FCC TEST REPORT

REPORT NO.: RF921011R05
MODEL NO.: GN-A15AG
RECEIVED: February 27, 2004
TESTED: February 26 ~ March 25, 2004

APPLICANT: GIGA-BYTE TECHNOLOGY CO., LTD.
ADDRESS: No. 6, Bau Chiang Road, Hsin-Tien, Taipei Hsien, Taiwan, R.O.C

ISSUED BY: Advance Data Technology Corporation
LAB LOCATION: 47 14th Lin, Chiapau Tsun, Linko, Taipei, Taiwan, R.O.C.

0528
ILAC MRA

Table of Contents

1 CERTIFICATION

PRODUCT :	IEEE 802.11a+g Wireless Access Point
BRAND NAME :	GIGABYTE
MODEL NO. :	GN-A15AG
TEST ITEM:	ENGINEERING SAMPLE
APPLICANT :	GIGA-BYTE TECHNOLOGY CO., LTD.
STANDARDS :	FCC Part 15, Subpart C (Section 15.247), Subpart E (Section 15.247), ANSI C63.4-1992

We, **Advance Data Technology Corporation**, hereby certify that one sample of the designation has been tested in our facility from February 26, 2004 to March 25, 2004. The test record, data evaluation and Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions herein specified.

PREPARED BY: Stacy Hsueh , **DATE:** March 26, 2004
Stacy Hsueh

APPROVED BY: , **DATE:** March 26, 2004
Ellis Wu / Manager

2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 15, Subpart C			
Standard Section	**Test Type and Limit**	**Result**	**REMARK**
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit Minimum passing margin is –16.64dB at 0.838MHz
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 –2.01dB at 2483.50MHz
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

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

APPLIED STANDARD: FCC Part 15, Subpart E			
Standard Section	**Test Type**	**Result**	**REMARK**
15.407(b)(5)	AC Power Conducted Emission	PASS	Meet the requirement of limit Minimum passing margin is –21.99dB at 1.090MHz
15.407(b/1/2/3)(b)(5)	Electric Field Strength Spurious Emissions, 30MHz ~ 40000MHz	PASS	Meet the requirement of limit Minimum passing margin is –2.67dB at 400.01MHz
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

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

3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	IEEE 802.11a+g Wireless Access Point
MODEL NO.	GN-A15AG
POWER SUPPLY	5.0Vdc from AC Adapter
MODULATION TYPE	BPSK, QPSK, 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 1)
FREQUENCY RANGE	802.11b and 802.11g: 2412~2462MHz 802.11a: 5.15~5.35GHz and 5.725~5.825GHz
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 and 802.11g: 5MHz 802.11a: 20MHz for Normal mode / 40MHz for Turbo mode
OUTPUT POWER	802.11b : 20.25dBm and 802.11g: 18.17dBm 802.11a: 17.76dBm
DATA CABLE	NA
ANTENNA TYPE	Dipole antenna with 2.0dBi antenna gain
I/O PORTS	RJ45
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 EUT were powered by the two adapter:

BRAND :	Fairway
MODEL :	WN10A-050
INPUT :	100-240Vac, 1A , 50-60Hz
OUTPUT :	5Vdc, 2A

4. 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.
2. Above 1GHz, the channel 1, 6, and 11 were tested individually.
3. Transfer rate of 11Mbps with CCK technique and 6Mbps with OFDM technique, the worst cases, were chosen for final test.

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: Thirteen channels are provided to this EUT for Normal mode.

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

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).
4. Channel 1, 4, 5, 8, 9, 12 and 13 are the closest frequencies to the band edge, were chosen for final test of Normal Mode.

5. Channel 1~5 were chosen for final test of Turbo mode.

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a IEEE 802.11a+g Wireless Access Point. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

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

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

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

3.4 DESCRIPTION OF SUPPORT UNITS

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

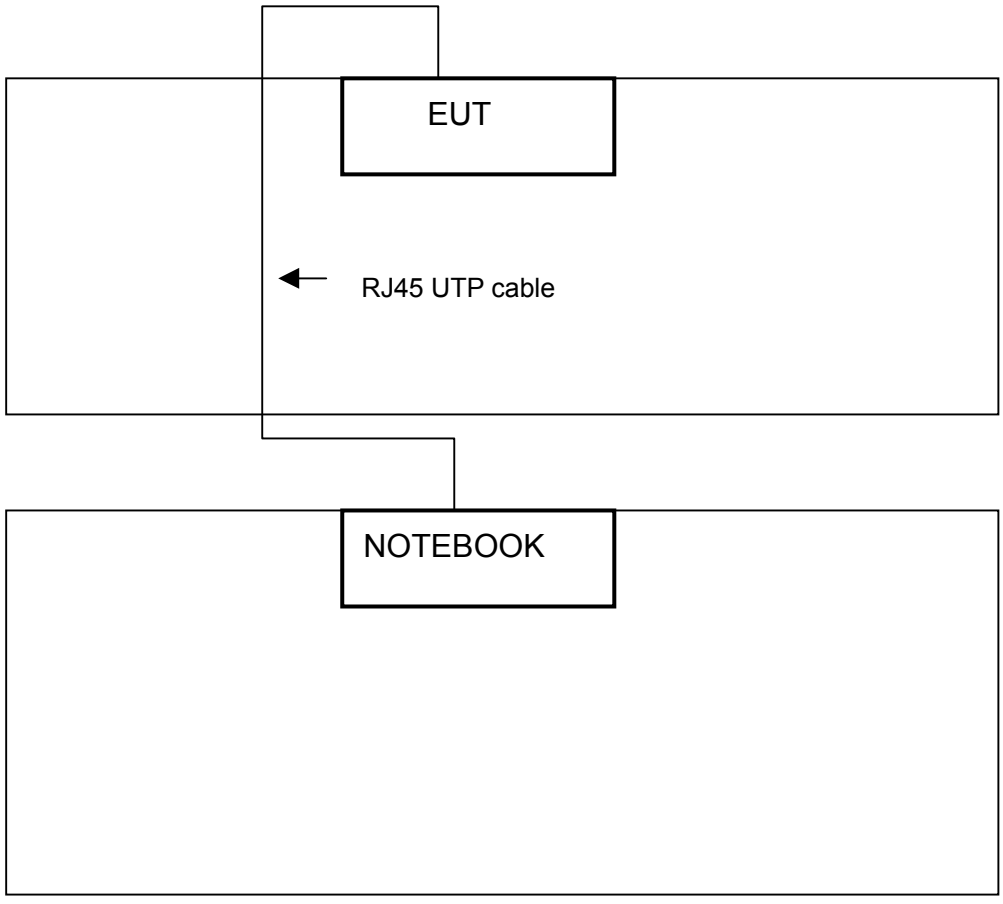
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK	Compaq	N800C	470048-515	FCC DoC Approved

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

NOTE:

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

3.5 CONFIGURATION OF SYSTEM UNDER TEST



4 TEST TYPES AND RESULTS (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	MODEL NO.	MANUFACTURER	SERIAL NO.	CALIBRATED UNTIL
Test Receiver	ESCS30	ROHDE & SCHWARZ	100291	Dec. 12, 2004
RF signal cable	5D-FB	Woken	Cable-HYC01-01	Mar. 02, 2005
LISN	ESH3-Z5	ROHDE & SCHWARZ	847265/023	Oct. 22, 2004
LISN	ESH3-Z5	ROHDE & SCHWARZ	100220	Dec. 10, 2004
Software	ADT_Cond_V3	ADT	NA	X

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

2. The test was performed in HwaYa Shielded Room 1.

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.

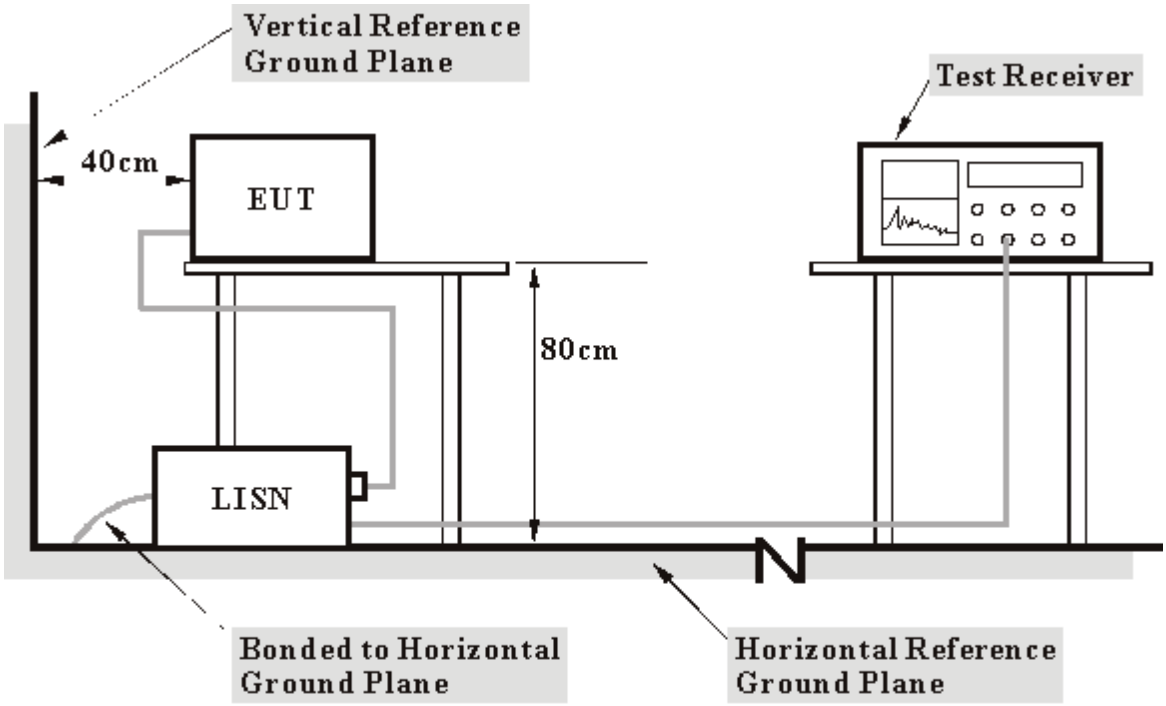
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

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

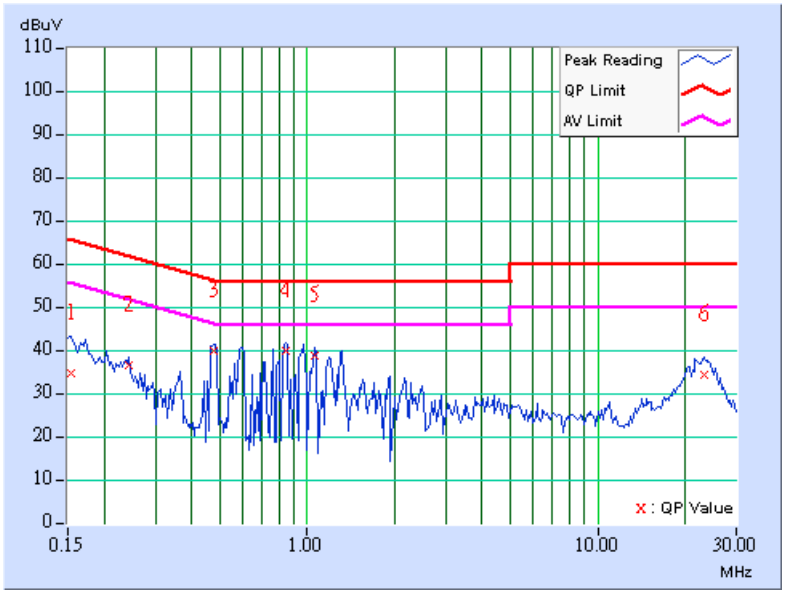
a. Placed the EUT on the testing table.
b. Prepared another notebook system to act as a communication partner and placed it outside of testing area.
c. The communication partner ran a test program(provided by manufacturer) to enable EUT under transmission/receiving condition continuously at specific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

4.1.7 TEST RESULTS

EUT	IEEE 802.11a+g Wireless Access Point	MODEL	GN-A15AG
MODE	Channel 1	6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	TESTED BY: Steven Lu	

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.154	0.11	33.66	-	33.77	-	65.79	55.79	-32.02	-
2	0.244	0.12	35.56	-	35.68	-	61.97	51.97	-26.29	-
3	0.478	0.13	38.91	-	39.04	-	56.37	46.37	-17.33	-
4	0.841	0.14	39.04	-	39.18	-	56.00	46.00	-16.82	-
5	1.064	0.15	37.80	-	37.95	-	56.00	46.00	-18.05	-
6	23.127	1.11	33.25	-	34.36	-	60.00	50.00	-25.64	-

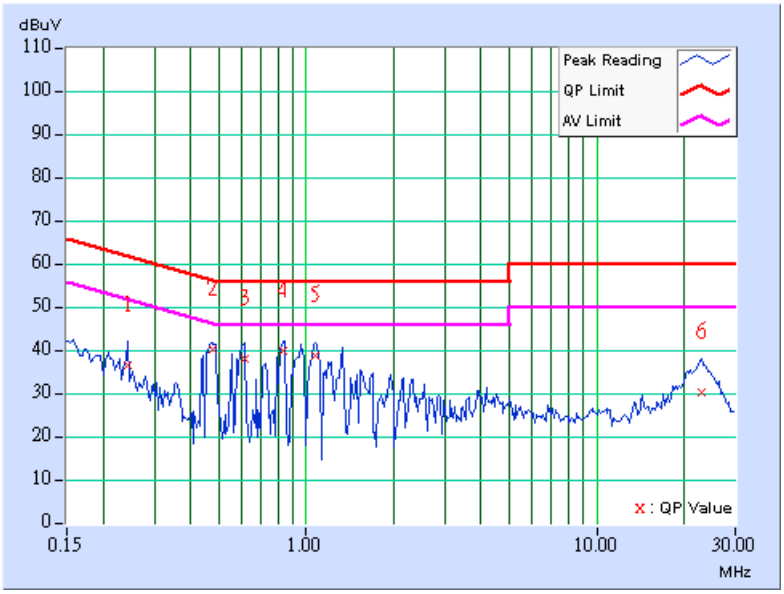
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	IEEE 802.11a+g Wireless Access Point	**MODEL**	GN-A15AG
MODE	Channel 1	**6dB BANDWIDTH**	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**PHASE**	Neutral (N)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	**TESTED BY**: Steven Lu	

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.244	0.11	35.92	-	36.03	-	61.97	51.97	-25.94	-
2	0.474	0.12	39.54	-	39.66	-	56.44	46.44	-16.78	-
3	0.611	0.12	37.59	-	37.71	-	56.00	46.00	-18.29	-
4	**0.838**	**0.14**	**39.22**	**-**	**39.36**	**-**	**56.00**	**46.00**	**-16.64**	**-**
5	1.072	0.15	38.27	-	38.42	-	56.00	46.00	-17.58	-
6	22.838	0.69	29.64	-	30.33	-	60.00	50.00	-29.67	-

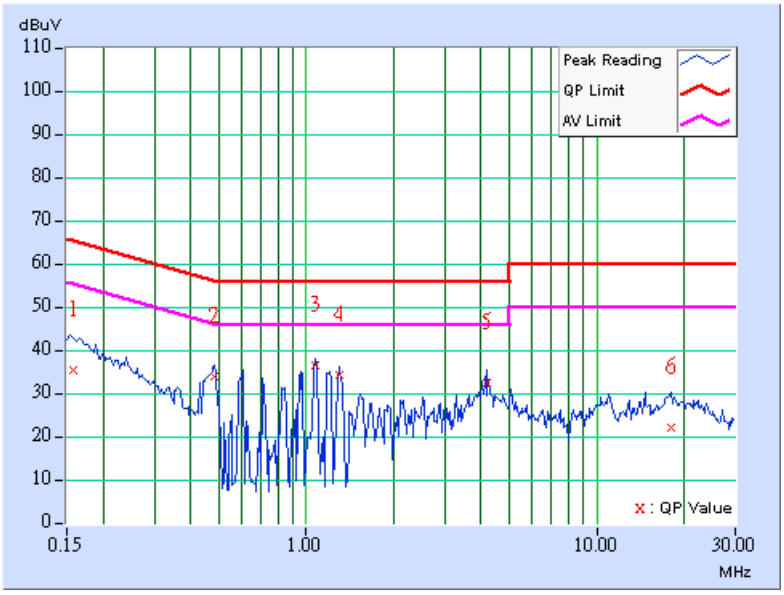
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	IEEE 802.11a+g Wireless Access Point	**MODEL**	GN-A15AG
MODE	Channel 6	**6dB BANDWIDTH**	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**PHASE**	Line (L)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	**TESTED BY**: Steven Lu	

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.158	0.11	34.62	-	34.73	-	65.58	55.58	-30.85	-
2	0.482	0.13	33.02	-	33.15	-	56.30	46.30	-23.16	-
3	1.078	0.15	35.59	-	35.74	-	56.00	46.00	-20.26	-
4	1.301	0.15	33.55	-	33.70	-	56.00	46.00	-22.30	-
5	4.161	0.21	31.62	-	31.83	-	56.00	46.00	-24.17	-
6	18.110	0.93	21.37	-	22.30	-	60.00	50.00	-37.70	-

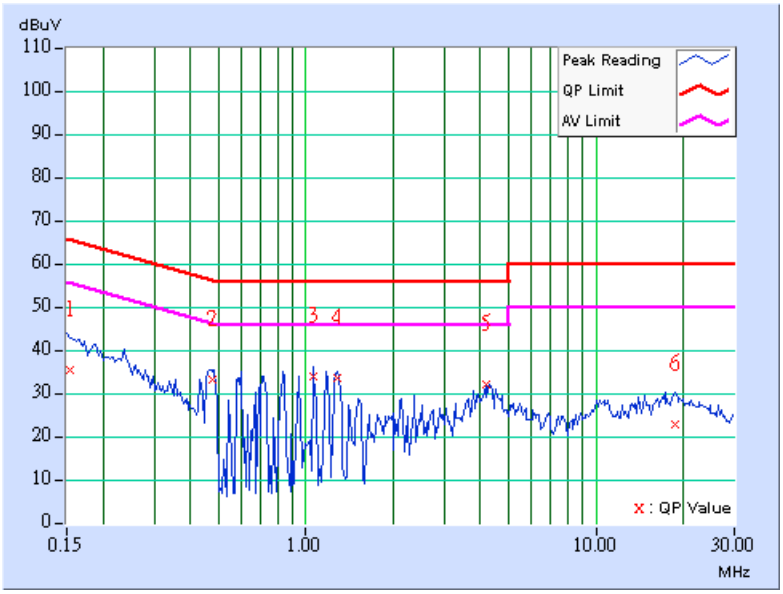
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	IEEE 802.11a+g Wireless Access Point	**MODEL**	GN-A15AG
MODE	Channel 6	**6dB BANDWIDTH**	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**PHASE**	Neutral (N)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	**TESTED BY**: Steven Lu	

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.154	0.10	34.79	-	34.89	-	65.79	55.79	-30.90	-
2	0.474	0.12	32.73	-	32.85	-	56.44	46.44	-23.59	-
3	1.057	0.15	33.29	-	33.44	-	56.00	46.00	-22.56	-
4	1.284	0.15	33.16	-	33.31	-	56.00	46.00	-22.69	-
5	4.161	0.20	31.64	-	31.84	-	56.00	46.00	-24.16	-
6	18.656	0.69	22.20	-	22.89	-	60.00	50.00	-37.11	-

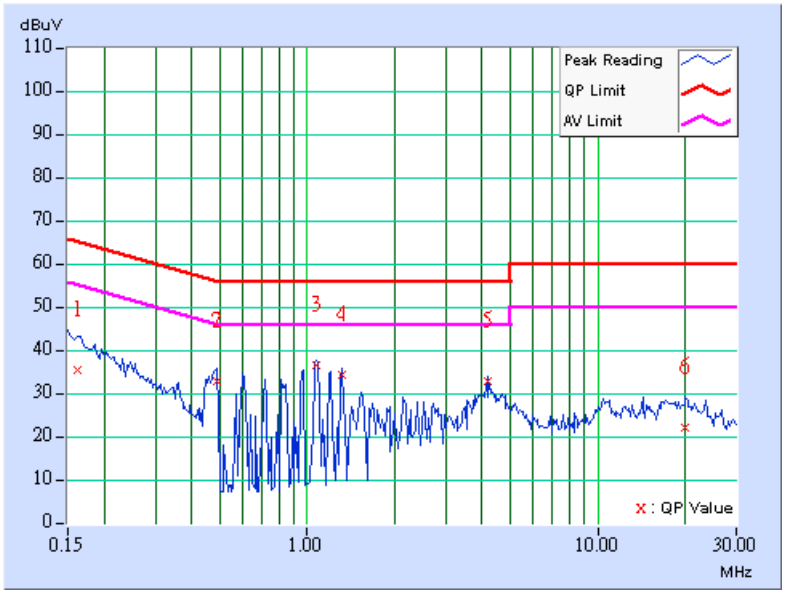
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	IEEE 802.11a+g Wireless Access Point	**MODEL**	GN-A15AG
MODE	Channel 11	**6dB BANDWIDTH**	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	**PHASE**	Line (L)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	**TESTED BY**: Steven Lu	

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.162	0.11	34.52	-	34.63	-	65.38	55.38	-30.75	-
2	0.486	0.13	32.13	-	32.26	-	56.24	46.24	-23.98	-
3	1.078	0.15	35.55	-	35.70	-	56.00	46.00	-20.30	-
4	1.316	0.15	33.48	-	33.63	-	56.00	46.00	-22.37	-
5	4.160	0.21	31.80	-	32.01	-	56.00	46.00	-23.99	-
6	19.910	1.02	21.14	-	22.16	-	60.00	50.00	-37.84	-

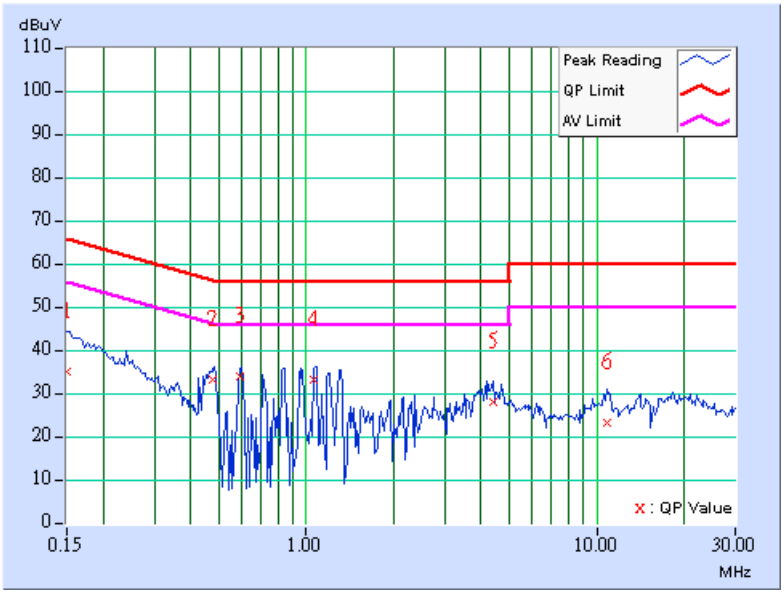
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	IEEE 802.11a+g Wireless Access Point	MODEL	GN-A15AG
MODE	Channel 11	6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	PHASE	Neutral (N)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	TESTED BY: Steven Lu	

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	0.10	34.76	-	34.86	-	66.00	56.00	-31.14	-
2	0.474	0.12	33.05	-	33.17	-	56.44	46.44	-23.27	-
3	0.594	0.12	33.57	-	33.69	-	56.00	46.00	-22.31	-
4	1.065	0.15	33.13	-	33.28	-	56.00	46.00	-22.72	-
5	4.391	0.21	27.85	-	28.06	-	56.00	46.00	-27.94	-
6	10.895	0.34	22.94	-	23.28	-	60.00	50.00	-36.72	-

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



4.2 RADIATED EMISSION MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

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

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

NOTE:

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

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
* HP Spectrum Analyzer	8590L	3544A01176	Jun. 10, 2004
* HP Preamplifier	8447D	2944A08485	May 01, 2004
* HP Spectrum Analyzer	8593E	3926A04191	Mar. 24, 2005
* HP Preamplifier	8449B	3008A01292	Aug. 13, 2004
ROHDE & SCHWARZ TEST RECEIVER	ESI7	838496/016	Feb. 23, 2005
* ROHDE & SCHWARZ TEST RECEIVER	ESMI	839013/007 839379/002	Feb. 12, 2005
SCHAFFNER Tunable Dipole Antenna SCHWARZBECK Tunable Dipole Antenna	VHBA 9123 UHA 9105	459 977	Jun. 26, 2004
* CHASE BILOG Antenna	CBL6112A	2221	Jul. 26, 2004
* SCHWARZBECK Horn Antenna	BBHA9120-D1	D130	Jun. 30, 2004
* EMCO Turn Table	1060	1115	NA
* CHANCE Tower	CM-AT40	CM-A010	NA
* Software	ADT_Radiated_V5.14	NA	NA
* ANRITSU RF Switches	MP59B	M35046	Oct. 9, 2004
* TIMES RF cable	LMR-600	CABLE-ST5-01	Oct. 9, 2004

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

2. "*" = These equipment are used for the final measurement.
3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
4. The test was performed in ADT Open Site No. 5.
5. The VCCI Site Registration No. is R-1039.

4.2.3 TEST PROCEDURES

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

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

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

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

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

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

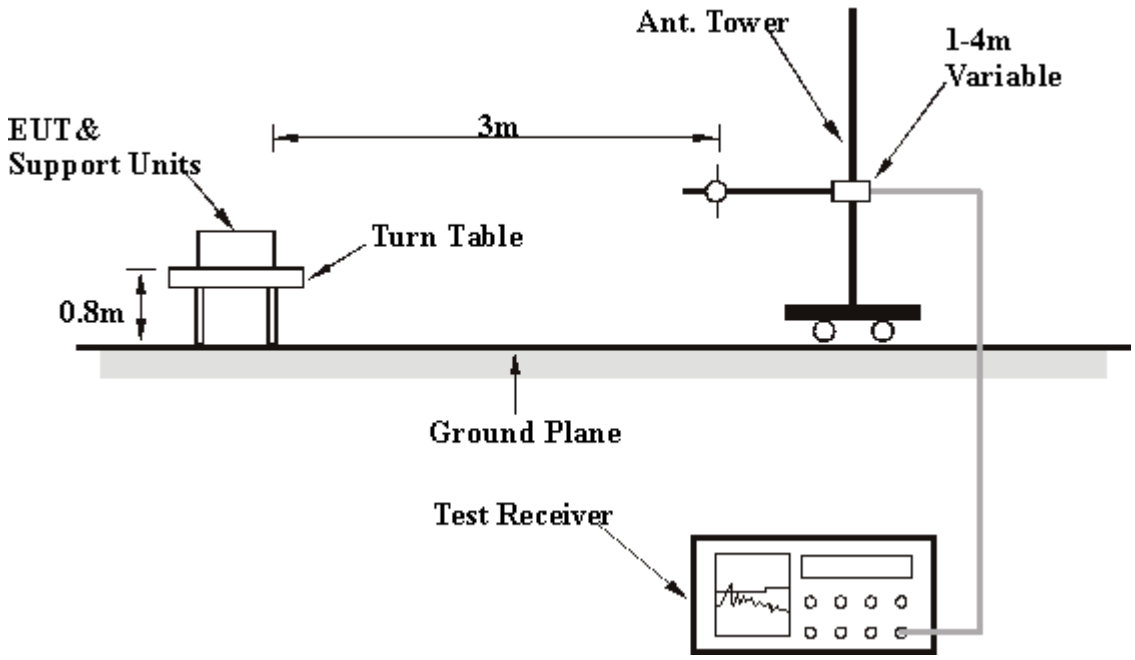
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10Hz 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	IEEE 802.11a+g Wireless Access Point	**MODEL**	GN-A15AG
CHANNEL	Channel 11	**FREQUENCY RANGE**	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Quasi-Peak
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	**TESTED BY**: Vincent Lin	

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	125.01	30.19 QP	43.50	-13.31	1.45 H	53	17.63	12.56
2	179.76	31.41 QP	43.50	-12.09	1.21 H	230	21.38	10.03
3	233.34	33.50 QP	46.00	-12.50	1.81 H	359	21.15	12.35
4	240.02	37.35 QP	46.00	-8.65	1.48 H	359	24.59	12.76
5	250.03	33.30 QP	46.00	-12.70	1.64 H	308	19.93	13.37
6	300.01	38.33 QP	46.00	-7.67	2.04 H	337	22.91	15.42
7	319.99	35.16 QP	46.00	-10.84	1.07 H	359	19.42	15.74
8	366.68	35.56 QP	46.00	-10.44	1.16 H	214	18.71	16.85
9	400.01	43.33 QP	46.00	-2.67	1.00 H	44	25.25	18.08
10	480.01	42.94 QP	46.00	-3.06	1.00 H	57	23.60	19.34
11	500.01	40.49 QP	46.00	-5.51	1.00 H	92	20.57	19.92
12	560.01	42.53 QP	46.00	-3.47	2.24 H	281	21.75	20.78
13	799.99	35.74 QP	46.00	-10.26	1.31 H	359	12.41	23.33
14	879.99	37.54 QP	46.00	-8.46	1.49 H	99	13.42	24.12

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	IEEE 802.11a+g Wireless Access Point	MODEL	GN-A15AG
CHANNEL	Channel 11	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	TESTED BY: Vincent Lin	

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	75.02	35.55 QP	40.00	-4.45	1.00 V	359	28.40	7.15
2	80.03	34.27 QP	40.00	-5.73	1.13 V	266	26.24	8.03
3	125.00	40.74 QP	43.50	-2.76	1.00 V	330	28.18	12.56
4	200.00	32.79 QP	43.50	-10.71	1.06 V	190	22.48	10.31
5	240.02	42.55 QP	46.00	-3.45	1.73 V	266	29.79	12.76
6	300.00	38.97 QP	46.00	-7.03	1.66 V	41	23.55	15.42
7	320.04	39.13 QP	46.00	-6.87	2.08 V	259	23.39	15.74
8	375.01	35.69 QP	46.00	-10.31	1.74 V	96	18.53	17.16
9	400.01	43.26 QP	46.00	-2.74	1.63 V	354	25.18	18.08
10	480.01	39.90 QP	46.00	-6.10	1.18 V	60	20.56	19.34
11	500.02	40.52 QP	46.00	-5.48	1.53 V	43	20.60	19.92
12	560.00	43.24 QP	46.00	-2.76	2.54 V	8	22.46	20.78
13	600.00	36.96 QP	46.00	-9.04	1.00 V	177	15.20	21.76
14	640.02	40.52 QP	46.00	-5.48	1.40 V	25	18.56	21.96
15	719.99	40.60 QP	46.00	-5.40	1.04 V	343	17.90	22.70
16	879.99	39.04 QP	46.00	-6.96	1.04 V	131	14.92	24.12

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	IEEE 802.11a+g Wireless Access Point	**MODEL**	GN-A15AG
CHANNEL	Channel 1	**FREQUENCY RANGE**	1 ~ 25GHz
MODE	CCK		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	**TESTED BY**: Vincent Lin	

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	2390.00	58.36 PK	74.00	-15.64	1.50 H	251	28.04	30.32
1	2390.00	50.38 AV	54.00	-3.62	1.50 H	251	20.06	30.32
2	*2412.00	109.87 PK			1.50 H	251	79.46	30.41
2	*2412.00	101.89 AV			1.50 H	251	71.48	30.41
3	2688.00	47.53 PK	74.00	-26.47	1.02 H	232	16.41	31.12
3	2688.00	43.34 AV	54.00	-10.66	1.02 H	232	12.22	31.12
4	4824.00	46.99 PK	74.00	-27.01	1.27 H	296	11.49	35.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	59.86 PK	74.00	-14.14	1.00 V	250	29.54	30.32
1	2390.00	51.80 AV	54.00	-2.20	1.00 V	250	21.48	30.32
2	*2412.00	111.37 PK			1.00 V	250	80.96	30.41
2	*2412.00	103.31 AV			1.00 V	250	72.90	30.41
3	2688.00	50.87 PK	74.00	-23.13	1.98 V	234	19.75	31.12
3	2688.00	47.94 AV	54.00	-6.06	1.98 V	234	16.82	31.12
4	4824.00	49.77 PK	74.00	-24.23	1.05 V	117	14.27	35.50

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

EUT	IEEE 802.11a+g Wireless Access Point	**MODEL**	GN-A15AG
CHANNEL	Channel 6	**FREQUENCY RANGE**	1 ~ 25GHz
MODE	CCK		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	**TESTED BY**: Vincent Lin	

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	*2437.00	109.47 PK			1.11 H	253	78.97	30.50
1	*2437.00	101.75 AV			1.11 H	253	71.25	30.50
2	2688.00	48.10 PK	74.00	-25.90	1.02 H	231	16.98	31.12
2	2688.00	44.36 AV	54.00	-9.64	1.02 H	231	13.24	31.12
3	4874.00	45.36 PK	74.00	-28.64	1.00 H	241	9.60	35.76

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	*2437.00	112.36 PK			1.05 V	248	81.86	30.50
1	*2437.00	104.36 AV			1.05 V	248	73.86	30.50
2	2688.00	51.45 PK	74.00	-22.55	2.01 V	235	20.33	31.12
2	2688.00	48.93 AV	54.00	-5.07	2.01 V	235	17.81	31.12
3	4874.00	50.27 PK	74.00	-23.73	1.51 V	54	14.50	35.76

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

EUT	IEEE 802.11a+g Wireless Access Point	**MODEL**	GN-A15AG
CHANNEL	Channel 11	**FREQUENCY RANGE**	1 ~ 25GHz
MODE	CCK		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	**TESTED BY**: Vincent Lin	

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	*2462.00	108.61 PK			1.14 H	252	78.02	30.59
1	*2462.00	100.69 AV			1.14 H	252	70.10	30.59
2	2483.50	55.91 PK	74.00	-18.09	1.14 H	252	25.24	30.67
2	2483.50	47.99 AV	54.00	-6.01	1.14 H	252	17.32	30.67
3	2688.00	48.48 PK	74.00	-25.52	1.04 H	230	17.36	31.12
3	2688.00	42.29 AV	54.00	-11.71	1.04 H	230	11.17	31.12
4	4924.00	46.57 PK	74.00	-27.43	1.05 H	154	10.58	35.99

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	*2462.00	110.59 PK			1.04 V	244	80.00	30.59
1	*2462.00	102.99 AV			1.04 V	244	72.40	30.59
2	2483.50	57.89 PK	74.00	-16.11	1.04 V	244	27.22	30.67
2	2483.50	50.29 AV	54.00	-3.71	1.04 V	244	19.62	30.67
3	2688.00	52.17 PK	74.00	-21.83	2.01 V	234	21.05	31.12
3	2688.00	49.98 AV	54.00	-4.02	2.01 V	234	18.86	31.12
4	4924.00	49.31 PK	74.00	-24.69	1.55 V	157	13.33	35.99

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

Normal mode

EUT	IEEE 802.11a+g Wireless Access Point	**MODEL**	GN-A15AG
CHANNEL	Channel 1	**FREQUENCY RANGE**	1 ~ 25GHz
MODE	OFDM		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	**TESTED BY**: Vincent Lin	

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	2360.00	58.66 PK	74.00	-15.34	1.35 H	254	28.50	30.16
1	2360.00	48.40 AV	54.00	-5.60	1.35 H	254	18.24	30.16
2	2390.00	60.55 PK	74.00	-13.45	1.35 H	254	30.23	30.32
2	2390.00	51.78 AV	54.00	-2.22	1.35 H	254	21.46	30.32
3	*2412.00	105.66 PK			1.35 H	254	75.25	30.41
3	*2412.00	95.40 AV			1.35 H	254	64.99	30.41
4	2688.00	47.39 PK	74.00	-26.61	1.04 H	232	16.27	31.12
4	2688.00	42.38 AV	54.00	-11.62	1.04 H	232	11.26	31.12
5	4824.00	45.69 PK	74.00	-28.31	1.22 H	277	10.19	35.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2360.00	60.93 PK	74.00	-13.07	1.00 V	250	30.77	30.16
1	2360.00	49.89 AV	54.00	-4.11	1.00 V	250	19.73	30.16
2	2390.00	61.38 PK	74.00	-12.62	1.00 V	250	31.06	30.32
2	2390.00	51.34 AV	54.00	-2.66	1.00 V	250	21.02	30.32
3	*2412.00	107.93 PK			1.00 V	250	77.52	30.41
3	*2412.00	96.89 AV			1.00 V	250	66.48	30.41
4	2688.00	50.22 PK	74.00	-23.78	1.99 V	235	19.10	31.12
4	2688.00	47.04 AV	54.00	-6.96	1.99 V	235	15.92	31.12
5	4824.00	49.36 PK	74.00	-24.64	1.06 V	174	13.86	35.50

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

EUT	IEEE 802.11a+g Wireless Access Point	**MODEL**	GN-A15AG
CHANNEL	Channel 6	**FREQUENCY RANGE**	1 ~ 25GHz
MODE	OFDM		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	**TESTED BY**: Vincent Lin	

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	2360.00	55.77 PK	74.00	-18.23	1.14 H	253	25.61	30.16
1	2360.00	45.65 AV	54.00	-8.35	1.14 H	253	15.49	30.16
2	*2437.00	105.00 PK			1.14 H	253	74.50	30.50
2	*2437.00	94.88 AV			1.14 H	253	64.38	30.50
3	2688.00	47.13 PK	74.00	-26.87	1.03 H	230	16.01	31.12
3	2688.00	42.50 AV	54.00	-11.50	1.03 H	230	11.38	31.12
4	4874.00	45.36 PK	74.00	-28.64	1.14 H	228	9.60	35.76

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	2360.00	59.76 PK	74.00	-14.24	1.63 V	287	29.60	30.16
1	2360.00	49.24 AV	54.00	-4.76	1.63 V	287	19.08	30.16
2	*2437.00	108.99 PK			1.63 V	287	78.49	30.50
2	*2437.00	98.47 AV			1.63 V	287	67.97	30.50
3	2688.00	49.42 PK	74.00	-24.58	1.98 V	232	18.30	31.12
3	2688.00	46.54 AV	54.00	-7.46	1.98 V	232	15.42	31.12
4	4874.00	45.99 PK	74.00	-28.01	1.05 V	189	10.22	35.76

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

EUT	IEEE 802.11a+g Wireless Access Point	**MODEL**	GN-A15AG
CHANNEL	Channel 11	**FREQUENCY RANGE**	1 ~ 25GHz
MODE	OFDM		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	**TESTED BY**: Vincent Lin	

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	*2462.00	105.42 PK			1.37 H	252	74.83	30.59
1	*2462.00	94.78 AV			1.37 H	252	64.19	30.59
2	2483.50	58.27 PK	74.00	-15.73	1.37 H	252	27.60	30.67
2	2483.50	47.63 AV	54.00	-6.37	1.37 H	252	16.96	30.67
3	2688.00	47.11 PK	74.00	-26.89	1.01 H	252	15.99	31.12
3	2688.00	42.75 AV	54.00	-11.25	1.01 H	252	11.63	31.12
4	4924.00	46.25 PK	74.00	-27.75	1.01 H	244	10.26	35.99

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	*2462.00	109.46 PK			1.57 V	265	78.87	30.59
1	*2462.00	98.96 AV			1.57 V	265	68.37	30.59
2	2483.50	62.31 PK	74.00	-11.69	1.57 V	265	31.64	30.67
2	2483.50	51.81 AV	54.00	-2.19	1.57 V	265	21.14	30.67
3	2688.00	50.22 PK	74.00	-23.78	1.99 V	235	19.10	31.12
3	2688.00	47.04 AV	54.00	-6.96	1.99 V	235	15.92	31.12
4	4924.00	48.38 PK	74.00	-25.62	1.41 V	148	12.39	35.99

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

Turbo mode

EUT	IEEE 802.11a+g Wireless Access Point	**MODEL**	GN-A15AG
CHANNEL	Channel 6	**FREQUENCY RANGE**	1 ~ 25GHz
MODE	OFDM		
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	**TESTED BY**: Vincent Lin	

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	2390.00	56.05 PK	74.00	-17.95	1.00 H	259	25.73	30.32
1	2390.00	45.53 AV	54.00	-8.47	1.00 H	259	15.21	30.32
2	*2437.00	101.78 PK			1.00 H	259	71.28	30.50
2	*2437.00	91.26 AV			1.00 H	259	60.76	30.50
3	2483.50	58.08 PK	74.00	-15.92	1.00 H	259	27.41	30.67
3	2483.50	47.56 AV	54.00	-6.44	1.00 H	259	16.89	30.67
4	2688.00	46.01 PK	74.00	-27.99	1.00 H	252	14.89	31.12
4	2688.00	41.07 AV	54.00	-12.93	1.00 H	252	9.95	31.12
5	4874.00	46.03 PK	74.00	-27.97	1.15 H	76	10.26	35.76

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	2390.00	60.51 PK	74.00	-13.49	1.64 V	261	30.19	30.32
1	2390.00	49.96 AV	54.00	-4.04	1.64 V	261	19.64	30.32
2	*2437.00	106.24 PK			1.64 V	261	75.74	30.50
2	*2437.00	95.69 AV			1.64 V	261	65.19	30.50
3	2483.50	62.54 PK	74.00	-11.46	1.64 V	261	31.87	30.67
3	**2483.50**	**51.99 AV**	**54.00**	**-2.01**	**1.64 V**	**261**	**21.32**	**30.67**
4	2688.00	50.82 PK	74.00	-23.18	1.51 V	255	19.69	31.12
4	2688.00	48.06 AV	54.00	-5.94	1.51 V	255	16.93	31.12
5	4874.00	51.22 PK	74.00	-22.78	1.04 V	225	15.46	35.76

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

4.3 6dB BANDWIDTH MEASUREMENT

4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SPECTRUM ANALYZER	FSEK 30	100049	Aug. 12, 2004

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

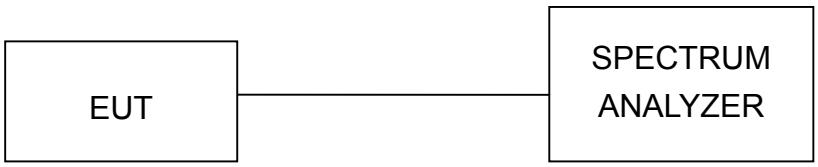
4.3.3 TEST PROCEDURE

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

4.3.4 DEVIATION FROM TEST STANDARD

No deviation

4.3.5 TEST SETUP



4.3.6 EUT OPERATING CONDITIONS

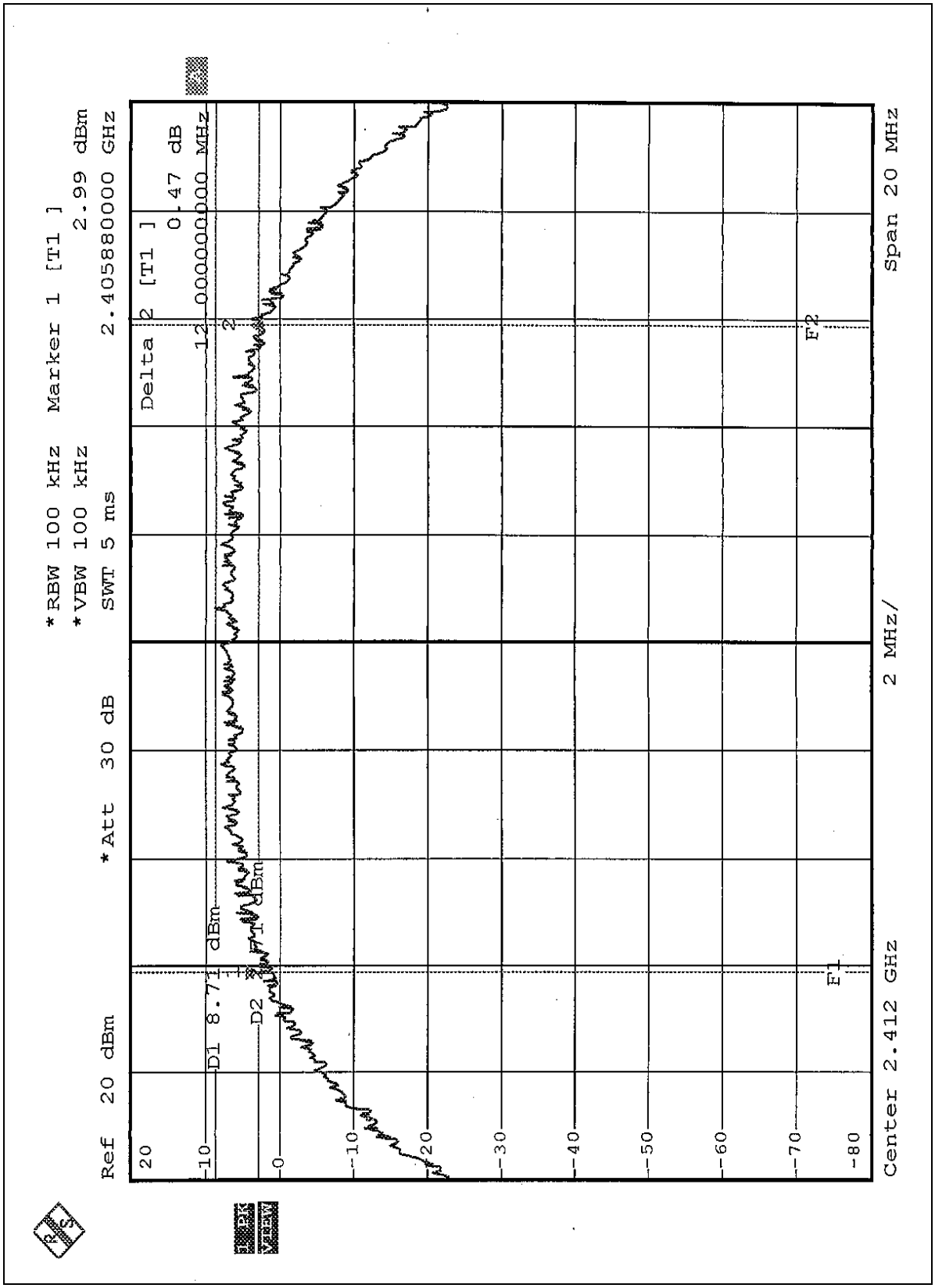
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.3.7 TEST RESULTS

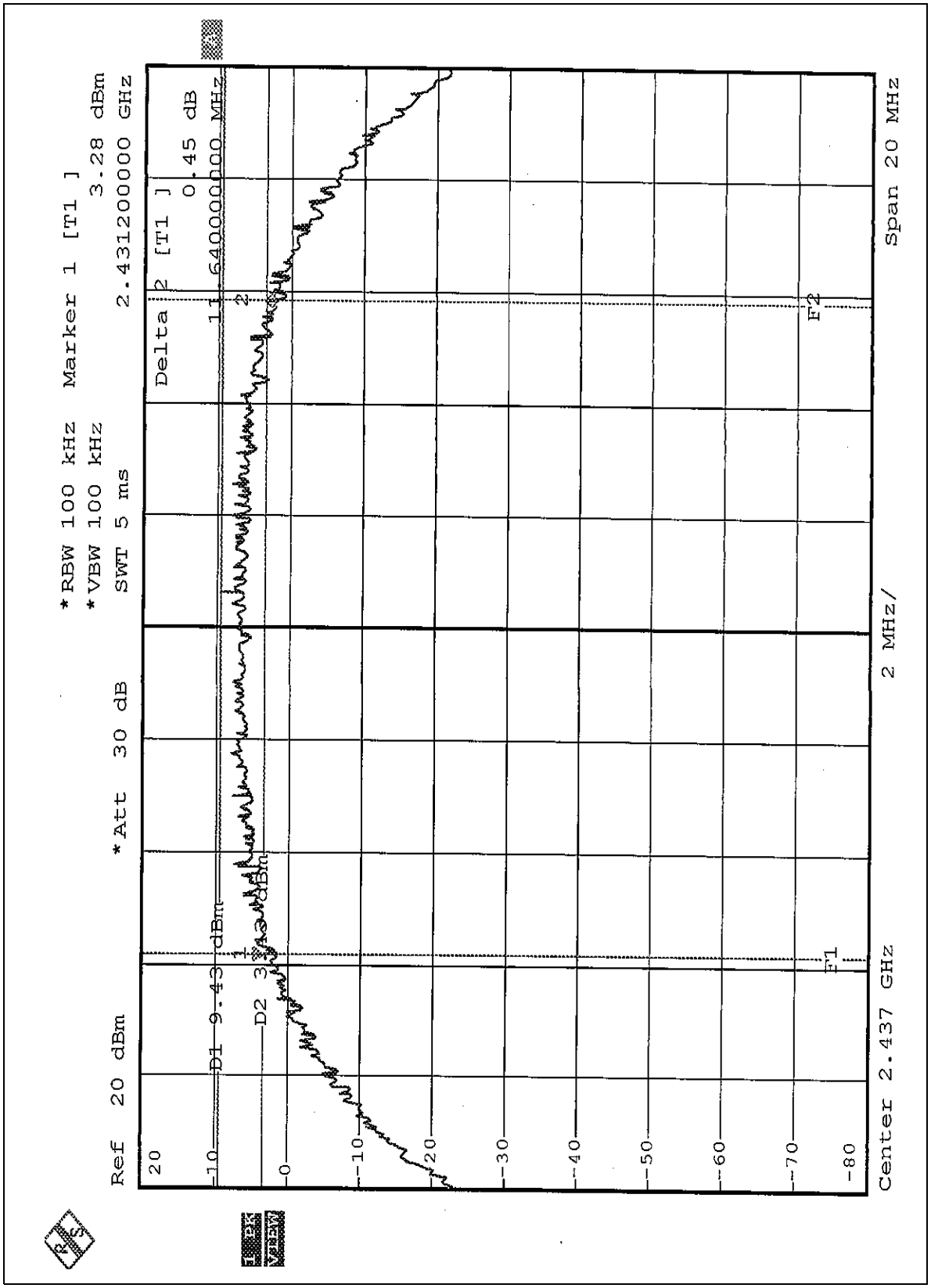
EUT	IEEE 802.11a+g Wireless Access Point	**MODEL**	GN-A15AG
MODE	CCK	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 63%RH, 991hPa	**TESTED BY**	Steven Lu

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	12.00	0.5	PASS
6	2437	11.64	0.5	PASS
11	2462	11.24	0.5	PASS

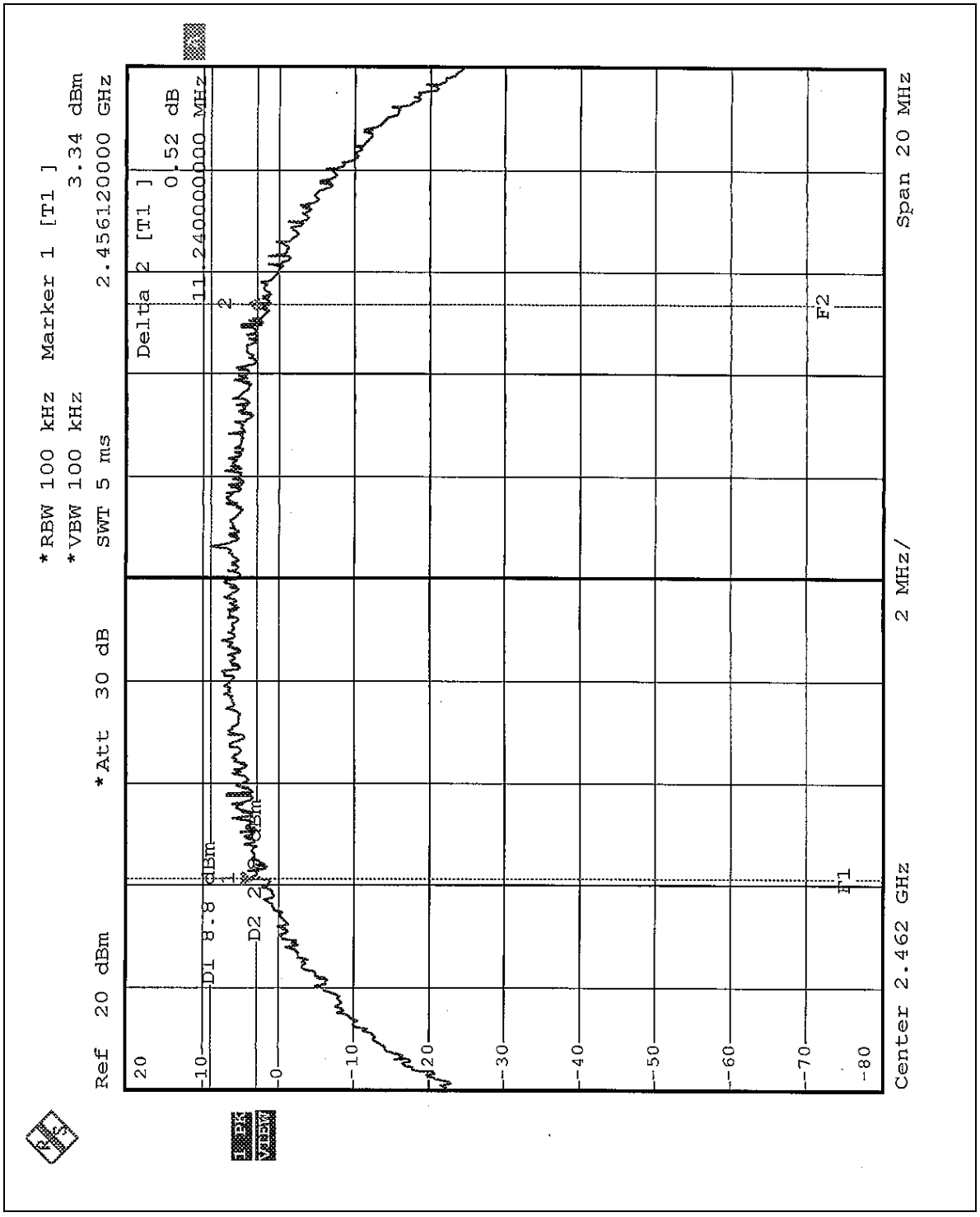
CH1


Ref 20 dBm
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 5 ms
Marker 1 [T1]
2.99 dBm
2.405880000 GHz
Delta 2 [T1]
0.47 dB
12.000000000 MHz
D1 8.71 dBm
D2 dBm
Center 2.412 GHz
2 MHz/
Span 20 MHz
F1
F2

CH6


Ref 20 dBm
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 5 ms
Marker 1 [T1]
3.28 dBm
2.431200000 GHz
Delta 2 [T1]
0.45 dB
11.640000000 MHz
D1 9.43 dBm
D2 3.43 dBm
Center 2.437 GHz
2 MHz/
Span 20 MHz
F1
F2

