

EMC TEST REPORT

Report No. : TS08100102-EME
Model No. : H3C DNMA-83
Issued Date : Dec. 16, 2008

Applicant: 3Com Corporation
350 Campus Drive Marlborough, MA 01752-3064,
U.S.A.

Test Method/ Standard: CFR 47 FCC Part 15.247 & ANSI C63.4 2003

Test By: Intertek Testing Services Taiwan Ltd.
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1. Summary of Test Data

Test/Requirement Description	Applicable Rule	Result
Minimum 6 dB 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:	3Com Corporation
Product:	Wireless mini PCI Card
Model No.:	H3C DNMA-83
FCC ID.:	O9C-DNMA83
Frequency Range:	1. 2412 ~ 2462 MHz for 802.11b/g/n HT20 2. 2422 ~ 2452 MHz for 802.11n HT40 3. 5745 ~ 5825 MHz for 802.11a/n HT20 4. 5755 ~ 5795 MHz for 802.11n HT40
Channel Number:	1. 11 Channels for 2412 ~ 2462 MHz 2. 7 Channels for 2422 ~ 2452 MHz 3. 5 Channels for 5745 ~ 5825 MHz 4. 2 Channels for 5755 ~ 5795 MHz
Rated Power:	DC 3.3 V from Notebook PC
Power Cord:	N/A
Data Cable:	N/A
Sample Received:	Sep. 26, 2008
Test Date(s):	Oct. 23 , 2008 ~ Dec. 28, 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 a Wireless mini PCI Card, it supports three transmitted and three received MIMO functions, 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 antenna is affixed to the EUT using a unique connector, which allows for replacement of a broken antenna, but DOES NOT use a standard antenna jack or electrical connector.

For 2.4GHz Band

Ant.	Model number	Antenna Type	Connector Type	Gain (dBi)
1	C5060-510002-A	Omni Antenna Kit	RSMA female	2
2	3CWE591	Omni Antenna	N Female	6
3	3CWE596	Panel Antenna	N Female	18
4	3CWE598	Panel Antenna	N Female	8

For 5GHz Band

Ant.	Model number	Antenna Type	Connector Type	Gain (dBi)
1	C5060-510002-A	Omni Antenna Kit	RSMA female	3
2	3CWE591	Omni Antenna	N Female	8
3	3CWE596	Panel Antenna	N Female	20
4	3CWE598	Panel Antenna	N Female	10

Antenna Cable description

For 2.4GHz Band

Ant. Cable	Model number	Connector Type	Cable Length (m)	Gain (dBi)
A	3CWE580	SMA (male) to N type (male)	1.83	-2
B	3CWE581	SMA (male) to N type (male)	6.1	-2
C	3CWE582	SMA (male) to N type (male)	15.2	-5

For 5GHz Band

Ant. Cable	Model number	Connector Type	Cable Length (m)	Gain (dBi)
A	3CWE580	SMA (male) to N type (male)	1.83	-4
B	3CWE581	SMA (male) to N type (male)	6.1	-4
C	3CWE582	SMA (male) to N type (male)	15.2	-10

Operation mode

The EUT was supplied with DC 3.3 V from Notebook PC and it was run in TX mode that was controlled by “ART” program.

The EUT was transmitted continuously during the test.

With individual verifying, the maximum output power was found out 1Mbps data rate for 802.11b mode, 6Mbps data rate for 802.11g/a mode, 6.5Mbps data rate for 802.11n 20HT mode and 13.5Mbps data rate for 802.11n 40HT mode. The final tests were executed under these conditions and recorded in this report individually.

802.11b ch6 Chain A		802.11g ch6 Chain A		802.11n HT20 ch6 Chain A	
Data rate (Mbps)	PK(dBm)	Data rate (Mbps)	PK(dBm)	Data rate (Mbps)	PK(dBm)
1	20.04	6	23.62	6.5	23.66
2	19.82	9	23.07	13	23.07
5.5	19.07	12	22.67	19.5	22.84
11	18.67	18	22.09	26	22.31
		24	21.77	39	21.97
		36	21.34	52	21.33
		48	20.88	58.5	20.79
		54	20.13	65	20.14

802.11n HT40 ch6 Chain A		802.11a ch157 Chain A		802.11n HT20 ch157 Chain A	
Data rate (Mbps)	PK(dBm)	Data rate (Mbps)	PK(dBm)	Data rate (Mbps)	PK(dBm)
13.5	22.85	6	22.78	6.5	22.69
27	22.07	9	22.17	13	22.01
40.5	21.84	12	21.87	19.5	21.49
54	21.41	18	21.17	26	20.99
81	20.89	24	20.79	39	20.19
108	20.14	36	20.17	52	19.67
121.5	19.88	48	19.97	58.5	19.07
135	19.17	54	19.47	65	18.88

802.11n HT40 ch151 Chain A	
Data rate (Mbps)	PK(dBm)
13.5	22.58
27	22.01
40.5	21.87
54	21.07
81	20.81
108	20.26
121.5	19.47
135	19.07

The following test mode(s) were pre- test:

Pre-Test Mode		
Mode	Antenna	Antenna cable
1	C5060-510002-A	-
2	3CWE591	3CWE580
3		3CWE581
4		3CWE582
5	3CWE596	3CWE580
6		3CWE581
7		3CWE582
8	3CWE598	3CWE580
9		3CWE581
10		3CWE582

After the pre-test, the following test mode was found to produce the highest emission level.

Final Test Mode	
Minimum 6dB Bandwidth test	Mode 1
Maximum Output Power test	Mode 1, Mode 2, Mode 5, Mode 8
RF Antenna Conducted Spurious test	Mode 1
Radiated Spurious Emission test	Mode 1, Mode 2, Mode 5, Mode 8
Power Spectrum Density test	Mode 1
Emission on the Band Edge	Mode 1, Mode 2, Mode 5, Mode 8
Power Line Conducted Emission test	Mode 1

The final test was executed under test mode with highest emission and recorded in this report individually.

Table for Parameters of Test Software Setting

During testing, Channel & Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

Antenna 1: C5060-510002-A

Power Parameters

Test Software Version	ART		
Frequency	2412 MHz	2437 MHz	2462 MHz
802.11b (dBm)	19	19	19
802.11g (dBm)	16.5	16.5	15.5
802.11n HT20 (dBm)	16.5	16.5	15.5

Power Parameters

Test Software Version	ART		
Frequency	2427 MHz	2422 MHz	2452 MHz
802.11n HT40 (dBm)	13.5	13.5	13

Power Parameters

Test Software Version	ART		
Frequency	5745 MHz	5785 MHz	5825 MHz
802.11a (dBm)	18	18	18
802.11n HT20 (dBm)	18	18	18

Power Parameters

Test Software Version	ART		
Frequency	5755 MHz	5795 MHz	-
802.11n HT40 (dBm)	17	17	-

Antenna 2: 3CWE591+Antenna cable A: 3CWE580

Power Parameters

Test Software Version	ART		
Frequency	2412 MHz	2437 MHz	2462 MHz
802.11b (dBm)	18.5	18.5	18.5
802.11g (dBm)	14	15	15
802.11n HT20 (dBm)	13.5	14.5	14.5

Power Parameters

Test Software Version	ART		
Frequency	2427 MHz	2422 MHz	2452 MHz
802.11n HT40 (dBm)	10	12	12

Power Parameters

Test Software Version	ART		
Frequency	5745 MHz	5785 MHz	5825 MHz
802.11a (dBm)	18	18	18
802.11n HT20 (dBm)	18	18	18

Power Parameters

Test Software Version	ART		
Frequency	5755 MHz	5795 MHz	-
802.11n HT40 (dBm)	17	17	-

Antenna 3: 3CWE596+ Antenna cable A: 3CWE580

Power Parameters

Test Software Version	ART		
Frequency	2412 MHz	2437 MHz	2462 MHz
802.11b (dBm)	16.5	16.5	17
802.11g (dBm)	10	10	10
802.11n HT20 (dBm)	10	10	10

Power Parameters

Test Software Version	ART		
Frequency	2427 MHz	2422 MHz	2452 MHz
802.11n HT40 (dBm)	5.5	6.5	6.5

Power Parameters

Test Software Version	ART		
Frequency	5745 MHz	5785 MHz	5825 MHz
802.11a (dBm)	18	18	18
802.11n HT20 (dBm)	18	18	18

Power Parameters

Test Software Version	ART		
Frequency	5755 MHz	5795 MHz	-
802.11n HT40 (dBm)	17	17	-

Antenna 4: 3CWE598+ Antenna cable A: 3CWE580

Power Parameters

Test Software Version	ART		
Frequency	2412 MHz	2437 MHz	2462 MHz
802.11b (dBm)	19	19	19
802.11g (dBm)	16.5	16.5	15.5
802.11n HT20 (dBm)	16.5	16.5	15.5

Power Parameters

Test Software Version	ART		
Frequency	2427 MHz	2422 MHz	2452 MHz
802.11n HT40 (dBm)	13	13	13

Power Parameters

Test Software Version	ART		
Frequency	5745 MHz	5785 MHz	5825 MHz
802.11a (dBm)	18	18	18
802.11n HT20 (dBm)	18	18	18

Power Parameters

Test Software Version	ART		
Frequency	5755 MHz	5795 MHz	-
802.11n HT40 (dBm)	17	17	-

3. Maximum 6 dB Bandwidth

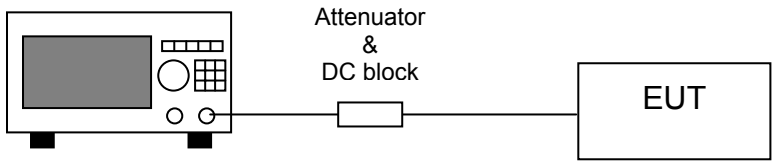
Name of Test	Maximum 6 dB Bandwidth
Base Standard	FCC 15.247 (a)(2)

Test Result: Complies
Measurement Data: See Table & plots below

Method of Measurement:
Reference FCC document: KDB558074

A portion of the transmitted signal is coupled to a Spectrum Analyzer with a resolution bandwidth of at least 1 % of the bandwidth of the transmitted signal. The resolution bandwidth is chosen so as not to reduce the peak level of the measured waveform. The appropriate bandwidth mask is applied to the output waveform to verify compliance.

Test Diagram:



Spectrum Analyzer

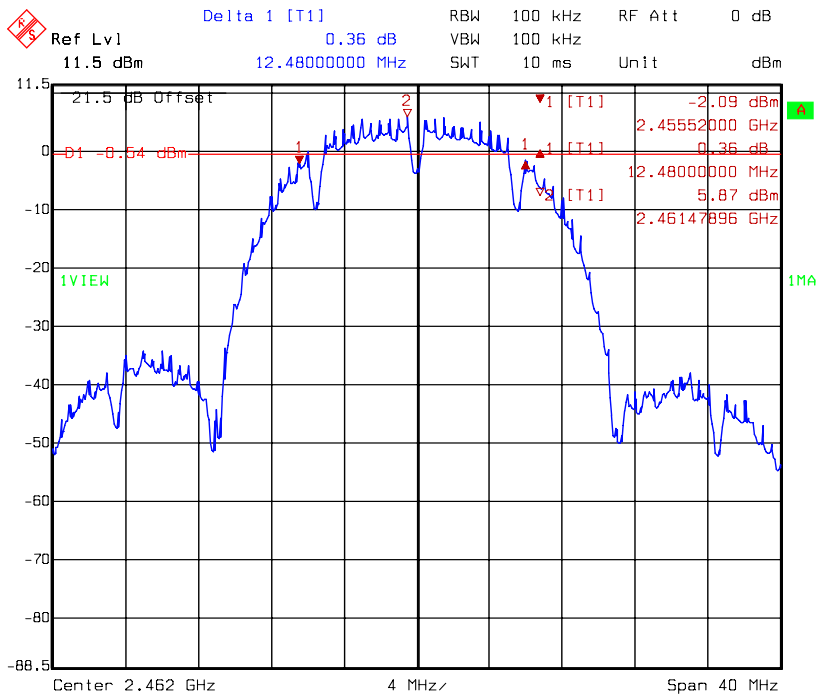
Note: The EUT was tested while in a continuous transmit mode and the worst case data rates are 1 Mbps for 802.11b, 6 Mbps for 802.11a/ 11g, 6.5 Mbps for 802.11n HT20 and 13.5 Mbps for 802.11n HT40. The EUT was tuned to a low, middle and high channel.

Table 1. Maximum 6 dB Bandwidth

Test Condition: Mode 1

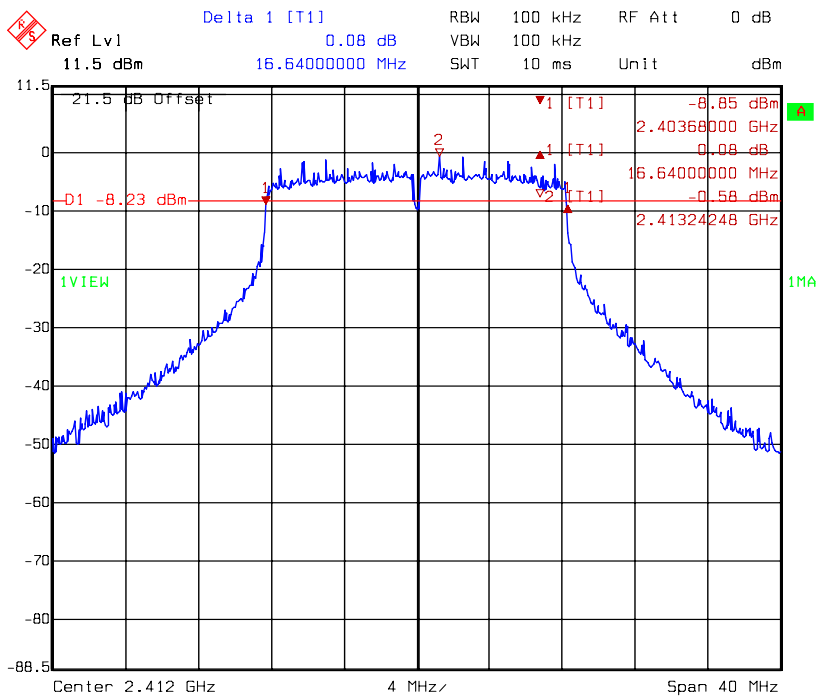
Mode	Channel	Frequency (MHz)	Data rate (Mbps)	6dB Bandwidth (MHz)			Limit (MHz)	Pass/Fail
				Chain A	Chain B	Chain C		
802.11b	1	2412	1	13.12	12.72	12.56	0.5	Pass
	6	2437		13.60	13.60	12.16	0.5	Pass
	11	2462		12.48	14.08	12.64	0.5	Pass
802.11g	1	2412	6	16.64	16.80	16.64	0.5	Pass
	6	2437		16.80	16.80	16.64	0.5	Pass
	11	2462		16.56	16.80	16.64	0.5	Pass
802.11n HT20	1	2412	6.5	17.84	18.08	18.00	0.5	Pass
	6	2437		17.76	18.00	18.08	0.5	Pass
	11	2462		17.84	18.08	18.00	0.5	Pass
802.11n HT40	3	2422	13.5	36.78	37.02	36.78	0.5	Pass
	6	2437		36.78	36.90	36.78	0.5	Pass
	9	2452		36.78	36.90	36.78	0.5	Pass
802.11a	149	5745	6	16.48	16.56	16.72	0.5	Pass
	157	5785		16.72	16.40	16.64	0.5	Pass
	165	5825		16.48	16.80	16.80	0.5	Pass
802.11n HT20	149	5745	6.5	17.44	17.76	17.76	0.5	Pass
	157	5785		17.76	17.68	18.08	0.5	Pass
	165	5825		16.80	18.08	17.84	0.5	Pass
802.11n HT40	151	5755	13.5	36.78	36.90	36.66	0.5	Pass
	159	5795		36.66	36.78	36.78	0.5	Pass

Chain A: 6 dB Bandwidth @ 802.11b mode channel 11



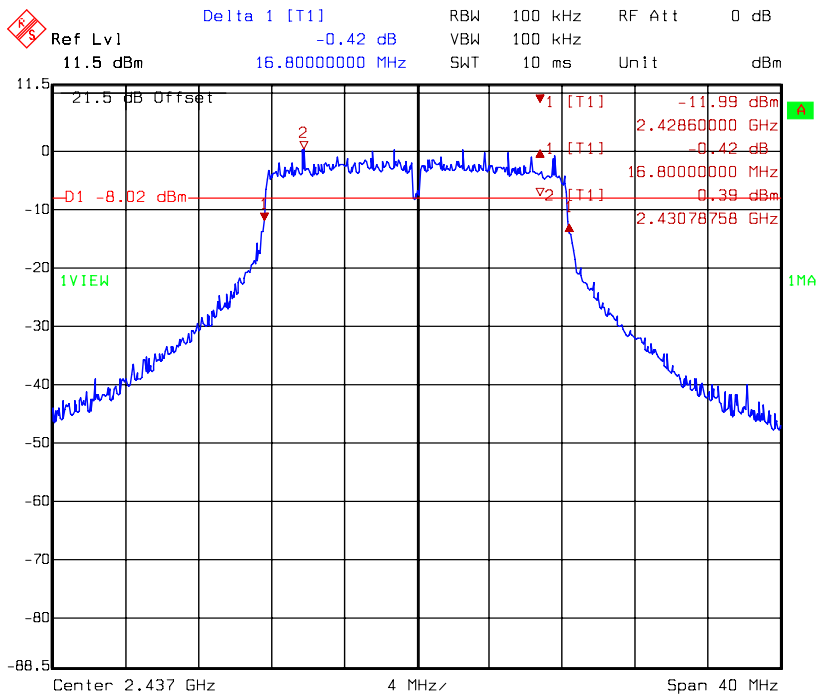
Title: 6dB Band-Width
Comment A: CH 11 at 802.11b mode chainA
Date: 24.OCT.2008 15:47:52

Chain A: 6 dB Bandwidth @ 802.11g mode channel 1



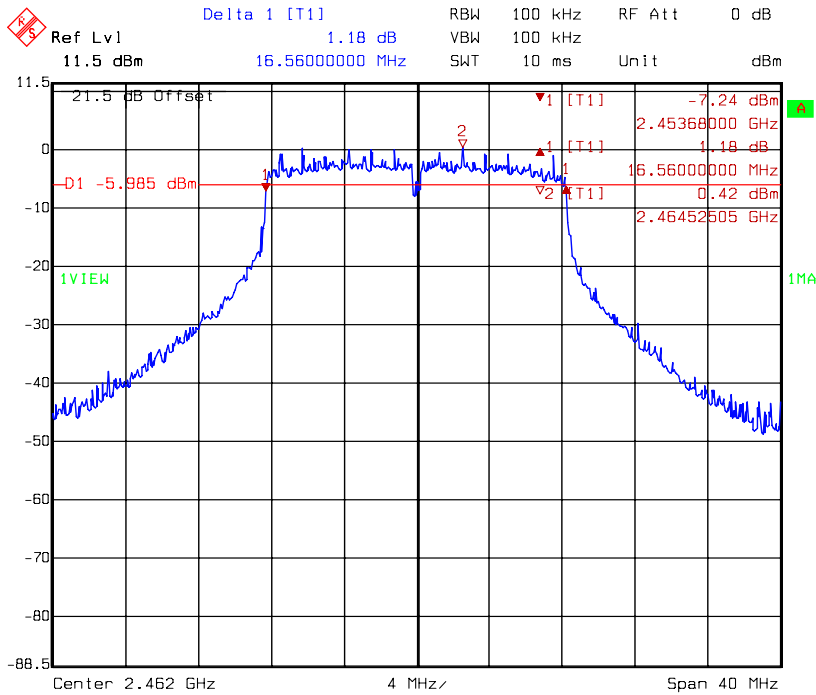
Title: 6dB Band-Width
Comment A: CH 1 at 802.11g mode chainA
Date: 24.OCT.2008 15:51:21

Chain A: 6 dB Bandwidth @ 802.11g mode channel 6



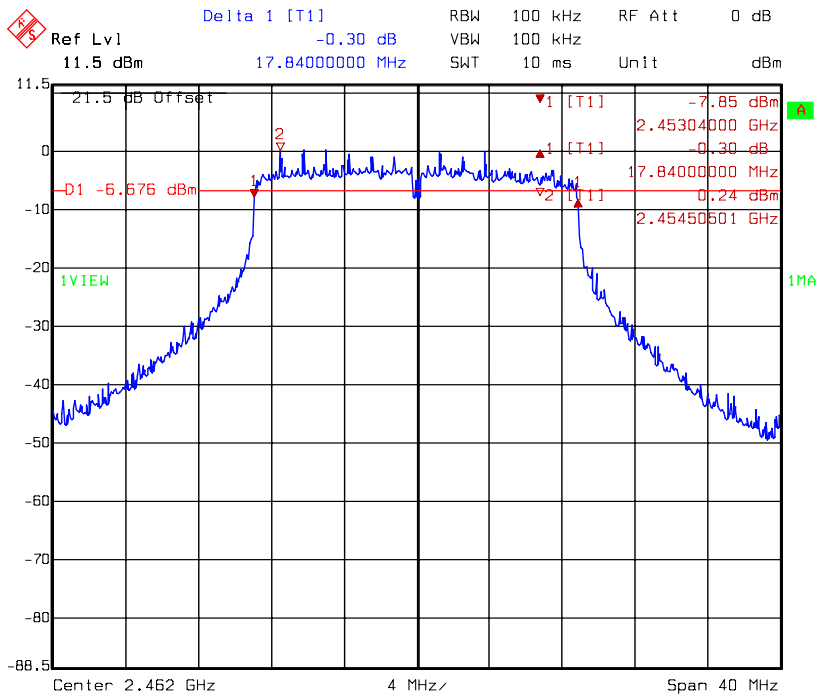
Title: 6dB Band-Width
 Comment A: CH 6 at 802.11g mode chainA
 Date: 24.OCT.2008 15:54:29

Chain A: 6 dB Bandwidth @ 802.11g mode channel 11



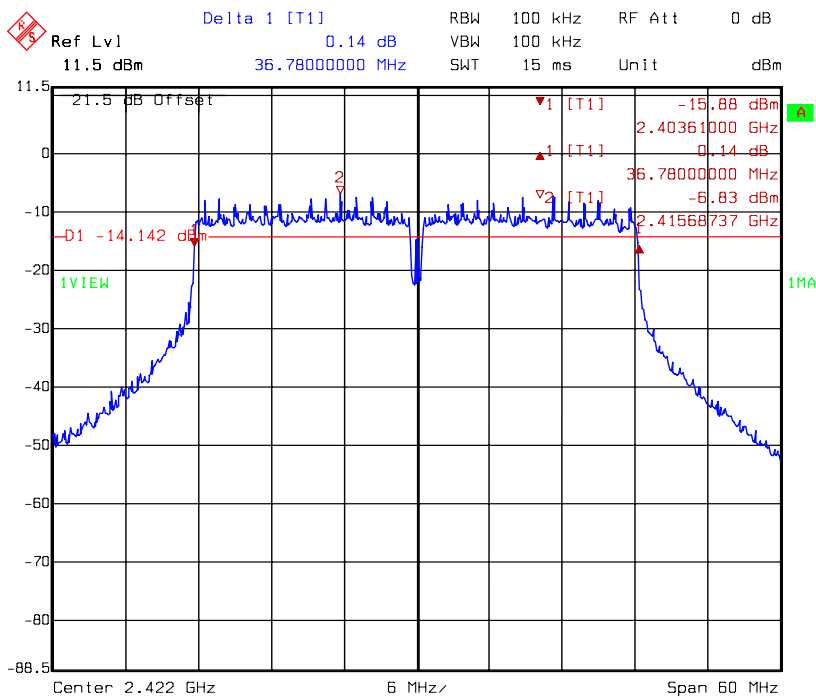
Title: 6dB Band-Width
 Comment A: CH 11 at 802.11g mode chainA
 Date: 24.OCT.2008 15:58:03

Chain A: 6 dB Bandwidth @ 802.11n HT20 mode channel 11



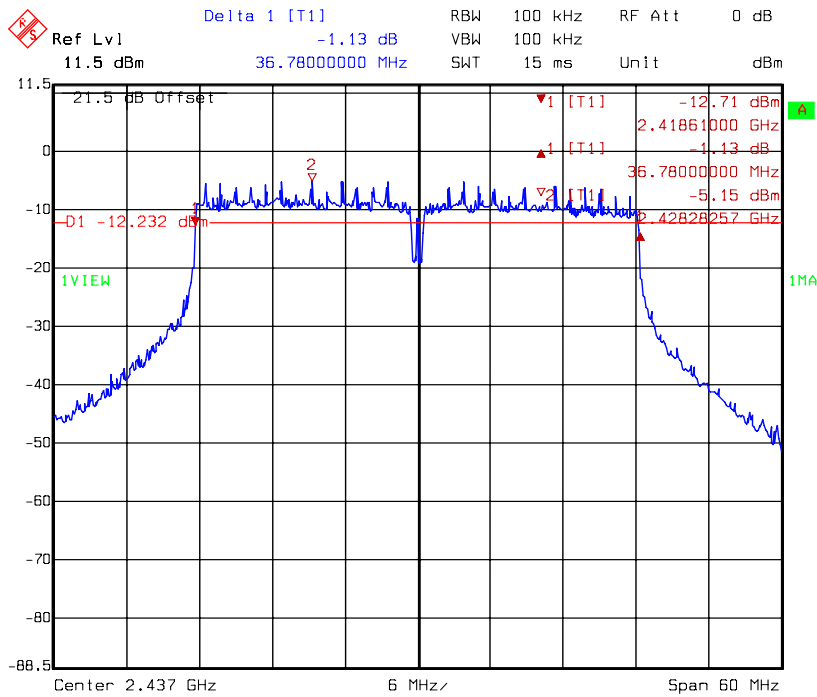
Title: 6dB Band-Width
Comment A: CH 11 at 802.11n 20MHz mode chainA
Date: 24.OCT.2008 16:10:29

Chain A: 6 dB Bandwidth @ 802.11n HT40 mode channel 3



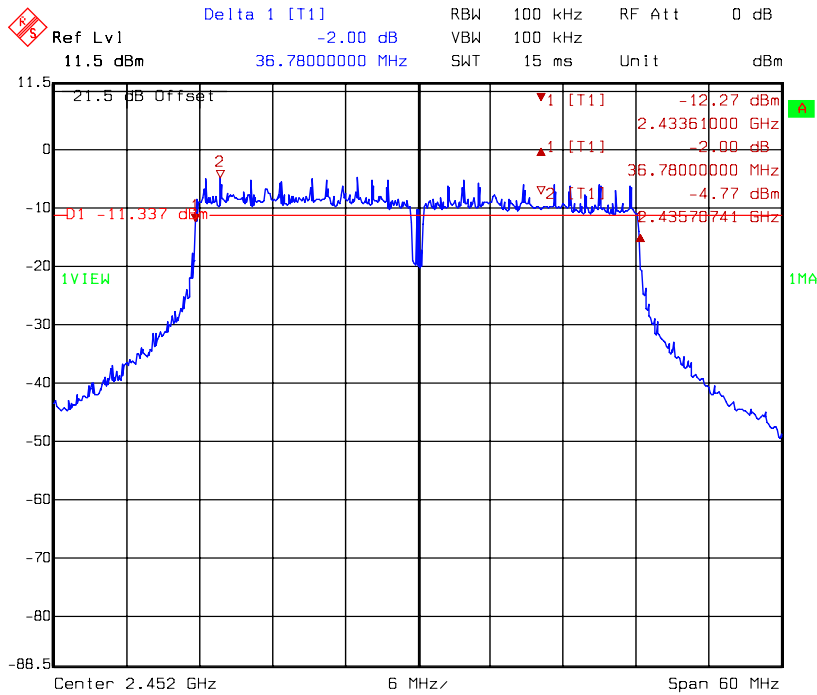
Title: 6dB Band-Width
Comment A: CH 3 at 802.11n 40MHz mode chainA
Date: 24.OCT.2008 16:16:44

Chain A: 6 dB Bandwidth @ 802.11n HT40 mode channel 6



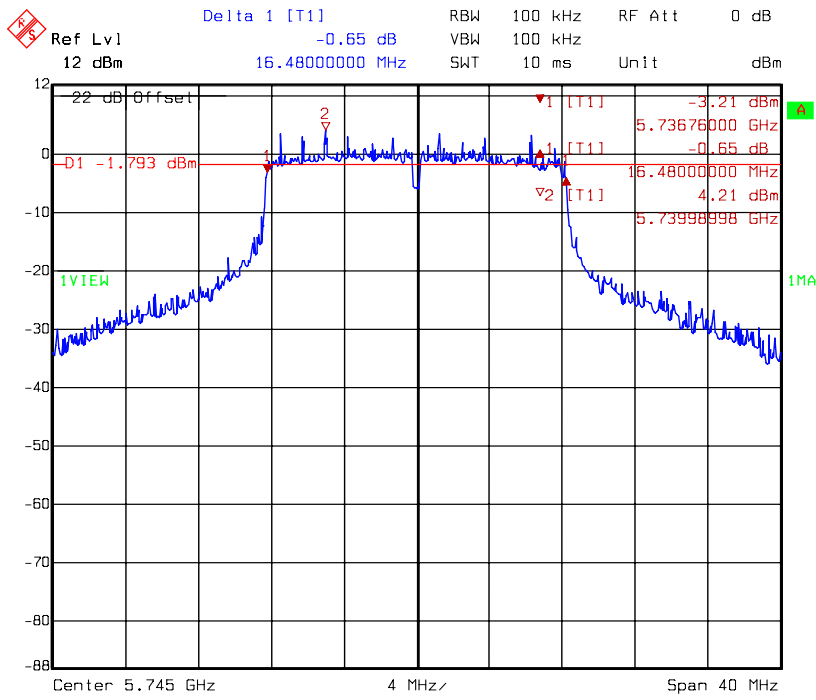
Title: 6dB Band-Width
Comment A: CH 6 at 802.11n 40MHz mode chainA
Date: 24.OCT.2008 16:25:16

Chain A: 6 dB Bandwidth @ 802.11n HT40 mode channel 9



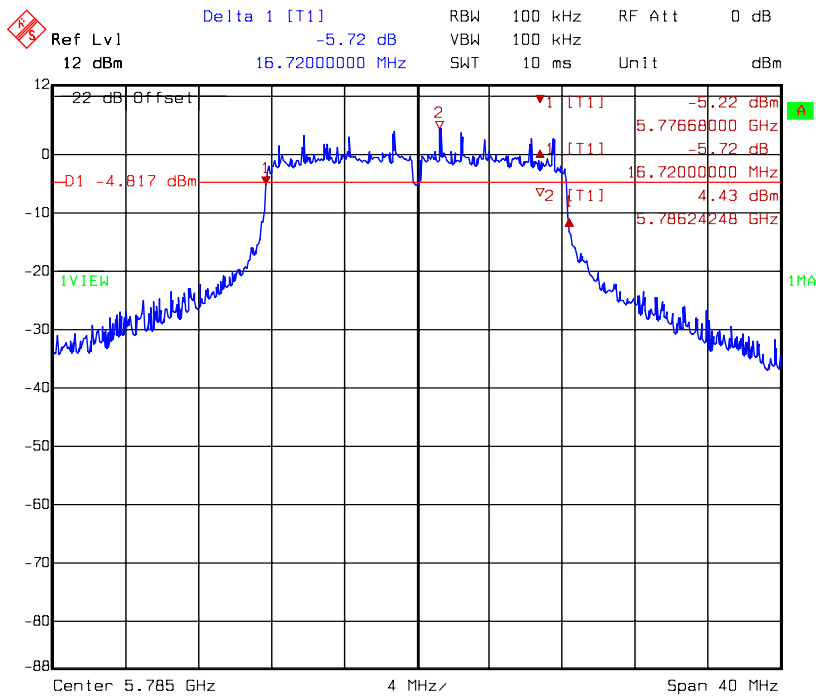
Title: 6dB Band-Width
Comment A: CH 9 at 802.11n 40MHz mode chainA
Date: 24.OCT.2008 16:28:06

Chain A: 6 dB Bandwidth @ 802.11a mode channel 149



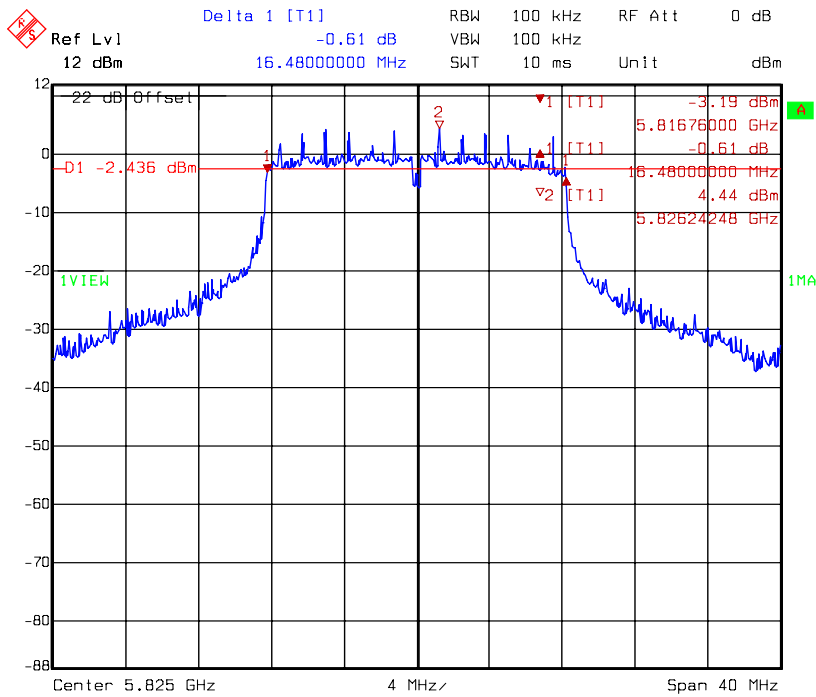
Title: 6dB Band-Width
Comment A: CH 149 at 802.11a mode chainA
Date: 27.OCT.2008 11:52:41

Chain A: 6 dB Bandwidth @ 802.11a mode channel 157



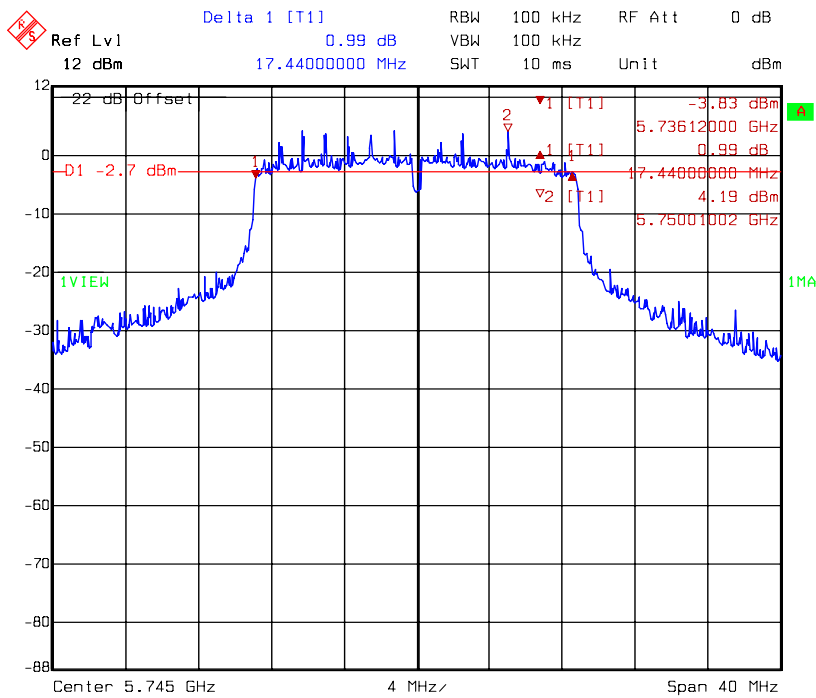
Title: 6dB Band-Width
Comment A: CH 157 at 802.11a mode chainA
Date: 27.OCT.2008 11:56:22

Chain A: 6 dB Bandwidth @ 802.11a mode channel 165



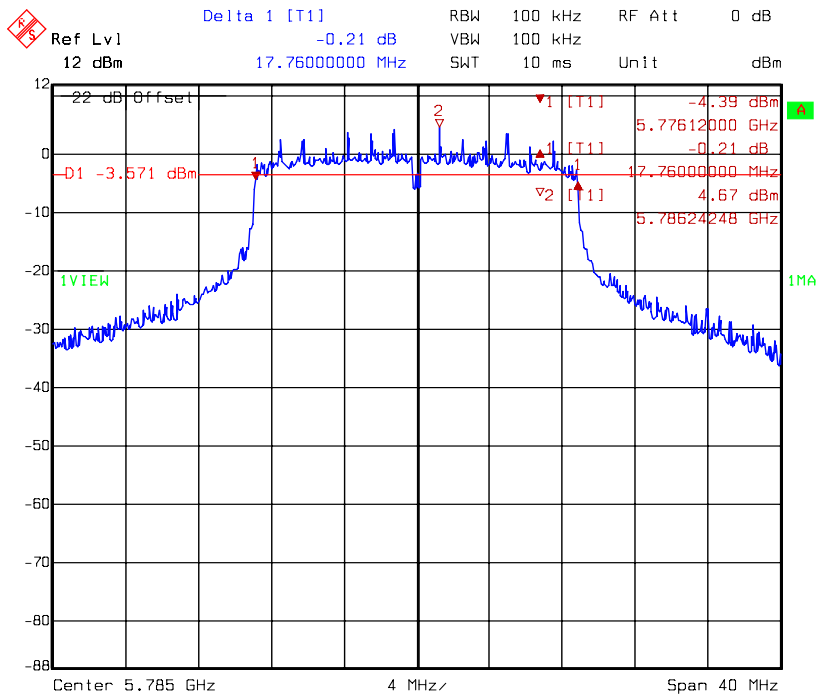
Title: 6dB Band-Width
Comment A: CH 165 at 802.11a mode chainA
Date: 27.OCT.2008 12:06:28

Chain A: 6 dB Bandwidth @ 802.11n HT20 mode channel 149



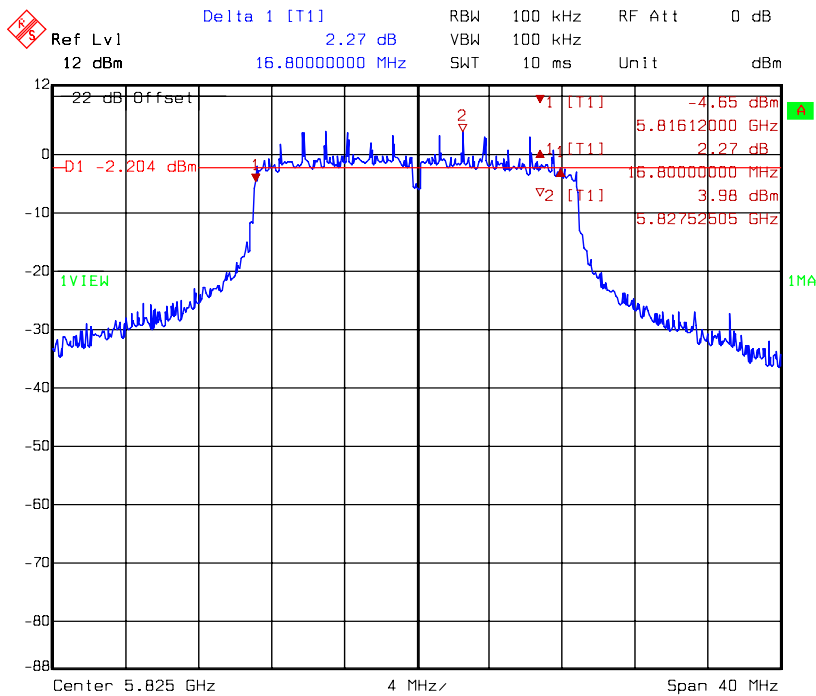
Title: 6dB Band-Width
Comment A: CH 149 at 802.11n 20MHz mode chainA
Date: 27.OCT.2008 14:07:34

