RESEARCH IN MOTION	Appendices for the BlackB Model No. RAP40GW Tes	5	ndheld	Page 1(30)
Author Data	Dates of Test	Test Report No	FCC ID:	
Daoud Attayi	May 03 – 19, 2004	RIM-0086-0405-01	L6ARAP40GV	V

APPENDIX D: PROBE & DIPOLE CALIBRATION DATA

RESEARCH IN MOTION	Appendices the BlackBerry No. RAP40GW test report	•	eld Model	Page 2(30)
Author Data	Dates of Test	Test Report No	FCC ID:	
Daoud Attayi	May 03–13 & June 08-11, 2004	RIM-0086-0405-01	L6ARAP40	GW

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

-

Client RIM			
CALIBRATION (ERTIFICAT		
bject(s)	ET3DV6 - SN:	1643	
Calibration procedure(s)	QA CAL-01 v2 Calibration prov	cedure for dosimetric E-field prob	85
Calibration date:	October 9, 200	3	
Condition of the calibrated item	In Tolerance (a	ccording to the specific calibration	n document)
This calibration statement documer 17025 international standard.	nts traceability of M&TE u	ised in the calibration procedures and conformity of	f the procedures with the ISO/IEC
Il calibrations have been conducte	d in the closed laboratory	y facility: environment temperature 22 +/- 2 degree	s Celsius and humidity < 75%.
alibration Equipment used (M&TE	critical for calibration)		
lodel Type	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
ower meter EPM E4419B	GB41293874	2-Apr-03 (METAS, No 252-0250)	Apr-04
ower sensor E4412A	MY41495277	2-Apr-03 (METAS, No 252-0250)	Apr-04
eference 20 dB Attenuator	SN: 5086 (20b)	3-Apr-03 (METAS No. 251-0340	Apr-04
luke Process Calibrator Type 702		8-Sep-03 (Sintrel SCS No. E-030020)	Sep-04
ower sensor HP 8481A	MY41092180	18-Sep-02 (Agilent, No. 20020918)	In house check: Oct 03
RF generator HP 8684C letwork Analyzer HP 8753E	US3642U01700 US37390585	4-Aug-99 (SPEAG, in house check Aug-02) 18-Oct-01 (Agilent, No. 24BR1033101)	In house check: Aug-05 In house check: Oct 03
	0337390363	10-00-01 (Agreent, NO. 24BR 1033101)	in house check: Oct 03
Calibrated by:	Name Nico Vetterli	Function Technician	Signature Willow
Approved by:	Katja Pokovic	Laboratory Director	plus Kig-
	***************************************		Date issued: October 9, 2003
his calibration certificate is issued a alibration Laboratory of Schmid &		on until the accreditation process (based on ISO/IE is completed.	C 17025 International Standard) for
30-KP0301061-A	······································		Page 1 (1

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RESEARCH IN MOTION	Appendices the BlackBerry No. RAP40GW test report		eld Model	Page 3(30)
Author Data	Dates of Test	Test Report No	FCC ID:	
Daoud Attayi	May 03–13 & June 08-11, 2004	RIM-0086-0405-01	L6ARAP40	GW

Schmid & Partner Engineering AG

s <u>p e a g</u>

Zeughausstrasse 43, 8004 Zurich, Switzerland Phone +41 1 245 9700, Fax +41 1 245 9779 info@speag.com, http://www.speag.com

Probe ET3DV6

SN:1643

Manufactured:November 7, 2001Last calibration:September 24, 2002Recalibrated:October 9, 2003

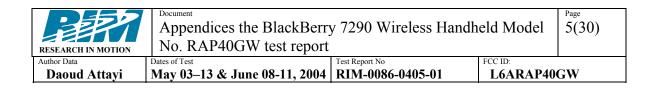
Calibrated for DASY Systems (Note: non-compatible with DASY2 system!)

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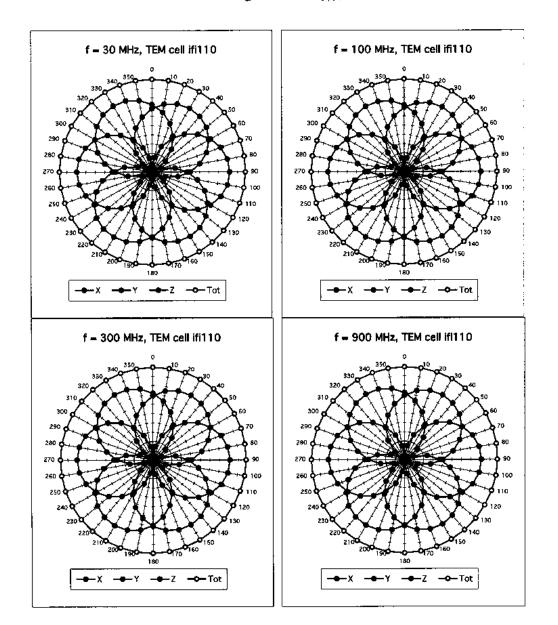
RESEARCH IN MOTION	Appendices the BlackBerry No. RAP40GW test report		eld Model	Page 4(30)
Author Data	Dates of Test	Test Report No	FCC ID:	
Daoud Attayi	May 03–13 & June 08-11, 2004	RIM-0086-0405-01	L6ARAP400	GW

