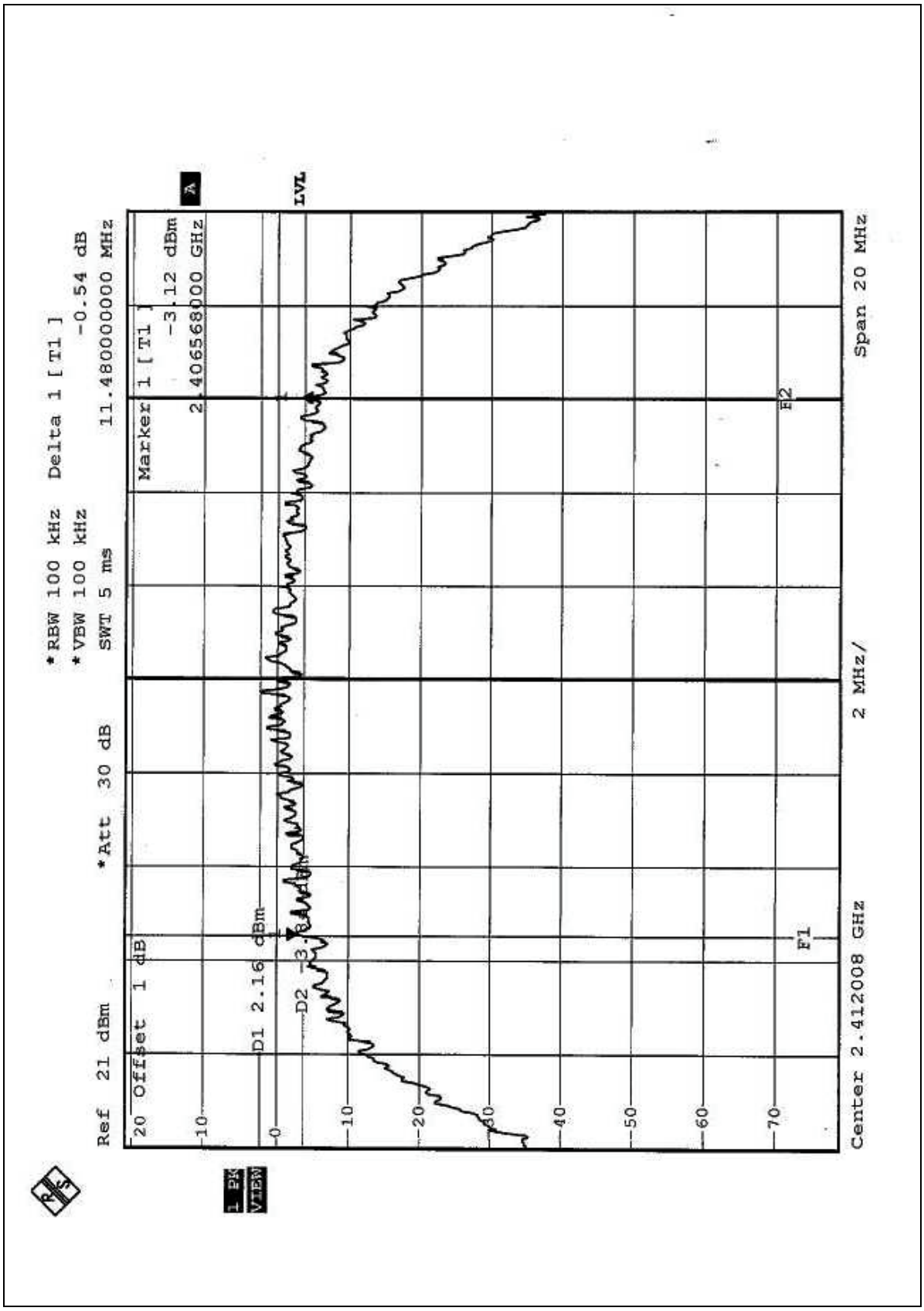
4.3.7 TEST RESULTS (A)

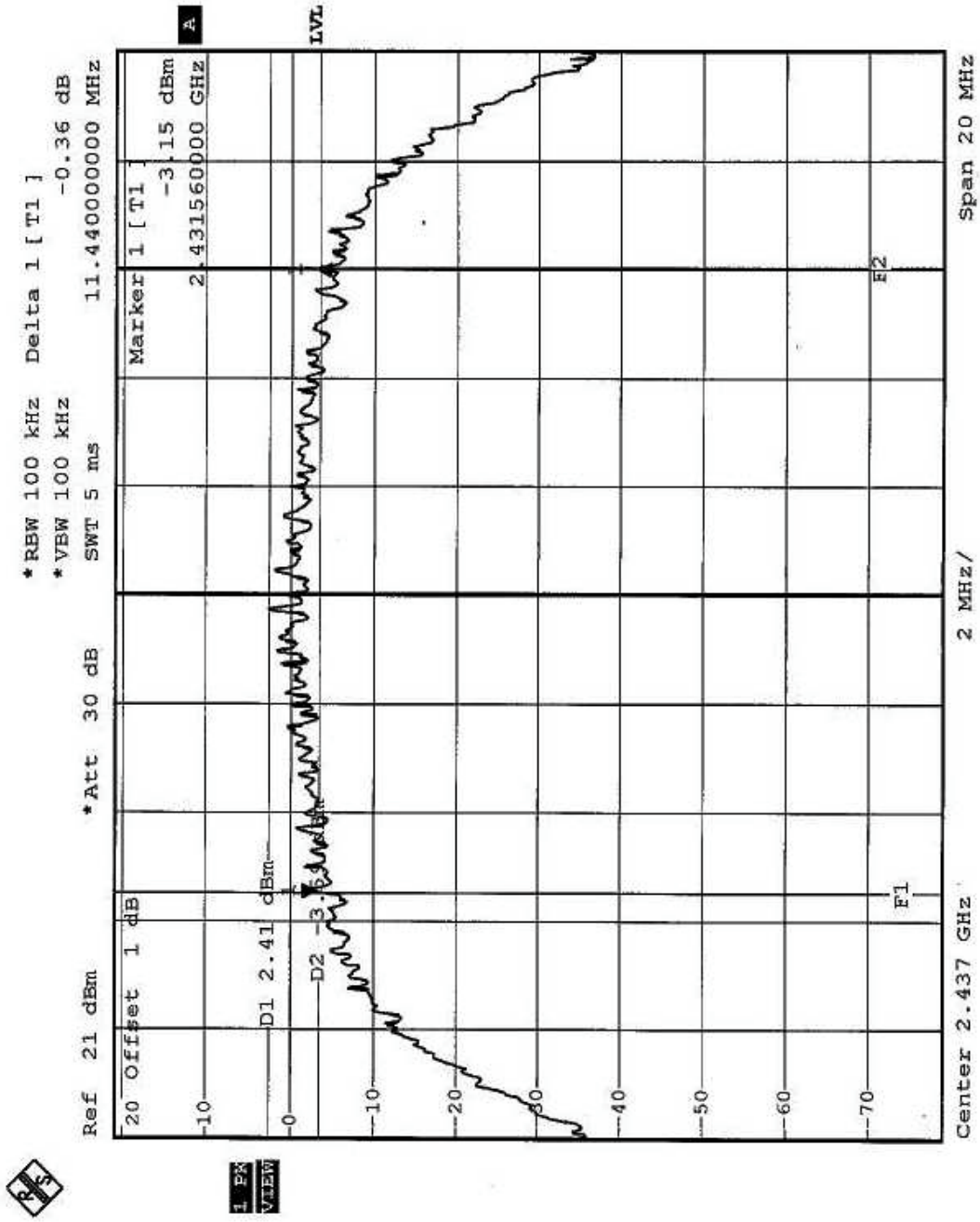
EUT	Mini PCI 802.11g Wireless LAN Adapter	**MODEL**	Q802MIG
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	21deg. C, 69%RH, 991hPa
TESTED BY: Jamison Chan			

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	11.48	0.5	PASS
6	2437	11.44	0.5	PASS
11	2462	11.44	0.5	PASS

