
	Document <b>Appendix D for the BlackBerry® Smartphone Model RCS71CW</b> <b>SAR Report</b>		Page <b>1(29)</b>
Author Data <b>Andrew Becker</b>	Dates of Test <b>October 19 - November 4, 2009</b>	Test Report No <b>RTS-2340-0911-15</b>	FCC ID: <b>L6ARCS70CW</b>

## APPENDIX D: PROBE & DIPOLE CALIBRATION DATA

	Document		Page
	<b>Appendix D for the BlackBerry® Smartphone Model RCS71CW</b> <b>SAR Report</b>		<b>2(29)</b>
Author Data	Dates of Test	Test Report No	FCC ID:
<b>Andrew Becker</b>	<b>October 19 - November 4, 2009</b>	<b>RTS-2340-0911-15</b>	<b>L6ARCS70CW</b>

**Calibration Laboratory of**  
**Schmid & Partner**  
**Engineering AG**  
 Zeughausstrasse 43, 8004 Zurich, Switzerland



S Schweizerischer Kalibrierdienst  
 C Service suisse d'étalonnage  
 S 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**

Client **RTS (RIM Testing Services)**

Certificate No: **ET3-1642\_Jan09**

## CALIBRATION CERTIFICATE

Object **ET3DV6 - SN:1642**

Calibration procedure(s) **QA CAL-01.v6 and QA CAL-23.v3**  
 Calibration procedure for dosimetric E-field probes

Calibration date: **January 12, 2009**

Condition of the calibrated item **In Tolerance**


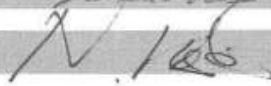
This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).  
 The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature  $(22 \pm 3)^{\circ}\text{C}$  and humidity  $< 70\%$ .

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	1-Apr-08 (No. 217-00788)	Apr-09
Power sensor E4412A	MY41495277	1-Apr-08 (No. 217-00788)	Apr-09
Power sensor E4412A	MY41498067	1-Apr-08 (No. 217-00788)	Apr-09
Reference 3 dB Attenuator	SN: S5054 (3c)	1-Jul-08 (No. 217-00865)	Jul-09
Reference 20 dB Attenuator	SN: S5086 (20b)	31-Mar-08 (No. 217-00787)	Apr-09
Reference 30 dB Attenuator	SN: S5129 (30b)	1-Jul-08 (No. 217-00866)	Jul-09
Reference Probe ES3DV2	SN: 3013	2-Jan-09 (No. ES3-3013_Jan09)	Jan-10
DAE4	SN: 660	9-Sep-08 (No. DAE4-660_Sep08)	Sep-09

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator HP 8646C	US3642U01700	4-Aug-99 (in house check Oct-07)	In house check: Oct-09
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-08)	In house check: Oct-09


Calibrated by:	Name <b>Katja Pokovic</b>	Function <b>Technical Manager</b>	Signature 
Approved by:	Name <b>Niels Kuster</b>	Function <b>Quality Manager</b>	Signature 

Issued: January 12, 2009

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Certificate No: ET3-1642\_Jan09

Page 1 of 9

	Document <b>Appendix D for the BlackBerry® Smartphone Model RCS71CW</b> <b>SAR Report</b>		Page <b>3(29)</b>
Author Data <b>Andrew Becker</b>	Dates of Test <b>October 19 - November 4, 2009</b>	Test Report No <b>RTS-2340-0911-15</b>	FCC ID: <b>L6ARCS70CW</b>

**Calibration Laboratory of**  
**Schmid & Partner**  
**Engineering AG**  
Zeughausstrasse 43, 8004 Zurich, Switzerland



**S** Schweizerischer Kalibrierdienst  
**C** Service suisse d'étalonnage  
**S** 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:


TSL	tissue simulating liquid
NORM <sub>x,y,z</sub>	sensitivity in free space
ConvF	sensitivity in TSL / NORM <sub>x,y,z</sub>
DCP	diode compression point
Polarization $\varphi$	$\varphi$ rotation around probe axis
Polarization $\vartheta$	$\vartheta$ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., $\vartheta = 0$ 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
- 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:

- NORM<sub>x,y,z</sub>**: Assessed for E-field polarization  $\vartheta = 0$  ( $f \leq 900$  MHz in TEM-cell;  $f > 1800$  MHz: R22 waveguide). NORM<sub>x,y,z</sub> are only intermediate values, i.e., the uncertainties of NORM<sub>x,y,z</sub> does not effect the E<sup>2</sup>-field uncertainty inside TSL (see below *ConvF*).
- NORM(f)<sub>x,y,z</sub>** = NORM<sub>x,y,z</sub> \* 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*.
- DCP<sub>x,y,z</sub>**: DCP are numerical linearization parameters assessed based on the data of power sweep (no uncertainty required). DCP does not depend on frequency nor media.
- ConvF and Boundary Effect Parameters**: Assessed in flat phantom using E-field (or Temperature Transfer Standard for  $f \leq 800$  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 NORM<sub>x,y,z</sub> \* 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  $\pm 50$  MHz to  $\pm 100$  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.

	Document <b>Appendix D for the BlackBerry® Smartphone Model RCS71CW SAR Report</b>			Page <b>4(29)</b>
	Author Data <b>Andrew Becker</b>	Dates of Test <b>October 19 - November 4, 2009</b>	Test Report No <b>RTS-2340-0911-15</b>	FCC ID: <b>L6ARCS70CW</b>

ET3DV6 SN:1642

January 12, 2009


# Probe ET3DV6

## SN:1642

Manufactured:	November 7, 2001
Last calibrated:	January 18, 2008
Recalibrated:	January 12, 2009

Calibrated for DASY Systems

(Note: non-compatible with DASY2 system!)

	Document <b>Appendix D for the BlackBerry® Smartphone Model RCS71CW SAR Report</b>		Page <b>5(29)</b>
Author Data <b>Andrew Becker</b>	Dates of Test <b>October 19 - November 4, 2009</b>	Test Report No <b>RTS-2340-0911-15</b>	FCC ID: <b>L6ARCS70CW</b>

ET3DV6 SN:1642

January 12, 2009

## DASY - Parameters of Probe: ET3DV6 SN:1642

### Sensitivity in Free Space<sup>A</sup>

NormX	1.68 ± 10.1%	$\mu\text{V}/(\text{V}/\text{m})^2$
NormY	1.88 ± 10.1%	$\mu\text{V}/(\text{V}/\text{m})^2$
NormZ	1.66 ± 10.1%	$\mu\text{V}/(\text{V}/\text{m})^2$

### Diode Compression<sup>B</sup>

DCP X	91 mV
DCP Y	93 mV
DCP Z	93 mV

### Sensitivity in Tissue Simulating Liquid (Conversion Factors)

Please see Page 6.

