RTS RIM Testing Services	Annex B to Hearing Aid C Report for the BlackBerry			Page 1(13)
Author Data	Dates of Test	Report No	FCC ID	
Daoud Attayi	June 22-25, 2008	RTS-1114-0806-10	L6ARBY40G	έW

Annex B: Probe and dipole descriptions and calibration certificates

B.2 Dipole calibration certificate

Testing Services	Report for the I	aring Aid Compatibility RF Emis BlackBerry® Smartphone mode	1 RBY41GW 2(13
ata Id Attayi	Dates of Test June 22-25, 2008	Report No RTS-1114-0806-10	FCC ID L6ARBY40GW
Calibration Labora Schmid & Partner Engineering AG _{Zeughausstrasse} 43, 8004 Z			hweizerischer Kalibrierdienst rvice suisse d'étalonnage rvizio svizzero di taratura riss Calibration Service
Accredited by the Swiss Ac The Swiss Accreditation Se Multilateral Agreement for t	rvice is one of the signato		SCS 108
Client RIM		Certificate No: Cl	D835V3-1011_Nov07
CALIBRATION	I CERTIFICAT	ΓE	
Object	CD835V3 - SN	: 1011	
Calibration procedure(s)	QA CAL-20.v4 Calibration pro	cedure for dipoles in air	
Calibration date:	November 7, 2	007	
Condition of the collingted its		and the second	and the second and a second second second
Condition of the calibrated ite This calibration certificate do All calibrations have been co	cuments the traceability to n	national standards, which realize the physical units of atory facility: environment temperature (22 \pm 3)°C and	measurements (SI). humidity < 70%.
This calibration certificate do	cuments the traceability to n nducted in the closed labora	atory facility: environment temperature $(22 \pm 3)^{\circ}C$ and	measurements (SI). humidity < 70%.
This calibration certificate do All calibrations have been co Calibration Equipment used (Primary Standards	cuments the traceability to n nducted in the closed labora (M&TE critical for calibration	atory facility: environment temperature (22 ± 3)°C and) Cal Date (Calibrated by, Certificate No.)	humidity < 70%. Scheduled Calibration
This calibration certificate do All calibrations have been co Calibration Equipment used (Primary Standards Power meter EPM-442A	cuments the traceability to n nducted in the closed labora (M&TE critical for calibration ID # GB37480704	Cal Date (Calibrated by, Certificate No.) 04-Oct-07 (METAS, No. 217-00736)	Scheduled Calibration
This calibration certificate do All calibrations have been co Calibration Equipment used (Primary Standards Power meter EPM-442A Power sensor HP 8481A	Cuments the traceability to n nducted in the closed labora (M&TE critical for calibration ID # GB37480704 US37292783	Cal Date (Calibrated by, Certificate No.) 04-Oct-07 (METAS, No. 217-00736) 04-Oct-07 (METAS, No. 217-00736)	humidity < 70%. Scheduled Calibration
This calibration certificate do All calibrations have been co Calibration Equipment used (Primary Standards Power meter EPM-442A	cuments the traceability to n nducted in the closed labora (M&TE critical for calibration ID # GB37480704	Cal Date (Calibrated by, Certificate No.) 04-Oct-07 (METAS, No. 217-00736)	Scheduled Calibration Oct-08 Oct-08
This calibration certificate do All calibrations have been co Calibration Equipment used (Primary Standards Power meter EPM-442A Power sensor HP 8481A Probe ER3DV6	Currents the traceability to n nducted in the closed labora (M&TE critical for calibration ID # GB37480704 US37292783 SN: 2336	Cal Date (Calibrated by, Certificate No.) 04-Oct-07 (METAS, No. 217-00736) 04-Oct-07 (METAS, No. 217-00736) 04-Oct-07 (METAS, No. 217-00736) 27-Dec-06 (SPEAG, No. ER3-2336_Dec06)	Scheduled Calibration Oct-08 Oct-08 Dec-07
This calibration certificate do All calibrations have been co Calibration Equipment used (Primary Standards Power meter EPM-442A Power sensor HP 8481A Probe ER3DV6 Probe H3DV6 DAE4	Currents the traceability to n nducted in the closed labora (M&TE critical for calibration ID # GB37480704 US37292783 SN: 2336 SN: 2336 SN: 6065 SN: 781	Cal Date (Calibrated by, Certificate No.) 04-Oct-07 (METAS, No. 217-00736) 04-Oct-07 (METAS, No. 217-00736) 04-Oct-07 (METAS, No. 217-00736) 27-Dec-06 (SPEAG, No. ER3-2336_Dec06) 27-Dec-06 (SPEAG, No. H3-6065-Dec06) 2-Oct-07 (SPEAG, No. DAE4-781_Oct07)	Scheduled Calibration Oct-08 Oct-08 Dec-07 Dec-07 Oct-08
This calibration certificate do All calibrations have been co Calibration Equipment used (Primary Standards Power meter EPM-442A Power sensor HP 8481A Probe ER3DV6 Probe H3DV6 DAE4 Secondary Standards	Currents the traceability to n nducted in the closed labora (M&TE critical for calibration ID # GB37480704 US37292783 SN: 2336 SN: 2336 SN: 6065 SN: 781 ID #	Cal Date (Calibrated by, Certificate No.) 04-Oct-07 (METAS, No. 217-00736) 04-Oct-07 (METAS, No. 217-00736) 04-Oct-07 (METAS, No. 217-00736) 27-Dec-06 (SPEAG, No. ER3-2336_Dec06) 27-Dec-06 (SPEAG, No. H3-6065-Dec06) 2-Oct-07 (SPEAG, No. DAE4-781_Oct07) Check Date (in house)	Scheduled Calibration Oct-08 Oct-08 Dec-07 Dec-07 Oct-08 Scheduled Check
