

TEST REPORT FROM RFI GLOBAL SERVICES LTD



Test of: NTT docomo EB-4056

FCC ID: UCE212054A

To: FCC Part 15.247: 2011 Subpart C

Test Report Serial No.:
RFI-RPT-RP87471JD11A V3.0

Version 3.0 Supersedes All Previous Versions

This Test Report Is Issued Under The Authority Of John Newell, Group Quality Manager:	
Checked By:	Ian Watch
Signature:	
Date of Issue:	18 June 2012

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1. Customer Information











Company Name:	Panasonic Mobile Communications Development of Europe Ltd.
Address:	Panasonic House Willoughby Road Bracknell Berkshire RG12 8FP United Kingdom

2. Summary of Testing

2.1. General Information

Specification Reference:	47CFR15.247
Specification Title:	Code of Federal Regulations Volume 47 (Telecommunications) 2011: Part 15 Subpart C (Intentional Radiators) - Section 15.247
Specification Reference:	47CFR15.107 and 47CFR15.109
Specification Title:	Code of Federal Regulations Volume 47 (Telecommunications) 2011: 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) 2011: Part 15 Subpart C (Intentional Radiators) - Sections 15.207 and 15.209
Site Registration:	FCC: 209735
Location of Testing:	RFI Global Services Ltd, Wade Road, Basingstoke, Hampshire, RG24 8AH.
Test Dates:	02 May 2012 to 23 May 2012

2.2. Summary of Test Results

FCC Reference (47CFR)	Measurement	Result
Part 15.107(a)	Receiver/Idle Mode AC Conducted Emissions	
Part 15.109	Receiver/Idle Mode Radiated Spurious Emissions	
Part 15.207	Transmitter AC Conducted Emissions	
Part 15.247(a)(2)	Transmitter 6 dB Bandwidth	
Part 15.247(e)	Transmitter Power Spectral Density	
Part 15.247(b)(3)	Transmitter Maximum Peak Output Power	
Part 15.247(d)/ 15.209(a)	Transmitter Radiated Emissions	
Part 15.247(d)/ 15.209(a)	Transmitter Band Edge Radiated Emissions	
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
Reference:	KDB 558074 D01 v01 1/18/2012
Title:	Guidance for Performing Compliance Measurements on Digital Transmission System (DTS) Operating Under 15.247

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:	NTT docomo
Model Name or Number:	EB-4056
IMEI:	351808050018796 (<i>Radiated sample #1</i>)
Hardware Version Number:	Rev C
Software Version Number:	ACPU: nemo-ics-09-0433 CCPU: R1C_0_EC10_00_D00
FCC ID:	UCE212054A

Brand Name:	NTT docomo
Model Name or Number:	EB-4056
IMEI:	351808050018796 (<i>Radiated sample #1</i>)
Hardware Version Number:	Rev C
Software Version Number:	ACPU: nemo-ics-09-0507 CCPU: R1C_0_EC12_00_D00
FCC ID:	UCE212054A

Brand Name:	NTT docomo
Model Name or Number:	EB-4056
IMEI:	351808050018994 (<i>Conducted RF port sample #1</i>)
Hardware Version Number:	Rev C
Software Version Number:	ACPU: nemo-ics-09-0433 CCPU: R1C_0_EC10_00_D00
FCC ID:	UCE212054A

Brand Name:	NTT docomo
Model Name or Number:	EB-4056
IMEI:	351808050018994 (<i>Conducted RF port sample #1</i>)
Hardware Version Number:	Rev C
Software Version Number:	ACPU: nemo-ics-09-0507 CCPU: R1C_0_EC12_00_D00
FCC ID:	UCE212054A

Brand Name:	NTT docomo
Description:	AC Charger
Model Name or Number:	03

Identification of Equipment Under Test (EUT) (continued)

Brand Name:	NTT docomo
Description:	Charge/USB Data cable
Model Name or Number:	Not marked or stated

Brand Name:	NTT docomo
Model Name or Number:	Charger Pad Type Number: DE-PAD002AAA
Serial Number:	N/A

Brand Name:	NTT docomo
Model Name or Number:	Charger PSU Type Number: DE-PAA002AAA
Serial Number:	N/A

Brand Name:	NTT docomo
Description:	Personal Hands-Free
Model Name or Number:	Part Number 549266

3.2. Description of EUT

The equipment under test was a Dual Mode UMTS/GSM Mobile Phone with WLAN, *Bluetooth* and RFID.

3.3. Modifications Incorporated in the EUT

The Customer changed the Software Version on all samples from
 ACPU: nemo-ics-09-0433 CCPU: R1C_0_EC10_00_D00 to
 ACPU: nemo-ics-09-0507 CCPU: R1C_0_EC12_00_D00 on 10 May 2012.

The Customer declared that the software update was to fix GPRS/EGPRS connectivity problems only and the software change did not affect any other parameters.

3.4. Additional Information Related to Testing

Technology Tested:	Digital Transmission System (IEEE 802.11b/g/n)		
Type of Unit:	Transceiver		
Modulation:	BPSK, QPSK, 16 QAM and 64QAM		
Data Rate:	1, 2, 5.5, 11, 6, 9, 12, 18, 24, 36, 48, 54, 6.5,13,19.5, 26, 39, 52, 58.5, 65, 7.2,14.4, 21.7, 28.9, 43.3, 57.8, 65 and 72.2 Mbps		
Power Supply Requirement(s):	Nominal	3.8 V	
Maximum Conducted Output Power:	19.3 dBm		
Antenna Gain	-3.1 dB		
Transmit Frequency Range:	2412 MHz to 2462 MHz		
Transmit Channels Tested:	Channel ID	Channel Number	Channel Frequency (MHz)
	Bottom	1	2412
	Middle	6	2437
	Top	11	2462
Receive Frequency Range:	2412 MHz to 2462 MHz		
Receive Channels Tested:	Channel ID	Channel Number	Channel Frequency (MHz)
	Bottom	1	2412
	Middle	6	2437
	Top	11	2462

3.5. Support Equipment

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

Brand Name:	Panasonic
Description:	Laptop PC
Model Name or Number:	CF74

Brand Name:	Not marked or stated
Description:	2 GB Micro SD Card
Model Name or Number:	MMAGR02GUECA

Description:	USB Hub
Brand Name:	Buffalo
Model Name or Number:	BSH3U01

4. Operation and Monitoring of the EUT during Testing

4.1. Operating Modes

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

- Receive/Idle Mode
- Continuously transmitting at maximum power on the bottom, middle and top channels as required using the data rates which exhibited the widest spectral bandwidths and highest power levels.

4.2. Configuration and Peripherals

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

- Controlled using a bespoke application on the EUT, by pressing sequence of buttons on the front panel display which placed the unit into test mode. The application was used to enable continuous transmission and receive mode and to select the test channels, data rates and modulation schemes as required.
- Receive/Idle tests: The 802.11 mode was active but not transmitting.
- Transmitter radiated spurious emissions final measurements were performed using the 802.11b 11 Mbps configuration as it was previously measured and found to produce the highest EIRP.
- Conducted measurements were performed with the antenna removed and the measurement equipment connected to the reverse SMA RF connector.
- Idle and transmitter radiated spurious emissions tests were performed with the phone laying on the charge pad with the PHF and USB cable connected to the EUT as this was found to be the worst case during pre-scans. The USB cable was terminated into a USB hub supplied by the Customer. All the accessories were individually connected and measurements made during the pre-scans to determine the worst case combination.

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:	Mark Percival	Test Date:	15 May 2012
Test Sample IMEI:	351808050018796		

FCC Reference:	Part 15.107(a)
Test Method Used:	As detailed in ANSI C63.10 Section 6.2 referencing ANSI C63.4

Environmental Conditions:

Temperature (°C):	21
Relative Humidity (%):	39

Results: Live / Quasi Peak

Frequency (MHz)	Line	Level (dB μ V)	Limit (dB μ V)	Margin (dB)	Result
0.636000	Live	29.2	56.0	26.8	Complied
0.744000	Live	26.2	56.0	29.8	Complied
1.252500	Live	33.2	56.0	22.8	Complied
1.333500	Live	31.6	56.0	24.4	Complied
1.743000	Live	36.2	56.0	19.8	Complied
13.920000	Live	17.0	60.0	43.0	Complied

Results: Neutral / Quasi Peak

Frequency (MHz)	Line	Level (dB μ V)	Limit (dB μ V)	Margin (dB)	Result
0.240000	Neutral	36.3	62.1	25.8	Complied
0.348000	Neutral	36.0	59.0	23.0	Complied
0.505500	Neutral	30.1	56.0	25.9	Complied
1.225500	Neutral	35.8	56.0	20.2	Complied
1.725000	Neutral	48.8	56.0	7.2	Complied
2.188500	Neutral	32.6	56.0	23.4	Complied

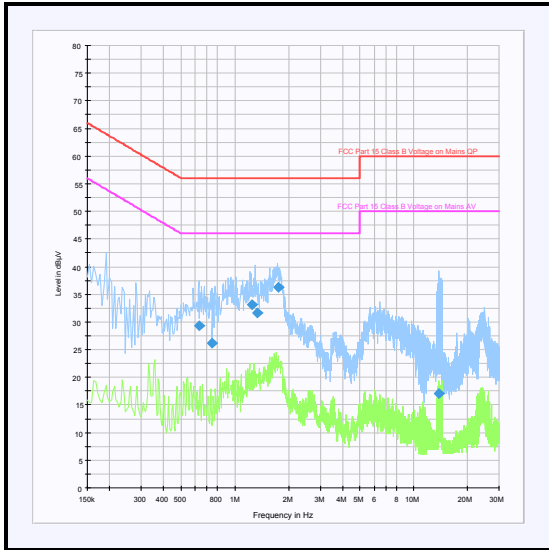
Receiver/Idle Mode AC Conducted Spurious Emissions (continued)**Results: Neutral / Average**

Frequency (MHz)	Line	Level (dBμV)	Limit (dBμV)	Margin (dB)	Result
1.752000	Neutral	32.3	46.0	13.7	Complied
2.103000	Neutral	21.5	46.0	24.5	Complied
2.197500	Neutral	22.5	46.0	23.5	Complied
2.427000	Neutral	20.3	46.0	25.7	Complied
2.454000	Neutral	21.7	46.0	24.3	Complied
2.571000	Neutral	24.4	46.0	21.6	Complied

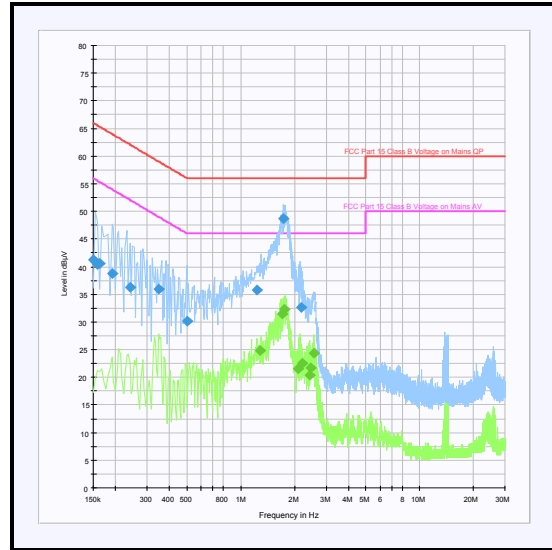
Note(s):

1. Live/Average emissions were all >30 dB below the applicable limit or below the measurement system noise floor and were therefore, not recorded.

Receiver/Idle Mode AC Conducted Spurious Emissions (continued)



Live



Neutral

Note: These plots are pre-scans 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	Test Date:	03 May 2012
Test Sample IMEI:	351808050018796		

FCC Part:	15.109
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):	24
Relative Humidity (%):	33

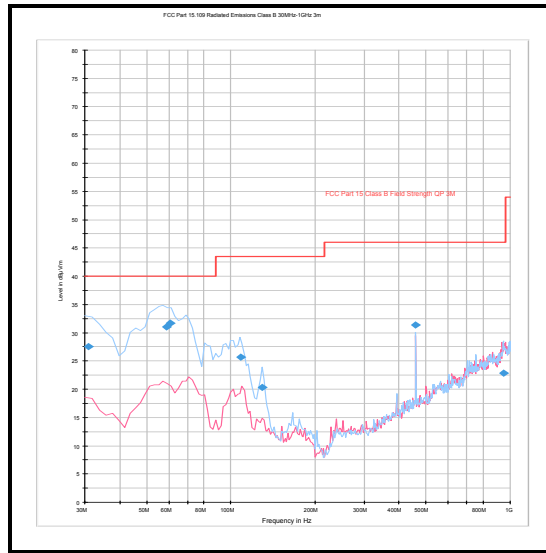
Results: Quasi Peak

Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
30.909	Horizontal	27.6	40.0	12.4	Complied
58.672	Horizontal	31.1	40.0	8.9	Complied
60.895	Horizontal	31.7	40.0	8.3	Complied
108.424	Horizontal	25.6	43.5	17.9	Complied
129.576	Horizontal	20.4	43.5	23.1	Complied
458.806	Horizontal	31.3	46.0	14.7	Complied
944.903	Horizontal	22.8	46.0	23.2	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. 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.
3. Measurements below 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.

Receiver/Idle Mode Radiated Spurious Emissions (continued)



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

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

Test Engineer:	Nick Steele	Test Date:	01 May 2012
Test Sample IMEI:	351808050018796		

FCC Part:	15.109
Test Method Used:	As detailed in ANSI C63.10 Sections 6.3 and 6.6 referencing ANSI C63.4
Frequency Range:	1 GHz to 12.75 GHz

Environmental Conditions:

Temperature (°C):	23
Relative Humidity (%):	25

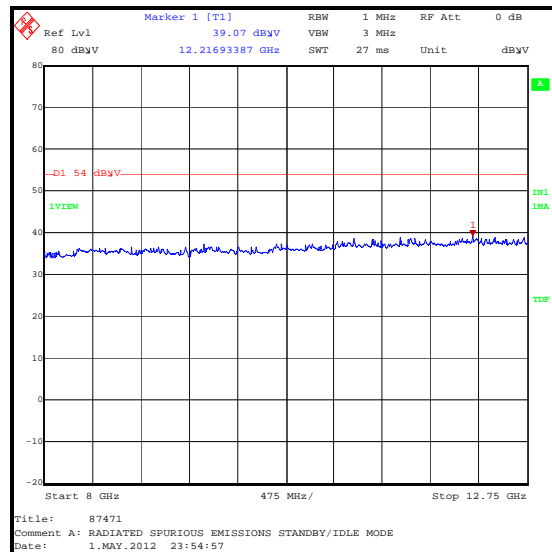
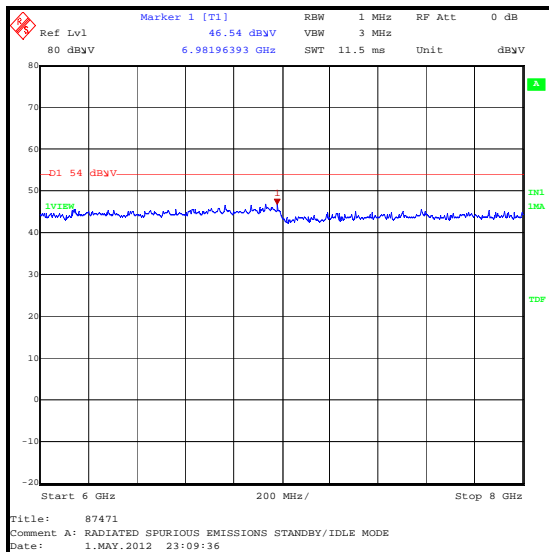
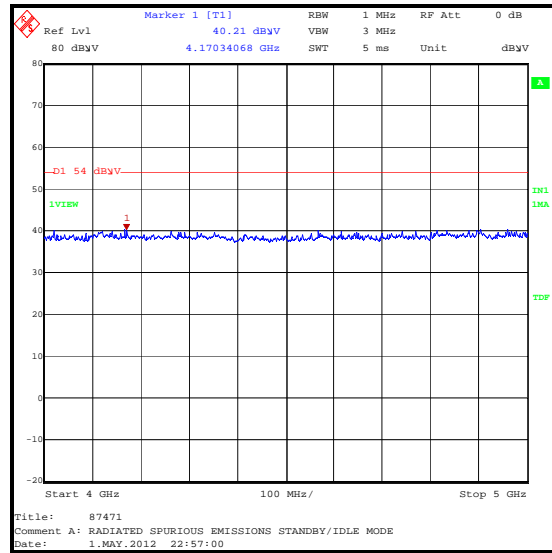
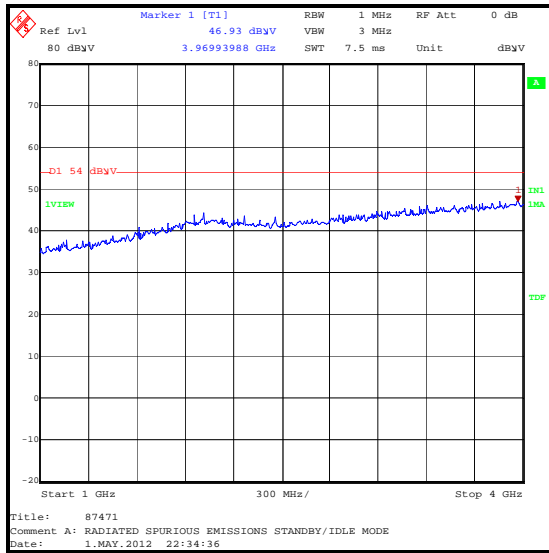
Results:

Frequency (MHz)	Antenna Polarity	Peak Level (dBμV/m)	Average Limit (dBμV/m)	Margin (dB)	Result
3969.940	Vertical	46.9	54.0	7.1	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. 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.
3. 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. The peak level was compared to the average limit as opposed to being compared to the peak limit because this is the more onerous limit.

