



Variant FCC RF Test Report

APPLICANT : Motorola Solutions, Inc.
EQUIPMENT : Access Point, Radio Module 6
BRAND NAME : Motorola
MODEL NAME : AP-6
FCC ID : UZ7AP6
STANDARD : FCC Part 15 Subpart C §15.247
CLASSIFICATION : (DTS) Digital Transmission System

This is a variant report which is only valid together with the original test report. The product was received on Sep. 06, 2012 and completely tested on Oct. 10, 2012. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures and shown the compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Reviewed by:

Jones Tsai / Manager



SPORTON INTERNATIONAL INC.
No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.



TABLE OF CONTENTS

REVISION HISTORY.....	3
SUMMARY OF TEST RESULT	4
1 GENERAL DESCRIPTION.....	5
1.1 Applicant	5
1.2 Manufacturer.....	5
1.3 Feature of Equipment Under Test	5
1.4 Test Site.....	10
1.5 Applied Standards	10
1.6 Ancillary Equipment List	10
2 TEST CONFIGURATION OF EQUIPMENT UNDER TEST.....	11
2.1 Carrier Frequency and Channel	12
2.2 Test Mode.....	13
2.3 Connection Diagram of Test System.....	16
2.4 RF Utility	16
3 TEST RESULT.....	17
3.1 99% Bandwidth Measurement.....	17
3.2 Output Power Measurement.....	51
3.3 Power Spectral Density Measurement	74
3.4 Conducted Band Edges and Spurious Emission Measurement	158
3.5 Radiated Band Edges and Spurious Emission Measurement	300
3.6 Antenna Requirements	305
4 LIST OF MEASURING EQUIPMENT.....	307
5 UNCERTAINTY OF EVALUATION	308
APPENDIX A. TEST RESULT FOR ANTENNA 6	
APPENDIX B. TEST RESULT FOR ANTENNA 7	
APPENDIX C. TEST RESULT FOR ANTENNA 8	
APPENDIX D. SETUP PHOTOGRAPHS	



REVISION HISTORY



SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	-	Gen 4.6.1	99% Bandwidth	-	Pass	-
3.2	15.247(b)	A8.4	Power Output Measurement	≤ 30dBm	Pass	-
3.3	15.247(e)	A8.2(b)	Power Spectral Density	≤ 8dBm/3kHz	Pass	-
3.4	15.247(d)	A8.5	Conducted Band Edges	≤ 20dBc	Pass	
			Conducted Spurious Emission		Pass	
3.5	15.247(d)	A8.5	Radiated Band Edges	15.209(a) & 15.247(d)	Pass	
			Radiated Spurious Emission		Pass	Under limit 0.40 dB at 2483.520 MHz
3.6	15.203 & 15.247(b)	A8.4	Antenna Requirement	N/A	Pass	-



1 General Description

1.1 Applicant

Motorola Solutions, Inc.

One Motorola Plaza, Holtsville, NY 11742-1300 USA

1.2 Manufacturer

Motorola Solutions, Inc.

One Motorola Plaza, Holtsville, NY 11742-1300 USA

1.3 Feature of Equipment Under Test

Product Feature	
Equipment	Access Point, Radio Module 6
Brand Name	Motorola
Model Name	AP-6
FCC ID	UZ7AP6
Radios application	WLAN 11abgn
HW Version	DVT
SW Version	ART Rev 0.9 Build #16
EUT Stage	Production Unit

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.



Product Specification subjective to this standard	
Tx/Rx Frequency Range	802.11b/g/n : 2400 MHz ~ 2483.5 MHz 802.11a/n: 5725 MHz~ 5850 MHz.
Maximum Output Power to Antenna	<Antenna 6 for 4.5V> <MIMO Chain 1+2> <2400 MHz ~ 2483.5 MHz> 802.11b : 26.63 dBm (0.4603 W) 802.11g : 26.58 dBm (0.4550 W) 802.11n HT20 : 26.45 dBm (0.4416 W) 802.11n HT40 : 26.61 dBm (0.4581 W) <Antenna 6 for 3.3V> <MIMO Chain 1+2> <2400 MHz ~ 2483.5 MHz> 802.11b : 26.31 dBm (0.4276 W) 802.11g : 26.51 dBm (0.4477 W) 802.11n HT20 : 26.41 dBm (0.4375 W) 802.11n HT40 : 26.37 dBm (0.4335 W) <Antenna 7 for 4.5V> <MIMO Chain 1+2> <5725 MHz ~ 5850 MHz> 802.11a : 29.71 dBm (0.9354 W) 802.11n HT20 : 29.59 dBm (0.9099 W) 802.11n HT40 : 29.85 dBm (0.9661 W) <Antenna 7 for 3.3V > <MIMO Chain 1+2> <5725 MHz ~ 5850 MHz> 802.11a : 27.83 dBm (0.6067 W) 802.11n HT20 : 27.73 dBm (0.5929 W) 802.11n HT40 : 27.79 dBm (0.6012 W) <Antenna 8 for 4.5V> <MIMO Chain 1+2> <2400 MHz ~ 2483.5 MHz> 802.11b : 28.05 dBm (0.6383 W) 802.11g : 29.72 dBm (0.9376 W) 802.11n HT20 : 29.51 dBm (0.8933 W) 802.11n HT40 : 27.44 dBm (0.5546 W) <Antenna 8 for 3.3V > <MIMO Chain 1+2> <2400 MHz ~ 2483.5 MHz> 802.11b : 28.04 dBm (0.3368 W) 802.11g : 29.41 dBm (0.8730 W) 802.11n HT20 : 29.15 dBm (0.8222 W) 802.11n HT40 : 27.15 dBm (0.5188 W)



Product Specification subjective to this standard	
99% Occupied Bandwidth	<Antenna 7 for 4.5V> <MIMO Chain 1+2(1)> <5725 MHz ~ 5850 MHz> 802.11a : 18.95MHz 802.11n HT20 : 19.70MHz 802.11n HT40 : 38.10MHz <MIMO Chain 1+2(2)> <5725 MHz ~ 5850 MHz> 802.11a : 18.75MHz 802.11n HT20 : 19.75MHz 802.11n HT40 : 37.60MHz <Antenna 8 for 4.5V> <MIMO Chain 1+2(1)> <2400 MHz ~ 2483.5 MHz> 802.11b : 15.80MHz 802.11g : 18.60MHz 802.11n HT20 : 19.60MHz 802.11n HT40 : 37.40MHz <MIMO Chain 1+2(2)> <2400 MHz ~ 2483.5 MHz> 802.11b : 15.75MHz 802.11g : 18.70MHz 802.11n HT20 : 19.50MHz 802.11n HT40 : 37.40MHz
Type of Modulation	802.11b : DSSS (BPSK / QPSK / CCK) 802.11a/g/h : OFDM (BPSK / QPSK / 16QAM / 64QAM)
Data Rate	802.11b MIMO mode: 1/2/5.5/11 Mbps 802.11a/g MIMO mode: 6/9/12/18/24/36/48/54 Mbps 802.11n HT20 MIMO mode: MCS 8/9/10/11/12/13/14/15 802.11n HT40 MIMO mode: MCS 8/9/10/11/12/13/14/15



<Antenna Information>

Type	Model Number	2.4GHz				
		Peak Gain	Cable Loss (external)	Cable Loss (internal)	Net Peak Gain	Note
Dipole	ML-2452-APA2-01	3	0	1.3	1.7	Antenna 1
	ML-2452-HPA5-036	2.9	0.8	1.3	0.8	
	ML-5299-APA1-01R	N/A				
	ML-5299-HPA1-01R	N/A				
	ML-2499-HPA3-01R	4.6	1.3	1.3	2	
	ML-2499-APA2-01R	2	0	1.3	0.7	
	ML-2452-APA2GA1-01	2	0	1.3	0.7	
	ML-2452-APAG2A1-01	2.7	0	1.3	1.4	
	ML-2499-FHPA9-01R	10.5	0	1.3	9.2	Antenna 6
Panel	ML-2452-PNA5-01R	4.50	0.31	1.3	2.89	Antenna 2
Patch	ML-2452-PTA3M3-036	5	0	1.3	3.7	Antenna 3
	ML-5299-PTA1-0R	N/A				
	ML-2499-SD3-01R	4.8	1.3	1.3	2.2	
	ML-2452-PTA2M2-036	4	0	1.3	2.7	Antenna 7
	ML-2499-PNAHD-02R	7.5	0	1.3	6.2	Antenna 8
PIFA_MCN	MCN PIFA	2	0	0	2	Antenna 4
PIFA_NCAP	NCAP PIFA	3	0	0	3	Antenna 5



Type	Model Number	5GHz				
		Peak Gain	Cable Loss (external)	Cable Loss (internal)	Net Peak Gain	Note
Dipole	ML-2452-APA2-01	5	0	1.5	3.5	Antenna 1
	ML-2452-HPA5-036	4.9	1.1	1.5	2.3	
	ML-5299-APA1-01R	2	0	1.5	0.5	
	ML-5299-HPA1-01R	5	0.84	1.5	2.66	
	ML-2499-HPA3-01R	N/A				
	ML-2499-APA2-01R	N/A				
	ML-2452-APA2GA1-01	1	0	1.5	-0.5	
	ML-2452-APAG2A1-01	2	0	1.5	0.5	
	ML-2499-FHPA9-01R	N/A				Antenna 6
Panel	ML-2452-PNA5-01R	5.00	0.60	1.5	2.90	Antenna 2
Patch	ML-2452-PTA3M3-036	3	0	1.5	1.5	Antenna 3
	ML-5299-PTA1-0R	5	2	1.5	1.5	
	ML-2499-SD3-01R	N/A				
	ML-2452-PTA2M2-036	5	0	1.5	3.5	Antenna 7
	ML-2499-PNAHD-02R	N/A				Antenna 8
PIFA_MCN	MCN PIFA	4.5	0	0	4.5	Antenna 4
PIFA_NCAP	NCAP PIFA	6	0	0	6	Antenna 5

Note:

1. The Dipole antenna 2.4GHz Net Peak gain worse case is ML-2452-APA2-01 (Antenna 6).
2. The Patch antenna 5GHz Net Peak gain worse case is ML-2452-PTA2M2-036 (Antenna 7).
3. The Patch antenna 2.4GHz Net Peak gain worse case is ML-2499-PNAHD-02R (Antenna 8).
4. The Dipole antenna adding ML-2452-APAG2A1-01 Antenna. The ML-2452-APAG2A1-01 Antenna Net Peak gain is less then ML-2452-APA2-01 Antenna. The test cases which can be referred to ML-2452-APA2-01 (Antenna 1).



1.4 Test Site

Test Site	SPORTON INTERNATIONAL INC.		
Test Site Location	No. 52, Hwa Ya 1 st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-3273456 / FAX: +886-3-3284978		
Test Site No.	Sportun Site No.		FCC/IC Registration No.
	TH02-HY	03CH07-HY	722060/4086B-1

1.5 Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC Part 15 Subpart C §15.247
- FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v02
- FCC KDB 662911 D01 Multiple Transmitter Output v01r02.
- ANSI C63.4-2003 and ANSI C63.10-2009
- IC RSS-210 Issue 8
- IC RSS-Gen Issue 3

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

1.6 Ancillary Equipment List

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	DC Power Supply	GW	GPC-60300	N/A	N/A	Unshielded, 1.8 m
2.	Notebook	DELL	Vostro 1510	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m



2 Test Configuration of Equipment Under Test

The EUT supports a 2 X 2 MIMO configuration which supports completely uncorrelated MIMO (Chain 1+2) modes, and is enabled by voltage 3.3V / 4.5V.

Pre-scanned tests were performed to determine the final configuration from all possible combinations, and the worst-case data rates are determined to the investigations by measuring the maximum power and PPSD across all the data rates, bandwidths, modulations and spatial stream modes.

Thus all tests were made with following data rates:

- 802.11b MIMO mode, 20 MHz Channel Bandwidth, 1 Mb/s, CCK Modulation
- 802.11g MIMO mode, 20 MHz Channel Bandwidth, 6 Mb/s, OFDM Modulation
- 802.11a MIMO mode, 20 MHz Channel Bandwidth, 6 Mb/s, OFDM Modulation
- 802.11n HT20 MIMO mode, 20 MHz Channel Bandwidth, MCS8, OFDM Modulation
- 802.11n HT40 MIMO mode, 40 MHz Channel Bandwidth, MCS8, OFDM Modulation

Based on the worst configuration (modulation, data rate) found above, and based on different voltage level and different supported antenna type and gain, the module RF power setting is set individually to meet FCC compliance limit.

The details of test channels and bandwidth for RF conductive measurement and Radiated Spurious Emissions are listed next tables.



Ant.	Antenna type	Voltage	6dB EBW	Power	Spectral Density	99% Bandwidth	Conducted Band Edges	Conducted Spurious Emission	Radiated Spurious Emissions
6	Dipole	4.5 V		✓	✓				✓
6	Dipole	3.3 V		✓					✓
7	Panel	4.5 V		✓	✓	✓	✓	✓	✓
7	Panel	3.3 V		✓					✓
8	Patch	4.5 V		✓	✓	✓	✓	✓	✓
8	Patch	3.3 V		✓					✓

Note:

1. The output power of Antenna 6 (3.3V), Antenna 7 (3.3V), and Antenna 8 (3.3V) were less than 4.5V, thus the Antenna 6 (3.3V), Antenna 7 (3.3V), and Antenna 8 (3.3V) were performance Radiated Spurious Emissions only.
2. The output power of Antenna 6 (4.5V) was less than Antenna 8 (4.5V), thus the 99% Bandwidth, Conducted Band Edges, and Conducted Spurious Emission can be excluded.
3. 6dB Bandwidth test result which can be referred to Sporton Report NO. FR092308A.

2.1 Carrier Frequency and Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
2400-2483.5 MHz	1	2412	7	2442
	2	2417	8	2447
	3	2422	9	2452
	4	2427	10	2457
	5	2432	11	2462
	6	2437		

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5725-5850 MHz Band 4	149	5745	159	5795
	151	5755	161	5805
	157	5785	165	5825

Note: The above Frequency and Channel in boldface were 802.11n HT40.



2.2 Test Mode

Antenna Information		
Antenna 6	Model Name	ML-2499-FHPA9-01R
	Antenna Type	Dipole Antenna
	Antenna Gain	9.2 dBi

Test Cases	
Test Item	802.11b (Modulation : DSSS) 802.11g/n (Modulation : OFDM)
Conducted TCs	Mode 1: 802.11b_CH01_2412 MHz (Chain 1+2) Mode 2: 802.11b_CH02_2417 MHz (Chain 1+2) Mode 3: 802.11b_CH06_2437 MHz (Chain 1+2) Mode 4: 802.11b_CH10_2457 MHz (Chain 1+2) Mode 5: 802.11b_CH11_2462 MHz (Chain 1+2) Mode 6: 802.11g_CH01_2412 MHz (Chain 1+2) Mode 7: 802.11g_CH02_2417 MHz (Chain 1+2) Mode 8: 802.11g_CH06_2437 MHz (Chain 1+2) Mode 9: 802.11g_CH10_2457 MHz (Chain 1+2) Mode 10: 802.11g_CH11_2462 MHz (Chain 1+2) Mode 11: 802.11n HT20_CH01_2412 MHz (Chain 1+2) Mode 12: 802.11n HT20_CH02_2417 MHz (Chain 1+2) Mode 13: 802.11n HT20_CH06_2437 MHz (Chain 1+2) Mode 14: 802.11n HT20_CH10_2457 MHz (Chain 1+2) Mode 15: 802.11n HT20_CH11_2462 MHz (Chain 1+2) Mode 16: 802.11n HT40_CH03_2422 MHz (Chain 1+2) Mode 17: 802.11n HT40_CH04_2427 MHz (Chain 1+2) Mode 18: 802.11n HT40_CH05_2432 MHz (Chain 1+2) Mode 19: 802.11n HT40_CH06_2437 MHz (Chain 1+2) Mode 20: 802.11n HT40_CH07_2442 MHz (Chain 1+2) Mode 21: 802.11n HT40_CH08_2447 MHz (Chain 1+2) Mode 22: 802.11n HT40_CH09_2452 MHz (Chain 1+2)



Antenna Information		
Antenna 7	Model Name	ML-2452-PTA2M2-036
	Antenna Type	Patch Antenna
	Antenna Gain	3.5 dBi

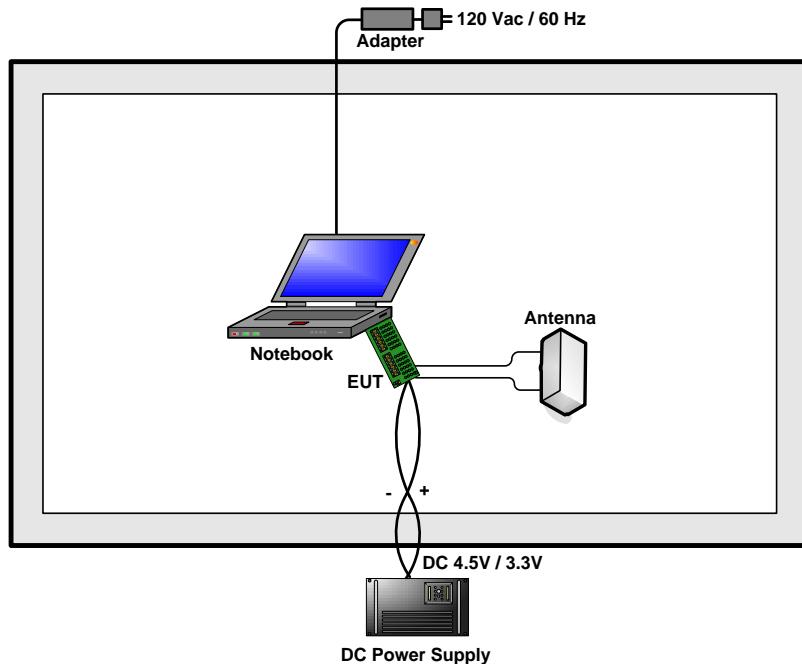
Test Cases	
Test Item	802.11a/n (Modulation : OFDM)
Conducted TCs	Mode 1: 802.11a_CH149_5745 MHz (Chain 1+2) Mode 2: 802.11a_CH157_5785 MHz (Chain 1+2) Mode 3: 802.11a_CH165_5825 MHz (Chain 1+2) Mode 4: 802.11n HT20_CH149_5745 MHz (Chain 1+2) Mode 5: 802.11n HT20_CH157_5785 MHz (Chain 1+2) Mode 6: 802.11n HT20_CH165_5825 MHz (Chain 1+2) Mode 7: 802.11n HT40_CH151_5755 MHz (Chain 1+2) Mode 8: 802.11n HT40_CH159_5795 MHz (Chain 1+2)



Antenna Information		
Antenna 8	Model Name	ML-2499-PNAHD-02R
	Antenna Type	Patch Antenna
	Antenna Gain	6.2 dBi

Test Cases	
Test Item	802.11b (Modulation : DSSS) 802.11g/n (Modulation : OFDM)
Conducted TCs	Mode 1: 802.11b_CH01_2412 MHz (Chain 1+2) Mode 2: 802.11b_CH02_2417 MHz (Chain 1+2) Mode 3: 802.11b_CH06_2437 MHz (Chain 1+2) Mode 4: 802.11b_CH10_2457 MHz (Chain 1+2) Mode 5: 802.11b_CH11_2462 MHz (Chain 1+2) Mode 6: 802.11g_CH01_2412 MHz (Chain 1+2) Mode 7: 802.11g_CH02_2417 MHz (Chain 1+2) Mode 8: 802.11g_CH06_2437 MHz (Chain 1+2) Mode 9: 802.11g_CH10_2457 MHz (Chain 1+2) Mode 10: 802.11g_CH11_2462 MHz (Chain 1+2) Mode 11: 802.11n HT20_CH01_2412 MHz (BW 20M) (Chain 1+2) Mode 12: 802.11n HT20_CH02_2417 MHz (BW 20M) (Chain 1+2) Mode 13: 802.11n HT20_CH06_2437 MHz (BW 20M) (Chain 1+2) Mode 14: 802.11n HT20_CH10_2457 MHz (BW 20M) (Chain 1+2) Mode 15: 802.11n HT20_CH11_2462 MHz (BW 20M) (Chain 1+2) Mode 16: 802.11n HT40_CH03_2422 MHz (BW 40M) (Chain 1+2) Mode 17: 802.11n HT40_CH04_2427 MHz (BW 40M) (Chain 1+2) Mode 18: 802.11n HT40_CH05_2432 MHz (BW 40M) (Chain 1+2) Mode 19: 802.11n HT40_CH06_2437 MHz (BW 40M) (Chain 1+2) Mode 20: 802.11n HT40_CH07_2442 MHz (BW 40M) (Chain 1+2) Mode 21: 802.11n HT40_CH08_2447 MHz (BW 40M) (Chain 1+2) Mode 22: 802.11n HT40_CH09_2452 MHz (BW 40M) (Chain 1+2)

2.3 Connection Diagram of Test System



2.4 RF Utility

The programmed RF utility “ART”, is installed in EUT to provide channel selection, power level, data rate and the application type. RF Utility can send transmitting signal for all testing. 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.

3 Test Result

3.1 99% Bandwidth Measurement

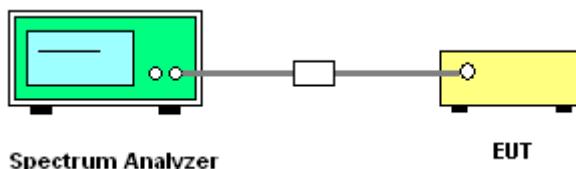
3.1.1 Measuring Instruments

The section 4.0 of List of Measuring Equipment of this test report is used for test.

3.1.2 Test Procedures

1. The testing follows the Measurement Procedure of FCC KDB No. 558074 DTS D01 Meas. Guidance v02.
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.

3.1.3 Test Setup





3.1.4 Test Result of 99% Occupied Bandwidth

<Antenna 7 for 4.5V>

Test Mode :	802.11a	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%

Channel	Frequency (MHz)	802.11a 99% Occupied Bandwidth (MHz)		Pass/Fail
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	
149	5745	18.70	18.60	N/A
157	5785	18.95	18.60	N/A
165	5825	18.95	18.75	N/A

Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%

Channel	Frequency (MHz)	802.11n HT20 99% Occupied Bandwidth (MHz)		Pass/Fail
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	
149	5745	19.55	19.75	N/A
157	5785	19.70	19.75	N/A
165	5825	19.65	19.70	N/A

Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%

Channel	Frequency (MHz)	802.11n HT40 99% Occupied Bandwidth (MHz)		Pass/Fail
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	
151	5755	38.10	37.60	N/A
159	5795	38.00	37.40	N/A



<Antenna 8 for 4.5V>

Test Mode :	802.11b	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%

Channel	Frequency (MHz)	802.11b 99% Occupied Bandwidth (MHz)		Pass/Fail
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	
01	2412	15.75	15.75	Pass
02	2417	15.75	15.70	Pass
06	2437	15.80	15.75	Pass
10	2457	15.75	15.75	Pass
11	2462	15.75	15.70	Pass

Test Mode :	802.11g	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%

Channel	Frequency (MHz)	802.11g 99% Occupied Bandwidth (MHz)		Pass/Fail
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	
01	2412	18.55	18.45	Pass
02	2417	18.50	18.60	Pass
06	2437	18.55	18.50	Pass
10	2457	18.55	18.70	Pass
11	2462	18.60	18.60	Pass



Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%

Channel	Frequency (MHz)	2.4GHz 802.11n HT20 99% Occupied Bandwidth (MHz)		Pass/Fail
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	
01	2412	19.40	19.35	Pass
02	2417	19.40	19.40	Pass
06	2437	19.60	19.35	Pass
10	2457	19.45	19.50	Pass
11	2462	19.50	19.45	Pass

Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%

Channel	Frequency (MHz)	2.4GHz 802.11n HT40 99% Occupied Bandwidth (MHz)		Pass/Fail
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	
03	2422	37.10	37.40	Pass
04	2427	37.20	37.10	Pass
05	2432	37.20	37.20	Pass
06	2437	37.30	37.30	Pass
07	2442	37.40	37.30	Pass
08	2447	37.10	37.10	Pass
09	2452	37.10	37.40	Pass

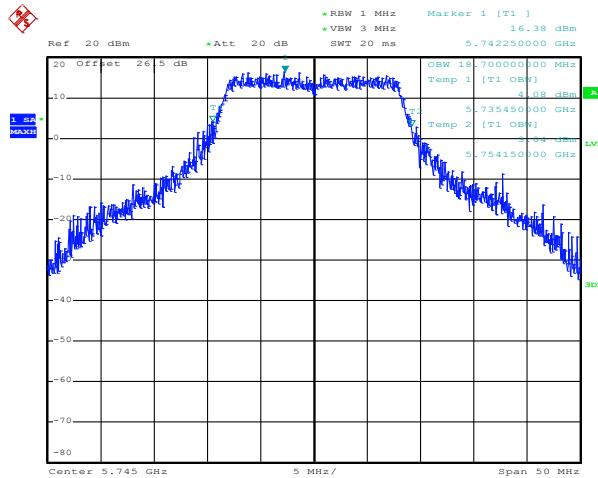


3.1.5 Test Result of 99% Bandwidth Plots

<Antenna 7 for 4.5V>

802.11a – MIMO Chain 1+2(1)

99% Occupied Bandwidth Plot on Channel 149

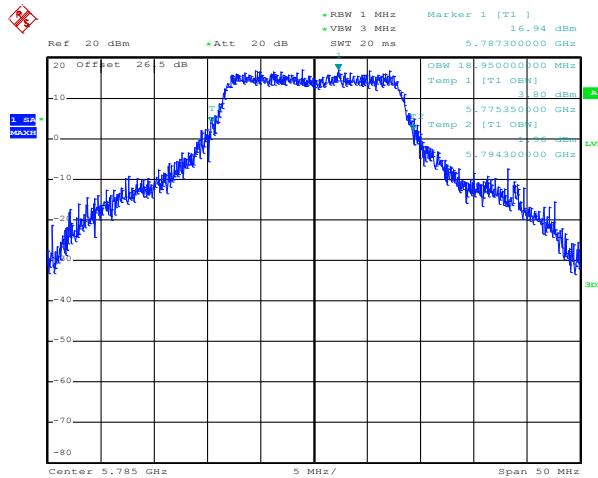


290603 15C IC-OB 802.11a 5745 (ch149)

Date: 10.OCT.2012 18:11:37

802.11a – MIMO Chain 1+2(1)

99% Occupied Bandwidth Plot on Channel 157



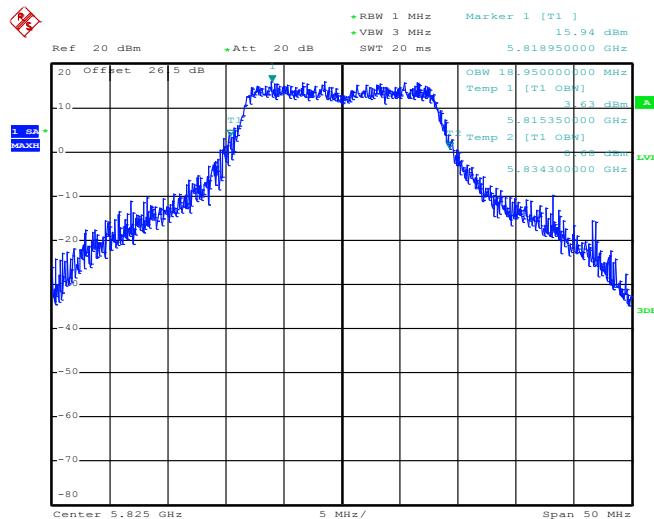
290603 15C IC-OB 802.11a 5785 (ch157)

Date: 10.OCT.2012 18:16:48



802.11a – MIMO Chain 1+2(1)

99% Occupied Bandwidth Plot on Channel 165

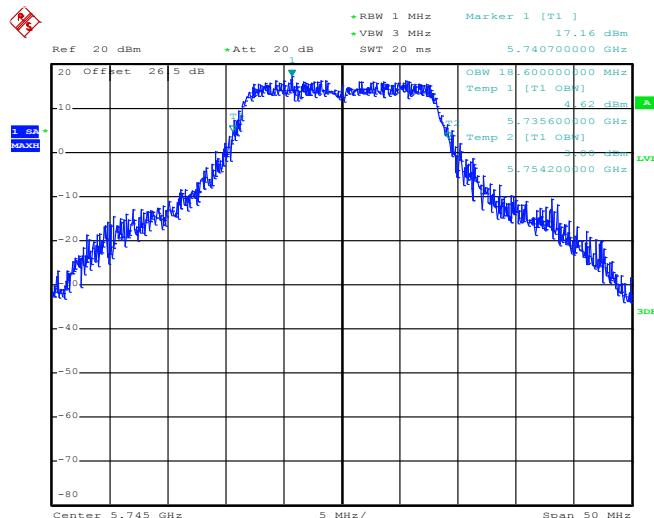


290603 15C IC-OB 802.11a 5825 (ch165)

Date: 10.OCT.2012 18:09:25

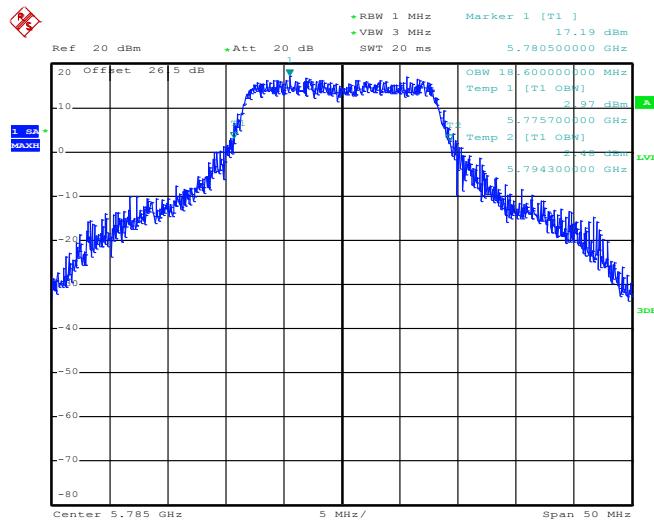
802.11a – MIMO Chain 1+2(2)

99% Occupied Bandwidth Plot on Channel 149



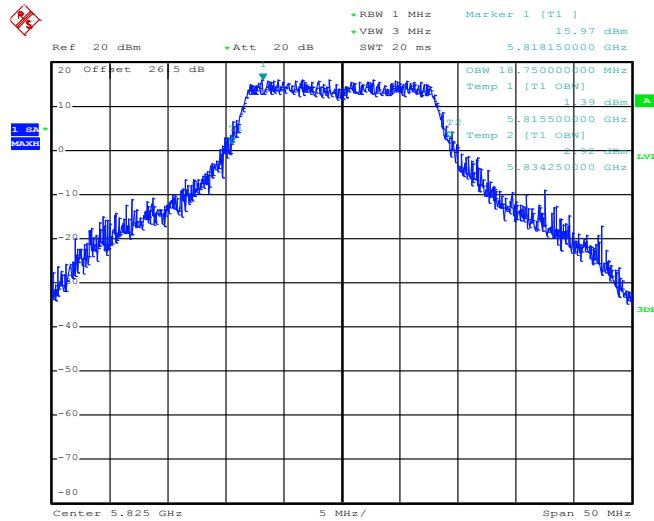
290603 15C IC-OB 802.11a 5745 (ch149)

Date: 10.OCT.2012 18:15:20

802.11a – MIMO Chain 1+2(2)
99% Occupied Bandwidth Plot on Channel 157


290603 15C IC-OB 802.11a 5785 (ch157)

Date: 10.OCT.2012 18:06:06

802.11a – MIMO Chain 1+2(2)
99% Occupied Bandwidth Plot on Channel 165


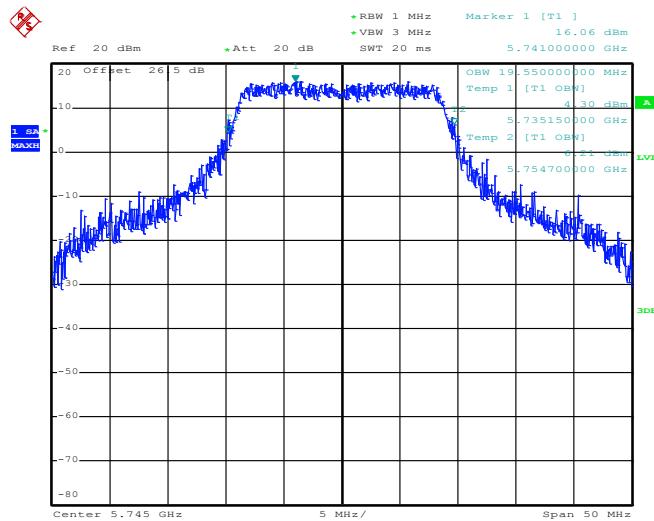
290603 15C IC-OB 802.11a 5825 (ch165)

Date: 10.OCT.2012 18:07:25



802.11n HT20 – MIMO Chain 1+2(1)

99% Occupied Bandwidth Plot on Channel 149

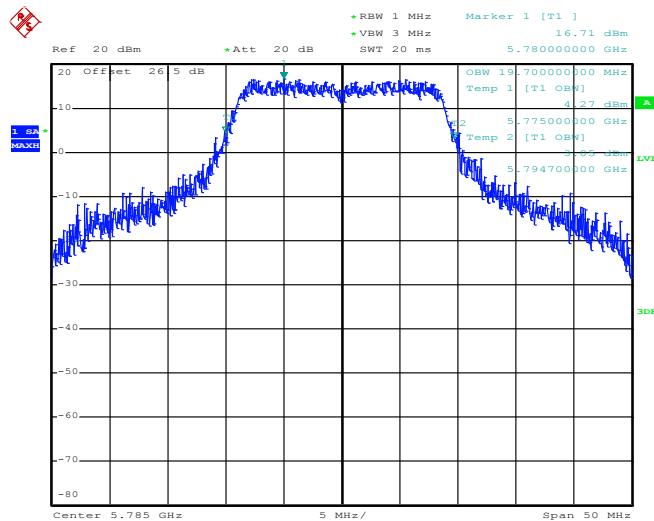


290603 15C IC-OB 802.11a_N20 5745 (ch149)

Date: 10.OCT.2012 17:46:27

802.11n HT20 – MIMO Chain 1+2(1)

99% Occupied Bandwidth Plot on Channel 157



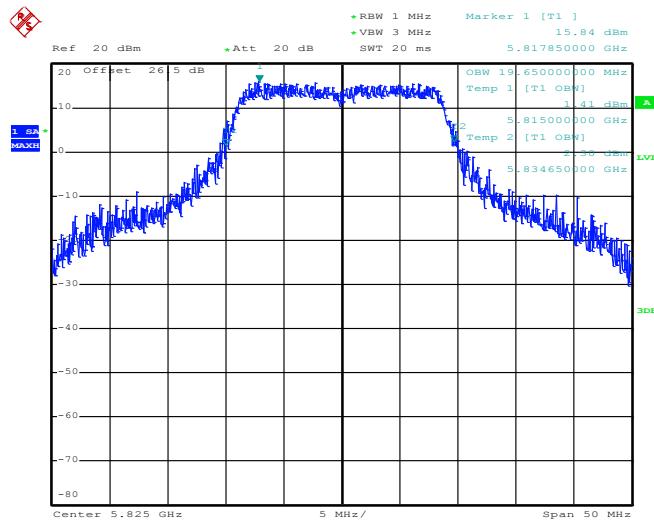
290603 15C IC-OB 802.11a_N20 5785 (ch157)

Date: 10.OCT.2012 18:02:58



802.11n HT20 – MIMO Chain 1+2(1)

99% Occupied Bandwidth Plot on Channel 165

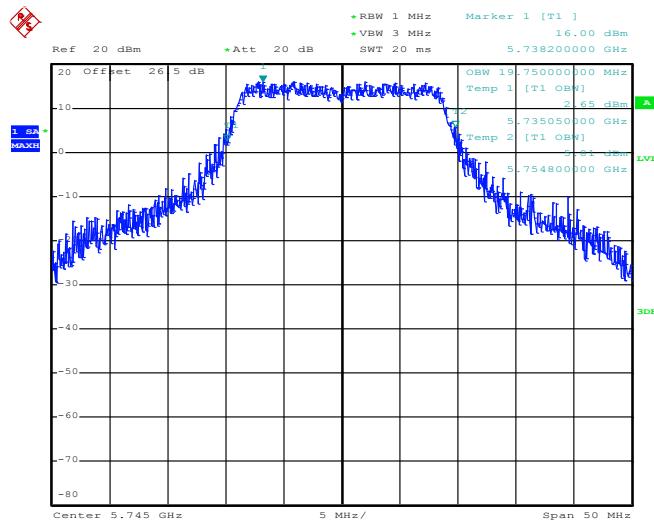


290603 15C IC-OB 802.11a_N20 5825 (chl165)

Date: 10.OCT.2012 17:57:24

802.11n HT20 –MIMO Chain 1+2(2)

99% Occupied Bandwidth Plot on Channel 149



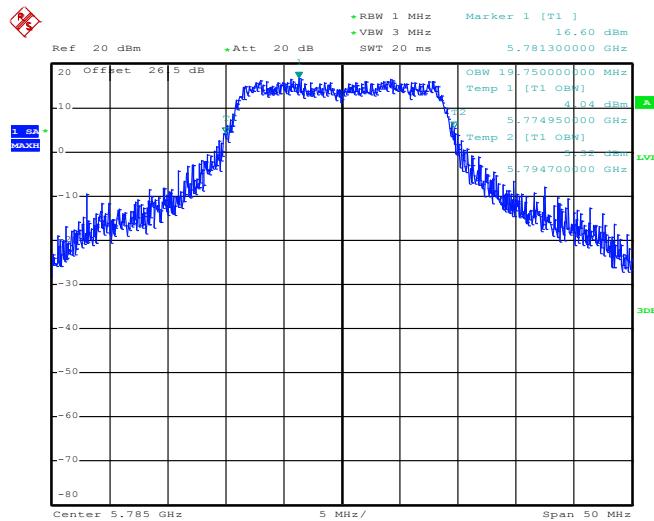
290603 15C IC-OB 802.11a_N20 5745 (chl149)

Date: 10.OCT.2012 17:44:14



802.11n HT20 – MIMO Chain 1+2(2)

99% Occupied Bandwidth Plot on Channel 157

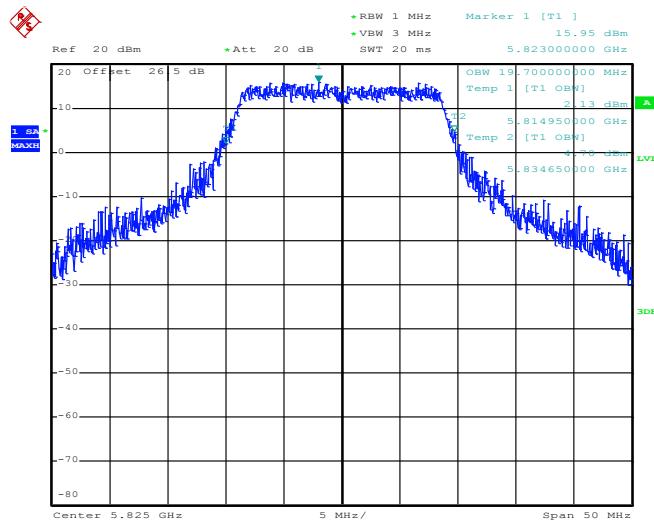


290603 15C IC-OB 802.11a_N20 5785 (ch157)

Date: 10.OCT.2012 18:01:36

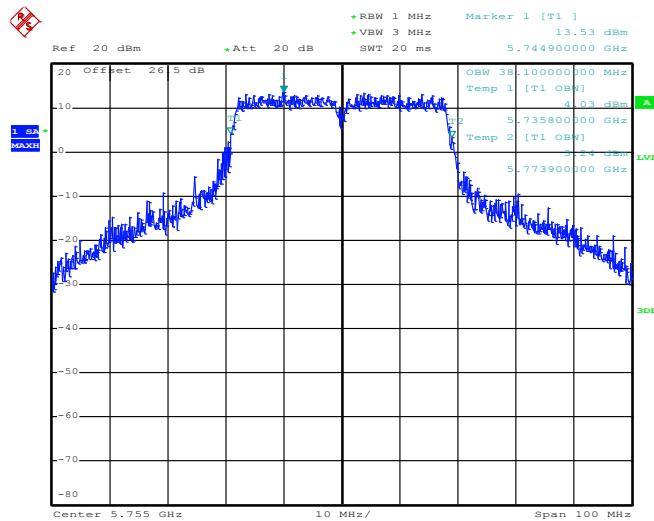
802.11n HT20 – MIMO Chain 1+2(2)

