TEST REPORT
FROM
RFI GLOBAL SERVICES LTD

Test of: NTT docomo EB-4055

FCC ID: UCE111050A

To: FCC Part 15.247: 2011 Subpart C

Test Report Serial No.:
RFI-RPT-RP87983JD06A

This Test Report Is Issued Under The Authority Of John Newell, Group Quality Manager:	
Checked By:	Sarah Williams
Signature:	
Date of Issue:	26 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:	06 May 2012 to 25 June 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 Minimum 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) devices 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-4055
IMEI:	359952040036328 *(Radiated sample)*
Hardware Version Number:	Rev C
Software Version Number:	ACPU: arrietty-ics-09-0417 CCPU: R1B_0_EC12_02_D00
FCC ID:	UCE111050A

Brand Name:	NTT docomo
Model Name or Number:	EB-4055
IMEI:	359952040036344 *(Conducted RF port sample)*
Hardware Version Number:	Rev C
Software Version Number:	ACPU: arrietty-ics-09-0417 CCPU: R1B_0_EC12_02_D00
FCC ID:	UCE111050A

Brand Name:	NTT docomo
Description:	AC Charger
Model Name or Number:	Type P01

Brand Name:	NTT docomo
Description:	USB Data cable
Model Name or Number:	Type 01

Brand Name:	Panasonic
Description:	Personal Hands-Free
Model Name or Number:	Panasonic Part # L0ZZ00000036

Brand Name:	Not marked or stated
Description:	Cradle
Model Name or Number:	P50

3.2. Description of EUT

The equipment under test was a single mode UMTS Tablet Device with WLAN and *Bluetooth.*

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:	Digital Transmission System (IEEE 802.11b/g/n)		
Type of Unit:	Transceiver		
Modulation Types:	BPSK, QPSK, 16QAM and 64QAM		
Data Rate:	802.11b: 1, 2, 5.5 and 11 Mbps		
	802.11g: 6, 9, 12, 18, 24, 36, 48 and 54 Mbps		
	802.11n: 7.2, 14.4, 21.7, 28.9, 43.3, 57.8, 58.5, 65 and 72.2 Mbps		
Declared Antenna Gains:	2412 MHz -3.4 dBi, 2437 MHz -3.1 dBi, 2462 MHz -3.4 dBi		
Power Supply Requirement(s):	Nominal	3.7 V	
Maximum Conducted Output Power:	22.4 dBm		
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:	Toughbook CF-74

Brand Name:	Not marked or stated
Description:	2G Micro SD Card
Model Name or Number:	Not known

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 supported data rates.

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 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 measurements were performed using the 802.11b 11 Mbps, configuration as this was measured and found to produce the highest EIRP.
- Idle and transmitter radiated spurious emissions tests were performed with the AC charger and PHF connected to the EUT as this was found to be the worst case during pre-scans. All the accessories were individually connected and measurements made during the pre-scans to determine the worst case combination.
- The conducted sample with IMEI 359952040036344 was used for 6dB Bandwidth, maximum output power and power spectral density tests.
- The radiated sample with IMEI 359952040036328 was used for all radiated tests.

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:**	19 June 2012
Test Sample IMEI:	359952040036328		

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

Environmental Conditions:

Temperature (°C):	26
Relative Humidity (%):	38

Results: Live / Quasi Peak

Frequency (MHz)	Line	Level (dBµV)	Limit (dBµV)	Margin (dB)	Result
4.825	Live	33.6	56.0	22.4	Complied
6.013	Live	34.6	60.0	25.4	Complied
6.144	Live	35.1	60.0	24.9	Complied
6.549	Live	34.7	60.0	25.3	Complied
7.476	Live	38.3	60.0	21.7	Complied
7.534	Live	38.5	60.0	21.5	Complied
7.584	Live	38.5	60.0	21.5	Complied
7.701	Live	37.5	60.0	22.5	Complied
7.939	Live	38.8	60.0	21.2	Complied

Results: Live / Average

Frequency (MHz)	Line	Level (dBµV)	Limit (dBµV)	Margin (dB)	Result
0.478	Live	26.2	46.4	20.2	Complied
5.019	Live	27.4	50.0	22.6	Complied
15.742	Live	30.3	50.0	19.7	Complied
15.814	Live	31.6	50.0	18.4	Complied
15.886	Live	31.5	50.0	18.5	Complied
15.954	Live	31.9	50.0	18.1	Complied
16.026	Live	29.6	50.0	20.4	Complied

Receiver/Idle Mode AC Conducted Spurious Emissions (continued)

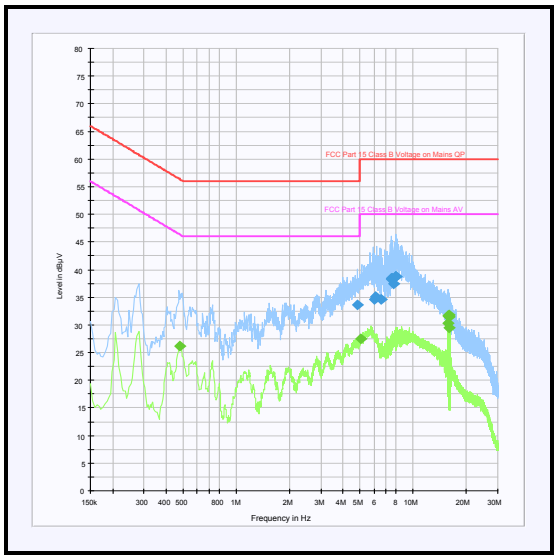
Results: Neutral / Quasi Peak

Frequency (MHz)	Line	Level (dBμV)	Limit (dBμV)	Margin (dB)	Result
0.474	Neutral	39.1	56.4	17.3	Complied
2.737	Neutral	36.0	56.0	20.0	Complied
3.183	Neutral	36.6	56.0	19.4	Complied
3.633	Neutral	37.6	56.0	18.4	Complied
4.848	Neutral	40.0	56.0	16.0	Complied
5.667	Neutral	42.3	60.0	17.7	Complied
6.072	Neutral	41.5	60.0	18.5	Complied
6.135	Neutral	41.3	60.0	18.7	Complied
6.603	Neutral	38.9	60.0	21.1	Complied
7.476	Neutral	38.8	60.0	21.2	Complied

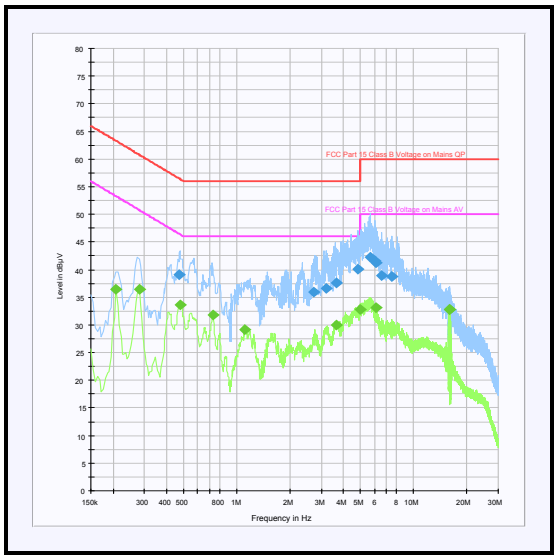
Results: Neutral / Average

Frequency (MHz)	Line	Level (dBμV)	Limit (dBμV)	Margin (dB)	Result
0.208	Neutral	36.4	53.3	16.9	Complied
0.280	Neutral	36.4	50.8	14.4	Complied
0.478	Neutral	33.6	46.4	12.8	Complied
0.730	Neutral	31.8	46.0	14.2	Complied
1.117	Neutral	29.2	46.0	16.8	Complied
3.642	Neutral	29.9	46.0	16.1	Complied
4.956	Neutral	32.8	46.0	13.2	Complied
6.121	Neutral	33.1	50.0	16.9	Complied
15.886	Neutral	32.8	50.0	17.2	Complied
15.954	Neutral	32.8	50.0	17.2	Complied

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:**	01 June 2012
Test Sample IMEI:	359952040036328		

FCC Reference:	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):	27
Relative Humidity (%):	39

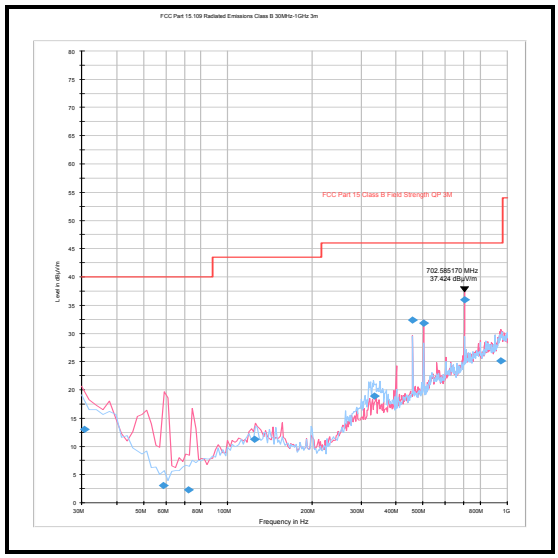
Results: Quasi Peak

Frequency (MHz)	Antenna Polarity	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
30.770	Vertical	13.0	40.0	27.0	Complied
334.079	Horizontal	18.9	46.0	27.1	Complied
458.796	Vertical	32.3	46.0	13.7	Complied
501.023	Vertical	31.8	46.0	14.2	Complied
701.349	Vertical	36.0	46.0	10.0	Complied
950.176	Vertical	25.2	46.0	20.8	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:	David Doyle	**Test Date:**	30 May 2012
Test Sample IMEI:	359952040036328		

FCC Reference:	Part 15.109
Test Method Used:	As detailed in ANSI C63.4 Section 8
Frequency Range:	1 GHz to 12.75 GHz

Environmental Conditions:

Temperature (°C):	25
Relative Humidity (%):	41

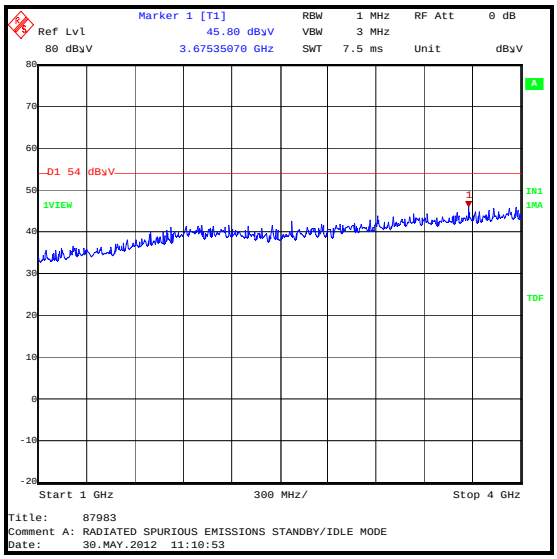
Results:

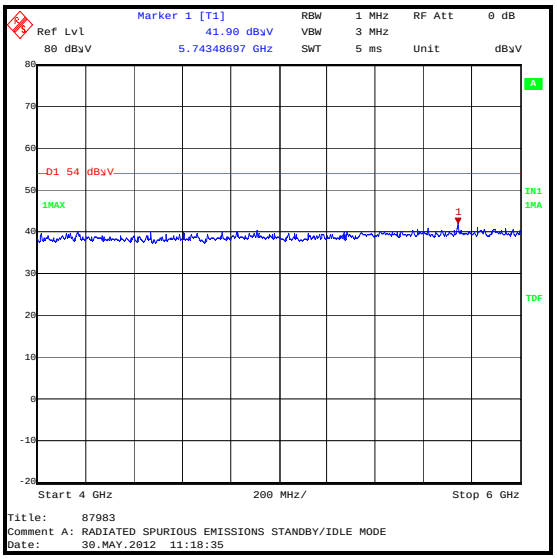
Frequency (MHz)	Antenna Polarity	Peak Level (dBµV/m)	Average Limit (dBµV/m)	Margin (dB)	Result
3675.351	Vertical	45.8	54.0	8.2	Complied

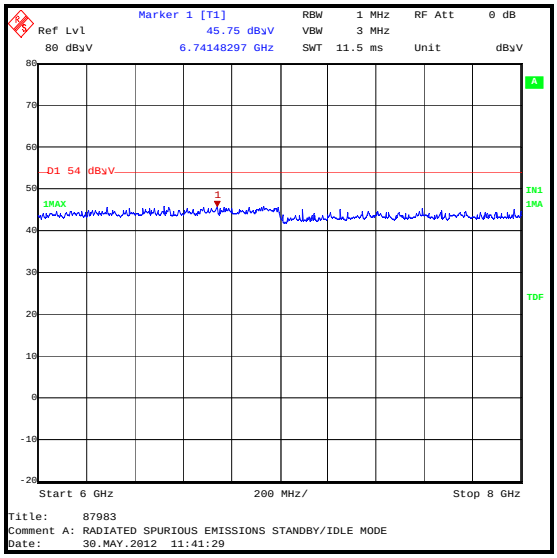
Note(s):

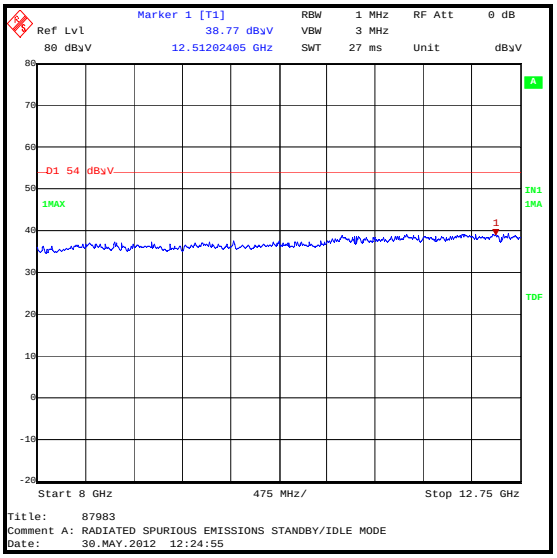
1. The final measured value, for the given emission, in the table above incorporates the calibrated antenna factor and cable loss.
2. Pre-scans above 1 GHz were performed in a fully anechoic chamber (RFI Asset Number K0002) at a distance of 3 metres. The EUT was placed at a height of 1.5 metres above 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:**	19 June 2012
Test Sample IMEI:	359952040036328		

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):	26
Relative Humidity (%):	38

Results: Live / Quasi Peak

Frequency (MHz)	Line	Level (dBµV)	Limit (dBµV)	Margin (dB)	Result
4.780	Live	33.7	56.0	22.3	Complied
5.752	Live	35.8	60.0	24.2	Complied
6.081	Live	35.7	60.0	24.3	Complied
6.139	Live	35.4	60.0	24.6	Complied
6.252	Live	34.7	60.0	25.3	Complied
6.576	Live	35.2	60.0	24.8	Complied
6.967	Live	36.3	60.0	23.7	Complied
7.629	Live	38.2	60.0	21.8	Complied
8.016	Live	39.4	60.0	20.6	Complied

Results: Live / Average

Frequency (MHz)	Line	Level (dBµV)	Limit (dBµV)	Margin (dB)	Result
0.478	Live	26.2	46.4	20.2	Complied
4.888	Live	26.9	46.0	19.1	Complied
15.751	Live	30.6	50.0	19.4	Complied
15.819	Live	32.0	50.0	18.0	Complied
15.891	Live	32.3	50.0	17.7	Complied
15.958	Live	32.2	50.0	17.8	Complied
16.026	Live	31.2	50.0	18.8	Complied
16.098	Live	29.9	50.0	20.1	Complied

Transmitter AC Conducted Spurious Emissions (continued)

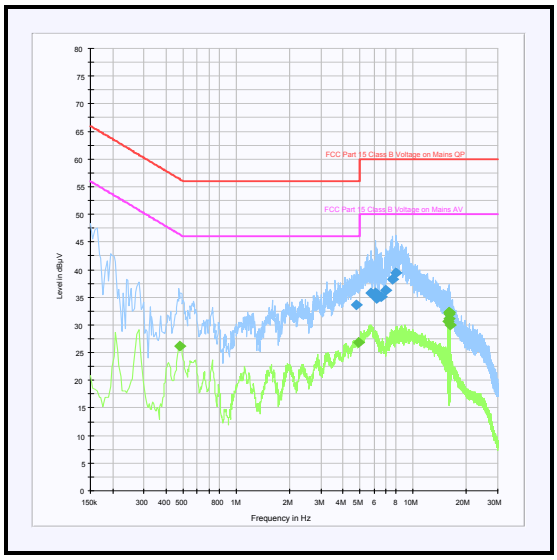
Results: Neutral / Quasi Peak

Frequency (MHz)	Line	Level (dBμV)	Limit (dBμV)	Margin (dB)	Result
0.573	Neutral	37.9	56.0	18.2	Complied
1.936	Neutral	34.6	56.0	21.4	Complied
2.760	Neutral	36.2	56.0	19.8	Complied
3.201	Neutral	37.4	56.0	18.6	Complied
3.543	Neutral	37.5	56.0	18.5	Complied
4.996	Neutral	40.9	56.0	15.1	Complied
5.626	Neutral	42.4	60.0	17.6	Complied
6.081	Neutral	41.6	60.0	18.4	Complied
7.062	Neutral	39.4	60.0	20.6	Complied
7.480	Neutral	39.3	60.0	20.7	Complied

