Testing Services™	Document Appendix D for the Black SAR Report	Berry® Smartphone Mo	del RDD71UW/RD2	X71UW	Page 1(36)			
Author Data	Dates of Test	Dates of Test Test Report No FCC ID: IC ID						
Andrew Becker	Apr 13 – July 11, 2011 RTS-2579-1106-34B L6ARDX70UW 2503A-RDX							

APPENDIX D: PROBE & DIPOLE CALIBRATION DATA

	tes of Test pr 13 – July 11, 201	Test Report No 1 RTS-2579-1106-34B	FCC ID: L6ARDX70UW	IC ID 2503A-RDX7
Calibration Laborate Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zu	-	C C Z S	Schweizerischer Kalibrier Service suisse d'étalonnar Servizio svizzero di taratu Swiss Calibration Service	ge ra
Accredited by the Swiss Accred The Swiss Accreditation Serv Multilateral Agreement for the	vice is one of the signatories	s to the EA	No.: SCS 108	
Client RTS (RIM Te	sting Services)	Certificate No	: ES3-3225_Jan11	
CALIBRATION	CERTIFICATI		$\{\sum_{i=1}^{N-1} a_{i}, \ldots, a_{N-1}, \ldots, a_{$	
Object	ES3DV3 - SN:32	25	an Martin Contra de C	
Calibration procedure(s)		A CAL-23.v4 and QA CAL-25.v3 dure for dosimetric E-field probes		
			가방감 아파 가지? 	
Calibration date:		and the second		
This calibration certificate doce		onal standards, which realize the physical unit		
This calibration certificate doc The measurements and the un All calibrations have been con-	uments the traceability to natio neertainties with confidence pr ducted in the closed laborator		d are part of the certificate.	
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Appendix D for the BlackBerry® Smartphone Model RDD71UW/RDX71UW

Author Data Andrew Becker

Dates of Test Apr 13 – July 11, 2011

RTS-2579-1106-34B

FCC ID:

IC ID L6ARDX70UW 2503A-RDX70UW

Calibration Laboratory of

Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland



Test Report No



Schweizerischer Kalibrierdienst s Service suisse d'étalonnage

С Servizio svizzero di taratura

s Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)

The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates Accreditation No.: SCS 108

Glossary:

Glossary.	
TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConvF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C	modulation dependent linearization parameters
Polarization ϕ	φ rotation around probe axis
Polarization 9	9 rotation around an axis that is in the plane normal to probe axis (at measurement center),
	i.e., $9 = 0$ is normal to probe axis

Calibration is Performed According to the Following Standards:

- IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005

Methods Applied and Interpretation of Parameters:

- NORMx, y, z: Assessed for E-field polarization 8 = 0 (f < 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not effect the E²-field uncertainty inside TSL (see below ConvF).
- NORM(f)x,y,z = NORMx,y,z * frequency response (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of ConvF.
- DCPx, y, z: DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- Ax,y,z; Bx,y,z; Cx,y,z, VRx,y,z; A, B, C are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. VR is the maximum calibration range expressed in RMS voltage across the diode.
- ConvF and Boundary Effect Parameters: Assessed in flat phantom using E-field (or Temperature Transfer Standard for f ≤ 800 MHz) and inside waveguide using analytical field distributions based on power measurements for f > 800 MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORMx,y,z * ConvF whereby the uncertainty corresponds to that given for ConvF. A frequency dependent ConvF is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- Spherical isotropy (3D deviation from isotropy): in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- Sensor Offset: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.

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Services™	SAR Report					
Author Data Andrew Becker	Dates of Test Test Report No FCC ID: IC ID Apr 13 – July 11, 2011 RTS-2579-1106-34B FCC ID: IC ID					

January 13, 2011

Probe ES3DV3

SN:3225

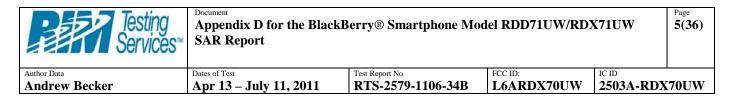
Manufactured: Last calibrated: Recalibrated: September 1, 2009 December 11, 2009 January 13, 2011

Calibrated for DASY/EASY Systems

(Note: non-compatible with DASY2 system!)

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DASY/EASY - Parameters of Probe: ES3DV3 SN:3225

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm (µV/(V/m) ²) ^A	1.26	1.21	1.31	± 10.1%
DCP (mV) ⁸	102.1	100.8	99.1	

Modulation Calibration Parameters

סוט	Communication System Name	PAR		A dB	B dBuV	С	VR mV	Unc ^E (k=2)
10000	cw	0.00	x	0.00	0.00	1.00	149.8	± 2.6 %
			Y	0.00	0.00	1.00	148.1	
			z	0.00	0.00	1.00	110.7	

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

^a The uncertainties of NormX, Y,Z do not affect the E²-field uncertainty inside TSL (see Pages 5 and 6).

⁸ Numerical linearization parameter, uncertainty not required.

^c Uncertainty is determined using the maximum deviation from linear response applying recatangular distribution and is expressed for the square of the field value.