CH11

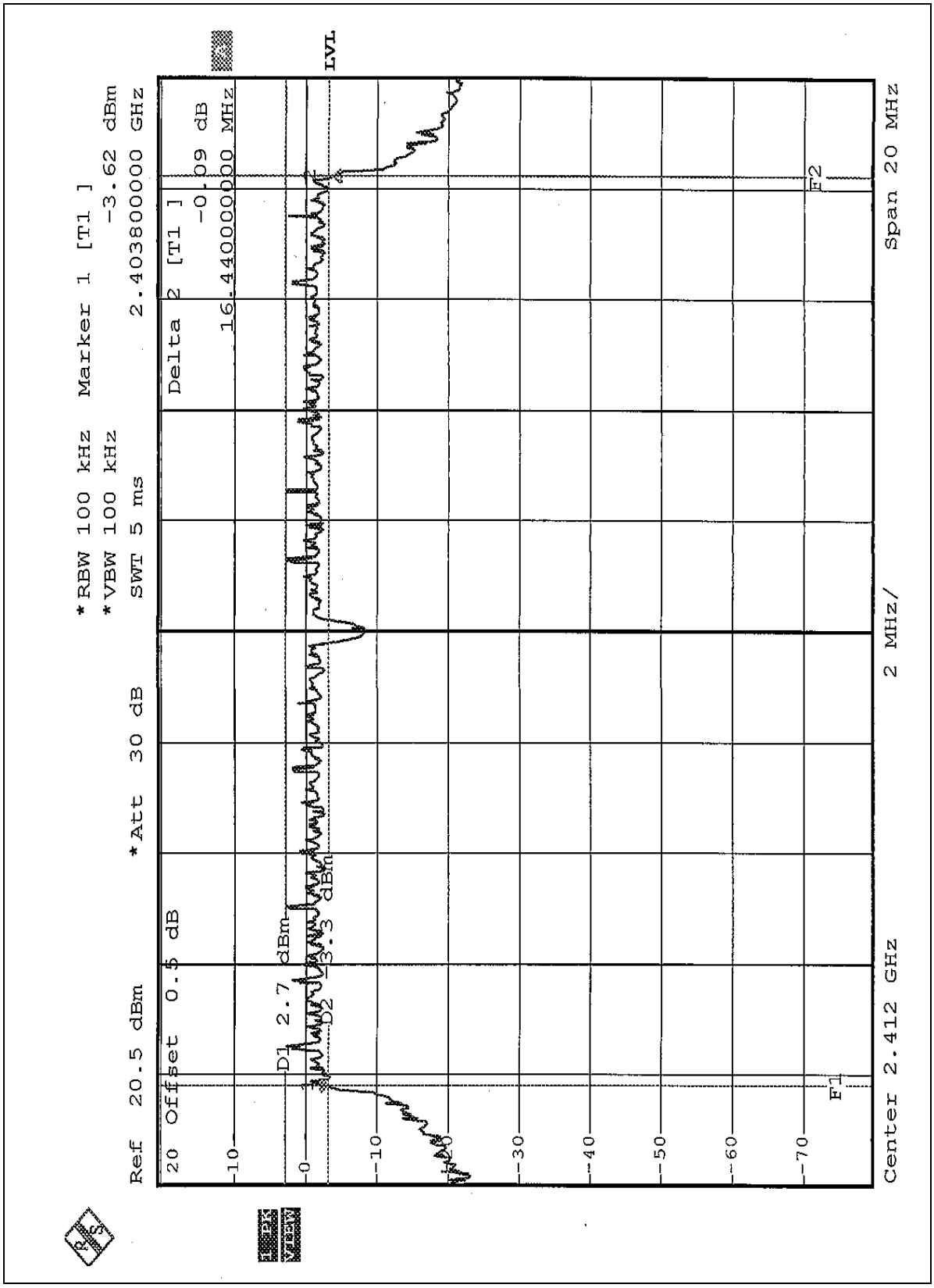

*RBW 100 kHz
*VBW 100 kHz
Marker 1 [T1]
3.34 dBm
2.456120000 GHz
*Att 30 dB
SWT 5 ms
Delta 2 [T1]
0.52 dB
11.240000000 MHz
Ref 20 dBm
D1 8.8 dBm
D2
Center 2.462 GHz
2 MHz/
Span 20 MHz
F1
F2

Normal mode

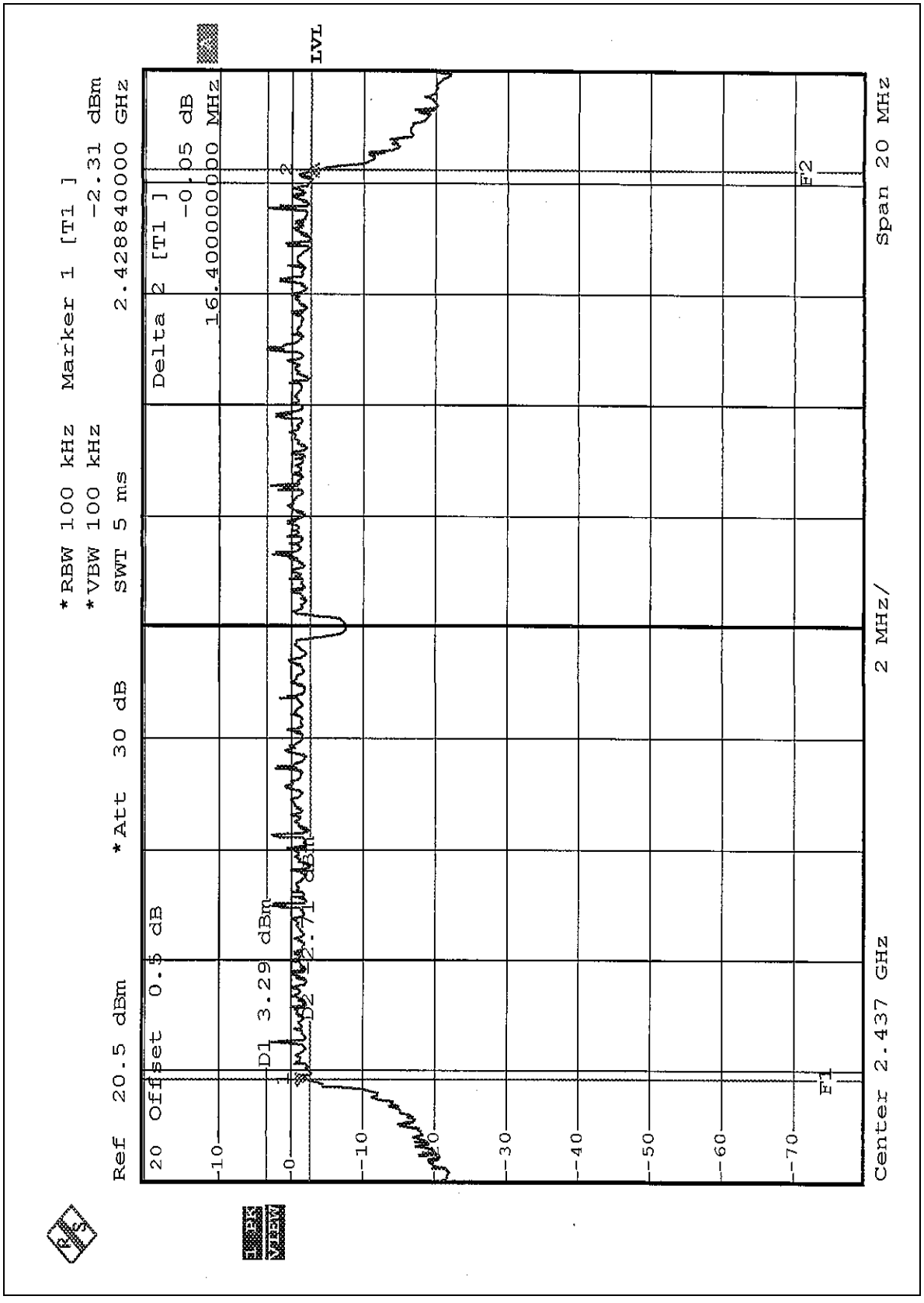
EUT	IEEE 802.11a+g Wireless Access Point	**MODEL**	GN-A15AG
MODE	OFDM	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 63%RH, 991hPa	**TESTED BY**	Steven Lu

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	16.44	0.5	PASS
6	2437	16.40	0.5	PASS
11	2462	16.44	0.5	PASS

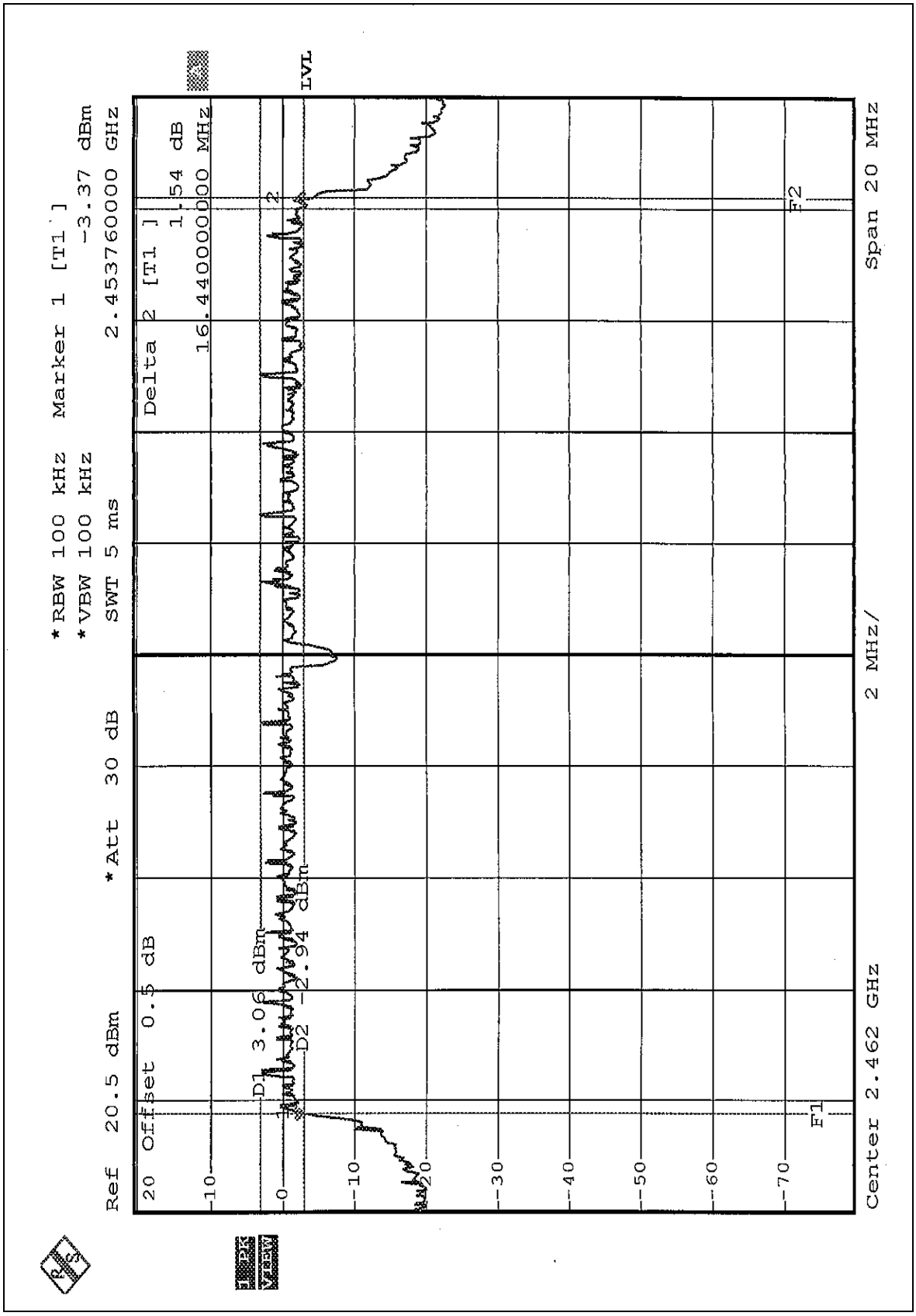
CH1


Ref 20.5 dBm
20 Offset 0.5 dB
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 5 ms
Marker 1 [T1]
-3.62 dBm
2.403800000 GHz
Delta 2 [T1]
-0.09 dB
16.440000000 MHz
D1 2.7 dBm
D2 -3.3 dBm
LVL
F1
F2
Center 2.412 GHz
2 MHz/
Span 20 MHz

CH6


Ref 20.5 dBm
20 Offset 0.5 dB
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 5 ms
Marker 1 [T1]
-2.31 dBm
2.428840000 GHz
Delta 2 [T1]
-0.05 dB
16.400000000 MHz
D1 3.29 dBm
D2 2.71 dBm
LVL
Center 2.437 GHz
2 MHz/
Span 20 MHz
F1
F2

CH11

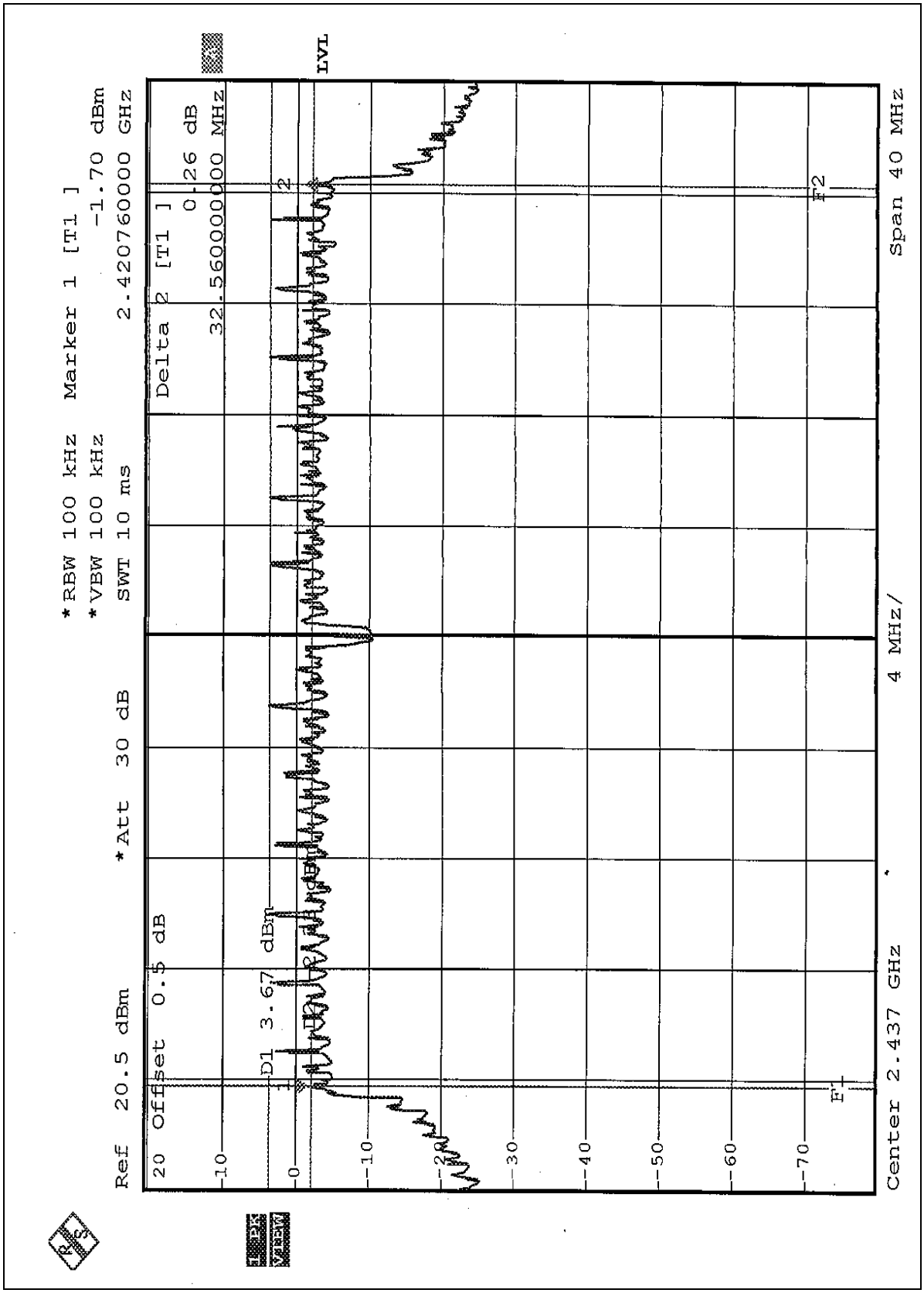

Ref 20.5 dBm
20 Offset 0.5 dB
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 5 ms
Marker 1 [T1]
-3.37 dBm
2.453760000 GHz
Delta 2 [T1]
1.54 dB
16.440000000 MHz
D1 3.06 dBm
D2 -2.94 dBm
Center 2.462 GHz
2 MHz/
Span 20 MHz
F1
F2
IVL
PK
VBW

Turbo mode

EUT	IEEE 802.11a+g Wireless Access Point	**MODEL**	GN-A15AG
MODE	OFDM	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 63%RH, 991hPa	**TESTED BY**	Steven Lu

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
6	2437	32.56	0.5	PASS

CH 6


*RBW 100 kHz
*VBW 100 kHz
SWT 10 ms
Marker 1 [T1]
-1.70 dBm
2.420760000 GHz
Delta 2 [T1]
0.26 dB
32.560000000 MHz
Ref 20.5 dBm
Offset 0.5 dB
*Att 30 dB
D1 3.67 dBm
Center 2.437 GHz
4 MHz/
Span 40 MHz
LVL

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, 2004
R&S SIGNAL GENERATOR	SMP04	100011	May 28, 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 DEVIATION FROM TEST STANDARD

No deviation

4.4.5 TEST SETUP

4.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6

4.4.7 TEST RESULTS

EUT	IEEE 802.11a+g Wireless Access Point	MODEL	GN-A15AG
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	20deg.C, 63%RH, 991hPa
MODE	CCK	TESTED BY	Steven Lu

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	20.13	30	PASS
6	2437	20.25	30	PASS
11	2462	20.06	30	PASS

Normal mode

EUT	IEEE 802.11a+g Wireless Access Point	MODEL	GN-A15AG
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	20deg.C, 63%RH, 991hPa
MODE	OFDM	TESTED BY	Steven Lu

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	18.17	30	PASS
6	2437	18.09	30	PASS
11	2462	18.08	30	PASS

Turbo mode

EUT	IEEE 802.11a+g Wireless Access Point	MODEL	GN-A15AG
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	20deg.C, 63%RH, 991hPa
MODE	OFDM	TESTED BY	Steven Lu

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
6	2437	17.73	30	PASS

4.5 POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

4.5.2 TEST INSTRUMENTS

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

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

4.5.3 TEST PROCEDURE

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

4.5.4 DEVIATION FROM TEST STANDARD

No deviation

4.5.5 TEST SETUP

4.5.6 EUT OPERATING CONDITION

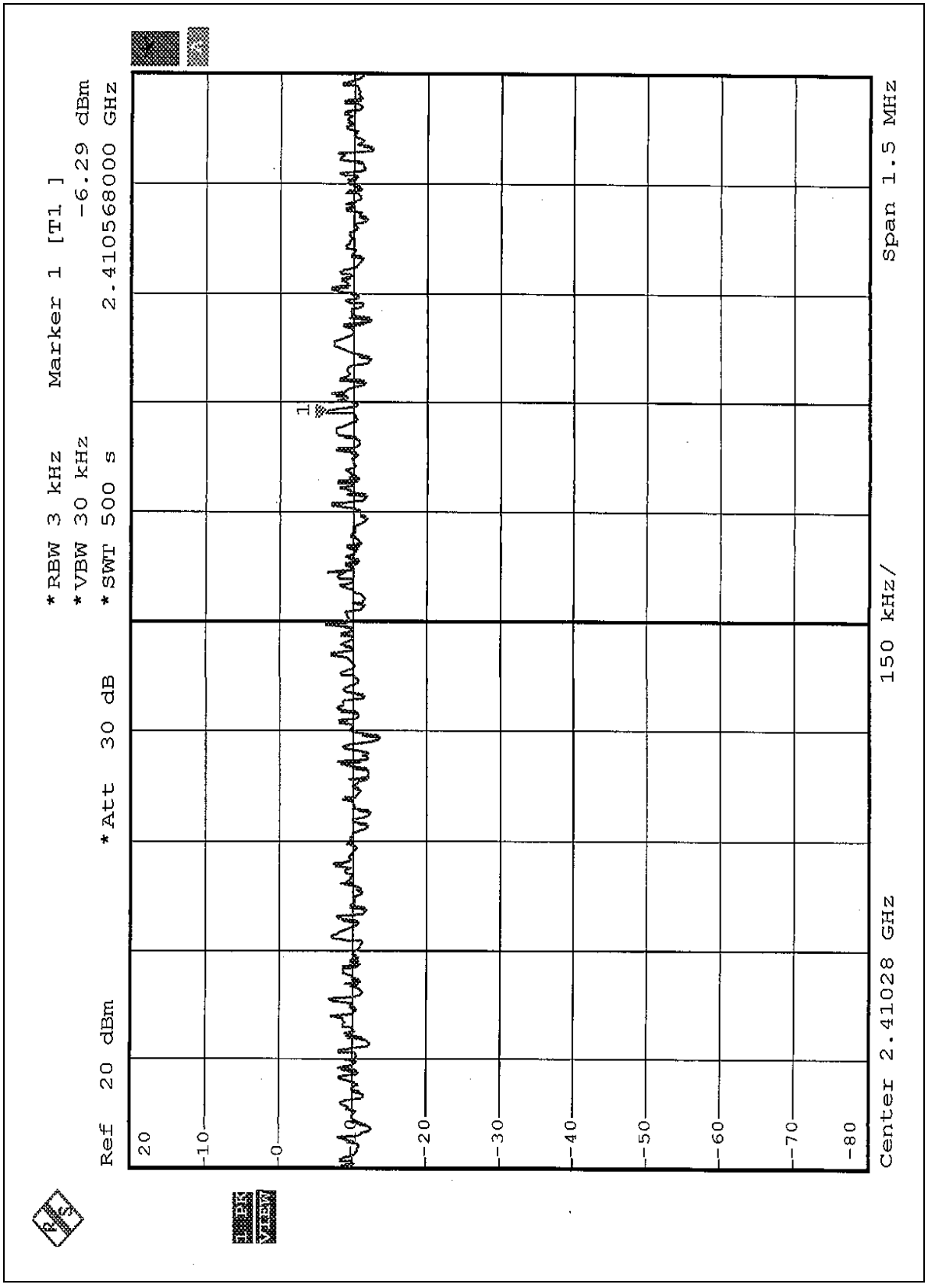
Same as Item 4.3.6

4.5.7 TEST RESULTS

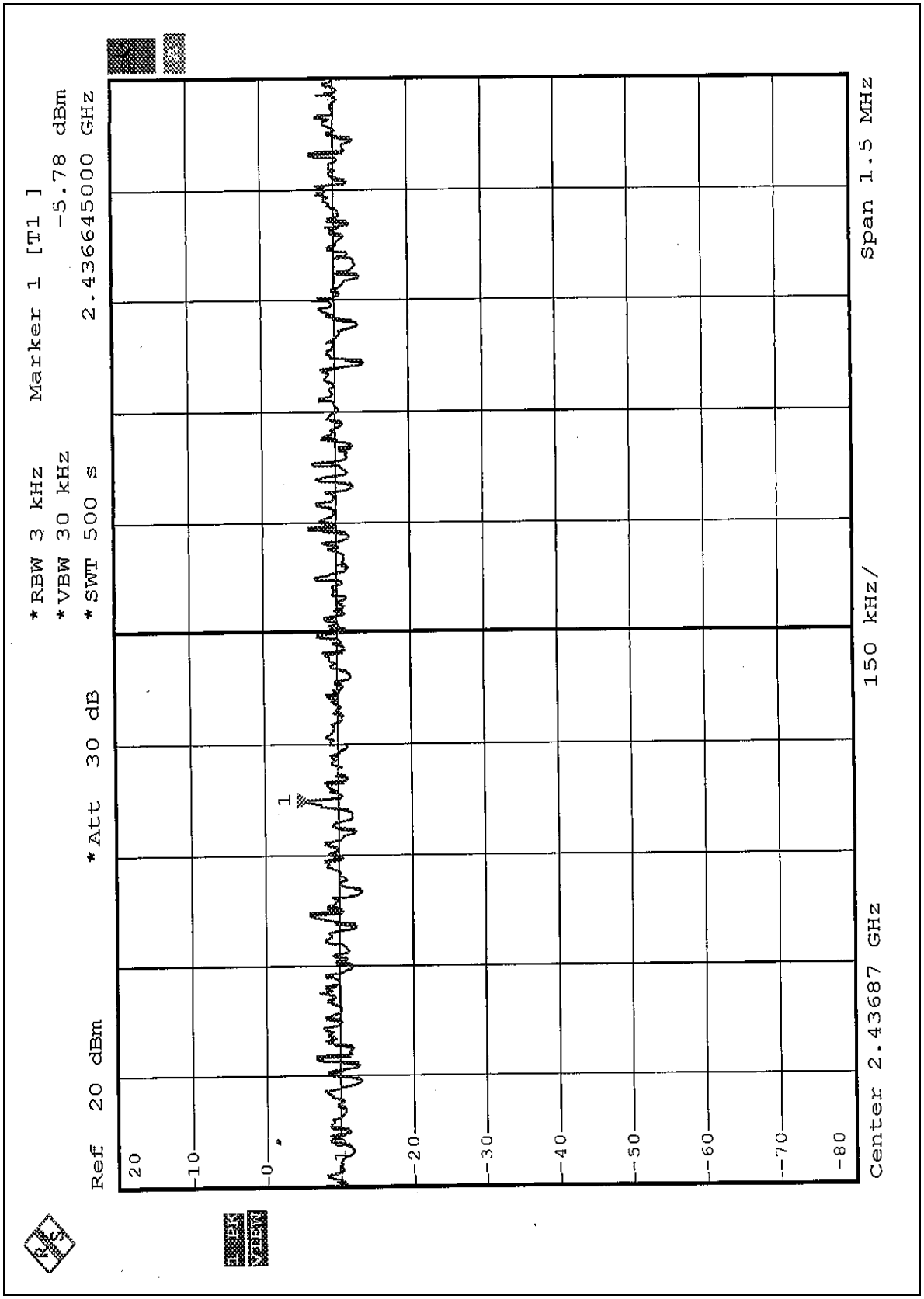
EUT	IEEE 802.11a+g Wireless Access Point	**MODEL**	GN-A15AG
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	20deg.C, 63%RH, 991hPa
MODE	CCK	**TESTED BY**	Steven Lu

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-6.29	8	PASS
6	2437	-5.78	8	PASS
11	2462	-6.71	8	PASS

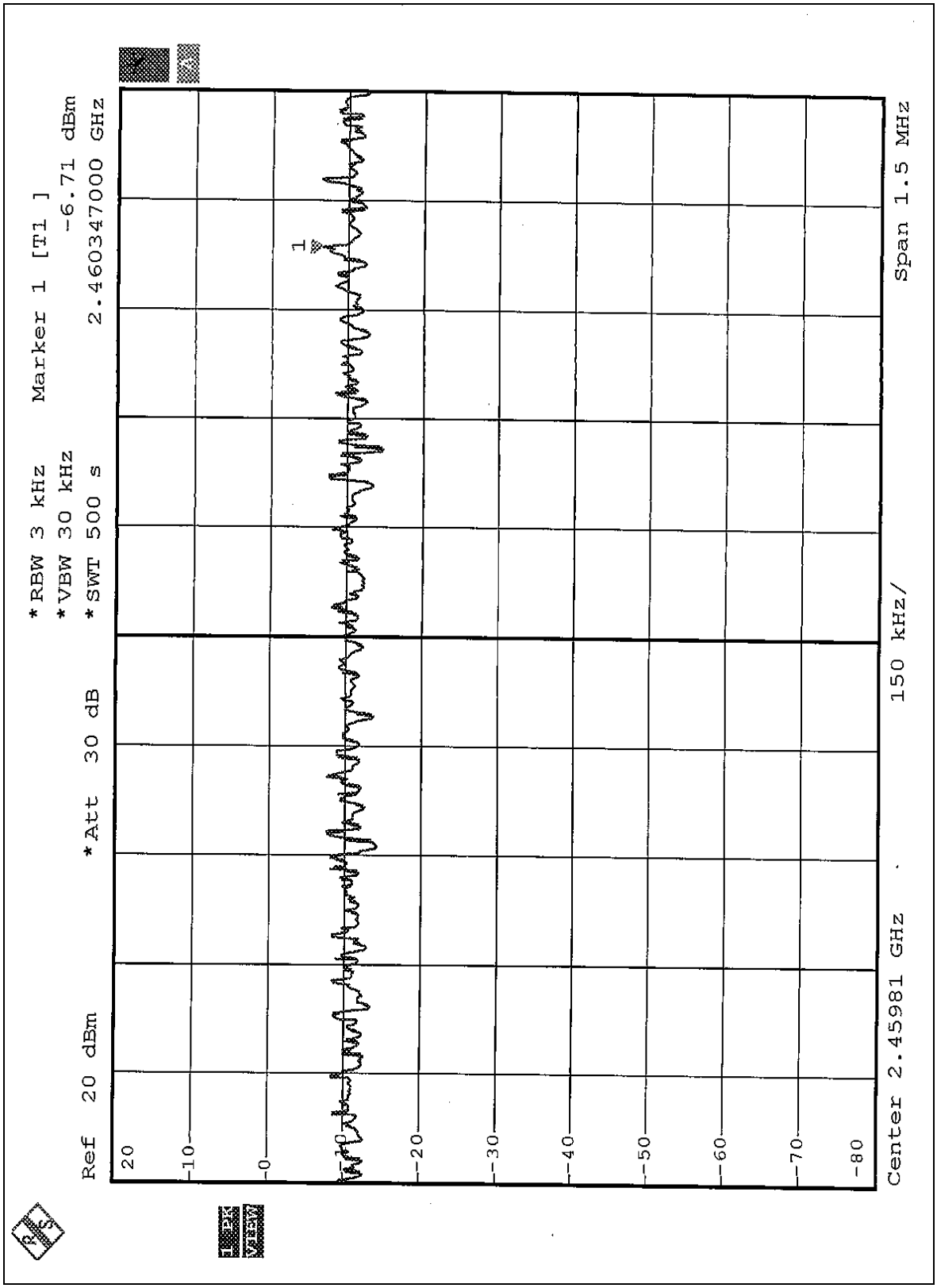
CH1


Ref 20 dBm
*Att 30 dB
*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-6.29 dBm
2.410568000 GHz
Center 2.41028 GHz
150 kHz/
Span 1.5 MHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80

CH6


Ref 20 dBm
*Att 30 dB
*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-5.78 dBm
2.436645000 GHz
Span 1.5 MHz
150 kHz/
Center 2.43687 GHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
CLRWR
VIEW

CH11

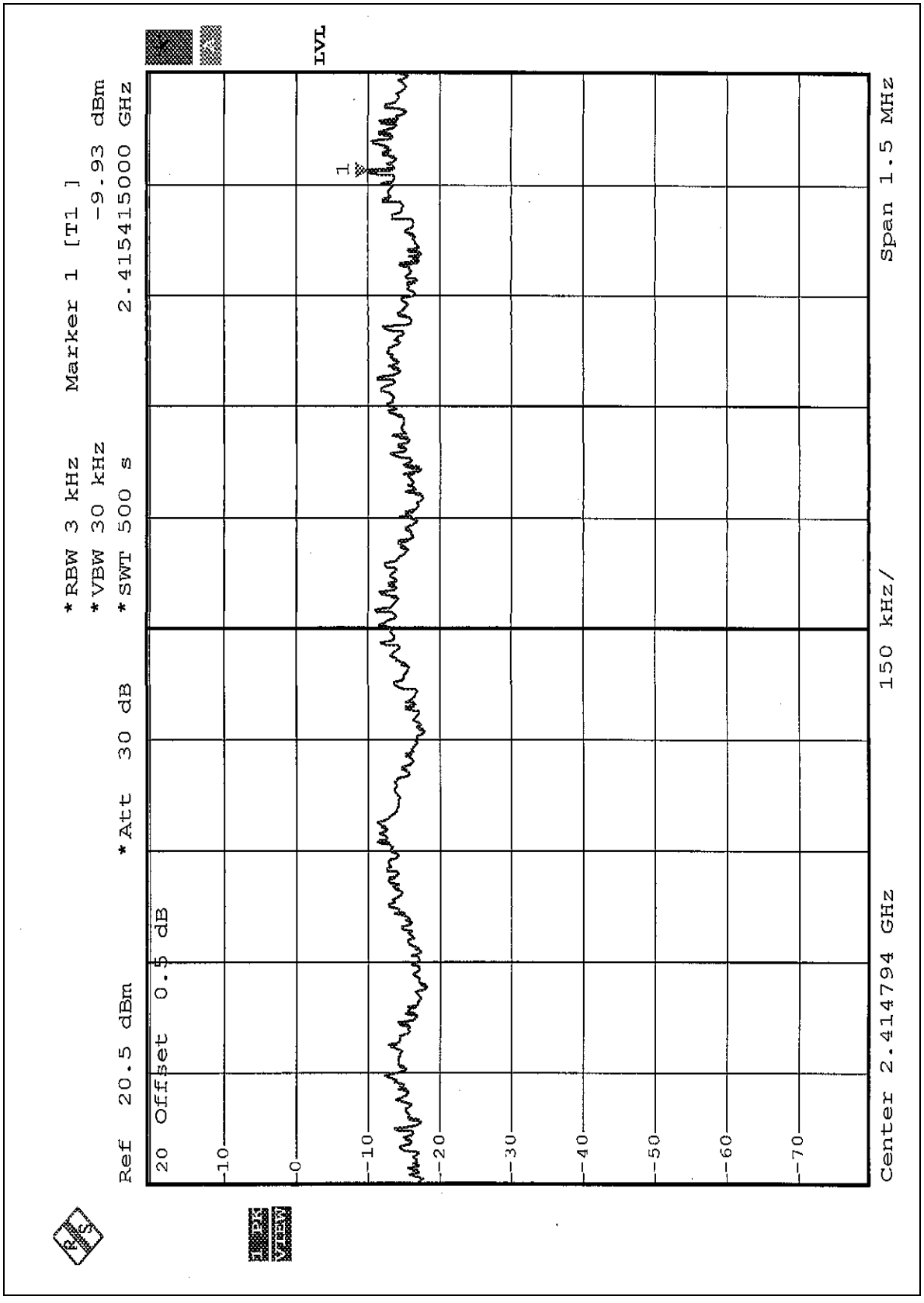

*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-6.71 dBm
2.460347000 GHz
Ref 20 dBm
*Att 30 dB
Center 2.45981 GHz
150 kHz/
Span 1.5 MHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80

Normal mode

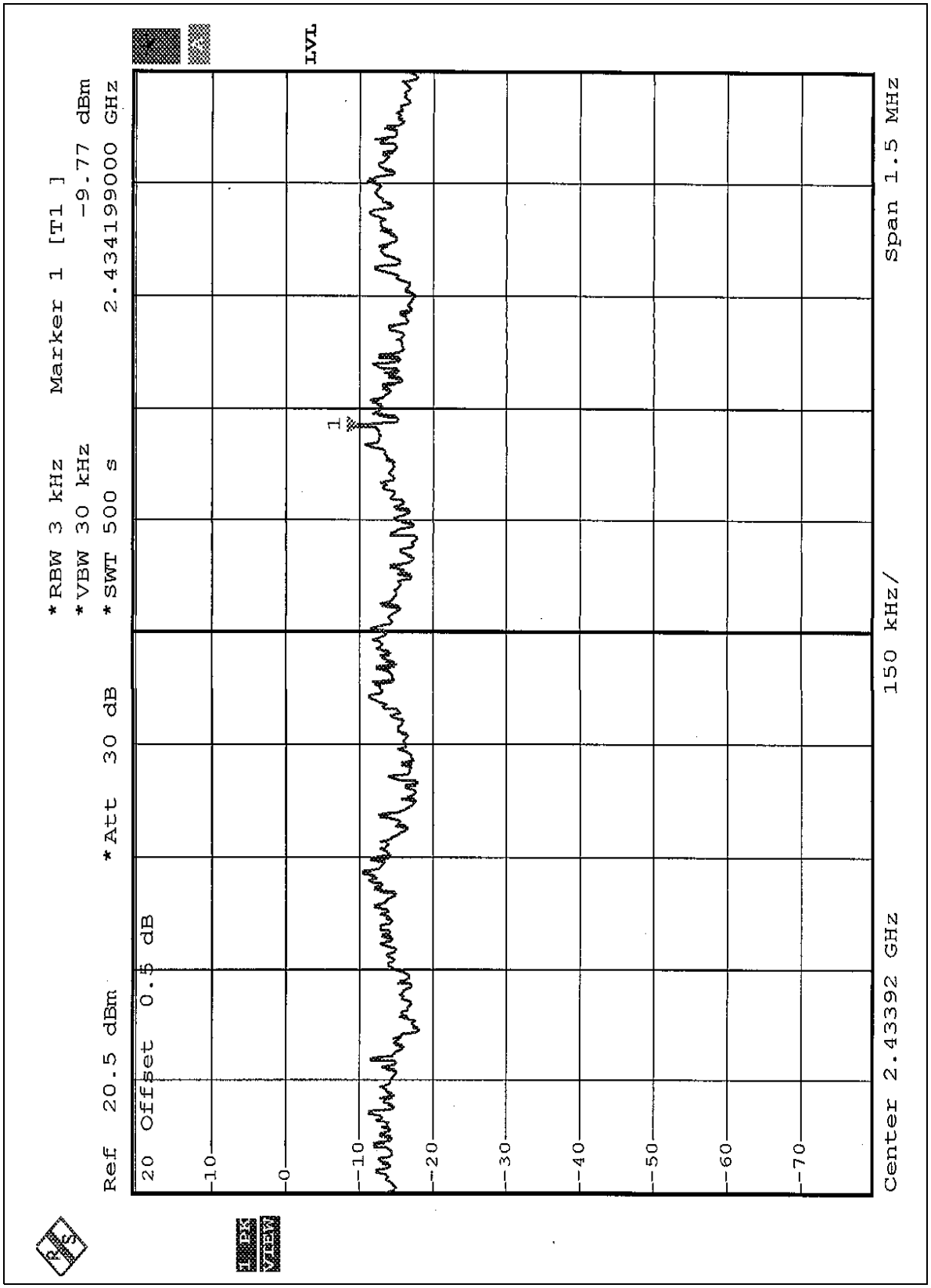
EUT	IEEE 802.11a+g Wireless Access Point	MODEL	GN-A15AG
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	20deg.C, 63%RH, 991hPa
MODE	OFDM	TESTED BY	Steven Lu

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-9.93	8	PASS
6	2437	-9.77	8	PASS
11	2462	-9.25	8	PASS

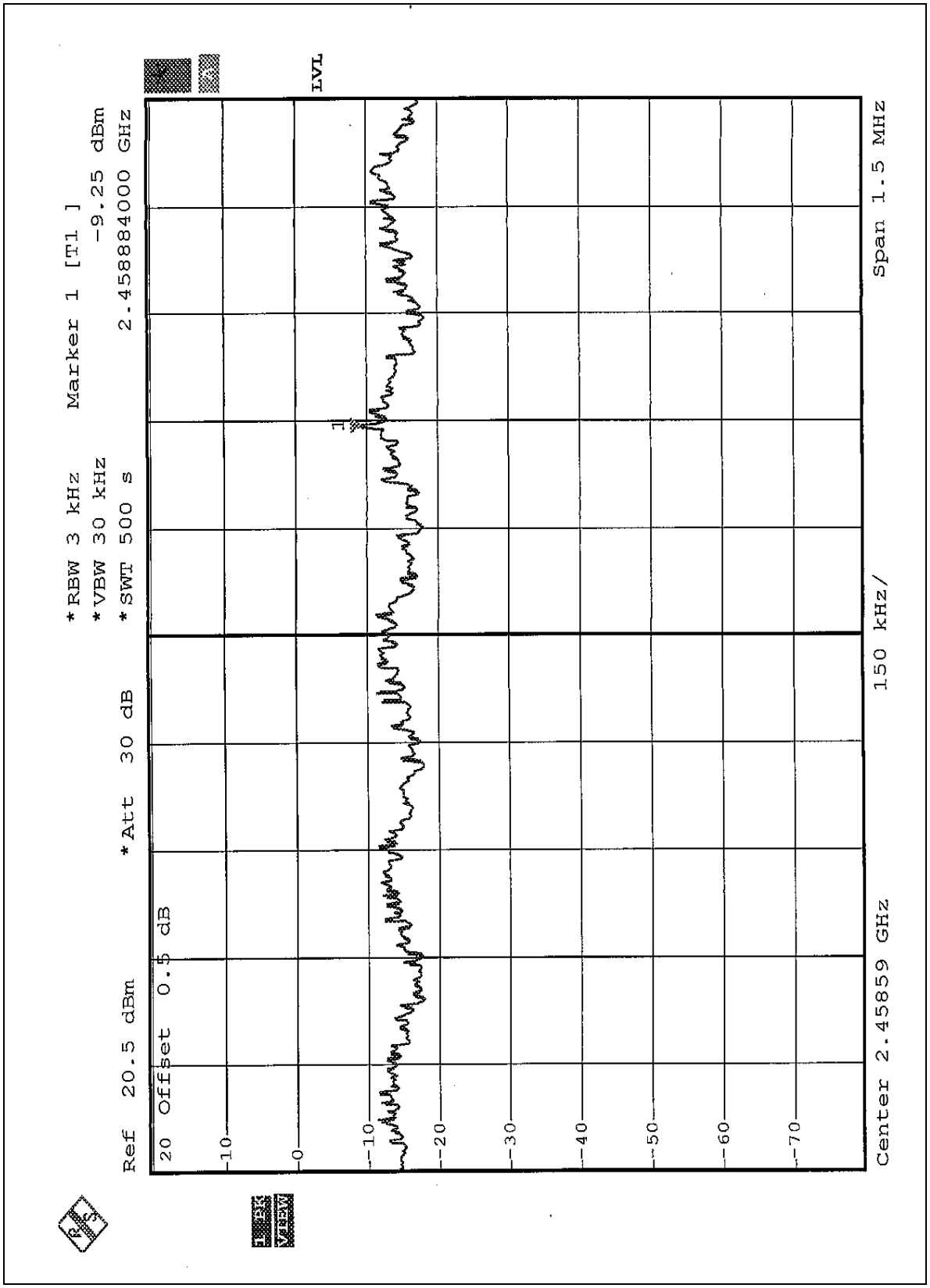
CH1


Ref 20.5 dBm
20 Offset 0.5 dB
*Att 30 dB
*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-9.93 dBm
2.415415000 GHz
1
LVL
Center 2.414794 GHz
150 kHz/
Span 1.5 MHz
-10
0
-10
-20
-30
-40
-50
-60
-70
PK
VIEW

CH6


Ref 20.5 dBm
20 Offset 0.5 dB
*Att 30 dB
*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-9.77 dBm
2.434199000 GHz
LVL
Center 2.43392 GHz
150 kHz/
Span 1.5 MHz

CH11

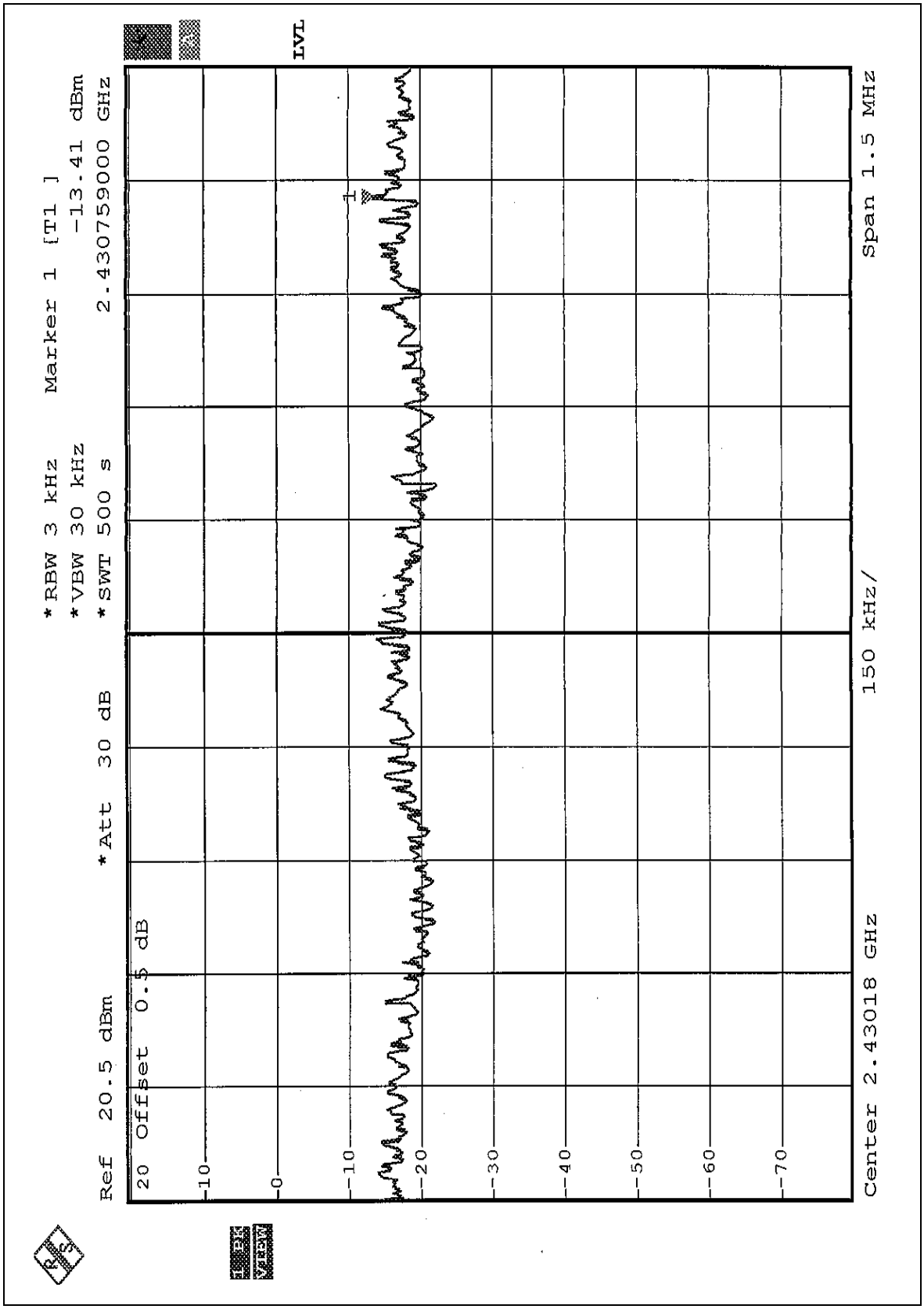

Ref 20.5 dBm
20 Offset 0.5 dB
*Att 30 dB
*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-9.25 dBm
2.458884000 GHz
Center 2.45859 GHz
150 kHz/
Span 1.5 MHz
VIEW
MAXH
10
0
-10
-20
-30
-40
-50
-60
-70

Turbo mode

EUT	IEEE 802.11a+g Wireless Access Point	**MODEL**	GN-A15AG
INPUT POWER (SYSTEM)	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	20deg.C, 63%RH, 991hPa
MODE	OFDM	**TESTED BY**	Steven Lu

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
6	2437	-13.41	8	PASS

CH6


Ref 20.5 dBm
20 Offset 0.5 dB
*Att 30 dB
*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-13.41 dBm
2.430759000 GHz
1VL
Center 2.43018 GHz
150 kHz/
Span 1.5 MHz

4.6 BAND EDGES MEASUREMENT

4.6.1 LIMITS OF BAND EDGES MEASUREMENT

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

4.6.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SPECTRUM ANALYZER	8564EC	4208A00660	August 12, 2004

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

4.6.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer via a low lose cable. Set both RBW and VBW of spectrum analyzer to 1MHz and 10Hz with suitable frequency span including 100MHz bandwidth from band edge. The band edges was measured and recorded.

4.6.4 DEVIATION FROM TEST STANDARD

No deviation

4.6.5 EUT OPERATING CONDITION

Same as Item 4.3.6

4.6.6 TEST RESULTS

The spectrum plots are attached on the following 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 the following 1~2 pages show 50.91dB delta between carrier maximum power and local maximum emission in restrict band (2.3866GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 103.31dBuV/m, so the maximum field strength in restrict band is103.31-50.91=52.40dBuV/m which is under 54dBuV/m limit.

NOTE 2: The band edge emission plot of CCK technique on the following 3~4 pages show 54.82dB delta between carrier maximum power and local maximum emission in restrict band (2.4876GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 102.99dBuV/m, so the maximum field strength in restrict band is 102.99-54.82=48.17dBuV/m which is under 54dBuV/m limit.

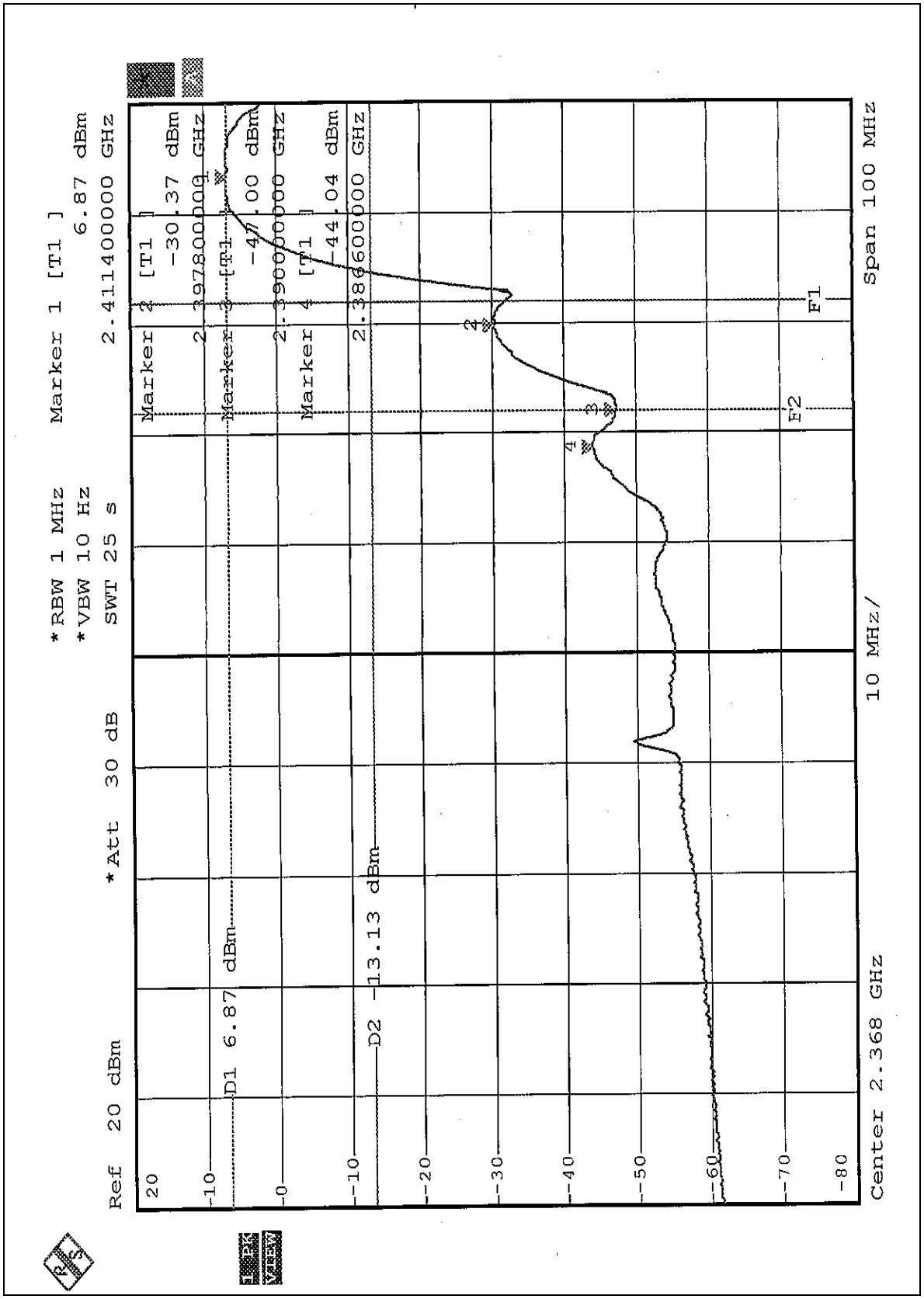
NOTE 3: The band edge emission plot of OFDM technique on the following 5~6 pages show 46.27dB delta between carrier maximum power and local maximum emission in restrict band (2.3900GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 96.89dBuV/m, so the maximum field strength in restrict band is 96.89-46.27=50.62dBuV/m which is under 54dBuV/m limit.