Receiver/Idle Mode Radiated Spurious Emissions (continued)



5.2.3. Transmitter AC Conducted Spurious Emissions**Test Summary:**

Test Engineer:	Mark Percival	Test Date:	15 May 2012
Test Sample IMEI:	351808050018796		

FCC Reference:	Part 15.207
Test Method Used:	As detailed in ANSI C63.10 Section 6.2 referencing ANSI C63.4

Environmental Conditions:

Temperature (°C):	21
Relative Humidity (%):	39

Results: Live / Quasi Peak

Frequency (MHz)	Line	Level (dB μ V)	Limit (dB μ V)	Margin (dB)	Result
0.478500	Live	37.4	56.4	19.0	Complied
0.762000	Live	34.9	56.0	21.1	Complied
1.005000	Live	31.2	56.0	24.8	Complied
1.302000	Live	35.6	56.0	20.4	Complied
1.752000	Live	42.8	56.0	13.2	Complied
1.810500	Live	44.3	56.0	11.7	Complied

Results: Live / Average

Frequency (MHz)	Line	Level (dB μ V)	Limit (dB μ V)	Margin (dB)	Result
1.396500	Live	26.3	46.0	19.7	Complied
1.639500	Live	27.2	46.0	18.8	Complied
1.666500	Live	27.8	46.0	18.2	Complied
1.725000	Live	27.6	46.0	18.4	Complied
1.783500	Live	27.6	46.0	18.4	Complied
1.815000	Live	28.2	46.0	17.8	Complied

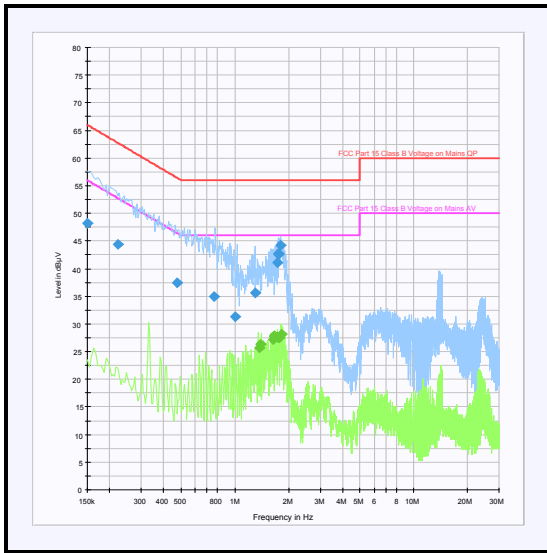
Transmitter AC Conducted Spurious Emissions (continued)**Results: Neutral / Quasi Peak**

Frequency (MHz)	Line	Level (dB μ V)	Limit (dB μ V)	Margin (dB)	Result
1.666500	Neutral	50.0	56.0	6.0	Complied
1.689000	Neutral	50.5	56.0	5.5	Complied
1.729500	Neutral	50.9	56.0	5.1	Complied
1.756500	Neutral	51.8	56.0	4.2	Complied
1.923000	Neutral	51.6	56.0	4.4	Complied
1.954500	Neutral	48.7	56.0	7.3	Complied

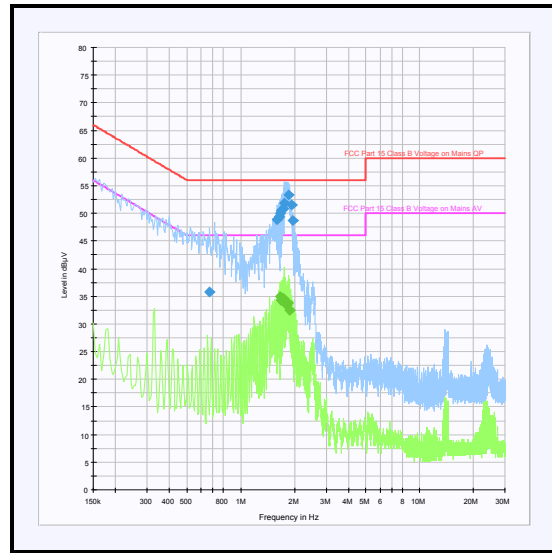
Results: Neutral / Average

Frequency (MHz)	Line	Level (dB μ V)	Limit (dB μ V)	Margin (dB)	Result
1.693500	Neutral	34.3	46.0	11.7	Complied
1.725000	Neutral	34.6	46.0	11.4	Complied
1.725000	Neutral	34.2	46.0	11.8	Complied
1.756500	Neutral	34.0	46.0	12.0	Complied
1.806000	Neutral	33.5	46.0	12.6	Complied
1.837500	Neutral	33.7	46.0	12.3	Complied

Transmitter AC Conducted Spurious Emissions (continued)



Live



Neutral

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

5.2.4. Transmitter 6 dB Bandwidth**Test Summary:**

Test Engineer:	Mark Percival	Test Dates:	02 May 2012 & 03 May 2012
Test Sample IMEI:	351808050018994		

FCC Reference:	Part 15.247(a)(2)
Test Method Used:	FCC KDB 558074 D01 Section 5.1.1 ANSI C63.10 Section 6.9.1

Environmental Conditions:

Temperature (°C):	23
Relative Humidity (%):	32 to 33

Results: 802.11b / 1 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	10.128	≥0.5	9.628	Complied
Middle	10.000	≥0.5	9.500	Complied
Top	10.064	≥0.5	9.564	Complied

Results: 802.11b / 2 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	9.744	≥0.5	9.244	Complied
Middle	9.808	≥0.5	9.308	Complied
Top	9.678	≥0.5	9.278	Complied

Results: 802.11b / 5.5 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	10.256	≥0.5	9.756	Complied
Middle	10.321	≥0.5	9.821	Complied
Top	10.449	≥0.5	9.949	Complied

Results: 802.11b / 11 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	10.449	≥0.5	9.949	Complied
Middle	10.449	≥0.5	9.949	Complied
Top	10.256	≥0.5	9.756	Complied

Transmitter 6 dB Bandwidth (continued)**Results: 802.11g / 6 Mbps**

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	16.026	≥0.5	15.526	Complied
Middle	16.090	≥0.5	15.590	Complied
Top	16.026	≥0.5	15.526	Complied

Results: 802.11g / 9 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	16.090	≥0.5	15.590	Complied
Middle	16.090	≥0.5	15.590	Complied
Top	16.154	≥0.5	15.654	Complied

Results: 802.11g / 12 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	16.282	≥0.5	15.782	Complied
Middle	16.346	≥0.5	15.846	Complied
Top	16.218	≥0.5	15.718	Complied

Results: 802.11g / 18 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	16.218	≥0.5	15.718	Complied
Middle	16.346	≥0.5	15.846	Complied
Top	16.218	≥0.5	15.718	Complied

Results: 802.11g / 24 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	16.731	≥0.5	16.231	Complied
Middle	16.667	≥0.5	16.167	Complied
Top	16.731	≥0.5	16.231	Complied

Results: 802.11g / 36 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	16.667	≥0.5	16.167	Complied
Middle	16.731	≥0.5	16.231	Complied
Top	16.667	≥0.5	16.167	Complied

Transmitter 6 dB Bandwidth (continued)**Results: 802.11g / 48 Mbps**

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	16.731	≥0.5	16.231	Complied
Middle	16.795	≥0.5	16.295	Complied
Top	16.731	≥0.5	16.231	Complied

Results: 802.11g / 54 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	16.731	≥0.5	16.231	Complied
Middle	16.667	≥0.5	16.167	Complied
Top	16.731	≥0.5	16.231	Complied

Results: 802.11n / 20 MHz / 6.5 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	17.372	≥0.5	16.872	Complied
Middle	17.372	≥0.5	16.872	Complied
Top	16.859	≥0.5	16.359	Complied

Results: 802.11n / 20 MHz / 13 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	17.500	≥0.5	17.000	Complied
Middle	17.500	≥0.5	17.000	Complied
Top	17.500	≥0.5	17.000	Complied

Results: 802.11n / 20 MHz / 19.5 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	17.308	≥0.5	16.808	Complied
Middle	17.628	≥0.5	17.128	Complied
Top	17.372	≥0.5	16.872	Complied

Results: 802.11n / 20 MHz / 26 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	17.885	≥0.5	17.385	Complied
Middle	17.949	≥0.5	17.449	Complied
Top	17.949	≥0.5	17.449	Complied

Transmitter 6 dB Bandwidth (continued)**Results: 802.11n / 20 MHz / 39 Mbps**

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	18.013	≥0.5	17.513	Complied
Middle	17.885	≥0.5	17.385	Complied
Top	17.885	≥0.5	17.385	Complied

Results: 802.11n / 20 MHz / 52 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	17.949	≥0.5	17.449	Complied
Middle	17.885	≥0.5	17.385	Complied
Top	17.885	≥0.5	17.885	Complied

Results: 802.11n / 20 MHz / 58.5 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	17.949	≥0.5	17.449	Complied
Middle	17.949	≥0.5	17.449	Complied
Top	17.628	≥0.5	17.128	Complied

Results: 802.11n / 20 MHz / 65 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	17.949	≥0.5	17.449	Complied
Middle	17.885	≥0.5	17.385	Complied
Top	17.885	≥0.5	17.385	Complied

Results: 802.11n / 20 MHz / 7.2 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	17.244	≥0.5	16.744	Complied
Middle	17.436	≥0.5	16.936	Complied
Top	17.308	≥0.5	16.808	Complied

Results: 802.11n / 20 MHz / 14.4 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	17.179	≥0.5	16.679	Complied
Middle	17.372	≥0.5	16.872	Complied
Top	17.436	≥0.5	16.936	Complied

Transmitter 6 dB Bandwidth (continued)**Results: 802.11n / 20 MHz / 21.7 Mbps**

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	17.308	≥0.5	16.808	Complied
Middle	17.308	≥0.5	16.808	Complied
Top	17.179	≥0.5	16.179	Complied

Results: 802.11n / 20 MHz / 28.9 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	17.885	≥0.5	17.385	Complied
Middle	17.885	≥0.5	17.385	Complied
Top	17.949	≥0.5	17.449	Complied

Results: 802.11n / 20 MHz / 43.4 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	17.949	≥0.5	17.449	Complied
Middle	17.885	≥0.5	17.385	Complied
Top	17.885	≥0.5	17.385	Complied

Results: 802.11n / 20 MHz / 57.8 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	17.885	≥0.5	17.385	Complied
Middle	17.885	≥0.5	17.385	Complied
Top	17.949	≥0.5	17.449	Complied

Results: 802.11n / 20 MHz / 65 Mbps

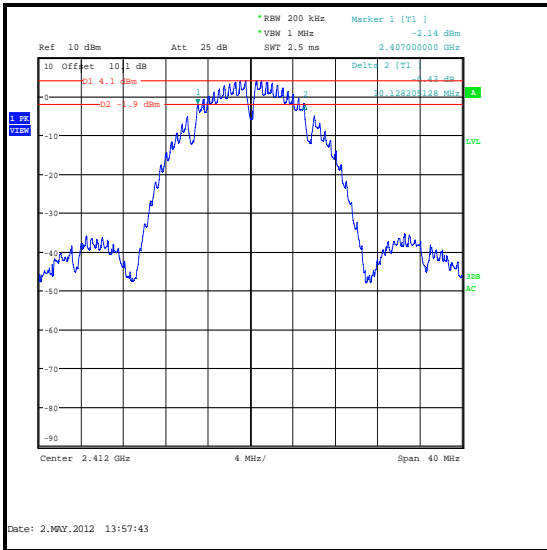
Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	18.013	≥0.5	17.513	Complied
Middle	17.949	≥0.5	17.449	Complied
Top	17.949	≥0.5	17.449	Complied

Results: 802.11n / 20 MHz / 72.2 Mbps

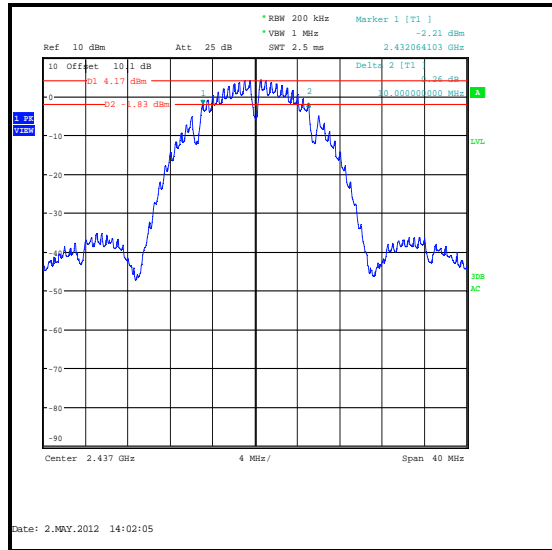
Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	17.949	≥0.5	17.449	Complied
Middle	17.949	≥0.5	17.449	Complied
Top	18.013	≥0.5	17.513	Complied

Transmitter 6 dB Bandwidth (continued)

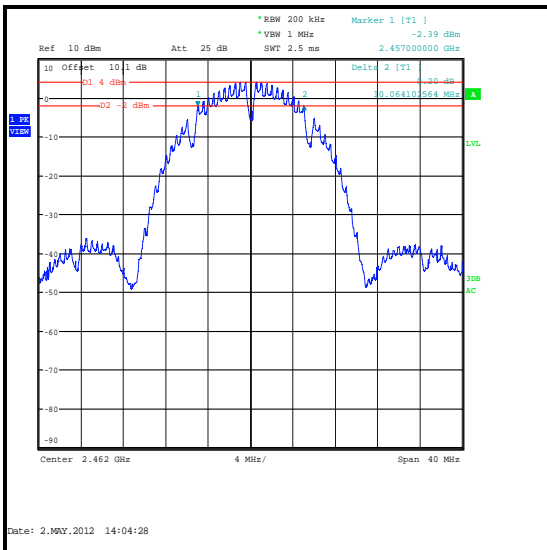
Results: 802.11b / 1 Mbps



Bottom Channel



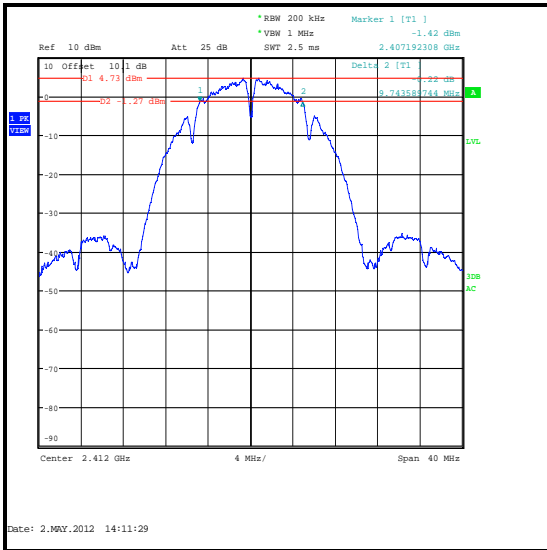
Middle Channel



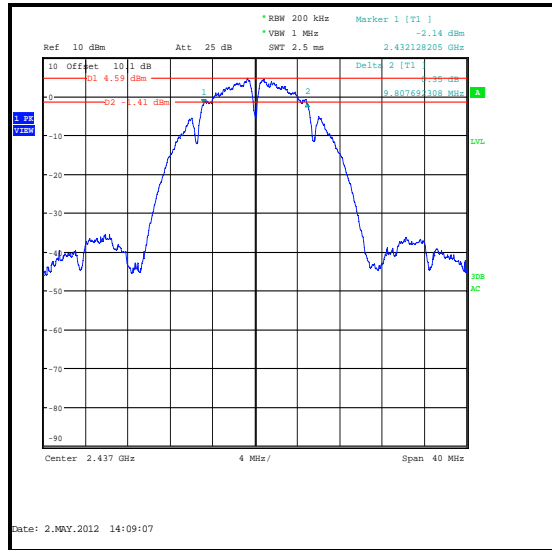
Top Channel

Transmitter 6 dB Bandwidth (continued)

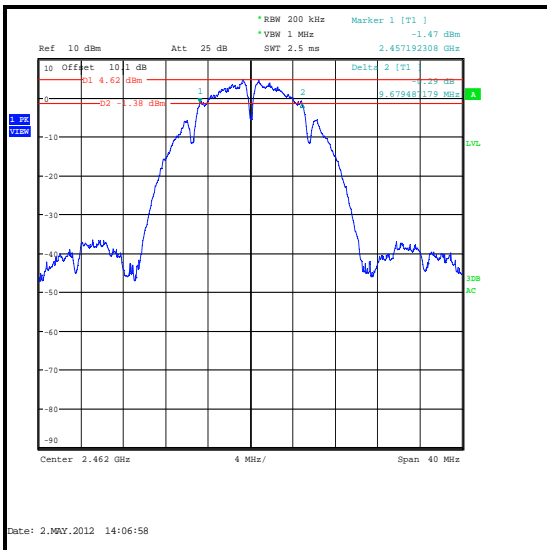
Results: 802.11b / 2 Mbps



Bottom Channel



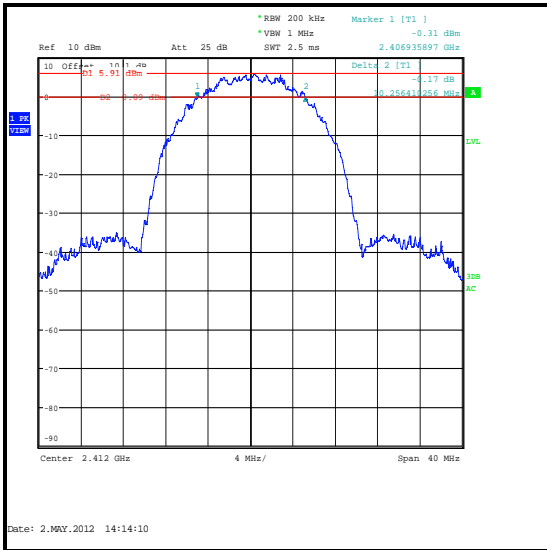
Middle Channel



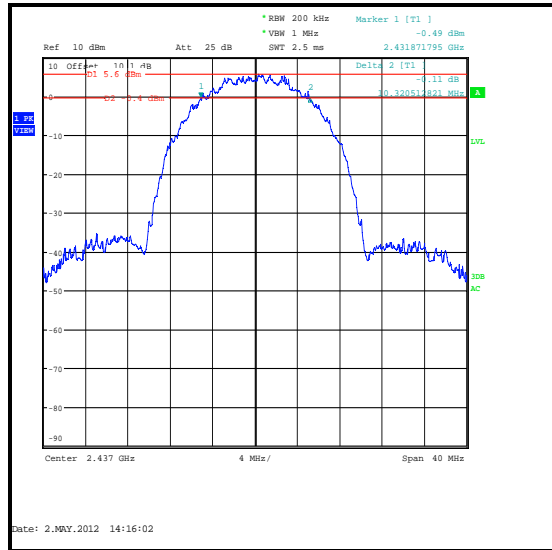
Top Channel

Transmitter 6 dB Bandwidth (continued)

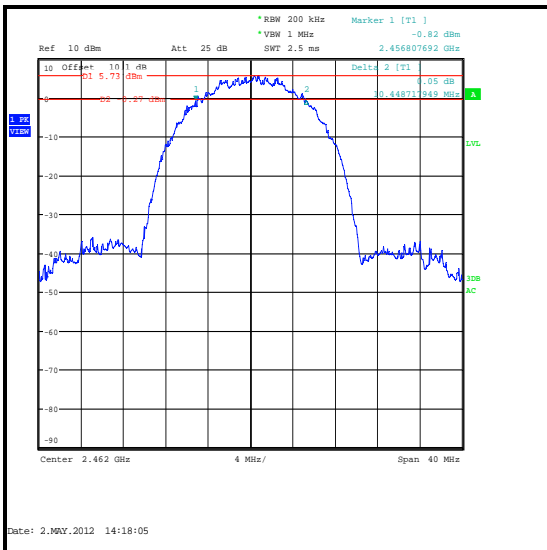
Results: 802.11b / 5.5 Mbps



Bottom Channel



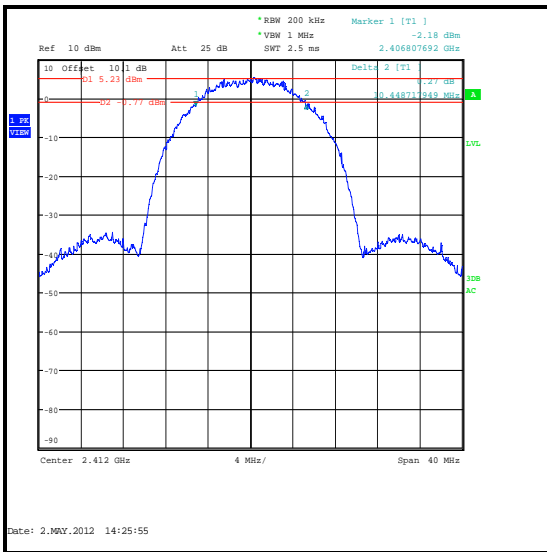
Middle Channel



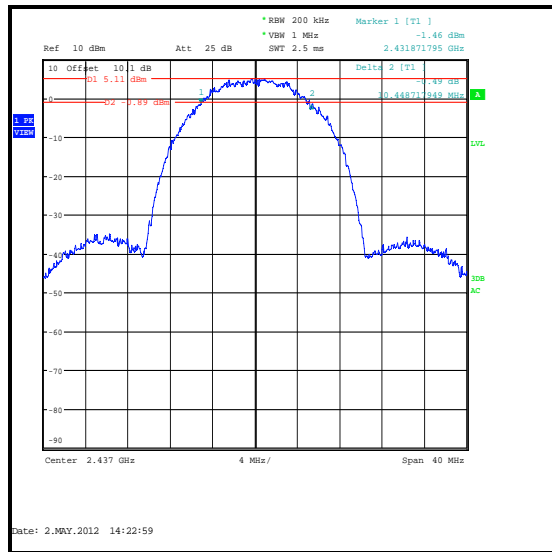
Top Channel

Transmitter 6 dB Bandwidth (continued)

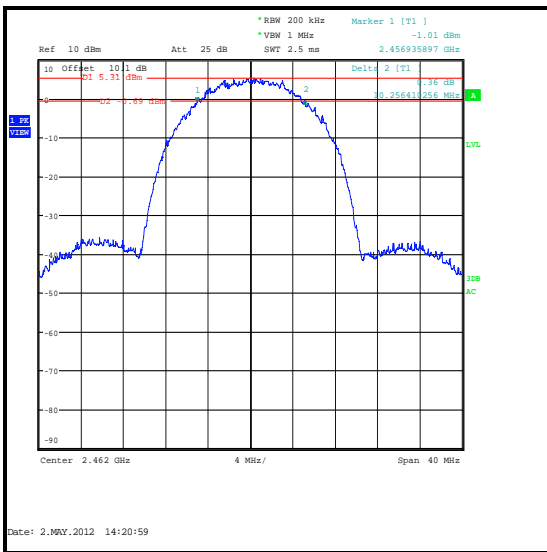
Results: 802.11b / 11 Mbps



Bottom Channel



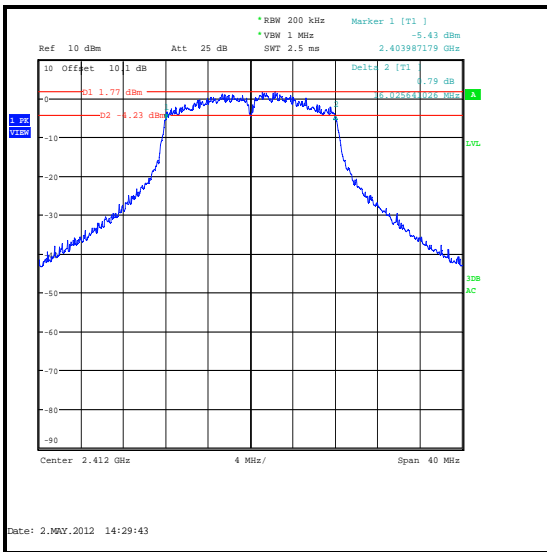
Middle Channel



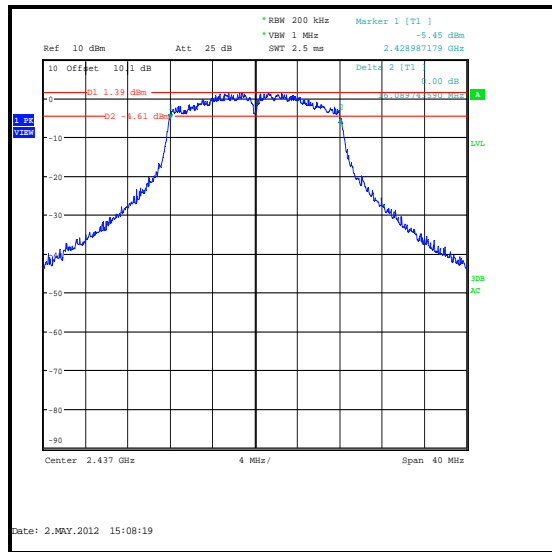
Top Channel

Transmitter 6 dB Bandwidth (continued)