October 9, 2003

			=0 ···///////=>2		DODY		
	NormX		.73 μV/(V/m) ²		DCP X	96	r
	NormY		.88 μV/(V/m) ²		DCP Y	96	r
	NormZ	1	.81 μV/(V/m) ²		DCP Z	96	r
Sensitiv	vity in Tissue	e Simula	ting Liquid				
Head		0 MHz	ε _r = 41.5	± 5%	$\sigma = 0.97 \pm 5\%$	mho/m	
Valid for f=	800-1000 MHz v	vith Head Ti	ssue Simulating Liquid a	ccording to EN 5	0361, P1528-200	x	
	ConvF X		6.5 ± 9.5% (k=2)		Boundary e	ffect:	
	ConvF Y		6.5 ± 9.5% (k=2)		Alpha	0.37	
	ConvF Z		6.5 ± 9.5% (k=2)		Depth	2.72	
Head	180	0 MHz	ε _r = 40.0	± 5%	σ= 1.40 ± 5%	mho/m	
Valid for f=	=1710-1910 MHz	with Head	Tissue Simulating Liquid	according to EN	50361, P1528-20	OX	
	ConvF X		5.2 ± 9.5% (k=2)		Boundary e	ffect:	
	ConvF Y		5.2 ± 9.5% (k=2)		Alpha	0.47	
	ConvF Z		5.2 ± 9.5% (k=2)		Depth	2.87	
Round	ary Effect						
Head		0 MHz	Typical SAR grad	lient: 5 % per m	m		
neau	50		Typical SAR grad	nent. 5 % per n			
	Probe Tip to	Boundary			1 mm	2 mm	
	SAR _{be} [%]	Without 0	Correction Algorithm		10.8	6.3	
	SAR _{be} [%]	With Cor	rection Algorithm		0.4	0.6	
Head	180	00 MHz	Typical SAR grad	lient: 10 % per	mm		
	Probe Tip to	Boundary			1 mm	2 mm	
	SAR _{be} [%]		Correction Algorithm		14.5	10.1	
	SAR _{be} [%]	With Cor	rection Algorithm		0.2	0.1	
Sensor	Offset						
	Probe Tip to	Sensor Cer	nter	2.7		mm	



October 9, 2003

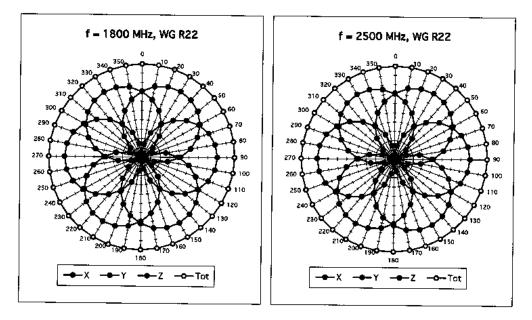


Receiving Pattern (ϕ), $\theta = 0^{\circ}$

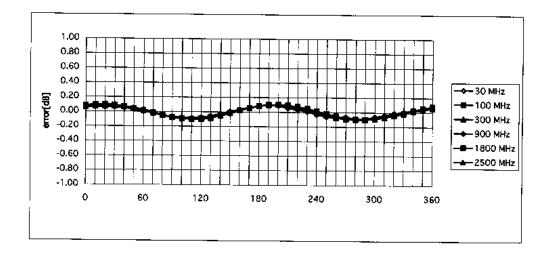


RESEARCH IN MOTION	Appendices the BlackBerry No. RAP40GW test report		eld Model	Page 6(30)
Author Data	Dates of Test	Test Report No	FCC ID:	
Daoud Attayi	May 03–13 & June 08-11, 2004	RIM-0086-0405-01	L6ARAP40	GW

