Global Product Certification
EMC-EMF-Safety Approvals

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SAR Test Report

Report Number: M090333

Test Sample: XSports 2400

Model Number: ADPC2400

Tested For: Phicom

Date of Issue: 25th March 2009

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SAR EVALUATION
Bluetooth Transmitter, **Model:** ADPC 2400 (XSports 2400)
Report Number: M090333

1.0 GENERAL INFORMATION

Test Sample:	XSports 2400
Model Number:	ADPC2400
Serial Number:	Pre-Production Unit
Manufacturer:	Phicom
Radio Module:	BTMM3C1XX Bluetooth
Manufacturer:	Windigo Systems
FCC ID:	W8I-ADPC2400R9
Canada ID:	8271A-ADPC2400R9
Device Category:	Portable Transmitter
Test Device:	Production Unit / Prototype Sample
RF exposure Category:	General Public/Unaware user
Tested for:	Phicom
Address:	83 Wood Street Eaglehawk Vic. Australia 3556
Contact:	Peter Crowhurst
Phone:	+61 3 5446 2177
Fax:	+61 3 5446 1215
Email:	peter.crowhurst@phicom.com.au

Test Standard/s:

1. Evaluating Compliance with FCC Guidelines For Human Exposure to Radiofrequency Electromagnetic Fields
   Supplement C (Edition 01-01) to OET Bulletin 65 (Edition 97-01)
2. Radio Frequency Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands)
   RSS-102 Issue 2 November 2005

Statement Of Compliance: The Bluetooth Transmitter, Model: ADPC 2400 (XSports 2400). Complied with the FCC General public/uncontrolled RF exposure limits of 1.6mW/g for 1g cube of tissue per requirements of 47CFR2.1093(d).

Test Date: 18th March 2009

Test Officer:

Peter Jakubiec

Authorised Signature:

Peter Jakubiec

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2.0 DESCRIPTION OF DEVICE

2.1 Description of Test Sample

The device tested was a body worn transmitter operating in the 2400 MHz bluetooth frequency band. It has one internal antenna. The test device was tested in the Body Worn Positions.

Table: EUT Parameters

Operating Mode during Testing	: See Clause 2.3
Network Standard:	: Bluetooth RF Test Specification
Modulation:	: FHSS
Frequency Range:	: 2402 to 2480 MHz
Nominal Output Power:	: 20dBm (Class 1)
Antenna type	: Internal Proprietary PCB
Reference Oscillator:	: 16 MHz (built in)
Applicable Head Configurations	: None
Applicable Body Worn-Configurations	: Body Worn Position
Battery Options	: One Battery Type

2.2 Test sample Accessories

2.2.1 Battery Types

One type of battery can be used with the Bluetooth transmitter. SAR measurements were performed with the standard 3.7V battery.

2.3 Test Signal, Frequency and Output Power

The test was performed on the DUT provided by Phicom for this evaluation. The transmitter was put into operation using manufacturer’s test application. The channels utilised in the measurements were the traffic channels shown in the table below. The power level was set to maximum.

Table: Test Frequencies

Frequency	Channel	Measured Power (dBm)
2402 MHz	01	19.0
2441 MHz	40	18.2
2480 MHz	79	20.3

2.4 Conducted Power Measurements

The conducted power of the EUT was not measured because the device is not equipped with an RF test port.

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2.5 Battery Status

The Bluetooth Transmitter battery was fully charged prior to commencement of each measurement. Each SAR test was completed within 30 minutes. The battery condition was monitored by measuring the RF power at a defined position inside the phantom before the commencement of each test and again after the completion of the test.

Table: Battery Details

Battery #1:	3.7V Li-ion Rechargeable
Rating:	1050 mAh
Model No.:	GSP 533555

2.6 Details of Test Laboratory

2.6.1 Location

EMC Technologies Pty Ltd
176 Harrick Road
Keilor Park, (Melbourne) Victoria
Australia 3042

Telephone: +61 3 9365 1000
Facsimile: +61 3 9331 7455
email: melb@emctech.com.au
website: www.emctech.com.au

2.6.2 Accreditations

EMC Technologies Pty. Ltd. is accredited by the National Association of Testing Authorities, Australia (NATA). **NATA Accredited Laboratory Number: 5292**

