

SAR EVALUATION REPORT

For

Posh Mobile Limited

1011A, 10/F., Harbour Centre Tower 1, No. 1 Hok Cheung St., Hung Hom, Kowloon, Hong Kong

FCC ID: 2ABN6S900

Report Type: Original Report	Product Type: Equal Max
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Report Number: <u>RDG151008002-20</u>	
Report Date: <u>2015-10-23</u>	
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Attestation of Test Results		
EUT Information	Company Name	Posh Mobile Limited
	EUT Description	Tablet
	Product Name	Equal Max
	FCC ID	2ABN6S900
	Tested Model	S900A
	Multiple Model	S900B
	Serial Number	151008002
	Test Date	2015-10-21,2015-10-22
MODE		Max. SAR Level(s) Reported(W/Kg)
GSM 850	1g Head SAR	0.125
	1g Body SAR	1.313
PCS 1900	1g Head SAR	0.083
	1g Body SAR	1.382
WCDMA 850	1g Head SAR	0.161
	1g Body SAR	1.235
WCDMA 1900	1g Head SAR	0.078
	1g Body SAR	1.146
Simultaneous	1g Head SAR	0.548
	1g Body SAR	1.576
Hotspot	1g Body SAR	1.576
Applicable Standards	ANSI / IEEE C95.1 : 2005 IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields,3 kHz to 300 GHz.	
	ANSI / IEEE C95.3 : 2002 IEEE Recommended Practice for Measurements and Computations of Radio Frequency Electromagnetic Fields With Respect to Human Exposure to SuchFields,100 kHz—300 GHz.	
	FCC 47 CFR part 2.1093 Radiofrequency radiation exposure evaluation: portable devices	
	IEEE1528:2013 IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques	
	IEC 62209-2:2010 Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices-Human models, instrumentation, and procedures-Part 2: Procedure to determine the specific absorption rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)	
	KDB procedures KDB 447498 D01 General RF Exposure Guidance v05r02. KDB 648474 D04 Handset SAR v01r02. KDB 865664 D01 SAR measurement 100 MHz to 6 GHz v01r03 KDB 865664 D02 RF Exposure Reporting v01r01 KDB 941225 D01 3G SAR Procedures v03 KDB 941225 D06 Hotspot Mode v02 KDB 616217 SAR for laptop and tablets v01r01	
	Note: This wireless device has been shown to be capable of compliance for localized specific absorption rate (SAR) for General Population/Uncontrolled Exposure limits specified in ANSI/IEEE Standards and has been tested in accordance with the measurement procedures specified in IEEE 1528-2013 and RF exposure KDB procedures.	
	The results and statements contained in this report pertain only to the device(s) evaluated.	

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	RDG151008002-20	Original Report	2015-10-23

EUT DESCRIPTION

This report has been prepared on behalf of *Posh Mobile Limited* and their product, Model: S900A , S900B, or the EUT (Equipment under Test) as referred to in the rest of this report.

Technical Specification

Exposure Category:	Population / Uncontrolled
Antenna Type(s):	Internal Antenna
Body-Worn Accessories:	Headset
Face-Head Accessories:	None
Operation Mode :	GSM Voice, GPRS multi-slot class 12, WCDMA R99 (Voice + Data), HSUPA Rel 6, HSDPA Rel 7, DC-HSDPA Rel 8, HSPA+ Rel 6 WLAN Bluetooth
Frequency Band:	GSM 850: 824-849 MHz(TX) ; 869-894 MHz(RX) PCS 1900: 1850-1910 MHz(TX) ; 1930-1990 MHz(RX) WCDMA850: 824-849 MHz(TX) ; 869-894 MHz(RX) WCDMA1900: 1850-1910 MHz(TX) ; 1930-1990 MHz(RX) WLAN: 2412MHz-2462 MHz Bluetooth : 2402MHz-2480 MHz
Conducted RF Power:	GSM 850 : 32.68 dBm PCS 1900: 30.01 dBm WCDMA 850: 22.61 dBm WCDMA 1900: 22.4 dBm WLAN: 9.48 dBm Bluetooth: 1.46 dBm BLE:-5.86 dBm
Dimensions (L*W*H):	239 mm (L) x 136 mm (W) x 11 mm (H)
Power Source:	3.7 VDC Rechargeable Battery
Normal Operation:	Head and Body-worn

REFERENCE, STANDARDS, AND GUIDELINES

FCC:

The Report and Order requires routine SAR evaluation prior to equipment authorization of portable transmitter devices, including portable telephones. For consumer products, the applicable limit is 1.6 mW/g as recommended by the ANSI/IEEE standard C95.1-1992 [6] for an uncontrolled environment (Paragraph 65). According to the Supplement C of OET Bulletin 65 "Evaluating Compliance with FCC Guide-lines for Human Exposure to Radio frequency Electromagnetic Fields", released on Jun 29, 2001 by the FCC, the device should be evaluated at maximum output power (radiated from the antenna) under "worst-case" conditions for normal or intended use, incorporating normal antenna operating positions, device peak performance frequencies and positions for maximum RF energy coupling.

This report describes the methodology and results of experiments performed on wireless data terminal. The objective was to determine if there is RF radiation and if radiation is found, what is the extent of radiation with respect to safety limits. SAR (Specific Absorption Rate) is the measure of RF exposure determined by the amount of RF energy absorbed by human body (or its parts) – to determine how the RF energy couples to the body or head which is a primary health concern for body worn devices. The limit below which the exposure to RF is considered safe by regulatory bodies in North America is 1.6 mW/g average over 1 gram of tissue mass.

CE:

The order requires routine SAR evaluation prior to equipment authorization of portable transmitter devices, including portable telephones. For consumer products, the applicable limit is 2 mW/g as recommended by EN62209-1 for an uncontrolled environment. According to the Standard, the device should be evaluated at maximum output power (radiated from the antenna) under "worst-case" conditions for normal or intended use, incorporating normal antenna operating positions, device peak performance frequencies and positions for maximum RF energy coupling.

This report describes the methodology and results of experiments performed on wireless data terminal. The objective was to determine if there is RF radiation and if radiation is found, what is the extent of radiation with respect to safety limits. SAR (Specific Absorption Rate) is the measure of RF exposure determined by the amount of RF energy absorbed by human body (or its parts) – to determine how the RF energy couples to the body or head which is a primary health concern for body worn devices. The limit below which the exposure to RF is considered safe by regulatory bodies in Europe is 2 mW/g average over 10 gram of tissue mass.

The test configurations were laid out on a specially designed test fixture to ensure the reproducibility of measurements. Each configuration was scanned for SAR. Analysis of each scan was carried out to characterize the above effects in the device.

SAR Limits

FCC Limit

EXPOSURE LIMITS	SAR (W/kg)	
	(General Population / Uncontrolled Exposure Environment)	(Occupational / Controlled Exposure Environment)
Spatial Average (averaged over the whole body)	0.08	0.4
Spatial Peak (averaged over any 1 g of tissue)	1.60	8.0
Spatial Peak (hands/wrists/feet/ankles averaged over 10 g)	4.0	20.0

CE Limit

EXPOSURE LIMITS	SAR (W/kg)	
	(General Population / Uncontrolled Exposure Environment)	(Occupational / Controlled Exposure Environment)
Spatial Average (averaged over the whole body)	0.08	0.4
Spatial Peak (averaged over any 10 g of tissue)	2.0	10
Spatial Peak (hands/wrists/feet/ankles averaged over 10 g)	4.0	20.0

Population/Uncontrolled Environments are defined as locations where there is the exposure of individual who have no knowledge or control of their exposure.

Occupational/Controlled Environments are defined as locations where there is exposure that may be incurred by people who are aware of the potential for exposure (i.e. as a result of employment or occupation).

General Population/Uncontrolled environments Spatial Peak limit 1.6W/kg (FCC) & 2 W/kg (CE) applied to the EUT.