Chain A: 6 dB Bandwidth @ 802.11n HT20 mode channel 157



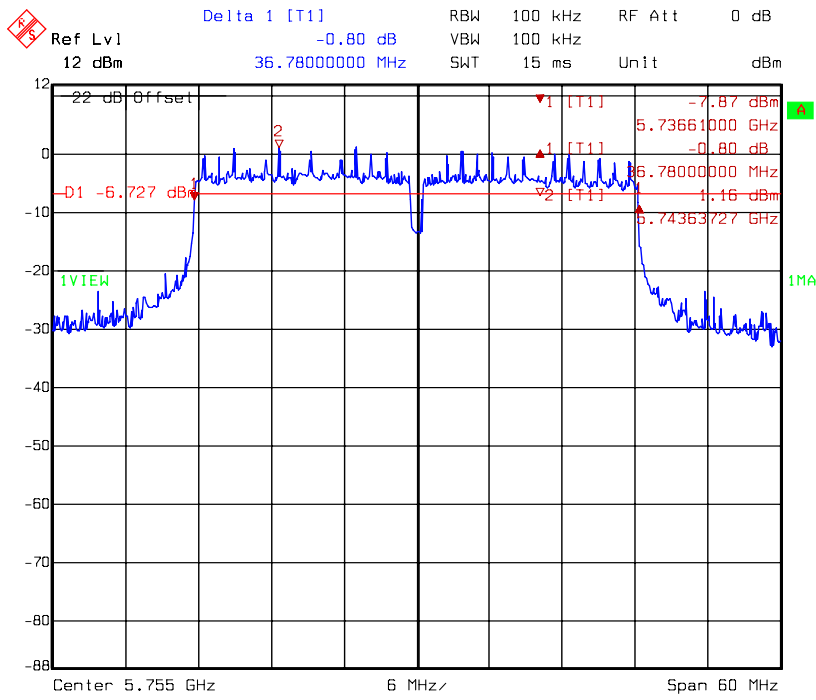
Title: 6dB Band-Width
Comment A: CH 157 at 802.11n 20MHz mode chainA
Date: 27.OCT.2008 14:12:49

Chain A: 6 dB Bandwidth @ 802.11n HT20 mode channel 165



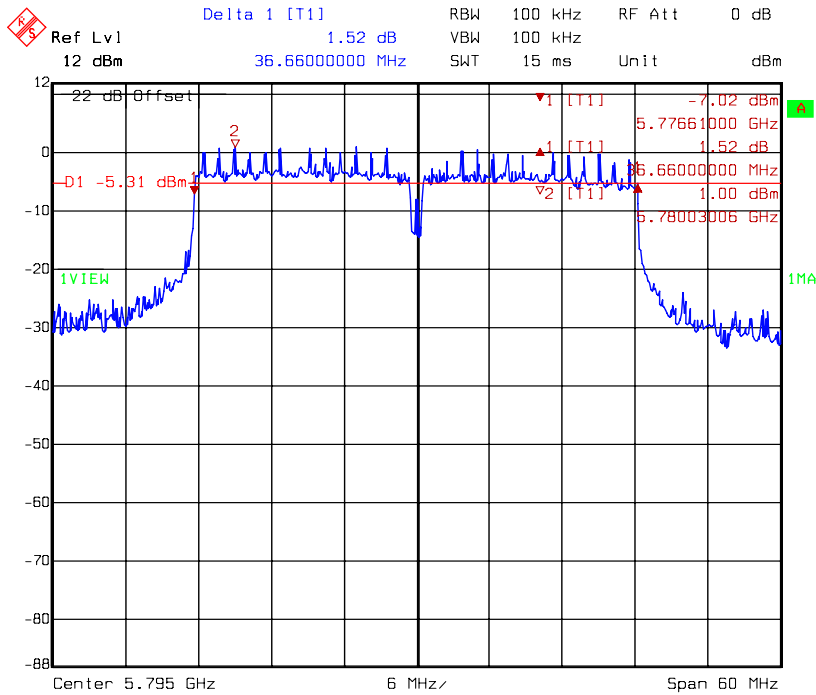
Title: 6dB Band-Width
Comment A: CH 165 at 802.11n 20MHz mode chainA
Date: 27.OCT.2008 14:16:32

Chain A: 6 dB Bandwidth @ 802.11n HT40 mode channel 151



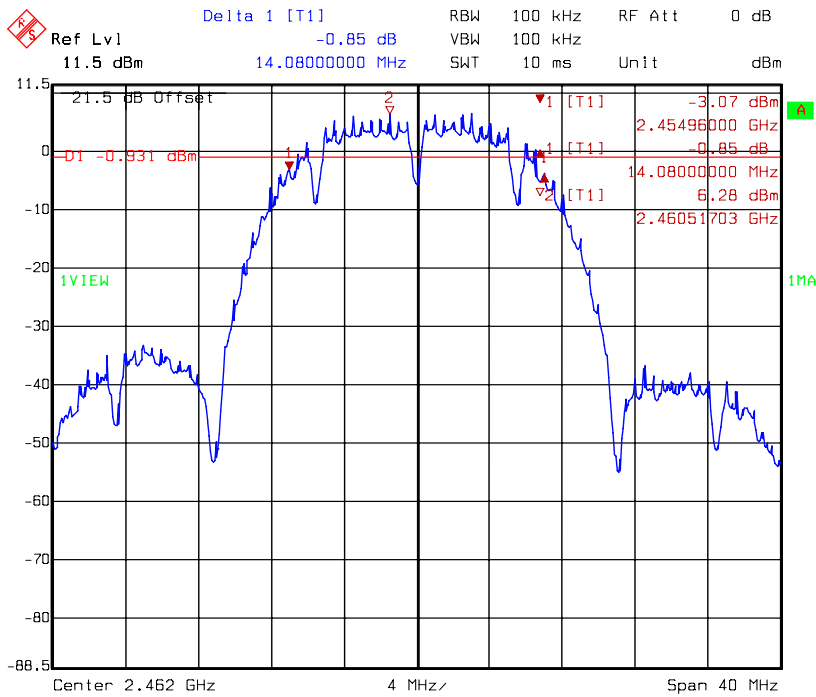
Title: 6dB Band-Width
Comment A: CH 151 at 802.11n 40MHz mode chainA
Date: 27.OCT.2008 14:21:16

Chain A: 6 dB Bandwidth @ 802.11n HT40 mode channel 159



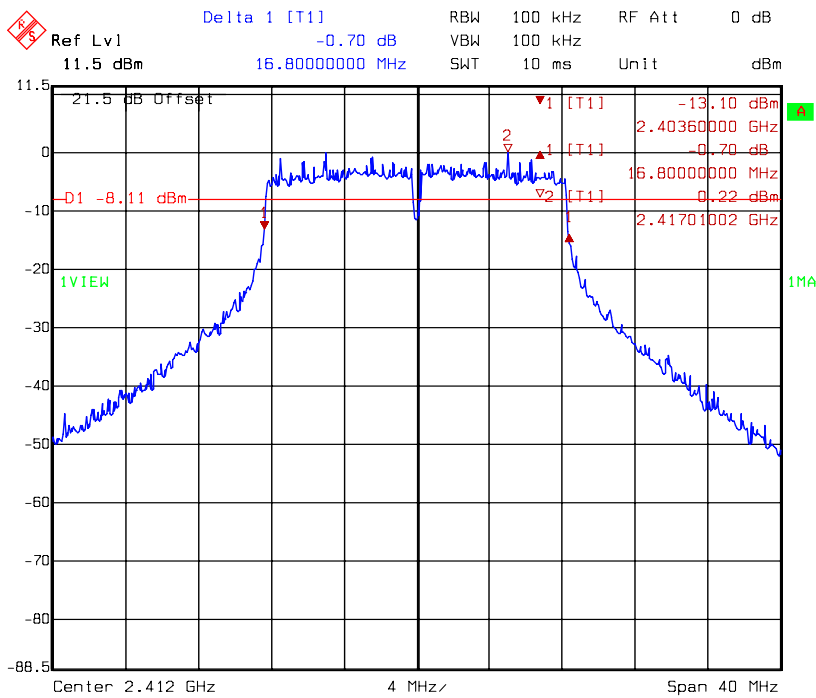
Title: 6dB Band-Width
Comment A: CH 159 at 802.11n 40MHz mode chainA
Date: 27.OCT.2008 14:24:37

Chain B: 6 dB Bandwidth @ 802.11b mode channel 11



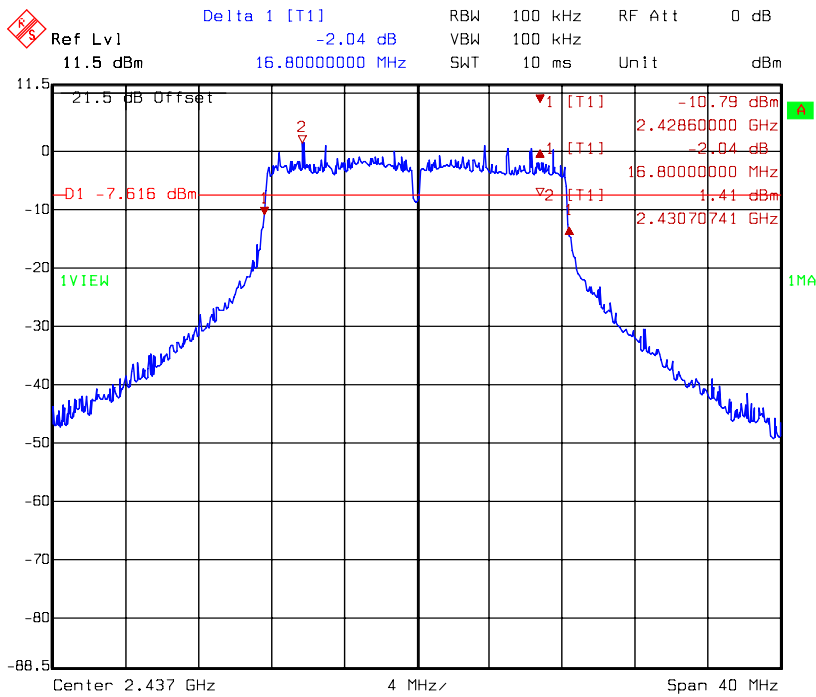
Title: 6dB Band-Width
Comment A: CH 11 at 802.11b mode chainB
Date: 27.OCT.2008 15:01:57

Chain B: 6 dB Bandwidth @ 802.11g mode channel 1



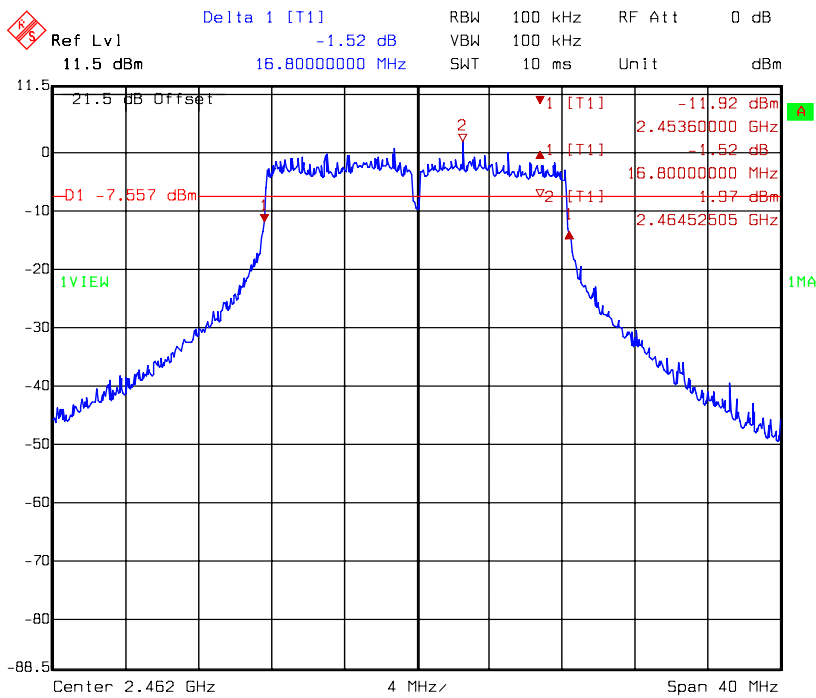
Title: 6dB Band-Width
Comment A: CH 1 at 802.11g mode chainB
Date: 27.OCT.2008 16:22:03

Chain B: 6 dB Bandwidth @ 802.11g mode channel 6



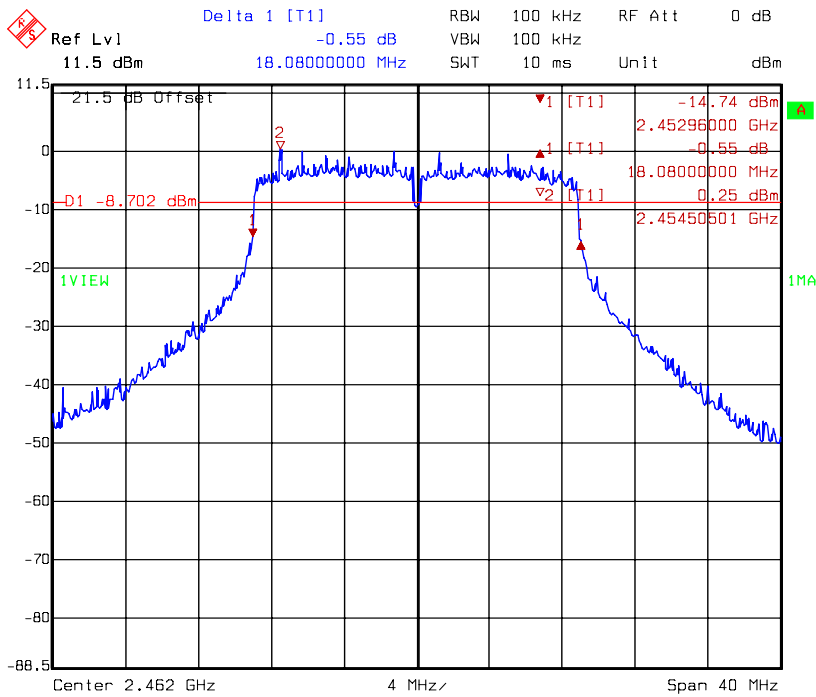
Title: 6dB Band-Width
Comment A: CH 6 at 802.11g mode chainB
Date: 27.OCT.2008 16:24:52

Chain B: 6 dB Bandwidth @ 802.11g mode channel 11



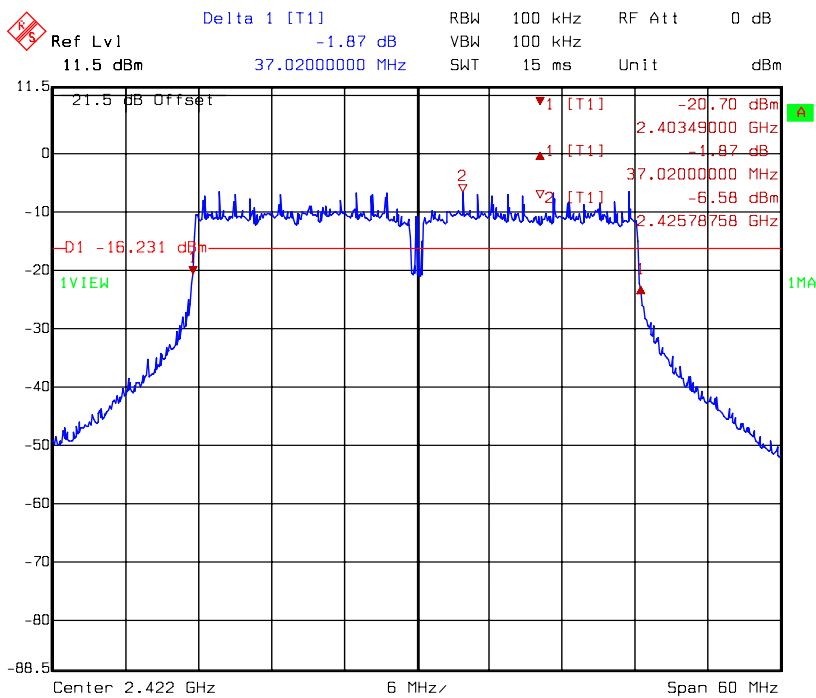
Title: 6dB Band-Width
Comment A: CH 11 at 802.11g mode chainB
Date: 27.OCT.2008 16:27:51

Chain B: 6 dB Bandwidth @ 802.11n HT20 mode channel 11



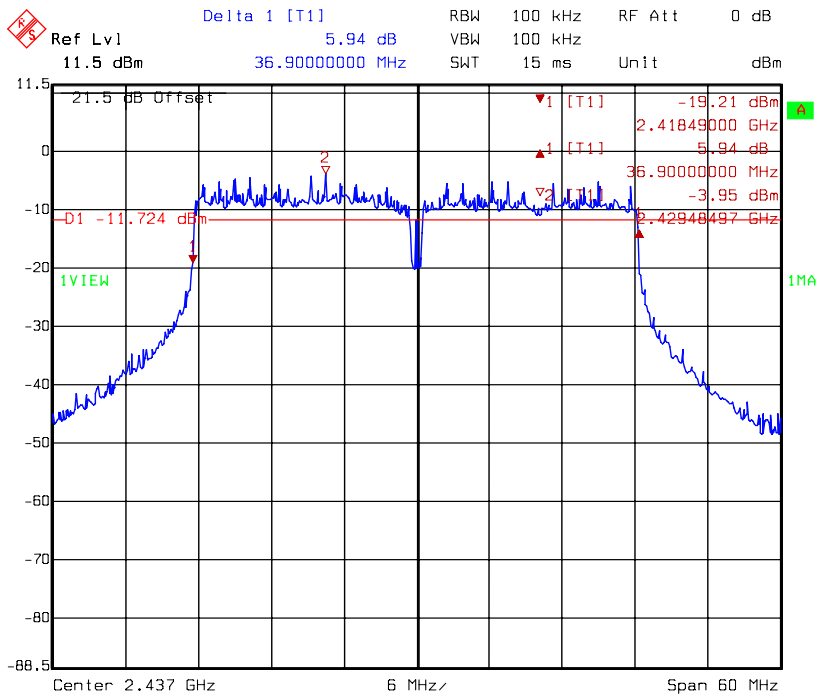
Title: 6dB Band-Width
Comment A: CH 11 at 802.11n 20MHz mode chainB
Date: 27.OCT.2008 16:36:38

Chain B: 6 dB Bandwidth @ 802.11n HT40 mode channel 3



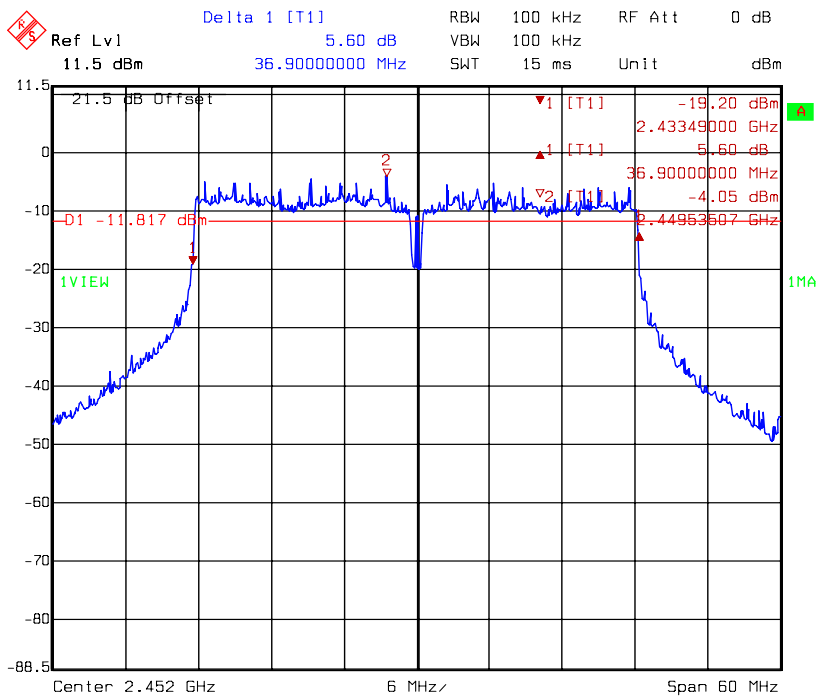
Title: 6dB Band-Width
Comment A: CH 3 at 802.11n 40MHz mode chainB
Date: 27.OCT.2008 16:40:05

Chain B: 6 dB Bandwidth @ 802.11n HT40 mode channel 6



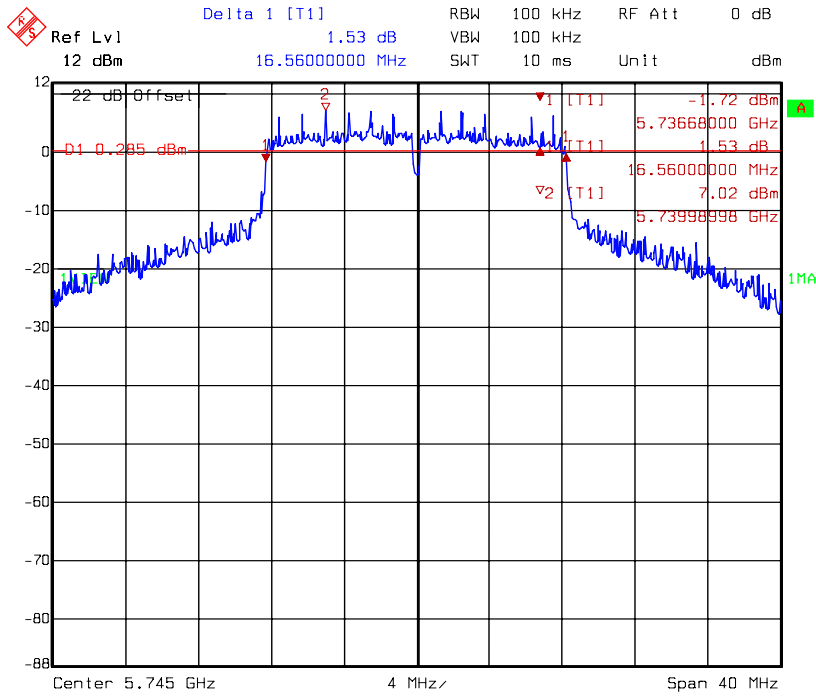
Title: 6dB Band-Width
Comment A: CH 6 at 802.11n 40MHz mode chainB
Date: 27.OCT.2008 16:46:53

Chain B: 6 dB Bandwidth @ 802.11n HT40 mode channel 9



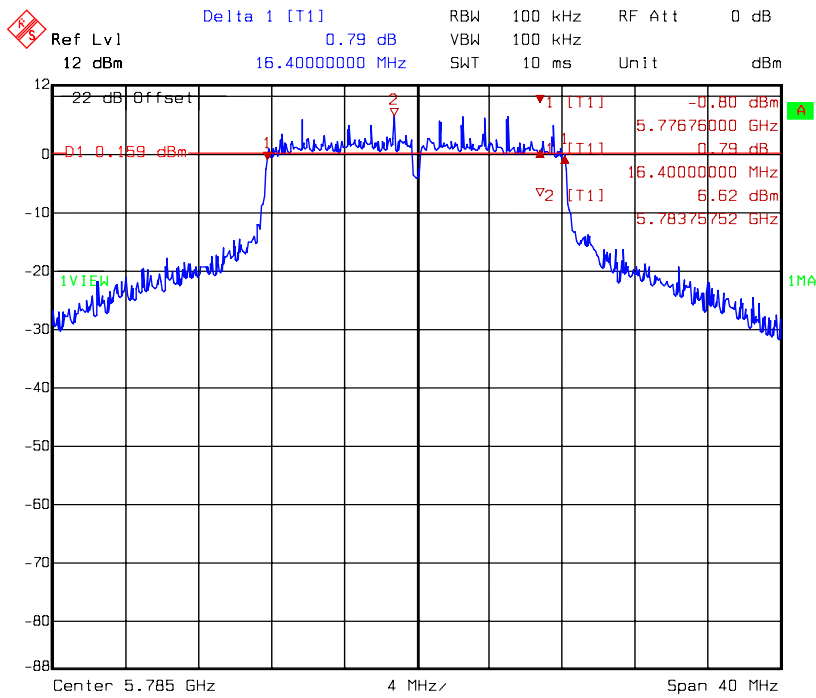
Title: 6dB Band-Width
Comment A: CH 9 at 802.11n 40MHz mode chainB
Date: 27.OCT.2008 16:50:19

Chain B: 6 dB Bandwidth @ 802.11a mode channel 149



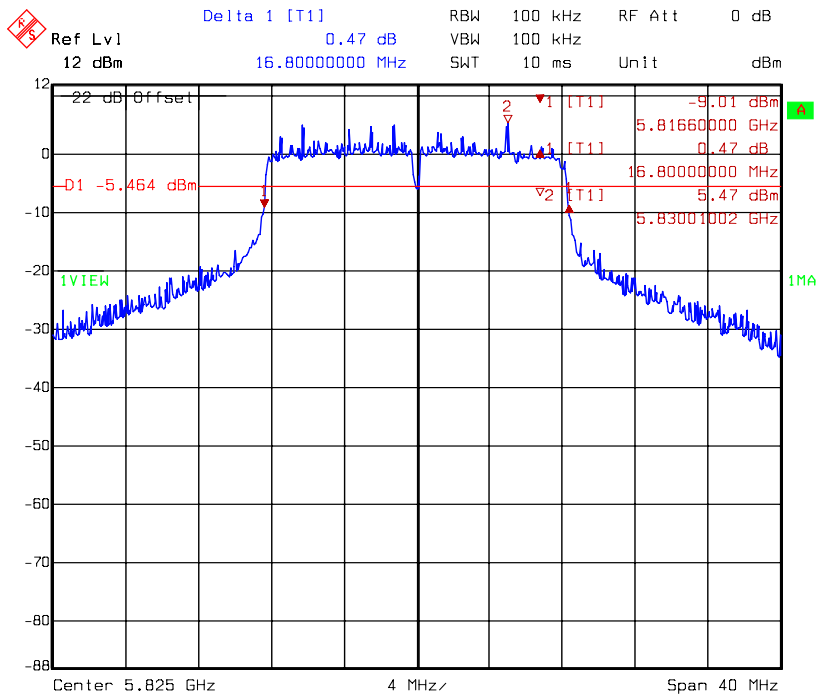
Title: 6dB Band-Width
Comment A: CH 149 at 802.11a mode chainB
Date: 27.OCT.2008 16:54:18

Chain B: 6 dB Bandwidth @ 802.11a mode channel 157



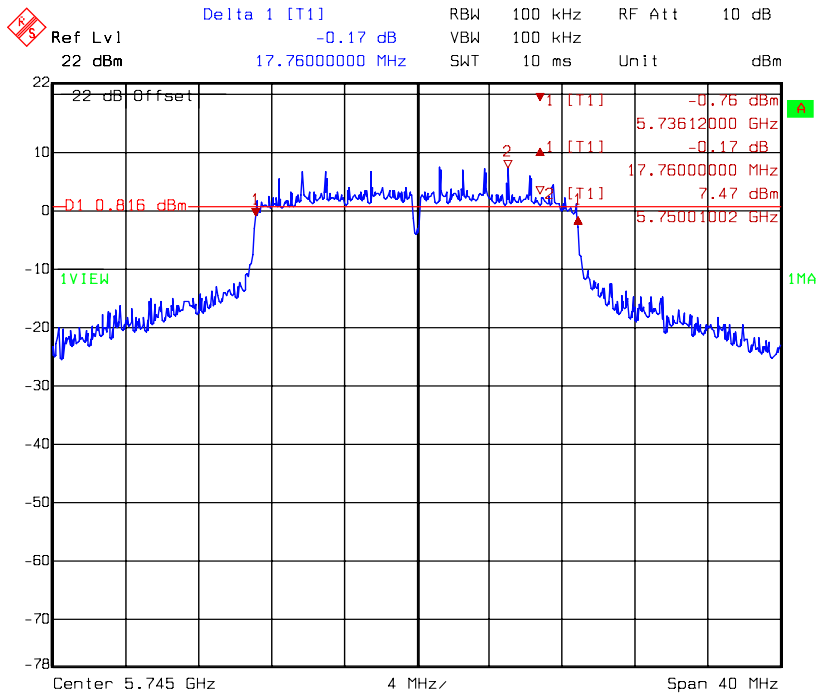
Title: 6dB Band-Width
Comment A: CH 157 at 802.11a mode chainB
Date: 27.OCT.2008 16:59:10

Chain B: 6 dB Bandwidth @ 802.11a mode channel 165



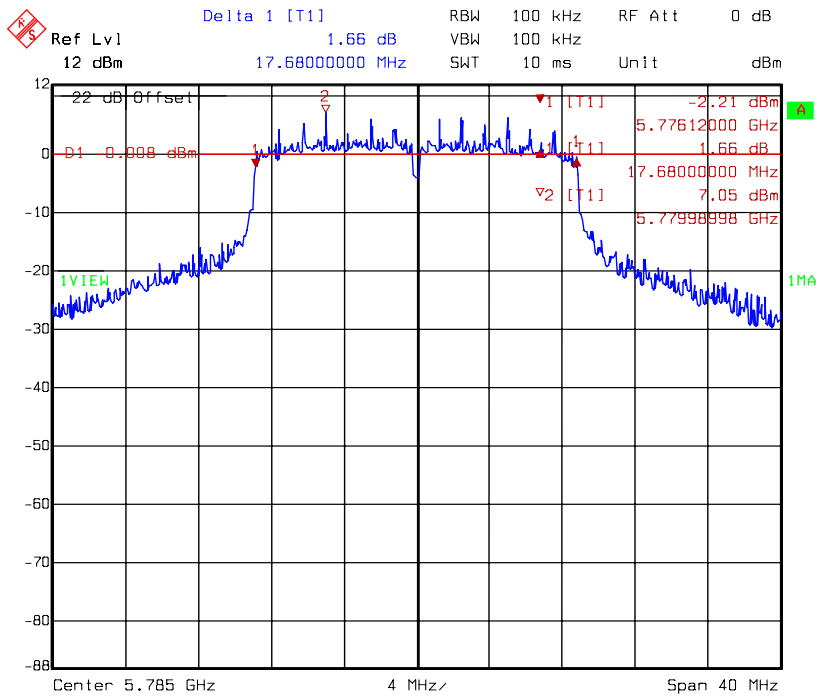
Title: 6dB Band-Width
Comment A: CH 165 at 802.11a mode chainB
Date: 27.OCT.2008 17:02:21

Chain B: 6 dB Bandwidth @ 802.11n HT20 mode channel 149



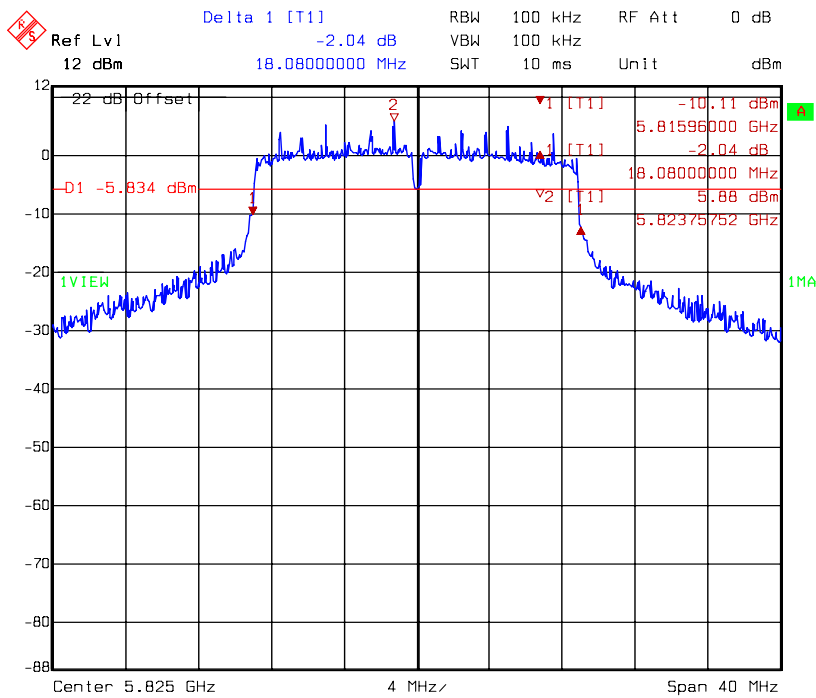
Title: 6dB Band-Width
Comment A: CH 149 at 802.11n 20MHz mode chainB
Date: 27.OCT.2008 17:07:38

Chain B: 6 dB Bandwidth @ 802.11n HT20 mode channel 157



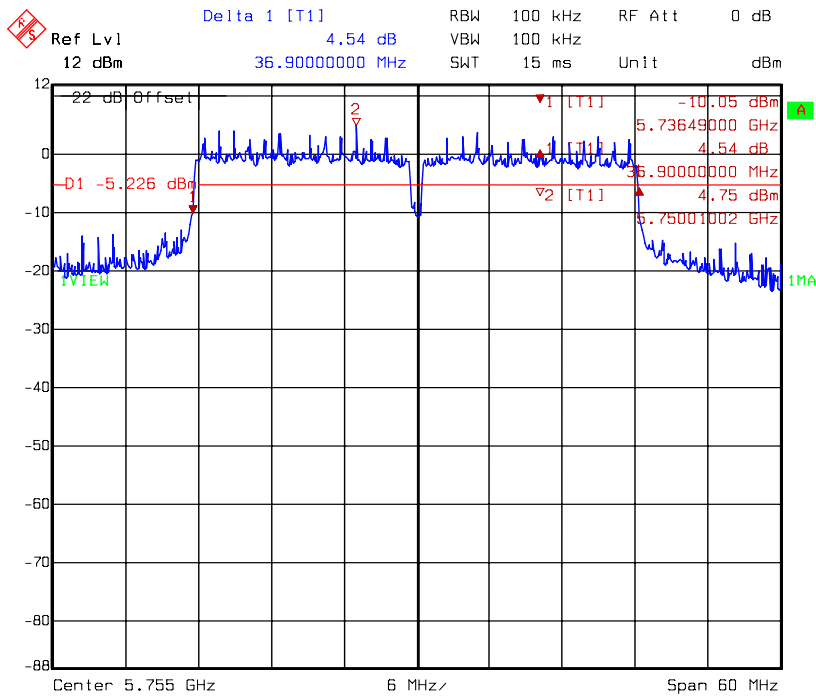
Title: 6dB Band-Width
Comment A: CH 157 at 802.11n 20MHz mode chainB
Date: 27.OCT.2008 17:10:57

Chain B: 6 dB Bandwidth @ 802.11n HT20 mode channel 165



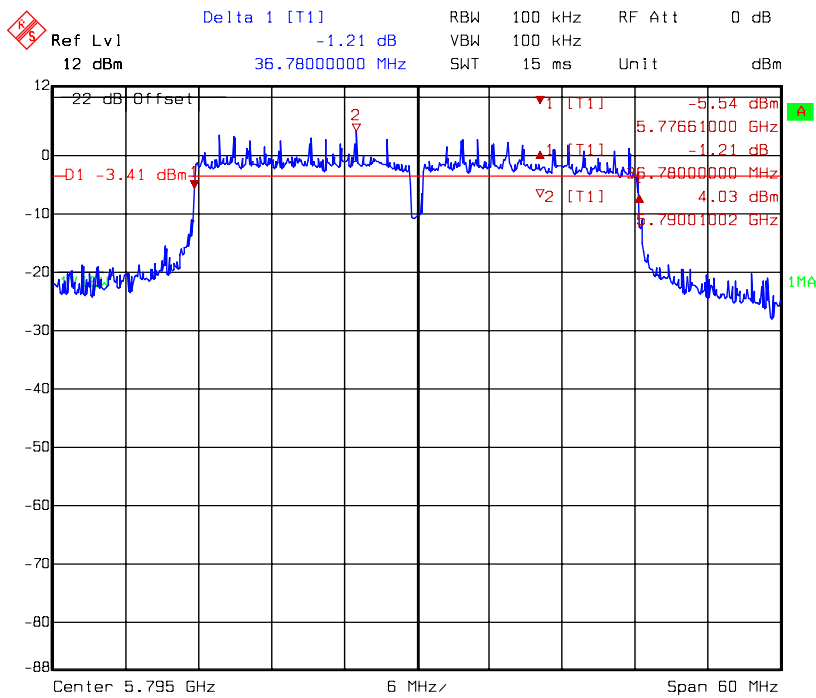
Title: 6dB Band-Width
Comment A: CH 165 at 802.11n 20MHz mode chainB
Date: 27.OCT.2008 17:16:07

Chain B: 6 dB Bandwidth @ 802.11n HT40 mode channel 151



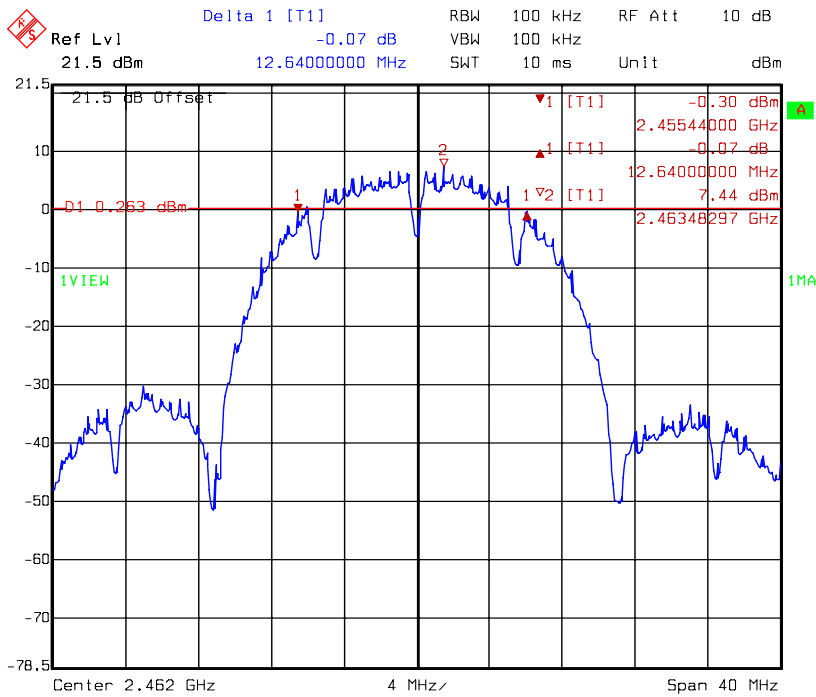
Title: 6dB Band-Width
Comment A: CH 151 at 802.11n 40MHz mode chainB
Date: 27.OCT.2008 17:21:58

Chain B: 6 dB Bandwidth @ 802.11n HT40 mode channel 159



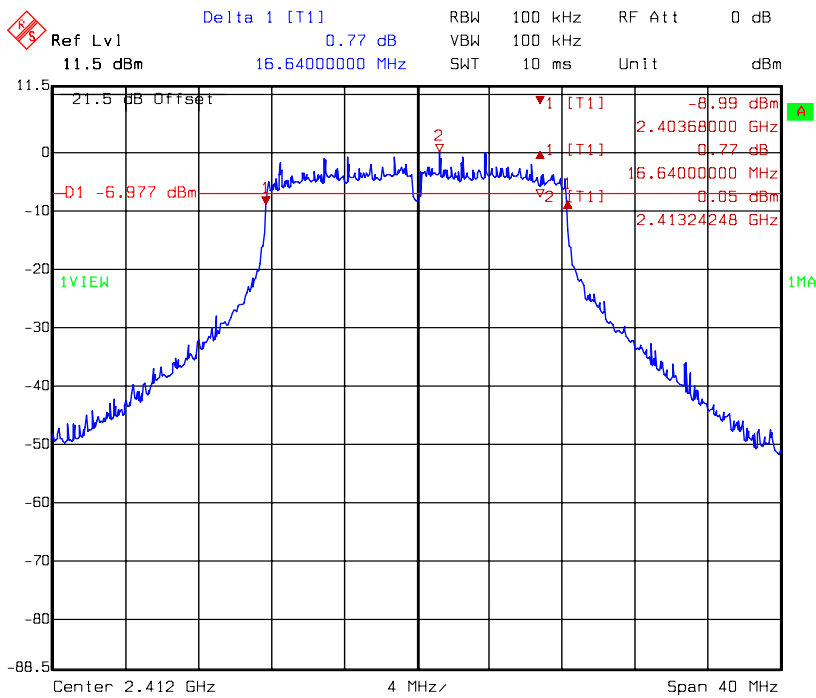
Title: 6dB Band-Width
Comment A: CH 159 at 802.11n 40MHz mode chainB
Date: 27.OCT.2008 17:26:03