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DASY/EASY - Parameters of Probe: ES3DV3 SN:3225

Calibration Parameter Determined in Head Tissue Simulating Media

f [MHz]	Validity [MHz] ^C	Permittivity	Conductivity	ConvF X Co	nvFY Com	FZ	Alpha	Depth Linc (k=2)
750	± 50 / ± 100	41.9 ± 5%	0.89 ± 5%	6.47	6.47	6.47	0.89	1.08 ± 11.0%
900	± 50 / ± 100	41.5 ± 5%	0.97 ± 5%	6.11	6.11	6.11	0.81	1.10 ± 11.0%
1810	± 50 / ± 100	40.0 ± 5%	$1.40 \pm 5\%$	5.26	5.26	5.26	0.37	1.68 ± 11.0%
1950	± 50 / ± 100	$40.0 \pm 5\%$	1.40 ± 5%	4.98	4.98	4.98	0.48	1.51 ± 11.0%
2450	± 50 / ± 100	39.2 ± 5%	1.80 ± 5%	4.60	4.60	4.60	0.52	1.54 ± 11.0%
2600	± 50 / ± 100	$39.0\pm5\%$	1.96 ± 5%	4.52	4.52	4.52	0.53	1.58 ± 11.0%

^c The validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2). The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

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DASY/EASY - Parameters of Probe: ES3DV3 SN:3225

Calibration Parameter Determined in Body Tissue Simulating Media

f [MHz]	Validity [MHz] ^C	Permittivity	Conductivity	ConvF X Co	nvFY Con	vFZ	Alpha	Depth Unc (k=2)
750	± 50 / ± 100	$55.5 \pm 5\%$	0.96 ± 5%	6.30	6.30	6.30	0.76	1.17 ± 11.0%
900	± 50 / ± 100	$55.0 \pm 5\%$	1.05 ± 5%	6.12	6.12	6.12	0.72	1.20 ±11.0%
1810	± 50 / ± 100	53.3 ± 5%	1.52 ± 5%	4.88	4.88	4.88	0.26	2.70 ± 11.0%
1950	± 50 / ± 100	53.3 ± 5%	1.52 ± 5%	4.89	4.89	4.89	0.33	2.28 ± 11.0%
2450	± 50 / ± 100	52.7 ± 5%	1.95 ± 5%	4.43	4.43	4.43	0.99	1.04 ± 11.0%
2600	± 50 / ± 100	52.5 ± 5%	2.16 ± 5%	4.29	4.29	4.29	0.99	1.05 ± 11.0%

[©] The validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2). The uncertainty is the RSS of the ConvF uncertainty at calibration frequency

and the uncertainty for the indicated frequency band.

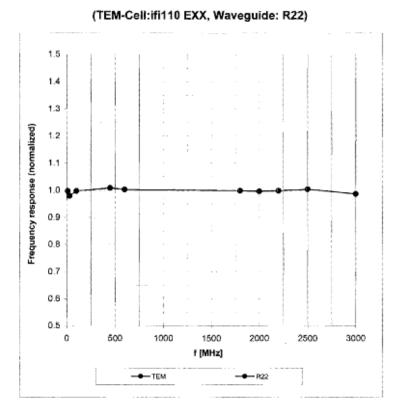
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Andrew Becker	Apr 13 – July 11, 2011 RTS-2579-1106-34B L6ARDX70UW 2503A-RD							

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Frequency Response of E-Field



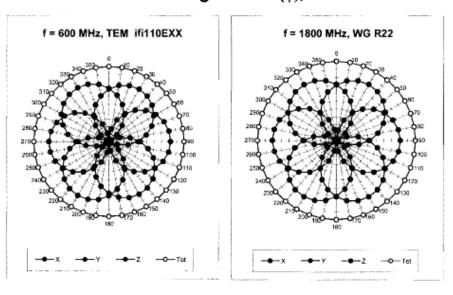
Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

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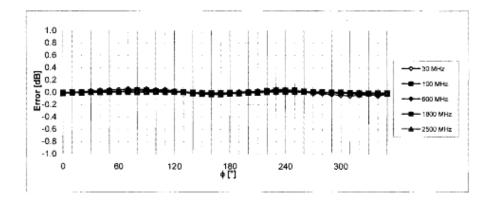
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Receiving Pattern (ϕ), $\vartheta = 0^{\circ}$



Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

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Andrew Becker	Apr 13 – July 11, 2011						

January 13, 2011

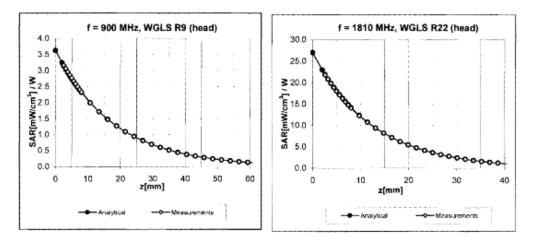
Dynamic Range f(SAR_{head}) (TEM cell, f = 900 MHz) 1.E+06 1.E+05 1.E+04 Sensor Voltage Sensor Voltage 1.E+03 1.E+01 1.E+00 0.001 0.01 0.1 10 100 1 SAR [mW/cm³] X con - Z corr Y con 2.00 1.00 (BD) 0.00 1.00 -2.00 0.001 0.01 0.1 10 100 SAR [mW/cm3]

Uncertainty of Linearity Assessment: ± 0.6% (k=2)

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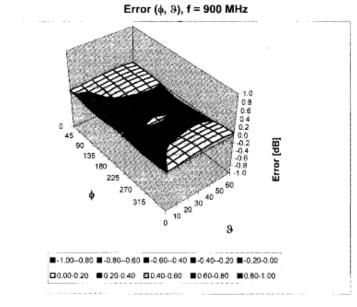
Testing Services™	Appendix D for the Black SAR Report	Berry® Smartphone Mod	del RDD71UW/RD2	X71UW	Page 11(36)			
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Conversion Factor Assessment