FACILITIES

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.69 Pulongcun, Puxinhu Industrial Zone, Tangxia, Dongguan, Guangdong, China

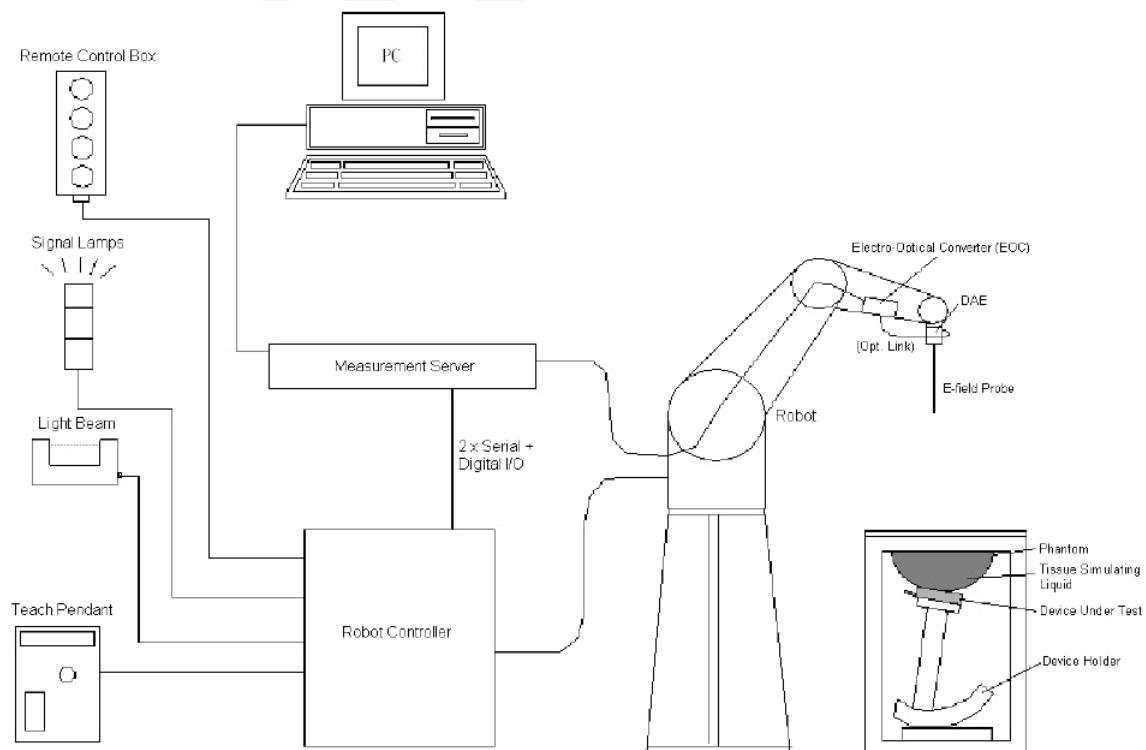
DESCRIPTION OF TEST SYSTEM

These measurements were performed with the automated near-field scanning system DASY5 from Schmid & Partner Engineering AG (SPEAG) which is the Fifth generation of the system shown in the figure hereinafter:



DASY5 System Description

The DASY5 system for performing compliance tests consists of the following items:



- A standard high precision 6-axis robot (Staubli TX-RX family) with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (DAE) which performs the signal application, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running Win7 professional operating system and the DASY52 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

DASY5 Measurement Server

The DASY5 measurement server is based on a PC/104 CPU board with a 400MHz Intel ULV Celeron, 128MB chip-disk and 128MB RAM. The necessary circuits for communication with the DAE4 (or DAE3) electronics box, as well as the 16 bit AD-converter system for optical detection and digital I/O interface are contained on the DASY5 I/O board, which is directly connected to the PC/104 bus of the CPU board.

The measurement server performs all real-time data evaluation of field measurements and surface detection, controls robot movements and handles safety operation. The PC operating system cannot interfere with these time critical processes. All connections are supervised by a watchdog, and disconnection of any of the cables to the measurement server will automatically disarm the robot and disable all program-controlled robot movements. Furthermore, the measurement server is equipped with an expansion port which is reserved for future applications. Please note that this expansion port does not have a standardized point out, and therefore only devices provided by SPEAG can be connected. Devices from any other supplier could seriously damage the measurement server.



Data Acquisition Electronics

The data acquisition electronics (DAE4) consist 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 with a control logic unit. Transmission to the measurement server 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.

The input impedance of both the DAE4 as well as of the DAE3 box is 200MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.

EX3DV4 E-Field Probes

Frequency	10 MHz to > 6 GHz Linearity: ± 0.2 dB (30 MHz to 6 GHz)
Directivity	± 0.3 dB in TSL (rotation around probe axis) ± 0.5 dB in TSL (rotation normal to probe axis)
Dynamic Range	10 μ W/g to > 100 mW/g Linearity: ± 0.2 dB (noise: typically < 1 μ W/g)
Dimensions	Overall length: 337 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm
Application	High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields); the only probe that enables compliance testing for frequencies up to 6 GHz with precision of better 30%.
Compatibility	DASY3, DASY4, DASY52 SAR and higher, EASY4/MRI

SAM Twin Phantom

The SAM twin phantom is a fiberglass shell phantom with 2mm shell thickness (except the ear region, where shell thickness

increases to 6 mm). The phantom has three measurement areas:

- Left hand
- Right hand
- Flat phantom

The phantom table for the DASY systems based on the TX90XL and RX160L robots have the size of 100 x 50 x 85 cm (L x W x H).

The phantom table for the compact DASY systems based on the RX60L robot have the size of 100 x 75 x 91 cm (L x W x H); these tables are reinforced for mounting of the robot onto the table.

For easy dislocation these tables have fork lift cut outs at the bottom.

The bottom plate contains three pairs of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections. Only one device holder is necessary if two phantoms are used (e.g., for different liquids)

A white cover is provided to cover the phantom during off-periods to prevent water evaporation and changes in the liquid parameters. Free space scans of devices on top of this phantom cover are possible. Three reference marks are provided on the phantom counter. These reference marks are used to teach the absolute phantom position relative to the robot.



Robots

The DASY5 system uses the high precision industrial robots TX90XL from Staubli SA (France). The TX robot family is the successor of the well known RX robot family and offers the same features important for our application:

- High precision (repeatability 0.02mm)
- High reliability (industrial design)
- Low maintenance costs (virtually maintenance free due to direct drive gears; no belt drives)
- Jerk-free straight movements (brushless synchrony motors; no stepper motors)
- Low ELF interference (motor control fields shielded via the closed metallic construction shields)

The above mentioned robots are controlled by the Staubli CS8c robot controllers. All information regarding the use and maintenance of the robot arm and the robot controller is contained on the CDs delivered along with the robot. Paper manuals are available upon request direct from Staubli.

Area Scans

Area scans are defined prior to the measurement process being executed with a user defined variable spacing between each measurement point (integral) allowing low uncertainty measurements to be conducted. Scans defined for FCC applications utilize a 15mm 2 step integral, with 1.5mm interpolation used to locate the peak SAR area used for zoom scan assessments.

Where the system identifies multiple SAR peaks (which are within 25% of peak value) the system will provide the user with the option of assessing each peak location individually for zoom scan averaging.

Zoom Scan (Cube Scan Averaging)

The averaging zoom scan volume utilized in the DASY5 software is in the shape of a cube and the side dimension of a 1 g or 10 g mass is dependent on the density of the liquid representing the simulated tissue. A density of 1000 kg/m³ is used to represent the head and body tissue density and not the phantom liquid density, in order to be consistent with the definition of the liquid dielectric properties, i.e. the side length of the 1g cube is 10mm, with the side length of the 10g cube is 21.5mm.

When the cube intersects with the surface of the phantom, it is oriented so that 3 vertices touch the surface of the shell or the center of a face is tangent to the surface. The face of the cube closest to the surface is modified in order to conform to the tangent surface.

The zoom scan integer steps can be user defined so as to reduce uncertainty, but normal practice for typical test applications (including FCC) utilize a physical step of 7 x7 x 7 (5mmx5mmx5mm) providing a volume of 30 mm in the X & Y & Z axis.

Tissue Dielectric Parameters for Head and Body Phantoms

The head tissue dielectric parameters recommended by the IEEE SCC-34/SC-2 in P1528 have been incorporated in the following table. These head parameters are derived from planar layer models simulating the highest expected SAR for the dielectric properties and tissue thickness variations in a human head. Other head and body tissue parameters that have not been specified in P1528 are derived from the tissue dielectric parameters computed from the 4-Cole-Cole equations described in Reference [12] and extrapolated according to the head parameters specified in P1528.