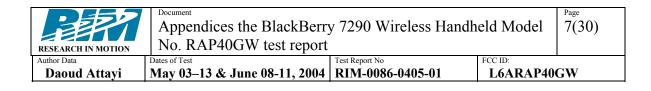
October 9, 2003



Isotropy Error (ϕ), $\theta = 0^{\circ}$



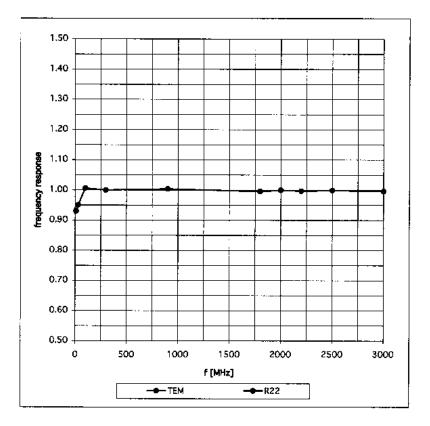




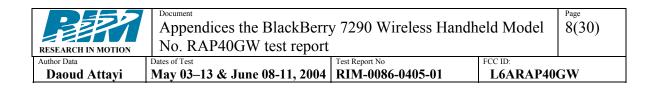
October 9, 2003

Frequency Response of E-Field

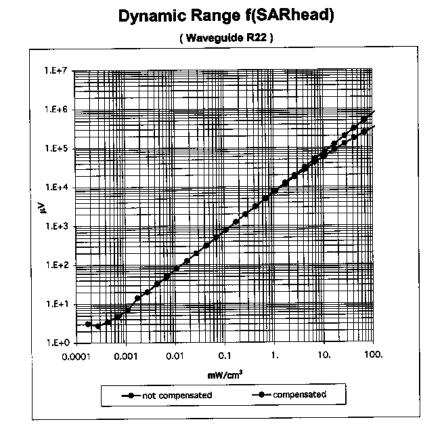
(TEM-Cell:if110, Waveguide R22)

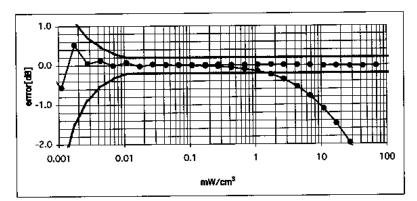


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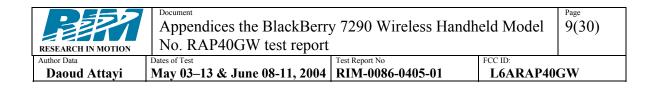


October 9, 2003

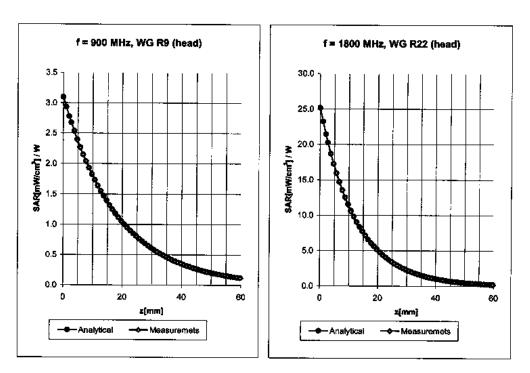




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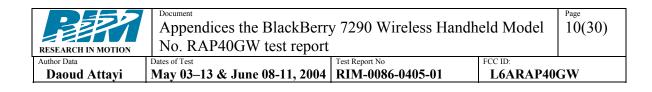
October 9, 2003



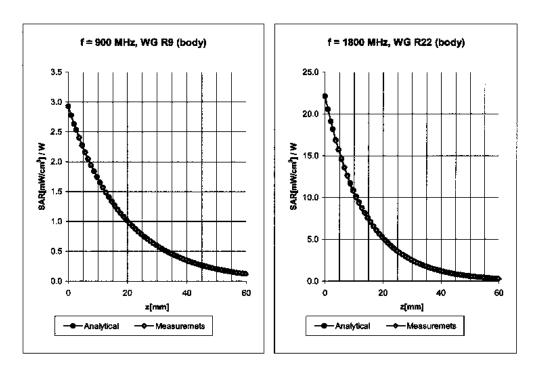
Conversion Factor Assessment

Head	900 MHz		६= 41.5 ± 5%	σ.	0.97 ± 59	6 mho/m
Valid for f=8	000-1000 MHz with Head	Tissue Simul	lating Liquid according	to EN 503	61, P1528-20	oox
	ConvF X	6.5 ± 9.5	% (k=2)		Boundary e	ffect:
	ConvF Y	6.5 ± 9.5	% (k=2)		Alpha	0.37
	ConvF Z	6.5 ± 9.5	% (k=2)		Depth	2.72
Head	1800 MHz		e₁= 40.0 ± 5%	σ.	1.40 ± 59	i mho/m
Valid for f=1	710-1910 MHz with Hea	d Tissue Sim	ulating Liquid accordin	g to EN 503	361, P1528-	zoox
	ConvF X	5.2 ± 9.5	% (k=2)		Boundary e	ffect:
	ConvF Y	5.2 ± 9.5	% (k=2)		Alpha	0.47
	ConvF Z	5.2 ± 9.5	% (k=2)		Depth	2.87
Vaild for f=1	ConvF X ConvF Y	5.2 ±9.5	% (k=2) % (k=2)	g to EN 50:	Boundary e Alpha	ffect: 0.47

