

TEST REPORT FROM RFI GLOBAL SERVICES LTD

Test of: OWS451x

FCC ID: PVH0941

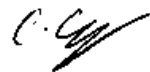
IC Certification Number: 5325A-0941

To: FCC Part 15.407: 2010 Subpart E, RSS-210 Issue 8 December 2010 and RSS-Gen Issue 3 December 2010

Test Report Serial No:
RFI-RPT-RP78718JD03A V2.0

Version 2.0 Supersedes All Previous Versions

**This Test Report Is Issued Under The Authority
Of Chris Guy, Head of Global Approvals:**



Checked By:

Nigel Davison

Signature:



Date of Issue:

17 May 2011

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1. Customer Information

Company Name:	connectBlue AB
Address:	Norra Vallgatan 64 3V Malmo Sweden SE-211 22

2. Summary of Testing

2.1. General Information

Specification Reference:	47CFR15.407
Specification Title:	Code of Federal Regulations Volume 47 (Telecommunications) 2010: Part 15 Subpart E (Unlicensed National Information Infrastructure Devices) - Section 15.407
Specification Reference:	47CFR15.107 and 47CFR15.109
Specification Title:	Code of Federal Regulations Volume 47 (Telecommunications) 2010: Part 15 Subpart B (Unintentional Radiators) - Sections 15.107 and 15.109
Specification Reference:	47CFR15.207 and 47CFR15.209
Specification Title:	Code of Federal Regulations Volume 47 (Telecommunications) 2010: Part 15 Subpart C (Intentional Radiators) - Sections 15.207 and 15.209
Specification Reference:	RSS-GEN Issue 3 December 2010
Specification Title:	General Requirements and Information for the Certification of Radio communication Equipment
Specification Reference:	RSS-210 Issue 8 December 2010
Specification Title:	Low-power Licence-exempt Radio communication Devices (All Frequency Bands): Category I Equipment.
Site Registration:	FCC: 209735; Industry Canada: 3245B-2
Location of Testing:	RFI Global Services Ltd, Wade Road, Basingstoke, Hampshire, RG24 8AH.
Test Dates:	7 October 2010 to 12 May 2011

2.2. Summary of Test Results

FCC Reference (47CFR)	IC Reference	Measurement	Result
Part 15.107(a)	RSS-Gen 7.2.4	Receiver/Idle Mode AC Conducted Emissions	
Part 15.109	RSS-Gen 4.10/6.1	Receiver/Idle Mode Radiated Spurious Emissions	
Part 15.207	RSS-Gen 7.2.4	Transmitter AC Conducted Emissions	
Part 15.403(i)	-	Transmitter 26 dB Emission Bandwidth	
Part 2.1049	RSS-Gen 4.6.1 / RSS-210 A9.2	Transmitter 99% Emission Bandwidth	
Part 15.407(a)	-	Transmitter Maximum Conducted Output Power (5.15-5.25 GHz band)	
-	RSS-Gen 4.8 / RSS-210 A9.2(1)	Transmitter Maximum Equivalent Isotropically Radiated Power (EIRP) (5.15-5.25 GHz band)	
Part 15.407(a)	-	Transmitter Peak Power Spectral Density	
-	RSS-210 A9.2(1)	Transmitter EIRP Spectral Density (5.15-5.25 GHz band)	
Part 15.407(a)	-	Transmitter Peak Excursion	
Part 15.407(b)/ 15.209(a)	RSS-Gen 4.9 RSS-210 A9.2(1)	Transmitter Out of Band Radiated Emissions	
Part 15.407(b)/ 15.209(a)	RSS-Gen 4.9 RSS-210 A9.2(1)	Transmitter Band Edge Radiated Emissions	
Part 15.407(g)	RSS-Gen 4.7 RSS-210 A9.5(5)	Transmitter Frequency Stability (Temperature & Voltage Variation)	
Key to Results  = Complied  = Did not comply			

2.3. Methods and Procedures

Reference:	ANSI C63.4 (2009)
Title:	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
Reference:	ANSI C63.10 (2009)
Title:	American National Standard for Testing Unlicensed Wireless Devices

2.4. Deviations from the Test Specification

For the measurements contained within this test report, there were no deviations from, additions to, or exclusions from the test specification identified above.

3. Equipment Under Test (EUT)

3.1. Identification of Equipment Under Test (EUT)

Brand Name:	connectBlue AB
Model Name or Number:	OWS451x
Serial Number:	Not stated
Hardware Version Number:	cB-0941-02
Software Version Number:	2.4_2.1.9_RPS / ows451_pcti_firmware_2.1.0_release.cbz
FCC ID:	PVH0941
IC Certification Number:	5325A-0941
Antenna:	ProAnt Inside WLAN, gain 3dBi

3.2. Description of EUT

The equipment under test was a WLAN module with an external antenna port which provided a wireless communication link using IEEE802.11a/n WLAN.

- ProAnt Inside WLAN

Note: This test report includes the test results for the ProAnt Inside WLAN antenna. Please refer to RFI Test Report Serial Number RFI-RPT-RP78718JD07B and RFI-RPT-RP78718JD07D for additional antennas tested.

3.3. Modifications Incorporated in the EUT

No modifications were applied to the EUT during testing.

3.4. Additional Information Related to Testing

Technology Tested:	Unlicensed National Information Infrastructure Devices (U-NII)/License-exempt local area network (LE-LAN)		
Type of Unit:	Transceiver		
Channel Spacing:	20 MHz		
Modulation:	OFDM		
Data Rate:	802.11a: 6,9,12,18,24,36,48,54 Mbps 802.11n: 6.5,13,19.5,26,39,52,58.5,65 Mbps		
Power Supply Requirement(s):	Nominal	3.3V min, 5.0 V nom, 5.5V max	
Transmit & Receive Frequency Range:	5150 MHz to 5250 MHz		
Transmit & Receive Channels Tested:	Channel ID	Channel Number	Channel Frequency (MHz)
	Bottom	36	5180
	Middle	40	5200
	Top	48	5240

3.5. Support Equipment

The following support equipment was used to exercise the EUT during testing:

Description:	Dell
Brand Name:	Laptop
Model Name or Number:	Latitude D610

Description:	Connect Blue AB
Brand Name:	Development Board
Model Name or Number:	0068-01-002440

4. Operation and Monitoring of the EUT during Testing

4.1. Operating Modes

The EUT was tested in the following operating mode(s):

- Receiver/Idle mode.
- Continuously transmitting at maximum power on the bottom, centre and top channels as required using the highest and lowest data rates of each modulation scheme.

4.2. Configuration and Peripherals

The EUT was tested in the following configuration(s):

- Controlled using a bespoke application on the laptop PC supplied by the client. The application was used to enable continuous transmission and idle mode (enabled but not transmitting) and to select the test channels, data rates and modulation schemes as required.

Transmitter spurious emissions were performed with the EUT transmitting at 65Mbps (802.11n) as this was found to have the highest power level and therefore deemed to be worst case.
- All other tests were performed at the highest and lowest data rate of each modulation scheme as required.

5. Measurements, Examinations and Derived Results

5.1. General Comments

Measurement uncertainties are evaluated in accordance with current best practice. Our reported expanded uncertainties are based on standard uncertainties, which are multiplied by an appropriate coverage factor to provide a statistical confidence level of approximately 95%. Please refer to *Section 6; Measurement Uncertainty* for details.

5.2. Test Results

5.2.1. Receiver/Idle Mode AC Conducted Spurious Emissions

Test Summary:

Test Engineer:	Nicholas Jones	Test Date:	09 May 2011
Test Sample:	ID 8		

FCC/IC Part:	15.107(a) and RSS-Gen 7.2.4
Test Method Used:	As detailed in ANSI C63.10 Section 6.2 referencing ANSI C63.4

Environmental Conditions:

Temperature (°C):	22
Relative Humidity (%):	30

Results: Quasi Peak

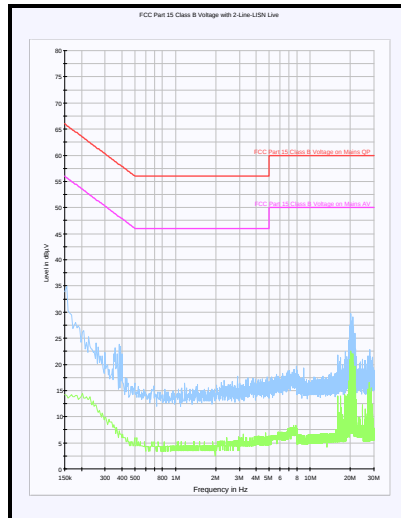
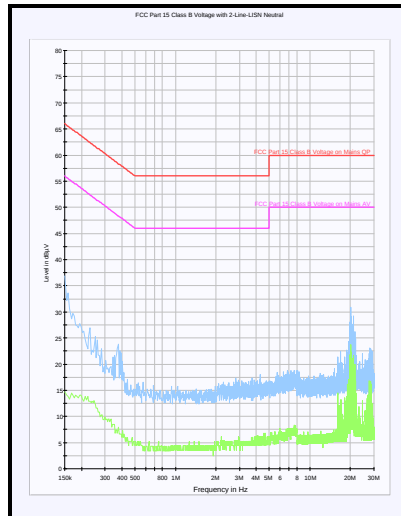
0Frequency (MHz)	Line	Level (dBμV)	Limit (dBμV)	Margin (dB)	Result
Refer to Note 1					

Results: Average

Frequency (MHz)	Line	Level (dBμV)	Limit (dBμV)	Margin (dB)	Result
Refer to Note 1					

Note(s):

1. All results were 20dB below the limit line and hence no final measurements were taken.

Receiver/Idle Mode AC Conducted Spurious Emissions (continued)**Idle/LIVE****Idle/NEUTRAL**

Note: This plot is a pre-scan and for indication purposes only. For final measurements, see accompanying tables.

5.2.2. Receiver/Idle Mode Radiated Spurious Emissions**Test Summary:**

Test Engineer:	Nick Steele / Andrew Edwards	Test Date:	07 October 2010
Test Sample:	ID 8		

FCC/IC Part:	15.109 and RSS-Gen 4.10/6.1
Test Method Used:	As detailed in ANSI C63.10 Sections 6.3 and 6.5 referencing ANSI C63.4
Frequency Range:	30 MHz to 1000 MHz

Environmental Conditions:

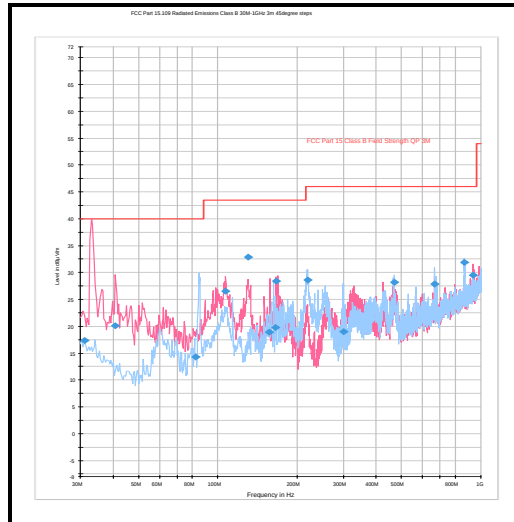
Temperature (°C):	26
Relative Humidity (%):	30

Results: Quasi Peak

Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
40.679	Vertical	20.1	40.0	19.9	Complied
106.762	Vertical	26.5	43.5	17.0	Complied
130.119	Vertical	32.8	43.5	10.7	Complied
167.206	Vertical	28.3	43.5	15.2	Complied
218.932	Horizontal	28.7	46.0	17.3	Complied
467.302	Horizontal	28.1	46.0	17.9	Complied
664.956	Horizontal	27.9	46.0	18.1	Complied
867.914	Horizontal	31.9	46.0	14.1	Complied
932.419	Vertical	29.5	46.0	16.5	Complied

Note(s):

1. The final measured value, for the given emission, in the table above incorporates the calibrated antenna factor and cable loss.
2. The emission at 33MHz was an ambient and not coming from the EUT, after further investigation.
3. All other emissions shown on the pre-scan plot were investigated and found to be ambient or >20 dB below the applicable limit or below the measurement system noise floor.

Receiver/Idle Mode Radiated Spurious Emissions (continued)

Receiver/Idle Mode Radiated Spurious Emissions (continued)**Test Summary:**

Test Engineer:	Nick Steele / Andrew Edwards	Test Date:	16 November 2010, 28 November 2010 & 01 December 2010
Test Sample Serial No:	ID 8		

FCC/IC Part:	15.109 and RSS-Gen 4.10/6.1
Test Method Used:	As detailed in ANSI C63.10 Sections 6.3 and 6.6 referencing ANSI C63.4
Frequency Range:	1 GHz to 30 GHz

Environmental Conditions:

Temperature (°C):	21 to 23
Relative Humidity (%):	23 to 26

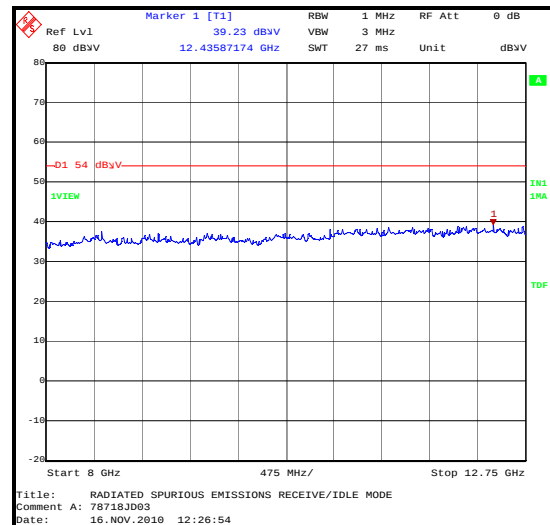
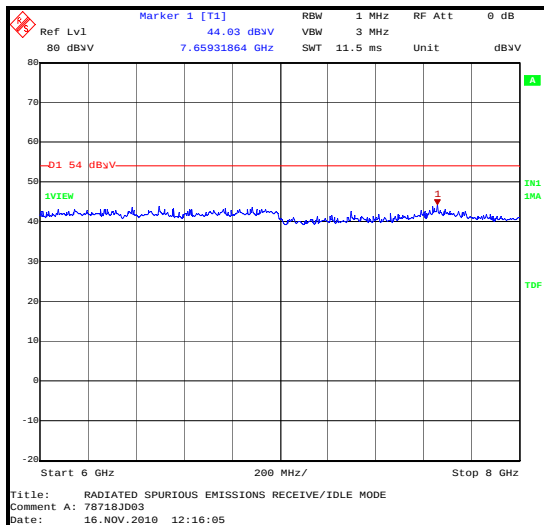
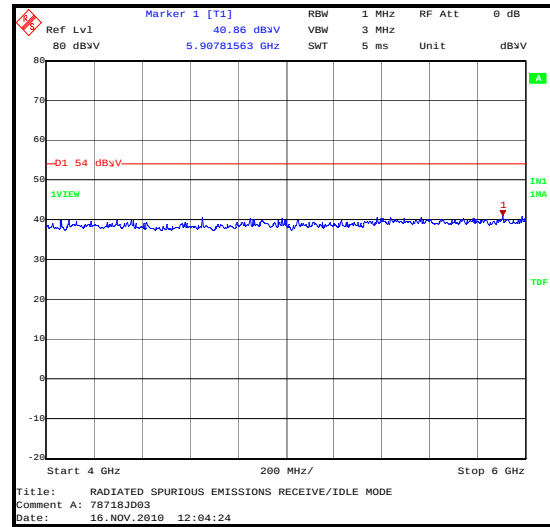
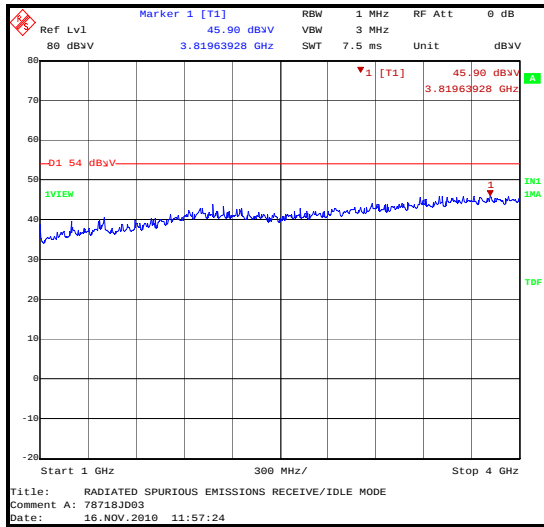
Results:

Frequency (GHz)	Antenna Polarity	Peak Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
25.171343	Vertical	50.0	*54.0	4.0	Complied

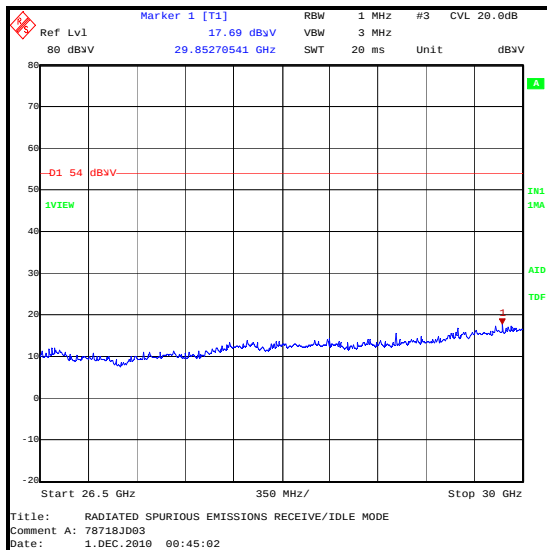
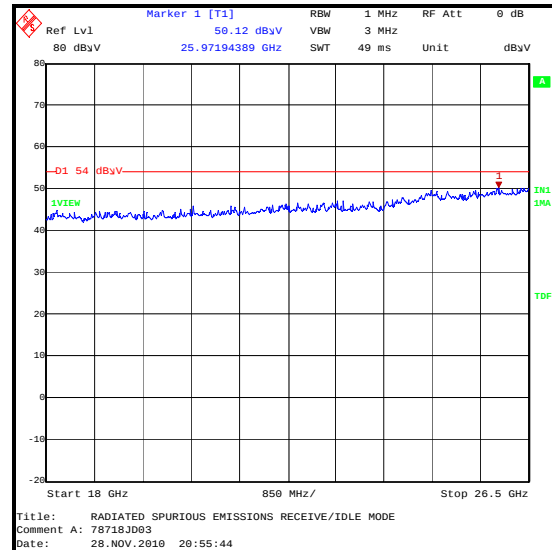
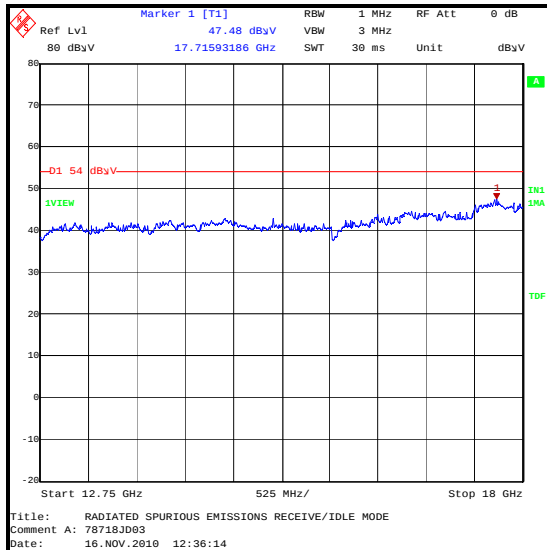
Note(s):

1. The final measured value, for the given emission, in the table above incorporates the calibrated and cable loss.
2. No spurious emissions were detected above the noise floor of the measuring receiver therefore the highest peak noise floor reading of the measuring receiver was recorded as shown in the table above.
3. Pre-scans above 1 GHz were performed in a fully anechoic chamber (RFI Asset Number K0002) at a distance of 3 metres. The EUT was placed at a height of 1.5 metres above the test chamber floor in the centre of the chamber turntable. All measurement antennas were placed at a fixed height of 1.5 metres above the test chamber floor, in line with the EUT. Final measurements above 1 GHz were performed in a semi-anechoic chamber (RFI Asset Number K0001) at a distance of 3 metres. The EUT was placed at a height of 80 cm above the reference ground plane in the centre of the chamber turntable. Maximum emission levels were determined by height searching the measurement antenna over the range 1 metre to 4 metres.

* The average limit was compared to the peak level as opposed to being compared to the peak limit because this is the more stringent limit.

Receiver/Idle Mode Radiated Spurious Emissions (continued)

Note: These plots are pre-scans and for indication purposes only. For final measurements, see accompanying tables.

Receiver/Idle Mode Radiated Spurious Emissions (continued)

Note: These plots are pre-scans and for indication purposes only. For final measurements, see accompanying tables.

5.2.3. Transmit mode AC Conducted Spurious Emissions**Test Summary:**

Test Engineer:	Nicholas Jones	Test Date:	9 May 2011
Test Sample Serial No:	ID 8		

FCC/IC Part:	15.207 and RSS-Gen 7.2.4
Test Method Used:	As detailed in ANSI C63.10 Section 6.2 referencing ANSI C63.4

Environmental Conditions:

Temperature (°C):	23
Relative Humidity (%):	28

Results: Quasi Peak

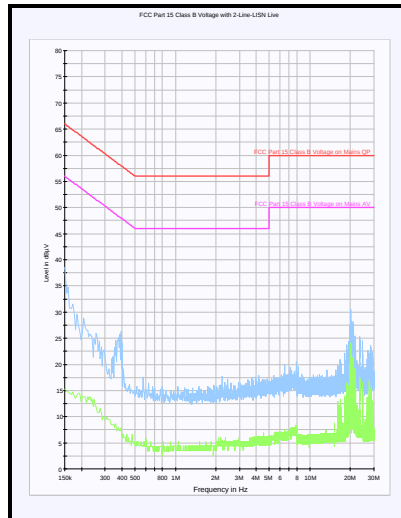
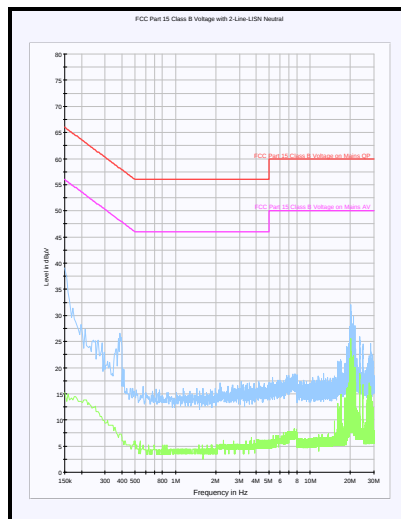
Frequency (MHz)	Line	Level (dBμV)	Limit (dBμV)	Margin (dB)	Result
Refer to Note 1					

Results: Average

Frequency (MHz)	Line	Level (dBμV)	Limit (dBμV)	Margin (dB)	Result
Refer to Note 1					

Note(s):

All emissions were at least 20dB below the relevant spurious emissions limit.

Transmitter AC Conducted Spurious Emissions (continued)**Transmit/LIVE****Transmit/NEUTRAL**

Note: This plot is a pre-scan and for indication purposes only. For final measurements, see accompanying table.

5.2.4. Transmitter 26 dB Emission Bandwidth**Test Summary:**

Test Engineer:	Nigel Davison	Test Date:	11 May 2011
Test Sample Serial No:	ID 3		

FCC Part:	15.403(i)
Test Method Used:	A spectrum analyzer was used to perform this measurement employing a peak detector function. The measurement bandwidth was approximately 1% or greater than the emission bandwidth and the 26dBc bandwidth reported. Tested in accordance with method detailed in public notice DA-02-2138 for emission bandwidth.

Environmental Conditions:

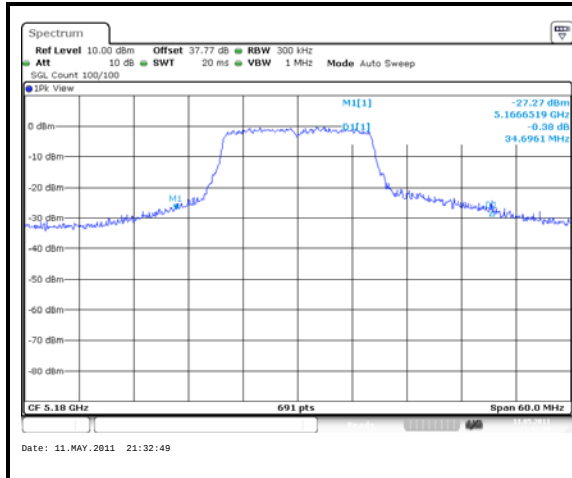
Temperature (°C):	25
Relative Humidity (%):	32

Transmitter 26 dB Emission Bandwidth (continued)**Results: 802.11A - 5150 to 5250 MHz band**

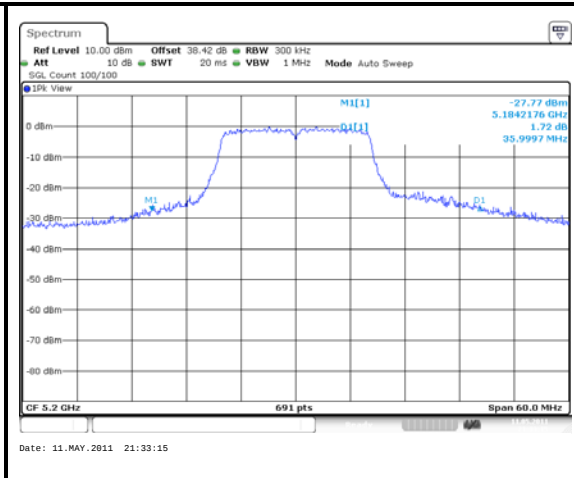
Channel	Frequency (MHz)	Modulation Scheme	Data Rate (MB/s)	26 dB Emission Bandwidth (MHz)
Bottom	5180	BPSK	6	34.7
Middle	5200	BPSK	6	36.0
Top	5240	BPSK	6	34.8
Bottom	5180	BPSK	9	33.1
Middle	5200	BPSK	9	36.1
Top	5240	BPSK	9	32.0
Bottom	5180	QPSK	12	32.5
Middle	5200	QPSK	12	30.8
Top	5240	QPSK	12	29.9
Bottom	5180	QPSK	18	28.8
Middle	5200	QPSK	18	42.7
Top	5240	QPSK	18	31.6
Bottom	5180	16QAM	24	31.7
Middle	5200	16QAM	24	28.1
Top	5240	16QAM	24	31.5
Bottom	5180	16QAM	36	28.3
Middle	5200	16QAM	36	29.4
Top	5240	16QAM	36	28.0
Bottom	5180	64QAM	48	30.4
Middle	5200	64QAM	48	31.4
Top	5240	64QAM	48	27.2
Bottom	5180	64QAM	54	28.7
Middle	5200	64QAM	54	28.2
Top	5240	64QAM	54	30.3

Transmitter 26 dB Emission Bandwidth (continued)

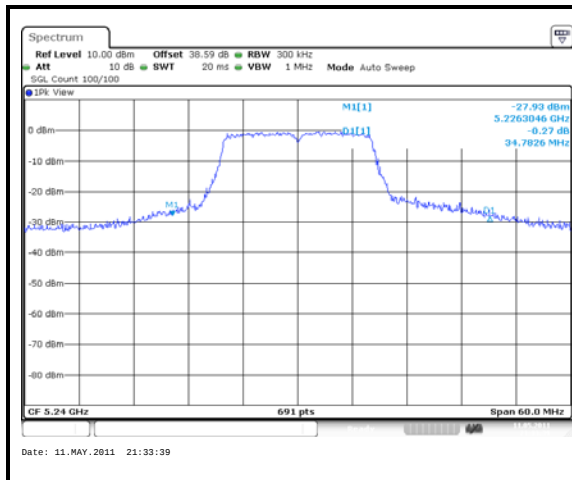
Plots: 802.11A



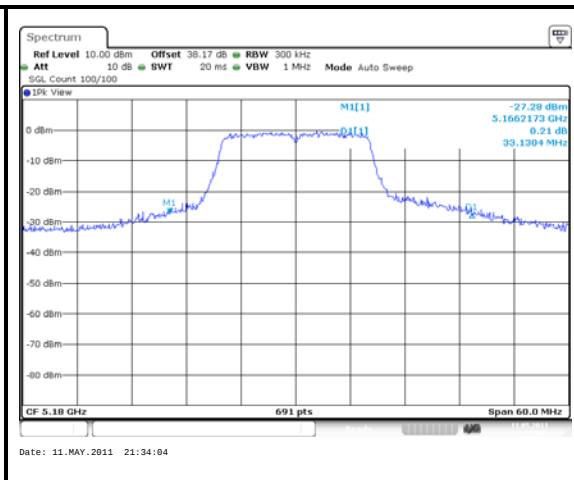
EmissionBandwidth_UNII_1_802_11A_6MBS_BottomChannel



