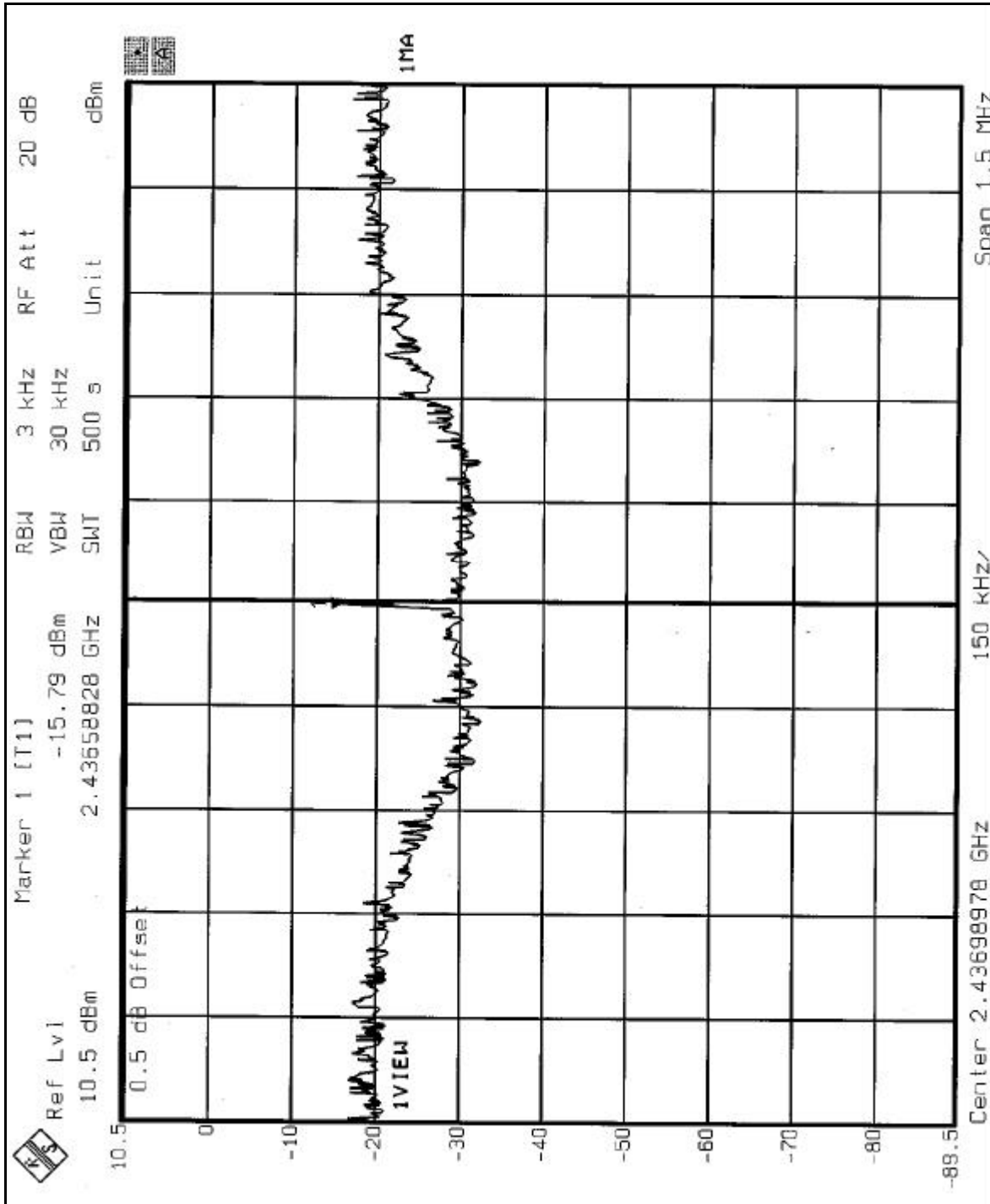




CH6





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
SPECTRUM ANALYZER	FSEK30	100049	Aug. 12, 2005

NOTE:

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

4.6.3 TEST PROCEDURE

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

4.6.4 DEVIATION FROM TEST STANDARD

No deviation

4.6.5 EUT OPERATING CONDITION

Same as Item 4.3.6



4.6.6 TEST RESULTS

The spectrum plots are attached on the following 12 pages. D2 line indicates the highest level, and D1 line indicates the 20dB offset below D2. It shows compliance with the requirement in part 15.247(C).

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

NOTE 2: The band edge emission plot of CCK technique on page 66 show 56.85dB delta between carrier maximum power and local maximum emission in restrict band (2.4835GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 105.53dBuV/m, so the maximum field strength in restrict band is $105.53 - 56.58 = 48.68$ dBuV/m which is under 54dBuV/m limit.

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

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

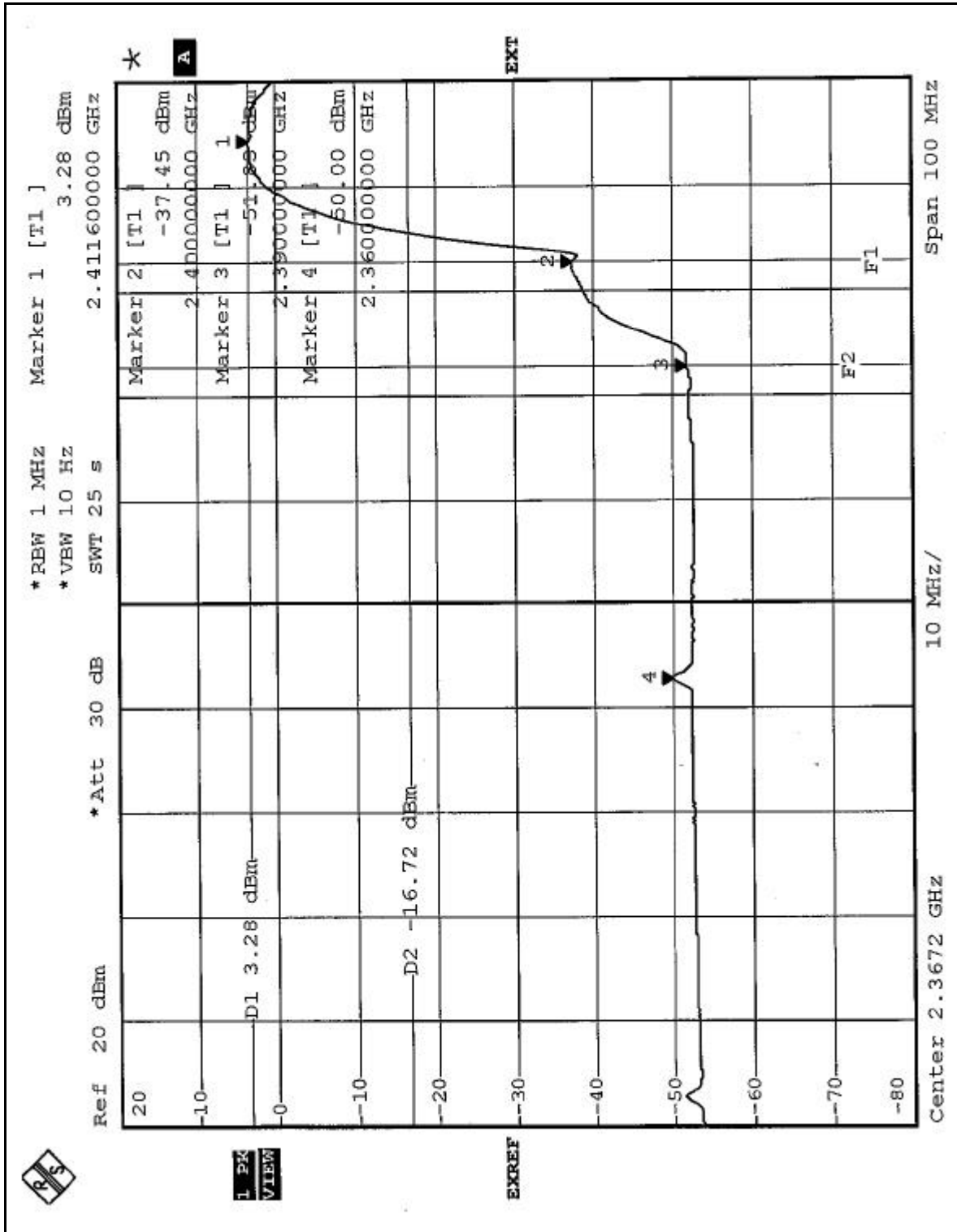
NOTE 5: The band edge emission plot of OFDM technique with Turbo mode on page 72 shows 46.93dB delta between carrier maximum power and local maximum emission in restrict band (2.3599GHz). The emission of carrier strength list in the test result of channel 6 at the item 4.2.7 is 89.14dBuV/m, so the maximum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

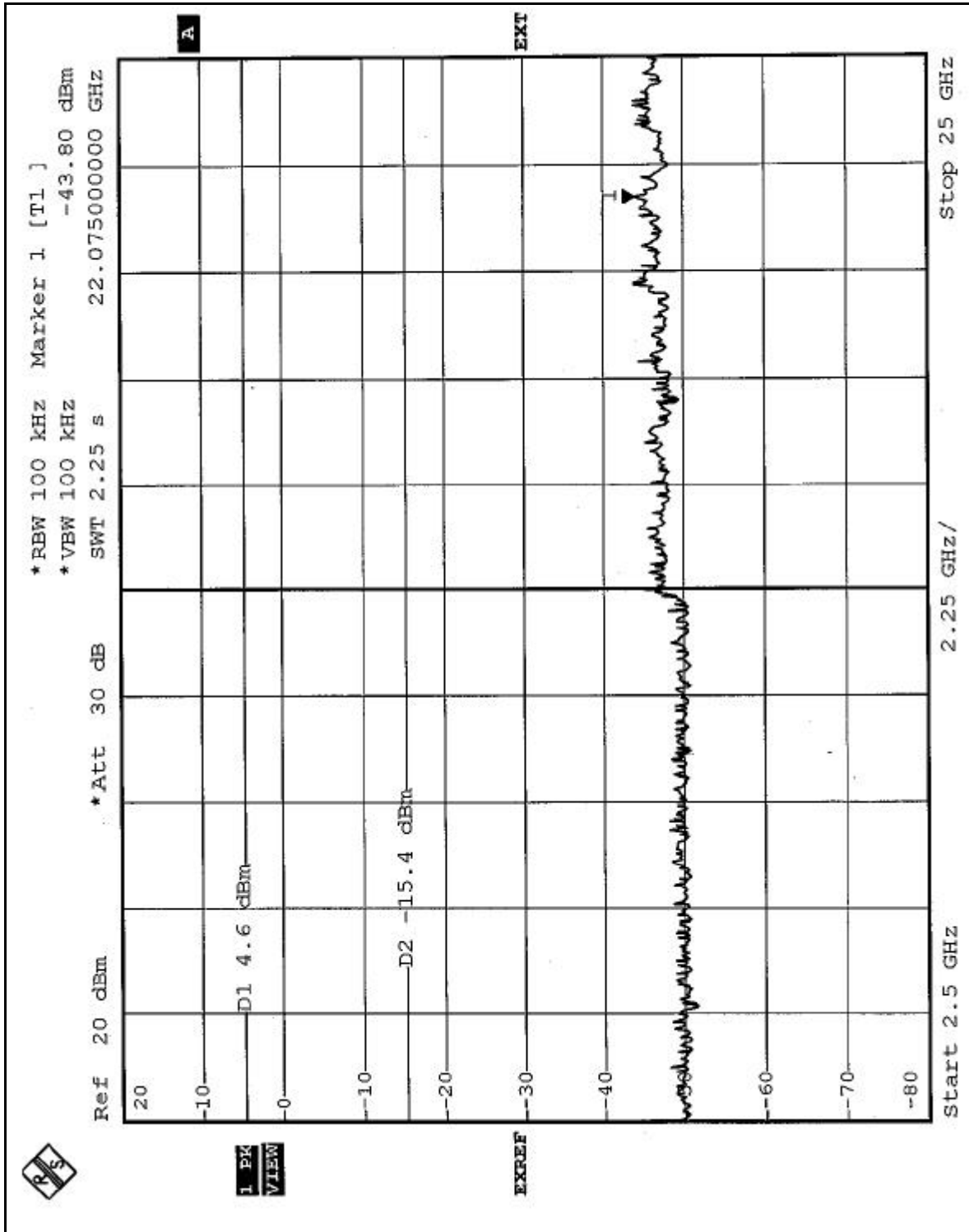
NOTE 6: The band edge emission plot of OFDM technique with Turbo mode on page 74 shows 51.39dB delta between carrier maximum power and local maximum emission in restrict band (2.4835GHz). The emission of carrier strength list in the test result of channel 6 at the item 4.2.7 is 96.02dBuV/m, so the maximum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