Recommended Tissue Dielectric Parameters for Head and Body

Frequency (MHz)	Head Tissue		Body Tissue	
	ϵ_r	σ (S/m)	ϵ_r	σ (S/m)
150	52.3	0.76	61.9	0.80
300	45.3	0.87	58.2	0.92
450	43.5	0.87	56.7	0.94
835	41.5	0.90	55.2	0.97
900	41.5	0.97	55.0	1.05
915	41.5	0.98	55.0	1.06
1450	40.5	1.20	54.0	1.30
1610	40.3	1.29	53.8	1.40
1800-2000	40.0	1.40	53.3	1.52
2450	39.2	1.80	52.7	1.95
3000	38.5	2.40	52.0	2.73
5800	35.3	5.27	48.2	6.00

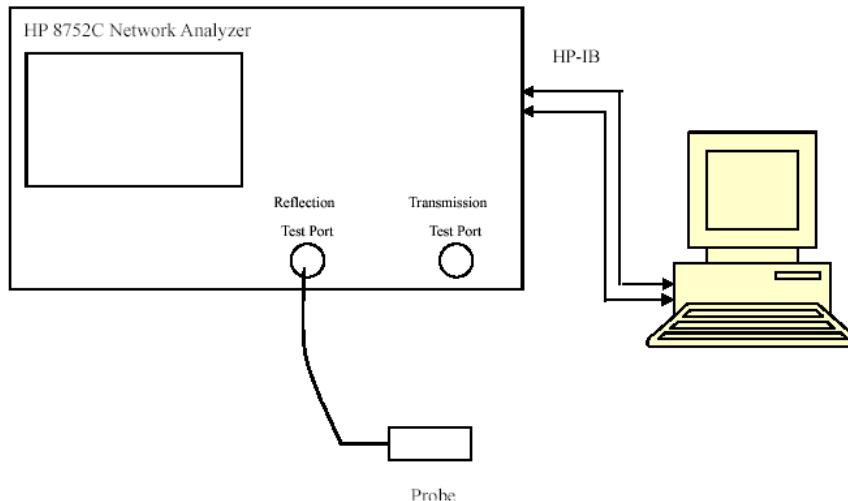
EQUIPMENT LIST AND CALIBRATION

Equipments List & Calibration Information

Equipment	Model	S/N	Calibration Date	Calibration Due Date
Robot	RX90	D03636	N/A	N/A
DASY5 Test Software	DASY52.8	N/A	N/A	N/A
DASY5 Measurement Server	DASY5 4.5.12	1470	N/A	N/A
Data Acquisition Electronics	DAE4	1459	2015/9/18	2016/9/18
E-Field Probe	EX3DV4	7329	2015/2/5	2016/2/5
Dipole, 835MHz	D835V1	453	2015/8/17	2018/8/17
Dipole, 1900MHz	D1900V2	5d206	2015/7/14	2018/7/14
R&S, universal Radio Communication Tester	CMU200	105047	2014/11/20	2015/11/20
8960 Series 10 Wireless Communication Test Set	E5515C	MY50266471	2015-01-13	2016-01-13
Mounting Device	MD4HHTV5	SD 000 H01 KA	N/A	N/A
Twin SAM	Twin SAM V5.0	1874	N/A	N/A
Simulated Tissue 835 MHz Head	TS-835-H	201504	Each Time	/
Simulated Tissue 835 MHz Body	TS-835-B	201505	Each Time	/
Simulated Tissue 1900 MHz Head	TS-1900-H	201506	Each Time	/
Simulated Tissue 1900 MHz Body	TS-1900-B	201507	Each Time	/
Network Analyzer	8752C	3140A02356	2015/6/3	2016/6/3
Dielectric probe kit	85070B	US33020324	2015/6/13	2016/6/13
Signal Generator	E4422B	MY41000355	2014/10/27	2015/10/27
Power Meter	EPM-441A	GB37481494	2014/11/3	2015/11/3
Power Meter Sensor	8481A	T-03-EM-127	2014/11/3	2015/11/3
Power Amplifier	5205PE	1015	N/A	N/A
Directional Coupler	488Z	N/A	N/A	N/A
Attenuator	20dB, 100W	N/A	N/A	N/A

SAR MEASUREMENT SYSTEM VERIFICATION

Liquid Verification



Liquid Verification Setup Block Diagram

Liquid Verification Results

Frequency	Liquid Type	Liquid Parameter		Target Value		Delta (%)		Tolerance (%)
		ϵ_r	σ (S/m)	ϵ_r	σ (S/m)	$\Delta\epsilon_r$	$\Delta\sigma$ (S/m)	
824.2	Head	42.916	0.877	41.5	0.9	3.41	-2.56	± 5
	Body	55.153	0.963	55.2	0.97	-0.09	-0.72	± 5
826.4	Head	42.871	0.879	41.5	0.9	3.3	-2.33	± 5
	Body	55.156	0.966	55.2	0.97	-0.08	-0.41	± 5
836.6	Head	42.849	0.891	41.5	0.9	3.25	-1	± 5
	Body	55.09	0.977	55.2	0.97	-0.2	0.72	± 5
846.6	Head	42.806	0.895	41.5	0.9	3.15	-0.56	± 5
	Body	55.028	0.986	55.2	0.97	-0.31	1.65	± 5
848.8	Head	42.69	0.896	41.5	0.9	2.87	-0.44	± 5
	Body	55.003	0.988	55.2	0.97	-0.36	1.86	± 5

*Liquid Verification above was performed on 2015-10-21.

Frequency	Liquid Type	Liquid Parameter		Target Value		Delta (%)		Tolerance (%)
		ϵ_r	σ (S/m)	ϵ_r	σ (S/m)	$\Delta\epsilon_r$	$\Delta\sigma$ (S/m)	
1850.2	Head	39.838	1.358	40	1.4	-0.4	-3	± 5
	Body	55.284	1.478	53.3	1.52	3.72	-2.76	± 5
1852.4	Head	39.872	1.354	40	1.4	-0.32	-3.29	± 5
	Body	55.212	1.474	53.3	1.52	3.59	-3.03	± 5
1880	Head	39.752	1.384	40	1.4	-0.62	-1.14	± 5
	Body	53.717	1.545	53.3	1.52	0.78	1.64	± 5
1907.6	Head	39.57	1.413	40	1.4	-1.08	0.93	± 5
	Body	53.615	1.49	53.3	1.52	0.59	-1.97	± 5
1909.8	Head	39.591	1.413	40	1.4	-1.02	0.93	± 5
	Body	53.368	1.494	53.3	1.52	0.13	-1.71	± 5

*Liquid Verification above was performed on 2015-10-22.

Please refer to the following tables.

