



**TEST REPORT  
FROM  
RFI GLOBAL SERVICES LTD**

Test of: DL-KYMAN 701-902

To: FCC Part 15.247: 2009 Subpart C, RSS-210 Issue 7 June 2007  
& RSS-Gen Issue 2 June 2007

**Test Report Serial No:**  
RFI/RPT4/RP48332JD03C

**Supersedes Test Report Serial No:**  
RFI/RPT3/RP48332JD03C

<b>This Test Report Is Issued Under The Authority Of Brian Watson, COO Payments and Consultancy:</b>	pp 
<b>Checked By:</b>	R. Graham
<b>Signature:</b>	
<b>Date of Issue:</b>	30 April 2010

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**1. Customer Information**












<b>Company Name:</b>	Datalogic Mobile SRL
<b>Address:</b>	Via Candini, 2 Lippo di Calderara di Reno Bologna 40012 Italy

## **2. Summary of Testing**

### **2.1. General Information**

<b>Specification Reference:</b>	47CFR15.247
<b>Specification Title:</b>	Code of Federal Regulations Volume 47 (Telecommunications) 2009: Part 15 Subpart C (Radio Frequency Devices) - Section 15.247
<b>Specification Reference:</b>	47CFR15.107 and 47CFR15.107
<b>Specification Title:</b>	Code of Federal Regulation Volume 47 (Telecommunications) 2009: Part 15 Subpart B (Radio Frequency devices)-Sections 15.107 and 15.109
<b>Specification Reference:</b>	RSS-GEN Issue 2 June 2007
<b>Specification Title:</b>	General Requirements and Information for the Certification of Radio communication Equipment
<b>Specification Reference:</b>	RSS-210 Issue 7 June 2007
<b>Specification Title:</b>	Low-power Licence-exempt Radio communication Devices (All Frequency Bands): Category I Equipment
<b>Site Registration:</b>	FCC: 209735; Industry Canada: 3245B-2
<b>Location of Testing:</b>	RFI Global Services Ltd, Wade Road, Basingstoke, Hampshire, RG24 8AH.
<b>Test Dates:</b>	13 December 2009 to 29 January 2010

## 2.2. Summary of Test Results

FCC Reference (47CFR)	IC Reference	Measurement	Port Type	Result
Part 15.107	RSS-Gen 7.2.2	Idle Mode AC Conducted Emissions	AC Mains	
Part 15.109	RSS-Gen 4.10/6	Idle Mode Radiated Spurious Emissions	Enclosure	
Part 15.207	RSS-Gen 7.2.2	Transmitter AC Conducted Emissions	AC Mains	
Part 15.247(a)(2)	RSS-210 A8.2	Transmitter 6 dB Bandwidth	Antenna	
Part 15.247(a)(1)	RSS-Gen 4.6.1	Transmitter 20 dB Bandwidth	Antenna	
Part 15.247(b)(3)	RSS-Gen 4.8 RSS-210 A8.4(4)	Transmitter Maximum Peak Output Power and Conducted Output Power	Enclosure and Antenna	
Part 15.247(e)	RSS-210 A8.2	Transmitter Peak Power Spectral Density	Antenna	
Part 15.247(d) & 15.209(a)	RSS-Gen 4.9 RSS-210 A8.5	Transmitter Radiated Emissions	Antenna	
Part 15.247(d) & 15.209(a)	RSS-Gen 4.9 RSS-210 A8.5	Transmitter Band Edge Radiated Emissions	Antenna	
<b>Key to Results</b>				
 = Complied  = Did not comply				

## 2.3. Methods and Procedures

<b>Reference:</b>	ANSI C63.4 (2003)
<b>Title:</b>	American National Standard Methods of Measurement of Electromagnetic Emissions from Low Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.
<b>Reference:</b>	DA00-705 (2000)
<b>Title:</b>	Filing and Frequency Measurement Guidelines for Frequency Hopping Spread Spectrum Systems.

## 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)**

<b>Description:</b>	Mobile Computer
<b>Brand Name:</b>	Datalogic
<b>Model Name or Number:</b>	DL-KYMAN 701-902
<b>Serial Number:</b>	D09P00030
<b>Hardware Version Number:</b>	None Stated
<b>Software Version Number:</b>	3.00.77.20080825
<b>Industry Canada Certification Number:</b>	3862E-M1116
<b>FCC ID Number:</b>	U4G0050
<b>Country of Manufacture:</b>	Italy
<b>Date of Receipt:</b>	18 May 2009

#### **3.2. Description of EUT**

The equipment under test is a battery powered mobile computer with *Bluetooth* (2.4 GHz) and WiFi (2.4 GHz) radio capability. It includes a laser scanner in order to read bar codes.

#### **3.3. Modifications Incorporated in the EUT**

No modifications were applied to the EUT during testing.

**3.4. Additional Information Related to Testing**

<b>Tested Technology:</b>	WiFi			
<b>Power Supply Requirement:</b>	7.4 V nominal internal battery supply			
<b>Type of Unit:</b>	Transceiver			
<b>Modulation:</b>	DBPSK	BPSK	CCK	64-QAM
<b>Data Rate (Mbit/s):</b>	1	6	11	54
<b>Maximum Transmit EIRP Peak:</b>	18.0 dBm			
<b>Average Conducted Power:</b>	13.7 dBm			
<b>Transmit Frequency Range:</b>	2412 MHz to 2462 MHz			
<b>Transmit Channels Tested:</b>	<b>Channel ID</b>	<b>Channel Number</b>	<b>Channel Frequency (MHz)</b>	
	Bottom	1	2412	
	Middle	6	2437	
	Top	11	2462	
<b>Receive Frequency Range:</b>	2412 MHz to 2462 MHz			
<b>Receive Channels Tested:</b>	<b>Channel ID</b>	<b>Channel Number</b>	<b>Channel Frequency (MHz)</b>	
	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:

<b>Description:</b>	Power supply
<b>Brand Name:</b>	Datalogic
<b>Model Name or Number:</b>	Kyman-net single cradle
<b>Serial Number:</b>	T08A00741

<b>Description:</b>	Laptop
<b>Brand Name:</b>	Dell
<b>Model Name or Number:</b>	Latitude D610
<b>Asset Number:</b>	PC393NT



## **4. Operation and Monitoring of the EUT during Testing**

### **4.1. Operating Modes**

The EUT was tested in the following operating modes, unless otherwise stated.

- Receive / Idle Mode.

Transmit Mode. Set to transmit on top, middle and bottom channels on all data rates to establish the highest power levels and widest spectral bandwidth i.e. 802.11b: 1 Mbps (DBPSK) and 802.11g: 6 Mbps (BPSK).

### **4.2. Configuration and Peripherals**

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

- The EUT was configured with the communication/charger port connected to a laptop PC via the serial port and to an external 110V AC supply via an AC charger.
- In 'transmitter mode' measurements for radiated spurious emission test were performed on all modes and compared for the overall worst case. Tests were than performed on the overall modulation mode which presented the worse case result; in this case 802.11g mode with a data rate of 6 Mbps and modulation type 'BPSK'.

## **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. Idle Mode AC Conducted Spurious Emissions****Test Summary:**

<b>FCC Part:</b>	15.107
<b>Test Method Used:</b>	As detailed in ANSI C63.4 Section 7 and relevant annexes

**Environmental Conditions:**

<b>Temperature (°C):</b>	19
<b>Relative Humidity (%):</b>	25

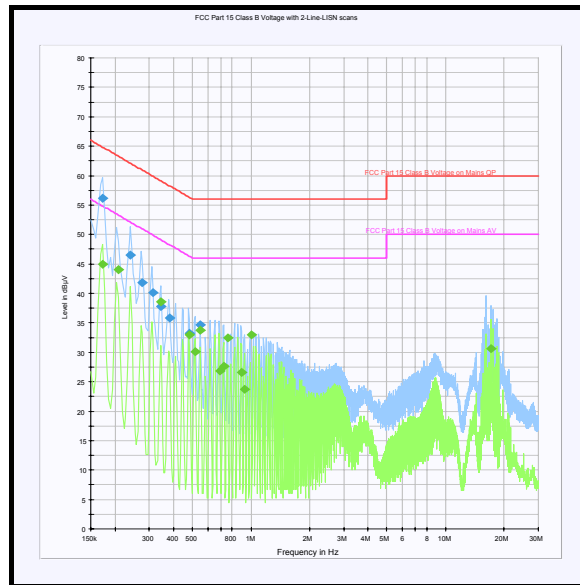
**Results: Quasi Peak Detector Measurements**

