



# FCC TEST REPORT

**REPORT NO.:** RF930421L03

**MODEL NO.:** CAP-1

**RECEIVED:** April 20, 2004

**TESTED:** April 24 ~ May 4, 2004

**APPLICANT:** Wistron NeWeb Corp.

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**ISSUED BY:** Advance Data Technology Corporation

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0528  
ILAC MRA



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## 1. CERTIFICATION

**PRODUCT:** 802.11 a+g Super A/G Intelligent WLAN Access Point  
**BRAND NAME:** Wistron NeWeb  
**MODEL NO.:** CAP-1  
**TEST ITEM:** Engineering Sample  
**TESTED:** April 24 ~ May 4, 2004  
**APPLICANT:** Wistron NeWeb Corp.  
**STANDARDS:** FCC Part 15, Subpart C (Section 15.247),  
Subpart E (Section 15.247), ANSI C63.4-2001

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

**PREPARED BY:** Stacy Hsueh, **DATE:** May 5, 2004  
Stacy Hsueh

**APPROVED BY:** Cody Chang, **DATE:** May 5, 2004  
Cody Chang/ Supervisor



## 2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

<b>APPLIED STANDARD: FCC Part 15, Subpart C</b>			
<b>Standard Section</b>	<b>Test Type and Limit</b>	<b>Result</b>	<b>Remark</b>
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -8.00dB at 0.197MHz
15.247(a)(2)	Spectrum Bandwidth of a Direct Sequence Spread Spectrum System Limit: min. 500kHz	PASS	Meet the requirement of limit.
15.247(b)	Maximum Peak Output Power Limit: max. 30dBm	PASS	Meet the requirement of limit.
15.247(c)	Radiated Emissions Limit: Table 15.209	PASS	Meet the requirement of limit. Minimum passing margin is -1.39dB at 250.00MHz
15.247(d)	Power Spectral Density Limit: max. 8dBm	PASS	Meet the requirement of limit.
15.247(c)	Band Edge Measurement Limit: 20dB less than the peak value of fundamental frequency	PASS	Meet the requirement of limit.

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



**For Freq. 5.15 ~ 5.35GHz:**

<b>APPLIED STANDARD: FCC Part 15, Subpart E</b>			
<b>Standard Section</b>	<b>Test Type</b>	<b>Result</b>	<b>Remark</b>
15.407(b)(5)	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -3.66dB at 0.197MHz
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 -1.39dB at 250.00MHz
15.407(a/1/2/3)	Peak Transmit Power	PASS	Meet the requirement of limit.
15.407(a)(6)	Peak Power Excursion	PASS	Meet the requirement of limit.
15.407(a/1/2/3)	Peak Power Spectral Density	PASS	Meet the requirement of limit.
15.407(g)	Frequency Stability	PASS	Meet the requirement of limit.

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



## For Freq. 5.725 ~ 5.850GHz :

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 -3.66dB at 0.197MHz
15.247(a)(2)	Spectrum Bandwidth of a Direct Sequence Spread Spectrum System Limit: min. 500kHz	PASS	Meet the requirement of limit.
15.247(b)	Maximum Peak Output Power Limit: max. 30dBm	PASS	Meet the requirement of limit.
15.247(c)	Radiated Emissions Limit: Table 15.209	PASS	Meet the requirement of limit. Minimum passing margin is -1.39dB at 250.00MHz
15.247(d)	Power Spectral Density Limit: max. 8dBm	PASS	Meet the requirement of limit.
15.247(c)	Band Edge Measurement Limit: 20dB less than the peak value of fundamental frequency	PASS	Meet the requirement of limit.

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



### 3. GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT

<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point
<b>MODEL NO.</b>	CAP-1
<b>POWER SUPPLY</b>	5.0Vdc from AC Adapter
<b>MODULATION TYPE</b>	DBPSK, DQPSK, CCK, 16QAM, 64QAM
<b>MODULATION TECHNOLOGY</b>	DSSS, OFDM
<b>TRANSFER RATE</b>	802.11b: 11/5.5/2/1Mbps 802.11g: 54/48/36/24/18/12/9/6Mbps 802.11a: 54/48/36/24/18/12/9/6Mbps (Turbo mode: up to 108Mbps *see Note 2)
<b>FREQUENCY RANGE</b>	802.11b & 802.11g: 2412 ~ 2462MHz 802.11a: 5.15 ~ 5.35GHz and 5.725 ~ 5.825GHz
<b>NUMBER OF CHANNEL</b>	802.11b & 802.11g: 11 for Normal mode / 1 for Turbo mode 802.11a: 13 for Normal mode / 5 for Turbo mode
<b>CHANNEL SPACING</b>	802.11b & 802.11g: 5MHz 802.11a: 20MHz for Normal mode / 40MHz for Turbo mode
<b>OUTPUT POWER</b>	802.11b: 19.00dBm 802.11g: 18.50dBm 802.11a: 19.51dBm
<b>DATA CABLE</b>	NA
<b>ANTENNA TYPE</b>	Dipole antenna with 2.0dBi gain for 2.4GHz band Patch antenna with 4.33dBi gain for 5GHz band
<b>I/O PORTS</b>	RJ45
<b>ASSOCIATED DEVICES</b>	NA

**NOTE:**

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

<b>MODEL :</b>	SA070507
<b>INPUT :</b>	100~240Vac, 50~60Hz, 0.4A
<b>OUTPUT :</b>	5Vdc, 10W

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



### 3.2 DESCRIPTION OF TEST MODES

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

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

**NOTE:**

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

One channel is provided to this EUT for Turbo Mode.

Channel	Frequency
6	2437 MHz

**NOTE:** One turbo mode at frequency 2437MHz.

For 802.11a: 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, 11 and 13 are the closest frequencies to the band edge, were chosen for final test of Normal Mode.
5. Channel 1~5 were chosen for final test of Turbo mode.



### **3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS**

The EUT is a 802.11 a+g Super A/G Intelligent WLAN 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 : 2001**

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

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



### 3.4 DESCRIPTION OF SUPPORT UNITS

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

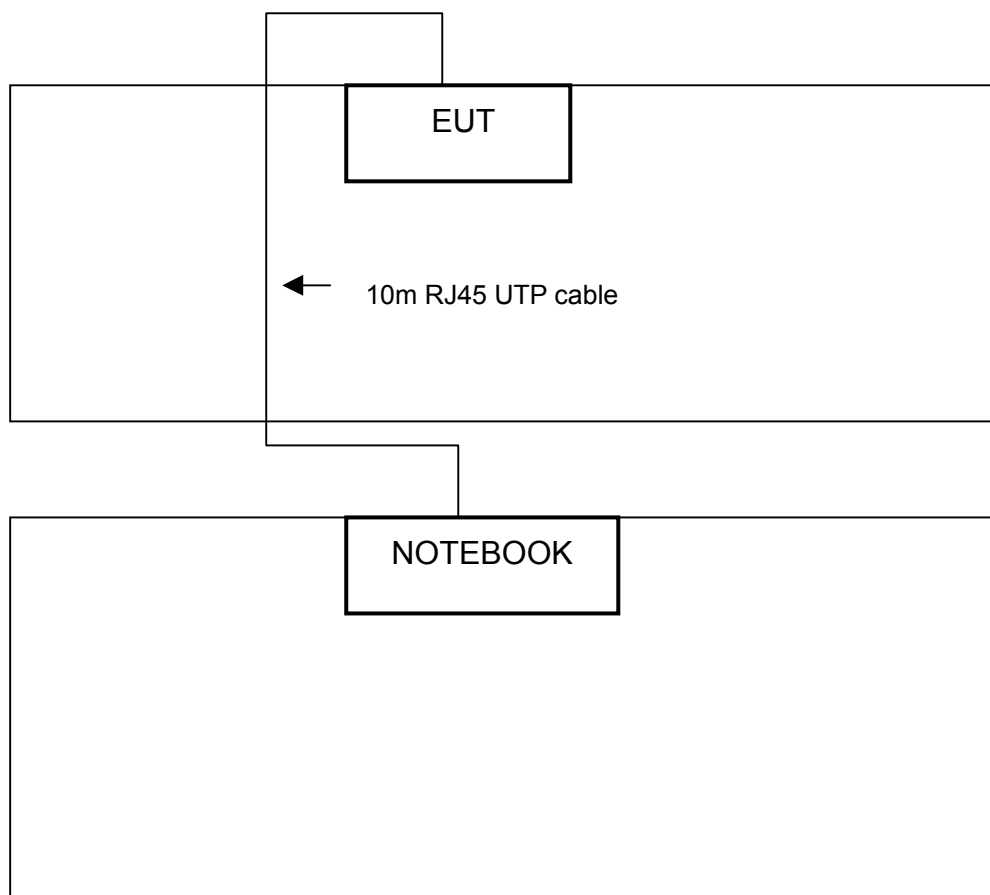
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK COMPUTER	DELL	PP05L	12130898320	E2K24CLNS

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 (dB $\mu$ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

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

#### 4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
ROHDE & SCHWARZ Test Receiver	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.



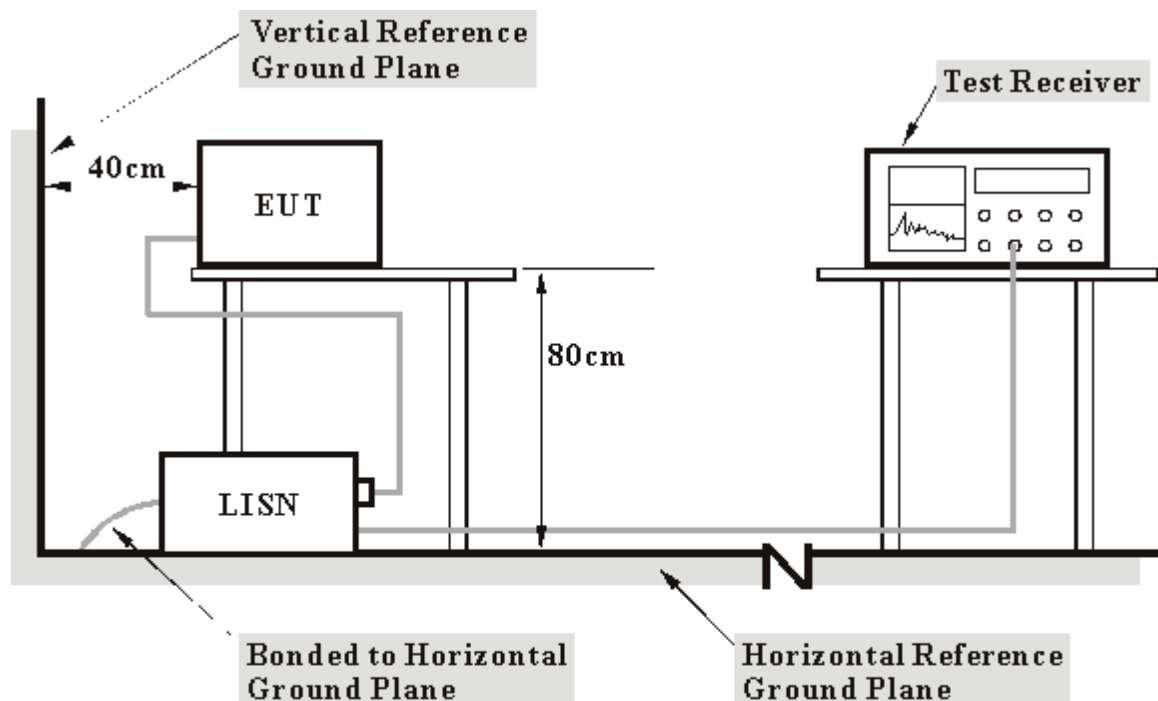
#### 4.1.3 TEST PROCEDURES

- 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".



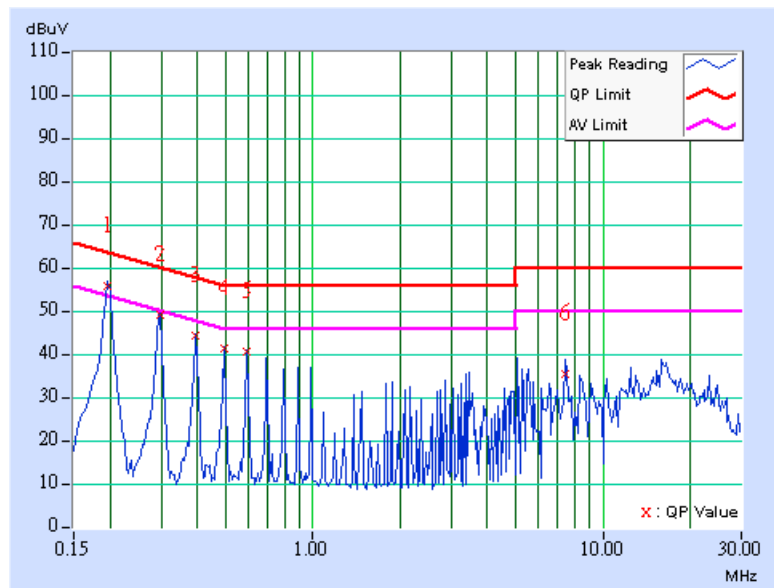


4.1.7 TEST RESULTS

<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>MODE</b>	Channel 1	<b>6dB BANDWIDTH</b>	9 kHz
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz	<b>PHASE</b>	Line (L)
<b>ENVIRONMENTAL CONDITIONS</b>	25deg. C, 60%RH, 991hPa	<b>TESTED BY:</b> Gary Chang	

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.197	0.12	55.62	43.28	55.74	43.40	63.74
2	0.298	0.12	48.84	-	48.96	-	60.29	50.29	-11.32	-
3	0.396	0.13	44.12	-	44.25	-	57.93	47.93	-13.69	-
4	0.494	0.13	41.30	-	41.43	-	56.10	46.10	-14.68	-
5	0.591	0.13	40.58	-	40.71	-	56.00	46.00	-15.29	-
6	7.414	0.30	35.36	-	35.66	-	60.00	50.00	-24.34	-

- 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.

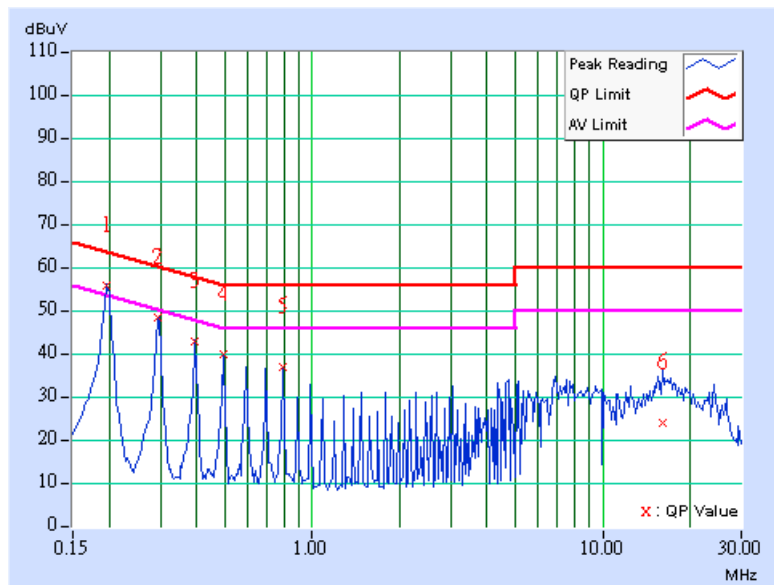




<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>MODE</b>	Channel 1	<b>6dB BANDWIDTH</b>	9 kHz
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz	<b>PHASE</b>	Neutral (N)
<b>ENVIRONMENTAL CONDITIONS</b>	25deg. C, 60%RH, 991hPa	<b>TESTED BY:</b> Gary Chang	

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.197	0.11	55.12	42.65	55.23	42.76	63.74
2	0.295	0.11	48.02	-	48.13	-	60.40	50.40	-12.26	-
3	0.396	0.12	42.42	-	42.54	-	57.93	47.93	-15.40	-
4	0.494	0.12	39.32	-	39.44	-	56.10	46.10	-16.67	-
5	0.791	0.13	36.48	-	36.61	-	56.00	46.00	-19.39	-
6	16.004	0.65	23.49	-	24.14	-	60.00	50.00	-35.86	-

- 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.

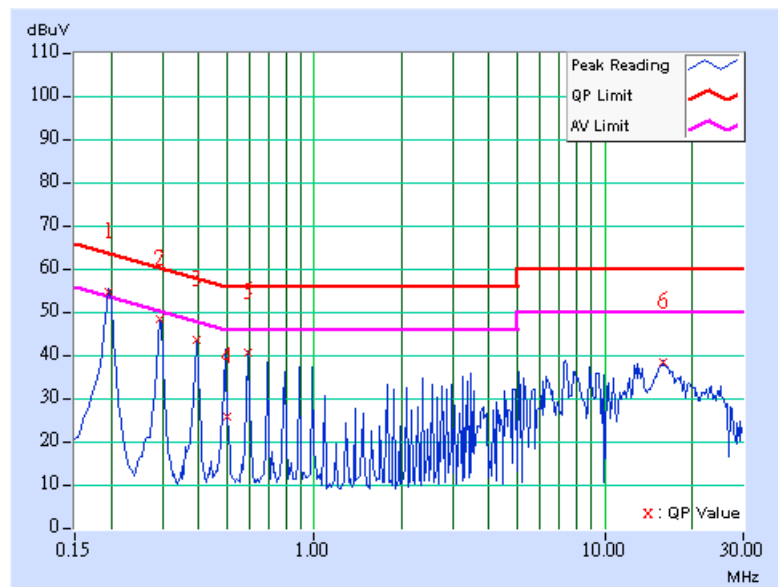




<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>MODE</b>	Channel 6	<b>6dB BANDWIDTH</b>	9 kHz
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz	<b>PHASE</b>	Line (L)
<b>ENVIRONMENTAL CONDITIONS</b>	25deg. C, 60%RH, 991hPa	<b>TESTED BY:</b> Gary Chang	

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
	1	0.197	0.12	54.16	41.66	54.28	41.78	63.74	53.74	-9.46
2	0.295	0.12	47.84	-	47.96	-	60.40	50.40	-12.43	-
3	0.396	0.13	42.92	-	43.05	-	57.93	47.93	-14.89	-
4	0.500	0.13	25.24	-	25.37	-	56.00	46.00	-30.63	-
5	0.591	0.13	40.03	-	40.16	-	56.00	46.00	-15.84	-
6	15.980	0.83	37.75	-	38.58	-	60.00	50.00	-21.42	-

- 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.

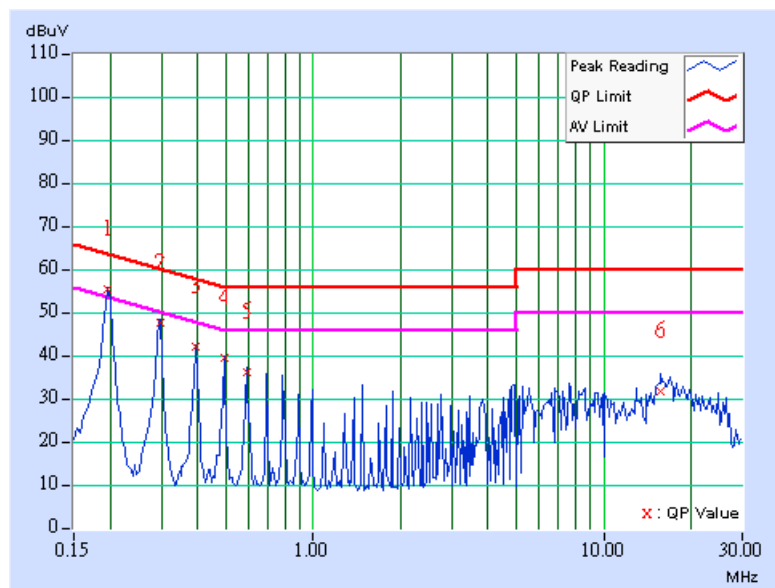




<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>MODE</b>	Channel 6	<b>6dB BANDWIDTH</b>	9 kHz
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz	<b>PHASE</b>	Neutral (N)
<b>ENVIRONMENTAL CONDITIONS</b>	25deg. C, 60%RH, 991hPa	<b>TESTED BY:</b> Gary Chang	

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.197	0.11	54.91	42.37	55.02	42.48	63.74
2	0.298	0.11	47.19	-	47.30	-	60.29	50.29	-12.98	-
3	0.396	0.12	41.71	-	41.83	-	57.93	47.93	-16.11	-
4	0.494	0.12	38.97	-	39.09	-	56.10	46.10	-17.02	-
5	0.591	0.12	35.61	-	35.73	-	56.00	46.00	-20.27	-
6	15.695	0.65	31.05	-	31.70	-	60.00	50.00	-28.30	-

- 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.

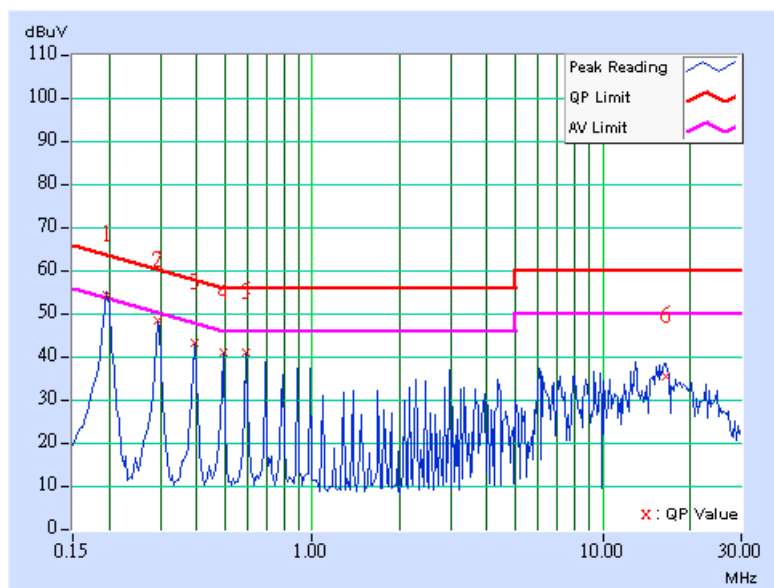




<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>MODE</b>	Channel 11	<b>6dB BANDWIDTH</b>	9 kHz
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz	<b>PHASE</b>	Line (L)
<b>ENVIRONMENTAL CONDITIONS</b>	25deg. C, 60%RH, 991hPa	<b>TESTED BY:</b> Gary Chang	

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.197	0.12	53.74	41.51	53.86	41.63	63.74
2	0.295	0.12	47.56	-	47.68	-	60.40	50.40	-12.71	-
3	0.396	0.13	42.58	-	42.71	-	57.93	47.93	-15.23	-
4	0.494	0.13	40.14	-	40.27	-	56.10	46.10	-15.84	-
5	0.591	0.13	40.16	-	40.29	-	56.00	46.00	-15.71	-
6	16.469	0.85	34.80	-	35.65	-	60.00	50.00	-24.35	-

- 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.

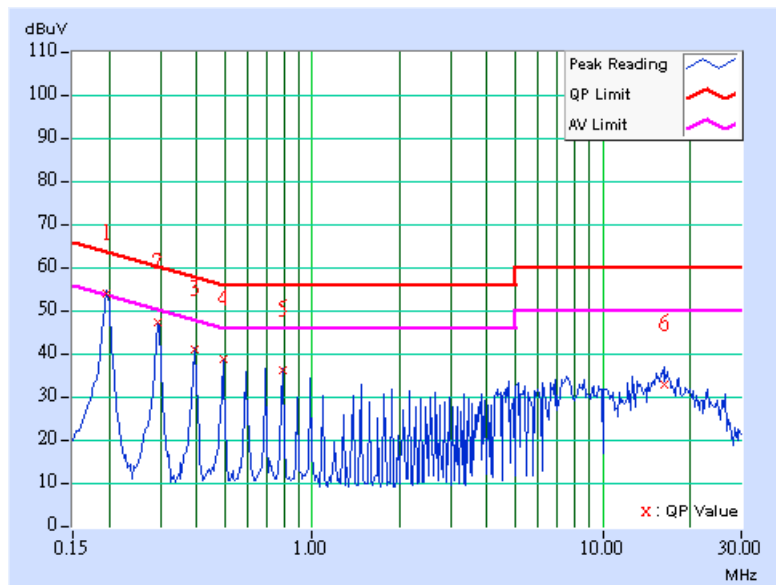




<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>MODE</b>	Channel 11	<b>6dB BANDWIDTH</b>	9 kHz
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz	<b>PHASE</b>	Neutral (N)
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 65%RH, 991hPa	<b>TESTED BY:</b> Gary Chang	

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.197	0.11	53.40	-	53.51	-	63.74
2	0.295	0.11	46.80	-	46.91	-	60.40	50.40	-13.48	-
3	0.392	0.12	40.62	-	40.74	-	58.02	48.02	-17.28	-
4	0.494	0.12	38.12	-	38.24	-	56.10	46.10	-17.87	-
5	0.791	0.13	35.58	-	35.71	-	56.00	46.00	-20.29	-
6	16.266	0.66	32.14	-	32.80	-	60.00	50.00	-27.20	-

- 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	8593E	3911A07465	Jul. 7, 2004
* HP Preamplifier	8447D	2432A03504	Jun. 10, 2004
* HP Preamplifier	8449B	3008A01292	Aug. 11, 2004
SCHAFFNER Tunable Dipole Antenna	VHBA 9123	459	Jun. 26, 2004
SCHWARZBECK Tunable Dipole Antenna	UHA 9105	977	
* ROHDE & SCHWARZ Test Receiver	ESI7	838496/016	Feb. 08, 2005
* Schwarzbeck Antenna	VULB9168	137	Feb. 27, 2005
* SCHWARZBECK Horn Antenna	BBHA9120-D1	D130	Jun. 30, 2004
* ADT. Turn Table	TT100	0306	NA
* ADT. Tower	AT100	0306	NA
* Software	ADT_Radiated_V5.14	NA	NA
* TIMES RF cable	LL142	CABLE-CH6-01	Apr. 30, 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 Chamber No. 6.





#### 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.

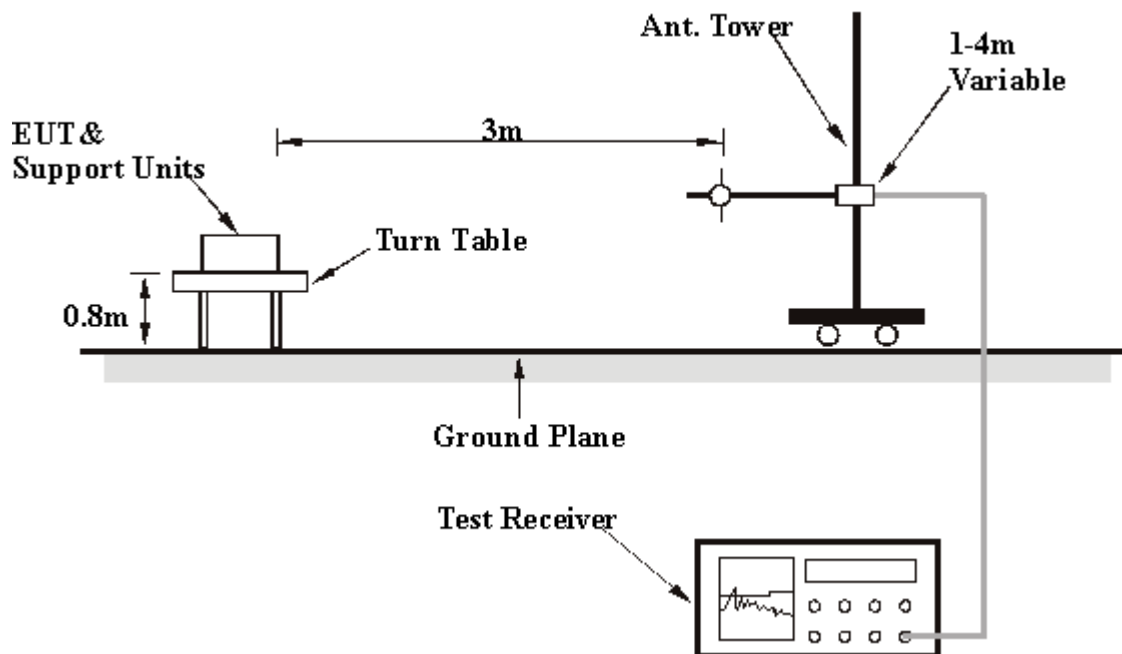
**NOTE:**

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

#### 4.2.4 DEVIATION FROM TEST STANDARD

No deviation

### 4.2.5 TEST SETUP



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

### 4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6



## 4.2.7 TEST RESULTS

<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>CHANNEL</b>	Channel 11	<b>FREQUENCY RANGE</b>	Below 1000MHz
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Quasi-Peak
<b>ENVIRONMENTAL CONDITIONS</b>	25deg. C, 60%RH, 991hPa	<b>TESTED BY:</b> Gary Chang	

**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	123.31	40.99 QP	43.50	-2.51	1.75 H	238	27.87	13.12
2	218.56	35.06 QP	46.00	-10.94	1.00 H	244	23.01	12.06
<b>3</b>	<b>250.00</b>	<b>44.61 QP</b>	<b>46.00</b>	<b>-1.39</b>	<b>1.00 H</b>	<b>155</b>	<b>31.50</b>	<b>13.11</b>
4	374.07	42.74 QP	46.00	-3.26	1.00 H	97	26.63	16.10
5	405.17	35.14 QP	46.00	-10.86	1.00 H	181	18.28	16.86
6	500.42	42.92 QP	46.00	-3.08	1.75 H	196	24.34	18.58
7	550.96	36.40 QP	46.00	-9.60	1.25 H	208	16.92	19.49
8	624.83	39.14 QP	46.00	-6.86	1.25 H	298	18.00	21.15
9	675.37	37.13 QP	46.00	-8.87	1.00 H	250	15.39	21.74
10	751.18	40.42 QP	46.00	-5.58	1.00 H	202	17.18	23.25
11	904.75	38.51 QP	46.00	-7.49	1.00 H	31	13.65	24.86

**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	55.27	35.10 QP	40.00	-4.90	1.00 V	343	21.02	14.08
2	123.31	36.89 QP	43.50	-6.61	1.50 V	280	23.76	13.12
3	249.66	40.42 QP	46.00	-5.58	1.75 V	241	27.31	13.11
4	331.30	36.57 QP	46.00	-9.43	1.50 V	184	21.46	15.10
5	374.07	44.53 QP	46.00	-1.47	1.50 V	199	28.43	16.10
6	500.00	44.24 QP	46.00	-1.76	1.00 V	155	25.67	18.57
7	550.96	36.79 QP	46.00	-9.21	1.00 V	10	17.30	19.49
8	624.83	38.80 QP	46.00	-7.20	1.50 V	205	17.65	21.15
9	675.37	37.84 QP	46.00	-8.16	1.50 V	304	16.09	21.74
10	751.18	37.39 QP	46.00	-8.61	2.00 V	343	14.15	23.25

- 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



<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>CHANNEL</b>	Channel 1	<b>FREQUENCY RANGE</b>	1 ~ 25GHz
<b>MODE</b>	CCK		
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	24deg. C, 68%RH, 991hPa	<b>TESTED BY:</b> Steven Lu	

### ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1100.00	43.03 PK	74.00	-30.97	1.30 H	246	15.16	27.87
1	1100.00	36.39 AV	54.00	-17.61	1.30 H	246	8.52	27.87
2	1375.00	42.45 PK	74.00	-31.55	1.00 H	305	13.44	29.01
2	1375.00	34.52 AV	54.00	-19.48	1.00 H	305	5.51	29.01
3	1540.00	42.75 PK	74.00	-31.25	1.00 H	301	13.79	28.96
3	1540.00	33.75 AV	54.00	-20.25	1.00 H	301	4.79	28.96
4	1625.00	43.67 PK	74.00	-30.33	1.84 H	300	14.86	28.81
4	1625.00	34.15 AV	54.00	-19.85	1.84 H	300	5.34	28.81
5	2280.00	44.26 PK	74.00	-29.74	1.48 H	98	12.83	31.43
5	2280.00	32.88 AV	54.00	-21.12	1.48 H	98	1.45	31.43
6	2386.40	51.52 PK	74.00	-22.48	2.13 H	110	19.77	31.75
6	2386.40	43.80 AV	54.00	-10.20	2.13 H	110	12.05	31.75
7	*2412.00	108.45 PK			2.13 H	110	76.59	31.86
7	*2412.00	100.73 AV			2.13 H	110	68.87	31.86
8	2688.00	44.58 PK	74.00	-29.42	1.00 H	32	11.77	32.81
9	2808.00	43.52 PK	74.00	-30.48	1.74 H	240	10.41	33.11
10	4824.00	51.66 PK	74.00	-22.34	1.10 H	230	12.95	38.71
10	4824.00	38.08 AV	54.00	-15.92	1.10 H	230	-0.63	38.71
11	7236.00	54.83 PK	74.00	-19.17	1.23 H	106	10.47	44.36
11	7236.00	43.83 AV	54.00	-10.17	1.23 H	106	-0.53	44.36
12	9648.00	57.39 PK	74.00	-16.61	1.32 H	236	10.18	47.21
12	9648.00	46.74 AV	54.00	-7.26	1.32 H	236	-0.47	47.21

- 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



<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>CHANNEL</b>	Channel 1	<b>FREQUENCY RANGE</b>	1 ~ 25GHz
<b>MODE</b>	CCK		
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	24deg. C, 68%RH, 991hPa	<b>TESTED BY:</b> Steven Lu	

### ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1100.00	47.73 PK	74.00	-26.27	1.00 V	275	19.86	27.87
1	1100.00	43.19 AV	54.00	-10.81	1.00 V	275	15.32	27.87
2	1375.00	42.08 PK	74.00	-31.92	1.00 V	90	13.07	29.01
2	1375.00	32.41 AV	54.00	-21.59	1.00 V	90	3.40	29.01
3	1540.00	43.14 PK	74.00	-30.86	1.64 V	22	14.18	28.96
3	1540.00	34.04 AV	54.00	-19.96	1.64 V	22	5.08	28.96
4	1625.00	42.92 PK	74.00	-31.08	1.23 V	274	14.11	28.81
4	1625.00	34.39 AV	54.00	-19.61	1.23 V	274	5.58	28.81
5	2280.00	44.98 PK	74.00	-29.02	1.35 V	280	13.55	31.43
5	2280.00	32.11 AV	54.00	-21.89	1.35 V	280	0.68	31.43
6	2386.40	56.10 PK	74.00	-17.90	1.42 V	345	24.35	31.75
6	2386.40	47.90 AV	54.00	-6.10	1.42 V	345	16.15	31.75
7	*2412.00	113.03 PK			1.42 V	345	81.17	31.86
7	*2412.00	104.82 AV			1.42 V	345	72.96	31.86
8	2688.00	47.50 PK	74.00	-26.50	1.55 V	350	14.69	32.81
8	2688.00	41.36 AV	54.00	-12.64	1.55 V	350	8.55	32.81
9	2808.00	46.16 PK	74.00	-27.84	1.00 V	310	13.05	33.11
9	2808.00	37.14 AV	54.00	-16.86	1.00 V	310	4.03	33.11
10	4824.00	58.17 PK	74.00	-15.83	1.35 V	162	19.46	38.71
10	4824.00	43.97 AV	54.00	-10.03	1.35 V	162	5.26	38.71
11	7236.00	60.50 PK	74.00	-13.50	1.00 V	174	16.14	44.36
11	7236.00	49.13 AV	54.00	-4.87	1.00 V	174	4.77	44.36
12	9648.00	58.46 PK	74.00	-15.54	1.00 V	177	11.25	47.21
12	9648.00	48.31 AV	54.00	-5.69	1.00 V	177	1.10	47.21

- 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



<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>CHANNEL</b>	Channel 6	<b>FREQUENCY RANGE</b>	1 ~ 25GHz
<b>MODE</b>	CCK		
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	24deg. C, 68%RH, 991hPa	<b>TESTED BY:</b> Steven Lu	

### 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	1100.00	43.32 PK	74.00	-30.68	1.30 H	244	15.45	27.87
1	1100.00	36.96 AV	54.00	-17.04	1.30 H	244	9.09	27.87
2	1375.00	43.36 PK	74.00	-30.64	1.00 H	302	14.35	29.01
2	1375.00	35.25 AV	54.00	-18.78	1.00 H	302	6.24	29.01
3	1540.00	43.63 PK	74.00	-30.37	1.00 H	302	14.67	28.96
3	1540.00	34.22 AV	54.00	-19.78	1.00 H	302	5.26	28.96
4	1625.00	44.52 PK	74.00	-29.48	1.96 H	300	15.71	28.81
4	1625.00	35.55 AV	54.00	-18.45	1.96 H	300	6.74	28.81
5	2280.00	45.63 PK	74.00	-28.37	1.50 H	120	14.20	31.43
5	2280.00	33.96 AV	54.00	-20.04	1.50 H	120	2.53	31.43
6	2375.20	49.48 PK	74.00	-24.52	2.20 H	96	17.76	31.72
6	2375.20	41.35 AV	54.00	-12.65	2.20 H	96	9.63	31.72
7	*2437.00	106.87 PK			2.20 H	96	74.85	32.02
7	*2437.00	98.74 AV			2.20 H	96	66.72	32.02
8	2688.00	45.63 PK	74.00	-28.37	1.00 H	44	12.82	32.81
8	2688.00	33.96 AV	54.00	-20.04	1.00 H	44	2.82	32.81
9	2858.00	44.52 PK	74.00	-29.48	1.75 H	226	11.30	33.22
9	2858.00	32.69 AV	54.00	-21.31	1.75 H	226	-0.53	33.22
10	4874.00	51.66 PK	74.00	-22.34	1.10 H	201	12.93	38.73
10	4874.00	40.32 AV	54.00	-13.68	1.10 H	201	1.59	38.73
11	7311.00	57.04 PK	74.00	-16.96	1.23 H	100	12.44	44.61
11	7311.00	45.40 AV	54.00	-8.60	1.23 H	100	0.80	44.61
12	9748.00	60.07 PK	74.00	-13.93	1.32 H	245	12.90	47.17
12	9748.00	47.72 AV	54.00	-6.28	1.32 H	245	0.55	47.17

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



<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>CHANNEL</b>	Channel 6	<b>FREQUENCY RANGE</b>	1 ~ 25GHz
<b>MODE</b>	CCK		
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	24deg. C, 68%RH, 991hPa	<b>TESTED BY:</b> Steven Lu	

### 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	1100.00	48.27 PK	74.00	-25.73	1.10 V	272	20.40	27.87
1	1100.00	43.08 AV	54.00	-10.92	1.10 V	272	15.21	27.87
2	1375.00	43.88 PK	74.00	-30.12	1.16 V	10	14.87	29.01
2	1375.00	35.19 AV	54.00	-18.81	1.16 V	10	6.18	29.01
3	1540.00	42.42 PK	74.00	-31.58	1.26 V	142	13.46	28.96
3	1540.00	33.47 AV	54.00	-20.53	1.26 V	142	4.51	28.96
4	1625.00	42.57 PK	74.00	-31.43	1.32 V	360	13.76	28.81
4	1625.00	34.67 AV	54.00	-19.33	1.32 V	360	5.86	28.81
5	2280.00	42.48 PK	74.00	-31.52	1.38 V	274	11.05	31.43
5	2280.00	31.59 AV	54.00	-22.41	1.38 V	274	0.16	31.43
6	2375.20	53.52 PK	74.00	-20.48	1.70 V	20	21.80	31.72
6	2375.20	45.14 AV	54.00	-8.86	1.70 V	20	13.42	31.72
7	*2437.00	113.91 PK			1.70 V	20	81.89	32.02
7	*2437.00	104.53 AV			1.70 V	20	72.51	32.02
8	2688.00	49.36 PK	74.00	-24.64	1.26 V	22	16.55	32.81
8	2688.00	43.53 AV	54.00	-10.47	1.26 V	22	10.72	32.81
9	2858.00	45.31 PK	74.00	-28.69	1.00 V	145	12.09	33.22
9	2858.00	33.38 AV	54.00	-20.62	1.00 V	145	0.16	33.22
10	4874.00	55.34 PK	74.00	-18.66	1.06 V	152	16.61	38.73
10	4874.00	41.34 AV	54.00	-12.66	1.06 V	152	2.61	38.73
11	7311.00	56.48 PK	74.00	-17.52	1.44 V	232	11.88	44.61
11	7311.00	45.60 AV	54.00	-8.40	1.44 V	232	1.00	44.61
12	9748.00	59.93 PK	74.00	-14.07	1.53 V	298	12.76	47.17
12	9748.00	50.93 AV	54.00	-3.07	1.53 V	298	3.76	47.17

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



<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>CHANNEL</b>	Channel 11	<b>FREQUENCY RANGE</b>	1 ~ 25GHz
<b>MODE</b>	CCK		
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	24deg. C, 68%RH, 991hPa	<b>TESTED BY:</b> Steven Lu	

### 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	1100.00	43.28 PK	74.00	-30.72	1.44 H	172	15.41	27.87
1	1100.00	36.13 AV	54.00	-17.87	1.44 H	172	8.26	27.87
2	1375.00	42.45 PK	74.00	-31.55	1.00 H	20	13.44	29.01
2	1375.00	34.52 AV	54.00	-19.48	1.00 H	20	5.51	29.01
3	1540.00	44.48 PK	74.00	-29.52	1.00 H	24	15.52	28.96
3	1540.00	38.57 AV	54.00	-15.43	1.00 H	24	9.61	28.96
4	1625.00	42.34 PK	74.00	-31.66	1.00 H	310	13.53	28.81
4	1625.00	33.16 AV	54.00	-20.84	1.00 H	310	4.35	28.81
5	2280.00	42.88 PK	74.00	-31.12	1.20 H	20	11.45	31.43
5	2280.00	31.15 AV	54.00	-22.85	1.20 H	20	-0.28	31.43
6	2377.40	55.06 PK	74.00	-18.94	2.00 H	106	23.33	31.73
6	2377.40	46.89 AV	54.00	-7.11	2.00 H	106	15.16	31.73
7	*2462.00	109.07 PK			2.00 H	106	76.90	32.17
7	*2462.00	100.90 AV			2.00 H	106	68.73	32.17
8	2484.30	51.42 PK	74.00	-22.58	2.00 H	106	19.11	32.31
8	2484.30	43.25 AV	54.00	-10.75	2.00 H	106	10.94	32.31
9	2688.00	46.87 PK	74.00	-27.13	1.27 H	32	14.06	32.81
9	2688.00	35.33 AV	54.00	-18.67	1.27 H	32	2.52	32.81
10	2880.00	43.68 PK	74.00	-30.32	1.00 H	238	10.41	33.27
10	2880.00	32.82 AV	54.00	-21.18	1.00 H	238	-0.45	33.27
11	4924.00	51.35 PK	74.00	-22.65	1.30 H	240	12.63	38.72
11	4924.00	37.22 AV	54.00	-16.78	1.30 H	240	-1.50	38.72
12	7386.00	56.25 PK	74.00	-17.75	1.06 H	160	11.30	44.95
12	7386.00	44.76 AV	54.00	-9.24	1.06 H	160	-0.19	44.95

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





<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>CHANNEL</b>	Channel 11	<b>FREQUENCY RANGE</b>	1 ~ 25GHz
<b>MODE</b>	CCK		
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	24deg. C, 68%RH, 991hPa	<b>TESTED BY:</b> Steven Lu	

### 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	1100.00	48.61 PK	74.00	-25.39	1.00 V	273	20.74	27.87
1	1100.00	43.50 AV	54.00	-10.50	1.00 V	273	15.63	27.87
2	1375.00	43.13 PK	74.00	-30.87	1.16 V	344	14.12	29.01
2	1375.00	33.52 AV	54.00	-20.48	1.16 V	344	4.51	29.01
3	1540.00	42.68 PK	74.00	-31.32	1.28 V	141	13.72	28.96
3	1540.00	33.31 AV	54.00	-20.69	1.28 V	141	4.35	28.96
4	1625.00	43.60 PK	74.00	-30.40	1.17 V	274	14.79	28.81
4	1625.00	34.67 AV	54.00	-19.33	1.17 V	274	5.86	28.81
5	2280.00	44.98 PK	74.00	-29.02	1.08 V	274	13.55	31.43
5	2280.00	34.19 AV	54.00	-19.81	1.08 V	274	2.76	31.43
6	2377.40	59.20 PK	74.00	-14.80	1.10 V	196	27.47	31.73
6	2377.40	50.71 AV	54.00	-3.29	1.10 V	196	18.98	31.73
7	*2462.00	113.21 PK			1.10 V	196	81.04	32.17
7	*2462.00	104.72 AV			1.10 V	196	72.55	32.17
8	2484.30	55.56 PK	74.00	-18.44	1.10 V	196	23.25	32.31
8	2484.30	47.07 AV	54.00	-6.93	1.10 V	196	14.76	32.31
9	2688.00	48.64 PK	74.00	-25.36	1.24 V	24	15.83	32.81
9	2688.00	43.40 AV	54.00	-10.60	1.24 V	24	10.59	32.81
10	2880.00	44.32 PK	74.00	-29.68	1.34 V	113	11.05	33.27
10	2880.00	32.79 AV	54.00	-21.21	1.34 V	113	-0.48	33.27
11	4924.00	57.64 PK	74.00	-16.36	1.05 V	162	18.92	38.72
11	4924.00	43.91 AV	54.00	-10.09	1.05 V	162	5.19	38.72
12	7386.00	55.69 PK	74.00	-18.31	1.17 V	167	10.74	44.95
12	7386.00	44.36 AV	54.00	-9.64	1.17 V	167	-0.59	44.95
13	9848.00	58.93 PK	74.00	-15.07	1.12 V	170	11.76	47.17
13	9848.00	47.92 AV	54.00	-6.08	1.12 V	170	0.75	47.17

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

**Normal mode**

<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>CHANNEL</b>	Channel 1	<b>FREQUENCY RANGE</b>	1 ~ 25GHz
<b>MODE</b>	OFDM		
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	24deg. C, 68%RH, 991hPa	<b>TESTED BY:</b> Steven Lu	

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1100.00	42.54 PK	74.00	-31.46	1.54 H	174	14.67	27.87
1	1100.00	35.52 AV	54.00	-18.48	1.54 H	174	7.65	27.87
2	1375.00	42.19 PK	74.00	-31.81	1.60 H	195	13.18	29.01
2	1375.00	30.70 AV	54.00	-23.30	1.60 H	195	1.69	29.01
3	1540.00	43.75 PK	74.00	-30.25	1.00 H	93	14.79	28.96
3	1540.00	37.16 AV	54.00	-16.84	1.00 H	93	8.20	28.96
4	1625.00	42.48 PK	74.00	-31.52	1.60 H	308	13.67	28.81
4	1625.00	32.11 AV	54.00	-21.89	1.60 H	308	3.30	28.81
5	2390.00	55.33 PK	74.00	-18.67	1.08 H	22	23.57	31.76
5	2390.00	43.87 AV	54.00	-10.13	1.08 H	22	12.11	31.76
6	*2412.00	103.87 PK			1.08 H	22	72.01	31.86
6	*2412.00	92.41 AV			1.08 H	22	60.55	31.86
7	2688.00	44.93 PK	74.00	-29.07	1.00 H	347	12.12	32.81
7	2688.00	33.95 AV	54.00	-20.05	1.00 H	347	1.14	32.81
8	2808.00	44.83 PK	74.00	-29.17	1.47 H	28	11.72	33.11
8	2808.00	30.95 AV	54.00	-23.05	1.47 H	28	-2.16	33.11
9	4824.00	50.78 PK	74.00	-23.22	1.01 H	334	12.07	38.71
9	4824.00	39.89 AV	54.00	-14.11	1.01 H	334	1.18	38.71
10	7236.00	55.61 PK	74.00	-18.39	1.20 H	241	11.25	44.36
10	7236.00	44.39 AV	54.00	-9.61	1.20 H	241	0.03	44.36

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



<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>CHANNEL</b>	Channel 1	<b>FREQUENCY RANGE</b>	1 ~ 25GHz
<b>MODE</b>	OFDM		
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	24deg. C, 68%RH, 991hPa	<b>TESTED BY:</b> Steven Lu	

### ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1100.00	45.43 PK	74.00	-28.57	1.00 V	250	17.56	27.87
1	1100.00	40.73 AV	54.00	-13.27	1.00 V	250	12.86	27.87
2	1375.02	42.91 PK	74.00	-31.09	1.30 V	32	13.90	29.01
2	1375.02	31.88 AV	54.00	-22.12	1.30 V	32	2.87	29.01
3	1540.00	43.11 PK	74.00	-30.89	1.40 V	37	14.15	28.96
3	1540.00	33.92 AV	54.00	-20.08	1.40 V	37	4.96	28.96
4	1626.00	42.18 PK	74.00	-31.82	1.27 V	15	13.37	28.81
4	1626.00	33.78 AV	54.00	-20.22	1.27 V	15	4.97	28.81
5	2390.00	63.50 PK	74.00	-10.50	1.16 V	30	31.74	31.76
5	2390.00	51.84 AV	54.00	-2.16	1.16 V	30	20.08	31.76
6	*2412.00	112.04 PK			1.16 V	30	80.18	31.86
6	*2412.00	100.38 AV			1.16 V	30	68.52	31.86
7	2688.00	49.42 PK	74.00	-24.58	1.24 V	12	16.61	32.81
7	2688.00	44.89 AV	54.00	-9.11	1.24 V	12	12.08	32.81
8	2808.00	45.18 PK	74.00	-28.82	1.00 V	20	12.07	33.11
8	2808.00	40.01 AV	54.00	-13.99	1.00 V	20	6.90	33.11
9	4824.00	52.71 PK	74.00	-21.29	1.12 V	349	14.00	38.71
9	4824.00	39.88 AV	54.00	-14.12	1.12 V	349	1.17	38.71
10	7236.00	60.20 PK	74.00	-13.80	1.23 V	222	15.84	44.36
10	7236.00	46.11 AV	54.00	-7.89	1.23 V	222	1.75	44.36

