



4.6 FREQUENCY STABILITY

4.6.1 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.

4.6.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
ANRITSU SPECTRUM ANALYZER	MS2667C	M10281	Aug. 12, 2005
WIT STANDARD TEMPERATURE AND HUMIDITY CHAMBER	TH-4S-C	W901030	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.

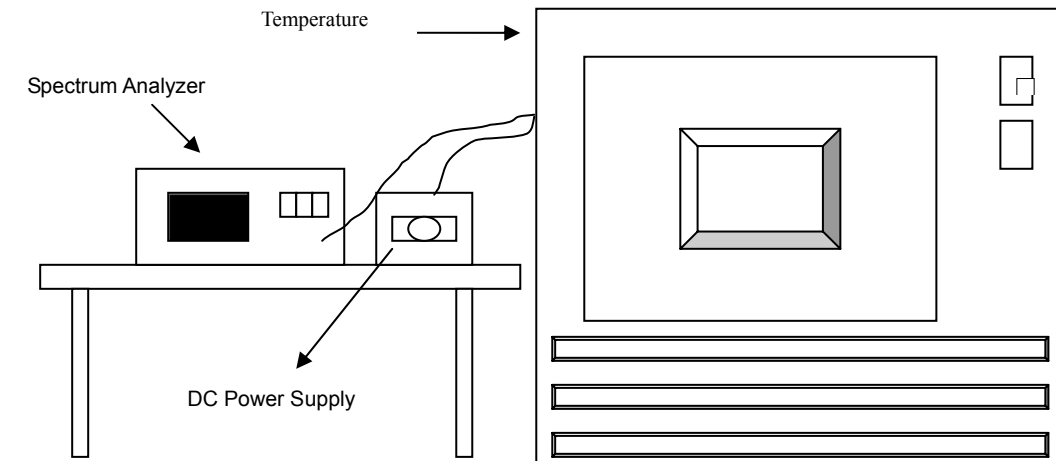
4.6.3 TEST PROCEDURE

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.

4.6.4 DEVIATION FROM TEST STANDARD

No deviation

4.6.5 TEST SETUP



4.6.6 EUT OPERATING CONDITION

Same as Item 4.1.6



4.6.7 TEST RESULTS

		Operating frequency: 5320MHz				Limit : ± 0.015%	
Temp. (°C)	Power supply (VAC)	2 minute		5 minute		10 minute	
		(MHz)	(%)	(MHz)	(%)	(MHz)	(%)
50	102.0	5319.9874	-0.0002368	5319.9864	-0.0002556	5319.9860	-0.0002632
	120.0	5319.9872	-0.0002406	5319.9864	-0.0002556	5319.9860	-0.0002632
	135.0	5319.9876	-0.0002331	5319.9862	-0.0002594	5319.9860	-0.0002632
40	102.0	5319.9842	-0.0002970	5319.9830	-0.0003195	5319.9826	-0.0003271
	120.0	5319.9854	-0.0002744	5319.9838	-0.0003045	5319.9830	-0.0003195
	135.0	5319.9854	-0.0002744	5319.9828	-0.0003233	5319.9832	-0.0003158
30	102.0	5319.9818	-0.0003421	5319.9818	-0.0003421	5319.9814	-0.0003496
	120.0	5319.9820	-0.0003383	5319.9818	-0.0003421	5319.9816	-0.0003459
	135.0	5319.9818	-0.0003421	5319.9818	-0.0003421	5319.9814	-0.0003496
20	102.0	5319.9804	-0.0003684	5319.9806	-0.0003647	5319.9808	-0.0003609
	120.0	5319.9800	-0.0003759	5319.9806	-0.0003647	5319.9808	-0.0003609
	135.0	5319.9802	-0.0003722	5319.9806	-0.0003647	5319.9806	-0.0003647
10	102.0	5319.9817	-0.0003440	5319.9822	-0.0003346	5319.9828	-0.0003233
	120.0	5319.9816	-0.0003459	5319.9820	-0.0003383	5319.9826	-0.0003271
	135.0	5319.9820	-0.0003383	5319.9824	-0.0003308	5319.9830	-0.0003195
0	102.0	5319.9848	-0.0002857	5319.9852	-0.0002782	5319.9864	-0.0002556
	120.0	5319.9846	-0.0002895	5319.9854	-0.0002744	5319.9864	-0.0002556
	135.0	5319.9850	-0.0002820	5319.9854	-0.0002744	5319.9864	-0.0002556
-10	102.0	5319.9884	-0.0002180	5319.9888	-0.0002105	5319.9898	-0.0001917
	120.0	5319.9882	-0.0002218	5319.9888	-0.0002105	5319.9896	-0.0001955
	135.0	5319.9882	-0.0002218	5319.9888	-0.0002105	5319.9896	-0.0001955
-20	102.0	5319.9926	-0.0001391	5319.9930	-0.0001316	5319.9930	-0.0001316
	120.0	5319.9928	-0.0001353	5319.9932	-0.0001278	5319.9928	-0.0001353
	135.0	5319.9928	-0.0001353	5319.9932	-0.0001278	5319.9932	-0.0001278
-30	102.0	5319.9948	-0.0000977	5319.9956	-0.0000827	5319.9968	-0.0000602
	120.0	5319.9944	-0.0001053	5319.9952	-0.0000902	5319.9964	-0.0000677
	135.0	5319.9946	-0.0001015	5319.9948	-0.0000977	5319.9966	-0.0000639



4.7 BAND EDGES MEASUREMENT

4.7.1 TEST INSTRUMENTS

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

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

4.7.2 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.

4.7.3 EUT OPERATING CONDITION

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

4.7.4 TEST RESULTS

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

The spectrum plots (Peak RBW=VBW=1MHz; Average RBW=1MHz, VBW=10Hz) are attached on the following pages.

**Normal Mode:****Channel 1 (5180MHz)**

The band edge emission plot on page 180 shows 44.49dBc 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 103.04dBuV/m (Peak), so the maximum field strength in restrict band is $103.04 - 44.49 = 58.55$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on page 181 shows 54.39dBc 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 92.27dBuV/m (Average), so the maximum field strength in restrict band is $92.27 - 54.39 = 37.88$ dBuV/m which is under 54dBuV/m limit.

Channel 8 (5320MHz)

The band edge emission plot on page 183 shows 45.35dBc 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 107.29dBuV/m (Peak), so the maximum field strength in restrict band is $107.29 - 45.35 = 61.94$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on page 184 shows 54.81dBc 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 97.21dBuV/m (Average), so the maximum field strength in restrict band is $97.21 - 54.81 = 42.40$ dBuV/m which is under 54dBuV/m limit.

**Turbo Mode:**

Channel 1 (5210MHz)

The band edge emission plot on page 186 shows 51.90dBc 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 101.89dBuV/m (Peak), so the maximum field strength in restrict band is $101.89-51.90=49.99$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on page 187 shows 57.44dBc 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 92.02dBuV/m (Average), so the maximum field strength in restrict band is $92.02-57.44=34.58$ dBuV/m which is under 54dBuV/m limit.

