



#### 4.11 6dB BANDWIDTH MEASUREMENT

##### 4.11.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

##### 4.11.2 TEST INSTRUMENTS

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

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

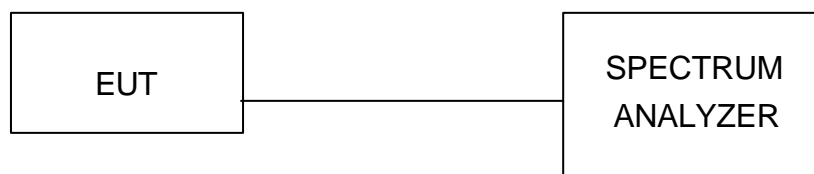
#### 4.11.3 TEST PROCEDURE

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.

#### 4.11.4 DEVIATION FROM TEST STANDARD

No deviation

#### 4.11.5 TEST SETUP



#### 4.11.6 EUT OPERATING CONDITIONS

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



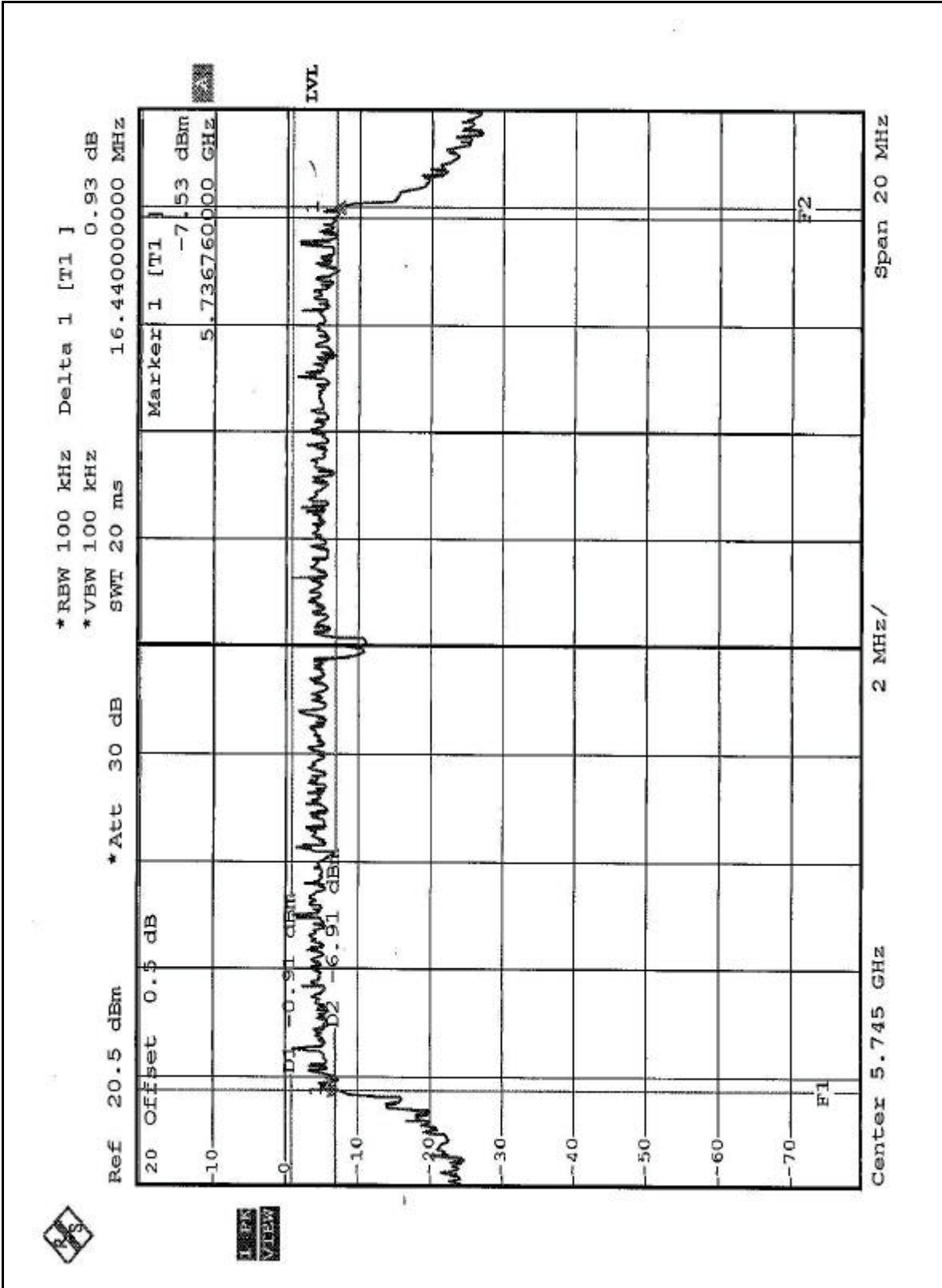
## 4.11.7 TEST RESULTS

<b>EUT</b>	802.11a mini-PCI Module	<b>MODEL</b>	WMIA-105A
<b>MODE</b>	Normal	<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz
<b>ENVIRONMENTAL CONDITIONS</b>	24deg. C, 64%RH, 991 hPa	<b>TESTED BY</b>	Leo Hung

<b>CHANNEL</b>	<b>CHANNEL FREQUENCY (MHz)</b>	<b>6dB BANDWIDTH (MHz)</b>	<b>MINIMUM LIMIT (MHz)</b>	<b>PASS/FAIL</b>
9	5745	16.44	0.5	PASS
11	5785	16.44	0.5	PASS
13	5825	16.36	0.5	PASS