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



<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>CHANNEL</b>	Channel 6	<b>FREQUENCY RANGE</b>	1 ~ 25GHz
<b>MODE</b>	OFDM		
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	24deg. C, 68%RH, 991hPa	<b>TESTED BY:</b> Steven Lu	

### 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	1100.00	43.19 PK	74.00	-30.81	1.25 H	246	15.32	27.87
1	1100.00	37.22 AV	54.00	-16.78	1.25 H	246	9.35	27.87
2	1375.00	42.42 PK	74.00	-31.58	1.01 H	310	13.41	29.01
2	1375.00	34.88 AV	54.00	-19.12	1.01 H	310	5.87	29.01
3	1540.00	44.31 PK	74.00	-29.69	1.00 H	93	15.35	28.96
3	1540.00	37.17 AV	54.00	-16.83	1.00 H	93	8.21	28.96
4	1625.00	42.57 PK	74.00	-31.43	1.84 H	302	13.76	28.81
4	1625.00	34.83 AV	54.00	-19.17	1.84 H	302	6.02	28.81
5	2374.10	50.32 PK	74.00	-23.68	1.06 H	22	18.60	31.72
5	2374.10	40.26 AV	54.00	-13.74	1.06 H	22	8.54	31.72
6	*2437.00	102.29 PK			1.06 H	22	70.27	32.02
6	*2437.00	92.23 AV			1.06 H	22	60.21	32.02
7	2688.00	46.33 PK	74.00	-27.67	1.00 H	352	13.52	32.81
7	2688.00	36.53 AV	54.00	-17.47	1.00 H	352	3.72	32.81
8	2858.00	45.38 PK	74.00	-28.62	1.44 H	28	12.16	33.22
8	2858.00	35.99 AV	54.00	-18.01	1.44 H	28	2.77	33.22
9	4874.00	49.65 PK	74.00	-24.35	1.01 H	323	10.92	38.73
9	4874.00	39.04 AV	54.00	-14.99	1.01 H	323	0.28	38.73
10	7311.00	55.86 PK	74.00	-18.14	1.20 H	268	11.26	44.61
10	7311.00	45.04 AV	54.00	-8.96	1.20 H	268	0.44	44.61

- 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



<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>CHANNEL</b>	Channel 6	<b>FREQUENCY RANGE</b>	1 ~ 25GHz
<b>MODE</b>	OFDM		
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	24deg. C, 68%RH, 991hPa	<b>TESTED BY:</b> Steven Lu	

### 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	1100.00	46.50 PK	74.00	-27.50	1.00 V	273	18.63	27.87
1	1100.00	42.87 AV	54.00	-11.13	1.00 V	273	15.00	27.87
2	1375.00	41.52 PK	74.00	-32.48	1.10 V	12	12.51	29.01
2	1375.00	32.56 AV	54.00	-21.44	1.10 V	12	3.55	29.01
3	1540.00	42.14 PK	74.00	-31.86	1.21 V	252	13.18	28.96
3	1540.00	33.42 AV	54.00	-20.58	1.21 V	252	4.46	28.96
4	1625.00	42.56 PK	74.00	-31.44	1.40 V	248	13.75	28.81
4	1625.00	35.23 AV	54.00	-18.77	1.40 V	248	6.42	28.81
5	2374.10	60.03 PK	74.00	-13.97	1.13 V	3	28.31	31.72
5	2374.10	49.03 AV	54.00	-4.97	1.13 V	3	17.31	31.72
6	*2437.00	112.00 PK			1.13 V	3	79.98	32.02
6	*2437.00	101.00 AV			1.13 V	3	68.98	32.02
7	2688.00	48.97 PK	74.00	-25.03	1.00 V	24	16.16	32.81
7	2688.00	43.68 AV	54.00	-10.32	1.00 V	24	10.87	32.81
8	2858.00	44.63 PK	74.00	-29.37	1.20 V	301	11.41	33.22
8	2858.00	33.05 AV	54.00	-20.95	1.20 V	301	-0.17	33.22
9	4874.00	50.23 PK	74.00	-23.77	1.12 V	352	11.50	38.73
9	4874.00	40.23 AV	54.00	-13.77	1.12 V	352	1.50	38.73
10	7311.00	55.65 PK	74.00	-18.35	1.22 V	225	11.05	44.61
10	7311.00	45.04 AV	54.00	-8.96	1.22 V	225	0.44	44.61

- 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



<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>CHANNEL</b>	Channel 11	<b>FREQUENCY RANGE</b>	1 ~ 25GHz
<b>MODE</b>	OFDM		
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	24deg. C, 68%RH, 991hPa	<b>TESTED BY:</b> Steven Lu	

### 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	1100.00	42.55 PK	74.00	-31.45	1.54 H	174	14.68	27.87
1	1100.00	35.87 AV	54.00	-18.13	1.54 H	174	8.00	27.87
2	1375.00	42.64 PK	74.00	-31.36	1.02 H	318	13.63	29.01
2	1375.00	34.02 AV	54.00	-19.98	1.02 H	318	5.01	29.01
3	1540.00	43.64 PK	74.00	-30.36	1.00 H	92	14.68	28.96
3	1540.00	37.17 AV	54.00	-16.83	1.00 H	92	8.21	28.96
4	1625.00	42.23 PK	74.00	-31.77	1.32 H	298	13.42	28.81
4	1625.00	33.67 AV	54.00	-20.33	1.32 H	298	4.86	28.81
5	*2462.00	105.69 PK			2.14 H	92	73.52	32.17
5	*2462.00	94.87 AV			2.14 H	92	62.70	32.17
6	2483.50	54.36 PK	74.00	-19.64	2.14 H	92	22.06	32.30
6	2483.50	43.54 AV	54.00	-10.46	2.14 H	92	11.24	32.30
7	2688.00	44.58 PK	74.00	-29.42	1.82 H	344	11.77	32.81
7	2688.00	34.25 AV	54.00	-19.75	1.82 H	344	1.44	32.81
8	2880.00	44.32 PK	74.00	-29.68	1.24 H	32	11.05	33.27
8	2880.00	32.10 AV	54.00	-21.90	1.24 H	32	-1.17	33.27
9	4924.00	50.71 PK	74.00	-23.29	1.01 H	352	11.99	38.72
9	4924.00	39.60 AV	54.00	-14.40	1.01 H	352	0.88	38.72
10	7386.00	55.68 PK	74.00	-18.32	1.44 H	30	10.73	44.95
10	7386.00	44.92 AV	54.00	-9.08	1.44 H	30	-0.03	44.95

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



<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>CHANNEL</b>	Channel 11	<b>FREQUENCY RANGE</b>	1 ~ 25GHz
<b>MODE</b>	OFDM		
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	24deg. C, 68%RH, 991hPa	<b>TESTED BY:</b> Steven Lu	

### 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	1100.00	43.83 PK	74.00	-30.17	1.16 V	296	15.96	27.87
1	1100.00	37.50 AV	54.00	-16.50	1.16 V	296	9.63	27.87
2	1375.00	45.82 PK	74.00	-28.18	1.30 V	145	16.81	29.01
2	1375.00	32.62 AV	54.00	-21.38	1.30 V	145	3.61	29.01
3	1540.00	42.35 PK	74.00	-31.65	1.34 V	35	13.39	28.96
3	1540.00	33.65 AV	54.00	-20.35	1.34 V	35	4.69	28.96
4	1626.00	42.49 PK	74.00	-31.51	1.20 V	138	13.68	28.81
4	1626.00	33.57 AV	54.00	-20.43	1.20 V	138	4.76	28.81
5	*2462.00	113.13 PK			1.11 V	20	80.96	32.17
5	*2462.00	102.29 AV			1.11 V	20	70.12	32.17
6	2483.50	61.88 PK	74.00	-12.12	1.11 V	20	29.58	32.30
6	2483.50	50.96 AV	54.00	-3.04	1.11 V	20	18.66	32.30
7	2688.00	48.10 PK	74.00	-25.90	1.00 V	23	15.29	32.81
7	2688.00	42.08 AV	54.00	-11.92	1.00 V	23	9.27	32.81
8	2880.00	43.85 PK	74.00	-30.15	1.00 V	67	10.58	33.27
8	2880.00	32.43 AV	54.00	-21.57	1.00 V	67	-0.84	33.27
9	4924.00	55.03 PK	74.00	-18.97	1.02 V	173	16.31	38.72
9	4924.00	42.02 AV	54.00	-11.98	1.02 V	173	3.30	38.72
10	7386.00	62.66 PK	74.00	-11.34	1.20 V	222	17.71	44.95
10	7386.00	46.36 AV	54.00	-7.64	1.20 V	222	1.41	44.95

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

**Turbo mode**

<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>CHANNEL</b>	Channel 6	<b>FREQUENCY RANGE</b>	1 ~ 25GHz
<b>MODE</b>	OFDM		
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	25deg. C, 60%RH, 991hPa	<b>TESTED BY:</b> Gary Chang	

**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	1100.00	42.50 PK	74.00	-31.50	1.25 H	350	14.63	27.87
2	1375.00	41.30 PK	74.00	-32.70	1.60 H	310	12.29	29.01
3	1540.00	43.20 PK	74.00	-30.80	1.50 H	212	14.24	28.96
4	1625.00	41.37 PK	74.00	-32.63	1.36 H	102	12.56	28.81
5	2390.00	51.98 PK	74.00	-22.02	1.42 H	26	20.22	31.76
5	2390.00	42.37 AV	54.00	-11.63	1.42 H	26	10.61	31.76
6	*2437.00	105.49 PK			1.42 H	26	73.47	32.02
6	*2437.00	95.88 AV			1.42 H	26	63.86	32.02
7	2483.50	55.00 PK	74.00	-19.00	1.42 H	26	22.70	32.30
7	2483.50	45.80 AV	54.00	-8.20	1.42 H	26	13.50	32.30
8	2688.00	45.25 PK	74.00	-28.75	1.10 H	218	12.44	32.81
9	2858.00	44.15 PK	74.00	-29.85	1.20 H	129	10.93	33.22
10	4874.00	49.63 PK	74.00	-24.37	1.33 H	258	10.90	38.73
11	7311.00	58.52 PK	74.00	-15.48	1.13 H	258	13.91	44.61
11	7311.00	43.08 AV	54.00	-10.92	1.13 H	258	-1.53	44.61

- 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





<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>CHANNEL</b>	Channel 6	<b>FREQUENCY RANGE</b>	1 ~ 25GHz
<b>MODE</b>	OFDM		
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	25deg. C, 60%RH, 991hPa	<b>TESTED BY:</b> Gary Chang	

<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3M</b>								
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	1100.00	44.85 PK	74.00	-29.15	1.00 V	290	16.98	27.87
2	1375.00	40.42 PK	74.00	-33.58	1.12 V	12	11.41	29.01
3	1540.00	40.92 PK	74.00	-33.08	1.12 V	250	11.96	28.96
4	1625.00	41.35 PK	74.00	-32.65	1.28 V	259	12.54	28.81
5	2390.00	60.63 PK	74.00	-13.37	1.00 V	93	28.87	31.76
5	2390.00	51.29 AV	54.00	-2.71	1.00 V	93	19.53	31.76
6	*2437.00	110.75 PK			1.00 V	93	78.73	32.02
6	*2437.00	98.80 AV			1.00 V	93	66.78	32.02
7	2483.50	60.00 PK	74.00	-14.00	1.00 V	93	27.70	32.30
7	2483.50	48.80 AV	54.00	-5.20	1.00 V	93	16.50	32.30
8	2688.00	47.58 PK	74.00	-26.42	1.00 V	208	14.77	32.81
9	2858.00	42.95 PK	74.00	-31.05	1.10 V	234	9.73	33.22
10	4874.00	51.58 PK	74.00	-22.42	1.10 V	311	12.85	38.73
10	4874.00	36.88 AV	54.00	-17.12	1.10 V	311	-1.85	38.73
11	7311.00	55.76 PK	74.00	-18.24	1.00 V	250	11.15	44.61
11	7311.00	42.08 AV	54.00	-11.92	1.00 V	250	-2.53	44.61

- 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.



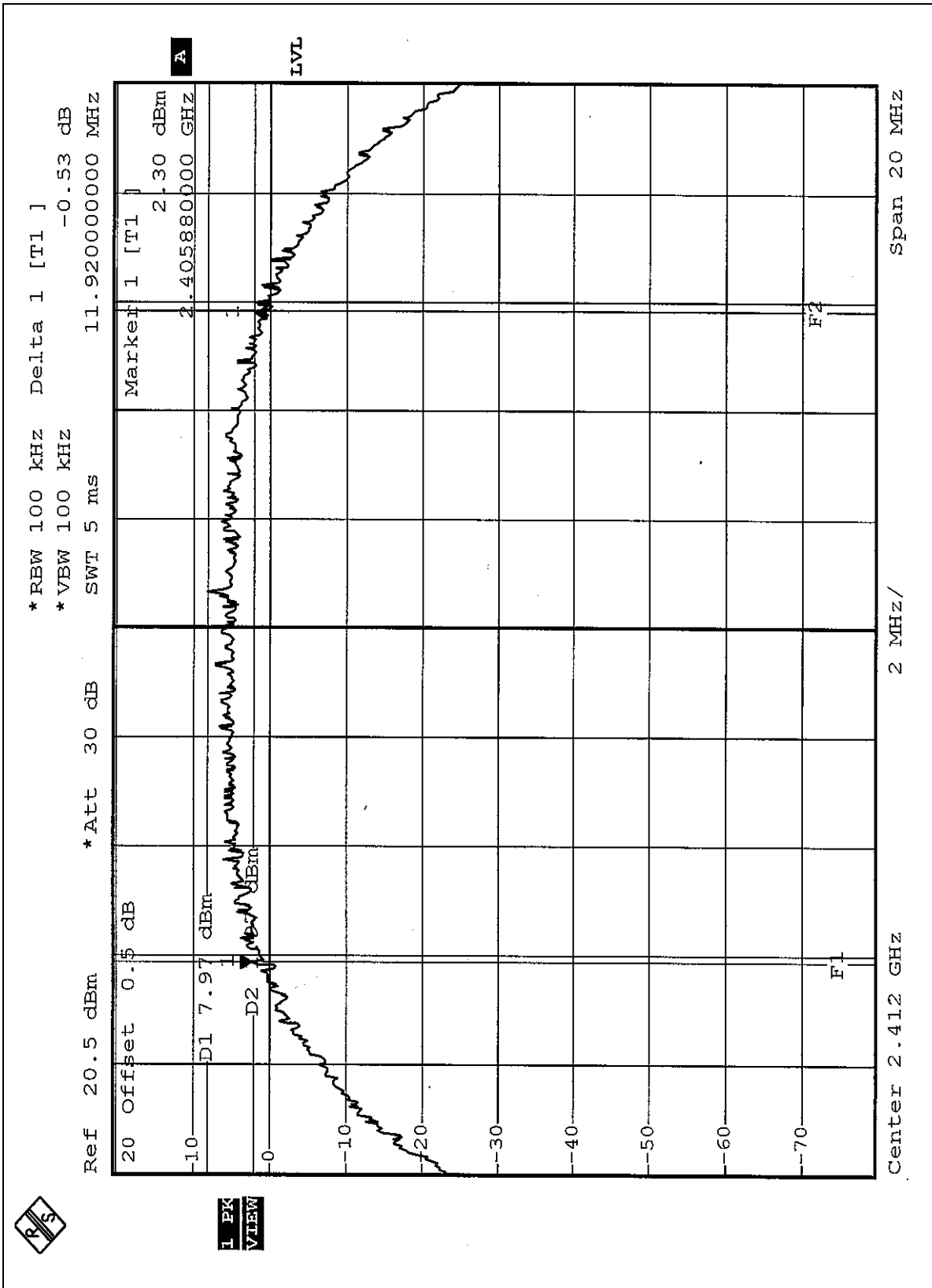
## 4.3.7 TEST RESULTS

<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>MODE</b>	CCK	<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz
<b>ENVIRONMENTAL CONDITIONS</b>	25deg. C, 60%RH, 991hPa	<b>TESTED BY</b>	Steven Lu

<b>CHANNEL</b>	<b>CHANNEL FREQUENCY (MHz)</b>	<b>6dB BANDWIDTH (MHz)</b>	<b>MINIMUM LIMIT (MHz)</b>	<b>PASS/FAIL</b>
1	2412	11.92	0.5	PASS
6	2437	11.80	0.5	PASS
11	2462	11.88	0.5	PASS

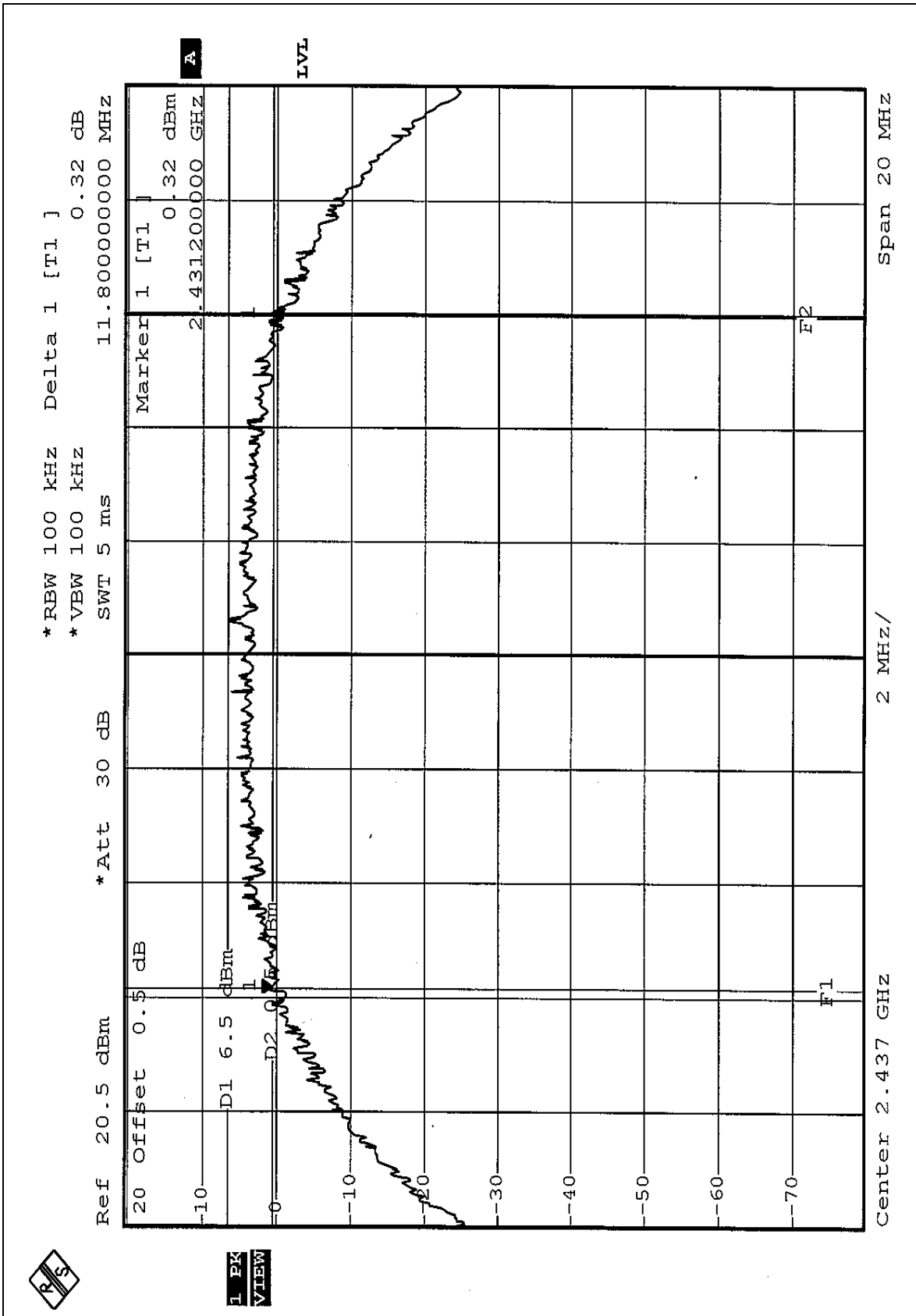


CH1



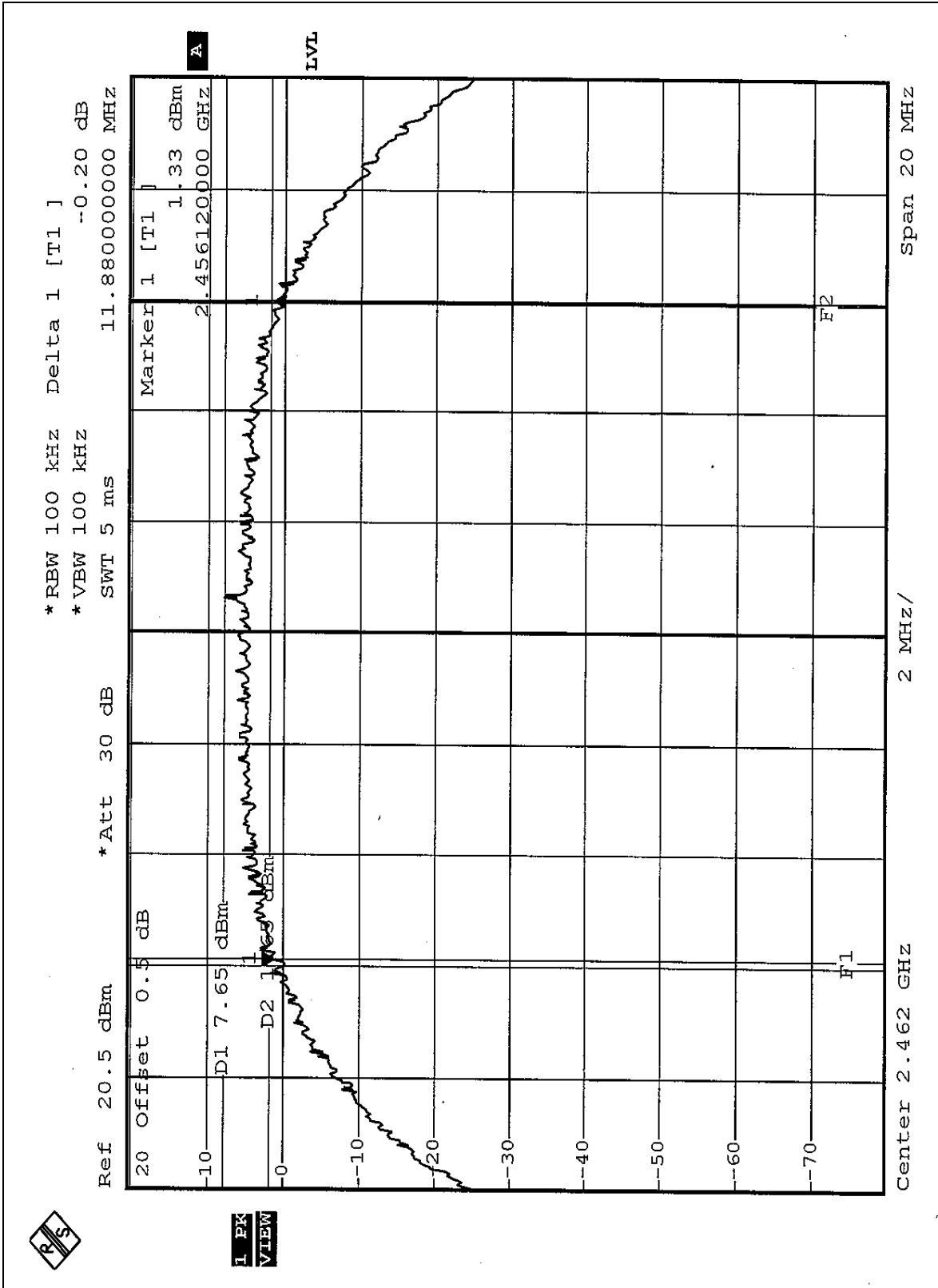


CH6





CH11



**Normal mode**

<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>MODE</b>	OFDM	<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz
<b>ENVIRONMENTAL CONDITIONS</b>	25deg. C, 60%RH, 991hPa	<b>TESTED BY</b>	Steven Lu

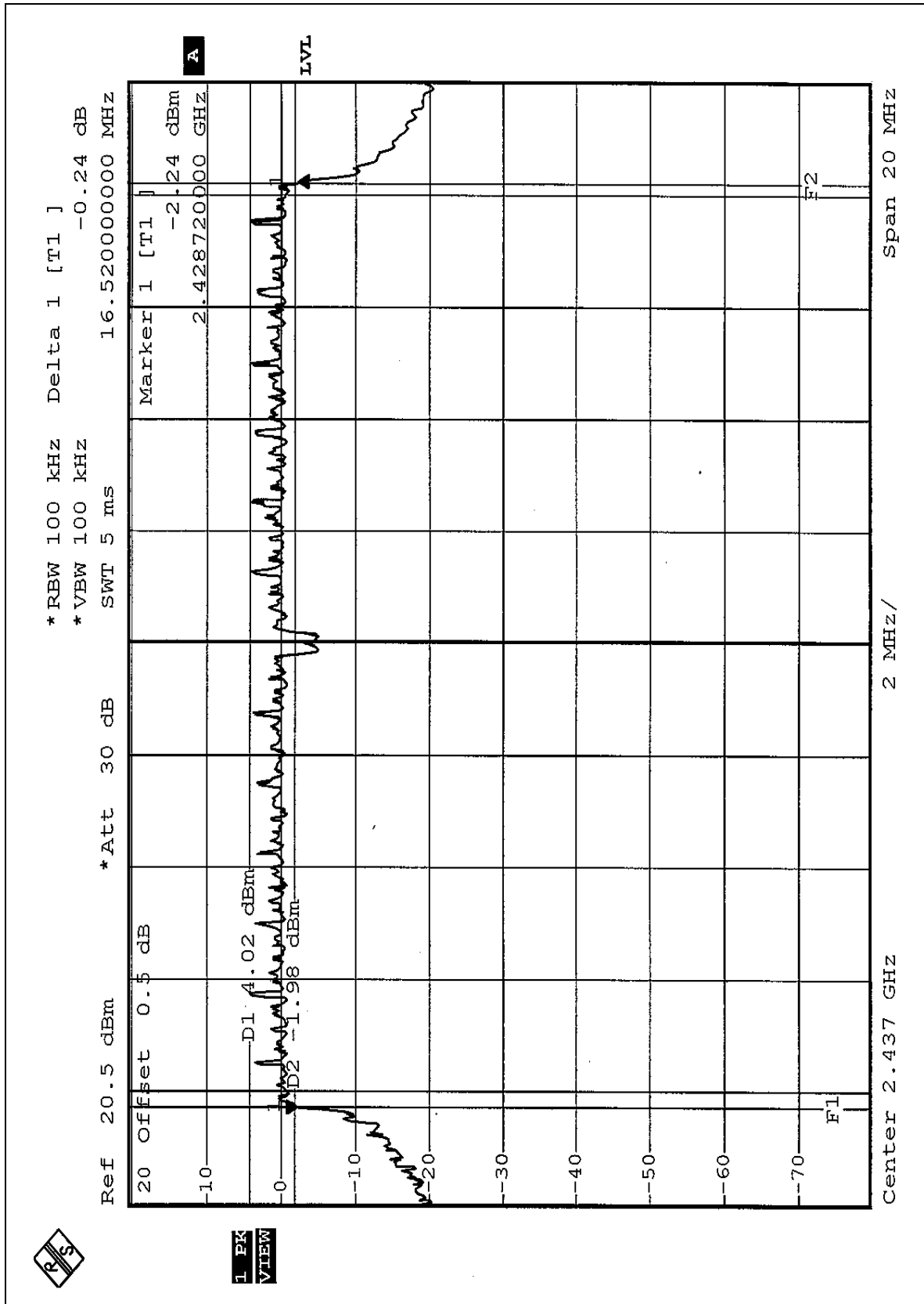
<b>CHANNEL</b>	<b>CHANNEL FREQUENCY (MHz)</b>	<b>6dB BANDWIDTH (MHz)</b>	<b>MINIMUM LIMIT (MHz)</b>	<b>PASS/FAIL</b>
1	2412	16.44	0.5	PASS
6	2437	16.52	0.5	PASS
11	2462	16.48	0.5	PASS





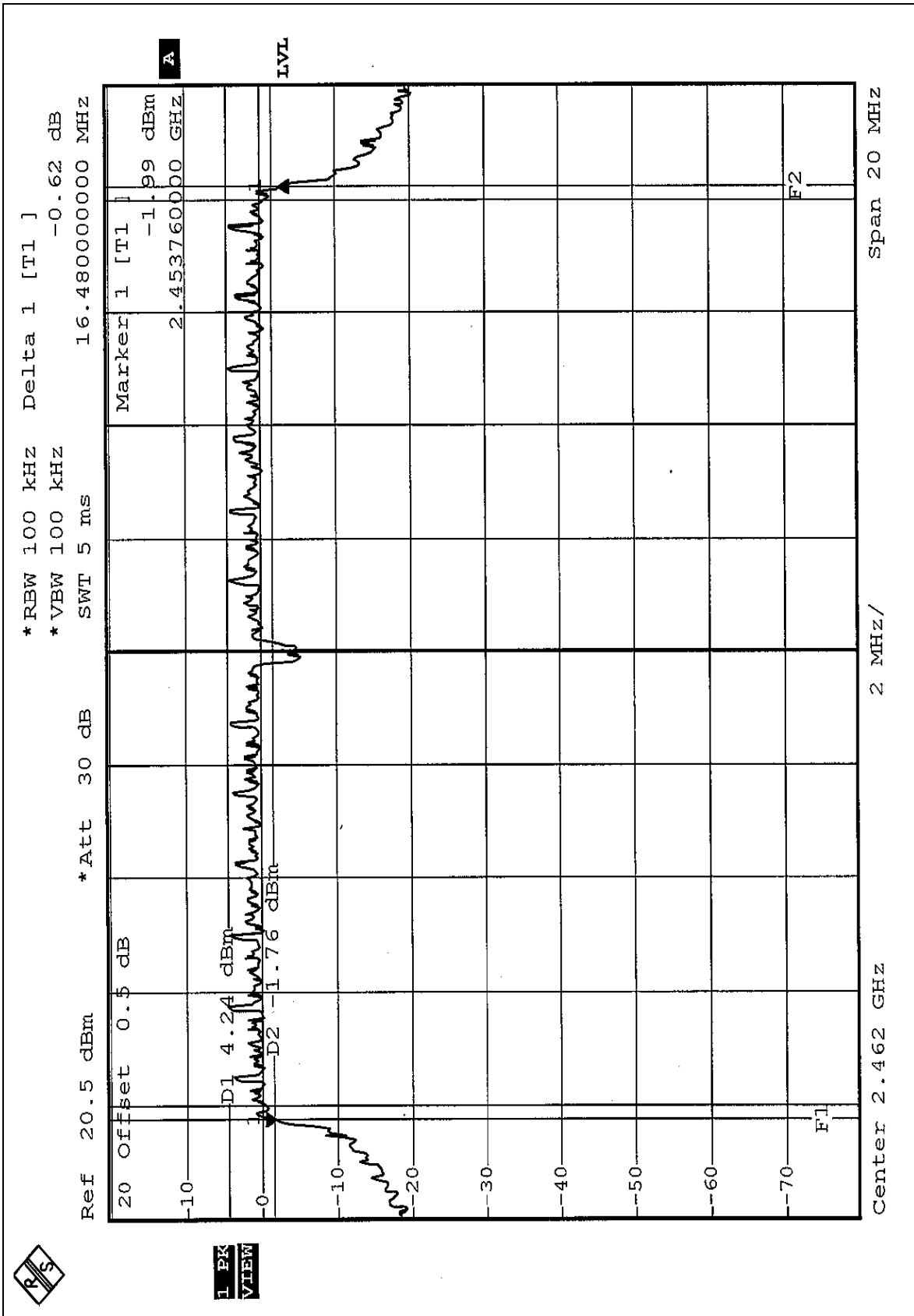


CH6





CH11



1 PK VIEW



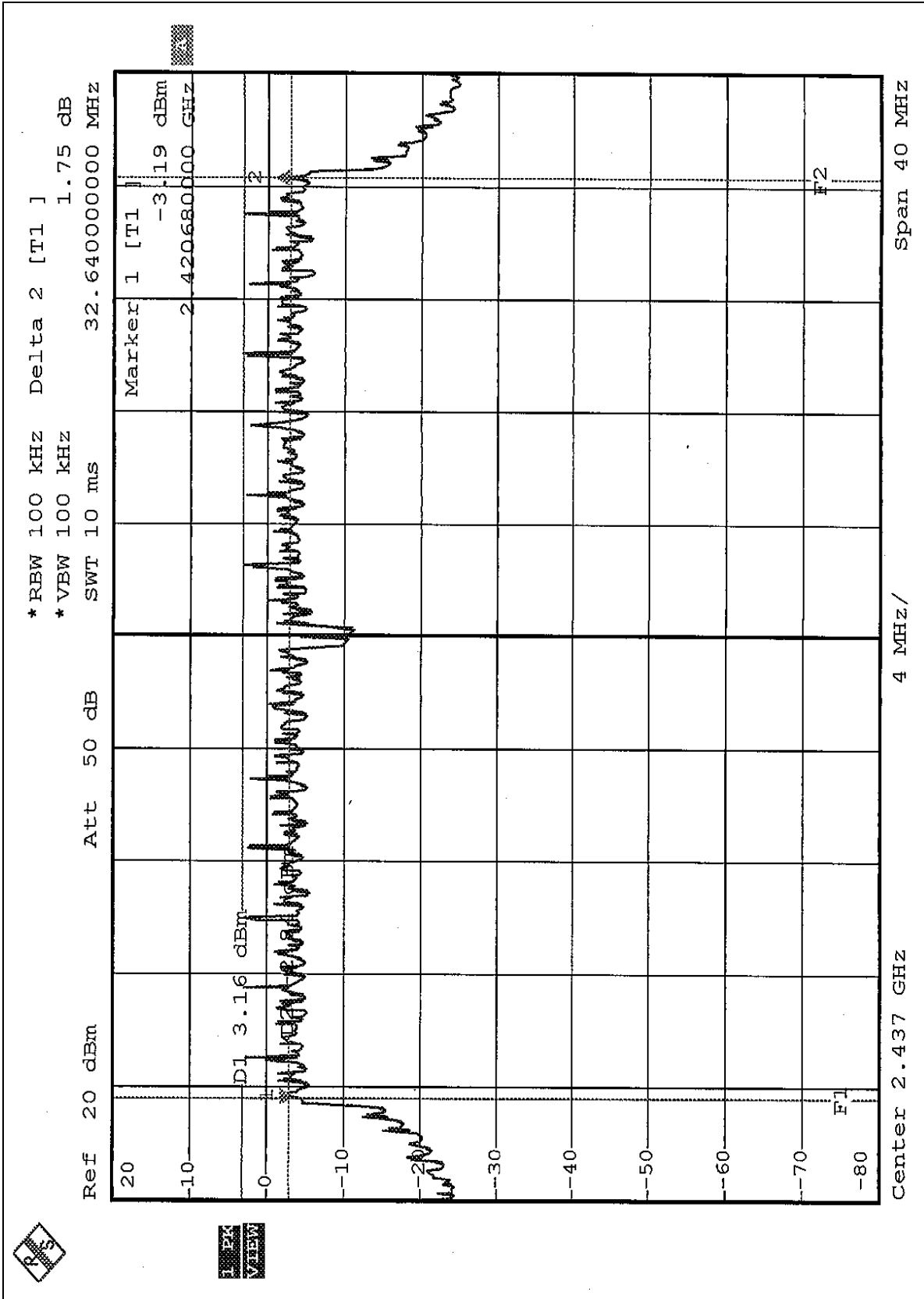
**Turbo mode**

<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>MODE</b>	OFDM	<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz
<b>ENVIRONMENTAL CONDITIONS</b>	25deg. C, 60%RH, 991hPa	<b>TESTED BY</b>	Steven Lu

<b>CHANNEL</b>	<b>CHANNEL FREQUENCY (MHz)</b>	<b>6dB BANDWIDTH (MHz)</b>	<b>MINIMUM LIMIT (MHz)</b>	<b>PASS/FAIL</b>
6	2437	32.64	0.5	PASS



CH6





#### 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..



#### 4.4.1 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.

#### 4.4.2 DEVIATION FROM TEST STANDARD

No deviation

#### 4.4.3 TEST SETUP



#### 4.4.4 EUT OPERATING CONDITIONS

Same as Item 4.3.6



## 4.4.3 TEST RESULTS

<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz	<b>ENVIRONMENTAL CONDITIONS</b>	25deg.C, 60%RH, 991hPa
<b>MODE</b>	CCK	<b>TESTED BY</b>	Gary Chang

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	18.00	30	PASS
6	2437	19.00	30	PASS
11	2462	18.00	30	PASS

## Normal mode

<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz	<b>ENVIRONMENTAL CONDITIONS</b>	25deg.C, 60%RH, 991hPa
<b>MODE</b>	OFDM	<b>TESTED BY</b>	Gary Chang

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	17.00	30	PASS
6	2437	18.50	30	PASS
11	2462	17.00	30	PASS

## Turbo mode

<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz	<b>ENVIRONMENTAL CONDITIONS</b>	25deg.C, 60%RH, 991hPa
<b>MODE</b>	OFDM	<b>TESTED BY</b>	Steven Lu

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
6	2437	18.25	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
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.

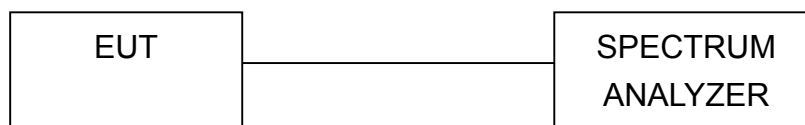
#### 4.5.3 TEST PROCEDURE

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

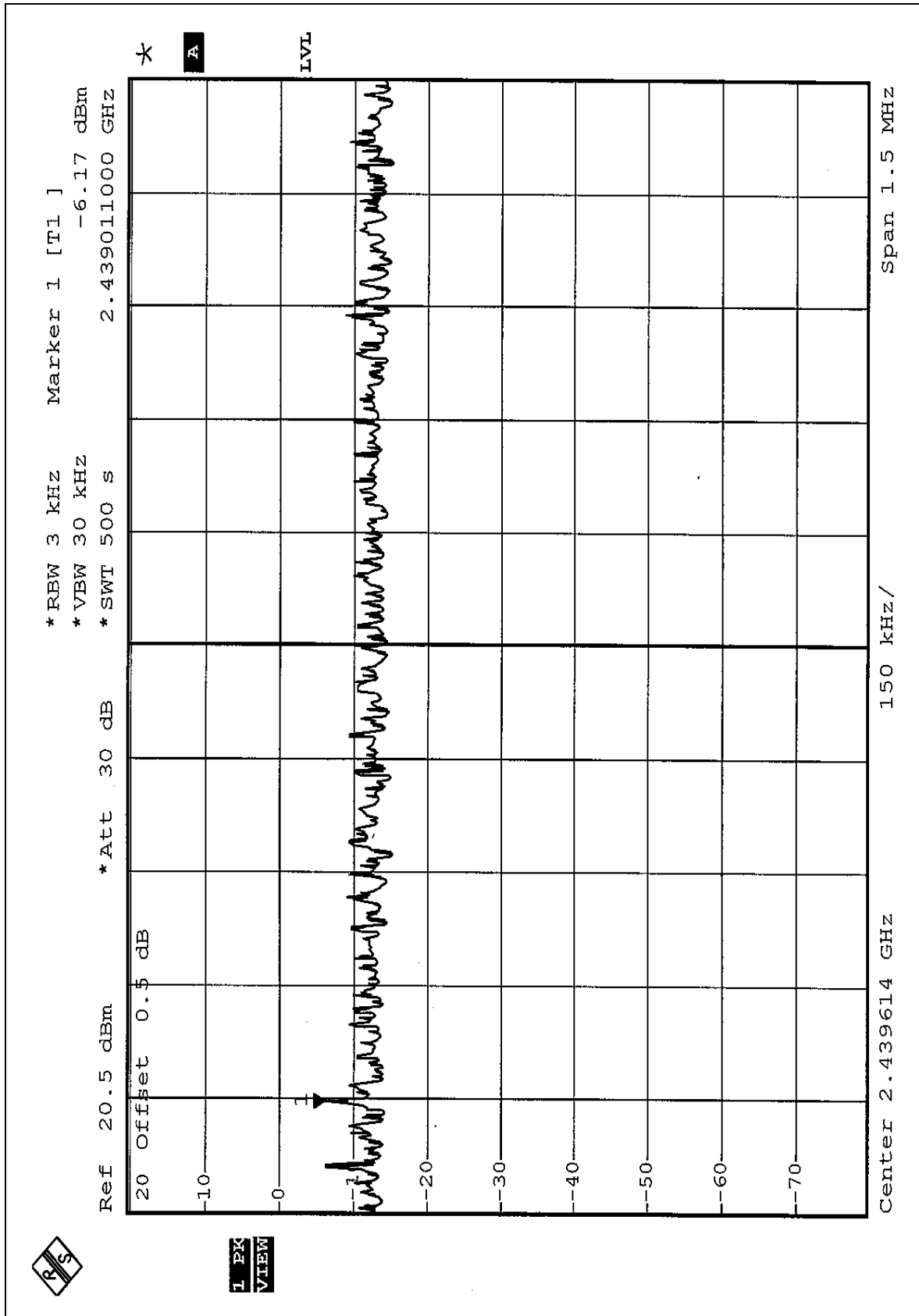
<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz	<b>ENVIRONMENTAL CONDITIONS</b>	25deg.C, 60%RH, 991hPa
<b>MODE</b>	CCK	<b>TESTED BY</b>	Steven Lu

<b>CHANNEL</b>	<b>CHANNEL FREQUENCY (MHz )</b>	<b>RF POWER LEVEL IN 3kHz BW (dBm)</b>	<b>MAXIMUM LIMIT (dBm)</b>	<b>PASS/FAIL</b>
1	2412	-6.03	8	PASS
6	2437	-6.17	8	PASS
11	2462	-6.18	8	PASS





CH6





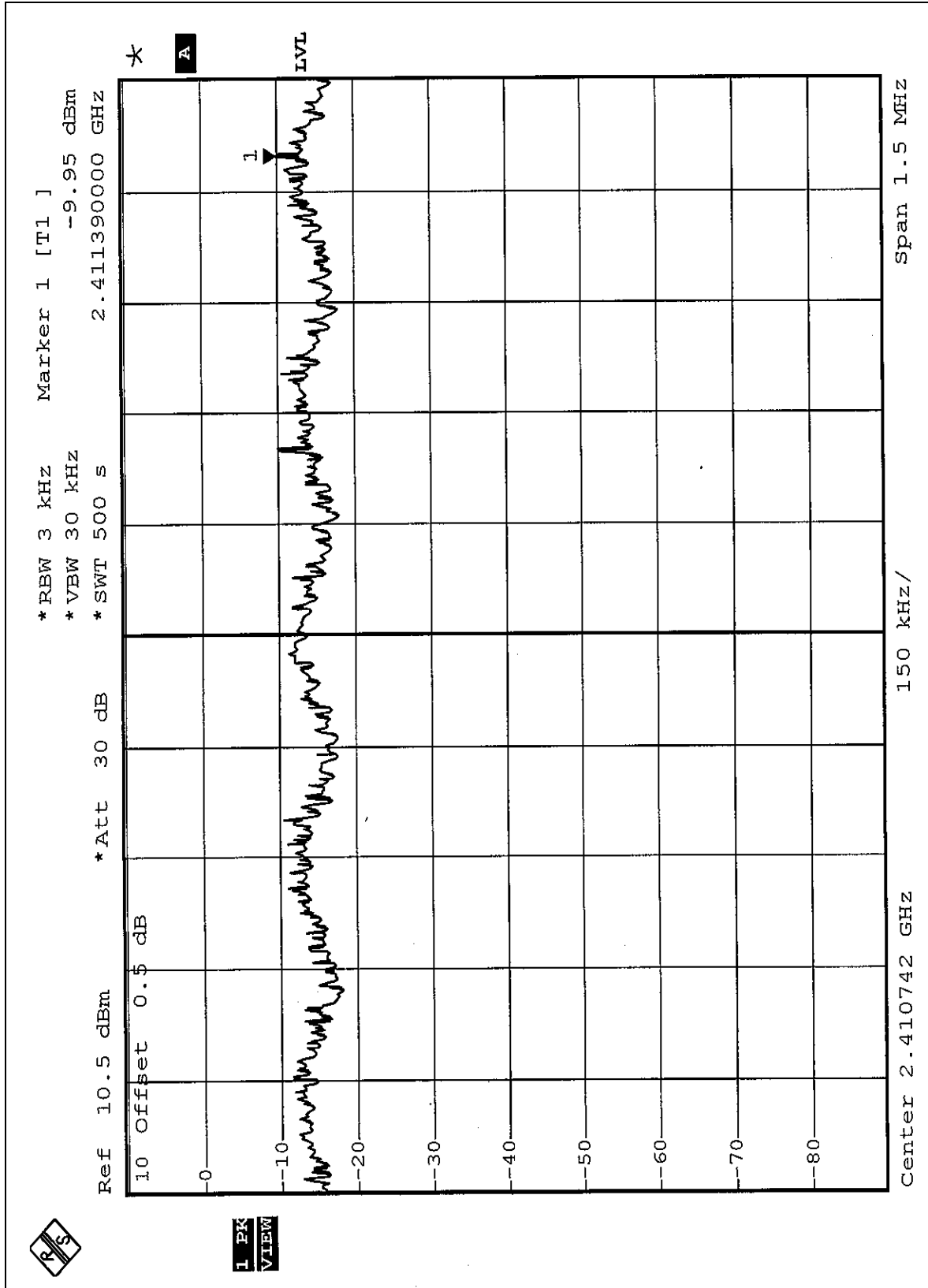
**Normal mode**

<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz	<b>ENVIRONMENTAL CONDITIONS</b>	25deg.C, 60%RH, 991hPa
<b>MODE</b>	OFDM	<b>TESTED BY</b>	Steven Lu

<b>CHANNEL</b>	<b>CHANNEL FREQUENCY (MHz )</b>	<b>RF POWER LEVEL IN 3kHz BW (dBm)</b>	<b>MAXIMUM LIMIT (dBm)</b>	<b>PASS/FAIL</b>
1	2412	-9.95	8	PASS
6	2437	-9.06	8	PASS
11	2462	-9.58	8	PASS