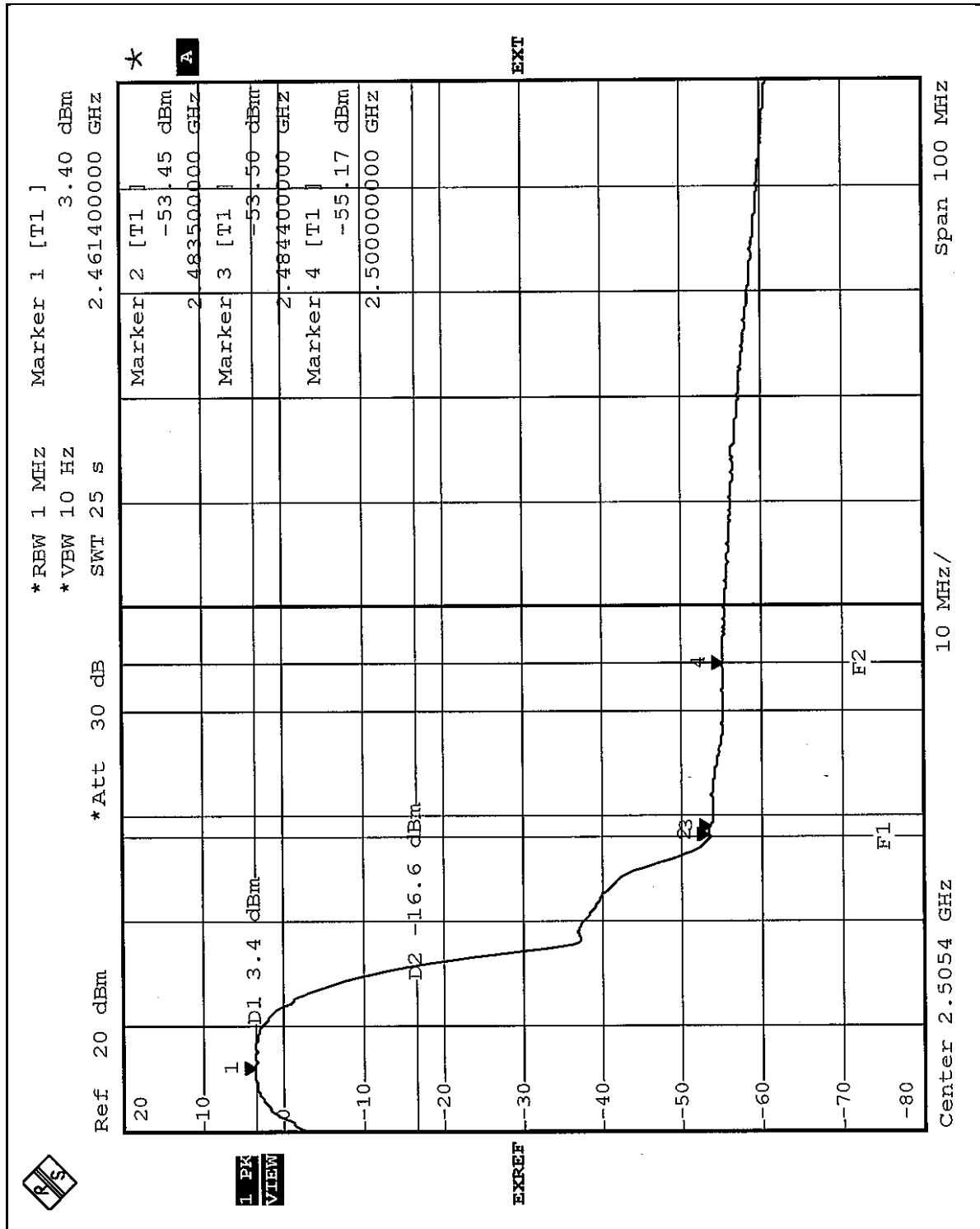
*(The test data is in accordance with ADT Report No.: RF930909L11.)

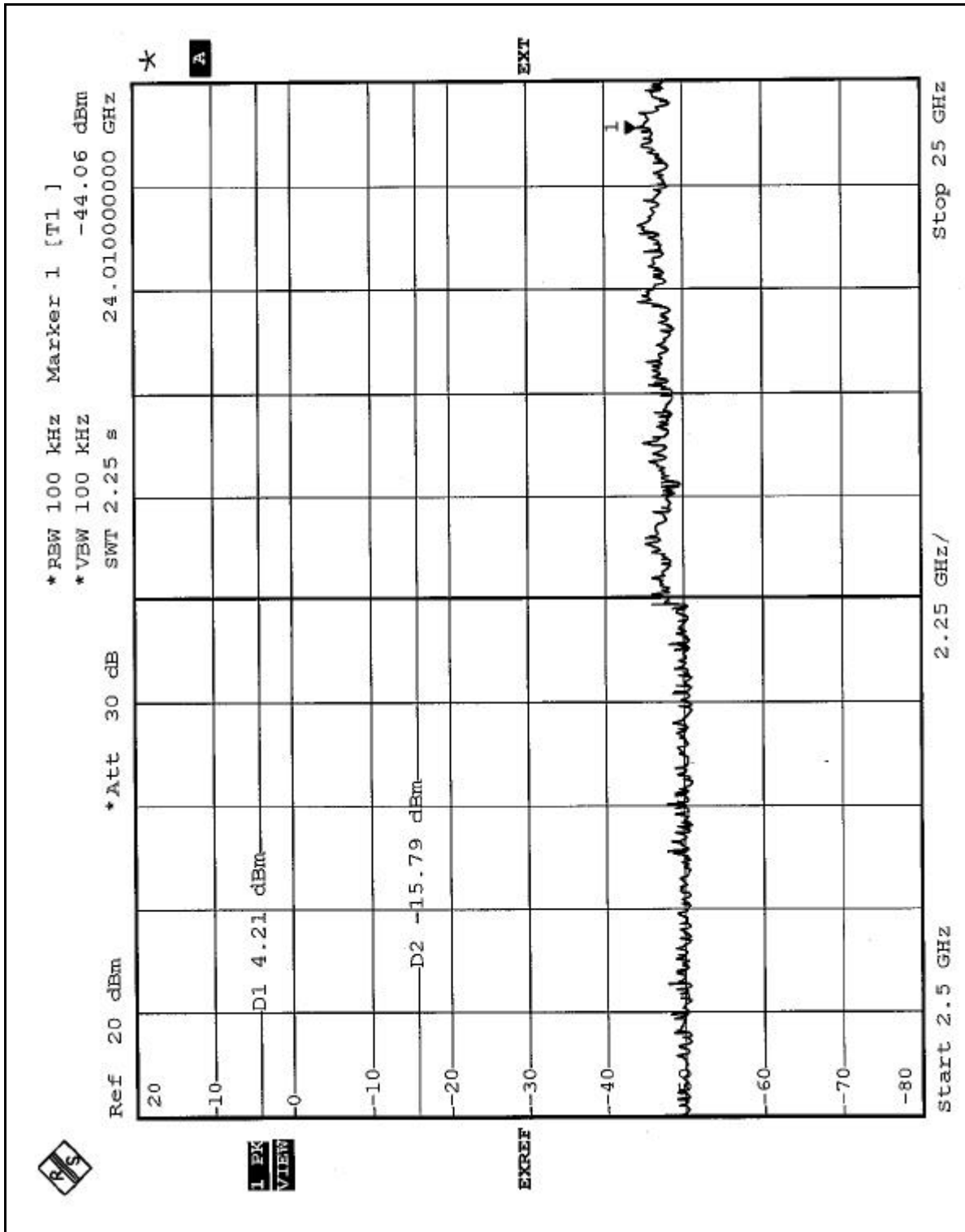


CCK mode:



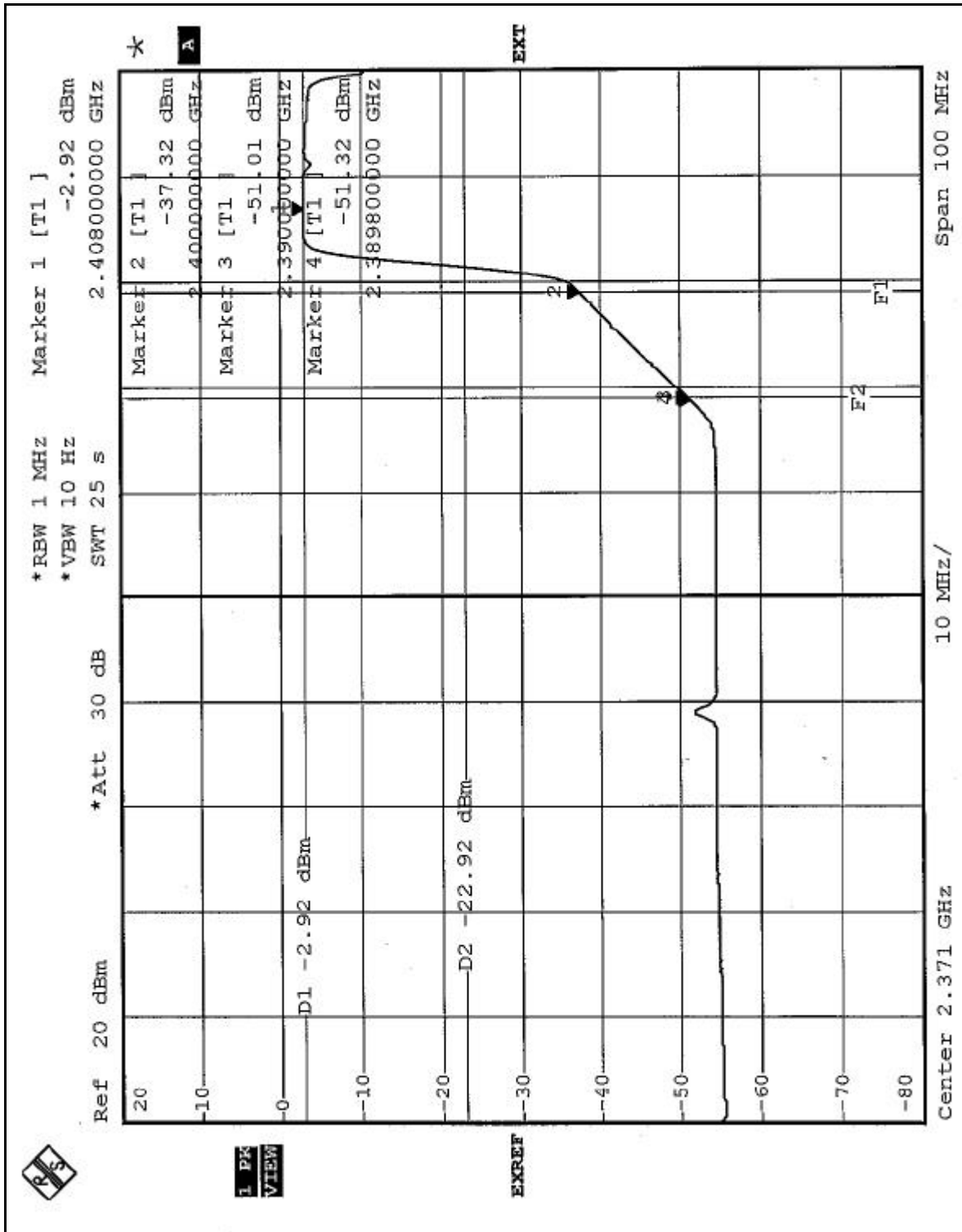


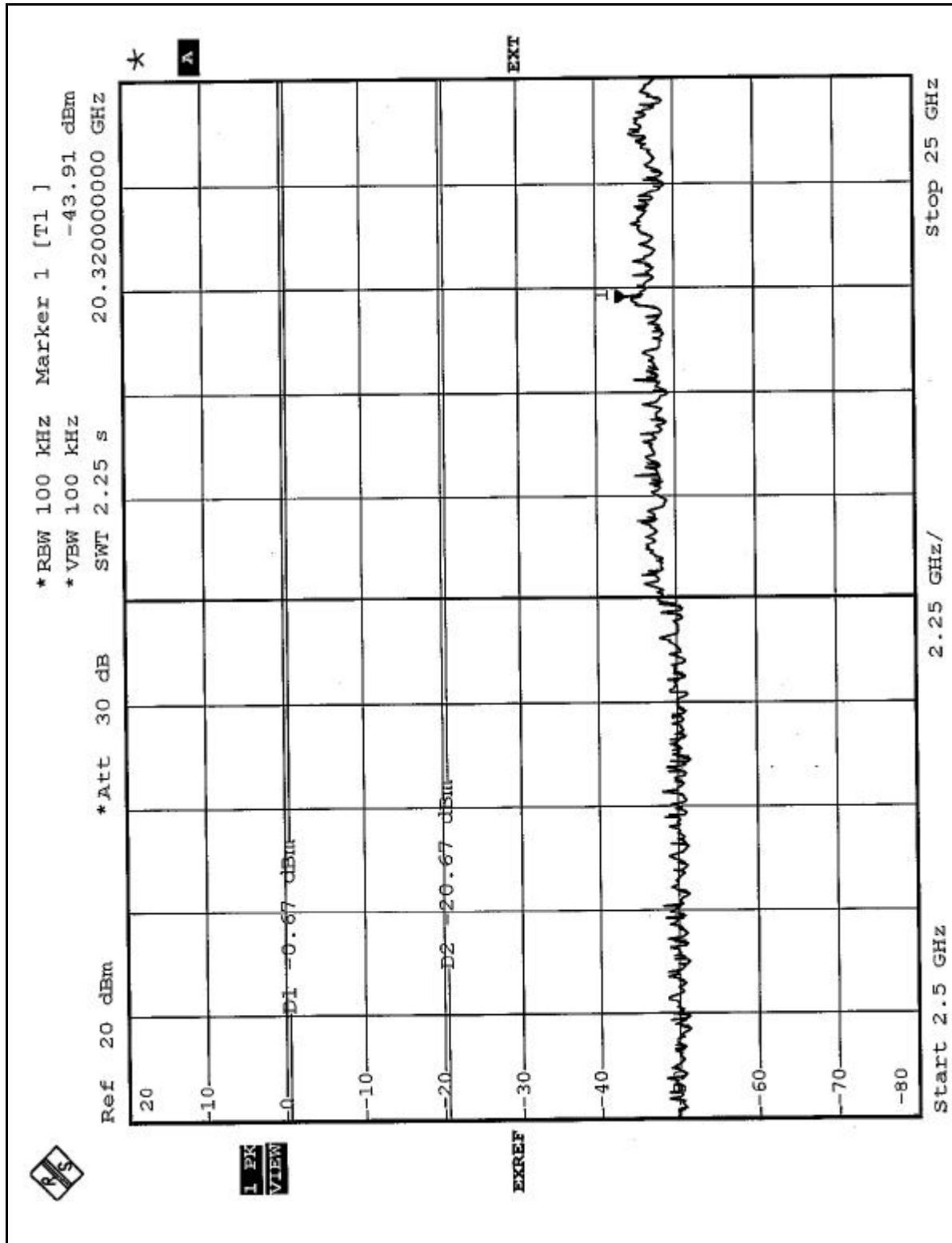


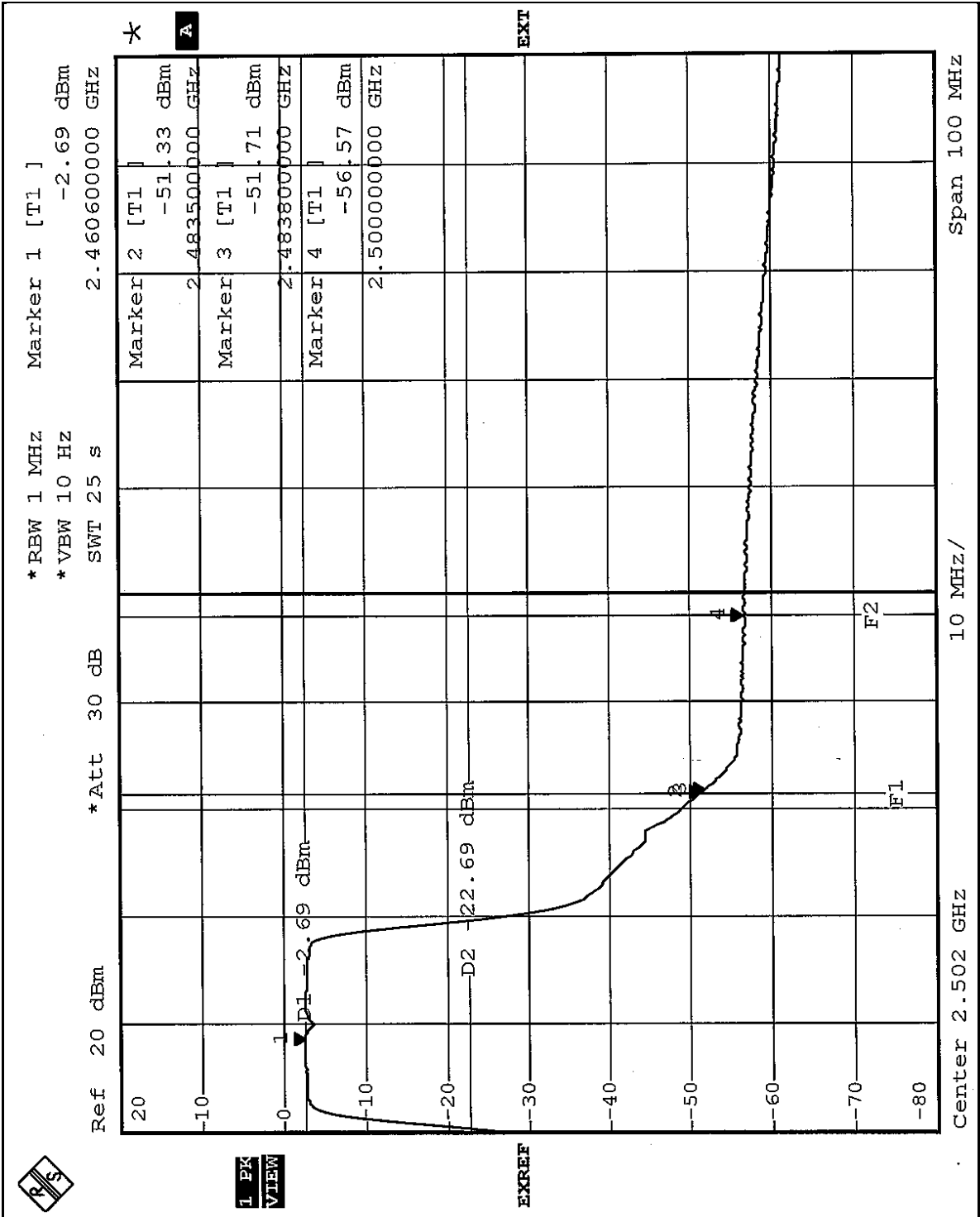


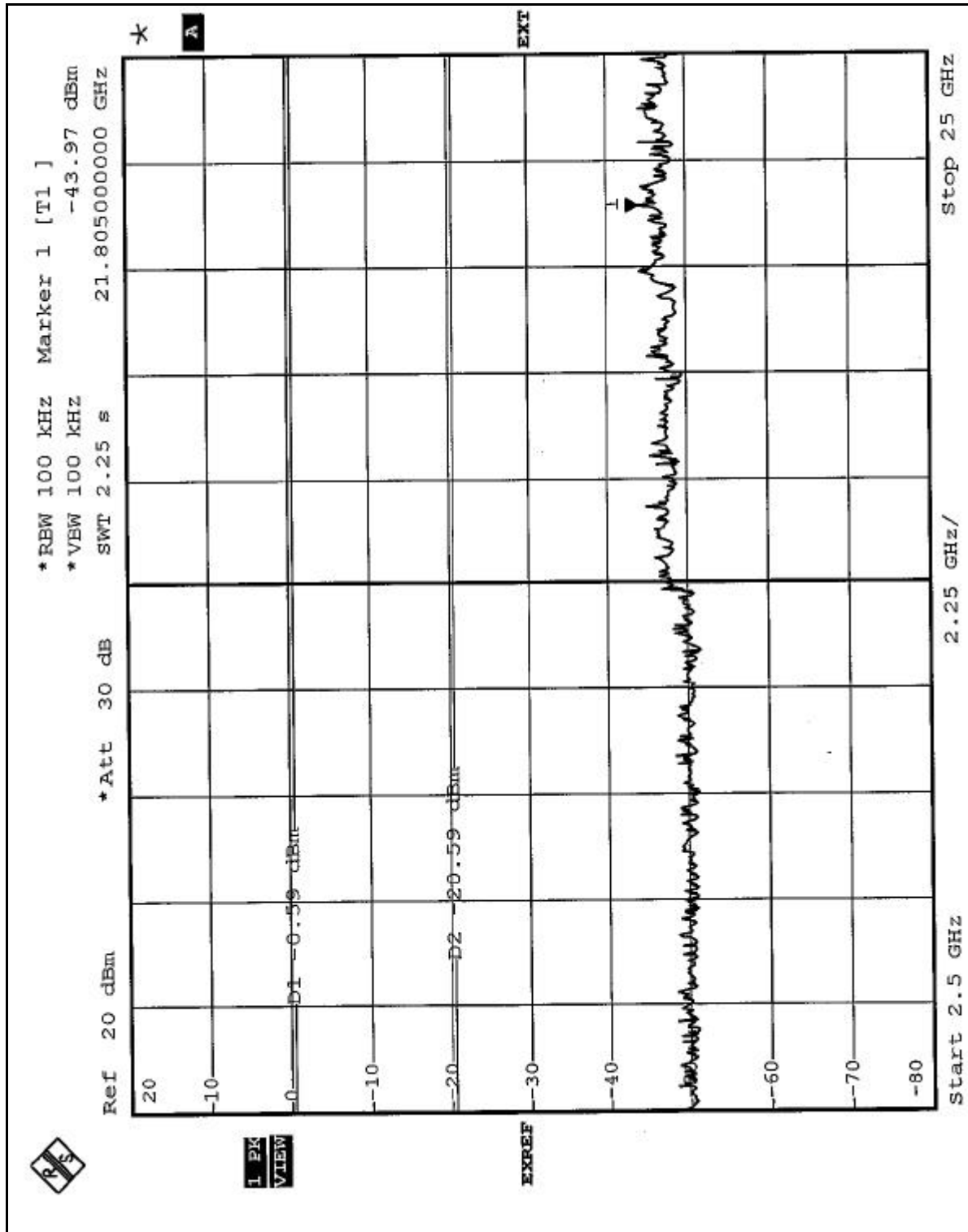


OFDM mode:



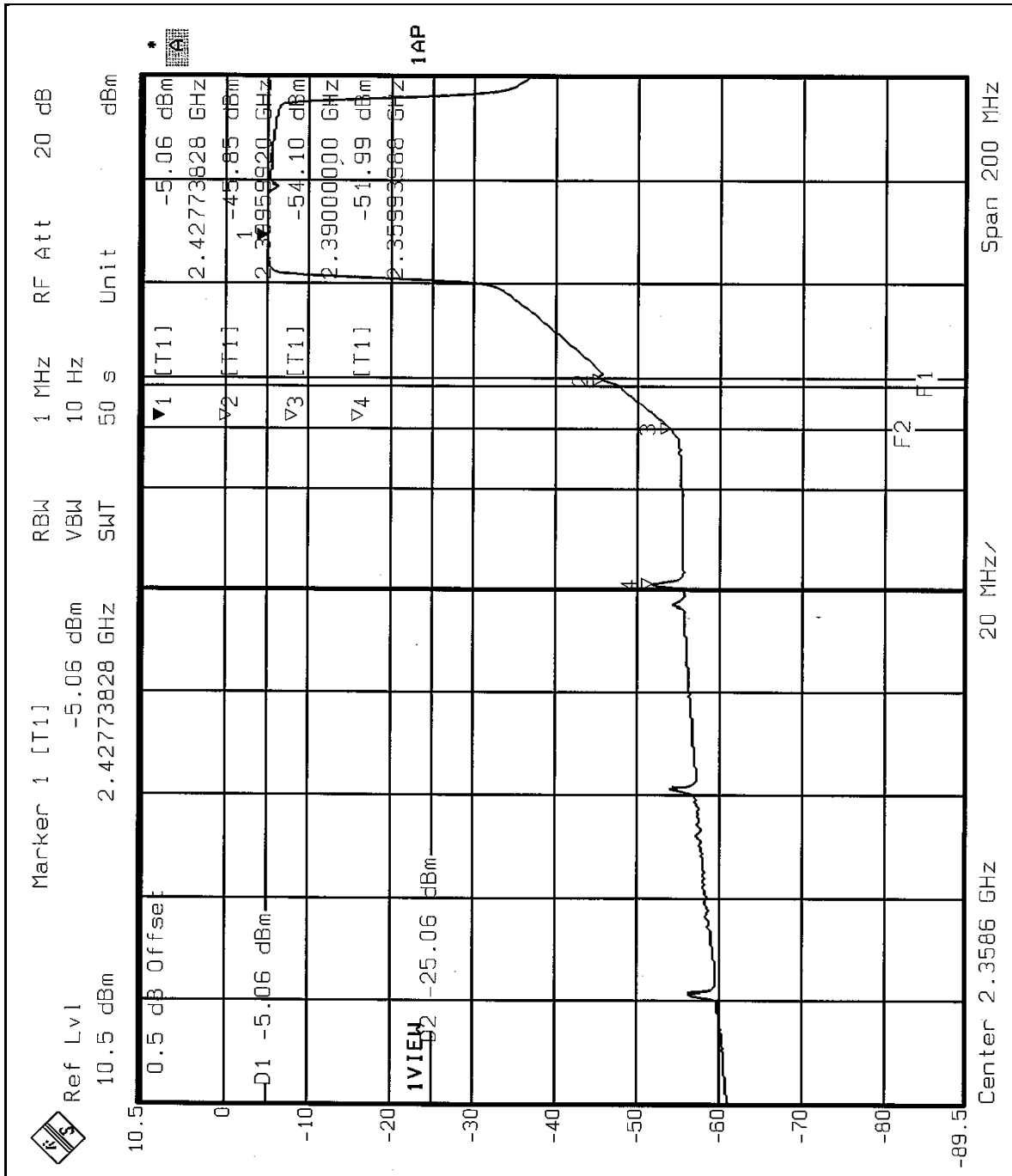


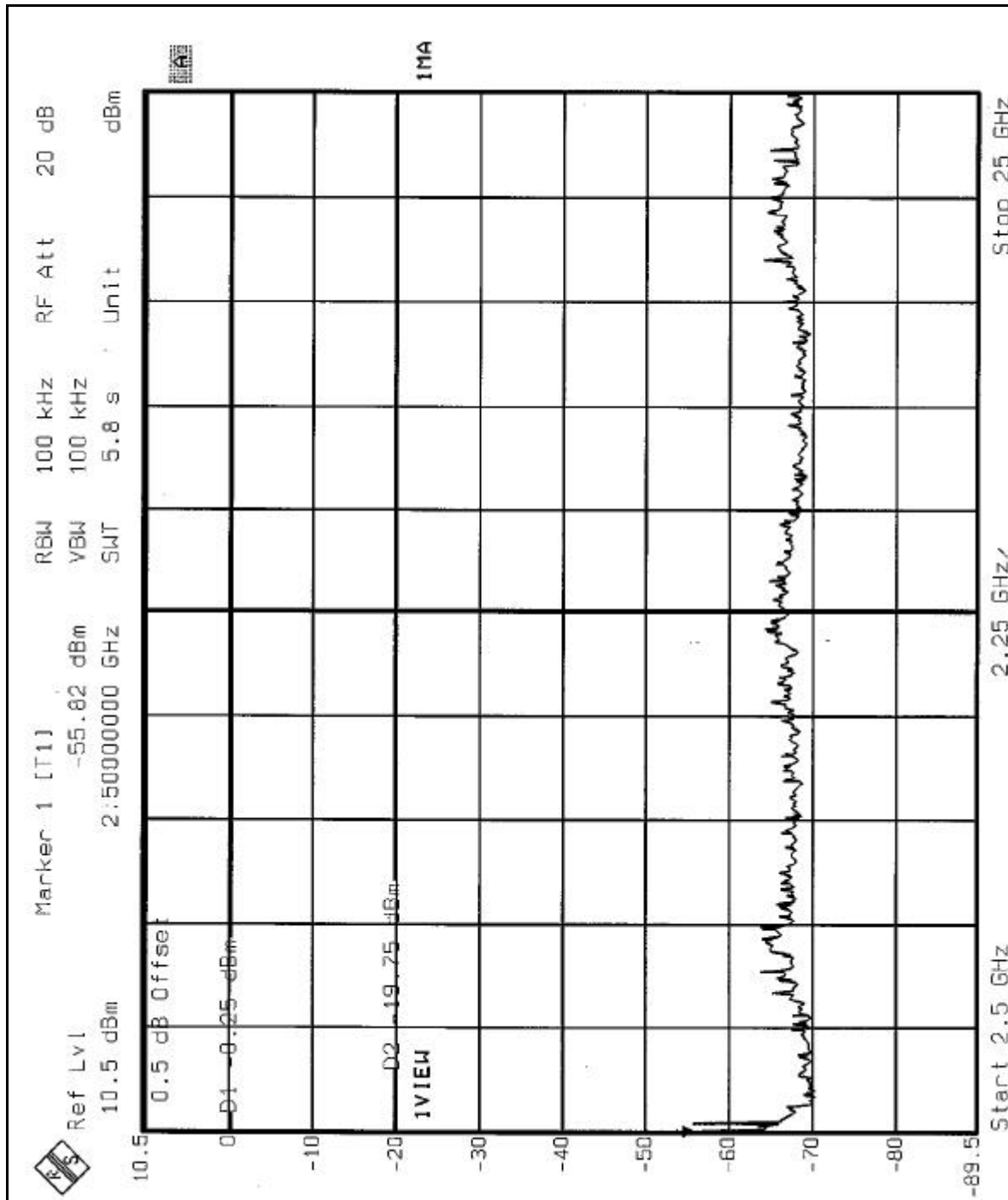


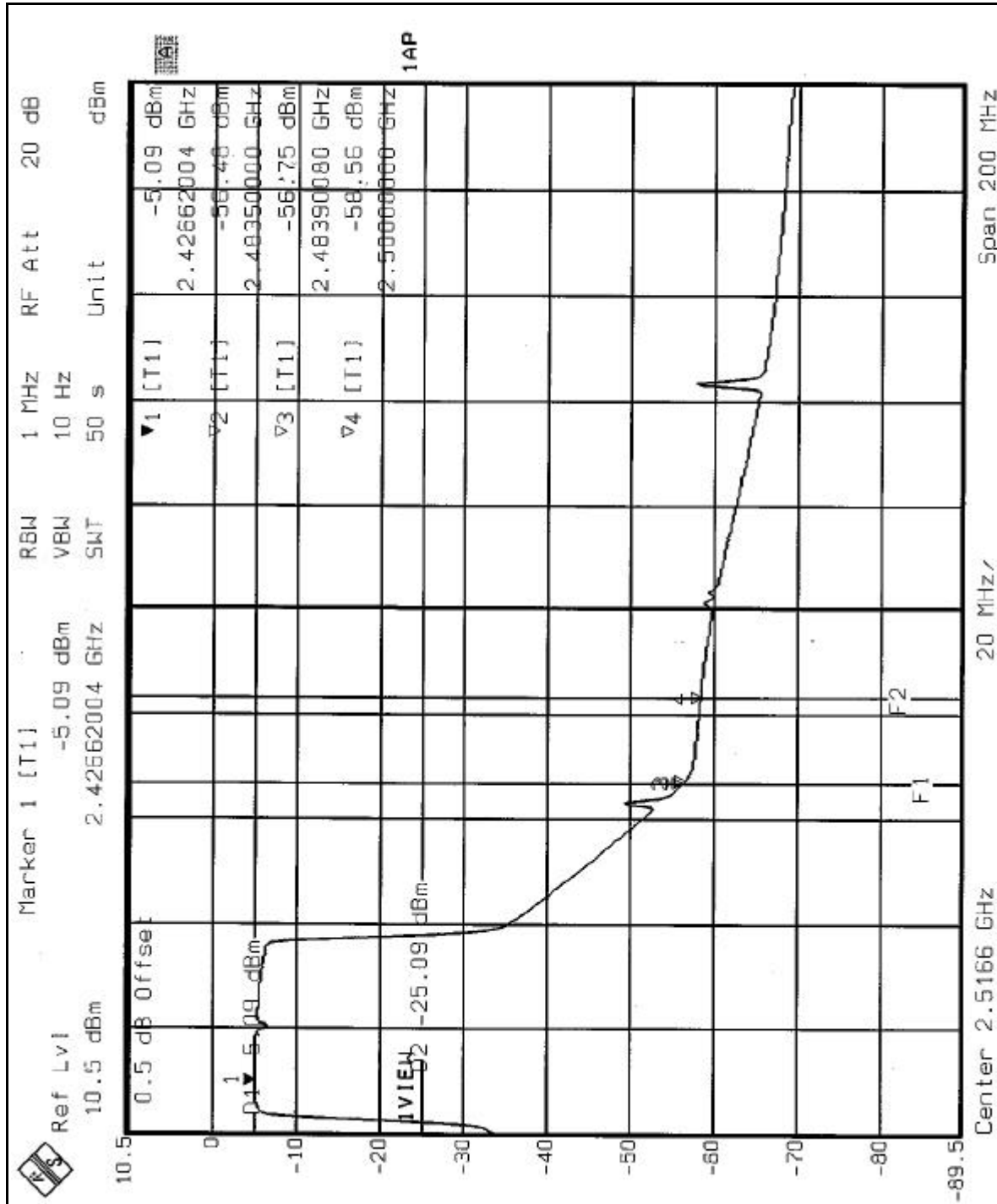


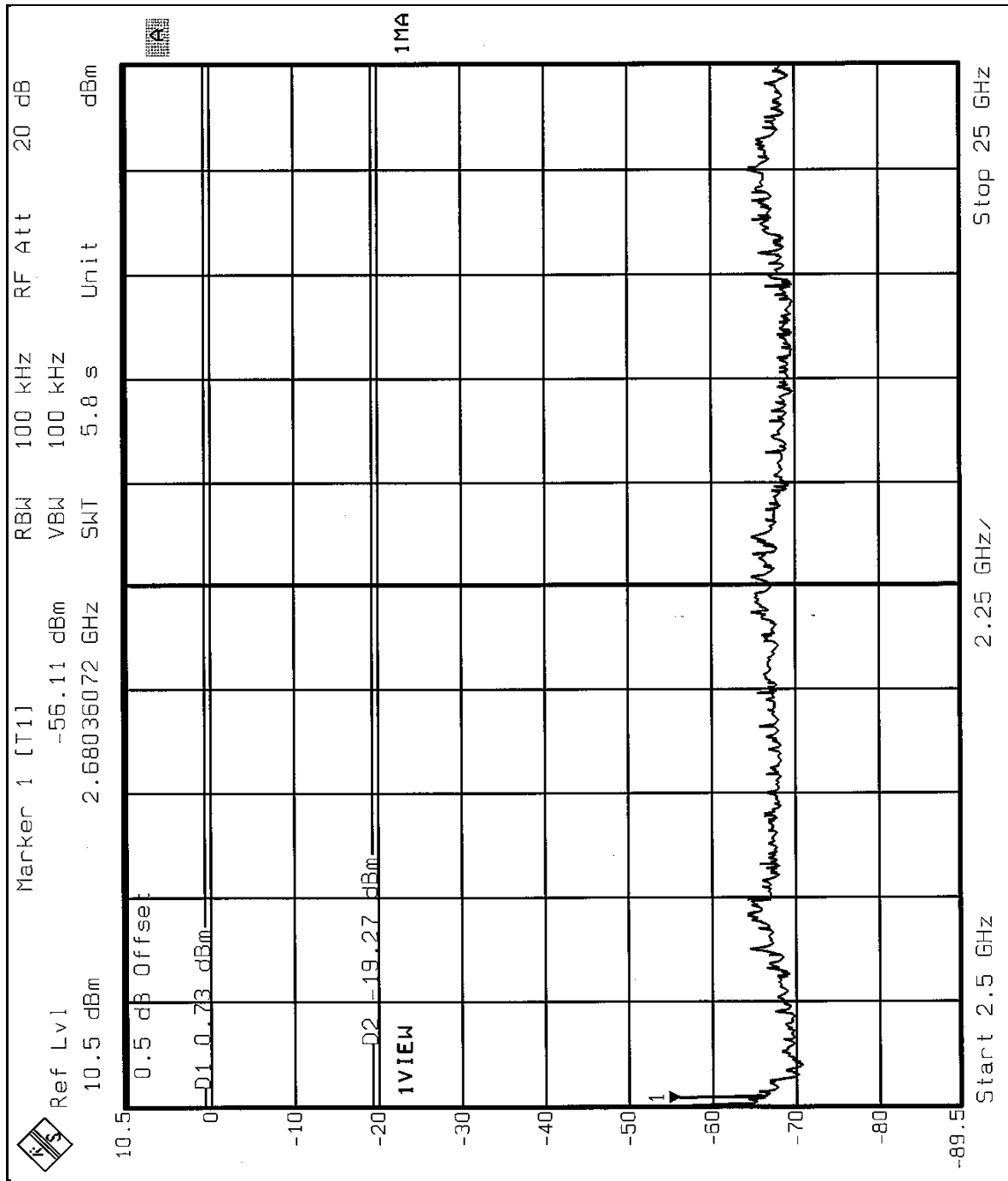


OFDM Turbo mode:











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 and printed antenna with UFL connector. The maximum Gain of the antenna is 4dBi.



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

5.1 CONDUCTED EMISSION MEASUREMENT

5.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

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

5.1.2 TEST INSTRUMENTS

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

- NOTE:**
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 2. The test was performed in HwaYa Shielded Room 2.
 3. The VCCI Site Registration No. is C-2047.