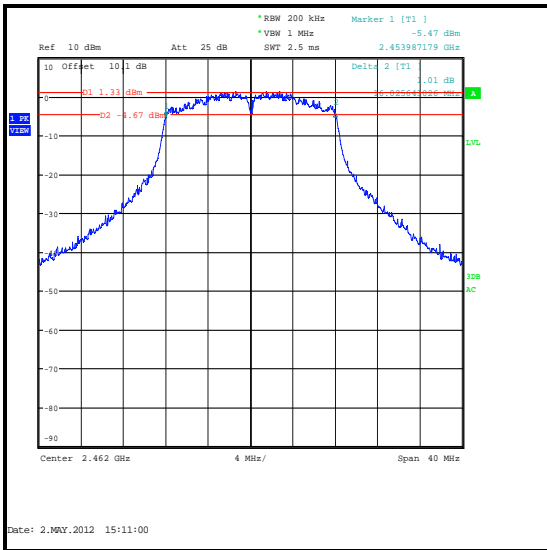
Results: 802.11g / 6 Mbps



Bottom Channel



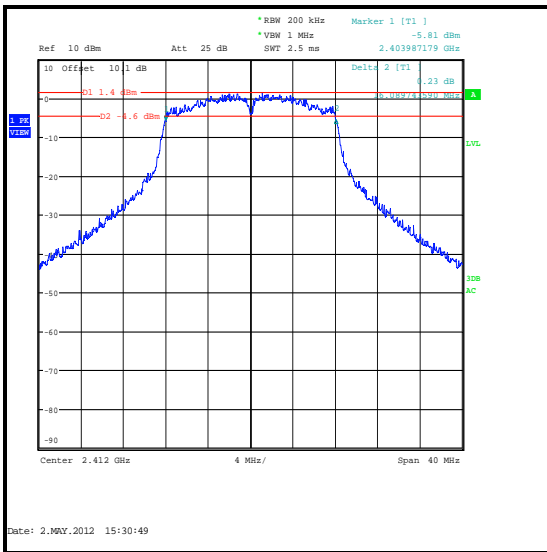
Middle Channel



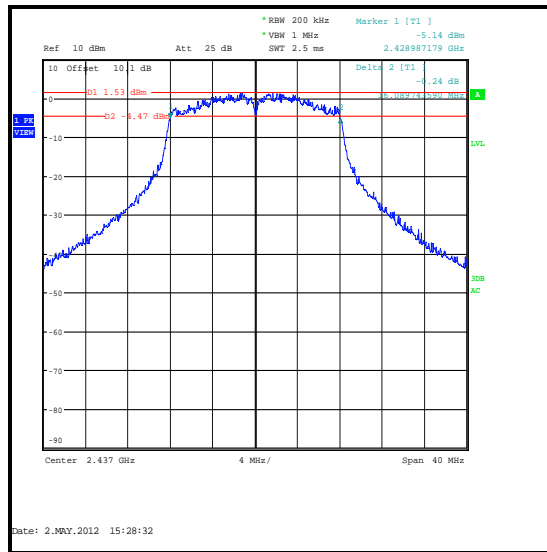
Top Channel

Transmitter 6 dB Bandwidth (continued)

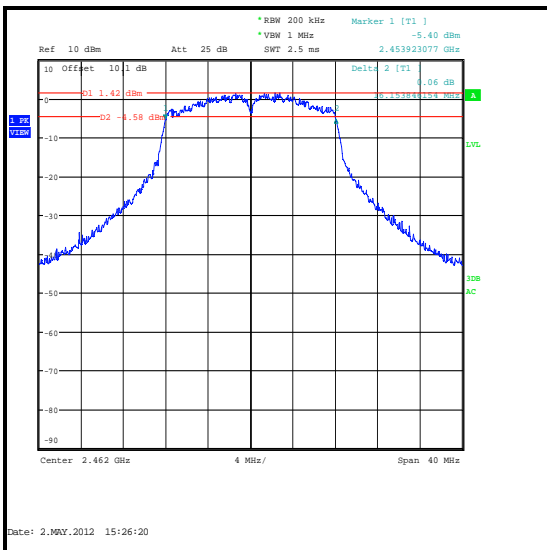
Results: 802.11g / 9 Mbps



Bottom Channel



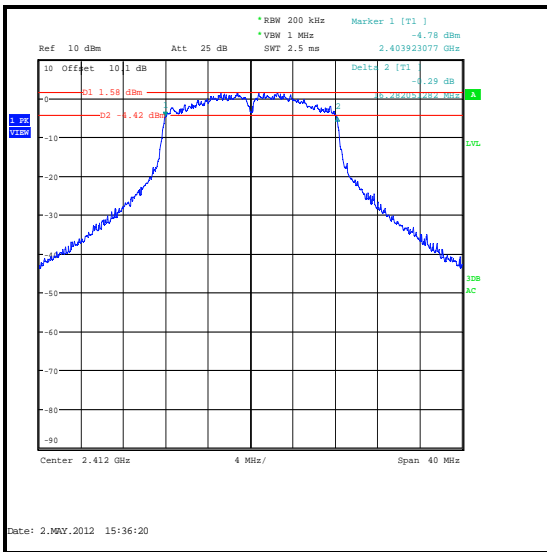
Middle Channel



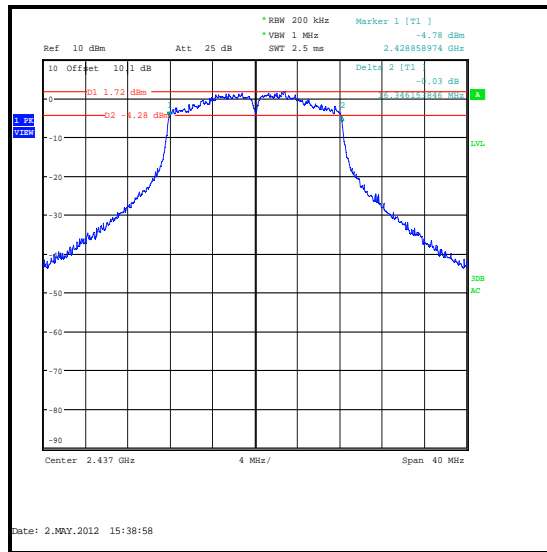
Top Channel

Transmitter 6 dB Bandwidth (continued)

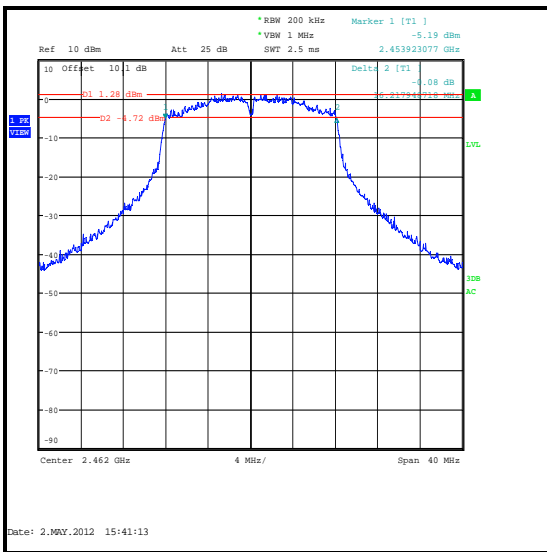
Results: 802.11g / 12 Mbps



Bottom Channel



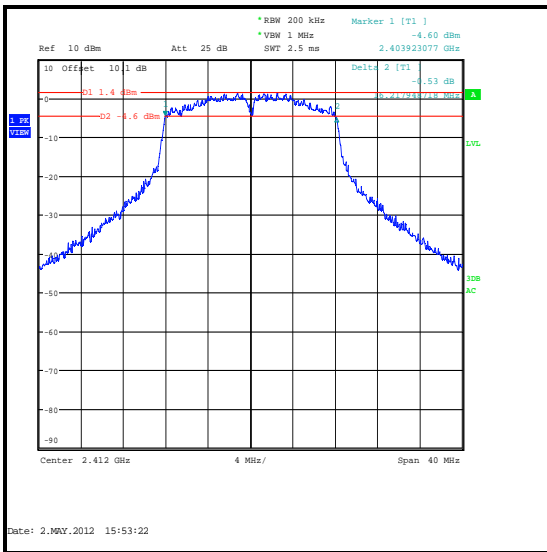
Middle Channel



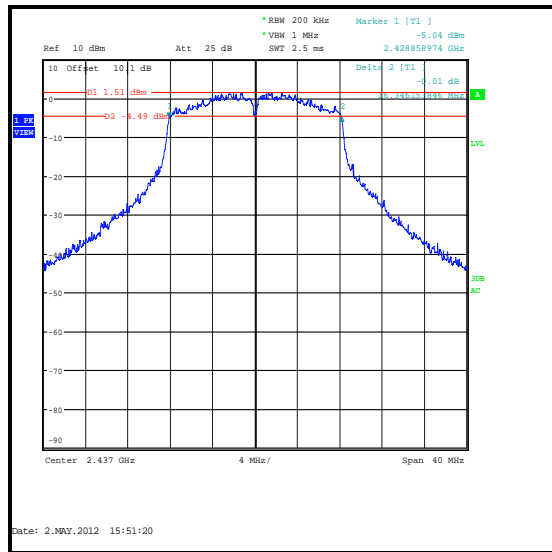
Top Channel

Transmitter 6 dB Bandwidth (continued)

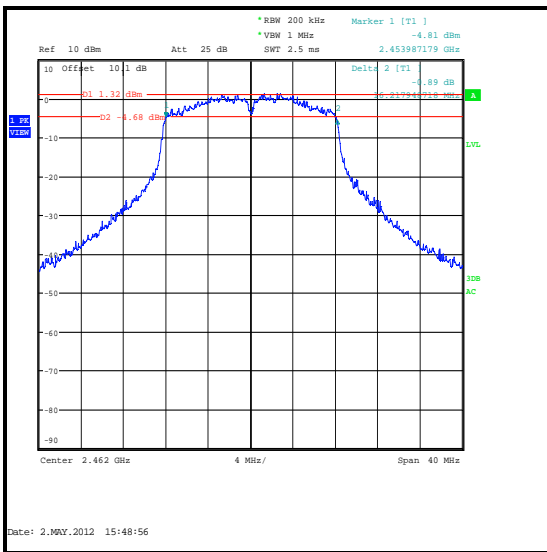
Results: 802.11g / 18 Mbps



Bottom Channel



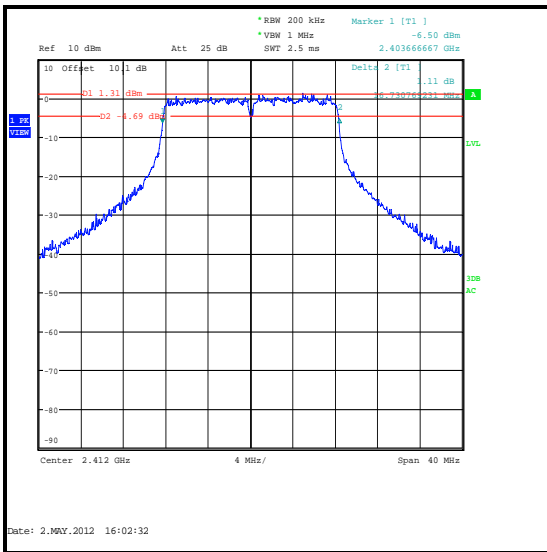
Middle Channel



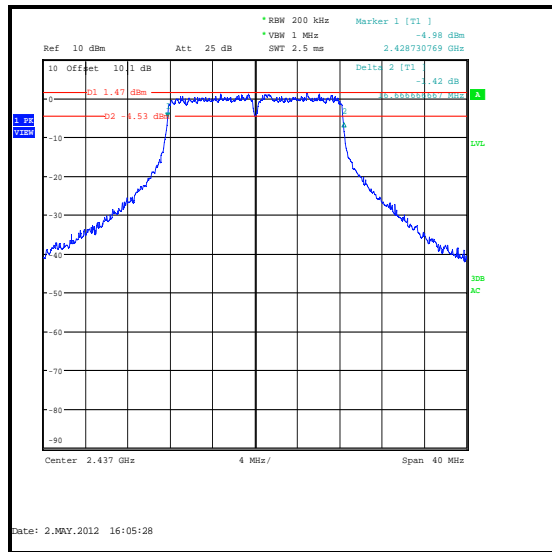
Top Channel

Transmitter 6 dB Bandwidth (continued)

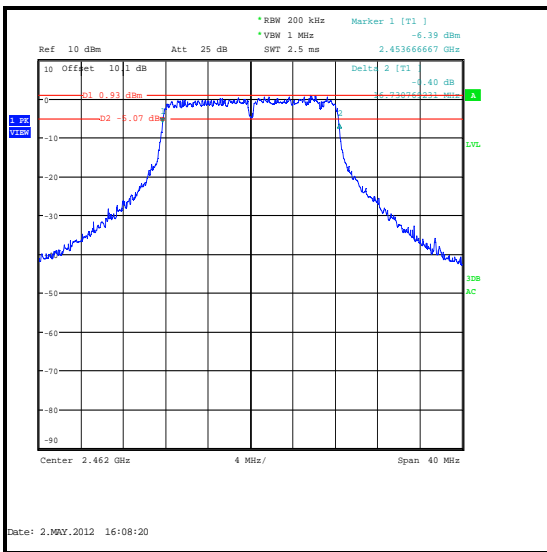
Results: 802.11g / 24 Mbps



Bottom Channel



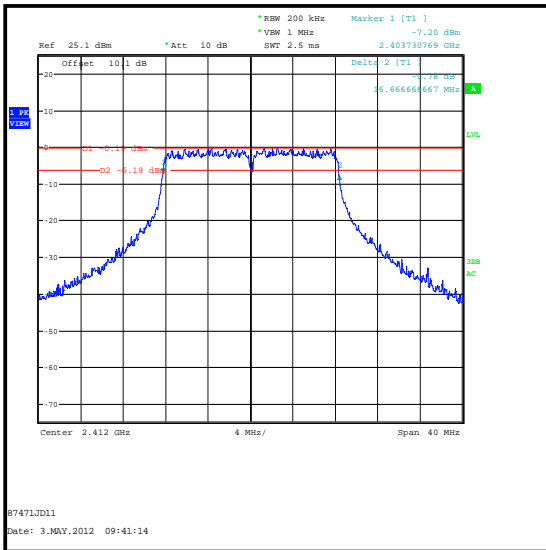
Middle Channel



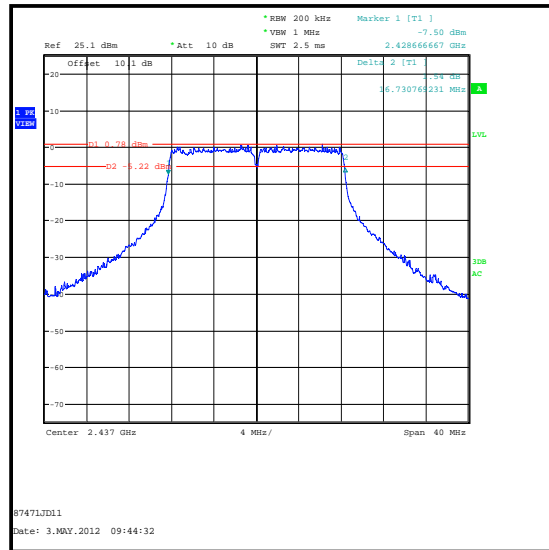
Top Channel

Transmitter 6 dB Bandwidth (continued)

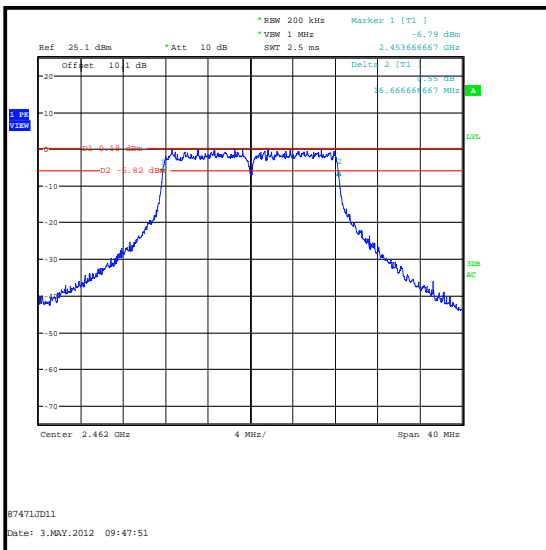
Results: 802.11g / 36 Mbps



Bottom Channel



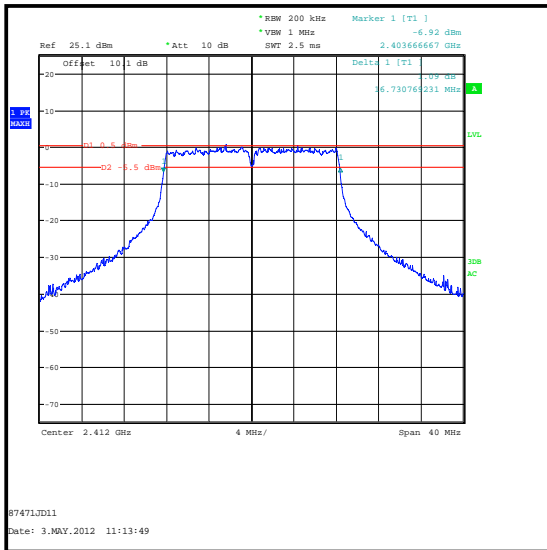
Middle Channel



Top Channel

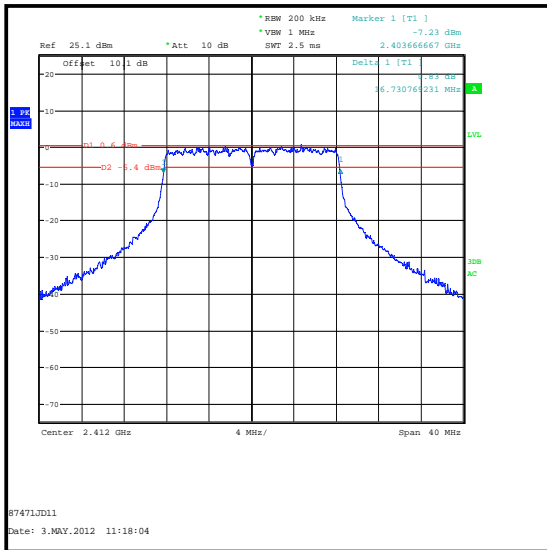
Transmitter 6 dB Bandwidth (continued)

Results: 802.11g / 48 Mbps

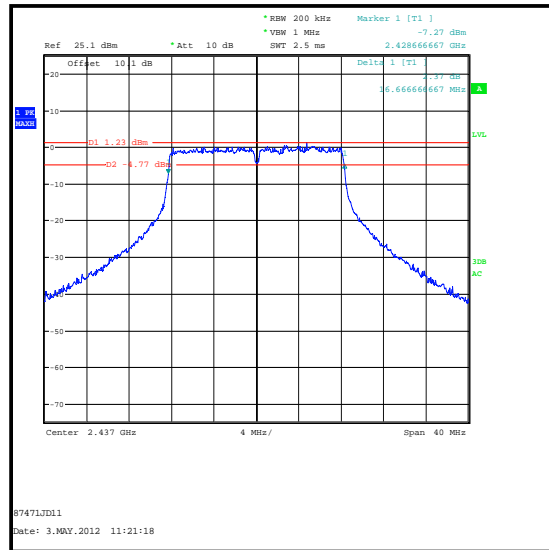


Transmitter 6 dB Bandwidth (continued)