Chain C: 6 dB Bandwidth @ 802.11b mode channel 11



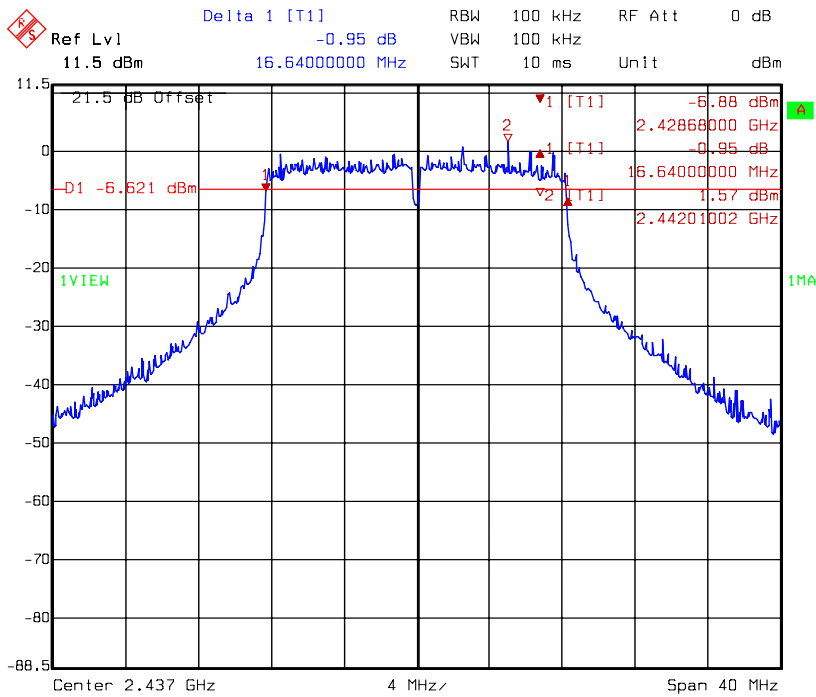
Title: 6dB Band-Width
Comment A: CH 11 at 802.11b mode chainC
Date: 28.OCT.2008 10:34:36

Chain C: 6 dB Bandwidth @ 802.11g mode channel 1



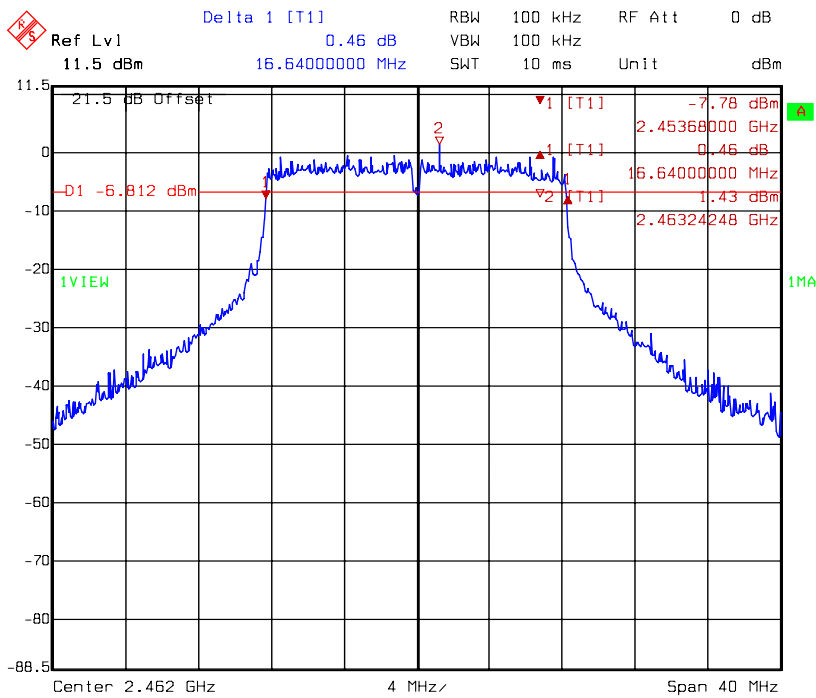
Title: 6dB Band-Width
Comment A: CH 1 at 802.11g mode chainC
Date: 28.OCT.2008 10:38:30

Chain C: 6 dB Bandwidth @ 802.11g mode channel 6



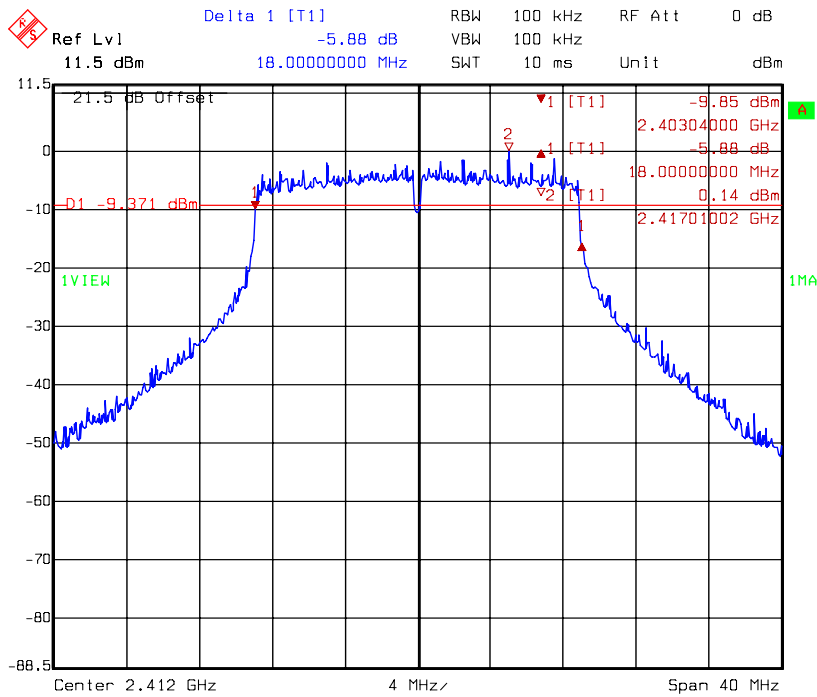
Title: 6dB Band-Width
Comment A: CH 6 at 802.11g mode chainC
Date: 28.OCT.2008 10:41:14

Chain C: 6 dB Bandwidth @ 802.11g mode channel 11



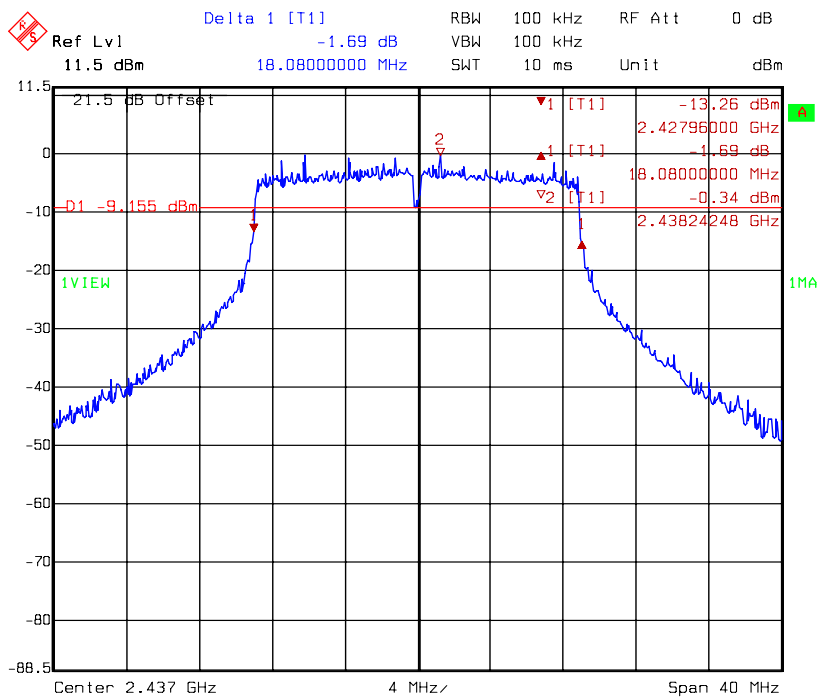
Title: 6dB Band-Width
Comment A: CH 11 at 802.11g mode chainC
Date: 28.OCT.2008 10:43:54

Chain C: 6 dB Bandwidth @ 802.11n HT20 mode channel 1



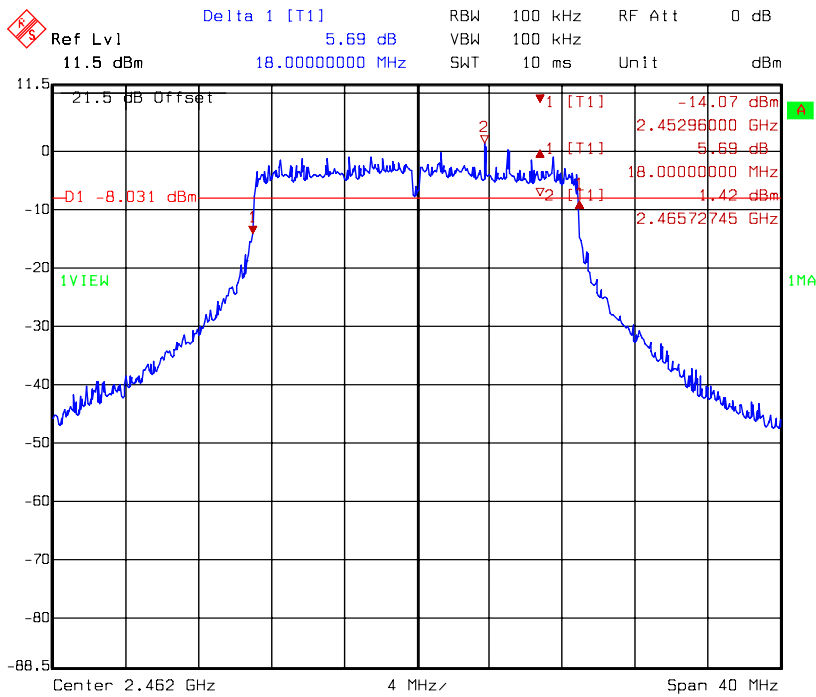
Title: 6dB Band-Width
Comment A: CH 1 at 802.11n 20MHz mode chainC
Date: 28.OCT.2008 10:51:23

Chain C: 6 dB Bandwidth @ 802.11n HT20 mode channel 6



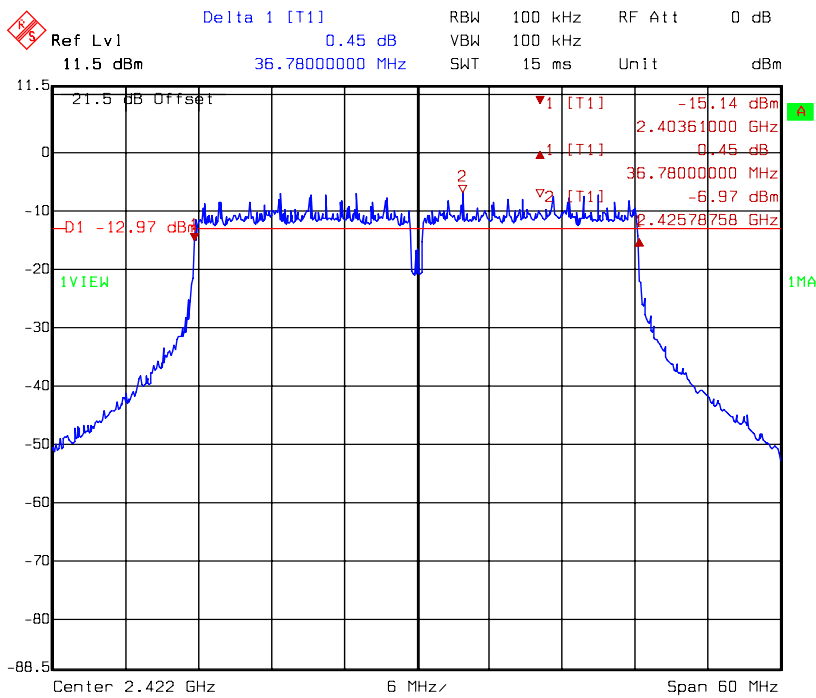
Title: 6dB Band-Width
Comment A: CH 6 at 802.11n 20MHz mode chainC
Date: 28.OCT.2008 11:16:36

Chain C: 6 dB Bandwidth @ 802.11n HT20 mode channel 11



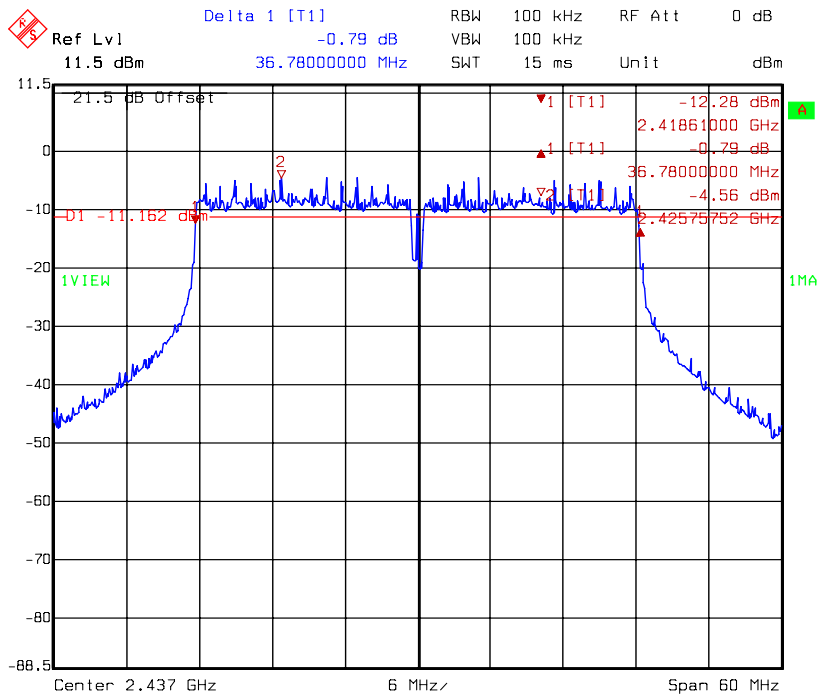
Title: 6dB Band-Width
Comment A: CH 11 at 802.11n 20MHz mode chainC
Date: 28.OCT.2008 11:19:23

Chain C: 6 dB Bandwidth @ 802.11n HT40 mode channel 3



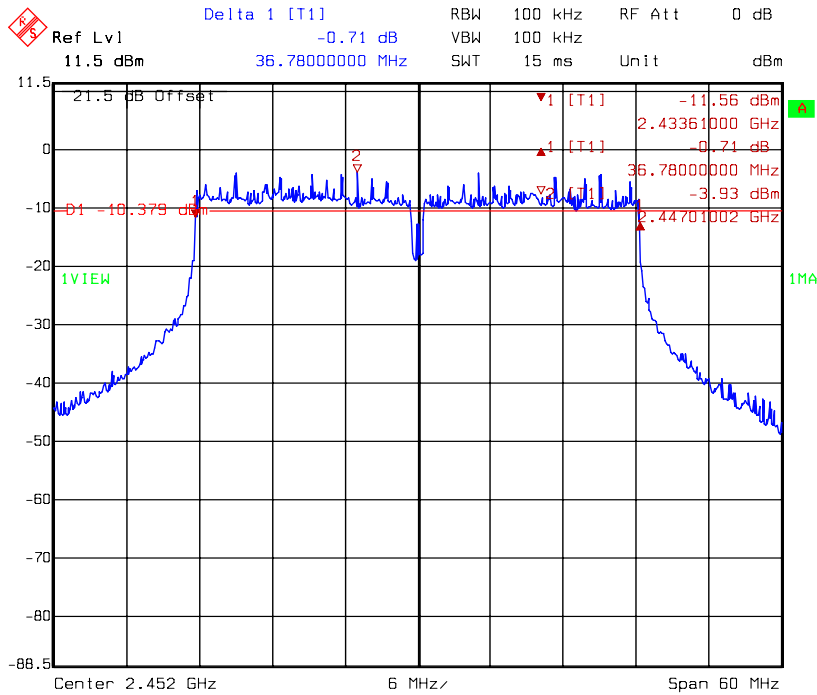
Title: 6dB Band-Width
Comment A: CH 3 at 802.11n 40MHz mode chainC
Date: 28.OCT.2008 11:31:06

Chain C: 6 dB Bandwidth @ 802.11n HT40 mode channel 6



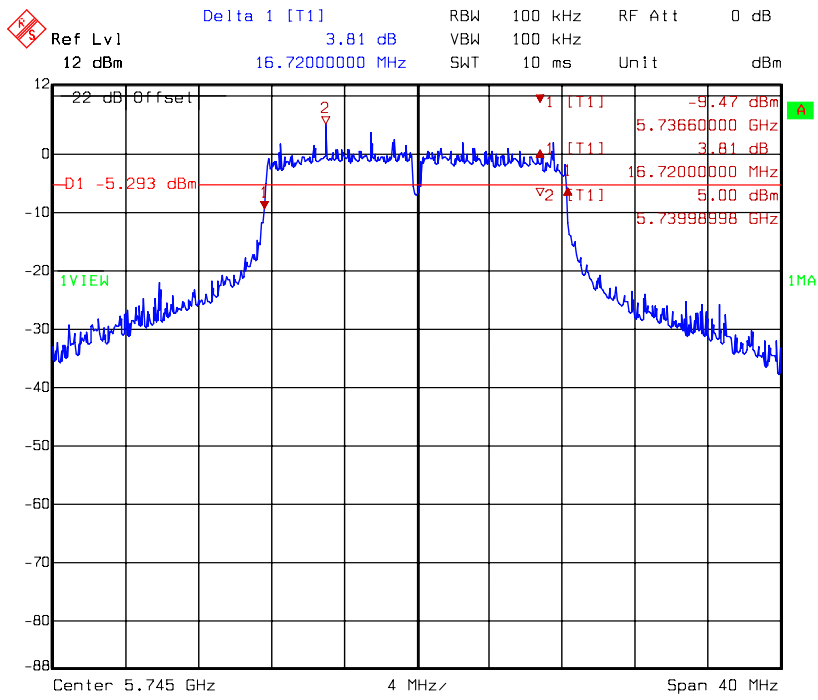
Title: 6dB Band-Width
Comment A: CH 6 at 802.11n 40MHz mode chainC
Date: 28.OCT.2008 11:36:14

Chain C: 6 dB Bandwidth @ 802.11n HT40 mode channel 9



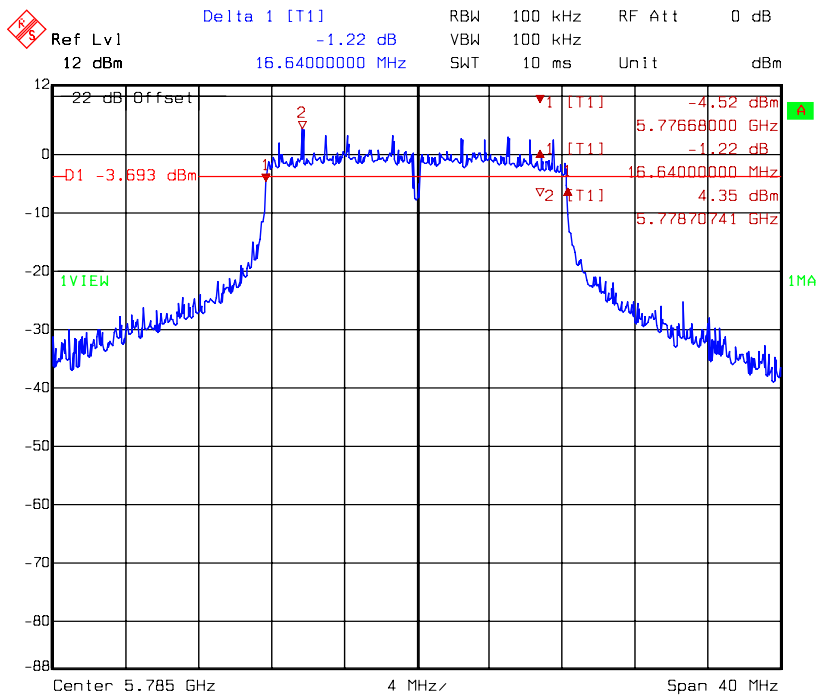
Title: 6dB Band-Width
Comment A: CH 9 at 802.11n 40MHz mode chainC
Date: 28.OCT.2008 11:39:53

Chain C: 6 dB Bandwidth @ 802.11a mode channel 149



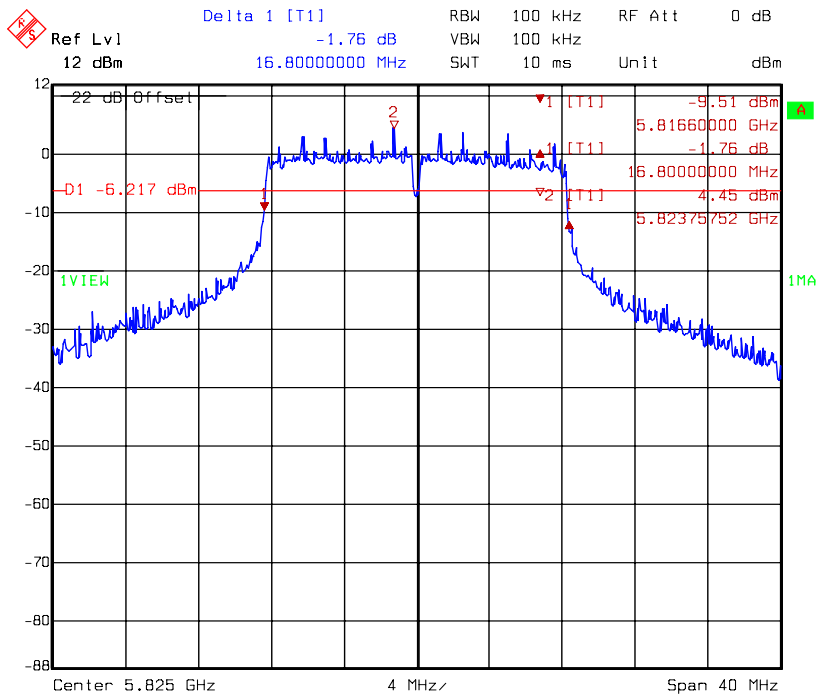
Title: 6dB Band-Width
Comment A: CH 149 at 802.11a mode chainC
Date: 28.OCT.2008 11:44:25

Chain C: 6 dB Bandwidth @ 802.11a mode channel 157



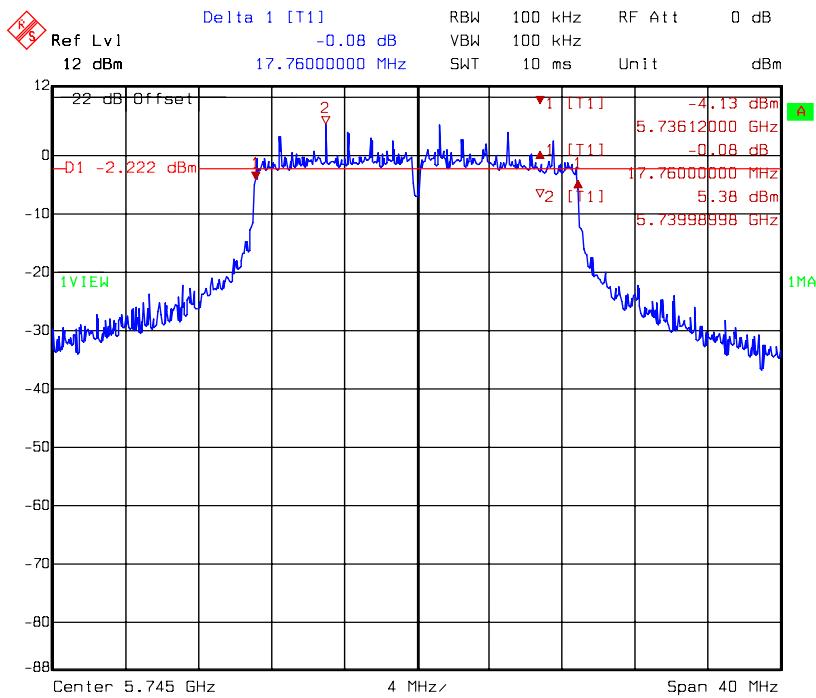
Title: 6dB Band-Width
Comment A: CH 157 at 802.11a mode chainC
Date: 28.OCT.2008 11:47:46

Chain C: 6 dB Bandwidth @ 802.11a mode channel 165



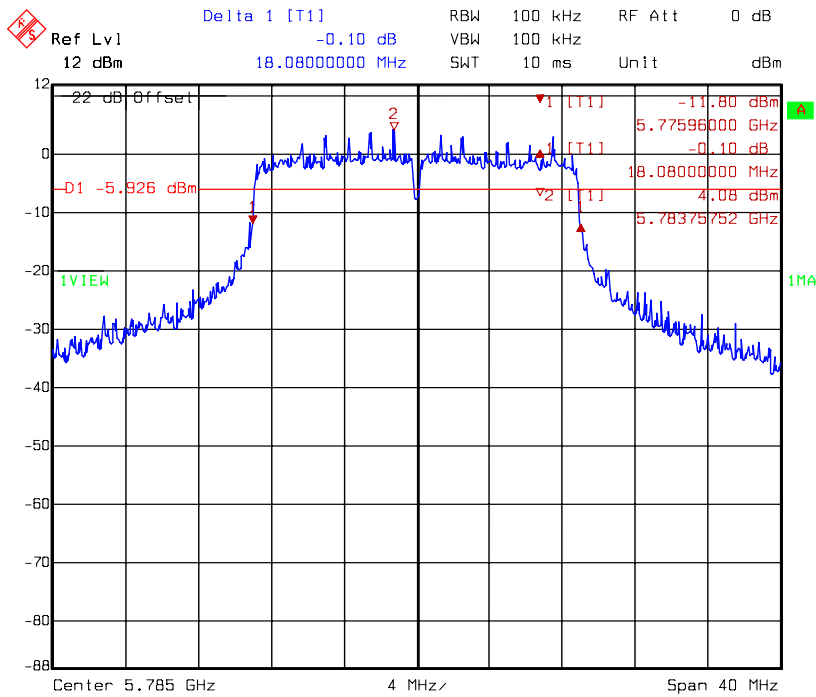
Title: 6dB Band-Width
Comment A: CH 165 at 802.11a mode chainC
Date: 28.OCT.2008 11:55:47

Chain C: 6 dB Bandwidth @ 802.11n HT20 mode channel 149



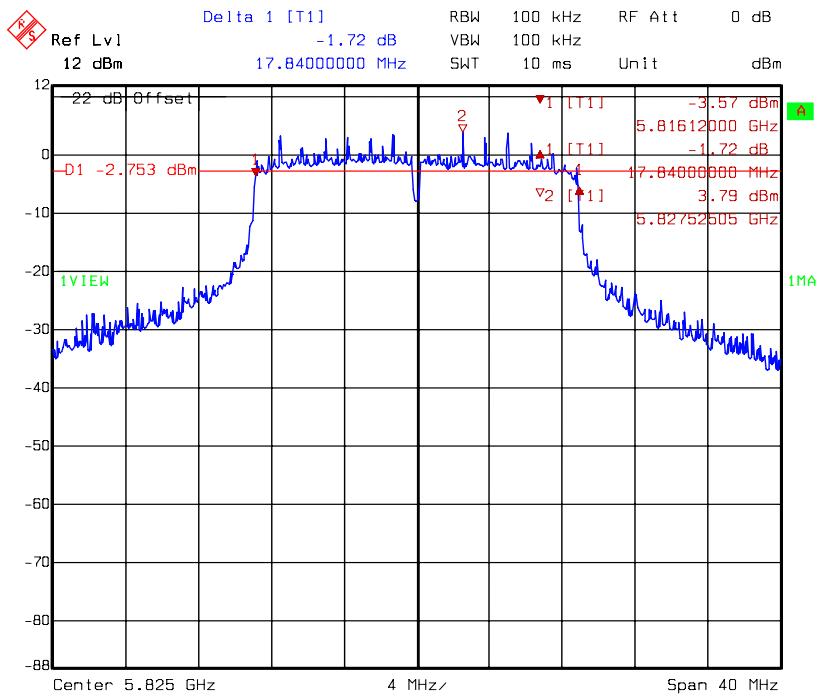
Title: 6dB Band-Width
Comment A: CH 149 at 802.11n 20MHz mode chainC
Date: 28.OCT.2008 12:00:56

Chain C: 6 dB Bandwidth @ 802.11n HT20 mode channel 157



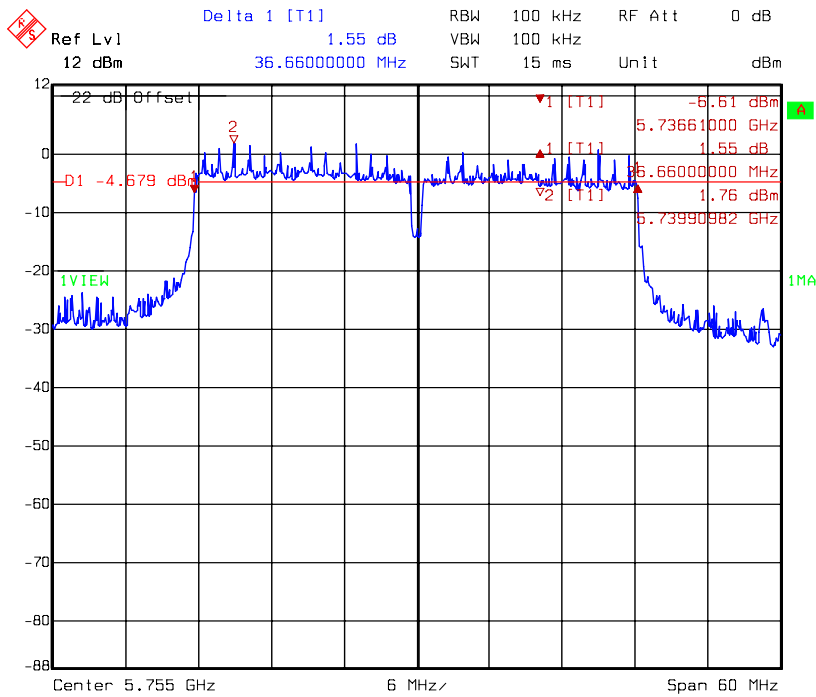
Title: 6dB Band-Width
Comment A: CH 157 at 802.11n 20MHz mode chainC
Date: 28.OCT.2008 12:04:17

Chain C: 6 dB Bandwidth @ 802.11n HT20 mode channel 165



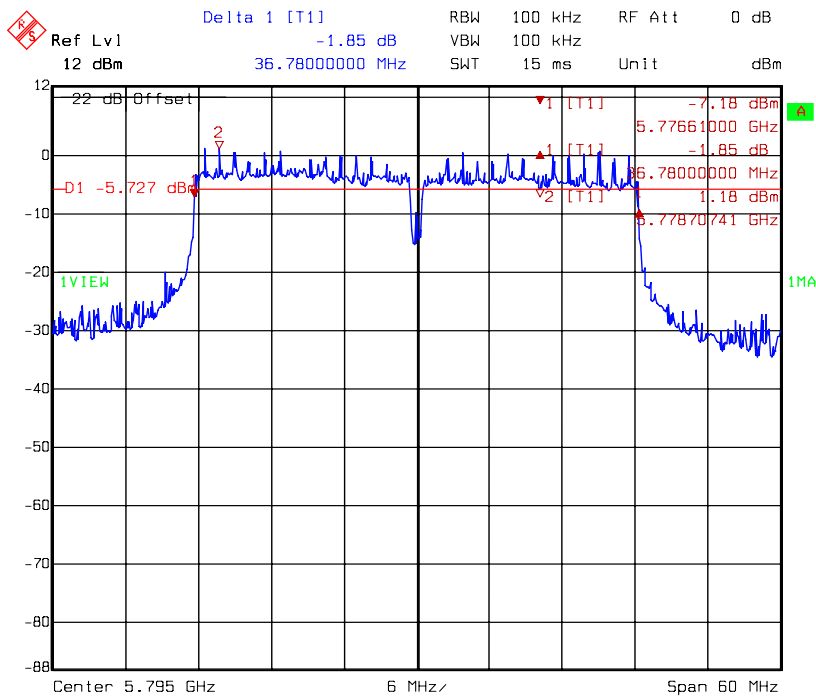
Title: 6dB Band-Width
Comment A: CH 165 at 802.11n 20MHz mode chainC
Date: 28.OCT.2008 12:07:10

Chain C: 6 dB Bandwidth @ 802.11n HT40 mode channel 151



Title: 6dB Band-Width
Comment A: CH 151 at 802.11n 40MHz mode chainC
Date: 28.OCT.2008 12:10:15

Chain C: 6 dB Bandwidth @ 802.11n HT40 mode channel 159



Title: 6dB Band-Width
Comment A: CH 159 at 802.11n 40MHz mode chainC
Date: 28.OCT.2008 12:13:11

4. 99 % Occupied Bandwidth

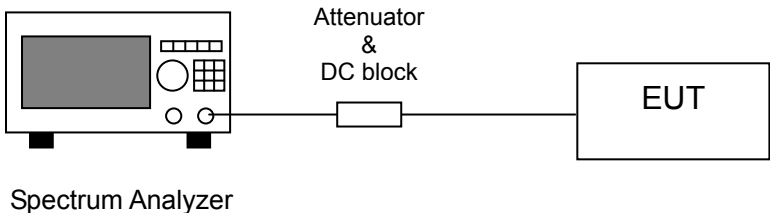
Name of Test	99 % Occupied Bandwidth
Base Standard	None; for reporting purposes only

Test Result: Complies
Measurement Data: See Table & plots below

Method of Measurement:
Reference FCC document: KDB558074

A portion of the transmitted signal is coupled to a Spectrum Analyzer with a resolution bandwidth of at least 1 % of the bandwidth of the transmitted signal. The resolution bandwidth is chosen so as not to reduce the peak level of the measured waveform. The appropriate bandwidth mask is applied to the output waveform to verify compliance.

Test Diagram:



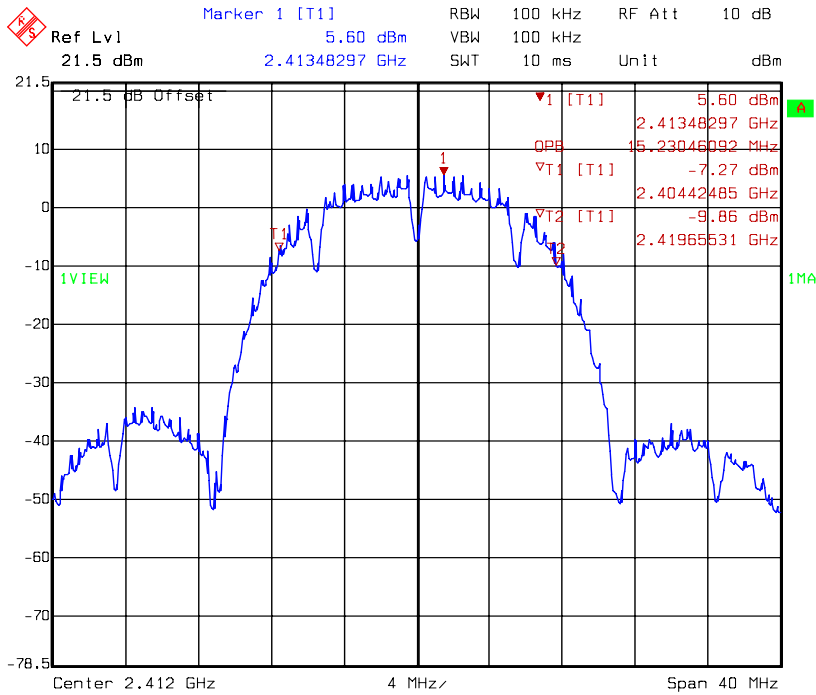
Note: The EUT was tested while in a continuous transmit mode and the worst case data rates are 1 Mbps for 802.11b, 6 Mbps for 802.11a/ 11g, 6.5Mbps for 802.11n HT20 and 13.5 Mbps for 802.11n HT40. The EUT was tuned to a low, middle and high channel.