99% Occupied Bandwidth Plot on Channel 165



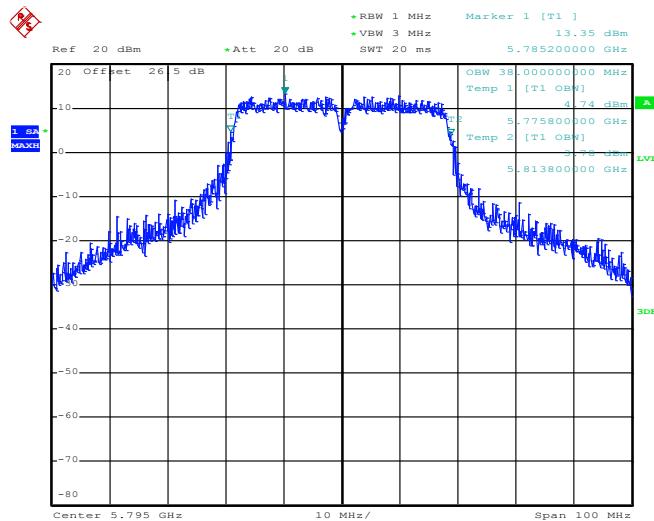
290603 15C IC-OB 802.11a_N20 5825 (ch165)

Date: 10.OCT.2012 18:00:09

802.11n HT40 – MIMO Chain 1+2(1)
99% Occupied Bandwidth Plot on Channel 151


290603 15C IC-OB 802.11a_N40 5755

Date: 10.OCT.2012 17:20:48

802.11n HT40 – MIMO Chain 1+2(1)
99% Occupied Bandwidth Plot on Channel 159


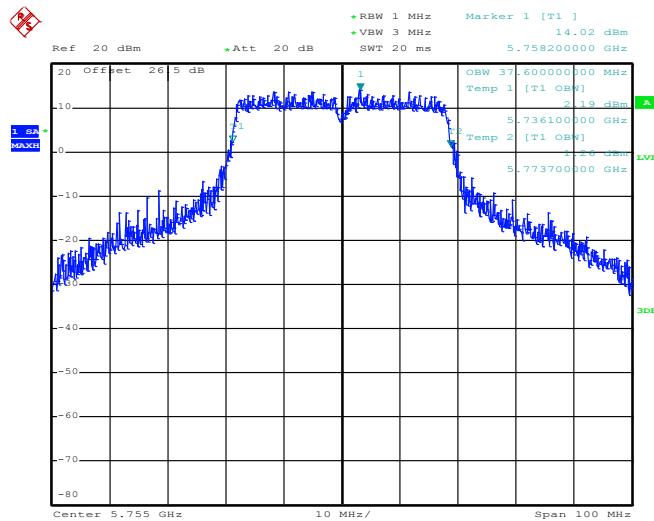
290603 15C IC-OB 802.11a_N40 5795

Date: 10.OCT.2012 17:08:59



802.11n HT40 – MIMO Chain 1+2(2)

99% Occupied Bandwidth Plot on Channel 151

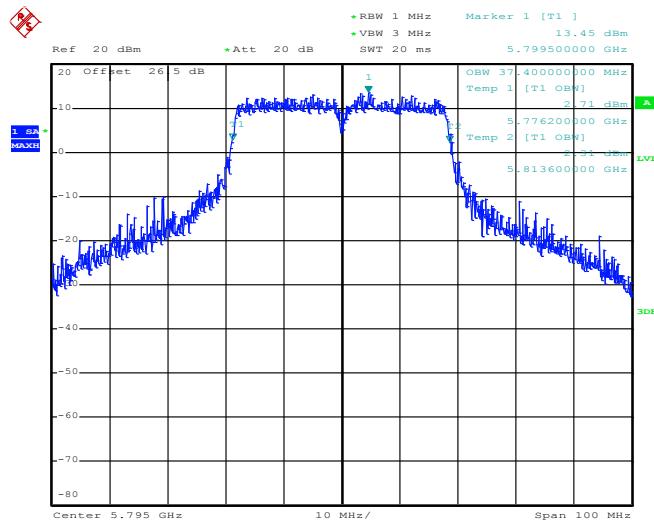


290603 15C IC-OB 802.11a_N40 5755

Date: 10.OCT.2012 17:23:56

802.11n HT40 – MIMO Chain 1+2(2)

99% Occupied Bandwidth Plot on Channel 159



290603 15C IC-OB 802.11a_N40 5795

Date: 10.OCT.2012 17:07:05

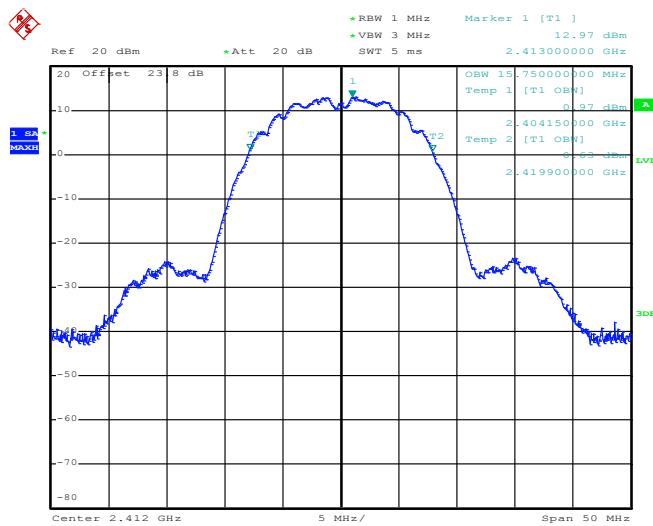


<Antenna 8 for 4.5V>

<802.11b>

802.11b – MIMO Chain 1+2(1)

99% Occupied Bandwidth Plot on Channel 01

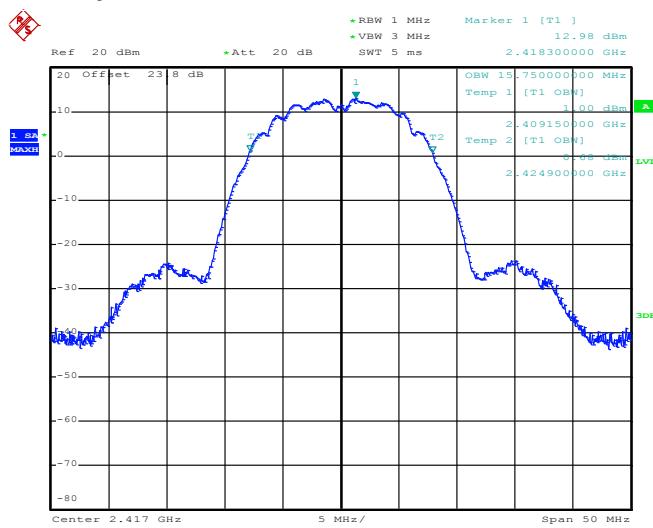


282903-1011 15C IC-OB 802.11b 2412 (ch01)

Date: 27.SEP.2012 15:45:16

802.11b – MIMO Chain 1+2(1)

99% Occupied Bandwidth Plot on Channel 02

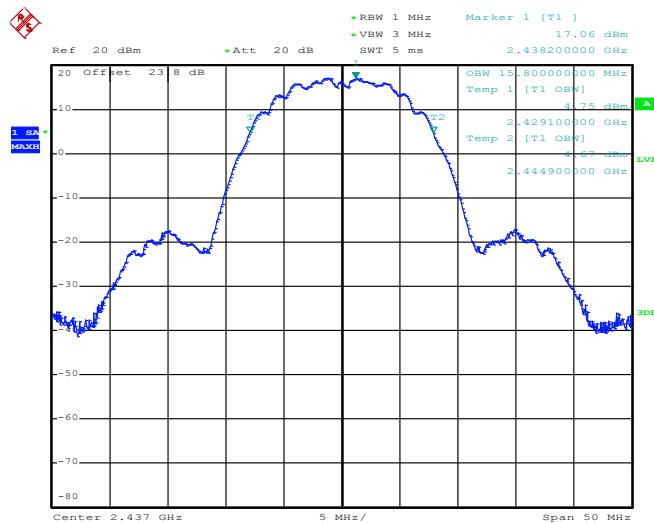


282903-1011 15C IC-OB 802.11b 2417

Date: 27.SEP.2012 15:47:10

802.11b – MIMO Chain 1+2(1)

99% Occupied Bandwidth Plot on Channel 06

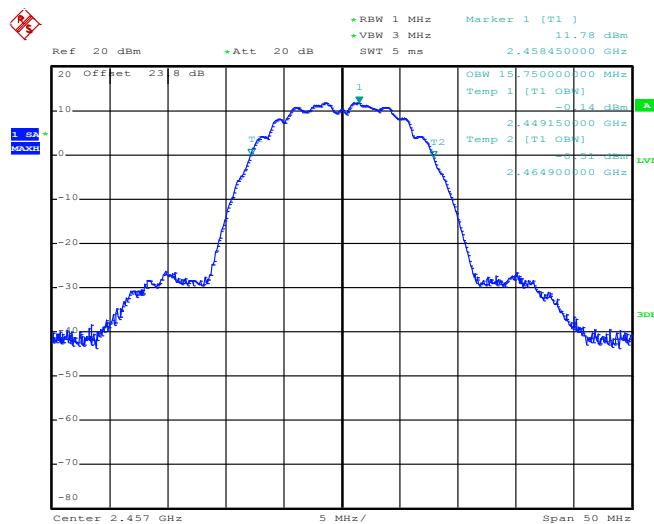


282903-1011 15C IC-OB 802.11b 2437 (ch06)

Date: 27.SEP.2012 15:49:59

802.11b – MIMO Chain 1+2(1)

99% Occupied Bandwidth Plot on Channel 10



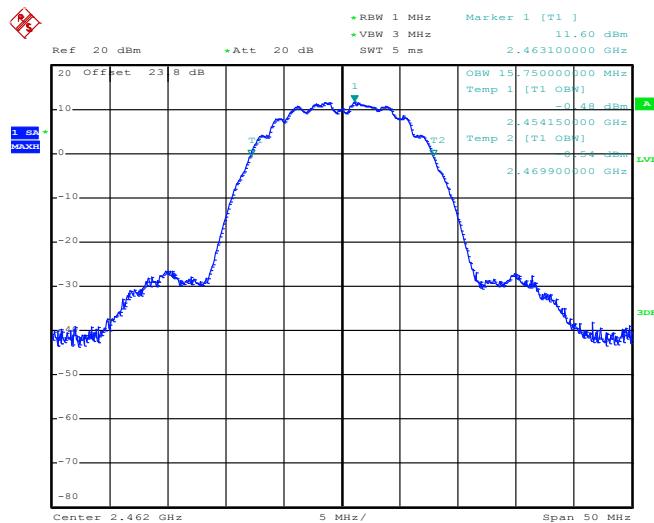
282903-1011 15C IC-OB 802.11b 2457

Date: 27.SEP.2012 15:53:21



802.11b – MIMO Chain 1+2(1)

99% Occupied Bandwidth Plot on Channel 11

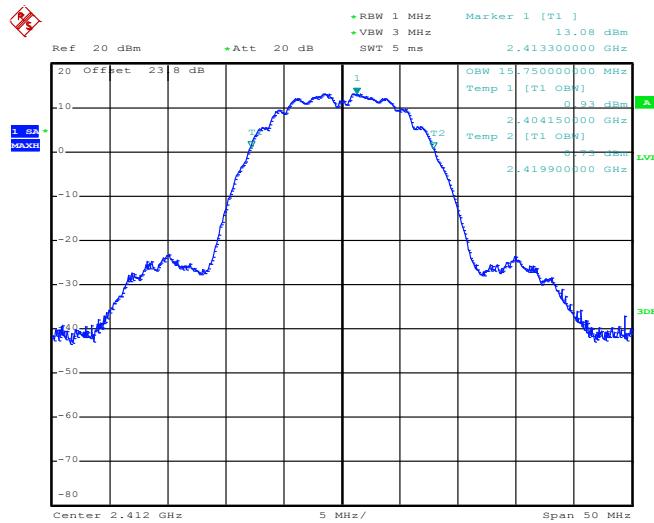


282903-1011 15C IC-OB 802.11b 2462 (ch11)

Date: 27.SEP.2012 15:56:31

802.11b – MIMO Chain 1+2(2)

99% Occupied Bandwidth Plot on Channel 01



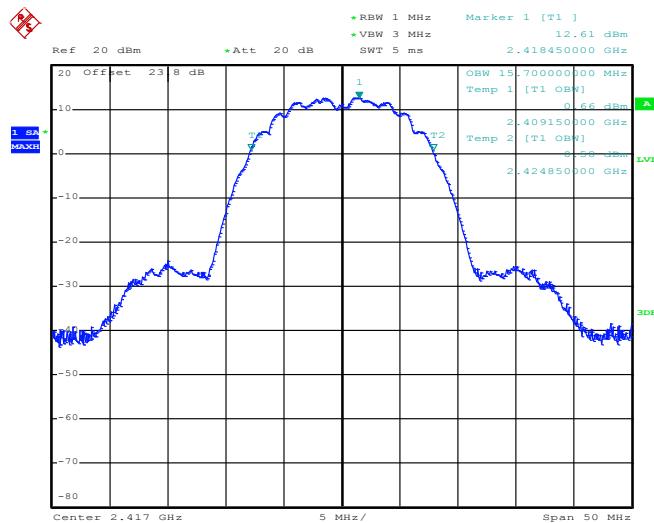
282903-1011 15C IC-OB 802.11b 2412 (ch01)

Date: 27.SEP.2012 17:40:18



802.11b – MIMO Chain 1+2(2)

99% Occupied Bandwidth Plot on Channel 02

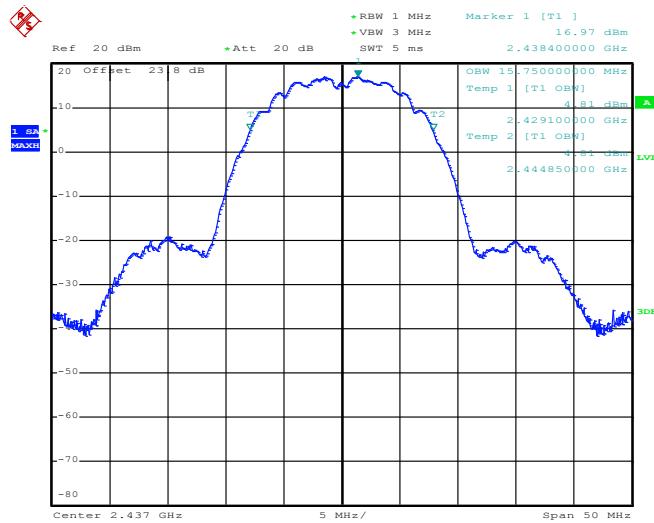


282903-1011 15C IC-OB 802.11b 2417

Date: 27.SEP.2012 17:42:14

802.11b – MIMO Chain 1+2(2)

99% Occupied Bandwidth Plot on Channel 06



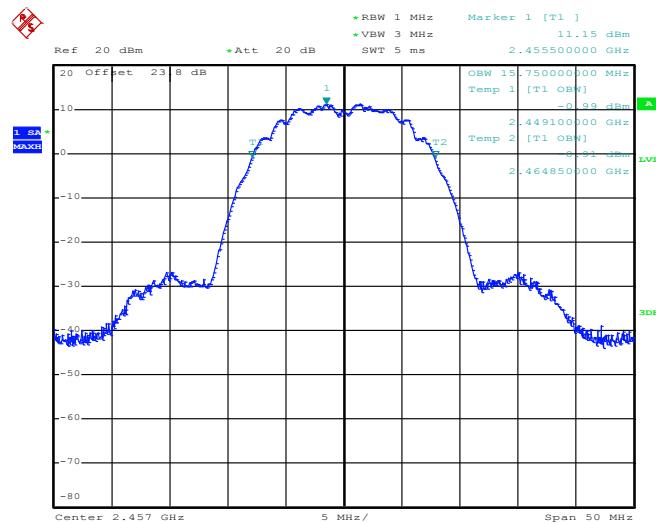
282903-1011 15C IC-OB 802.11b 2437 (ch06)

Date: 27.SEP.2012 17:44:05



802.11b – MIMO Chain 1+2(2)

99% Occupied Bandwidth Plot on Channel 10

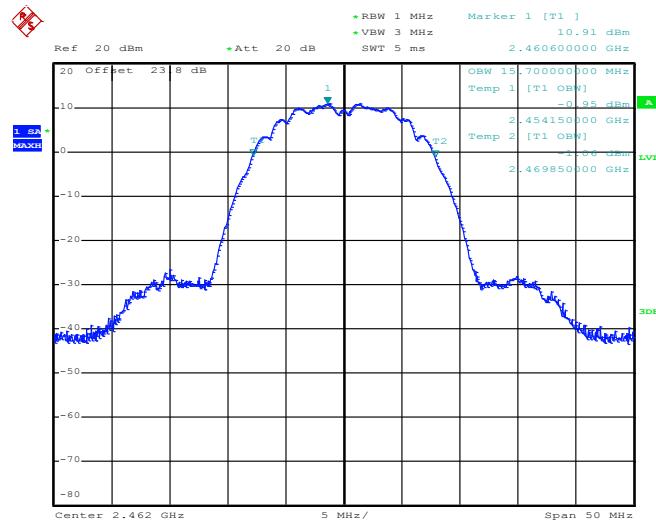


282903-1011 15C IC-OB 802.11b 2457

Date: 27.SEP.2012 17:45:22

802.11b – MIMO Chain 1+2(2)

99% Occupied Bandwidth Plot on Channel 11



282903-1011 15C IC-OB 802.11b 2462 (ch11)

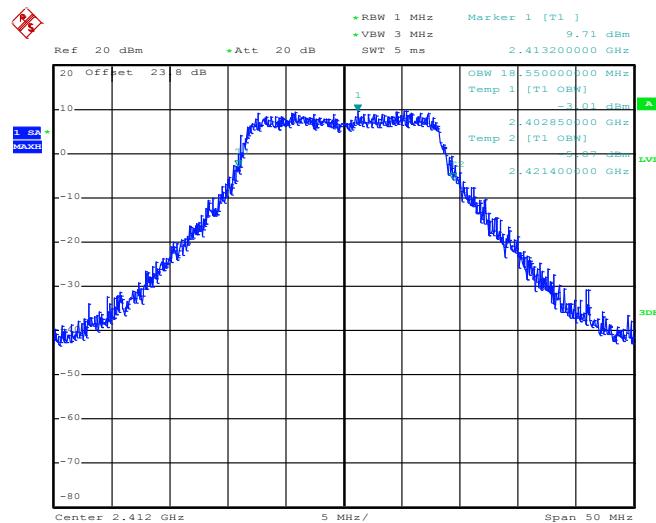
Date: 27.SEP.2012 17:47:01



<802.11g>

802.11g – MIMO Chain 1+2(1)

99% Occupied Bandwidth Plot on Channel 01

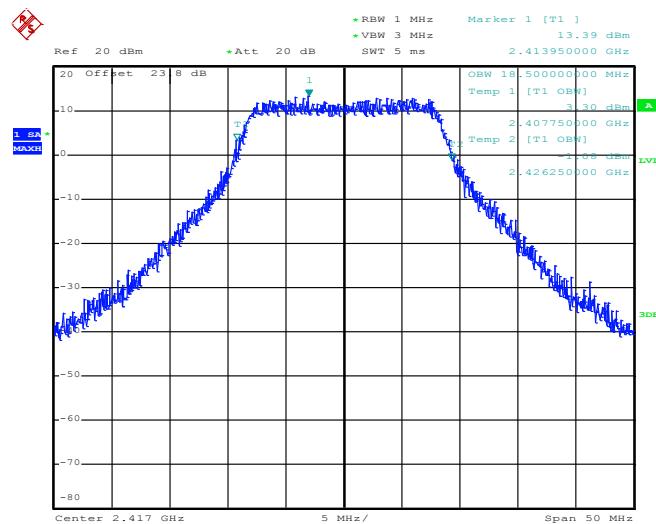


282903-1011 15C IC-OB 802.11g 2412 (ch01)

Date: 27.SEP.2012 16:05:50

802.11g – MIMO Chain 1+2(1)

99% Occupied Bandwidth Plot on Channel 02

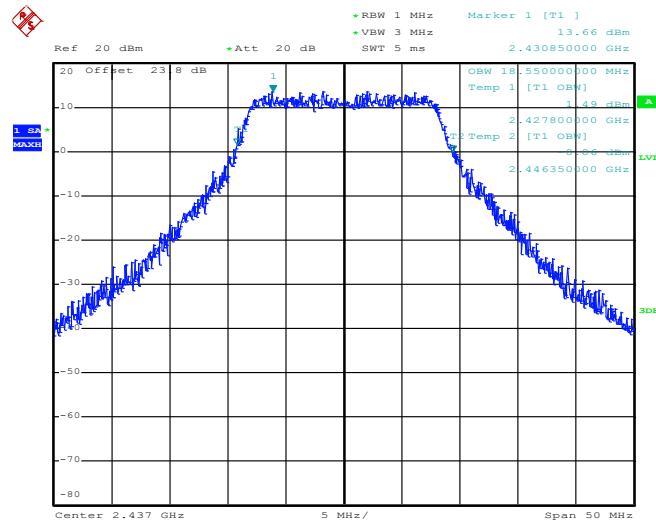


282903-1011 15C IC-OB 802.11g 2417

Date: 27.SEP.2012 16:03:26

802.11g – MIMO Chain 1+2(1)

99% Occupied Bandwidth Plot on Channel 06

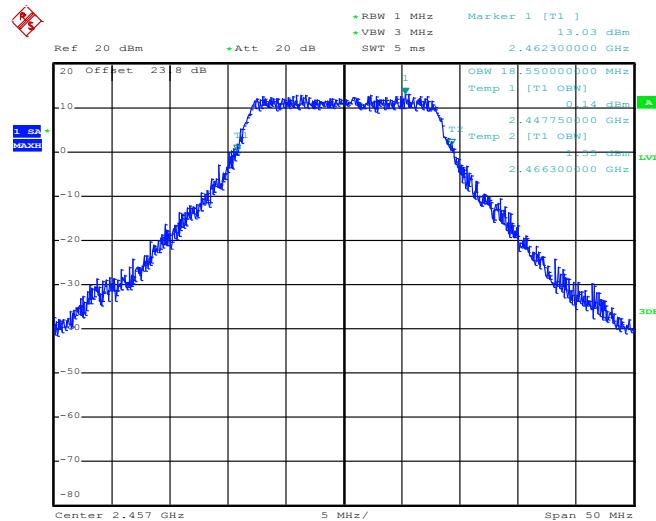


282903-1011 15C IC-OB 802.11g 2437 (ch06)

Date: 27.SEP.2012 16:02:00

802.11g – MIMO Chain 1+2(1)

99% Occupied Bandwidth Plot on Channel 10



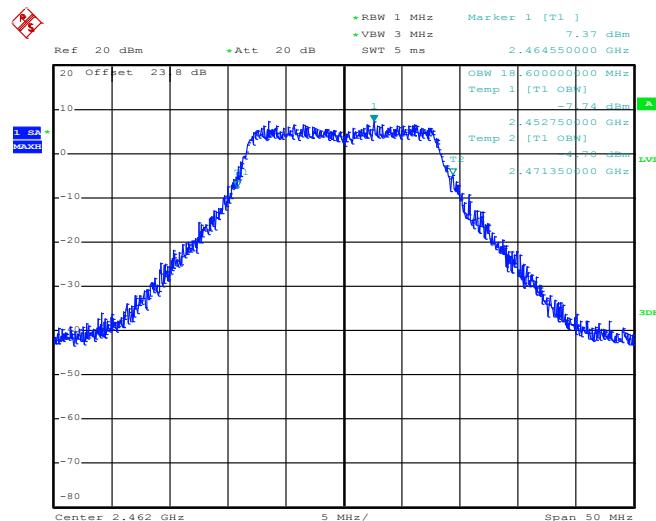
282903-1011 15C IC-OB 802.11g 2457

Date: 27.SEP.2012 16:00:42



802.11g – MIMO Chain 1+2(1)

99% Occupied Bandwidth Plot on Channel 11

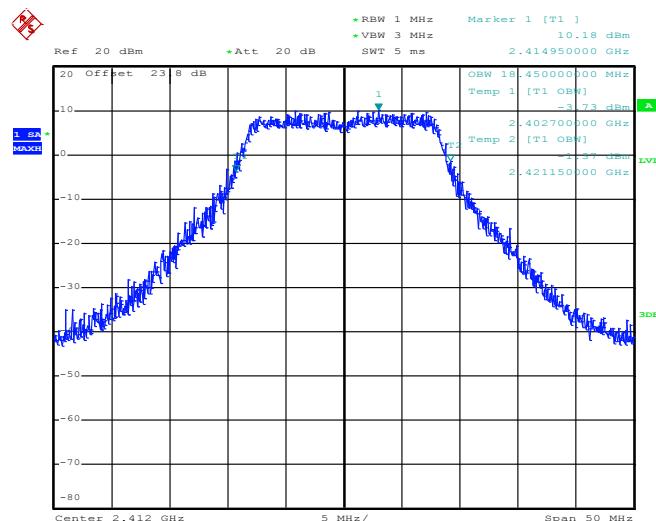


282903-1011 15C IC-OB 802.11g 2462 (ch11)

Date: 27.SEP.2012 15:59:16

802.11g – MIMO Chain 1+2(2)

99% Occupied Bandwidth Plot on Channel 01

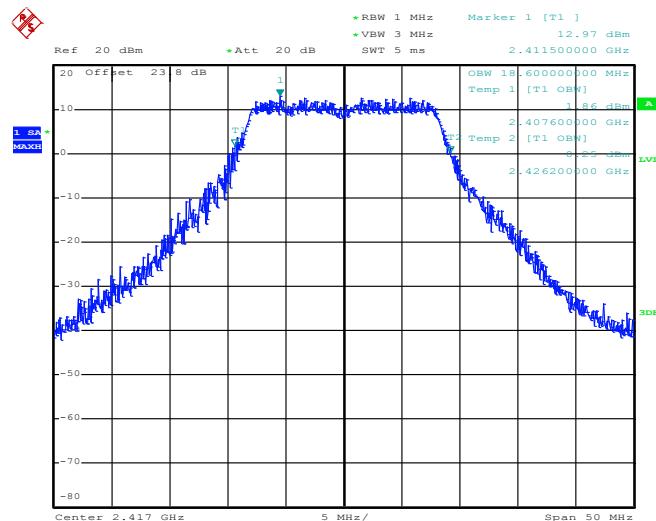


282903-1011 15C IC-OB 802.11g 2412 (ch01)

Date: 27.SEP.2012 17:37:50

802.11g – MIMO Chain 1+2(2)

99% Occupied Bandwidth Plot on Channel 02

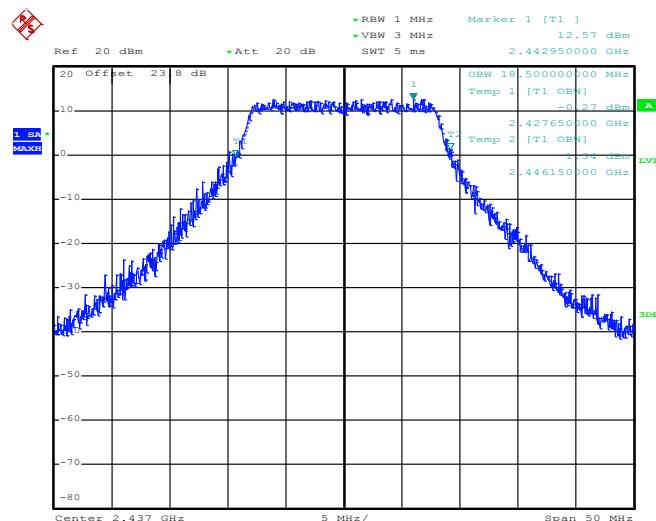


282903-1011 15C IC-OB 802.11g 2417

Date: 27.SEP.2012 17:35:41

802.11g – MIMO Chain 1+2(2)

99% Occupied Bandwidth Plot on Channel 06



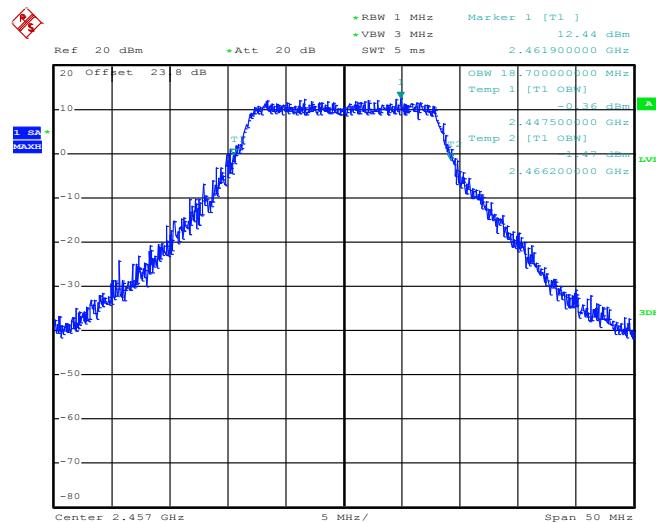
282903-1011 15C IC-OB 802.11g 2437 (ch06)

Date: 27.SEP.2012 17:34:24



802.11g – MIMO Chain 1+2(2)

99% Occupied Bandwidth Plot on Channel 10

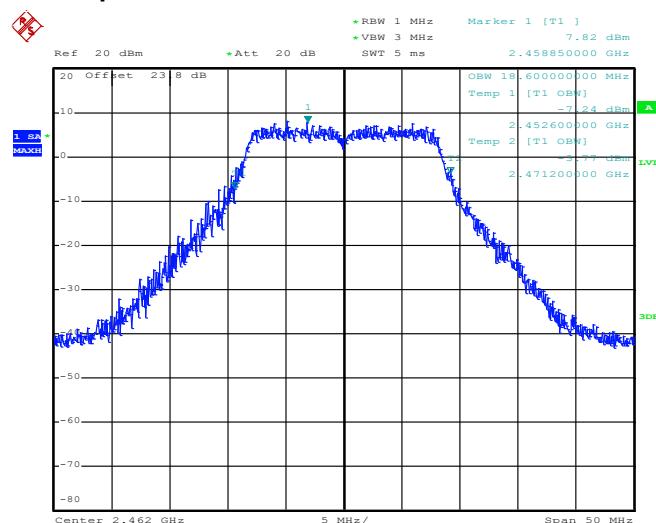


282903-1011 15C IC-OB 802.11g 2457

Date: 27.SEP.2012 17:31:40

802.11g – MIMO Chain 1+2(2)

99% Occupied Bandwidth Plot on Channel 11



282903-1011 15C IC-OB 802.11g 2462 (ch11)

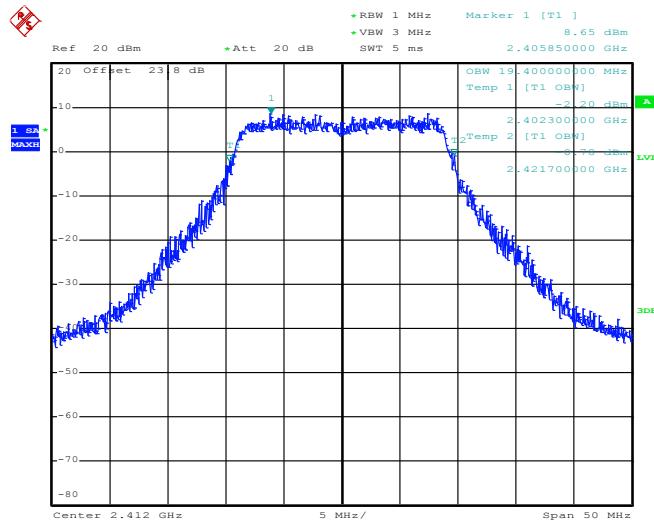
Date: 27.SEP.2012 17:33:02



<2.4GHz 802.11n HT20>

802.11n HT20 – MIMO Chain 1+2(1)

99% Occupied Bandwidth Plot on Channel 01

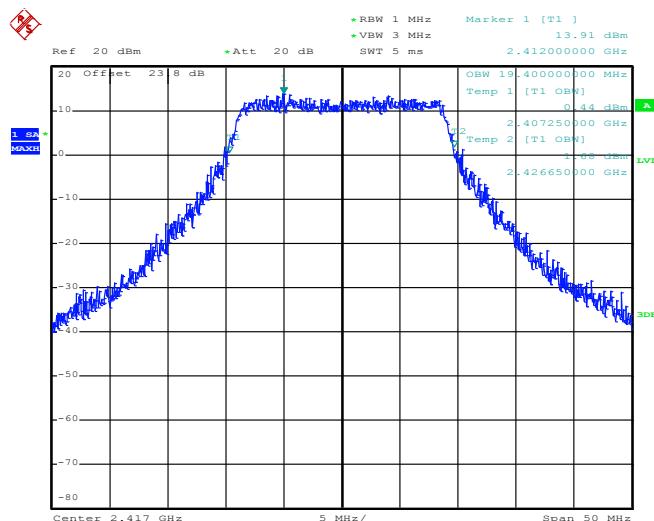


282903-1011 15C IC-OB 802.11g_N20 2412 (ch01)

Date: 27.SEP.2012 16:09:53

802.11n HT20 – MIMO Chain 1+2(1)

99% Occupied Bandwidth Plot on Channel 02



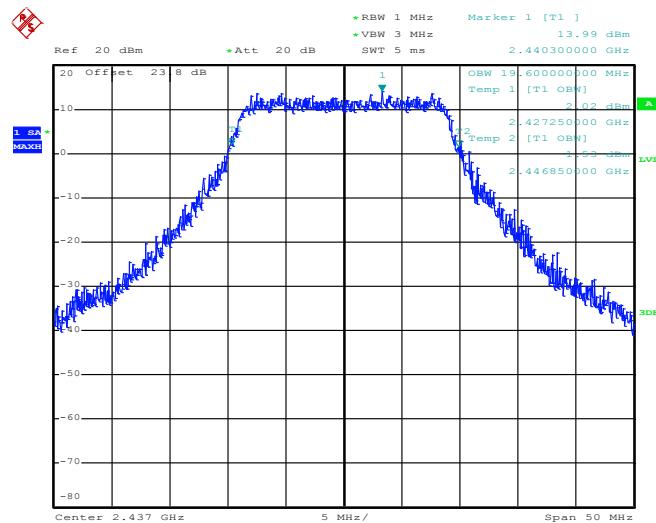
282903-1011 15C IC-OB 802.11g_N20 2417

Date: 27.SEP.2012 16:11:41



802.11n HT20 – MIMO Chain 1+2(1)

99% Occupied Bandwidth Plot on Channel 06

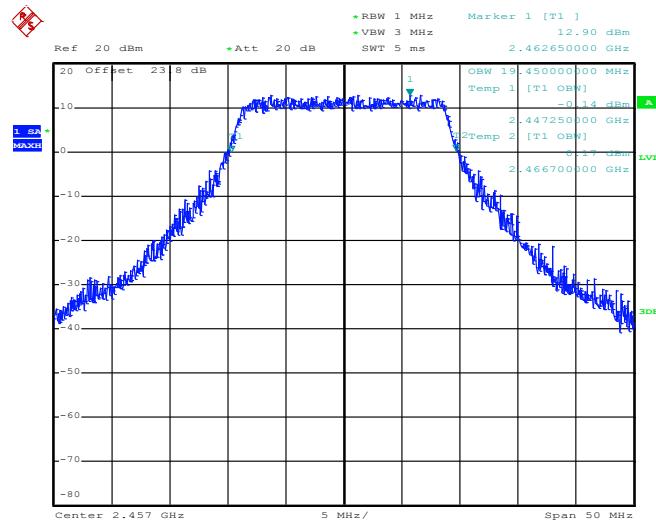


282903-1011 15C IC-OB 802.11g_N20 2437 (ch06)

Date: 27.SEP.2012 16:13:32

802.11n HT20 – MIMO Chain 1+2(1)

99% Occupied Bandwidth Plot on Channel 10

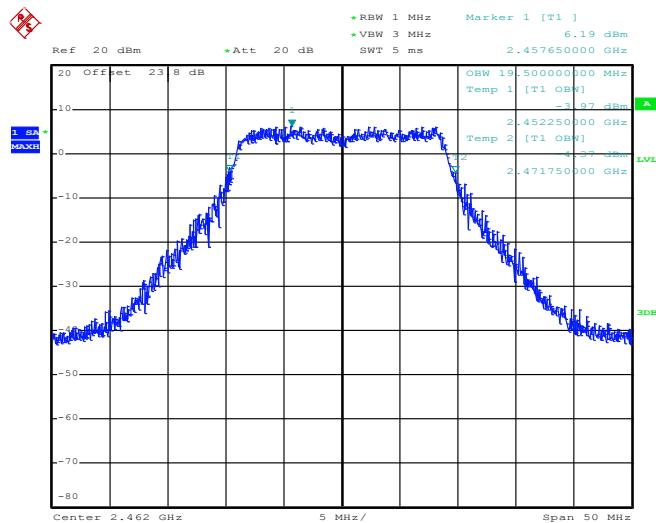


282903-1011 15C IC-OB 802.11g_N20 2457

Date: 27.SEP.2012 16:15:13

802.11n HT20 – MIMO Ant 1

99% Occupied Bandwidth Plot on Channel 11

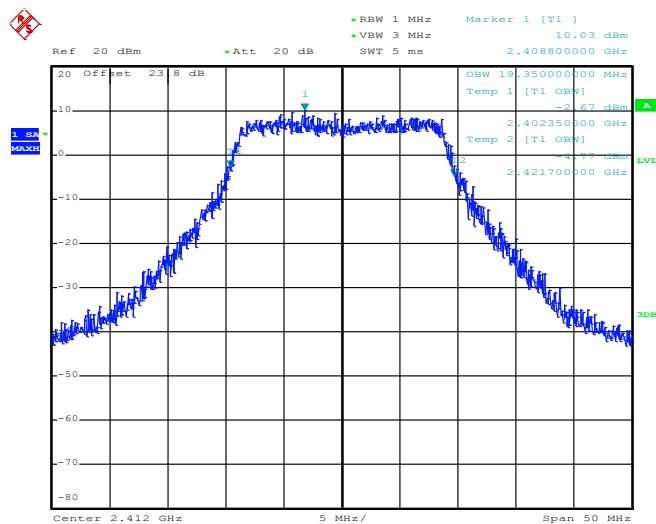


282903-1011 15C IC-OB 802.11g_N20 2462 (ch11)

Date: 27.SEP.2012 16:17:05

802.11n HT20 – MIMO Chain 1+2(2)

99% Occupied Bandwidth Plot on Channel 01



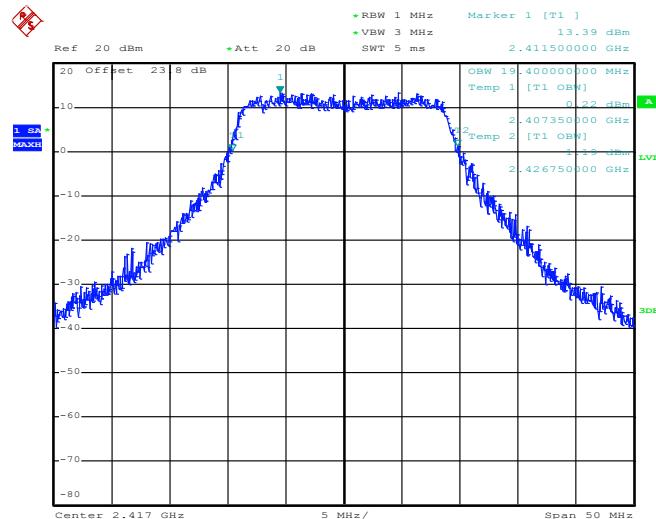
282903-1011 15C IC-OB 802.11g_N20 2412 (ch01)

Date: 27.SEP.2012 17:16:06



802.11n HT20 – MIMO Chain 1+2(2)

99% Occupied Bandwidth Plot on Channel 02

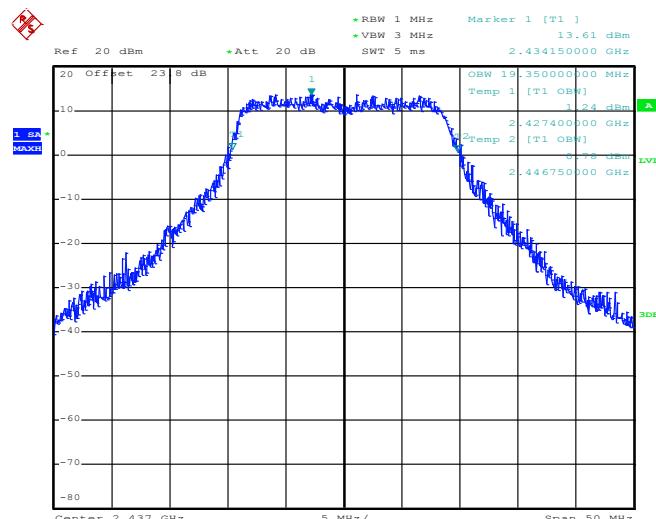


282903-1011 15C IC-OB 802.11a_N20 2417

Date: 27.SEP.2012 17:11:39

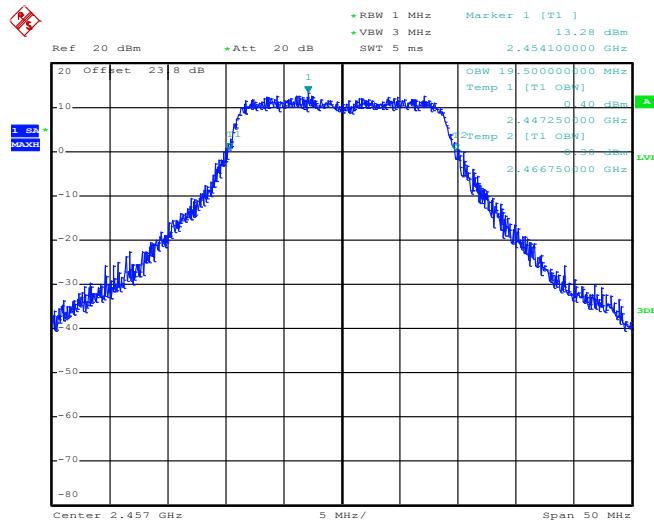
802.11n HT20 – MIMO Chain 1+2(2)

