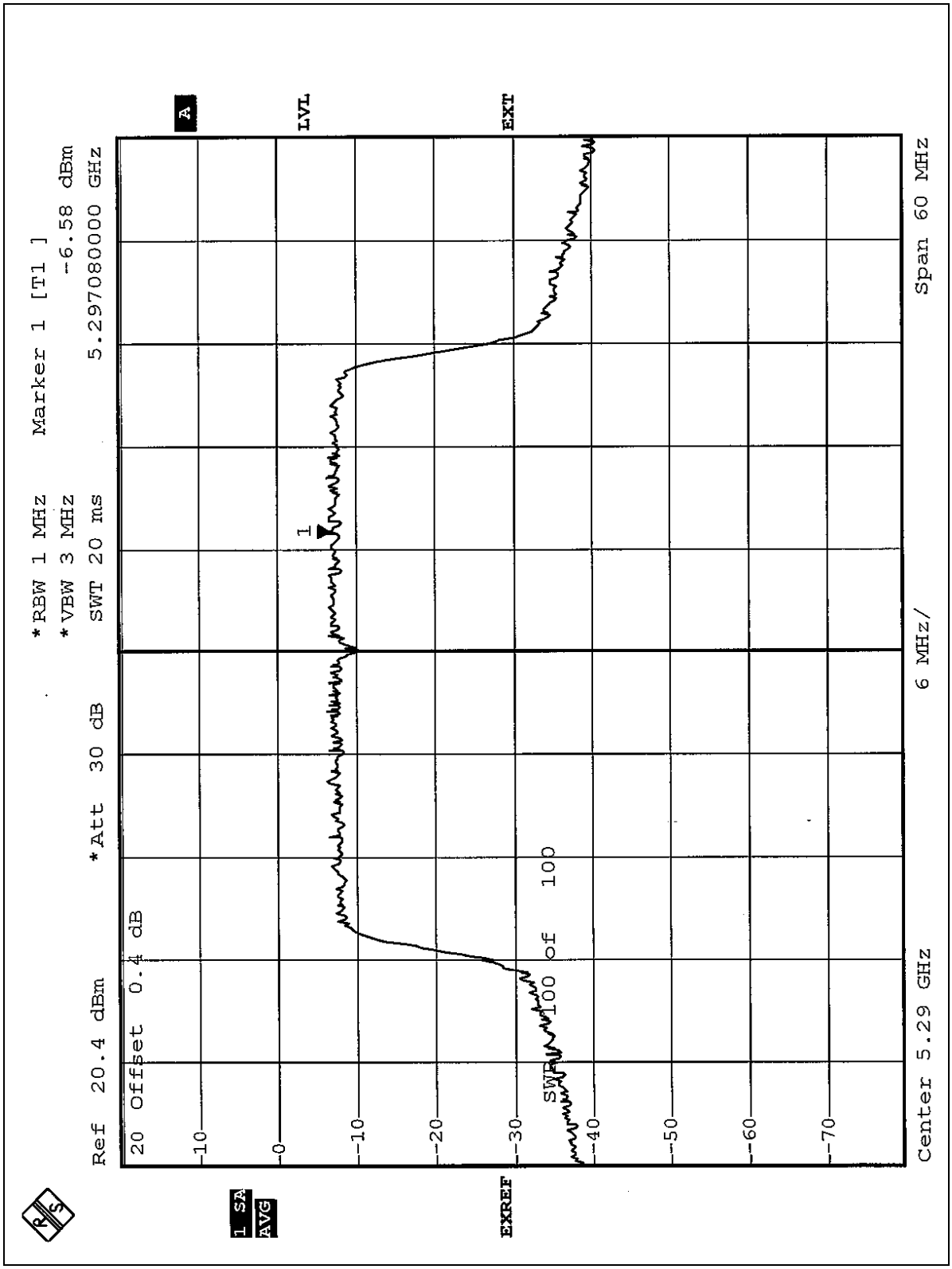
CH 1


A
LVL
EXT
*RBW 1 MHz
*VBW 3 MHz
Marker 1 [T1]
-6.50 dBm
5.208200000 GHz
*Att 30 dB
SWT 20 ms
Ref 20.4 dBm
20 Offset 0.4 dB
Span 60 MHz
6 MHz/
Center 5.21 GHz
1 SA
AVG
EXREF
100 of 100

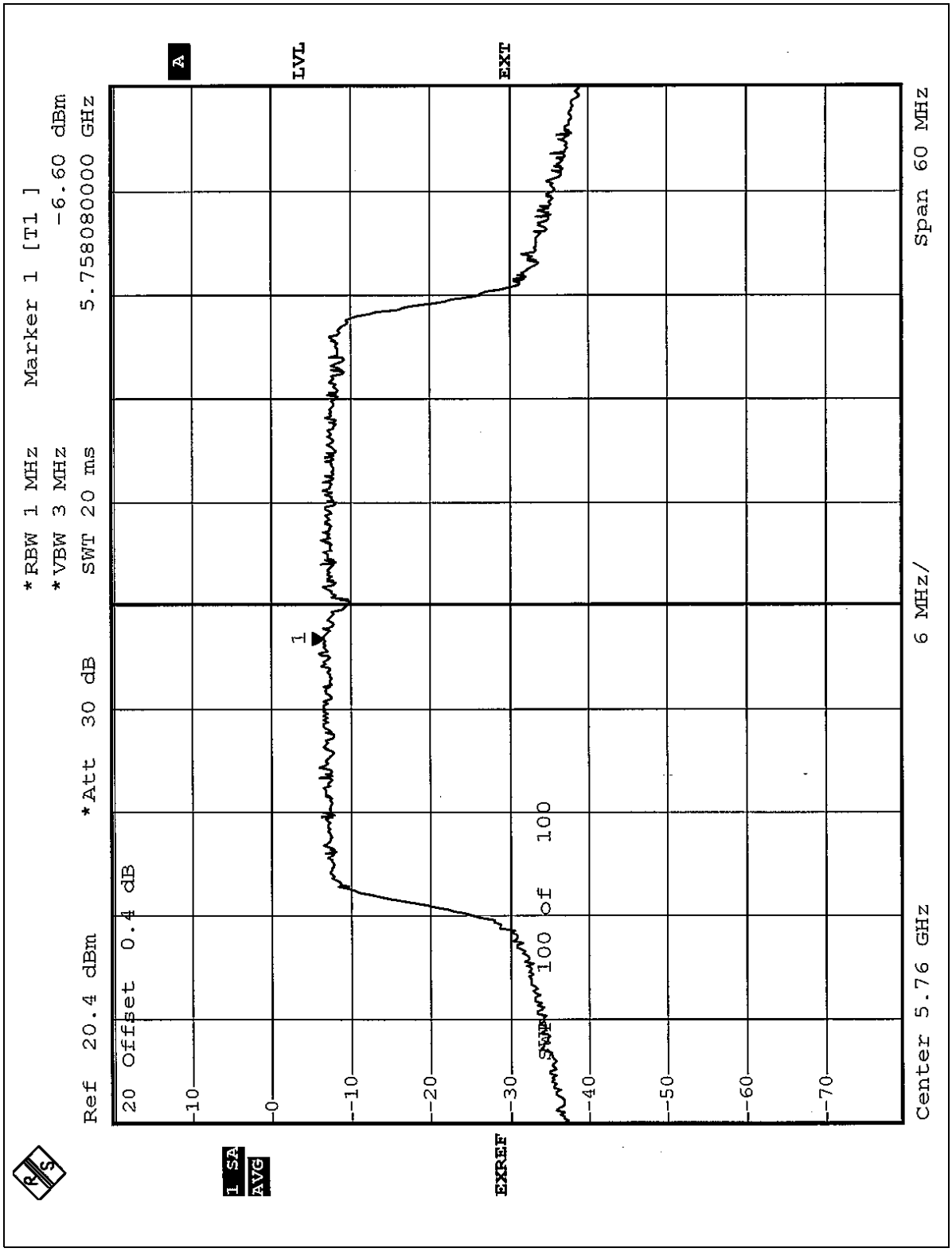
CH 2


Ref 20.4 dBm
20 Offset 0.4 dB
*Att 30 dB
*RBW 1 MHz
*VBW 3 MHz
SWT 20 ms
Marker 1 [T1]
-7.03 dBm
5.254080000 GHz
1 SA
AVG
A
LVL
EXT
EXREF
100 of 100
Center 5.25 GHz
6 MHz/
Span 60 MHz