835 MHz Head			835 MHz Body		
Frequency (MHz)	e'	e''	Frequency (MHz)	e'	e''
824	42.8828	19.1471	824	55.16	21.0455
824.5	42.9662	19.1368	824.5	55.1434	20.9679
825	42.9604	19.1544	825	55.1539	21.0007
825.5	42.9301	19.2076	825.5	55.1914	20.9889
826	42.9316	19.1349	826	55.1321	21.0521
826.5	42.8553	19.1394	826.5	55.1616	21.0136
827	42.9103	19.1905	827	55.0459	21.0173
827.5	42.8828	19.1625	827.5	55.1593	20.9959
828	42.945	19.2194	828	55.118	20.9789
828.5	42.9281	19.1601	828.5	55.1643	20.9996
829	42.9464	19.2244	829	55.114	20.9093
829.5	42.9514	19.1289	829.5	55.0962	20.9078
830	42.9762	19.1628	830	55.1086	20.9377
830.5	42.9529	19.2191	830.5	55.1222	20.9569
831	42.9378	19.1814	831	55.1073	20.9706
831.5	42.8677	19.1885	831.5	55.1302	20.9678
832	42.9405	19.1986	832	55.2102	20.9488
832.5	42.9496	19.2354	832.5	55.1048	20.917
833	42.9906	19.2179	833	55.1232	20.9115
833.5	42.9294	19.2114	833.5	55.1319	20.9736
834	42.9187	19.1945	834	55.1747	21.024
834.5	42.8823	19.1925	834.5	55.0877	20.9332
835	42.9606	19.2447	835	55.11	20.979
835.5	42.9421	19.1725	835.5	55.0743	20.9904
836	42.9157	19.1423	836	55.1286	21.0363
836.5	42.846	19.1529	836.5	55.0952	21.0011
837	42.8588	19.1794	837	55.07	20.9818
837.5	42.8564	19.1635	837.5	55.0498	20.912
838	42.8843	19.1996	838	55.0937	20.9818
838.5	42.907	19.2029	838.5	55.1302	20.9984
839	42.9106	19.2271	839	55.0947	20.9492
839.5	42.9334	19.1625	839.5	55.0992	21.0314
840	42.8975	19.117	840	55.0612	20.9975
840.5	42.8845	19.0809	840.5	55.1438	20.9864
841	42.8901	19.2124	841	55.0508	21.0046
841.5	42.9041	19.1295	841.5	55.0479	20.9583
842	42.8644	19.1196	842	55.0918	20.965
842.5	42.82	19.1341	842.5	54.9937	20.9914
843	42.8143	19.099	843	55.0556	20.9778
843.5	42.7909	19.0628	843.5	55.0286	20.9298
844	42.809	19.0705	844	55.0578	20.9034
844.5	42.8791	19.0178	844.5	55.0882	21.0291
845	42.7806	19.0625	845	55.0823	20.9665
845.5	42.8509	19.0922	845.5	55.0035	20.9053
846	42.8489	18.994	846	55.0399	20.9834
846.5	42.8175	18.9887	846.5	55.031	20.9405
847	42.7612	19.1029	847	55.0135	20.9778
847.5	42.7452	18.9795	847.5	55.0472	20.9941
848	42.798	18.9935	848	54.9957	20.9903
848.5	42.7025	18.9959	848.5	54.9945	20.932
849	42.6815	18.9785	849	55.0094	20.942

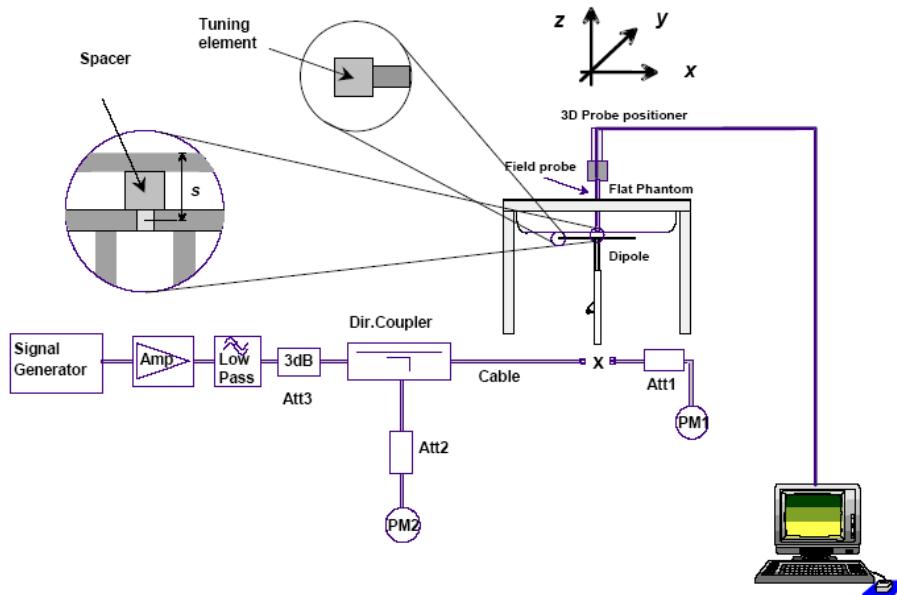
1900 MHz Head			1900 MHz Body		
Frequency (MHz)	e'	e''	Frequency (MHz)	e'	e''
1850	39.8322	13.2073	1850	55.2609	14.3738
1851	39.86	13.1954	1851	55.3768	14.3554
1852	39.8736	13.1476	1852	55.2414	14.3432
1853	39.8705	13.1409	1853	55.1682	14.2584
1854	39.8859	13.1612	1854	55.0781	14.1968
1855	39.8559	13.216	1855	55.0487	14.2286
1856	39.8537	13.1917	1856	54.9042	14.2737
1857	39.9044	13.1917	1857	54.7642	14.2086
1858	39.8252	13.18	1858	54.6058	14.1065
1859	39.7979	13.1842	1859	54.6091	14.0655
1860	39.8339	13.2445	1860	54.455	14.1712
1861	39.8758	13.1997	1861	54.5209	14.119
1862	39.8778	13.1902	1862	54.3411	14.1234
1863	39.8296	13.18	1863	54.2051	14.1164
1864	39.8234	13.1811	1864	54.1637	14.1644
1865	39.8748	13.1886	1865	54.0848	14.1603
1866	39.7798	13.1908	1866	53.957	14.1459
1867	39.7895	13.1868	1867	53.8965	14.1461
1868	39.7902	13.2388	1868	53.8157	14.2053
1869	39.8391	13.3151	1869	53.7062	14.1824
1870	39.8317	13.2607	1870	53.686	14.2874
1871	39.8096	13.2058	1871	53.6575	14.3215
1872	39.7989	13.1801	1872	53.6921	14.3396
1873	39.7828	13.1779	1873	53.6536	14.4521
1874	39.7239	13.2507	1874	53.591	14.4194
1875	39.7566	13.223	1875	53.635	14.4654
1876	39.745	13.2203	1876	53.6399	14.5842
1877	39.7841	13.2435	1877	53.6718	14.6497
1878	39.7601	13.2312	1878	53.6195	14.6973
1879	39.7415	13.218	1879	53.6659	14.6537
1880	39.7519	13.2388	1880	53.7168	14.7758
1881	39.7213	13.2126	1881	53.7332	14.7459
1882	39.7451	13.2593	1882	53.7563	14.8264
1883	39.7363	13.2594	1883	53.7946	14.806
1884	39.7469	13.2726	1884	53.8829	14.7808
1885	39.7247	13.3158	1885	53.9602	14.8342
1886	39.6974	13.2986	1886	54.119	14.8131
1887	39.6715	13.2737	1887	54.174	14.7602
1888	39.6616	13.2781	1888	54.2313	14.802
1889	39.6605	13.3008	1889	54.2238	14.7127
1890	39.6849	13.3209	1890	54.2769	14.7398
1891	39.6932	13.2795	1891	54.3352	14.7372
1892	39.6983	13.2912	1892	54.3705	14.7372
1893	39.6797	13.3116	1893	54.3547	14.6654
1894	39.6777	13.3114	1894	54.3354	14.6366
1895	39.6279	13.2885	1895	54.3562	14.6037
1896	39.6795	13.2812	1896	54.4295	14.49
1897	39.6315	13.2894	1897	54.3951	14.4764
1898	39.6416	13.3083	1898	54.4172	14.4289
1899	39.632	13.2564	1899	54.2297	14.3693
1900	39.6877	13.3244	1900	54.191	14.3151

1900 MHz Head			1900 MHz Body		
Frequency (MHz)	e'	e''	Frequency (MHz)	e'	e''
1901	39.6862	13.3199	1901	54.129	14.2766
1902	39.6025	13.3236	1902	54.0569	14.2402
1903	39.6031	13.2651	1903	53.9588	14.2025
1904	39.6443	13.329	1904	53.8937	14.1117
1905	39.6506	13.3085	1905	53.7965	14.152
1906	39.5965	13.3423	1906	53.7307	14.1357
1907	39.5632	13.3299	1907	53.6466	14.1014
1908	39.5743	13.3145	1908	53.5942	14.0189
1909	39.5667	13.3308	1909	53.4641	14.0429
1910	39.5968	13.2961	1910	53.3444	14.0763

System Accuracy Verification

Prior to the assessment, the system validation kit was used to test whether the system was operating within its specifications of $\pm 10\%$. The validation results are tabulated below. And also the corresponding SAR plot is attached as well in the SAR plots files.

