

EMC TEST REPORT

CFR 47 FCC Part 15.247

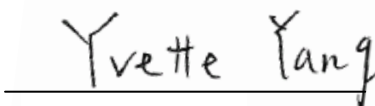
Report No. : TS08030033-EME**Model No. : XN-791****Issued Date : Mar. 25, 2008**

Applicant: Z-Com, Inc.
7F-2, No. 9. Prosperity RD. I Science-Based Industrial
Park, Hsinchu, 300 Taiwan

Test By: Intertek Testing Services Taiwan Ltd.
No. 11, Lane 275, Ko-Nan 1 Street, Chia-Tung Li,
Shiang-Shan District, Hsinchu City, Taiwan

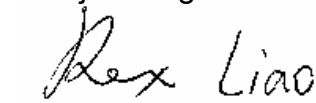
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Report Engineer



Yvette Yang

Project Engineer



Rex Liao

Reviewed By



Kevin Chen

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1. Summary of Test Data

Test/Requirement Description	Applicable Rule	Result
Minimum 6dB Bandwidth	15.247(a)(2)	Pass
Maximum Output Power	15.247(b)	Pass
Power Spectral Density	15.247(e)	Pass
RF Antenna Conducted Spurious	15.247(d)	Pass
Radiated Spurious Emission	15.247(d), 15.205, 15.209	Pass
Emission on the Band Edge	15.247(d)	Pass
AC Power Line Conducted Emission	15.207	Pass

2. General Information

Identification of the EUT

Applicant:	Z-Com, Inc.
Product:	IEEE 802.11n Wireless LAN USB Adapter
Model No.:	XN-791
FCC ID.:	M4Y-XN791V02
Frequency Range:	2412MHz to 2462MHz for 802.11b, 802.11g, 802.11n HT20 2422MHz to 2452MHz for 802.11n HT40
Channel Number:	11 channels for 802.11b, 802.11g, 802.11n HT20 7 channels for 802.11n HT40
Rated Power:	DC 5V from Notebook PC
Power Cord:	N/A
Sample Received:	Mar. 04, 2008
Test Date(s):	Mar. 05, 2008 ~ Mar. 06, 2008
Note 1:	This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.
Note 2:	When determining the test conclusion, the Measurement Uncertainty of test has been considered.

Description of EUT

The EUT is an IEEE 802.11n Wireless LAN USB Adapter (MIMO 1T2R), and was defined as information technology equipment.

For more detail features, please refer to User's manual as file name "Installation guide.pdf"

Antenna description

The EUT uses a permanently connected antenna.

Antenna Gain	-4.32dBi max
Antenna Type	PCB Printed antenna
Connector Type	N/A

3. Maximum 6dB Bandwidth

Name of Test	Maximum 6dB Bandwidth
Base Standard	FCC 15.247 a(2)

Tested By: Rex Liao
Test Date: Mar. 06, 2008

Test Equipment: EC1365

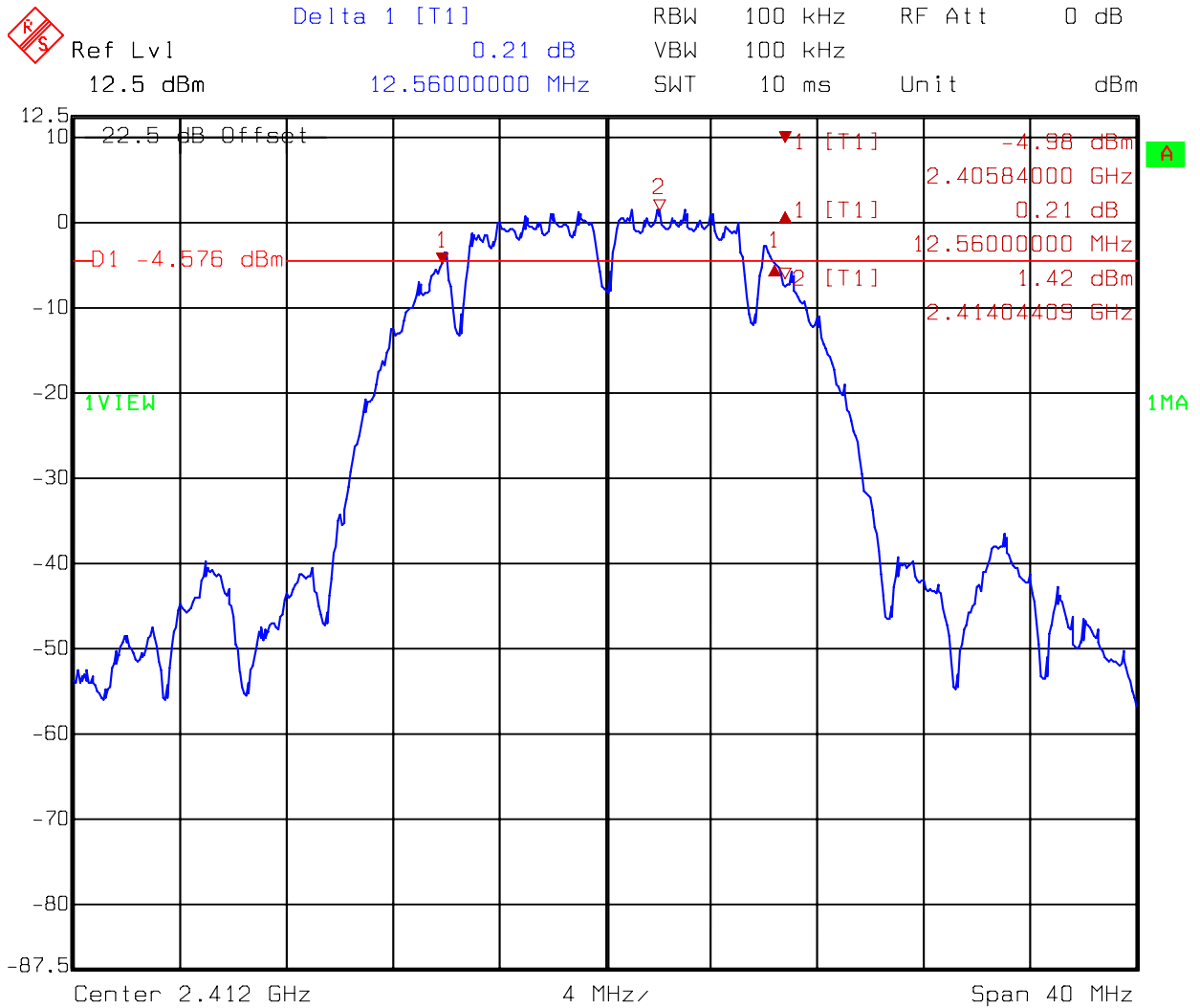
Test Result: Complies
Test Method: See Appendix A
Measurement Data: See Table & plots below

Note: The EUT was tested while in a continuous transmit mode. The EUT was tuned to a low, middle and high channel.

Table1. Maximum 6dB Bandwidth

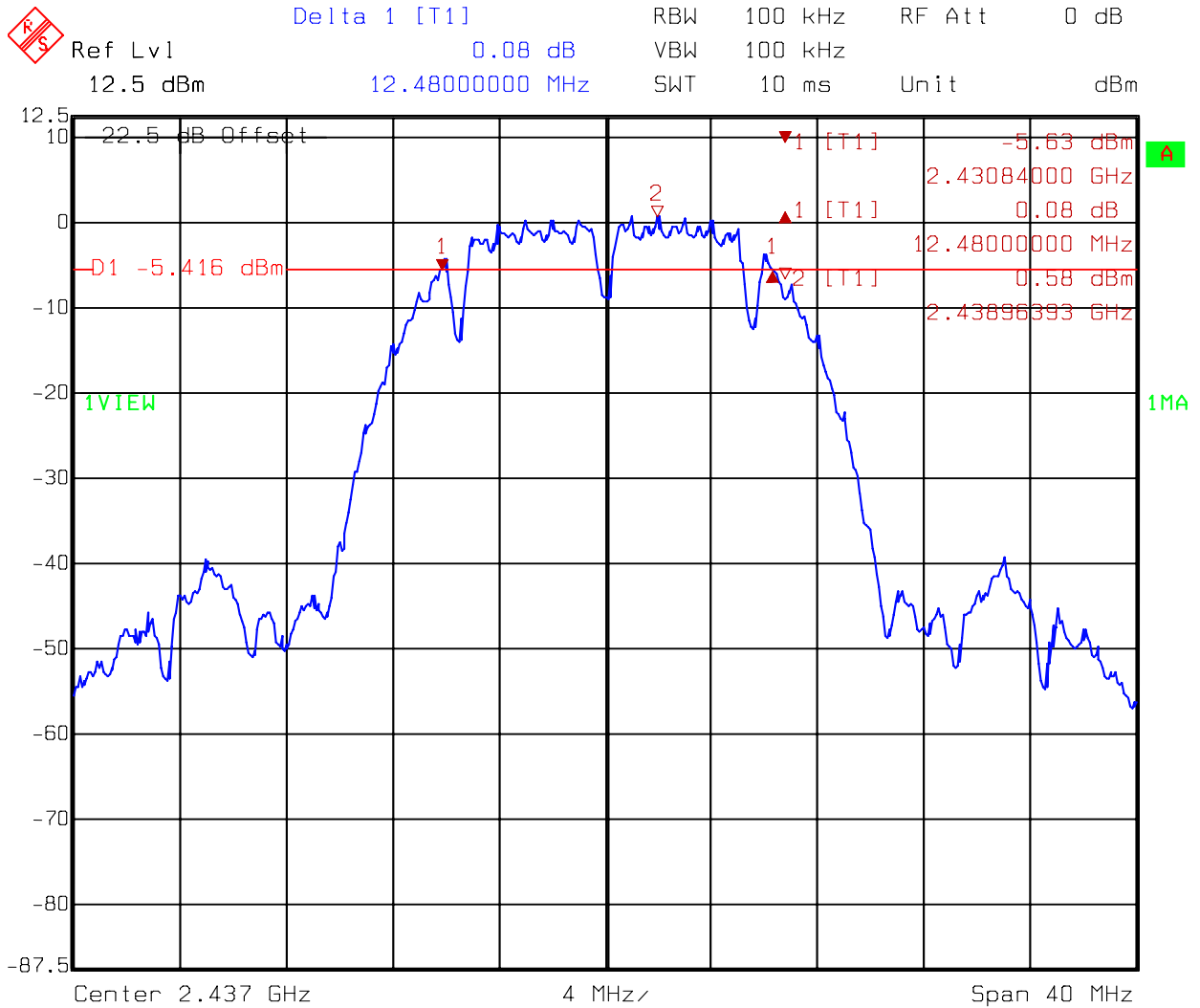
Mode	Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Min. Limit (MHz)	Pass/Fail
11b	1	2412	12.56	0.5	Pass
	6	2437	12.48	0.5	Pass
	11	2462	12.72	0.5	Pass
11g	1	2412	16.80	0.5	Pass
	6	2437	16.80	0.5	Pass
	11	2462	16.80	0.5	Pass
HT20	1	2412	17.92	0.5	Pass
	6	2437	17.92	0.5	Pass
	11	2462	18.00	0.5	Pass
HT40	3	2422	36.78	0.5	Pass
	6	2437	36.78	0.5	Pass
	9	2452	36.78	0.5	Pass

6dB Bandwidth @ 802.11b mode channel 1



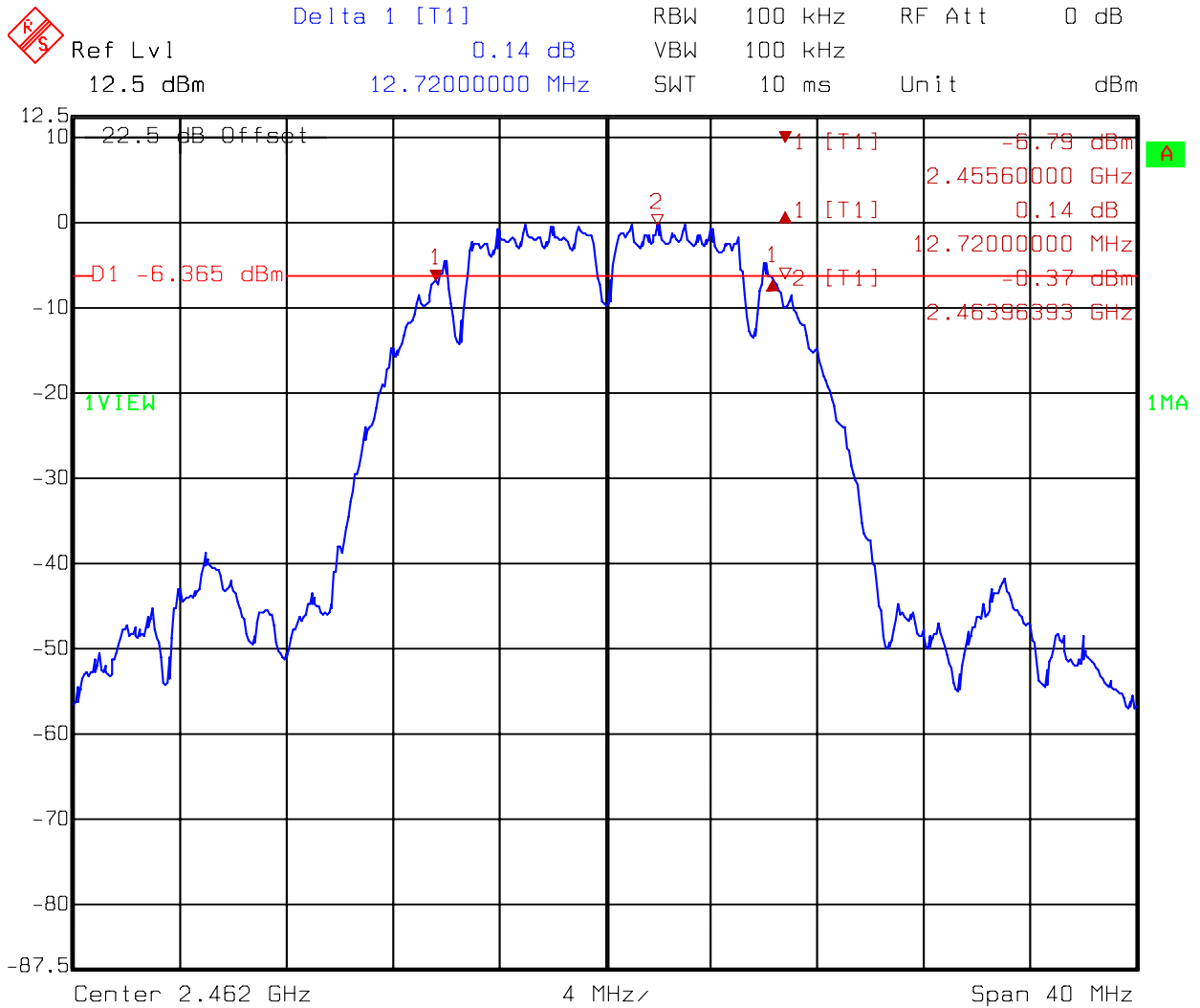
Title: 6dB Band-Width
 Comment A: CH 1 at 802.11b mode
 Date: 06.MAR.2008 10:15:12

6dB Bandwidth @ 802.11b mode channel 6



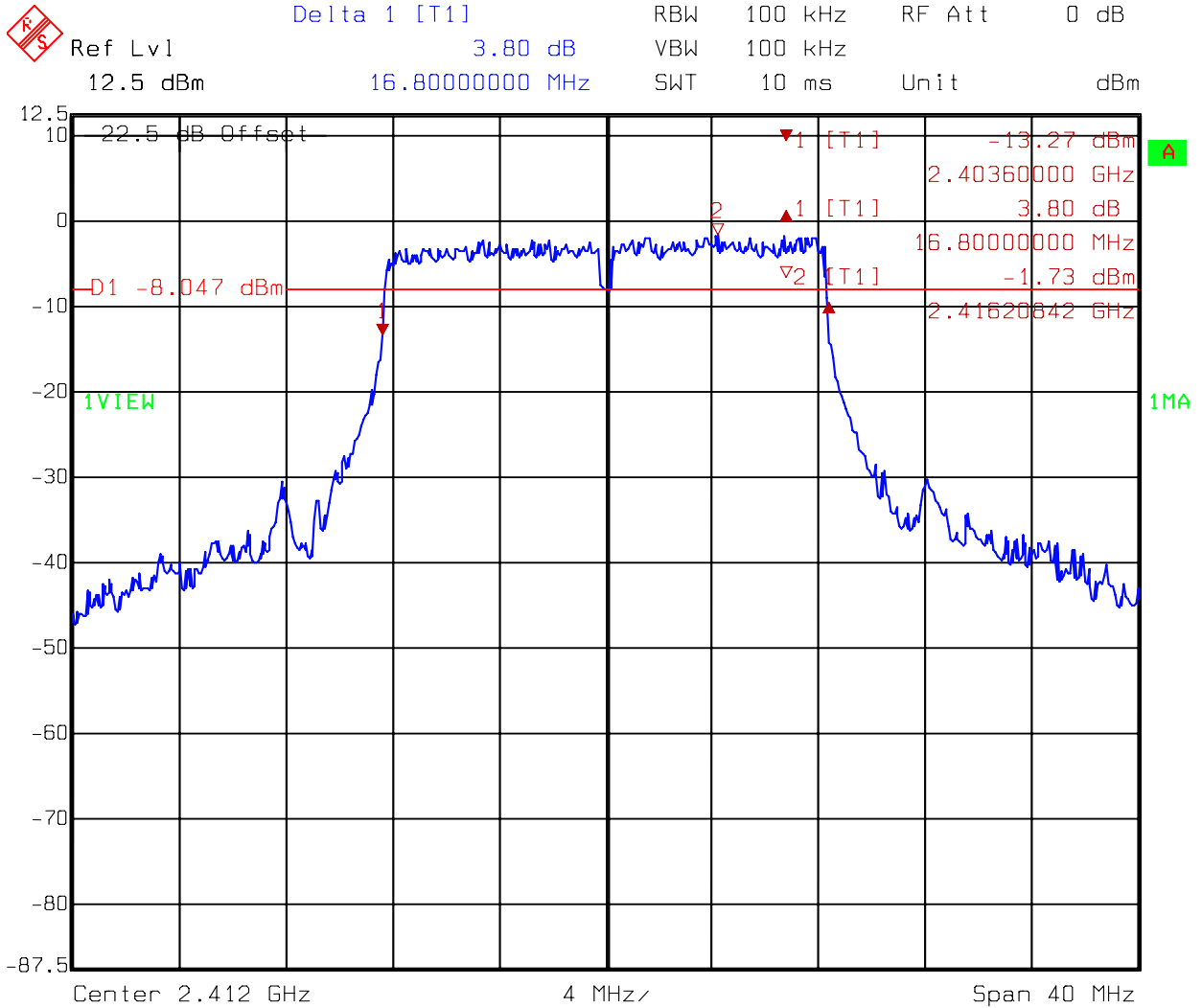
Title: 6dB Band-Width
 Comment A: CH 6 at 802.11b mode
 Date: 06.MAR.2008 10:18:43

6dB Bandwidth @ 802.11b mode channel 11



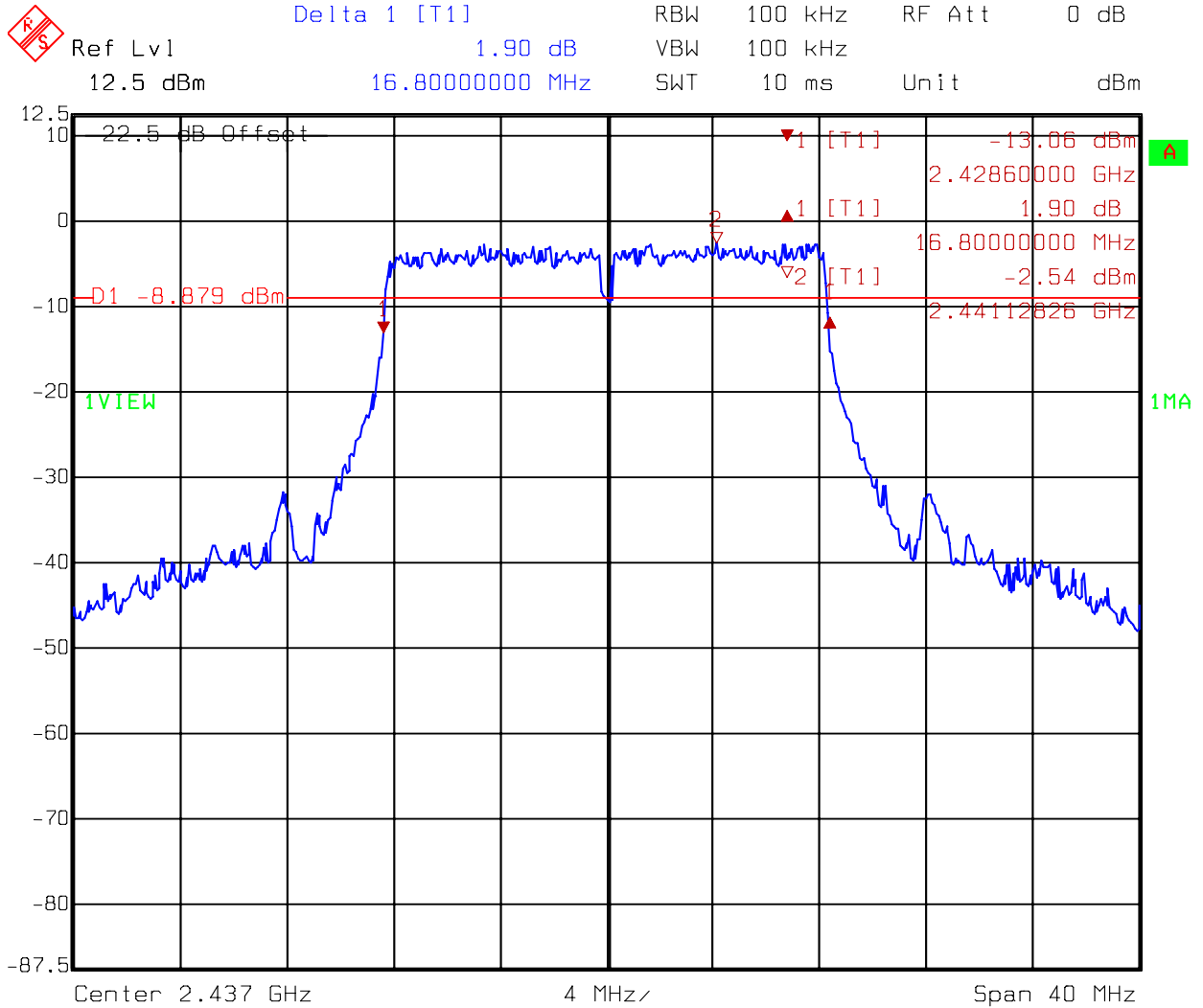
Title: 6dB Band-Width
 Comment A: CH 11 at 802.11b mode
 Date: 06.MAR.2008 10:21:25