99% Occupied Bandwidth Plot on Channel 06



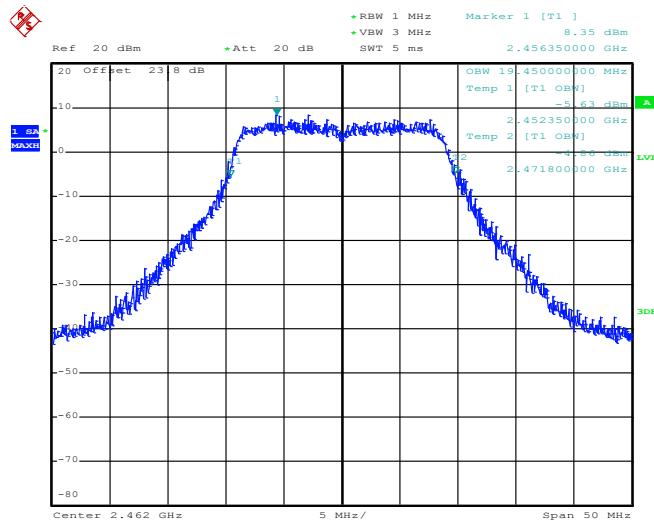
282903-1011 15C IC-OB 802.11a_N20 2437 (ch06)

Date: 27.SEP.2012 17:09:55

802.11n HT20 – MIMO Chain 1+2(2)
99% Occupied Bandwidth Plot on Channel 10


282903-1011 15C IC-OB 802.11a_N20 2457

Date: 27.SEP.2012 17:08:47

802.11n HT20 – MIMO Chain 1+2(2)
99% Occupied Bandwidth Plot on Channel 11


282903-1011 15C IC-OB 802.11a_N20 2462 (ch11)

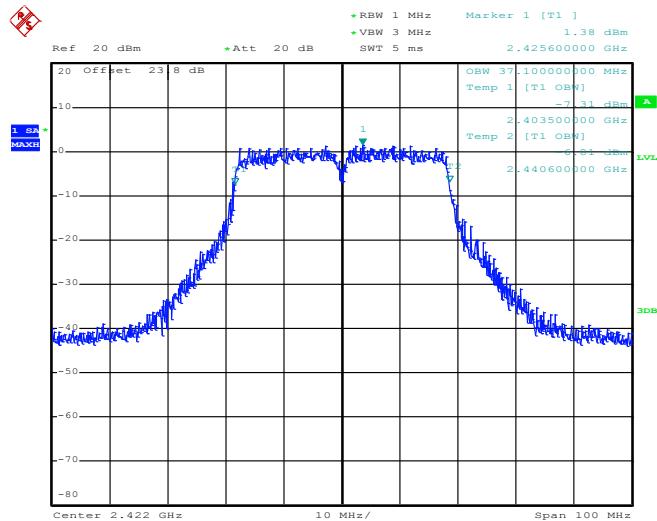
Date: 27.SEP.2012 17:07:15



<2.4GHz 802.11n HT40>

802.11n HT40 – MIMO Chain 1+2(1)

99% Occupied Bandwidth Plot on Channel 03

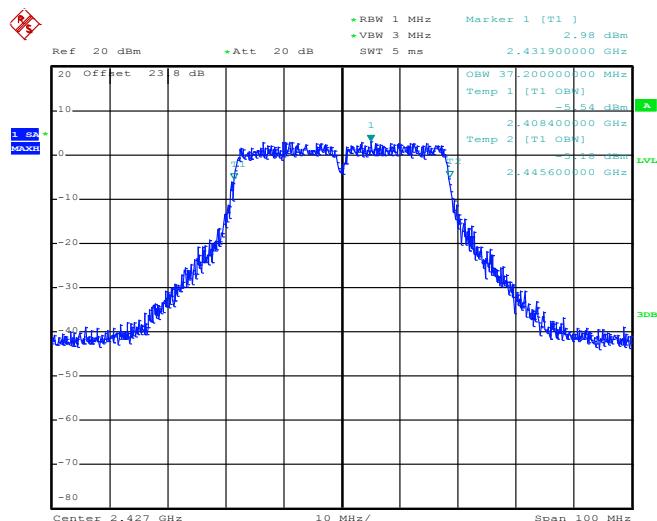


282903-1011 15C IC-OB 802.11g_N40 2422 (ch03)

Date: 27.SEP.2012 16:42:08

802.11n HT40 – MIMO Chain 1+2(1)

99% Occupied Bandwidth Plot on Channel 04



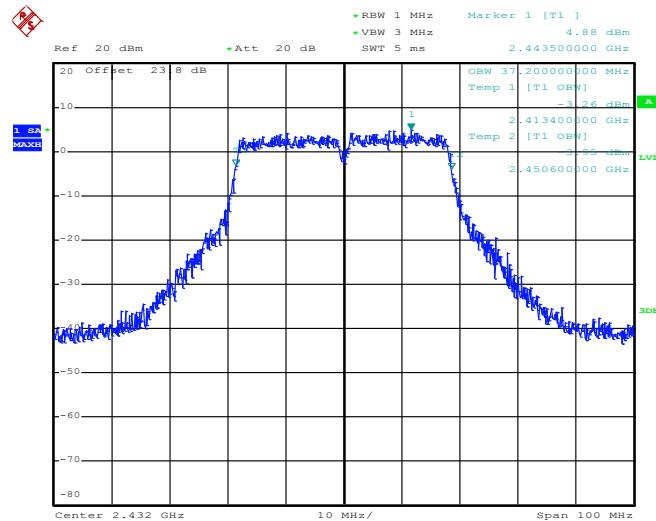
282903-1011 15C IC-OB 802.11g_N40 2427

Date: 27.SEP.2012 16:40:17



802.11n HT40 – MIMO Chain 1+2(1)

99% Occupied Bandwidth Plot on Channel 05

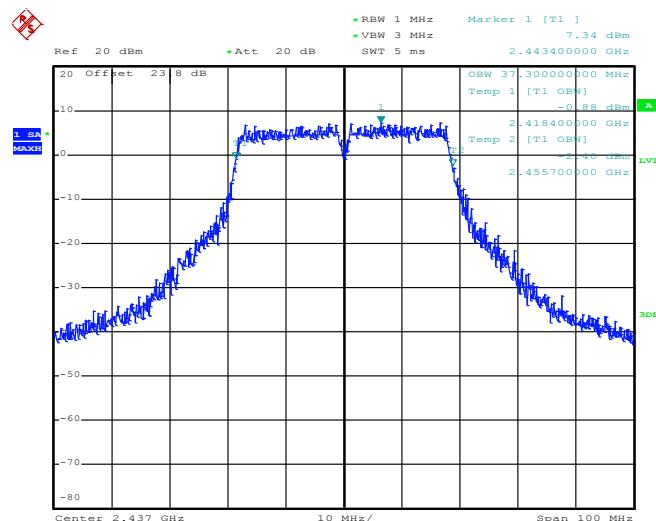


282903-1011 15C IC-OB 802.11g_N40 2432

Date: 27.SEP.2012 16:38:50

802.11n HT40 – MIMO Chain 1+2(1)

99% Occupied Bandwidth Plot on Channel 06



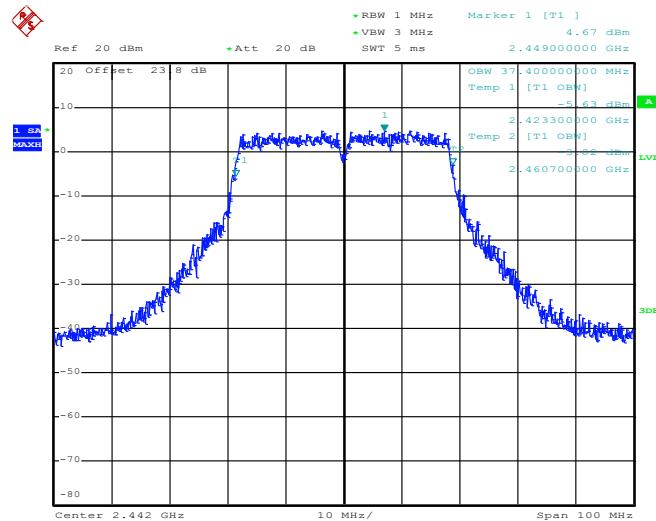
282903-1011 15C IC-OB 802.11g_N40 2437 (ch06)

Date: 27.SEP.2012 16:36:39



802.11n HT40 – MIMO Chain 1+2(1)

99% Occupied Bandwidth Plot on Channel 07

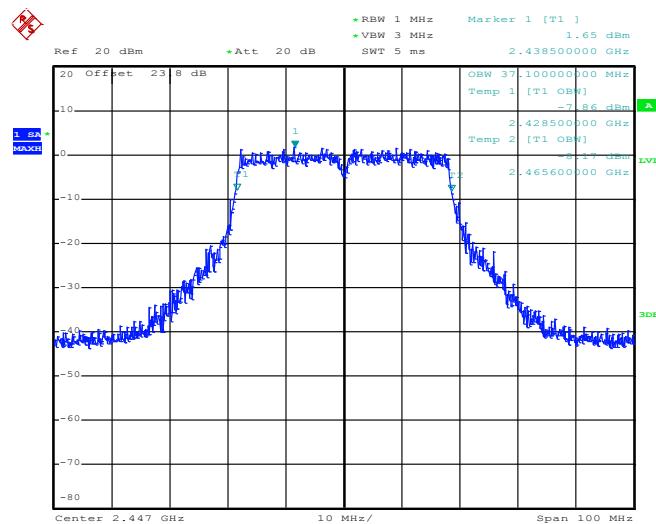


282903-1011 15C IC-OB 802.11g_N40 2442 (ch07)

Date: 27.SEP.2012 16:30:12

802.11n HT40 – MIMO Chain 1+2(1)

99% Occupied Bandwidth Plot on Channel 08



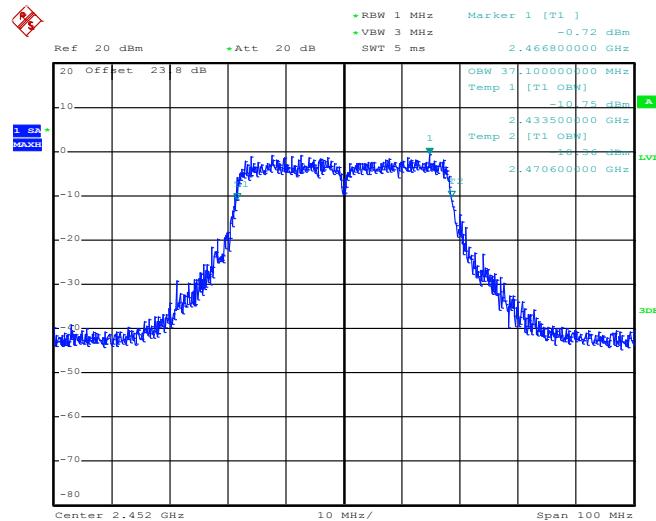
282903-1011 15C IC-OB 802.11g_N40 2447

Date: 27.SEP.2012 16:26:43



802.11n HT40 – MIMO Chain 1+2(1)

99% Occupied Bandwidth Plot on Channel 09

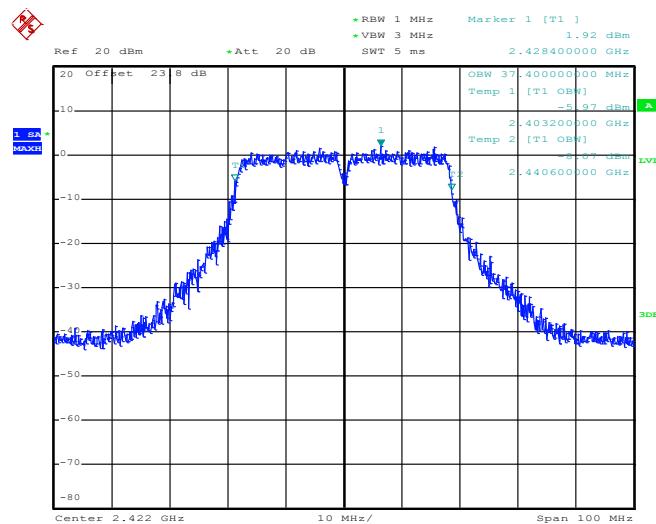


282903-1011 15C IC-OB 802.11g_N40 2452 (ch09)

Date: 27.SEP.2012 16:25:22

802.11n HT40 – MIMO Chain 1+2(2)

99% Occupied Bandwidth Plot on Channel 03



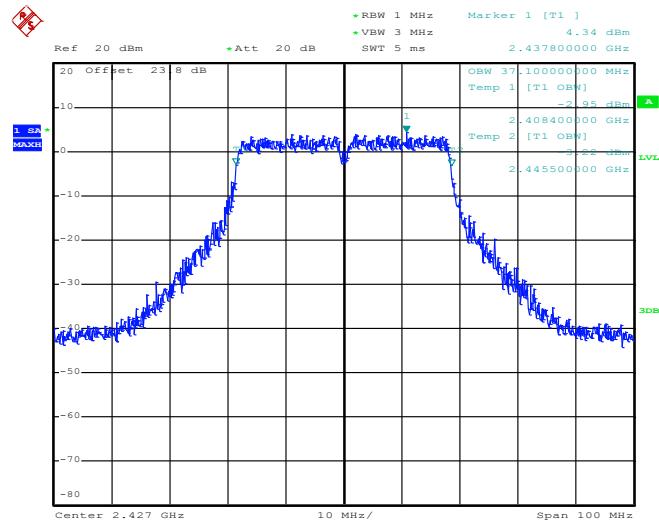
282903-1011 15C IC-OB 802.11g_N40 2422 (ch03)

Date: 27.SEP.2012 16:52:38



802.11n HT40 – MIMO Chain 1+2(2)

99% Occupied Bandwidth Plot on Channel 04

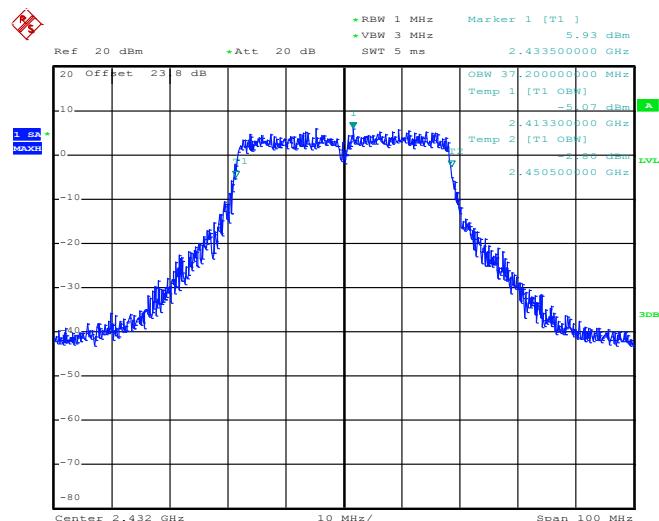


282903-1011 15C IC-OB 802.11g_N40 2427

Date: 27.SEP.2012 16:55:07

802.11n HT40 – MIMO Chain 1+2(2)

99% Occupied Bandwidth Plot on Channel 05



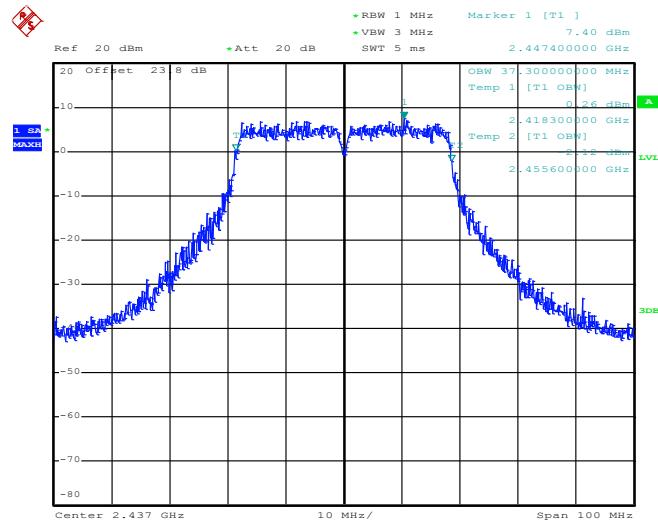
282903-1011 15C IC-OB 802.11g_N40 2432

Date: 27.SEP.2012 16:56:29



802.11n HT40 – MIMO Chain 1+2(2)

99% Occupied Bandwidth Plot on Channel 06

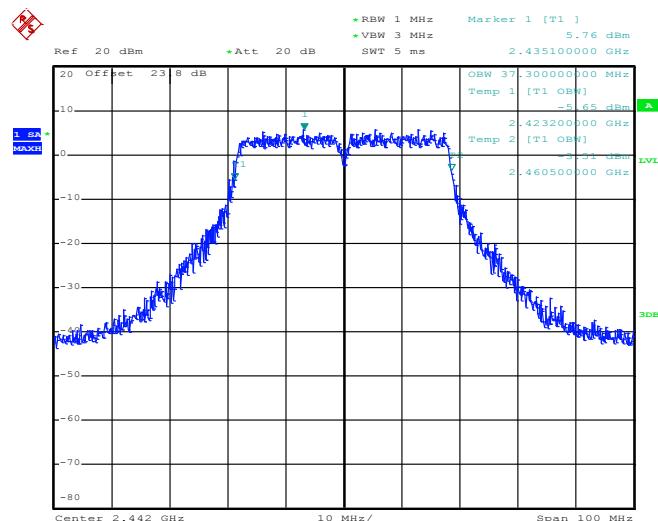


282903-1011 15C IC-OB 802.11g_N40 2437 (ch06)

Date: 27.SEP.2012 16:58:06

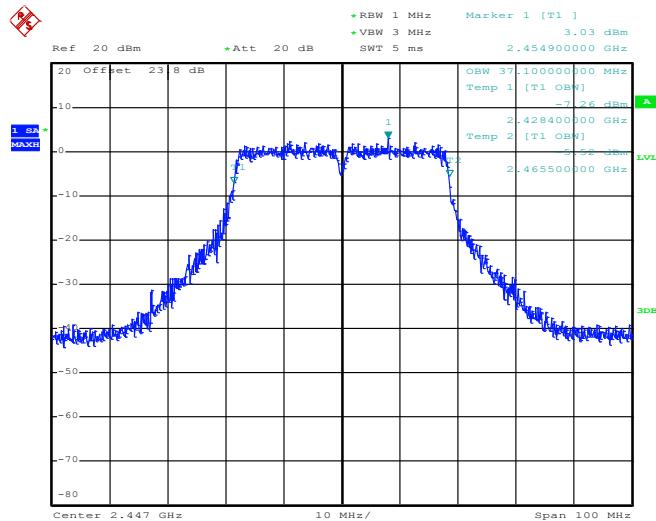
802.11n HT40 – MIMO Chain 1+2(2)

99% Occupied Bandwidth Plot on Channel 07



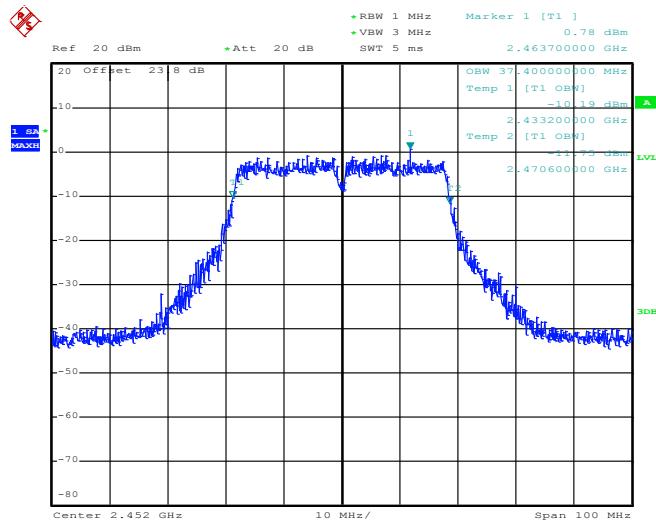
282903-1011 15C IC-OB 802.11g_N40 2442 (ch07)

Date: 27.SEP.2012 16:59:47

802.11n HT40 – MIMO Chain 1+2(2)
99% Occupied Bandwidth Plot on Channel 08


282903-1011 15C IC-OB 802.11g_N40 2447

Date: 27.SEP.2012 17:01:18

802.11n HT40 – MIMO Chain 1+2(2)
99% Occupied Bandwidth Plot on Channel 09


282903-1011 15C IC-OB 802.11g_N40 2452 (ch09)

Date: 27.SEP.2012 17:03:47

3.2 Output Power Measurement

3.2.1 Limit of Output Power

For systems using digital modulation in the 2400-2483.5MHz and 5725-5850MHz, the limit for peak output power is 30dBm. If transmitting Antenna of directional gain greater than 6dBi are used the peak output power from the intentional radiator shall be reduced below the above stated value by the amount in dB that the directional gain of the Antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of the Antenna exceeds 6dBi.

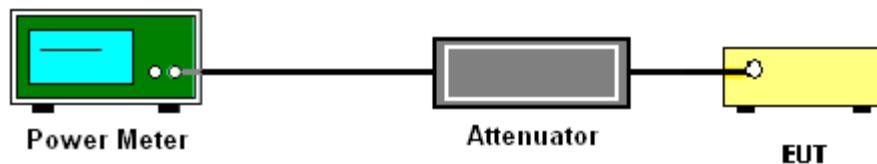
3.2.2 Measuring Instruments

The section 4.0 of List of Measuring Equipment of this test report is used for test.

3.2.3 Test Procedures

1. The testing follows the Measurement Procedure of FCC KDB No. 558074 DTS D01 Meas. Guidance v02.
2. The RF output of EUT was connected to the power meter by a low loss cable
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Measure the conducted output power and record the results in the test report.
5. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v01r02.

3.2.4 Test Setup





3.2.5 Test Result of Peak Output Power

<Antenna 6 for 4.5V>

Test Mode :	802.11b	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%

Channel	Frequency (MHz)	802.11b Peak Output Power (dBm)			Max. Limits (dBm)	Pass/Fail
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2		
01	2412	21.54	21.16	24.36	26.8	Pass
02	2417	21.23	20.96	24.11	26.8	Pass
06	2437	23.38	23.85	26.63	26.8	Pass
10	2457	19.76	20.21	23.00	26.8	Pass
11	2462	19.19	19.61	22.42	26.8	Pass

Test Mode :	802.11g	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%

Channel	Frequency (MHz)	802.11g Peak Output Power (dBm)			Max. Limits (dBm)	Pass/Fail
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2		
01	2412	23.64	22.49	26.11	26.8	Pass
02	2417	23.18	23.54	26.37	26.8	Pass
06	2437	23.62	23.52	26.58	26.8	Pass
10	2457	23.47	23.61	26.55	26.8	Pass
11	2462	21.58	20.57	24.11	26.8	Pass



Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%

Channel	Frequency (MHz)	802.11n HT20 Peak Output Power (dBm)			Max. Limits (dBm)	Pass/Fail
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2		
01	2412	22.67	21.36	25.07	26.8	Pass
02	2417	23.32	23.17	26.26	26.8	Pass
06	2437	23.08	23.78	26.45	26.8	Pass
10	2457	22.96	23.67	26.34	26.8	Pass
11	2462	20.91	20.61	23.77	26.8	Pass

Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%

Channel	Frequency (MHz)	802.11n HT40 Peak Output Power (dBm)			Max. Limits (dBm)	Pass/Fail
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2		
03	2422	19.45	18.78	22.14	26.8	Pass
04	2427	21.18	20.23	23.74	26.8	Pass
05	2432	22.86	22.01	25.47	26.8	Pass
06	2437	23.71	23.48	26.61	26.8	Pass
07	2442	22.57	21.87	25.24	26.8	Pass
08	2447	20.23	20.92	23.60	26.8	Pass
09	2452	17.46	18.69	21.13	26.8	Pass

Note:

1. MIMO Chain 1+2 is a calculated result from sum of the power MIMO Chain 1+2(1) and MIMO Chain 1+2(2).
2. The section 3.6 of List of Antenna Requirements of this test report is used for test Limit.



<Antenna 6 for 3.3V>

Test Mode :	802.11b	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%

Channel	Frequency (MHz)	802.11b Peak Output Power (dBm)			Max. Limits (dBm)	Pass/Fail
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2		
01	2412	21.29	20.77	24.05	26.8	Pass
02	2417	20.74	20.66	23.71	26.8	Pass
06	2437	23.15	23.44	26.31	26.8	Pass
10	2457	19.55	20.14	22.87	26.8	Pass
11	2462	18.87	19.53	22.22	26.8	Pass

Test Mode :	802.11g	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%

Channel	Frequency (MHz)	802.11g Peak Output Power (dBm)			Max. Limits (dBm)	Pass/Fail
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2		
01	2412	23.26	22.38	25.85	26.8	Pass
02	2417	23.35	23.34	26.36	26.8	Pass
06	2437	23.40	23.34	26.38	26.8	Pass
10	2457	23.34	23.65	26.51	26.8	Pass
11	2462	21.40	20.76	24.10	26.8	Pass



Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%

Channel	Frequency (MHz)	802.11n HT20 Peak Output Power (dBm)			Max. Limits (dBm)	Pass/Fail
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2		
01	2412	21.84	21.28	24.58	26.8	Pass
02	2417	22.90	22.99	25.96	26.8	Pass
06	2437	23.43	23.36	26.41	26.8	Pass
10	2457	23.08	23.14	26.12	26.8	Pass
11	2462	20.60	20.27	23.45	26.8	Pass

Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%

Channel	Frequency (MHz)	802.11n HT40 Peak Output Power (dBm)			Max. Limits (dBm)	Pass/Fail
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2		
03	2422	19.10	18.48	21.81	26.8	Pass
04	2427	21.12	19.66	23.46	26.8	Pass
05	2432	22.70	22.05	25.40	26.8	Pass
06	2437	23.12	23.58	26.37	26.8	Pass
07	2442	22.44	21.93	25.20	26.8	Pass
08	2447	20.85	19.75	23.35	26.8	Pass
09	2452	17.43	17.96	20.71	26.8	Pass

Note:

1. MIMO Chain 1+2 is a calculated result from sum of the power MIMO Chain 1+2(1) and MIMO Chain 1+2(2).
2. The section 3.6 of List of Antenna Requirements of this test report is used for test Limit.



<Antenna 7 for 4.5V>

Test Mode :	802.11a	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%

Channel	Frequency (MHz)	802.11a Peak Output Power (dBm)			Max. Limits (dBm)	Pass/Fail
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2		
149	5745	26.46	26.69	29.59	30.0	Pass
157	5785	26.32	26.79	29.57	30.0	Pass
165	5825	26.49	26.90	29.71	30.0	Pass

Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%

Channel	Frequency (MHz)	802.11n HT20 Peak Output Power (dBm)			Max. Limits (dBm)	Pass/Fail
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2		
149	5745	26.28	26.55	29.43	30.0	Pass
157	5785	26.09	26.56	29.34	30.0	Pass
165	5825	26.23	26.90	29.59	30.0	Pass

Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%

Channel	Frequency (MHz)	802.11n HT40 Peak Output Power (dBm)			Max. Limits (dBm)	Pass/Fail
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2		
151	5755	26.68	27.00	29.85	30.0	Pass
159	5795	26.37	26.95	29.68	30.0	Pass

Note:

1. MIMO Chain 1+2 is a calculated result from sum of the power MIMO Chain 1+2(1) and MIMO Chain 1+2(2).
2. The section 3.6 of List of Antenna Requirements of this test report is used for test Limit.



<Antenna 7 for 3.3V>

Test Mode :	802.11a	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%

Channel	Frequency (MHz)	802.11a Peak Output Power (dBm)			Max. Limits (dBm)	Pass/Fail
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2		
149	5745	24.51	24.88	27.71	30.0	Pass
157	5785	24.40	24.97	27.70	30.0	Pass
165	5825	24.58	25.05	27.83	30.0	Pass

Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%

Channel	Frequency (MHz)	802.11n HT20 Peak Output Power (dBm)			Max. Limits (dBm)	Pass/Fail
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2		
149	5745	24.45	24.90	27.69	30.0	Pass
157	5785	24.31	24.96	27.66	30.0	Pass
165	5825	24.47	24.95	27.73	30.0	Pass

Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%

Channel	Frequency (MHz)	802.11n HT40 Peak Output Power (dBm)			Max. Limits (dBm)	Pass/Fail
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2		
151	5755	24.63	24.93	27.79	30.0	Pass
159	5795	24.42	24.99	27.72	30.0	Pass

Note:

1. MIMO Chain 1+2 is a calculated result from sum of the power MIMO Chain 1+2(1) and MIMO Chain 1+2(2).
2. The section 3.6 of List of Antenna Requirements of this test report is used for test Limit.



<Antenna 8 for 4.5V>

Test Mode :	802.11b	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%

Channel	Frequency (MHz)	802.11b Peak Output Power (dBm)			Max. Limits (dBm)	Pass/Fail
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2		
01	2412	21.36	20.86	24.13	29.8	Pass
02	2417	20.86	20.91	23.90	29.8	Pass
06	2437	25.11	24.97	28.05	29.8	Pass
10	2457	19.54	20.13	22.86	29.8	Pass
11	2462	19.52	20.15	22.86	29.8	Pass

Test Mode :	802.11g	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%

Channel	Frequency (MHz)	802.11g Peak Output Power (dBm)			Max. Limits (dBm)	Pass/Fail
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2		
01	2412	23.50	22.86	26.20	29.8	Pass
02	2417	26.33	26.49	29.42	29.8	Pass
06	2437	26.72	26.69	29.72	29.8	Pass
10	2457	26.00	26.81	29.43	29.8	Pass
11	2462	21.10	20.19	23.68	29.8	Pass



Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%

Channel	Frequency (MHz)	802.11n HT20 Peak Output Power (dBm)			Max. Limits (dBm)	Pass/Fail
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2		
01	2412	21.86	21.36	24.63	29.8	Pass
02	2417	26.17	26.81	29.51	29.8	Pass
06	2437	26.69	26.14	29.43	29.8	Pass
10	2457	25.66	26.32	29.01	29.8	Pass
11	2462	20.26	19.49	22.90	29.8	Pass

Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%

Channel	Frequency (MHz)	802.11n HT40 Peak Output Power (dBm)			Max. Limits (dBm)	Pass/Fail
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2		
03	2422	18.47	18.32	21.41	29.8	Pass
04	2427	21.75	19.72	23.86	29.8	Pass
05	2432	23.13	21.67	25.47	29.8	Pass
06	2437	24.12	24.71	27.44	29.8	Pass
07	2442	22.81	22.03	25.45	29.8	Pass
08	2447	19.13	18.85	22.00	29.8	Pass
09	2452	16.41	16.04	19.24	29.8	Pass

Note:

1. MIMO Chain 1+2 is a calculated result from sum of the power MIMO Chain 1+2(1) and MIMO Chain 1+2(2).
2. The section 3.6 of List of Antenna Requirements of this test report is used for test Limit.



<Antenna 8 for 3.3V>

Test Mode :	802.11b	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%

Channel	Frequency (MHz)	802.11b Peak Output Power (dBm)			Max. Limits (dBm)	Pass/Fail
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2		
01	2412	21.36	20.53	23.98	29.8	Pass
02	2417	20.74	20.66	23.71	29.8	Pass
06	2437	25.12	24.94	28.04	29.8	Pass
10	2457	19.47	19.96	22.73	29.8	Pass
11	2462	19.70	19.95	22.84	29.8	Pass

Test Mode :	802.11g	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%

Channel	Frequency (MHz)	802.11g Peak Output Power (dBm)			Max. Limits (dBm)	Pass/Fail
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2		
01	2412	23.85	22.32	26.16	29.8	Pass
02	2417	25.95	26.32	29.15	29.8	Pass
06	2437	26.19	26.60	29.41	29.8	Pass
10	2457	25.88	26.11	29.01	29.8	Pass
11	2462	20.97	20.22	23.62	29.8	Pass



Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%

Channel	Frequency (MHz)	802.11n HT20 Peak Output Power (dBm)			Max. Limits (dBm)	Pass/Fail
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2		
01	2412	21.41	21.36	24.40	29.8	Pass
02	2417	26.10	26.17	29.15	29.8	Pass
06	2437	25.95	26.08	29.03	29.8	Pass
10	2457	25.67	26.19	28.95	29.8	Pass
11	2462	19.85	19.65	22.76	29.8	Pass

Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%

Channel	Frequency (MHz)	802.11n HT40 Peak Output Power (dBm)			Max. Limits (dBm)	Pass/Fail
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2		
03	2422	18.23	18.50	21.38	29.8	Pass
04	2427	21.19	20.04	23.66	29.8	Pass
05	2432	22.73	21.76	25.28	29.8	Pass
06	2437	24.08	24.20	27.15	29.8	Pass
07	2442	22.60	22.07	25.35	29.8	Pass
08	2447	18.95	18.91	21.94	29.8	Pass
09	2452	16.05	16.36	19.22	29.8	Pass

Note:

1. MIMO Chain 1+2 is a calculated result from sum of the power MIMO Chain 1+2(1) and MIMO Chain 1+2(2).
2. The section 3.6 of List of Antenna Requirements of this test report is used for test Limit.



3.2.6 Test Result of Average output Power (Reporting Only)

<Antenna 6 for 4.5V>

Test Mode :	802.11b	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%
Duty Cycle:	100%	Duty Factor:	0.00dB

Channel	Frequency (MHz)	802.11b Average Output Power (dBm)				
		Measured		Final		
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2
01	2412	19.07	18.72	19.07	18.72	21.91
02	2417	18.77	18.48	18.77	18.48	21.64
06	2437	21.18	21.62	21.18	21.62	24.42
10	2457	17.40	17.79	17.40	17.79	20.61
11	2462	16.79	17.40	16.79	17.40	20.12

Test Mode :	802.11g	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%
Duty Cycle:	100%	Duty Factor:	0.00dB

Channel	Frequency (MHz)	802.11g Average Output Power (dBm)				
		Measured		Final		
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2
01	2412	13.14	12.59	13.14	12.59	15.88
02	2417	13.28	13.63	13.28	13.63	16.47
06	2437	13.29	13.67	13.29	13.67	16.49
10	2457	13.62	13.92	13.62	13.92	16.78
11	2462	11.59	10.89	11.59	10.89	14.26



Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%
Duty Cycle:	98.93% for Chain 1+2(1) 98.94% for Chain 1+2(2)	Duty Factor:	0.05dB for Chain 1+2(1) 0.05dB for Chain 1+2(2)

Channel	Frequency (MHz)	802.11n HT20 Average Output Power (dBm)				
		Measured		Final		
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2
01	2412	11.67	11.57	11.72	11.62	14.68
02	2417	13.02	13.37	13.07	13.42	16.26
06	2437	13.53	14.09	13.58	14.14	16.88
10	2457	13.51	14.06	13.56	14.11	16.85
11	2462	11.32	10.88	11.37	10.93	14.16

Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%
Duty Cycle:	98.41%	Duty Factor:	0.07dB

Channel	Frequency (MHz)	802.11n HT40 Average Output Power (dBm)				
		Measured		Final		
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2
03	2422	8.75	7.64	8.82	7.71	11.31
04	2427	10.32	9.05	10.39	9.12	12.81
05	2432	11.67	10.97	11.74	11.04	14.41
06	2437	12.65	12.80	12.72	12.87	15.81
07	2442	11.63	11.03	11.70	11.10	14.42
08	2447	9.51	9.86	9.58	9.93	12.77
09	2452	6.11	6.16	6.18	6.23	9.21

Note:

1. The final result is corrected the duty factor with measured result which has been offset the cable loss in power meter.
2. MIMO Chain 1+2 is a calculated result from sum of the power MIMO Chain 1+2(1) and MIMO Chain 1+2(2).
3. The section 3.6 of List of Antenna Requirements of this test report is used for test Limit.



<Antenna 6 for 3.3V>

Test Mode :	802.11b	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%
Duty Cycle:	100%	Duty Factor:	0.00dB

Channel	Frequency (MHz)	802.11b Average Output Power (dBm)				
		Measured		Final		
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2
01	2412	19.07	18.36	19.07	18.36	21.74
02	2417	18.68	18.44	18.68	18.44	21.57
06	2437	20.87	21.31	20.87	21.31	24.11
10	2457	17.34	17.81	17.34	17.81	20.59
11	2462	16.47	17.22	16.47	17.22	19.87

Test Mode :	802.11g	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%
Duty Cycle:	100%	Duty Factor:	0.00dB

Channel	Frequency (MHz)	802.11g Average Output Power (dBm)				
		Measured		Final		
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2
01	2412	12.90	12.46	12.90	12.46	15.70
02	2417	13.32	13.54	13.32	13.54	16.44
06	2437	13.15	13.58	13.15	13.58	16.38
10	2457	14.09	13.85	14.09	13.85	16.98
11	2462	11.20	10.95	11.20	10.95	14.09



Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%
Duty Cycle:	98.93% for Chain 1+2(1) 98.94% for Chain 1+2(2)	Duty Factor:	0.05dB for Chain 1+2(1) 0.05dB for Chain 1+2(2)

Channel	Frequency (MHz)	802.11n HT20 Average Output Power (dBm)				
		Measured		Final		
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2
01	2412	11.52	11.58	11.57	11.63	14.61
02	2417	12.90	13.48	12.95	13.53	16.26
06	2437	13.50	14.10	13.55	14.15	16.87
10	2457	13.60	13.56	13.65	13.61	16.64
11	2462	11.32	10.74	11.37	10.79	14.10

Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%
Duty Cycle:	98.41%	Duty Factor:	0.07dB

Channel	Frequency (MHz)	802.11n HT40 Average Output Power (dBm)				
		Measured		Final		
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2
03	2422	8.48	7.51	8.55	7.58	11.10
04	2427	10.21	9.18	10.28	9.25	12.81
05	2432	11.42	11.16	11.49	11.23	14.37
06	2437	12.25	12.76	12.32	12.83	15.59
07	2442	11.40	11.18	11.47	11.25	14.37
08	2447	9.77	8.95	9.84	9.02	12.46
09	2452	6.02	6.20	6.09	6.27	9.19

Note:

1. The final result is corrected the duty factor with measured result which has been offset the cable loss in power meter.
2. MIMO Chain 1+2 is a calculated result from sum of the power MIMO Chain 1+2(1) and MIMO Chain 1+2(2).
3. The section 3.6 of List of Antenna Requirements of this test report is used for test Limit.



<Antenna 7 for 4.5V>

Test Mode :	802.11a	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%
Duty Cycle:	100%	Duty Factor:	0.00dB

Channel	Frequency (MHz)	802.11a Average Output Power (dBm)				
		Measured		Final		
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2
149	5745	18.95	19.27	18.95	19.27	22.12
157	5785	19.43	19.57	19.43	19.57	22.51
165	5825	19.57	19.98	19.57	19.98	22.79

Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%
Duty Cycle:	99.15%	Duty Factor:	0.04dB

Channel	Frequency (MHz)	802.11n HT20 Average Output Power (dBm)				
		Measured		Final		
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2
149	5745	18.85	19.20	18.89	19.24	22.08
157	5785	19.29	19.54	19.33	19.58	22.46
165	5825	19.58	19.82	19.62	19.86	22.75



Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%
Duty Cycle:	98.30% for Chain 1+2(1) 98.30% for Chain 1+2(2)	Duty Factor:	0.07dB for Chain 1+2(1) 0.07dB for Chain 1+2(2)

Channel	Frequency (MHz)	802.11n HT40 Average Output Power (dBm)					
		Measured		Final			
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2	
151	5755	19.49	19.84	19.56	19.91	22.75	
159	5795	19.51	19.86	19.58	19.93	22.77	

Note:

1. The final result is corrected the duty factor with measured result which has been offset the cable loss in power meter.
2. MIMO Chain 1+2 is a calculated result from sum of the power MIMO Chain 1+2(1) and MIMO Chain 1+2(2).
3. The section 3.6 of List of Antenna Requirements of this test report is used for test Limit.



<Antenna 7 for 3.3V>

Test Mode :	802.11a	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%
Duty Cycle:	100%	Duty Factor:	0.00dB

Channel	Frequency (MHz)	802.11a Average Output Power (dBm)				
		Measured		Final		
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2
149	5745	19.12	19.29	19.12	19.29	22.22
157	5785	19.11	19.44	19.11	19.44	22.29
165	5825	19.32	19.61	19.32	19.61	22.48

Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%
Duty Cycle:	99.15%	Duty Factor:	0.04dB

Channel	Frequency (MHz)	802.11n HT20 Average Output Power (dBm)				
		Measured		Final		
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2
149	5745	19.07	19.43	19.11	19.47	22.30
157	5785	18.96	19.35	19.00	19.39	22.21
165	5825	19.41	19.87	19.45	19.91	22.69



Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%
Duty Cycle:	98.30%	Duty Factor:	0.07dB

Channel	Frequency (MHz)	802.11n HT40 Average Output Power (dBm)				
		Measured		Final		
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2
151	5755	19.61	19.80	19.68	19.87	22.79
159	5795	19.44	19.70	19.51	19.77	22.66

Note:

1. The final result is corrected the duty factor with measured result which has been offset the cable loss in power meter.
2. MIMO Chain 1+2 is a calculated result from sum of the power MIMO Chain 1+2(1) and MIMO Chain 1+2(2).
3. The section 3.6 of List of Antenna Requirements of this test report is used for test Limit.