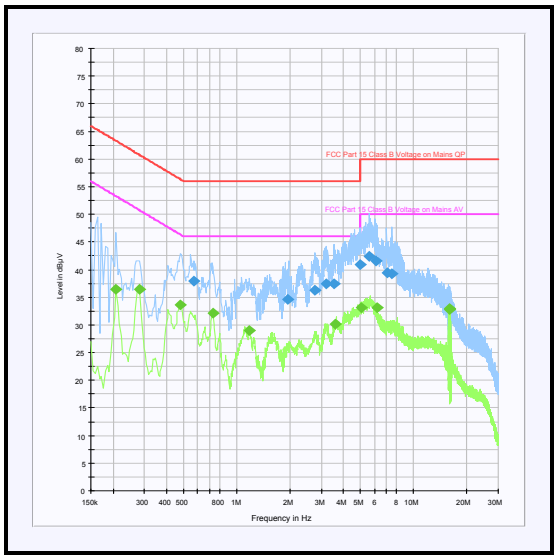
Results: Neutral / Average

Frequency (MHz)	Line	Level (dBμV)	Limit (dBμV)	Margin (dB)	Result
0.208	Neutral	36.5	53.3	16.8	Complied
0.280	Neutral	36.5	50.8	14.3	Complied
0.478	Neutral	33.7	46.4	12.7	Complied
0.730	Neutral	32.2	46.0	13.8	Complied
1.180	Neutral	29.1	46.0	16.9	Complied
3.624	Neutral	30.1	46.0	15.9	Complied
5.019	Neutral	33.2	50.0	16.8	Complied
6.202	Neutral	33.2	50.0	16.8	Complied
15.819	Neutral	32.8	50.0	17.2	Complied
15.958	Neutral	33.0	50.0	17.0	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 Date:**	25 June 2012
Test Sample IMEI:	359952040036344		

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

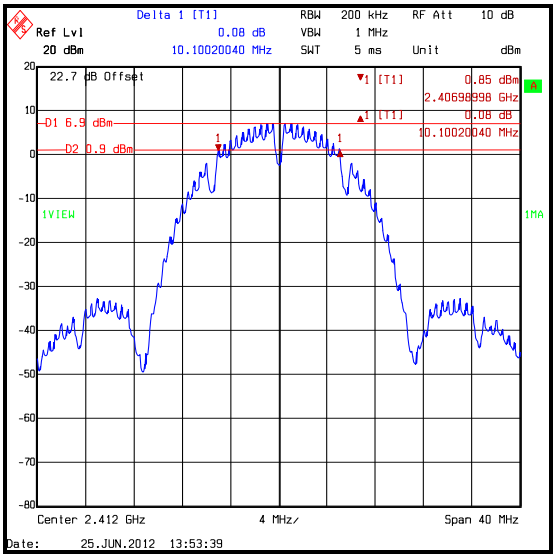
Environmental Conditions:

Temperature (°C):	24
Relative Humidity (%):	40

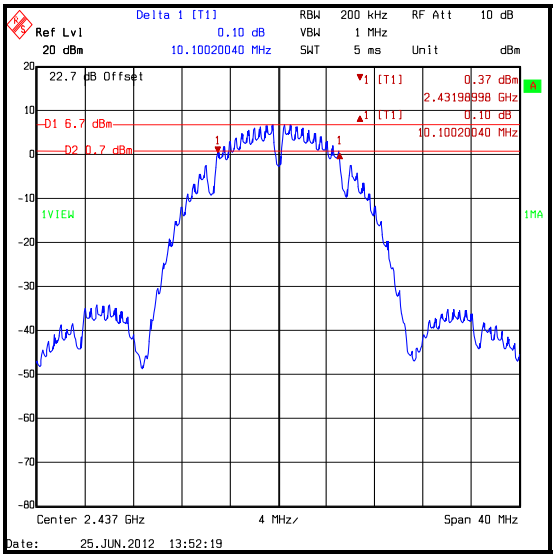
Transmitter 6 dB Bandwidth (continued)

Results: 1 Mbps

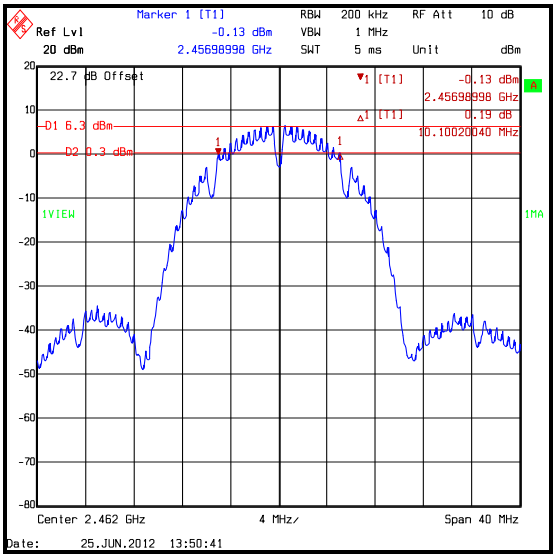
Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	10.100	≥0.5	9.600	Complied
Middle	10.100	≥0.5	9.600	Complied
Top	10.100	≥0.5	9.600	Complied



Bottom channel



Middle channel

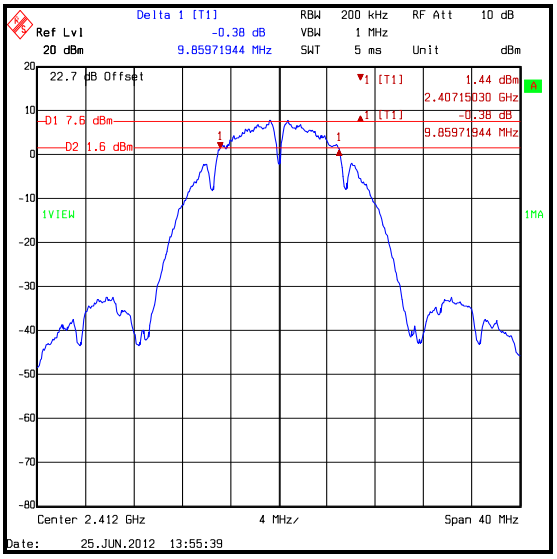


Top channel

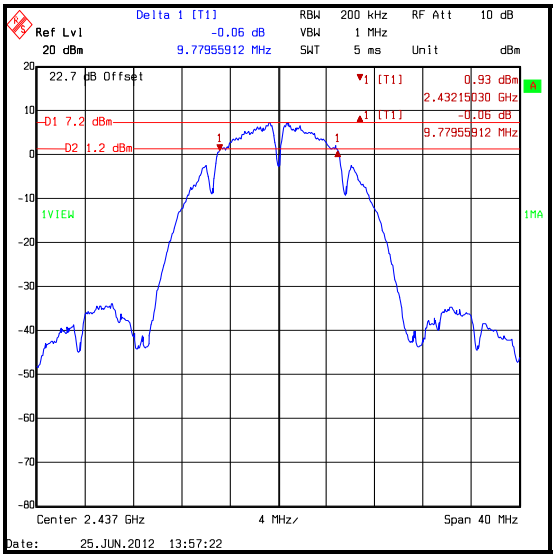
Transmitter 6 dB Bandwidth (continued)

Results: 2 Mbps

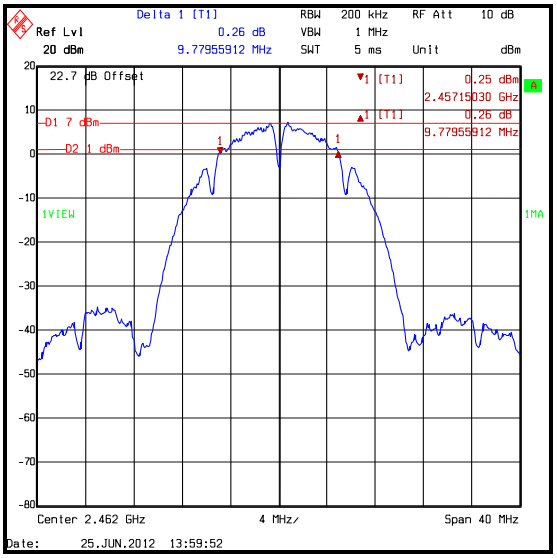
Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	9.860	≥0.5	9.360	Complied
Middle	9.780	≥0.5	9.280	Complied
Top	9.780	≥0.5	9.280	Complied



Bottom channel



Middle channel

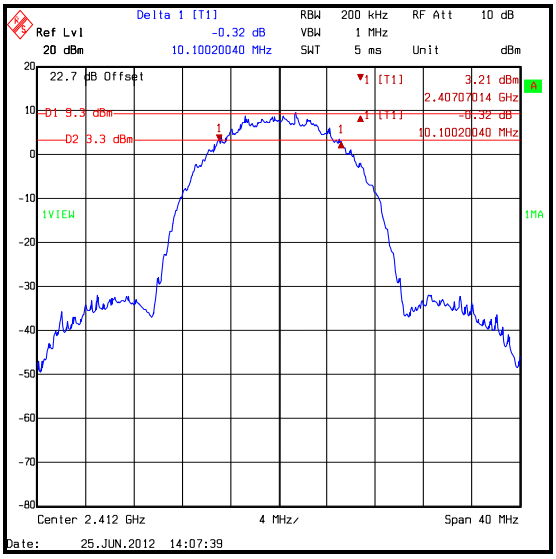


Top channel

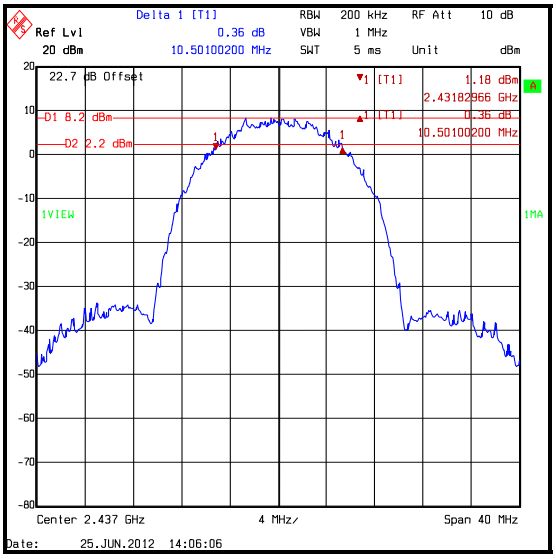
Transmitter 6 dB Bandwidth (continued)

Results: 5.5 Mbps

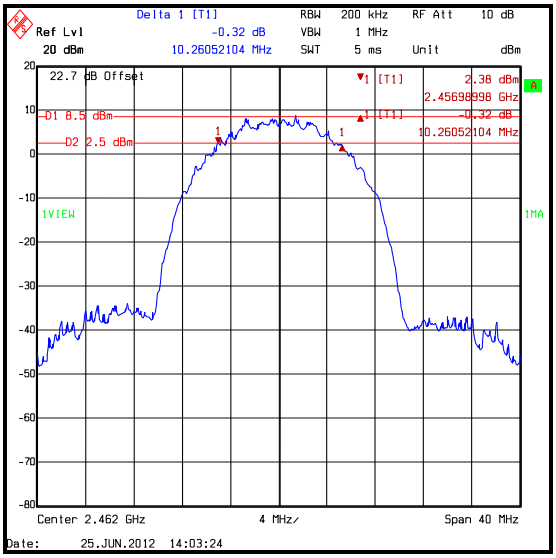
Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	10.100	≥0.5	9.600	Complied
Middle	10.501	≥0.5	10.001	Complied
Top	10.261	≥0.5	9.761	Complied



Bottom channel



Middle channel

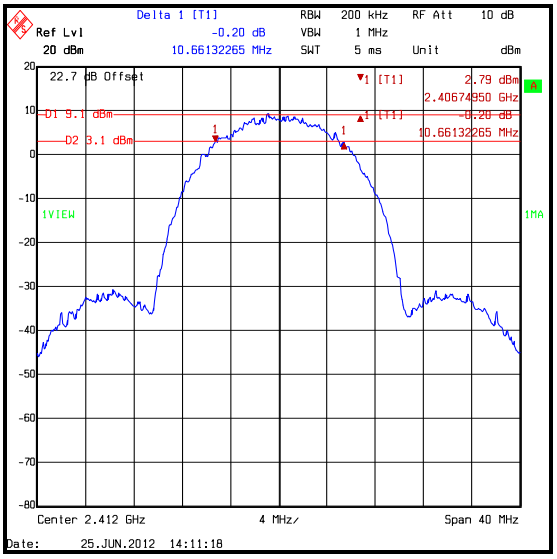


Top channel

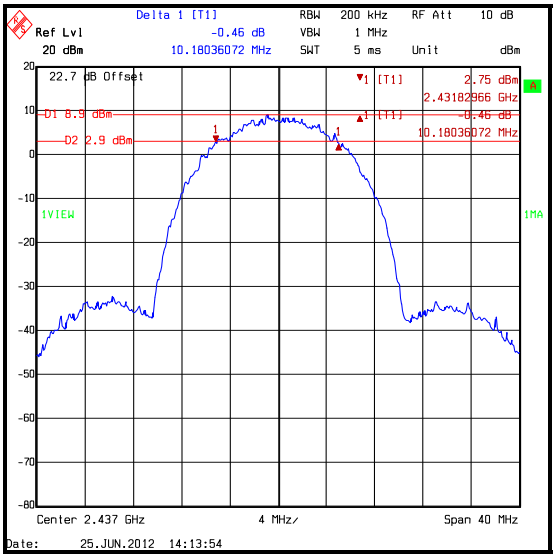
Transmitter 6 dB Bandwidth (continued)

Results: 11 Mbps

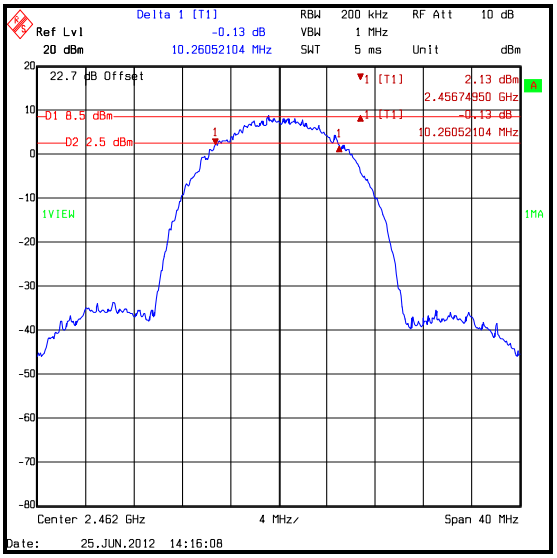
Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	10.661	≥0.5	10.161	Complied
Middle	10.180	≥0.5	9.680	Complied
Top	10.261	≥0.5	9.761	Complied



Bottom channel



Middle channel

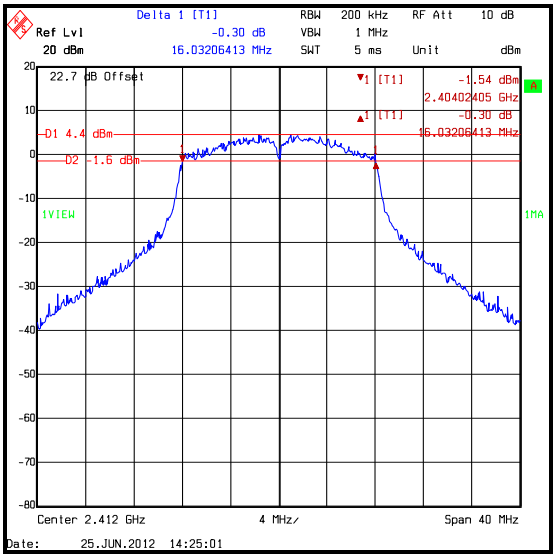


Top channel

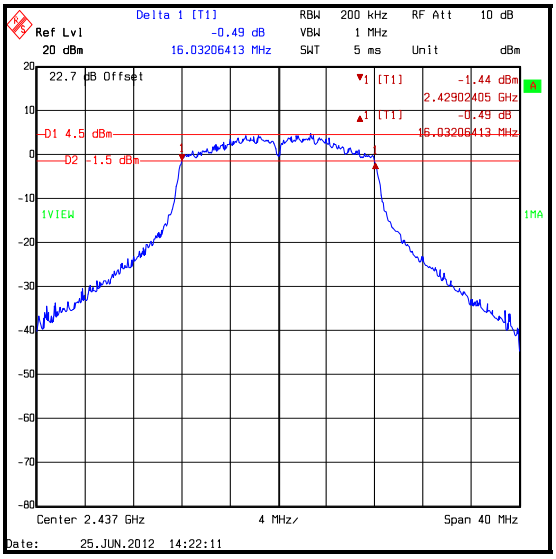
Transmitter 6 dB Bandwidth (continued)

Results: 6 Mbps

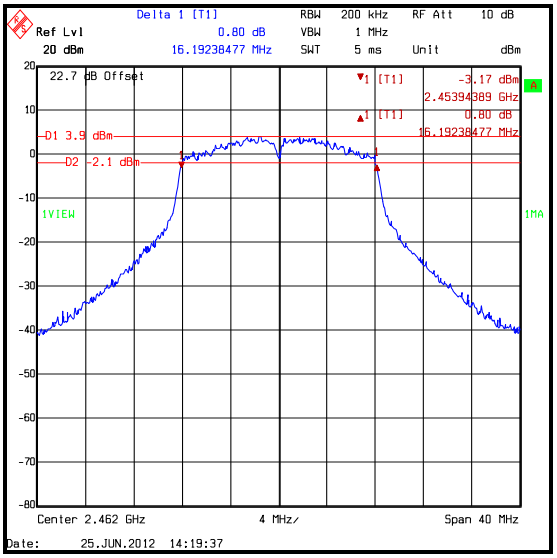
Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	16.032	≥0.5	15.532	Complied
Middle	16.032	≥0.5	15.532	Complied
Top	16.192	≥0.5	15.692	Complied