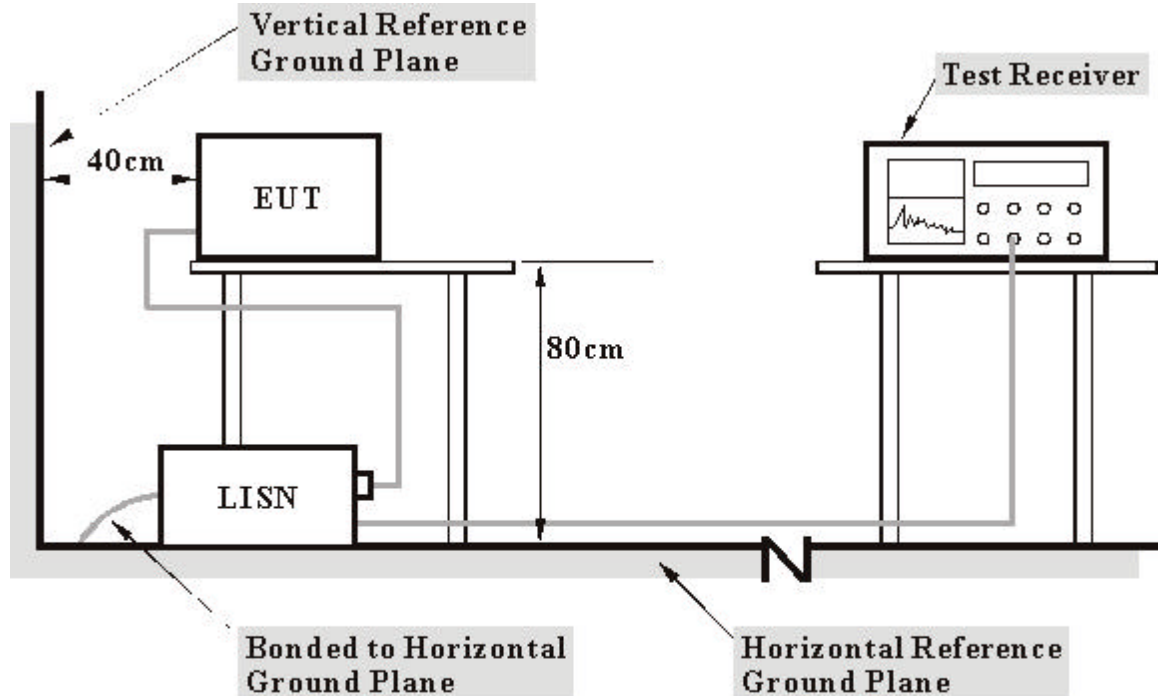
5.1.3 TEST PROCEDURES

- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

5.1.4 DEVIATION FROM TEST STANDARD

No deviation

5.1.5 TEST SETUP



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

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

5.1.6 EUT OPERATING CONDITIONS

Same as 4.1.6



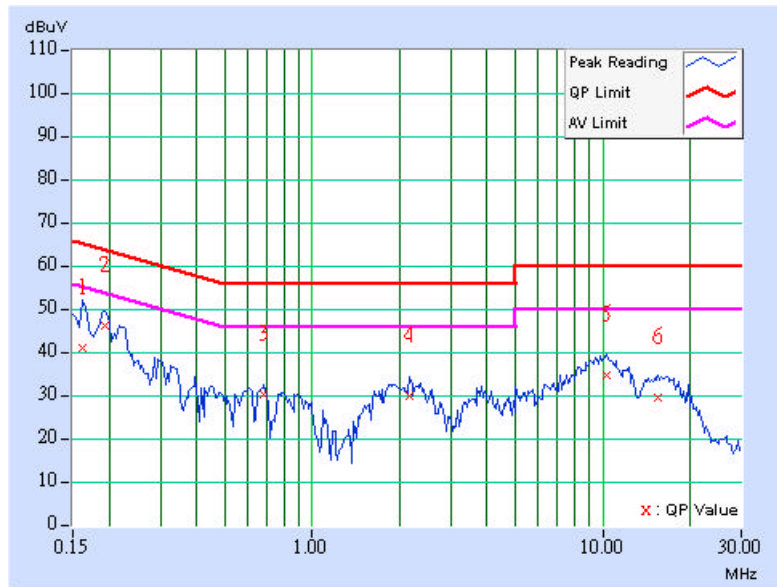
5.1.7 TEST RESULTS

EUT	Wireless A+G Mini PCI Card	MODEL	WMCE54AG2
		6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	TESTED BY: Match Tsui	

No	Freq. [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	0.162	0.10	40.34	-	40.44	-	65.38
2	0.193	0.10	45.63	-	45.73	-	63.91	53.91	-18.18	-
3	0.681	0.18	29.65	-	29.83	-	56.00	46.00	-26.17	-
4	2.152	0.26	29.44	-	29.70	-	56.00	46.00	-26.30	-
5	10.340	0.54	33.96	-	34.50	-	60.00	50.00	-25.50	-
6	15.508	0.72	28.91	-	29.63	-	60.00	50.00	-30.37	-

*(The test data is in accordance with ADT Report No.: RF930909L11.)

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



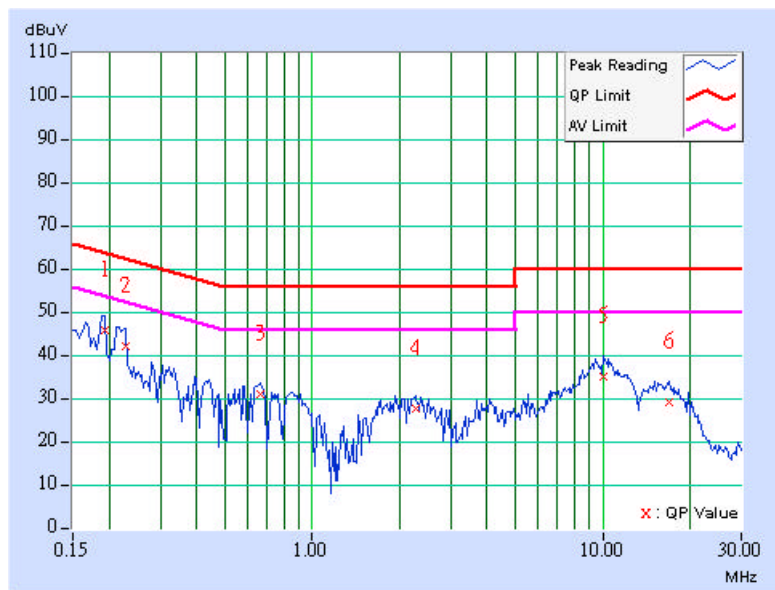


EUT	Wireless A+G Mini PCI Card	MODEL	WMCE54AG2
		6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	PHASE	Neutral (N)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	TESTED BY: Match Tsui	

No	Freq. [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	0.193	0.10	45.17	-	45.27	-	63.91	53.91	-18.64
2	0.228	0.10	41.57	-	41.67	-	62.52	52.52	-20.85	-
3	0.662	0.16	30.54	-	30.70	-	56.00	46.00	-25.30	-
4	2.266	0.26	27.28	-	27.54	-	56.00	46.00	-28.46	-
5	10.102	0.49	34.55	-	35.04	-	60.00	50.00	-24.96	-
6	16.867	0.59	28.58	-	29.17	-	60.00	50.00	-30.83	-

*(The test data is in accordance with ADT Report No.: RF930909L11.)

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





5.2 RADIATED EMISSION MEASUREMENT

5.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

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

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

NOTE:

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



5.2.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

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

NOTE:

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

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



5.2.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESIB7	100188	Jan. 13, 2005
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100039	Dec. 15, 2004
BILOG Antenna SCHWARZBECK	VULB9168	9168-157	Feb. 03, 2005
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-407	Feb. 03, 2005
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA 9170241	Feb. 23, 2005
Preamplifier Agilent	8449B	3008A01961	Jan. 22, 2005
Preamplifier Agilent	8447D	2944A10629	Jan. 14, 2005
RF signal cable HUBER+SUHNER	SUCOFLEX 104	218182/4	Mar. 04, 2005
RF signal cable HUBER+SUHNER	SUCOFLEX 104	218194/4	Mar. 04, 2005
Software ADT.	ADT_Radiated_V5.14	NA	NA
Antenna Tower ADT.	AT100	AT93021702	NA
Turn Table ADT.	TT100.	TT93021702	NA
Controller ADT.	SC100.	SC93021702	NA

- NOTE:**
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 2. The test was performed in HwaYa Chamber 1.
 3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
 4. The IC Site Registration No. is IC4924-2.



5.2.4 TEST PROCEDURES

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

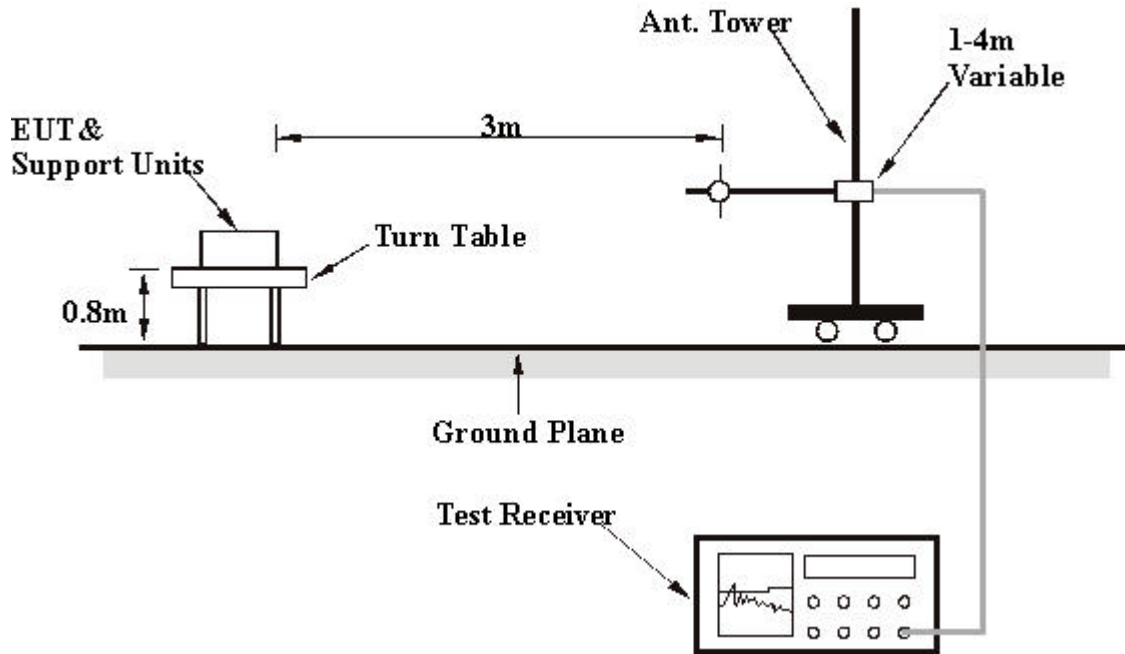
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 Hz for Average detection (AV) at frequency above 1GHz.

5.2.5 DEVIATION FROM TEST STANDARD

No deviation

5.2.6 TEST SETUP



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

5.2.7 EUT OPERATING CONDITIONS

Same as 4.1.6



5.2.8 TEST RESULTS

EUT	Wireless A+G Mini PCI Card	MODEL	WMCE54AG2
CHANNEL	Channel 11	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	TESTED BY: Match Tsui	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	57.21	26.01 QP	40.00	-13.99	1.50 H	265	12.03	13.99
2	82.48	30.46 QP	40.00	-9.54	1.50 H	181	20.43	10.03
3	113.59	36.98 QP	43.50	-6.52	1.00 H	325	24.60	12.37
4	125.25	42.17 QP	43.50	-1.33	1.50 H	31	28.78	13.39
5	142.75	42.10 QP	43.50	-1.40	1.47 H	357	27.62	14.48
6	177.74	42.18 QP	43.50	-1.32	1.50 H	357	29.00	13.18
7	210.78	36.36 QP	43.50	-7.14	1.00 H	316	24.73	11.63
8	267.15	32.21 QP	46.00	-13.79	1.50 H	154	18.56	13.66
9	300.20	32.16 QP	46.00	-13.84	1.00 H	316	17.65	14.50
10	333.25	41.05 QP	46.00	-4.95	1.00 H	325	25.78	15.26
11	377.96	32.28 QP	46.00	-13.72	1.00 H	25	16.01	16.27
12	449.88	32.00 QP	46.00	-14.00	1.50 H	262	13.94	18.07
13	531.52	26.40 QP	46.00	-19.60	1.50 H	208	7.06	19.34
14	599.56	33.39 QP	46.00	-12.61	1.50 H	94	12.39	21.00
15	665.65	29.40 QP	46.00	-16.60	1.00 H	274	7.52	21.87
16	931.96	29.22 QP	46.00	-16.78	1.50 H	130	3.77	25.45

*(The test data is in accordance with ADT Report No.: RF930909L11.)

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



EUT	Wireless A+G Mini PCI Card	MODEL	WMCE54AG2
CHANNEL	Channel 11	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	TESTED BY: Match Tsui	

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	57.21	35.47 QP	40.00	-4.53	1.00 V	172	21.49	13.99
2	92.20	33.21 QP	43.50	-10.29	1.00 V	10	22.84	10.37
3	125.25	37.84 QP	43.50	-5.66	1.00 V	310	24.44	13.39
4	142.75	38.57 QP	43.50	-4.93	1.50 V	91	24.09	14.48
5	166.07	39.03 QP	43.50	-4.47	1.00 V	49	24.73	14.30
6	199.12	33.22 QP	43.50	-10.28	1.25 V	88	21.76	11.46
7	267.15	28.83 QP	46.00	-17.17	1.50 V	304	15.17	13.66
8	333.25	35.78 QP	46.00	-10.22	1.25 V	286	20.52	15.26
9	348.80	34.39 QP	46.00	-11.61	1.25 V	283	18.77	15.62
10	381.84	34.25 QP	46.00	-11.75	1.25 V	283	17.90	16.35
11	457.66	33.05 QP	46.00	-12.95	1.00 V	280	14.88	18.17
12	498.48	27.87 QP	46.00	-18.13	1.00 V	349	9.16	18.71
13	533.47	30.03 QP	46.00	-15.97	1.00 V	310	10.66	19.37
14	601.50	32.97 QP	46.00	-13.03	1.25 V	13	11.94	21.03
15	731.74	29.01 QP	46.00	-16.99	1.50 V	346	5.92	23.08
16	931.96	30.10 QP	46.00	-15.90	1.50 V	58	4.65	25.45

*(The test data is in accordance with ADT Report No.: RF930909L11.)