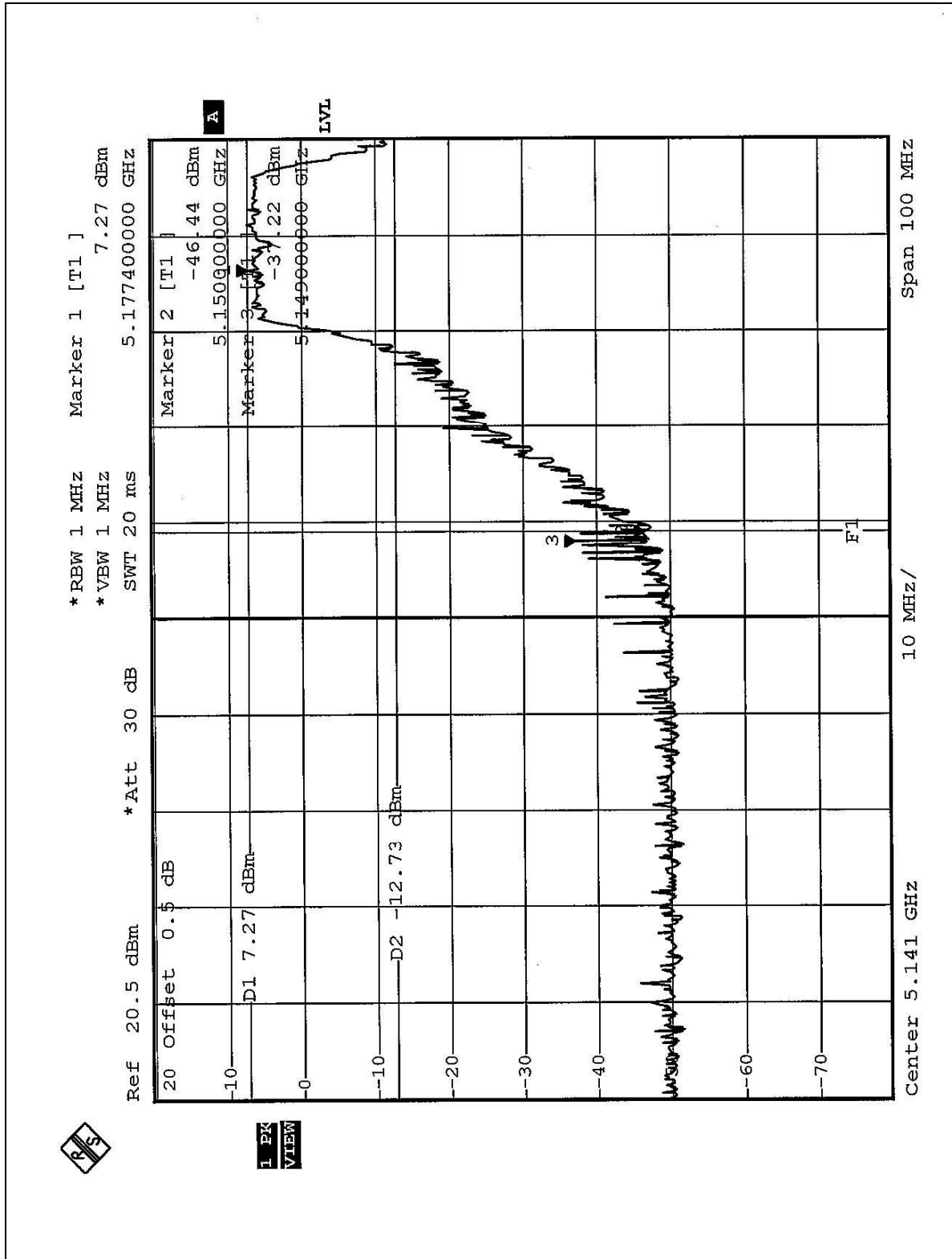
Channel 3 (5290MHz)

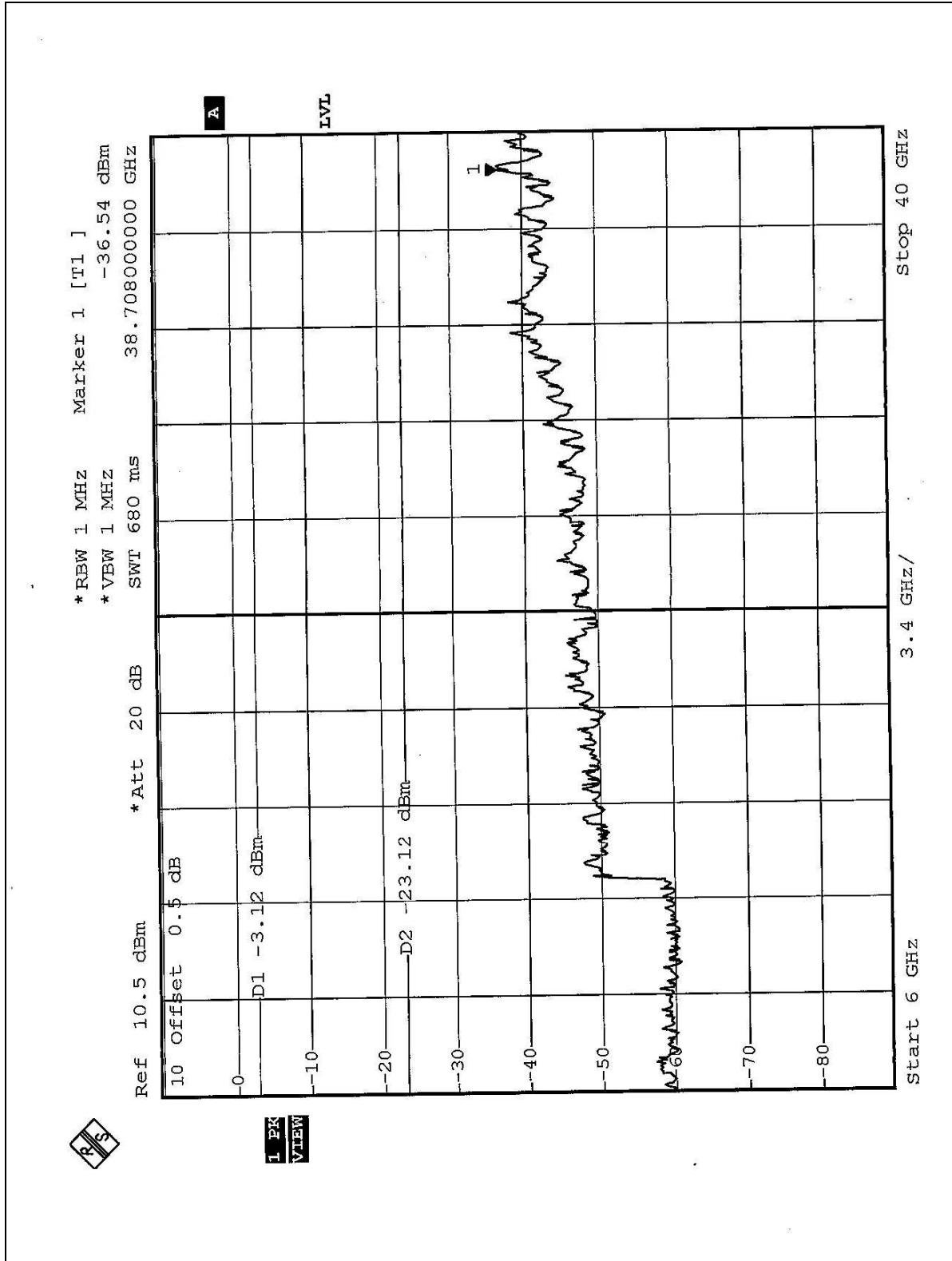
The band edge emission plot on the pages 189 shows 55.03dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 3 is 101.21dBuV/m (Peak), so the maximum field strength in restrict band is $101.21-55.03=46.18$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the pages 190 shows 57.78dBc 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 99.01dBuV/m (Average), so the maximum field strength in restrict band is $99.01-57.78=41.23$ dBuV/m which is under 54dBuV/m limit.