Table 2. 99 % Occupied Bandwidth

Test Condition: Mode 1

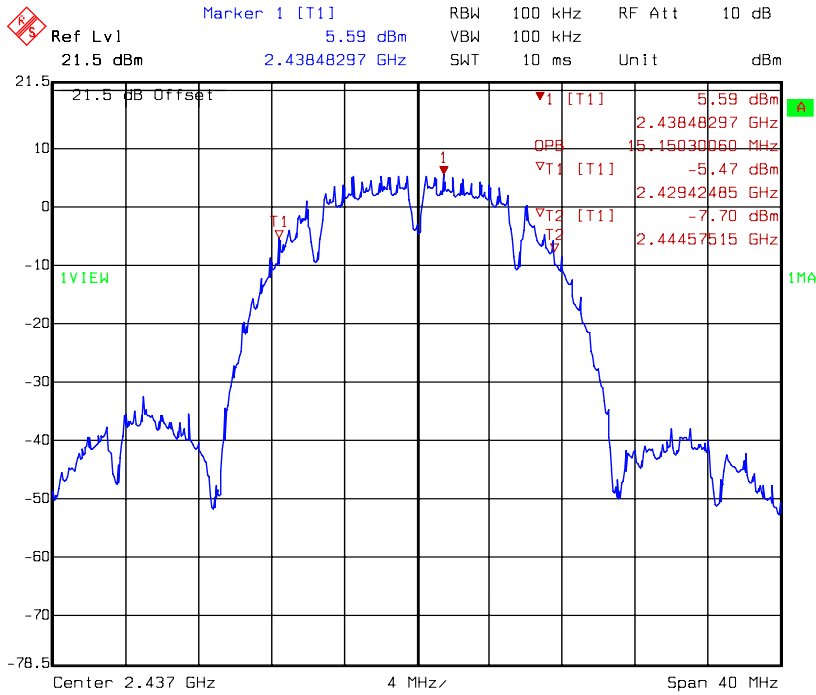
Mode	Channel	Frequency (MHz)	Data rate (Mbps)	99% Bandwidth (MHz)		
				Chain A	Chain B	Chain C
802.11b	1	2412	1	15.23	15.23	15.23
	6	2437		15.15	15.15	15.31
	11	2462		15.07	15.23	15.31
802.11g	1	2412	6	15.43	16.43	16.43
	6	2437		16.51	16.51	16.43
	11	2462		16.51	16.51	16.43
802.11n HT20	1	2412	6.5	17.72	17.72	17.72
	6	2437		17.72	17.64	17.72
	11	2462		17.72	17.72	17.72
802.11n HT40	3	2422	13.5	36.31	36.43	36.43
	6	2437		36.31	36.43	36.43
	9	2452		36.31	36.31	36.43
802.11a	149	5745	6	16.59	18.92	16.51
	157	5785		16.51	16.67	16.51
	165	5825		16.59	16.59	16.51
802.11n HT20	149	5745	6.5	17.72	20.20	17.80
	157	5785		17.80	17.88	17.72
	165	5825		17.72	17.80	17.72
802.11n HT40	151	5755	13.5	36.43	37.03	36.43
	159	5795		36.31	36.55	36.31

Chain A: 99 % Occupied Bandwidth @ 802.11b mode channel 1



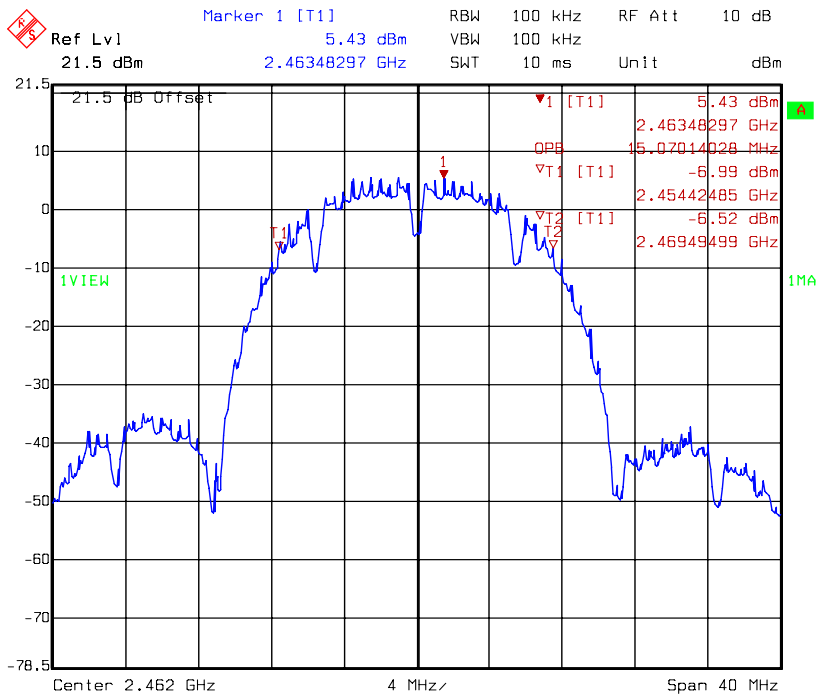
Title: Occupied Band-Width
Comment A: CH 1 at 802.11b mode chainA
Date: 24.OCT.2008 15:43:06

Chain A: 99 % Occupied Bandwidth @ 802.11b mode channel 6



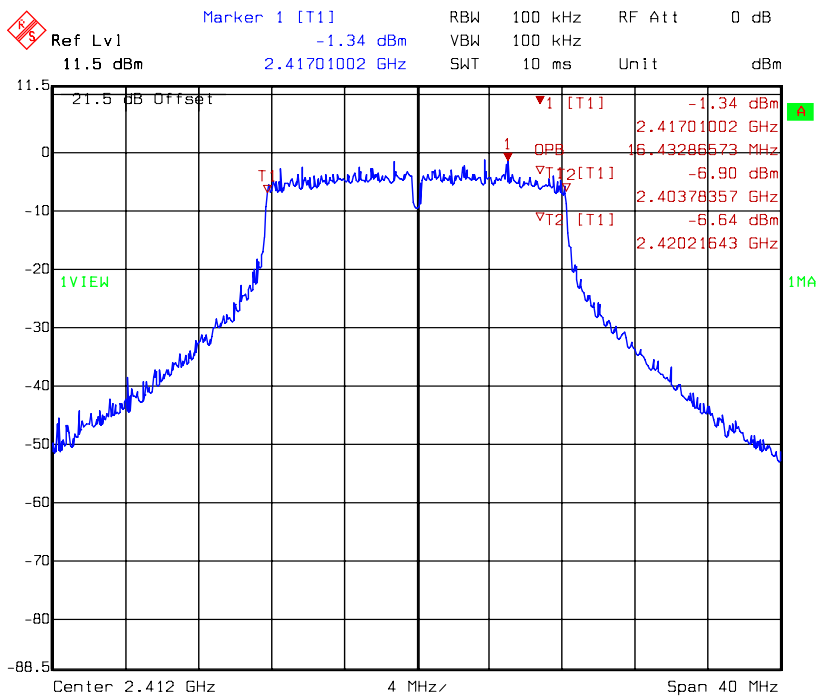
Title: Occupied Band-Width
Comment A: CH 6 at 802.11b mode chainA
Date: 24.OCT.2008 15:46:58

Chain A: 99 % Occupied Bandwidth @ 802.11b mode channel 11



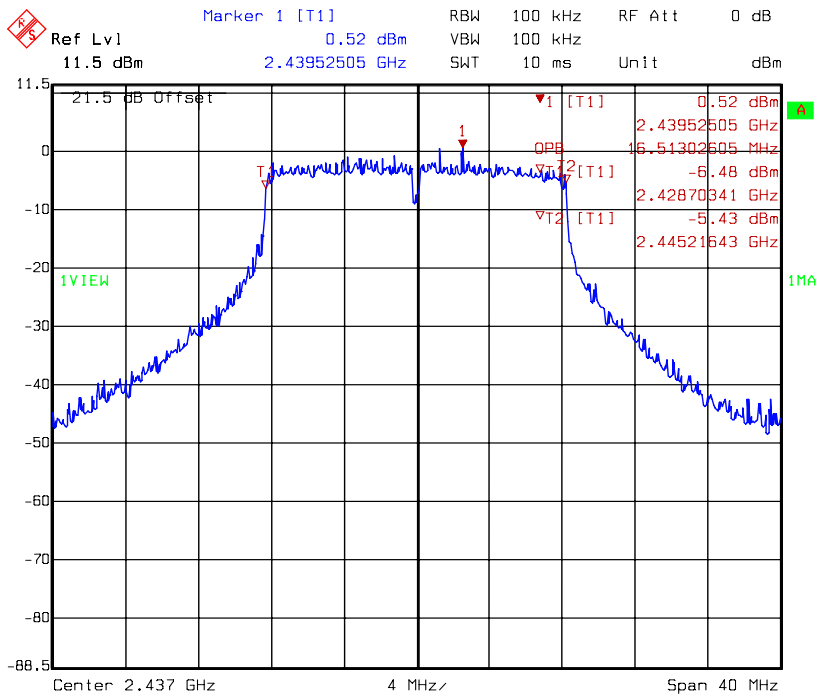
Title: Occupied Band-Width
Comment A: CH 11 at 802.11b mode chainA
Date: 24.OCT.2008 15:49:42

Chain A: 99 % Occupied Bandwidth @ 802.11g mode channel 1



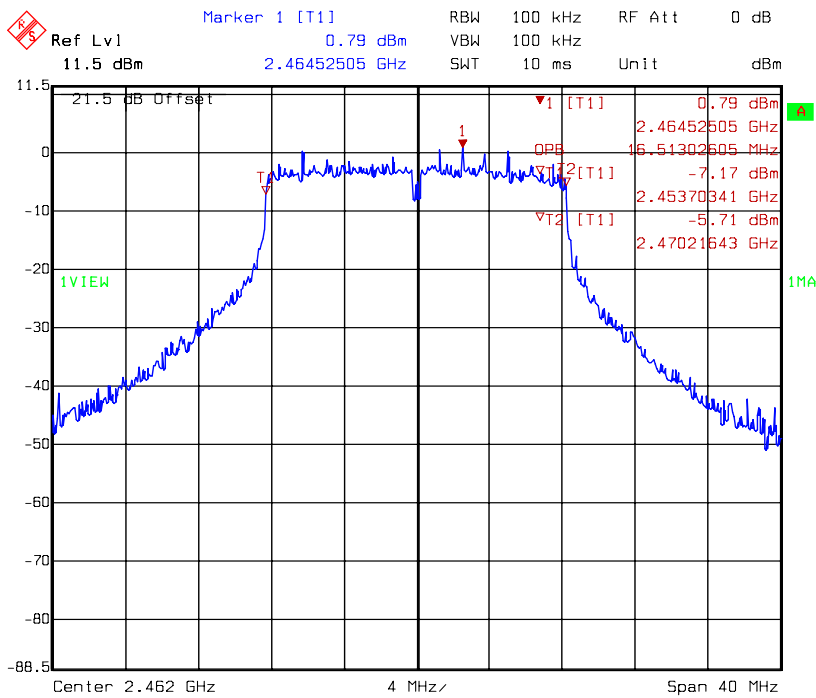
Title: Occupied Band-Width
Comment A: CH 1 at 802.11g mode chainA
Date: 24.OCT.2008 15:53:06

Chain A: 99 % Occupied Bandwidth @ 802.11g mode channel 6



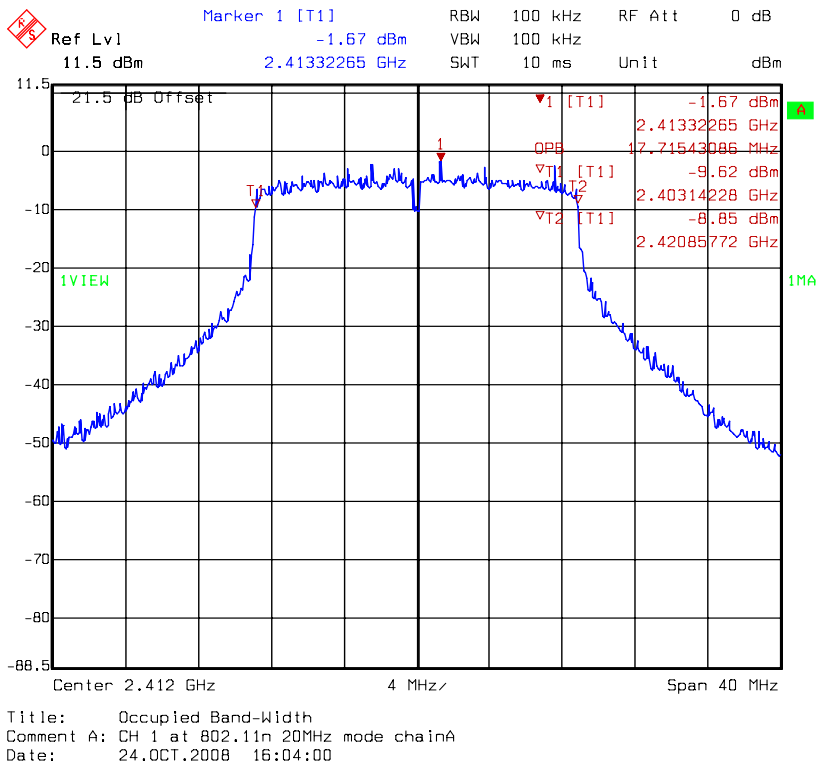
Title: Occupied Band-Width
Comment A: CH 6 at 802.11g mode chainA
Date: 24.OCT.2008 15:56:13

Chain A: 99 % Occupied Bandwidth @ 802.11g mode channel 11

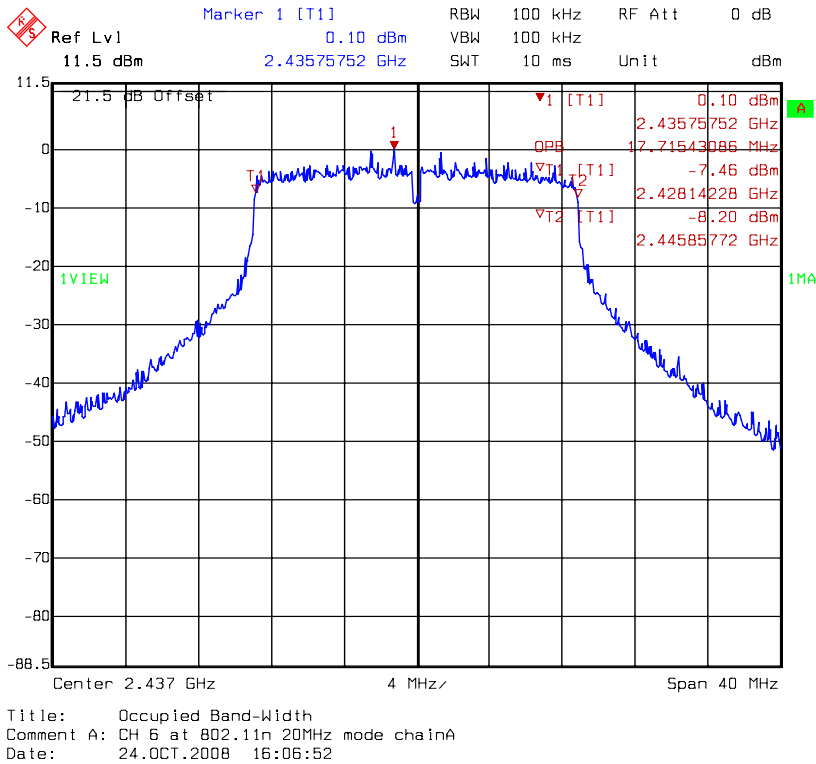


Title: Occupied Band-Width
Comment A: CH 11 at 802.11g mode chainA
Date: 24.OCT.2008 15:59:47

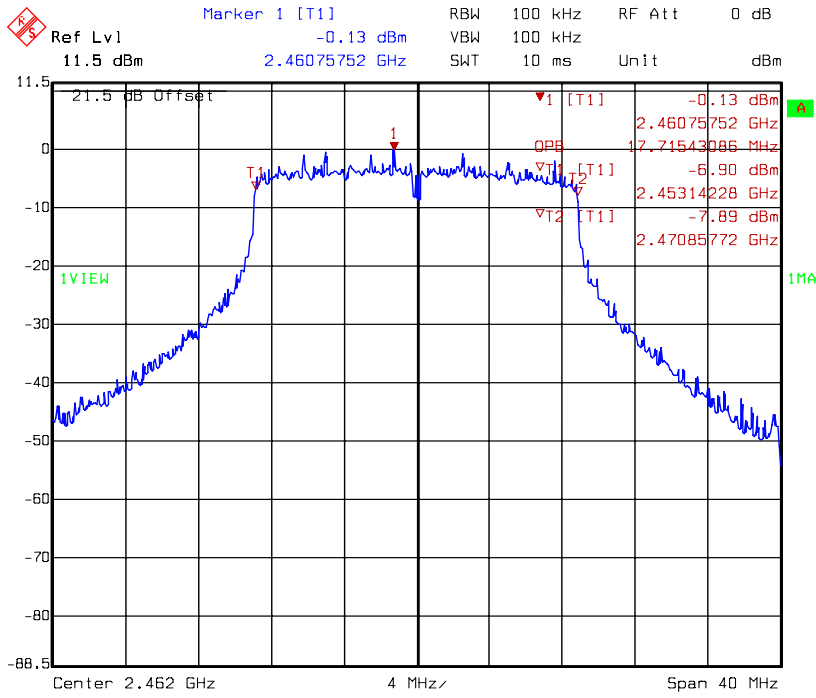
Chain A: 99 % Occupied Bandwidth @ 802.11n HT20 mode channel 1



Chain A: 99 % Occupied Bandwidth @ 802.11n HT20 mode channel 6

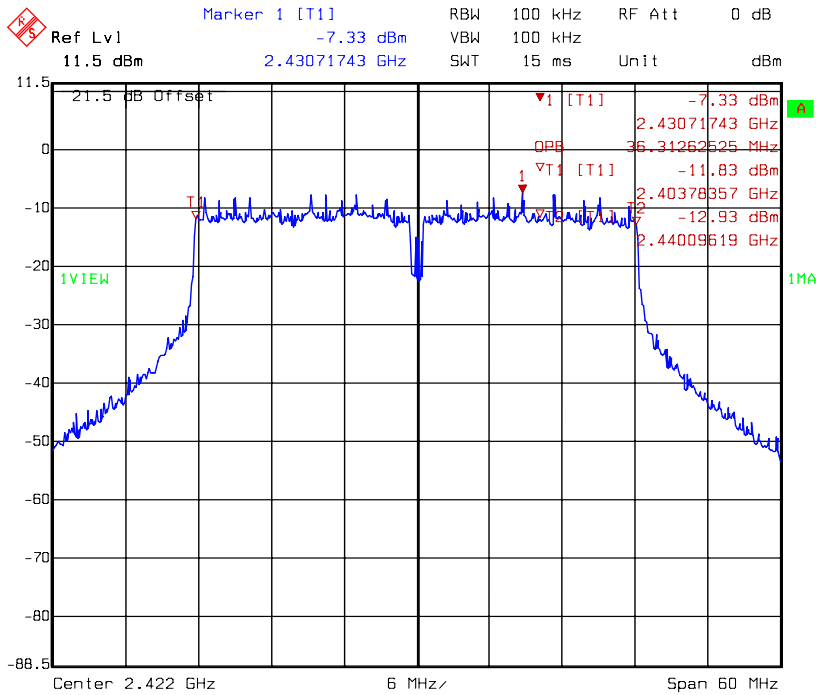


Chain A: 99 % Occupied Bandwidth @ 802.11n HT20 mode channel 11



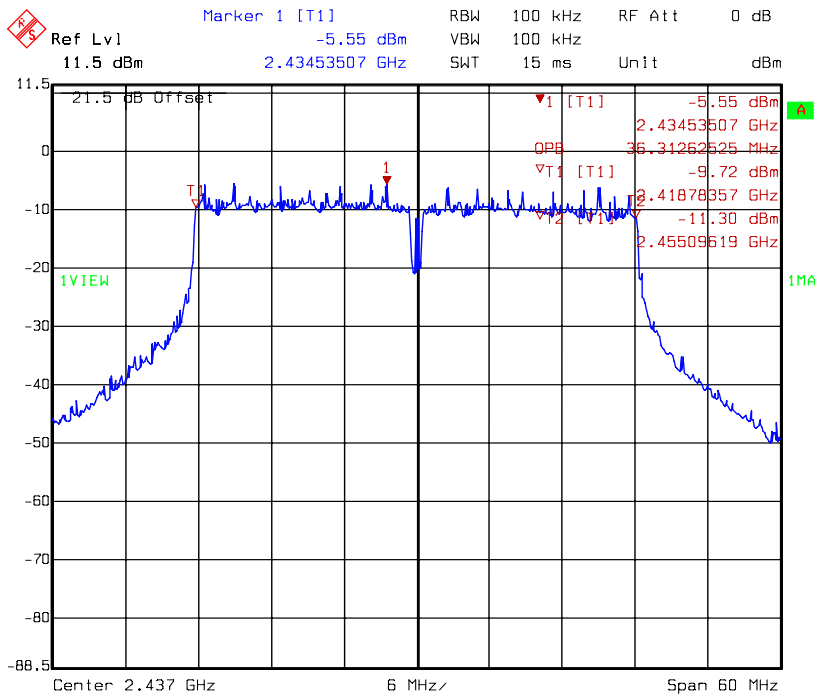
Title: Occupied Band-Width
Comment A: CH 11 at 802.11n 20MHz mode chainA
Date: 24.OCT.2008 16:12:13

Chain A: 99 % Occupied Bandwidth @ 802.11n HT40 mode channel 3



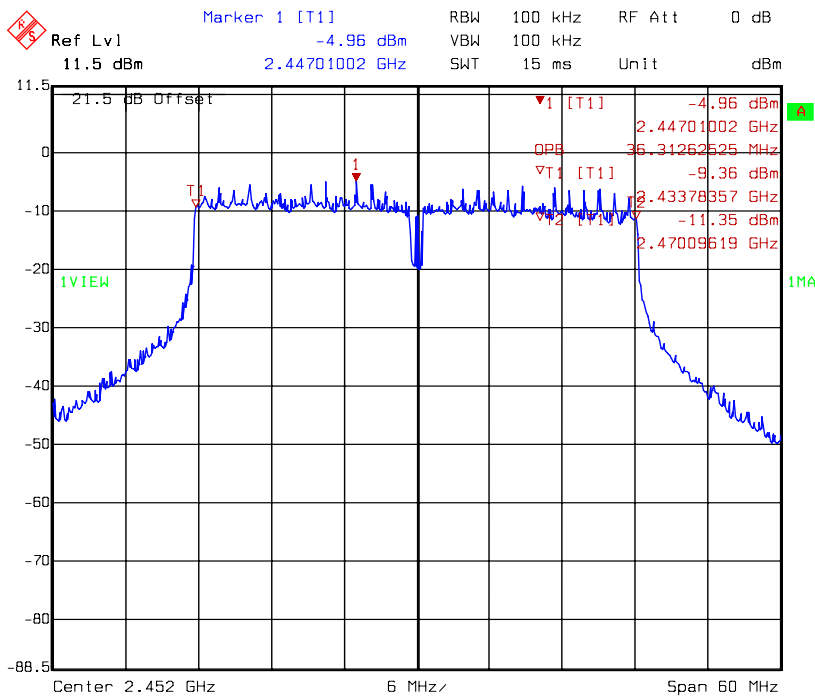
Title: Occupied Band-Width
Comment A: CH 3 at 802.11n 40MHz mode chainA
Date: 24.OCT.2008 16:18:28

Chain A: 99 % Occupied Bandwidth @ 802.11n HT40 mode channel 6



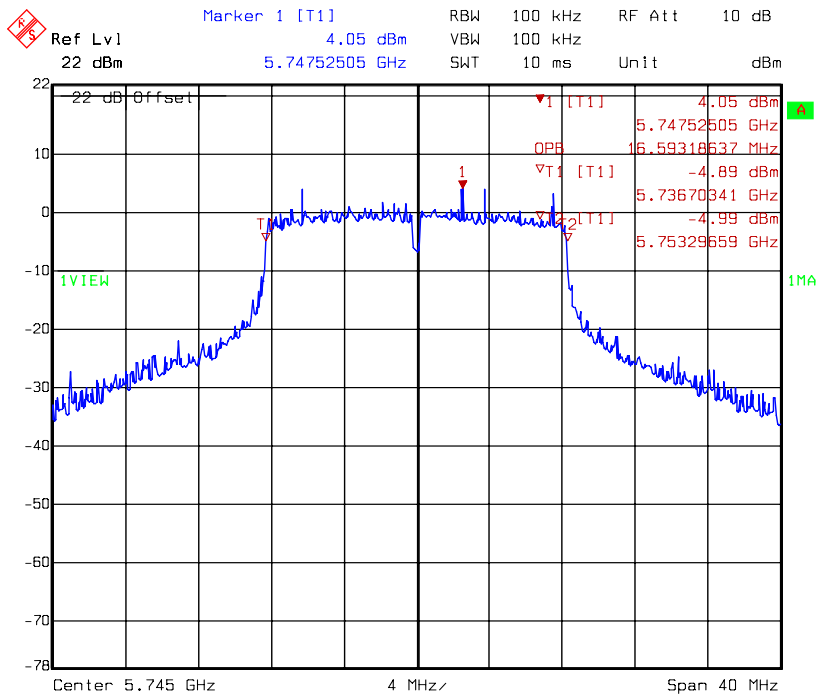
Title: Occupied Band-Width
Comment A: CH 6 at 802.11n 40MHz mode chainA
Date: 24.OCT.2008 16:27:01

Chain A: 99 % Occupied Bandwidth @ 802.11n HT40 mode channel 9



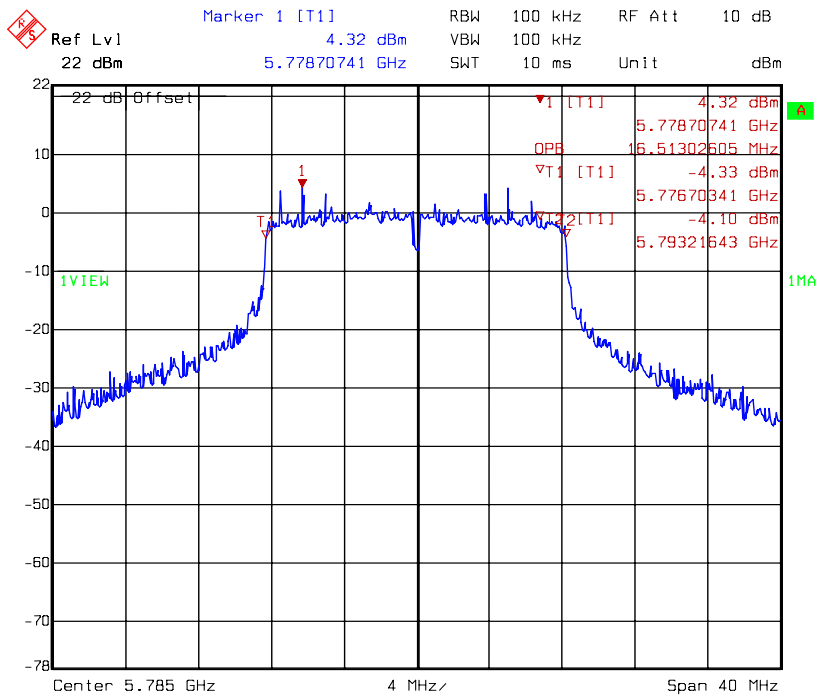
Title: Occupied Band-Width
Comment A: CH 9 at 802.11n 40MHz mode chainA
Date: 24.OCT.2008 16:29:49

Chain A: 99 % Occupied Bandwidth @ 802.11a mode channel 149



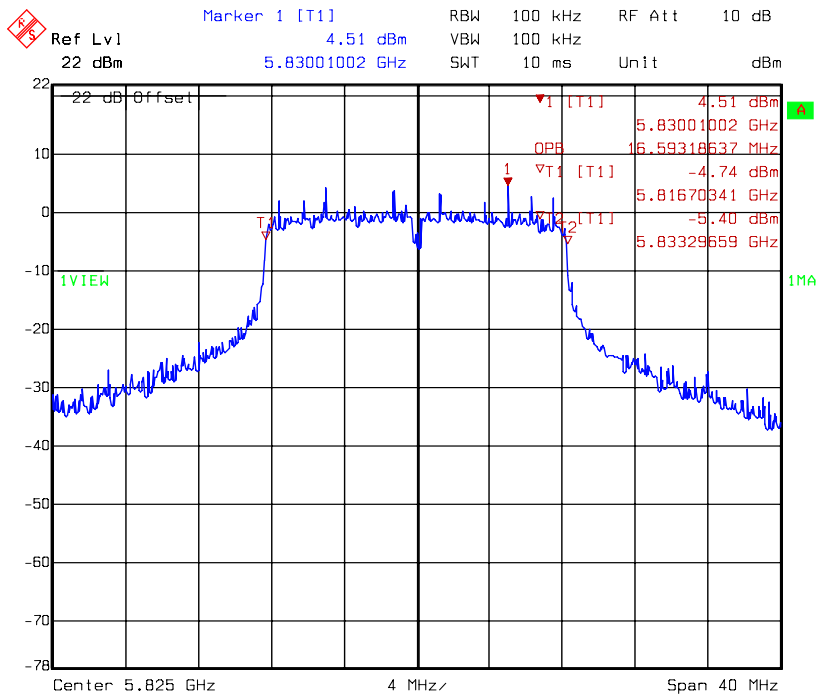
Title: Occupied Band-Width
Comment A: CH 149 at 802.11a mode chainA
Date: 27.OCT.2008 11:54:53

Chain A: 99 % Occupied Bandwidth @ 802.11a mode channel 157



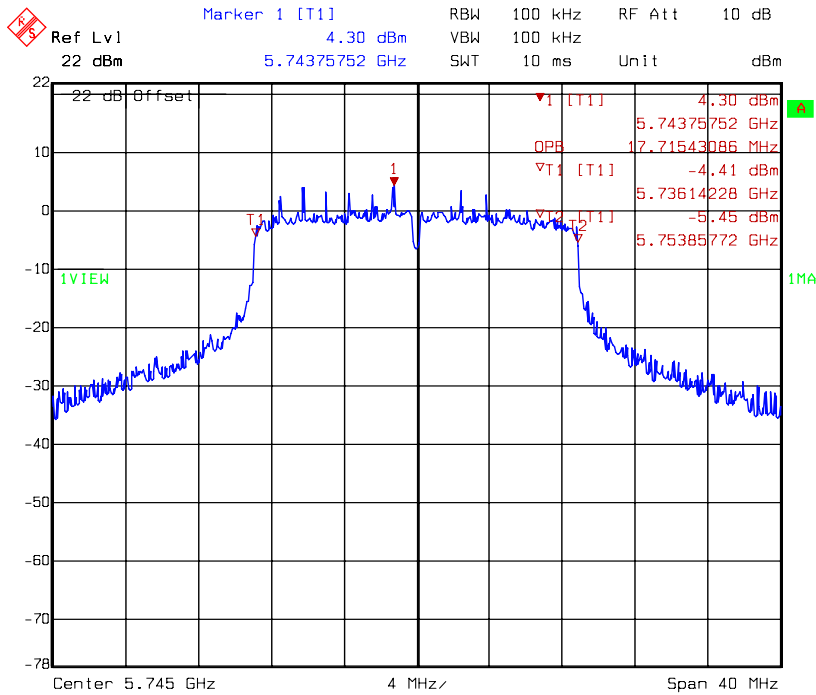
Title: Occupied Band-Width
Comment A: CH 157 at 802.11a mode chainA
Date: 27.OCT.2008 11:58:34

Chain A: 99 % Occupied Bandwidth @ 802.11a mode channel 165



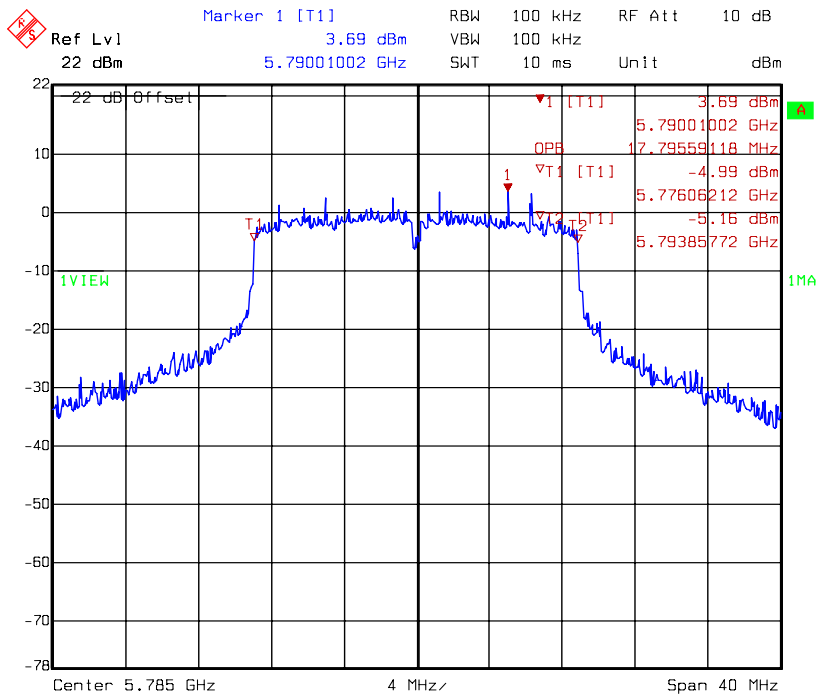
Title: Occupied Band-Width
Comment A: CH 165 at 802.11a mode chainA
Date: 27.OCT.2008 12:08:39

Chain A: 99 % Occupied Bandwidth @ 802.11n HT20 mode channel 149



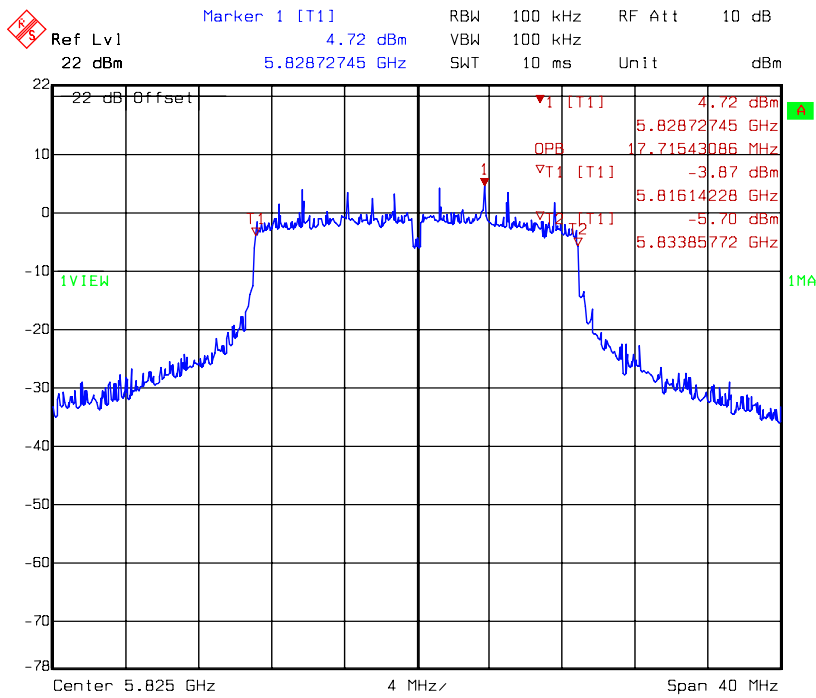
Title: Occupied Band-Width
Comment A: CH 149 at 802.11n 20MHz mode chainA
Date: 27.OCT.2008 14:09:29

Chain A: 99 % Occupied Bandwidth @ 802.11n HT20 mode channel 157



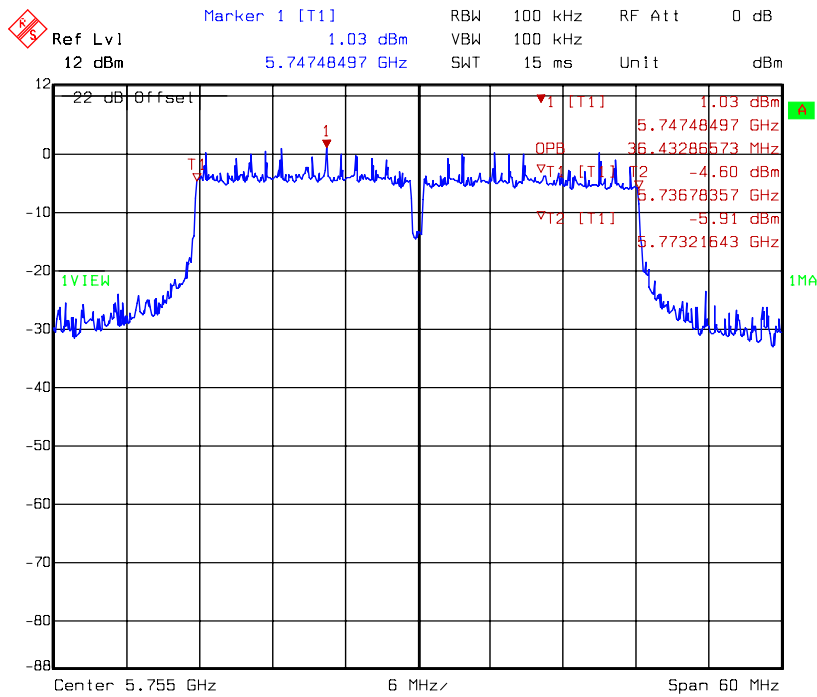
Title: Occupied Band-Width
Comment A: CH 157 at 802.11n 20MHz mode chainA
Date: 27.OCT.2008 14:14:45

Chain A: 99 % Occupied Bandwidth @ 802.11n HT20 mode channel 165



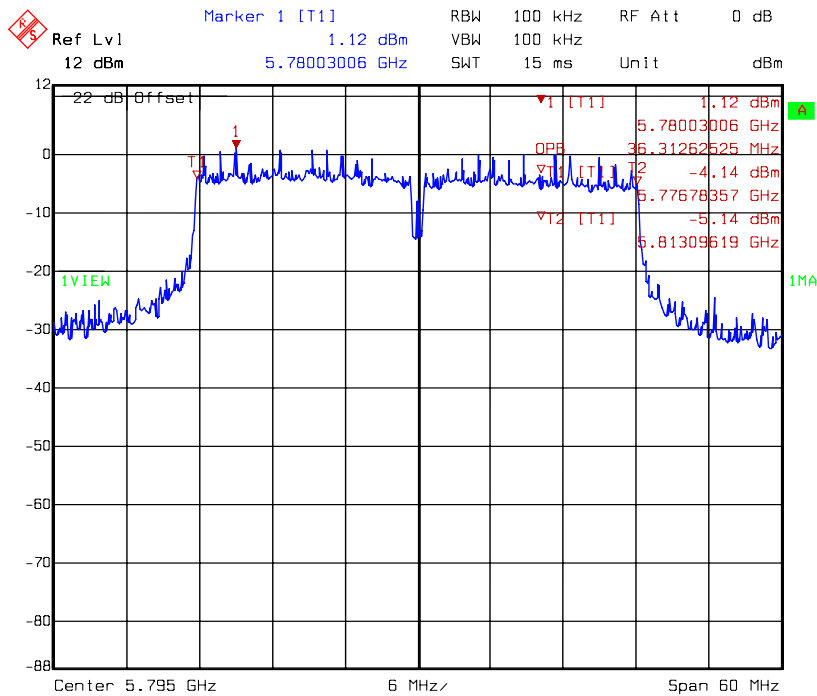
Title: Occupied Band-Width
Comment A: CH 165 at 802.11n 20MHz mode chainA
Date: 27.OCT.2008 14:18:27

Chain A: 99 % Occupied Bandwidth @ 802.11n HT40 mode channel 151



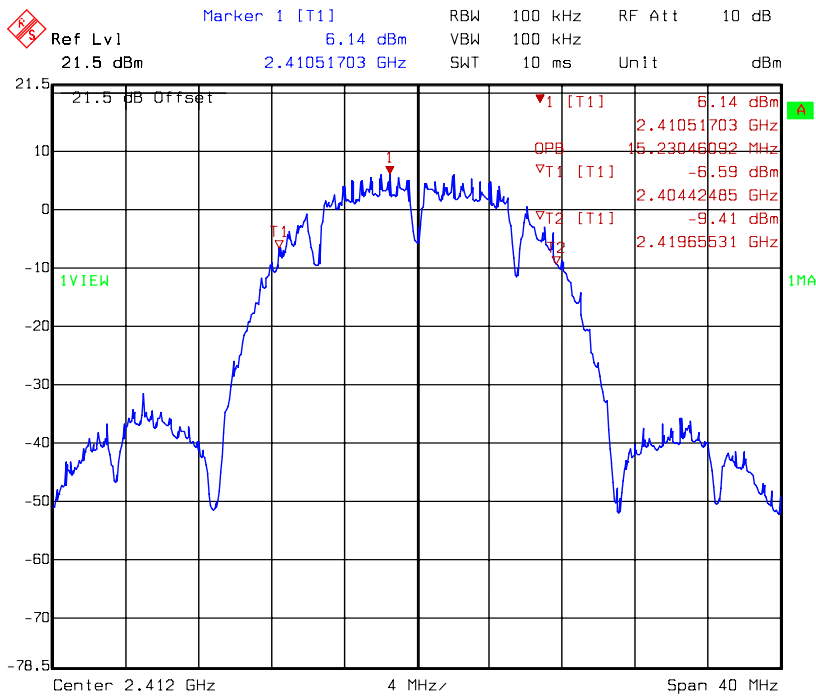
Title: Occupied Band-Width
Comment A: CH 151 at 802.11n 40MHz mode chainA
Date: 27.OCT.2008 14:23:05

Chain A: 99 % Occupied Bandwidth @ 802.11n HT40 mode channel 159



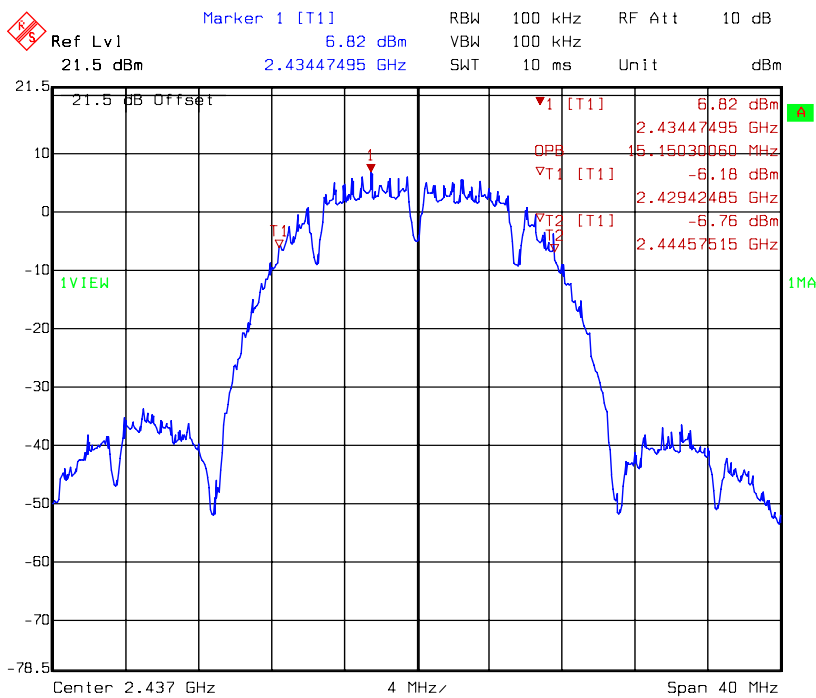
Title: Occupied Band-Width
Comment A: CH 159 at 802.11n 40MHz mode chainA
Date: 27.OCT.2008 14:26:26