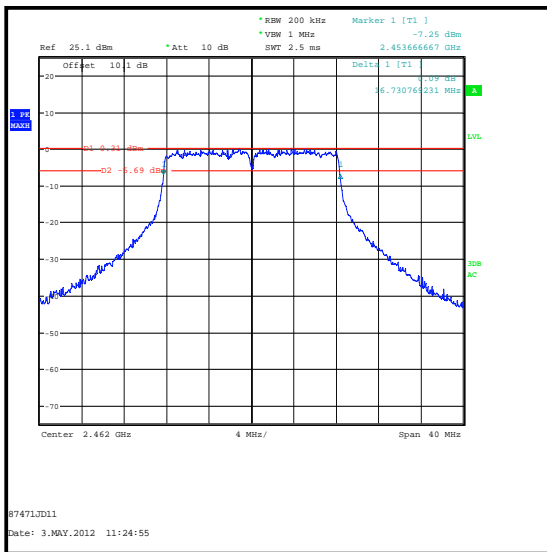
Results: 802.11g / 54 Mbps



Bottom Channel



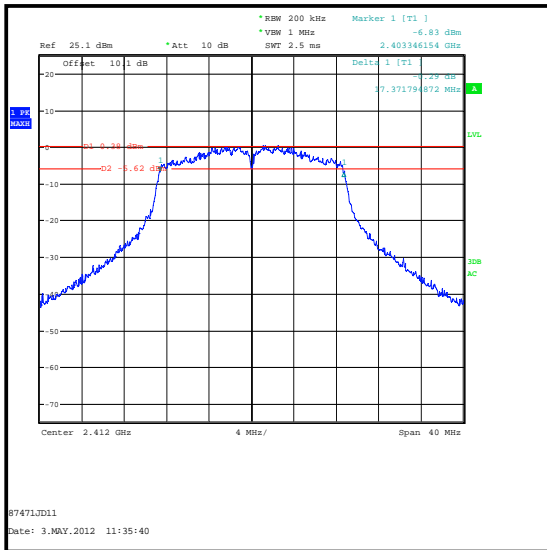
Middle Channel



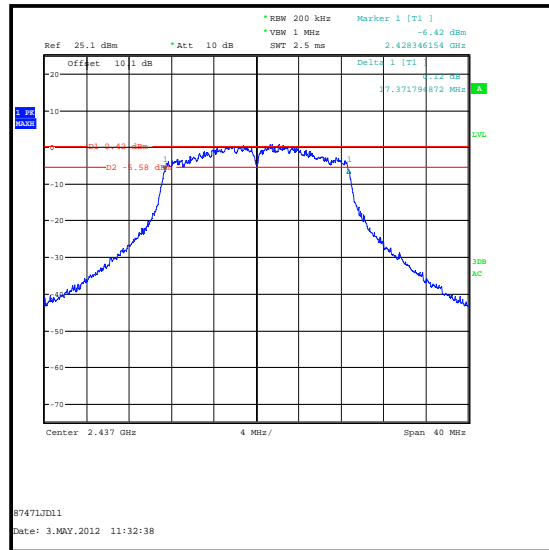
Top Channel

Transmitter 6 dB Bandwidth (continued)

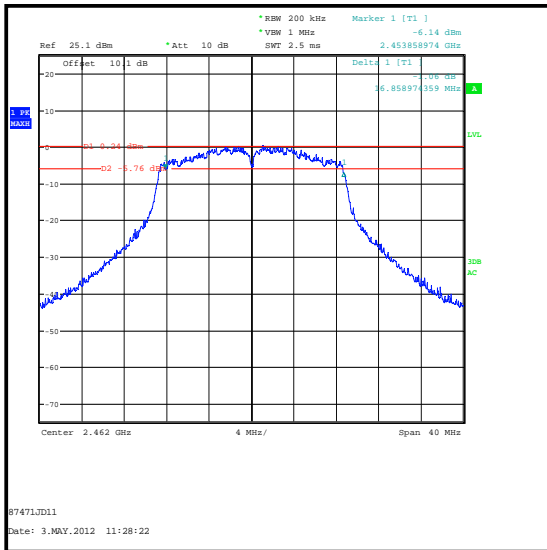
Results: 802.11n / 20 MHz / 6.5 Mbps



Bottom Channel



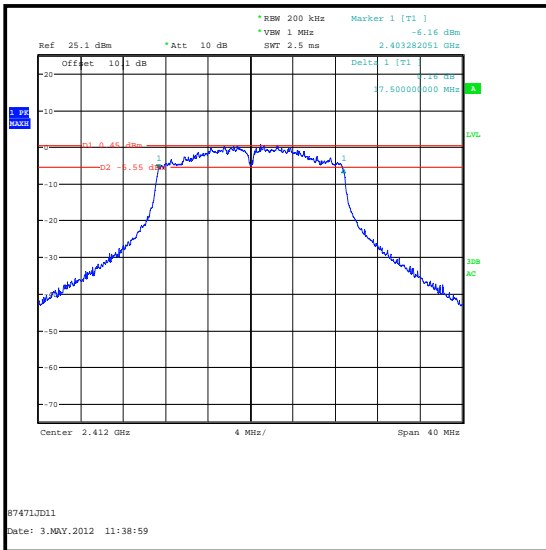
Middle Channel



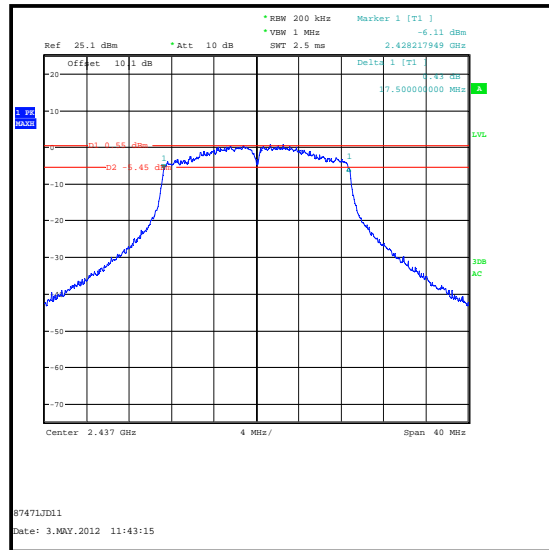
Top Channel

Transmitter 6 dB Bandwidth (continued)

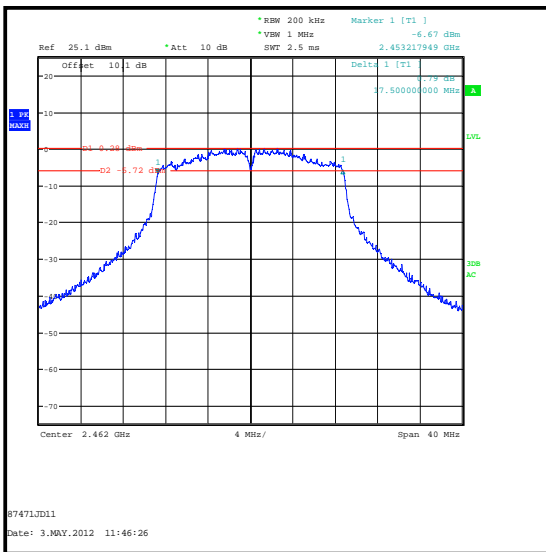
Results: 802.11n / 20 MHz / 13 Mbps



Bottom Channel



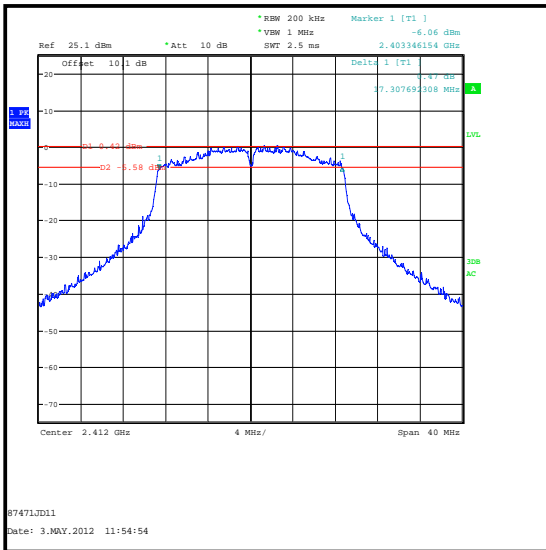
Middle Channel



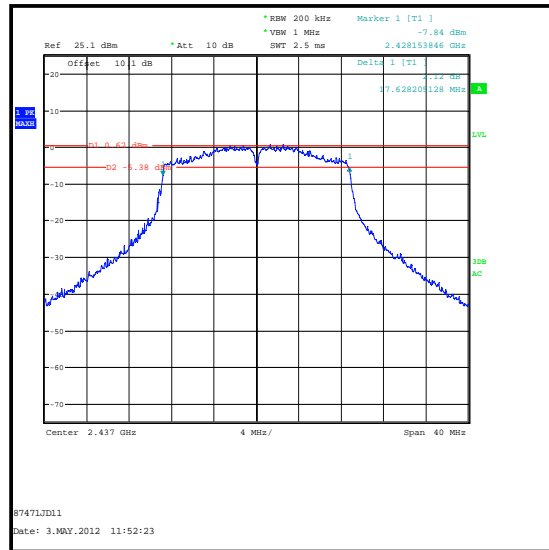
Top Channel

Transmitter 6 dB Bandwidth (continued)

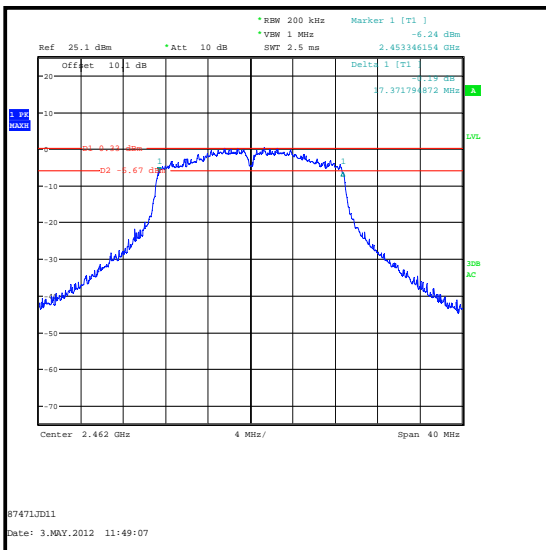
Results: 802.11n / 20 MHz / 19.5 Mbps



Bottom Channel



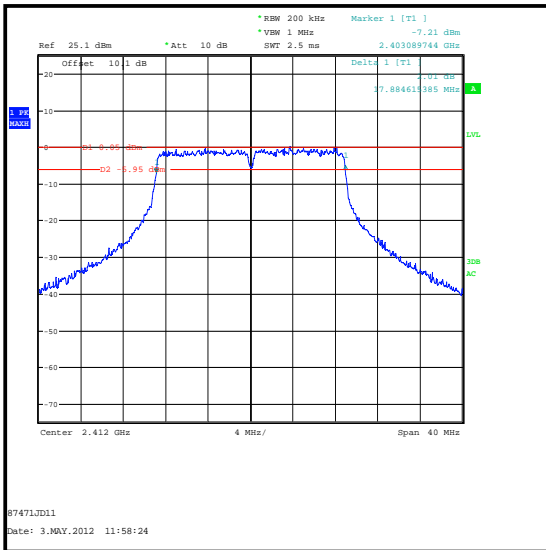
Middle Channel



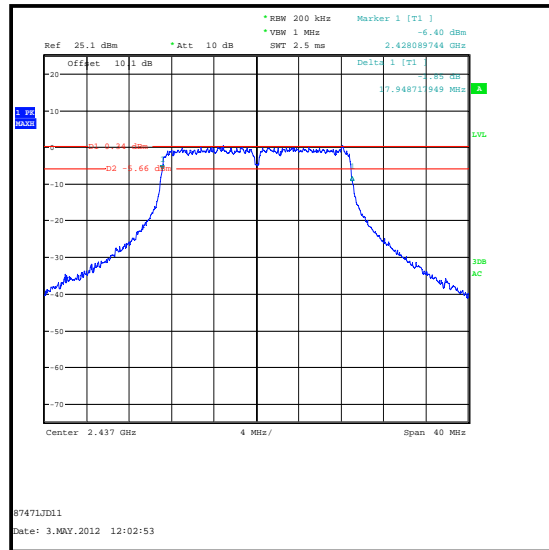
Top Channel

Transmitter 6 dB Bandwidth (continued)

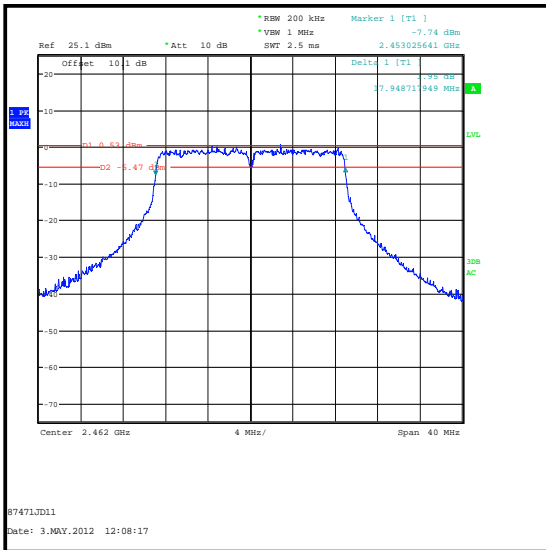
Results: 802.11n / 20 MHz / 26 Mbps



Bottom Channel



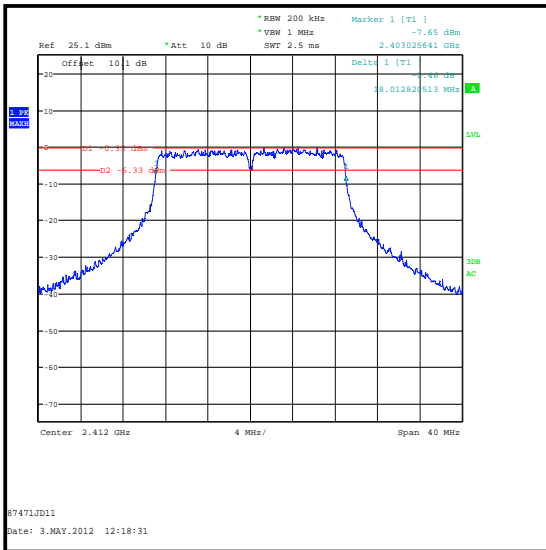
Middle Channel



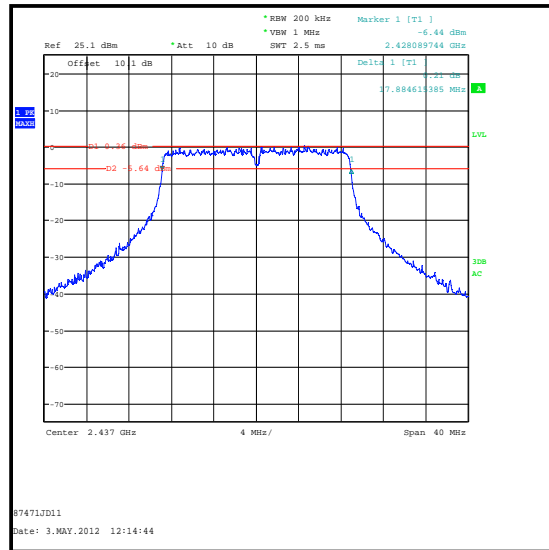
Top Channel

Transmitter 6 dB Bandwidth (continued)

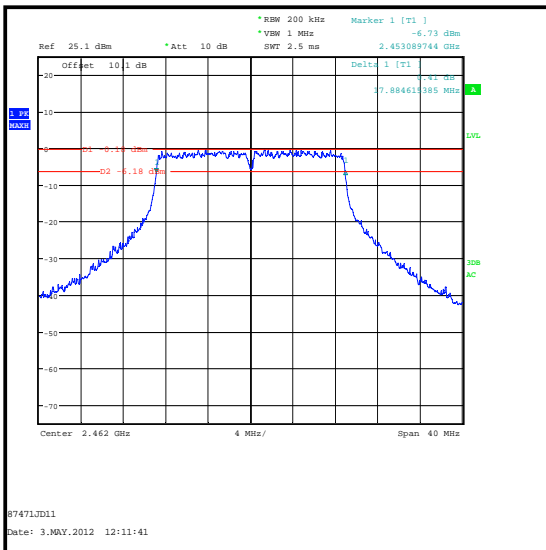
Results: 802.11n / 20 MHz / 39 Mbps



Bottom Channel



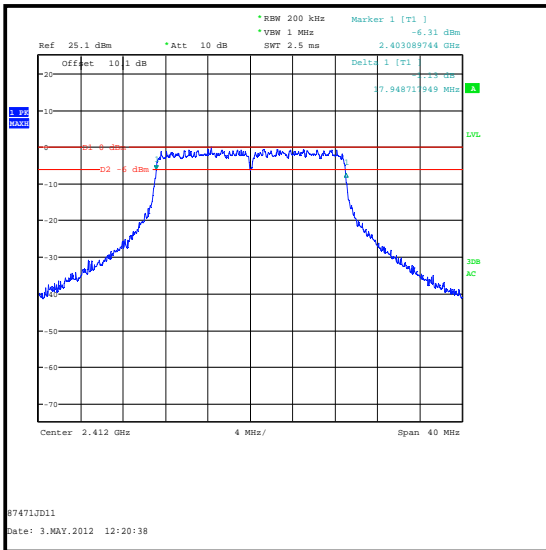
Middle Channel



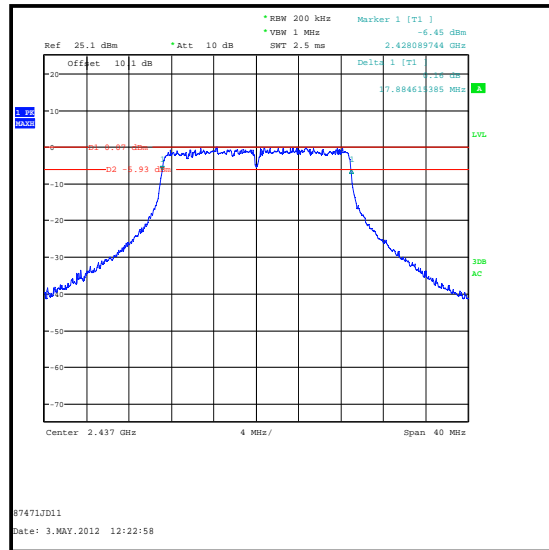
Top Channel

Transmitter 6 dB Bandwidth (continued)

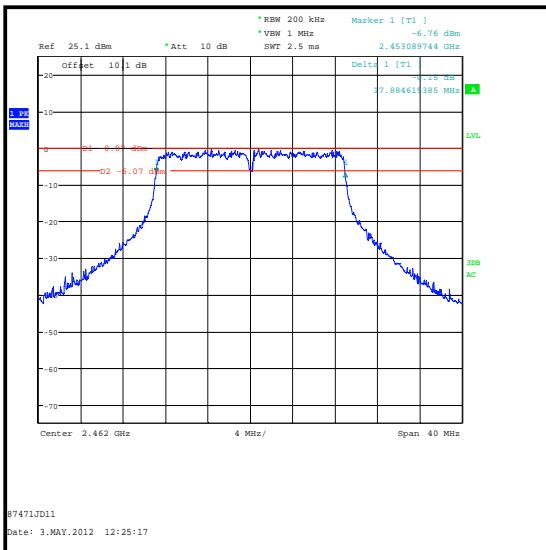
Results: 802.11n / 20 MHz / 52 Mbps



Bottom Channel



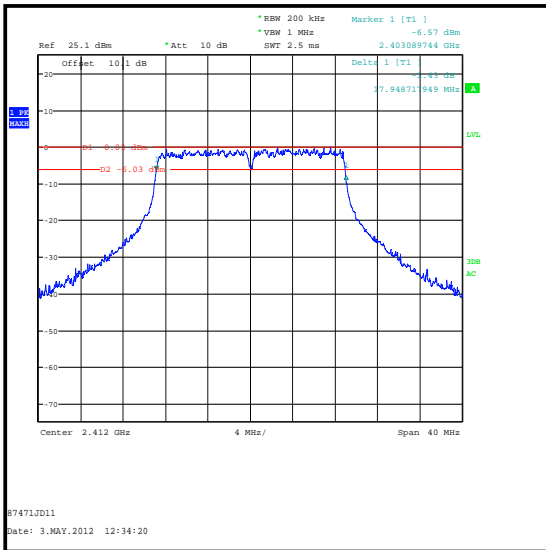
Middle Channel



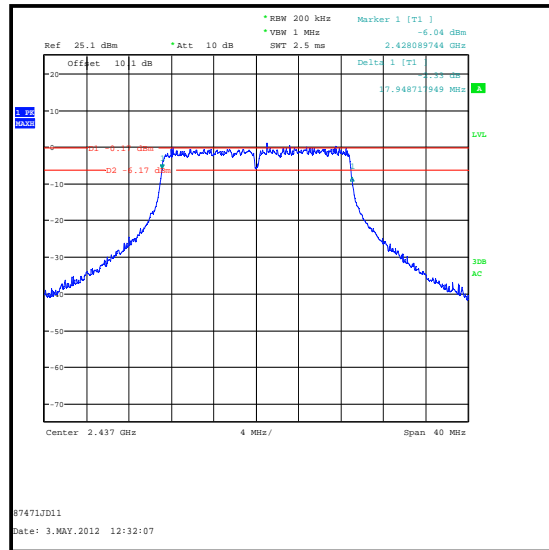
Top Channel

Transmitter 6 dB Bandwidth (continued)