This calibration certificate do All calibrations have been co Calibration Equipment used (Primary Standards Power meter EPM-442A Power sensor HP 8481A Probe ER3DV6 Probe H3DV6 DAE4	Currents the traceability to n nducted in the closed labora (M&TE critical for calibration ID # GB37480704 US37292783 SN: 2336 SN: 2336 SN: 6065 SN: 781	Cal Date (Calibrated by, Certificate No.) 04-Oct-07 (METAS, No. 217-00736) 04-Oct-07 (METAS, No. 217-00736) 04-Oct-07 (METAS, No. 217-00736) 27-Dec-06 (SPEAG, No. ER3-2336_Dec06) 27-Dec-06 (SPEAG, No. H3-6065-Dec06) 2-Oct-07 (SPEAG, No. DAE4-781_Oct07)	Scheduled Calibration Oct-08 Oct-08 Dec-07 Dec-07 Oct-08
This calibration certificate do All calibrations have been co Calibration Equipment used (Primary Standards Power meter EPM-442A Power sensor HP 8481A Probe ER3DV6 Probe H3DV6 DAE4 Secondary Standards Power meter EPM-4419B	cuments the traceability to n nducted in the closed labora (M&TE critical for calibration ID # GB37480704 US37292783 SN: 2336 SN: 2336 SN: 6065 SN: 781 ID # ID # GB42420191	atory facility: environment temperature (22 ± 3)°C and (a) Cal Date (Calibrated by, Certificate No.) 04-Oct-07 (METAS, No. 217-00736) 04-Oct-07 (METAS, No. 217-00736) 27-Dec-06 (SPEAG, No. ER3-2336_Dec06) 27-Dec-06 (SPEAG, No. H3-6065-Dec06) 2-Oct-07 (SPEAG, No. DAE4-781_Oct07) Check Date (in house) 11-May-05 (SPEAG, in house check Oct -07)	Scheduled Calibration Oct-08 Oct-08 Dec-07 Dec-07 Oct-08 Scheduled Check In house check: Nov-08
This calibration certificate do All calibrations have been co Calibration Equipment used (Primary Standards Power meter EPM-442A Power sensor HP 8481A Probe ER3DV6 Probe H3DV6 DAE4 Secondary Standards Power meter EPM-4419B Power sensor HP 8482A	cuments the traceability to n nducted in the closed labora (M&TE critical for calibration ID # GB37480704 US37292783 SN: 2336 SN: 6065 SN: 781 ID # ID # GB42420191 US37295597 3318A09450	atory facility: environment temperature (22 ± 3)°C and (2) Cal Date (Calibrated by, Certificate No.) 04-Oct-07 (METAS, No. 217-00736) 04-Oct-07 (METAS, No. 217-00736) 04-Oct-07 (METAS, No. 217-00736) 27-Dec-06 (SPEAG, No. ER3-2336_Dec06) 27-Dec-06 (SPEAG, No. H3-6065-Dec06) 2-Oct-07 (SPEAG, No. DAE4-781_Oct07) Check Date (in house) 11-May-05 (SPEAG, in house check Oct -07) 11-May-05 (SPEAG, in house check Oct -07) 08-Jan-02 (SPEAG, in house check Oct -07) 18-Oct-01 (SPEAG, in house check Oct-07)	Scheduled Calibration Oct-08 Oct-08 Dec-07 Dec-07 Oct-08 Scheduled Check In house check: Nov-08 In house check: Nov-09
This calibration certificate do All calibrations have been co Calibration Equipment used (Primary Standards Power meter EPM-442A Power sensor HP 8481A Probe ER3DV6 Probe H3DV6 DAE4 Secondary Standards Power meter EPM-4419B Power sensor HP 8482A Power sensor HP 8482H	cuments the traceability to n nducted in the closed labora (M&TE critical for calibration ID # GB37480704 US37292783 SN: 2336 SN: 6065 SN: 781 ID # ID # GB42420191 US37295597 3318A09450	Cal Date (Calibrated by, Certificate No.) 04-Oct-07 (METAS, No. 217-00736) 04-Oct-07 (METAS, No. 217-00736) 04-Oct-07 (METAS, No. 217-00736) 27-Dec-06 (SPEAG, No. ER3-2336_Dec06) 27-Dec-06 (SPEAG, No. H3-6065-Dec06) 2-Oct-07 (SPEAG, No. DAE4-781_Oct07) Check Date (in house) 11-May-05 (SPEAG, in house check Oct -07) 11-May-05 (SPEAG, in house check Oct -07) 08-Jan-02 (SPEAG, in house check Oct -07)	Scheduled Calibration Oct-08 Oct-07 Dec-07 Oct-08 Scheduled Check In house check: Nov-08 In house check: Nov-08 In house check: Nov-08 In house check: Nov-08
This calibration certificate do All calibrations have been co Calibration Equipment used (Primary Standards Power meter EPM-442A Power sensor HP 8481A Probe ER3DV6 Probe H3DV6 DAE4 Secondary Standards Power meter EPM-4419B Power sensor HP 8482A Power sensor HP 8482H Network Analyzer HP 8753E	cuments the traceability to n nducted in the closed labora (M&TE critical for calibration UD # GB37480704 US37292783 SN: 2336 SN: 6065 SN: 781 ID # GB42420191 US37295597 3318A09450 US37390585 MY 41310391	Cal Date (Calibrated by, Certificate No.) 04-Oct-07 (METAS, No. 217-00736) 04-Oct-07 (METAS, No. 217-00736) 04-Oct-07 (METAS, No. 217-00736) 27-Dec-06 (SPEAG, No. ER3-2336_Dec06) 27-Dec-06 (SPEAG, No. H3-6065-Dec06) 2-Oct-07 (SPEAG, No. DAE4-781_Oct07) Check Date (in house) 11-May-05 (SPEAG, in house check Oct -07) 11-May-05 (SPEAG, in house check Oct -07) 08-Jan-02 (SPEAG, in house check Oct -07) 18-Oct-01 (SPEAG, in house check Oct-07) 22-Nov-04 (SPEAG, in house check Oct-07)	Scheduled Calibration Oct-08 Oct-08 Dec-07 Dec-07 Oct-08 Scheduled Check In house check: Nov-08 In house check: Nov-09 In house check: Nov-09
