



# TEST REPORT FROM RFI GLOBAL SERVICES LTD

Test of: NTT docomo P-04B

To: FCC Part 22: 2009 Subpart H

**Test Report Serial No:**  
RFI-RPT-RP77078JD05A\_V2.0

**Version 2.0 supersedes all previous versions**

<p><b>This Test Report Is Issued Under The Authority Of Brian Watson, COO Payments and Consultancy:</b></p> <div style="text-align: right;">   pp </div>	
<b>Checked By:</b>	R. Graham
<b>Signature:</b>	<div style="text-align: right;">   pp </div>
<b>Date of Issue:</b>	08 April 2010

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**RFI Global Services Ltd**

Pavilion A, Ashwood Park, Ashwood Way, Basingstoke, Hampshire RG23 8BG  
Telephone: +44 (0)1256 312000 Facsimile: +44 (0)1256 312001  
Email: [info@rfi-global.com](mailto:info@rfi-global.com) Website: [www.rfi-global.com](http://www.rfi-global.com)

Registered in England and Wales. Company number:2117901

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**1. Customer Information**











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

## **2. Summary of Testing**

### **2.1. General Information**

<b>Specification Reference:</b>	47CFR22
<b>Specification Title:</b>	Code of Federal Regulations Volume 47 (Telecommunications) 2009: Part 22 Subpart H (Public Mobile Services)
<b>Site Registration:</b>	FCC: 209735
<b>Location of Testing:</b>	RFI Global Services Ltd, Wade Road, Basingstoke, Hampshire, RG24 8AH, United Kingdom
<b>Test Dates:</b>	02 March to 12 March 2010

### **2.2. Summary of Test Results**

<b>FCC Reference (47CFR)</b>	<b>Measurement</b>	<b>Result</b>
Part 15.107	Receiver/Idle Mode AC Conducted Spurious Emissions	
Part 15.109	Receiver/Idle Mode Radiated Spurious Emissions	
Part 15.207	Transmitter AC Conducted Spurious Emissions	
Part 22.913(a)	Transmitter Effective Radiated Power (ERP)	
Part 22.355	Transmitter Frequency Stability (Temperature & Voltage Variation)	
Part 2.1049	Transmitter Occupied Bandwidth	
Part 2.1053/22.917	Transmitter Out of Band Radiated Emissions	
Part 2.1053/22.917	Transmitter Band Edge Radiated Emissions	
<b>Key to Results</b>  = Complied  = Did not comply		

### **2.3. Methods and Procedures**

<b>Reference:</b>	ANSI/TIA-603-C-2004
<b>Title:</b>	Land Mobile Communications Equipment, Measurements and performance Standards
<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.

### **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>Brand Name:</b>	NTT docomo
<b>Model Name or Number:</b>	P-04B
<b>IMEI:</b>	358862030014626 ( <i>radiated sample</i> ); 358862030014600 ( <i>conducted sample</i> )
<b>Hardware Version Number:</b>	Rev C
<b>Software Version Number:</b>	B-D01WP1-01.01.001 D01WP1_Cv48032102
<b>FCC ID Number:</b>	UCE210027A

<b>Description:</b>	Battery
<b>Brand Name:</b>	NTT docomo
<b>Model Name or Number:</b>	P20
<b>Serial Number:</b>	N/A

<b>Description:</b>	AC Charger
<b>Brand Name:</b>	NTT docomo
<b>Model Name or Number:</b>	FOMA AC Adapter 01 for Global use / MAS-BH0008-A 002
<b>Serial Number:</b>	N/A

<b>Description:</b>	DC Charger
<b>Brand Name:</b>	NTT docomo
<b>Model Name or Number:</b>	FOMA DC Adapter 02
<b>Serial Number:</b>	N/A

<b>Description:</b>	Charge/USB Data cable
<b>Brand Name:</b>	NTT docomo
<b>Model Name or Number:</b>	FOMA USB Cable with Charge Function 02
<b>Serial Number:</b>	N/A

<b>Description:</b>	Micro SD memory card
<b>Brand Name:</b>	Not stated
<b>Model Name or Number:</b>	Not stated
<b>Serial Number:</b>	Not stated

<b>Description:</b>	Personal Hands-Free
<b>Brand Name:</b>	NTT docomo
<b>Model Name or Number:</b>	Stereo Earphone Set 01
<b>Serial Number:</b>	N/A

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

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

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

No modifications were applied to the EUT during testing.

**3.4. Additional Information Related to Testing**

Technology Tested:	UMTS		
Type of Radio Device:	Transceiver		
Mode:	UMTS FDD V and UMTS Release 5 HSDPA		
Modulation Type:	QPSK		
Channel Spacing:	5 MHz		
Power Supply Requirement(s):	Nominal	3.7 V	
	Minimum	3.4 V	
	Maximum	4.2 V	
Transmit Frequency Range:	824 to 849 MHz		
Transmit Channels Tested:	Channel ID	Channel Number	Channel Frequency (MHz)
	Bottom	4132	826.4
	Middle	4182	836.4
	Top	4233	846.6
Receive Frequency Range:	869 to 894 MHz		
Receive Channels Tested:	Channel ID	Channel Number	Channel Frequency (MHz)
	Bottom	4357	871.4
	Middle	4407	881.4
	Top	4458	891.6

**3.5. Support Equipment**

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

<b>Description:</b>	Dummy battery
<b>Brand Name:</b>	Not stated
<b>Model Name or Number:</b>	Not stated
<b>Serial Number:</b>	Not stated



## **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.
- Constantly transmitting at full power on bottom, middle and top channels as required.
- Occupied bandwidth, ERP and band edge tests were performed with the EUT in Voice (RMC/12.2 kbps) or HSDPA (Sets 1 to 4) modes.
- Transmitter radiated spurious emissions were checked in all modes during prescans. Voice (RMC/12.2 kbps) was found to be the worst case and all final measurements were performed with the EUT in this mode.

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

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

- Connected to Rohde & Schwarz CMU 200 Universal Radio Communications Tester, operating in UMTS Band V mode.
- Idle mode and transmitter mode radiated spurious emissions tests were performed with the personal hands free 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.

## **5. Measurements, Examinations and Derived Results**

### **5.1. General Comment**

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%.

## **5.2. Test Results**

### **5.2.1. Receiver/Idle Mode AC Conducted Spurious Emissions**

#### **Test Summary:**

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

#### **Environmental Conditions:**

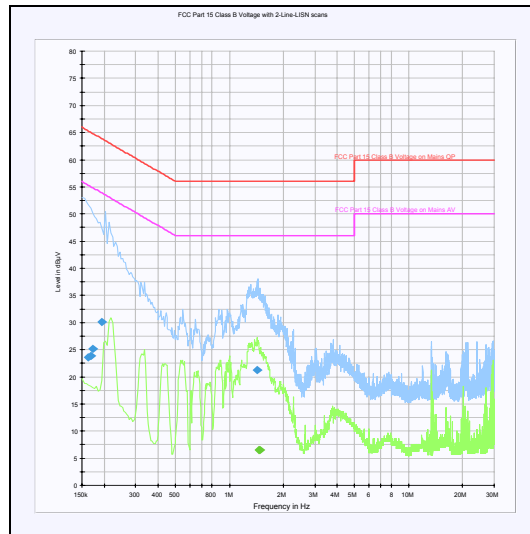
<b>Temperature (°C):</b>	26
<b>Relative Humidity (%):</b>	28

#### **Results: Quasi Peak Detector Measurements**

<b>Frequency (MHz)</b>	<b>Line</b>	<b>Level (dB<math>\mu</math>V)</b>	<b>Limit (dB<math>\mu</math>V)</b>	<b>Margin (dB)</b>	<b>Result</b>
0.163500	Live	23.5	65.3	41.8	Complied
0.168000	Live	23.9	65.1	41.2	Complied
0.172500	Live	25.1	64.8	39.7	Complied
0.195000	Live	30.0	63.8	33.8	Complied
1.419000	Live	21.2	56.0	34.8	Complied

#### **Results: Average Detector Measurements**

<b>Frequency (MHz)</b>	<b>Line</b>	<b>Level (dB<math>\mu</math>V)</b>	<b>Limit (dB<math>\mu</math>V)</b>	<b>Margin (dB)</b>	<b>Result</b>
1.468500	Live	6.6	46.0	39.4	Complied
1.473000	Live	6.6	46.0	39.4	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:**

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

**Environmental Conditions:**

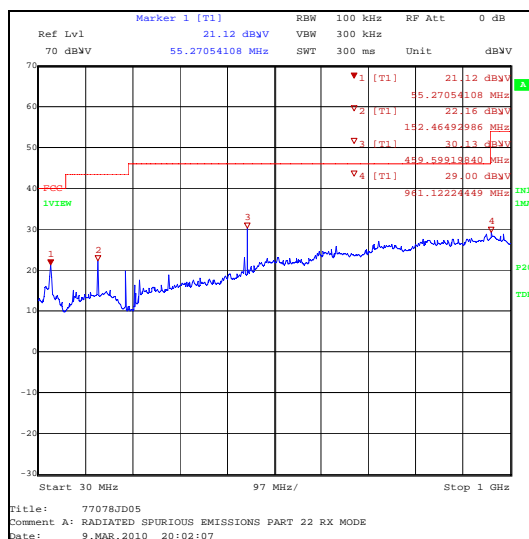
<b>Temperature (°C):</b>	24
<b>Relative Humidity (%):</b>	21

**Results:**

Frequency (MHz)	Antenna Polarity	Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Result
55.279	Vertical	17.9	40.0	22.1	Complied
153.261	Horizontal	21.1	43.5	22.4	Complied
458.775	Vertical	28.9	46.0	17.1	Complied
961.129	Vertical	29.1	54.0	24.9	Complied

**Note(s):**

- The final measured value, for the given emission, in the table above incorporates the calibrated antenna factor and cable loss.



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

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

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

**Environmental Conditions:**

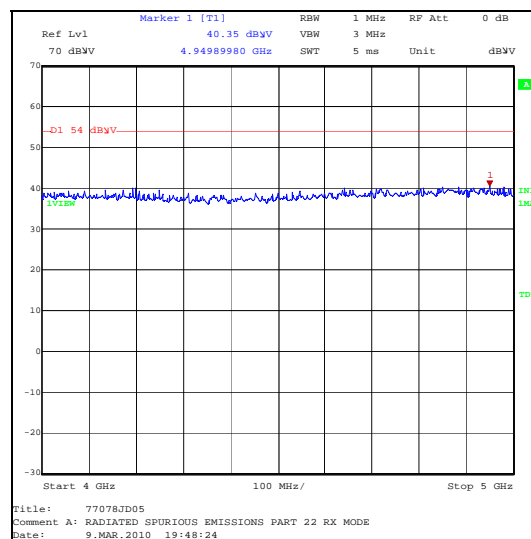
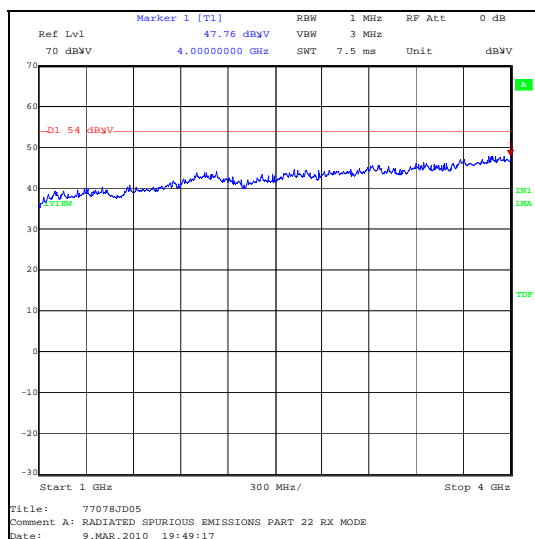
<b>Temperature (°C):</b>	24
<b>Relative Humidity (%):</b>	21

**Results:**

Frequency (GHz)	Antenna Polarity	Peak Level (dB $\mu$ V/m)	Average Limit (dB $\mu$ V/m)	Margin (dB)	Result
4.000	Vertical	47.8	54.0	6.2	Complied

**Note(s):**

- 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.
- The final measured value, for the given emission, in the table above incorporates the calibrated antenna factor and cable loss.



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

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

**Environmental Conditions:**

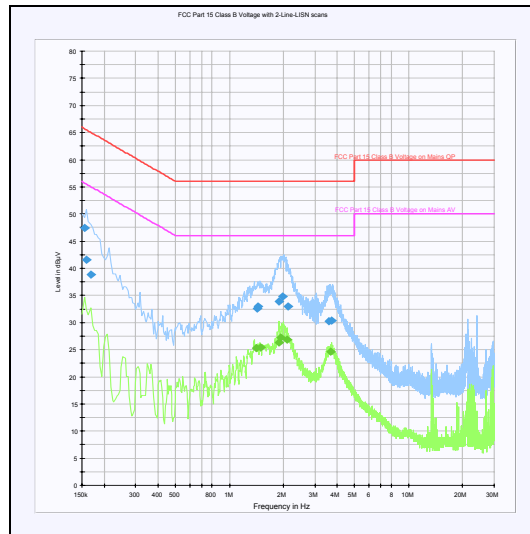
<b>Temperature (°C):</b>	26
<b>Relative Humidity (%):</b>	28

**Results: Quasi Peak Detector Measurements**

Frequency (MHz)	Line	Level (dB $\mu$ V)	Limit (dB $\mu$ V)	Margin (dB)	Result
0.154500	Live	47.5	65.8	18.3	Complied
0.159000	Neutral	41.5	65.5	24.0	Complied
0.168000	Live	38.8	65.1	26.3	Complied
1.419000	Live	32.6	56.0	23.4	Complied
1.446000	Live	33.0	56.0	23.0	Complied
1.887000	Live	33.8	56.0	22.2	Complied
1.968000	Live	34.8	56.0	21.2	Complied
2.121000	Live	33.0	56.0	23.0	Complied
3.592500	Live	30.3	56.0	25.7	Complied
3.718500	Live	30.4	56.0	25.6	Complied

**Results: Average Detector Measurements**

Frequency (MHz)	Line	Level (dB $\mu$ V)	Limit (dB $\mu$ V)	Margin (dB)	Result
1.410000	Live	25.3	46.0	20.7	Complied
1.491000	Live	25.4	46.0	20.6	Complied
1.882500	Live	26.3	46.0	19.7	Complied
1.936500	Live	27.3	46.0	18.7	Complied
2.098500	Live	26.8	46.0	19.2	Complied
3.669000	Live	24.7	46.0	21.3	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 Effective Radiated Power (ERP)****Test Summary:**

<b>FCC Part:</b>	22.913(a)
<b>Test Method Used:</b>	As detailed in ANSI TIA-603-C-2004 Section 2.2.17.2

**Environmental Conditions:**

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

**Results: Peak**

Modes		HSDPA				Voice			
Sub-tests		1	2	3	4	RMC 12.2kbps			
Band	Channel	Power (dBm)	Power (dBm)	Power (dBm)	Power (dBm)	Power (dBm)	Limit (dBm)	Margin	Result
V	4132	19.0	19.7	19.8	20.1	19.0	38.5	18.4	Complied
	4182	19.7	20.4	20.7	20.8	20.0	38.5	17.7	Complied
	4233	17.7	18.7	18.9	18.9	17.6	38.5	19.6	Complied
$\beta_c$		2	12	15	15				
$\beta_d$		15	15	8	4				
$\Delta ACK, \Delta NACK, \Delta CQI$		8	8	8	8				

**Results: RMS**

Modes		HSDPA				Voice			
Sets		1	2	3	4	RMC 12.2kbps			
Band	Channel	Power (dBm)	Power (dBm)	Power (dBm)	Power (dBm)	Power (dBm)	Limit (dBm)	Margin	Result
V	4132	16.1	15.9	15.9	16.0	15.3	38.5	22.4	Complied
	4182	16.9	16.2	16.7	16.7	17.3	38.5	21.2	Complied
	4233	14.8	14.7	14.7	14.8	14.8	38.5	23.7	Complied
$\beta_c$		2	12	15	15				
$\beta_d$		15	15	8	4				
$\Delta ACK, \Delta NACK, \Delta CQI$		8	8	8	8				

**Note(s):**

1. All modes were compared on each channel and the highest power recorded was subtracted from the limit to show the margin.

**5.2.5. Conducted Average Power Measurement**

Modes		HSDPA				WCDMA
Sets		1	2	3	4	Voice / RMC 12.2kbps
Band	Channel	Average Power (dBm)	Average Power (dBm)	Average Power (dBm)	Average Power (dBm)	Average Power (dBm)
V	4132	23.2	21.2	19.7	19.4	23.2
	4183	23.3	21.2	19.7	19.5	23.2
	4233	23.4	21.4	19.9	19.6	23.3
$\beta_c$		2	12	15	15	
$\beta_d$		15	15	8	4	
$\Delta\text{ACK}, \Delta\text{NACK}, \Delta\text{CQI}$		8	8	8	8	

**5.2.6. Transmitter Frequency Stability (Temperature Variation)****Test Summary:**

<b>FCC Part:</b>	22.355
<b>Test Method Used:</b>	As detailed in ANSI TIA-603-C-2004 Section 2.2.2 referencing FCC CFR Part 2.1055

**Environmental Conditions:**

<b>Temperature (°C):</b>	26
<b>Relative Humidity (%):</b>	28

**Results: Middle Channel (836.4 MHz)**

Temperature (°C)	Measured Frequency (MHz)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)	Margin (ppm)	Result
-30	836.400032	32	0.04	2.5	2.46	Complied
-20	836.399963	-34	0.04	2.5	2.46	Complied
-10	836.400017	17	0.02	2.5	2.48	Complied
0	836.399987	-13	0.02	2.5	2.48	Complied
10	836.399966	-34	0.04	2.5	2.46	Complied
20	836.399965	-35	0.04	2.5	2.46	Complied
30	836.399967	-33	0.04	2.5	2.46	Complied
40	836.400021	21	0.03	2.5	2.47	Complied
50	836.400035	35	0.04	2.5	2.46	Complied

**5.2.7. Transmitter Frequency Stability (Voltage Variation)****Test Summary:**

<b>FCC Part:</b>	22.355
<b>Test Method Used:</b>	As detailed in ANSI TIA-603-C-2004 Section 2.2.2 referencing FCC CFR Part 2.1055

**Environmental Conditions:**

<b>Temperature (°C):</b>	26
<b>Relative Humidity (%):</b>	25

**Results: Middle Channel (836.4 MHz)**

<b>Supply Voltage (V)</b>	<b>Measured Frequency (MHz)</b>	<b>Frequency Error (Hz)</b>	<b>Frequency Error (ppm)</b>	<b>Limit (ppm)</b>	<b>Margin (ppm)</b>	<b>Result</b>
3.4	836.399987	-16.0	0.02	2.5	2.48	Complied
4.2	836.399987	-16.0	0.02	2.5	2.48	Complied

**5.2.8. Transmitter Occupied Bandwidth****Test Summary:**

<b>FCC Part:</b>	2.1049
<b>Test Method Used:</b>	As detailed in ANSI C63.4 Section 13.1.7 and relevant annexes referencing FCC CFR Part 2.1049 (see note below)

**Environmental Conditions:**

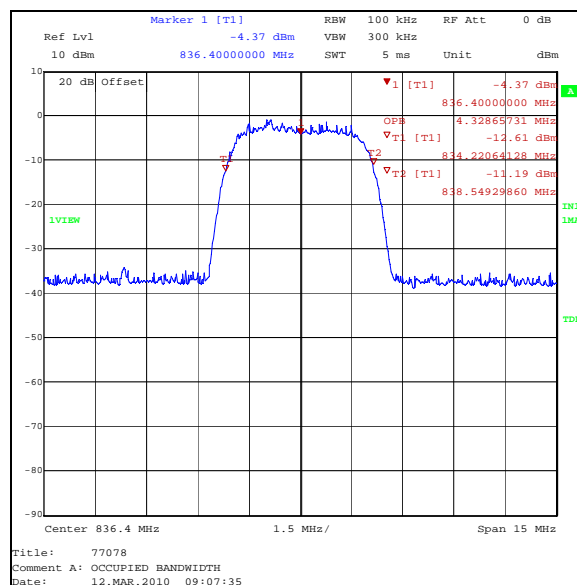
<b>Temperature (°C):</b>	21
<b>Relative Humidity (%):</b>	30

**Results: RMC/Voice**

Channel	Frequency (MHz)	Occupied Bandwidth (kHz)
Centre	836.4	4328.657

**Note(s):**

- In lieu of the test method detailed in ANSI C63.4 Section 13.1.7 the 99% occupied bandwidth was measured using the Occupied Bandwidth function of the spectrum analyser

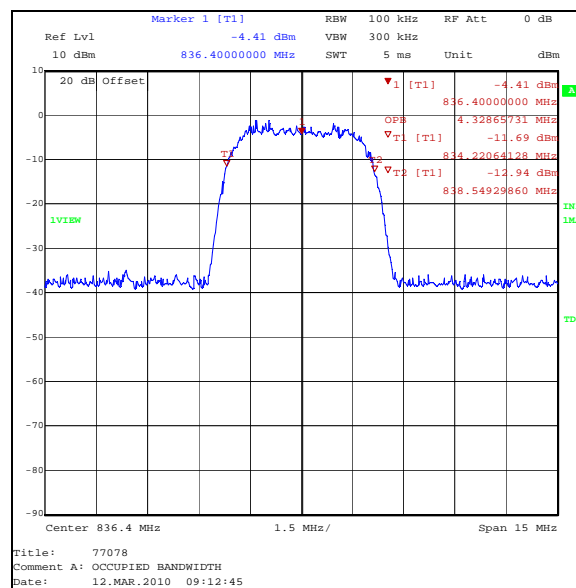


**Transmitter Occupied Bandwidth (continued)****Results: HSDPA Sub-test 1**

Channel	Frequency (MHz)	Occupied Bandwidth (kHz)
Centre	836.4	4328.657

**Note(s):**

- In lieu of the test method detailed in ANSI C63.4 Section 13.1.7 the 99% occupied bandwidth was measured using the Occupied Bandwidth function of the spectrum analyser



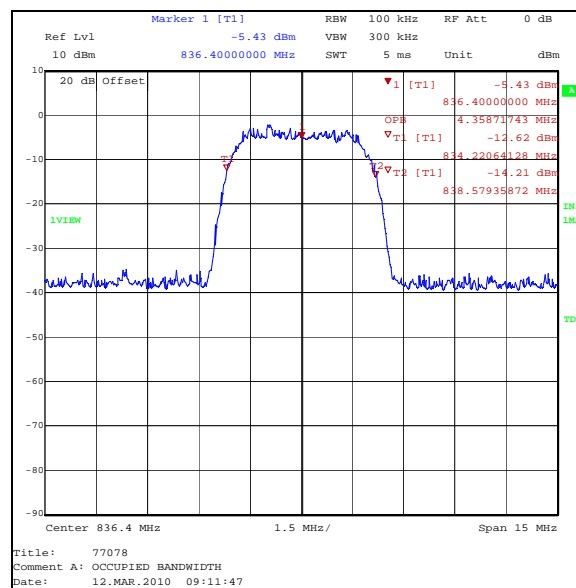
### Transmitter Occupied Bandwidth (continued)

### Results: HSDPA Sub-test 2

Channel	Frequency (MHz)	Occupied Bandwidth (kHz)
Centre	836.4	4358.717

**Note(s):**

1. In lieu of the test method detailed in ANSI C63.4 Section 13.1.7 the 99% occupied bandwidth was measured using the Occupied Bandwidth function of the spectrum analyser



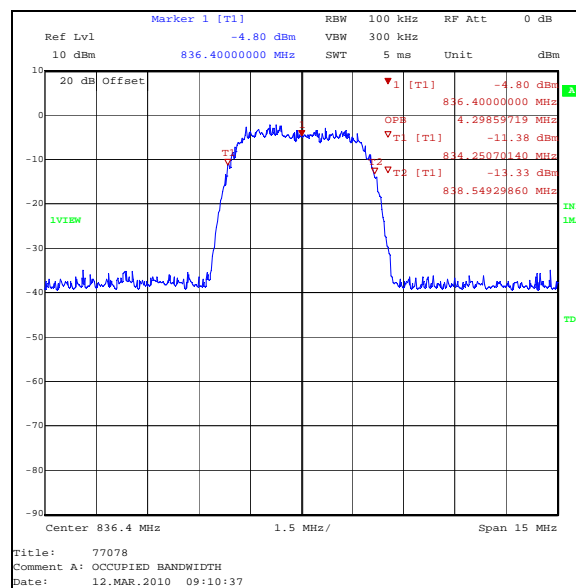
### Transmitter Occupied Bandwidth (continued)

### Results: HSDPA Sub-test 3

Channel	Frequency (MHz)	Occupied Bandwidth (kHz)
Centre	836.4	4298.597

**Note(s):**

1. In lieu of the test method detailed in ANSI C63.4 Section 13.1.7 the 99% occupied bandwidth was measured using the Occupied Bandwidth function of the spectrum analyser





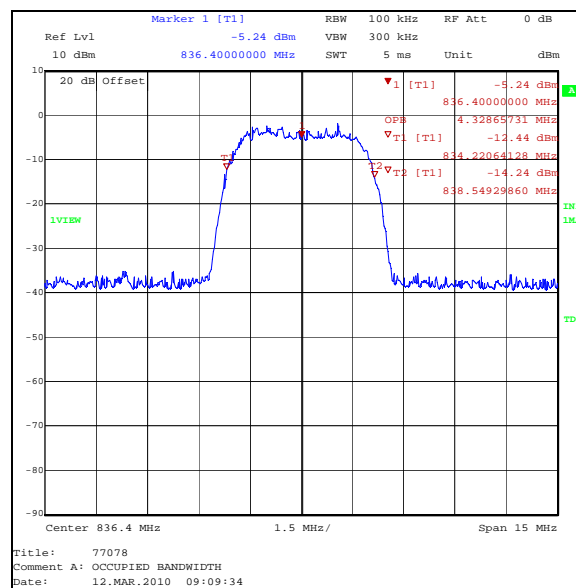
**Transmitter Occupied Bandwidth (continued)**

### Results: HSDPA Sub-test 4

Channel	Frequency (MHz)	Occupied Bandwidth (kHz)
Centre	836.4	4328.657

**Note(s):**

1. In lieu of the test method detailed in ANSI C63.4 Section 13.1.7 the 99% occupied bandwidth was measured using the Occupied Bandwidth function of the spectrum analyser



**5.2.9. Transmitter Out of Band Radiated Emissions****Test Summary:**

<b>FCC Part:</b>	2.1053 & 22.917
<b>Frequency Range:</b>	30 MHz to 12.75 GHz
<b>Test Method Used:</b>	As detailed in ANSI TIA-603-C-2004 Section 2.2.12 referencing FCC CFR Part 2.1053
<b>Modulation:</b>	Voice / RMC 12.2 kbps

**Environmental Conditions:**

<b>Temperature (°C):</b>	25
<b>Relative Humidity (%):</b>	18

**Results: Bottom Channel**

<b>Frequency (MHz)</b>	<b>Peak Emission Level (dBm)</b>	<b>Limit (dBm)</b>	<b>Margin (dB)</b>	<b>Result</b>
1651.214	-34.2	-13.0	21.2	Complied

**Results: Middle Channel**

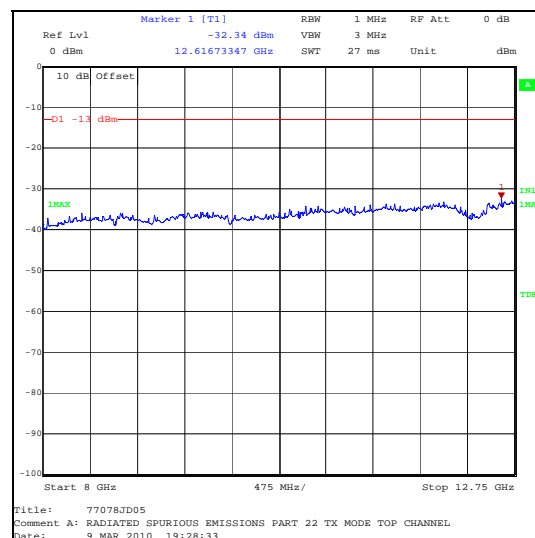
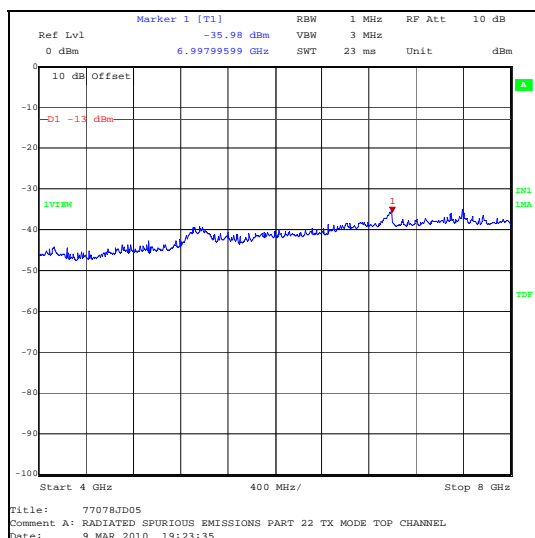
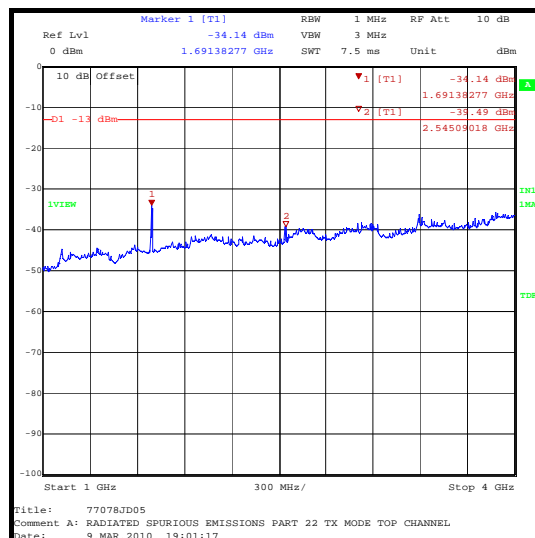
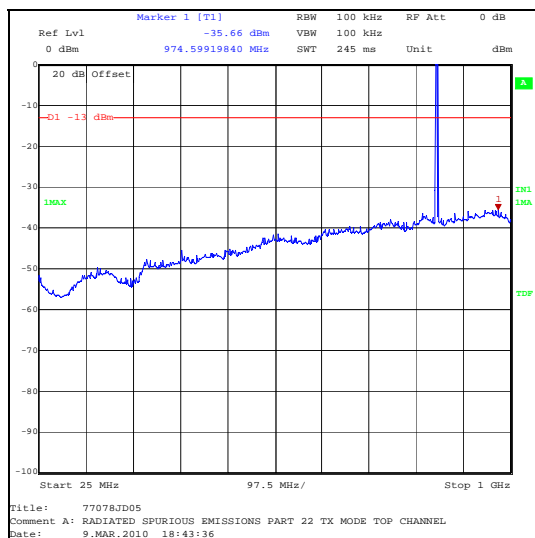
<b>Frequency (MHz)</b>	<b>Peak Emission Level (dBm)</b>	<b>Limit (dBm)</b>	<b>Margin (dB)</b>	<b>Result</b>
1671.581	-33.5	-13.0	20.5	Complied

**Results: Top Channel**

<b>Frequency (MHz)</b>	<b>Peak Emission Level (dBm)</b>	<b>Limit (dBm)</b>	<b>Margin (dB)</b>	<b>Result</b>
1691.059	-33.2	-13.0	20.2	Complied

**Note(s):**

1. The uplink and downlink traffic channels are shown on the 30 MHz to 1 GHz plot.

**Transmitter Out of Band Radiated Emissions (continued)**

**5.2.10. Transmitter Radiated Emissions at Band Edges****Test Summary:**

<b>FCC Part:</b>	2.1053 & 22.917
<b>Test Method Used:</b>	As detailed in ANSI TIA-603-C-2004 Section 2.2.12 referencing FCC CFR Parts 2.1053 and 22.917

**Environmental Conditions:**

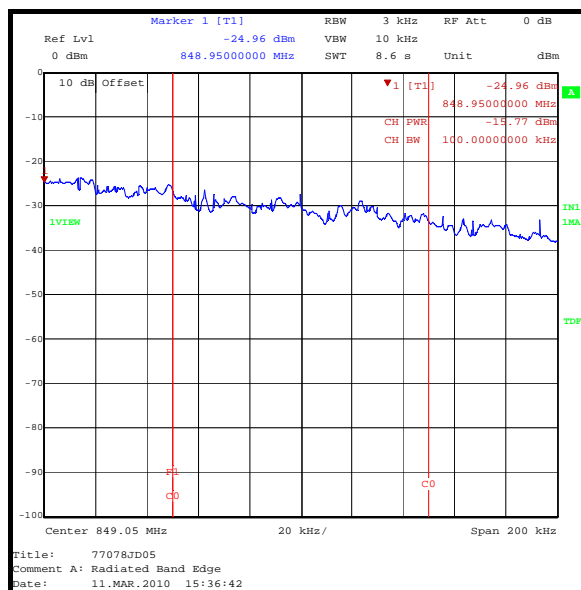
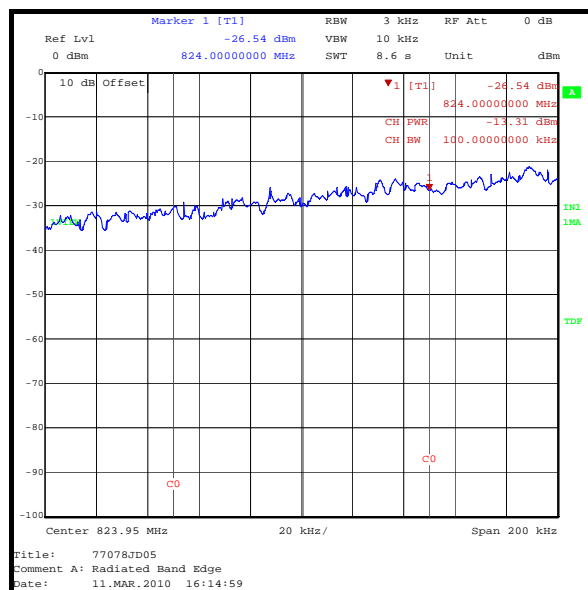
<b>Temperature (°C):</b>	24
<b>Relative Humidity (%):</b>	20

**Results: Voice / RMC 12.2 kbps**

Frequency (MHz)	Peak Emission Level (dBm)	Limit (dBm)	Margin (dBm)	Result
824	-13.3	-13.0	0.3	Complied
849	-15.7	-13.0	2.7	Complied

**Note(s):**

1. The band edge result was obtained by integrating the 100 kHz strip immediately adjacent to the band edge using a channel power function of the measurement analyser.

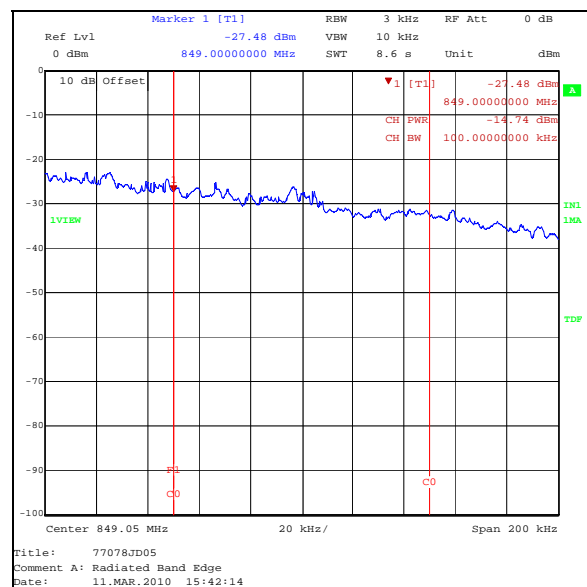
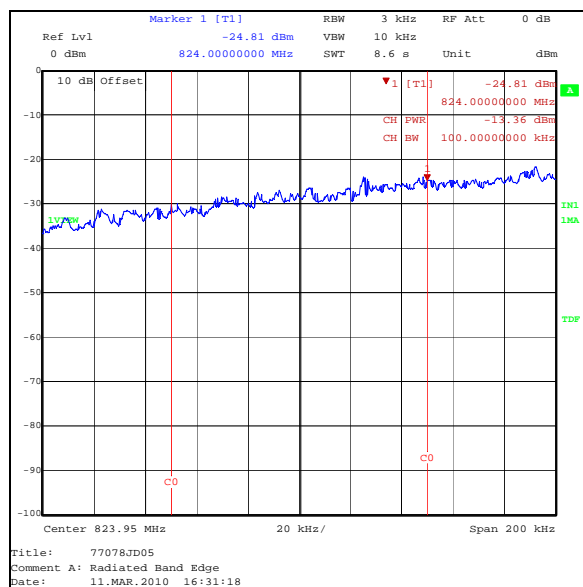


**Transmitter Radiated Emissions at Band Edges (continued)****Results: HSDPA Sub-test 1**

Frequency (MHz)	Peak Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
824.0	-13.4	-13.0	0.4	Complied
849.0	-14.7	-13.0	1.7	Complied

**Note(s):**

- The band edge result was obtained by integrating the 100 kHz strip immediately adjacent to the band edge using a channel power function of the measurement analyser.

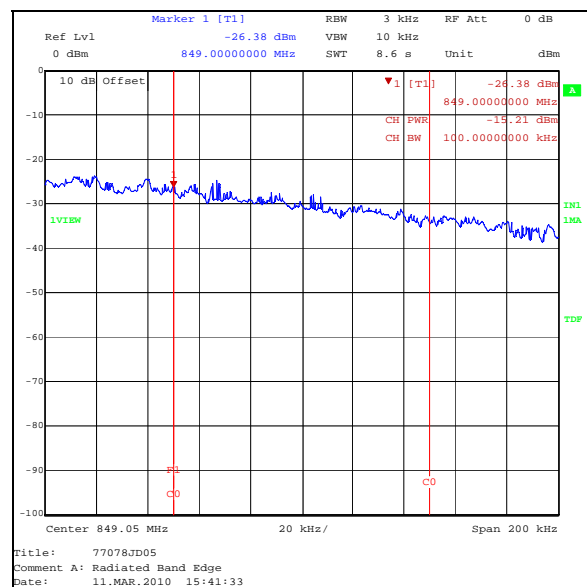
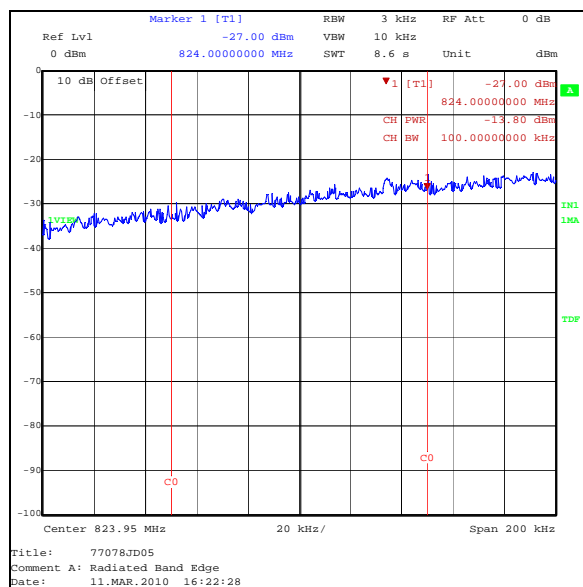


**Transmitter Radiated Emissions at Band Edges (continued)****Results: HSDPA Sub-test 2**

Frequency (MHz)	Peak Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
824.0	-13.8	-13.0	0.8	Complied
849.0	-15.2	-13.0	2.2	Complied

**Note(s):**

- The band edge result was obtained by integrating the 100 kHz strip immediately adjacent to the band edge using a channel power function of the measurement analyser.

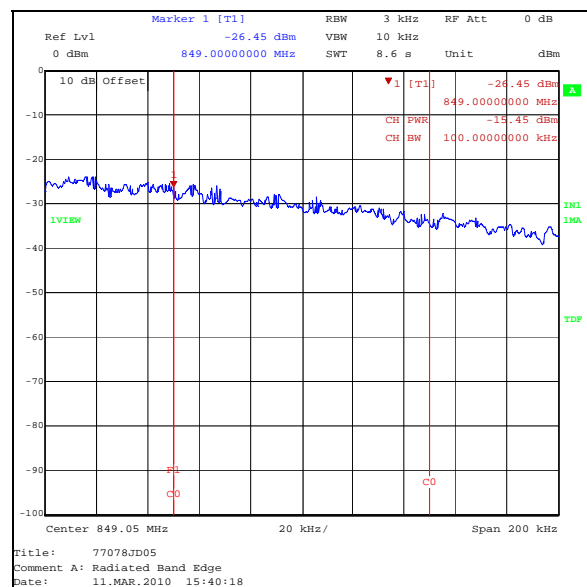
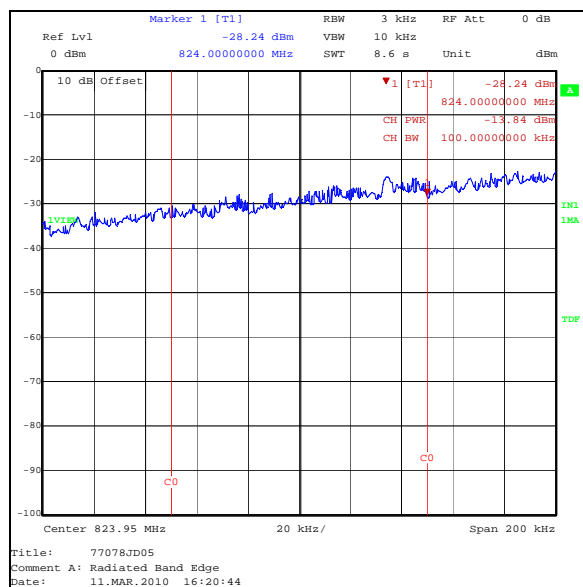


**Transmitter Radiated Emissions at Band Edges (continued)****Results: HSDPA Sub-test 3**

Frequency (MHz)	Peak Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
824.0	-13.8	-13.0	0.8	Complied
849.0	-15.5	-13.0	2.5	Complied

**Note(s):**

- The band edge result was obtained by integrating the 100 kHz strip immediately adjacent to the band edge using a channel power function of the measurement analyser.

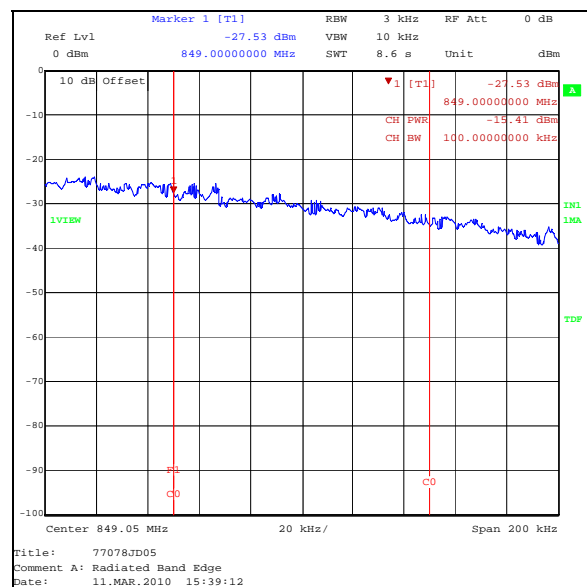
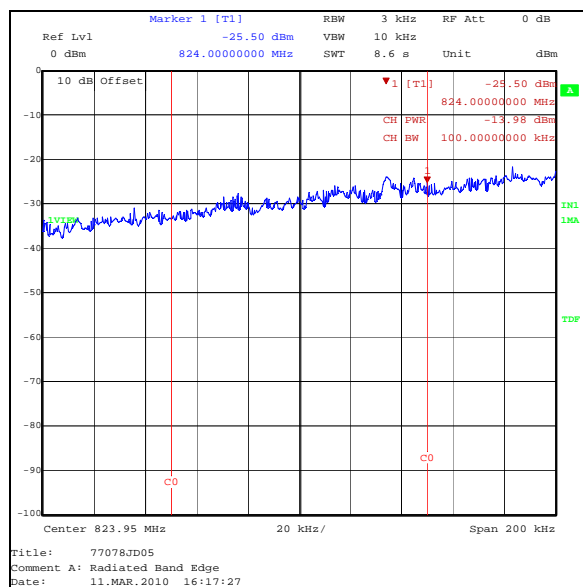


**Transmitter Radiated Emissions at Band Edges (continued)****Results: HSDPA Sub-test 4**

Frequency (MHz)	Peak Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
824.0	-14.0	-13.0	1.0	Complied
849.0	-15.4	-13.0	2.4	Complied

**Note(s):**

- The band edge result was obtained by integrating the 100 kHz strip immediately adjacent to the band edge using a channel power function of the measurement analyser.





## **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
Effective Radiated Power (ERP)	Not applicable	95%	±2.94 dB
Frequency Stability	Not applicable	95%	±0.92 ppm
Occupied Bandwidth	Not applicable	95%	±0.92 ppm
Radiated Spurious Emissions	30 MHz to 12.75 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**

<b>RFI No.</b>	<b>Instrument</b>	<b>Manufacturer</b>	<b>Type No.</b>	<b>Serial No.</b>	<b>Date Last Calibrated</b>	<b>Cal. Interval (Months)</b>
A067	LISN	Rohde & Schwarz	ESH3-Z5	890603/002	03 Jun 2009	12
A1391	Attenuator	Huber + Suhner	757987	6810.17.B	Calibrated before use	-
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	01 Mar 2010	12
A288	Antenna	Chase	CBL6111A	1589	13 Mar 2009	12
E013	Environmental Chamber	Sanyo	ATMOS chamber	None	Calibrated before use	-
K0002	3m RSE Chamber	Rainford EMC	N/A	N/A	01 Sep 2009	12
L1004	Comms Test Set	Rohde & Schwarz	CMU200	117194	02 Feb 2010	12
M1068	Thermometer	Iso-Tech	RS55	93102884	01 Oct 2009	12
M1124	Spectrum Analyser	Rohde & Schwarz	ESIB26	100046K	09 Mar 2009	13
M122	Digital Voltmeter	Fluke	77	64910017	23 Jun 2009	12
M1379	Test Receiver	Rohde and Schwarz	ESIB7	100330	20 Aug 2009	12
S0536	DC Power Supply	TTI	EL302D	249944	Calibrated before use	12

Note that asset M1124 indicates it went out of calibration during testing. It shall be noted however that the asset was in calibration for the test for which it was used.

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