TEST REPORT
FROM
RFI GLOBAL SERVICES LTD

Test of: Blocsock BBIP01

To: EN 50360:2001 Incorporating Corrigendum No. 1

Test Report Serial No:
RFI/SAR1/RP77086JD01A

This Test Report Is Issued Under The Authority Of Scott D'Adamo, Group Service Manager Global Approvals: 	
Checked By: Richelieu Quoi 	**Report Copy No: PDF01**
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To: EN 50360:2001 Incorporating Corrigendum No. 1

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To: **EN 50360:2001 Incorporating Corrigendum No. 1**

1. Customer Information

Company Name:	Wireless Protection
Address:	Bank top Kiln lane Paythorne Lancs BB7 4JD

2. Equipment Under Test (EUT)

2.1. Identification of Equipment Under Test (EUT)

Description:	Phone Sack
Brand Name:	Blocsock
Model Name or Number:	BB1P01
Serial Number:	None Stated
Country of Manufacture:	None Stated
Date of Receipt:	09th March 2010

Description:	Mobile Handset
Brand Name:	BlackBerry
Model Name or Number:	8520 Curve
Serial Number:	None Stated
IMEI Number:	359428033225780
Hardware Version Number:	None Stated
Software Version Number:	None Stated
Hardware Revision of GSM Module:	None Stated
Software Revision of GSM Module:	None Stated
FCC ID Number:	L6ARCG40GW
Country of Manufacture:	Hungary
Date of Receipt:	09th March 2010

2.2. Description of EUT

The Equipment Under Test is a customised mobile phone sack (Blocsock) that is used in conjunction with a Mobile handset. Test was performed at EGSM900 band using a BlackBerry Mobile handset.

2.3. Modifications Incorporated in the EUT

There were no modifications incorporated in the EUT.

2.4. Accessories

The following accessories were supplied with the EUT during testing:

Description:	Battery
Brand Name:	BlackBerry
Model Name or Number:	C-S2
Serial Number:	None Stated
Cable Length and Type:	Not Applicable
Country of Manufacture:	Japan
Connected to Port	4 Pin Contact point

Description:	Memory Card
Brand Name:	None Stated
Model Name or Number:	None Stated
Serial Number:	None Stated
Cable Length and Type:	Not Applicable
Country of Manufacture:	China
Connected to Port	Dedicated micro-SD card port

2.5. Support Equipment

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

Description:	GSM Communication Test Set
Brand Name:	Will'tek
Model Name or Number:	4202S
Serial Number:	513018
Cable Length and Type:	~2.0 m Utiflex RF cable
Connected to Port:	RF Input/ Output Port

2.6. Additional Information Related to Testing

Equipment Category	EGSM900		
Type of Unit	Portable Passive Mobile Phone Sack		
Intended Operating Environment:	Within GSM Coverage		
Transmitter Maximum Output Power Characteristics:	EGSM900	33dBm	
Transmitter Frequency Range:	EGSM900	(880 to 915) MHz	
Transmitter Frequency Allocation of EUT When Under Test:	**Channel Number**	**Channel Description**	**Frequency (MHz)**
	975	Low	880.2
	37	Middle	897.4
	124	High	914.8
Modulation(s):	Support Mobile Handset: GMSK: 217 Hz		
Modulation Scheme (Crest Factor):	Support Mobile Handset: 8.3		
Antenna Type:	Support Mobile Handset: Internal		
Antenna Length:	Support Mobile Handset: Unknown		
Number of Antenna Positions:	Support Mobile Handset: 1 Fixed		
Power Supply Requirement:	Support Mobile Handset: 3.7 V		
Battery Type(s):	Support Mobile Handset: Li-Ion		

3. Test Specification, Methods and Procedures

3.1. Test Specification

Reference:	EN 50360:2001 Incorporating Corrigendum No. 1
Title:	Basic Standard for the measurement of Specific Absorption Rate related to human exposure to electromagnetic fields from mobile phones (300 MHz - 3 GHz).
Purpose of Test:	To determine whether the equipment met the basic restrictions as defined in Council Recommendation 1999/519/EC using the SAR averaging method as described in the test specification above.

3.2. Methods and Procedures Reference Documentation

The methods and procedures used were as detailed in:

EN 62209-1: 2006
Title: Basic standard for the measurement of specific absorption rate related to human exposure to electromagnetic fields from mobile phones (300 MHz - 3 GHz).

ANSI/IEEE C95.1: 1999
IEEE standard for safety levels with respect to human exposure to radio frequency electromagnetic fields, 3 kHz to 300 GHz.

3.3. Definition of Measurement Equipment

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

4. Deviations from the Test Specification

Testing was performed on a passive mobile handset sack supported via a GSM mobile handset in call allocated mode. Testing was performed without the Blocsock (sack) to establish the worst-case configuration on the mobile handset. The worst-case configuration was than applied to the Blocsock (sack) with the mobile handset placed in the pouch.

5. Operation and Configuration of the EUT during Testing

5.1. Operating Modes

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

- EGSM900 call allocated mode with mobile handset placed in the Blocsock (sack) pouch and GSM test set configured to allow the mobile handset to transmit at maximum power of up to 33dBm.
- EGSM900 call allocated mode with mobile handset only and GSM test set configured to allow the mobile handset to transmit at maximum power of up to 33dBm.

5.2. Configuration and Peripherals

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

- Head configuration with the mobile handset placed in the Blocsock (sack) pouch.
- Head configuration without the mobile handset placed in the Blocsock (sack) pouch.
- Standalone battery powered.

Head Configuration

a) The handset was placed in a normal operating position with the centre of the ear-piece aligned with the ear canal on the phantom.

b) With the ear-piece touching the phantom the centre line of the handset was aligned with an imaginary plane (X and Y axis) consisting of three lines connecting both ears and the mouth.

c) For the cheek position the handset was gradually moved towards the cheek until any point of the mouth-piece or keypad touched the cheek.

d) For the tilted position the EUT was positioned as for the cheek position, and then the horizontal angle was increased by fifteen degrees (the phone keypad was moved away from the cheek by fifteen degrees).

e) SAR measurements were evaluated at maximum power and the unit was operated for an appropriate period prior to the evaluation in order to minimise the drift.

f) The device was keyed to operate continuously in the transmit mode for the duration of the test.

g) The location of the maximum spatial SAR distribution (hot spot) was determined relative to the handset and its antenna.

h) The EUT was transmitting at full power throughout the duration of the test powered by a fully charged battery.

6. Summary of Test Results

Test Name	Specification Reference	Result
Specific Absorption Rate-EGSM900 Head Configuration 10g	EN50360:2001 Incorporating Corrigendum No. 1	Complied

6.1. Location of Tests

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

7. Measurements, Examinations and Derived Results

7.1. General Comments

This section contains test results only.

Measurement uncertainties are evaluated in accordance with current best practice. Our reported expanded uncertainties are based on standard uncertainties, which are multiplied by an appropriate coverage factor to provide a statistical confidence level of approximately 95%. Please refer to section 8 for details of measurement uncertainties.

7.2. Test Results

7.2.1.Specific Absorption Rate - EGSM900 Head Configuration 10g

Test Summary:

Tissue Volume:	10g
Maximum Level With Mobile Handset Only (W/kg):	0.805
Maximum Level Mobile Handset Placed in Blocsock Pouch (W/kg):	0.032

Environmental Conditions:

Temperature Variation in Lab (°C):	24.0 to 24.0
Temperature Variation in Liquid (°C):	23.3 to 23.3

Results:

EUT Position	Phantom Configuration	Channel Number	Level (W/kg)	Limit (W/kg)	Margin (W/kg)	Note(s)	Result
Touch	Left	37	0.805	2.000	1.195	1	Complied
Tilt	Left	37	0.443	2.000	1.557	1	Complied
Touch	Right	37	0.770	2.000	1.230	1	Complied
Tilt	Right	37	0.476	2.000	1.524	1	Complied
Touch	Left	37	0.032	2.000	1.968	1, 2	Complied

Note(s):

1. SAR test was performed in the middle channel only as the measured levels were < 50% of the SAR limit.
2. Using overall worst-case orientation with the mobile handset placed in the Blocsock sack.

8. Measurement Uncertainty

No measurement or test can ever be perfect and the imperfections give rise to error of measurement in the results. Consequently, the result of a measurement is only an approximation to the value of the measurand (the specific quantity subject to measurement) and is only complete when accompanied by a statement of the uncertainty of the approximation.

The expression of uncertainty of a measurement result allows realistic comparison of results with reference values and limits given in specifications and standards.

The uncertainty of the result may need to be taken into account when interpreting the measurement results.

The reported expanded uncertainties below are based on a standard uncertainty multiplied by an appropriate coverage factor, such that a confidence level of approximately 95% is maintained. For the purposes of this document “approximately” is interpreted as meaning “effectively” or “for most practical purposes”.

Test Name	Confidence Level	Calculated Uncertainty
Specific Absorption Rate- EGSM900 Head Configuration 10g	95%	17.20%

The methods used to calculate the above uncertainties are in line with those recommended within the various measurement specifications. Where measurement specifications do not include guidelines for the evaluation of measurement uncertainty, the published guidance of the appropriate accreditation body is followed.