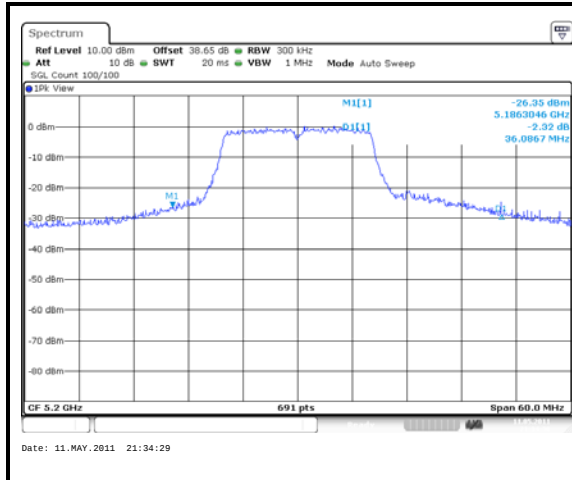
EmissionBandwidth_UNII_1_802_11A_6MBS_MiddleChannel



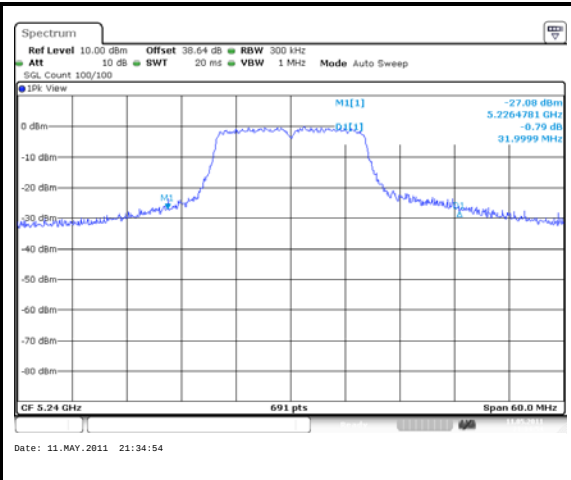
EmissionBandwidth_UNII_1_802_11A_6MBS_TopChannel



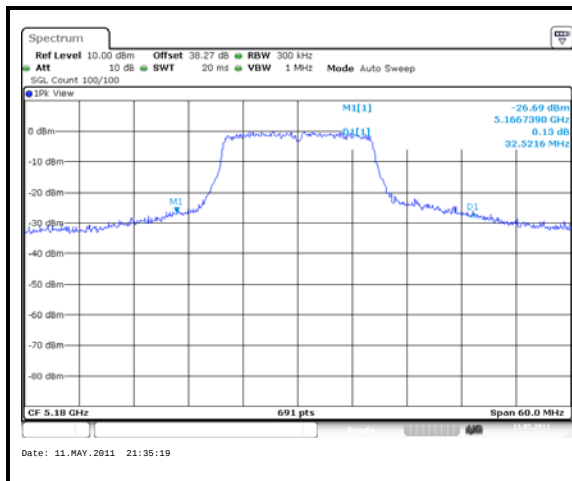
EmissionBandwidth_UNII_1_802_11A_9MBS_BottomChannel

Transmitter 26 dB Emission Bandwidth (continued)**Plots: 802.11A**

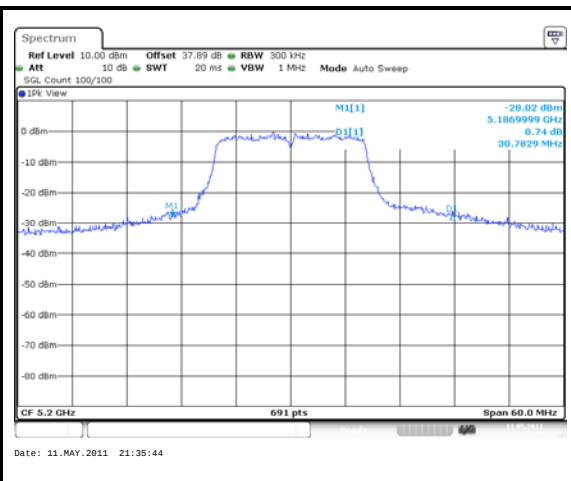
EmissionBandwidth_UNII_1_802_11A_9MBS_MiddleChannel



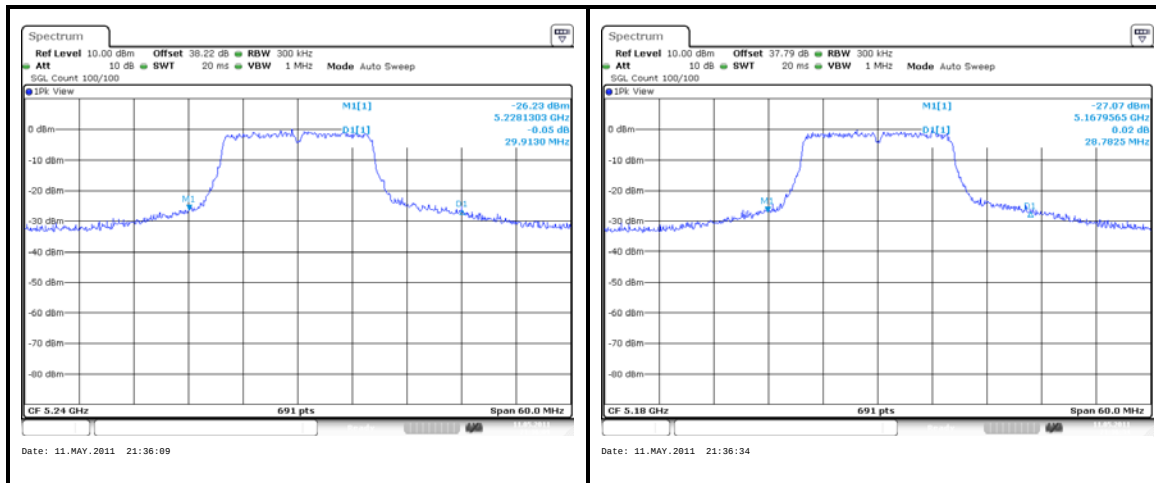
EmissionBandwidth_UNII_1_802_11A_9MBS_TopChannel



EmissionBandwidth_UNII_1_802_11A_12MBS_BottomChannel

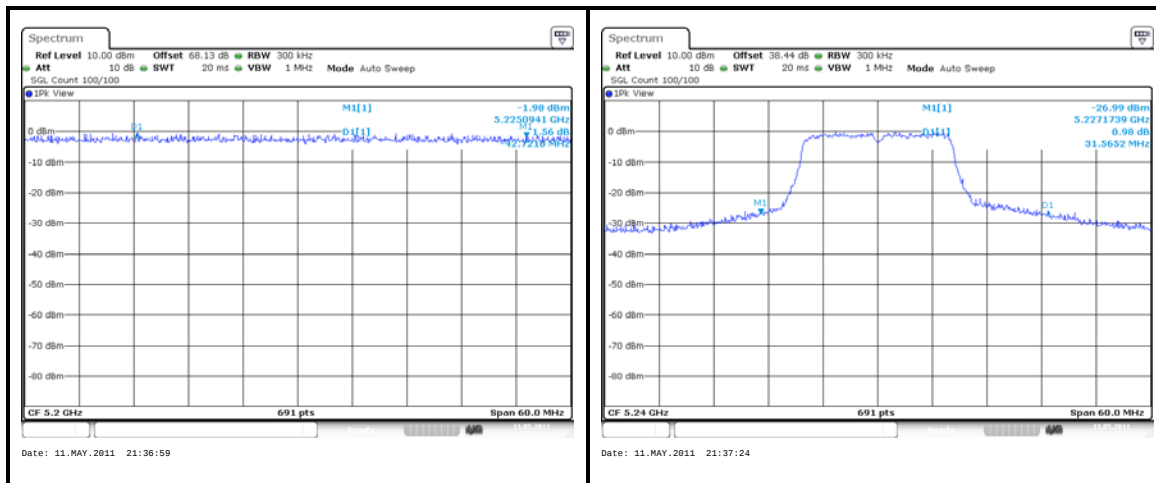


EmissionBandwidth_UNII_1_802_11A_12MBS_MiddleChannel

Transmitter 26 dB Emission Bandwidth (continued)**Plots: 802.11A**

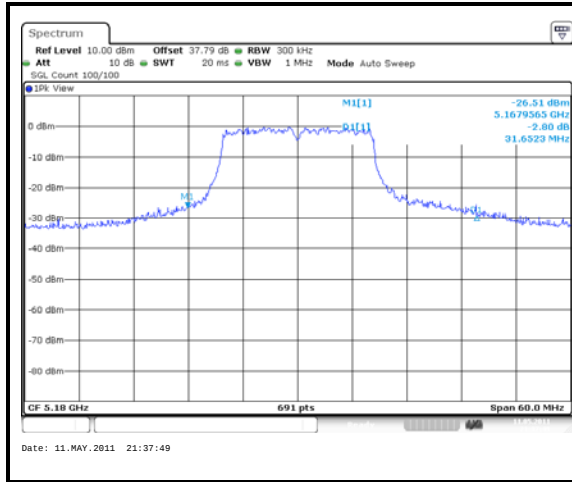
EmissionBandwidth_UNII_1_802_11A_12MBS_TopChannel

EmissionBandwidth_UNII_1_802_11A_18MBS_BottomChannel

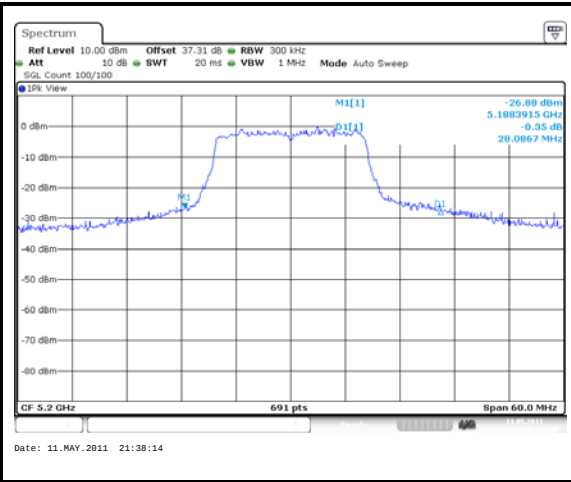


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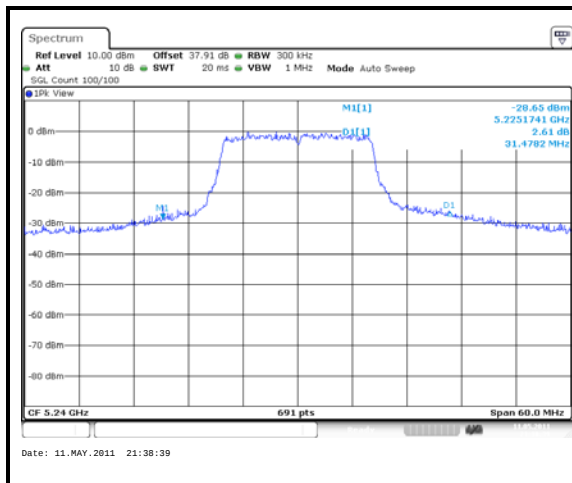
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Transmitter 26 dB Emission Bandwidth (continued)**Plots: 802.11A**

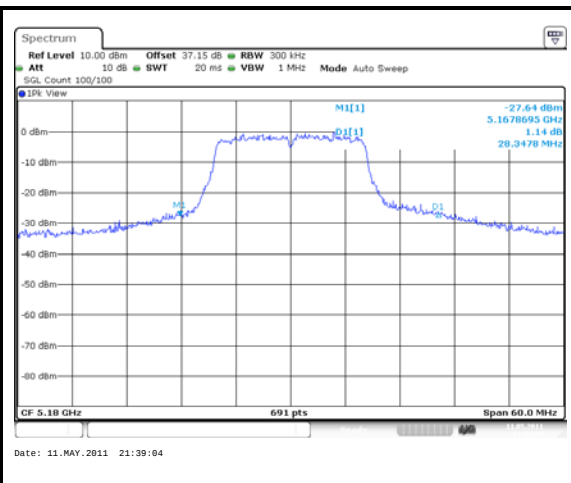
EmissionBandwidth_UNII_1_802_11A_24MBS_BottomChannel



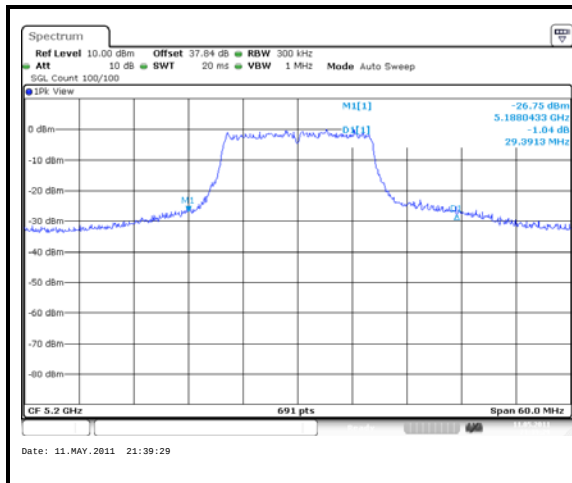
EmissionBandwidth_UNII_1_802_11A_24MBS_MiddleChannel



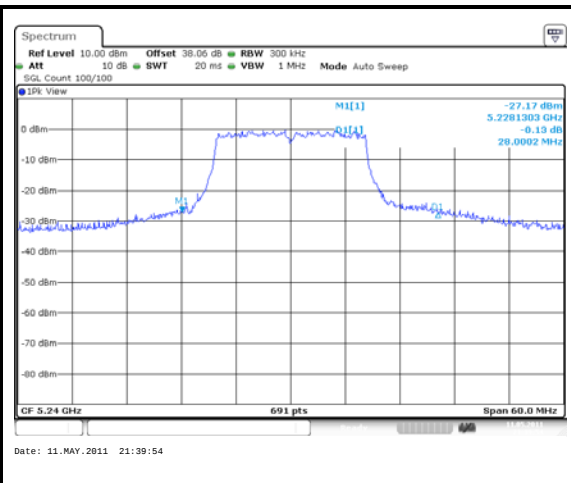
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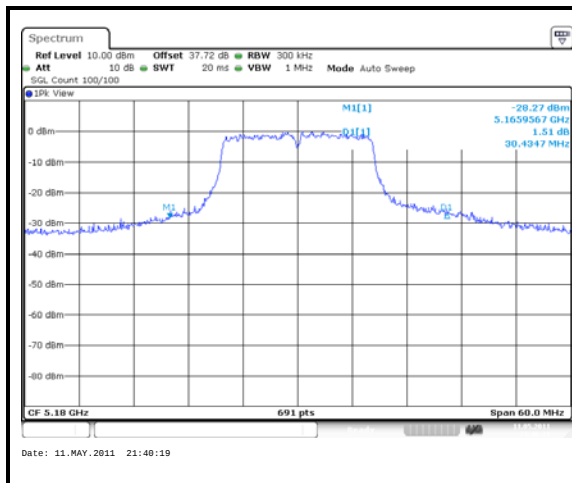
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Transmitter 26 dB Emission Bandwidth (continued)**Plots: 802.11A**

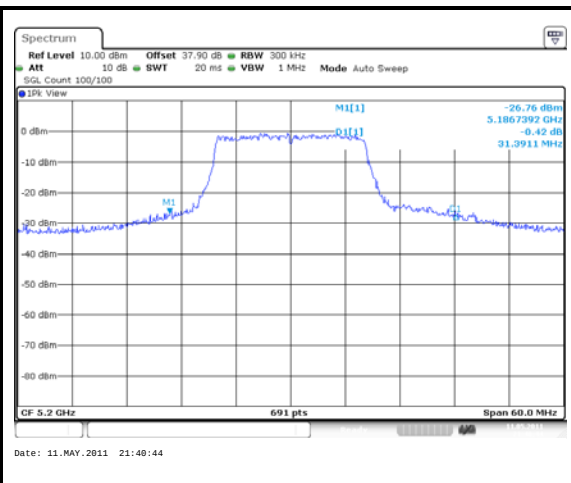
EmissionBandwidth_UNII_1_802_11A_36MBS_MiddleChannel



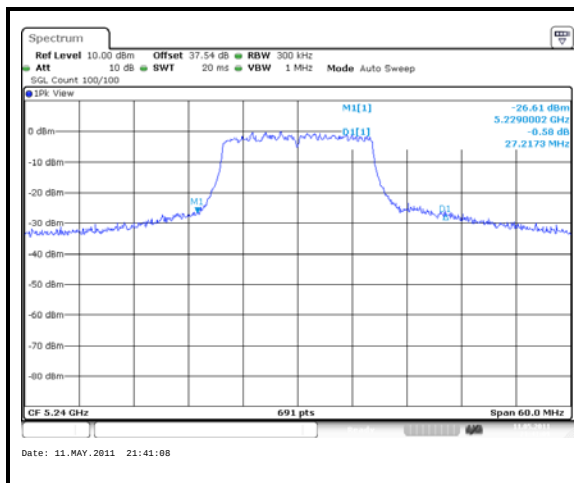
EmissionBandwidth_UNII_1_802_11A_36MBS_TopChannel



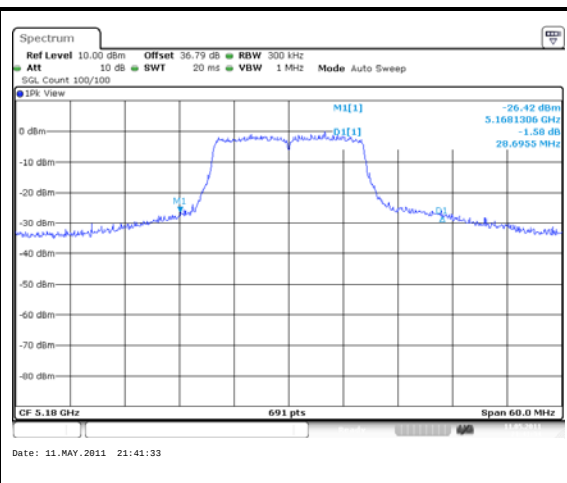
EmissionBandwidth_UNII_1_802_11A_48MBS_BottomChannel



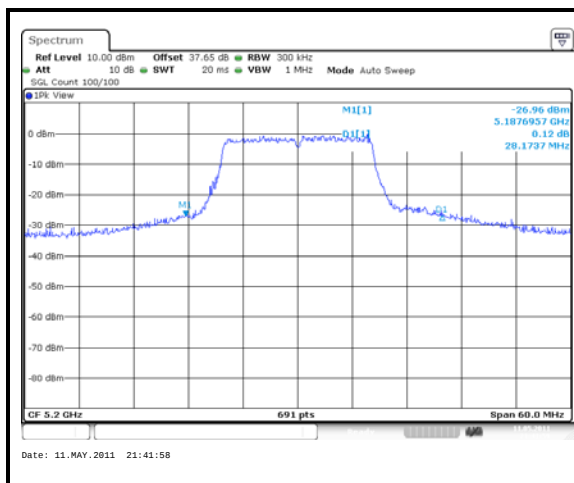
EmissionBandwidth_UNII_1_802_11A_48MBS_MiddleChannel

Transmitter 26 dB Emission Bandwidth (continued)**Plots: 802.11A**

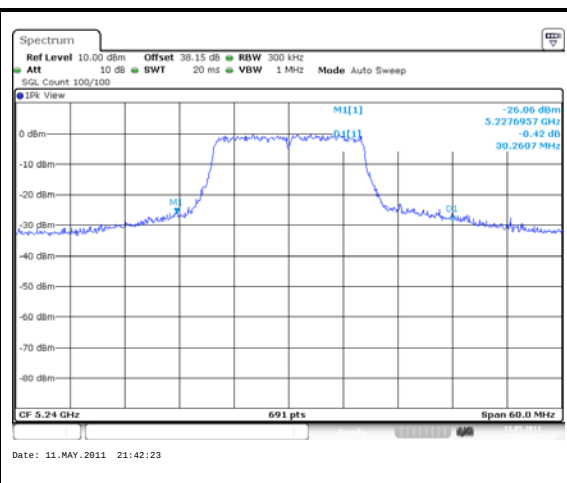
EmissionBandwidth_UNII_1_802_11A_48MBS_TopChannel



EmissionBandwidth_UNII_1_802_11A_54MBS_BottomChannel



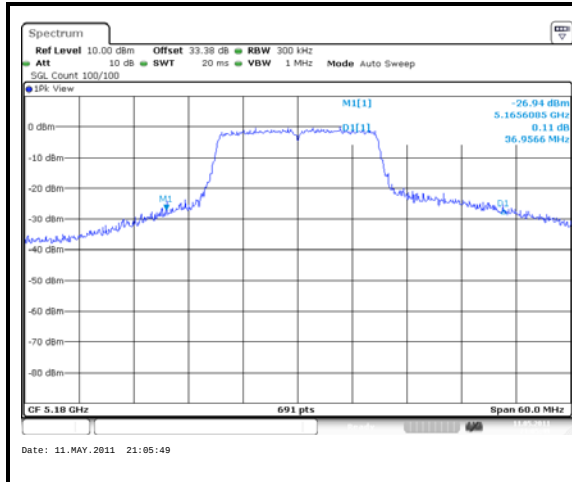
EmissionBandwidth_UNII_1_802_11A_54MBS_MiddleChannel



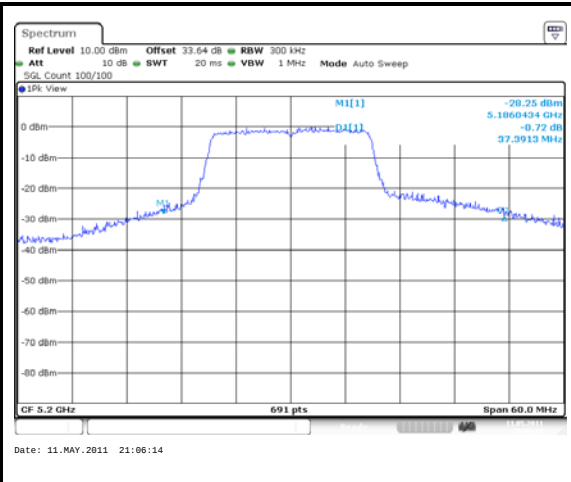
EmissionBandwidth_UNII_1_802_11A_54MBS_TopChannel

Transmitter 26 dB Emission Bandwidth (continued)**Results: 802.11N - 5150 to 5250 MHz band**

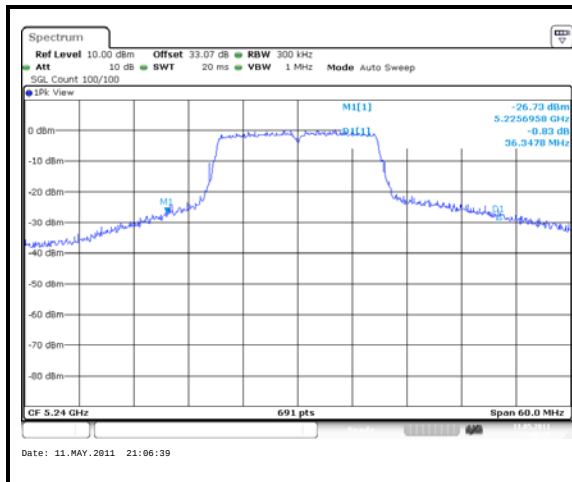
Channel	Frequency (MHz)	Modulation Scheme	Data Rate (MB/s)	26 dB Emission Bandwidth (MHz)
Bottom	5180	BPSK	6.5	37.0
Middle	5200	BPSK	6.5	37.4
Top	5240	BPSK	6.5	36.3
Bottom	5180	QPSK	13	31.8
Middle	5200	QPSK	13	32.6
Top	5240	QPSK	13	27.0
Bottom	5180	QPSK	19.5	31.2
Middle	5200	QPSK	19.5	28.3
Top	5240	QPSK	19.5	30.0
Bottom	5180	16QAM	26	31.9
Middle	5200	16QAM	26	28.2
Top	5240	16QAM	26	28.4
Bottom	5180	16QAM	39	31.6
Middle	5200	16QAM	39	28.3
Top	5240	16QAM	39	25.9
Bottom	5180	64QAM	52	28.3
Middle	5200	64QAM	52	31.7
Top	5240	64QAM	52	28.4
Bottom	5180	64QAM	58.5	29.3
Middle	5200	64QAM	58.5	33.2
Top	5240	64QAM	58.5	28.4
Bottom	5180	64QAM	65	28.6
Middle	5200	64QAM	65	30.6
Top	5240	64QAM	65	31.5

Transmitter 26 dB Emission Bandwidth (continued)**Plots: 802.11N**

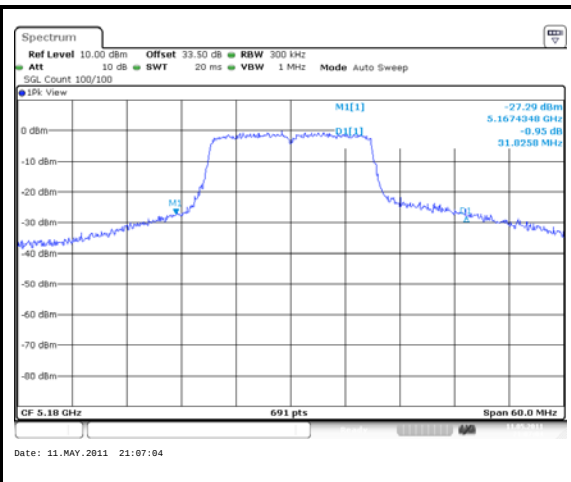
EmissionBandwidth_UNII_1_802_11N_6_5MBS_BottomChannel



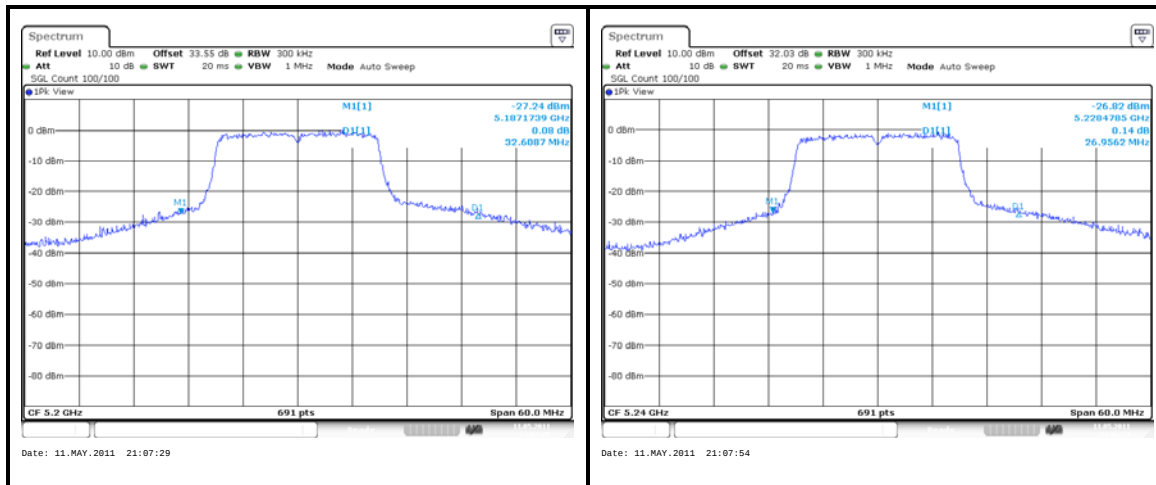
EmissionBandwidth_UNII_1_802_11N_6_5MBS_MiddleChannel