Bottom channel



Middle channel

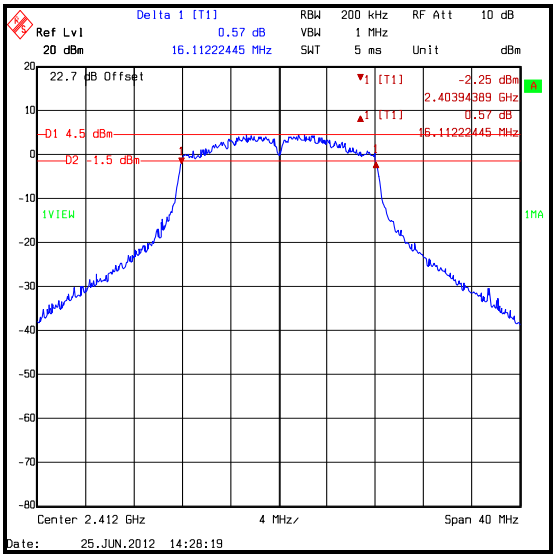


Top channel

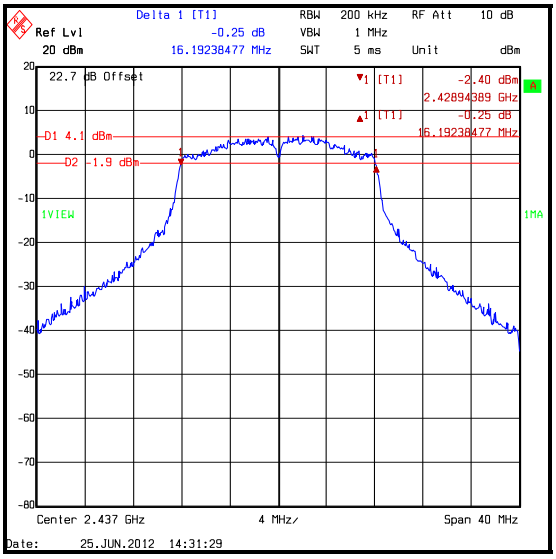
Transmitter 6 dB Bandwidth (continued)

Results: 9 Mbps

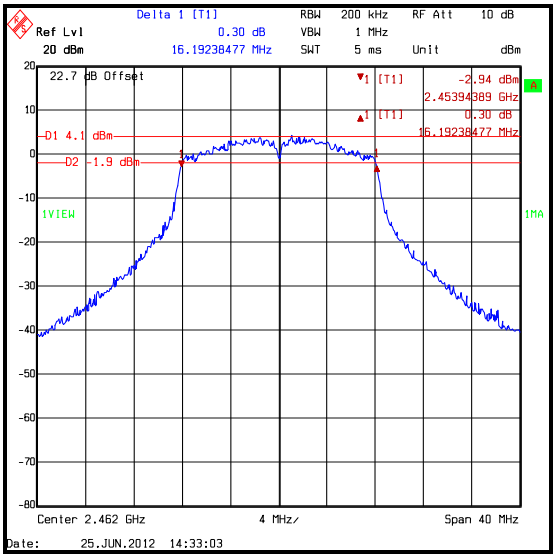
Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	16.112	≥0.5	15.612	Complied
Middle	16.192	≥0.5	15.692	Complied
Top	16.192	≥0.5	15.692	Complied



Bottom channel



Middle channel

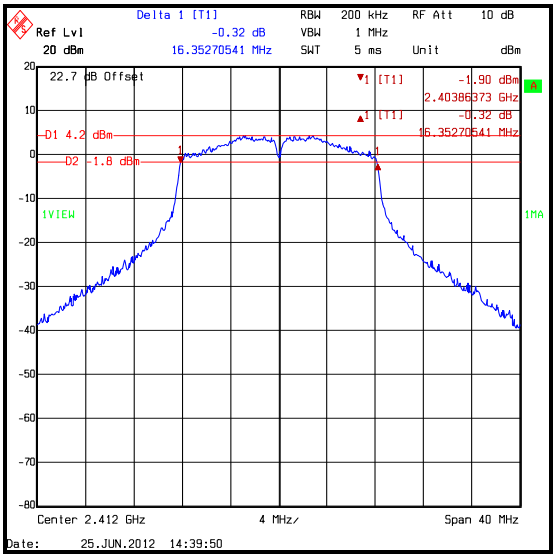


Top channel

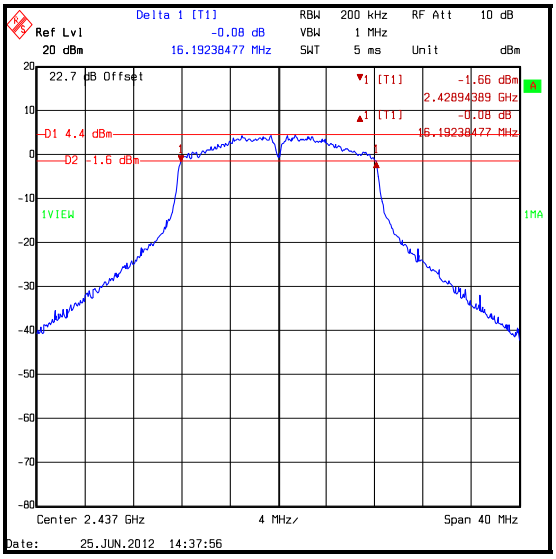
Transmitter 6 dB Bandwidth (continued)

Results: 12 Mbps

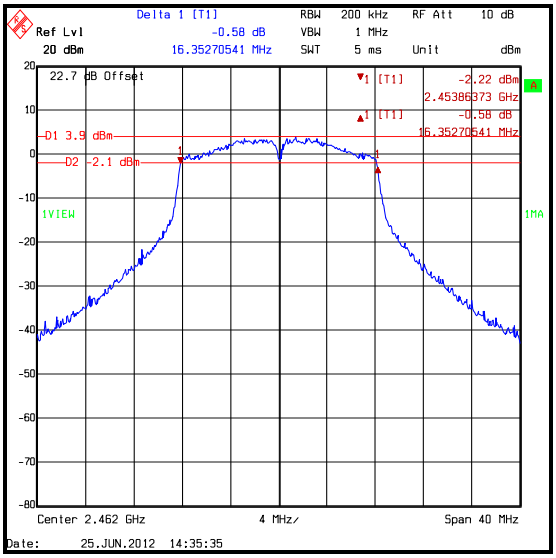
Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	16.353	≥0.5	15.853	Complied
Middle	16.192	≥0.5	15.692	Complied
Top	16.353	≥0.5	15.853	Complied



Bottom channel



Middle channel

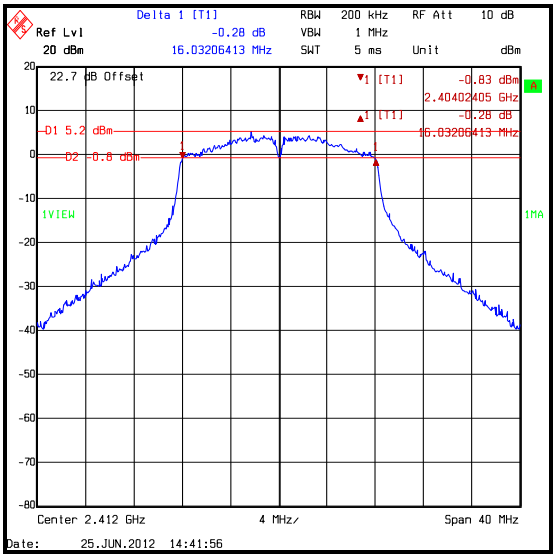


Top channel

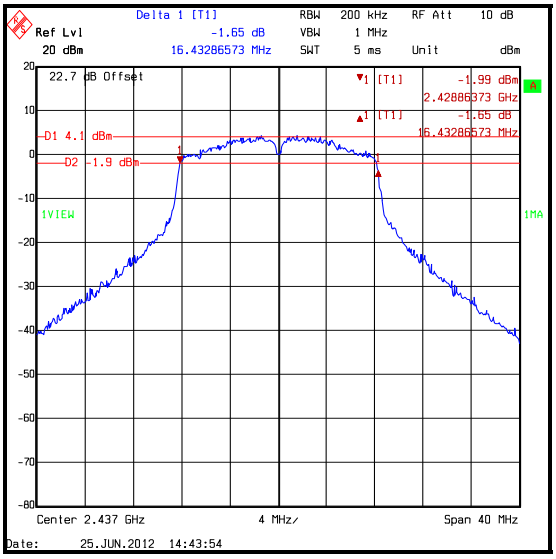
Transmitter 6 dB Bandwidth (continued)

Results: 18 Mbps

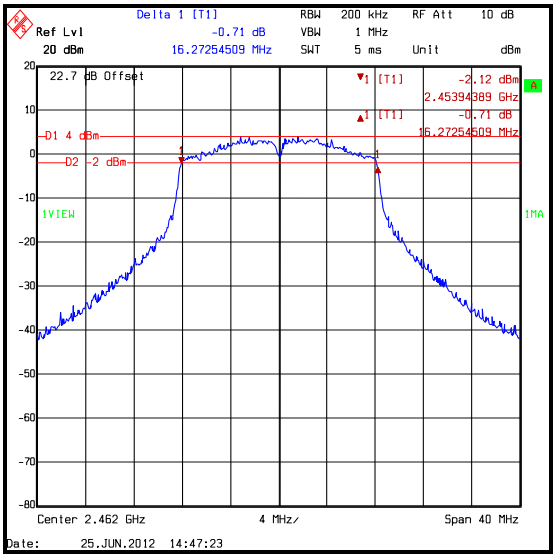
Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	16.032	≥0.5	15.532	Complied
Middle	16.433	≥0.5	15.933	Complied
Top	16.273	≥0.5	15.773	Complied



Bottom channel



Middle channel

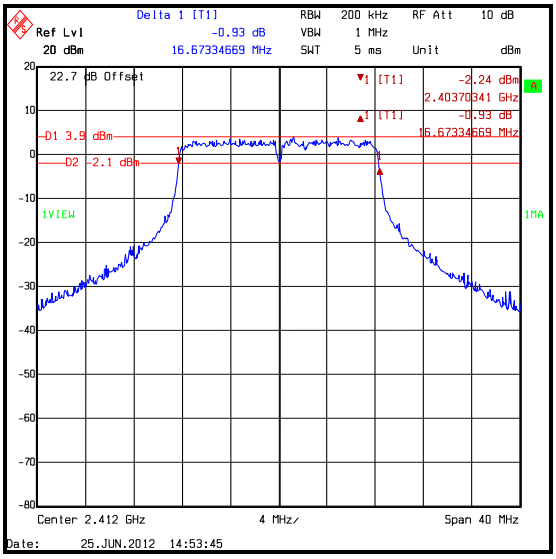


Top channel

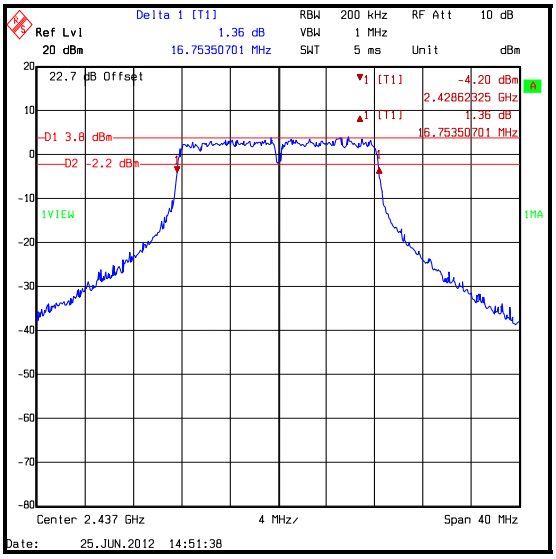
Transmitter 6 dB Bandwidth (continued)

Results: 24 Mbps

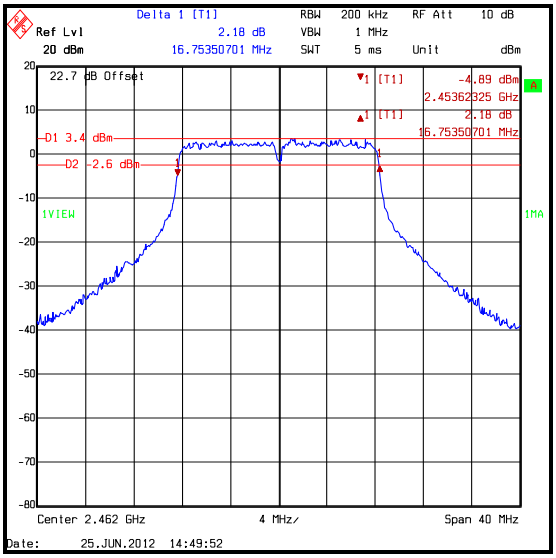
Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	16.673	≥0.5	16.173	Complied
Middle	16.754	≥0.5	16.254	Complied
Top	16.754	≥0.5	16.254	Complied



Bottom channel



Middle channel

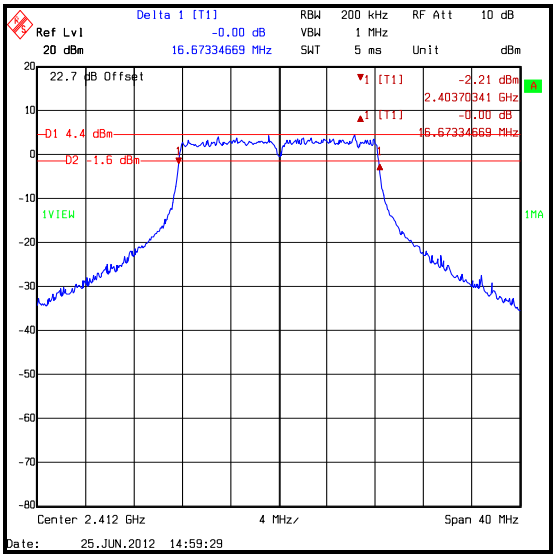


Top channel

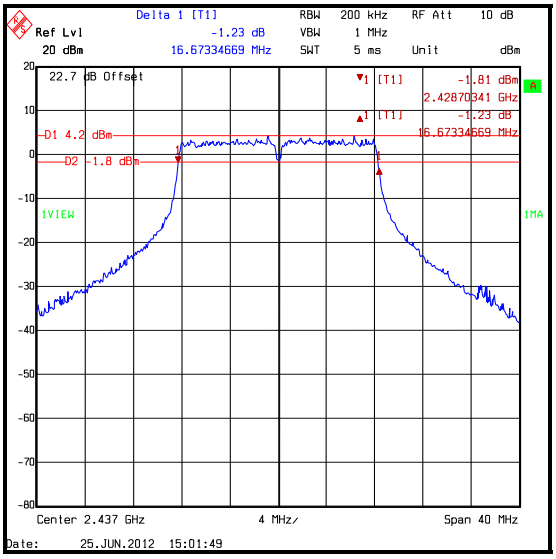
Transmitter 6 dB Bandwidth (continued)

Results: 36 Mbps

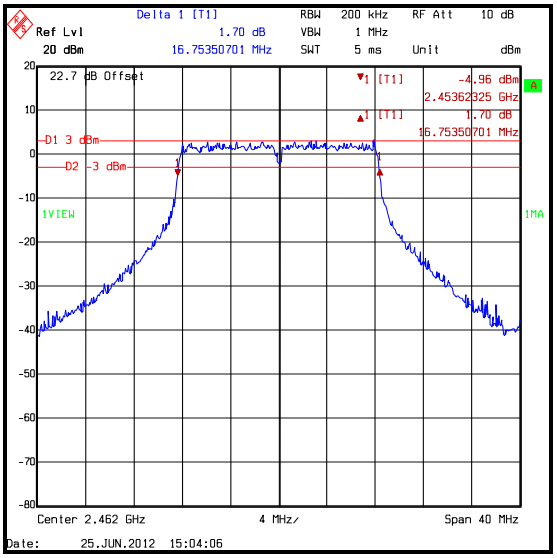
Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	16.673	≥0.5	16.173	Complied
Middle	16.673	≥0.5	16.173	Complied
Top	16.754	≥0.5	16.254	Complied



Bottom channel



Middle channel

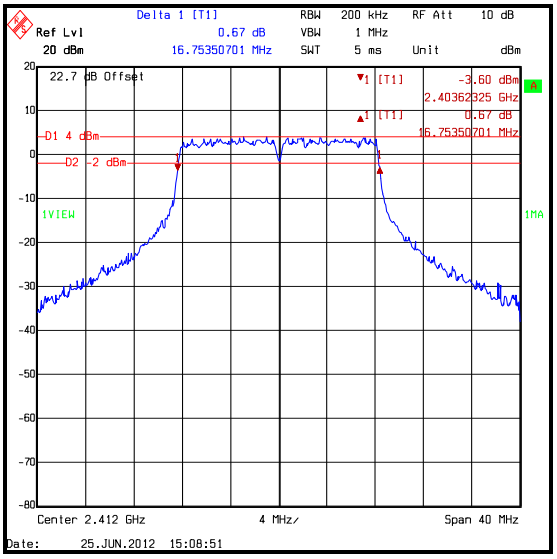


Top channel

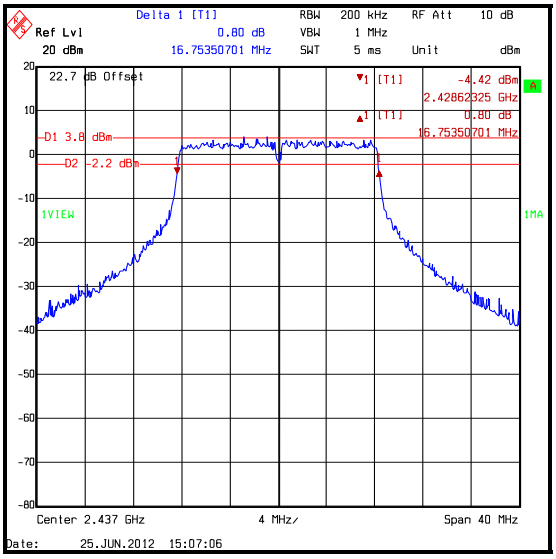
Transmitter 6 dB Bandwidth (continued)