Measurement Uncertainty (Continued)

8.1. Specific Absorption Rate Uncertainty at 900 MHz Head 10g, GSM Modulation Scheme calculated in accordance with IEC 62209-1 & IEEE 1528

Type	Source of uncertainty	+ Value	- Value	Probability Distribution	Divisor	$c_{i\ (10g)}$	Standard Uncertainty		υ_i or υ_{eff}
							+ u (%)	- u (%)	
B	Probe calibration	11.000	11.000	normal (k=2)	2.0000	1.0000	5.500	5.500	∞
B	Axial Isotropy	0.500	0.500	normal (k=2)	2.0000	1.0000	0.250	0.250	∞
B	Hemispherical Isotropy	2.600	2.600	normal (k=2)	2.0000	1.0000	1.300	1.300	∞
B	Spatial Resolution	0.500	0.500	Rectangular	1.7321	1.0000	0.289	0.289	∞
B	Boundary Effect	0.769	0.769	Rectangular	1.7321	1.0000	0.444	0.444	∞
B	Linearity	0.600	0.600	Rectangular	1.7321	1.0000	0.346	0.346	∞
B	Detection Limits	0.200	0.200	Rectangular	1.7321	1.0000	0.115	0.115	∞
B	Readout Electronics	0.560	0.560	normal (k=2)	2.0000	1.0000	0.280	0.280	∞
B	Response Time	0.000	0.000	Rectangular	1.7321	1.0000	0.000	0.000	∞
B	Integration Time	1.730	1.730	Rectangular	1.7321	1.0000	0.999	0.999	∞
B	RF Ambient conditions	3.000	3.000	Rectangular	1.7321	1.0000	1.732	1.732	∞
B	Probe Positioner Mechanical Restrictions	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Probe Positioning with regard to Phantom Shell	2.850	2.850	Rectangular	1.7321	1.0000	1.645	1.645	∞
B	Extrapolation and integration/ Maximum SAR evaluation	5.080	5.080	Rectangular	1.7321	1.0000	2.933	2.933	∞
A	Test Sample Positioning	0.584	0.584	normal (k=1)	1.0000	1.0000	0.584	0.584	10
A	Device Holder uncertainty	0.154	0.154	normal (k=1)	1.0000	1.0000	0.154	0.154	10
B	Phantom Uncertainty	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Drift of output power	5.000	5.000	Rectangular	1.7321	1.0000	2.887	2.887	∞
B	Liquid Conductivity (target value)	5.000	5.000	Rectangular	1.7321	0.4300	1.241	1.241	∞
A	Liquid Conductivity (measured value)	3.410	3.410	normal (k=1)	1.0000	0.4300	1.466	1.466	5
B	Liquid Permittivity (target value)	5.000	5.000	Rectangular	1.7321	0.4900	1.415	1.415	∞
A	Liquid Permittivity (measured value)	4.140	4.140	normal (k=1)	1.0000	0.4900	2.029	2.029	5
	Combined standard uncertainty			t-distribution			8.77	8.77	>500
	Expanded uncertainty			k = 1.96			17.20	17.20	>500

Appendix 1. Test Equipment Used

RFI No.	Instrument	Manufacturer	Type No.	Serial No.	Date Last Calibrated	Cal. Interval (Months)
A034	Narda 20W Termination	Narda	374BNM	8706	Calibrated as part of system	-
A1094	Digital Camera	Sony	MVC - FD81	125805	-	-
A1097	SMA Directional Coupler	MiDISCO	MDC6223-30	None	Calibrated as part of system	-
A1137	3dB Attenuator	Narda	779	04690	Calibrated as part of system	-
A1174	Dielectric Probe Kit	Agilent Technologies	85070C	Us99360072	Calibrated before use	-
A1328	Handset Positioner	Schmid & Partner Engineering AG	Modification	SD 000 H01 DA	-	-
A1182	Handset Positioner	Schmid & Partner Engineering AG	V3.0	None	-	-
A1234	Data Acquisition Electronics	Schmid & Partner Engineering AG	DAE3	450	30 April 2009	12
A1378	Probe	Schmid & Partner Engineering AG	EX3 DV3	3508	26 June 2009	12
A1566	SAM Phantom	Schmid & Partner Engineering AG	SAM a	002	Calibrated before use	-
A1238	SAM Phantom	Schmid & Partners	SAM b	001	Calibrated before use	-
A1329	900 MHz Dipole Kit	Schmid & Partner Engineering AG	D900V2	185	18 Aug 2009	24
A1474	Amplifier	Mini-Circuits	ZVE-8G	638700305	Calibrated as part of system	-
A215	20 dB Attenuator	Narda	766-20	9402	Calibrated as part of system	-
A1531	Antenna	AARONIA AG	7025	02458	-	-
C1144	Cable	Rosenberger MICRO-COAX	FA147AF00 1503030	41842-1	Calibrated as part of system	-
C1145	Cable	Rosenberger MICRO-COAX	FA147AF00 3003030	41843-1	Calibrated as part of system	-
C1146	Cable	Rosenberger MICRO-COAX	FA147AF03 0003030	41752-1	Calibrated as part of system	-
G0528	Robot Power Supply	Schmid & Partner Engineering AG	DASY	None	Calibrated before use	-

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RFI No.	Instrument	Manufacturer	Type No.	Serial No.	Date Last Calibrated	Cal. Interval (Months)
G087	PSU	Thurlby Thandar	CPX200	100701	Calibrated before use	-
M1015	Network Analyser	Agilent Technologies	8753ES	US39172406	16 Sept 2008	12
M1047	Robot Arm	Staubli	RX908 L	F00/SD89A1/ A/01	Calibrated before use	-
M1159	Signal Generator	Agilent Technologies	E8241A	US42110332	Internal Checked 07 December 2009	4
M1071	Spectrum Analyzer	Agilent	HP8590E	3647U00514	(Monitoring use only)	-
M1044	Diode Power Sensor	Rohde & Schwarz	NRV-Z1	893350/019	19 May 2009	12
M265	Diode Power Sensor	Rohde & Schwarz	NRV-Z1	893350/017	19 May 2009	12
M263	Dual Channel Power Meter	Rohde & Schwarz	NRVD	826558/004	20 May 2009	12
M1270	Temperature/ Humidity/ Pressure Meter	RS Components	None	None	June 2009 (Internal Calibration)	12
S256	SAR Lab	RFI	Site 56	N/A	Calibrated before use	-

NB In accordance with UKAS requirements, all the measurement equipment is on a calibration schedule.

Appendix 2. Measurement Methods

A.2.1. Evaluation Procedure

The Specific Absorption Rate (SAR) evaluation was performed in the following manner:

a) (i) The evaluation was performed in an applicable area of the phantom depending on the type of device being tested. For devices worn about the ear during normal operation, both the left and right ear positions were evaluated at the centre frequency of the band at maximum power. The side, which produced the greatest SAR, determined which side of the phantom would be used for the entire evaluation. The positioning of the head worn device relative to the phantom was dictated by the test specification identified in section 3.1 of this report.

   (ii) For body worn devices or devices which can be operated within 20 cm of the body, the flat section of the SAM phantom was used were the size of the device(s) is normal. for bigger devices and base station the 2mm Oval phantom is used for evaluation. The type of device being evaluated dictated the distance of the EUT to the outer surface of the phantom flat section.

b) The SAR was determined by a pre-defined procedure within the DASY4 software. The exposed region of the phantom was scanned near the inner surface with a grid spacing of 20mm x 20mm or appropriate resolution.

c) A 5x5x7 matrix was performed around the greatest spatial SAR distribution found during the area scan of the applicable exposed region. SAR values were then calculated using a 3-D spline interpolation algorithm and averaged over spatial volumes of 1 and 10 grams.

d) If the EUT had any appreciable drift over the course of the evaluation, then the EUT was re-evaluated. Any unusual anomalies over the course of the test also warranted a re-evaluation.

A.2.2. Specific Absorption Rate (SAR) Measurements to EN50360:2001 Incorporating Corrigendum No. 1

Product standard to demonstrate the compliance of mobile phones with the basic restrictions related to electromagnetic fields (300 MHz – 3 GHz)

SAR measurements for head configuration were performed in accordance with Section 6 of the standard EN 62209-1:2006 (IEC 62209-1:2005), against appropriate limits for each measurement position in accordance with Council Recommendation: 1999/519/EC.

SAR measurements for body-worn configuration were performed in accordance with Appendix D of the standard FCC OET Bulletin 65 Supplement C: 2001, against appropriate limits for each measurement position in accordance with Council Recommendation: 1999/519/EC.

The test was performed in a shielded enclosure with the temperature controlled to remain between +18.0ºC and +25.0ºC. The tissue equivalent material fluid temperature was controlled to give a maximum variation of ± 2.0ºC

Prior to any SAR measurements on the EUT, system validation and material dielectric property measurements were conducted. In the absence of a detailed procedure within the specification, system validation and material dielectric property measurements were performed in accordance with annex D of EN 62209-1:2006 (IEC 62209-1:2005).