Deviation from Isotropy in HSL



Uncertainty of Spherical Isotropy Assessment: ± 2.6% (k=2)

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Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	Not applicable
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	10 mm
Tip Diameter	4 mm
Probe Tip to Sensor X Calibration Point	2 mm
Probe Tip to Sensor Y Calibration Point	2 mm
Probe Tip to Sensor Z Calibration Point	2 mm
Recommended Measurement Distance from Surface	3 mm

Certificate No: ES3-3225_Jan11

Page 11 of 11

	Services [™]	SAR Report		odel RDD71UW/RD2	X71UW 13()
r Data Irew Bec		Dates of Test Apr 13 – July 11, 201	Test Report No 1 RTS-2579-1106-34B	FCC ID: L6ARDX70UW	IC ID 2503A-RDX70U
	Calibration Labo Schmid & Partner Engineering AG Zeughausstrasse 43, 800		Hac MRA	Service suisse d'étalonnage Servizio svizzero di taratura	,
	The Swiss Accreditation	accreditation Service (SAS) I Service is one of the signatori or the recognition of calibratio	es to the EA	n No.: SCS 108	
	Client RTS (RIM	Testing Services)	Certificate N	lo: D835V2-446_Jan11	
	CALIBRATIC	ON CERTIFICAT			
	Object	D835V2 - SN: 4	46		
	Calibration procedure(s)	QA CAL-05.v8 Calibration proc	edure for dipole validation kits		
	Calibration date:	January 21, 201	to an off spaces		
	The measurements and t	the uncertainties with confidence	tional standards, which realize the physical ur probability are given on the following pages a ory facility: environment temperature (22 ± 3) ⁴	nd are part of the certificate.	
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	The measurements and t All calibrations have been Calibration Equipment us Primary Standards Power meter EPM-442A Power sensor HP 8481A Reference 20 dB Attenua	the uncertainties with confidence in conducted in the closed laborat and (M&TE critical for calibration) ID # GB37480704 US37292783 ator SN: 5086 (20g) nation SN: 5047.2 / 06327	probability are given on the following pages a ory facility: environment temperature (22 ± 3) ⁴ Cal Date (Certificate No.) 06-Oct-10 (No. 217-01266) 06-Oct-10 (No. 217-01266) 30-Mar-10 (No. 217-01158)	C and humidity < 70%. Scheduled Calibration Oct-11 Oct-11 Mar-11	
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Appendix D for the BlackBerry® Smartphone Model RDD71UW/RDX71UW **SAR Report**

Author Data Andrew Becker

Dates of Test Apr 13 – July 11, 2011

RTS-2579-1106-34B

FCC ID:

IC ID L6ARDX70UW 2503A-RDX70UW

Calibration Laboratory of

Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland



Test Report No



- С
- s Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)

The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Document

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

- a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
- c) Federal Communications Commission Office of Engineering & Technology (FCC OET). "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

d) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

- Measurement Conditions: Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL: The dipole is mounted with the spacer to position its feed ٠ point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- Feed Point Impedance and Return Loss: These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- Electrical Delay: One-way delay between the SMA connector and the antenna feed point. ٠ No uncertainty required.
- SAR measured: SAR measured at the stated antenna input power. ٠
- SAR normalized: SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters: The measured TSL parameters are used to calculate the ٠ nominal SAR result.

Certificate No: D835V2-446_Jan11

- Schweizerischer Kalibrierdienst s Service suisse d'étalonnage
 - Servizio svizzero di taratura

Accreditation No.: SCS 108



Document Appendix D for the BlackBerry® Smartphone Model RDD71UW/RDX71UW SAR Report

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Author Data	Dates of Test	Test Report No	FCC ID:	IC ID
Andrew Becker	Apr 13 – July 11, 2011	RTS-2579-1106-34B	L6ARDX70UW	2503A-RDX70UW

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V52.6
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V4.9	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	835 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity	
Nominal Head TSL parameters	22.0 °C	41.5	0.90 mho/m	
Measured Head TSL parameters	(22.0 ± 0.2) °C	41.3 ± 6 %	0.89 mho/m ± 6 %	
Head TSL temperature during test	(21.8 ± 0.2) °C			

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.39 mW / g
SAR normalized	normalized to 1W	9.56 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	9.63 mW /g ± 17.0 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.56 mW / g
SAR normalized	normalized to 1W	6.24 mW / g
SAR for nominal Head TSL parameters		

Certificate No: D835V2-446_Jan11



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Author Data	Dates of Test	Test Report No	FCC ID:	IC ID
Andrew Becker	Apr 13 – July 11, 2011	RTS-2579-1106-34B	L6ARDX70UW	2503A-RDX70UW

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	49.6 Ω - 7.7 jΩ	
Return Loss	- 22.2 dB	

General Antenna Parameters and Design

Electrical Delay (one direction)	1.386 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

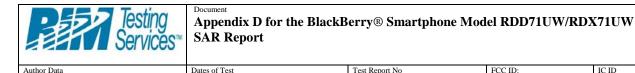
The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	October 24, 2001

