

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, 2005

NOTE:

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

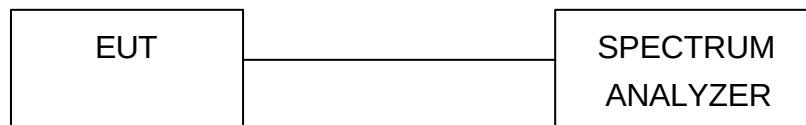
4.5.3 TEST PROCEDURE

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

4.5.4 DEVIATION FROM TEST STANDARD

No deviation

4.5.5 TEST SETUP



4.5.6 EUT OPERATING CONDITION

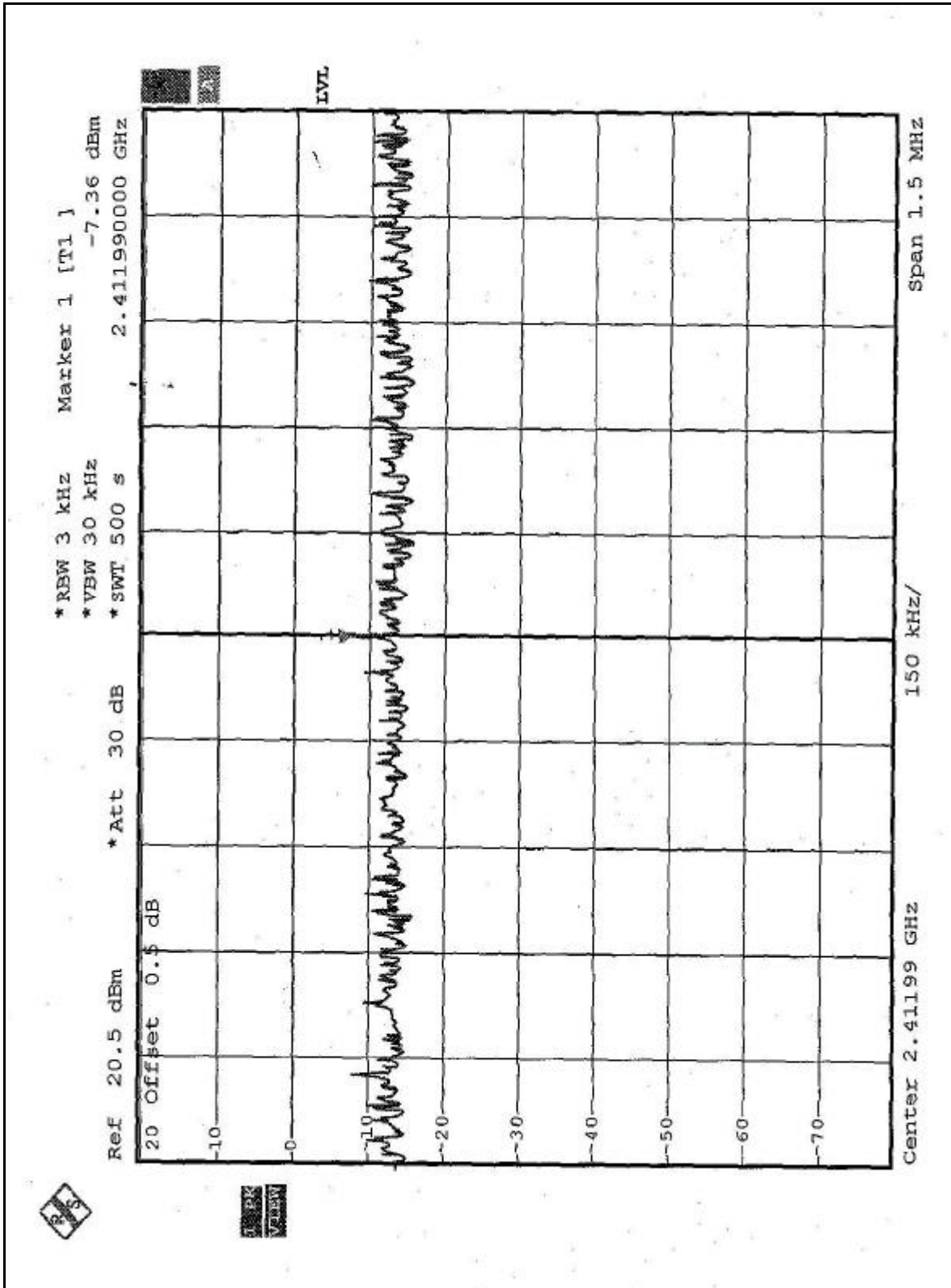
Same as Item 4.3.6

4.5.7 TEST RESULTS

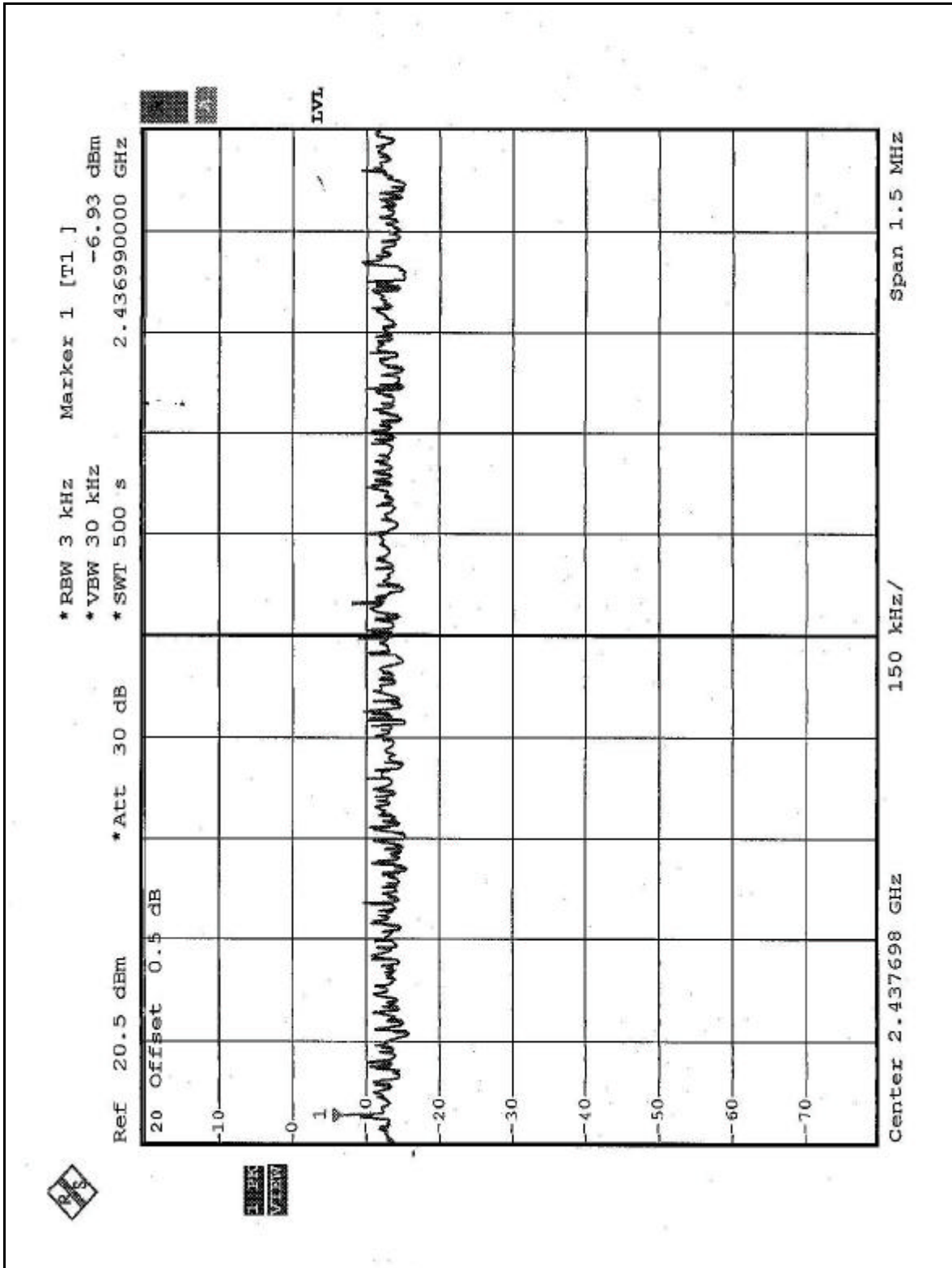
EUT	Wireless AG Gaming Adapter	MODEL	DGL-3420
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	24deg.C, 64%RH, 991hPa
MODE	CCK	TESTED BY	Leo Hung