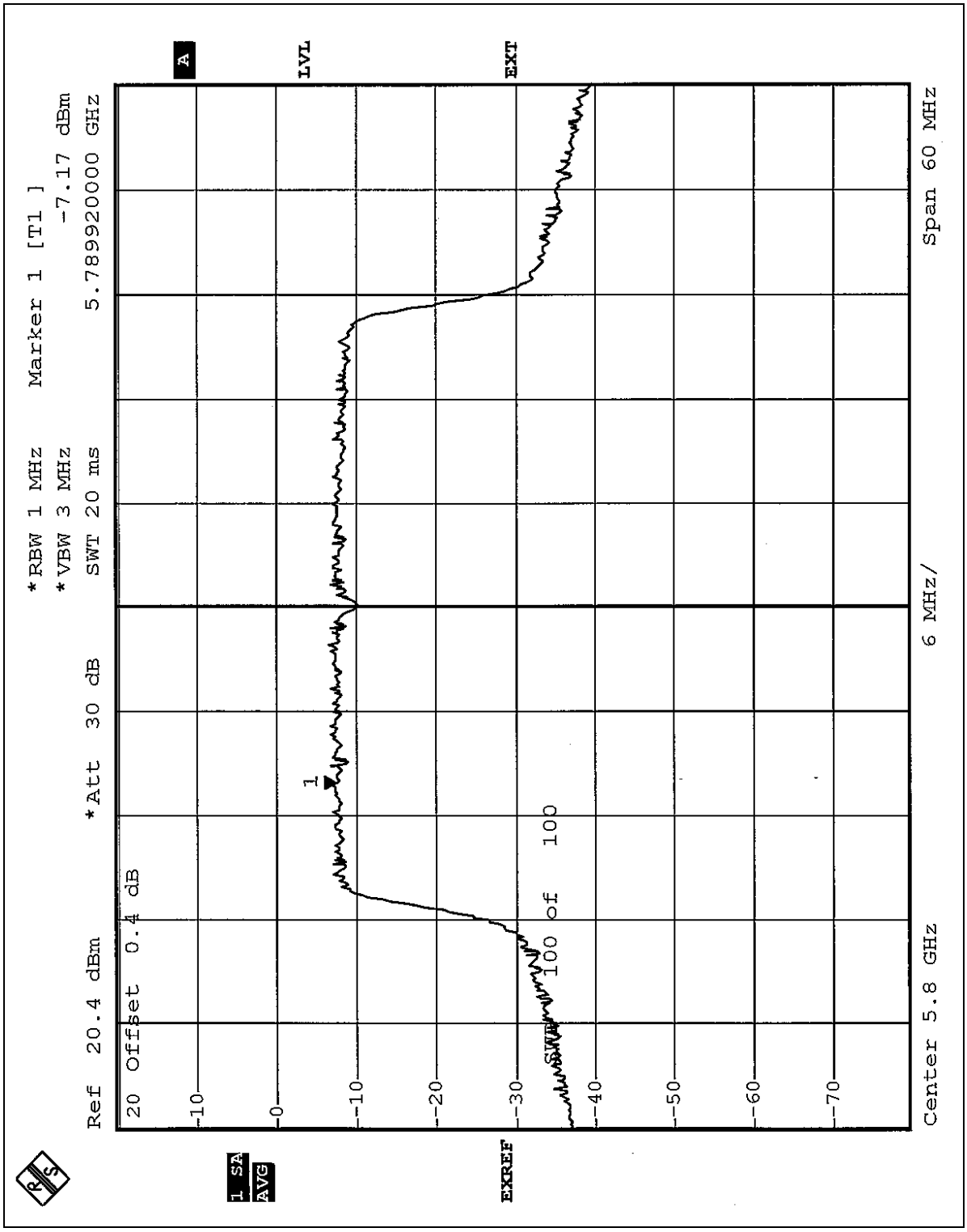
CH 3


Ref 20.4 dBm
20 Offset 0.4 dB
*Att 30 dB
*RBW 1 MHz
*VBW 3 MHz
SWT 20 ms
Marker 1 [T1]
-6.58 dBm
5.297080000 GHz
Center 5.29 GHz
6 MHz/
Span 60 MHz
LVL
EXT
EXREF
1 SA
AVG
SWP 100 of 100

CH 4


A
LVL
EXT
*RBW 1 MHz
*VBW 3 MHz
*Att 30 dB
Marker 1 [T1]
-6.60 dBm
5.75808000 GHz
SWT 20 ms
Ref 20.4 dBm
20 Offset 0.4 dB
Span 60 MHz
6 MHz/
Center 5.76 GHz
1 SA
AVG
EXREF
100 of 100

CH 5


Ref 20.4 dBm
20 Offset 0.4 dB
*Att 30 dB
*RBW 1 MHz
*VBW 3 MHz
SWT 20 ms
Marker 1 [T1]
-7.17 dBm
5.789920000 GHz
Center 5.8 GHz
6 MHz/
Span 60 MHz
100 of 100
1 SA
AVG
EXREF
LVL
EXT
A

5.6 FREQUENCY STABILITY

5.6.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

The frequency tolerance of the carrier signal shall be maintained within +/- 0.02% of the operating frequency over a temperature variation of –30 degrees to 50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C.

5.6.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
ANRITSU SPECTRUM ANALYZER	MS2667C	M10281	Feb. 09, 2005
WIT STANDARD TEMPERATURE AND HUMIDITY CHAMBER	TH-4S-C	W981030	Jul. 18, 2005

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

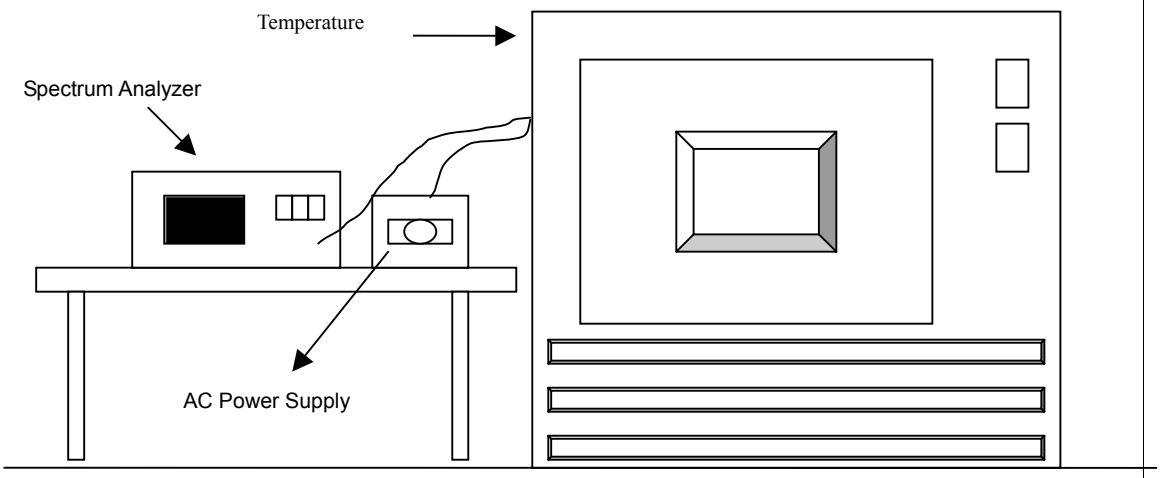
5.6.3 TEST PROCEDURE

1. The EUT was placed inside the environmental test chamber and powered by nominal DC voltage.
2. Turn the EUT on and couple its output to a spectrum analyzer.
3. Turn the EUT off and set the chamber to the highest temperature specified.
4. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
5. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
6. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

