TEST REPORT
FROM
RFI GLOBAL SERVICES LTD

Test of: NTT docomo P-03C

FCC ID: UCE210034A

To: FCC Part 15.247: 2010 Subpart C

Test Report Serial No:
RFI-RPT-RP79094JD11A

Version 2.0 supersedes all previous versions

This Test Report Is Issued Under The Authority Of Chris Guy, Head of Global Approvals:	
Checked By:	Ian Watch
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Date of Issue:	04 November 2010

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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 October 2010 to 21 October 2010

2.2. Summary of Test Results

FCC Reference (47CFR)	Measurement	Result
Part 15.107(a)	Receiver/Idle Mode AC Conducted Emissions	✓
Part 15.109	Receiver/Idle Mode Radiated Spurious Emissions	✓
Part 15.207	Transmitter AC Conducted Emissions	✓
Part 15.247(a)(2)	Transmitter 6 dB Bandwidth	✓
Part 15.247(e)	Transmitter Power Spectral Density	✓
Part 15.247(b)(3)	Transmitter Maximum Peak Output Power	✓
Part 15.247(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-03C
IMEI:	352816040058201 *(Radiated sample #1)*
Hardware Version Number:	Rev C
Software Version Number:	B-D02SL1-01.04.004 D02SL1_Cv38081110
FCC ID:	UCE210034A

Brand Name:	NTT docomo
Model Name or Number:	P-03C
IMEI:	352816040059142 *(Conducted RF port sample #1)*
Hardware Version Number:	Rev C
Software Version Number:	B-D02SL1-01.04.004 D02SL1_Cv38081110
FCC ID:	UCE210034A

Brand Name:	NTT docomo
Model Name or Number:	P-03C
IMEI:	352816040059720 *(Conducted RF port sample #2)*
Hardware Version Number:	Rev C
Software Version Number:	B-D02SL1-01.04.004 D02SL1_Cv30081110*
FCC ID:	UCE210034A

**The Customer stated this software version is identical to D02SL1_Cv38081110 but allows the EUT to operate with SIMs having any network code.*

Brand Name:	NTT docomo
Description:	Battery
Model Name or Number:	P20*

Brand Name:	NTT docomo
Description:	AC Charger
Model Name or Number:	MAS-BH0008-AC02

Brand Name:	NTT docomo
Description:	DC Charger
Model Name or Number:	FOMA DC Adapter 02

Brand Name:	NTT docomo
Description:	Charge/USB Data cable
Model Name or Number:	FOMA USB Cable with Charge Function 02

Brand Name:	NTT docomo
Description:	Personal Hands-Free
Model Name or Number:	Stereo Earphone Set 01

3.2. Description of EUT

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

Modifications Incorporated in the EUT

No modifications were applied to the EUT during testing.

3.3. Additional Information Related to Testing

Technology Tested:	WLAN		
Type of Unit:	Transceiver		
Modulation Type:	BPSK; 64QAM		
Data Rate:	802.11b (DSSS): 1, 2, 5.5, 11 Mbps 802.11g (OFDM): 6, 9, 12, 18, 24, 36, 48, 54 Mbps		
Power Supply Requirement(s):	Nominal	3.7 V	
Maximum Peak Power Output (EIRP)	17.8 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

3.4. Support Equipment

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

Brand Name:	Sony
Description:	Laptop PC
Model Name or Number:	Vaio PCG-551N

Brand Name:	Generic
Description:	Micro SD Memory Card
Model Name or Number:	Not marked or stated

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 data rates which exhibited the widest spectral bandwidths and highest power levels i.e. 802.11b 5.5 Mbps – BPSK and 802.11g 48 Mbps - 64QAM

4.2. Configuration and Peripherals

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

- Controlled using a bespoke application on the laptop PC supplied by the client. The application was used to enable continuous transmission and idle mode (enabled but not transmitting) and to select the test channels, data rates and modulation schemes as required.
- The sample with IMEI 352816040058201 was used for AC conducted emissions, output power and radiated spurious emissions tests. The sample with IMEI 352816040059720 was used for conducted power measurements. The sample with IMEI 352816040059142 was used for all other measurements.
- The SDRAM card was present in the EUT during all testing.
- Transmitter spurious emissions were performed with the EUT transmitting with a data rate of 48 Mbps as this was found to have the highest power level and therefore deemed to be worst case.
- Idle mode and transmitter mode radiated spurious emissions tests were performed with the AC charger connected to the EUT and with the TV antenna extended as this was found to be the worst case during pre-scans. All accessories were individually connected with the TV antenna extended and retracted during pre-scan measurements to determine the worst case combination.

5. Measurements, Examinations and Derived Results

5.1. General Comments

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

5.2. Test Results

5.2.1. Receiver/Idle Mode AC Conducted Spurious Emissions

Test Summary:

Test Engineer:	Andrew Edwards	**Test Date:**	09 October 2010
Test Sample IMEI:	352816040058201		

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

Environmental Conditions:

Temperature (°C):	25
Relative Humidity (%):	31

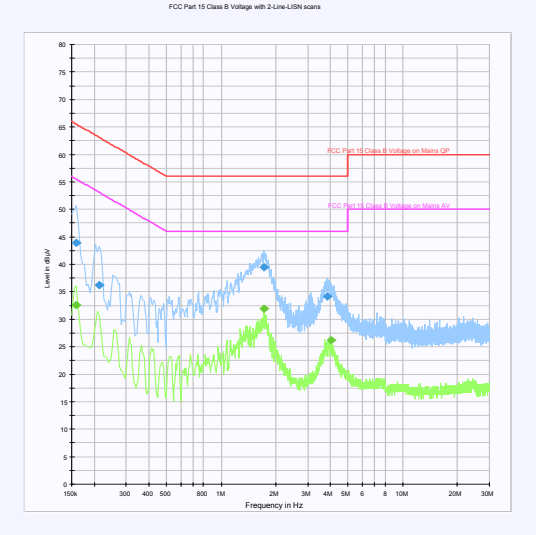
Results: Quasi Peak

Frequency (MHz)	Line	Level (dBµV)	Limit (dBµV)	Margin (dB)	Result
0.159000	Live	43.9	65.5	21.6	Complied
0.213000	Live	36.2	63.1	26.9	Complied
1.720500	Neutral	39.5	56.0	16.5	Complied
3.867000	Neutral	34.2	56.0	21.8	Complied

Results: Average

Frequency (MHz)	Line	Level (dBµV)	Limit (dBµV)	Margin (dB)	Result
0.159000	Neutral	32.6	55.5	21.6	Complied
1.716000	Neutral	31.9	46.0	26.9	Complied
4.033500	Neutral	26.3	46.0	16.5	Complied

Receiver/Idle Mode AC Conducted Spurious Emissions (continued)



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

5.2.2. Receiver/Idle Mode Radiated Spurious Emissions

Test Summary:

Test Engineer:	Nick Steele	**Test Date:**	12 October 2010
Test Sample IMEI No:	352816040058201		

FCC Part:	15.109
Test Method Used:	As detailed in ANSI C63.10 Sections 6.3 and 6.5 referencing ANSI C63.4
Frequency Range:	30 MHz to 1000 MHz

Environmental Conditions:

Temperature (°C):	26
Relative Humidity (%):	33

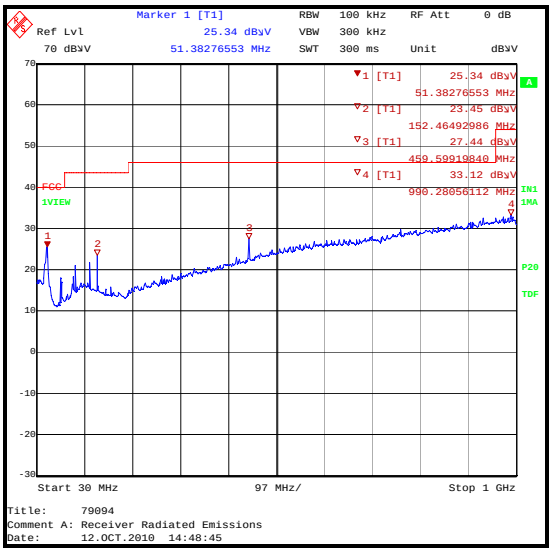
Results: Quasi Peak

Frequency (MHz)	Antenna Polarity	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
51.046	Vertical	25.4	40.0	14.6	Complied
458.775	Vertical	27.0	46.0	19.0	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 were investigated and found to be 20 dB lower than the relevant limit.

Receiver/Idle Mode Radiated Spurious Emissions (continued)



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

Receiver/Idle Mode Radiated Spurious Emissions (continued)

Test Summary:

Test Engineer:	Nick Steele	**Test Date:**	12 October 2010
Test Sample IMEI No:	352816040058201		

FCC Part:	15.109
Test Method Used:	As detailed in ANSI C63.10 Sections 6.3 and 6.6 referencing ANSI C63.4
Frequency Range:	1 GHz to 12.5 GHz

Environmental Conditions:

Temperature (°C):	26
Relative Humidity (%):	33

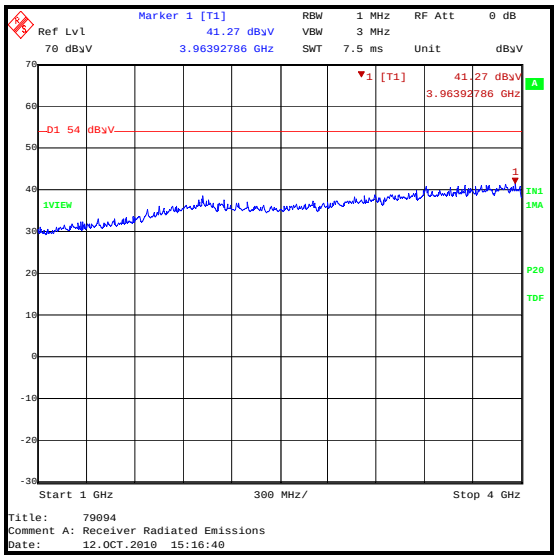
Results:

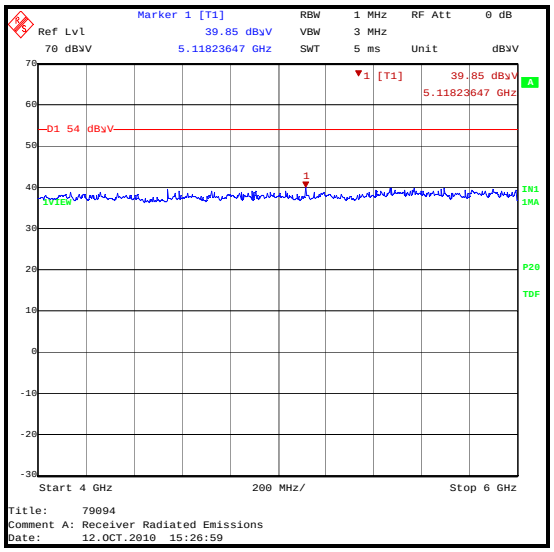
Frequency (MHz)	Antenna Polarity	Peak Level (dBμV/m)	Average Limit (dBμV/m))	Margin (dB)	Result
6969.940	Vertical	44.3	54.0	9.7	Complied

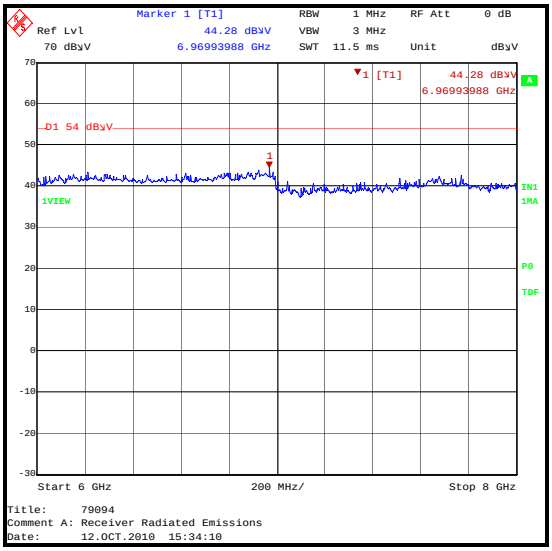
Note(s):

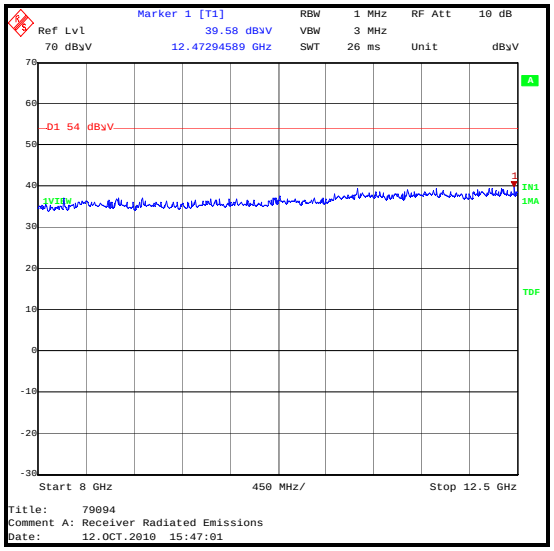
1. The final measured value, for the given emission, in the table above incorporates the calibrated antenna factor and cable loss.
2. No spurious emissions were detected above the noise floor of the measuring receiver therefore the highest peak noise floor reading of the measuring receiver was recorded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

Receiver/Idle Mode Radiated Spurious Emissions (continued)









5.2.3. Transmitter AC Conducted Spurious Emissions

Test Summary:

Test Engineer:	Andrew Edwards	**Test Date:**	18 October 2010
Test Sample IMEI:	352816040059142		

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

Environmental Conditions:

Temperature (°C):	28
Relative Humidity (%):	26

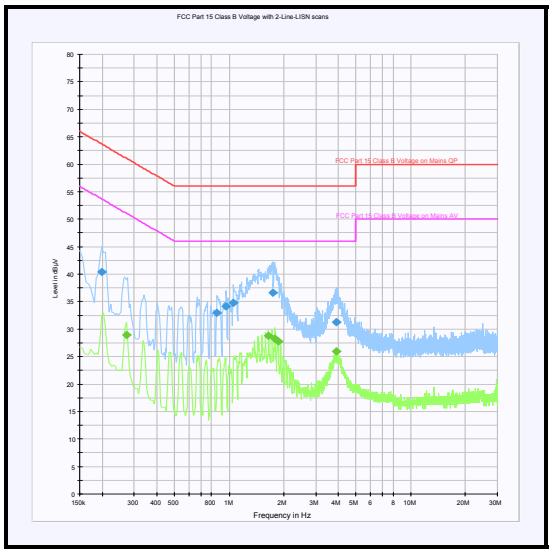
Results: Quasi Peak

Frequency (MHz)	Line	Level (dBµV)	Limit (dBµV)	Margin (dB)	Result
0.199500	Live	40.3	63.6	23.3	Complied
0.856500	Live	33.0	56.0	23.0	Complied
0.964500	Live	34.1	56.0	21.9	Complied
1.054500	Live	34.8	56.0	21.2	Complied
1.738500	Live	36.6	56.0	19.4	Complied
3.889500	Live	31.3	56.0	24.7	Complied

Results: Average

Frequency (MHz)	Line	Level (dBµV)	Limit (dBµV)	Margin (dB)	Result
0.271500	Live	29.0	51.1	22.1	Complied
1.648500	Live	28.8	46.0	17.2	Complied
1.783500	Live	28.3	46.0	17.7	Complied
1.855500	Live	27.8	46.0	18.2	Complied
3.894000	Live	26.0	46.0	20.0	Complied

Transmitter AC Conducted Spurious Emissions (continued)



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

5.2.4. Transmitter 6 dB Bandwidth

Test Summary:

Test Engineer:	Andrew Edwards	**Test Date:**	18 October 2010
Test Sample IMEI:	352816040059142		

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

Environmental Conditions:

Temperature (°C):	28
Relative Humidity (%):	25

Results: 802.11b - 5.5 Mbps

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	12.425	≥0.5	11.925	Complied
Middle	12.525	≥0.5	12.025	Complied
Top	12.525	≥0.5	12.025	Complied

Results: 802.11g - 48 Mbps

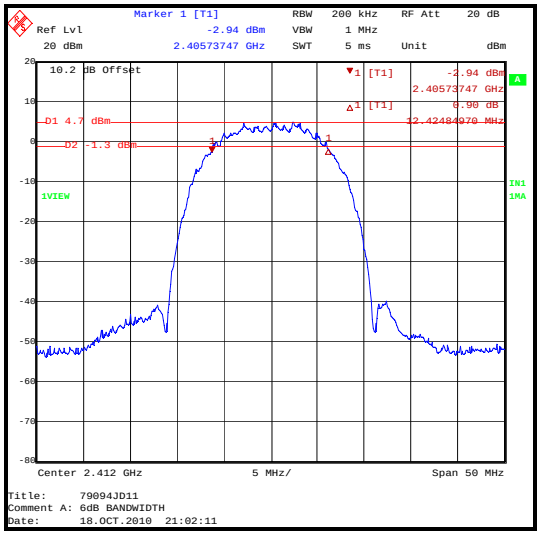
Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	16.733	≥0.5	16.233	Complied
Middle	16.733	≥0.5	16.233	Complied
Top	16.834	≥0.5	16.334	Complied

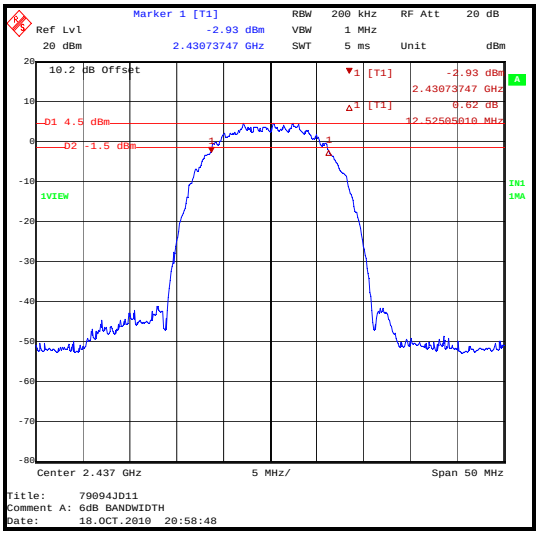
Note(s):

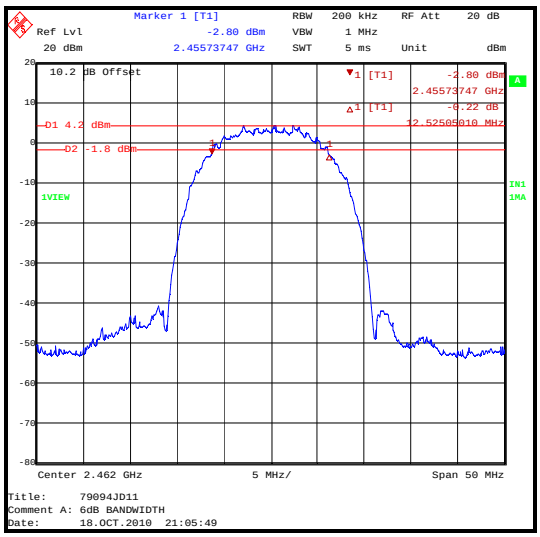
1. Testing was performed on the data rates in each mode that exhibited the narrowest 6 dB bandwidths and, therefore, closest to the limit. It should be noted that the 6 dB bandwidths for the data rates in each specific mode i.e. 802.11b or 802.11g were very similar.