<Antenna 8 for 4.5V>

Test Mode :	802.11b	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%
Duty Cycle:	100%	Duty Factor:	0.00dB

Channel	Frequency (MHz)	802.11b Average Output Power (dBm)				
		Measured		Final		
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2
01	2412	18.85	18.40	18.85	18.40	21.64
02	2417	18.43	18.49	18.43	18.49	21.47
06	2437	23.12	22.74	23.12	22.74	25.94
10	2457	17.18	17.76	17.18	17.76	20.49
11	2462	17.17	17.80	17.17	17.80	20.51

Test Mode :	802.11g	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%
Duty Cycle:	100%	Duty Factor:	0.00dB

Channel	Frequency (MHz)	802.11g Average Output Power (dBm)				
		Measured		Final		
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2
01	2412	13.32	12.90	13.32	12.90	16.13
02	2417	16.53	16.68	16.53	16.68	19.62
06	2437	16.92	16.83	16.92	16.83	19.89
10	2457	16.46	16.90	16.46	16.90	19.70
11	2462	11.42	10.30	11.42	10.30	13.91



Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%
Duty Cycle:	98.93% for Chain 1+2(1) 98.94% for Chain 1+2(2)	Duty Factor:	0.05dB for Chain 1+2(1) 0.05dB for Chain 1+2(2)

Channel	Frequency (MHz)	802.11n HT20 Average Output Power (dBm)				
		Measured		Final		
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2
01	2412	11.87	11.73	11.92	11.78	14.86
02	2417	16.59	16.78	16.64	16.83	19.74
06	2437	16.69	16.91	16.74	16.96	19.86
10	2457	16.23	16.58	16.28	16.63	19.47
11	2462	10.85	9.82	10.90	9.87	13.42

Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%
Duty Cycle:	98.41%	Duty Factor:	0.07dB

Channel	Frequency (MHz)	802.11n HT40 Average Output Power (dBm)				
		Measured		Final		
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2
03	2422	8.14	7.36	8.21	7.43	10.85
04	2427	10.46	9.03	10.53	9.10	12.88
05	2432	11.74	11.17	11.81	11.24	14.54
06	2437	13.57	13.64	13.64	13.71	16.69
07	2442	12.03	11.39	12.10	11.46	14.80
08	2447	8.81	7.89	8.88	7.96	11.45
09	2452	4.78	4.81	4.85	4.88	7.87

Note:

1. The final result is corrected the duty factor with measured result which has been offset the cable loss in power meter.
2. MIMO Chain 1+2 is a calculated result from sum of the power MIMO Chain 1+2(1) and MIMO Chain 1+2(2).
3. The section 3.6 of List of Antenna Requirements of this test report is used for test Limit.



<Antenna 8 for 3.3V>

Test Mode :	802.11b	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%
Duty Cycle:	100%	Duty Factor:	0.00dB

Channel	Frequency (MHz)	802.11b Average Output Power (dBm)				
		Measured		Final		
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2
01	2412	18.63	18.28	18.63	18.28	21.47
02	2417	18.44	18.22	18.44	18.22	21.34
06	2437	22.92	22.73	22.92	22.73	25.84
10	2457	16.96	17.55	16.96	17.55	20.28
11	2462	16.92	17.59	16.92	17.59	20.28

Test Mode :	802.11g	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%
Duty Cycle:	100%	Duty Factor:	0.00dB

Channel	Frequency (MHz)	802.11g Average Output Power (dBm)				
		Measured		Final		
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2
01	2412	13.13	12.89	13.13	12.89	16.02
02	2417	16.27	16.68	16.27	16.68	19.49
06	2437	16.80	16.48	16.80	16.48	19.65
10	2457	16.31	16.77	16.31	16.77	19.56
11	2462	10.86	10.22	10.86	10.22	13.56



Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%
Duty Cycle:	98.93% for Chain 1+2(1) 98.94% for Chain 1+2(2)	Duty Factor:	0.05dB for Chain 1+2(1) 0.05dB for Chain 1+2(2)

Channel	Frequency (MHz)	802.11n HT20 Average Output Power (dBm)				
		Measured		Final		
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2
01	2412	11.32	11.57	11.37	11.62	14.50
02	2417	16.60	16.54	16.65	16.59	19.63
06	2437	16.46	16.41	16.51	16.46	19.49
10	2457	16.02	16.34	16.07	16.39	19.24
11	2462	10.46	9.40	10.51	9.45	13.02

Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%
Duty Cycle:	98.41% for Chain 1+2(1) 98.41% for Chain 1+2(2)	Duty Factor:	0.07dB for Chain 1+2(1) 0.07dB for Chain 1+2(2)

Channel	Frequency (MHz)	802.11n HT40 Average Output Power (dBm)				
		Measured		Final		
		MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2(1)	MIMO Chain 1+2(2)	MIMO Chain 1+2
03	2422	7.60	7.22	7.67	7.29	10.49
04	2427	10.14	9.03	10.21	9.10	12.70
05	2432	11.71	11.18	11.78	11.25	14.53
06	2437	13.57	13.53	13.64	13.60	16.63
07	2442	12.01	11.32	12.08	11.39	14.76
08	2447	8.38	7.47	8.45	7.54	11.03
09	2452	4.53	4.43	4.60	4.50	7.56

Note:

1. The final result is corrected the duty factor with measured result which has been offset the cable loss in power meter.
2. MIMO Chain 1+2 is a calculated result from sum of the power MIMO Chain 1+2(1) and MIMO Chain 1+2(2).
3. The section 3.6 of List of Antenna Requirements of this test report is used for test Limit.



3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

The peak power spectral density shall not be greater than 8dBm in any 3KHz band at any time interval of continuous transmission.

3.3.2 Measuring Instruments

The section 4.0 of List of Measuring Equipment of this test report is used for test.

3.3.3 Test Procedures

1. The testing follows Measurement Procedure 9.1 Option 1 of FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v02
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. Video bandwidth VBW =300 kHz In order to make an accurate measurement, set the span to 1.5 times DTS Channel Bandwidth. (6dB BW)
5. When above step result is Pass limit, 8dBm/3KHz, and then the PSD is not required to re-test by RBW=3KHz. Otherwise, the PSD shall be re-measured by RBW=3KHz, and compare to the limit line.
6. Detector = peak, Sweep time = auto couple, Trace mode = max hold, Allow trace to fully stabilize. Use the peak marker function to determine the maximum power level.
7. Record the measurement data derived from spectrum analyzer.
8. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v01r02.

If measurements performed using method (2) plus $10 \log (N)$ exceeds the emission limit, the test should choose method (1) before declaring that the device fails the emission limit.

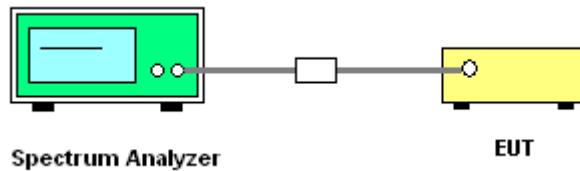
Method (1): Measure and sum the spectra across the outputs.

The total final Power Spectral Density is from a device with 2 transmitter outputs. The spectrum measurements of the individual outputs are all performed with the same span and number of points, the spectrum value in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 to obtain the value for the first frequency bin of the summed spectrum.

Method (2): Measure and add $10 \log (N)$ dB, where N is the number of outputs. (N=2)



3.3.4 Test Setup





3.3.5 Test Result of Power Spectral Density

<Antenna 6 for 4.5V>

Test Mode :	802.11b	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%

Channel	Frequency (MHz)	802.11b Power Density					Max. Limits (dBm)	Pass /Fail		
		Measured			Final					
		MIMO Chain 1+2(1)		MIMO Chain 1+2(2)		MIMO Chain 1+2				
		PSD/100KHz (dBm)	PSD/100KHz (dBm) +10log2	PSD/100KHz (dBm)	PSD/100KHz (dBm) +10log2	PSD/3KHz (dBm)				
01	2412	9.02	12.03	8.22	11.23	-6.14	1.79	Pass		
02	2417	7.50	10.51	7.95	10.96	-6.92	1.79	Pass		
06	2437	11.17	14.18	11.34	14.35	-4.06	1.79	Pass		
10	2457	6.54	9.55	6.81	9.82	-7.81	1.79	Pass		
11	2462	5.55	8.56	5.68	8.69	-8.53	1.79	Pass		

Test Mode :	802.11g	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%

Channel	Frequency (MHz)	802.11g Power Density					Max. Limits (dBm)	Pass /Fail		
		Measured			Final					
		MIMO Chain 1+2(1)		MIMO Chain 1+2(2)		MIMO Chain 1+2				
		PSD/100KHz (dBm)	PSD/100KHz (dBm) +10log2	PSD/100KHz (dBm)	PSD/100KHz (dBm) +10log2	PSD/3KHz (dBm)				
01	2412	1.81	4.82	0.86	3.87	-12.35	1.79	Pass		
02	2417	1.48	4.49	2.53	5.54	-10.52	1.79	Pass		
06	2437	1.84	4.85	2.47	5.48	-11.55	1.79	Pass		
10	2457	2.40	5.41	2.48	5.49	-11.91	1.79	Pass		
11	2462	0.19	3.20	-0.89	2.12	-13.72	1.79	Pass		



Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%

Channel	Frequency (MHz)	802.11n HT20 Power Density					Max. Limits (dBm)	Pass /Fail		
		Measured			Final					
		MIMO Chain 1+2(1)		MIMO Chain 1+2(2)		MIMO Chain 1+2				
		PSD/100KHz (dBm)	PSD/100KHz (dBm) +10log2	PSD/100KHz (dBm)	PSD/100KHz (dBm) +10log2	PSD/3KHz (dBm)				
01	2412	2.24	5.25	0.67	3.68	-12.82	4.80	Pass		
02	2417	3.98	6.99	2.79	5.80	-12.03	4.80	Pass		
06	2437	3.83	6.84	3.64	6.65	-10.47	4.80	Pass		
10	2457	3.77	6.78	3.38	6.39	-11.44	4.80	Pass		
11	2462	1.56	4.57	-0.30	2.71	-	4.80	Pass		

Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%

Channel	Frequency (MHz)	802.11n HT40 Power Density					Max. Limits (dBm)	Pass /Fail		
		Measured			Final					
		MIMO Chain 1+2(1)		MIMO Chain 1+2(2)		MIMO Chain 1+2				
		PSD/100KHz (dBm)	PSD/100KHz (dBm) +10log2	PSD/100KHz (dBm)	PSD/100KHz (dBm) +10log2	PSD/3KHz (dBm)				
03	2422	-4.29	-1.28	-3.83	-0.82	-	4.80	Pass		
04	2427	-2.87	0.14	-3.78	-0.77	-	4.80	Pass		
05	2732	-1.20	1.81	-2.81	0.20	-	4.80	Pass		
06	2437	0.13	3.14	-0.55	2.46	-	4.80	Pass		
07	2442	-1.12	1.89	-2.32	0.69	-	4.80	Pass		
08	2447	-2.68	0.33	-3.82	-0.81	-	4.80	Pass		
09	2452	-5.67	-2.66	-7.14	-4.13	-	4.80	Pass		

Note:

1. Measured power density (dBm) has offset with cable loss.
2. The Measured power density (dBm)/ 100KHz is reference level and used as 20dBc down for Conducted Band Edges and Conducted Spurious Emission limit line.



3. Use the Method (2) of FCC KDB 662911 D01 Multiple Transmitter Output v01r02, "Measure and add 10 log (N) dB, where N is the number of outputs. (N=2)". The MIMO modes are measured respectively at each port by setting RBW=100KHz, and then add the 10 log (N) dB. The MIMO chain 1+2(1) means that the chain 1 is measured by using RBW=100KHz, and then add 10 log (2) dB.
4. When above step result is Pass limit, 8dBm/3KHz, and then the PSD is not required to re-test by RBW=3KHz. Otherwise, the PSD shall be re-measured by RBW=3KHz, and compare to the limit line.
5. The section 3.6 of List of Antenna Requirements of this test report is used for test Limit.



<Antenna 7 for 4.5V>

Test Mode :	802.11a	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%

Channel	Frequency (MHz)	802.11a Power Density					Max. Limits (dBm)	Pass /Fail		
		Measured			Final					
		MIMO Chain 1+2(1)		MIMO Chain 1+2(2)		MIMO Chain 1+2				
		PSD/100KHz (dBm)	PSD/100KHz (dBm) +10log2	PSD/100KHz (dBm)	PSD/100KHz (dBm) +10log2	PSD/3KHz (dBm)				
149	5745	7.01	10.02	6.90	9.91	-5.11	7.49	Pass		
157	5785	7.42	10.43	7.19	10.20	-4.47	7.49	Pass		
165	5825	7.93	10.94	8.06	11.07	-5.19	7.49	Pass		

Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%

Channel	Frequency (MHz)	802.11n HT20 Power Density					Max. Limits (dBm)	Pass /Fail		
		Measured			Final					
		MIMO Chain 1+2(1)		MIMO Chain 1+2(2)		MIMO Chain 1+2				
		PSD/100KHz (dBm)	PSD/100KHz (dBm) +10log2	PSD/100KHz (dBm)	PSD/100KHz (dBm) +10log2	PSD/3KHz (dBm)				
149	5745	8.09	11.10	7.09	10.10	-3.92	8.00	Pass		
157	5785	8.44	11.45	7.38	10.39	-5.13	8.00	Pass		
165	5825	8.97	11.98	7.76	10.77	-4.71	8.00	Pass		



Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%

Channel	Frequency (MHz)	802.11n HT40 Power Density					Max. Limits (dBm)	Pass /Fail
		Measured			Final			
		MIMO Chain 1+2(1)		MIMO Chain 1+2(2)		MIMO Chain 1+2		
		PSD/100KHz (dBm)	PSD/100KHz (dBm) +10log2	PSD/100KHz (dBm)	PSD/100KHz (dBm) +10log2	PSD/3KHz (dBm)		
151	5755	5.82	8.83	5.83	8.84	-4.98	8.00	Pass
159	5795	5.77	8.78	5.46	8.47	-7.56	8.00	Pass

Note:

1. Measured power density (dBm) has offset with cable loss.
2. The Measured power density (dBm)/ 100KHz is reference level and used as 20dBc down for Conducted Band Edges and Conducted Spurious Emission limit line.
3. Use the Method (2) of FCC KDB 662911 D01 Multiple Transmitter Output v01r02, " Measure and add 10 log (N) dB, where N is the number of outputs. (N=2)". The MIMO modes are measured respectively at each port by setting RBW=100KHz, and then add the 10 log (N) dB. The MIMO chain 1+2(1) means that the chain 1 is measured by using RBW=100KHz, and then add 10 log (2) dB.
4. When above step result is Pass limit, 8dBm/3KHz, and then the PSD is not required to re-test by RBW=3KHz. Otherwise, the PSD shall be re-measured by RBW=3KHz, and compare to the limit line.
5. The section 3.6 of List of Antenna Requirements of this test report is used for test Limit.



<Antenna 8 for 4.5V>

Test Mode :	802.11b	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%

Channel	Frequency (MHz)	802.11b Power Density					Max. Limits (dBm)	Pass /Fail
		Measured				Final		
		MIMO Chain 1+2(1)		MIMO Chain 1+2(2)		MIMO Chain 1+2		
		PSD/100KHz (dBm)	PSD/100KHz (dBm) +10log2	PSD/100KHz (dBm)	PSD/100KHz (dBm) +10log2	PSD/3KHz (dBm)		
01	2412	8.57	11.58	8.38	11.39	-6.14	4.79	Pass
02	2417	8.48	11.49	8.15	11.16	-6.92	4.79	Pass
06	2437	12.90	15.91	13.11	16.12	0.85	4.79	Pass
10	2457	6.93	9.94	6.82	9.83	-7.81	4.79	Pass
11	2462	6.85	9.86	7.04	10.05	-8.05	4.79	Pass

Test Mode :	802.11g	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%

Channel	Frequency (MHz)	802.11g Power Density					Max. Limits (dBm)	Pass /Fail
		Measured				Final		
		MIMO Chain 1+2(1)		MIMO Chain 1+2(2)		MIMO Chain 1+2		
		PSD/100KHz (dBm)	PSD/100KHz (dBm) +10log2	PSD/100KHz (dBm)	PSD/100KHz (dBm) +10log2	PSD/3KHz (dBm)		
01	2412	1.47	4.48	0.88	3.89	-	4.79	Pass
02	2417	5.04	8.05	5.99	9.00	2.24	4.79	Pass
06	2437	5.43	8.44	7.34	10.35	4.14	4.79	Pass
10	2457	4.40	7.41	5.89	8.90	2.28	4.79	Pass
11	2462	-0.52	2.49	-1.26	1.75	-	4.79	Pass



Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%

Channel	Frequency (MHz)	802.11n HT20 Power Density					Max. Limits (dBm)	Pass /Fail
		Measured				Final		
		MIMO Chain 1+2(1)		MIMO Chain 1+2(2)		MIMO Chain 1+2		
		PSD/100KHz (dBm)	PSD/100KHz (dBm) +10log2	PSD/100KHz (dBm)	PSD/100KHz (dBm) +10log2	PSD/3KHz (dBm)		
01	2412	2.06	5.07	0.25	3.26	-	7.80	Pass
02	2417	6.15	9.16	5.04	8.05	-8.62	7.80	Pass
06	2437	7.20	10.21	6.71	9.72	4.51	7.80	Pass
10	2457	5.58	8.59	5.67	8.68	3.20	7.80	Pass
11	2462	0.29	3.30	-1.75	1.26	-	7.80	Pass

Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Engineer :	Alan Liu and Book Lin	Relative Humidity :	55~58%

Channel	Frequency (MHz)	802.11n HT40 Power Density					Max. Limits (dBm)	Pass /Fail
		Measured				Final		
		MIMO Chain 1+2(1)		MIMO Chain 1+2(2)		MIMO Chain 1+2		
		PSD/100KHz (dBm)	PSD/100KHz (dBm) +10log2	PSD/100KHz (dBm)	PSD/100KHz (dBm) +10log2	PSD/3KHz (dBm)		
03	2422	-6.07	-3.06	-6.18	-3.17	-	7.80	Pass
04	2427	-2.88	0.13	-4.21	-1.20	-	7.80	Pass
05	2732	-1.59	1.42	-3.22	-0.21	-	7.80	Pass
06	2437	-0.57	2.44	0.23	3.24	-	7.80	Pass
07	2442	-1.77	1.24	-3.00	0.01	-	7.80	Pass
08	2447	-4.61	-1.60	-5.18	-2.17	-	7.80	Pass
09	2452	-7.81	-4.80	-7.67	-4.66	-	7.80	Pass

Note:

1. Measured power density (dBm) has offset with cable loss.
2. The Measured power density (dBm)/ 100KHz is reference level and used as 20dBc down for Conducted Band Edges and Conducted Spurious Emission limit line.



3. Use the Method (2) of FCC KDB 662911 D01 Multiple Transmitter Output v01r02, "Measure and add 10 log (N) dB, where N is the number of outputs. (N=2)". The MIMO modes are measured respectively at each port by setting RBW=100KHz, and then add the 10 log (N) dB. The MIMO chain 1+2(1) means that the chain 1 is measured by using RBW=100KHz, and then add 10 log (2) dB.
4. When above step result is Pass limit, 8dBm/3KHz, and then the PSD is not required to re-test by RBW=3KHz. Otherwise, the PSD shall be re-measured by RBW=3KHz, and compare to the limit line.
5. The section 3.6 of List of Antenna Requirements of this test report is used for test Limit.

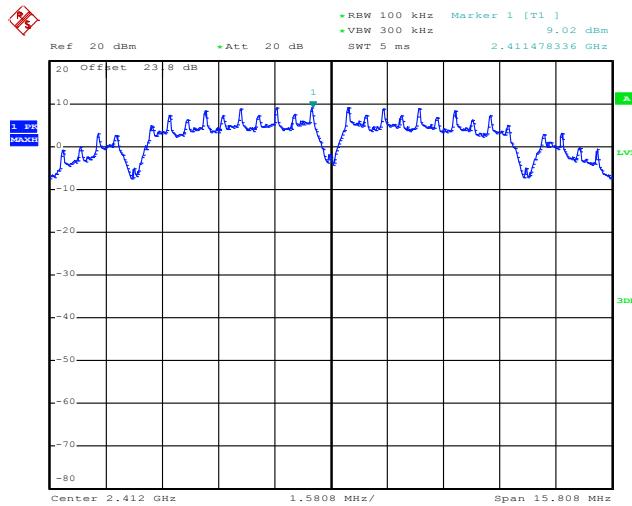
3.3.6 Test Result of Power Spectral Density Plots (100kHz)

<Antenna 6 for 4.5V>

<802.11b>

802.11b – MIMO Chain 1+2(1)

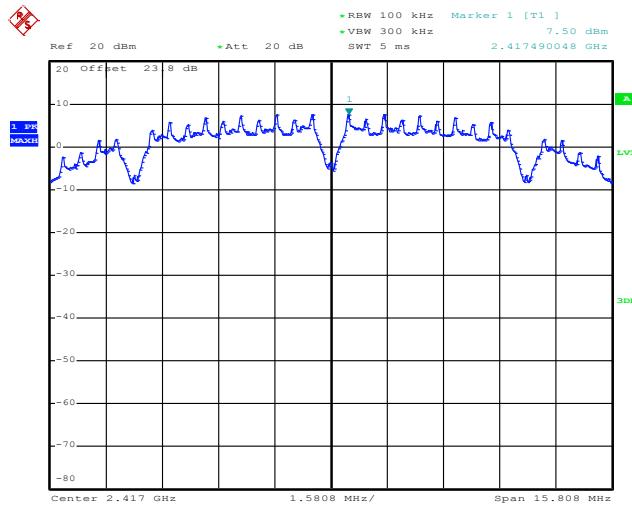
PSD 100kHz Plot on Channel 01



Date: 11.SEP.2012 23:18:19

802.11b – MIMO Chain 1+2(1)

PSD 100kHz Plot on Channel 02

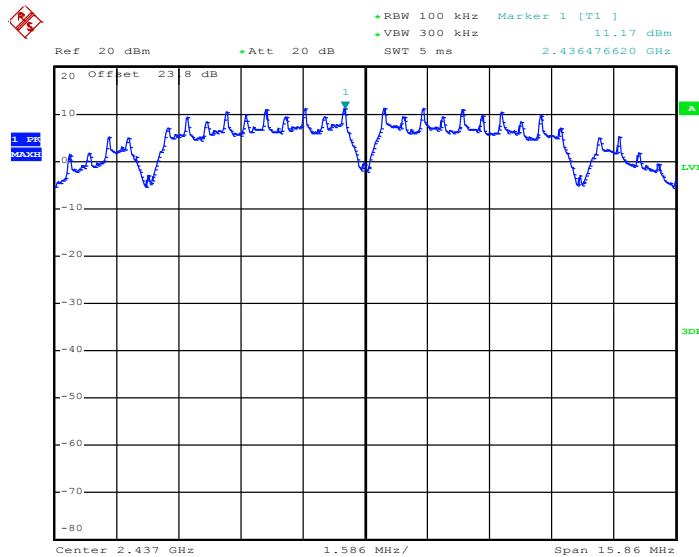


Date: 11.SEP.2012 23:40:34



802.11b – MIMO Chain 1+2(1)

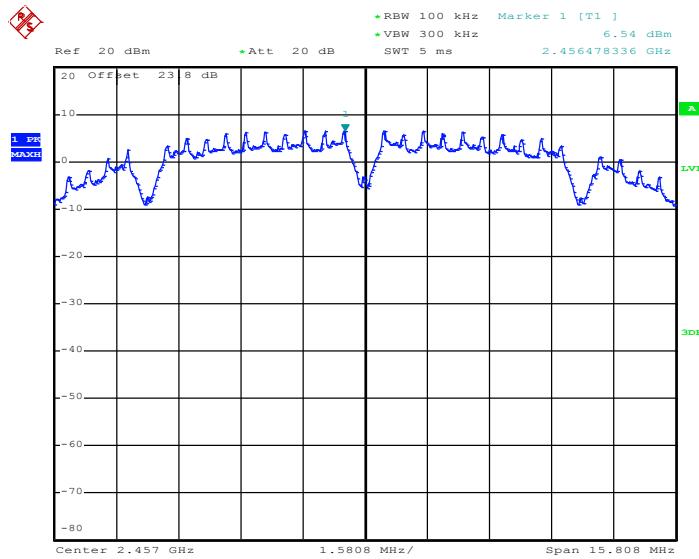
PSD 100kHz Plot on Channel 06



Date: 12.SEP.2012 01:03:47

802.11b – MIMO Chain 1+2(1)

PSD 100kHz Plot on Channel 10

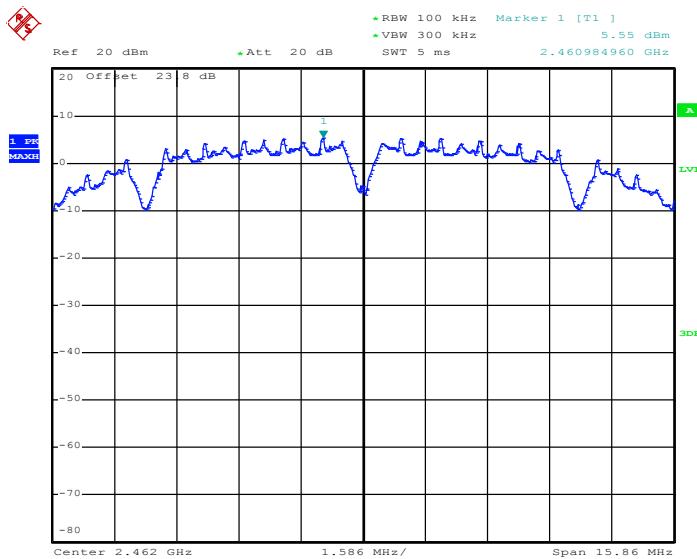


Date: 11.SEP.2012 23:49:11



802.11b – MIMO Chain 1+2(1)

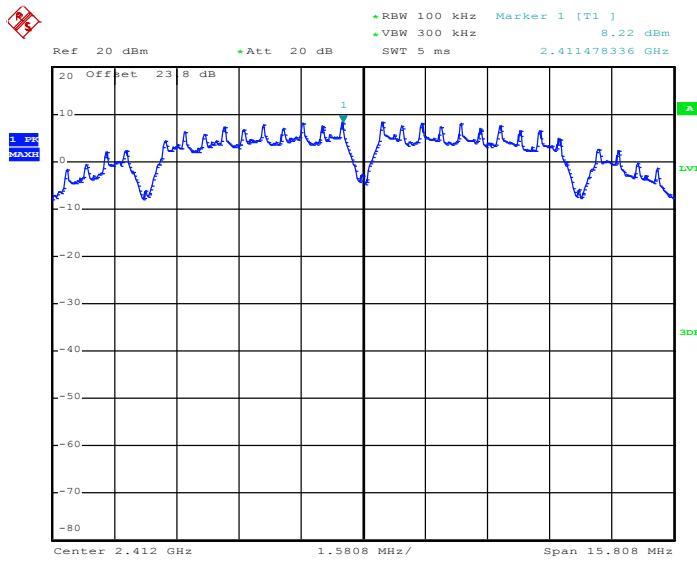
PSD 100kHz Plot on Channel 11



Date: 12.SEP.2012 00:12:01

802.11b – MIMO Chain 1+2(2)

PSD 100kHz Plot on Channel 01

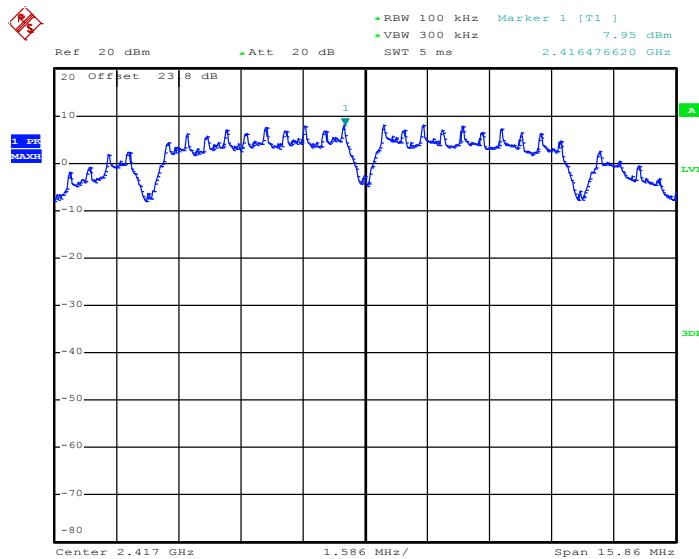


Date: 11.SEP.2012 23:30:17



802.11b – MIMO Chain 1+2(2)

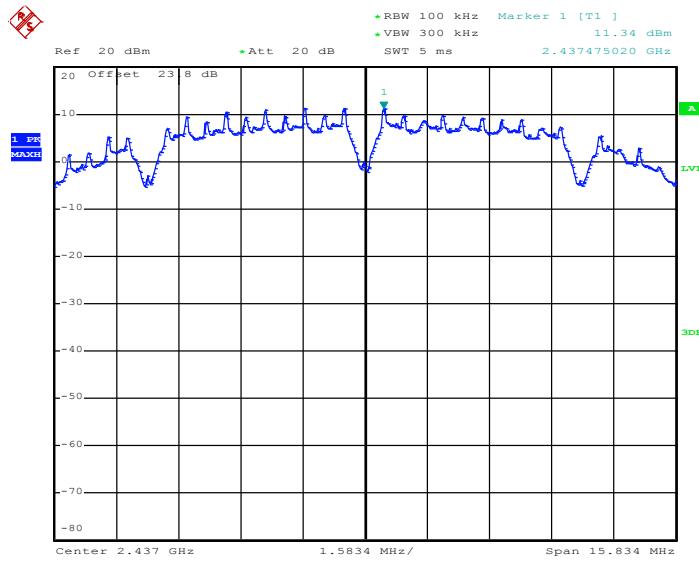
PSD 100kHz Plot on Channel 02



Date: 11.SEP.2012 23:32:44

802.11b – MIMO Chain 1+2(2)

PSD 100kHz Plot on Channel 06

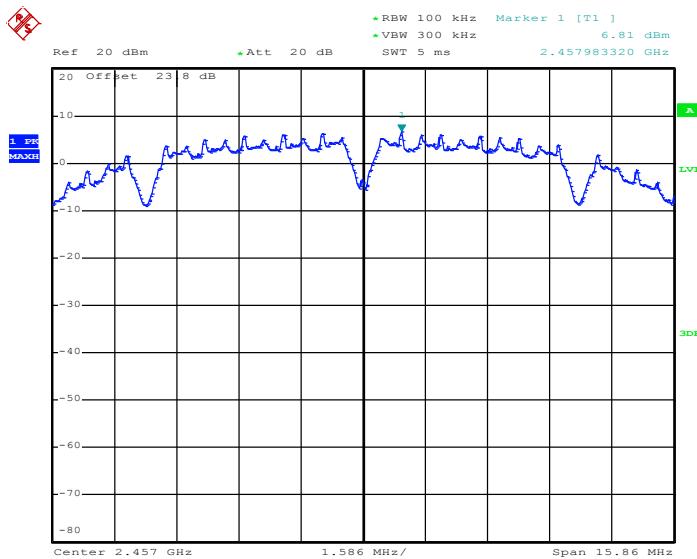


Date: 12.SEP.2012 01:00:58



802.11b – MIMO Chain 1+2(2)

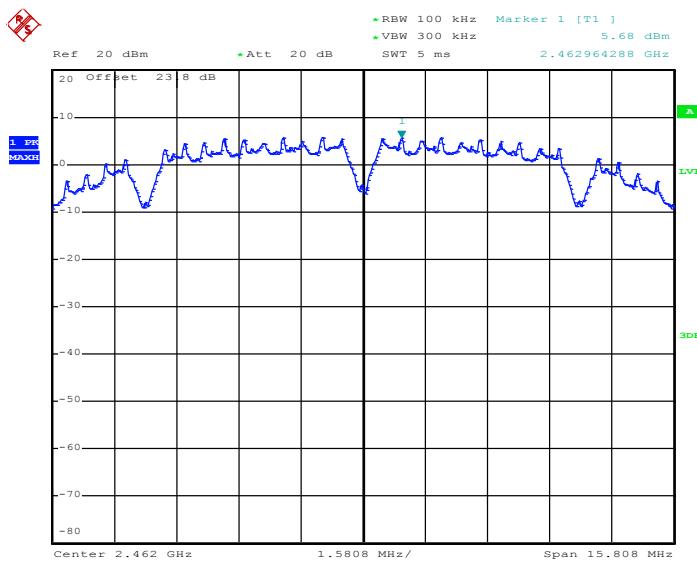
PSD 100kHz Plot on Channel 10



Date: 12.SEP.2012 00:07:19

802.11b – MIMO Chain 1+2(2)

PSD 100kHz Plot on Channel 11

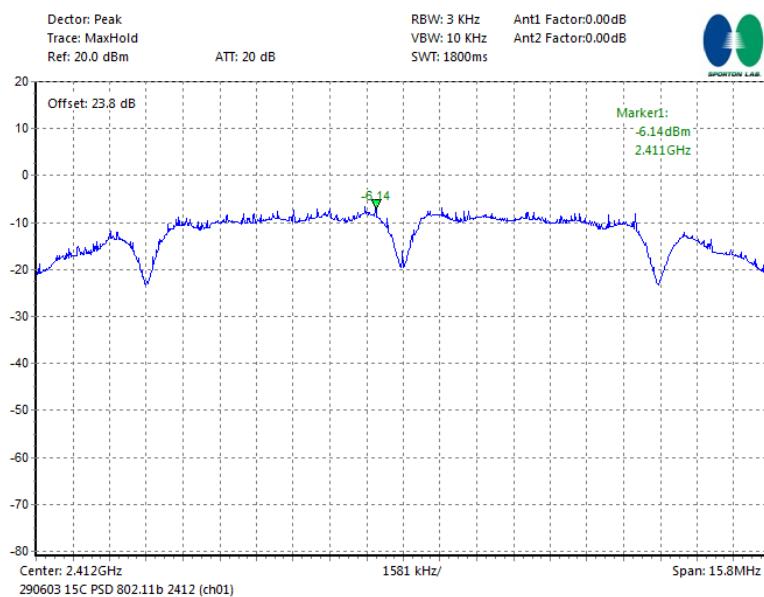


Date: 12.SEP.2012 00:09:48



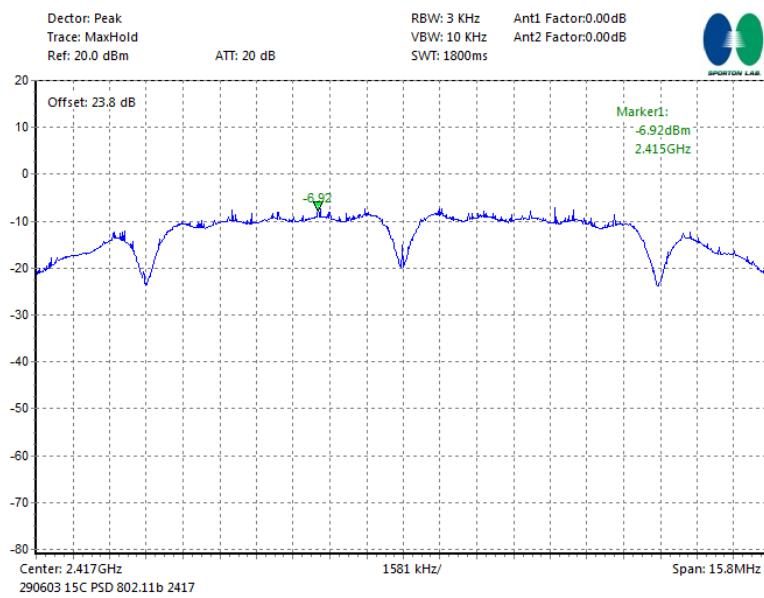
802.11b – MIMO Chain 1+2

PSD 100kHz Plot on Channel 01



802.11b – MIMO Chain 1+2

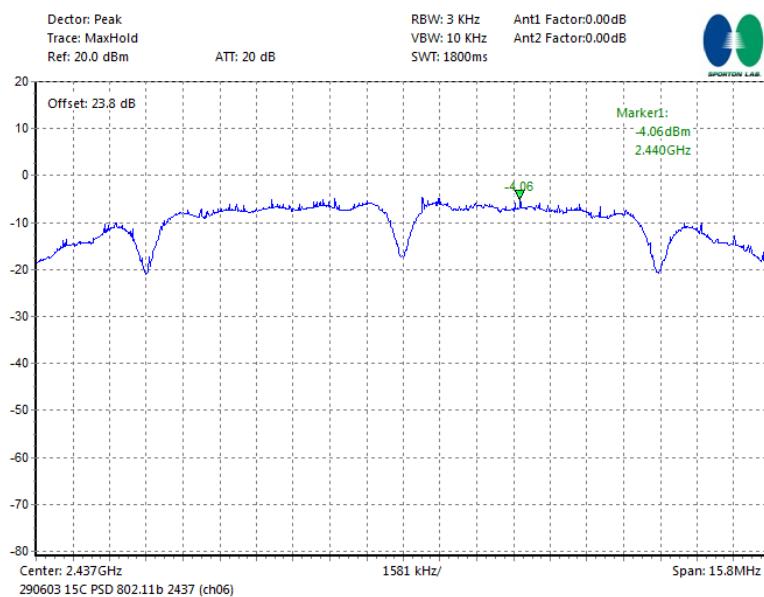
PSD 100kHz Plot on Channel 02





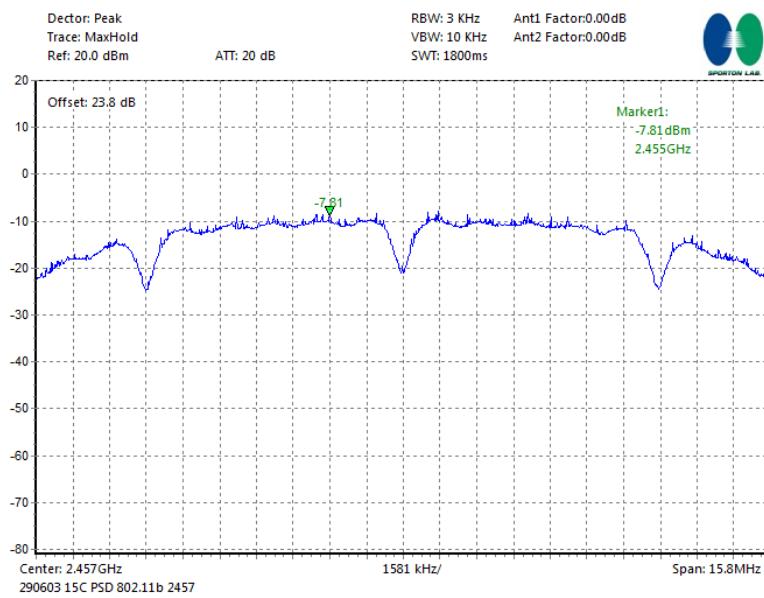
802.11b – MIMO Chain 1+2

PSD 100kHz Plot on Channel 06



802.11b – MIMO Chain 1+2

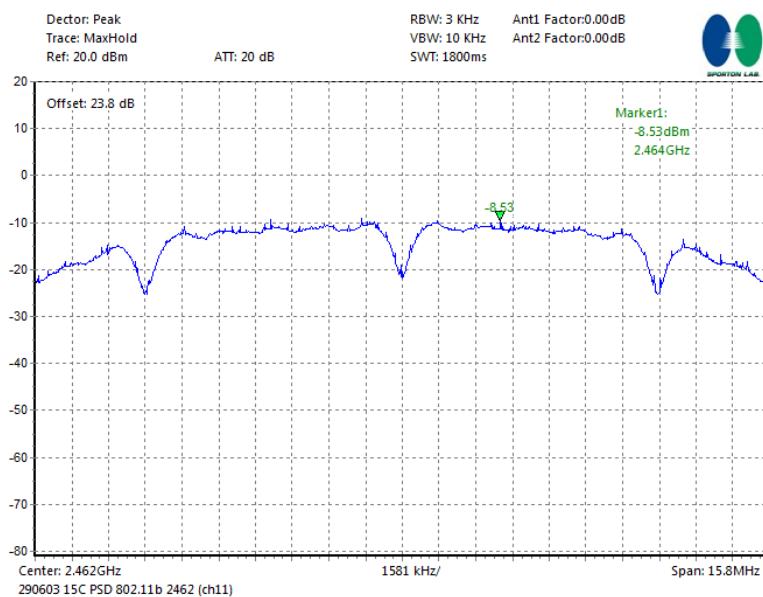
PSD 100kHz Plot on Channel 10





802.11b – MIMO Chain 1+2

PSD 100kHz Plot on Channel 11

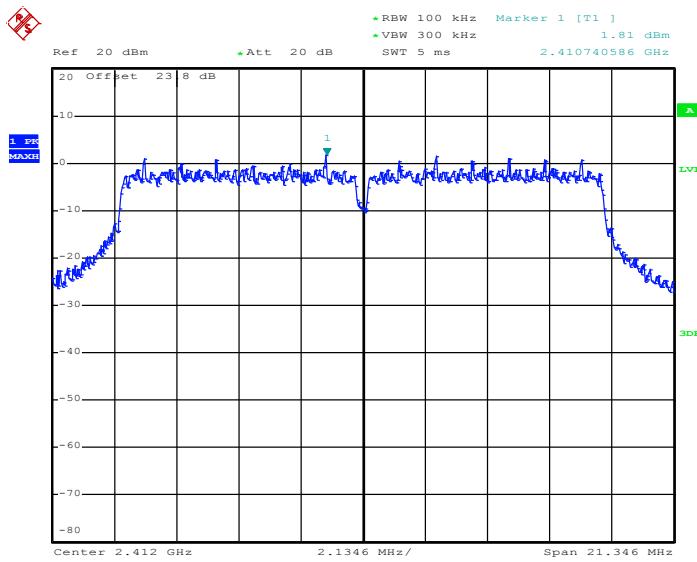




<802.11g>

802.11g – MIMO Chain 1+2(1)