EmissionBandwidth_UNII_1_802_11N_6_5MBS_TopChannel

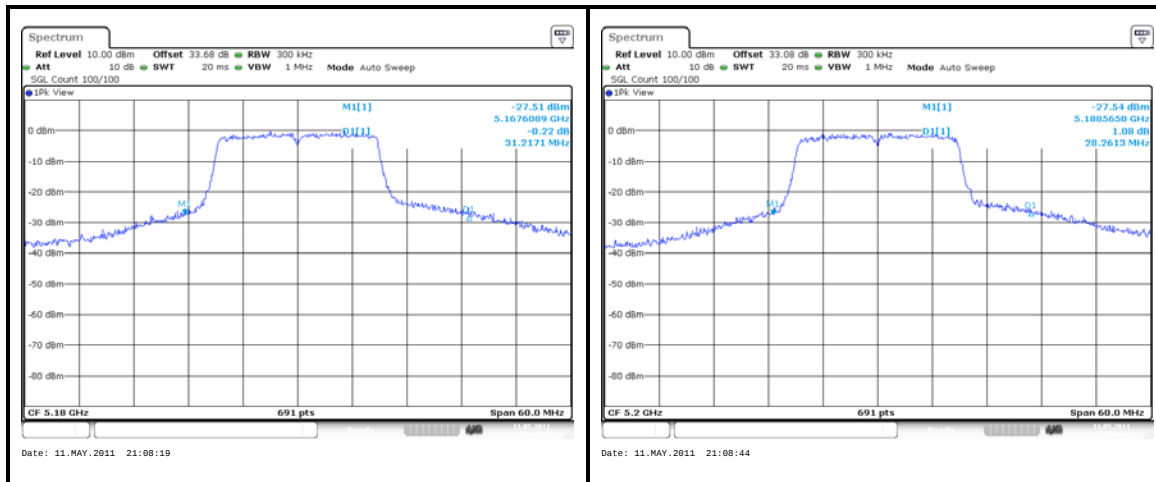


EmissionBandwidth_UNII_1_802_11N_13MBS_BottomChannel

Transmitter 26 dB Emission Bandwidth (continued)**Plots: 802.11N**

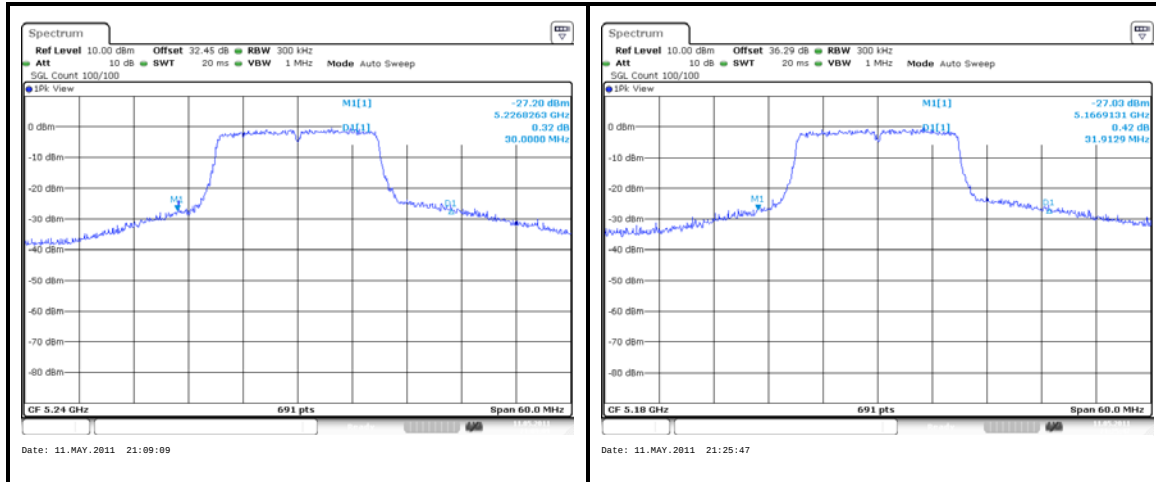
EmissionBandwidth_UNII_1_802_11N_13MBS_MiddleChannel

EmissionBandwidth_UNII_1_802_11N_13MBS_TopChannel



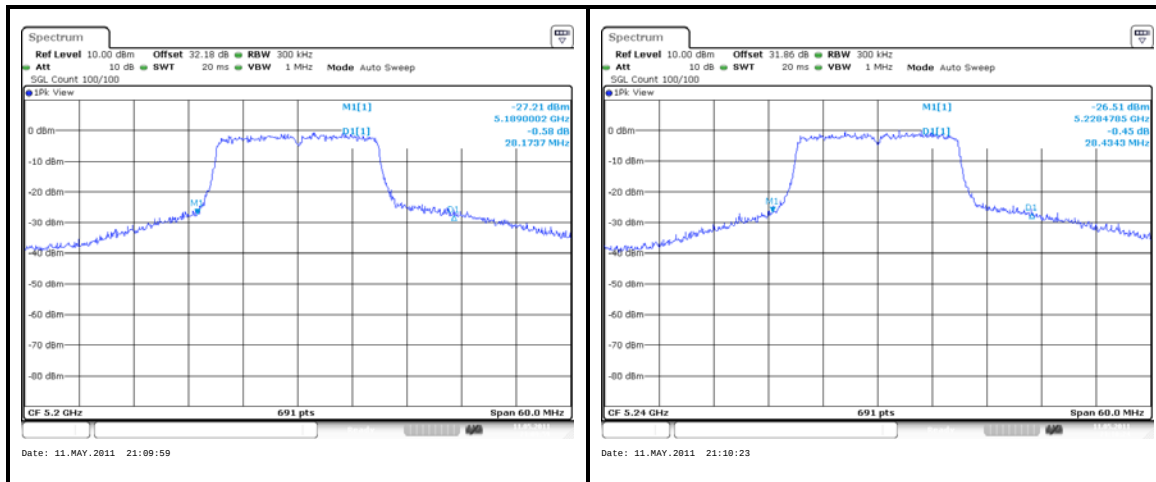
EmissionBandwidth_UNII_1_802_11N_19_5MBS_BottomChannel

EmissionBandwidth_UNII_1_802_11N_19_5MBS_MiddleChannel

Transmitter 26 dB Emission Bandwidth (continued)**Plots: 802.11N**

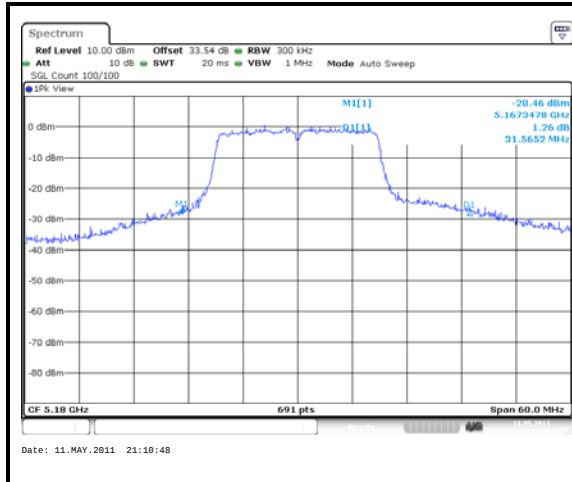
EmissionBandwidth_UNII_1_802_11N_19_5MBS_TopChannel

EmissionBandwidth_UNII_1_802_11N_26MBS_BottomChannel

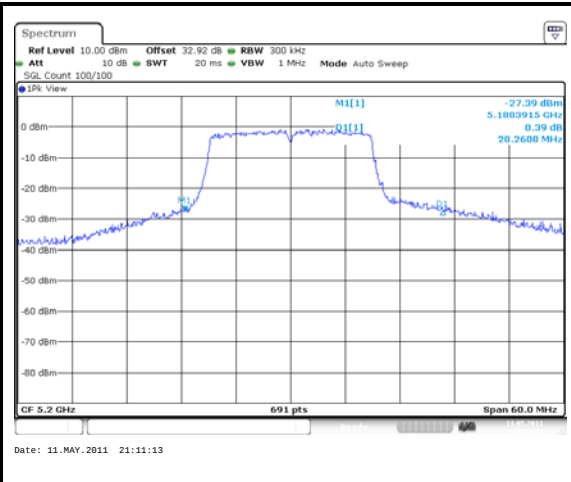


EmissionBandwidth_UNII_1_802_11N_26MBS_MiddleChannel

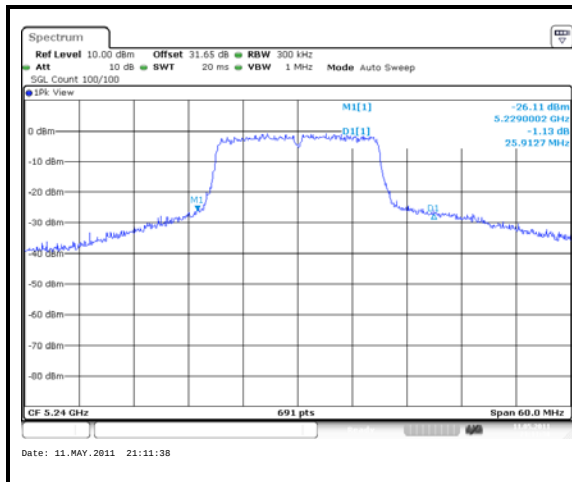
EmissionBandwidth_UNII_1_802_11N_26MBS_TopChannel

Transmitter 26 dB Emission Bandwidth (continued)**Plots: 802.11N**

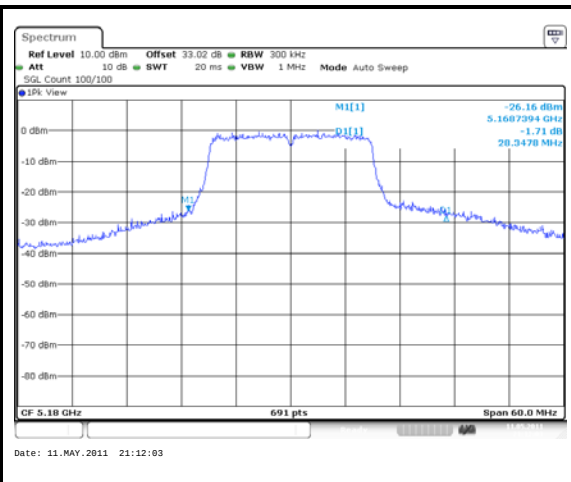
EmissionBandwidth_UNII_1_802_11N_39MBS_BottomChannel



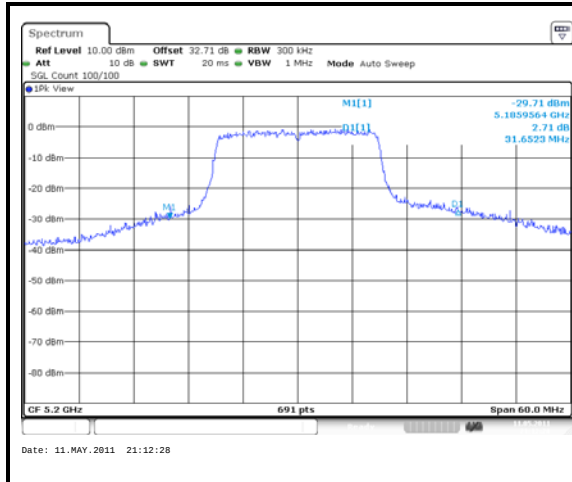
EmissionBandwidth_UNII_1_802_11N_39MBS_MiddleChannel



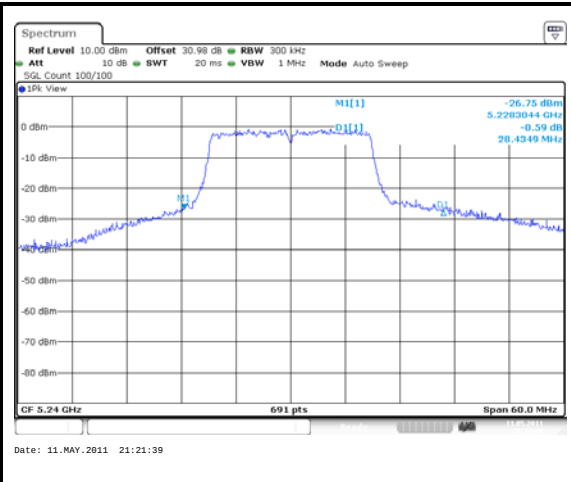
EmissionBandwidth_UNII_1_802_11N_39MBS_TopChannel



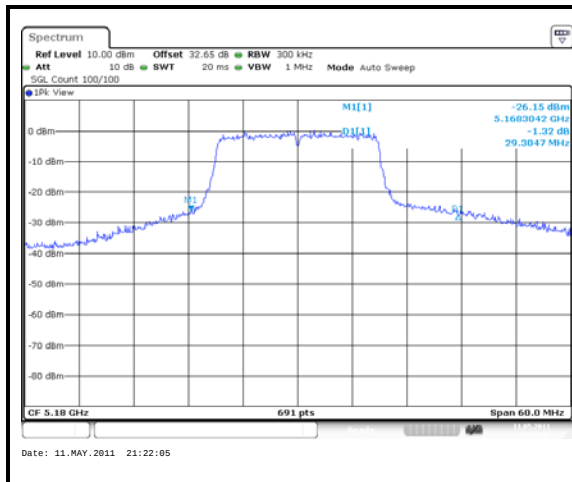
EmissionBandwidth_UNII_1_802_11N_52MBS_BottomChannel

Transmitter 26 dB Emission Bandwidth (continued)**Plots: 802.11N**

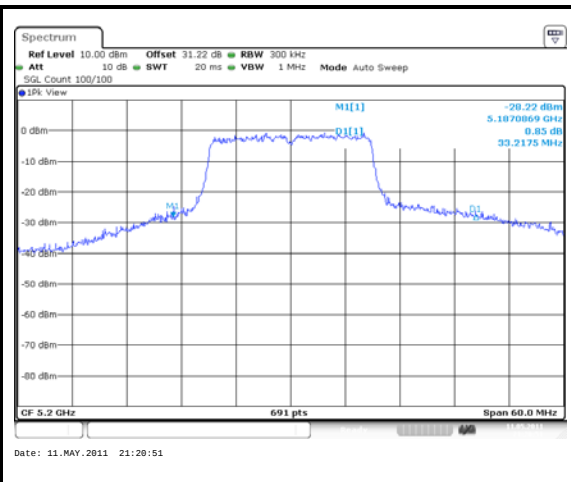
EmissionBandwidth_UNII_1_802_11N_52MBS_MiddleChannel



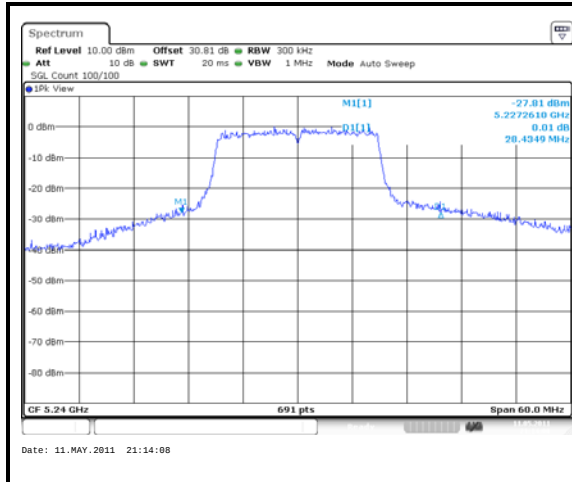
EmissionBandwidth_UNII_1_802_11N_52MBS_TopChannel



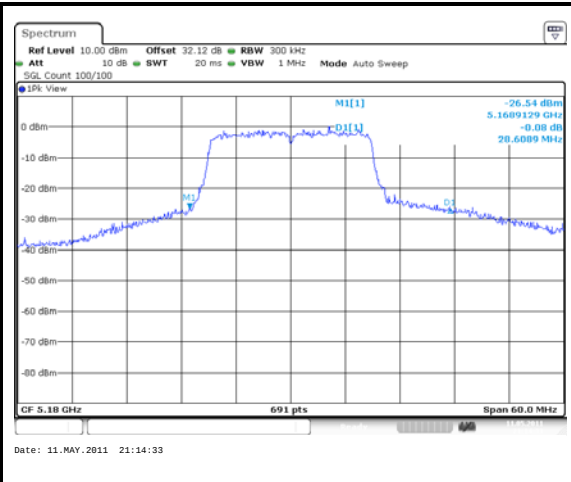
EmissionBandwidth_UNII_1_802_11N_58_5MBS_BottomChannel



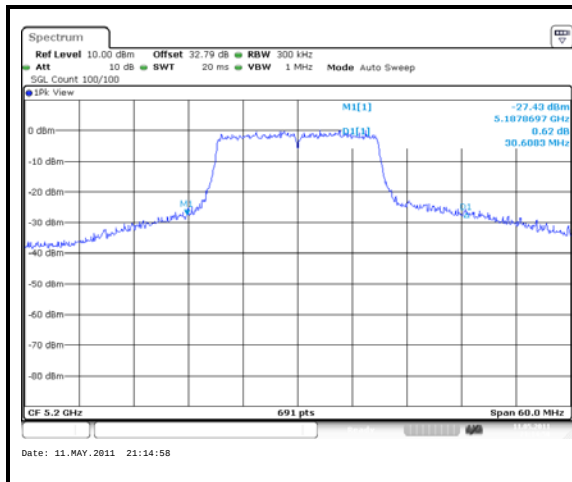
EmissionBandwidth_UNII_1_802_11N_58_5MBS_MiddleChannel

Transmitter 26 dB Emission Bandwidth (continued)**Plots: 802.11N**

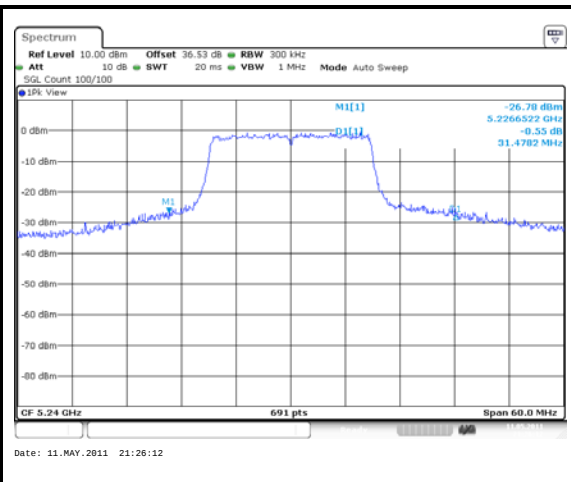
EmissionBandwidth_UNII_1_802_11N_58_5MBS_TopChannel



EmissionBandwidth_UNII_1_802_11N_65MBS_BottomChannel



EmissionBandwidth_UNII_1_802_11N_65MBS_MiddleChannel



EmissionBandwidth_UNII_1_802_11N_65MBS_TopChannel

5.2.4.1. Transmitter 99% Emission Bandwidth**Test Summary:**

Test Engineer:	Nigel Davison	Test Date:	11 May 2011
Test Sample Serial No:	ID 3		

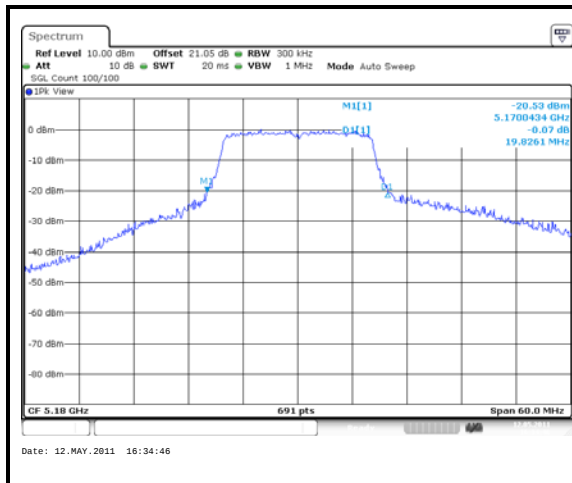
RSS Reference:	RSS-Gen 4.6.1 / RSS-210 A9.2
Test Method Used:	As detailed in RSS-Gen 4.6.1 Note: RBW was set to a maximum of 1% of the 26dB emission bandwidth or the next highest bandwidth up that the analyser supported. A larger bandwidth gave rise to a greater system noise floor which distorting the final result.

Environmental Conditions:

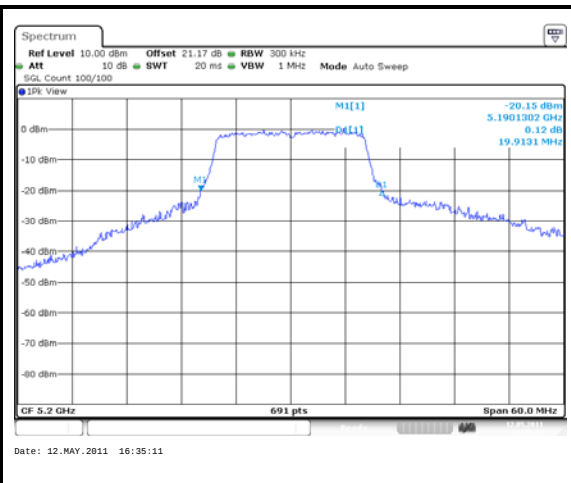
Temperature (°C):	24
Relative Humidity (%):	26

Transmitter 99% Emission Bandwidth (continued)**Results: 802.11A - 5150 to 5250 MHz band**

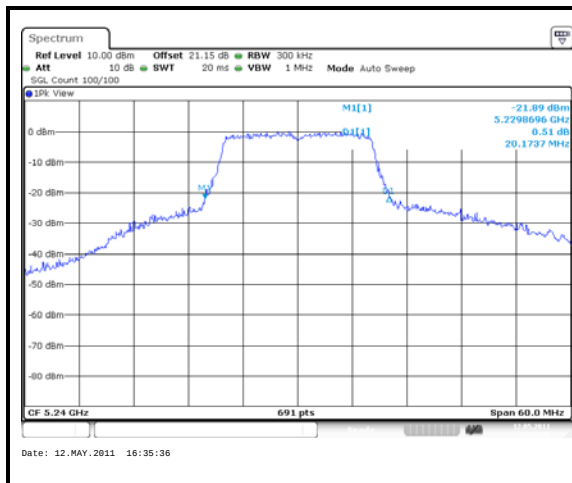
Channel	Frequency (MHz)	Modulation Scheme	Data Rate (MB/s)	99% Emission Bandwidth (MHz)
Bottom	5180	BPSK	6	19.8
Middle	5200	BPSK	6	19.9
Top	5240	BPSK	6	20.2
Bottom	5180	BPSK	9	19.8
Middle	5200	BPSK	9	19.7
Top	5240	BPSK	9	20.1
Bottom	5180	QPSK	12	19.4
Middle	5200	QPSK	12	19.4
Top	5240	QPSK	12	19.3
Bottom	5180	QPSK	18	19.4
Middle	5200	QPSK	18	19.6
Top	5240	QPSK	18	19.5
Bottom	5180	16QAM	24	19.6
Middle	5200	16QAM	24	19.1
Top	5240	16QAM	24	19.4
Bottom	5180	16QAM	36	19.3
Middle	5200	16QAM	36	19.2
Top	5240	16QAM	36	19.6
Bottom	5180	64QAM	48	19.1
Middle	5200	64QAM	48	19.3
Top	5240	64QAM	48	19.0
Bottom	5180	64QAM	54	19.0
Middle	5200	64QAM	54	19.4
Top	5240	64QAM	54	19.7

Transmitter 99% Emission Bandwidth (continued)**Plots: 802.11A**

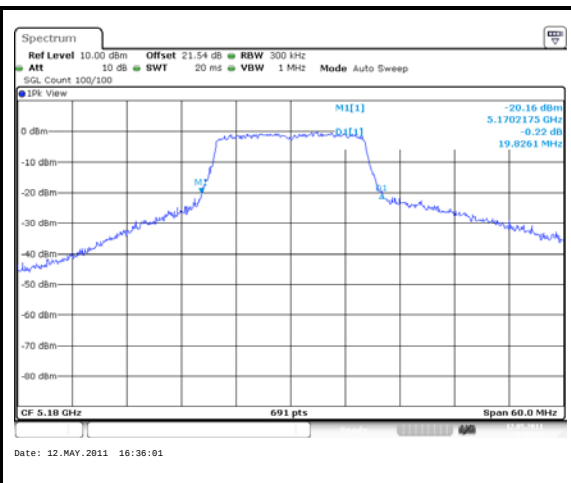
99pct_Bandwidth_UNII_1_802_11A_6MBS_BottomChannel



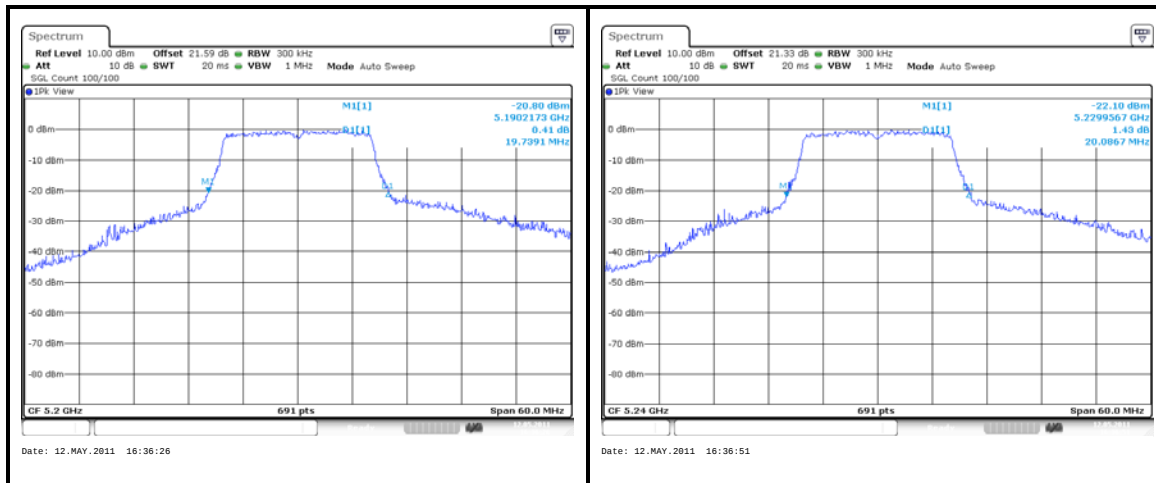
99pct_Bandwidth_UNII_1_802_11A_6MBS_MiddleChannel



99pct_Bandwidth_UNII_1_802_11A_6MBS_TopChannel

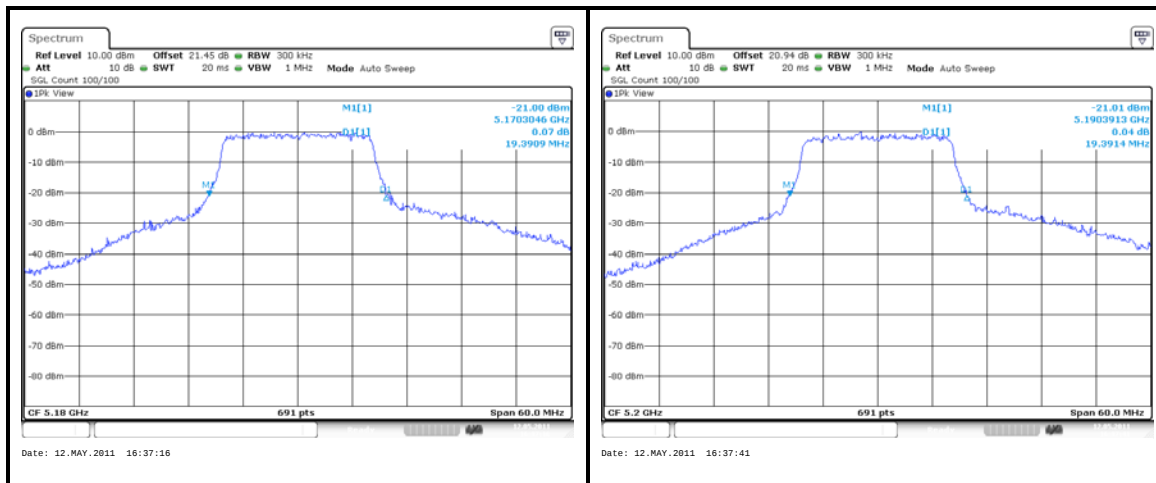


99pct_Bandwidth_UNII_1_802_11A_9MBS_BottomChannel

Transmitter 99% Emission Bandwidth (continued)**Plots: 802.11A**

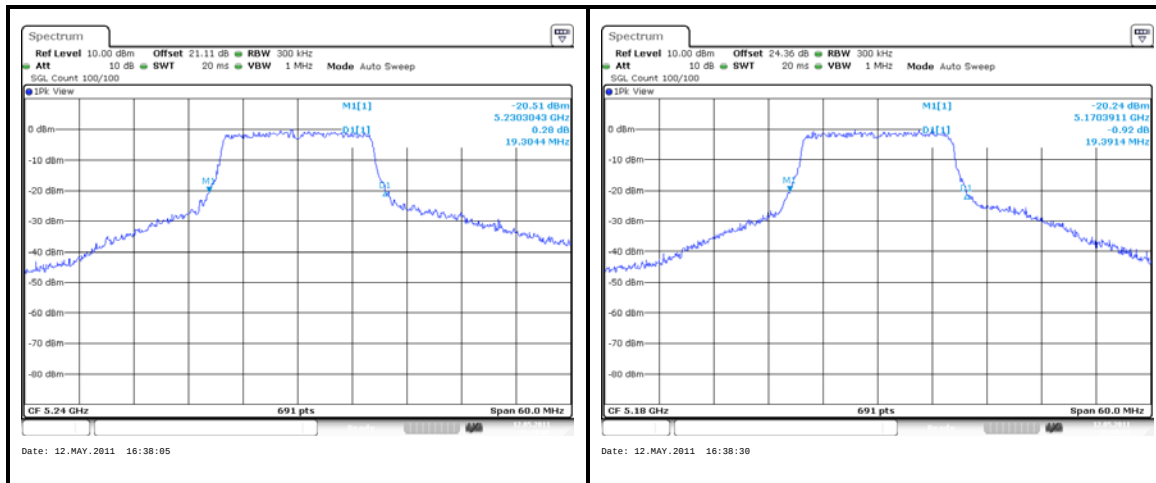
99pct_Bandwidth_UNII_1_802_11A_9MBS_MiddleChannel