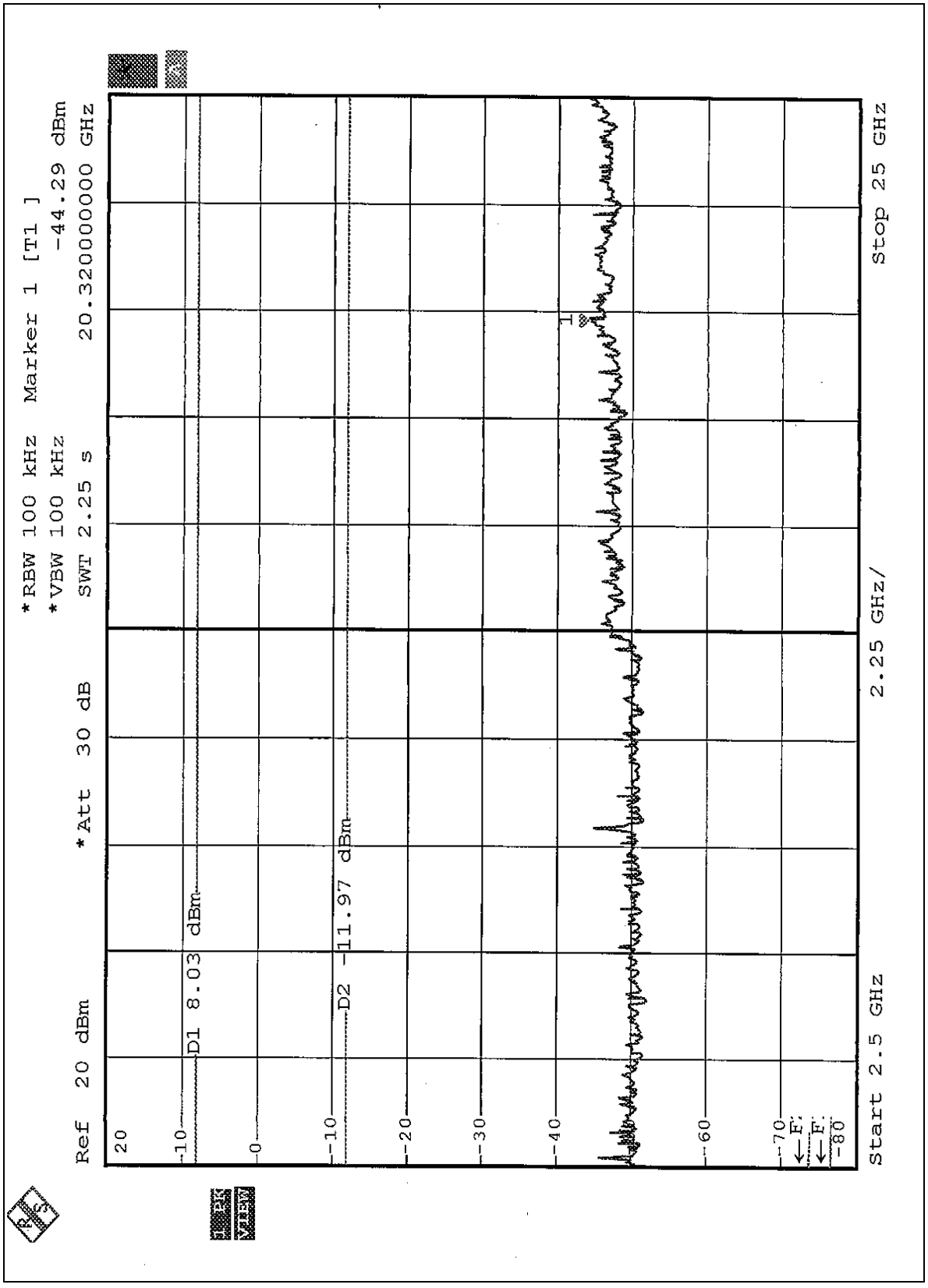
NOTE 4: The band edge emission plot of OFDM technique on the following 7~8 pages show 48.74dB delta between carrier maximum power and local maximum emission in restrict band (2.4835GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 98.96dBuV/m, so the maximum field strength in restrict band is 98.96-48.74=50.22dBuV/m which is under 54dBuV/m limit.

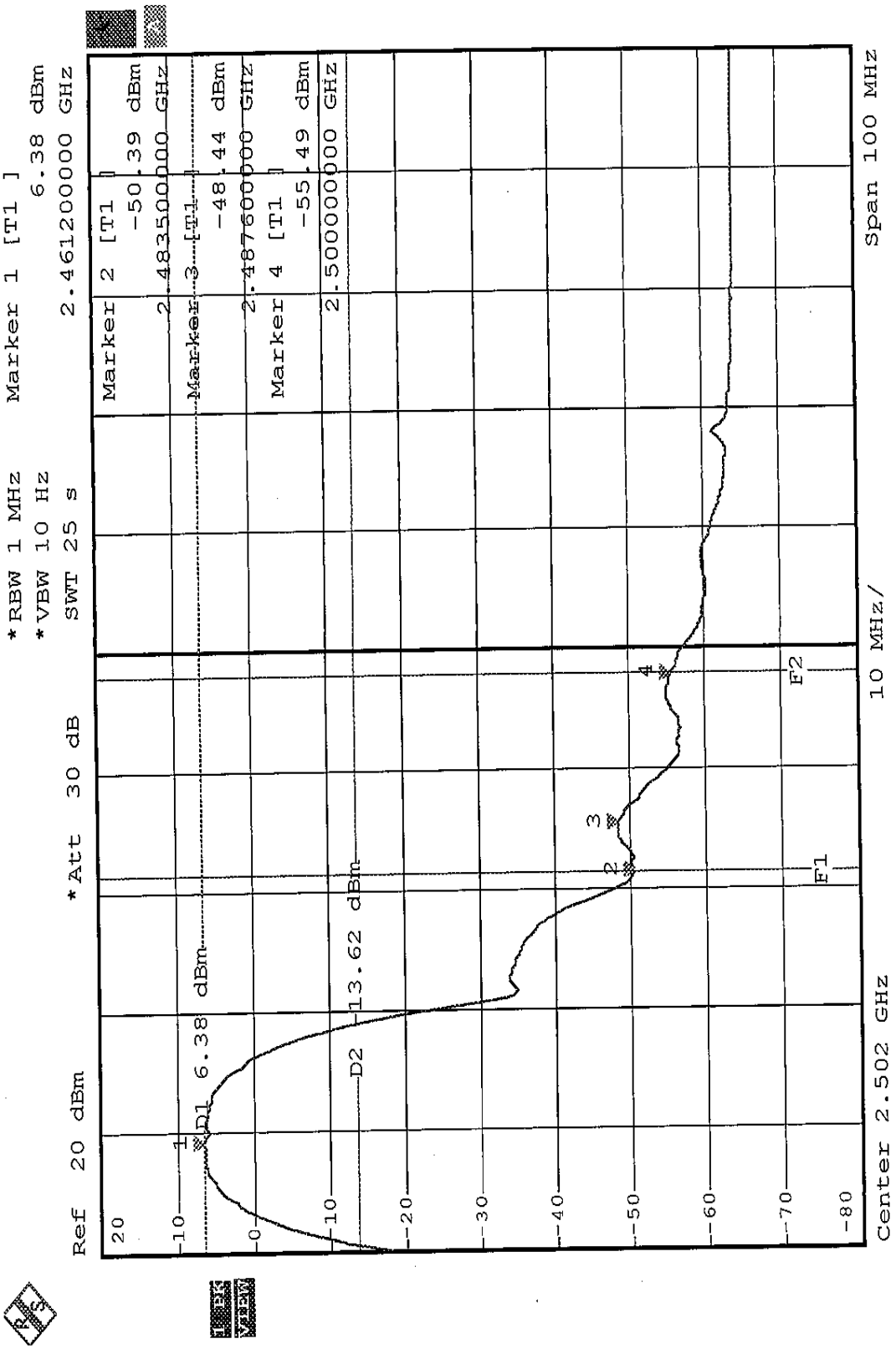
NOTE 5: The band edge emission plot of OFDM technique with Turbo mode on the following 9 page shows 47.81dB delta between carrier maximum power and local maximum emission in restrict band (2.3900GHz). The emission of carrier strength list in the test result of channel 6 at the item 4.2.7 is 95.69dBuV/m, so the maximum field strength in restrict band is 95.69-47.81=47.88dBuV/m which is under 54dBuV/m limit.

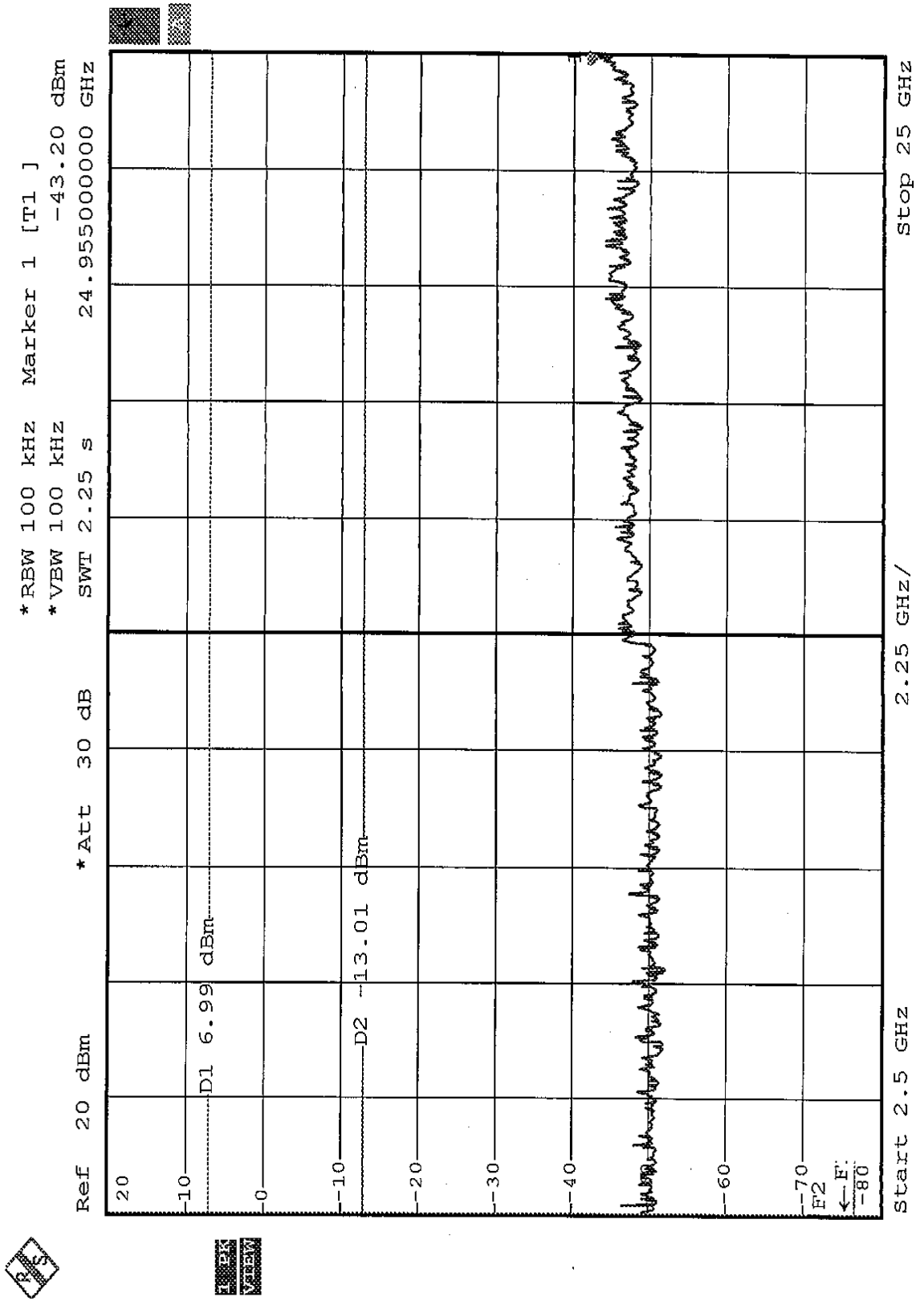
NOTE 6: The band edge emission plot of OFDM technique with Turbo mode on the following 10 page shows 48.91dB delta between carrier maximum power and local maximum emission in restrict band (2.4835GHz). The emission of carrier strength list in the test result of channel 6 at the item 4.2.7 is 95.69dBuV/m, so the maximum field strength in restrict band is 95.69-48.91=46.78dBuV/m which is under 54dBuV/m limit.

CCK

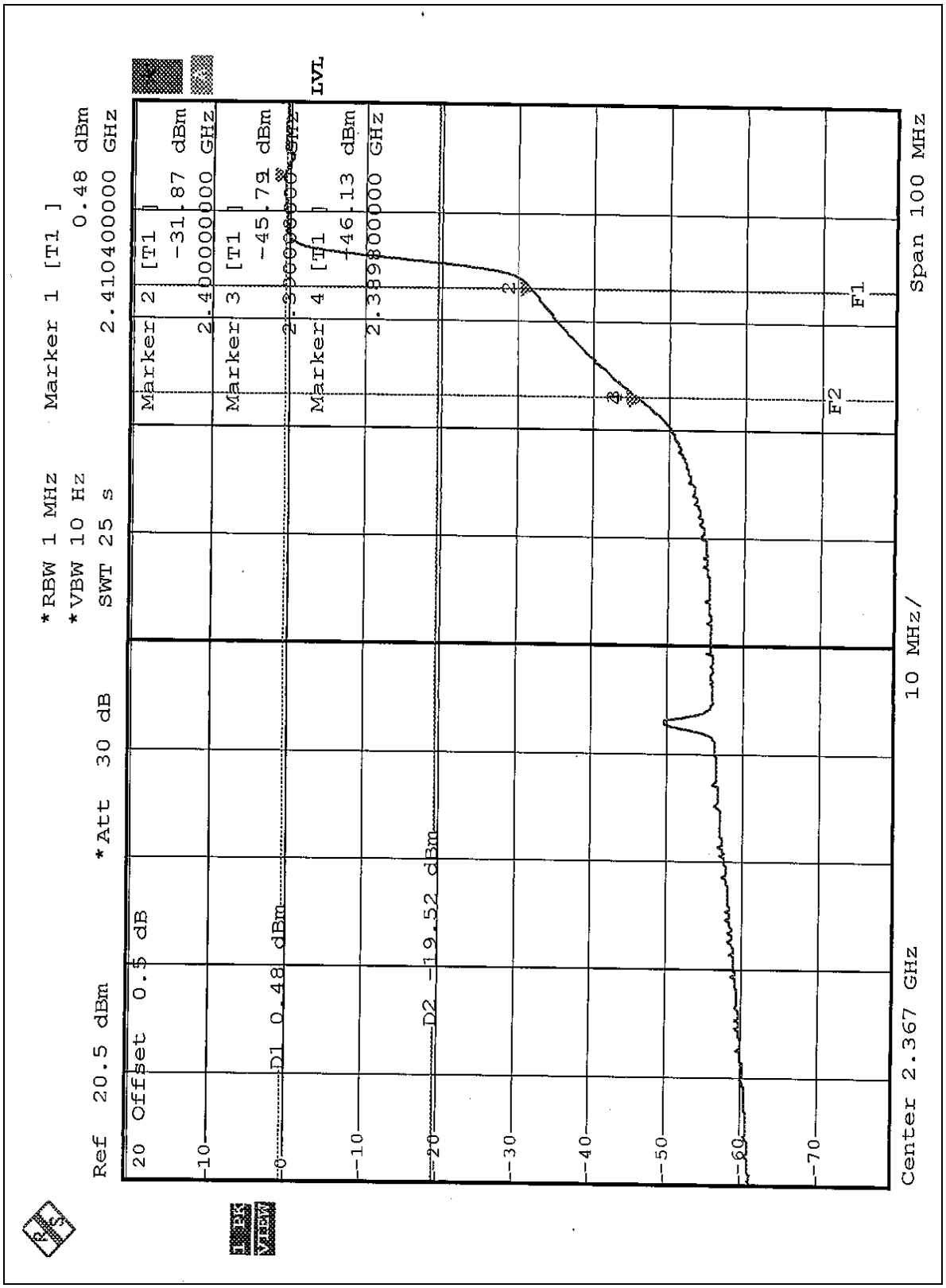

Ref 20 dBm
*Att 30 dB
*RBW 1 MHz
*VBW 10 Hz
SWT 25 s
Marker 1 [T1]
6.87 dBm
2.411400000 GHz
Marker 2 [T1]
-30.37 dBm
2.397800000 GHz
Marker 3 [T1]
-47.00 dBm
2.390000000 GHz
Marker 4 [T1]
-44.04 dBm
2.386600000 GHz
D1 6.87 dBm
D2 -13.13 dBm
Center 2.368 GHz
10 MHz/
Span 100 MHz
F1
F2

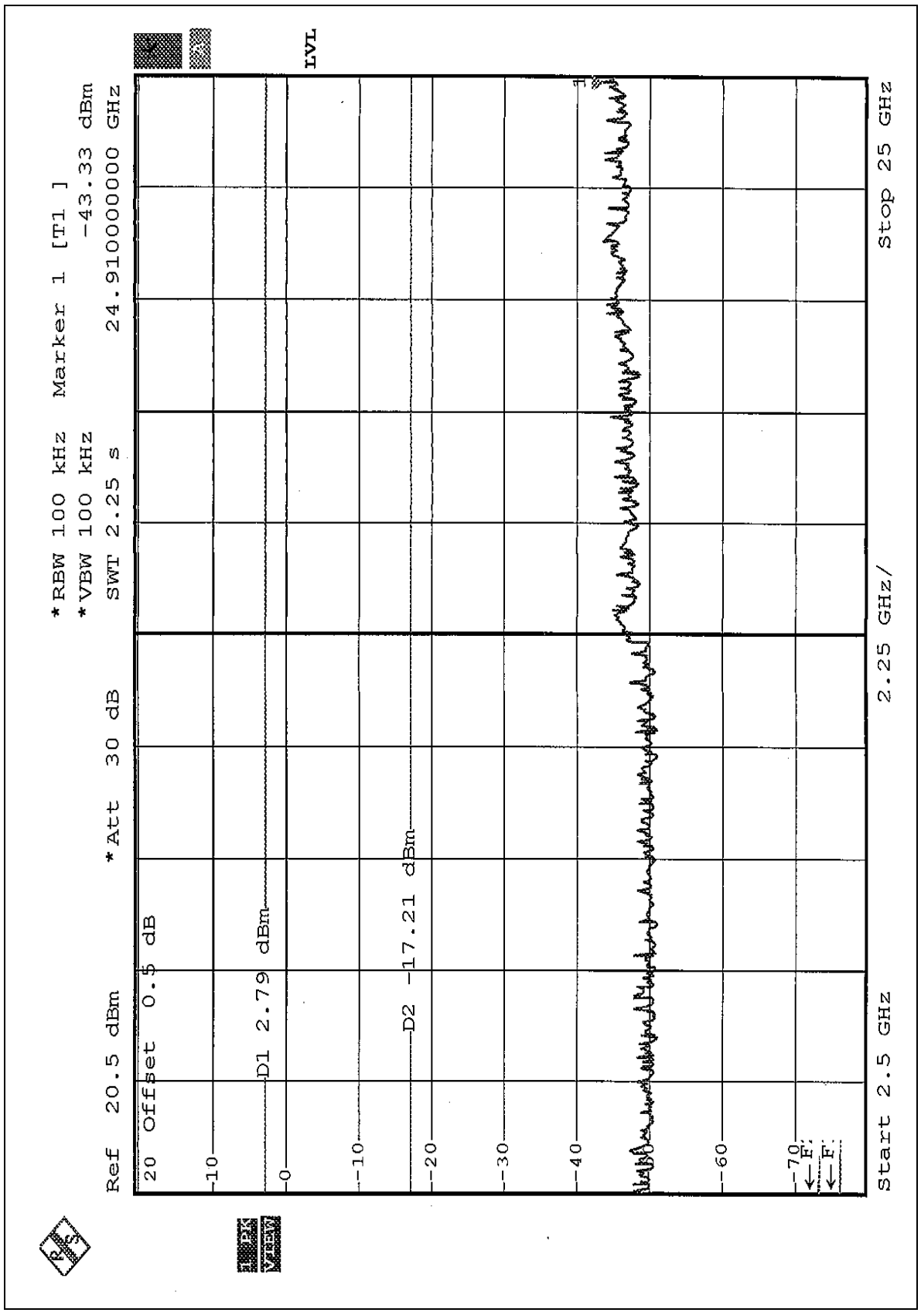

*RBW 100 kHz
*VBW 100 kHz
SWT 2.25 s
Marker 1 [T1]
-44.29 dBm
20.32000000 GHz
Ref 20 dBm
*Att 30 dB
D1 8.03 dBm
D2 -11.97 dBm
Start 2.5 GHz
2.25 GHz/
Stop 25 GHz

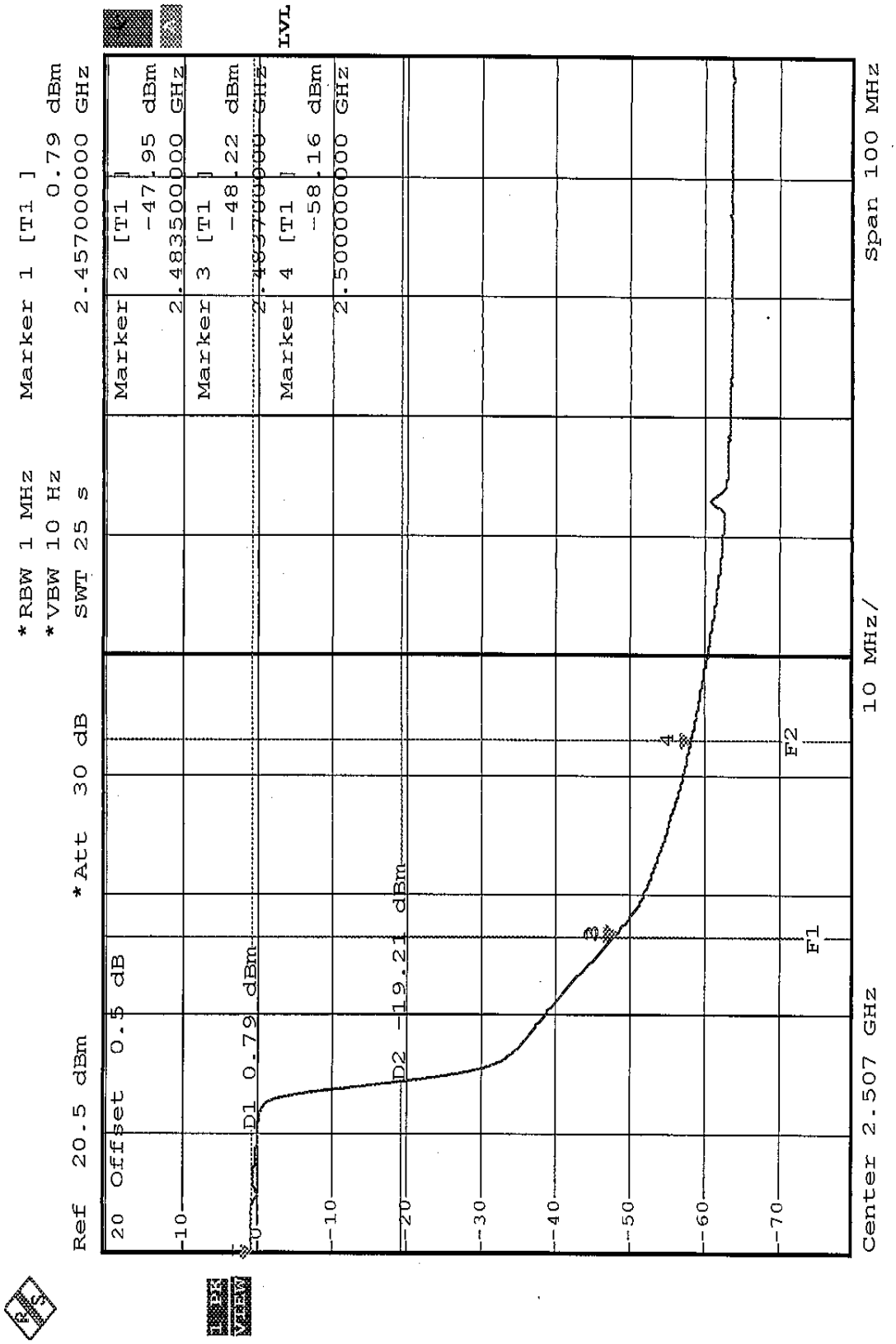

Marker 1 [T1]
6.38 dBm
2.461200000 GHz
*RBW 1 MHz
*VBW 10 Hz
SWT 25 s
*Att 30 dB
Ref 20 dBm
Marker 2 [T1]
-50.39 dBm
2.483500000 GHz
Marker 3 [T1]
-48.44 dBm
2.487600000 GHz
Marker 4 [T1]
-55.49 dBm
2.500000000 GHz
D1 6.38 dBm
D2 13.62 dBm
F1
F2
Center 2.502 GHz
10 MHz/
Span 100 MHz

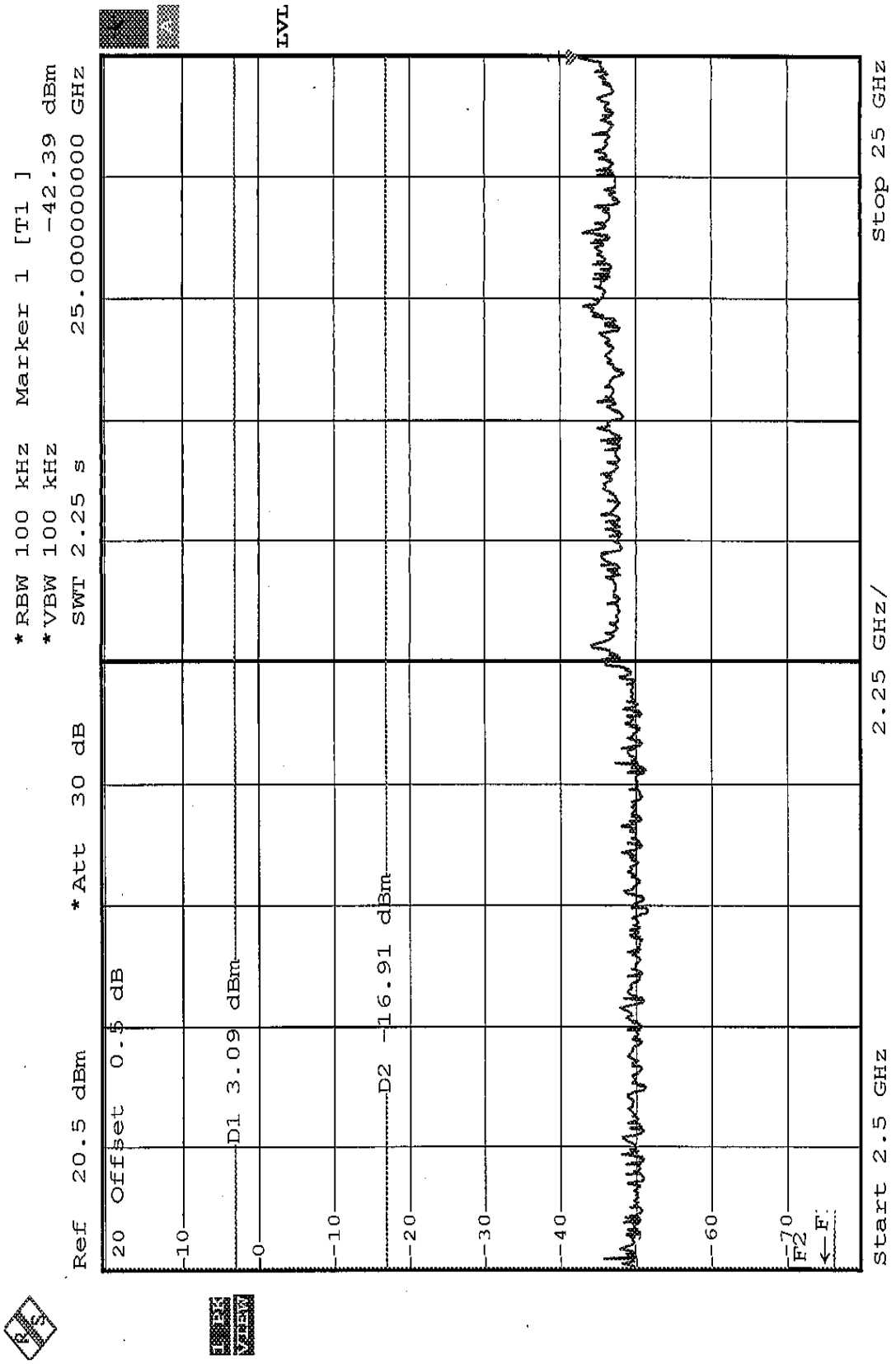

*RBW 100 kHz
*VBW 100 kHz
SWT 2.25 s
Marker 1 [T1]
-43.20 dBm
24.955000000 GHz
Ref 20 dBm
*Att 30 dB
D1 6.99 dBm
D2 -13.01 dBm
Start 2.5 GHz
2.25 GHz/
Stop 25 GHz
F2
F1

OFDM

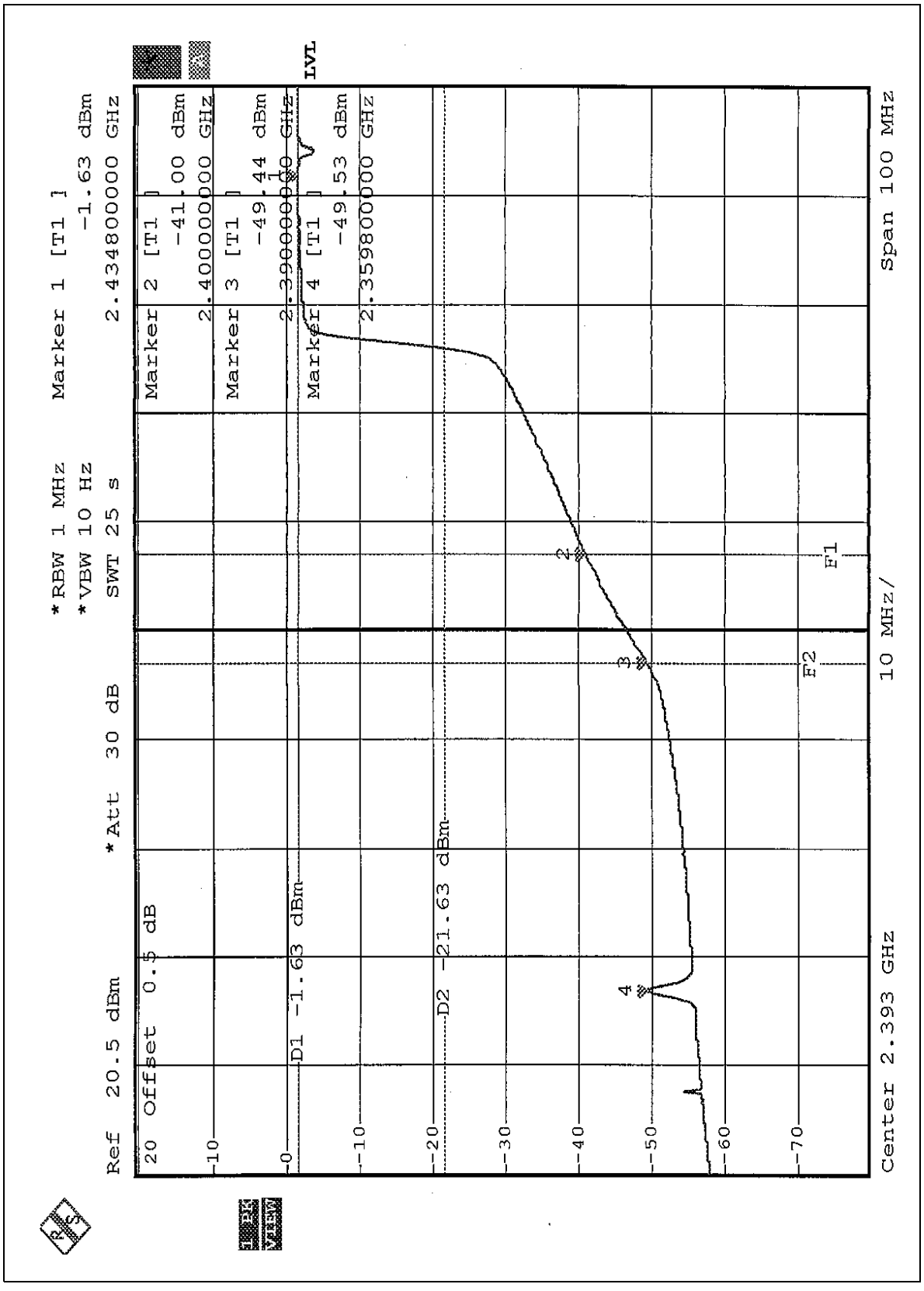

Marker 1 [T1]
0.48 dBm
2.410400000 GHz
*RBW 1 MHz
*VBW 10 Hz
SWT 25 s
*Att 30 dB
Ref 20.5 dBm
Offset 0.5 dB
Marker 2 [T1]
-31.87 dBm
2.400000000 GHz
Marker 3 [T1]
-45.79 dBm
2.390000000 GHz
Marker 4 [T1]
-46.13 dBm
2.389800000 GHz
D1 0.48 dBm
D2 -19.52 dBm
Center 2.367 GHz
10 MHz/
Span 100 MHz
F1
F2

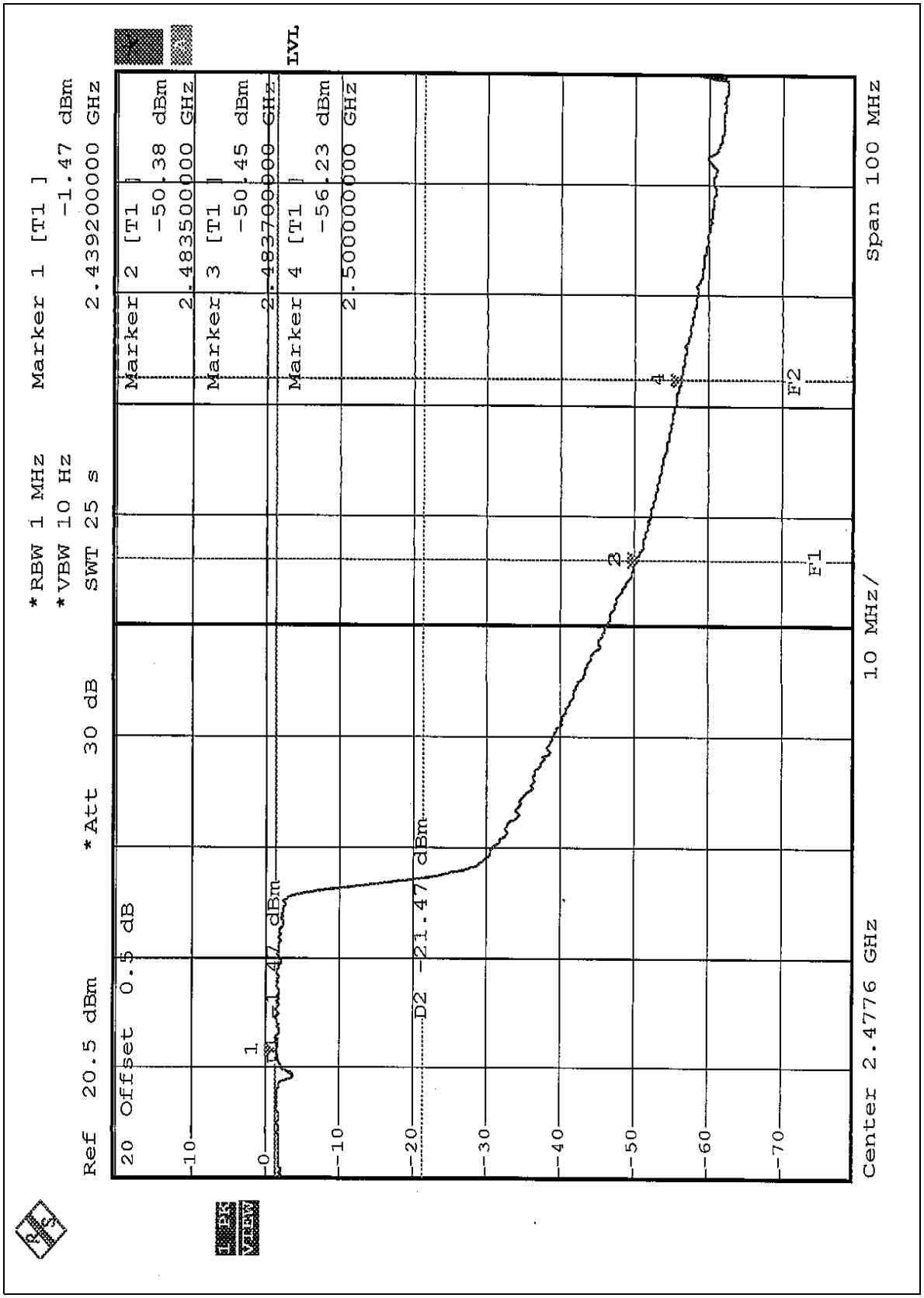

Ref 20.5 dBm
20 Offset 0.5 dB
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 2.25 s
Marker 1 [T1]
-43.33 dBm
24.910000000 GHz
LVL
D1 2.79 dBm
D2 -17.21 dBm
Start 2.5 GHz
2.25 GHz/
Stop 25 GHz
1 PK
VIEW


*RBW 1 MHz
*VBW 10 Hz
SWT 25 s
Marker 1 [T1]
0.79 dBm
2.457000000 GHz
*Att 30 dB
Ref 20.5 dBm
20 Offset 0.5 dB
D1 0.79 dBm
D2 -19.21 dBm
Marker 2 [T1]
-47.95 dBm
2.483500000 GHz
Marker 3 [T1]
-48.22 dBm
2.487700000 GHz
Marker 4 [T1]
-58.16 dBm
2.500000000 GHz
F1
F2
Center 2.507 GHz
10 MHz/
Span 100 MHz


Ref 20.5 dBm
20 Offset 0.5 dB
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 2.25 s
Marker 1 [T1]
-42.39 dBm
25.000000000 GHz
LVL
D1 3.09 dBm
D2 -16.91 dBm
Start 2.5 GHz
2.25 GHz/
Stop 25 GHz
F2
F1

Turbo


Ref 20.5 dBm
20 Offset 0.5 dB
*Att 30 dB
*RBW 1 MHz
*VBW 10 Hz
SWT 25 s
Marker 1 [T1]
-1.63 dBm
2.434800000 GHz
Marker 2 [T1]
-41.00 dBm
2.400000000 GHz
Marker 3 [T1]
-49.44 dBm
2.390000000 GHz
Marker 4 [T1]
-49.53 dBm
2.359800000 GHz
LVL
D1 -1.63 dBm
D2 -21.63 dBm
F1
F2
Center 2.393 GHz
10 MHz/
Span 100 MHz


*RBW 1 MHz
*VBW 10 Hz
SWT 25 s
Marker 1 [T1]
-1.47 dBm
2.439200000 GHz
Ref 20.5 dBm
Offset 0.5 dB
*Att 30 dB
Marker 2 [T1]
-50.38 dBm
2.483500000 GHz
Marker 3 [T1]
-50.45 dBm
2.483700000 GHz
Marker 4 [T1]
-56.23 dBm
2.500000000 GHz
LVL
D2 -21.47 dBm
F1
F2
Center 2.4776 GHz
10 MHz/
Span 100 MHz

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

5 TEST TYPES AND RESULTS (FOR PART 802.11a)

5.1 CONDUCTED EMISSION MEASUREMENT

5.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

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

5.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
ROHDE & SCHWARZ Test Receiver	ESCS 30	838251/021	Jan. 04, 2005
ROHDE & SCHWARZ Artificial Mains Network (for EUT)	ESH3-Z5	100218	Dec. 09, 2004
ROHDE & SCHWARZ Artificial Mains Network (for peripherals)	ESH3-Z5	100219	Dec. 09, 2004
ROHDE & SCHWARZ Artificial Mains Network (for peripherals)	ESH3-Z5	100220	Dec. 09, 2004
*ROHDE & SCHWARZ 4-wire ISN	ENY41	837032/016	Nov. 19, 2004
*ROHDE & SCHWARZ 2-wire ISN	ENY22	837497/016	Nov. 19, 2004
Software	Cond-V2M3	NA	NA
RF cable (JYEBAO)	5D-FB	Cable-C10.01	May 01, 2004
SUHNER Terminator (For ROHDE & SCHWARZ LISN)	65BNC-5001	E1-010770	Feb. 28, 2005
SUHNER Terminator (For ROHDE & SCHWARZ LISN)	65BNC-5001	E1-010773	Feb. 28, 2005

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. "*": These equipment are used for conducted telecom port test only (if tested).
3. The test was performed in ADT Shielded Room No. 10.
4. The VCCI Site Registration No. is C-1312.

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.

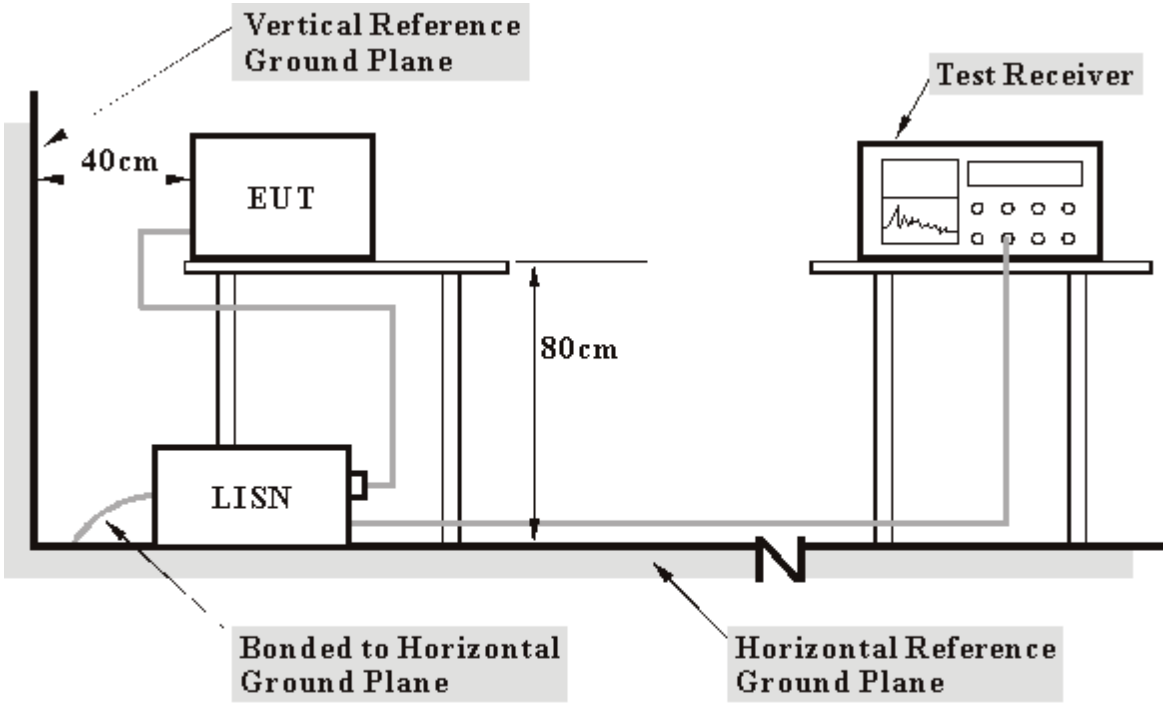
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

c. The frequency range from 150kHz to 30MHz was searched. Emission levels under limit-20dB could not be reported

5.1.4 DEVIATION FROM TEST STANDARD

No deviation

5.1.5 TEST SETUP



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

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

5.1.6 EUT OPERATING CONDITIONS

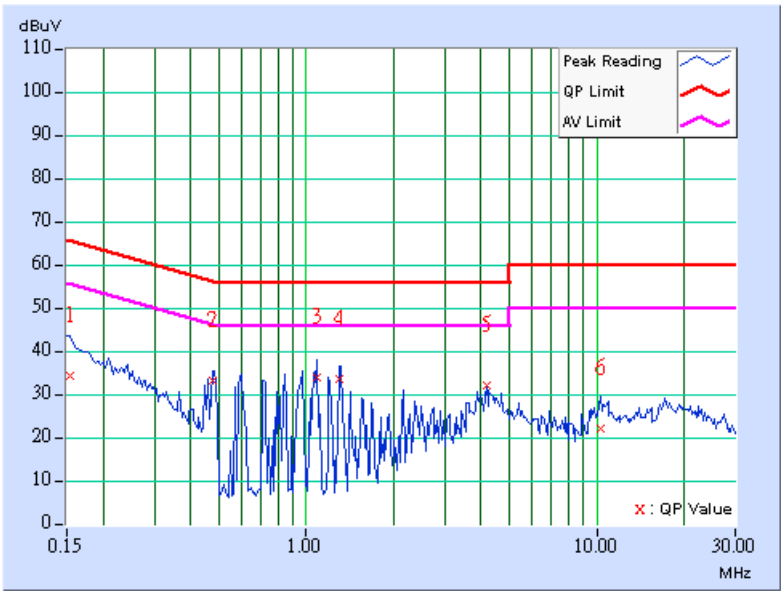
Same as 4.1.6.

5.1.7 TEST RESULTS

EUT	IEEE 802.11a+g Wireless Access Point	**MODEL**	GN-A15AG
		6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**PHASE**	Line (L)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	**TESTED BY**: Steven Lu	

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.154	0.11	34.28	-	34.39	-	65.79	55.79	-31.40	-
2	0.474	0.13	33.03	-	33.16	-	56.44	46.44	-23.28	-
3	**1.090**	**0.15**	**33.86**	**-**	**34.01**	**-**	**56.00**	**46.00**	**-21.99**	**-**
4	1.301	0.15	33.50	-	33.65	-	56.00	46.00	-22.35	-
5	4.160	0.21	31.76	-	31.97	-	56.00	46.00	-24.03	-
6	10.320	0.33	21.89	-	22.22	-	60.00	50.00	-37.78	-

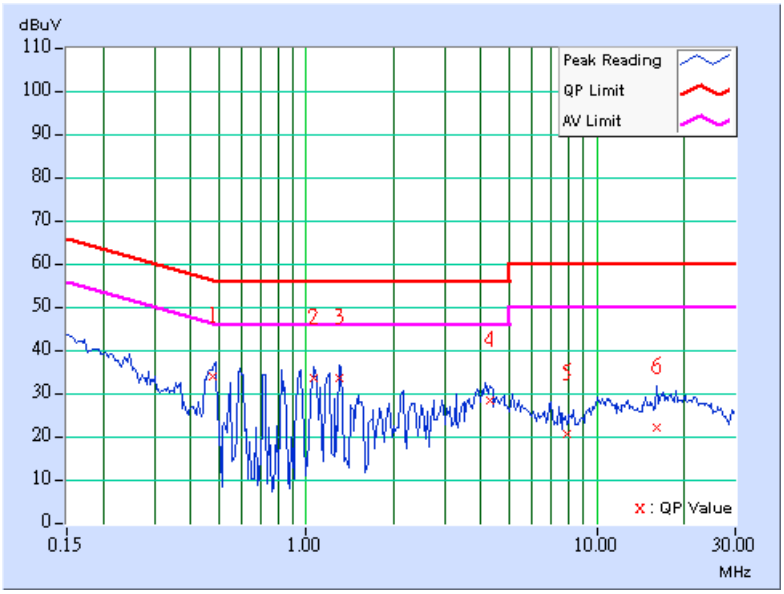
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	IEEE 802.11a+g Wireless Access Point	**MODEL**	GN-A15AG
		6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**PHASE**	Neutral (N)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	**TESTED BY**: Steven Lu	

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.480	0.12	33.26	-	33.38	-	56.35	46.35	-22.97	-
2	1.066	0.15	33.11	-	33.26	-	56.00	46.00	-22.74	-
3	1.301	0.15	33.14	-	33.29	-	56.00	46.00	-22.71	-
4	4.301	0.21	28.00	-	28.21	-	56.00	46.00	-27.79	-
5	7.922	0.28	19.98	-	20.26	-	60.00	50.00	-39.74	-
6	16.188	0.66	21.51	-	22.17	-	60.00	50.00	-37.83	-

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
* HP Spectrum Analyzer	8590L	3544A01176	Jun. 10, 2004
* HP Preamplifier	8447D	2944A08485	May 01, 2004
* HP Spectrum Analyzer	8593E	3926A04191	Mar. 24, 2005
* HP Preamplifier	8449B	3008A01292	Aug. 13, 2004
ROHDE & SCHWARZ TEST RECEIVER	ESI7	838496/016	Feb. 23, 2005
* ROHDE & SCHWARZ TEST RECEIVER	ESMI	839013/007 839379/002	Feb. 12, 2005
SCHAFFNER Tunable Dipole Antenna SCHWARZBECK Tunable Dipole Antenna	VHBA 9123 UHA 9105	459 977	Jun. 26, 2004
* CHASE BILOG Antenna	CBL6112A	2221	Jul. 26, 2004
* SCHWARZBECK Horn Antenna	BBHA9120-D1	D130	Jun. 30, 2004
* EMCO Turn Table	1060	1115	NA
* CHANCE Tower	CM-AT40	CM-A010	NA
* Software	ADT_Radiated_V5.14	NA	NA
* ANRITSU RF Switches	MP59B	M35046	Oct. 9, 2004
* TIMES RF cable	LMR-600	CABLE-ST5-01	Oct. 9, 2004

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

2. "*" = These equipment are used for the final measurement.
3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
4. The test was performed in ADT Open Site No. 5.
5. The VCCI Site Registration No. is R-1039.

5.2.4 TEST PROCEDURES

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

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

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

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

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

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

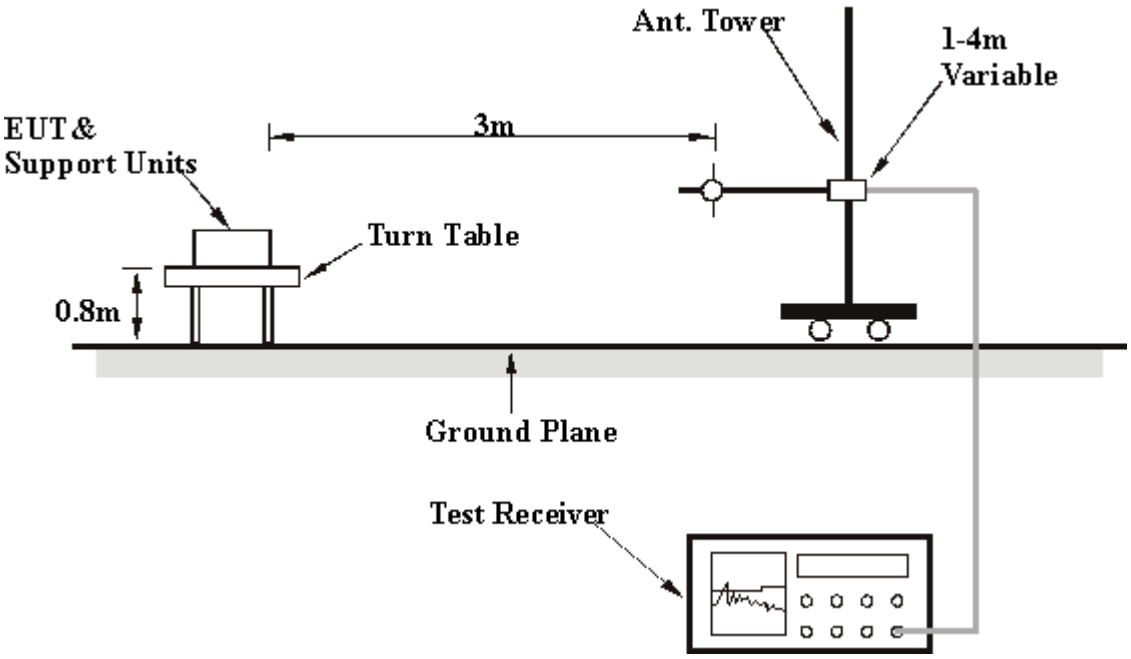
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 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	IEEE 802.11a+g Wireless Access Point	MODEL	GN-A15AG
FREQUENCY RANGE	Below 1000MHz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	INPUT POWER (SYSTEM)	120Vac, 60Hz
TESTED BY	Vincent Lin		

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	125.01	30.19 QP	43.50	-13.31	1.45 H	53	17.63	12.56
2	179.76	31.41 QP	43.50	-12.09	1.21 H	230	21.38	10.03
3	233.34	33.50 QP	46.00	-12.50	1.81 H	359	21.15	12.35
4	240.02	37.35 QP	46.00	-8.65	1.48 H	359	24.59	12.76
5	250.03	33.30 QP	46.00	-12.70	1.64 H	308	19.93	13.37
6	300.01	38.33 QP	46.00	-7.67	2.04 H	337	22.91	15.42
7	319.99	35.16 QP	46.00	-10.84	1.07 H	359	19.42	15.74
8	366.68	35.56 QP	46.00	-10.44	1.16 H	214	18.71	16.85
9	**400.01**	**43.33 QP**	**46.00**	**-2.67**	**1.00 H**	**44**	**25.25**	**18.08**
10	480.01	42.94 QP	46.00	-3.06	1.00 H	57	23.60	19.34
11	500.01	40.49 QP	46.00	-5.51	1.00 H	92	20.57	19.92
12	560.01	42.53 QP	46.00	-3.47	2.24 H	281	21.75	20.78
13	799.99	35.74 QP	46.00	-10.26	1.31 H	359	12.41	23.33
14	879.99	37.54 QP	46.00	-8.46	1.49 H	99	13.42	24.12

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.

EUT	IEEE 802.11a+g Wireless Access Point	MODEL	GN-A15AG
FREQUENCY RANGE	Below 1000MHz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	INPUT POWER (SYSTEM)	120Vac, 60Hz
TESTED BY	Vincent Lin		

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	75.02	35.55 QP	40.00	-4.45	1.00 V	359	28.40	7.15
2	80.03	34.27 QP	40.00	-5.73	1.13 V	266	26.24	8.03
3	125.00	40.74 QP	43.50	-2.76	1.00 V	330	28.18	12.56
4	200.00	32.79 QP	43.50	-10.71	1.06 V	190	22.48	10.31
5	240.02	42.55 QP	46.00	-3.45	1.73 V	266	29.79	12.76
6	300.00	38.97 QP	46.00	-7.03	1.66 V	41	23.55	15.42
7	320.04	39.13 QP	46.00	-6.87	2.08 V	259	23.39	15.74
8	375.01	35.69 QP	46.00	-10.31	1.74 V	96	18.53	17.16
9	400.01	43.26 QP	46.00	-2.74	1.63 V	354	25.18	18.08
10	480.01	39.90 QP	46.00	-6.10	1.18 V	60	20.56	19.34
11	500.02	40.52 QP	46.00	-5.48	1.53 V	43	20.60	19.92
12	560.00	43.24 QP	46.00	-2.76	2.54 V	8	22.46	20.78
13	600.00	36.96 QP	46.00	-9.04	1.00 V	177	15.20	21.76
14	640.02	40.52 QP	46.00	-5.48	1.40 V	25	18.56	21.96
15	719.99	40.60 QP	46.00	-5.40	1.04 V	343	17.90	22.70
16	879.99	39.04 QP	46.00	-6.96	1.04 V	131	14.92	24.12

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.