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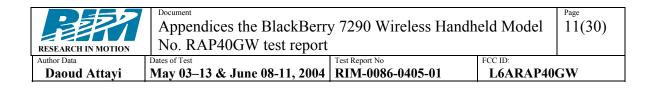
October 9, 2003



Conversion Factor Assessment

Body	900 MHz		&= 55.0 ± 5%	σ =	1.05 ± 5% mho/r	n
Valid for f=	800-1000 MHz with Body	/ Tissue	e Simulating Liquid according to OET	Г 65 5	Suppl. C	
	ConvF X	6.3	± 9.5% (k=2)		Boundary effect:	
	ConvF Y	6.3	± 9.5% (k=2)		Alpha	0.43
	ConvF Z	6.3	± 9.5% (k=2)		Depth	2.49
Body	1800 MHz		&= 53.3 ± 5%	6 •	1.52 ± 5% mho/r	п
Valid for f=	1710-1910 MHz with Bo	dy Tissi	ue Simulating Liquid according to O	ET 65	Suppl. C	
	ConvF X	4.8	± 9.5% (k=2)		Boundary effect:	
	ConvF Y	4.8	± 9.5% (k=2)		Alpha	0.57
	ConvF Z	4.8	± 9.5% (k=2)		Depth	2.74

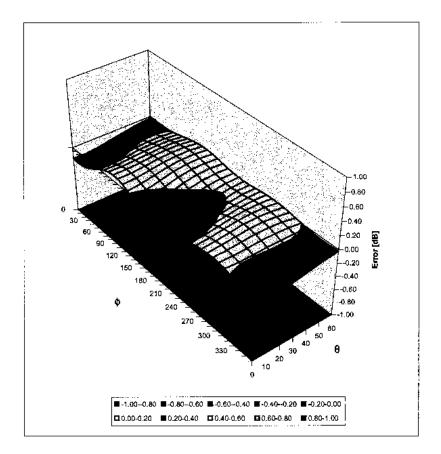
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October 9, 2003

Deviation from Isotropy in HSL

Error (θ, ϕ) , f = 900 MHz



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Author Data	Dates of Test	Test Report No	FCC ID:	
Daoud Attayi	May 03–13 & June 08-11, 2004	RIM-0086-0405-01	L6ARAP40	GW

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

Olia n4	i esti na	1111	1931.	1411	1.12.14	1.145	a 12	1.1
Client	PUM	higger i a	76.5 P	4	-12-0-	199 - N	관건	- 22

46 edure for dipole validation kits 3 coording to the specific calibratia sed in the calibration procedures and conformity	oo docum e nt)
edure for dipole validation kits 3 ccording to the specific calibrati	pə. document)
ccording to the specific calibrati	oo document)
	on document)
sed in the calibration procedures and conformity	
facility: environment temperature 22 +/- 2 degre	
Cal Date (Cafibrated by, Cartificate No.) 27-Mar-2002 (R&S, No. 20-92389) 18-Oct-02 (Agilent, No. 20021018) 30-Oct-02 (METAS, No. 252-0236) 30-Oct-02 (METAS, No. 252-0236) 18-Oct-01 (Agilent, No. 24BR1033101)	Scheduled Calibration In house check: Mar-05 Oct-04 Oct-03 Oct-03 In house check: Oct 03
Function Technican	Signature
Lationatory Director	flow fog-
	Date issued: August 22, 2003
on until the accreditation process (based on ISO/	IEC 17025 International Standard) for
ic	ion until the accreditation process (based on ISO/ 3 is completed

RESEARCH IN MOTION	Appendices the BlackBerry 7290 Wireless Handheld Model No. RAP40GW test report			
Author Data	Dates of Test	Test Report No	FCC ID:	
Daoud Attayi	May 03–13 & June 08-11, 2004	RIM-0086-0405-01	L6ARAP40	GW
	······································			



Zeughausstrasse 43, 8004 Zurich, Switzerland Phone +41 1 245 9700, Fax +41 1 245 9779 info@speag.com, http://www.speag.com

DASY

Dipole Validation Kit

Type: D835V2

Serial: 446

Manufactured: October 24, 2001 Calibrated: August 21, 2003

RESEARCH IN MOTION	Appendices the BlackBerry No. RAP40GW test report	-	eld Model	Page 14(30)
Author Data	Dates of Test	Test Report No	FCC ID:	
Daoud Attayi	May 03–13 & June 08-11, 2004	RIM-0086-0405-01	L6ARAP40	GW

1. Measurement Conditions

The measurements were performed in the flat section of the SAM twin phantom filled with head simulating solution of the following electrical parameters at 835 MHz:

Relative Dielectricity	43.3	± 5%
Conductivity	0.91 mho/m	± 5%

The DASY4 System with a dosimetric E-field probe ET3DV6 (SN:1507, Conversion factor 6.7 at 835 MHz) was used for the measurements.