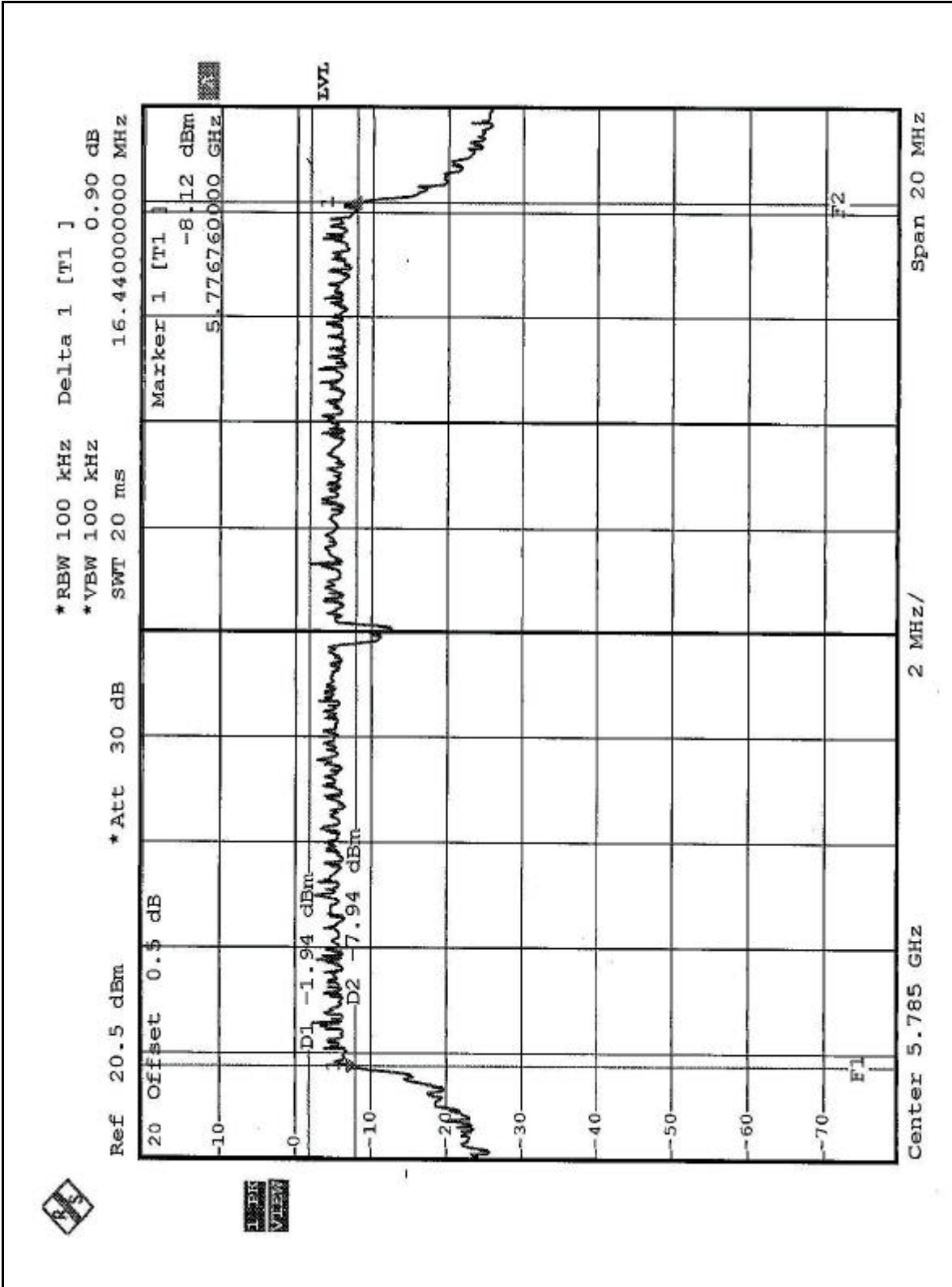


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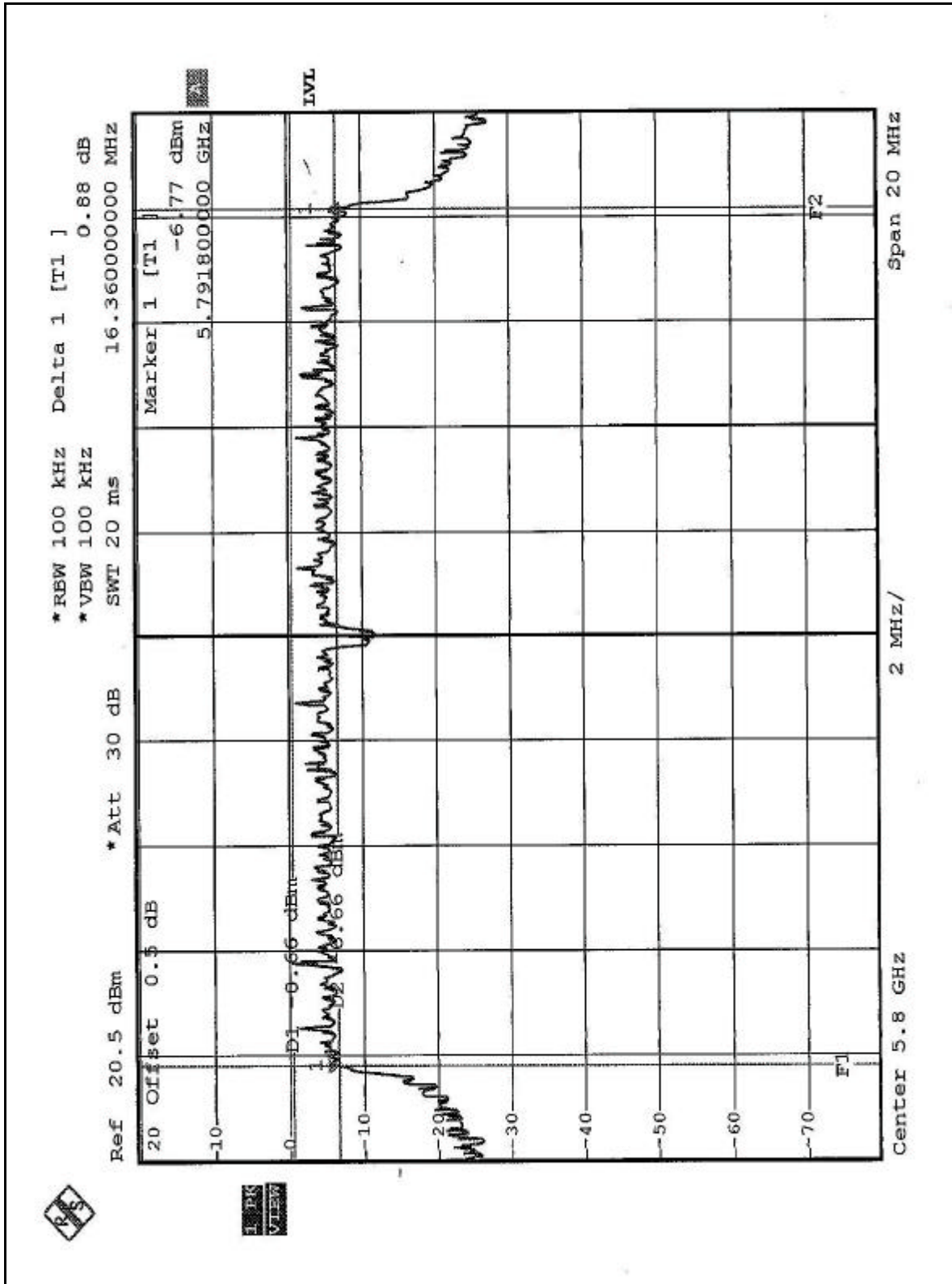


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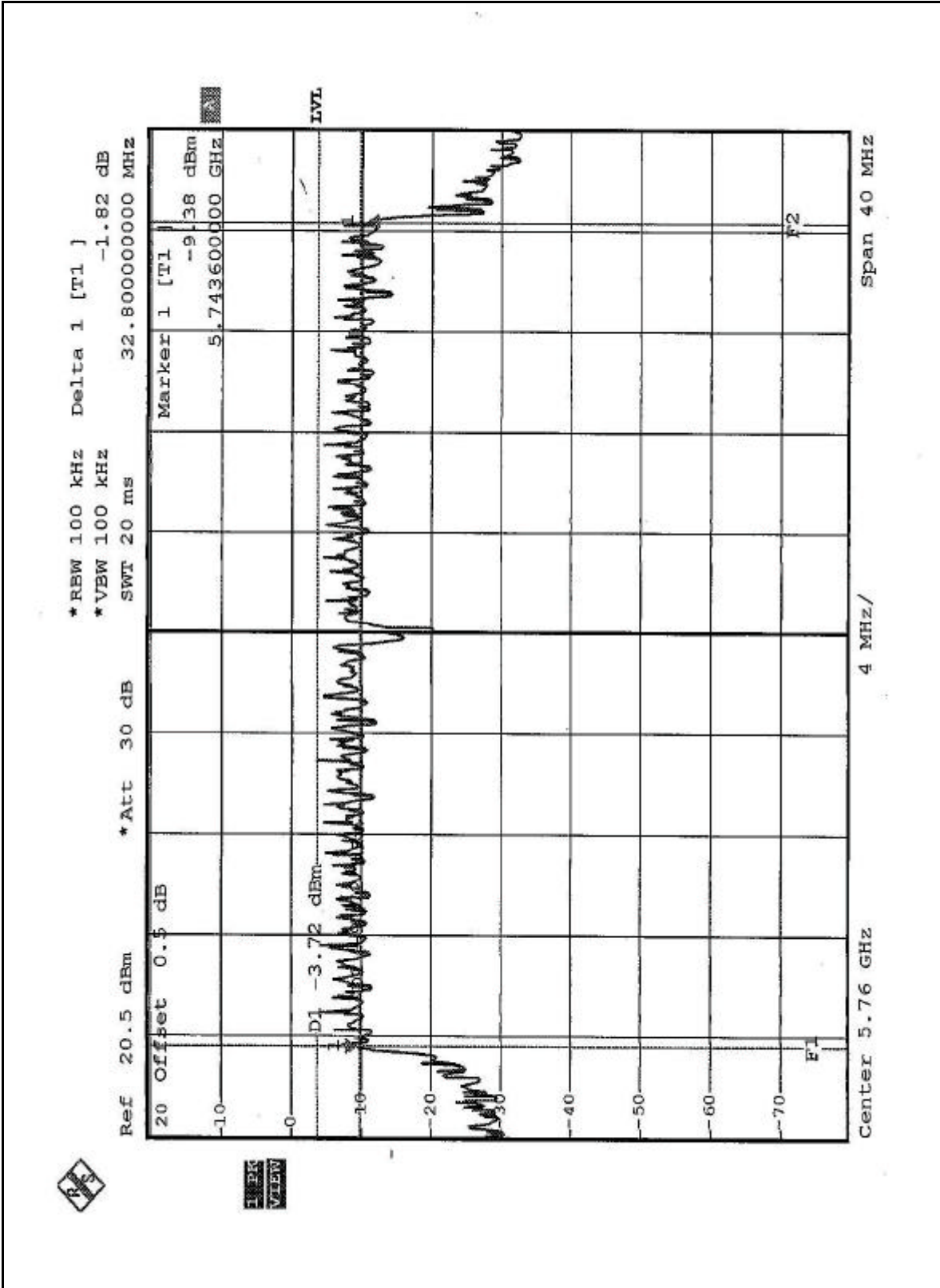


<b>EUT</b>	802.11a mini-PCI Module	<b>MODEL</b>	WMIA-105A
<b>MODE</b>	Turbo	<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz
<b>ENVIRONMENTAL CONDITIONS</b>	24deg. C, 64%RH, 991 hPa	<b>TESTED BY</b>	Leo Hung

<b>CHANNEL</b>	<b>CHANNEL FREQUENCY (MHz)</b>	<b>6dB BANDWIDTH (MHz)</b>	<b>MINIMUM LIMIT (MHz)</b>	<b>PASS/FAIL</b>
4	5760	32.80	0.5	PASS
5	5800	33.04	0.5	PASS



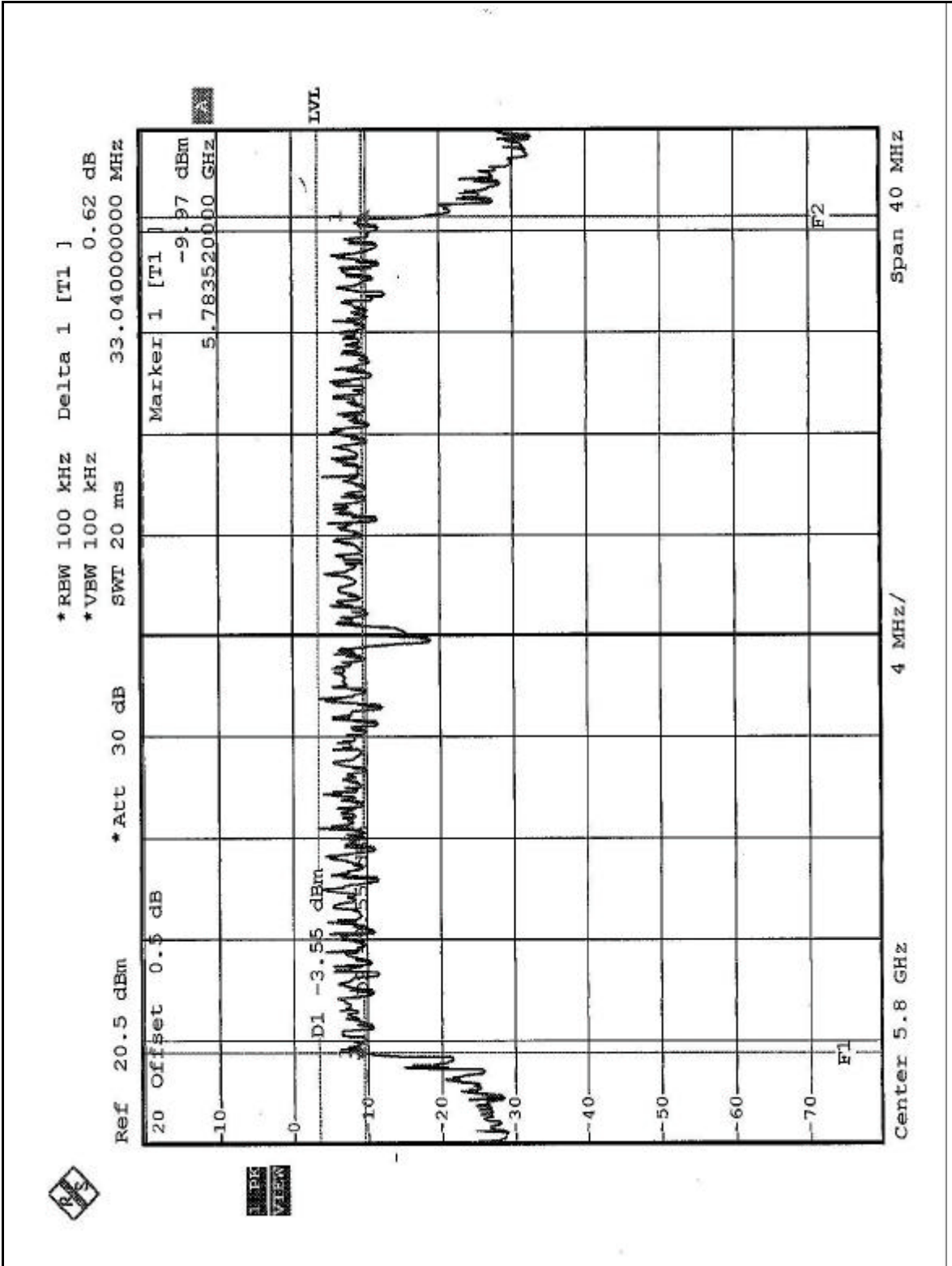
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## 4.12 MAXIMUM PEAK OUTPUT POWER