6dB Bandwidth @ 802.11g mode channel 1



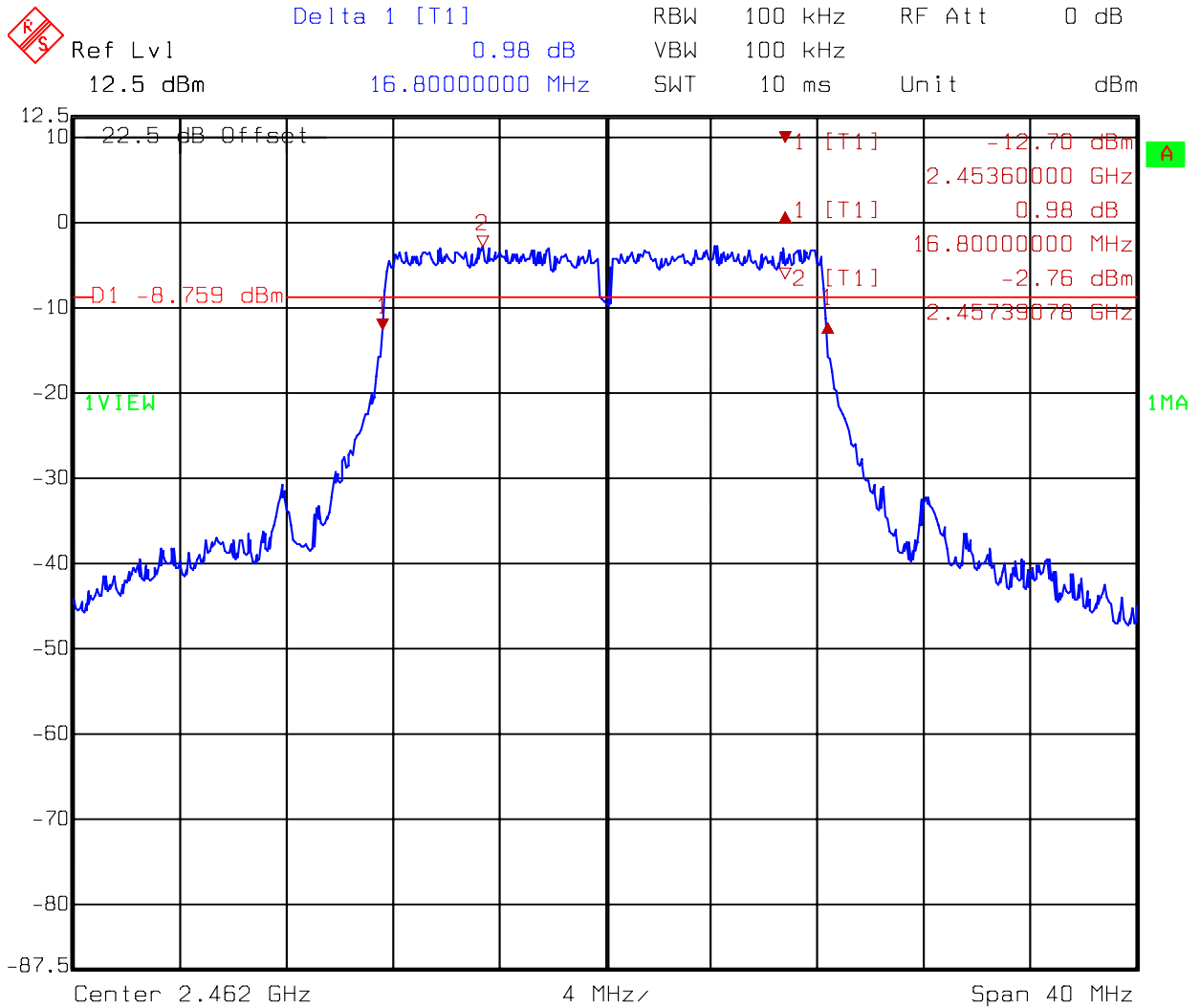
Title: 6dB Band-Width
 Comment A: CH 1 at 802.11g mode
 Date: 06.MAR.2008 10:24:47

6dB Bandwidth @ 802.11g mode channel 6



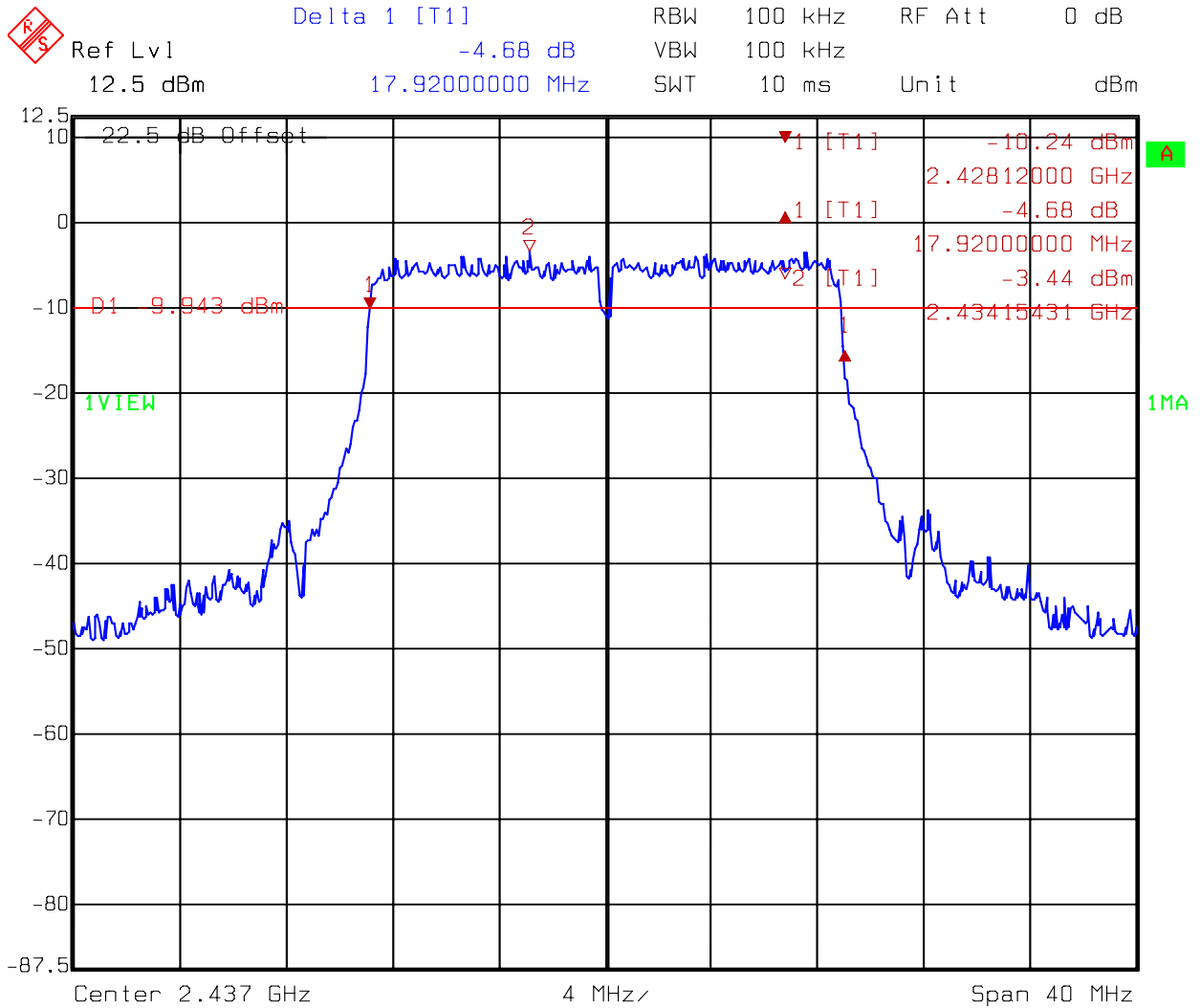
Title: 6dB Band-Width
 Comment A: CH 6 at 802.11g mode
 Date: 06.MAR.2008 10:27:37

6dB Bandwidth @ 802.11g mode channel 11



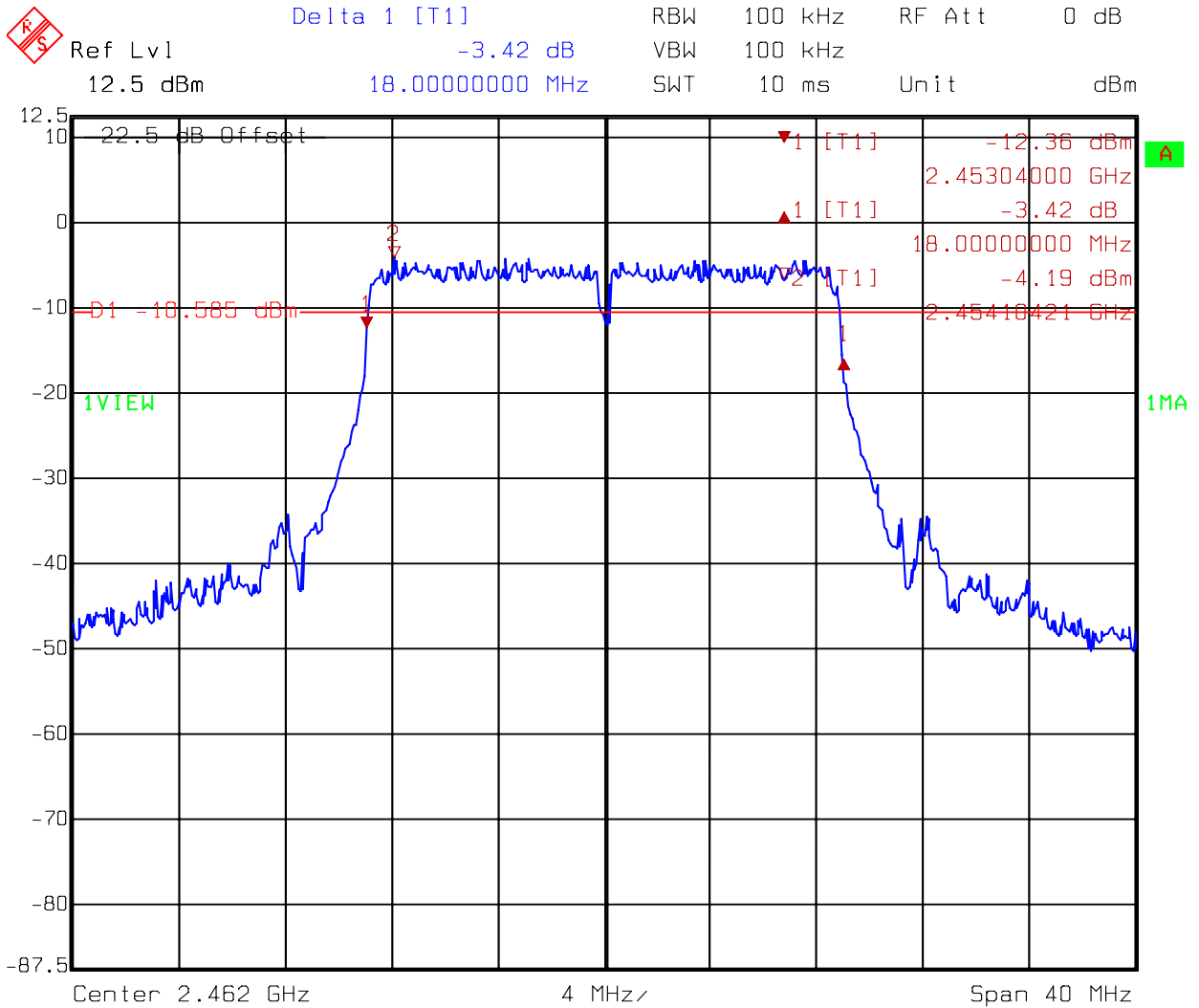
Title: 6dB Band-Width
 Comment A: CH 11 at 802.11g mode
 Date: 06.MAR.2008 10:30:23

6dB Bandwidth @ 802.11n HT20 mode channel 6



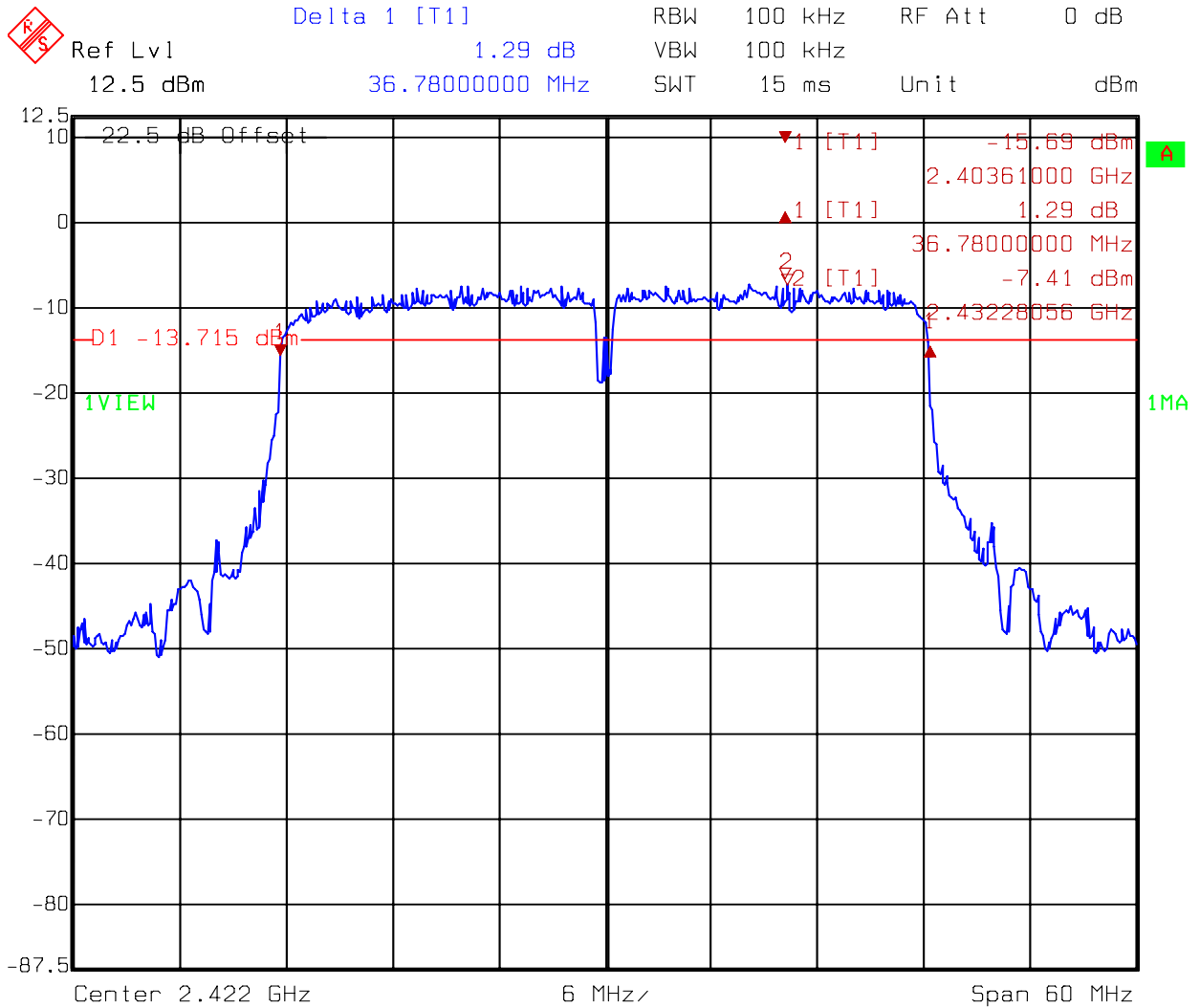
Title: 6dB Band-Width
Comment A: CH 6 at 802.11n 20MHz mode
Date: 06.MAR.2008 10:37:19

6dB Bandwidth @ 802.11n HT20 mode channel 11



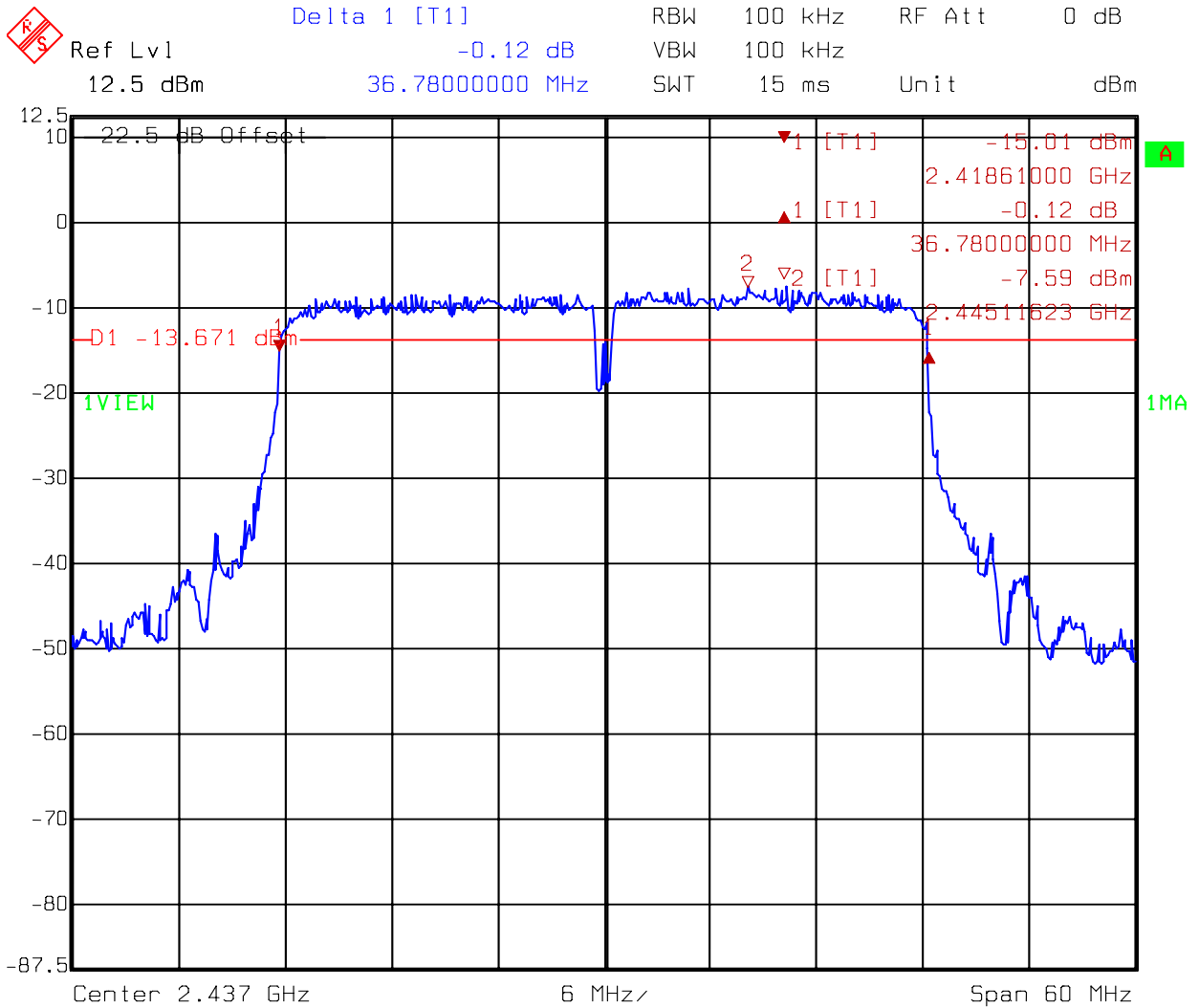
Title: 6dB Band-Width
 Comment A: CH 11 at 802.11n 20MHz mode
 Date: 06.MAR.2008 10:40:44

6dB Bandwidth @ 802.11n HT40 mode channel 3



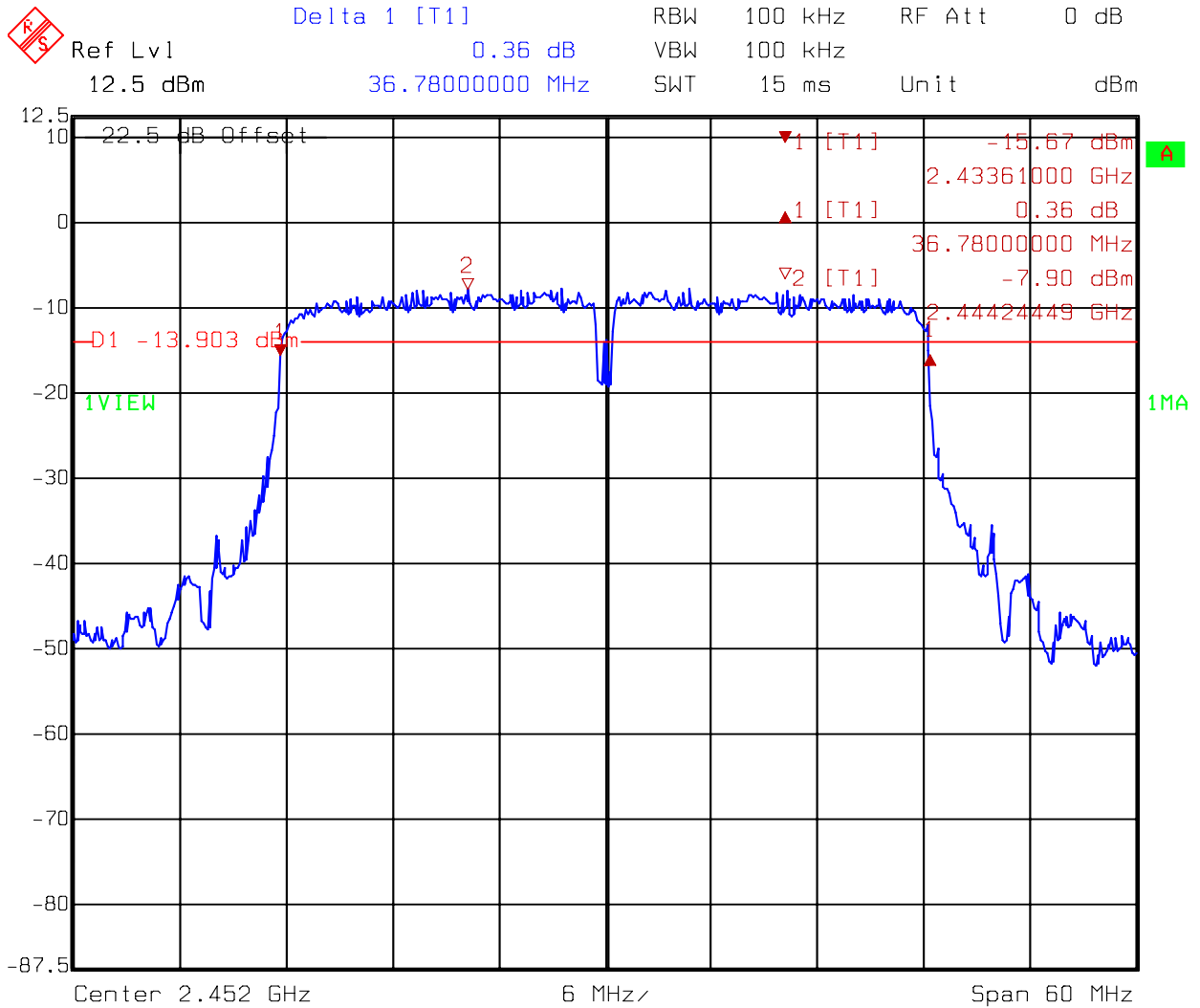
Title: 6dB Band-Width
 Comment A: CH 3 at 802.11n 40MHz mode
 Date: 06.MAR.2008 10:44:00

6dB Bandwidth @ 802.11n HT40 mode channel 6



Title: 6dB Band-Width
 Comment A: CH 6 at 802.11n 40MHz mode
 Date: 06.MAR.2008 10:46:53

6dB Bandwidth @ 802.11n HT40 mode channel 9



Title: 6dB Band-Width
Comment A: CH 9 at 802.11n 40MHz mode
Date: 06.MAR.2008 10:49:41

4. 99% Occupied Bandwidth

Name of Test	99% Occupied Bandwidth
Base Standard	None; for reporting purposes only