This calibration certificate do All calibrations have been co Calibration Equipment used (Primary Standards Power meter EPM-442A Power sensor HP 8481A Probe ER3DV6 Probe H3DV6 DAE4 Secondary Standards Power meter EPM-4419B Power sensor HP 8482A Power sensor HP 8482A Power sensor HP 8482A Network Analyzer HP 8753E RF generator E4433B	cuments the traceability to n nducted in the closed labora (M&TE critical for calibration GB37480704 US37292783 SN: 2336 SN: 6065 SN: 781 ID # GB42420191 US37295597 3318A09450 US37390585 MY 41310391	Cal Date (Calibrated by, Certificate No.) 04-Oct-07 (METAS, No. 217-00736) 04-Oct-07 (METAS, No. 217-00736) 04-Oct-07 (METAS, No. 217-00736) 27-Dec-06 (SPEAG, No. ER3-2336_Dec06) 27-Dec-06 (SPEAG, No. H3-6065-Dec06) 2-Oct-07 (SPEAG, No. DAE4-781_Oct07) Check Date (in house) 11-May-05 (SPEAG, in house check Oct -07) 11-May-05 (SPEAG, in house check Oct -07) 08-Jan-02 (SPEAG, in house check Oct -07) 22-Nov-04 (SPEAG, in house check Oct-07) Eunction	Scheduled Calibration Oct-08 Oct-08 Dec-07 Dec-07 Oct-08 Scheduled Check In house check: Nov-08 In house check: Nov-09
This calibration certificate do All calibrations have been co Calibration Equipment used (Primary Standards Power meter EPM-442A Power sensor HP 8481A Probe ER3DV6 Probe H3DV6 DAE4 Secondary Standards Power meter EPM-4419B Power sensor HP 8482A Power sensor HP 8482H Network Analyzer HP 8753E	cuments the traceability to n nducted in the closed labora (M&TE critical for calibration UD # GB37480704 US37292783 SN: 2336 SN: 6065 SN: 781 ID # GB42420191 US37295597 3318A09450 US37390585 MY 41310391	Cal Date (Calibrated by, Certificate No.) 04-Oct-07 (METAS, No. 217-00736) 04-Oct-07 (METAS, No. 217-00736) 04-Oct-07 (METAS, No. 217-00736) 27-Dec-06 (SPEAG, No. ER3-2336_Dec06) 27-Dec-06 (SPEAG, No. H3-6065-Dec06) 2-Oct-07 (SPEAG, No. DAE4-781_Oct07) Check Date (in house) 11-May-05 (SPEAG, in house check Oct -07) 11-May-05 (SPEAG, in house check Oct -07) 08-Jan-02 (SPEAG, in house check Oct -07) 18-Oct-01 (SPEAG, in house check Oct-07) 22-Nov-04 (SPEAG, in house check Oct-07)	Scheduled Calibration Oct-08 Oct-08 Dec-07 Dec-07 Oct-08 Scheduled Check In house check: Nov-08 In house check: Nov-09 In house check: Nov-09
This calibration certificate do All calibrations have been co Calibration Equipment used (Primary Standards Power meter EPM-442A Power sensor HP 8481A Probe ER3DV6 Probe H3DV6 DAE4 Secondary Standards Power meter EPM-4419B Power sensor HP 8482A Power sensor HP 8482A Power sensor HP 8482A Network Analyzer HP 8753E RF generator E4433B	cuments the traceability to n nducted in the closed labora (M&TE critical for calibration GB37480704 US37292783 SN: 2336 SN: 6065 SN: 781 ID # GB42420191 US37295597 3318A09450 US37390585 MY 41310391	Cal Date (Calibrated by, Certificate No.) 04-Oct-07 (METAS, No. 217-00736) 04-Oct-07 (METAS, No. 217-00736) 04-Oct-07 (METAS, No. 217-00736) 27-Dec-06 (SPEAG, No. ER3-2336_Dec06) 27-Dec-06 (SPEAG, No. H3-6065-Dec06) 2-Oct-07 (SPEAG, No. DAE4-781_Oct07) Check Date (in house) 11-May-05 (SPEAG, in house check Oct -07) 11-May-05 (SPEAG, in house check Oct -07) 08-Jan-02 (SPEAG, in house check Oct -07) 22-Nov-04 (SPEAG, in house check Oct-07) Eunction	Scheduled Calibration Oct-08 Oct-08 Dec-07 Dec-07 Oct-08 Scheduled Check In house check: Nov-08 In house check: Nov-09 In house check: Nov-09
This calibration certificate do All calibrations have been co Calibration Equipment used (Primary Standards Power meter EPM-442A Power sensor HP 8481A Probe ER3DV6 Probe H3DV6 DAE4 Secondary Standards Power meter EPM-4419B Power sensor HP 8482A Power sensor HP 8482A Network Analyzer HP 8753E RF generator E4433B Calibrated by:	cuments the traceability to n nducted in the closed labora (M&TE critical for calibration GB37480704 US37292783 SN: 2336 SN: 2336 SN: 6065 SN: 781 ID # GB42420191 US37295597 3318A09450 US37390585 MY 41310391 Name Mike Meili	Cal Date (Calibrated by, Certificate No.) 04-Oct-07 (METAS, No. 217-00736) 04-Oct-07 (METAS, No. 217-00736) 07-Dec-06 (SPEAG, No. ER3-2336_Dec06) 27-Dec-06 (SPEAG, No. H3-6065-Dec06) 2-Oct-07 (SPEAG, No. DAE4-781_Oct07) Check Date (in house) 11-May-05 (SPEAG, in house check Oct -07) 11-May-05 (SPEAG, in house check Oct -07) 08-Jan-02 (SPEAG, in house check Oct -07) 18-Oct-01 (SPEAG, in house check Oct-07) 22-Nov-04 (SPEAG, in house check Oct-07) Function Laboratory Technician	Scheduled Calibration Oct-08 Oct-08 Dec-07 Dec-07 Oct-08 Scheduled Check In house check: Nov-08 In house check: Nov-09 In house check: Nov-09