Following the successful system validation and material dielectric property measurements, a SAR versus time sweep shall be performed within 10 mm of the phantom inner surface. If the EUT power output is stable after three minutes then the measurement probe will perform a coarse surface level scan at each test position in order to ascertain the location of the maximum local SAR level. Once this area had been established, a 5x5x7 cube of 343 points (5 mm spacing in each axis ≈ 27g) will be centred at the area of concern. Extrapolation and interpolation will then be carried out on the 27g of tissue and the highest averaged SAR over a 10g cube determined.

Once the maximum interpolated SAR measurement is complete; the coarse scan is visually assessed to check for secondary peaks within 50% of the maximum SAR level. If there are any further SAR measurements required, extra 5x5x7 cubes shall be centred on each of these extra local SAR maxima.

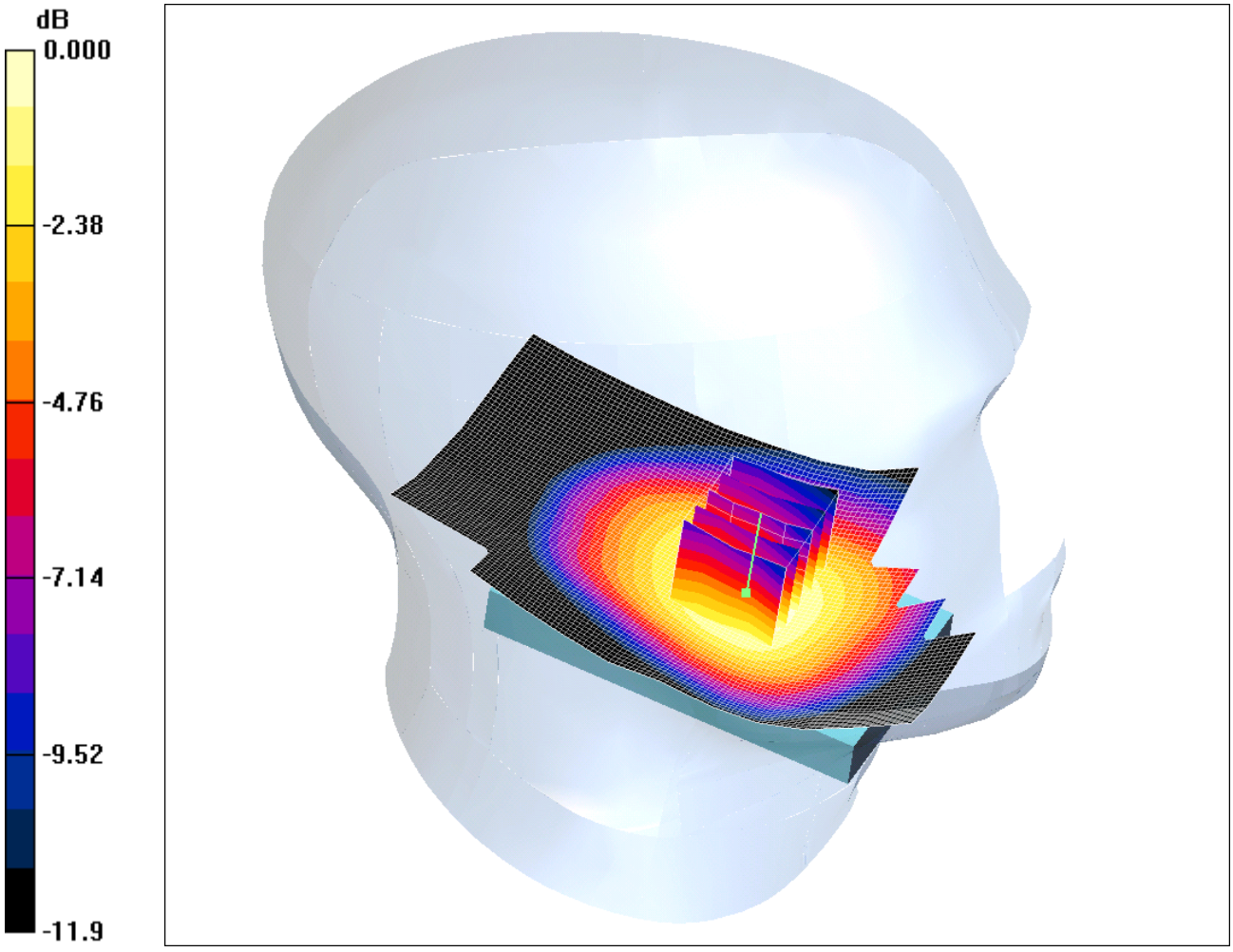
At the end of each position test case a second time sweep shall be performed to check whether the EUT has remained stable throughout the test.

Appendix 3. SAR Distribution Scans

This appendix contains SAR distribution scans which are not included in the total number of pages for this report.

Scan Reference Number	Title
SCN/77086JD01/001	Touch Left EGSM CH37 Without Phone Sack
SCN/77086JD01/002	Tilt Left EGSM CH37 Without Phone Sack
SCN/77086JD01/003	Touch Right EGSM CH37 Without Phone Sack
SCN/77086JD01/004	Tilt Right EGSM CH37 Without Phone Sack
SCN/77086JD01/005	Touch Left EGSM CH37 With Phone Sack
SCN/77086JD01/006	System Performance Check 900MHz Head 09 03 10

SCN/77086JD01/001: Touch Left EGSM CH37 Without Phone Sack
Date 09/03/2010
DUT: BlackBerry; Type: 8520; Serial: 359428033225780

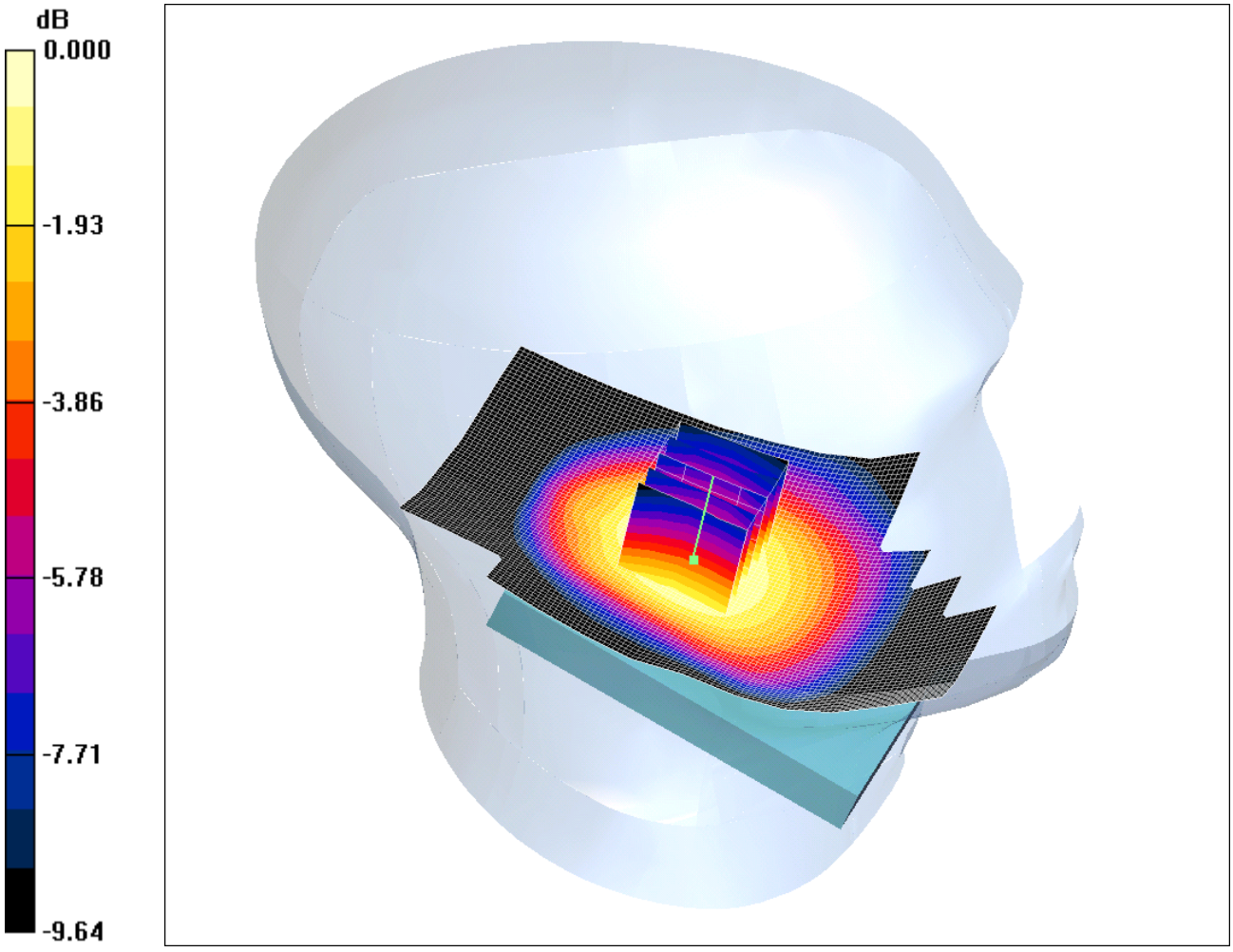


0 dB = 1.20mW/g

Communication System: EGSM 900; Frequency: 897.4 MHz;Duty Cycle: 1:8.3
Medium: 900 MHz HSL Medium parameters used (interpolated): f = 897.4 MHz; σ = 1 mho/m; ε_r = 41.2; ρ = 1000 kg/m^3
Phantom section: Left Section
DASY4 Configuration:
- Probe: EX3DV3 - SN3508; ConvF(9.76, 9.76, 9.76); Calibrated: 26/06/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn450; Calibrated: 30/04/2009
- Phantom: SAM 12a; Type: SAM 4.0; Serial: TP:1193
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Touch Left - Middle/Area Scan (71x111x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.18 mW/g
Touch Left - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.7 V/m; Power Drift = -0.096 dB
Peak SAR (extrapolated) = 1.44 W/kg
SAR(1 g) = 1.12 mW/g; SAR(10 g) = 0.805 mW/g
Maximum value of SAR (measured) = 1.20 mW/g