Results: 48 Mbps

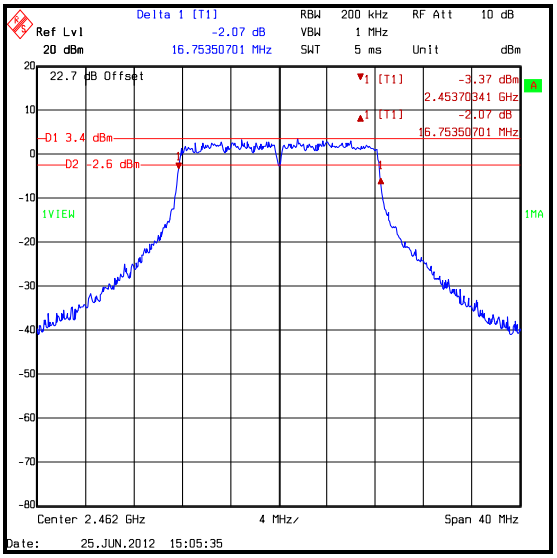
Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	16.754	≥0.5	16.254	Complied
Middle	16.754	≥0.5	16.254	Complied
Top	16.754	≥0.5	16.254	Complied



Bottom channel



Middle channel

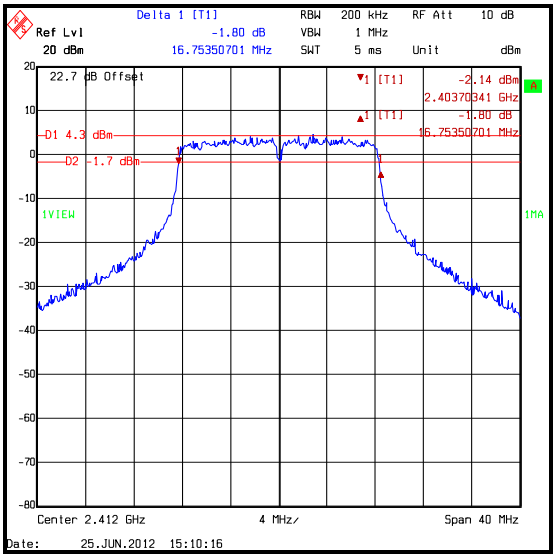


Top channel

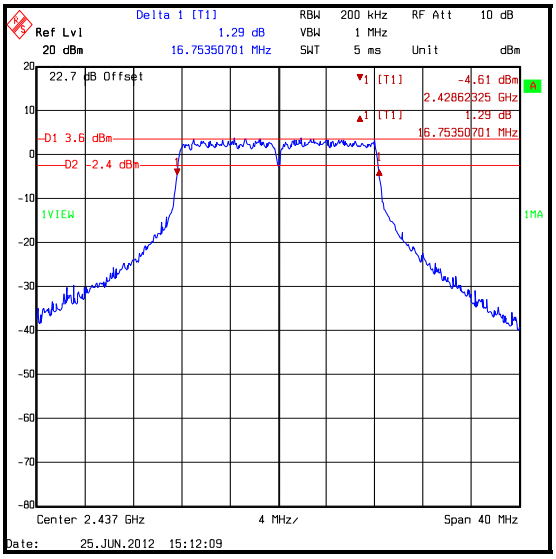
Transmitter 6 dB Bandwidth (continued)

Results: 54 Mbps

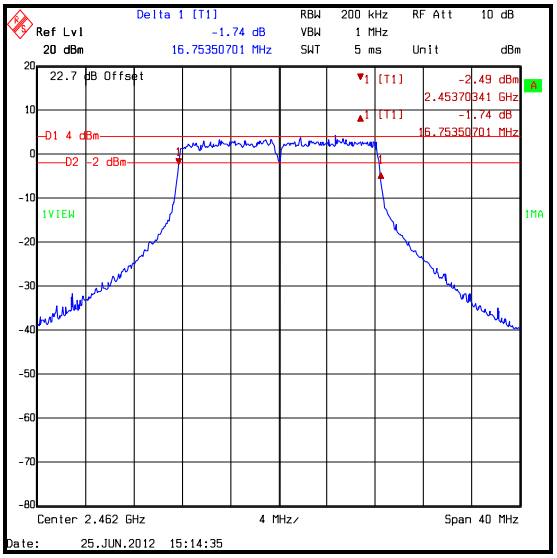
Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	16.754	≥0.5	16.254	Complied
Middle	16.754	≥0.5	16.254	Complied
Top	16.754	≥0.5	16.254	Complied



Bottom channel



Middle channel

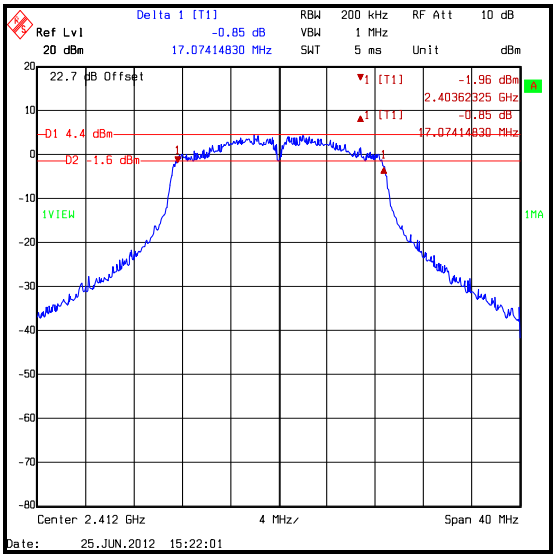


Top channel

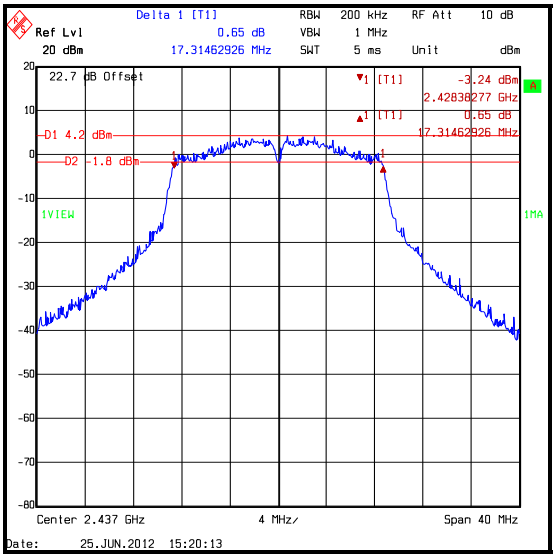
Transmitter 6 dB Bandwidth (continued)

Results: 802.11n / 20 MHz / 7.2 Mbps

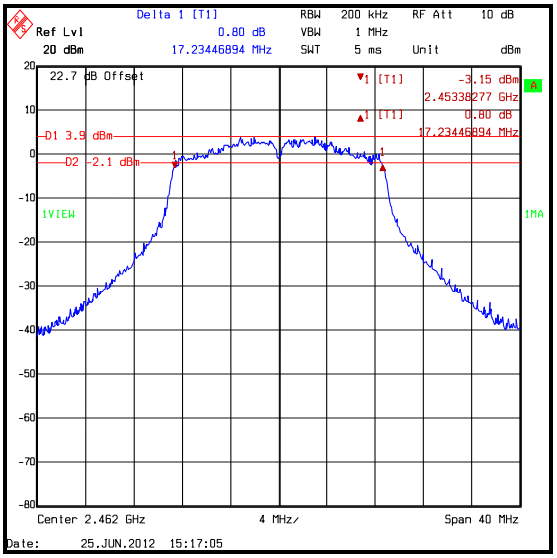
Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	17.074	≥0.5	16.574	Complied
Middle	17.315	≥0.5	16.815	Complied
Top	17.234	≥0.5	16.734	Complied



Bottom channel



Middle channel

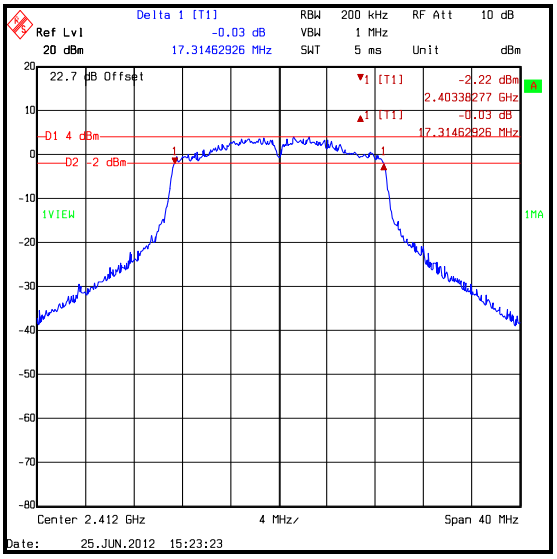


Top channel

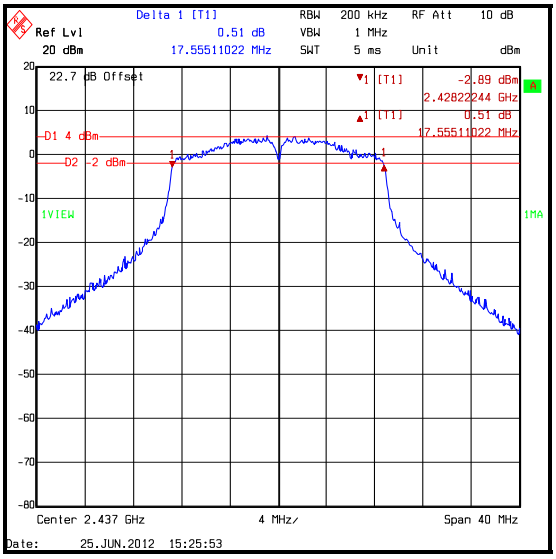
Transmitter 6 dB Bandwidth (continued)

Results: 802.11n / 20 MHz / 14.4 Mbps

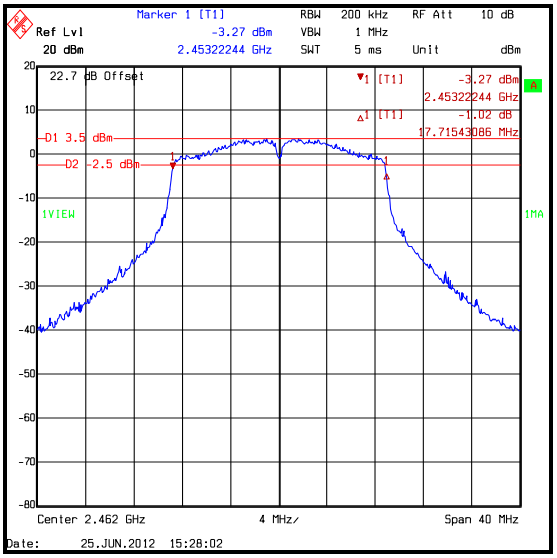
Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	17.315	≥0.5	16.815	Complied
Middle	17.555	≥0.5	17.055	Complied
Top	17.715	≥0.5	17.215	Complied



Bottom channel



Middle channel

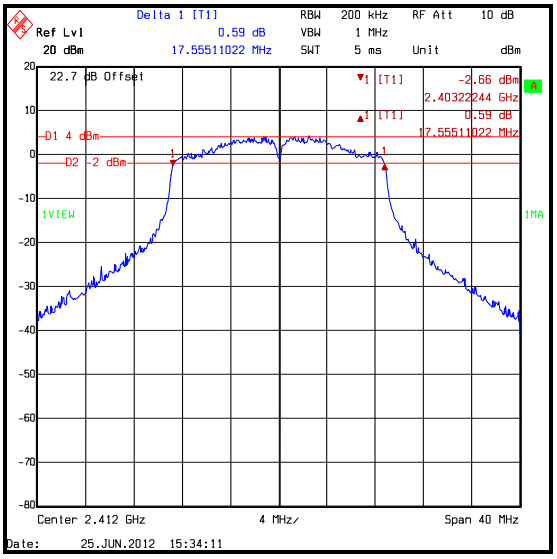


Top channel

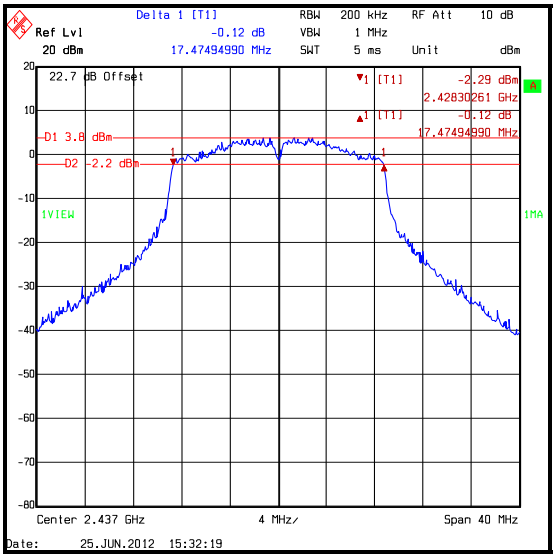
Transmitter 6 dB Bandwidth (continued)

Results: 802.11n / 20 MHz / 21.7 Mbps

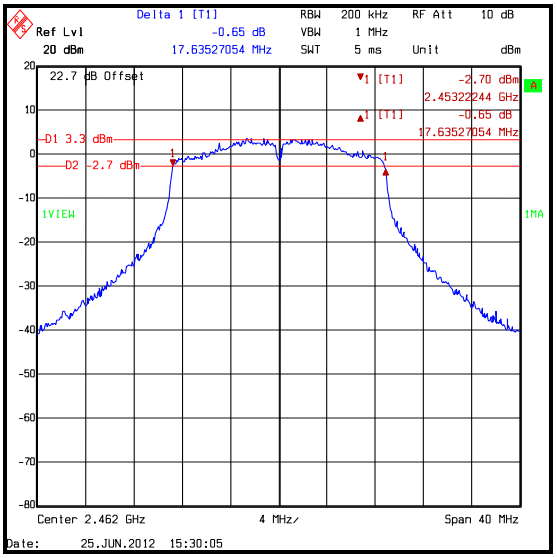
Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	17.555	≥0.5	17.055	Complied
Middle	17.475	≥0.5	16.975	Complied
Top	17.635	≥0.5	17.135	Complied



Bottom channel



Middle channel

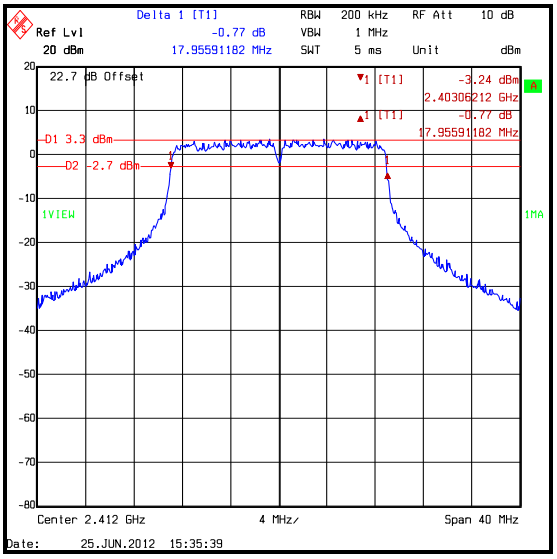


Top channel

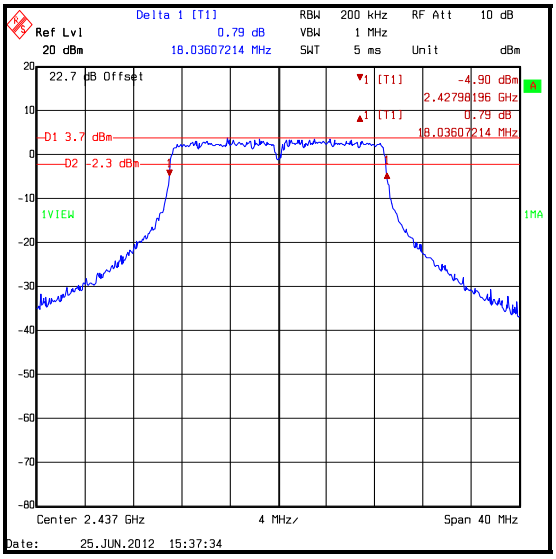
Transmitter 6 dB Bandwidth (continued)

Results: 802.11n / 20 MHz / 28.9 Mbps

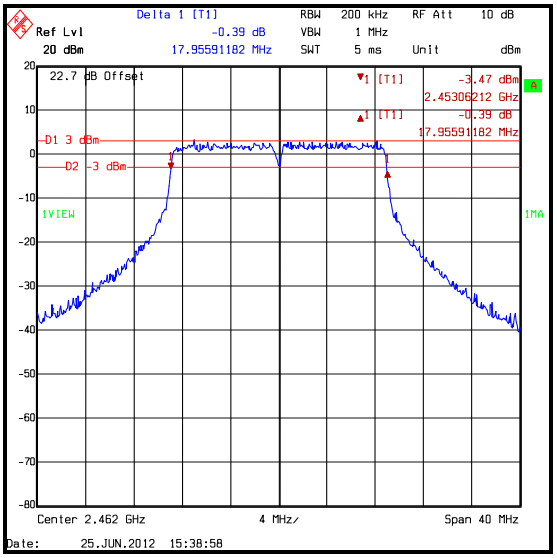
Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	17.956	≥0.5	17.456	Complied
Middle	18.036	≥0.5	17.536	Complied
Top	17.956	≥0.5	17.456	Complied