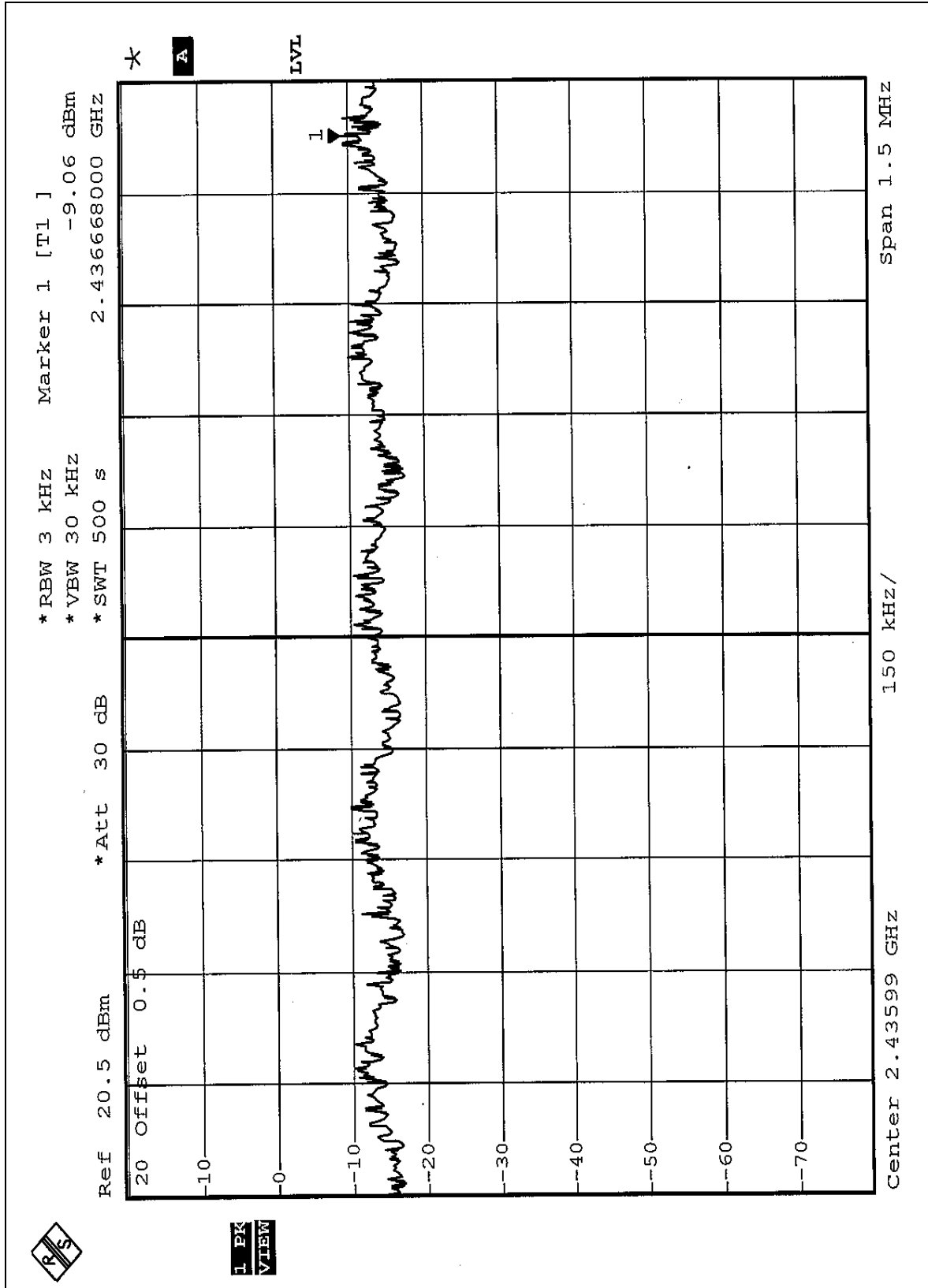
CH1







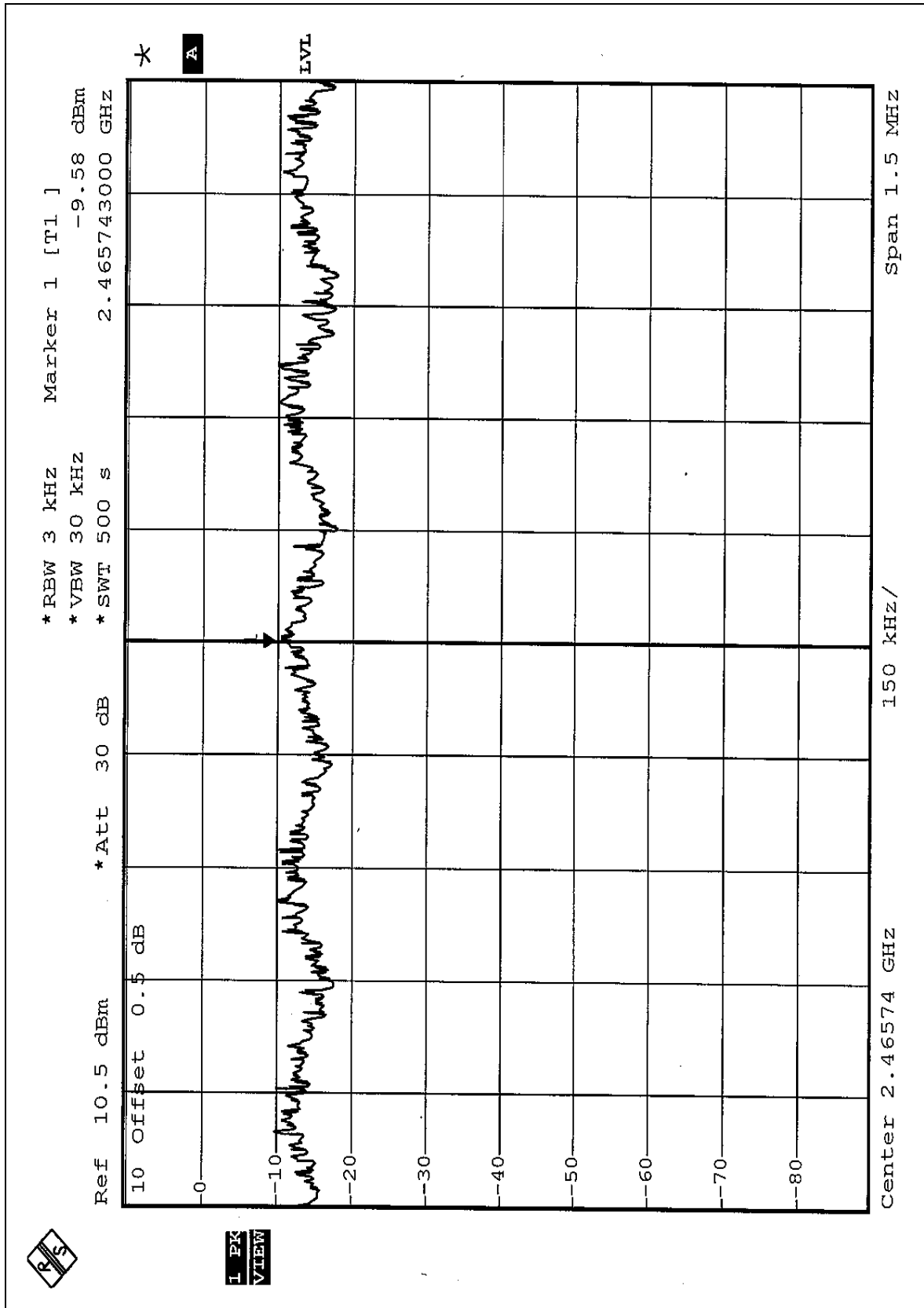
CH6



1 PK VIEW



CH11



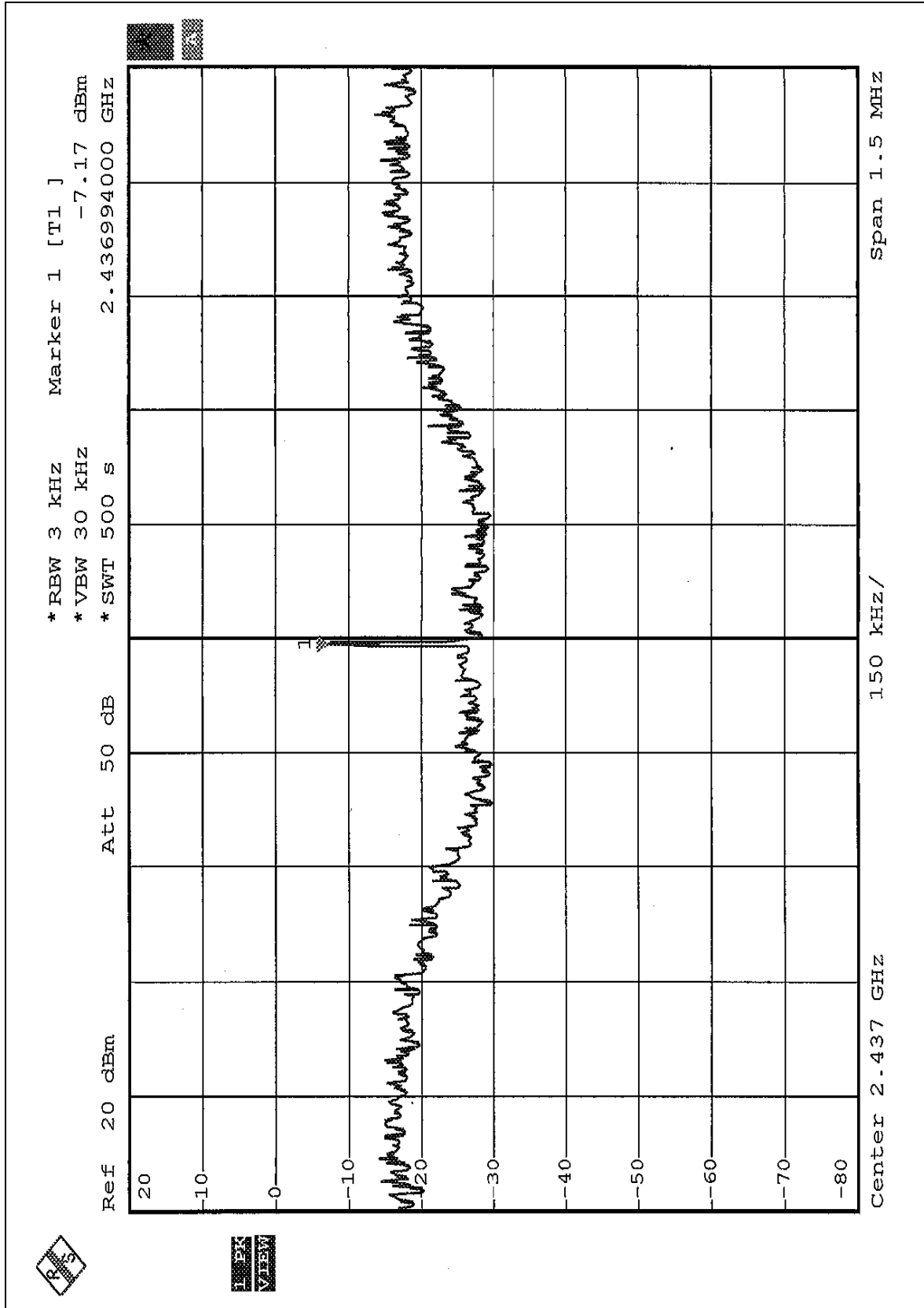
**Turbo mode**

<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz	<b>ENVIRONMENTAL CONDITIONS</b>	25deg.C, 60%RH, 991hPa
<b>MODE</b>	OFDM	<b>TESTED BY</b>	Steven Lu

<b>CHANNEL</b>	<b>CHANNEL FREQUENCY (MHz )</b>	<b>RF POWER LEVEL IN 3kHz BW (dBm)</b>	<b>MAXIMUM LIMIT (dBm)</b>	<b>PASS/FAIL</b>
6	2437	-7.17	8	PASS



CH6





## 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
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.

### 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 100 MHz bandwidth from band edge. The band edges was measured and recorded.

### 4.6.4 DEVIATION FROM TEST STANDARD

No deviation

### 4.6.5 EUT OPERATING CONDITION

Same as Item 4.3.6

### 4.6.6 TEST RESULTS

The spectrum plots are attached on the following 10 pages. D2 line indicates the highest level, and D1 line indicates the 20dB offset below D2. It shows compliance with the requirement in part 15.247(C).



**NOTE 1:** The band edge emission plot of CCK technique on page 71 show 56.84dB delta between carrier maximum power and local maximum emission in restrict band (2.3862GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 104.82dBuV/m, so the maximum field strength in restrict band is  $104.82 - 56.84 = 47.98$ dBuV/m which is under 54dBuV/m limit.

**NOTE 2:** The band edge emission plot of CCK technique on page 73 show 58.88dB delta between carrier maximum power and local maximum emission in restrict band (2.4873GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 104.72dBuV/m, so the maximum field strength in restrict band is  $104.72 - 58.88 = 45.84$ dBuV/m which is under 54dBuV/m limit.

**NOTE 3:** The band edge emission plot of OFDM technique on page 75 show 48.39dB 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 100.38dBuV/m, so the maximum field strength in restrict band is  $100.38 - 48.39 = 51.99$ dBuV/m which is under 54dBuV/m limit.

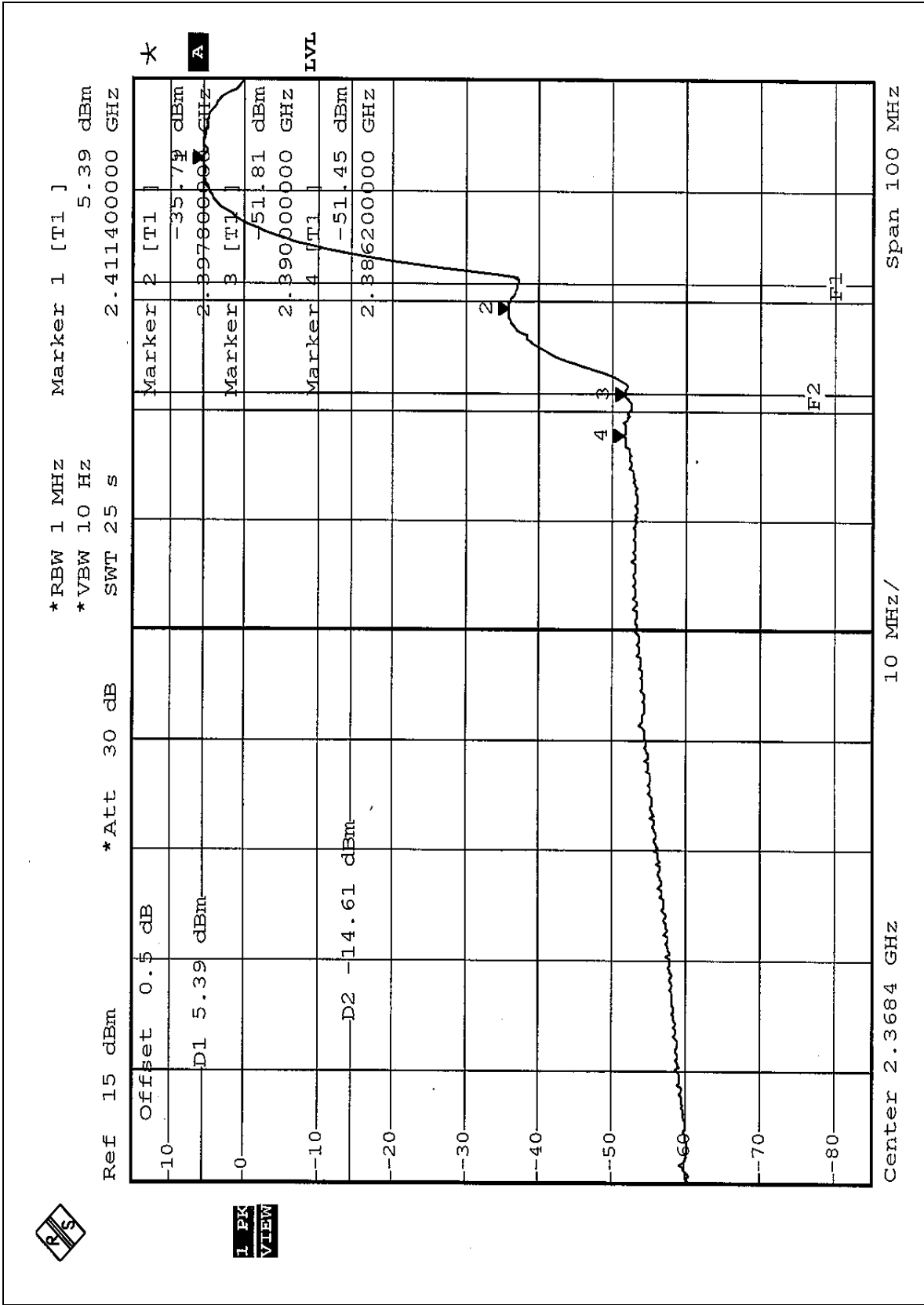
**NOTE 4:** The band edge emission plot of OFDM technique on page 77 show 50.59dB delta between carrier maximum power and local maximum emission in restrict band (2.4835GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 102.29dBuV/m, so the maximum field strength in restrict band is  $102.29 - 50.59 = 51.70$ dBuV/m which is under 54dBuV/m limit.

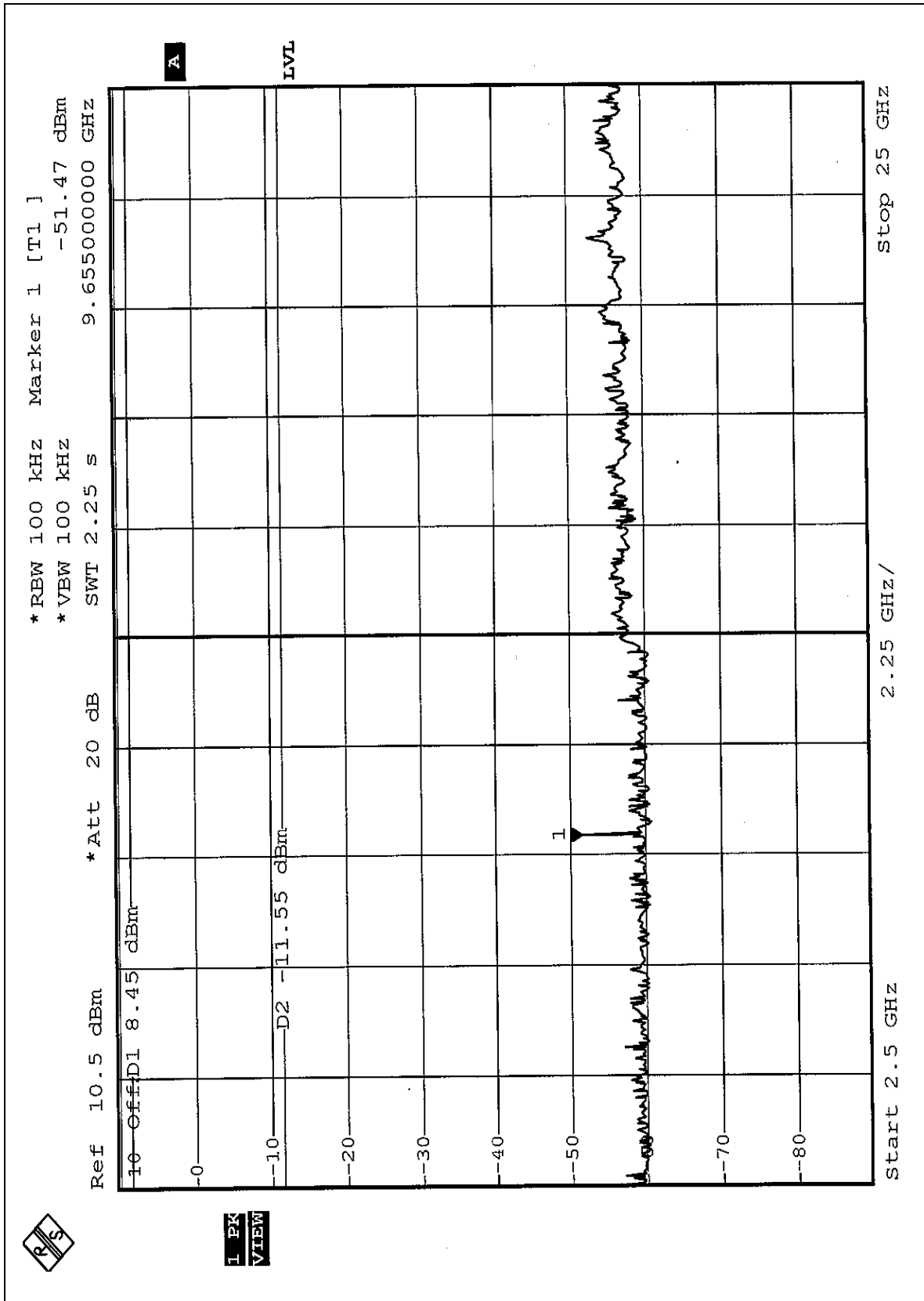
**NOTE 5:** The band edge emission plot of OFDM technique with Turbo mode on page 79 shows 46.79dB delta between carrier maximum power and local maximum emission in restrict band (2.3900GHz). The emission of carrier strength list in the test result of channel 6 at the item 4.2.7 is 98.80dBuV/m, so the maximum field strength in restrict band is  $98.80 - 46.79 = 52.01$ dBuV/m which is under 54dBuV/m limit.

**NOTE 6:** The band edge emission plot of OFDM technique with Turbo mode on page 80 shows 49.94dB 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 98.80dBuV/m, so the maximum field strength in restrict band is  $98.80 - 49.94 = 48.86$ dBuV/m which is under 54dBuV/m limit.



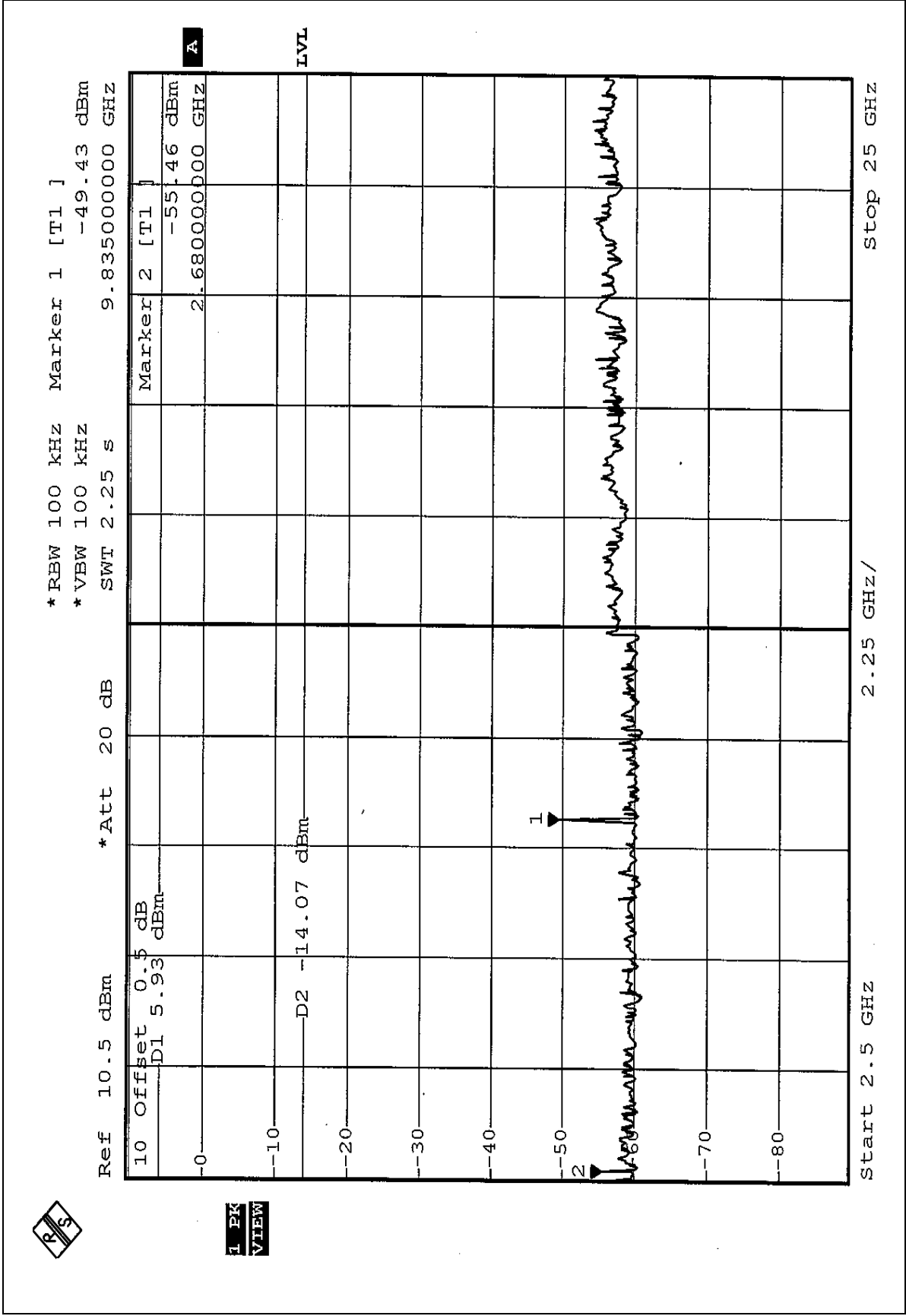
CCK mode:





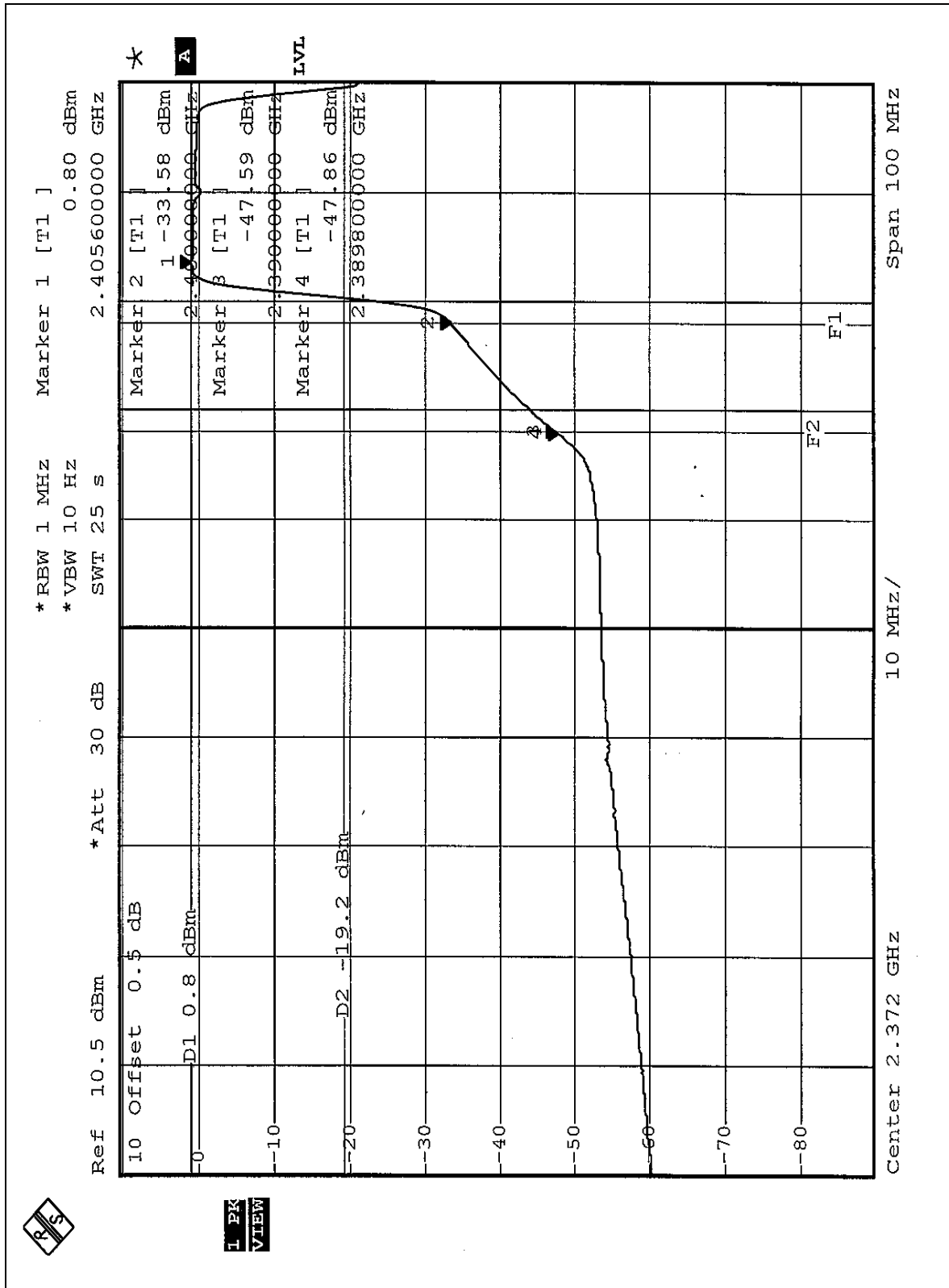


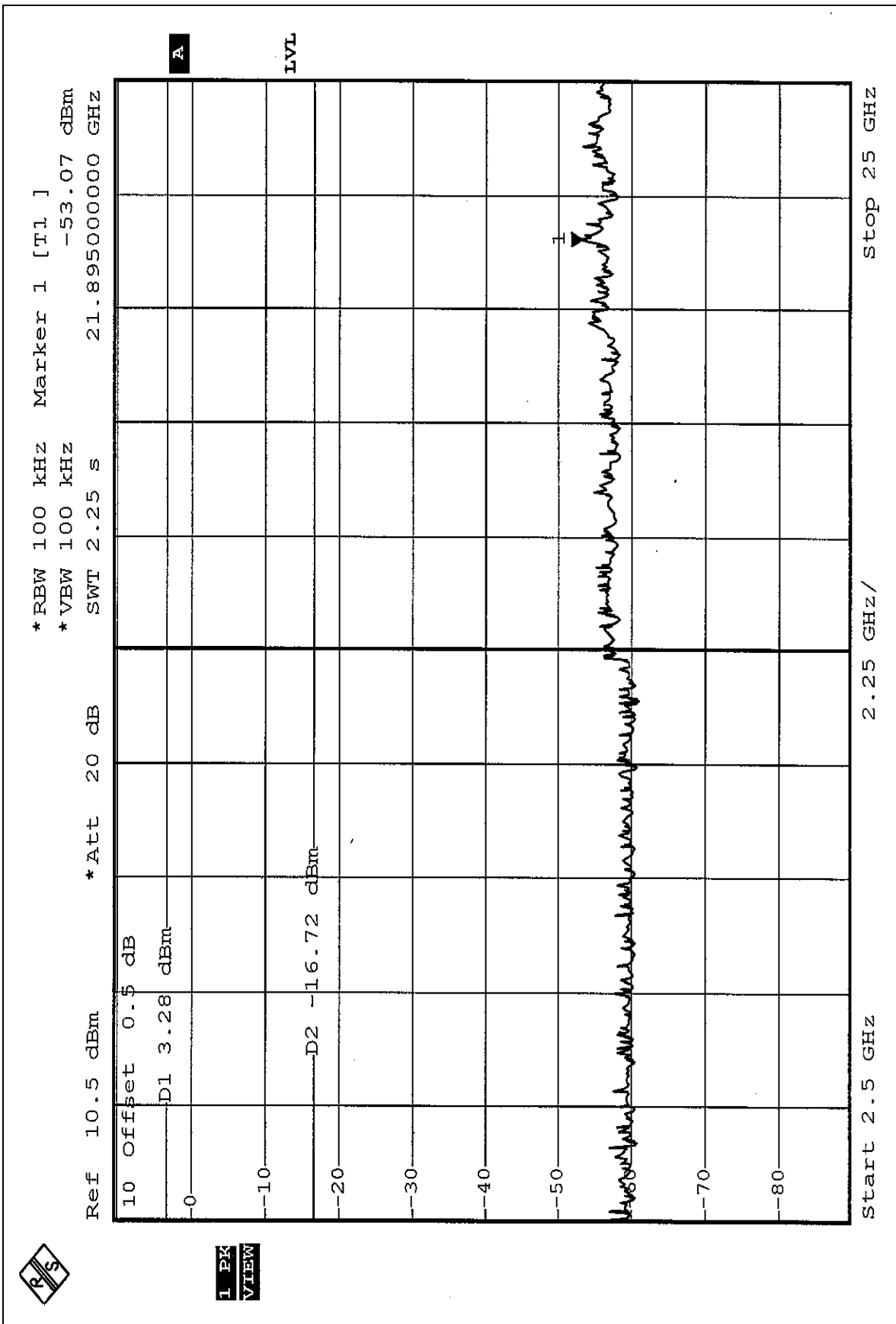


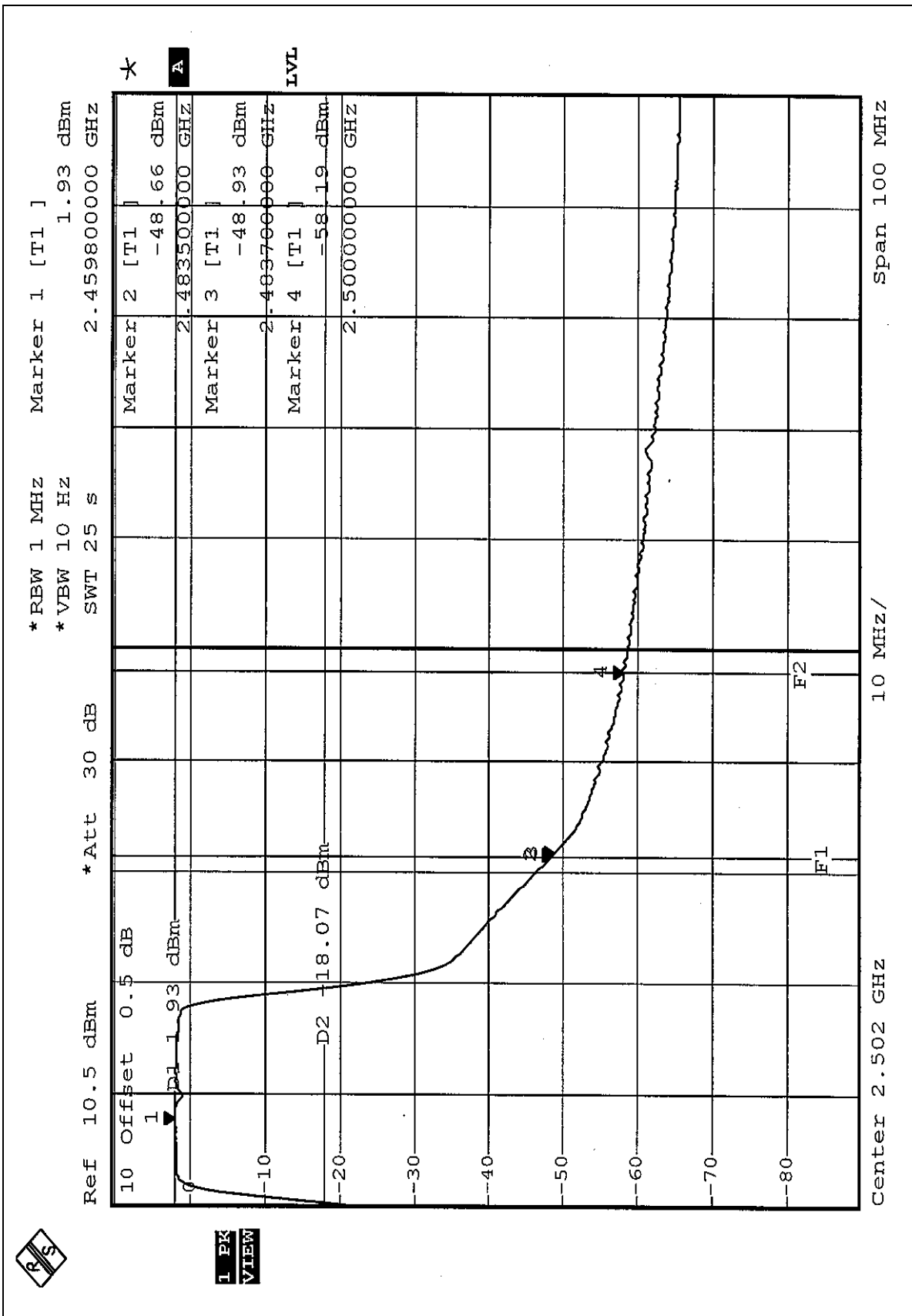


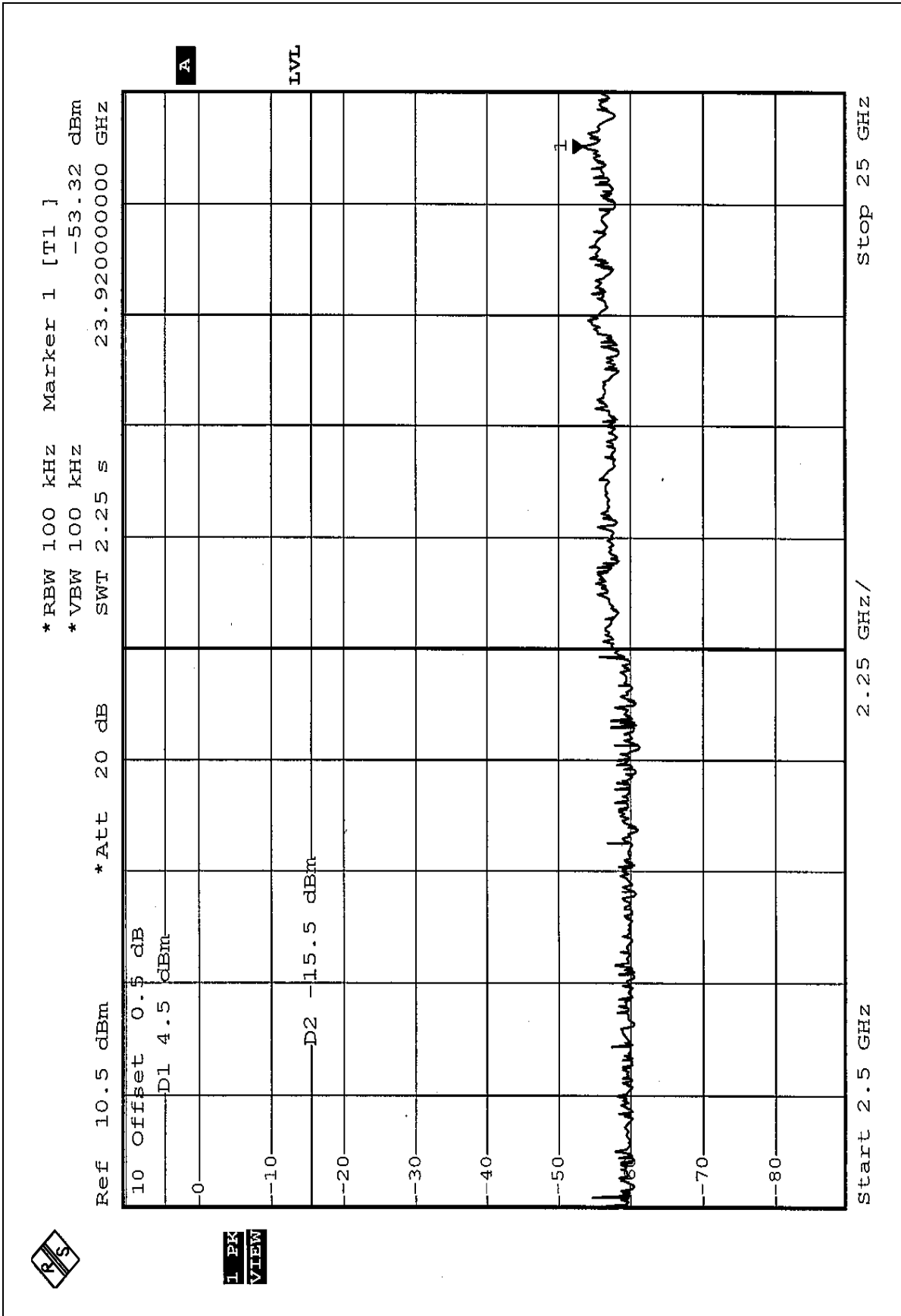


**OFDM mode:**



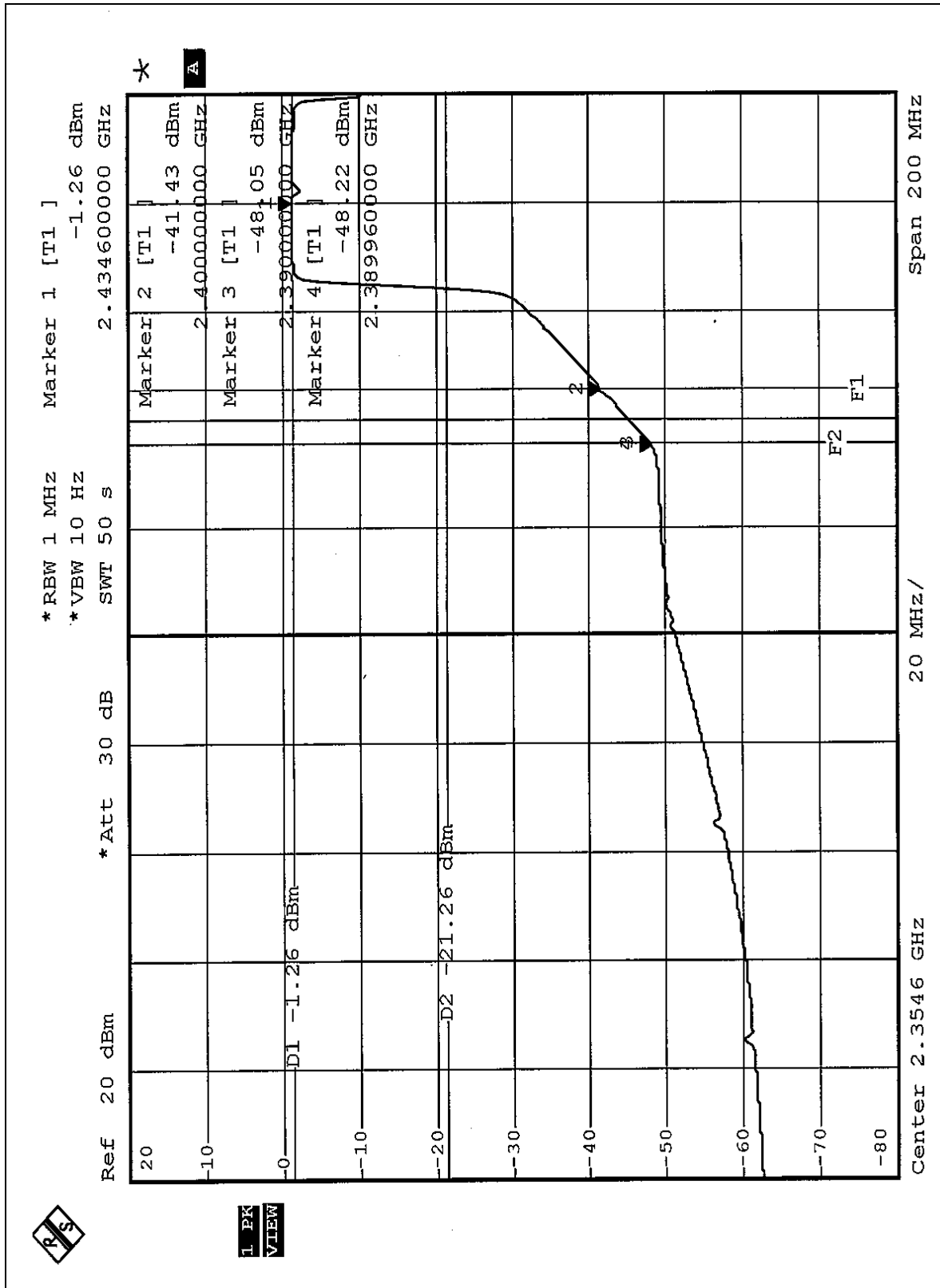


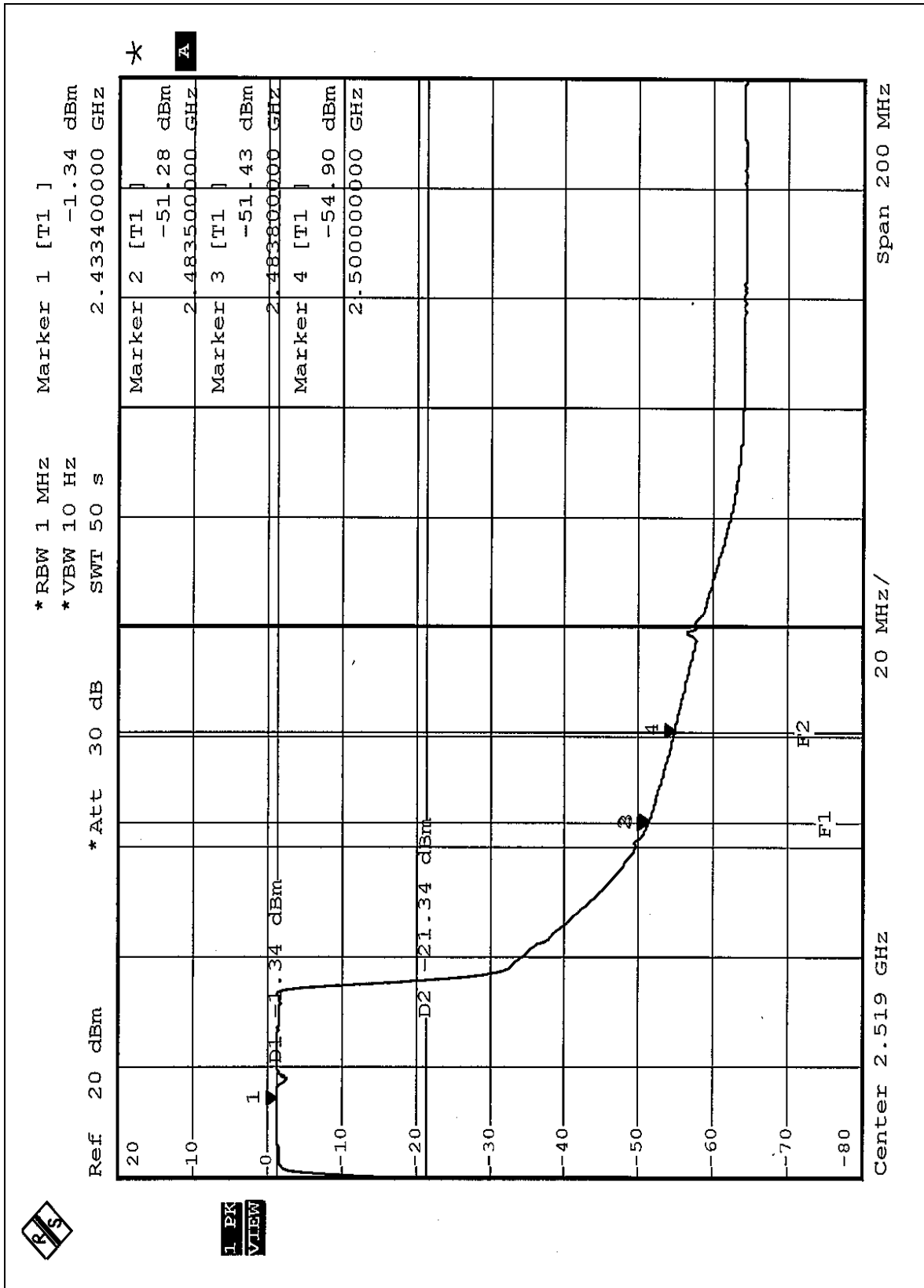






OFDM Turbo mode:









## **4.7 ANTENNA REQUIREMENT**

### **4.7.1 STANDARD APPLICABLE**

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

### **4.7.2 ANTENNA CONNECTED CONSTRUCTION**

The antenna used in this product is Dipole antenna with Reversed SMA 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 (dB $\mu$ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

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

#### 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
SUHNTER Terminator (For ROHDE & SCHWARZ LISN)	65BNC-5001	E1-010770	Feb. 28, 2005
SUHNTER 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.



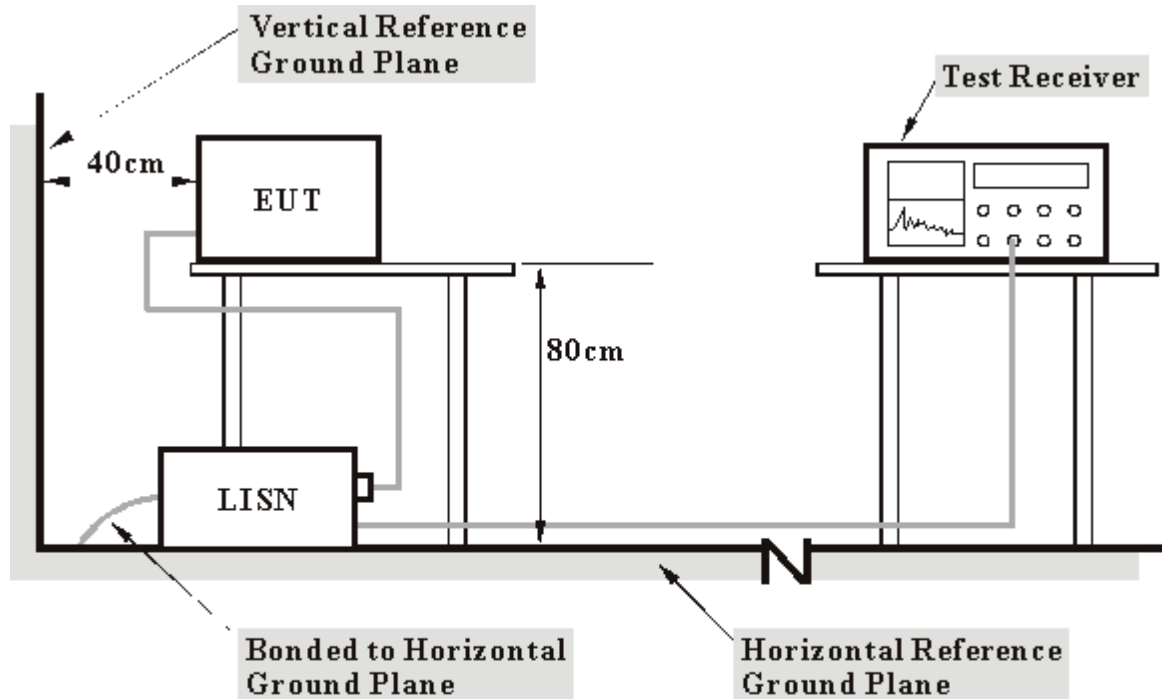
### 5.1.3 TEST PROCEDURES

- 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) was not recorded.

### 5.1.4 DEVIATION FROM TEST STANDARD

No deviation

### 5.1.5 TEST SETUP



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

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

### 5.1.6 EUT OPERATING CONDITIONS

Same as 4.1.6

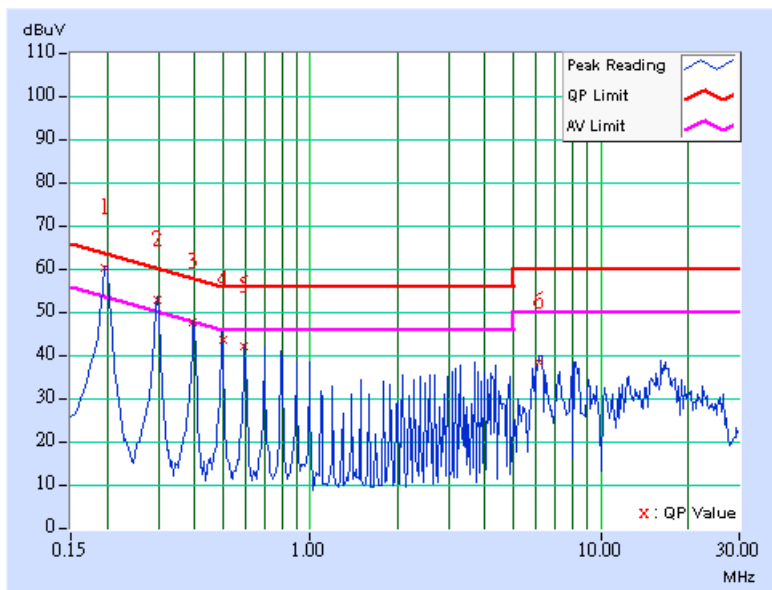


5.1.7 TEST RESULTS

<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
		<b>6dB BANDWIDTH</b>	9 kHz
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>PHASE</b>	Line (L)
<b>ENVIRONMENTAL CONDITIONS</b>	25deg. C, 60%RH, 991hPa	<b>TESTED BY:</b> Gary Chang	

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.197	0.12	59.96	48.12	60.08	48.24	63.74
2	0.298	0.12	52.82	40.39	52.94	40.51	60.29	50.29	-7.34	-9.77
3	0.396	0.13	47.36	-	47.49	-	57.93	47.93	-10.45	-
4	0.499	0.13	43.42	-	43.55	-	56.02	46.02	-12.47	-
5	0.595	0.13	41.82	-	41.95	-	56.00	46.00	-14.05	-
6	6.148	0.27	38.25	-	38.52	-	60.00	50.00	-21.48	-

- 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.