EMC Technologies Pty Ltd is NATA accredited for the following standards:

ARPANSA Standard AS/NZS 2772.2:	RF and microwave radiation hazard measurement
ACA:	Radio communications (Electromagnetic Radiation - Human Exposure) Standard 2003
FCC:	Guidelines for Human Exposure to RF Electromagnetic Field OET65C 01/01
CENELEC:	ES59005: 1998
EN 50360: 2001	Product standard to demonstrate the compliance of Mobile phones with the basic restrictions related to human exposure to electromagnetic fields (300 MHz – 3 GHz)
EN 62209-1:2006	Human Exposure to radio frequency fields from hand-held and body-mounted wireless communication devices - Human models instrumentation and procedures. **Part 1:** Procedure to determine the specific absorption rate (SAR) for hand-held devices used in close proximity to the ear (300 MHz to 3 GHz)
IEEE 1528: 2003	Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head Due to Wireless Communications Devices: Measurement Techniques.

Refer to NATA website www.nata.asn.au for the full scope of accreditation.

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2.6.3 Environmental Factors

The measurements were performed in a shielded room with no background RF signals. The temperature in the laboratory was controlled to within 20 ± 1 °C, the humidity was 57%. See section 3.5.1 for measured temperature and humidity. The liquid parameters were measured daily prior to the commencement of each test. Tests were performed to check that reflections within the environment did not influence the SAR measurements. The noise floor of the DASY4 SAR measurement system using the SN1380 probe is less than 5μV in both air and liquid mediums.

3.0 DESCRIPTION OF SAR MEASUREMENT SYSTEM

3.1 Probe Positioning System

The measurements were performed with the state of the art automated near-field scanning system **DASY4 Version V4.7 Build 53** from Schmid & Partner Engineering AG (SPEAG). The system is based on a high precision 6-axis robot (working range greater that 1.1m), which positions the SAR measurement probes with a positional repeatability of better than ±0.02 mm. The DASY4 fully complies with the OET65 C (01-01), IEEE 1528 and EN 62209-1 SAR measurement requirements.

3.2 E-Field Probe Type and Performance

The SAR measurements were conducted with the dosimetric probe ET3DV6 Serial: 1380 (manufactured by SPEAG) designed in the classical triangular configuration and optimised for dosimetric evaluation. The probe has been calibrated and found to be accurate to better than ±0.25 dB. The probe is suitable for measurements close to material discontinuity at the surface of the phantom.

3.3 Data Acquisition Electronics

The data acquisition electronics (DAE3) consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit. The input impedance of the DAE3 box is 200 MΩ; the inputs are symmetrical and floating. Common mode rejection is above 80dB.Transmission to the PC-card is accomplished through an optical downlink for data and status information as well as an optical uplink for commands and the clock.

The mechanical probe-mounting device includes two different sensor systems for frontal and sideways probe contacts. They are used for mechanical surface detection and probe collision detection.

3.4 Calibration and Validation Procedures and Data

Prior to the SAR assessment, the system validation kit was used to verify that the DASY4 was operating within its specifications. The validation was performed at 2450 MHz with the SPEAG calibrated dipole. The validation dipoles are highly symmetric and matched at the centre frequency for the specified liquid and distance to the phantom. The accurate distance between the liquid surface and the dipole centre is achieved with a distance holder that snaps onto the dipole. System validation is performed by feeding a known power level into a reference dipole, set at a known distance from the phantom. The measured SAR is compared to the theoretically derived level, and must be within 10%.

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3.4.1 Validation Results (2450 MHz)

The following table lists the dielectric properties of the tissue simulating liquid measured prior to the SAR validation. The results of the validation are listed in columns 5 and 6. The forward power into the reference dipole was adjusted to 250 mW.

Table: Validation Results (D2450V2)

1. Validation Date	2. Frequency (MHz)	3. ∈r (measured)	4. σ (mho/m) (measured)	5. Measured SAR 1g	6. Measured SAR 10g
18th March 2009	2450	39.1	1.83	13.7	6.28

3.4.2 Deviation from reference validation values

The reference SAR values are derived using a reference dipole and flat phantom suitable for centre frequency of 2450 MHz. This reference SAR value is obtained from the IEEE Std 1528-2003 and are normalized to 1W.