The dipole was mounted on the small tripod so that the dipole feedpoint was positioned below the center marking of the flat phantom section and the dipole was oriented parallel to the body axis (the long side of the phantom). The standard measuring distance was <u>15mm</u> from dipole center to the solution surface. The included distance spacer was used during measurements for accurate distance positioning.

The coarse grid with a grid spacing of 15mm was aligned with the dipole. The 7x7x7 fine cube was chosen for cube integration.

The dipole input power (forward power) was 250 mW \pm 3 %. The results are normalized to 1W input power.

2. SAR Measurement with DASY4 System

Standard SAR-measurements were performed according to the measurement conditions described in section 1. The results (see figure supplied) have been normalized to a dipole input power of 1W (forward power). The resulting averaged SAR-values measured with the dosimetric probe ET3DV6 SN:1507 and applying the <u>advanced extrapolation</u> are:

averaged over 1 cm^3 (1 g) of tissue:	9.60 mW/g ± 16.8 % (k=2) ¹
averaged over 10 cm ³ (10 g) of tissue:	6.24 mW/g ± 16.2 % $(k=2)^{1}$

¹ validation uncertainty

RESEARCH IN MOTION	Appendices the BlackBerry No. RAP40GW test report	-	eld Model	Page 15(30)
Author Data	Dates of Test	Test Report No	FCC ID:	
Daoud Attayi	May 03–13 & June 08-11, 2004	RIM-0086-0405-01	L6ARAP40	GW

3. Dipole Impedance and Return Loss

The impedance was measured at the SMA-connector with a network analyzer and numerically transformed to the dipole feedpoint. The transformation parameters from the SMA-connector to the dipole feedpoint are:

Electrical delay:	1.395 ns	(one direction)
Transmission factor:	0.983	(voltage transmission, one direction)

The dipole was positioned at the flat phantom sections according to section 1 and the distance spacer was in place during impedance measurements.

Feedpoint impedance at 835 MHz:	$\operatorname{Re}\{Z\} = 48.9 \Omega$
	$\operatorname{Im} \{Z\} = -5.5 \Omega$
Return Loss at 835 MHz	-24.9 dB

4. Handling

Do not apply excessive force to the dipole arms, because they might bend. Bending of the dipole arms stresses the soldered connections near the feedpoint leading to a damage of the dipole.

5. Design

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.

6. Power Test

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

RESEARCH IN MOTION	Appendices the BlackBerry 7290 Wireless Handheld Model 16(3 No. RAP40GW test report			
Author Data	Dates of Test	Test Report No	FCC ID:	
Daoud Attayi	May 03–13 & June 08-11, 2004	RIM-0086-0405-01	L6ARAP40	GW
			•	

Page 1 of 1 Date/Time: 08/21/03 10:03:51

Test Laboratory: SPEAG, Zurich, Switzerland File Name: <u>SN446_SN1507_HSL835_210803.da4</u>

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN446 Program: Dipole Calibration

Communication System: CW-835; Frequency: 835 MHz;Duty Cycle: 1:1 Medium: HSL 835 MHz ($\sigma = 0.91$ mho/m, $\epsilon_r = 43.28$, $\rho = 1000$ kg/m³) Phantom section: Flat Section Measurement Standard: DASY4 (High Precision Assessment)

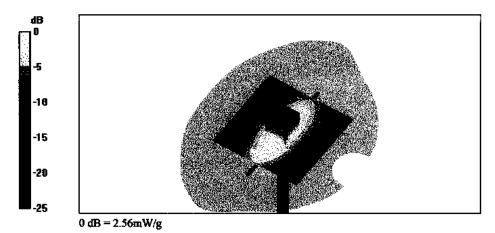
DASY4 Configuration:

- Probe: ET3DV6 SN1507; ConvF(6.7, 6.7, 6.7); Calibrated: 1/18/2003
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 SN411; Calibrated: 1/16/2003
- Phantom: SAM with CRP TP1006; Type: SAM 4.0; Serial: TP:1006
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Pin = 250 mW; d = 15 mm/Area Scan (81x81x1): Measurement grid: dx=15mm, dy=15mm Reference Value = 55.3 V/m Power Drift = -0.02 dB Maximum value of SAR = 2.55 mW/g