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-7.36	8	PASS
6	2437	-6.93	8	PASS
11	2462	-7.49	8	PASS

CH1

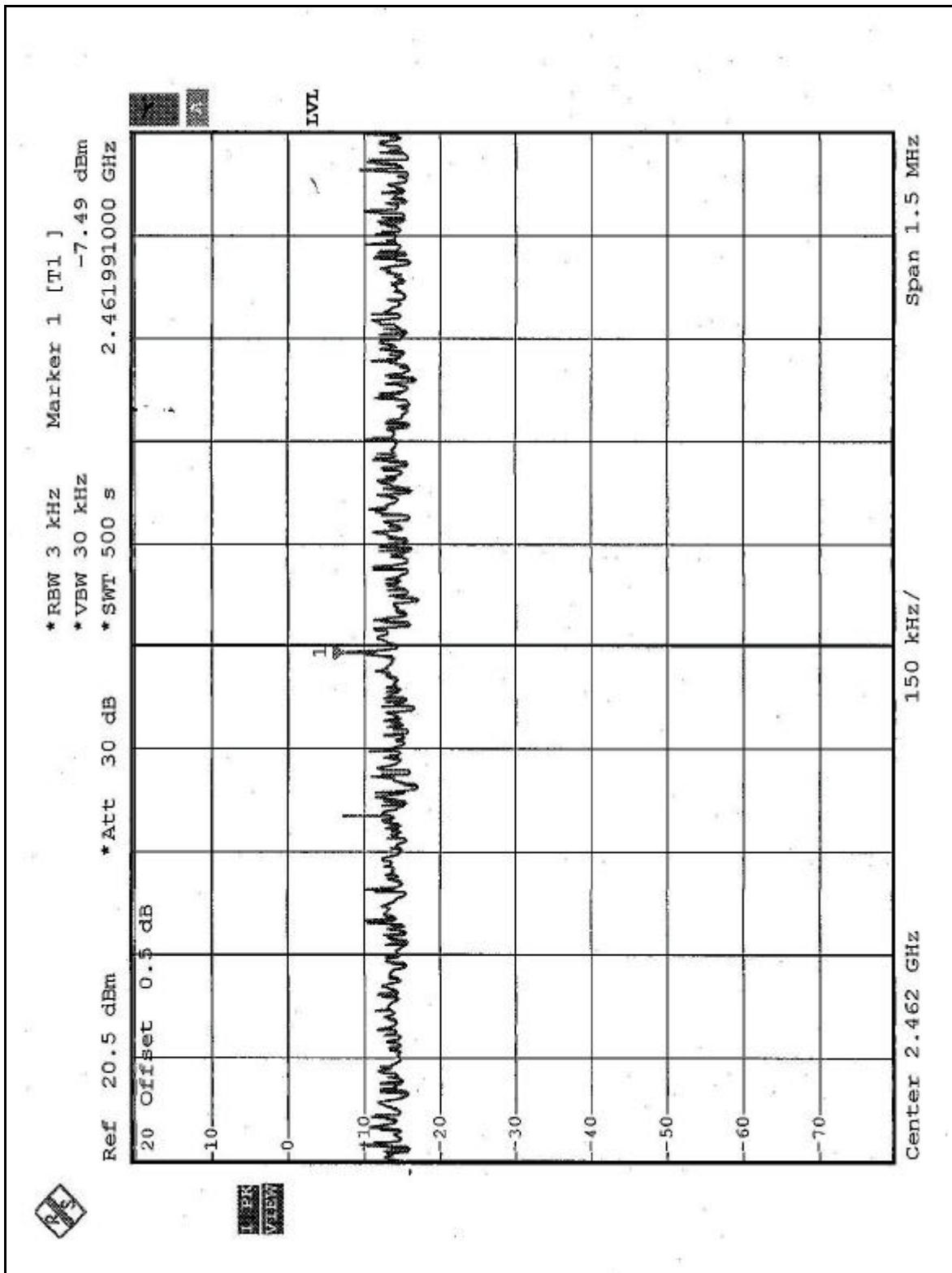


CH6





CH11

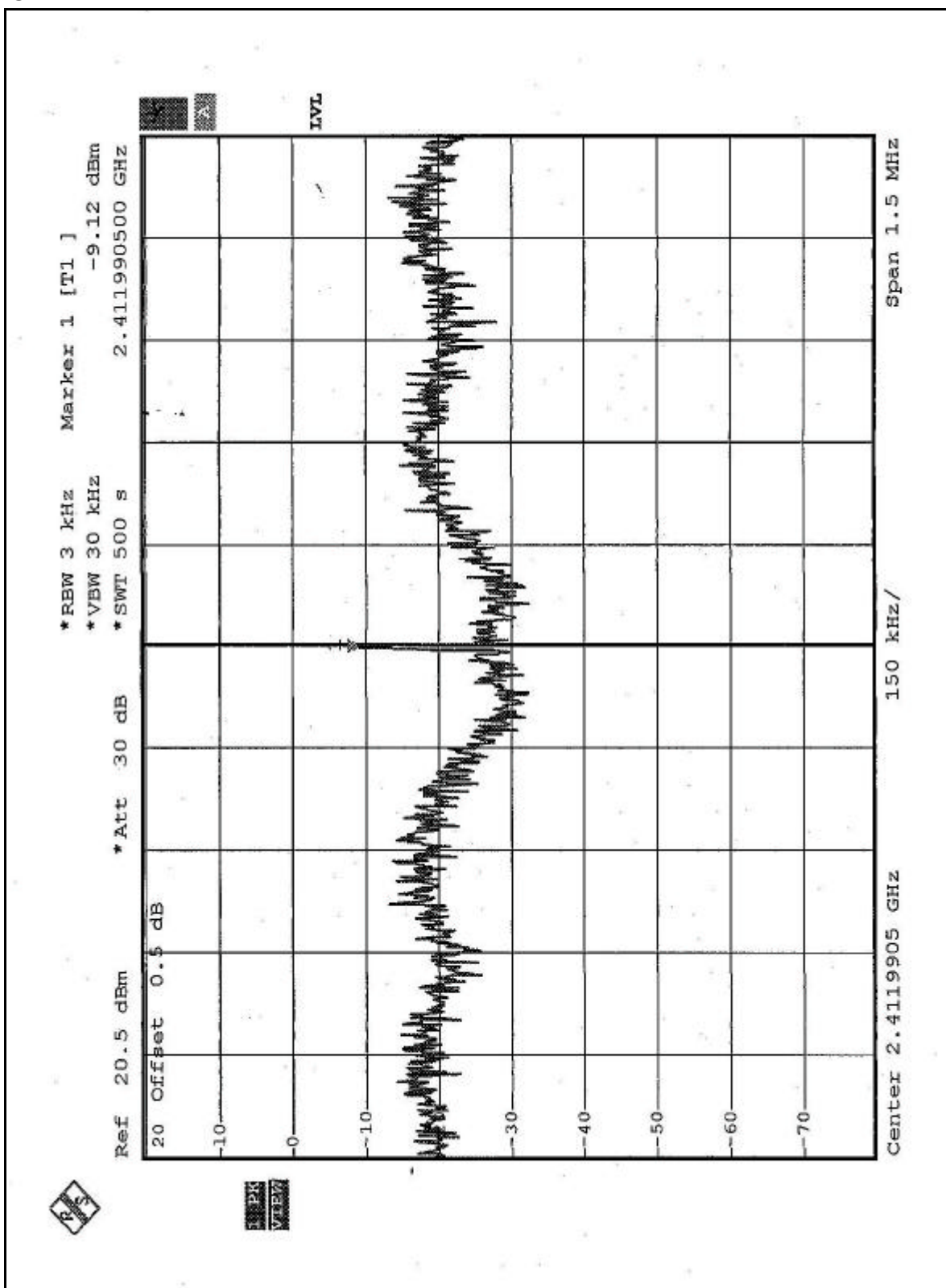


**Normal mode**

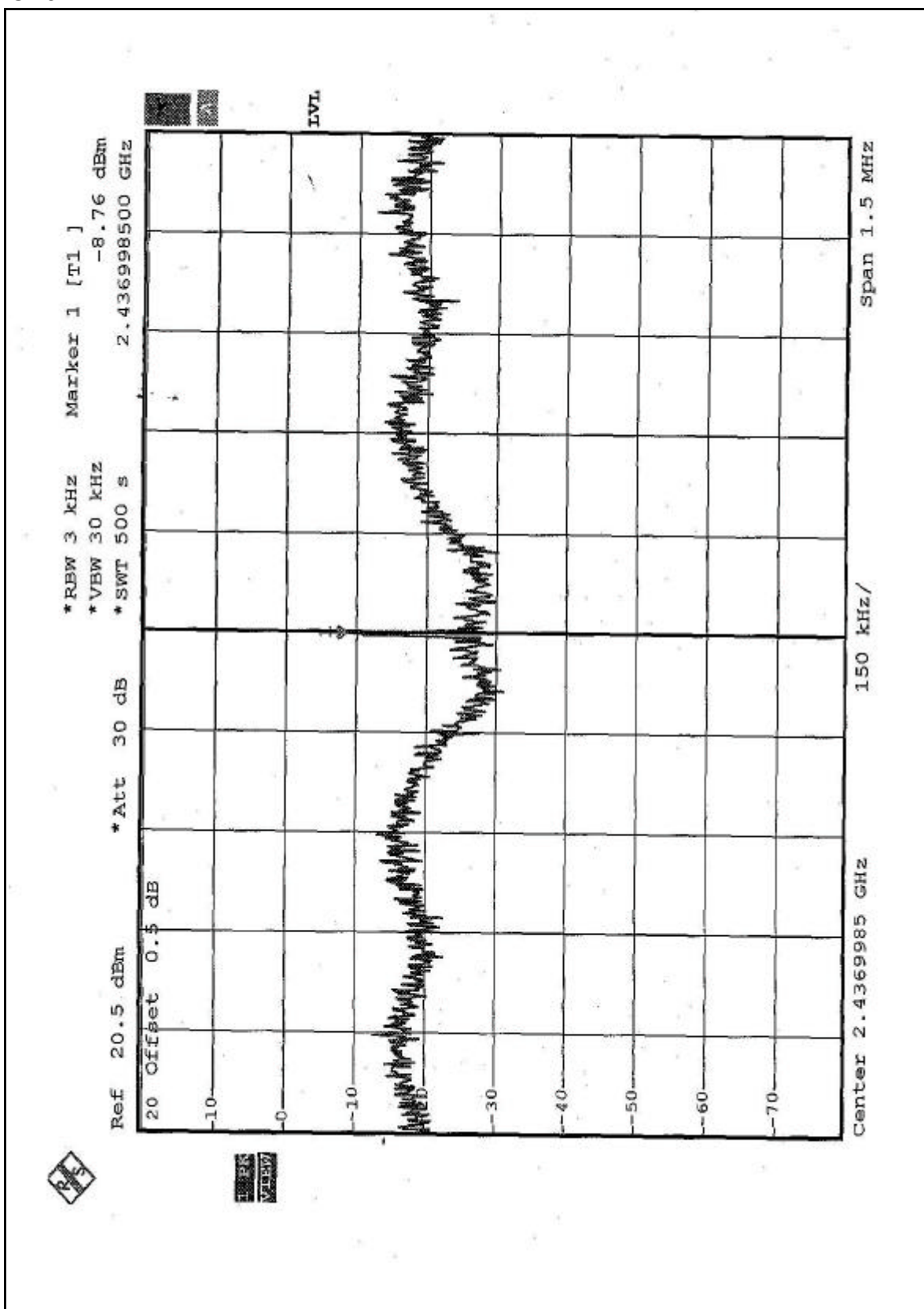
EUT	Wireless AG Gaming Adapter	MODEL	DGL-3420
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	24deg.C, 64%RH, 991hPa
MODE	OFDM	TESTED BY	Leo Hung

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-9.12	8	PASS
6	2437	-8.76	8	PASS
11	2462	-9.21	8	PASS