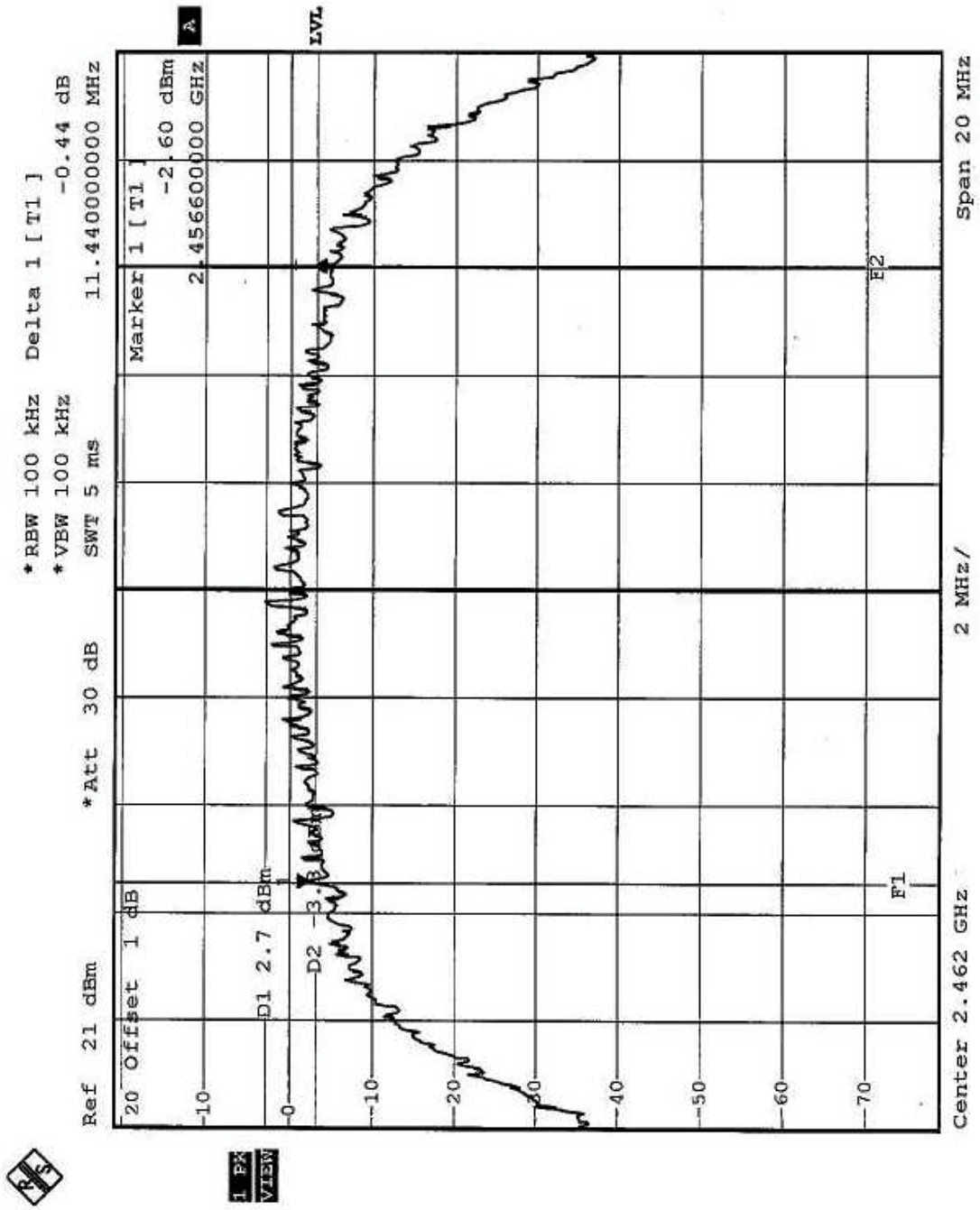
CH1


Ref 21 dBm
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 5 ms
Delta 1 [T1]
-0.54 dB
11.48000000 MHz
Marker 1 [T1]
-3.12 dBm
2.40656000 GHz
Offset 1 dB
D1 2.16 dBm
D2 -3.12 dBm
LVL
Center 2.412008 GHz
2 MHz/
Span 20 MHz
F1
F2
1 PK
VIEW

CH6


Ref 21 dBm
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 5 ms
Delta 1 [T1]
-0.36 dB
11.440000000 MHz
Marker 1 [T1]
-3.15 dBm
2.431560000 GHz
20 Offset 1 dB
D1 2.41 dBm
D2 -3.15 dBm
LVL
A
1 PK VIEW
F1
F2
Center 2.437 GHz
2 MHz/
Span 20 MHz

CH11

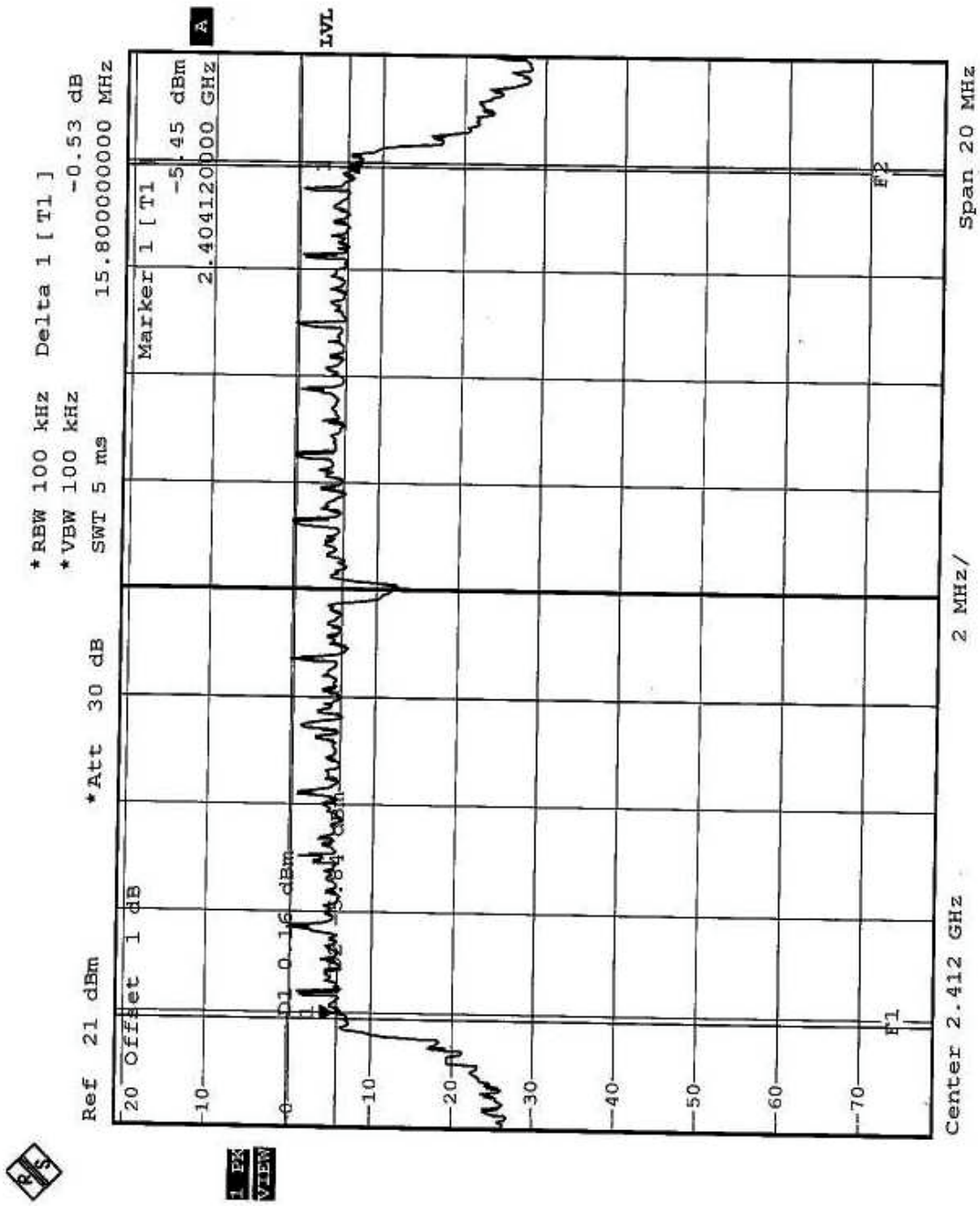

Ref 21 dBm
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 5 ms
Delta 1 [T1]
-0.44 dB
11.440000000 MHz
Marker 1 [T1]
-2.60 dBm
2.456600000 GHz
Offset 1 dB
D1 2.7 dBm
D2 -3.
LVL
F1
F2
Center 2.462 GHz
2 MHz/
Span 20 MHz