Frequency (MHz)	Line	Quasi Peak Level (dB $\mu$ V)	Limit (dB $\mu$ V)	Margin (dB)	Result
0.172500	Live	56.1	64.8	8.7	Complied
0.240000	Live	46.5	62.1	15.6	Complied
0.276000	Live	41.8	60.9	19.1	Complied
0.312000	Live	40.1	59.9	19.8	Complied
0.343500	Live	37.8	59.1	21.3	Complied
0.379500	Live	35.8	58.3	22.5	Complied
0.483000	Live	33.2	56.3	23.1	Complied
0.550500	Live	34.7	56.0	21.3	Complied

**Results: Average Detector Measurements**

Frequency (MHz)	Line	Average Level (dB $\mu$ V)	Limit (dB $\mu$ V)	Margin (dB)	Result
0.172500	Live	44.9	54.8	9.9	Complied
0.208500	Live	44.0	53.3	9.3	Complied
0.343500	Live	38.6	49.1	10.5	Complied
0.483000	Live	32.9	46.3	13.4	Complied
0.514500	Live	30.1	46.0	15.9	Complied
0.550500	Live	33.8	46.0	12.2	Complied
0.690000	Live	26.8	46.0	19.2	Complied
0.721500	Live	27.6	46.0	18.4	Complied
0.757500	Neutral	32.5	46.0	13.5	Complied
0.897000	Live	26.5	46.0	19.5	Complied
0.928500	Live	23.8	46.0	22.2	Complied
1.000500	Live	32.9	46.0	13.1	Complied
17.101500	Neutral	30.6	50.0	19.4	Complied

**Idle Mode AC Conducted Spurious Emissions (continued)**



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

**5.2.2. Idle Mode Radiated Spurious Emissions**

**Test Summary:**

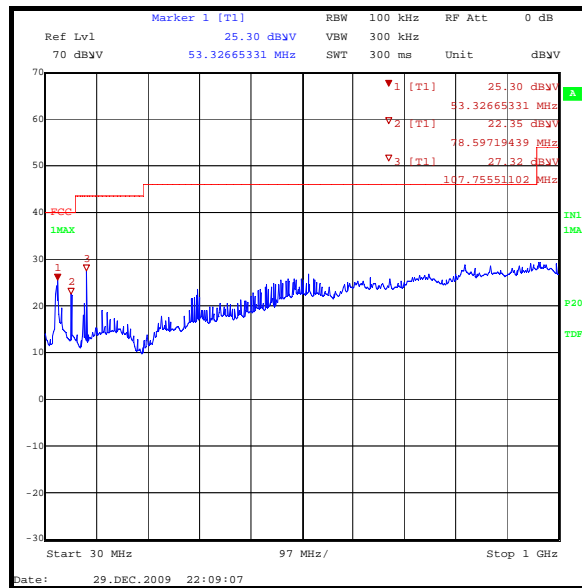
<b>FCC Part:</b>	15.109
<b>Test Method Used:</b>	As detailed in ANSI C63.4 Section 8 and relevant annexes
<b>Frequency Range:</b>	30 MHz to 1000 MHz

**Environmental Conditions:**

<b>Temperature (°C):</b>	18
<b>Relative Humidity (%):</b>	29

**Results:**

Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
54.107	Horizontal	26.1	40.0	13.9	Complied
79.755	Horizontal	21.6	40.0	18.4	Complied
107.943	Horizontal	27.9	43.5	15.6	Complied



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

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

<b>FCC Part:</b>	15.109
<b>Test Method Used:</b>	As detailed in ANSI C63.4 Section 8 and relevant annexes
<b>Frequency Range:</b>	1 GHz to 12.75 GHz

**Environmental Conditions:**

<b>Temperature (°C):</b>	18
<b>Relative Humidity (%):</b>	30

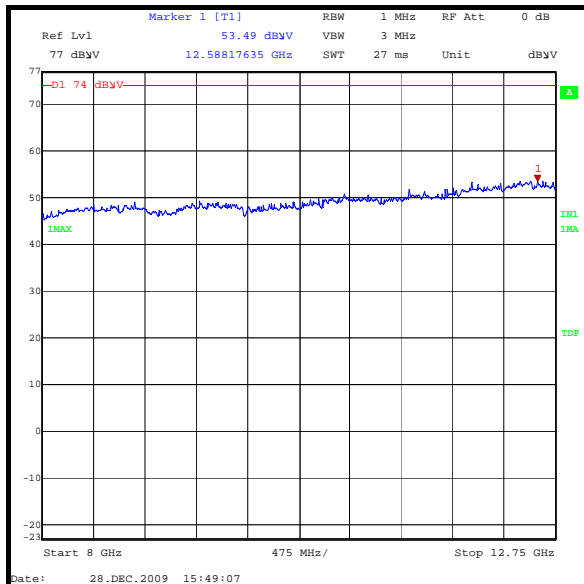
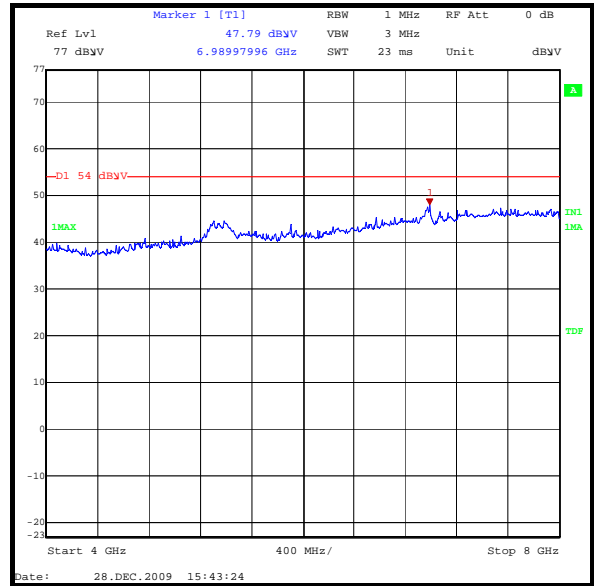
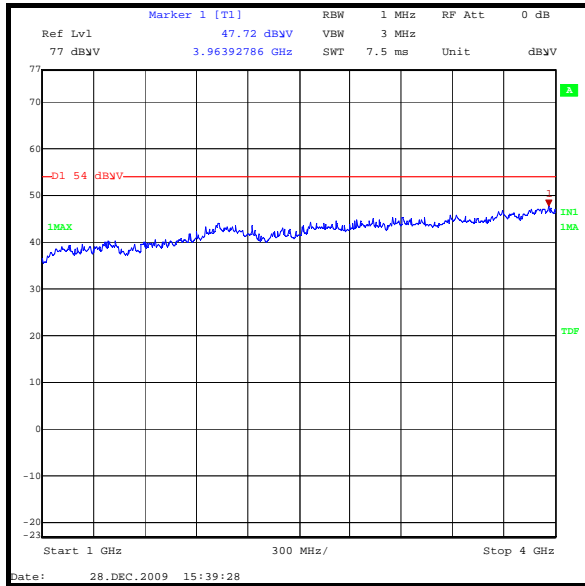
**Results:**

<b>Frequency (MHz)</b>	<b>Antenna Polarity</b>	<b>Peak Level (dB<math>\mu</math>V/m)</b>	<b>Average Limit (dB<math>\mu</math>V/m)</b>	<b>Margin (dB)</b>	<b>Result</b>
6989.980	Horizontal	47.8	54.0	6.2	Complied

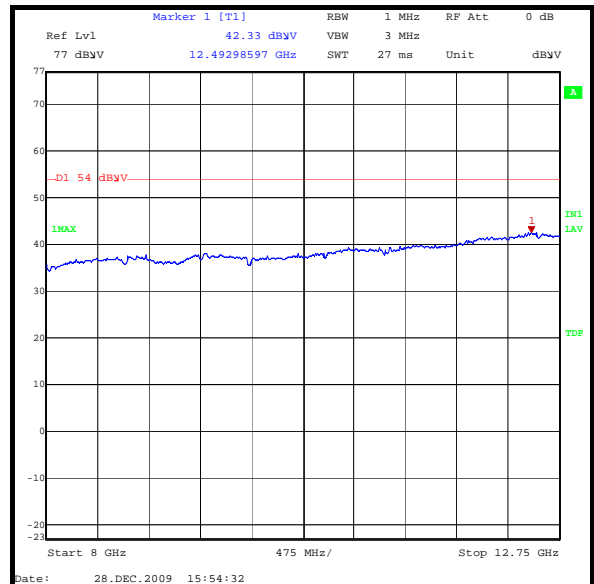
**Note(s):**

1. 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.
2. All pre-scans were performed with the peak detector against average limits apart from measurements made in the range of 8 GHz to 12.75 GHz where pre-scans were performed with peak and average detector and the applicable limit applied. This was due to the noise floor exceeding the average limit when using the peak detector.