RTS RIM Testing Services		Aid Compatibility RF Emis Berry® Smartphone model		Page 3(13)
Author Data	Dates of Test	Report No	FCC ID	
Daoud Attavi	June 22-25, 2008	RTS-1114-0806-10	L6ARBY400	τw

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





S

Schweizerischer Kalibrierdienst

C Service suisse d'étalonnage

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

References

 ANSI-C63.19-2006 American National Standard for Methods of Measurement of Compatibility between Wireless Communications Devices and Hearing Aids.

Methods Applied and Interpretation of Parameters:

- Coordinate System: y-axis is in the direction of the dipole arms. z-axis is from the basis of the antenna (mounted on the table) towards its feed point between the two dipole arms. x-axis is normal to the other axes. In coincidence with standard [1], the measurement planes (probe sensor center) are selected to be at a distance of 10 mm above the top edge of the dipole arms.
- Measurement Conditions: Further details are available from the hardcopies at the end of the certificate. All
 figures stated in the certificate are valid at the frequency indicated. The forward power to the dipole
 connector is set with a calibrated power meter connected and monitored with an auxiliary power meter
 connected to a directional coupler. While the dipole under test is connected, the forward power is adjusted to
 the same level.
- Antenna Positioning: The dipole is mounted on a HAC Test Arch phantom using the matching dipole positioner with the arms horizontal and the feeding cable coming from the floor. The measurements are performed in a shielded room with absorbers around the setup to reduce the reflections. It is verified before the mounting of the dipole under the Test Arch phantom, that its arms are perfectly in a line. It is installed on the HAC dipole positioner with its arms parallel below the dielectric reference wire and able to move elastically in vertical direction without changing its relative position to the top center of the Test Arch phantom. The vertical distance to the probe is adjusted after dipole mounting with a DASY4 Surface Check job. Before the measurement, the distance between phantom surface and probe tip is verified. The proper measurement distance is selected by choosing the matching section of the HAC Test Arch phantom with the proper device reference point (upper surface of the dipole) and the matching grid reference point (tip of the probe) considering the probe sensor offset. The vertical distance to the probe is essential for the accuracy.
- Feed Point Impedance and Return Loss: These parameters are measured using a HP 8753E Vector Network Analyzer. The impedance is specified at the SMA connector of the dipole. The influence of reflections was eliminating by applying the averaging function while moving the dipole in the air, at least 70cm away from any obstacles.
- E- field distribution: E field is measured in the x-y-plane with an isotropic ER3D-field probe with 100 mW forward power to the antenna feed point. In accordance with [1], the scan area is 20mm wide, its length exceeds the dipole arm length (180 or 90mm). The sensor center is 10 mm (in z) above the top of the dipole arms. Two 3D maxima are available near the end of the dipole arms. Assuming the dipole arms are perfectly in one line, the average of these two maxima (in subgrid 2 and subgrid 8) is determined to compensate for any non-parallelity to the measurement plane as well as the sensor displacement. The E-field value stated as calibration value represents the maximum of the interpolated 3D-E-field, 10mm above the dipole surface.
- H-field distribution: H-field is measured with an isotropic H-field probe with 100mW forward power to the
 antenna feed point, in the x-y-plane. The scan area and sensor distance is equivalent to the E-field scan. The
 maximum of the field is available at the center (subgrid 5) above the feed point. The H-field value stated as
 calibration value represents the maximum of the interpolated H-field, 10mm above the dipole surface at the
 feed point.