Chain B: 99 % Occupied Bandwidth @ 802.11b mode channel 1



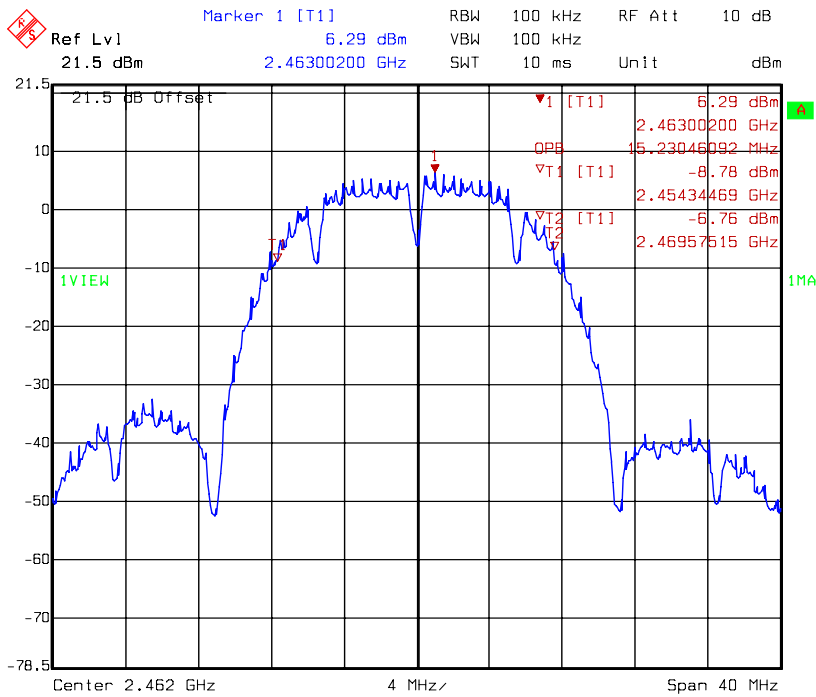
Title: Occupied Band-Width
Comment A: CH 1 at 802.11b mode chainB
Date: 27.OCT.2008 14:57:42

Chain B: 99 % Occupied Bandwidth @ 802.11b mode channel 6



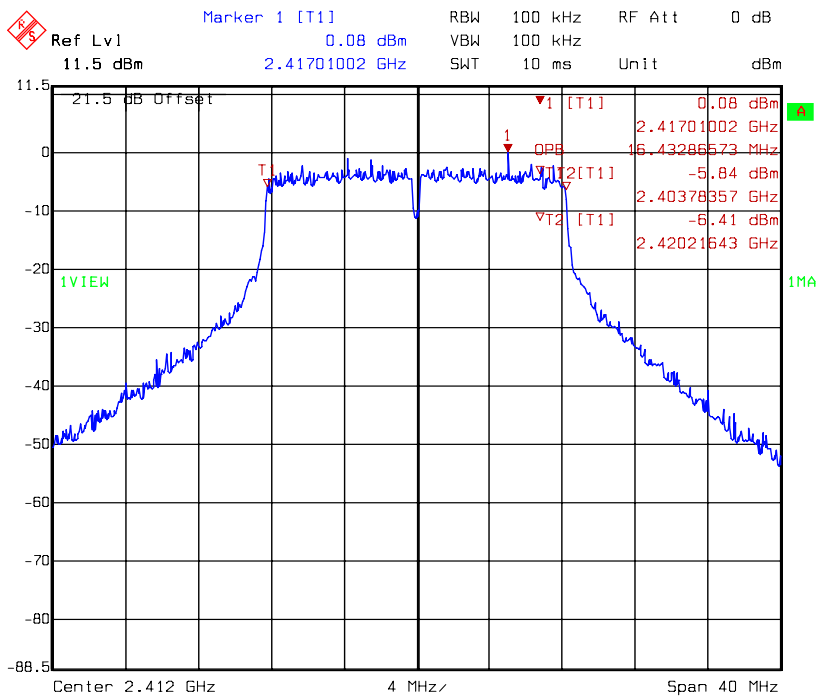
Title: Occupied Band-Width
Comment A: CH 6 at 802.11b mode chainB
Date: 27.OCT.2008 15:00:52

Chain B: 99 % Occupied Bandwidth @ 802.11b mode channel 11



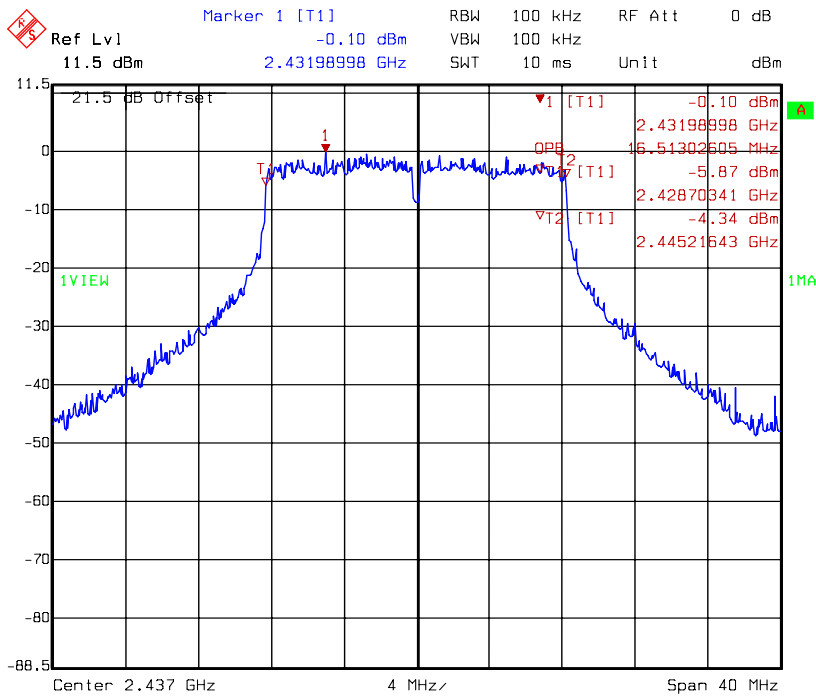
Title: Occupied Band-Width
Comment A: CH 11 at 802.11b mode chainB
Date: 27.OCT.2008 15:03:50

Chain B: 99 % Occupied Bandwidth @ 802.11g mode channel 1



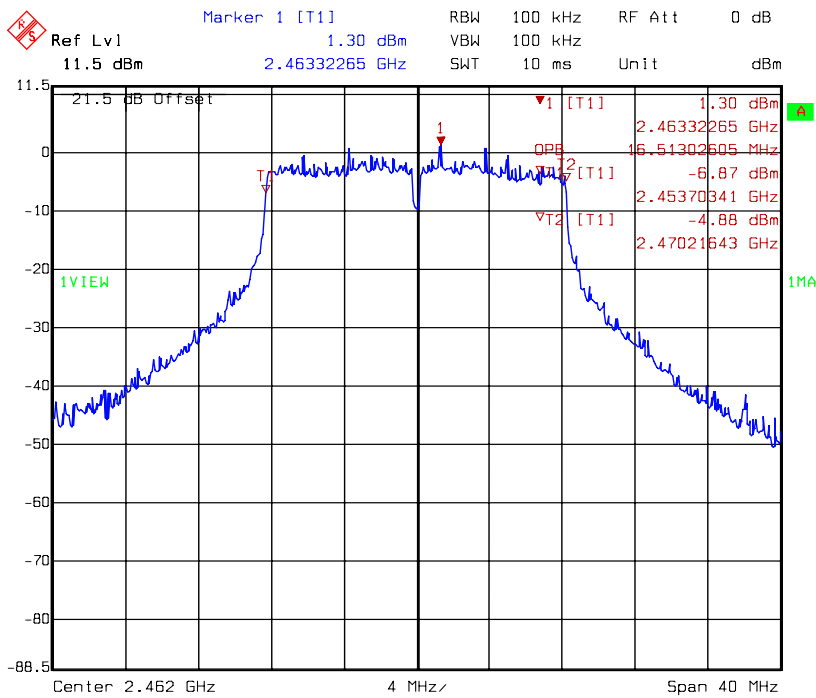
Title: Occupied Band-Width
Comment A: CH 1 at 802.11g mode chainB
Date: 27.OCT.2008 16:23:47

Chain B: 99 % Occupied Bandwidth @ 802.11g mode channel 6



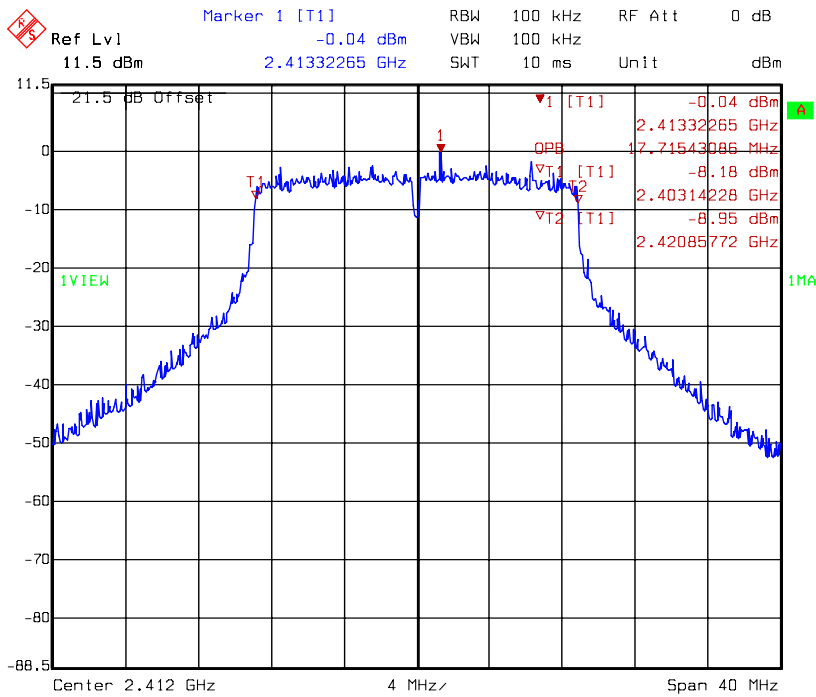
Title: Occupied Band-Width
Comment A: CH 6 at 802.11g mode chainB
Date: 27.OCT.2008 16:26:37

Chain B: 99 % Occupied Bandwidth @ 802.11g mode channel 11



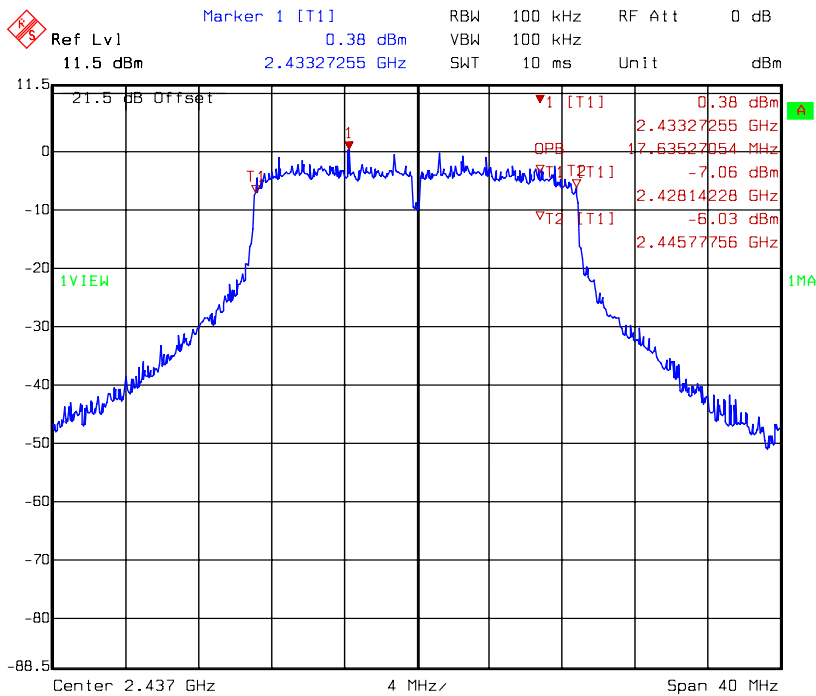
Title: Occupied Band-Width
Comment A: CH 11 at 802.11g mode chainB
Date: 27.OCT.2008 16:29:35

Chain B: 99 % Occupied Bandwidth @ 802.11n HT20 mode channel 1



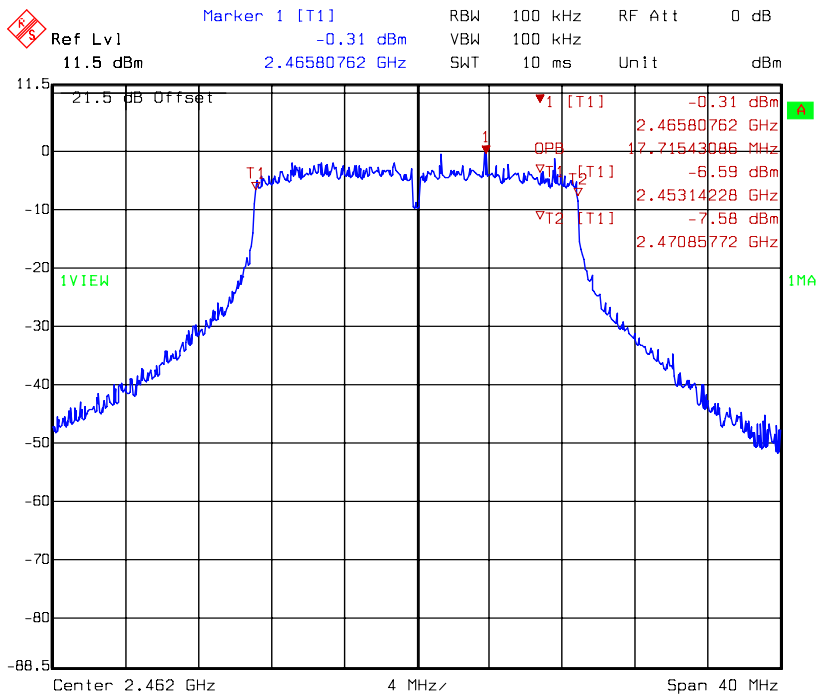
Title: Occupied Band-Width
Comment A: CH 1 at 802.11n 20MHz mode chainB
Date: 27.OCT.2008 16:33:04

Chain B: 99 % Occupied Bandwidth @ 802.11n HT20 mode channel 6



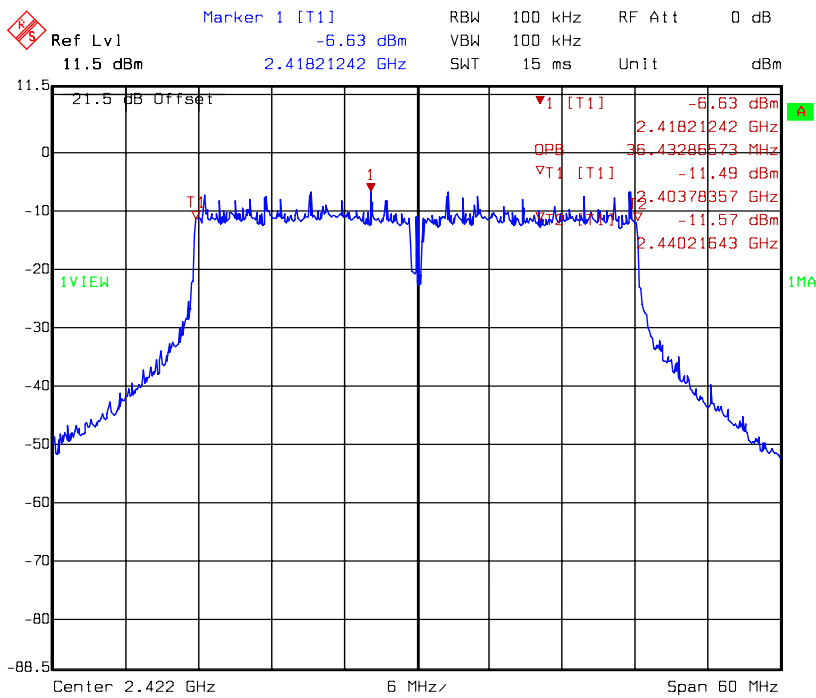
Title: Occupied Band-Width
Comment A: CH 6 at 802.11n 20MHz mode chainB
Date: 27.OCT.2008 16:35:47

Chain B: 99 % Occupied Bandwidth @ 802.11n HT20 mode channel 11



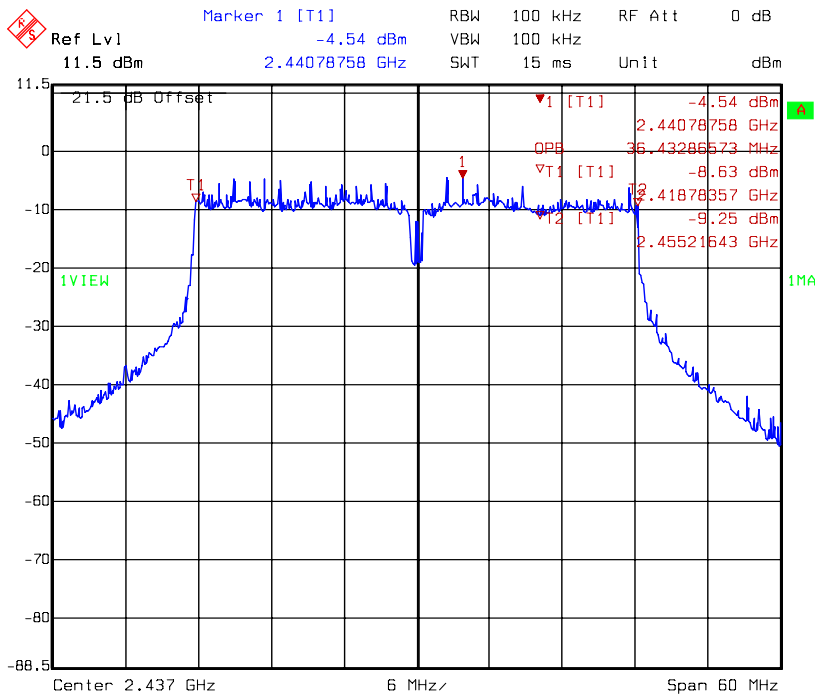
Title: Occupied Band-Width
Comment A: CH 11 at 802.11n 20MHz mode chainB
Date: 27.OCT.2008 16:38:22

Chain B: 99 % Occupied Bandwidth @ 802.11n HT40 mode channel 3



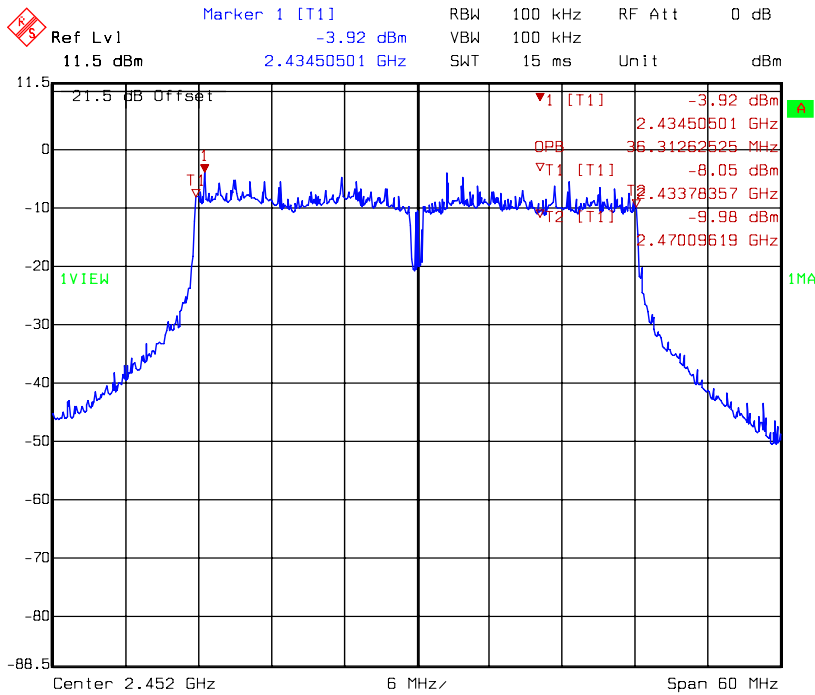
Title: Occupied Band-Width
Comment A: CH 3 at 802.11n 40MHz mode chainB
Date: 27.OCT.2008 16:41:49

Chain B: 99 % Occupied Bandwidth @ 802.11n HT40 mode channel 6



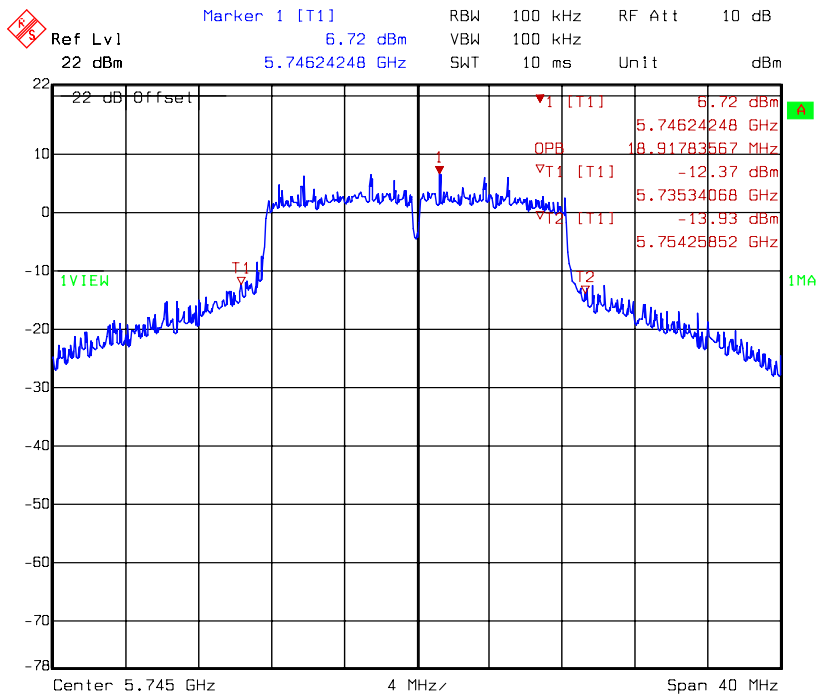
Title: Occupied Band-Width
Comment A: CH 6 at 802.11n 40MHz mode chainB
Date: 27.OCT.2008 16:48:37

Chain B: 99 % Occupied Bandwidth @ 802.11n HT40 mode channel 9



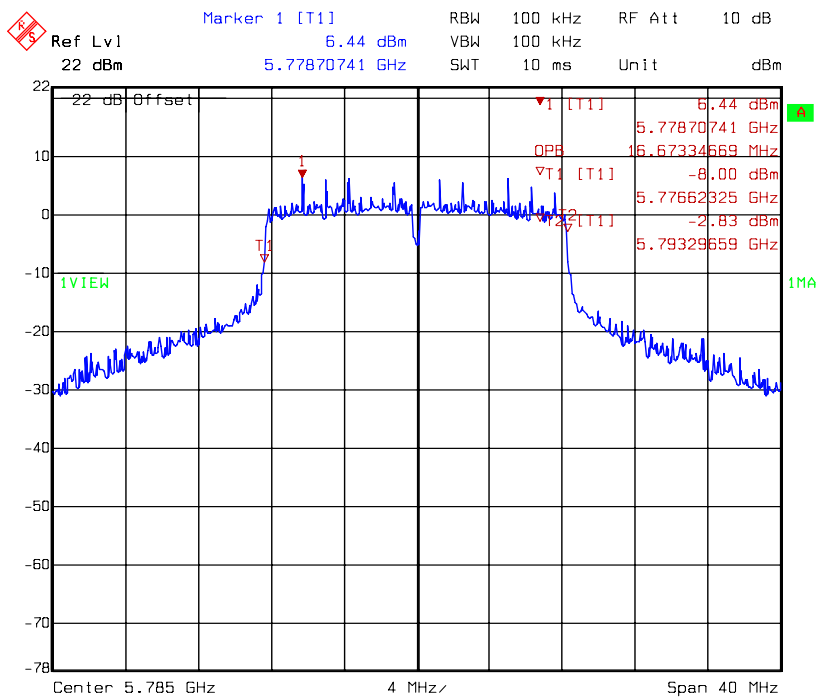
Title: Occupied Band-Width
Comment A: CH 9 at 802.11n 40MHz mode chainB
Date: 27.OCT.2008 16:52:03

Chain B: 99 % Occupied Bandwidth @ 802.11a mode channel 149



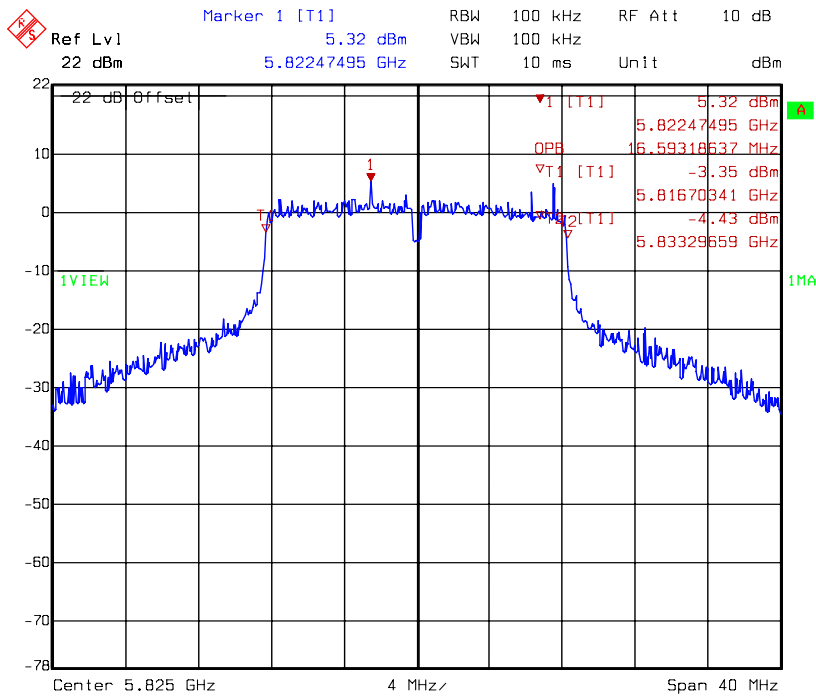
Title: Occupied Band-Width
Comment A: CH 149 at 802.11a mode chainB
Date: 27.OCT.2008 16:56:30

Chain B: 99 % Occupied Bandwidth @ 802.11a mode channel 157



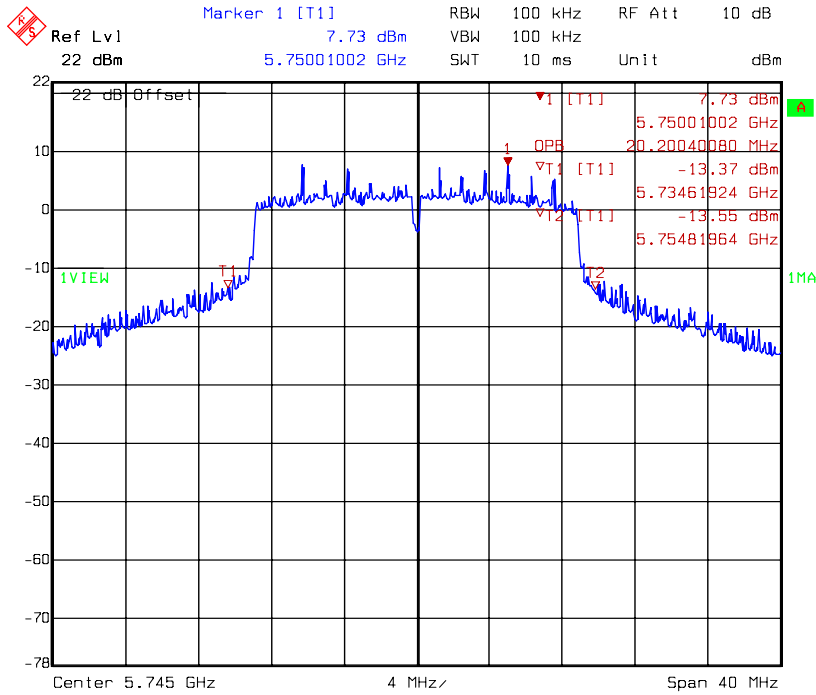
Title: Occupied Band-Width
Comment A: CH 157 at 802.11a mode chainB
Date: 27.OCT.2008 17:01:22

Chain B: 99 % Occupied Bandwidth @ 802.11a mode channel 165



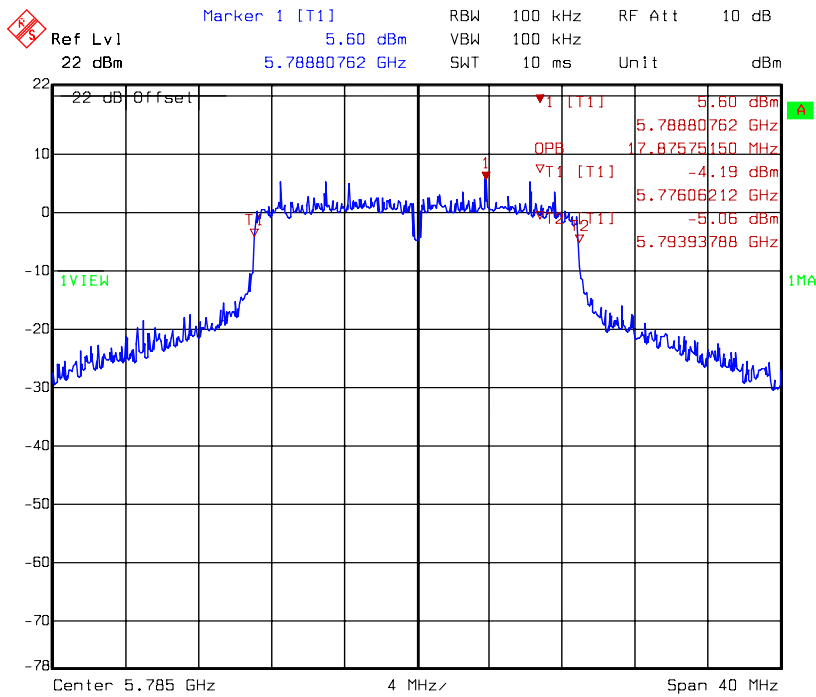
Title: Occupied Band-Width
Comment A: CH 165 at 802.11a mode chainB
Date: 27.OCT.2008 17:04:32

Chain B: 99 % Occupied Bandwidth @ 802.11n HT20 mode channel 149



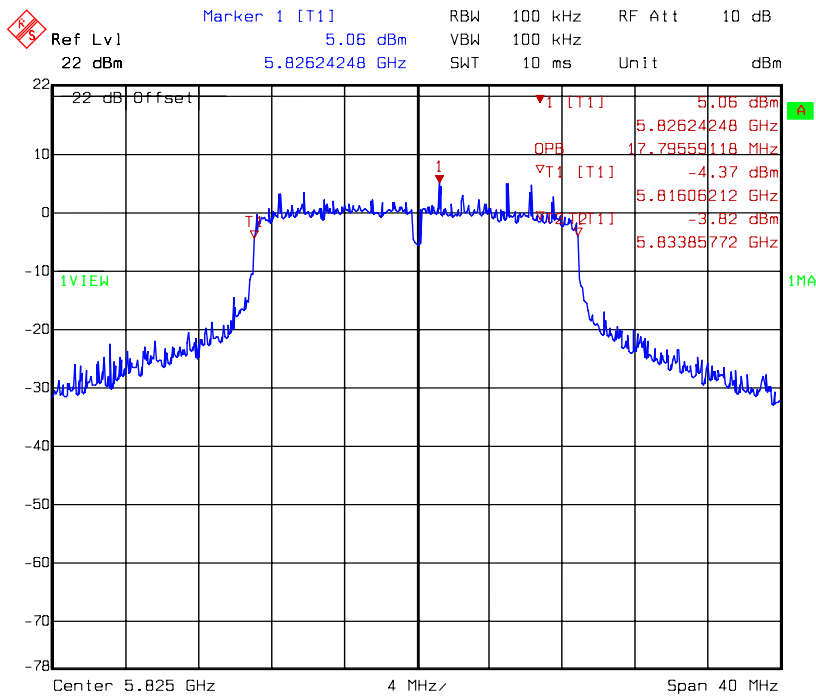
Title: Occupied Band-Width
Comment A: CH 149 at 802.11n 20MHz mode chainB
Date: 27.OCT.2008 17:09:34

Chain B: 99 % Occupied Bandwidth @ 802.11n HT20 mode channel 157



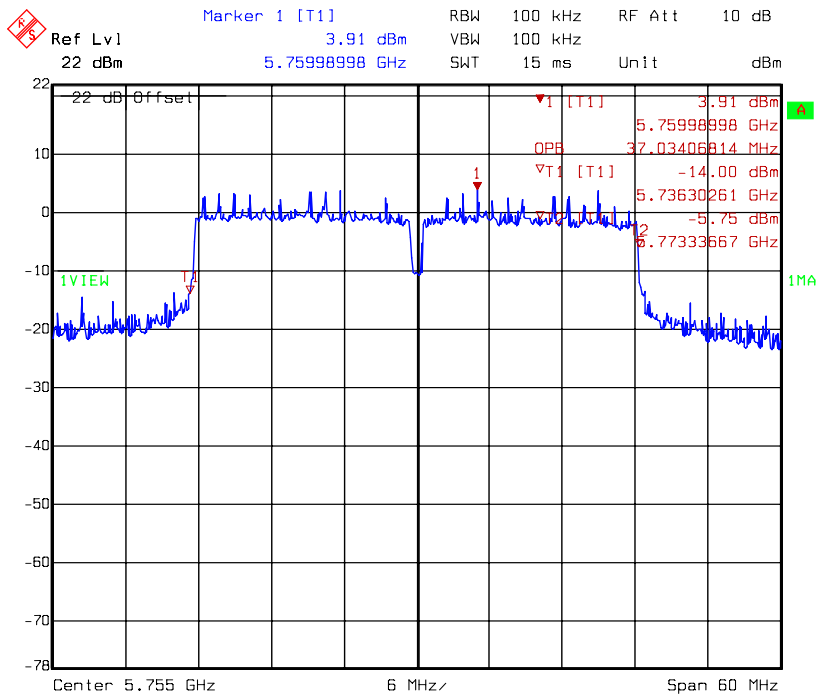
Title: Occupied Band-Width
Comment A: CH 157 at 802.11n 20MHz mode chainB
Date: 27.OCT.2008 17:12:53

Chain B: 99 % Occupied Bandwidth @ 802.11n HT20 mode channel 165



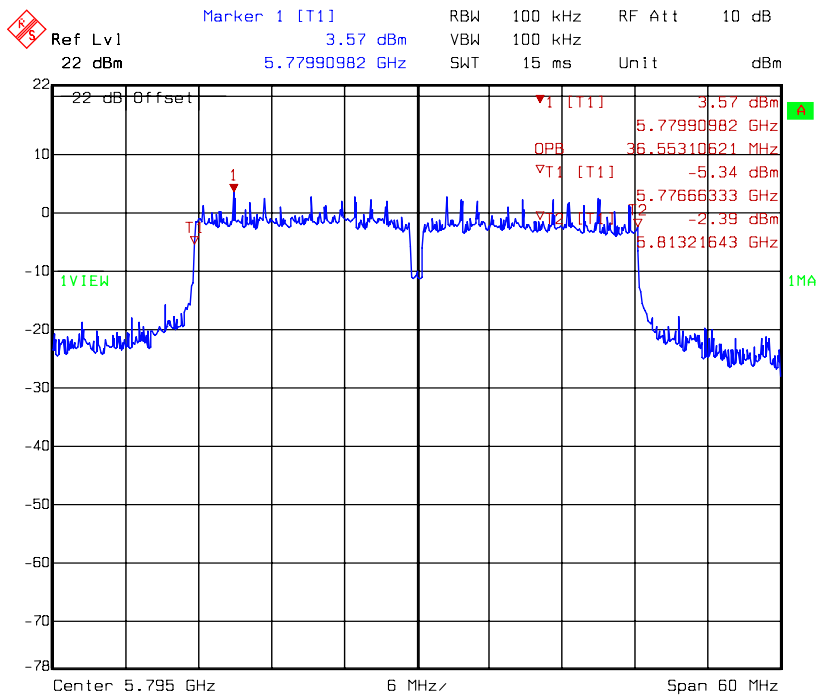
Title: Occupied Band-Width
Comment A: CH 165 at 802.11n 20MHz mode chainB
Date: 27.OCT.2008 17:18:02

Chain B: 99 % Occupied Bandwidth @ 802.11n HT40 mode channel 151



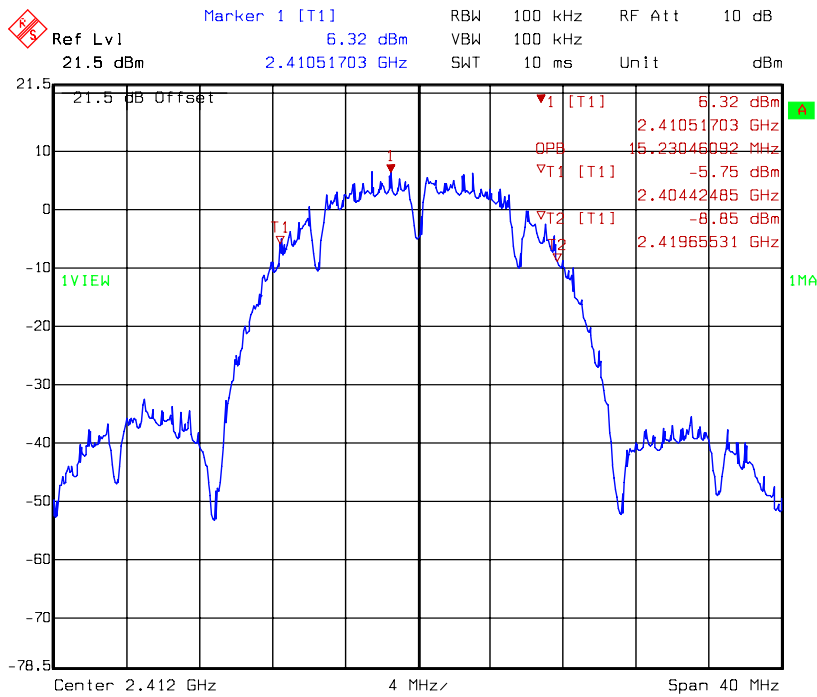
Title: Occupied Band-Width
Comment A: CH 151 at 802.11n 40MHz mode chainB
Date: 27.OCT.2008 17:23:54

Chain B: 99 % Occupied Bandwidth @ 802.11n HT40 mode channel 159



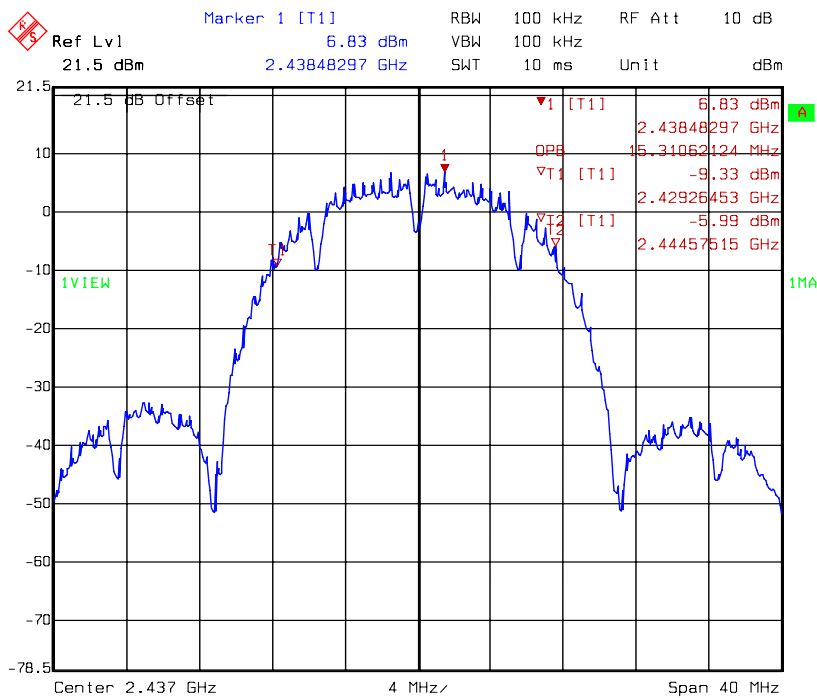
Title: Occupied Band-Width
Comment A: CH 159 at 802.11n 40MHz mode chainB
Date: 27.OCT.2008 17:27:59