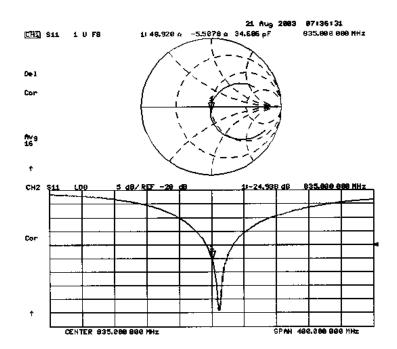
Pin = 250 mW; d = 15 mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Peak SAR (extrapolated) = 3.52 W/kg SAR(1 g) = 2.4 mW/g; SAR(10 g) = 1.56 mW/g

SAR(1 g) = 2.4 mW/g; SAR(10 g) = 1.3 Reference Value = 55.3 V/m Power Drift = -0.02 dB Maximum value of SAR = 2.56 mW/g



RESEARCH IN MOTION NO. RAP40GW test	Appendices the BlackBerry 7290 Wireless Handheld Model No. RAP40GW test report		
Author Data Dates of Test	Test Report No	FCC ID:	
Daoud Attayi May 03–13 & June 08-1	1,2004 RIM-0086-0405-0	1 L6ARAP40	GW

446



RESEARCH IN MOTION	Appendices the BlackBerry 7290 Wireless Handheld Model 18(30 No. RAP40GW test report			
Author Data	Dates of Test	Test Report No	FCC ID:	
Daoud Attayi	May 03–13 & June 08-11, 2004	RIM-0086-0405-01	L6ARAP40	GW

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

Client RIM PERSON STREET

CALIBRATION	CERTIFICA		
Object(s)	D1900V2 - SM	1545 (1997) - El Santa de Historia (1997) - El Santa de Historia (1997) - El Santa de Historia (1997) - El Sa	
Calibration procedure(s)	QA CAL-05.v Calibration pr	2 ocadure for dipole validation kits	
Calibration date:	August 22, 20	03 ATTALL, MARCHER	
Condition of the calibrated item	In Tolerance (according to the specific calibrati	on document)
17025 international standard.	eted in the closed laborat	E used in the calibration procedures and conformity ory facility: environment temperature 22 -/- 2 degre	
Model Type	iD#	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
RF generator R&S SML-03 Power sensor HP 8481A Power sensor HP 8481A Power meter EPM E442 Network Analyzer HP 8753E	100698 MY41092317 US37292783 GB37480704 US37390585	27-Mar-2002 (R&S, No. 20-92389) 18-Oct-02 (Agilent, No. 20021018) 30-Oct-02 (METAS, No. 252-0236) 30-Oct-02 (METAS, No. 252-0236) 18-Oct-01 (Agilent, No. 24BR1033101)	In house check: Mar-05 Oct-04 Oct-03 Oct-03 In house check: Oct 03
	Name	Function	Signature
Calibrated by:	Judith Mueller	Techoican	pindet
Approved by:	Kátja Pokovic	Laboratory Director	flow they
			Date issued: August 24, 2003
This calibration certificate is issue Calibration Laboratory of Schmid		Nation until the accreditation process (based on ISO AG is completed.	/IEC 17025 International Standard) for
			Page 1 (1

RESEARCH IN MOTION	Appendices the BlackBerry 7290 Wireless Handheld Model 19(3 No. RAP40GW test report			
Author Data	Dates of Test	Test Report No	FCC ID:	
Daoud Attayi	May 03–13 & June 08-11, 2004	RIM-0086-0405-01	L6ARAP40GW	

Schmid & Partner Engineering AG SDC A G

Zeughausstrasse 43, 8004 Zwich, Switzerland Phone +41 1 245 9700, Fax +41 1 245 9779 info@speeg.com, http://www.speeg.com

DASY

Dipole Validation Kit

Type: D1900V2

Serial: 545

Manufactured: November 15, 2001 Calibrated: August 22, 2003

RESEARCH IN MOTION	Appendices the BlackBerry No. RAP40GW test report	•	eld Model	Page 20(30)
Author Data	Dates of Test	Test Report No	FCC ID:	
Daoud Attayi	May 03–13 & June 08-11, 2004	RIM-0086-0405-01	L6ARAP40	GW

1. Measurement Conditions

The measurements were performed in the flat section of the SAM twin phantom filled with head simulating solution of the following electrical parameters at 1900 MHz:

Relative Dielectricity	40.2	± 5%
Conductivity	1.46 mbo/m	± 5%

The DASY4 System with a dosimetric E-field probe ET3DV6 (SN:1507, Conversion factor 5.2 at 1900 MHz) was used for the measurements.

The dipole was mounted on the small tripod so that the dipole feedpoint was positioned below the center marking of the flat phantom section and the dipole was oriented parallel to the body axis (the long side of the phantom). The standard measuring distance was <u>10mm</u> from dipole center to the solution surface. The included distance spacer was used during measurements for accurate distance positioning.