Certificate No: D835V2-446_Jan11



Andrew Becker

2503A-RDX70UW

DASY5 Validation Report for Head TSL

Date/Time: 21.01.2011 10:18:05

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:446

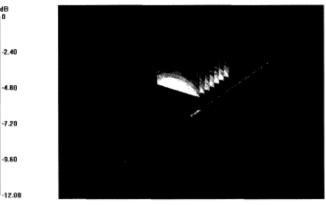
Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1 Medium: HSL900 Medium parameters used: f = 835 MHz; σ = 0.89 mho/m; ϵ_r = 41.2; ρ = 1000 kg/m³ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 SN3205; ConvF(6.03, 6.03, 6.03); Calibrated: 30.04.2010
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 10.06.2010
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- Measurement SW: DASY52, V52.6.1 Build (408)
- Postprocessing SW: SEMCAD X, V14.4.2 Build (2595)

Pin=250 mW /d=15mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7) /Cube 0: Measurement

grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 57.426 V/m; Power Drift = 0.04 dB Peak SAR (extrapolated) = 3.600 W/kg SAR(1 g) = 2.39 mW/g; SAR(10 g) = 1.56 mW/g Maximum value of SAR (measured) = 2.790 mW/g



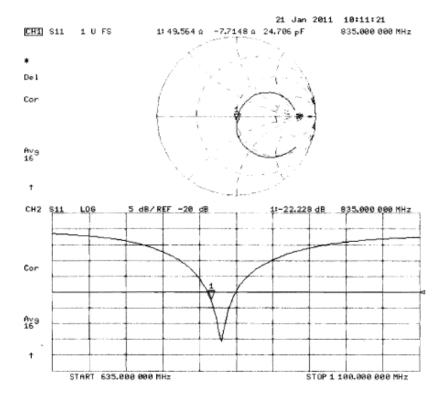


Certificate No: D835V2-446_Jan11

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Testing Services™	Document Appendix D for the BlackBerry® Smartphone Model RDD71UW/RDX71UW SAR Report			Page 18(36)	
Author Data	Dates of Test Test Report No FCC ID: IC ID				
Andrew Becker	Apr 13 – July 11, 2011 RTS-2579-1106-34B L6ARDX70UW 2503A-RDX7				70UW

Impedance Measurement Plot for Head TSL



Certificate No: D835V2-446_Jan11

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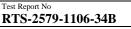
	AR Report	BlackBerry® Smartphone M	odel KDD/10W/KD.	X71UW
	tes of Test pr 13 – July 11, 201	Test Report No RTS-2579-1106-34B	FCC ID: L6ARDX70UW	IC ID 2503A-RDX7
Calibration Laborate Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zu			Service suisse d'étalonna Servizio svizzero di taratu	age ura
Accredited by the Swiss Accred The Swiss Accreditation Serv Multilateral Agreement for the	ice is one of the signatorie	es to the EA	n No.: SCS 108	
Client RTS (RIM Te	sting Services)	Certificate N	lo: D1800V2-2d020_J	an11
CALIBRATION	CERTIFICATI			
Object	D1800V2 - SN: 2	2020	gradde star stress en service ana	
Calibration procedure(s)	QA CAL-05.v8 Calibration proce	dure for dipole validation kits		
Calibration date:				
The measurements and the un	ncertainties with confidence p ducted in the closed laborato	ional standards, which realize the physical u probability are given on the following pages a ry facility: environment temperature (22 ± 3)	ind are part of the certificate.	
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Document Appendix D for the BlackBerry® Smartphone Model RDD71UW/RDX71UW **SAR Report**

Author Data Andrew Becker

Dates of Test Apr 13 – July 11, 2011



SIN 2

(BD)

FCC ID:

IC ID L6ARDX70UW 2503A-RDX70UW

Schweizerischer Kalibrierdienst

- С

Accredited by the Swiss Accreditation Service (SAS)

Zeughausstrasse 43, 8004 Zurich, Switzerland

Calibration Laboratory of

Schmid & Partner

Engineering AG

The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

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Additional Documentation:

d) DASY4/5 System Handbook

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Certificate No: D1800V2-2d020_Jan11

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s Swiss Calibration Service

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Appendix D for the BlackBerry® Smartphone Model RDD71UW/RDX71UW SAR Report

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Author Data	Dates of Test	Test Report No	FCC ID:	IC ID
Andrew Becker	Apr 13 – July 11, 2011	RTS-2579-1106-34B	L6ARDX70UW	2503A-RDX70UW

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V52.6
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1800 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	40.0	1.40 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	38.6 ± 6 %	1.38 mho/m ± 6 %
Head TSL temperature during test	(21.3 ± 0.2) °C		

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	9.78 mW / g
SAR normalized	normalized to 1W	39.1 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	39.2 mW /g ± 17.0 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	5.13 mW / g
SAR normalized	normalized to 1W	20.5 mW / g

Certificate No: D1800V2-2d020_Jan11



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Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	46.5 Ω - 7.3 jΩ
Return Loss	- 21.5 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.216 ns	

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	September 07, 2001

Certificate No: D1800V2-2d020_Jan11

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	Dates of Test	Test Report No	ICC ID.	IC ID
ker	Apr 13 – July 11, 2011	RTS-2579-1106-34B	L6ARDX70UW	2503A-RDX70UW

DASY5 Validation Report for Head TSL

Date/Time: 13.01.2011 12:34:12

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1800 MHz; Type: D1800V2; Serial: D1800V2 - SN:2d020