99pct_Bandwidth_UNII_1_802_11A_9MBS_TopChannel



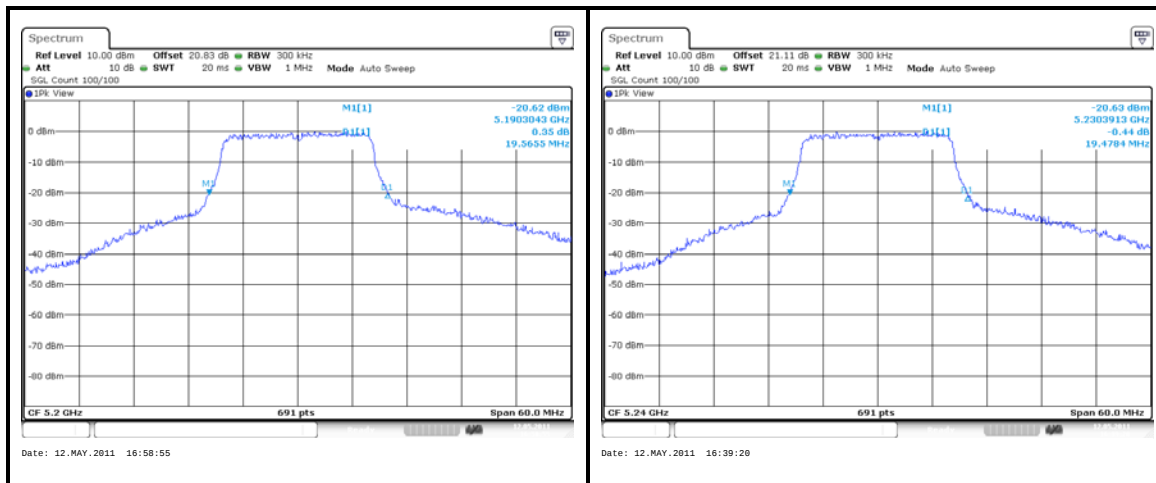
99pct_Bandwidth_UNII_1_802_11A_12MBS_BottomChannel

99pct_Bandwidth_UNII_1_802_11A_12MBS_MiddleChannel

Transmitter 99% Emission Bandwidth (continued)**Plots: 802.11A**

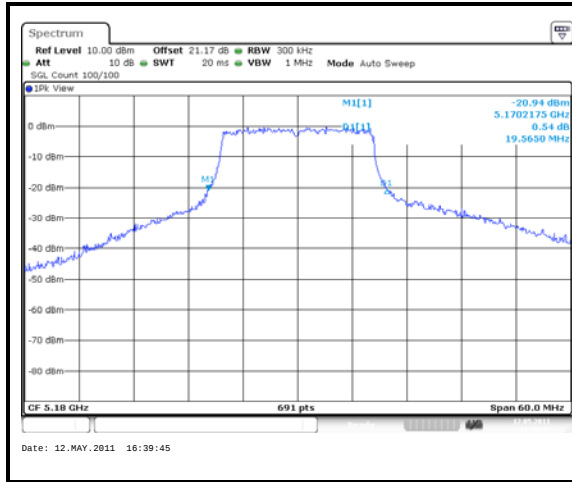
99pct_Bandwidth_UNII_1_802_11A_12MBS_TopChannel

99pct_Bandwidth_UNII_1_802_11A_18MBS_BottomChannel

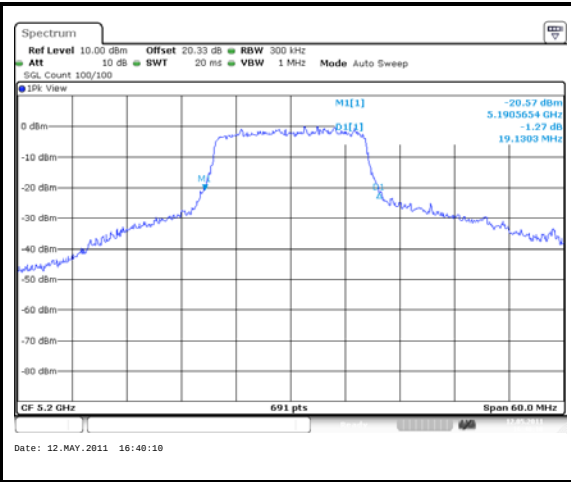


99pct_Bandwidth_UNII_1_802_11A_18MBS_MiddleChannel

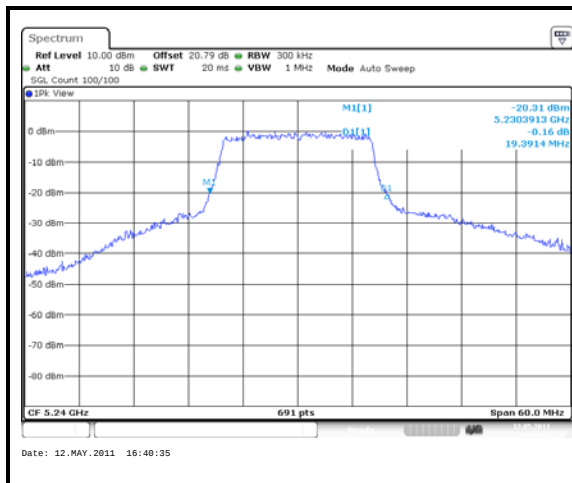
99pct_Bandwidth_UNII_1_802_11A_18MBS_TopChannel

Transmitter 99% Emission Bandwidth (continued)**Plots: 802.11A**

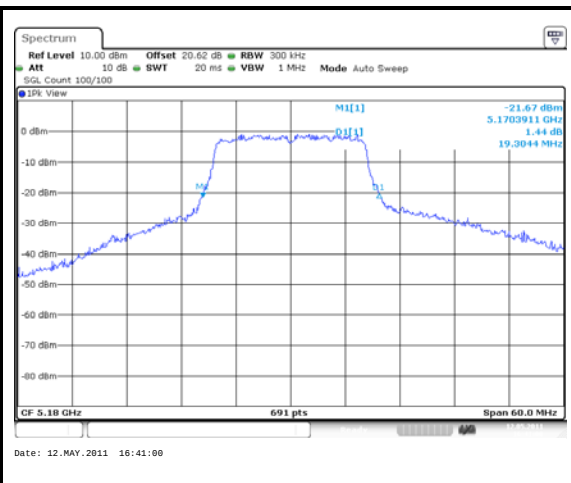
99pct_Bandwidth_UNII_1_802_11A_24MBS_BottomChannel



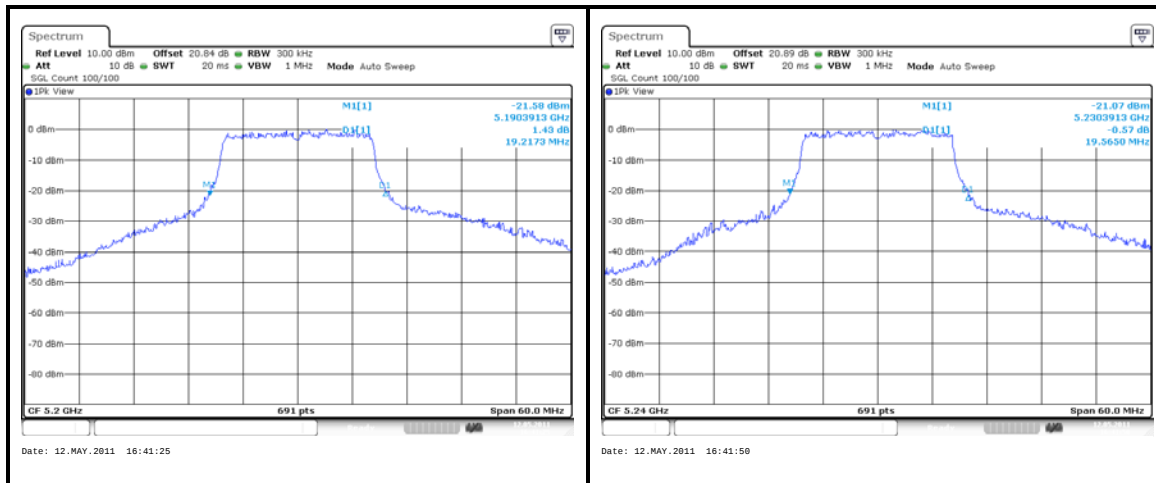
99pct_Bandwidth_UNII_1_802_11A_24MBS_MiddleChannel



99pct_Bandwidth_UNII_1_802_11A_24MBS_TopChannel

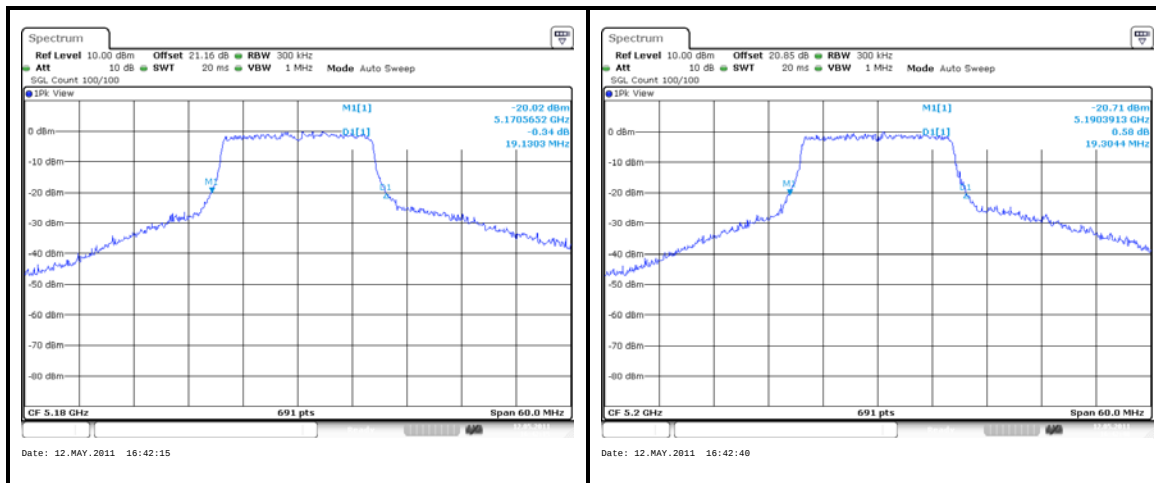


99pct_Bandwidth_UNII_1_802_11A_36MBS_BottomChannel

Transmitter 99% Emission Bandwidth (continued)**Plots: 802.11A**

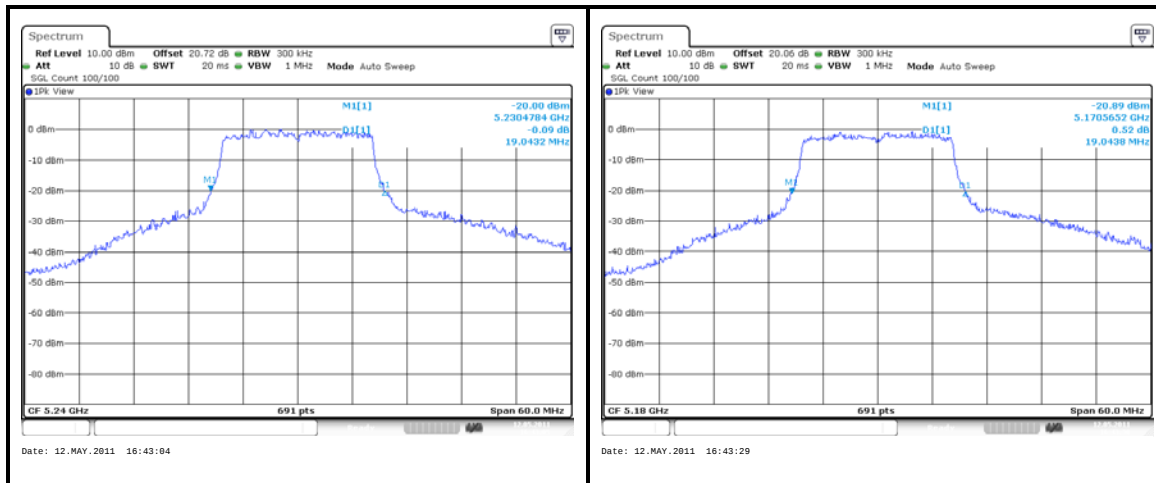
99pct_Bandwidth_UNII_1_802_11A_36MBS_MiddleChannel

99pct_Bandwidth_UNII_1_802_11A_36MBS_TopChannel



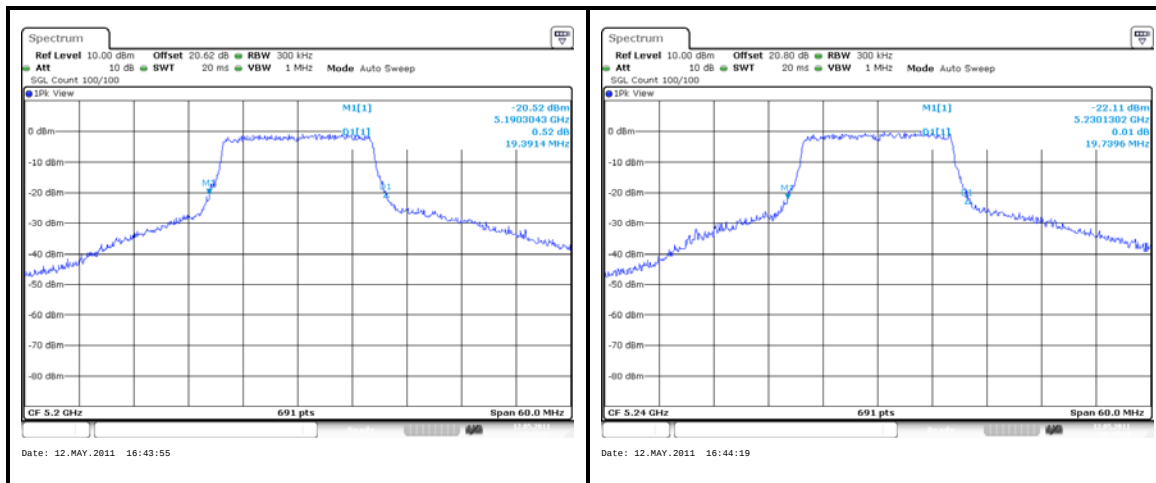
99pct_Bandwidth_UNII_1_802_11A_48MBS_BottomChannel

99pct_Bandwidth_UNII_1_802_11A_48MBS_MiddleChannel

Transmitter 99% Emission Bandwidth (continued)**Plots: 802.11A**

99pct_Bandwidth_UNII_1_802_11A_48MBS_TopChannel

99pct_Bandwidth_UNII_1_802_11A_54MBS_BottomChannel

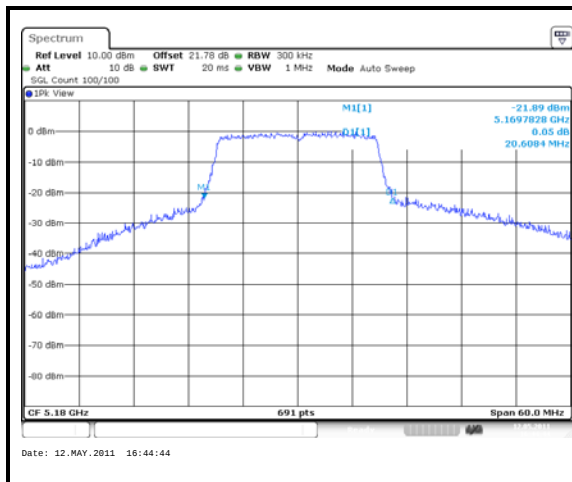


99pct_Bandwidth_UNII_1_802_11A_54MBS_MiddleChannel

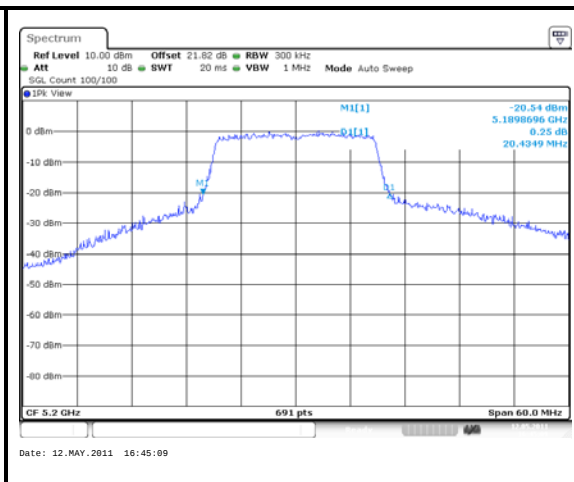
99pct_Bandwidth_UNII_1_802_11A_54MBS_TopChannel

Transmitter 99% Emission Bandwidth (continued)**Results: 802.11N - 5150 to 5250 MHz band**

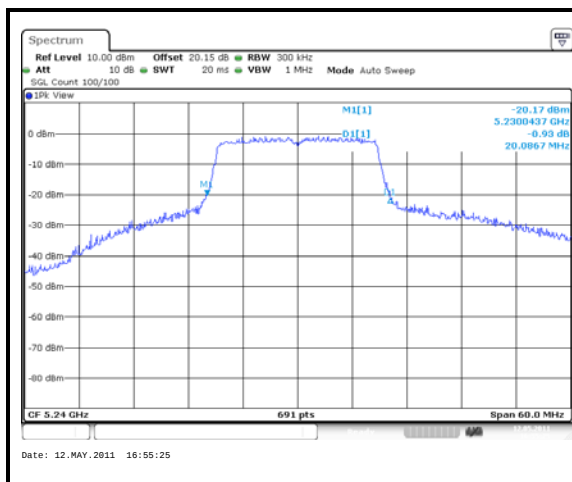
Channel	Frequency (MHz)	Modulation Scheme	Data Rate (MB/s)	99% Emission Bandwidth (MHz)
Bottom	5180	BPSK	6.5	20.6
Middle	5200	BPSK	6.5	20.4
Top	5240	BPSK	6.5	20.1
Bottom	5180	QPSK	13	20.3
Middle	5200	QPSK	13	20.3
Top	5240	QPSK	13	20.3
Bottom	5180	QPSK	19.5	20.0
Middle	5200	QPSK	19.5	20.2
Top	5240	QPSK	19.5	20.0
Bottom	5180	16QAM	26	19.7
Middle	5200	16QAM	26	20.2
Top	5240	16QAM	26	19.7
Bottom	5180	16QAM	39	20.2
Middle	5200	16QAM	39	20.2
Top	5240	16QAM	39	20.1
Bottom	5180	64QAM	52	20.2
Middle	5200	64QAM	52	20.1
Top	5240	64QAM	52	20.0
Bottom	5180	64QAM	58.5	19.9
Middle	5200	64QAM	58.5	20.0
Top	5240	64QAM	58.5	20.0
Bottom	5180	64QAM	65	20.0
Middle	5200	64QAM	65	20.1
Top	5240	64QAM	65	19.7

Transmitter 99% Emission Bandwidth (continued)**Results: 802.11N**

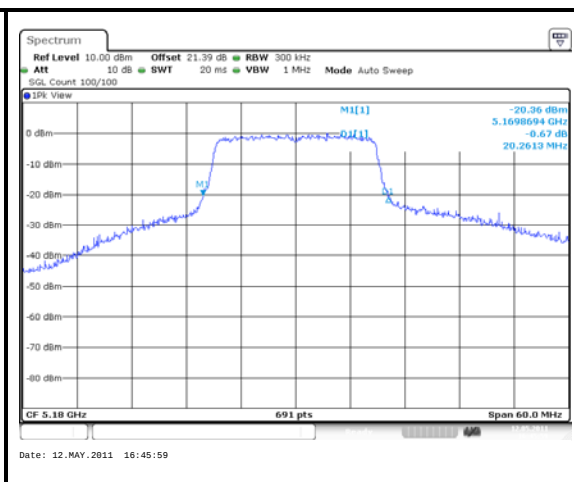
99pct_Bandwidth_UNII_1_802_11N_6_5MBS_BottomChannel



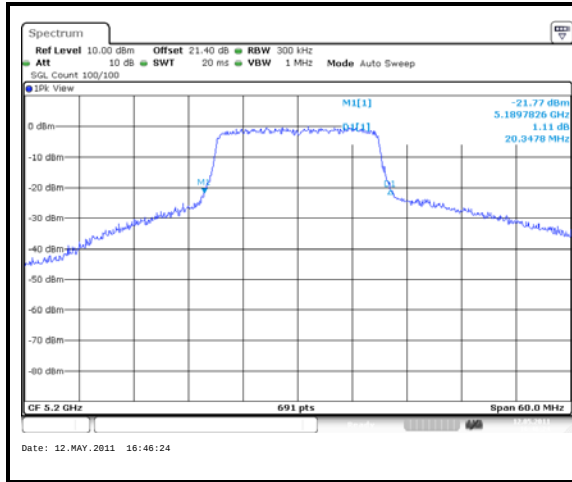
99pct_Bandwidth_UNII_1_802_11N_6_5MBS_MiddleChannel



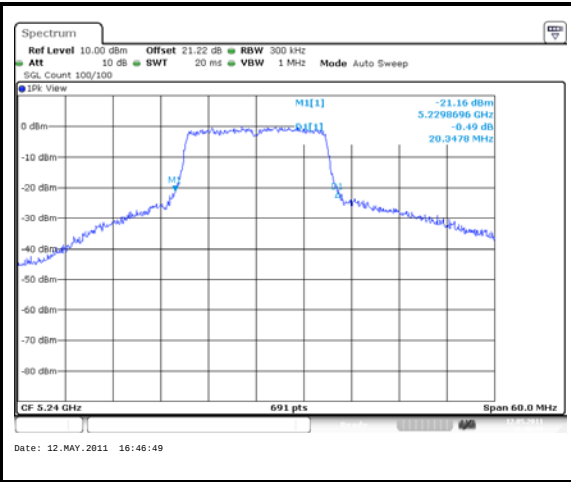
99pct_Bandwidth_UNII_1_802_11N_6_5MBS_TopChannel



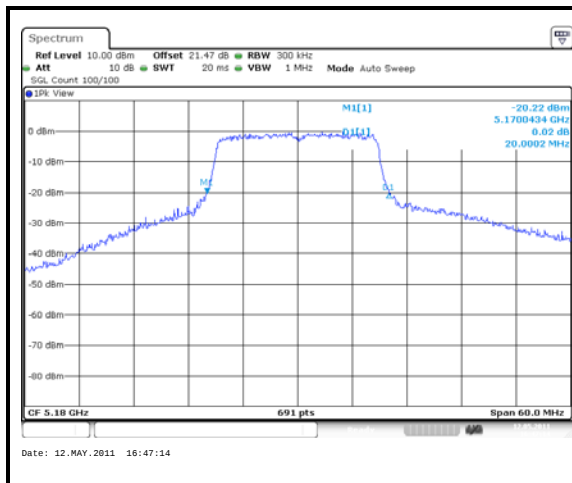
99pct_Bandwidth_UNII_1_802_11N_13MBS_BottomChannel

Transmitter 99% Emission Bandwidth (continued)**Results: 802.11N**

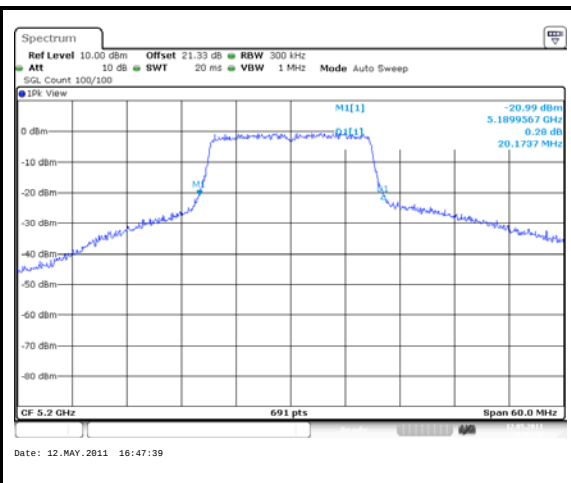
99pct_Bandwidth_UNII_1_802_11N_13MBS_MiddleChannel



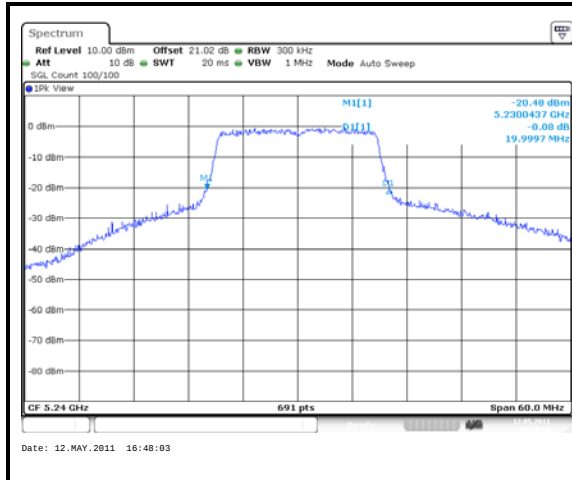
99pct_Bandwidth_UNII_1_802_11N_13MBS_TopChannel



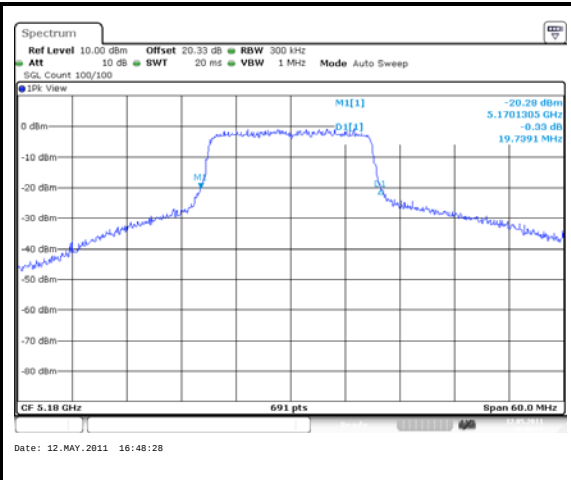
99pct_Bandwidth_UNII_1_802_11N_19_5MBS_BottomChannel



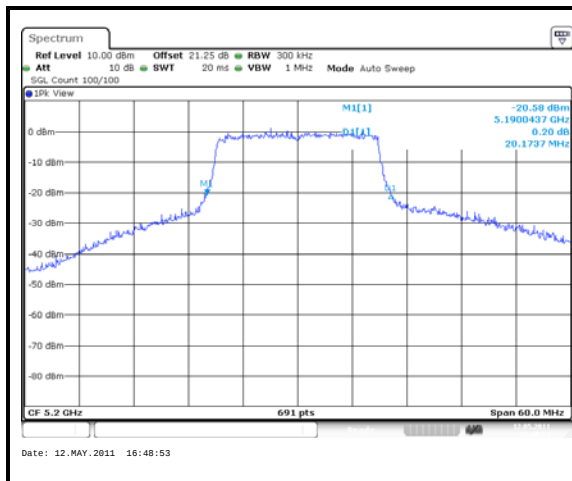
99pct_Bandwidth_UNII_1_802_11N_19_5MBS_MiddleChannel

Transmitter 99% Emission Bandwidth (continued)**Results: 802.11N**

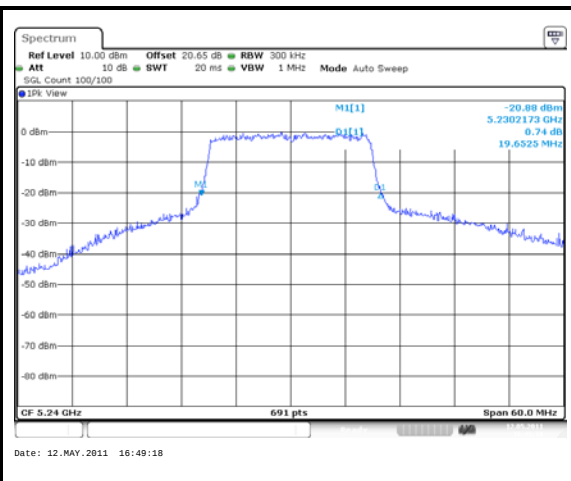
99pct_Bandwidth_UNII_1_802_11N_19_5MBS_TopChannel



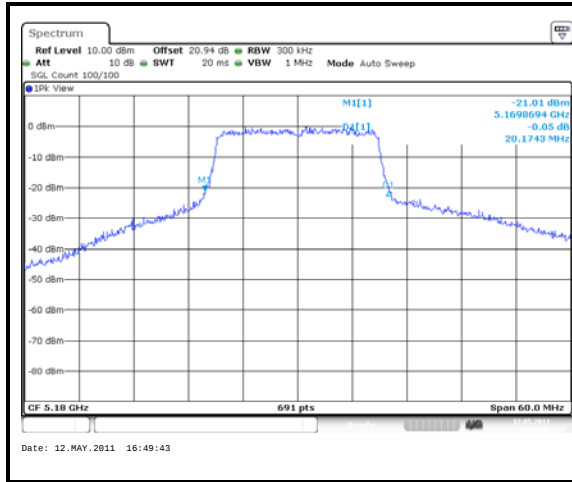
99pct_Bandwidth_UNII_1_802_11N_26MBS_BottomChannel