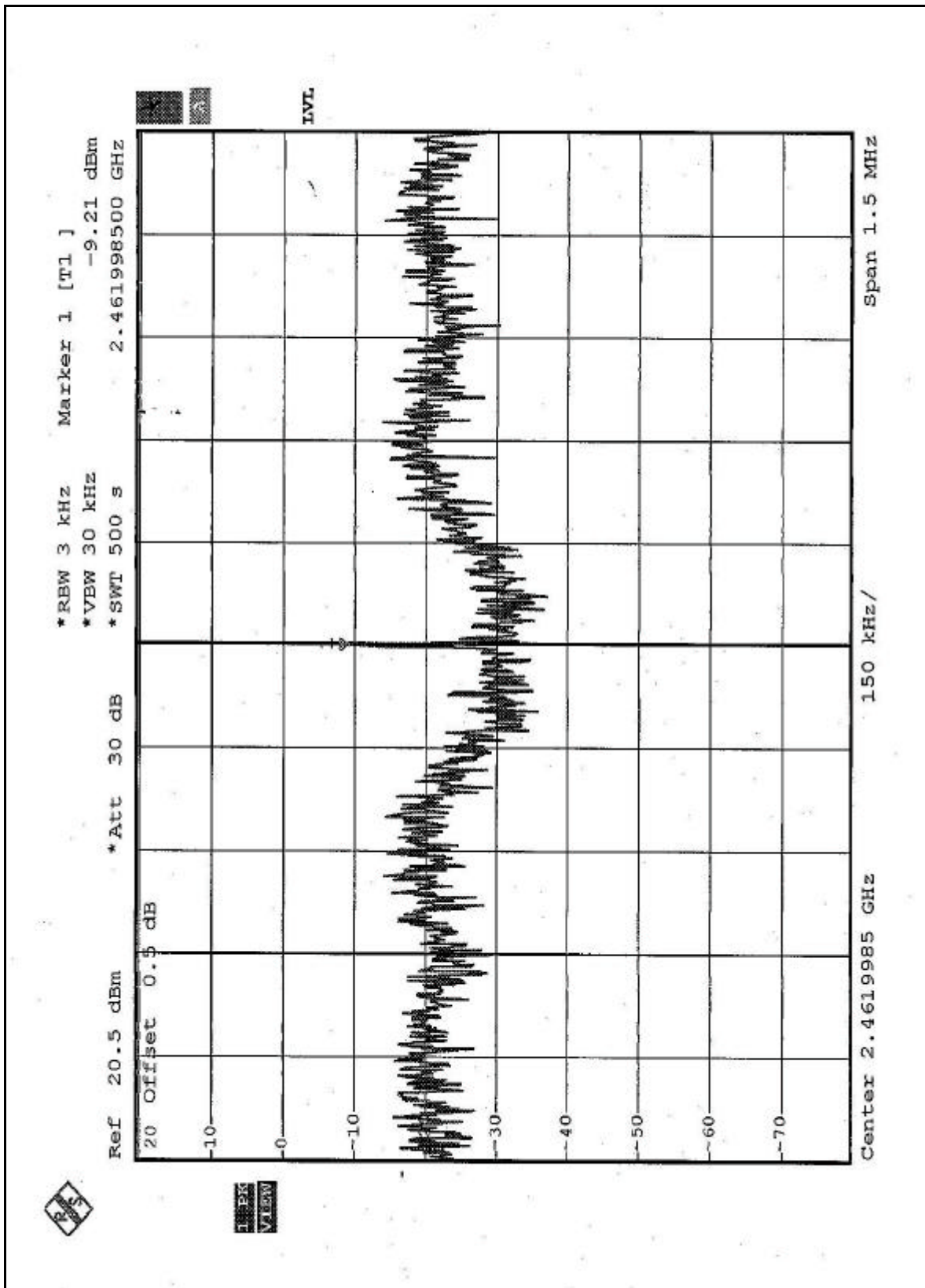
CH1



CH6



CH11



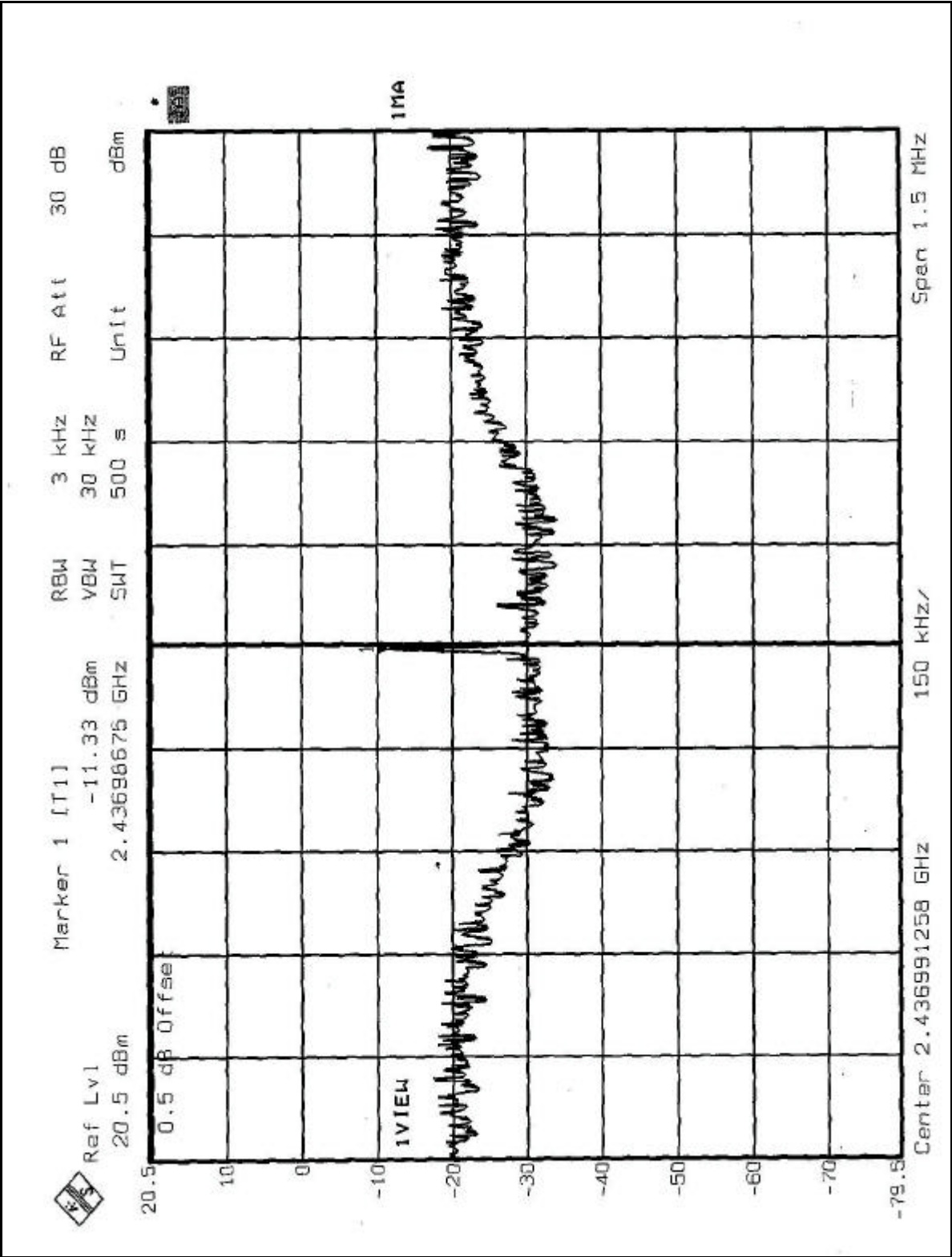
**Turbo mode**

EUT	Wireless AG Gaming Adapter	MODEL	DGL-3420
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	24deg.C, 64%RH, 991hPa
MODE	OFDM	TESTED BY	Leo Hung

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
6	2437	-11.33	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, 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 10Hz with suitable frequency span including 100 MHz bandwidth from band edge. The band edges was measured and recorded.