SCN/77086JD01/002: Tilt Left EGSM CH37 Without Phone Sack
Date 09/03/2010
DUT: BlackBerry; Type: 8520; Serial: 359428033225780



0 dB = 0.635mW/g

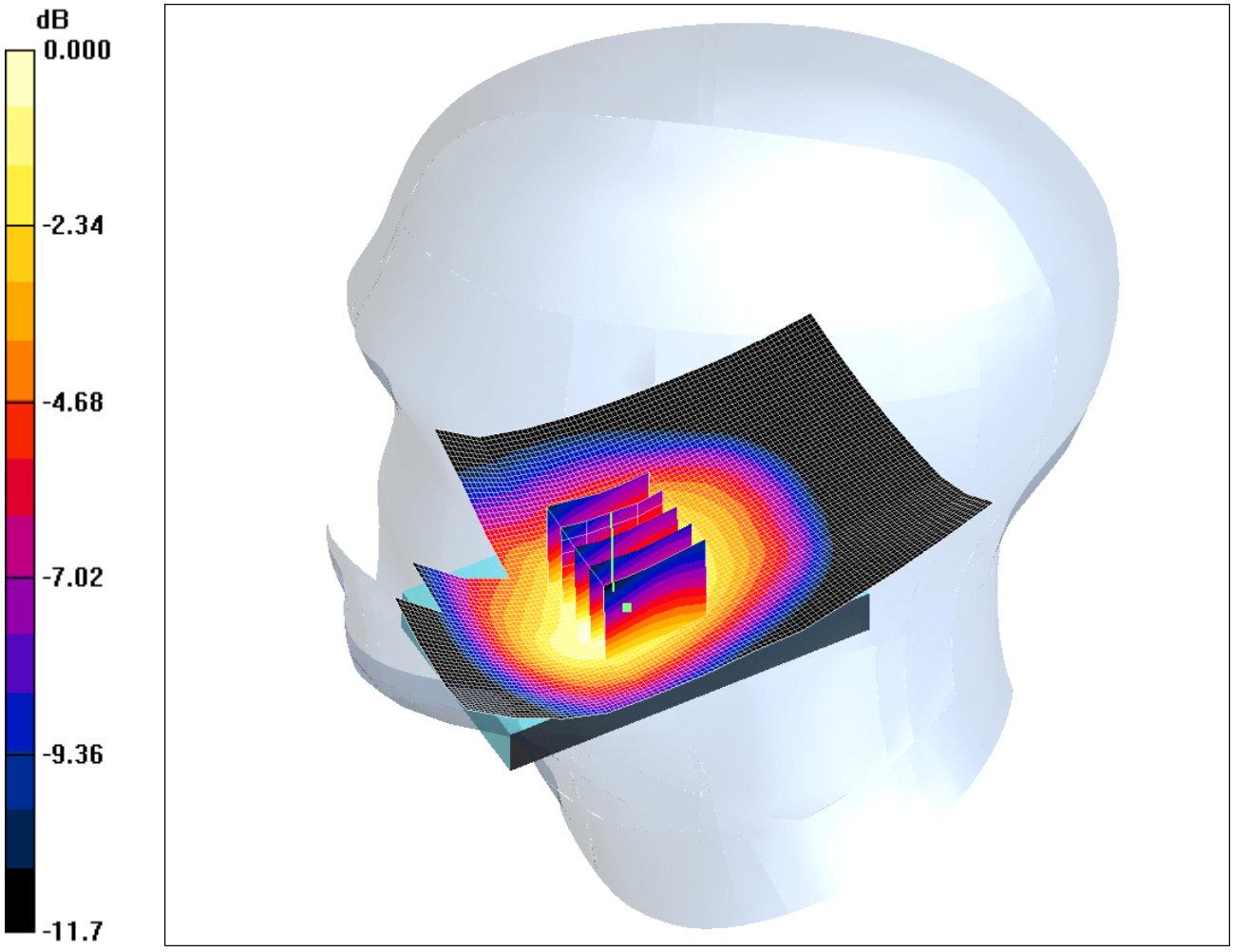
Communication System: EGSM 900; Frequency: 897.4 MHz;Duty Cycle: 1:8.3
Medium: 900 MHz HSL Medium parameters used (interpolated): f = 897.4 MHz; σ = 1 mho/m; ε_r = 41.2; ρ = 1000 kg/m^3
Phantom section: Left Section
DASY4 Configuration:
- Probe: EX3DV3 - SN3508; ConvF(9.76, 9.76, 9.76); Calibrated: 26/06/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn450; Calibrated: 30/04/2009
- Phantom: SAM 12a; Type: SAM 4.0; Serial: TP:1193
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Tilt Left - Middle/Area Scan (71x111x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.631 mW/g
Tilt Left - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.7 V/m; Power Drift = 0.043 dB
Peak SAR (extrapolated) = 0.773 W/kg
SAR(1 g) = 0.603 mW/g; SAR(10 g) = 0.443 mW/g
Maximum value of SAR (measured) = 0.635 mW/g

Test of: **Blocsock BBIP01**

To: **EN 50360:2001 Incorporating Corrigendum No. 1**

SCN/77086JD01/003: Touch Right EGSM CH37 Without Phone Sack
Date 09/03/2010
DUT: BlackBerry; Type: 8520; Serial: 359428033225780