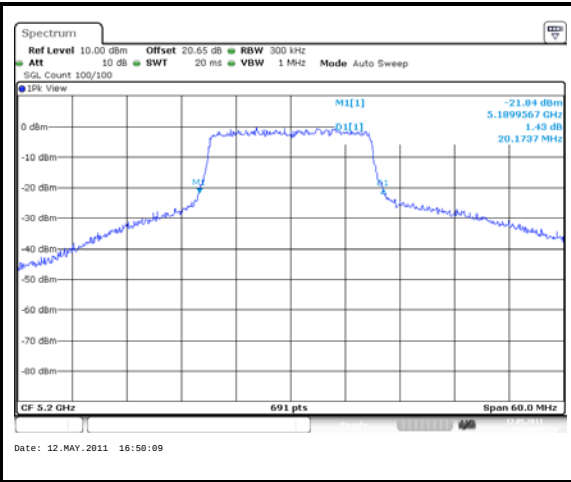
99pct_Bandwidth_UNII_1_802_11N_26MBS_MiddleChannel



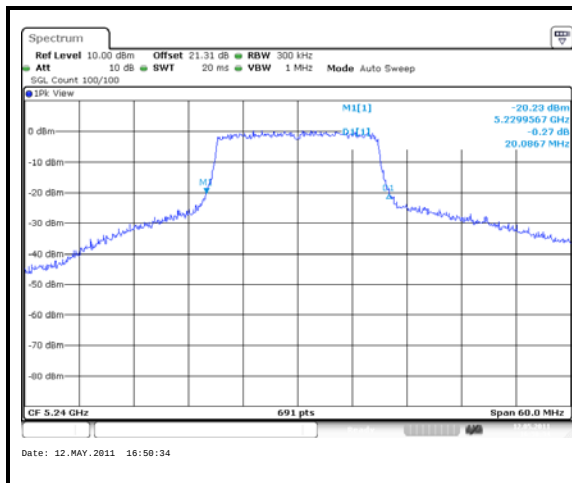
99pct_Bandwidth_UNII_1_802_11N_26MBS_TopChannel

Transmitter 99% Emission Bandwidth (continued)**Results: 802.11N**

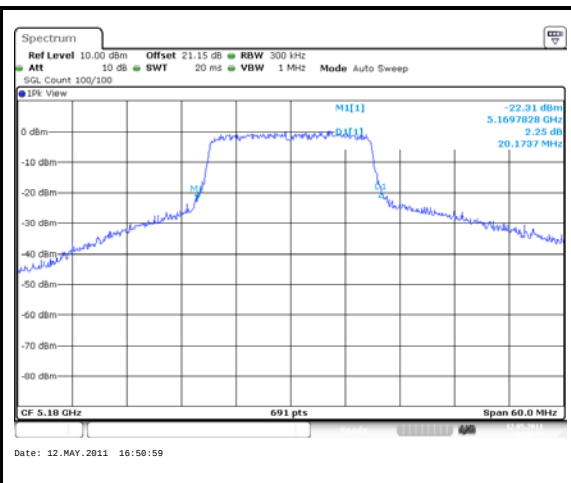
99pct_Bandwidth_UNII_1_802_11N_39MBS_BottomChannel



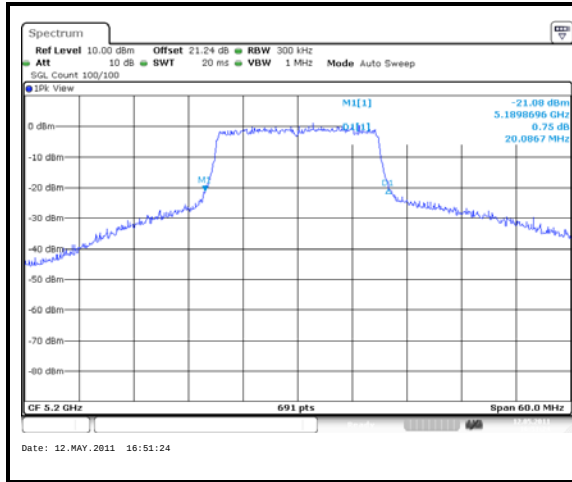
99pct_Bandwidth_UNII_1_802_11N_39MBS_MiddleChannel



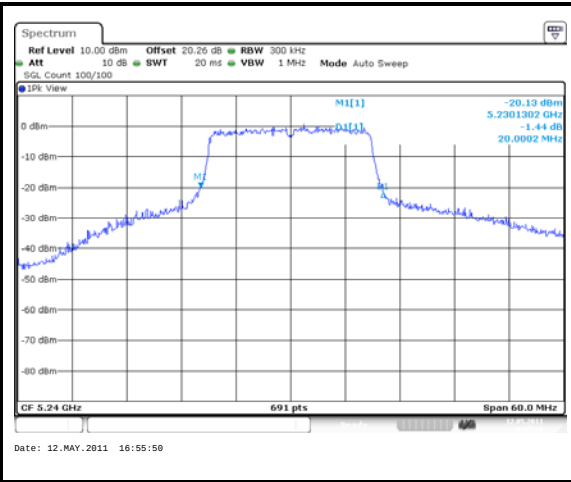
99pct_Bandwidth_UNII_1_802_11N_39MBS_TopChannel



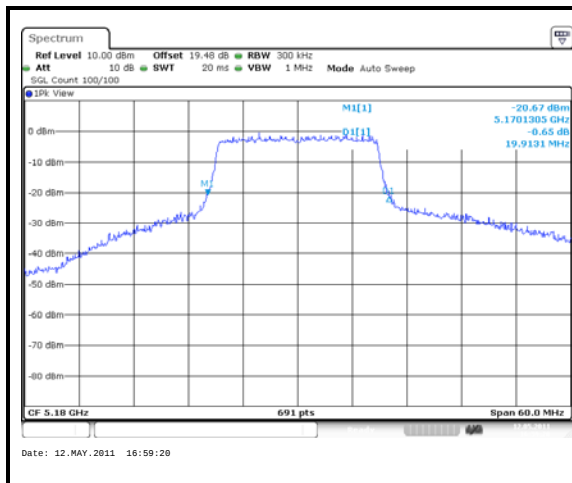
99pct_Bandwidth_UNII_1_802_11N_52MBS_BottomChannel

Transmitter 99% Emission Bandwidth (continued)**Results: 802.11N**

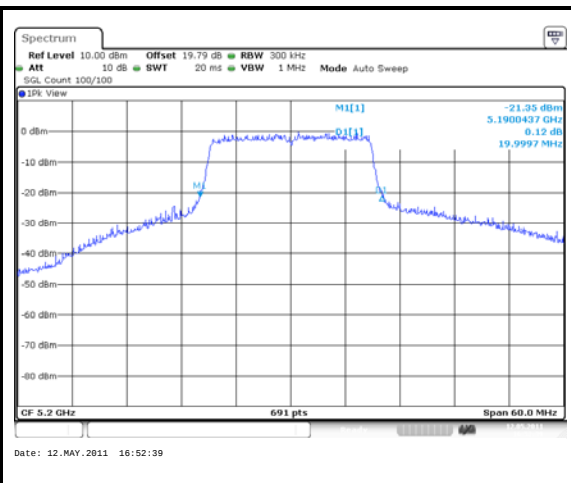
99pct_Bandwidth_UNII_1_802_11N_52MBS_MiddleChannel



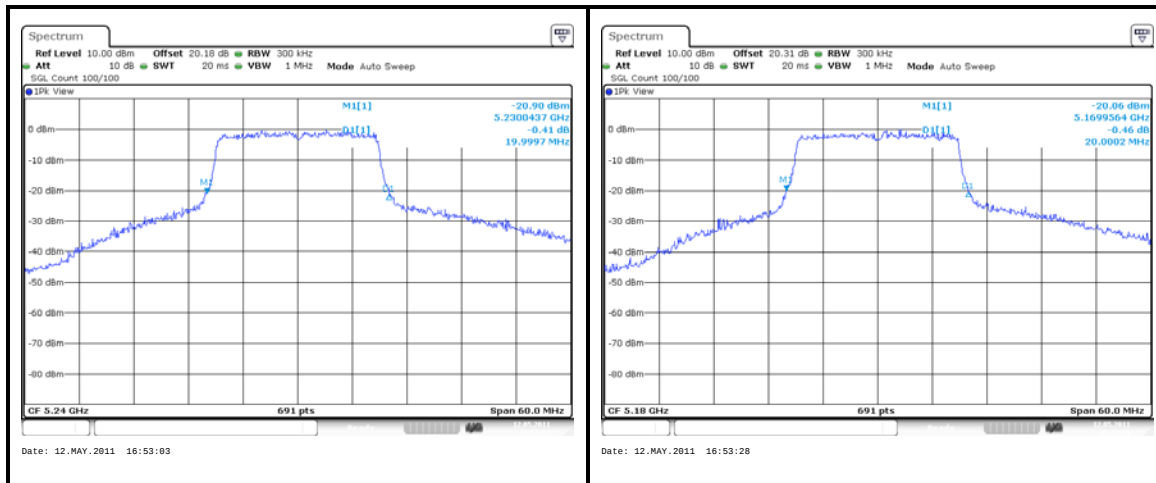
99pct_Bandwidth_UNII_1_802_11N_52MBS_TopChannel



99pct_Bandwidth_UNII_1_802_11N_58_5MBS_BottomChannel

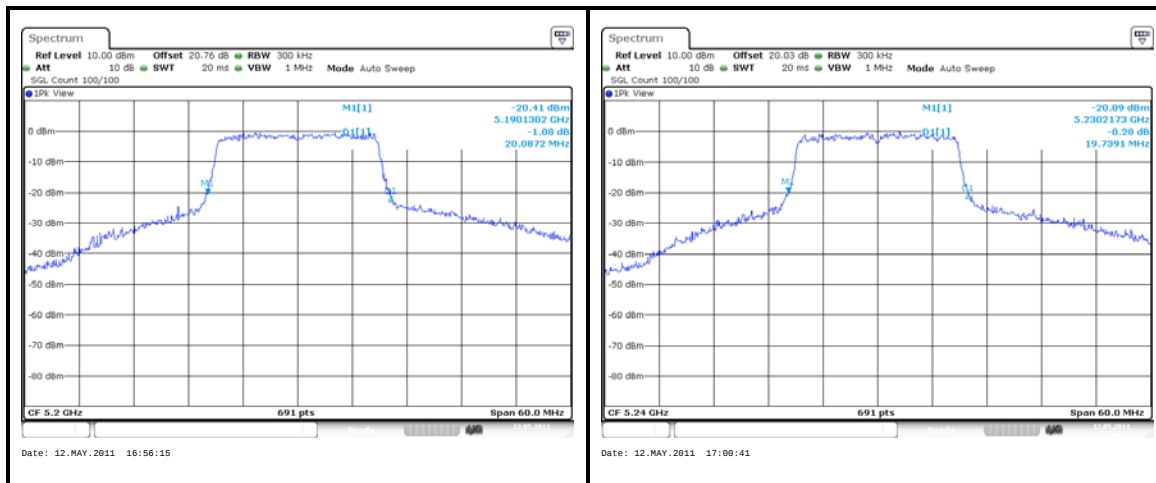


99pct_Bandwidth_UNII_1_802_11N_58_5MBS_MiddleChannel

Transmitter 99% Emission Bandwidth (continued)**Results: 802.11N**

99pct_Bandwidth_UNII_1_802_11N_58_5MBS_TopChannel

99pct_Bandwidth_UNII_1_802_11N_65MBS_BottomChannel



99pct_Bandwidth_UNII_1_802_11N_65MBS_MiddleChannel

99pct_Bandwidth_UNII_1_802_11N_65MBS_TopChannel

5.2.5. Transmitter Maximum Peak Output Power**Test Summary:**

Test Engineer:	Nigel Davison	Test Date:	12 May 2011
Test Sample Serial No:	ID 3		

FCC Reference:	FCC 15.407(a)
Test Method Used:	As detailed in ANSI C63.10 Section 6.10.3.1 Method 1

Environmental Conditions:

Temperature (°C):	26
Relative Humidity (%):	24

The limit was the lesser of 17dBm or 4dBm + 10 x Log (B) where B is the emission bandwidth measure above.

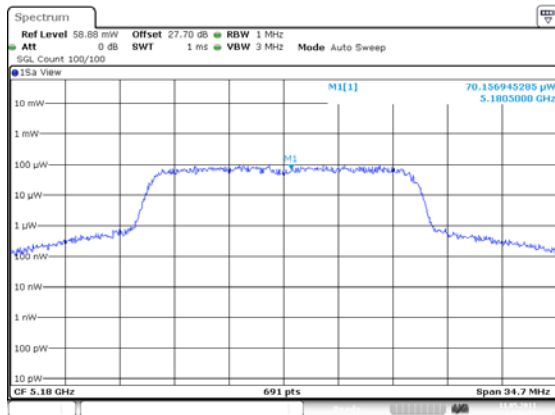
For the result of 5150 to 5250MHz, 17dBm was the lowest limit and thus was used as the limit shown in the results table below.

For 802.11N, limits for all bands were calculated based on the emissions bandwidth and the limit calculation within the FCC 15.407 as these were slightly lower than the fixed limits.

The gain of the proposed antenna is 3dBi.

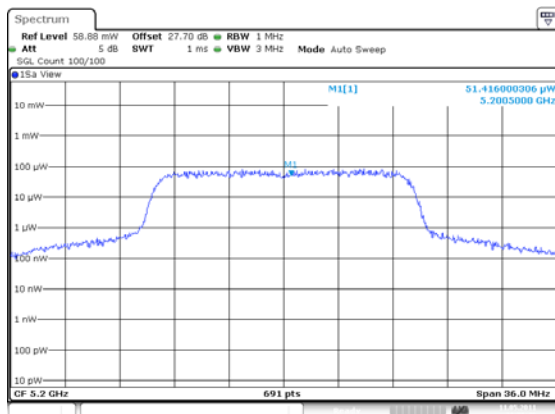
Transmitter Maximum Peak Output Power (continued)**Results - 802.11A 5150 to 5250MHz**

Channel	Frequency (MHz)	Modulation Scheme	Data Rate (Mbps)	Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5180	BPSK	6	8.2	17	8.8	Complied
Middle	5200	BPSK	6	7.1	17	9.9	Complied
Top	5240	BPSK	6	7.5	17	9.5	Complied
Bottom	5180	BPSK	9	6.8	17	10.2	Complied
Middle	5200	BPSK	9	7.7	17	9.3	Complied
Top	5240	BPSK	9	8.5	17	8.5	Complied
Bottom	5180	QPSK	12	7.1	17	9.9	Complied
Middle	5200	QPSK	12	7.3	17	9.7	Complied
Top	5240	QPSK	12	8.0	17	9.0	Complied
Bottom	5180	QPSK	18	6.4	17	10.6	Complied
Middle	5200	QPSK	18	6.9	17	10.1	Complied
Top	5240	QPSK	18	7.5	17	9.5	Complied
Bottom	5180	16QAM	24	6.6	17	10.4	Complied
Middle	5200	16QAM	24	6.6	17	10.4	Complied
Top	5240	16QAM	24	7.4	17	9.6	Complied
Bottom	5180	16QAM	36	8.3	17	8.7	Complied
Middle	5200	16QAM	36	7.8	17	9.2	Complied
Top	5240	16QAM	36	8.3	17	8.7	Complied
Bottom	5180	64QAM	48	7.5	17	9.5	Complied
Middle	5200	64QAM	48	7.4	17	9.6	Complied
Top	5240	64QAM	48	8.9	17	8.1	Complied
Bottom	5180	64QAM	54	7.5	17	9.5	Complied
Middle	5200	64QAM	54	7.4	17	9.6	Complied
Top	5240	64QAM	54	7.7	17	9.3	Complied

Transmitter Maximum Peak Output Power (continued)**Results - 802.11A 5150 to 5250MHz**

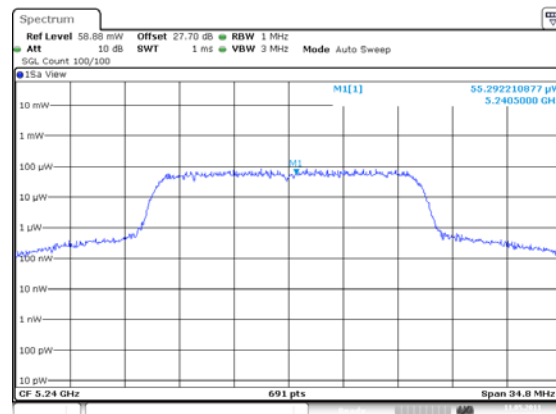
Date: 11.MAY.2011 21:56:17

Channel_Power_UNII_1_802_11A_6MBS_BottomChannel



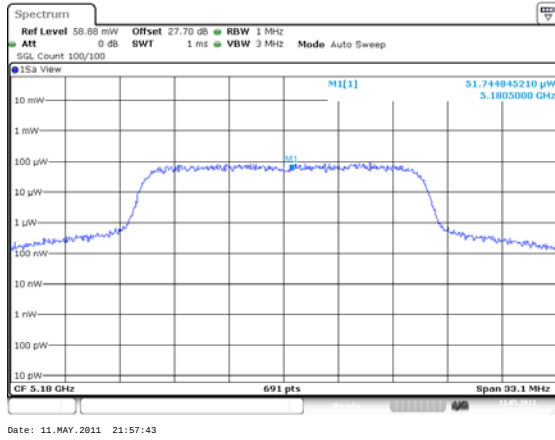
Date: 11.MAY.2011 21:56:45

Channel_Power_UNII_1_802_11A_6MBS_MiddleChannel

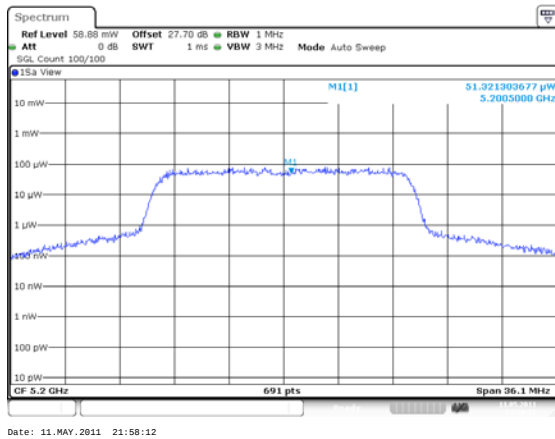


Date: 11.MAY.2011 21:57:14

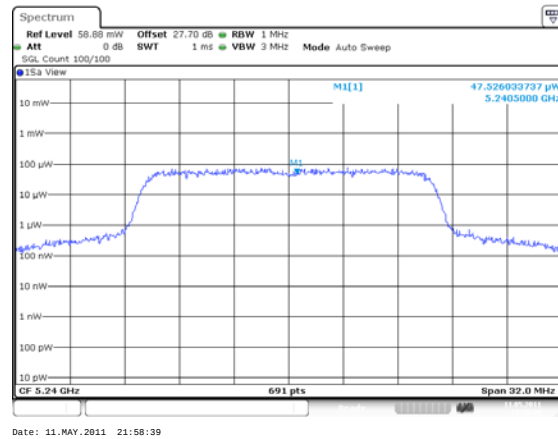
Channel_Power_UNII_1_802_11A_6MBS_TopChannel

Transmitter Maximum Peak Output Power (continued)

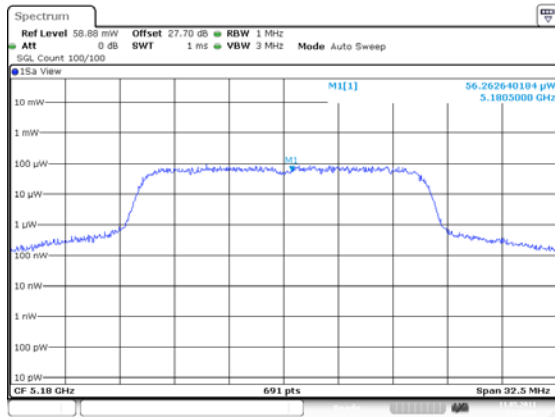
Channel_Power_UNII_1_802_11A_9MBS_BottomChannel



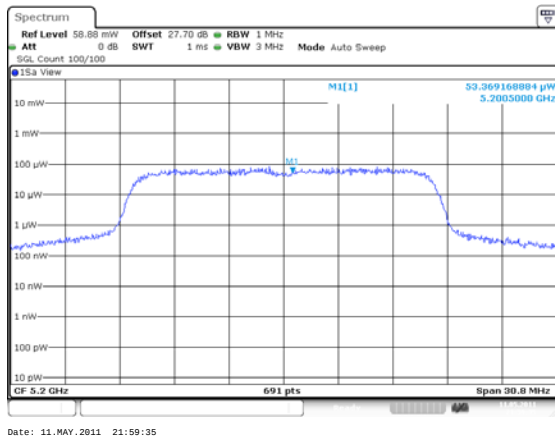
Channel_Power_UNII_1_802_11A_9MBS_MiddleChannel



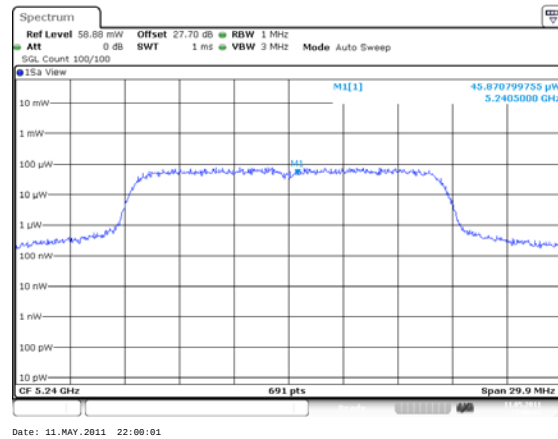
Channel_Power_UNII_1_802_11A_9MBS_TopChannel

Transmitter Maximum Peak Output Power (continued)

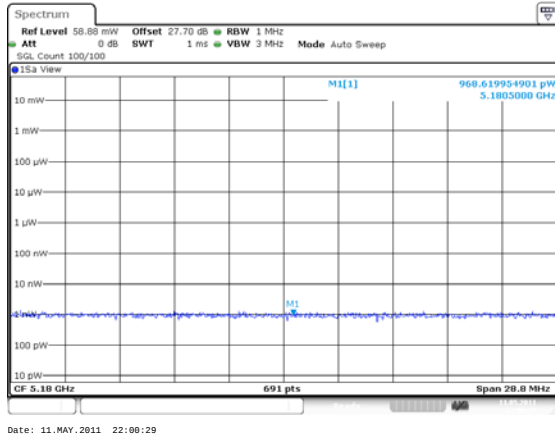
Channel_Power_UNII_1_802_11A_12MBS_BottomChannel



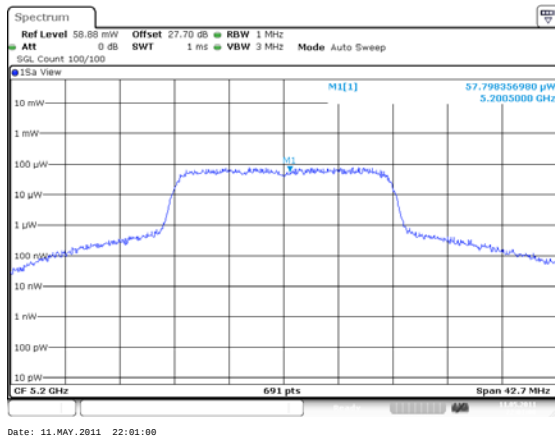
Channel_Power_UNII_1_802_11A_12MBS_MiddleChannel



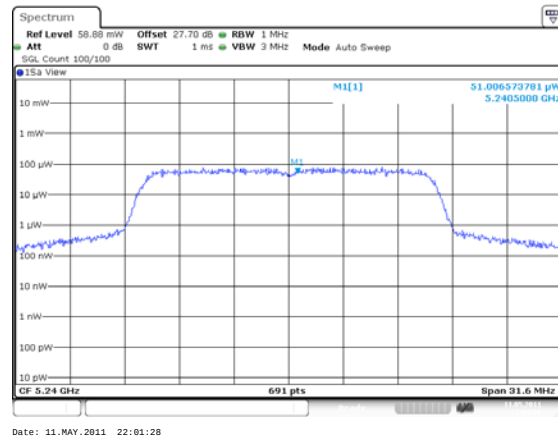
Channel_Power_UNII_1_802_11A_12MBS_TopChannel

Transmitter Maximum Peak Output Power (continued)

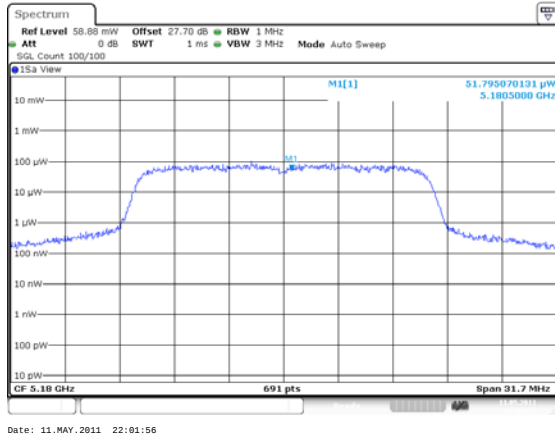
Channel_Power_UNII_1_802_11A_18MBS_BottomChannel



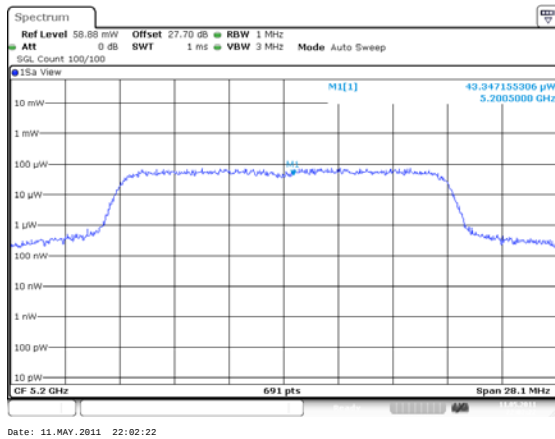
Channel_Power_UNII_1_802_11A_18MBS_MiddleChannel



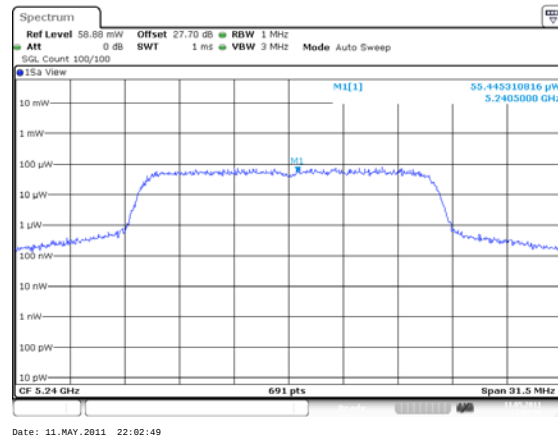
Channel_Power_UNII_1_802_11A_18MBS_TopChannel

Transmitter Maximum Peak Output Power (continued)

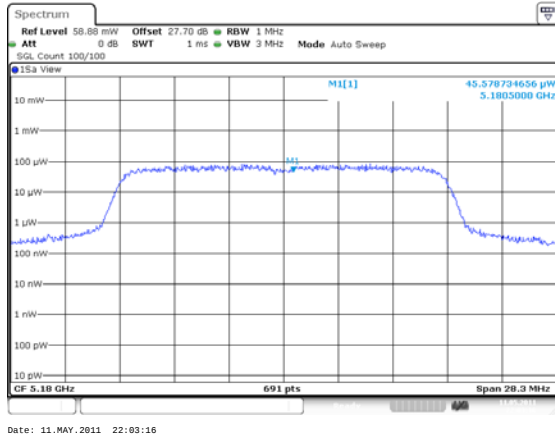
Channel_Power_UNII_1_802_11A_24MBS_BottomChannel



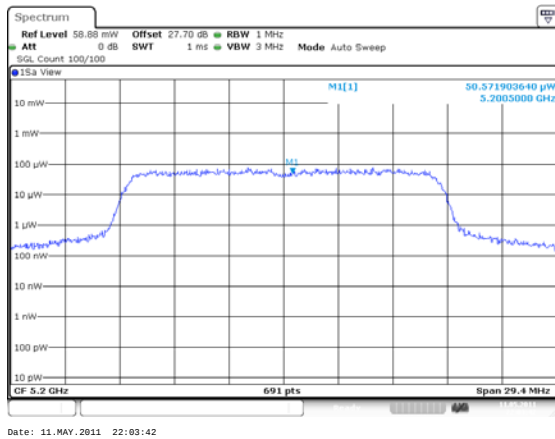
Channel_Power_UNII_1_802_11A_24MBS_MiddleChannel



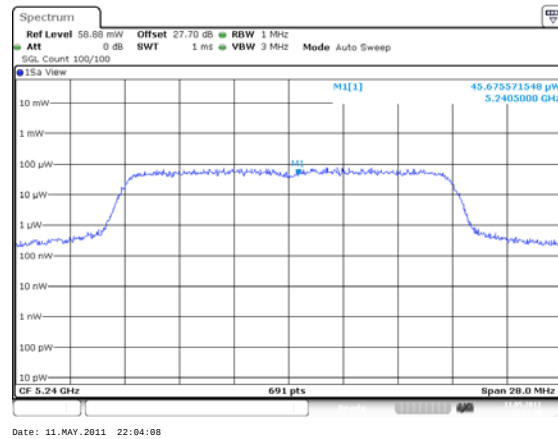
Channel_Power_UNII_1_802_11A_24MBS_TopChannel