Bottom channel



Middle channel

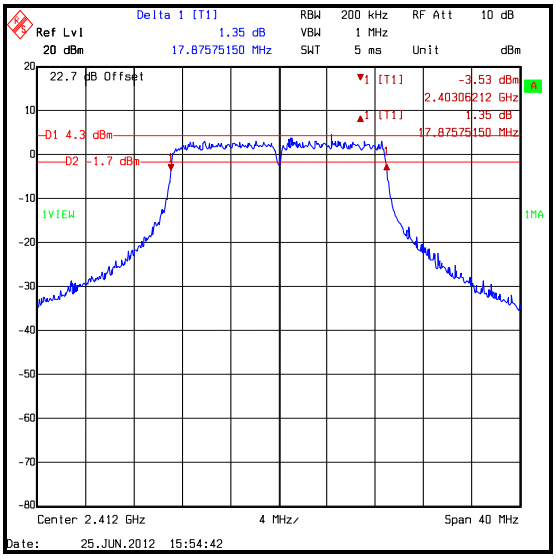


Top channel

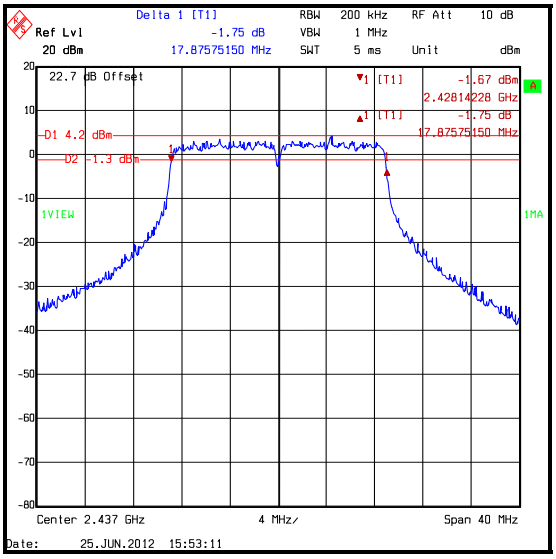
Transmitter 6 dB Bandwidth (continued)

Results: 802.11n / 20 MHz / 43.3 Mbps

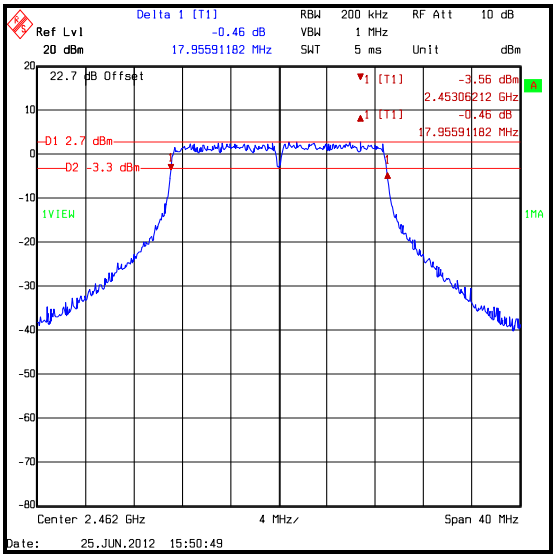
Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	17.876	≥0.5	17.376	Complied
Middle	17.876	≥0.5	17.376	Complied
Top	17.956	≥0.5	17.456	Complied



Bottom channel



Middle channel

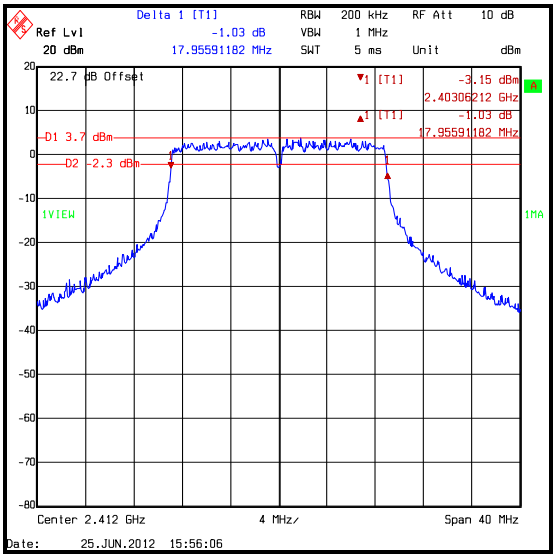


Top channel

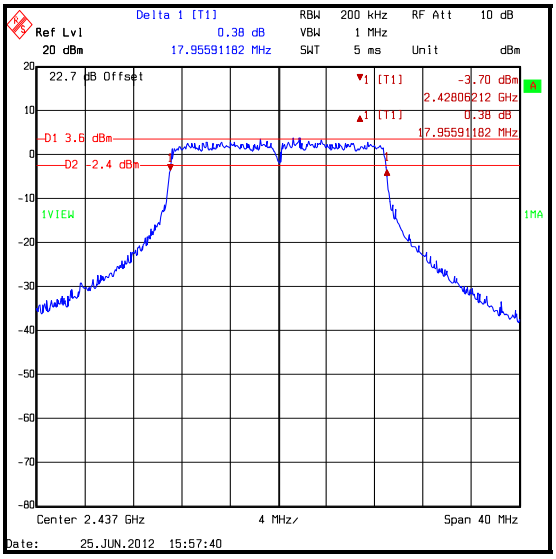
Transmitter 6 dB Bandwidth (continued)

Results: 802.11n / 20 MHz / 57.8 Mbps

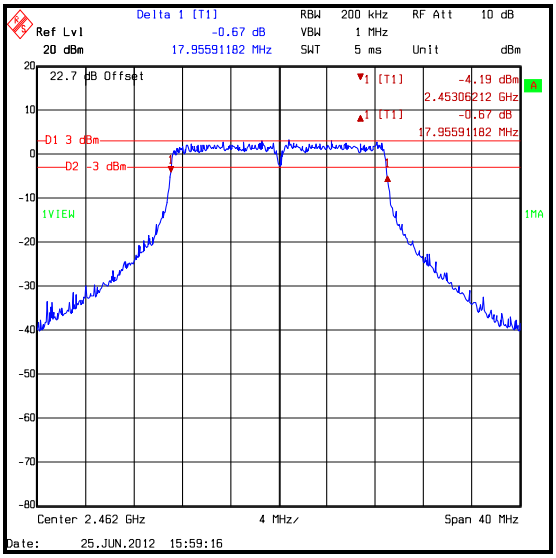
Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	17.956	≥0.5	17.456	Complied
Middle	17.956	≥0.5	17.456	Complied
Top	17.956	≥0.5	17.456	Complied



Bottom channel



Middle channel

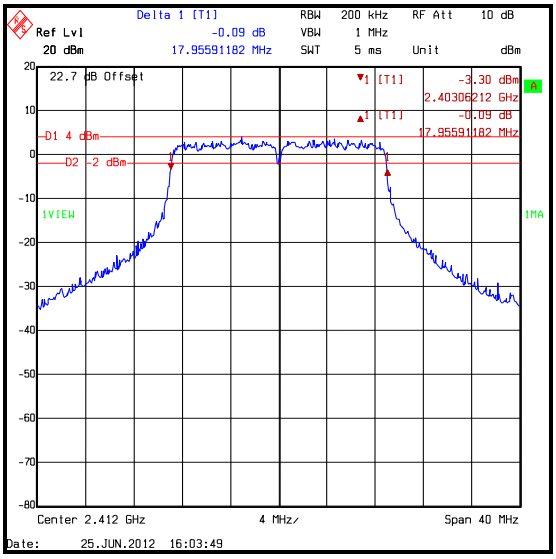


Top channel

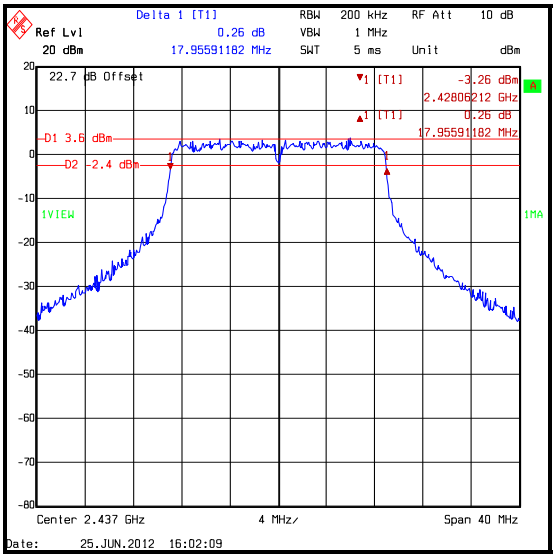
Transmitter 6 dB Bandwidth (continued)

Results: 802.11n / 20 MHz / 65 Mbps

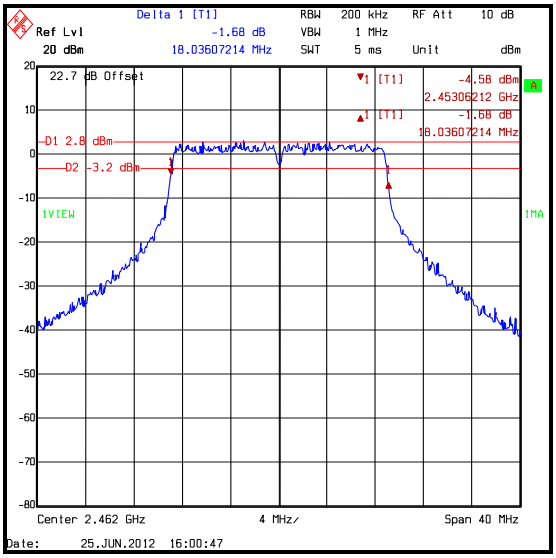
Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	17.956	≥0.5	17.456	Complied
Middle	17.956	≥0.5	17.456	Complied
Top	18.036	≥0.5	17.536	Complied



Bottom channel



Middle channel

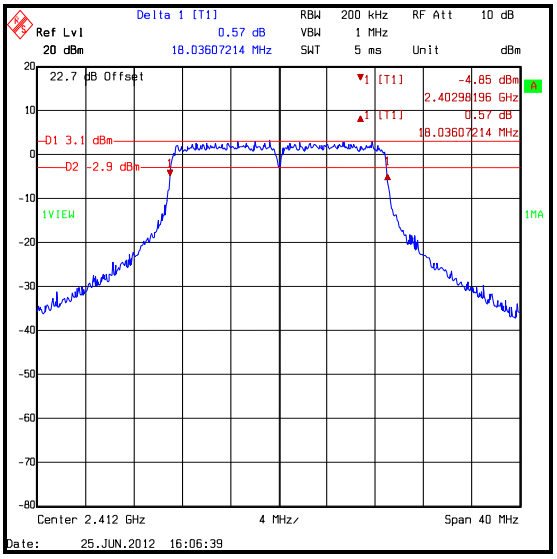


Top channel

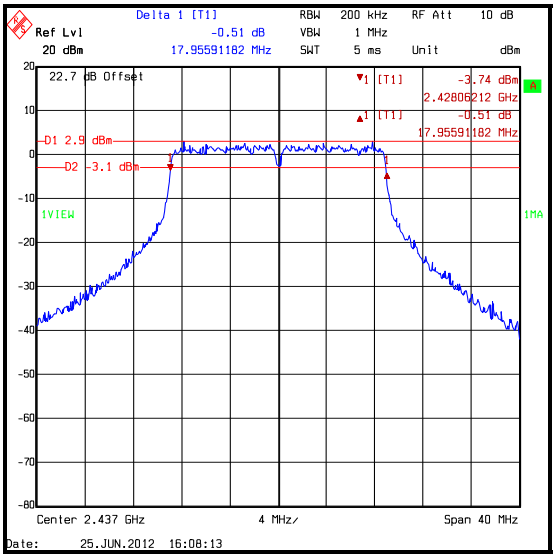
Transmitter 6 dB Bandwidth (continued)

Results: 802.11n / 20 MHz / 72.2 Mbps

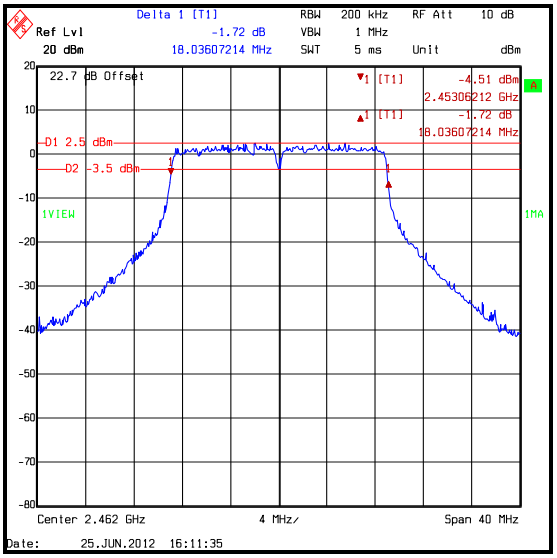
Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	18.036	≥0.5	17.536	Complied
Middle	17.956	≥0.5	17.456	Complied
Top	18.036	≥0.5	17.536	Complied



Bottom channel



Middle channel



Top channel

5.2.5. Transmitter Power Spectral Density

Test Summary:

Test Engineer:	David Doyle	**Test Date:**	25 June 2012
Test Sample IMEI:	359952040036344		

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

Environmental Conditions:

Temperature (°C):	25
Relative Humidity (%):	35

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 as the limit is specified in a 3 kHz bandwidth. The correction factor (BWCF) was calculated as shown below:

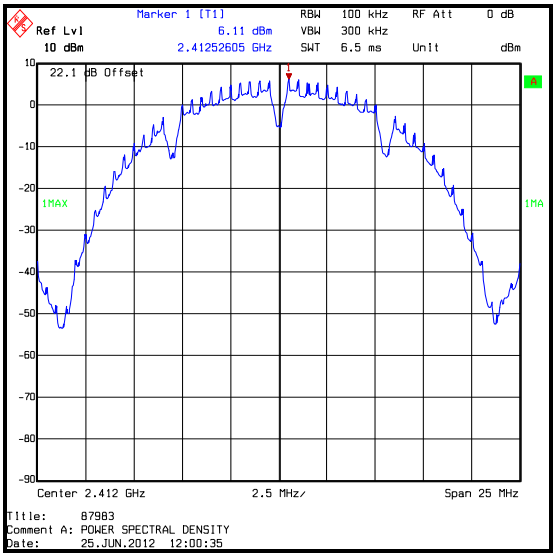
$$10 \log_{10} (3 \text{ kHz} / 100 \text{ kHz}) = -15.2 \text{ dB}.$$

Results: 802.11b / 1 Mbps

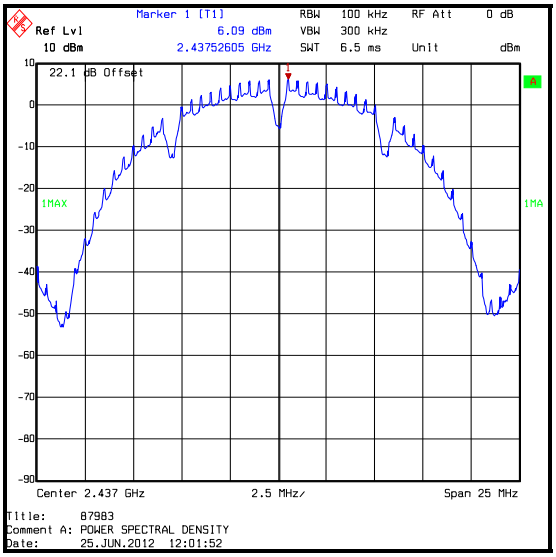
Channel	Output Power (dBm / 100 kHz)	Output Power (dBm / 3 kHz)	Limit (dBm / 3 kHz)	Margin (dB)	Result
Bottom	6.1	-9.1	8.0	17.1	Complied
Middle	6.1	-9.1	8.0	17.1	Complied
Top	5.8	-9.4	8.0	17.4	Complied

Transmitter Power Spectral Density (continued)

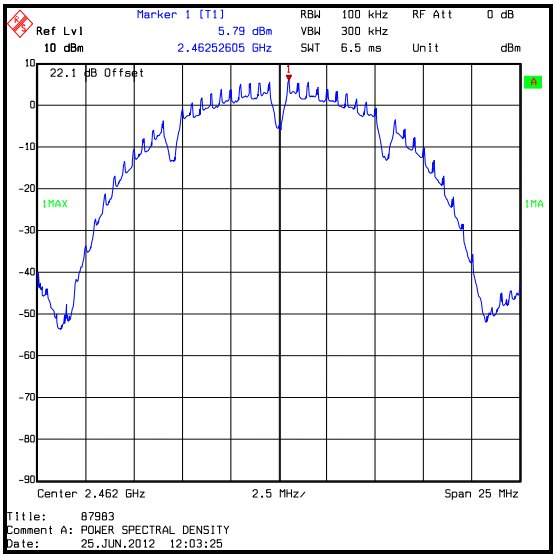
Results: 802.11b / 1 Mbps



Bottom channel



Middle channel



Top channel

5.2.6. Transmitter Maximum Peak Output Power

Test Summary:

Test Engineer:	Mark Percival	**Test Date:**	25 June 2012
Test Sample IMEI:	359952040036344		

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

Environmental Conditions:

Temperature (°C):	24
Relative Humidity (%):	40

Note(s):

1. Conducted power tests were performed using a spectrum analyser in accordance with FCC KDB 558074 Section 5.2.1.2 Measurement Procedure PK2. The spectrum analyser was connected to the RF port on the EUT using suitable attenuation and RF cable.
2. Each supported modulation type was tested at the highest data rate.