The SPEAG calibration reference SAR value is the SAR validation result obtained in a specific dielectric liquid using the validation dipole during calibration. The measured one-gram SAR should be within 10% of the expected target reference values shown in table below.

Table: Deviation from reference validation values

Validation Frequency and Date	Measured SAR 1g (input power = 250mW)	Measured SAR 1g (Normalized to 1W)	SPEAG Calibration reference SAR Value 1g (mW/g)	Deviation From SPEAG 1g (%)	IEEE Std 1528 reference SAR value 1g (mW/g)	Deviation From IEEE 1g (%)
2450 MHz 18th March 2009	13.7	54.80	52	5.38	52.4	4.58

Note: All reference validation values are referenced to 1W input power.

3.4.3 Liquid Depth 15cm

During the SAR measurement process the liquid level was maintained to a level of at least 15cm with a tolerance of ± 0.5cm. The following photo shows the depth of the liquid maintained during the testing.

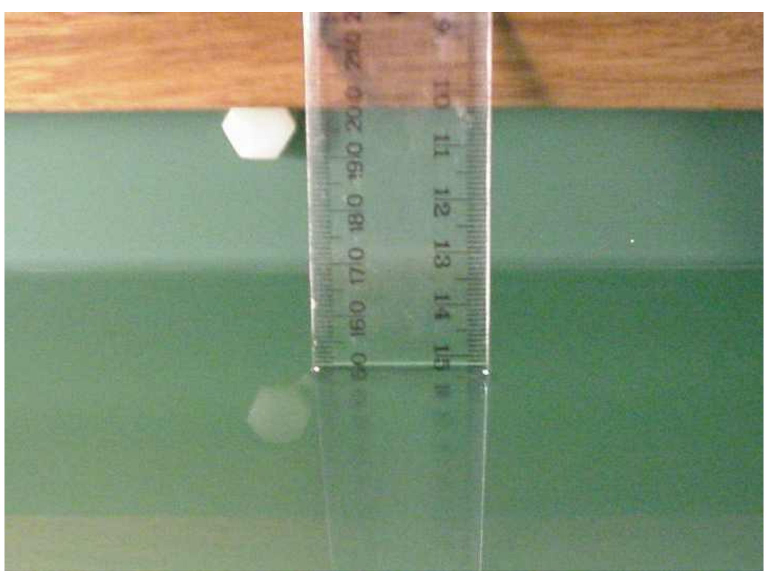

Photo of liquid Depth in Flat Phantom

3.5 Phantom Properties (Size, Shape, Shell Thickness, Tissue Material Properties)

The phantom used during the SAR testing and validation was the “SAM” phantom from SPEAG. The phantom thickness is 2.0mm+/-0.2 mm and was filled with the required tissue simulating liquid.

For SAR testing in the Body Worn positions an AndreT Flat Phantom V10.1 was used. The phantom thickness is 2.0mm +/-0.2 mm and the phantom was filled with the required tissue simulating liquid. The table below provides a summary of the measured phantom properties

Table: Phantom Properties (300MHz-2500MHz)

Phantom Properties	Requirement for specific EUT	Measured
Depth of Phantom	N/A	200mm
Width of flat section	N/A	540mm
Length of flat section	N/A	620mm
Thickness of flat section	2.0mm +/-0.2mm (flat section)	2.08 – 2.20mm
Dielectric Constant	<5.0	4.603 @ 300MHz (worst-case frequency)
Loss Tangent	<0.05	0.0379 @ 2500MHz (worst-case frequency)

Photo 1: Flat Phantom V10.1 2mm

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The dielectric parameters of the simulating liquid were measured prior to SAR assessment using the HP85070A dielectric probe kit and HP8714B Network Analyser. The actual dielectric parameters are shown in the following tables:

Table: Measured Brain Simulating Liquid Dielectric Values at 2450MHz

Frequency Band	∈r (measured range)	∈r (target)	σ (mho/m) (measured range)	σ (target)	ρ kg/m^3
2450 MHz Brain	39.1	39.2 ±5% (37.2 to 41.2)	1.83	1.80 ±5% (1.71 to 1.89)	1000

Note: The brain liquid parameters were within the required tolerances of ±5%.