**Idle Mode Radiated Spurious Emissions (continued)**



**8 GHz to 12.75 GHz Peak**



**8 GHz to 12.75 GHz Average**

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

<b>FCC Part:</b>	15.207
<b>Test Method Used:</b>	As detailed in ANSI C63.4 Section 7 and relevant annexes

**Environmental Conditions:**

<b>Temperature (°C):</b>	23
<b>Relative Humidity (%):</b>	29

**Results: Quasi Peak Detector Measurements**

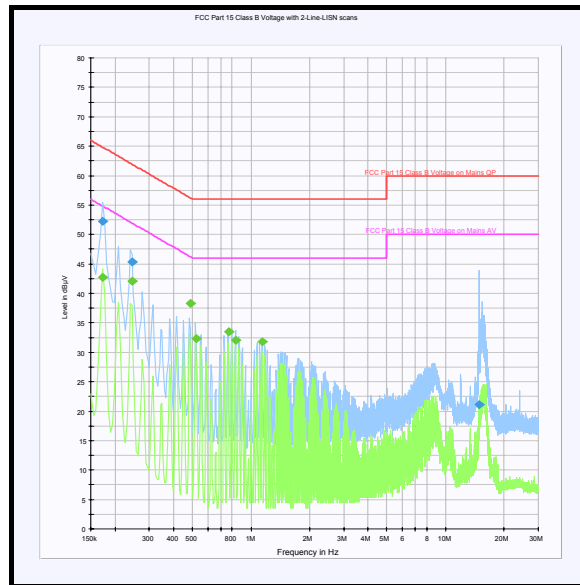
Frequency (MHz)	Line	Quasi Peak Level (dB $\mu$ V)	Limit (dB $\mu$ V)	Margin (dB)	Result
0.172500	Live	52.2	64.8	12.6	Complied
0.244500	Live	45.4	61.9	16.5	Complied
14.883000	Live	21.1	60.0	38.9	Complied

**Results: Average Detector Measurements**

Frequency (MHz)	Line	Average Level (dB $\mu$ V)	Limit (dB $\mu$ V)	Margin (dB)	Result
0.172500	Live	42.7	54.8	12.1	Complied
0.244500	Live	42.0	51.9	9.9	Complied
0.487500	Live	38.3	46.2	7.9	Complied
0.523500	Neutral	32.4	46.0	13.6	Complied
0.766500	Live	33.5	46.0	12.5	Complied
0.834000	Live	32.1	46.0	13.9	Complied
1.149000	Live	31.8	46.0	14.2	Complied



**Transmitter AC Conducted Spurious Emissions (continued)**



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

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

<b>FCC Part:</b>	15.247(a)(2)
<b>Test Method Used:</b>	See note below.

**Environmental Conditions:**

<b>Temperature (°C):</b>	23
<b>Relative Humidity (%):</b>	30

**Results: 1 Mbps**

Channel	Transmitter 6 dB Bandwidth (MHz)	Limit (MHz)	Result
Bottom	11.784	≥0.5	Complied
Middle	12.144	≥0.5	Complied
Top	12.024	≥0.5	Complied

**Results: 6 Mbps**

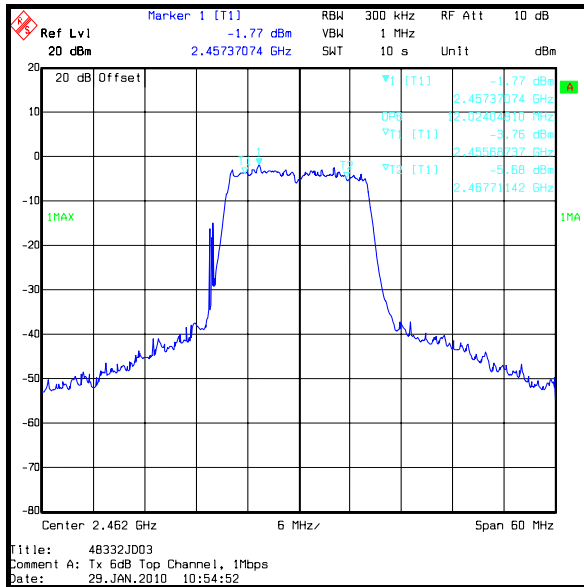
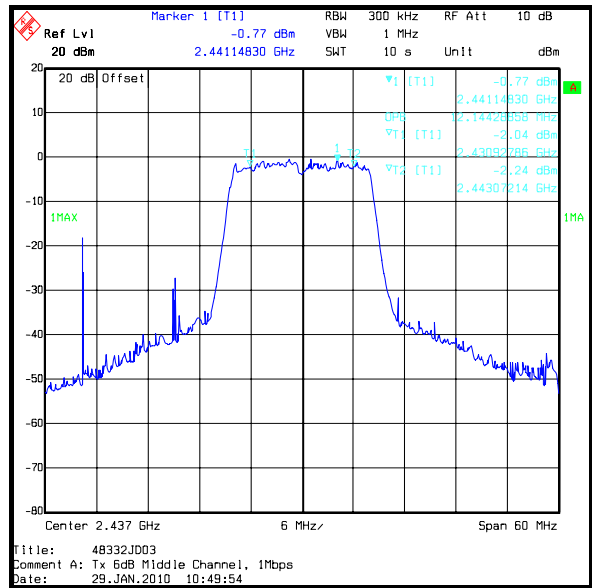
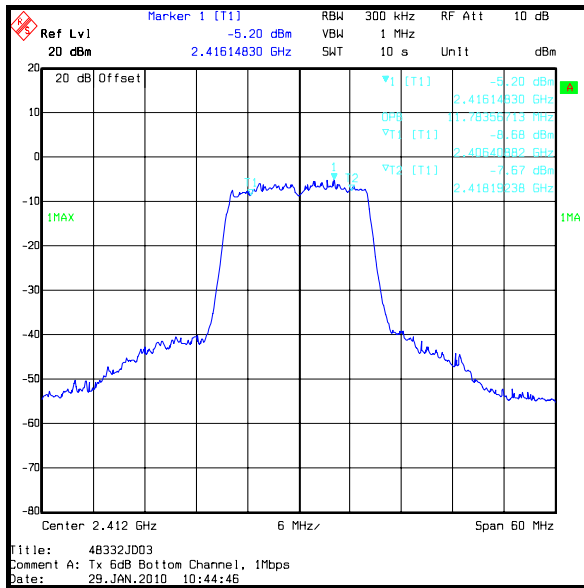
Channel	Transmitter 6 dB Bandwidth (MHz)	Limit (MHz)	Result
Bottom	12.385	≥0.5	Complied
Middle	11.784	≥0.5	Complied
Top	12.024	≥0.5	Complied

**Note(s):**

1. The 6 dB (75%) occupied bandwidth was measured using the Occupied Bandwidth Function of the spectrum analyser.

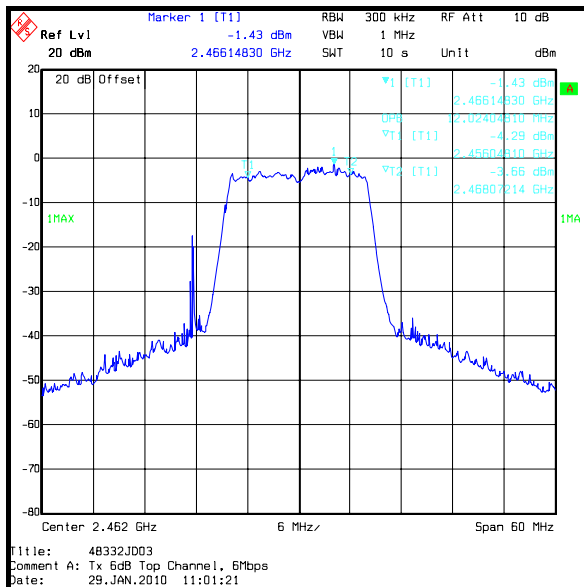
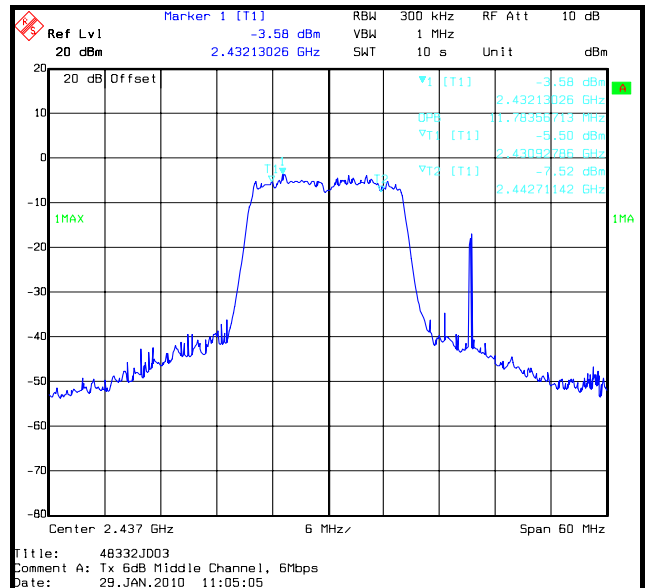
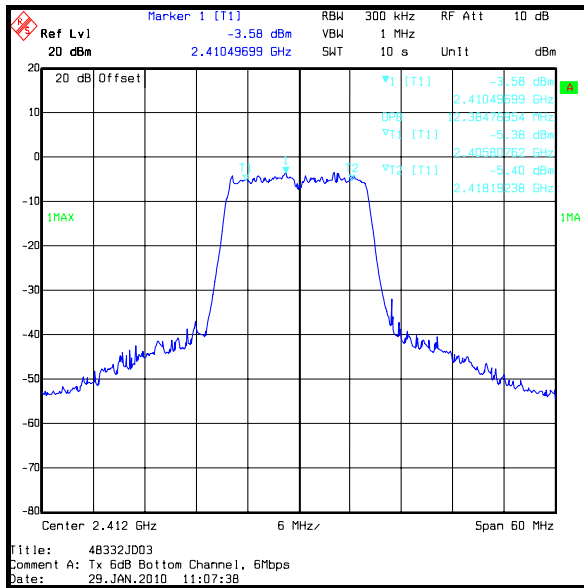
**Transmitter 6 dB Bandwidth (continued)**