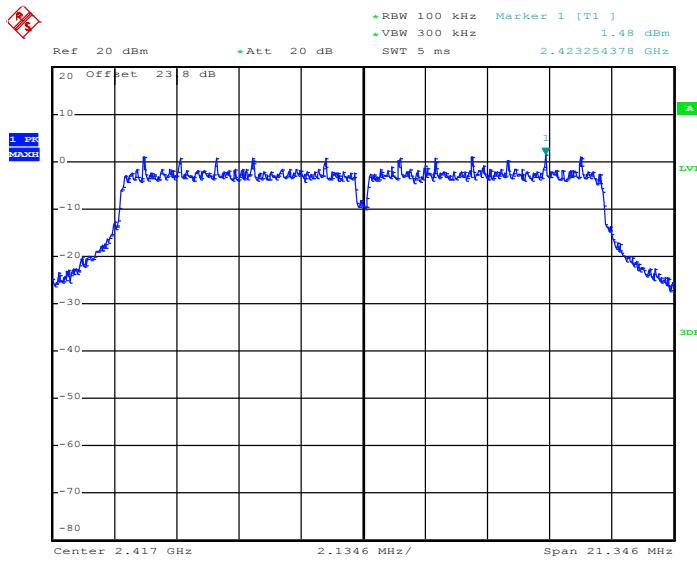
PSD 100kHz Plot on Channel 01



Date: 12.SEP.2012 02:33:09

802.11g – MIMO Chain 1+2(1)

PSD 100kHz Plot on Channel 02

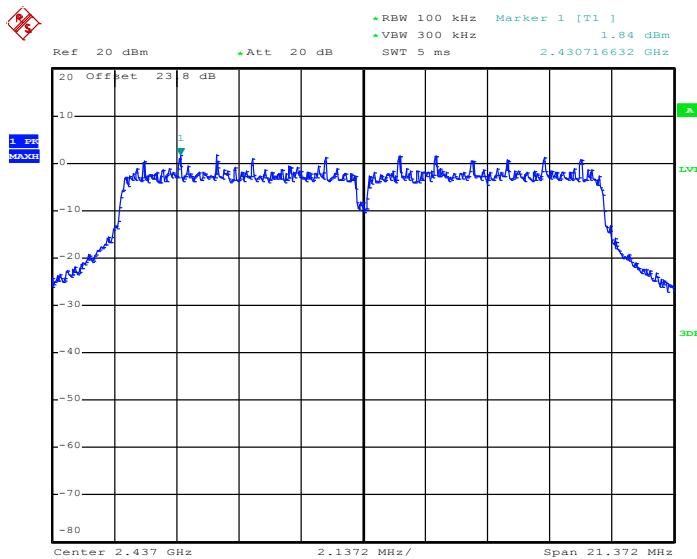


Date: 12.SEP.2012 02:29:34



802.11g – MIMO Chain 1+2(1)

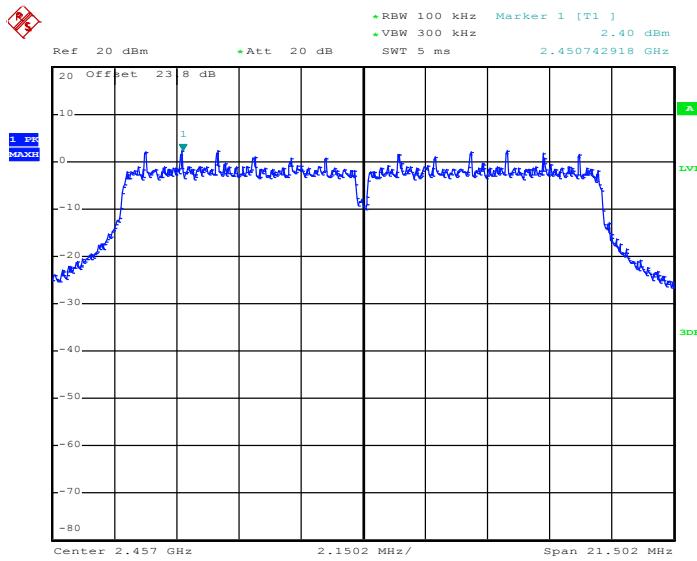
PSD 100kHz Plot on Channel 06



Date: 12.SEP.2012 02:18:12

802.11g – MIMO Chain 1+2(1)

PSD 100kHz Plot on Channel 10

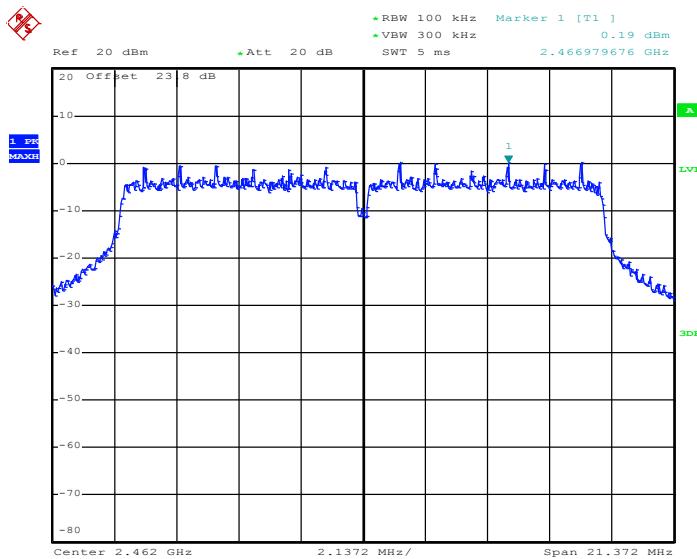


Date: 12.SEP.2012 02:14:17



802.11g – MIMO Chain 1+2(1)

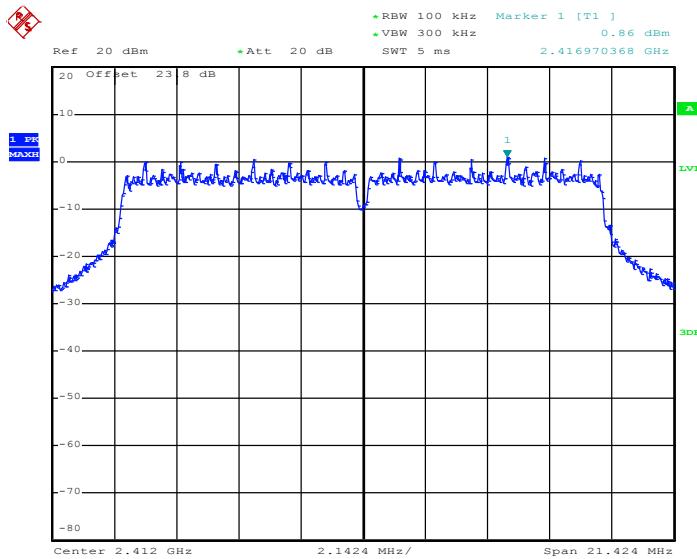
PSD 100kHz Plot on Channel 11



Date: 12.SEP.2012 01:59:34

802.11g – MIMO Chain 1+2(2)

PSD 100kHz Plot on Channel 01

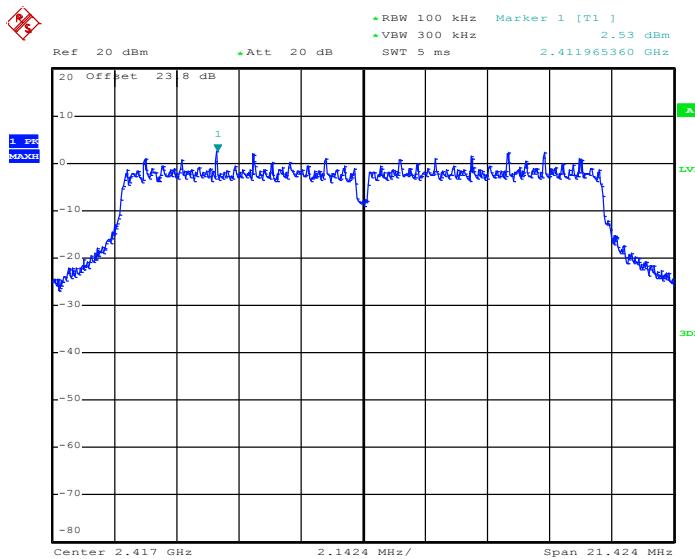


Date: 12.SEP.2012 02:36:13



802.11g – MIMO Chain 1+2(2)

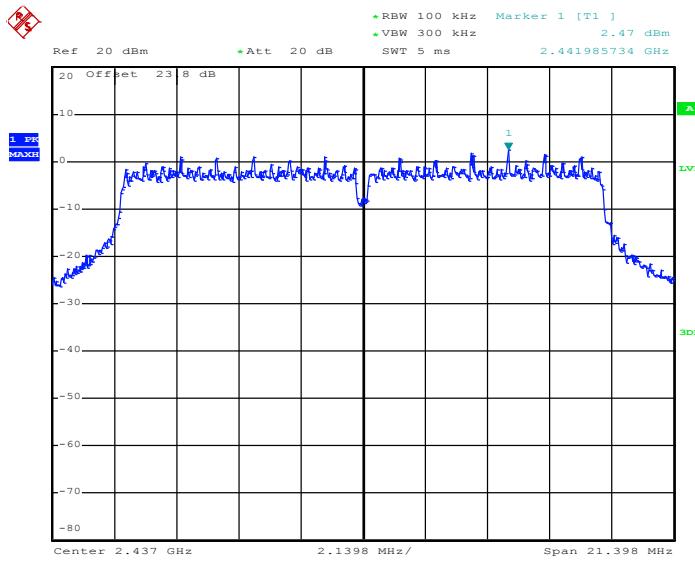
PSD 100kHz Plot on Channel 02



Date: 12.SEP.2012 02:26:16

802.11g – MIMO Chain 1+2(2)

PSD 100kHz Plot on Channel 06

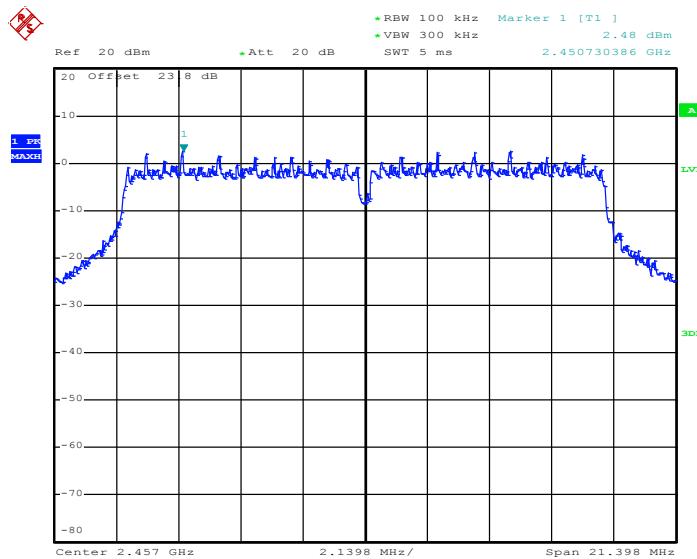


Date: 12.SEP.2012 02:21:27



802.11g – MIMO Chain 1+2(2)

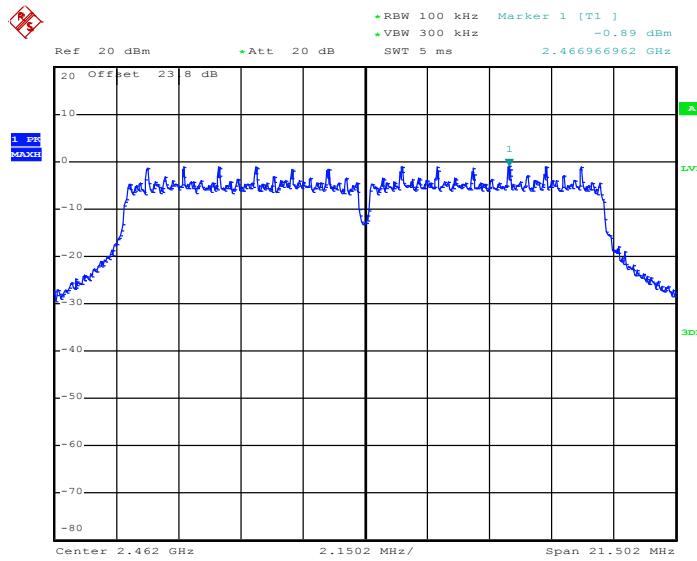
PSD 100kHz Plot on Channel 10



Date: 12.SEP.2012 02:11:36

802.11g – MIMO Chain 1+2(2)

PSD 100kHz Plot on Channel 11

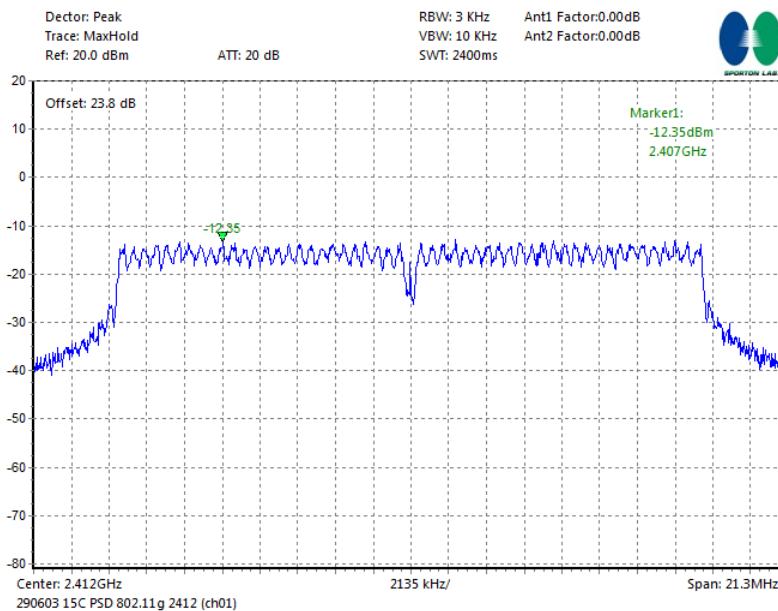


Date: 12.SEP.2012 02:02:10



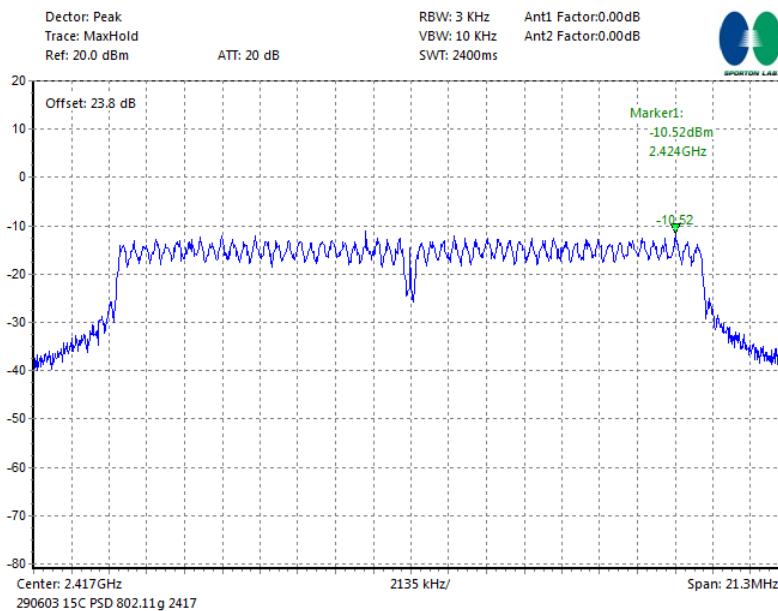
802.11g – MIMO Chain 1+2

PSD 3kHz Plot on Channel 01



802.11g – MIMO Chain 1+2

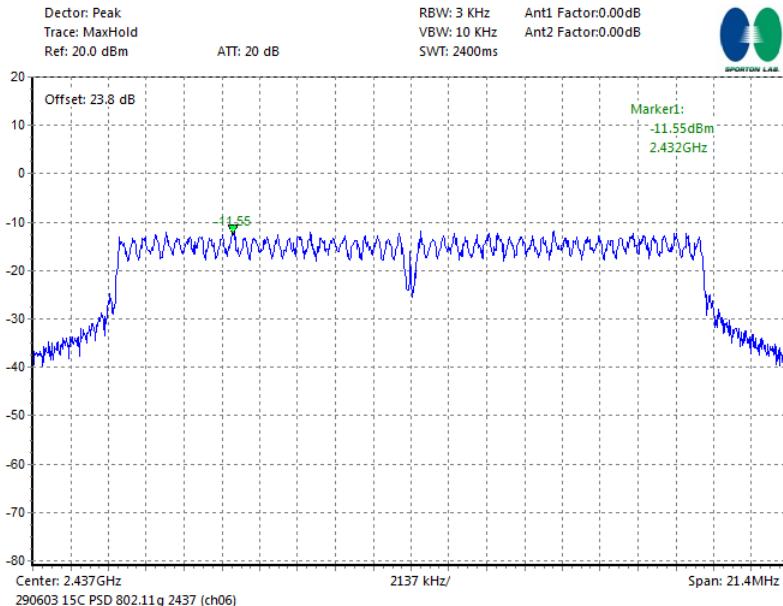
PSD 3kHz Plot on Channel 02





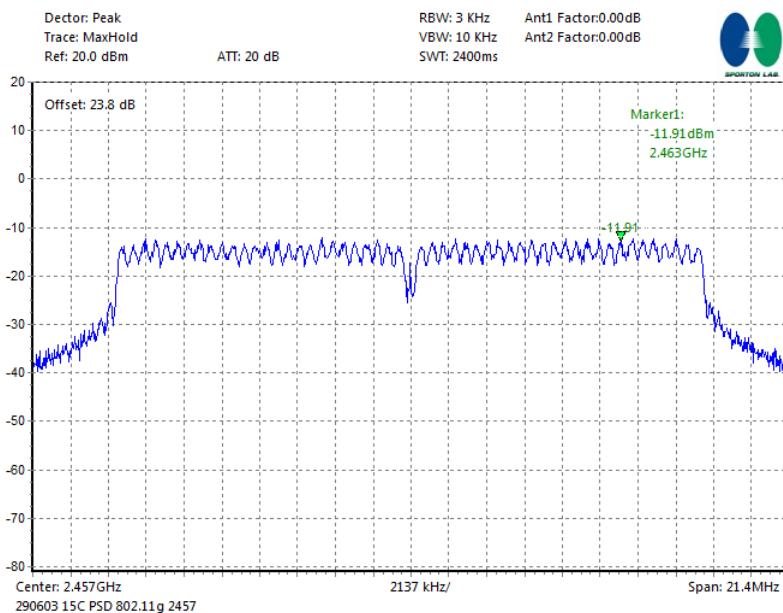
802.11g – MIMO Chain 1+2

PSD 3kHz Plot on Channel 06



802.11g – MIMO Chain 1+2

PSD 3kHz Plot on Channel 10





802.11g – MIMO Chain 1+2

PSD 3kHz Plot on Channel 11

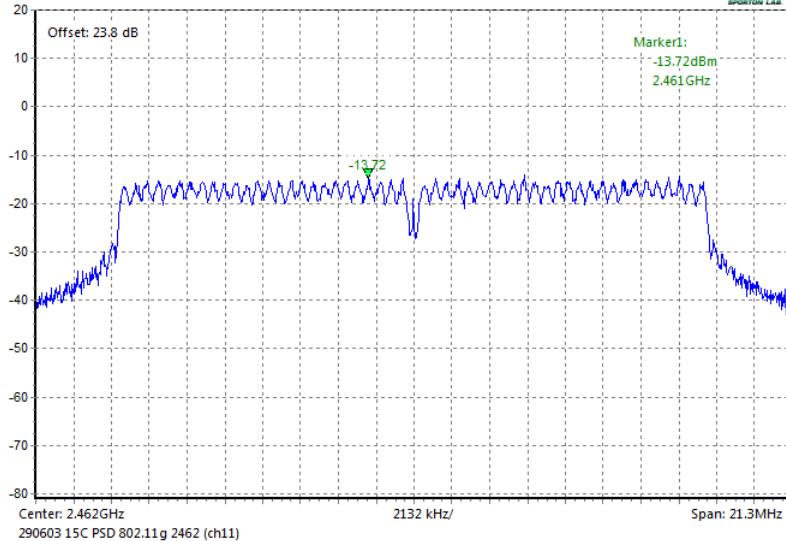
Detector: Peak
Trace: MaxHold
Ref: 20.0 dBm

ATT: 20 dB

RBW: 3 KHz
VBW: 10 KHz
SWT: 2400ms

Ant1 Factor: 0.00dB

Ant2 Factor: 0.00dB

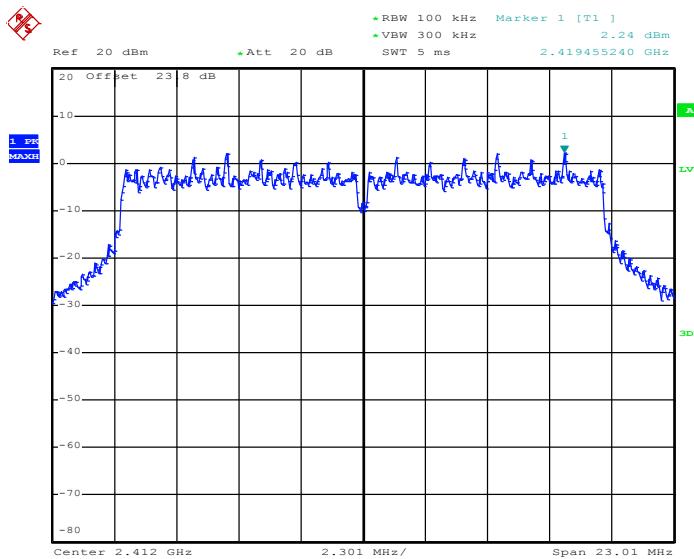




<2.4GHz 802.11n HT20>

802.11n HT20 – MIMO Chain 1+2(1)

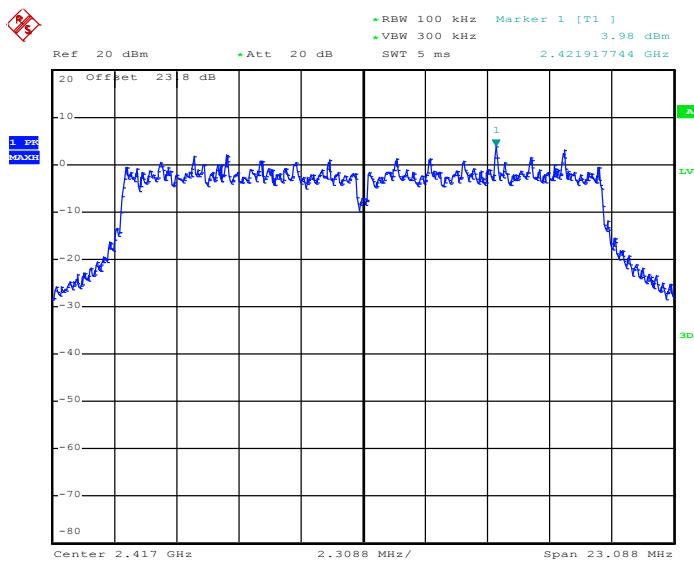
PSD 100kHz Plot on Channel 01



Date: 12.SEP.2012 03:45:31

802.11n HT20 – MIMO Chain 1+2(1)

PSD 100kHz Plot on Channel 02

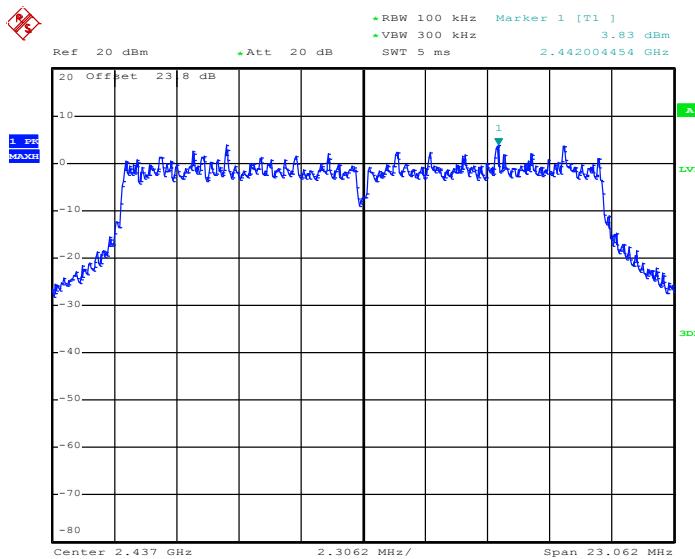


Date: 12.SEP.2012 03:36:09



802.11n HT20 – MIMO Chain 1+2(1)

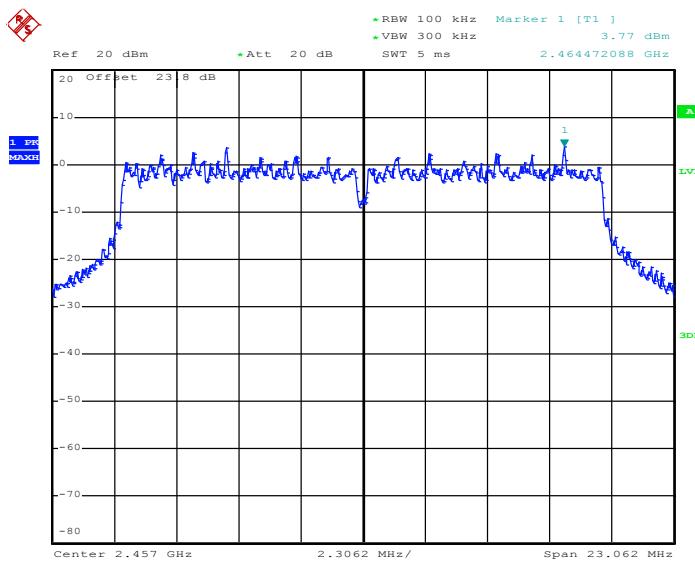
PSD 100kHz Plot on Channel 06



Date: 12.SEP.2012 03:33:06

802.11n HT20 – MIMO Chain 1+2(1)

PSD 100kHz Plot on Channel 10

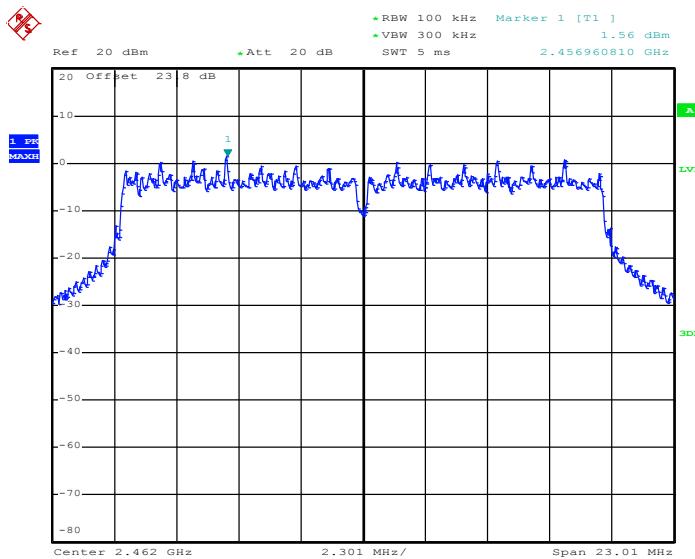


Date: 12.SEP.2012 03:21:41



802.11n HT20 – MIMO Chain 1+2(1)

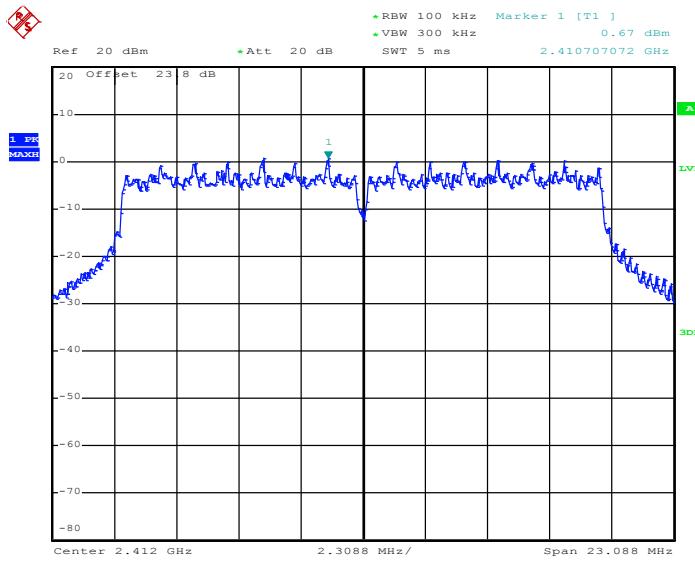
PSD 100kHz Plot on Channel 11



Date: 12.SEP.2012 03:18:20

802.11n HT20 – MIMO Chain 1+2(2)

PSD 100kHz Plot on Channel 01

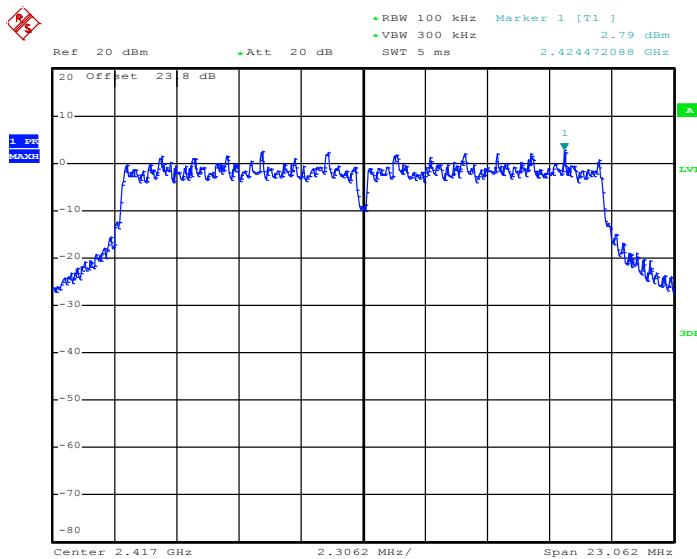


Date: 12.SEP.2012 03:42:58



802.11n HT20 – MIMO Chain 1+2(2)

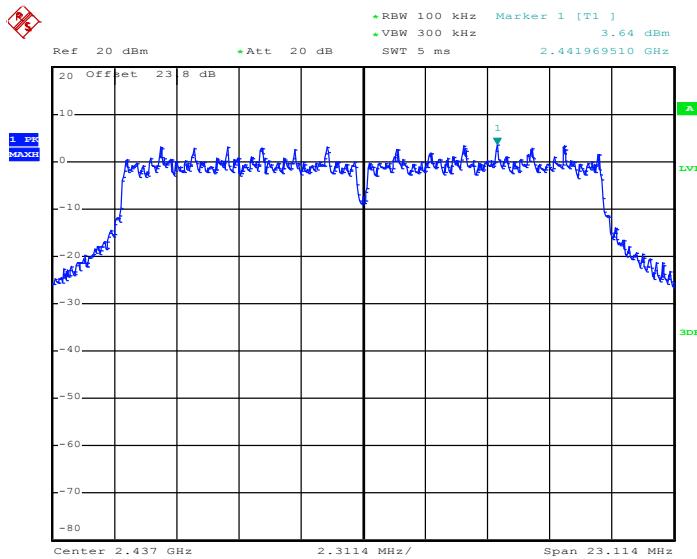
PSD 100kHz Plot on Channel 02



Date: 12.SEP.2012 03:39:18

802.11n HT20 – MIMO Chain 1+2(2)

PSD 100kHz Plot on Channel 06

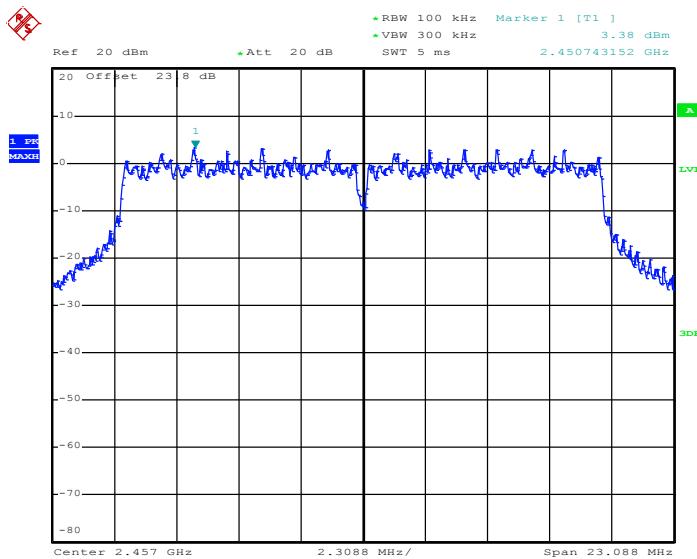


Date: 12.SEP.2012 03:30:39



802.11n HT20 – MIMO Chain 1+2(2)

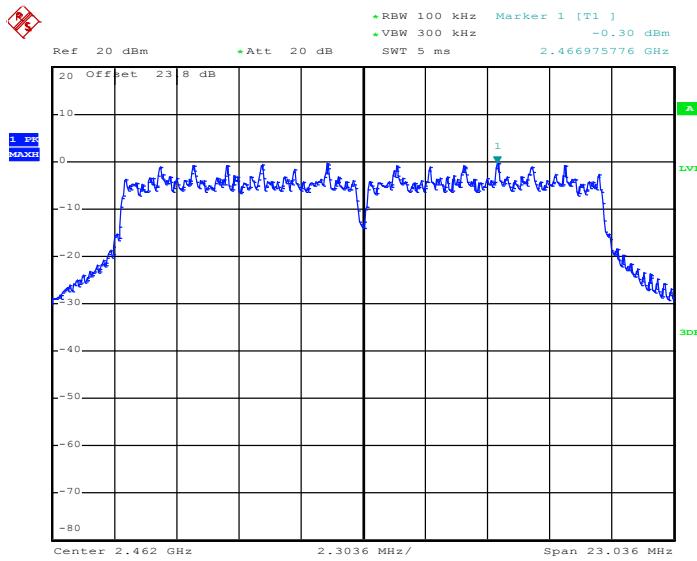
PSD 100kHz Plot on Channel 10



Date: 12.SEP.2012 03:25:02

802.11n HT20 – MIMO Chain 1+2(2)

PSD 100kHz Plot on Channel 11

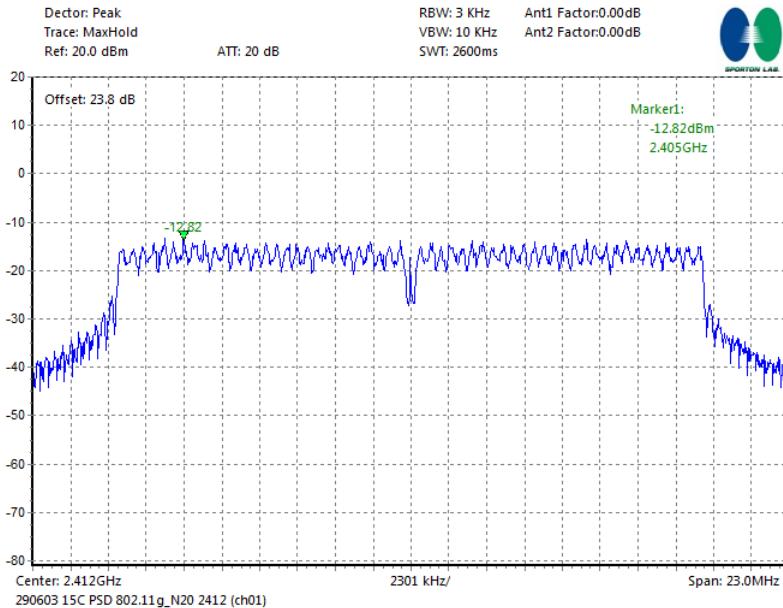


Date: 12.SEP.2012 03:14:54



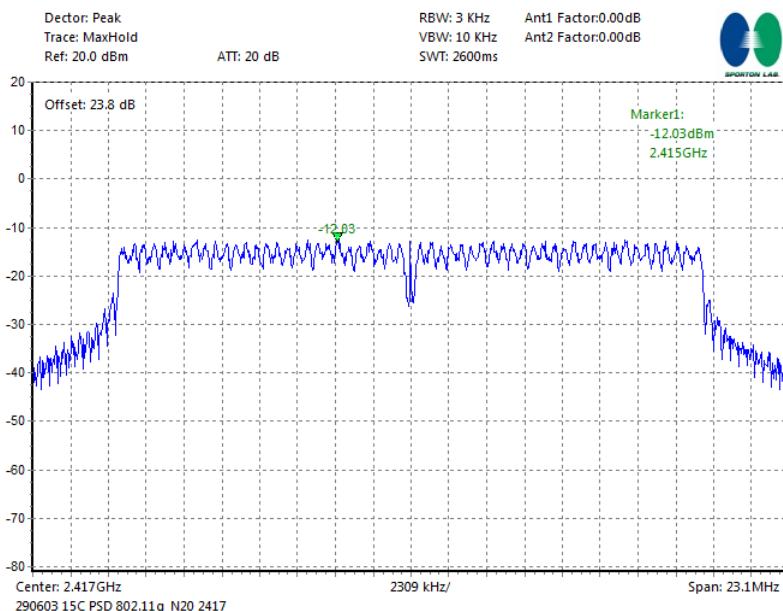
802.11n HT20 – MIMO Chain 1+2

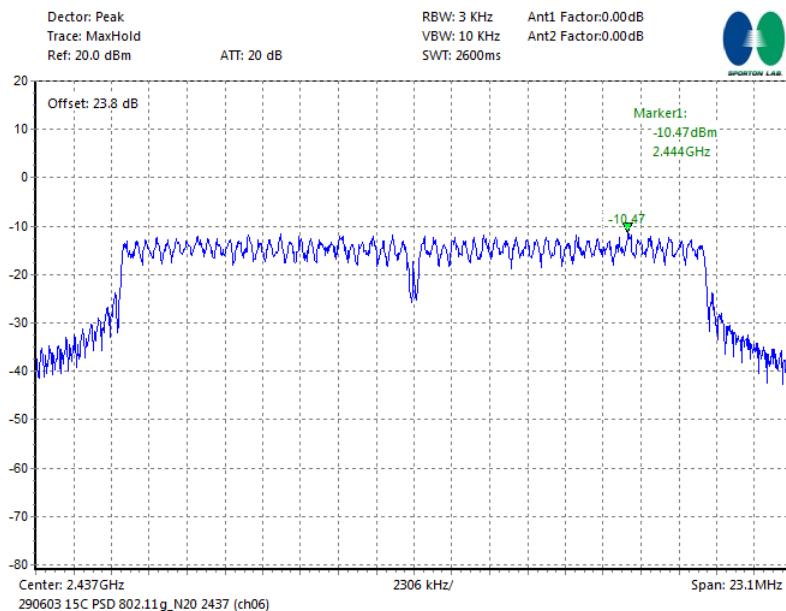
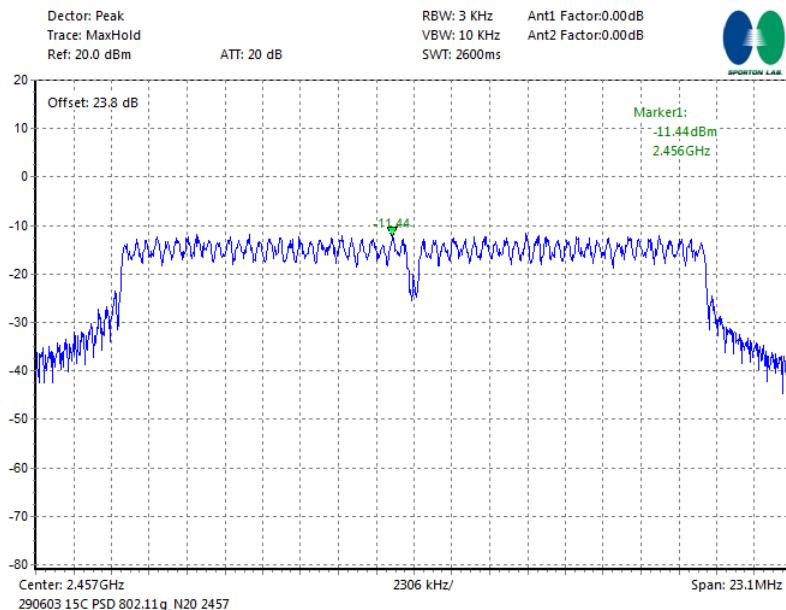
PSD 3kHz Plot on Channel 01