### Boundary Effect

TSL                      900 MHz              Typical SAR gradient: 5 % per mm

Sensor Center to Phantom Surface Distance		3.7 mm	4.7 mm
SAR <sub>be</sub> [%]	Without Correction Algorithm	10.1	5.8
SAR <sub>be</sub> [%]	With Correction Algorithm	0.9	0.5

TSL                      1810 MHz              Typical SAR gradient: 10 % per mm

Sensor Center to Phantom Surface Distance		3.7 mm	4.7 mm
SAR <sub>be</sub> [%]	Without Correction Algorithm	12.6	8.1
SAR <sub>be</sub> [%]	With Correction Algorithm	0.9	0.6

### Sensor Offset


Probe Tip to Sensor Center                      2.7 mm

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%.

<sup>A</sup> The uncertainties of NormX,Y,Z do not affect the E<sub>1</sub>-field uncertainty inside TSL (see Page 8).

<sup>B</sup> Numerical linearization parameter; uncertainty not required.



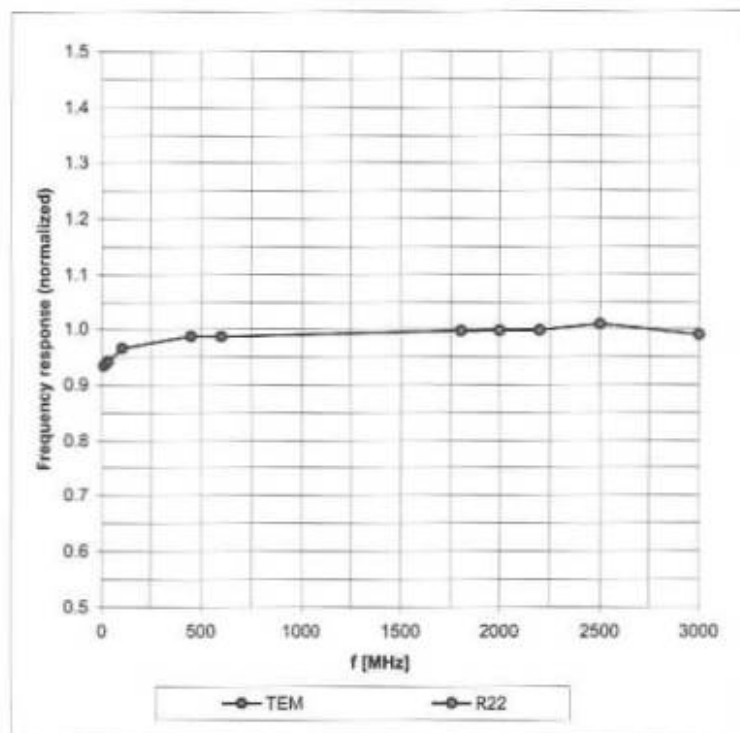
	Document <b>Appendix D for the BlackBerry® Smartphone Model RCS71CW SAR Report</b>			Page <b>6(29)</b>
Author Data <b>Andrew Becker</b>	Dates of Test <b>October 19 - November 4, 2009</b>	Test Report No <b>RTS-2340-0911-15</b>	FCC ID: <b>L6ARCS70CW</b>	

ET3DV6 SN:1642


January 12, 2009

## Frequency Response of E-Field

(TEM-Cell: ifi110 EXX, Waveguide: R22)



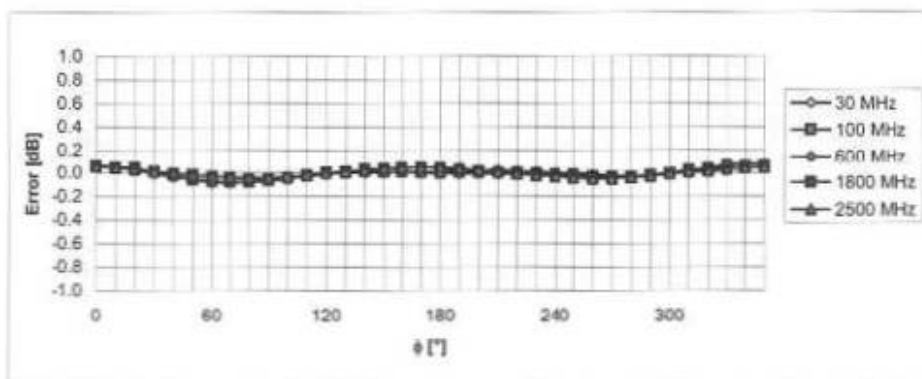
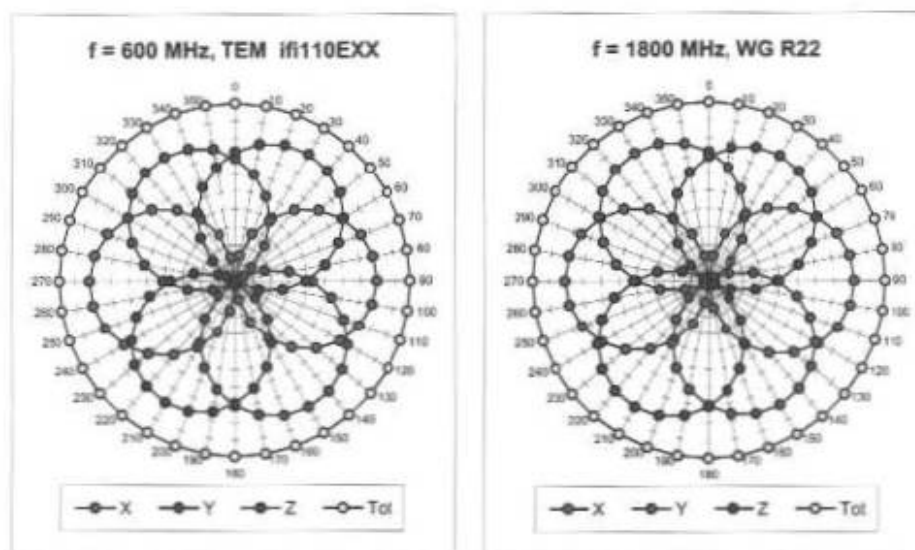
Uncertainty of Frequency Response of E-field:  $\pm 6.3\%$  ( $k=2$ )