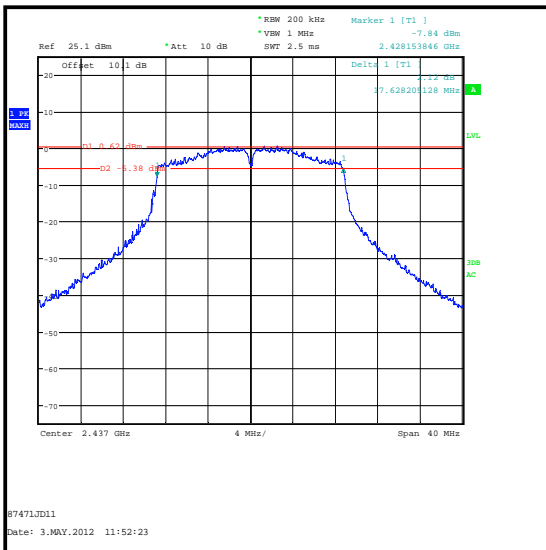
Results: 802.11n / 20 MHz / 58.5 Mbps



Bottom Channel



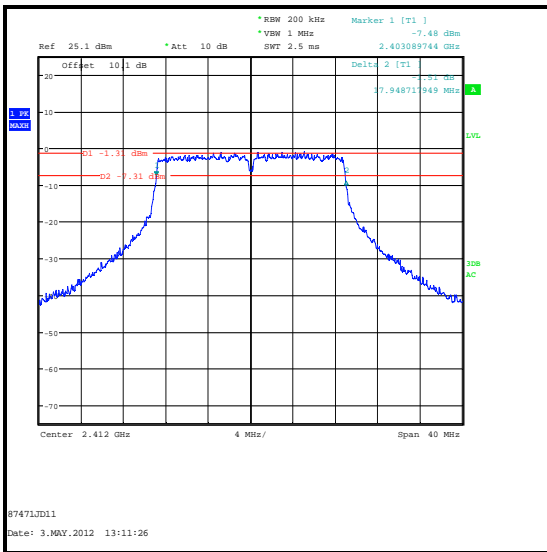
Middle Channel



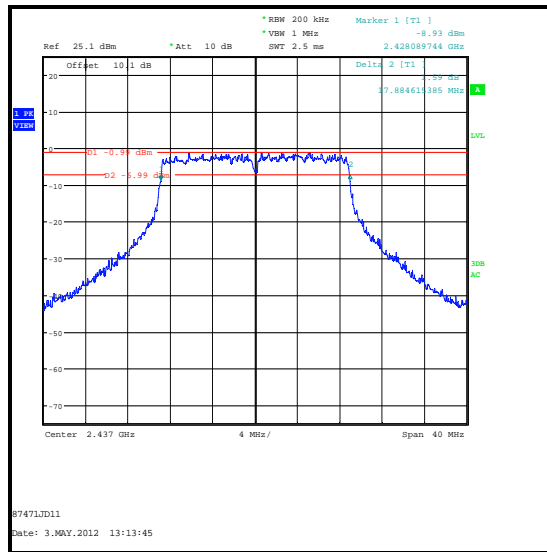
Top Channel

Transmitter 6 dB Bandwidth (continued)

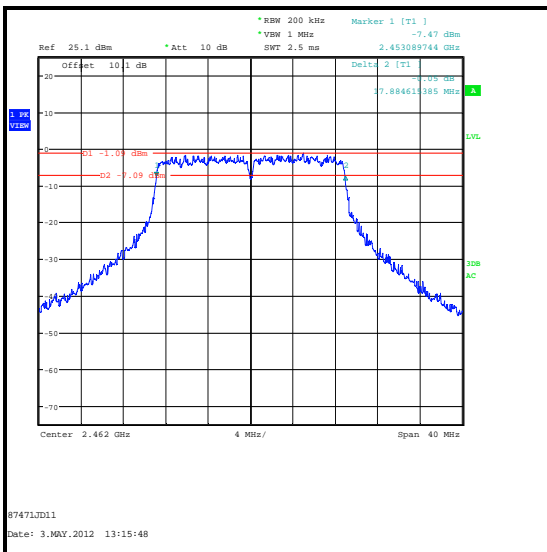
Results: 802.11n / 20 MHz / 65 Mbps



Bottom Channel



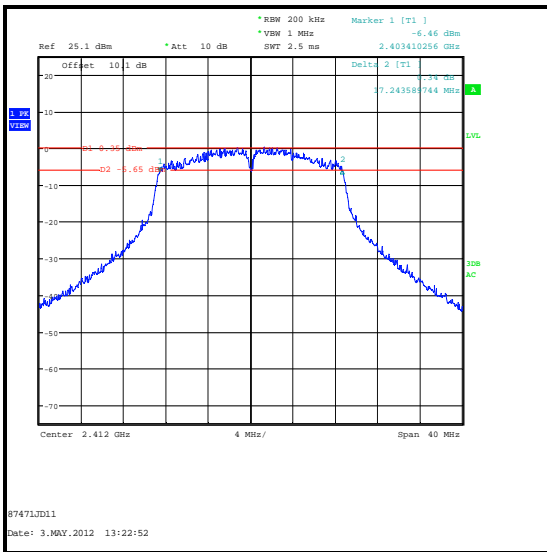
Middle Channel



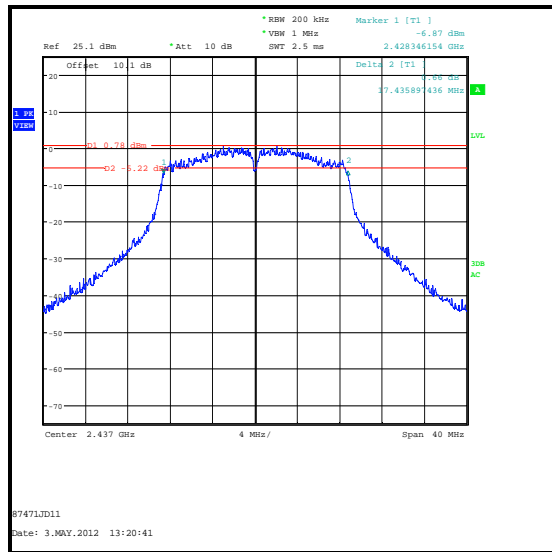
Top Channel

Transmitter 6 dB Bandwidth (continued)

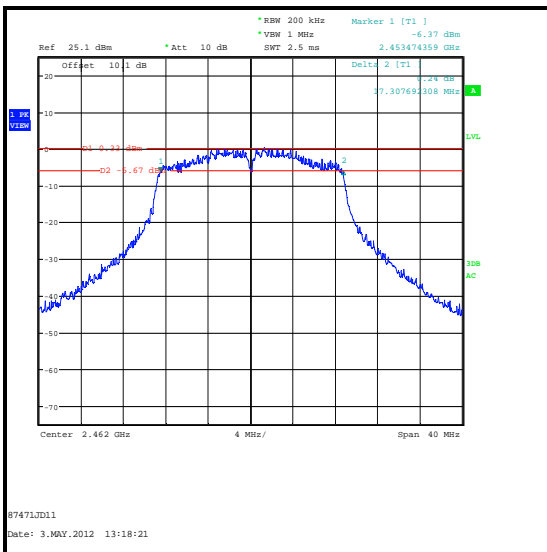
Results: 802.11n / 20 MHz / 7.2 Mbps



Bottom Channel



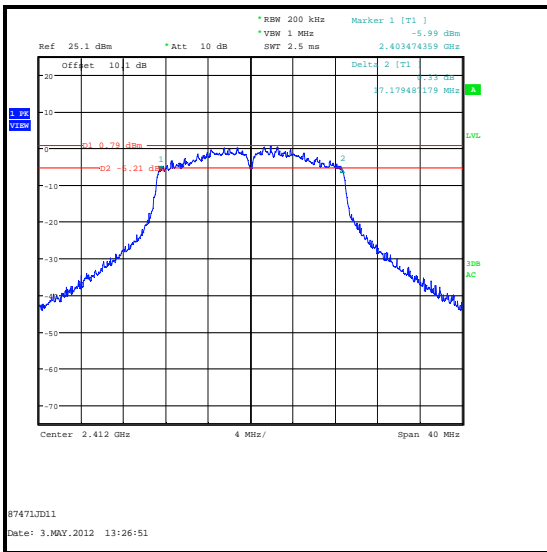
Middle Channel



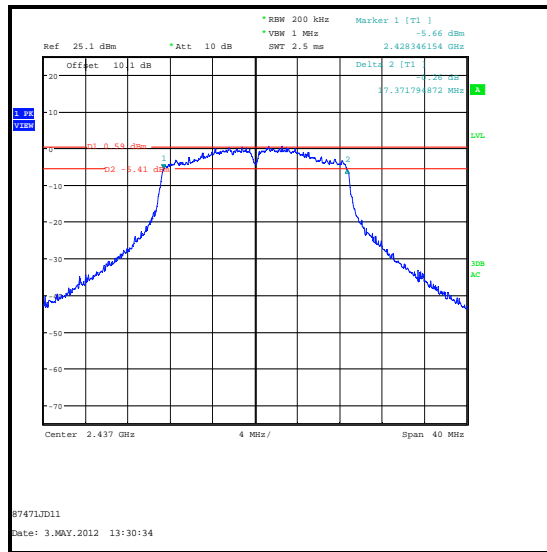
Top Channel

Transmitter 6 dB Bandwidth (continued)

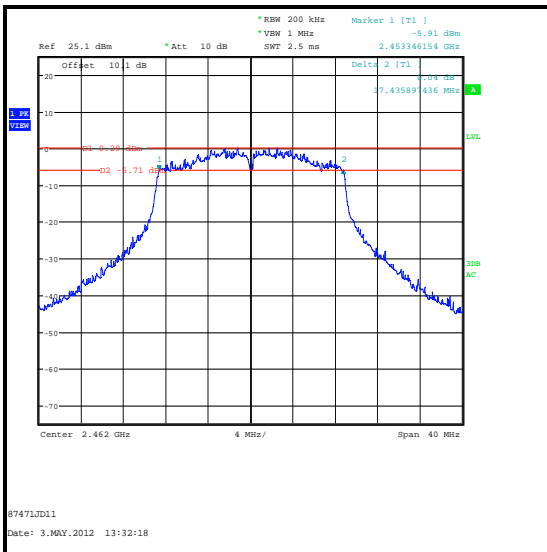
Results: 802.11n / 20 MHz / 14.4 Mbps



Bottom Channel



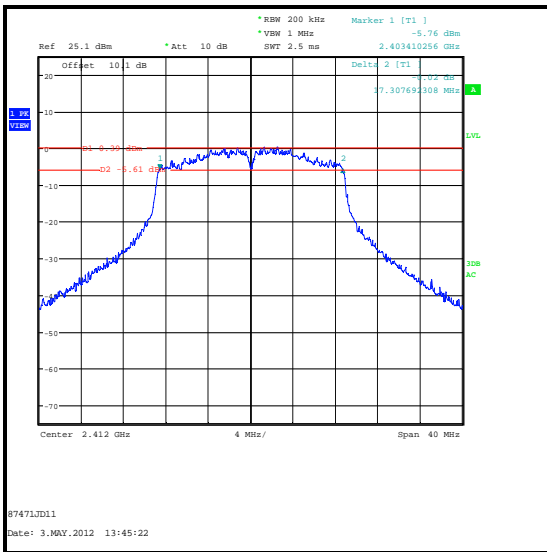
Middle Channel



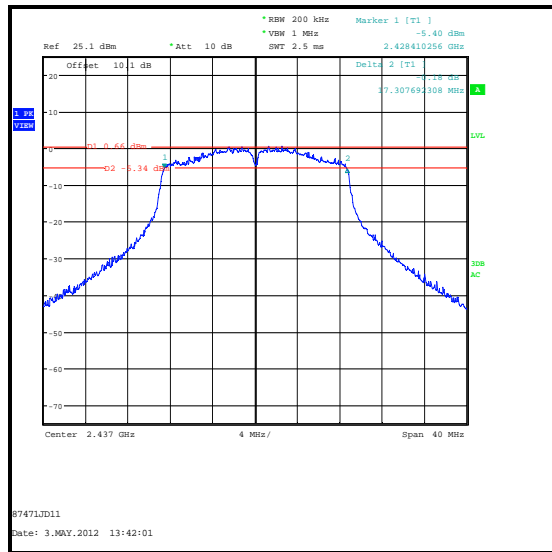
Top Channel

Transmitter 6 dB Bandwidth (continued)

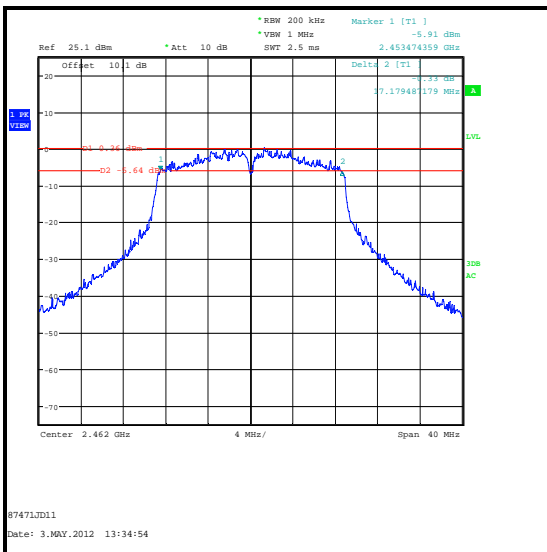
Results: 802.11n / 20 MHz / 21.7 Mbps



Bottom Channel



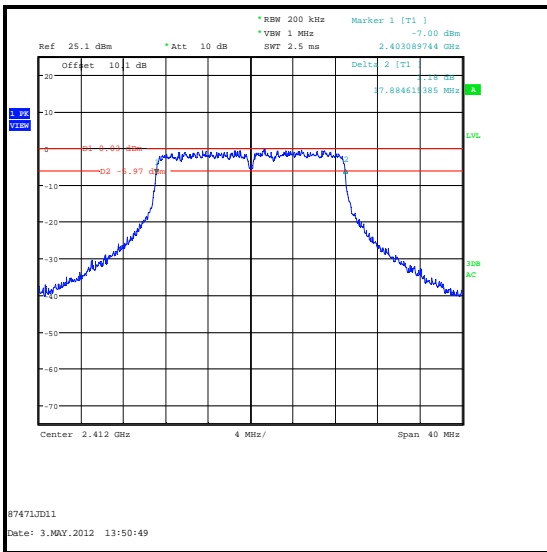
Middle Channel



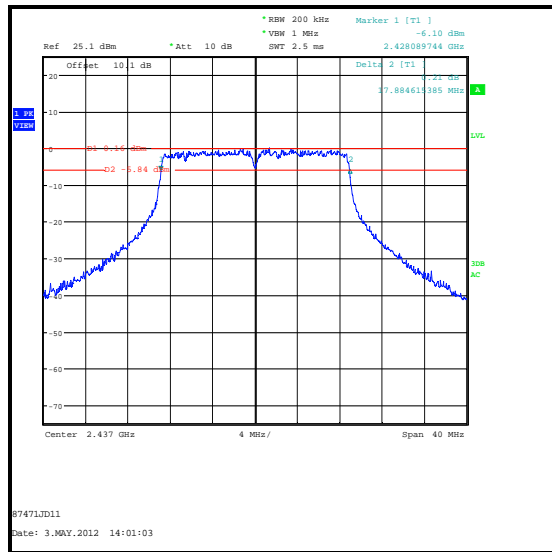
Top Channel

Transmitter 6 dB Bandwidth (continued)

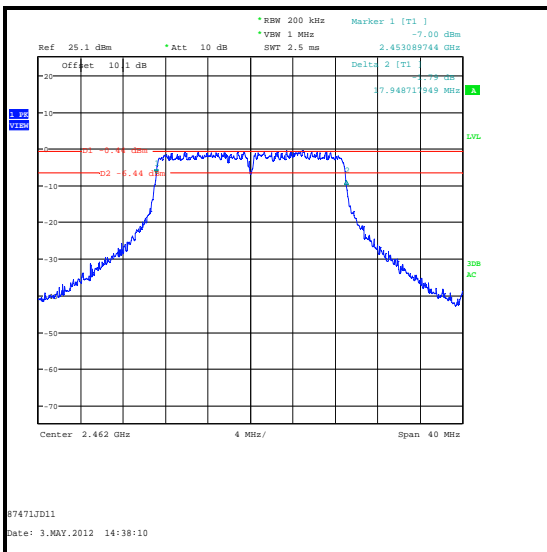
Results: 802.11n / 20 MHz / 28.9 Mbps



Bottom Channel



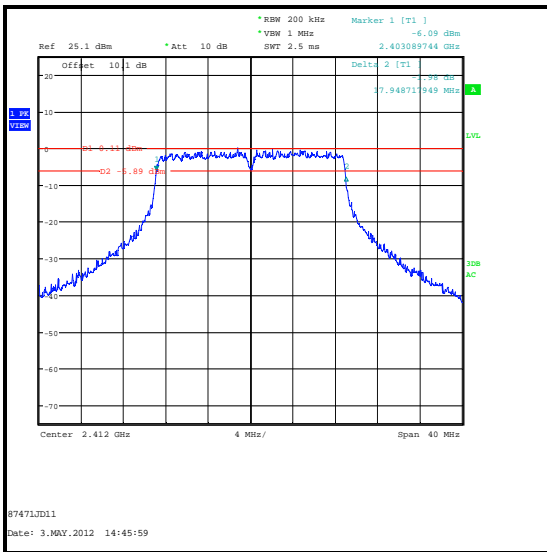
Middle Channel



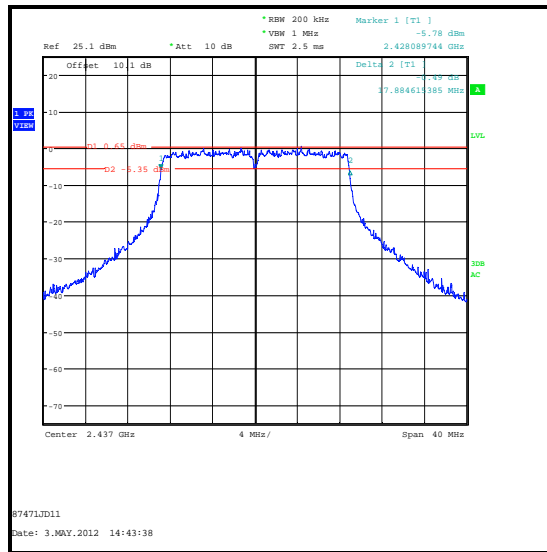
Top Channel

Transmitter 6 dB Bandwidth (continued)