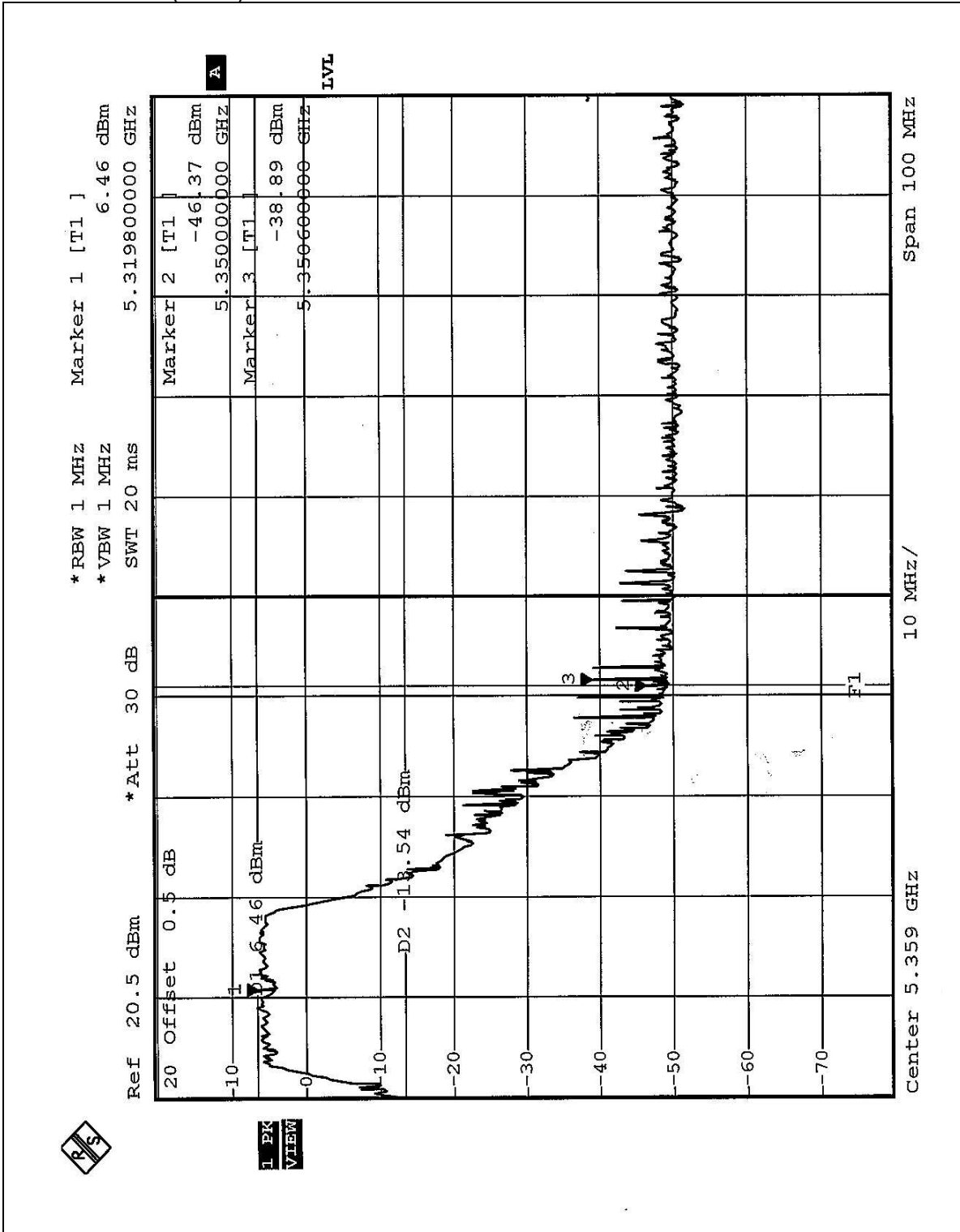
Normal Mode (CH 1)