Tested By: Rex Liao
Test Date: Mar. 25, 2008

Test Equipment: EC365

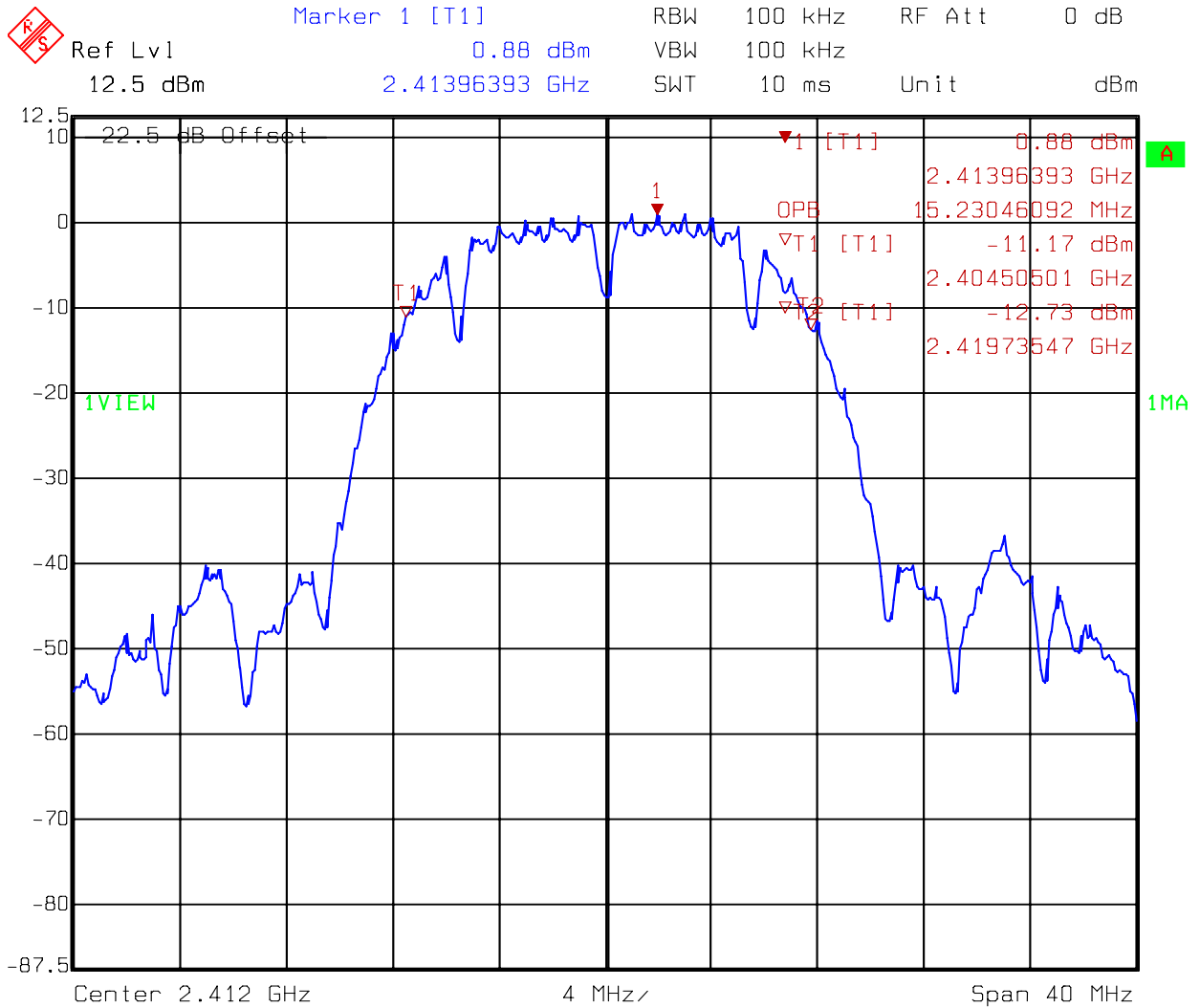
Test Result: Complies
Test Method: See Appendix A
Measurement Data: See Table & plots below

Note: The EUT was tested while in a continuous transmit mode. The EUT was tuned to a low, middle and high channel.

Table2. 99% Occupied Bandwidth

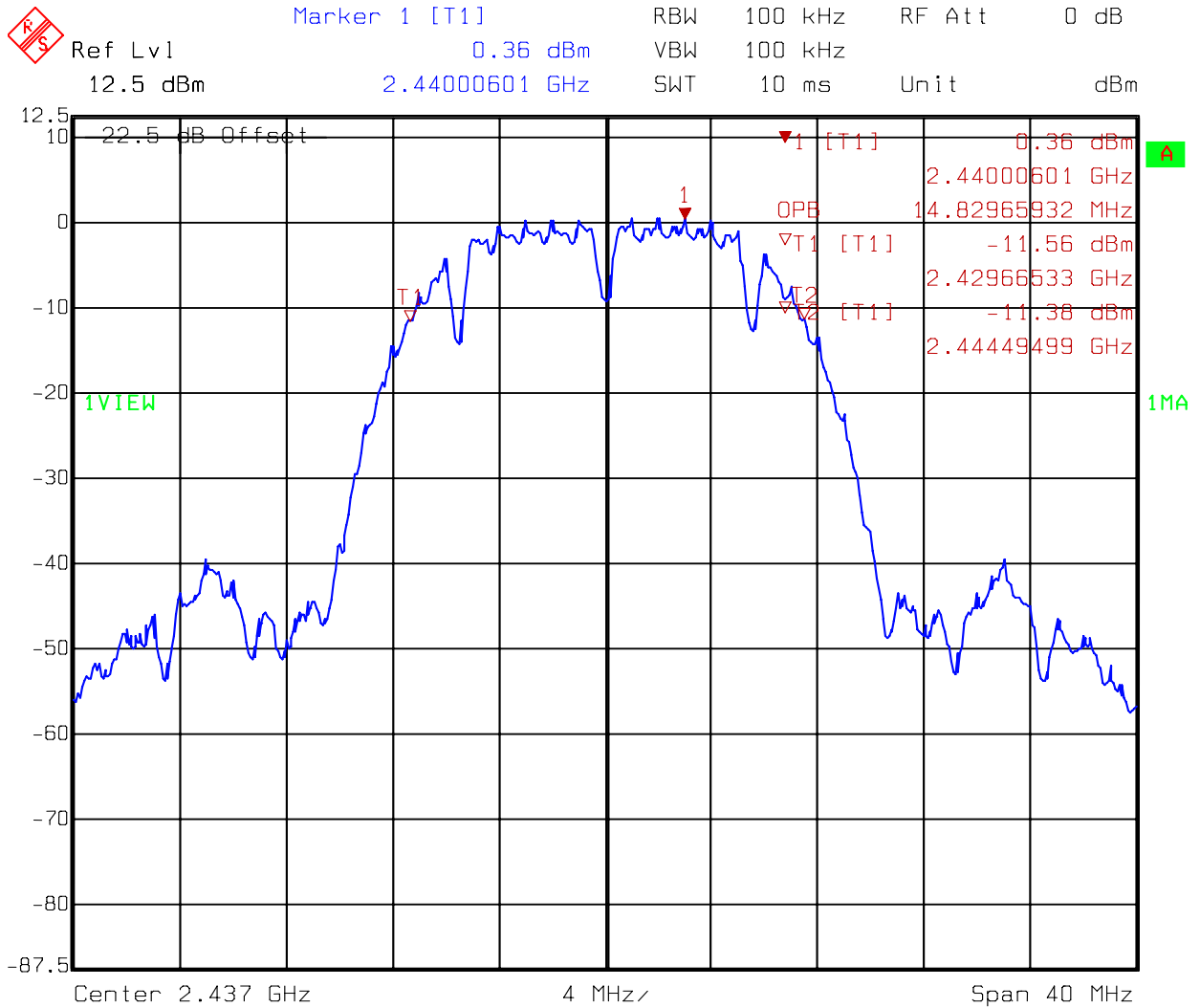
Mode	Channel	Frequency (MHz)	6dB Bandwidth (MHz)
11b	1	2412	15.23
	6	2437	14.83
	11	2462	14.91
11g	1	2412	16.51
	6	2437	16.51
	11	2462	16.43
HT20	1	2412	17.64
	6	2437	17.64
	11	2462	17.64
HT40	3	2422	36.07
	6	2437	36.07
	9	2452	35.95

99% Occupied Bandwidth @ 802.11b mode channel 1



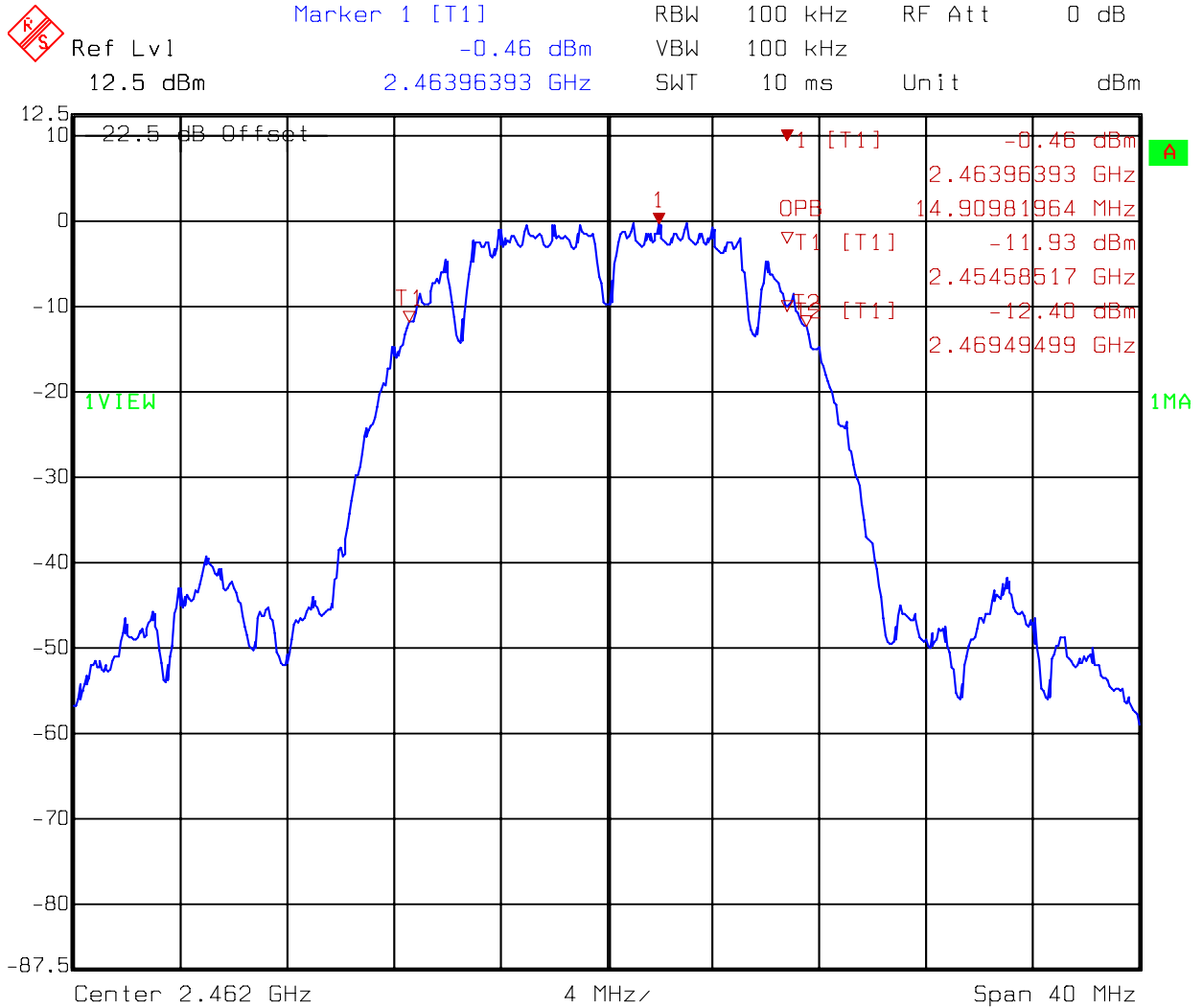
Title: Occupied Band-Width
 Comment A: CH 1 at 802.11b mode
 Date: 06.MAR.2008 10:16:56

99% Occupied Bandwidth @ 802.11b mode channel 6



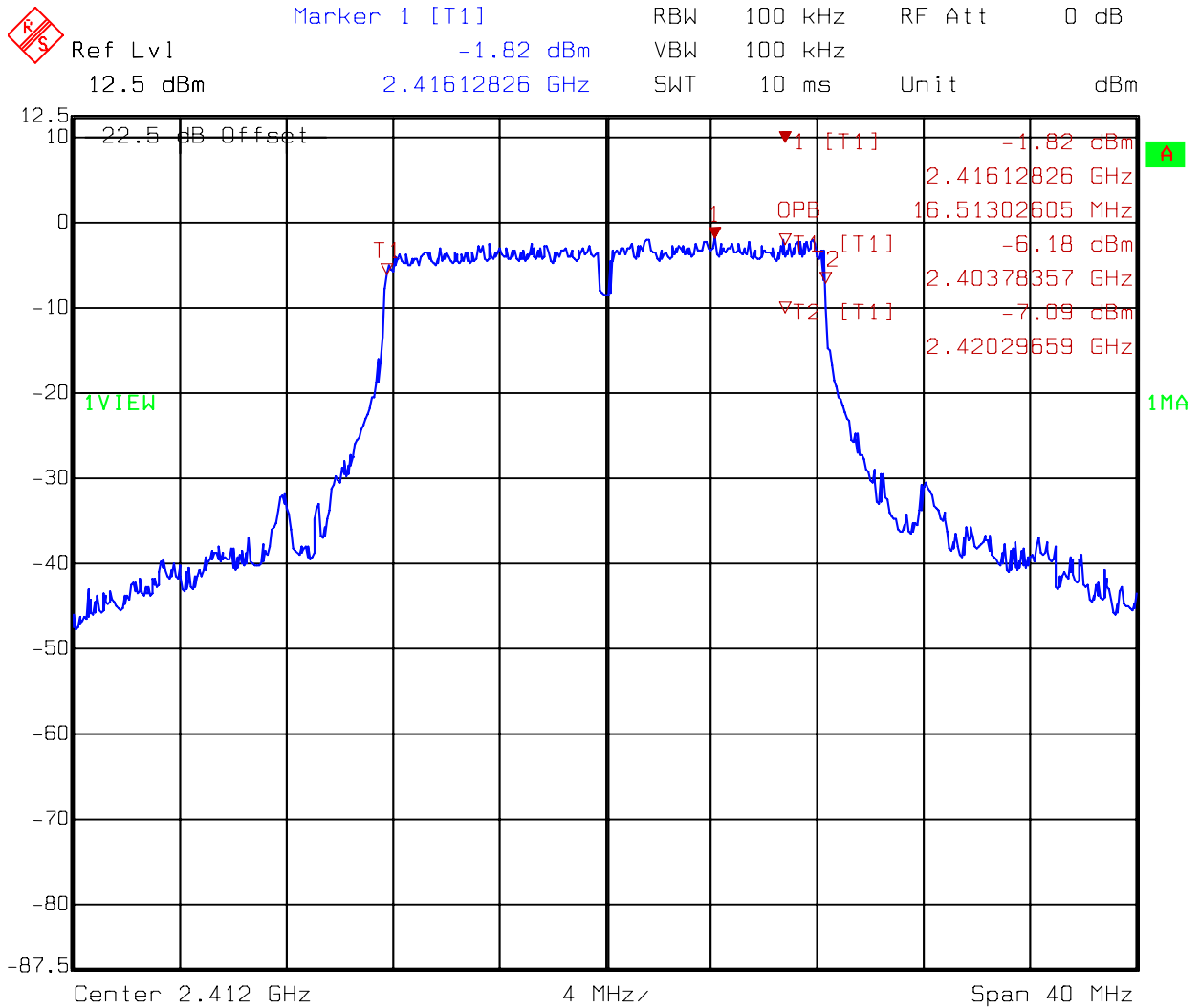
Title: Occupied Band-Width
 Comment A: CH 6 at 802.11b mode
 Date: 06.MAR.2008 10:20:27

99% Occupied Bandwidth @ 802.11b mode channel 11



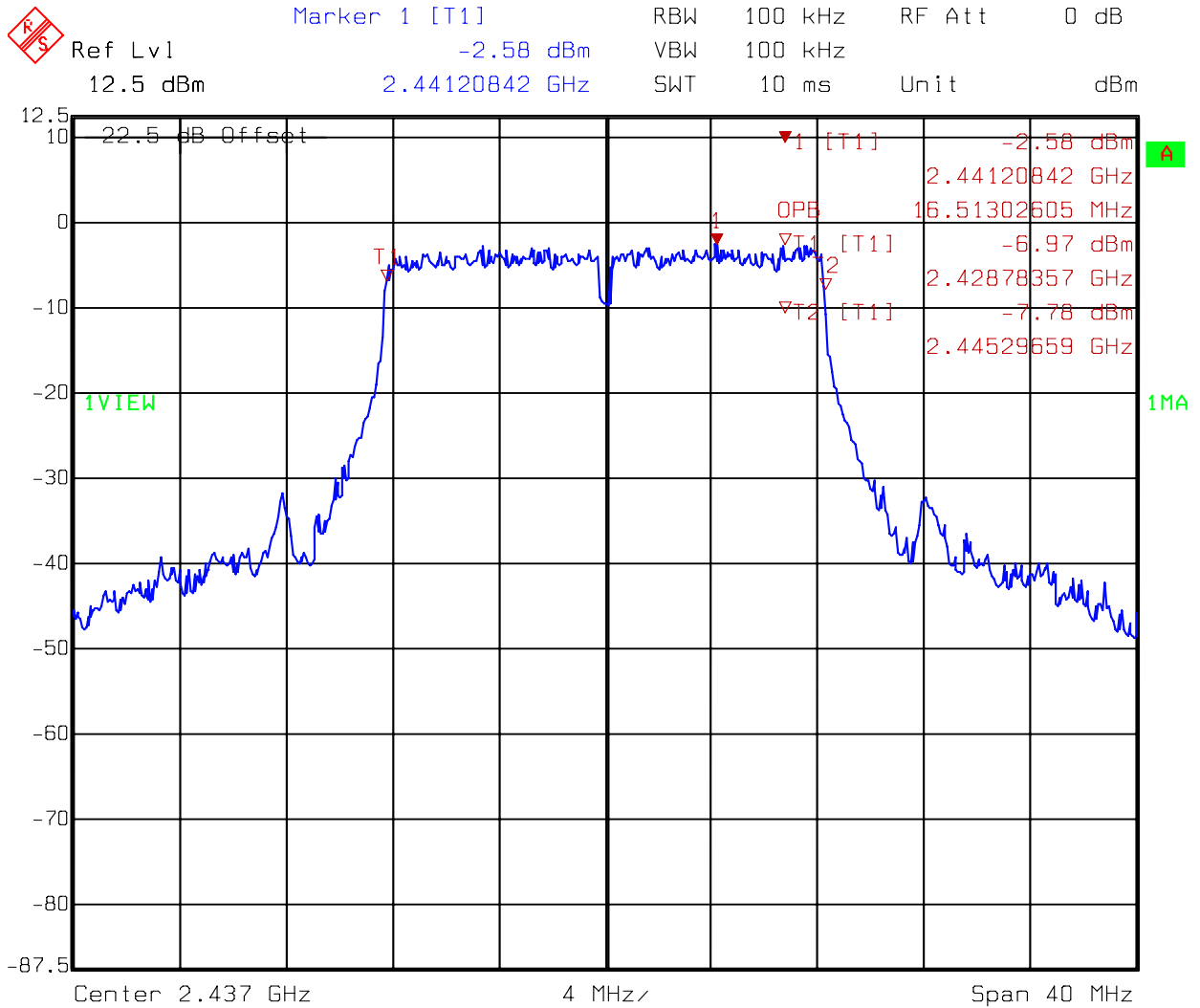
Title: Occupied Band-Width
 Comment A: CH 11 at 802.11b mode
 Date: 06.MAR.2008 10:23:09

99% Occupied Bandwidth @ 802.11g mode channel 1



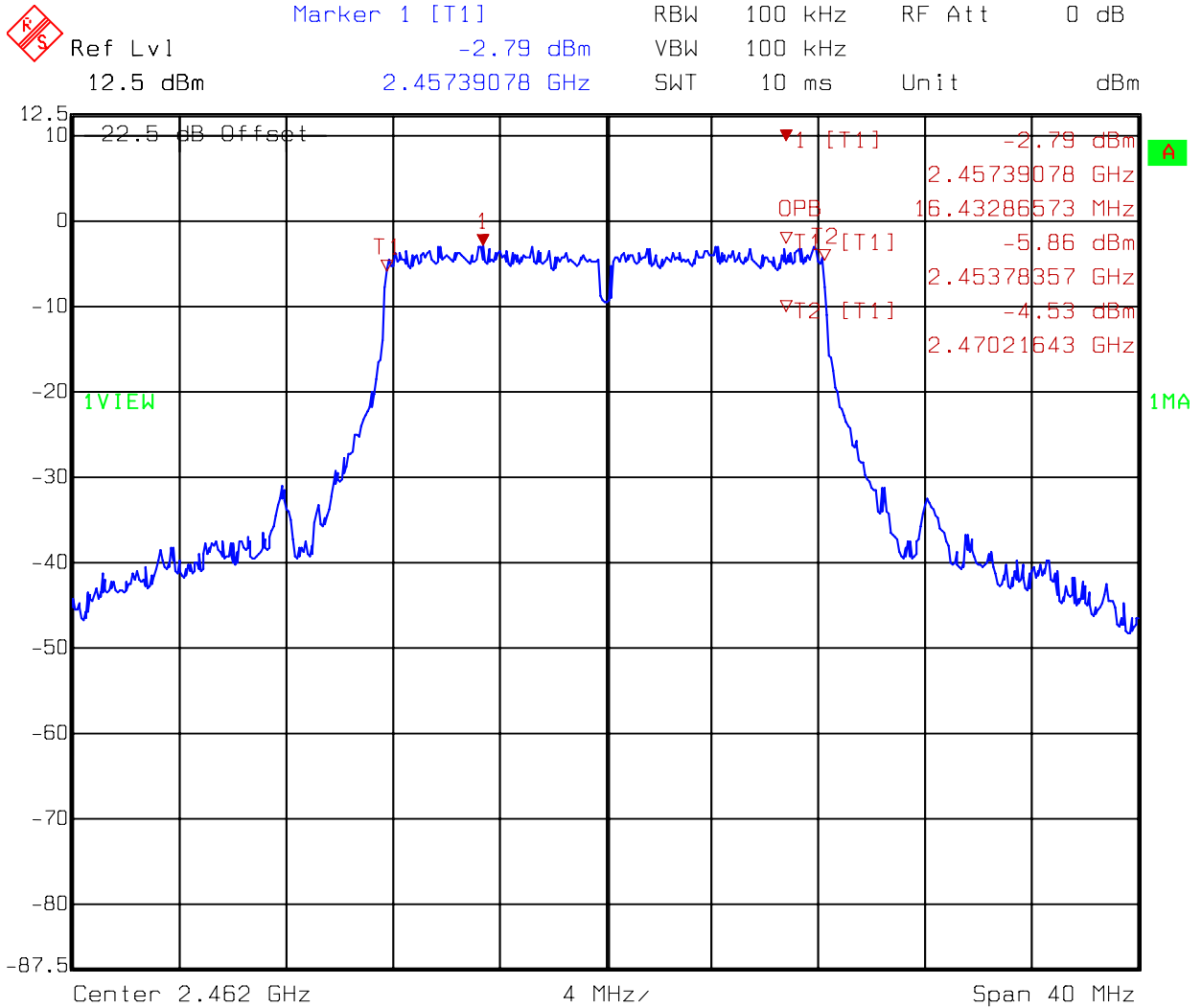
Title: Occupied Band-Width
 Comment A: CH 1 at 802.11g mode
 Date: 06.MAR.2008 10:26:30