**1 Mbps**



**Transmitter 6 dB Bandwidth (continued)**

**6 Mbps**



**5.2.5.Transmitter 20 dB Bandwidth****Test Summary:**

<b>FCC Part:</b>	15.247(a)(1)
<b>Test Method Used:</b>	As detailed in Public Notice DA 00-705 (March 30, 2000) and ANSI C63.4 Section 13.1.7 and relevant annexes (see note below)

**Environmental Conditions:**

<b>Temperature (°C):</b>	23
<b>Relative Humidity (%):</b>	30

**Results: Data rate 1 Mbps**

<b>Channel</b>	<b>20 dB Bandwidth (MHz)</b>
Bottom	16.954
Middle	16.713
Top	16.954

**Result : Data rate 6 Mbps**

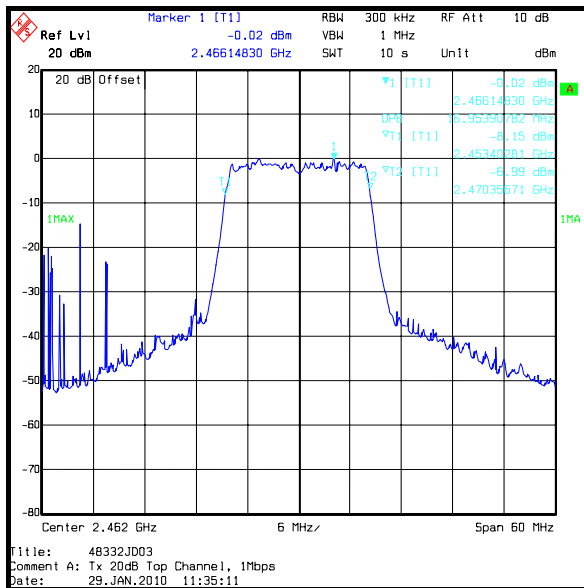
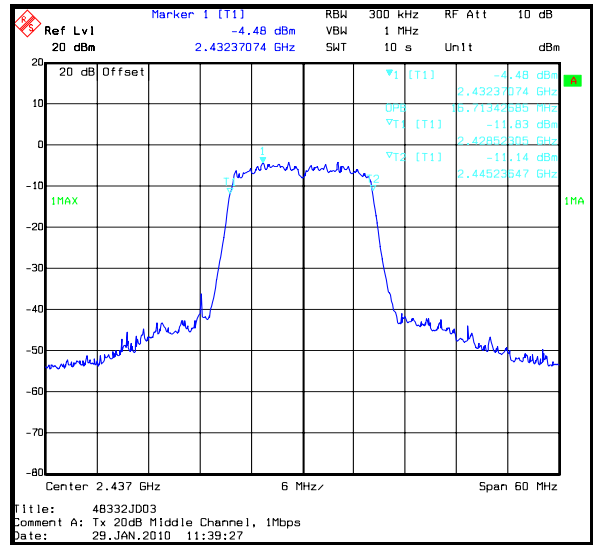
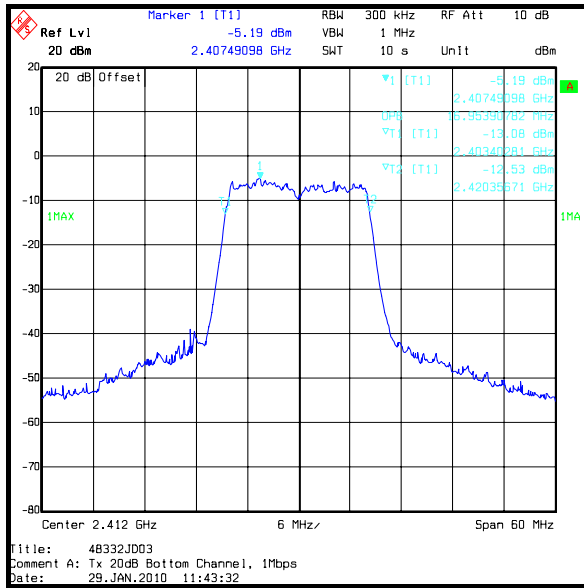
<b>Channel</b>	<b>20 dB Bandwidth (MHz)</b>
Bottom	16.834
Middle	16.834
Top	16.954

**Note(s):**

1. In lieu of the test method detailed in ANSI C63.4 Section 13.1.7 the 20 dB bandwidth was measured using the Occupied Bandwidth function of the spectrum analyser.

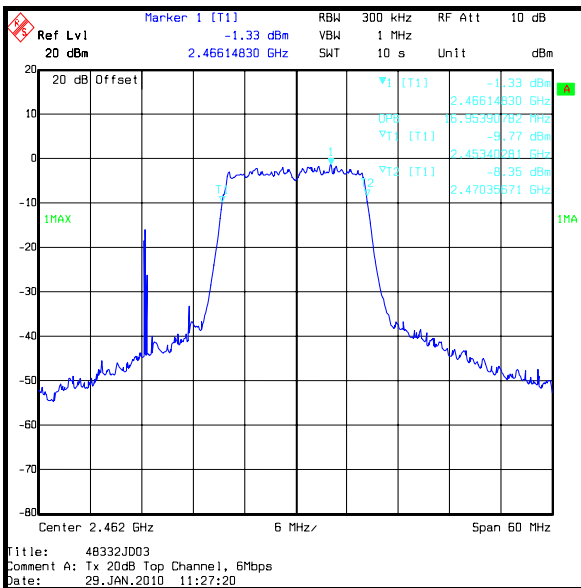
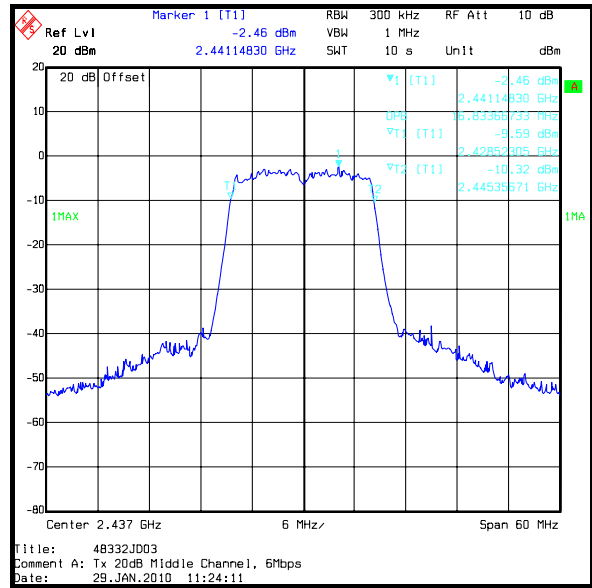
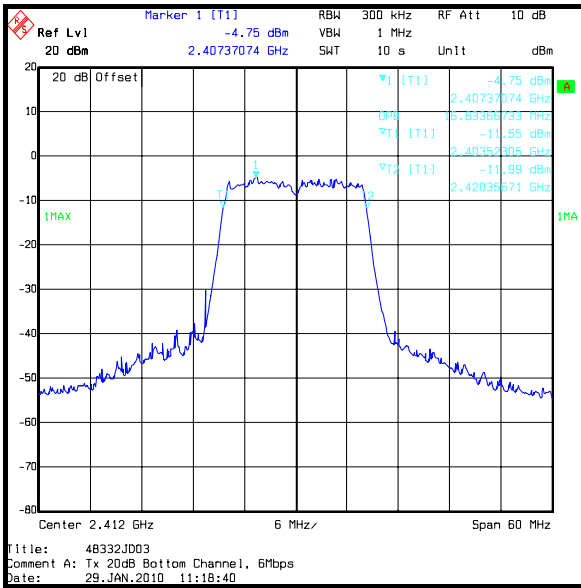
### Transmitter 20 dB Bandwidth (continued)