System Verification Setup Block Diagram



System Accuracy Check Results

Date	Frequency Band	Liquid Type	Measured SAR (W/Kg)		Target Value (W/Kg)	Delta (%)	Tolerance (%)
2015-10-21	835	Head	1g	9.38	9.43	-0.53	± 10
		Body	1g	9.77	9.55	2.30	± 10
2015-10-22	1900	Head	1g	40.3	40.7	-0.98	± 10
		Body	1g	41.9	40.8	2.70	± 10

*All SAR values are normalized to 1 Watt forward power.

SAR SYSTEM VALIDATION DATA

Test Laboratory: Bay Area Compliance Labs Corp.(Dongguan)

System Performance 835 MHz Head

DUT:D835V1; Type: 835 MHz; Serial:453

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

Medium parameters used: $f = 835$ MHz; $\sigma = 0.894$ S/m; $\epsilon_r = 42.961$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7329; ConvF(9.52, 9.52, 9.52); Calibrated: 2015/2/5;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1459; Calibrated: 2015/9/18
- Phantom: SAM (30deg probe tilt) with CRP v5.0_20150321; Type: QD000P40CD; Serial: TP:1874
- Measurement SW: DASY52, Version 52.8 (8);

System Performance 835 MHz Head /Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 11.3 W/kg

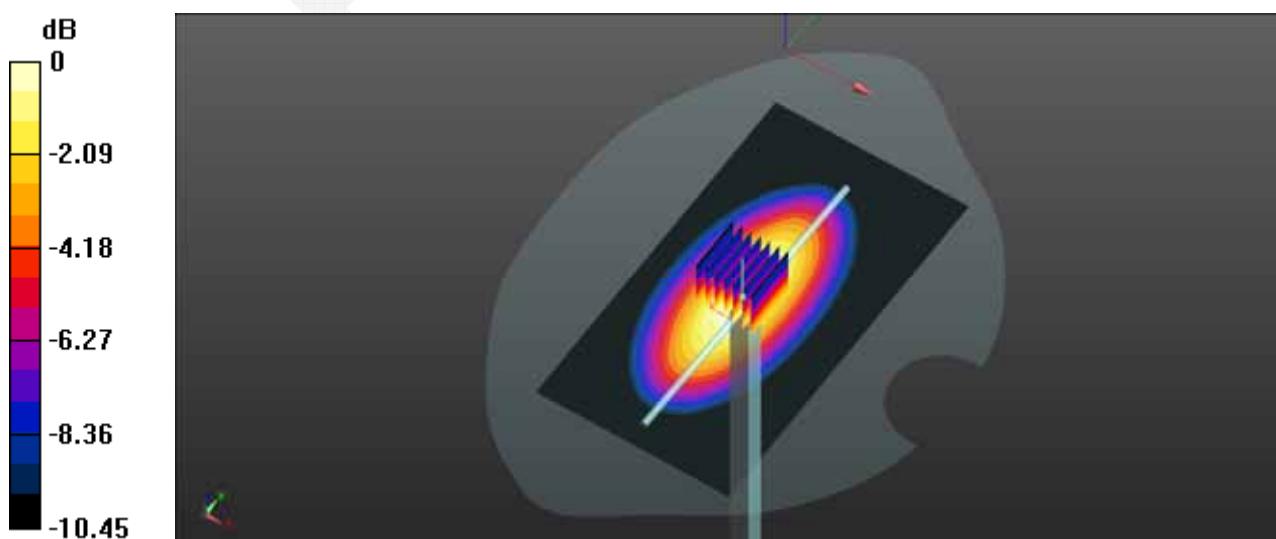
System Performance 835 MHz Head /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 112.1 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 14.2 W/kg

SAR(1 g) = 9.38 W/kg; SAR(10 g) = 6.24 W/kg

Maximum value of SAR (measured) = 10.2 W/kg



Test Laboratory: Bay Area Compliance Labs Corp.(Dongguan)**System Performance 835 MHz Body****DUT:D835V1; Type: 835 MHz; Serial:453**

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

Medium parameters used: $f = 835$ MHz; $\sigma = 0.974$ S/m; $\epsilon_r = 55.11$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7329; ConvF(9.17, 9.17, 9.17); Calibrated: 2015/2/5;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1459; Calibrated: 2015/9/18
- Phantom: SAM (30deg probe tilt) with CRP v5.0_20150321; Type: QD000P40CD; Serial: TP:1874
- Measurement SW: DASY52, Version 52.8 (8);

System Performance 835 MHz Body /Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 11.0 W/kg

System Performance 835 MHz Body /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm,

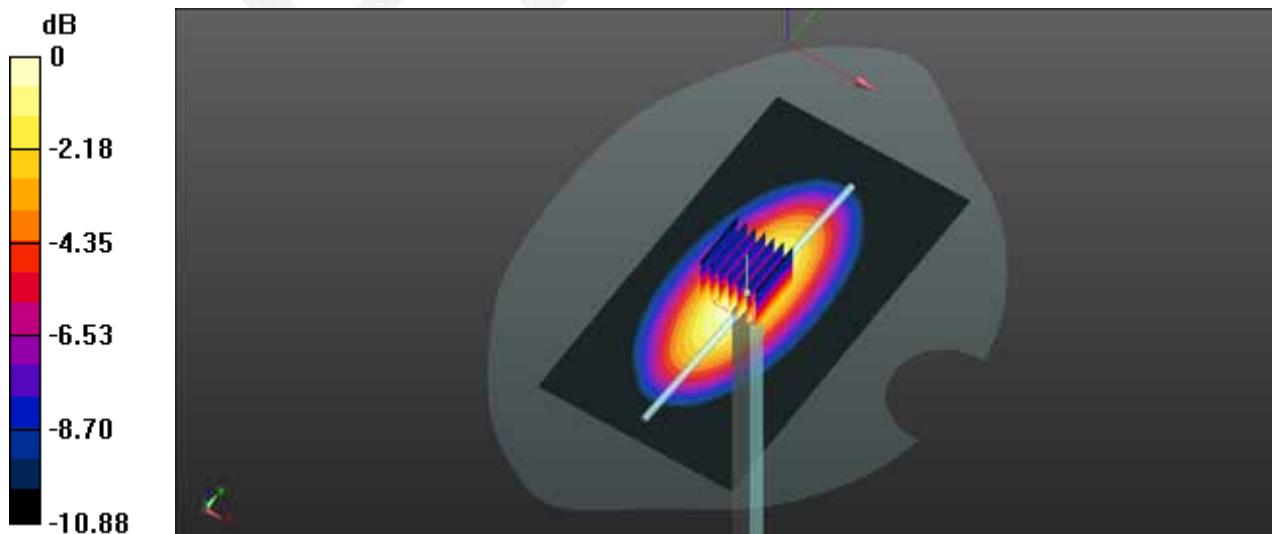
dz=5mm

Reference Value = 1066.7 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 15.1 W/kg

SAR(1 g) = 9.77 W/kg; SAR(10 g) = 6.24 W/kg

Maximum value of SAR (measured) = 11.4 W/kg



Test Laboratory: Bay Area Compliance Labs Corp.(Dongguan)**System Performance 1900 MHz Head****DUT: D1900V2; Type: 1900 MHz; Serial: 5d206**

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.408$ S/m; $\epsilon_r = 39.688$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7329; ConvF(7.88, 7.88, 7.88); Calibrated: 2015/2/5;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1459; Calibrated: 2015/9/18
- Phantom: SAM (30deg probe tilt) with CRP v5.0_20150321; Type: QD000P40CD; Serial: TP:1874
- Measurement SW: DASY52, Version 52.8 (8);

System Performance 1900 MHz Head /Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 47.8 W/kg