Transmitter Maximum Peak Output Power (continued)

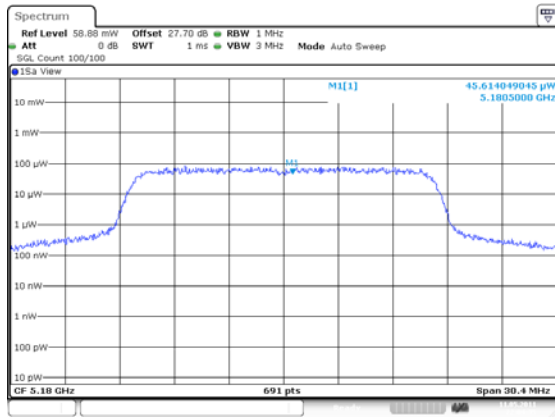
Channel_Power_UNII_1_802_11A_36MBS_BottomChannel



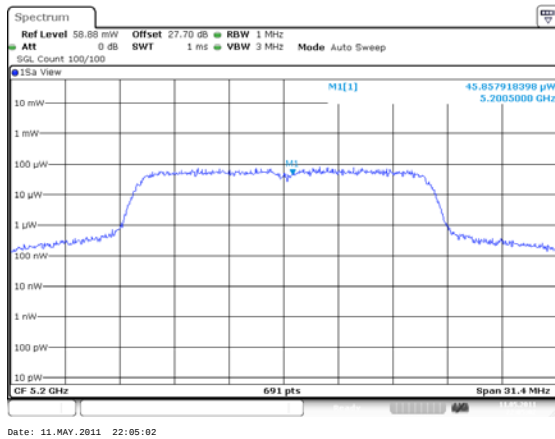
Channel_Power_UNII_1_802_11A_36MBS_MiddleChannel



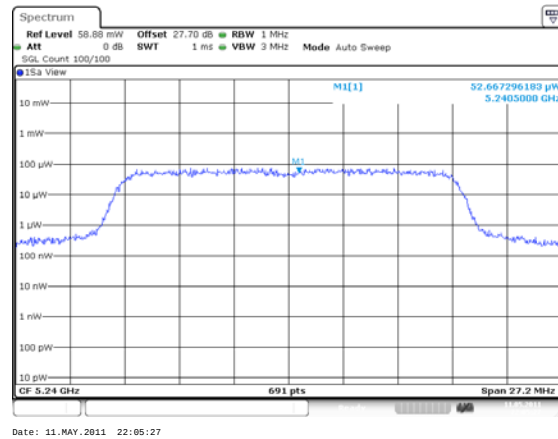
Channel_Power_UNII_1_802_11A_36MBS_TopChannel

Transmitter Maximum Peak Output Power (continued)

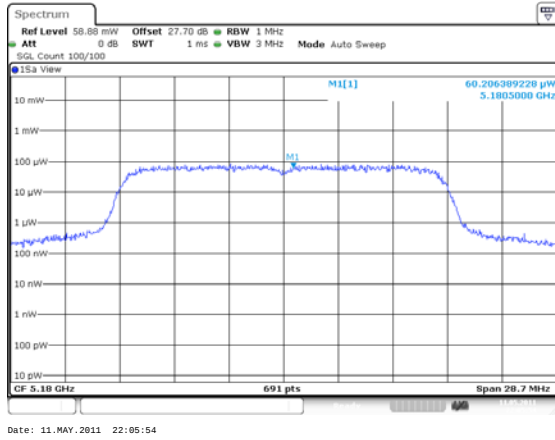
Channel_Power_UNII_1_802_11A_48MBS_BottomChannel



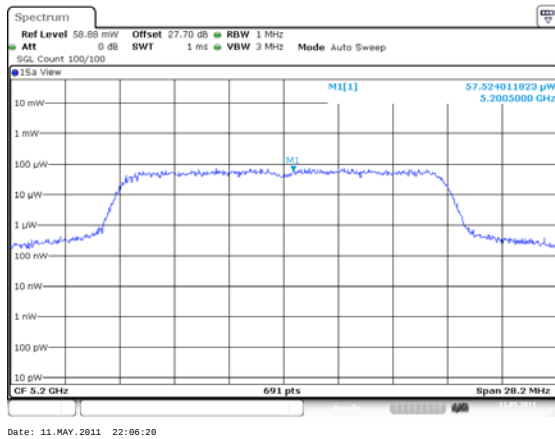
Channel_Power_UNII_1_802_11A_48MBS_MiddleChannel



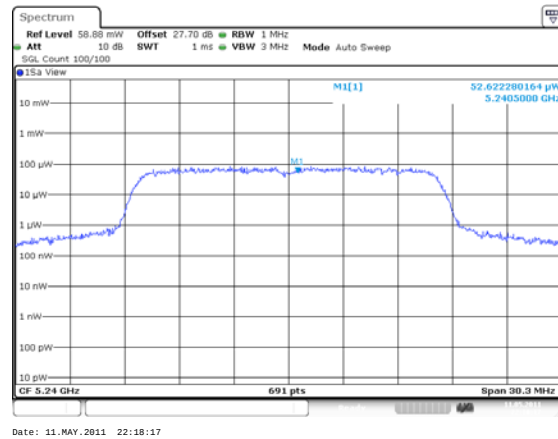
Channel_Power_UNII_1_802_11A_48MBS_TopChannel

Transmitter Maximum Peak Output Power (continued)

Channel_Power_UNII_1_802_11A_54MBS_BottomChannel



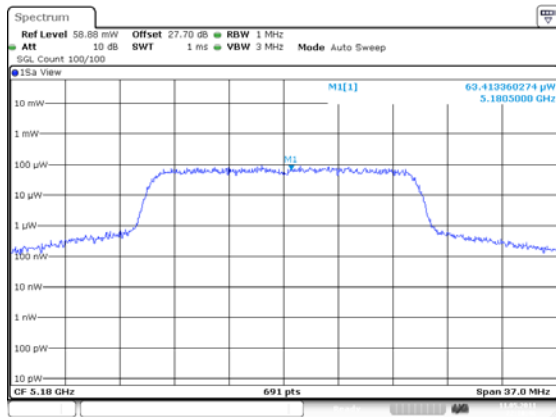
Channel_Power_UNII_1_802_11A_54MBS_MiddleChannel



Channel_Power_UNII_1_802_11A_58MBS_TopChannel

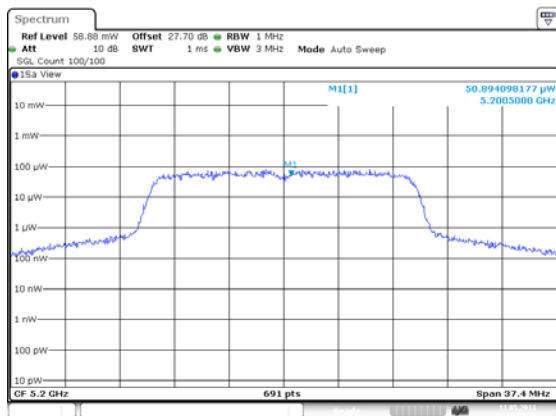
Transmitter Maximum Output Power (continued)**Results - 802.11N 5150 to 5250MHz**

Channel	Frequency (MHz)	Modulation Scheme	Data Rate (Mbps)	Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5180	BPSK	6.5	7.1	17	9.9	Complied
Middle	5200	BPSK	6.5	7.3	17	9.7	Complied
Top	5240	BPSK	6.5	8.2	17	8.8	Complied
Bottom	5180	QPSK	13	7.2	17	9.8	Complied
Middle	5200	QPSK	13	7.3	17	9.7	Complied
Top	5240	QPSK	13	8.2	17	8.8	Complied
Bottom	5180	QPSK	19.5	7.1	17	9.9	Complied
Middle	5200	QPSK	19.5	7.4	17	9.6	Complied
Top	5240	QPSK	19.5	8.0	17	9.0	Complied
Bottom	5180	16QAM	26	7.0	17	10.0	Complied
Middle	5200	16QAM	26	7.4	17	9.6	Complied
Top	5240	16QAM	26	7.8	17	9.2	Complied
Bottom	5180	64QAM	39	8.0	17	9.0	Complied
Middle	5200	64QAM	39	7.7	17	9.3	Complied
Top	5240	64QAM	39	8.2	17	8.8	Complied
Bottom	5180	64QAM	52	7.1	17	9.9	Complied
Middle	5200	64QAM	52	7.3	17	9.7	Complied
Top	5240	64QAM	52	8.6	17	8.4	Complied
Bottom	5180	64QAM	58	8.0	17	9.0	Complied
Middle	5200	64QAM	58	7.7	17	9.3	Complied
Top	5240	64QAM	58	8.4	17	8.6	Complied
Bottom	5180	64QAM	65	7.6	17	9.4	Complied
Middle	5200	64QAM	65	8.9	17	8.1	Complied
Top	5240	64QAM	65	9.4	17	7.6	Complied

Transmitter Maximum Peak Output Power (continued)**Results - 802.11N 5150 to 5250MHz**

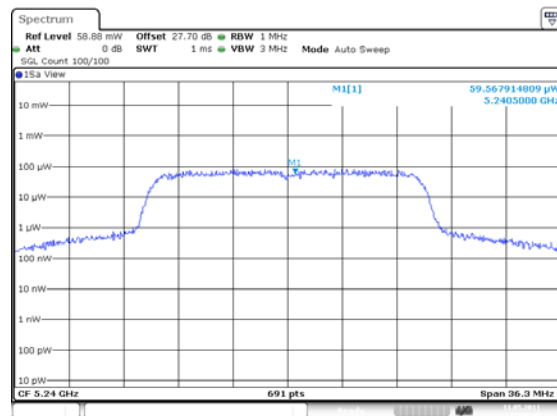
Date: 11.MAY.2011 22:18:46

Channel_Power_UNII_1_802_11N_6_5MBS_BottomChannel



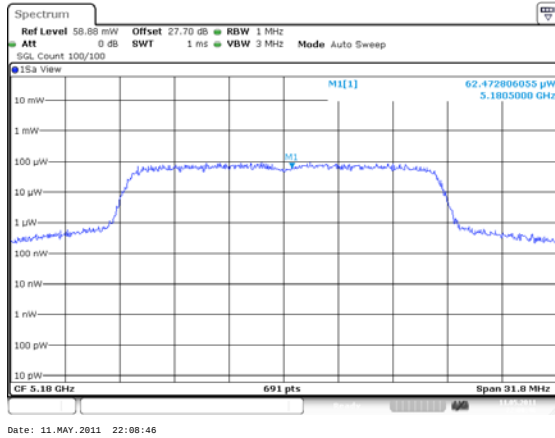
Date: 11.MAY.2011 22:19:15

Channel_Power_UNII_1_802_11N_6_5MBS_MiddleChannel

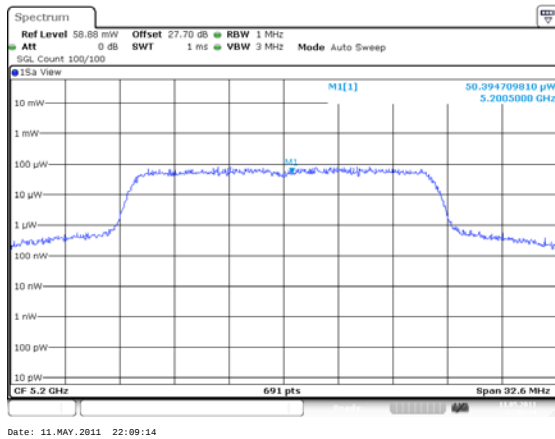


Date: 11.MAY.2011 22:08:18

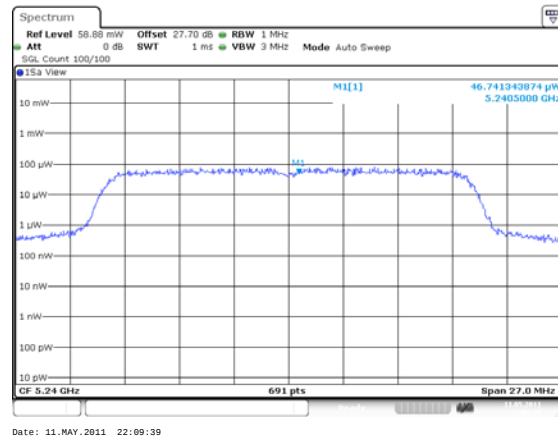
Channel_Power_UNII_1_802_11N_6_5MBS_TopChannel

Transmitter Maximum Peak Output Power (continued)

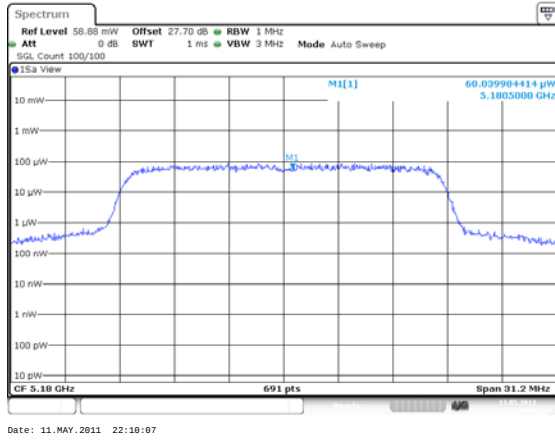
Channel_Power_UNII_1_802_11N_13MBS_BottomChannel



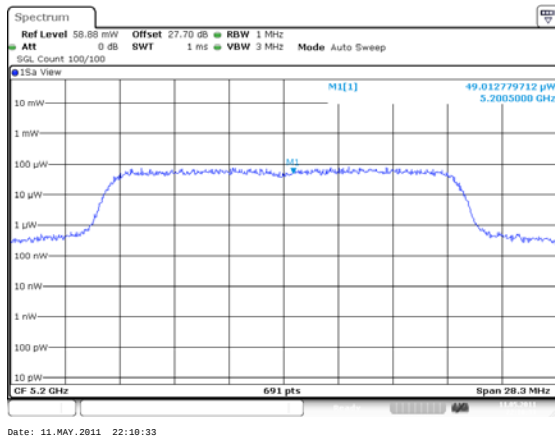
Channel_Power_UNII_1_802_11N_13MBS_MiddleChannel



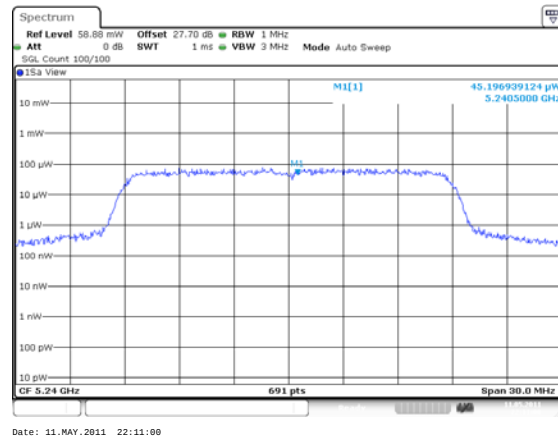
Channel_Power_UNII_1_802_11N_13MBS_TopChannel

Transmitter Maximum Peak Output Power (continued)

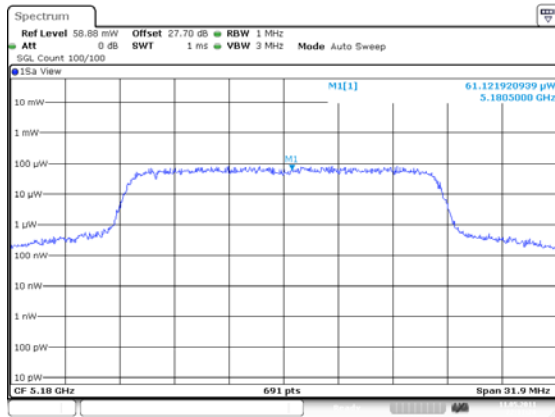
Channel_Power_UNII_1_802_11N_19_5MBS_BottomChannel



Channel_Power_UNII_1_802_11N_19_5MBS_MiddleChannel

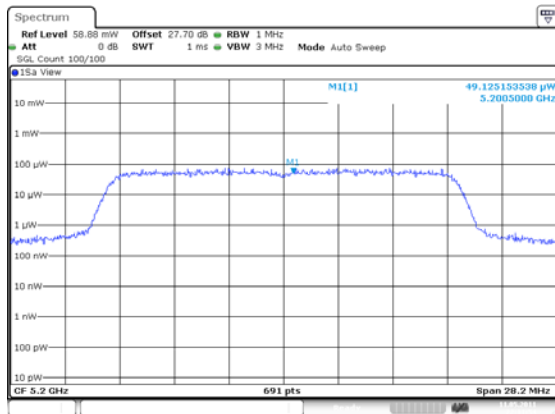


Channel_Power_UNII_1_802_11N_19_5MBS_TopChannel

Transmitter Maximum Peak Output Power (continued)

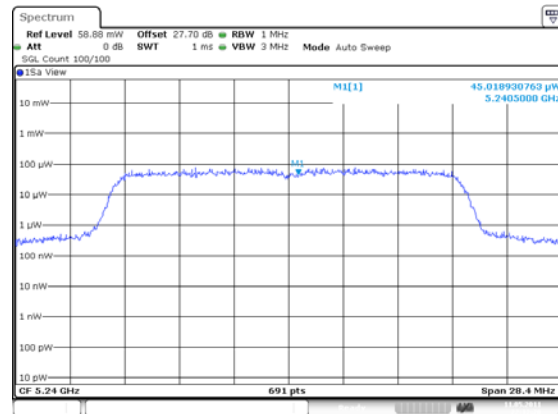
Date: 11.MAY.2011 22:11:28

Channel_Power_UNII_1_802_11N_26MBS_BottomChannel



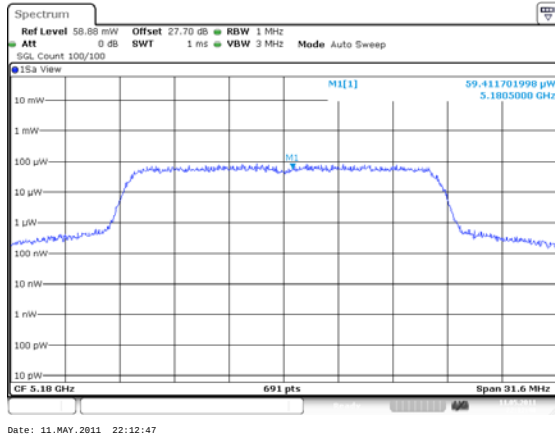
Date: 11.MAY.2011 22:11:54

Channel_Power_UNII_1_802_11N_26MBS_MiddleChannel

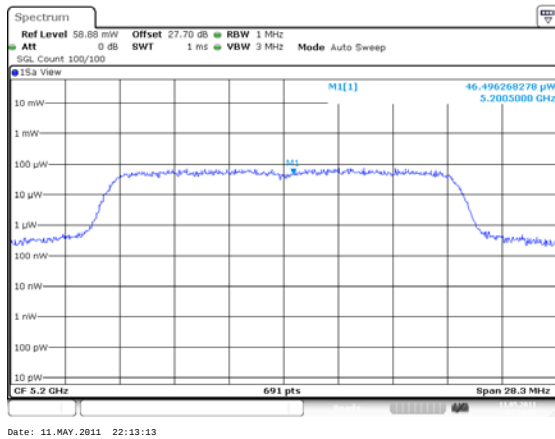


Date: 11.MAY.2011 22:12:28

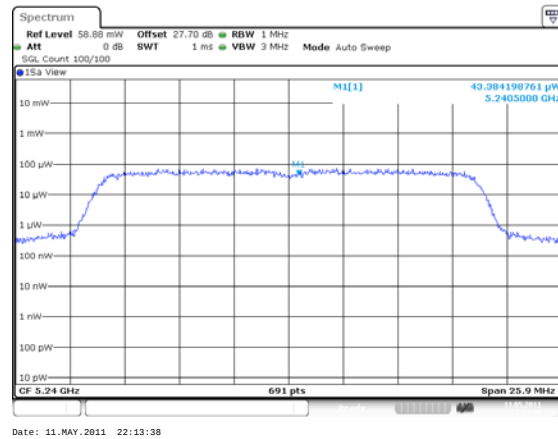
Channel_Power_UNII_1_802_11N_26MBS_TopChannel

Transmitter Maximum Peak Output Power (continued)

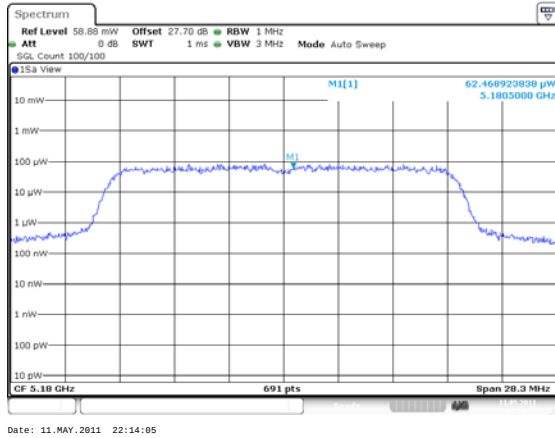
Channel_Power_UNII_1_802_11N_39MBS_BottomChannel



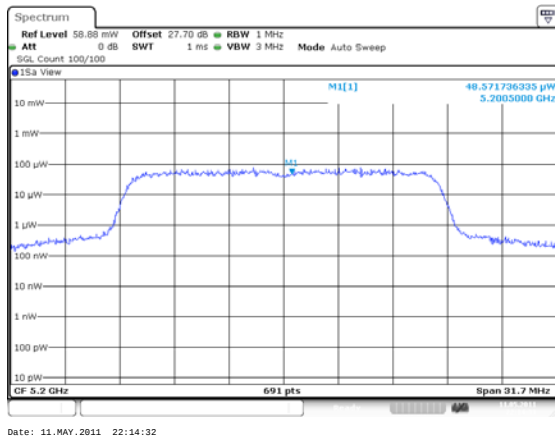
Channel_Power_UNII_1_802_11N_39MBS_MiddleChannel



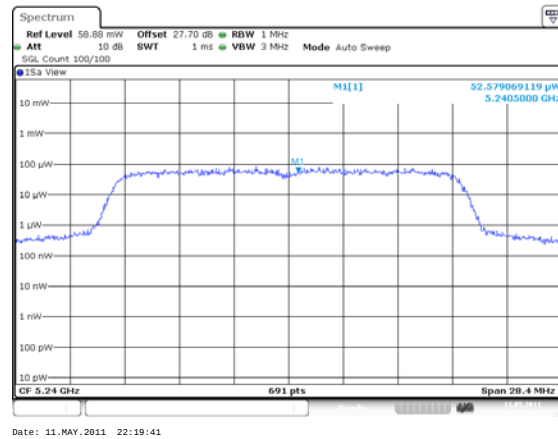
Channel_Power_UNII_1_802_11N_39MBS_TopChannel

Transmitter Maximum Peak Output Power (continued)

Channel_Power_UNII_1_802_11N_52MBS_BottomChannel

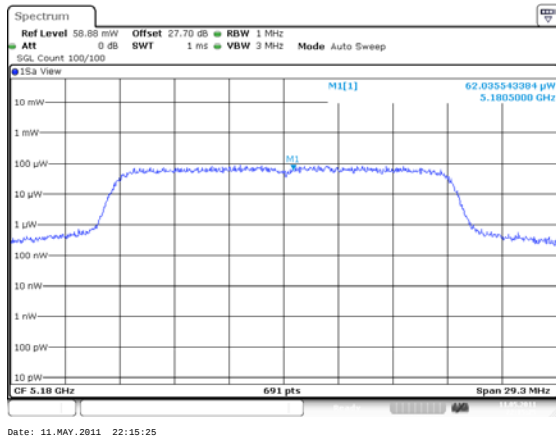


Channel_Power_UNII_1_802_11N_52MBS_MiddleChannel

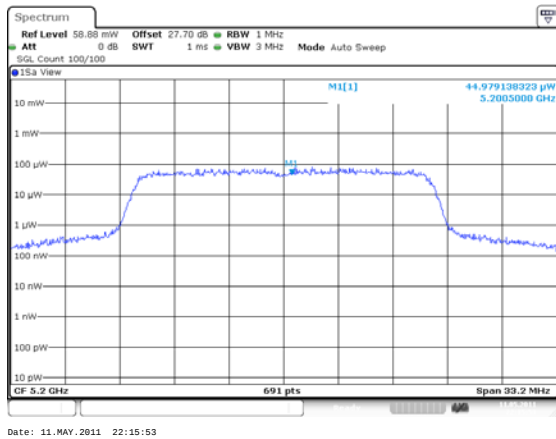


Channel_Power_UNII_1_802_11N_52MBS_TopChannel

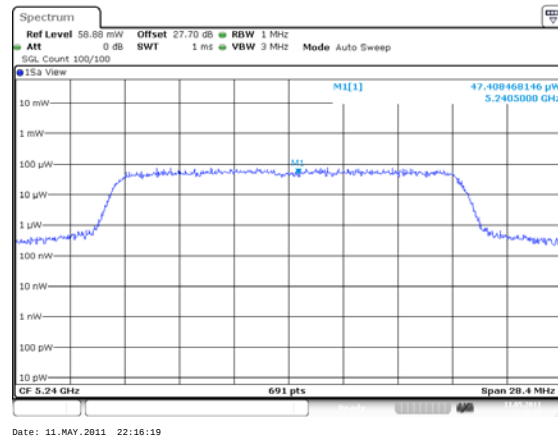
Transmitter Maximum Peak Output Power (continued)



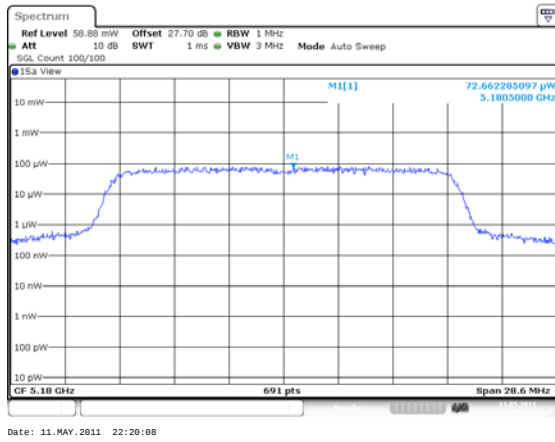
Channel_Power_UNII_1_802_11N_58_5MBS_BottomChannel



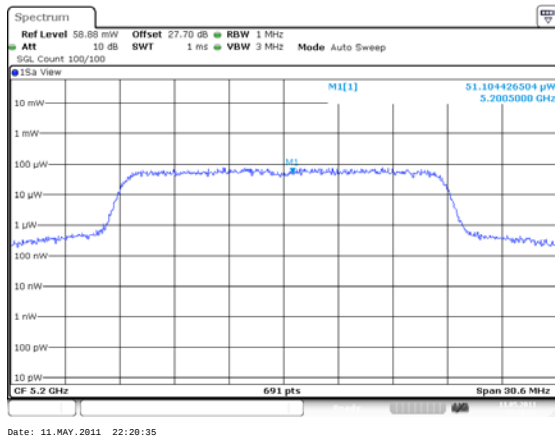
Channel_Power_UNII_1_802_11N_58_5MBS_MiddleChannel



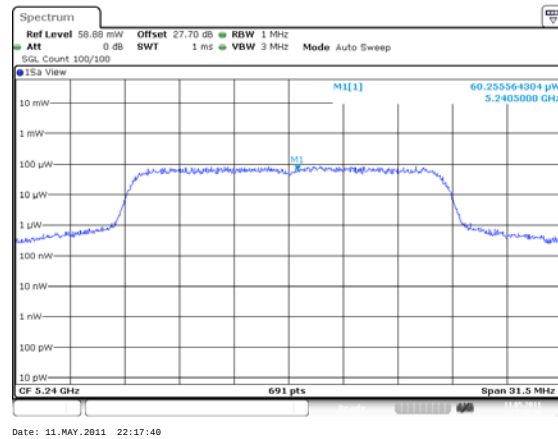
Channel_Power_UNII_1_802_11N_358_5MBS_TopChannel

Transmitter Maximum Peak Output Power (continued)

Channel_Power_UNII_1_802_11N_65MBS_BottomChannel



Channel_Power_UNII_1_802_11N_65MBS_MiddleChannel



Channel_Power_UNII_1_802_11N_65MBS_TopChannel

5.2.6. Transmitter Maximum Equivalent Isotropically Radiated Power (5.15-5.25 GHz band)**Test Summary:**

Test Engineer:	Nigel Davison	Test Date:	11 May 2011
Test Sample Serial No:	ID 3		

RSS Reference:	RSS-210 A9.2(1)
Test Method Used:	As detailed in ANSI C63.10 Section 6.10.3.1 Method 1

Environmental Conditions:

Temperature (°C):	26
Relative Humidity (%):	24

Results - 802.11A 5150 to 5250MHz

Channel	Mod Scheme	Data Rate	Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Fixed Limit (dBm)	Margin (dB)	Result
Bottom	BPSK	6	8.2	3	11.2	23.0	11.8	Complied
Middle	BPSK	6	7.1	3	10.1	23.0	12.9	Complied
Top	BPSK	6	7.5	3	10.5	23.0	12.5	Complied
Bottom	BPSK	9	6.8	3	9.8	23.0	13.2	Complied
Middle	BPSK	9	7.7	3	10.7	23.0	12.3	Complied
Top	BPSK	9	8.5	3	11.5	23.0	11.5	Complied
Bottom	QPSK	12	7.1	3	10.1	23.0	12.9	Complied
Middle	QPSK	12	7.3	3	10.3	23.0	12.7	Complied
Top	QPSK	12	8.0	3	11.0	23.0	12.0	Complied
Bottom	QPSK	18	6.4	3	9.4	23.0	13.6	Complied
Middle	QPSK	18	6.9	3	9.9	23.0	13.1	Complied
Top	QPSK	18	7.5	3	10.5	23.0	12.5	Complied
Bottom	16QAM	24	6.6	3	9.6	23.0	13.4	Complied
Middle	16QAM	24	6.6	3	9.6	23.0	13.4	Complied
Top	16QAM	24	7.4	3	10.4	23.0	12.6	Complied
Bottom	16QAM	36	8.3	3	11.3	23.0	11.7	Complied
Middle	16QAM	36	7.8	3	10.8	23.0	12.2	Complied
Top	16QAM	36	8.3	3	11.3	23.0	11.7	Complied
Bottom	64QAM	48	7.5	3	10.5	23.0	12.5	Complied
Middle	64QAM	48	7.4	3	10.4	23.0	12.6	Complied
Top	64QAM	48	8.9	3	11.9	23.0	11.1	Complied
Bottom	64QAM	54	7.5	3	10.5	23.0	12.5	Complied

Channel	Mod Scheme	Data Rate	Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Fixed Limit (dBm)	Margin (dB)	Result
Middle	64QAM	54	7.4	3	10.4	23.0	12.6	Complied
Top	64QAM	54	7.7	3	10.7	23.0	12.3	Complied

Note(s):

1. The limit is the lesser of 200 mW (23.0 dBm) or $10 \text{ dBm} + 10 \log B$, where B is the 99% emission bandwidth in MHz.
2. For the smallest 99% bandwidth of 19.0 MHz the limit equates to 22.8 dBm however as the pass margin is in excess of 10 dB for all test cases the fixed limit of 23.0 dBm is detailed in the above table for the sake of simplicity.