#### 1 Mbps



**Transmitter 20 dB Bandwidth (continued)**

**6 Mbps**



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

<b>FCC Part:</b>	15.247(e)
<b>Test Method Used:</b>	As detailed in ANSI TIA-603-C-2004 and FCC CFR Part 2

**Environmental Conditions:**

<b>Temperature (°C):</b>	23
<b>Relative Humidity (%):</b>	30

**Results: 1 Mbps**

Channel	Output Power (dBm/3 kHz)	Limit (dBm/3 kHz)	Margin (dB)	Result
Bottom	-4.8	8.0	12.8	Complied
Middle	-5.9	8.0	13.9	Complied
Top	-4.6	8.0	12.6	Complied

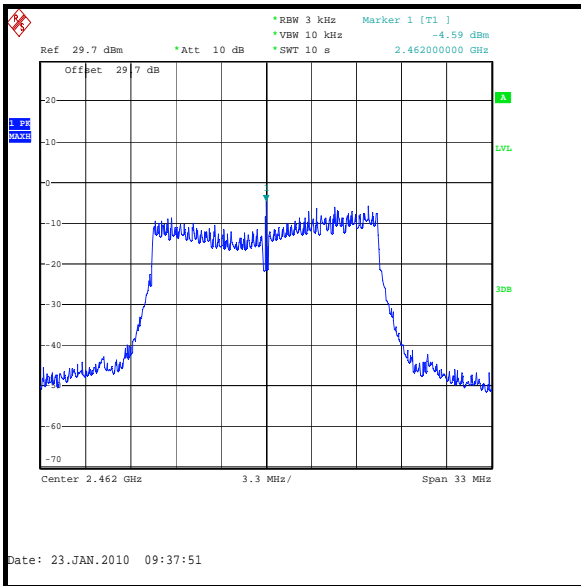
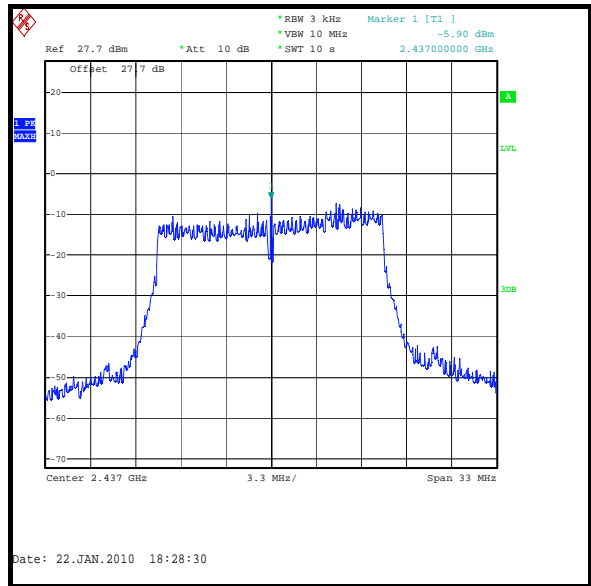
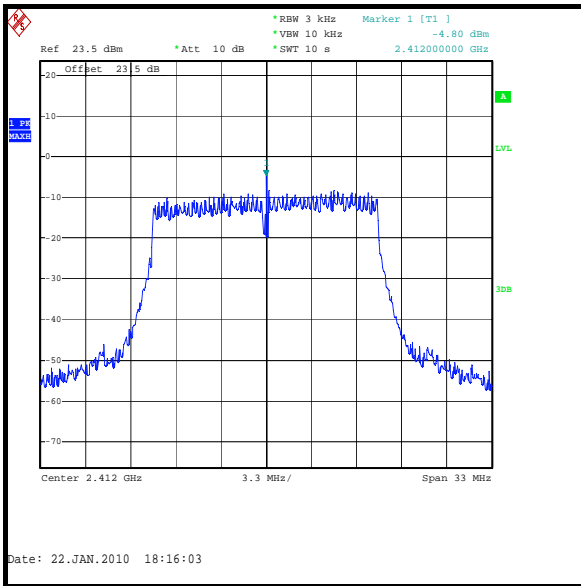
**Results: 6 Mbps**

Channel	Output Power (dBm/3 kHz)	Limit (dBm/3 kHz)	Margin (dB)	Result
Bottom	-5.8	8.0	13.8	Complied
Middle	-7.0	8.0	15.0	Complied
Top	-2.2	8.0	10.2	Complied



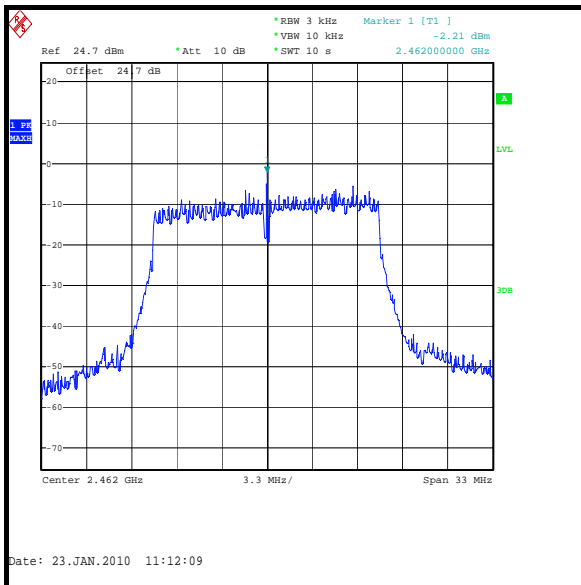
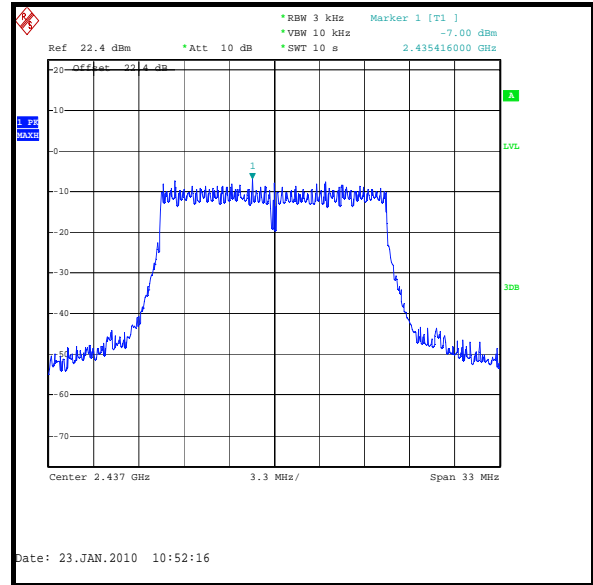
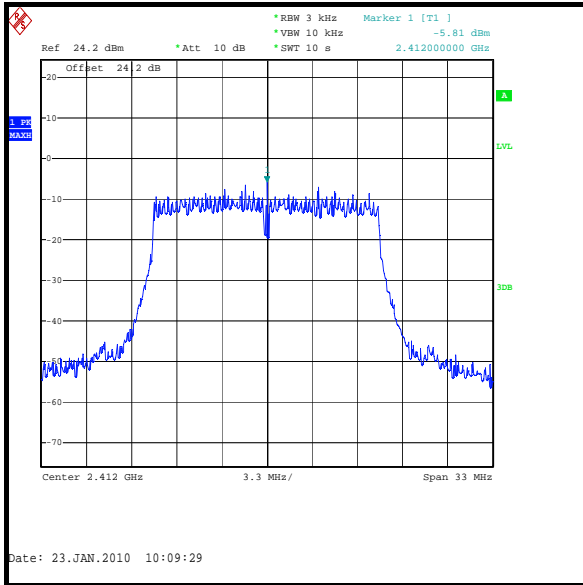
### Transmitter Peak Power Spectral Density (continued)

#### 1 Mbps



### Transmitter Peak Power Spectral Density (continued)

#### 6 Mbps



**5.2.7. Transmitter Maximum Peak Output Power (EIRP) and Average Conducted Output Power****Test Summary:**

<b>FCC Part:</b>	15.247(b)(3)
<b>Test Method Used:</b>	ANSI TIA-603-C-2004 and FCC CFR Part 2

**Environmental Conditions:**

<b>Temperature (°C):</b>	22
<b>Relative Humidity (%):</b>	22

**Note(s):**

1. The EUT antenna gain is encompassed in the EIRP results and not measurable.
2. All modulation types were tested and the highest power recorded in the tables below.