	Document <b>Appendix D for the BlackBerry® Smartphone Model RCS71CW SAR Report</b>		Page <b>7(29)</b>
Author Data <b>Andrew Becker</b>	Dates of Test <b>October 19 - November 4, 2009</b>	Test Report No <b>RTS-2340-0911-15</b>	FCC ID: <b>L6ARCS70CW</b>


ET3DV6 SN:1642

January 12, 2009

## Receiving Pattern ( $\phi$ ), $\theta = 0^\circ$



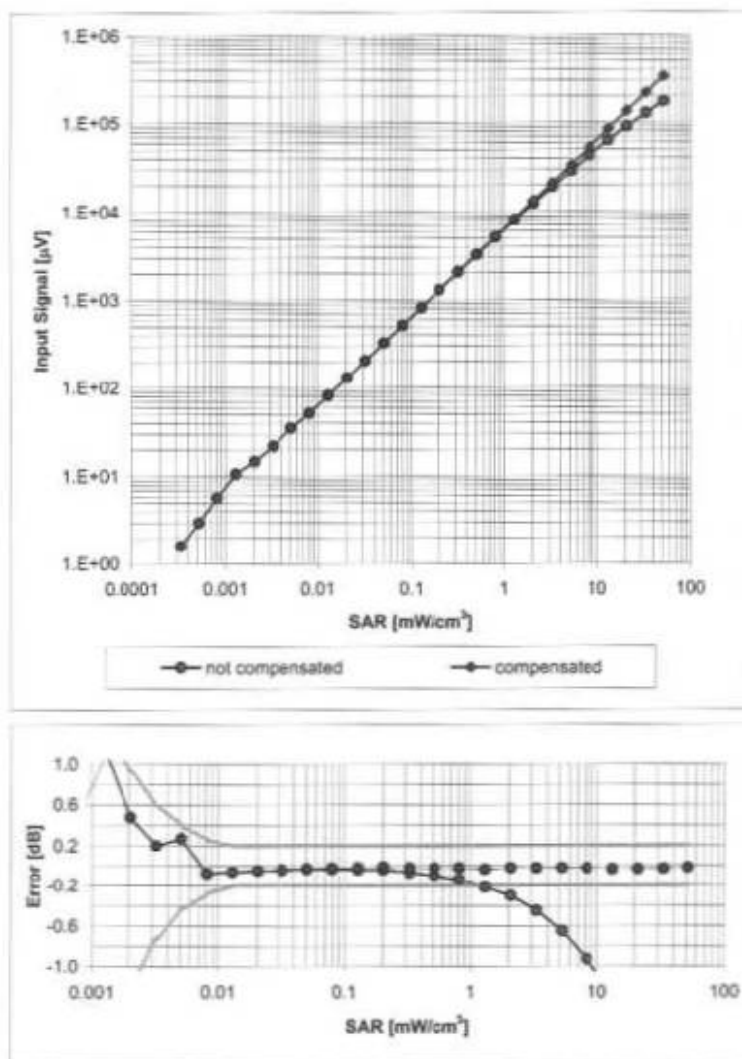
Uncertainty of Axial Isotropy Assessment:  $\pm 0.5\%$  (k=2)

	Document <b>Appendix D for the BlackBerry® Smartphone Model RCS71CW SAR Report</b>		Page <b>8(29)</b>
Author Data <b>Andrew Becker</b>	Dates of Test <b>October 19 - November 4, 2009</b>	Test Report No <b>RTS-2340-0911-15</b>	FCC ID: <b>L6ARCS70CW</b>

ET3DV6 SN:1642


January 12, 2009

### Dynamic Range $f(\text{SAR}_{\text{head}})$ (Waveguide R22, $f = 1800 \text{ MHz}$ )



Uncertainty of Linearity Assessment:  $\pm 0.6\%$  ( $k=2$ )

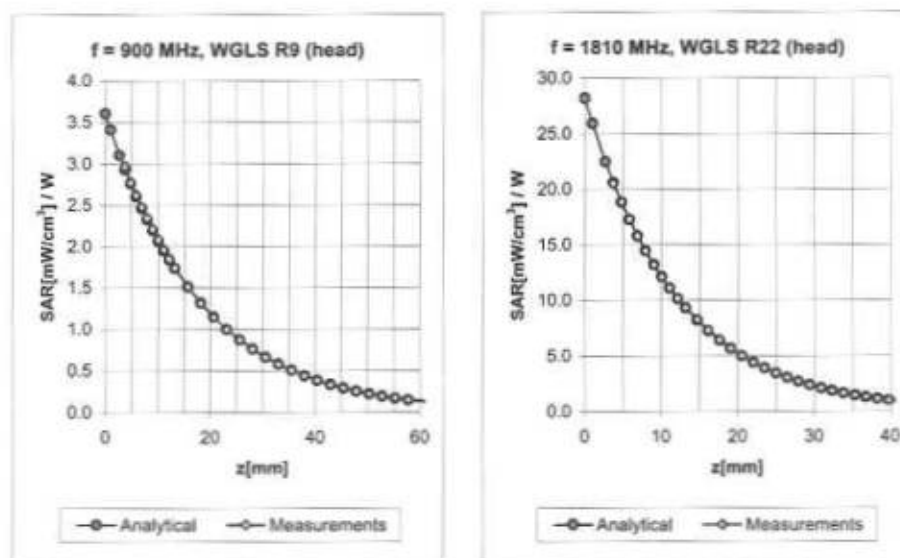


	Document <b>Appendix D for the BlackBerry® Smartphone Model RCS71CW</b> <b>SAR Report</b>		Page <b>9(29)</b>
Author Data <b>Andrew Becker</b>	Dates of Test <b>October 19 - November 4, 2009</b>	Test Report No <b>RTS-2340-0911-15</b>	FCC ID: <b>L6ARCS70CW</b>