Transmitter 6 dB Bandwidth (continued)

Results: 802.11b - 5.5 Mbps

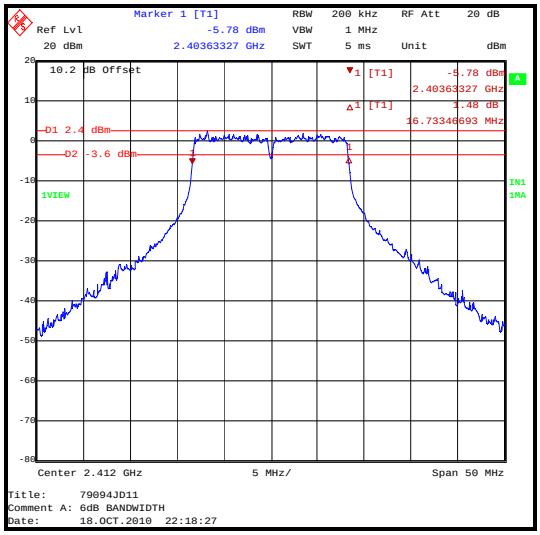


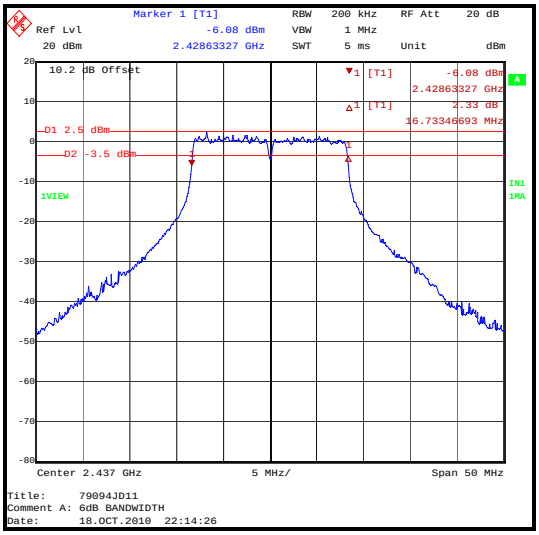


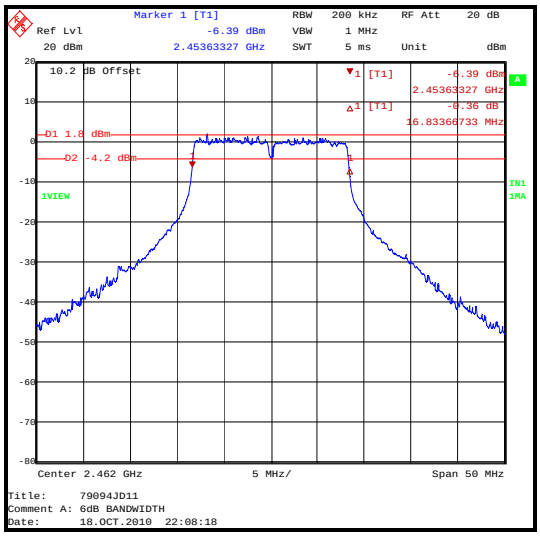


Transmitter 6 dB Bandwidth (continued)

Results: 802.11g - 48 Mbps







5.2.5. Transmitter Power Spectral Density

Test Summary:

Test Engineer:	Nick Steele	**Test Date:**	20 October 2010
Test Sample IMEI:	352816040059142		

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

Environmental Conditions:

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

Results: 802.11b - 5.5 Mbps

Channel	Output Power (dBm/3 kHz)	Limit (dBm/3 kHz)	Margin (dB)	Result
Bottom	-17.0	8.0	25.0	Complied
Middle	-13.9	8.0	21.9	Complied
Top	-18.1	8.0	26.1	Complied

Results: 802.11g - 48 Mbps

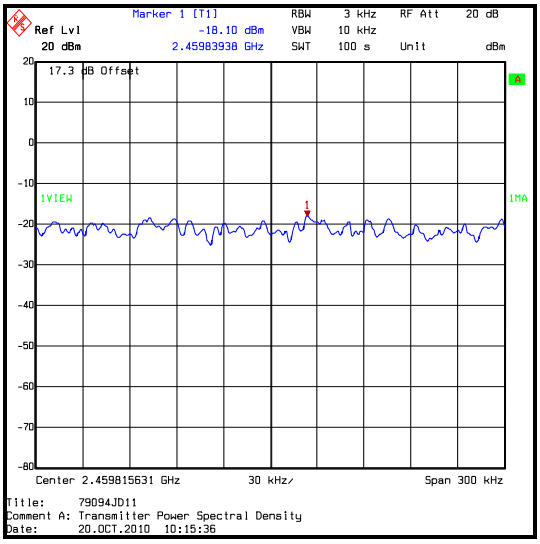
Channel	Output Power (dBm/3 kHz)	Limit (dBm/3 kHz)	Margin (dB)	Result
Bottom	-19.5	8.0	27.5	Complied
Middle	-15.8	8.0	23.8	Complied
Top	-15.8	8.0	23.8	Complied

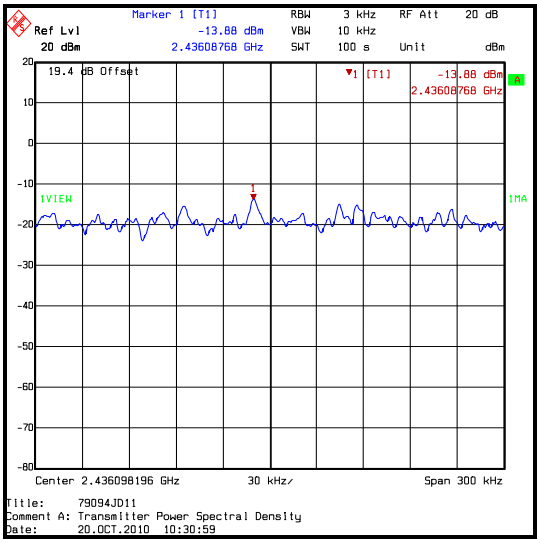
Note(s):

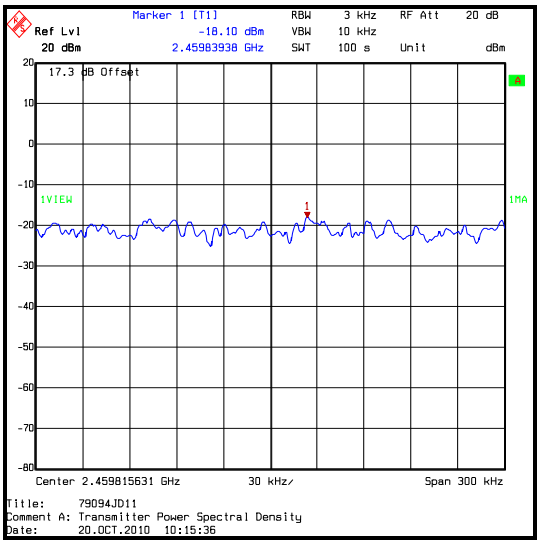
2. These tests were performed radiated as the EUT has an integral antenna and does not have an external antenna port.
3. Testing was performed with the data rates which produced the highest power spectral density

Transmitter Power Spectral Density (continued)

Results: 802.11b - 5.5 Mbps

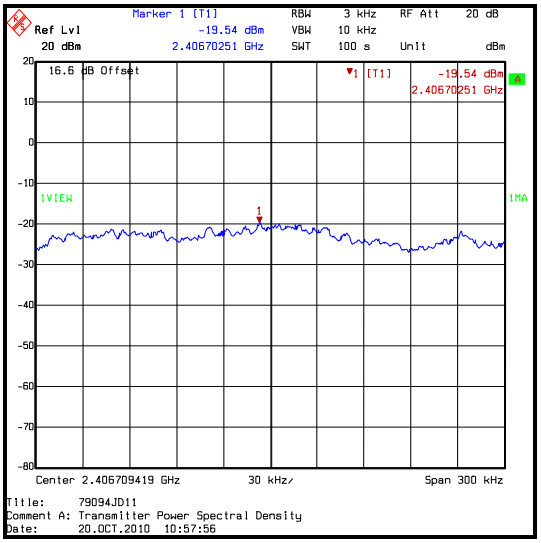


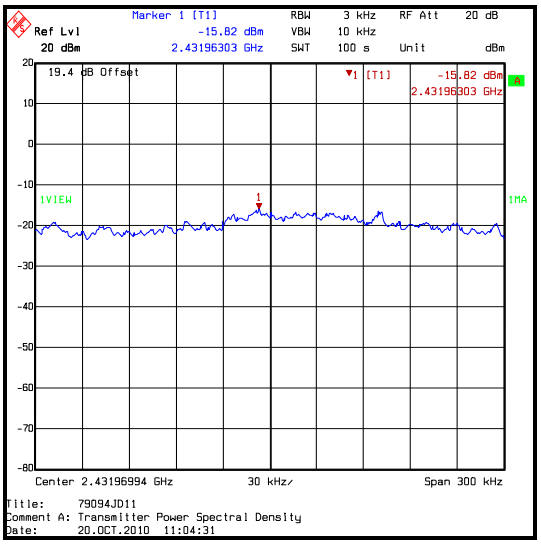


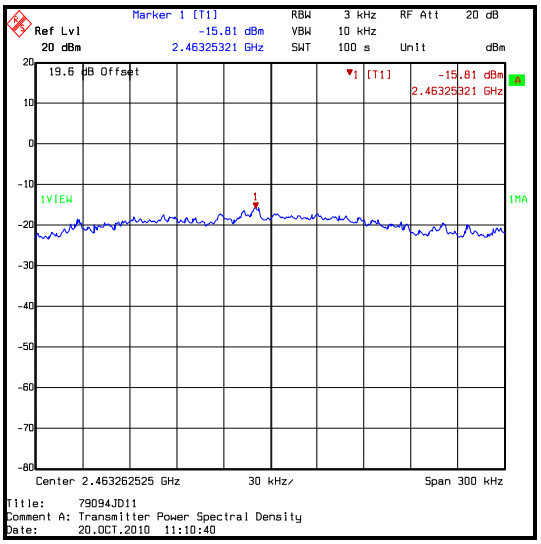


Transmitter Power Spectral Density (continued)

Results: 802.11g - 48Mbps







5.2.6. Transmitter Maximum Peak Output Power

Test Summary:

Test Engineer:	Nick Steele	**Test Date:**	12 October 2010
Test Sample IMEI:	352816040058201		

FCC Part:	15.247(b)(3)
Test Method Used:	As detailed in ANSI C63.10 Section 6.10.2 and Sections 6.3 and 6.6 referencing ANSI C63.4 (see note below)

Environmental Conditions:

Temperature (°C):	25
Relative Humidity (%):	29

Results: 802.11b – 5.5 Mbps

Channel	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	14.6	36.0	21.4	Complied
Middle	16.7	36.0	19.3	Complied
Top	15.3	36.0	20.7	Complied

Results: 802.11g – 48 Mbps

Channel	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	14.5	36.0	21.5	Complied
Middle	17.6	36.0	18.4	Complied
Top	17.8	36.0	18.2	Complied

Note(s):

1. Power measurements were performed on all possible data rates on the highest channel only. The mode showing the highest output power was then tested at the bottom and middle channels.
2. Tests were performed using a combination of the conducted test method described in ANSI C63.10 Section 6.10.2 and the test methods for radiated emissions measurements described in Sections 6.3 and 6.6. The reason for this being that the measurements were performed radiated as the EUT has an integral antenna and does not an external antenna port.