### 4.12.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

### 4.12.2 INSTRUMENTS

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

**NOTE:**

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



#### 4.12.3 TEST PROCEDURES

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

#### 4.12.4 DEVIATION FROM TEST STANDARD

No deviation

#### 4.12.5 TEST SETUP



#### 4.12.6 EUT OPERATING CONDITIONS

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



4.12.7 TEST RESULTS

<b>EUT</b>	802.11a mini-PCI Module	<b>MODEL</b>	WMIA-105A
<b>MODE</b>	Normal	<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz
<b>ENVIRONMENTAL CONDITIONS</b>	24deg. C, 64%RH, 991 hPa	<b>TESTED BY</b>	Leo Hung

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
9	5745	25.645	14.09	30	PASS
11	5785	25.586	14.08	30	PASS
13	5825	25.410	14.05	30	PASS

<b>EUT</b>	802.11a mini-PCI Module	<b>MODEL</b>	WMIA-105A
<b>MODE</b>	Turbo	<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz
<b>ENVIRONMENTAL CONDITIONS</b>	24deg. C, 64%RH, 991 hPa	<b>TESTED BY</b>	Leo Hung

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
4	5760	25.235	14.02	30	PASS
5	5800	25.351	14.04	30	PASS



#### 4.13 POWER SPECTRAL DENSITY MEASUREMENT

##### 4.13.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

##### 4.13.2 TEST INSTRUMENTS

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

**NOTES:**

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

#### 4.13.3 TEST PROCEDURE

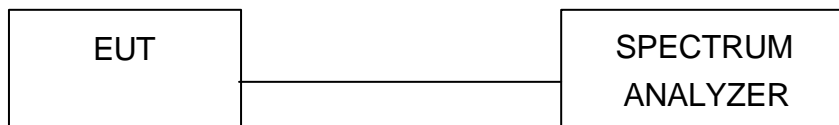
The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3 kHz RBW and 30 kHz VBW, set sweep time = span/3 kHz. The power spectral density was measured and recorded.

The sweep time is allowed to be longer than span/3 kHz for a full response of the mixer in the spectrum analyzer.

#### 4.13.4 DEVIATION FROM TEST STANDARD

No deviation

#### 4.13.5 TEST SETUP



#### 4.13.6 EUT OPERATING CONDITION

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



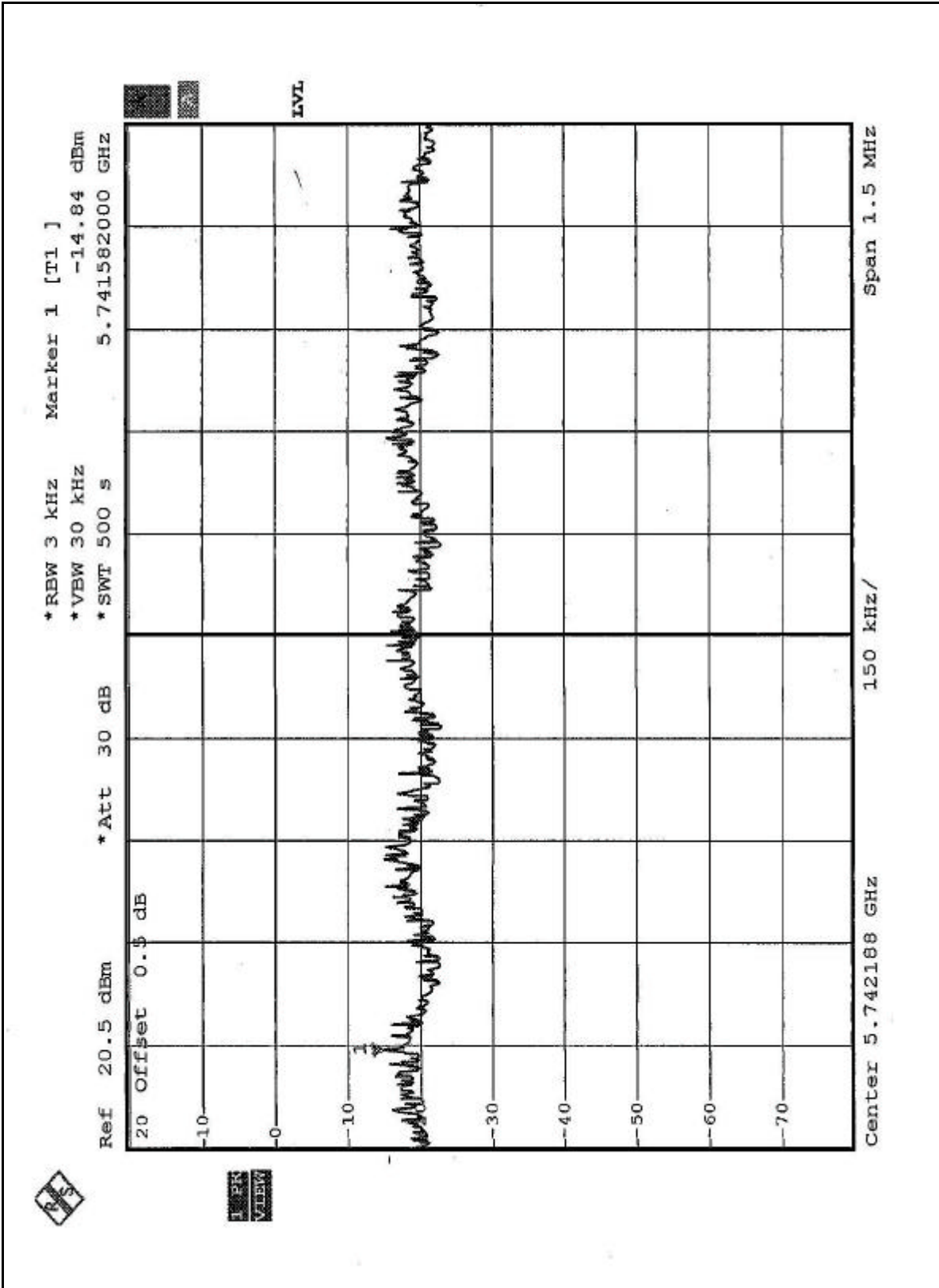
## 4.13.7 TEST RESULTS

<b>EUT</b>	802.11a mini-PCI Module	<b>MODEL</b>	WMIA-105A
<b>MODE</b>	Normal	<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz
<b>ENVIRONMENTAL CONDITIONS</b>	24deg. C, 64%RH, 991 hPa	<b>TESTED BY</b>	Leo Hung

<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	-14.84	8	PASS
11	5785	-14.68	8	PASS
13	5825	-14.64	8	PASS