99% Occupied Bandwidth @ 802.11g mode channel 6



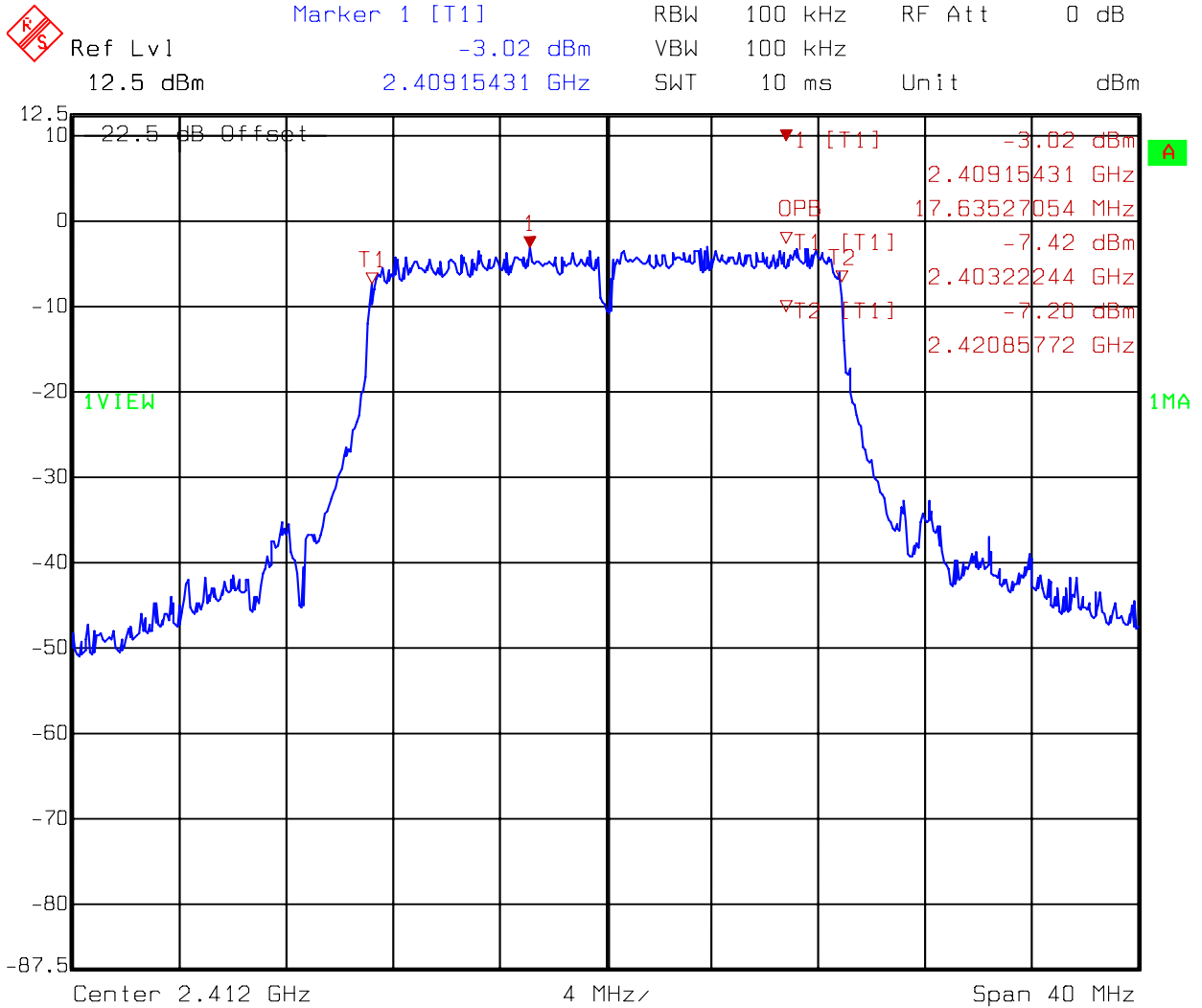
Title: Occupied Band-Width
 Comment A: CH 6 at 802.11g mode
 Date: 06.MAR.2008 10:29:20

99% Occupied Bandwidth h @ 802.11g mode channel 11



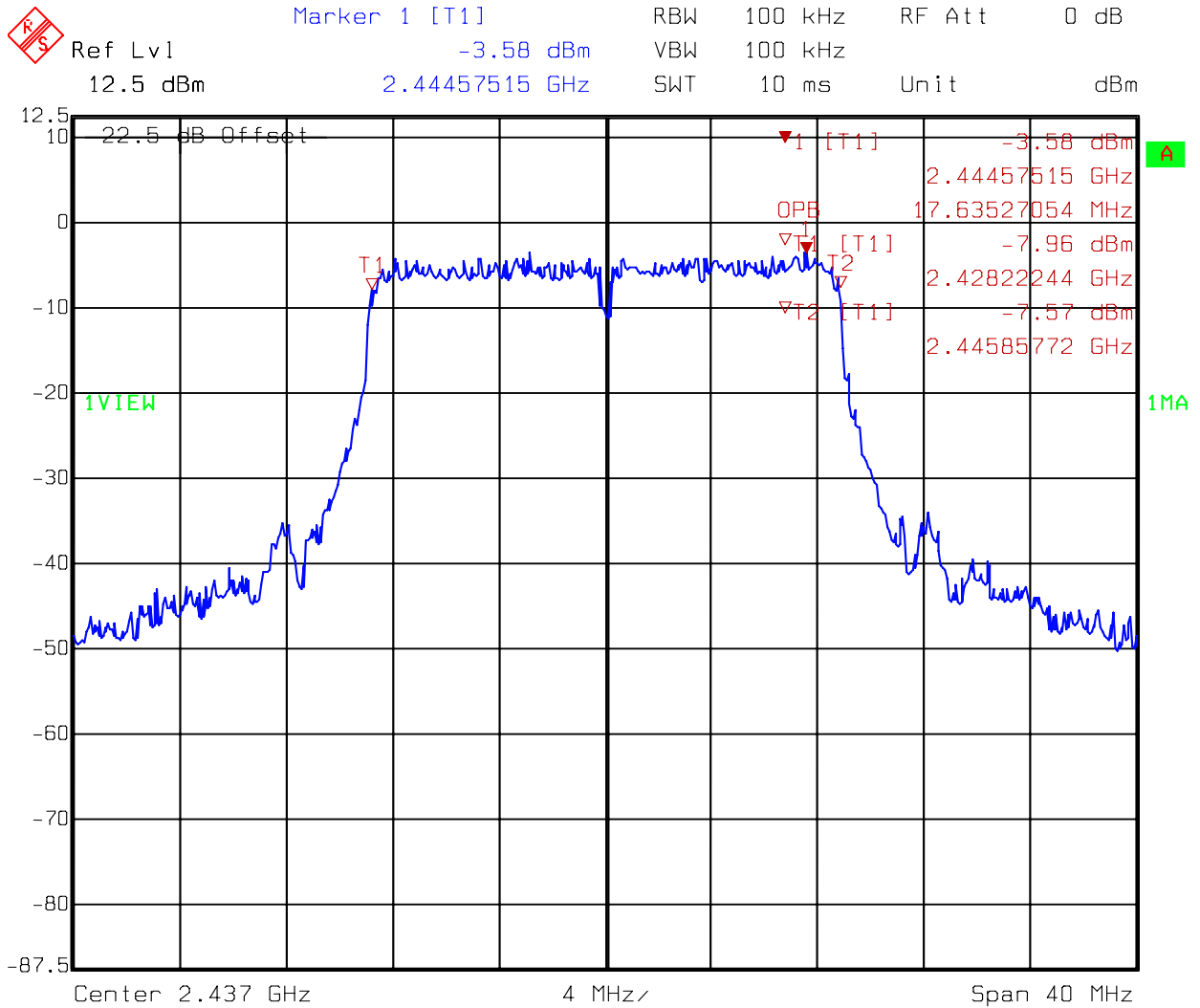
Title: Occupied Band-Width
 Comment A: CH 11 at 802.11g mode
 Date: 06.MAR.2008 10:32:07

99% Occupied Bandwidth @ 802.11n HT20 mode channel 1



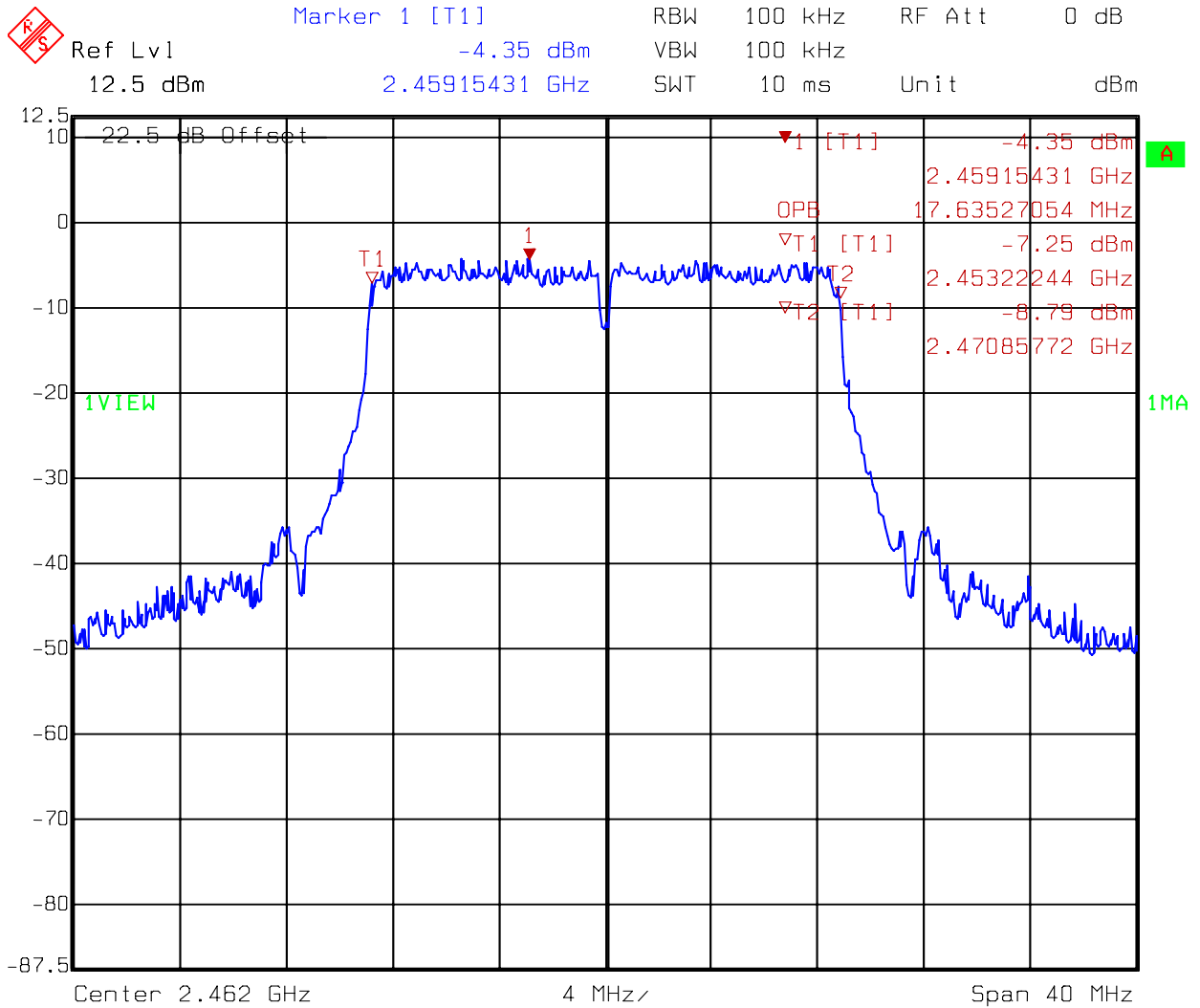
Title: Occupied Band-Width
 Comment A: CH 1 at 802.11n 20MHz mode
 Date: 06.MAR.2008 10:35:55

99% Occupied Bandwidth @ 802.11n HT20 mode channel 6



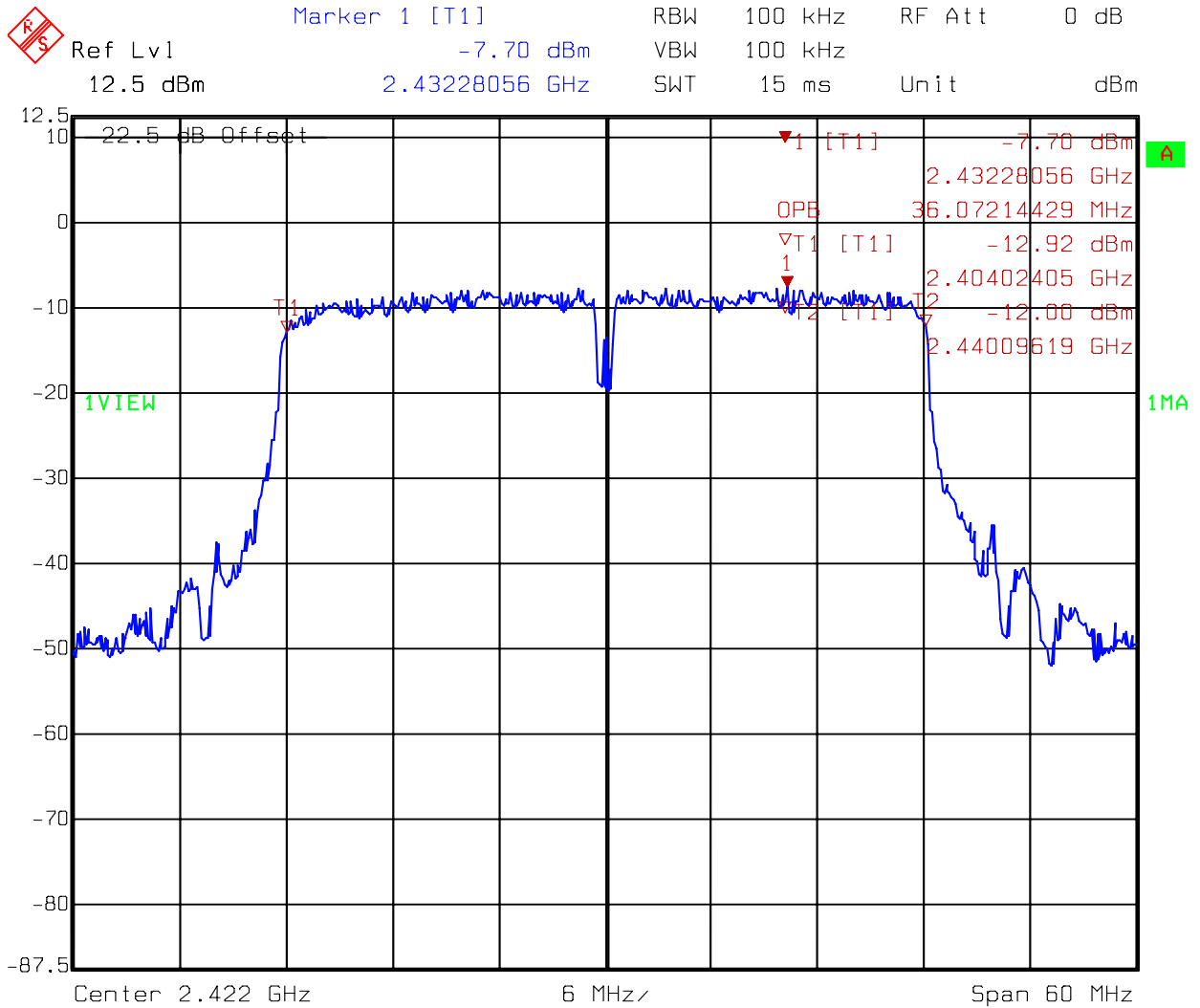
Title: Occupied Band-Width
 Comment A: CH 6 at 802.11n 20MHz mode
 Date: 06.MAR.2008 10:39:03

99% Occupied Bandwidth @ 802.11n HT20 mode channel 11



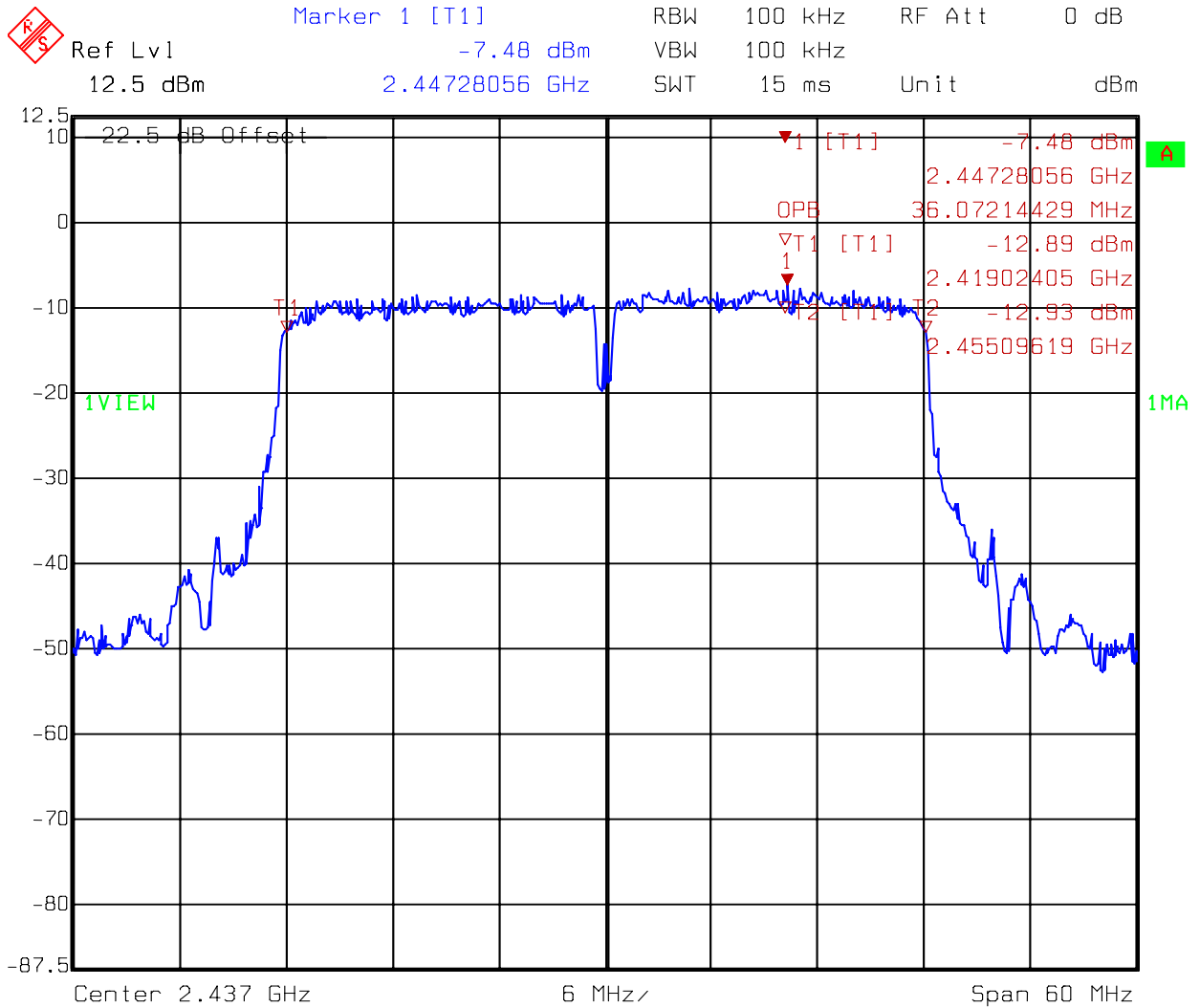
Title: Occupied Band-Width
 Comment A: CH 11 at 802.11n 20MHz mode
 Date: 06.MAR.2008 10:42:28

99% Occupied Bandwidth @ 802.11n HT40 mode channel 3



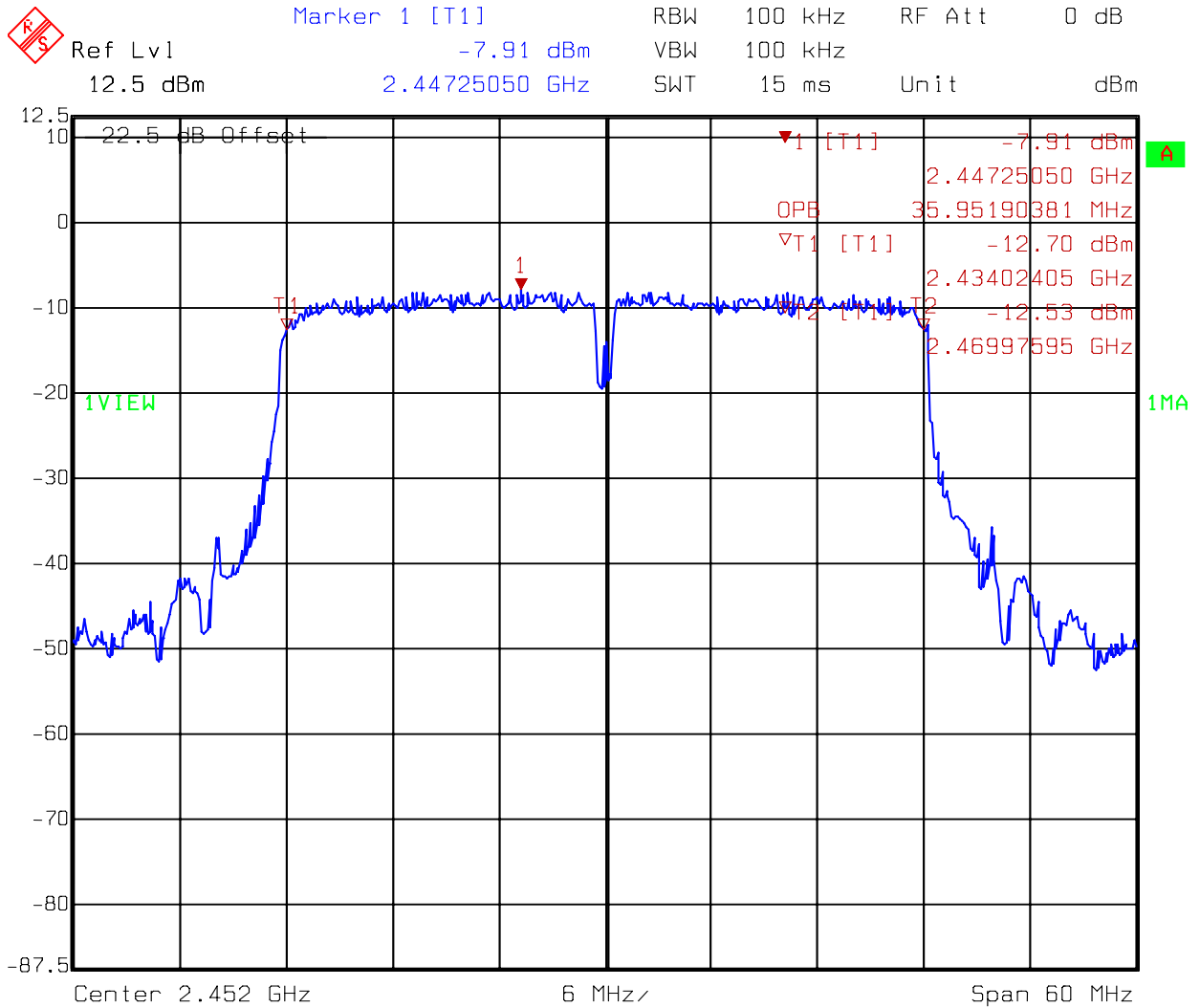
Title: Occupied Band-Width
 Comment A: CH 3 at 802.11n 40MHz mode
 Date: 06.MAR.2008 10:45:43

99% Occupied Bandwidth @ 802.11n HT40 mode channel 6



Title: Occupied Band-Width
 Comment A: CH 6 at 802.11n 40MHz mode
 Date: 06.MAR.2008 10:48:36

99% Occupied Bandwidth @ 802.11n HT40 mode channel 9



Title: Occupied Band-Width
 Comment A: CH 9 at 802.11n 40MHz mode
 Date: 06.MAR.2008 10:51:24

5. Maximum Output Power

Name of Test	Maximum output power
Base Standard	FCC 15.247(b)

Tested By: Rex Liao
Test Date: Mar. 06, 2008

Test Equipment: EC1396, EC1396-1
Measurement Uncertainty: ±2dB (k=2)

Test Result: Complies
Test Method: See Appendix B
Measurement Data: See Table below

Note: The EUT was tested while in a continuous transmit mode. The EUT was tuned to a low, middle and high channel.