5.2.7. Transmitter Average Conducted Output Power

Test Summary:

Test Engineer:	Richelieu Quoi	**Test Date:**	18 October 2010
Test Sample IMEI:	352816040059720		

FCC Part:	15.247(b)(3)

Environmental Conditions:

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

Results:

Channel	Frequency (MHz)	Average Transmit Power (dBm)	Note
1	2412	14.1	802.11b (1 Mbps)
6	2437	13.5	
11	2462	13.2	
1	2412	13.0	802.11b (11 Mbps)
6	2437	12.7	
11	2462	12.7	
1	2412	13.4	802.11g (6 Mbps)
6	2437	12.9	
11	2462	12.7	
1	2412	13.1	802.11g (54 Mbps)
6	2437	12.4	
11	2462	12.4	

Note(s):

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

5.2.8. Transmitter Radiated Emissions

Test Summary:

Test Engineer:	Nick Steele	**Test Date:**	12 October 2010
Test Sample IMEI:	352816040058201		

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):	25
Relative Humidity (%):	30

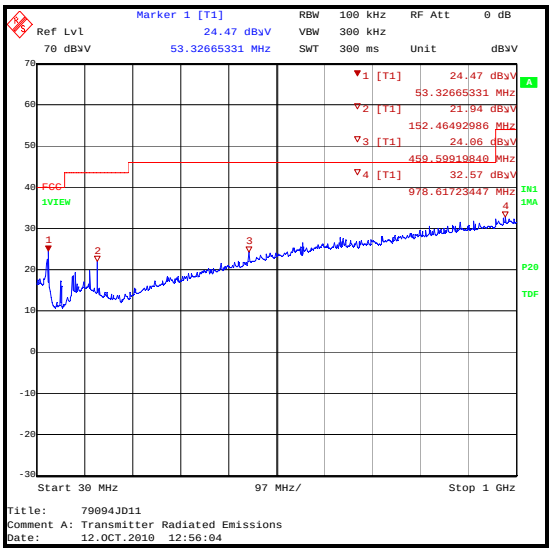
Results: Top Channel

Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
51.875	Vertical	21.9	40.0	18.1	Complied
138.048	Vertical	20.9	43.5	22.6	Complied
153.308	Vertical	20.6	43.5	20.6	Complied
458.778	Vertical	25.7	46.0	20.3	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. Tests were performed with the DC charger connected to the EUT as this was found to be the worst case during pre-scans. All accessories were individually connected and measurements made during pre-scans to determine the worst case combination.

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:	Nick Steele	**Test Date:**	12 October 2010
Test Sample IMEI:	352816040058201		

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 26.5 GHz

Environmental Conditions:

Temperature (°C):	24
Relative Humidity (%):	31

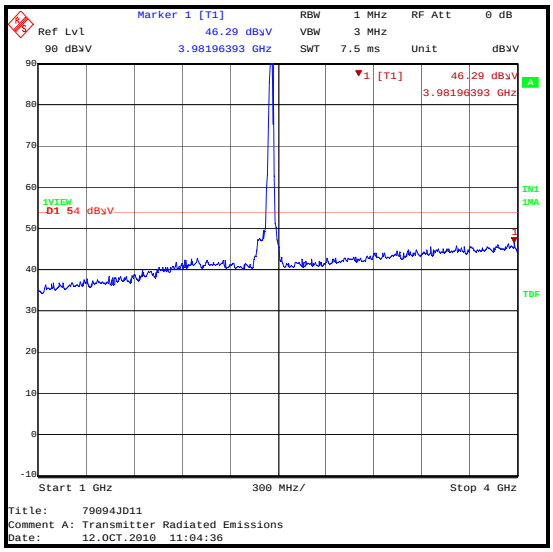
Results:

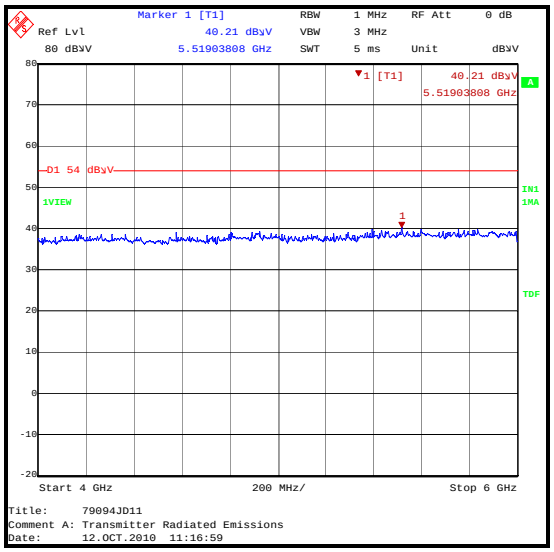
Frequency (GHz)	Antenna Polarity	Peak Level (dBµV/m)	Average Limit (dBµV/m)	Margin (dB)	Result
26.295591	Horizontal	48.5	54.0	5.5	Complied

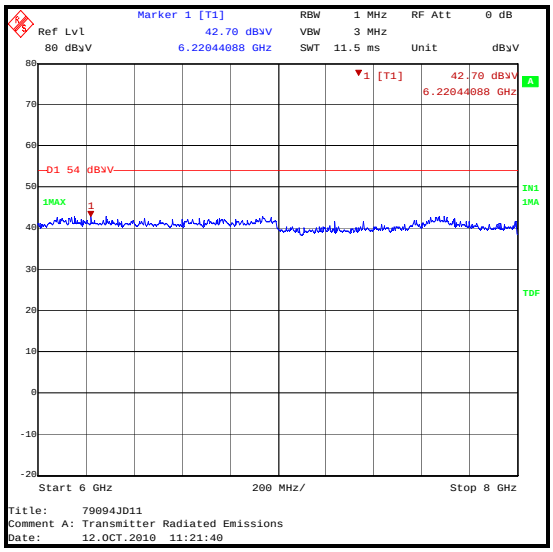
Note(s):

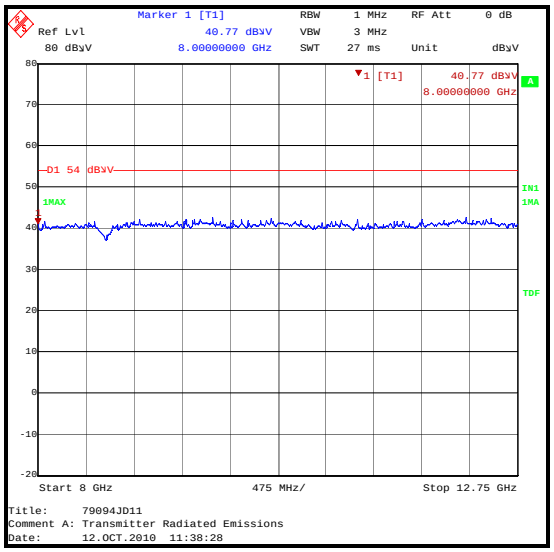
1. The final measured value, for the given emission, in the table above incorporates the calibrated antenna factor and cable loss
2. No spurious emissions were detected above the noise floor of the measuring receiver therefore the highest peak noise floor reading of the measuring receiver was recorded 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 on the 1 GHz to 4 GHz plot is the EUT fundamental.

Transmitter Radiated Emissions (continued)

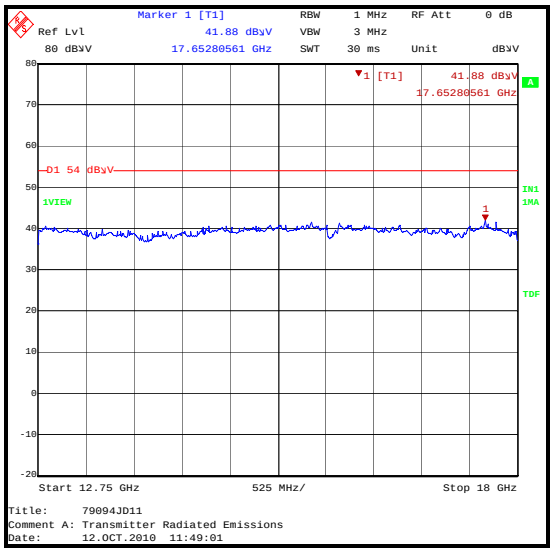


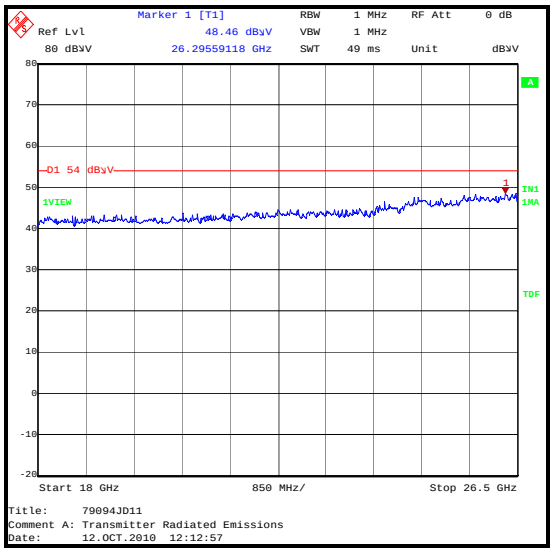






Transmitter Radiated Emissions (continued)





5.2.9. Transmitter Band Edge Radiated Emissions

Test Summary:

Test Engineer:	Nick Steele	**Test Date:**	21 October 2010
Test Sample IMEI:	352816040058201		

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):	24
Relative Humidity (%):	21

Results: 802.11b – 1 Mbps - Peak

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
2400	55.0	76.7*	21.7	Complied
2483.5	49.0	74.0	25.0	Complied

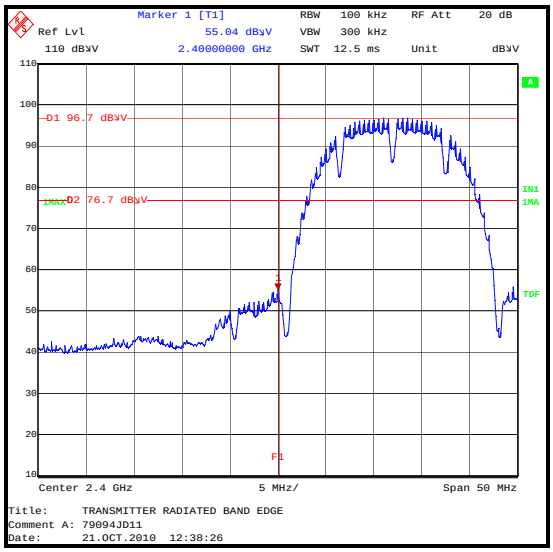
Results: 802.11b – 1 Mbps - Average

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
2483.5	38.0	54.0	16.0	Complied

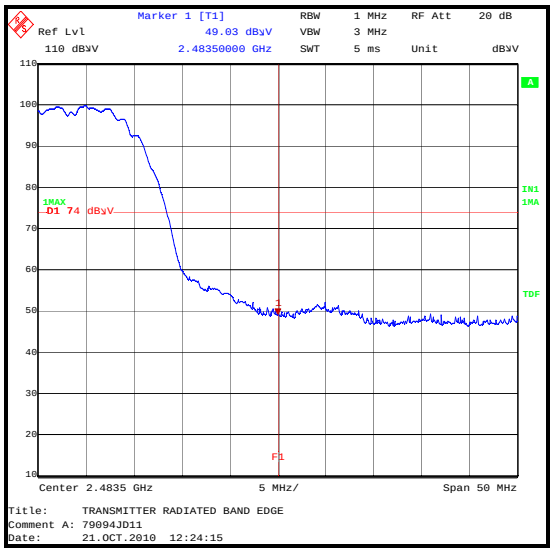
Note(s):

1. The final measured value, for the given emission, in the table above incorporates the calibrated antenna factor and cable loss.
2. * -20 dBc limit.