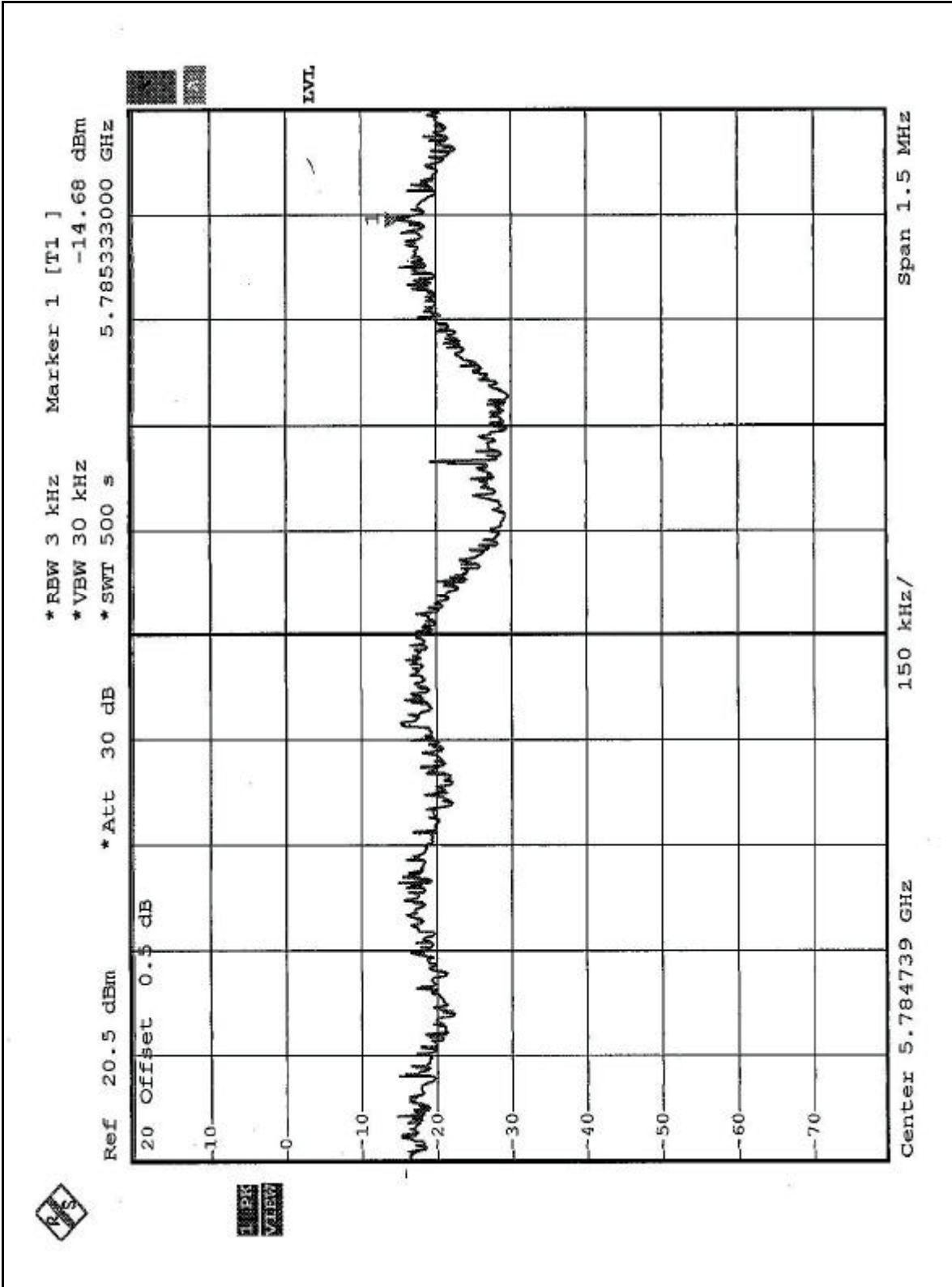
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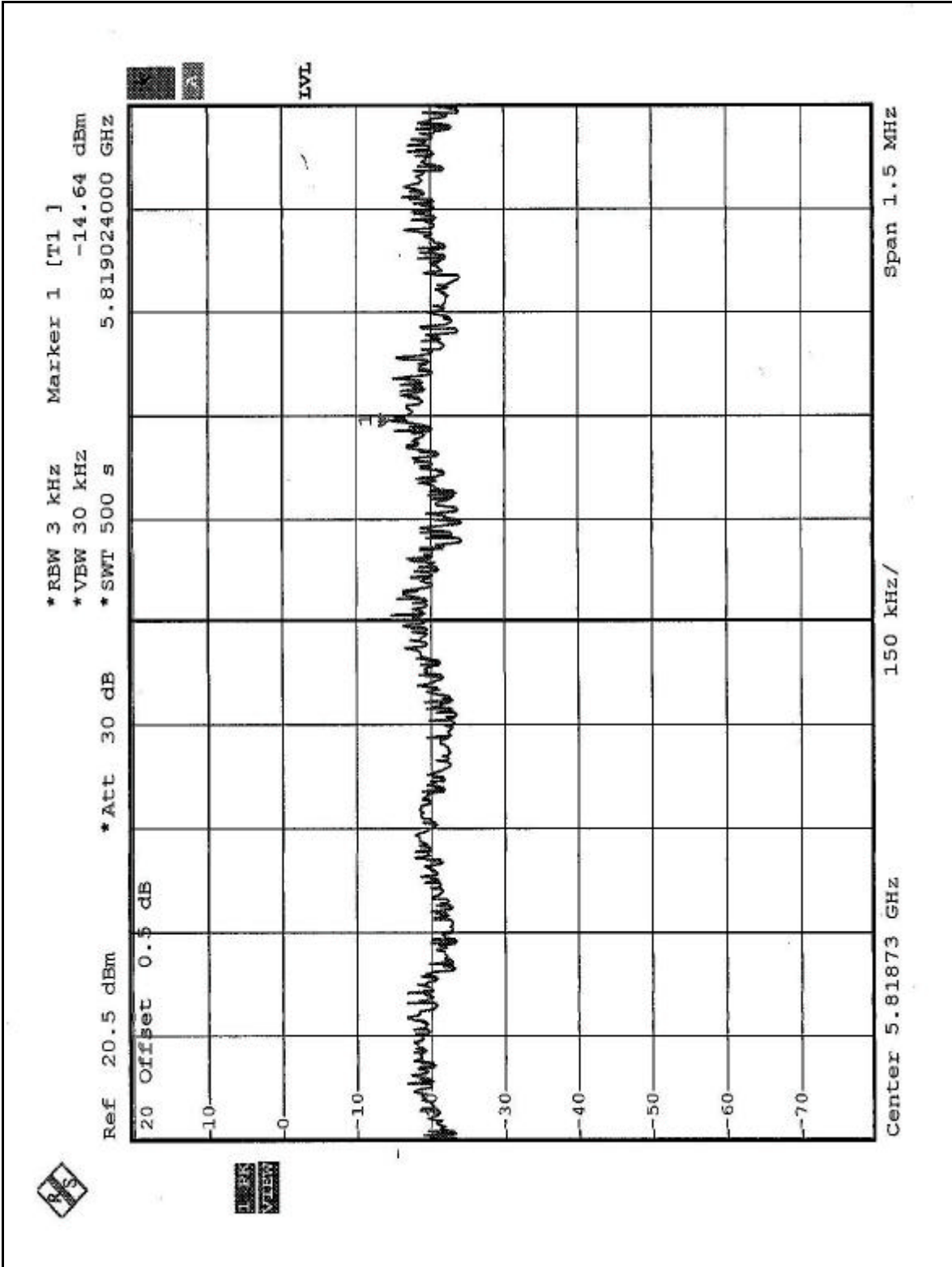


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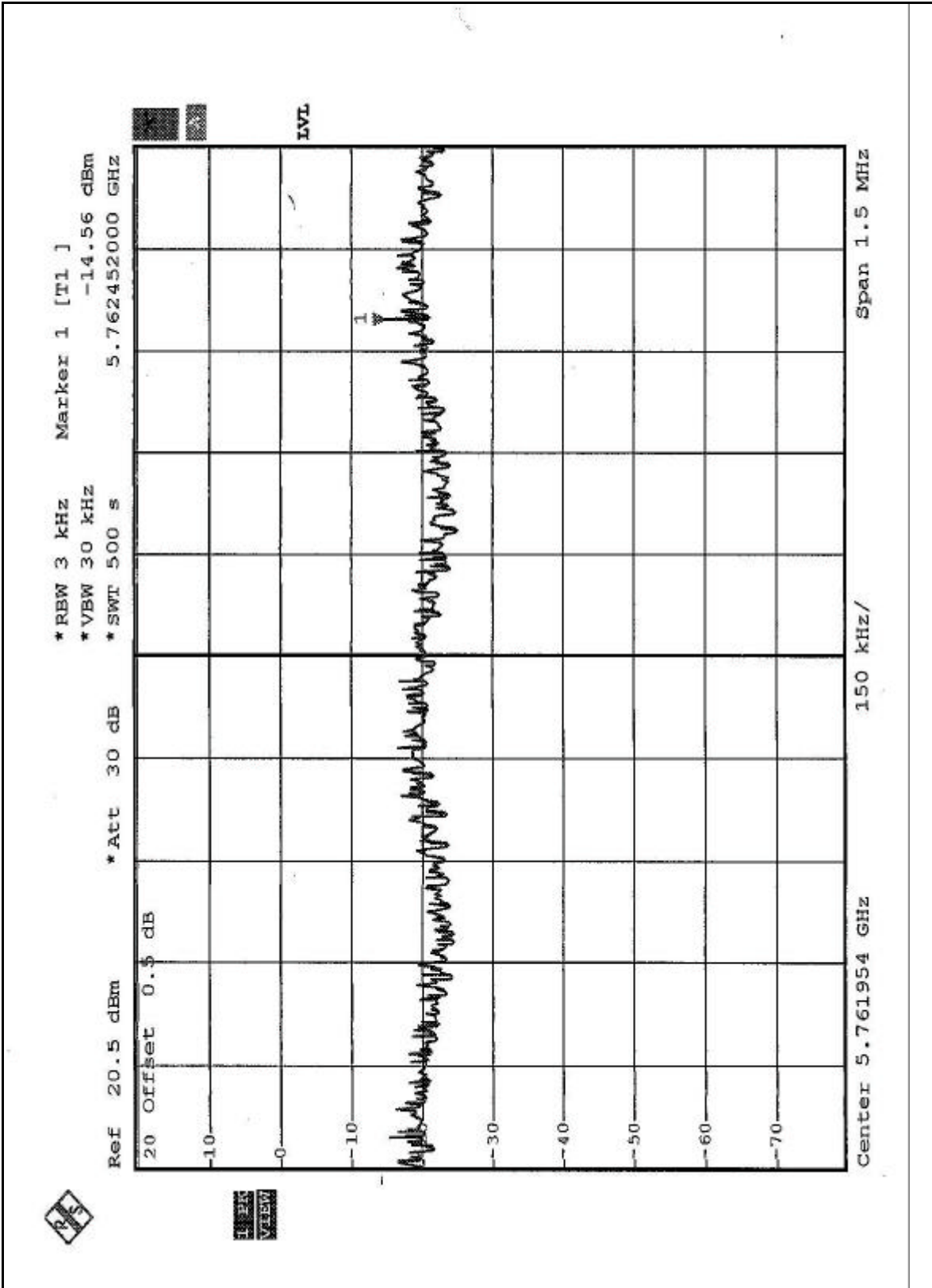


<b>EUT</b>	802.11a mini-PCI Module	<b>MODEL</b>	WMIA-105A
<b>MODE</b>	Turbo	<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz
<b>ENVIRONMENTAL CONDITIONS</b>	24deg. C, 64%RH, 991 hPa	<b>TESTED BY</b>	Leo Hung

<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	-14.56	8	PASS
5	5800	-14.63	8	PASS