EUT	IEEE 802.11a+g Wireless Access Point	MODEL	GN-A15AG
MODE	Normal Mode	CHANNEL	1
FREQUENCY RANGE	1 ~40 GHz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 70%RH, 991hPa	INPUT POWER (SYSTEM)	120Vac, 60Hz
TESTED BY	Vincent Lin		

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	48.51 PK	74.00	-25.49	1.09 H	154	12.35	36.16
1	#5150.00	38.04 AV	54.00	-15.96	1.09 H	154	1.88	36.16
2	*5180.00	98.49 PK			1.09 H	154	62.32	36.17
2	*5180.00	88.02 AV			1.09 H	154	51.85	36.17
3	10360.00	56.45 PK	68.30	-11.85	1.15 H	202	10.46	45.99
3	10360.00	42.78 AV	68.30	-25.52	1.15 H	202	-3.21	45.99

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	57.70 PK	74.00	-16.30	1.00 V	124	21.54	36.16
1	#5150.00	46.79 AV	54.00	-7.21	1.00 V	124	10.63	36.16
2	*5180.00	107.68 PK			1.00 V	124	71.51	36.17
2	*5180.00	96.77 AV			1.00 V	124	60.60	36.17
3	10360.00	56.65 PK	68.30	-11.65	1.20 V	347	10.66	45.99
3	10360.00	44.26 AV	68.30	-24.04	1.20 V	347	-1.73	45.99

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	IEEE 802.11a+g Wireless Access Point	**MODEL**	GN-A15AG
MODE	Normal Mode	**CHANNEL**	4
FREQUENCY RANGE	1 ~40 GHz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 70%RH, 991hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
TESTED BY	Vincent Lin		

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	101.63 PK			2.00 H	355	65.43	36.20
1	*5240.00	90.65 AV			2.00 H	355	54.45	36.20
2	10480.00	55.87 PK	68.30	-12.43	1.53 H	269	9.85	46.02
2	10480.00	41.96 AV	68.30	-26.34	1.53 H	269	-4.06	46.02

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	107.45 PK			1.00 V	125	71.25	36.20
1	*5240.00	96.26 AV			1.00 V	125	60.06	36.20
2	10480.00	56.12 PK	68.30	-12.18	1.26 V	305	10.10	46.02
2	10480.00	42.53 AV	68.30	-25.77	1.26 V	305	-3.49	46.02

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	IEEE 802.11a+g Wireless Access Point	**MODEL**	GN-A15AG
MODE	Normal Mode	**CHANNEL**	5
FREQUENCY RANGE	1 ~40 GHz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 70%RH, 991hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
TESTED BY	Vincent Lin		

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	102.71 PK			2.00 H	348	66.51	36.20
1	*5260.00	91.48 AV			2.00 H	348	55.28	36.20
2	10520.00	55.71 PK	68.30	-12.59	1.63 H	98	9.72	45.99
2	10520.00	41.68 AV	68.30	-26.62	1.63 H	98	-4.31	45.99

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	107.66 PK			1.00 V	122	71.46	36.20
1	*5260.00	96.37 AV			1.00 V	122	60.17	36.20
2	10520.00	57.28 PK	68.30	-11.02	1.15 V	185	11.29	45.99
2	10520.00	42.85 AV	68.30	-25.45	1.15 V	185	-3.14	45.99

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	IEEE 802.11a+g Wireless Access Point	MODEL	GN-A15AG
MODE	Normal Mode	CHANNEL	8
FREQUENCY RANGE	1 ~40 GHz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 70%RH, 991hPa	INPUT POWER (SYSTEM)	120Vac, 60Hz
TESTED BY	Vincent Lin		

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	101.04 PK			2.19 H	332	64.85	36.19
1	*5320.00	90.02 AV			2.19 H	332	53.83	36.19
2	#5350.00	46.18 PK	74.00	-27.82	2.19 H	332	10.02	36.16
2	#5350.00	35.16 AV	54.00	-18.84	2.19 H	332	-1.00	36.16
3	#10640.00	54.33 PK	74.00	-19.67	1.08 H	196	8.40	45.93
3	#10640.00	42.10 AV	54.00	-11.90	1.08 H	196	-3.83	45.93

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	108.67 PK			1.94 V	345	72.48	36.19
1	*5320.00	68.30 AV			1.94 V	345	32.11	36.19
2	#5350.00	53.81 PK	74.00	-20.19	1.94 V	345	17.66	36.16
2	#5350.00	42.64 AV	54.00	-11.36	1.94 V	345	6.48	36.16
3	#10640.00	56.37 PK	74.00	-17.63	1.55 V	262	10.44	45.93
3	#10640.00	42.66 AV	54.00	-11.34	1.55 V	262	-3.27	45.93

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	IEEE 802.11a+g Wireless Access Point	MODEL	GN-A15AG
MODE	Normal Mode	CHANNEL	9
FREQUENCY RANGE	1 ~40 GHz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	INPUT POWER (SYSTEM)	120Vac, 60Hz
TESTED BY	Vincent Lin		

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	5725.00	64.50 PK	81.05	-16.55	1.00 H	180	27.77	36.73
1	5725.00	53.25 AV	70.25	-17.00	1.00 H	180	16.52	36.73
2	*5745.00	101.05 PK			1.00 H	180	64.24	36.81
2	*5745.00	90.25 AV			1.00 H	180	53.44	36.81
3	#11490.00	55.32 PK	74.00	-18.68	1.00 H	185	8.52	46.80
3	#11490.00	43.65 AV	54.00	-10.35	1.00 H	185	-3.15	46.80

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5725.00	71.60 PK	88.60	-17.00	1.00 V	196	34.87	36.73
1	5725.00	60.37 AV	77.37	-17.00	1.00 V	196	23.64	36.73
2	*5745.00	108.60 PK			1.00 V	196	71.79	36.81
2	*5745.00	97.37 AV			1.00 V	196	60.56	36.81
3	#11490.00	56.95 PK	74.00	-17.05	1.20 V	196	10.15	46.80
3	#11490.00	44.35 AV	54.00	-9.65	1.20 V	196	-2.45	46.80

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.
7. The limit value is defined as per 15.247

EUT	IEEE 802.11a+g Wireless Access Point	**MODEL**	GN-A15AG
MODE	Normal Mode	**CHANNEL**	11
FREQUENCY RANGE	1 ~40 GHz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
TESTED BY	Vincent Lin		

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	*5785.00	99.30 PK			1.00 H	201	62.32	36.98
1	*5785.00	88.32 AV			1.00 H	201	51.34	36.98
2	#11570.00	55.96 PK	74.00	-18.04	1.02 H	222	9.34	46.62
2	#11570.00	43.00 AV	54.00	-11.00	1.02 H	222	-3.62	46.62

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	*5785.00	107.45 PK			1.00 V	203	70.47	36.98
1	*5785.00	96.83 AV			1.00 V	203	59.85	36.98
2	#11570.00	56.96 PK	74.00	-17.04	1.24 V	240	10.34	46.62
2	#11570.00	43.85 AV	54.00	-10.15	1.24 V	240	-2.77	46.62

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.
8. "#"The radiated frequency falling in the restricted band.
9. The limit value is defined as per 15.247

EUT	IEEE 802.11a+g Wireless Access Point	**MODEL**	GN-A15AG
MODE	Normal Mode	**CHANNEL**	13
FREQUENCY RANGE	1 ~40 GHz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
TESTED BY	Vincent Lin		

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	*5825.00	99.38 PK			1.10 H.	202	62.32.	37.06
1	*5825.00	89.02 AV			1.10 H	202	51.96	37.06
2	5850.00	58.13 PK	79.38	-21.25	1.10 H	202	21.05	37.08
2	5850.00	47.77AV	69.02	-21.25	1.10 H	202	10.69	37.08
3	#11650.00	55.96 PK	74.00	-18.04	1.14 H	247	9.45	46.52
3	#11650.00	42.89 AV	54.00	-11.11	1.14 H	247	-3.62	46.52

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	*5825.00	108.71 PK			1.00 V	203	71.65	37.06
1	*5825.00	97.81 AV			1.00 V	203	60.75	37.06
2	5850.00	66.56 PK	88.71	-22.15	1.00 V	203	29.48	37.08
2	5850.00	55.66 AV	77.81	-22.15	1.00 V	203	18.58	37.08
3	#11650.00	55.23 PK	74.00	-18.77	1.00 V	224	8.71	46.52
3	#11650.00	43.32 AV	54.00	-10.68	1.00 V	224	-3.20	46.52

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.

10. "#"The radiated frequency falling in the restricted band.
11. The limit value is defined as per 15.247

EUT	IEEE 802.11a+g Wireless Access Point	MODEL	GN-A15AG
MODE	Turbo Mode	CHANNEL	1
FREQUENCY RANGE	1 ~40 GHz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 70%RH, 991hPa	INPUT POWER (SYSTEM)	120Vac, 60Hz
TESTED BY	Vincent Lin		

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	48.62 PK	74.00	-25.38	2.08 H	352	12.46	36.16
1	#5150.00	38.01 AV	54.00	-15.99	2.08 H	352	1.85	36.16
2	*5210.00	98.07 PK			2.08 H	352	61.89	36.18
2	*5210.00	87.46 AV			2.08 H	352	51.28	36.18
3	10420.00	54.77 PK	68.30	-13.53	1.02 H	223	8.70	46.07
3	10420.00	42.14 AV	68.30	-26.16	1.02 H	223	-3.93	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	#5150.00	55.99 PK	74.00	-18.01	1.00 V	183	19.83	36.16
1	#5150.00	45.17 AV	54.00	-8.83	1.00 V	183	9.01	36.16
2	*5210.00	105.44 PK			1.00 V	183	69.26	36.18
2	*5210.00	94.62 AV			1.00 V	183	58.44	36.18
3	10420.00	56.40 PK	68.30	-11.90	1.19 V	148	10.33	46.07
3	10420.00	43.43 AV	68.30	-24.87	1.19 V	148	-2.64	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	IEEE 802.11a+g Wireless Access Point	**MODEL**	GN-A15AG
MODE	Turbo Mode	**CHANNEL**	2
FREQUENCY RANGE	1 ~40 GHz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 70%RH, 991hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
TESTED BY	Vincent Lin		

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	98.73 PK			2.09 H	355	62.53	36.20
1	*5250.00	88.25 AV			2.09 H	355	52.05	36.20
2	10500.00	53.84 PK	68.30	-14.46	1.36 H	325	7.84	46.00
2	10500.00	41.63 AV	68.30	-26.67	1.36 H	325	-4.37	46.00

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	104.69 PK			1.00 V	183	68.49	36.20
1	*5250.00	94.25 AV			1.00 V	183	58.05	36.20
2	10500.00	55.91 PK	68.30	-12.39	1.26 V	185	9.91	46.00
2	10500.00	42.96 AV	68.30	-25.34	1.26 V	185	-3.04	46.00

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	IEEE 802.11a+g Wireless Access Point	**MODEL**	GN-A15AG
MODE	Turbo Mode	**CHANNEL**	3
FREQUENCY RANGE	1 ~40 GHz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 70%RH, 991hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
TESTED BY	Vincent Lin		

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	98.92 PK			2.12 H	353	62.70	36.22
1	*5290.00	89.01 AV			2.12 H	353	52.79	36.22
2	#5350.00	45.96 PK	74.00	-28.04	2.12 H	353	9.80	36.16
2	#5350.00	36.05 AV	54.00	-17.95	2.12 H	353	-0.11	36.16
3	10580.00	55.12 PK	68.30	-13.18	1.81 H	96	9.16	45.96
3	10580.00	43.06 AV	68.30	-25.24	1.81 H	96	-2.90	45.96

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	*5290.00	105.67 PK			1.00 V	155	69.45	36.22
1	*5290.00	95.00 AV			1.00 V	155	58.78	36.22
2	#5350.00	52.71 PK	74.00	-21.29	1.00 V	155	16.55	36.16
2	#5350.00	42.04 AV	54.00	-11.96	1.00 V	155	5.88	36.16
3	10580.00	56.87 PK	68.30	-11.43	1.14 V	201	10.91	45.96
3	10580.00	44.17 AV	68.30	-24.13	1.14 V	201	-1.79	45.96

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	IEEE 802.11a+g Wireless Access Point	**MODEL**	GN-A15AG
MODE	Turbo Mode	**CHANNEL**	4
FREQUENCY RANGE	1 ~40 GHz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
TESTED BY	Vincent Lin		

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	5725.00	68.48 PK	78.48	-10.00	1.03 H	156	31.75	36.73
1	5725.00	58.41 AV	68.41	-10.00	1.03 H	156	21.68	36.73
2	*5760.00	98.48 PK			1.03 H	156	61.60	36.88
2	*5760.00	88.41 AV			1.03 H	156	51.53	36.88
3	#11520.00	55.32 PK	74.00	-18.68	1.00 H	211	8.57	46.75
3	#11520.00	46.96 AV	54.00	-7.04	1.00 H	211	0.21	46.75

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	5725.00	78.35 PK	88.35	-10.00	1.03 V	215	41.62	36.73
1	5725.00	67.60 AV	77.60	-10.00	1.03 V	215	30.87	36.73
2	*5760.00	108.35 PK			1.03 V	215	71.47	36.88
2	*5760.00	97.60 AV			1.03 V	215	60.72	36.88
3	#11520.00	57.19 PK	74.00	-16.81	1.06 V	274	10.44	46.75
3	#11520.00	47.58 AV	54.00	-6.42	1.06 V	274	0.83	46.75

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.
7. The limit value is defined as per 15.247

EUT	IEEE 802.11a+g Wireless Access Point	**MODEL**	GN-A15AG
MODE	Turbo Mode	**CHANNEL**	5
FREQUENCY RANGE	1 ~40 GHz	**DETECTOR FUNCTION**	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	**INPUT POWER (SYSTEM)**	120Vac, 60Hz
TESTED BY	Vincent Lin		

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	108.68 PK			1.06 H	211	71.64	37.04
1	*5800.00	97.90 AV			1.06 H	211	60.86	37.04
2	5850.00	67.36 PK	88.68	-21.32	1.06 H	211	30.28	37.08
2	5850.00	56.58 AV	77.90	-21.32	1.06 H	211	19.50	37.08
3	#11600.00	57.36 PK	74.00	-16.64	1.11 H	73	10.81	46.55
3	#11600.00	46.69 AV	54.00	-7.31	1.11 H	273	0.14	46.55

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	97.58 PK			1.13 V	196	60.54	37.04
1	*5800.00	87.63 AV			1.13 V	196	50.59	37.04
2	5850.00	56.26 PK	77.58	-21.32	1.13 V	196	19.18	37.08
2	5850.00	46.31 AV	67.63	-21.32	1.13 V	196	9.23	37.08
3	#11600.00	55.32 PK	74.00	-18.68	1.04 V	278	8.77	46.55
3	#11600.00	45.35 AV	54.00	-8.65	1.04 V	278	-1.20	46.55

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.

12. "#"The radiated frequency falling in the restricted band.
13. The limit value is defined as per 15.247

for frequency 5.15~5.35GHZ

5.3 PEAK TRANSMIT POWER MEASUREMENT

5.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT

Frequency Band	Limit
5.15 – 5.25GHz	The lesser of 50mW (17dBm) or 4dBm + 10logB
5.25 – 5.35GHz	The lesser of 250mW (24dBm) or 11dBm + 10logB
5.725 – 5.825GHz	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
R&S SPECTRUM ANALYZER	FSEK30	100049	Aug. 12, 2004

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

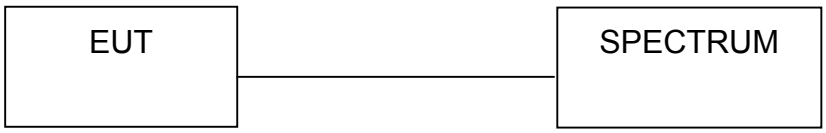
5.3.3 TEST PROCEDURE

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.

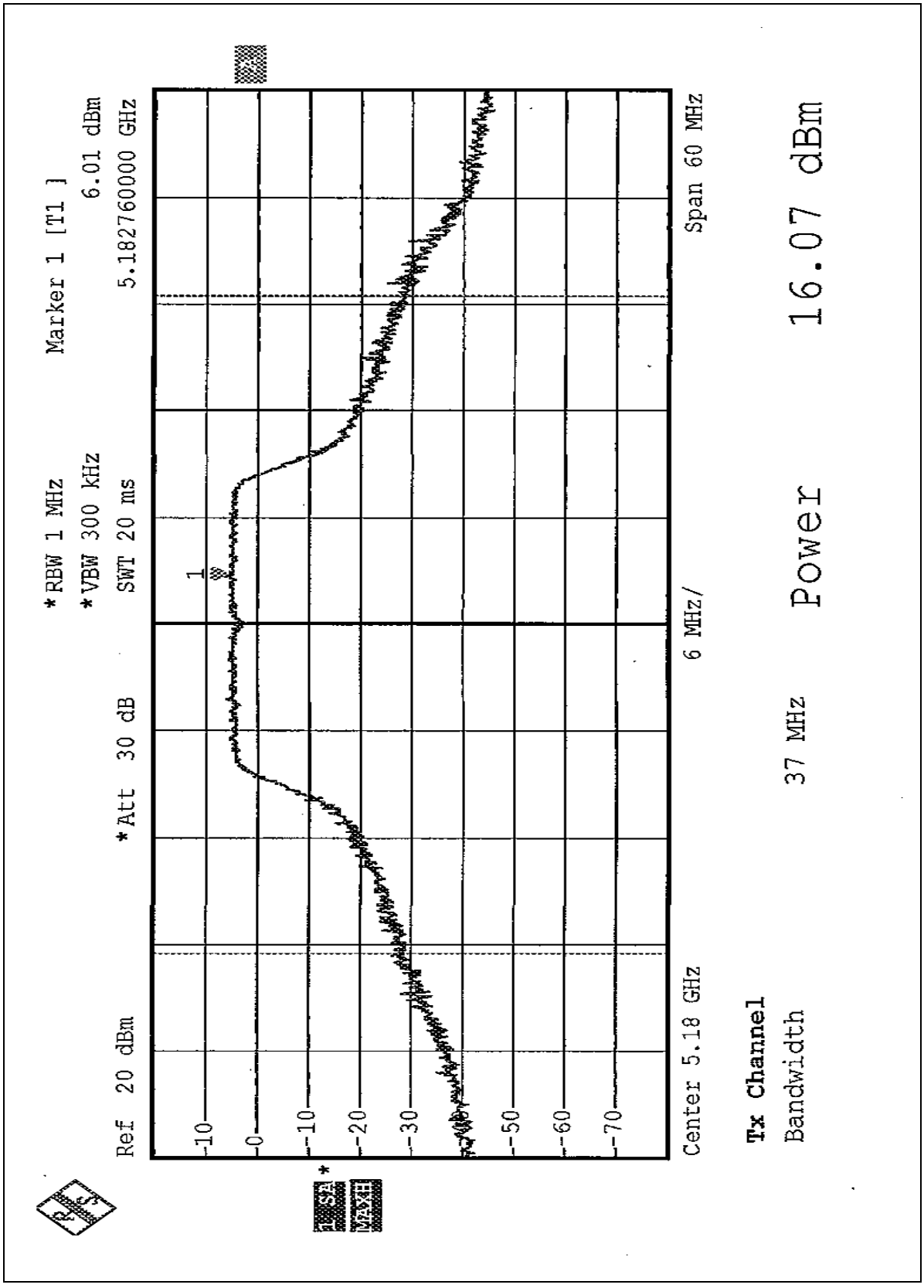
5.3.7 TEST RESULTS

EUT	IEEE 802.11a+g Wireless Access Point	**MODEL**	GN-A15AG
MODE	Normal	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 63%RH, 991hPa	**TESTED BY**	Steven Lu

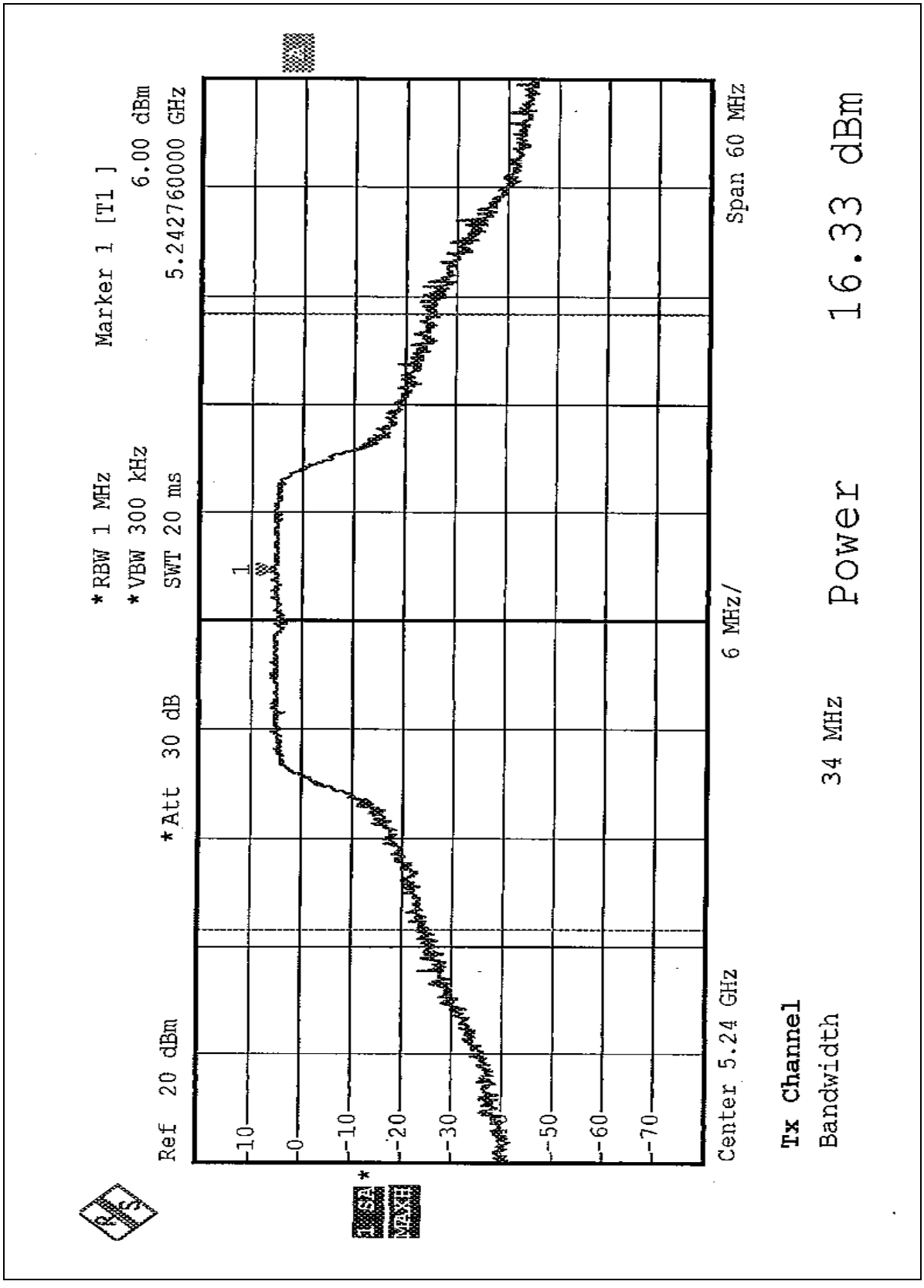
CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	26dBc Occupied Bandwidth (MHz)	PASS/FAIL
1	5180	16.07	17.00	35.04	PASS
4	5240	16.33	17.00	32.64	PASS
5	5260	16.45	24.00	34.40	PASS
8	5320	16.13	24.00	31.52	PASS

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

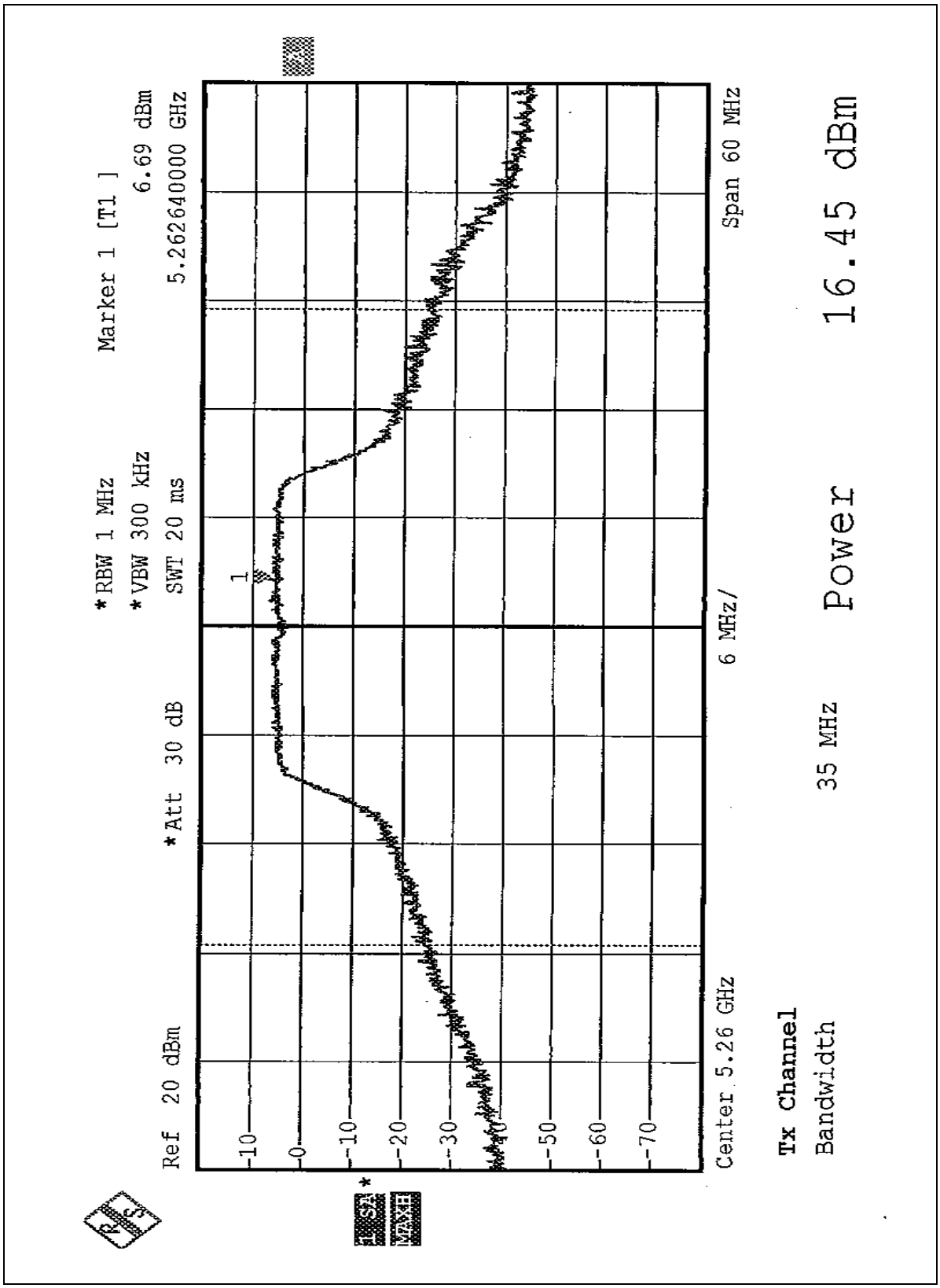
CHANNEL 1


Marker 1 [T1]
6.01 dBm
5.182760000 GHz
*RBW 1 MHz
*VBW 300 kHz
SWT 20 ms
*Att 30 dB
Ref 20 dBm
Center 5.18 GHz
6 MHz/
Span 60 MHz
16.07 dBm
Power
37 MHz
Tx Channel
Bandwidth

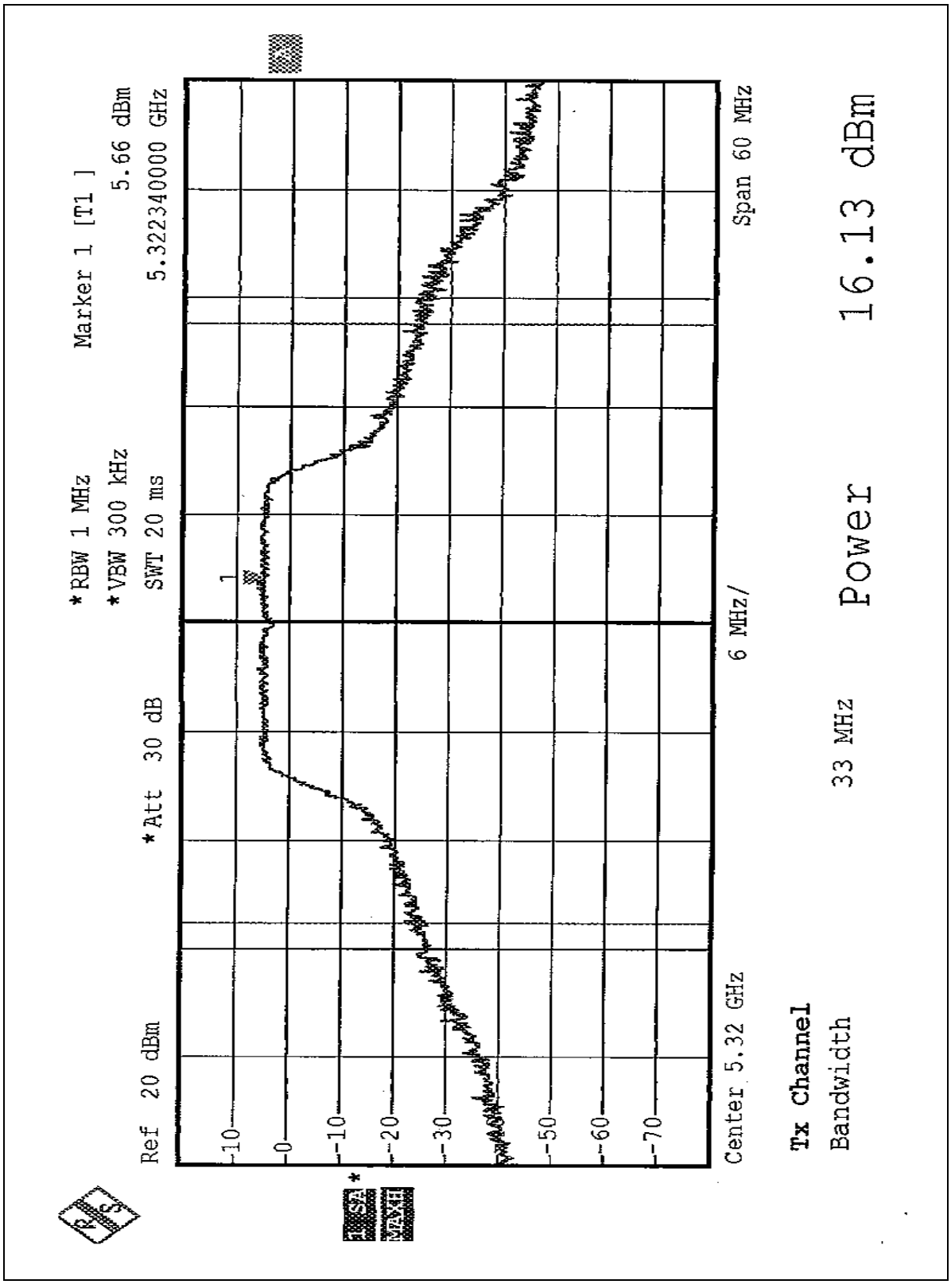
CHANNEL 4


Tx Channel
Bandwidth
34 MHz
Power
16.33 dBm
Center 5.24 GHz
6 MHz/
Span 60 MHz
Ref 20 dBm
*Att 30 dB
*VBW 300 kHz
SWT 20 ms
*RBW 1 MHz
Marker 1 [T1]
6.00 dBm
5.242760000 GHz

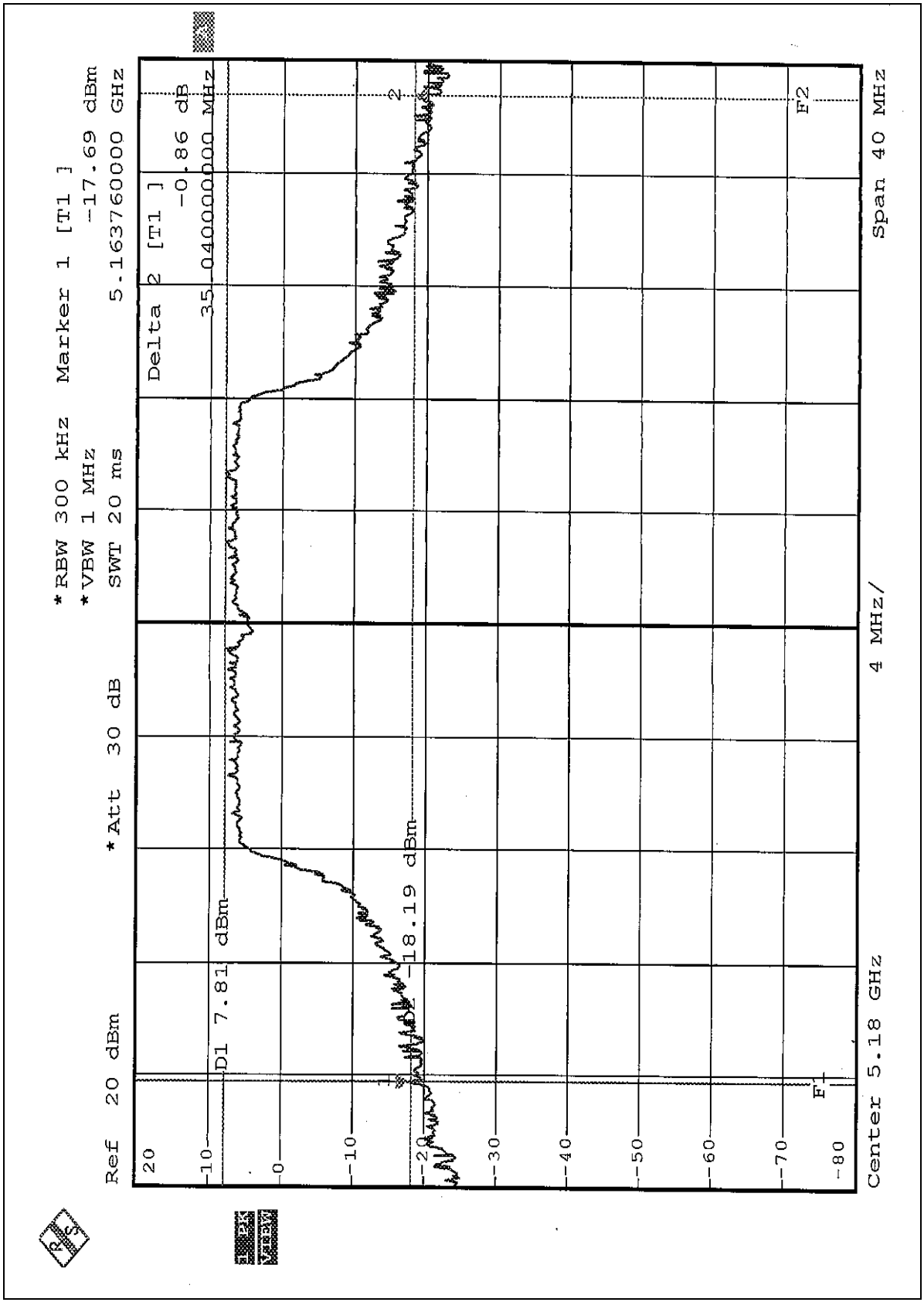
CHANNEL 5


Marker 1 [T1]
6.69 dBm
5.262640000 GHz
*RBW 1 MHz
*VBW 300 kHz
SWT 20 ms
*Att 30 dB
Ref 20 dBm
Center 5.26 GHz
6 MHz/
Span 60 MHz
16.45 dBm
Power
35 MHz
Tx Channel
Bandwidth

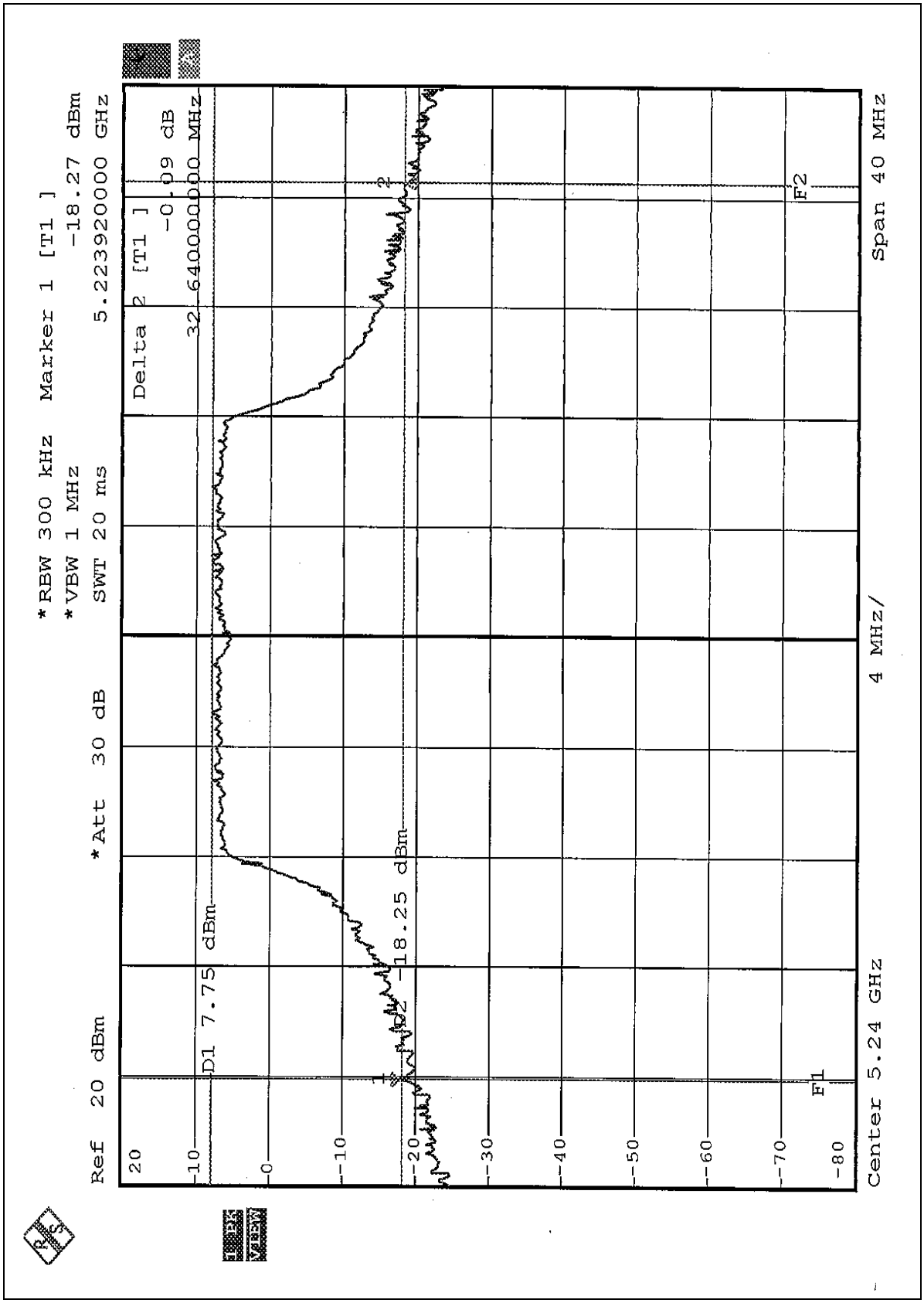
CHANNEL 8


Ref 20 dBm
*Att 30 dB
*VBW 300 kHz
SWT 20 ms
*RBW 1 MHz
Marker 1 [T1]
5.66 dBm
5.322340000 GHz
Center 5.32 GHz
6 MHz/
Span 60 MHz
Tx Channel
Bandwidth
33 MHz
Power
16.13 dBm

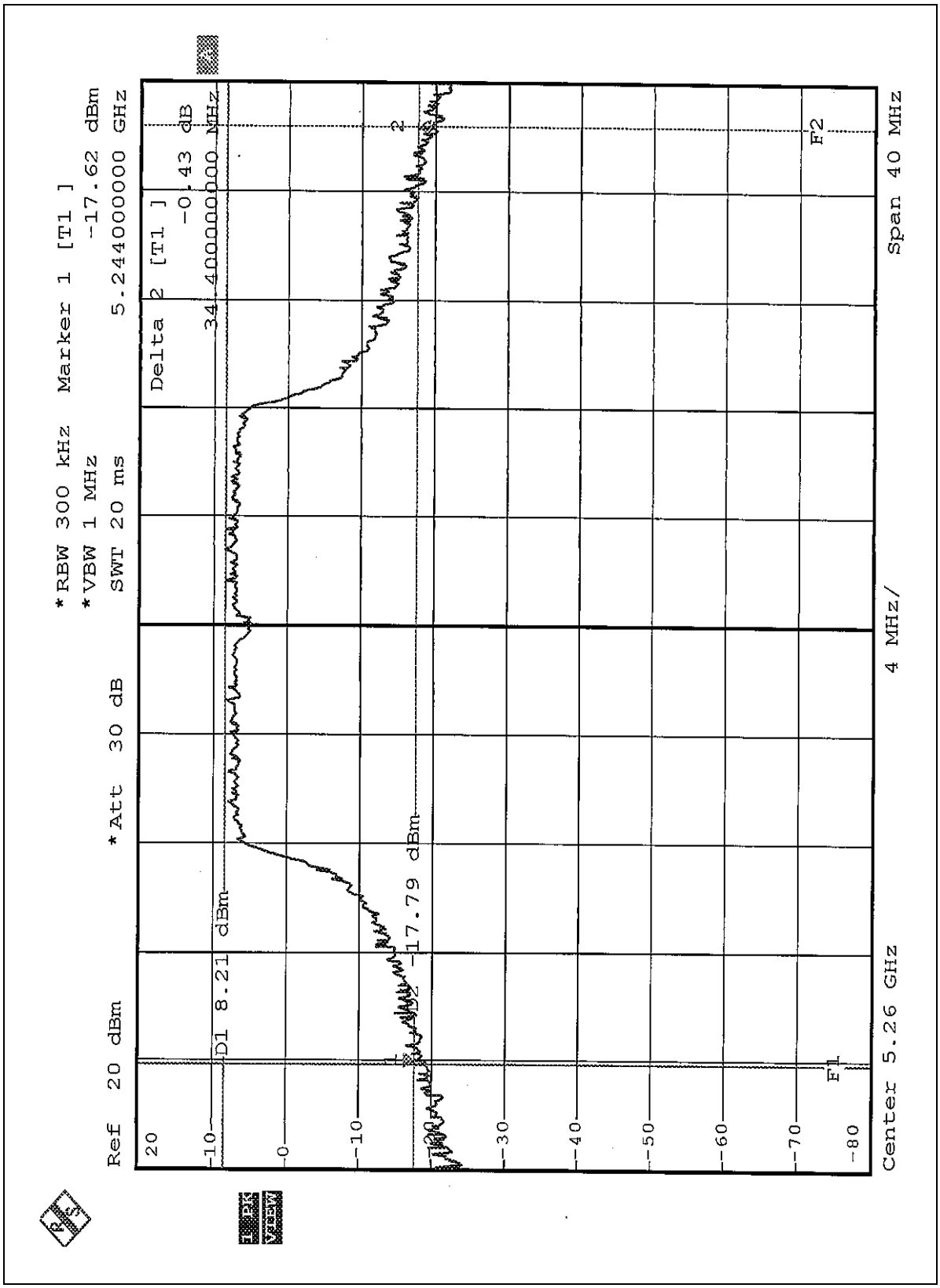
CHANNEL 1


Ref 20 dBm
*Att 30 dB
*RBW 300 kHz
*VBW 1 MHz
SWT 20 ms
Marker 1 [T1]
-17.69 dBm
5.16376000 GHz
Delta 2 [T1]
-0.86 dB
35.04000000 MHz
D1 7.81 dBm
D2 -18.19 dBm
Center 5.18 GHz
4 MHz/
Span 40 MHz
F1
F2
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80

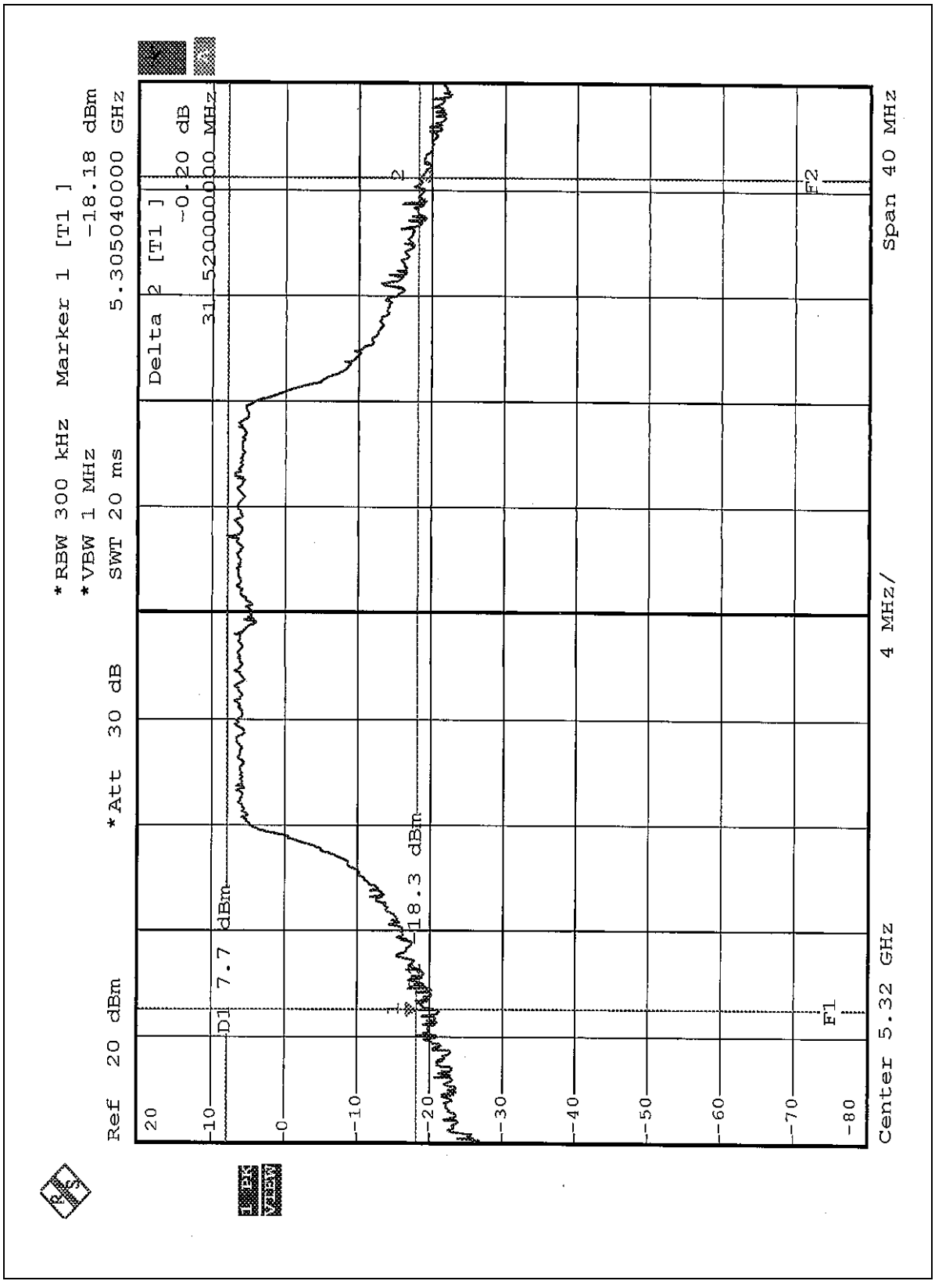
CHANNEL 4


*RBW 300 kHz
*VBW 1 MHz
SWT 20 ms
Marker 1 [T1]
-18.27 dBm
5.223920000 GHz
Delta 2 [T1]
-0.09 dB
32.640000000 MHz
Ref 20 dBm
*Att 30 dB
D1 7.75 dBm
18.25 dBm
Center 5.24 GHz
4 MHz/
Span 40 MHz
F1
F2

CHANNEL 5


Ref 20 dBm
*Att 30 dB
*VBW 1 MHz
*RBW 300 kHz
SWT 20 ms
Marker 1 [T1]
-17.62 dBm
5.244000000 GHz
Delta 2 [T1]
-0.43 dB
34.400000000 MHz
D1 8.21 dBm
-17.79 dBm
Center 5.26 GHz
4 MHz/
Span 40 MHz
F1
F2

CHANNEL 8

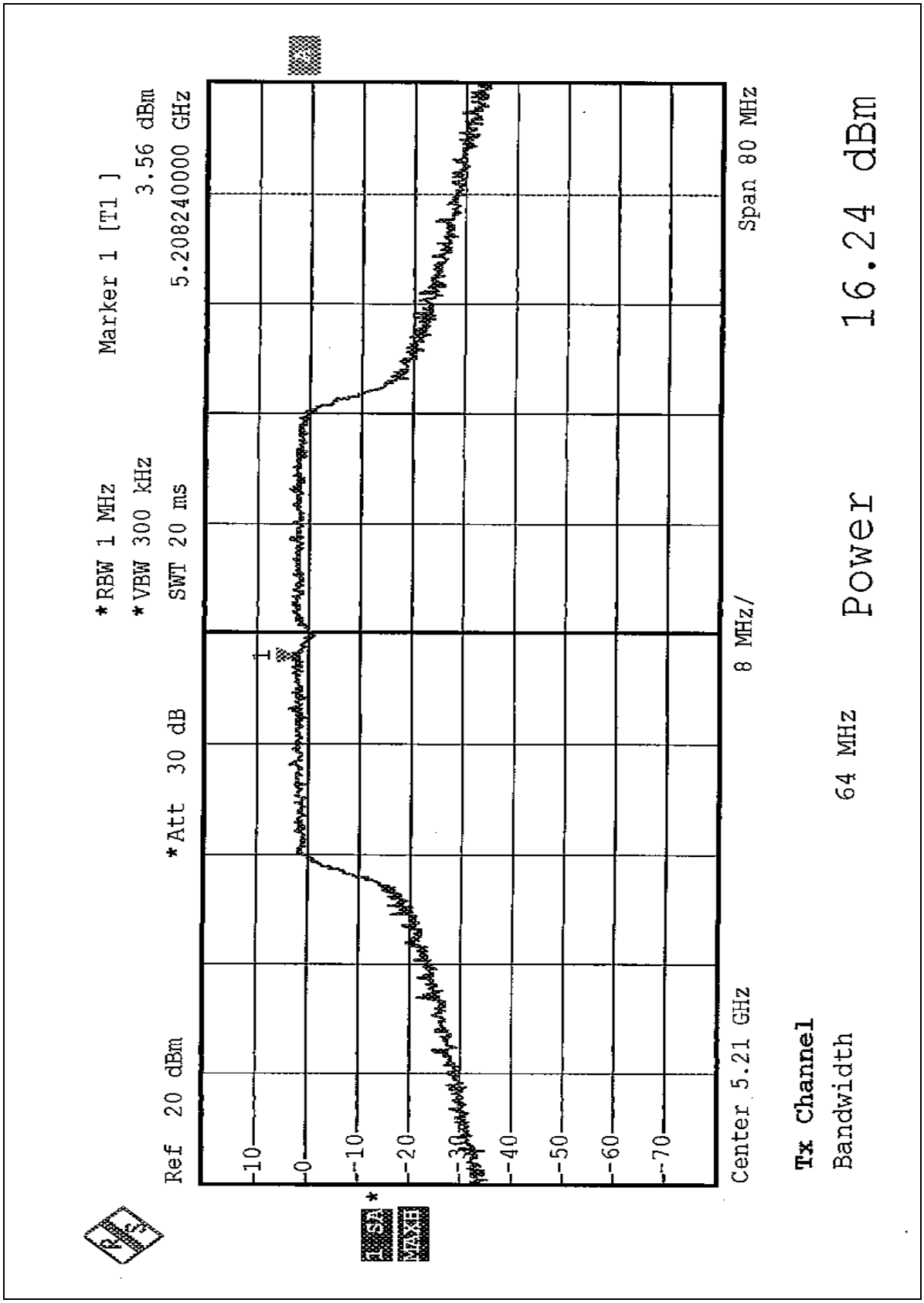

*RBW 300 kHz
*VBW 1 MHz
SWT 20 ms
*Att 30 dB
Ref 20 dBm
Marker 1 [T1]
-18.18 dBm
5.305040000 GHz
Delta 2 [T1]
-0.20 dB
31.52000000 MHz
D1 7.7 dBm
18.3 dBm
Center 5.32 GHz
4 MHz/
Span 40 MHz
F1
F2

EUT	IEEE 802.11a+g Wireless Access Point	**MODEL**	GN-A15AG
MODE	Turbo	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 63%RH, 991hPa	**TESTED BY**	Steven Lu

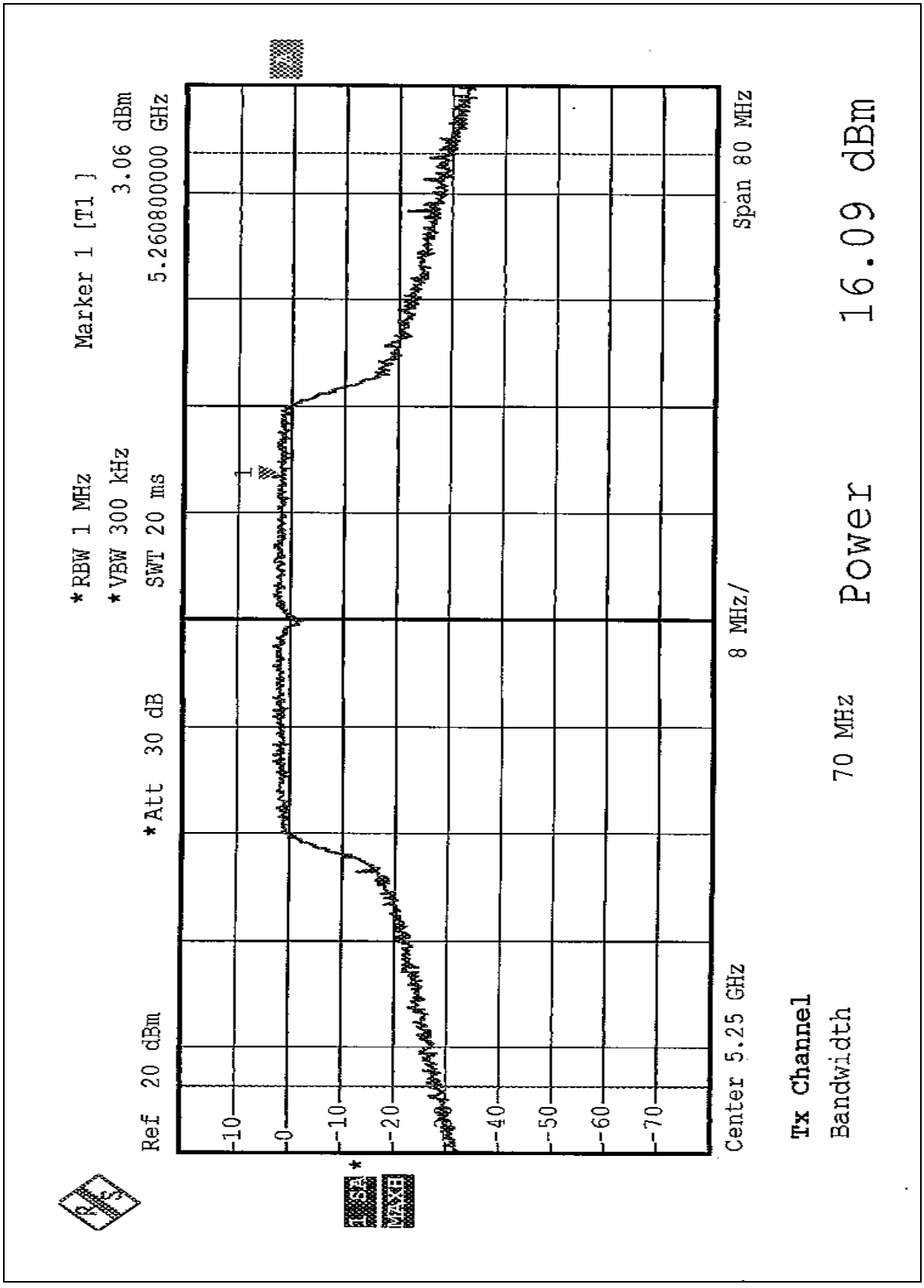
CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	26dBc Occupied Bandwidth (MHz)	PASS/FAIL
1	5210	16.24	17.00	62.28	PASS
2	5250	16.09	17.00	68.64	PASS
3	5290	16.43	24.00	56.48	PASS