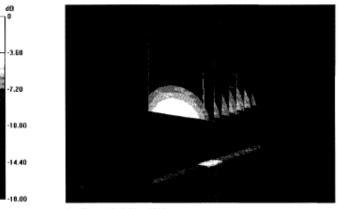
Communication System: CW; Frequency: 1800 MHz; Duty Cycle: 1:1 Medium: HSL U12 BB Medium parameters used: f = 1800 MHz; $\sigma = 1.38 \text{ mho/m}$; $\varepsilon_r = 38.7$; $\rho = 1000 \text{ kg/m}^3$ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 SN3205; ConvF(5.05, 5.05, 5.05); Calibrated: 30.04.2010
- Sensor-Surface: 3mm (Mechanical Surface Detection) ٠
- Electronics: DAE4 Sn601; Calibrated: 10.06.2010 ٠
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001 ٠
- Measurement SW: DASY52, V52.6.1 Build (408) •
- Postprocessing SW: SEMCAD X, V14.4.2 Build (2595)

Pin=250 mW /d=10mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7) /Cube 0: Measurement

grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 96.654 V/m; Power Drift = 0.04 dB Peak SAR (extrapolated) = 17.902 W/kg SAR(1 g) = 9.78 mW/g; SAR(10 g) = 5.13 mW/gMaximum value of SAR (measured) = 12.051 mW/g



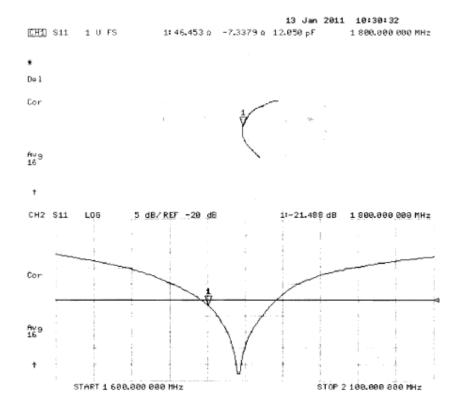
 $0 \, dB = 12.050 \, mW/g$

Certificate No: D1800V2-2d020_Jan11

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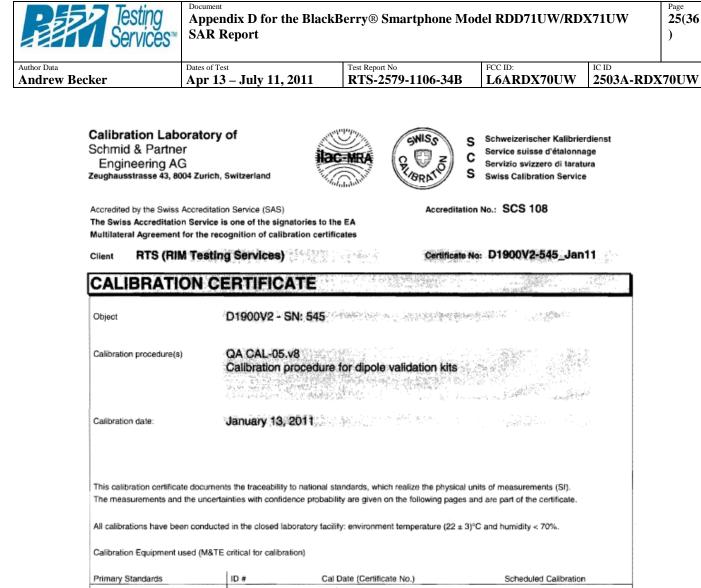
Testing Services™	Document Appendix D for the BlackBerry® Smartphone Model RDD71UW/RDX71UW SAR Report			K7 1UW	Page 24(36)
Author Data	Dates of Test	Test Report No	FCC ID:	IC ID	
Andrew Becker	Apr 13 – July 11, 2011	RTS-2579-1106-34B	L6ARDX70UW	2503A-RDX	.70UW

Impedance Measurement Plot for Head TSL



Certificate No: D1800V2-2d020_Jan11

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Power meter EPM-442A	GB37480704	06-Oct-10 (No. 217-01266)	Oct-11
Power sensor HP 8481A	US37292783	06-Oct-10 (No. 217-01266)	Oct-11
Reference 20 dB Attenuator	SN: 5086 (20g)	30-Mar-10 (No. 217-01158)	Mar-11
Type-N mismatch combination	SN: 5047.2 / 06327	30-Mar-10 (No. 217-01162)	Mar-11
Reference Probe ES3DV3	SN: 3205	30-Apr-10 (No. ES3-3205_Apr10)	Apr-11
DAE4	SN: 601	10-Jun-10 (No. DAE4-601_Jun10)	Jun-11
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-09)	In house check: Oct-11
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-09)	in house check: Oct-11
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-10)	in house check: Oct-11
	Name	Function	Signature
Calibrated by:	Dimce fliev	Laboratory Technician	D'Riev
Approved by:	Kața Pokovic	Technical Manager	Delig
This calibration certificate shall not	be reproduced except in	full without written approval of the laboratory.	Issued: January 14, 2011

Certificate No: D1900V2-545_Jan11

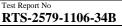
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Appendix D for the BlackBerry® Smartphone Model RDD71UW/RDX71UW SAR Report

Author Data Andrew Becker

Dates of Test Apr 13 – July 11, 2011



FCC ID:

L6ARDX70UW 2503A-RDX70UW

IC ID

Calibration Laboratory of

Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland

Document



S Schweizerischer Kalibrierdienst

C Service suisse d'étalonnage

Servizio svizzero di taratura Suiss Calibration Service

Swiss Calibration Service

Accreditation No.: SCS 108

Accredited by the Swiss Accreditation Service (SAS)

The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

- a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
- c) Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

d) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

- Measurement Conditions: Further details are available from the Validation Report at the end
 of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL: The dipole is mounted with the spacer to position its feed
 point exactly below the center marking of the flat phantom section, with the arms oriented
 parallel to the body axis.
- Feed Point Impedance and Return Loss: These parameters are measured with the dipole
 positioned under the liquid filled phantom. The impedance stated is transformed from the
 measurement at the SMA connector to the feed point. The Return Loss ensures low
 reflected power. No uncertainty required.
- Electrical Delay: One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- SAR measured: SAR measured at the stated antenna input power.
- SAR normalized: SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters: The measured TSL parameters are used to calculate the nominal SAR result.