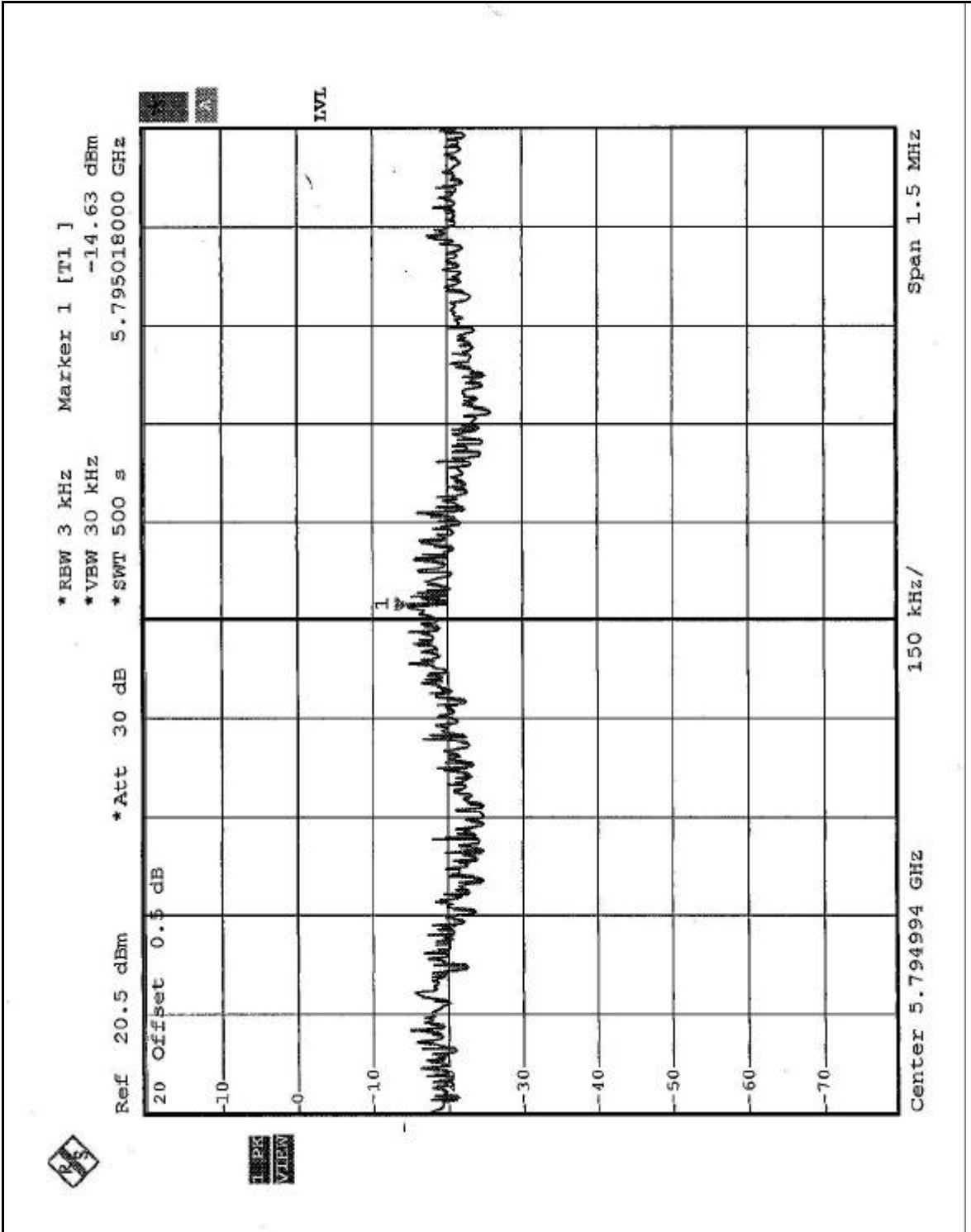


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#### 4.14 BAND EDGES MEASUREMENT

##### 4.14.1 LIMITS OF BAND EDGES MEASUREMENT

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

##### 4.14.2 TEST INSTRUMENTS

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

**NOTES:**

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

##### 4.14.3 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.

##### 4.14.4 DEVIATION FROM TEST STANDARD

No deviation



#### 4.14.5 EUT OPERATING CONDITION

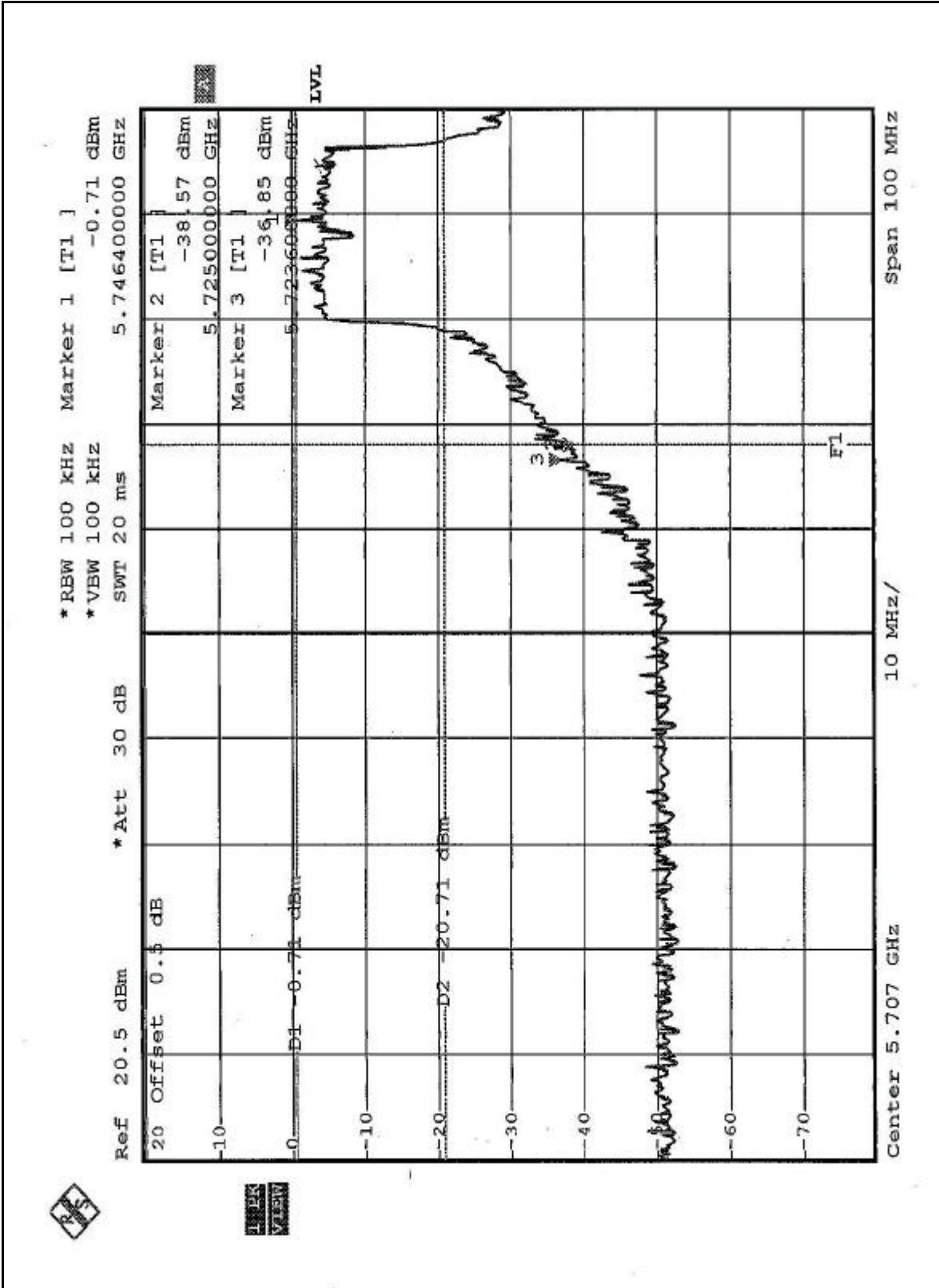
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

#### 4.14.6 TEST RESULTS

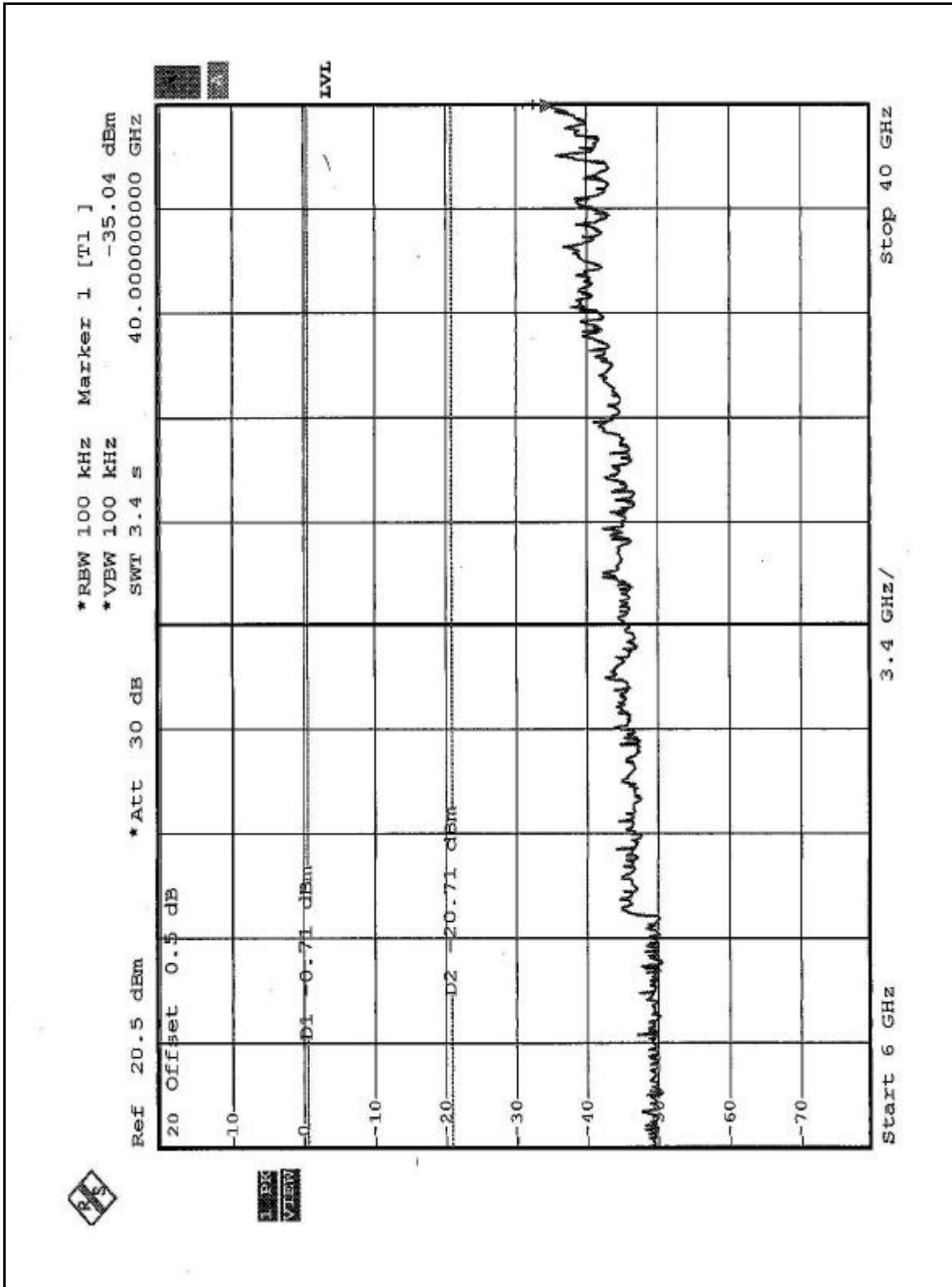
The spectrum plots are attached on the following pages. D2 line indicates the highest level, D1 line indicates the 20dB offset below D2. It shows compliance with the requirement in part 15.247(d).