The spectrum plots (Peak RBW=VBW=100kHz ; Average RBW=1MHz, VBW=10Hz) are attached on the following pages.

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 18 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(d).

NOTE 1: The band edge emission plot of DSSS technique on page 67 show 49.63dB between carrier maximum power and local maximum emission in restrict band (2.3796GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 111.49dBuV/m (Peak), so the maximum field strength in restrict band is $111.49 - 49.63 = 61.86$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot of DSSS technique on page 68 show 58.37dB 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 101.85dBuV/m (Average), so the maximum field strength in restrict band is $101.85 - 58.37 = 43.48$ dBuV/m which is under 54dBuV/m limit.

NOTE 2: The band edge emission plot of DSSS technique on page 70 show 52.23dB between carrier maximum power and local maximum emission in restrict band (2.4887GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 110.04dBuV/m (Peak), so the maximum field strength in restrict band is $110.04 - 52.23 = 57.81$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot of DSSS technique on page 71 show 59.69dB 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 100.58dBuV/m (Average), so the maximum field strength in restrict band is $100.58 - 59.69 = 40.89$ dBuV/m which is under 54dBuV/m limit.

NOTE 3: The band edge emission plot of OFDM technique with normal mode on page 73 show 44.71dB between carrier maximum power and local maximum emission in restrict band (2.3898GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 109.51dBuV/m (Peak), so the maximum field strength in restrict band is $109.51 - 44.71 = 64.80$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot of OFDM technique with normal mode on page 74 show 48.10dB 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 99.88dBuV/m (Average), so the maximum field strength in restrict band is $99.88 - 48.10 = 51.78$ dBuV/m which is under 54dBuV/m limit.



NOTE 4: The band edge emission plot of OFDM technique with normal mode on page 76 show 46.37dB 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 109.77dBuV/m (Peak), so the maximum field strength in restrict band is $109.77 - 46.37 = 63.40$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot of OFDM technique with normal mode on page 77 show 47.41dB 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 99.58dBuV/m (Average), so the maximum field strength in restrict band is $99.58 - 47.41 = 52.17$ dBuV/m which is under 54dBuV/m limit.

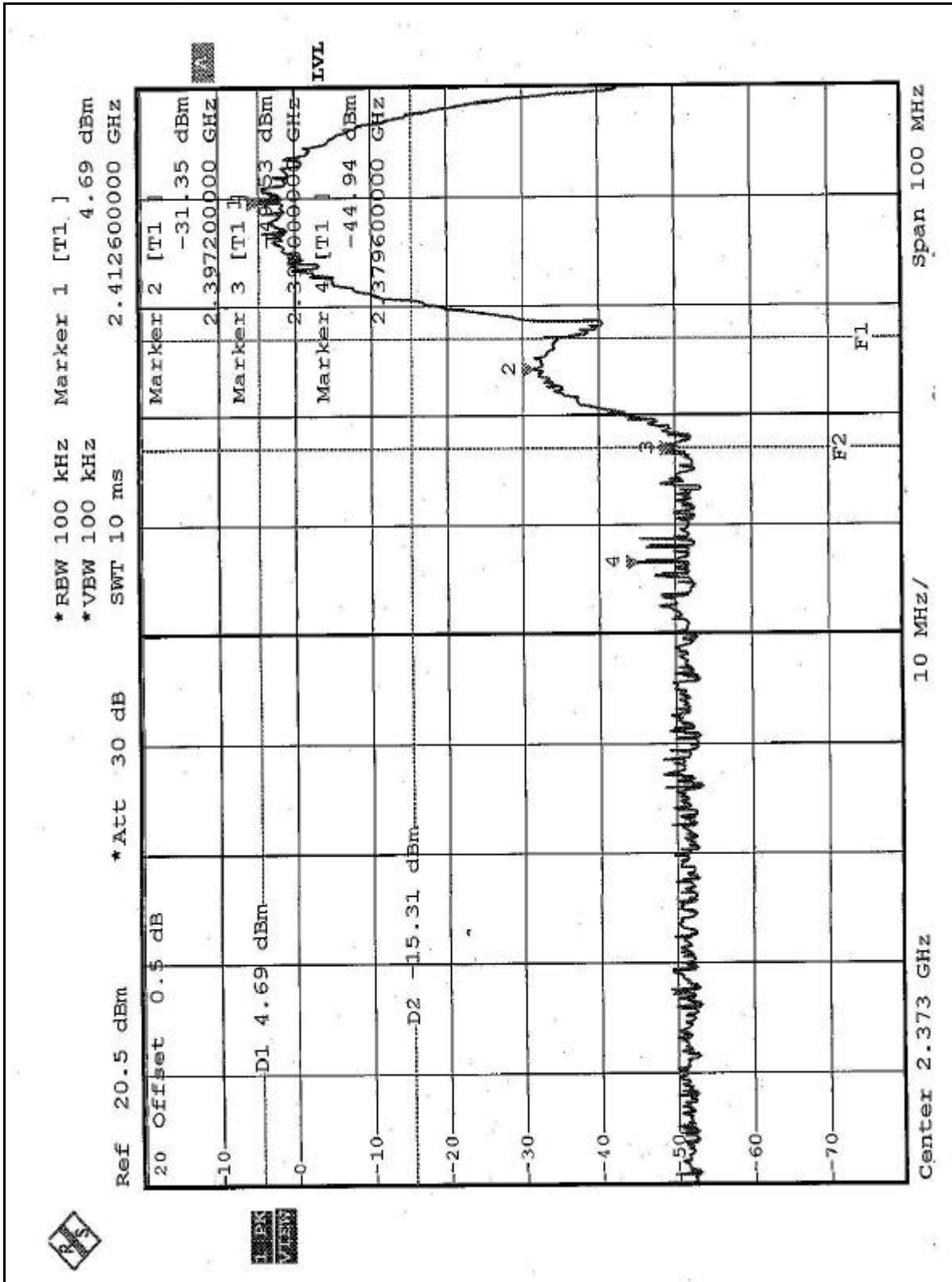
NOTE 5: The band edge emission plot of OFDM technique with Turbo mode on page 79 shows 43.08dB between carrier maximum power and local maximum emission in restrict band (2.3987GHz). The emission of carrier strength list in the test result of channel 6 at the item 4.2.7 is 107.56dBuV/m (Peak), so the maximum field strength in restrict band is $107.56 - 43.08 = 64.48$ dBuV/m which is under 74dBuV/m limit.