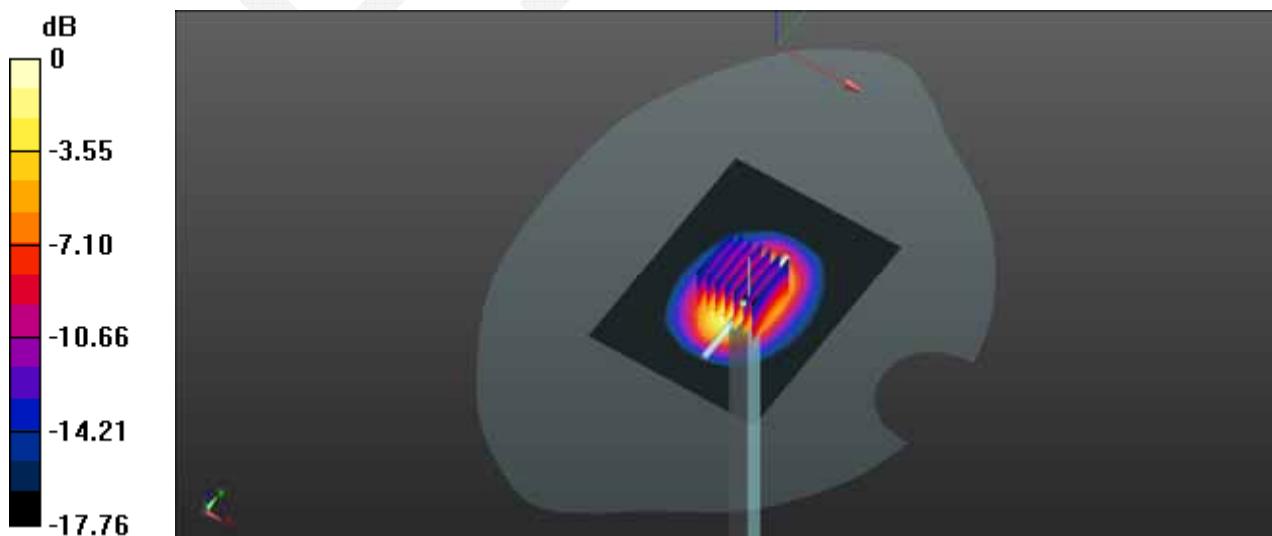
System Performance 1900 MHz Head /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 176.9 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 75.1 W/kg

SAR(1 g) = 40.3 W/kg; SAR(10 g) = 20.9 W/kg

Maximum value of SAR (measured) = 45.6 W/kg



Test Laboratory: Bay Area Compliance Labs Corp.(Dongguan)**System Performance 1900 MHz Body****DUT: D1900V2; Type: 1900 MHz; Serial: 5d206**

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.512$ S/m; $\epsilon_r = 54.191$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7329; ConvF(7.56, 7.56, 7.56); Calibrated: 2015/2/5;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1459; Calibrated: 2015/9/18
- Phantom: SAM (30deg probe tilt) with CRP v5.0_20150321; Type: QD000P40CD; Serial: TP:1874
- Measurement SW: DASY52, Version 52.8 (8);

System Performance 1900 MHz Body /Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 47.6 W/kg

System Performance 1900 MHz Body /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm,

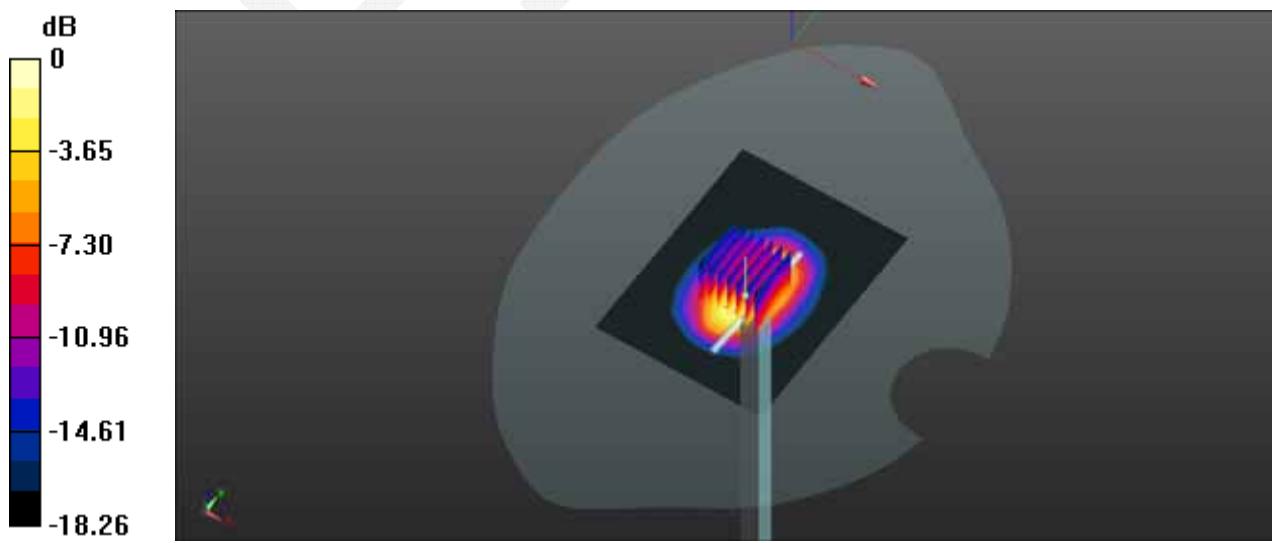
dz=5mm

Reference Value = 177.2 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 75.8 W/kg

SAR(1 g) = 41.9 W/kg; SAR(10 g) = 21.2 W/kg

Maximum value of SAR (measured) = 46.3 W/kg

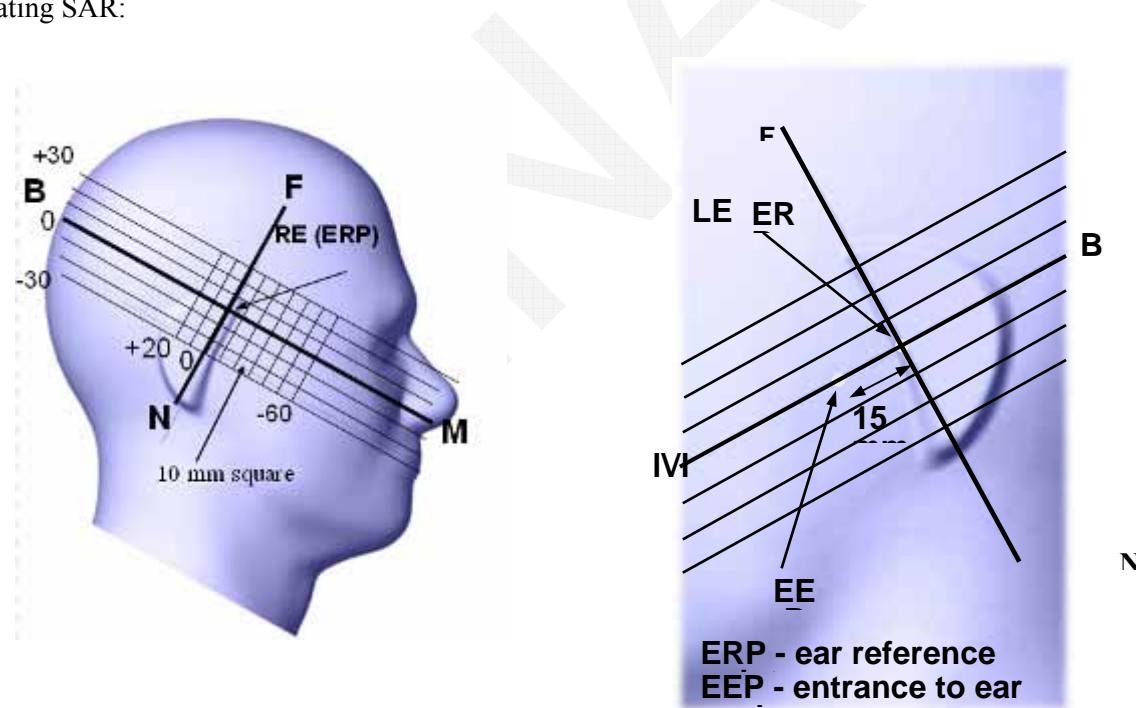


EUT TEST STRATEGY AND METHODOLOGY

Test Positions for Device Operating Next to a Person's Ear

This category includes most wireless handsets with fixed, retractable or internal antennas located toward the top half of the device, with or without a foldout, sliding or similar keypad cover. The handset should have its earpiece located within the upper 1/4 of the device, either along the centerline or off-centered, as perceived by its users. This type of handset should be positioned in a normal operating position with the “test device reference point” located along the “vertical centerline” on the front of the device aligned to the “ear reference point”. The “test device reference point” should be located at the same level as the center of the earpiece region. The “vertical centerline” should bisect the front surface of the handset at its top and bottom edges. A “ear reference point” is located on the outer surface of the head phantom on each ear spacer. It is located 1.5 cm above the center of the ear canal entrance in the “phantom reference plane” defined by the three lines joining the center of each “ear reference point” (left and right) and the tip of the mouth.