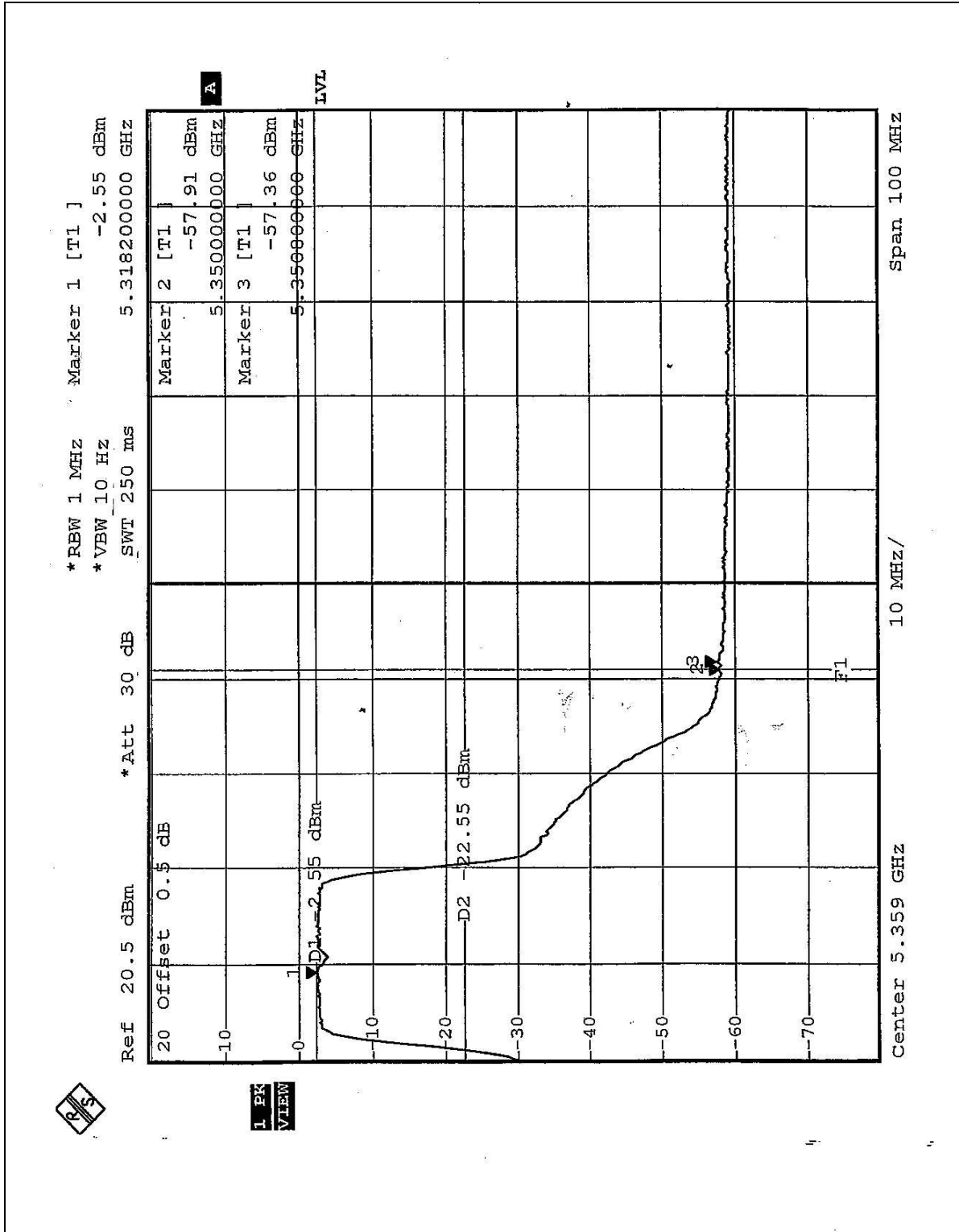




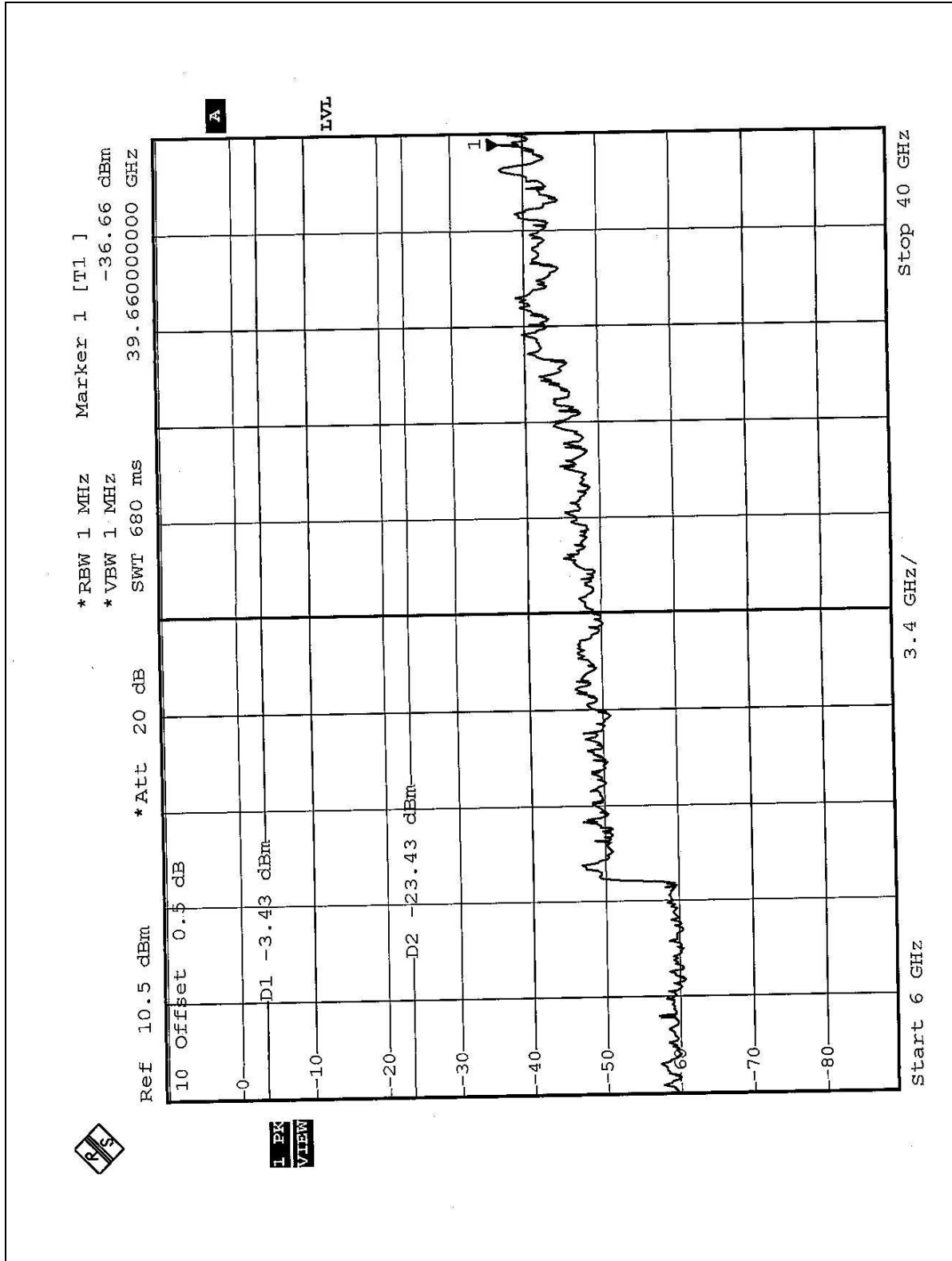


Normal Mode (CH 8)