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



EUT	Wireless A+G Mini PCI Card	MODEL	WMCE54AG2
MODE	Normal Mode	CHANNEL	1
FREQUENCY RANGE	1 ~ 40 GHz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	INPUT POWER (SYSTEM)	120Vac, 60Hz
TESTED BY	Match Tsui		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB)
1	#5150.00	37.25 PK	74.00	-36.75	1.15 H	341	-1.85	39.10
2	*5180.00	100.09 PK			1.15 H	341	60.92	39.17
2	*5180.00	90.10 AV			1.15 H	341	50.93	39.17
3	10360.00	56.65 PK	68.30	-11.65	1.19 H	126	11.36	45.29

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB)
1	#5150.00	45.02 PK	74.00	-28.98	1.00 V	350	5.92	39.10
2	*5180.00	107.86 PK			1.00 V	350	68.69	39.17
2	*5180.00	98.57 AV			1.00 V	350	59.40	39.17
3	10360.00	67.22 PK	68.30	-1.08	1.44 V	3	21.93	45.29

*(The test data is in accordance with ADT Report No.: RF930909L11.)

NOTE:

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



EUT	Wireless A+G Mini PCI Card	MODEL	WMCE54AG2
MODE	Normal Mode	CHANNEL	4
FREQUENCY RANGE	1 ~ 40 GHz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	INPUT POWER (SYSTEM)	120Vac, 60Hz
TESTED BY	Match Tsui		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB)
1	*5240.00	100.14 PK			1.23 H	21	60.96	39.18
1	*5240.00	90.65 AV			1.23 H	21	51.47	39.18
2	10480.00	57.09 PK	68.30	-11.21	1.25 H	211	11.00	46.08

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

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

*(The test data is in accordance with ADT Report No.: RF930909L11.)

NOTE:

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



EUT	Wireless A+G Mini PCI Card	MODEL	WMCE54AG2
MODE	Normal Mode	CHANNEL	5
FREQUENCY RANGE	1 ~ 40 GHz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	INPUT POWER (SYSTEM)	120Vac, 60Hz
TESTED BY	Match Tsui		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB)
1	*5260.00	97.84 PK			1.30 H	2	58.68	39.16
1	*5260.00	88.57 AV			1.30 H	2	49.41	39.16
2	10520.00	55.29 PK	68.30	-13.01	1.35 H	2	9.14	46.16

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB)
1	*5260.00	107.11 PK			1.14 V	233	67.95	39.16
1	*5260.00	98.04 AV			1.14 V	233	58.88	39.16
2	10520.00	64.20 PK	68.30	-4.10	1.37 V	2	18.05	46.16

*(The test data is in accordance with ADT Report No.: RF930909L11.)

NOTE:

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



EUT	Wireless A+G Mini PCI Card	MODEL	WMCE54AG2
MODE	Normal Mode	CHANNEL	8
FREQUENCY RANGE	1 ~ 40 GHz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	INPUT POWER (SYSTEM)	120Vac, 60Hz
TESTED BY	Match Tsui		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)
1	*5320.00	95.94 PK			1.03 H	47	56.79	39.15
1	*5320.00	86.72 AV			1.03 H	47	47.57	39.15
2	#5350.00	33.79 PK	74.00	-40.21	1.03 H	47	-5.41	39.20
3	#10640.00	56.16 PK	74.00	-17.84	1.02 H	135	9.93	46.23
3	#10640.00	44.95 AV	54.00	-9.05	1.02 H	135	-1.28	46.23

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

*(The test data is in accordance with ADT Report No.: RF930909L11.)

NOTE:

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



EUT	Wireless A+G Mini PCI Card	MODEL	WMCE54AG2
MODE	Normal Mode	CHANNEL	9
FREQUENCY RANGE	1 ~ 40 GHz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	INPUT POWER (SYSTEM)	120Vac, 60Hz
TESTED BY	Match Tsui		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5715.00	65.00 PK	68.30	-3.30	1.25 H	339	24.21	40.79
2	5725.00	67.05 PK	78.30	-11.25	1.25 H	339	26.22	40.83
3	*5745.00	102.24 PK			1.25 H	339	61.34	40.90
3	*5745.00	92.46 AV			1.25 H	339	51.56	40.90

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5715.00	66.08 PK	68.30	-2.22	1.01 V	316	25.29	40.79
2	5725.00	73.54 PK	78.30	-4.76	1.00 V	316	32.71	40.83
3	*5745.00	106.87 PK			1.00 V	316	65.97	40.90
3	*5745.00	95.89 AV			1.00 V	316	54.99	40.90

*(The test data is in accordance with ADT Report No.: RF930909L11.)

NOTE:

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



EUT	Wireless A+G Mini PCI Card	MODEL	WMCE54AG2
MODE	Normal Mode	CHANNEL	12
FREQUENCY RANGE	1 ~ 40 GHz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	INPUT POWER (SYSTEM)	120Vac, 60Hz
TESTED BY	Match Tsui		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5805.00	100.45 PK			1.16 H	360	59.38	41.07
1	*5805.00	89.45 AV			1.16 H	360	48.38	41.07
2	5825.00	67.57 PK	78.30	-10.73	1.16 H	360	26.62	40.95
3	5835.00	67.24 PK	68.30	-1.06	1.16 H	360	26.36	40.88

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5805.00	107.68 PK			1.21 V	19	66.61	41.07
1	*5805.00	98.11 AV			1.21 V	19	57.04	41.07
2	5825.00	70.13 PK	78.30	-8.17	1.21 V	19	29.18	40.95
3	5835.00	66.90 PK	68.30	-1.40	1.21 V	19	26.02	40.88

*(The test data is in accordance with ADT Report No.: RF930909L11.)

NOTE:

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



EUT	Wireless A+G Mini PCI Card	MODEL	WMCE54AG2
MODE	Turbo Mode	CHANNEL	1
FREQUENCY RANGE	1 ~ 40 GHz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	INPUT POWER (SYSTEM)	120Vac, 60Hz
TESTED BY	Match Tsui		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB)
1	#5150.00	50.74 PK	74.00	-23.26	1.16 H	18	11.64	39.10
1	#5150.00	42.32 AV	54.00	-11.68	1.16 H	18	11.64	39.10
2	*5210.00	96.22 PK			1.16 H	18	57.01	39.21
2	*5210.00	87.80 AV			1.16 H	18	48.59	39.21
3	10420.00	55.49 PK	68.30	-12.81	1.32 H	7	9.72	45.77

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB)
1	#5150.00	59.68 PK	74.00	-14.32	1.14 V	27	20.58	39.10
1	#5150.00	50.99 AV	54.00	-3.01	1.14 V	27	11.89	39.10
2	*5210.00	105.16 PK			1.14 V	27	65.95	39.21
2	*5210.00	96.47 AV			1.14 V	27	57.26	39.21
3	10420.00	66.72 PK	68.30	-1.58	1.31 V	3	20.95	45.77

*(The test data is in accordance with ADT Report No.: RF930909L11.)

NOTE:

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



EUT	Wireless A+G Mini PCI Card	MODEL	WMCE54AG2
MODE	Turbo Mode	CHANNEL	2
FREQUENCY RANGE	1 ~ 40 GHz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	INPUT POWER (SYSTEM)	120Vac, 60Hz
TESTED BY	Match Tsui		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB)
1	*5250.00	97.02 PK			1.23 H	21	57.85	39.17
1	*5250.00	87.94 AV			1.23 H	21	48.77	39.17
2	10500.00	55.75 PK	68.30	-12.55	1.24 H	221	9.56	46.19

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

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

*(The test data is in accordance with ADT Report No.: RF930909L11.)

NOTE:

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



EUT	Wireless A+G Mini PCI Card	MODEL	WMCE54AG2
MODE	Turbo Mode	CHANNEL	3
FREQUENCY RANGE	1 ~ 40 GHz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	INPUT POWER (SYSTEM)	120Vac, 60Hz
TESTED BY	Match Tsui		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB)
1	*5290.00	96.69 PK			1.02 H	19	57.56	39.13
1	*5290.00	88.09 AV			1.02 H	19	48.96	39.13
2	#5350.00	46.00 PK	74.00	-28.00	1.02 H	19	6.80	39.20
3	10580.00	56.24 PK	68.30	-12.06	1.24 H	91	10.17	46.07

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB)
1	*5290.00	104.18 PK			1.22 V	232	65.05	39.13
1	*5290.00	95.44 AV			1.22 V	232	56.31	39.13
2	#5350.00	53.49 PK	74.00	-20.51	1.22 V	232	14.29	39.20
2	#5350.00	44.75 AV	54.00	-9.25	1.22 V	232	5.55	39.20
3	10580.00	65.55 PK	68.30	-2.75	1.23 V	360	19.48	46.07

*(The test data is in accordance with ADT Report No.: RF930909L11.)

NOTE:

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



EUT	Wireless A+G Mini PCI Card	MODEL	WMCE54AG2
MODE	Turbo Mode	CHANNEL	4
FREQUENCY RANGE	1 ~40 GHz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	INPUT POWER (SYSTEM)	120Vac, 60Hz
TESTED BY	Match Tsui		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB)
1	5715.00	66.45 PK	68.30	-1.85	1.04 H	342	25.66	40.79
2	5725.00	71.37 PK	78.30	-6.93	1.04 H	342	30.54	40.83
3	*5760.00	99.18 PK			1.04 H	342	58.22	40.96
3	*5760.00	88.18 AV			1.04 H	342	47.22	40.96

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB)
1	5715.00	67.24 PK	68.30	-1.06	1.07 V	345	26.45	40.79
2	5725.00	75.80 PK	78.30	-2.50	1.07 V	345	34.97	40.83
3	*5760.00	104.36 PK			1.07 V	345	63.40	40.96
3	*5760.00	93.37 AV			1.07 V	345	52.41	40.96

*(The test data is in accordance with ADT Report No.: RF930909L11.)

NOTE

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



EUT	Wireless A+G Mini PCI Card	MODEL	WMCE54AG2
MODE	Turbo Mode	CHANNEL	5
FREQUENCY RANGE	1 ~ 40 GHz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 991hPa	INPUT POWER (SYSTEM)	120Vac, 60Hz
TESTED BY	Match Tsui		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB)
1	*5800.00	99.59 PK			1.09 H	339	58.48	41.11
1	*5800.00	88.62 AV			1.09 H	339	47.51	41.11
2	5825.00	73.15 PK	78.30	-5.15	1.09 H	339	32.20	40.95
3	5835.00	67.20 PK	68.30	-1.10	1.09 H	339	26.32	40.88

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB)
1	*5800.00	103.97 PK			1.04 V	347	62.86	41.11
1	*5800.00	92.99 AV			1.04 V	347	51.88	41.11
2	5825.00	76.37 PK	78.30	-1.93	1.04 V	347	35.42	40.95
3	5835.00	67.31 PK	68.30	-0.99	1.04 V	347	26.43	40.88

*(The test data is in accordance with ADT Report No.: RF930909L11.)