Table3. Maximum output power

Mode	Channel	Frequency (MHz)	Temp. (°C)	Reading (dBm)	Cable Loss (dB)	Calculated Power			Limit (dBm)
						Peak		Average (dBm)	
						(dBm)	(mW)		
11b	1	2412	20	15.57	2	17.57	57.15	14.89	30
	6	2437	20	15.76	2	17.76	59.70	14.97	30
	11	2462	20	15.75	2	17.75	59.57	14.95	30
11g	1	2412	20	19.41	2	21.41	138.36	13.79	30
	6	2437	20	19.65	2	21.65	146.22	13.83	30
	11	2462	20	19.84	2	21.84	152.76	13.75	30
HT20	1	2412	20	18.9	2	20.90	123.03	12.76	30
	6	2437	20	19.08	2	21.08	128.23	12.72	30
	11	2462	20	19.31	2	21.31	135.21	12.70	30
HT409	3	2422	20	18.01	2	20.01	100.23	11.67	30
	6	2437	20	17.96	2	19.96	99.08	11.64	30
	9	2452	20	18.16	2	20.16	103.75	11.87	30

6. Power Spectral Density

Name of Test	Power Spectral Density
Base Standard	FCC 15.247(e)

Tested By: Rex Liao
Test Date: Mar. 06, 2008

Test Equipment: EC1365

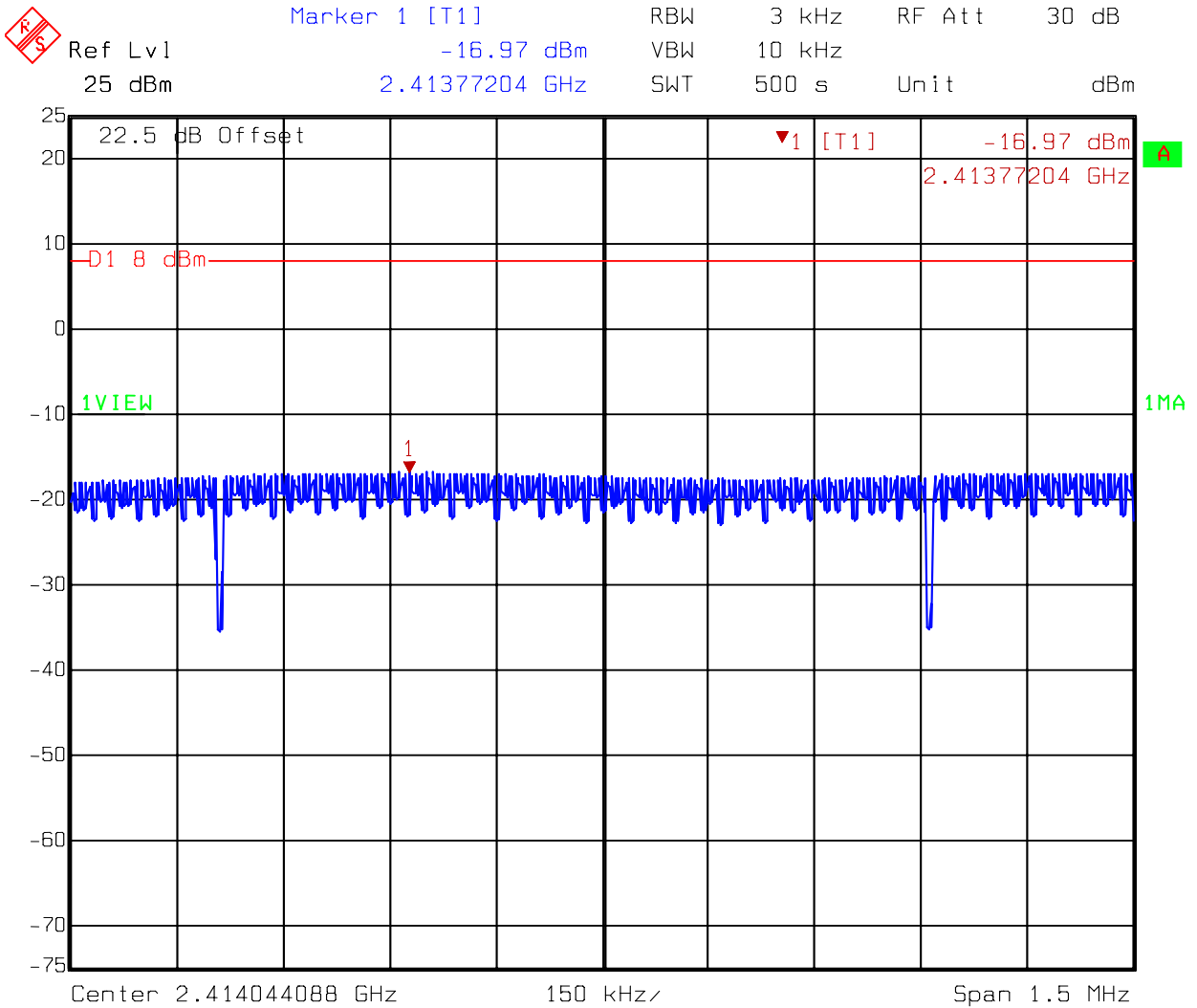
Test Result: Complies
Test Method: See Appendix C
Measurement Data: See Table & plots below

Note: The EUT was tested while in a continuous transmit mode. The EUT was tuned to a low, middle and high channel.

Table4. Power Spectral Density

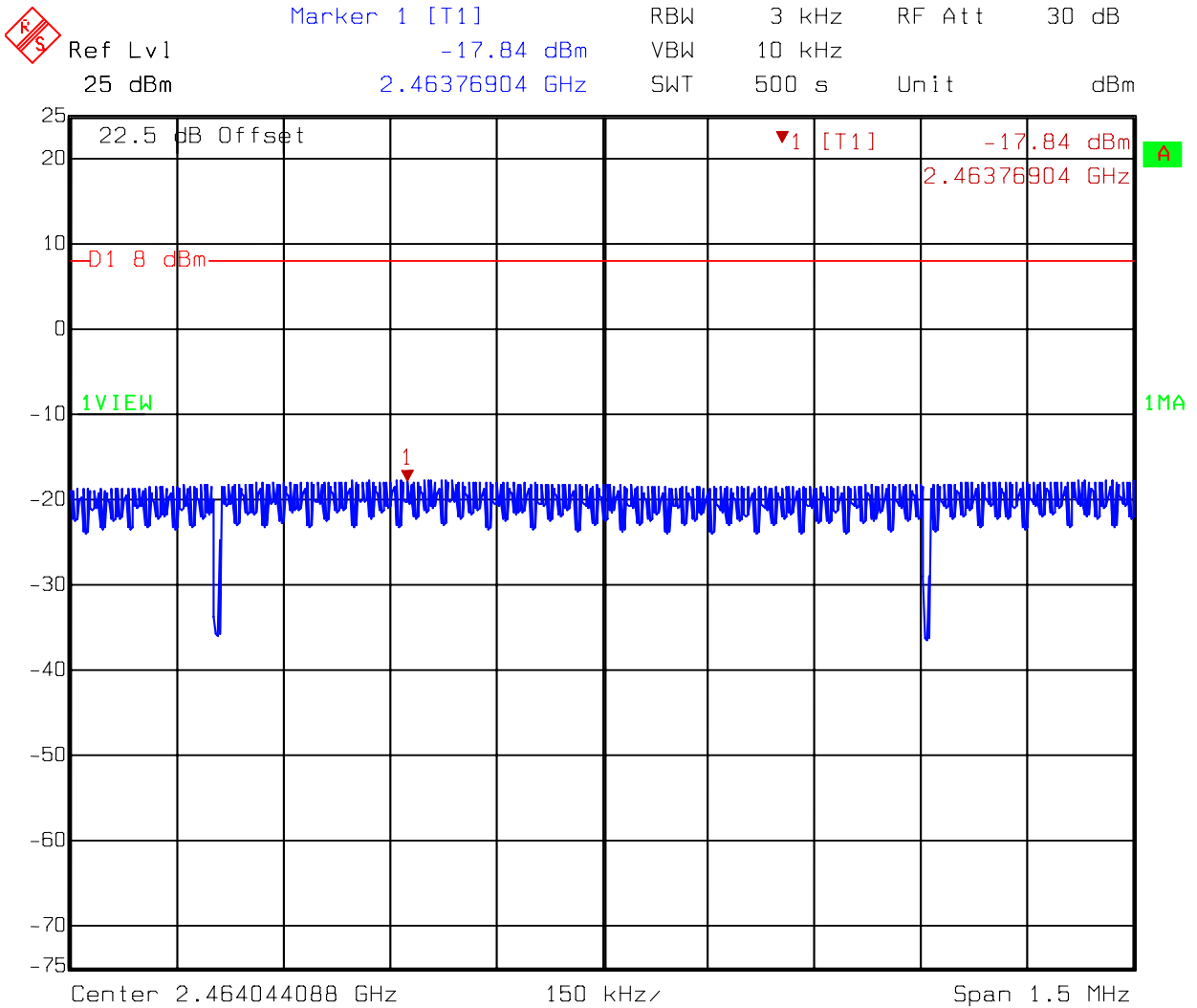
Mode	Channel	Frequency (MHz)	PSD (dBm)	Limit (dBm)
11b	1	2412	-16.97	8
	6	2437	-17.50	8
	11	2462	-17.84	8
11g	1	2412	-15.72	8
	6	2437	-16.27	8
	11	2462	-17.30	8
HT20	1	2412	-16.88	8
	6	2437	-17.76	8
	11	2462	-17.84	8
HT40	3	2422	-21.43	8
	6	2437	-19.69	8
	9	2452	-21.42	8

Power Spectral Density @ 802.11b mode channel 1



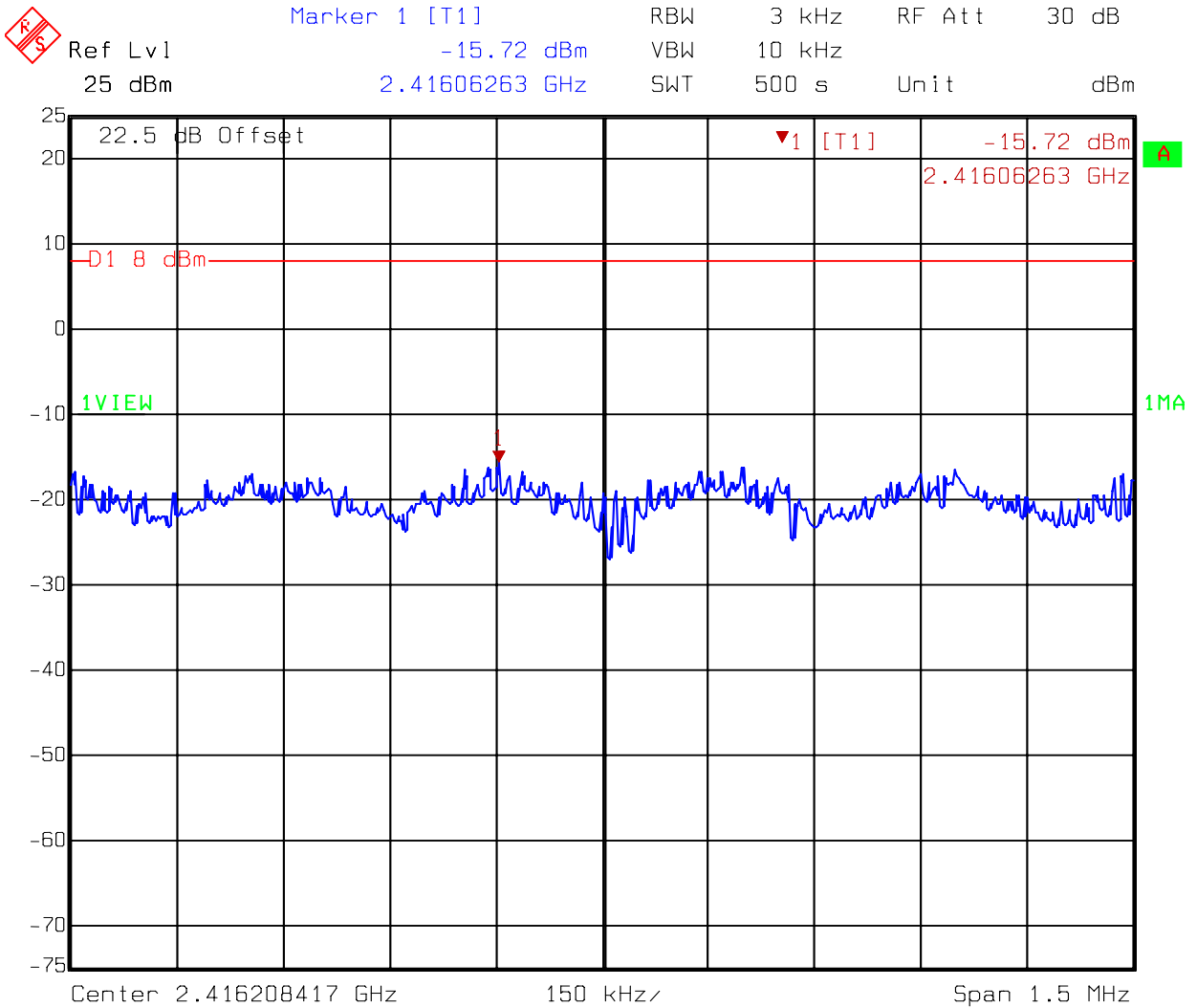
Title: Power density
Comment A: CH 1 at 802.11b mode
Date: 06.MAR.2008 10:15:28

Power Spectral Density @ 802.11b mode channel 11



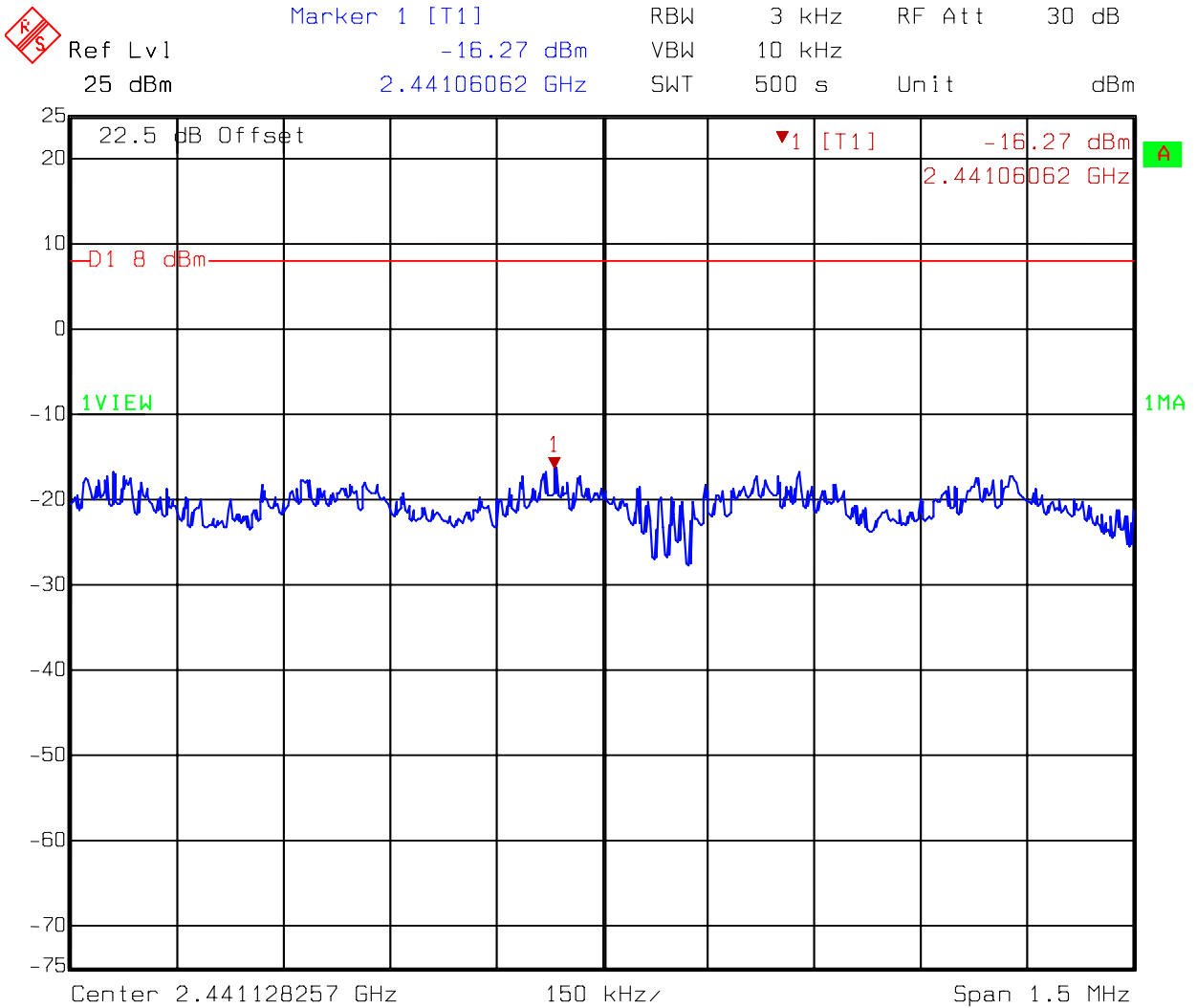
Title: Power density
 Comment A: CH 11 at 802.11b mode
 Date: 06.MAR.2008 10:21:40

Power Spectral Density @ 802.11g mode channel 1



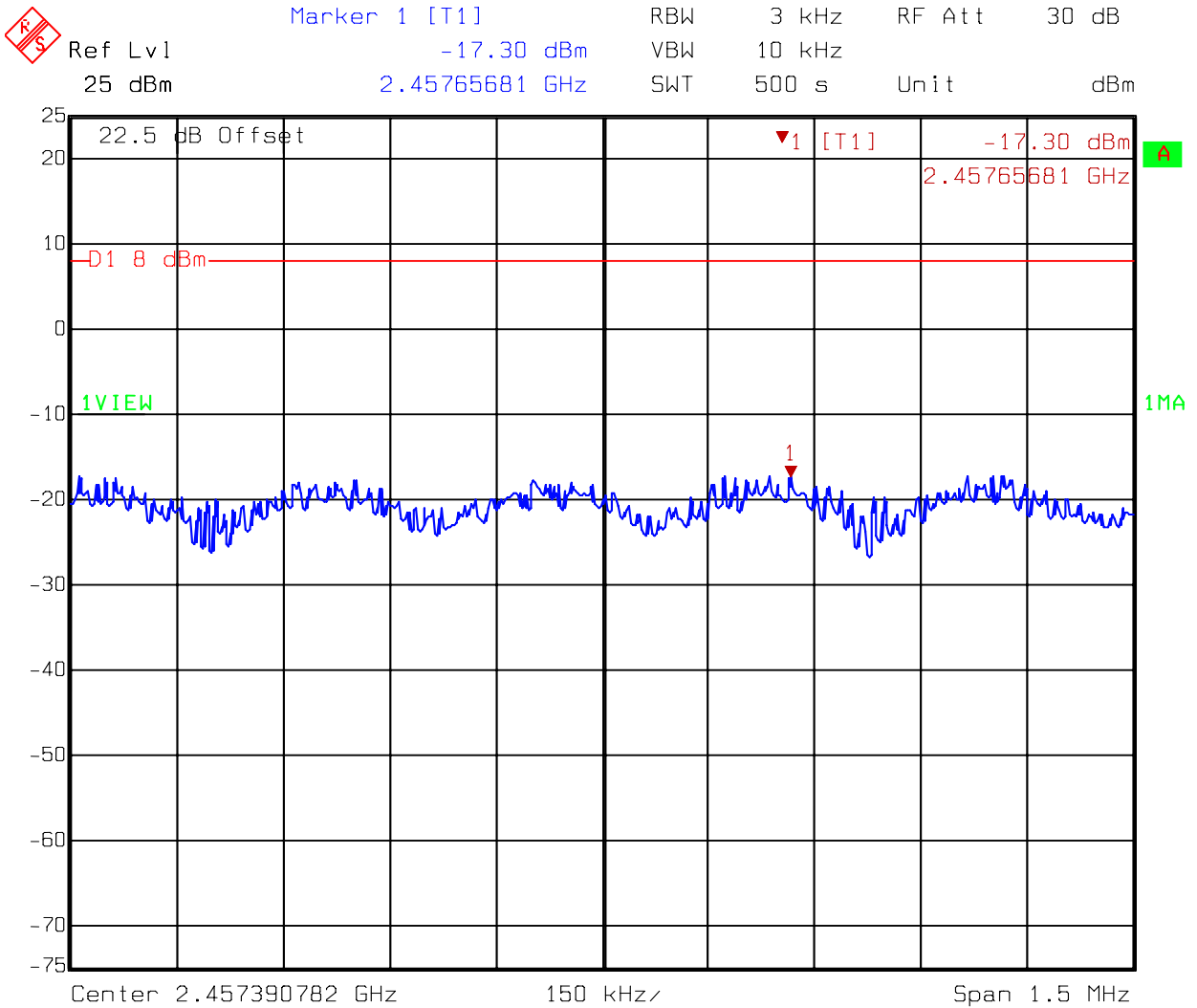
Title: Power density
 Comment A: CH 1 at 802.11g mode
 Date: 06.MAR.2008 10:25:03