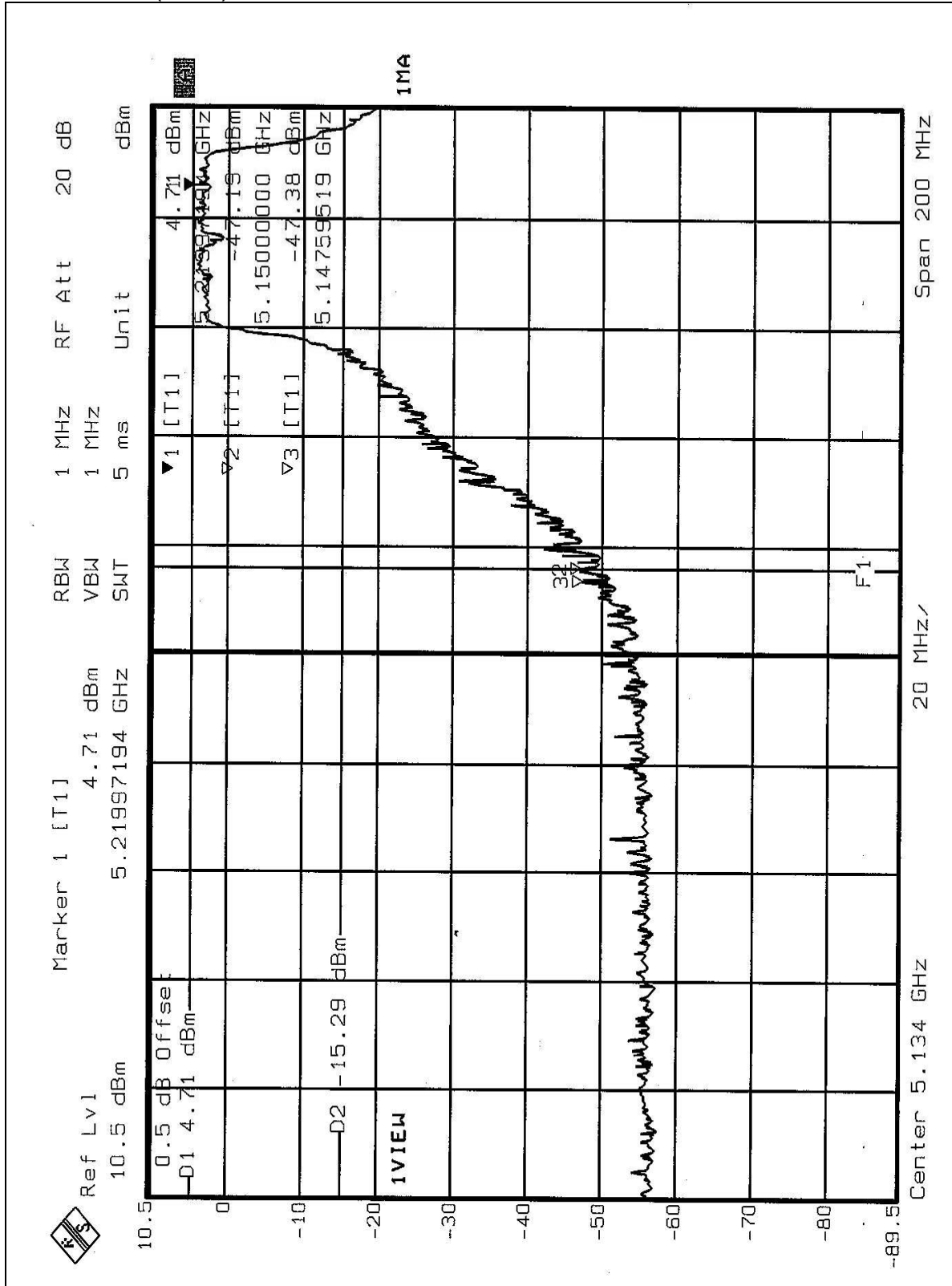


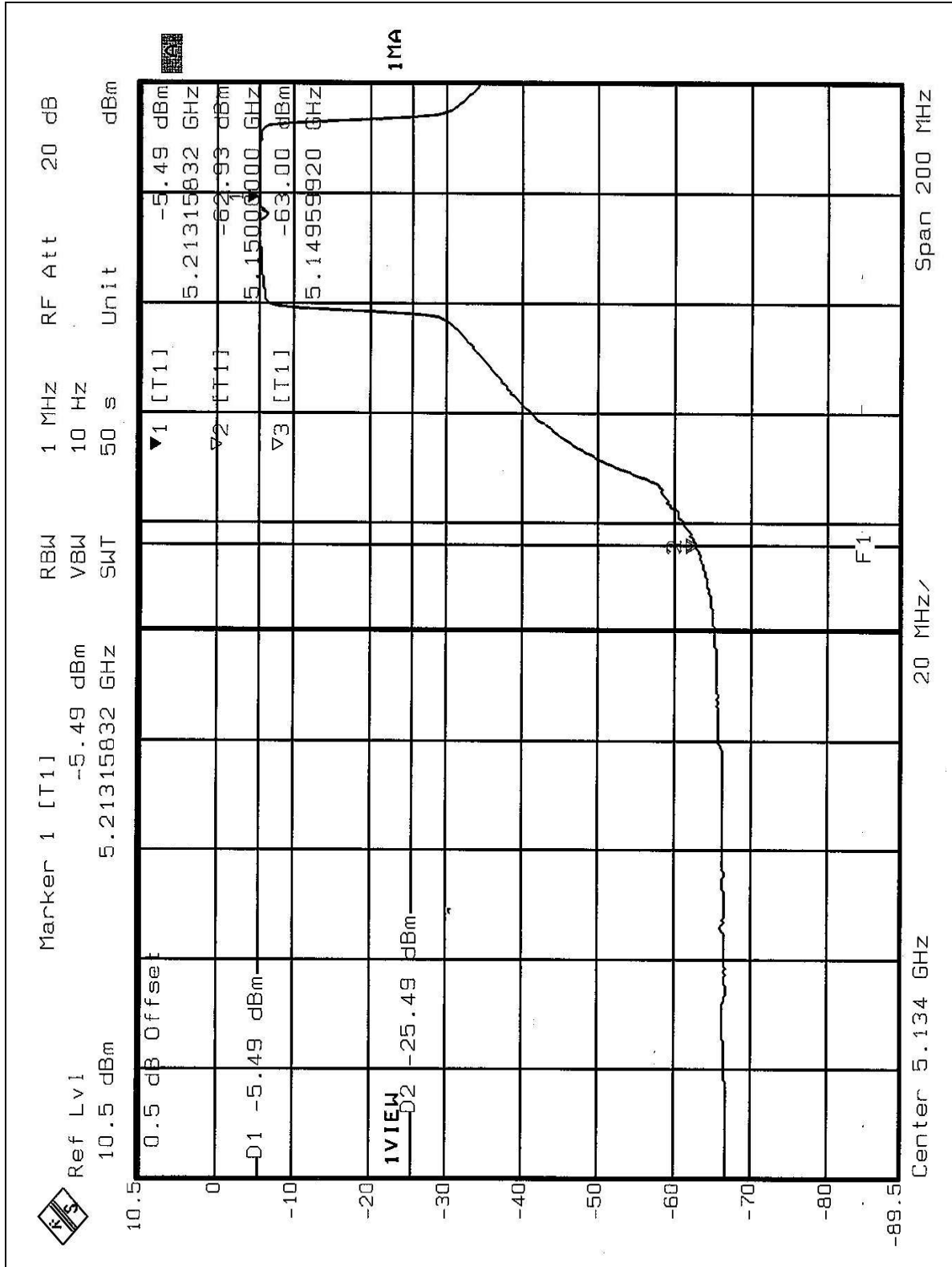
1 PK VIEW

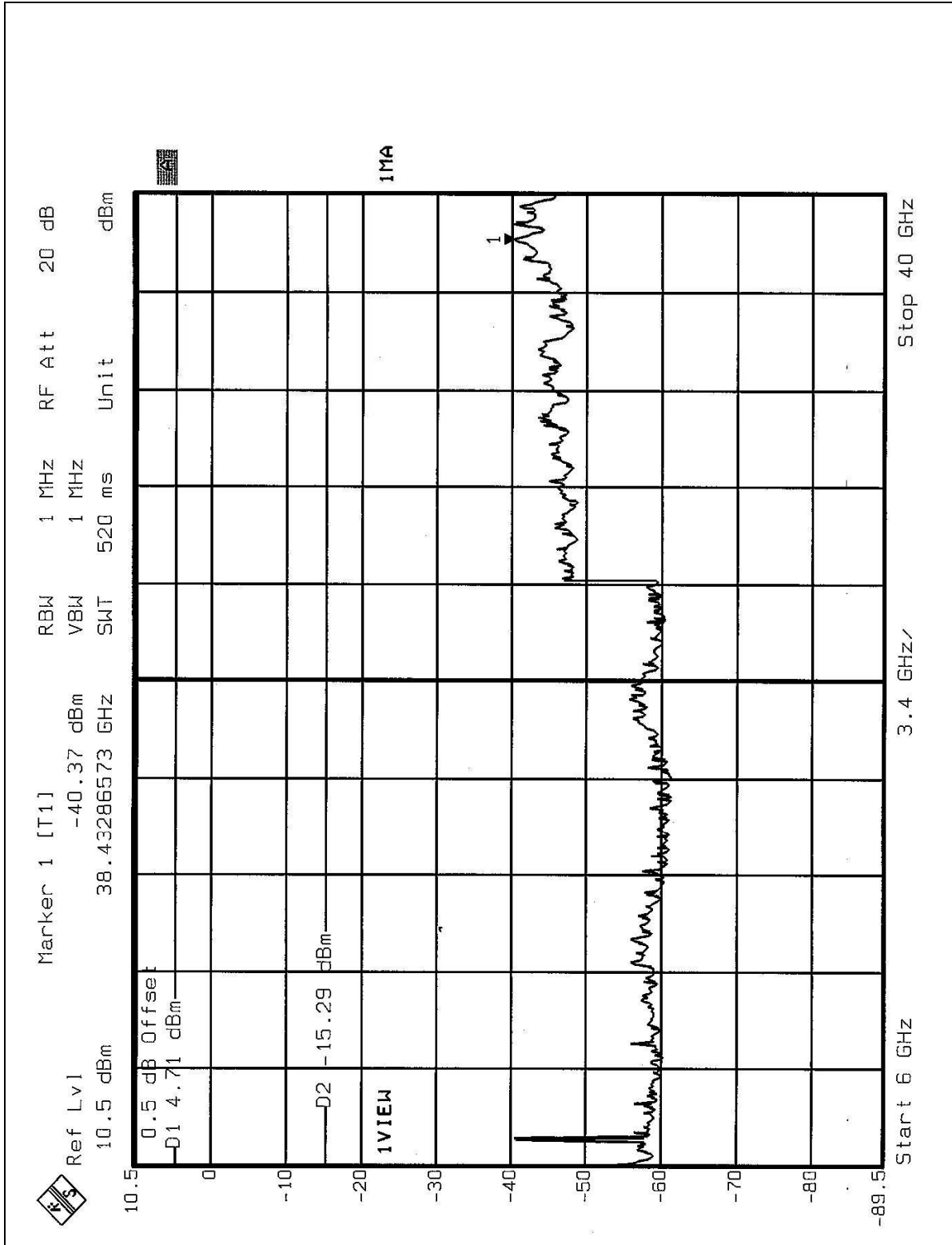




Turbo Mode (CH 1)

