TEST REPORT
FROM
RFI GLOBAL SERVICES LTD

Test of: NTT DoCoMo P-02D

FCC ID: UCE211042A

To: FCC Part 15.247: 2010 Subpart C

Test Report Serial No:
RFI-RPT-RP83529JD07A V3.0

Version 3.0 Supersedes All Previous Versions

This Test Report Is Issued Under The Authority Of Chris Guy, Head of Global Approvals: 	
Checked By:	Ian Watch
Signature: 	
Date of Issue:	12 October 2011

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Registered in England and Wales. Company number:2117901

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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) 2010: 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) 2010: Part 15 Subpart B (Unintentional Radiators) - Sections 15.107 and 15.109
Specification Reference:	47CFR15.207 and 47CFR15.209
Specification Title:	Code of Federal Regulations Volume 47 (Telecommunications) 2010: Part 15 Subpart C (Intentional Radiators) - Sections 15.207 and 15.209
Site Registration:	FCC: 209735
Location of Testing:	RFI Global Services Ltd, Wade Road, Basingstoke, Hampshire, RG24 8AH.
Test Dates:	08 September 2011 to 25 September 2011

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(b)(3)	Transmitter Average Conducted Output Power	Note 1
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		

Note 1: The measurement was performed to support SAR tests.

2.3. Methods and Procedures

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

2.4. Deviations from the Test Specification

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

3. Equipment Under Test (EUT)

3.1. Identification of Equipment Under Test (EUT)

Brand Name:	NTT DoCoMo
Model Name or Number:	P-02D
IMEI:	357867040012115 *(Radiated sample #1)*
Hardware Version Number:	Revision C
Software Version Number:	ACPU: totoro-ginger-dcm-07-0363, CCPU: R1D
FCC ID:	UCE211042A

Brand Name:	NTT DoCoMo
Model Name or Number:	P-02D
IMEI:	357867040012099 *(Radiated sample #2)*
Hardware Version Number:	Revision C
Software Version Number:	ACPU: totoro-ginger-dcm-07-0317, CCPU: R1D
FCC ID:	UCE211042A

Brand Name:	NTT DoCoMo
Model Name or Number:	P-02D
IMEI:	357867040012198 *(Conducted RF port sample)*
Hardware Version Number:	Revision C
Software Version Number:	ACPU: totoro-ginger-dcm-07-0363, CCPU: R1D
FCC ID:	UCE211042A

Brand Name:	Not Stated
Description:	Battery
Model Name or Number:	P26

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

Brand Name:	NTT docomo
Description:	Desktop Charger
Model Name or Number:	P48

Identification of Equipment Under Test (continued)

Brand Name:	NTT docomo
Description:	Charge/USB Data cable
Model Name or Number:	P01

Brand Name:	NTT docomo
Description:	Personal Hands-Free
Model Name or Number:	L0ZZ00000027

3.2. Description of EUT

The equipment under test was a dual mode UMTS/GSM cellular handset with *Bluetooth*, WLAN and RFID

3.3. Modifications Incorporated in the EUT

The Customer stated that the final software version is ACPU: totoro-ginger-dcm-07-0363 CCPU: R1D.

Initial software version ACPU: totoro-ginger-dcm-07-0317 CCPU: R1D was installed in the sample with IMEI 357867040012099. The Customer stated this version was to enable operation of WLAN therefore allowing WLAN test cases to be performed. Otherwise this software is identical to the final software version and has no impact on the test results contained within this test report.

3.4. Additional Information Related to Testing

Technology Tested:	WLAN (IEEE 802.11)		
Type of Unit:	Transceiver		
Modulation Type:	BPSK, QPSK, 16QAM 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		
Declared Antenna Gain	-1.3 dBi		
Power Supply Requirement(s):	Nominal	3.7 V	
Maximum Conducted Output Power:	21.5 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:	Generic
Description:	Micro SD Memory Card
Model Name or Number:	128 MB

Brand Name:	Buffalo
Description:	USB Hub
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):

- 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 spurious emissions tests were performed with the EUT transmitting with a data rate of 11 Mbps, as this was found to have the highest power level and therefore deemed to be worst case.
- Idle and transmitter radiated spurious emissions tests were performed with the Desktop charger 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 357867040012198 was used for 6 dB bandwidth, maximum output power and power spectral density tests.
- The radiated sample with IMEI 357867040012099 was used for idle mode AC conducted emissions and idle mode radiated spurious emissions tests.
- The radiated sample with IMEI 357867040012115 was used for all other 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:	Andrew Edwards	**Test Date:**	15 September 2011
Test Sample IMEI:	357867040012099		

FCC 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 (%):	22

Results: Live / Quasi Peak

Frequency (MHz)	Line	Level (dBµV)	Limit (dBµV)	Margin (dB)	Result
1.230000	Live	30.7	56.0	25.3	Complied
1.522500	Live	23.5	56.0	32.5	Complied
1.585500	Live	24.7	56.0	31.3	Complied
1.905000	Live	22.8	56.0	33.2	Complied
1.968000	Live	22.8	56.0	33.2	Complied
1.990500	Live	22.0	56.0	34.0	Complied
2.017500	Live	21.2	56.0	34.8	Complied
2.031000	Live	22.7	56.0	33.3	Complied
2.076000	Live	20.6	56.0	35.4	Complied
2.139000	Live	20.4	56.0	35.6	Complied

Results: Live / Average

Frequency (MHz)	Line	Level (dBµV)	Limit (dBµV)	Margin (dB)	Result
0.406500	Live	27.6	47.7	20.1	Complied
0.559500	Live	19.2	46.0	26.8	Complied
2.260500	Live	15.1	46.0	30.9	Complied
2.593500	Live	10.0	46.0	36.0	Complied
2.737500	Live	9.6	46.0	36.4	Complied
2.746500	Live	9.6	46.0	36.4	Complied

Receiver/Idle Mode AC Conducted Spurious Emissions (continued)

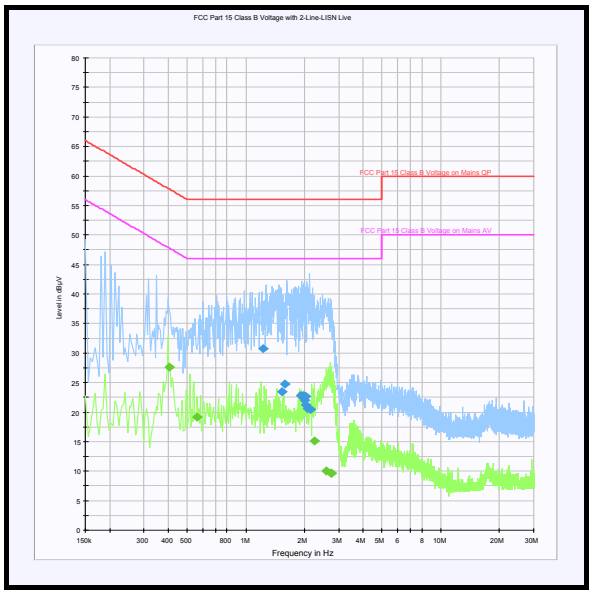
Results: Neutral / Quasi Peak

Frequency (MHz)	Line	Level (dBμV)	Limit (dBμV)	Margin (dB)	Result
0.424500	Neutral	40.4	57.4	17.0	Complied
0.721500	Neutral	36.3	56.0	19.7	Complied
1.185000	Neutral	39.9	56.0	16.1	Complied
1.594500	Neutral	40.0	56.0	16.0	Complied
2.332500	Neutral	32.3	56.0	23.7	Complied
2.332500	Neutral	33.2	56.0	22.8	Complied
2.553000	Neutral	37.9	56.0	18.1	Complied
2.562000	Neutral	36.7	56.0	19.3	Complied
2.625000	Neutral	36.0	56.0	20.0	Complied
2.643000	Neutral	34.8	56.0	21.2	Complied

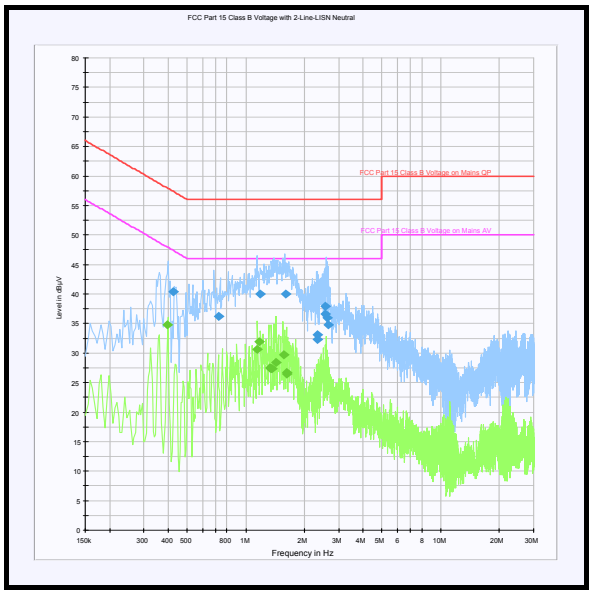
Results: Neutral / Average

Frequency (MHz)	Line	Level (dBμV)	Limit (dBμV)	Margin (dB)	Result
0.393000	Neutral	34.8	48.0	13.2	Complied
1.144500	Neutral	30.6	46.0	15.4	Complied
1.176000	Neutral	31.9	46.0	14.1	Complied
1.329000	Neutral	27.5	46.0	18.5	Complied
1.342500	Neutral	27.4	46.0	18.6	Complied
1.365000	Neutral	27.3	46.0	18.7	Complied
1.419000	Neutral	28.5	46.0	17.5	Complied
1.572000	Neutral	29.7	46.0	16.3	Complied
1.621500	Neutral	26.4	46.0	19.6	Complied
1.621500	Neutral	26.7	46.0	19.3	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:	Andrew Edwards	**Test Date:**	16 September 2011
Test Sample IMEI:	357867040012099		

FCC Part:	15.109
Test Method Used:	As detailed in ANSI C63.4 Section 8
Frequency Range:	30 MHz to 1000 MHz

Environmental Conditions:

Temperature (°C):	30
Relative Humidity (%):	31

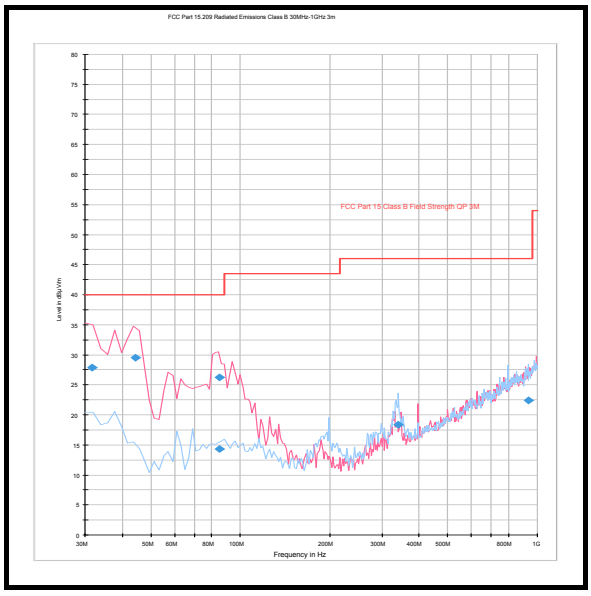
Results:

Frequency (MHz)	Antenna Polarity	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
31.640	Vertical	27.8	40.0	12.2	Complied
44.496	Vertical	29.5	40.0	10.5	Complied
84.886	Vertical	26.2	40.0	13.8	Complied
85.087	Vertical	14.3	40.0	25.7	Complied
340.382	Horizontal	18.3	46.0	27.7	Complied
933.555	Horizontal	22.4	46.0	23.6	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:	Andrew Edwards	**Test Date:**	08 September 2011
Test Sample IMEI:	357867040012099		

FCC Part:	15.109
Test Method Used:	As detailed in ANSI C63.4 Section 8
Frequency Range:	1 GHz to 12.5 GHz

Environmental Conditions:

Temperature (°C):	26
Relative Humidity (%):	32

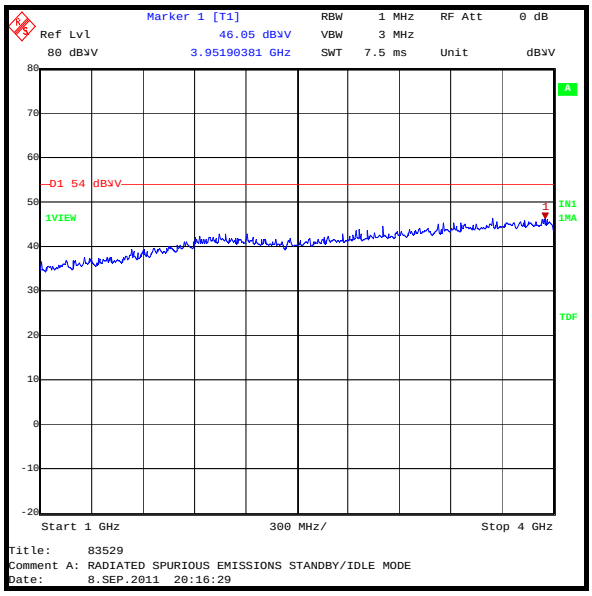
Results:

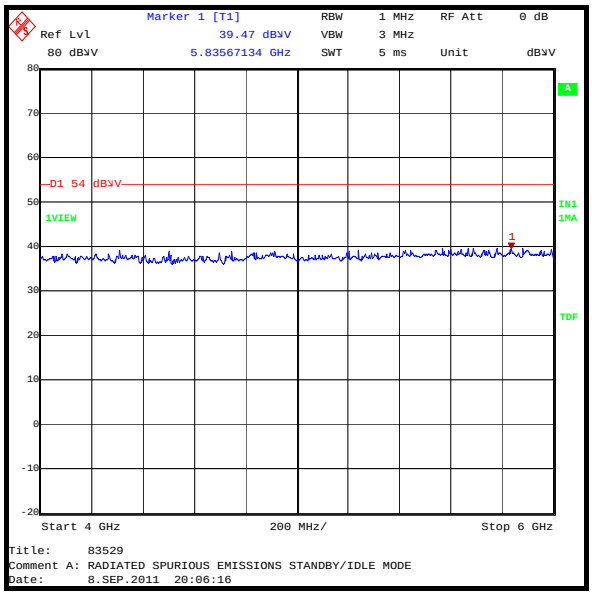
Frequency (MHz)	Antenna Polarity	Peak Level (dBµV/m)	Average Limit (dBµV/m)	Margin (dB)	Result
3951.904	Vertical	46.1	54.0	7.9	Complied

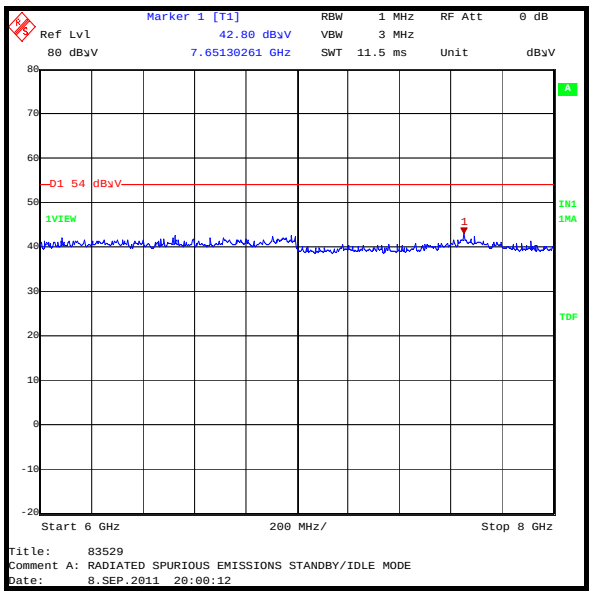
Note(s):

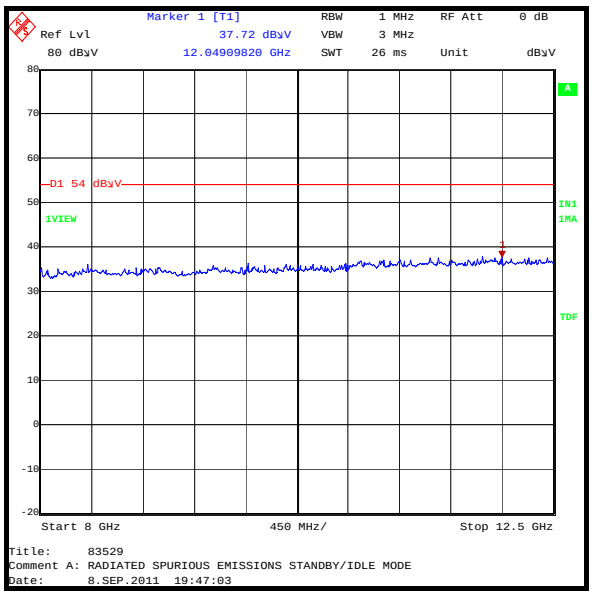
1. The final measured value, for the given emission, in the table above incorporates the calibrated antenna factor and cable loss.
2. No spurious emissions were detected above the noise floor of the measuring receiver therefore the highest peak noise floor reading of the measuring receiver was recorded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

Receiver/Idle Mode Radiated Spurious Emissions (continued)









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

5.2.3. Transmitter AC Conducted Spurious Emissions

Test Summary:

Test Engineer:	Andrew Edwards	**Test Date:**	15 September 2011
Test Sample IMEI:	357867040012115		

FCC 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 (%):	22

Results: Live / Quasi Peak

Frequency (MHz)	Line	Level (dBµV)	Limit (dBµV)	Margin (dB)	Result
0.780000	Live	36.9	56.0	19.1	Complied
1.630500	Live	38.9	56.0	17.1	Complied
1.689000	Live	38.6	56.0	17.4	Complied
1.698000	Live	38.8	56.0	17.2	Complied
1.770000	Live	38.7	56.0	17.3	Complied
1.873500	Live	38.0	56.0	18.0	Complied
1.918500	Live	37.7	56.0	18.3	Complied
2.161500	Live	39.1	56.0	16.9	Complied
2.377500	Live	40.9	56.0	15.1	Complied
2.530500	Live	42.4	56.0	13.6	Complied

Results: Live / Average

Frequency (MHz)	Line	Level (dBµV)	Limit (dBµV)	Margin (dB)	Result
0.393000	Live	29.6	18.4	48.0	Complied
0.478500	Live	25.1	21.3	46.4	Complied
1.212000	Live	24.5	21.5	46.0	Complied
1.252500	Live	25.0	21.0	46.0	Complied
1.617000	Live	25.5	20.5	46.0	Complied
2.710500	Live	31.5	14.5	46.0	Complied

Transmitter AC Conducted Spurious Emissions (continued)

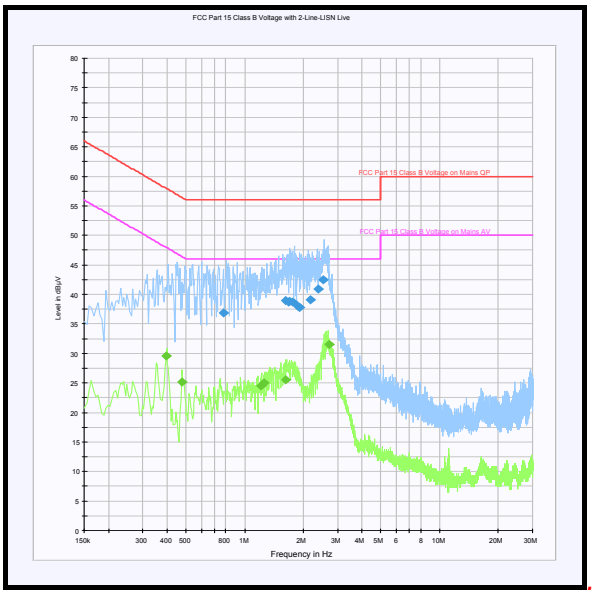
Results: Neutral / Quasi Peak

Frequency (MHz)	Line	Level (dBμV)	Limit (dBμV)	Margin (dB)	Result
0.487500	Neutral	39.8	56.2	16.4	Complied
0.487500	Neutral	39.8	56.2	16.4	Complied
0.492000	Neutral	39.0	56.1	17.1	Complied
0.537000	Neutral	37.3	56.0	18.7	Complied
0.573000	Neutral	38.2	56.0	17.8	Complied
0.681000	Neutral	40.6	56.0	15.4	Complied
1.221000	Neutral	44.5	56.0	11.5	Complied
1.423500	Neutral	46.2	56.0	9.8	Complied
2.346000	Neutral	40.8	56.0	15.2	Complied
2.535000	Neutral	42.9	56.0	13.1	Complied

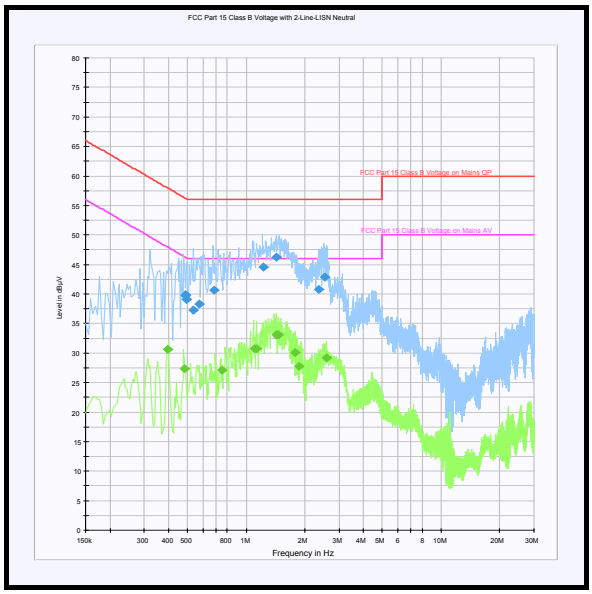
Results: Neutral / Average

Frequency (MHz)	Line	Level (dBμV)	Limit (dBμV)	Margin (dB)	Result
0.393000	Neutral	30.6	48.0	17.4	Complied
0.483000	Neutral	27.4	46.3	18.9	Complied
0.748500	Neutral	27.2	46.0	18.8	Complied
1.099500	Neutral	30.8	46.0	15.2	Complied
1.135500	Neutral	30.7	46.0	15.3	Complied
1.423500	Neutral	33.1	46.0	12.9	Complied
1.464000	Neutral	33.1	46.0	12.9	Complied
1.779000	Neutral	30.2	46.0	15.8	Complied
1.860000	Neutral	27.8	46.0	18.2	Complied
2.584500	Neutral	29.2	46.0	16.8	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:	Sarah Williams	**Test Date:**	22 September 2011 & 23 September 2011
Test Sample IMEI:	357867040012198		