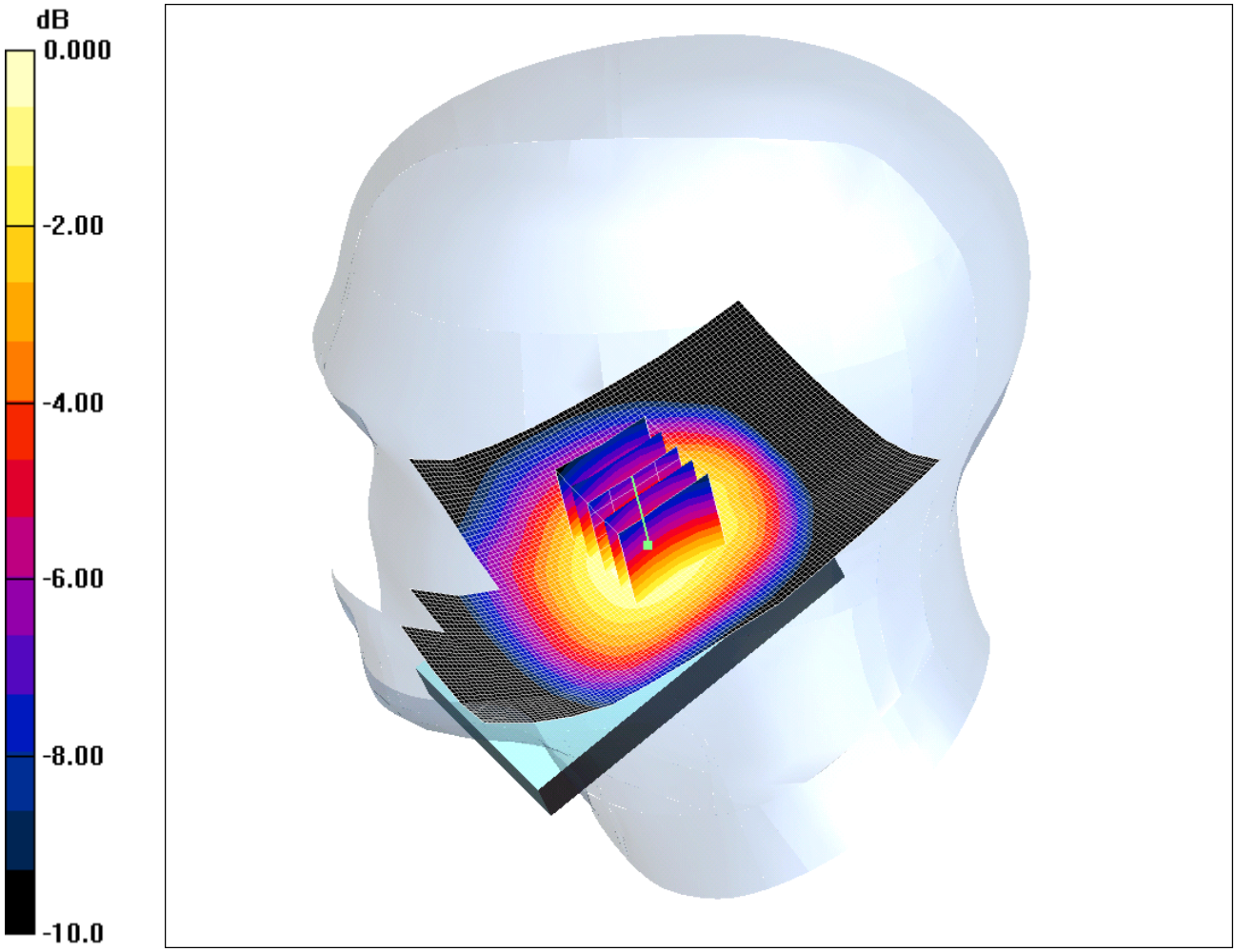
0 dB = 1.16mW/g

Communication System: EGSM 900; Frequency: 897.4 MHz;Duty Cycle: 1:8.3
Medium: 900 MHz HSL Medium parameters used (interpolated): f = 897.4 MHz; σ = 1 mho/m; ε_r = 41.2; ρ = 1000 kg/m^3
Phantom section: Right Section
DASY4 Configuration:
- Probe: EX3DV3 - SN3508; ConvF(9.76, 9.76, 9.76); Calibrated: 26/06/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn450; Calibrated: 30/04/2009
- Phantom: SAM 12a; Type: SAM 4.0; Serial: TP:1193
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176
Touch Right - Middle/Area Scan (71x111x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.16 mW/g
Touch Right - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.1 V/m; Power Drift = -0.166 dB
Peak SAR (extrapolated) = 1.45 W/kg
SAR(1 g) = 1.09 mW/g; SAR(10 g) = 0.770 mW/g
Maximum value of SAR (measured) = 1.16 mW/g

Test of: **Blocsock BBIP01**

To: **EN 50360:2001 Incorporating Corrigendum No. 1**

SCN/77086JD01/004: Tilt Right EGSM CH37 Without Phone Sack
Date 09/03/2010
DUT: BlackBerry; Type: 8520; Serial: 359428033225780



0 dB = 0.686mW/g

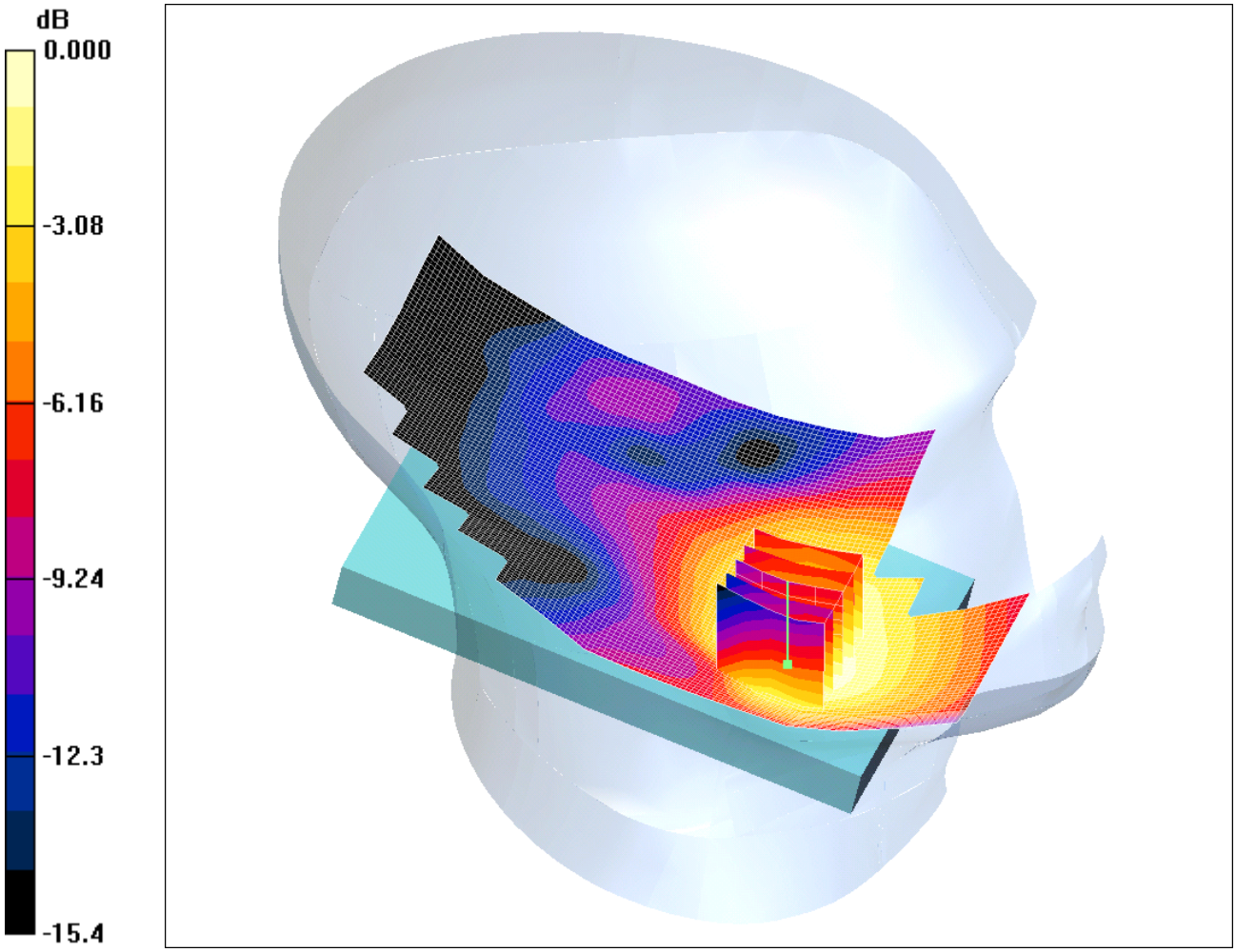
Communication System: EGSM 900; Frequency: 897.4 MHz;Duty Cycle: 1:8.3
Medium: 900 MHz HSL Medium parameters used (interpolated): f = 897.4 MHz; σ = 1 mho/m; ε_r = 41.2; ρ = 1000 kg/m^3
Phantom section: Right Section
DASY4 Configuration:
- Probe: EX3DV3 - SN3508; ConvF(9.76, 9.76, 9.76); Calibrated: 26/06/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn450; Calibrated: 30/04/2009
- Phantom: SAM 12a; Type: SAM 4.0; Serial: TP:1193
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Tilt Right - Middle/Area Scan (71x111x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.682 mW/g
Tilt Right - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.8 V/m; Power Drift = 0.080 dB
Peak SAR (extrapolated) = 0.847 W/kg
SAR(1 g) = 0.651 mW/g; SAR(10 g) = 0.476 mW/g
Maximum value of SAR (measured) = 0.686 mW/g

Test of: **Blocsock BBIP01**

To: **EN 50360:2001 Incorporating Corrigendum No. 1**

SCN/77086JD01/005: Touch Left EGSM CH37 With Phone Sack
Date 09/03/2010
DUT: BlackBerry + Blocsock; Type: 8520 + BB1P01 (Phone Sack); Serial: 359428033225780 + None Stated