ET3DV6 SN:1642


January 12, 2009

## Conversion Factor Assessment



f [MHz]	Validity [MHz] <sup>c</sup>	TSL	Permittivity	Conductivity	Alpha	Depth	ConvF Uncertainty
900	± 50 / ± 100	Head	41.5 ± 5%	0.97 ± 5%	0.40	2.33	6.06 ± 11.0% (k=2)
1810	± 50 / ± 100	Head	40.0 ± 5%	1.40 ± 5%	0.54	2.62	5.14 ± 11.0% (k=2)
1950	± 50 / ± 100	Head	40.0 ± 5%	1.40 ± 5%	0.67	2.35	4.88 ± 11.0% (k=2)
2450	± 50 / ± 100	Head	39.2 ± 5%	1.80 ± 5%	0.90	1.74	4.54 ± 11.0% (k=2)
900	± 50 / ± 100	Body	55.0 ± 5%	1.05 ± 5%	0.37	2.77	5.99 ± 11.0% (k=2)
1810	± 50 / ± 100	Body	53.3 ± 5%	1.52 ± 5%	0.85	2.33	4.71 ± 11.0% (k=2)
1950	± 50 / ± 100	Body	53.3 ± 5%	1.52 ± 5%	0.60	2.30	4.61 ± 11.0% (k=2)
2450	± 50 / ± 100	Body	52.7 ± 5%	1.95 ± 5%	0.90	1.89	4.02 ± 11.0% (k=2)

<sup>c</sup> 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.

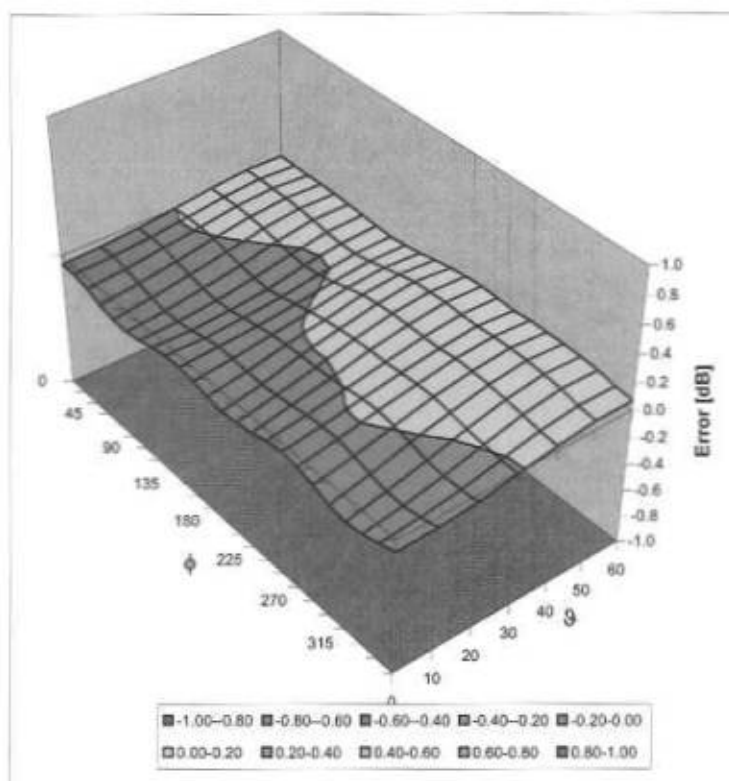
	Document <b>Appendix D for the BlackBerry® Smartphone Model RCS71CW SAR Report</b>		Page <b>10(29)</b>
Author Data <b>Andrew Becker</b>	Dates of Test <b>October 19 - November 4, 2009</b>	Test Report No <b>RTS-2340-0911-15</b>	FCC ID: <b>L6ARCS70CW</b>

ET3DV6 SN:1642


January 12, 2009

## Deviation from Isotropy in HSL

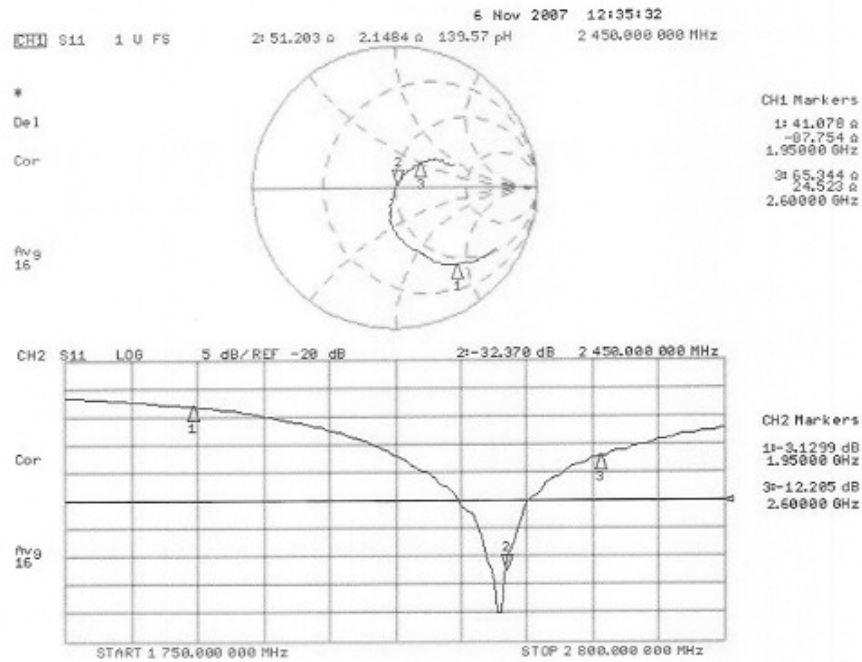
Error ( $\phi$ ,  $\theta$ ),  $f = 900$  MHz




Uncertainty of Spherical Isotropy Assessment:  $\pm 2.6\%$  ( $k=2$ )

	Document <b>Appendix D for the BlackBerry® Smartphone Model RCS71CW</b> <b>SAR Report</b>		Page <b>11(29)</b>
Author Data <b>Andrew Becker</b>	Dates of Test <b>October 19 - November 4, 2009</b>	Test Report No <b>RTS-2340-0911-15</b>	FCC ID: <b>L6ARCS70CW</b>

# Impedance Measurement Plot for Head TSL



	Document <b>Appendix D for the BlackBerry® Smartphone Model RCS71CW SAR Report</b>		Page <b>12(29)</b>
	Author Data <b>Andrew Becker</b>	Dates of Test <b>October 19 - November 4, 2009</b>	Test Report No <b>RTS-2340-0911-15</b>

**Calibration Laboratory of**  
**Schmid & Partner**  
**Engineering AG**  
 Zeughausstrasse 43, 8004 Zurich, Switzerland



**S** Schweizerischer Kalibrierdienst  
**C** Service suisse d'étalonnage  
**S** 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**

Client **RTS ( RIM Testing Services)**

Certificate No: **D835V2-446\_Jan09**

## CALIBRATION CERTIFICATE

Object **D835V2 - SN: 446**

Calibration procedure(s)  
**QA CAL-05.v7**  
 Calibration procedure for dipole validation kits

Calibration date: **January 05, 2009**

Condition of the calibrated item **In Tolerance**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).  
 The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.