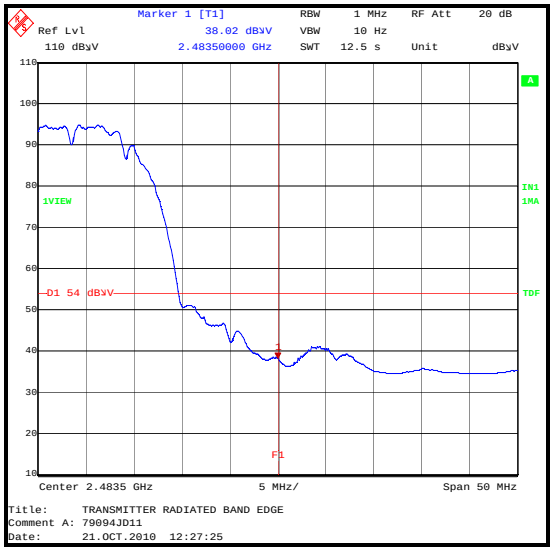
Transmitter Band Edge Radiated Emissions (continued)



Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement



Upper Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (continued)

Results: 802.11b – 2 Mbps - Peak

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2400	52.9	76.2*	23.3	Complied
2483.5	48.9	74.0	25.1	Complied

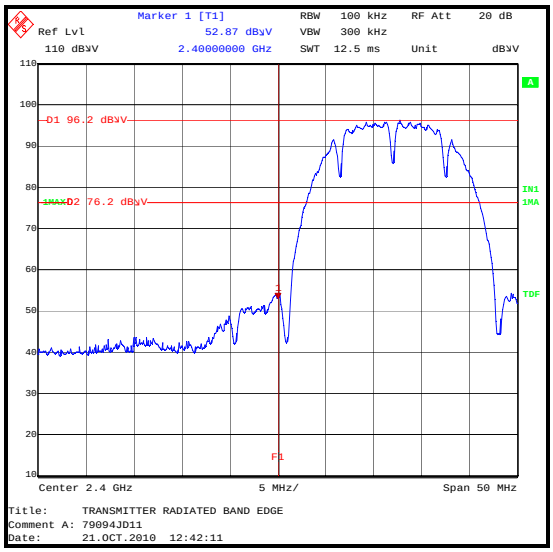
Results: 802.11b – 2 Mbps - Average

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	37.6	54.0	16.4	Complied

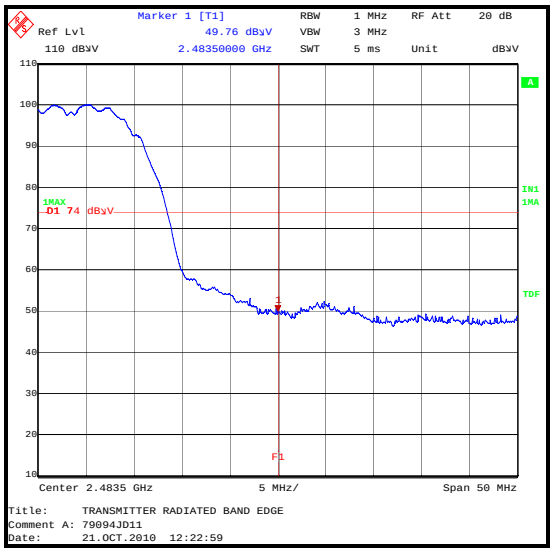
Note(s):

1. The final measured value, for the given emission, in the table above incorporates the calibrated antenna factor and cable loss.
2. * -20 dBc limit.

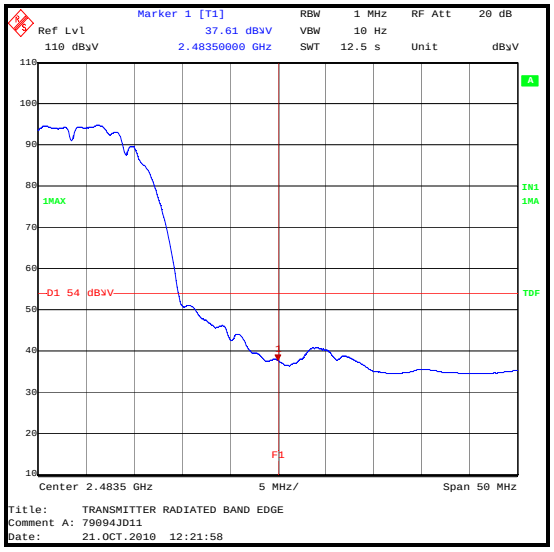
Transmitter Band Edge Radiated Emissions (continued)



Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement



Upper Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (continued)

Results: 802.11b – 5.5 Mbps - Peak

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2400	54.4	76.9*	22.5	Complied
2483.5	48.4	74.0	25.6	Complied

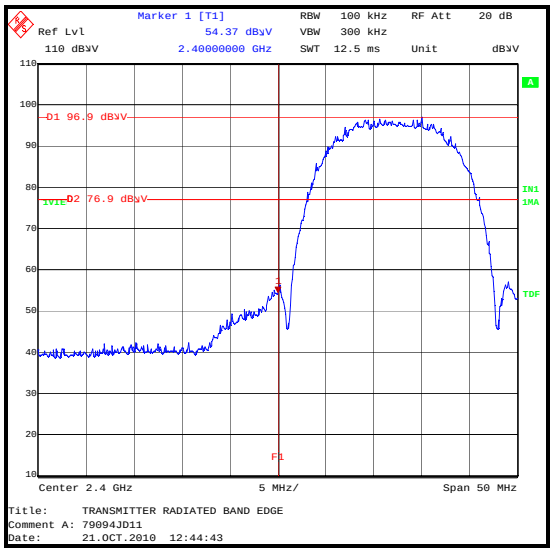
Results: 802.11b – 5.5 Mbps - Average

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	36.0	54.0	18.0	Complied

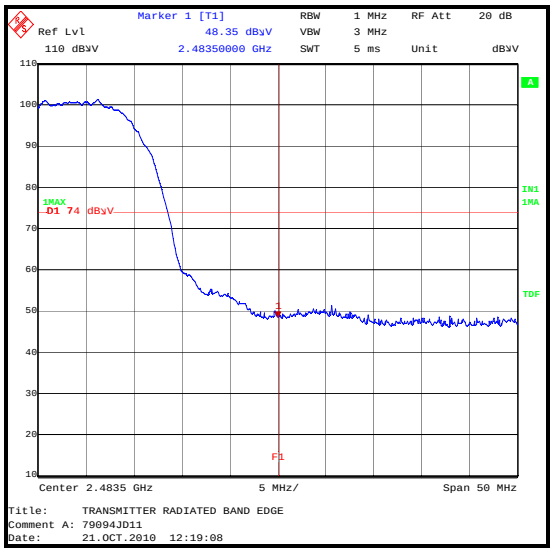
Note(s):

1. The final measured value, for the given emission, in the table above incorporates the calibrated antenna factor and cable loss.
2. * -20 dBc limit.

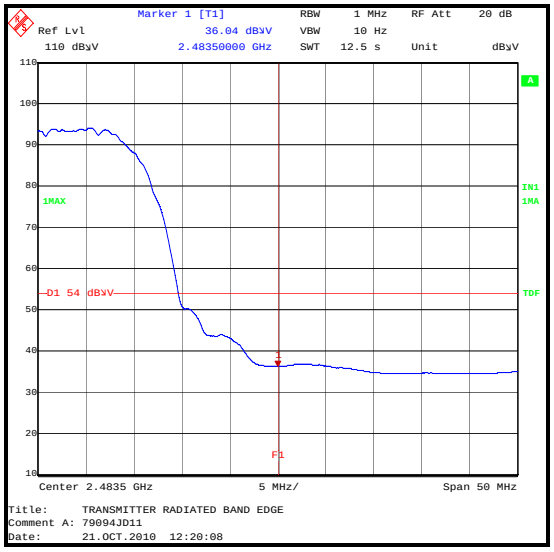
Transmitter Band Edge Radiated Emissions (continued)



Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement



Upper Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (continued)

Results: 802.11b – 11 Mbps - Peak

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2400	53.6	75.5*	21.9	Complied
2483.5	49.8	74.0	24.2	Complied

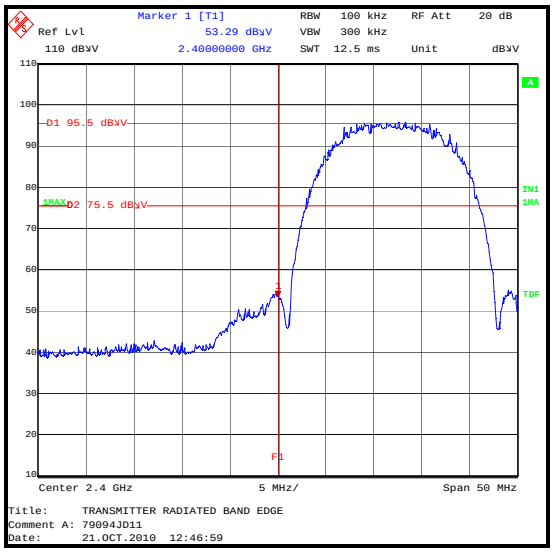
Results: 802.11b – 11 Mbps - Average

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	36.6	54.0	17.4	Complied

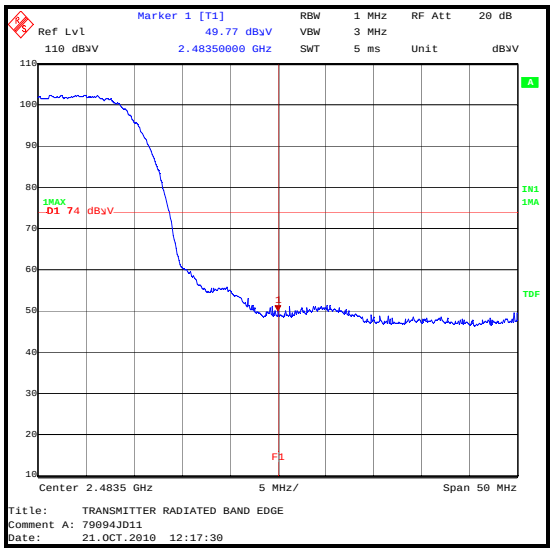
Note(s):

1. The final measured value, for the given emission, in the table above incorporates the calibrated antenna factor and cable loss.
2. * -20 dBc limit.