0 dB = 0.047mW/g

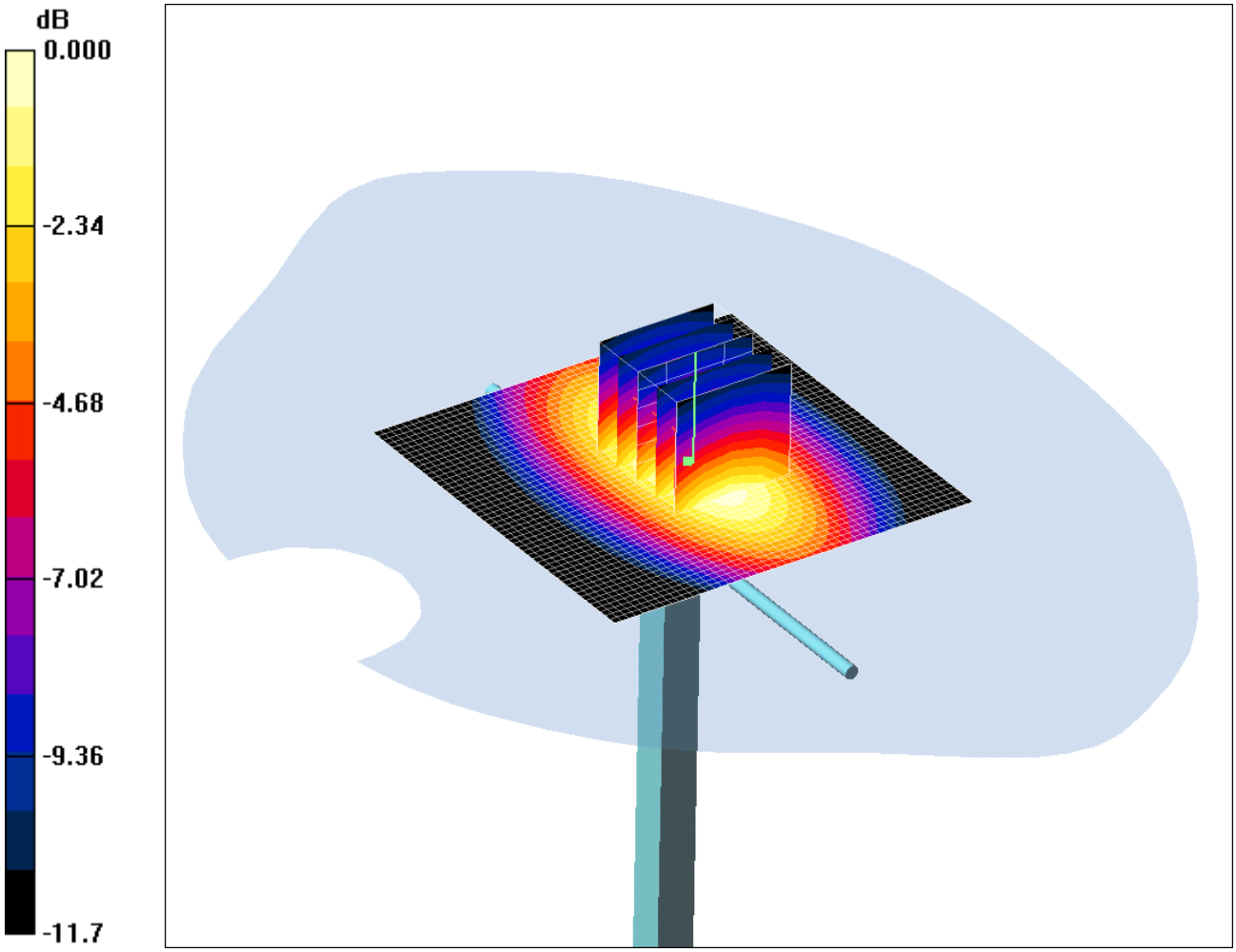
Communication System: EGSM 900; Frequency: 897.4 MHz;Duty Cycle: 1:8.3
Medium: 900 MHz HSL Medium parameters used (interpolated): f = 897.4 MHz; σ = 1 mho/m; ε_r = 41.2; ρ = 1000 kg/m^3
Phantom section: Left Section
DASY4 Configuration:
- Probe: EX3DV3 - SN3508; ConvF(9.76, 9.76, 9.76); Calibrated: 26/06/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn450; Calibrated: 30/04/2009
- Phantom: SAM 12a; Type: SAM 4.0; Serial: TP:1193
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

Touch Left - Middle/Area Scan (81x131x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.055 mW/g
Touch Left - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.08 V/m; Power Drift = 0.222 dB
Peak SAR (extrapolated) = 0.070 W/kg
SAR(1 g) = 0.045 mW/g; SAR(10 g) = 0.032 mW/g
Maximum value of SAR (measured) = 0.047 mW/g

Test of: **Blocsock BBIP01**

To: **EN 50360:2001 Incorporating Corrigendum No. 1**

SCN/77086JD01/006: System Performance Check 900MHz Head 09 03 10
Date 09/03/2010
DUT: Dipole 900 MHz; Type: D900V2; Serial: SN185



0 dB = 2.87mW/g

Communication System: CW; Frequency: 900 MHz;Duty Cycle: 1:1
Medium: 900 MHz HSL Medium parameters used: f = 900 MHz; σ = 1 mho/m; ε_r = 41.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: EX3DV3 - SN3508; ConvF(9.76, 9.76, 9.76); Calibrated: 26/06/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn450; Calibrated: 30/04/2009
- Phantom: SAM 12a; Type: SAM 4.0; Serial: TP:1193
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176
d=15mm, Pin=250mW/Area Scan (51x51x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 2.89 mW/g
d=15mm, Pin=250mW/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 52.1 V/m; Power Drift = 0.104 dB
Peak SAR (extrapolated) = 4.13 W/kg
SAR(1 g) = 2.66 mW/g; SAR(10 g) = 1.69 mW/g
Maximum value of SAR (measured) = 2.87 mW/g

Appendix 4. Photographs

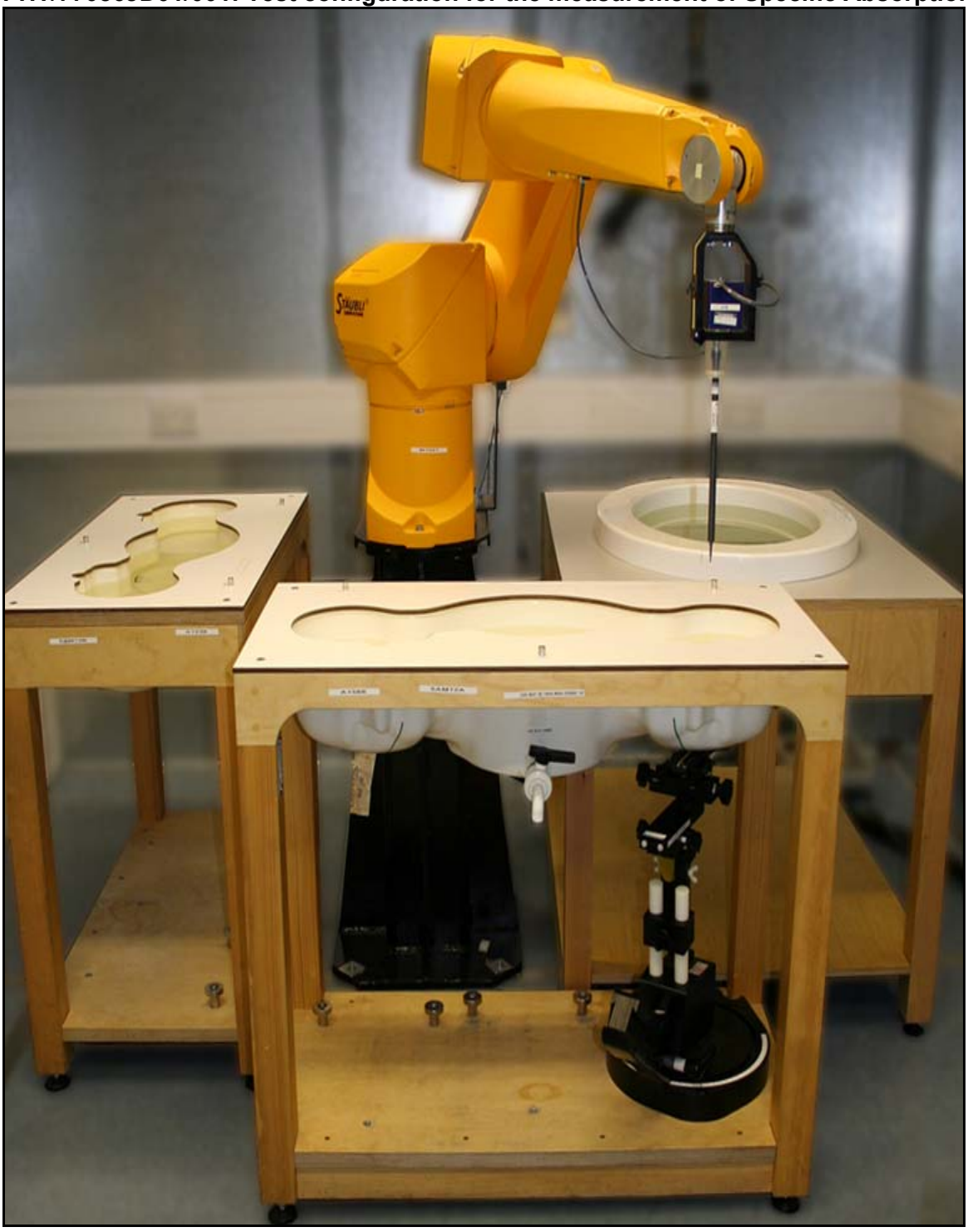
This appendix contains the following photographs:

Photo Reference Number	Title
PHT/77086JD01/001	Test configuration for the measurement of Specific Absorption Rate (SAR)
PHT/77086JD01/002	Touch Left Worst Case Position
PHT/77086JD01/003	Touch Left With Phone in Blocsock Pouch Worst Case Position
PHT/77086JD01/004	Tilt Left
PHT/77086JD01/005	Touch Right
PHT/77086JD01/006	Tilt Right
PHT/77086JD01/007	Front of Mobile Phone
PHT/77086JD01/008	Rear of Mobile Phone
PHT/77086JD01/009	Internal View of Mobile Phone
PHT/77086JD01/010	Battery View
PHT/77086JD01/011	Front View of Blocsock
PHT/77086JD01/012	Rear View of Blocsock
PHT/77086JD01/013	Mobile handset Placed in Blocsock Pouch