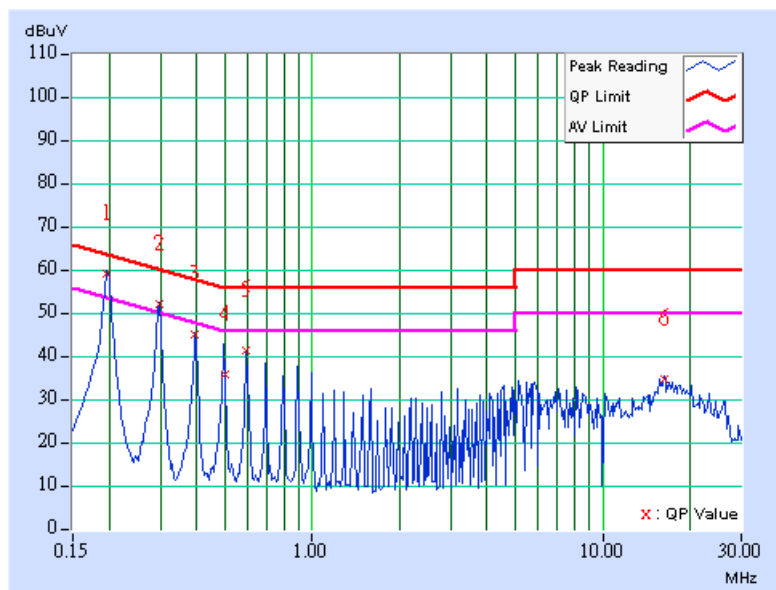




<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
		<b>6dB BANDWIDTH</b>	9 kHz
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>PHASE</b>	Neutral (N)
<b>ENVIRONMENTAL CONDITIONS</b>	25deg. C, 60%RH, 991hPa	<b>TESTED BY:</b> Gary Chang	

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.197	0.11	58.78	46.58	58.89	46.69	63.74	53.74	-4.85	-7.05
2	0.298	0.11	51.46	38.58	51.57	38.69	60.29	50.29	-8.71	-11.59
3	0.396	0.12	44.58	-	44.70	-	57.93	47.93	-13.24	-
4	0.500	0.12	35.32	-	35.44	-	56.00	46.00	-20.56	-
5	0.595	0.12	40.94	-	41.06	-	56.00	46.00	-14.94	-
6	16.240	0.66	34.14	-	34.80	-	60.00	50.00	-25.20	-

- 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 (dB $\mu$ V/m) *note 3
5150~5250	-27	68.3
5250~5350	-27	68.3
5725~5825	-27 *note 1	68.3
	-17 *note 2	78.3

**NOTE:**

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

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





## 5.2.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
* HP Spectrum Analyzer	8593E	3911A07465	Jul. 7, 2004
* HP Preamplifier	8447D	2432A03504	Jun. 10, 2004
* HP Preamplifier	8449B	3008A01292	Aug. 11, 2004
SCHAFFNER Tunable Dipole Antenna	VHBA 9123	459	Jun. 26, 2004
SCHWARZBECK Tunable Dipole Antenna	UHA 9105	977	
* ROHDE & SCHWARZ Test Receiver	ESI7	838496/016	Feb. 08, 2005
* Schwarzbeck Antenna	VULB9168	137	Feb. 27, 2005
* SCHWARZBECK Horn Antenna	BBHA9120-D1	D130	Jun. 30, 2004
* ADT. Turn Table	TT100	0306	NA
* ADT. Tower	AT100	0306	NA
* Software	ADT_Radiated_V5.14	NA	NA
* TIMES RF cable	LL142	CABLE-CH6-01	Apr. 30, 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 Chamber No. 6.



#### 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.

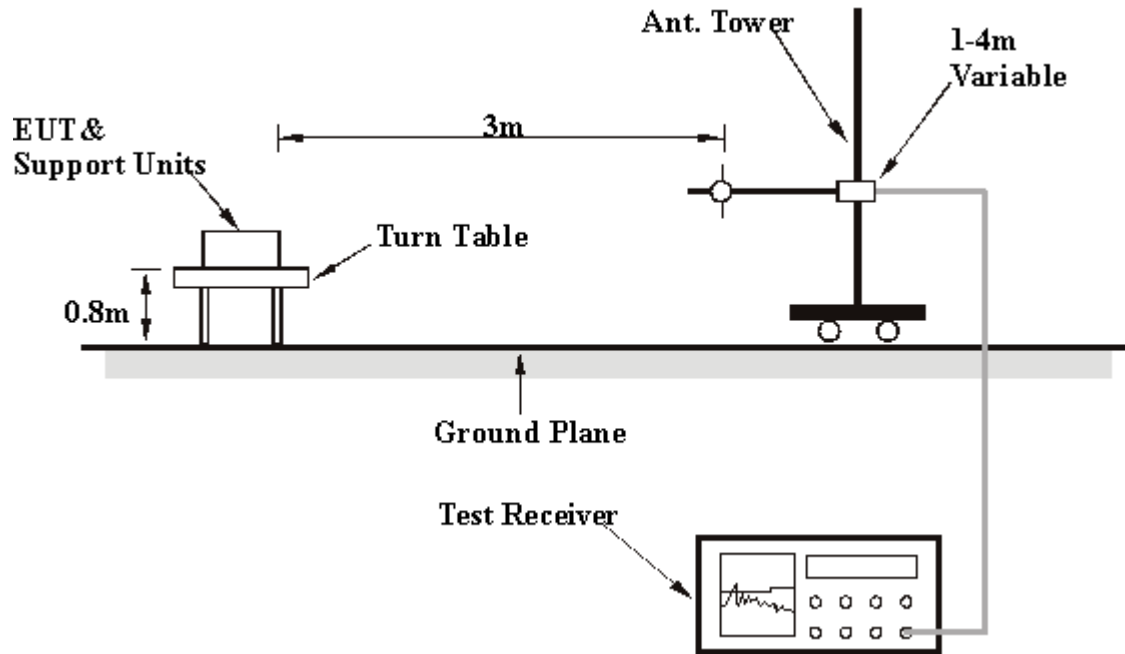
**NOTE:**

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

<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>CHANNEL</b>	Channel 11	<b>FREQUENCY RANGE</b>	Below 1000MHz
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Quasi-Peak
<b>ENVIRONMENTAL CONDITIONS</b>	25deg. C, 60%RH, 991hPa	<b>TESTED BY:</b> Gary Chang	

**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	123.31	40.99 QP	43.50	-2.51	1.75 H	238	27.87	13.12
2	218.56	35.06 QP	46.00	-10.94	1.00 H	244	23.01	12.06
<b>3</b>	<b>250.00</b>	<b>44.61 QP</b>	<b>46.00</b>	<b>-1.39</b>	<b>1.00 H</b>	<b>155</b>	<b>31.50</b>	<b>13.11</b>
4	374.07	42.74 QP	46.00	-3.26	1.00 H	97	26.63	16.10
5	405.17	35.14 QP	46.00	-10.86	1.00 H	181	18.28	16.86
6	500.42	42.92 QP	46.00	-3.08	1.75 H	196	24.34	18.58
7	550.96	36.40 QP	46.00	-9.60	1.25 H	208	16.92	19.49
8	624.83	39.14 QP	46.00	-6.86	1.25 H	298	18.00	21.15
9	675.37	37.13 QP	46.00	-8.87	1.00 H	250	15.39	21.74
10	751.18	40.42 QP	46.00	-5.58	1.00 H	202	17.18	23.25
11	904.75	38.51 QP	46.00	-7.49	1.00 H	31	13.65	24.86

**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	55.27	35.10 QP	40.00	-4.90	1.00 V	343	21.02	14.08
2	123.31	36.89 QP	43.50	-6.61	1.50 V	280	23.76	13.12
3	249.66	40.42 QP	46.00	-5.58	1.75 V	241	27.31	13.11
4	331.30	36.57 QP	46.00	-9.43	1.50 V	184	21.46	15.10
5	374.07	44.53 QP	46.00	-1.47	1.50 V	199	28.43	16.10
6	500.00	44.24 QP	46.00	-1.76	1.00 V	155	25.67	18.57
7	550.96	36.79 QP	46.00	-9.21	1.00 V	10	17.30	19.49
8	624.83	38.80 QP	46.00	-7.20	1.50 V	205	17.65	21.15
9	675.37	37.84 QP	46.00	-8.16	1.50 V	304	16.09	21.74
10	751.18	37.39 QP	46.00	-8.61	2.00 V	343	14.15	23.25

- 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



<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>MODE</b>	Normal Mode	<b>CHANNEL</b>	1
<b>FREQUENCY RANGE</b>	1 ~ 40 GHz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	25deg. C, 60%RH, 991hPa	<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz
<b>TESTED BY</b>	Gary Chang		

### 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	#1100.00	46.20 PK	74.00	-27.80	1.12 H	44	18.33	27.87
2	3453.30	47.20 PK	68.30	-21.10	1.62 H	85	12.63	34.57
3	#5150.00	59.87 PK	74.00	-14.13	1.16 H	62	20.87	39.00
3	#5150.00	48.30 AV	54.00	-5.70	1.16 H	62	9.30	39.00
4	*5180.00	107.74 PK			1.16 H	62	68.69	39.05
4	*5180.00	97.03 AV			1.16 H	62	57.98	39.05
5	10360.00	65.57 PK	68.30	-2.73	1.64 H	98	16.98	48.59

### 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	#1325.00	45.10 PK	74.00	-28.90	1.62 V	34	16.36	28.74
2	3453.30	45.10 PK	68.30	-23.20	1.85 V	74	10.53	34.57
3	#5150.00	57.60 PK	74.00	-16.40	1.54 V	28	18.60	39.00
3	#5150.00	49.00 AV	54.00	-5.00	1.54 V	28	10.00	39.00
4	*5180.00	106.83 PK			1.54 V	28	67.78	39.05
4	*5180.00	95.54 AV			1.54 V	28	56.49	39.05
5	10360.00	66.55 PK	68.30	-1.75	1.01 V	27	17.96	48.59

#### 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.



<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>MODE</b>	Normal Mode	<b>CHANNEL</b>	4
<b>FREQUENCY RANGE</b>	1 ~ 40 GHz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	25deg. C, 60%RH, 991hPa	<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz
<b>TESTED BY</b>	Gary Chang		

#### 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	1752.00	45.70 PK	68.30	-22.60	1.62 H	34	16.65	29.05
2	3492.80	46.10 PK	68.30	-22.20	1.12 H	332	11.52	34.58
3	*5240.00	107.04 PK			1.13 H	65	67.94	39.10
3	*5240.00	96.60 AV			1.13 H	65	57.50	39.10
4	10480.00	65.67 PK	68.30	-2.63	1.52 H	94	17.44	48.23

#### ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB)
1	#1131.00	46.10 PK	74.00	-27.90	1.52 V	34	18.18	27.92
2	3505.00	47.80 PK	68.30	-20.50	1.52 V	274	13.20	34.60
3	*5240.00	107.95 PK			1.28 V	55	68.84	39.11
3	*5240.00	96.17 AV			1.28 V	55	57.06	39.11
4	10520.00	66.06 PK	68.30	-2.24	1.85 V	102	17.96	48.10

#### 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.



<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>MODE</b>	Normal Mode	<b>CHANNEL</b>	5
<b>FREQUENCY RANGE</b>	1 ~ 40 GHz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	25deg. C, 60%RH, 991hPa	<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz
<b>TESTED BY</b>	Gary Chang		

#### 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	1751.00	43.80 PK	68.30	-24.50	1.36 H	274	14.75	29.05
2	3505.00	44.80 PK	68.30	-23.50	1.12 H	51	10.20	34.60
3	*5260.00	111.65 PK			1.14 H	85	72.54	39.11
3	*5260.00	99.93 AV			1.14 H	85	60.82	39.11
4	10520.00	66.31 PK	68.30	-1.99	1.85 H	102	18.21	48.10

#### ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB)
1	#1131.00	46.10 PK	74.00	-27.90	1.52 V	34	18.18	27.92
2	3505.00	47.80 PK	68.30	-20.50	1.52 V	274	13.20	34.60
3	*5260.00	108.10 PK			1.28 V	55	68.99	39.11
3	*5260.00	96.17 AV			1.28 V	55	57.06	39.11
4	10520.00	66.06 PK	68.30	-2.24	1.85 V	102	17.96	48.10

#### 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.



<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>MODE</b>	Normal Mode	<b>CHANNEL</b>	8
<b>FREQUENCY RANGE</b>	1 ~ 40 GHz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	25deg. C, 60%RH, 991hPa	<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz
<b>TESTED BY</b>	Gary Chang		

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	#1104.00	45.80 PK	74.00	-28.20	1.41 H	34	17.92	27.88
2	3545.80	45.80 PK	68.30	-22.50	1.31 H	92	11.05	34.75
3	*5320.00	113.44 PK			1.21 H	312	74.33	39.11
3	*5320.00	102.44 AV			1.21 H	312	63.33	39.11
4	#5350.00	61.40 PK	74.00	-12.60	1.31 H	227	22.32	39.08
4	#5350.00	50.04 AV	54.00	-3.96	1.31 H	227	10.96	39.08
5	#10640.00	65.34 PK	74.00	-8.66	1.49 H	79	17.06	48.28
5	#10640.00	51.34 AV	54.00	-2.66	1.49 H	79	3.06	48.28

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	#1541.00	45.80 PK	74.00	-28.20	1.54 V	215	16.84	28.96
2	3545.00	48.10 PK	68.30	-20.20	1.61 V	91	13.35	34.75
3	*5320.00	108.47 PK			1.12 V	82	69.36	39.11
3	*5320.00	97.53 AV			1.12 V	82	58.42	39.11
4	#5350.00	58.58 PK	74.00	-15.42	1.12 V	82	19.50	39.08
4	#5350.00	47.64 AV	54.00	-6.36	1.12 V	82	8.56	39.08
5	#10640.00	64.50 PK	74.00	-9.50	1.31 V	56	16.22	48.28
5	#10640.00	51.70 AV	54.00	-2.30	1.31 V	56	3.42	48.28

**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.





<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>MODE</b>	Normal Mode	<b>CHANNEL</b>	9
<b>FREQUENCY RANGE</b>	1 ~ 40 GHz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	25deg. C, 60%RH, 991hPa	<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz
<b>TESTED BY</b>	Gary Chang		

#### 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	#1100.00	45.20 PK	74.00	-28.80	1.31 H	24	17.33	27.87
2	5725.00	77.50 PK	92.50	-15.00	1.31 H	24	37.61	39.89
2	5725.00	65.25 AV	81.15	-15.90	1.31 H	24	25.36	39.89
3	*5745.00	112.50 PK			1.31 H	24	72.50	40.00
3	*5745.00	101.15 AV			1.31 H	24	61.15	40.00
4	#11488.00	65.00 PK	74.00	-9.00	1.72 H	354	15.34	49.66
4	#11488.00	52.46 AV	54.00	-1.54	1.72 H	354	2.80	49.66

#### 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	#1315.00	46.00 PK	74.00	-28.00	1.15 V	236	17.32	28.68
2	5725.00	70.50 PK	85.47	-14.97	1.31 V	82	30.61	39.89
2	5725.00	58.53 AV	74.53	-16.00	1.31 V	82	18.64	39.89
3	*5745.00	105.47 PK			1.31 V	82	65.47	40.00
3	*5745.00	94.53 AV			1.31 V	82	54.53	40.00
4	#11488.00	64.00 PK	74.00	-10.00	1.18 V	112	14.34	49.66
4	#11488.00	51.48 AV	54.00	-2.52	1.18 V	112	1.82	49.66

#### 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



<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>MODE</b>	Normal Mode	<b>CHANNEL</b>	11
<b>FREQUENCY RANGE</b>	1 ~ 40 GHz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	25deg. C, 60%RH, 991hPa	<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz
<b>TESTED BY</b>	Gary Chang		

#### 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	1752.00	45.10 PK	93.75	-48.65	1.82 H	72	16.05	29.05
2	*5785.00	113.75 PK			1.35 H	62	73.55	40.20
2	*5785.00	102.80 AV			1.35 H	62	62.60	40.20
3	#11570.00	67.00 PK	74.00	-7.00	1.50 H	309	16.76	50.24
3	#11570.00	51.89 AV	54.00	-2.11	1.50 H	309	1.65	50.24

#### 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	1255.00	43.90 PK	88.60	-44.70	1.52 V	92	15.56	28.34
2	*5785.00	108.60 PK			1.13 V	66	68.40	40.20
2	*5785.00	97.41 AV			1.13 V	66	57.21	40.20
3	#11570.00	63.63 PK	74.00	-10.37	1.68 V	39	13.39	50.24
3	#11570.00	49.78 AV	54.00	-4.22	1.68 V	39	-0.46	50.24

#### 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



<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>MODE</b>	Normal Mode	<b>CHANNEL</b>	13
<b>FREQUENCY RANGE</b>	1 ~ 40 GHz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	25deg. C, 60%RH, 991hPa	<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz
<b>TESTED BY</b>	Gary Chang		

### 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	#1131.00	45.20 PK	74.00	-28.80	1.07 H	22	17.28	27.92
2	*5825.00	112.27 PK			1.31 H	81	71.98	40.29
2	*5825.00	101.18 AV			1.31 H	81	60.89	40.29
3	5850.00	69.00 PK	92.27	-23.27	1.31 H	81	28.70	40.30
3	5850.00	58.10 AV	81.18	-23.08	1.31 H	81	17.80	40.30
4	#11650.00	65.86 PK	74.00	-8.14	1.56 H	309	15.81	50.05
4	#11650.00	51.24 AV	54.00	-2.76	1.56 H	309	1.19	50.05

### 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	1252.00	47.20 PK	86.64	-39.44	1.08 V	34	18.88	28.32
2	*5825.00	106.84 PK			1.31 V	82	66.55	40.29
2	*5825.00	95.86 AV			1.31 V	82	55.57	40.29
3	5850.00	63.80 PK	86.84	-23.04	1.31 V	82	23.50	40.30
3	5850.00	52.80 AV	75.86	-23.06	1.31 V	82	12.50	40.30
4	#11650.00	61.67 PK	74.00	-12.33	1.67 V	46	11.62	50.05
4	#11650.00	49.28 AV	54.00	-4.72	1.67 V	46	-0.77	50.05

#### 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



<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>MODE</b>	Turbo Mode	<b>CHANNEL</b>	1
<b>FREQUENCY RANGE</b>	1 ~ 40 GHz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	25deg. C, 60%RH, 991hPa	<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz
<b>TESTED BY</b>	Gary Chang		

#### 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	#1224.00	45.70 PK	74.00	-28.30	1.13 H	34	17.54	28.16
2	3473.00	45.20 PK	68.30	-23.10	1.30 H	65	10.63	34.57
3	3473.00	46.70 PK	68.30	-21.60	1.12 H	150	12.13	34.57
4	#5150.00	60.00 PK	74.00	-14.00	1.31 H	26	21.00	39.00
4	#5150.00	51.40 AV	54.00	-2.60	1.31 H	26	12.40	39.00
5	*5210.00	106.67 PK			1.31 H	26	67.58	39.09
5	*5210.00	95.76 AV			1.31 H	26	56.67	39.09
6	10420.00	66.77 PK	68.30	-1.53	1.45 H	34	18.18	48.59

#### 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	#1121.00	44.70 PK	74.00	-29.30	1.08 V	264	16.80	27.90
2	3473.00	46.80 PK	68.30	-21.50	1.62 V	95	12.23	34.57
3	#5150.00	56.83 PK	74.00	-17.17	1.16 V	76	17.83	39.00
3	#5150.00	46.67 AV	54.00	-7.33	1.16 V	76	7.67	39.00
4	*5210.00	103.74 PK			1.16 V	76	64.65	39.09
4	*5210.00	92.31 AV			1.16 V	76	53.22	39.09
5	10420.00	66.93 PK	68.30	-1.37	1.49 V	84	18.34	48.59

#### 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.



<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>MODE</b>	Turbo Mode	<b>CHANNEL</b>	2
<b>FREQUENCY RANGE</b>	1 ~ 40 GHz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	25deg. C, 60%RH, 991hPa	<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz
<b>TESTED BY</b>	Gary Chang		

#### 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	#1572.00	45.10 PK	74.00	-28.90	1.07 H	181	16.23	28.87
2	3499.20	44.70 PK	68.30	-23.60	1.62 H	97	10.12	34.58
3	*5250.00	107.32 PK			1.31 H	230	68.21	39.11
3	*5250.00	95.23 AV			1.31 H	230	56.12	39.11
4	10500.00	64.70 PK	68.30	-3.60	1.14 H	98	16.59	48.11

#### ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB)
1	#1328.00	43.70 PK	74.00	-30.30	1.02 V	34	14.95	28.75
2	3499.20	47.50 PK	68.30	-20.80	1.32 V	62	12.92	34.58
3	*5250.00	102.22 PK			1.07 V	61	63.11	39.11
3	*5250.00	91.23 AV			1.07 V	61	52.12	39.11
4	10500.00	65.99 PK	68.30	-2.31	1.19 V	81	17.88	48.11

#### 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.



<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>MODE</b>	Turbo Mode	<b>CHANNEL</b>	3
<b>FREQUENCY RANGE</b>	1 ~ 40 GHz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	25deg. C, 60%RH, 991hPa	<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz
<b>TESTED BY</b>	Gary Chang		

#### 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	1252.00	45.00 PK	68.30	-23.30	1.08 H	33	16.68	28.32
2	3525.40	44.10 PK	68.30	-24.20	1.12 H	98	9.43	34.67
3	*5290.00	111.13 PK			1.31 H	62	72.01	39.12
3	*5290.00	101.35 AV			1.31 H	62	62.23	39.12
4	#5350.00	58.53 PK	74.00	-15.47	1.31 H	62	19.45	39.08
4	#5350.00	49.60 AV	54.00	-4.40	1.31 H	62	10.52	39.08
5	10580.00	65.51 PK	68.30	-2.79	1.44 H	90	17.42	48.09

#### 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	#1131.00	43.00 PK	74.00	-31.00	1.62 V	71	15.08	27.92
2	3525.40	46.00 PK	68.30	-22.30	1.65 V	66	11.33	34.67
3	*5290.00	110.27 PK			1.10 V	82	71.15	39.12
3	*5290.00	99.96 AV			1.10 V	82	60.84	39.12
4	#5350.00	56.67 PK	74.00	-17.33	1.31 V	305	17.59	39.08
4	#5350.00	46.90 AV	54.00	-7.10	1.31 V	305	7.82	39.08
5	10580.00	66.26 PK	68.30	-2.04	1.19 V	81	18.17	48.09

#### 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.



<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>MODE</b>	Turbo Mode	<b>CHANNEL</b>	4
<b>FREQUENCY RANGE</b>	1 ~40 GHz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	25deg. C, 60%RH, 991hPa	<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz
<b>TESTED BY</b>	Gary Chang		

### 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	#1104.00	45.80 PK	74.00	-28.20	1.31 H	38	17.92	27.88
2	5725.00	69.00 PK	85.20	-16.20	1.15 H	34	29.11	39.89
2	5725.00	58.00 AV	74.56	-16.56	1.15 H	34	18.11	39.89
3	*5760.00	105.20 PK			1.15 H	34	65.13	40.07
3	*5760.00	94.56 AV			1.15 H	34	54.49	40.07
4	#11520.00	63.04 PK	74.00	-10.96	1.35 H	27	13.15	49.89
4	#11520.00	51.09 AV	54.00	-2.91	1.35 H	27	1.20	49.89

### 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	#1352.00	45.10 PK	74.00	-28.90	1.82 V	77	16.22	28.88
2	5725.00	74.10 PK	90.75	-16.65	1.21 V	34	34.21	39.89
2	5725.00	63.40 AV	79.91	-16.51	1.21 V	34	23.51	39.89
3	*5760.00	110.75 PK			1.21 V	34	70.68	40.07
3	*5760.00	99.91 AV			1.21 V	34	59.84	40.07
4	#11520.00	60.48 PK	74.00	-13.52	1.77 V	328	10.59	49.89
4	#11520.00	47.59 AV	54.00	-6.41	1.77 V	328	-2.30	49.89

#### 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



<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>MODE</b>	Turbo Mode	<b>CHANNEL</b>	5
<b>FREQUENCY RANGE</b>	1 ~ 40 GHz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	25deg. C, 60%RH, 991hPa	<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz
<b>TESTED BY</b>	Gary Chang		

### 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	#1205.00	45.10 PK	74.00	-28.90	1.30 H	104	17.05	28.05
2	*5800.00	109.84 PK			1.12 H	34	69.56	40.28
2	*5800.00	98.91 AV			1.12 H	34	58.63	40.28
3	5850.00	64.00 PK	89.84	-25.84	1.12 H	34	23.70	40.30
3	5850.00	53.00 AV	78.91	-25.91	1.12 H	34	12.70	40.30
4	#11600.00	63.40 PK	74.00	-10.60	1.54 H	210	12.95	50.45
4	#11600.00	51.40 AV	54.00	-2.60	1.54 H	210	0.95	50.45

### 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	#1131.00	45.10 PK	74.00	-28.90	1.07 V	186	17.18	27.92
2	*5800.00	104.32 PK			1.27 V	85	64.04	40.28
2	*5800.00	93.54 AV			1.27 V	85	53.26	40.28
3	5850.00	59.00 PK	84.32	-25.32	1.27 V	85	18.70	40.30
3	5850.00	48.00 AV	73.54	-25.54	1.27 V	85	7.70	40.30
4	#11600.00	62.58 PK	74.00	-11.42	1.55 V	88	12.13	50.45
4	#11600.00	49.45 AV	54.00	-4.55	1.55 V	88	-1.00	50.45

#### 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





## 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.



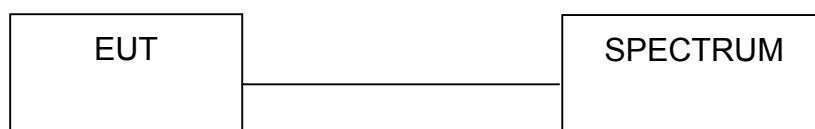
### 5.3.3 TEST PROCEDURE

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

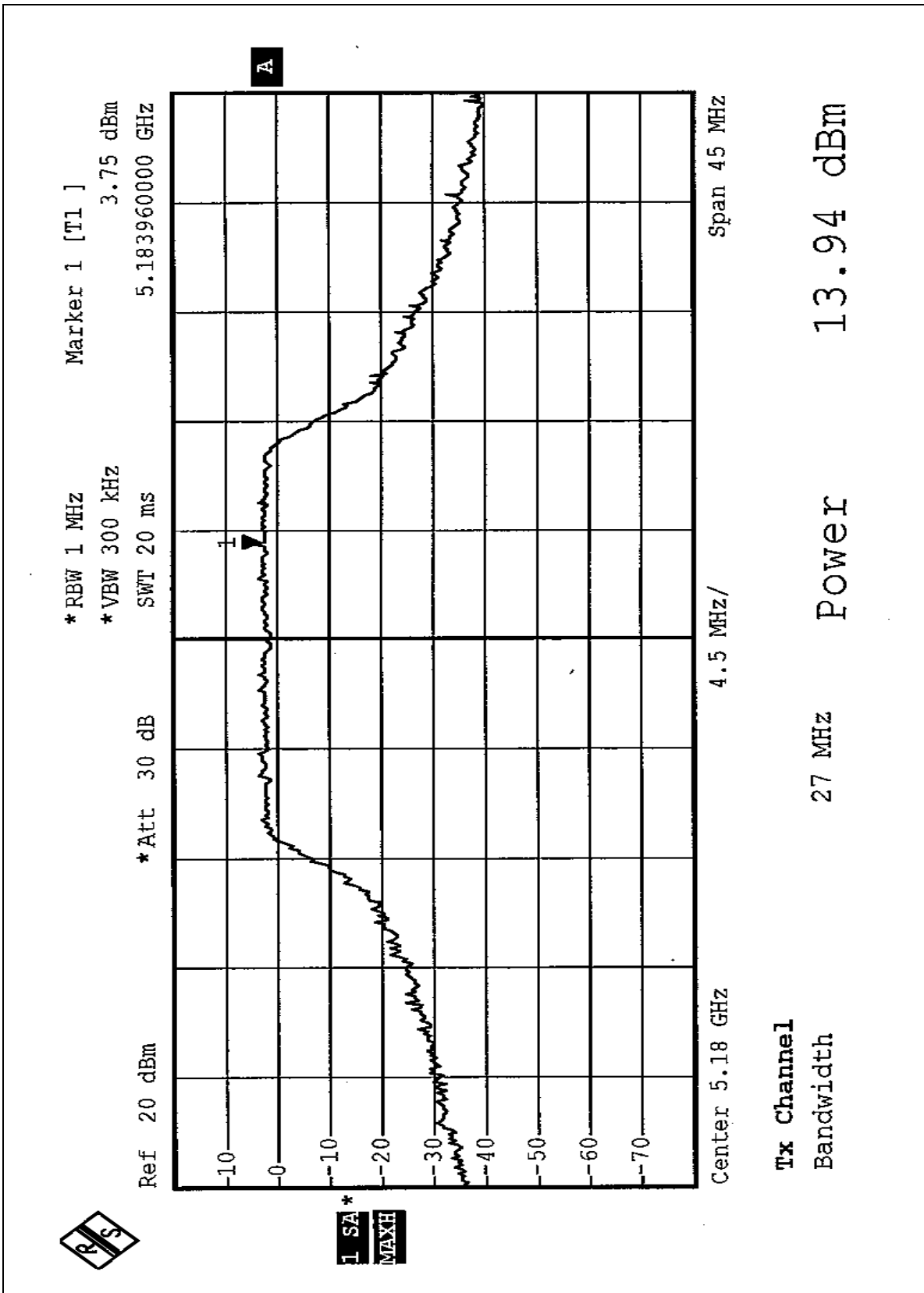
<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>MODE</b>	Normal	<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz
<b>ENVIRONMENTAL CONDITIONS</b>	25deg. C, 60%RH, 991hPa	<b>TESTED BY</b>	Gary Chang

<b>CHANNEL</b>	<b>CHANNEL FREQUENCY (MHz)</b>	<b>PEAK POWER OUTPUT (dBm)</b>	<b>PEAK POWER LIMIT (dBm)</b>	<b>26dBc Occupied Bandwidth (MHz)</b>	<b>PASS/FAIL</b>
1	5180	13.94	17.00	25.11	PASS
4	5240	14.02	17.00	25.56	PASS
5	5260	15.23	24.00	26.28	PASS
8	5320	18.06	24.00	24.84	PASS