5.6.4 DEVIATION FROM TEST STANDARD

No deviation

5.6.5 TEST SETUP



5.6.6 EUT OPERATING CONDITION

Same as Item 4.1.6

5.6.7 TEST RESULTS

Operating frequency: 5320MHz						Limit : ± 0.01%	
Temp. (℃)	Power supply (VAC)	2 minute		5 minute		10 minute	
		(MHz)	(%)	(MHz)	(%)	(MHz)	(%)
50	102	5319.9480	-0.0009774	5319.9780	-0.0004135	5319.9480	-0.0009774
	120	5319.9480	-0.0009774	5319.9480	-0.0009774	5319.9481	-0.0009756
	138	5319.9480	-0.0009774	5319.9480	-0.0009774	5319.9480	-0.0009774
40	102	5319.9486	-0.0009662	5319.9486	-0.0009662	5319.9483	-0.0009718
	120	5319.9486	-0.0009662	5319.9486	-0.0009662	5319.9486	-0.0009662
	138	5319.9486	-0.0009662	5319.9486	-0.0009662	5319.9486	-0.0009662
30	102	5319.9516	-0.0009098	5319.9520	-0.0009023	5319.9520	-0.0009023
	120	5319.9520	-0.0009023	5319.9520	-0.0009023	5319.9520	-0.0009023
	138	5319.9513	-0.0009154	5319.9520	-0.0009023	5319.9520	-0.0009023
20	102	5319.9590	-0.0007707	5319.9590	-0.0007707	5319.9590	-0.0007707
	120	5319.9590	-0.0007707	5319.9587	-0.0007763	5319.9590	-0.0007707
	138	5319.9590	-0.0007707	5319.9590	-0.0007707	5319.9593	-0.0007650
10	102	5319.9677	-0.0006071	5319.9683	-0.0005959	5319.9687	-0.0005883
	120	5319.9677	-0.0006071	5319.9683	-0.0005959	5319.9683	-0.0005959
	138	5319.9683	-0.0005959	5319.9683	-0.0005959	5319.9690	-0.0005827
0	102	5319.9810	-0.0003571	5319.9807	-0.0003628	5319.9810	-0.0003571
	120	5319.9807	-0.0003628	5319.9810	-0.0003571	5319.9813	-0.0003515
	138	5319.9807	-0.0003628	5319.9810	-0.0003571	5319.9813	-0.0003515
-10	102	5319.9897	-0.0001936	5319.9890	-0.0002068	5319.9893	-0.0002011
	120	5319.9890	-0.0002068	5319.9893	-0.0002011	5319.9897	-0.0001936
	138	5319.9887	-0.0002124	5319.9897	-0.0001936	5319.9897	-0.0001936
-20	102	5319.9973	-0.0000508	5319.9960	-0.0000752	5319.9960	-0.0000752
	120	5319.9963	-0.0000695	5319.9960	-0.0000752	5319.9960	-0.0000752
	138	5319.9963	-0.0000695	5319.9960	-0.0000752	5319.9960	-0.0000752
-30	102	5319.9930	-0.0001316	5319.9930	-0.0001316	5319.9933	-0.0001259
	120	5319.9927	-0.0001372	5319.9927	-0.0001372	5319.9923	-0.0001447
	138	5319.9933	-0.0001259	5319.9930	-0.0001316	5319.9930	-0.0001316

5.7 BAND EDGES MEASUREMENT

5.7.1 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SPECTRUM ANALYZER	FSEK30	100049	Aug. 12, 2005

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

5.7.2 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer via a low lose cable. Set both RBW and VBW of spectrum analyzer to 1MHz with suitable frequency span including 100 MHz bandwidth from band edge. The band edges was measured and recorded.