A handset should be initially positioned with the earpiece region pressed against the ear spacer of a head phantom. For the SCC-34/SC-2 head phantom, the device should be positioned parallel to the “N-F” line defined along the base of the ear spacer that contains the “ear reference point”. For interim head phantoms, the device should be positioned parallel to the cheek for maximum RF energy coupling. The “test device reference point” is aligned to the “ear reference point” on the head phantom and the “vertical centerline” is aligned to the “phantom reference plane”. This is called the “initial ear position”. While maintaining these three alignments, the body of the handset is gradually adjusted to each of the following positions for evaluating SAR:



Cheek/Touch Position

The device is brought toward the mouth of the head phantom by pivoting against the “ear reference point” or along the “N-F” line for the SCC-34/SC-2 head phantom.

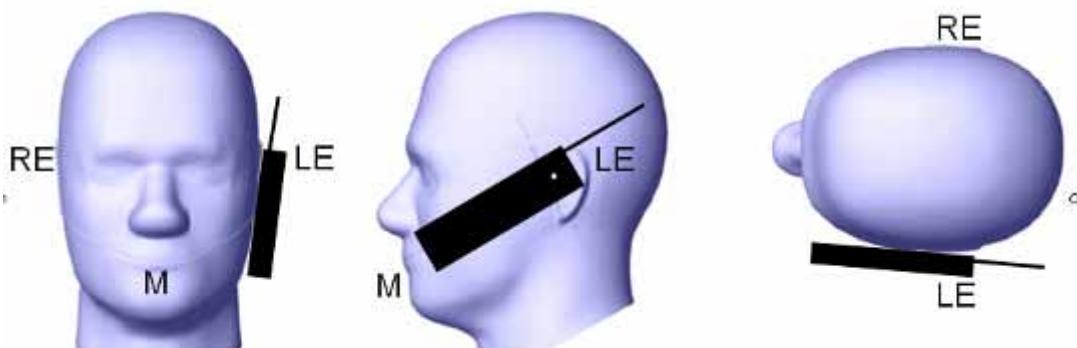
This test position is established:

When any point on the display, keypad or mouthpiece portions of the handset is in contact with the phantom.

(or) When any portion of a foldout, sliding or similar keypad cover opened to its intended self-adjusting normal use position is in contact with the cheek or mouth of the phantom.

For existing head phantoms – when the handset loses contact with the phantom at the pivoting point, rotation should continue until the device touches the cheek of the phantom or breaks its last contact from the ear spacer.

Cheek /Touch Position



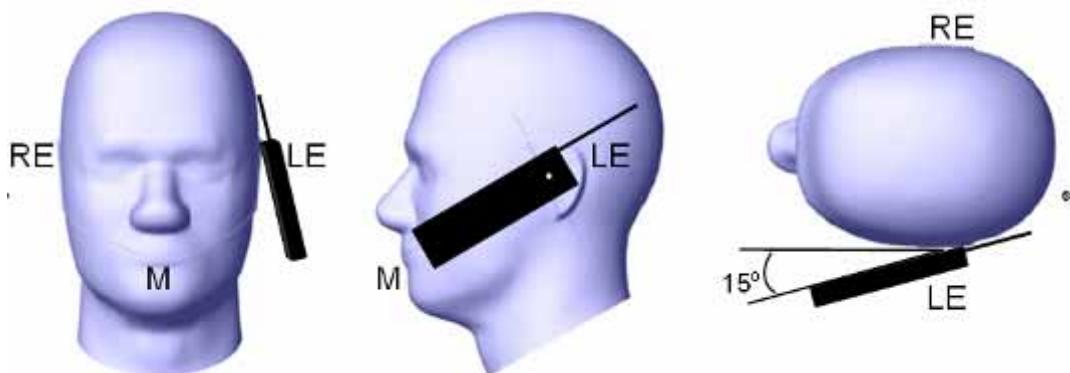
Ear/Tilt Position

With the handset aligned in the “Cheek/Touch Position”:

1) If the earpiece of the handset is not in full contact with the phantom’s ear spacer (in the “Cheek/Touch position”) and the peak SAR location for the “Cheek/Touch” position is located at the ear spacer region or corresponds to the earpiece region of the handset, the device should be returned to the “initial ear position” by rotating it away from the mouth until the earpiece is in full contact with the ear spacer.

2) (otherwise) The handset should be moved (translated) away from the cheek perpendicular to the line passes through both “ear reference points” (note: one of these ear reference points may not physically exist on a split head model) for approximate 2-3 cm. While it is in this position, the device handset is tilted away from the mouth with respect to the “test device reference point” until the inside angle between the vertical centerline on the front surface of the phone and the horizontal line passing through the ear reference point is by 15 80°. After the tilt, it is then moved (translated) back toward the head perpendicular to the line passes through both “ear reference points” until the device touches the phantom or the ear spacer. If the antenna touches the head first, the positioning process should be repeated with a tilt angle less than 15° so that the device and its antenna would touch the phantom simultaneously. This test position may require a device holder or positioner to achieve the translation and tilting with acceptable positioning repeatability.

If a device is also designed to transmit with its keypad cover closed for operating in the head position, such positions should also be considered in the SAR evaluation. The device should be tested on the left and right side of the head phantom in the “Cheek/Touch” and “Ear/Tilt” positions. When applicable, each configuration should be tested with the antenna in its fully extended and fully retracted positions. These test configurations should be tested at the high, middle and low frequency channels of each operating mode; for example, AMPS, CDMA, and TDMA. If the SAR measured at the middle channel for each test configuration (left, right, Cheek/Touch, Tilt/Ear, extended and retracted) is at least 2.0 dB lower than the SAR limit, testing at the high and low channels is optional for such test configuration(s). If the transmission band of the test device is less than 10 MHz, testing at the high and low frequency channels is optional.

Ear /Tilt 15° Position**Test positions for body-worn and other configurations**

Body-worn operating configurations should be tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in normal use configurations. Devices with a headset output should be tested with a headset connected to the device. When multiple accessories that do not contain metallic components are supplied with the device, the device may be tested with only the accessory that dictates the closest spacing to the body. When multiple accessories that contain metallic components are supplied with the device, the device must be tested with each accessory that contains a unique metallic component. If multiple accessories share an identical metallic component (e.g., the same metallic belt-clip used with different holsters with no other metallic components), only the accessory that dictates the closest spacing to the body must be tested.

Body-worn accessories may not always be supplied or available as options for some devices that are intended to be authorized for body-worn use. A separation distance of 1.5 cm between the back of the device and a flat phantom is recommended for testing body-worn SAR compliance under such circumstances. Other separation distances may be used, but they should not exceed 2.5 cm. In these cases, the device may use body-worn accessories that provide a separation distance greater than that tested for the device provided however that the accessory contains no metallic components.

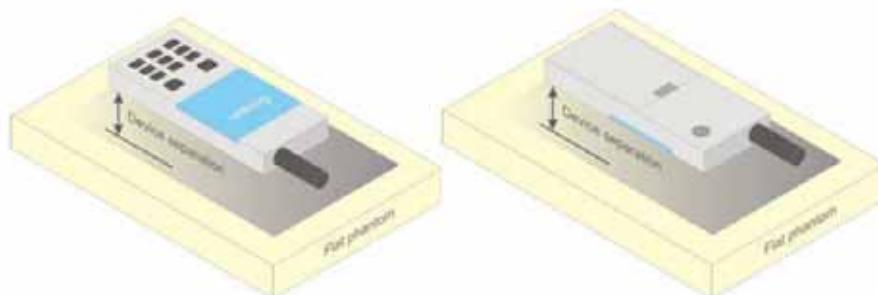


Figure 5 – Test positions for body-worn devices

SAR Evaluation Procedure

The evaluation was performed with the following procedure:

Step 1: Measurement of the SAR value at a fixed location above the ear point or central position was used as a reference value for assessing the power drop. The SAR at this point is measured at the start of the test and then again at the end of the testing.