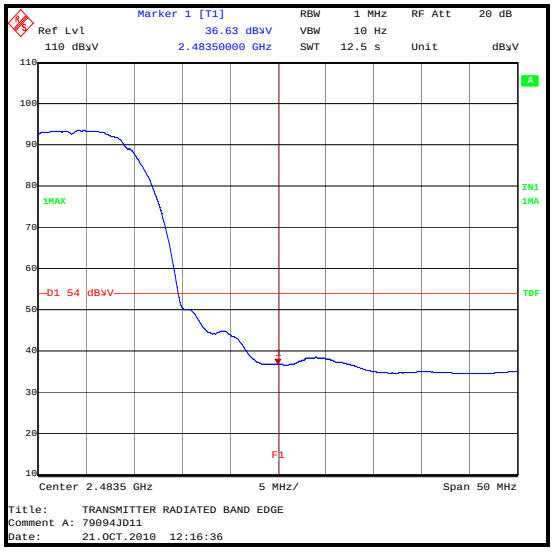
Transmitter Band Edge Radiated Emissions (continued)



Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement



Upper Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (continued)

Results: 802.11g – 6 Mbps - Peak

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2400	65.9	73.3*	7.4	Complied
2483.5	67.5	74.0	6.5	Complied

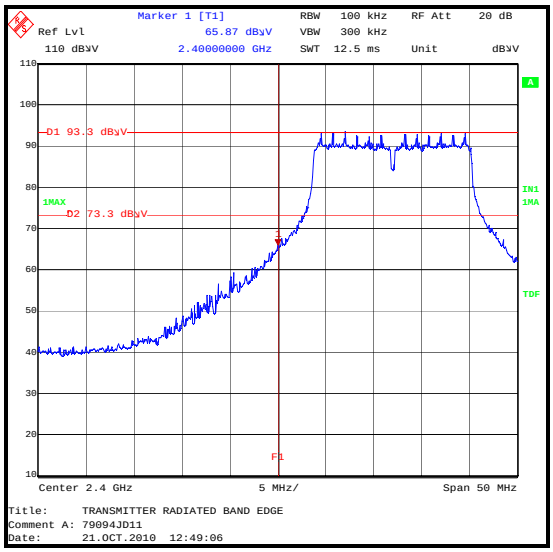
Results: 802.11g – 6 Mbps - Average

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	43.3	54.0	10.7	Complied

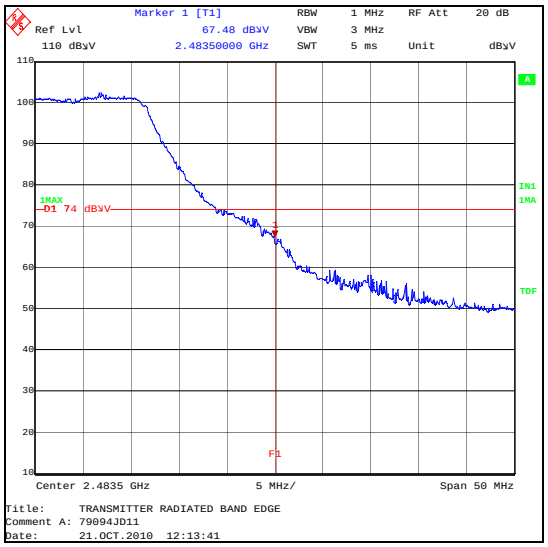
Note(s):

1. The final measured value, for the given emission, in the table above incorporates the calibrated antenna factor and cable loss.
2. * -20 dBc limit.

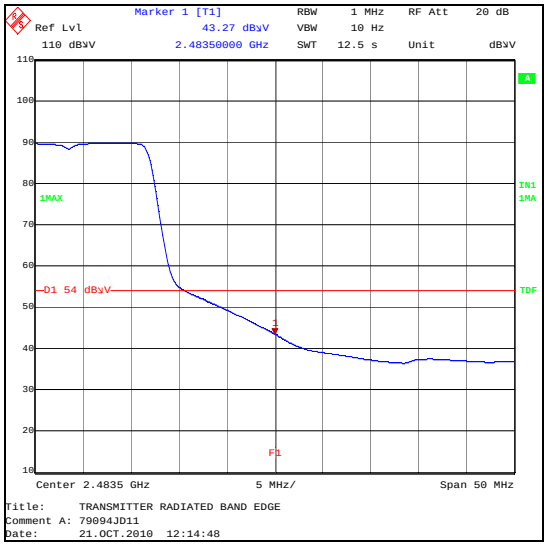
Transmitter Band Edge Radiated Emissions (continued)



Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement



Upper Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (continued)

Results: 802.11g – 9 Mbps - Peak

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2400	65.1	73.1*	8.0	Complied
2483.5	67.6	74.0	6.4	Complied

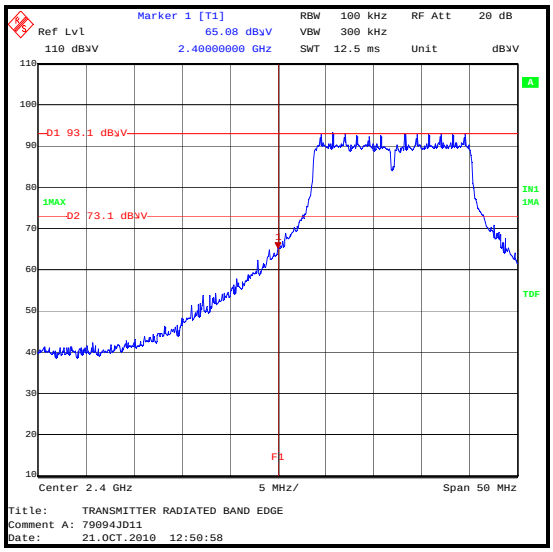
Results: 802.11g – 9 Mbps - Average

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	43.2	54.0	10.8	Complied

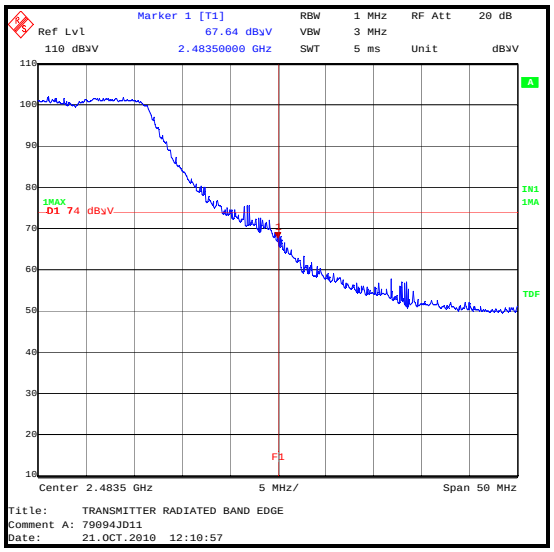
Note(s):

1. The final measured value, for the given emission, in the table above incorporates the calibrated antenna factor and cable loss.
2. * -20 dBc limit.

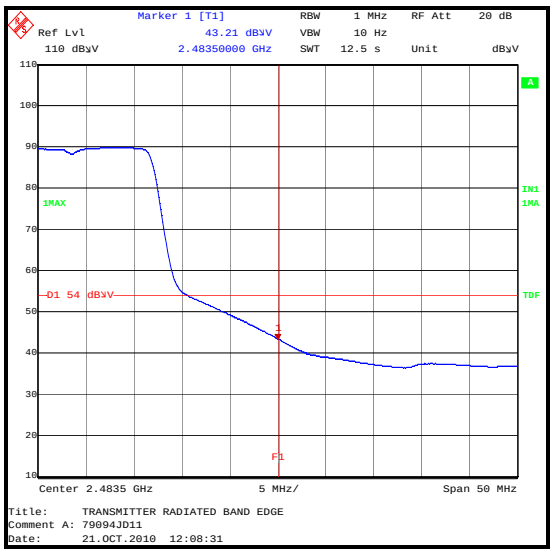
Transmitter Band Edge Radiated Emissions (continued)



Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement



Upper Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (continued)

Results: 802.11g – 12 Mbps - Peak

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2400	63.5	73.2*	9.7	Complied
2483.5	66.9	74.0	7.1	Complied

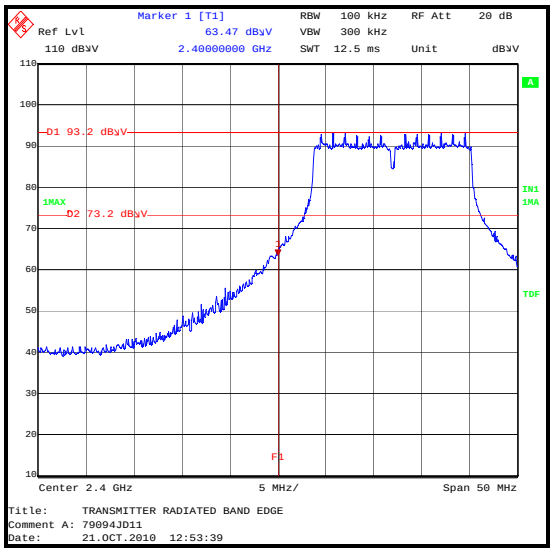
Results: 802.11g – 12 Mbps - Average

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	43.1	54.0	10.9	Complied

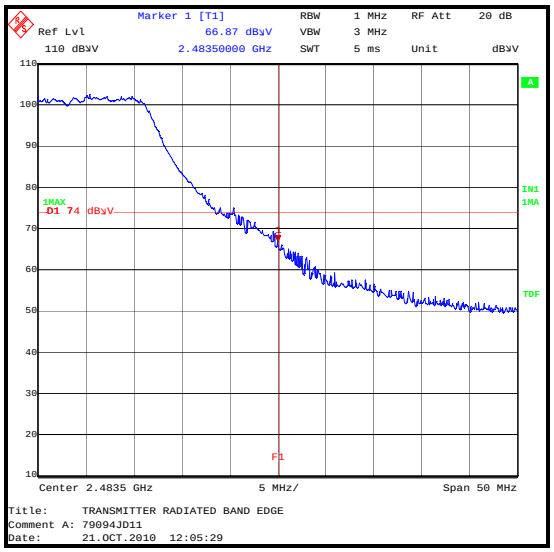
Note(s):

1. The final measured value, for the given emission, in the table above incorporates the calibrated antenna factor and cable loss.
2. * -20 dBc limit.