5.7.3 EUT OPERATING CONDITION

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

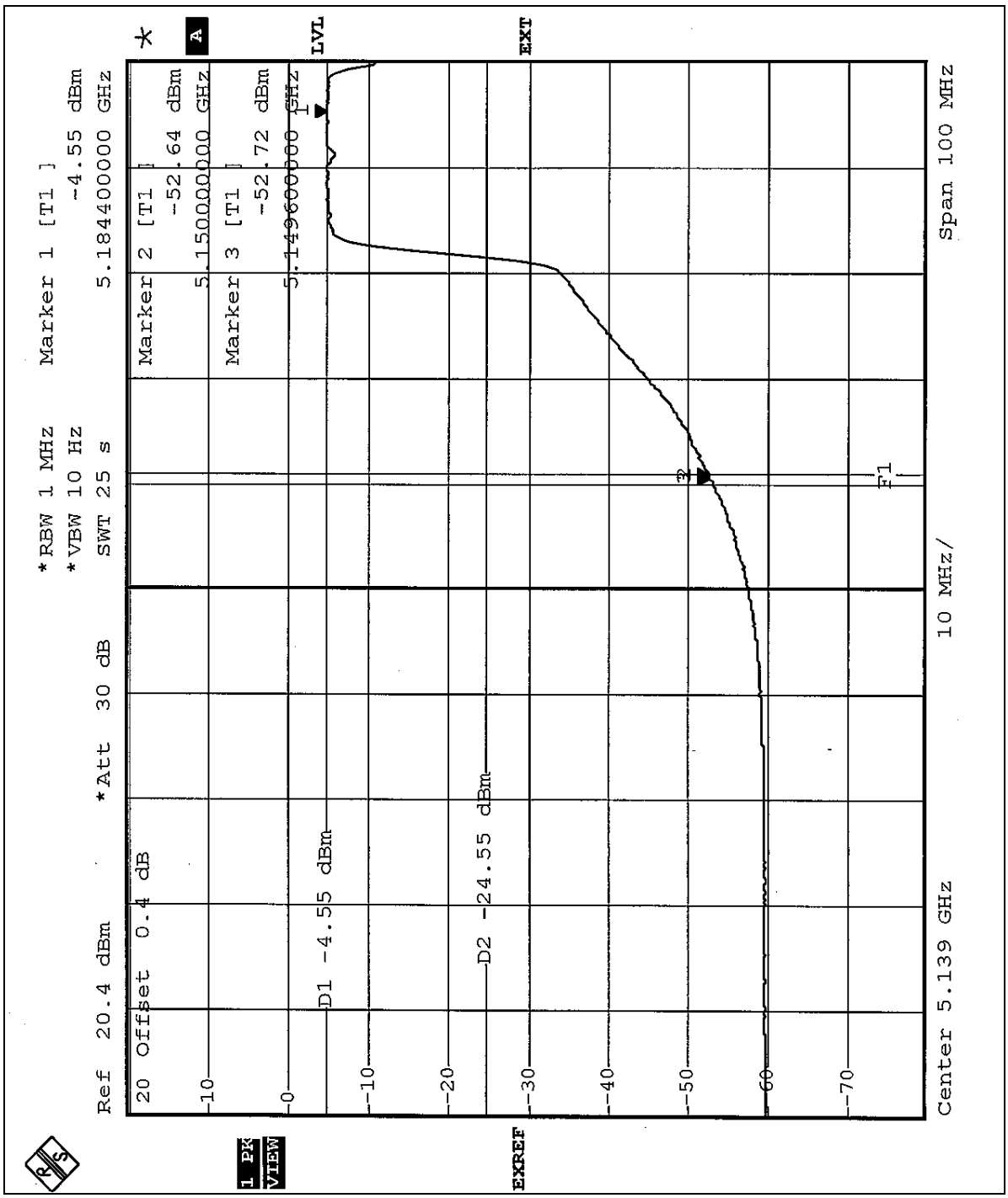
5.7.4 TEST RESULTS

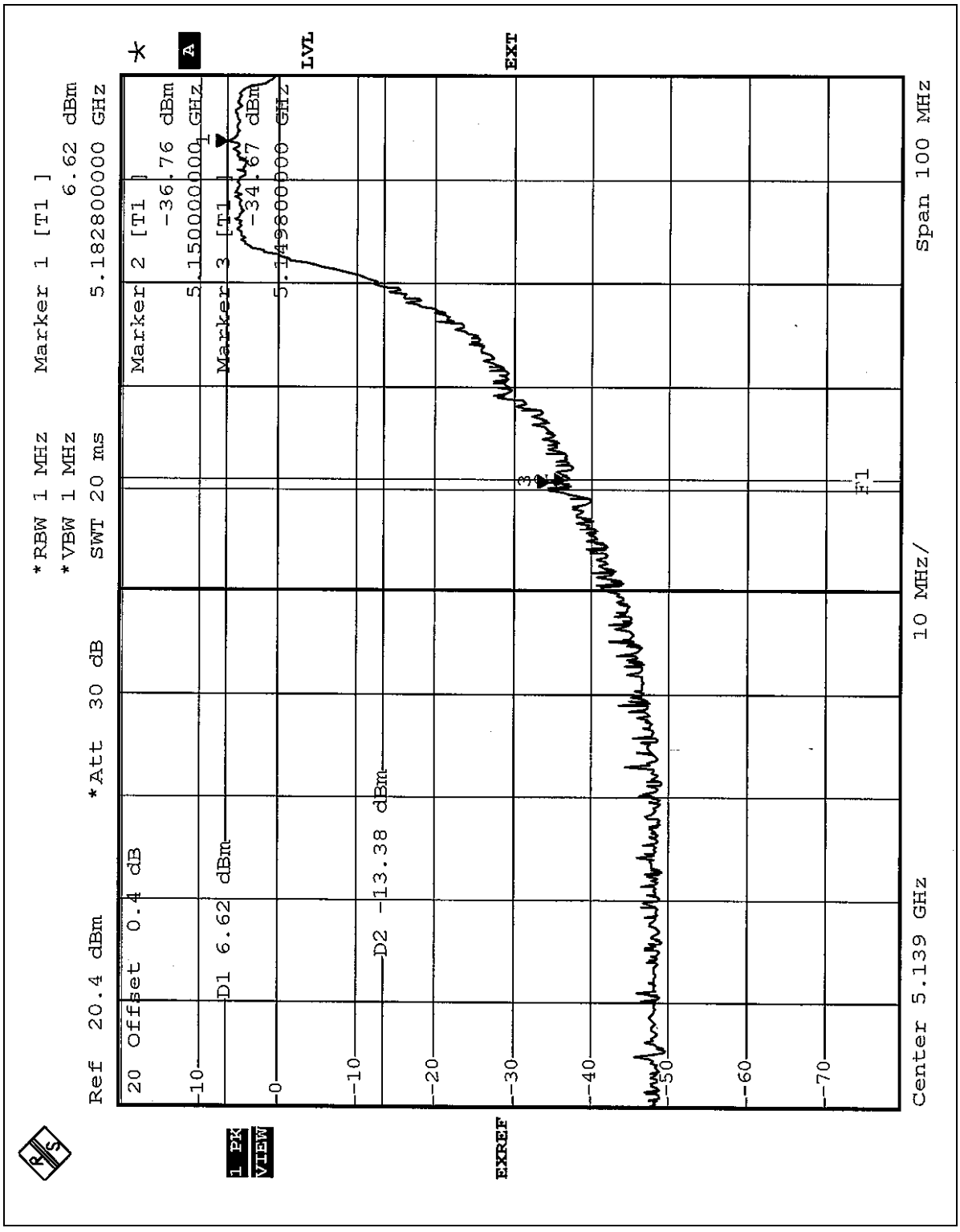
For signals in the restricted bands above and below the 5.15 to 5.35GHz allocated band a measurement was made of the amplitude of the spurious emissions with respect to the intentional signals. The relative amplitude, in dBc, was applied to the average and peak filed strength of the intentional signal made on the OATS to calculate the field strength of the unintentional signals.

The spectrum plots (Average RBW=1MHz, VBW=300Hz) are attached on the following 4 pages.

Normal Mode: Channel 1 (5180 MHz)

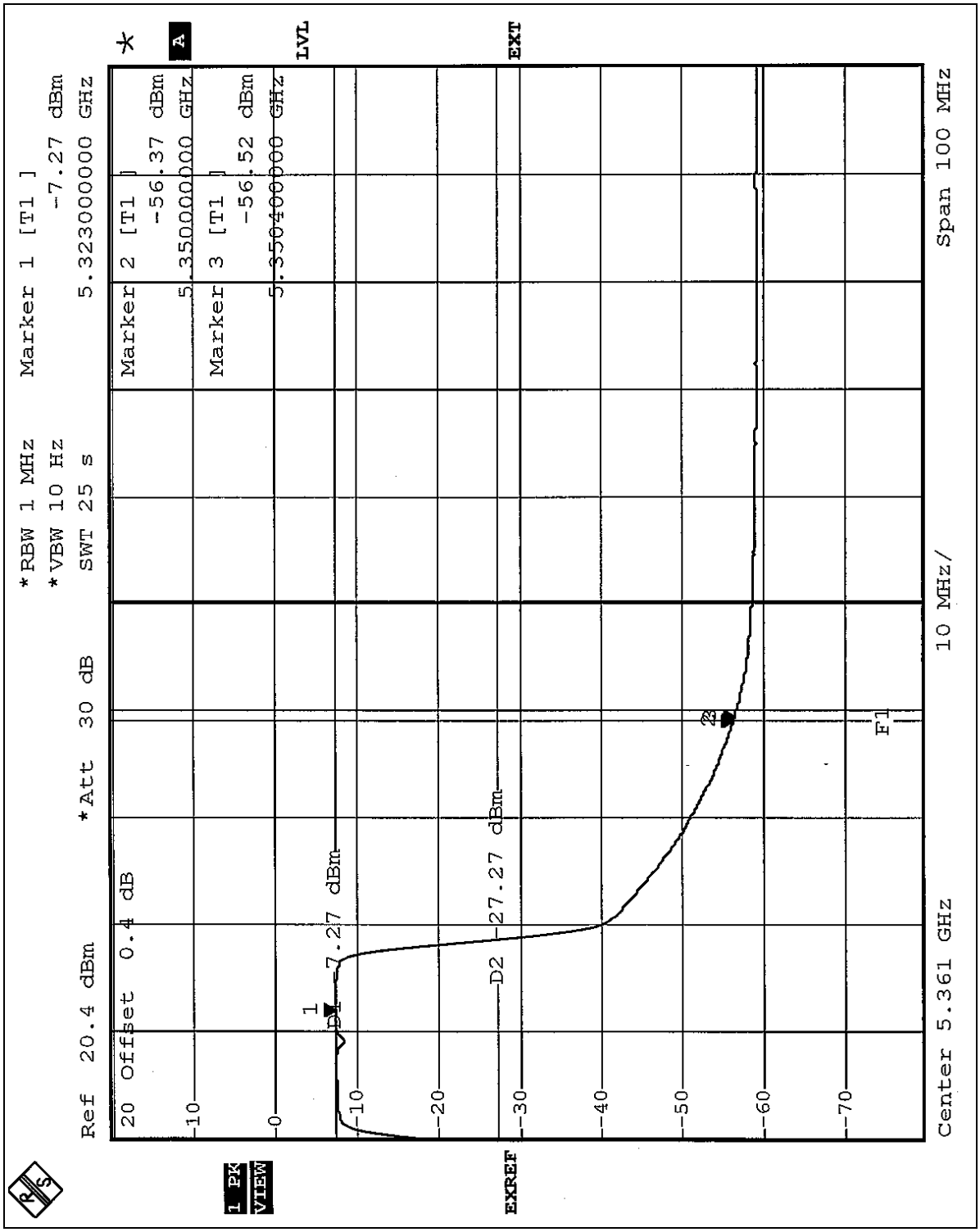
The band edge emission plot on the following page shows 48.09dBc (Average) / 41.29dBc (Peak) between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 1 (normal mode) is 98.57dBuV/m, so the maximum field strength in restrict band is 98.57-48.09=50.48dBuV/m which is under 54dBuV/m limit.