Table: Measured Body Simulating Liquid Dielectric Values at 2450MHz

Frequency Band	∈r (measured range)	∈r (target)	σ (mho/m) (measured range)	σ (target)	ρ kg/m^3
2402 MHz Body	52.8	52.7 ±5% (50.1 to 55.3)	1.89	1.95 ±5% (1.85 to 2.05)	1000
2441 MHz Body	52.5	52.7 ±5% (50.1 to 55.3)	1.95	1.95 ±5% (1.85 to 2.05)	1000
2480 MHz Body	52.4	52.7 ±5% (50.1 to 55.3)	2.00	1.95 ±5% (1.85 to 2.05)	1000

Note: The body liquid parameters were within the required tolerances of ±5%.

3.5.1 Temperature and Humidity

The humidity and dielectric/ambient temperatures are recorded during the assessment of the tissue material dielectric parameters. The difference between the ambient temperature of the liquid during the dielectric measurement and the temperature during tests was less than |2|°C.

Table: Temperature and Humidity recorded for each day

Date	Ambient Temperature (°C)	Liquid Temperature (°C)	Humidity (%)
18th March 2009	19.5	19.3	57

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3.6 Simulated Tissue Composition Used for SAR Test

The tissue simulating liquids are created prior to the SAR evaluation and often require slight modification each day to obtain the correct dielectric parameters.

Table: Tissue Type: Brain @ 2450MHz
Volume of Liquid: 30 Litres

Approximate Composition	% By Weight
Distilled Water	62.7
Salt	0.5
Triton X-100	36.8

Table: Tissue Type: Muscle @ 2450MHz
Volume of Liquid: 60 Litres

Approximate Composition	% By Weight
Distilled Water	73.2
Salt	0.04
DGBE	26.7

*Refer “OET Bulletin 65 97/01 P38”

3.7 Device Holder for DASY4

The DASY4 device holder supplied by SPEAG is designed to cope with different positions given in the standard. It has two scales for the device rotation (with respect to the body axis) and the device inclination (with respect to the line between the ear openings). The rotation centres for both scales is the ear opening. Thus the device needs no repositioning when changing the angles.

The DASY4 device holder is made of low-loss material having the following dielectric parameters: relative permittivity ε=3 and loss tangent δ=0.02. The amount of dielectric material has been reduced in the closest vicinity of the device, to reduce the influence on the clamp on the test results.

Refer to Appendix A for photograph of device positioning.

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4.0 SAR MEASUREMENT PROCEDURE USING DASY4

The SAR evaluation was performed with the SPEAG DASY4 System (**Version V4.7 Build 53**). A summary of the procedure follows:

a) A measurement of the SAR value at a fixed location is used as a reference value for assessing the power drop of the EUT. The SAR at this point is measured at the start of the test and then again at the end of the test.

b) The SAR distribution at the exposed side of the head or the flat section of the flat phantom is measured at a distance of 3.9 mm from the inner surface of the shell. The area covers the entire dimension of the head and the horizontal grid spacing is 15 mm x 15 mm. The actual Area Scan has dimensions of 120 mm x 180 mm surrounding the test device. Based on this data, the area of the maximum absorption is determined by Spline interpolation.

c) Around this point, a volume of 30 mm x 30 mm x 30 mm is assessed by measuring 7 x 7 x 7 points. On the basis of this data set, the spatial peak SAR value is evaluated with the following procedure:

   (i) The data at the surface are extrapolated, since the centre of the dipoles is 2.7 mm away from the tip of the probe and the distance between the surface and the lowest measuring point is 1.2 mm. The extrapolation is based on a least square algorithm. A polynomial of the fourth order is calculated through the points in z-axes. This polynomial is then used to evaluate the points between the surface and the probe tip.

   (ii) The maximum interpolated value is searched with a straightforward algorithm. Around this maximum the SAR values averaged over the spatial volumes (1 g and 10 g) are computed using the 3D-Spline interpolation algorithm. The 3D-Spline is composed of three one-dimensional splines with the “Not a knot”- condition (in x, y and z-direction). The volume is integrated with the trapezoidal – algorithm. One thousand points (10 x 10 x 10) are interpolated to calculate the averages.

   (iii) All neighbouring volumes are evaluated until no neighbouring volume with a higher average value is found.