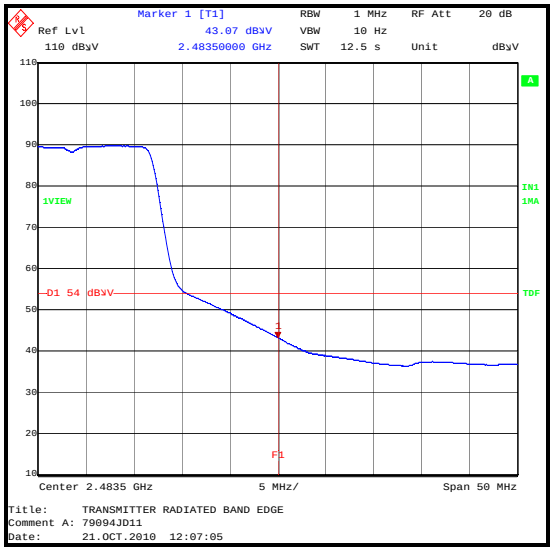
Transmitter Band Edge Radiated Emissions (continued)



Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement



Upper Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (continued)

Results: 802.11g – 18 Mbps - Peak

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2400	64.5	73.1*	8.6	Complied
2483.5	66.8	74.0	7.2	Complied

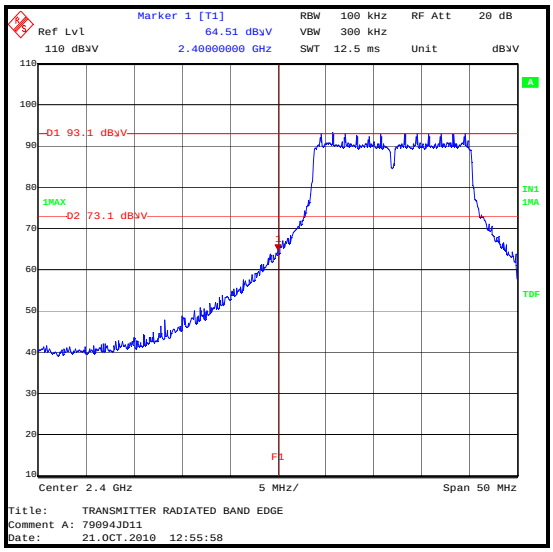
Results: 802.11g – 18 Mbps - Average

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	43.2	54.0	10.8	Complied

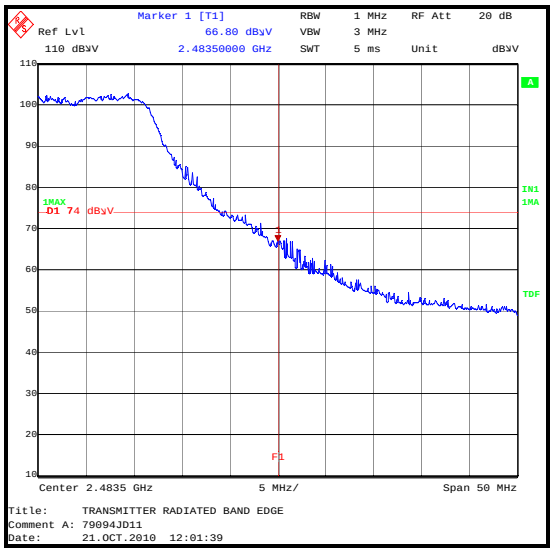
Note(s):

1. The final measured value, for the given emission, in the table above incorporates the calibrated antenna factor and cable loss.
2. * -20 dBc limit.

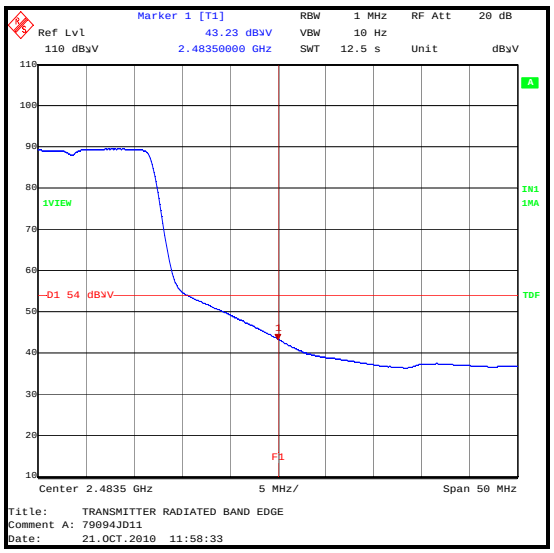
Transmitter Band Edge Radiated Emissions (continued)



Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement



Upper Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (continued)

Results: 802.11g – 24 Mbps - Peak

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2400	64.5	73.2*	8.7	Complied
2483.5	67.4	74.0	6.6	Complied

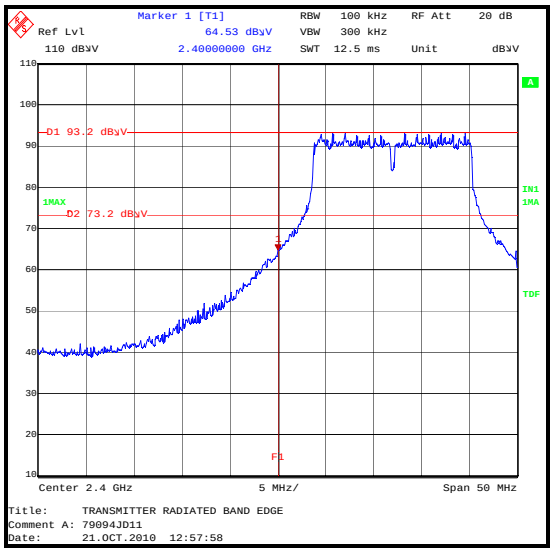
Results: 802.11g – 24 Mbps - Average

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	43.3	54.0	10.7	Complied

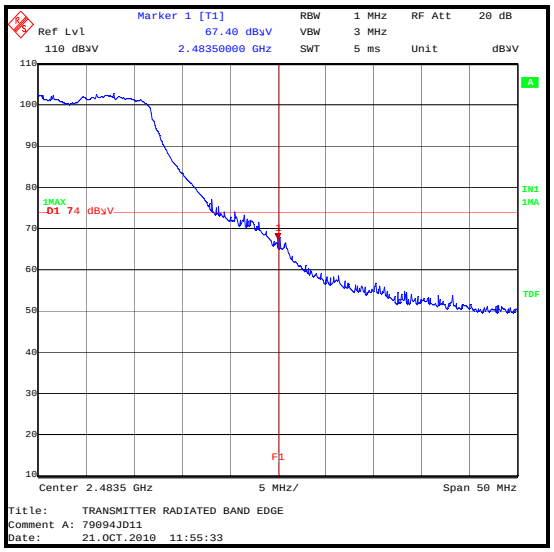
Note(s):

1. The final measured value, for the given emission, in the table above incorporates the calibrated antenna factor and cable loss.
2. * -20 dBc limit.

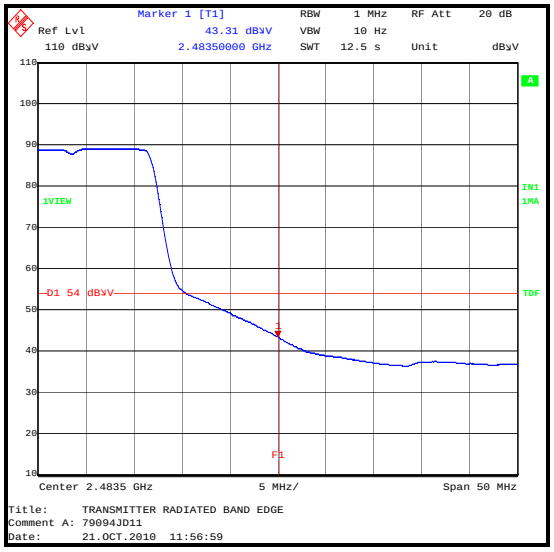
Transmitter Band Edge Radiated Emissions (continued)



Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement



Upper Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (continued)

Results: 802.11g – 36 Mbps - Peak

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2400	63.6	73.2*	9.6	Complied
2483.5	67.0	74.0	7.0	Complied

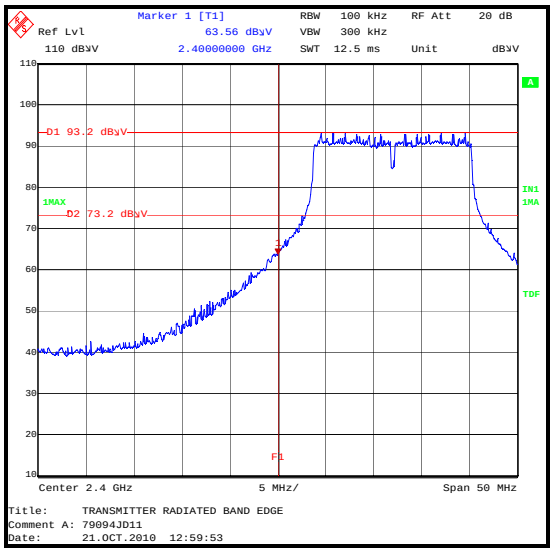
Results: 802.11g – 36 Mbps - Average

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	43.1	54.0	10.9	Complied

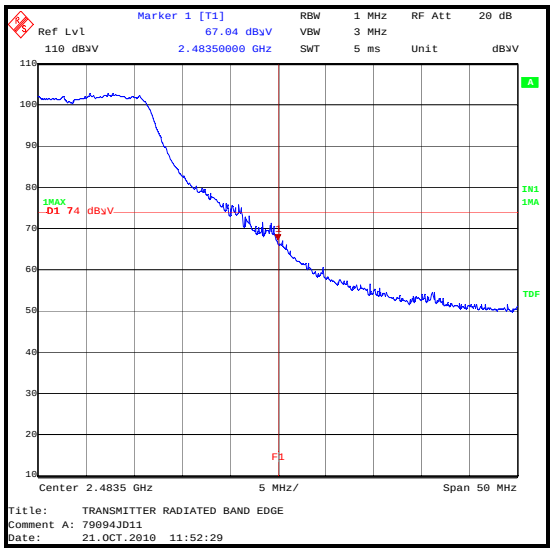
Note(s):

1. The final measured value, for the given emission, in the table above incorporates the calibrated antenna factor and cable loss.
2. * -20 dBc limit.