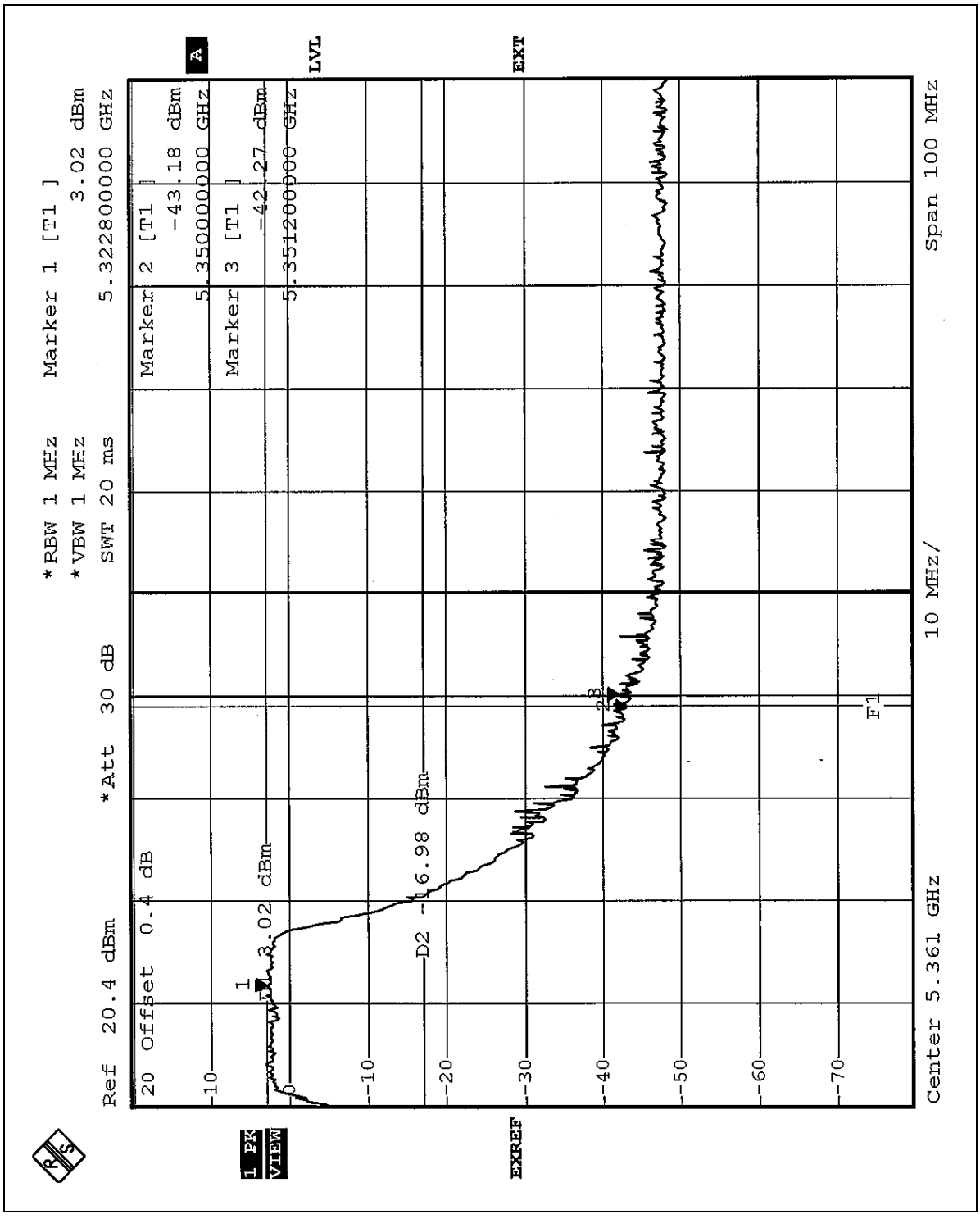



Ref 20.4 dBm
20 Offset 0.4 dB
*Att 30 dB
*RBW 1 MHz
*VBW 1 MHz
SWT 20 ms
Marker 1 [T1]
6.62 dBm
5.182800000 GHz
Marker 2 [T1]
-36.76 dBm
5.150000000 GHz
Marker 3 [T1]
-34.67 dBm
5.149800000 GHz
D1 6.62 dBm
D2 -13.38 dBm
LVL
EXT
EXREF
1 PK VIEW
Center 5.139 GHz
10 MHz/
Span 100 MHz

Normal Mode: Channel 8 (5320 MHz)

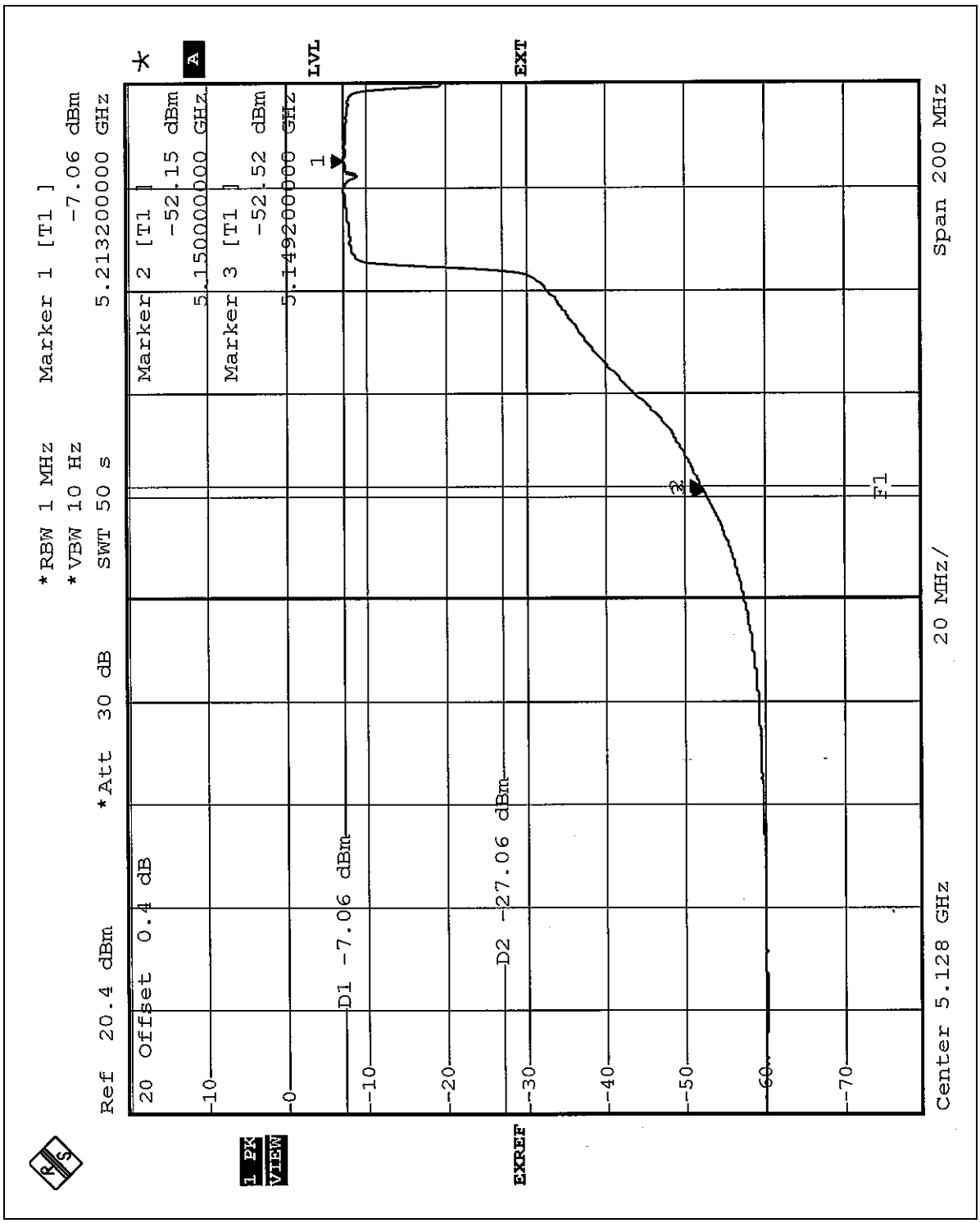
The band edge emission plot on the following page shows 49.10dBc (Average) / 45.29dBc (Peak) between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 8 (normal mode) is 95.08dBuV/m, so the maximum field strength in restrict band is 95.08-49.10=45.98dBuV/m which is under 54dBuV/m limit.