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

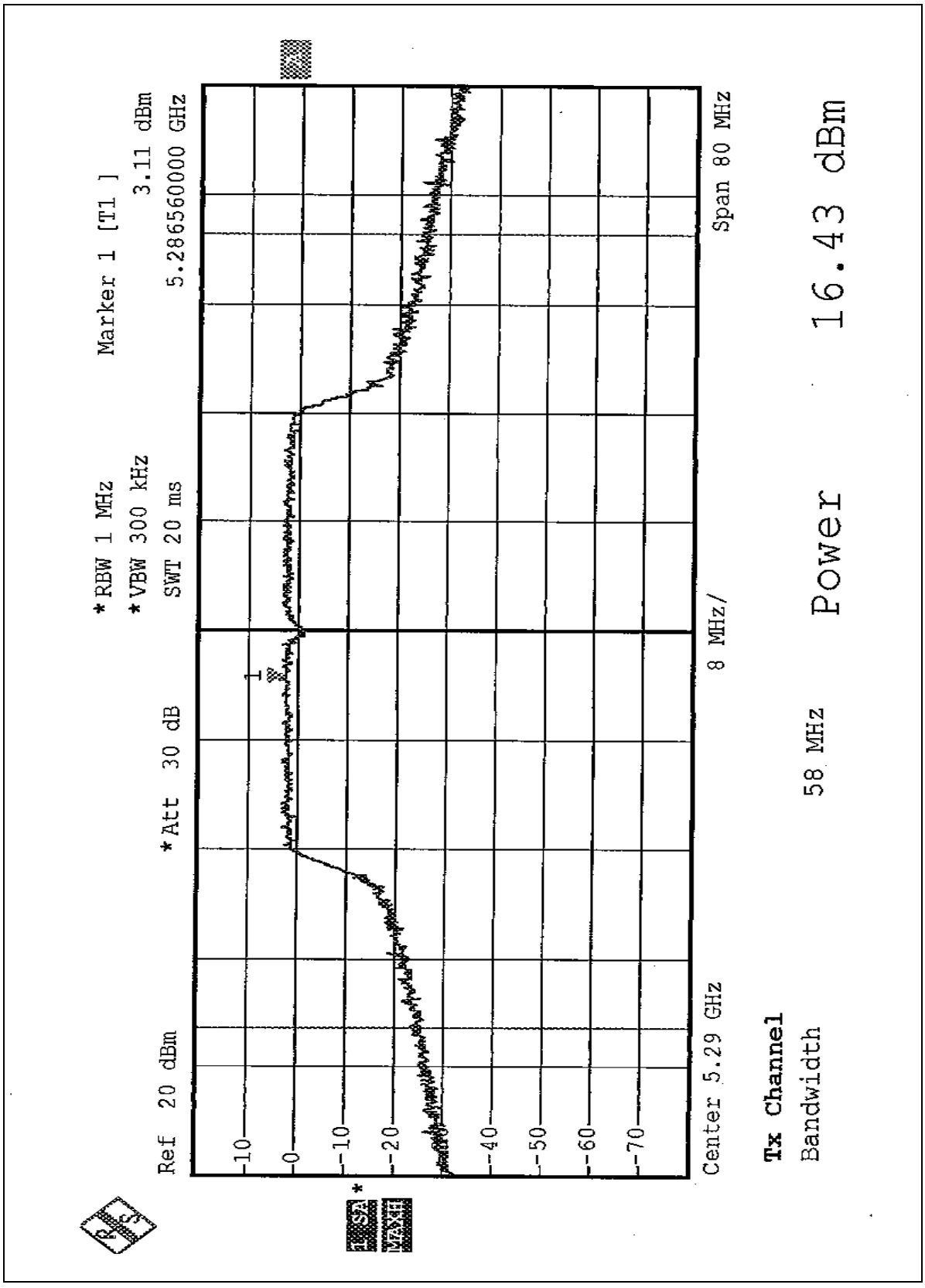
CHANNEL 1


Tx Channel
Bandwidth
64 MHz
Power
16.24 dBm
Ref 20 dBm
*Att 30 dB
*RBW 1 MHz
*VBW 300 kHz
SWT 20 ms
Marker 1 [T1]
3.56 dBm
5.208240000 GHz
Center 5.21 GHz
8 MHz/
Span 80 MHz

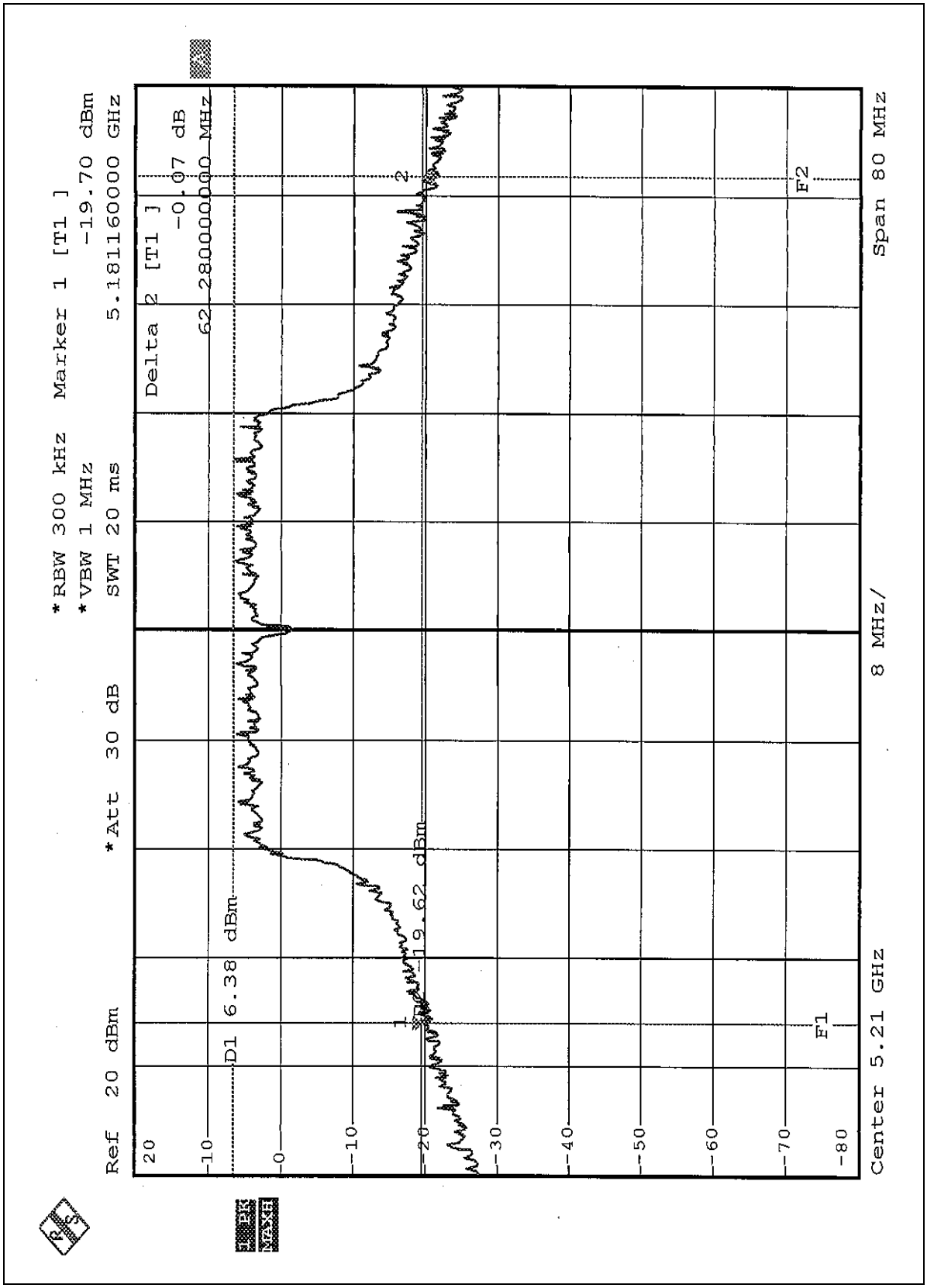
CHANNEL 2


Tx Channel
Bandwidth
70 MHz
Power
16.09 dBm
Center 5.25 GHz
8 MHz/
Span 80 MHz
Ref 20 dBm
*Att 30 dB
*VBW 300 kHz
SWT 20 ms
*RBW 1 MHz
Marker 1 [T1]
3.06 dBm
5.260800000 GHz

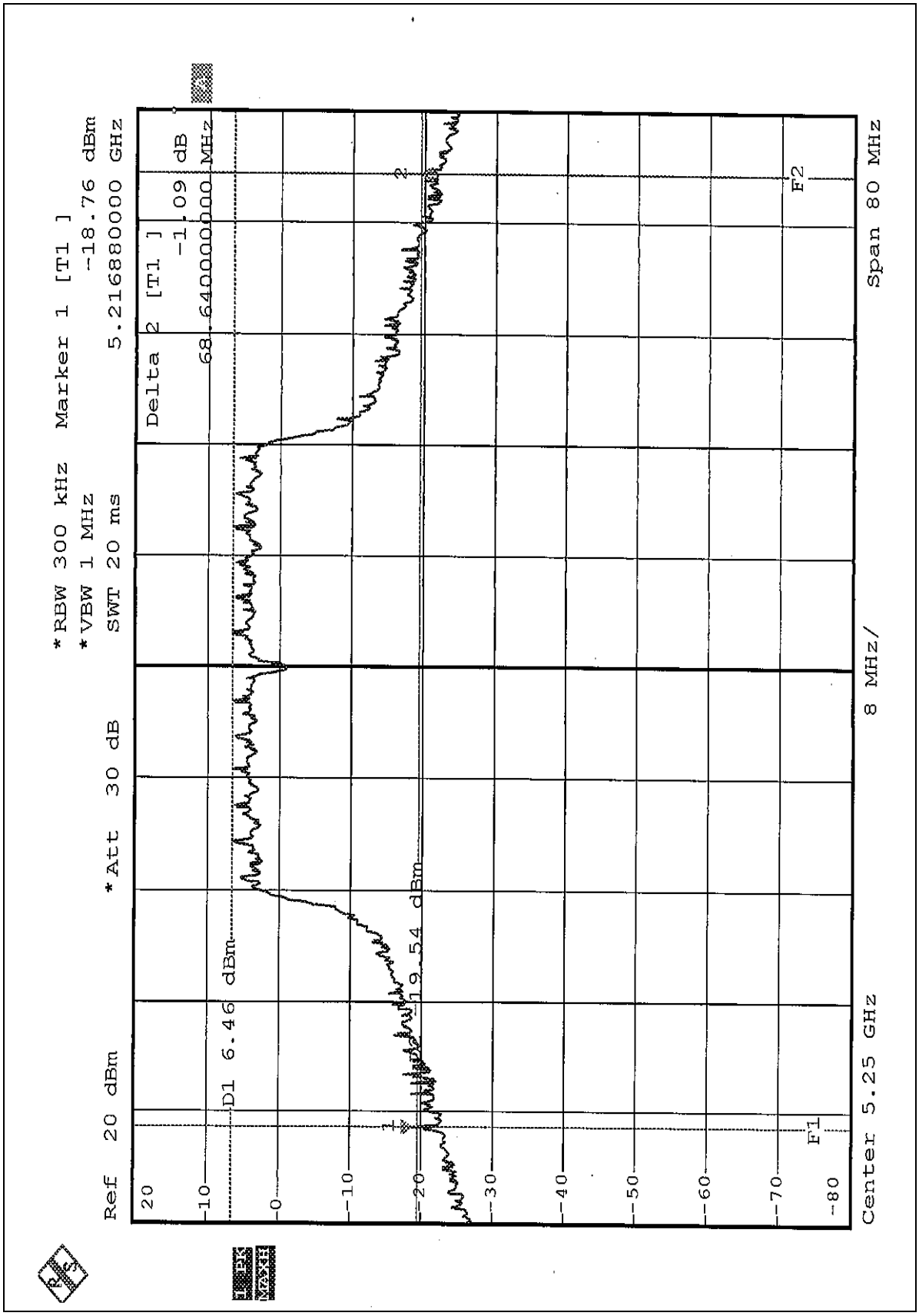
CHANNEL 3


Marker 1 [T1]
3.11 dBm
5.286560000 GHz
*RBW 1 MHz
*VBW 300 kHz
SWT 20 ms
*Att 30 dB
Ref 20 dBm
Center 5.29 GHz
8 MHz/
Span 80 MHz
Tx Channel
Bandwidth
58 MHz
Power
16.43 dBm

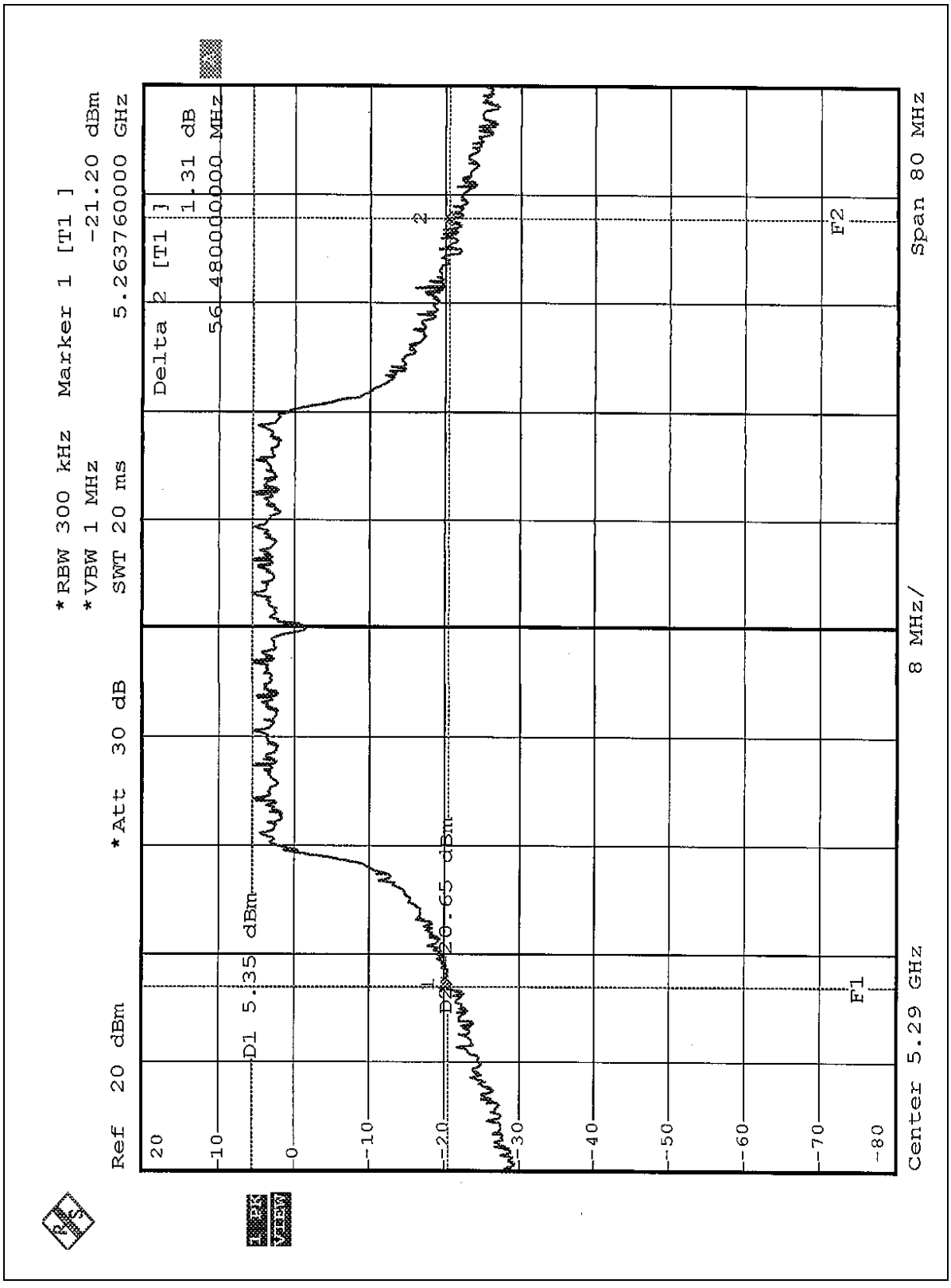
CHANNEL 1


Ref 20 dBm
*Att 30 dB
*RBW 300 kHz
*VBW 1 MHz
SWT 20 ms
Marker 1 [T1]
-19.70 dBm
5.181160000 GHz
Delta 2 [T1]
-0.07 dB
62.280000000 MHz
D1 6.38 dBm
1 -19.62 dBm
Center 5.21 GHz
8 MHz/
Span 80 MHz
F1
F2

CHANNEL 2


Ref 20 dBm
*Att 30 dB
*RBW 300 kHz
*VBW 1 MHz
SWT 20 ms
Marker 1 [T1]
-18.76 dBm
5.216880000 GHz
Delta 2 [T1]
-1.09 dB
68.640000000 MHz
D1 6.46 dBm
19.54 dBm
Center 5.25 GHz
8 MHz/
Span 80 MHz
F1
F2

CHANNEL 3


*RBW 300 kHz
*VBW 1 MHz
SWT 20 ms
Marker 1 [T1]
-21.20 dBm
5.26376000 GHz
Delta 2 [T1]
1.31 dB
56.48000000 MHz
*Att 30 dB
Ref 20 dBm
D1 5.35 dBm
D2 -20.65 dBm
Center 5.29 GHz
8 MHz/
Span 80 MHz
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
SPECTRUM ANALYZER	FSEK30	100049	Aug. 12, 2004

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

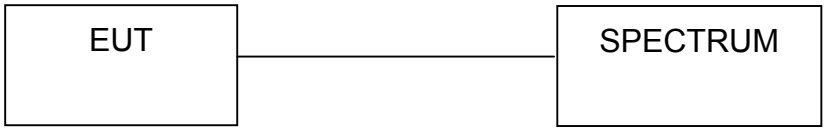
5.4.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer.
Set the spectrum bandwidth span to view the entire spectrum.
Using peak detector and Max-hold function for Trace 1 (RB=1MHz, VB=3MHz) and 2 (RB=1MHz, VB=300KHz).
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

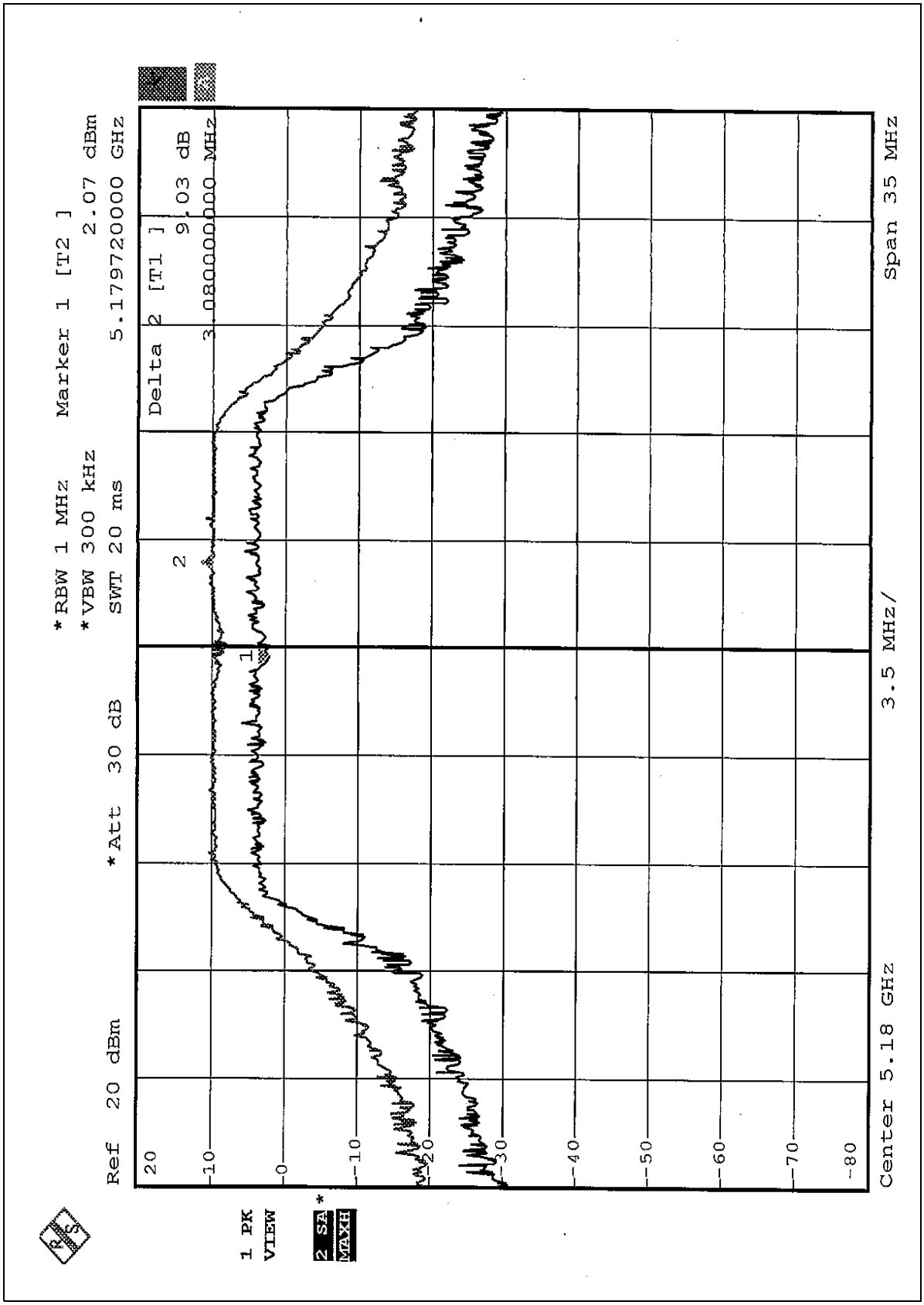
The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

5.4.7 TEST RESULTS

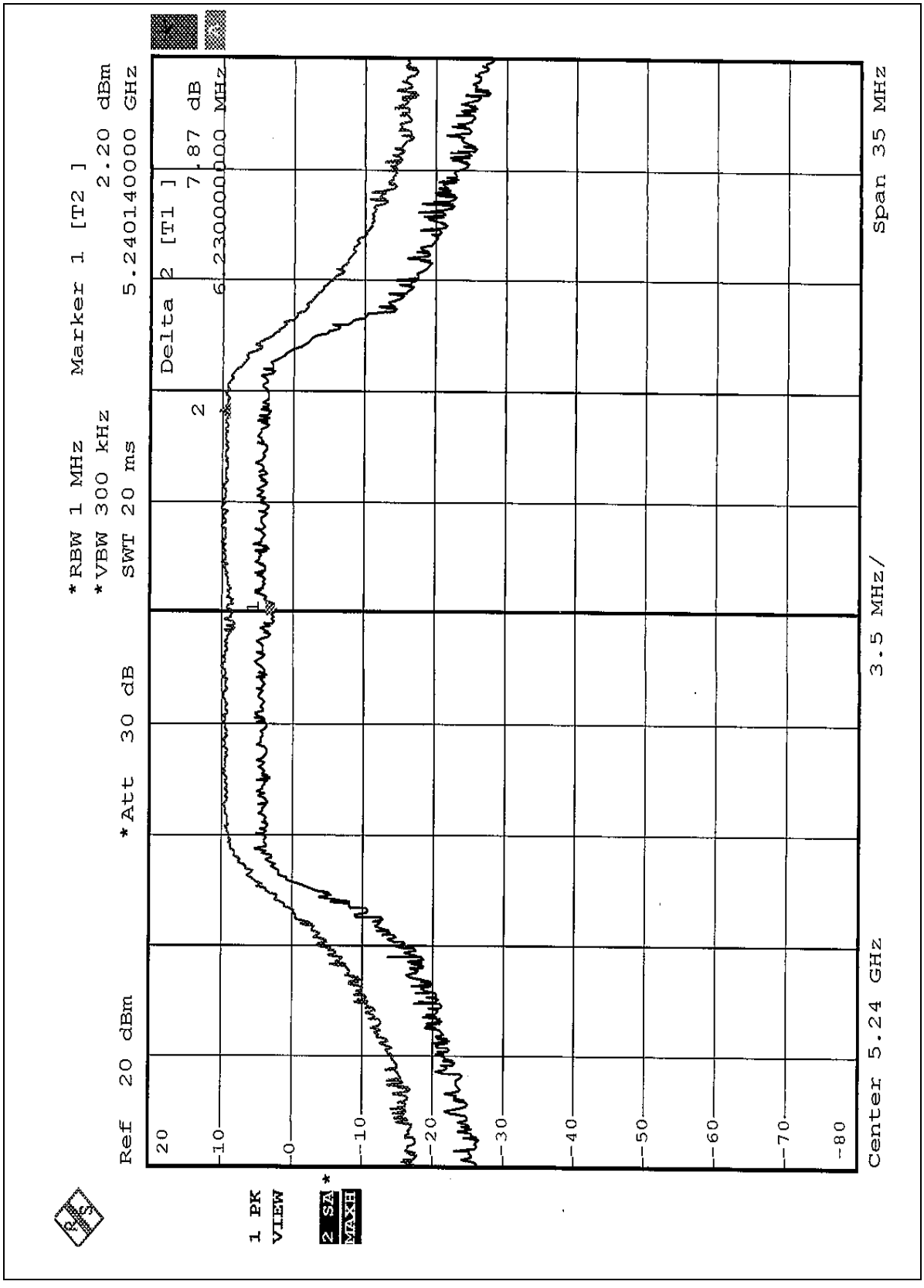
EUT	IEEE 802.11a+g Wireless Access Point	**MODEL**	GN-A15AG
MODE	Normal	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 63%RH, 991hPa	**TESTED BY**	Steven Lu

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
1	5180	9.03	13	PASS
4	5240	7.87	13	PASS
5	5260	7.89	13	PASS
8	5320	8.32	13	PASS

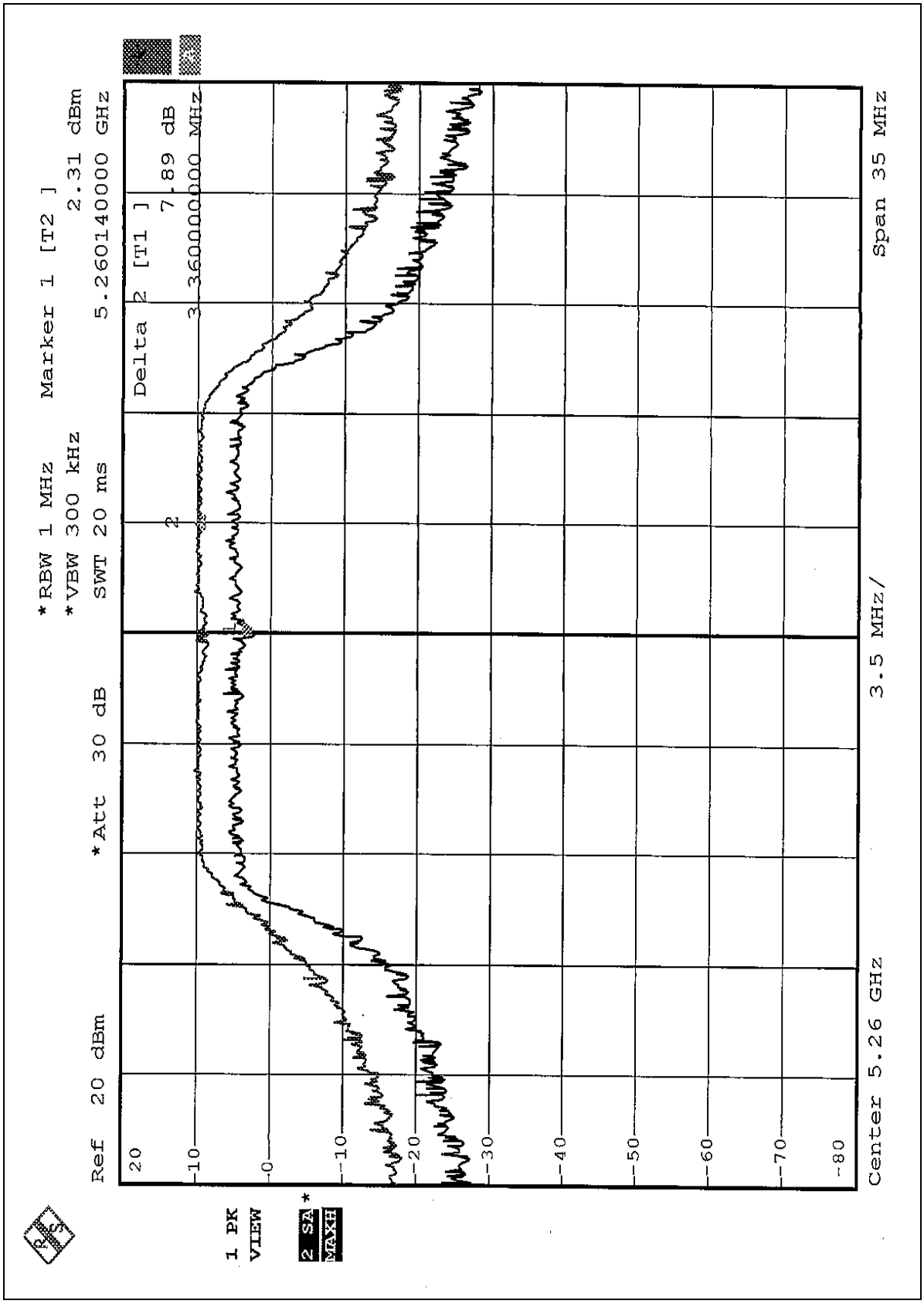
CHANNEL 1


*RBW 1 MHz
*VBW 300 kHz
SWT 20 ms
Marker 1 [T2]
2.07 dBm
5.179720000 GHz
Delta 2 [T1]
9.03 dB
3.080000000 MHz
*Att 30 dB
Ref 20 dBm
Center 5.18 GHz
3.5 MHz/
Span 35 MHz
1 PK VIEW
2 SA MAXH

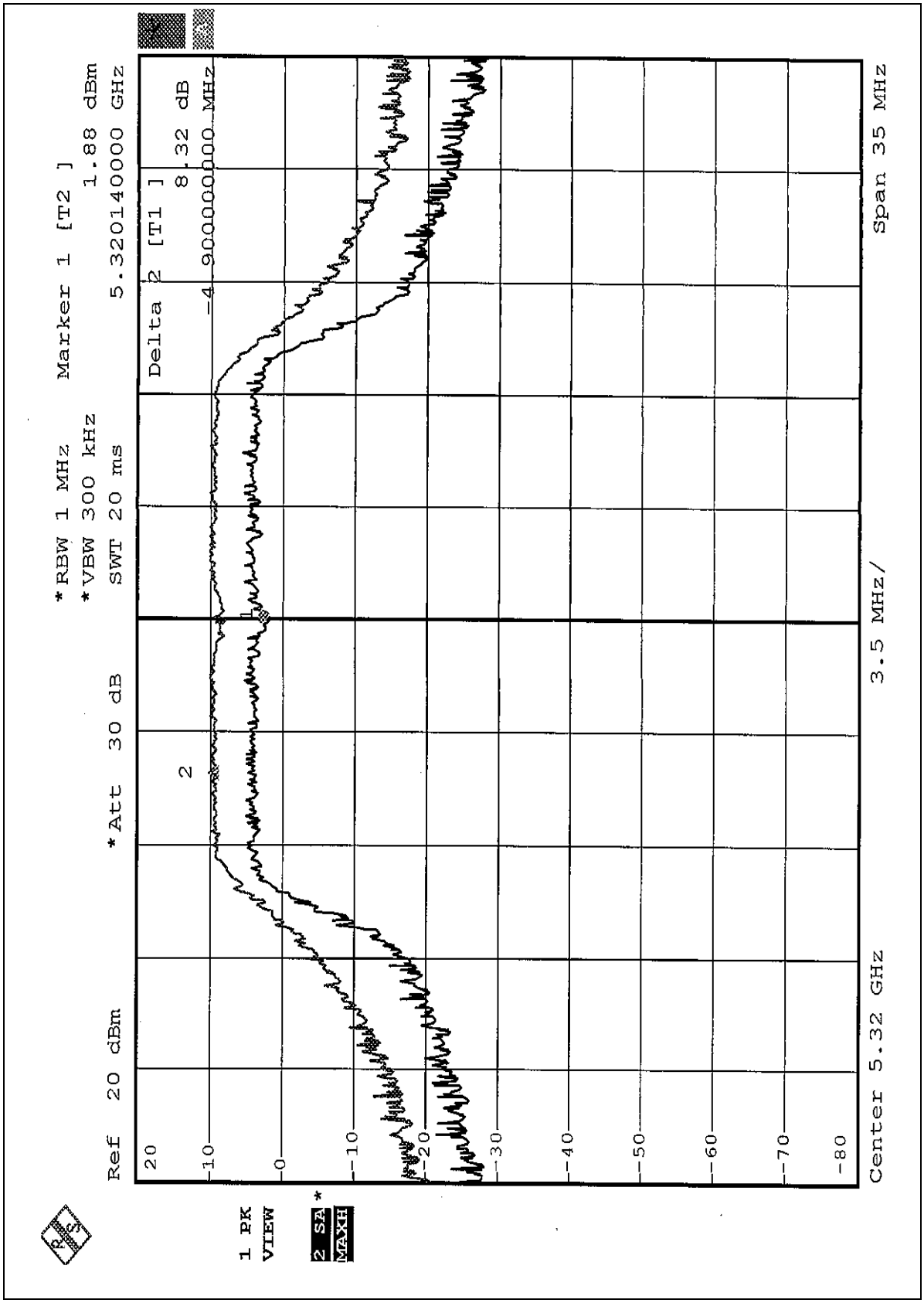
CHANNEL 4


Ref 20 dBm
*Att 30 dB
*RBW 1 MHz
*VBW 300 kHz
SWT 20 ms
Marker 1 [T2]
2.20 dBm
5.240140000 GHz
Delta 2 [T1]
7.87 dB
6.230000000 MHz
Center 5.24 GHz
3.5 MHz/
Span 35 MHz
1 PK VIEW
2 SA MAXH

CHANNEL 5


Ref 20 dBm
*Att 30 dB
*VBW 300 kHz
SWT 20 ms
*RBW 1 MHz
Marker 1 [T2]
2.31 dBm
5.260140000 GHz
Delta 2 [T1]
7.89 dB
3600000000 MHz
Center 5.26 GHz
3.5 MHz/
Span 35 MHz
1 PK VIEW
2 SA MAXH

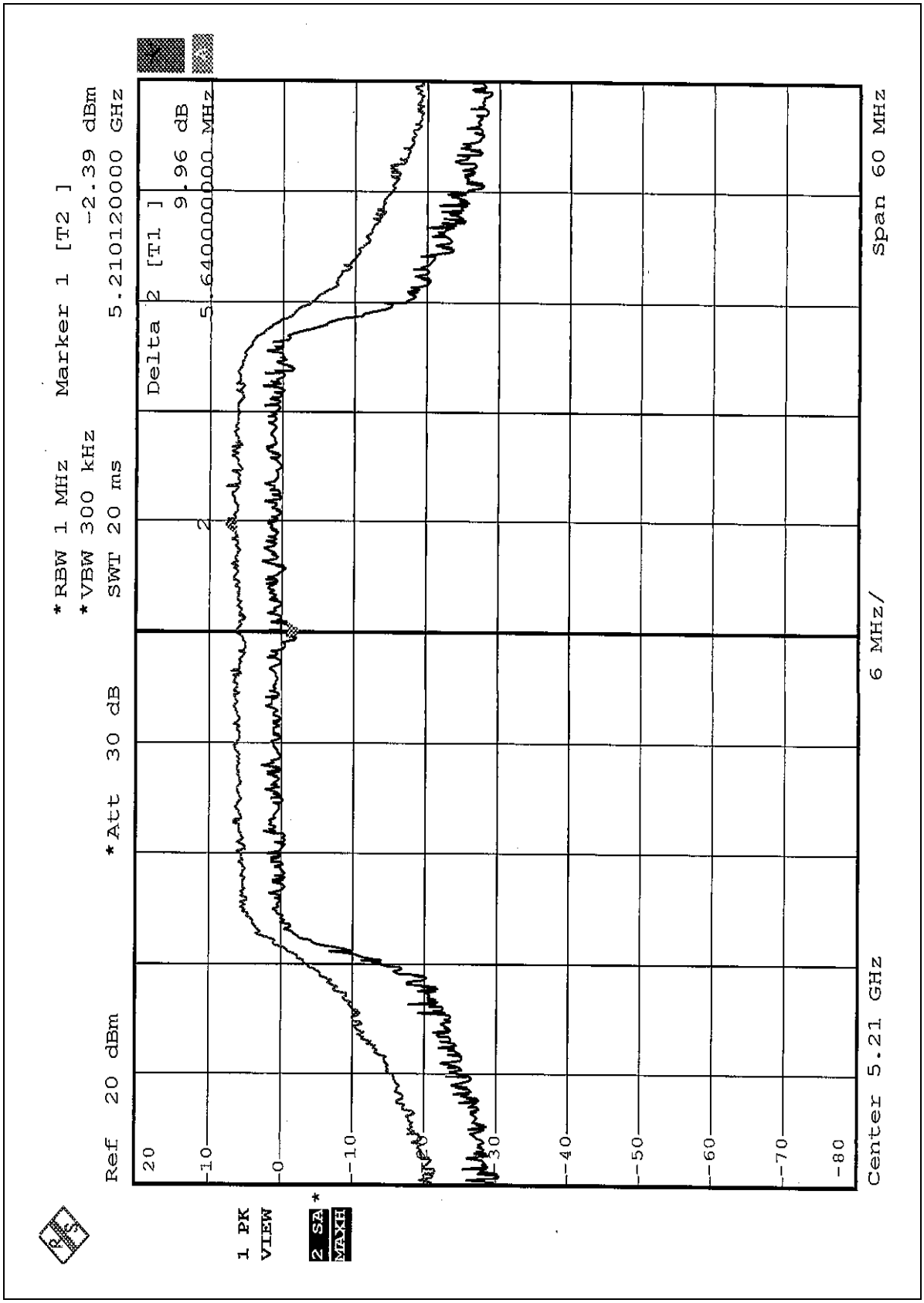
CHANNEL 8


Ref 20 dBm
*Att 30 dB
SWT 20 ms
*VBW 300 kHz
*RBW 1 MHz
Marker 1 [T2]
1.88 dBm
5.320140000 GHz
Delta 2 [T1]
8.32 dB
900000000 MHz
Center 5.32 GHz
3.5 MHz/
Span 35 MHz
1 PK VIEW
2 SA MAXH

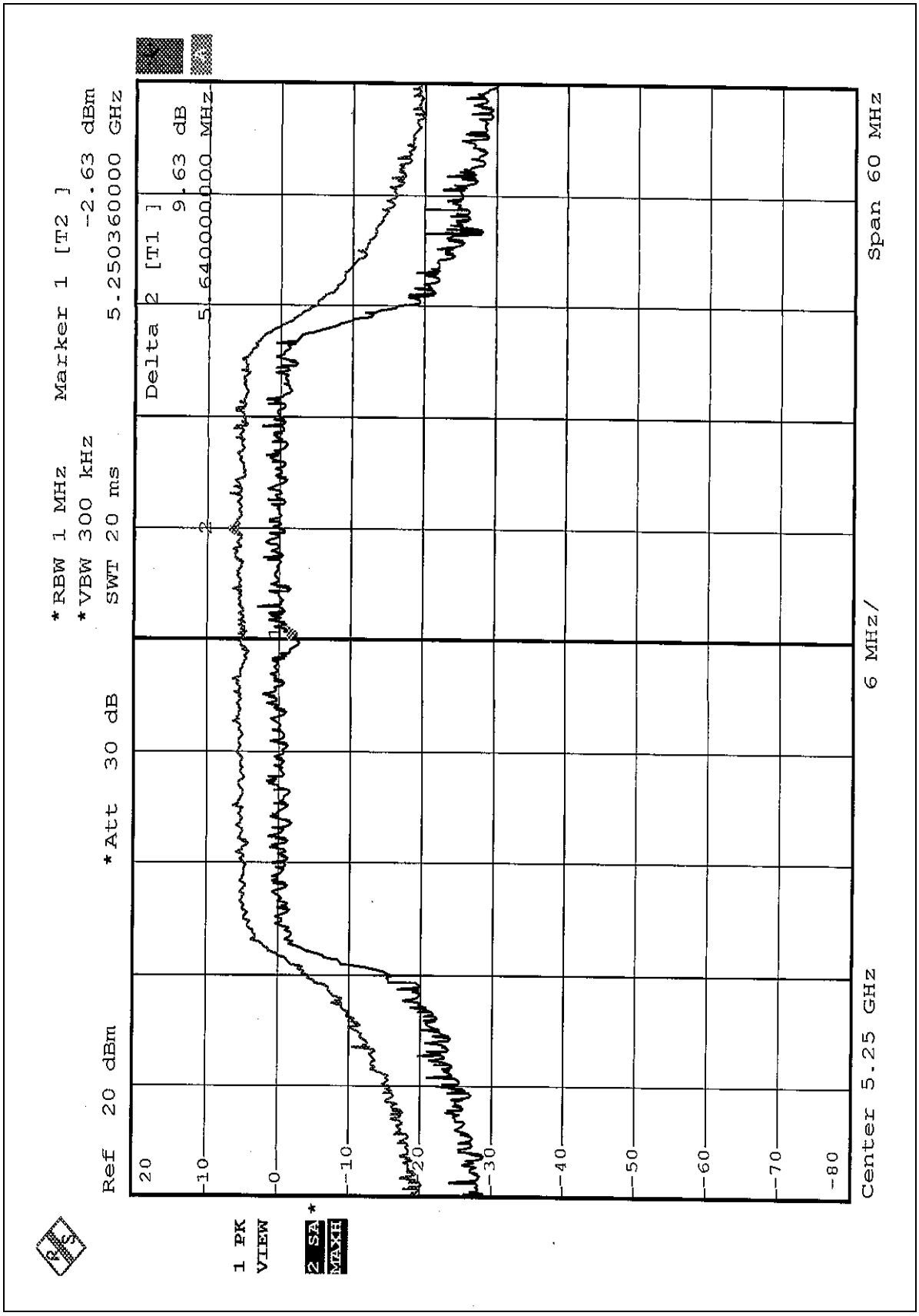
EUT	IEEE 802.11a+g Wireless Access Point	**MODEL**	GN-A15AG
MODE	Turbo	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 63%RH, 991hPa	**TESTED BY**	Steven Lu

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
1	5210	9.96	13	PASS
2	5250	9.63	13	PASS
3	5290	10.28	13	PASS

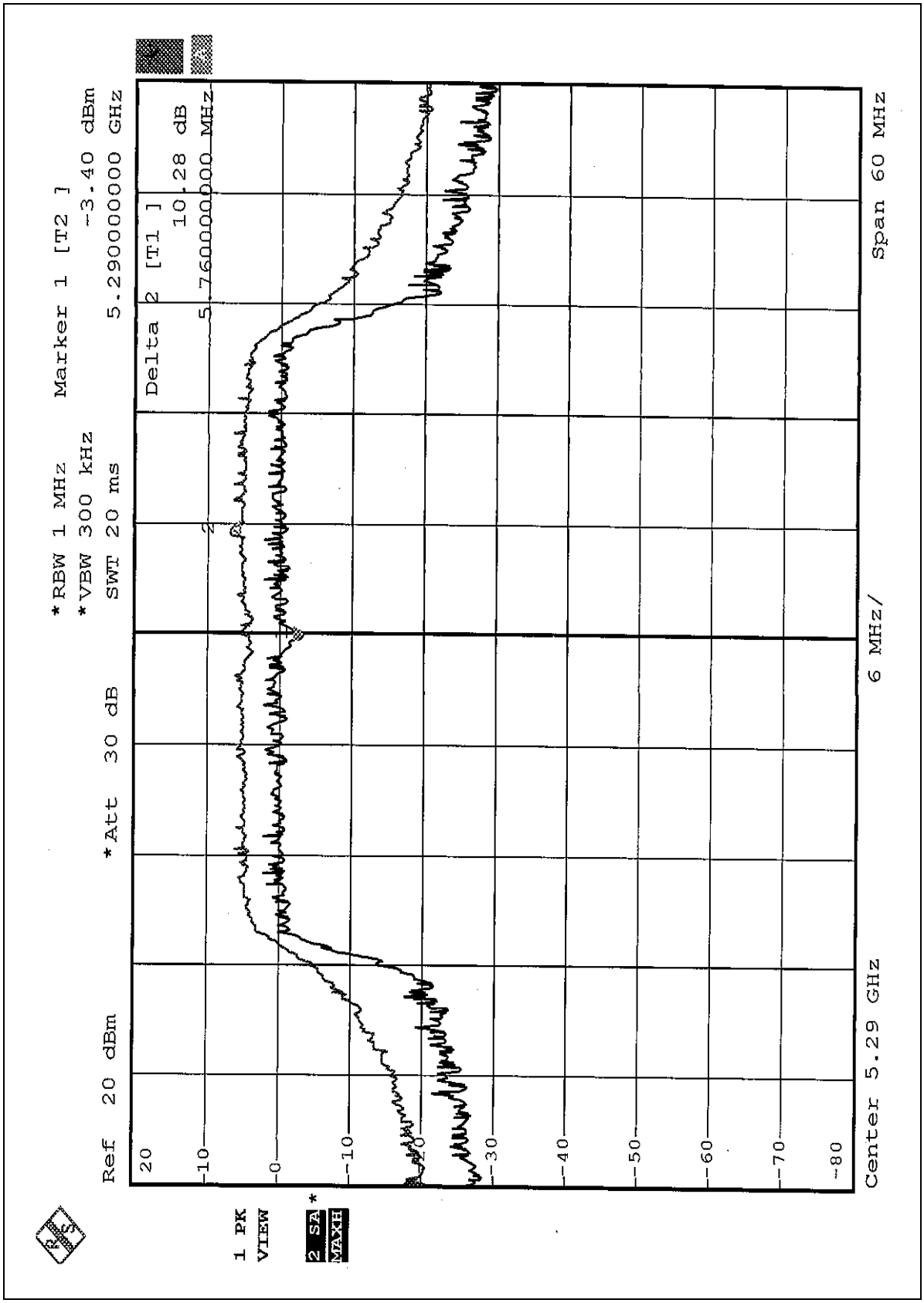
CHANNEL 1


RBW 1 MHz
VBW 300 kHz
SWT 20 ms
Att 30 dB
Ref 20 dBm
Marker 1 [T2]
-2.39 dBm
5.21012000 GHz
Delta 2 [T1]
9.96 dB
5.64000000 MHz
Center 5.21 GHz
6 MHz/
Span 60 MHz
1 PK VIEW
2 SA MAXH

CHANNEL 2


Ref 20 dBm
*Att 30 dB
*RBW 1 MHz
*VBW 300 kHz
SWT 20 ms
Marker 1 [T2]
-2.63 dBm
5.250360000 GHz
Delta 2 [T1]
9.63 dB
5.640000000 MHz
Center 5.25 GHz
6 MHz/
Span 60 MHz
1 PK VIEW
2 SA MAXH

CHANNEL 3


Ref 20 dBm
*Att 30 dB
*RBW 1 MHz
*VBW 300 kHz
SWT 20 ms
Marker 1 [T2]
-3.40 dBm
5.290000000 GHz
Delta 2 [T1]
10.28 dB
5.760000000 MHz
Center 5.29 GHz
6 MHz/
Span 60 MHz
1 PK
VIEW
2 SA
MAXH

5.5 PEAK POWER SPECTRAL DENSITY MEASUREMENT

5.5.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

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

5.5.2 TEST INSTRUMENTS

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

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

5.5.3 TEST PROCEDURES

The transmitter output was connected to the spectrum analyzer.
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

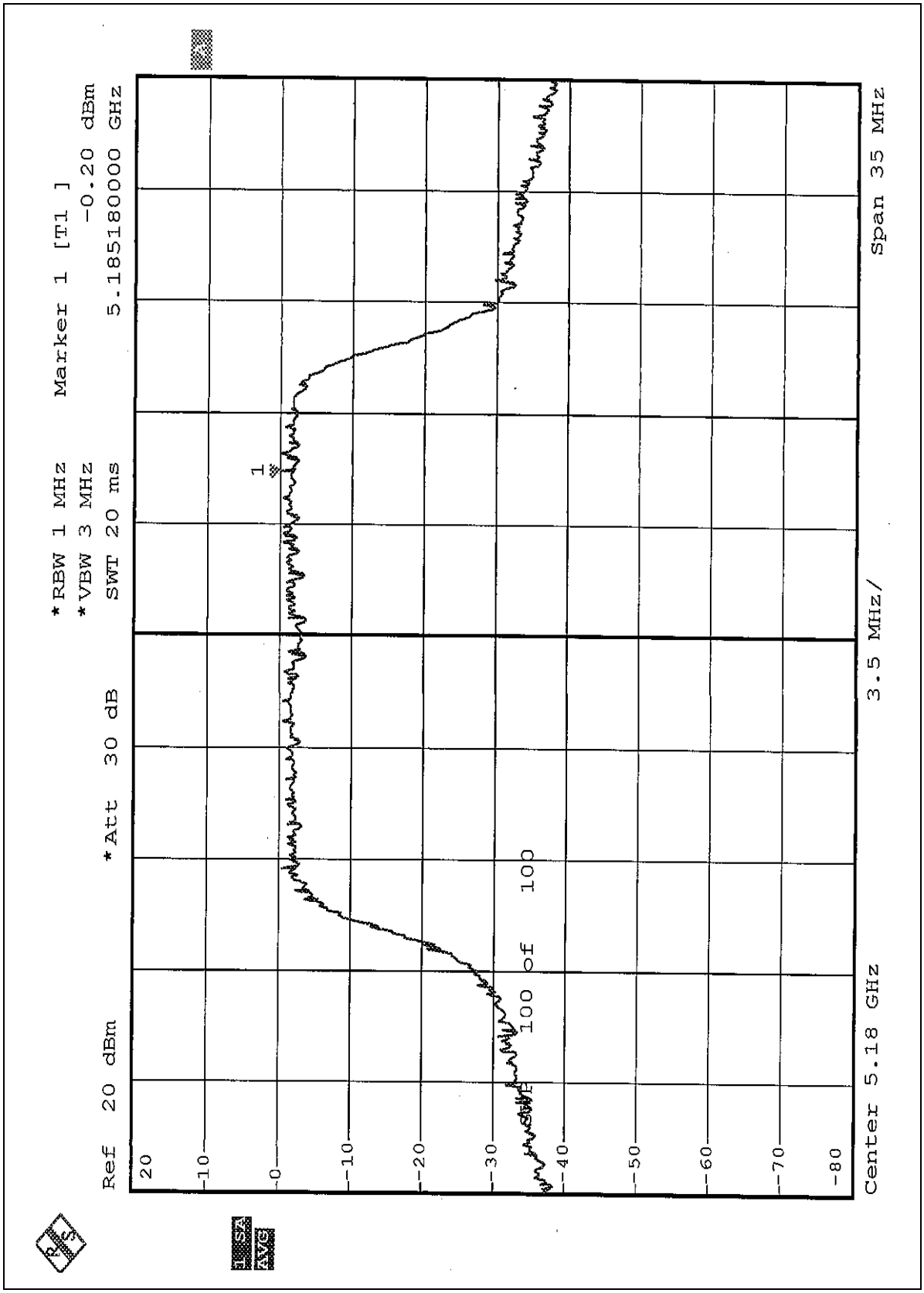
Same as 5.3.6

5.5.7 TEST RESULTS

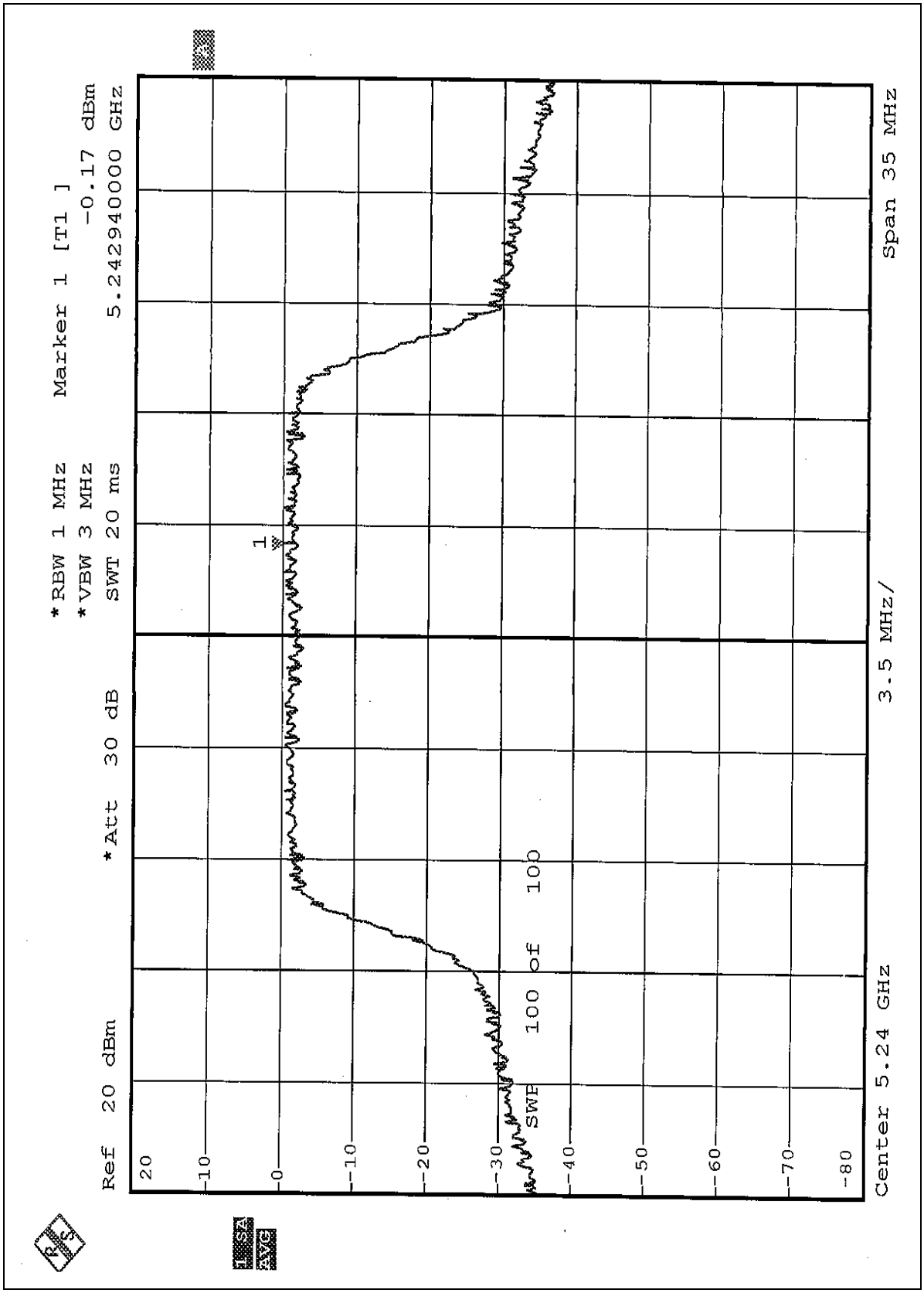
EUT	IEEE 802.11a+g Wireless Access Point	**MODEL**	GN-A15AG
MODE	Normal	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 63%RH, 991hPa	**TESTED BY**	Steven Lu