FCC Part:	15.247(a)(2)
Test Method Used:	As detailed in ANSI C63.10 Section 6.9.1

Environmental Conditions:

Temperature (°C):	26
Relative Humidity (%):	31

Results: 1 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	10.120	≥0.5	9.620	Complied
Middle	9.218	≥0.5	8.718	Complied
Top	9.218	≥0.5	8.718	Complied

Results: 2 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	9.619	≥0.5	9.119	Complied
Middle	9.719	≥0.5	9.219	Complied
Top	9.820	≥0.5	9.320	Complied

Results: 5.5 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	10.321	≥0.5	9.821	Complied
Middle	10.321	≥0.5	9.821	Complied
Top	10.220	≥0.5	9.720	Complied

Transmitter 6 dB Bandwidth (continued)

Results: 11 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	10.321	≥0.5	9.821	Complied
Middle	10.120	≥0.5	9.620	Complied
Top	10.020	≥0.5	9.520	Complied

Results: 6 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	16.132	≥0.5	15.632	Complied
Middle	16.333	≥0.5	15.833	Complied
Top	16.132	≥0.5	15.632	Complied

Results: 9 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	16.132	≥0.5	15.632	Complied
Middle	16.032	≥0.5	15.532	Complied
Top	16.132	≥0.5	15.632	Complied

Results: 12 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	16.333	≥0.5	15.833	Complied
Middle	16.333	≥0.5	15.833	Complied
Top	16.333	≥0.5	15.833	Complied

Results: 18 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	16.232	≥0.5	15.732	Complied
Middle	16.232	≥0.5	15.732	Complied
Top	16.132	≥0.5	15.632	Complied

Results: 24 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	16.633	≥0.5	16.133	Complied
Middle	16.633	≥0.5	16.133	Complied
Top	16.633	≥0.5	16.133	Complied

Transmitter 6 dB Bandwidth (continued)

Results: 36 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	16.633	≥0.5	16.133	Complied
Middle	16.633	≥0.5	16.133	Complied
Top	16.633	≥0.5	16.133	Complied

Results: 48 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	16.633	≥0.5	16.133	Complied
Middle	16.633	≥0.5	16.133	Complied
Top	16.733	≥0.5	16.233	Complied

Results: 54 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	16.633	≥0.5	16.133	Complied
Middle	16.633	≥0.5	16.133	Complied
Top	16.633	≥0.5	16.133	Complied

Results: 6.5 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	17.234	≥0.5	16.734	Complied
Middle	17.335	≥0.5	16.835	Complied
Top	17.335	≥0.5	16.835	Complied

Results: 13 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	17.635	≥0.5	17.135	Complied
Middle	17.635	≥0.5	17.135	Complied
Top	17.435	≥0.5	16.935	Complied

Results: 19.5 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	17.335	≥0.5	16.835	Complied
Middle	17.635	≥0.5	17.135	Complied
Top	17.535	≥0.5	17.035	Complied

Transmitter 6 dB Bandwidth (continued)

Results: 26 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	17.936	≥0.5	17.436	Complied
Middle	17.936	≥0.5	17.436	Complied
Top	17.936	≥0.5	17.436	Complied

Results: 39 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	17.836	≥0.5	17.336	Complied
Middle	17.836	≥0.5	17.336	Complied
Top	17.836	≥0.5	17.336	Complied

Results: 52 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	17.836	≥0.5	17.336	Complied
Middle	17.836	≥0.5	17.336	Complied
Top	17.836	≥0.5	17.336	Complied

Results: 58.5 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	17.836	≥0.5	17.336	Complied
Middle	17.836	≥0.5	17.336	Complied
Top	17.836	≥0.5	17.336	Complied

Results: 65 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	17.836	≥0.5	17.336	Complied
Middle	17.936	≥0.5	17.436	Complied
Top	17.836	≥0.5	17.336	Complied

Results: 7.2 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	16.934	≥0.5	16.434	Complied
Middle	16.934	≥0.5	16.434	Complied
Top	17.134	≥0.5	16.634	Complied

Transmitter 6 dB Bandwidth (continued)

Results: 14.4 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	17.435	≥0.5	16.935	Complied
Middle	17.635	≥0.5	17.135	Complied
Top	17.435	≥0.5	16.935	Complied

Results: 21.7 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	17.234	≥0.5	16.734	Complied
Middle	17.435	≥0.5	16.935	Complied
Top	17.435	≥0.5	16.935	Complied

Results: 28.9 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	17.936	≥0.5	17.436	Complied
Middle	17.836	≥0.5	17.336	Complied
Top	17.936	≥0.5	17.436	Complied

Results: 43.3 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	17.836	≥0.5	17.336	Complied
Middle	17.836	≥0.5	17.336	Complied
Top	17.836	≥0.5	17.336	Complied

Results: 57.8 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	17.936	≥0.5	17.436	Complied
Middle	17.936	≥0.5	17.436	Complied
Top	17.936	≥0.5	17.436	Complied

Results: 65 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	17.836	≥0.5	17.336	Complied
Middle	17.936	≥0.5	17.436	Complied
Top	17.936	≥0.5	17.436	Complied

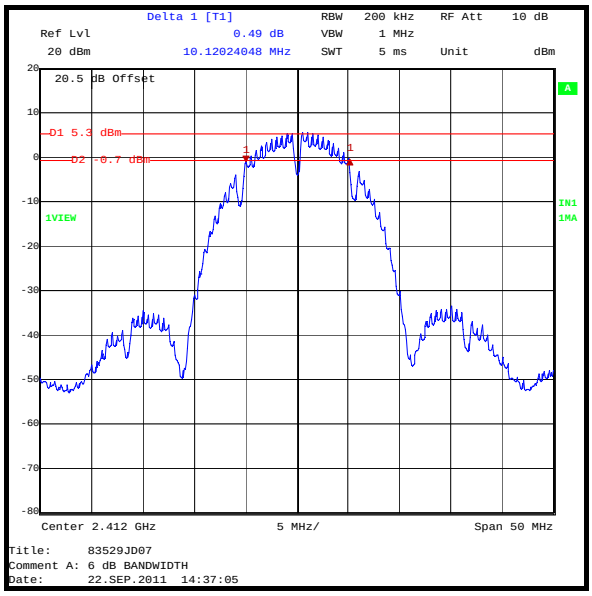
Transmitter 6 dB Bandwidth (continued)

Results: 72.2 Mbps

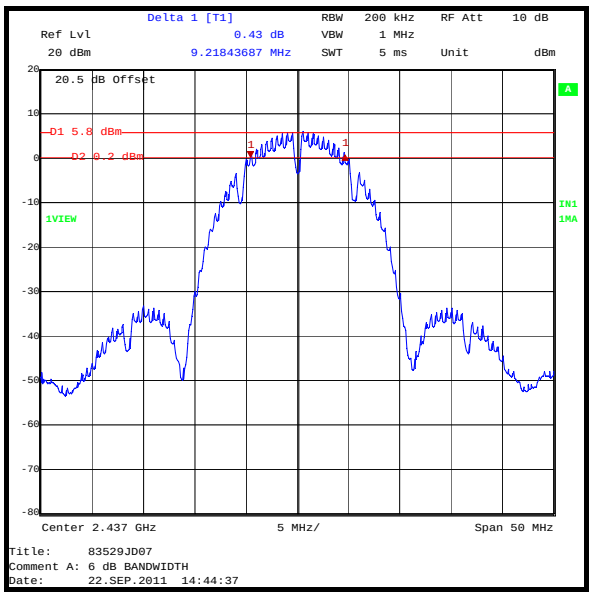
Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	17.936	≥0.5	17.436	Complied
Middle	17.836	≥0.5	17.336	Complied
Top	17.836	≥0.5	17.336	Complied

Transmitter 6 dB Bandwidth (continued)

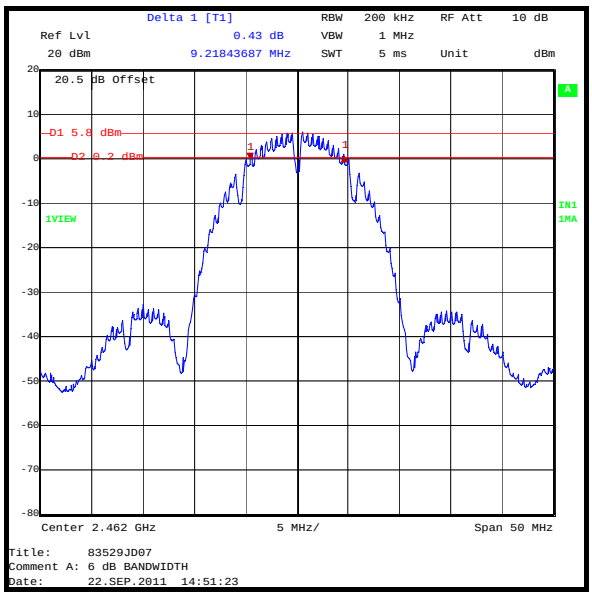
Results: 1 Mbps



Bottom channel



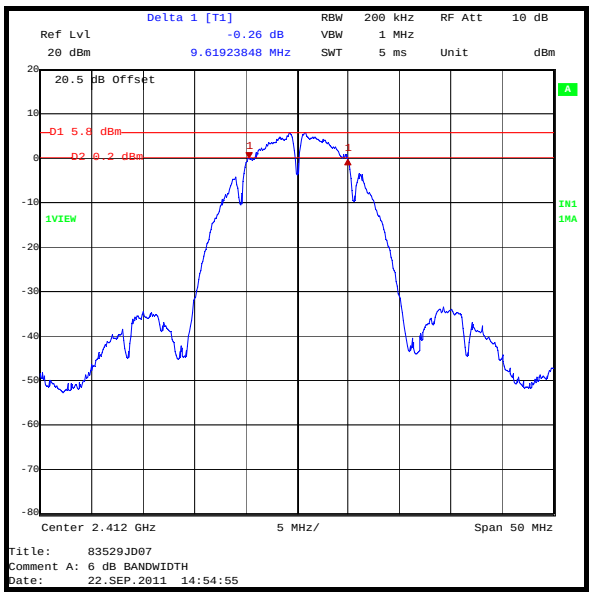
Middle channel



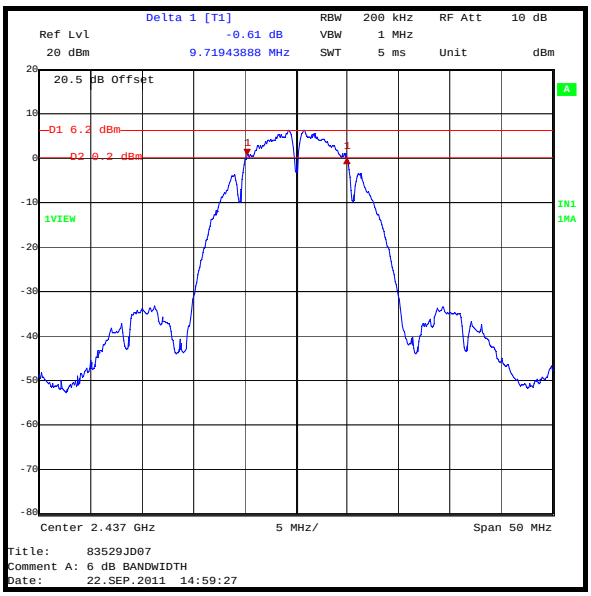
Top channel

Transmitter 6 dB Bandwidth (continued)

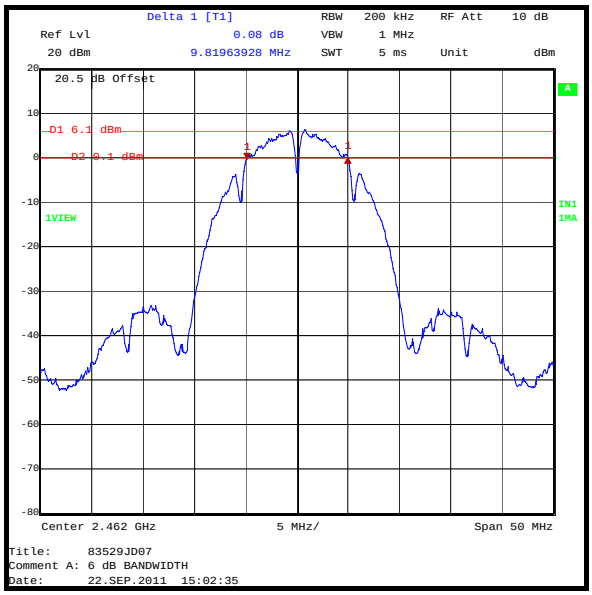
Results: 2 Mbps



Bottom channel



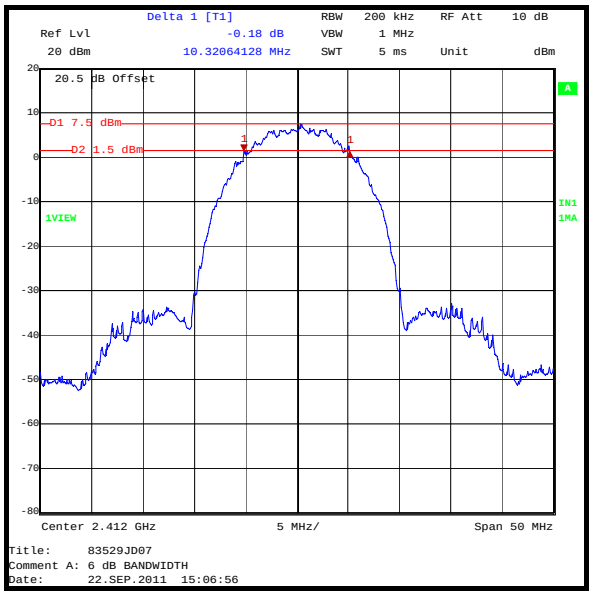
Middle channel



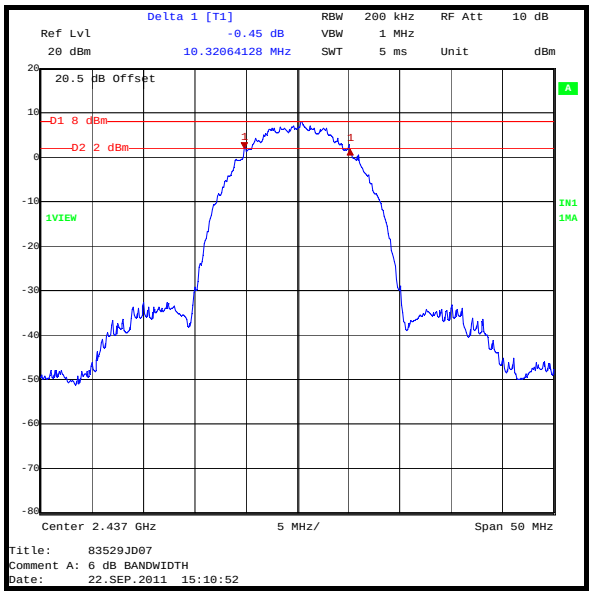
Top channel

Transmitter 6 dB Bandwidth (continued)

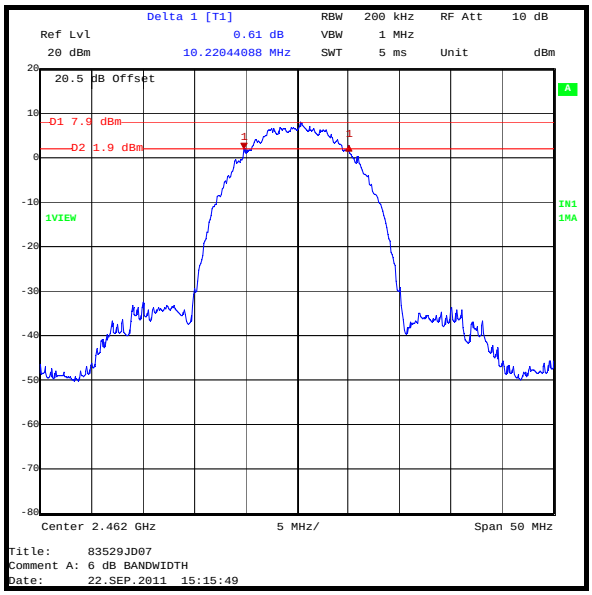
Results: 5.5 Mbps



Bottom channel



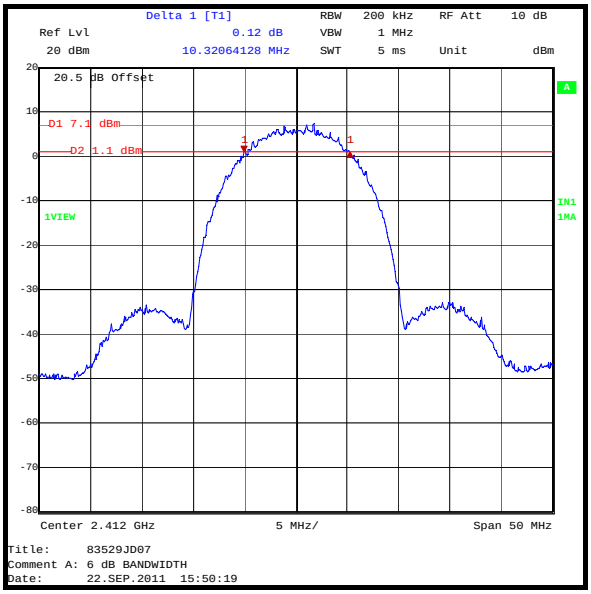
Middle channel



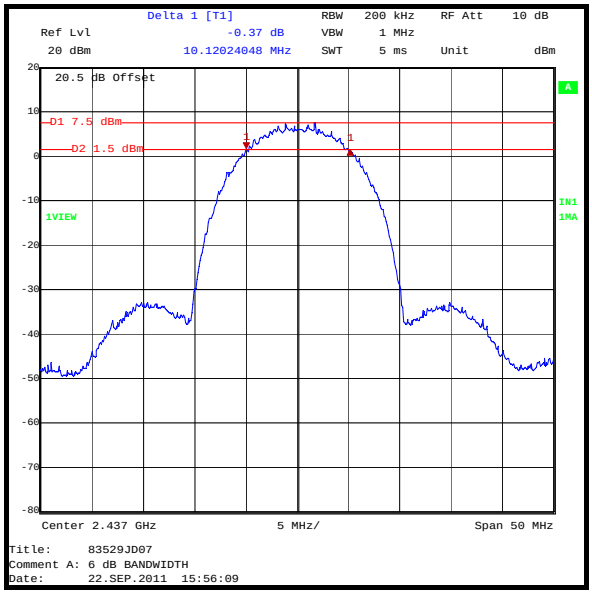
Top channel

Transmitter 6 dB Bandwidth (continued)

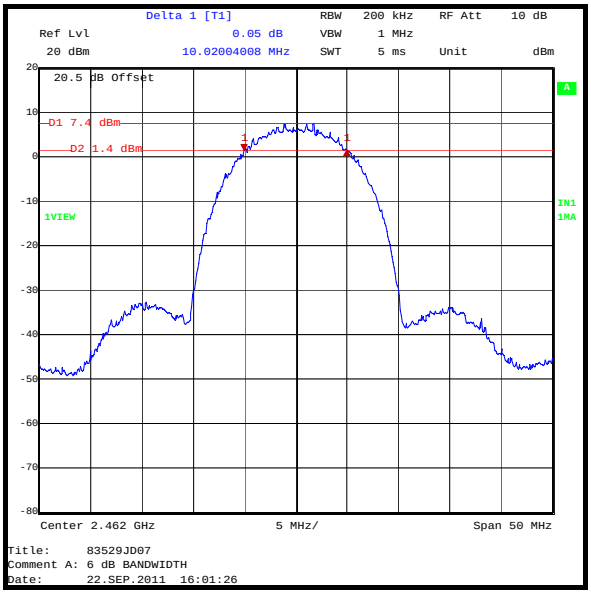
Results: 11 Mbps



Bottom channel



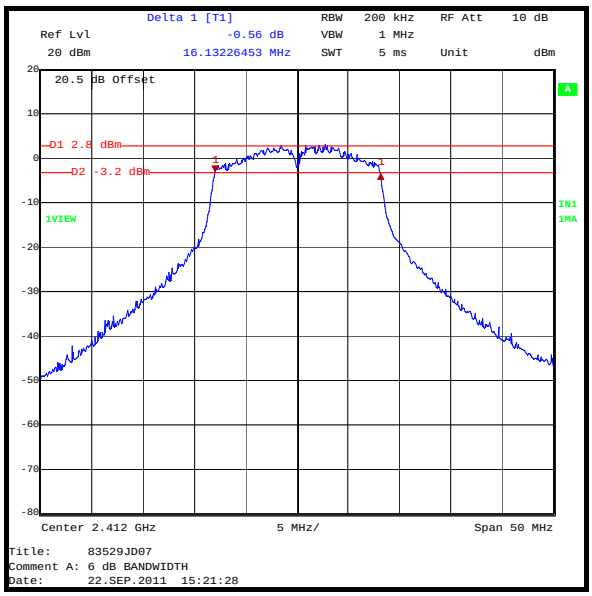
Middle channel



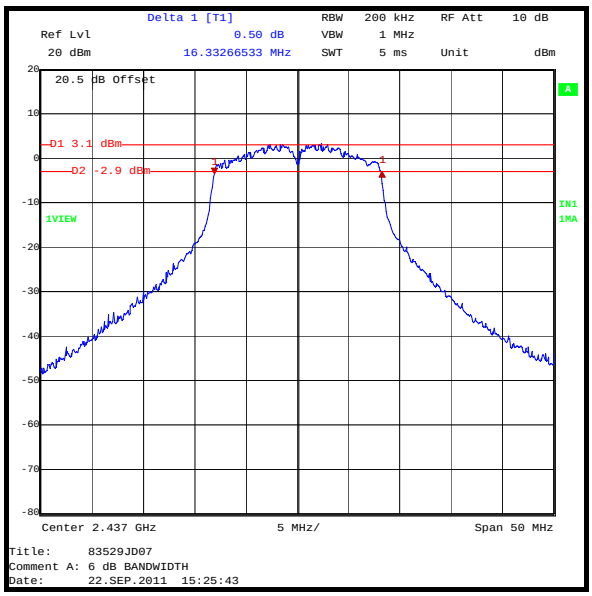
Top channel

Transmitter 6 dB Bandwidth (continued)