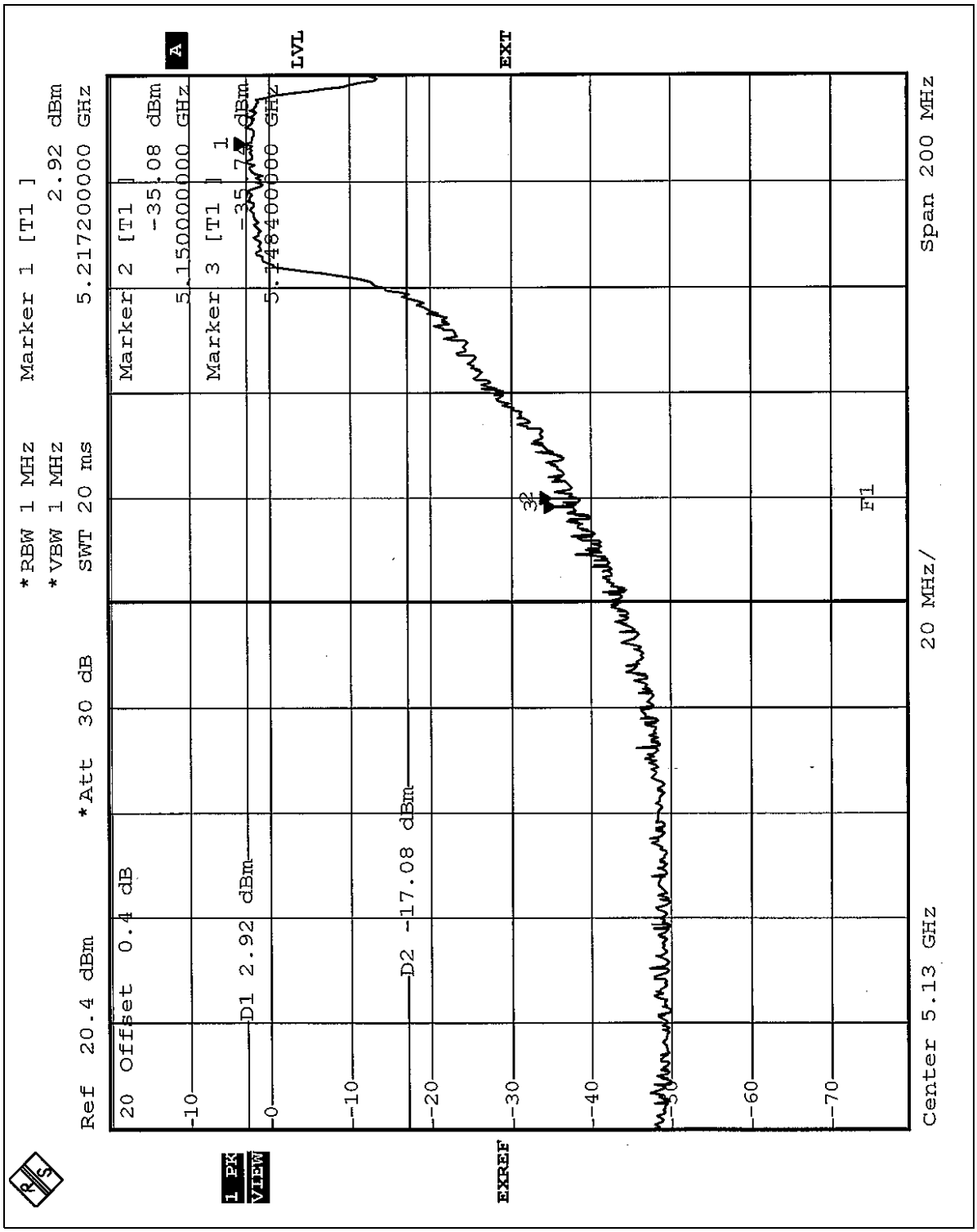



Ref 20.4 dBm
20 Offset 0.4 dB
*Att 30 dB
*RBW 1 MHz
*VBW 1 MHz
SWT 20 ms
Marker 1 [T1]
3.02 dBm
5.322800000 GHz
Marker 2 [T1]
-43.18 dBm
5.350000000 GHz
Marker 3 [T1]
-42.27 dBm
5.351200000 GHz
D2 -16.98 dBm
1 PK VIEW
LVL
EXT
EXREF
A
F1
Center 5.361 GHz
10 MHz/
Span 100 MHz

Turbo Mode: Channel 1 (5210 MHz)

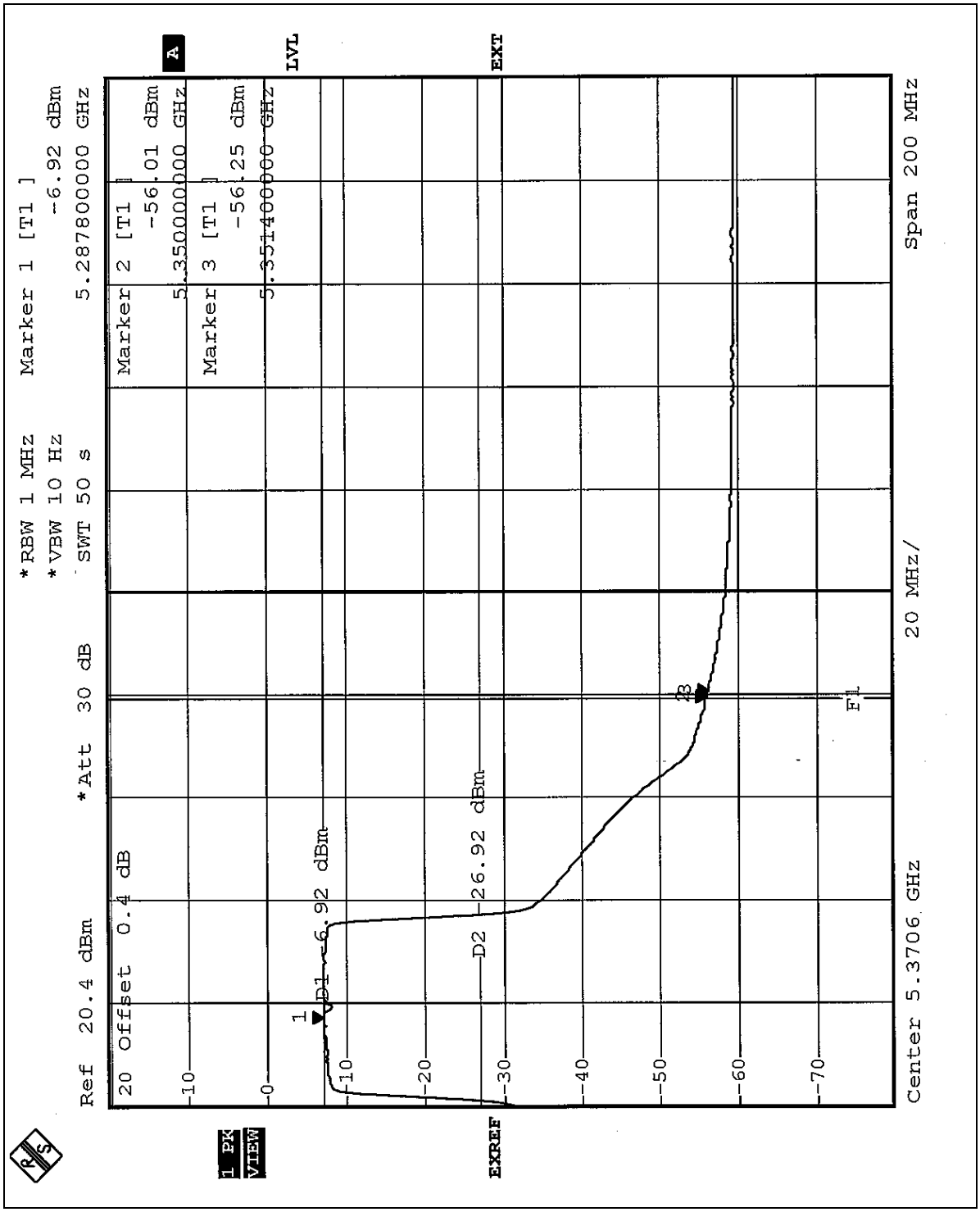
The band edge emission plot on the following page shows 45.09dBc (Average) / 38.00dBc (Peak) between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 1 (trubo mode) is 94.47dBuV/m, so the maximum field strength in restrict band is 94.47-45.09=49.38dBuV/m which is under 54dBuV/m limit.