802.11n HT20 – MIMO Chain 1+2

PSD 3kHz Plot on Channel 02



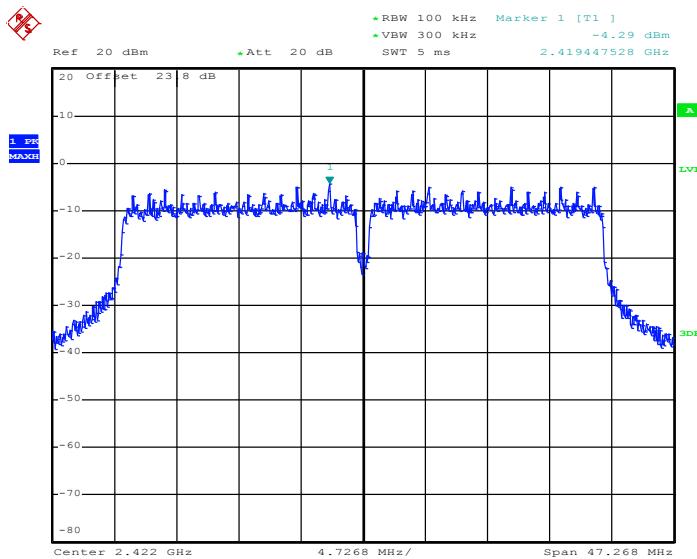
**802.11n HT20 – MIMO Chain 1+2****PSD 3kHz Plot on Channel 06****802.11n HT20 – MIMO Chain 1+2****PSD 3kHz Plot on Channel 10**



<2.4GHz 802.11n HT40>

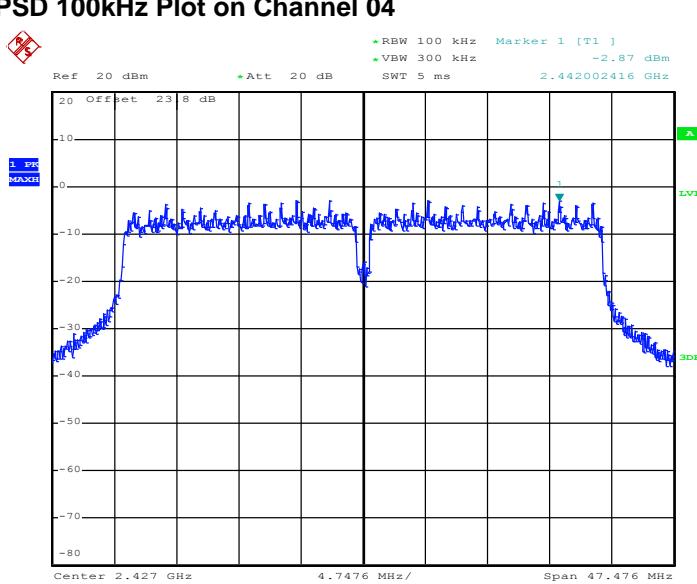
802.11n HT40 – MIMO Chain 1+2(1)

PSD 100kHz Plot on Channel 03



802.11n HT40 – MIMO Chain 1+2(1)

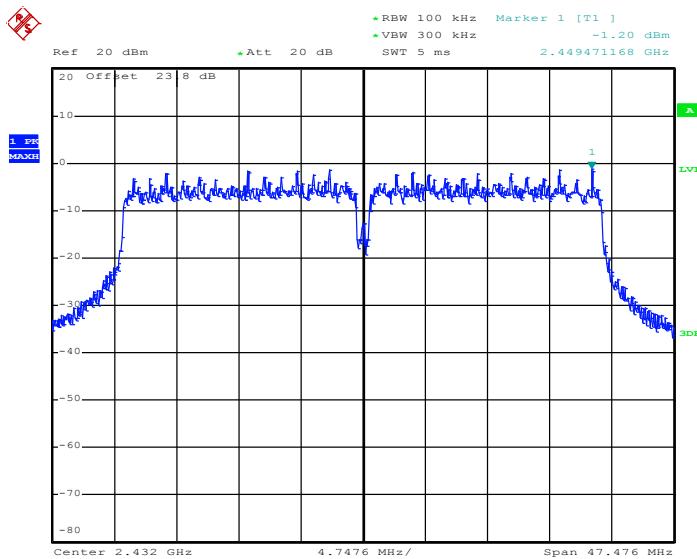
PSD 100kHz Plot on Channel 04





802.11n HT40 – MIMO Chain 1+2(1)

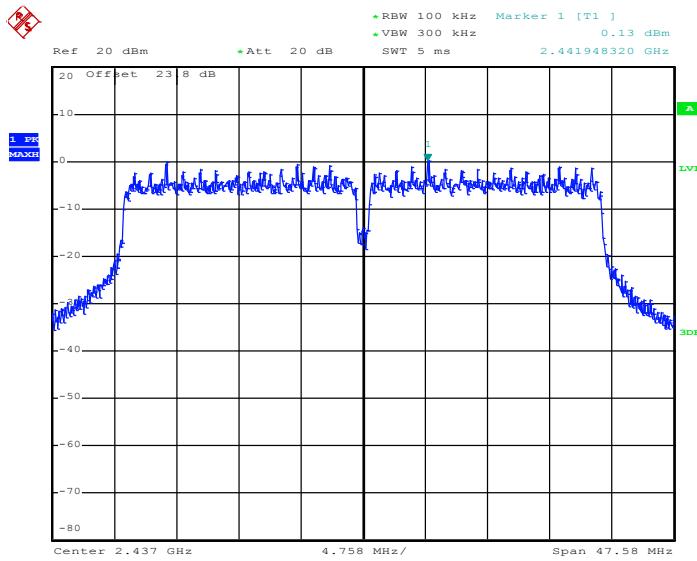
PSD 100kHz Plot on Channel 05



Date: 12.SEP.2012 05:04:41

802.11n HT40 – MIMO Chain 1+2(1)

PSD 100kHz Plot on Channel 06

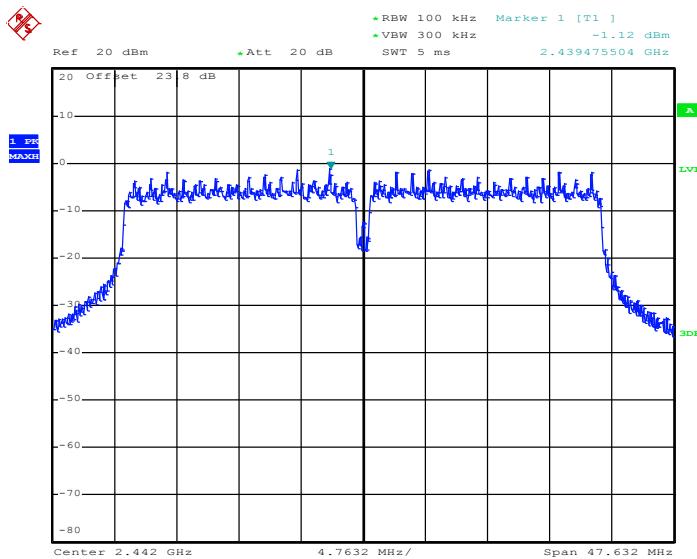


Date: 12.SEP.2012 04:55:28



802.11n HT40 – MIMO Chain 1+2(1)

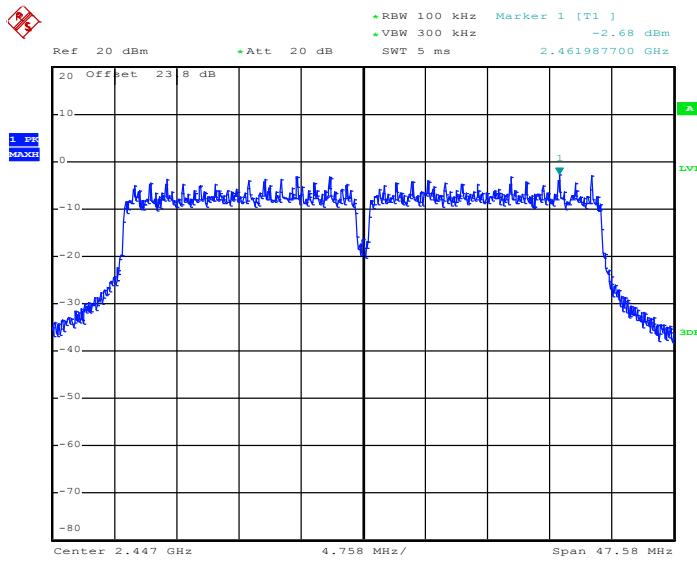
PSD 100kHz Plot on Channel 07



Date: 12.SEP.2012 04:52:12

802.11n HT40 – MIMO Chain 1+2(1)

PSD 100kHz Plot on Channel 08

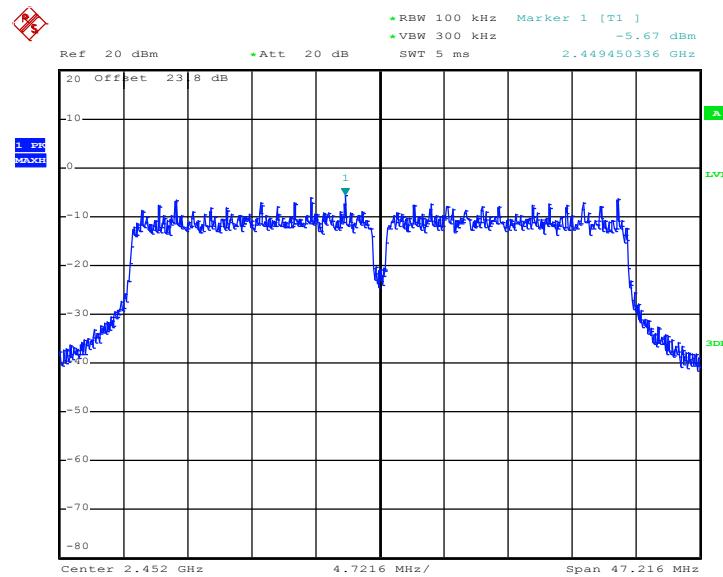


Date: 12.SEP.2012 04:43:44



802.11n HT40 – MIMO Chain 1+2(1)

PSD 100kHz Plot on Channel 09

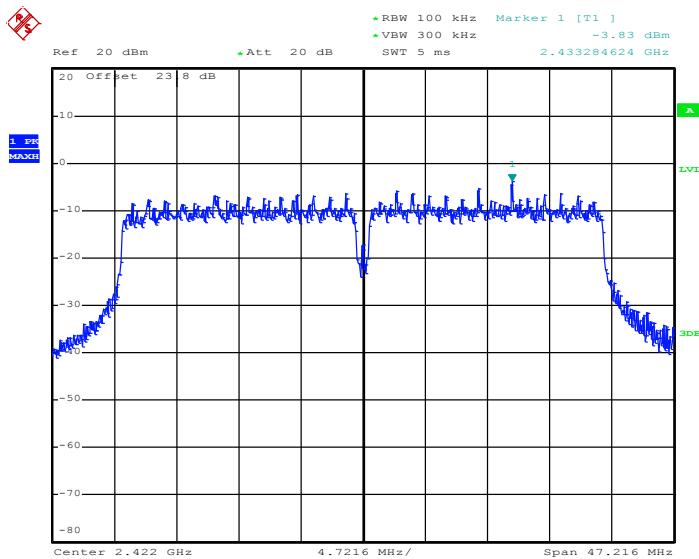


Date: 12.SEP.2012 04:40:45



802.11n HT40 – MIMO Chain 1+2(2)

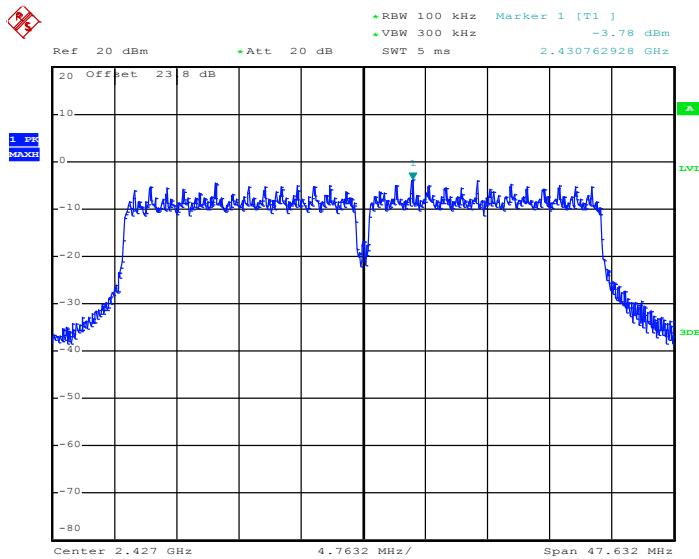
PSD 100kHz Plot on Channel 03



Date: 12.SEP.2012 05:15:15

802.11n HT40 – MIMO Chain 1+2(2)

PSD 100kHz Plot on Channel 04

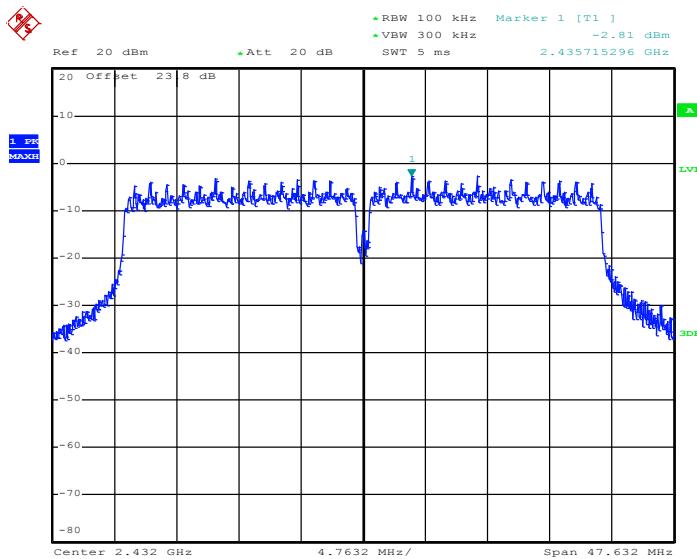


Date: 12.SEP.2012 05:10:19



802.11n HT40 – MIMO Chain 1+2(2)

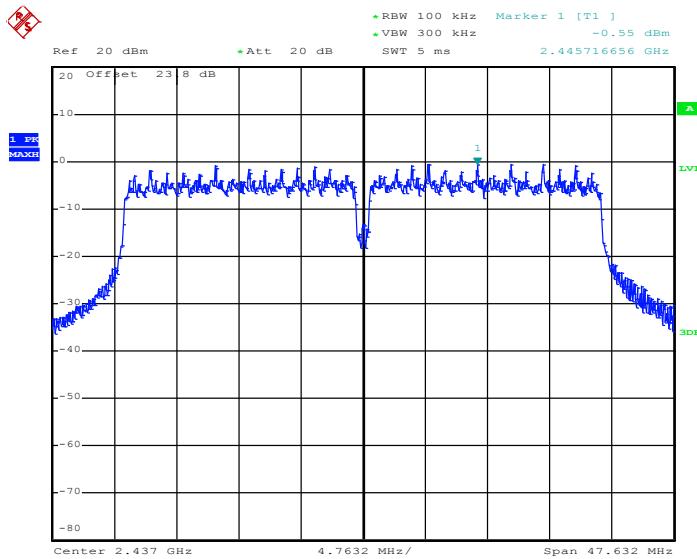
PSD 100kHz Plot on Channel 05



Date: 12.SEP.2012 05:01:08

802.11n HT40 – MIMO Chain 1+2(2)

PSD 100kHz Plot on Channel 06

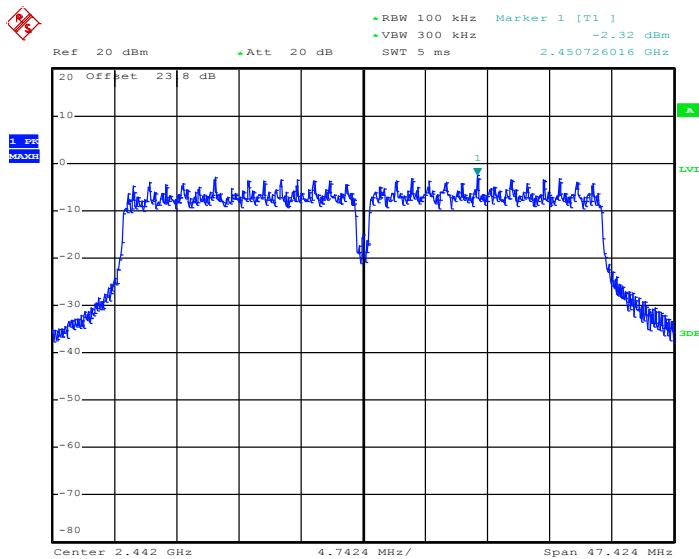


Date: 12.SEP.2012 04:57:47



802.11n HT40 – MIMO Chain 1+2(2)

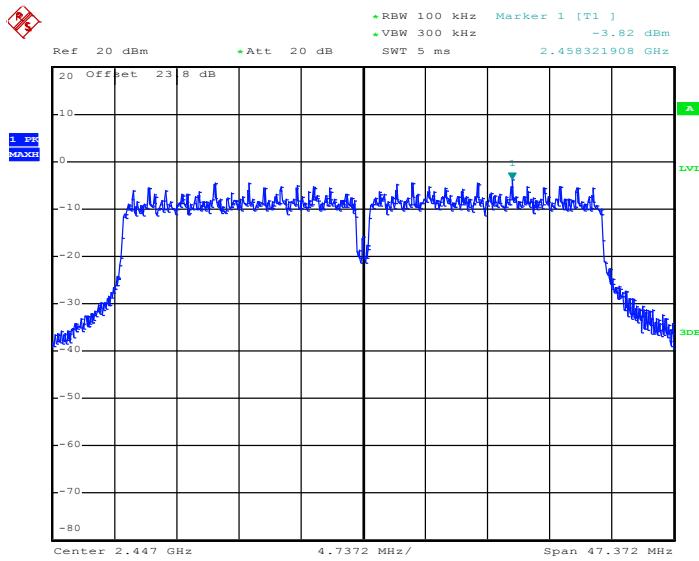
PSD 100kHz Plot on Channel 07



Date: 12.SEP.2012 04:49:42

802.11n HT40 – MIMO Chain 1+2(2)

PSD 100kHz Plot on Channel 08

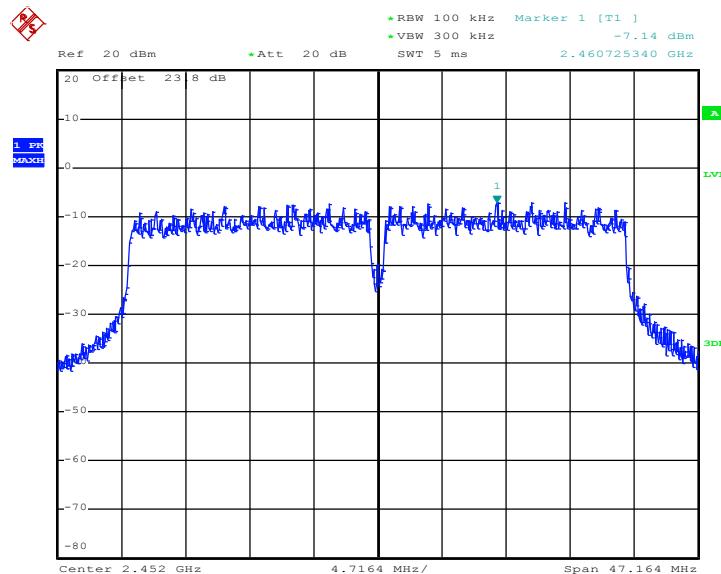


Date: 12.SEP.2012 04:45:47



802.11n HT40 – MIMO Chain 1+2(2)

PSD 100kHz Plot on Channel 09



Date: 12.SEP.2012 04:36:39

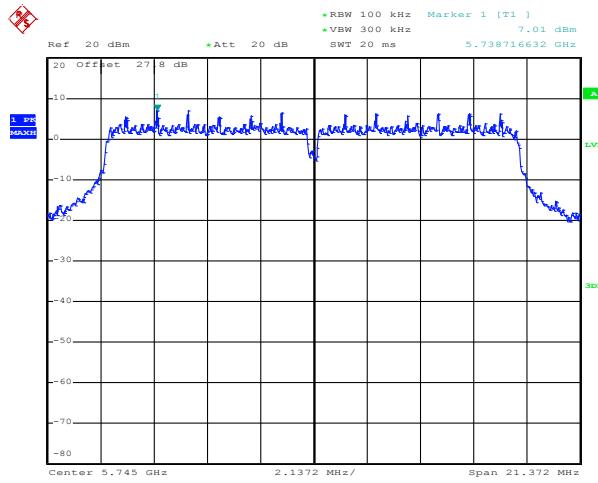


<Antenna 7 for 4.5V>

<802.11a>

802.11a – MIMO Chain 1+2(1)

PSD 100kHz Plot on Channel 149

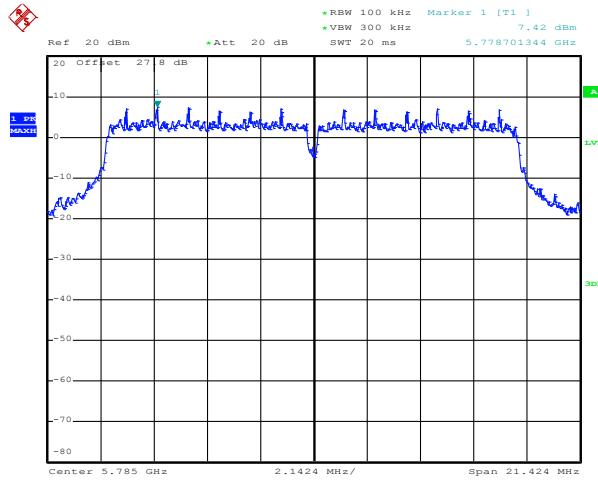


290603 15C PSD 802.11a 5745 (ch149)

Date: 3.OCT.2012 06:48:59

802.11a – MIMO Chain 1+2(1)

PSD 100kHz Plot on Channel 157



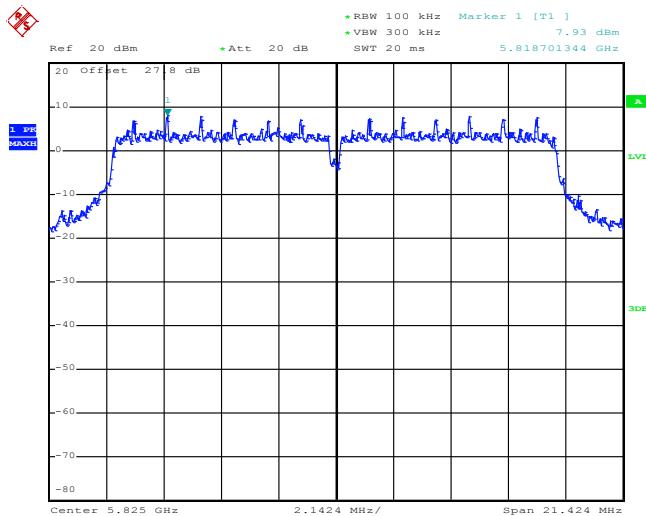
290603 15C PSD 802.11a 5785 (ch157)

Date: 3.OCT.2012 06:52:26



802.11a – MIMO Chain 1+2(1)

PSD 100kHz Plot on Channel 165

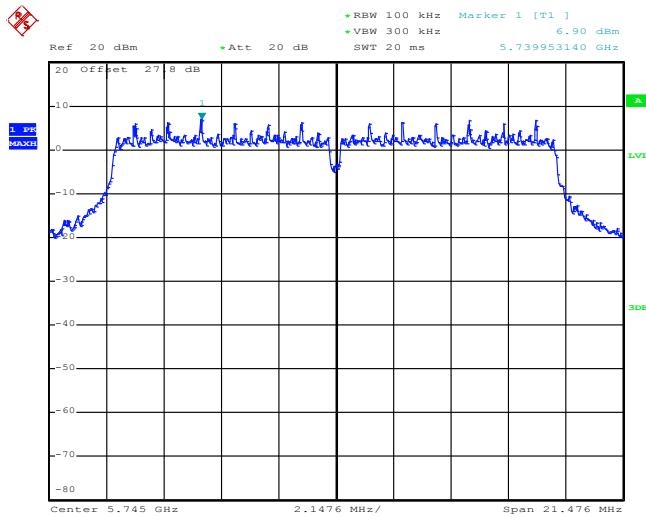


290603 15C PSD 802.11a 5825 (ch165)

Date: 3.OCT.2012 07:03:09

802.11a – MIMO Chain 1+2(2)

PSD 100kHz Plot on Channel 149



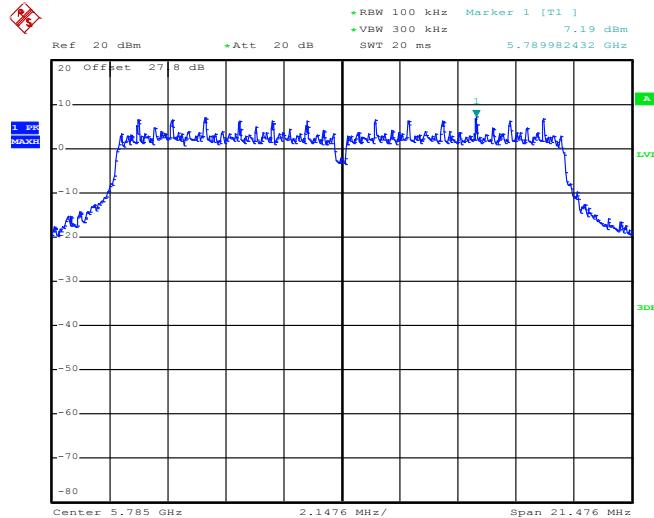
290603 15C PSD 802.11a 5745 (ch149)

Date: 3.OCT.2012 06:45:45



802.11a – MIMO Chain 1+2(2)

PSD 100kHz Plot on Channel 157

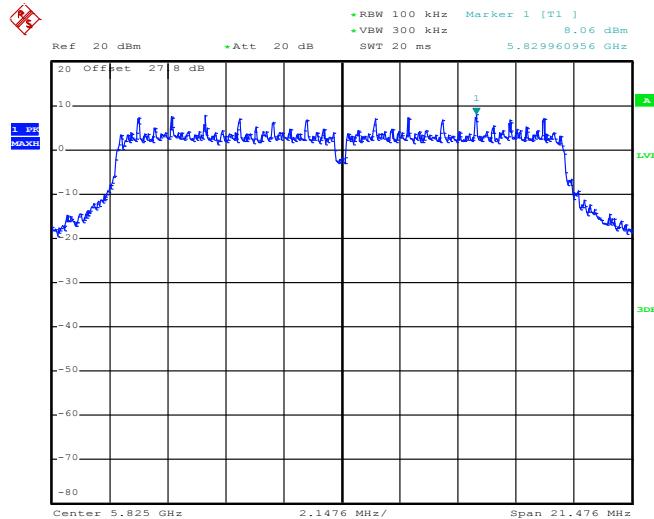


290603 15C PSD 802.11a 5785 (ch157)

Date: 3.OCT.2012 06:56:06

802.11a – MIMO Chain 1+2(2)

PSD 100kHz Plot on Channel 165



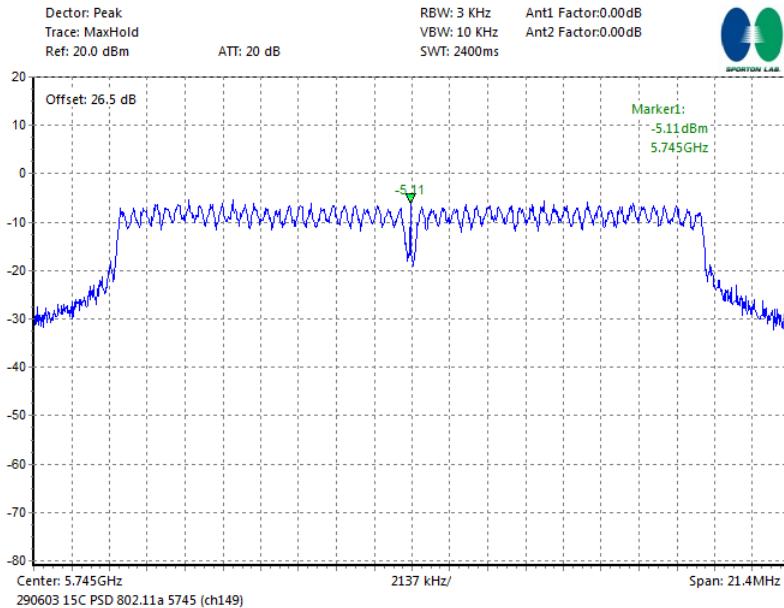
290603 15C PSD 802.11a 5825 (ch165)

Date: 3.OCT.2012 06:59:43



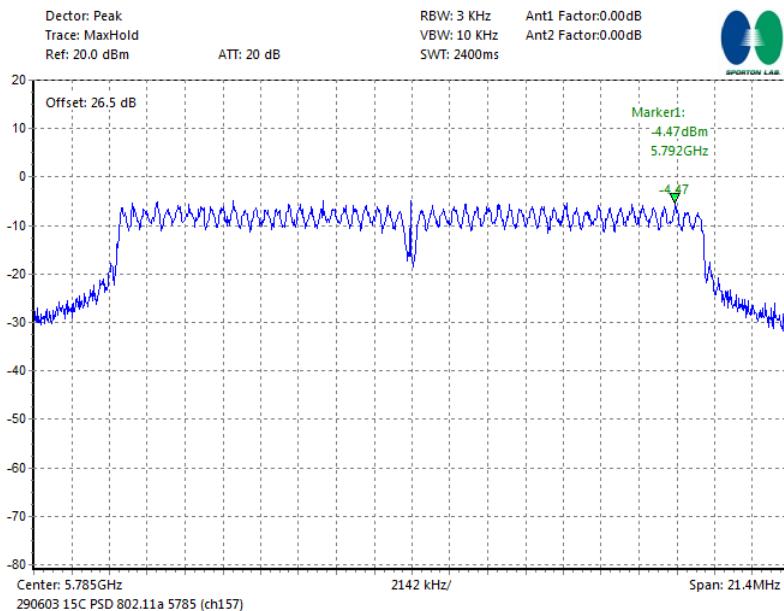
802.11a – MIMO Chain 1+2

PSD 3kHz Plot on Channel 149



802.11a – MIMO Chain 1+2

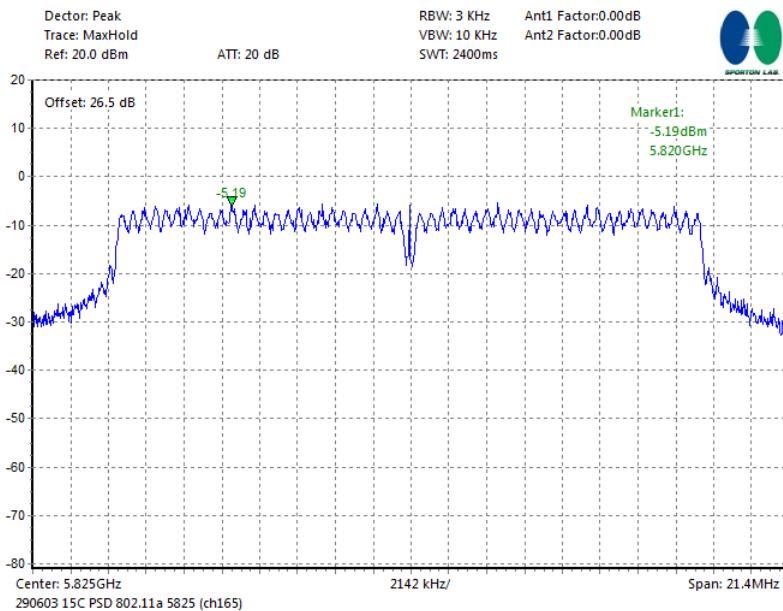
PSD 3kHz Plot on Channel 157





802.11a – MIMO Chain 1+2

PSD 3kHz Plot on Channel 165

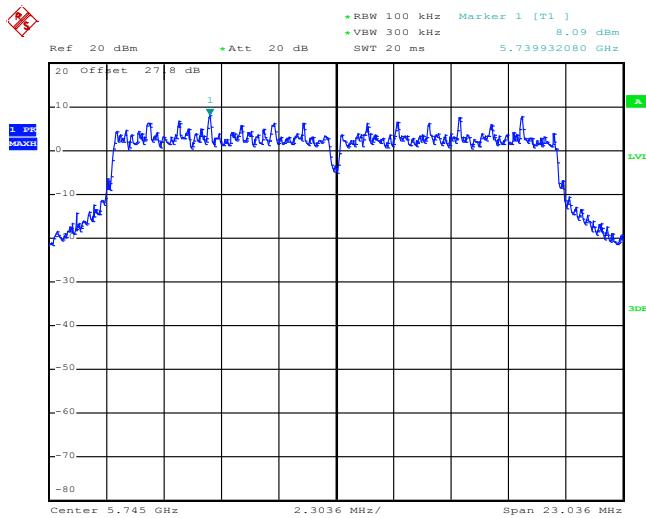




<5GHz 802.11n HT20>

802.11n HT20 – MIMO Chain 1+2(1)

PSD 100kHz Plot on Channel 149

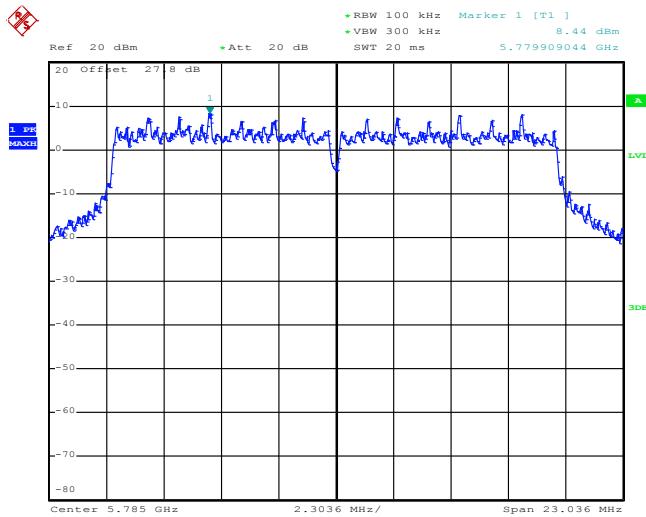


290603 15C PSD 802.11a_N20 5745 (ch149)

Date: 3.OCT.2012 07:19:42

802.11n HT20 –MIMO Chain 1+2(1)

PSD 100kHz Plot on Channel 157



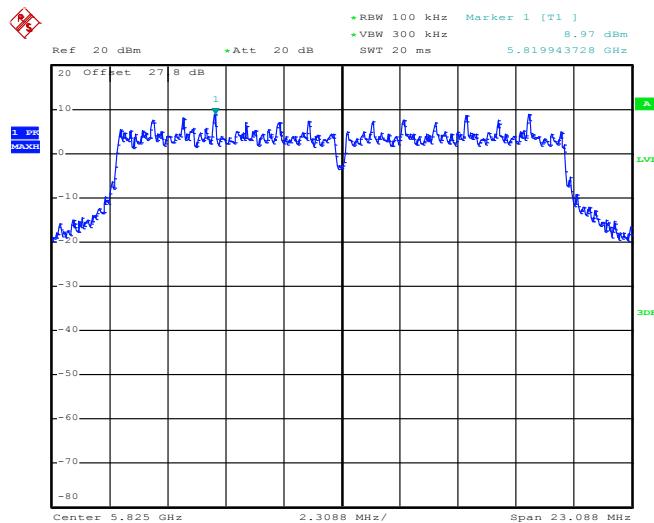
290603 15C PSD 802.11a_N20 5785 (ch157)

Date: 3.OCT.2012 07:16:47



802.11n HT20 – MIMO Chain 1+2(1)

PSD 100kHz Plot on Channel 165

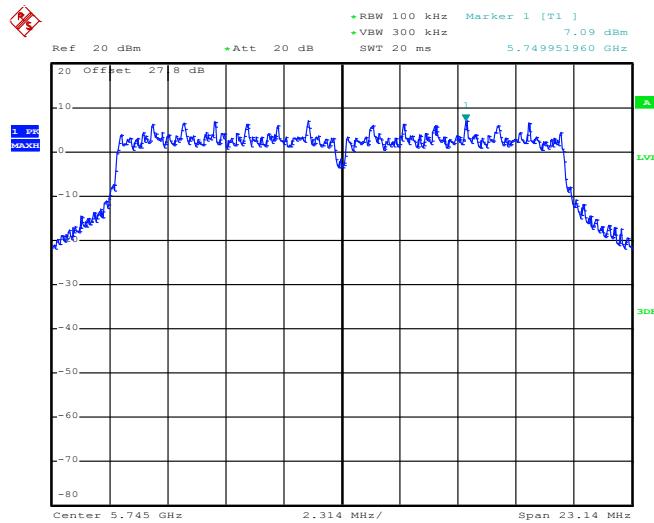


290603 15C PSD 802.11a_N20 5825 (ch165)

Date: 3.OCT.2012 07:05:57

802.11n HT20 – MIMO Chain 1+2(2)

PSD 100kHz Plot on Channel 149



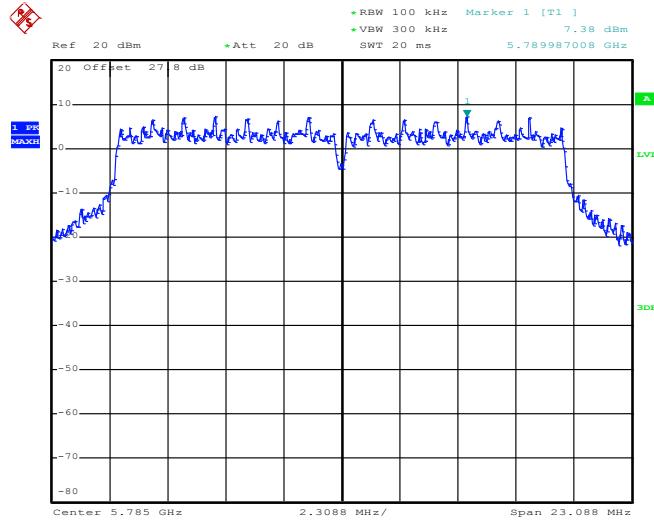
290603 15C PSD 802.11a_N20 5745 (ch149)

Date: 3.OCT.2012 07:22:29



802.11n HT20 – MIMO Chain 1+2(2)

PSD 100kHz Plot on Channel 157

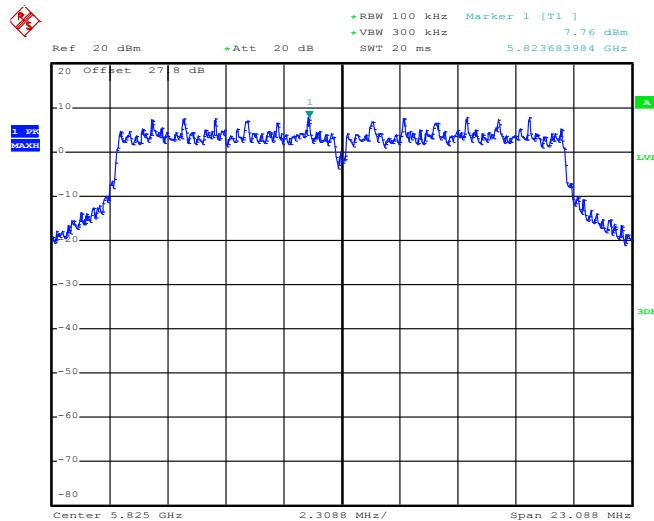


290603 15C PSD 802.11a_N20 5785 (ch157)

Date: 3.OCT.2012 07:12:06

802.11n HT20 – MIMO Chain 1+2(2)

PSD 100kHz Plot on Channel 165



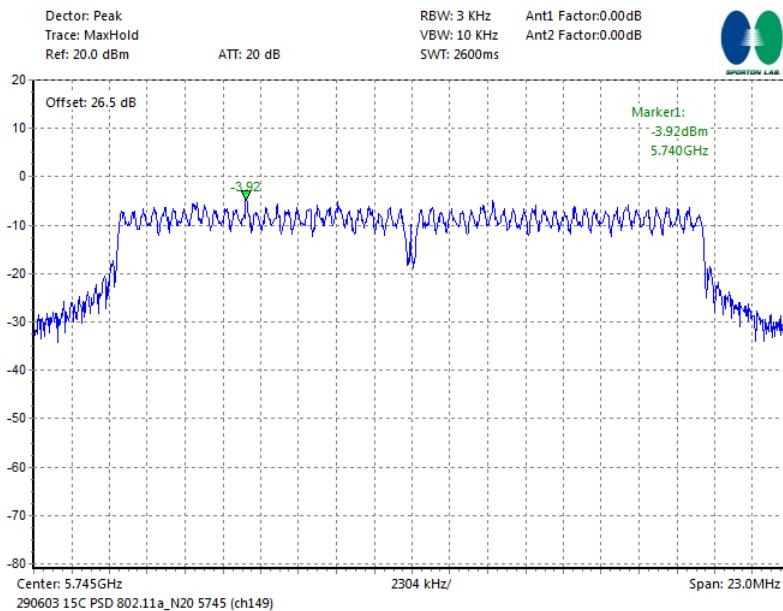
290603 15C PSD 802.11a_N20 5825 (ch165)