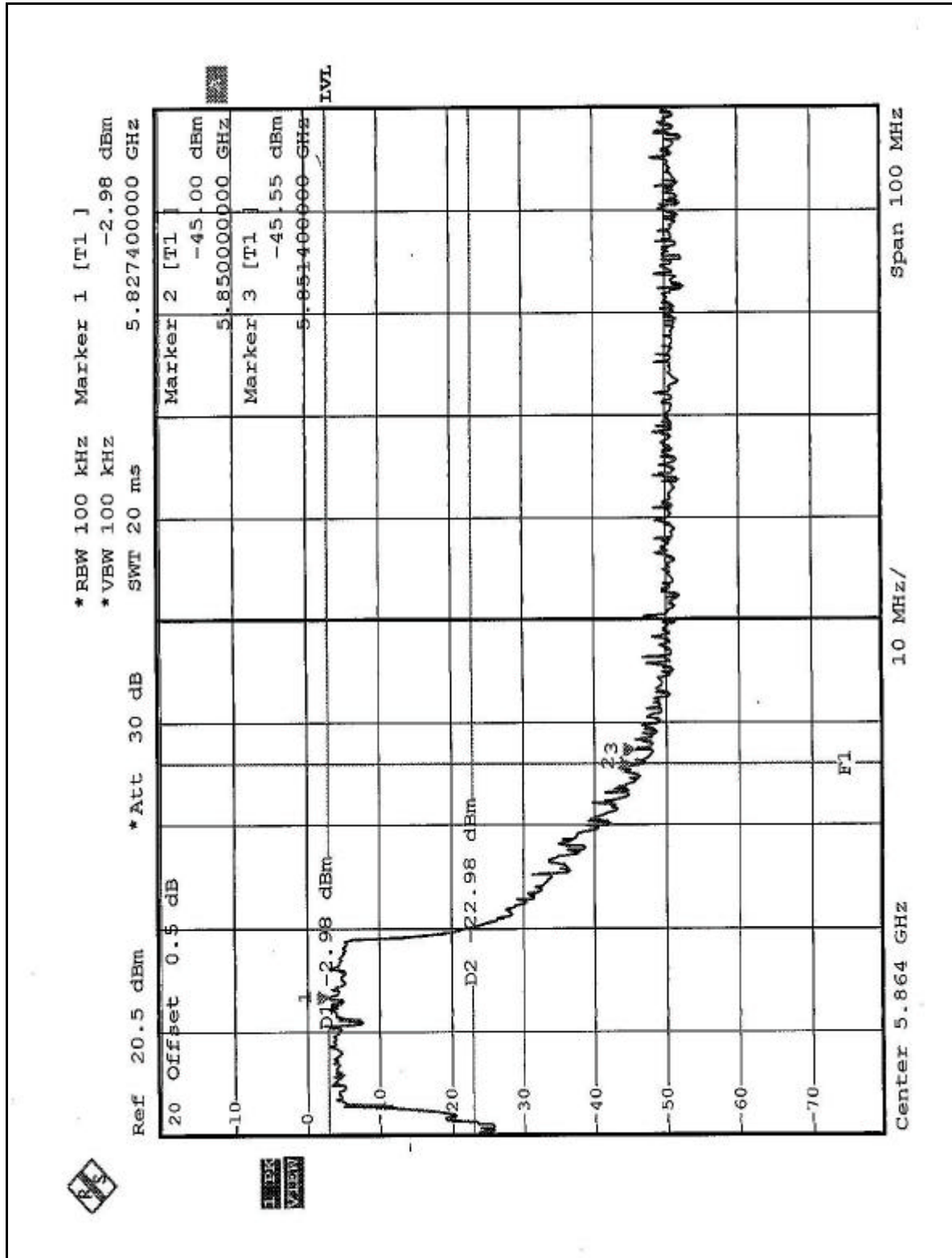


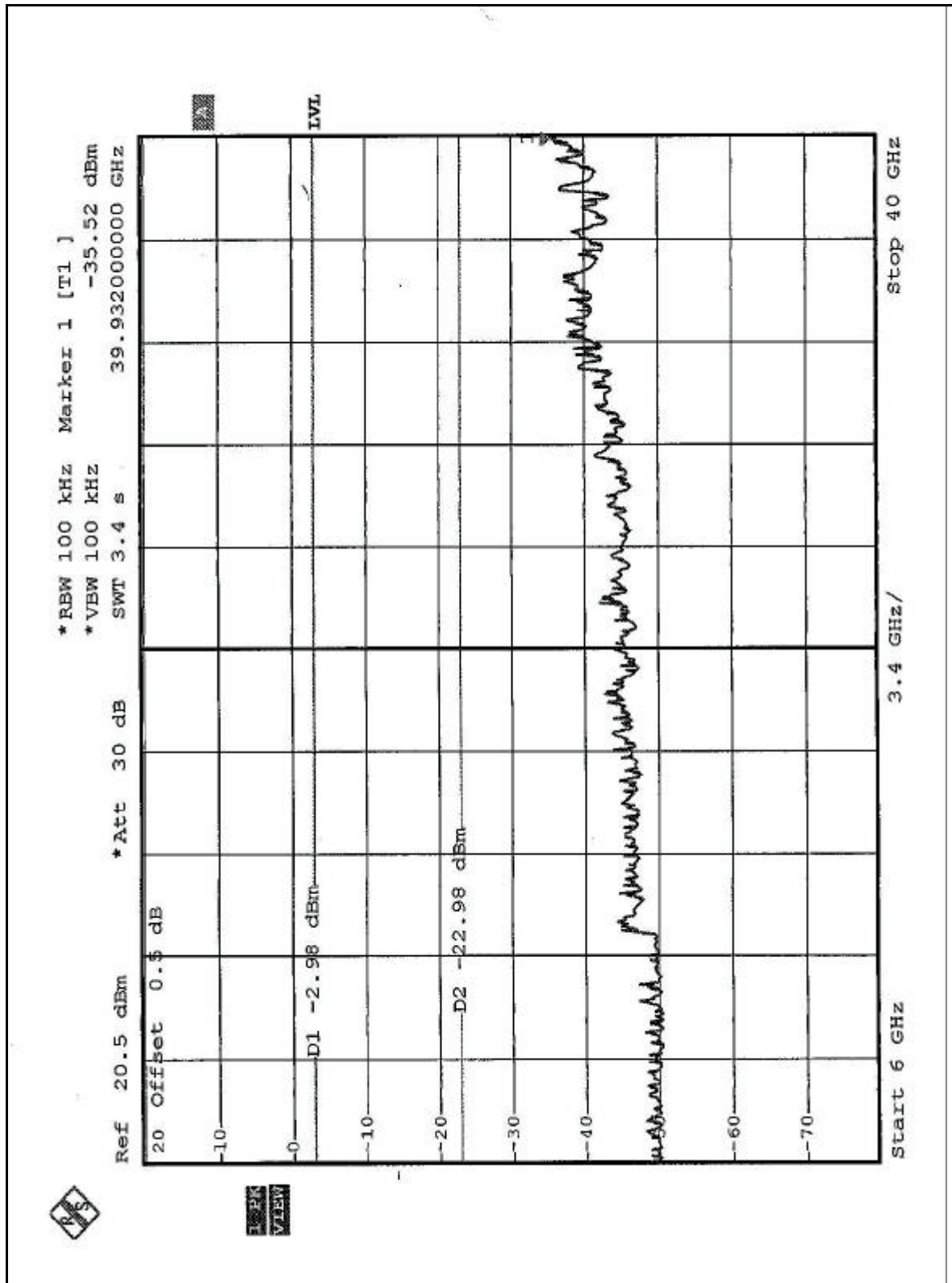
Normal Mode





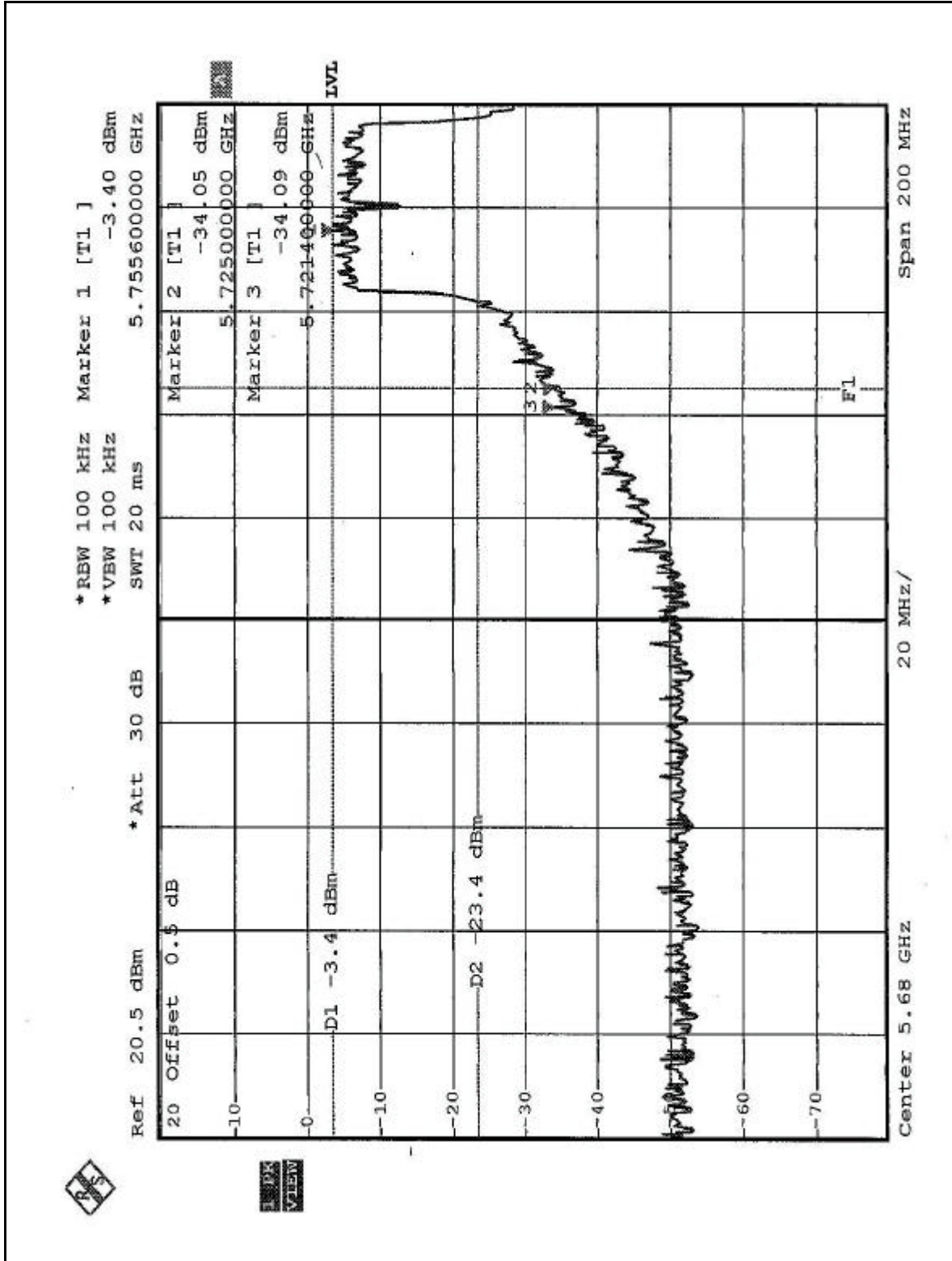


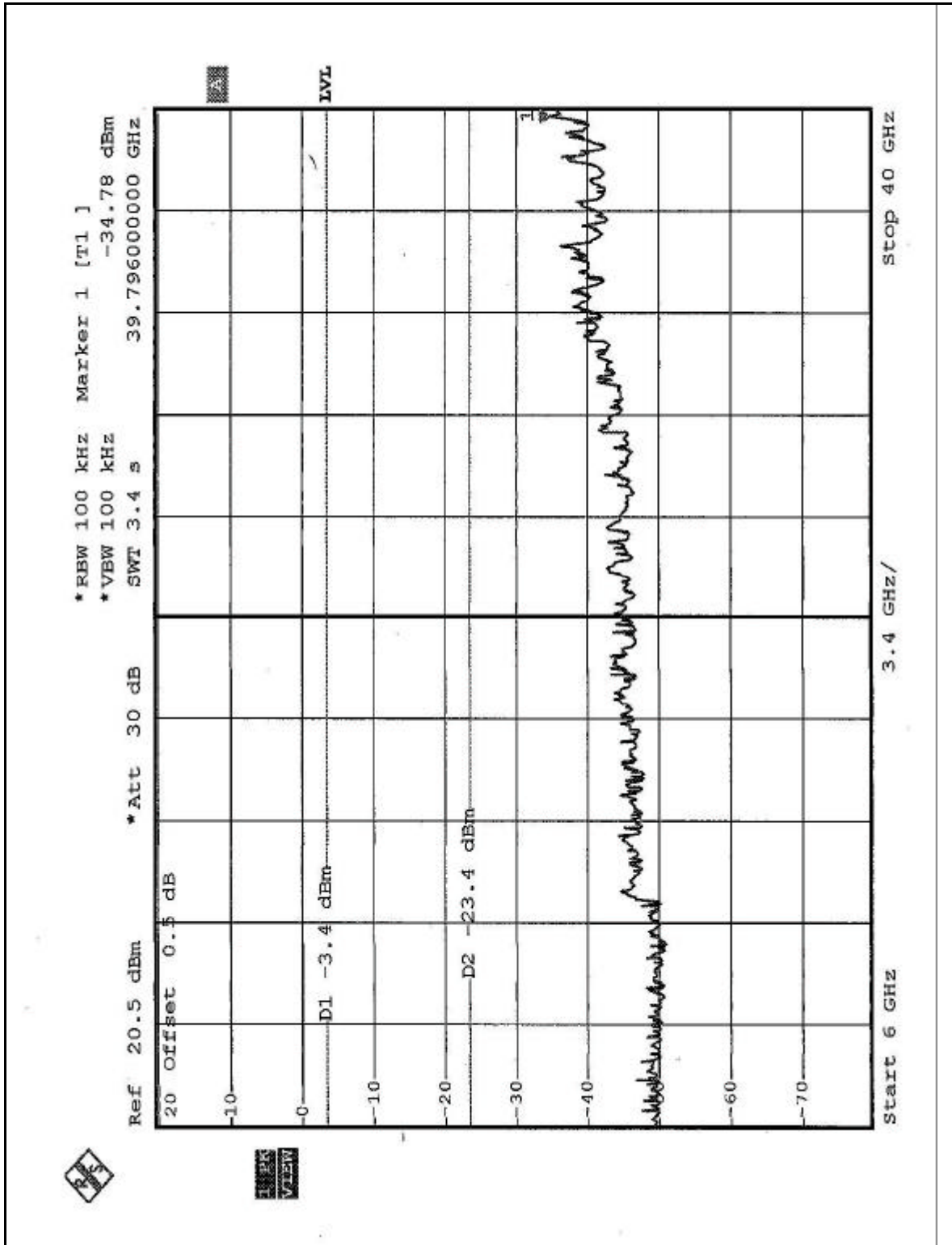




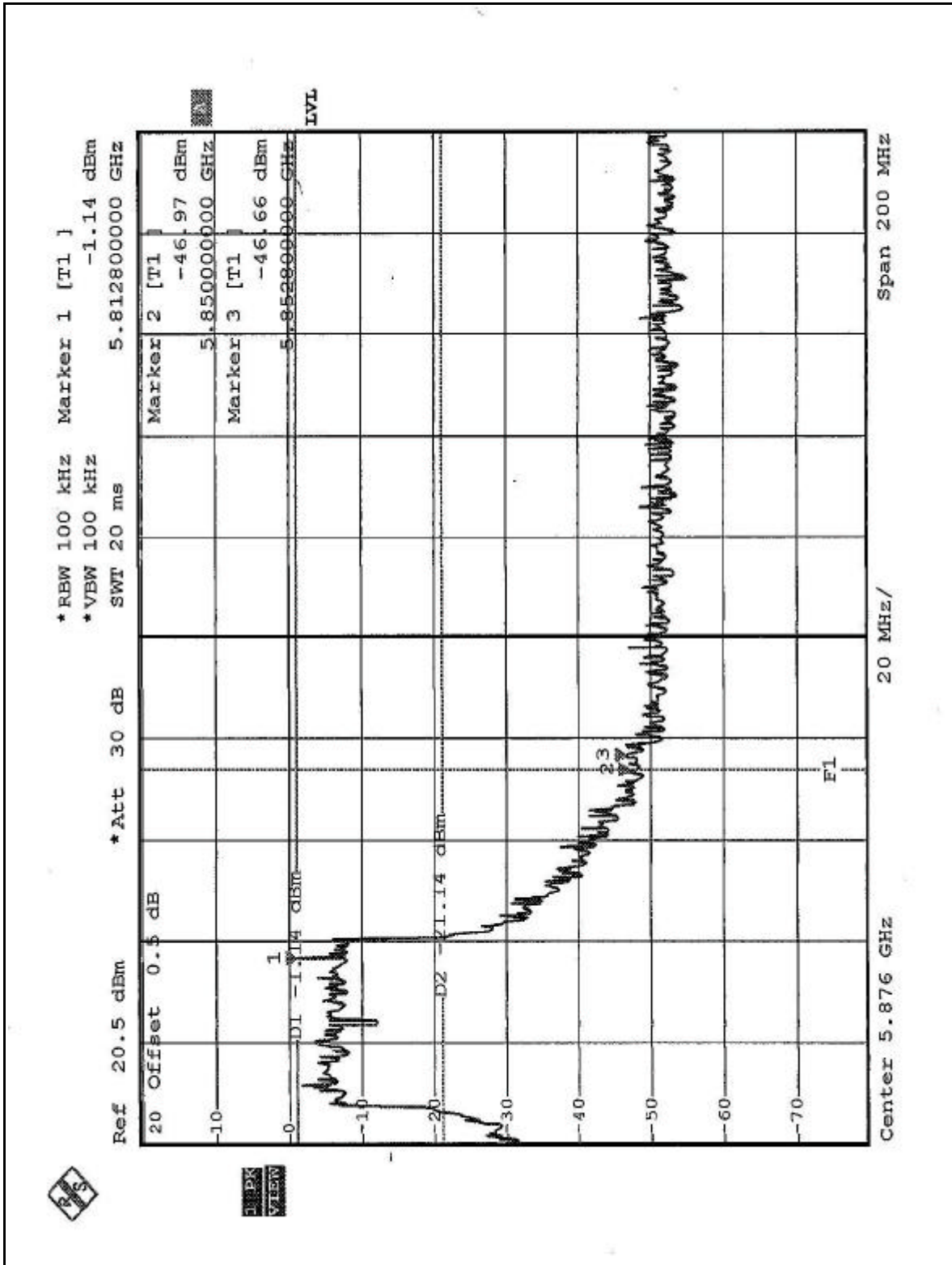


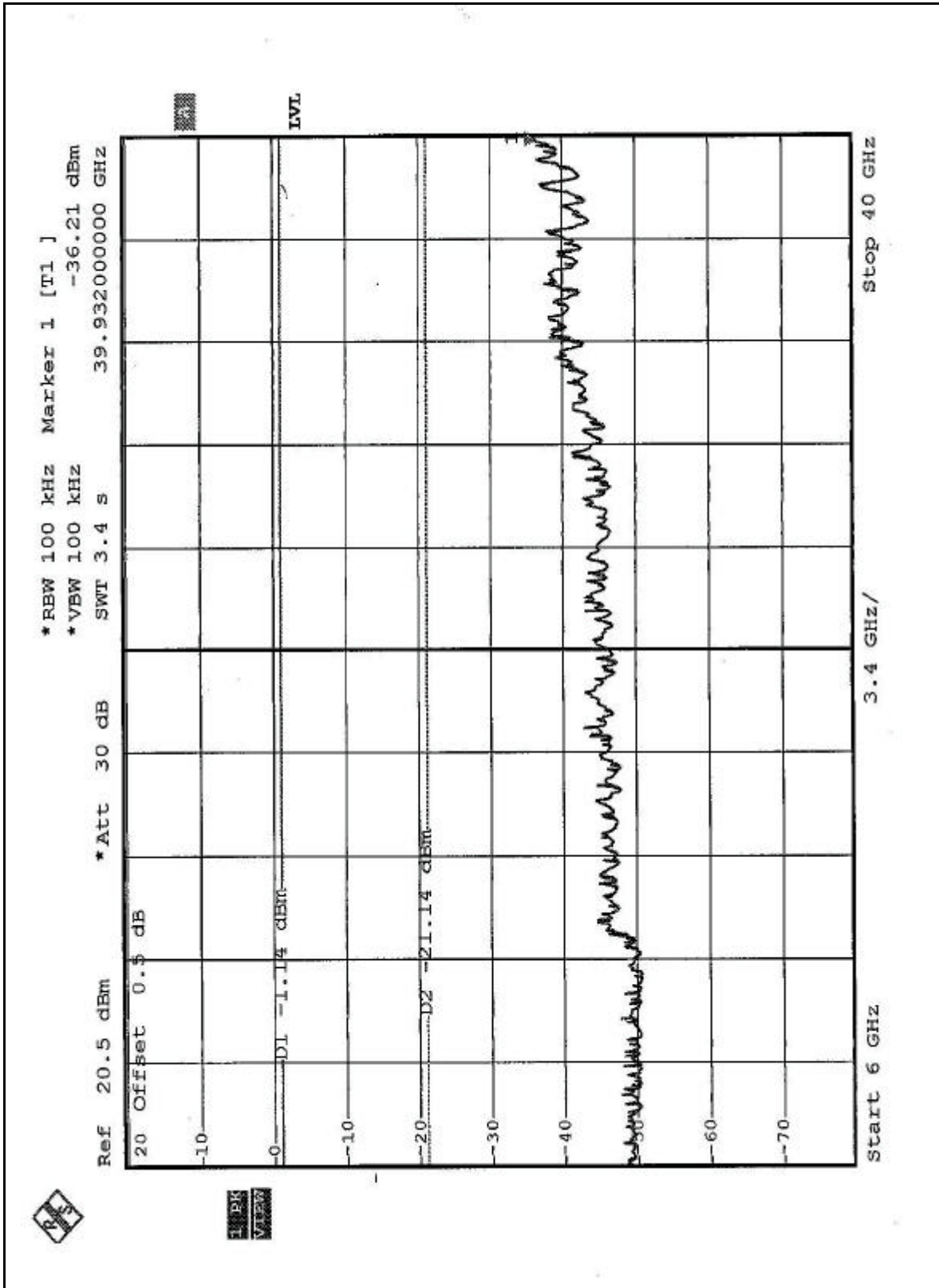
Turbo Mode













#### **4.15 ANTENNA REQUIREMENT**

##### **4.15.1 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(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.