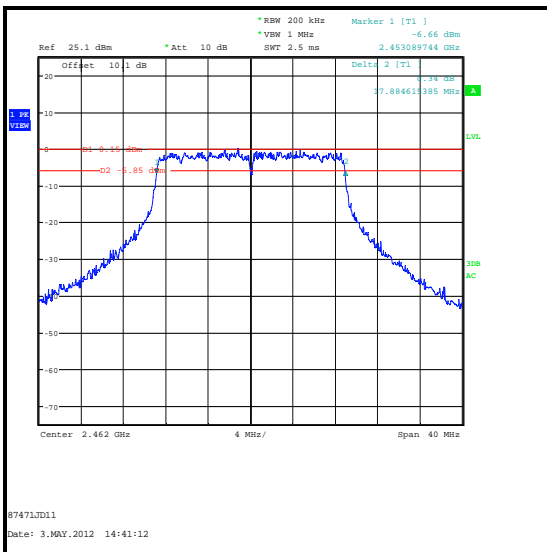
Results: 802.11n / 20 MHz / 43.4 Mbps



Bottom Channel



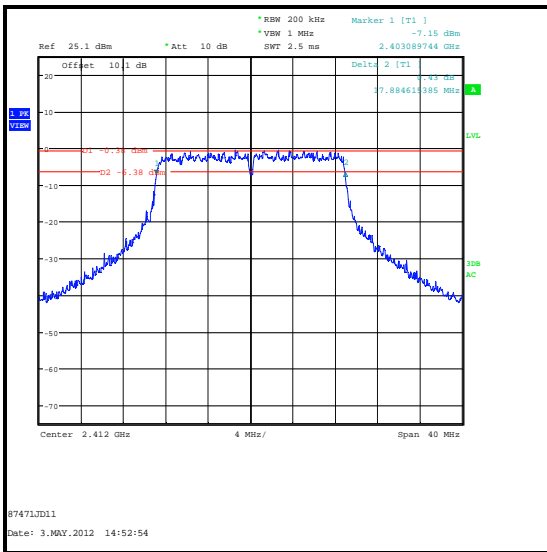
Middle Channel



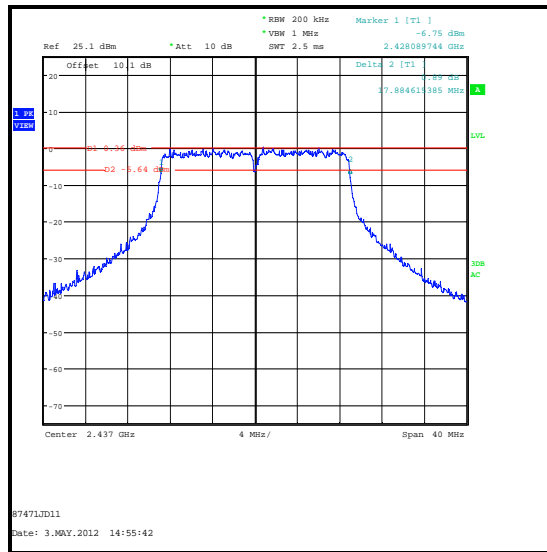
Top Channel

Transmitter 6 dB Bandwidth (continued)

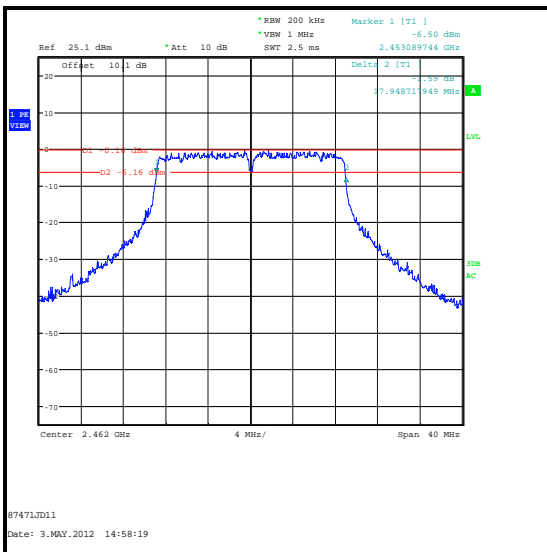
Results: 802.11n / 20 MHz / 57.8 Mbps



Bottom Channel



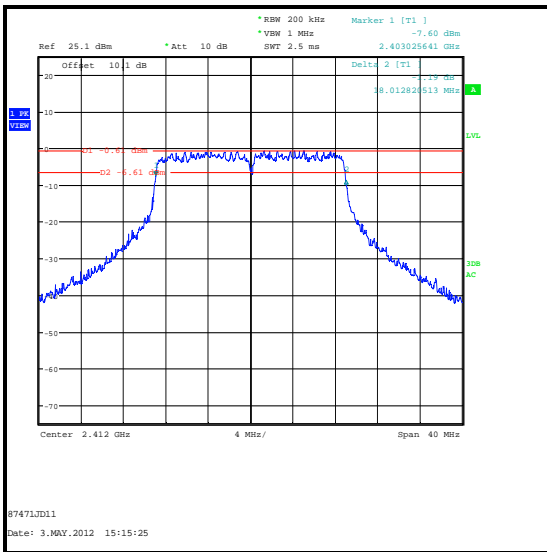
Middle Channel



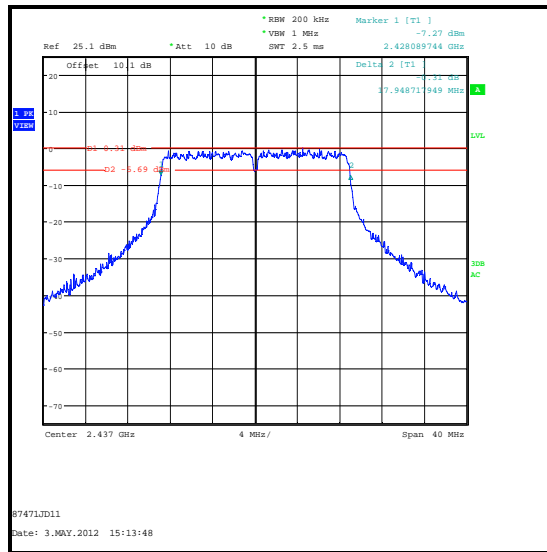
Top Channel

Transmitter 6 dB Bandwidth (continued)

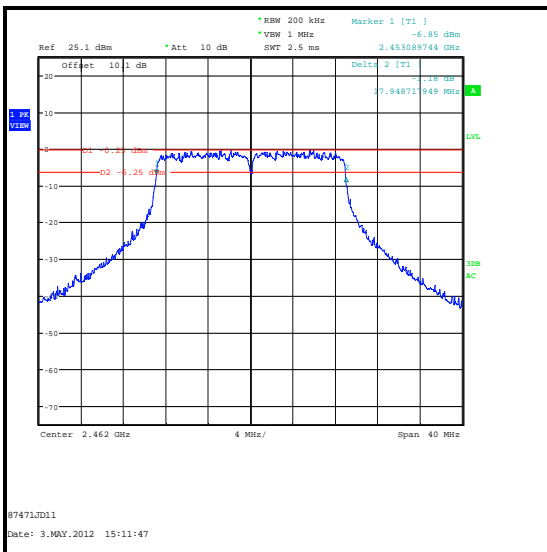
Results: 802.11n / 20 MHz / 65 Mbps



Bottom Channel



Middle Channel



Top Channel

5.2.5. Transmitter Power Spectral Density**Test Summary:**

Test Engineer:	Andrew Edwards	Test Date:	23 May 2012
Test Sample IMEI:	351808050018994		

FCC Reference:	Part 15.247(e)
Test Method Used:	KDB 558074 Section 5.3.1

Environmental Conditions:

Temperature (°C):	21
Relative Humidity (%):	35

Results: 802.11b / 11 Mbps

Channel	Output Power (dBm/100 kHz)	Output Power (dBm/3 kHz)	Limit (dBm/3 kHz)	Margin (dB)	Result
Bottom	2.9	-12.3	8.0	20.3	Complied
Middle	3.0	-12.2	8.0	20.2	Complied
Top	2.7	-12.5	8.0	20.6	Complied

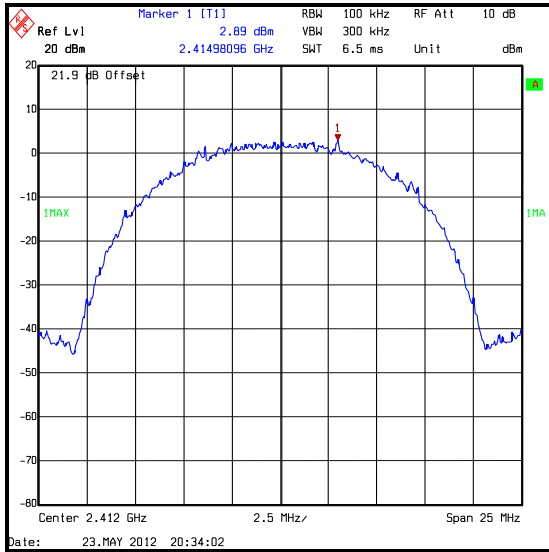
Note(s):

1. Transmitter Power Spectral Density tests in all bands were performed using a spectrum analyser in accordance with FCC KDB 558074 Section 5.3.1 Measurement Procedure PKPSD.
2. Preliminary tests were made on all supported data rates and modulation types to determine worst-case operation. The highest level of the worst-case mode was recorded in the table above.
3. In accordance with FCC KDB 558074 Section 5.3.1, the measurements were performed using a 100 kHz resolution bandwidth. A Band Width Correction Factor of 15.2 dB was then subtracted from the combined results to convert from a level measured in 100 kHz bandwidth as the limit is specified in a 3 kHz bandwidth. The correction factor (BWCF) was calculated as shown below:

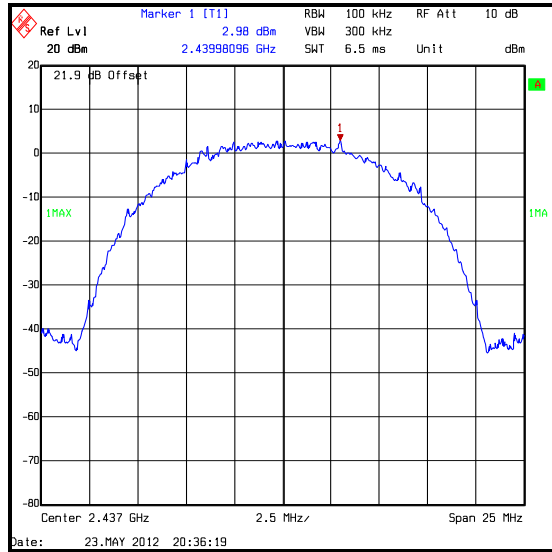
$$10 \log_{10} (3 \text{ kHz} / 100 \text{ kHz}) = -15.2 \text{ dB.}$$

Transmitter Power Spectral Density (continued)

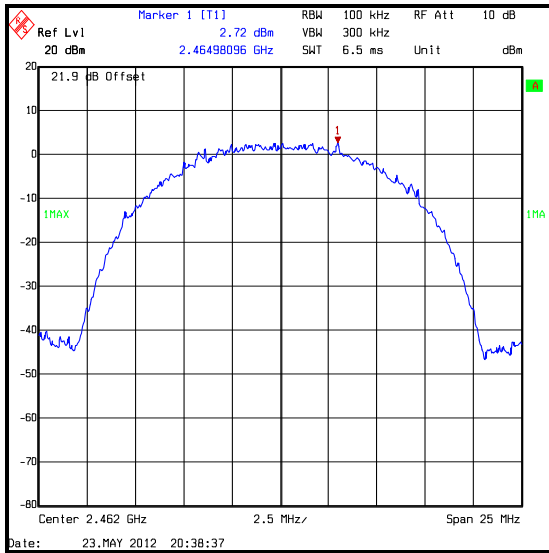
Results: 802.11b / 11 Mbps



Bottom Channel



Middle Channel



Top Channel

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

Test Engineer:	David Doyle	Test Date:	08 May 2012
Test Sample IMEI:	351808050018994		

FCC Reference:	Part 15.247(b)(3)
Test Method Used:	As detailed in KDB 558074 Section 5.2.1.2

Environmental Conditions:

Temperature (°C):	20
Relative Humidity (%):	28

Results: 802.11b / 1 Mbps

Channel	Conducted Peak Power (dBm)	Conducted Peak Power Limit (dBm)	Margin (dB)	Result
Bottom	15.8	30.0	14.2	Complied
Middle	15.9	30.0	14.1	Complied
Top	15.8	30.0	14.2	Complied

Channel	Conducted Peak Power (dBm)	Declared Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	15.8	-3.1	12.7	36.0	23.3	Complied
Middle	15.9	-3.1	12.8	36.0	23.2	Complied
Top	15.8	-3.1	12.7	36.0	23.3	Complied

Results: 802.11b / 11 Mbps

Channel	Conducted Peak Power (dBm)	Conducted Peak Power Limit (dBm)	Margin (dB)	Result
Bottom	19.3	30.0	10.7	Complied
Middle	19.3	30.0	10.7	Complied
Top	19.0	30.0	11.0	Complied

Channel	Conducted Peak Power (dBm)	Declared Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	19.3	-3.1	16.2	36.0	19.8	Complied
Middle	19.3	-3.1	16.2	36.0	19.8	Complied
Top	19.0	-3.1	15.9	36.0	20.1	Complied

Transmitter Maximum Peak Output Power (continued)**Results: 802.11g / 9 Mbps**

Channel	Conducted Peak Power (dBm)	Conducted Peak Power Limit (dBm)	Margin (dB)	Result
Bottom	17.2	30.0	12.8	Complied
Middle	16.7	30.0	13.3	Complied
Top	16.8	30.0	13.2	Complied

Channel	Conducted Peak Power (dBm)	Declared Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	17.2	-3.1	14.1	36.0	21.9	Complied
Middle	16.7	-3.1	13.6	36.0	22.4	Complied
Top	16.8	-3.1	13.7	36.0	22.3	Complied

Results: 802.11n / 20 MHz / 21.7 Mbps

Channel	Conducted Peak Power (dBm)	Conducted Peak Power Limit (dBm)	Margin (dB)	Result
Bottom	16.9	30.0	13.1	Complied
Middle	17.0	30.0	13.0	Complied
Top	17.1	30.0	12.9	Complied

Channel	Conducted Peak Power (dBm)	Declared Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	16.9	-3.1	13.8	36.0	22.2	Complied
Middle	17.0	-3.1	13.9	36.0	22.1	Complied
Top	17.1	-3.1	14.0	36.0	22.0	Complied

Transmitter Maximum Peak Output Power (continued)**Results: 802.11g / 48 Mbps**

Channel	Conducted Peak Power (dBm)	Conducted Peak Power Limit (dBm)	Margin (dB)	Result
Bottom	17.4	30.0	12.6	Complied
Middle	18.0	30.0	12.0	Complied
Top	17.2	30.0	12.8	Complied

Channel	Conducted Peak Power (dBm)	Declared Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	17.4	-3.1	14.3	36.0	21.7	Complied
Middle	18.0	-3.1	14.9	36.0	21.1	Complied
Top	17.2	-3.1	14.1	36.0	21.9	Complied

Results: 802.11n / 20 MHz / 72.2 Mbps

Channel	Conducted Peak Power (dBm)	Conducted Peak Power Limit (dBm)	Margin (dB)	Result
Bottom	16.6	30.0	13.4	Complied
Middle	16.5	30.0	13.5	Complied
Top	16.4	30.0	13.6	Complied

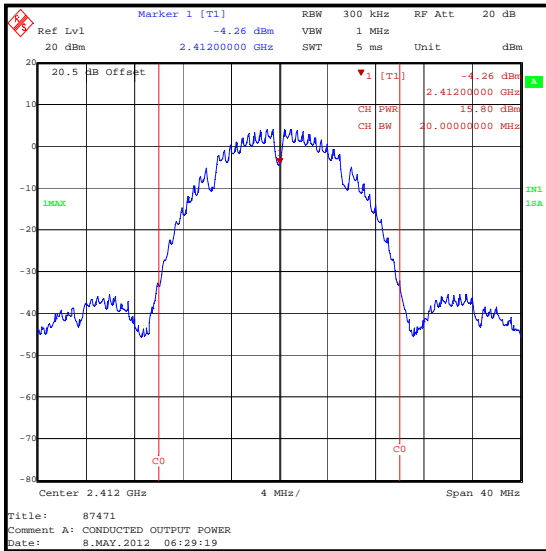
Channel	Conducted Peak Power (dBm)	Declared Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	16.6	-3.1	13.5	36.0	22.5	Complied
Middle	16.5	-3.1	13.4	36.0	22.6	Complied
Top	16.4	-3.1	13.3	36.0	22.7	Complied

Note(s):

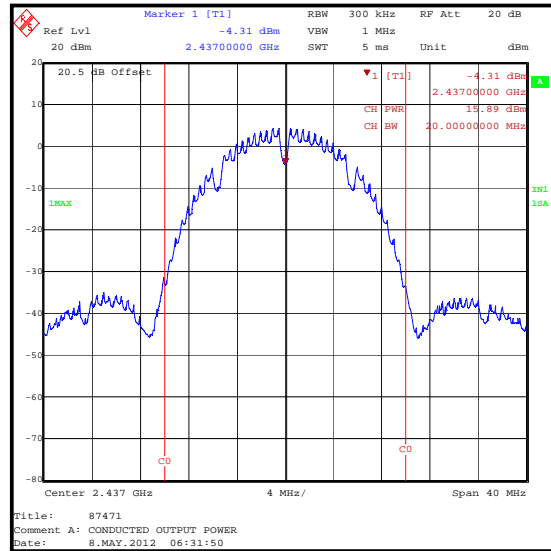
1. The highest data rate for each supported modulation type and channel width was tested.

Transmitter Maximum Peak Output Power (continued)

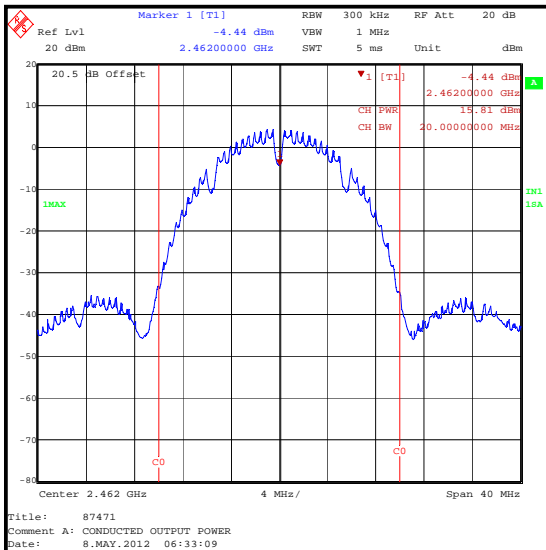
Results: 802.11b / 1 Mbps



Bottom Channel



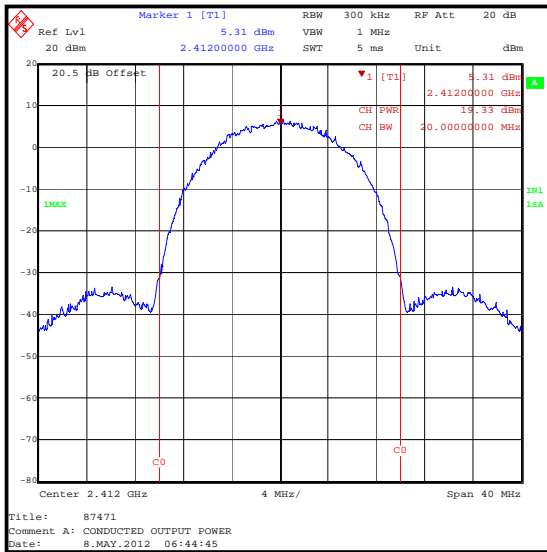
Middle Channel



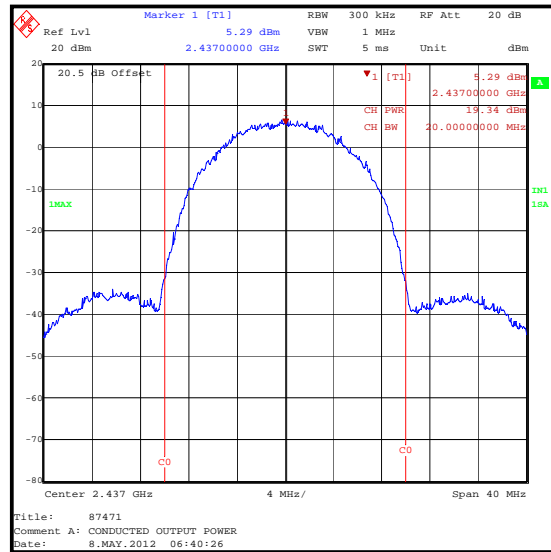
Top Channel

Transmitter Maximum Peak Output Power (continued)