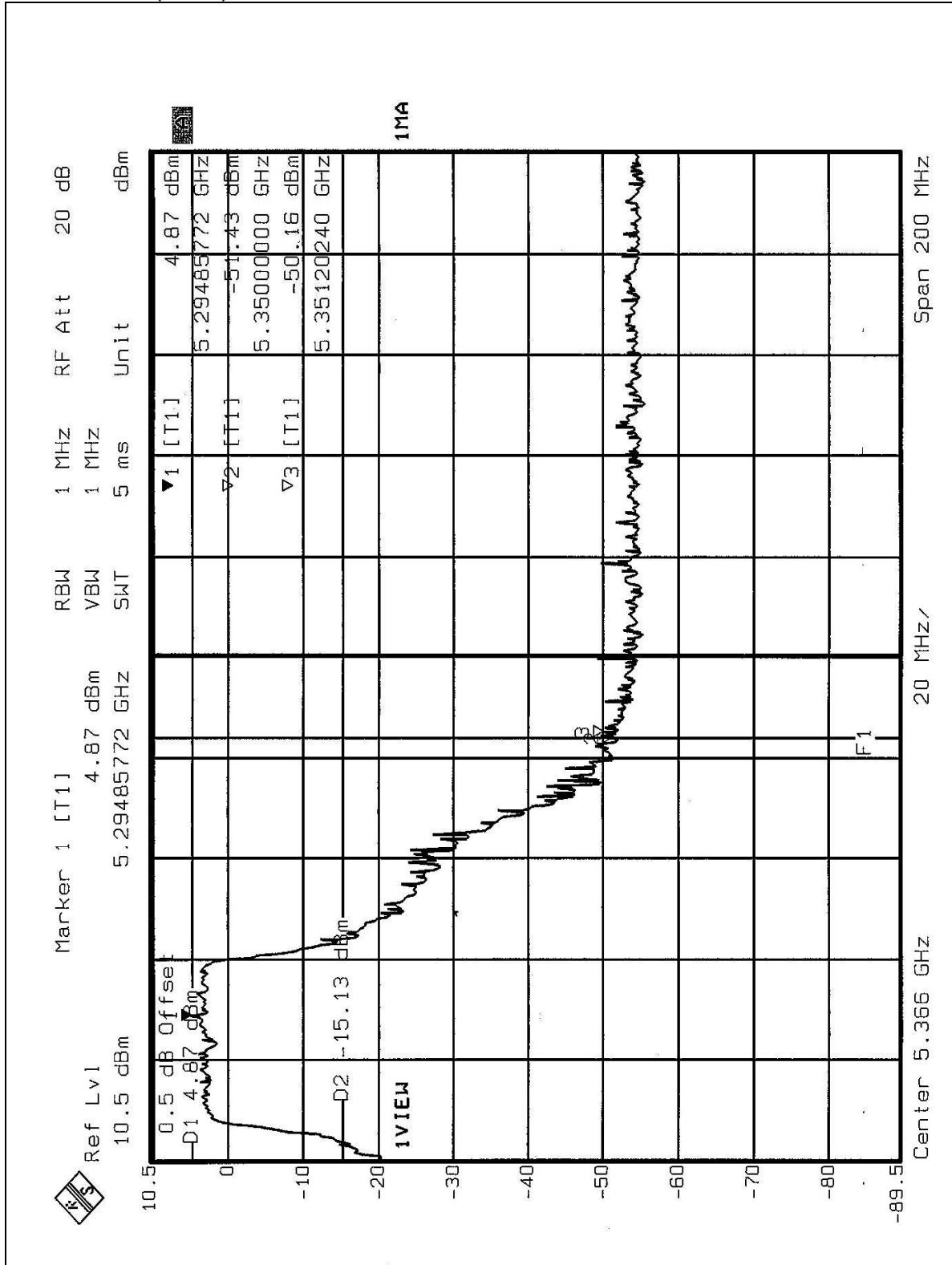


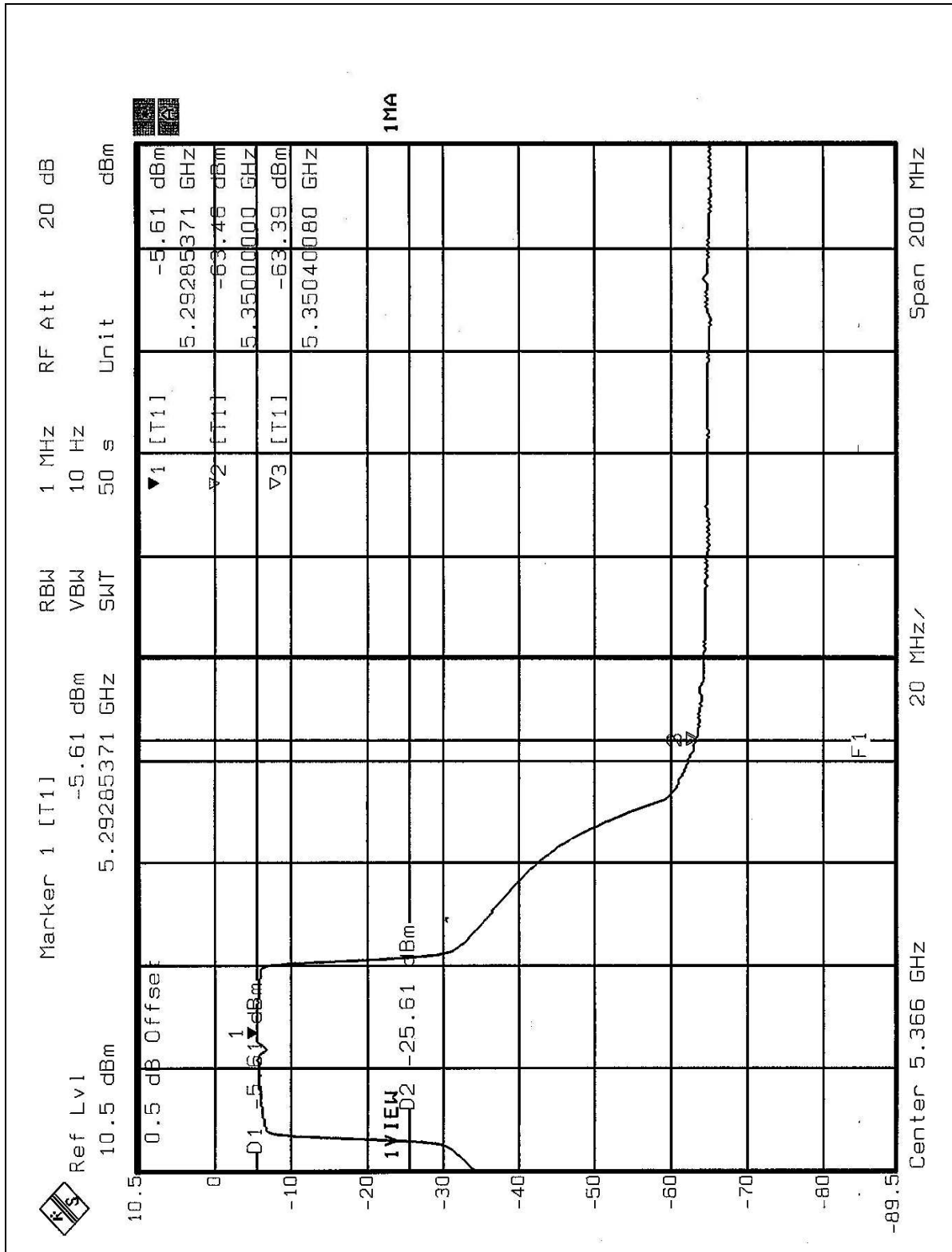


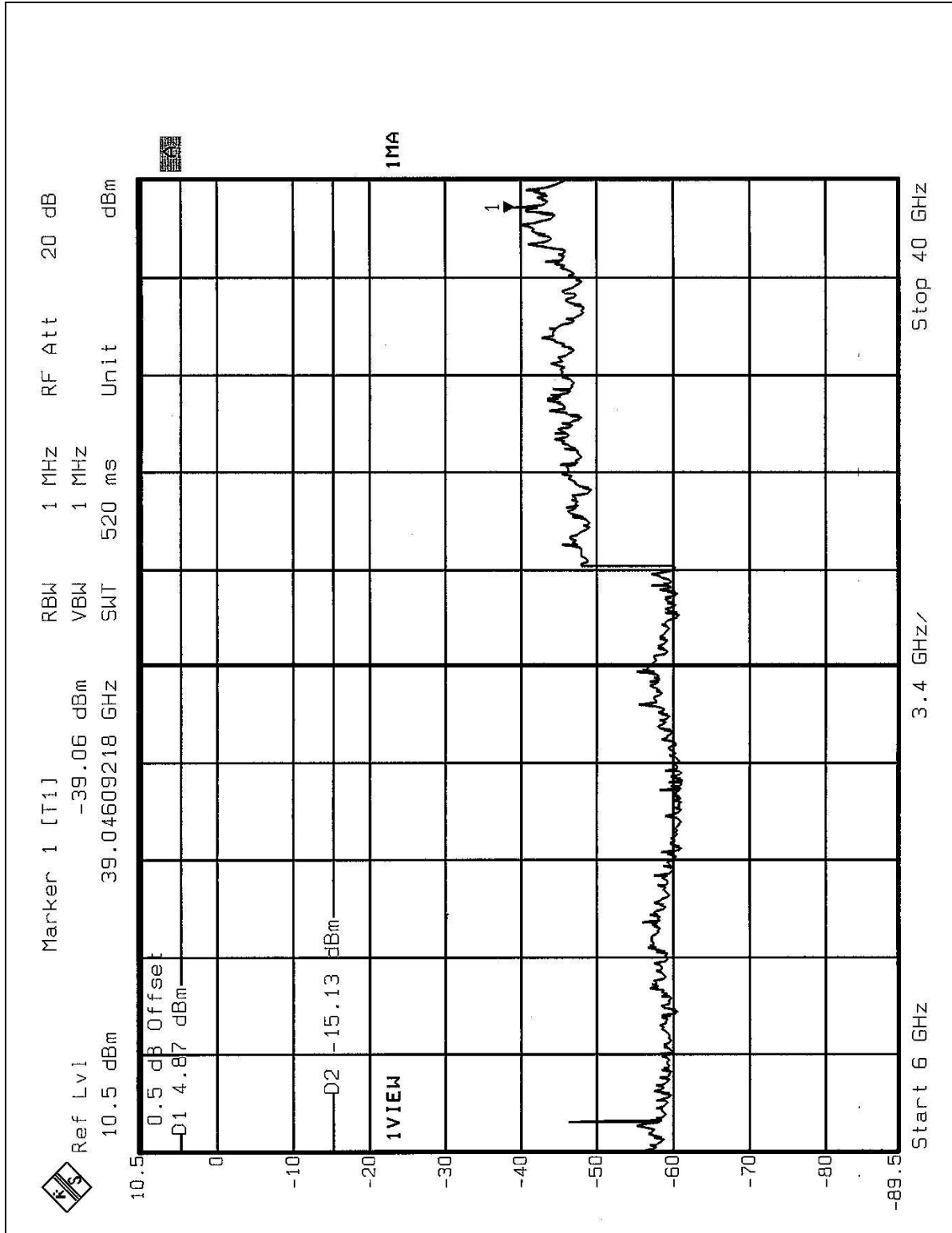




Turbo Mode (CH 3)









4.8 ANTENNA REQUIREMENT

4.8.1 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.

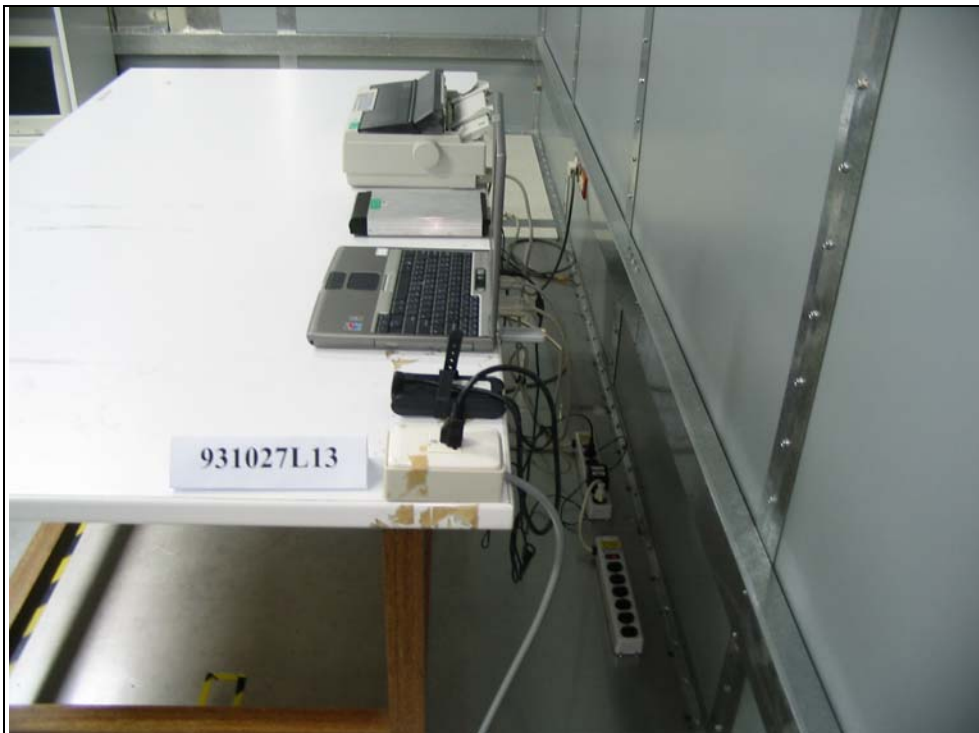