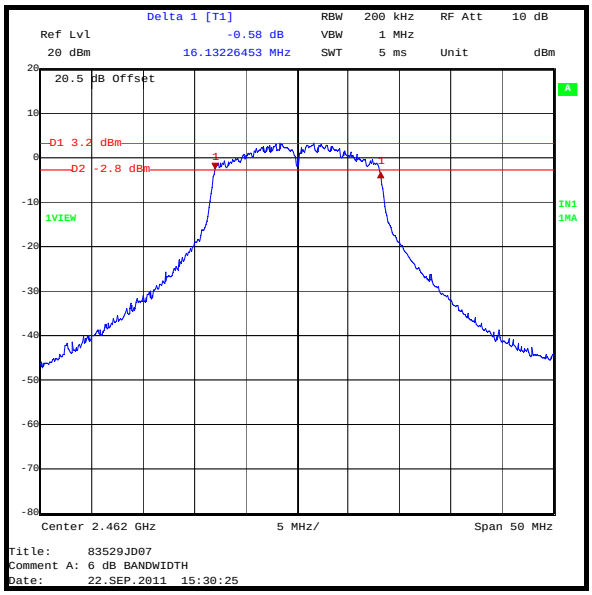
Results: 6 Mbps



Bottom channel



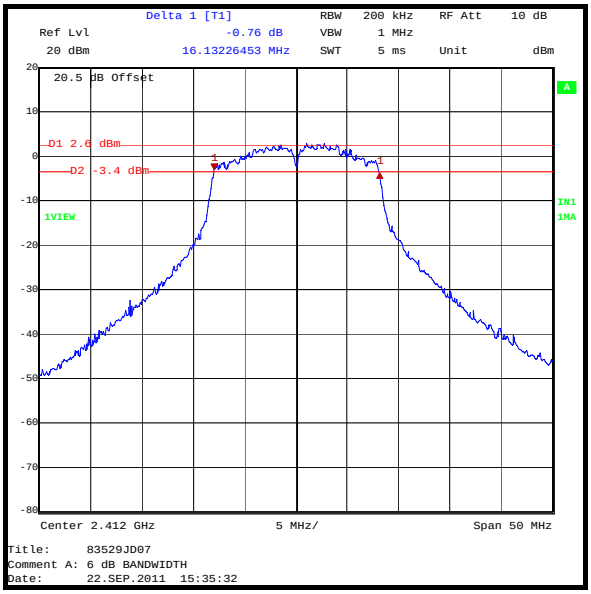
Middle channel



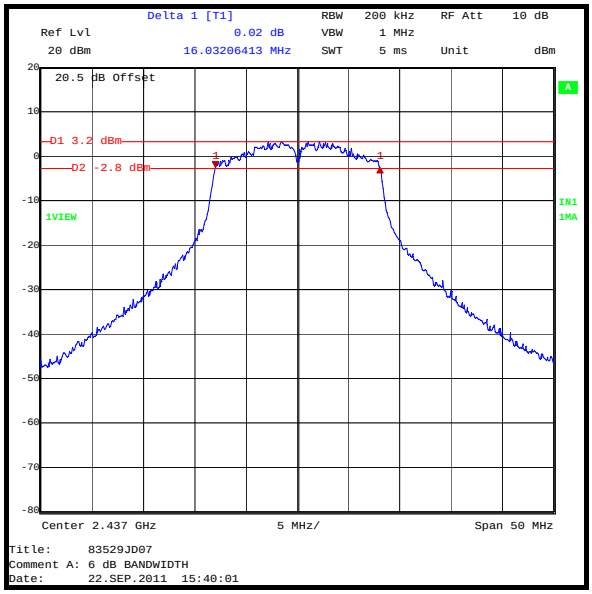
Top channel

Transmitter 6 dB Bandwidth (continued)

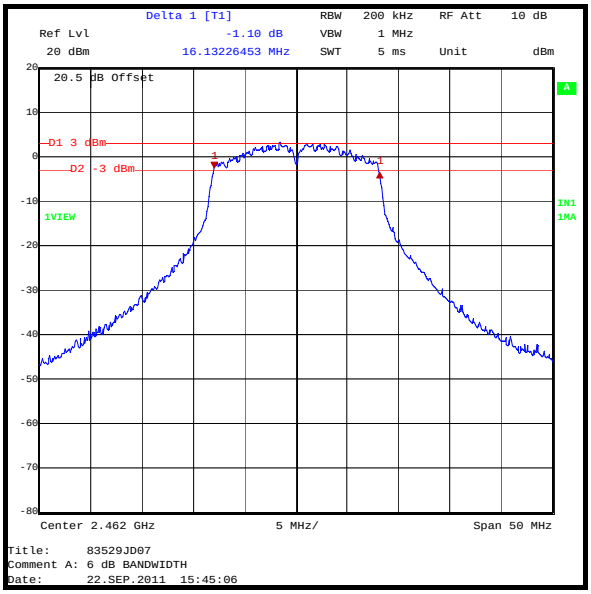
Results: 9 Mbps



Bottom channel



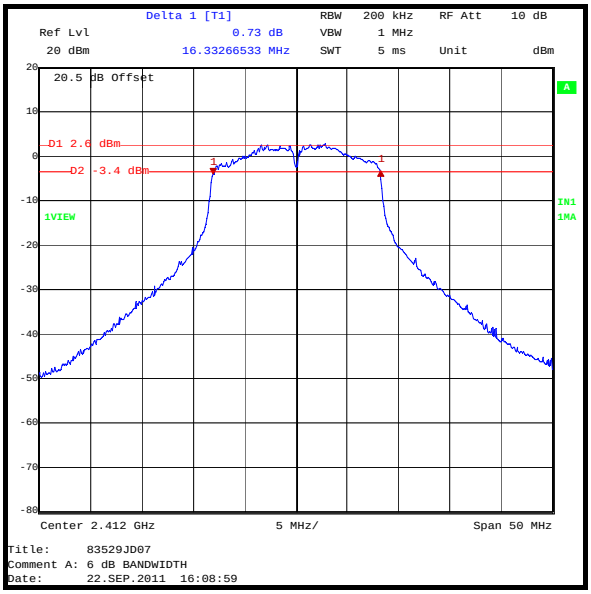
Middle channel



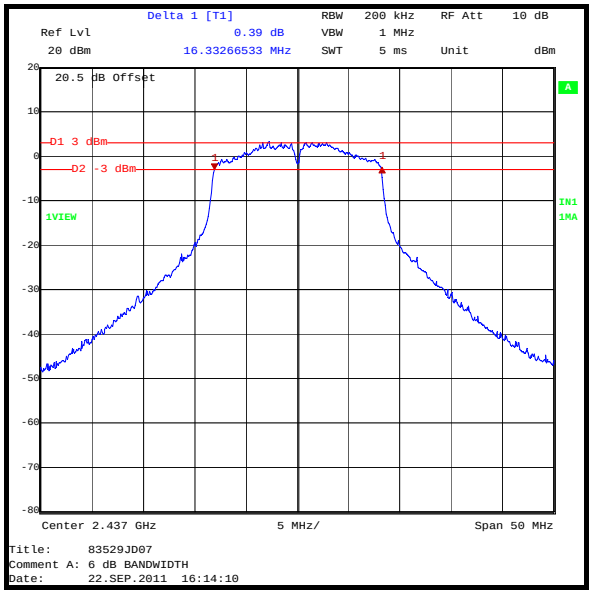
Top channel

Transmitter 6 dB Bandwidth (continued)

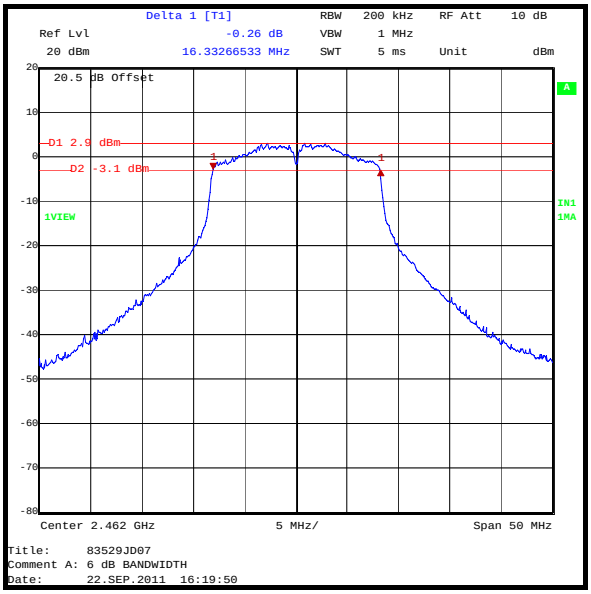
Results: 12 Mbps



Bottom channel



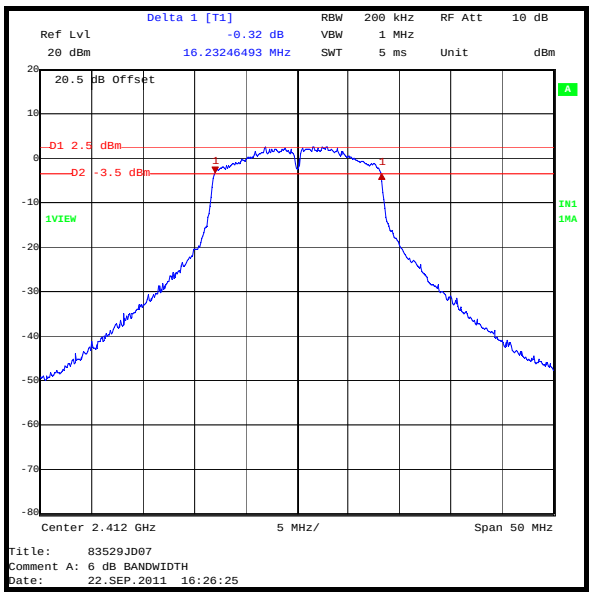
Middle channel



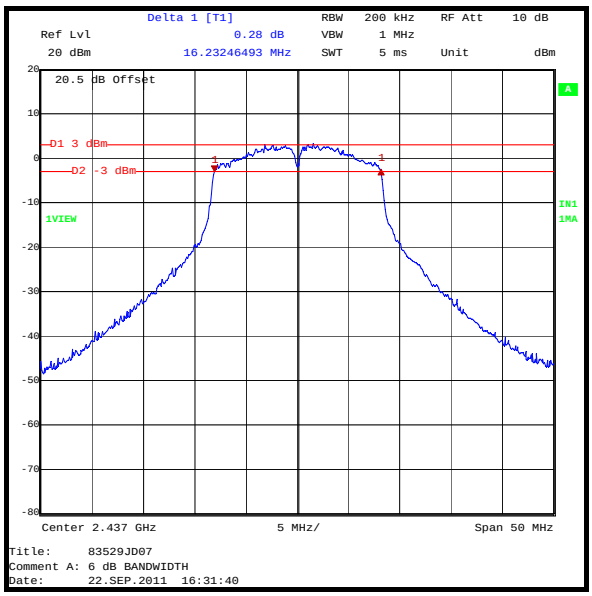
Top channel

Transmitter 6 dB Bandwidth (continued)

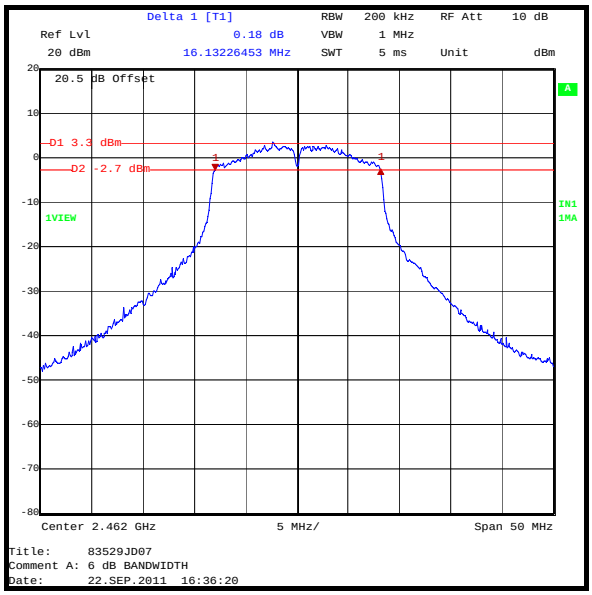
Results: 18 Mbps



Bottom channel



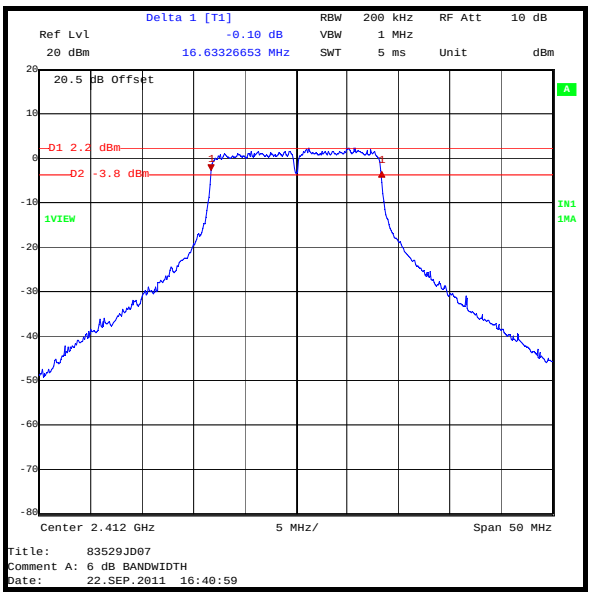
Middle channel



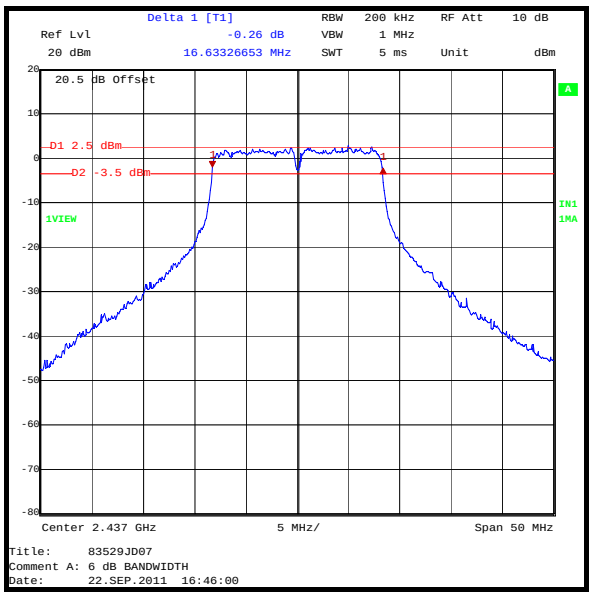
Top channel

Transmitter 6 dB Bandwidth (continued)

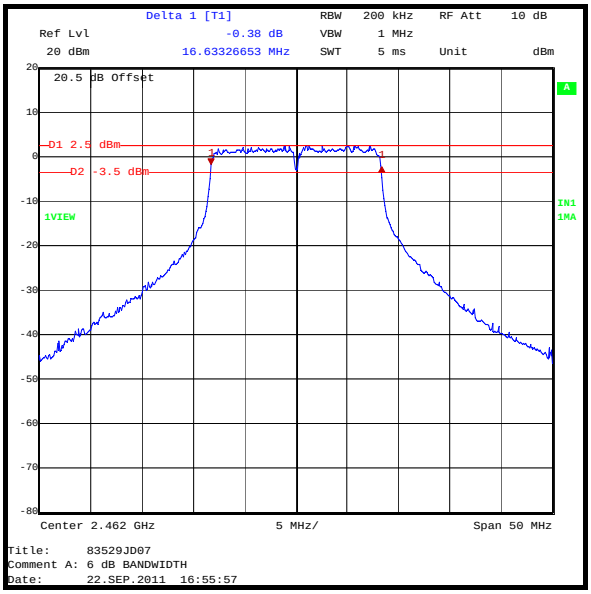
Results: 24 Mbps



Bottom channel



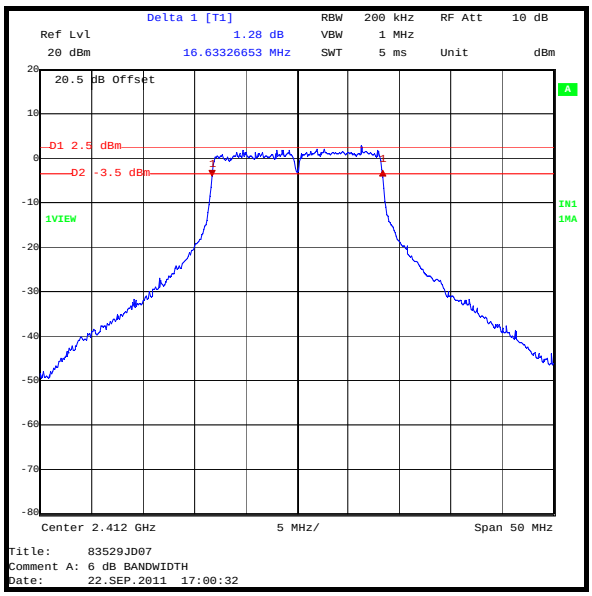
Middle channel



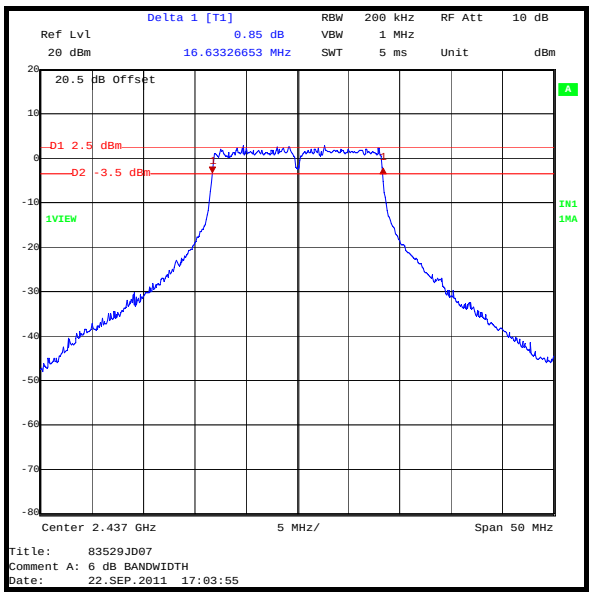
Top channel

Transmitter 6 dB Bandwidth (continued)

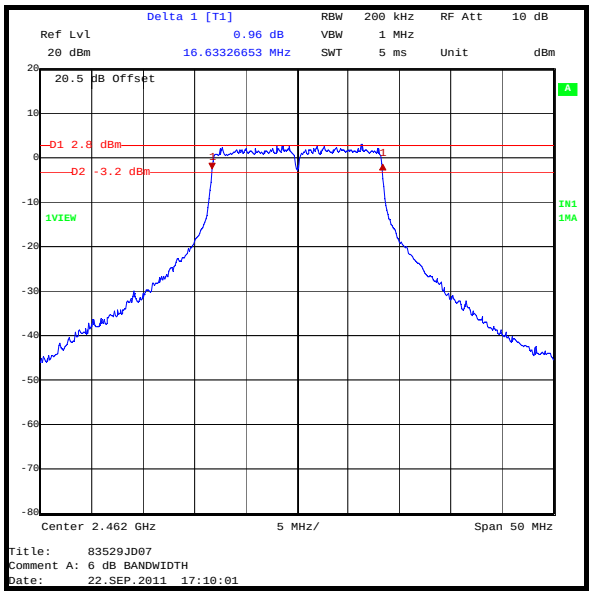
Results: 36 Mbps



Bottom channel



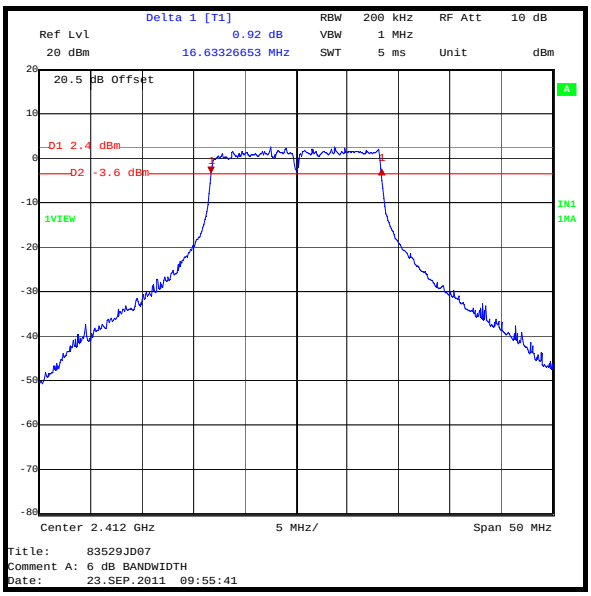
Middle channel



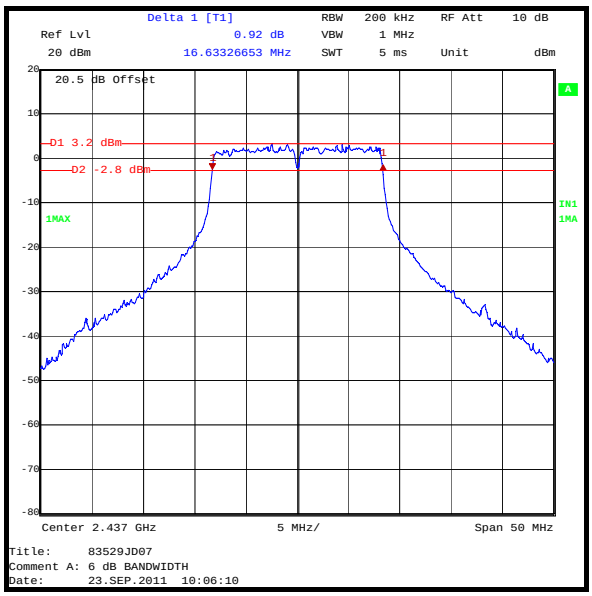
Top channel

Transmitter 6 dB Bandwidth (continued)