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

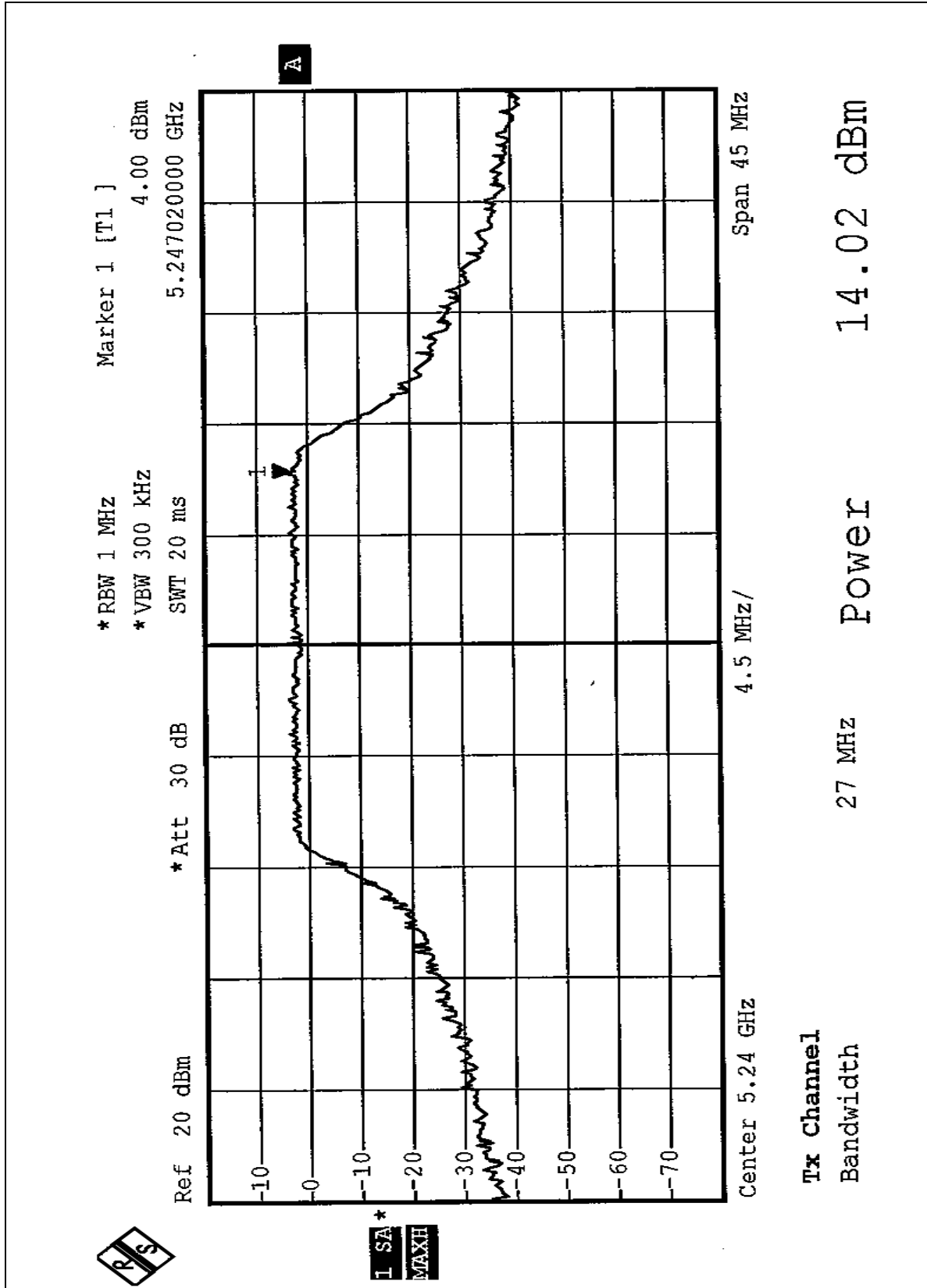


Peak Power Output:  
CH1



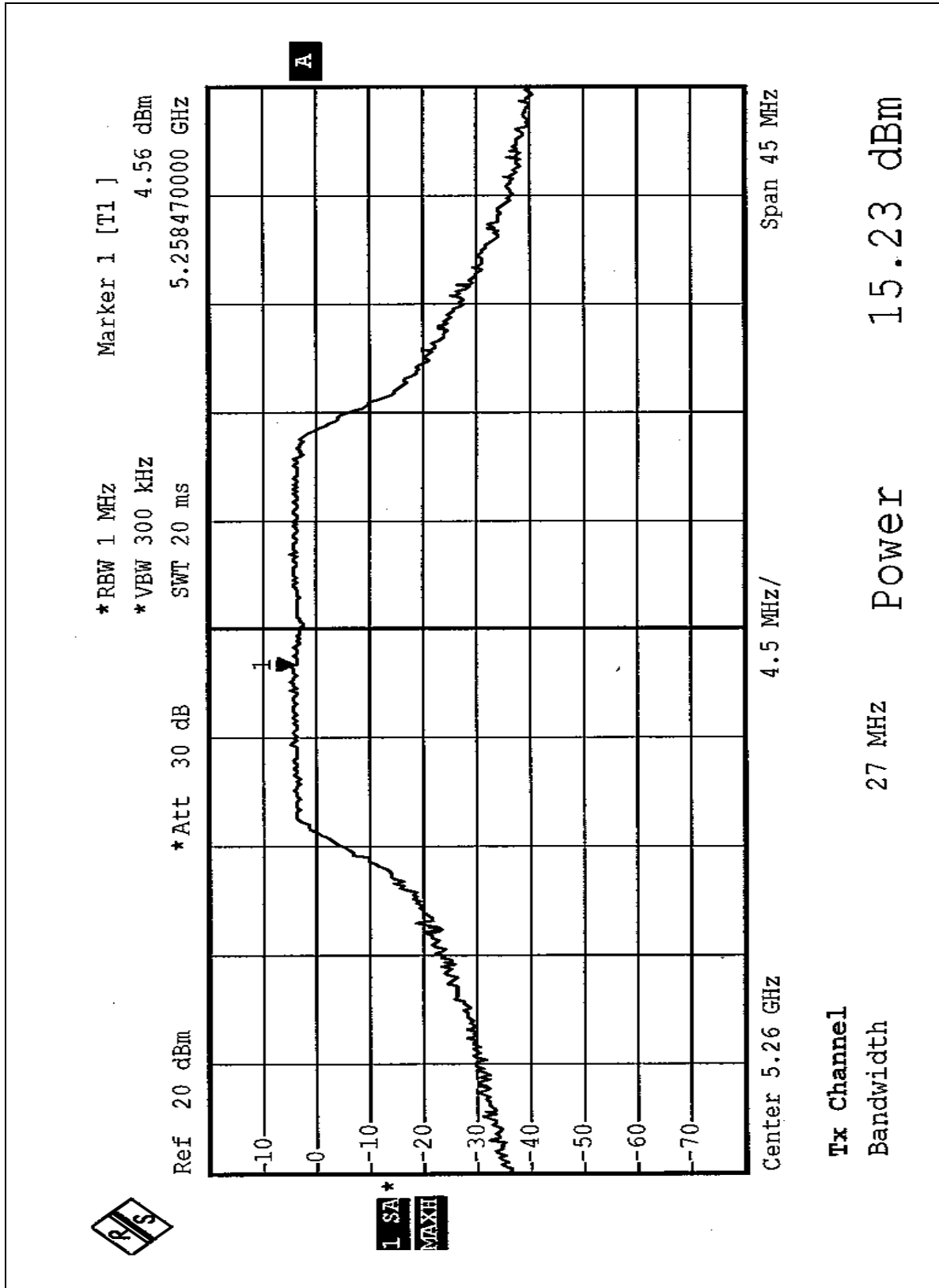


CH4



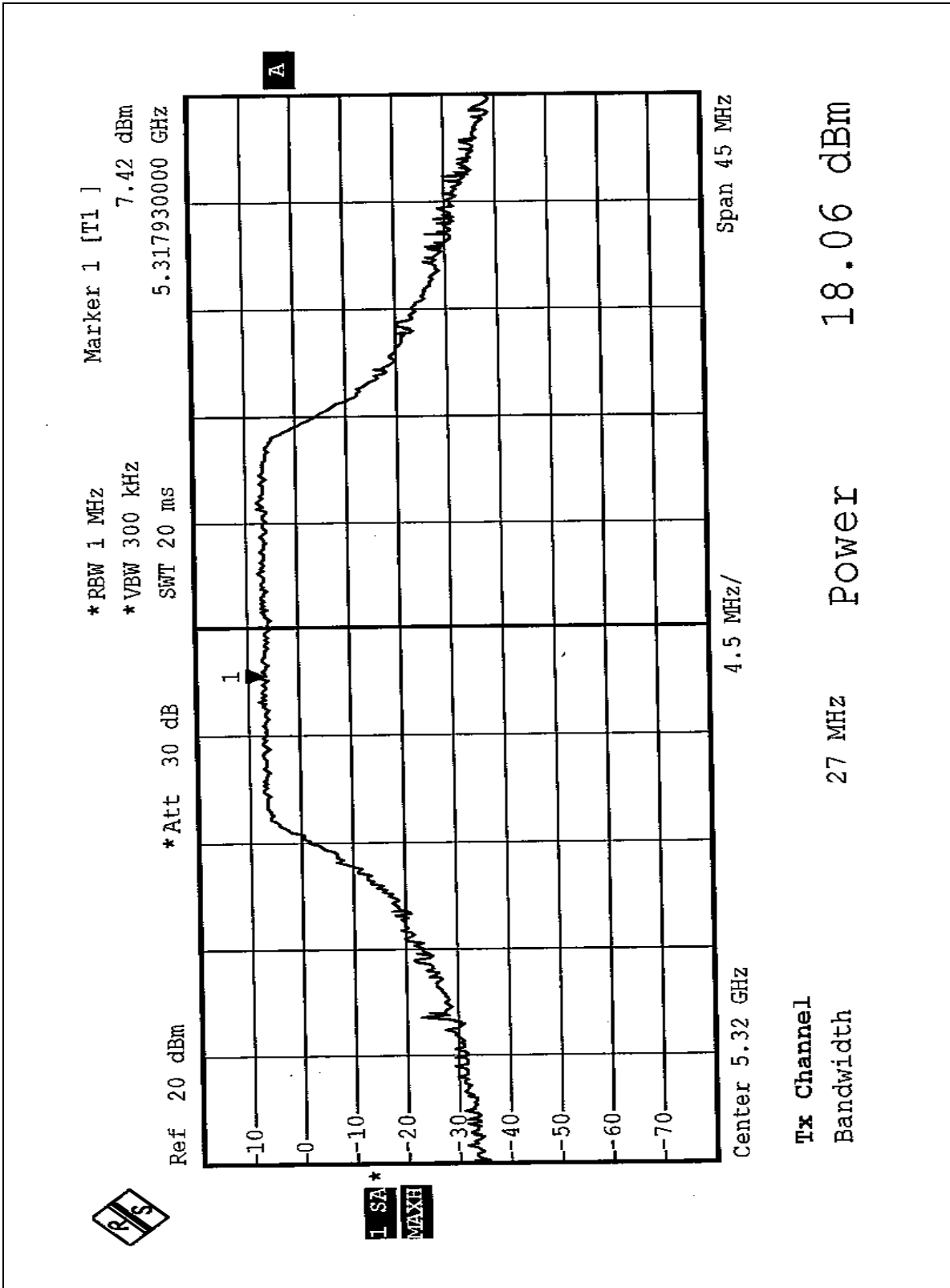


CH5



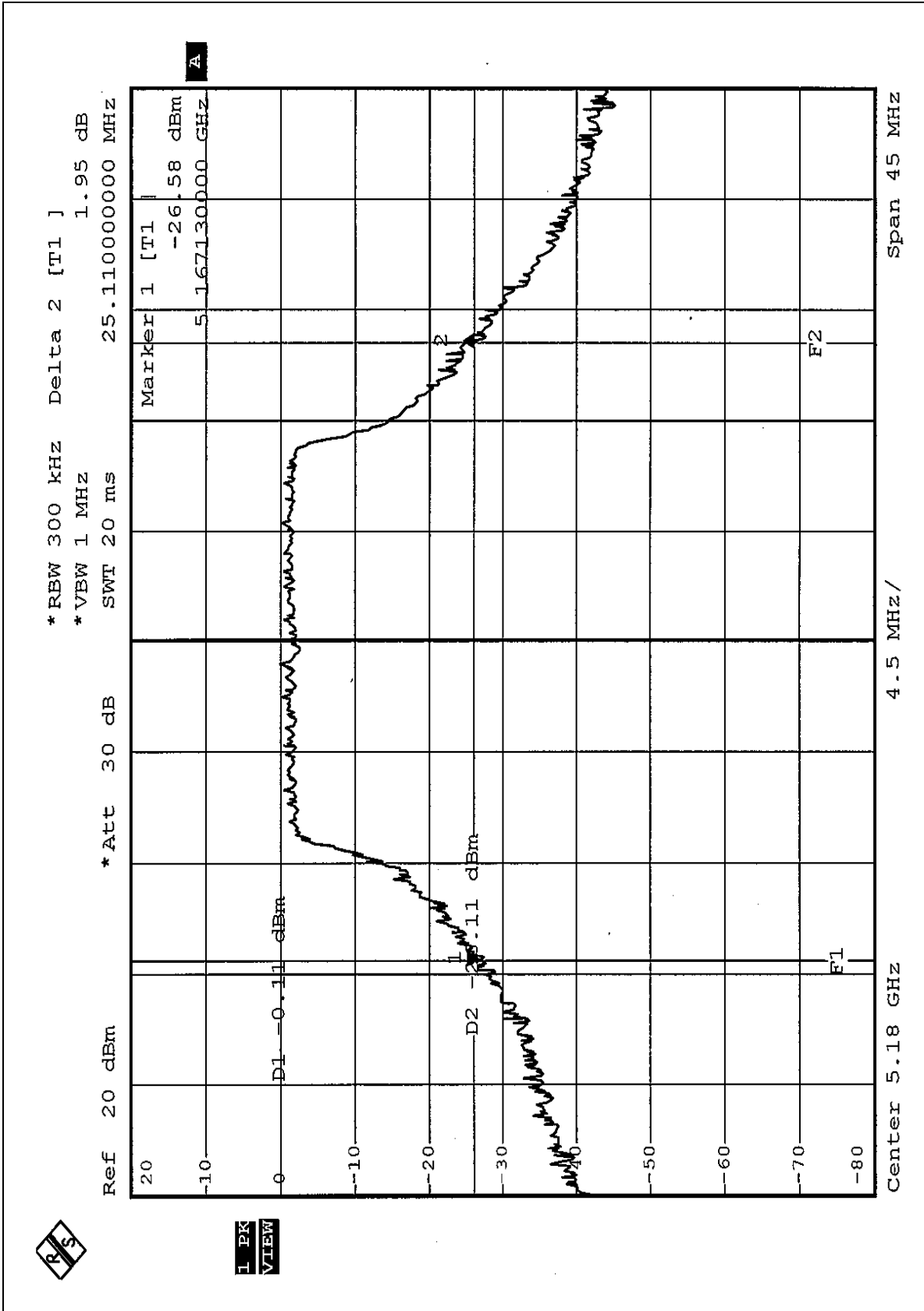


CH8





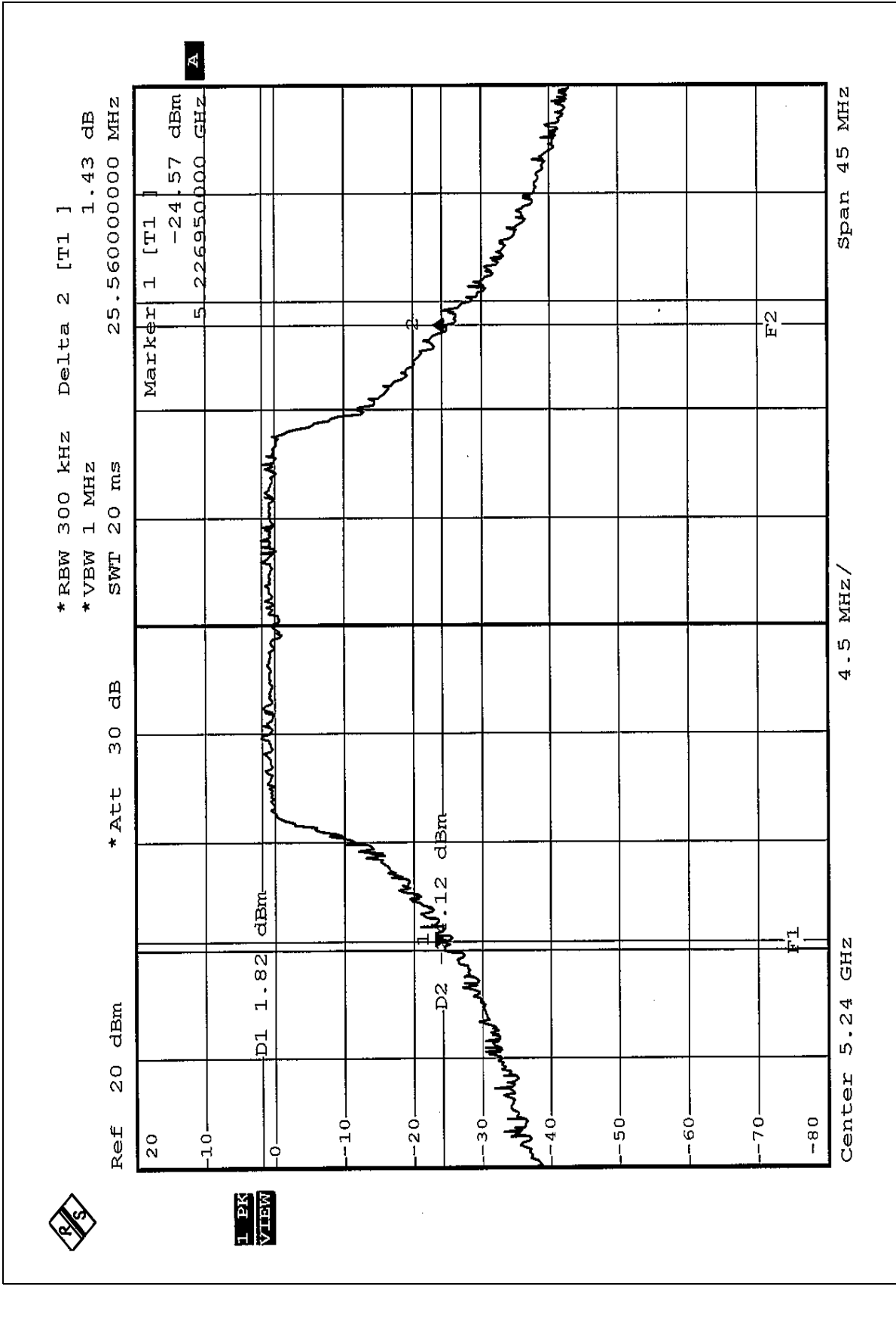
26dB Occupied Bandwidth:  
CH1





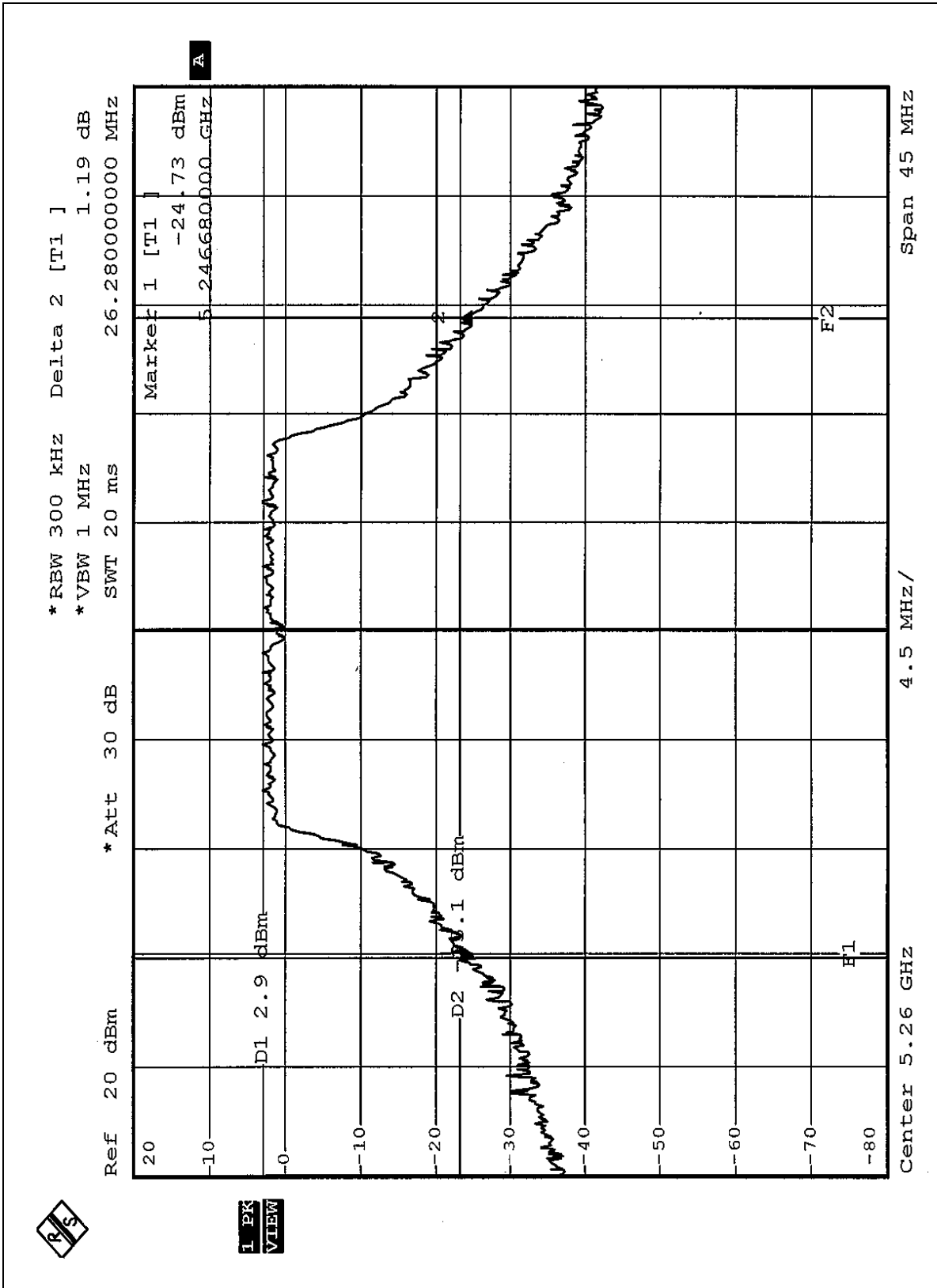


CH4



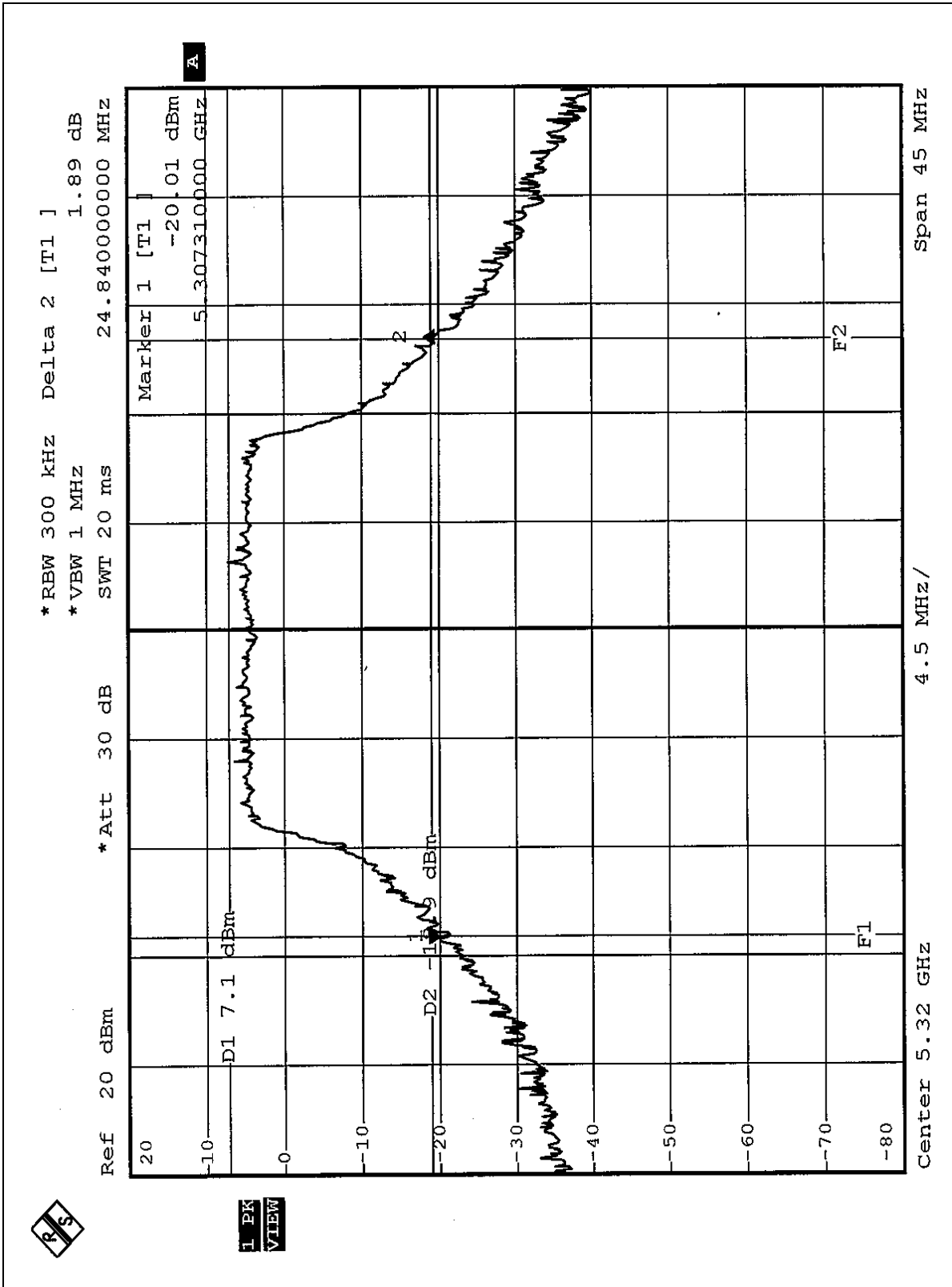


CH5





CH8





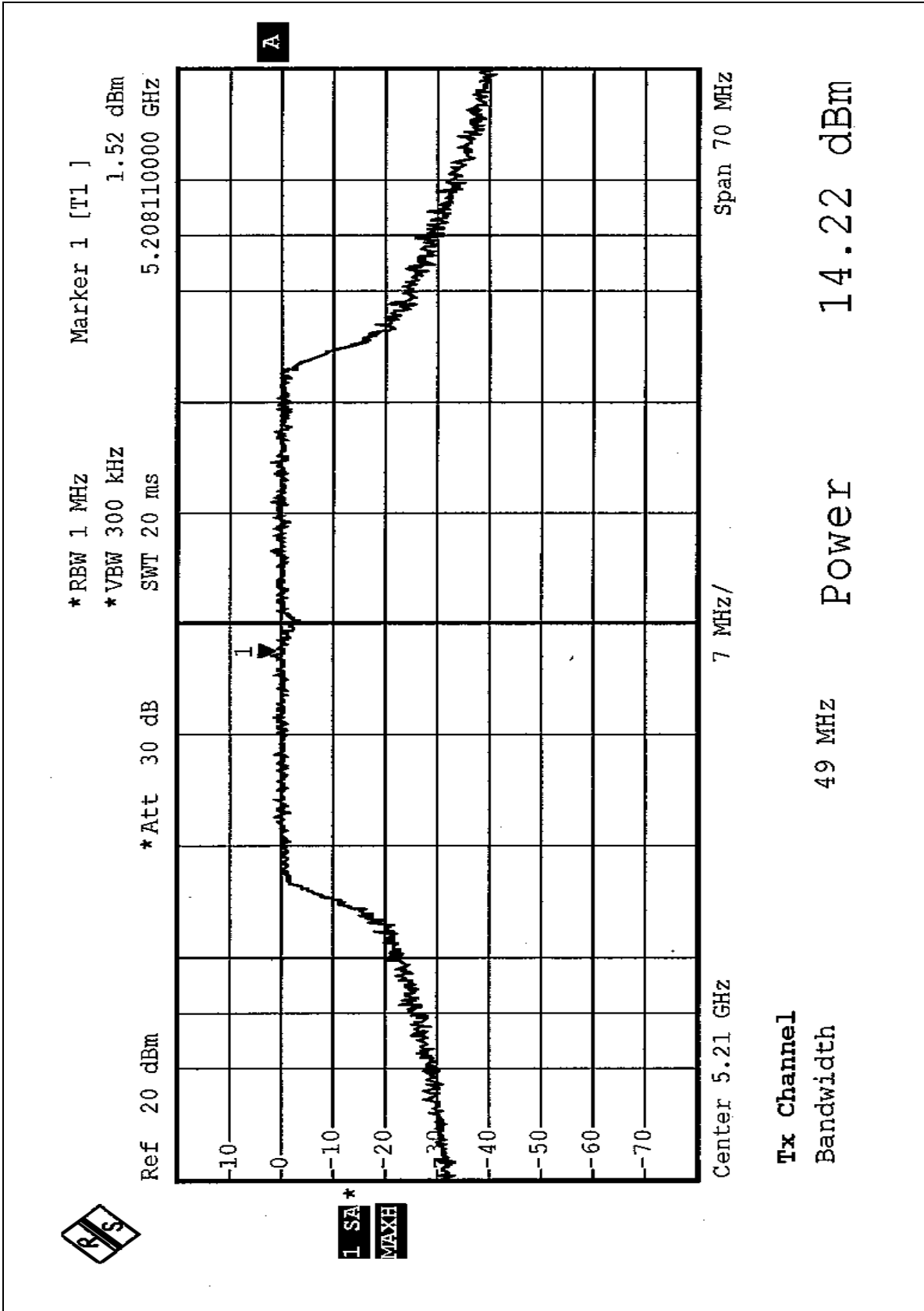
<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>MODE</b>	Turbo	<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz
<b>ENVIRONMENTAL CONDITIONS</b>	25deg. C, 60%RH, 991hPa	<b>TESTED BY</b>	Gary Chang

<b>CHANNEL</b>	<b>CHANNEL FREQUENCY (MHz)</b>	<b>PEAK POWER OUTPUT (dBm)</b>	<b>PEAK POWER LIMIT (dBm)</b>	<b>26dBc Occupied Bandwidth (MHz)</b>	<b>PASS/FAIL</b>
1	5210	14.22	17.00	48.16	PASS
2	5250	14.27	17.00	47.04	PASS
3	5290	18.73	24.00	48.16	PASS

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

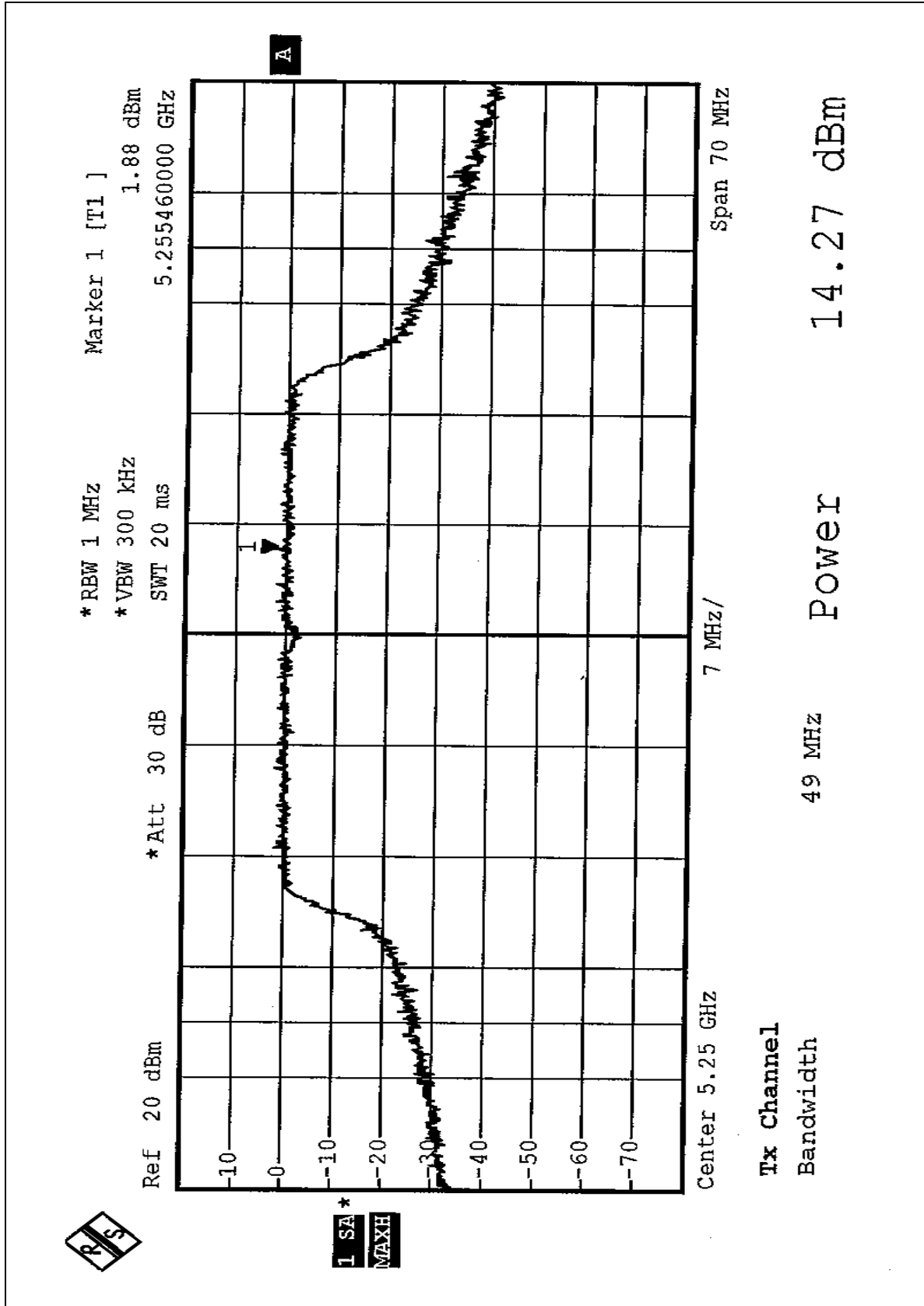


Peak Power Output:  
CH1



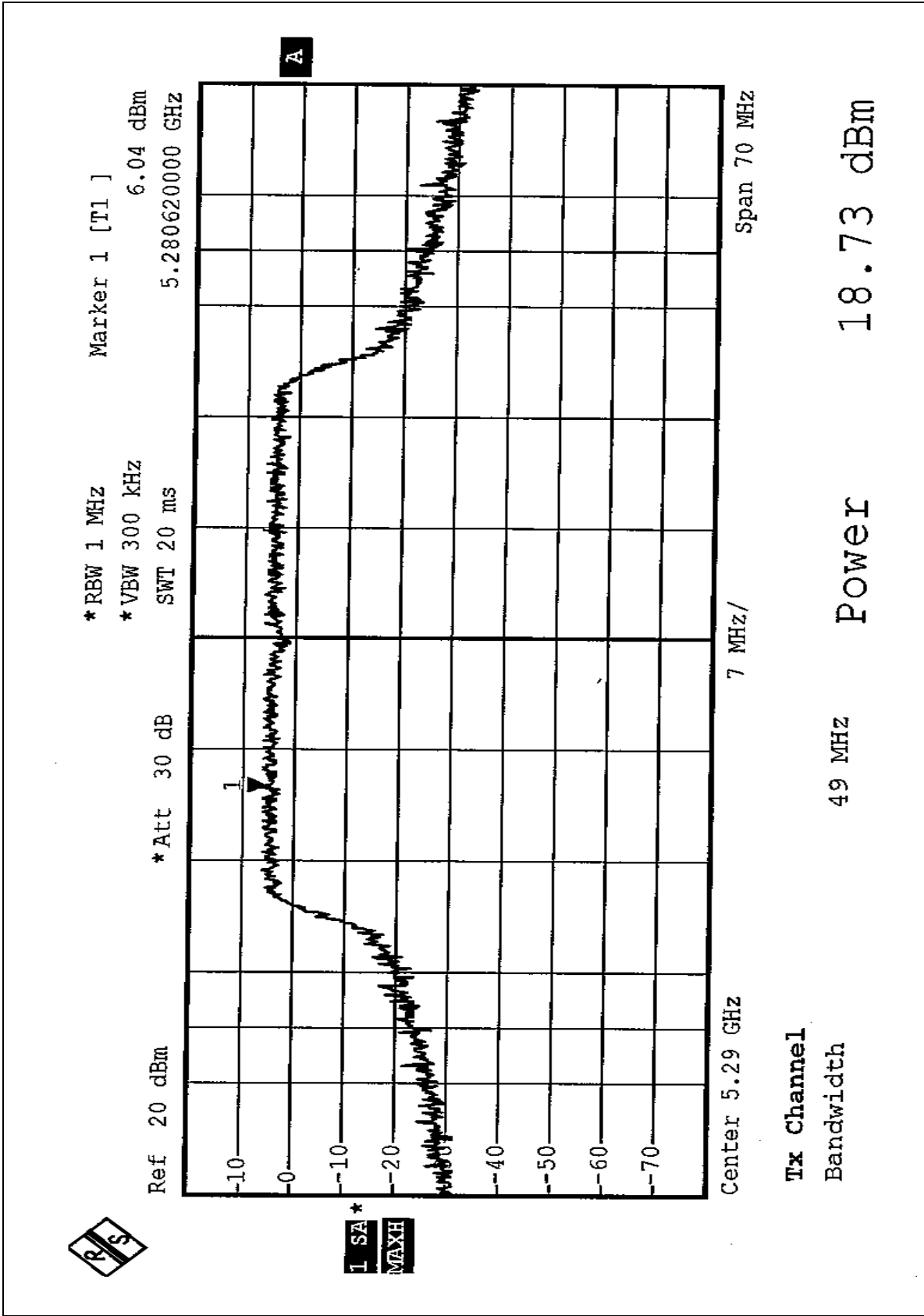


CH2



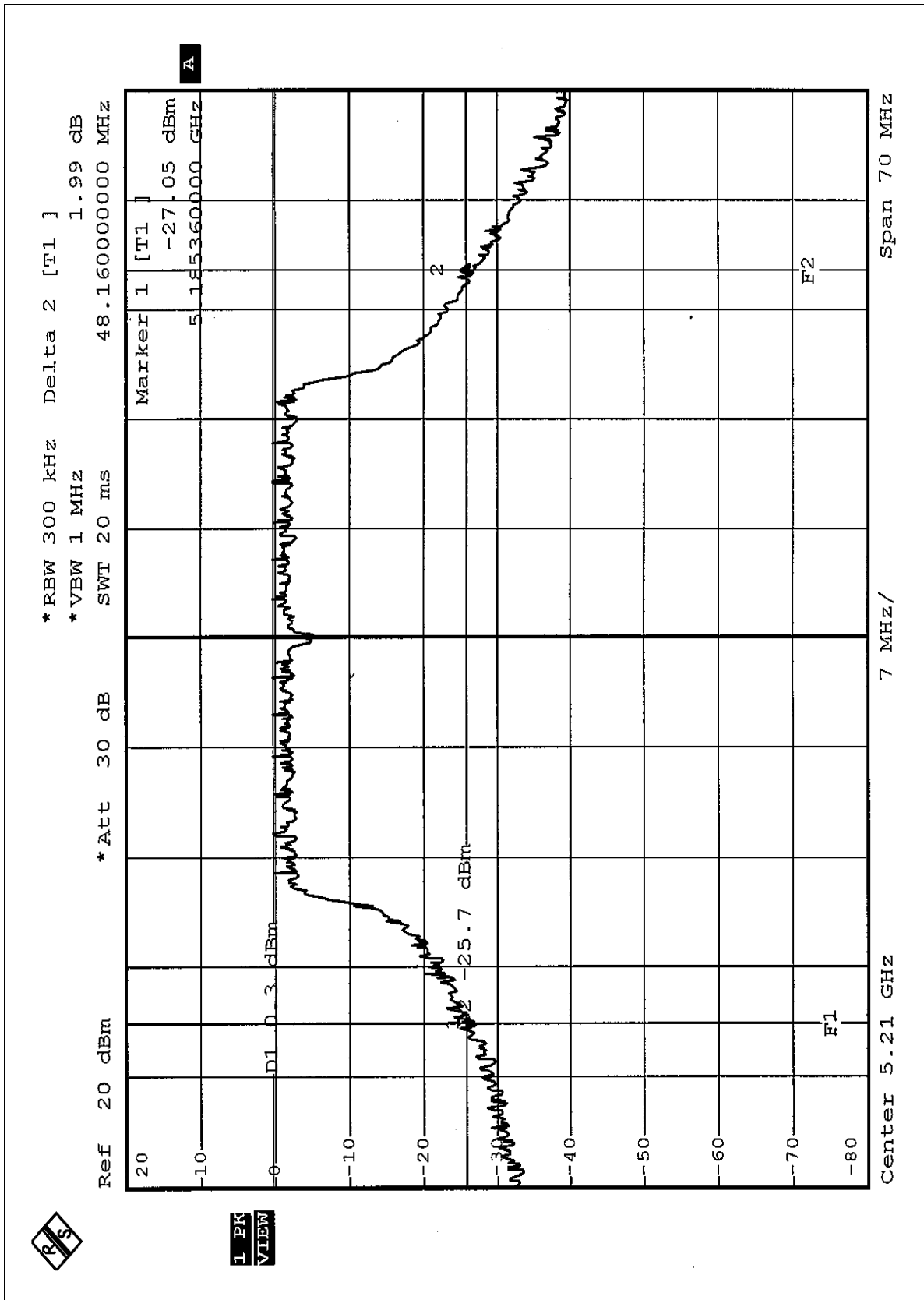


CH3





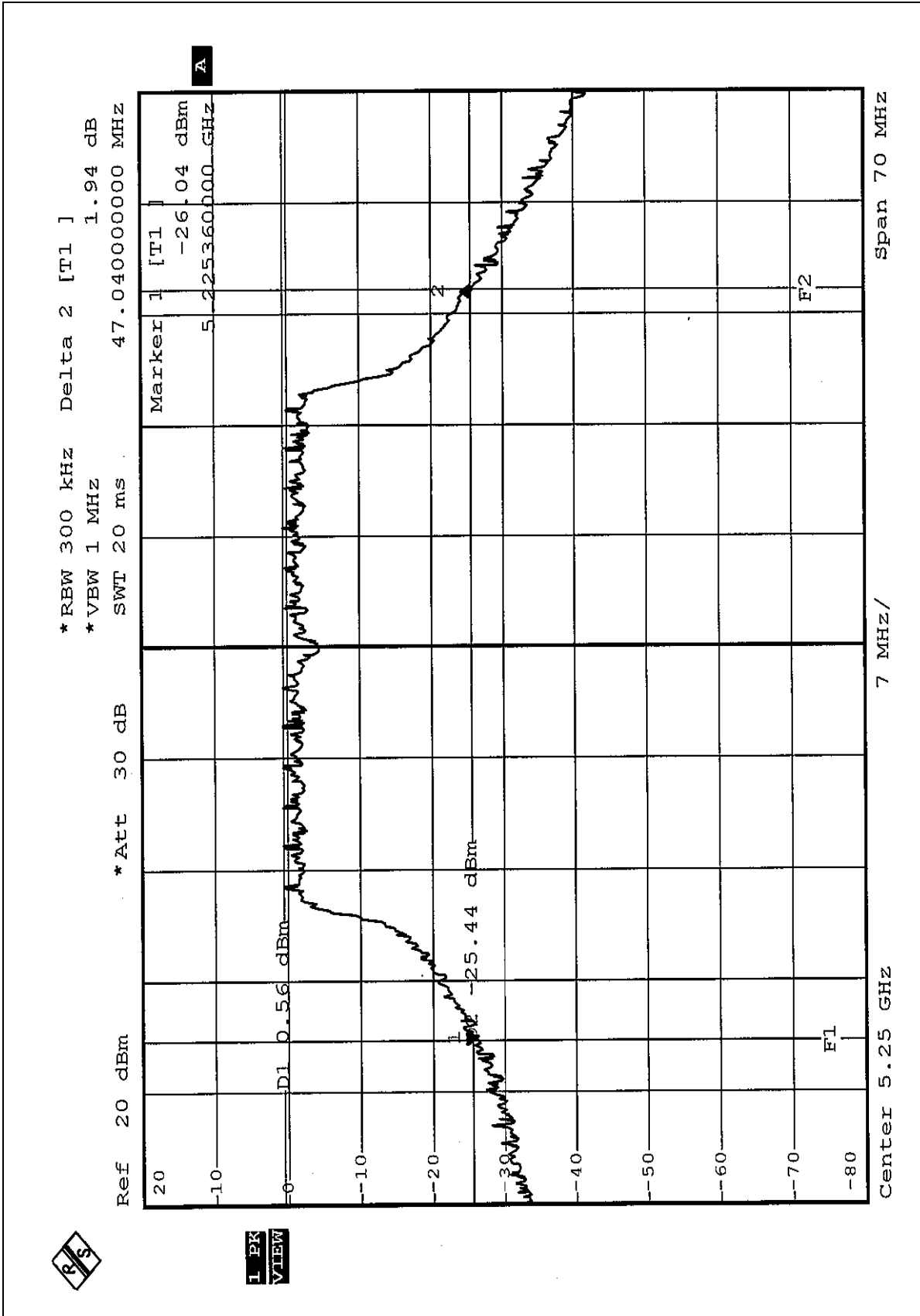
26dB Occupied Bandwidth:  
CH1







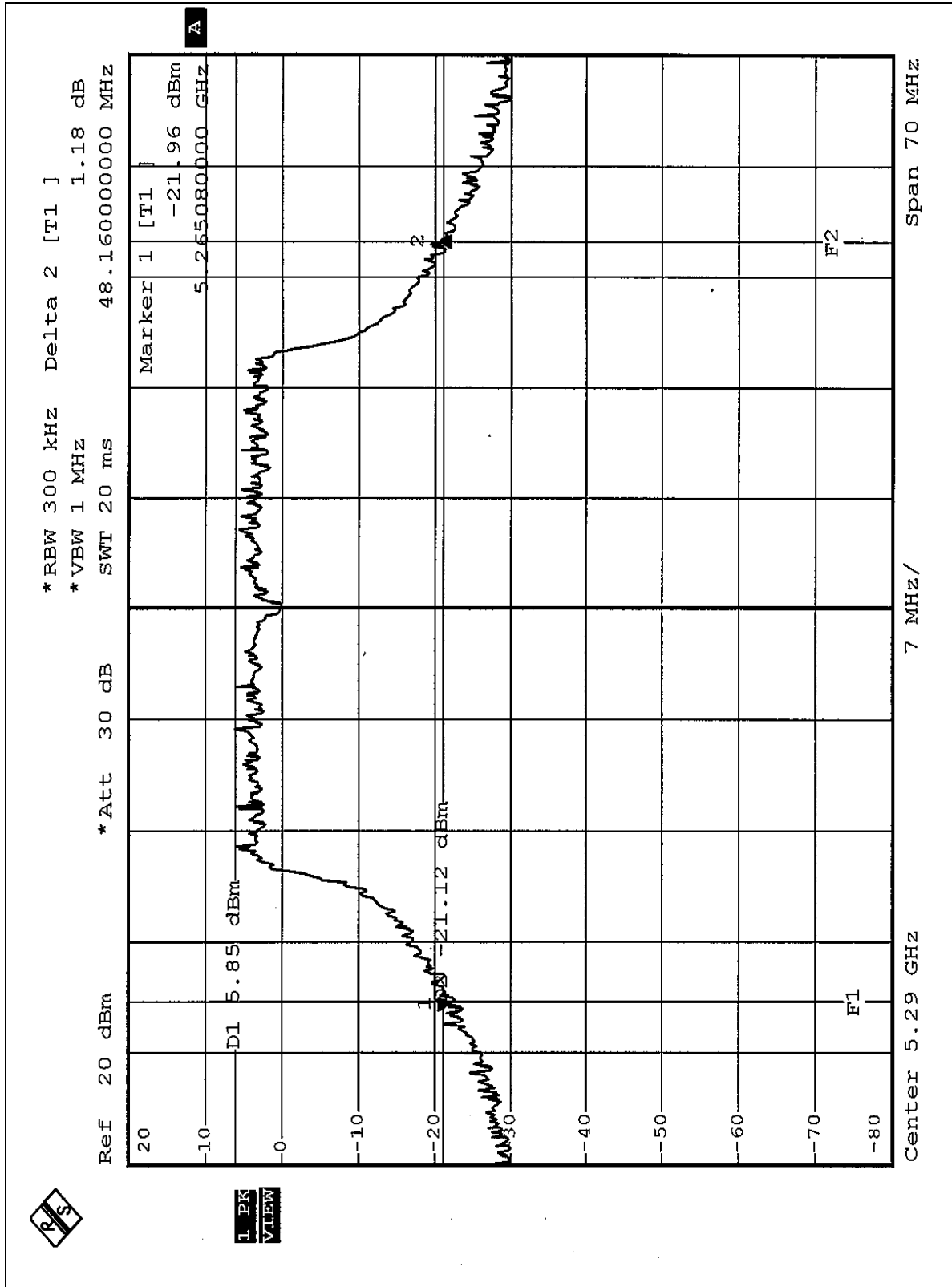
CH2



1 PK VIEW



CH3





## 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.



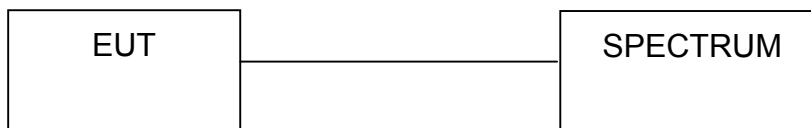
### 5.4.3 TEST PROCEDURE

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

### 5.4.4 DEVIATION FROM TEST STANDARD

No deviation

### 5.4.5 TEST SETUP



### 5.4.6 EUT OPERATING CONDITIONS

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



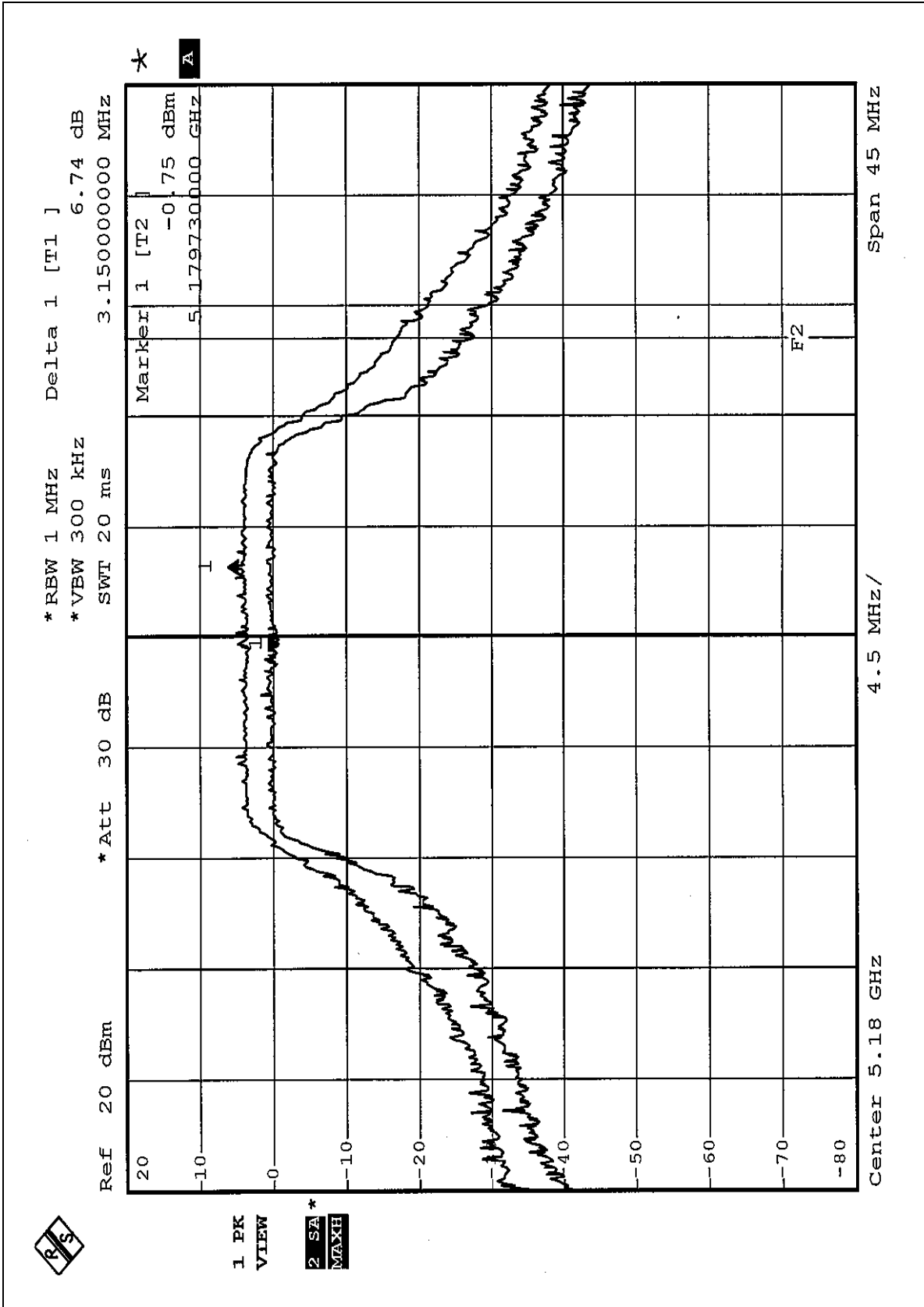
## 5.4.7 TEST RESULTS

<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>MODE</b>	Normal	<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz
<b>ENVIRONMENTAL CONDITIONS</b>	25deg. C, 60%RH, 991hPa	<b>TESTED BY</b>	Gary Chang

<b>CHANNEL</b>	<b>CHANNEL FREQUENCY (MHz)</b>	<b>PEAK POWER EXCURSION (dB)</b>	<b>PEAK to AVERAGE EXCURSION LIMIT (dB)</b>	<b>PASS/FAIL</b>
1	5180	6.74	13	PASS
4	5240	5.70	13	PASS
5	5260	5.83	13	PASS
8	5320	6.18	13	PASS

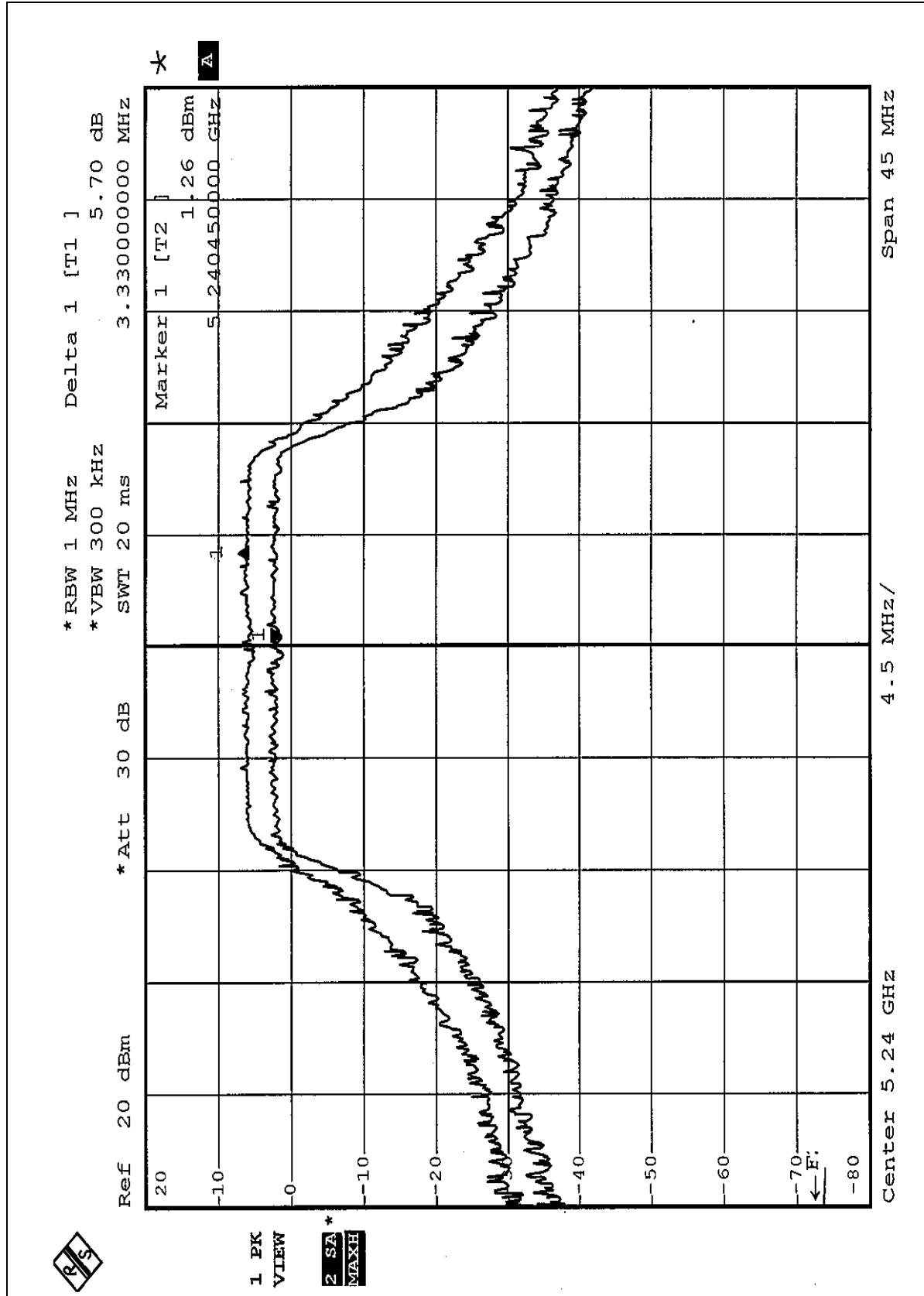


CH1



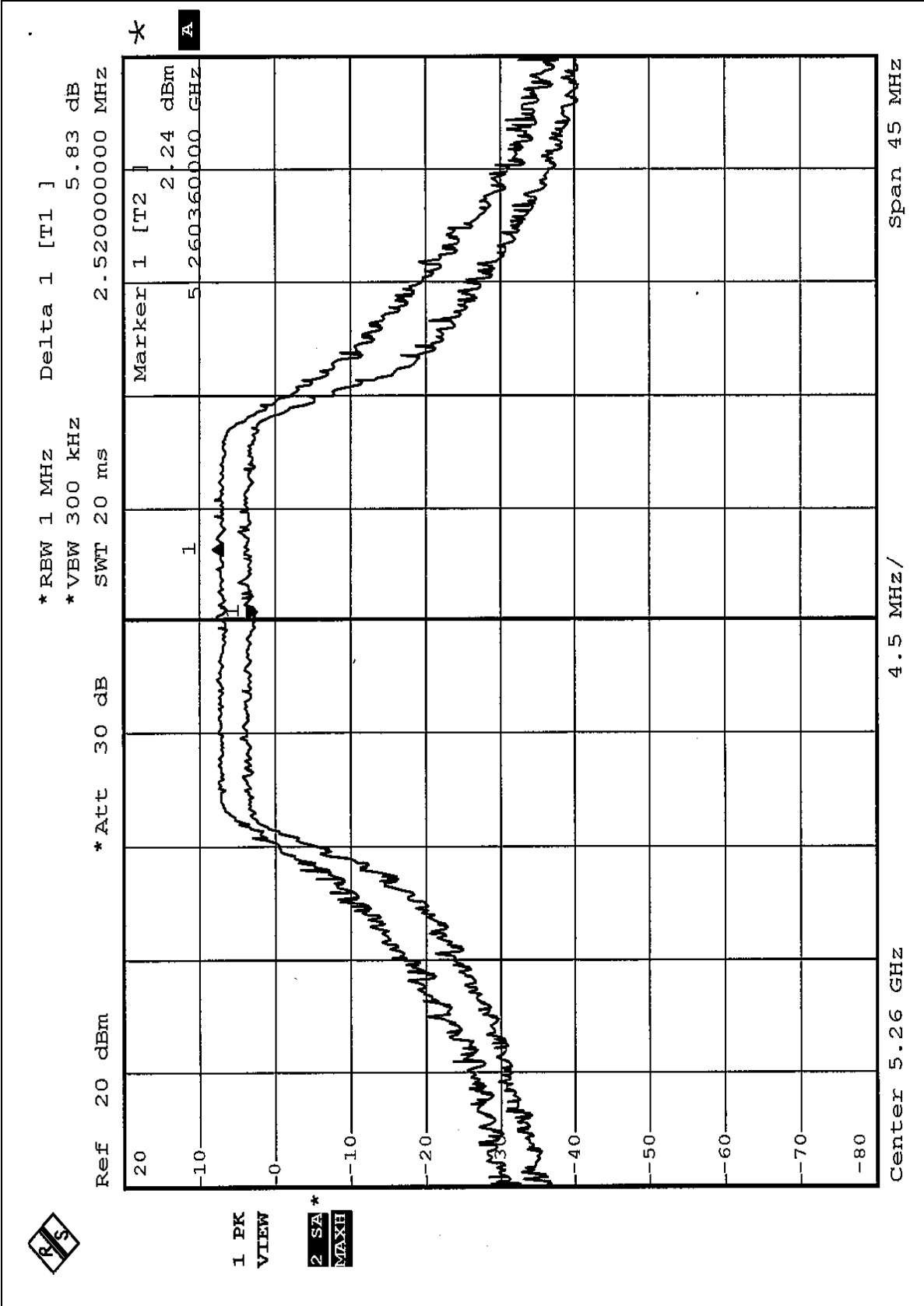


CH4





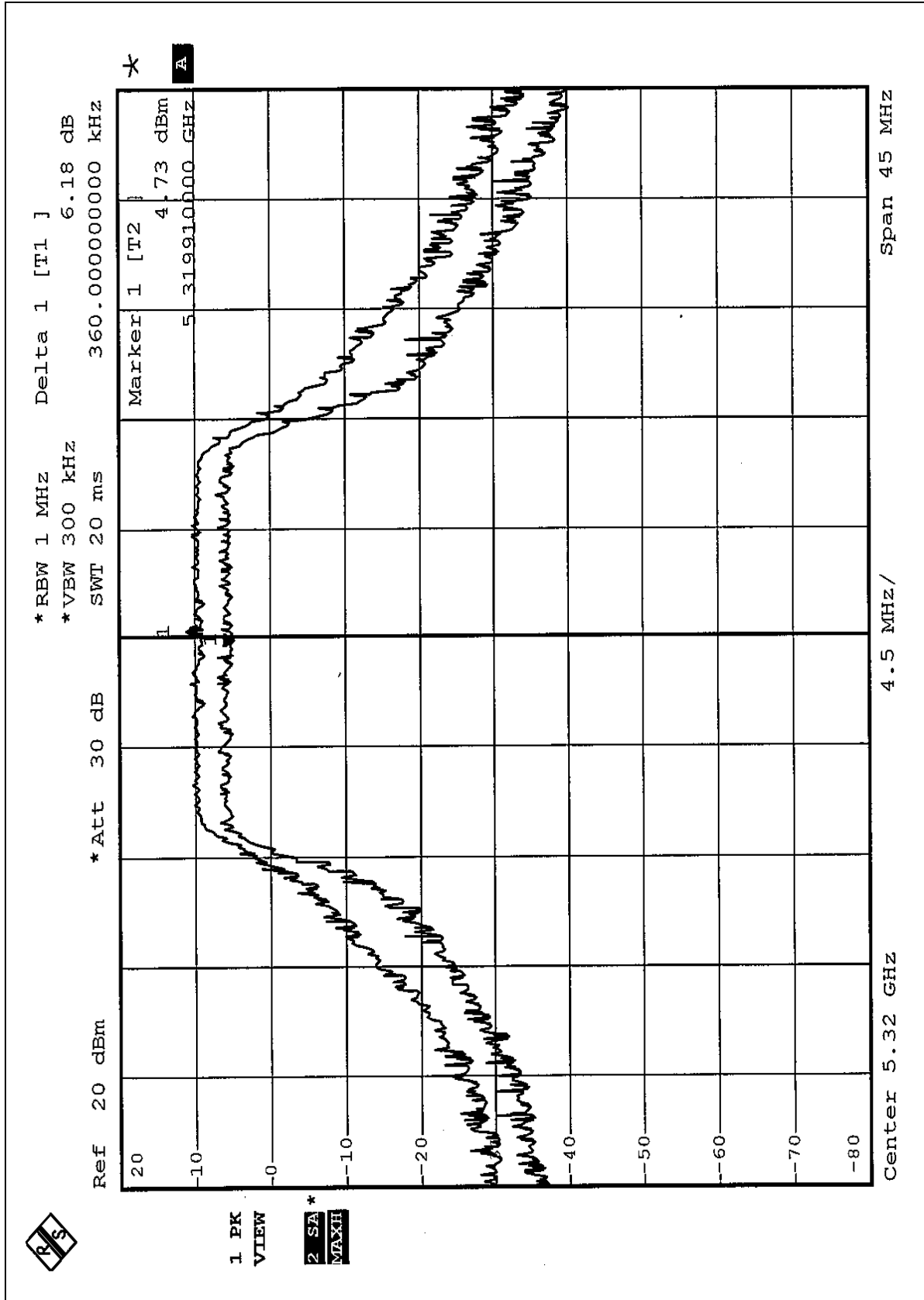
CH5







CH8



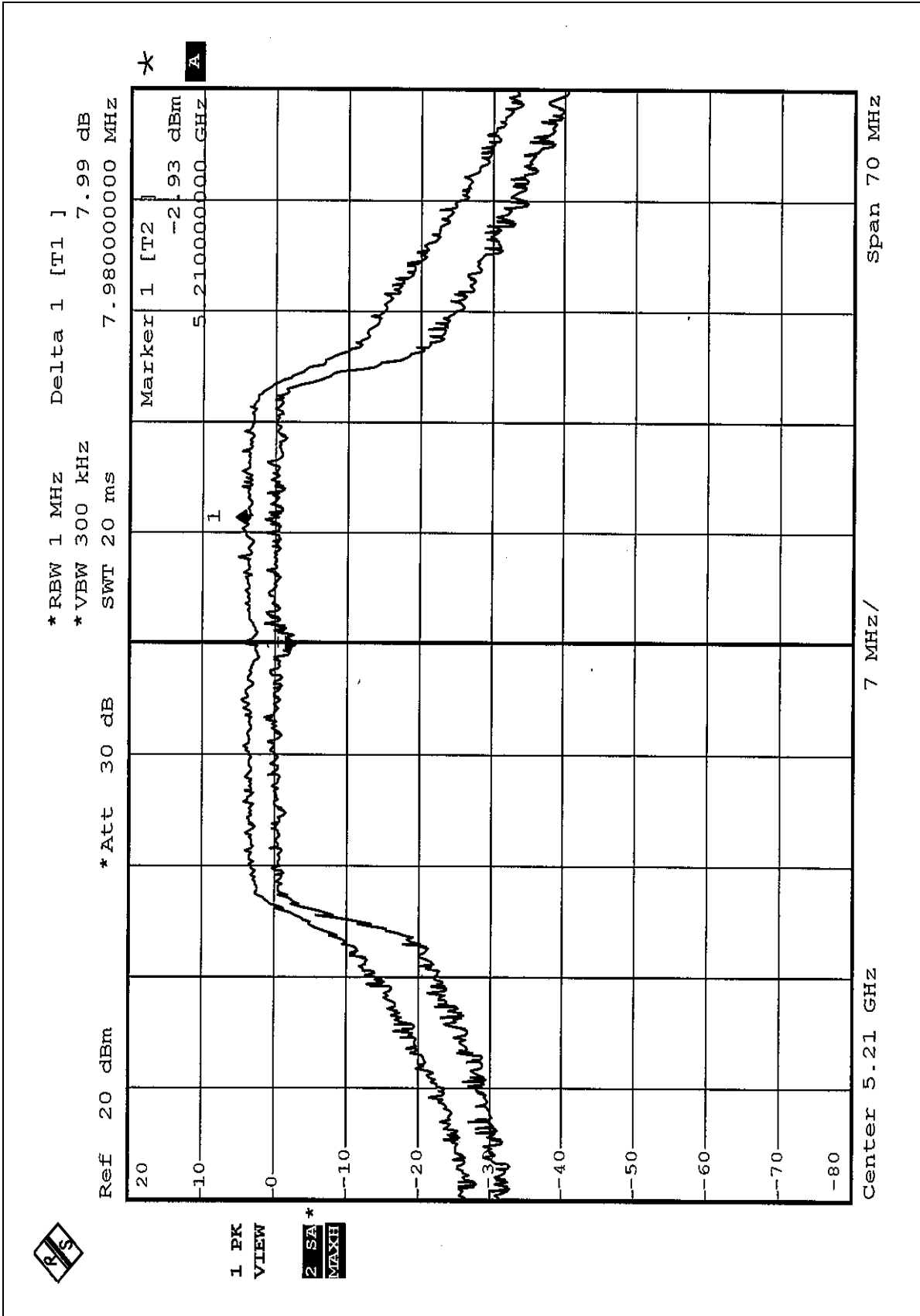


<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>MODE</b>	Turbo	<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz
<b>ENVIRONMENTAL CONDITIONS</b>	25deg. C, 60%RH, 991hPa	<b>TESTED BY</b>	Gary Chang