Date: 3.OCT.2012 07:08:56



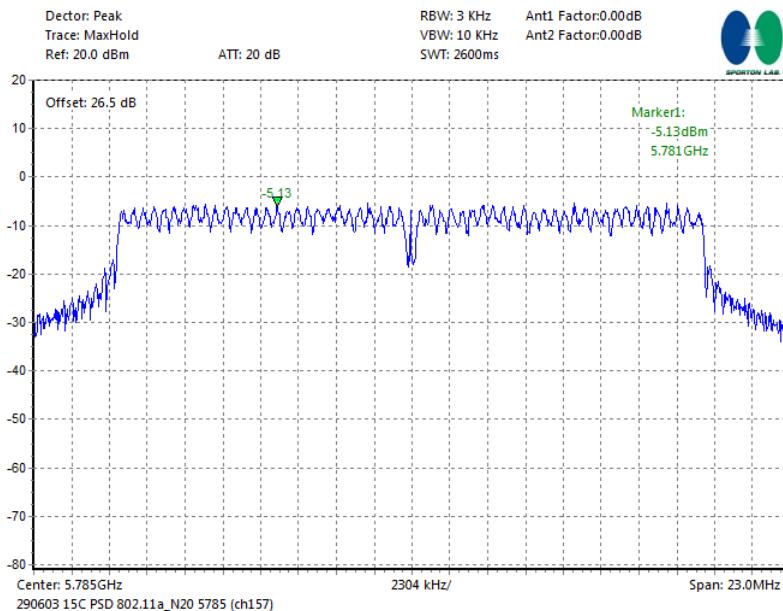
802.11n HT20 – MIMO Chain 1+2

PSD 3kHz Plot on Channel 149



802.11n HT20 – MIMO Chain 1+2

PSD 3kHz Plot on Channel 157





802.11n HT20 – MIMO Chain 1+2

PSD 3kHz Plot on Channel 165

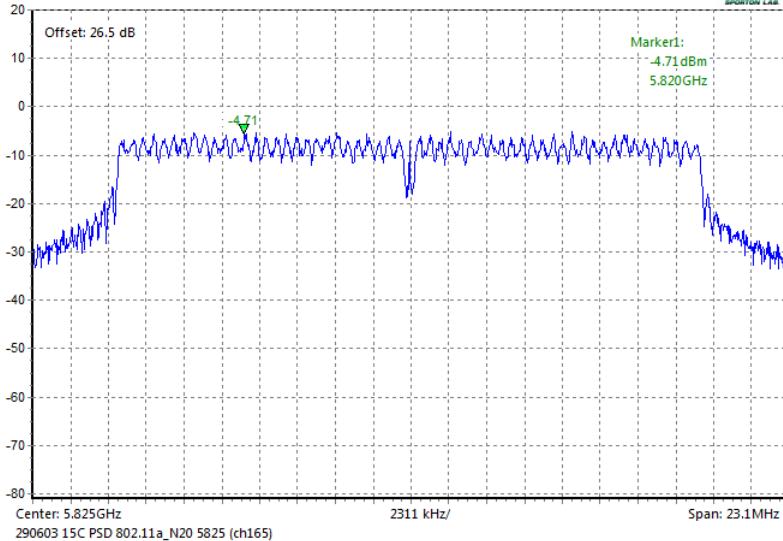
Detector: Peak
Trace: MaxHold
Ref: 20.0 dBm

ATT: 20 dB

RBW: 3 KHz
VBW: 10 KHz
SWT: 2600ms

Ant1 Factor: 0.00dB

Ant2 Factor: 0.00dB

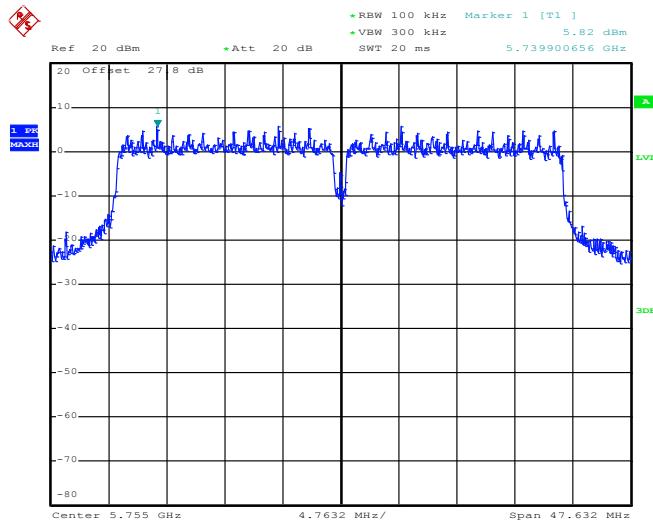




<5GHz 802.11n HT40>

802.11n HT40 – MIMO Chain 1+2(1)

PSD 100kHz Plot on Channel 151

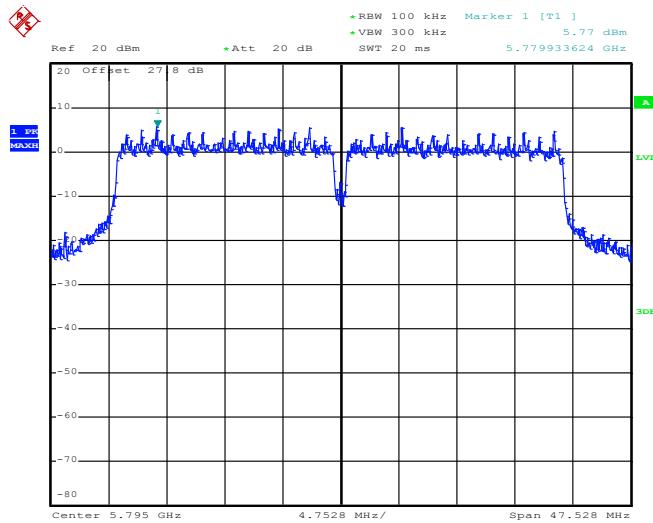


290603 15C PSD 802.11a_N40 5755

Date: 3.OCT.2012 06:35:38

802.11n HT40 – MIMO Chain 1+2(1)

PSD 100kHz Plot on Channel 159



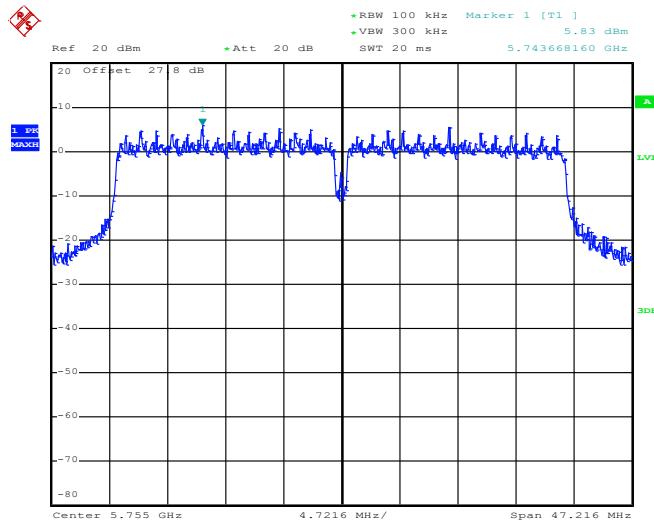
290603 15C PSD 802.11a_N40 5795

Date: 3.OCT.2012 06:39:04



802.11n HT40 – MIMO Chain 1+2(2)

PSD 100kHz Plot on Channel 151

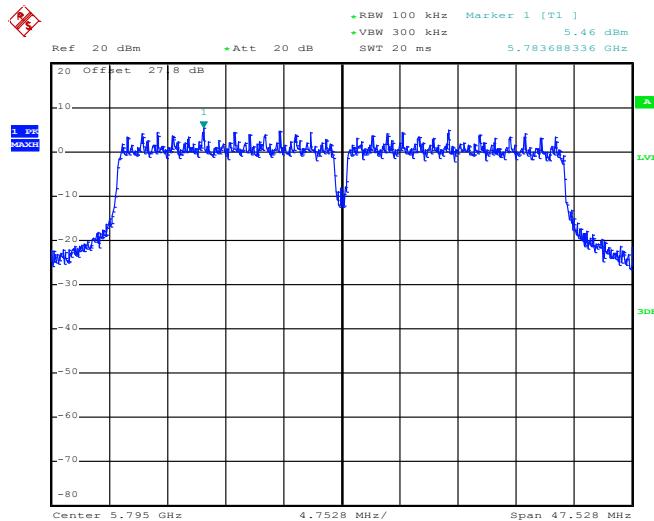


290603 15C PSD 802.11a_N40 5755

Date: 3.OCT.2012 06:31:11

802.11n HT40 – MIMO Chain 1+2(2)

PSD 100kHz Plot on Channel 159



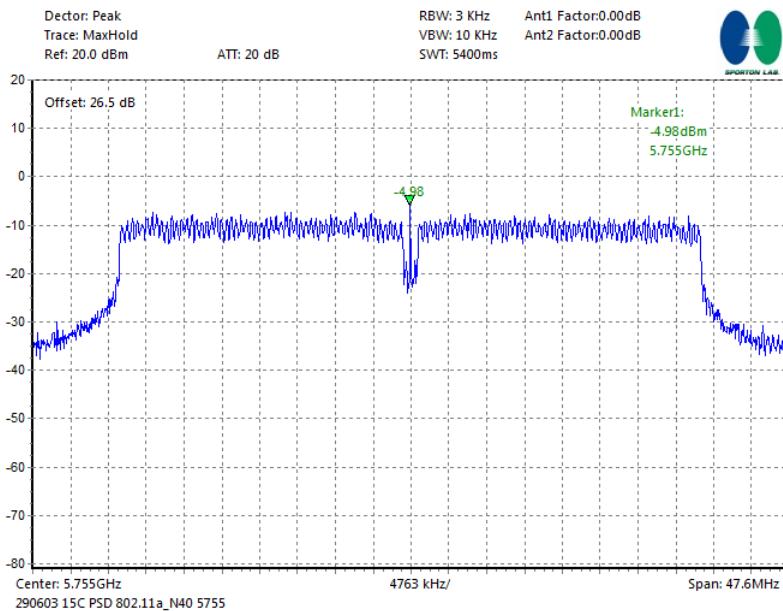
290603 15C PSD 802.11a_N40 5795

Date: 3.OCT.2012 06:41:55



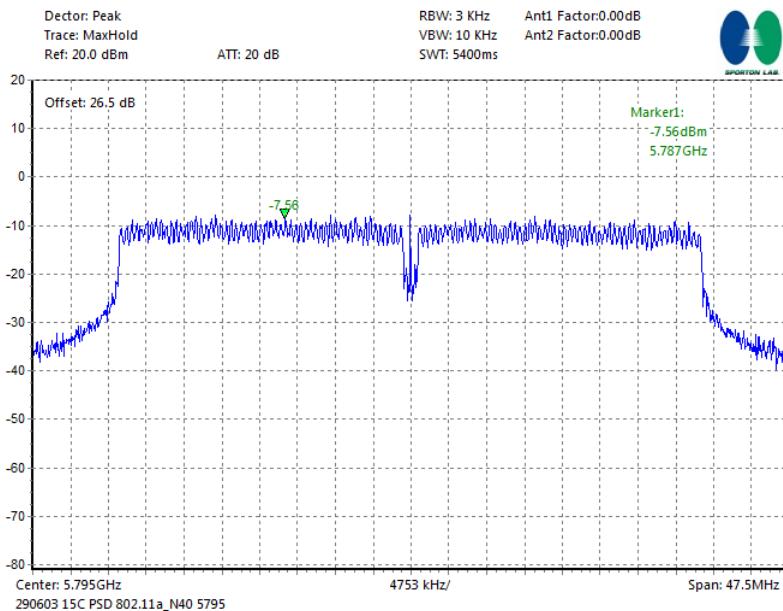
802.11n HT40 – MIMO Chain 1+2

PSD 3kHz Plot on Channel 151



802.11n HT40 – MIMO Chain 1+2

PSD 3kHz Plot on Channel 159



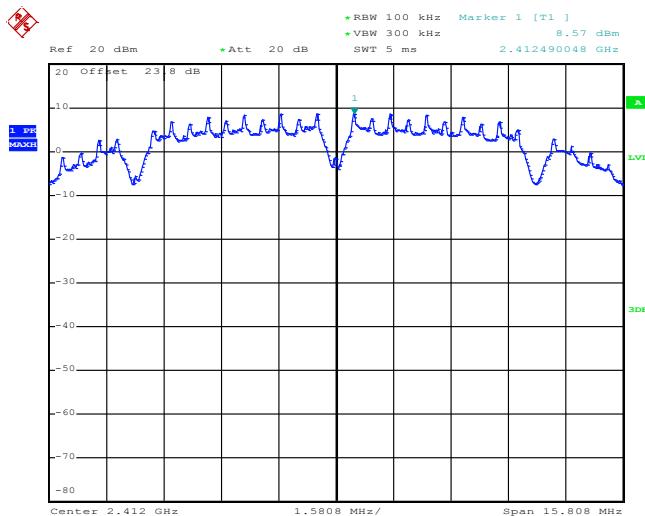


<Antenna 8 for 4.5V>

<802.11b>

802.11b – MIMO Chain 1+2(1)

PSD 100kHz Plot on Channel 01

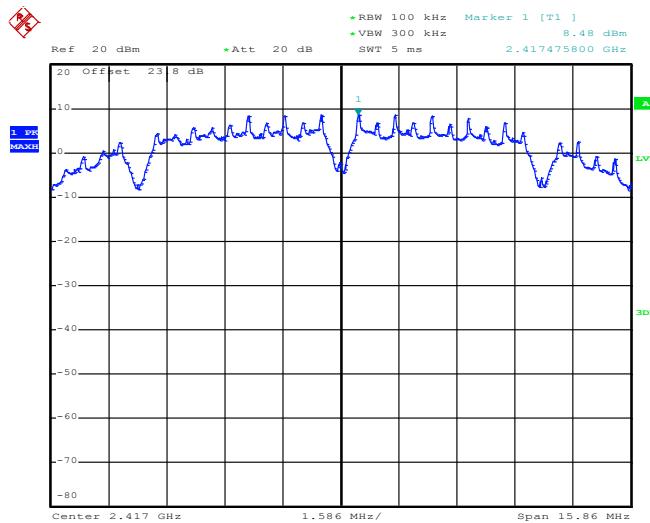


290603 15C PSD 802.11b 2412

Date: 2.OCT.2012 00:51:28

802.11b – MIMO Chain 1+2(1)

PSD 100kHz Plot on Channel 02



290603 15C PSD 802.11b 2417

Date: 2.OCT.2012 01:08:29



802.11b – MIMO Chain 1+2(1)

PSD 100kHz Plot on Channel 06

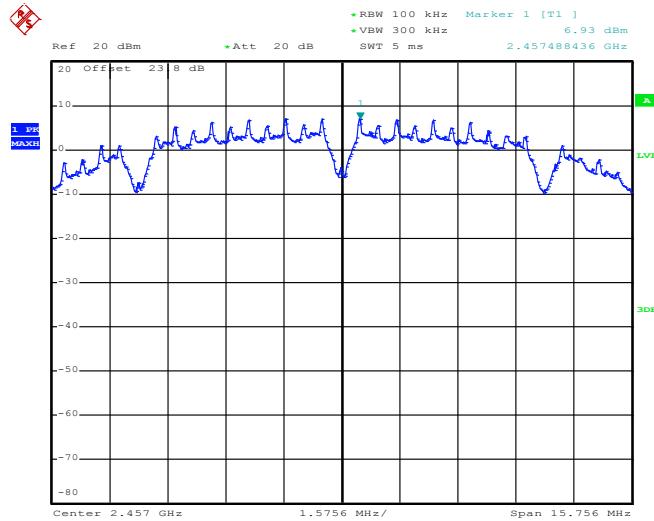


290603 15C PSD 802.11b 2437

Date: 2.OCT.2012 01:14:37

802.11b – MIMO Chain 1+2(1)

PSD 100kHz Plot on Channel 10



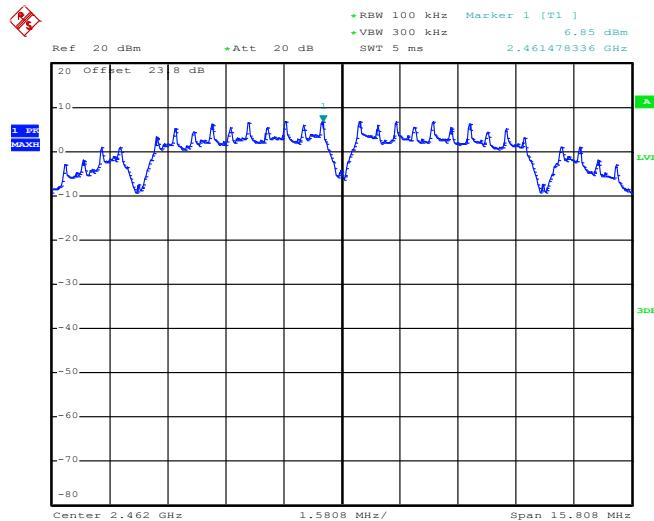
290603 15C PSD 802.11b 2457

Date: 2.OCT.2012 01:26:19



802.11b – MIMO Chain 1+2(1)

PSD 100kHz Plot on Channel 11

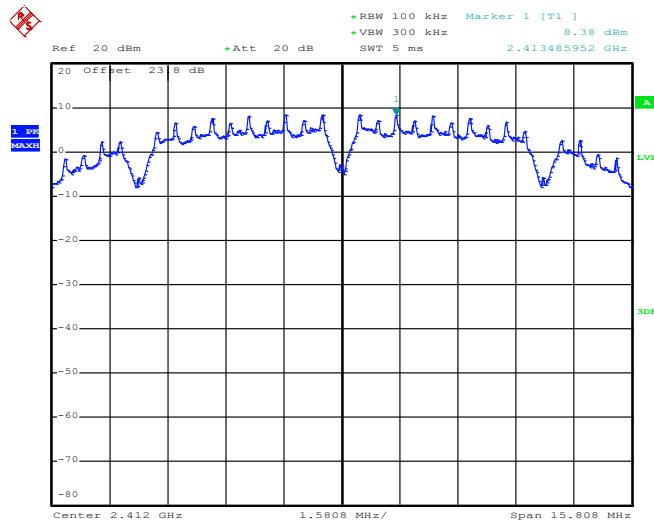


290603 15C PSD 802.11b 2462

Date: 2.OCT.2012 01:33:24

802.11b – MIMO Chain 1+2(2)

PSD 100kHz Plot on Channel 01



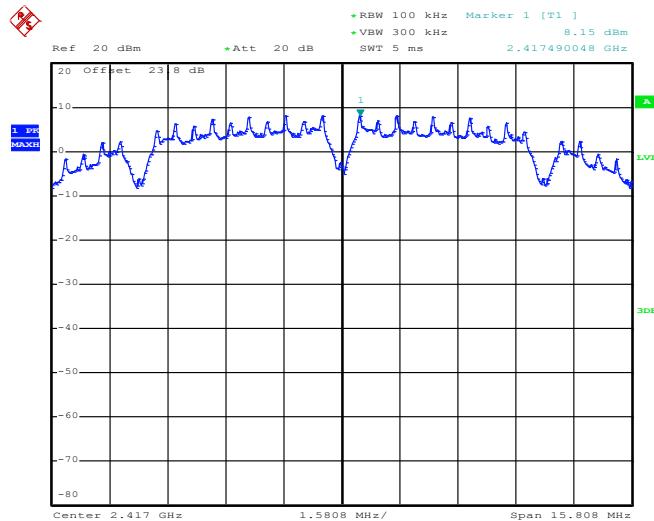
290603 15C PSD 802.11b 2412

Date: 2.OCT.2012 00:55:49



802.11b – MIMO Chain 1+2(2)

PSD 100kHz Plot on Channel 02

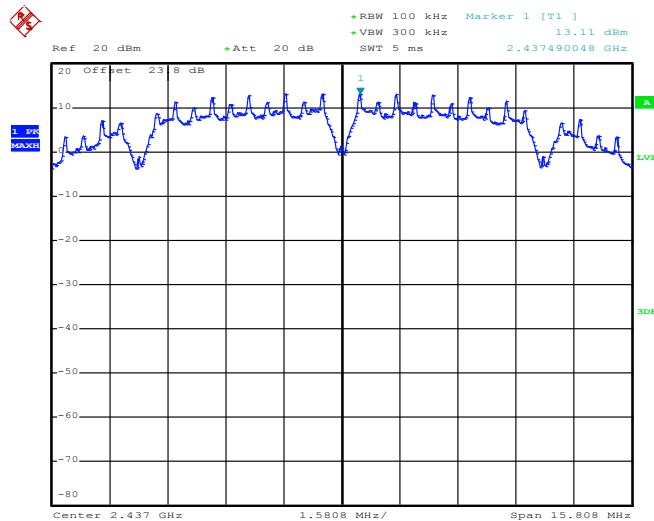


290603 15C PSD 802.11b 2417

Date: 2.OCT.2012 01:01:02

802.11b – MIMO Chain 1+2(2)

PSD 100kHz Plot on Channel 06



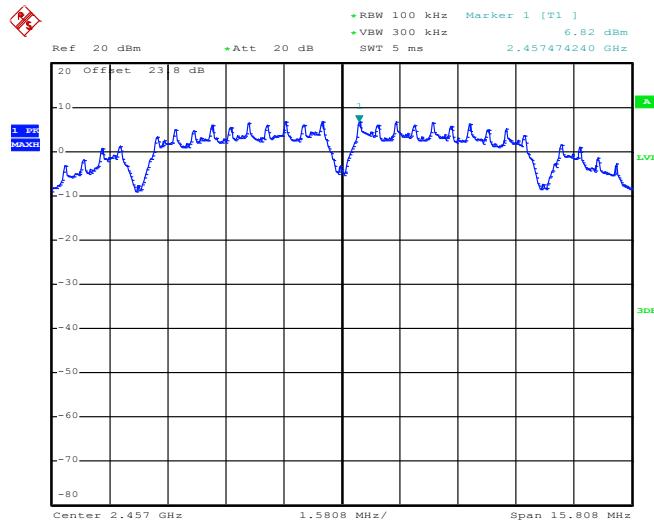
290603 15C PSD 802.11b 2437

Date: 2.OCT.2012 01:19:35



802.11b – MIMO Chain 1+2(2)

PSD 100kHz Plot on Channel 10

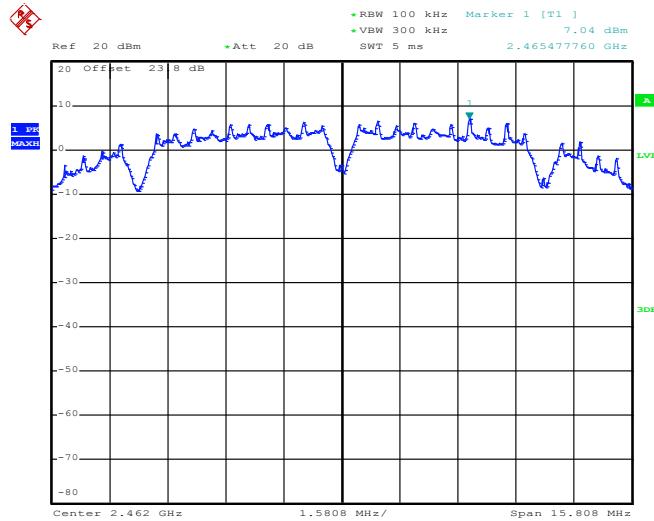


290603 15C PSD 802.11b 2457

Date: 2.OCT.2012 01:23:07

802.11b – MIMO Chain 1+2(2)

PSD 100kHz Plot on Channel 11



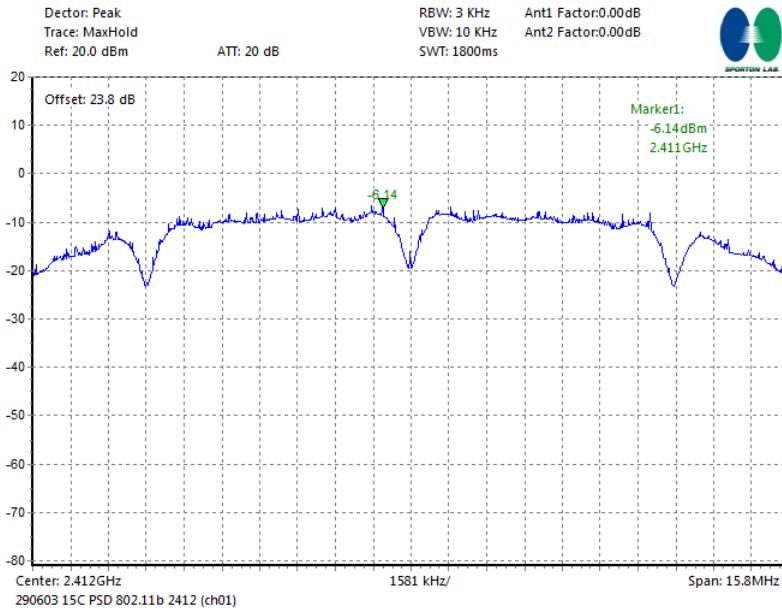
290603 15C PSD 802.11b 2462

Date: 2.OCT.2012 01:36:33



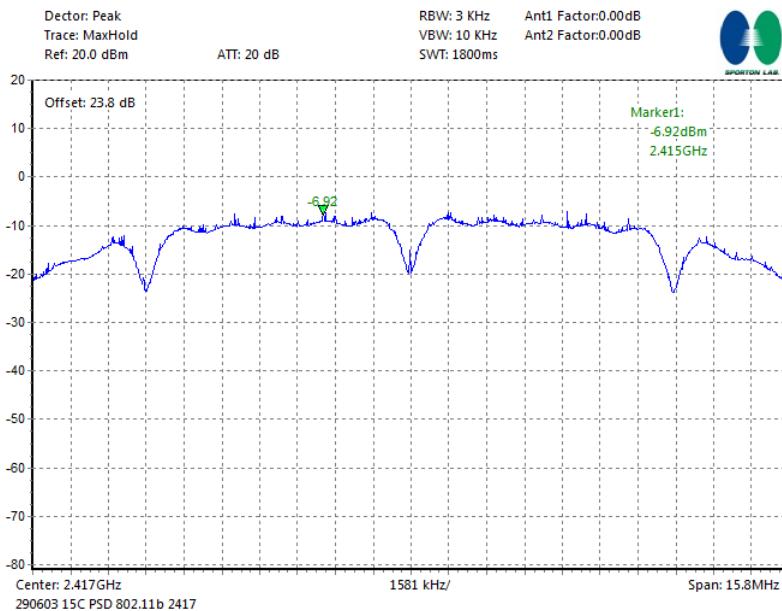
802.11b – MIMO Chain 1+2

PSD 100kHz Plot on Channel 01



802.11b – MIMO Chain 1+2

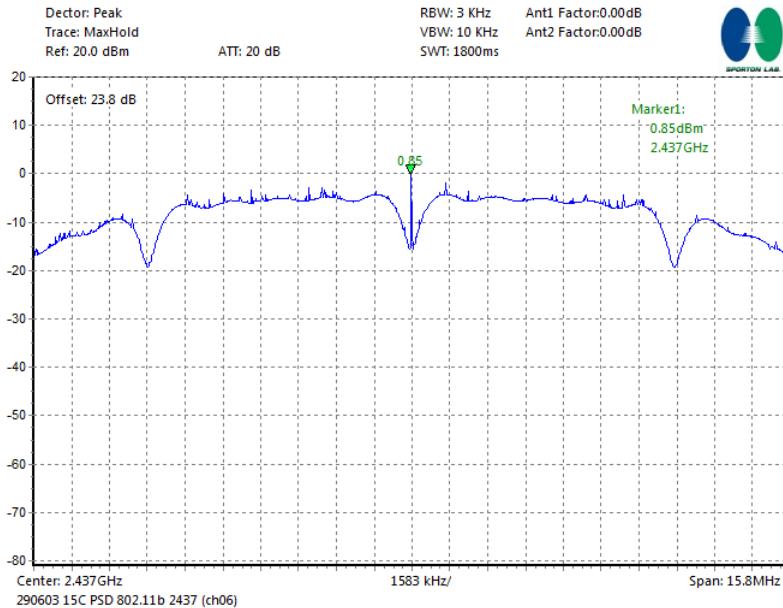
PSD 100kHz Plot on Channel 02





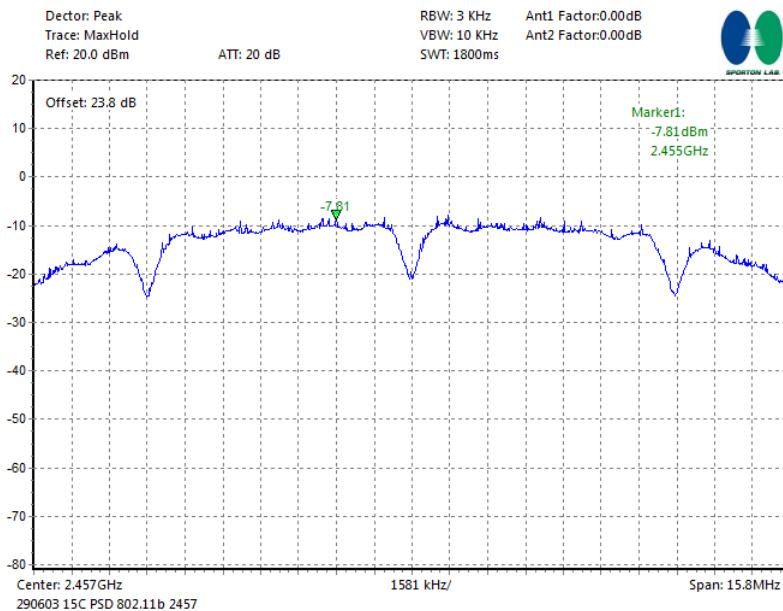
802.11b – MIMO Chain 1+2

PSD 100kHz Plot on Channel 06



802.11b – MIMO Chain 1+2

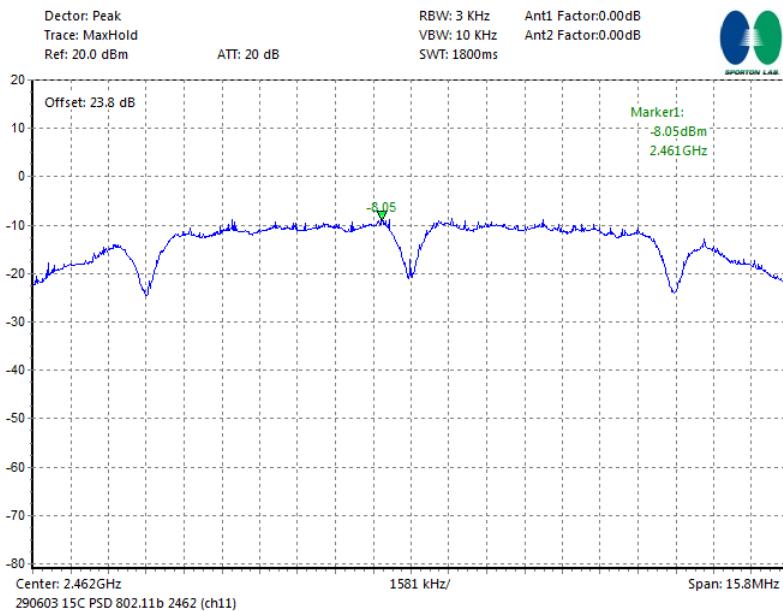
PSD 100kHz Plot on Channel 10





802.11b – MIMO Chain 1+2

PSD 100kHz Plot on Channel 11

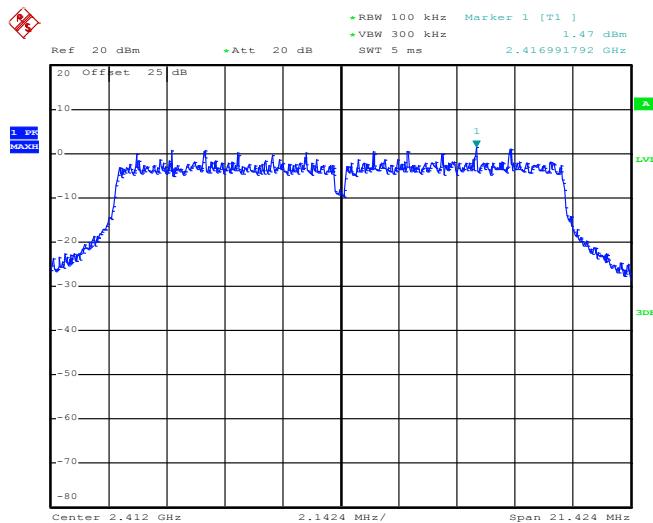




<802.11g>

802.11g – MIMO Chain 1+2(1)

PSD 100kHz Plot on Channel 01

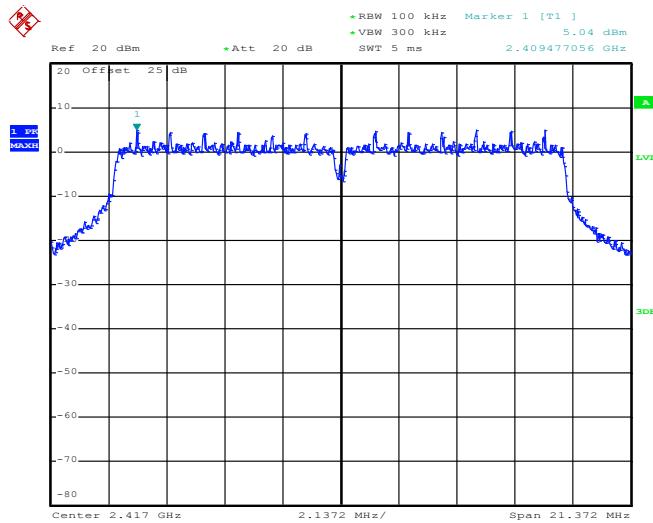


290603 15C PSD 802.11g 2412 (ch01)

Date: 2.OCT.2012 22:15:46

802.11g – MIMO Chain 1+2(1)

PSD 100kHz Plot on Channel 02

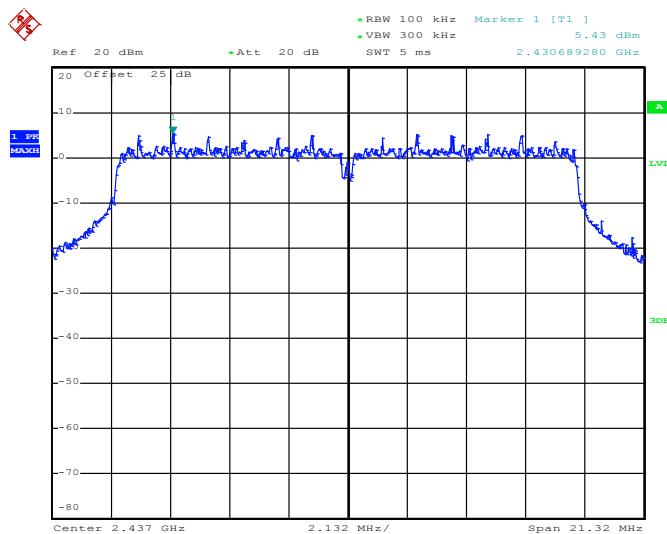


290603 15C PSD 802.11g 2417

Date: 2.OCT.2012 22:30:15

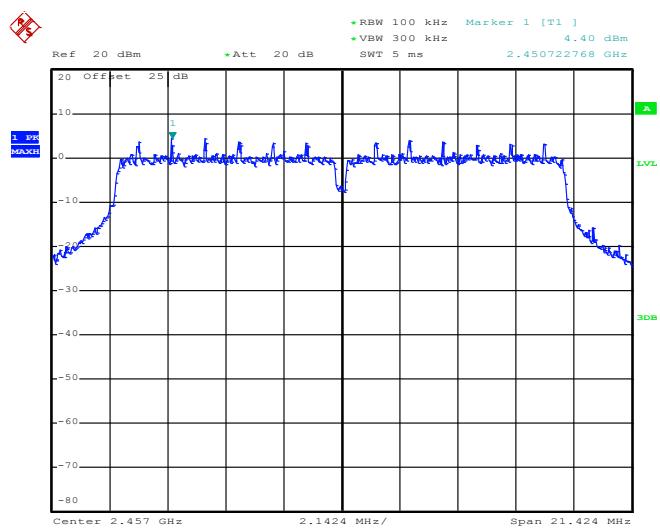


802.11g – MIMO Chain 1+2(1) PSD 100kHz Plot on Channel 06



290603 15C PSD 802.11g 2437 (ch06)
Date: 2.OCT.2012 22:36:26

802.11g – MIMO Chain 1+2(1) PSD 100kHz Plot on Channel 10

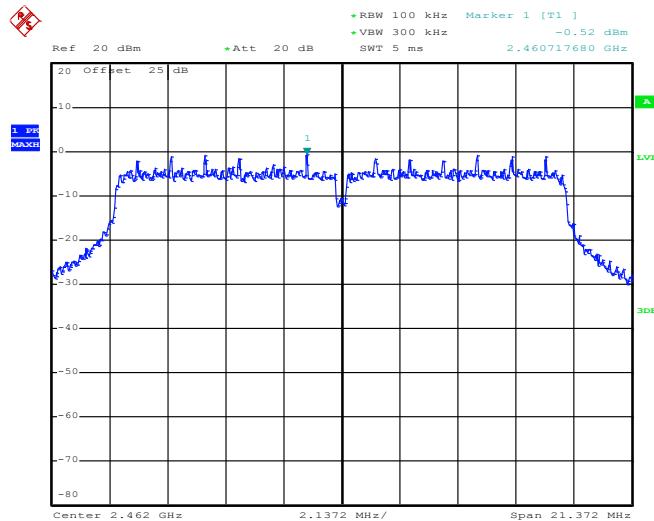


290603 15C PSD 802.11g 2457
Date: 2.OCT.2012 22:49:12



802.11g – MIMO Chain 1+2(1)

PSD 100kHz Plot on Channel 11

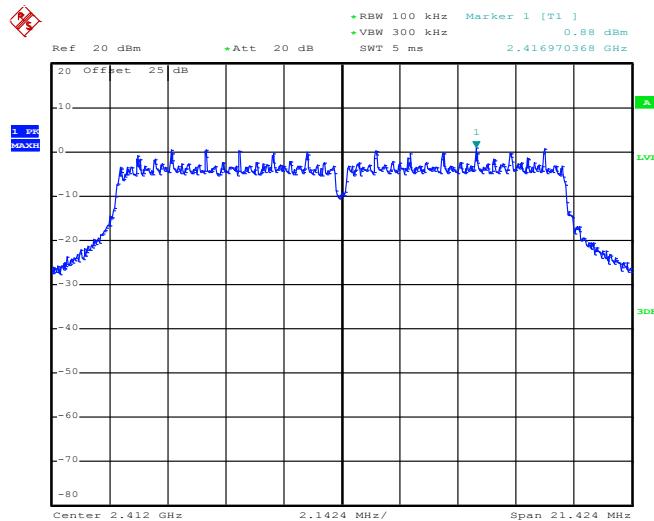


290603 15C PSD 802.11g 2462 (ch11)

Date: 2.OCT.2012 22:59:40

802.11g – MIMO Chain 1+2(2)

PSD 100kHz Plot on Channel 01



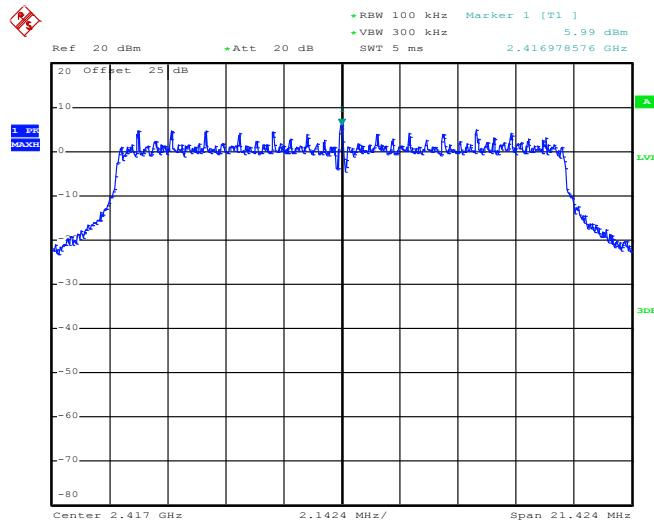
290603 15C PSD 802.11g 2412 (ch01)

Date: 2.OCT.2012 22:20:20



802.11g – MIMO Chain 1+2(2)