Results - 802.11N 5150 to 5250MHz

Channel	Mod Scheme	Data Rate	Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Fixed Limit (dBm)	Margin (dB)	Result
Bottom	BPSK	6.5	7.1	3	10.1	23.0	12.9	Complied
Middle	BPSK	6.5	7.3	3	10.3	23.0	12.7	Complied
Top	BPSK	6.5	8.2	3	11.2	23.0	11.8	Complied
Bottom	QPSK	13	7.2	3	10.2	23.0	12.8	Complied
Middle	QPSK	13	7.3	3	10.3	23.0	12.7	Complied
Top	QPSK	13	8.2	3	11.2	23.0	11.8	Complied
Bottom	QPSK	19.5	7.1	3	10.1	23.0	12.9	Complied
Middle	QPSK	19.5	7.4	3	10.4	23.0	12.6	Complied
Top	QPSK	19.5	8.0	3	11.0	23.0	12.0	Complied
Bottom	16QAM	26	7.0	3	10.0	23.0	13.0	Complied
Middle	16QAM	26	7.4	3	10.4	23.0	12.6	Complied
Top	16QAM	26	7.8	3	10.8	23.0	12.2	Complied
Bottom	64QAM	39	8.0	3	11.0	23.0	12.0	Complied
Middle	64QAM	39	7.7	3	10.7	23.0	12.3	Complied
Top	64QAM	39	8.2	3	11.2	23.0	11.8	Complied
Bottom	64QAM	52	7.1	3	10.1	23.0	12.9	Complied
Middle	64QAM	52	7.3	3	10.3	23.0	12.7	Complied
Top	64QAM	52	8.6	3	11.6	23.0	11.4	Complied
Bottom	64QAM	58	8.0	3	11.0	23.0	12.0	Complied
Middle	64QAM	58	7.7	3	10.7	23.0	12.3	Complied
Top	64QAM	58	8.4	3	11.4	23.0	11.6	Complied
Bottom	64QAM	65	7.6	3	10.6	23.0	12.4	Complied
Middle	64QAM	65	8.9	3	11.9	23.0	11.1	Complied
Top	64QAM	65	9.4	3	12.4	23.0	10.6	Complied

Note(s):

1. The limit is the lesser of 200 mW (23.0 dBm) or 10 dBm + 10 log B, where B is the 99% emission bandwidth in MHz.
2. For the smallest 99% bandwidth of 19.0 MHz the limit equates to 22.8 dBm however as the pass margin is in excess of 10 dB for all test cases the fixed limit of 23.0 dBm is detailed in the above table for the sake of simplicity.

5.2.7. Transmitter Peak Power Spectral Density**Test Summary:**

Test Engineer:	Nigel Davison	Test Date:	12 May 2011
Test Sample Serial No:	ID 3		

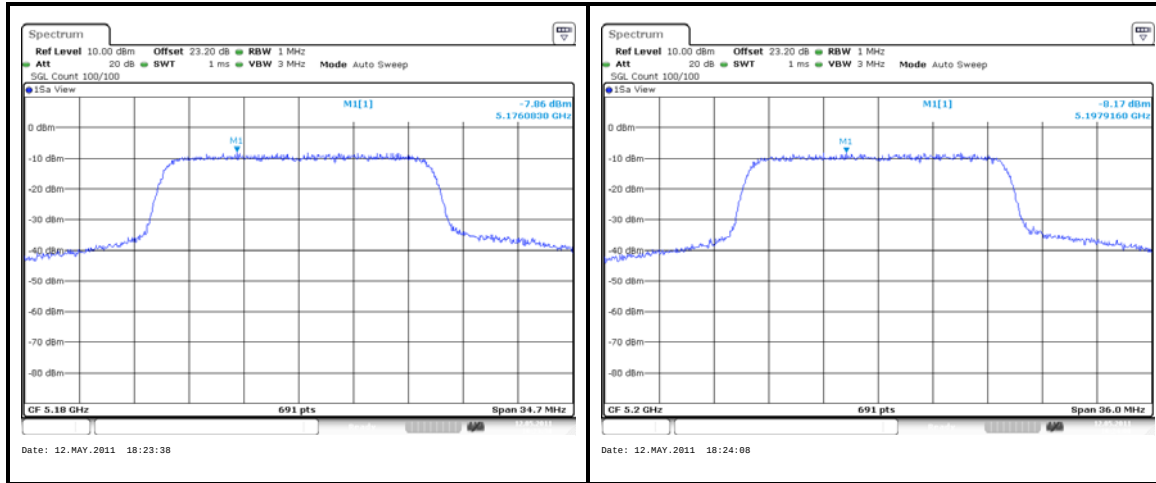
FCC/IC Part:	15.407(a) and RSS-210 A9.2(1)
Test Method Used:	As detailed in ANSI C63.10 Section 6.11.1.2.2 Method 2

Environmental Conditions:

Temperature (°C):	24
Relative Humidity (%):	28

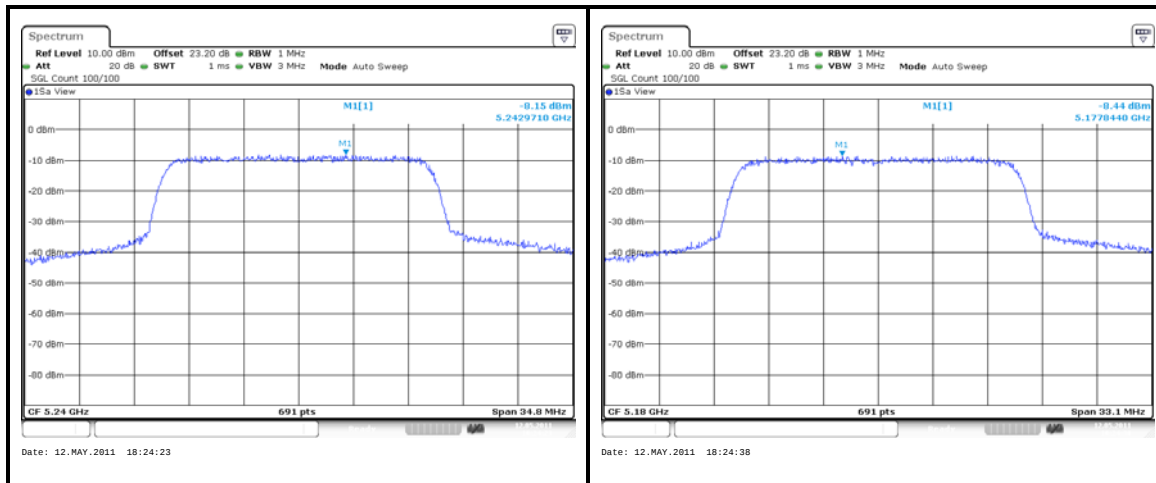
Transmitter Peak Power Spectral Density (continued)**Results - 802.11A 5150 to 5250 MHz band**

Channel	Frequency (MHz)	Modulation Scheme	Data Rate (Mbps)	PSD (dBm/MHz)	Limit (dBm/MHz)	Margin (dB)	Result
Bottom	5180	BPSK	6	-7.9	4	11.9	Complied
Middle	5200	BPSK	6	-8.2	4	12.2	Complied
Top	5240	BPSK	6	-8.2	4	12.2	Complied
Bottom	5180	BPSK	9	-8.4	4	12.4	Complied
Middle	5200	BPSK	9	-8.4	4	12.4	Complied
Top	5240	BPSK	9	-8.0	4	12.0	Complied
Bottom	5180	QPSK	12	-8.6	4	12.6	Complied
Middle	5200	QPSK	12	-8.2	4	12.2	Complied
Top	5240	QPSK	12	-8.4	4	12.4	Complied
Bottom	5180	QPSK	18	-8.8	4	12.8	Complied
Middle	5200	QPSK	18	-8.6	4	12.6	Complied
Top	5240	QPSK	18	-8.2	4	12.2	Complied
Bottom	5180	16QAM	24	-8.5	4	12.5	Complied
Middle	5200	16QAM	24	-8.8	4	12.8	Complied
Top	5240	16QAM	24	-8.0	4	12.0	Complied
Bottom	5180	16QAM	36	-8.7	4	12.7	Complied
Middle	5200	16QAM	36	-8.5	4	12.5	Complied
Top	5240	16QAM	36	-8.3	4	12.3	Complied
Bottom	5180	64QAM	48	-9.1	4	13.1	Complied
Middle	5200	64QAM	48	-8.8	4	12.8	Complied
Top	5240	64QAM	48	-8.3	4	12.3	Complied
Bottom	5180	64QAM	54	-8.2	4	12.2	Complied
Middle	5200	64QAM	54	-8.7	4	12.7	Complied
Top	5240	64QAM	54	-8.0	4	12.0	Complied

Transmitter Peak Power Spectral Density (continued)**Plots - 802.11A 5150 to 5250 MHz band**

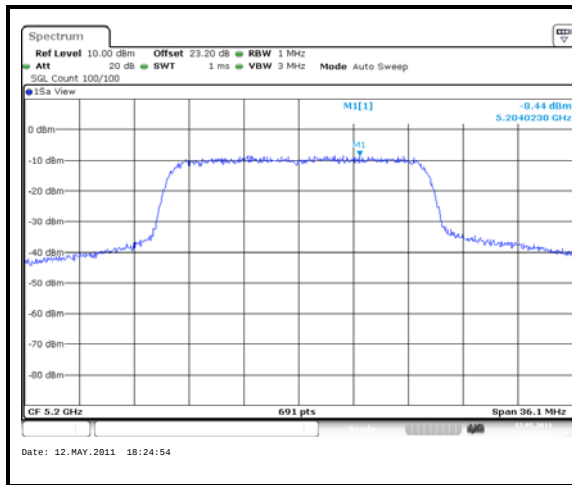
PSD_UNII_1_802_11A_6MBS_BottomChannel

PSD_UNII_1_802_11A_6MBS_MiddleChannel

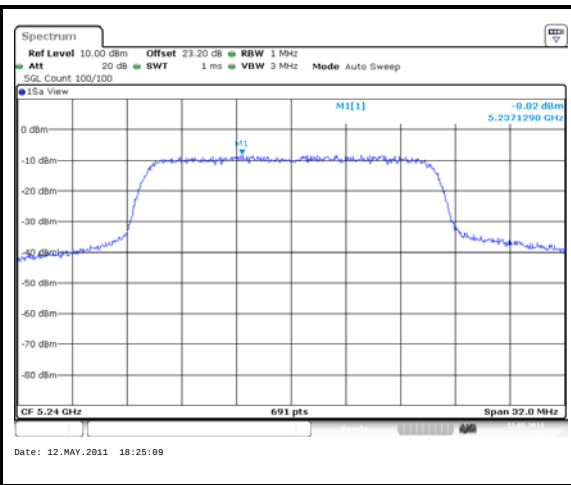


PSD_UNII_1_802_11A_6MBS_TopChannel

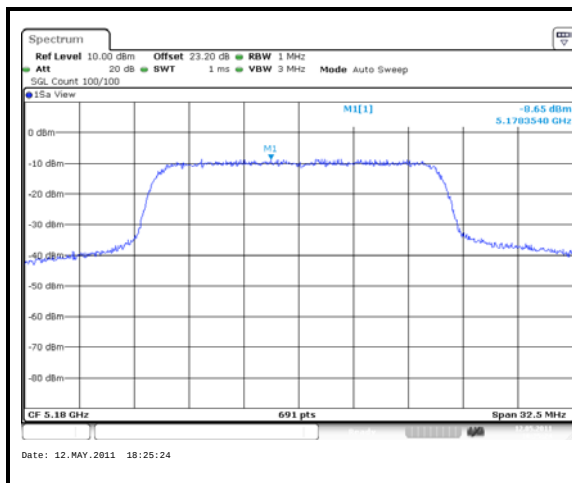
PSD_UNII_1_802_11A_9MBS_BottomChannel

Transmitter Peak Power Spectral Density (continued)**Plots - 802.11A 5150 to 5250 MHz band**

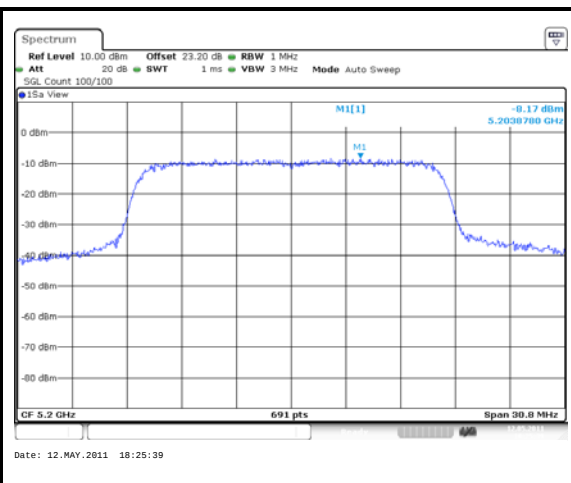
PSD_UNII_1_802_11A_9MBS_MiddleChannel



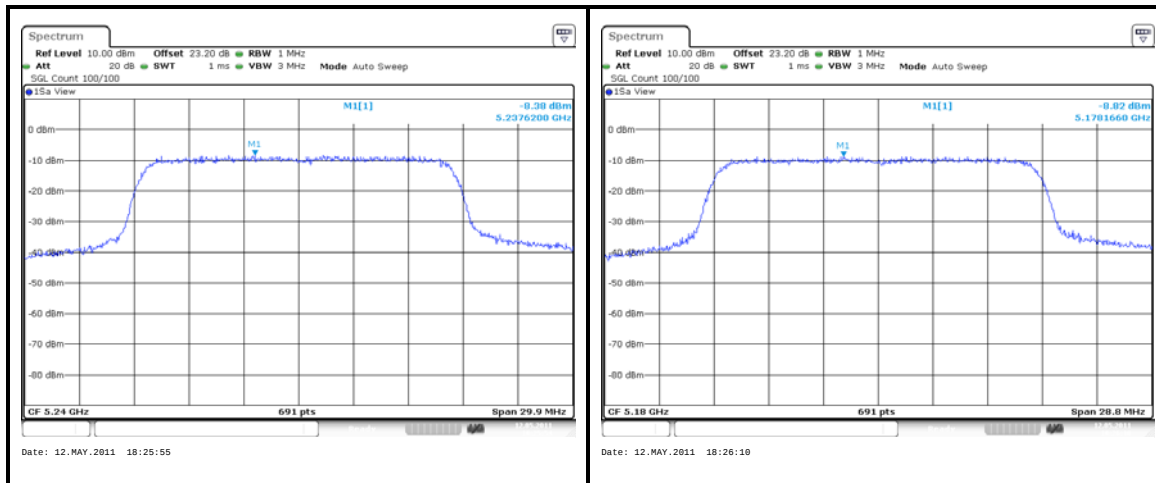
PSD_UNII_1_802_11A_9MBS_TopChannel



PSD_UNII_1_802_11A_12MBS_BottomChannel

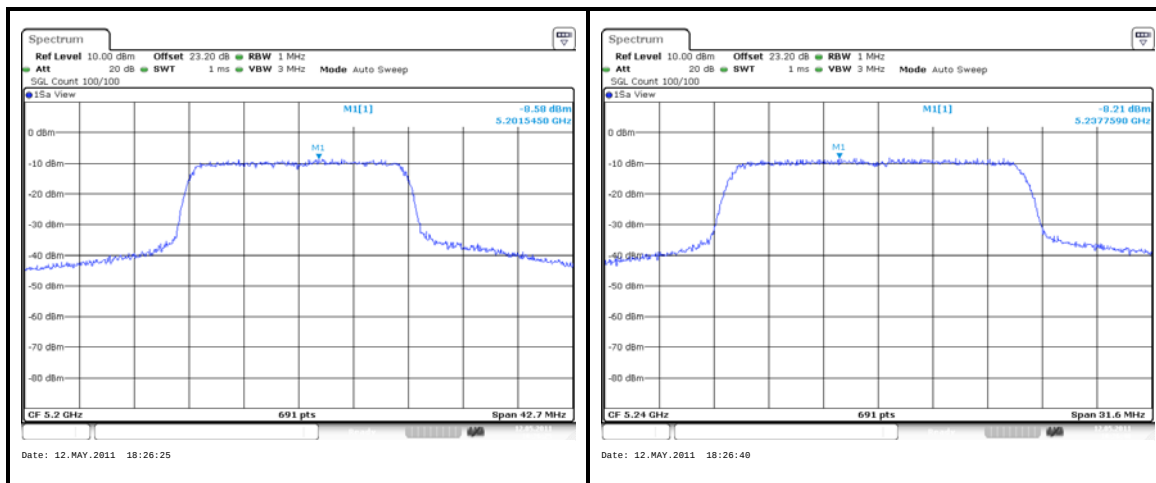


PSD_UNII_1_802_11A_12MBS_MiddleChannel

Transmitter Peak Power Spectral Density (continued)**Plots - 802.11A 5150 to 5250 MHz band**

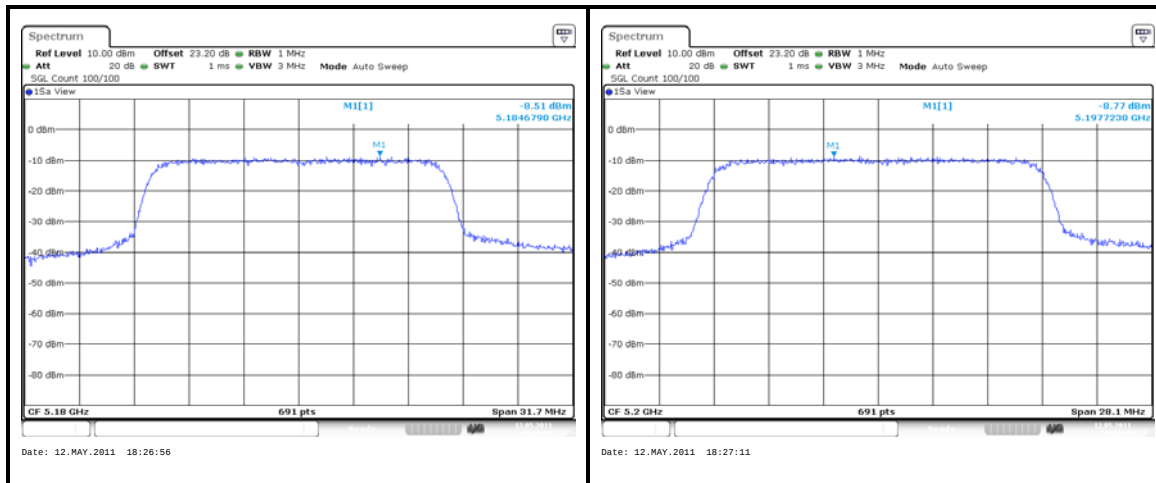
PSD_UNII_1_802_11A_12MBS_TopChannel

PSD_UNII_1_802_11A_18MBS_BottomChannel



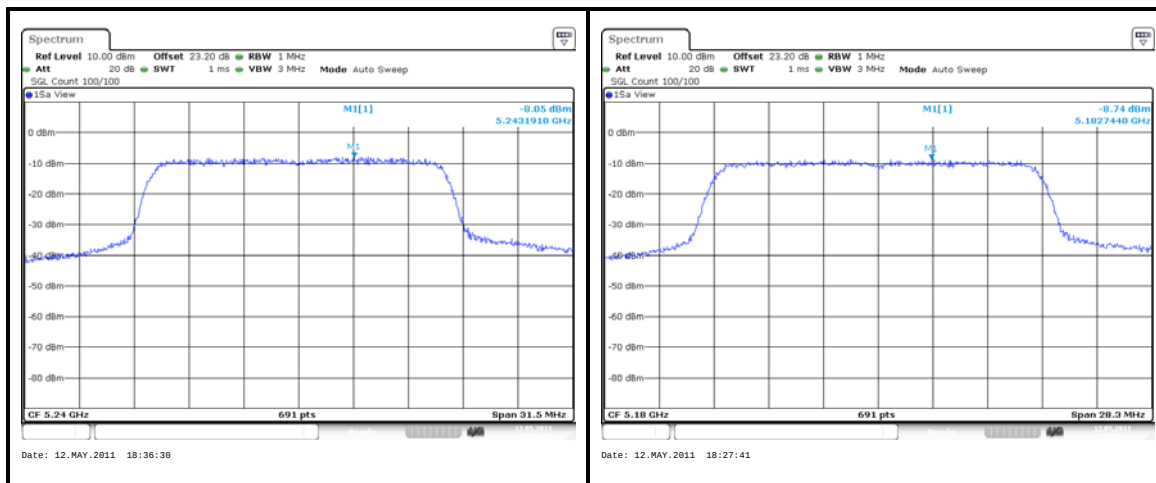
PSD_UNII_1_802_11A_18MBS_MiddleChannel

PSD_UNII_1_802_11A_18MBS_TopChannel

Transmitter Peak Power Spectral Density (continued)**Plots - 802.11A 5150 to 5250 MHz band**

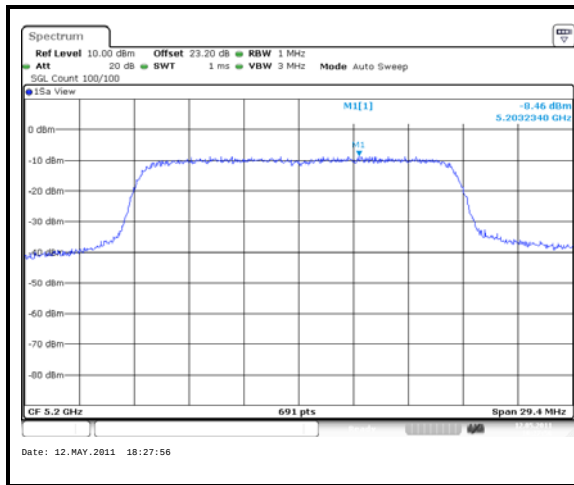
PSD_UNII_1_802_11A_24MBS_BottomChannel

PSD_UNII_1_802_11A_24MBS_MiddleChannel

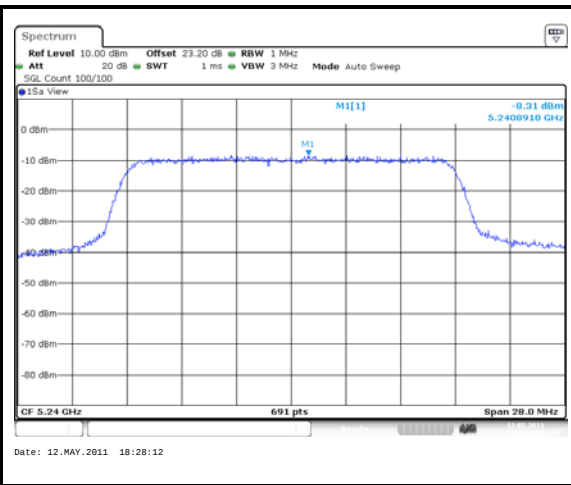


PSD_UNII_1_802_11A_24MBS_TopChannel

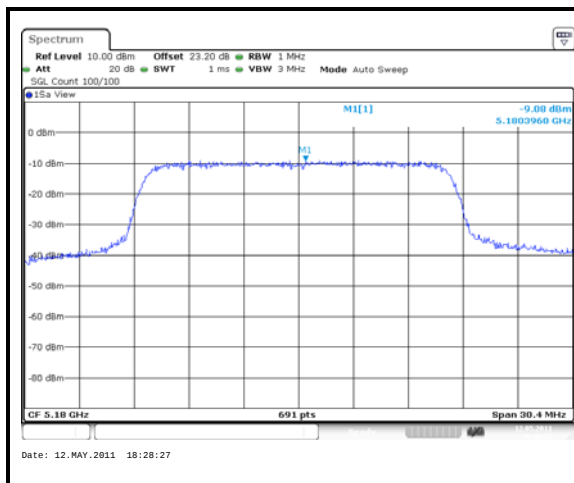
PSD_UNII_1_802_11A_36MBS_BottomChannel

Transmitter Peak Power Spectral Density (continued)**Plots - 802.11A 5150 to 5250 MHz band**

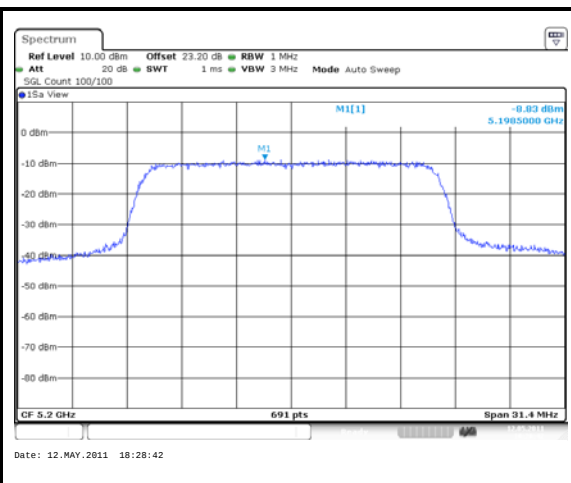
PSD_UNII_1_802_11A_36MBS_MiddleChannel



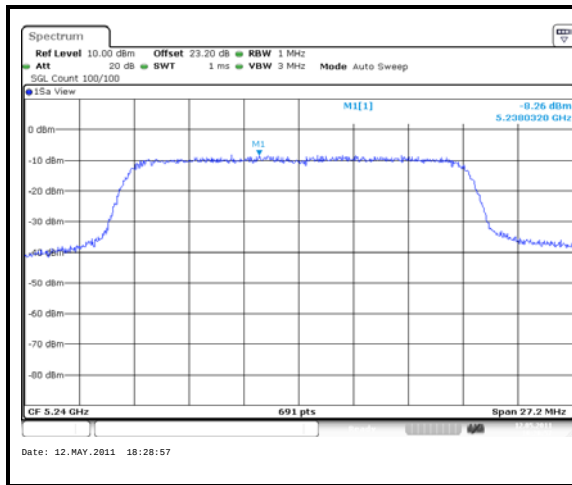
PSD_UNII_1_802_11A_36MBS_TopChannel



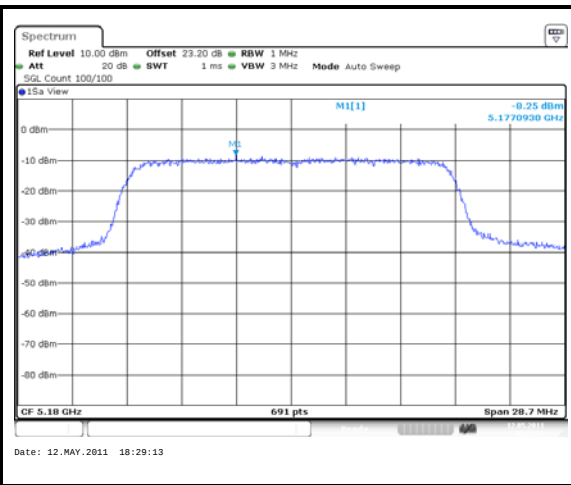
PSD_UNII_1_802_11A_48MBS_BottomChannel



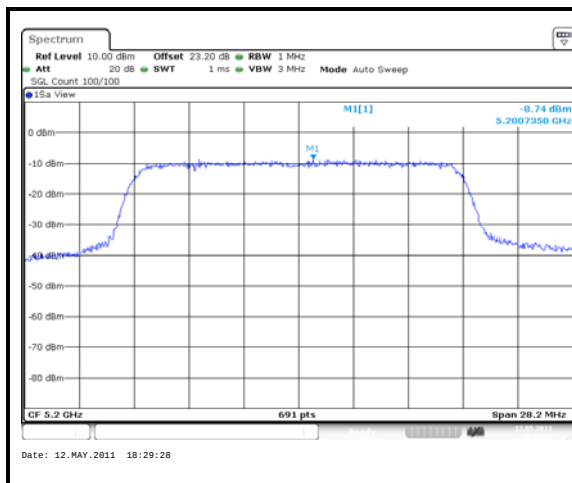
PSD_UNII_1_802_11A_48MBS_MiddleChannel

Transmitter Peak Power Spectral Density (continued)**Plots - 802.11A 5150 to 5250 MHz band**