Chain C: 99 % Occupied Bandwidth @ 802.11b mode channel 1



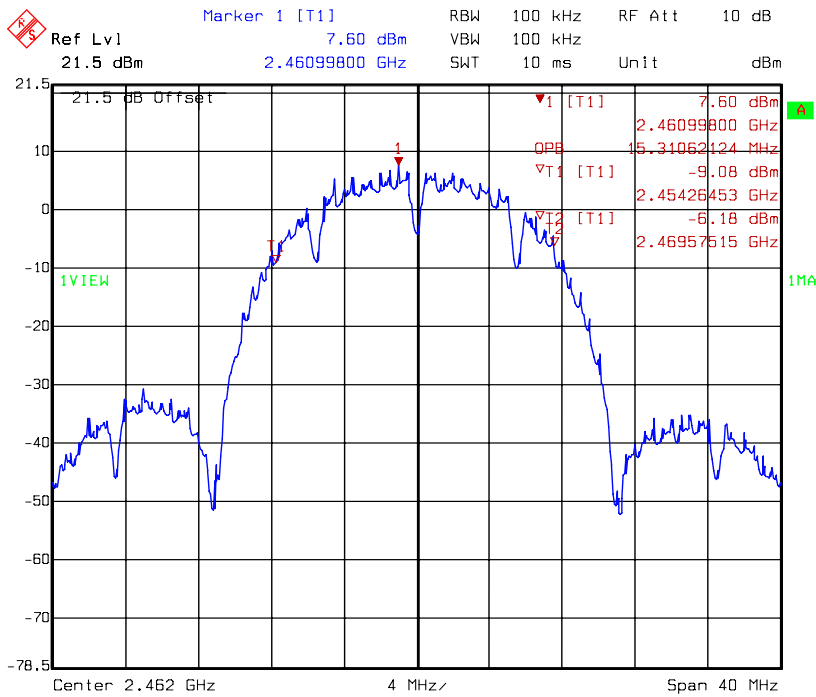
Title: Occupied Band-Width
Comment A: CH 1 at 802.11b mode chainC
Date: 28.OCT.2008 10:30:31

Chain C: 99 % Occupied Bandwidth @ 802.11b mode channel 6



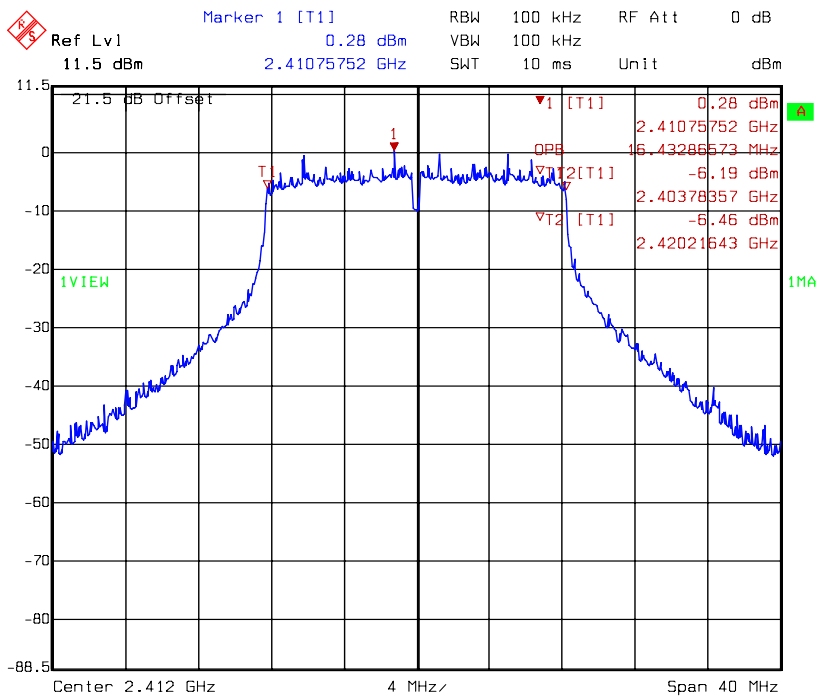
Title: Occupied Band-Width
Comment A: CH 6 at 802.11b mode chainC
Date: 28.OCT.2008 10:33:34

Chain C: 99 % Occupied Bandwidth @ 802.11b mode channel 11



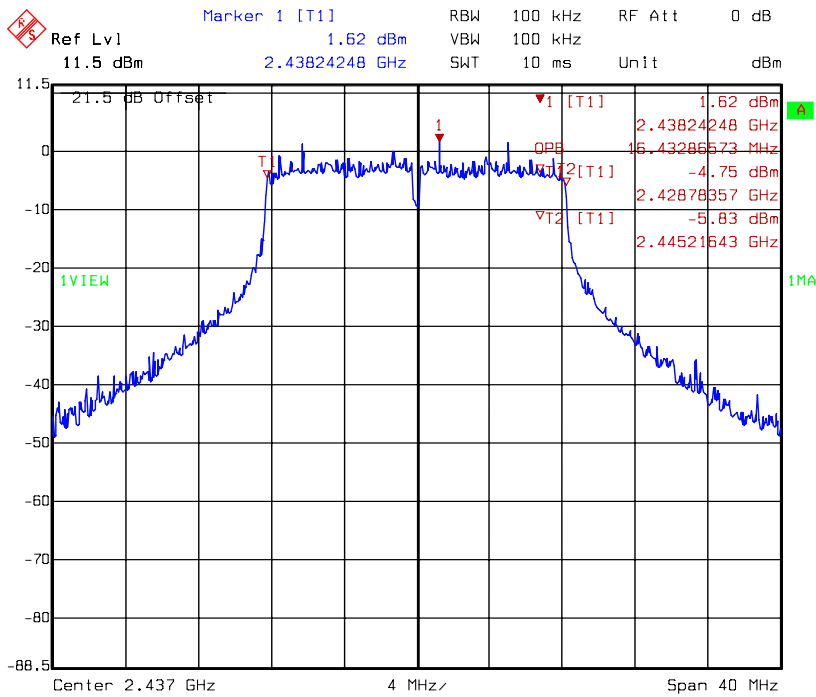
Title: Occupied Band-Width
Comment A: CH 11 at 802.11b mode chainC
Date: 28.OCT.2008 10:36:30

Chain C: 99 % Occupied Bandwidth @ 802.11g mode channel 1



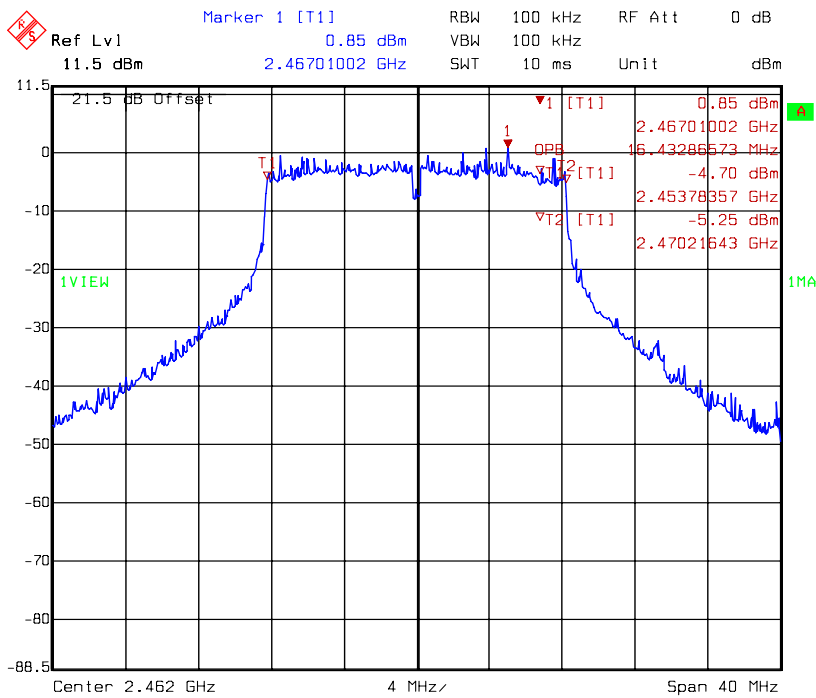
Title: Occupied Band-Width
Comment A: CH 1 at 802.11g mode chainC
Date: 28.OCT.2008 10:40:14

Chain C: 99 % Occupied Bandwidth @ 802.11g mode channel 6



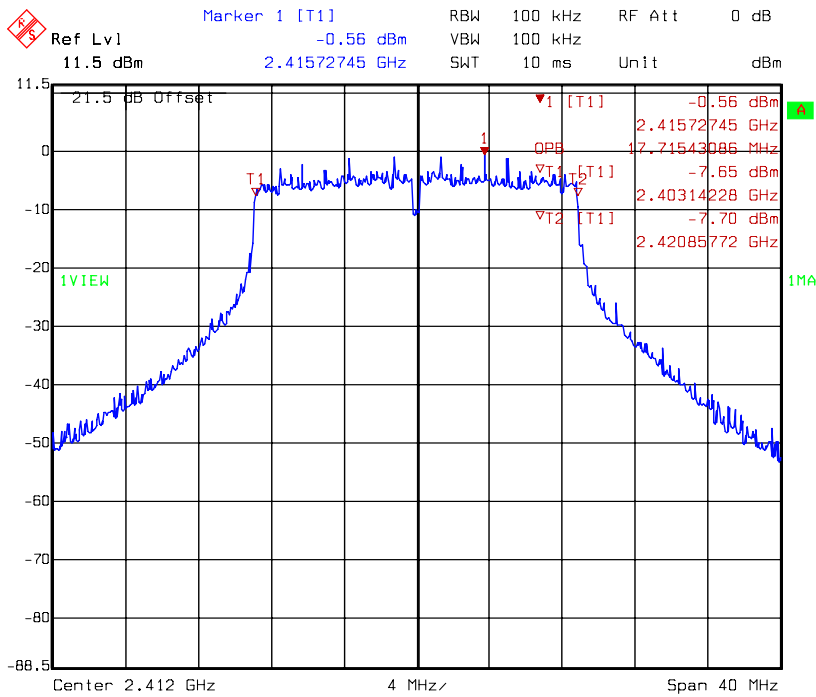
Title: Occupied Band-Width
Comment A: CH 6 at 802.11g mode chainC
Date: 28.OCT.2008 10:42:58

Chain C: 99 % Occupied Bandwidth @ 802.11g mode channel 11



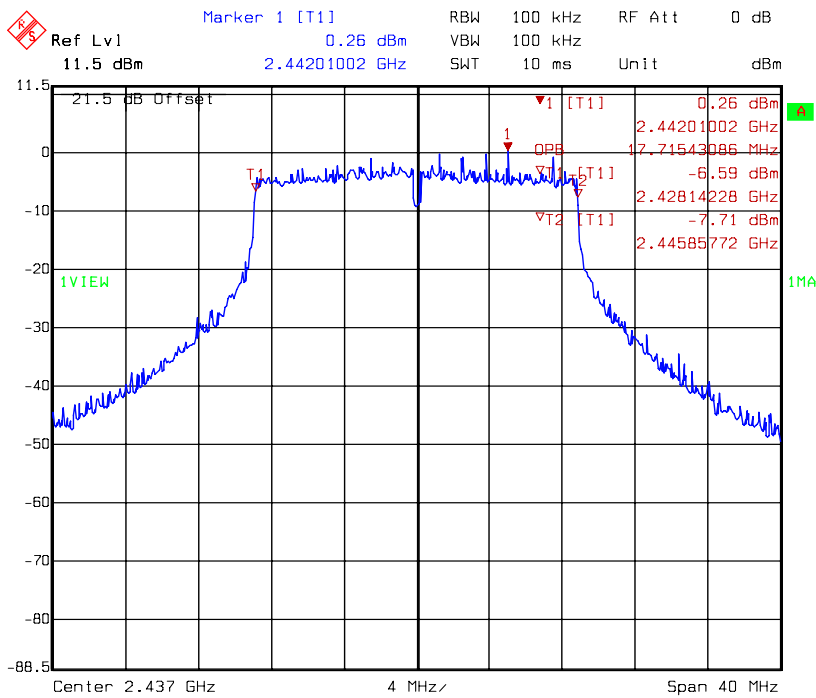
Title: Occupied Band-Width
Comment A: CH 11 at 802.11g mode chainC
Date: 28.OCT.2008 10:45:37

Chain C: 99 % Occupied Bandwidth @ 802.11n HT20 mode channel 1



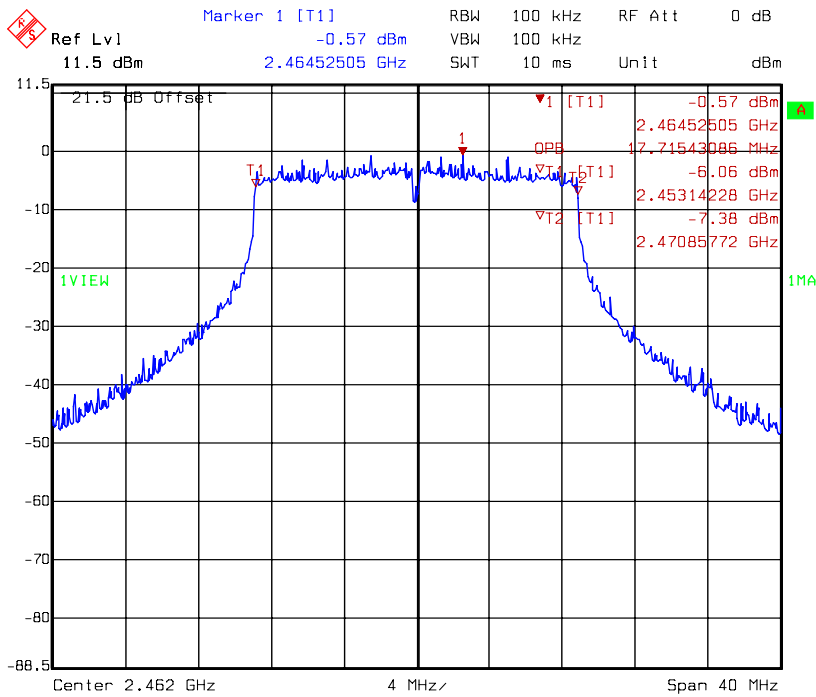
Title: Occupied Band-Width
Comment A: CH 1 at 802.11n 20MHz mode chainC
Date: 28.OCT.2008 10:53:06

Chain C: 99 % Occupied Bandwidth @ 802.11n HT20 mode channel 6



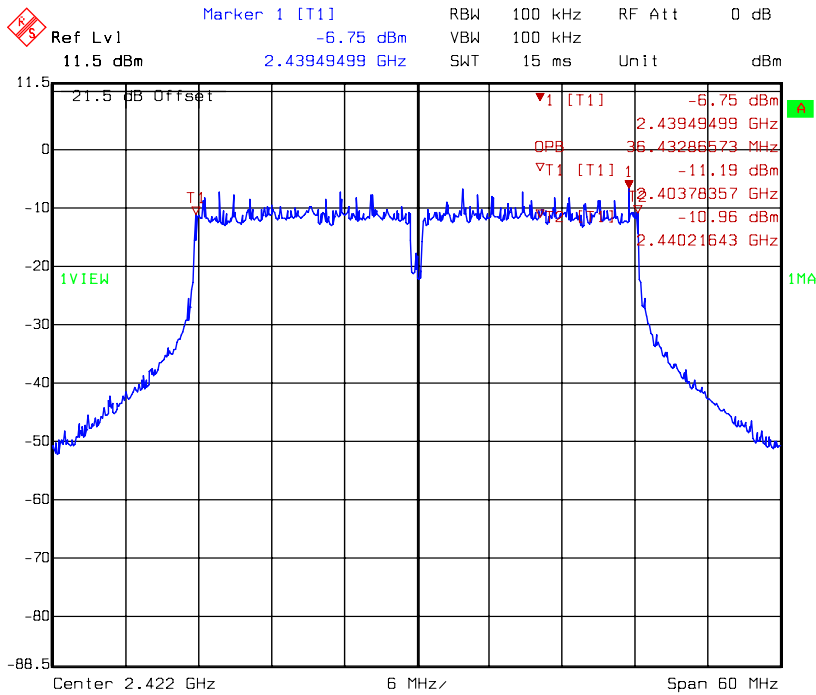
Title: Occupied Band-Width
Comment A: CH 6 at 802.11n 20MHz mode chainC
Date: 28.OCT.2008 11:18:20

Chain C: 99 % Occupied Bandwidth @ 802.11n HT20 mode channel 11



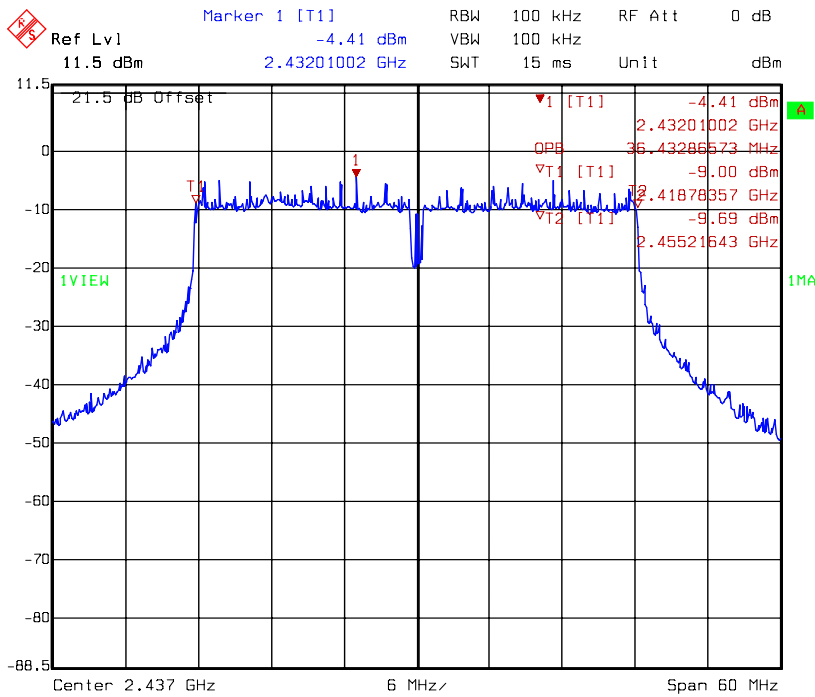
Title: Occupied Band-Width
Comment A: CH 11 at 802.11n 20MHz mode chainC
Date: 28.OCT.2008 11:21:07

Chain C: 99 % Occupied Bandwidth @ 802.11n HT40 mode channel 3



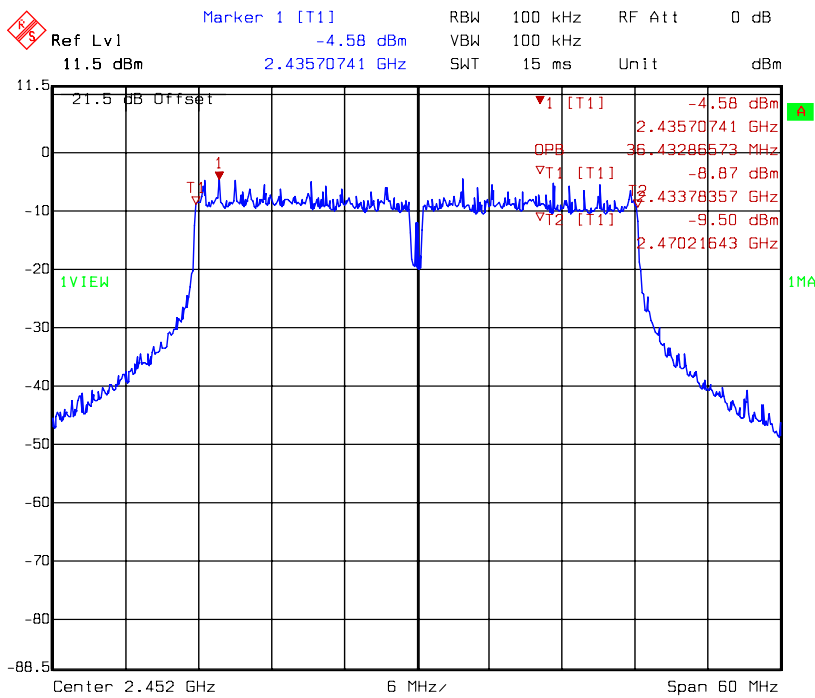
Title: Occupied Band-Width
Comment A: CH 3 at 802.11n 40MHz mode chainC
Date: 28.OCT.2008 11:32:51

Chain C: 99 % Occupied Bandwidth @ 802.11n HT40 mode channel 6



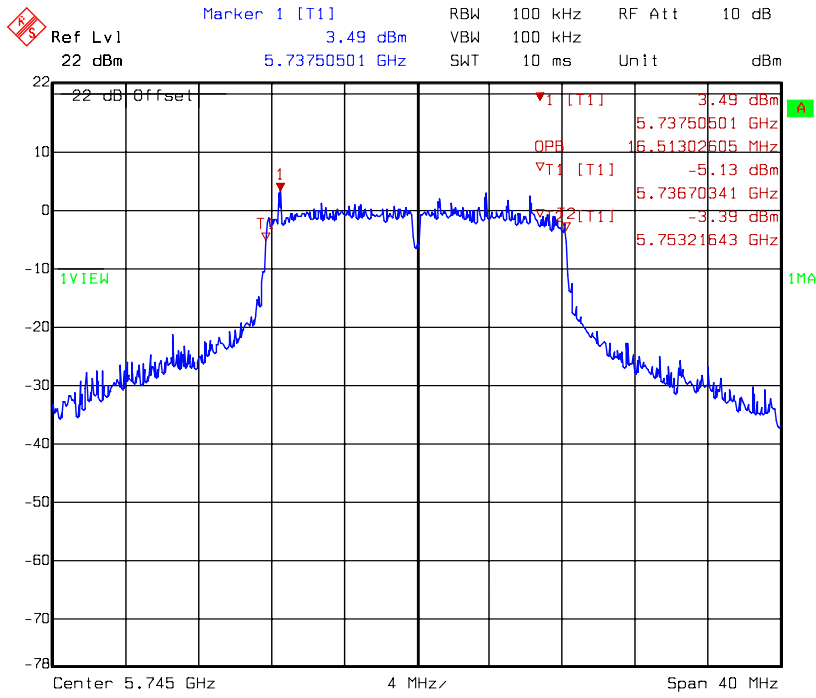
Title: Occupied Band-Width
Comment A: CH 6 at 802.11n 40MHz mode chainC
Date: 28.OCT.2008 11:37:59

Chain C: 99 % Occupied Bandwidth @ 802.11n HT40 mode channel 9



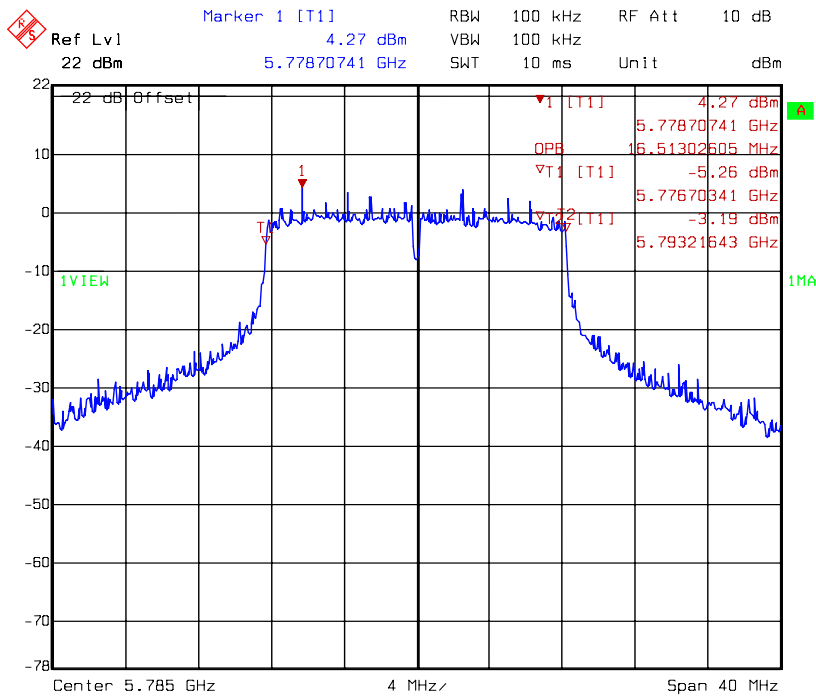
Title: Occupied Band-Width
Comment A: CH 9 at 802.11n 40MHz mode chainC
Date: 28.OCT.2008 11:41:39

Chain C: 99 % Occupied Bandwidth @ 802.11a mode channel 149



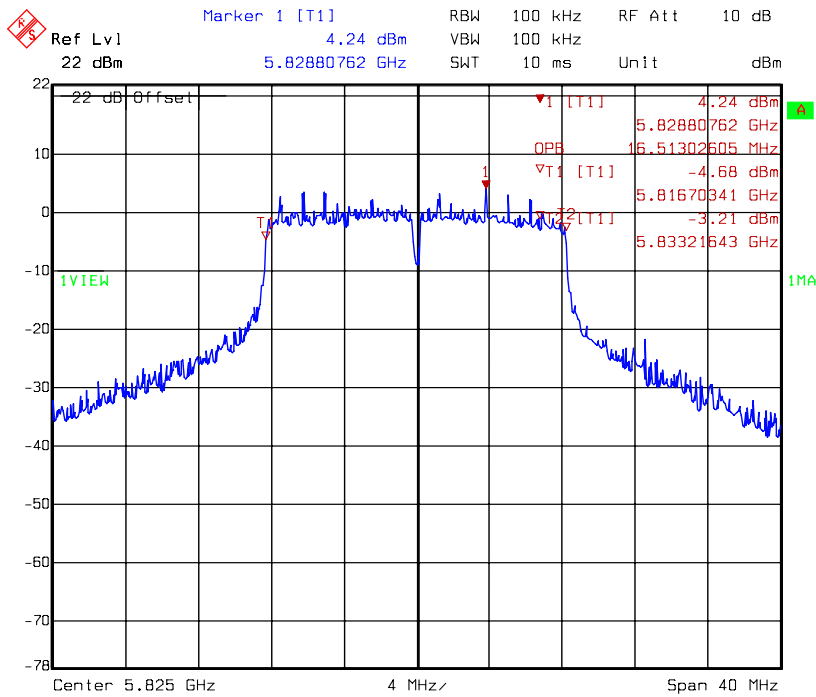
Title: Occupied Band-Width
Comment A: CH 149 at 802.11a mode chainC
Date: 28.OCT.2008 11:46:36

Chain C: 99 % Occupied Bandwidth @ 802.11a mode channel 157



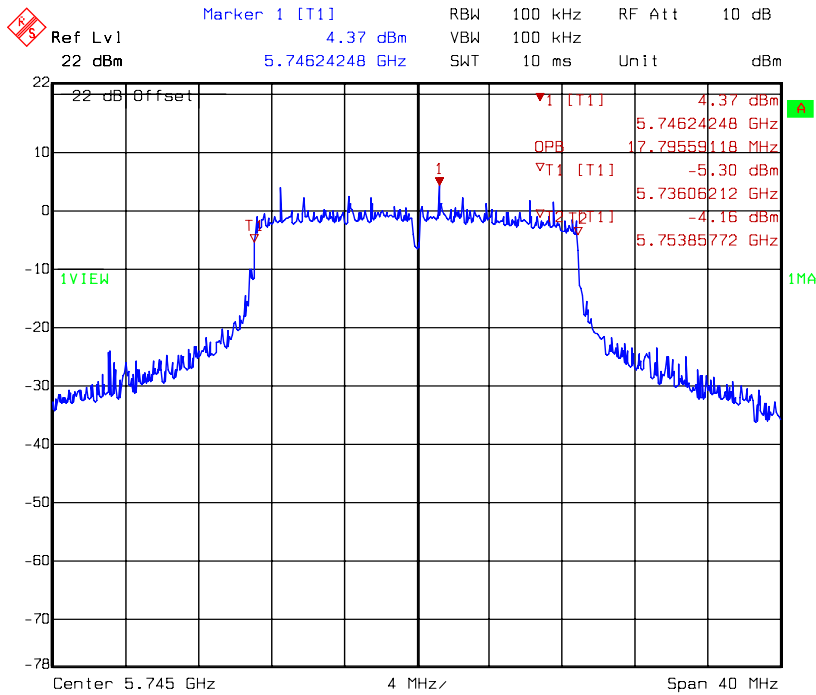
Title: Occupied Band-Width
Comment A: CH 157 at 802.11a mode chainC
Date: 28.OCT.2008 11:49:58

Chain C: 99 % Occupied Bandwidth @ 802.11a mode channel 165



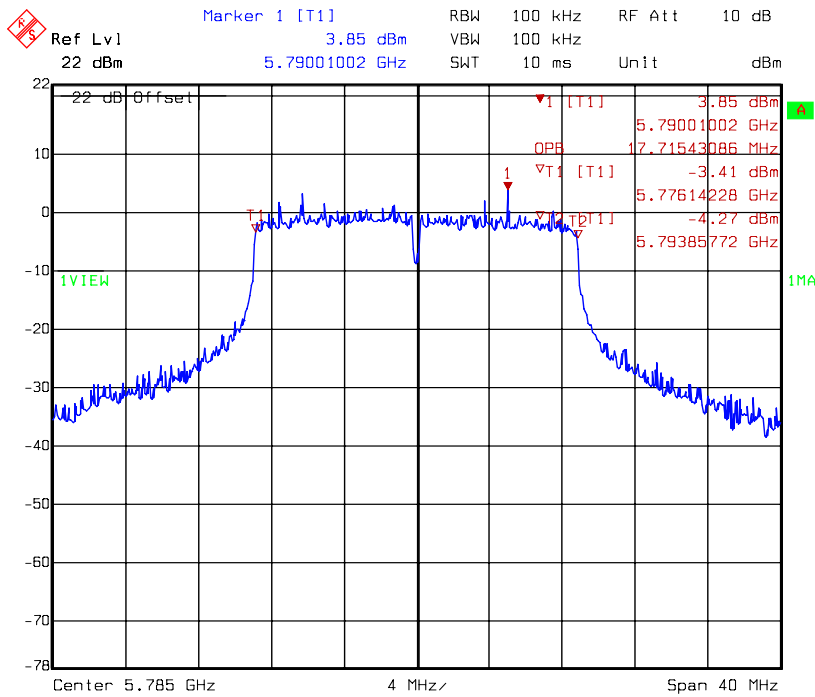
Title: Occupied Band-Width
 Comment A: CH 165 at 802.11a mode chainC
 Date: 28.OCT.2008 11:57:59

Chain C: 99 % Occupied Bandwidth @ 802.11n HT20 mode channel 149



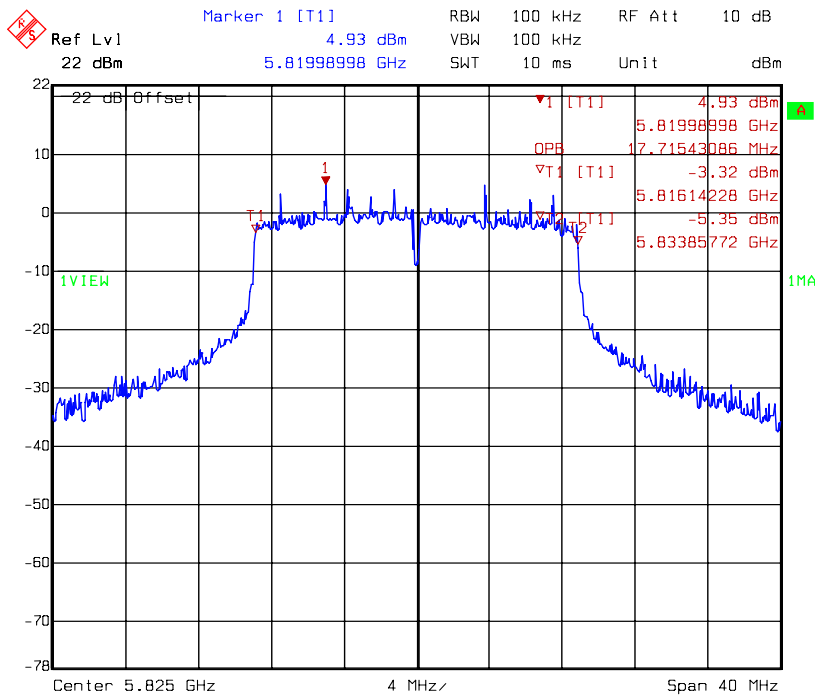
Title: Occupied Band-Width
 Comment A: CH 149 at 802.11n 20MHz mode chainC
 Date: 28.OCT.2008 12:02:51

Chain C: 99 % Occupied Bandwidth @ 802.11n HT20 mode channel 157



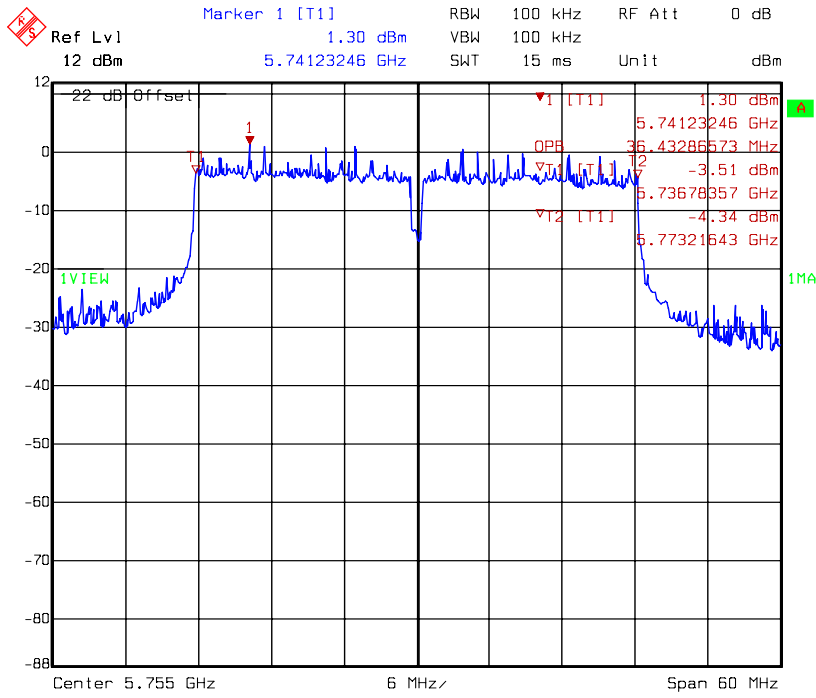
Title: Occupied Band-Width
Comment A: CH 157 at 802.11n 20MHz mode chainC
Date: 28.OCT.2008 12:06:13

Chain C: 99 % Occupied Bandwidth @ 802.11n HT20 mode channel 165



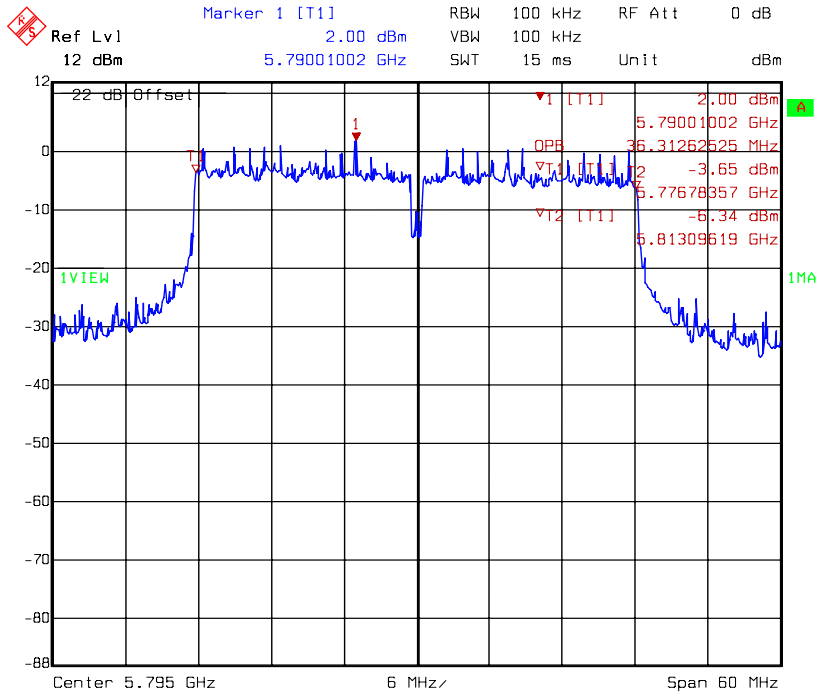
Title: Occupied Band-Width
Comment A: CH 165 at 802.11n 20MHz mode chainC
Date: 28.OCT.2008 12:09:06

Chain C: 99 % Occupied Bandwidth @ 802.11n HT40 mode channel 151



Title: Occupied Band-Width
Comment A: CH 151 at 802.11n 40MHz mode chainC
Date: 28.OCT.2008 12:12:05

Chain C: 99 % Occupied Bandwidth @ 802.11n HT40 mode channel 159



Title: Occupied Band-Width
Comment A: CH 159 at 802.11n 40MHz mode chainC
Date: 28.OCT.2008 12:15:00

5. Maximum Output Power

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

Measurement Uncertainty: ±2dB (k=2)

Test Result: Complies

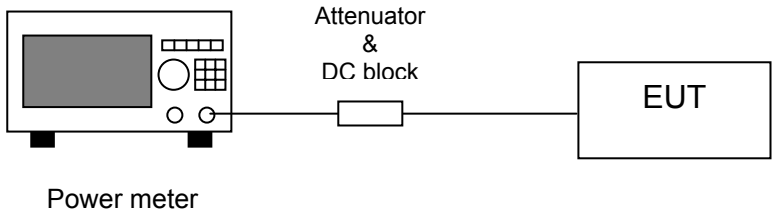
Measurement Data: See Table below

Method of Measurement:

Reference FCC document: KDB558074

The peak power at antenna terminals is measured using a Wideband Peak Power Meter. Power output is measured with the maximum rated input level.

Test Diagram:



- Note 1:** The EUT was tested while in a continuous transmit mode and the worst case data rates are 1 Mbps for 802.11b, 6 Mbps for 802.11a/ 11g, 6.5 Mbps for 802.11n HT20 and 13.5 Mbps for 802.11n HT40 . The EUT was tuned to a low, middle and high channel.
- Note 2:** §15.247 (b) (4) Except as shown in paragraphs (b)(3) (i), (ii) and (iii) of this section, if transmitting antennas of directional gain greater than 6 dBi are used the peak output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1) or (b)(2) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
- Note 3:** §15.247 (b) (4) (ii) Systems operating in the 5725–5850 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter peak output power.