Power Spectral Density @ 802.11g mode channel 6



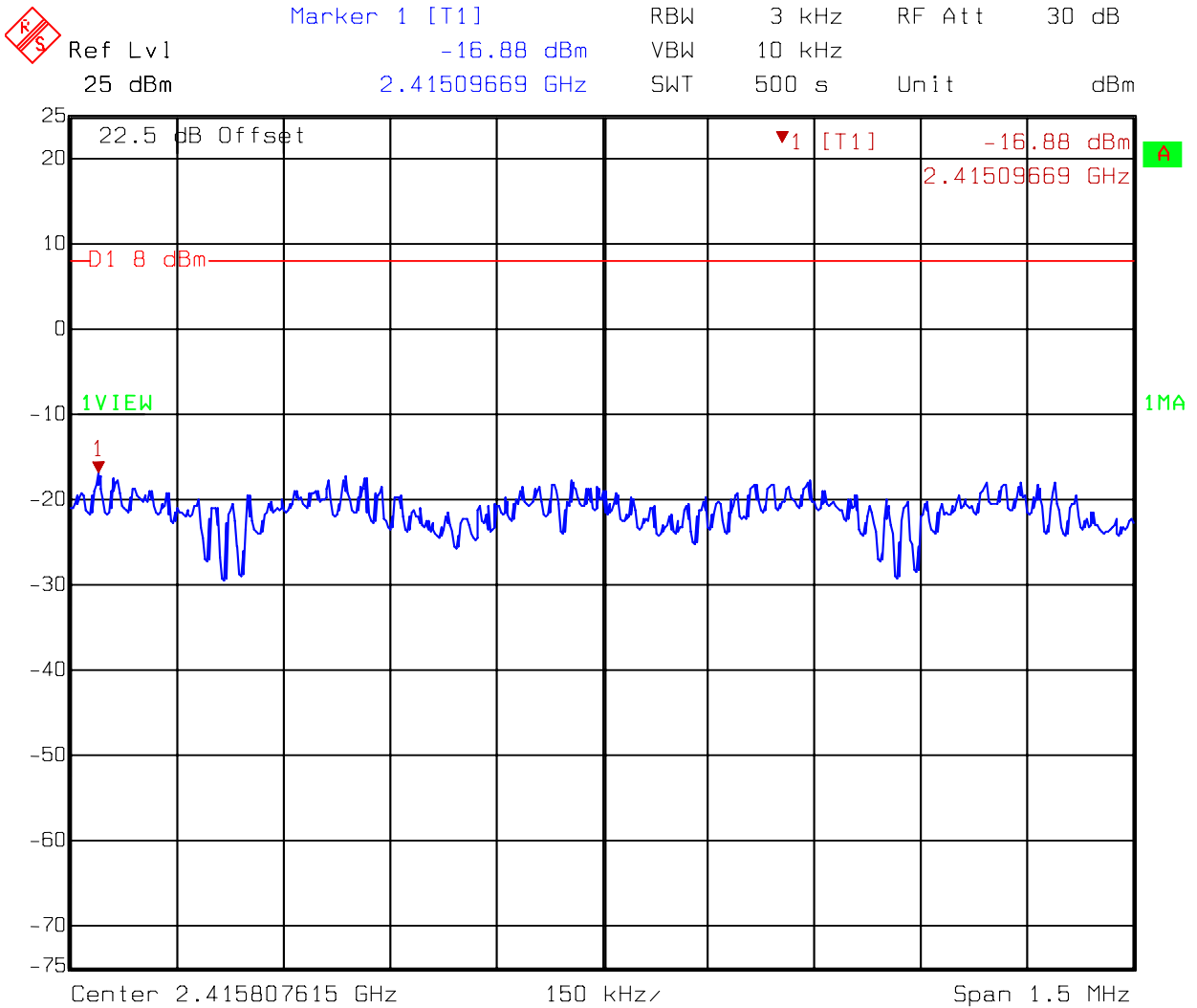
Title: Power density
 Comment A: CH 6 at 802.11g mode
 Date: 06.MAR.2008 10:27:53

Power Spectral Density @ 802.11g mode channel 11



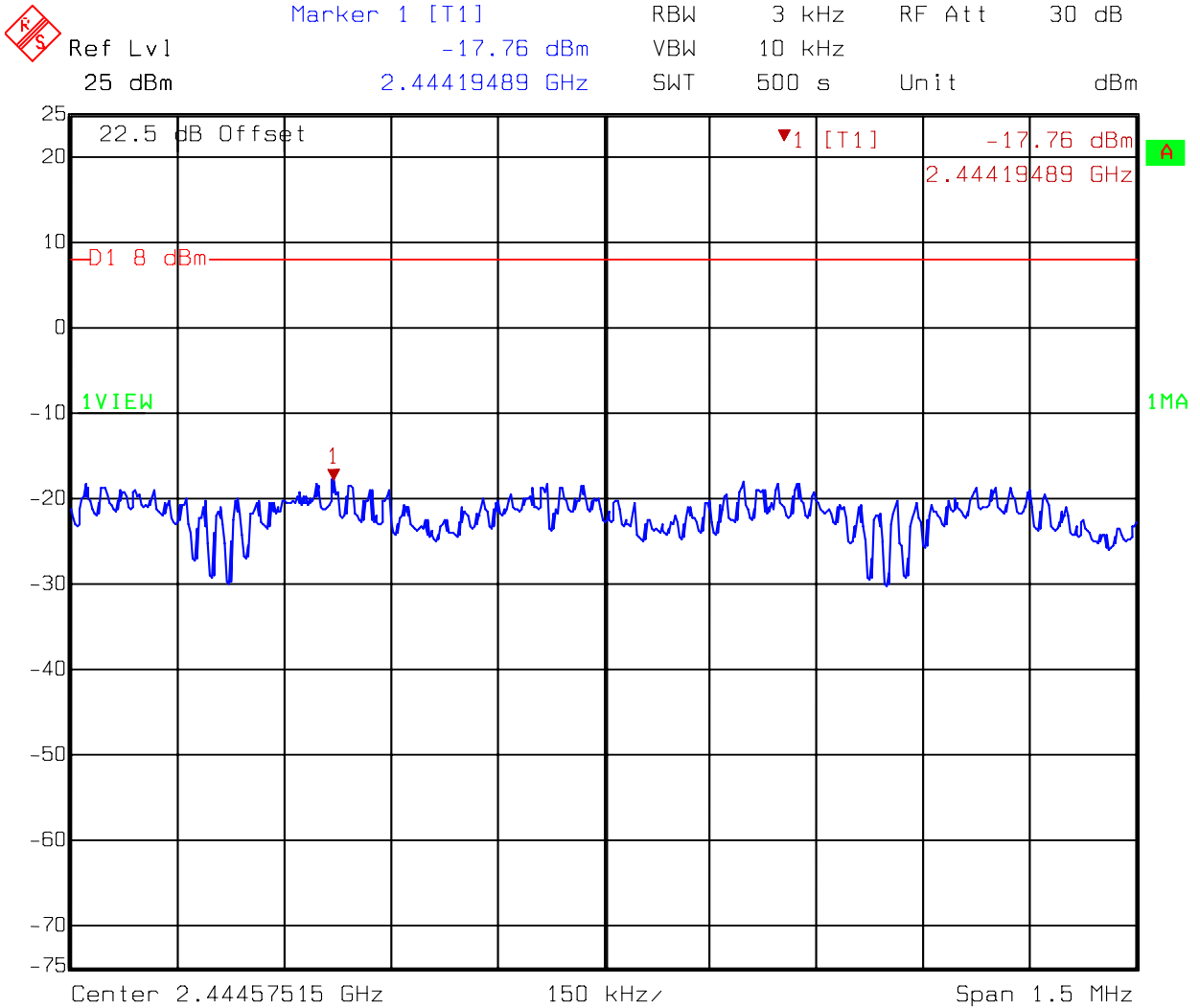
Title: Power density
Comment A: CH 11 at 802.11g mode
Date: 06.MAR.2008 10:30:39

Power Spectral Density @ draft 802.11n HT20 mode channel 1



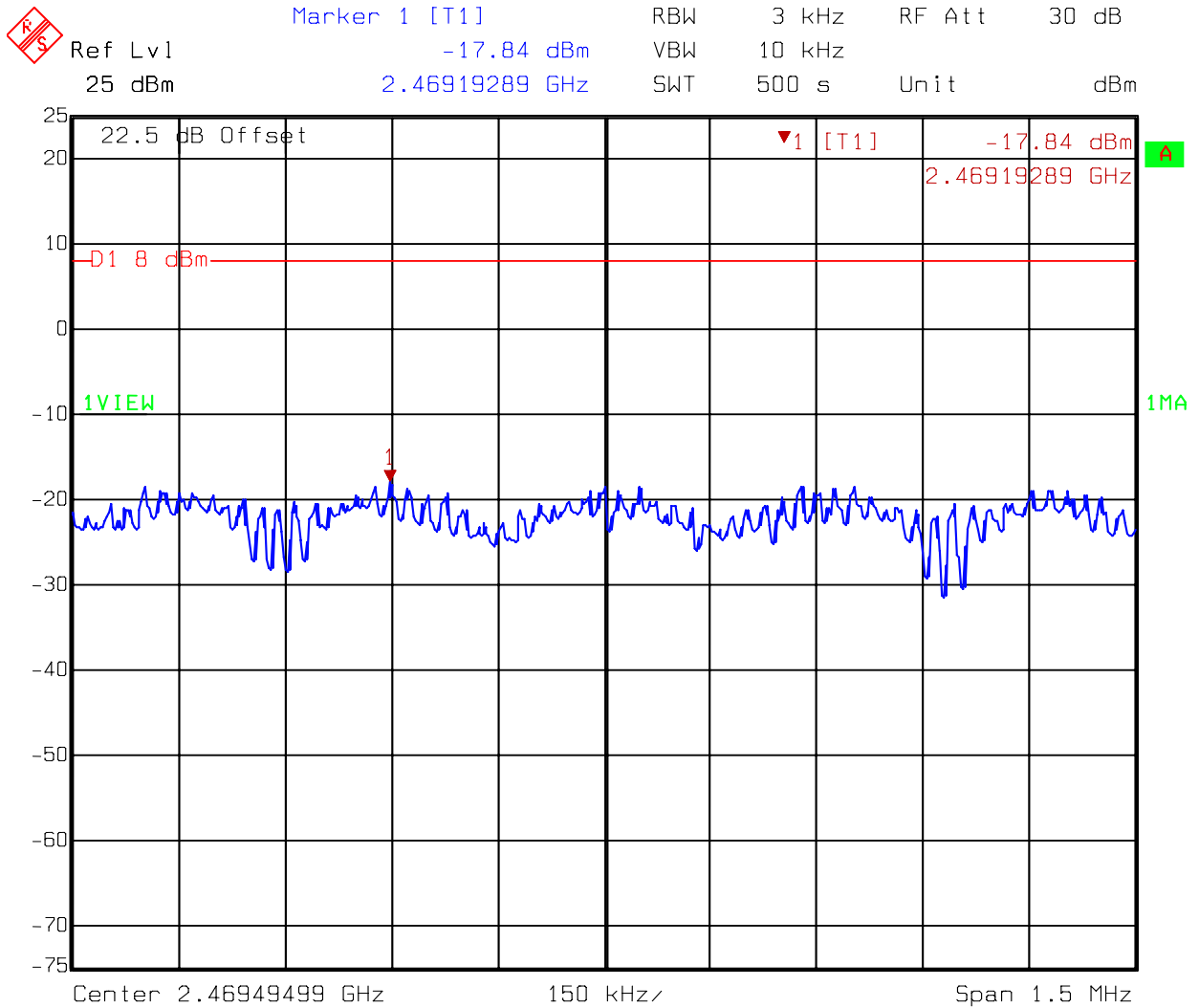
Title: Power density
 Comment A: CH 1 at 802.11n 20MHz mode
 Date: 06.MAR.2008 10:34:27

Power Spectral Density @ draft 802.11n HT20 mode channel 6



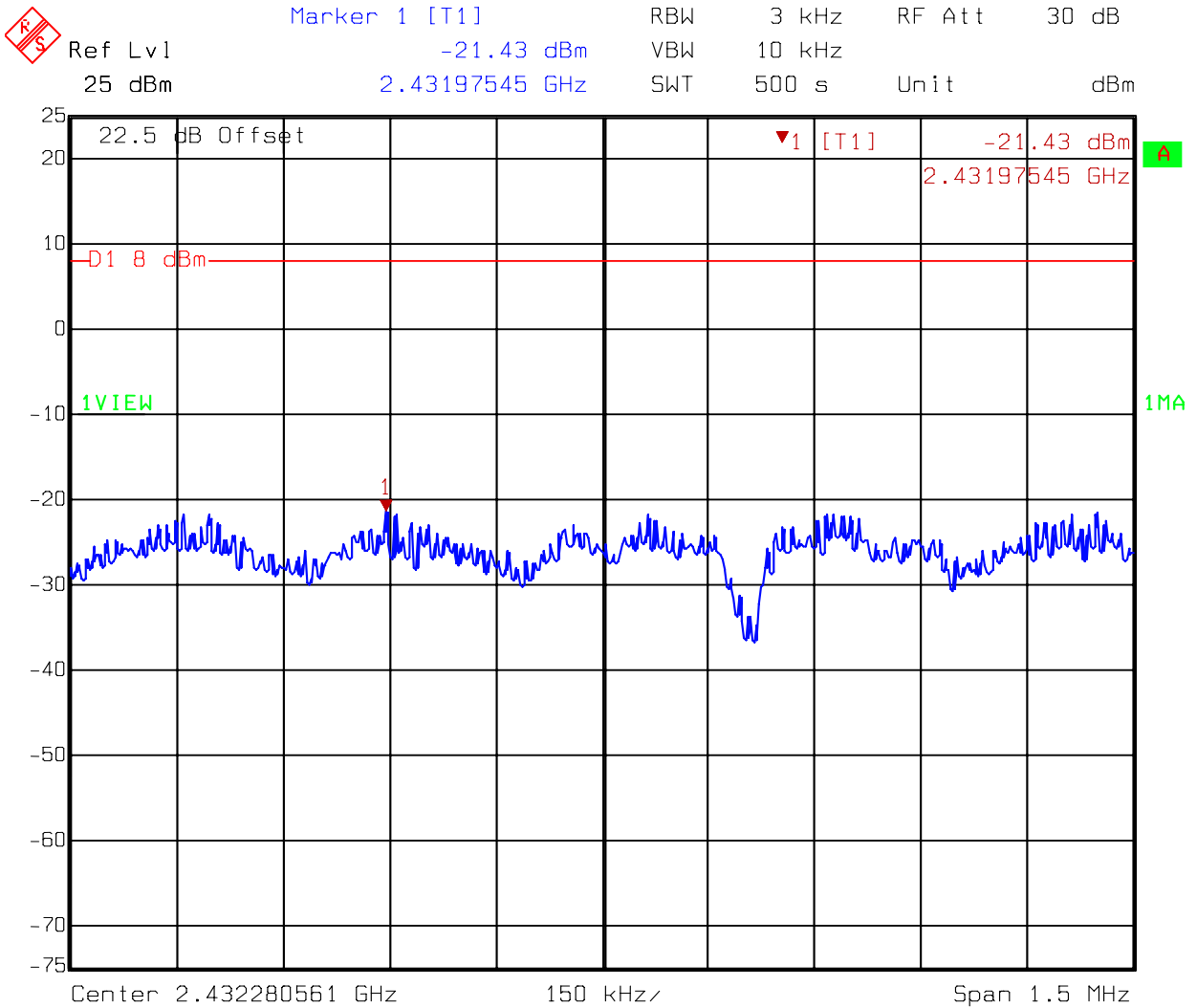
Title: Power density
 Comment A: CH 6 at 802.11n 20MHz mode
 Date: 06.MAR.2008 10:37:35

Power Spectral Density @ draft 802.11n HT20 mode channel 11



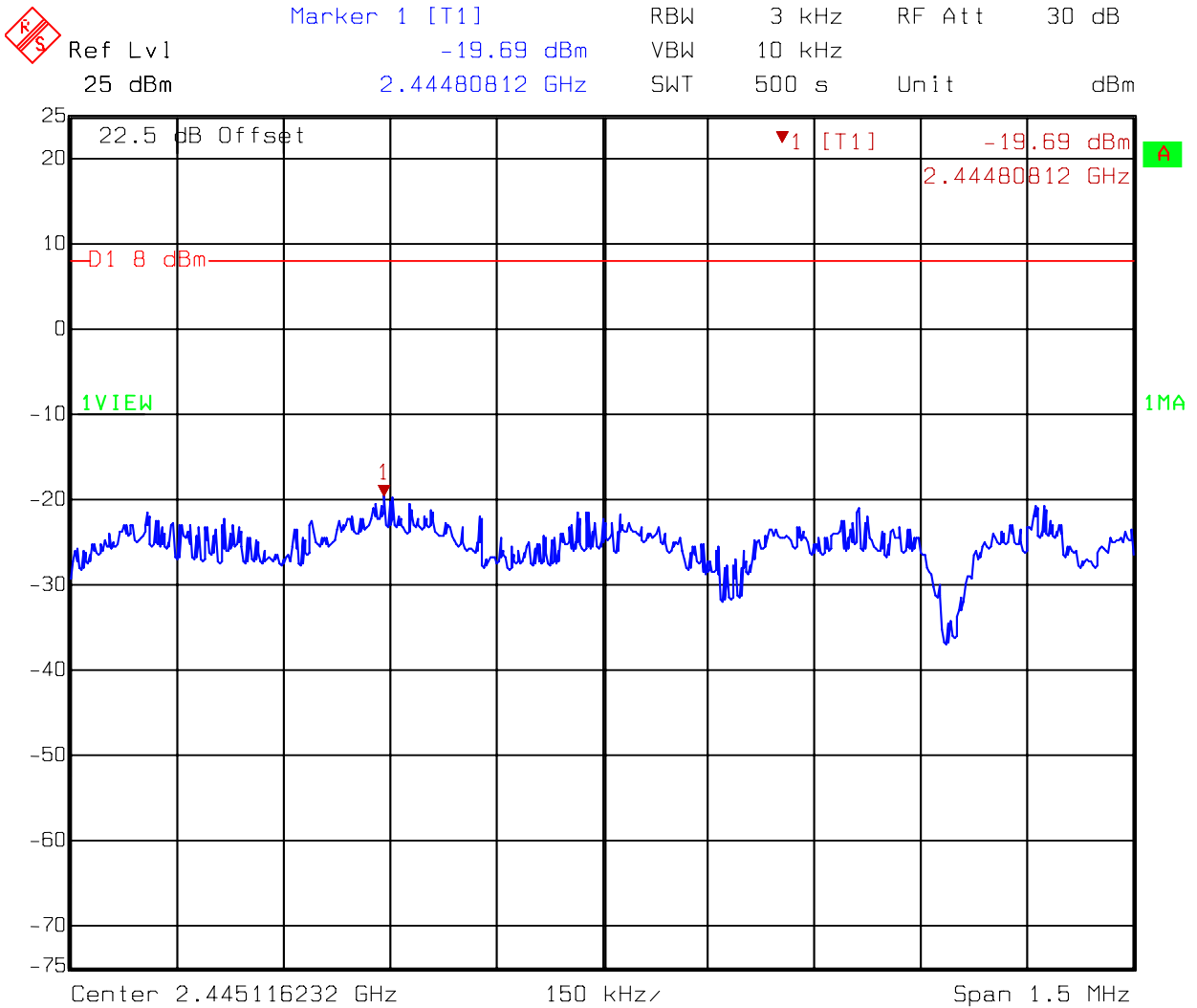
Title: Power density
 Comment A: CH 11 at 802.11n 20MHz mode
 Date: 06.MAR.2008 10:41:00

Power Spectral Density @ draft 802.11n HT40 mode channel 3



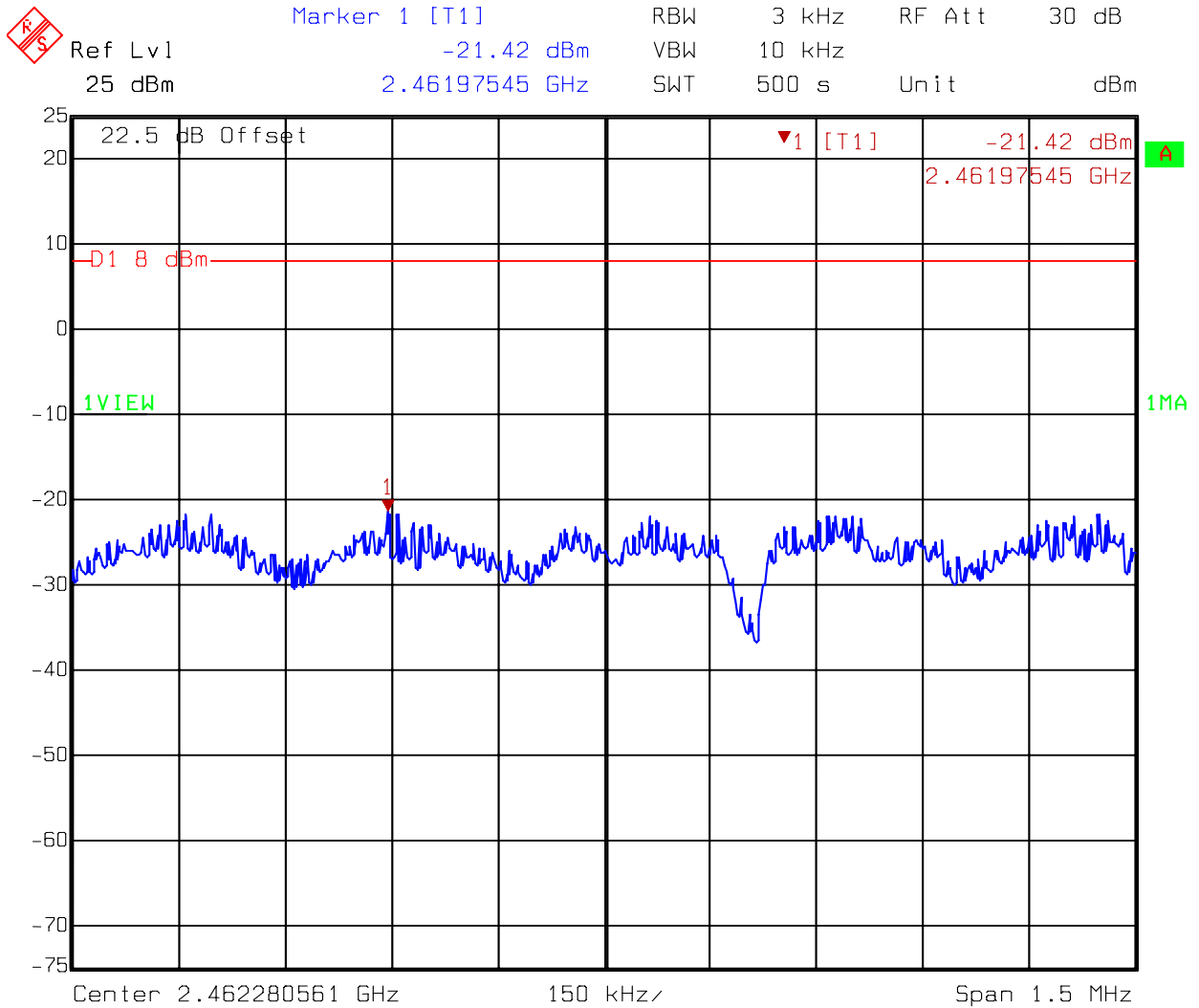
Title: Power density
 Comment A: CH 3 at 802.11n 40MHz mode
 Date: 06.MAR.2008 10:44:15

Power Spectral Density @ draft 802.11n HT40 mode channel 6



Title: Power density
 Comment A: CH 6 at 802.11n 40MHz mode
 Date: 06.MAR.2008 10:47:08

Power Spectral Density @ draft 802.11n HT40 mode channel 9



Title: Power density
 Comment A: CH 9 at 802.11n 40MHz mode
 Date: 06.MAR.2008 10:49:56

7. RF Antenna conducted Spurious

Name of Test	RF Antenna Conducted Spurious
Base Standard	FCC 15.247(d)