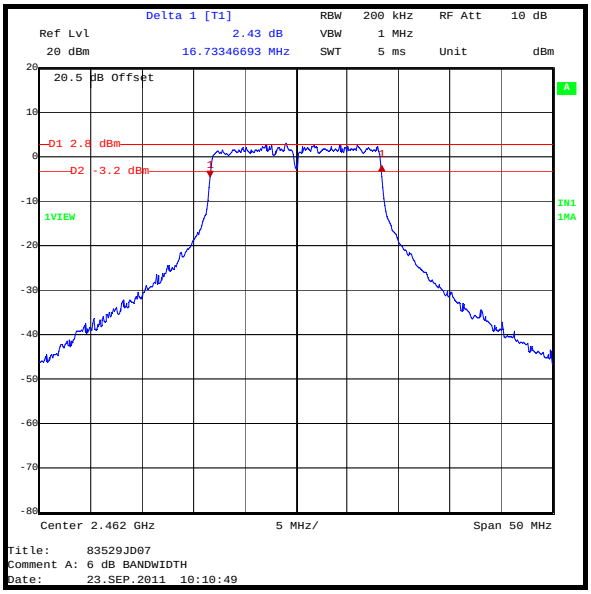
Results: 48 Mbps



Bottom channel



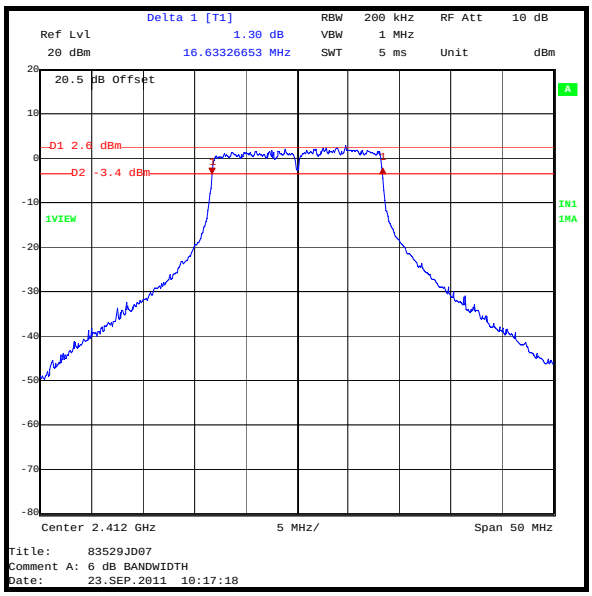
Middle channel



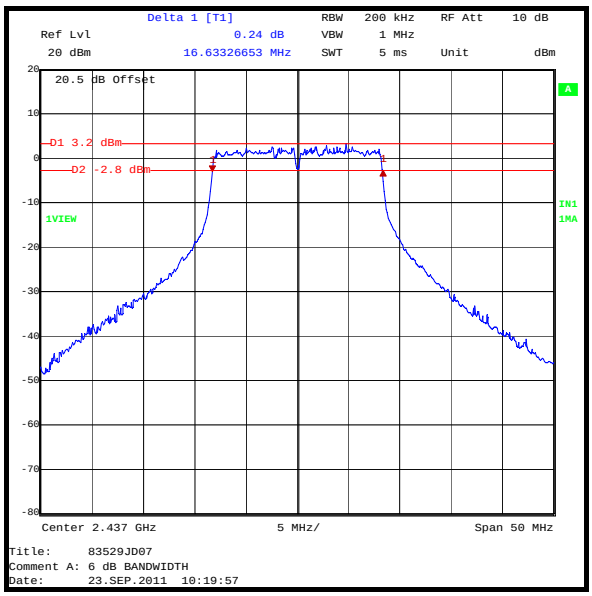
Top channel

Transmitter 6 dB Bandwidth (continued)

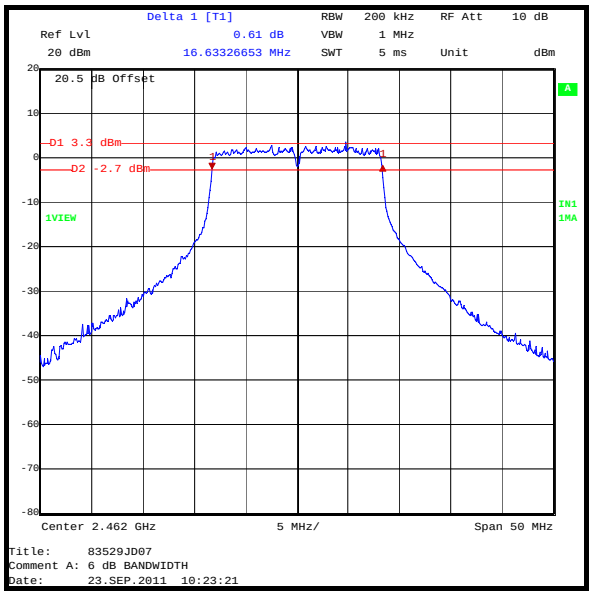
Results: 54 Mbps



Bottom channel



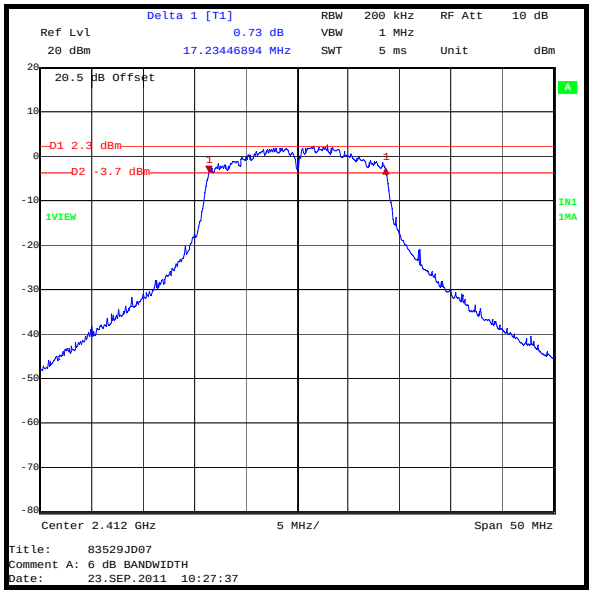
Middle channel



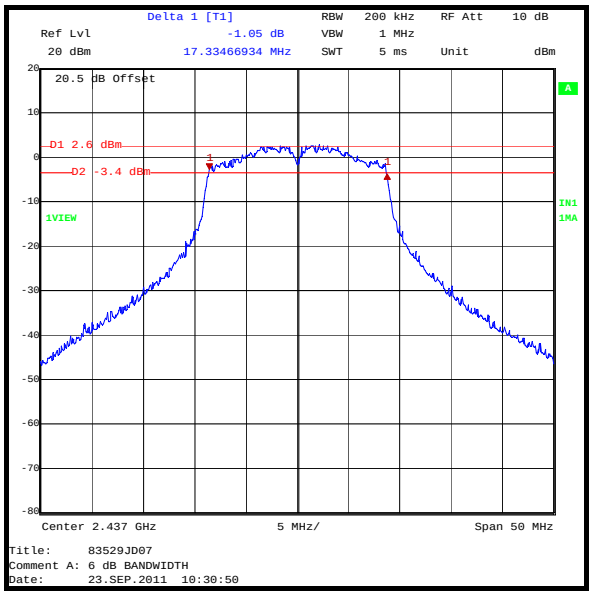
Top channel

Transmitter 6 dB Bandwidth (continued)

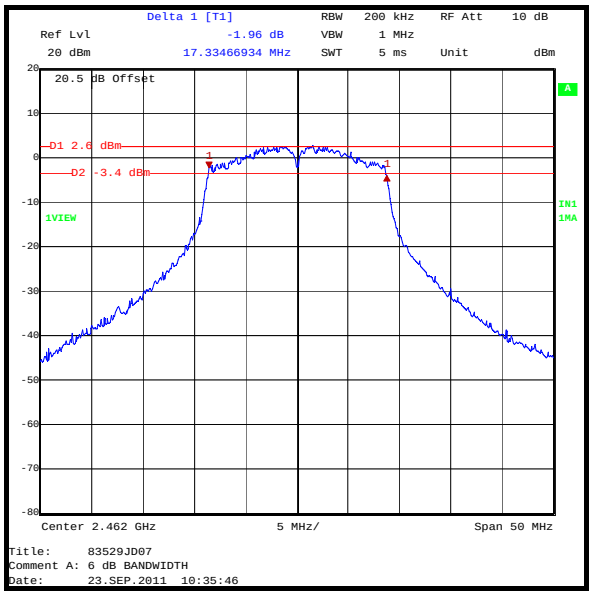
Results: 6.5 Mbps



Bottom channel



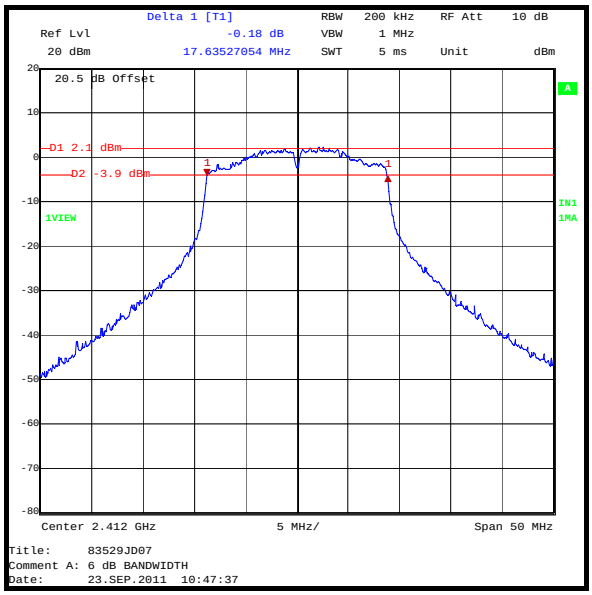
Middle channel



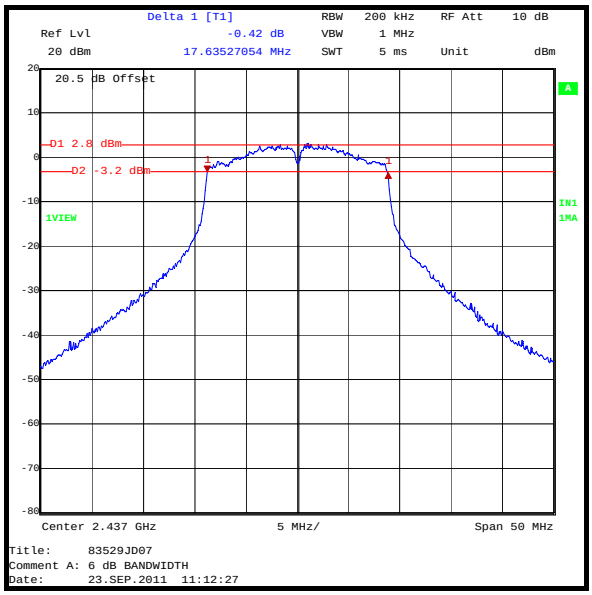
Top channel

Transmitter 6 dB Bandwidth (continued)

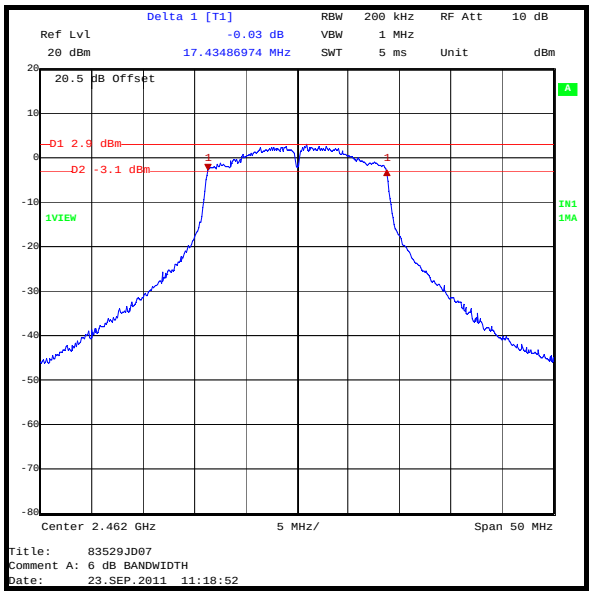
Results: 13 Mbps



Bottom channel



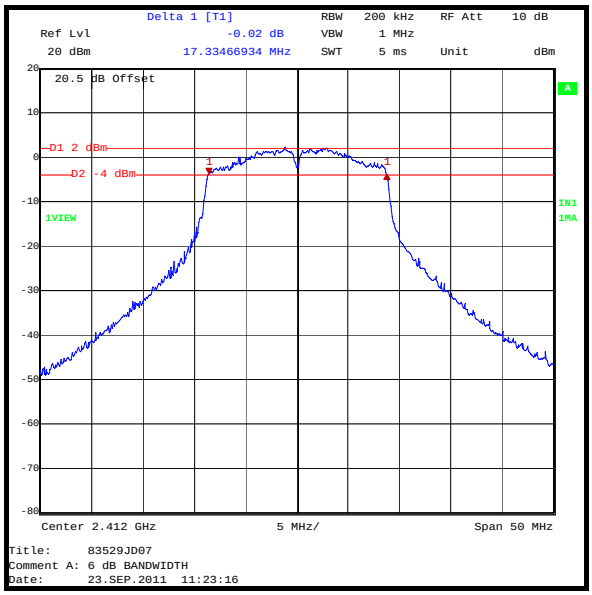
Middle channel



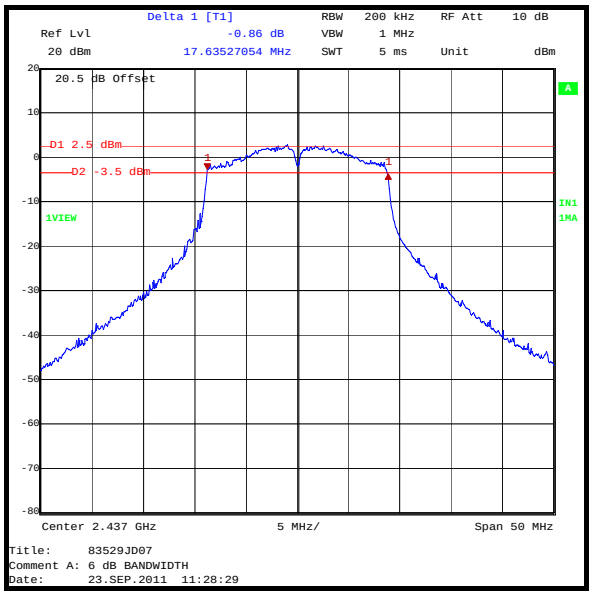
Top channel

Transmitter 6 dB Bandwidth (continued)

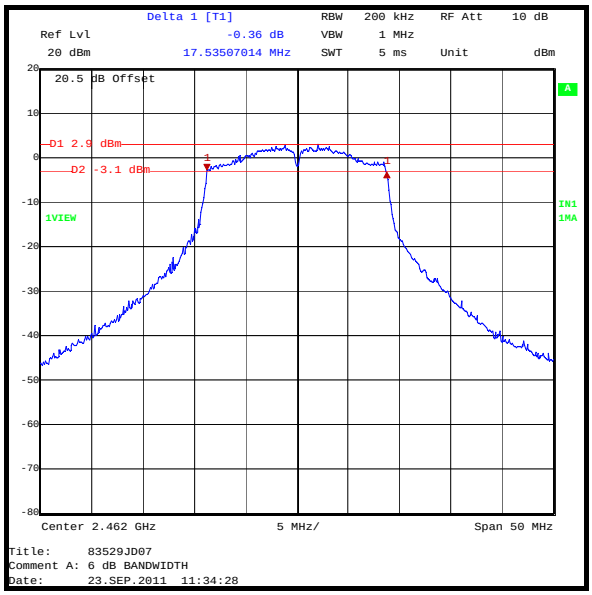
Results: 19.5 Mbps



Bottom channel



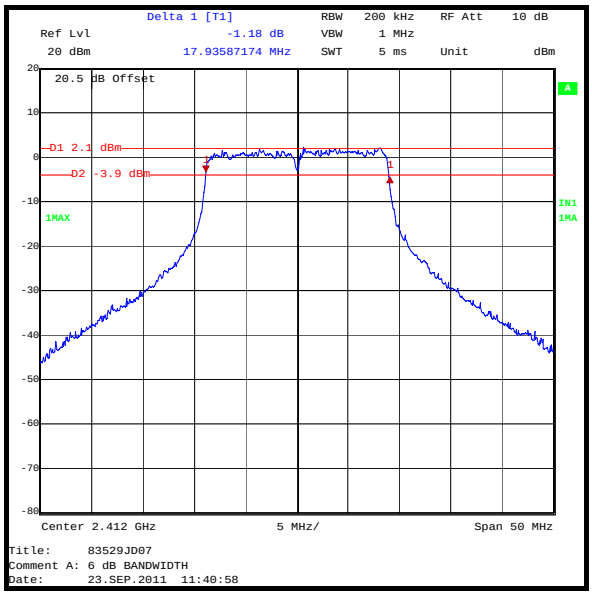
Middle channel



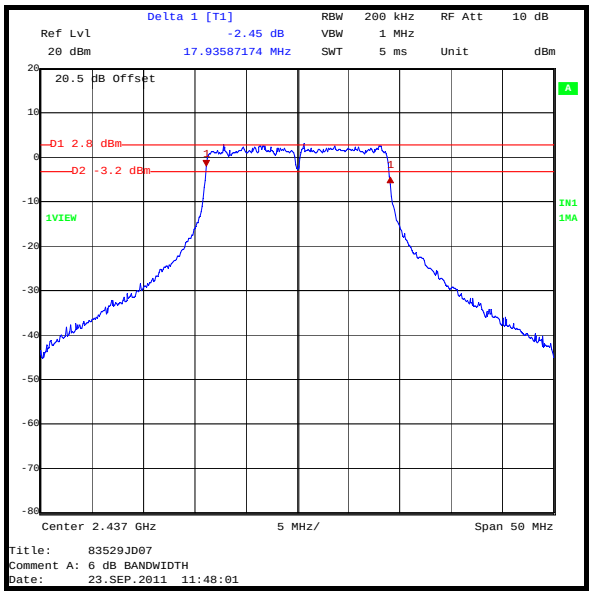
Top channel

Transmitter 6 dB Bandwidth (continued)

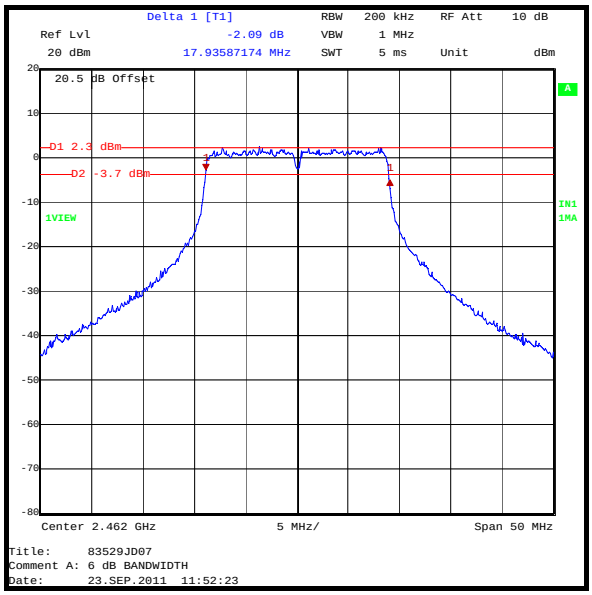
Results: 26 Mbps



Bottom channel



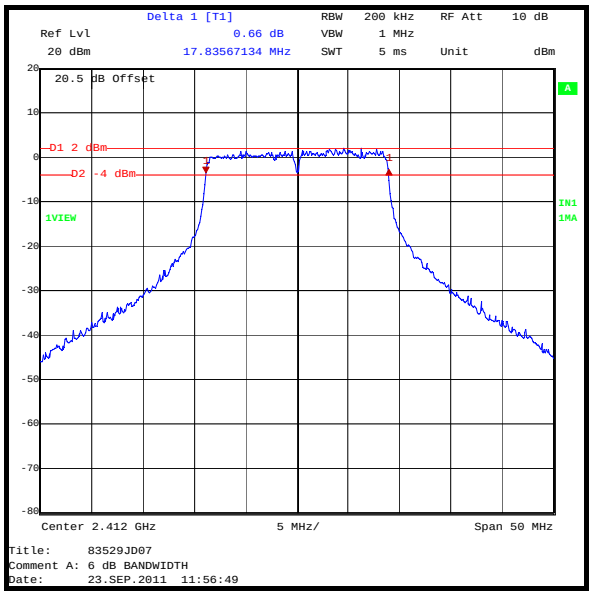
Middle channel



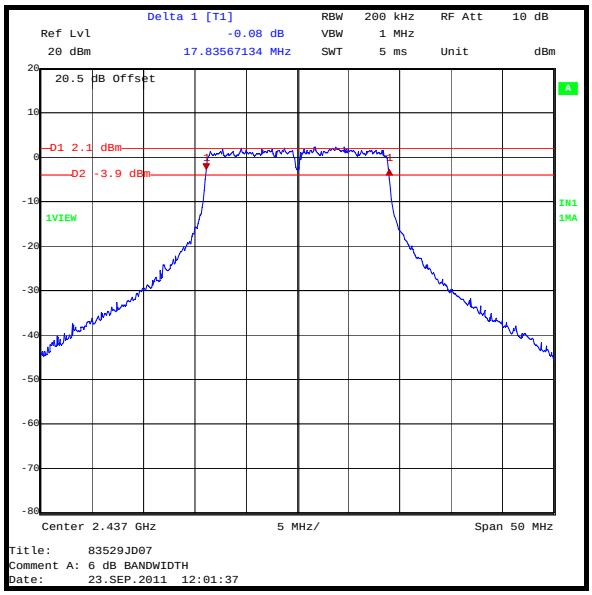
Top channel

Transmitter 6 dB Bandwidth (continued)