**Results: EIRP / 802.11b**

Channel Number	Frequency (GHz)	Data Rate	Peak TX Power (dBm)	Limit (dBm)	Margin (dB)	Result
1	2.412	1 Mbps	16.2	30.0	13.8	Complied
6	2.437	1 Mbps	16.9	30.0	13.1	Complied
11	2.462	1 Mbps	17.8	30.0	12.2	Complied
1	2.412	11 Mbps	13.1	30.0	16.9	Complied
6	2.437	11 Mbps	13.9	30.0	16.1	Complied
11	2.462	11 Mbps	14.3	30.0	15.7	Complied

**Results: EIRP / 802.11g**

Channel Number	Frequency (GHz)	Data Rate	Peak TX Power (dBm)	Limit (dBm)	Margin (dB)	Result
1	2.412	6 Mbps	16.3	30.0	13.7	Complied
6	2.437	6 Mbps	16.9	30.0	13.1	Complied
11	2.462	6 Mbps	18.0	30.0	12.0	Complied
1	2.412	54 Mbps	10.8	30.0	19.2	Complied
6	2.437	54 Mbps	11.3	30.0	18.7	Complied
11	2.462	54 Mbps	12.5	30.0	17.5	Complied

**Transmitter Maximum Peak Output Power (EIRP) and Average Conducted Output Power (continued)**

**Results: Average Conducted Power / 802.11b**

Channel Number	Frequency (GHz)	Data Rate	Average TX Power (dBm)	Limit (dBm)	Margin (dB)	Result
1	2.412	1 Mbps	13.1	30.0	16.9	Complied
6	2.437	1 Mbps	13.2	30.0	16.8	Complied
11	2.462	1 Mbps	13.7	30.0	13.3	Complied
1	2.412	11 Mbps	10.0	30.0	20.0	Complied
6	2.437	11 Mbps	10.1	30.0	19.9	Complied
11	2.462	11 Mbps	10.2	30.0	19.8	Complied

**Results: Average Conducted Power / 802.11g**

Channel Number	Frequency (GHz)	Data Rate	Average TX Power (dBm)	Limit (dBm)	Margin (dB)	Result
1	2.412	6 Mbps	11.9	30.0	18.1	Complied
6	2.437	6 Mbps	11.9	30.0	18.1	Complied
11	2.462	6 Mbps	11.9	30.0	18.1	Complied
1	2.412	54 Mbps	6.4	30.0	23.6	Complied
6	2.437	54 Mbps	6.3	30.0	23.7	Complied
11	2.462	54 Mbps	6.4	30.0	23.6	Complied

**Transmitter Radiated Emissions**

**Test Summary:**

<b>FCC Part:</b>	15.247(d) & 15.209(a)
<b>Test Method Used:</b>	As detailed in ANSI C63.4 Section 8 and Public Notice DA 00-705 (March 30, 2000)
<b>Frequency Range</b>	30 MHz to 1000 MHz

**Environmental Conditions:**

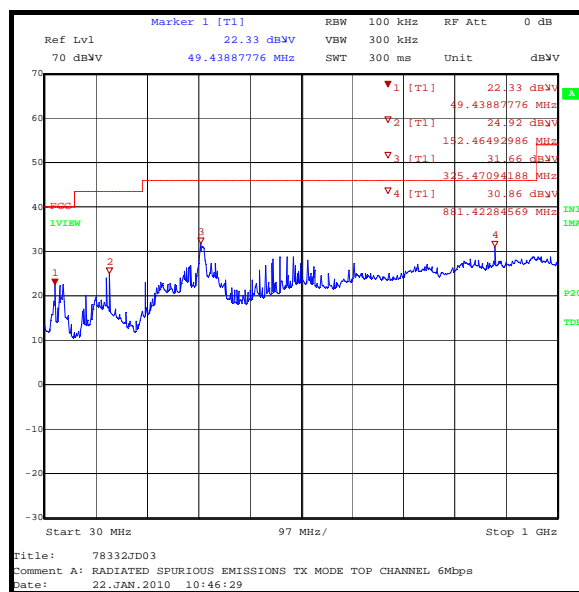
<b>Temperature (°C):</b>	20
<b>Relative Humidity (%):</b>	23

**Results: 6 Mbps Top Channel**

Frequency (MHz)	Antenna Polarity	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
324.989	Vertical	31.3	43.5	12.2	Complied
351.973	Vertical	26.9	46.0	19.1	Complied
448.492	Vertical	28.7	46.0	17.3	Complied
474.485	Vertical	30.2	46.0	15.8	Complied
500.497	Vertical	30.6	46.0	15.4	Complied
614.388	Vertical	30.4	46.0	15.6	Complied
879.986	Vertical	32.0	46.0	14.0	Complied

**Note(s):**

- 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.



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

<b>FCC Part:</b>	15.247(d) & 15.209(a)
<b>Test Method Used:</b>	As detailed in ANSI C63.4 Section 8 and Public Notice DA 00-705 (March 30, 2000)
<b>Frequency Range</b>	1GHz to 26.5GHz

**Environmental Conditions:**

<b>Temperature (°C):</b>	22
<b>Relative Humidity (%):</b>	22

**Peak Results: 6 Mbps**

Frequency (MHz)	Antenna Polarity	Peak Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Result
6973.948	Vertical	66.8	74.0	7.2	Complied

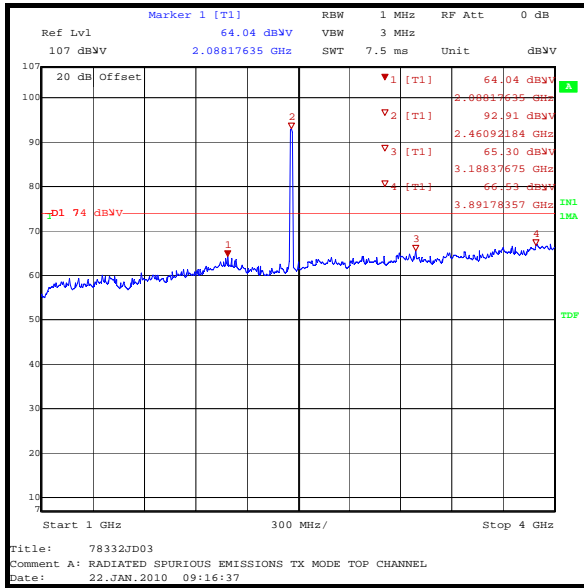
**Average Results: 6 Mbps**

Frequency (MHz)	Antenna Polarity	Peak Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Result
3915.832	Vertical	48.4	54.0	5.6	Complied

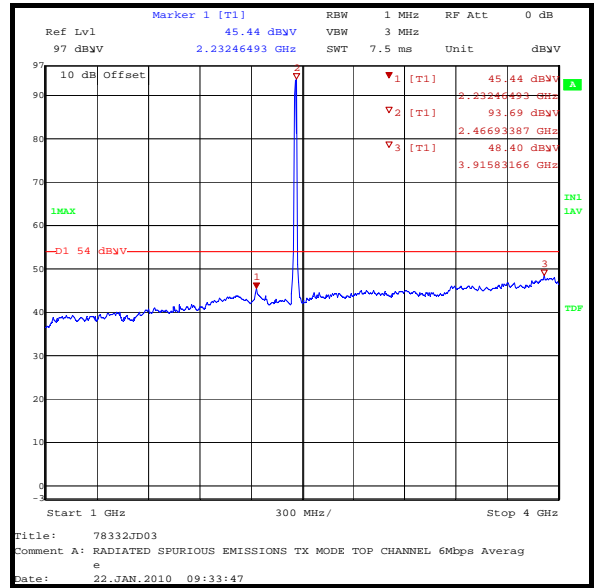
**Note(s):**

1. No spurious emissions were detected above the noise floor of the measuring receiver; therefore, the highest peak and average noise floor readings of the measuring receiver were recorded as shown in the tables above.
2. All pre-scans were performed with peak and average detectors and the applicable limit applied. This was due to the noise floor exceeding the average limit when using a peak detector.
3. The emission shown on the 1 GHz to 4 GHz plots is the fundamental transmit frequency at 2462 MHz