NOTE:

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



5.3 PEAK TRANSMIT POWER MEASUREMENT

5.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT

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

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

5.3.2 TEST INSTRUMENTS

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

NOTE:

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



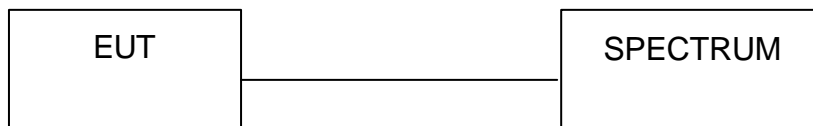
5.3.3 TEST PROCEDURE

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

5.3.4 DEVIATION FROM TEST STANDARD

No deviation

5.3.5 TEST SETUP



5.3.6 EUT OPERATING CONDITIONS

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



5.3.7 TEST RESULTS

EUT	Wireless A+G Mini PCI Card	MODEL	WMCE54AG2
MODE	Normal	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	24deg. C, 65%RH, 991hPa	TESTED BY	Match Tsui

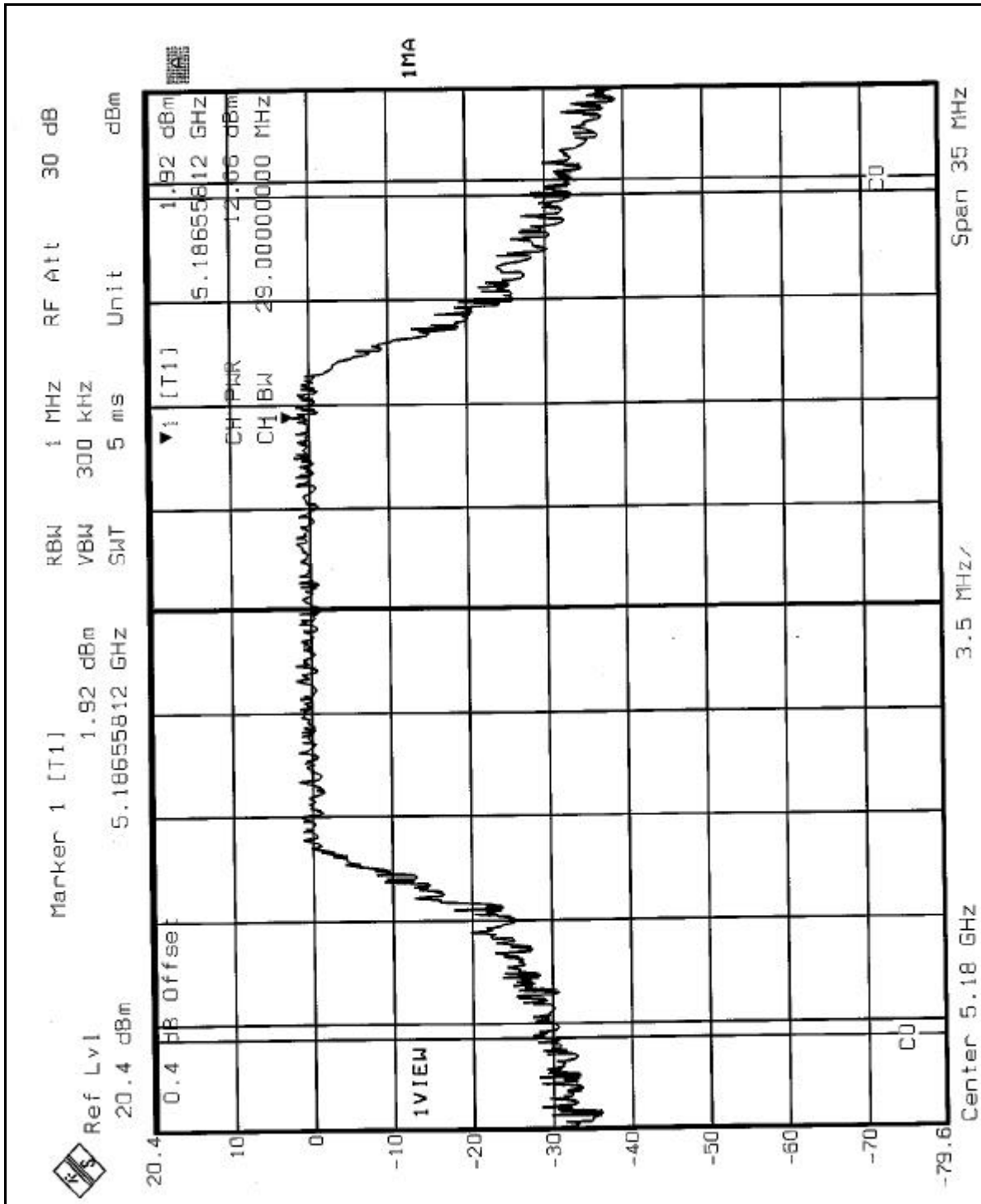
CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	26dBc Occupied Bandwidth (MHz)	PASS/FAIL
1	5180	16.069	12.06	17.00	29.05	PASS
4	5240	16.144	12.08	17.00	26.60	PASS
5	5260	15.885	12.01	24.00	26.11	PASS
8	5320	9.016	9.55	24.00	25.41	PASS
9	5745	15.959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

*(The test data is in accordance with ADT Report No.: RF930909L11.)