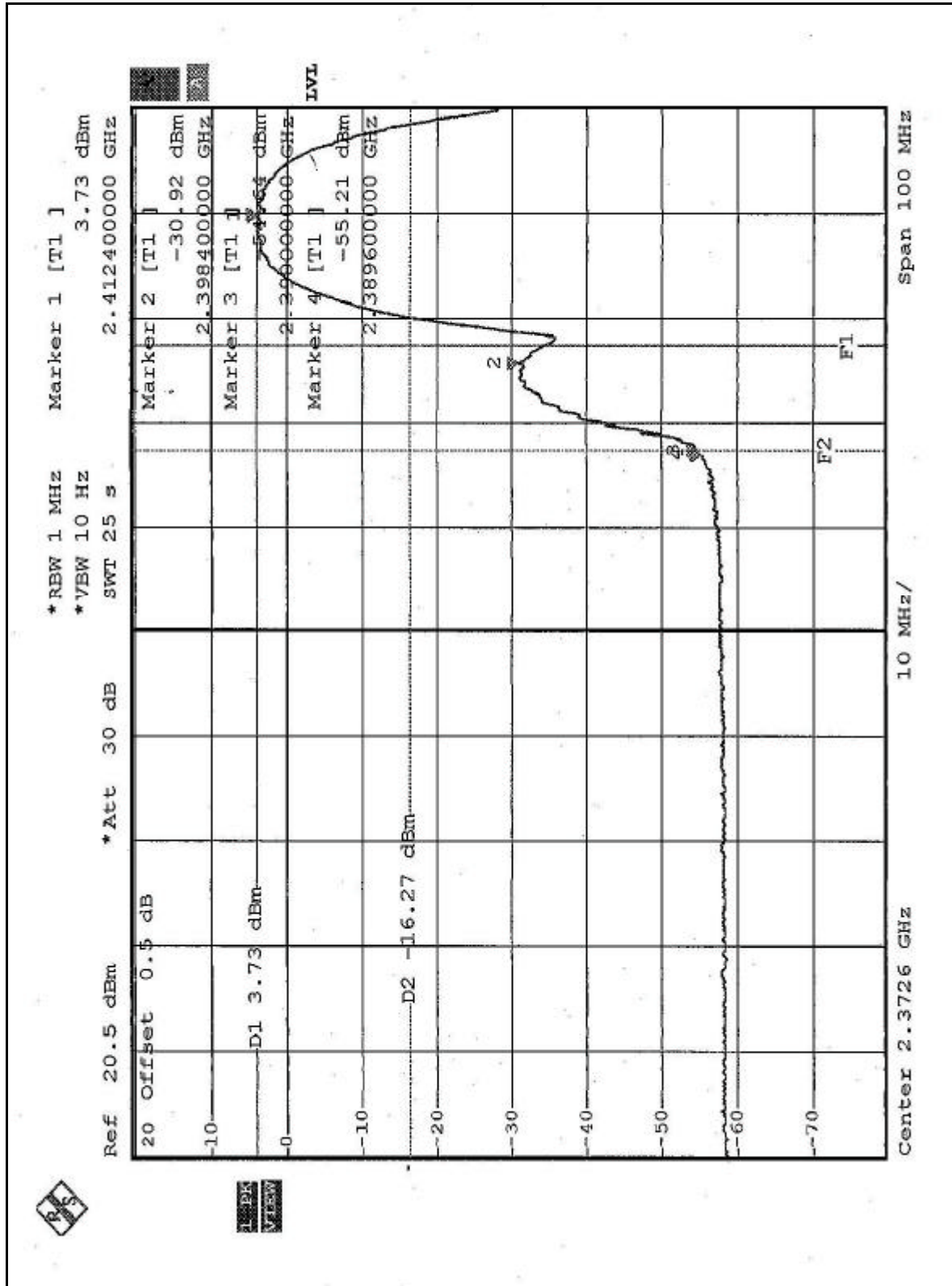
The band edge emission plot of OFDM technique with Turbo mode on page 80 shows 47.71dB between carrier maximum power and local maximum emission in restrict band (2.3201GHz). The emission of carrier strength list in the test result of channel 6 at the item 4.2.7 is 97.76dBuV/m (Average), so the maximum field strength in restrict band is $97.76 - 47.71 = 50.05$ dBuV/m which is under 54dBuV/m limit.

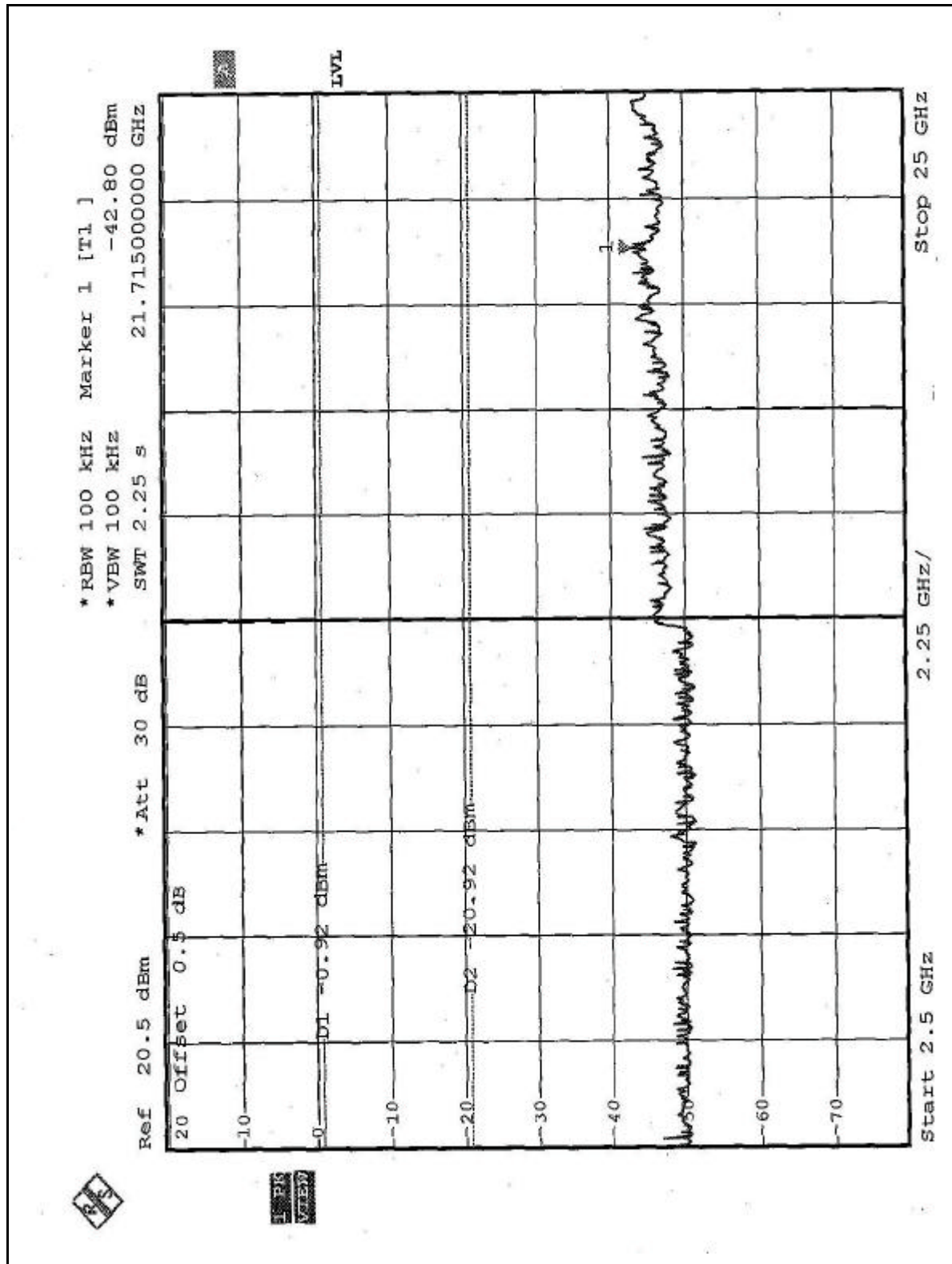
NOTE 6: The band edge emission plot of OFDM technique with Turbo mode on page 82 shows 53.17dB between carrier maximum power and local maximum emission in restrict band (2.4891GHz). The emission of carrier strength list in the test result of channel 6 at the item 4.2.7 is 107.56dBuV/m (Peak), so the maximum field strength in restrict band is $107.56 - 53.17 = 54.39$ dBuV/m which is under 74dBuV/m limit.