Test of: Blocsock BBIP01

To: EN 50360:2001 Incorporating Corrigendum No. 1

PHT/77086JD01/001: Test configuration for the measurement of Specific Absorption Rate (SAR)



Test of: Blocsock BBIP01

To: EN 50360:2001 Incorporating Corrigendum No. 1

PHT/77086JD01/002: Touch Left Worst Case Position

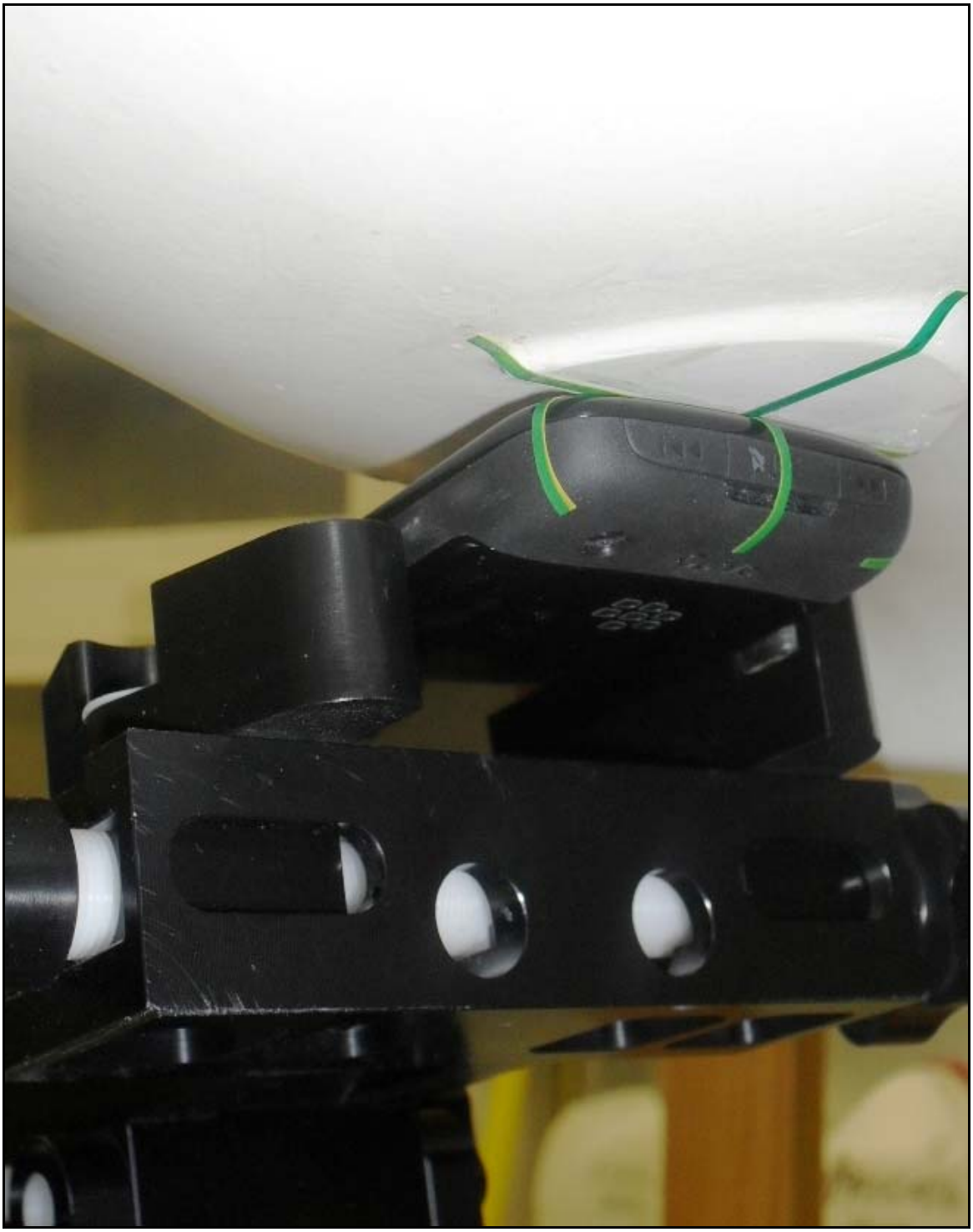
Test of: Blocsock BBIP01
To: EN 50360:2001 Incorporating Corrigendum No. 1

PHT/77086JD01/003: Touch Left With Phone in Blocsock Pouch Worst Case Position

Test of: Blocsock BBIP01

To: EN 50360:2001 Incorporating Corrigendum No. 1

PHT/77086JD01/004: Tilt Left



Test of: Blocsock BBIP01

To: EN 50360:2001 Incorporating Corrigendum No. 1

PHT/77086JD01/005: Touch Right

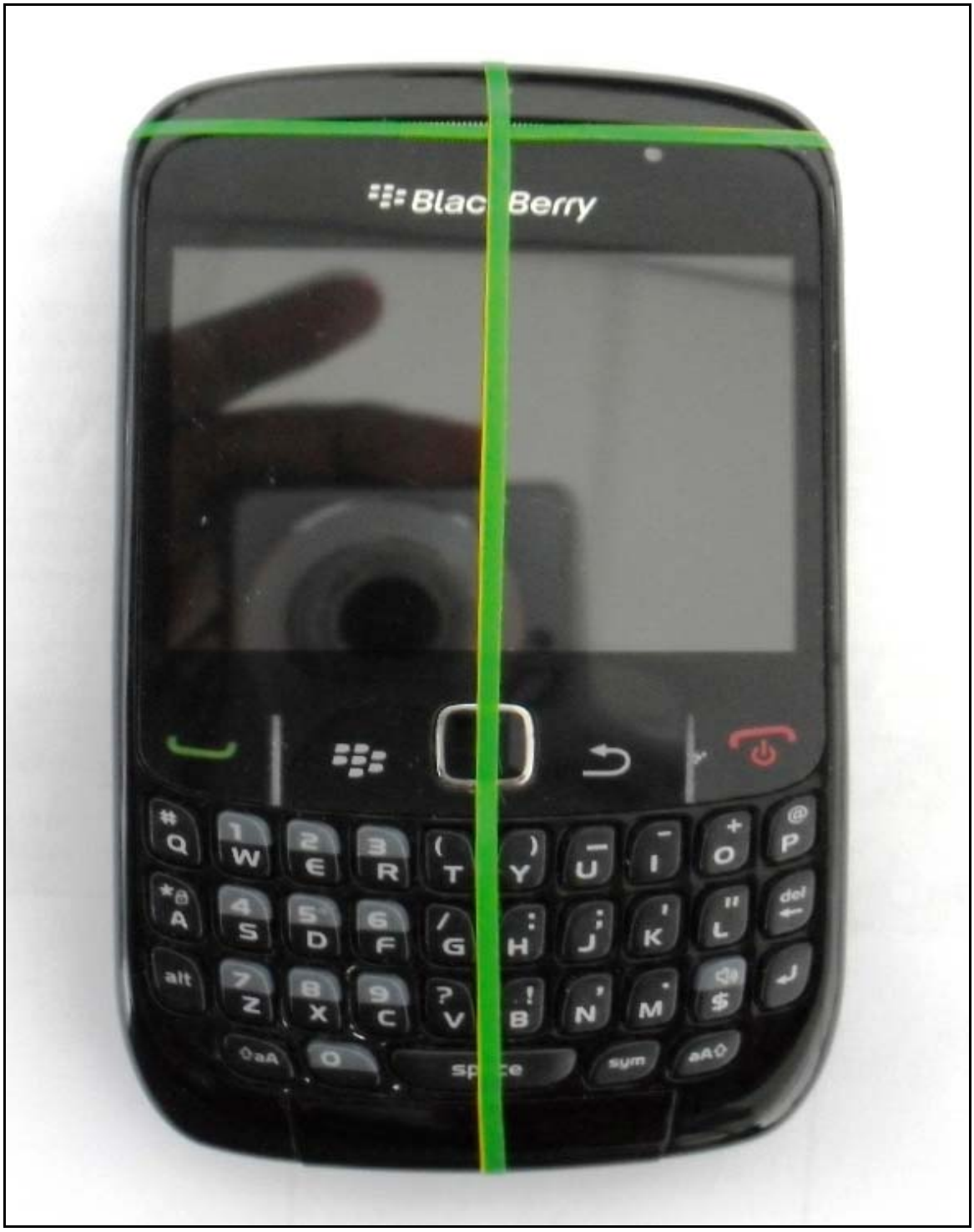
Test of: Blocsock BBIP01

To: EN 50360:2001 Incorporating Corrigendum No. 1

PHT/77086JD01/006: Tilt Right

Test of: **Blocsock BBIP01**
To: **EN 50360:2001 Incorporating Corrigendum No. 1**