1 Measurement Conditions

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

DASY Version	DASY4	V4.7 B55
DASY PP Version	SEMCAD	V1.8 B176
Phantom	HAC Test Arch	SD HAC P01 BA, #1070
Distance Dipole Top - Probe Center	10 mm	
Scan resolution	dx, dy = 5 mm	area = 20 x 180 mm
Frequency	835 MHz ± 1 MHz	
Forward power at dipole connector	20.0 dBm = 100mW	
Input power drift	< 0.05 dB	

2 Maximum Field values

H-field 10 mm above dipole surface	condition	interpolated maximum
Maximum measured	100 mW forward power	0.458 A/m
Incertainty for H-field measurement: 8.2% (k=2)		

E-field 10 mm above dipole surface	condition	Interpolated maximum
Maximum measured above high end-	100 mW forward power	167.1 V/m
Maximum measured above low end	100 mW forward power	160.1 V/m
Averaged maximum above arm	100 mW forward power	163.6 V/m

Uncertainty for E-field measurement: 12.8% (k=2)

3 Appendix

3.1 Antenna Parameters

Frequency	Return Loss	Impedance
800 MHz	16.2 dB	(42.9 – j12.6) Ohm
835 MHz	26.3 dB	(51.2 + j4.8) Ohm
900 MHz	16.5 dB	(56.7 – j14.6) Ohm
950 MHz	19.8 dB	(43.9 + j7.4) Ohm
960 MHz	16.3 dB	(50.3 + j15.5) Ohm

3.2 Antenna Design and Handling

The calibration dipole has a symmetric geometry with a built-in two stub matching network, which leads to the enhanced bandwidth.

The dipole is built of standard semirigid coaxial cable. The internal matching line is open ended. The antenna is therefore open for DC signals.

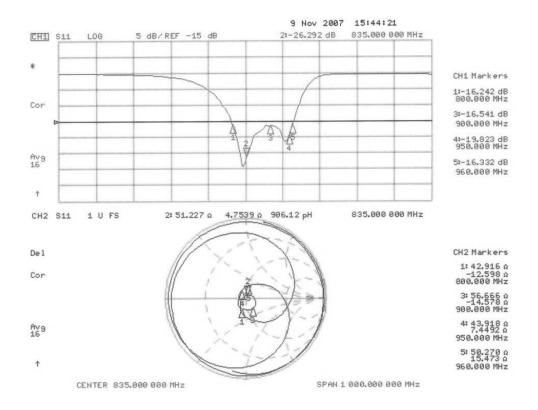
Do not apply force to dipole arms, as they are liable to bend. The soldered connections near the feedpoint may be damaged. After excessive mechanical stress or overheating, check the impedance characteristics to ensure that the internal matching network is not affected.

After long term use with 40W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

RTS RIM Testing Services	Report for the Black	Aid Compatibility RF Emise Berry® Smartphone model		Page 5(13)
Author Data	Dates of Test	Report No	FCC ID	
Daoud Attayi	June 22-25, 2008	RTS-1114-0806-10	L6ARBY400	έW

3.3 Measurement Sheets

3.3.1 Return Loss and Smith Chart



RTS RIM Testing Services		Aid Compatibility RF Emise Berry® Smartphone model		Page 6(13)
Author Data	Dates of Test	Report No	FCC ID	
Daoud Attayi	June 22-25, 2008	RTS-1114-0806-10	L6ARBY40G	W

3.3.2 DASY4 H-field result

Date/Time: 07.11.2007 12:08:55

Test Laboratory: SPEAG Lab 2

DUT: HAC-Dipole 835 MHz; Type: CD835V3; Serial: 1011 Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1 Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m³ Phantom section: H Dipole Section Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

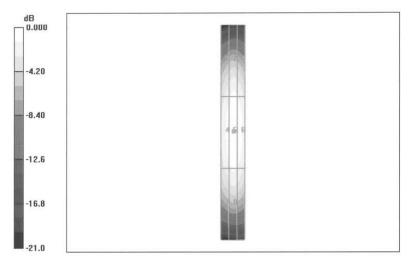
- Probe: H3DV6 SN6065; Calibrated: 27.12.2006
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn781; Calibrated: 02.10.2007
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1070
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

H Scan - Sensor Center 10mm above CD835 Dipole/Hearing Aid Compatibility Test (41x361x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.458 A/m Probe Modulation Factor = 1.00 Device Reference Point: 0.000, 0.000, 354.7 mm Reference Value = 0.484 A/m; Power Drift = 0.007 dB Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

Grid 1	Grid 2	Grid 3
0.378 M4	0.409 M4	0.394 M4
Grid 4	Grid 5	Grid 6
0.424 M4	0.458 M 4	0.442 M 4
Grid 7	Grid 8	Grid 9
0.373 M4	0.401 M4	0.386 M 4



0 dB = 0.458 A/m

RTS RIM Testing Services		Aid Compatibility RF Emise Berry® Smartphone model		Page 7(13)
Author Data	Dates of Test	Report No	FCC ID	
Daoud Attavi	June 22-25, 2008	RTS-1114-0806-10	L6ARBY400	τw

3.3.3 DASY4 E-Field result

Date/Time: 07.11.2007 14:04:24

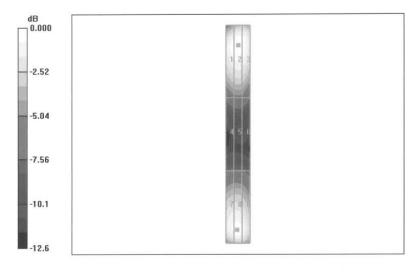
Test Laboratory: SPEAG Lab 2

DUT: HAC-Dipole 835 MHz; Type: D835V3; Serial: 1011 Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1 Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1000$ kg/m³ Phantom section: E Dipole Section Measurement Standard: DASY4 (High Precision Assessment) DASY4 Configuration:

- Probe: ER3DV6 SN2336; ConvF(1, 1, 1); Calibrated: 27.12.2006
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn781; Calibrated: 02.10.2007
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1070
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

E Scan - Sensor Center 10mm above CD835 Dipole/Hearing Aid Compatibility Test (41x361x1): Measurement grid: dx=5mm, dy=5mm Maximum value of peak Total field = 167.1 V/m Probe Modulation Factor = 1.00 Device Reference Point: 0.000, 0.000, 354.7 mm Reference Value = 103.6 V/m; Power Drift = 0.012 dB Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Grid 4 Grid :	5 Grid 6
CONTRACTORY IN DESCRIPTION	and the second se
87.2 M4 89.4 M	M4 87.1 M4



 $0 \, dB = 167.1 \, V/m$

RTS M Testing Services	Report for	ex B to Hearing Aid Compatibility RF Emissions Test ort for the BlackBerry® Smartphone model RBY41GW				Page 8(13)	
^{r Data} Dud Attayi	Dates of Test June 22-25,	2008	Report No RTS-1114-0)806-10	FCC ID	BY40GV	W
	June 22-25,	2008	K15-1114-0	0800-10	LOAK	D140G	vv
Accredited by The Swiss Ac Multilateral Ar Client R	sse 43, 8004 Zurich the Swiss Accredi creditation Service greement for the re	, Switzerland tation Service (SAS) is one of the signato cognition of calibrati ERTIFICA CD1880V3 - S	on certificates		C Serv S Serv S Swis	vice suisse vizio svizzer iss Calibratio SCS 108	
This calibration All calibrations Calibration Ec Primary Stand Power meter I Power sensor Probe ER3DV Probe H3DV6 DAE4 Secondary St Power meter I Power sensor Power sensor	te: he calibrated item in certificate docume s have been conduct quipment used (M&T dards EPM-442A HP 8481A /6 andards EPM-4419B HP 8482A HP 8482H yzer HP 8753E	November 8, 2 In Tolerance	cedure for dipoles 0007 national standards, whic atory facility: environmen)) Cal Date (Calibrat 04-Oct-07 (META 04-Oct-07 (META 27-Dec-06 (SPEA 27-Dec-06 (SPEA 2-Oct-07 (SPEAG Check Date (in ho 11-May-05 (SPEA 11-May-05 (SPEA 08-Jan-02 (SPEA 18-Oct-01 (SPEA	th realize the physic nt temperature (22 st ted by, Certificate N S, No. 217-00736) S, No. 217-00736) G, No. ER3-2336_C G, No. H3-6065_D6 S, No. DAE4-781_O	± 3)°C and f lo.) Dec06) ec06) ct07) Oct-07) Oct-07) Oct-07) Oct-07) Oct-07)	Scheduled Oct-08 Oct-08 Dec-07 Oct-08 Scheduled In house ch In house ch In house ch In house ch	0%. Calibration
Calibration da Condition of th This calibration All calibration Calibration Ec Primary Stand Power meter I Power sensor Probe H3DV6 DAE4 Secondary St Power meter I Power sensor Power sensor Power sensor Network Analt	te: he calibrated item in certificate docume s have been conduct quipment used (M&T dards EPM-442A HP 8481A /6 andards EPM-4419B HP 8482A HP 8482H yzer HP 8753E	Calibration pro November 8, 2 In Tolerance In Tolerance In the closed labora critical for calibration ID # GB37480704 US37292783 SN: 2336 SN: 6065 SN: 781 ID # GB42420191 US37295597 3318A09450 US37390585 MY 41310391	cedure for dipoles 0007 hational standards, whic atory facility: environmen 04-Oct-07 (META 04-Oct-07 (META 04-Oct-07 (META 27-Dec-06 (SPEA 27-Dec-06 (SPEA 27-Dec-06 (SPEA 2-Oct-07 (SPEAG Check Date (in ho 11-May-05 (SPEA 11-May-05 (SPEA 08-Jan-02 (SPEA 18-Oct-01 (SPEA 22-Nov-04 (SPEA	th realize the physic nt temperature (22 st ted by, Certificate N S, No. 217-00736) S, No. 217-00736) G, No. ER3-2336_I G, No. H3-6065_D6 S, No. DAE4-781_O6 buse) AG, in house check (AG, in house check (± 3)°C and f lo.) Dec06) ec06) ct07) Oct-07) Oct-07) Oct-07) Oct-07) Oct-07)	Scheduled Oct-08 Oct-08 Dec-07 Dec-07 Oct-08 Scheduled In house ch In house ch In house ch In house ch	Calibration Check heck: Nov-08 heck: Nov-08 heck: Nov-08 heck: Nov-09
Calibration da Condition of th This calibration All calibration Calibration Ec Primary Stand Power meter I Power sensor Probe H3DV6 DAE4 Secondary St Power meter I Power sensor Power sensor Power sensor Network Analt	te: he calibrated item in certificate docume s have been conduct quipment used (M&T tards EPM-442A HP 8481A /6 andards EPM-4419B HP 8482H HP 8482H yzer HP 8753E E4433B	Calibration pro November 8, 2 In Tolerance In Tolerance Ints the traceability to red in the closed labora E critical for calibration ID # GB37480704 US37292783 SN: 2336 SN: 6065 SN: 781 ID # GB42420191 US37295597 3318A09450 US37390585	cedure for dipoles 007 national standards, whic atory facility: environmen 0 Cal Date (Calibrat 04-Oct-07 (META 04-Oct-07 (META 04-Oct-07 (META 04-Oct-07 (META 04-Oct-07 (SPEA 27-Dec-06 (SPEA 27-Dec-06 (SPEA 27-Dec-06 (SPEA 2-Oct-07 (SPEAG Check Date (in ho 11-May-05 (SPEA 08-Jan-02 (SPEA 18-Oct-01 (SPEA 22-Nov-04 (SPEA	th realize the physic nt temperature (22 st ted by, Certificate N S, No. 217-00736) S, No. 217-00736) G, No. ER3-2336_I G, No. H3-6065_D6 S, No. DAE4-781_O6 buse) AG, in house check (AG, in house check (± 3)°C and f lo.) Dec06) ec06) ec06) ct07) Oct-07) Oct-07) Oct-07) Oct-07) Oct-07)	Scheduled Oct-08 Oct-08 Dec-07 Oct-08 Scheduled In house ch In house ch In house ch In house ch In house ch In house ch	Calibration Check heck: Nov-08 heck: Nov-08 heck: Nov-08 heck: Nov-09