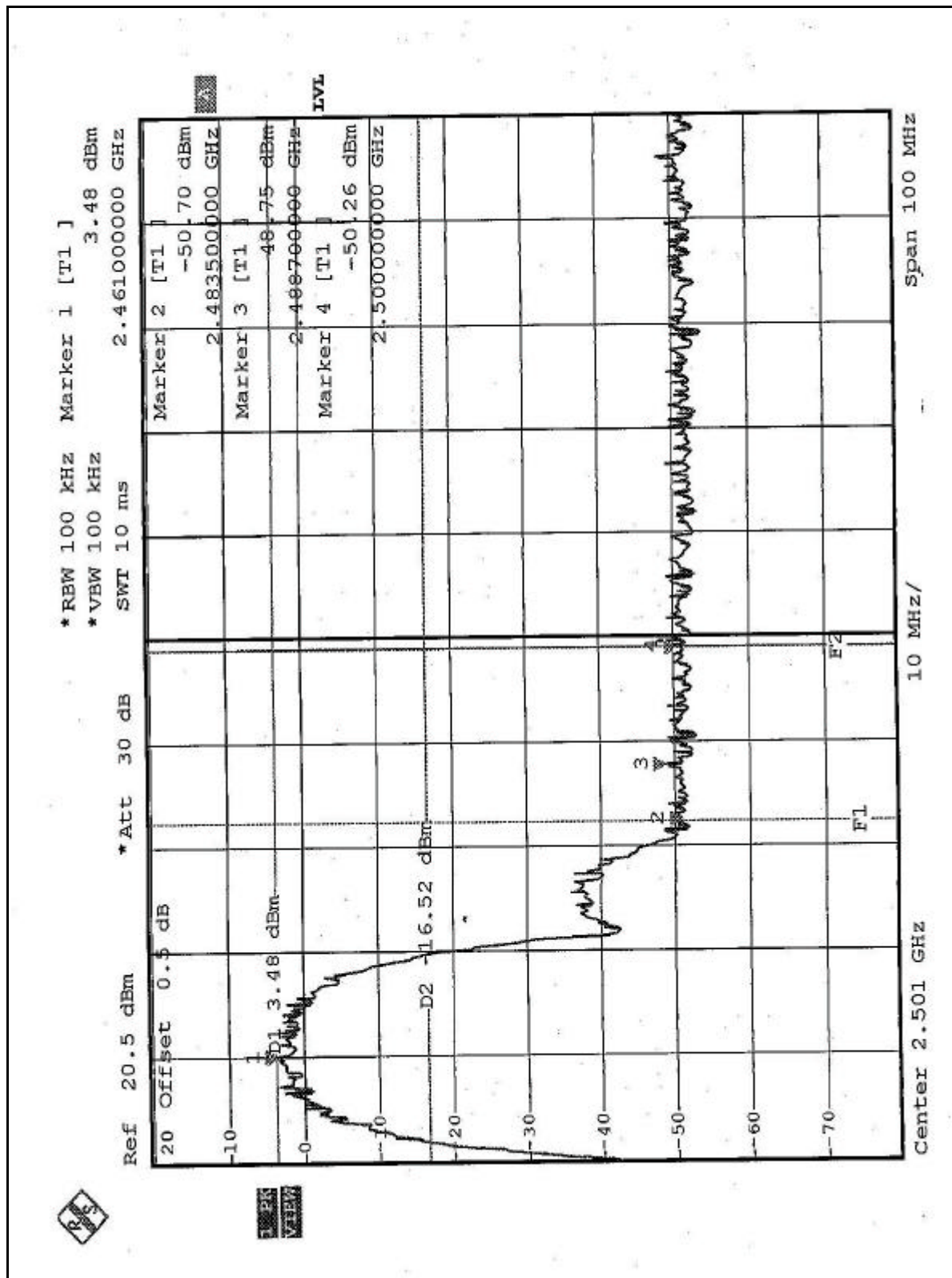
The band edge emission plot of OFDM technique with Turbo mode on page 83 shows 52.97dB between carrier maximum power and local maximum emission in restrict band (2.4835GHz). The emission of carrier strength list in the test result of channel 6 at the item 4.2.7 is 97.76dBuV/m (Average), so the maximum field strength in restrict band is $97.76 - 52.97 = 44.79$ dBuV/m which is under 54dBuV/m limit.