4.3.8 TEST RESULTS (B)

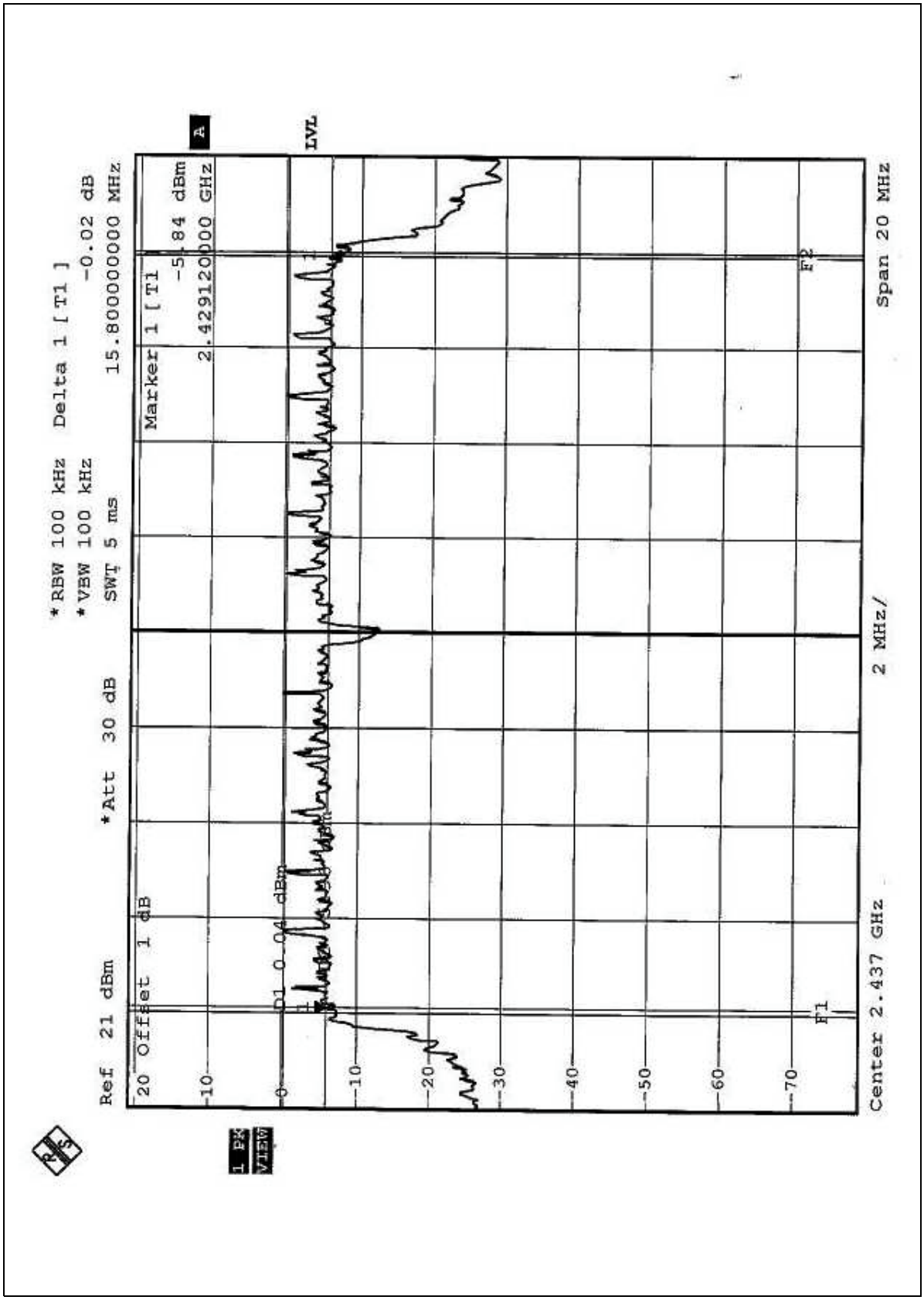
EUT	Mini PCI 802.11g Wireless LAN Adapter	**MODEL**	Q802MIG
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	21deg. C, 69%RH, 991hPa
TESTED BY: Jamison Chan			

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	15.80	0.5	PASS
6	2437	15.80	0.5	PASS
11	2462	15.84	0.5	PASS

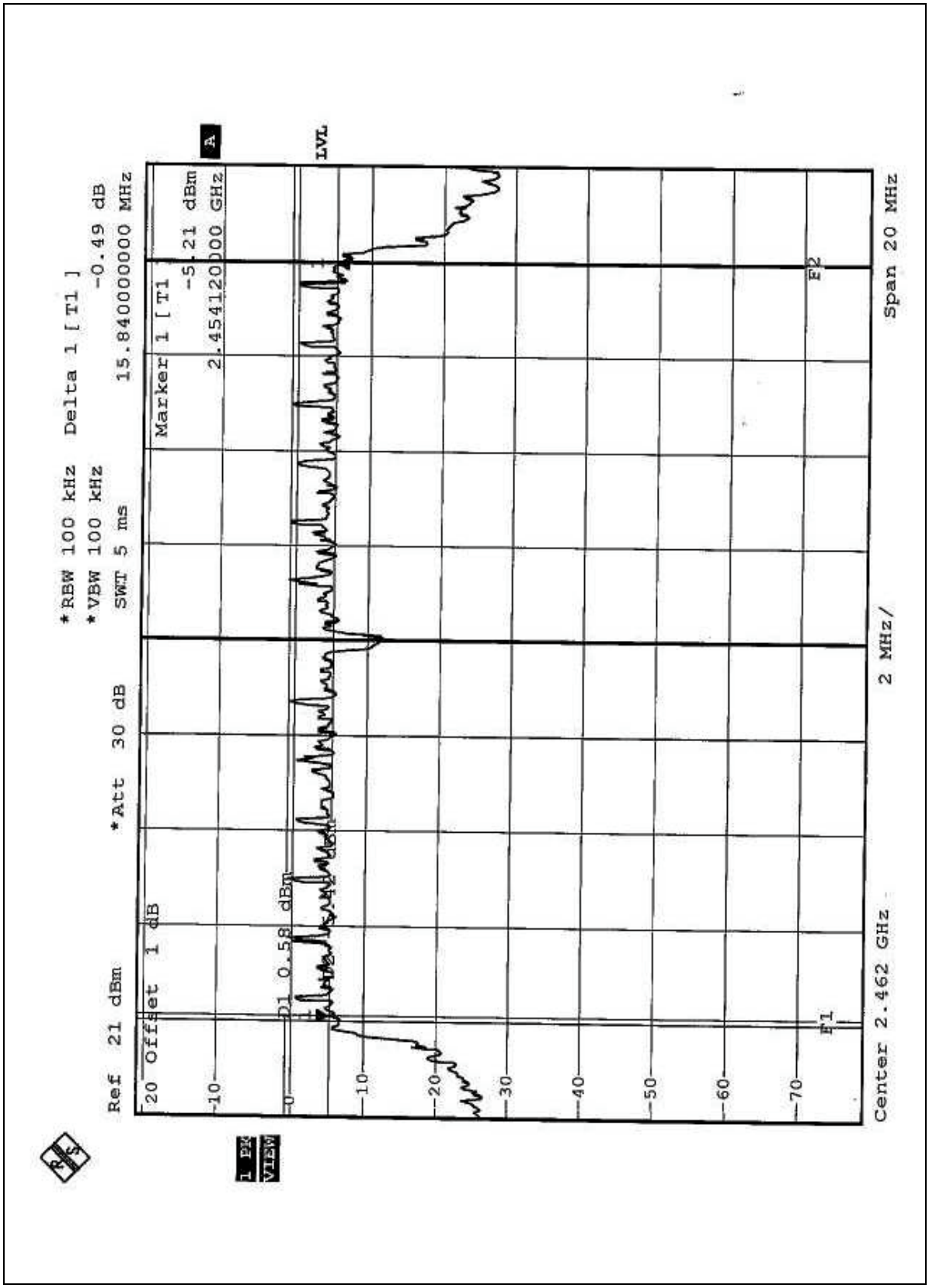
CH1


Ref 21 dBm
Offset 1 dB
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 5 ms
Delta 1 [T1]
-0.53 dB
15.800000000 MHz
Marker 1 [T1
-5.45 dBm
2.404120000 GHz
A
LVL
Center 2.412 GHz
2 MHz/
Span 20 MHz
F1
F2
1 PK
VIEW

CH6


Ref 21 dBm
Offset 1 dB
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 5 ms
Delta 1 [T1]
-0.02 dB
15.800000000 MHz
Marker 1 [T1
-5.84 dBm
2.429120000 GHz
D1 0.04 dBm
LVL
A
1 PK
VIEW
Center 2.437 GHz
2 MHz/
Span 20 MHz
F1
F2

CH11


Ref 21 dBm
Att 30 dB
RBW 100 kHz
VBW 100 kHz
SWT 5 ms
Delta 1 [T1] -0.49 dB
15.840000000 MHz
Marker 1 [T1
-5.21 dBm
2.454120000 GHz
Offset 1 dB
D1 0.58 dBm
LVL
A
1 PK VIEW
F1
F2
Center 2.462 GHz
2 MHz/
Span 20 MHz

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 TEST 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 220	B048470	Mar. 05, 2004
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..

4.4.3 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.

4.4.4 DEVIATION FROM TEST STANDARD

No deviation

4.4.5 TEST SETUP

4.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6

4.4.7 TEST RESULTS (A)

EUT	Mini PCI 802.11g Wireless LAN Adapter	**MODEL**	Q802MIG
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	21deg. C, 69%RH, 991hPa
TESTED BY: Jamison Chan			

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

4.4.8 TEST RESULTS (B)

EUT	Mini PCI 802.11g Wireless LAN Adapter	**MODEL**	Q802MIG
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	21deg. C, 69%RH, 991hPa
TESTED BY: Jamison Chan			

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	17.90	30	PASS
6	2437	18.10	30	PASS
11	2462	18.00	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
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.