PSD 100kHz Plot on Channel 02

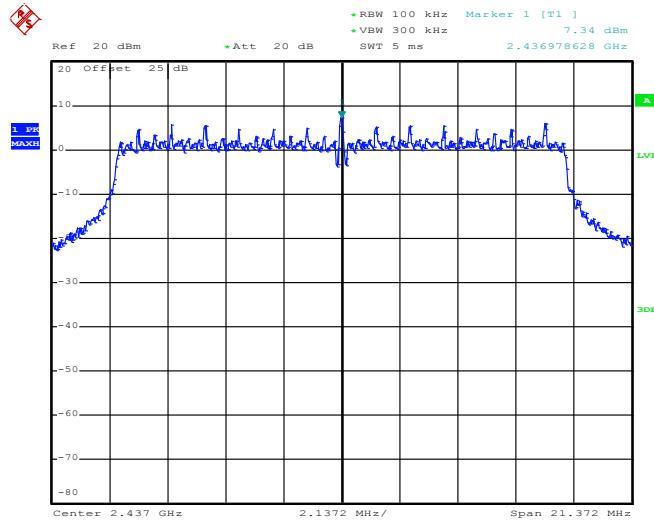


290603 15C PSD 802.11g 2417

Date: 2.OCT.2012 22:23:09

802.11g – MIMO Chain 1+2(2)

PSD 100kHz Plot on Channel 06



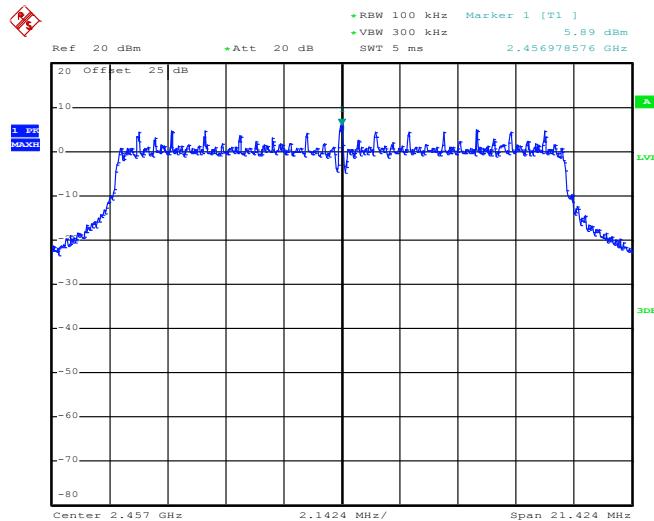
290603 15C PSD 802.11g 2437 (ch06)

Date: 2.OCT.2012 22:40:00



802.11g – MIMO Chain 1+2(2)

PSD 100kHz Plot on Channel 10

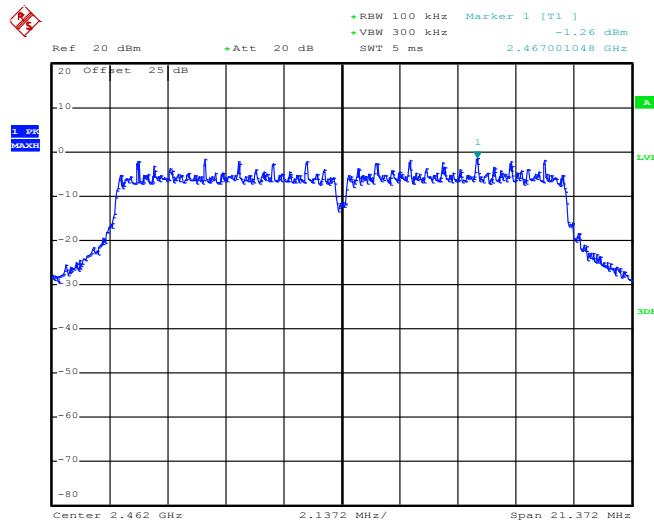


290603 15C PSD 802.11g 2457

Date: 2.OCT.2012 22:53:42

802.11g – MIMO Chain 1+2(2)

PSD 100kHz Plot on Channel 11



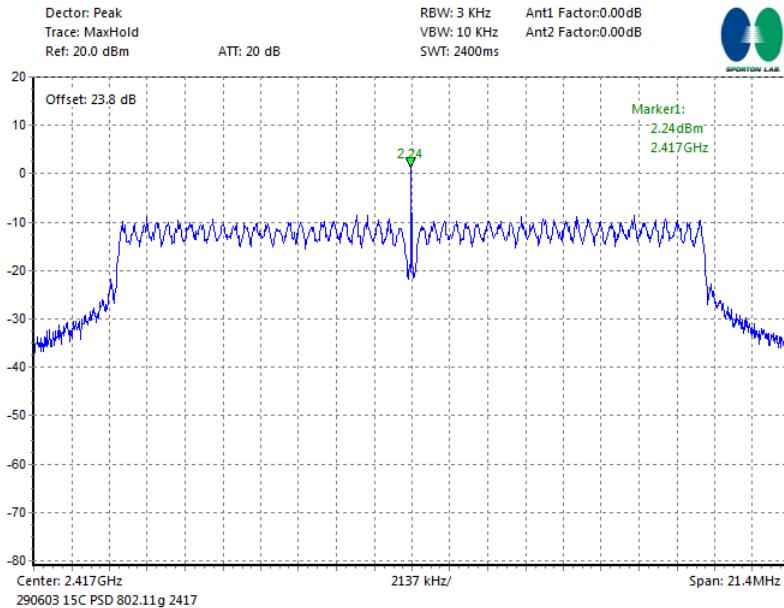
290603 15C PSD 802.11g 2462 (ch11)

Date: 2.OCT.2012 22:56:06



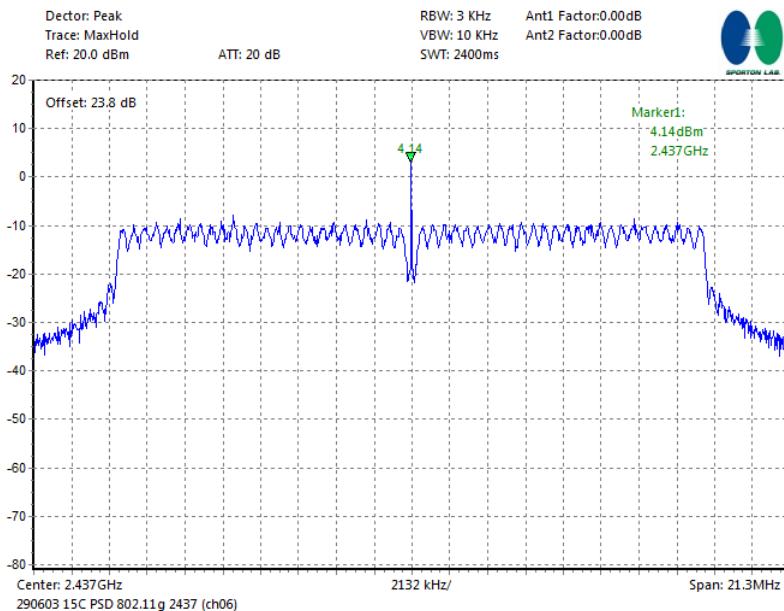
802.11g – MIMO Chain 1+2

PSD 3kHz Plot on Channel 02



802.11g – MIMO Chain 1+2

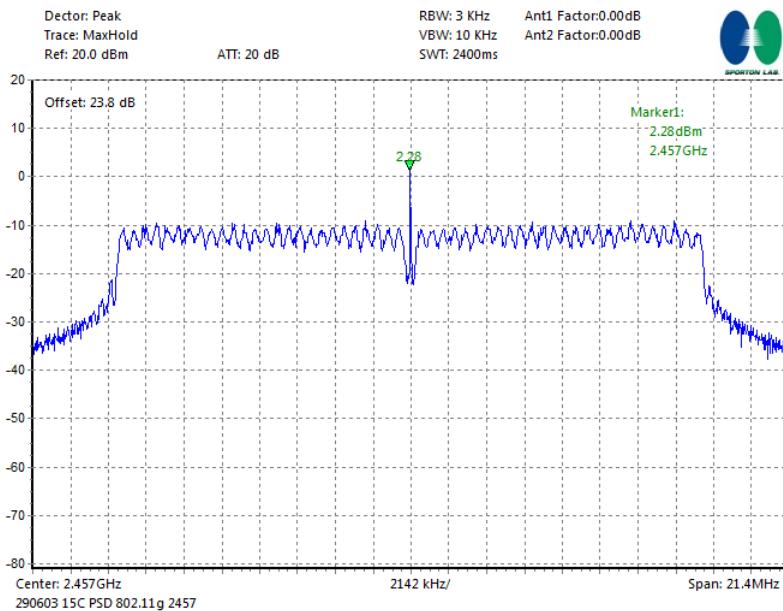
PSD 3kHz Plot on Channel 06





802.11g – MIMO Chain 1+2

PSD 3kHz Plot on Channel 10

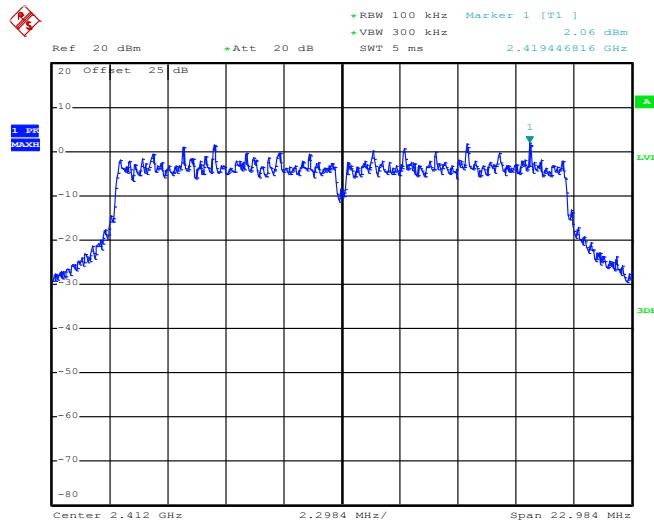




<2.4GHz 802.11n HT20>

802.11n HT20 – MIMO Chain 1+2(1)

PSD 100kHz Plot on Channel 01

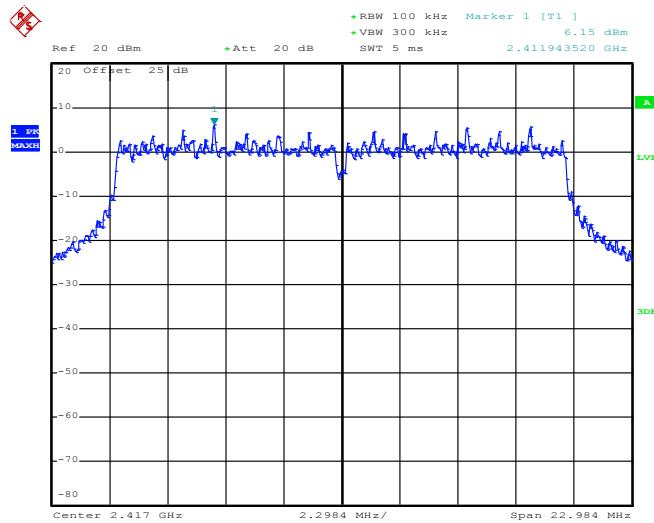


290603 15C PSD 802.11g_N20 2412 (ch01)

Date: 2.OCT.2012 23:08:19

802.11n HT20 – MIMO Chain 1+2(1)

PSD 100kHz Plot on Channel 02



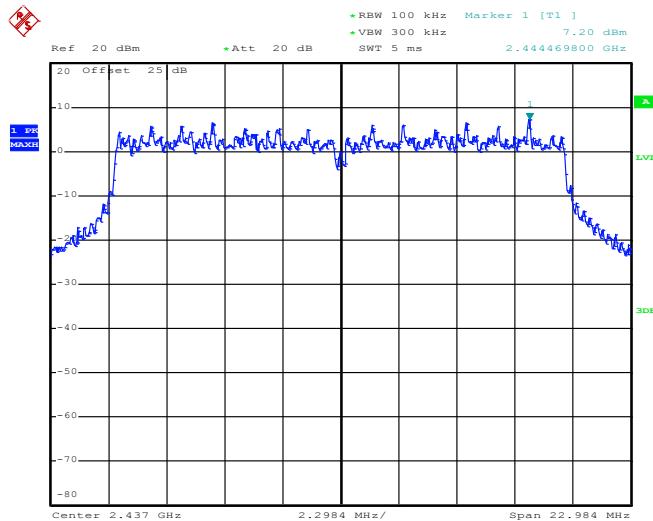
290603 15C PSD 802.11g_N20 2417

Date: 2.OCT.2012 23:33:20



802.11n HT20 – MIMO Chain 1+2(1)

PSD 100kHz Plot on Channel 06

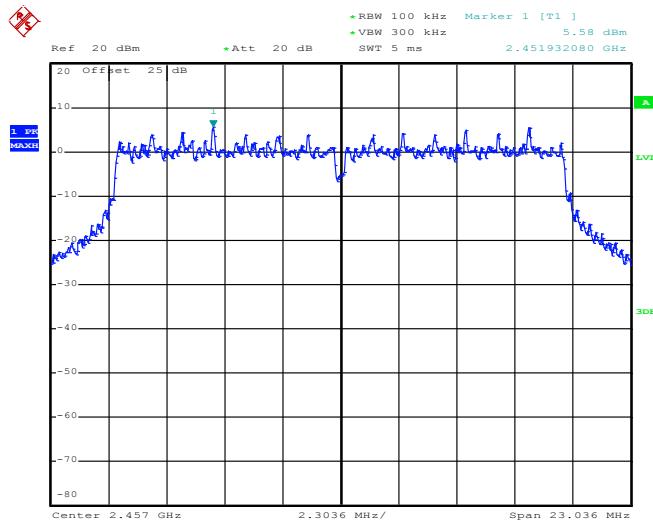


290603 15C PSD 802.11g_N20 2437 (ch06)

Date: 2.OCT.2012 23:38:17

802.11n HT20 – MIMO Chain 1+2(1)

PSD 100kHz Plot on Channel 10



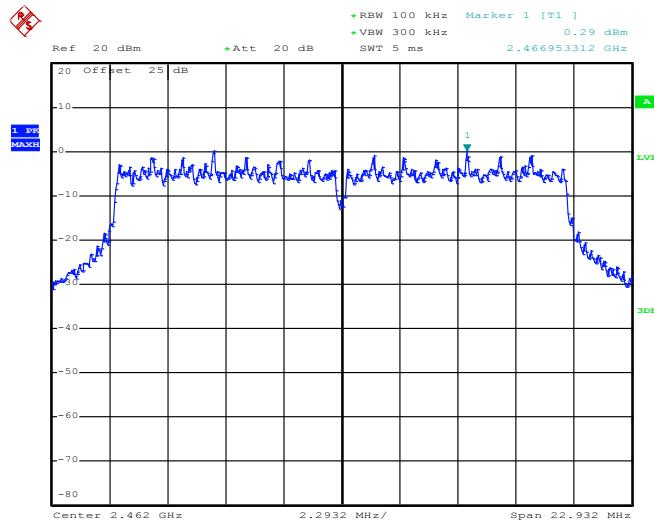
290603 15C PSD 802.11g_N20 2457

Date: 2.OCT.2012 23:52:09



802.11n HT20 – MIMO Chain 1+2(1)

PSD 100kHz Plot on Channel 11

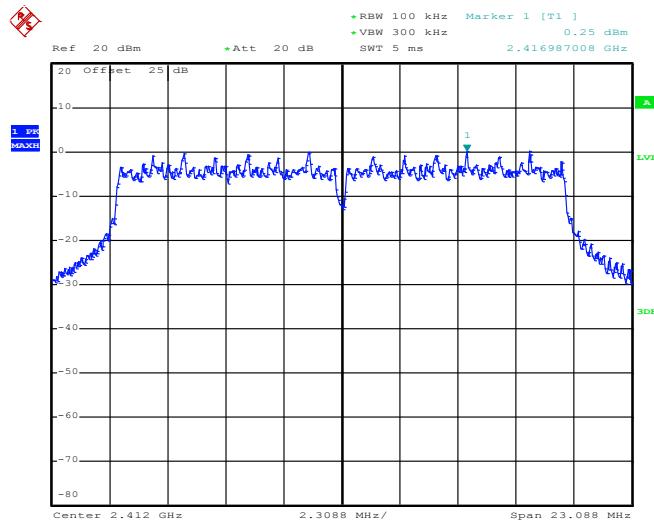


290603 15C PSD 802.11g_N20 2462 (ch11)

Date: 2.OCT.2012 23:58:28

802.11n HT20 – MIMO Chain 1+2(2)

PSD 100kHz Plot on Channel 01



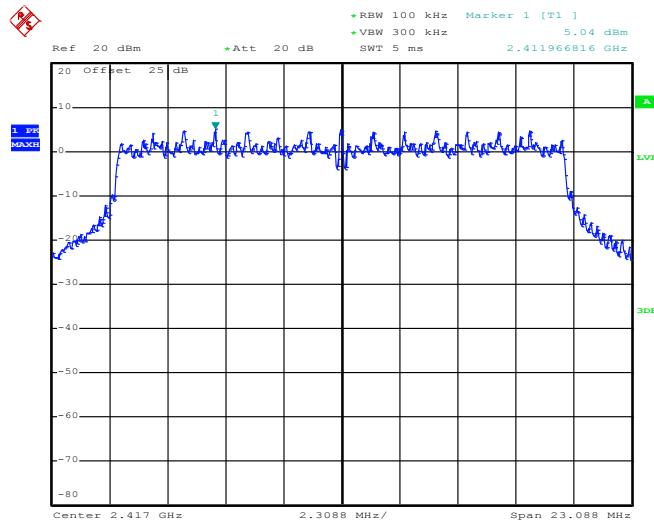
290603 15C PSD 802.11g_N20 2412 (ch01)

Date: 2.OCT.2012 23:16:38



802.11n HT20 – MIMO Chain 1+2(2)

PSD 100kHz Plot on Channel 02

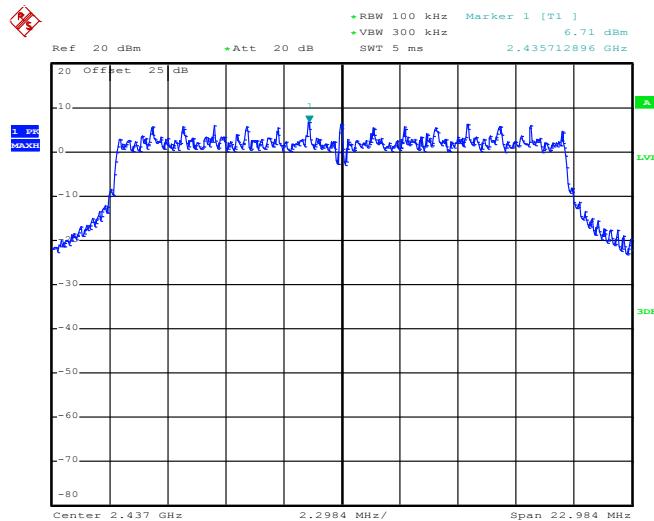


290603 15C PSD 802.11g_N20 2417

Date: 2.OCT.2012 23:23:29

802.11n HT20 – MIMO Chain 1+2(2)

PSD 100kHz Plot on Channel 06



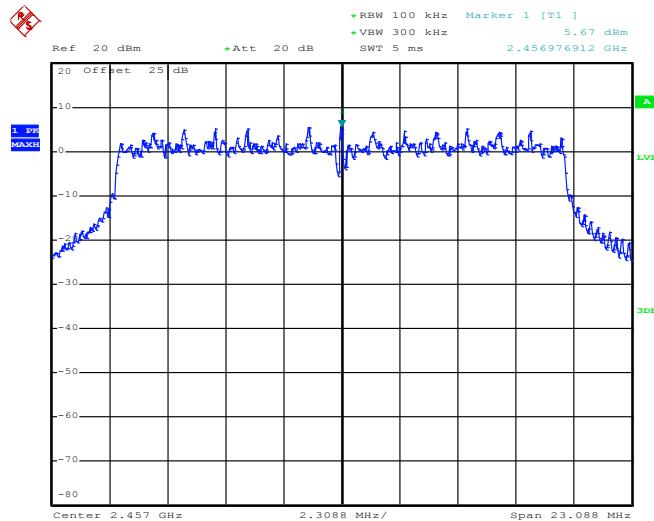
290603 15C PSD 802.11g_N20 2437 (ch06)

Date: 2.OCT.2012 23:41:59



802.11n HT20 – MIMO Chain 1+2(2)

PSD 100kHz Plot on Channel 10

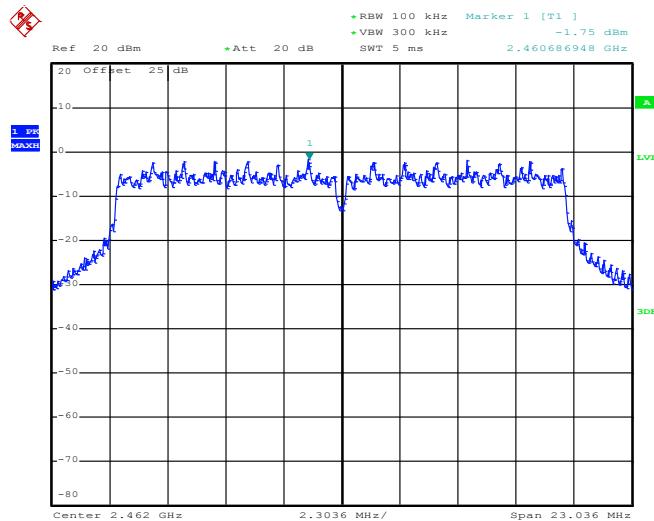


290603 15C PSD 802.11g_N20 2457

Date: 2.OCT.2012 23:48:33

802.11n HT20 – MIMO Chain 1+2(2)

PSD 100kHz Plot on Channel 11



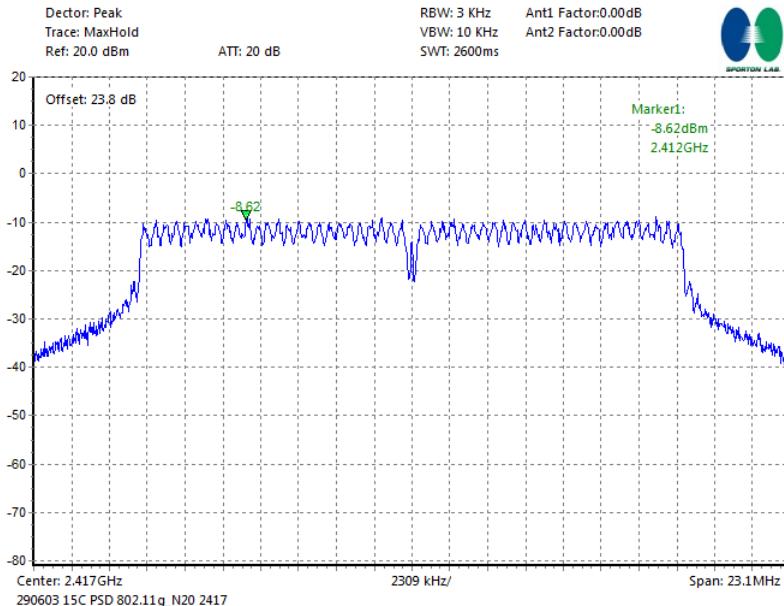
290603 15C PSD 802.11g_N20 2462 (ch11)

Date: 3.OCT.2012 00:01:22



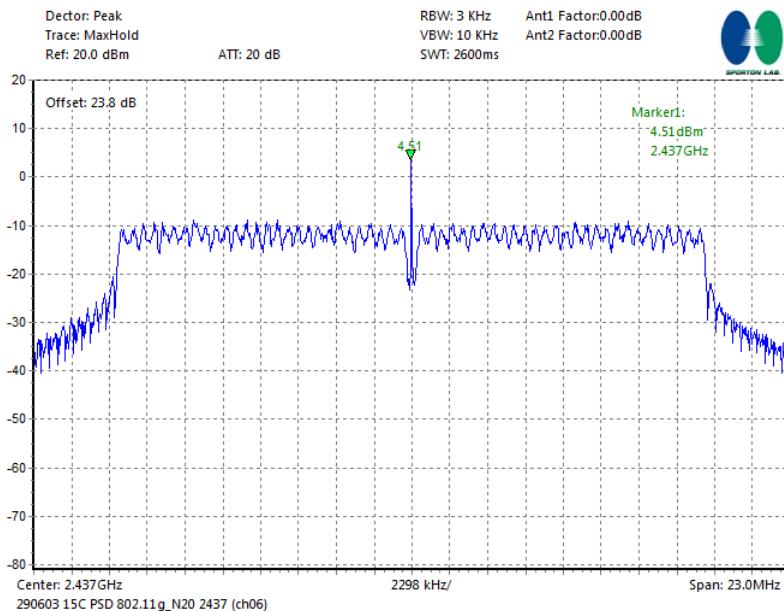
802.11n HT20 – MIMO Chain 1+2

PSD 3kHz Plot on Channel 02



802.11n HT20 – MIMO Chain 1+2

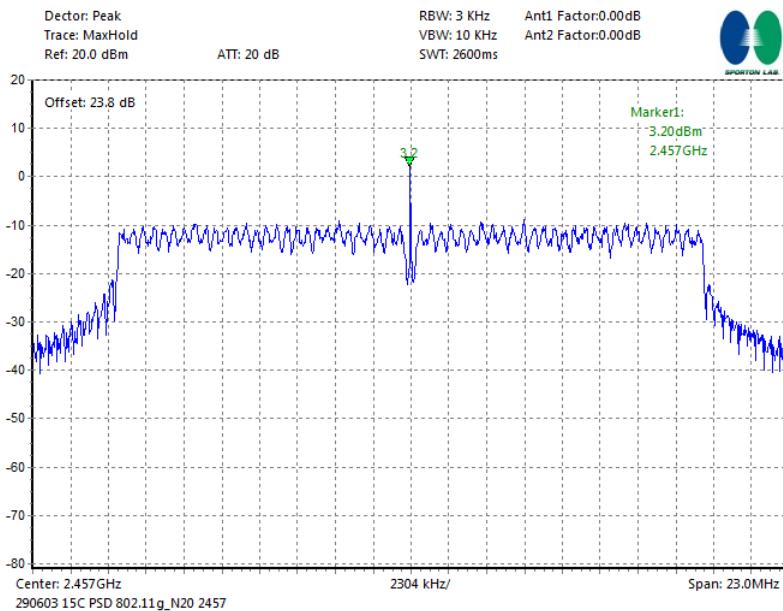
PSD 3kHz Plot on Channel 06





802.11n HT20 – MIMO Chain 1+2

PSD 3kHz Plot on Channel 10

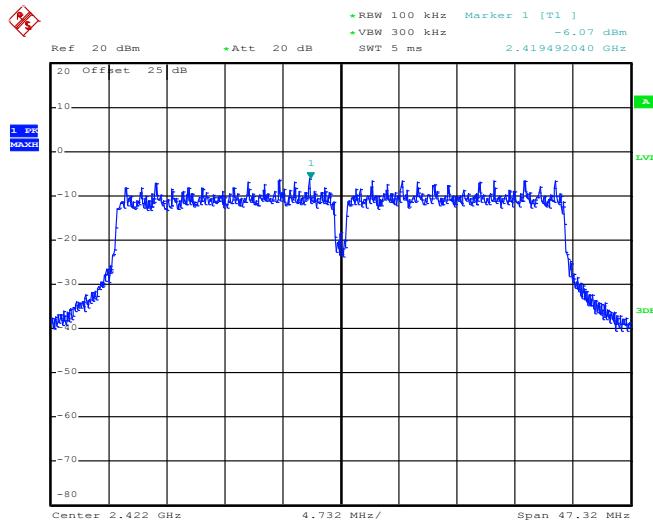




<2.4GHz 802.11n HT40>

802.11n HT40 – MIMO Chain 1+2(1)

PSD 100kHz Plot on Channel 03

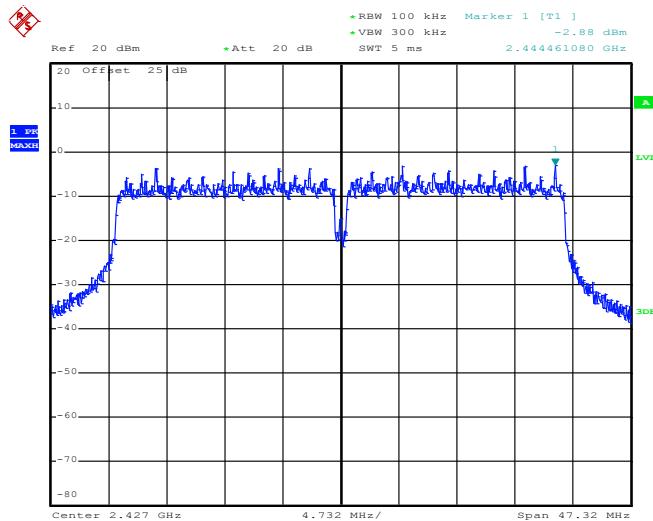


290603 15C PSD 802.11g_N40 2422 (ch03)

Date: 3.OCT.2012 00:18:02

802.11n HT40 – MIMO Chain 1+2(1)

PSD 100kHz Plot on Channel 04



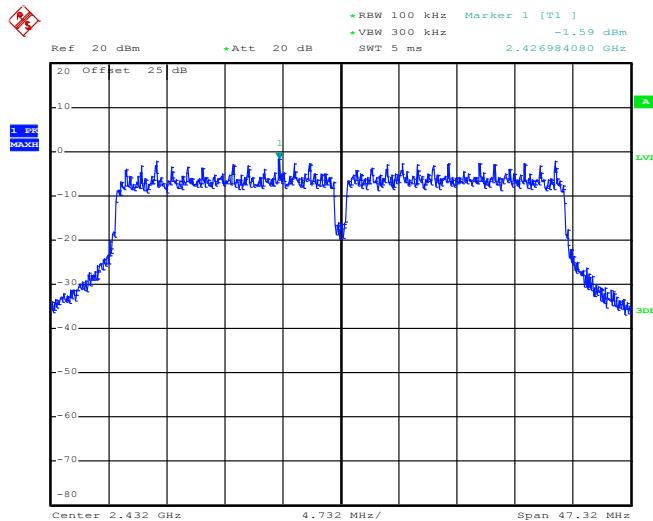
290603 15C PSD 802.11g_N40 2427

Date: 3.OCT.2012 00:23:39



802.11n HT40 – MIMO Chain 1+2(1)

PSD 100kHz Plot on Channel 05

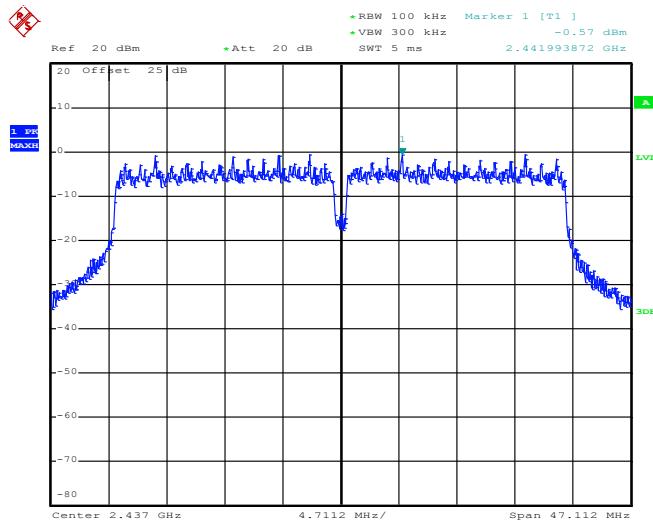


290603 15C PSD 802.11g_N40 2432

Date: 3.OCT.2012 00:56:53

802.11n HT40 – MIMO Chain 1+2(1)

PSD 100kHz Plot on Channel 06



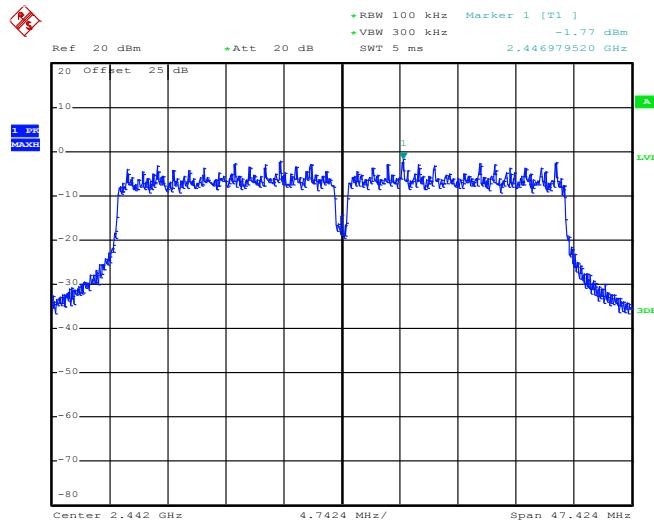
290603 15C PSD 802.11g_N40 2437 (ch06)

Date: 3.OCT.2012 01:00:24



802.11n HT40 – MIMO Chain 1+2(1)

PSD 100kHz Plot on Channel 07

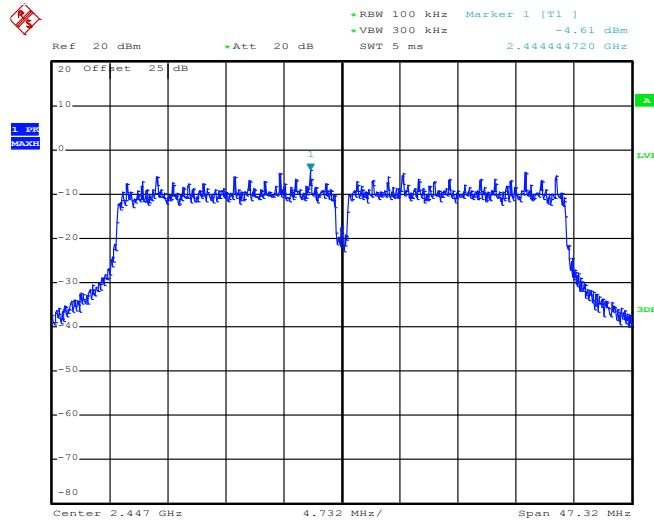


290603 15C PSD 802.11g_N40 2442

Date: 3.OCT.2012 01:12:54

802.11n HT40 – MIMO Chain 1+2(1)

PSD 100kHz Plot on Channel 08



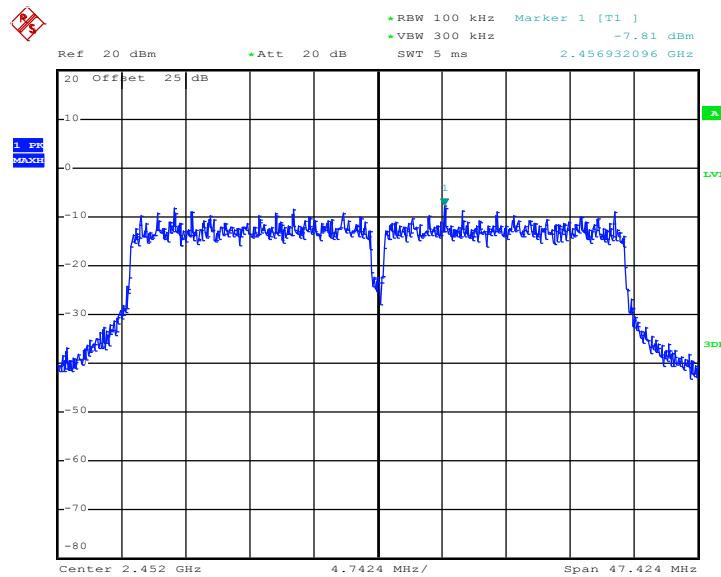
290603 15C PSD 802.11g_N40 2447

Date: 3.OCT.2012 01:15:28



802.11n HT40 – MIMO Chain 1+2(1)

PSD 100kHz Plot on Channel 09

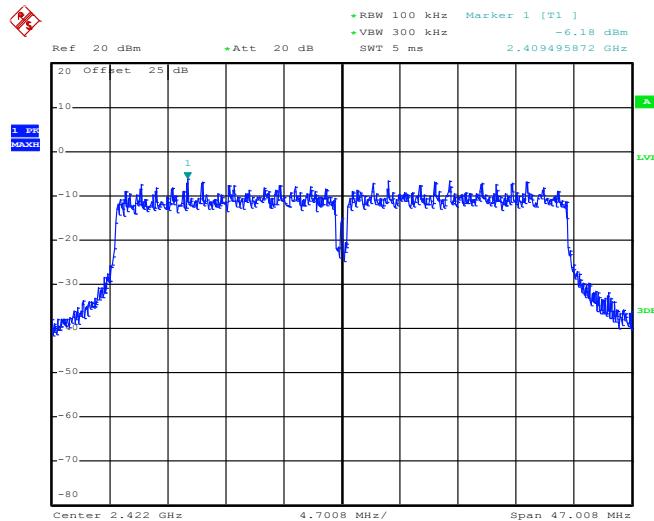


290603 15C PSD 802.11g_N40 2452 (ch09)
Date: 3.OCT.2012 01:27:58



802.11n HT40 – MIMO Chain 1+2(2)

PSD 100kHz Plot on Channel 03

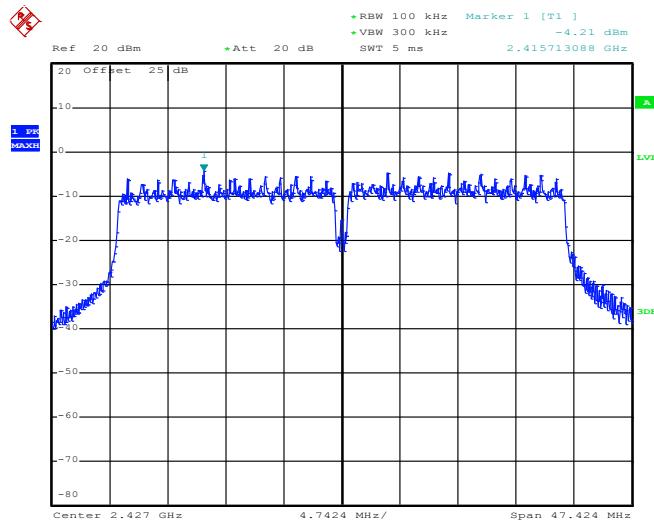


290603 15C PSD 802.11g_N40 2422 (ch03)

Date: 3.OCT.2012 00:13:00

802.11n HT40 – MIMO Chain 1+2(2)

PSD 100kHz Plot on Channel 04



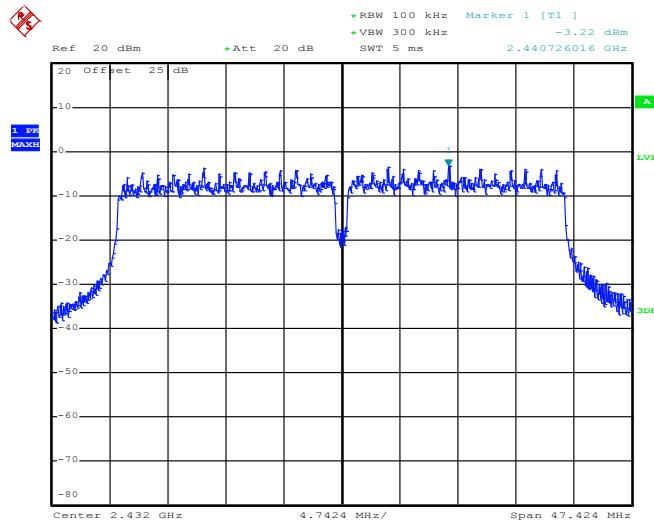
290603 15C PSD 802.11g_N40 2427

Date: 3.OCT.2012 00:27:42



802.11n HT40 – MIMO Chain 1+2(2)

PSD 100kHz Plot on Channel 05

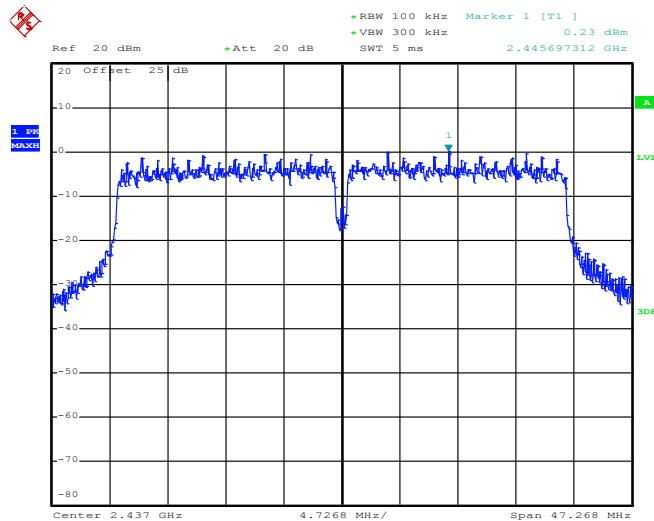


290603 15C PSD 802.11g_N40 2432

Date: 3.OCT.2012 00:35:03

802.11n HT40 – MIMO Chain 1+2(2)

PSD 100kHz Plot on Channel 06



290603 15C PSD 802.11g_N40 2437 (ch06)

Date: 3.OCT.2012 01:08:09