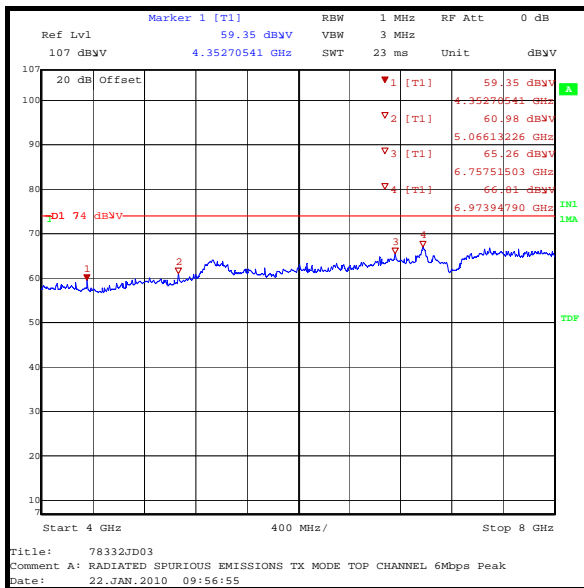
**Transmitter Radiated Emissions (continued)**



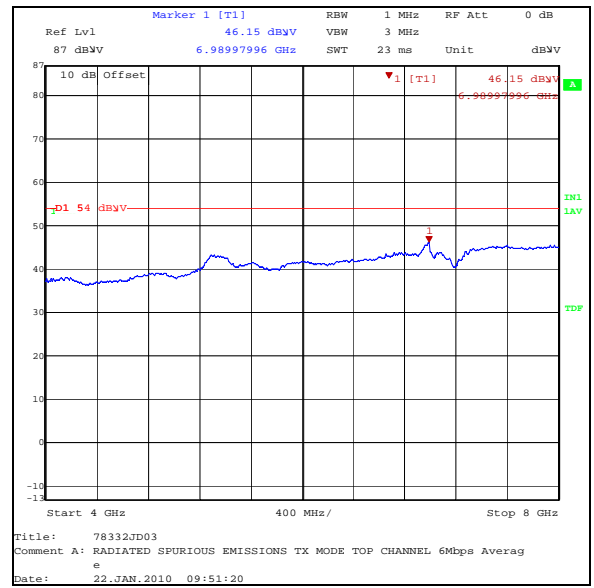
**Peak Detector**



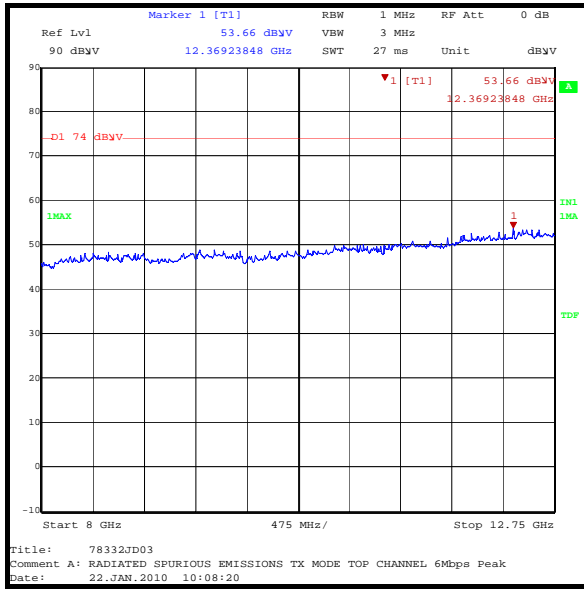
**Avg Detector**



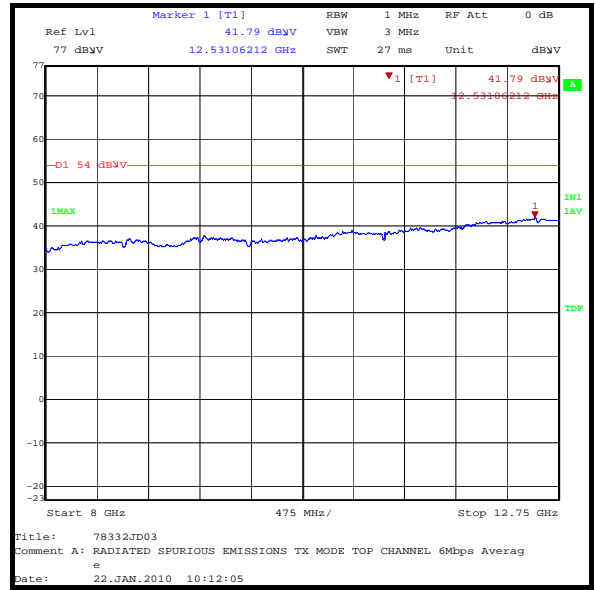
**Peak Detector**



**Avg Detector**



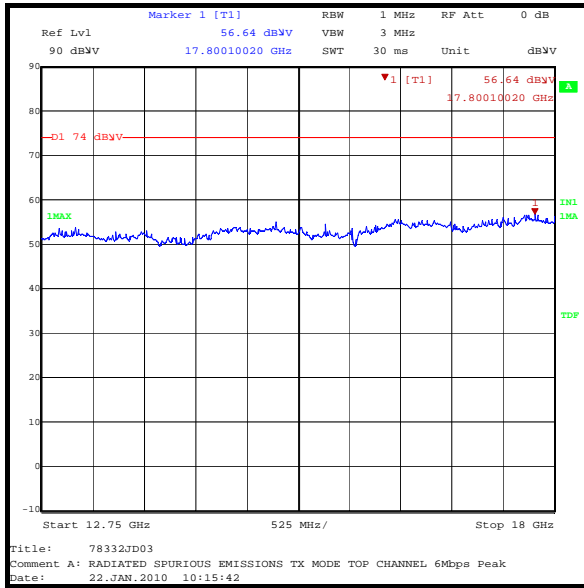
Peak Detector



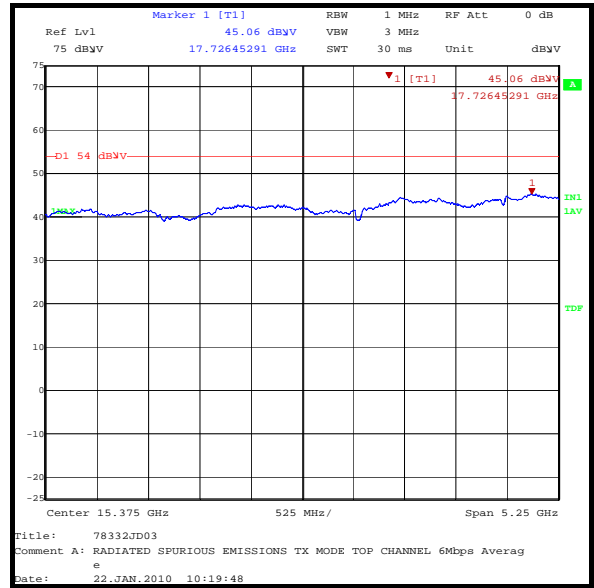
Avg Detector



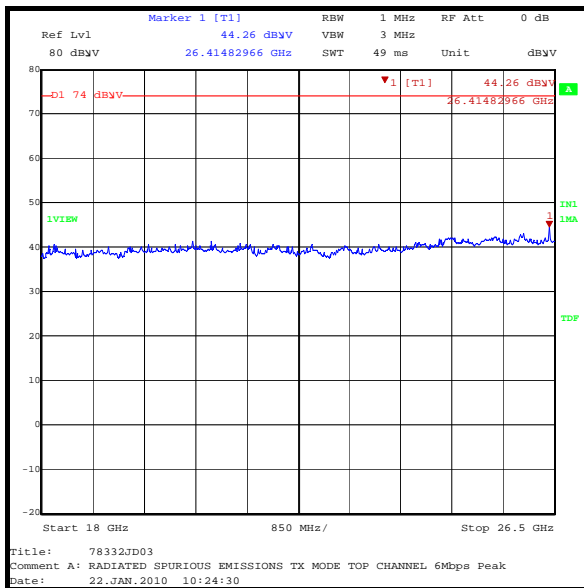
**Transmitter Radiated Emissions (continued)**



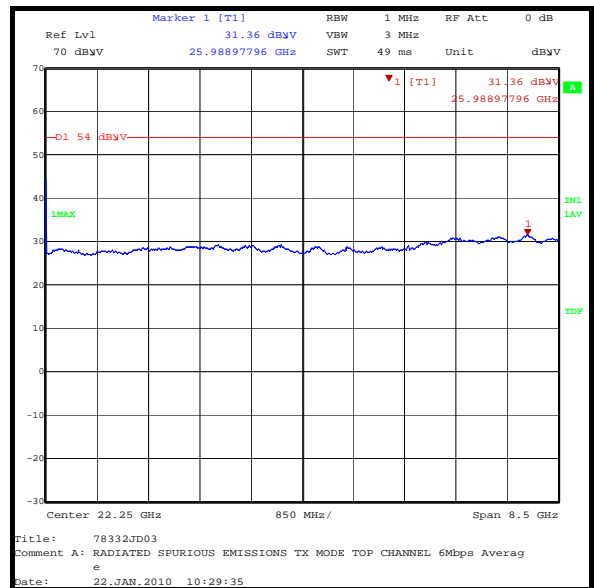
**Peak Detector**



**Avg Detector**



**Peak Detector**



**Avg Detector**

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

<b>FCC Part:</b>	15.247(d) & 15.209(a)
<b>Test Method Used:</b>	As detailed in ANSI C63.4 Section 8 and Public Notice DA 00-705 (March 30, 2000)