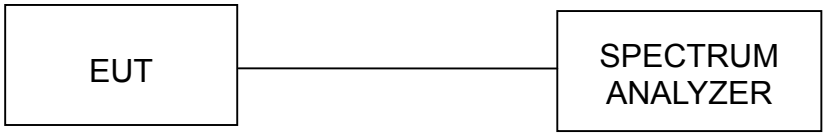
4.5.3 TEST PROCEDURE

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 CONDITIONS

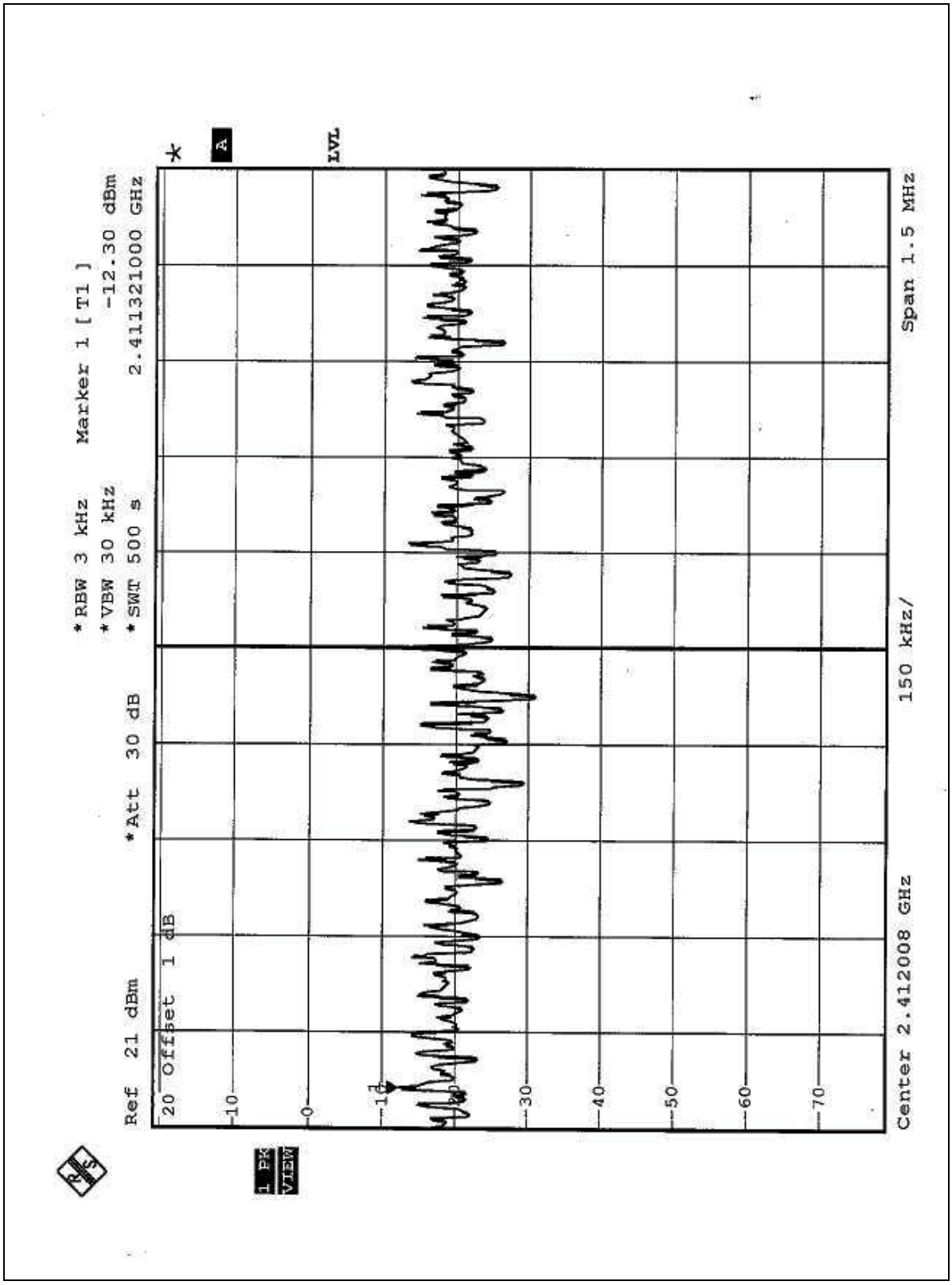
Same as 4.3.6

4.5.7 TEST RESULTS (A)

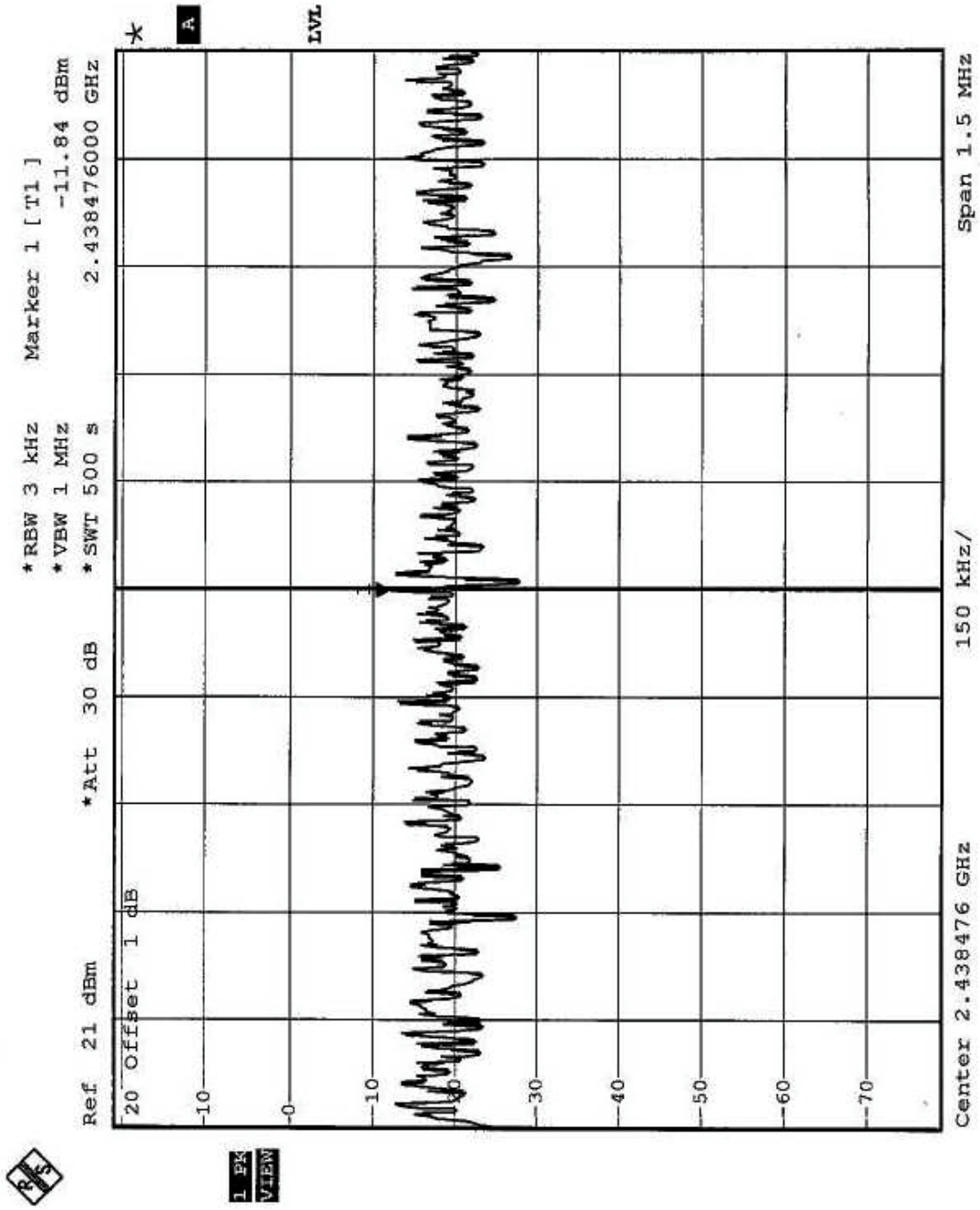
EUT	Mini PCI 802.11g Wireless LAN Adapter	**MODEL**	Q802MIG
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	21deg. C, 69%RH, 991hPa
TESTED BY: Jamison Chan			

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-12.30	8	PASS
6	2437	-11.84	8	PASS
11	2462	-13.19	8	PASS