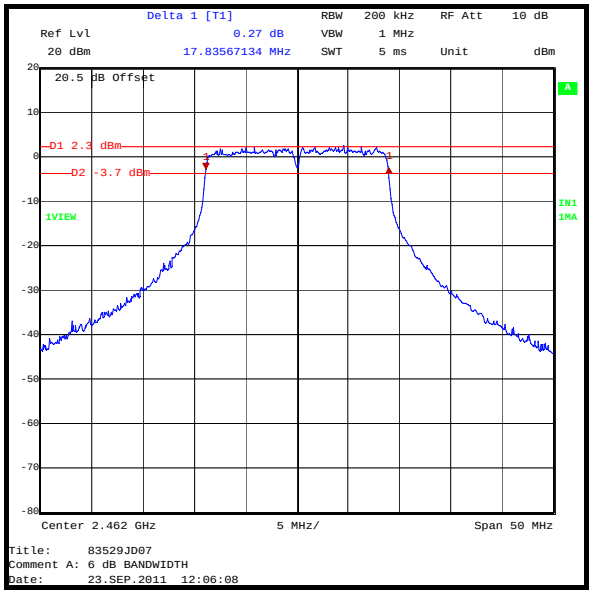
Results: 39 Mbps



Bottom channel



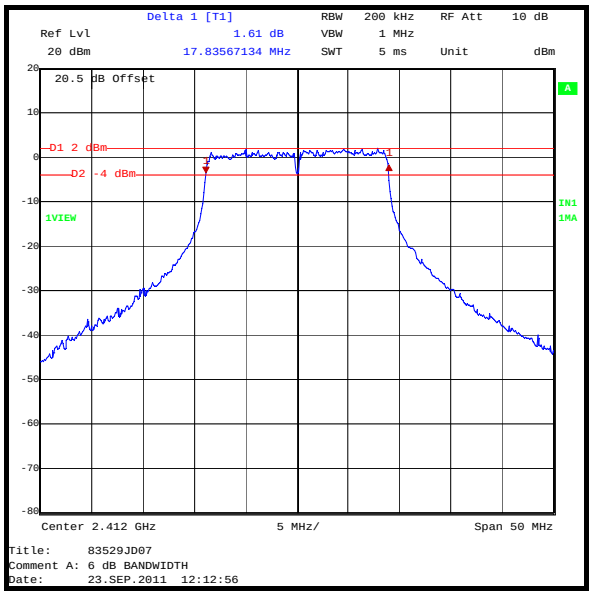
Middle channel



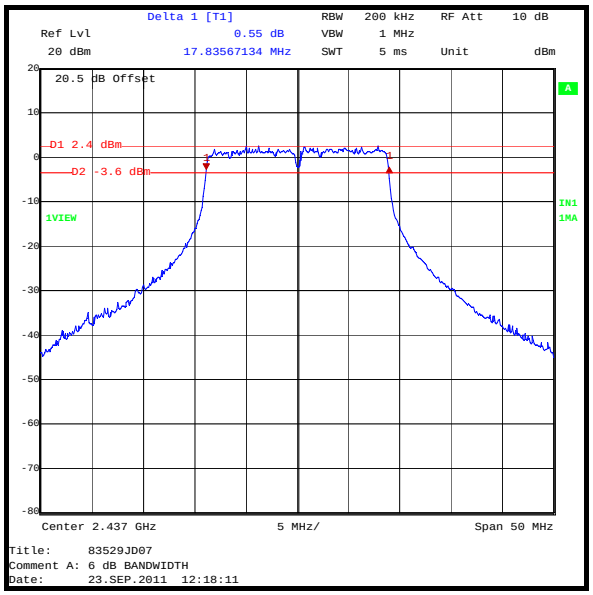
Top channel

Transmitter 6 dB Bandwidth (continued)

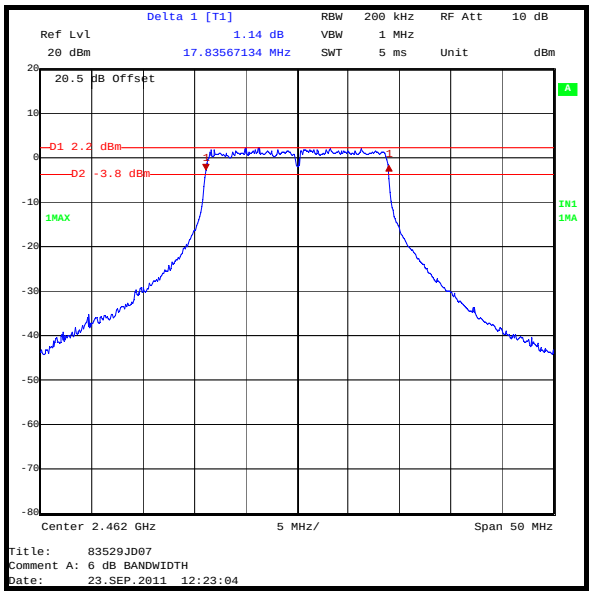
Results: 52 Mbps



Bottom channel



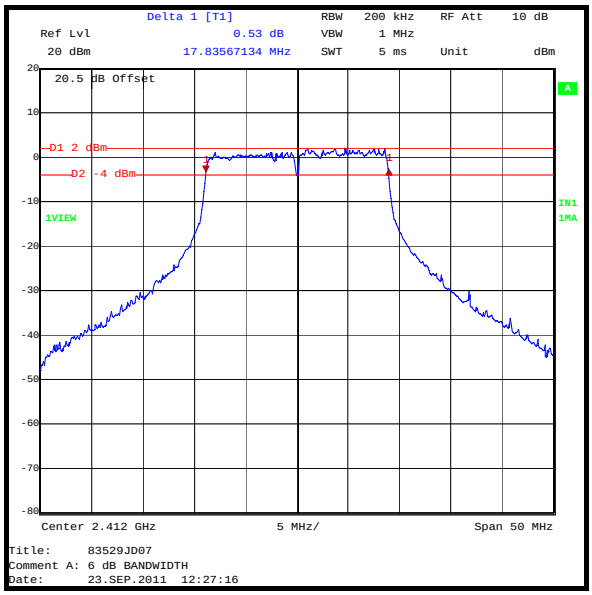
Middle channel



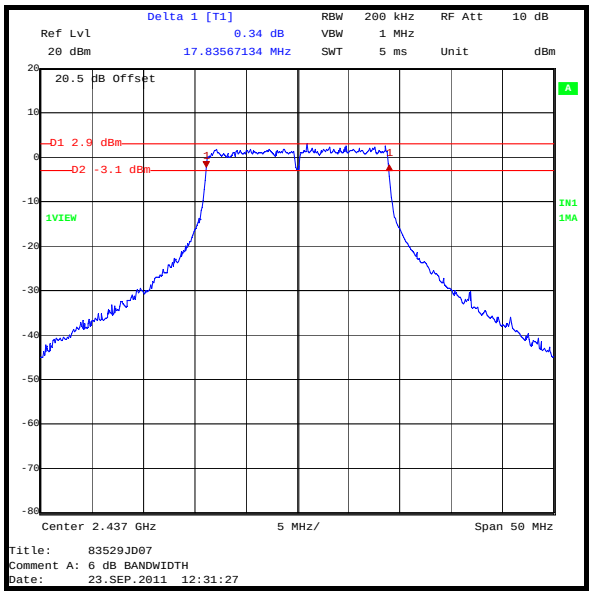
Top channel

Transmitter 6 dB Bandwidth (continued)

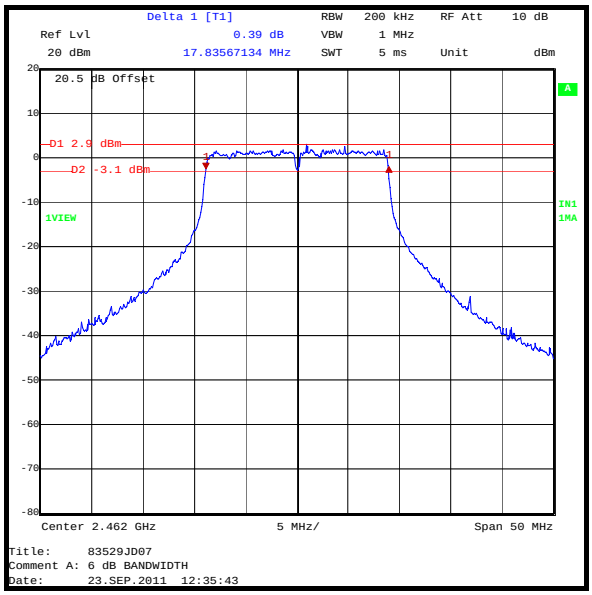
Results: 58.5 Mbps



Bottom channel



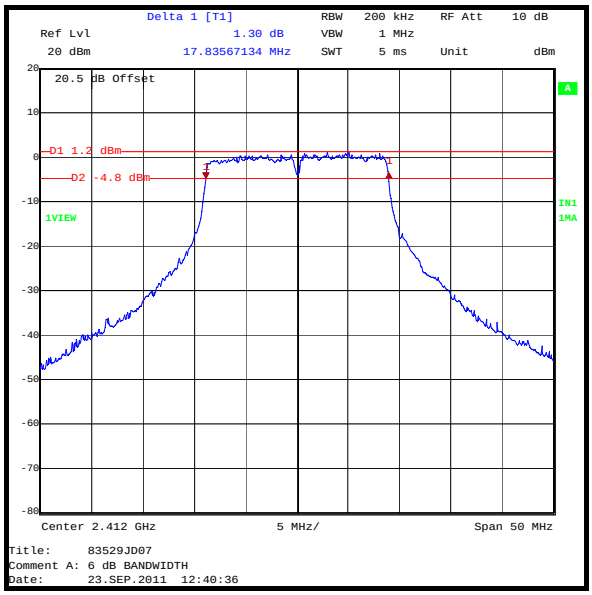
Middle channel



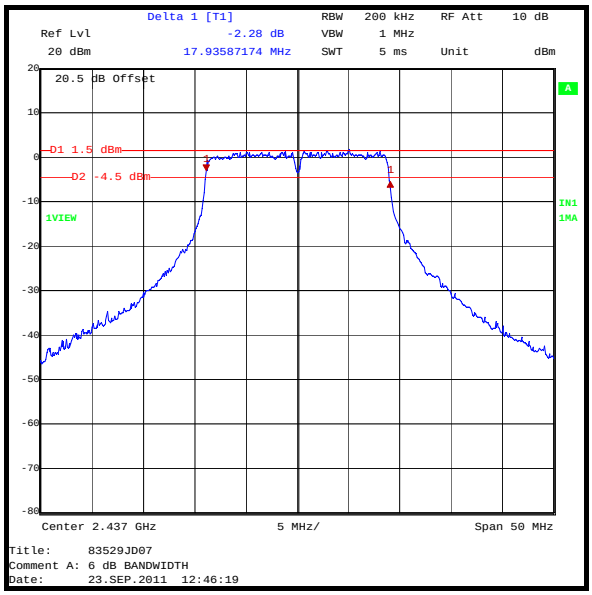
Top channel

Transmitter 6 dB Bandwidth (continued)

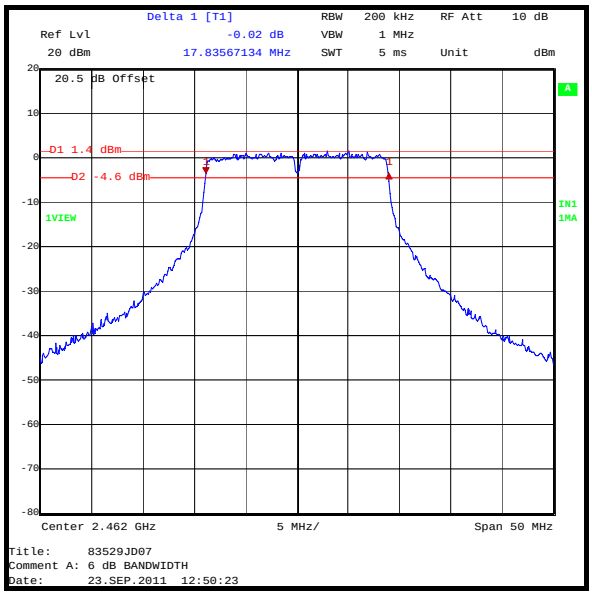
Results: 65 Mbps



Bottom channel



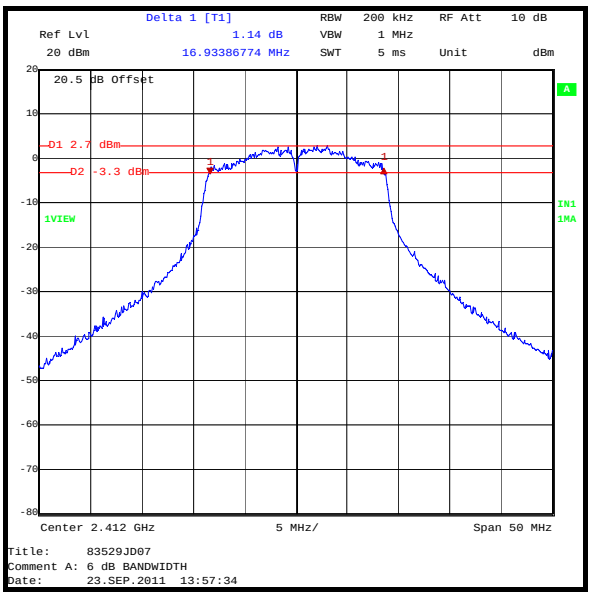
Middle channel



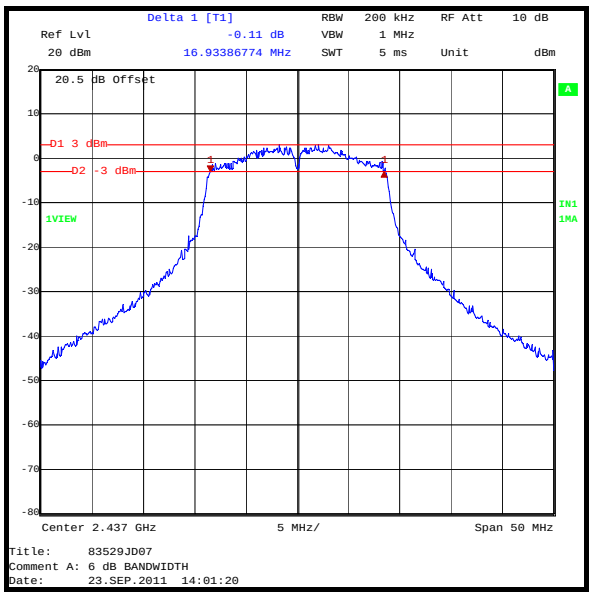
Top channel

Transmitter 6 dB Bandwidth (continued)

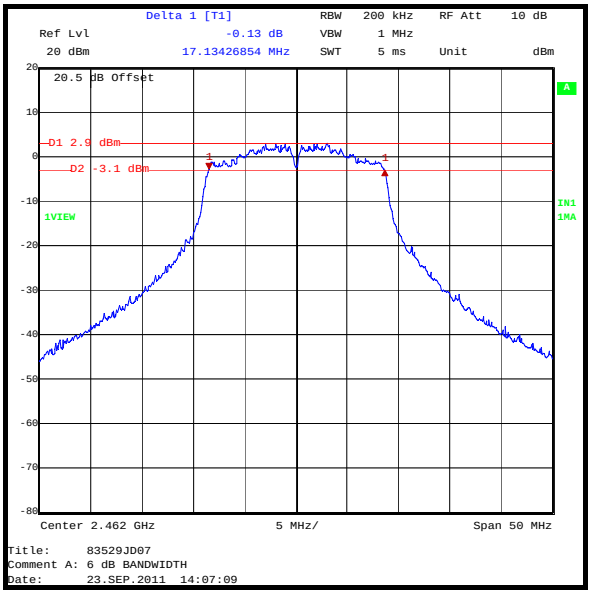
Results: 7.2 Mbps



Bottom channel



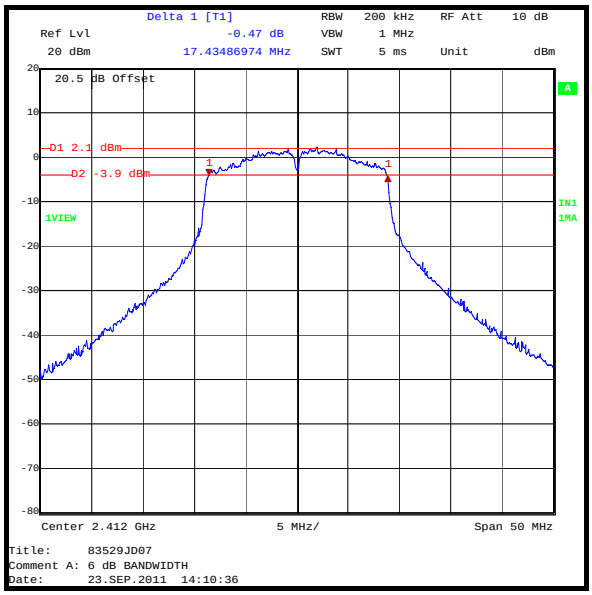
Middle channel



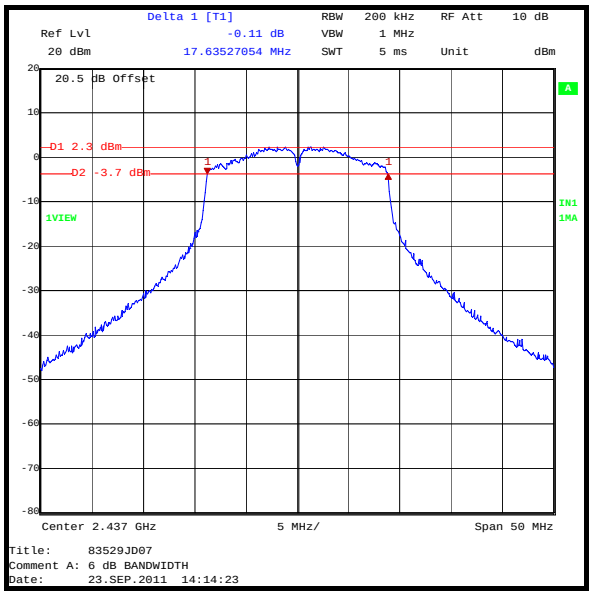
Top channel

Transmitter 6 dB Bandwidth (continued)

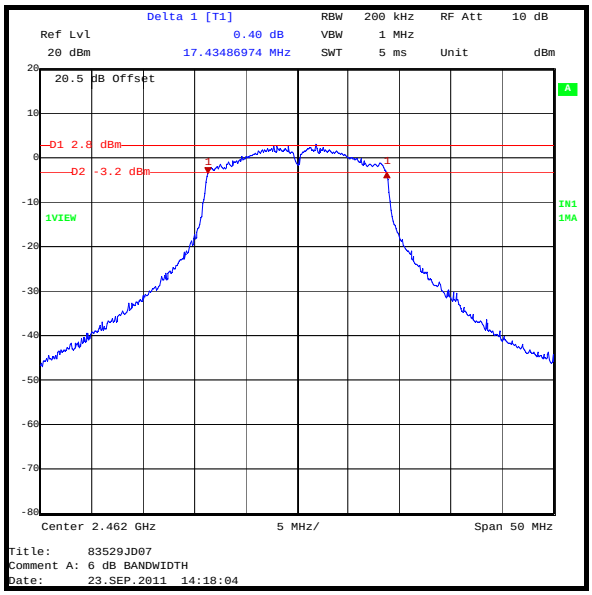
Results: 14.4 Mbps



Bottom channel



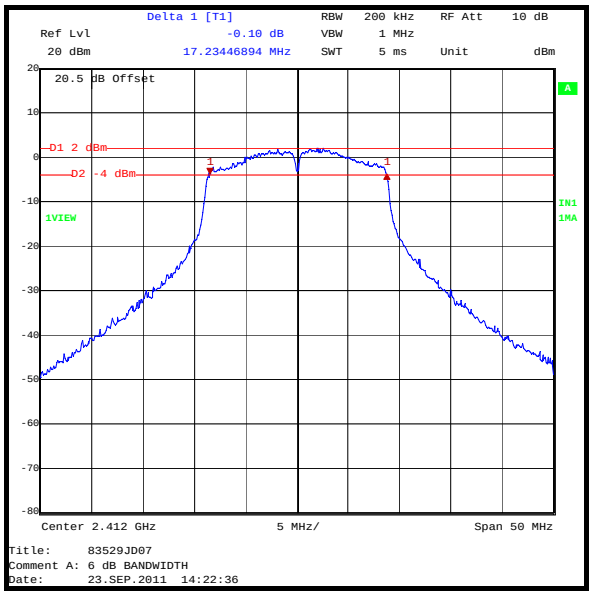
Middle channel



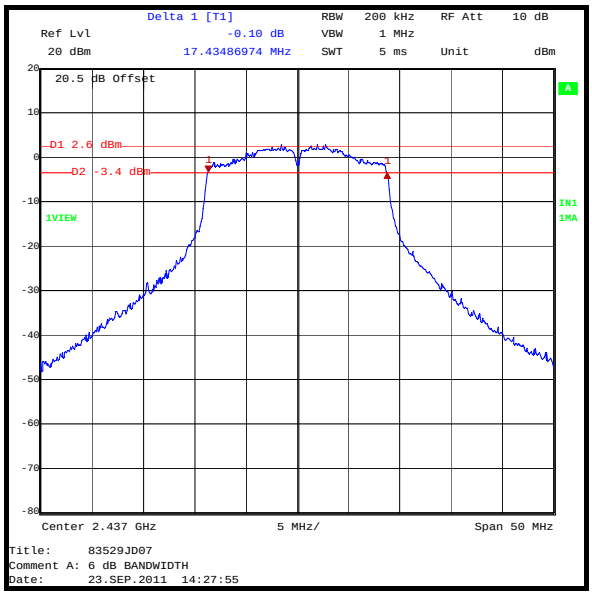
Top channel

Transmitter 6 dB Bandwidth (continued)