All calibrations have been conducted in the closed laboratory facility: environment temperature ( $22 \pm 3$ )°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	08-Oct-08 (No. 217-00898)	Oct-09
Power sensor HP 8481A	US37292783	08-Oct-08 (No. 217-00898)	Oct-09
Reference 20 dB Attenuator	SN: 5086 (20g)	01-Jul-08 (No. 217-00864)	Jul-09
Type-N mismatch combination	SN: 5047.2 / 06327	01-Jul-08 (No. 217-00867)	Jul-09
Reference Probe ES3DV2	SN: 3025	28-Apr-08 (No. ES3-3025_Apr08)	Apr-09
DAE4	SN: 601	14-Mar-08 (No. DAE4-601_Mar08)	Mar-09

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-07)	In house check: Oct-09
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-07)	In house check: Oct-09
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-08)	In house check: Oct-09

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	


Approved by:	Katja Pokovic	Technical Manager	
--------------	---------------	-------------------	---

Issued: January 7, 2009

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Certificate No: D835V2-446\_Jan09

Page 1 of 6

	Document <b>Appendix D for the BlackBerry® Smartphone Model RCS71CW</b> <b>SAR Report</b>		Page <b>13(29)</b>
Author Data <b>Andrew Becker</b>	Dates of Test <b>October 19 - November 4, 2009</b>	Test Report No <b>RTS-2340-0911-15</b>	FCC ID: <b>L6ARCS70CW</b>

**Calibration Laboratory of**  
**Schmid & Partner**  
**Engineering AG**  
 Zeughausstrasse 43, 8004 Zurich, Switzerland



**S** Schweizerischer Kalibrierdienst  
**S** Service suisse d'étalonnage  
**C** 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:

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:

- 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
- 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
- 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:

- 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.



	Document <b>Appendix D for the BlackBerry® Smartphone Model RCS71CW SAR Report</b>		Page <b>14(29)</b>
Author Data <b>Andrew Becker</b>	Dates of Test <b>October 19 - November 4, 2009</b>	Test Report No <b>RTS-2340-0911-15</b>	FCC ID: <b>L6ARCS70CW</b>

### Measurement Conditions

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

DASY Version	DASY5	V5.0
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 %	0.91 mho/m ± 6 %
Head TSL temperature during test	(21.5 ± 0.2) °C	---	---

### SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.40 mW / g
SAR normalized	normalized to 1W	9.60 mW / g
SAR for nominal Head TSL parameters <sup>1</sup>	normalized to 1W	<b>9.50 mW / g ± 17.0 % (k=2)</b>

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.58 mW / g
SAR normalized	normalized to 1W	6.32 mW / g
SAR for nominal Head TSL parameters <sup>1</sup>	normalized to 1W	<b>6.27 mW / g ± 16.5 % (k=2)</b>

<sup>1</sup> Correction to nominal TSL parameters according to d), chapter "SAR Sensitivities"

	Document <b>Appendix D for the BlackBerry® Smartphone Model RCS71CW SAR Report</b>			Page <b>15(29)</b>
Author Data <b>Andrew Becker</b>	Dates of Test <b>October 19 - November 4, 2009</b>	Test Report No <b>RTS-2340-0911-15</b>	FCC ID: <b>L6ARCS70CW</b>	

## Appendix

### Antenna Parameters with Head TSL

Impedance, transformed to feed point	49.8 $\Omega$ - 6.9 j $\Omega$
Return Loss	- 23.3 dB

### General Antenna Parameters and Design

Electrical Delay (one direction)	1.385 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

	Document <b>Appendix D for the BlackBerry® Smartphone Model RCS71CW</b> <b>SAR Report</b>		Page <b>16(29)</b>
Author Data <b>Andrew Becker</b>	Dates of Test <b>October 19 - November 4, 2009</b>	Test Report No <b>RTS-2340-0911-15</b>	FCC ID: <b>L6ARCS70CW</b>

## DASY5 Validation Report for Head TSL

Date/Time: 05.01.2009 10:38:06

Test Laboratory: SPEAG, Zurich, Switzerland

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

Communication System: CW-835; Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL 900 MHz

Medium parameters used:  $f = 835 \text{ MHz}$ ;  $\sigma = 0.91 \text{ mho/m}$ ;  $\epsilon_r = 41.1$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC)

### DASY5 Configuration:

- Probe: ES3DV2 - SN3025; ConvF(5.97, 5.97, 5.97); Calibrated: 28.04.2008
- Sensor-Surface: 3.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 14.03.2008
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

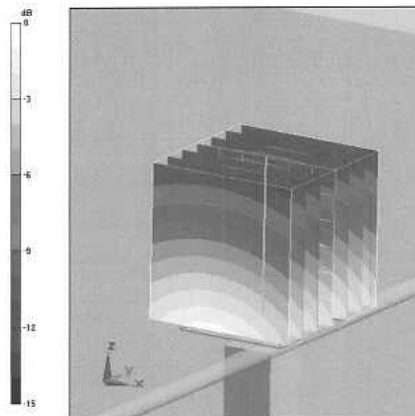
**Pin=250mW; dip=15mm; dist=3.4mm/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 55.7 V/m; Power Drift = 0.024 dB