   (iv) The SAR value at the same location as in Step (a) is again measured and the power drift is recorded.

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5.0 MEASUREMENT UNCERTAINTY

The uncertainty analysis is based on the template listed in the IEEE Std 1528-2003 for both Handset SAR tests and Validation uncertainty. The measurement uncertainty of a specific device is evaluated independently and the total uncertainty for both evaluations (95% confidence level) must be less than 30%.

Table: Uncertainty Budget for DASY4 Version V4.7 Build 53 – EUT SAR test

Uncertainty Component	Tol. (6%)	Prob. Dist.	Div.	C_i (1g)	C_i (10g)	1g u_i (6%)	10g u_i (6%)	v_i
Measurement System								
Probe Calibration	5.5	N	1	1	1	5.5	5.5	∞
Axial Isotropy	4.7	R	1.73	0.707	0.707	1.9	1.9	∞
Hemispherical Isotropy	9.6	R	1.73	0.707	0.707	3.9	3.9	∞
Boundary Effects	1	R	1.73	1	1	0.6	0.6	∞
Linearity	4.7	R	1.73	1	1	2.7	2.7	∞
System Detection Limits	1	R	1.73	1	1	0.6	0.6	∞
Readout Electronics	0.3	N	1	1	1	0.3	0.3	∞
Response Time	0.8	R	1.73	1	1	0.5	0.5	∞
Integration Time	2.6	R	1.73	1	1	1.5	1.5	∞
RF Ambient Noise	3	R	1.73	1	1	1.7	1.7	∞
RF Ambient Reflections	3	R	1.73	1	1	1.7	1.7	∞
Probe Positioner	0.4	R	1.73	1	1	0.2	0.2	∞
Probe Positioning	2.9	R	1.73	1	1	1.7	1.7	∞
Max. SAR Eval.	1	R	1.73	1	1	0.6	0.6	∞
Test Sample Related								
Test Sample Positioning	1.61	N	1	1	1	1.6	1.6	11
Device Holder Uncertainty	3.6	N	1	1	1	3.6	3.6	7
Output Power Variation – SAR Drift Measurement	6.95	R	1.73	1	1	4.0	4.0	∞
Phantom and Setup								
Phantom Uncertainty	4	R	1.73	1	1	2.3	2.3	∞
Liquid Conductivity – Deviation from target values	5	R	1.73	0.64	0.43	1.8	1.2	∞
Liquid Conductivity – Measurement uncertainty	2.5	N	1.00	0.64	0.43	1.6	1.1	5
Liquid Permittivity – Deviation from target values	5	R	1.73	0.6	0.49	1.7	1.4	∞
Liquid Permittivity – Measurement uncertainty	2.5	N	1.00	0.6	0.49	1.5	1.2	5
Combined standard Uncertainty		RSS				10.7	10.5	154
Expanded Uncertainty (95% CONFIDENCE LEVEL)		k=2				21.5	21.05	

Estimated total measurement uncertainty for the DASY4 measurement system was ±10.7%. The extended uncertainty (K = 2) was assessed to be ±21.5% based on 95% confidence level. The uncertainty is not added to the measurement result.