**Environmental Conditions:**

<b>Temperature (°C):</b>	27
<b>Relative Humidity (%):</b>	33

**Results: 1 Mbps Peak**

Frequency (MHz)	Antenna Polarity	Detector Level (dB $\mu$ V)	Transducer Factor (dB)	Actual Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Result
2400.0	Vertical	60.2	-0.2	60.0	81.1*	21.1	Complied
2483.5	Vertical	67.8	-0.3	67.5	74.0	6.5	Complied

**Results: 1 Mbps Average**

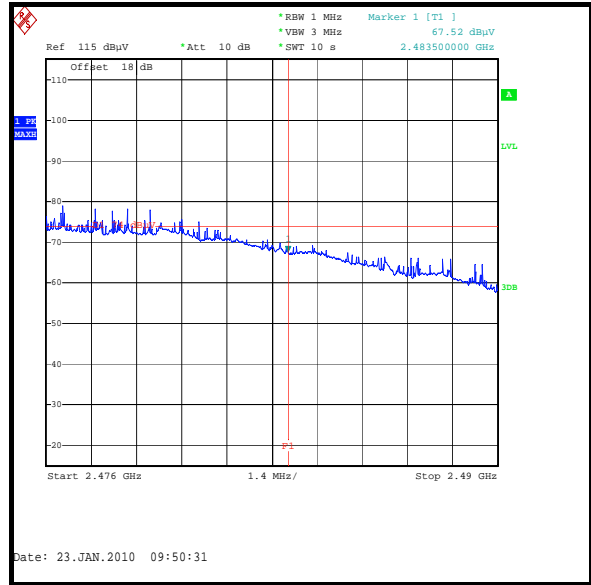
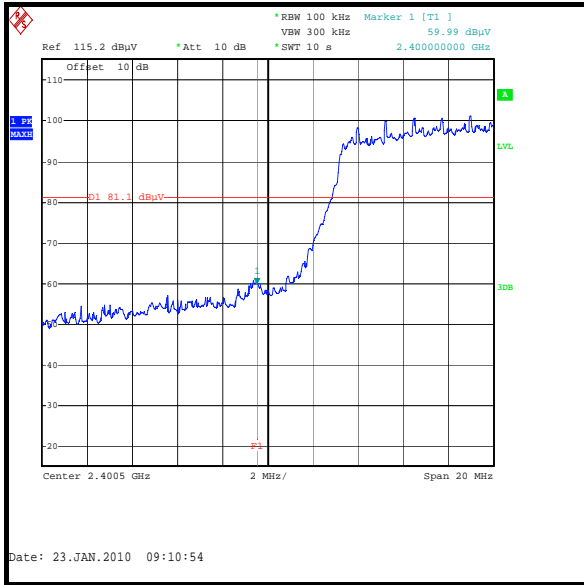
Frequency (MHz)	Antenna Polarity	Detector Level (dB $\mu$ V)	Transducer Factor (dB)	Actual Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Result
2483.5	Vertical	50.8	-0.3	50.5	54.0	3.5	Complied

**Note(s):**

- \* -20 dBc limit

### Transmitter Band Edge Radiated Emissions (continued)

#### 1 Mbps



**Transmitter Band Edge Radiated Emissions (continued)****Results: 6 Mbps Peak**

Frequency (MHz)	Antenna Polarity	Detector Level (dB $\mu$ V)	Transducer Factor (dB)	Actual Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Result
2400.0	Horizontal	66.0	-0.2	65.8	82.4*	16.6	Complied
2483.5	Horizontal	68.4	-0.3	70.8	74.0	3.2	Complied

**Results: 6Mbps Average**

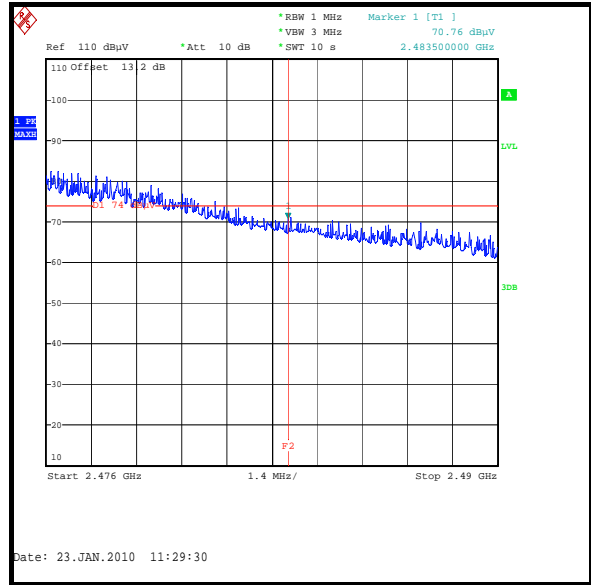
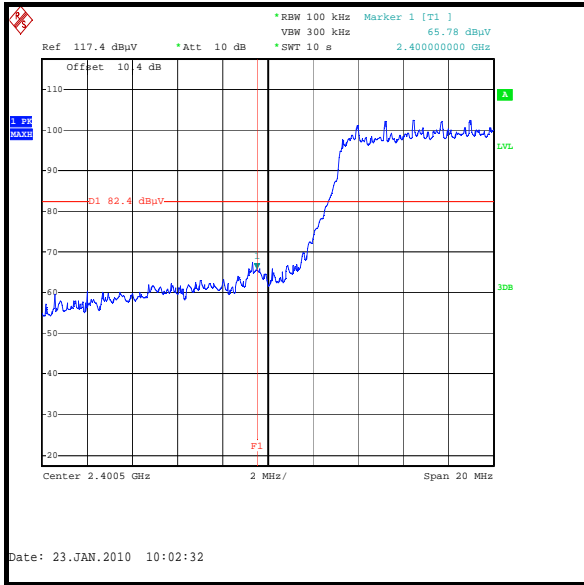
Frequency (MHz)	Antenna Polarity	Detector Level (dB $\mu$ V)	Transducer Factor (dB)	Actual Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Result
2483.5	Horizontal	50.0	-0.3	49.7	54.0	4.3	Complied

**Note(s):**

- \* -20 dBc limit

### Transmitter Band Edge Radiated Emissions (continued)

#### 6 Mbps



## **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".

<b>Measurement Type</b>	<b>Range</b>	<b>Confidence Level (%)</b>	<b>Calculated Uncertainty</b>
AC Conducted Spurious Emissions	0.15 MHz to 30 MHz	95%	±3.25 dB
Maximum Peak Output Power	2400 MHz to 2480 MHz	95%	±2.94 dB
Spectral Power Density	2400 MHz to 2480 MHz	95%	±2.94 dB
6 dB/20 dB Bandwidth	2400 MHz to 2480 MHz	95%	±0.92 ppm
Radiated Spurious Emissions	30 MHz to 26.6 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 Last Calibrated	Cal. Interval (Months)
A1299	Antenna	Schaffner	CBL6143	5094	13 Aug 2009	12
A1534	Pre Amplifier	Hewlett Packard	8449B OPT H02	3008A00405	Calibrated before use	-
A1818	Antenna	EMCO	3115	00075692	27 Nov 2009	12
A1830	Pulse Limiter	Rhode & Schwarz	ESH3-Z2	100668	05 Jan 2010	12
A1975	High Pass Filter	AtlanTecRF	AFH-03000	090424010	Calibrated before use	-
A288	Antenna	Chase	CBL6111A	1589	13 Mar 2009	12
A649	LISN	Rohde & Schwarz	ESH3-Z5	825562/008	19 Mar 2009	12
C363	Cable	Rosenberger	RG142	None	29 Mar 2009	12
K0002	3m RSE Chamber	Rainford EMC	N/A	N/A	01 Sep 2009	12
M1124	Spectrum Analyser	Rohde & Schwarz	ESIB26	100046K	09 Mar 2009	12
M1263	Test Receiver	Rohde & Schwarz	ESIB7	100265	22 Apr 2009	12
M1448	Spectrum Analyser	Rohde & Schwarz	FSP	100323	19 Jan 2009	12

Note that assets A1830 and M1448 indicate they were out of calibration during testing. It shall be noted however that the assets were in calibration for the tests for which they were used.

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