Certificate No: D1900V2-545_Jan11



Appendix D for the BlackBerry® Smartphone Model RDD71UW/RDX71UW SAR Report

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Author Data	Dates of Test	Test Report No	FCC ID:	IC ID
Andrew Becker	Apr 13 – July 11, 2011	RTS-2579-1106-34B	L6ARDX70UW	2503A-RDX70UW

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V52.6
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1900 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	40.0	1.40 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	38.5 ± 6 %	1.43 mho/m ± 6 %
Head TSL temperature during test	(21.2 ± 0.2) °C		

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	10.2 mW / g
SAR normalized	normalized to 1W	40.8 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	40.0 mW /g ± 17.0 % (k=2)
3		
SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	5.26 mW / g
SAR normalized	normalized to 1W	21.0 mW / g

Certificate No: D1900V2-545_Jan11



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Author Data	Dates of Test	Test Report No	FCC ID:	IC ID
Andrew Becker	Apr 13 – July 11, 2011	RTS-2579-1106-34B	L6ARDX70UW	2503A-RDX70UW

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	50.8 Ω + 1.8 jΩ
Return Loss	- 34.4 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.199 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	November 15, 2001

Certificate No: D1900V2-545_Jan11



er	Apr 13 – July 11, 2011	RTS-2579-1106-34B	L6ARDX70UW	2503A-RDX70UW
	Dates of Test	Test Report No	FCC ID:	ICID

DASY5 Validation Report for Head TSL

Date/Time: 13.01.2011 14:52:49

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:545

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1 Medium: HSL U12 BB Medium parameters used: f = 1900 MHz; $\sigma = 1.43 \text{ mho/m}$; $\varepsilon_r = 38.6$; $\rho = 1000 \text{ kg/m}^3$ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 SN3205; ConvF(5.09, 5.09, 5.09); Calibrated: 30.04.2010
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 10.06.2010 ٠
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- Measurement SW: DASY52, V52.6.1 Build (408)
- Postprocessing SW: SEMCAD X, V14.4.2 Build (2595)

Pin=250 mW /d=10mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7) /Cube 0: Measurement

grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 98.053 V/m; Power Drift = 0.03 dB Peak SAR (extrapolated) = 18.648 W/kg SAR(1 g) = 10.2 mW/g; SAR(10 g) = 5.26 mW/gMaximum value of SAR (measured) = 12.743 mW/g



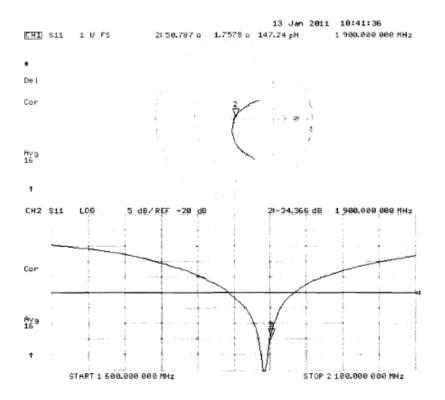
 $0 \, dB = 12.740 \, mW/g$

Certificate No: D1900V2-545_Jan11

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Testing Services™	Appendix D for the BlackB SAR Report	erry® Smartphone Mod	lel RDD71UW/RDX	K71UW	Page 30(36)
Author Data	Dates of Test	Test Report No	FCC ID:	IC ID	
Andrew Becker	Apr 13 – July 11, 2011	RTS-2579-1106-34B	L6ARDX70UW	2503A-RDX	70UW