Table: Uncertainty Budget for DASY4 Version V4.7 Build 53 - Validation

Uncertainty Component	Tol. (6%)	Prob. Dist.	Div.	C_i (1g)	C_i (10g)	1g u_i (6%)	10g u_i (6%)	v_i
Measurement System								
Probe Calibration	5.5	N	1	1	1	5.5	5.5	∞
Axial Isotropy	4.7	R	1.73	1	1	2.7	2.7	∞
Hemispherical Isotropy	9.6	R	1.73	0	0	0.0	0.0	∞
Boundary Effects	1	R	1.73	1	1	0.6	0.6	∞
Linearity	4.7	R	1.73	1	1	2.7	2.7	∞
System Detection Limits	1	R	1.73	1	1	0.6	0.6	∞
Readout Electronics	0.3	N	1	1	1	0.3	0.3	∞
Response Time	0	R	1.73	1	1	0.0	0.0	∞
Integration Time	0	R	1.73	1	1	0.0	0.0	∞
RF Ambient Noise	3	R	1.73	1	1	1.7	1.7	∞
RF Ambient Reflections	3	R	1.73	1	1	1.7	1.7	∞
Probe Positioner	0.4	R	1.73	1	1	0.2	0.2	∞
Probe Positioning	2.9	R	1.73	1	1	1.7	1.7	∞
Max. SAR Eval.	1	R	1.73	1	1	0.6	0.6	∞
Dipole								
Dipole Axis to Liquid Distance	2	N	1.73	1	1	1.2	1.2	11
Input Power and SAR drift meas.	4.7	R	1.73	1	1	2.7	2.7	∞
Phantom and Tissue Param.								
Phantom Uncertainty	4	R	1.73	1	1	2.3	2.3	∞
Liquid Conductivity – Deviation from target values	5	R	1.73	0.64	0.43	1.8	1.2	∞
Liquid Conductivity – Measurement uncertainty	2.5	N	1.00	0.64	0.43	1.6	1.1	5
Liquid Permittivity – Deviation from target values	5	R	1.73	0.6	0.49	1.7	1.4	∞
Liquid Permittivity – Measurement uncertainty	2.5	N	1.00	0.6	0.49	1.5	1.2	5
Combined standard Uncertainty		RSS				9.0	8.7	154
Expanded Uncertainty (95% CONFIDENCE LEVEL)		k=2				17.9	17.34	

Estimated total measurement uncertainty for the DASY4 measurement system was ±9.0%. The extended uncertainty (K = 2) was assessed to be ±17.9% based on 95% confidence level. The uncertainty is not added to the Validation measurement result.

6.0 EQUIPMENT LIST AND CALIBRATION DETAILS

Table: SPEAG DASY4 Version V4.7 Build 53

Equipment Type	Manufacturer	Model Number	Serial Number	Calibration Due	Used For this Test?
Robot - Six Axes	Staubli	RX90BL	N/A	Not applicable	✓
Robot Remote Control	SPEAG	CS7MB	RX90B	Not applicable	✓
SAM Phantom	SPEAG	N/A	1260	Not applicable	✓
SAM Phantom	SPEAG	N/A	1060	Not applicable	
Flat Phantom	AndreT	10.1	P 10.1	Not Applicable	✓
Flat Phantom	AndreT	9.1	P 9.1	Not Applicable	
Flat Phantom	SPEAG	PO1A 6mm	1003	Not Applicable	
Data Acquisition Electronics	SPEAG	DAE3 V1	359	11-July-2009	
Data Acquisition Electronics	SPEAG	DAE3 V1	442	10-Dec-2009	✓
Probe E-Field - Dummy	SPEAG	DP1	N/A	Not applicable	
Probe E-Field	SPEAG	ET3DV6	1380	18-Dec-2009	✓
Probe E-Field	SPEAG	ET3DV6	1377	14-July-2009	
Probe E-Field	SPEAG	ES3DV6	3029	Not Used	
Probe E-Field	SPEAG	EX3DV4	3563	14-July-2009	
Antenna Dipole 300 MHz	SPEAG	D300V2	1005	14-Dec-2009	
Antenna Dipole 450 MHz	SPEAG	D450V2	1009	17-Dec-2010	
Antenna Dipole 900 MHz	SPEAG	D900V2	047	7-July-2010	
Antenna Dipole 1640 MHz	SPEAG	D1640V2	314	16-July-2010	
Antenna Dipole 1800 MHz	SPEAG	D1800V2	242	8-July-2010	
Antenna Dipole 1950 MHz	SPEAG	D1950V3	1113	12-Dec -2010	
Antenna Dipole 3500 MHz	SPEAG	D3500V2	1002	06-July-2009	
Antenna Dipole 2450 MHz	SPEAG	D2450V2	724	10-Dec-2010	✓
Antenna Dipole 5600 MHz	SPEAG	D5GHzV2	1008	07-Dec-2009	
RF Amplifier	EIN	603L	N/A	*In test	
RF Amplifier	Mini-Circuits	ZHL-42	N/A	*In test	✓
RF Amplifier	Mini-Circuits	ZVE-8G	N/A	*In test	
Synthesized signal generator	Hewlett Packard	ESG-D3000A	GB37420238	*In test	✓
RF Power Meter Dual	Hewlett Packard	437B	3125012786	07-July-2009	✓
RF Power Sensor 0.01 - 18 GHz	Hewlett Packard	8481H	1545A01634	09-July-2009	✓
RF Power Meter Dual	Gigatronics	8542B	1830125	24-June-2009	
RF Power Sensor	Gigatronics	80301A	1828805	24-June-2009	
RF Power Meter Dual	Hewlett Packard	435A	1733A05847	*In test	✓
RF Power Sensor	Hewlett Packard	8482A	2349A10114	*In test	✓
Network Analyser	Hewlett Packard	8714B	GB3510035	18-Sept-2009	✓
Network Analyser	Hewlett Packard	8753ES	JP39240130	11-Nov-2009	
Dual Directional Coupler	Hewlett Packard	778D	1144 04700	*In test	
Dual Directional Coupler	NARDA	3022	75453	*In test	✓