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	5180	-0.20	4	PASS
4	5240	-0.17	4	PASS
5	5260	-0.06	11	PASS
8	5320	-0.24	11	PASS

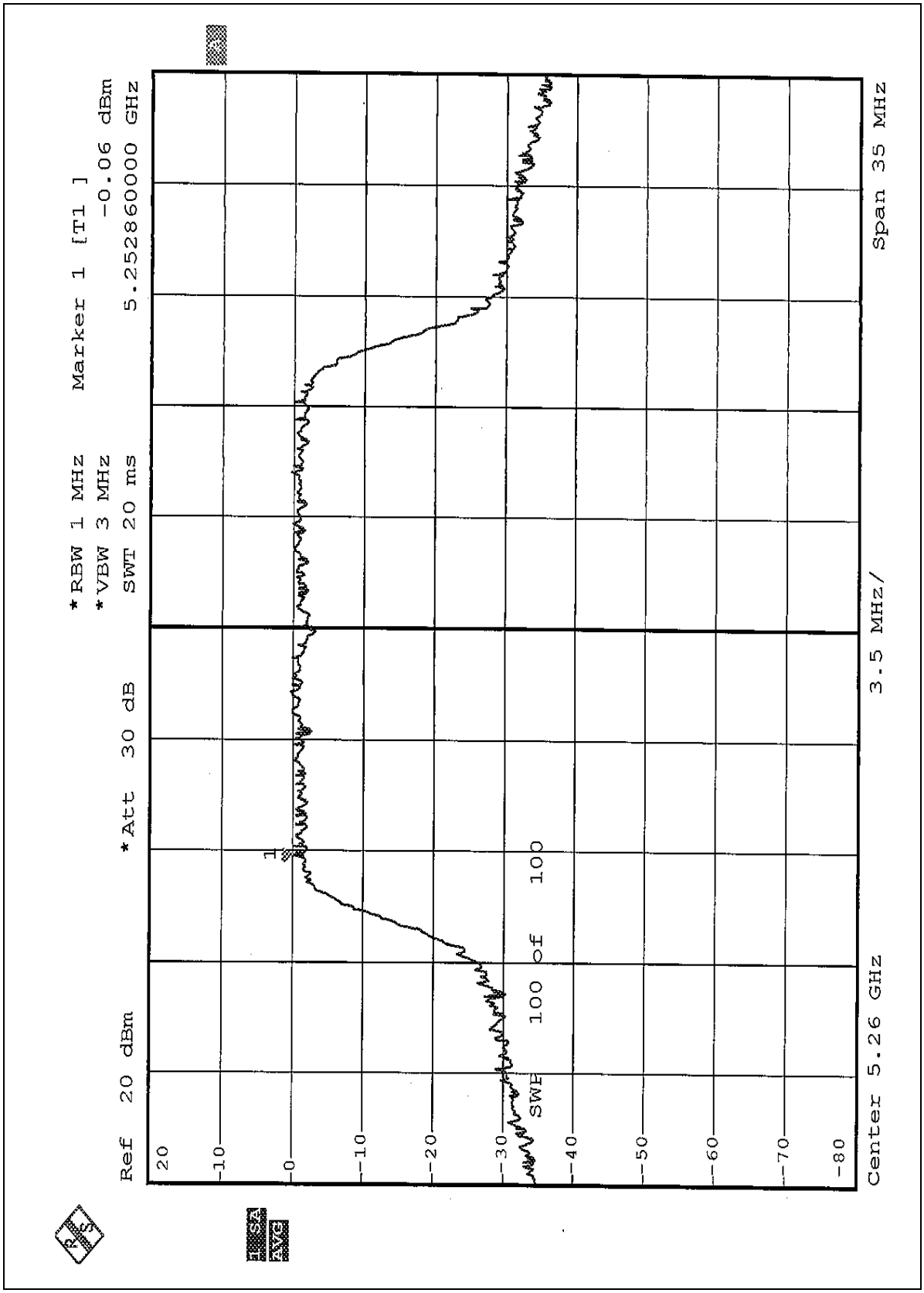
CHANNEL 1


Marker 1 [T1]
-0.20 dBm
5.185180000 GHz
*RBW 1 MHz
*VBW 3 MHz
SWT 20 ms
*Att 30 dB
Ref 20 dBm
Center 5.18 GHz
3.5 MHz/
Span 35 MHz
100 of 100
1SA
AVG

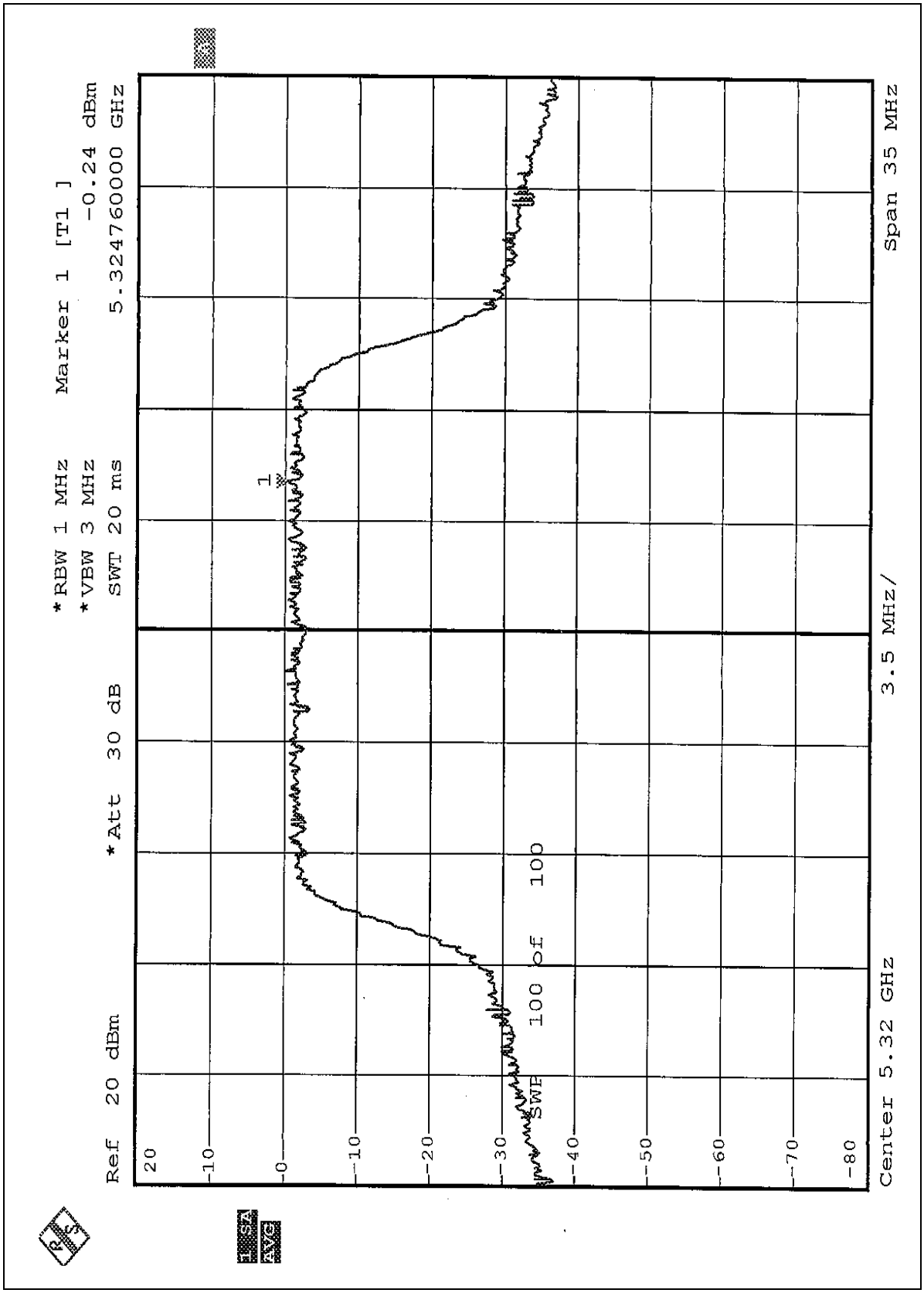
CHANNEL 4


Marker 1 [T1]
-0.17 dBm
5.242940000 GHz
*RBW 1 MHz
*VBW 3 MHz
SWT 20 ms
*Att 30 dB
Ref 20 dBm
Center 5.24 GHz
3.5 MHz/
Span 35 MHz
SWP 100 of 100
1SA
AVG

CHANNEL 5


Ref 20 dBm
*Att 30 dB
*RBW 1 MHz
*VBW 3 MHz
SWT 20 ms
Marker 1 [T1]
-0.06 dBm
5.252860000 GHz
Center 5.26 GHz
3.5 MHz/
Span 35 MHz
SWP 100 of 100
1SA
AVG

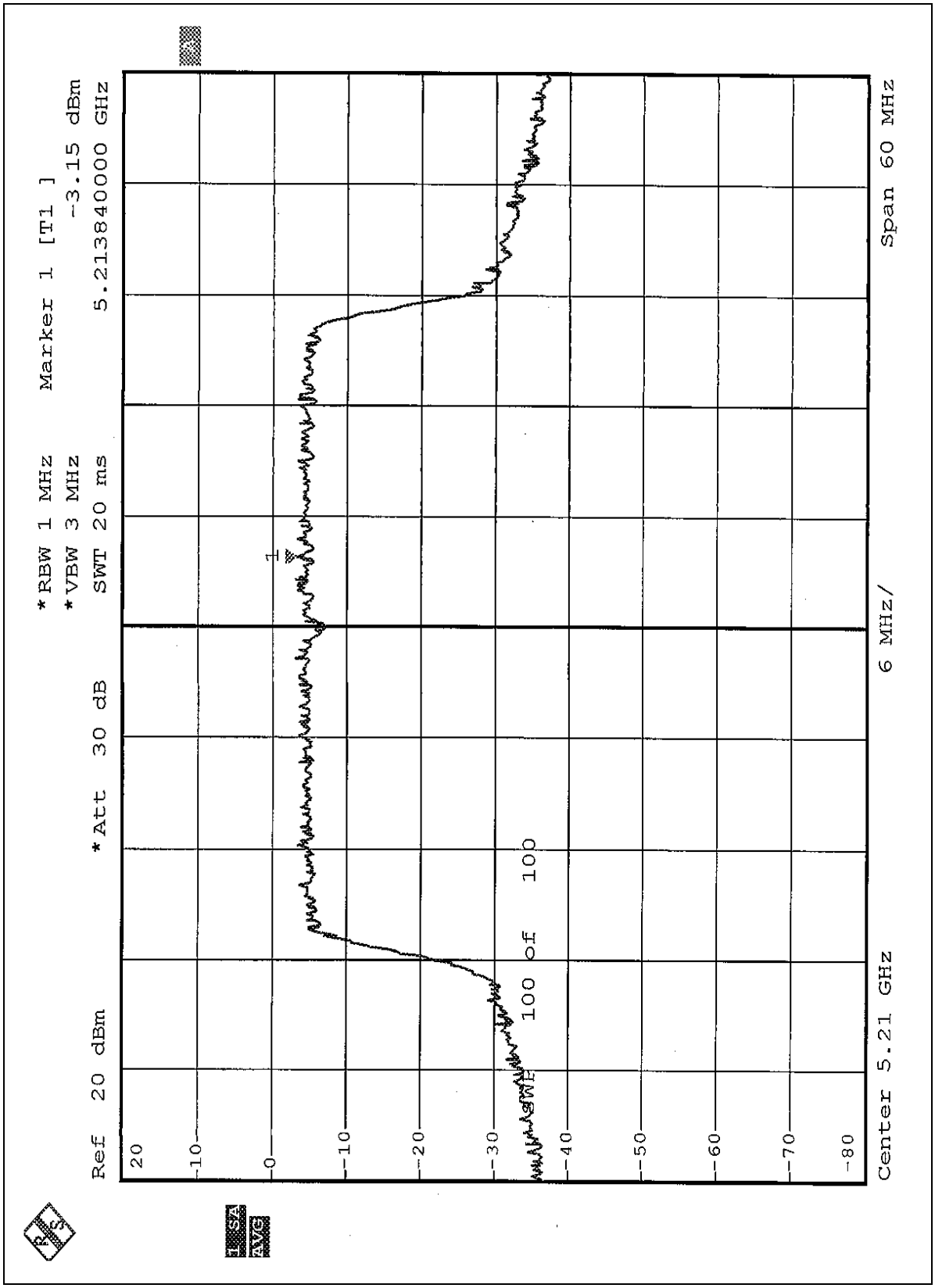
CHANNEL 8


Marker 1 [T1]
-0.24 dBm
5.32476000 GHz
*RBW 1 MHz
*VBW 3 MHz
SWT 20 ms
*Att 30 dB
Ref 20 dBm
Center 5.32 GHz
3.5 MHz/
Span 35 MHz
SWP 100 of 100
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80

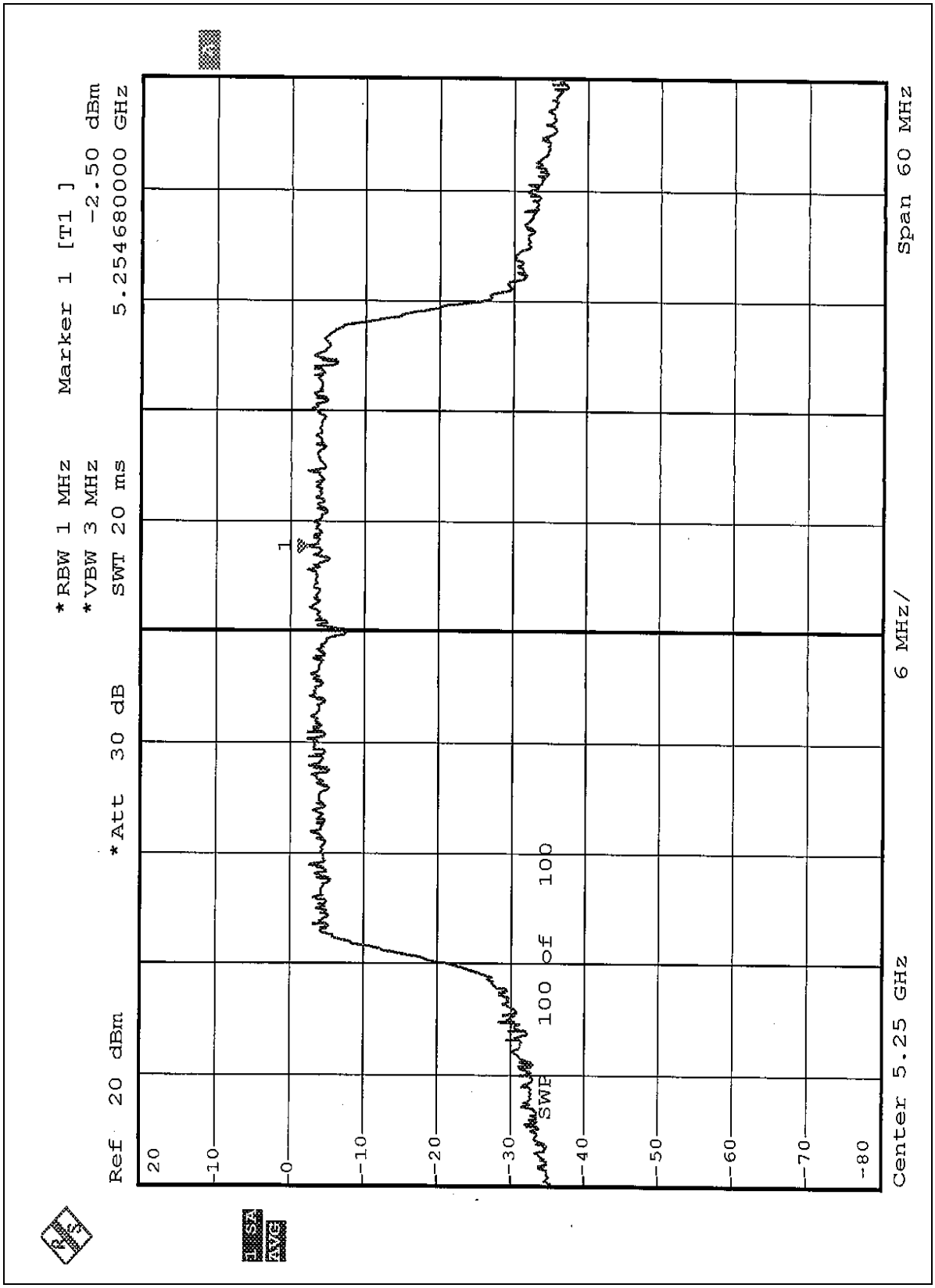
EUT	IEEE 802.11a+g Wireless Access Point	**MODEL**	GN-A15AG
MODE	Turbo	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 63%RH, 991hPa	**TESTED BY**	Steven Lu

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1 MHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	5210	-3.15	4	PASS
2	5250	-2.50	4	PASS
3	5290	-2.65	11	PASS

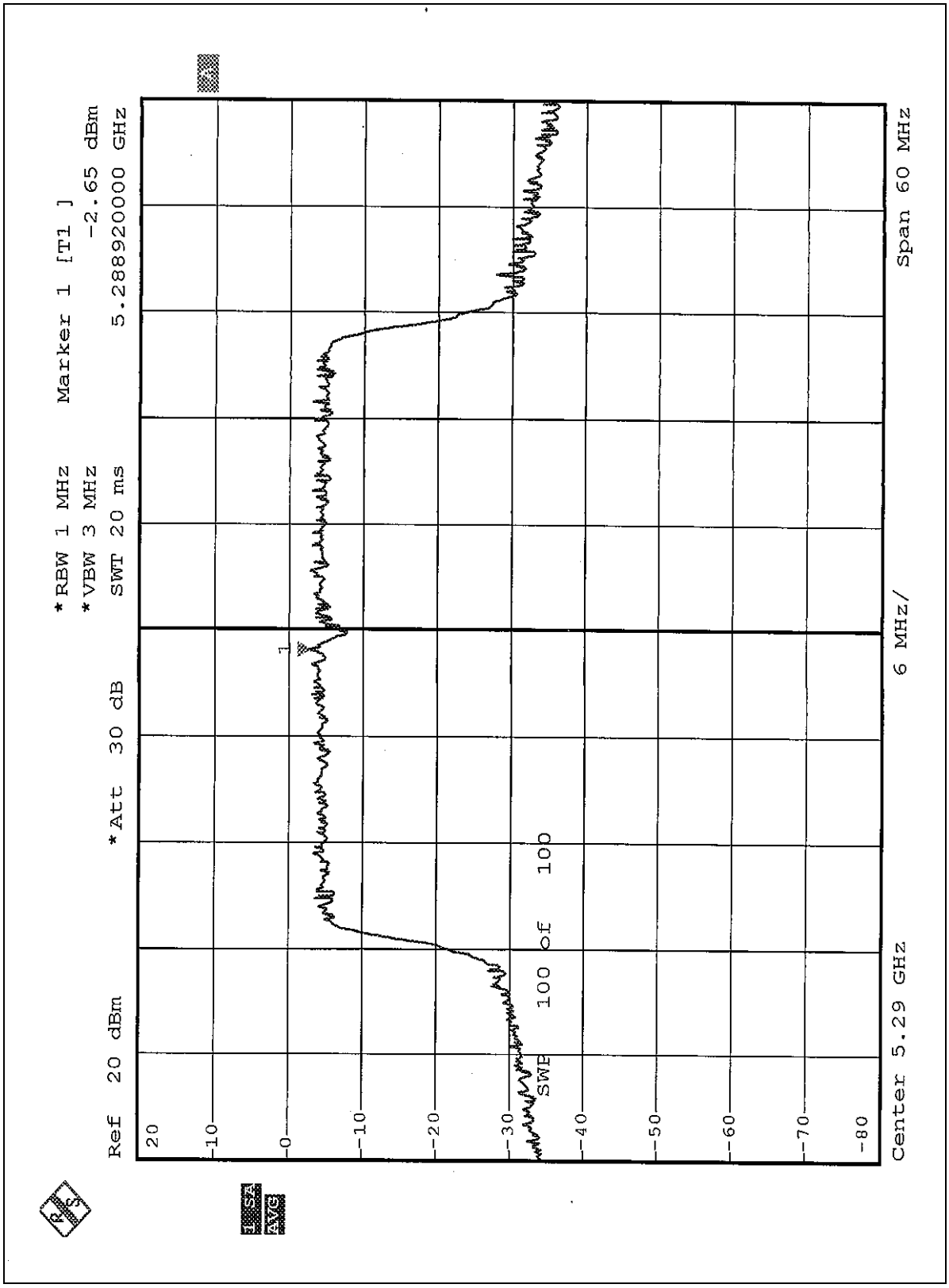
CHANNEL 1


Ref 20 dBm
*Att 30 dB
*VBW 3 MHz
SWT 20 ms
*RBW 1 MHz
Marker 1 [T1]
-3.15 dBm
5.213840000 GHz
Center 5.21 GHz
6 MHz/
Span 60 MHz
100 of 100
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1SA
AVG

CHANNEL 2


Marker 1 [T1]
-2.50 dBm
5.25468000 GHz
*RBW 1 MHz
*VBW 3 MHz
SWT 20 ms
*Att 30 dB
Ref 20 dBm
Center 5.25 GHz
6 MHz/
Span 60 MHz
SWP 100 of 100
1
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80

CHANNEL 3


Ref 20 dBm
*Att 30 dB
*RBW 1 MHz
*VBW 3 MHz
SWT 20 ms
Marker 1 [T1]
-2.65 dBm
5.288920000 GHz
Center 5.29 GHz
6 MHz/
Span 60 MHz
SWP 100 of 100
1SA
AVG

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	Aug. 12, 2004
WIT STANDARD TEMPERATURE AND HUMIDITY CHAMBER	TH-4S-C	W901030	Aug. 12, 2004

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

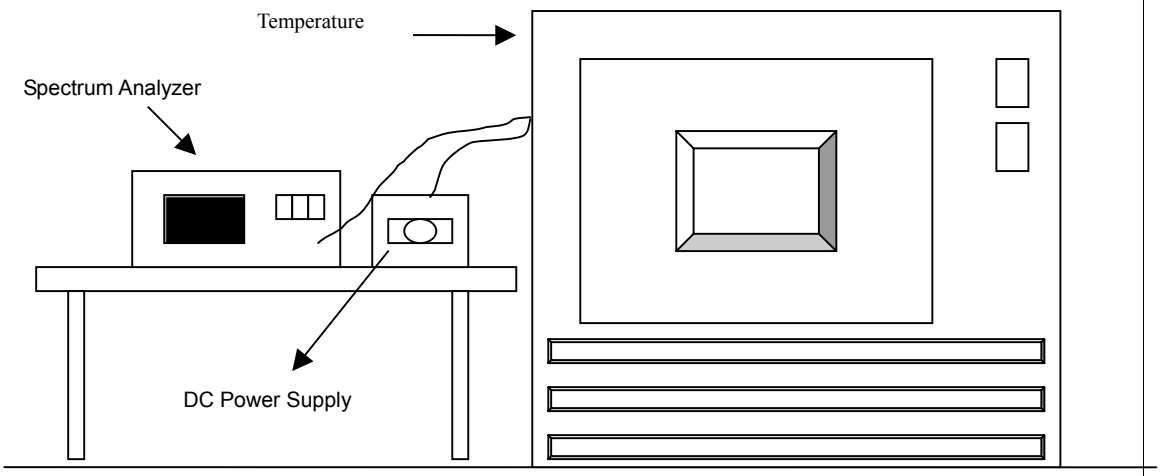
5.6.3 TEST PROCEDURE

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 : ± 0.02%			
Temp. (℃)	Power supply (VDC)	2 minute		5 minute		10 minute	
		(MHz)	(%)	(MHz)	(%)	(MHz)	(%)
50	102	5320.0024	0.0000451	5320.0025	0.0000470	5320.0028	0.0000526
	120V	5320.0026	0.0000489	5320.0023	0.0000432	5320.0027	0.0000508
	138	5320.0022	0.0000414	5320.0021	0.0000395	5320.0025	0.0000470
40	102	5319.9964	-0.0000677	5319.9963	-0.0000695	5319.9966	-0.0000639
	120V	5319.9966	-0.0000639	5319.9965	-0.0000658	5319.9964	-0.0000677
	138	5319.9967	-0.0000620	5319.9962	-0.0000714	5319.9962	-0.0000714
30	102	5319.9930	-0.0001316	5319.9931	-0.0001297	5319.9927	-0.0001372
	120V	5319.9928	-0.0001353	5319.9929	-0.0001335	5319.9933	-0.0001259
	138	5319.9927	-0.0001372	5319.9930	-0.0001316	5319.9934	-0.0001241
20	102	5319.9936	-0.0001203	5319.9935	-0.0001222	5319.9934	-0.0001241
	120V	5319.9932	-0.0001278	5319.9940	-0.0001128	5319.9933	-0.0001259
	138	5319.9938	-0.0001165	5319.9937	-0.0001184	5319.9938	-0.0001165
10	102	5319.9985	-0.0000282	5319.9984	-0.0000301	5319.9982	-0.0000338
	120V	5319.9988	-0.0000226	5319.9980	-0.0000376	5319.9981	-0.0000357
	138	5319.9986	-0.0000263	5319.9983	-0.0000320	5319.9987	-0.0000244
0	102	5320.0050	0.0000940	5320.0051	0.0000959	5320.0052	0.0000977
	120V	5320.0048	0.0000902	5320.0047	0.0000883	5320.0051	0.0000959
	138	5320.0049	0.0000921	5320.0046	0.0000865	5320.0047	0.0000883
-10	102	5320.0136	0.0002556	5320.0135	0.0002538	5320.0136	0.0002556
	120V	5320.0140	0.0002632	5320.0141	0.0002650	5320.0142	0.0002669
	138	5320.0138	0.0002594	5320.0144	0.0002707	5320.0143	0.0002688
-20	102	5320.0197	0.0003703	5320.0199	0.0003741	5320.0193	0.0003628
	120V	5320.0196	0.0003684	5320.0194	0.0003647	5320.0195	0.0003665
	138	5320.0198	0.0003722	5320.0197	0.0003703	5320.0199	0.0003741
-30	102	5320.0226	0.0004248	5320.0227	0.0004267	5320.0225	0.0004229
	120V	5320.0224	0.0004211	5320.0221	0.0004154	5320.0227	0.0004267
	138	5320.0222	0.0004173	5320.0226	0.0004248	5320.0224	0.0004211

5.7 BAND EDGES MEASUREMENT

5.7.1 TEST INSTRUMENTS

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

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

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 (Peak RBW=VBW=1MHz; Average RBW=1MHz, VBW=300Hz) are attached on the following pages.

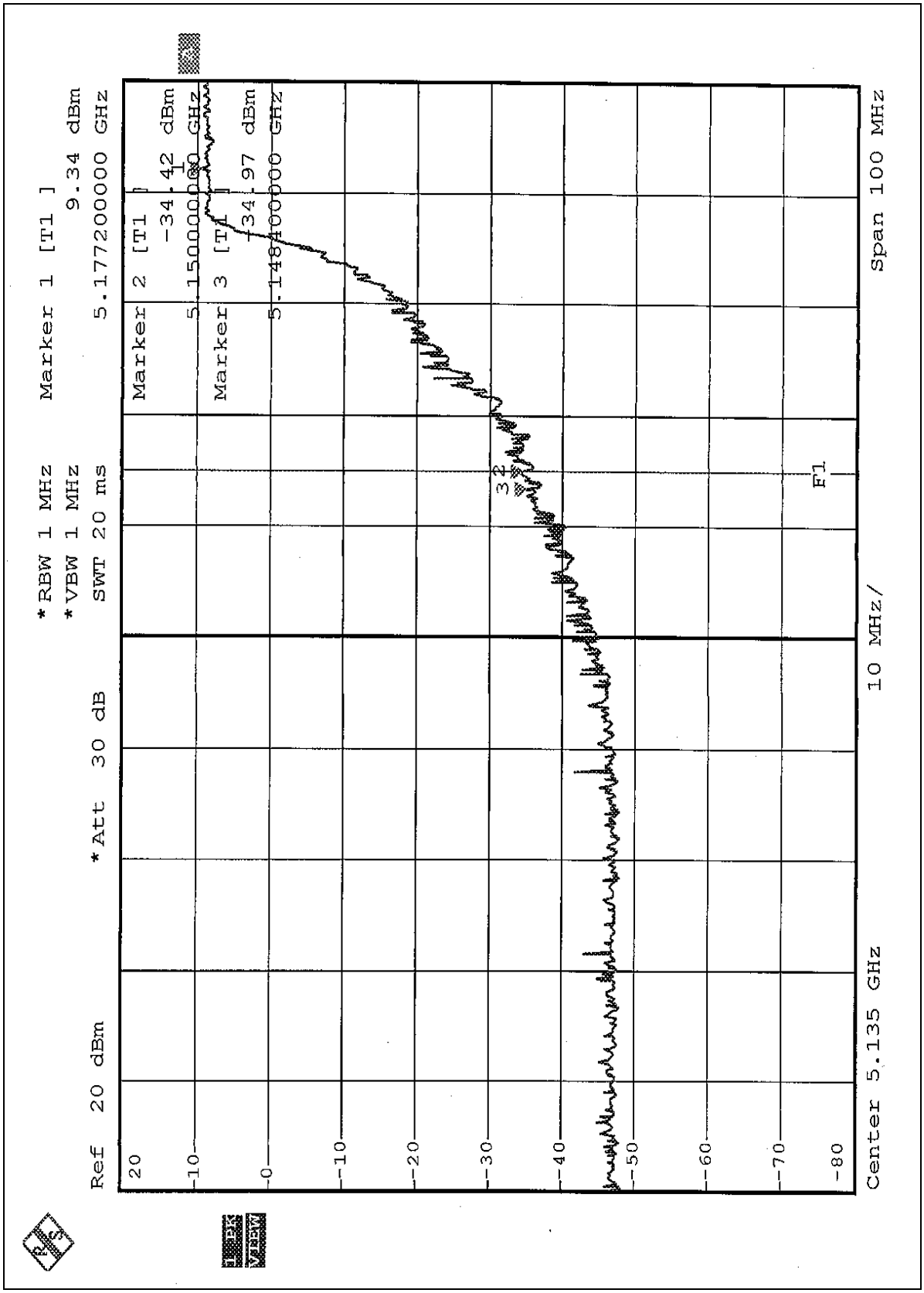
Normal Mode: Channel 1 (5180 MHz)
The band edge emission plot on the pages 144 ~ 146 shows 43.76dBc (Peak) / 50.16dBc (Average) between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 1 (normal mode) is 96.77dBuV/m, so the maximum field strength in restrict band is 96.77-50.16=46.61dBuV/m which is under 54dBuV/m limit.

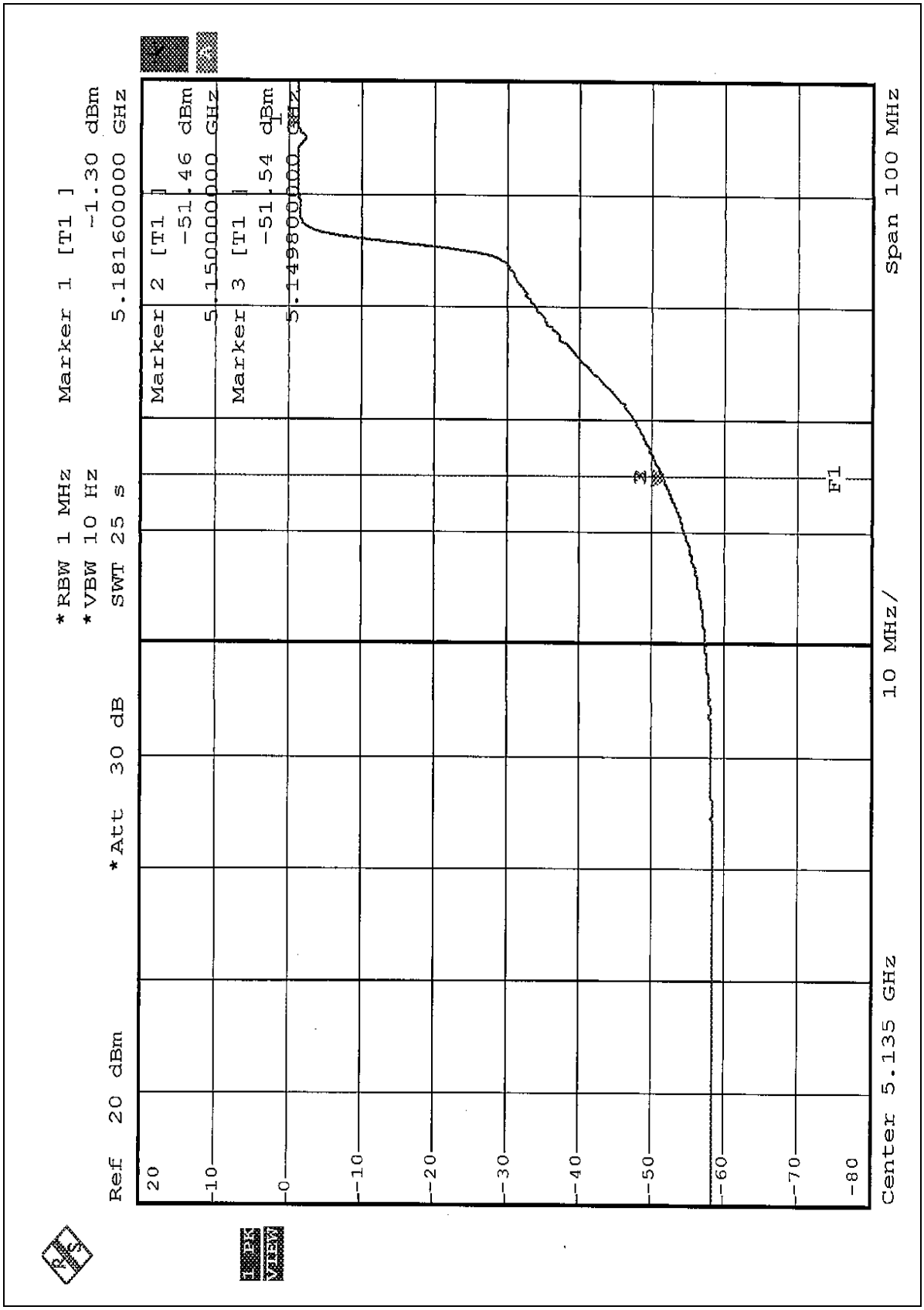
Normal Mode: Channel 8 (5320 MHz)
The band edge emission plot on the pages 147 ~ 149 shows 44.11dBc (Peak) / 53.57dBc (Average) between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 8 (normal mode) is 90.02dBuV/m, so the maximum field strength in restrict band is 90.02-53.57=36.45dBuV/m which is under 54dBuV/m limit.

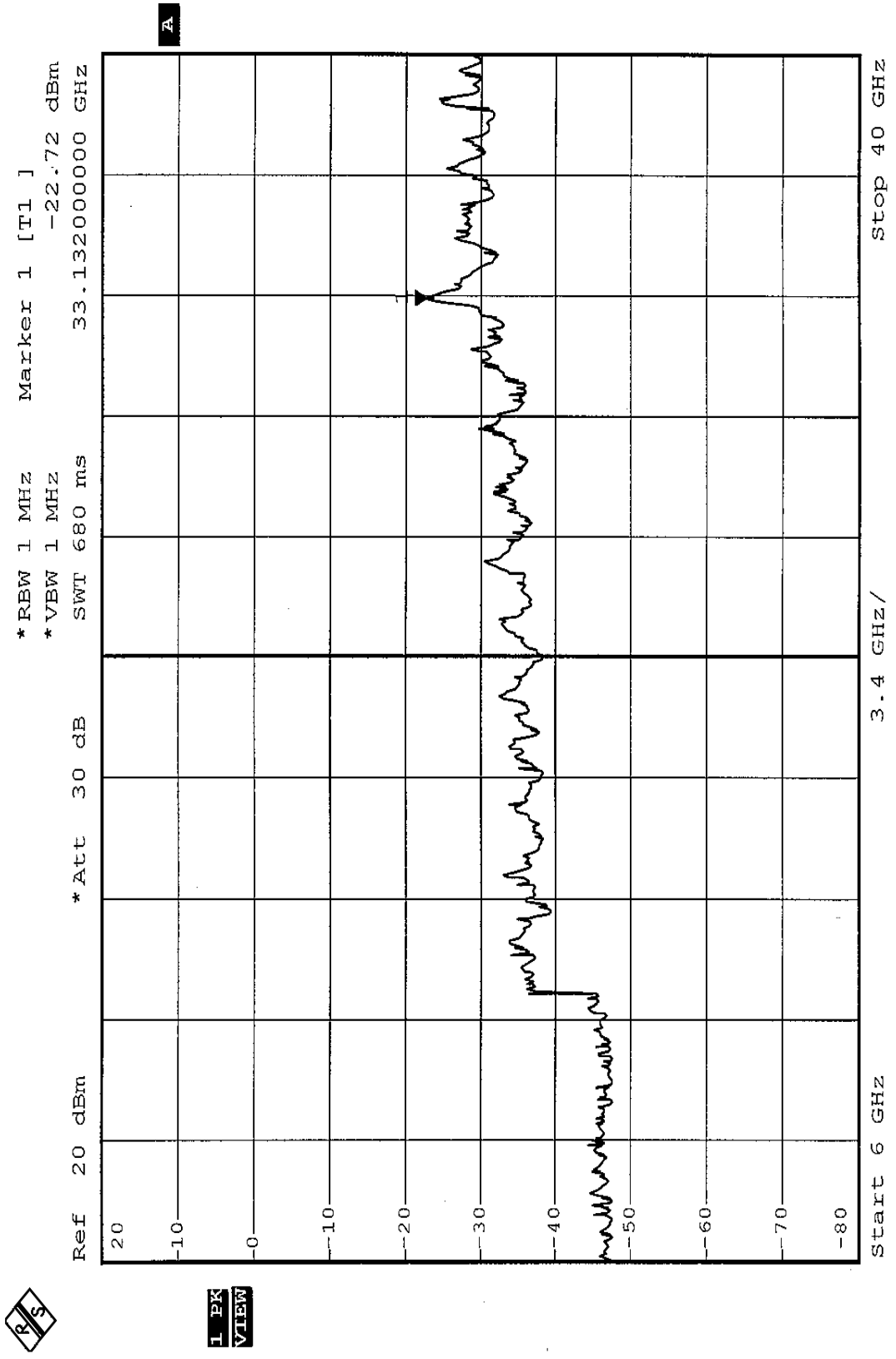
Turbo Mode: Channel 1 (5210 MHz)
The band edge emission plot on the pages 150 ~152 shows 42.28dBc (Peak) / 48.80dBc (Average) between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 1 (turbo mode) is 94.62dBuV/m, so the maximum field strength in restrict band is 94.62-48.80=45.82dBuV/m which is under 54dBuV/m limit.

Turbo Mode: Channel 3 (5290 MHz)
The band edge emission plot on the pages 153 ~155 shows 46.23dBc (Peak) / 51.70dBc (Average) 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 95.00dBuV/m, so the maximum field strength in restrict band is 95.00-51.70=43.30dBuV/m which is under 54dBuV/m limit.

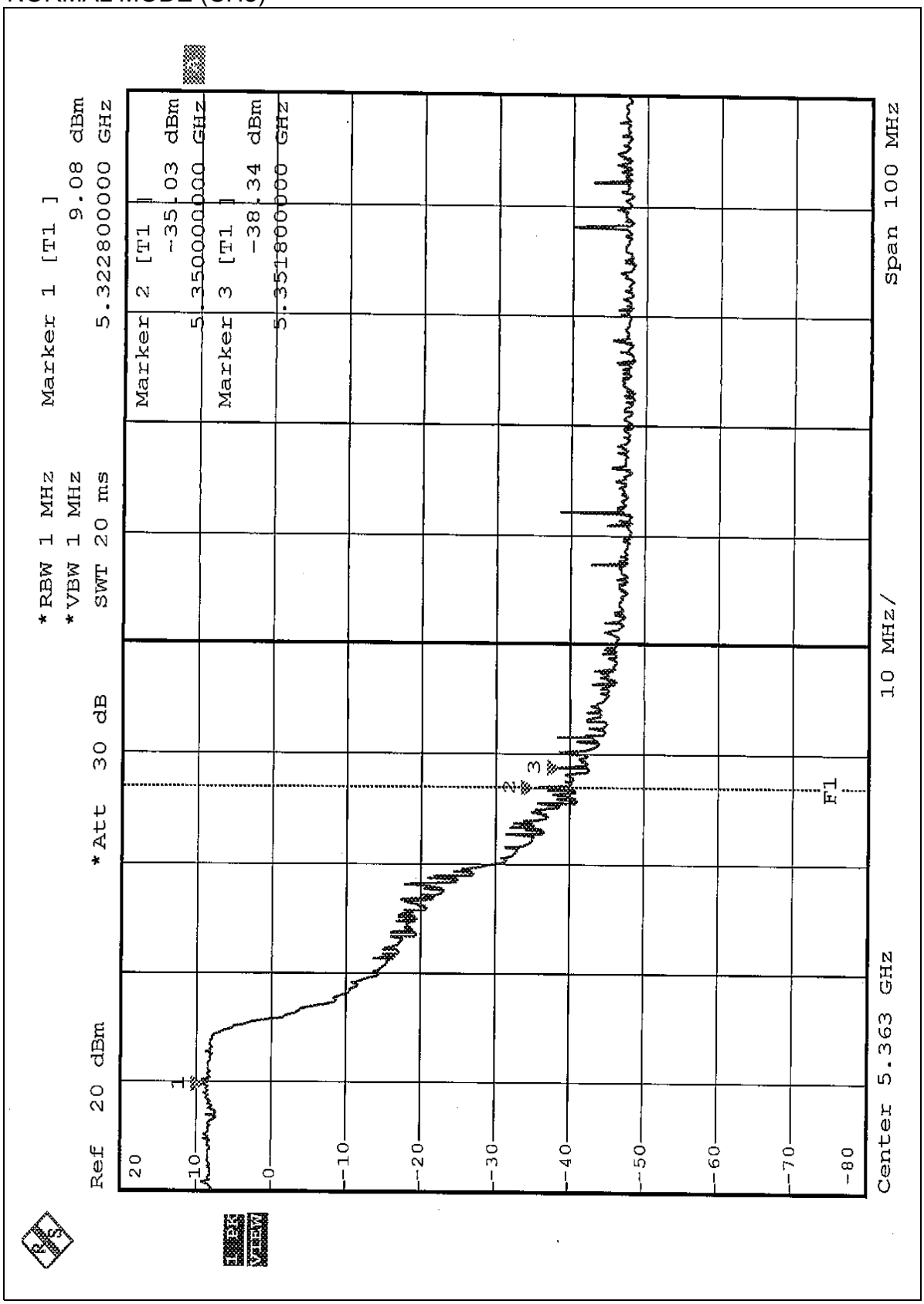
NORMAL MODE(CH 1)

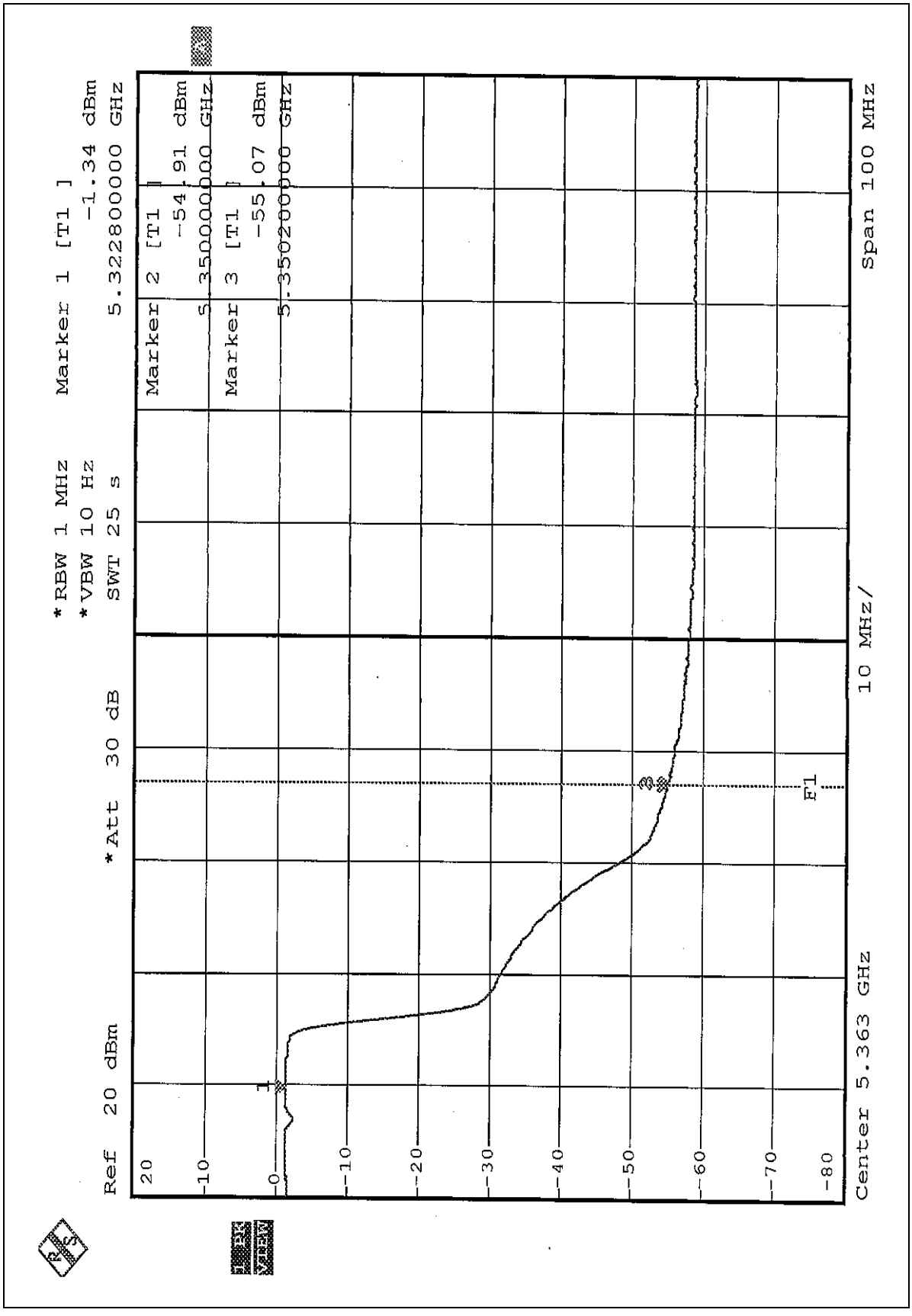


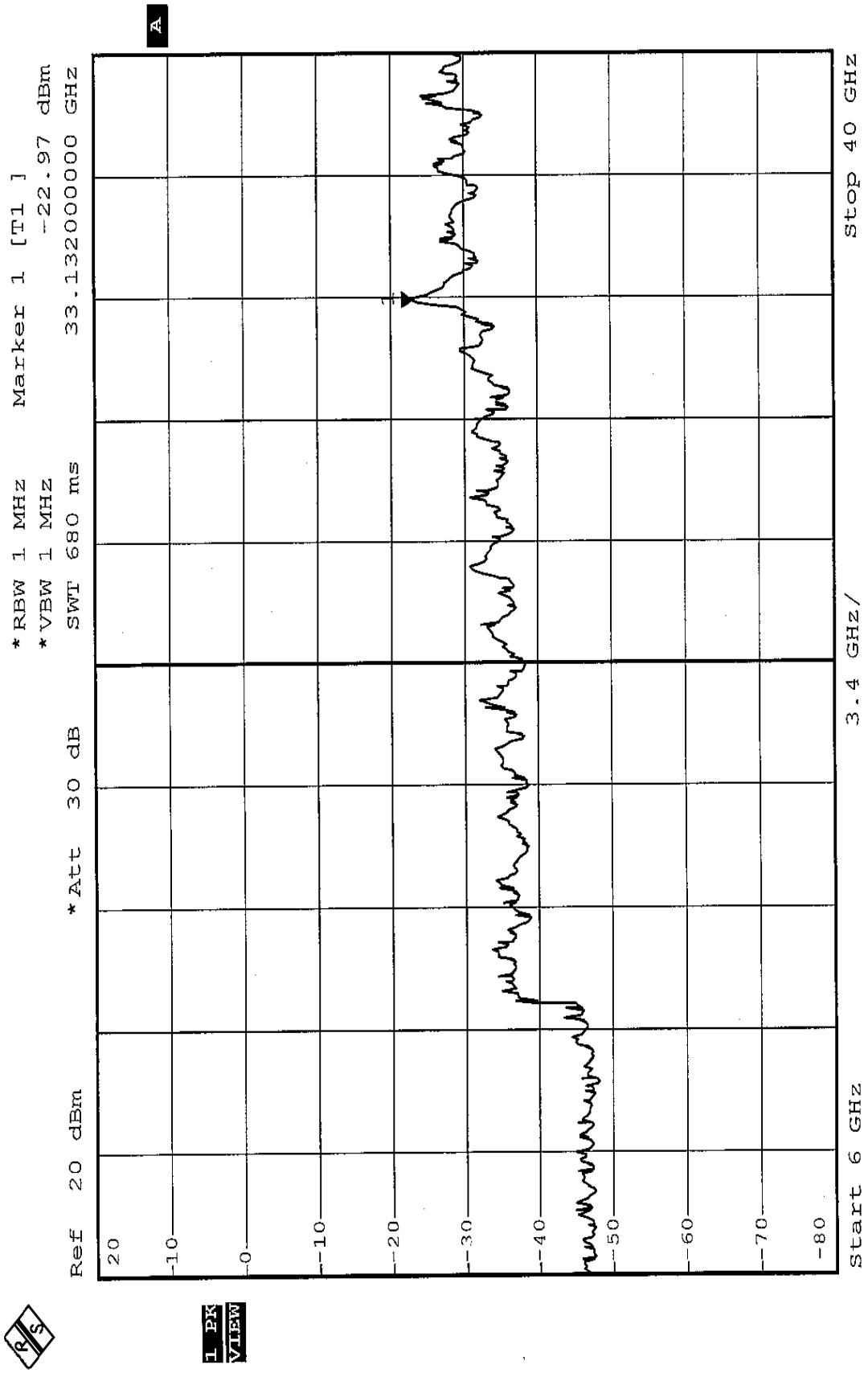

Ref 20 dBm
*Att 30 dB
SWT 25 s
*VBW 10 Hz
*RBW 1 MHz
Marker 1 [T1]
-1.30 dBm
5.181600000 GHz
Marker 2 [T1]
-51.46 dBm
5.150000000 GHz
Marker 3 [T1]
-51.54 dBm
5.149800000 GHz
Center 5.135 GHz
10 MHz/
Span 100 MHz
F1
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80


A
Marker 1 [T1]
-22.72 dBm
33.132000000 GHz
*RBW 1 MHz
*VBW 1 MHz
SWT 680 ms
*Att 30 dB
Ref 20 dBm
Start 6 GHz
3.4 GHz/
Stop 40 GHz
1 PK
VIEW