Peak SAR (extrapolated) = 3.54 W/kg

**SAR(1 g) = 2.4 mW/g; SAR(10 g) = 1.58 mW/g**

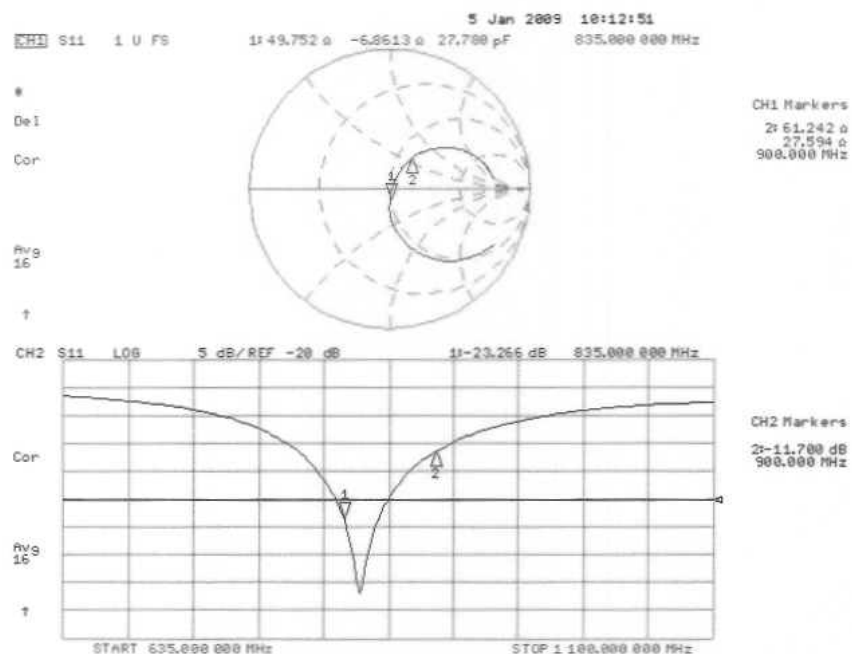
Maximum value of SAR (measured) = 2.7 mW/g




0 dB = 2.7mW/g

	Document <b>Appendix D for the BlackBerry® Smartphone Model RCS71CW SAR Report</b>		Page <b>17(29)</b>
Author Data <b>Andrew Becker</b>	Dates of Test <b>October 19 - November 4, 2009</b>	Test Report No <b>RTS-2340-0911-15</b>	FCC ID: <b>L6ARCS70CW</b>

# Impedance Measurement Plot for Head TSL



	Document		Page
	<b>Appendix D for the BlackBerry® Smartphone Model RCS71CW</b> <b>SAR Report</b>		<b>18(29)</b>
Author Data	Dates of Test	Test Report No	FCC ID:
<b>Andrew Becker</b>	<b>October 19 - November 4, 2009</b>	<b>RTS-2340-0911-15</b>	<b>L6ARCS70CW</b>

**Calibration Laboratory of**  
**Schmid & Partner**  
**Engineering AG**  
 Zeughausstrasse 43, 8004 Zurich, Switzerland



**S** Schweizerischer Kalibrierdienst  
**C** Service suisse d'étalonnage  
**S** 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**

Client **RTS (RIM Testing Services)**

Certificate No: **D1900V2-545-Jan09**

## CALIBRATION CERTIFICATE

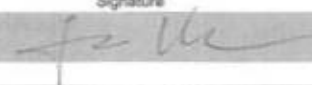

Object **D1900V2 - SN: 545**  
 Calibration procedure(s) **QA CAL-05.v7**  
**Calibration procedure for dipole validation kits**  
 Calibration date: **January 06, 2009**  
 Condition of the calibrated item **In Tolerance**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).  
 The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature  $(22 \pm 3)^{\circ}\text{C}$  and humidity  $< 70\%$ .

Calibration Equipment used (M&TE critical for calibration)


Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	08-Oct-08 (No. 217-00898)	Oct-09
Power sensor HP 8481A	US37292783	08-Oct-08 (No. 217-00898)	Oct-09
Reference 20 dB Attenuator	SN: 5086 (20g)	01-Jul-08 (No. 217-00864)	Jul-09
Type-N mismatch combination	SN: 5047.2 / 06327	01-Jul-08 (No. 217-00867)	Jul-09
Reference Probe ES3DV2	SN: 3025	28-Apr-08 (No. ES3-3025_Apr08)	Apr-09
DAE4	SN: 601	14-Mar-08 (No. DAE4-601_Mar08)	Mar-09
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-07)	In house check: Oct-09
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-07)	In house check: Oct-09
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-08)	In house check: Oct-09

	Name	Function	Signature
Calibrated by:	Jeton Kaszabi	Laboratory Technician	
Approved by:	Ketja Pokovic	Technical Manager	

Issued: January 7, 2009

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.



	Document <b>Appendix D for the BlackBerry® Smartphone Model RCS71CW SAR Report</b>			Page <b>19(29)</b>
Author Data <b>Andrew Becker</b>	Dates of Test <b>October 19 - November 4, 2009</b>	Test Report No <b>RTS-2340-0911-15</b>	FCC ID: <b>L6ARCS70CW</b>	

**Calibration Laboratory of  
Schmid & Partner  
Engineering AG**  
Zeughausstrasse 43, 8004 Zurich, Switzerland



**S** Schweizerischer Kalibrierdienst  
**C** Service suisse d'étalonnage  
**S** 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:

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:


- 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
- CENELEC EN 50361, "Basic standard for the measurement of Specific Absorption Rate related to human exposure to electromagnetic fields from mobile phones (300 MHz - 3 GHz), July 2001
- 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:

- 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.

	Document <b>Appendix D for the BlackBerry® Smartphone Model RCS71CW SAR Report</b>		Page <b>20(29)</b>
Author Data <b>Andrew Becker</b>	Dates of Test <b>October 19 - November 4, 2009</b>	Test Report No <b>RTS-2340-0911-15</b>	FCC ID: <b>L6ARCS70CW</b>

### Measurement Conditions

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

DASY Version	DASY5	V5.0
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	39.2 ± 6 %	1.47 mho/m ± 6 %
Head TSL temperature during test	(21.0 ± 0.2) °C	---	---

### SAR result with Head TSL

SAR averaged over 1 cm <sup>3</sup> (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 <sup>1</sup>	normalized to 1W	39.5 mW / g ± 17.0 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	Condition	
SAR measured	250 mW input power	5.29 mW / g
SAR normalized	normalized to 1W	21.2 mW / g
SAR for nominal Head TSL parameters <sup>1</sup>	normalized to 1W	20.8 mW / g ± 16.5 % (k=2)

<sup>1</sup> Correction to nominal TSL parameters according to d), chapter "SAR Sensitivities"

	Document <b>Appendix D for the BlackBerry® Smartphone Model RCS71CW SAR Report</b>		Page <b>21(29)</b>
Author Data <b>Andrew Becker</b>	Dates of Test <b>October 19 - November 4, 2009</b>	Test Report No <b>RTS-2340-0911-15</b>	FCC ID: <b>L6ARCS70CW</b>

#### Appendix

#### Antenna Parameters with Head TSL

Impedance, transformed to feed point	49.9 $\Omega$ + 1.9 j $\Omega$
Return Loss	- 34.4 dB