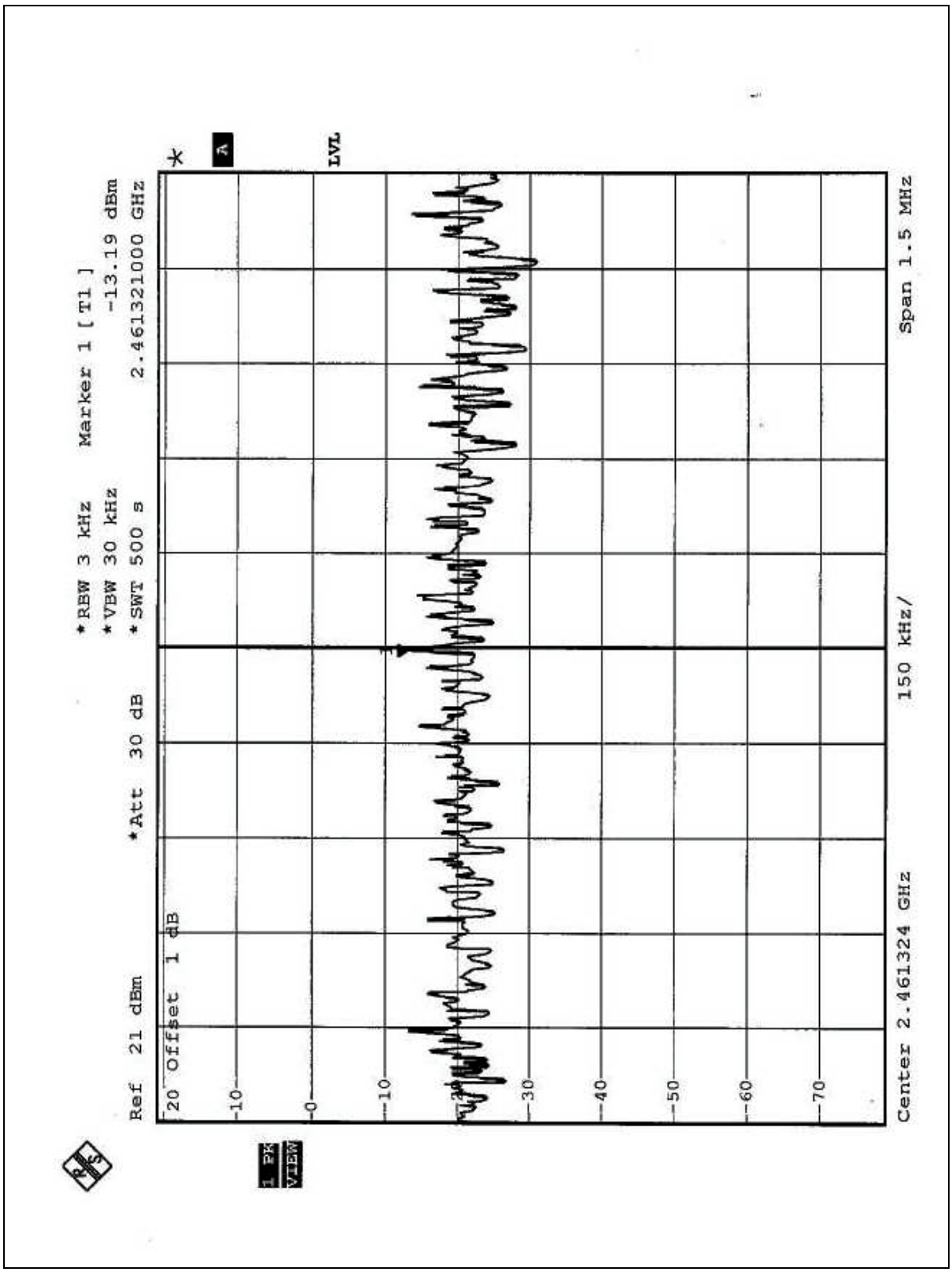
CH1


Ref 21 dBm
Offset 1 dB
*Att 30 dB
*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-12.30 dBm
2.411321000 GHz
1 PK VIEW
A
LVL
Center 2.412008 GHz
150 kHz/
Span 1.5 MHz

CH6


Ref 21 dBm
*Att 30 dB
Offset 1 dB
*RBW 3 kHz
*VBW 1 MHz
*SWT 500 s
Marker 1 [T1]
-11.84 dBm
2.438476000 GHz
1 PK VIEW
A
LVL
Center 2.438476 GHz
150 kHz/
Span 1.5 MHz

CH11

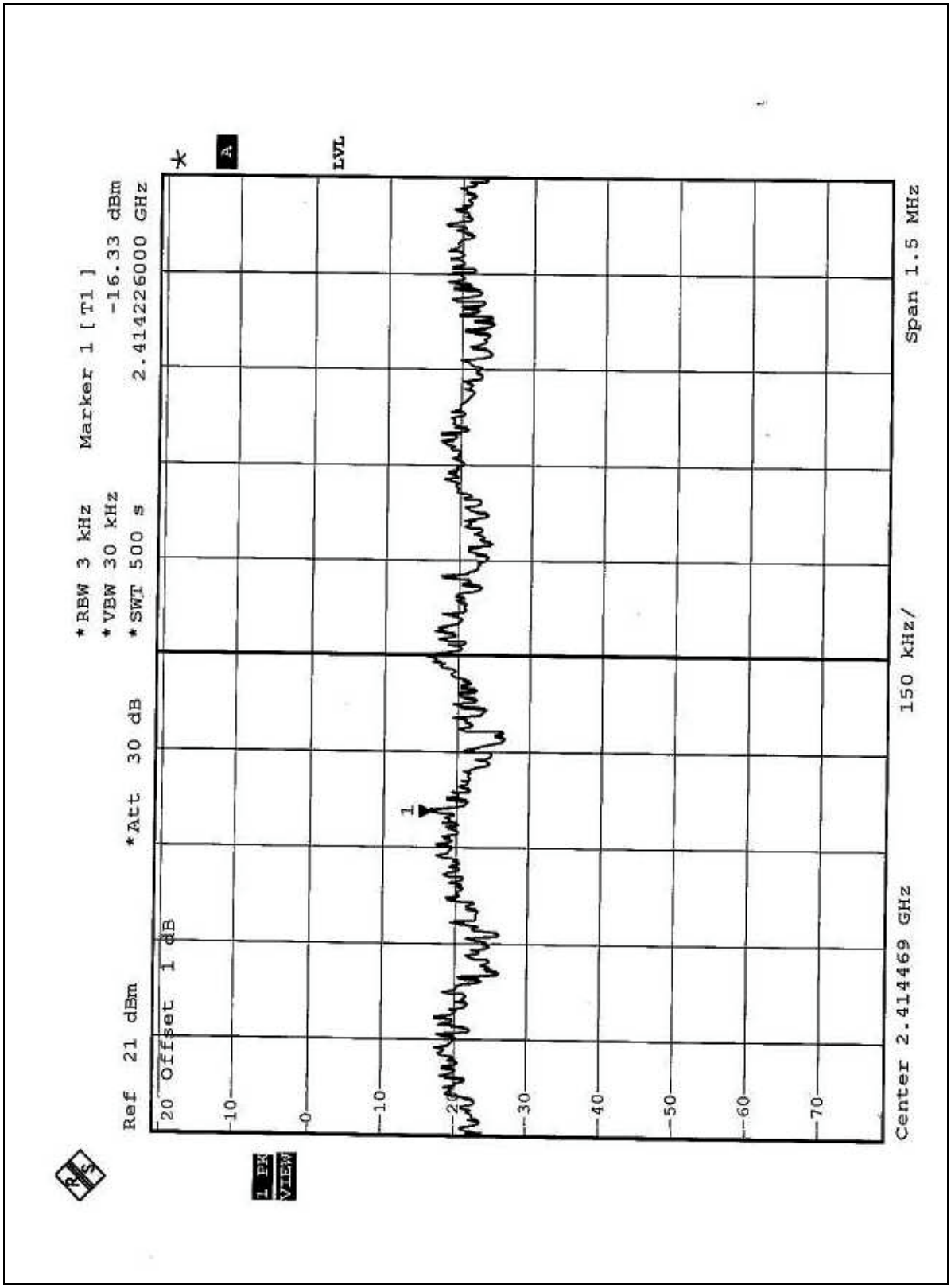

Ref 21 dBm
Offset 1 dB
*Att 30 dB
*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-13.19 dBm
2.461321000 GHz
1 PK
VIEW
A
LVL
20
10
0
-10
-20
-30
-40
-50
-60
-70
Center 2.461324 GHz
150 kHz/
Span 1.5 MHz