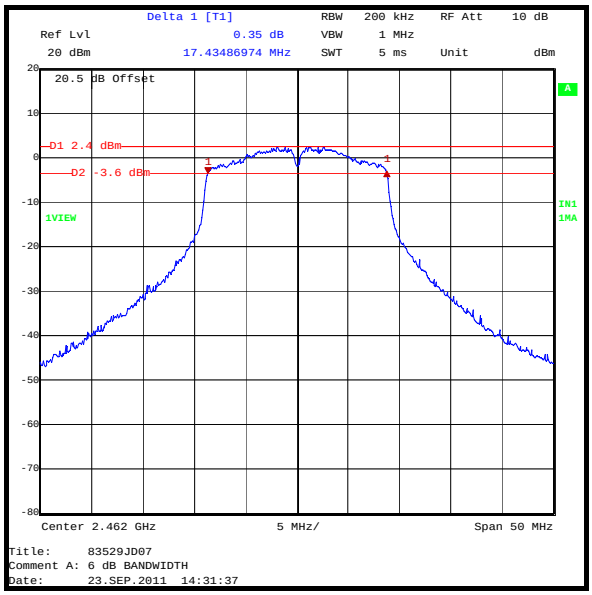
Results: 21.7 Mbps



Bottom channel



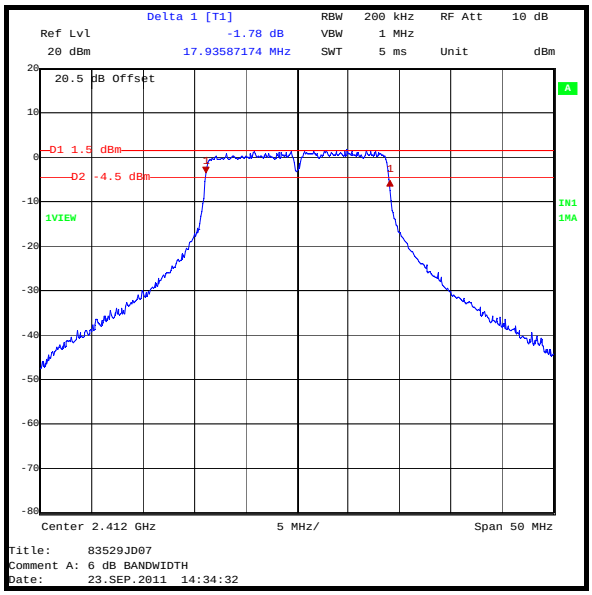
Middle channel



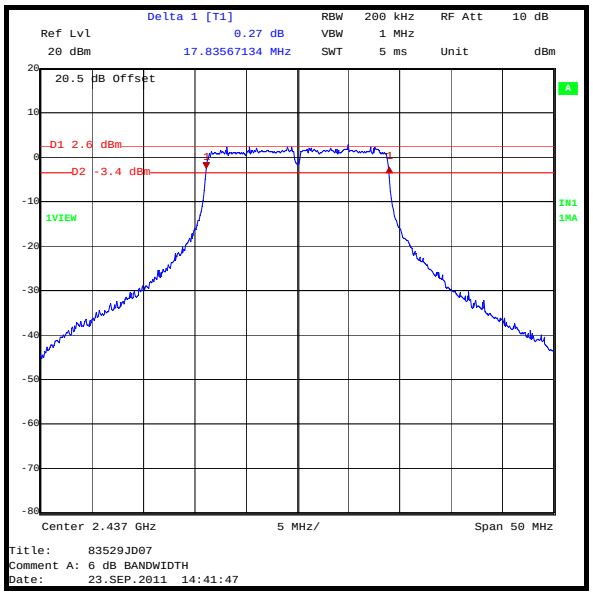
Top channel

Transmitter 6 dB Bandwidth (continued)

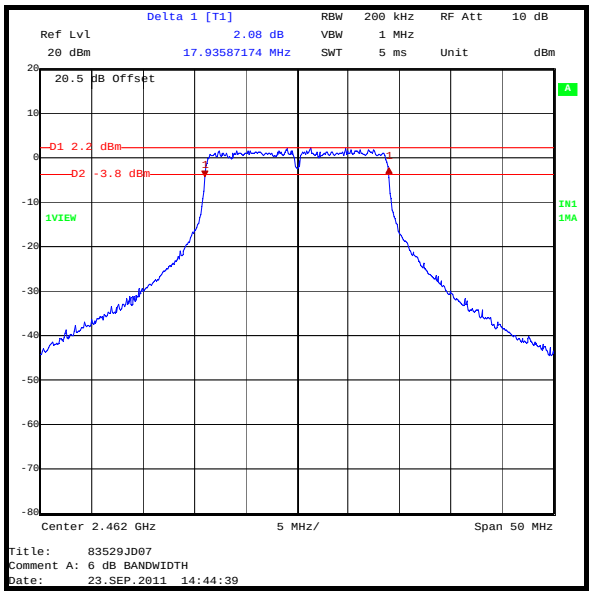
Results: 28.9 Mbps



Bottom channel



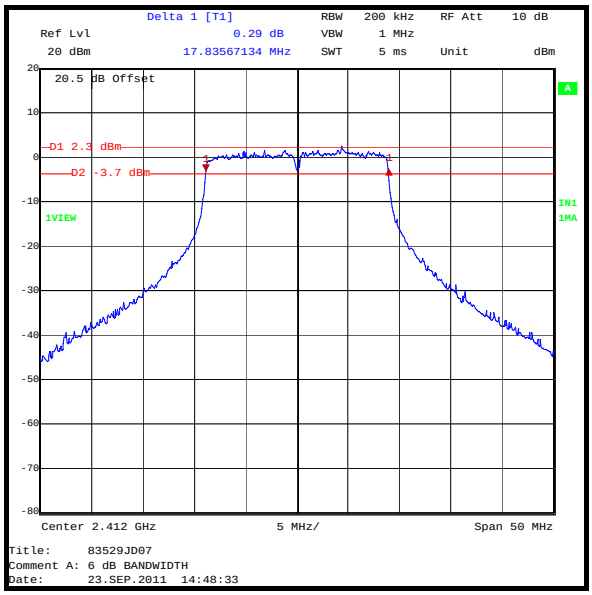
Middle channel



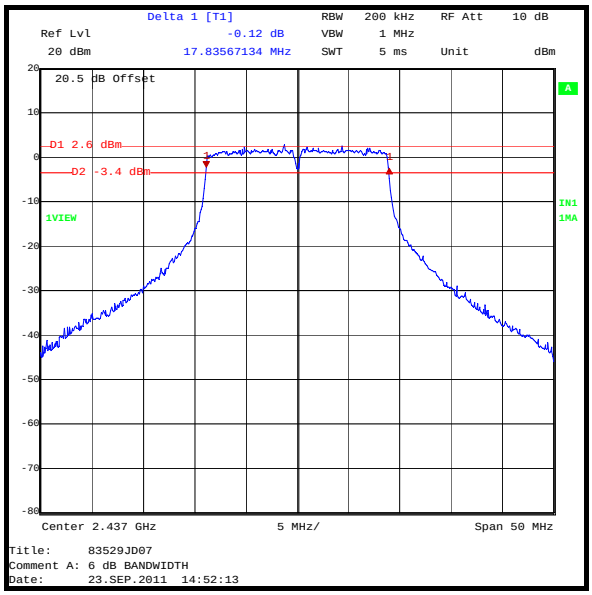
Top channel

Transmitter 6 dB Bandwidth (continued)

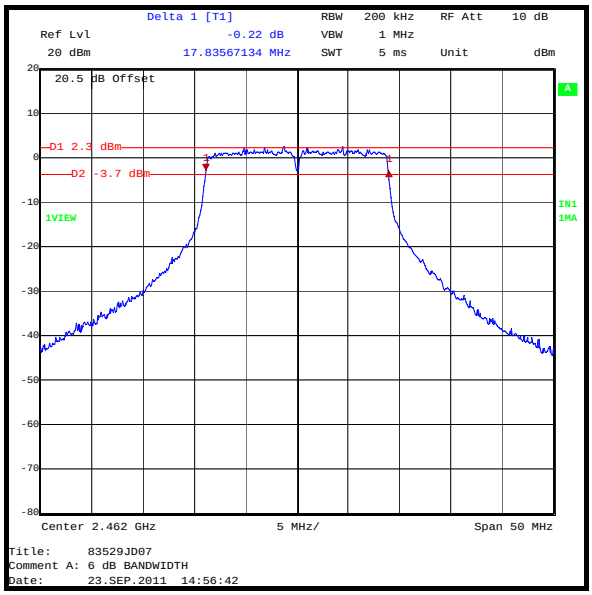
Results: 43.3 Mbps



Bottom channel



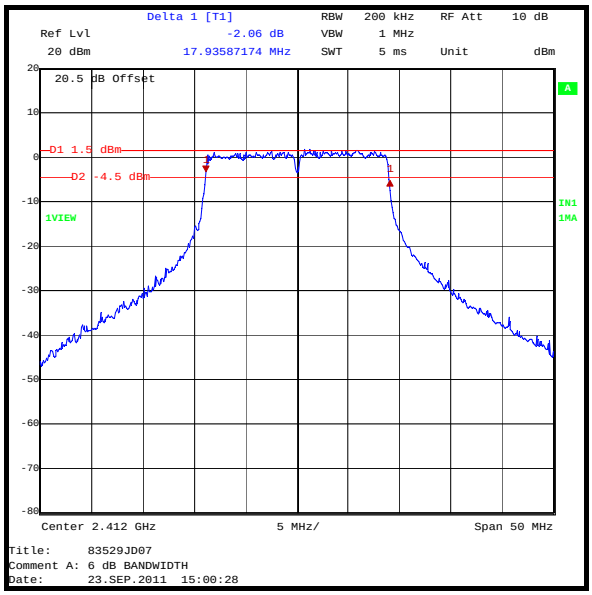
Middle channel



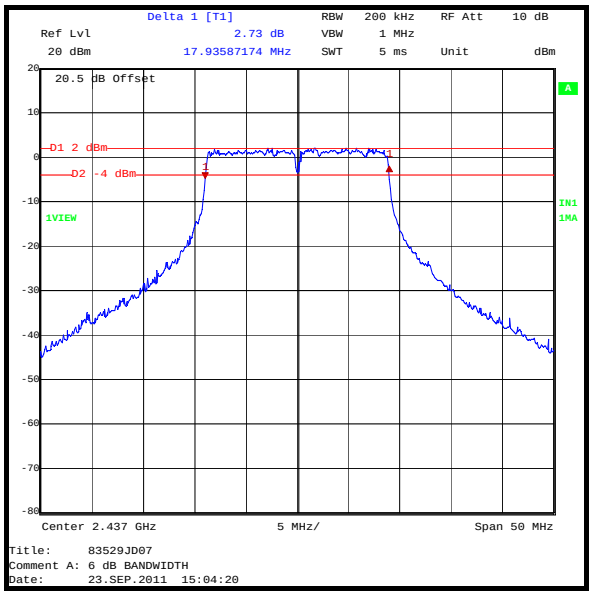
Top channel

Transmitter 6 dB Bandwidth (continued)

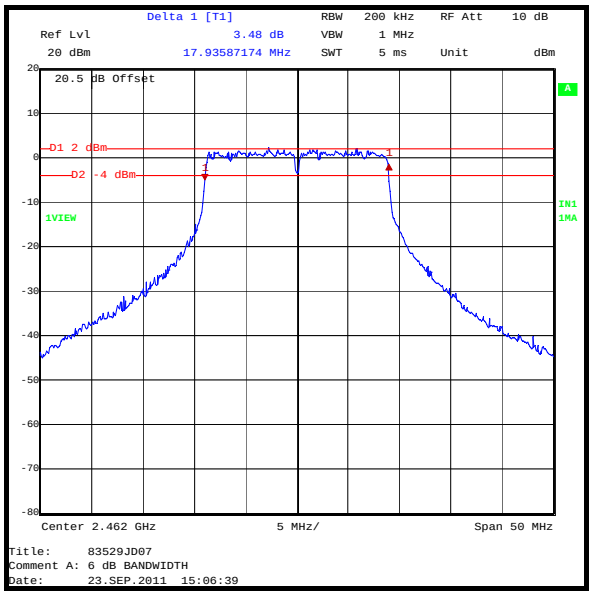
Results: 57.8 Mbps



Bottom channel



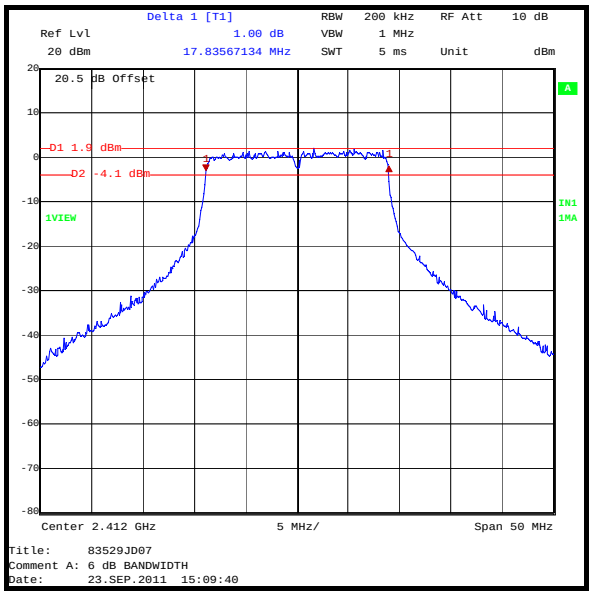
Middle channel



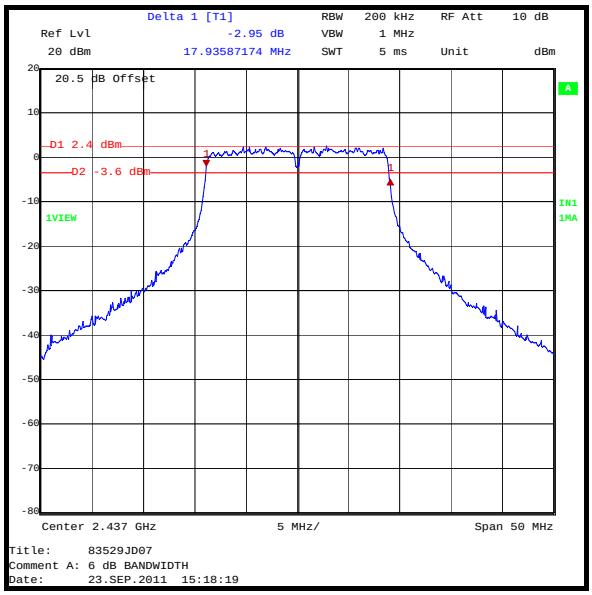
Top channel

Transmitter 6 dB Bandwidth (continued)

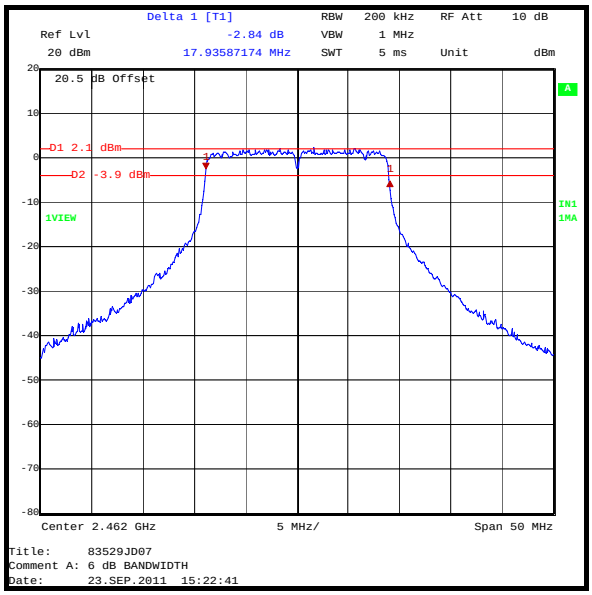
Results: 65 Mbps



Bottom channel



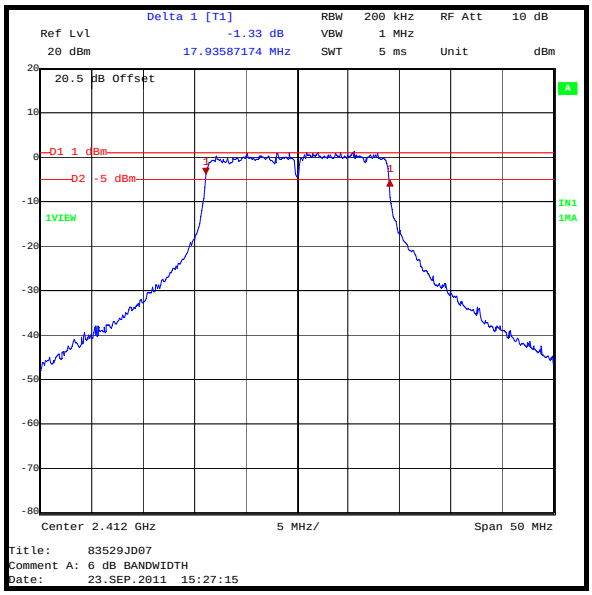
Middle channel



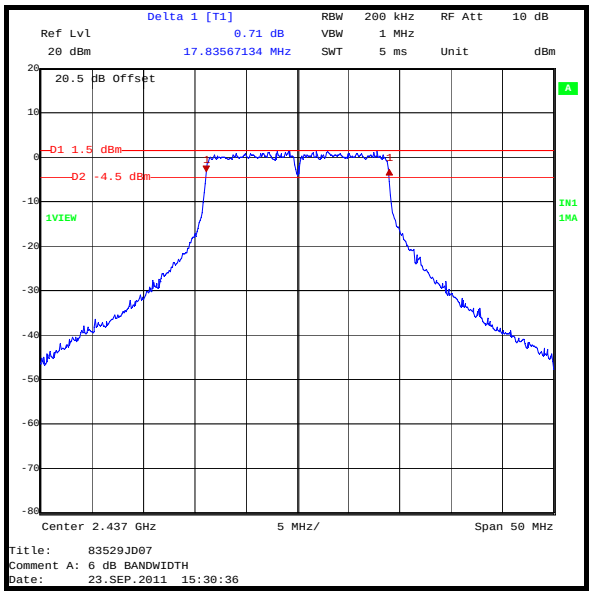
Top channel

Transmitter 6 dB Bandwidth (continued)

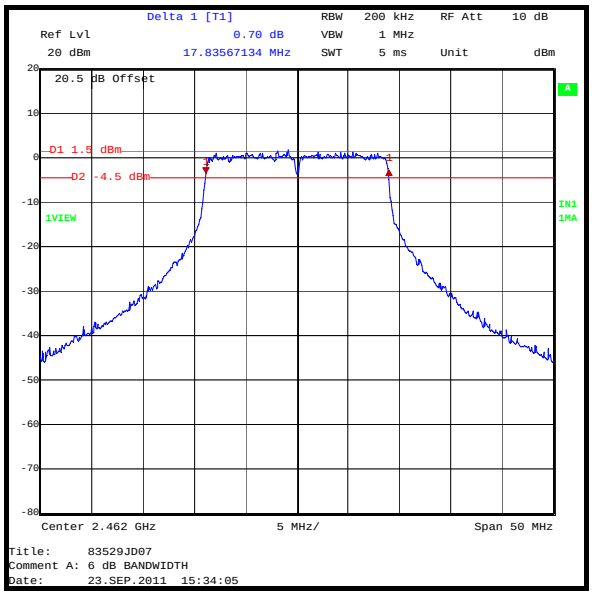
Results: 72.2 Mbps



Bottom channel



Middle channel



Top channel

5.2.5. Transmitter Power Spectral Density

Test Summary:

Test Engineer:	Nick Steele	**Test Date:**	25 September 2011
Test Sample IMEI:	357867040012198		

FCC Part:	15.247(e)
Test Method Used:	As detailed in ANSI C63.10 Section 6.11.2

Environmental Conditions:

Temperature (°C):	26
Relative Humidity (%):	31

Results: 1 Mbps

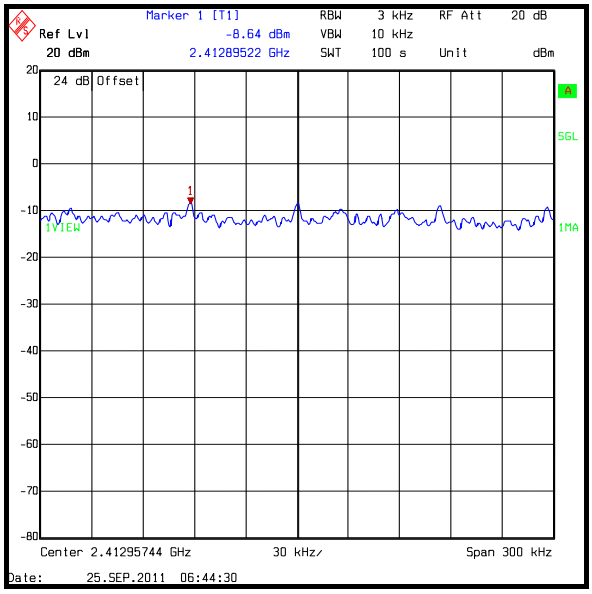
Channel	Output Power (dBm/3 kHz)	Limit (dBm/3 kHz)	Margin (dB)	Result
Bottom	-8.6	8.0	16.6	Complied
Middle	-8.3	8.0	16.3	Complied
Top	-7.8	8.0	15.8	Complied

Note(s):

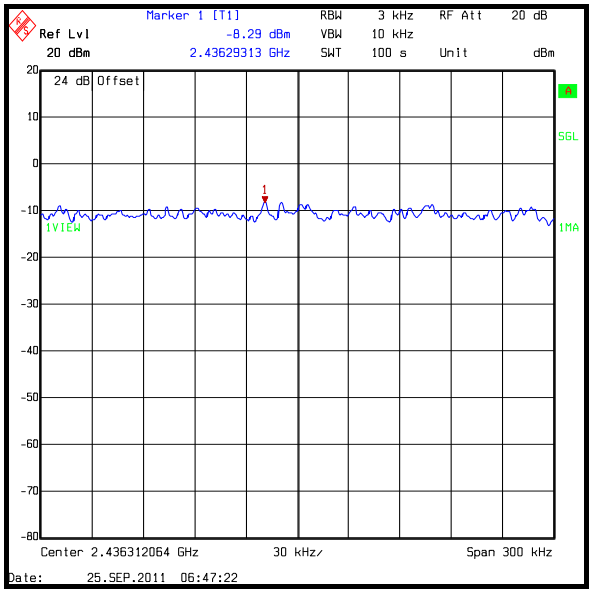
1. All supported modes were tested on the bottom, middle and top channels to determine the worst case configuration. The configuration that produced the highest levels is recorded in the table above.