<b>CHANNEL</b>	<b>CHANNEL FREQUENCY (MHz)</b>	<b>PEAK POWER EXCURSION (dB)</b>	<b>PEAK to AVERAGE EXCURSION LIMIT (dB)</b>	<b>PASS/FAIL</b>
1	5210	7.99	13	PASS
2	5250	7.03	13	PASS
3	5290	6.45	13	PASS

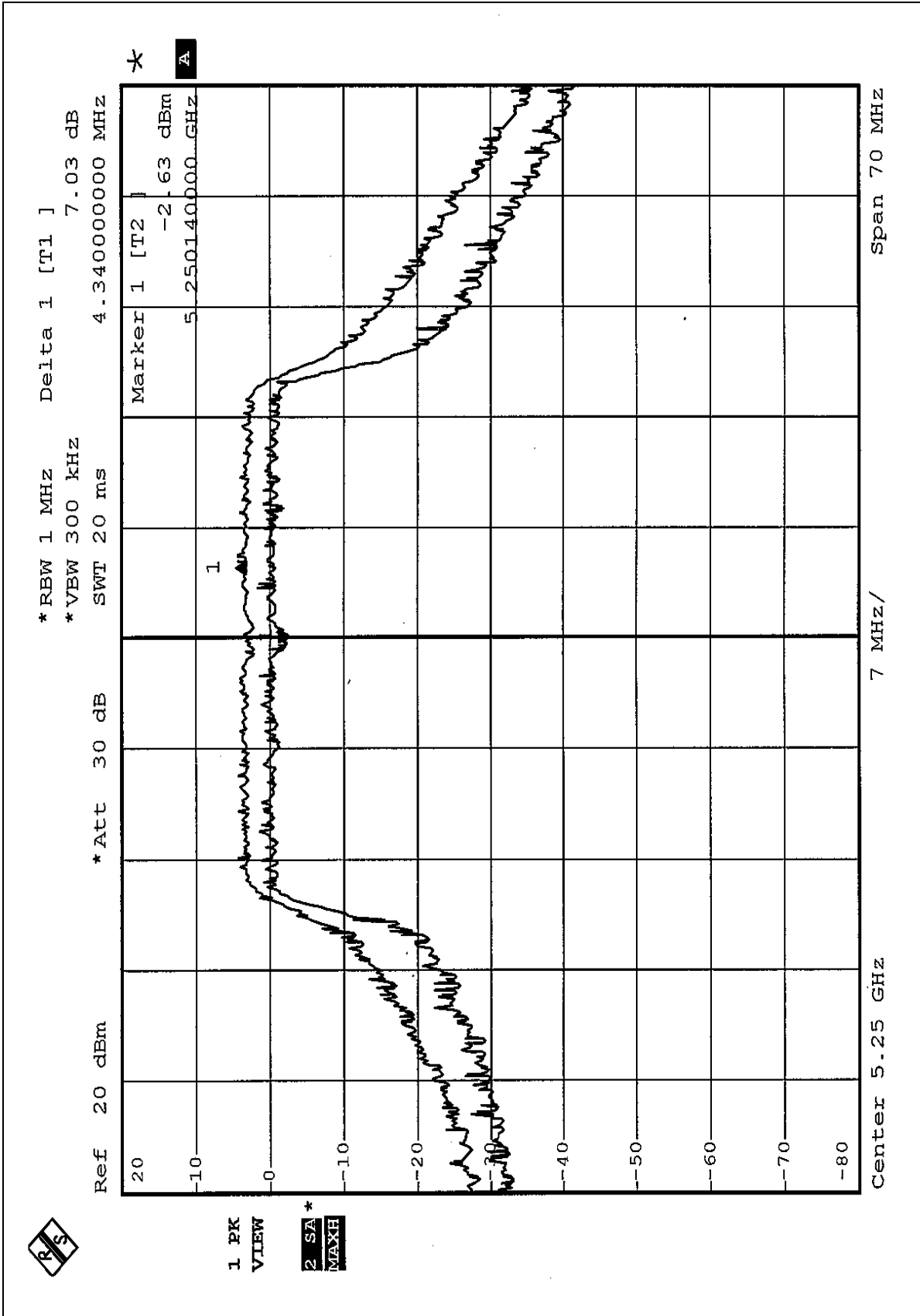


CH1



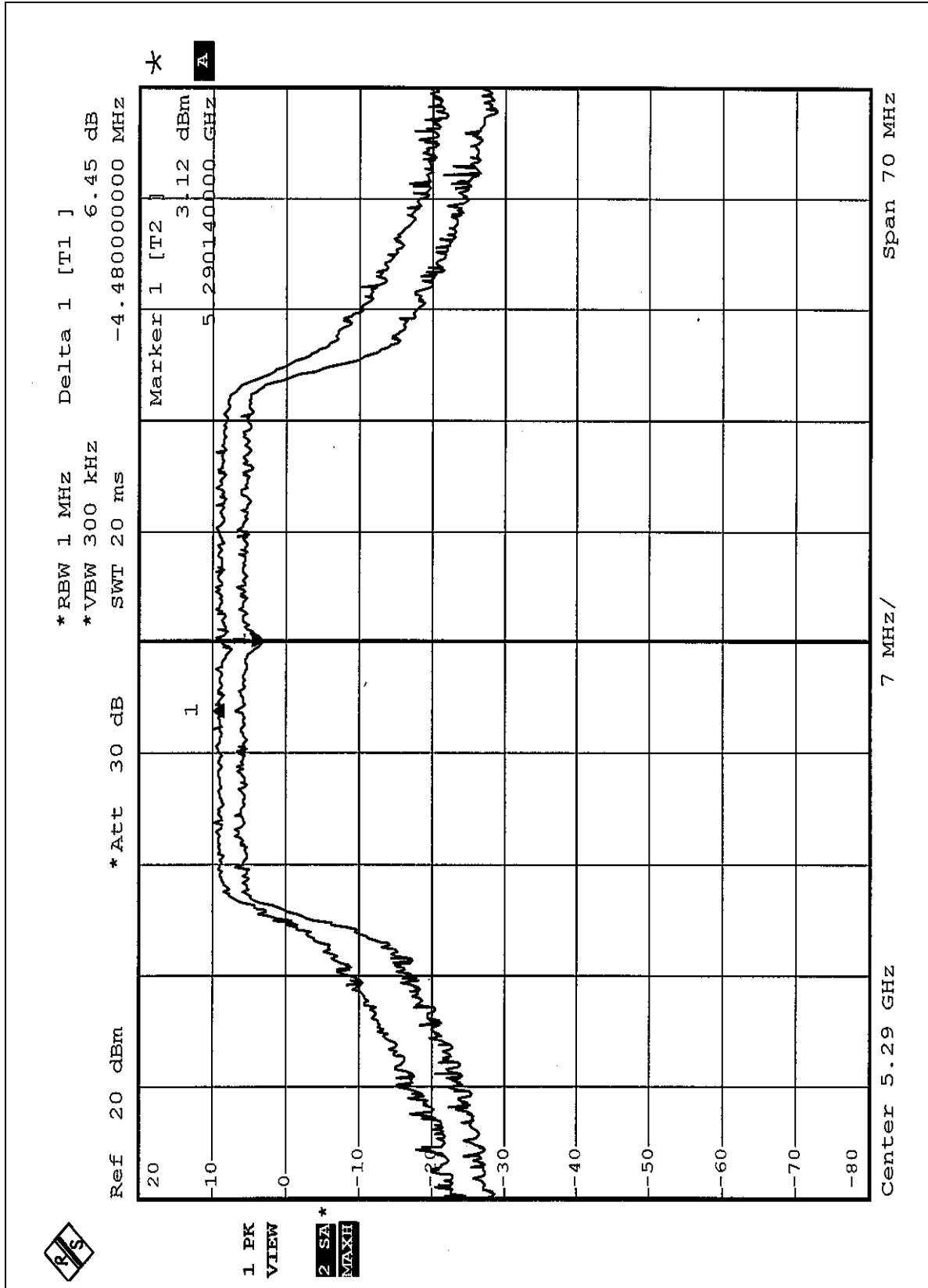


CH2





CH3





## 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

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

### 5.5.4 DEVIATION FROM TEST STANDARD

No deviation

### 5.5.5 TEST SETUP



### 5.5.6 EUT OPERATING CONDITIONS

Same as 5.3.6



## 5.5.7 TEST RESULTS

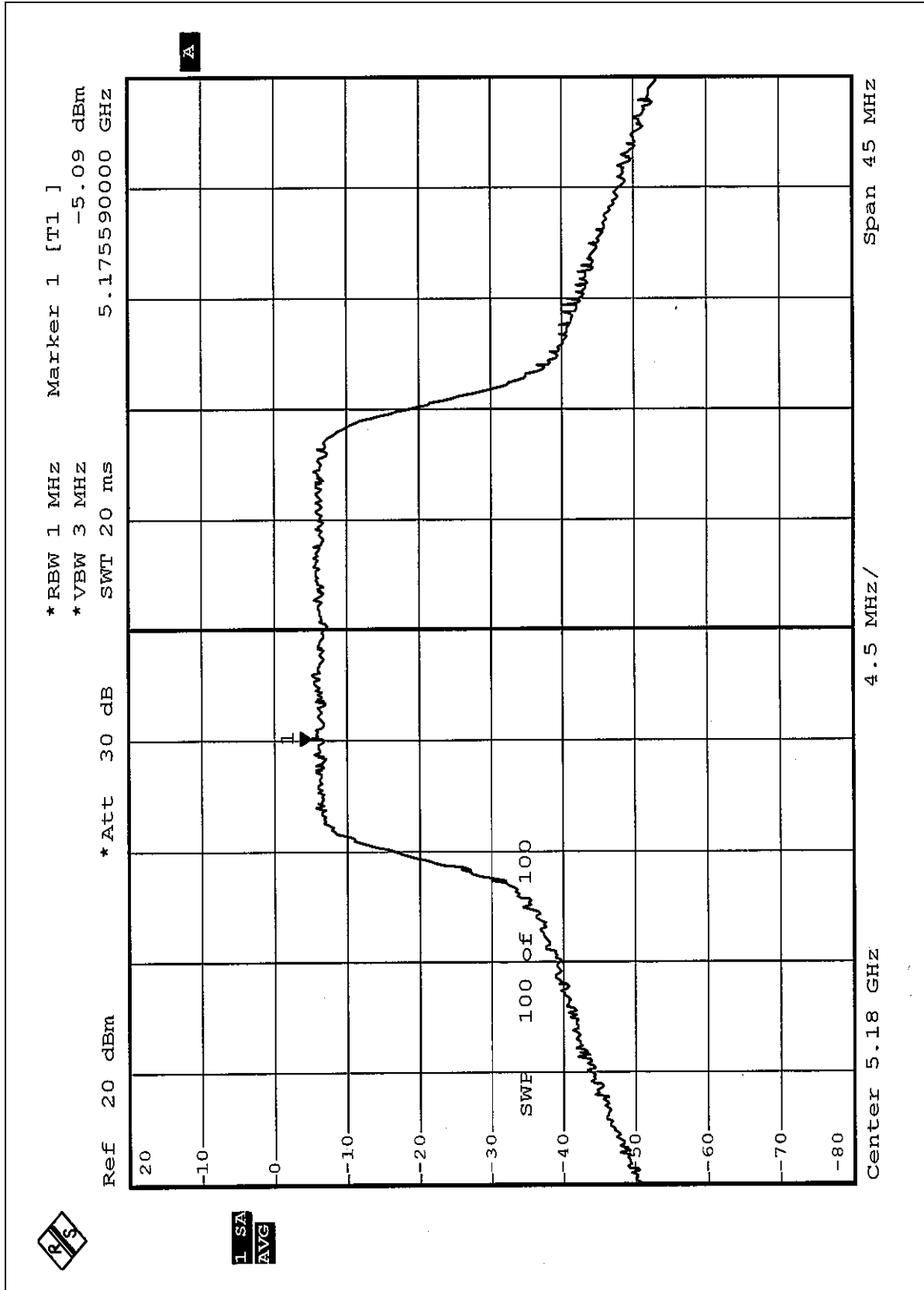
<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>MODE</b>	Normal	<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz
<b>ENVIRONMENTAL CONDITIONS</b>	25deg. C, 60%RH, 991hPa	<b>TESTED BY</b>	Gary Chang

<b>CHANNEL</b>	<b>CHANNEL FREQUENCY (MHz )</b>	<b>RF POWER LEVEL IN 1MHz BW (dBm)</b>	<b>MAXIMUM LIMIT (dBm)</b>	<b>PASS/FAIL</b>
1	5180	-5.09	4	PASS
4	5240	-2.76	4	PASS
5	5260	-1.79	11	PASS
8	5320	0.80	11	PASS





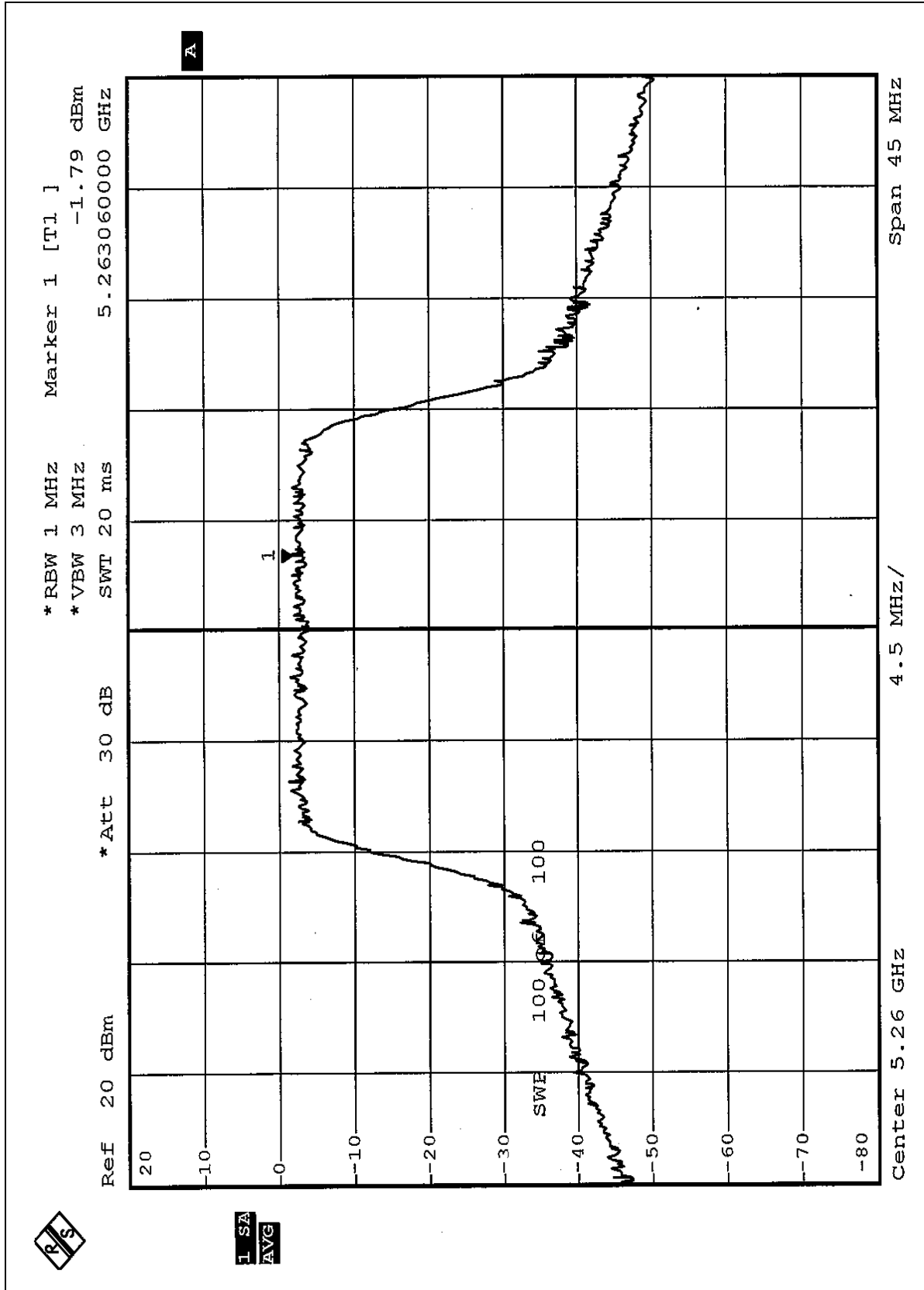
CH1





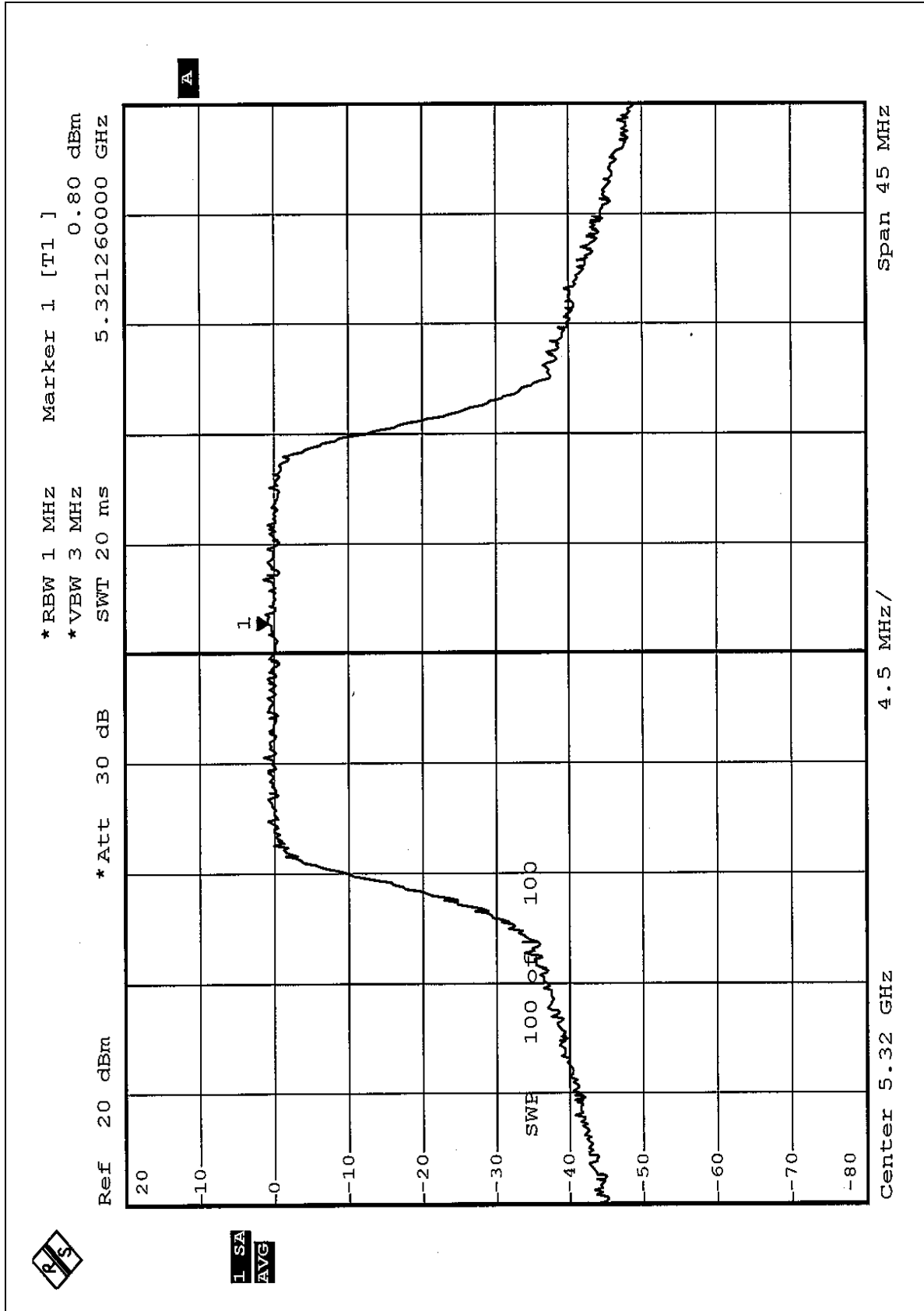


CH5





CH8



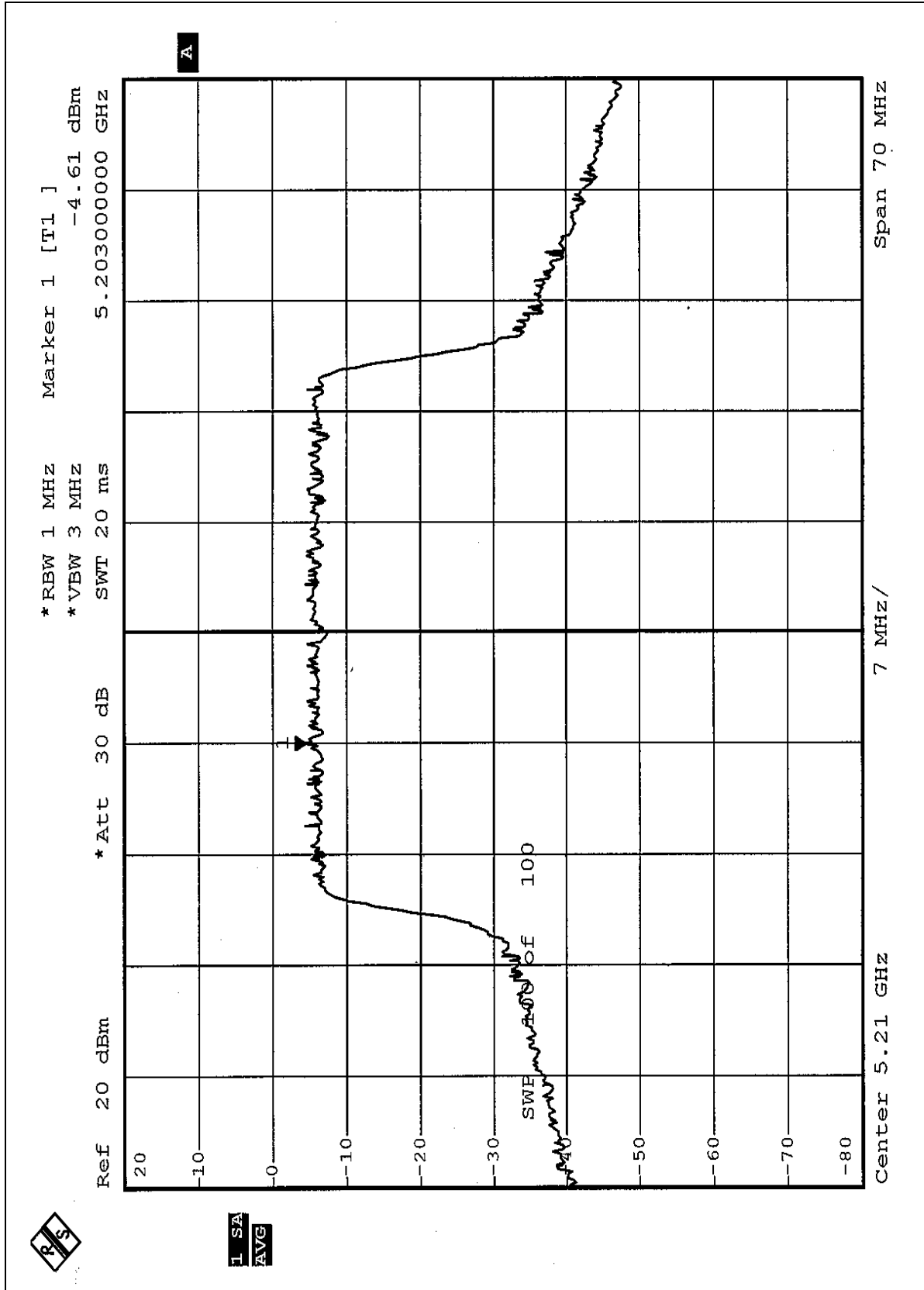


<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>MODE</b>	Turbo	<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz
<b>ENVIRONMENTAL CONDITIONS</b>	25deg. C, 60%RH, 991hPa	<b>TESTED BY</b>	Gary Chang

<b>CHANNEL</b>	<b>CHANNEL FREQUENCY (MHz)</b>	<b>RF POWER LEVEL IN 1 MHz BW (dBm)</b>	<b>MAXIMUM LIMIT (dBm)</b>	<b>PASS/FAIL</b>
1	5210	-4.61	4	PASS
2	5250	-4.44	4	PASS
3	5290	0.36	11	PASS

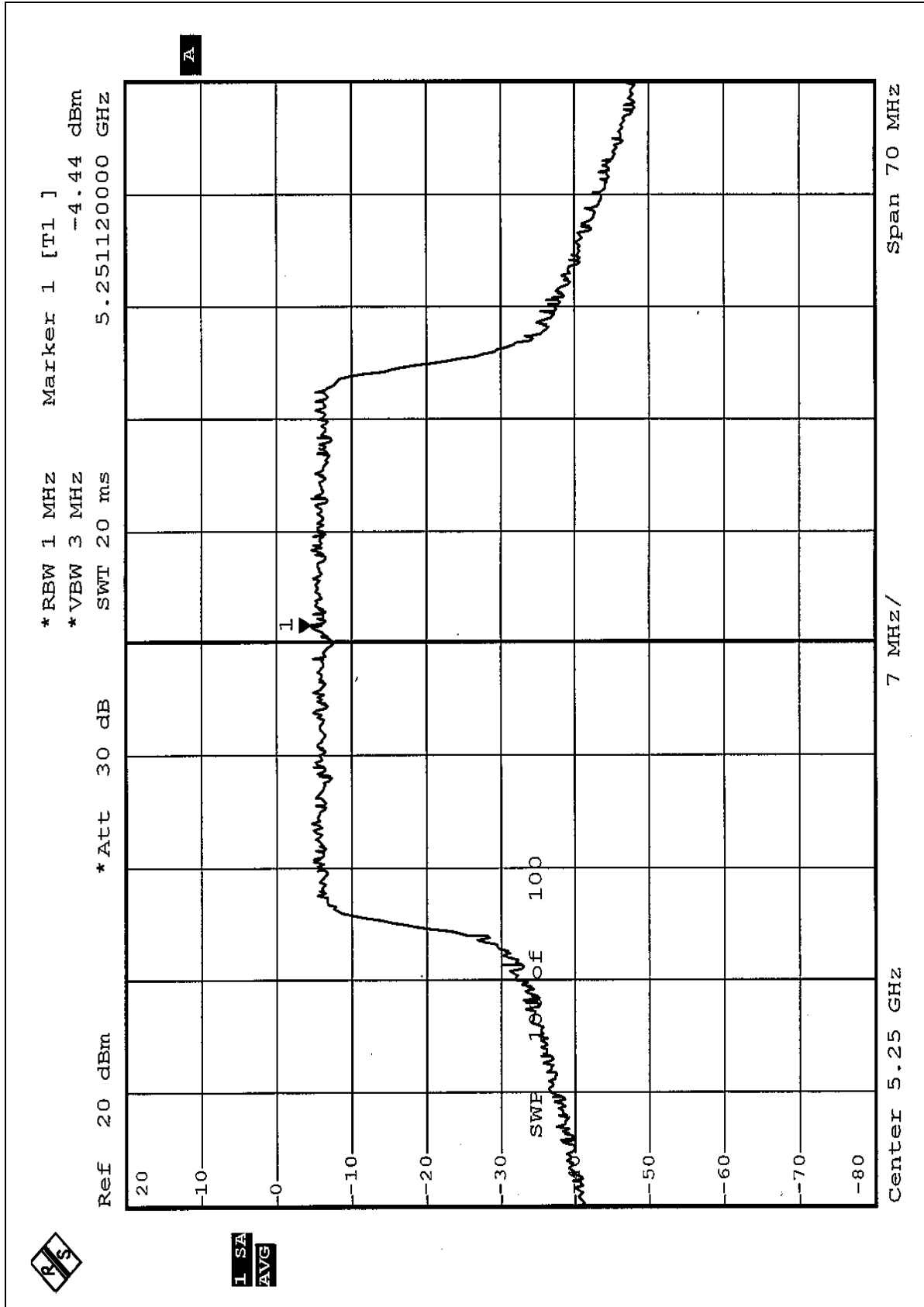


CH1



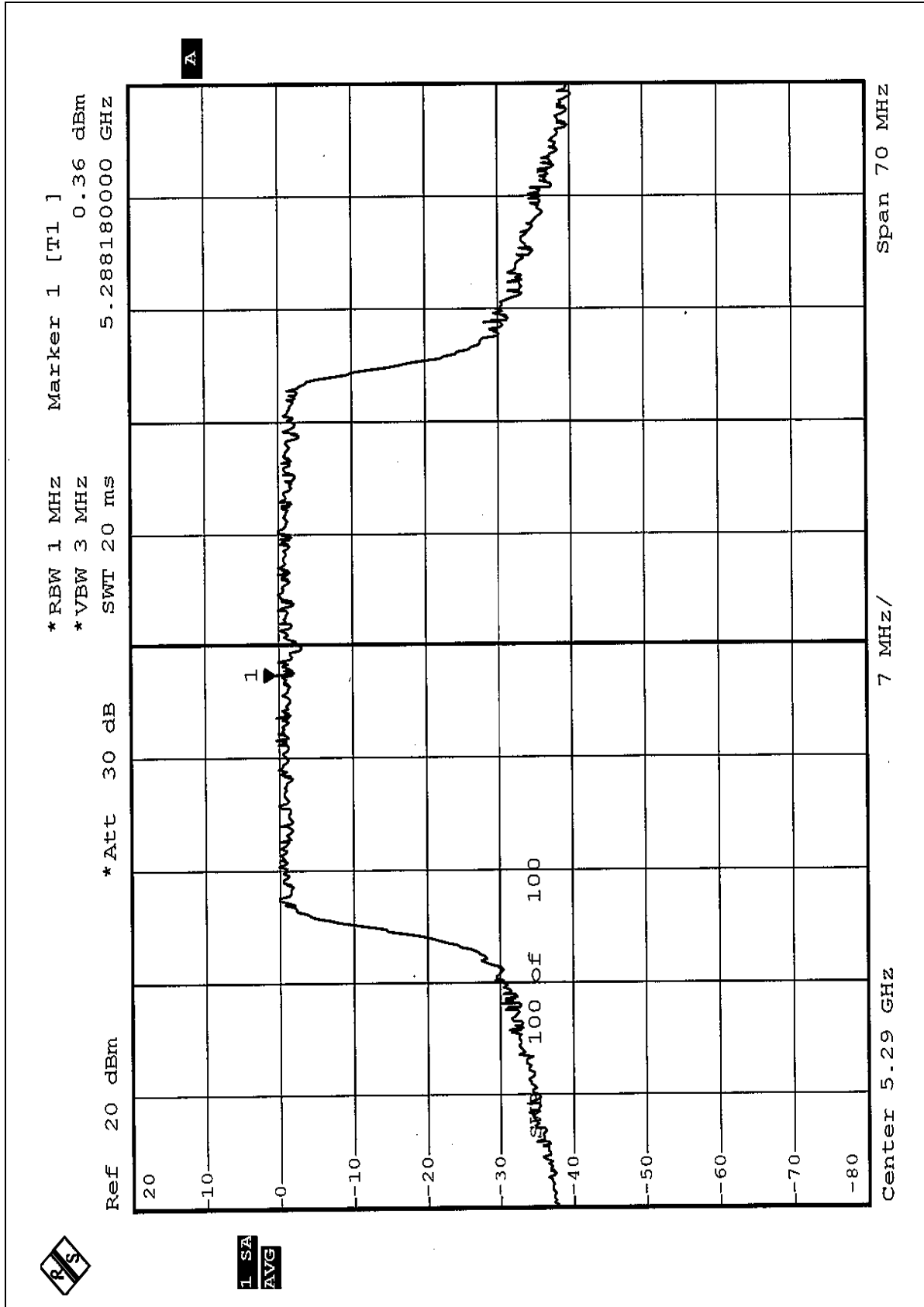


CH2





CH3







## 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.

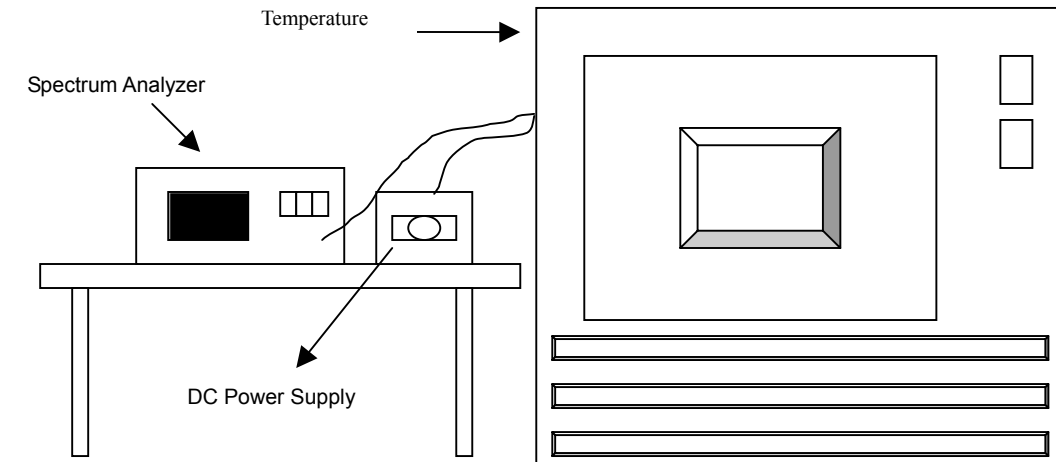
### 5.6.3 TEST PROCEDURE

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 : $\pm 0.02\%$	
Temp. (°C)	Power supply (VDC)	2 minute		5 minute		10 minute	
		(MHz)	(%)	(MHz)	(%)	(MHz)	(%)
50	102	5319.9934	-0.0001244	5319.9965	-0.0000665	5320.0019	0.0000357
	120V	5319.9934	-0.0001244	5319.9965	-0.0000665	5320.0019	0.0000357
	138	5319.3400	-0.0124064	5319.9965	-0.0000665	5320.0019	0.0000357
40	102	5319.9876	-0.0002331	5319.9884	-0.0002173	5319.9900	-0.0001883
	120V	5319.9876	-0.0002331	5319.9884	-0.0002173	5319.9900	-0.0001883
	138	5319.9876	-0.0002331	5319.9884	-0.0002173	5319.9900	-0.0001883
30	102	5319.9863	-0.0002579	5319.9863	-0.0002579	5319.9862	-0.0002602
	120V	5319.9863	-0.0002579	5319.9863	-0.0002579	5319.9862	-0.0002602
	138	5319.9863	-0.0002579	5319.9863	-0.0002579	5319.9862	-0.0002602
20	102	5319.9860	-0.0002632	5319.9854	-0.0002744	5319.9856	-0.0002699
	120V	5319.9860	-0.0002632	5319.9854	-0.0002744	5319.9856	-0.0002699
	138	5319.9860	-0.0002632	5319.9854	-0.0002165	5319.9856	-0.0002699
10	102	5319.9880	-0.0002256	5319.9885	-0.0002165	5319.9885	-0.0002158
	120V	5319.9880	-0.0002256	5319.9885	-0.0002165	5319.9885	-0.0002158
	138	5319.9880	-0.0002256	5319.9885	-0.0001158	5319.9885	-0.0002158
0	102	5319.9937	-0.0001180	5319.9938	-0.0001158	5319.9941	-0.0001105
	120V	5319.9937	-0.0001180	5319.9938	-0.0001158	5319.9941	-0.0001105
	138	5319.9937	-0.0001180	5319.9938	0.0000692	5319.9941	-0.0001105
-10	102	5320.0031	0.0000586	5320.0037	0.0000692	5320.0396	0.0007444
	120V	5320.0031	0.0000586	5320.0037	0.0000692	5320.0396	0.0007444
	138	5320.0031	0.0000586	5320.0037	0.0001650	5320.0396	0.0007444
-20	102	5320.0087	0.0001643	5320.0088	0.0001650	5320.0906	0.0017030
	120V	5320.0087	0.0001643	5320.0088	0.0001650	5320.0906	0.0017030
	138	5320.0087	0.0001643	5320.0088	0.0001763	5320.0906	0.0017030
-30	102	5320.0030	0.0000564	5320.0094	0.0001763	5320.0094	0.0001769
	120V	5320.0030	0.0000564	5320.0094	0.0001763	5320.0094	0.0001769
	138	5320.0030	0.0000564	5320.0094	0.0001763	5320.0094	0.0001769



## 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 loss 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 field 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=10Hz) are attached on the following pages.

**Normal Mode:**

## Channel 1 (5180MHz)

The band edge emission plot on the pages 150 ~ 151 shows 45.73dBc (Peak) / 49.33Bc (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 is 97.03dBuV/m, so the maximum field strength in restrict band is  $97.03-49.33=47.70$ dBuV/m which is under 54dBuV/m limit.

## Channel 8 (5320MHz)

The band edge emission plot on the pages 153 ~ 154 shows 46.89dBc (Peak) / 52.58dBc (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 is 102.44dBuV/m, so the maximum field strength in restrict band is  $102.44-52.58=49.86$ dBuV/m which is under 54dBuV/m limit.

**Turbo Mode:**

## Channel 1 (5210MHz)

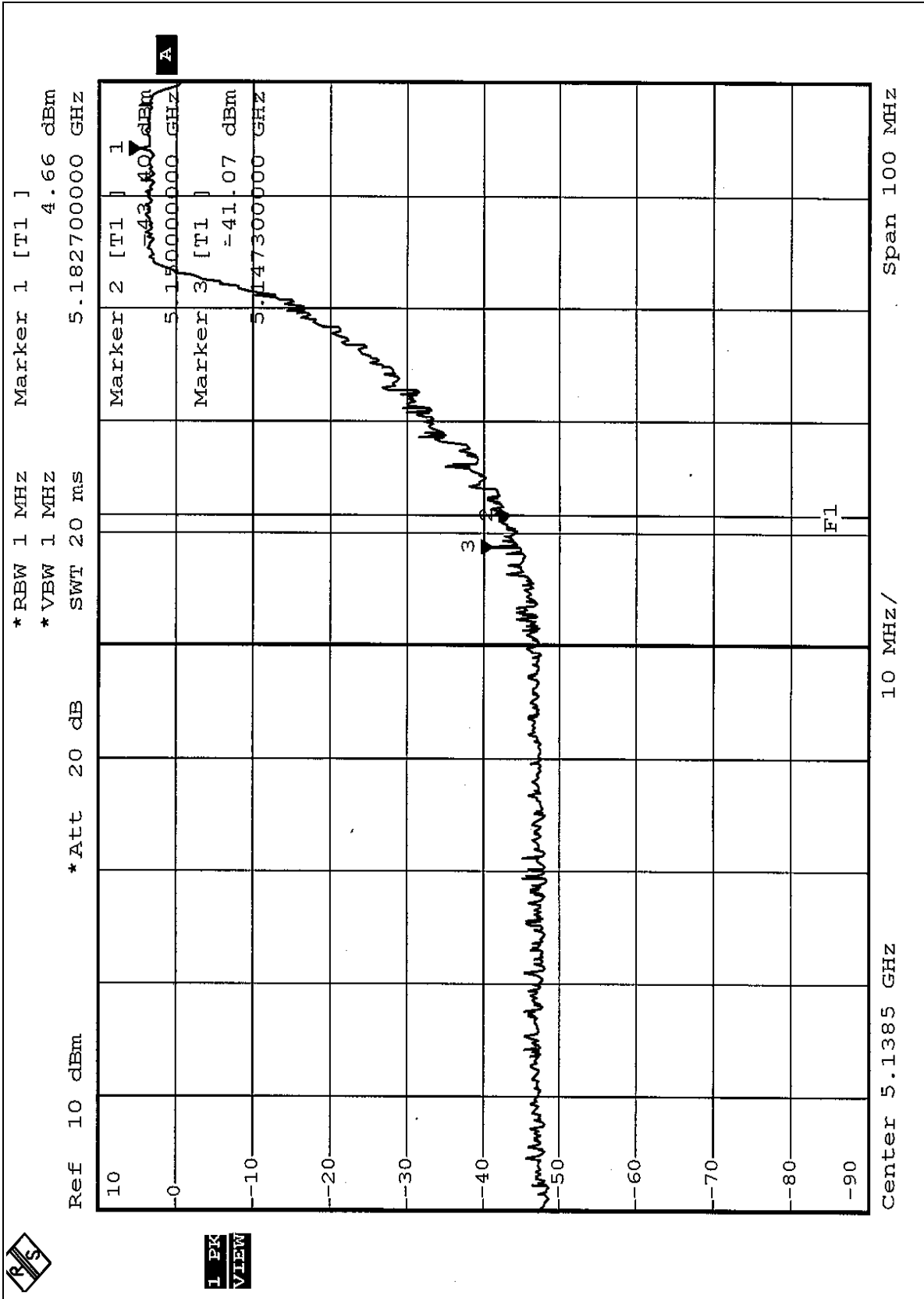
The band edge emission plot on the pages 156 ~157 shows 45.42dBc (Peak) / 47.43dBc (Average) between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 1 is 95.76dBuV/m, so the maximum field strength in restrict band is  $95.76-47.43=48.33$ dBuV/m which is under 54dBuV/m limit.

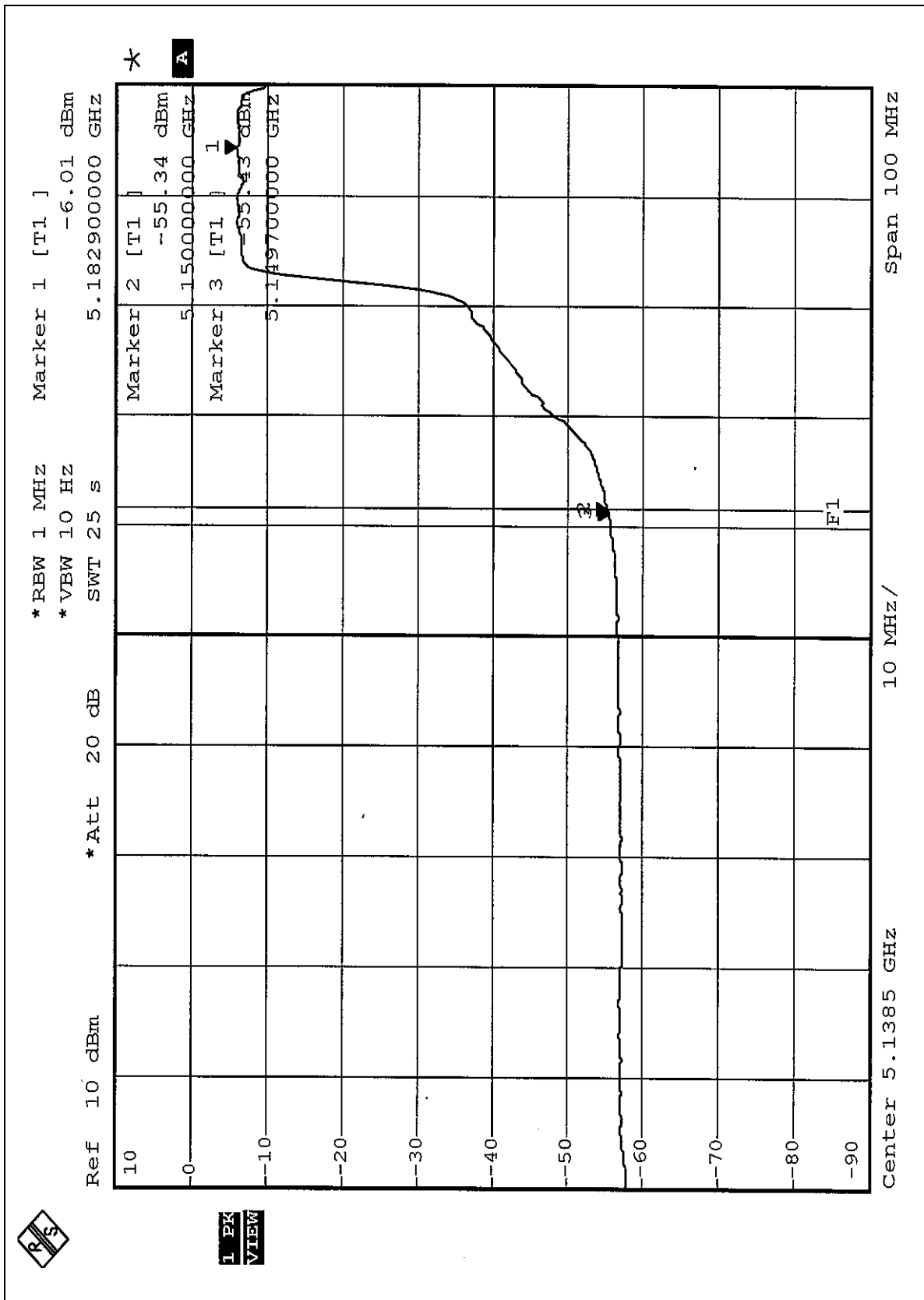
## Channel 3 (5290MHz)

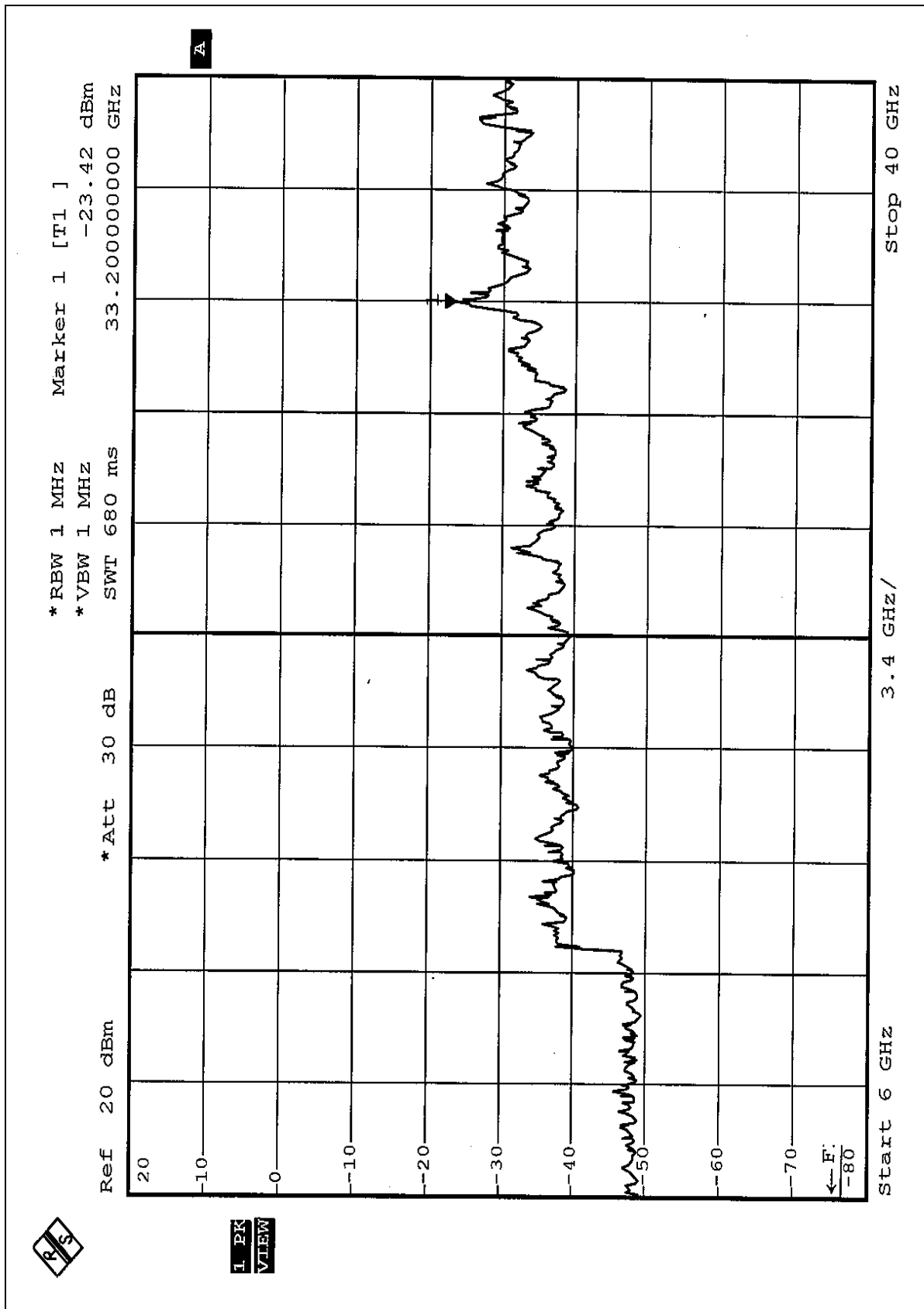
The band edge emission plot on the pages 159~160 shows 48.34dBc (Peak) / 51.79dBc (Average) between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 3 is 101.35dBuV/m, so the maximum field strength in restrict band is  $101.35-51.79=49.56$ dBuV/m which is under 54dBuV/m limit.