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



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

Accreditation No.: SCS 108

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

References

- ANSI-C63.19-2006 [1]
 - American National Standard for Methods of Measurement of Compatibility between Wireless Communications Devices and Hearing Aids.

Methods Applied and Interpretation of Parameters:

- Coordinate System: y-axis is in the direction of the dipole arms. z-axis is from the basis of the antenna (mounted on the table) towards its feed point between the two dipole arms. x-axis is normal to the other axes. In coincidence with standard [1], the measurement planes (probe sensor center) are selected to be at a distance of 10 mm above the top edge of the dipole arms.
- Measurement Conditions: Further details are available from the hardcopies at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated. The forward power to the dipole connector is set with a calibrated power meter connected and monitored with an auxiliary power meter connected to a directional coupler. While the dipole under test is connected, the forward power is adjusted to the same level.
- Antenna Positioning: The dipole is mounted on a HAC Test Arch phantom using the matching dipole positioner with the arms horizontal and the feeding cable coming from the floor. The measurements are performed in a shielded room with absorbers around the setup to reduce the reflections. It is verified before the mounting of the dipole under the Test Arch phantom, that its arms are perfectly in a line. It is installed on the HAC dipole positioner with its arms parallel below the dielectric reference wire and able to move elastically in vertical direction without changing its relative position to the top center of the Test Arch phantom. The vertical distance to the probe is adjusted after dipole mounting with a DASY4 Surface Check job. Before the measurement, the distance between phantom surface and probe tip is verified. The proper measurement distance is selected by choosing the matching section of the HAC Test Arch phantom with the proper device reference point (upper surface of the dipole) and the matching grid reference point (tip of the probe) considering the probe sensor offset. The vertical distance to the probe is essential for the accuracy.
- Feed Point Impedance and Return Loss: These parameters are measured using a HP 8753E Vector Network Analyzer. The impedance is specified at the SMA connector of the dipole. The influence of reflections was eliminating by applying the averaging function while moving the dipole in the air, at least 70cm away from any obstacles.
- E- field distribution: E field is measured in the x-y-plane with an isotropic ER3D-field probe with 100 mW forward power to the antenna feed point. In accordance with [1], the scan area is 20mm wide, its length exceeds the dipole arm length (180 or 90mm). The sensor center is 10 mm (in z) above the top of the dipole arms. Two 3D maxima are available near the end of the dipole arms. Assuming the dipole arms are perfectly in one line, the average of these two maxima (in subgrid 2 and subgrid 8) is determined to compensate for any non-parallelity to the measurement plane as well as the sensor displacement. The E-field value stated as calibration value represents the maximum of the interpolated 3D-E-field, 10mm above the dipole surface.
- H-field distribution: H-field is measured with an isotropic H-field probe with 100mW forward power to the antenna feed point, in the x-y-plane. The scan area and sensor distance is equivalent to the E-field scan. The maximum of the field is available at the center (subgrid 5) above the feed point. The H-field value stated as calibration value represents the maximum of the interpolated H-field, 10mm above the dipole surface at the feed point.

RTS RIM Testing Services	Annex B to Hearing Aid Report for the BlackBerr			Page 10(13)	
Author Data	Dates of Test	Report No	FCC ID		
Daoud Attayi	June 22-25, 2008	RTS-1114-0806-10	10 L6ARBY40GW		

1 Measurement Conditions

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

DASY Version	DASY4	V4.7 B55
DASY PP Version	SEMCAD	V1.8 B176
Phantom	HAC Test Arch	SD HAC P01 BA, #1070
Distance Dipole Top - Probe Center	10 mm	
Scan resolution	dx, dy = 5 mm	area = 20 x 90 mm
Frequency	1880 MHz ± 1 MHz	
Forward power at dipole connector	20.0 dBm = 100mW	
Input power drift	< 0.05 dB	

2 Maximum Field values

condition	Interpolated maximum
00 mW forward power	0.465 A/m
	100 mW forward power

Jncertainty for H-field measurement: 8.2% (k=2)

E-field 10 mm above dipole surface	condition	Interpolated maximum	
Maximum measured above high end	100 mW forward power	133.7 V/m	
Maximum measured above low end	100 mW forward power	133.5 V/m	
Averaged maximum above arm	100 mW forward power	133.6 V/m	

Uncertainty for E-field measurement: 12.8% (k=2)

3 Appendix

3.1 Antenna Parameters

Frequency	Return Loss	Impedance
1710 MHz	22.2 dB	(52.3 + j7.6) Ohm
1880 MHz	20.5 dB	(49.7 + j9.4) Ohm
1900 MHz	20.7 dB	(52.2 + j9.2) Ohm
1950 MHz	27.8 dB	(52.4 + j3.4) Ohm
2000 MHz	19.2 dB	(43.7 + i8.2) Ohm

3.2 Antenna Design and Handling

The calibration dipole has a symmetric geometry with a built-in two stub matching network, which leads to the enhanced bandwidth.