Table 3. Maximum output power

Test Condition: Mode 1

Mode	Channel	Frequency (MHz)	Output Power (dBm)			Total Power (PK)		Limit (dBm)
			Chain A	Chain B	Chain C	mW	dBm	
			PK	PK	PK			
802.11b	1	2412	19.87	19.88	20.33	302.22	24.80	30
	6	2437	20.04	19.99	20.47	312.12	24.94	30
	11	2462	19.99	19.95	20.71	316.39	25.00	30
8/02.11g	1	2412	23.58	23.59	23.91	702.63	28.47	30
	6	2437	23.62	23.54	23.75	693.23	28.41	30
	11	2462	23.02	23.01	23.1	604.61	27.81	30
802.11n HT20	1	2412	23.66	23.71	23.91	713.27	28.53	30
	6	2437	23.66	23.59	23.83	702.38	28.47	30
	11	2462	23.13	23.07	23.02	608.80	27.84	30
802.11n HT40	3	2422	22.65	23.06	23.13	591.97	27.72	30
	6	2437	22.85	22.97	23.05	592.74	27.73	30
	9	2452	22.86	22.61	22.89	570.12	27.56	30
802.11a	149	5745	22.43	23.67	22.73	595.29	27.75	30
	157	5785	22.78	23.74	23.08	629.50	27.99	30
	165	5825	22.99	23.86	16.68	488.85	26.89	30
802.11n HT20	149	5745	22.35	23.61	22.69	587.19	27.69	30
	157	5785	22.69	23.71	23.00	620.27	27.93	30
	165	5825	22.96	23.82	23.39	656.96	28.18	30
802.11n HT40	151	5755	22.58	23.72	23.04	618.01	27.91	30
	159	5795	22.91	23.92	23.39	660.31	28.20	30

Test Condition: Mode 2

Mode	Channel	Frequency (MHz)	Output Power (dBm)			Total Power (PK)		Limit (dBm)
			Chain A	Chain B	Chain C	mW	dBm	
			PK	PK	PK			
802.11b	1	2412	19.30	19.30	20.01	270.46	24.32	30
	6	2437	19.45	19.32	19.99	273.38	24.37	30
	11	2462	19.3	19.4	20.27	278.62	24.45	30
802.11g	1	2412	21.52	21.75	21.85	444.64	26.48	30
	6	2437	22.59	22.62	22.82	555.79	27.45	30
	11	2462	22.59	22.61	22.69	549.72	27.40	30
802.11n HT20	1	2412	21.07	21.47	21.58	412.10	26.15	30
	6	2437	22.15	22.26	22.25	500.21	26.99	30
	11	2462	22.29	22.09	22.41	505.42	27.04	30
802.11n HT40	3	2422	19.94	20.52	20.04	312.27	24.95	30
	6	2437	21.83	22.41	22.19	492.16	26.92	30
	9	2452	22.02	21.35	21.55	438.57	26.42	30
802.11a	149	5745	22.43	23.67	22.73	595.29	27.75	30
	157	5785	22.78	23.74	23.08	629.50	27.99	30
	165	5825	22.99	23.86	16.68	488.85	26.89	30
802.11n HT20	149	5745	22.35	23.61	22.69	587.19	27.69	30
	157	5785	22.69	23.71	23.00	620.27	27.93	30
	165	5825	22.96	23.82	23.39	656.96	28.18	30
802.11n HT40	151	5755	22.58	23.72	23.04	618.01	27.91	30
	159	5795	22.91	23.92	23.39	660.31	28.20	30

Test Condition: Mode 5

Mode	Channel	Frequency (MHz)	Output Power (dBm)		Total Power (PK)		Limit (dBm)
			Chain A	Chain B	mW	dBm	
			PK	PK			
802.11b	1	2412	17.23	17.12	104.37	20.19	23.33
	6	2437	17.33	17.30	107.78	20.33	23.33
	11	2462	17.79	17.89	121.64	20.85	23.33
802.11g	1	2412	17.58	17.77	117.12	20.69	23.33
	6	2437	17.39	17.88	116.20	20.65	23.33
	11	2462	18.01	17.86	124.34	20.95	23.33
802.11n HT20	1	2412	17.43	17.88	116.71	20.67	23.33
	6	2437	17.60	17.78	117.52	20.70	23.33
	11	2462	18.16	17.72	124.62	20.96	23.33
802.11n HT40	3	2422	16.13	16.75	88.34	19.46	23.33
	6	2437	17.34	18.05	118.03	20.72	23.33
	9	2452	17.61	17.42	112.88	20.53	23.33
802.11a	149	5745	22.98	23.97	448.07	26.51	30
	157	5785	23.05	24.10	458.88	26.62	30
	165	5825	23.32	24.17	476.00	26.78	30
802.11n HT20	149	5745	22.71	23.95	434.95	26.38	30
	157	5785	23.03	24.09	457.36	26.60	30
	165	5825	23.29	24.17	474.52	26.76	30
802.11n HT40	151	5755	22.88	23.99	444.70	26.48	30
	159	5795	23.21	24.18	471.23	26.73	30

Note:

For 2.4GHz application under this mode, due to the antenna gain greater than 6dBi, the maximum peak output power of the intentional radiator is reduced by 1dB for every 3 dB. Mode 5 is the group of antenna: 3CWE596 (ant. Gain=18dBi) and cable: 3CWE580 (loss=2dB). The antenna gain with cable loss is 16dBi. So the maximum peak output power shall be changed to 23.33dBm.

Test Condition: Mode 8

Mode	Channel	Frequency (MHz)	Output Power (dBm)		Total Power (PK)		Limit (dBm)
			Chain A	Chain B	mW	dBm	
			PK	PK			
802.11b	1	2412	19.81	19.69	188.83	22.76	30
	6	2437	20.00	19.91	197.95	22.97	30
	11	2462	19.91	19.74	192.14	22.84	30
802.11g	1	2412	23.58	23.68	461.38	26.64	30
	6	2437	23.72	23.61	465.12	26.68	30
	11	2462	23.09	23.03	404.61	26.07	30
802.11n HT20	1	2412	23.65	23.68	465.09	26.68	30
	6	2437	23.76	23.66	469.96	26.72	30
	11	2462	23.19	23.05	410.29	26.13	30
802.11n HT40	3	2422	22.44	22.83	367.25	25.65	30
	6	2437	22.57	22.75	369.08	25.67	30
	9	2452	22.87	22.72	380.71	25.81	30
802.11a	149	5745	22.98	23.97	448.07	26.51	30
	157	5785	23.05	24.1	458.88	26.62	30
	165	5825	23.32	24.17	476.00	26.78	30
802.11n HT20	149	5745	22.71	23.95	434.95	26.38	30
	157	5785	23.03	24.09	457.36	26.60	30
	165	5825	23.29	24.17	474.52	26.76	30
802.11n HT40	151	5755	22.88	23.99	444.70	26.48	30
	159	5795	23.21	24.18	471.23	26.73	30

6. Power Spectral Density

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

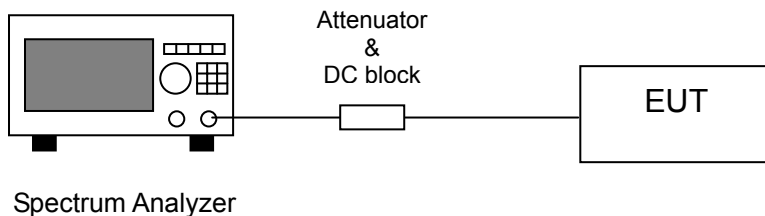
Test Result: Complies
Measurement Data: See Table & plots below

Method of Measurement:

Reference FCC document: KDB558074

A portion of the transmitted signal is coupled to a Spectrum Analyzer with a resolution bandwidth of at least 1 % of the bandwidth of the transmitted signal. The resolution bandwidth is chosen so as not to reduce the peak level of the measured waveform. The appropriate bandwidth mask is applied to the output waveform to verify compliance.

Test Diagram:



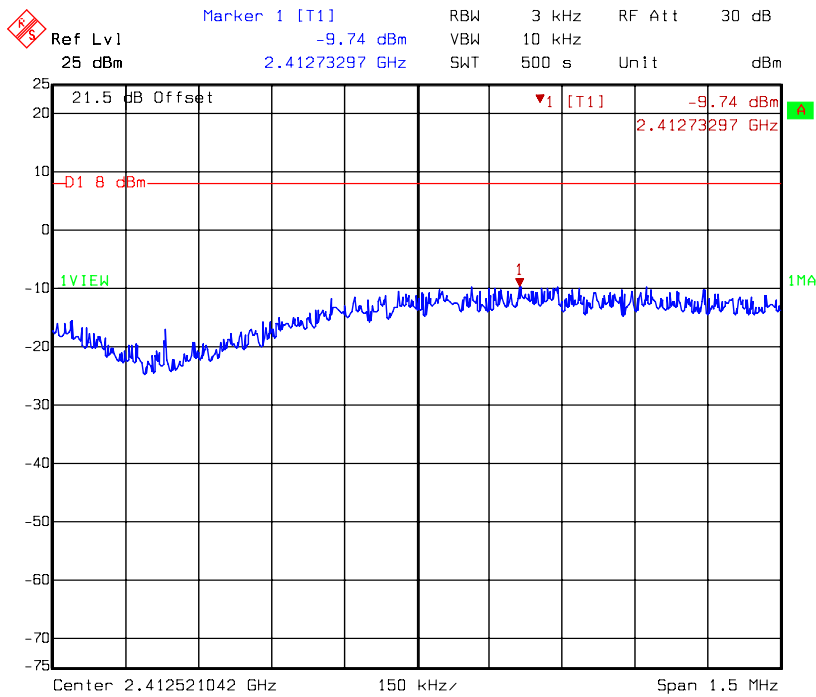
Note: The EUT was tested while in a continuous transmit mode and the worst case data rates are 1 Mbps for 802.11b, 6 Mbps for 802.11a/ 11g 6.5 Mbps for 802.11n HT20 and 802.11n HT40. The EUT was tuned to a low, middle and high channel.

Table 4. Power Spectral Density

Test Condition: Mode 1

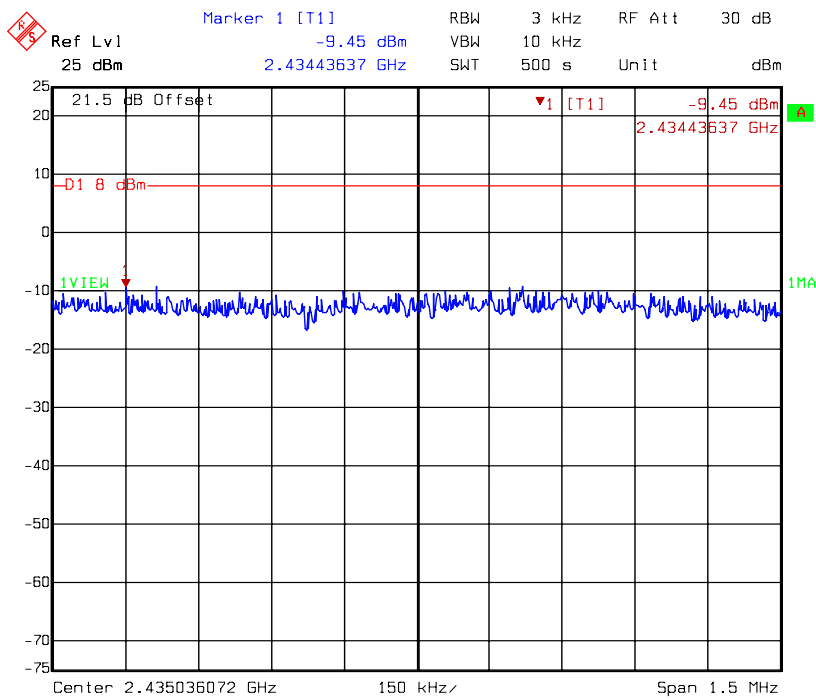
Mode	Channel	Frequency (MHz)	PPSD (dBm)			Total PPSD		Limit (dBm)
			Chain A	Chain B	Chain C	mW	dBm	
802.11b	1	2412	-9.74	-8.69	-8.62	0.38	-4.22	8
	6	2437	-9.45	-9.13	-8.06	0.39	-4.07	8
	11	2462	-8.5	-9.05	-8.31	0.41	-3.84	8
802.11g	1	2412	-15.66	-15.63	-14.78	0.09	-10.57	8
	6	2437	-14.19	-13.02	-13.21	0.14	-8.67	8
	11	2462	-13.32	-12.9	-13.78	0.14	-8.55	8
802.11n HT20	1	2412	-16.04	-15.89	-15.53	0.08	-11.04	8
	6	2437	-14.48	-14.93	-14.97	0.10	-10.02	8
	11	2462	-13.25	-14.02	-14.04	0.13	-8.98	8
802.11n HT40	3	2422	-22.86	-21.7	-23.29	0.02	-17.79	8
	6	2437	-20.77	-20.69	-20.71	0.03	-15.95	8
	9	2452	-18.86	-19.15	-19.66	0.04	-14.44	8
802.11a	149	5745	-11.89	-9.42	-11.65	0.25	-6.07	8
	157	5785	-10.53	-9.31	-11.21	0.28	-5.51	8
	165	5825	-12.36	-10.86	-10.97	0.22	-6.57	8
802.11n HT20	149	5745	-12.21	-7.72	-12.65	0.28	-5.47	8
	157	5785	-11.38	-10.48	-11.46	0.23	-6.31	8
	165	5825	-11.22	-10.75	-12.39	0.22	-6.63	8
802.11n HT40	151	5755	-14.17	-11.48	-14.74	0.14	-8.45	8
	159	5795	-12.79	-13.5	-15.84	0.12	-9.09	8

Chain A: Power Spectral Density @ 802.11b mode channel 1



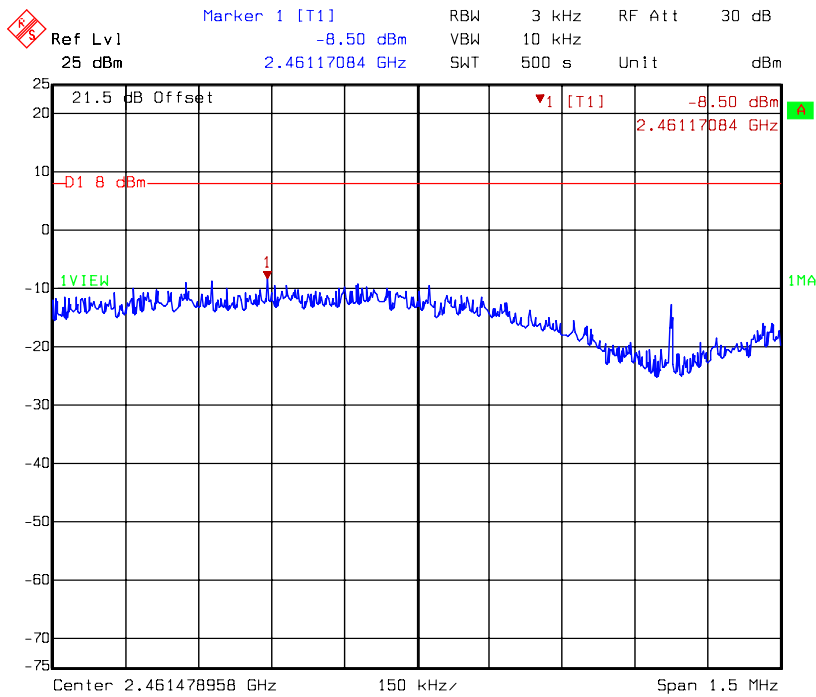
Title: Power density
 Comment A: CH 1 at 802.11b mode chainA
 Date: 24.OCT.2008 15:41:32

Chain A: Power Spectral Density @ 802.11b mode channel 6



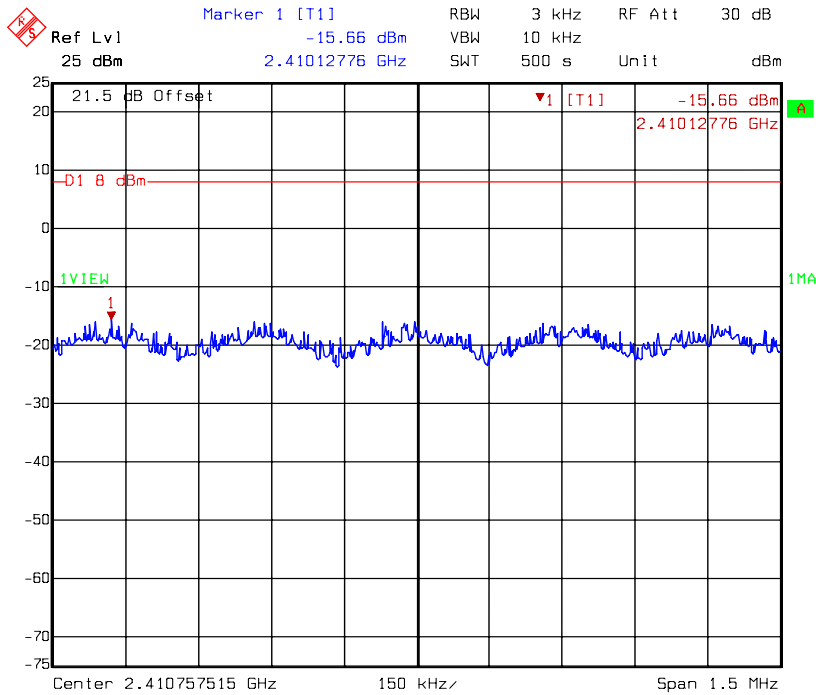
Title: Power density
 Comment A: CH 6 at 802.11b mode chainA
 Date: 24.OCT.2008 15:45:23

Chain A: Power Spectral Density @ 802.11b mode channel 11



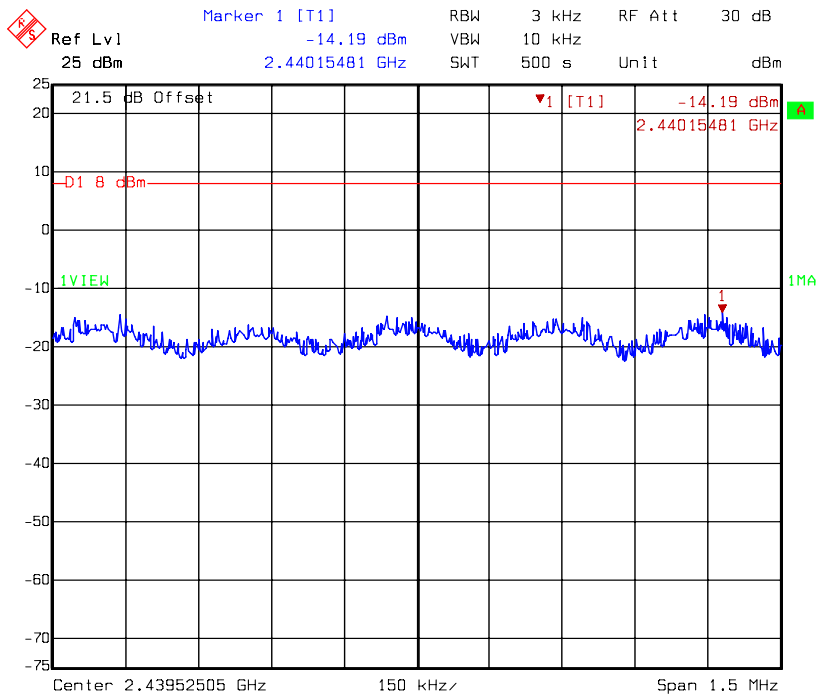
Title: Power density
Comment A: CH 11 at 802.11b mode chainA
Date: 24.OCT.2008 15:48:08

Chain A: Power Spectral Density @ 802.11g mode channel 1



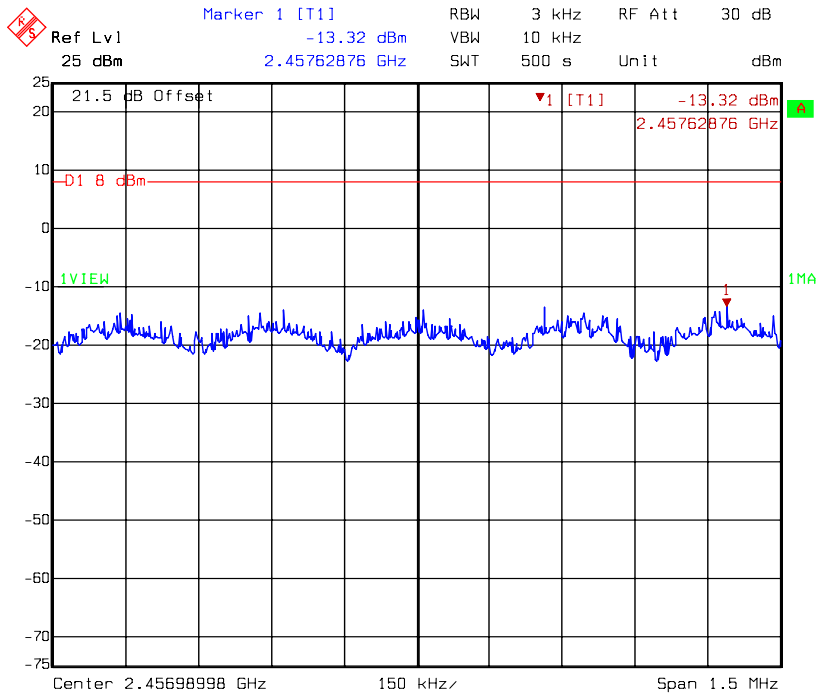
Title: Power density
Comment A: CH 1 at 802.11g mode chainA
Date: 24.OCT.2008 15:51:37

Chain A: Power Spectral Density @ 802.11g mode channel 6



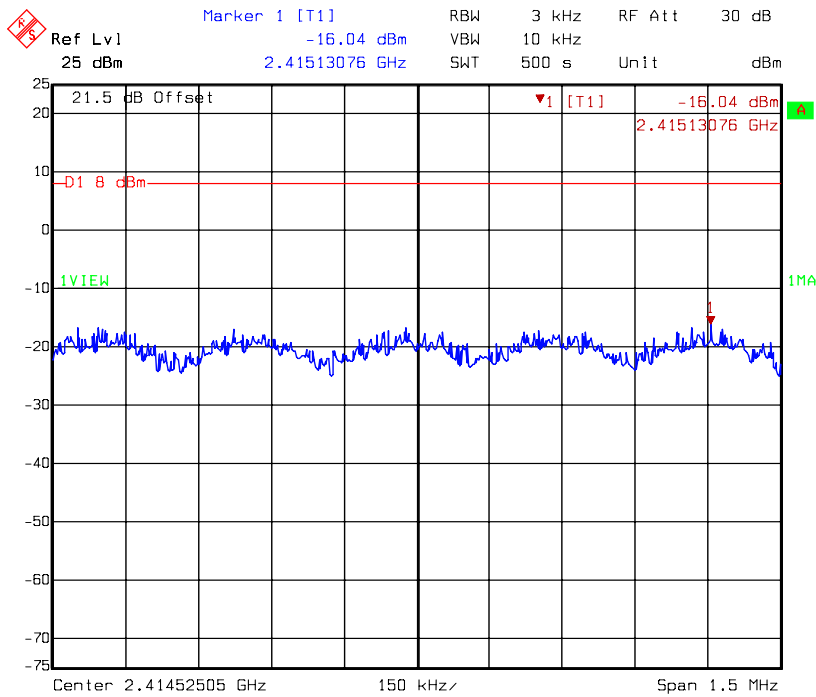
Title: Power density
Comment A: CH 6 at 802.11g mode chainA
Date: 24.OCT.2008 15:54:45

Chain A: Power Spectral Density @ 802.11g mode channel 11



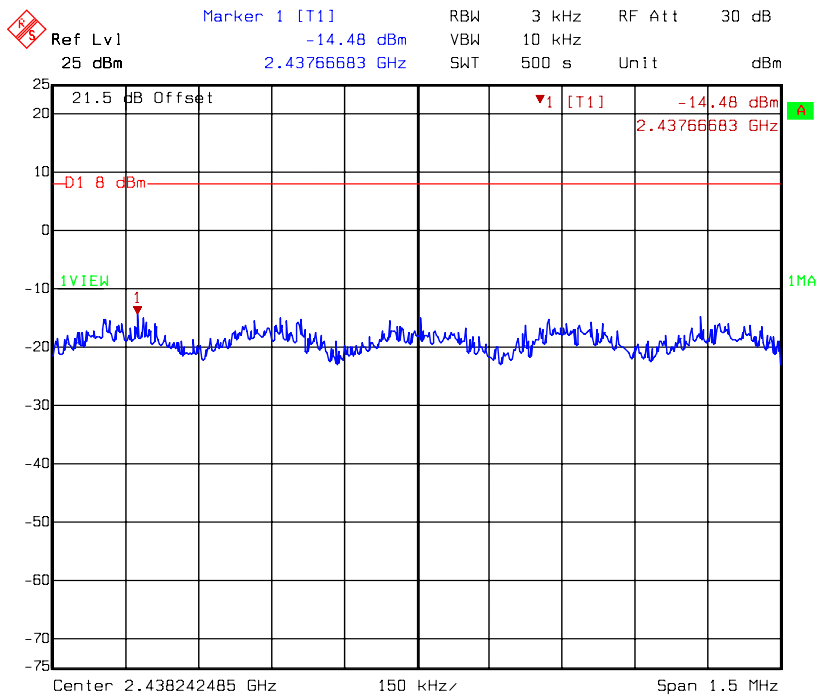
Title: Power density
Comment A: CH 11 at 802.11g mode chainA
Date: 24.OCT.2008 15:58:19

Chain A: Power Spectral Density @ 802.11n HT20 mode channel 1



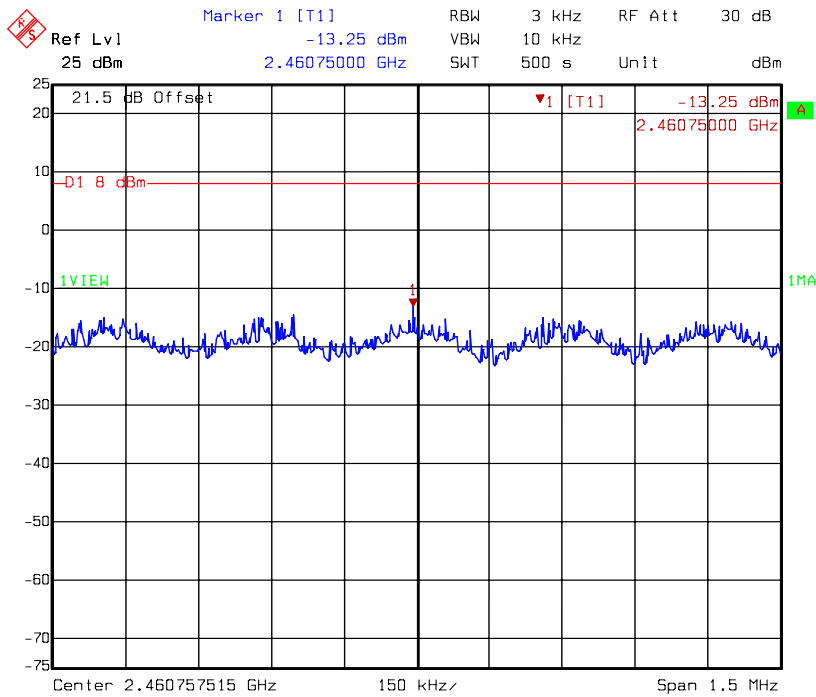
Title: Power density
Comment A: CH 1 at 802.11n 20MHz mode chainA
Date: 24.OCT.2008 16:02:32

Chain A: Power Spectral Density @ 802.11n HT20 mode channel 6



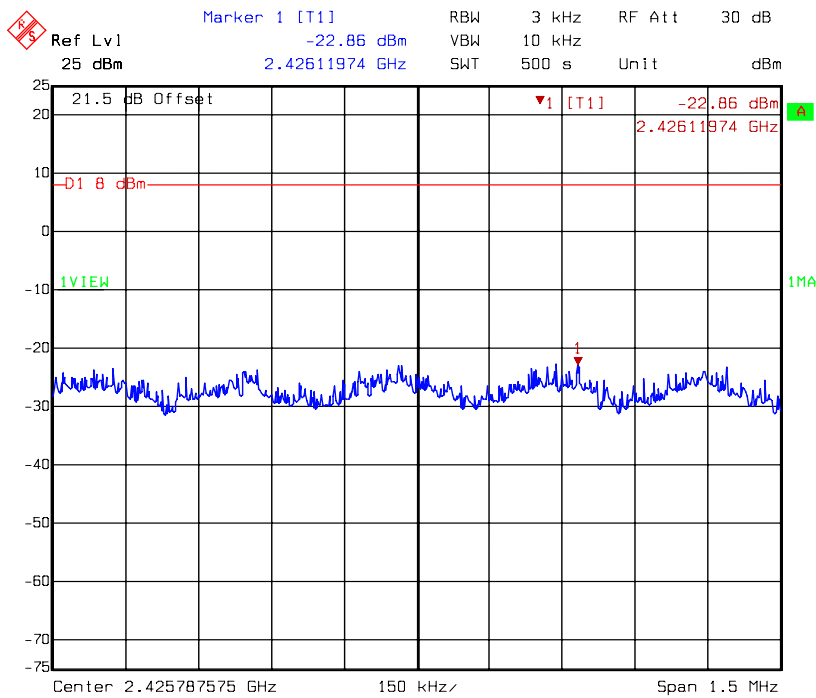
Title: Power density
Comment A: CH 6 at 802.11n 20MHz mode chainA
Date: 24.OCT.2008 16:05:24

Chain A: Power Spectral Density @ 802.11n HT20 mode channel 11



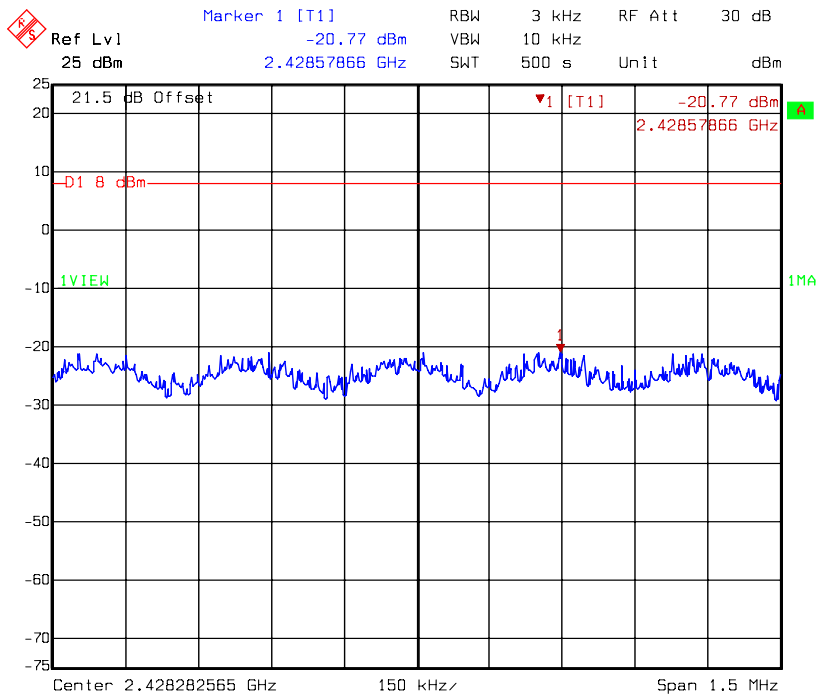
Title: Power density
Comment A: CH 11 at 802.11n 20MHz mode chainA
Date: 24.OCT.2008 16:10:45

Chain A: Power Spectral Density @ 802.11n HT40 mode channel 3



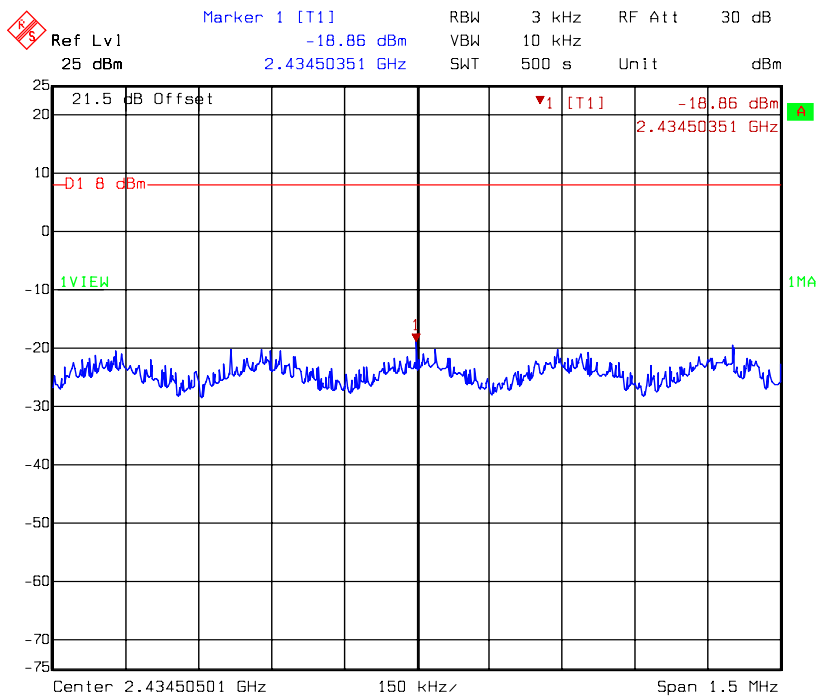
Title: Power density
Comment A: CH 3 at 802.11n 40MHz mode chainA
Date: 24.OCT.2008 16:17:00

Chain A: Power Spectral Density @ 802.11n HT40 mode channel 6



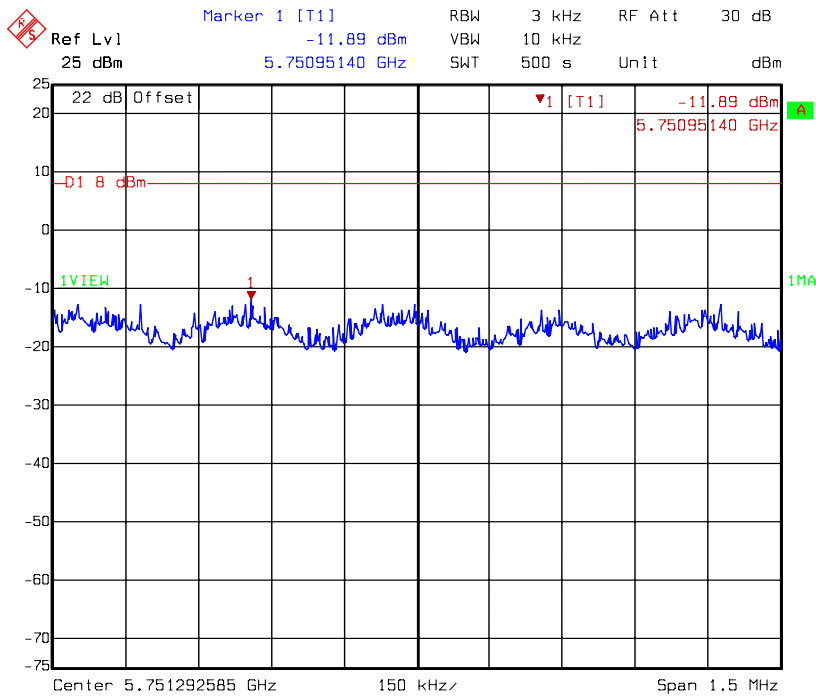
Title: Power density
 Comment A: CH 6 at 802.11n 40MHz mode chainA
 Date: 24.OCT.2008 16:25:32

Chain A: Power Spectral Density @ 802.11n HT40 mode channel 9



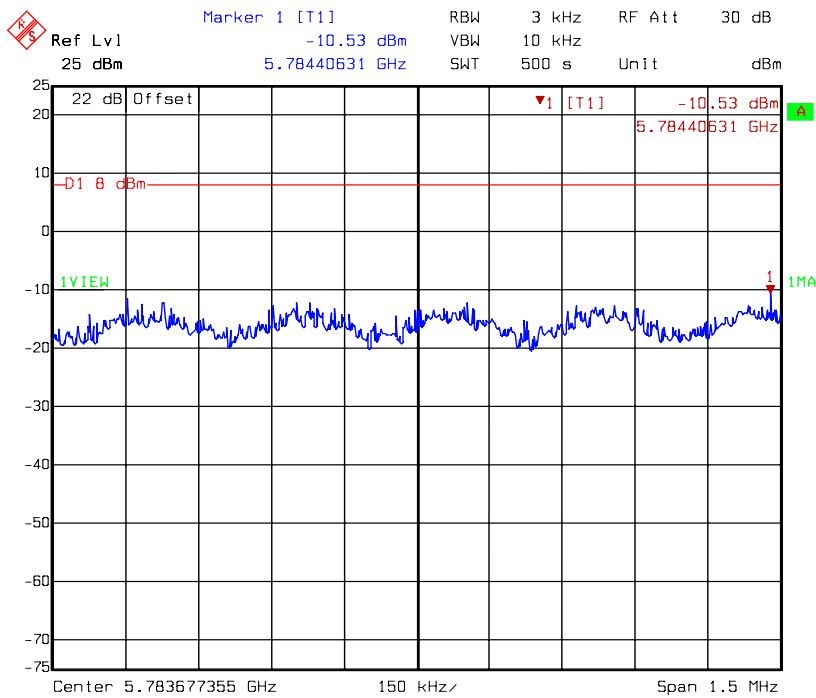
Title: Power density
 Comment A: CH 9 at 802.11n 40MHz mode chainA
 Date: 24.OCT.2008 16:28:21

Chain A: Power Spectral Density @ 802.11a mode channel 149



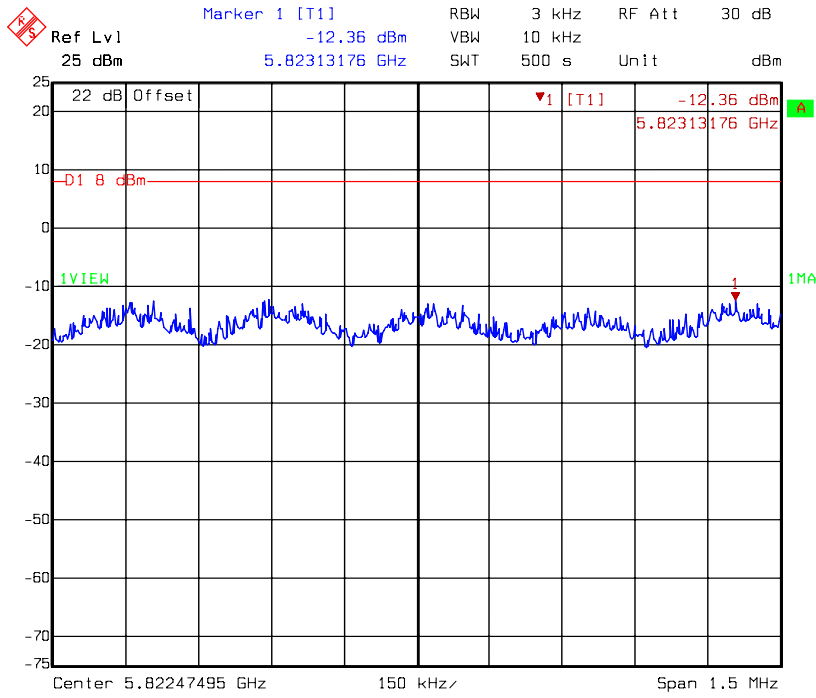
Title: Power density
Comment A: CH 149 at 802.11a mode chainA
Date: 27.OCT.2008 11:52:57

Chain A: Power Spectral Density @ 802.11a mode channel 157



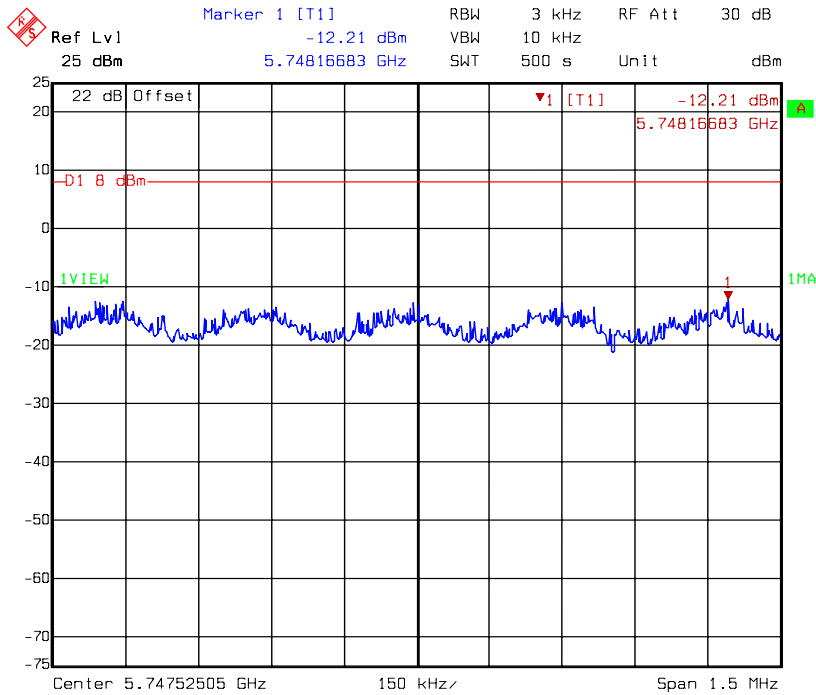
Title: Power density
Comment A: CH 157 at 802.11a mode chainA
Date: 27.OCT.2008 11:56:38