4.8.2 ANTENNA CONNECTED CONSTRUCTION

The antenna used in this product is Chip antenna without connector. The maximum Gain of the antenna is 4.0dBi.

5. PHOTOGRAPHS OF THE TEST CONFIGURATION

CONDUCTED EMISSION TEST

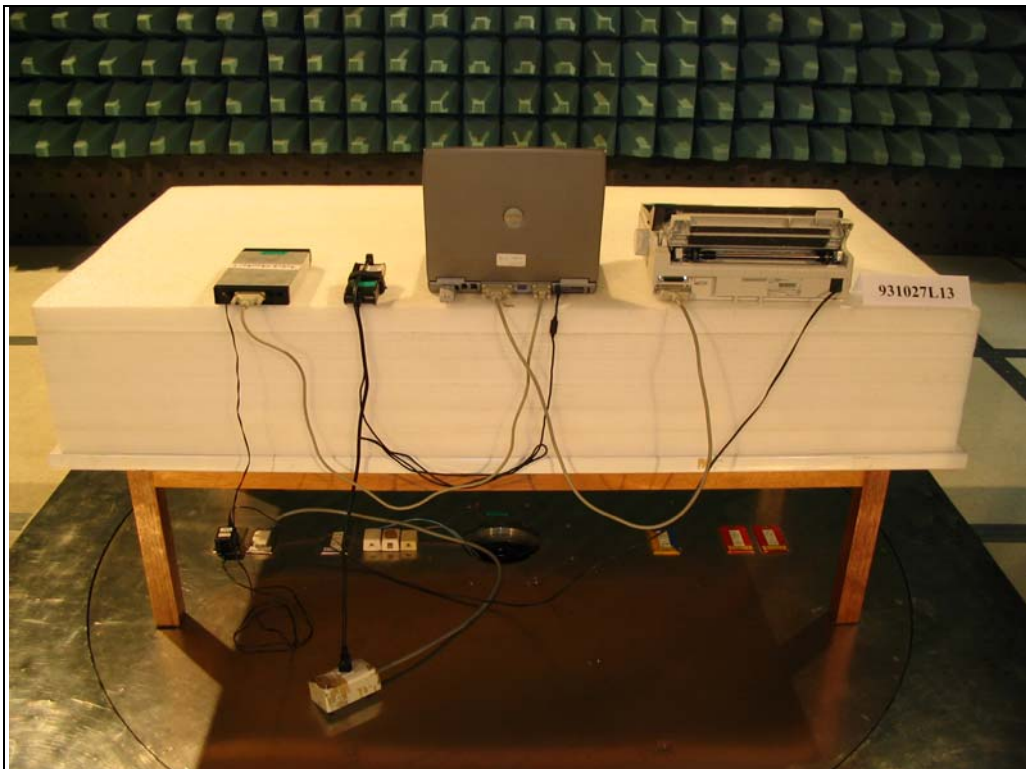
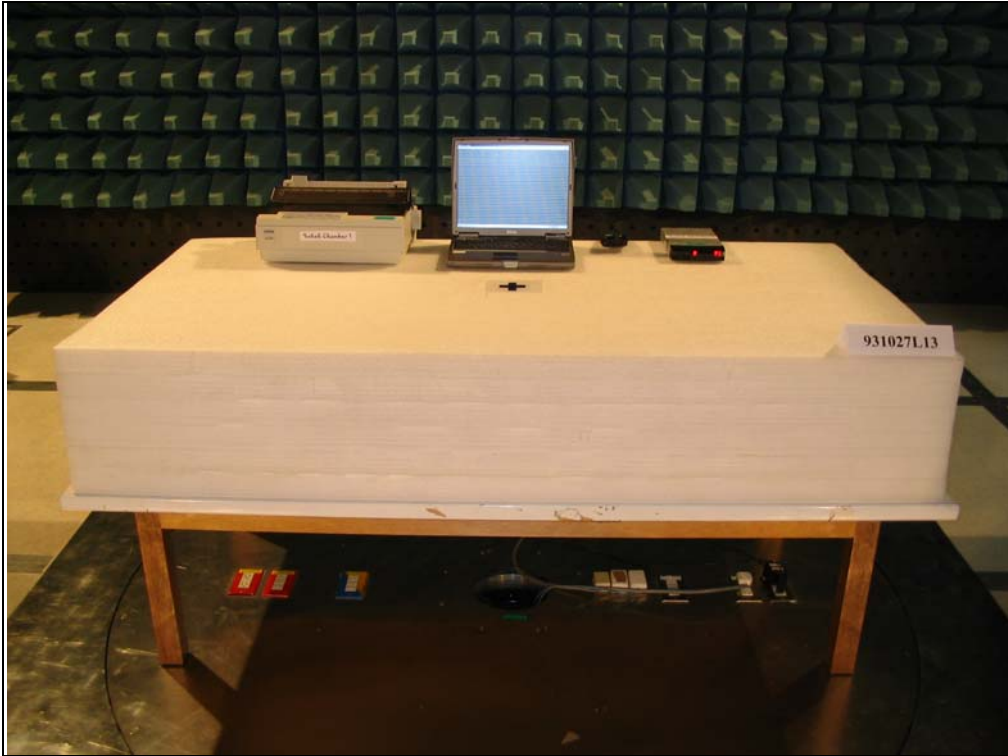
Test Mode 1