4.5.8 TEST RESULTS (B)

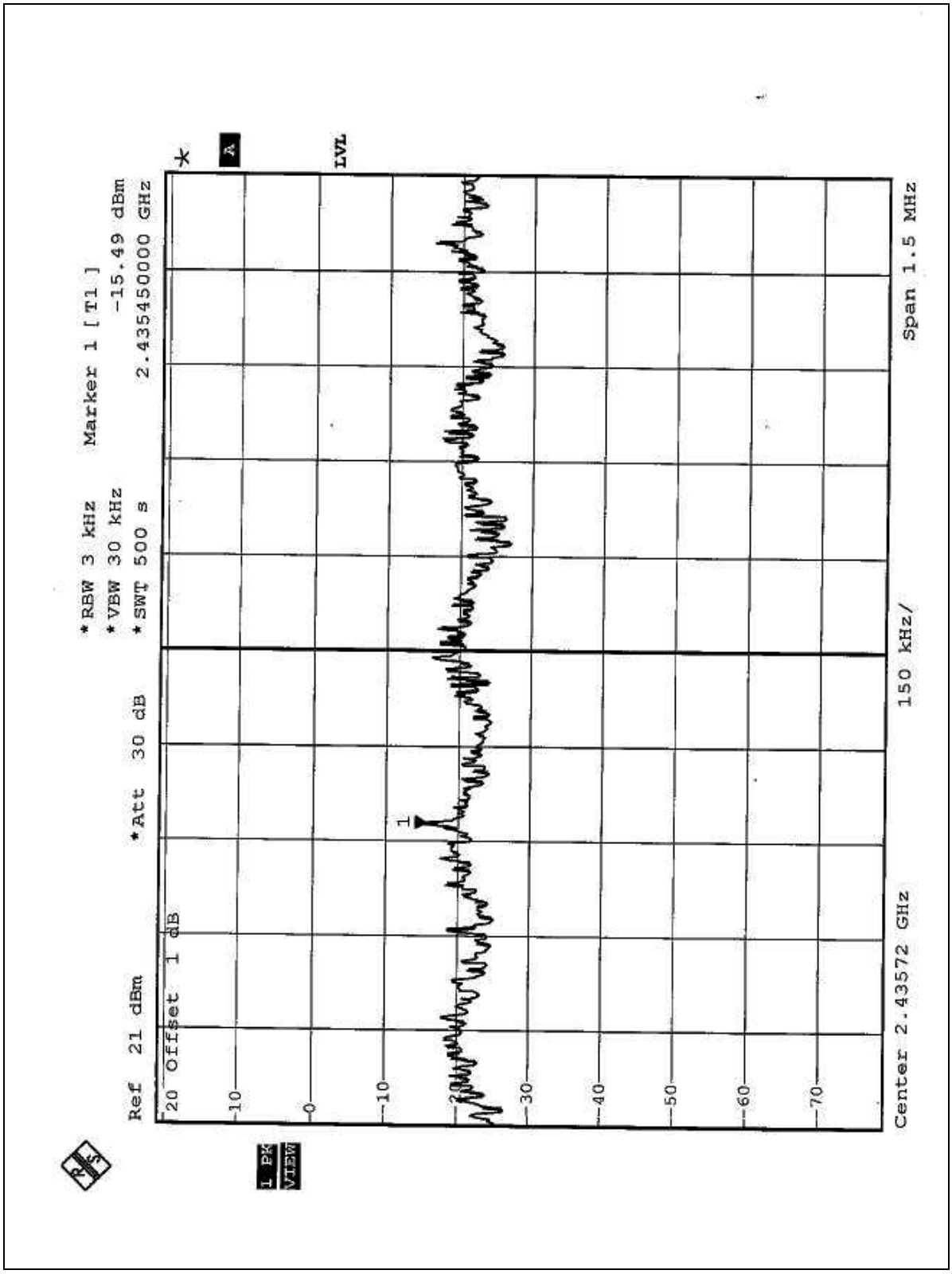
EUT	Mini PCI 802.11g Wireless LAN Adapter	**MODEL**	Q802MIG
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	21deg. C, 69%RH, 991hPa
TESTED BY: Jamison Chan			

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-16.33	8	PASS
6	2437	-15.49	8	PASS
11	2462	-15.40	8	PASS

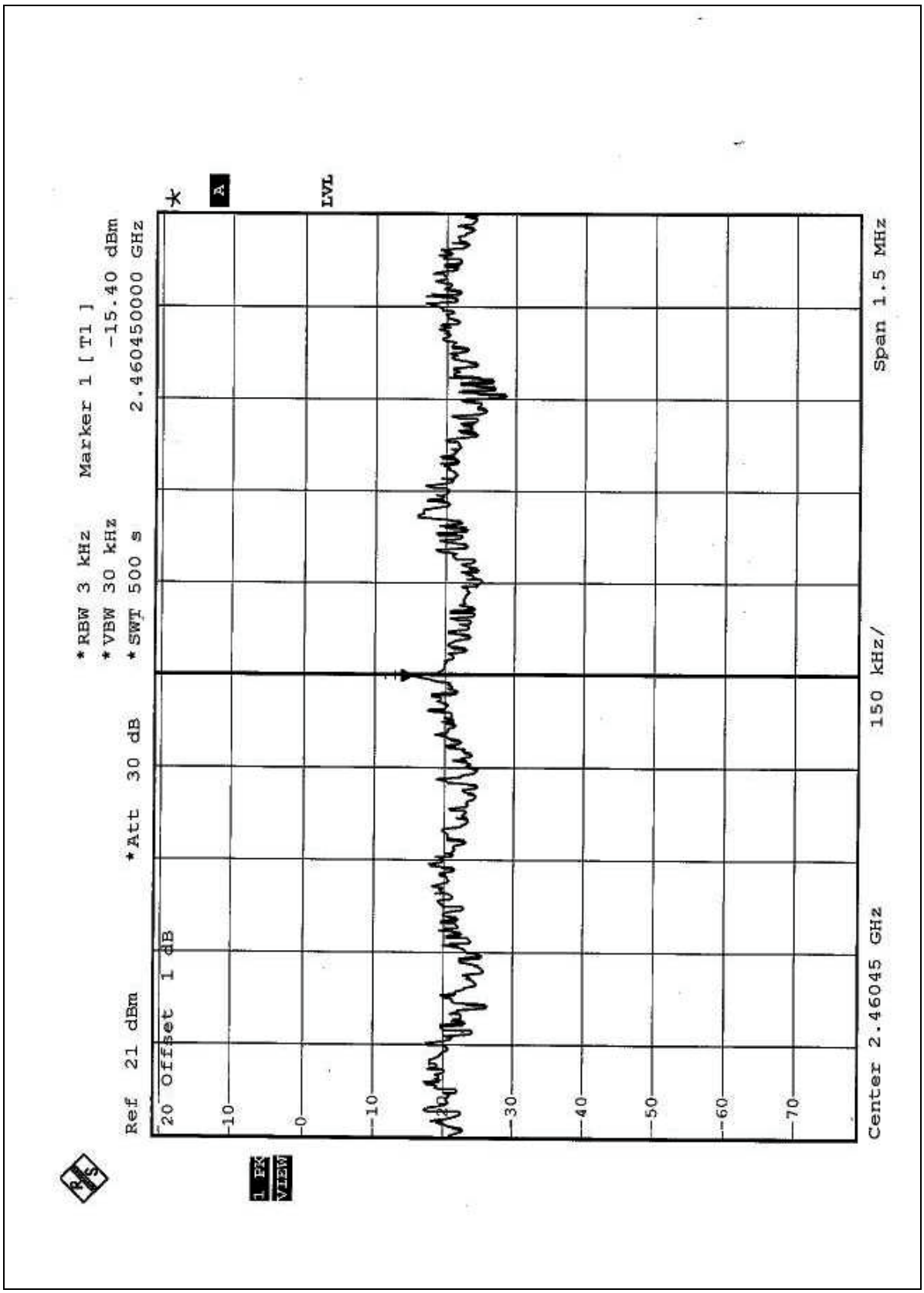
CH1


Ref 21 dBm
Offset 1 dB
*Att 30 dB
*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-16.33 dBm
2.414226000 GHz
1 PK
VIEW
A
LVL
Center 2.414469 GHz
150 kHz/
Span 1.5 MHz

CH6


Ref 21 dBm
Offset 1 dB
*Att 30 dB
*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-15.49 dBm
2.435450000 GHz
LVL
Center 2.43572 GHz
150 kHz/
Span 1.5 MHz
L PK
VIEW

CH11


Ref 21 dBm
Offset 1 dB
*Att 30 dB
*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-15.40 dBm
2.460450000 GHz
Center 2.46045 GHz
150 kHz/
Span 1.5 MHz
1 RX
VIEW

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, 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 100kHz with suitable frequency span including 100MHz 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