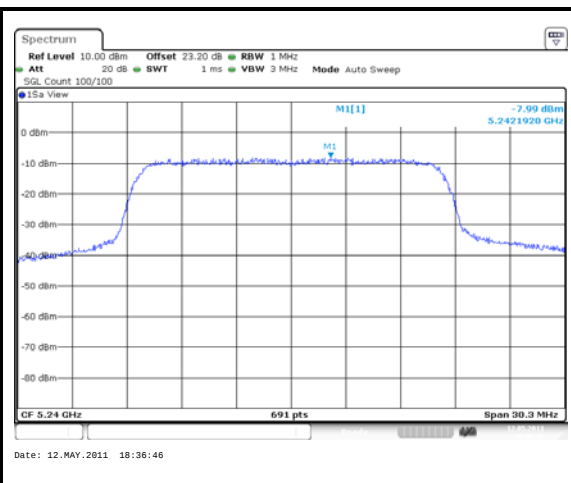
PSD_UNII_1_802_11A_48MBS_TopChannel



PSD_UNII_1_802_11A_54MBS_BottomChannel



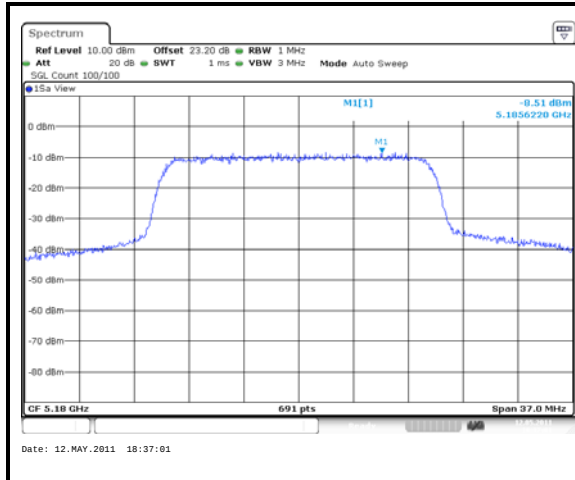
PSD_UNII_1_802_11A_54MBS_MiddleChannel



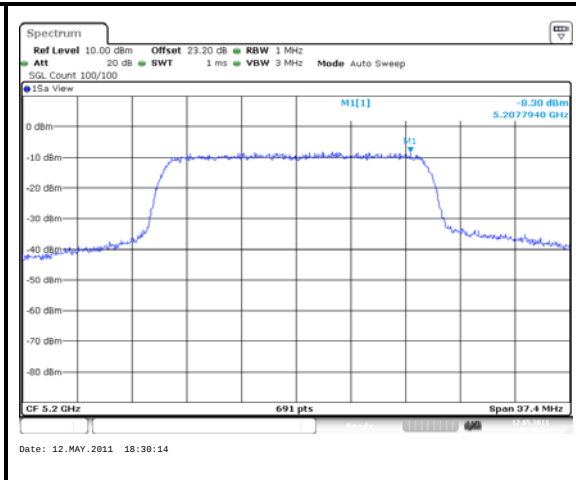
PSD_UNII_1_802_11A_54MBS_TopChannel

Transmitter Peak Power Spectral Density (continued)**Results - 802.11N 5150 to 5250 MHz band**

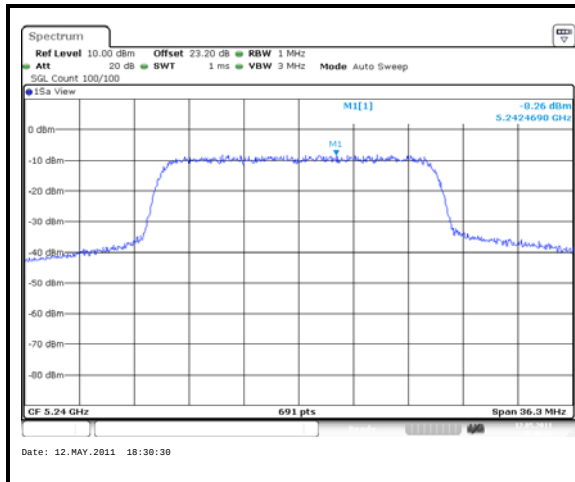
Channel	Frequency (MHz)	Modulation Scheme	Data Rate (Mbps)	PSD (dBm/MHz)	Limit (dBm)	Margin (dB)	Result
Bottom	5180	BPSK	6.5	-8.5	4	12.5	Complied
Middle	5200	BPSK	6.5	-8.3	4	12.3	Complied
Top	5240	BPSK	6.5	-8.3	4	12.3	Complied
Bottom	5180	QPSK	13	-8.6	4	12.6	Complied
Middle	5200	QPSK	13	-8.6	4	12.6	Complied
Top	5240	QPSK	13	-8.1	4	12.1	Complied
Bottom	5180	QPSK	19.5	-8.5	4	12.5	Complied
Middle	5200	QPSK	19.5	-8.3	4	12.3	Complied
Top	5240	QPSK	19.5	-8.3	4	12.3	Complied
Bottom	5180	16QAM	26	-8.8	4	12.8	Complied
Middle	5200	16QAM	26	-8.7	4	12.7	Complied
Top	5240	16QAM	26	-8.5	4	12.5	Complied
Bottom	5180	16QAM	39	-8.7	4	12.7	Complied
Middle	5200	16QAM	39	-8.1	4	12.1	Complied
Top	5240	16QAM	39	-8.3	4	12.3	Complied
Bottom	5180	64QAM	52	-8.9	4	12.9	Complied
Middle	5200	64QAM	52	-8.5	4	12.5	Complied
Top	5240	64QAM	52	-8.5	4	12.5	Complied
Bottom	5180	64QAM	58.5	-8.8	4	12.8	Complied
Middle	5200	64QAM	58.5	-8.6	4	12.6	Complied
Top	5240	64QAM	58.5	-8.0	4	12.0	Complied
Bottom	5180	64QAM	65	-8.7	4	12.7	Complied
Middle	5200	64QAM	65	-8.0	4	12.0	Complied
Top	5240	64QAM	65	-7.6	4	11.6	Complied

Transmitter Peak Power Spectral Density (continued)**Plots - 802.11N 5150 to 5250 MHz band**

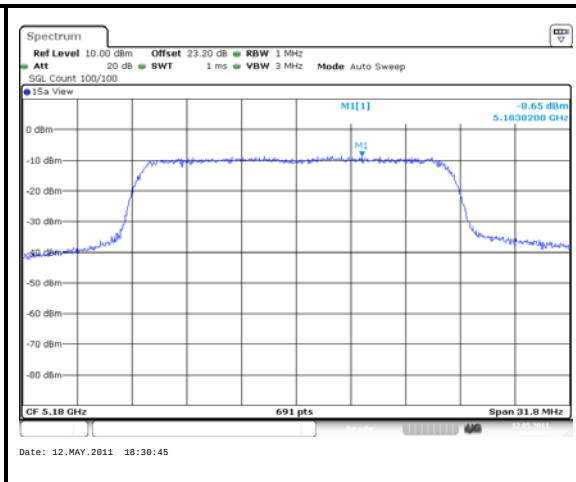
PSD_UNII_1_802_11N_6_5MBS_BottomChannel



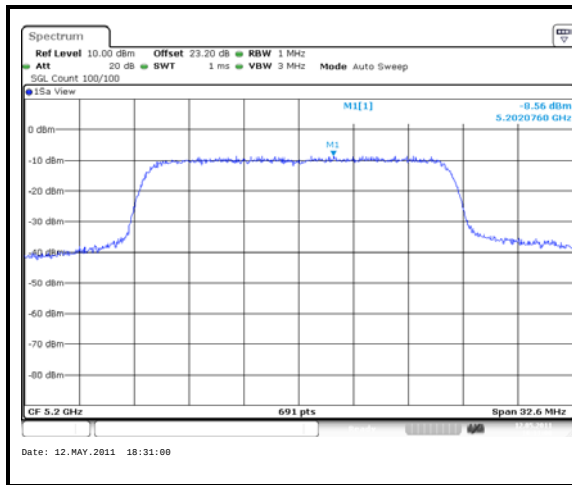
PSD_UNII_1_802_11N_6_5MBS_MiddleChannel



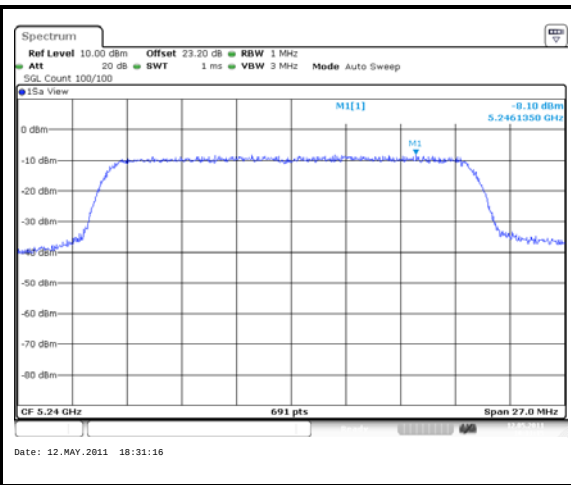
PSD_UNII_1_802_11N_6_5MBS_TopChannel



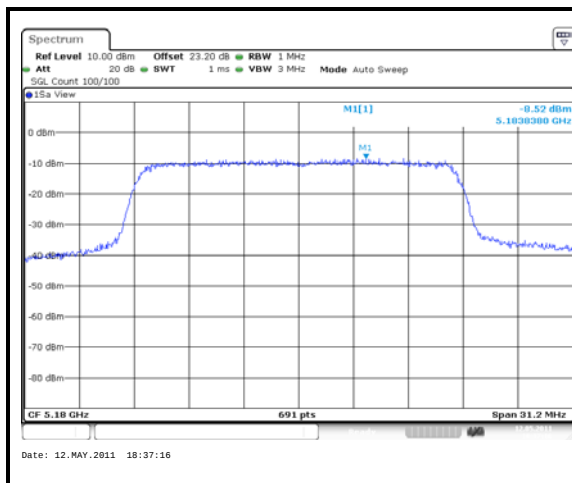
PSD_UNII_1_802_11N_13MBS_BottomChannel

Transmitter Peak Power Spectral Density (continued)**Plots - 802.11N 5150 to 5250 MHz band**

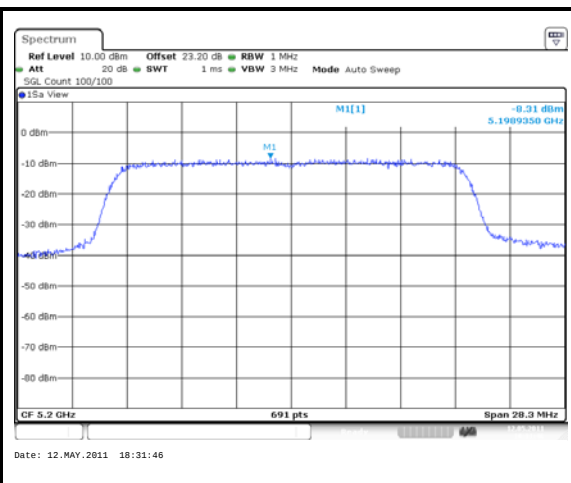
PSD_UNII_1_802_11N_13MBS_MiddleChannel



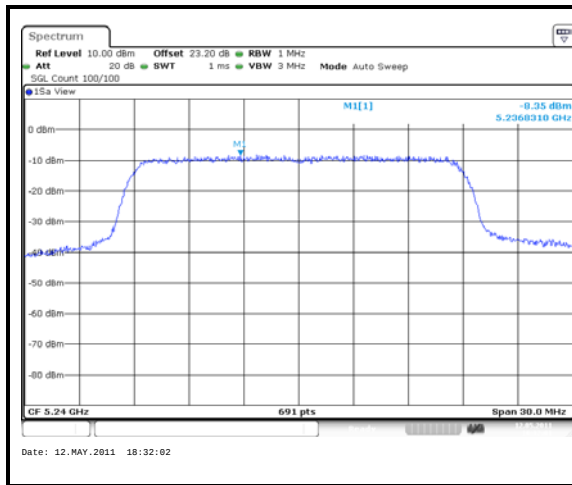
PSD_UNII_1_802_11N_13MBS_TopChannel



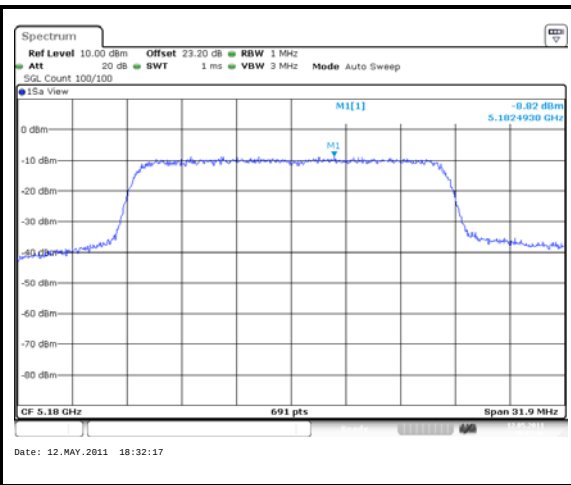
PSD_UNII_1_802_11N_19_5MBS_BottomChannel



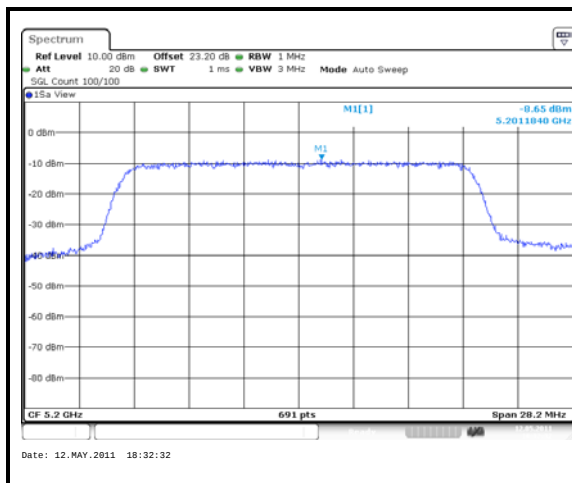
PSD_UNII_1_802_11N_19_5MBS_MiddleChannel

Transmitter Peak Power Spectral Density (continued)**Plots - 802.11N 5150 to 5250 MHz band**

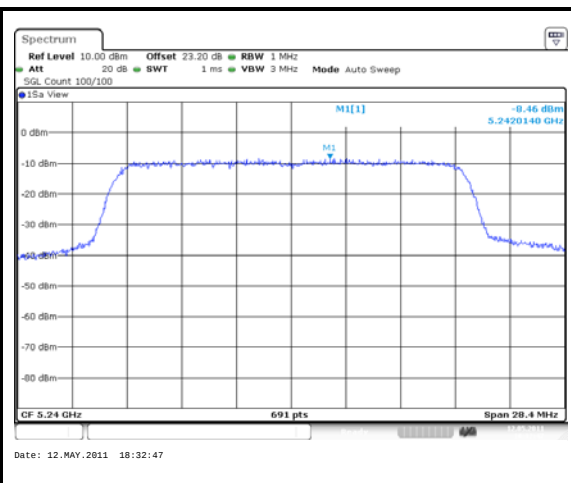
PSD_UNII_1_802_11N_19_5MBS_TopChannel



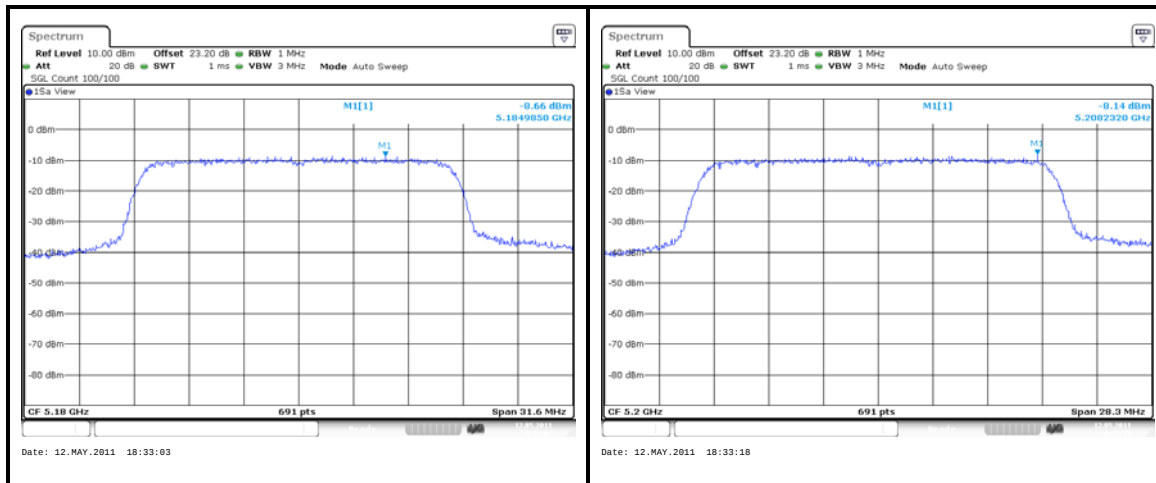
PSD_UNII_1_802_11N_26MBS_BottomChannel



PSD_UNII_1_802_11N_26MBS_MiddleChannel

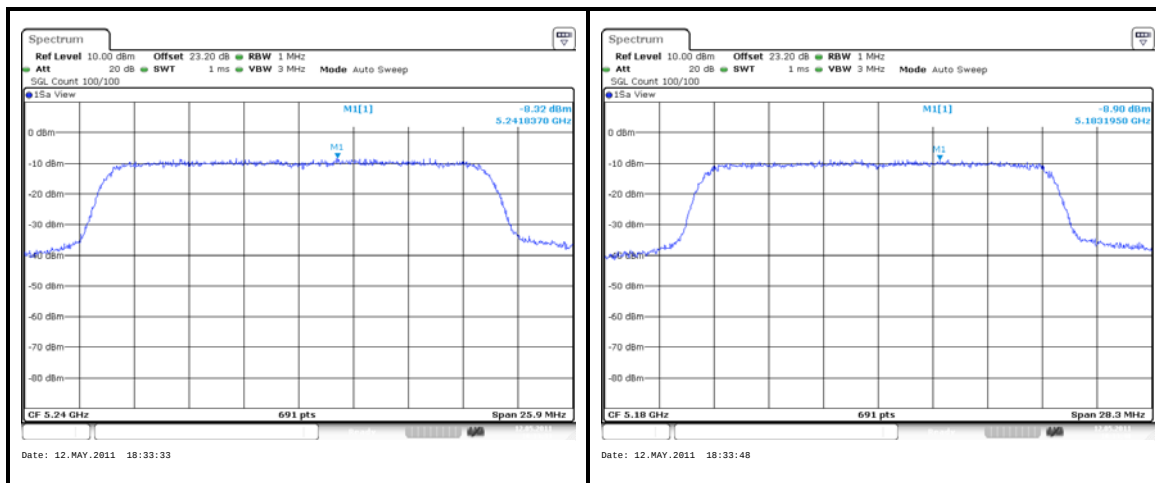


PSD_UNII_1_802_11N_26MBS_TopChannel

Transmitter Peak Power Spectral Density (continued)**Plots - 802.11N 5150 to 5250MHz**

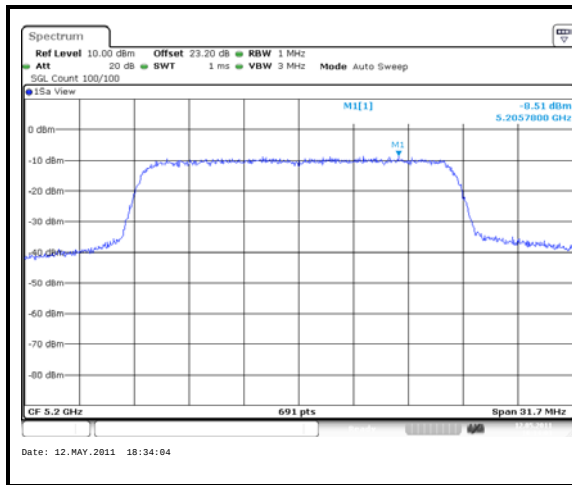
PSD_UNII_1_802_11N_39MBS_BottomChannel

PSD_UNII_1_802_11N_39MBS_MiddleChannel

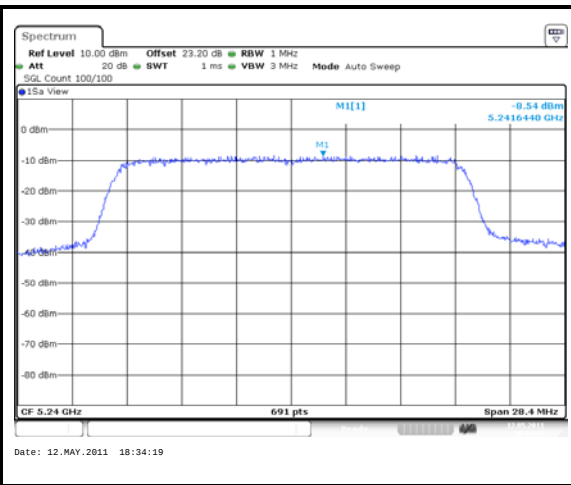


PSD_UNII_1_802_11N_39MBS_TopChannel

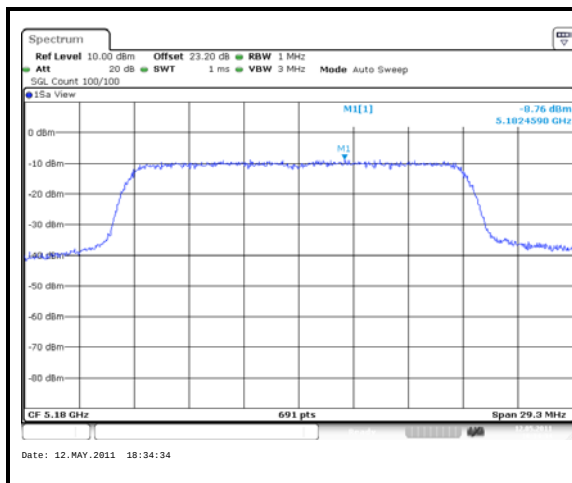
PSD_UNII_1_802_11N_52MBS_BottomChannel

Transmitter Peak Power Spectral Density (continued)**Plots - 802.11N 5150 to 5250MHz**

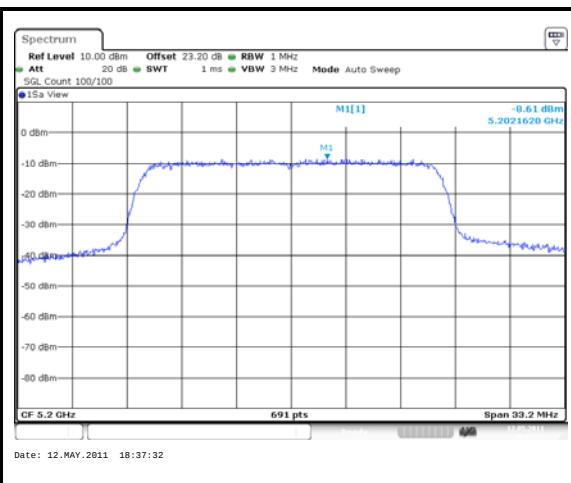
PSD_UNII_1_802_11N_52MBS_MiddleChannel



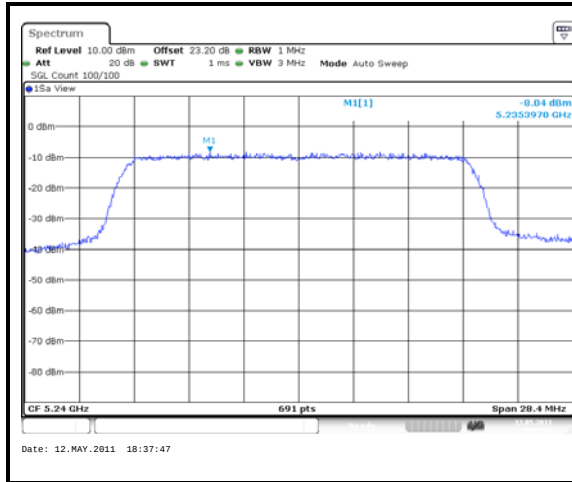
PSD_UNII_1_802_11N_52MBS_TopChannel



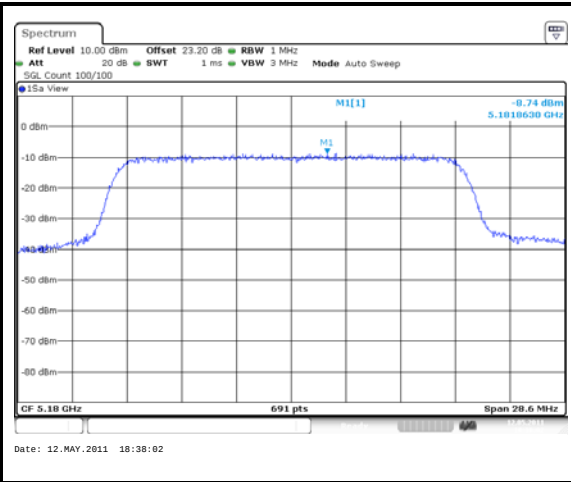
PSD_UNII_1_802_11N_58_5MBS_BottomChannel



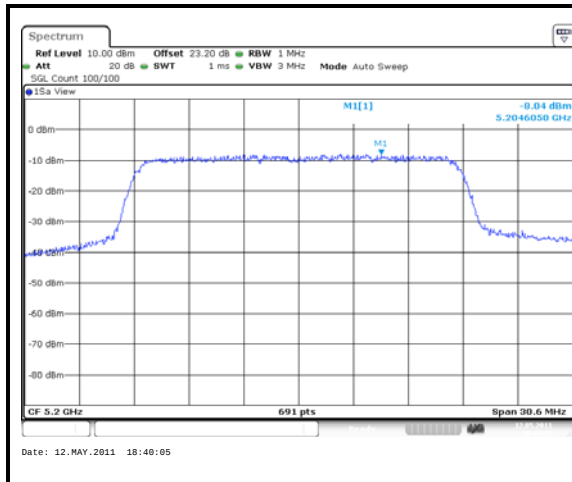
PSD_UNII_1_802_11N_58_5MBS_MiddleChannel

Transmitter Peak Power Spectral Density (continued)**Plots - 802.11N 5150 to 5250 MHz band**

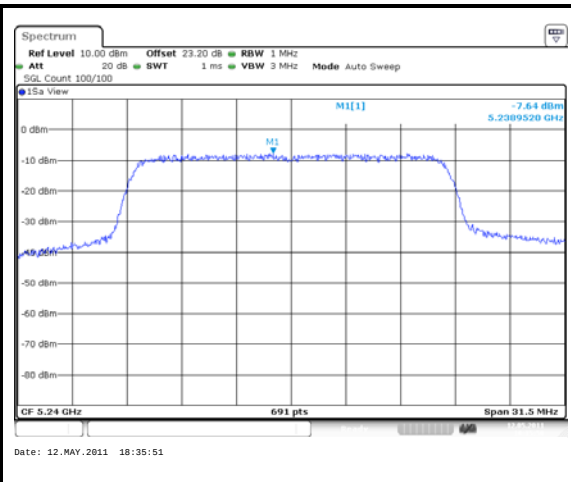
PSD_UNII_1_802_11N_58_5MBS_TopChannel



PSD_UNII_1_802_11N_65MBS_BottomChannel



PSD_UNII_1_802_11N_65MBS_MiddleChannel



PSD_UNII_1_802_11N_65MBS_TopChannel