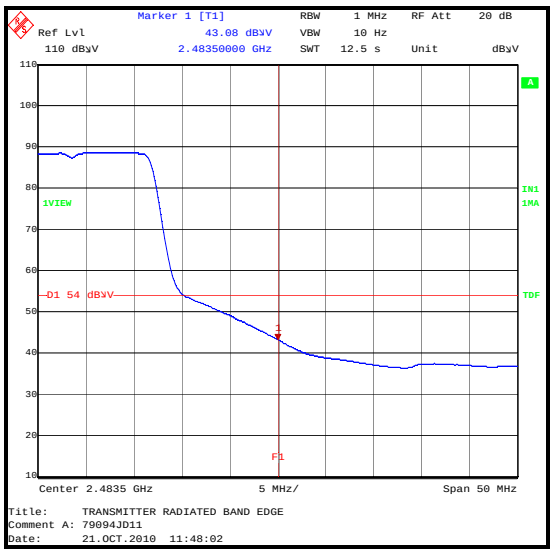
Transmitter Band Edge Radiated Emissions (continued)



Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement



Upper Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (continued)

Results: 802.11b – 48 Mbps - Peak

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2400	63.7	73.2*	9.5	Complied
2483.5	66.2	74.0	7.8	Complied

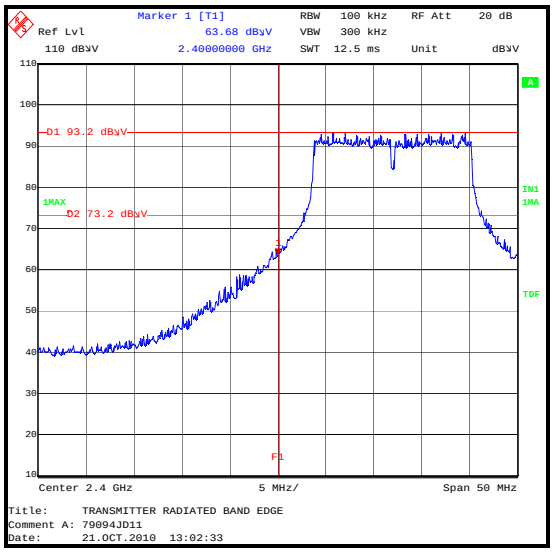
Results: 802.11b – 48 Mbps - Average

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	42.8	54.0	11.2	Complied

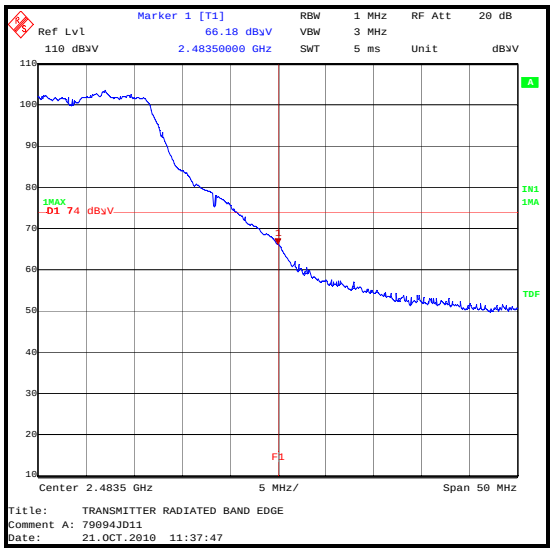
Note(s):

1. The final measured value, for the given emission, in the table above incorporates the calibrated antenna factor and cable loss.
2. * -20 dBc limit.

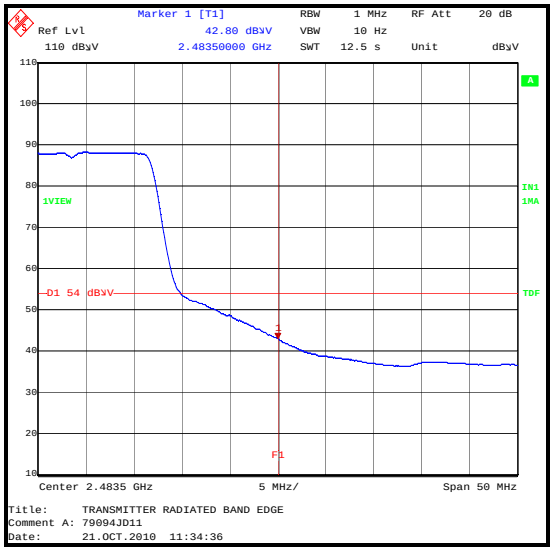
Transmitter Band Edge Radiated Emissions (continued)



Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement



Upper Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (continued)

Results: 802.11g – 54 Mbps - Peak

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2400	64.0	73.1*	8.9	Complied
2483.5	66.5	74.0	7.5	Complied

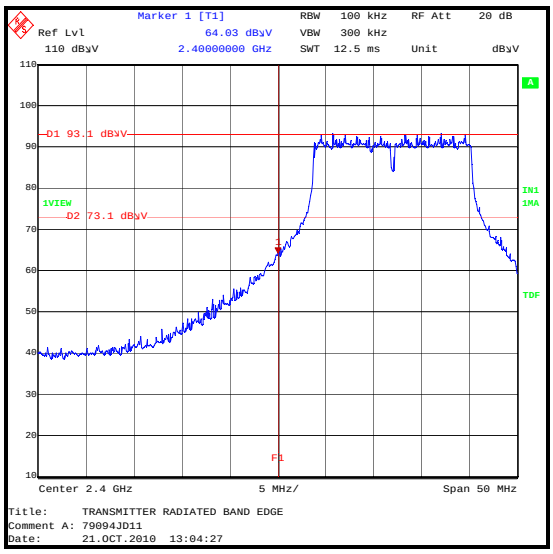
Results: 802.11g – 54 Mbps - Average

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	42.9	54.0	11.1	Complied

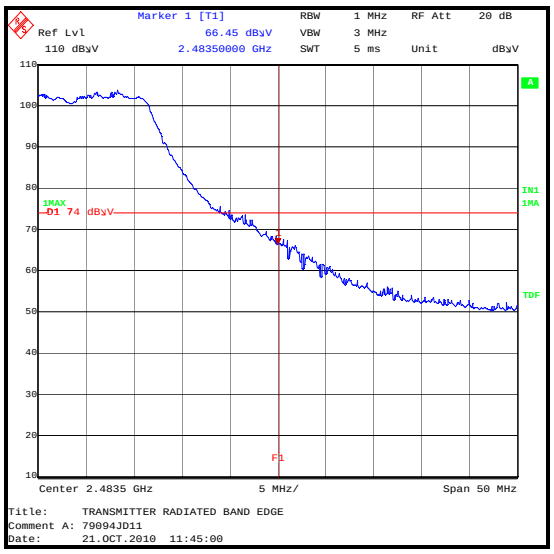
Note(s):

1. The final measured value, for the given emission, in the table above incorporates the calibrated antenna factor and cable loss.
2. * -20 dBc limit.

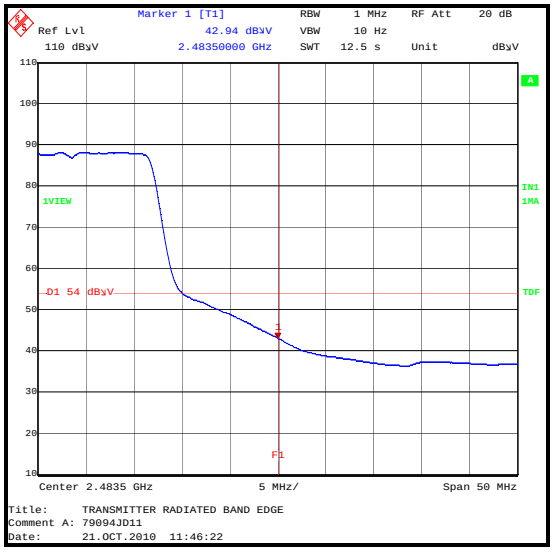
Transmitter Band Edge Radiated Emissions (continued)



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
Maximum Peak Output Power	2.4 GHz to 2.4835 GHz	95%	±2.94 dB
Spectral Power Density	2.4 GHz to 2.4835 GHz	95%	±2.94 dB
6 dB Bandwidth	2.4 GHz to 2.4835 GHz	95%	±0.92 ppm
Radiated Spurious Emissions	30 MHz to 26.5 GHz	95%	±2.94 dB

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

Appendix 1. Test Equipment Used

RFI No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
A1069	LISN	Rohde & Schwarz	ESH3-Z5	837469/012	13 Apr 2011	12
A1396	Attenuator	Huber & Suhner	757987	6810.17.B	06 Jul 2011	12
A1534	Pre Amplifier	Hewlett Packard	8449B	3008A00405	06 Jun 2011	12
A1818	Antenna	EMCO	3115	00075692	05 Sep 2011	12
A1830	Pulse Limiter	Rhode & Schwarz	ESH3-Z2	100668	01 Mar 2011	12
A253	Antenna	Flann Microwave	12240-20	128	05 Sep 2011	12
A254	Antenna	Flann Microwave	14240-20	139	05 Sep 2011	12
A255	Antenna	Flann Microwave	16240-20	519	05 Sep 2011	12
A256	Antenna	Flann Microwave	18240-20	400	05 Sep 2011	12
A288	Antenna	Chase	CBL6111A	1589	05 Sep 2011	12
A436	Antenna	Flann Microwave	20240-20	330	05 Sep 2011	12
K0002	3m RSE Chamber	Rainford EMC	N/A	N/A	05 Sep 2011	12
L1005	Comms Test Set	Rohde & Schwarz	CMU200	116284	29 Jan 2011	12
M1124	Test Receiver	Rohde & Schwarz	ESI26	100046K	22 Apr 2011	12
M1263	Test Receiver	Rohde & Schwarz	ESIB7	100265	28 Jun 2011	12
M127	Spectrum Analyser	Rohde & Schwarz	FSEB 30	842 659/016	15 Sep 2011	12
M1273	Test Receiver	Rohde & Schwarz	ESIB 26	100275	01 Apr 2011	12

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