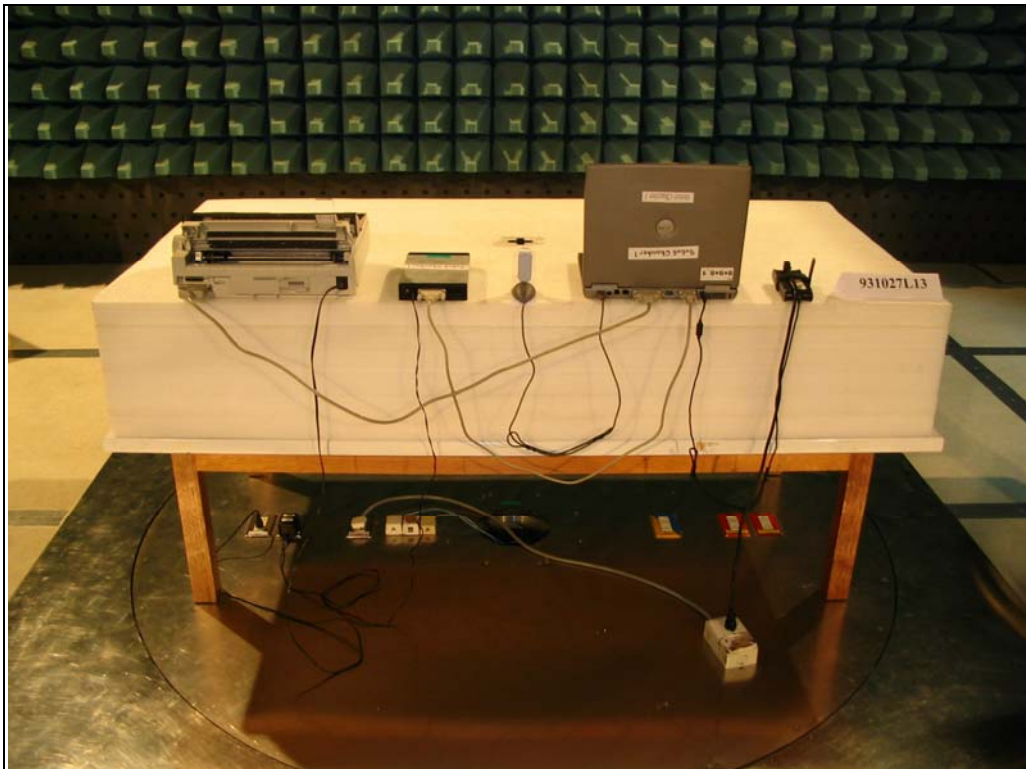
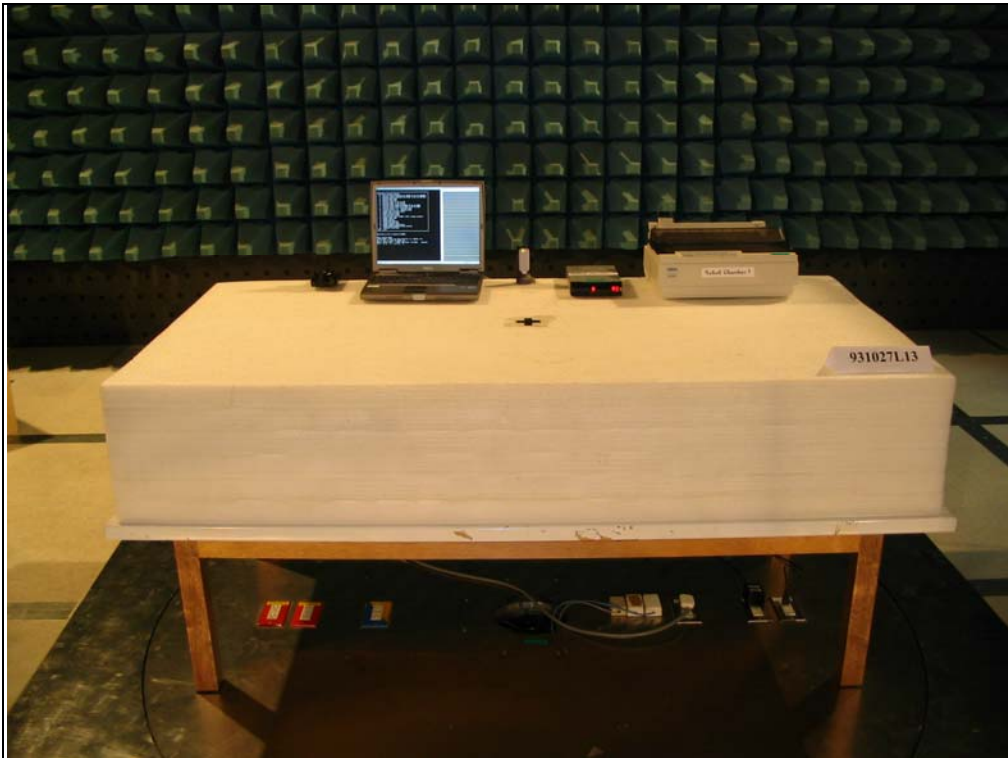
Test Mode 2



RADIATED EMISSION TEST
Test Mode 1



Test Mode 2





6. 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:

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

Copies of accreditation certificates of our laboratories obtained from approval agencies can be downloaded from our web site:

www.adt.com.tw/index.5/phtml. If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab:

Tel: 886-2-26052180

Fax: 886-2-26052943

Hsin Chu EMC/RF Lab:

Tel: 886-3-5935343

Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety Telecom Lab: Linko RF Lab.

Tel: 886-3-3183232

Fax: 886-3-3185050

Tel: 886-3-3270910

Fax: 886-3-3270892

Web Site: www.adt.com.tw

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