#### General Antenna Parameters and Design

Electrical Delay (one direction)	1.197 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

	Document <b>Appendix D for the BlackBerry® Smartphone Model RCS71CW SAR Report</b>		Page <b>22(29)</b>
Author Data <b>Andrew Becker</b>	Dates of Test <b>October 19 - November 4, 2009</b>	Test Report No <b>RTS-2340-0911-15</b>	FCC ID: <b>L6ARCS70CW</b>

## DASY5 Validation Report for Head TSL

Date/Time: 06.01.2009 13:17:58

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 U10 BB

Medium parameters used:  $f = 1900$  MHz;  $\sigma = 1.47$  mho/m;  $\epsilon_r = 39.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC)

### DASY5 Configuration:

- Probe: ES3DV2 - SN3025; ConvF(4.9, 4.9, 4.9); Calibrated: 28.04.2008
- Sensor-Surface: 3.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 14.03.2008
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**Pin = 250 mW; dip = 10 mm, scan at 3.4mm/Zoom Scan (dist=3.4mm, probe 0deg)**

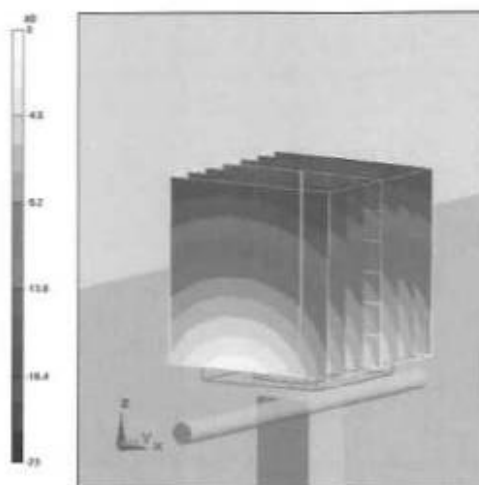
**(7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm**

Reference Value = 92.5 V/m; Power Drift = 0.037 dB


Peak SAR (extrapolated) = 19 W/kg

**SAR(1 g) = 10.2 mW/g; SAR(10 g) = 5.29 mW/g**

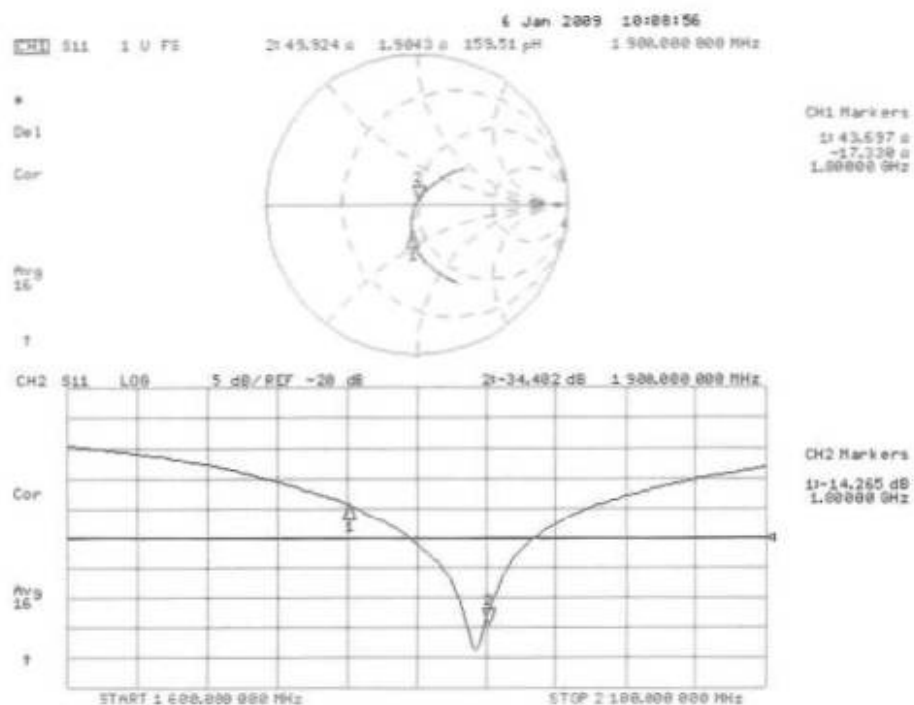
Maximum value of SAR (measured) = 12 mW/g




0 dB = 12mW/g

	Document <b>Appendix D for the BlackBerry® Smartphone Model RCS71CW SAR Report</b>		Page <b>23(29)</b>
Author Data <b>Andrew Becker</b>	Dates of Test <b>October 19 - November 4, 2009</b>	Test Report No <b>RTS-2340-0911-15</b>	FCC ID: <b>L6ARCS70CW</b>

# Impedance Measurement Plot for Head TSL





	Document		Page
	<b>Appendix D for the BlackBerry® Smartphone Model RCS71CW</b> <b>SAR Report</b>		<b>24(29)</b>
Author Data	Dates of Test	Test Report No	FCC ID:
<b>Andrew Becker</b>	<b>October 19 - November 4, 2009</b>	<b>RTS-2340-0911-15</b>	<b>L6ARCS70CW</b>

**Calibration Laboratory of**  
**Schmid & Partner**  
**Engineering AG**  
 Zeughausstrasse 43, 8004 Zurich, Switzerland



S Schweizerischer Kalibrierdienst  
 C Service suisse d'étalonnage  
 S 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**

Client **RIM**

Certificate No: **D2450V2-747\_Nov07**

## CALIBRATION CERTIFICATE

Object **D2450V2 - SN: 747**

Calibration procedure(s) **QA CAL-05.v6**  
**Calibration procedure for dipole validation kits**

Calibration date: **November 06, 2007**

Condition of the calibrated item **In Tolerance**

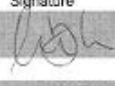
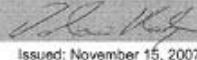
This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).  
 The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature  $(22 \pm 3)^{\circ}\text{C}$  and humidity  $< 70\%$ .