Impedance Measurement Plot for Head TSL



Certificate No: D1900V2-545_Jan11

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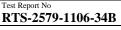
Services™	Appendix D for the E SAR Report	BlackBerry® Smartphone Mo	del RDD71UW/RDX7	1UW 31
	Dates of Test Apr 13 – July 11, 201	Test Report No RTS-2579-1106-34B		503A-RDX70U
Calibration Labora Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 2	itory of	BC-MRA SNISS SC	Schweizerischer Kalibrierdi Service suisse d'étalonnage Servizio svizzero di taratura	enst
	reditation Service (SAS) ervice is one of the signatories the recognition of calibration	s to the EA	n No.: SCS 108	
Client RTS (RIM T	esting Services)	Certificate N	o: D2450V2-747_Nov09	
CALIBRATION	N CERTIFICATE			
Object	D2450V2 - SN 7	47	te de Franke (de ser	
Calibration procedure(s)	QA CAL-05.v7 Calibration proce	dure for dipole validation kits		
Calibration date:	November 11, 20	09 % in 11 - 21 - 21 - 21 - 21 - 21 - 21 - 21		
The measurements and the All calibrations have been ca	uncertainties with confidence p	onal standards, which realize the physical u robability are given on the following pages a ry facility: environment temperature (22 ± 3)	nd are part of the certificate.	
The measurements and the All calibrations have been ca	uncertainties with confidence p onducted in the closed laborator	robability are given on the following pages a	nd are part of the certificate.	
The measurements and the All calibrations have been ca Calibration Equipment used Primary Standards Power meter EPM-442A Power sensor HP 8481A Reference 20 dB Attenuator Type-N mismatch combinati Reference Probe ES3DV3	Incertainties with confidence p onducted in the closed laborator (M&TE critical for calibration) ID # GB37480704 US37292783 r SN: 5086 (20g) ion SN: 5047.2 / 06327 SN: 3205	Cal Date (Certificate No.) 06-Oct-09 (No. 217-01086) 06-Oct-09 (No. 217-01086) 08-Oct-09 (No. 217-01086) 31-Mar-09 (No. 217-01025) 31-Mar-09 (No. 217-01029) 26-Jun-09 (No. ES3-3205_Jun09)	nd are part of the certificate. °C and humidity < 70%. Scheduled Calibration Oct-10 Oct-10 Mar-10 Jun-10 Jun-10	
The measurements and the All calibrations have been co Calibration Equipment used Primary Standards Power meter EPM-442A Power sensor HP 8481A Reference 20 dB Attenuator Type-N mismatch combinati Reference Probe ES3DV3 DAE4	Incertainties with confidence p onducted in the closed laborator (M&TE critical for calibration) ID # GB37480704 US37292783 r SN: 5086 (20g) ion SN: 5047.2 / 06327 SN: 3205 SN: 601	Cal Date (Certificate No.) 06-Oct-09 (No. 217-01086) 06-Oct-09 (No. 217-01086) 31-Mar-09 (No. 217-01025) 31-Mar-09 (No. 217-01025) 31-Mar-09 (No. 217-01029) 26-Jun-09 (No. 217-01029) 26-Jun-09 (No. DAE4-601_Mar09)	nd are part of the certificate. °C and humidity < 70%. Scheduled Calibration Oct-10 Oct-10 Mar-10 Jun-10 Mar-10 Mar-10	
The measurements and the All calibrations have been ca Calibration Equipment used Primary Standards Power meter EPM-442A Power sensor HP 8481A Reference 20 dB Attenuator Type-N mismatch combinati Reference Probe ES3DV3	Incertainties with confidence p onducted in the closed laborator (M&TE critical for calibration) ID # GB37480704 US37292783 r SN: 5086 (20g) ion SN: 5047.2 / 06327 SN: 3205 SN: 601 ID # ID # MY41092317 100005	Cal Date (Certificate No.) 06-Oct-09 (No. 217-01086) 06-Oct-09 (No. 217-01086) 08-Oct-09 (No. 217-01086) 31-Mar-09 (No. 217-01025) 31-Mar-09 (No. 217-01029) 26-Jun-09 (No. ES3-3205_Jun09)	nd are part of the certificate. °C and humidity < 70%. Scheduled Calibration Oct-10 Oct-10 Mar-10 Jun-10 Jun-10	
The measurements and the All calibrations have been co Calibration Equipment used Primary Standards Power meter EPM-442A Power sensor HP 8461A Reference 20 dB Attenuator Type-N mismatch combinati Reference Probe ES3DV3 DAE4 Secondary Standards Power sensor HP 8461A RF generator R&S SMT-06	Incertainties with confidence p onducted in the closed laborator (M&TE critical for calibration) ID # GB37480704 US37292783 r SN: 5086 (20g) ion SN: 5047.2 / 06327 SN: 3205 SN: 601 ID # ID # MY41092317 100005	cal Date (Certificate No.) 06-Oct-09 (No. 217-01086) 06-Oct-09 (No. 217-01086) 08-Oct-09 (No. 217-01086) 31-Mar-09 (No. 217-01025) 31-Mar-09 (No. 217-01029) 26-Jun-09 (No. 217-01029) 26-Jun-09 (No. ES3-3205_Jun09) 07-Mar-09 (No. DAE4-601_Mar09) Check Date (in house) 18-Oct-02 (in house check Oct-09) 4-Aug-99 (in house check Oct-09)	nd are part of the certificate. *C and humidity < 70%. Scheduled Calibration Oct-10 Oct-10 Mar-10 Jun-10 Mar-10 Mar-10 Scheduled Check In house check: Oct-11 In house check: Oct-11	
The measurements and the All calibrations have been co Calibration Equipment used Primary Standards Power meter EPM-442A Power sensor HP 8461A Reference 20 dB Attenuator Type-N mismatch combinati Reference Probe ES3DV3 DAE4 Secondary Standards Power sensor HP 8461A RF generator R&S SMT-06 Network Analyzer HP 8753E	uncertainties with confidence p onducted in the closed laborator (M&TE critical for calibration) ID # GB37480704 US37292783 r SN: 5086 (20g) ion SN: 5047.2 / 06327 SN: 3205 SN: 601 ID # MY41092317 100005 E US37390585 S4206 Name	Cal Date (Certificate No.) 06-Oct-09 (No. 217-01086) 06-Oct-09 (No. 217-01086) 03-Oct-09 (No. 217-01086) 31-Mar-09 (No. 217-01025) 31-Mar-09 (No. 217-01029) 26-Jun-09 (No. DAE4-601_Mar09) Check Date (in house) 18-Oct-02 (in house check Oct-09) 18-Oct-01 (in house check Oct-09) 18-Oct-01 (in house check Oct-09) Function	nd are part of the certificate. °C and humidity < 70%. Scheduled Calibration Oct-10 Oct-10 Mar-10 Jun-10 Mar-10 Mar-10 Scheduled Check In house check: Oct-11 In house check: Oct-11 In house check: Oct-10	