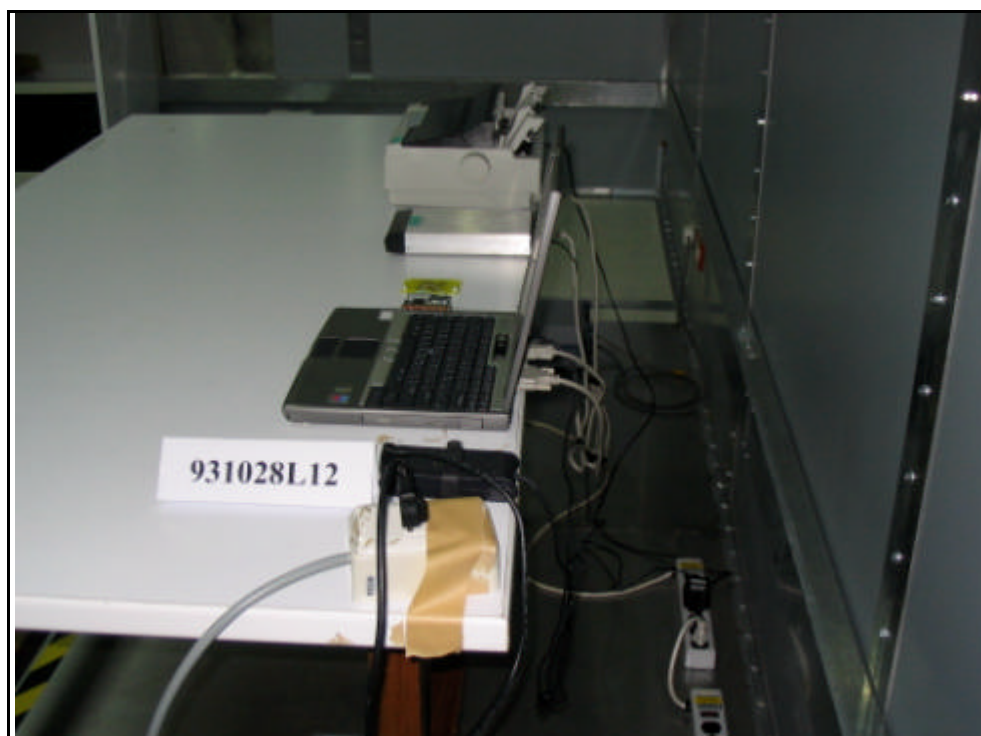
##### **4.15.2 ANTENNA CONNECTED CONSTRUCTION**

The antenna used in this product is Printed antenna with UFL antenna connector. The maximum Gain of the antenna is 2.7dBi.

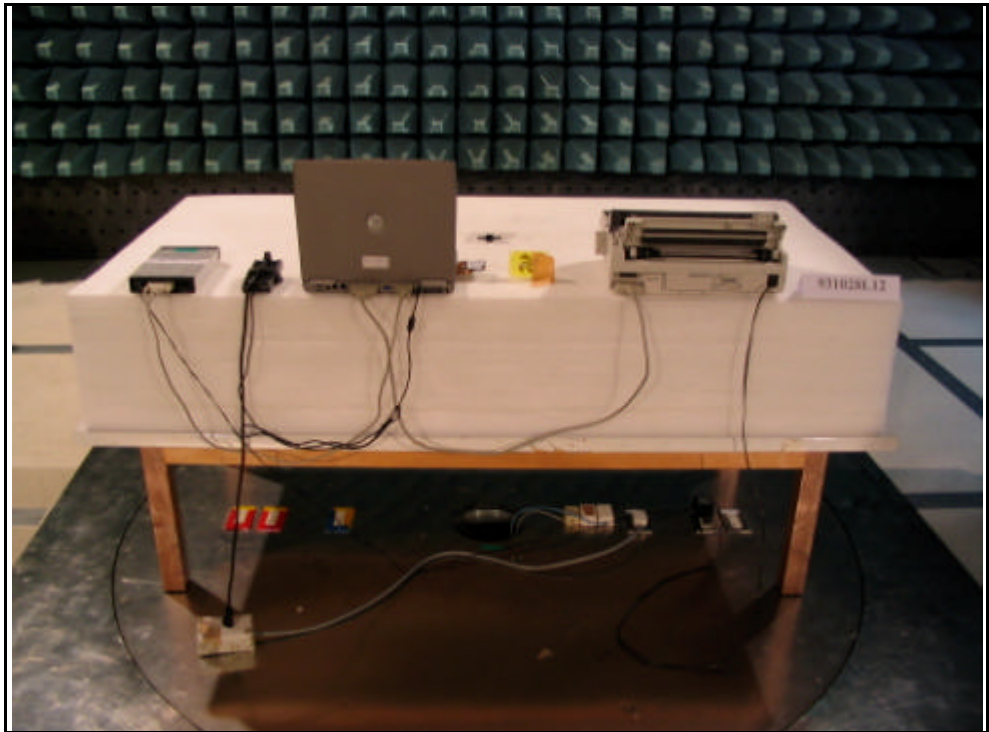
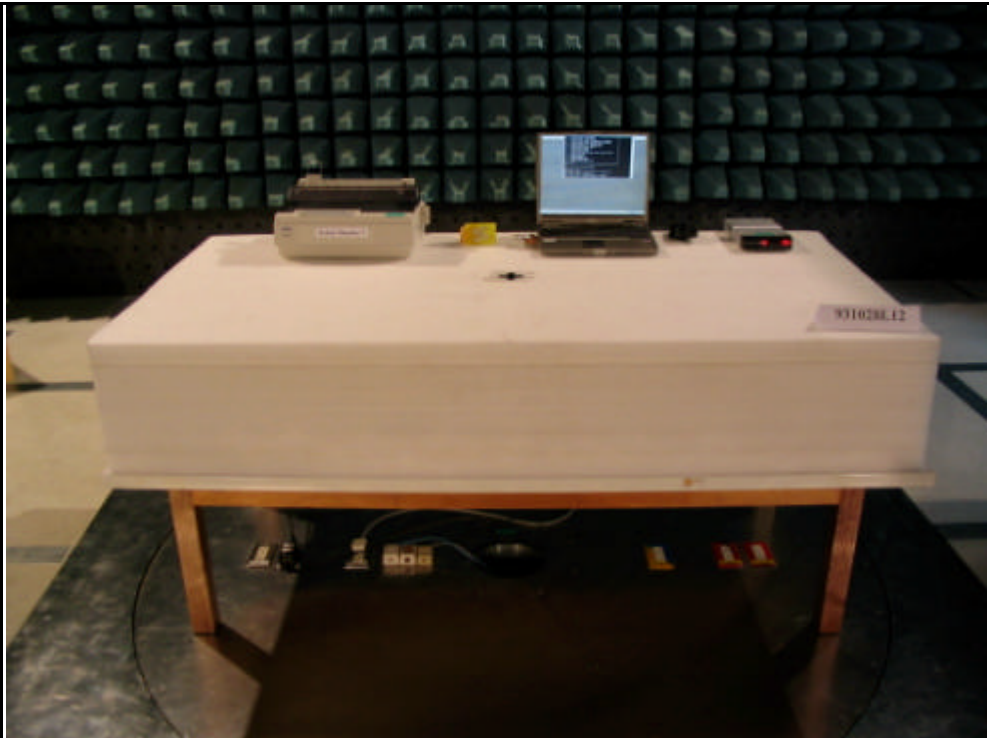


## 5. PHOTOGRAPHS OF THE TEST CONFIGURATION

### CONDUCTED EMISSION TEST



RADIATED EMISSION TEST







## 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, Guide 25 or EN 45001:

<b>USA</b>	FCC, NVLAP, UL, A2LA
<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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Tel: 886-3-3183232

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Fax: 886-3-3270892

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Report Format Version 1.5