Transmitter Power Spectral Density (continued)

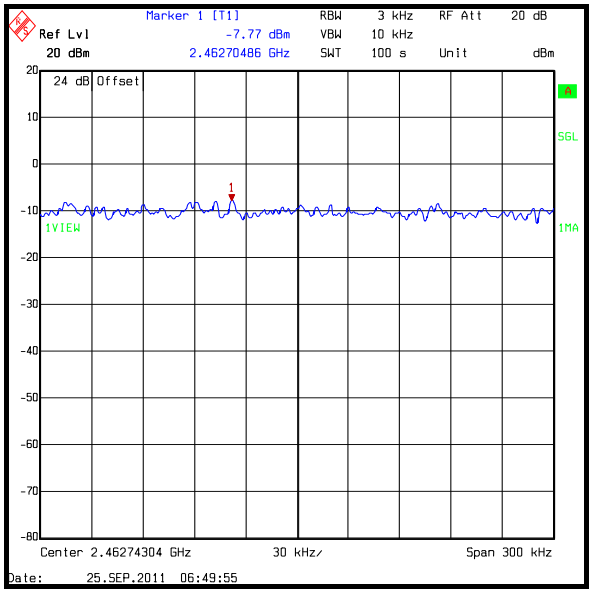
Results: 802.11b 1 Mbps



Bottom channel



Middle channel



Top channel

5.2.6. Transmitter Maximum Peak Output Power

Test Summary:

Test Engineer:	Andrew Edwards	**Test Date:**	23 September 2011
Test Sample IMEI:	357867040012198		

FCC Part:	15.247(b)(3)
Test Method Used:	ANSI C63.10 Section 6.10.2

Environmental Conditions:

Temperature (°C):	26
Relative Humidity (%):	22

Results: 11 Mbps

Conducted Peak Limit Comparison

Channel	Conducted Peak Power (dBm)	Conducted Peak Power Limit (dBm)	Margin (dB)	Result
Bottom	20.4	30.0	9.6	Complied
Middle	21.1	30.0	8.9	Complied
Top	21.5	30.0	8.5	Complied

De Facto EIRP Limit Comparison

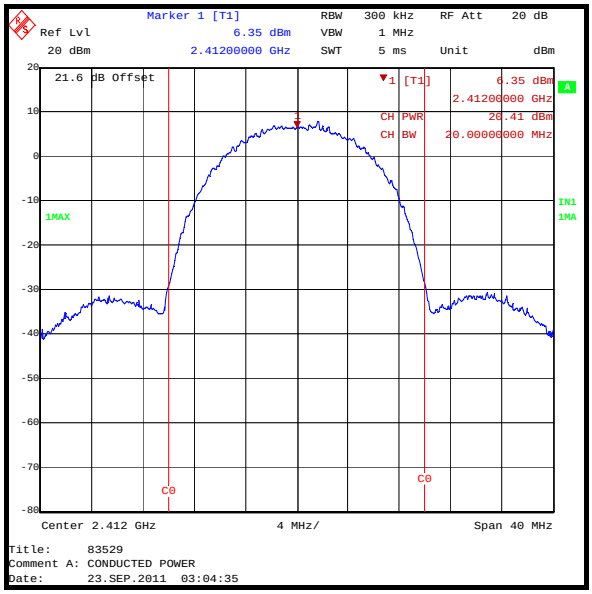
Channel	Conducted Peak Power (dBm)	Declared Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	20.4	-1.3	19.1	36.0	16.9	Complied
Middle	21.1	-1.3	19.8	36.0	16.2	Complied
Top	21.5	-1.3	20.2	36.0	15.8	Complied

Note(s):

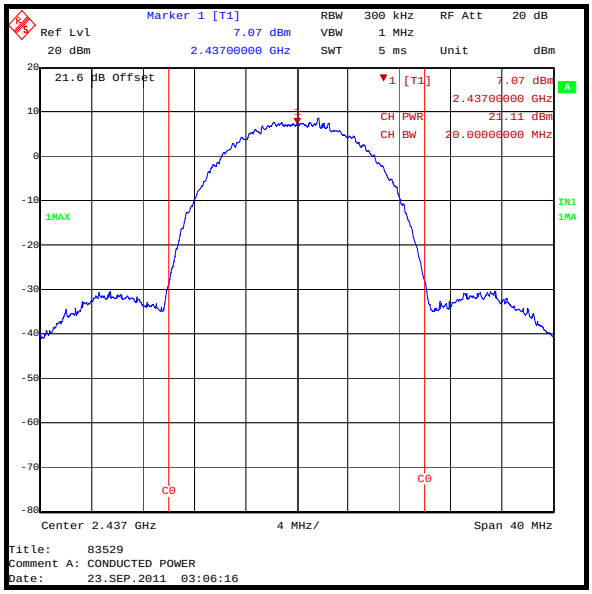
1. Power was measured using the channel power function on a spectrum analyser. The spectrum analyser was connected to the RF port on the EUT using suitable attenuation and RF cable.
2. All supported modes of operation were tested. The mode that produced the highest conducted output power is reported.

Transmitter Maximum Peak Output Power (continued)

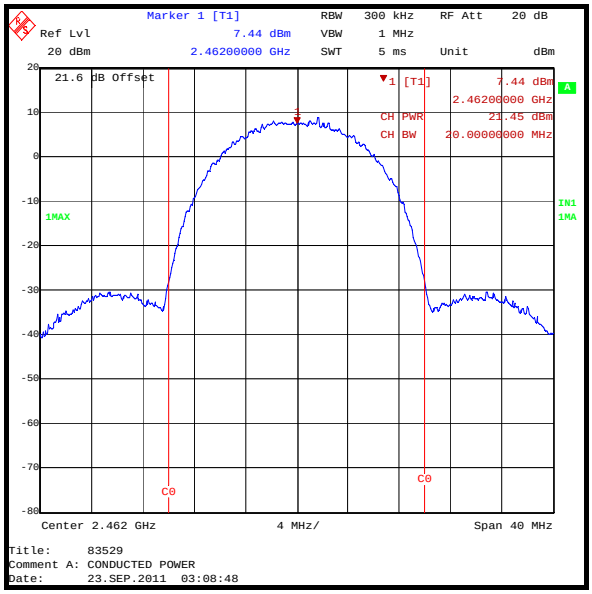
Results: 11 Mbps



Bottom channel



Middle channel



Top channel

5.2.7. Transmitter Average Conducted Output Power

Test Summary:

Test Engineer:	Jack Suter	**Test Date:**	13 September 2011
Test Sample IMEI:	357867040012198		

FCC Part:	15.247(b)(3)

Environmental Conditions:

Temperature (°C):	26
Relative Humidity (%):	27

Results:

Channel	Frequency (MHz)	Average Transmit Power (dBm)	Note
1	2412	13.6	802.11b (1 Mbps)
6	2437	14.5	
11	2462	14.8	
1	2412	13.2	802.11b (11 Mbps)
6	2437	14.0	
11	2462	14.4	
1	2412	12.2	802.11g (6 Mbps)
6	2437	13.2	
11	2462	13.5	
1	2412	11.3	802.11g (54 Mbps)
6	2437	12.4	
11	2462	12.6	
1	2412	12.0	802.11n (6.5 Mbps)
6	2437	13.1	
11	2462	13.3	

Note(s):

1. Conducted power measurements were performed to support SAR tests.

5.2.8. Transmitter Radiated Emissions

Test Summary:

Test Engineer:	Andrew Edwards	**Test Date:**	16 September 2011
Test Sample IMEI:	357867040012115		

FCC 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 (%):	31

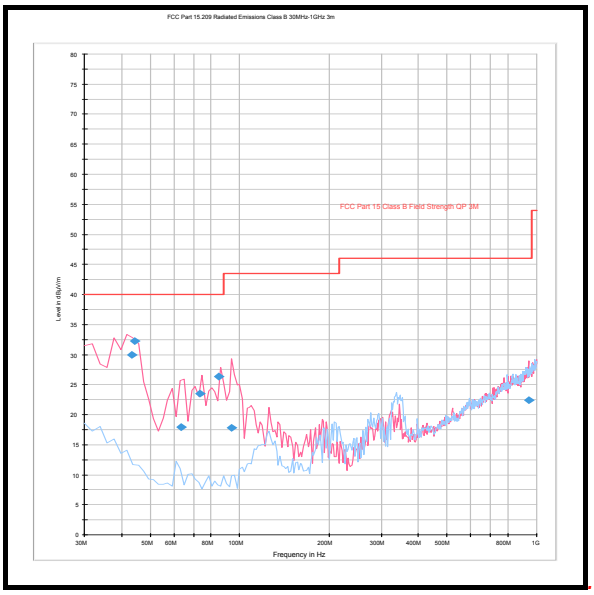
Results: Top Channel / 11 Mbps

Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
43.400	Vertical	30.0	40.0	10.0	Complied
44.218	Vertical	32.2	40.0	7.8	Complied
63.533	Vertical	17.9	40.0	22.1	Complied
73.627	Vertical	23.5	40.0	16.5	Complied
85.252	Vertical	26.4	40.0	13.6	Complied
93.816	Vertical	17.8	43.5	25.7	Complied
938.628	Vertical	22.4	46.0	23.6	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:	Andrew Edwards	**Test Date:**	15 September 2011
Test Sample IMEI:	357867040012115		

FCC Part:	15.247(d) & 15.209(a)
Test Method Used:	As detailed in ANSI C63.10 Sections 6.3 and 6.6 referencing ANSI C63.4
Frequency Range	1 GHz to 25 GHz

Environmental Conditions:

Temperature (°C):	25
Relative Humidity (%):	24

Results: Peak

Frequency (MHz)	Antenna Polarity	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
3993.988	Vertical	57.3	74.0	16.7	Complied

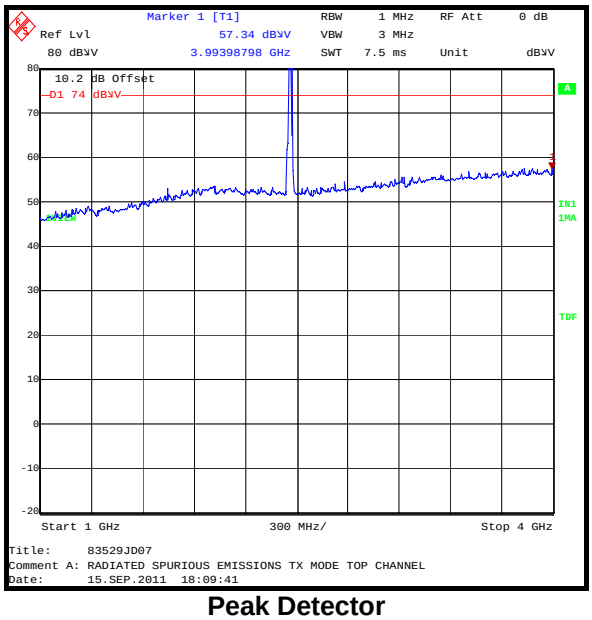
Results: Average

Frequency (MHz)	Antenna Polarity	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
3663.327	Vertical	48.0	54.0	6.0	Complied

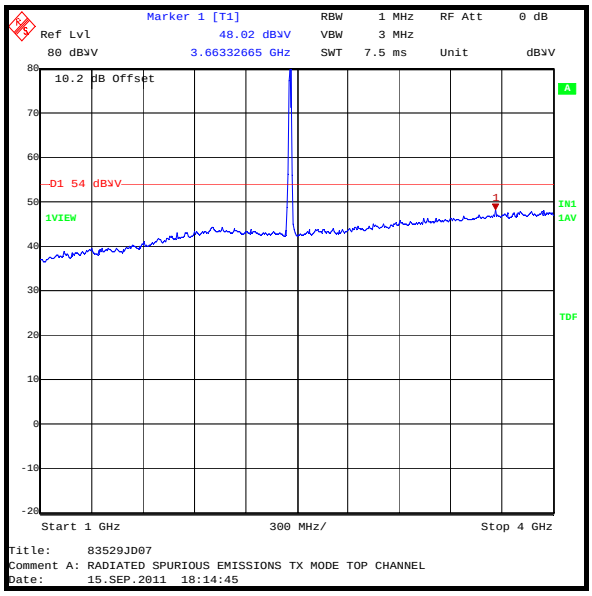
Note(s):

1. The final measured value, for the given emission, in the table above incorporates the calibrated antenna factor and cable loss
2. 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. 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. The emission shown at 2462 MHz on the 1 GHz to 4 GHz plot is the EUT fundamental.
5. 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.

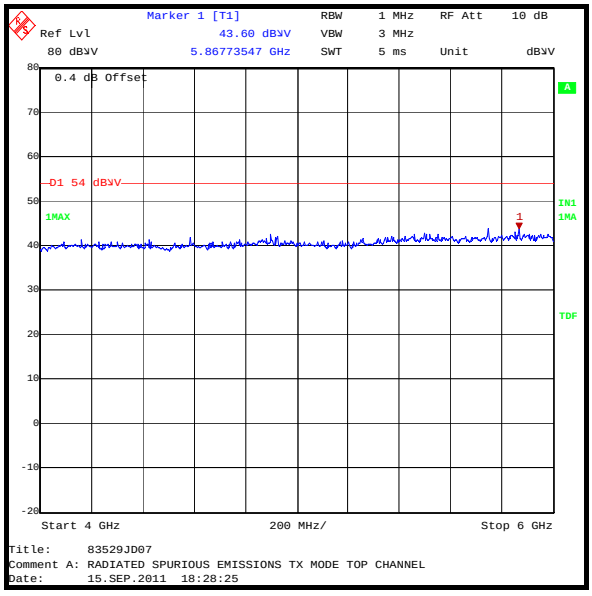
Transmitter Radiated Emissions (continued)

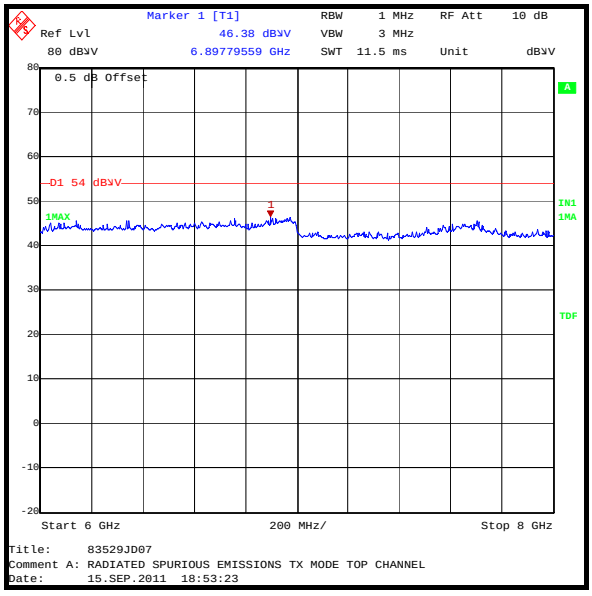


Peak Detector

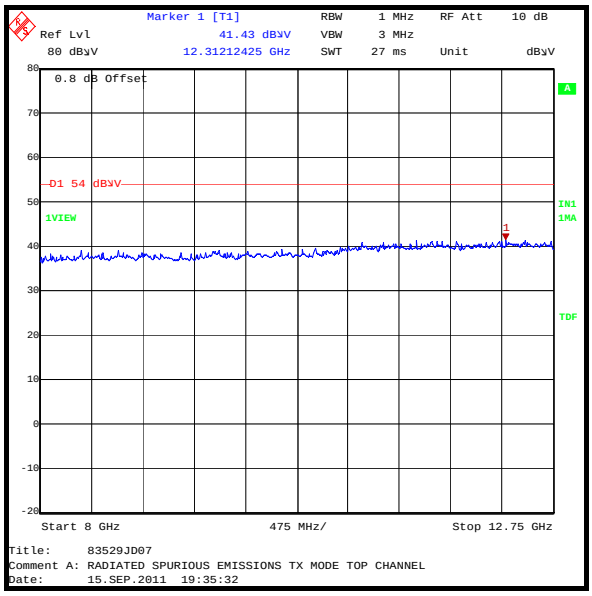


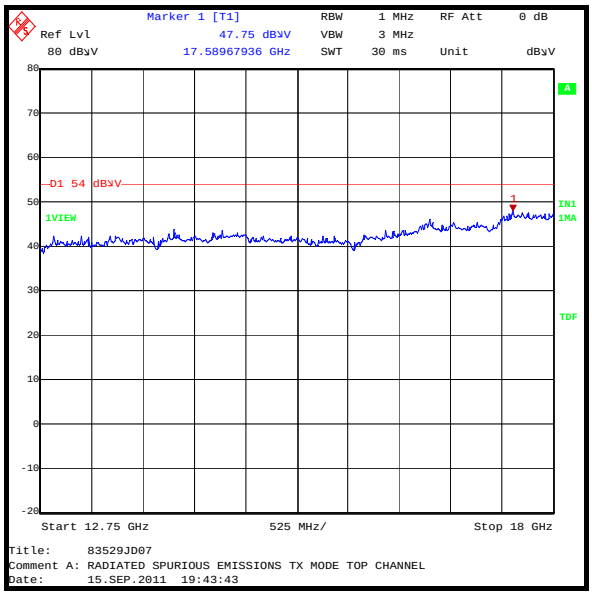
Average Detector

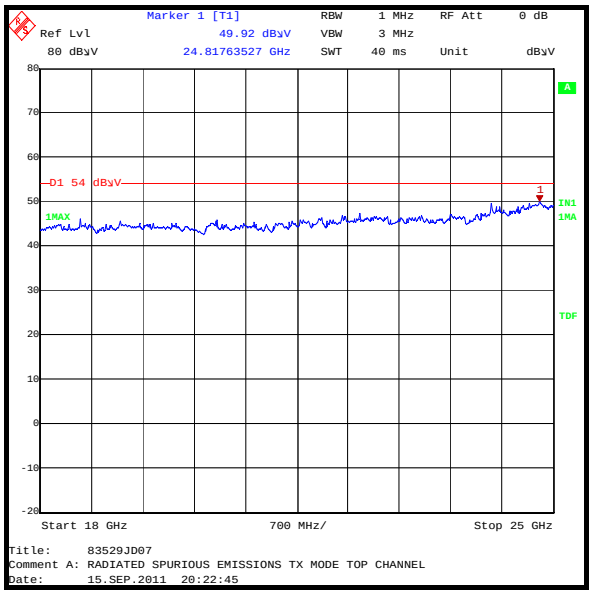




Transmitter Radiated Emissions (continued)







5.2.9. Transmitter Band Edge Radiated Emissions

Test Summary:

Test Engineer:	Andrew Edwards	**Test Date:**	15 September 2011
Test Sample IMEI:	357867040012115		

FCC Part:	15.247(d) & 15.209(a)
Test Method Used:	As detailed in ANSI C63.10 Section 6.9.2

Environmental Conditions:

Temperature (°C):	25
Relative Humidity (%):	24

Results: Peak / 1 Mbps

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
2400	52.2	91.6*	39.4	Complied
2483.5	63.2	74.0	10.8	Complied

Results: Average / 1 Mbps

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
2483.5	49.6	54.0	4.4	Complied

Results: Peak / 9 Mbps

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
2400	57.8	68.2*	10.4	Complied
2483.5	62.3	74.0	11.7	Complied

Results: Average / 9 Mbps

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
2483.5	48.5	54.0	5.5	Complied

Transmitter Band Edge Radiated Emissions (continued)

Results: Peak / 11 Mbps

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2400	52.1	71.3*	19.2	Complied
2483.5	63.0	74.0	11.0	Complied

Results: Average / 11 Mbps

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	49.9	54.0	4.1	Complied

Results: Peak / 18 Mbps

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2400	57.0	67.8*	10.8	Complied
2483.5	61.7	74.0	12.3	Complied

Results: Average / 18 Mbps

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	48.5	54.0	5.5	Complied

Transmitter Band Edge Radiated Emissions (continued)

Results: Peak / 48 Mbps

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2400	58.8	68.7*	9.9	Complied
2483.5	62.3	74.0	11.7	Complied

Results: Average / 48 Mbps

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	48.8	54.0	5.2	Complied

Results: Peak / 72.2 Mbps

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2400	60.5	67.8*	7.3	Complied
2483.5	61.8	74.0	12.2	Complied

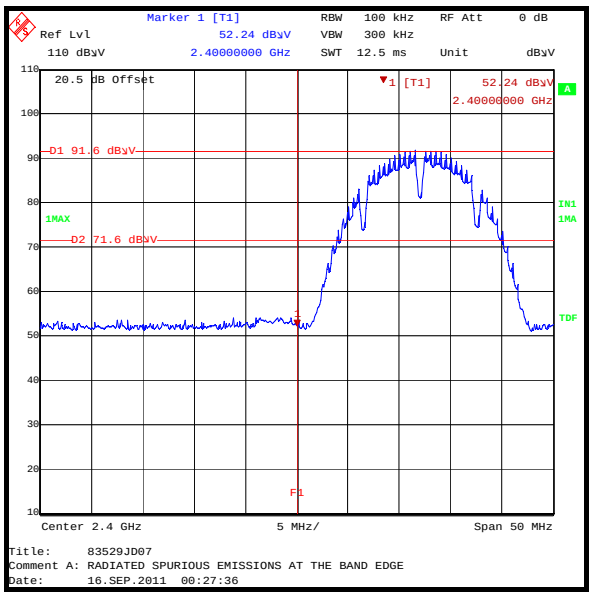
Results: Average / 72.2 Mbps

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	48.7	54.0	5.3	Complied

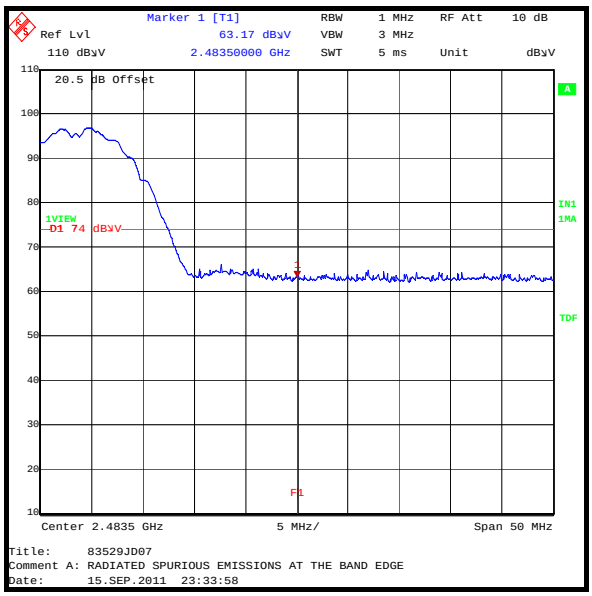
**-20 dBc limit*

Transmitter Band Edge Radiated Emissions (continued)