The coarse grid with a grid spacing of 15mm was aligned with the dipole. The 7x7x7 fine cube was chosen for cube integration.

The dipole input power (forward power) was 250 mW \pm 3 %. The results are normalized to 1W input power.

2. SAR Measurement with DASY4 System

Standard SAR-measurements were performed according to the measurement conditions described in section 1. The results (see figure supplied) have been normalized to a dipole input power of 1W (forward power). The resulting averaged SAR-values measured with the dosimetric probe ET3DV6 SN:1507 and applying the <u>advanced extrapolation</u> are:

averaged over 1 cm^3 (1 g) of tissue:	41.2 mW/g \pm 16.8 % (k=2) ¹
averaged over 10 cm ³ (10 g) of tissue:	21.3 mW/g \pm 16.2 % (k=2) ¹

validation uncertainty

RESEARCH IN MOTION	Appendices the BlackBerry No. RAP40GW test report	•	eld Model	Page 21(30)
Author Data	Dates of Test	Test Report No	FCC ID:	
Daoud Attayi	May 03–13 & June 08-11, 2004	RIM-0086-0405-01	L6ARAP40	GW

3. Dipole Immediance and Return Loss

The impedance was measured at the SMA-connector with a network analyzer and minimically transformed to the dipole feedpoint. The transformation parameters from the SMA-connector to the dipole feedpoint are:

Electrical delay:	1.198 ns	(one direction)
Transmission factor.	0.984	(voltage transmission, one direction)

The dipole was positioned at the flat phantom sections according to section 1 and the distance spacer was in place during impedance measurements.

Feedpoint impedance at 1900 MHz:	Re{Z} = 49.7 Ω
	lm (Z) = 0,96 Ω
Return Loss at 1900 MHz	-39.9 dB

4. Handling

Do not apply excessive force to the dipole arms, because they might bend. Bending of the dipole arms stresses the soldered connections near the feedpoint leading to a damage of the dipole.

5. Design

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.

Small end caps have been added to the dipole arms in order to improve matching when loaded according to the position as explained in Section 1. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

6. Power Test

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

RESEARCH IN MOTION	Appendices the BlackBerry No. RAP40GW test report	•	eld Model	Page 22(30)
Author Data	Dates of Test	Test Report No	FCC ID:	
Daoud Attayi	May 03–13 & June 08-11, 2004	RIM-0086-0405-01	L6ARAP400	GW

Page 1 of 1 Date/Time: 08/22/03 15:40:53

Test Laboratory: SPEAG, Zurich, Switzerland File Name: <u>SN545_SN1507_HSL1900_220803.da4</u>

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN545 Program: Dipole Calibration

Communication System: CW-1900; Frequency: 1900 MHz;Duty Cycle: 1:1 Medium: HSL 1900 MHz ($\sigma = 1.46$ mbo/m, $\varepsilon_{\tau} = 40.17$, p = 1000 kg/m³) Phantom section: Flat Section Measurement Standard: DASY4 (High Precision Assessment)

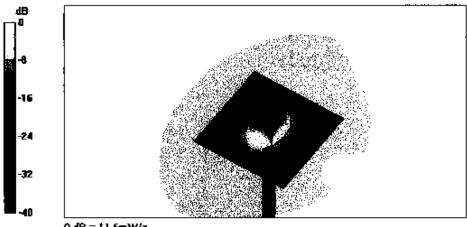
DASY4 Configuration:

- Probe: ET3DV6 SN1507; ConvF(5.2, 5.2, 5.2); Calibrated: 1/18/2003
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 SN411; Calibrated: 1/16/2003
- Phantom: SAM with CRP TP1006; Type: SAM 4.0; Serial: TP:1006
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Pin = 250 mW; d = 10 mm/Ares Scan (\$1x\$111); Measurement grid: dx=15mm, dy=15mm Reference Value = 93.6 V/m Power Drift = 0.05 dB Maximum value of SAR = 11.5 mW/g

Pin = 250 mW; d = 10 mm/Zoom Scan (71717)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Peak SAR (extrapolated) = 17.7 W/kg

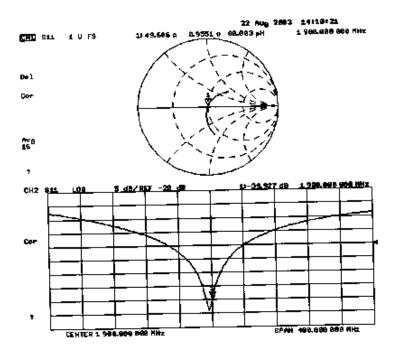
SAR(1 g) = 10.3 mW/g; SAR(10 g) = 5.32 mW/g Reference Value = 93.6 V/m Power Drift = 0.05 dB Maximum value of SAR = 11.5 mW/g