Results: 802.11b / BPSK / 1 Mbps

Conducted Peak Limit Comparison

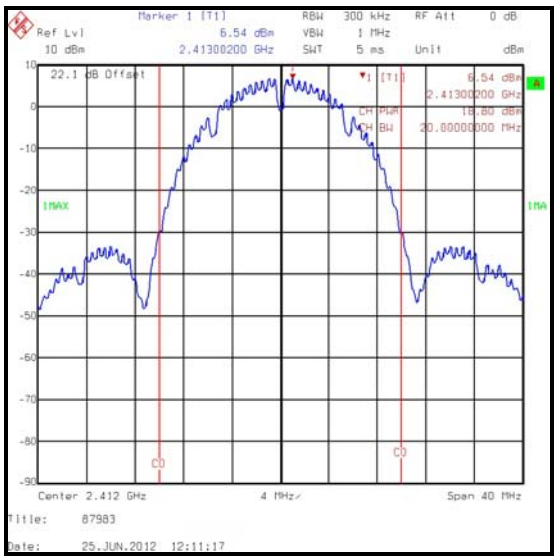
Channel	Conducted Peak Power (dBm)	Conducted Peak Power Limit (dBm)	Margin (dB)	Result
Bottom	18.8	30.0	11.2	Complied
Middle	18.4	30.0	11.6	Complied
Top	18.2	30.0	11.8	Complied

De Facto EIRP Limit Comparison

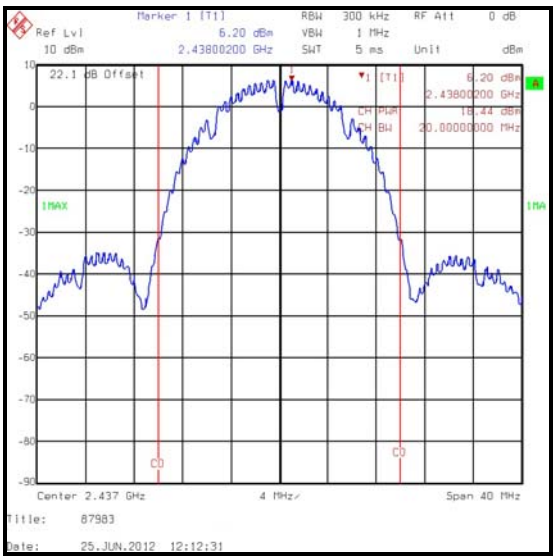
Channel	Conducted Peak Power (dBm)	Declared Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	18.8	-3.4	15.4	36.0	20.6	Complied
Middle	18.4	-3.1	15.3	36.0	20.7	Complied
Top	18.2	-3.4	14.8	36.0	21.2	Complied

Transmitter Maximum Peak Output Power (continued)

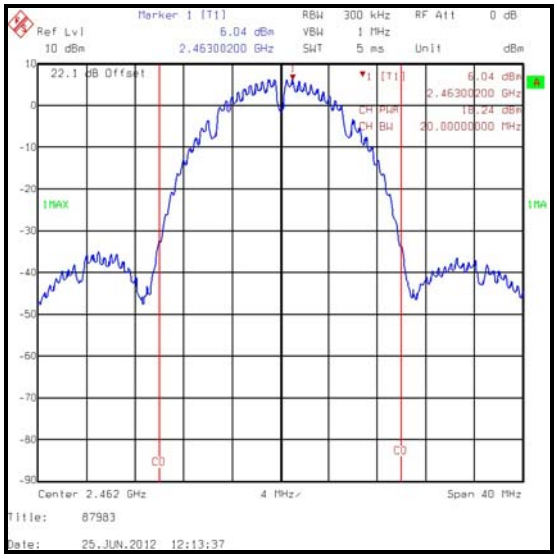
Results: 802.11b / BPSK / 1 Mbps



Bottom channel



Middle channel



Top channel

Transmitter Maximum Peak Output Power (continued)

Results: 802.11b / QPSK / 11 Mbps

Conducted Peak Limit Comparison

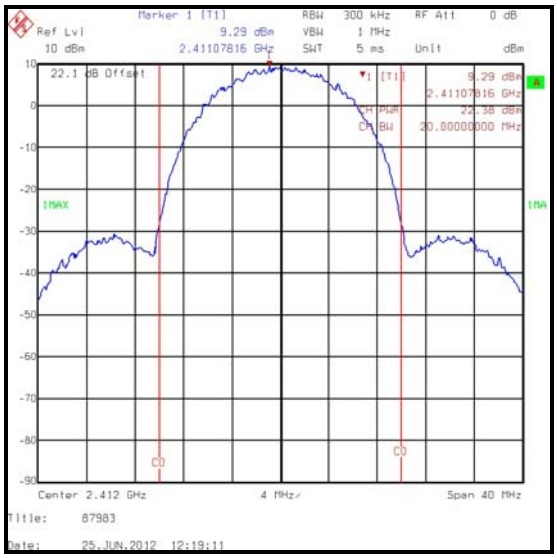
Channel	Conducted Peak Power (dBm)	Conducted Peak Power Limit (dBm)	Margin (dB)	Result
Bottom	22.4	30.0	7.6	Complied
Middle	22.2	30.0	7.8	Complied
Top	21.9	30.0	1.1	Complied

De Facto EIRP Limit Comparison

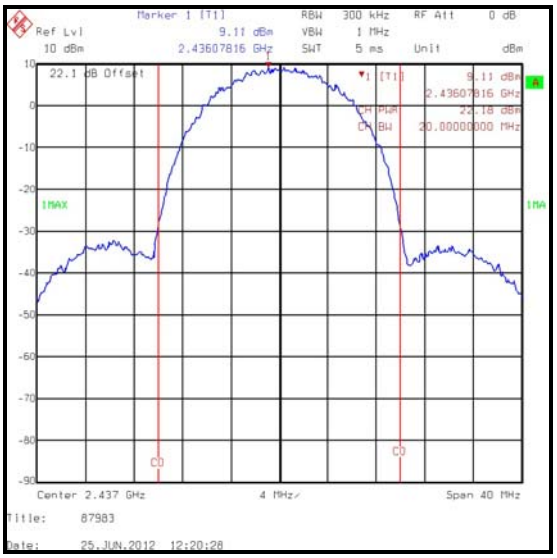
Channel	Conducted Peak Power (dBm)	Declared Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	22.4	-3.4	19.0	36.0	17.0	Complied
Middle	22.2	-3.1	19.1	36.0	16.9	Complied
Top	21.9	-3.4	18.5	36.0	17.5	Complied

Transmitter Maximum Peak Output Power (continued)

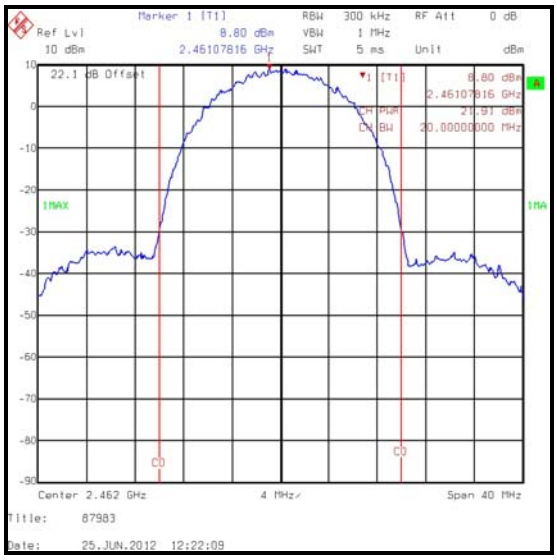
Results: 802.11b / QPSK / 11 Mbps



Bottom channel



Middle channel



Top channel

Transmitter Maximum Peak Output Power (continued)

Results: 802.11g / BPSK / 9 Mbps

Conducted Peak Limit Comparison

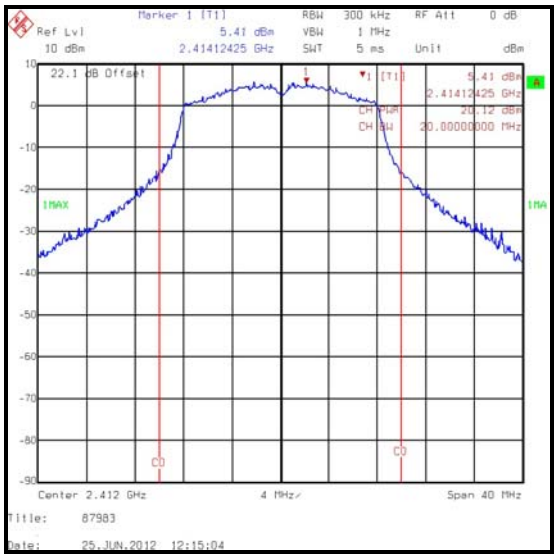
Channel	Conducted Peak Power (dBm)	Conducted Peak Power Limit (dBm)	Margin (dB)	Result
Bottom	20.1	30.0	9.9	Complied
Middle	20.0	30.0	10.0	Complied
Top	19.8	30.0	10.2	Complied

De Facto EIRP Limit Comparison

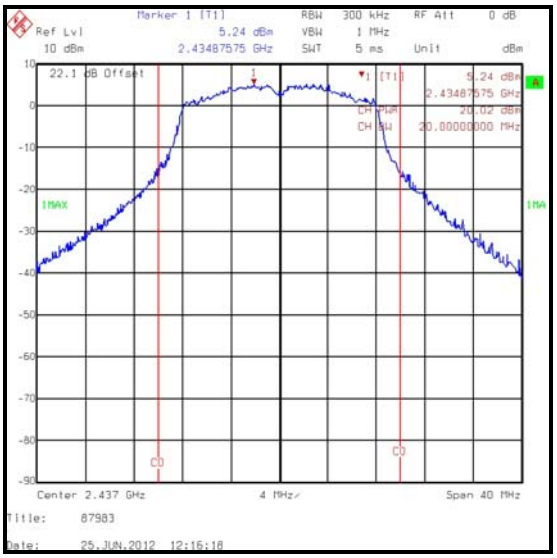
Channel	Conducted Peak Power (dBm)	Declared Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	20.1	-3.4	16.7	36.0	19.3	Complied
Middle	20.0	-3.1	16.9	36.0	19.1	Complied
Top	19.8	-3.4	16.4	36.0	19.6	Complied

Transmitter Maximum Peak Output Power (continued)

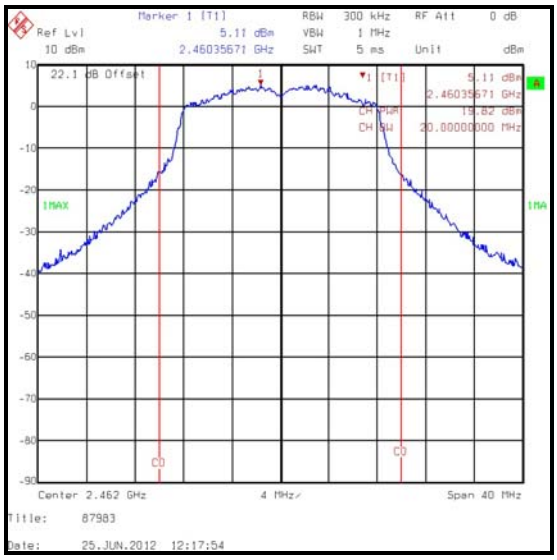
Results: 802.11g / BPSK / 9 Mbps



Bottom channel



Middle channel



Top channel

Transmitter Maximum Peak Output Power (continued)

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

Conducted Peak Limit Comparison

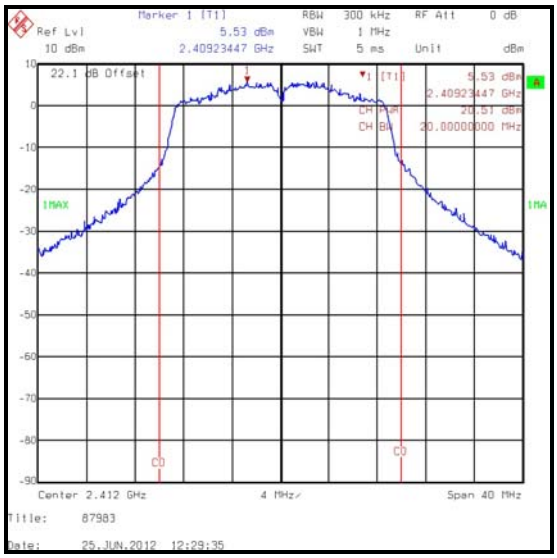
Channel	Conducted Peak Power (dBm)	Conducted Peak Power Limit (dBm)	Margin (dB)	Result
Bottom	20.5	30.0	9.5	Complied
Middle	20.4	30.0	9.6	Complied
Top	20.0	30.0	10.0	Complied

De Facto EIRP Limit Comparison

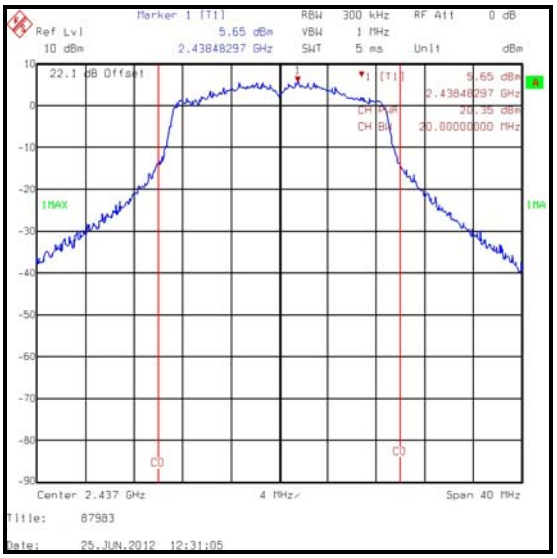
Channel	Conducted Peak Power (dBm)	Declared Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	20.5	-3.4	17.1	36.0	18.9	Complied
Middle	20.4	-3.1	17.3	36.0	18.7	Complied
Top	20.0	-3.4	16.6	36.0	19.4	Complied

Transmitter Maximum Peak Output Power (continued)

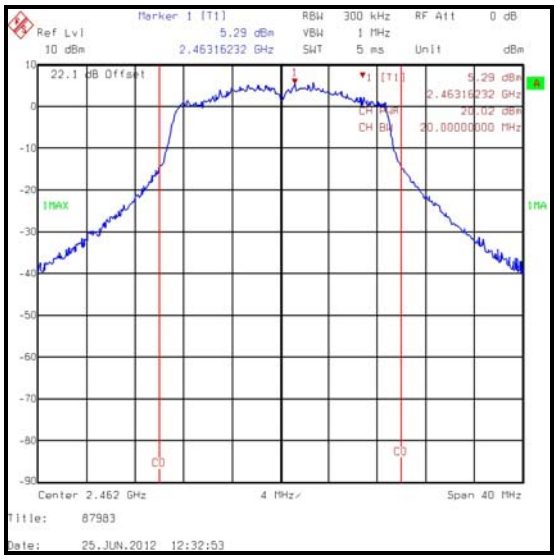
Results: 802.11n / 20 MHz / QPSK / 21.7 Mbps



Bottom channel



Middle channel



Top channel

Transmitter Maximum Peak Output Power (continued)

Results: 802.11n / 20 MHz / 16QAM / 43.3 Mbps

Conducted Peak Limit Comparison

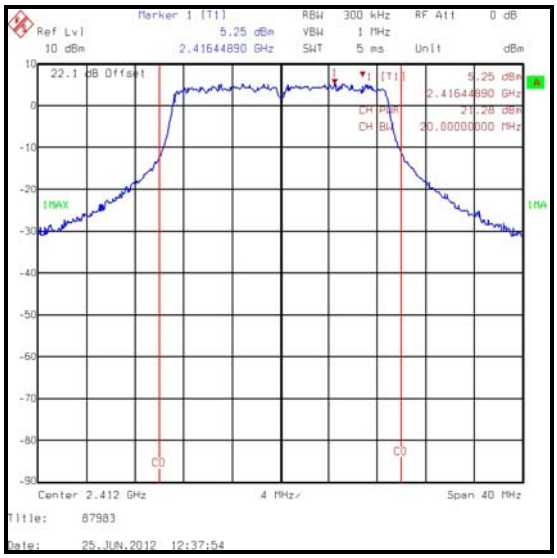
Channel	Conducted Peak Power (dBm)	Conducted Peak Power Limit (dBm)	Margin (dB)	Result
Bottom	21.3	30.0	8.7	Complied
Middle	21.1	30.0	8.9	Complied
Top	20.4	30.0	9.6	Complied

De Facto EIRP Limit Comparison

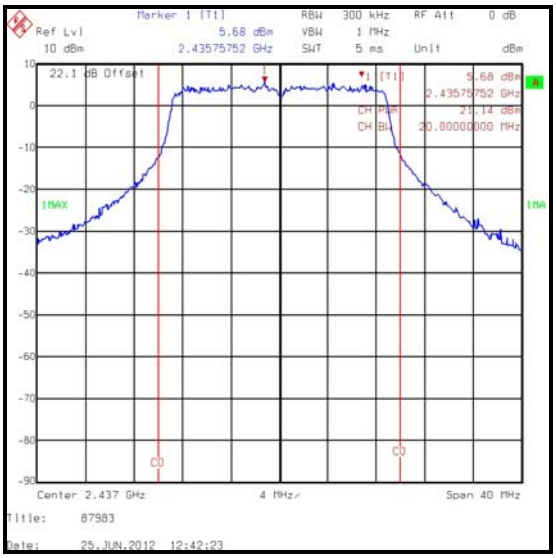
Channel	Conducted Peak Power (dBm)	Declared Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	21.3	-3.4	17.9	36.0	18.1	Complied
Middle	21.1	-3.1	18.0	36.0	18.0	Complied
Top	20.4	-3.4	17.0	36.0	19.0	Complied