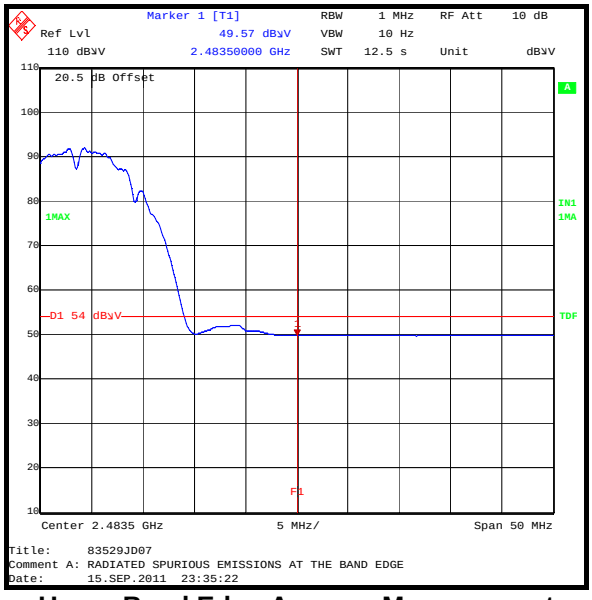
Results: 1 Mbps



Lower Band Edge Peak Measurement



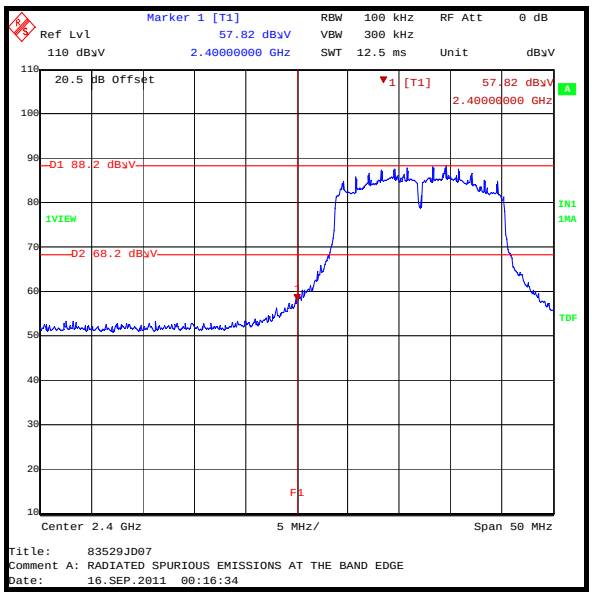
Upper Band Edge Peak Measurement



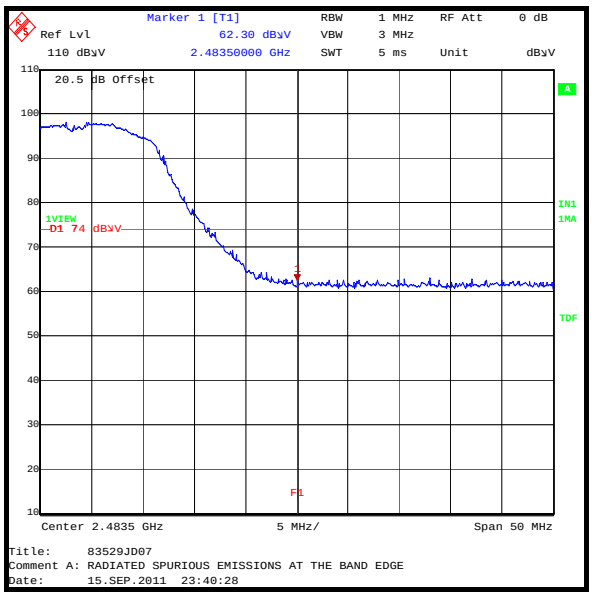
Upper Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (continued)

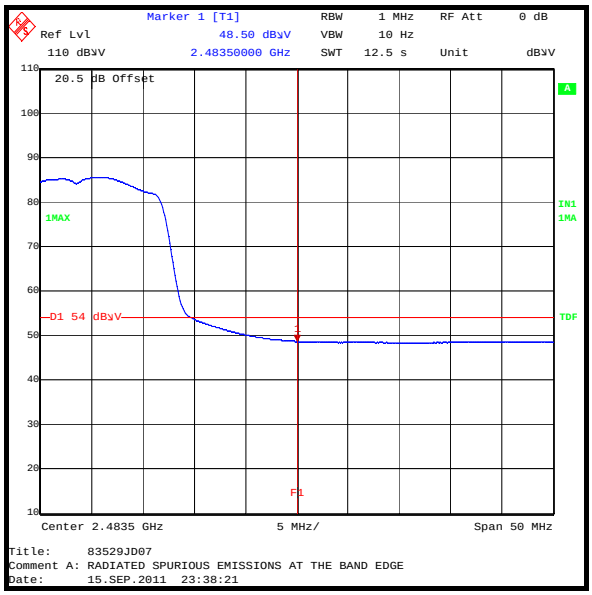
Results: 9 Mbps



Lower Band Edge Peak Measurement



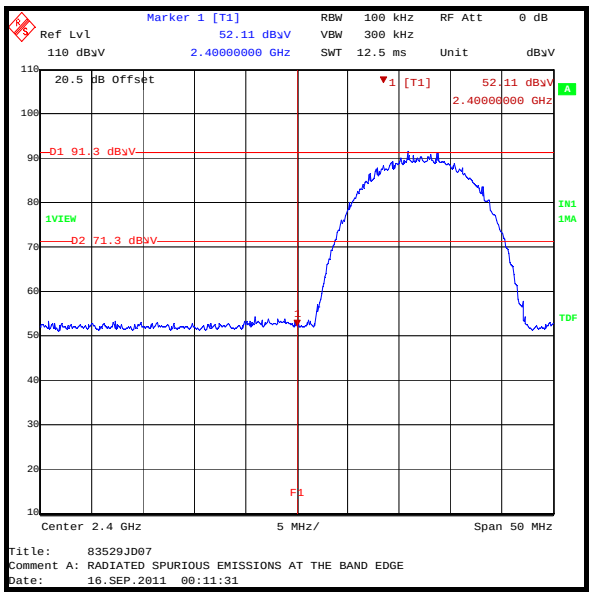
Upper Band Edge Peak Measurement



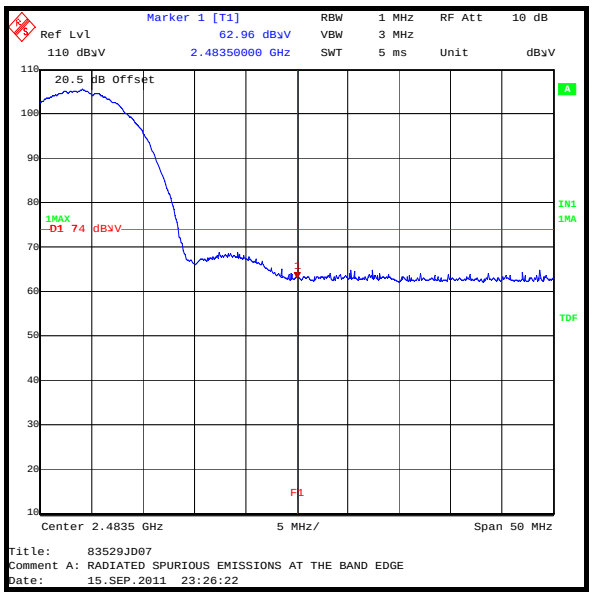
Upper Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (continued)

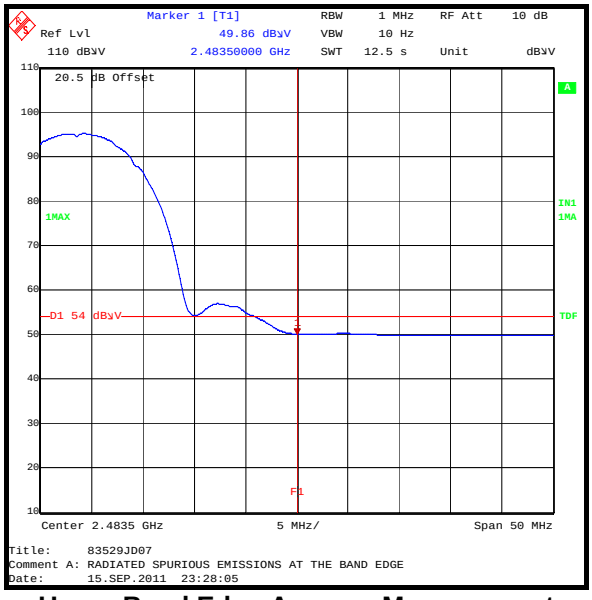
Results: 11 Mbps



Lower Band Edge Peak Measurement



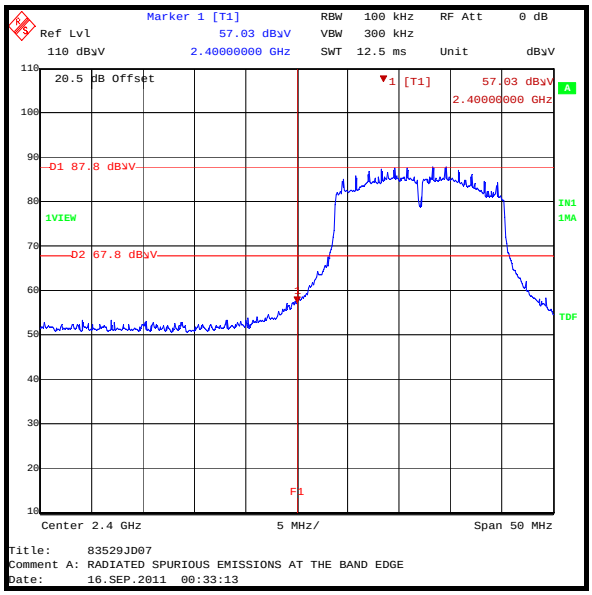
Upper Band Edge Peak Measurement



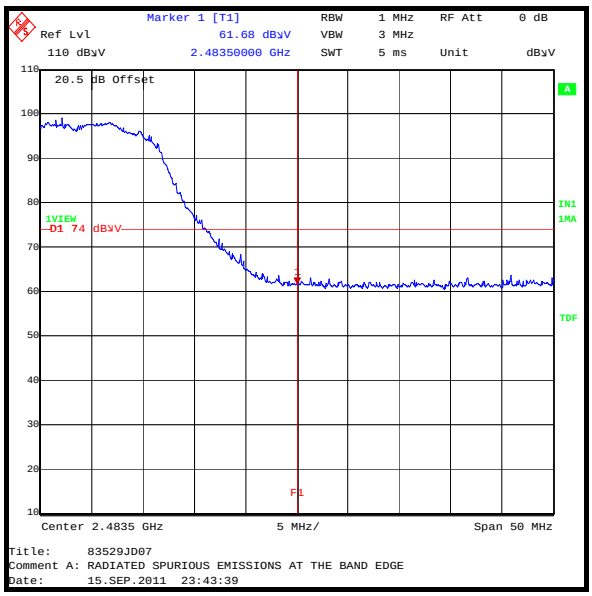
Upper Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (continued)

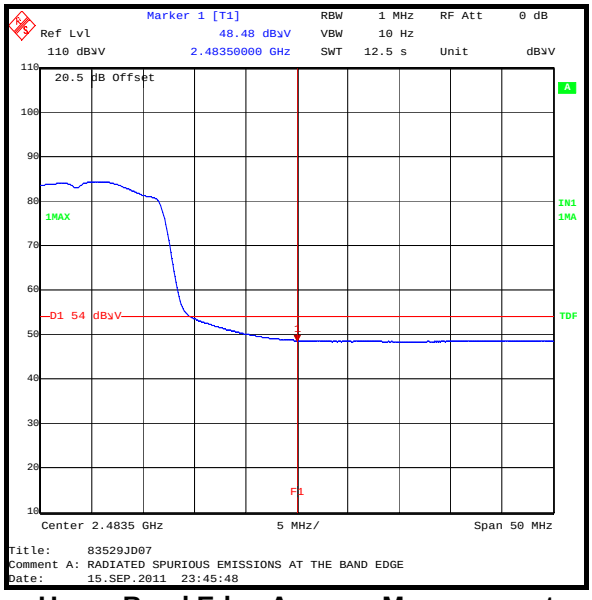
Results: 18 Mbps



Lower Band Edge Peak Measurement



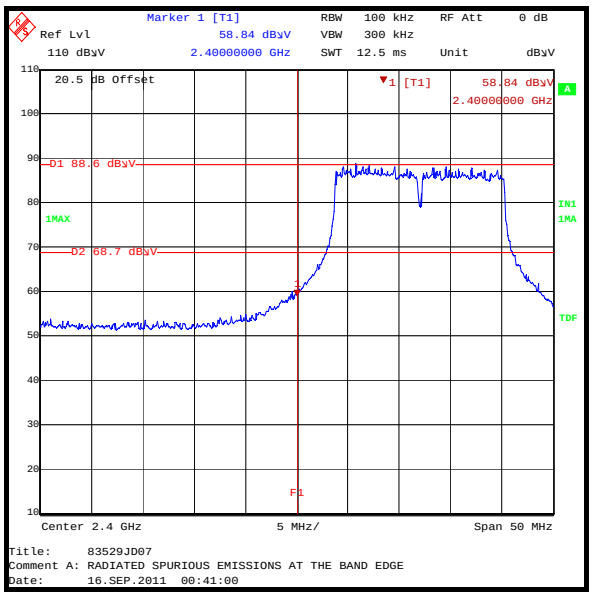
Upper Band Edge Peak Measurement



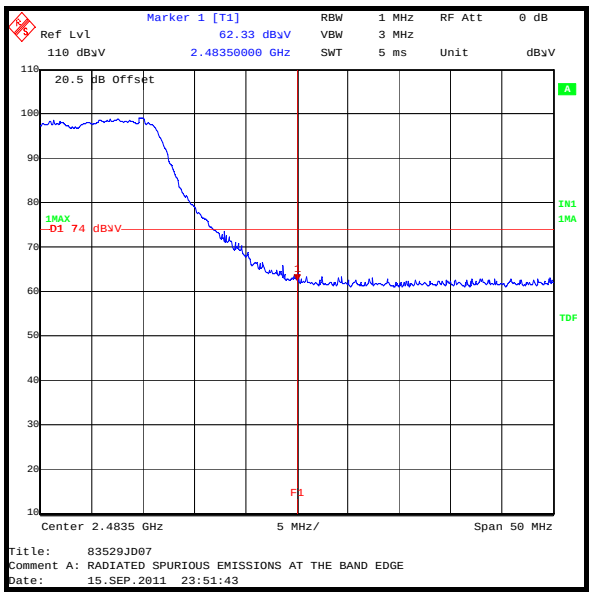
Upper Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (continued)

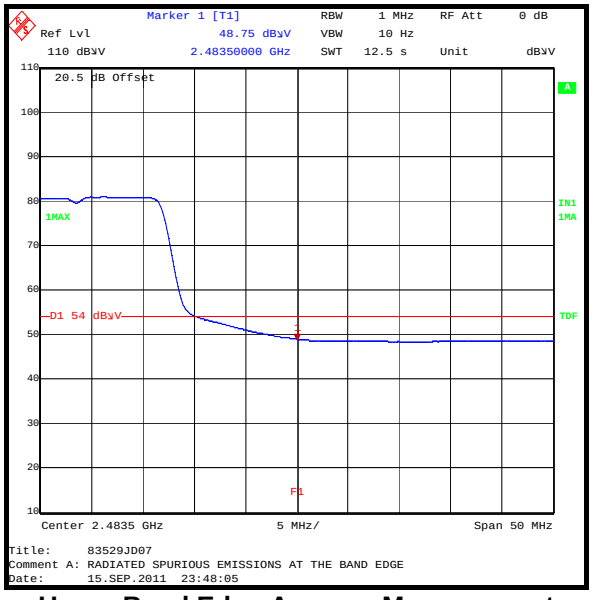
Results: 48 Mbps



Lower Band Edge Peak Measurement



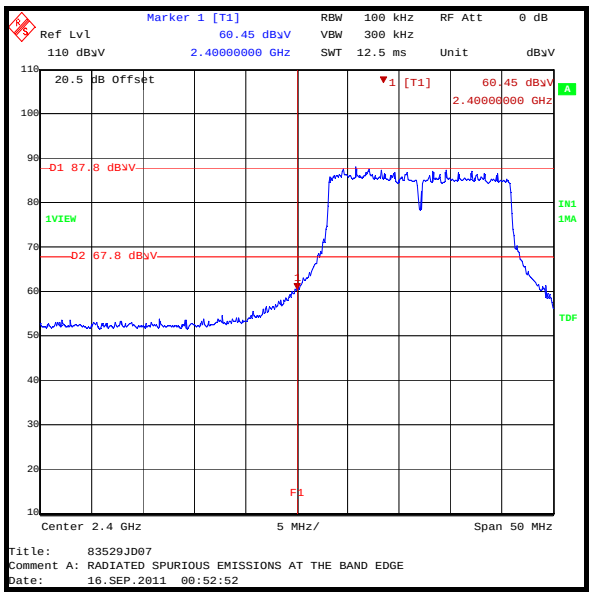
Upper Band Edge Peak Measurement



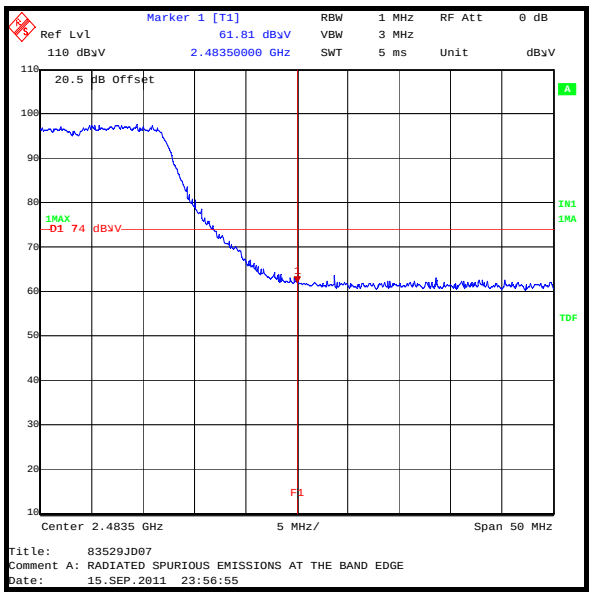
Upper Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (continued)

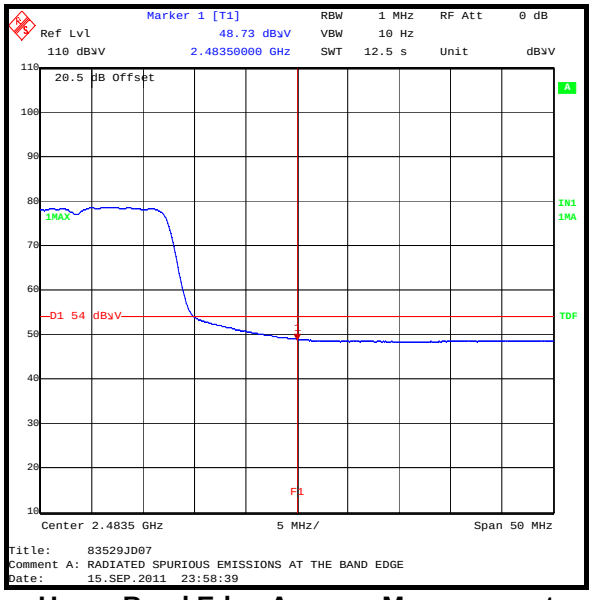
Results: 72.2 Mbps



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%	±0.27 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 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)
A067	LISN	Rohde & Schwarz	ESH3-Z5	890603/002	02 Jun 2012	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	20 Jun 2012	12
A1818	Antenna	EMCO	3115	00075692	13 Oct 2011	12
A1830	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100668	05 Mar 2012	12
A1834	Attenuator	Hewlett Packard	8491B	10444	26 Jul 2012	12
A1975	RF Filter	AtlanTecRF	AFH-03000	090424010	29 Dec 2011	12
A253	Antenna	Flann Microwave	12240-20	128	13 Oct 2011	12
A254	Antenna	Flann Microwave	14240-20	139	13 Oct 2011	12
A255	Antenna	Flann Microwave	16240-20	519	13 Oct 2011	12
A256	Antenna	Flann Microwave	18240-20	400	13 Oct 2011	12
A388	Attenuator	Suhner	6820.17.B	None	Calibrated before use	-
A436	Antenna	Flann	20240-20	330	13 Oct 2011	12
A553	Antenna	Chase	CBL6111A	1593	26 Mar 2012	12
K0001	5m RSE Chamber	Rainford EMC	N/A	N/A	29 May 2012	12
K0002	3m RSE Chamber	Rainford EMC	N/A	N/A	13 Oct 2011	12
M1044	Power Sensor	Rohde & Schwarz	NRV-Z1	893350/0019	27 May 2012	12
M1124	Spectrum Analyser	Rohde & Schwarz	ESI26	100046K	29 Jun 2012	12
M1242	Spectrum Analyser	Rohde & Schwarz,	FSEM30	845986/022	03 Dec 2011	12
M1263	Test Receiver	Rohde & Schwarz	ESIB7	100265	13 Jul 2012	12
M1273	Test Receiver	Rohde & Schwarz	ESIB 26	100275	04 Feb 2012	12

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