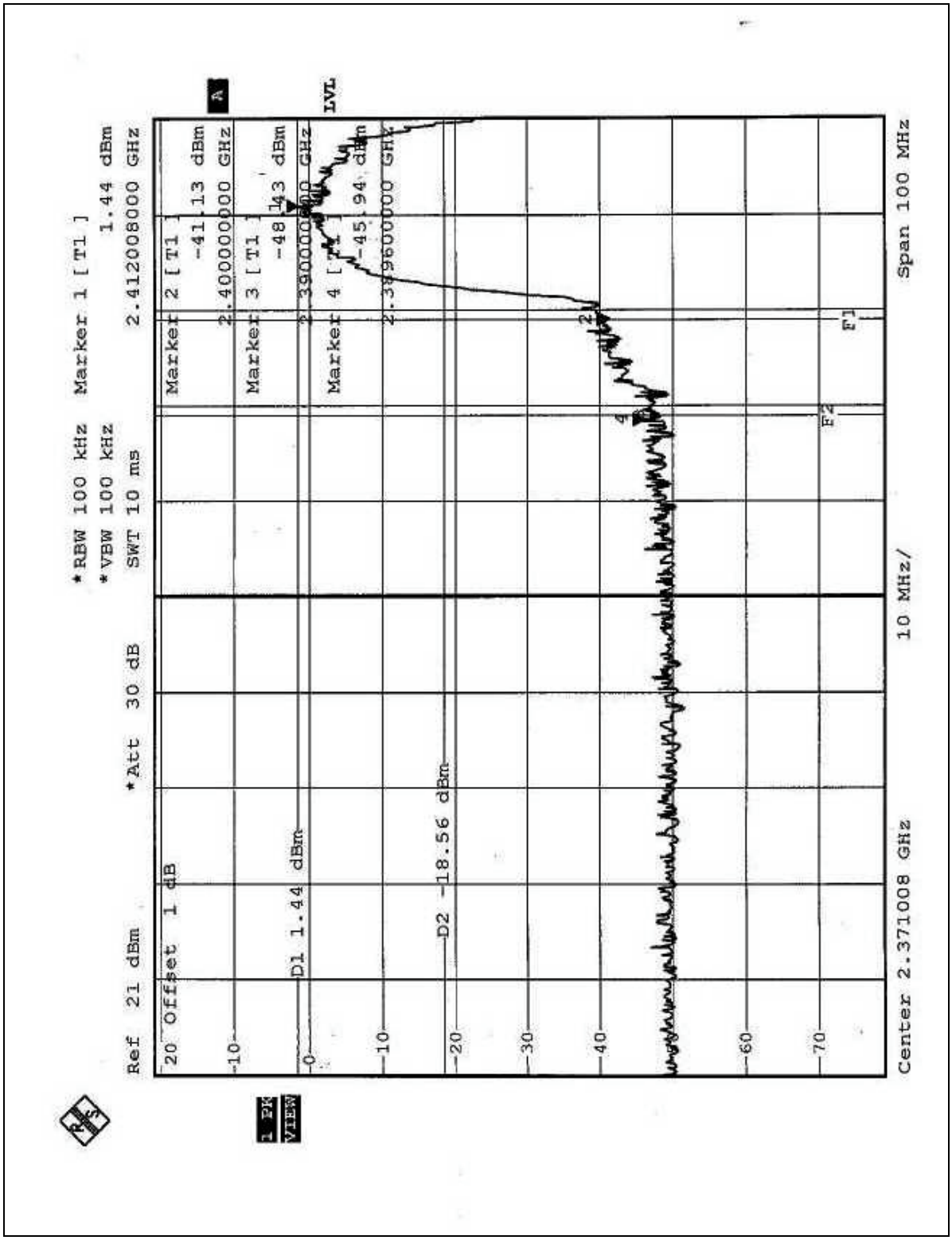
4.6.6 TEST RESULTS (A)

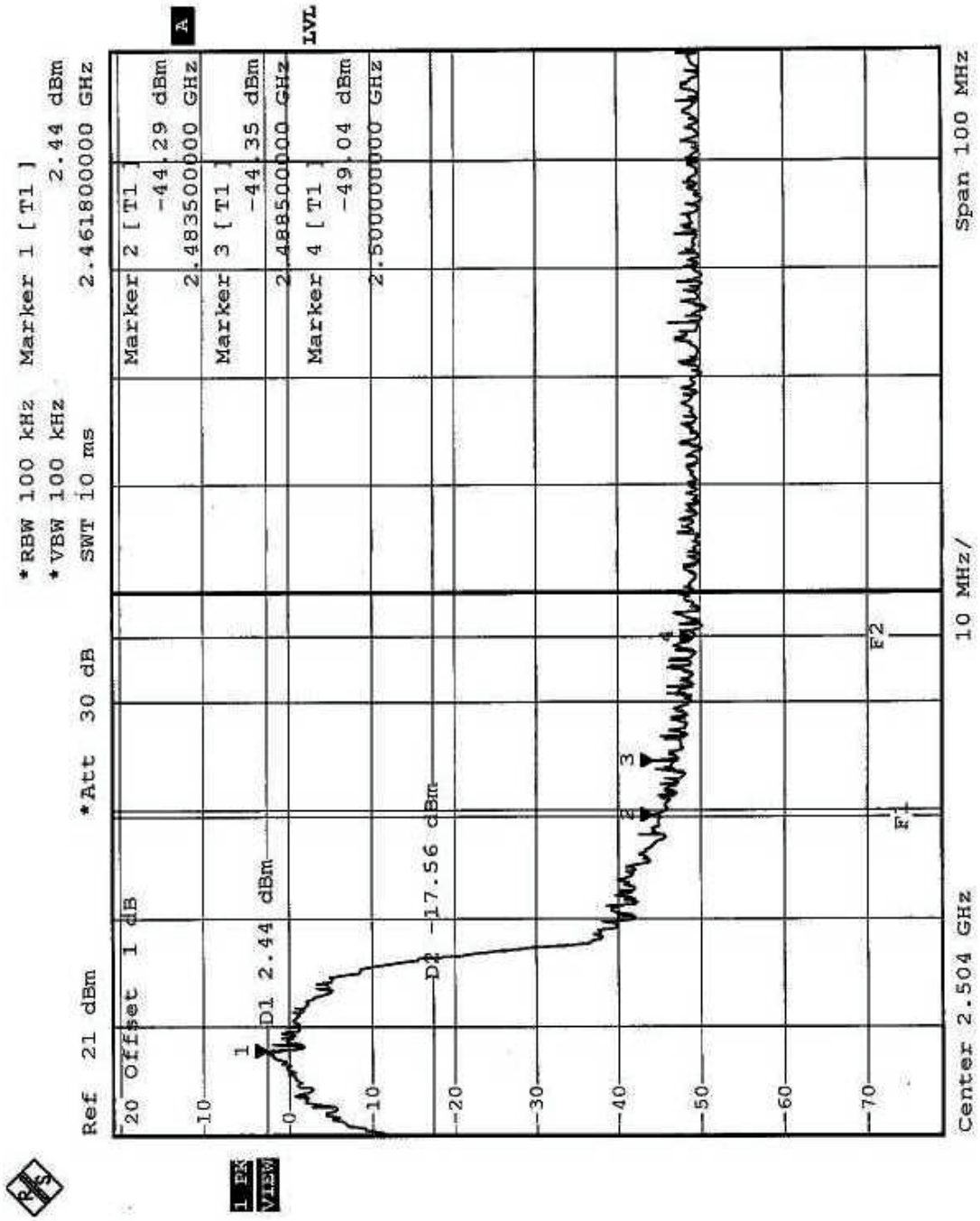
The spectrum plots are attached on the following 2 pages. D2 line indicates the highest level, D1 line indicates the 20dB offset below D2. It shows compliance with the requirement in part 15.247(C).

NOTE 1:
The band edge emission plot on the following first pages shows 47.38dB delta between carrier maximum power and local maximum emission in restrict band (2.3896GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.8 is 100.24dBuV/m, so the maximum field strength in restrict band is 100.24-47.68=52.56dBuV/m, which is under 54dBuV/m limit.

NOTE 2:

The band edge emission plot on the following second pages shows 46.73dB 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 4.2.8 is 100.04dBuV/m, so the maximum field strength in restrict band is 100.04-46.73=53.31dBuV/m which is under 54 dBuV/m limit.


Ref 21 dBm
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 10 ms
Marker 1 [T1]
1.44 dBm
2.412008000 GHz
Offset 1 dB
D1 1.44 dBm
D2 -18.56 dBm
Marker 2 [T1]
-41.13 dBm
2.400000000 GHz
Marker 3 [T1]
-48.43 dBm
Marker 4 [T1]
-45.94 dBm
2.396000000 GHz
Center 2.371008 GHz
10 MHz/
Span 100 MHz
1 EK
VIEW
A
LVL