Transmitter Maximum Peak Output Power (continued)

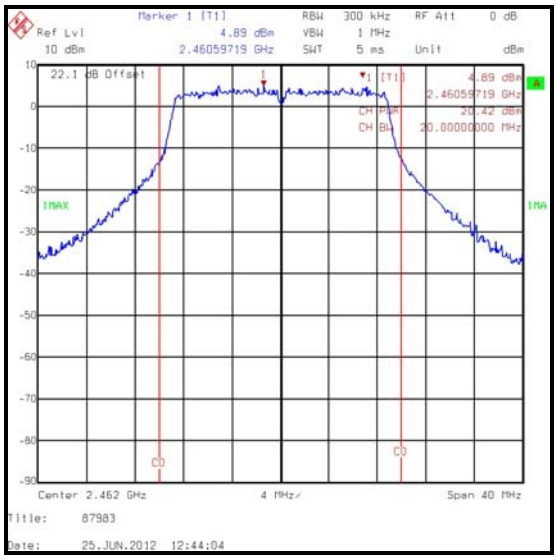
Results: 802.11n / 20 MHz / 16QAM / 43.3 Mbps



Bottom channel



Middle channel



Top channel

Transmitter Maximum Peak Output Power (continued)

Results: 802.11n / 20 MHz / 64QAM / 72.2 Mbps

Conducted Peak Limit Comparison

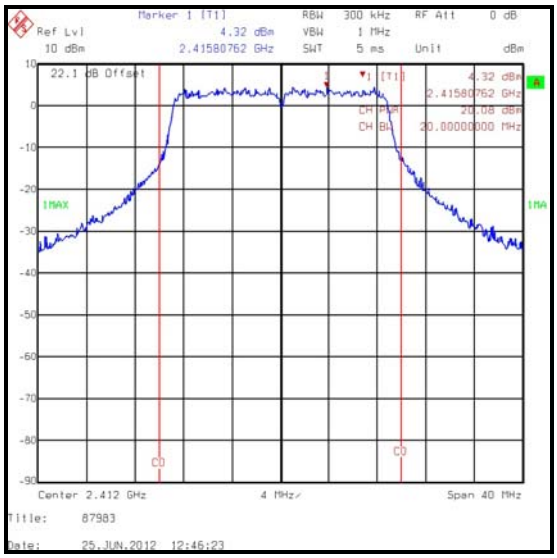
Channel	Conducted Peak Power (dBm)	Conducted Peak Power Limit (dBm)	Margin (dB)	Result
Bottom	20.1	30.0	9.9	Complied
Middle	20.2	30.0	9.8	Complied
Top	19.6	30.0	10.4	Complied

De Facto EIRP Limit Comparison

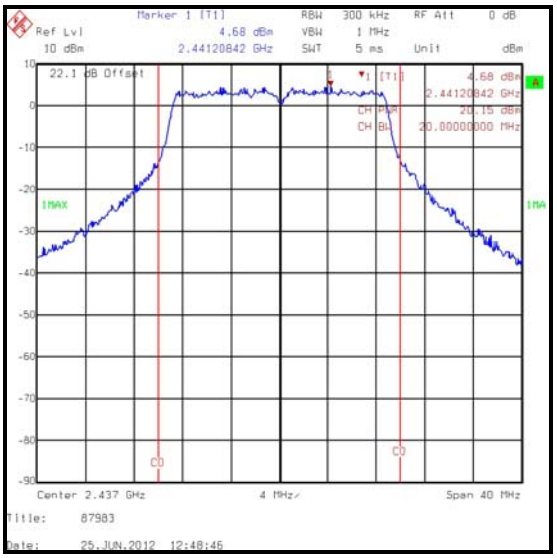
Channel	Conducted Peak Power (dBm)	Declared Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	20.1	-3.4	16.7	36.0	19.3	Complied
Middle	20.2	-3.1	17.1	36.0	18.9	Complied
Top	19.6	-3.4	16.2	36.0	19.8	Complied

Transmitter Maximum Peak Output Power (continued)

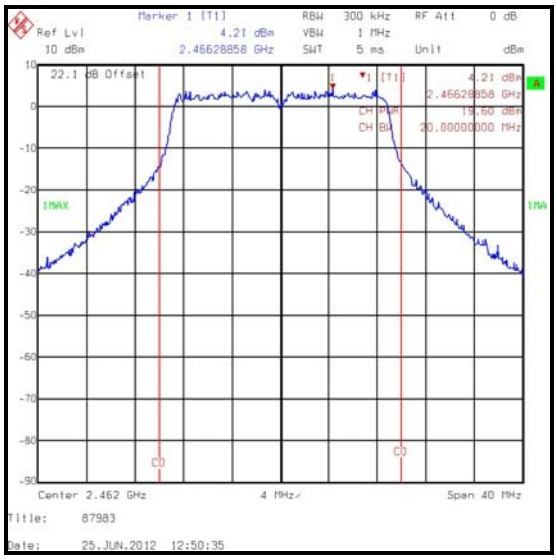
Results: 802.11n / 20 MHz / 64QAM / 72.2 Mbps



Bottom channel



Middle channel



Top channel

5.2.7. Transmitter Radiated Emissions

Test Summary:

Test Engineer:	Nick Steele	**Test Date:**	07 June 2012
Test Sample IMEI:	359952040036328		

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):	30
Relative Humidity (%):	27

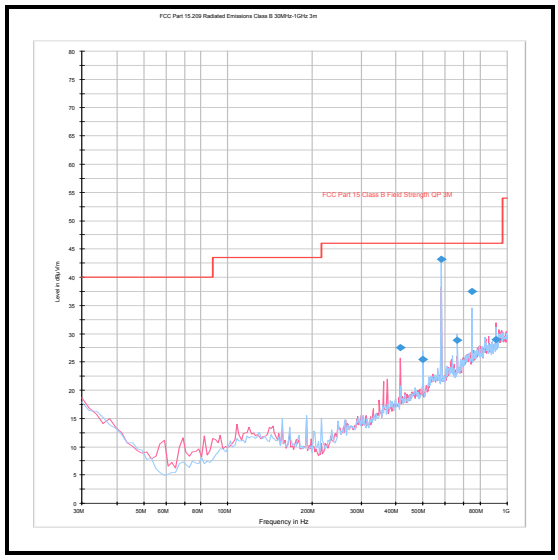
Results: Top Channel / 802.11b / 11 Mbps

Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
930.020	Horizontal	30.8	54.0	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. 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. 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.
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 Engineers:	Nick Steele & David Doyle	**Test Date:**	31 May 2012
Test Sample IMEI:	359952040036328		

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):	24
Relative Humidity (%):	42

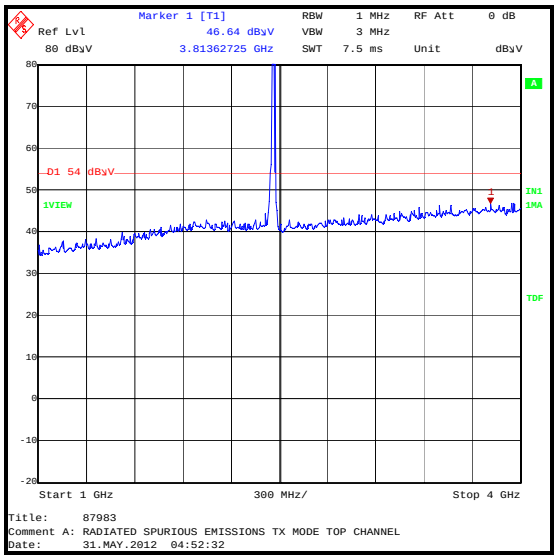
Results:

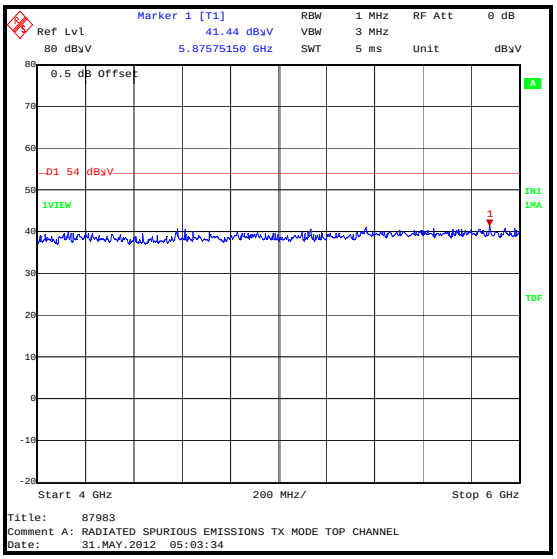
Frequency (MHz)	Antenna Polarity	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
24747.495	Vertical	49.8	54.0	4.2	Complied

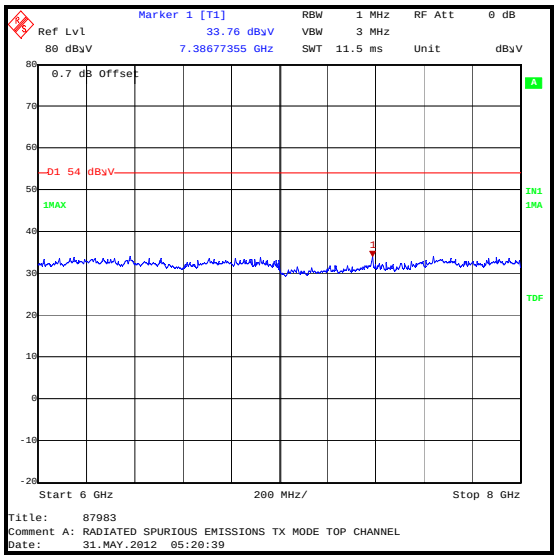
Note(s):

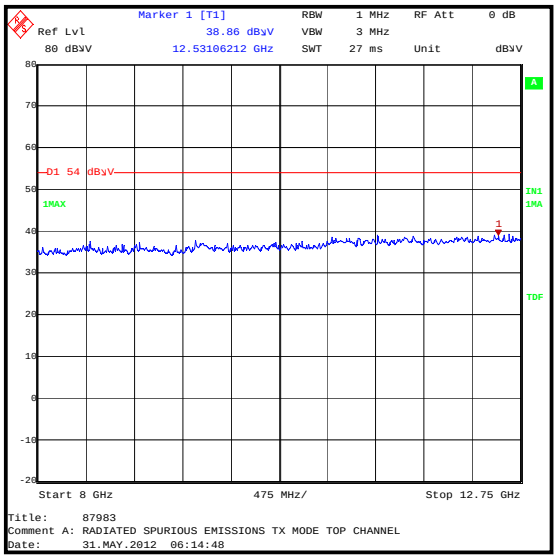
1. The final measured value, for the given emission, in the table above incorporates the calibrated antenna factor and cable loss
2. No spurious emissions were detected above the noise floor of the measuring receiver therefore the highest peak noise floor reading of the measuring receiver was recorded 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)

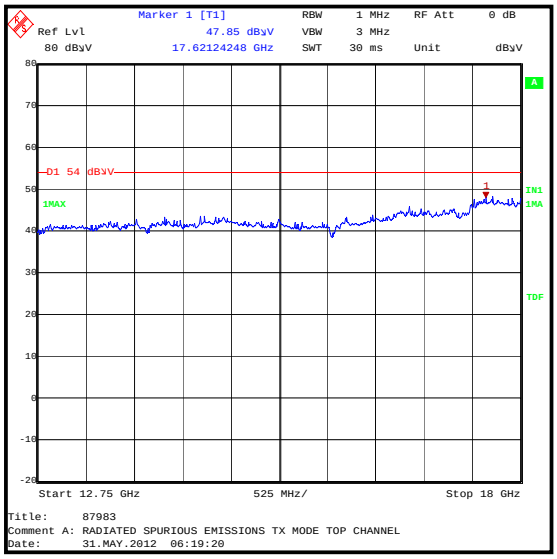


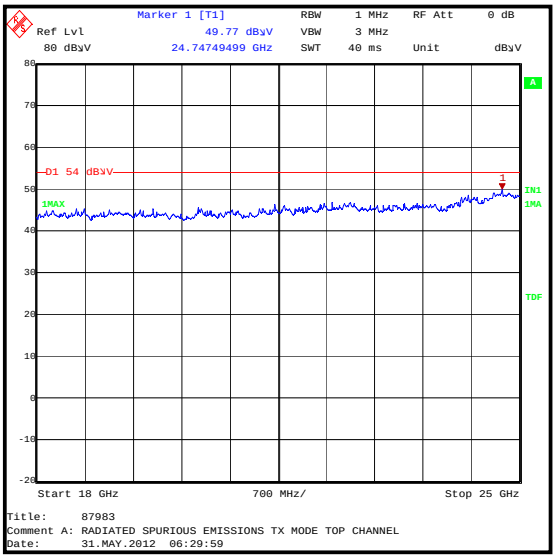






Transmitter Radiated Emissions (continued)





5.2.8. Transmitter Band Edge Radiated Emissions

Test Summary:

Test Engineer:	David Doyle	**Test Dates:**	31 May 2012 & 25 June 2012
Test Sample IMEI:	359952040036328		

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 to 24
Relative Humidity (%):	41 to 44

Note(s):

1. The final measured value, for the given emission, in the table below, incorporates the calibrated antenna factor and cable loss.
2. The highest data rate for each supported modulation type was tested.
3. *-20 dBc limit applied.

Results: Peak / 802.11b / BPSK / 1 Mbps

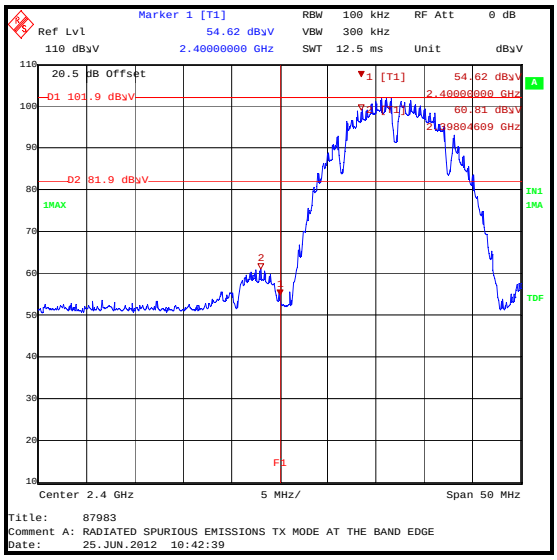
Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
2398.0	60.8	81.9*	21.1	Complied
2400	54.6	81.9*	27.3	Complied
2483.5	61.4	74.0	12.6	Complied

Results: Average / 802.11b / BPSK / 1 Mbps

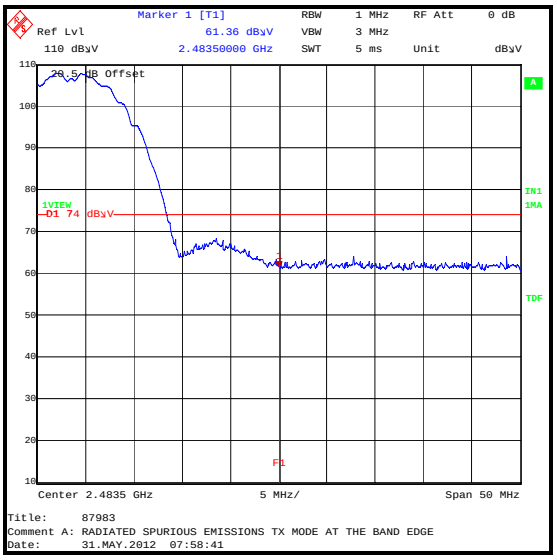
Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
2483.5	49.2	54.0	4.8	Complied

Transmitter Band Edge Radiated Emissions (continued)

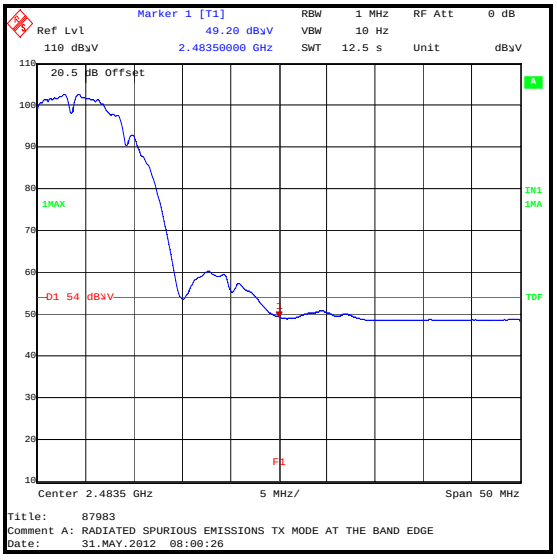
Results: 802.11b / BPSK / 1 Mbps



Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement



Upper Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (continued)

Results: Peak / 802.11b / QPSK / 11 Mbps

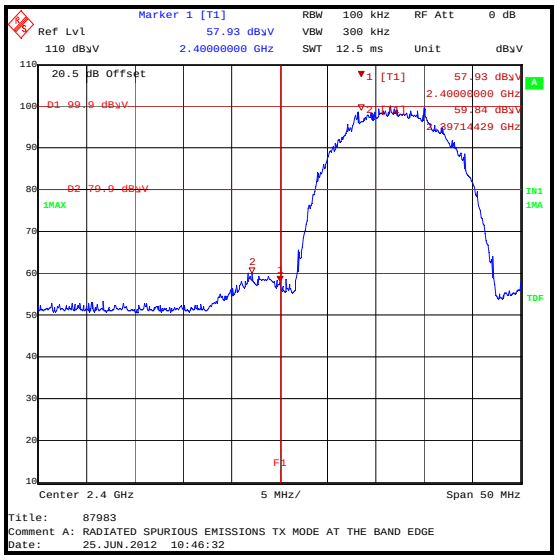
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2397.1	59.8	79.9*	20.1	Complied
2400	57.9	79.9*	22.0	Complied
2483.5	62.5	74.0	11.5	Complied