Chain A: Power Spectral Density @ 802.11a mode channel 165



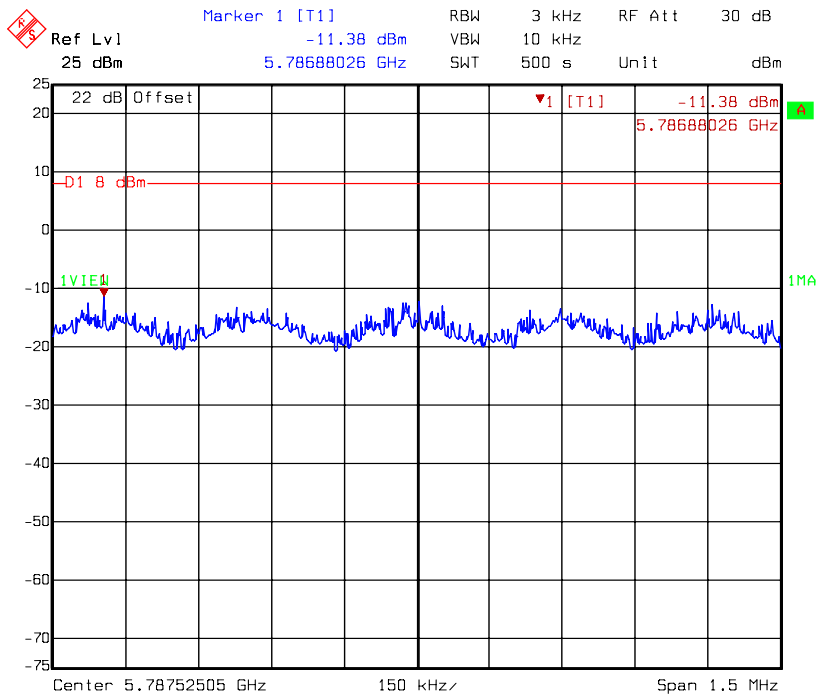
Title: Power density
Comment A: CH 165 at 802.11a mode chainA
Date: 27.OCT.2008 12:06:44

Chain A: Power Spectral Density @ 802.11n HT20 mode channel 149



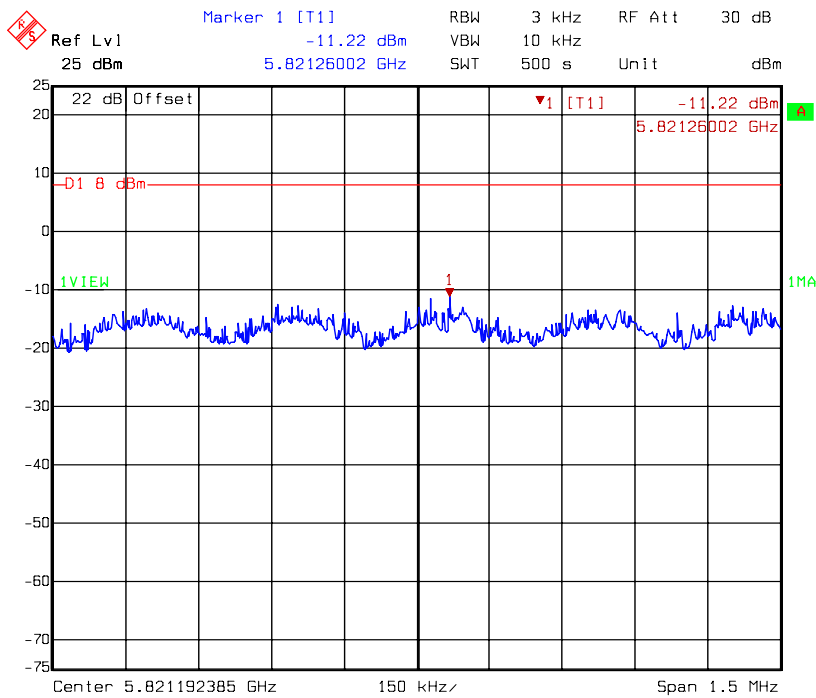
Title: Power density
Comment A: CH 149 at 802.11n 20MHz mode chainA
Date: 27.OCT.2008 14:07:49

Chain A: Power Spectral Density @ 802.11n HT20 mode channel 157



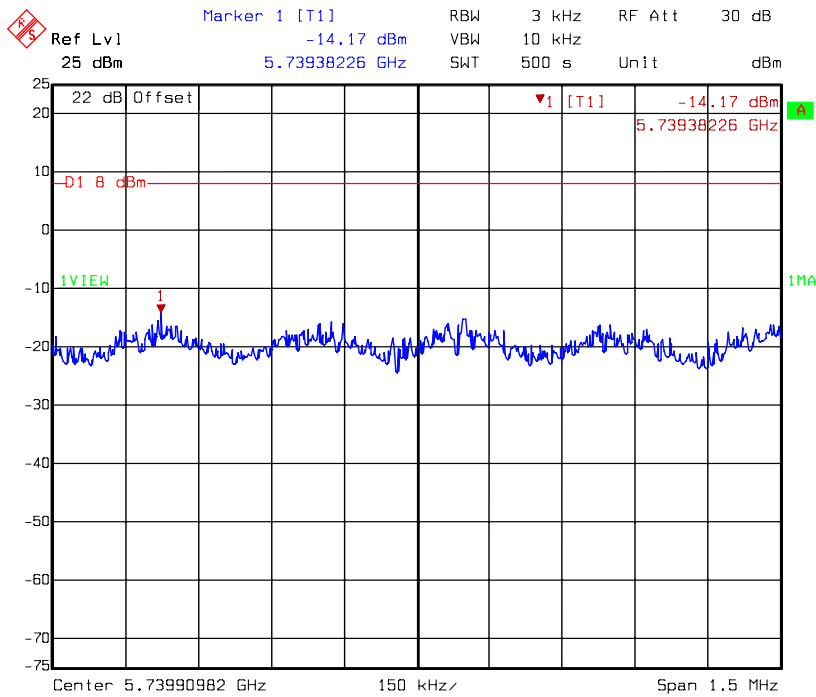
Title: Power density
 Comment A: CH 157 at 802.11n 20MHz mode chainA
 Date: 27.OCT.2008 14:13:05

Chain A: Power Spectral Density @ 802.11n HT20 mode channel 165



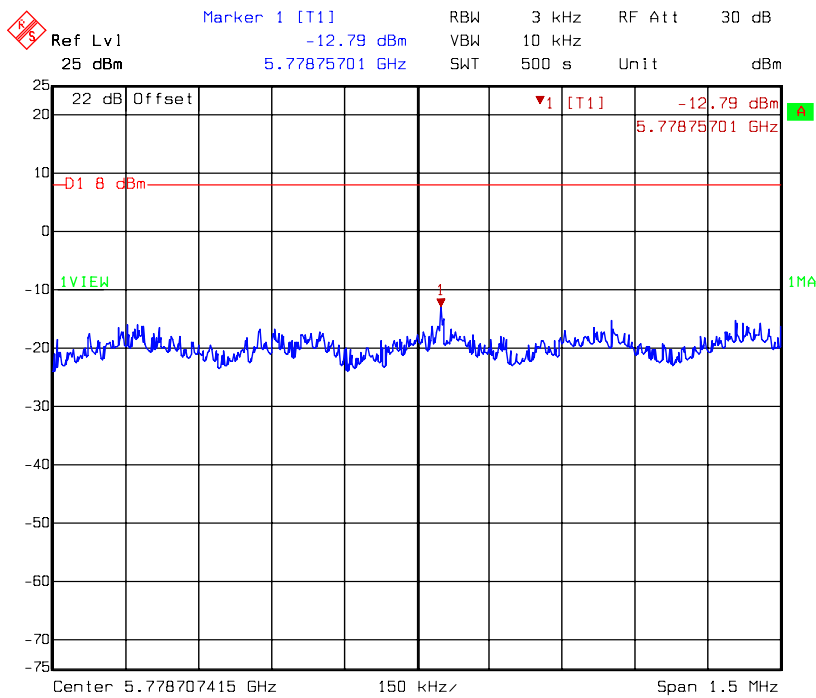
Title: Power density
 Comment A: CH 165 at 802.11n 20MHz mode chainA
 Date: 27.OCT.2008 14:16:48

Chain A: Power Spectral Density @ 802.11n HT40 mode channel 151



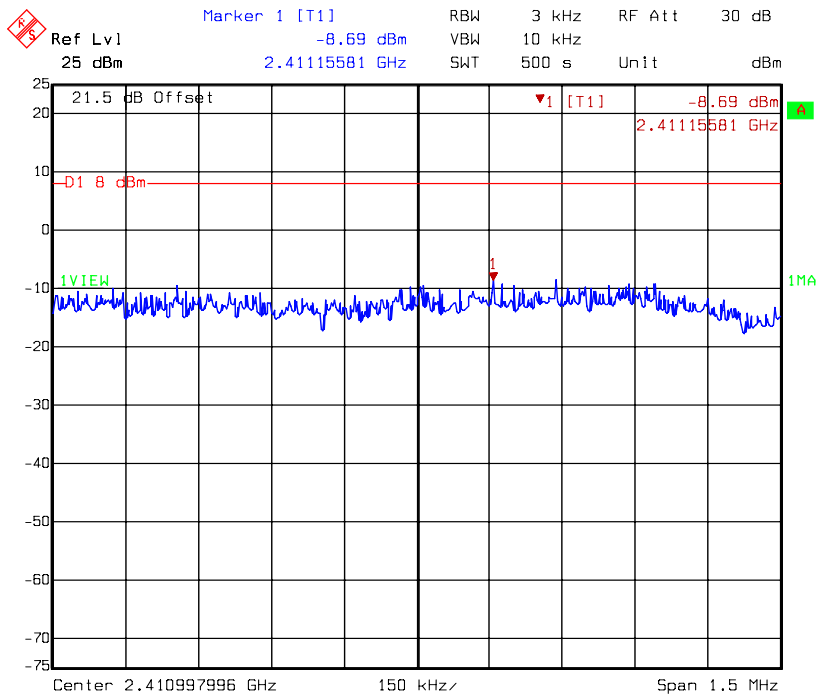
Title: Power density
Comment A: CH 151 at 802.11n 40MHz mode chainA
Date: 27.OCT.2008 14:21:32

Chain A: Power Spectral Density @ 802.11n HT40 mode channel 159



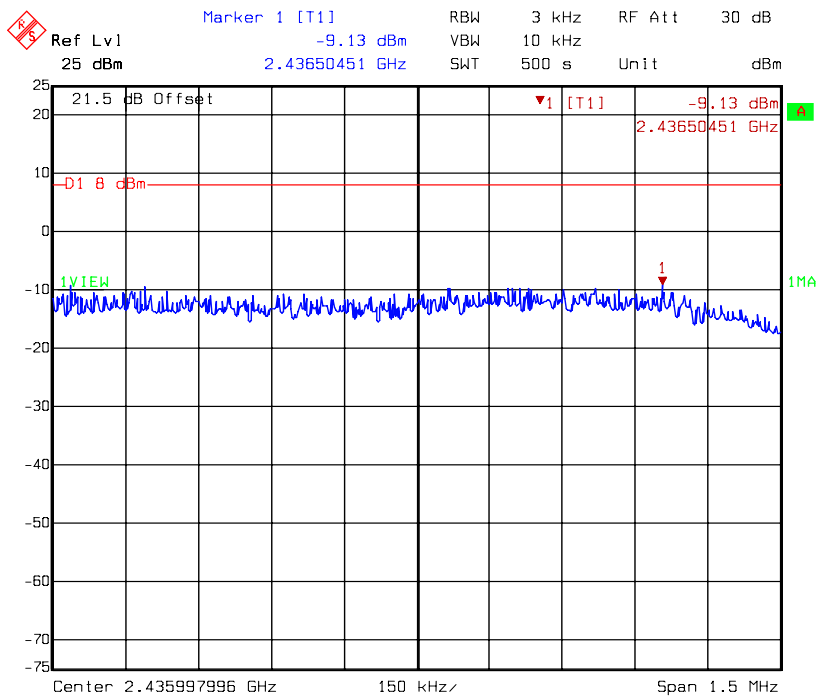
Title: Power density
Comment A: CH 159 at 802.11n 40MHz mode chainA
Date: 27.OCT.2008 14:24:53

Chain B: Power Spectral Density @ 802.11b mode channel 1



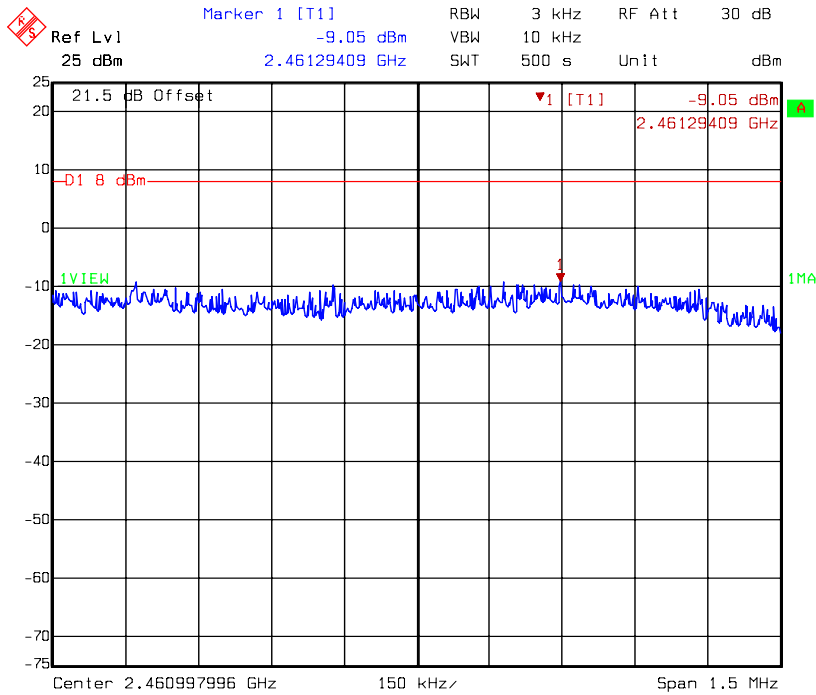
Title: Power density
Comment A: CH 1 at 802.11b mode chainB
Date: 27.OCT.2008 14:56:08

Chain B: Power Spectral Density @ 802.11b mode channel 6



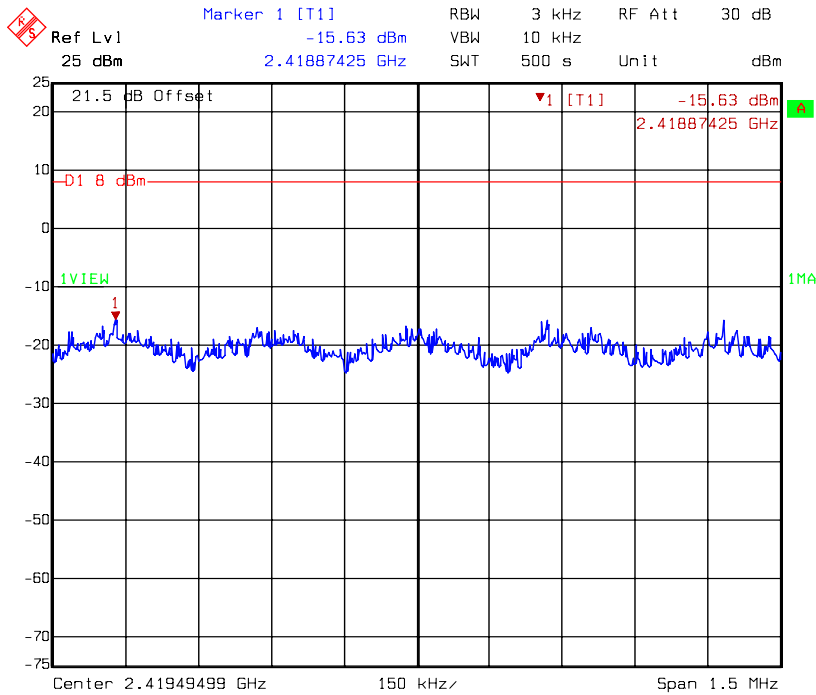
Title: Power density
Comment A: CH 6 at 802.11b mode chainB
Date: 27.OCT.2008 14:59:18

Chain B: Power Spectral Density @ 802.11b mode channel 11



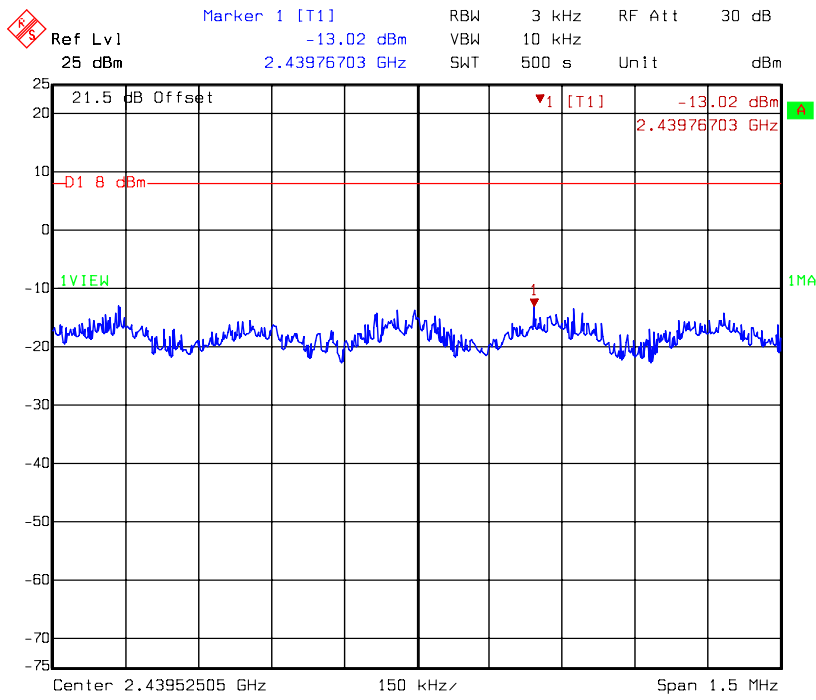
Title: Power density
Comment A: CH 11 at 802.11b mode chainB
Date: 27.OCT.2008 15:02:12

Chain B: Power Spectral Density @ 802.11g mode channel 1



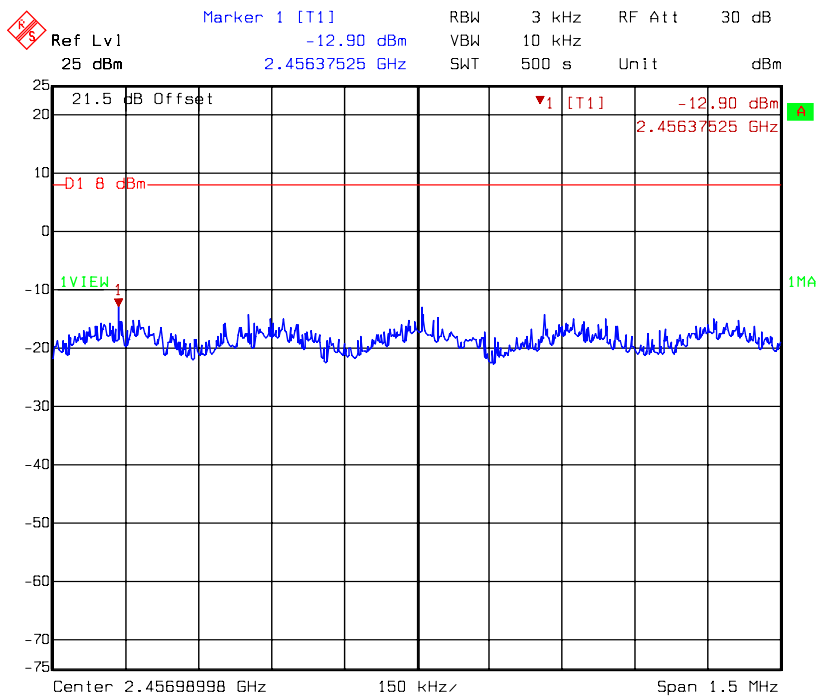
Title: Power density
Comment A: CH 1 at 802.11g mode chainB
Date: 27.OCT.2008 16:22:19

Chain B: Power Spectral Density @ 802.11g mode channel 6



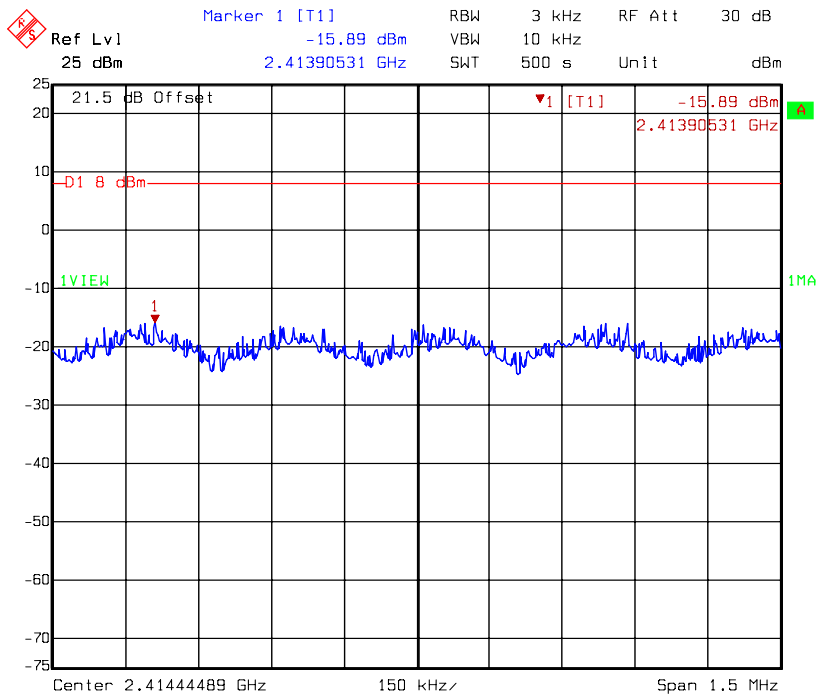
Title: Power density
Comment A: CH 6 at 802.11g mode chainB
Date: 27.OCT.2008 16:25:08

Chain B: Power Spectral Density @ 802.11g mode channel 11



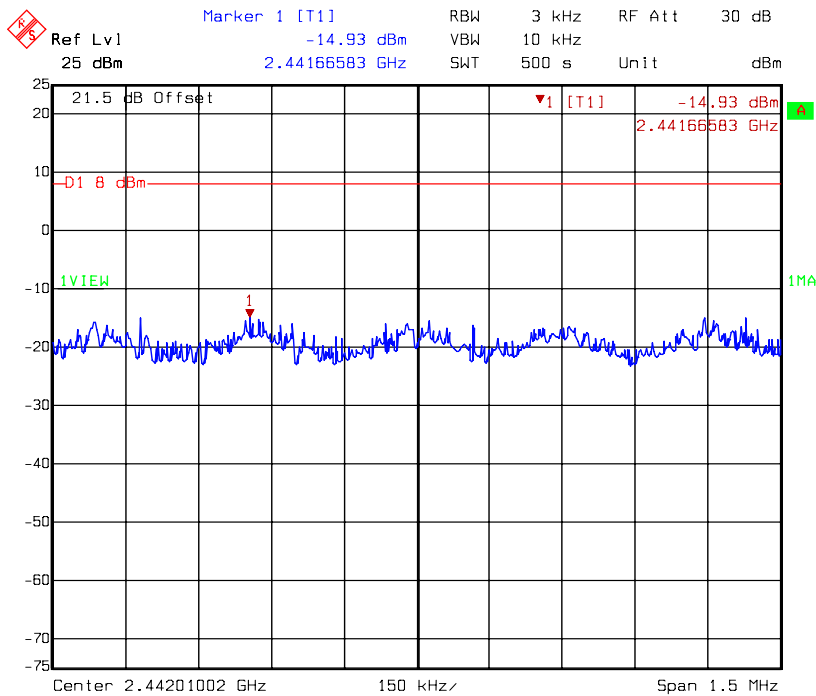
Title: Power density
Comment A: CH 11 at 802.11g mode chainB
Date: 27.OCT.2008 16:28:07

Chain B: Power Spectral Density @ 802.11n HT20 mode channel 1



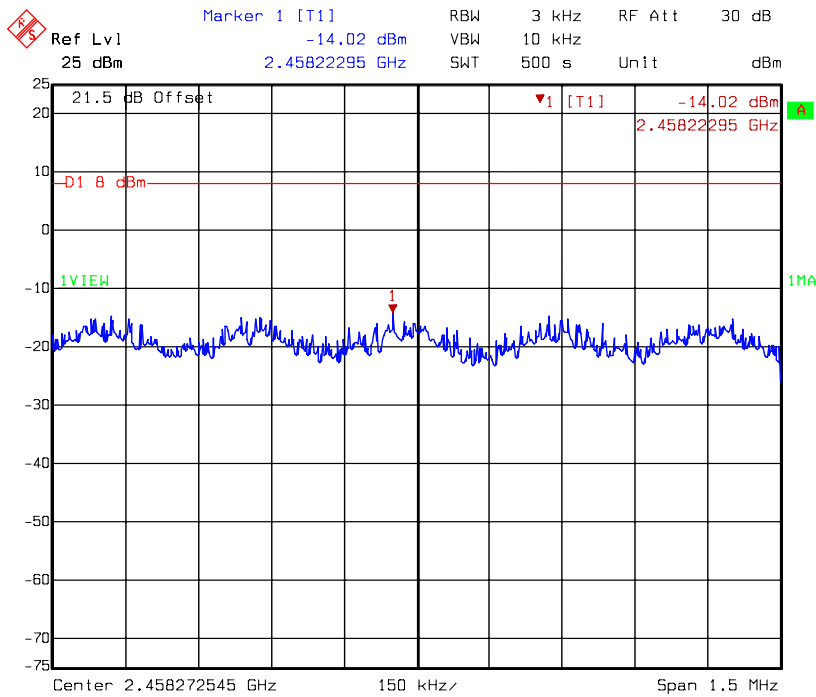
Title: Power density
Comment A: CH 1 at 802.11n 20MHz mode chainB
Date: 27.OCT.2008 16:31:35

Chain B: Power Spectral Density @ 802.11n HT20 mode channel 6



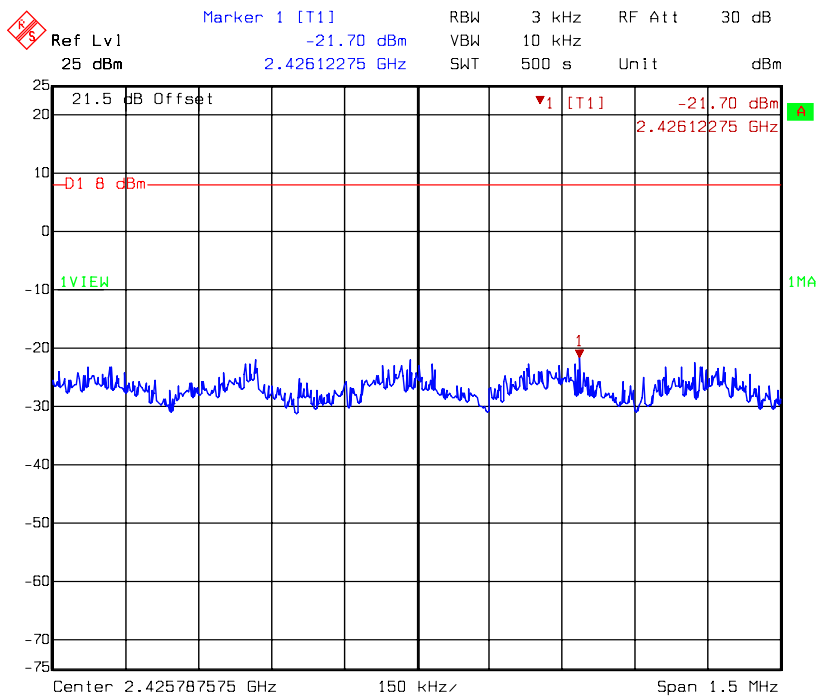
Title: Power density
Comment A: CH 6 at 802.11n 20MHz mode chainB
Date: 27.OCT.2008 16:34:19

Chain B: Power Spectral Density @ 802.11n HT20 mode channel 11



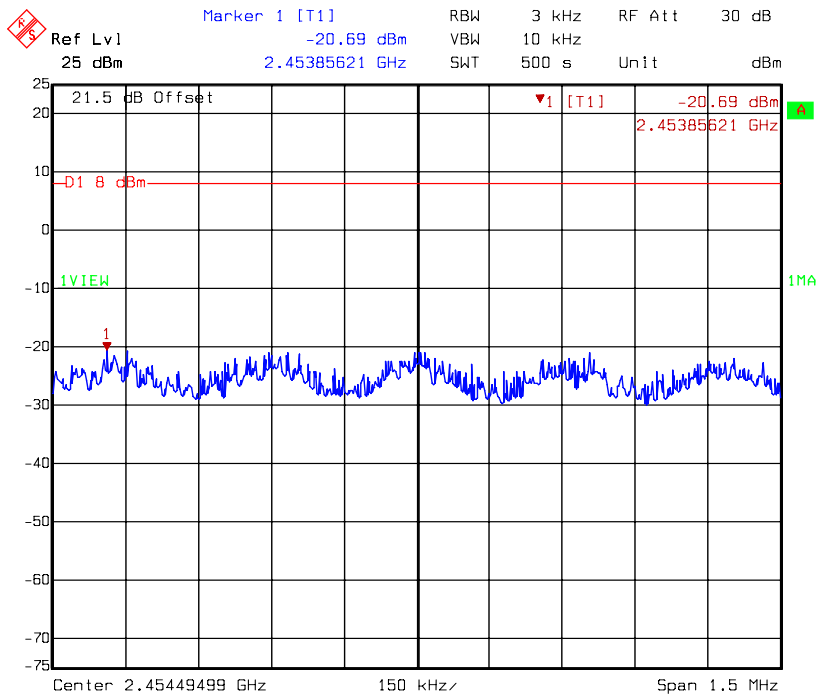
Title: Power density
Comment A: CH 11 at 802.11n 20MHz mode chainB
Date: 27.OCT.2008 16:36:53

Chain B: Power Spectral Density @ 802.11n HT40 mode channel 3



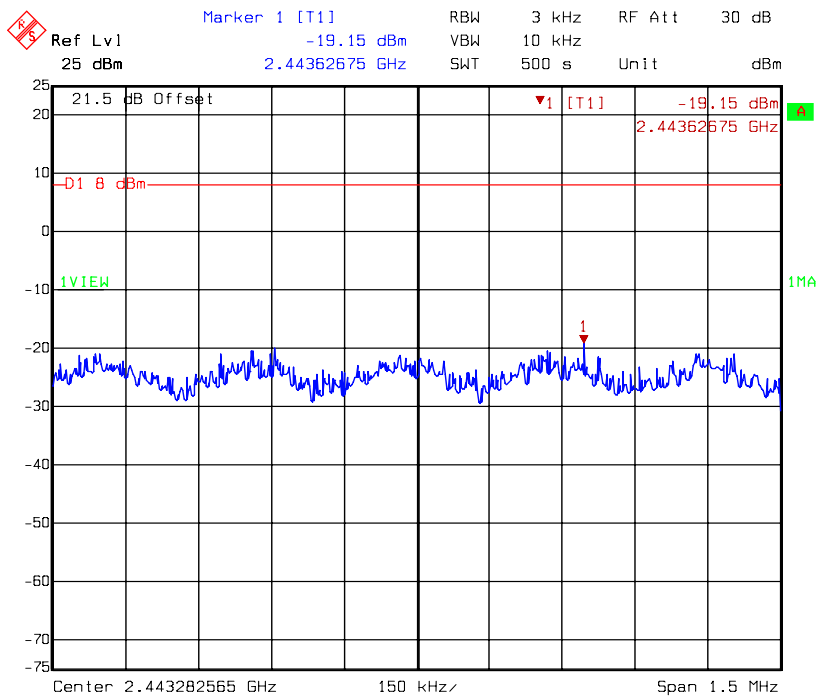
Title: Power density
Comment A: CH 3 at 802.11n 40MHz mode chainB
Date: 27.OCT.2008 16:40:21

Chain B: Power Spectral Density @ 802.11n HT40 mode channel 6



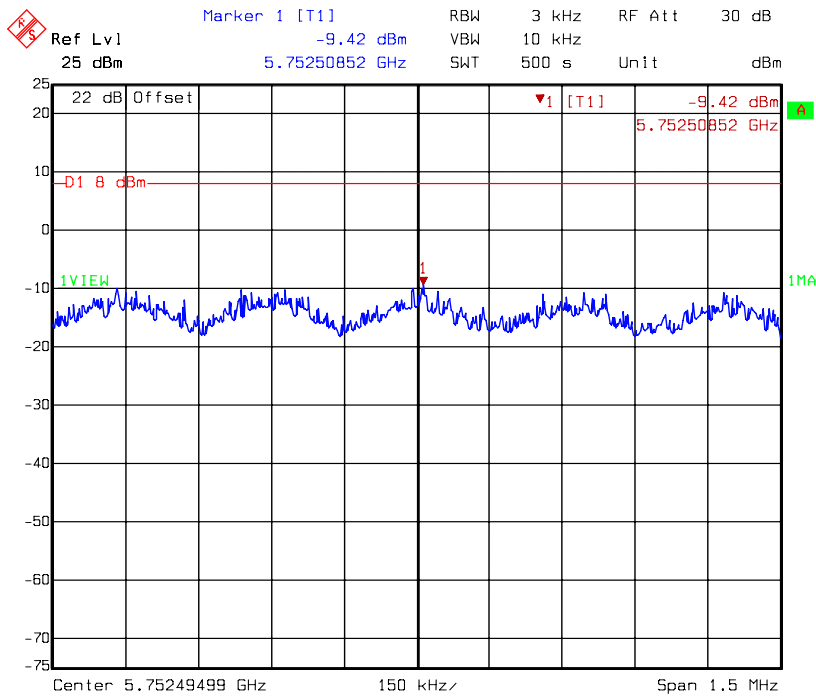
Title: Power density
Comment A: CH 6 at 802.11n 40MHz mode chainB
Date: 27.OCT.2008 16:47:08

Chain B: Power Spectral Density @ 802.11n HT40 mode channel 9



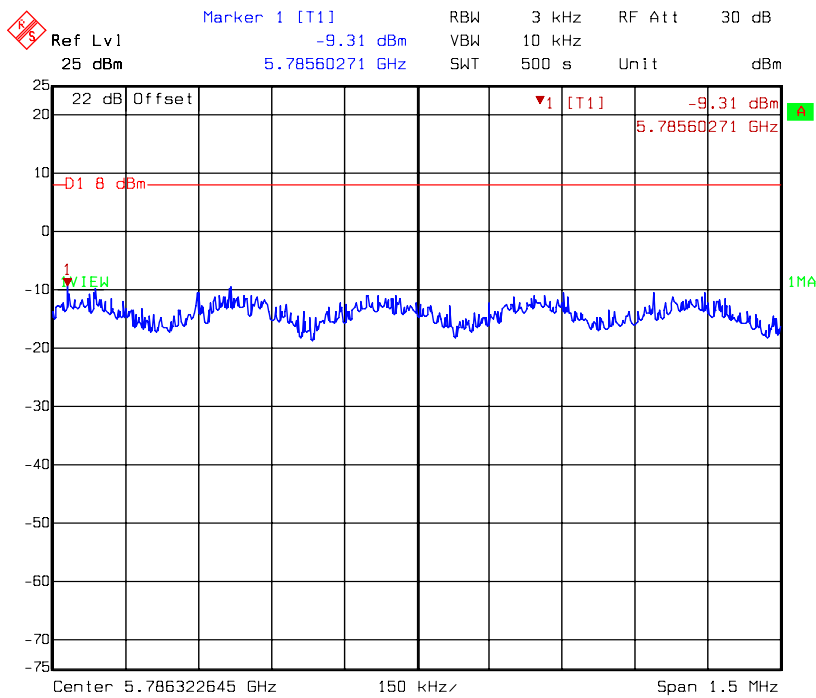
Title: Power density
Comment A: CH 9 at 802.11n 40MHz mode chainB
Date: 27.OCT.2008 16:50:35

Chain B: Power Spectral Density @ 802.11a mode channel 149



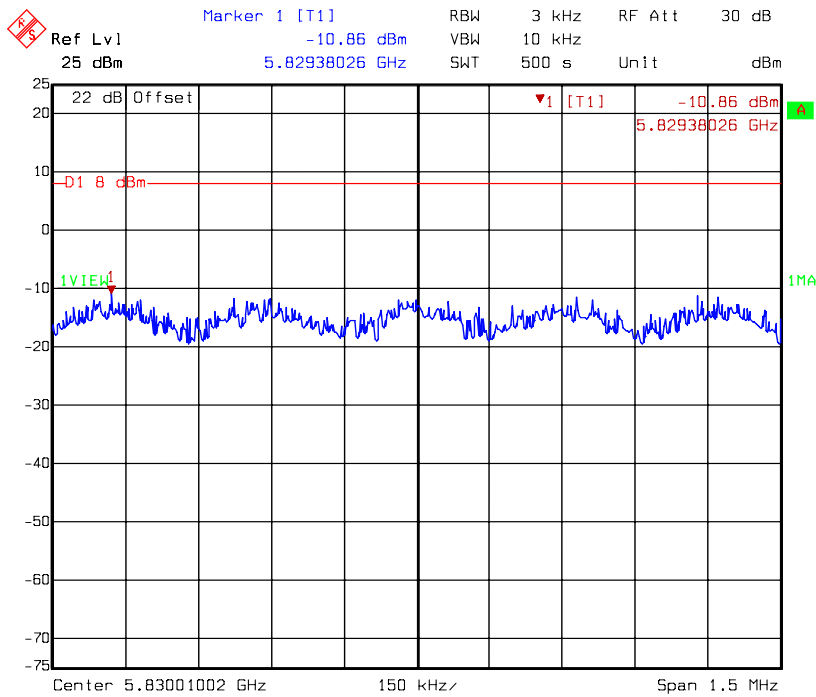
Title: Power density
Comment A: CH 149 at 802.11a mode chainB
Date: 27.OCT.2008 16:54:34

Chain B: Power Spectral Density @ 802.11a mode channel 157



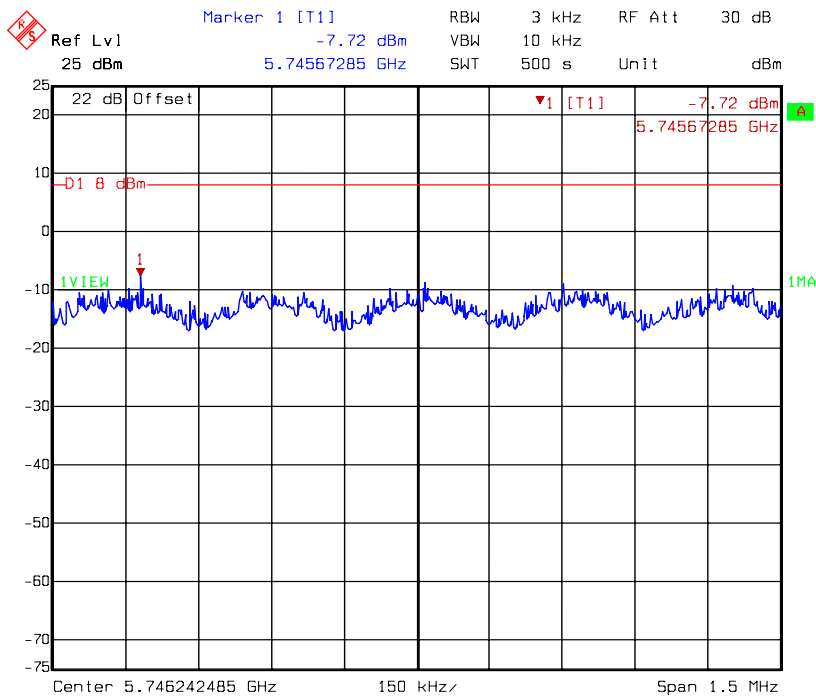
Title: Power density
Comment A: CH 157 at 802.11a mode chainB
Date: 27.OCT.2008 16:59:26

Chain B: Power Spectral Density @ 802.11a mode channel 165



Title: Power density
Comment A: CH 165 at 802.11a mode chainB
Date: 27.OCT.2008 17:02:36

Chain B: Power Spectral Density @ 802.11n HT20 mode channel 149



Title: Power density
Comment A: CH 149 at 802.11n 20MHz mode chainB
Date: 27.OCT.2008 17:07:54