Appendix D for the BlackBerry® Smartphone Model RDD71UW/RDX71UW SAR Report

Author Data Andrew Becker

Dates of Test Apr 13 – July 11, 2011



FCC ID: L6ARDX70UW

70UW 2503A-RDX70UW

Calibration Laboratory of

Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland





S Schweizerischer Kalibrierdienst

C Service suisse d'étalonnage Servizio svizzero di taratura

Servizio svizzero di taratura S Swiss Calibration Service

Accreditation No.: SCS 108

Accredited by the Swiss Accreditation Service (SAS)

The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Document

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

- a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
- c) Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

d) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

- Measurement Conditions: Further details are available from the Validation Report at the end
 of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL: The dipole is mounted with the spacer to position its feed
 point exactly below the center marking of the flat phantom section, with the arms oriented
 parallel to the body axis.
- Feed Point Impedance and Return Loss: These parameters are measured with the dipole
 positioned under the liquid filled phantom. The impedance stated is transformed from the
 measurement at the SMA connector to the feed point. The Return Loss ensures low
 reflected power. No uncertainty required.
- Electrical Delay: One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- · SAR measured: SAR measured at the stated antenna input power.
- SAR normalized: SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters: The measured TSL parameters are used to calculate the nominal SAR result.

Certificate No: D2450V2-747_Nov09



Appendix D for the BlackBerry® Smartphone Model RDD71UW/RDX71UW SAR Report

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Author Data	Dates of Test	Test Report No	FCC ID:	IC ID
Andrew Becker	Apr 13 – July 11, 2011	RTS-2579-1106-34B	L6ARDX70UW	2503A-RDX70UW

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V5.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V4.9	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	2450 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	39.2	1.80 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	39.1 ± 6 %	1.78 mho/m ± 6 %
Head TSL temperature during test	(21.3 ± 0.2) °C		

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition		
SAR measured	250 mW input power	13.3 mW / g	
SAR normalized	normalized to 1W	53.2 mW / g	
SAR for nominal Head TSL parameters	normalized to 1W	53.4 mW /g ± 17.0 % (k=2)	
SAR averaged over 10 cm ³ (10 g) of Head TSL	condition		
	condition 250 mW input power	6.23 mW / g	
SAR averaged over 10 cm ³ (10 g) of Head TSL SAR measured SAR normalized		6.23 mW / g 24.9 mW / g	

Certificate No: D2450V2-747_Nov09



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Author Data	Dates of Test	Test Report No	FCC ID:	IC ID
Andrew Becker	Apr 13 – July 11, 2011	RTS-2579-1106-34B	L6ARDX70UW	2503A-RDX70UW

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	51.9 Ω + 0.9 jΩ
Return Loss	- 33.9 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.161 ns

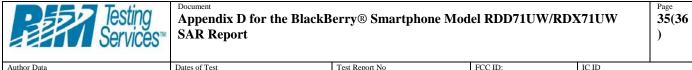
After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG	
Manufactured on	December 01, 2003	

Certificate No: D2450V2-747_Nov09



Becker	Dates of Test	Test Report No	FCC ID:
	Apr 13 – July 11, 2011	RTS-2579-1106-34B	L6ARDX70UW
DECREI	Apr $13 - 300 11, 2011$	KIS-23/7-1100-34D	LUANDA/UUW

2503A-RDX70UW

DASY5 Validation Report for Head TSL

Date/Time: 11.11.2009 15:04:10

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:747

Communication System: CW; Frequency: 2450 MHz; Duty Cycle: 1:1 Medium: HSL U11 BB Medium parameters used: f = 2450 MHz; σ = 1.79 mho/m; ϵ_r = 39.2; ρ = 1000 kg/m³ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

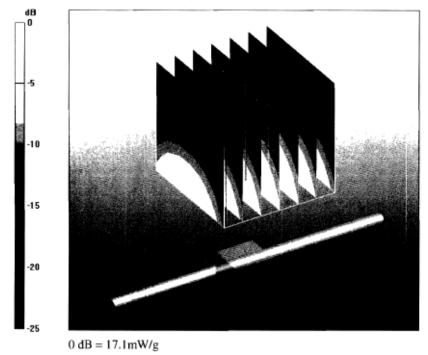
DASY5 Configuration:

Andrew B

- Probe: ES3DV3 SN3205; ConvF(4.53, 4.53, 4.53); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 07.03.2009
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

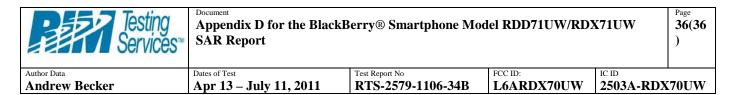
Head/d=10mm, Pin=250 mW, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7) (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 101.3 V/m; Power Drift = 0.067 dB Peak SAR (extrapolated) = 27 W/kg SAR(1 g) = 13.3 mW/g; SAR(10 g) = 6.23 mW/g Maximum value of SAR (measured) = 17.1 mW/g

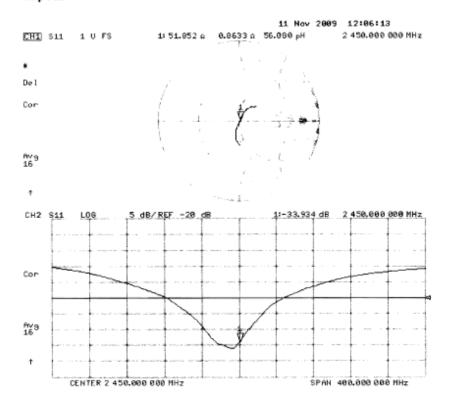


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Impedance Measurement Plot for Head TSL



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