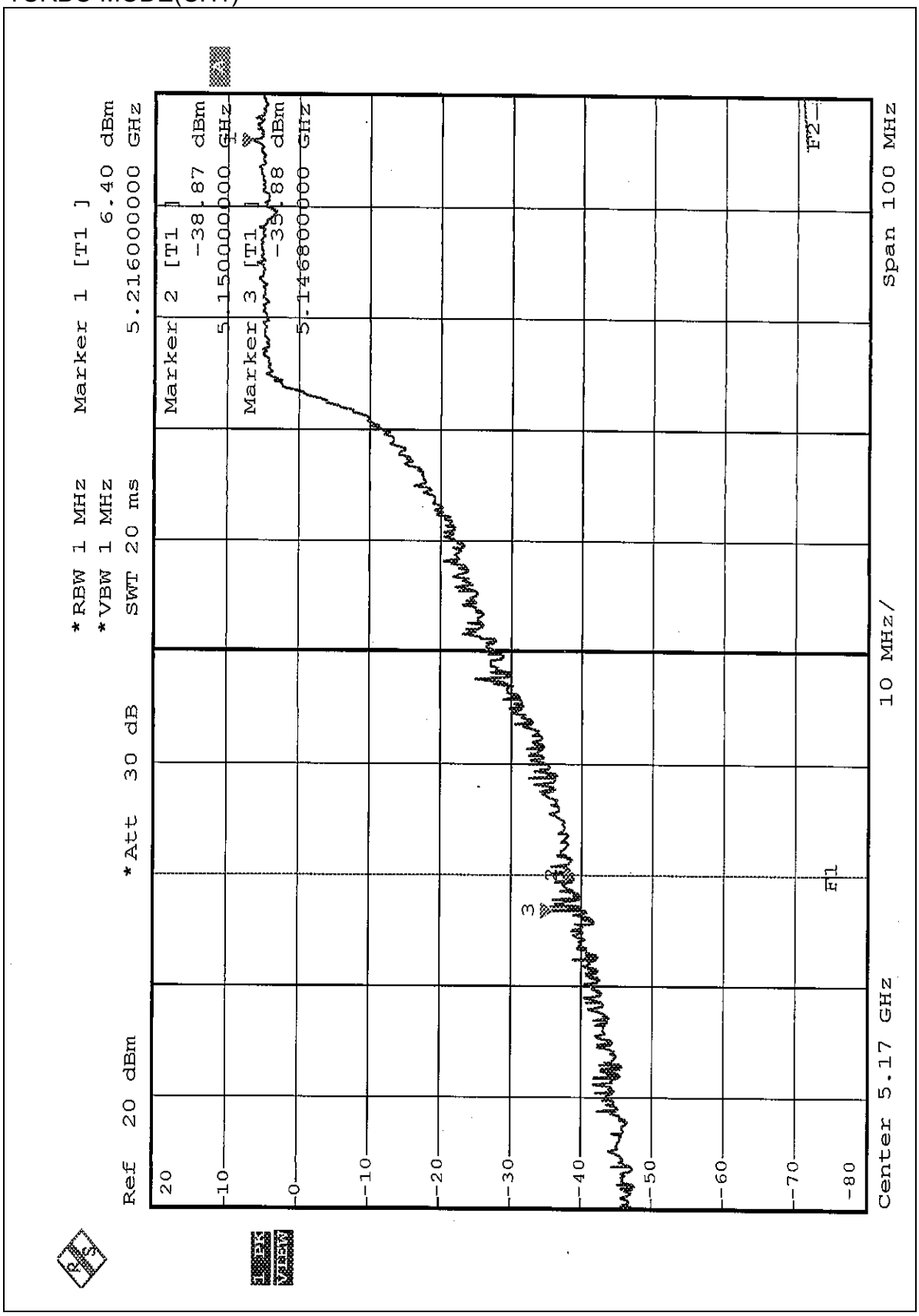
NORMAL MODE (CH8)

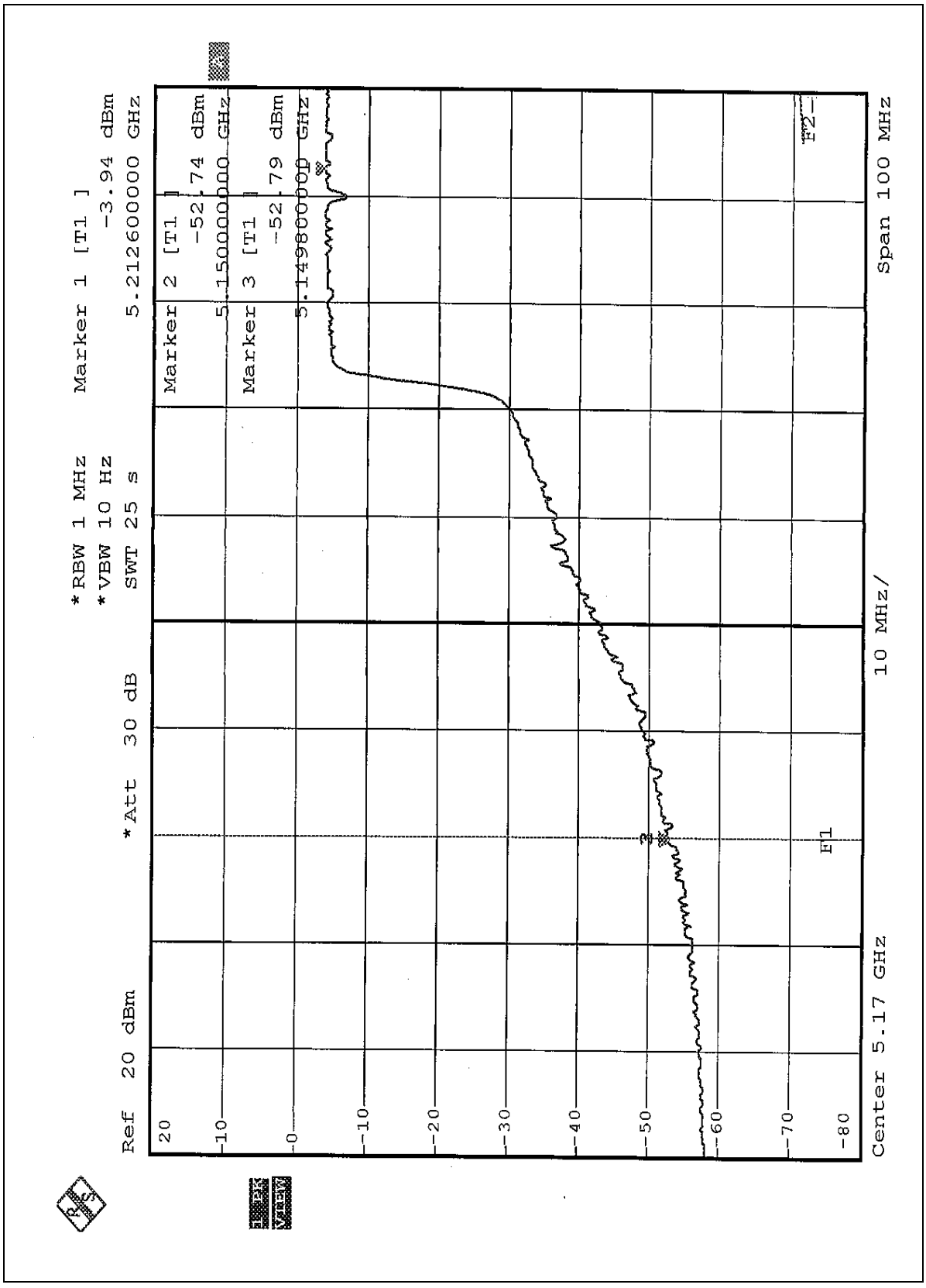


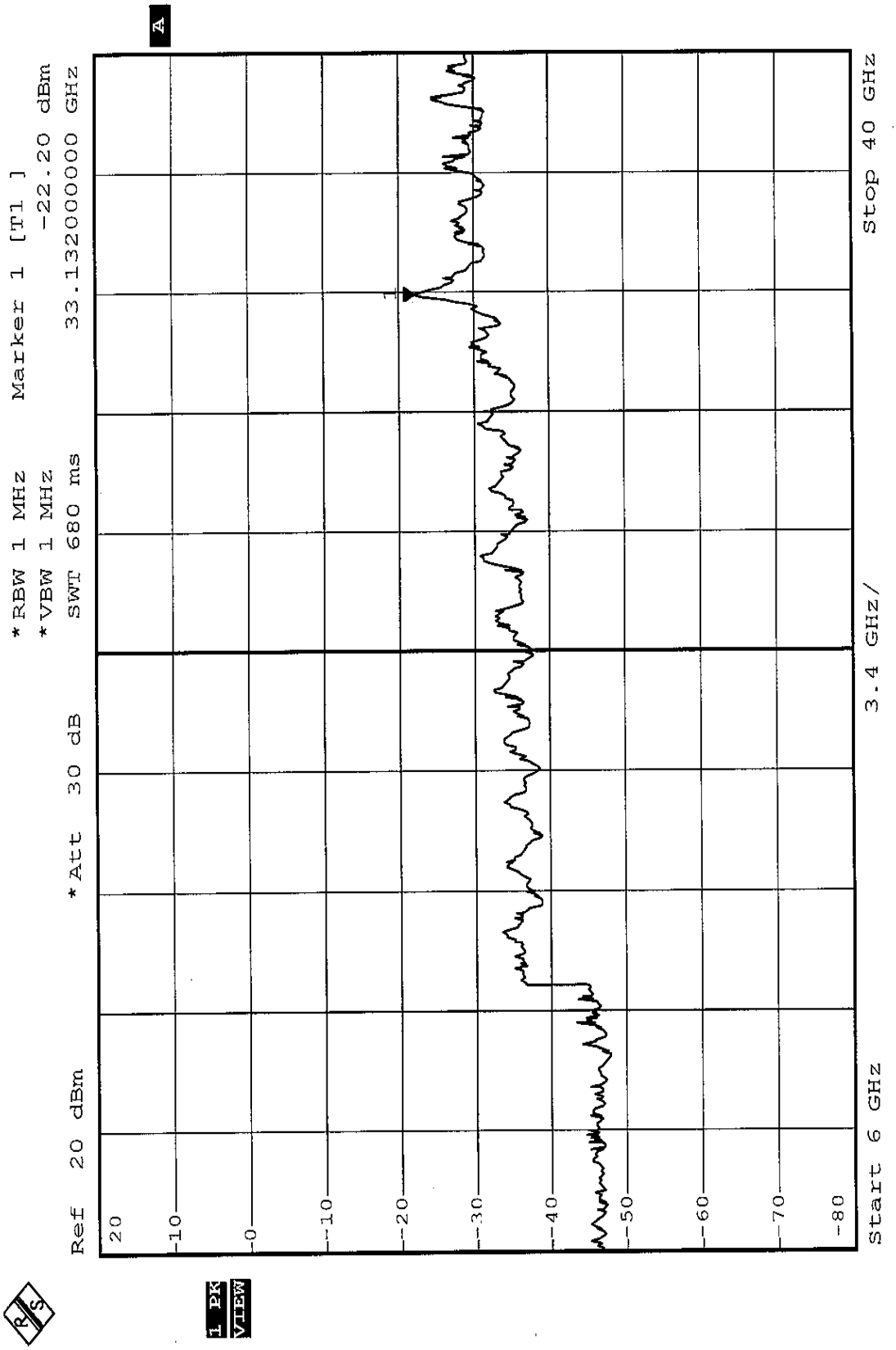

Marker 1 [T1]
-1.34 dBm
5.322800000 GHz
*RBW 1 MHz
*VBW 10 Hz
SWT 25 s
Marker 2 [T1]
-54.91 dBm
5.350000000 GHz
Marker 3 [T1]
-55.07 dBm
5.350200000 GHz
Ref 20 dBm
*Att 30 dB
Center 5.363 GHz
10 MHz/
Span 100 MHz
F1
MEAS
VBW


A
Marker 1 [T1]
-22.97 dBm
33.132000000 GHz
*RBW 1 MHz
*VBW 1 MHz
SWT 680 ms
*Att 30 dB
Ref 20 dBm
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
Start 6 GHz
3.4 GHz/
Stop 40 GHz
1 PK
VIEW

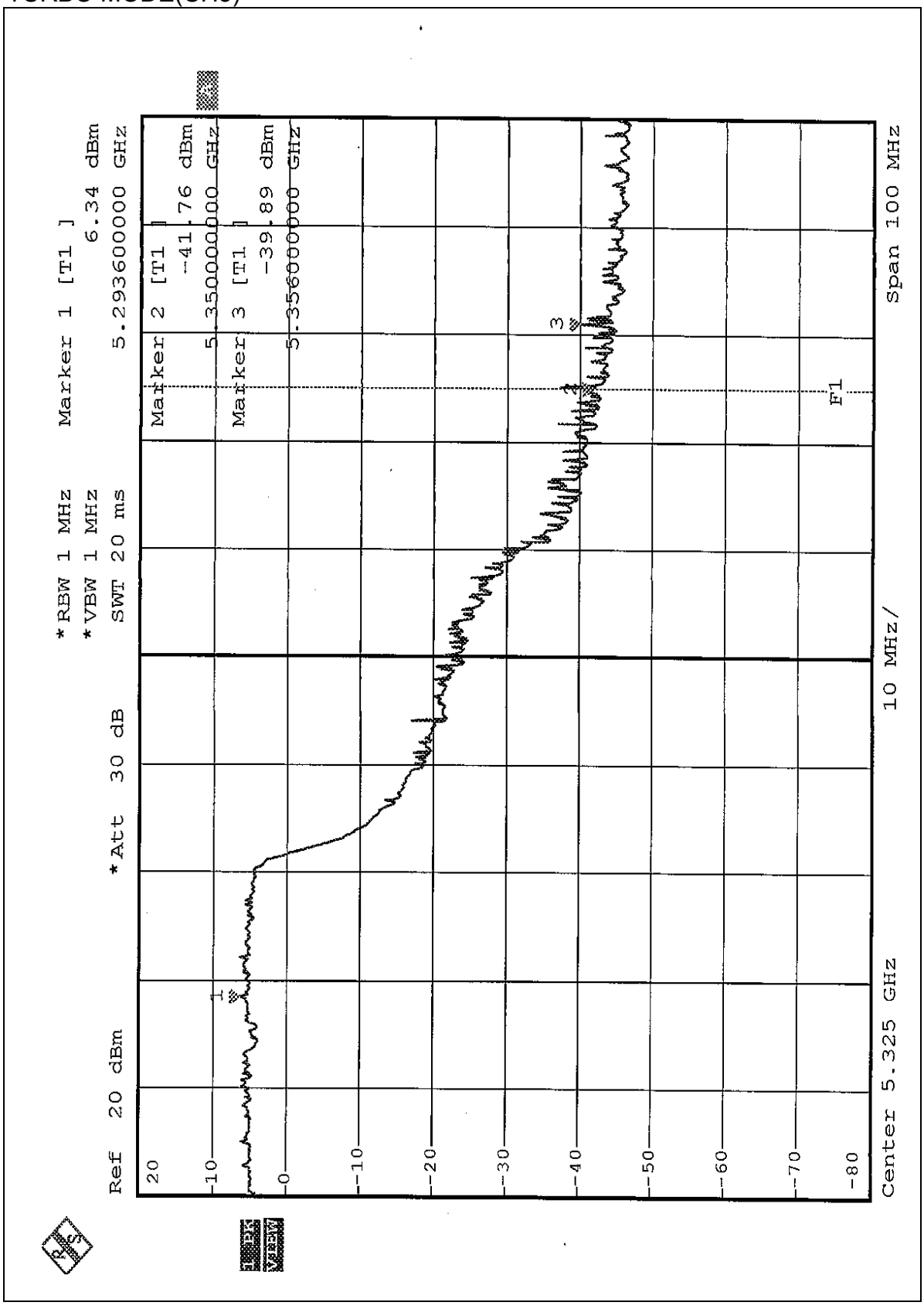
TURBO MODE(CH1)

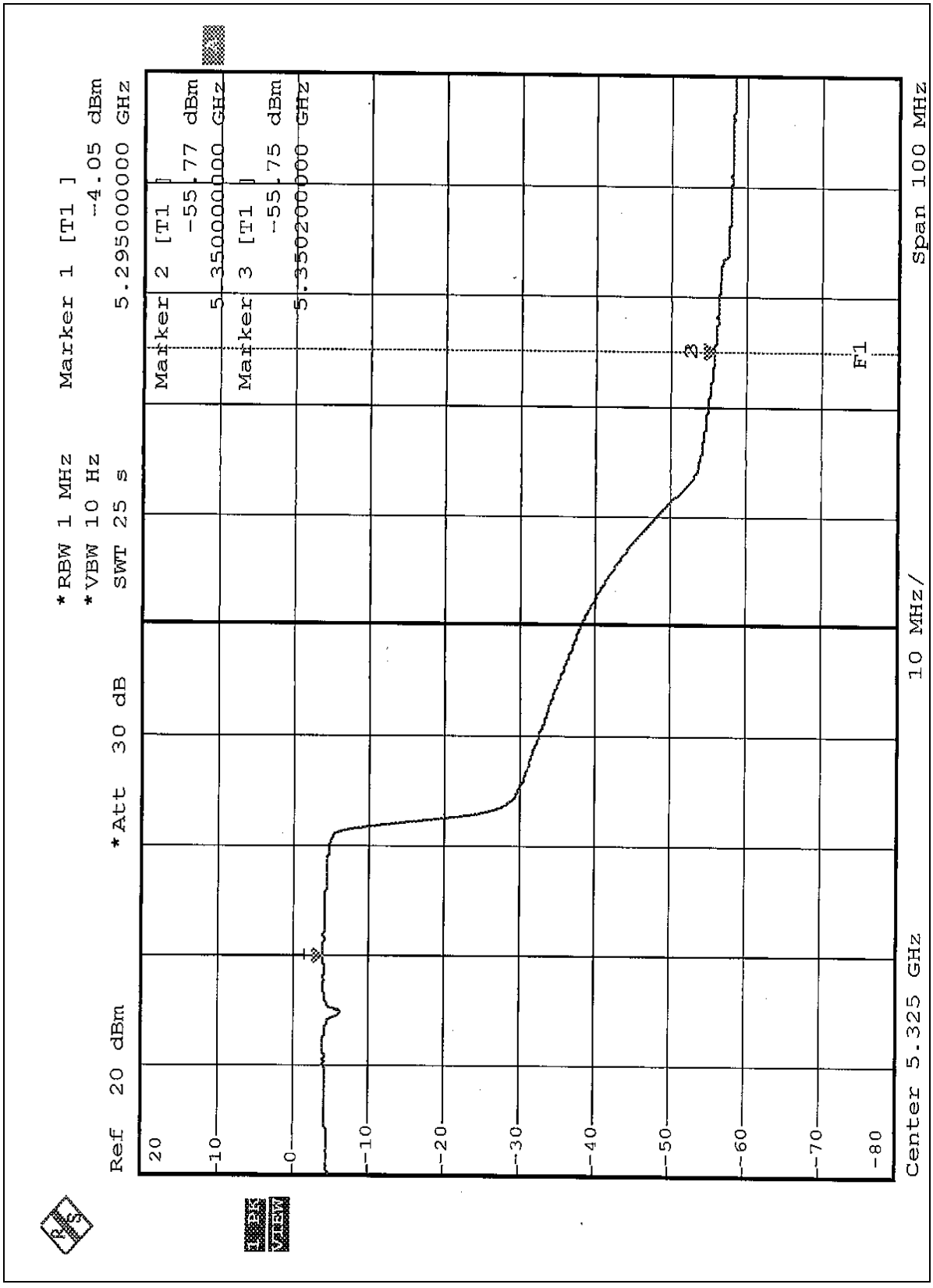


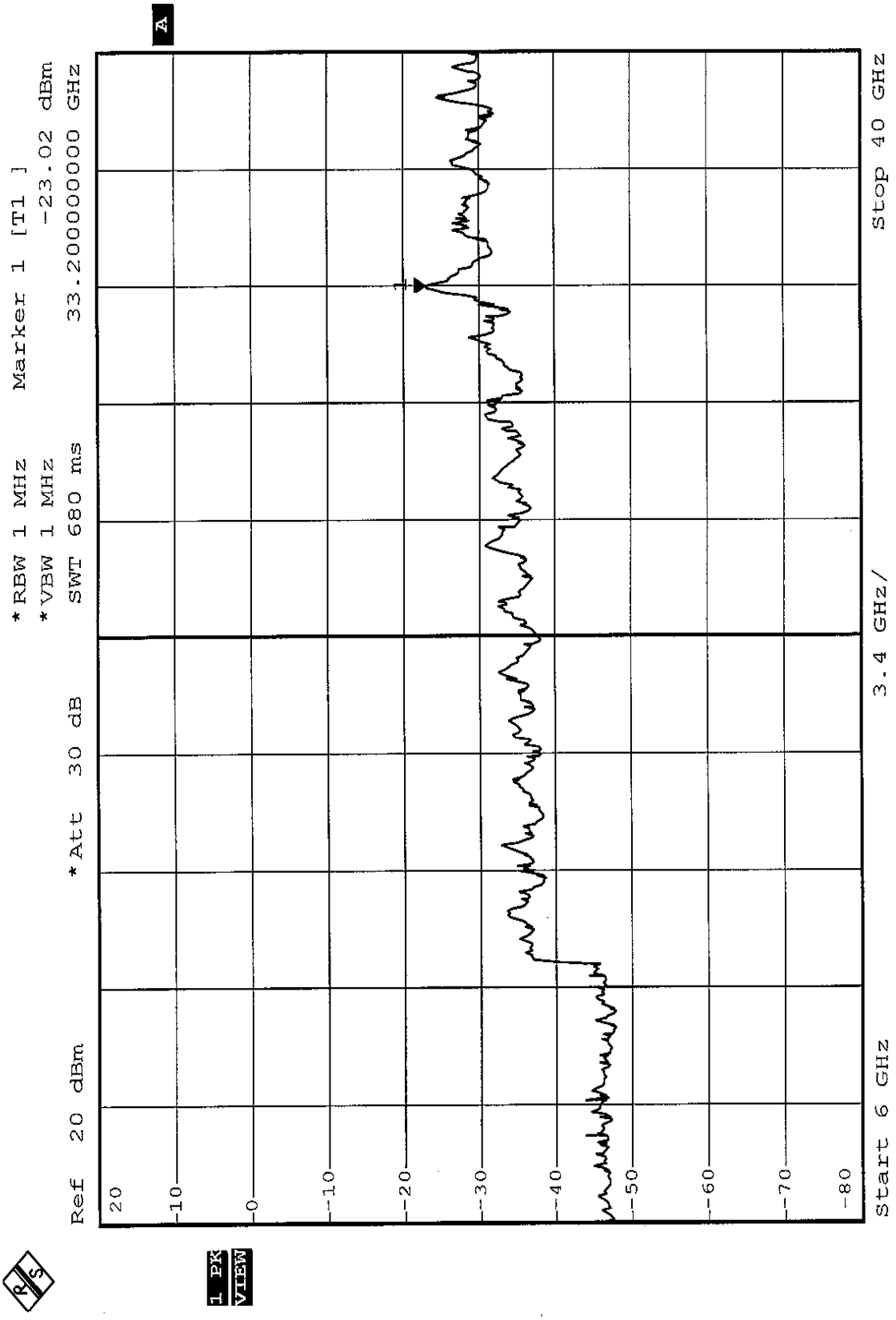

Ref 20 dBm
*Att 30 dB
*RBW 1 MHz
*VBW 10 Hz
SWT 25 s
Marker 1 [T1]
-3.94 dBm
5.212600000 GHz
Marker 2 [T1]
-52.74 dBm
5.150000000 GHz
Marker 3 [T1]
-52.79 dBm
5.149800000 GHz
Center 5.17 GHz
10 MHz/
Span 100 MHz
F1
F2
RBW
VBW

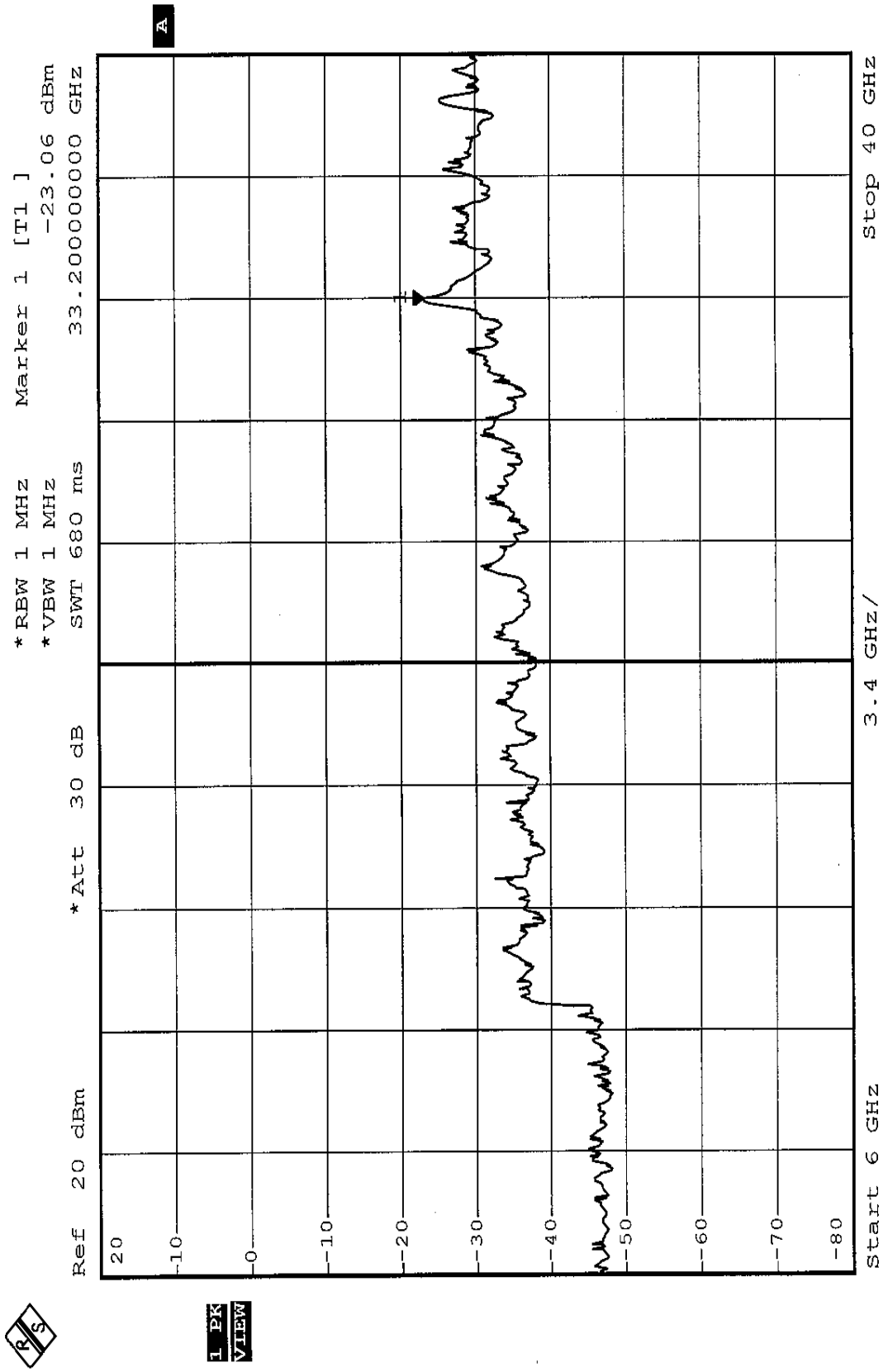

A
Marker 1 [T1]
-22.20 dBm
33.132000000 GHz
*RBW 1 MHz
*VBW 1 MHz
SWT 680 ms
Ref 20 dBm
*Att 30 dB
Start 6 GHz
3.4 GHz/
Stop 40 GHz
1 PK
VIEW

TURBO MODE(CH3)




Ref 20 dBm
*Att 30 dB
SWT 25 s
*VBW 10 Hz
*RBW 1 MHz
Marker 1 [T1]
-4.05 dBm
5.295000000 GHz
Marker 2 [T1]
-55.77 dBm
5.350000000 GHz
Marker 3 [T1]
-55.75 dBm
5.350200000 GHz
Center 5.325 GHz
10 MHz/
Span 100 MHz
F1
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80


A
Marker 1 [T1]
-23.02 dBm
33.200000000 GHz
*RBW 1 MHz
*VBW 1 MHz
SWT 680 ms
*Att 30 dB
Ref 20 dBm
Start 6 GHz
3.4 GHz/
Stop 40 GHz
1 PK
VIEW


A
Marker 1 [T1]
-23.06 dBm
33.20000000 GHz
*RBW 1 MHz
*VBW 1 MHz
SWT 680 ms
*Att 30 dB
Ref 20 dBm
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
Start 6 GHz
3.4 GHz/
Stop 40 GHz
1 PK
VIEW

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 antenna used in this product is Dipole antenna with UFL antenna connector. The maximum Gain of the antenna is 2dBi.

For Frequency 5.725~5.850GHZ

5.9 6dB BANDWIDTH MEASUREMENT

5.9.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

5.9.2 TEST INSTRUMENTS

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

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

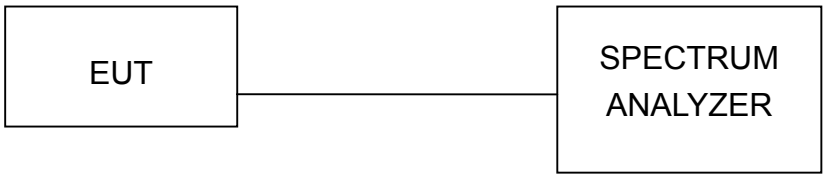
5.9.3 TEST PROCEDURE

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

5.9.4 DEVIATION FROM TEST STANDARD

No deviation

5.9.5 TEST SETUP



5.9.6 EUT OPERATING CONDITIONS

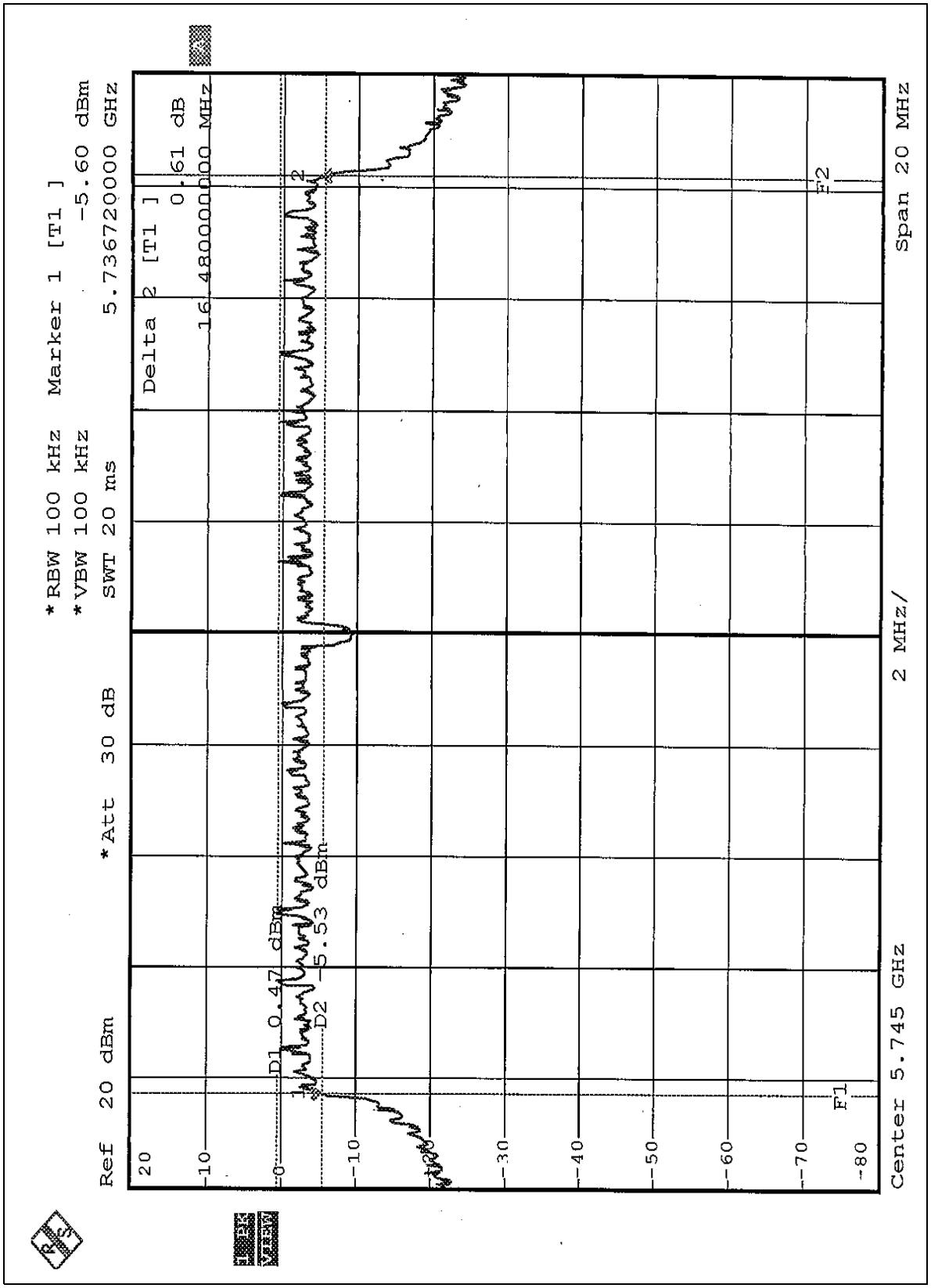
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

5.9.7 TEST RESULTS

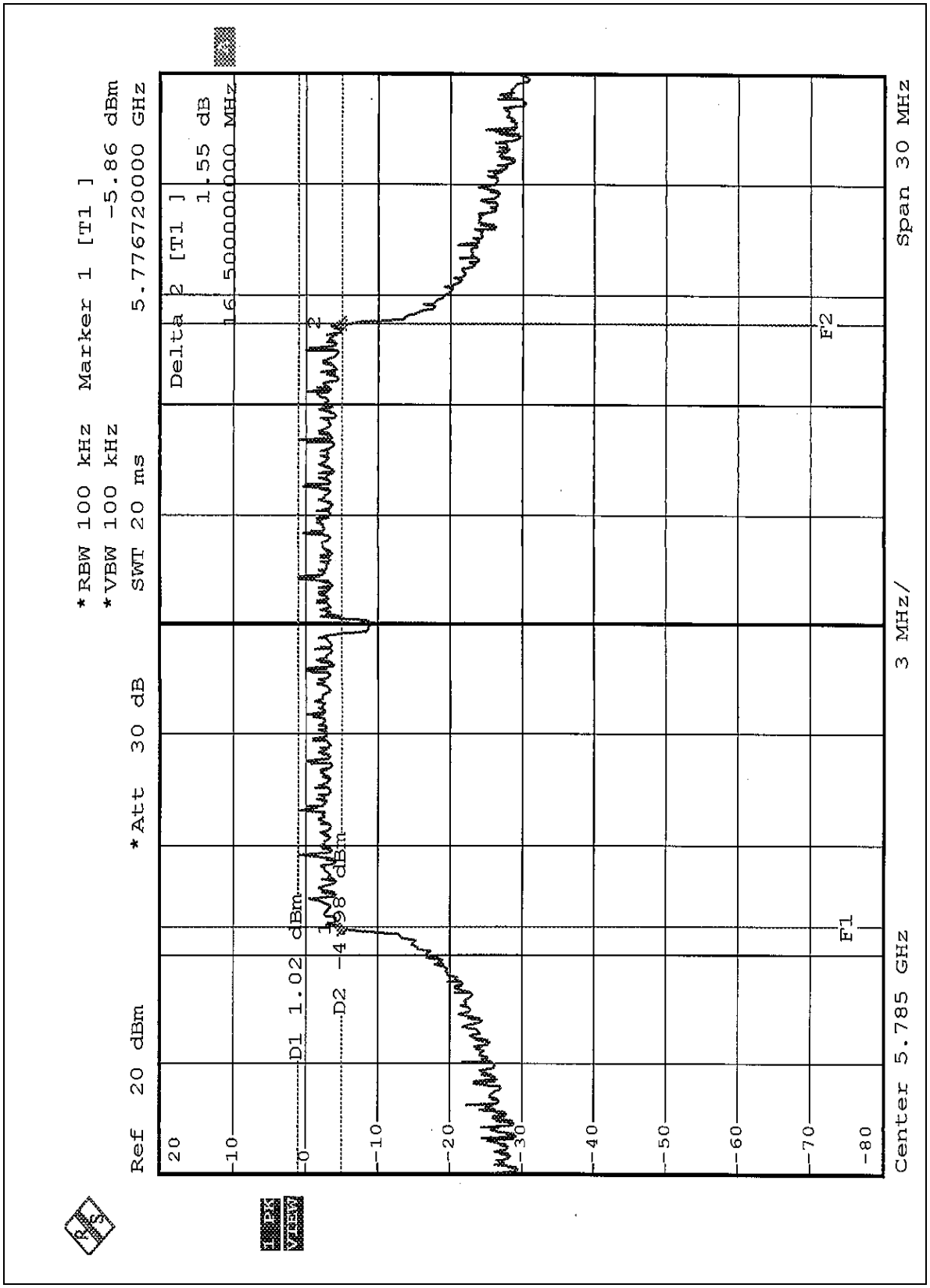
EUT	IEEE 802.11a+g Wireless Access Point	**MODEL**	GN-A15AG
MODE	Normal	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 63%RH, 991 hPa	**TESTED BY**	Steven Lu

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
9	5745	16.48	0.5	PASS
11	5785	16.50	0.5	PASS
13	5825	16.38	0.5	PASS

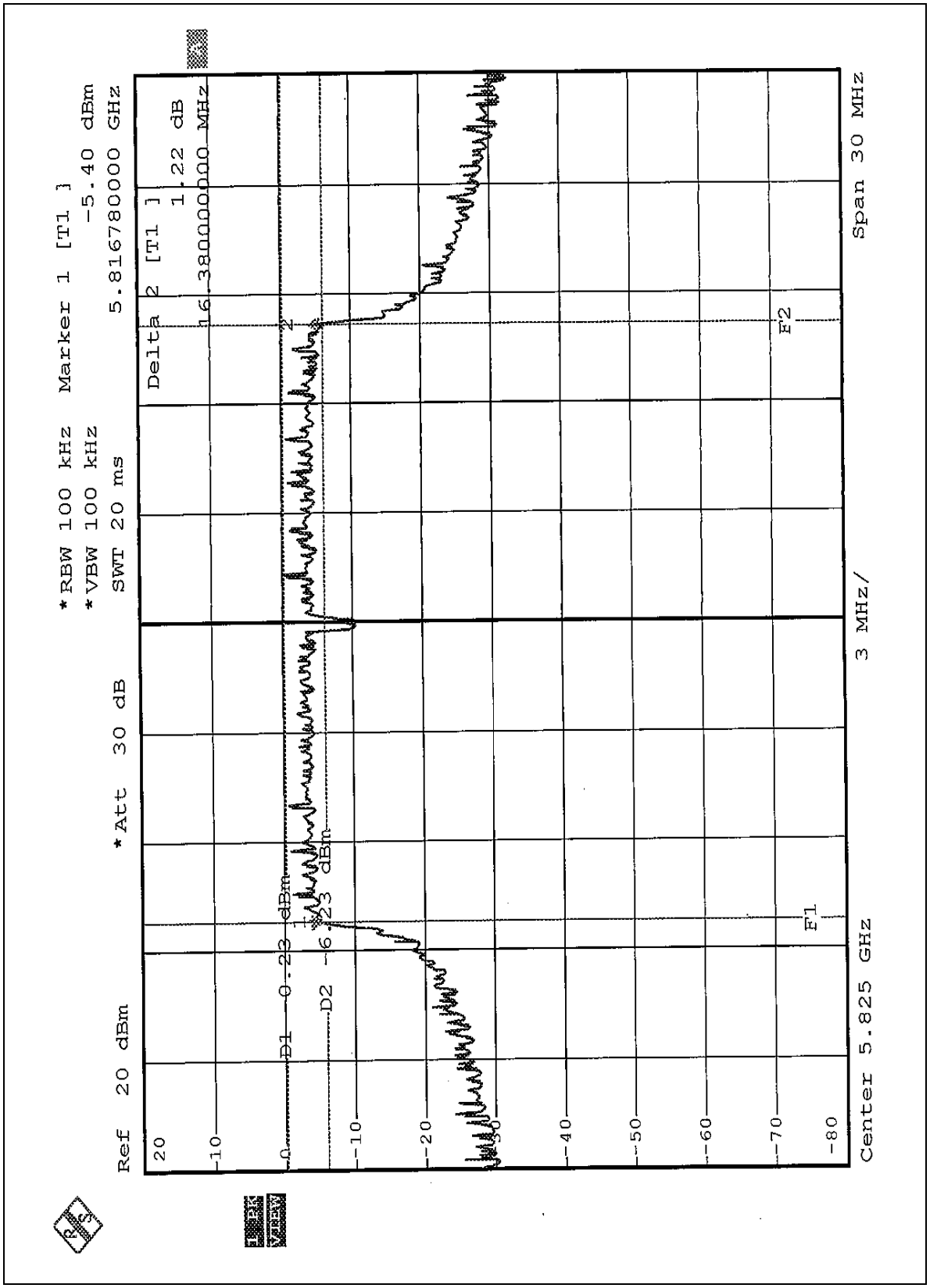
CHANNEL 9


Ref 20 dBm
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 20 ms
Marker 1 [T1]
-5.60 dBm
5.736720000 GHz
Delta 2 [T1]
0.61 dB
16.48000000 MHz
D1 0.47 dBm
D2 -5.53 dBm
Center 5.745 GHz
2 MHz/
Span 20 MHz

CHANNEL 11


Ref 20 dBm
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 20 ms
Marker 1 [T1]
-5.86 dBm
5.776720000 GHz
Delta 2 [T1]
1.55 dB
16.500000000 MHz
D1 1.02 dBm
D2 -4.98 dBm
F1
F2
Center 5.785 GHz
3 MHz/
Span 30 MHz

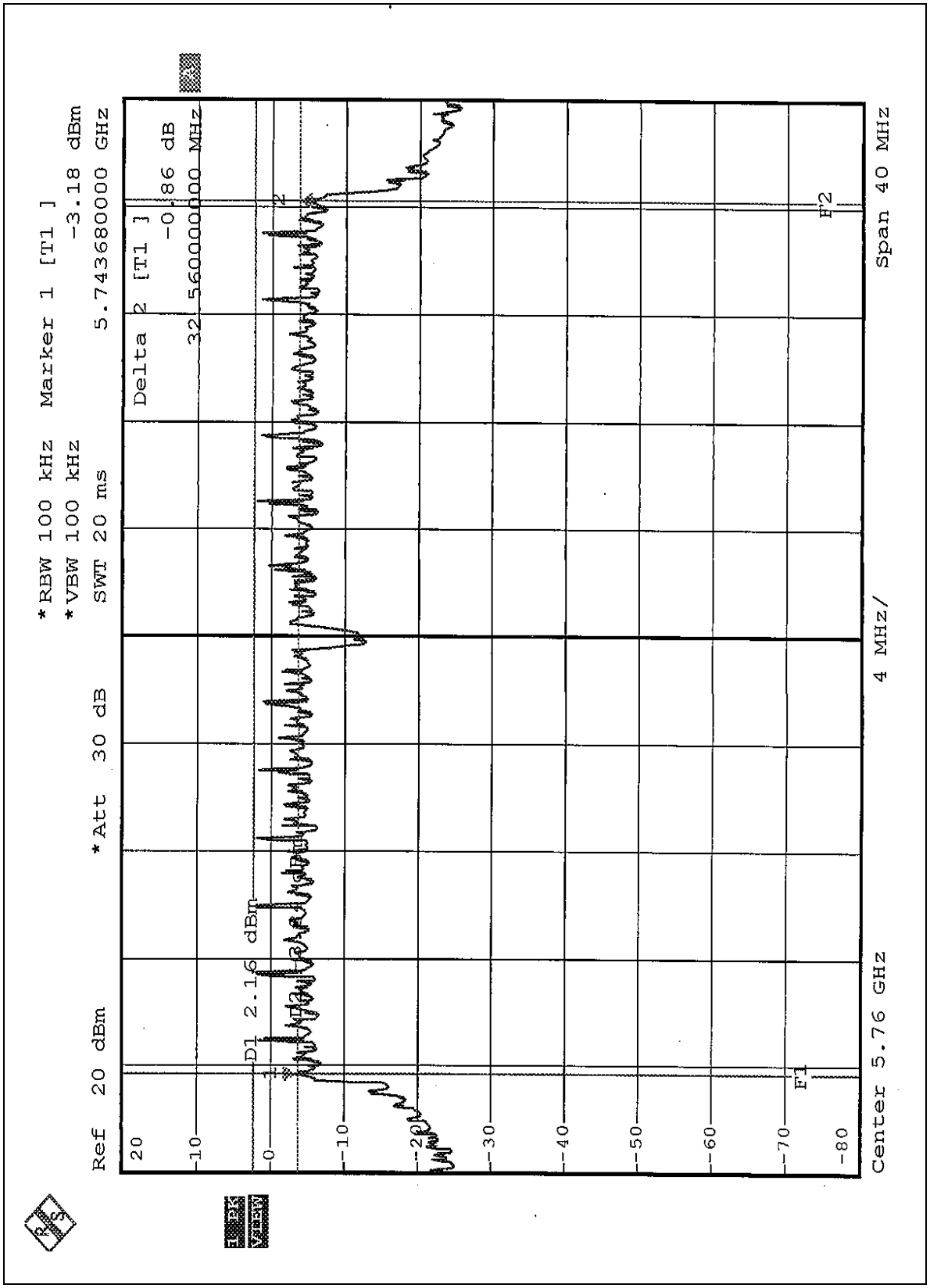
CHANNEL 13


Ref 20 dBm
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 20 ms
Marker 1 [T1]
-5.40 dBm
5.816780000 GHz
Delta 2 [T1]
1.22 dB
16.38000000 MHz
D1 -0.23 dBm
D2 -6.23 dBm
F1
F2
Center 5.825 GHz
3 MHz/
Span 30 MHz

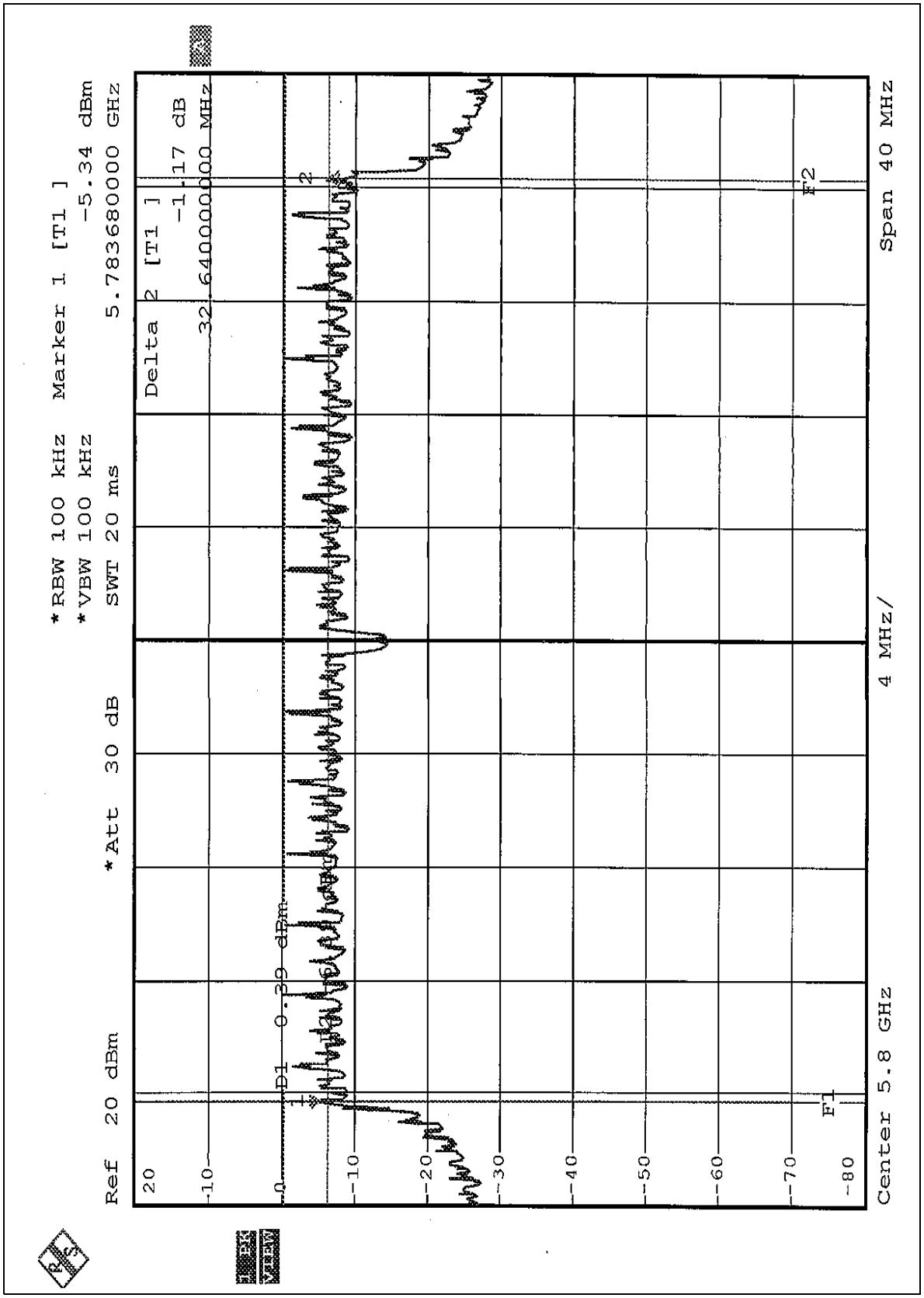
EUT	IEEE 802.11a+g Wireless Access Point	**MODEL**	GN-A15AG
MODE	Turbo	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 63%RH, 991 hPa	**TESTED BY**	Steven Lu

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
4	5760	32.56	0.5	PASS
5	5800	32.64	0.5	PASS

CHANNEL 4


Ref 20 dBm
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 20 ms
Marker 1 [T1]
-3.18 dBm
5.743680000 GHz
Delta 2 [T1]
-0.86 dB
32.560000000 MHz
D1 2.16 dBm
Center 5.76 GHz
4 MHz/
Span 40 MHz
F1
F2

CHANNEL 5


*RBW 100 kHz
*VBW 100 kHz
SWT 20 ms
Marker 1 [T1]
-5.34 dBm
5.783680000 GHz
*Att 30 dB
Ref 20 dBm
Delta 2 [T1]
-1.17 dB
32.640000000 MHz
D1 0.39 dBm
Center 5.8 GHz
4 MHz/
Span 40 MHz
F1
F2

5.10 MAXIMUM PEAK OUTPUT POWER

5.10.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

5.10.2 INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSEK30	100049	Aug. 12, 2004
R&S SIGNAL GENERATOR	SMP04	100011	May 28, 2004
TEKTRONIX OSCILLOSCOPE	TDS 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..

5.10.3 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.

5.10.4 DEVIATION FROM TEST STANDARD

No deviation

5.10.5 TEST SETUP

5.10.6 EUT OPERATING CONDITIONS

Same as Item 5.9.6

5.10.7 TEST RESULTS

EUT	IEEE 802.11a+g Wireless Access Point	MODEL	GN-A15AG
MODE	Normal	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 63%RH, 991 hPa	TESTED BY	Steven Lu

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
9	5745	17.76	30	PASS
11	5785	17.60	30	PASS
13	5825	16.58	30	PASS

EUT	IEEE 802.11a+g Wireless Access Point	MODEL	GN-A15AG
MODE	Turbo	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 63%RH, 991 hPa	TESTED BY	Steven Lu

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
4	5760	17.08	30	PASS
5	5800	16.54	30	PASS

5.11 POWER SPECTRAL DENSITY MEASUREMENT

5.11.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

5.11.2 TEST INSTRUMENTS

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

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

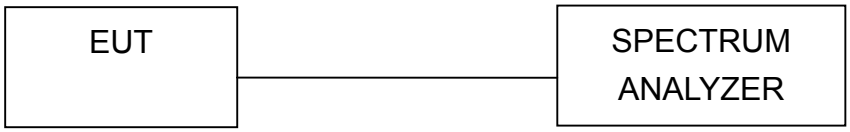
5.11.3 TEST PROCEDURE

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.