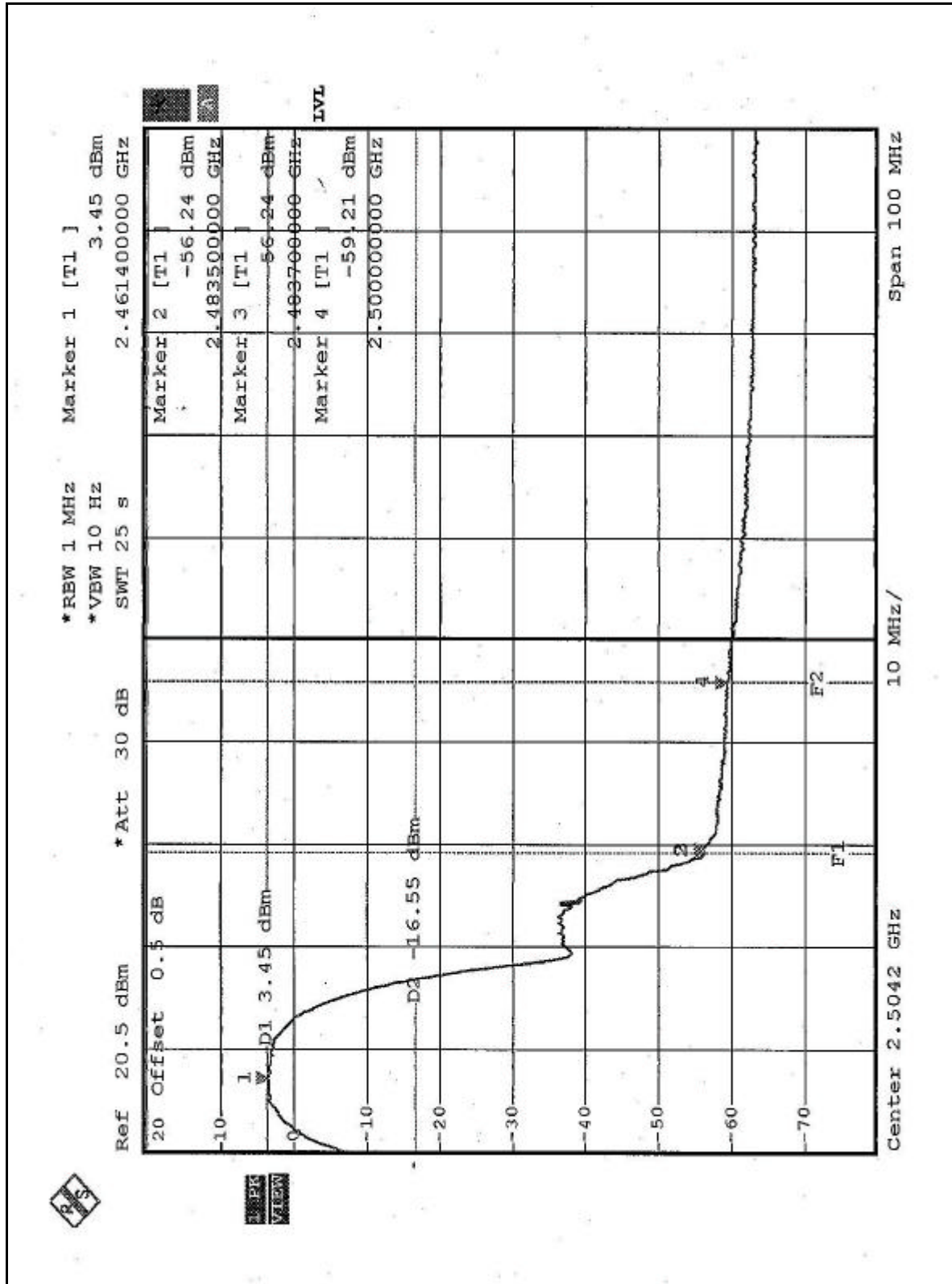
CCK mode:

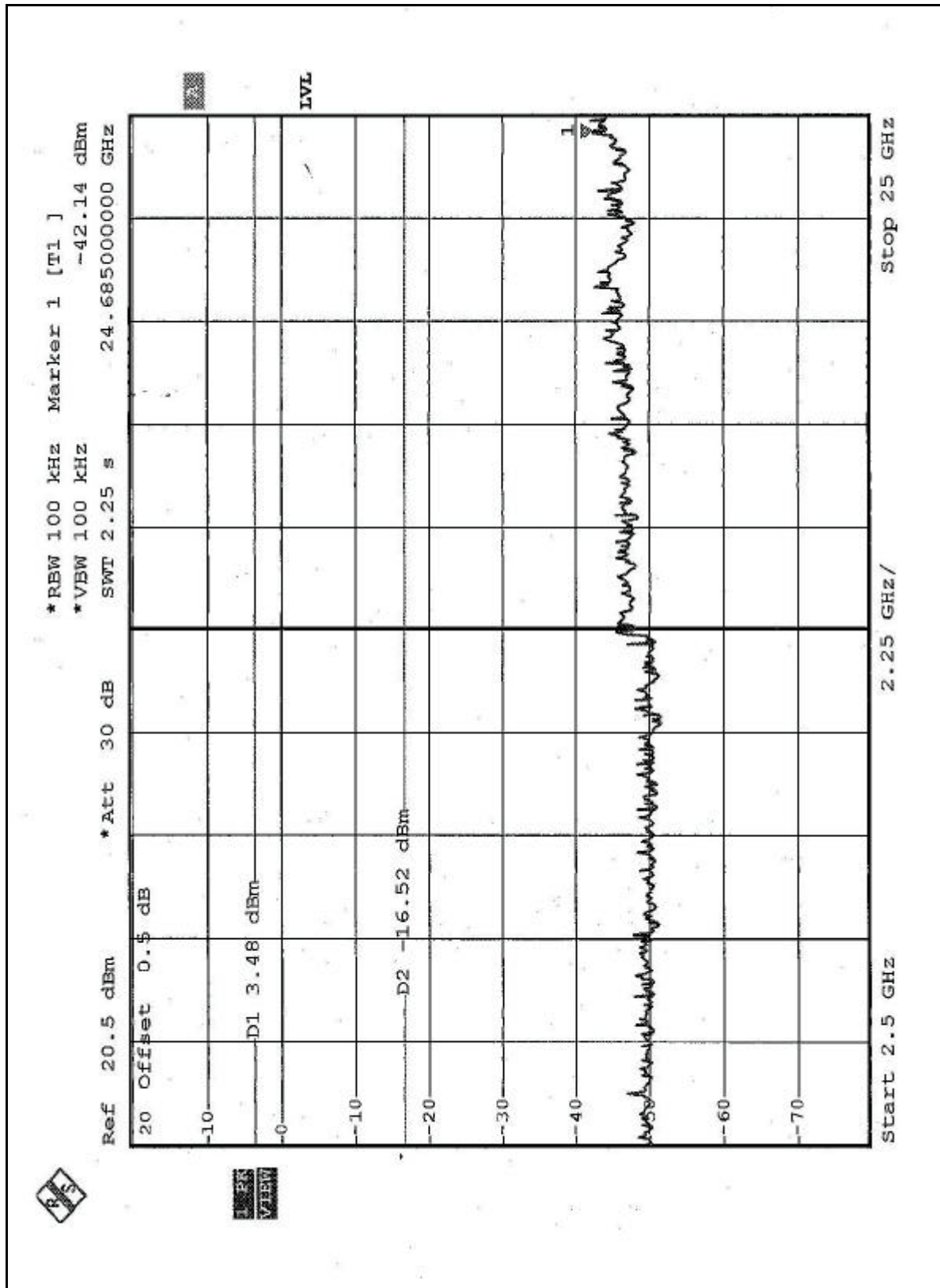












OFDM normal mode:

