



**TEST REPORT  
FROM  
RFI GLOBAL SERVICES LTD**

Test of: Dell Inspiron 1010 Netbook PC

To: OET Bulletin 65 Supplement C: (2001-01)

**Test Report Serial No:**  
RFI/SAR3/RP74349JD01A

**Supersedes Test Report Serial No:**  
RFI/SAR2/RP74349JD01A

<b>This Test Report Is Issued Under The Authority Of Stuart Thomas, General Manager Cellular Services:</b>	
	pp 
<b>Checked By: Scott D'Adamo</b> 	<b>Report Copy No: PDF01</b>
<b>Issue Date: 02 March 2009</b>	<b>Test Dates: 08 December 2008 to 09 January 2009</b>

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## 1. Customer Information

<b>Company Name:</b>	Dell Inc.
<b>Address:</b>	One Dell Way Round Rock TX 78682 USA
<b>Contact Name:</b>	Mr. T Nguyen

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## **2. Equipment Under Test (EUT)**

### **2.1. Identification of Equipment Under Test (EUT)**

<b>Description:</b>	Netbook PC
<b>Brand Name:</b>	Dell
<b>Model Name or Number:</b>	Inspiron 1010
<b>Serial Number:</b>	None stated
<b>Unique Netbook Identifier</b>	D-1010-32-477 (CN-0A663T-12961-8AN-0024-X00)
<b>IMEI Number:</b>	004401700148543
<b>Hardware Version Number:</b>	A00
<b>Software Version Number:</b>	Rev.A
<b>Hardware Revision of GSM Module:</b>	R1
<b>Software Revision of GSM Module:</b>	R1B003
<b>FCC ID Number:</b>	VV7-MBMF3507G-D
<b>Country of Manufacture:</b>	China
<b>Date of Receipt:</b>	08 December 2008

### **2.2. Description of EUT**

The equipment under test is a Dell Inspiron 1010 Netbook fitted with an Ericsson mobile broadband module F3507g, alternate model name Dell Wireless 5530 HSPA Mobile Broadband Mini-card.

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

There were no modifications incorporated in the EUT during the test duration.

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**2.4. Accessories**

The following accessories were supplied with the EUT during testing:

<b>Description:</b>	Battery
<b>Brand Name:</b>	Compal
<b>Model Name or Number:</b>	Dynapack Tiger_3C SDI 2.2F
<b>Serial Number:</b>	None stated
<b>Cable Length and Type:</b>	Not Applicable
<b>Country of Manufacture:</b>	China
<b>Connected to Port</b>	7 Pin Array Contact Point

<b>Description:</b>	Dell Wireless 365 Bluetooth Module
<b>Brand Name:</b>	Broadcom Corporation
<b>Model Name or Number:</b>	BCM92046MD
<b>FCC ID:</b>	QDS-BRCM1033
<b>Cable Length and Type:</b>	Not Applicable
<b>Country of Manufacture:</b>	China
<b>Connected to Port</b>	Bus Slot Unique to Manufacturer

<b>Description:</b>	Dell Wireless 1397 WLAN Module 802.11b/g
<b>Brand Name:</b>	Broadcom Corporation
<b>Model Name or Number:</b>	BCM94312HMG
<b>FCC ID:</b>	QDS-BRCM1030
<b>Cable Length and Type:</b>	Not Applicable
<b>Country of Manufacture:</b>	China
<b>Connected to Port</b>	Bus Slot Unique to Manufacturer

<b>Description:</b>	Dell Wireless 1510 WLAN Module 802.11a/b/g/n
<b>Brand Name:</b>	Broadcom Corporation
<b>Model Name or Number:</b>	BCM94322HM8L
<b>FCC ID:</b>	QDS-BRCM1031
<b>Cable Length and Type:</b>	Not Applicable
<b>Country of Manufacture:</b>	China
<b>Connected to Port</b>	Bus Slot Unique to Manufacturer

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## 2.5. Support Equipment

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

<b>Description:</b>	Wireless Communication Test Set
<b>Brand Name:</b>	Agilent
<b>Model Name or Number:</b>	8960 Series 10
<b>Serial Number:</b>	GB46310157
<b>Cable Length and Type:</b>	1.5m Utiflex Cable
<b>Connected to Port:</b>	RF (Input/Output) Air Link

<b>Description:</b>	Radio Communication Analyser
<b>Brand Name:</b>	Anritsu
<b>Model Name or Number:</b>	MT8820A
<b>Serial Number:</b>	6K00000647
<b>Cable Length and Type:</b>	1.5m Utiflex Cable
<b>Connected to Port:</b>	RF (Input/Output) Air Link

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**2.6. Additional Information Related to Testing**

<b>Equipment Category</b>	GPRS850/900/1800/1900; EGPRS850/900/1800/1900; UMTS FDD1/FDD2/FDD5 HSPA, WiFi 802.11a/b/g/n, Bluetooth	
<b>Type of Unit</b>	Portable Transceiver	
<b>Intended Operating Environment:</b>	Within 2G GSM, 3G UMTS, WiFi 802.11n and Bluetooth coverage	
<b>Transmitter Maximum Output Power Characteristics:</b>	GPRS/EGPRS850	33dBm
	GPRS/EGPRS1900	30dBm
	UMTS/HSPA FDD V	24dBm
	UMTS/HSPA FDD II	24dBm
	WiFi 2540	24dBm
	WiFi 5800	22dBm
	Bluetooth	6dBm
<b>Transmitter Frequency Range:</b>	GPRS/EGPRS850	824 to 849 MHz
	GPRS/EGPRS1900	1850 to 1910 MHz
	UMTS/HSPA FDD V	826 to 847 MHz
	UMTS/HSPA FDD II	1880 to 1908 MHz
	WiFi 2540	2412 to 2462 MHz
	WiFi 5800	5745 to 5825 MHz
	Bluetooth	2402 to 2480 MHz



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Additional Information Related to Testing (continued)

Transmitter Frequency Allocation of EUT When Under Test:	Channel Number	Channel Description	Frequency (MHz)
	128	Low	824.2
	189	Middle	836.4
	251	High	848.8
	512	Low	1850.2
	660	Middle	1879.8
	810	High	1909.8
	9262	Low	1852.4
	9400	Middle	1880
	9538	High	1907.6
	4132	Low	826.4
	4183	Middle	836.6
	4233	High	846.6
	1	Low	2312
	6	Middle	2437
	11	High	2462
	149	Low	5745
	157	Middle	5785
	165	High	5825
<b>Modulation(s):</b>	GMSK:217Hz, QPSK/CCK:0Hz		
<b>Modulation Scheme (Crest Factor):</b>	GMSK(GPRS/EGPRS):4, QPSK/CCK(UMTS/HSPA/WiFi):1		
<b>Antenna Type:</b>	Integral fixed onto the screen surrounding.		
<b>Antenna Length:</b>	Internal antennas of unknown lengths		
<b>Number of Antenna Positions:</b>	1 Fixed		
<b>Power Supply Requirement:</b>	14.8 V DC		
<b>Battery Type(s):</b>	Li-ion		

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### **3. Test Specification, Methods and Procedures**

#### **3.1. Test Specification**

<b>Reference:</b>	OET Bulletin 65 Supplement C: (2001-01)
<b>Title:</b>	Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields.
<b>Purpose of Test:</b>	To determine whether the equipment met the basic restrictions as defined in OET Bulletin 65 Supplement C: (2001-01) using the SAR averaging method as described in the test specification above.

#### **3.2. Methods and Procedures Reference Documentation**

The methods and procedures used were as detailed in:

Federal Communications Commission, "Evaluating compliance with FCC Guidelines for human exposure to radio frequency electromagnetic fields", OET Bulletin 65 Supplement C, FCC, Washington, D.C, 20554, 2001.

Thomas Schmid, Oliver Egger and Neils Kuster, "Automated E-field scanning system for dosimetric assessments", IEEE Transaction on microwave theory and techniques, Vol. 44, pp. 105-113, January 1996.

Neils Kuster, Ralph Kastle and Thomas Schmid, "Dosimetric evaluation of mobile communications equipment with know precision", IEICE Transactions of communications, Vol. E80-B, No.5, pp. 645-652, May 1997.

KDB 447498 D01 Mobile Portable RF Exposure v03.

KDB 616217 D01 SAR for Laptop v01.

KDB 248227 SAR Measurement Procedures for 802.11 a/b/g Transmitters Rev.1.2

KDB 941225 D01 SAR 3G Test Procedures v02

KDB 941225 D03 SAR Test Reduction GSM/GPRS/EDGE vo1

KDB 450824 D01 SAR Prob Cal and Ver Meas v01r01

3GPP TS 34.121

#### **3.3. Definition of Measurement Equipment**

The measurement equipment used complied with the requirements of the standards referenced in the methods & procedures section above. Appendix 1 contains a list of the test equipment used.

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#### **4. Deviations from the Test Specification**

Test was performed as per "FCC KDB 447498 D01 Mobile Portable RF Exposure v03", "KDB 248227 SAR Measurement Procedures for 802.11 a/b/g Transmitters Rev.1.2" and according to the body-worn procedures in consideration with FCC KDB 616217, FCC KDB 248227, FCC KDB 941225 SAR 3G devices v02, KDB 941225 D03 SAR Test Reduction GSM/GPRS/EDGE vo1 and KDB 450824 test Procedures and OET Bulletin 65 Supplement C 01-01 specific FCC test procedures. Testing followed the letter of TS-34.121 5.2B.4.2.

Prior to commencement of SAR testing the FCC was contacted to request permission to test the Netbook as the display is < 12 inches and it had more than one WLAN module available. Details of the Netbook were submitted to the FCC including calculations for simultaneous transmission and the support of HSPA. Permission was granted and the following KDB tracking number acquired: 853269.

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## **5. Operation and Configuration of the EUT during Testing**

### **5.1. Operating Modes**

The EUT was tested in the following operating mode(s) unless otherwise stated:

- WiFi Broadcom modules '1397- BCM94312HMG and 1510- BCM94322HM8L ' were setup to transmit continuously using a test software EPI\_TTCP Version 4.170.91.0, with predefined files to cover all worst case modes, running Windows Vista OS SP1. *Bluetooth* was disabled.
- UMTS FDD - RMC 12.2kbps with Test loop mode 1 and TPC bits configured to All "1's". *Bluetooth* was disabled.
- UMTS FDD - RMC 12.2kbps with Test loop mode 1 and TPC bits configured to All "1's" with HSDPA enabled. *Bluetooth* was disabled.
- UMTS FDD - FRC configured to HS-DPCCH Sub-test 1 and H-Set 1 and QPSK settings with HSPA enabled. *Bluetooth* was disabled.
- EGPRS850 / EGPRS900 / EGPRS1800 / EGPRS1900 Data allocated mode. *Bluetooth* was disabled.
- GPRS850 / GPRS900 / GPRS1800 / GPRS1900 Data allocated mode. *Bluetooth* was disabled.
- Throughout the duration of testing the HSPA channels remained active with the required E-TFCI and AG index values being maintained. This was verified by observing the HSUPA and HSDP uplink and downlink throughput parameters using an Agilent 8960 series 10 wireless communications test set which supports HSPA release 6.
- Simultaneous transmission was supported but not evaluated as the sum of the 1-g SAR was <1.6 W/kg and rx >5 cm.
- Prior to commencement of SAR testing the module power levels were measured in both HSPA and 3G RMC 12.2kbps modes and compared to ensure the correct mode of operation had been established.
- SAR test for 802.11n MIMO with multiple antennas was performed with both main and auxiliary antennas transmitting simultaneously in the same frequency band. A large measurement region that enclosed both antennas was used to determine the highest 1-g SAR. There were no overlapping SAR distribution and transmitting antennas were >5cm apart therefore volume scans were not required.

The reason for choosing this configuration was that it has been defined by the customer as being typical of normal use and likely to be worst case.

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## **5.2. Configuration and Peripherals**

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

- Prior to commencement of SAR testing the FCC was contacted to request permission to test the Netbook as the display is < 12 inches and it had more than one WLAN module available. Details of the Netbook were submitted to the FCC including calculations for simultaneous transmission and the support of HSPA. Permission was granted and the following KDB tracking number acquired: 853269.
- Standalone Battery Operated
- EUT was tested in the Body-Worn configuration only, with the bottom of the Netbook in direct contact against the flat phantom (0mm separation) and display open at 90 degrees to the keypad.
- The power measurements at maximum output power is verified on the High, Middle and Low channels according to Release 6 procedures in section 5.2 of 3GPP TS 34.121 using the appropriate RMC, FRC and E-DCH configurations. Prior to commencement of SAR testing the module power levels were measured in both HSPA and 3G RMC 12.2kbps modes and compared to ensure the correct mode of operation had been established.
- Throughout the duration of testing the HSPA channels remained active with the required E-TFCI and AG index values being maintained. This was verified by observing the HSUPA and HSDP uplink and downlink throughput parameters using an Agilent 8960 series 10 wireless communications test set which supports HSPA release 6. The test parameters were in accordance with power table settings in KDB 941225 for HSDPA Release 5 and HSPA Release 6 and TS 34.121 Table C.10.1 – C.10.4.

### **Body Configuration**

- a) The EUT was placed in a normal operating position where the centre of EUT was aligned with the centre reference point on the flat section of the 'OVAL 3mm' phantom.
  - b) With the EUT touching the phantom at an imaginary centre line. The EUT was aligned with a marked plane (X and Y axis) consisting of two lines.
  - c) For the touch-safe position the EUT was gradually moved towards the flat section of the 'Oval 3mm' phantom until any point of the EUT touched the phantom.
  - d) For position(s) greater than 0mm separation the EUT was positioned as per the touch-safe position, and then the vertical height was decreased/adjusted as required.
  - e) SAR measurements were evaluated at maximum power and the unit was operated for an appropriate period prior to the evaluation in order to minimise the drift.
  - f) The device was keyed to operate continuously in the transmit mode for the duration of the test.
  - g) The location of the maximum spatial SAR distribution (hot spot) was determined relative to the handset and its antenna.
  - h) The EUT was transmitting at predefined power stated in section 5.1 throughout the duration of the test.
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**6. Summary of Test Results**

Test Name	Specification Reference	Result
Specific Absorption Rate-GPRS850 Body Configuration 1g	OET Bulletin 65 Supplement C: 2001	Complied
Specific Absorption Rate-EGPRS850 Body Configuration 1g	OET Bulletin 65 Supplement C: 2001	Complied
Specific Absorption Rate-UMTS FDD V Body Configuration 1g	OET Bulletin 65 Supplement C: 2001	Complied
Specific Absorption Rate-UMTS FDD V HSDPA & HSPA Body Configuration 1g	OET Bulletin 65 Supplement C: 2001	Complied
Specific Absorption Rate-GPRS1900 Body Configuration 1g	OET Bulletin 65 Supplement C: 2001	Complied
Specific Absorption Rate-EGPRS1900 Body Configuration 1g	OET Bulletin 65 Supplement C: 2001	Complied
Specific Absorption Rate-UMTS FDD II Body Configuration 1g	OET Bulletin 65 Supplement C: 2001	Complied
Specific Absorption Rate-UMTS FDD II HSDPA & HSPA Body Configuration 1g	OET Bulletin 65 Supplement C: 2001	Complied
Specific Absorption Rate-WiFi Broadcom '1397' BCM94312HMG Module Body Configuration 1g	OET Bulletin 65 Supplement C: 2001	Complied
Specific Absorption Rate-WiFi Broadcom '1510' BCM94322HM8L Module Body Configuration 1g	OET Bulletin 65 Supplement C: 2001	Complied

**Individual SAR Evaluation Calculation:**

Module Name	device, mode	Frequency (MHz)	Pi = Module Power Level stated in FCC Grant Conducted (mW)	Pth = 60/f (mW)	n (cm)	r (cm)	R (cm)	single SAR	remarks
F3705g	WWAN, PCS1900	1900	870	32	28	18.70	19.23	Y	test normal evaluation
	WWAN, GSM850	850	2000	71	29	18.70	19.37	Y	test normal evaluation
	WWAN, UMTS V	850	500	71	7	18.70	8.59	Y	test highest output channel
	WWAN, UMTS II	1900	500	32	16	18.70	13.18	Y	test highest output channel
Dell 1397	WLAN, 802.11b/g	2450	202	24	9	18.70	9.30	Y	test highest output channel
Dell 1510	WLAN, 802.11b/g	2450	159	24	7	18.70	8.38	Y	test highest output channel
	WLAN, 802.11a/n	5800	159	10	17	18.70	13.51	Y	test highest output channel
Dell 365	BT, Bluetooth	2410	4.1	25	0	0.70	5.09	n/a	Not required {Pi<=Pth} {rBT<5cm}

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**Simultaneous Transmission SAR Evaluation Calculation:****Simultaneous Evaluation — EGSM850 (x)**

Module Name	(x,y)	d <sub>(x,y)</sub> cm	D <sub>(x,y)</sub> cm	sim-Tx SAR	remarks
Dell 1397	WWAN <sub>GSM850</sub> , WLAN <sub>802.11b/g</sub>	0.6	24	Y*	{P <sub>GSM850</sub> >P <sub>th</sub> } {d <sub>GSM850,WLAN</sub> <D <sub>GSM850,WLAN</sub> } {r <sub>GSM850</sub> >5cm}
Dell 1510	WWAN <sub>GSM850</sub> , WLAN <sub>802.11b/g</sub>	13.2	23	Y*	{P <sub>GSM850</sub> >P <sub>th</sub> } {d <sub>GSM850,WLAN</sub> <D <sub>GSM850,WLAN</sub> } {r <sub>GSM850</sub> >5cm}
	WWAN <sub>GSM850</sub> , WLAN <sub>802.11a</sub>	13.2	28	Y*	{P <sub>GSM850</sub> >P <sub>th</sub> } {d <sub>GSM850,WLAN</sub> <D <sub>GSM850,WLAN</sub> } {r <sub>GSM850</sub> >5cm}
Dell 365	WWAN <sub>GSM850</sub> , BT	23.35	19	N	{P <sub>GSM850</sub> >P <sub>th</sub> } {d <sub>GSM850,WLAN</sub> >5cm} {Σall SAR1g < 1.6 W/kg}

\*Simultaneous transmission not required if the following conditions are met: {Σall SAR1g < 1.6 W/kg} & {r<sub>x</sub> ≥ 5 cm}**Simultaneous Evaluation — PCS1900 (x)**

Module Name	(x,y)	d <sub>(x,y)</sub> cm	D <sub>(x,y)</sub> cm	sim-Tx SAR	remarks
Dell 1397	WWAN <sub>PCS1900</sub> , WLAN <sub>802.11b/g</sub>	0.6	24	Y*	{P <sub>PCS1900</sub> >P <sub>th</sub> } {d <sub>PCS1900,WLAN</sub> <D <sub>PCS1900,WLAN</sub> } {r <sub>PCS1900</sub> > 5cm}
Dell 1510	WWAN <sub>PCS1900</sub> , WLAN <sub>802.11b/g</sub>	13.2	23	Y*	{P <sub>PCS1900</sub> >P <sub>th</sub> } {d <sub>PCS1900,WLAN</sub> <D <sub>PCS1900,WLAN</sub> } {r <sub>PCS1900</sub> > 5cm}
	WWAN <sub>PCS1900</sub> , WLAN <sub>802.11a</sub>	13.2	28	Y*	{P <sub>PCS1900</sub> >P <sub>th</sub> } {d <sub>PCS1900,WLAN</sub> <D <sub>PCS1900,WLAN</sub> } {r <sub>PCS1900</sub> > 5cm}
Dell 365	WWAN <sub>PCS1900</sub> , BT	23.35	19	N	{P <sub>PCS1900</sub> >P <sub>th</sub> } {d <sub>PCS1900,WLAN</sub> >5cm} {Σall SAR1g < 1.6 W/kg}

\*Simultaneous transmission not required if the following conditions are met: {Σall SAR1g < 1.6 W/kg} & {r<sub>x</sub> ≥ 5 cm}

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**Simultaneous Evaluation — UMTS V (x)**

Module Name	(x,y)	d <sub>(x,y)</sub> cm	D <sub>(x,y)</sub> cm	sim-Tx SAR	remarks
Dell 1397	WWAN <sub>UMTS V</sub> , WLAN <sub>802.11b/g</sub>	0.6	13	Y*	{P <sub>UMTS V</sub> > P <sub>th</sub> } {d <sub>UMTS V,WLAN</sub> < D <sub>UMTS V,WLAN</sub> } {r <sub>UMTS V</sub> > 5cm}
Dell 1510	WWAN <sub>UMTS V</sub> , WLAN <sub>802.11b/g</sub>	13.2	12	N	{P <sub>UMTS V</sub> > P <sub>th</sub> } {d <sub>UMTS V,WLAN</sub> > D <sub>UMTS V,WLAN</sub> } {r <sub>UMTS V</sub> > 5cm}
	WWAN <sub>UMTS V</sub> , WLAN <sub>802.11a/n</sub>	13.2	17	Y*	{P <sub>UMTS V</sub> > P <sub>th</sub> } {d <sub>UMTS V,WLAN</sub> < D <sub>UMTS V,WLAN</sub> } {r <sub>UMTS V</sub> > 5cm}
Dell 365	WWAN <sub>UMTS V</sub> , BT	23.35	9	N	{P <sub>UMTS V</sub> > P <sub>th</sub> } {d <sub>PMTS V,WLAN</sub> > 5cm} {Σall SAR1g < 1.6 W/kg}

\*Simultaneous transmission not required if the following conditions are met: {Σall SAR1g < 1.6 W/kg} & {r<sub>x</sub> ≥ 5 cm}**Simultaneous Evaluation — UMTS II (x)**

Module Name	(x,y)	d <sub>(x,y)</sub> cm	D <sub>(x,y)</sub> cm	sim-Tx SAR	remarks
Dell 1397	WWAN <sub>UMTS II</sub> , WLAN <sub>802.11b/g</sub>	0.6	17	Y*	{P <sub>UMTS II</sub> > P <sub>th</sub> } {d <sub>UMTS II,WLAN</sub> < D <sub>UMTS II,WLAN</sub> } {r <sub>UMTS II</sub> > 5cm}
Dell 1510	WWAN <sub>UMTS II</sub> , WLAN <sub>802.11b/g</sub>	13.2	17	Y*	{P <sub>UMTS II</sub> > P <sub>th</sub> } {d <sub>UMTS II,WLAN</sub> < D <sub>UMTS II,WLAN</sub> } {r <sub>UMTS II</sub> > 5cm}
	WWAN <sub>UMTS II</sub> , WLAN <sub>802.11a/n</sub>	13.2	22	Y*	{P <sub>UMTS II</sub> > P <sub>th</sub> } {d <sub>UMTS II,WLAN</sub> < D <sub>UMTS II,WLAN</sub> } {r <sub>UMTS II</sub> > 5cm}
Dell 365	WWAN <sub>UMTS II</sub> , BT	23.35	13	N	{P <sub>UMTS II</sub> > P <sub>th</sub> } {d <sub>PMTS II,WLAN</sub> > 5cm} {Σall SAR1g < 1.6 W/kg}

\*Simultaneous transmission not required if the following conditions are met: {Σall SAR1g < 1.6 W/kg} & {r<sub>x</sub> ≥ 5 cm}**6.1. Location of Tests**

All the measurements described in this report were performed at the premises of RFI Global Services Ltd, Pavilion A, Ashwood Park, Ashwood Way, Basingstoke, Hampshire, RG23 8BG United Kingdom



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

### **7.1. General Comments**

This section contains test results only.

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 8 for details of measurement uncertainties.

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## **7.2. Test Results**

### **7.2.1. Specific Absorption Rate - GPRS850 Body Configuration 1g**

#### **Test Summary:**

Tissue Volume:	1g
Maximum Level (W/kg):	0.038

#### **Environmental Conditions:**

Temperature Variation in Lab (°C):	25.0 to 24.0
Temperature Variation in Liquid (°C):	25.0 to 25.0

#### **Results:**

EUT Position	Phantom Configuration	Channel Number	Level (W/kg)	Limit (W/kg)	Margin (W/kg)	Note(s)	Result
Base of EUT Facing Phantom With Display 90° to Keyboard	Flat (OVAL 3mm)	189	0.038	1.600	1.562	1	Complied

#### **Note(s):**

1. EUT was tested in the Body-Worn configuration with the bottom of the Netbook in direct contact against the flat phantom (0mm separation) and display open at 90 degrees to the keypad.

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### 7.2.2. Specific Absorption Rate - EGPRS850 Body Configuration 1g

#### Test Summary:

Tissue Volume:	1g
Maximum Level (W/kg):	0.102

#### Environmental Conditions:

Temperature Variation in Lab (°C):	25.0 to 24.0
Temperature Variation in Liquid (°C):	25.0 to 25.0

#### Results:

EUT Position	Phantom Configuration	Channel Number	Level (W/kg)	Limit (W/kg)	Margin (W/kg)	Note(s)	Result
Base of EUT Facing Phantom With Display 90° to Keyboard	Flat (OVAL 3mm)	189	0.102	1.600	1.498	1	Complied

#### Note(s):

1. EUT was tested in the Body-Worn configuration with the bottom of the Netbook in direct contact against the flat phantom (0mm separation) and display open at 90 degrees to the keypad.

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### 7.2.3. Specific Absorption Rate - UMTS FDD V Body Configuration 1g

#### Test Summary:

Tissue Volume:	1g
Maximum Level (W/kg):	0.034

#### Environmental Conditions:

Temperature Variation in Lab (°C):	25.0 to 25.0
Temperature Variation in Liquid (°C):	25.0 to 25.0

#### Results:

EUT Position	Phantom Configuration	Channel Number	Level (W/kg)	Limit (W/kg)	Margin (W/kg)	Note(s)	Result
Base of EUT Facing Phantom With Display 90° to Keyboard	Flat (OVAL 3mm)	4183	0.034	1.600	1.566	1, 2	Complied

#### Note(s):

- EUT was tested in the Body-Worn configuration with the bottom of the Netbook in direct contact against the flat phantom (0mm separation) and display open at 90 degrees to the keypad.
- RMC 12.2kbps with Test loop mode 1 and TPC bits configured to All "1's"

Test of: Dell Inspiron 1010 Netbook PC

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**7.2.4. Specific Absorption Rate - UMTS FDD V HSDPA & HSPA Body Configuration 1g****Test Summary:**

Tissue Volume:	1g
Maximum Level (W/kg):	0.036

**Environmental Conditions:**

Temperature Variation in Lab (°C):	25.0 to 25.0
Temperature Variation in Liquid (°C):	25.0 to 25.0

**Results:**

EUT Position	Phantom Configuration	Channel Number	Level (W/kg)	Limit (W/kg)	Margin (W/kg)	Note(s)	Result
Base of EUT Facing Phantom With Display 90° to Keyboard	Flat (OVAL 3mm)	4183	0.028	1.600	1.572	1, 2	Complied
Base of EUT Facing Phantom With Display 90° to Keyboard	Flat (OVAL 3mm)	4183	0.036	1.600	1.564	1, 3	Complied

**Note(s):**

1. EUT was tested in the Body-Worn configuration with the bottom of the Netbook in direct contact against the flat phantom (0mm separation) and display open at 90 degrees to the keypad.
2. RMC 12.2kbps with Test loop mode 1 and TPC bits configured to All "1's" with **HSDPA** enabled.
3. FRC configured to HS-DPCCH Sub-test 1 and H-Set 1 and QPSK settings with **HSPA** enabled.

Test of: Dell Inspiron 1010 Netbook PC

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### 7.2.5. Specific Absorption Rate - GPRS1900 Body Configuration 1g

#### Test Summary:

Tissue Volume:	1g
Maximum Level (W/kg):	0.030

#### Environmental Conditions:

Temperature Variation in Lab (°C):	25.0 to 25.0
Temperature Variation in Liquid (°C):	25.0 to 25.0

#### Results:

EUT Position	Phantom Configuration	Channel Number	Level (W/kg)	Limit (W/kg)	Margin (W/kg)	Note(s)	Result
Base of EUT Facing Phantom With Display 90° to Keyboard	Flat (OVAL 3mm)	660	0.030	1.600	1.570	1	Complied

#### Note(s):

- EUT was tested in the Body-Worn configuration with the bottom of the Netbook in direct contact against the flat phantom (0mm separation) and display open at 90 degrees to the keypad.

Test of: Dell Inspiron 1010 Netbook PC

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### 7.2.6. Specific Absorption Rate - EGPRS1900 Body Configuration 1g

#### Test Summary:

Tissue Volume:	1g
Maximum Level (W/kg):	0.035

#### Environmental Conditions:

Temperature Variation in Lab (°C):	25.0 to 25.0
Temperature Variation in Liquid (°C):	25.0 to 25.0

#### Results:

EUT Position	Phantom Configuration	Channel Number	Level (W/kg)	Limit (W/kg)	Margin (W/kg)	Note(s)	Result
Base of EUT Facing Phantom With Display 90° to Keyboard	Flat (OVAL 3mm)	660	0.035	1.600	1.565	1	Complied

#### Note(s):

- EUT was tested in the Body-Worn configuration with the bottom of the Netbook in direct contact against the flat phantom (0mm separation) and display open at 90 degrees to the keypad.

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**7.2.7. Specific Absorption Rate - UMTS FDD II Body Configuration 1g****Test Summary:**

Tissue Volume:	1g
Maximum Level (W/kg):	0.041

**Environmental Conditions:**

Temperature Variation in Lab (°C):	25.0 to 25.0
Temperature Variation in Liquid (°C):	25.0 to 25.0

**Results:**

EUT Position	Phantom Configuration	Channel Number	Level (W/kg)	Limit (W/kg)	Margin (W/kg)	Note(s)	Result
Base of EUT Facing Phantom With Display 90° to Keyboard	Flat (OVAL 3mm)	9400	0.041	1.600	1.559	1, 2	Complied

**Note(s):**

- EUT was tested in the Body-Worn configuration with the bottom of the Netbook in direct contact against the flat phantom (0mm separation) and display open at 90 degrees to the keypad.
- RMC 12.2kbps with Test loop mode 1 and TPC bits configured to All "1's"



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### 7.2.8. Specific Absorption Rate - UMTS FDD II HSDPA & HSPA Body Configuration 1g

#### Test Summary:

Tissue Volume:	1g
Maximum Level (W/kg):	0.035

#### Environmental Conditions:

Temperature Variation in Lab (°C):	25.0 to 25.0
Temperature Variation in Liquid (°C):	25.0 to 25.0

#### Results:

EUT Position	Phantom Configuration	Channel Number	Level (W/kg)	Limit (W/kg)	Margin (W/kg)	Note(s)	Result
Base of EUT Facing Phantom With Display 90° to Keyboard	Flat (OVAL 3mm)	9400	0.035	1.600	1.565	1, 2	Complied
Base of EUT Facing Phantom With Display 90° to Keyboard	Flat (OVAL 3mm)	9400	0.031	1.600	1.569	1, 3	Complied

#### Note(s):

1. EUT was tested in the Body-Worn configuration with the bottom of the Netbook in direct contact against the flat phantom (0mm separation) and display open at 90 degrees to the keypad.
2. RMC 12.2kbps with Test loop mode 1 and TPC bits configured to All "1's" with HSDPA enabled.
3. FRC configured to HS-DPCCH Sub-test 1 and H-Set 1 and QPSK settings with HSPA enabled.

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### 7.2.9. Specific Absorption Rate - WiFi Broadcom '1397' BCM94312HMG Module Body Configuration 1g

#### Test Summary:

Tissue Volume:	1g
Maximum Level (W/kg):	0.022

#### Environmental Conditions:

Temperature Variation in Lab (°C):	25.0 to 24.0
Temperature Variation in Liquid (°C):	24.8 to 24.0

#### Results:

EUT Position	Phantom Configuration	Channel Number	Level (W/kg)	Limit (W/kg)	Margin (W/kg)	Note(s)	Result
Base of EUT Facing Phantom With Display 90° to Keyboard	Flat (OVAL 3mm)	6	0.022	1.600	1.578	1, 2, 3	Complied

#### Note(s):

- EUT was tested in the Body-Worn configuration with the bottom of the Netbook in direct contact against the flat phantom (0mm separation) and display open at 90 degrees to the keypad.
- 802.11b (1Mbps)
- SAR is not required for 802.11g as the maximum average output power is less than 0.25dB higher than that measured on the corresponding 802.11b.

Test of: Dell Inspiron 1010 Netbook PC

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**7.2.10. Specific Absorption Rate - WiFi Broadcom '1510' BCM94322HM8L Module Body Configuration 1g****Test Summary:**

Tissue Volume:	1g
Maximum Level (W/kg):	0.050

**Environmental Conditions:**

Temperature Variation in Lab (°C):	25.0 to 24.0
Temperature Variation in Liquid (°C):	24.8 to 24.0

**Results:**

EUT Position	Phantom Configuration	Channel Number	Level (W/kg)	Limit (W/kg)	Margin (W/kg)	Note(s)	Result
Base of EUT Facing Phantom With Display 90° to Keyboard	Flat (OVAL 3mm)	6	0.024	1.600	1.576	1, 2	Complied
Base of EUT Facing Phantom With Display 90° to Keyboard	Flat (OVAL 3mm)	157	0.050	1.600	1.550	1, 3	Complied
Base of EUT Facing Phantom With Display 90° to Keyboard	Flat (OVAL 3mm)	6	0.031	1.600	1.569	1, 4	Complied
Base of EUT Facing Phantom With Display 90° to Keyboard	Flat (OVAL 3mm)	6	0.019	1.600	1.581	1, 5	Complied
Base of EUT Facing Phantom With Display 90° to Keyboard	Flat (OVAL 3mm)	157	0.040	1.600	1.560	1, 4	Complied
Base of EUT Facing Phantom With Display 90° to Keyboard	Flat (OVAL 3mm)	159	0.043	1.600	1.557	1, 5	Complied

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**Note(s):**

1. EUT was tested in the Body-Worn configuration with the bottom of the Netbook in direct contact against the flat phantom (0mm separation) and display open at 90 degrees to the keypad.
  2. 802.11b (1Mbps)
  3. 802.11a
  4. 802.11n 20MHz Channel
  5. 802.11n 40MHz Channel
  6. SAR evaluation is not required for 802.11g as the maximum average output power is less than 0.25dB higher than that measured on the corresponding 802.11b.
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**7.2.11. Conducted Power Measurements****GPRS/EGPRS**

Channel Number	Frequency (MHZ)	GPRS TX Power before Test (dBm)	EGPRS TX Power before Test (dBm)	Note
128	824.2	26.48	26.38	Average Power
189	836.4	26.18	26.28	Average Power
251	848.8	26.16	25.96	Average Power
512	1850.2	23.79	20.99	Average Power
660	1879.8	24.19	21.09	Average Power
810	1909.8	23.96	20.86	Average Power

**UMTS/HSPA – Average Power Measurements**

Modes		HSDPA				HSPA					WCDMA
Sets		1	2	3	4	1	2	3	4	5	Voice / RMC 12.2kbps
Band	Channel	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]
850	4132	21.85	20.44	20.65	20.78	20.90	20.50	20.34	20.11	20.48	21.12
	4183	22.28	21.03	20.90	20.78	21.22	20.70	20.45	20.49	21.05	21.48
	4233	21.97	19.49	20.78	20.41	20.90	20.00	20.70	20.60	20.60	21.60
1900	9262	21.61	20.70	20.42	20.54	20.64	20.70	20.30	21.00	20.80	21.49
	9400	22.51	20.37	20.20	20.33	20.60	20.50	20.20	21.20	21.50	21.56
	9538	21.80	21.22	20.20	19.70	20.67	20.10	19.70	20.80	20.80	20.46
βc		2	12	15	15	11	6	15	2	15	
βd		15	15	8	4	15	15	15	15	15	
ΔACK, ΔNACK, ΔCQI		8	8	8	8	8	8	8	8	8	
AGV		-	-	-	-	20	12	15	17	21	

\* Prior to commencement of SAR testing the module power levels were measured in both HSPA and 3G RMC 12.2kbps modes and compared to ensure the correct mode of operation had been established.

The following tables taken from FCC 3G SAR procedures (KDB 941225 D01 SAR test for 3G devices v02) below were applied using an Agilent 8960 series 10 wireless communications test set which supports 3G / HSDPA release 5 / HSPA release 6.

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**Sub-test 1 Setup for Release 5 HSDPA**

Sub-test	$\beta_c$	$\beta_d$	$B_d$ (SF)	$\beta_c/\beta_d$	$\beta_{hs}^{(1)}$	SM (dB) <sup>(2)</sup>
1	2/15	15/15	64	2/15	4/15	0.0
2	12/15 <sup>(3)</sup>	15/15 <sup>(3)</sup>	64	12/15 <sup>(3)</sup>	24/15	1.0
3	15/15	8/15	64	15/8	30/15	1.5
4	15/15	4/15	64	15/4	30/15	1.5

Note 1:  $\Delta_{ACK}$ ,  $\Delta_{NACK}$  and  $\Delta_{CQI} = 8 \Leftrightarrow A_{hs} = \beta_{hs}/\beta_c = 30/15 \Leftrightarrow \beta_{hs} = 30/15 * \beta_c$ Note 2: CM = 1 for  $\beta_c/\beta_d = 12/15$ ,  $B_{hs}/\beta_c = 24/15$ Note 3: For subtest 2 the  $\beta_c/\beta_d$  ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to  $\beta_c = 11/15$  and  $\beta_d = 15/15$ **Sub-test 5 Setup for Release 6 HSPA**

Sub-test	$\beta_c$	$\beta_d$	$B_d$ (SF)	$\beta_c/\beta_d$	$\beta_{hs}^{(1)}$	$B_{oc}$	$B_{od}$	$B_{od}$ (SF)	$B_{od}$ (codes)	CM <sup>(2)</sup> (dB)	MPR (dB)	AG <sup>(4)</sup> Index	E- TFCI
1	11/15 <sup>(3)</sup>	15/15 <sup>(3)</sup>	64	11/15 <sup>(3)</sup>	22/15	209/225	1039/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	31/15	$B_{a11}: 47/15$ $B_{a12}: 47/15$	4	1	2.0	1.0	15	92
4	2/15	15/15	64	2/15	2/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15 <sup>(4)</sup>	15/15 <sup>(4)</sup>	64	15/15 <sup>(4)</sup>	24/15	24/15	134/15	4	1	1.0	0.0	21	81

Note 1:  $\Delta_{ACK}$ ,  $\Delta_{NACK}$  and  $\Delta_{CQI} = 8 \Leftrightarrow A_{hs} = \beta_{hs}/\beta_c = 30/15 \Leftrightarrow \beta_{hs} = 30/15 * \beta_c$ Note 2: CM = 1 for  $\beta_c/\beta_d = 12/15$ ,  $B_{hs}/\beta_c = 24/15$ . For all other combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH AND E-DPCCH for the MPR is based on the relative CM difference.Note 3: For subtest 1 the  $\beta_c/\beta_d$  ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to  $\beta_c = 10/15$  and  $\beta_d = 15/15$ .Note 4: For subtest 5 the  $\beta_c/\beta_d$  ratio of 15/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to  $\beta_c = 14/15$  and  $\beta_d = 15/15$ .

Note 5: Testing UE using E-DPDCH Physical Layer category 1 Sub-test 3 is not required according to TS 25.306 Table 5.1g.

Note 6:  $B_{od}$  can not be set directly; it is set by Absolute Grant Value.

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Channel Number	Frequency (GHZ)	TX Power before Test (dBm)	Note
1	2.412	17.9	Broadcom '1397' BCM94312HMG <b>2.4GHz 802.11b</b> (1Mbps)
<b>6</b>	<b>2.437</b>	<b>17.9</b>	
11	2.462	17.8	
1	2.412	17.4	Broadcom '1397' BCM94312HMG <b>2.4GHz 802.11g</b> (6Mbps)
6	2.437	17.1	
11	2.462	17.3	
1	2.412	18.0	Broadcom '1510' BCM94312HMG <b>2.4GHz 802.11b</b> (1Mbps)
<b>6</b>	<b>2.437</b>	<b>18.0</b>	
11	2.462	17.8	
1	2.412	17.6	Broadcom '1510' BCM94312HMG <b>2.4GHz 802.11g</b> (6Mbps)
6	2.437	17.5	
11	2.462	17.6	
36	5.180	13.5	Broadcom '1510' BCM94312HMG <b>5GHz 802.11a UNII</b>
40	5.200	13.5	
48	5.240	13.5	
52	5.260	16.3	
60	5.32	16.0	
64	5.320	14.5	
100	5.500	15.6	
104	5.520	16.0	
120	5.600	15.8	
140	5.700	15.7	
149	5.745	15.5	
<b>157</b>	<b>5.785</b>	<b>15.5</b>	Broadcom '1510' BCM94312HMG <b>5GHz 802.11a UNII Or</b> <b>15.247</b>
165	5.825	15.5	

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Channel Number	Frequency (GHZ)	TX Power before Test (dBm) 20MHz Channel (MIMO)		Note
		Main Antenna	Aux Antenna	
1	2.412	17.3	17.3	Broadcom '1510' BCM94312HMG Main Antenna <b>2.4GHz 802.11n</b>
<b>6</b>	<b>2.437</b>	<b>17.7</b>	<b>17.3</b>	
11	2.462	17.7	17.3	
36	5.180	8.7	8.7	Broadcom '1510' BCM94312HMG Main Antenna <b>5GHz 802.11n</b> <b>UNII</b>
40	5.200	8.7	8.8	
48	5.240	9.0	8.9	
52	5.260	14.7	14.7	
60	5.32	14.8	14.7	
64	5.320	12.9	12.9	
100	5.500	15.4	14.7	
120	5.600	16.0	15.0	
140	5.700	15.7	15.0	
149	5.745	15.7	15.0	
<b>157</b>	<b>5.785</b>	<b>15.8</b>	<b>15.1</b>	Broadcom '1510' BCM94312HMG Aux Antenna <b>5GHz 802.11n</b> <b>UNII Or 15.247</b>
165	5.825	15.6	15.1	



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Channel Number	Frequency (GHZ)	TX Power before Test (dBm) 40MHz Channel (MIMO)		Note
		Main Antenna	Aux Antenna	
3	2.412	11.7	12.2	Broadcom '1510' BCM94312HMG Aux Antenna <b>2.4GHz</b> <b>802.11n</b>
<b>6</b>	<b>2.437</b>	<b>11.7</b>	<b>12.2</b>	
9	2.462	11.7	12.0	
38	-	10.6	11.0	Broadcom '1510' BCM94312HMG Main Antenna <b>5GHz 802.11n</b> <b>UNII</b>
46	-	10.7	11.3	
54	-	15.2	15.7	
62	-	11.0	11.7	
102	-	15.9	15.3	
118	-	16.0	15.5	
134	-	15.9	15.5	Broadcom '1510' BCM94312HMG Aux Antenna <b>5GHz 802.11n</b> <b>UNII Or 15.247</b>
151	-	16.0	15.7	
<b>159</b>	<b>5.795</b>	<b>16.0</b>	<b>15.5</b>	

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## **8. 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>Test Name</b>	<b>Confidence Level</b>	<b>Calculated Uncertainty</b>
Specific Absorption Rate- GPRS850 / GPRS900 Body Configuration 1g	95%	18.03%
Specific Absorption Rate- GPRS1900 Body Configuration 1g	95%	18.30%
Specific Absorption Rate- WCDMA Body Configuration 1g	95%	18.19%
Specific Absorption Rate- 2450 MHz Body Configuration 1g	95%	19.33%
Specific Absorption Rate- 5800 MHz Body Configuration 1g	95%	20.80%

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.

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**Measurement Uncertainty (Continued)****8.1. Specific Absorption Rate Uncertainty at 850 MHz Body 1g, GPRS Modulation Scheme calculated in accordance with IEC 62209-1 & IEEE 1528**

Type	Source of uncertainty	+ Value	- Value	Probability Distribution	Divisor	C <sub>i</sub> (10g)	Standard Uncertainty		v <sub>i</sub> or v <sub>eff</sub>
							+ u (%)	- u (%)	
B	Probe calibration	11.000	11.000	normal (k=2)	2.0000	1.0000	5.500	5.500	∞
B	Axial Isotropy	0.500	0.500	normal (k=2)	2.0000	1.0000	0.250	0.250	∞
B	Hemispherical Isotropy	2.600	2.600	normal (k=2)	2.0000	1.0000	1.300	1.300	∞
B	Spatial Resolution	0.500	0.500	Rectangular	1.7321	1.0000	0.289	0.289	∞
B	Boundary Effect	0.769	0.769	Rectangular	1.7321	1.0000	0.444	0.444	∞
B	Linearity	0.600	0.600	Rectangular	1.7321	1.0000	0.346	0.346	∞
B	Detection Limits	0.200	0.200	Rectangular	1.7321	1.0000	0.115	0.115	∞
B	Readout Electronics	0.560	0.560	normal (k=2)	2.0000	1.0000	0.280	0.280	∞
B	Response Time	0.000	0.000	Rectangular	1.7321	1.0000	0.000	0.000	∞
B	Integration Time	1.730	1.730	Rectangular	1.7321	1.0000	0.999	0.999	∞
B	RF Ambient conditions	3.000	3.000	Rectangular	1.7321	1.0000	1.732	1.732	∞
B	Probe Positioner Mechanical Restrictions	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Probe Positioning with regard to Phantom Shell	2.850	2.850	Rectangular	1.7321	1.0000	1.645	1.645	∞
B	Extrapolation and integration/ Maximum SAR evaluation	5.080	5.080	Rectangular	1.7321	1.0000	2.933	2.933	∞
A	Test Sample Positioning	0.584	0.584	normal (k=1)	1.0000	1.0000	0.584	0.584	10
A	Device Holder uncertainty	0.154	0.154	normal (k=1)	1.0000	1.0000	0.154	0.154	10
B	Phantom Uncertainty	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Drift of output power	5.000	5.000	Rectangular	1.7321	1.0000	2.887	2.887	∞
B	Liquid Conductivity (target value)	5.000	5.000	Rectangular	1.7321	0.6400	1.848	1.848	∞
A	Liquid Conductivity (measured value)	3.600	3.600	normal (k=1)	1.0000	0.6400	2.304	2.304	5
B	Liquid Permittivity (target value)	5.000	5.000	Rectangular	1.7321	0.6000	1.732	1.732	∞
A	Liquid Permittivity (measured value)	4.000	4.000	normal (k=1)	1.0000	0.6000	2.400	2.400	5
	Combined standard uncertainty			t-distribution			9.20	9.20	>500
	Expanded uncertainty			k = 1.96			18.03	18.03	>500

Test of: Dell Inspiron 1010 Netbook PC

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**8.2. Specific Absorption Rate Uncertainty at 1900 MHz Body 1g, GPRS Modulation Scheme calculated in accordance with IEC 62209-1 & IEEE 1528**

Type	Source of uncertainty	+ Value	- Value	Probability Distribution	Divisor	C <sub>i</sub> (10g)	Standard Uncertainty		v <sub>i</sub> or v <sub>eff</sub>
							+ u (%)	- u (%)	
B	Probe calibration	11.000	11.000	normal (k=2)	2.0000	1.0000	5.500	5.500	∞
B	Axial Isotropy	0.500	0.500	normal (k=2)	2.0000	1.0000	0.250	0.250	∞
B	Hemispherical Isotropy	2.600	2.600	normal (k=2)	2.0000	1.0000	1.300	1.300	∞
B	Spatial Resolution	0.500	0.500	Rectangular	1.7321	1.0000	0.289	0.289	∞
B	Boundary Effect	0.769	0.769	Rectangular	1.7321	1.0000	0.444	0.444	∞
B	Linearity	0.600	0.600	Rectangular	1.7321	1.0000	0.346	0.346	∞
B	Detection Limits	0.200	0.200	Rectangular	1.7321	1.0000	0.115	0.115	∞
B	Readout Electronics	0.560	0.560	normal (k=2)	2.0000	1.0000	0.280	0.280	∞
B	Response Time	0.000	0.000	Rectangular	1.7321	1.0000	0.000	0.000	∞
B	Integration Time	1.730	1.730	Rectangular	1.7321	1.0000	0.999	0.999	∞
B	RF Ambient conditions	3.000	3.000	Rectangular	1.7321	1.0000	1.732	1.732	∞
B	Probe Positioner Mechanical Restrictions	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Probe Positioning with regard to Phantom Shell	2.850	2.850	Rectangular	1.7321	1.0000	1.645	1.645	∞
B	Extrapolation and integration/ Maximum SAR evaluation	5.080	5.080	Rectangular	1.7321	1.0000	2.933	2.933	∞
A	Test Sample Positioning	0.584	0.584	normal (k=1)	1.0000	1.0000	0.584	0.584	10
A	Device Holder uncertainty	0.154	0.154	normal (k=1)	1.0000	1.0000	0.154	0.154	10
B	Phantom Uncertainty	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Drift of output power	5.000	5.000	Rectangular	1.7321	1.0000	2.887	2.887	∞
B	Liquid Conductivity (target value)	5.000	5.000	Rectangular	1.7321	0.6400	1.848	1.848	∞
A	Liquid Conductivity (measured value)	4.170	4.170	normal (k=1)	1.0000	0.6400	2.669	2.669	5
B	Liquid Permittivity (target value)	5.000	5.000	Rectangular	1.7321	0.6000	1.732	1.732	∞
A	Liquid Permittivity (measured value)	4.230	4.230	normal (k=1)	1.0000	0.6000	2.538	2.538	5
	Combined standard uncertainty			t-distribution			9.34	9.34	>400
	Expanded uncertainty			k = 1.96			18.30	18.30	>400

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**8.3. Specific Absorption Rate Uncertainty at 1900 MHz Body 1g, WCDMA Modulation Scheme calculated in accordance with IEC 62209-1 & IEEE 1528**