The dipole is built of standard semirigid coaxial cable. The internal matching line is open ended. The antenna is therefore open for DC signals.

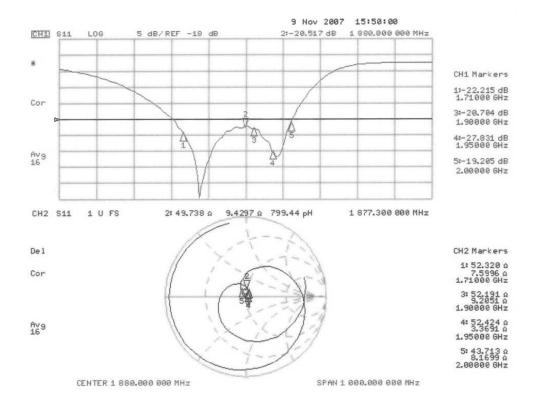
Do not apply force to dipole arms, as they are liable to bend. The soldered connections near the feedpoint may be damaged. After excessive mechanical stress or overheating, check the impedance characteristics to ensure that the internal matching network is not affected.

After long term use with 40W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

RTS RIM Testing Services	Annex B to Hearing Aid C Report for the BlackBerry			Page 11(13)
Author Data	Dates of Test	Report No	FCC ID	
Daoud Attayi	June 22-25, 2008	RTS-1114-0806-10	L6ARBY40G	W

3.3 Measurement Sheets

3.3.1 Return Loss and Smith Chart



.

3.3.2 DASY4 H-Field Result

Date/Time: 08.11.2007 11:15:44

Test Laboratory: SPEAG Lab 2

DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Serial: 1008 Communication System: CW; Frequency: 1880 MHz; Duty Cycle: 1:1 Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m³ Phantom section: H Dipole Section Measurement Standard: DASY4 (High Precision Assessment)

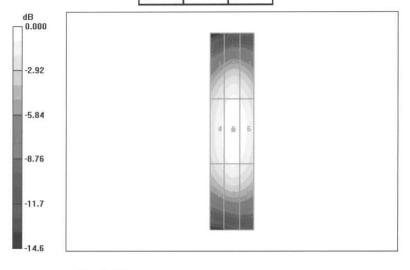
DASY4 Configuration:

- Probe: H3DV6 SN6065; Calibrated: 27.12.2006
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn781; Calibrated: 02.10.2007
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1070
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

H Scan - Sensor Center 10mm above CD1880V3 Dipole/Hearing Aid Compatibility Test (41x181x1): Measurement grid: dx=5mm, dy=5mm Maximum value of peak Total field = 0.465 A/m Probe Modulation Factor = 1.00 Device Reference Point: 0.000, 0.000, 354.7 mm Reference Value = 0.490 A/m; Power Drift = -0.001 dB

Hearing Aid Near-Field Category: M2 (AWF 0 dB)

Peak H-field in A/m Grid 1 Grid 2 Grid 3 0.395 M2 0.428 M2 0.415 M2 Grid 4 Grid 5 Grid 6 0.434 M2 0.465 M2 0.451 M2 Grid 8 Grid 7 Grid 9 0.423 M2 0.409 M2 0.394 M2



 $0 \, dB = 0.465 \, A/m$

3.3.2 DASY4 E-Field Result

Date/Time: 07.11.2007 15:57:04

Test Laboratory: SPEAG Lab 2

DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Serial: 1008 Communication System: CW; Frequency: 1880 MHz; Duty Cycle: 1:1 Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1000$ kg/m³ Phantom section: E Dipole Section Measurement Standard: DASY4 (High Precision Assessment)

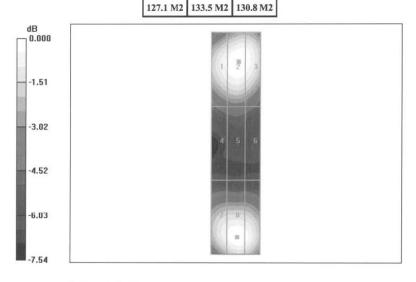
DASY4 Configuration:

- Probe: ER3DV6 SN2336; ConvF(1, 1, 1); Calibrated: 27.12.2006
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn781; Calibrated: 02.10.2007
- Phantom: HAC Test Arch with Coil; Type: SD HAC P01 BA; Serial: 1070
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

E Scan - Sensor Center 10mm above CD1880V3 Dipole/Hearing Aid Compatibility Test (41x181x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 133.7 V/m Probe Modulation Factor = 1.00 Device Reference Point: 0.000, 0.000, 354.7 mm Reference Value = 149.2 V/m; Power Drift = 0.031 dB Hearing Aid Near-Field Category: M2 (AWF 0 dB)

> Peak E-field in V/m Grid 2 Grid 1 Grid 3 128.8 M2 133.7 M2 132.1 M2 Grid 4 Grid 5 Grid 6 88.1 M3 90.8 M3 87.7 M3 Grid 7 Grid 8 Grid 9



0 dB = 133.7 V/m