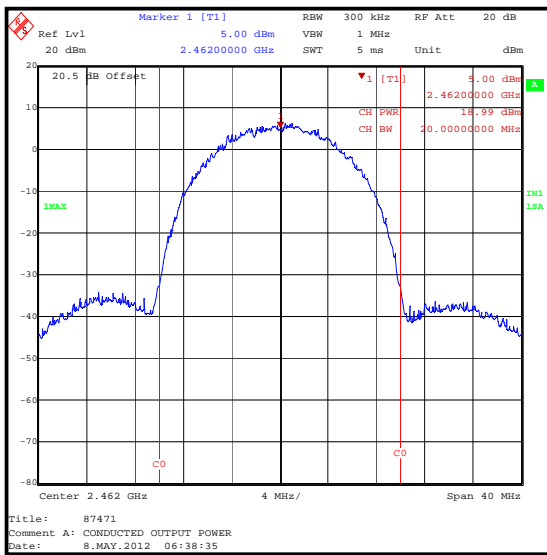
Results: 802.11b / 11 Mbps



Bottom Channel



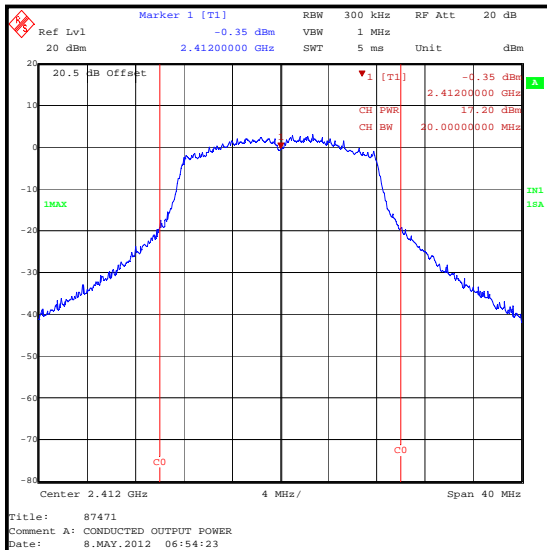
Middle Channel



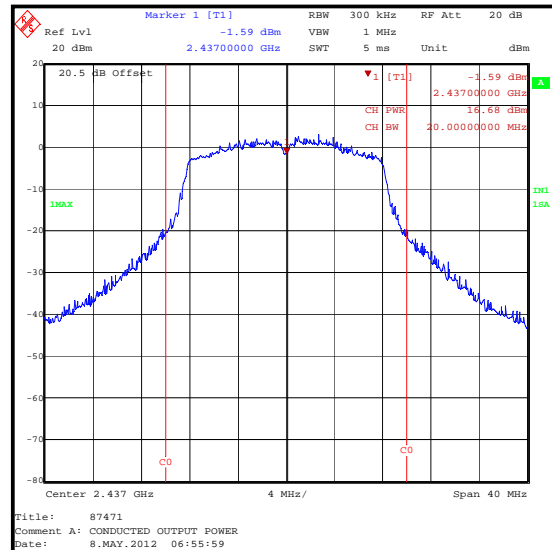
Top Channel

Transmitter Maximum Peak Output Power (continued)

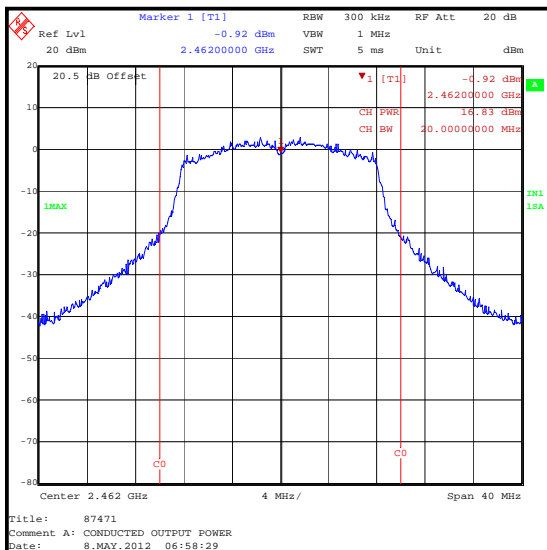
Results: 802.11g / 9 Mbps



Bottom Channel



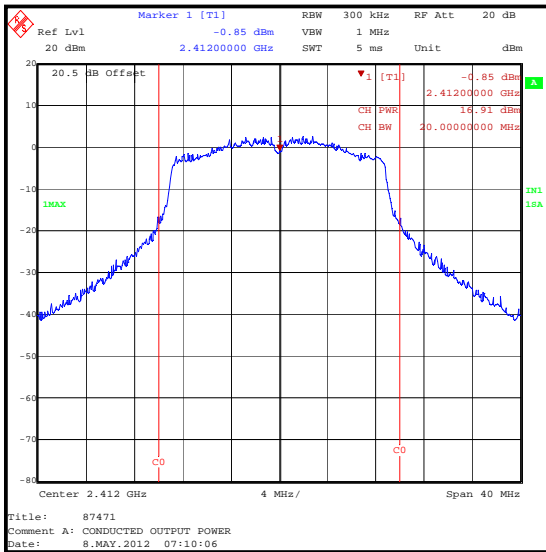
Middle Channel



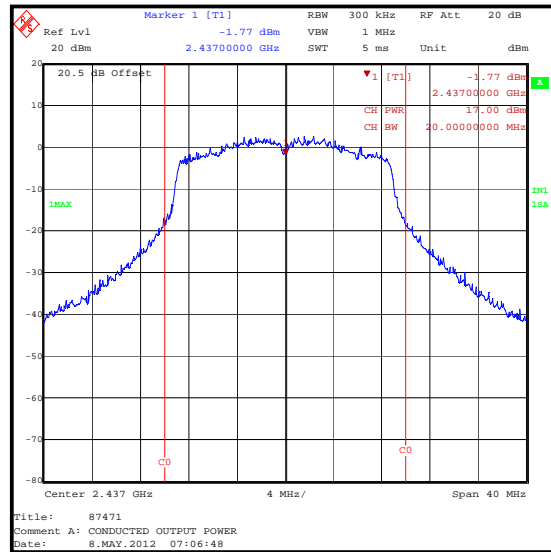
Top Channel

Transmitter Maximum Peak Output Power (continued)

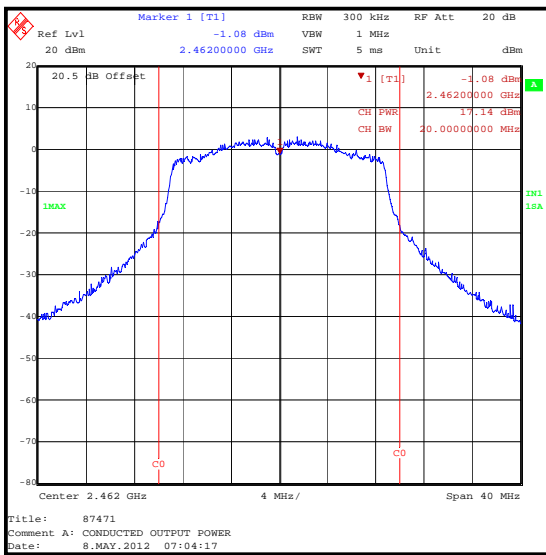
Results: 802.11n / 20 MHz / 21.7 Mbps



Bottom Channel



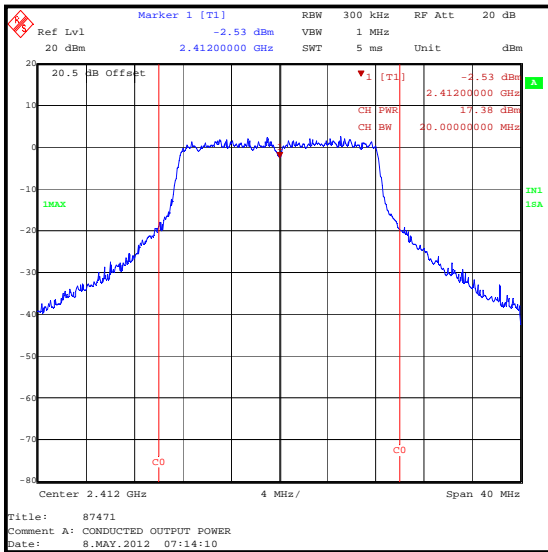
Middle Channel



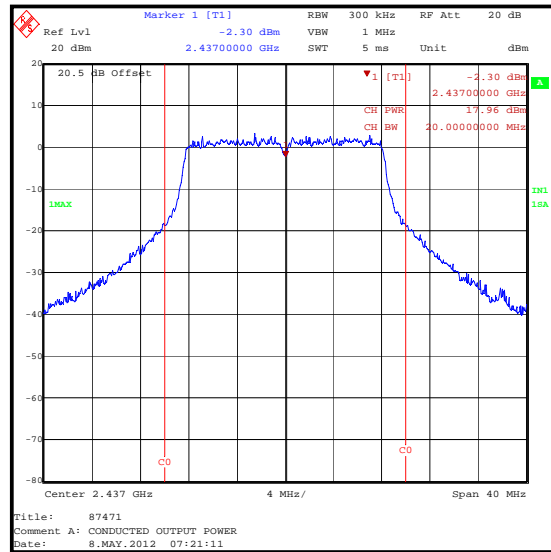
Top Channel

Transmitter Maximum Peak Output Power (continued)

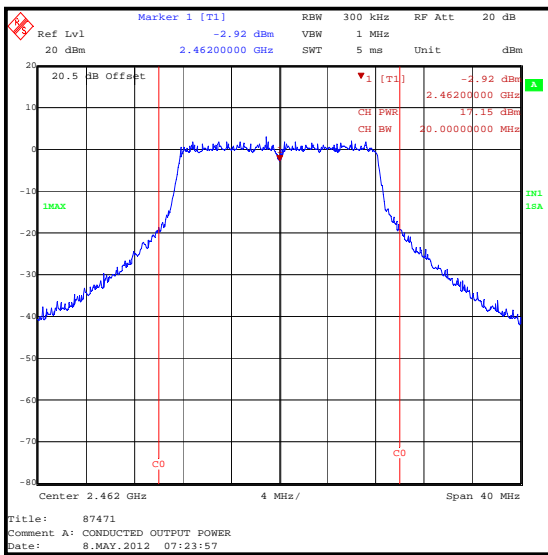
Results: 802.11g / 48 Mbps



Bottom Channel



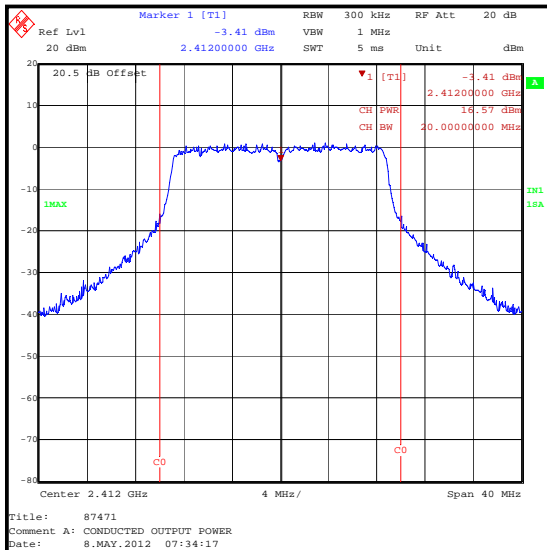
Middle Channel



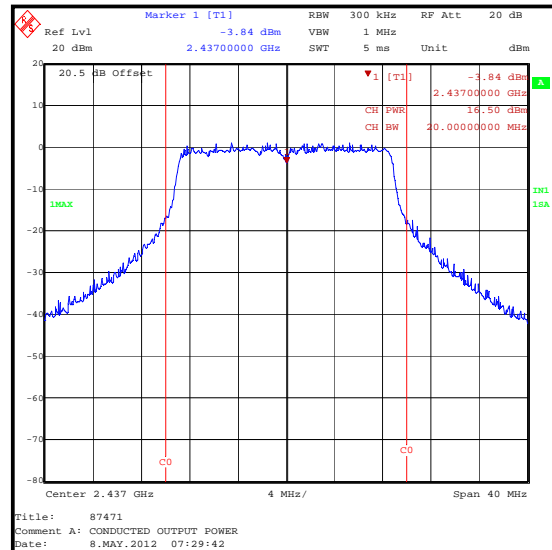
Top Channel

Transmitter Maximum Peak Output Power (continued)

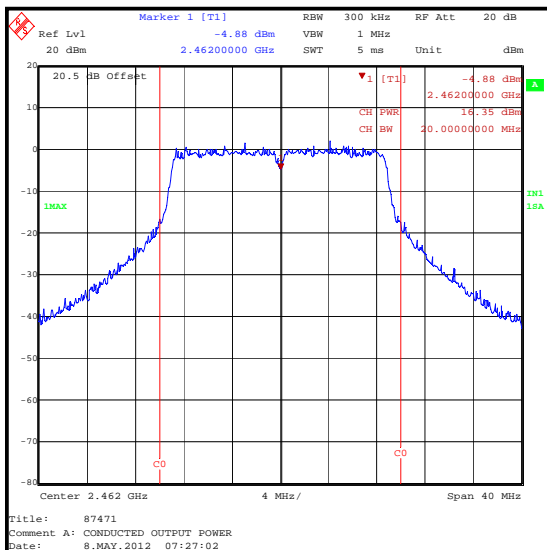
Results: 802.11n / 20 MHz / 72.2 Mbps



Bottom Channel



Middle Channel



Top Channel

5.2.7. Transmitter Radiated Emissions**Test Summary:**

Test Engineer:	Nick Steele	Test Date:	04 May 2012
Test Sample IMEI:	351808050018796		

FCC Reference:	Part 15.247(d) & 15.209(a)
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):	24
Relative Humidity (%):	33

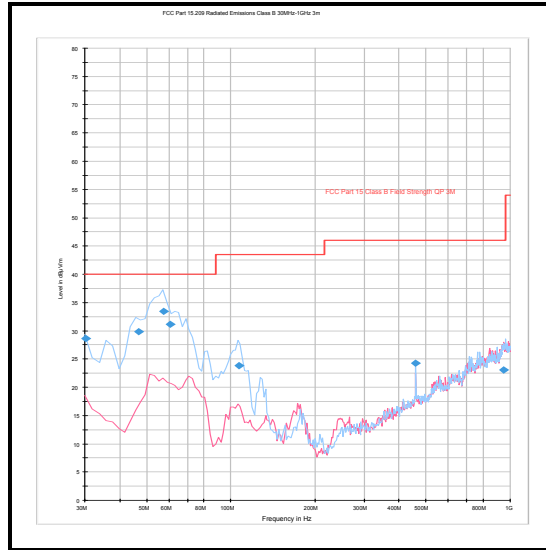
Results: 802.11b / 11 Mbps / Top Channel

Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
30.164	Horizontal	28.7	40.0	11.3	Complied
46.903	Horizontal	29.8	40.0	10.2	Complied
57.412	Horizontal	33.4	40.0	6.6	Complied
60.887	Horizontal	31.2	40.0	8.8	Complied
106.894	Horizontal	23.8	43.5	19.7	Complied
458.825	Horizontal	24.3	46.0	21.7	Complied
947.751	Vertical	23.0	46.0	23.0	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 preliminary scans showed similar emission levels below 1 GHz, for each channel of operation. Therefore final radiated emissions measurements were performed with the EUT set to the top channel only.
3. All other emissions were at least 20 dB below the appropriate limit or below the noise floor of the measurement system.
4. Measurements below 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.

Transmitter Radiated Emissions (continued)



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

Transmitter Radiated Emissions (continued)**Test Summary:**

Test Engineer:	David Doyle & Nick Steele	Test Date:	03 May 2012
Test Sample IMEI:	351808050018796		

FCC Reference:	Part 15.247(d) & 15.209(a)
Test Method Used:	FCC KDB 558074 D01 Section 5.4 ANSI C63.10 Sections 6.3 and 6.6
Frequency Range	1 GHz to 25 GHz

Environmental Conditions:

Temperature (°C):	21
Relative Humidity (%):	25

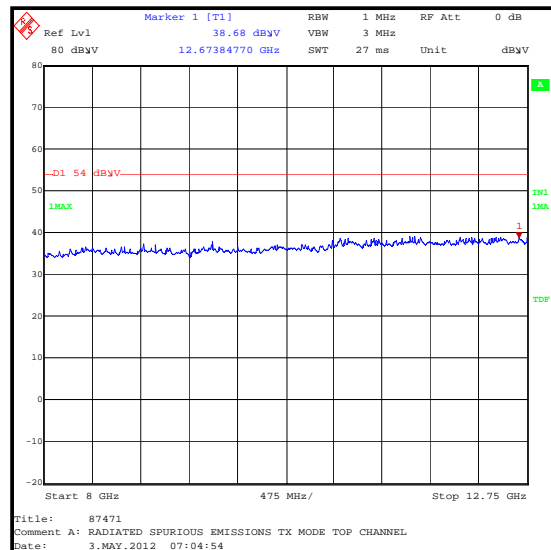
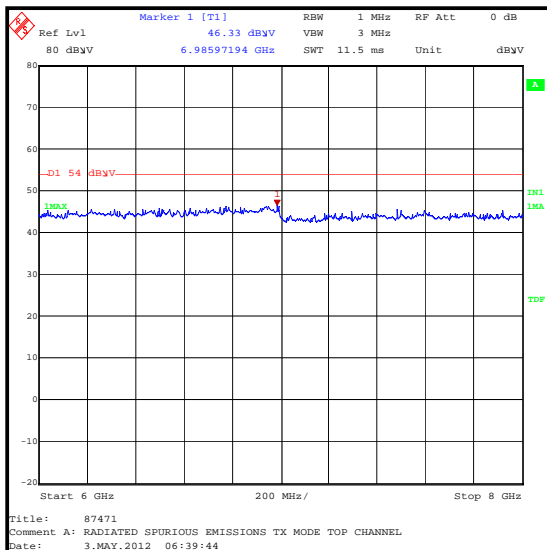
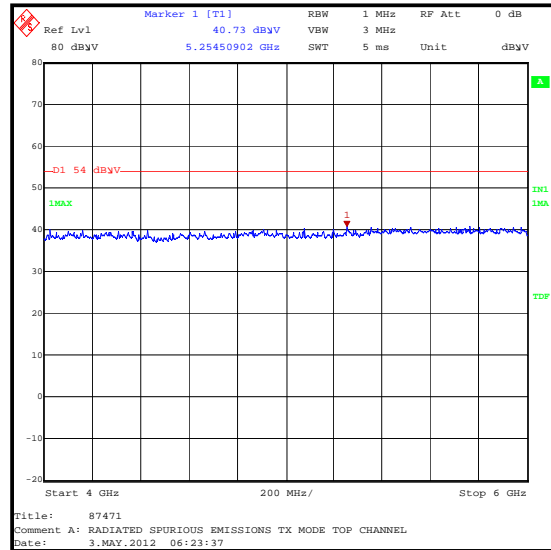
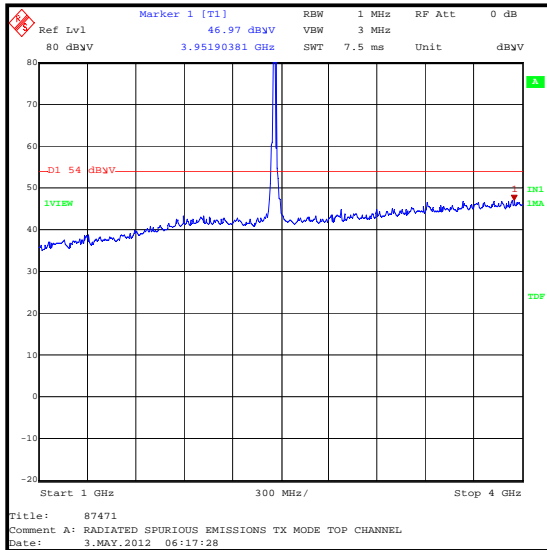
Results: 802.11b / 11 Mbps / Top Channel

Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
24817.635	Vertical	50.1	54.0	3.9	Complied

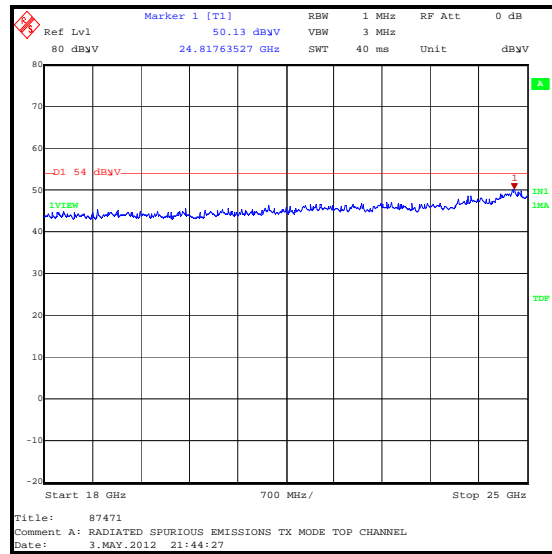
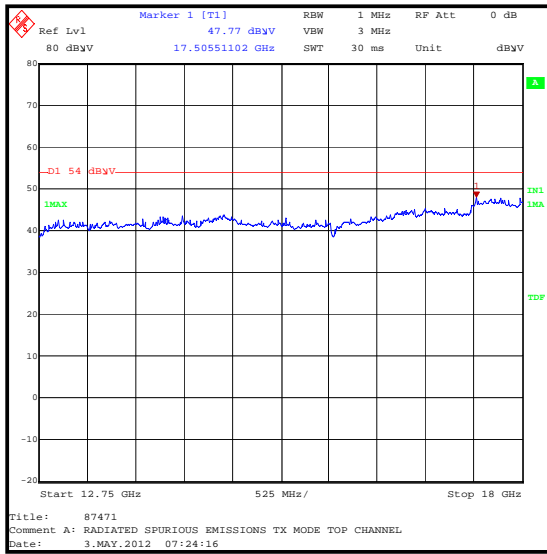
Note(s):

1. The final measured value, for the given emission, in the table above incorporates the calibrated antenna factor and cable loss
2. 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. The peak level was compared to the average limit as opposed to being compared to the peak limit because this is the more onerous limit.
3. The emission shown at 2462 MHz on the 1 GHz to 4 GHz plot is the EUT fundamental.
4. 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.