Type	Source of uncertainty	+ Value	- Value	Probability Distribution	Divisor	C <sub>i</sub> (10g)	Standard Uncertainty		v <sub>i</sub> or v <sub>eff</sub>
							+ u (%)	- u (%)	
B	Probe calibration	11.000	11.000	normal (k=2)	2.0000	1.0000	5.500	5.500	∞
B	Axial Isotropy	0.500	0.500	normal (k=2)	2.0000	1.0000	0.250	0.250	∞
B	Hemispherical Isotropy	2.600	2.600	normal (k=2)	2.0000	1.0000	1.300	1.300	∞
B	Spatial Resolution	0.500	0.500	Rectangular	1.7321	1.0000	0.289	0.289	∞
B	Boundary Effect	0.769	0.769	Rectangular	1.7321	1.0000	0.444	0.444	∞
B	Linearity	0.600	0.600	Rectangular	1.7321	1.0000	0.346	0.346	∞
B	Detection Limits	0.200	0.200	Rectangular	1.7321	1.0000	0.115	0.115	∞
B	Readout Electronics	0.560	0.560	normal (k=2)	2.0000	1.0000	0.280	0.280	∞
B	Response Time	0.000	0.000	Rectangular	1.7321	1.0000	0.000	0.000	∞
B	Integration Time	0.000	0.000	Rectangular	1.7321	1.0000	0.000	0.000	∞
B	RF Ambient conditions	3.000	3.000	Rectangular	1.7321	1.0000	1.732	1.732	∞
B	Probe Positioner Mechanical Restrictions	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Probe Positioning with regard to Phantom Shell	2.850	2.850	Rectangular	1.7321	1.0000	1.645	1.645	∞
B	Extrapolation and integration/ Maximum SAR evaluation	5.080	5.080	Rectangular	1.7321	1.0000	2.933	2.933	∞
A	Test Sample Positioning	0.584	0.584	normal (k=1)	1.0000	1.0000	0.584	0.584	10
A	Device Holder uncertainty	0.154	0.154	normal (k=1)	1.0000	1.0000	0.154	0.154	10
B	Phantom Uncertainty	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Drift of output power	5.000	5.000	Rectangular	1.7321	1.0000	2.887	2.887	∞
B	Liquid Conductivity (target value)	5.000	5.000	Rectangular	1.7321	0.6400	1.848	1.848	∞
A	Liquid Conductivity (measured value)	4.170	4.170	normal (k=1)	1.0000	0.6400	2.669	2.669	5
B	Liquid Permittivity (target value)	5.000	5.000	Rectangular	1.7321	0.6000	1.732	1.732	∞
A	Liquid Permittivity (measured value)	4.230	4.230	normal (k=1)	1.0000	0.6000	2.538	2.538	5
	Combined standard uncertainty			t-distribution			9.28	9.28	>400
	Expanded uncertainty			k = 1.96			18.19	18.19	>400

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**8.4. Specific Absorption Rate Uncertainty at 2400 MHz Body 1g, calculated in accordance with IEC 62209-1 & IEEE 1528**

Type	Source of uncertainty	+ Value	- Value	Probability Distribution	Divisor	C <sub>i</sub> (10g)	Standard Uncertainty		v <sub>i</sub> or v <sub>eff</sub>
							+ u (%)	- u (%)	
B	Probe calibration	11.800	11.800	normal (k=2)	2.0000	1.0000	5.900	5.900	∞
B	Axial Isotropy	0.500	0.500	normal (k=2)	2.0000	1.0000	0.250	0.250	∞
B	Hemispherical Isotropy	2.600	2.600	normal (k=2)	2.0000	1.0000	1.300	1.300	∞
B	Spatial Resolution	0.500	0.500	Rectangular	1.7321	1.0000	0.289	0.289	∞
B	Boundary Effect	0.769	0.769	Rectangular	1.7321	1.0000	0.444	0.444	∞
B	Linearity	0.600	0.600	Rectangular	1.7321	1.0000	0.346	0.346	∞
B	Detection Limits	0.200	0.200	Rectangular	1.7321	1.0000	0.115	0.115	∞
B	Readout Electronics	0.560	0.560	normal (k=2)	2.0000	1.0000	0.280	0.280	∞
B	Response Time	0.000	0.000	Rectangular	1.7321	1.0000	0.000	0.000	∞
B	Integration Time	0.000	0.000	Rectangular	1.7321	1.0000	0.000	0.000	∞
B	RF Ambient conditions	3.000	3.000	Rectangular	1.7321	1.0000	1.732	1.732	∞
B	Probe Positioner Mechanical Restrictions	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Probe Positioning with regard to Phantom Shell	2.850	2.850	Rectangular	1.7321	1.0000	1.645	1.645	∞
B	Extrapolation and integration/ Maximum SAR evaluation	5.080	5.080	Rectangular	1.7321	1.0000	2.933	2.933	∞
A	Test Sample Positioning	2.920	2.920	normal (k=1)	1.0000	1.0000	2.920	2.920	10
A	Device Holder uncertainty	0.154	0.154	normal (k=1)	1.0000	1.0000	0.154	0.154	10
B	Phantom Uncertainty	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Drift of output power	5.000	5.000	Rectangular	1.7321	1.0000	2.887	2.887	∞
B	Liquid Conductivity (target value)	5.000	5.000	Rectangular	1.7321	0.6400	1.848	1.848	∞
A	Liquid Conductivity (measured value)	3.930	3.930	normal (k=1)	1.0000	0.6400	2.515	2.515	5
B	Liquid Permittivity (target value)	5.000	5.000	Rectangular	1.7321	0.6000	1.732	1.732	∞
A	Liquid Permittivity (measured value)	3.940	3.940	normal (k=1)	1.0000	0.6000	2.364	2.364	5
	Combined standard uncertainty			t-distribution			9.86	9.86	>400
	Expanded uncertainty			k = 1.96			19.33	19.33	>400

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**8.5. Specific Absorption Rate Uncertainty at 5800 MHz Body 1g, calculated in accordance with IEC 62209-1 & IEEE 1528**

Type	Source of uncertainty	+ Value	- Value	Probability Distribution	Divisor	C <sub>i</sub> (10g)	Standard Uncertainty		v <sub>i</sub> or v <sub>eff</sub>
							+ u (%)	- u (%)	
B	Probe calibration	13.100	13.100	normal (k=2)	2.0000	1.0000	6.550	6.550	∞
B	Axial Isotropy	0.500	0.500	normal (k=2)	2.0000	1.0000	0.250	0.250	∞
B	Hemispherical Isotropy	2.600	2.600	normal (k=2)	2.0000	1.0000	1.300	1.300	∞
B	Spatial Resolution	0.500	0.500	Rectangular	1.7321	1.0000	0.289	0.289	∞
B	Boundary Effect	0.769	0.769	Rectangular	1.7321	1.0000	0.444	0.444	∞
B	Linearity	0.600	0.600	Rectangular	1.7321	1.0000	0.346	0.346	∞
B	Detection Limits	0.200	0.200	Rectangular	1.7321	1.0000	0.115	0.115	∞
B	Readout Electronics	0.560	0.560	normal (k=2)	2.0000	1.0000	0.280	0.280	∞
B	Response Time	0.000	0.000	Rectangular	1.7321	1.0000	0.000	0.000	∞
B	Integration Time	0.000	0.000	Rectangular	1.7321	1.0000	0.000	0.000	∞
B	RF Ambient conditions	3.000	3.000	Rectangular	1.7321	1.0000	1.732	1.732	∞
B	Probe Positioner Mechanical Restrictions	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Probe Positioning with regard to Phantom Shell	2.850	2.850	Rectangular	1.7321	1.0000	1.645	1.645	∞
B	Extrapolation and integration/ Maximum SAR evaluation	5.080	5.080	Rectangular	1.7321	1.0000	2.933	2.933	∞
A	Test Sample Positioning	2.920	2.920	normal (k=1)	1.0000	1.0000	2.920	2.920	10
A	Device Holder uncertainty	0.154	0.154	normal (k=1)	1.0000	1.0000	0.154	0.154	10
B	Phantom Uncertainty	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Drift of output power	5.000	5.000	Rectangular	1.7321	1.0000	2.887	2.887	∞
B	Liquid Conductivity (target value)	5.000	5.000	Rectangular	1.7321	0.6400	1.848	1.848	∞
A	Liquid Conductivity (measured value)	5.000	5.000	normal (k=1)	1.0000	0.6400	3.200	3.200	5
B	Liquid Permittivity (target value)	5.000	5.000	Rectangular	1.7321	0.6000	1.732	1.732	∞
A	Liquid Permittivity (measured value)	5.000	5.000	normal (k=1)	1.0000	0.6000	3.000	3.000	5
	Combined standard uncertainty			t-distribution			10.61	10.61	>250
	Expanded uncertainty			k = 1.96			20.80	20.80	>250