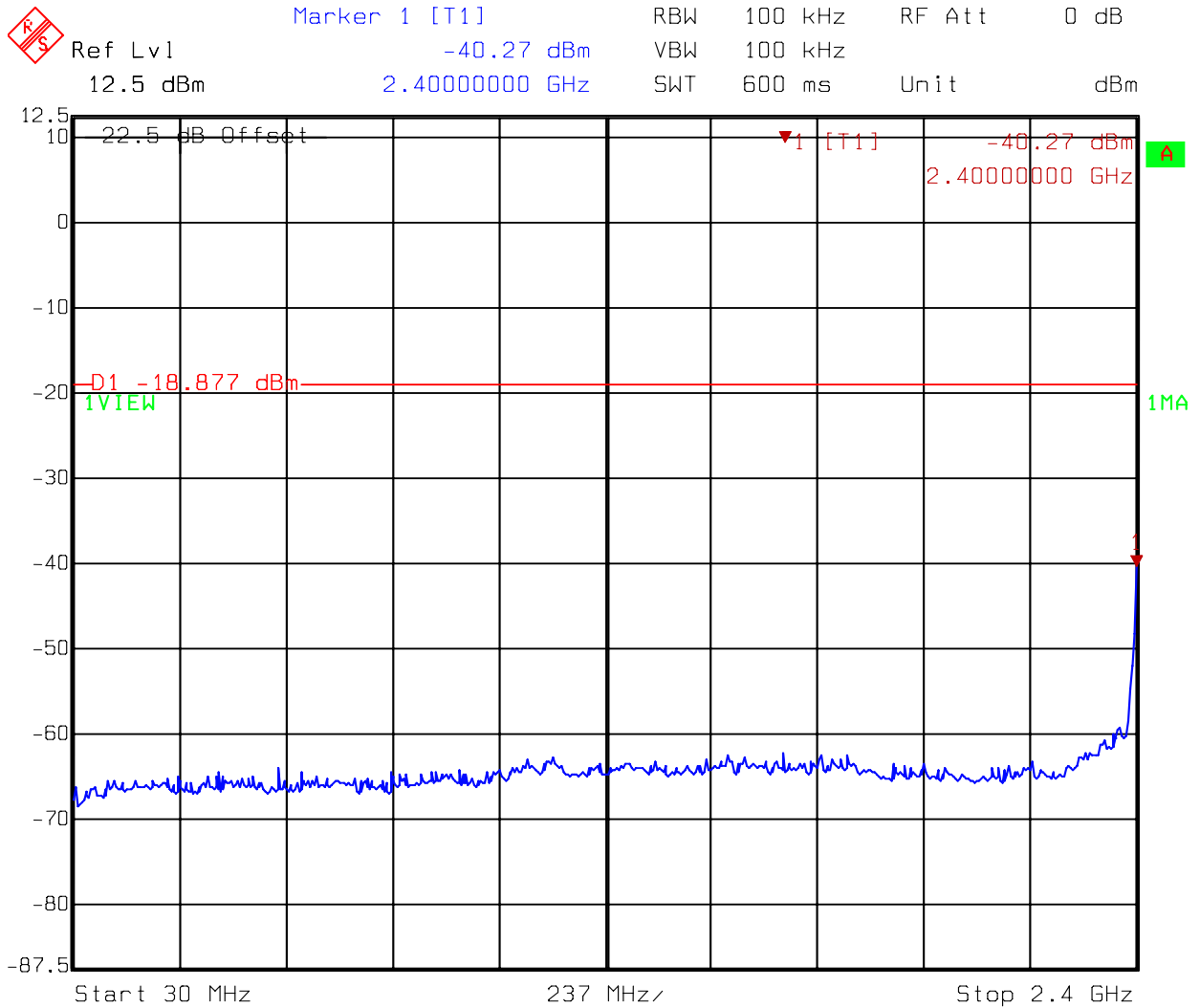
Tested By: Rex Liao
Test Date: Mar. 06, 2008

Test Equipment: EC1365

Test Result: Complies
Test Method: See Appendix D
Measurement Data: See plots below

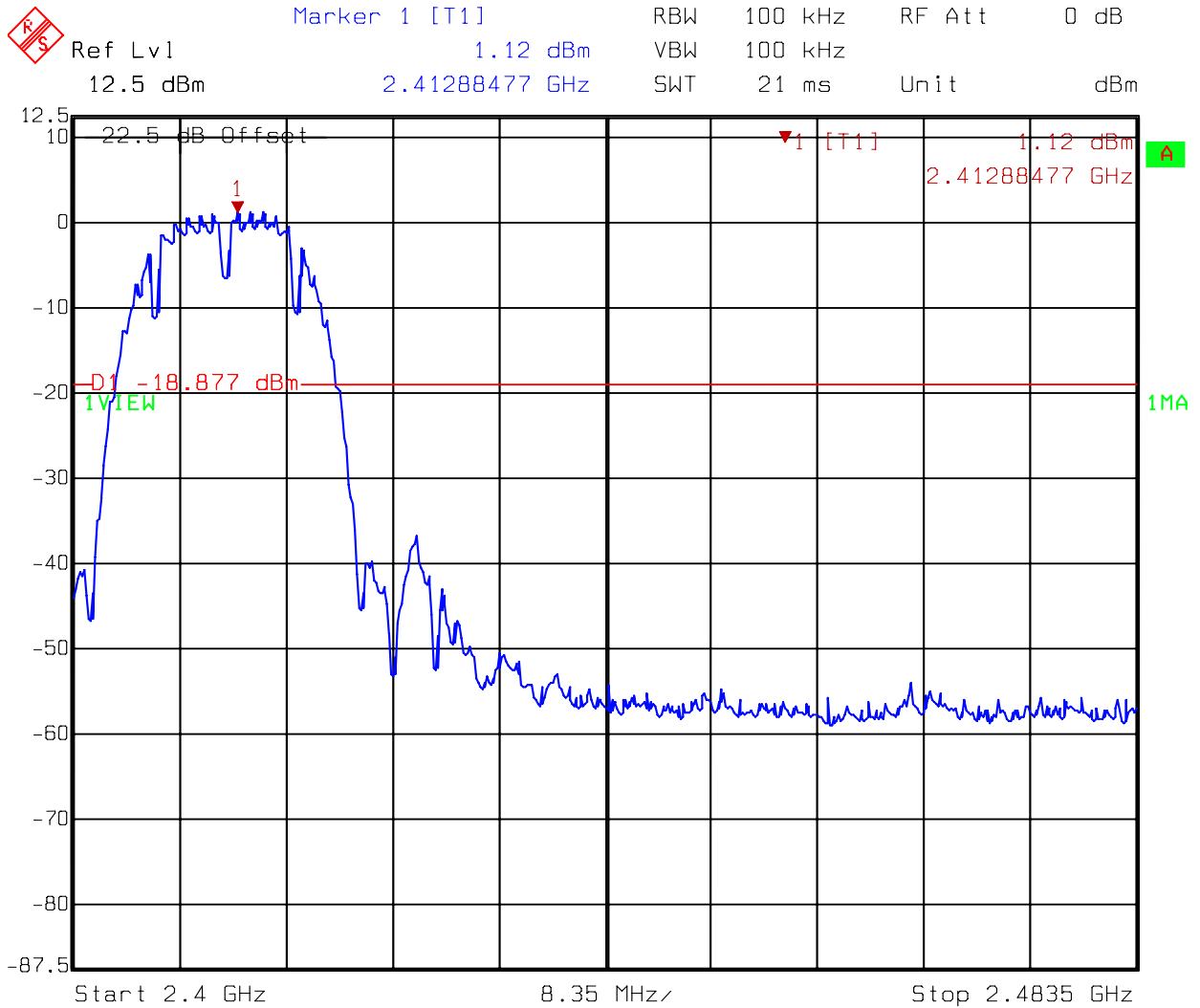
Note: (1) The EUT was tested while in a continuous transmit mode. The EUT was tuned to a low, middle and high channel.
(2) The EUT operating at 2.4GHz ISM band. Frequency Range scanned from 30MHz to 25GHz.

conducted spurious @ 802.11b mode channel 1 (1 of 3)



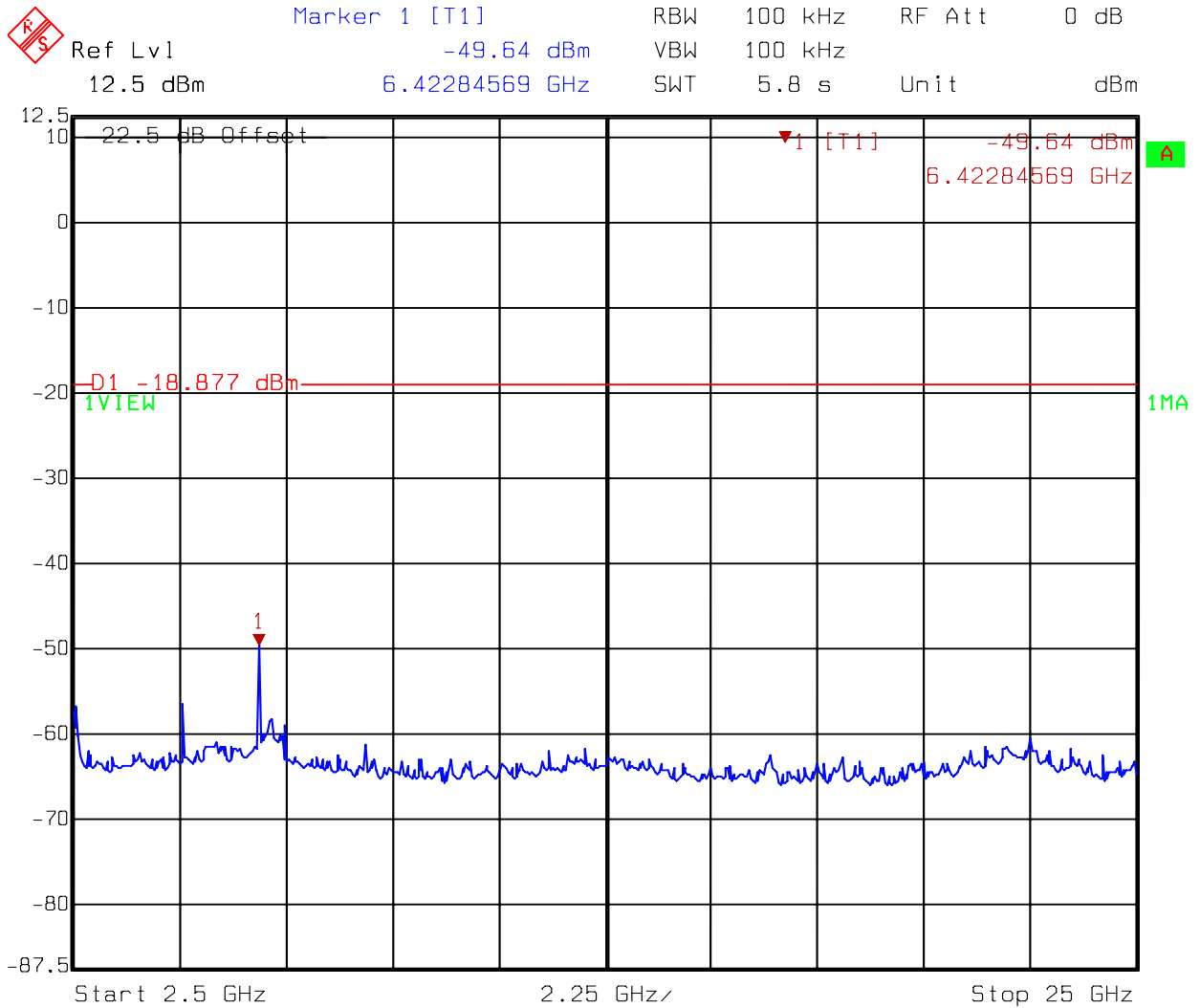
Title: Conductive-Spurious
Comment A: CH 1 at 802.11b mode 30MHz~2400MHz
Date: 06.MAR.2008 10:16:10

conducted spurious @ 802.11b mode channel 1 (2 of 3)



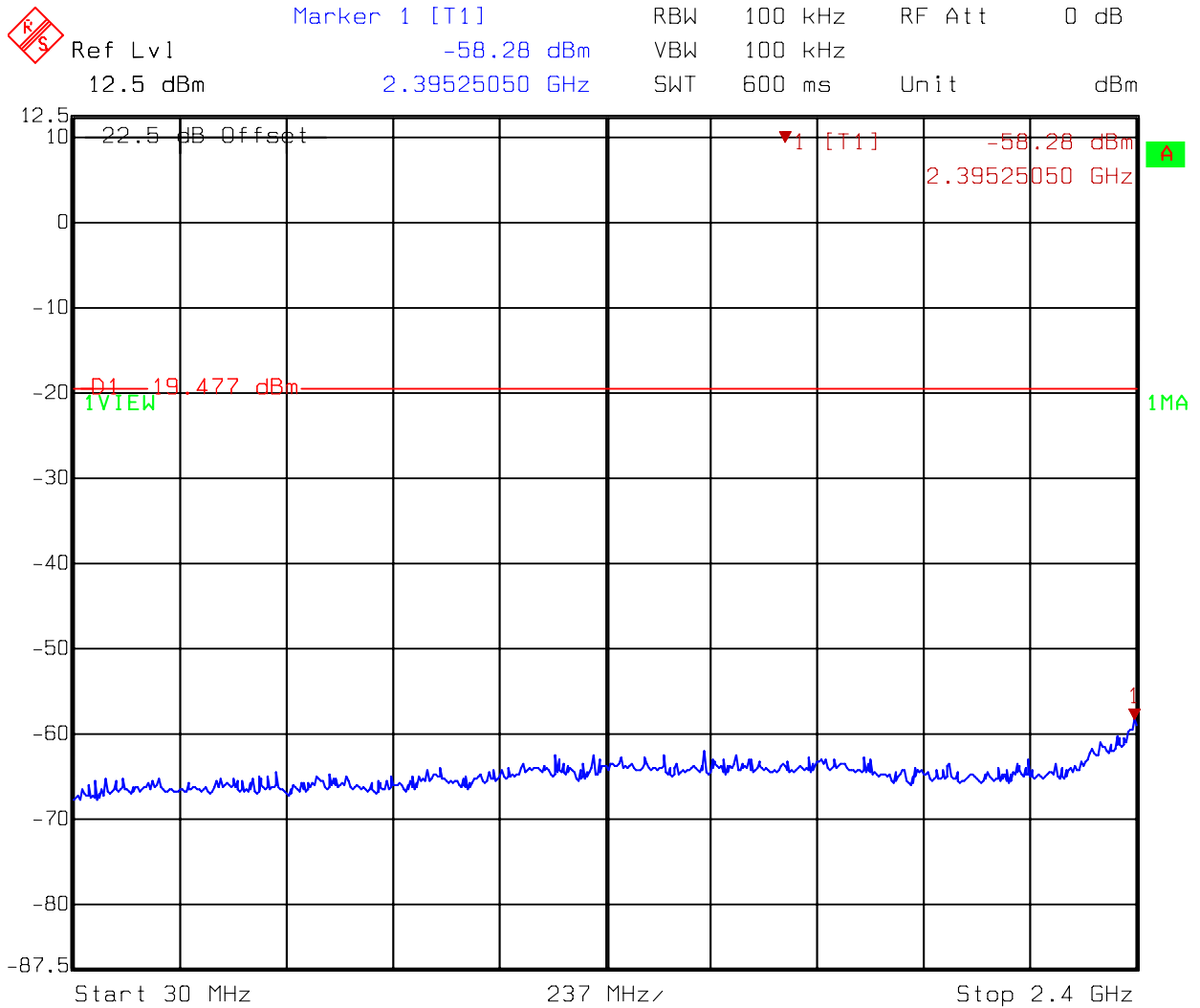
Title: Conductive-Spurious
Comment A: CH 1 at 802.11b mode 2400MHz~2483.5MHz
Date: 06.MAR.2008 10:15:48

conducted spurious @ 802.11b mode channel 1 (3 of 3)



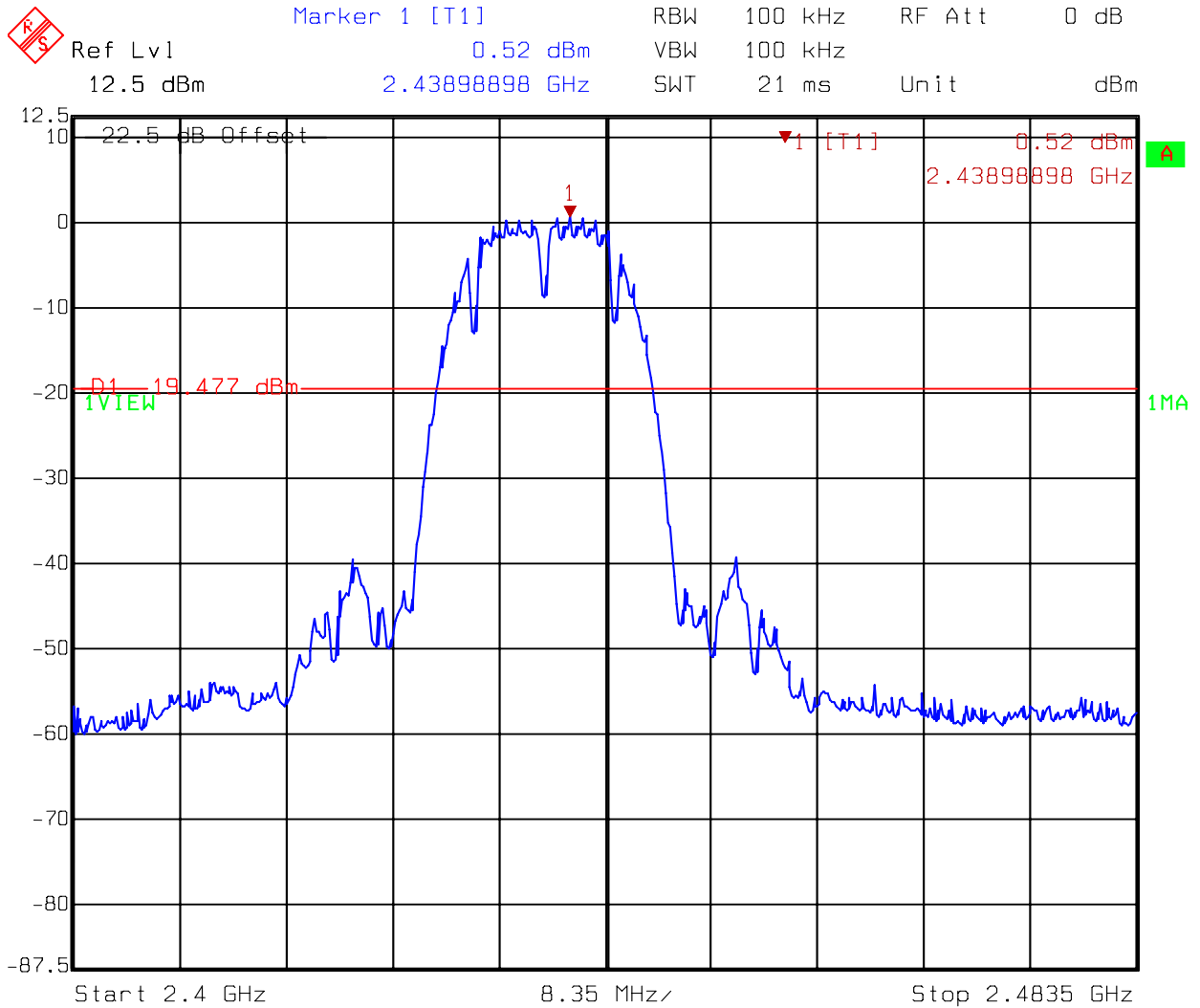
Title: Conductive-Spurious
Comment A: CH 1 at 802.11b mode 2483.5MHz~25GHz
Date: 06.MAR.2008 10:16:37

conducted spurious @ 802.11b mode channel 6 (1 of 3)



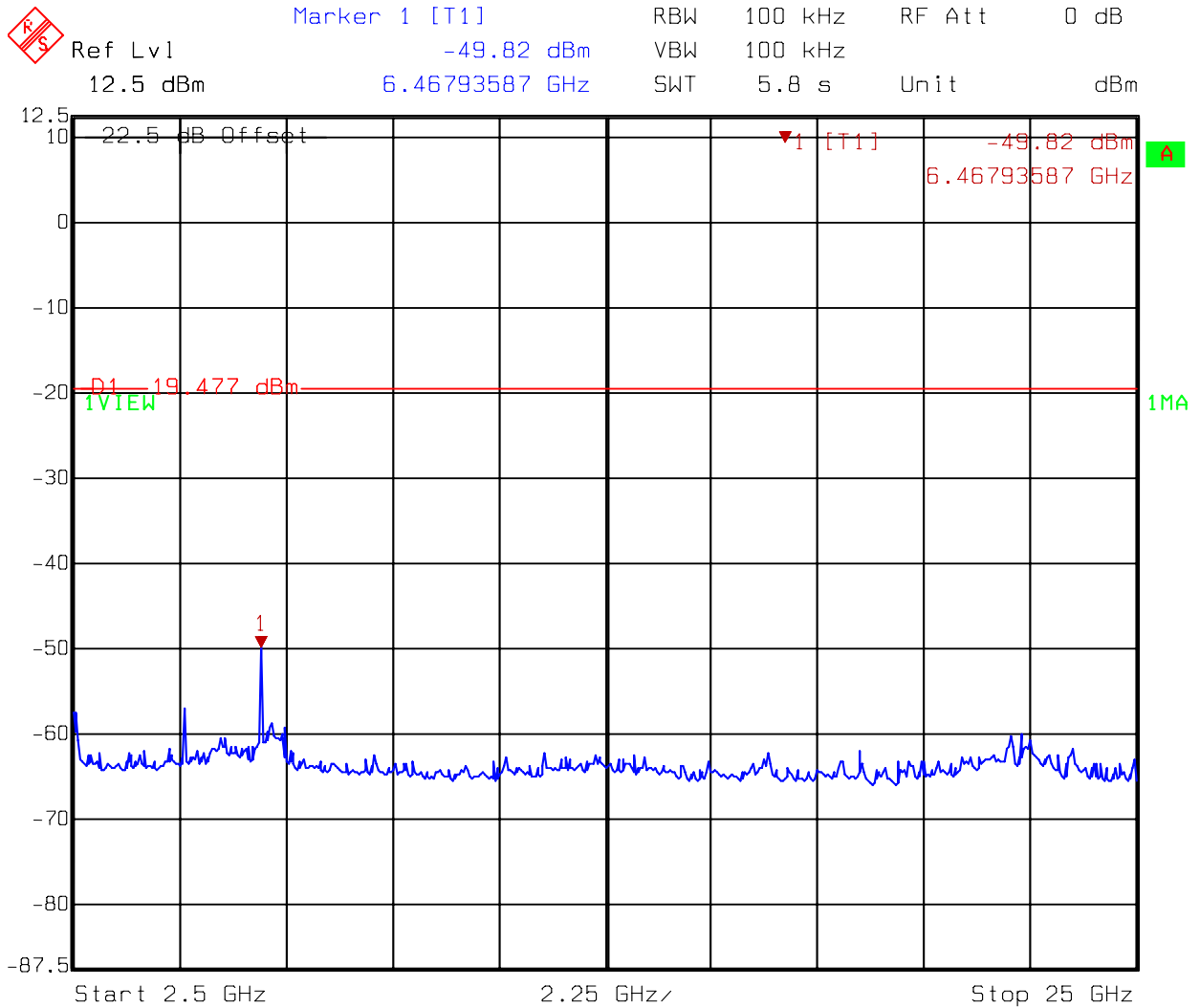
Title: Conductive-Spurious
Comment A: CH 6 at 802.11b mode 30MHz~2400MHz
Date: 06.MAR.2008 10:19:40

conducted spurious @ 802.11b mode channel 6 (2 of 3)