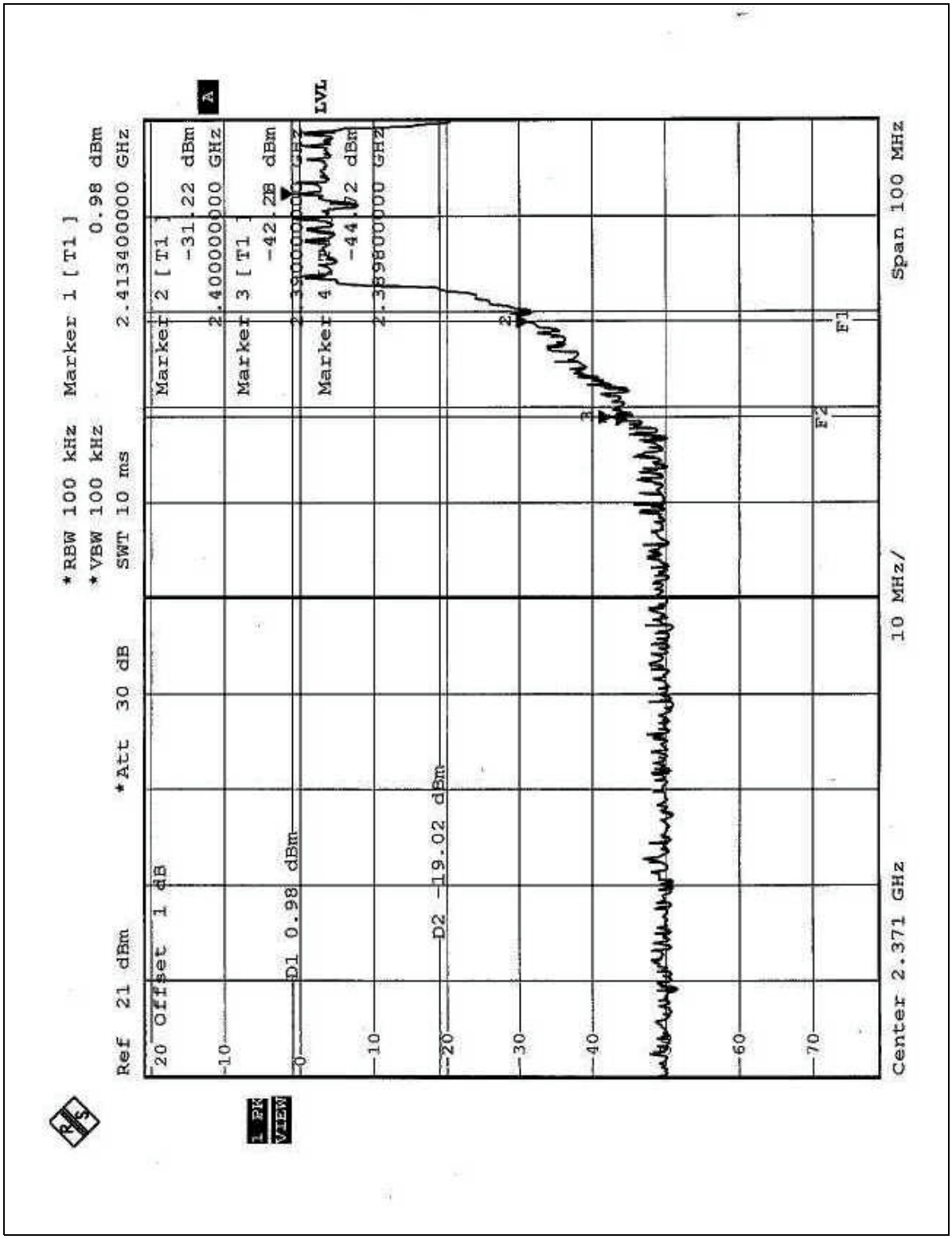

Ref 21 dBm
Offset 1 dB
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 10 ms
Marker 1 [T1]
2.44 dBm
2.461800000 GHz
D1 2.44 dBm
D2 -17.56 dBm
Marker 2 [T1]
-44.29 dBm
2.483500000 GHz
Marker 3 [T1]
-44.35 dBm
2.488500000 GHz
Marker 4 [T1]
-49.04 dBm
2.500000000 GHz
1 PK
VIEW
Center 2.504 GHz
10 MHz/
Span 100 MHz

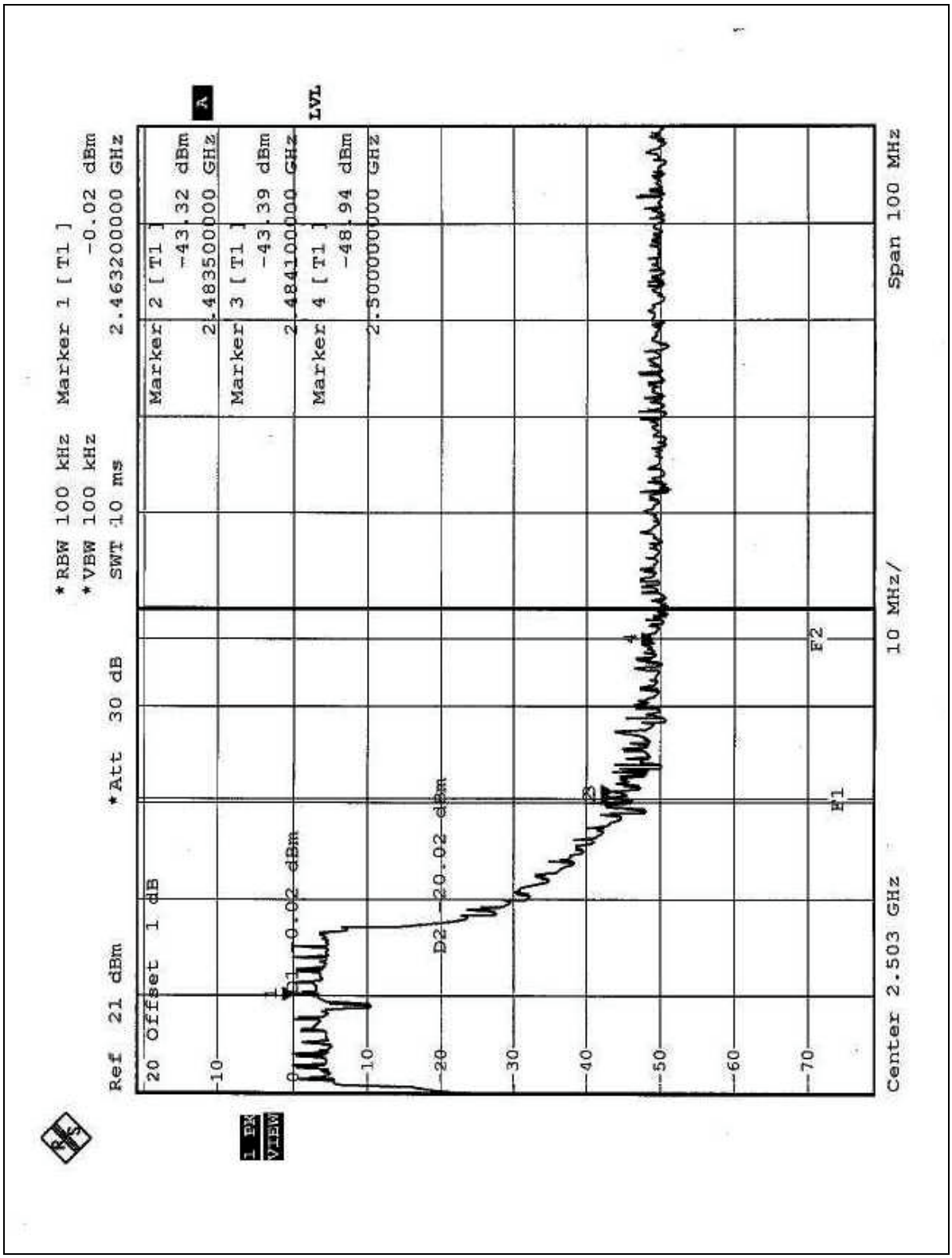
4.6.7 TEST RESULTS (B)

The spectrum plots are attached on the following 2 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).

NOTE 1:
The band edge emission plot on the following first pages shows 43.26dB 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 4.2.9 is 93.57dBuV/m, so the maximum field strength in restrict band is 93.57-43.26=50.31dBuV/m which is under 54dBuV/m limit.

NOTE 2:
The band edge emission plot on the following second pages shows 43.30dB 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 4.2.9 is 95.54dBuV/m, so the maximum field strength in restrict band is 95.54-43.30=52.24dBuV/m which is under 54dBuV/m limit.


Ref 21 dBm
*Att 30 dB
Offset 1 dB
D1 0.98 dBm
D2 -19.02 dBm
*RBW 100 kHz
*VBW 100 kHz
SWT 10 ms
Marker 1 [T1]
0.98 dBm
2.413400000 GHz
Marker 2 [T1]
-31.22 dBm
2.400000000 GHz
Marker 3 [T1]
-42.28 dBm
2.390000000 GHz
Marker 4
-44.12 dBm
2.389800000 GHz
1 PK
VIEW
A
LVL
Center 2.371 GHz
10 MHz/
Span 100 MHz


Ref 21 dBm
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 10 ms
Marker 1 [T1]
-0.02 dBm
2.463200000 GHz
Marker 2 [T1]
-43.32 dBm
2.483500000 GHz
Marker 3 [T1]
-43.39 dBm
2.484100000 GHz
Marker 4 [T1]
-48.94 dBm
2.500000000 GHz
D2 -20.02 dBm
Center 2.503 GHz
10 MHz/
Span 100 MHz

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 type used in this product is Printed Antenna with UFL antenna connector. The maximum Gain of this antenna is only 0.62dBi.

5 PHOTOGRAPHS OF THE TEST CONFIGURATION

CONDUCTED EMISSION TEST

RADIATED EMISSION TEST

921229R02

6 INFORMATION ON THE TESTING LABORATORIES

We, ADT Corp., were founded in 1988 to provide our best service in EMC and Safety consultation. Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025, Guide 25 or EN 45001:

USA	FCC, NVLAP
Germany	TUV Rheinland
Japan	VCCI
New Zealand	MoC
Norway	NEMKO
R.O.C.	BSMI, DGT, CNLA

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:

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Fax: 886-2-26052943

Hsin Chu EMC Lab:
Tel: 886-35-935343
Fax: 886-35-935342

Lin Kou Safety Lab:
Tel: 886-2-26093195
Fax: 886-2-26093184

Lin Kou RF&Telecom Lab
Tel: 886-3-3270910
Fax: 886-3-3270892

Email: service@mail.adt.com.tw
Web Site: www.adt.com.tw

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