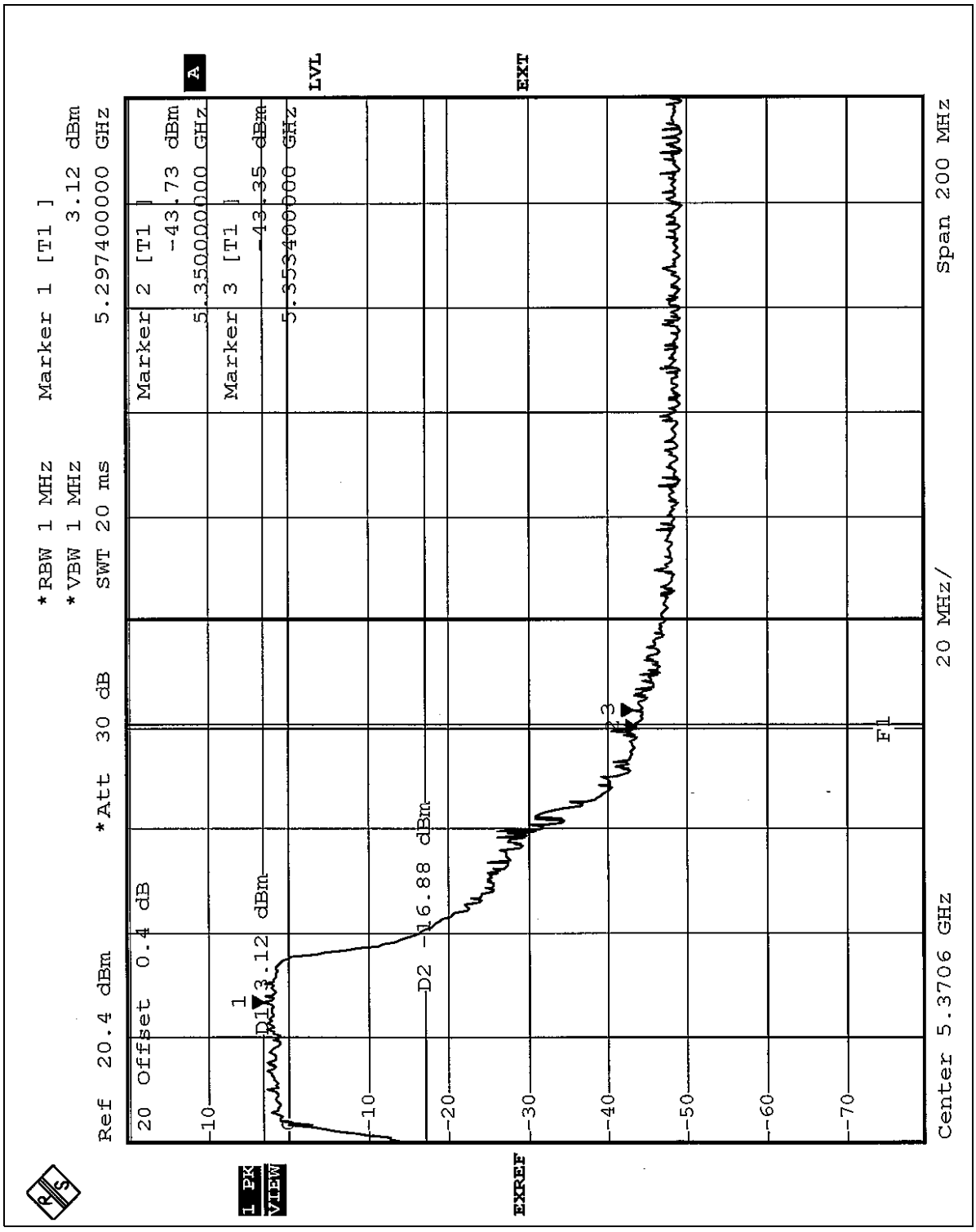



Ref 20.4 dBm
20 Offset 0.4 dB
*RBW 1 MHz
*VBW 1 MHz
*Att 30 dB
SWT 20 ms
Marker 1 [T1]
2.92 dBm
5.217200000 GHz
Marker 2 [T1]
-35.08 dBm
5.150000000 GHz
Marker 3 [T1]
-35.74 dBm
5.748400000 GHz
D1 2.92 dBm
D2 -17.08 dBm
Center 5.13 GHz
20 MHz/
Span 200 MHz
LVL
EXT
EXREF
1 PK
VIEW
A
F1

Turbo Mode: Channel 3 (5290 MHz)

The band edge emission plot on the following page shows 49.09dBc (Average) / 46.47dBc (Peak) between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 3 (turbo mode) is 95.44dBuV/m, so the maximum field strength in restrict band is 95.44-49.09=46.35dBuV/m which is under 54dBuV/m limit.




Ref 20.4 dBm
20 Offset 0.4 dB
*Att 30 dB
*RBW 1 MHz
*VBW 1 MHz
SWT 20 ms
Marker 1 [T1]
3.12 dBm
5.297400000 GHz
Marker 2 [T1]
-43.73 dBm
5.350000000 GHz
Marker 3 [T1]
-43.35 dBm
5.353400000 GHz
D1 3.12 dBm
D2 -16.88 dBm
Center 5.3706 GHz
20 MHz/
Span 200 MHz
1 PK VIEW
EXREF
LVL
EXT
A

5.8 ANTENNA REQUIREMENT

5.8.1 STANDARD APPLICABLE

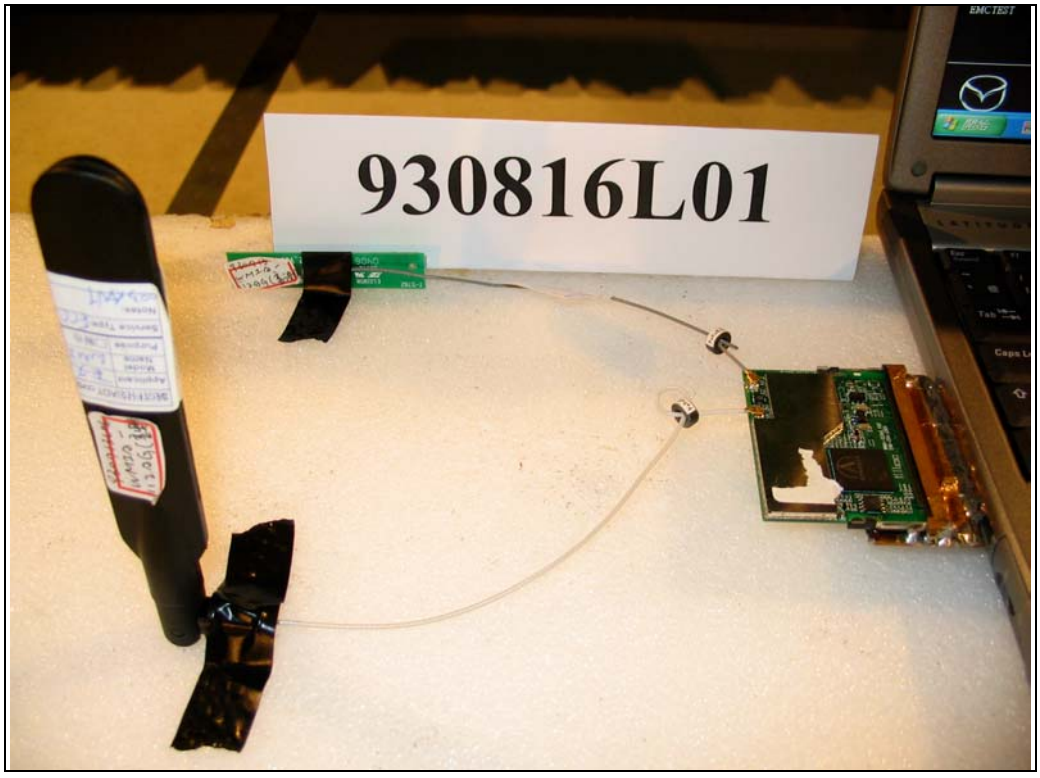
For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.
And according to FCC 47 CFR Section 15.407(a), if transmitting antennas of directional 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.

5.8.2 ANTENNA CONNECTED CONSTRUCTION

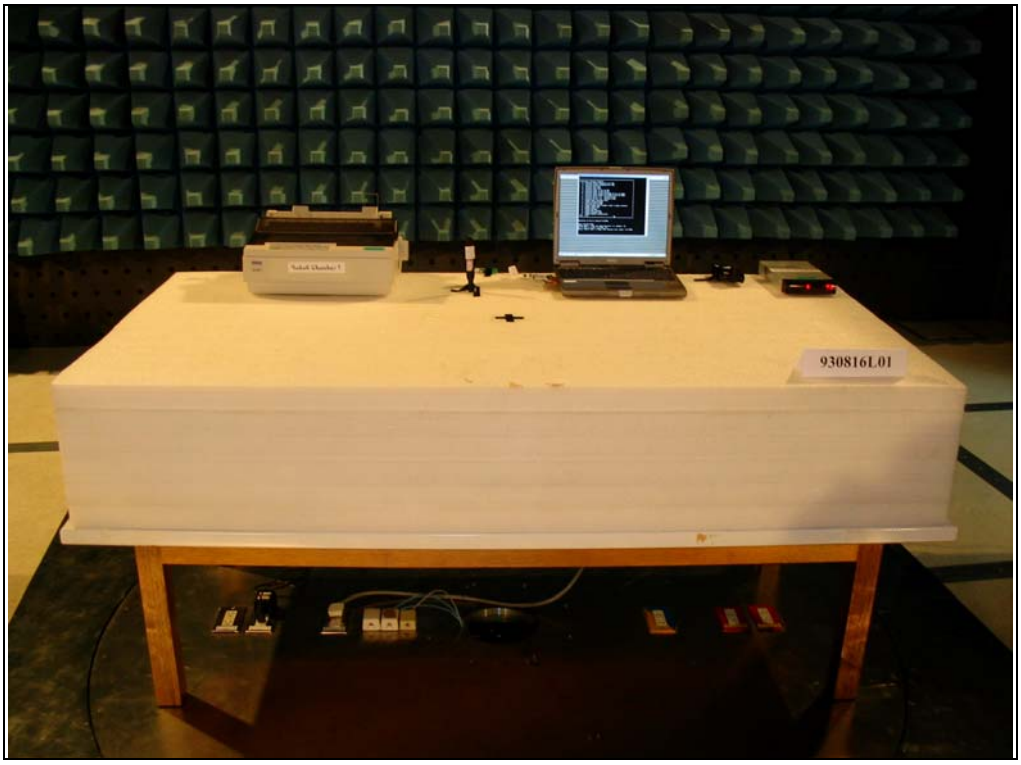
The antennas used in this product are Printed antenna and Dipole antenna with UFL antenna connector. The maximum Gain of the antenna is 5.0dBi.

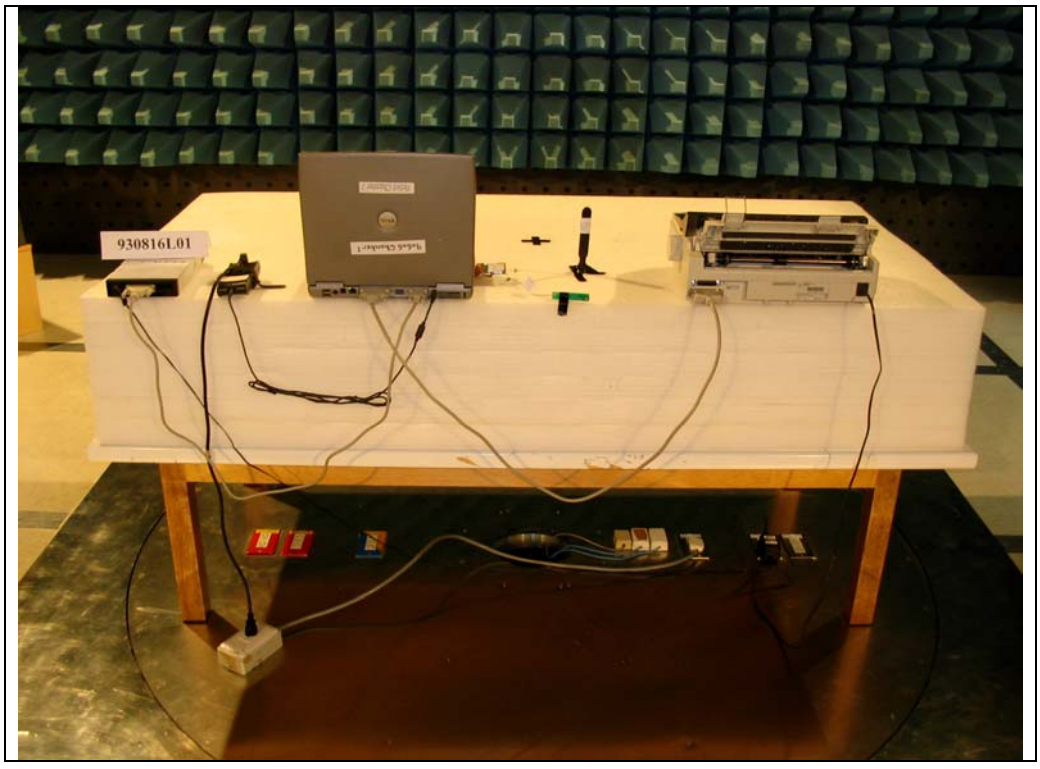
6. PHOTOGRAPHS OF THE TEST CONFIGURATION

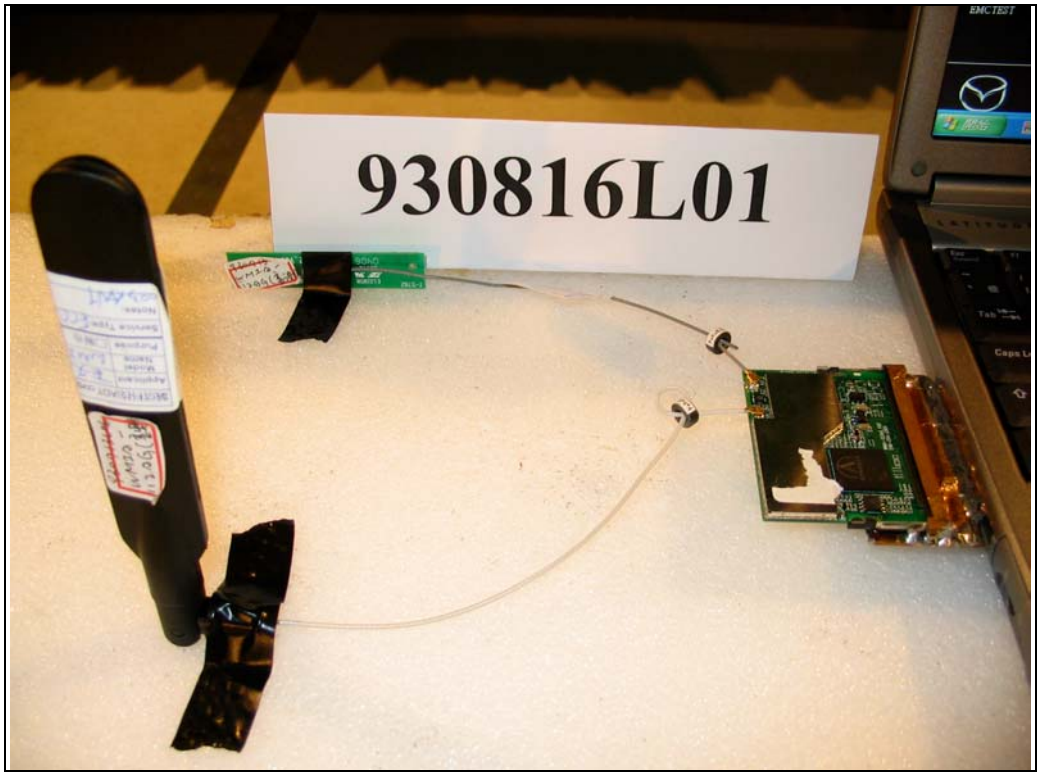
CONDUCTED EMISSION TEST


930816L01

RADIATED EMISSION TEST






930816L01

7. 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, A2LA
Germany	TUV Rheinland
Japan	VCCI
Norway	NEMKO
Canada	INDUSTRY CANADA , CSA
R.O.C.	CNLA, BSMI, DGT
Netherlands	Telefication
Singapore	PSB , GOST-ASIA(MOU)
Russia	CERTIS(MOU)

Copies of accreditation certificates of our laboratories obtained from approval agencies can be downloaded from our web site: www.adt.com.tw/index.5/phtml. If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab:
Tel: 886-2-26052180
Fax: 886-2-26052943

Hsin Chu EMC/RF Lab:
Tel: 886-3-5935343
Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety Telecom Lab:
Tel: 886-3-3183232
Fax: 886-3-3185050

Linko RF Lab.
Tel: 886-3-3270910
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The address and road map of all our labs can be found in our web site also

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