Normal Mode (CH1)



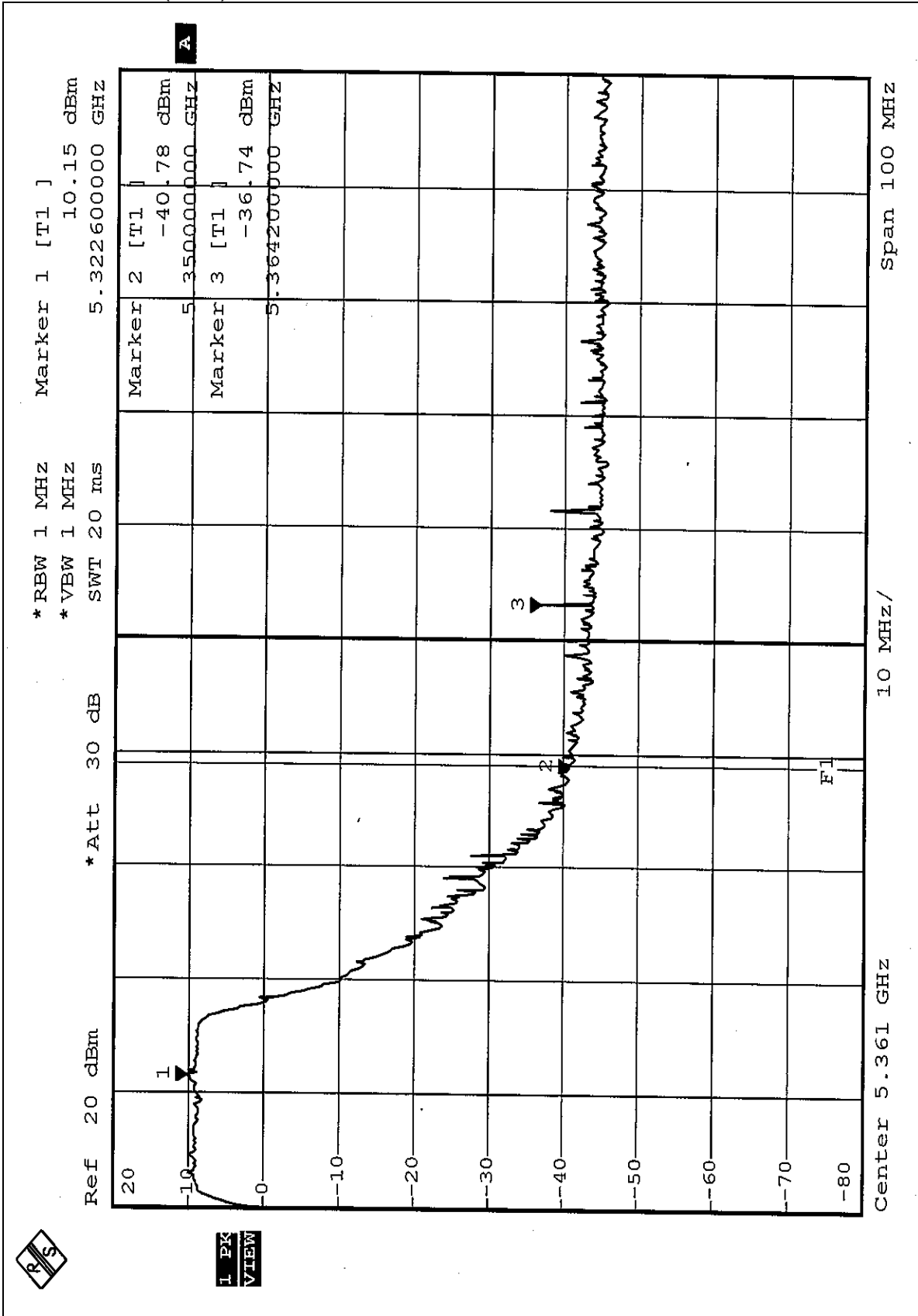


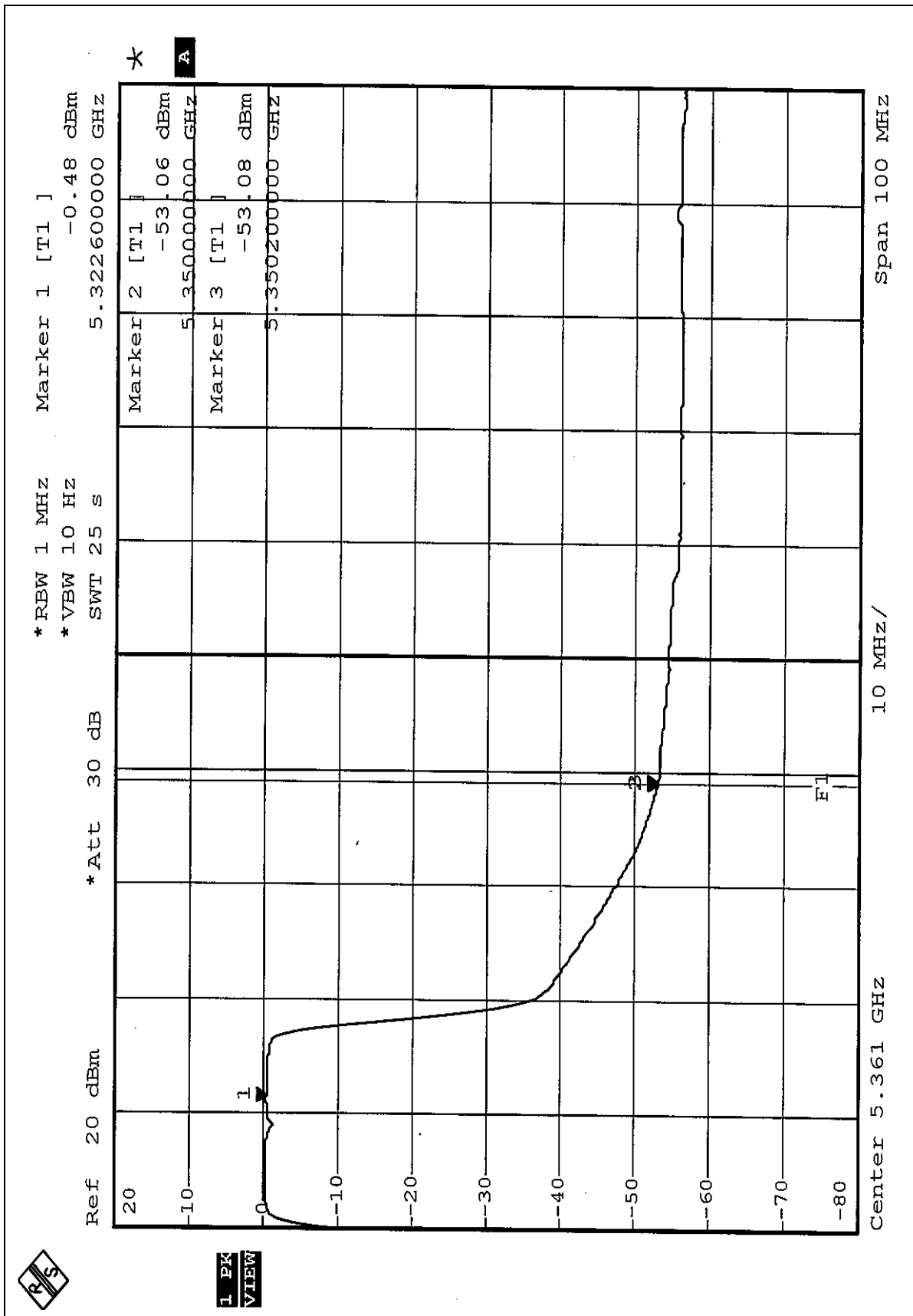


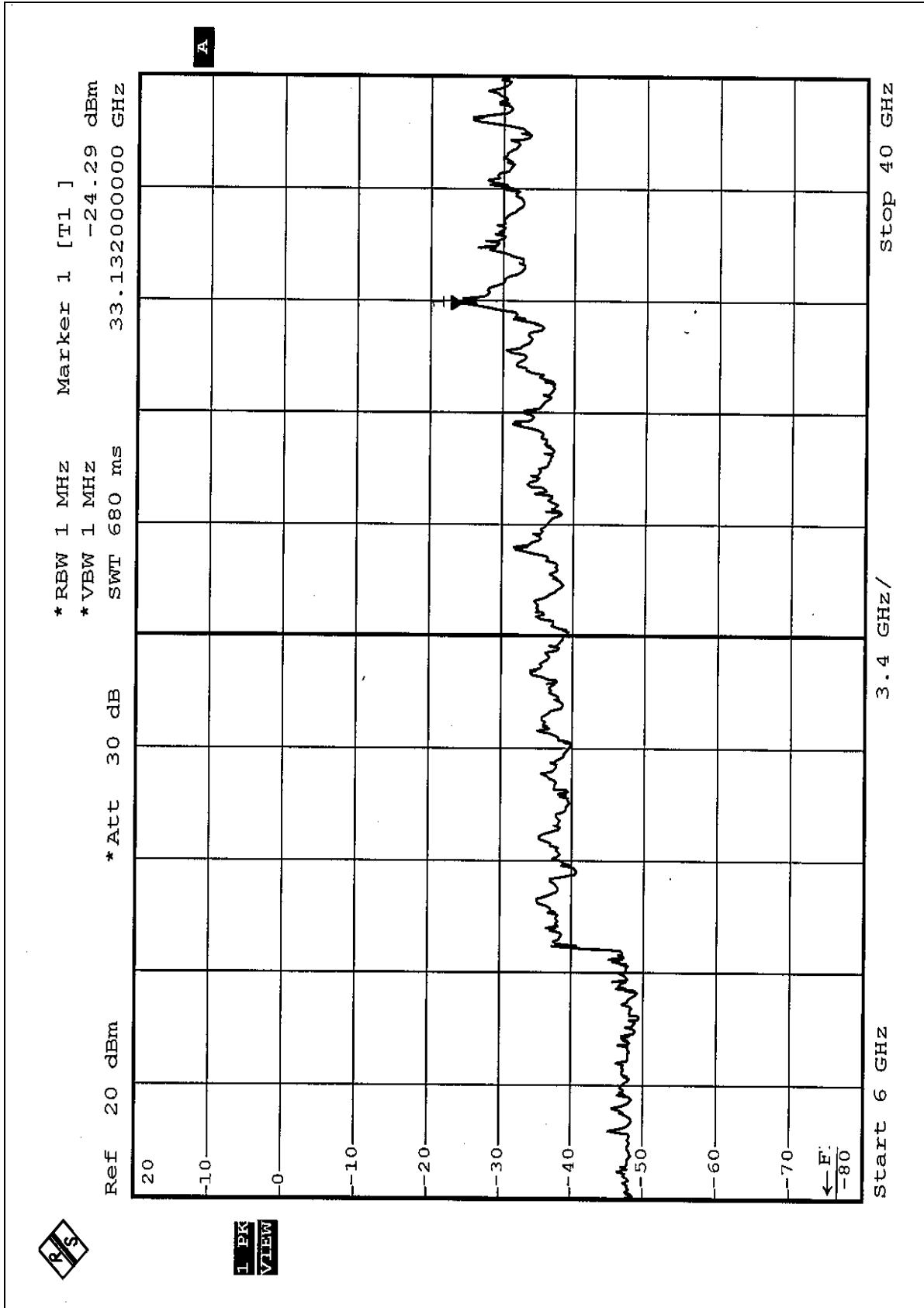




Normal Mode (CH8)

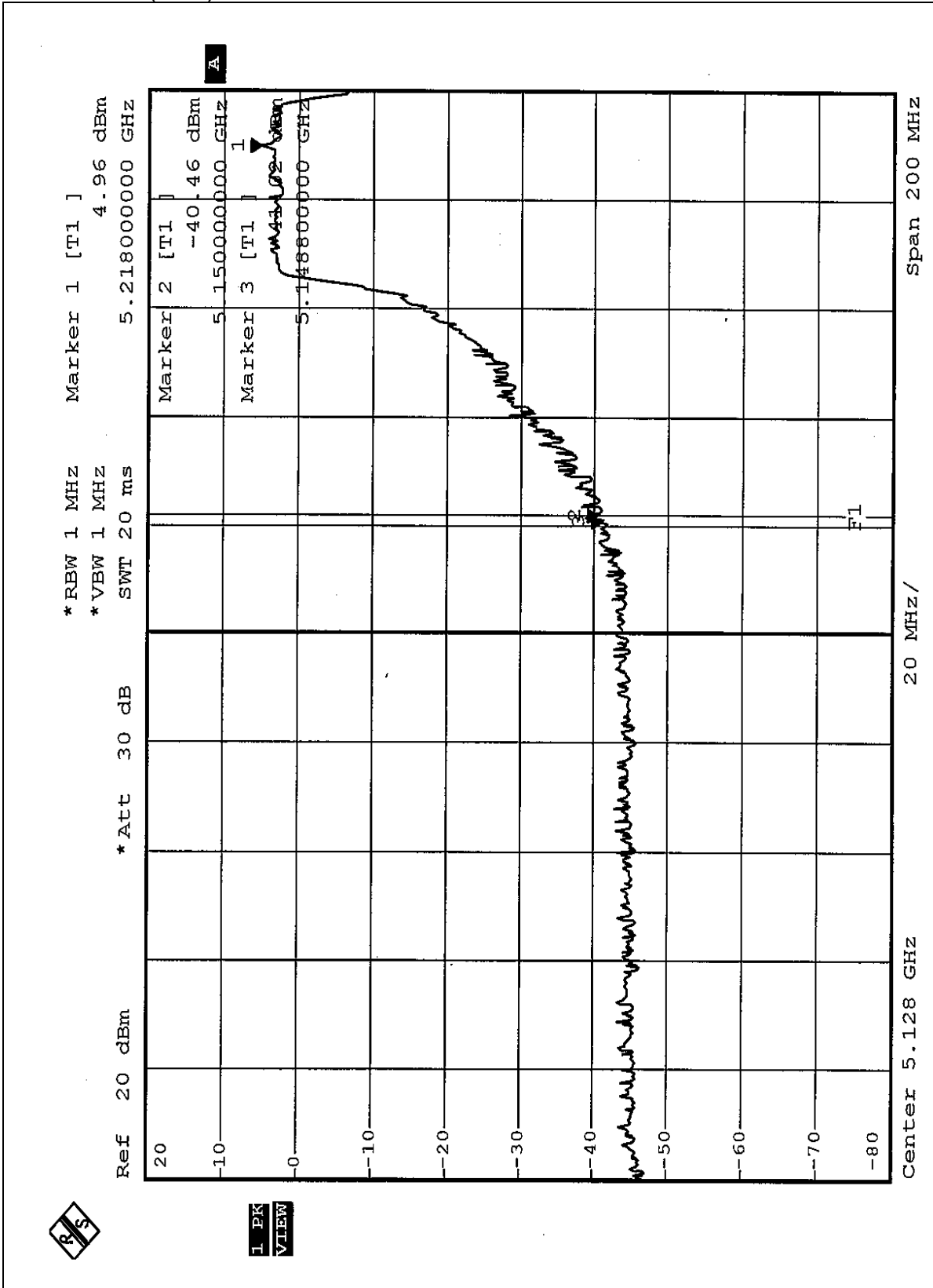


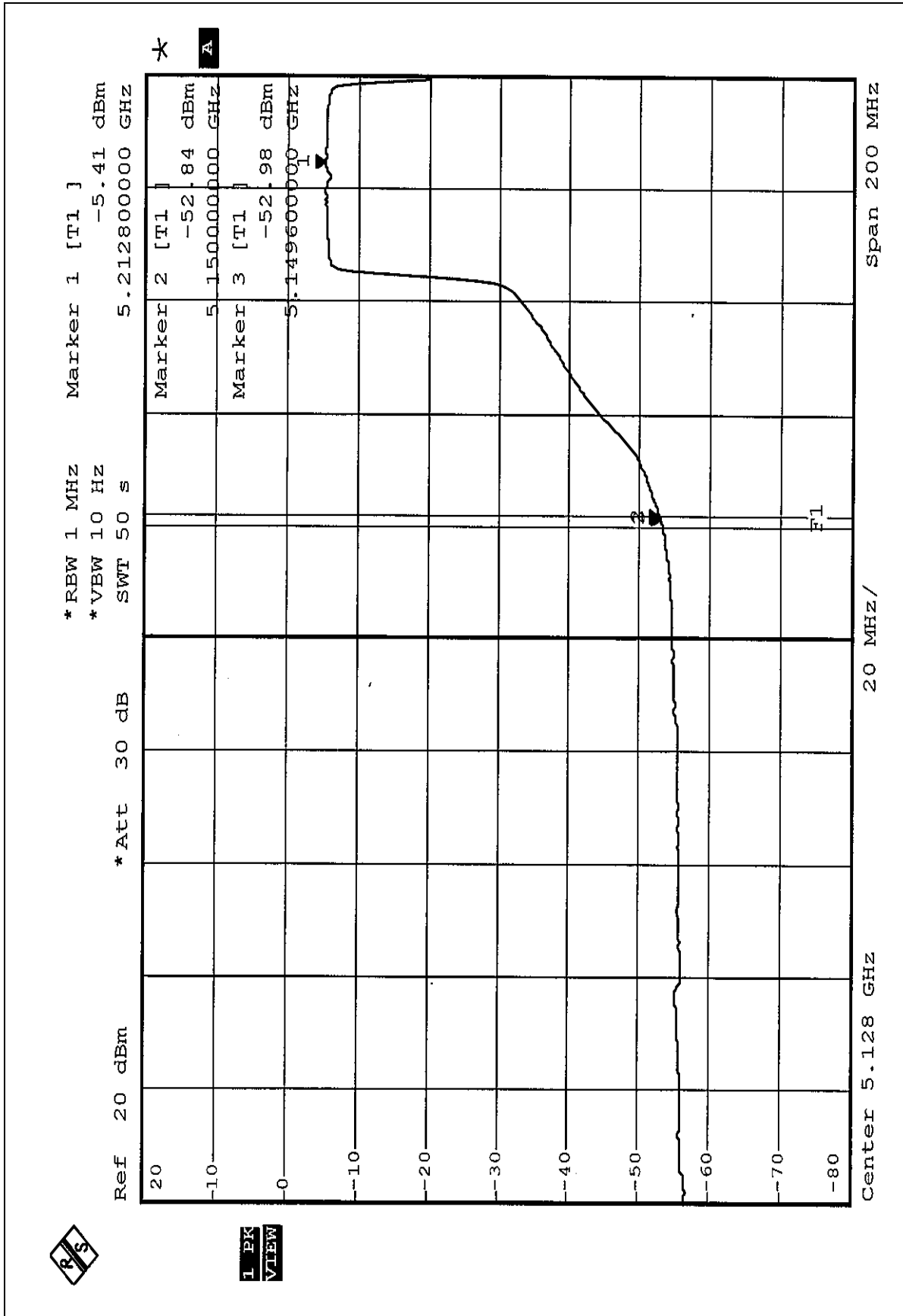


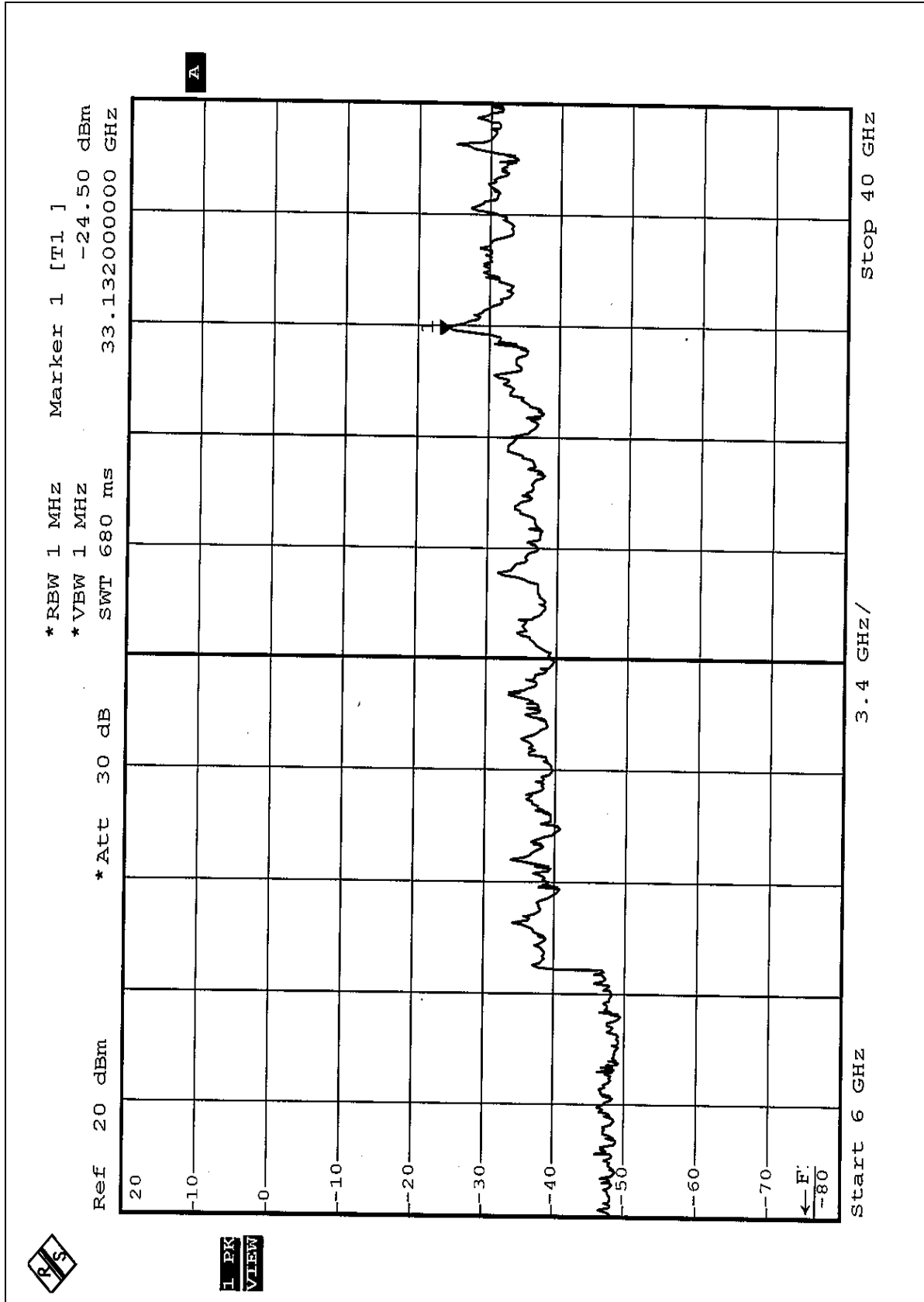




Turbo Mode (CH1)

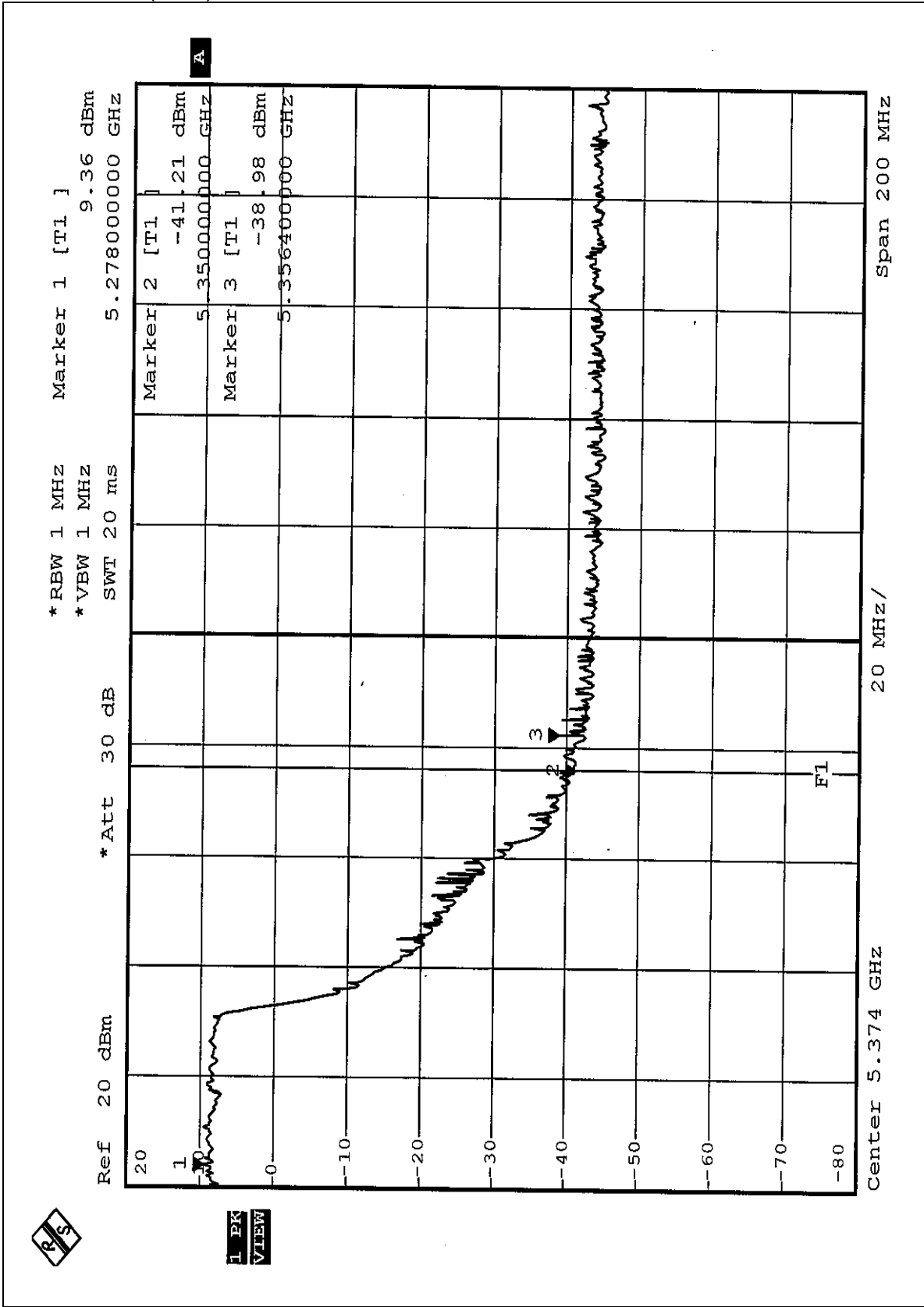


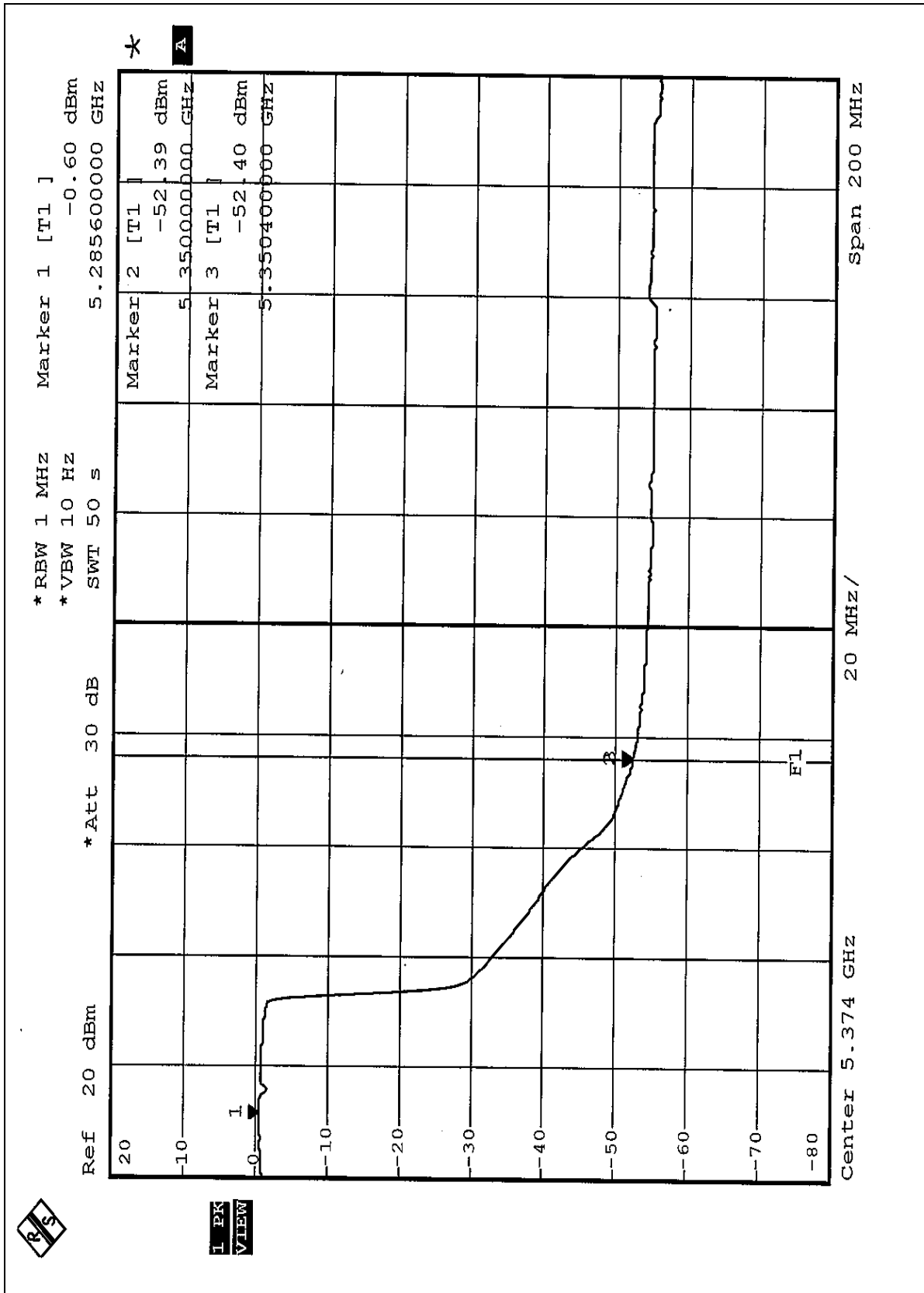




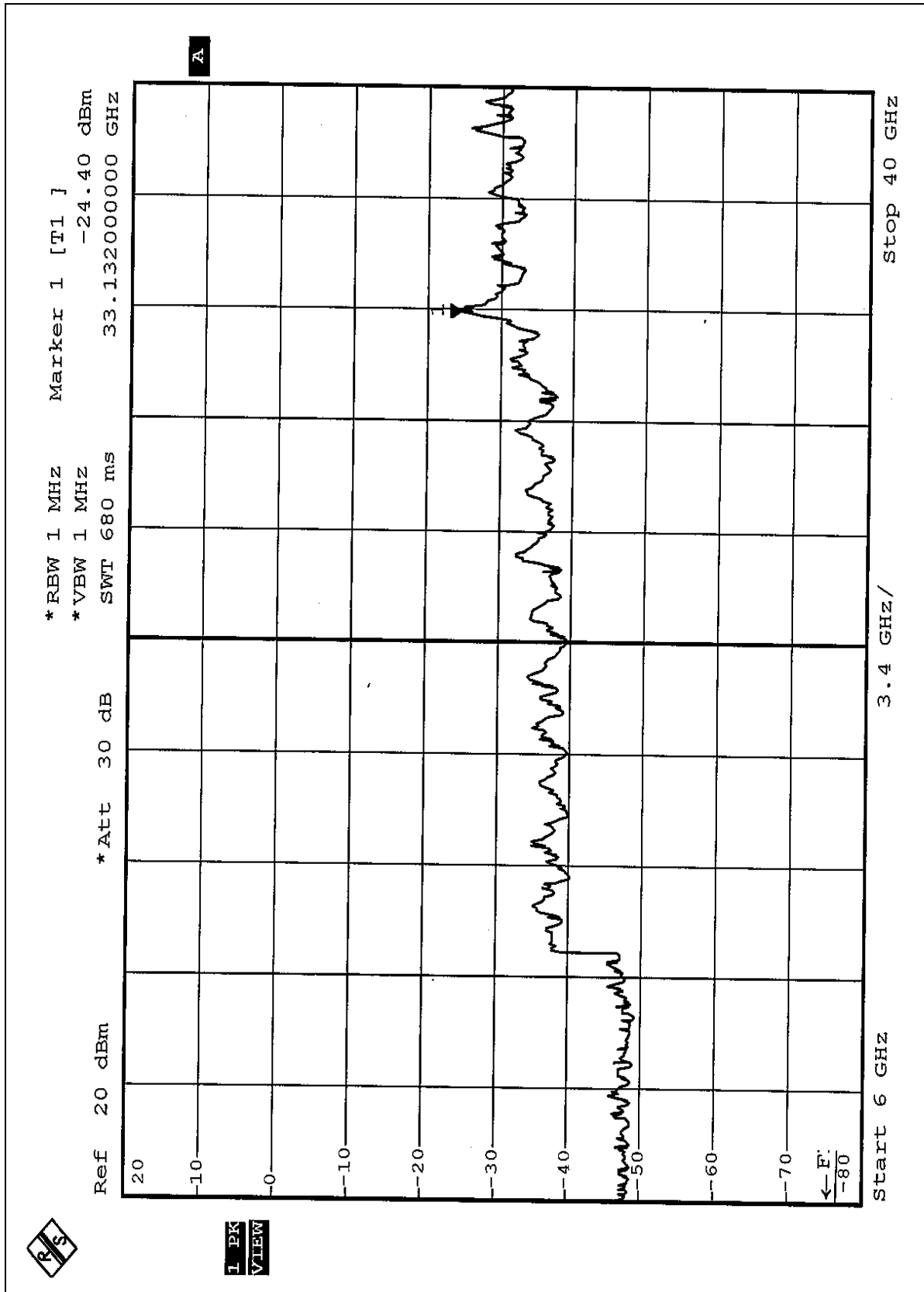


Turbo Mode (CH3)











## **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 Patch antenna with UFL antenna connector. The maximum Gain of the antenna is 4.33dBi.

**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.

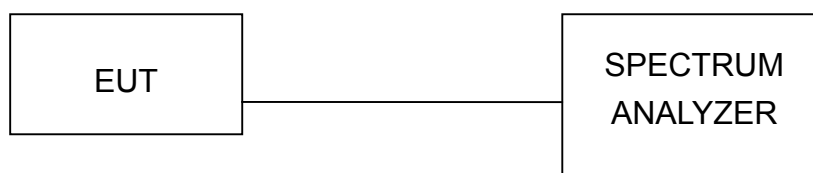
### 5.9.3 TEST PROCEDURE

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.



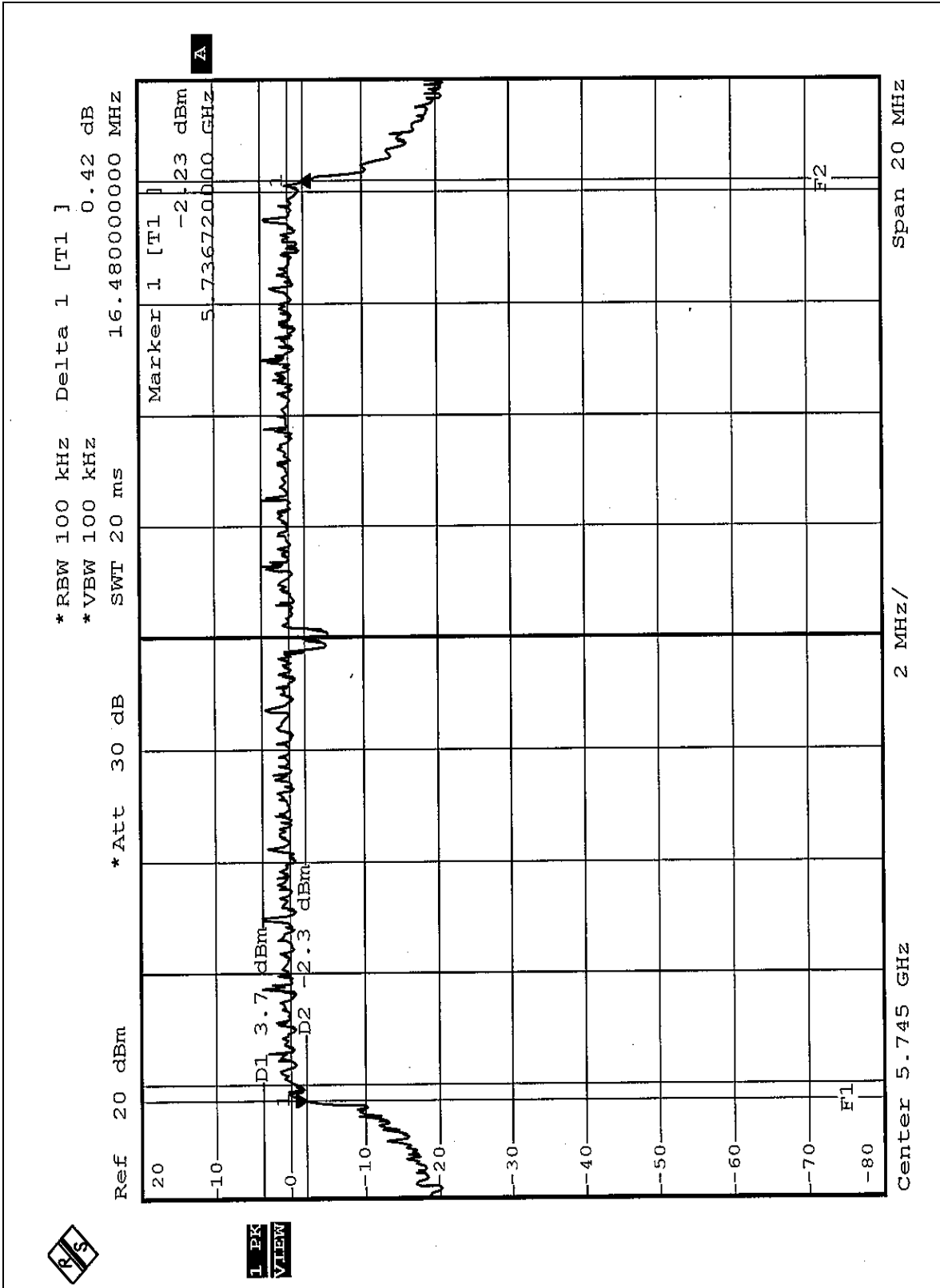
## 5.9.7 TEST RESULTS

<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>MODE</b>	Normal	<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz
<b>ENVIRONMENTAL CONDITIONS</b>	25deg. C, 60%RH, 991 hPa	<b>TESTED BY</b>	Gary Chang

<b>CHANNEL</b>	<b>CHANNEL FREQUENCY (MHz)</b>	<b>6dB BANDWIDTH (MHz)</b>	<b>MINIMUM LIMIT (MHz)</b>	<b>PASS/FAIL</b>
9	5745	16.48	0.5	PASS
11	5785	16.44	0.5	PASS
13	5825	16.48	0.5	PASS

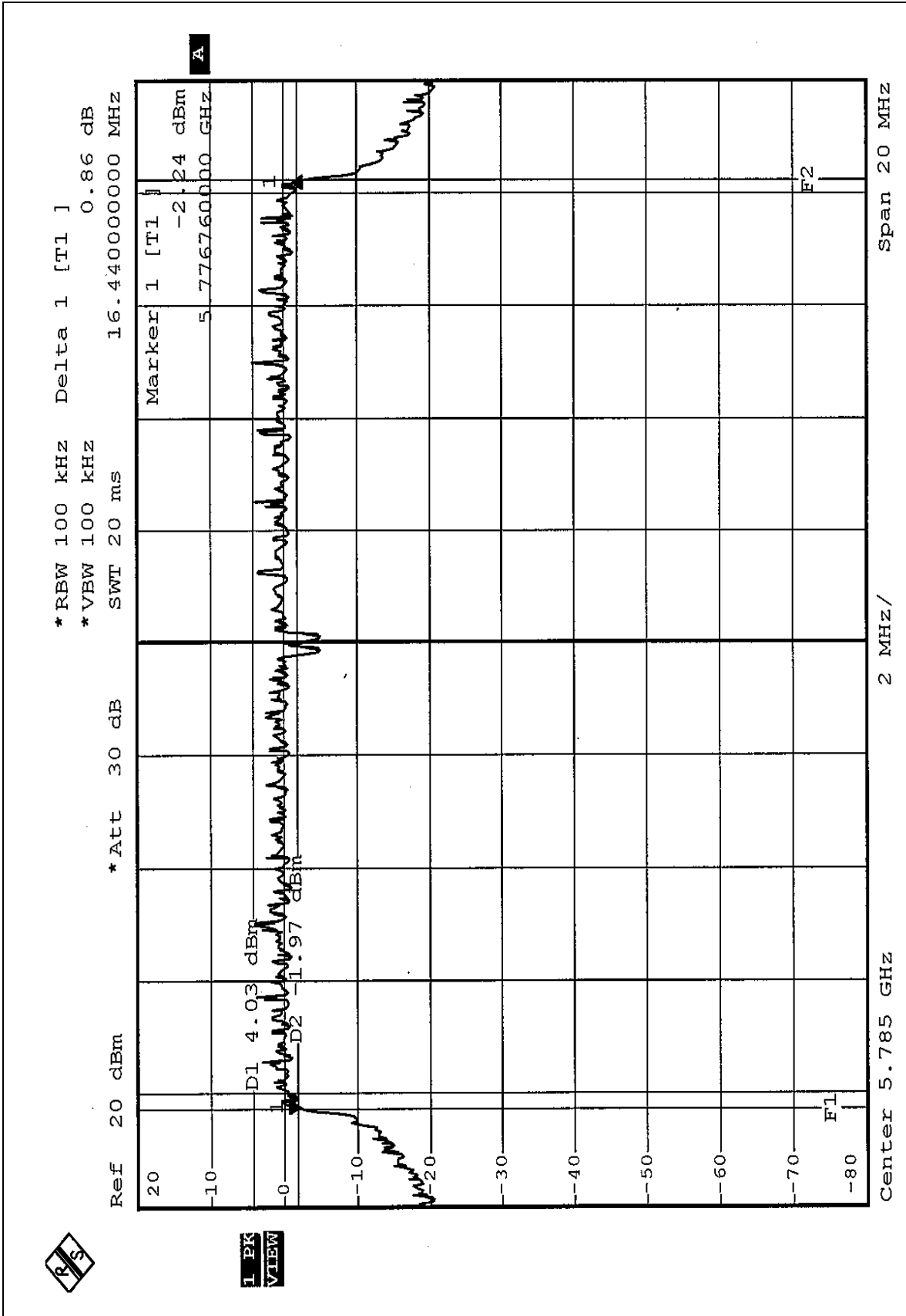


CH9





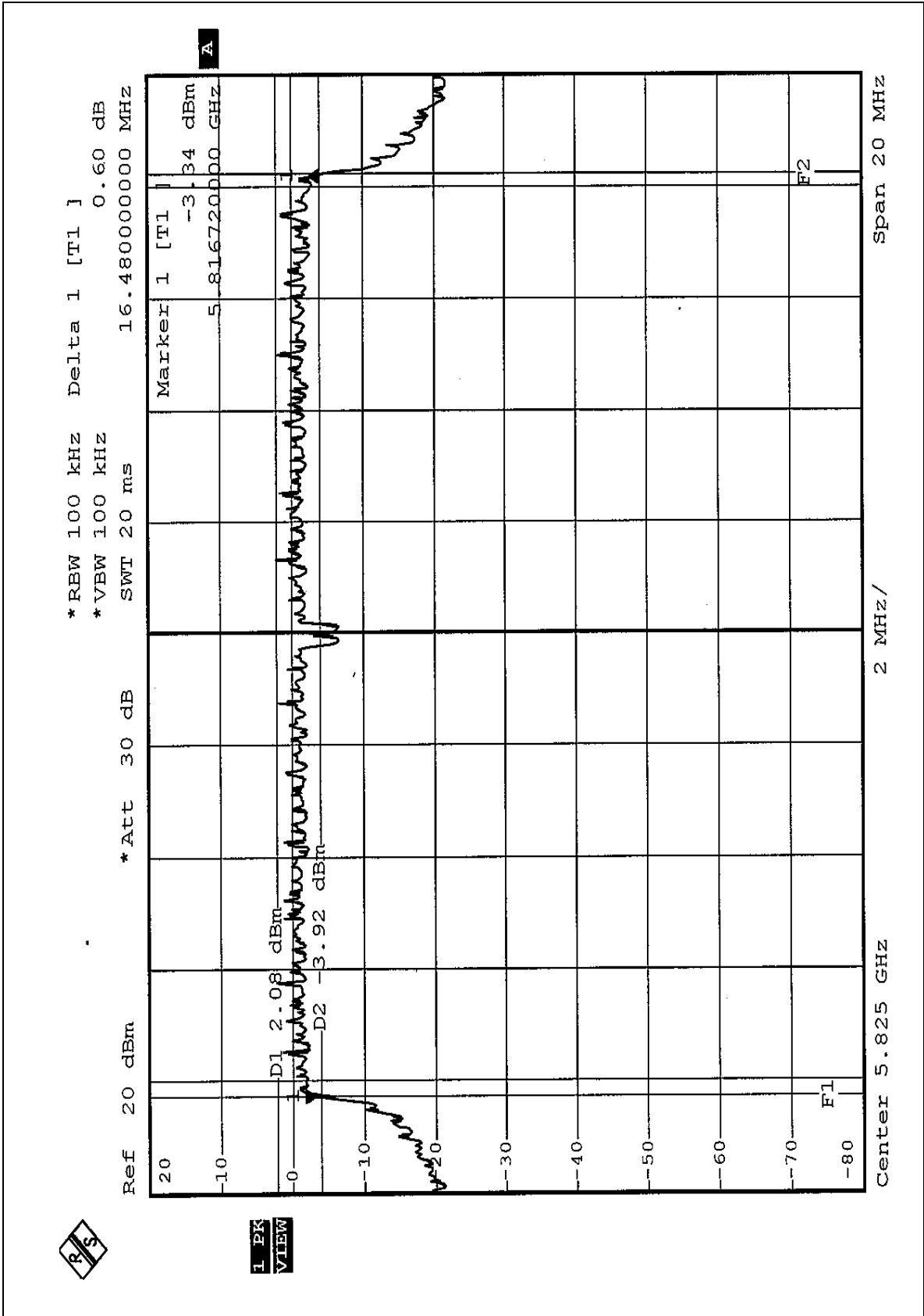
CH11



1 PK VIEW



CH13





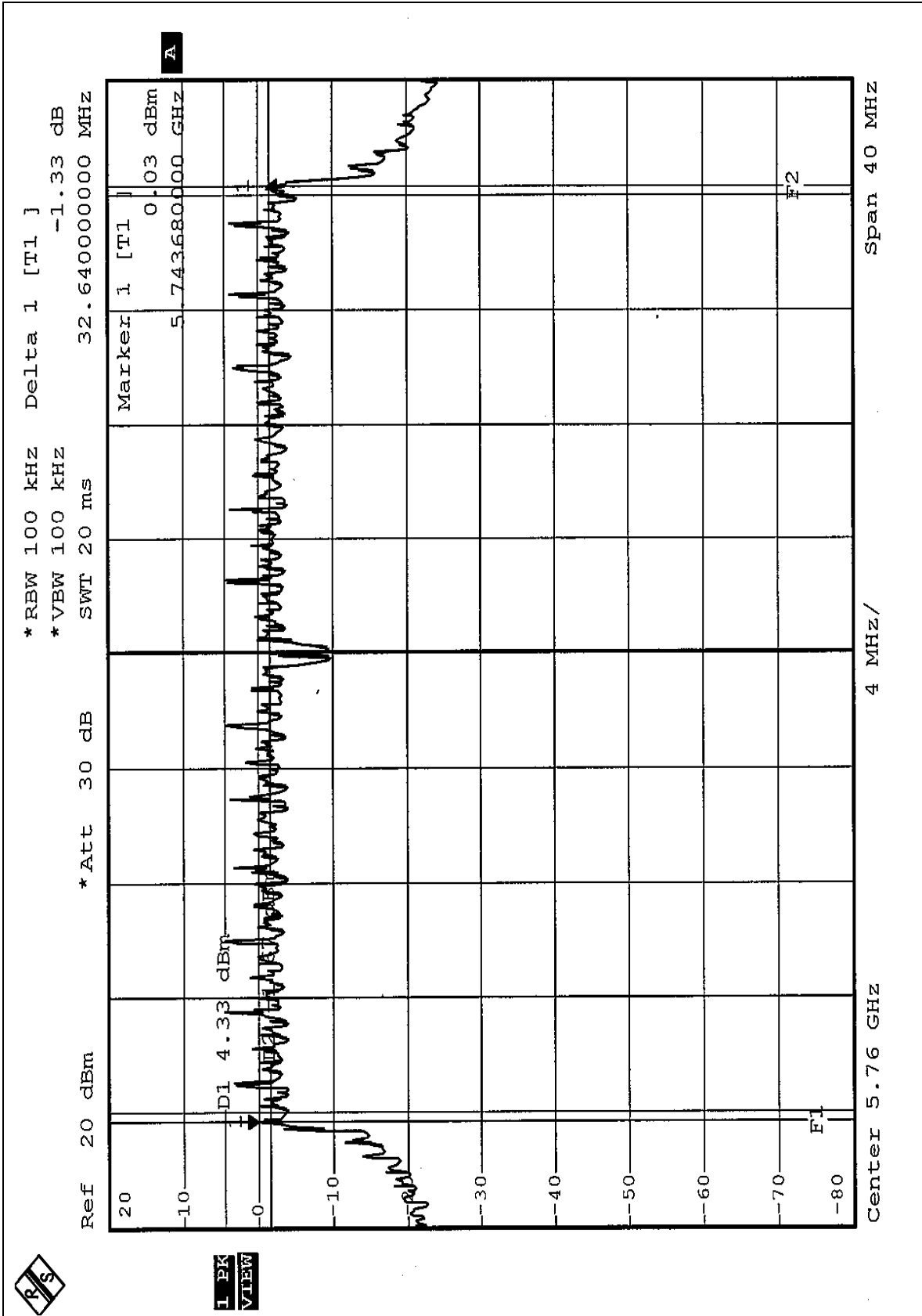


<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>MODE</b>	Turbo	<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz
<b>ENVIRONMENTAL CONDITIONS</b>	25deg. C, 60%RH, 991 hPa	<b>TESTED BY</b>	Gary Chang

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

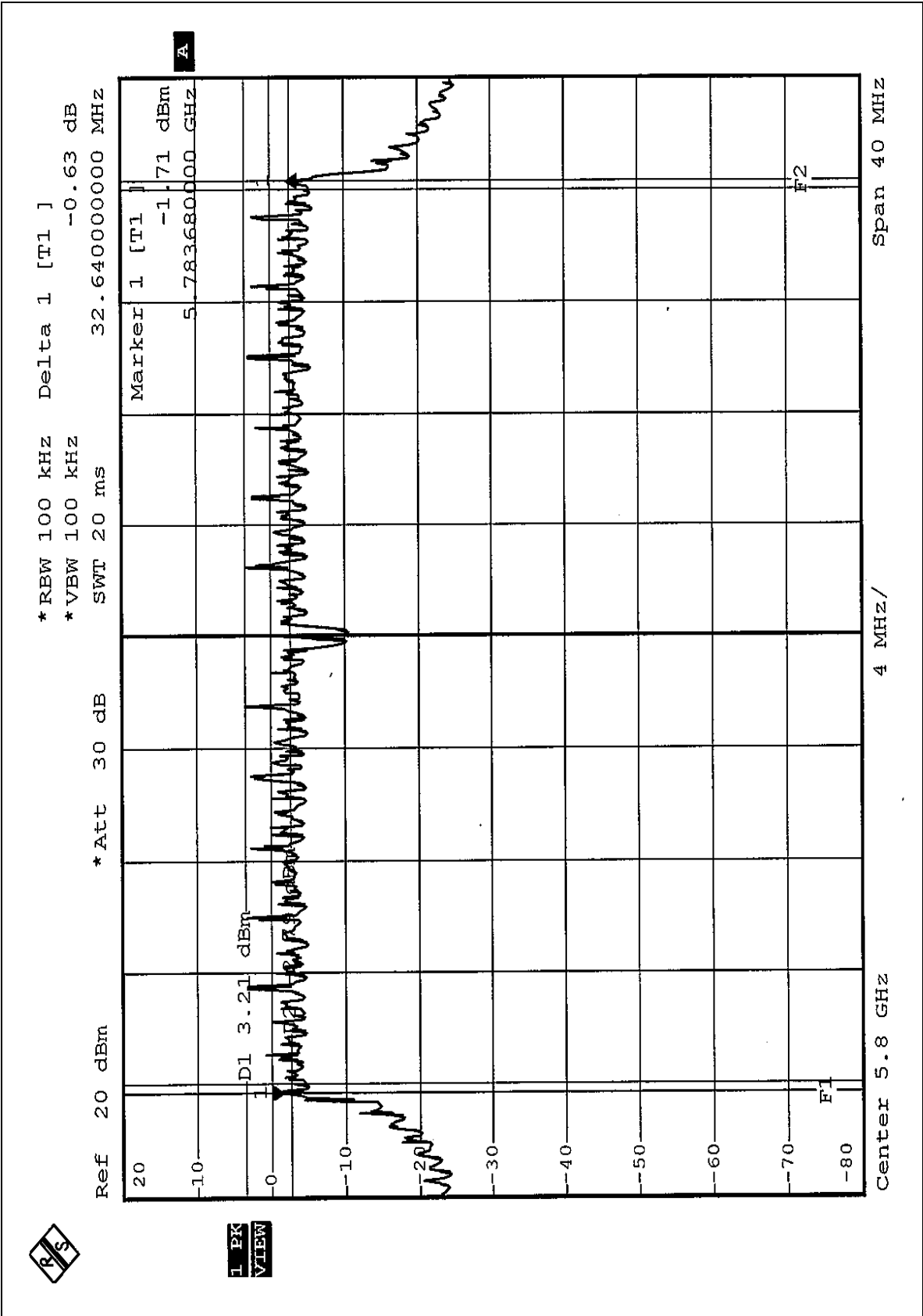


CH4





CH5



1 PK VIEW



## 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

<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>MODE</b>	Normal	<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz
<b>ENVIRONMENTAL CONDITIONS</b>	25deg. C, 60%RH, 991 hPa	<b>TESTED BY</b>	Gary Chang

<b>CHANNEL</b>	<b>CHANNEL FREQUENCY (MHz)</b>	<b>PEAK POWER OUTPUT (dBm)</b>	<b>PEAK POWER LIMIT (dBm)</b>	<b>PASS/FAIL</b>
9	5745	18.50	30	PASS
11	5785	19.51	30	PASS
13	5825	18.25	30	PASS

<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>MODE</b>	Turbo	<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz
<b>ENVIRONMENTAL CONDITIONS</b>	25deg. C, 60%RH, 991 hPa	<b>TESTED BY</b>	Gary Chang

<b>CHANNEL</b>	<b>CHANNEL FREQUENCY (MHz)</b>	<b>PEAK POWER OUTPUT (dBm)</b>	<b>PEAK POWER LIMIT (dBm)</b>	<b>PASS/FAIL</b>
4	5760	18.26	30	PASS
5	5800	18.26	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

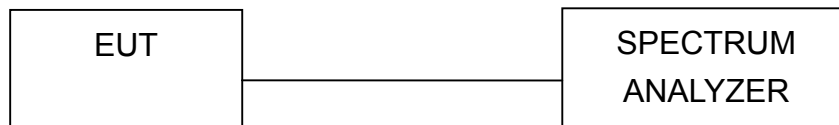
The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3 kHz RBW and 30 kHz VBW, set sweep time = span/3 kHz. The power spectral density was measured and recorded.