Results: Average / 802.11b / QPSK / 11 Mbps

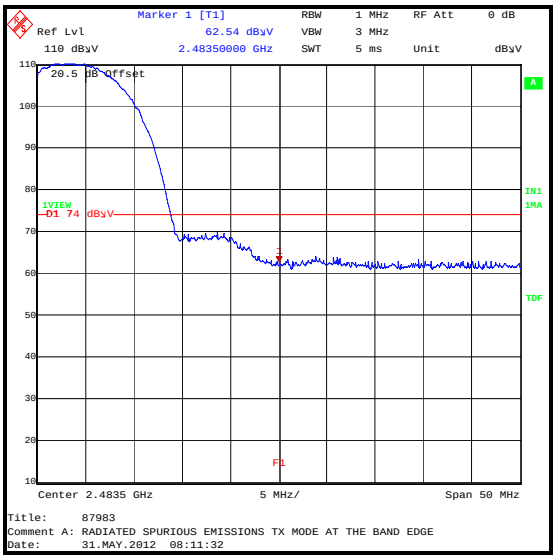
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	49.5	54.0	4.5	Complied

Transmitter Band Edge Radiated Emissions (continued)

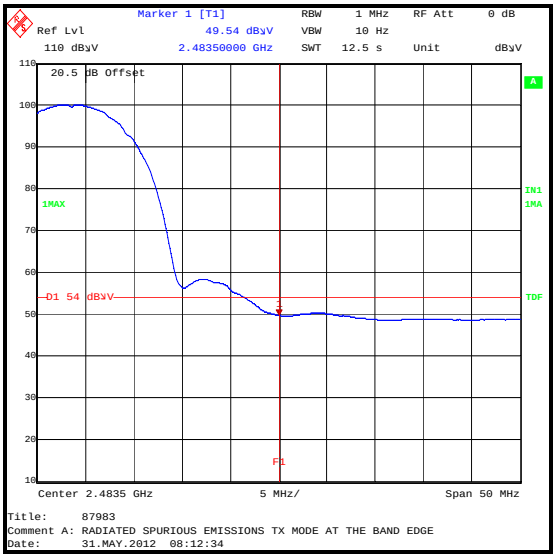
Results: 802.11b / QPSK / 11 Mbps



Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement



Upper Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (continued)

Results: Peak / 802.11g / BPSK / 9 Mbps

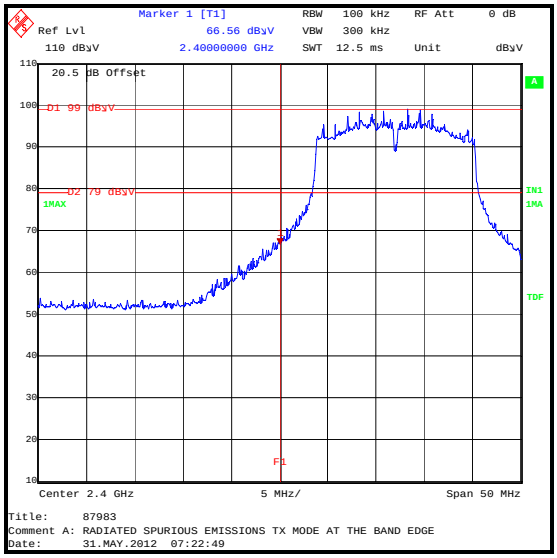
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2400	66.6	79.0*	12.4	Complied
2483.5	62.9	74.0	11.1	Complied

Results: Average / 802.11g / BPSK / 9 Mbps

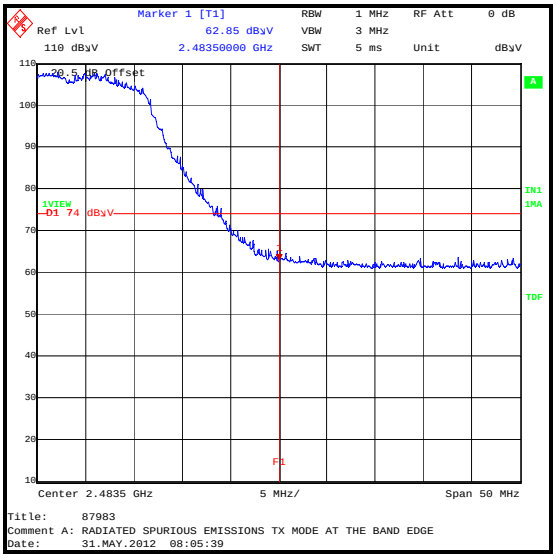
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	50.9	54.0	3.1	Complied

Transmitter Band Edge Radiated Emissions (continued)

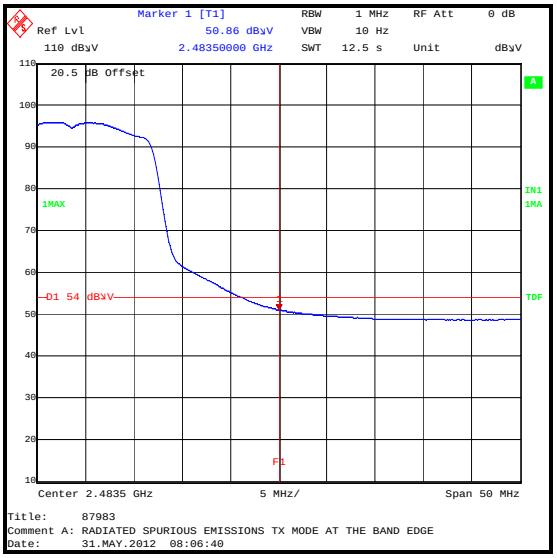
Results: 802.11g / BPSK / 9 Mbps



Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement



Upper Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (continued)

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

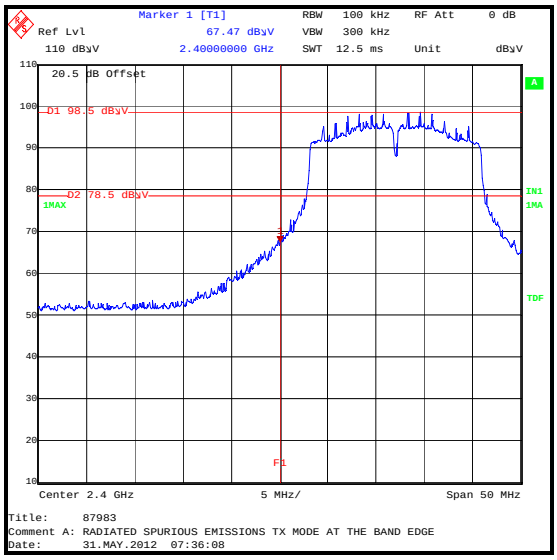
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2400	67.5	78.5*	11.0	Complied
2483.5	65.9	74.0	8.1	Complied

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

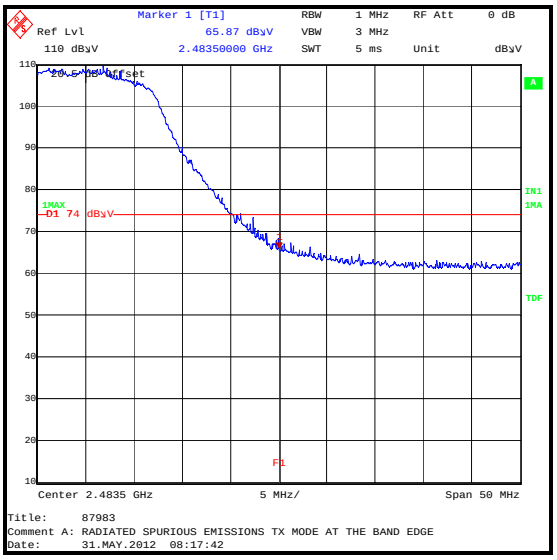
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	51.0	54.0	3.0	Complied

Transmitter Band Edge Radiated Emissions (continued)

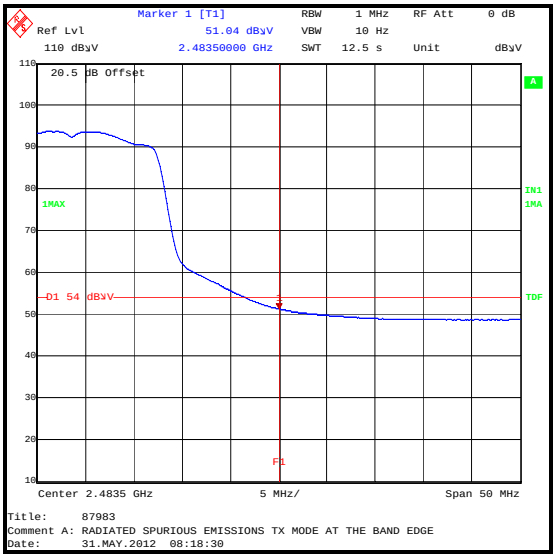
Results: 802.11n / 20 MHz / QPSK / 21.7 Mbps



Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement



Upper Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (continued)

Results: Peak / 802.11n / 20 MHz / 16QAM / 43.3 Mbps

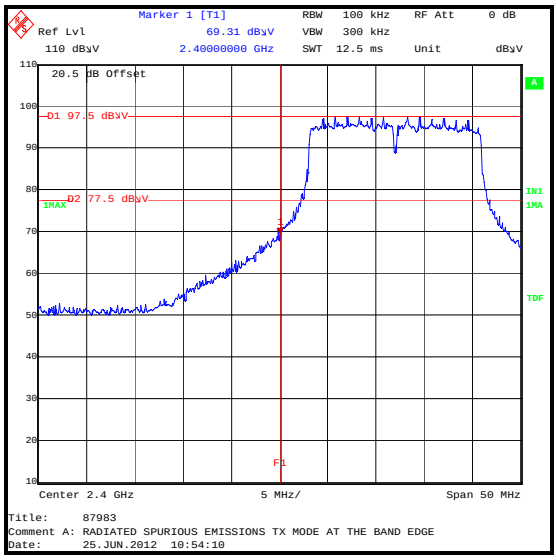
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2400	69.3	77.5*	8.2	Complied
2483.5	67.9	74.0	6.1	Complied

Results: Average / 802.11n / 20 MHz / 16QAM / 43.3 Mbps

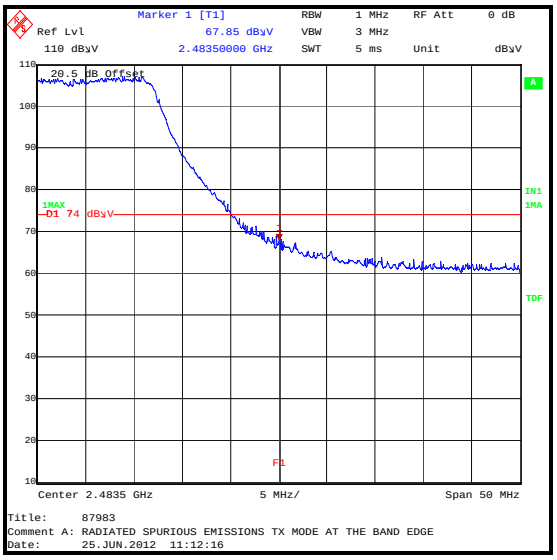
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	50.9	54.0	3.1	Complied

Transmitter Band Edge Radiated Emissions (continued)

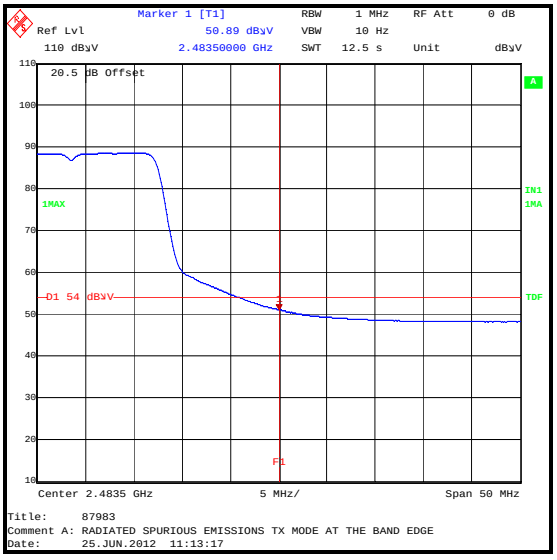
Results: 802.11n / 20 MHz / 16QAM / 43.3 Mbps



Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement



Upper Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (continued)

Results: Peak / 802.11n / 20 MHz / 64QAM / 72.2 Mbps

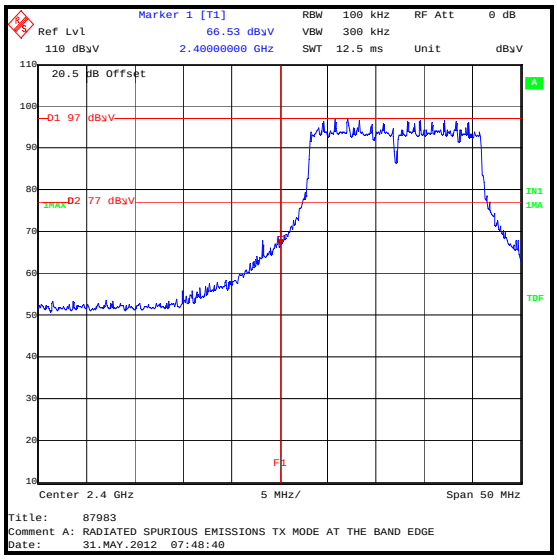
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2400	66.5	77.0*	10.5	Complied
2483.5	64.2	74.0	9.8	Complied

Results: Average / 802.11n / 20 MHz / 64QAM / 72.2 Mbps

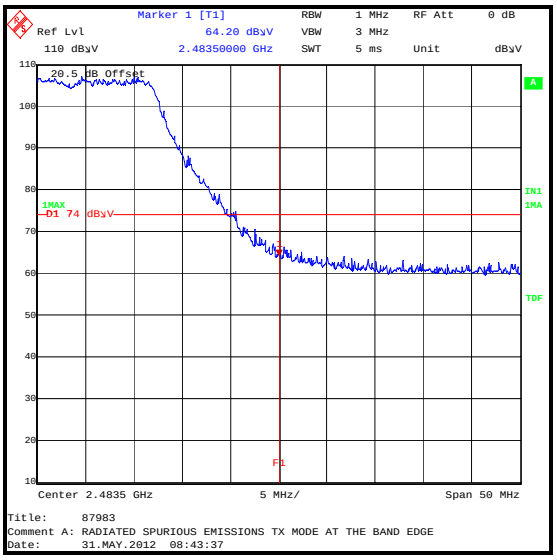
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	50.7	54.0	3.3	Complied

Transmitter Band Edge Radiated Emissions (continued)

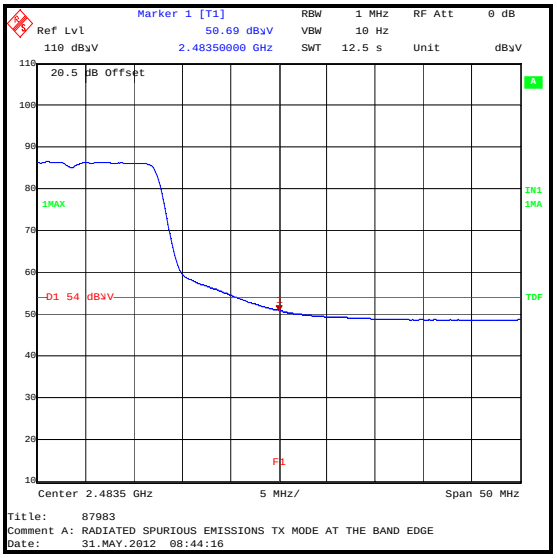
Results: 802.11n / 20 MHz / 64QAM / 72.2 Mbps



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%	±0.28 dB
Spectral Power Density	2.4 GHz to 2.4835 GHz	95%	±2.62 dB
6 dB Bandwidth	2.4 GHz to 2.4835 GHz	95%	±0.92 ppm
Radiated Spurious Emissions	30 MHz to 25 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)
A1393	Attenuator	Huber & Suhner	6820.17.B	757456	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
A1975	High Pass Filter	AtlanTecRF	AFH-03000	090424010	15 Mar 2013	12
A253	Antenna	Flann Microwave	12240-20	128	09 Oct 2012	12
A254	Antenna	Flann Microwave	14240-20	139	09 Oct 2012	12
A255	Antenna	Flann Microwave	16240-20	519	09 Oct 2012	12
A256	Antenna	Flann Microwave	18240-20	400	09 Oct 2012	12
A436	Antenna	Flann	20240-20	330	09 Oct 2012	12
A553	Antenna	Chase	CBL6111A	1593	15 Feb 2013	12
A649	LISN	Rohde & Schwarz	ESH3-Z5	825562/008	19 Apr 2013	12
G0543	Amplifier	Sonoma	310N	230801	13 Jul 2012	3
K0001	5m RSE Chamber	Rainford EMC	N/A	N/A	31 Aug 2012	12
K0002	3m RSE Chamber	Rainford EMC	N/A	N/A	09 Oct 2012	12
M1124	Spectrum Analyser	Rohde & Schwarz	ESI26	100046K	29 Jun 2012	12
M1269	DMM	Fluke	179	90250210	20 Jul 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
S0523	PSU	TTi	PL320	224235	Calibrated before use	-

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