0 dB = 11.5 mW/g

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Daoud Attayi M	lay 03–13 & June 08-11, 2004	RIM-0086-0405-01	L6ARAP400	GW

545



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Daoud Attayi	May 03–13 & June 08-11, 2004	RIM-0086-0405-01	L6ARAP40	GW

APPENDIX E: SAR SET UP PHOTOS

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Daoud Attayi	May 03–13 & June 08-11, 2004	RIM-0086-0405-01	L6ARAP40	GW

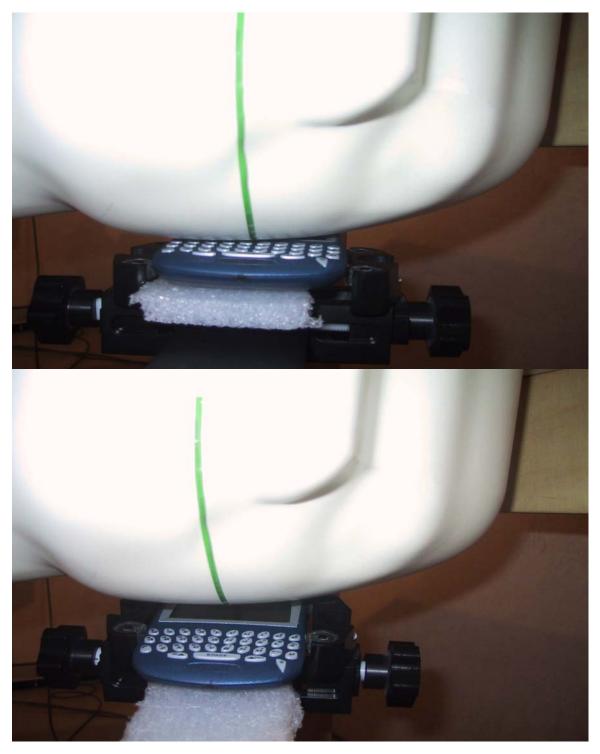


Figure E1. Left ear configuration

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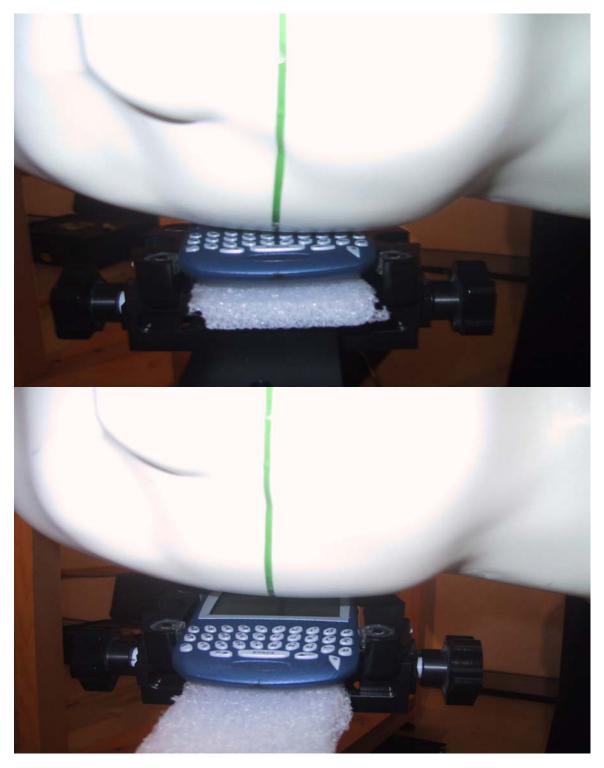


Figure E2. Right ear configuration

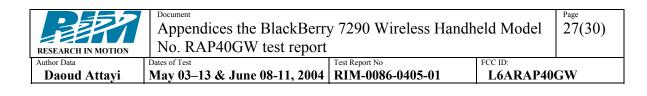






Figure E3. Body worn configuration with Plastic Holster and Leather Swivel Holster

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	•		•	



Figure E4. Body worn configuration with Leather Swivel Holster & Headset

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Author Data	Dates of Test	Test Report No	FCC ID:	
Daoud Attayi	May 03–13 & June 08-11, 2004	RIM-0086-0405-01	L6ARAP40GW	





Figure E5. Body worn configuration with Vertical Foam Holster

RESEARCH IN MOTION	Appendices the BlackBerry 7290 Wireless Handheld Model No. RAP40GW test report				
Author Data	Dates of Test	Test Report No	FCC ID:		
Daoud Attayi	May 03–13 & June 08-11, 2004	RIM-0086-0405-01	L6ARAP40GW		



Figure E6. Body worn configuration with Horizontal Foam Holster