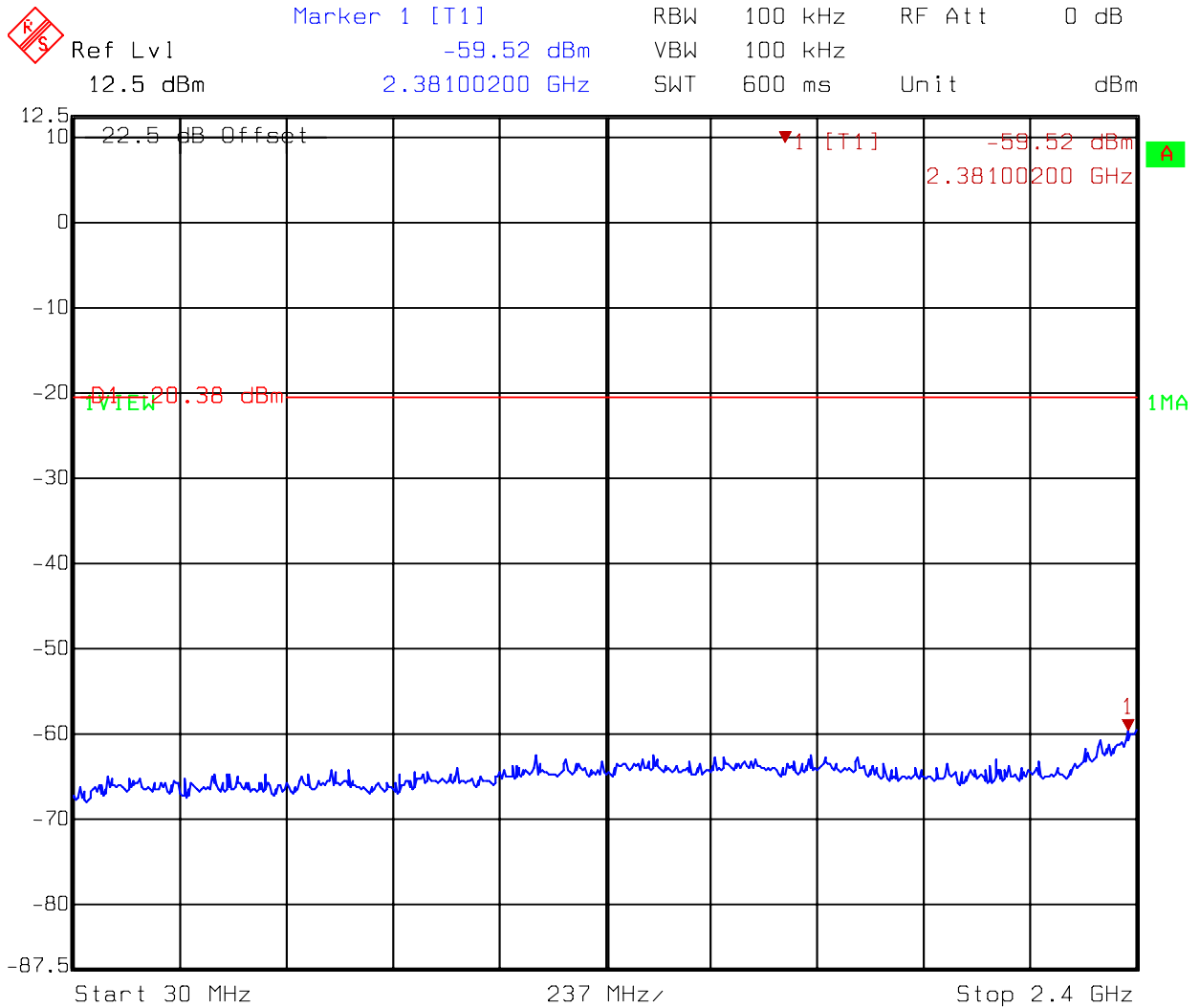
Title: Conductive-Spurious
Comment A: CH 6 at 802.11b mode 2400MHz~2483.5MHz
Date: 06.MAR.2008 10:19:19

conducted spurious @ 802.11b mode channel 6 (3 of 3)



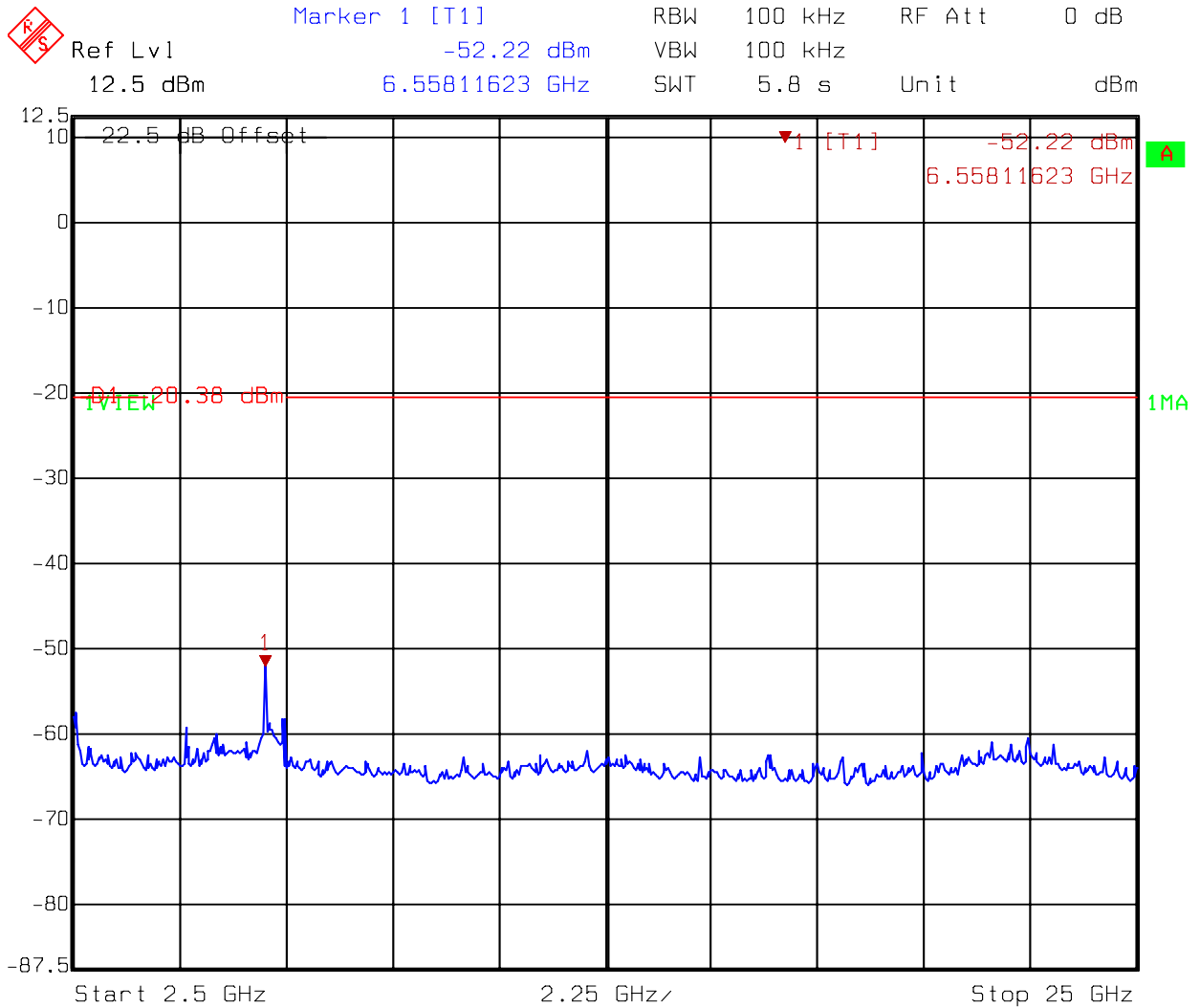
Title: Conductive-Spurious
 Comment A: CH 6 at 802.11b mode 2483.5MHz~25GHz
 Date: 06.MAR.2008 10:20:07

conducted spurious @ 802.11b mode channel 11 (1 of 3)



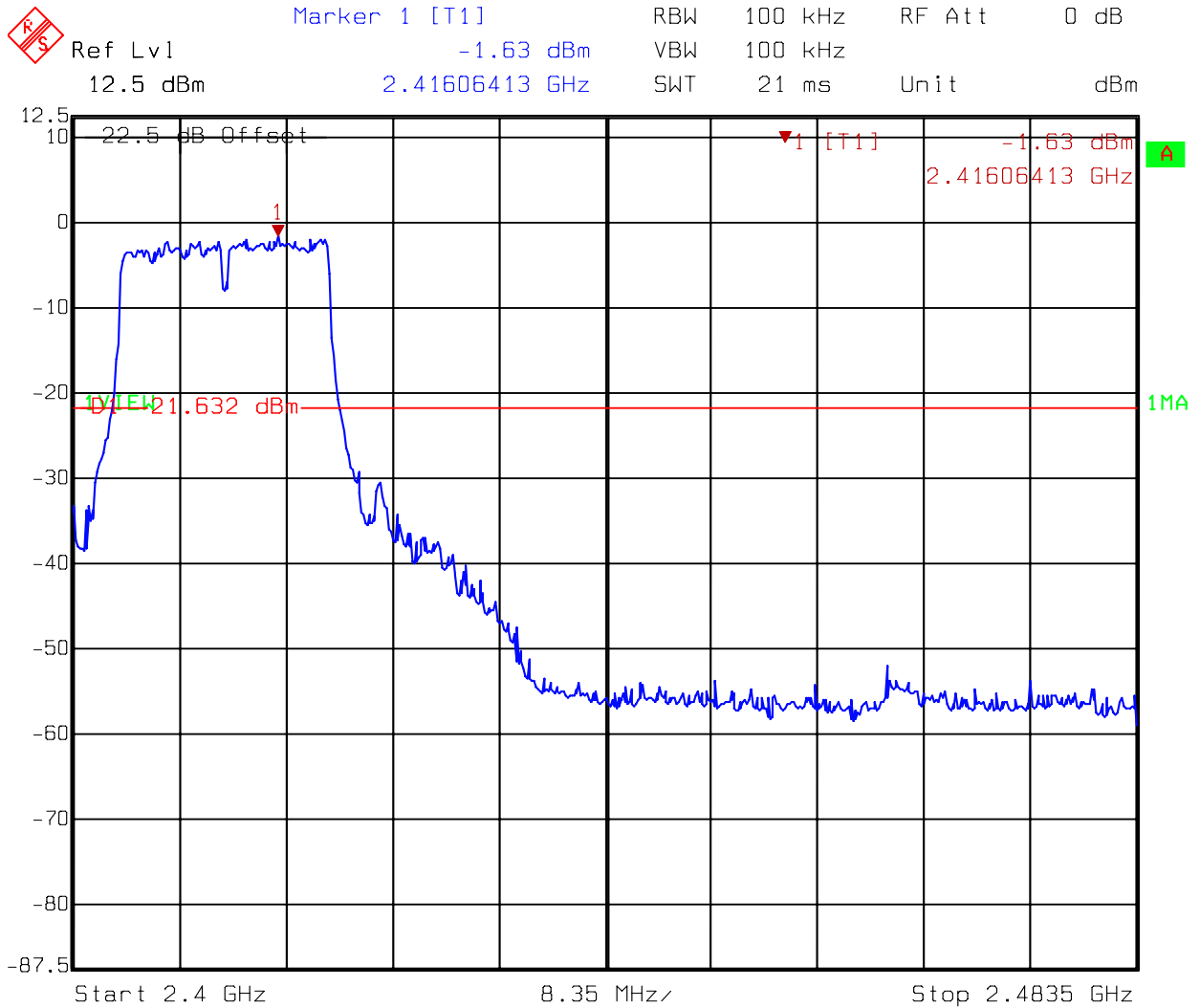
Title: Conductive-Spurious
Comment A: CH 11 at 802.11b mode 30MHz~2400MHz
Date: 06.MAR.2008 10:22:22

conducted spurious @ 802.11b mode channel 11 (3 of 3)



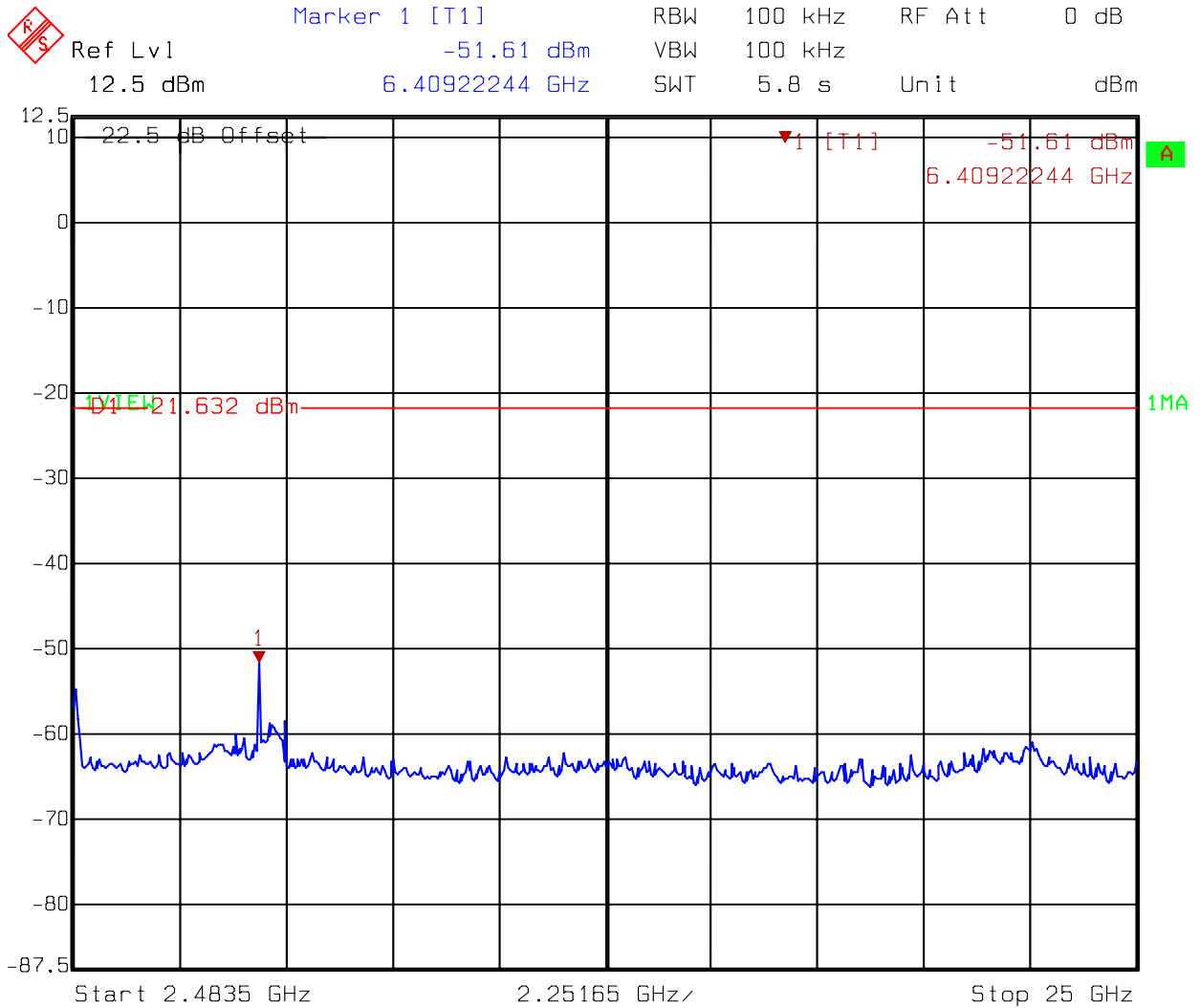
Title: Conductive-Spurious
 Comment A: CH 11 at 802.11b mode 2483.5MHz~25GHz
 Date: 06.MAR.2008 10:22:49

conducted spurious @ 802.11g mode channel 1 (2 of 3)



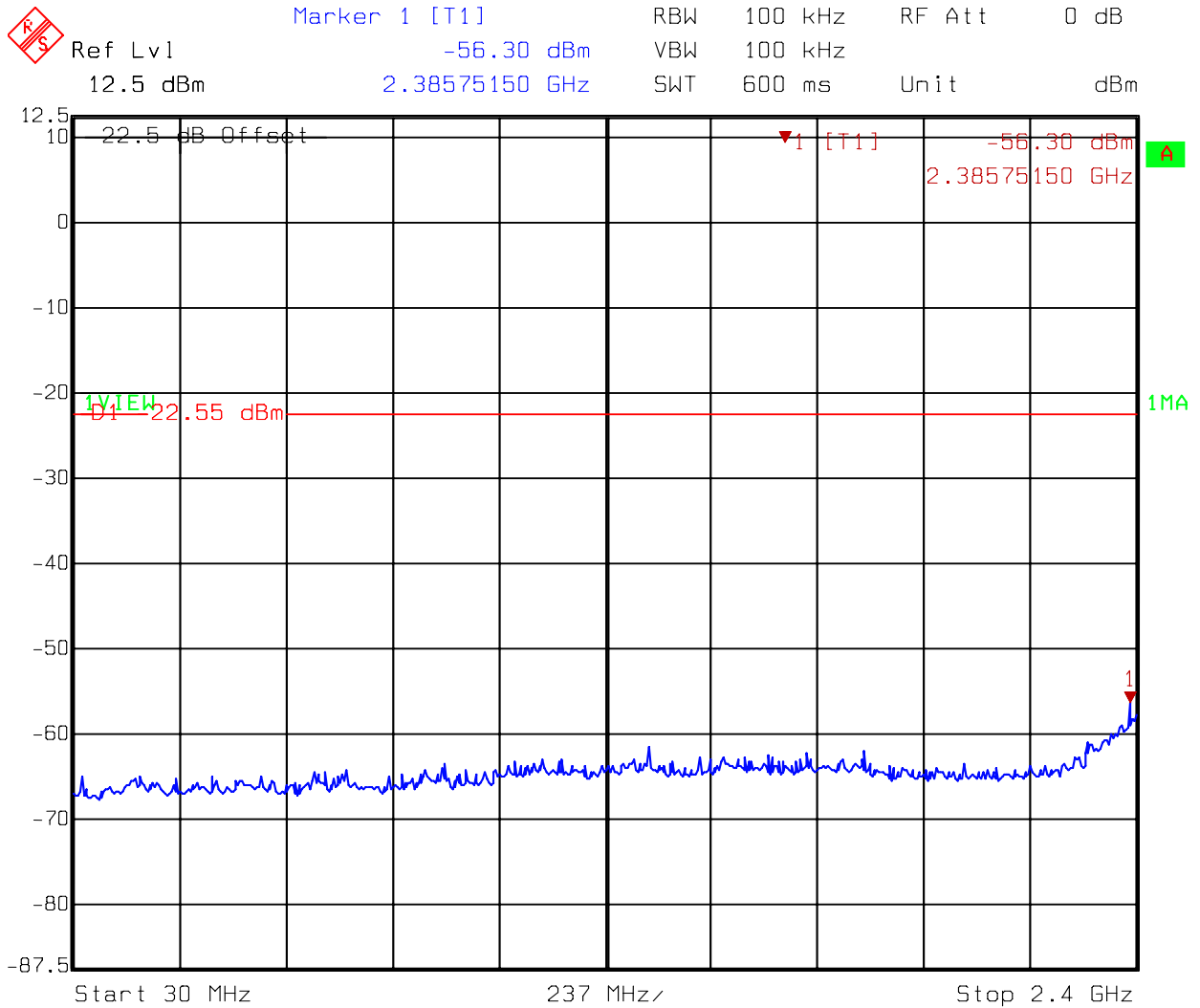
Title: Conductive-Spurious
Comment A: CH 1 at 802.11g mode 2400MHz~2483.5MHz
Date: 06.MAR.2008 10:25:23

conducted spurious @ 802.11g mode channel 1 (3 of 3)



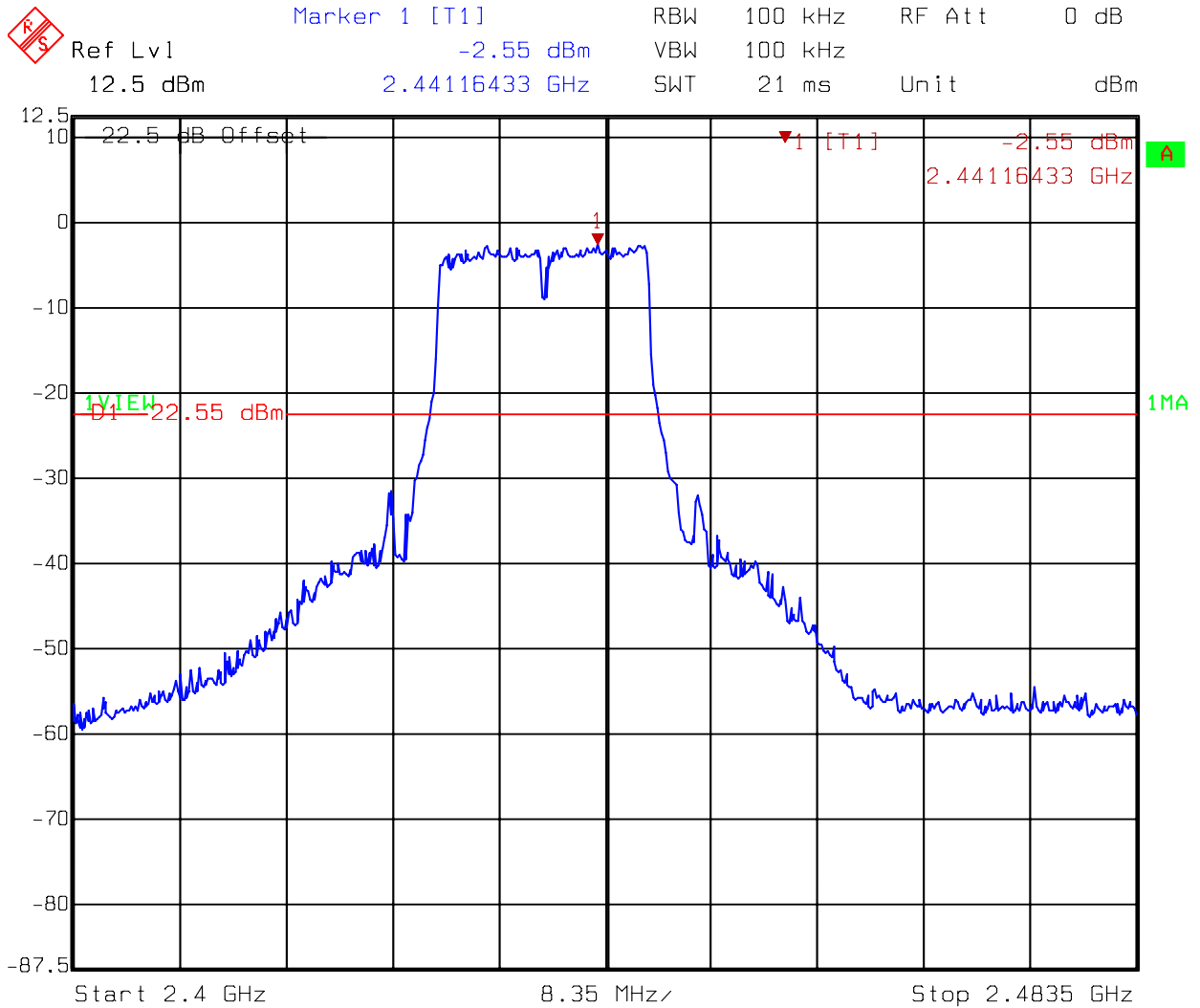
Title: Conductive-Spurious
 Comment A: CH 1 at 802.11g mode 2483.5MHz~25000MHz
 Date: 06.MAR.2008 10:26:11

conducted spurious @ 802.11g mode channel 6 (1 of 3)



Title: Conductive-Spurious
 Comment A: CH 6 at 802.11g mode 30MHz~2400MHz
 Date: 06.MAR.2008 10:28:34

conducted spurious @ 802.11g mode channel 6 (2 of 3)



Title: Conductive-Spurious
Comment A: CH 6 at 802.11g mode 2400MHz~2483.5MHz
Date: 06.MAR.2008 10:28:13