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





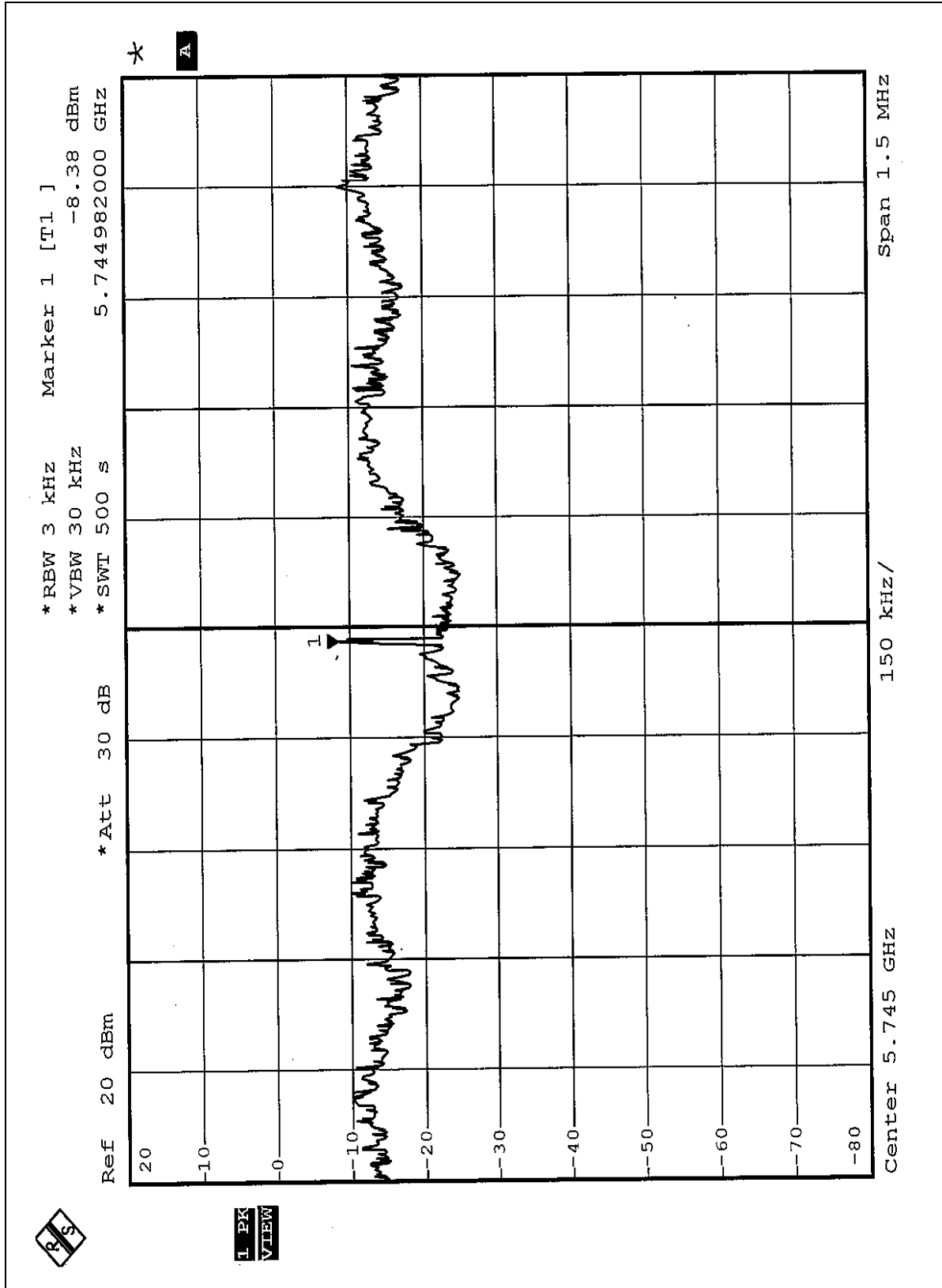
## 5.11.7 TEST RESULTS

<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>MODE</b>	Normal	<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz
<b>ENVIRONMENTAL CONDITIONS</b>	25deg. C, 60%RH, 991 hPa	<b>TESTED BY</b>	Gary Chang

<b>CHANNEL</b>	<b>CHANNEL FREQUENCY (MHz )</b>	<b>RF POWER LEVEL IN 3 kHz BW (dBm)</b>	<b>MAXIMUM LIMIT (dBm)</b>	<b>PASS/FAIL</b>
9	5745	-8.38	8	PASS
11	5785	-4.51	8	PASS
13	5825	-9.46	8	PASS

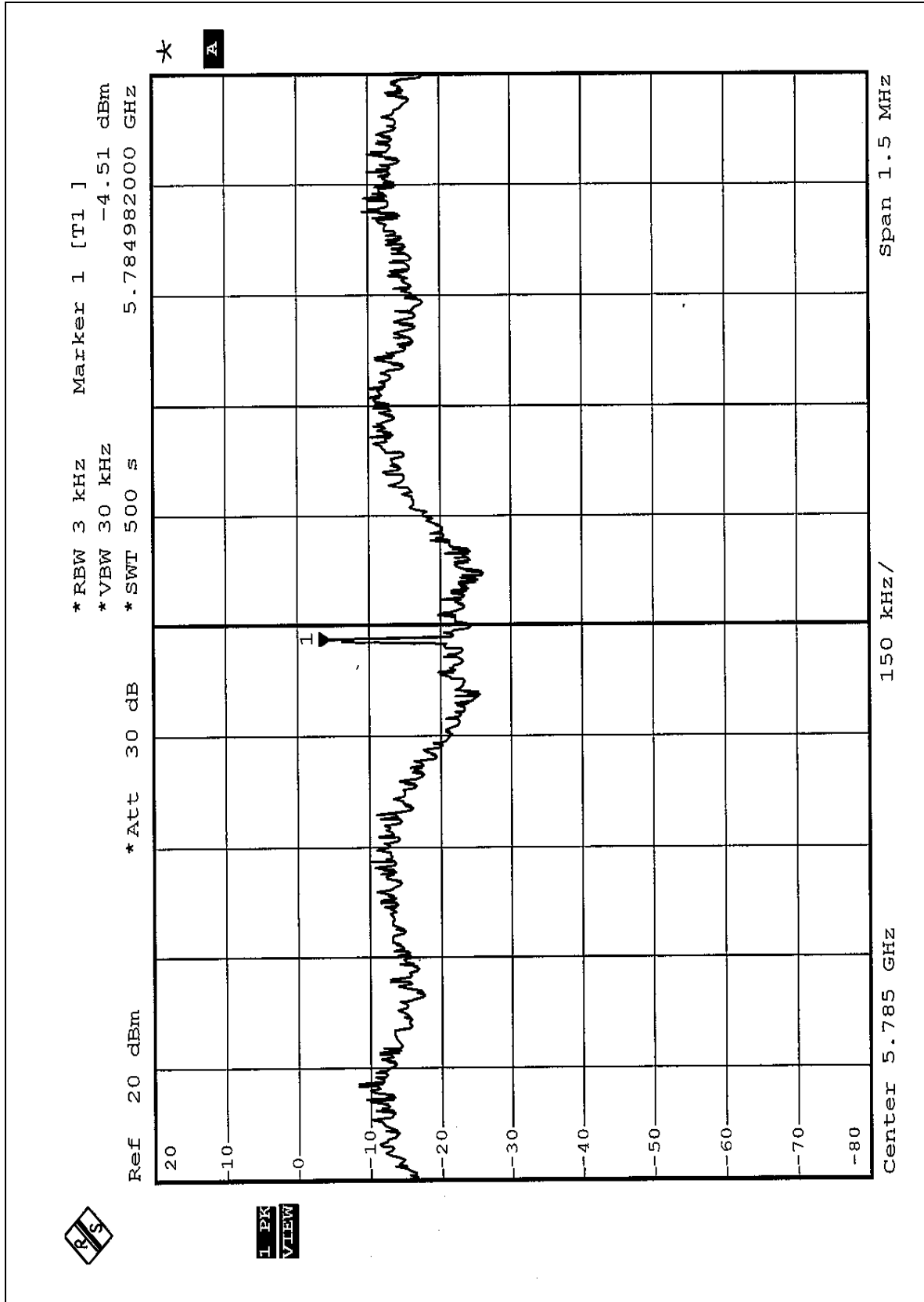


CH9



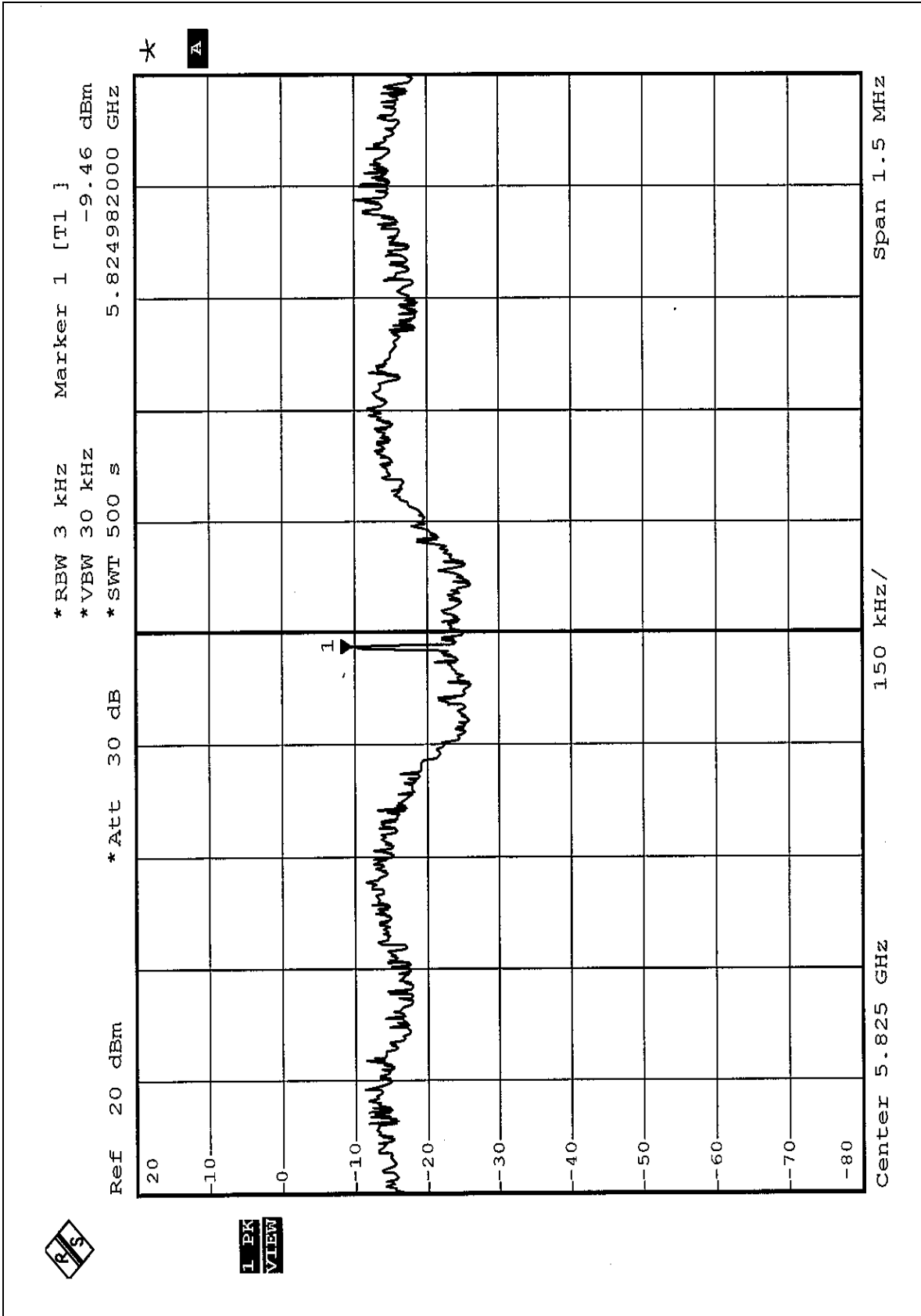


CH11





CH13



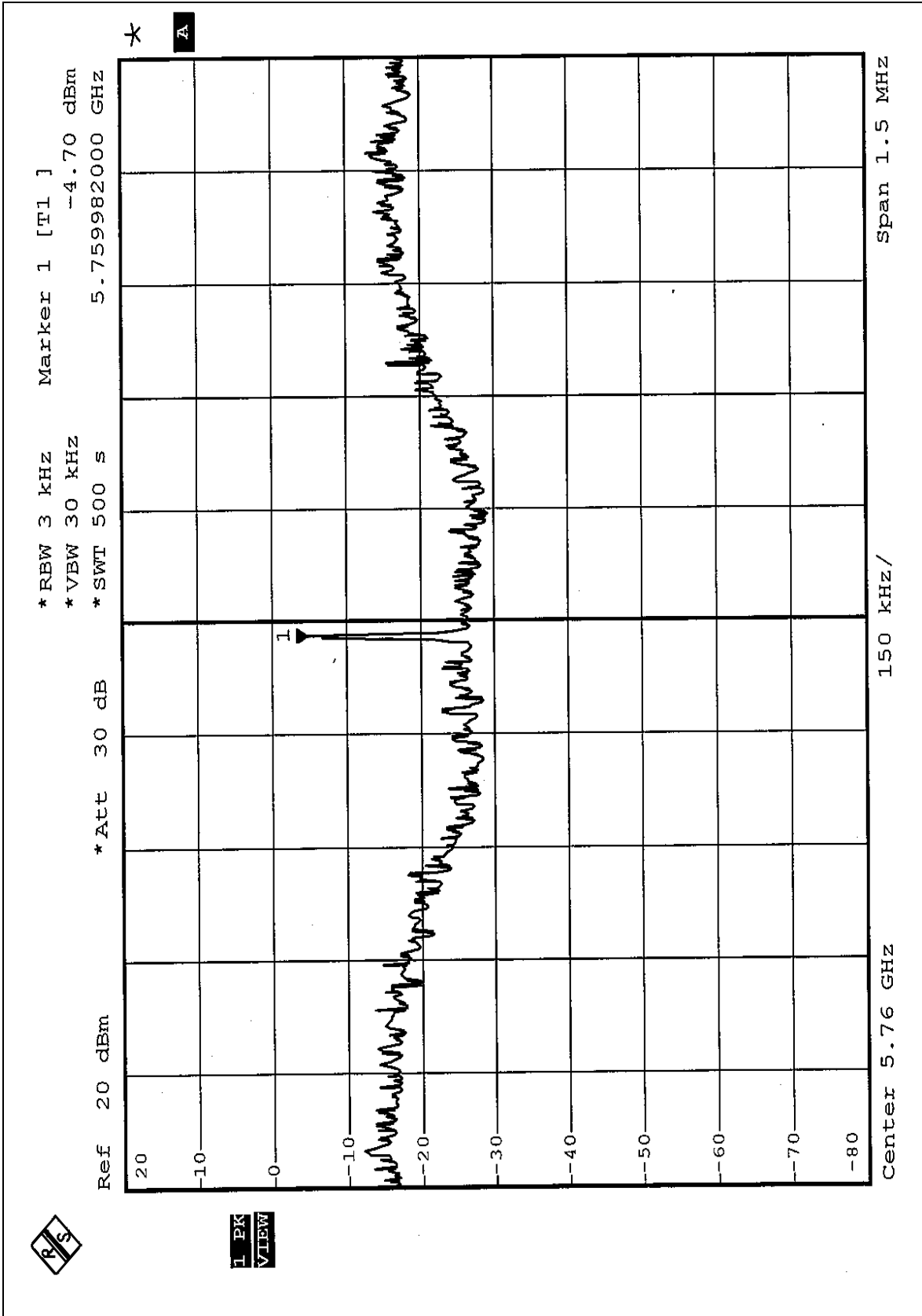


<b>EUT</b>	802.11 a+g Super A/G Intelligent WLAN Access Point	<b>MODEL</b>	CAP-1
<b>MODE</b>	Turbo	<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz
<b>ENVIRONMENTAL CONDITIONS</b>	25deg. C, 60%RH, 991 hPa	<b>TESTED BY</b>	Gary Chang

<b>CHANNEL</b>	<b>CHANNEL FREQUENCY (MHz )</b>	<b>RF POWER LEVEL IN 3 kHz BW (dBm)</b>	<b>MAXIMUM LIMIT (dBm)</b>	<b>PASS/FAIL</b>
4	5760	-4.70	8	PASS
5	5800	-5.66	8	PASS

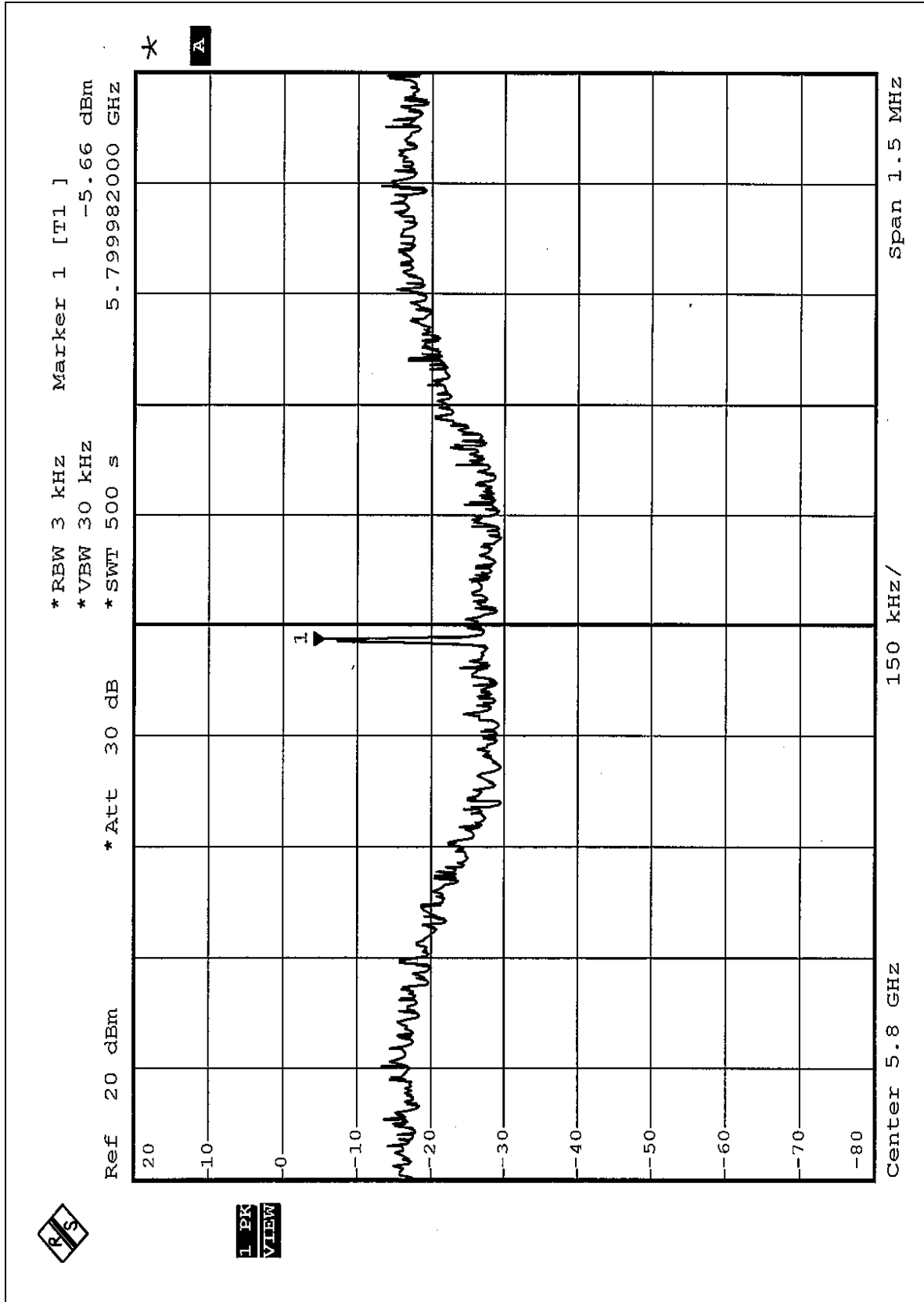


CH4





CH5





## 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 kHz 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





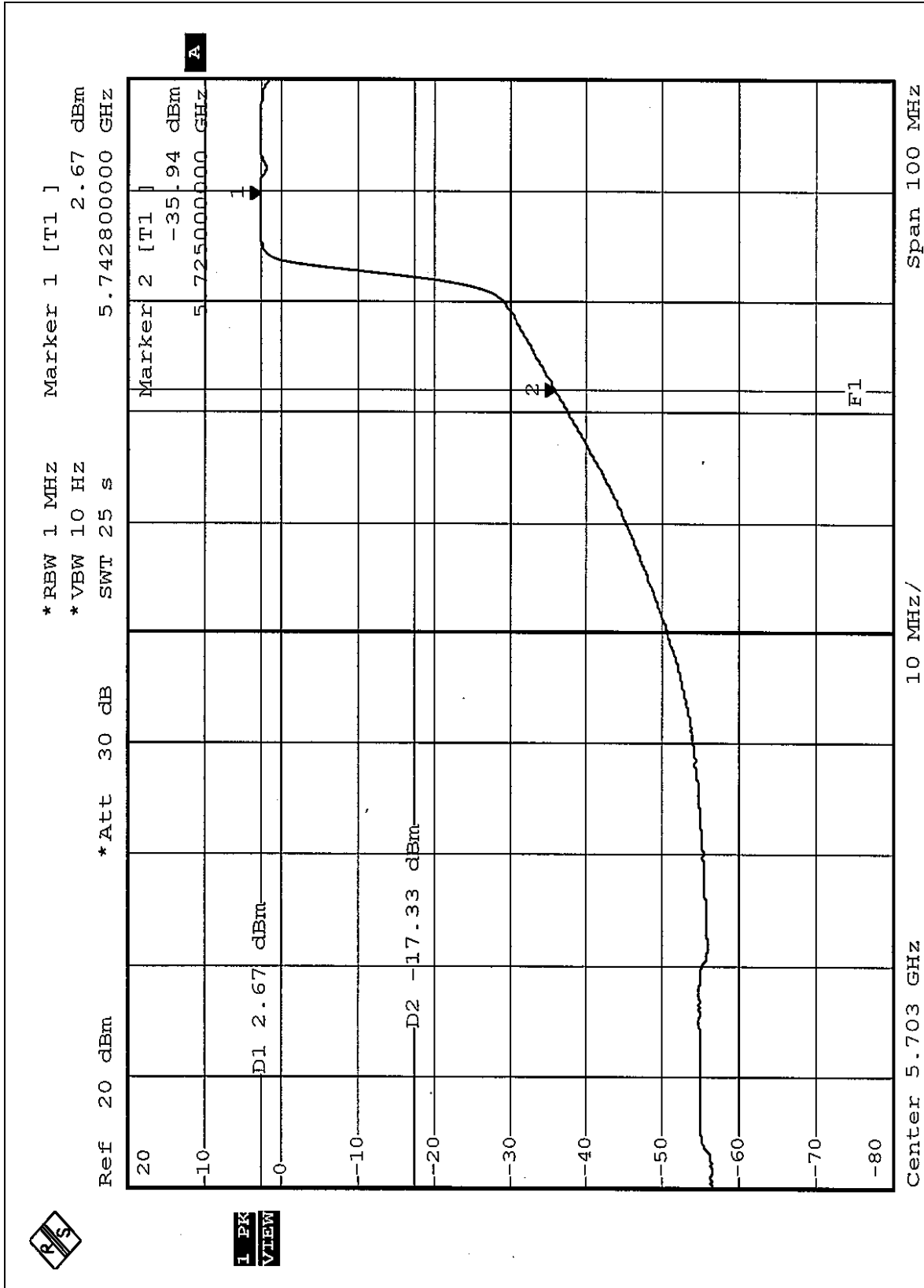
#### 5.12.5 EUT OPERATING CONDITION

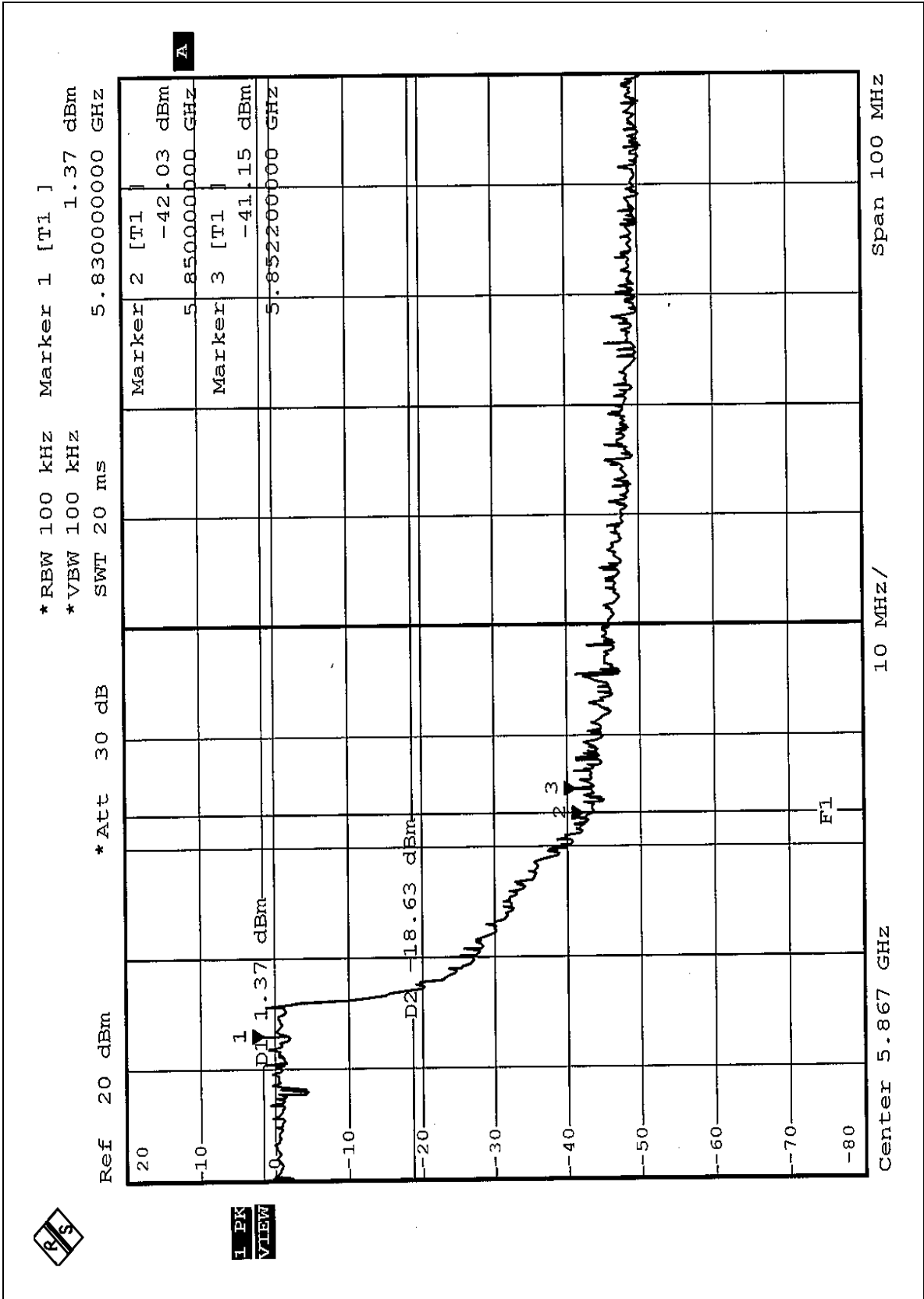
Same as Item 5.9.6

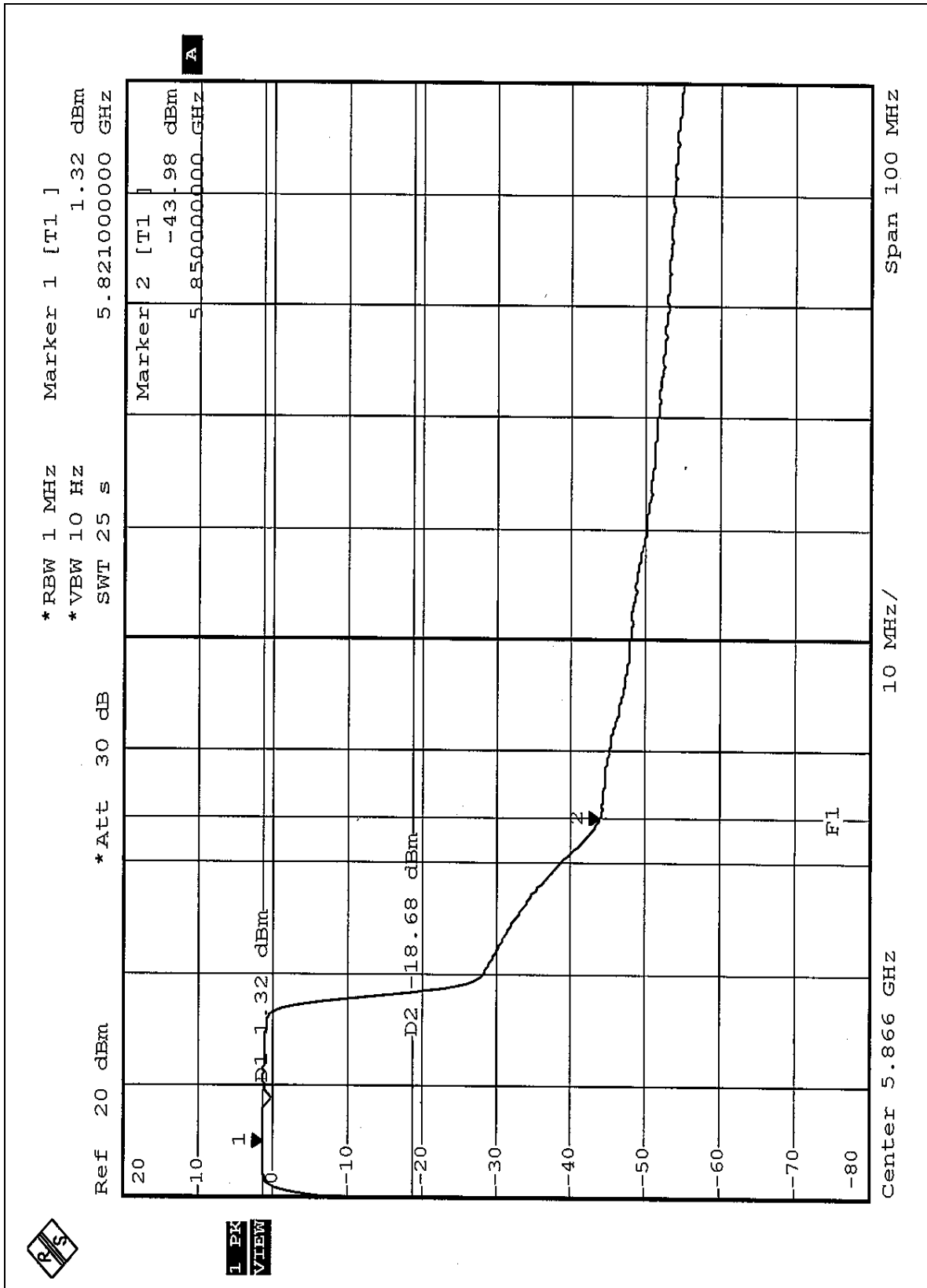
#### 5.12.6 TEST RESULTS

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).



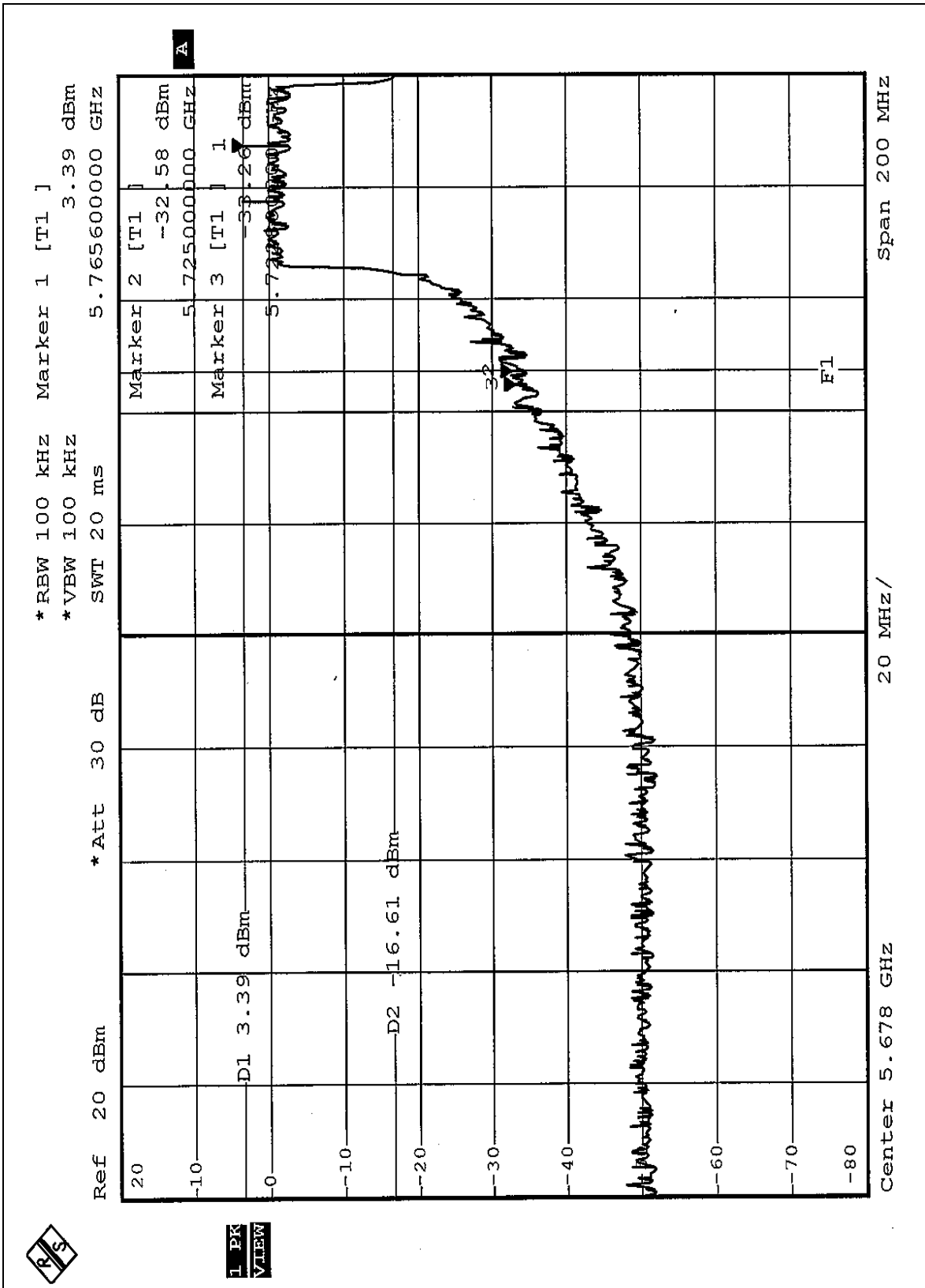




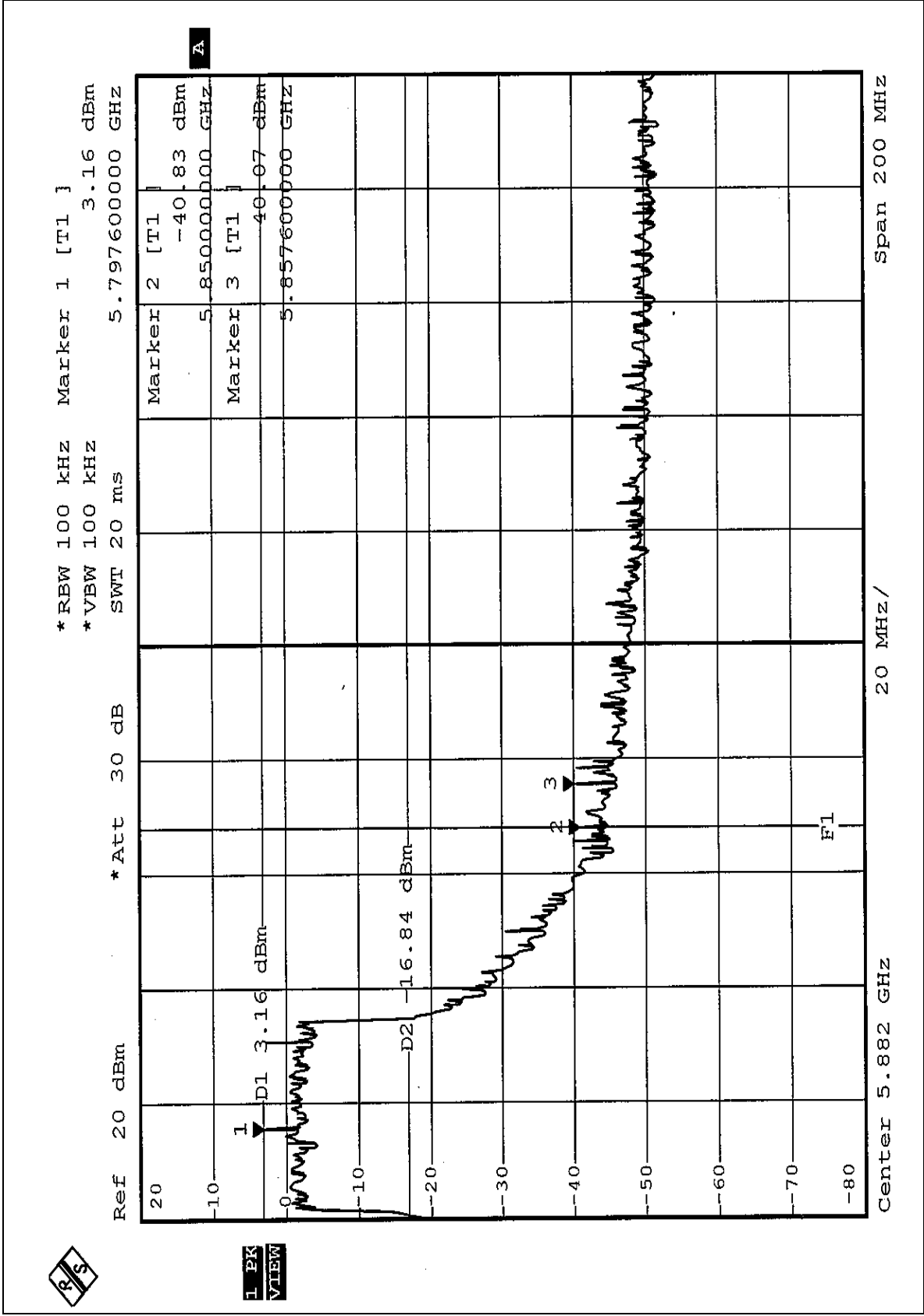




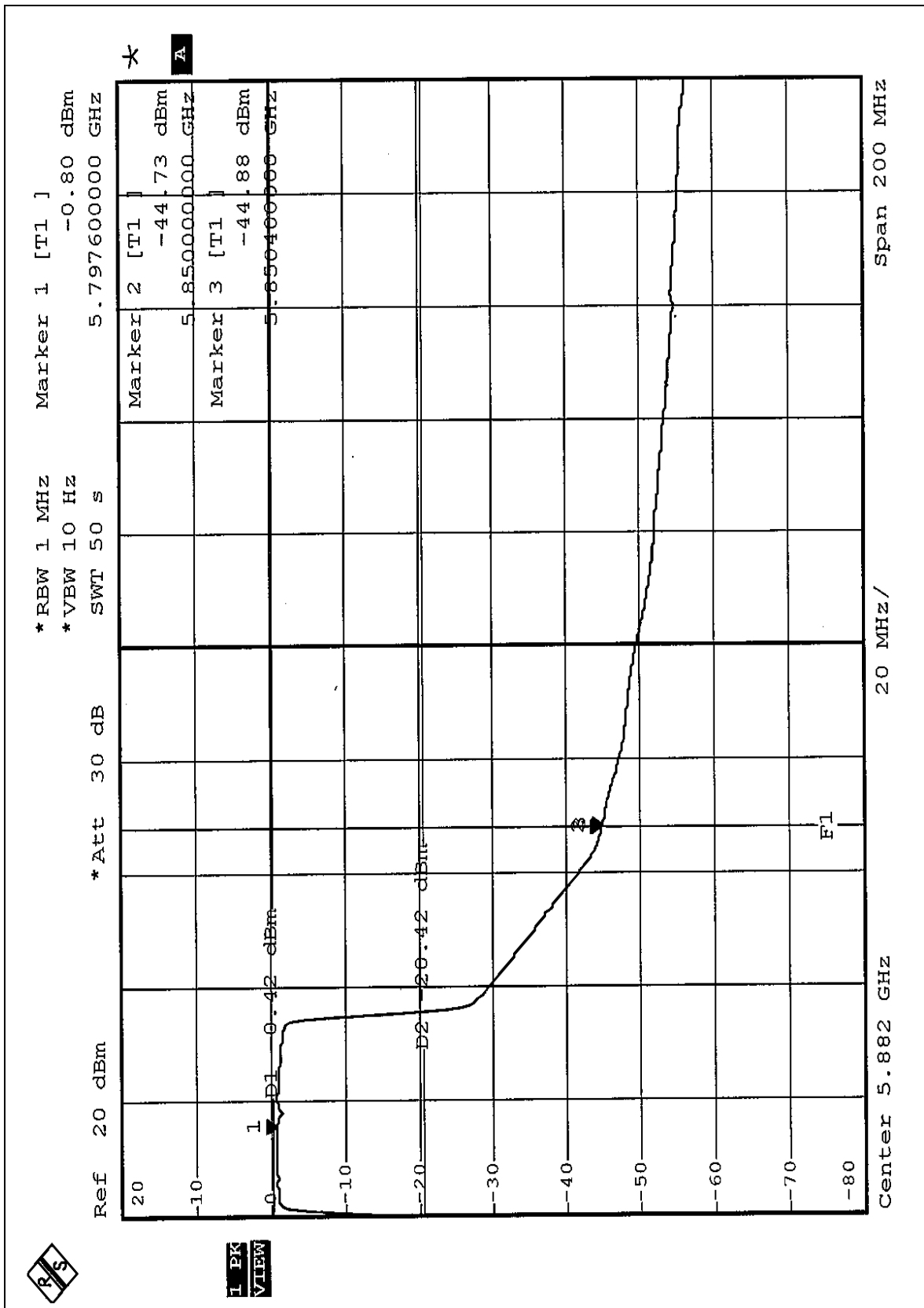
Turbo Mode













## **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 Patch antenna with UFL antenna connector. The maximum Gain of the antenna is 4.33dBi.

## 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:

<b>USA</b>	FCC, NVLAP, UL
<b>Germany</b>	TUV Rheinland
<b>Japan</b>	VCCI
<b>Norway</b>	NEMKO
<b>Canada</b>	INDUSTRY CANADA , CSA
<b>R.O.C.</b>	CNLA, BSMI, DGT
<b>Netherlands</b>	Telefication
<b>Singapore</b>	PSB , GOST-ASIA(MOU)
<b>Russia</b>	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](http://www.adt.com.tw/index.5/phtml). If you have any comments, please feel free to contact us at the following:

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

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