PHT/77086JD01/007: Front of Mobile Phone



Test of: **Blocsock BBIP01**
To: **EN 50360:2001 Incorporating Corrigendum No. 1**

PHT/77086JD01/008: Rear of Mobile Phone

Test of: **Blocsock BBIP01**

To: **EN 50360:2001 Incorporating Corrigendum No. 1**

PHT/77086JD01/009: Internal View of Mobile Phone

Test of: Blocsock BBIP01

To: EN 50360:2001 Incorporating Corrigendum No. 1

PHT/77086JD01/010: Battery View

Test of: **Blocsock BBIP01**
To: **EN 50360:2001 Incorporating Corrigendum No. 1**

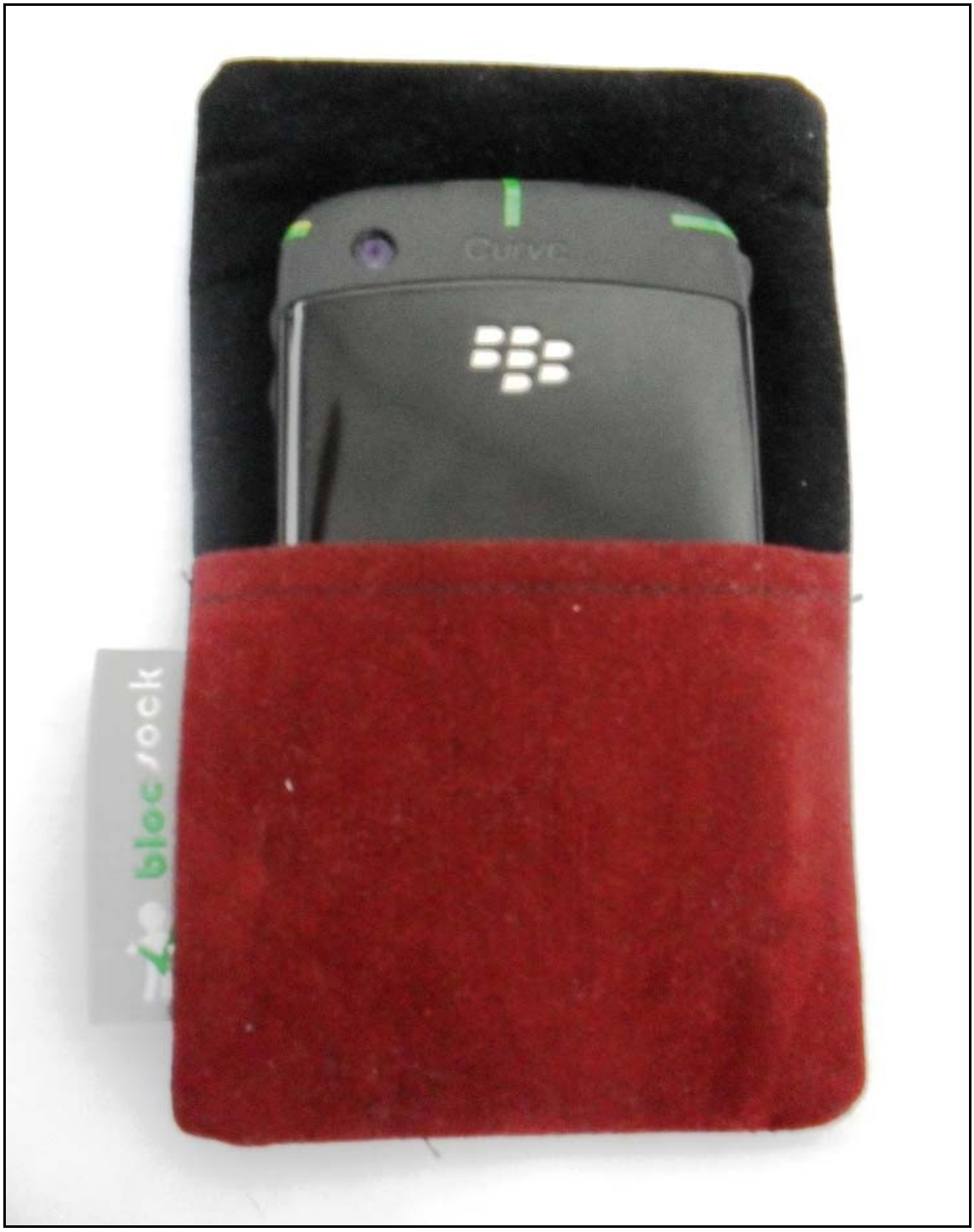
PHT/77086JD01/011: Front View of Blocsock

Test of: **Blocsock BBIP01**
To: **EN 50360:2001 Incorporating Corrigendum No. 1**

PHT/77086JD01/012: Rear View of Blocsock

Test of: Blocsock BBIP01
To: EN 50360:2001 Incorporating Corrigendum No. 1

PHT/77086JD01/013: Mobile handset Placed in Blocsock Pouch



Appendix 5. Validation of System

Prior to the assessment, the system was verified in the flat region of the phantom.
A 900 MHz dipole was used. A forward power of 250 mW was applied to the dipole and the system was verified to a tolerance of ±5% for the 900 MHz dipole. The applicable verification (normalised to 1 Watt).

Date: 09/03/2010

Validation Dipole and Serial Number: D900V2 SN:124

Simulant	Frequency (MHz)	Room Temperature	Liquid Temperature	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
Head	900	24.0 ºC	23.3 ºC	ε_r	41.50	41.21	-0.70	5.00
				σ	0.97	1.00	3.22	5.00
				1g SAR	11.00	10.64	-3.27	5.00
				10g SAR	7.06	6.76	-4.25	5.00

Appendix 6. Simulated Tissues

The body mixture consists of water and glycol. Visual inspection is made to ensure air bubbles are not trapped during the mixing process. The mixture is calibrated to obtain proper dielectric constant (permittivity) and conductivity of the tissue.

Ingredient	Frequency
	835/850/900 MHz Head
Propanediol	64.81%
De-Ionised Water	34.40%
Salt	0.79%

Appendix 7. DASY4 System Details

A.7.1. DASY4 SAR Measurement System

RFI Global Services Ltd, SAR measurement facility utilises the Dosimetric Assessment System (DASY™) manufactured by Schmid & Partner Engineering AG (SPEAG™) of Zurich, Switzerland. The DASY4 system is comprised of the robot controller, computer, near-field probe, probe alignment sensor, and the SAM phantom containing brain or muscle equivalent material. The robot is a six-axis industrial robot performing precise movements to position the probe to the location (points) of maximum electromagnetic field (EMF). A cell controller system contains the power supply, robot controller; teach pendant (Joystick), and remote control. This is used to drive the robot motors. The Staubli robot is connected to the cell controller to allow software manipulation of the robot. The data acquisition electronics (DAE) performs signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection etc. The DAE is connected to the Electro-optical coupler (EOC). The EOC performs the conversion from the optical into digital electric signal of the DAE and transfers data to the PC plug-in card. The DAE3 utilises a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching mulitplexer, a fast 16-bit AD-converter and a command decoder and control logic unit. Transmission to the PC-card is accomplished through an optical downlink for data and status information and an optical uplink for commands and clock lines. The mechanical probe-mounting device includes two different sensor systems for frontal and sidewise probe contacts. They are also used for mechanical surface detection and probe collision detection. The robot uses its own controller with a built in VME-bus computer.

A.7.2. DASY4 SAR System Specifications

Robot System

Positioner:	Stäubli Unimation Corp. Robot Model: RX90L
Repeatability:	0.025 mm
No. of Axis:	6
Serial Number:	F00/SD89A1/A/01
Reach:	1185 mm
Payload:	3.5 kg
Control Unit:	CS7
Programming Language:	V+

Data Acquisition Electronic (DAE) System

Serial Number:	DAE3 SN:450

PC Controller

PC:	Dell Precision 340
Operating System:	Windows 2000
Data Card:	DASY4 Measurement Server
Serial Number:	1080

Data Converter

Features:	Signal Amplifier, multiplexer, A/D converted and control logic.
Software:	DASY4 Software
Connecting Lines:	Optical downlink for data and status info. Optical uplink for commands and clock.

PC Interface Card

Function:	24 bit (64 MHz) DSP for real time processing Link to DAE3 16 nit A/D converter for surface detection system serial link to robot direct emergency stop output for robot.

DASY4 SAR System Specifications (Continued)

E-Field Probe

Model:	EX3DV3
Serial No:	3508
Construction:	Triangular core
Frequency:	10 MHz to >6 GHz
Linearity:	±0.2 dB (30 MHz to 6 GHz)
Probe Length (mm):	330
Probe Diameter (mm):	12
Tip Length (mm):	20
Tip Diameter (mm):	2.5
Sensor X Offset (mm):	1
Sensor Y Offset (mm):	1
Sensor Z Offset (mm):	1

Phantom

Phantom:	SAM Phantom
Shell Material:	Fibreglass
Thickness:	2.0 ±0.1 mm