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	04-Oct-07 (METAS, No. 217-00736)	Oct-08
Power sensor HP 8481A	US37292783	04-Oct-07 (METAS, No. 217-00736)	Oct-08
Reference 20 dB Attenuator	SN: 5086 (20g)	07-Aug-07 (METAS, No 217-00718)	Aug-08
Reference 10 dB Attenuator	SN: 5047.2 (10r)	07-Aug-07 (METAS, No 217-00718)	Aug-08
Reference Probe ES3DV2	SN: 3025	26-Oct-07 (SPEAG, No. ES3-3025_Oct07)	Oct-08
DAE4	SN: 601	30-Jan-07 (SPEAG, No. DAE4-601_Jan07)	Jan-08

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (SPEAG, in house check Oct-07)	In house check: Oct-08
RF generator R&S SMT-06	100005	4-Aug-99 (SPEAG, in house check Oct-07)	In house check: Oct-09
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (SPEAG, in house check Oct-07)	In house check: Oct-08


Calibrated by:	Name	Function	Signature
	Claudio Leubler	Laboratory Technician	
Approved by:	Name	Function	Signature
	Katja Pokovic	Technical Manager	

Issued: November 15, 2007

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Certificate No: D2450V2-747\_Nov07

Page 1 of 6

	Document <b>Appendix D for the BlackBerry® Smartphone Model RCS71CW</b> <b>SAR Report</b>			Page <b>25(29)</b>
Author Data <b>Andrew Becker</b>	Dates of Test <b>October 19 - November 4, 2009</b>	Test Report No <b>RTS-2340-0911-15</b>	FCC ID: <b>L6ARCS70CW</b>	

**Calibration Laboratory of**  
**Schmid & Partner**  
**Engineering AG**  
 Zeughausstrasse 43, 8004 Zurich, Switzerland



**S** Schweizerischer Kalibrierdienst  
**C** Service suisse d'étalonnage  
**S** 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:

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:


- 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
- 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
- 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:

- DASY4 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.

	Document <b>Appendix D for the BlackBerry® Smartphone Model RCS71CW</b> <b>SAR Report</b>		Page <b>26(29)</b>
Author Data <b>Andrew Becker</b>	Dates of Test <b>October 19 - November 4, 2009</b>	Test Report No <b>RTS-2340-0911-15</b>	FCC ID: <b>L6ARCS70CW</b>

### Measurement Conditions

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

DASY Version	DASY4	V4.7
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	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	38.4 ± 6 %	1.85 mho/m ± 6 %
Head TSL temperature during test	(21.5 ± 0.2) °C	-----	-----

### SAR result with Head TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	condition	
SAR measured	250 mW input power	13.6 mW / g
SAR normalized	normalized to 1W	54.4 mW / g
SAR for nominal Head TSL parameters <sup>1</sup>	normalized to 1W	<b>53.2 mW / g ± 17.0 % (k=2)</b>

SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.27 mW / g
SAR normalized	normalized to 1W	25.1 mW / g
SAR for nominal Head TSL parameters <sup>1</sup>	normalized to 1W	<b>24.8 mW / g ± 16.5 % (k=2)</b>

<sup>1</sup> Correction to nominal TSL parameters according to d), chapter "SAR Sensitivities"

	Document <b>Appendix D for the BlackBerry® Smartphone Model RCS71CW SAR Report</b>			Page <b>27(29)</b>
Author Data <b>Andrew Becker</b>	Dates of Test <b>October 19 - November 4, 2009</b>	Test Report No <b>RTS-2340-0911-15</b>	FCC ID: <b>L6ARCS70CW</b>	

## Appendix

### Antenna Parameters with Head TSL

Impedance, transformed to feed point	51.2 $\Omega$ + 2.1 j $\Omega$
Return Loss	- 32.4 dB

### General Antenna Parameters and Design

Electrical Delay (one direction)	1.160 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



	Document <b>Appendix D for the BlackBerry® Smartphone Model RCS71CW SAR Report</b>		Page <b>28(29)</b>
Author Data <b>Andrew Becker</b>	Dates of Test <b>October 19 - November 4, 2009</b>	Test Report No <b>RTS-2340-0911-15</b>	FCC ID: <b>L6ARCS70CW</b>

## DASY4 Validation Report for Head TSL

Date/Time: 06.11.2007 15:01:41

Test Laboratory: SPEAG, Zurich, Switzerland

**DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN747**

Communication System: CW-2450; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: HSL U10 BB;

Medium parameters used:  $f = 2450$  MHz;  $\sigma = 1.79$  mho/m;  $\epsilon_r = 38$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY4 (High Precision Assessment)

### DASY4 Configuration:

- Probe: ES3DV2 - SN3025 (HF); ConvF(4.41, 4.41, 4.41); Calibrated: 26.10.2007
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.01.2007
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; ;
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 172

**Pin = 250 mW; d = 10 mm/Zoom Scan (7x7x7)/Cube 0:**

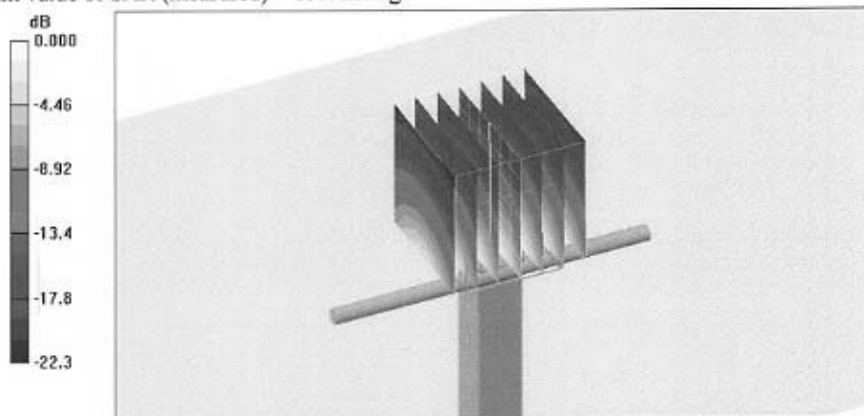
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 93.4 V/m; Power Drift = 0.016 dB

Peak SAR (extrapolated) = 29.4 W/kg


**SAR(1 g) = 13.6 mW/g; SAR(10 g) = 6.27 mW/g**

Maximum value of SAR (measured) = 15.4 mW/g



0 dB = 15.4mW/g



	Document <b>Appendix D for the BlackBerry® Smartphone Model RCS71CW</b> <b>SAR Report</b>			Page <b>29(29)</b>
Author Data <b>Andrew Becker</b>	Dates of Test <b>October 19 - November 4, 2009</b>	Test Report No <b>RTS-2340-0911-15</b>	FCC ID: <b>L6ARCS70CW</b>	

### Impedance Measurement Plot for Head TSL