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

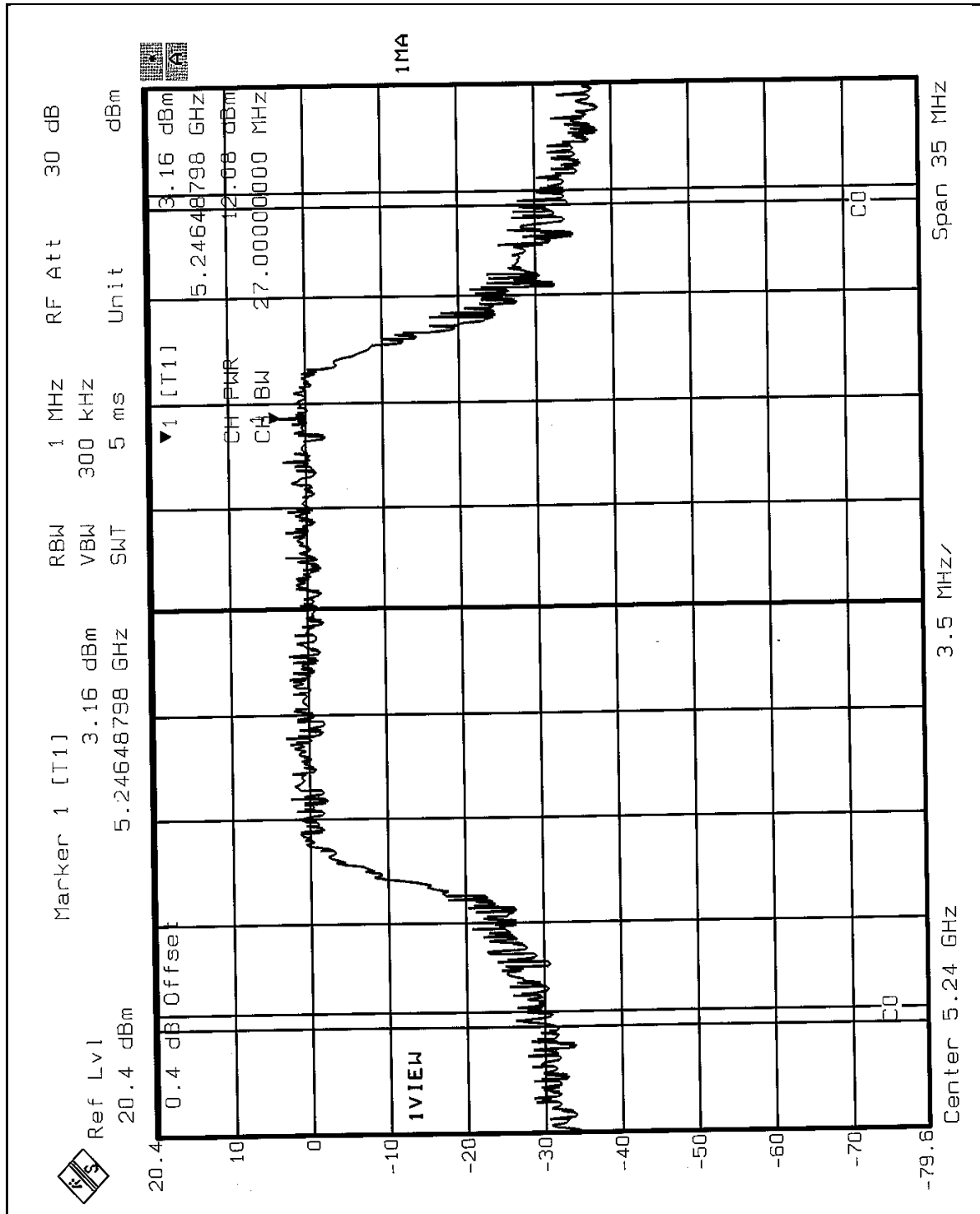


Peak Power Output:
CH 1



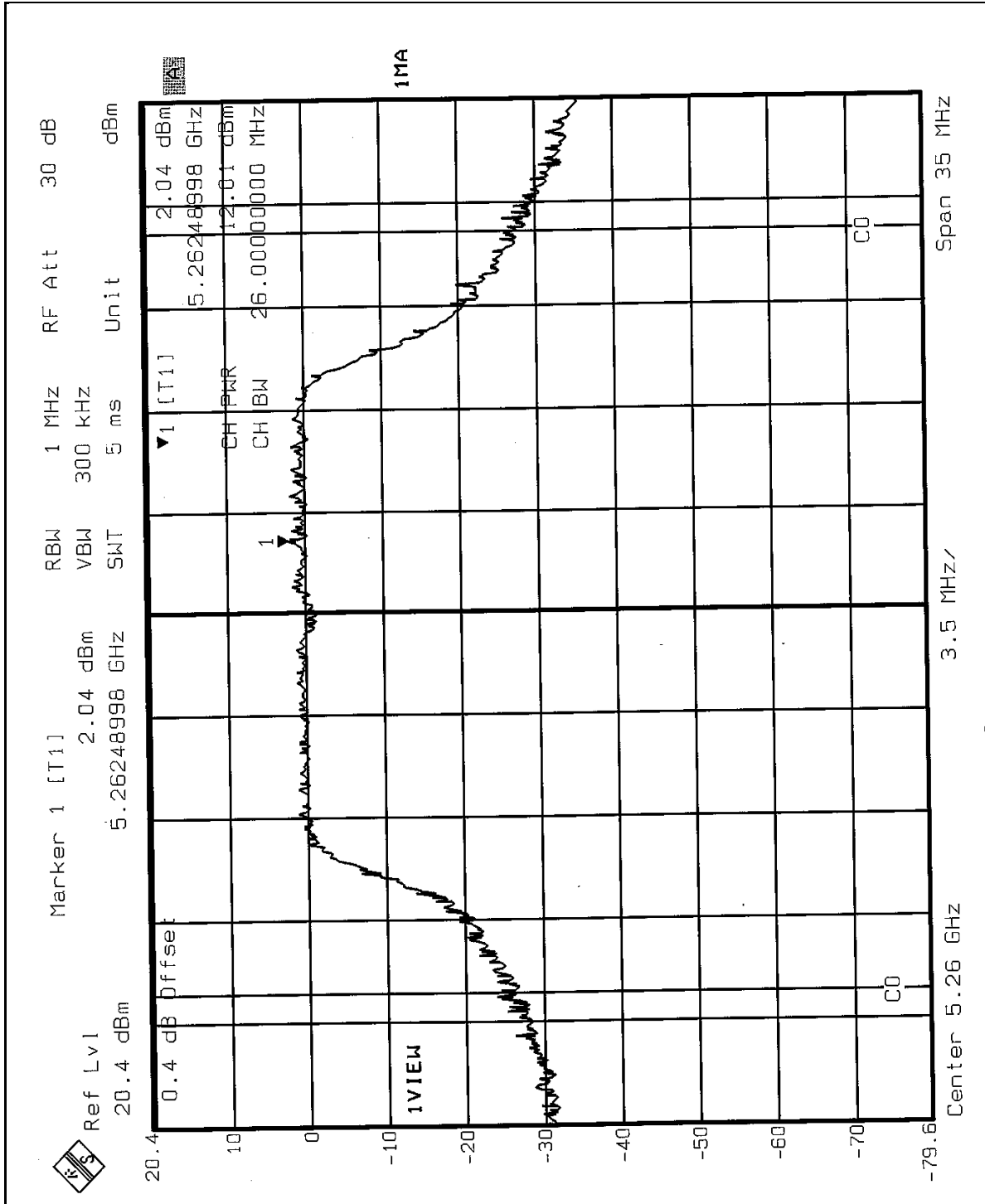


CH 4



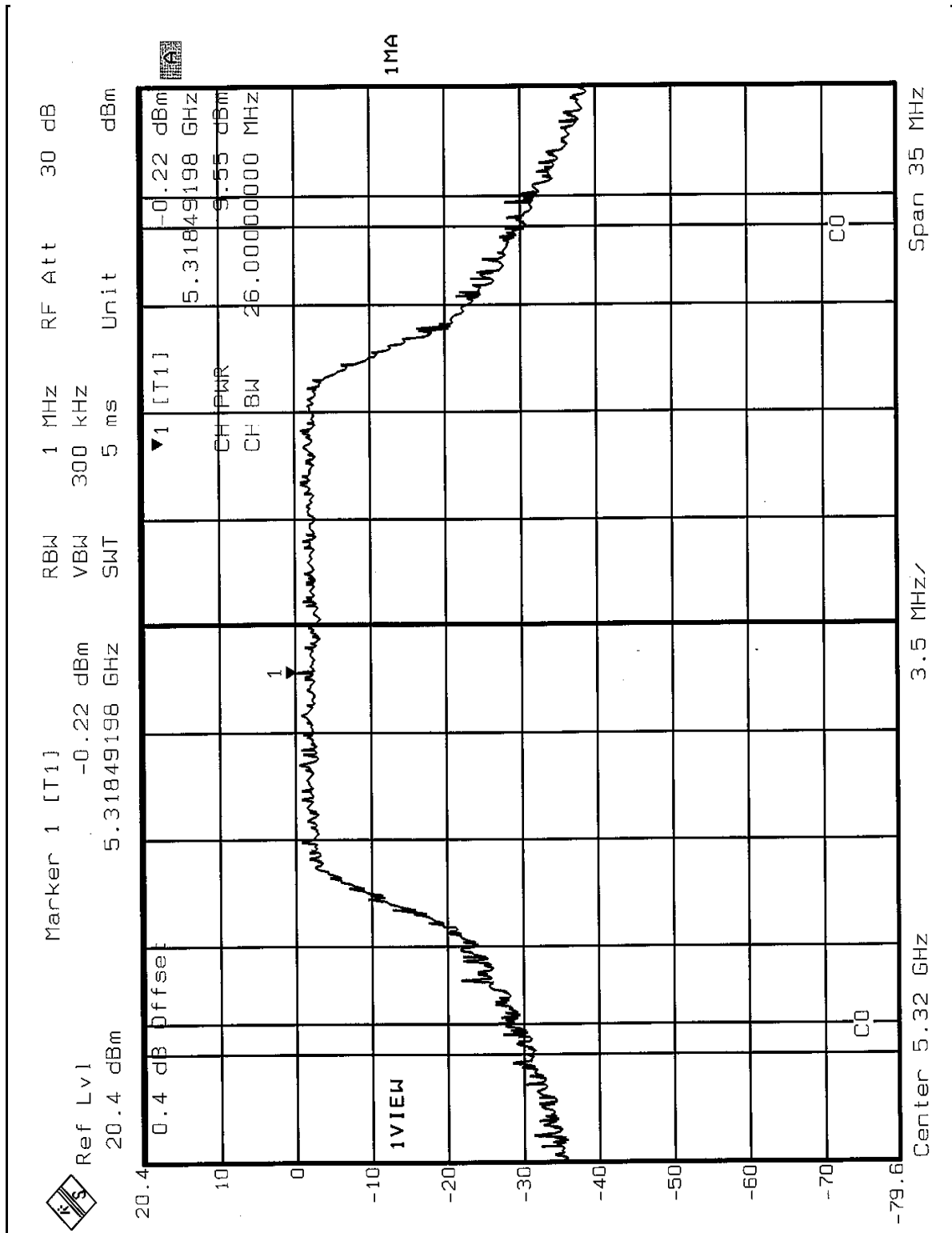


CH 5



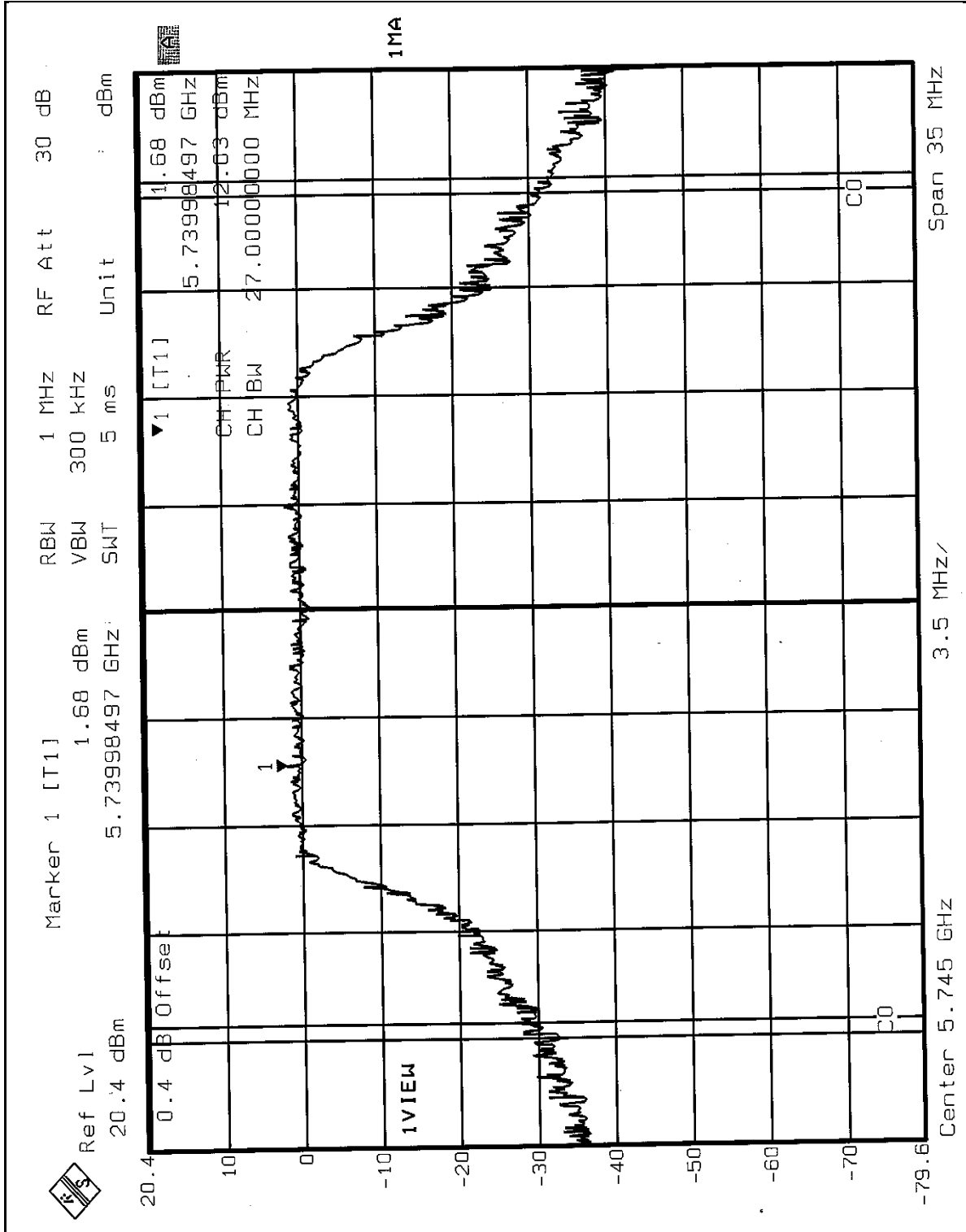


CH 8



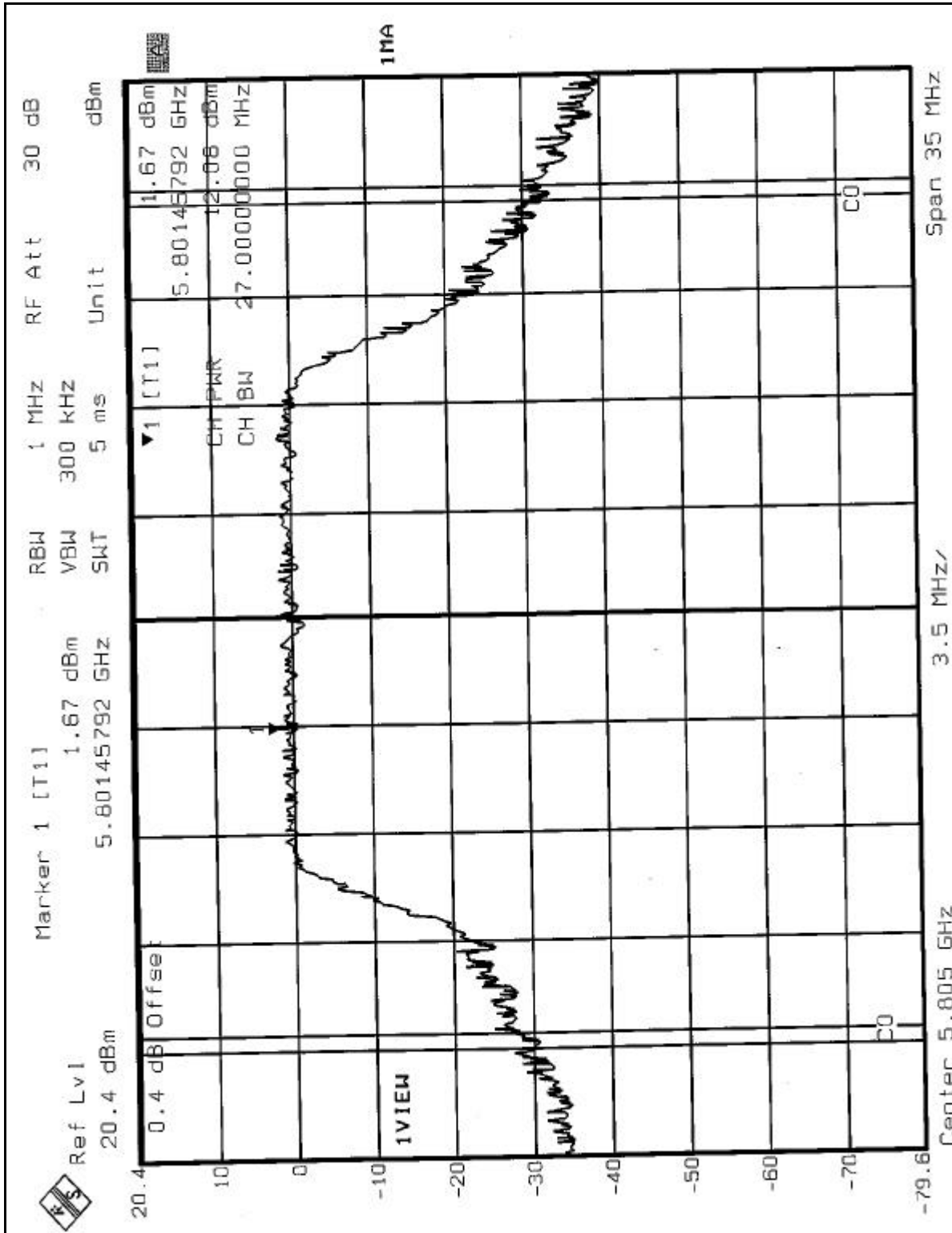


CH9





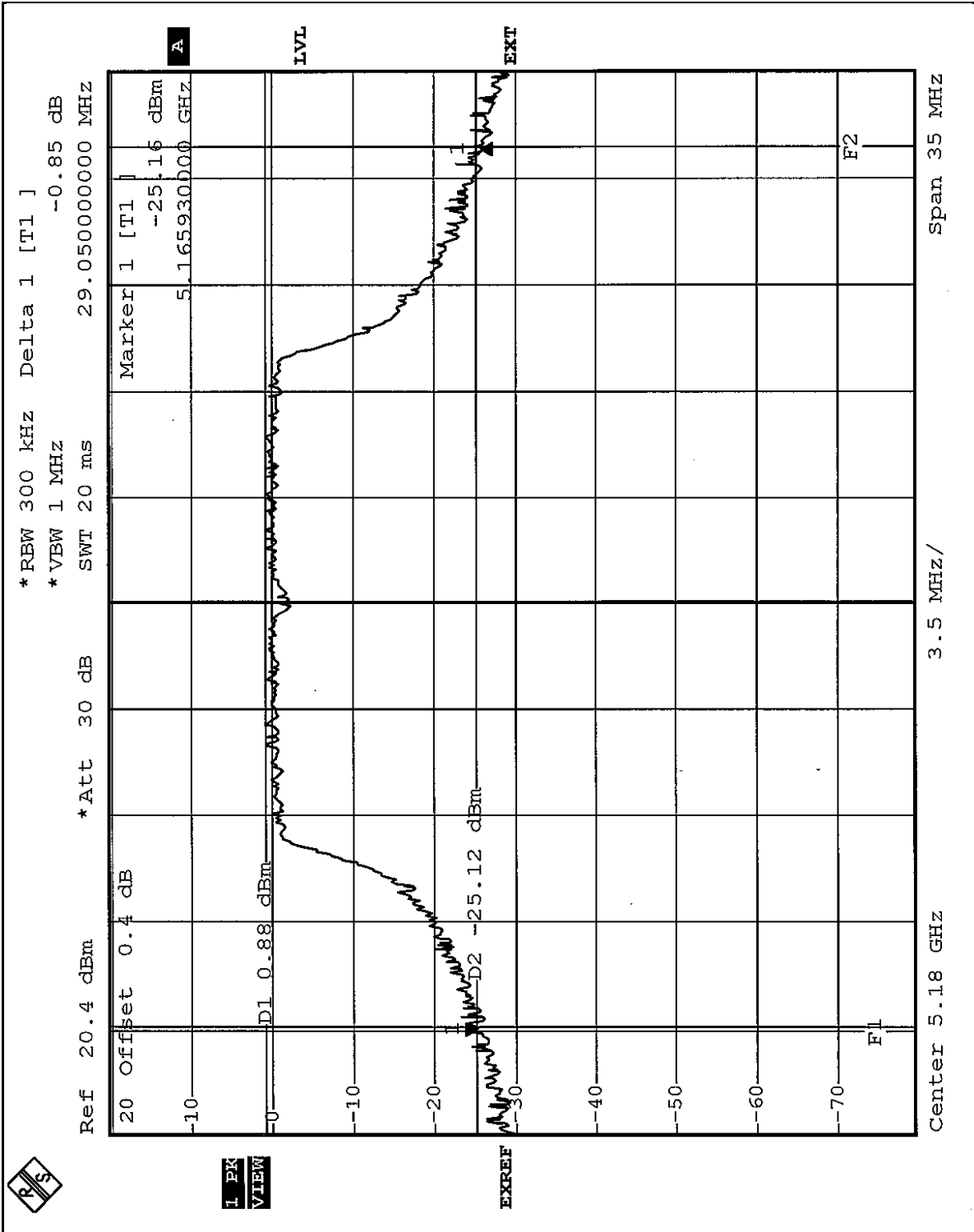
CH 12





26dB Occupied Bandwidth:

CH 1





CH 4