Transmitter Radiated Emissions (continued)



Transmitter Radiated Emissions (continued)



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

5.2.8. Transmitter Band Edge Radiated Emissions**Test Summary:**

Test Engineer:	David Doyle	Test Date:	04 May 2012
Test Sample IMEI:	351808050018796		

FCC Reference:	Part 15.247(d) & 15.209(a)
Test Method Used:	FCC KDB 558074 D01 Section 5.4 ANSI C63.10 Section 6.9.2

Environmental Conditions:

Temperature (°C):	22
Relative Humidity (%):	24

Results: 802.11b / 1 Mbps / Peak

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2400	48.8	75.8*	27.0	Complied
2483.5	53.1	74.0	20.9	Complied

Results: 802.11b / 1 Mbps / Average

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2483.5	40.1	54.0	13.9	Complied

Results: 802.11g / 9 Mbps / Peak

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2400	61.5	72.8*	11.3	Complied
2483.5	59.7	74.0	14.3	Complied

Results: 802.11g / 9 Mbps / Average

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2483.5	44.2	54.0	9.8	Complied

Results: 802.11b / 11 Mbps / Peak

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2400	53.8	75.8*	22.0	Complied
2483.5	55.5	74.0	18.5	Complied

Transmitter Band Edge Radiated Emissions (continued)**Results: 802.11b / 11 Mbps / Average**

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2483.5	41.5	54.0	12.5	Complied

Results: 802.11n / 20 MHz / 21.7 Mbps / Peak

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2400	61.5	72.2*	10.7	Complied
2483.5	60.0	74.0	14.0	Complied

Results: 802.11n / 20 MHz / 21.7 Mbps / Average

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2483.5	44.3	54.0	9.7	Complied

Results: 802.11g / 48 Mbps / Peak

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2400	61.5	72.5*	11.0	Complied
2483.5	62.2	74.0	11.8	Complied

Results: 802.11g / 48 Mbps / Average

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2483.5	44.3	54.0	9.7	Complied

Results: 802.11n / 20 MHz / 72.2 Mbps / Peak

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2400	61.1	70.9*	9.8	Complied
2483.5	60.2	74.0	13.8	Complied

Results: 802.11n / 20 MHz / 72.2 Mbps / Average

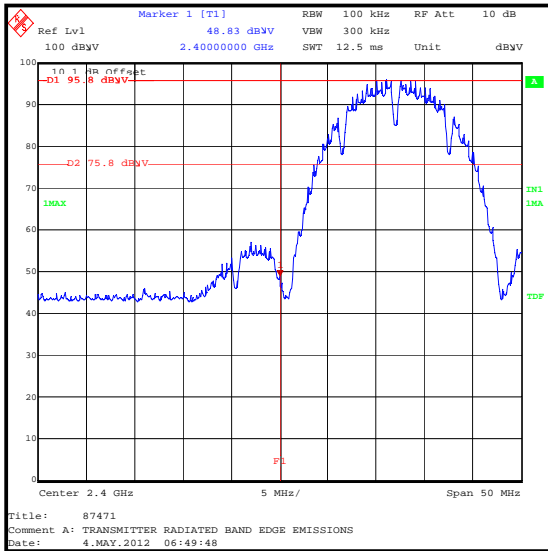
Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2483.5	43.5	54.0	10.5	Complied

Note(s):

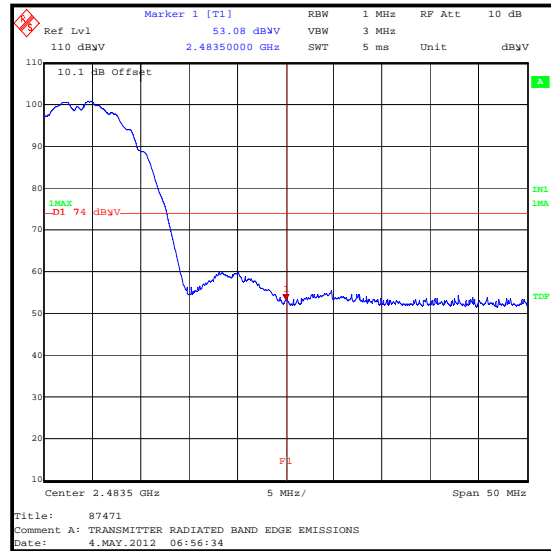
1. The final measured value, for the given emissions in the tables above, incorporates the calibrated antenna factor and cable loss.
2. * -20 dBc limit.
3. The highest data rate for each supported modulation type and channel width was tested.

Transmitter Band Edge Radiated Emissions (continued)

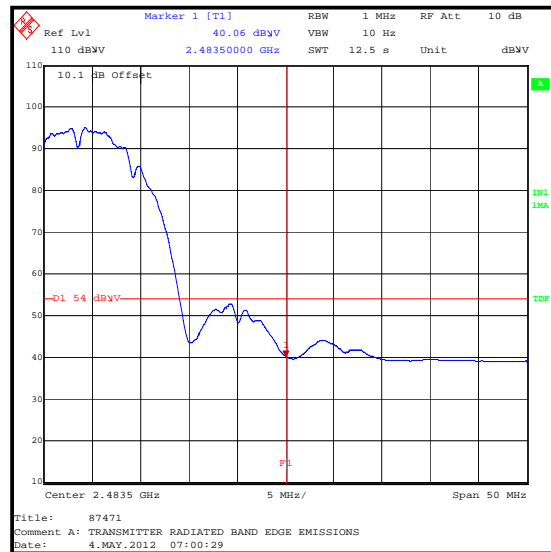
Results: 802.11b / 1 Mbps



Lower Band Edge Peak Measurement



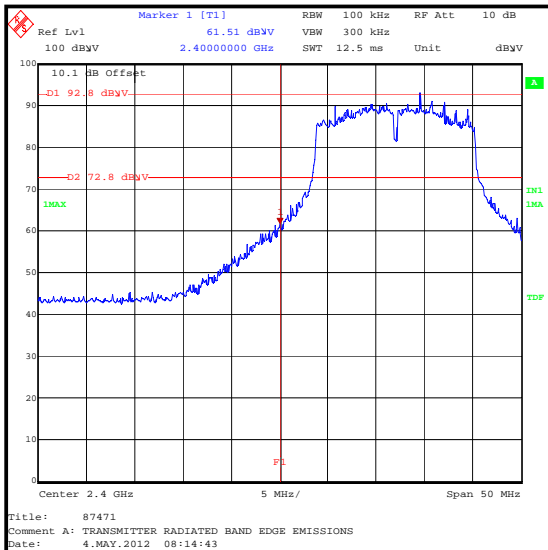
Upper Band Edge Peak Measurement



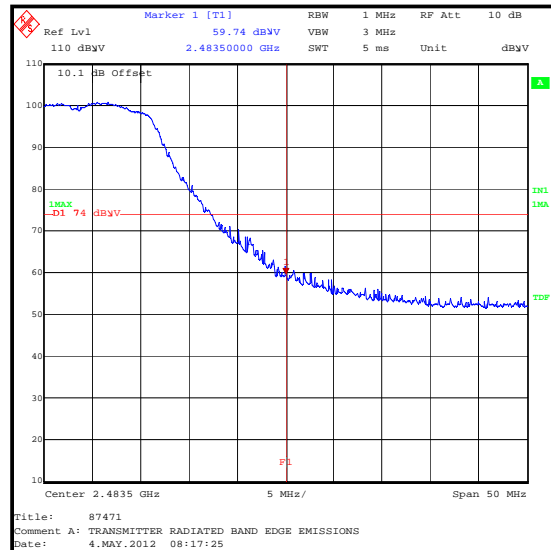
Upper Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (continued)

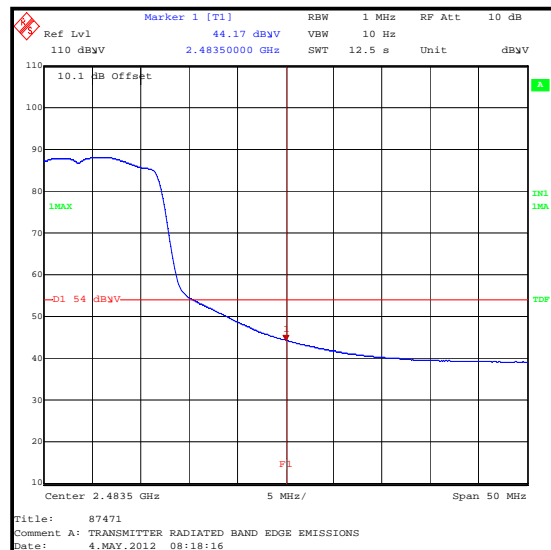
Results: 802.11g / 9 Mbps



Lower Band Edge Peak Measurement



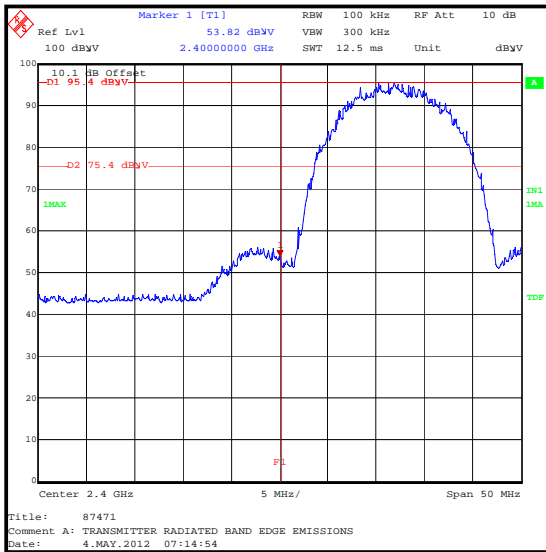
Upper Band Edge Peak Measurement



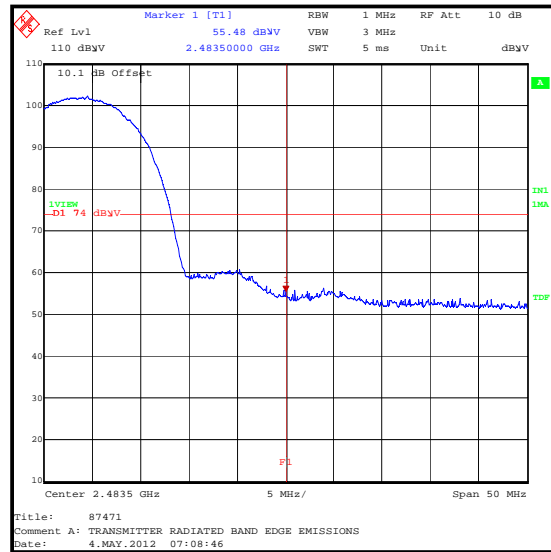
Upper Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (continued)

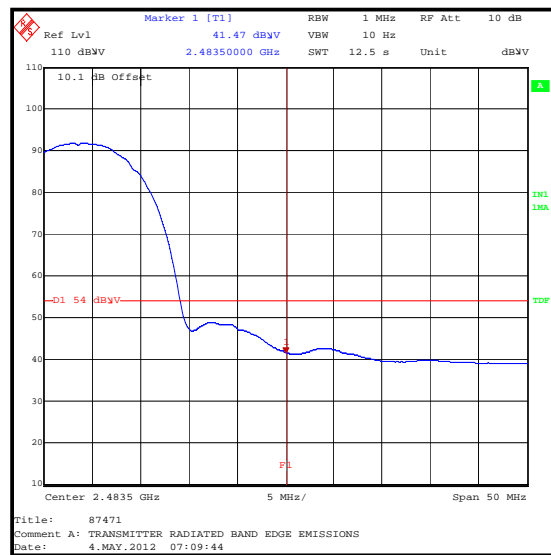
Results: 802.11b / 11 Mbps



Lower Band Edge Peak Measurement



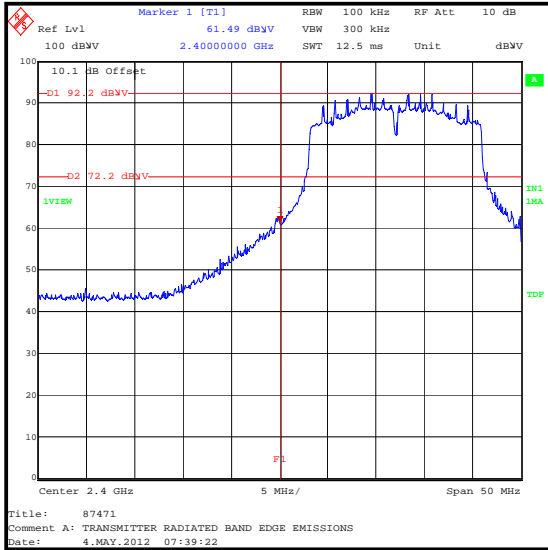
Upper Band Edge Peak Measurement



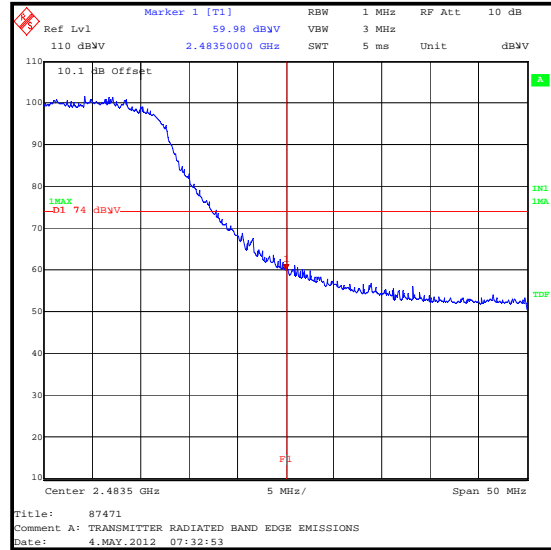
Upper Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (continued)

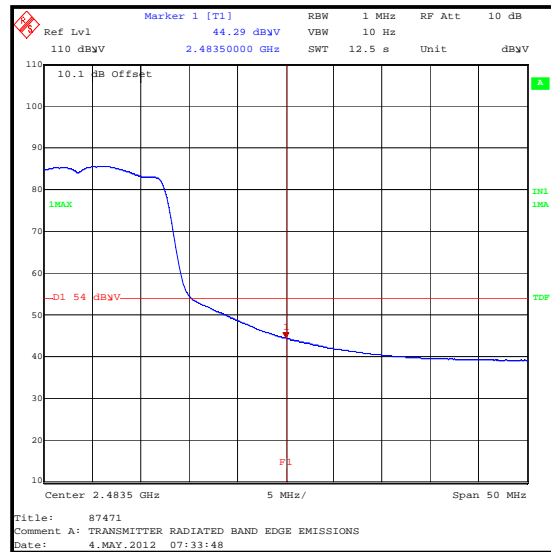
Results: 802.11n / 20 MHz / 21.7 Mbps



Lower Band Edge Peak Measurement



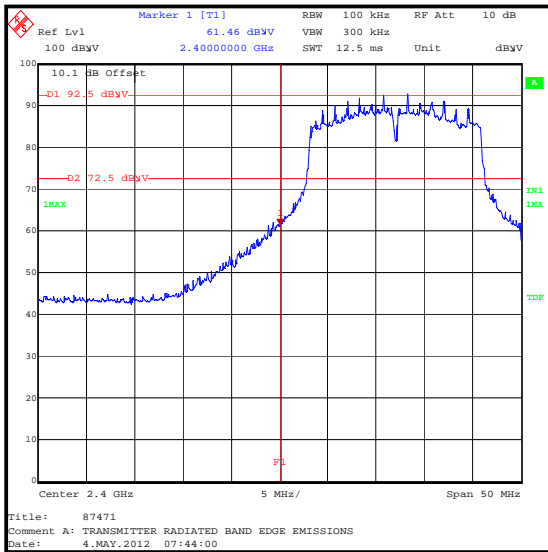
Upper Band Edge Peak Measurement



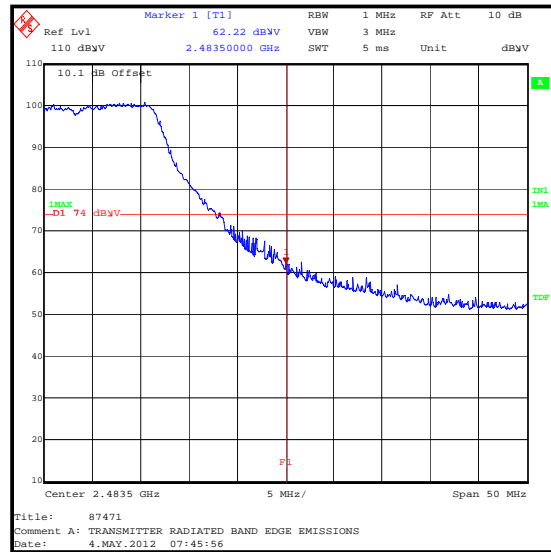
Upper Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (continued)

Results: 802.11g / 48 Mbps



Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement



Upper Band Edge Average Measurement

6. Measurement Uncertainty

No measurement or test can ever be perfect and the imperfections give rise to error of measurement in the results. Consequently the result of a measurement is only an approximation to the value of the measurand (the specific quantity subject to measurement) and is only complete when accompanied by a statement of the uncertainty of the approximation.

The expression of uncertainty of a measurement result allows realistic comparison of results with reference values and limits given in specifications and standards.

The uncertainty of the result may need to be taken into account when interpreting the measurement results.

The reported expanded uncertainties below are based on a standard uncertainty multiplied by an appropriate coverage factor such that a confidence level of approximately 95% is maintained. For the purposes of this document "approximately" is interpreted as meaning "effectively" or "for most practical purposes".

Measurement Type	Range	Confidence Level (%)	Calculated Uncertainty
AC Conducted Spurious Emissions	0.15 MHz to 30 MHz	95%	±3.25 dB
Conducted Maximum Peak Output Power	2.4 GHz to 2.4835 GHz	95%	±0.27 dB
Spectral Power Density	2.4 GHz to 2.4835 GHz	95%	±2.94 dB
6 dB Bandwidth	2.4 GHz to 2.4835 GHz	95%	±0.92 ppm
Radiated Spurious Emissions	30 MHz to 26.5 GHz	95%	±2.94 dB

The methods used to calculate the above uncertainties are in line with those recommended within the various measurement specifications. Where measurement specifications do not include guidelines for the evaluation of measurement uncertainty the published guidance of the appropriate accreditation body is followed.

Appendix 1. Test Equipment Used

RFI No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (months)
A067	LISN	Rohde & Schwarz	ESH3-Z5	890603/002	02 Jun 2012	12
A1391	Attenuator	Huber & Suhner	757987	6810.17.B	03 Apr 2013	12
A1393	Attenuator	Huber & Suhner	757456	6820.17.B	08 Jul 2012	12
A1396	Attenuator	Huber & Suhner	757987	6810.17.B	08 Jul 2012	12
A1534	Pre Amplifier	Hewlett Packard	8449B	3008A00405	09 Oct 2012	12
A1818	Antenna	EMCO	3115	00075692	09 Oct 2012	12
A1830	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100668	25 Feb 2013	12
A1834	Attenuator	Hewlett Packard	8491B	10444	29 Jan 2013	12
A244	Attenuator	Schaffner	6820-17-B	None	03 Apr 2013	12
A253	Antenna	Flann Microwave	12240-20	128	09 Oct 2012	12
A254	Antenna	Flann Microwave	14240-20	139	09 Oct 2012	12
A436	Antenna	Flann Microwave	20240-20	330	09 Oct 2012	12
A553	Antenna	Chase	CBL6111A	1593	15 Feb 2013	12
G0543	Amplifier	Sonoma	310N	230801	13 Jul 2012	3
K0001	5 m RSE Chamber	Rainford EMC	N/A	N/A	29 May 2012	12
K0002	3 m RSE Chamber	Rainford EMC	N/A	N/A	09 Oct 2012	12
M1124	Spectrum Analyser	Rohde & Schwarz	ESI26	100046K	29 Jun 2012	12
M127	Spectrum Analyser	Rohde & Schwarz	FSEB 30	842 659/016	08 Nov 2012	12
M1273	Test Receiver	Rohde & Schwarz	ESIB 26	100275	03 Feb 2013	12
M1379	Test Receiver	Rohde & Schwarz	ESIB7	100330	20 Sep 2012	12
M1630	Test Receiver	Rohde & Schwarz	ESU40	100233	06 Feb 2013	12

NB In accordance with UKAS requirements all the measurement equipment is on a calibration schedule.