5.11.4 DEVIATION FROM TEST STANDARD

No deviation

5.11.5 TEST SETUP



5.11.6 EUT OPERATING CONDITION

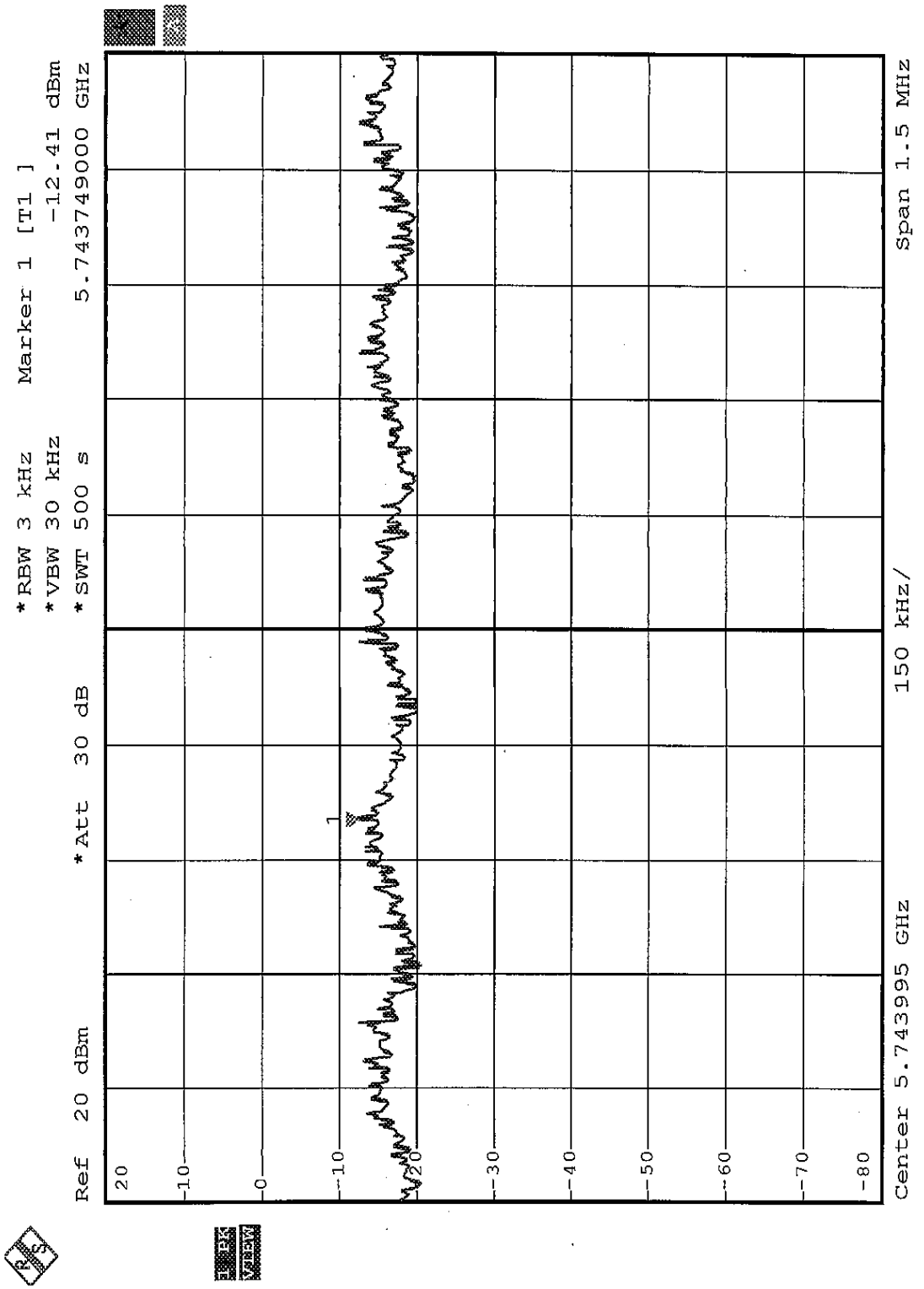
Same as Item 5.9.6

5.11.7 TEST RESULTS

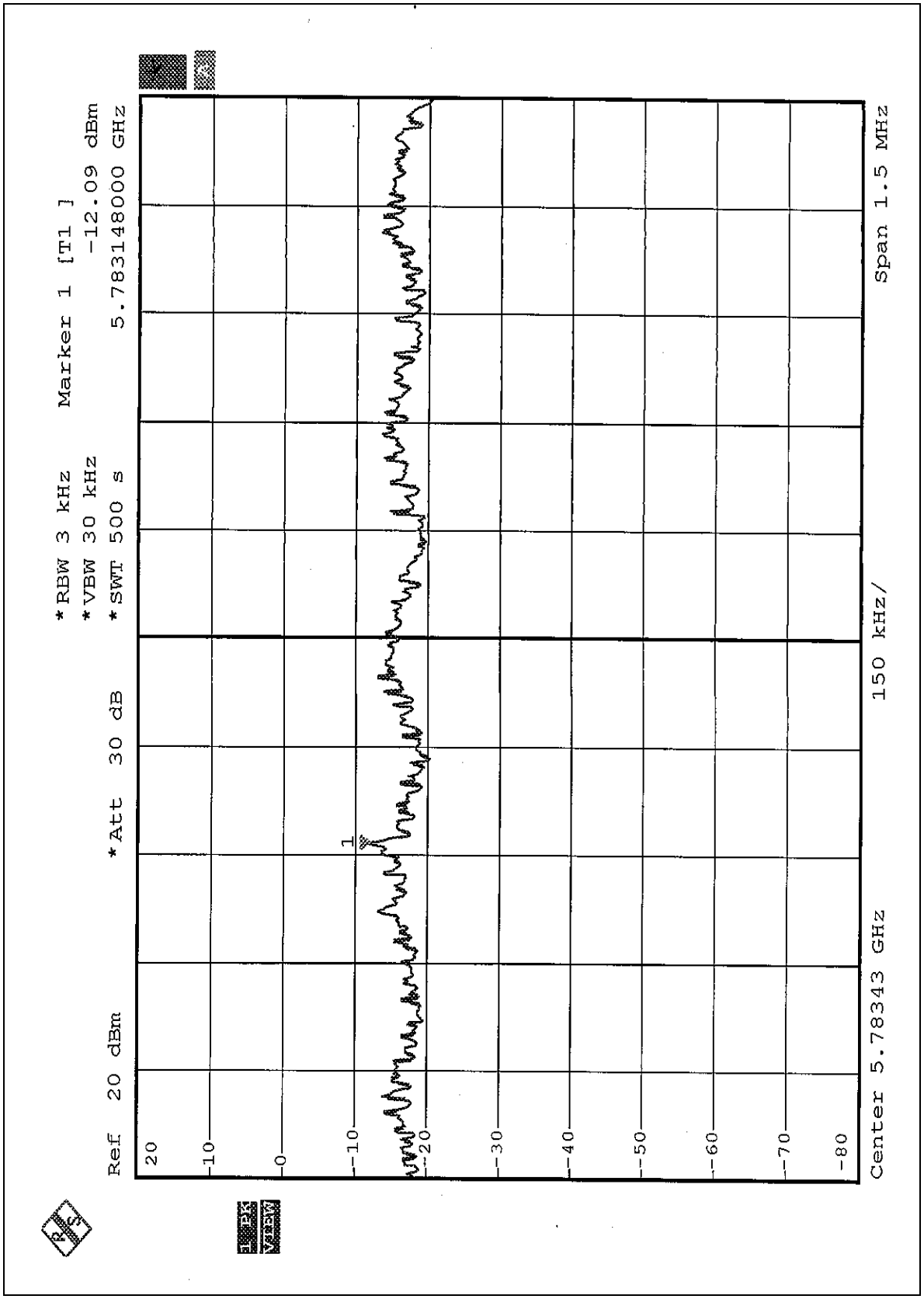
EUT	IEEE 802.11a+g Wireless Access Point	**MODEL**	GN-A15AG
MODE	Normal	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 63%RH, 991 hPa	**TESTED BY**	Steven Lu

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
9	5745	-12.41	8	PASS
11	5785	-12.09	8	PASS
13	5825	-13.37	8	PASS

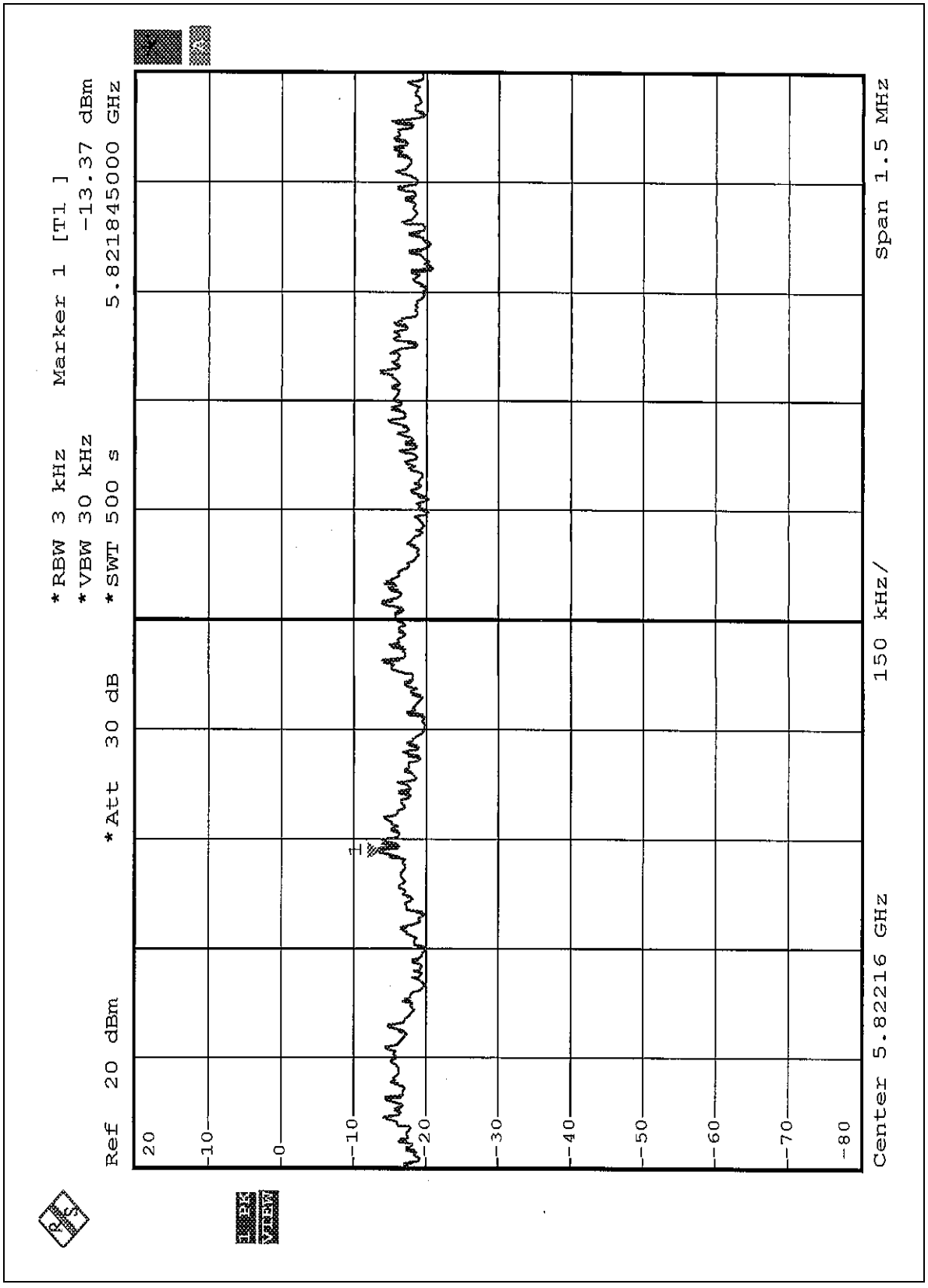
CHANNEL 9


Ref 20 dBm
*Att 30 dB
*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-12.41 dBm
5.743749000 GHz
Center 5.743995 GHz
150 kHz/
Span 1.5 MHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80

CHANNEL 11


Ref 20 dBm
*Att 30 dB
*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-12.09 dBm
5.783148000 GHz
Center 5.78343 GHz
150 kHz/
Span 1.5 MHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80

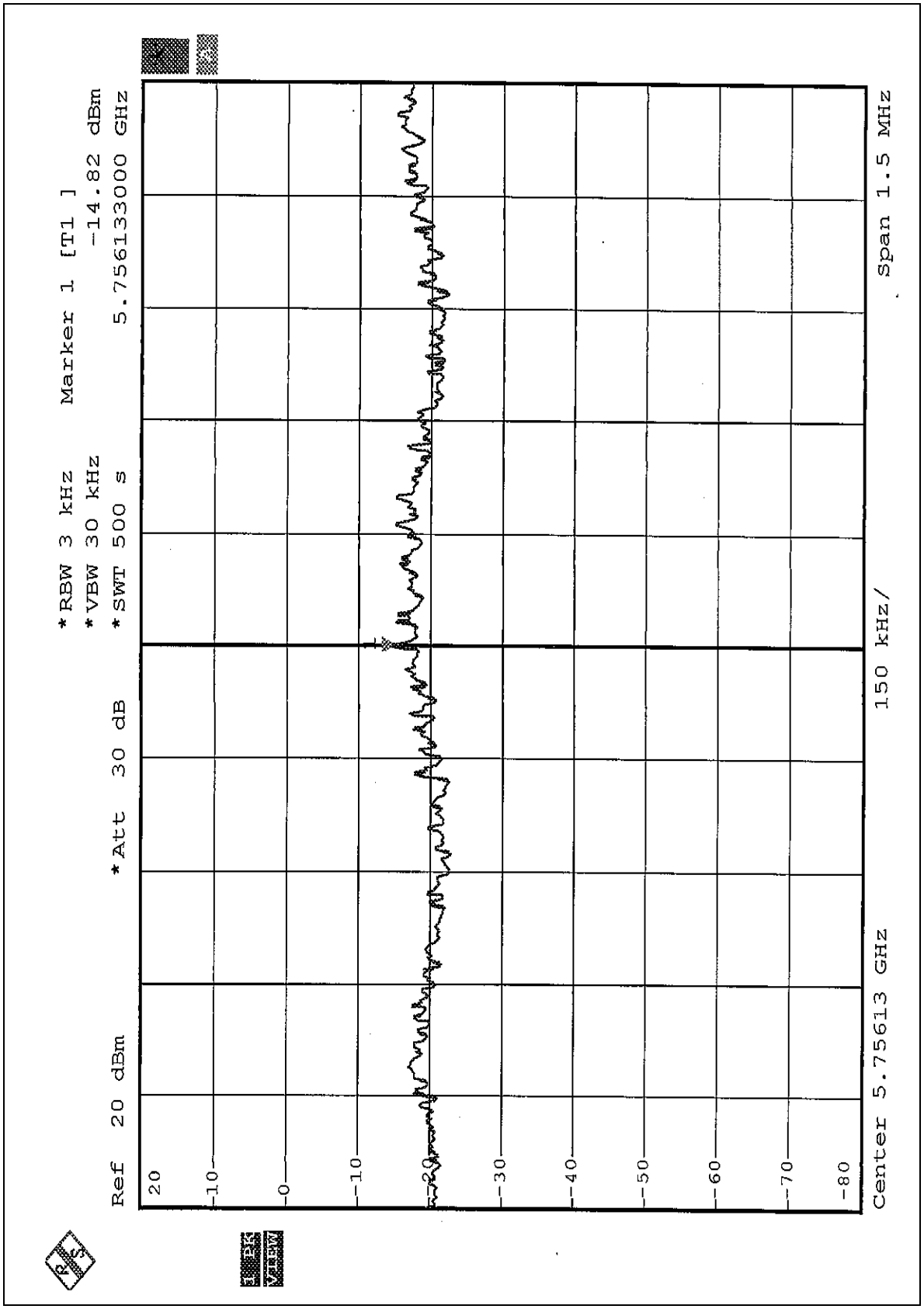
CHANNEL 13


Marker 1 [T1]
-13.37 dBm
5.821845000 GHz
*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
*Att 30 dB
Ref 20 dBm
Center 5.82216 GHz
150 kHz/
Span 1.5 MHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80

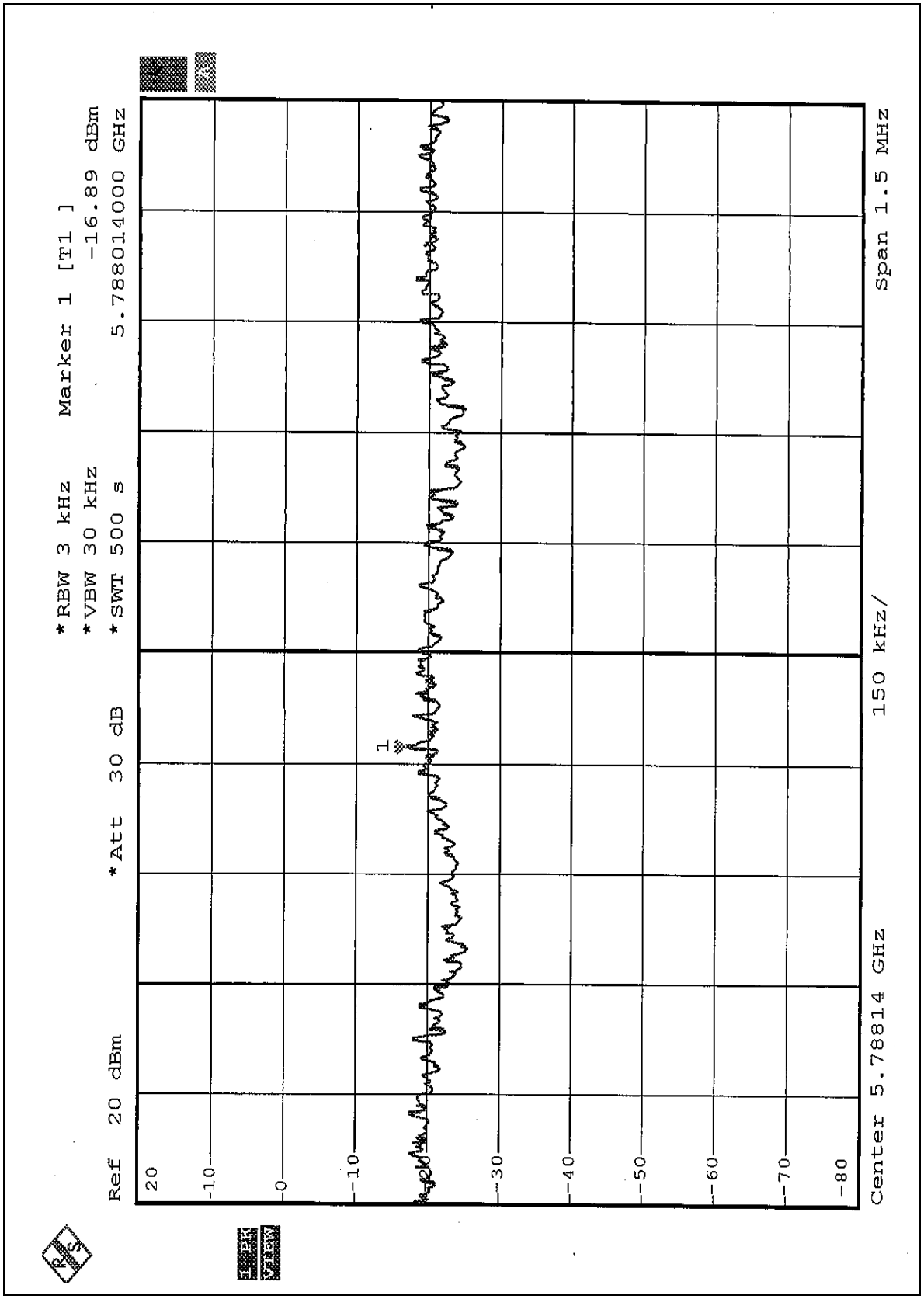
EUT	IEEE 802.11a+g Wireless Access Point	**MODEL**	GN-A15AG
MODE	Turbo	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 63%RH, 991 hPa	**TESTED BY**	Steven Lu

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
4	5760	-14.82	8	PASS
5	5800	-16.89	8	PASS

CHANNEL 4


Marker 1 [T1]
-14.82 dBm
5.756133000 GHz
*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
*Att 30 dB
Ref 20 dBm
Center 5.75613 GHz
150 kHz/
Span 1.5 MHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80

CHANNEL 5


Ref 20 dBm
*Att 30 dB
*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-16.89 dBm
5.78801400 GHz
Center 5.78814 GHz
150 kHz/
Span 1.5 MHz
1 PK
VIEW
20
10
0
-10
-30
-40
-50
-60
-70
-80

5.12 BAND EDGES MEASUREMENT

5.12.1 LIMITS OF BAND EDGES MEASUREMENT

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

5.12.2 TEST INSTRUMENTS

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

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

5.12.3 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 100 MHz with suitable frequency span including 100 MHz bandwidth from band edge. The band edges was measured and recorded.

5.12.4 DEVIATION FROM TEST STANDARD

No deviation

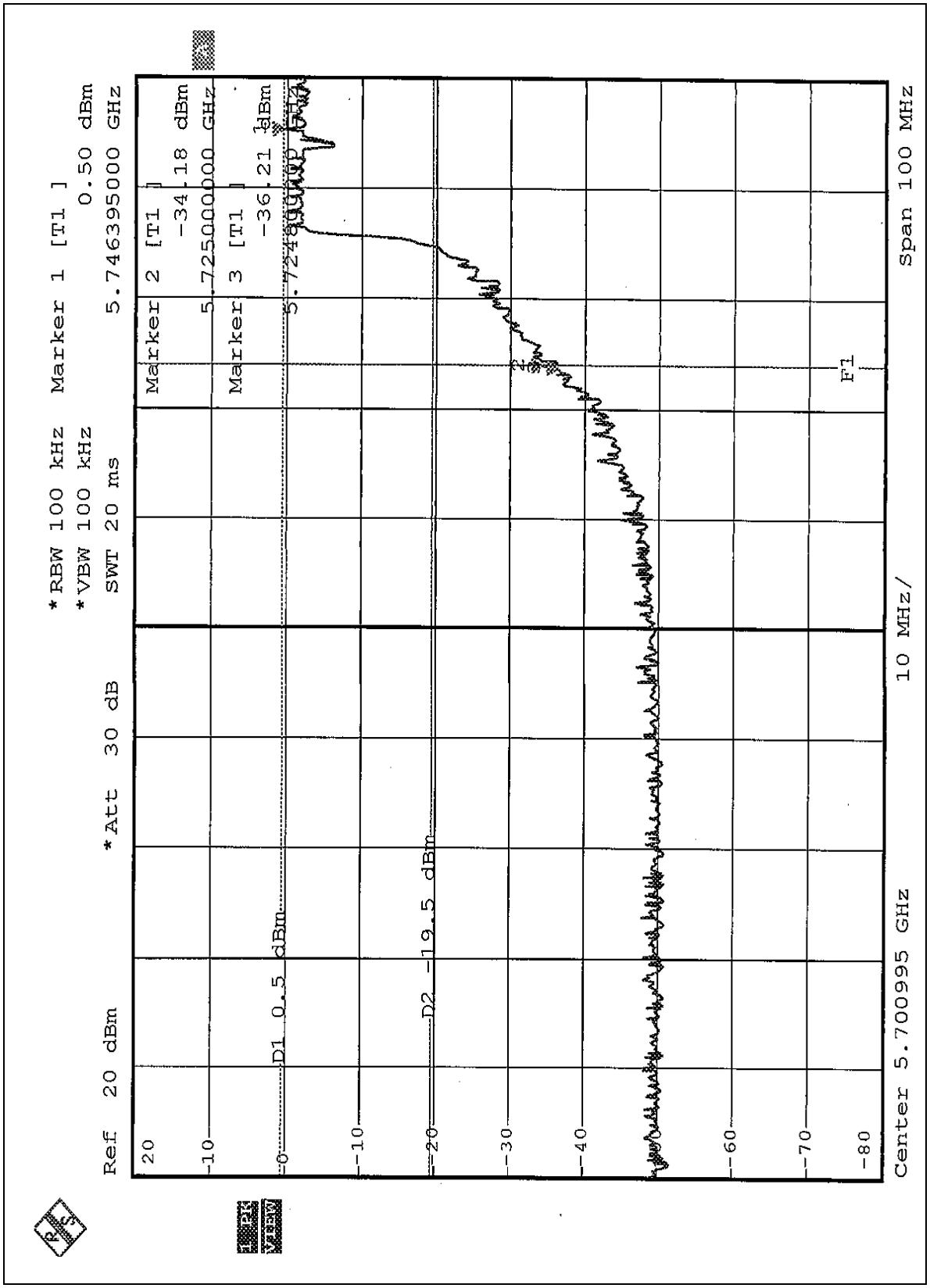
5.12.5 EUT OPERATING CONDITION

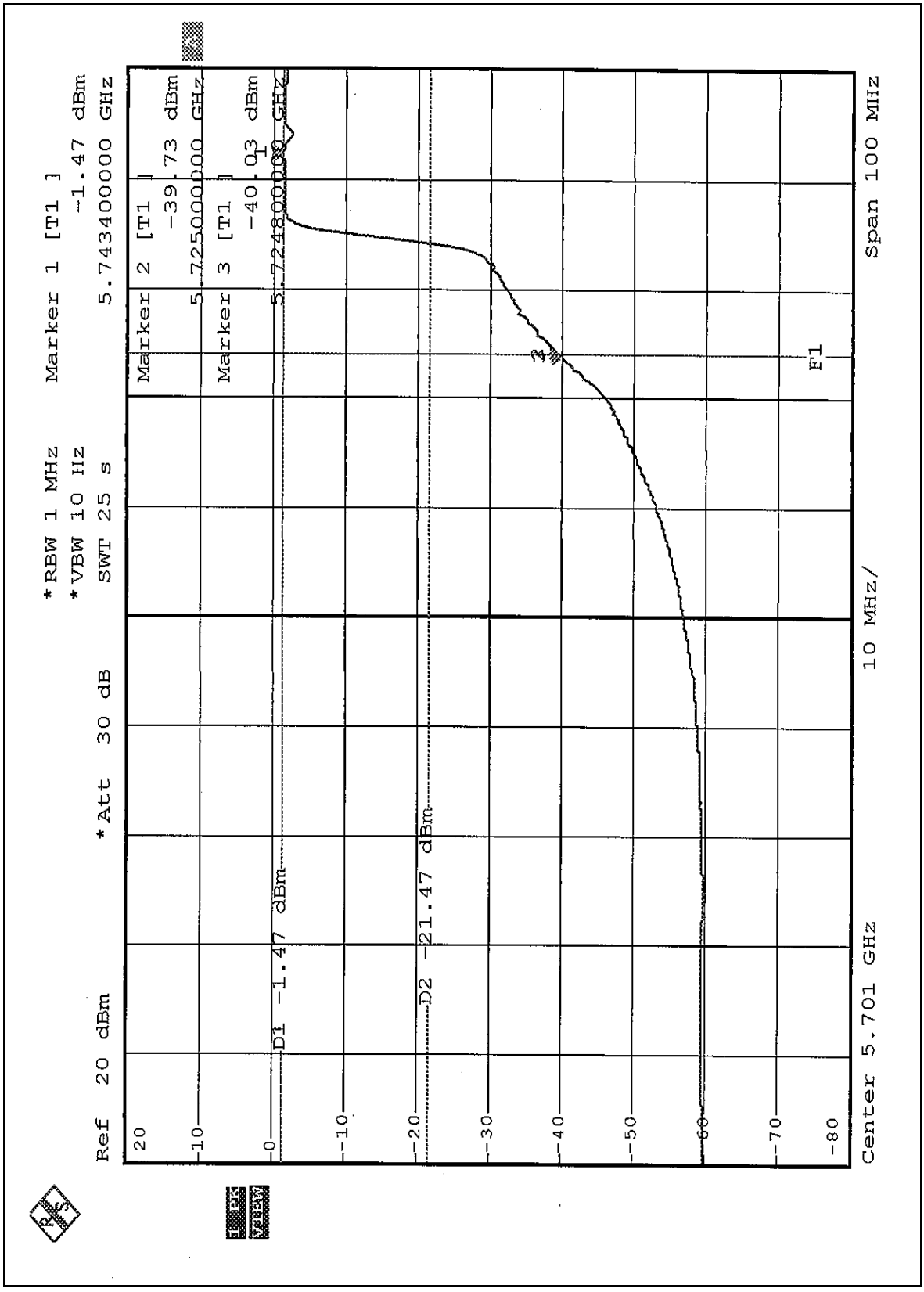
Same as Item 5.9.6

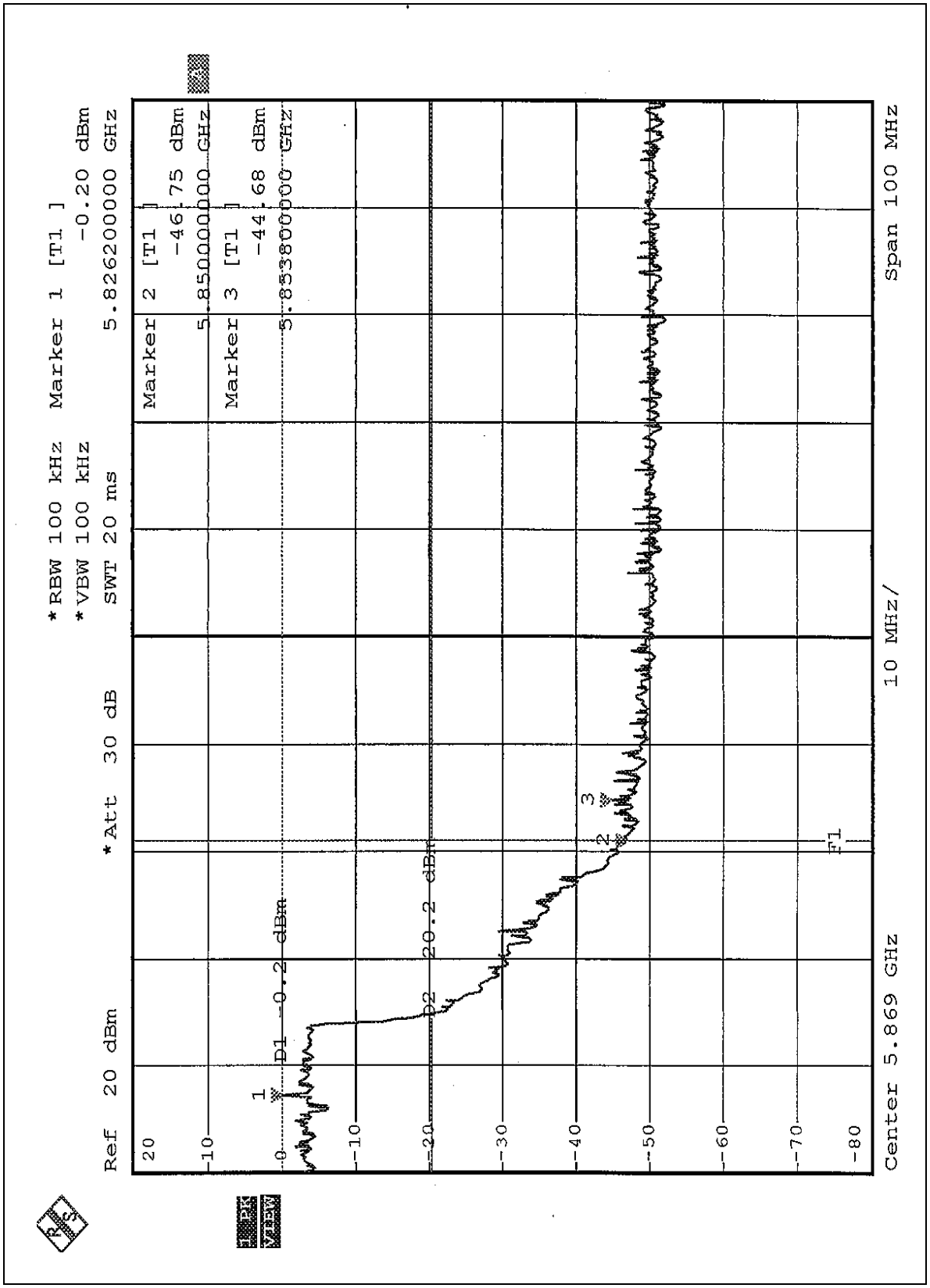
5.12.6 TEST RESULTS

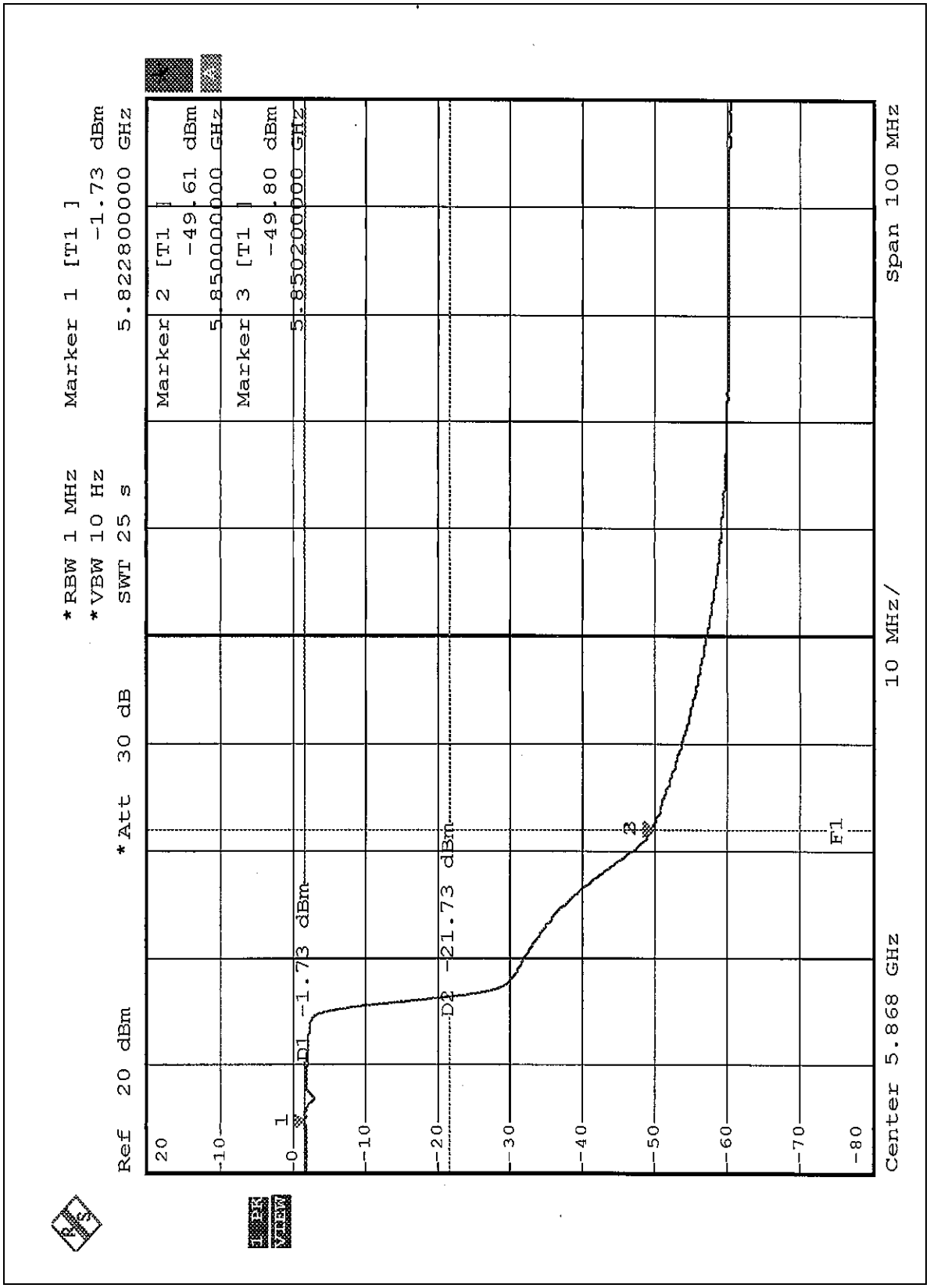
The spectrum plots are attached on the following pages. D2 line indicates the highest level, D1 line indicates the 20dB offset below D2. It shows compliance with the requirement in part 15.247(C).

Normal Mode

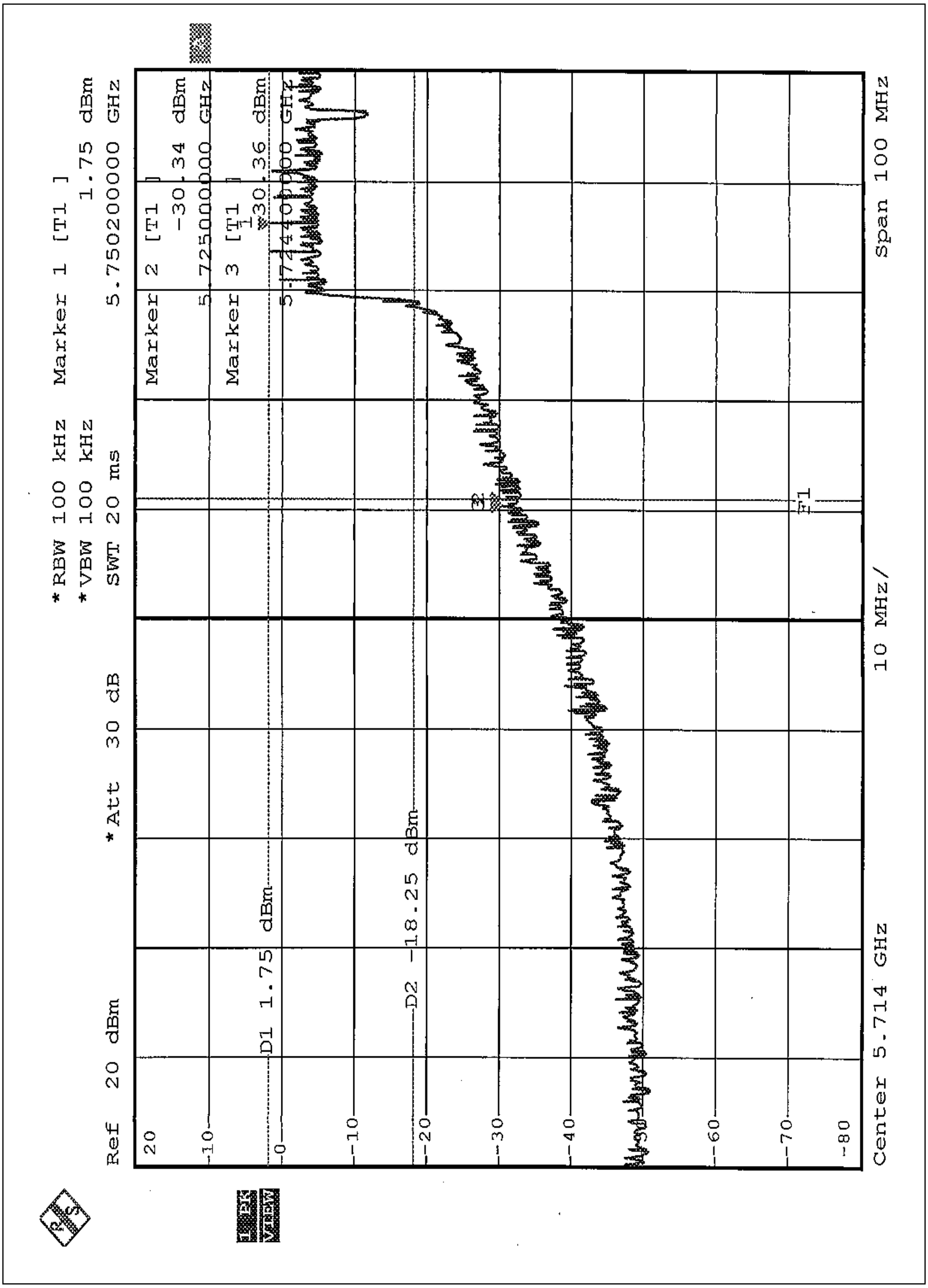

*RBW 100 kHz
*VBW 100 kHz
SWT 20 ms
*Att 30 dB
Ref 20 dBm
Marker 1 [T1]
0.50 dBm
5.746395000 GHz
Marker 2 [T1]
-34.18 dBm
5.725000000 GHz
Marker 3 [T1]
-36.21 dBm
5.724990000 GHz
D1 0.5 dBm
D2 -19.5 dBm
F1
Center 5.700995 GHz
10 MHz/
Span 100 MHz

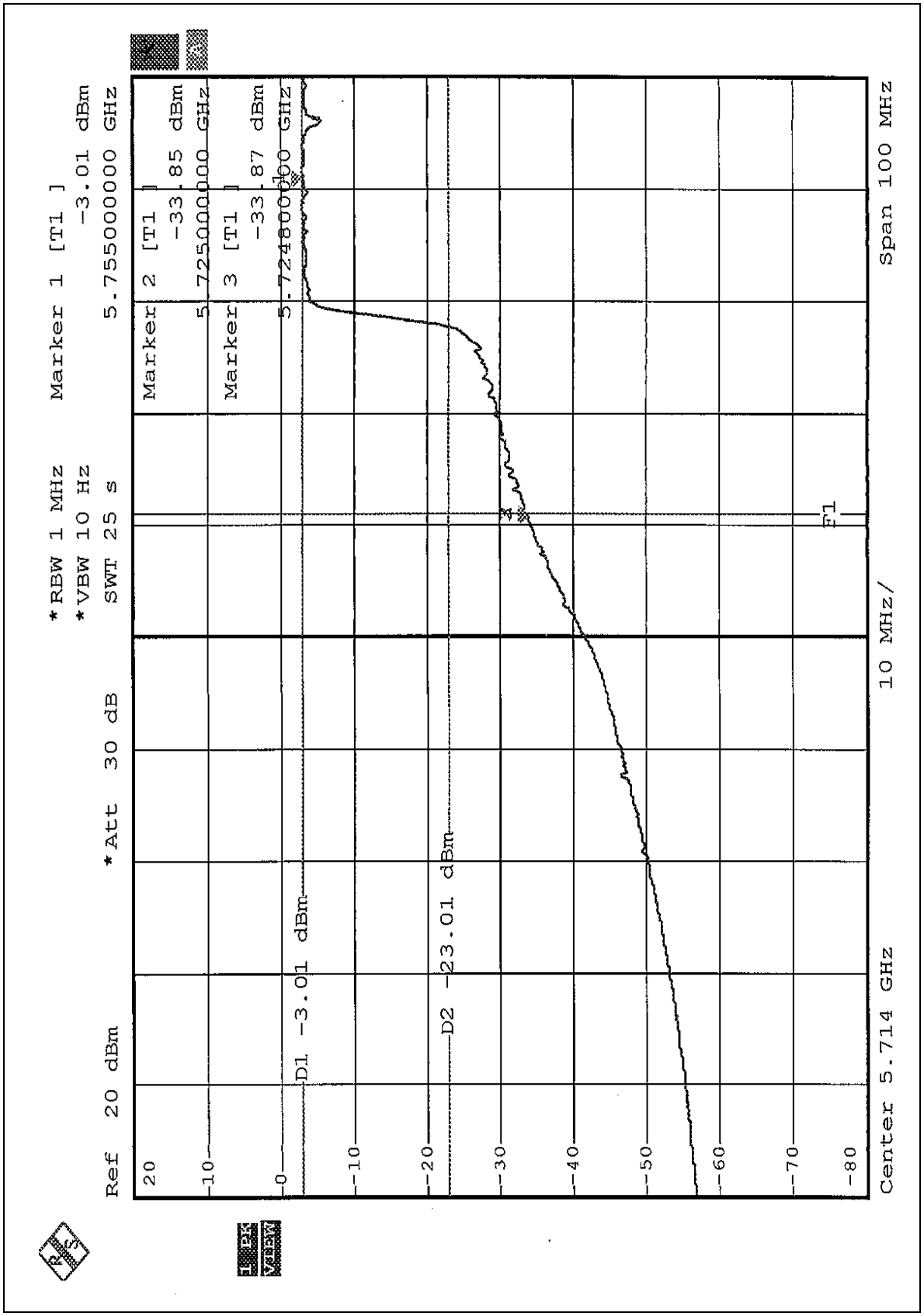

Ref 20 dBm
*Att 30 dB
*RBW 1 MHz
*VBW 10 Hz
SWT 25 s
Marker 1 [T1]
-1.47 dBm
5.743400000 GHz
Marker 2 [T1]
-39.73 dBm
5.725000000 GHz
Marker 3 [T1]
-40.03 dBm
5.724800000 GHz
D1 -1.47 dBm
D2 -21.47 dBm
Center 5.701 GHz
10 MHz/
Span 100 MHz

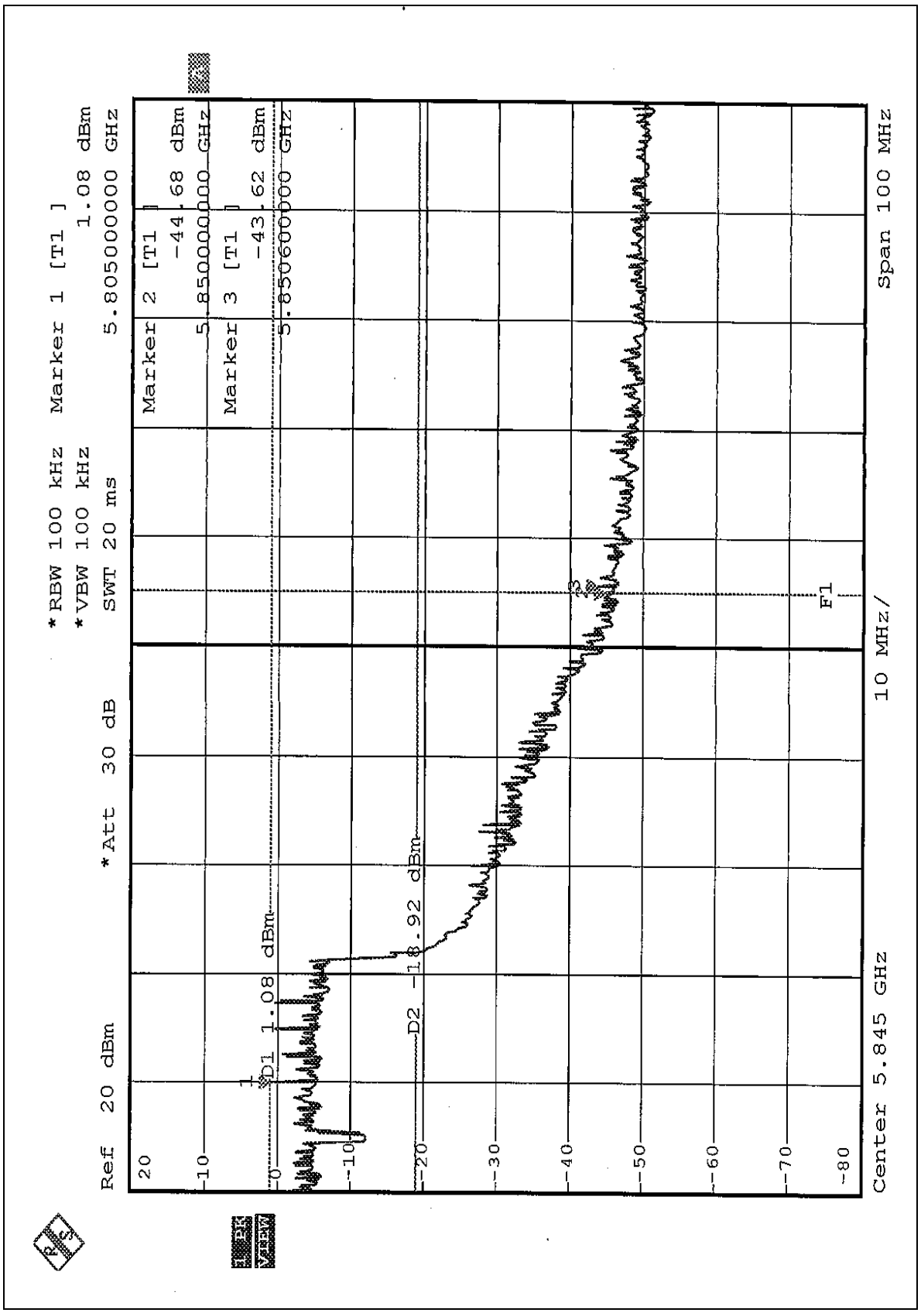

*RBW 100 kHz
*VBW 100 kHz
SWT 20 ms
*Att 30 dB
Ref 20 dBm
Marker 1 [T1]
-0.20 dBm
5.826200000 GHz
Marker 2 [T1]
-46.75 dBm
5.850000000 GHz
Marker 3 [T1]
-44.68 dBm
5.853800000 GHz
D1 -0.2 dBm
D2 -20.2 dBm
Center 5.869 GHz
10 MHz/
Span 100 MHz

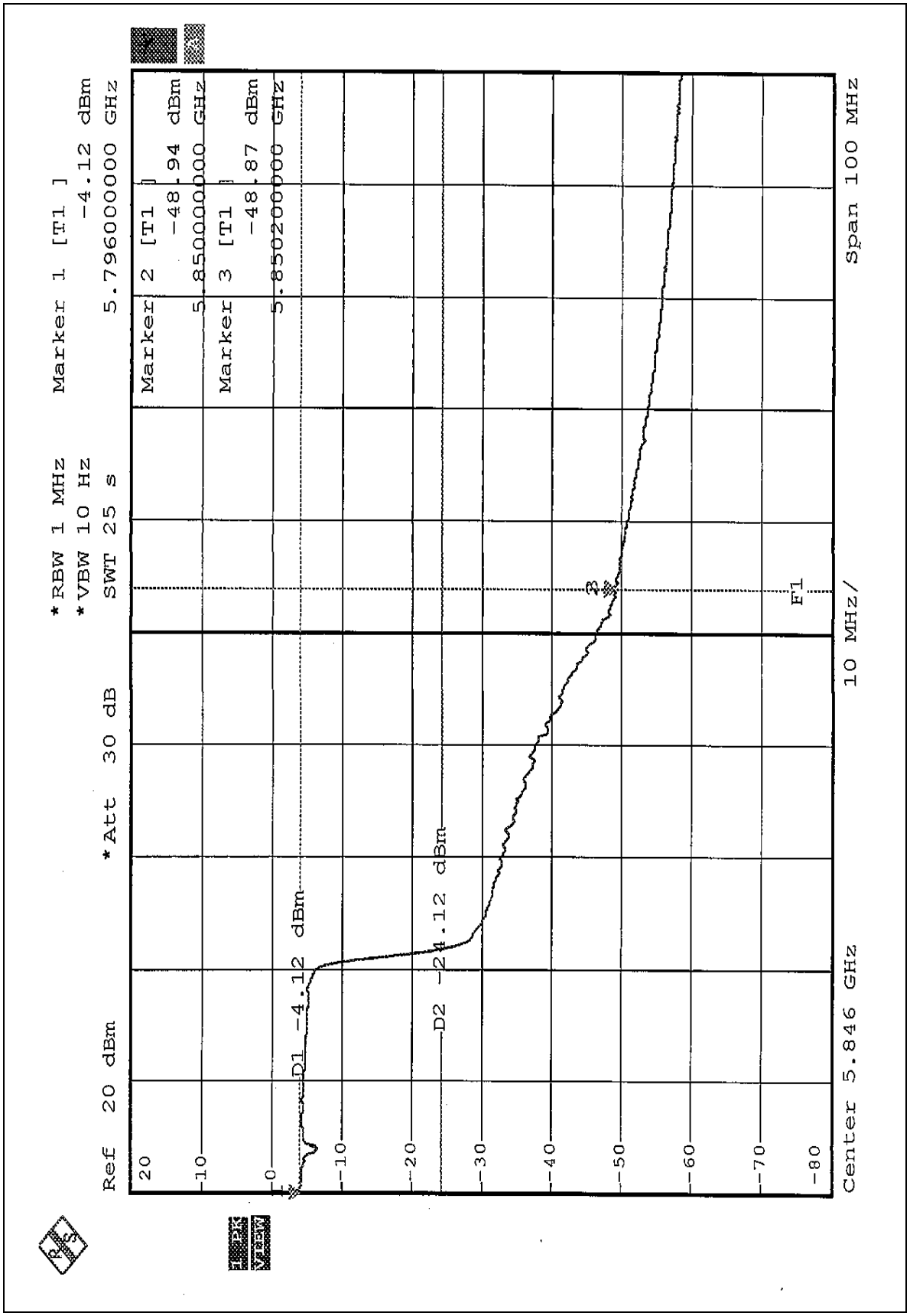

Ref 20 dBm
*Att 30 dB
*VBW 10 Hz
*RBW 1 MHz
SWT 25 s
Marker 1 [T1]
-1.73 dBm
5.822800000 GHz
Marker 2 [T1]
-49.61 dBm
5.850000000 GHz
Marker 3 [T1]
-49.80 dBm
5.850200000 GHz
D1 -1.73 dBm
D2 -21.73 dBm
F1
Center 5.868 GHz
10 MHz/
Span 100 MHz

Turbo Mode


*RBW 100 kHz
*VBW 100 kHz
SWT 20 ms
Marker 1 [T1]
1.75 dBm
5.75020000 GHz
Marker 2 [T1]
-30.34 dBm
5.72500000 GHz
Marker 3 [T1]
-30.36 dBm
5.77440000 GHz
Ref 20 dBm
*Att 30 dB
D1 1.75 dBm
D2 -18.25 dBm
F1
Center 5.714 GHz
10 MHz/
Span 100 MHz


Ref 20 dBm
*Att 30 dB
*RBW 1 MHz
*VBW 10 Hz
SWT 25 s
Marker 1 [T1]
-3.01 dBm
5.755000000 GHz
Marker 2 [T1]
-33.85 dBm
5.725000000 GHz
Marker 3 [T1]
-33.87 dBm
5.724800000 GHz
D1 -3.01 dBm
D2 -23.01 dBm
F1
Center 5.714 GHz
10 MHz/
Span 100 MHz


Ref 20 dBm
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 20 ms
Marker 1 [T1]
1.08 dBm
5.805000000 GHz
Marker 2 [T1]
-44.68 dBm
5.850000000 GHz
Marker 3 [T1]
-43.62 dBm
5.850600000 GHz
D1 1.08 dBm
D2 -18.92 dBm
Center 5.845 GHz
10 MHz/
Span 100 MHz


Ref 20 dBm
*Att 30 dB
*RBW 1 MHz
*VBW 10 Hz
SWT 25 s
Marker 1 [T1]
-4.12 dBm
5.796000000 GHz
Marker 2 [T1]
-48.94 dBm
5.850000000 GHz
Marker 3 [T1]
-48.87 dBm
5.850200000 GHz
D1 -4.12 dBm
D2 -24.12 dBm
Center 5.846 GHz
10 MHz/
Span 100 MHz
F1
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80

5.13 ANTENNA REQUIREMENT

5.13.1 STANDARD APPLICABLE

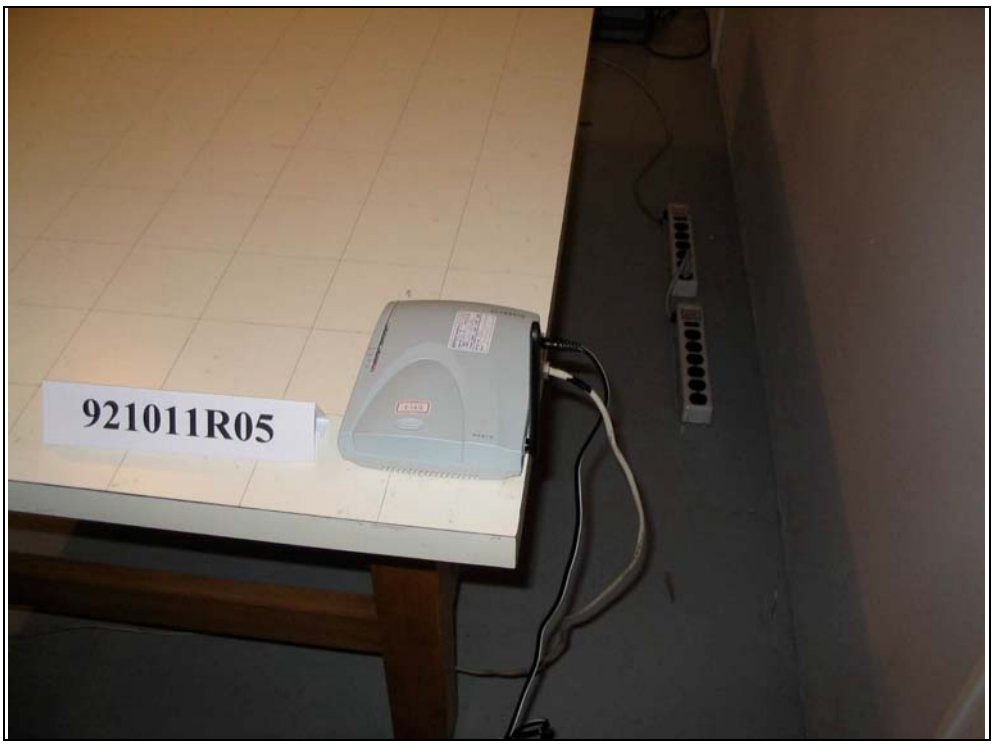
For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.
And according to FCC 47 CFR Section 15.407(a), if transmitting antennas of directional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

5.13.2 ANTENNA CONNECTED CONSTRUCTION

The antenna used in this product is Dipole antenna with UFL antenna connector. The maximum Gain of the antenna is 2dBi.

6 PHOTOGRAPHS OF THE TEST CONFIGURATION

CONDUCTED EMISSION TEST



RADIATED EMISSION TEST

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
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 Lab:
Tel: 886-3-3183232
Fax: 886-3-3185050

Linko RF & Telecom Lab.
Tel: 886-3-3270910
Fax: 886-3-3270892

Email: service@mail.adt.com.tw
Web Site: www.adt.com.tw

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