* Calibrated during the test for the relevant parameters.

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7.0 SAR TEST METHOD

7.1 Description of the Test Positions (Body Sections)

The SAR measurements are performed in the “Body Worn” position using the centre frequency of the operating band. The configuration giving the maximum mass-averaged SAR is used to test the low-end and high-end frequencies of the transmitting band.
See Appendix A for photos of test positions.

7.1.1 “Body Worn Position”

The body-worn operating configuration was tested with a headset connected to the device and positioned against a flat phantom in normal use configuration. The position chosen for testing was the “Body Worn Position”, this position simulated the EUT placed against the body of a user.

7.1.2 “Belt Clip Position”

The body-worn operating configuration was also tested with an optional belt-clip attached to the device. This “Belt Clip” configuration was tested with a headset connected to the device and positioned against a flat phantom in normal use configuration. The belt clip contains metallic and plastic parts.

7.2 List of All Test Cases (Antenna In/Out, Test Frequencies, User Modes etc)

The SAR was measured at three test channels for the band of operation with the test sample operating as maximum power, as specified in section 2.3.

7.3 FCC and RSS-102 RF Exposure Limits for Occupational/ Controlled Exposure

Spatial Peak SAR Limits For:	
Partial-Body:	8.0 mW/g (averaged over any 1g cube of tissue)
Hands, Wrists, Feet and Ankles:	20.0 mW/g (averaged over 10g cube of tissue)

7.4 FCC and RSS-102 RF Exposure Limits for Un-controlled/Non–occupational

Spatial Peak SAR Limits For:	
Partial-Body:	1.6 mW/g (averaged over any 1g cube of tissue)
Hands, Wrists, Feet and Ankles:	4.0 mW/g (averaged over 10g cube of tissue)

8.0 SAR EVALUATION RESULTS

The SAR values averaged over 1 g and 10 g tissue masses were determined for the sample device for the “Body Worn” position. The results are given in table below.

The plots with the corresponding SAR distributions, which reveal information about the location of the maximum SAR with respect to the devices, are contained in Appendix B of this report.

8.1 SAR Measurement Results for 2450 MHz

Table: SAR Measurement Results – 2450 MHz

Test Position	Plot Number	Test Channel	Test Freq. (MHz)	SAR Level for (1g) mW/g	DASY4 Measured Drift (dB)
Body Worn Position Front	1	01	2402	0.040	-0.018
	2	40	2441	0.058	0.104
	3	79	2480	0.052	0.292
Body Worn Position Back	4	40	2441	0.040	0.076
Belt Clip	5	40	2441	0.016	-0.071
Belt Clip Tilted	6	40	2441	0.029	-0.047

Note: The uncertainty of the system (± 21.5%) has not been added to the result.

The maximum measured SAR level in the 2450MHz band was 0.058 mW/g for a 1-gram cube. This value was measured in the “Body Worn Front” position at a frequency of 2441 MHz (Channel 40).

The FCC and RSS-102 SAR limit for Non-occupational exposure is 1.6 m W/g measurement in a 1g cube of tissue.

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9.0 COMPLIANCE STATEMENT

The Bluetooth Transmitter Model: ADPC 2400 (XSports 2400), was tested on behalf of Phicom It complied with the FCC and RSS-102 SAR requirements.

The highest SAR level recorded was 0.058 mW/g for a 1g cube. This value was measured in the "Body Worn Front" position, and was below the uncontrolled limit of 1.6 mW/g, even taking into account the measurement uncertainty of 21.5 %.

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