Step 2: The SAR distribution at the exposed side of the head was measured at a distance of 4 mm from the inner surface of the shell. The area covered the entire dimension of the head or radiating structures of the EUT, the horizontal grid spacing was 15 mm x 15 mm, and the SAR distribution was determined by integrated grid of 1.5mm x 1.5mm. Based on these data, the area of the maximum absorption was determined by spline interpolation. The first Area Scan covers the entire dimension of the EUT to ensure that the hotspot was correctly identified.

Step 3: Around this point, a volume of 30 mm x 30 mm x 30 mm was assessed by measuring 7x 7 x 7 points. On the basis of this data set, the spatial peak SAR value was evaluated under the following procedure:

- 1) The data at the surface were extrapolated, since the center of the dipoles is 1.2 mm away from the tip of the probe and the distance between the surface and the lowest measuring point is 1.3 mm. The extrapolation was based on a least square algorithm. A polynomial of the fourth order was calculated through the points in z-axes. This polynomial was then used to evaluate the points between the surface and the probe tip.
- 2) The maximum interpolated value was searched with a straightforward algorithm. Around this maximum the SAR values averaged over the spatial volumes (1 g or 10 g) were computed by 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-directions). The volume was integrated with the trapezoidal-algorithm. One thousand points (10 x 10 x 10) were interpolated to calculate the averages.

All neighboring volumes were evaluated until no neighboring volume with a higher average value was found.

Step 4: Re-measurement of the SAR value at the same location as in Step 1. If the value changed by more than 5%, the evaluation was repeated.

Test methodology

KDB 447498 D01 General RF Exposure Guidance v05r02.
KDB 648474 D04 Handset SAR v01r02.
KDB 865664 D01 SAR measurement 100 MHz to 6 GHz v01r03
KDB 865664 D02 RF Exposure Reporting v01r01
KDB 941225 D01 3G SAR Procedures v03
KDB 941225 D06 Hotspot Mode v02
KDB 616217 SAR for laptop and tablets v01r01

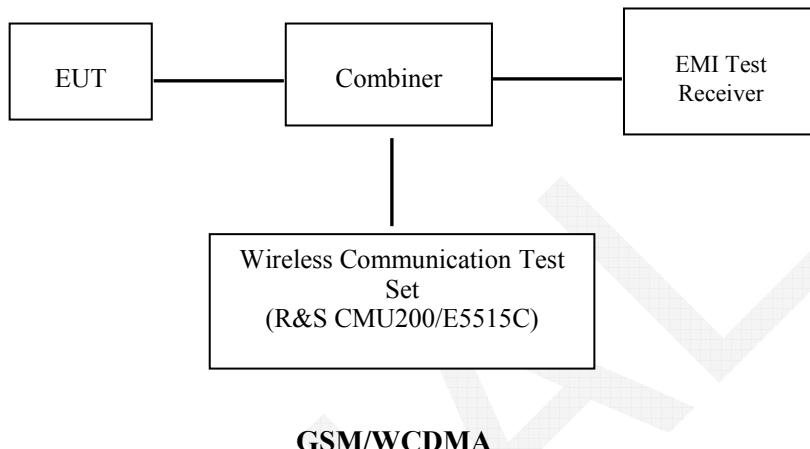
CONDUCTED OUTPUT POWER MEASUREMENT

Provision Applicable

The measured peak output power should be greater and within 5% than EMI measurement.

Test Procedure

The RF output of the transmitter was connected to the input of the EMI Test Receiver through sufficient attenuation.



Radio Configuration

The power measurement was configured by the Wireless Communication Test Set CMU200 for all Radio configurations except the HSPA+/DC-HSDPA configured by E5515C.

GSM

Function: Menu select > GSM Mobile Station > GSM 850/1900

Press Connection control to choose the different menus

Press RESET > choose all the reset all settings

Connection: Press Signal Off to turn off the signal and change settings

Network Support > GSM + only

MS Signal

> 33 dBm for GSM 850

> 30 dBm for PCS 1900

BS Signal: Enter the same channel number for TCH channel (test channel) and BCCH channel

Frequency Offset >+ 0 Hz

Mode > BCCH and TCH

BCCH Level > -85 dBm (May need to adjust if link is not stable)

BCCH Channel >choose desire test channel [Enter the same channel number for TCH channel (test channel) and BCCH channel]

Channel Type > Off

P0 > 4 dB

TCH > choose desired test channel

Hopping >Off

AF/RF: Enter appropriate offsets for Ext. Att. Output and Ext. Att. Input

Connection: Press Signal on to turn on the signal and change settings

GPRS

Function: Menu select > GSM Mobile Station > GSM 850/1900

Press Connection control to choose the different menus

Press RESET > choose all the reset all settings

Connection: Press Signal Off to turn off the signal and change settings

Network Support > GSM + GPRS or GSM + EGSM

Main Service > Packet Data

Service selection > Test Mode A – Auto Slot Config. off

MS Signal: Press Slot Config Bottom on the right twice to select and change the number of time slots and power setting

> Slot configuration > Uplink/Gamma

> 33 dBm for GPRS 850

> 30 dBm for GPRS 1900

BS Signal: Enter the same channel number for TCH channel (test channel) and BCCH channel

Frequency Offset >+ 0 Hz

Mode >BCCH and TCH

BCCH Level >-85 dBm (May need to adjust if link is not stable)

BCCH Channel > choose desire test channel [Enter the same channel number for TCH channel (test channel) and BCCH channel]

Channel Type > Off

P0 > 4 dB

Slot Config > Unchanged (if already set under MS signal)

TCH > choose desired test channel

Hopping >Off

Main Timeslot >3

Network: Coding Scheme >CS4 (GPRS)

Bit Stream >2E9-1 PSR Bit Stream

AF/RF: Enter appropriate offsets for Ext. Att. Output and Ext. Att. Input

Connection: Press Signal on to turn on the signal and change settings

WCDMA Release 99

The following tests were conducted according to the test requirements outlines in section 5.2 of the 3GPP TS34.121-1 specification. The EUT has a nominal maximum output power of 24dBm (+1.7/-3.7).

WCDMA General Settings	Loopback Mode	Test Mode 1
	Rel99 RMC	12.2kbps RMC
	Power Control Algorithm	Algorithm2
	β_c/β_d	8/15

HSDPA

The following tests were conducted according to the test requirements outlines in section 5.2 of the 3GPP TS34.121-1 specification.

	Mode	HSDPA	HSDPA	HSDPA	HSDPA	
	Subset	1	2	3	4	
WCDMA General Settings	Loopback Mode	Test Mode 1				
	Rel99 RMC	12.2kbps RMC				
	HSDPA FRC	H-Set1				
	Power Control Algorithm	Algorithm2				
	β_c	2/15	12/15	15/15	15/15	
	β_d	15/15	15/15	8/15	4/15	
	$\beta_d(SF)$	64				
	β_c/β_d	2/15	12/15	15/8	15/4	
	β_{hs}	4/15	24/15	30/15	30/15	
HSDPA Specific Settings	MPR(dB)	0	0	0.5	0.5	
	DACK	8				
	DNAK	8				
	DCQI	8				
	Ack-Nack repetition factor	3				
	CQI Feedback	4ms				
CQI Repetition Factor		2				
$A_{hs} = \beta_{hs} / \beta_c$		30/15				

HSUPA

The following tests were conducted according to the test requirements outlines in section 5.2 of the 3GPP TS34.121-1 specification.

	Mode	HSUPA	HSUPA	HSUPA	HSUPA	HSUPA
	Subset	1	2	3	4	5
WCDMA General Settings	Loopback Mode	Test Mode 1				
	Rel99 RMC	12.2kbps RMC				
	HSDPA FRC	H-Set1				
	HSUPA Test	HSUPA Loopback				
	Power Control Algorithm	Algorithm2				
	β_c	11/15	6/15	15/15	2/15	15/15
	β_d	15/15	15/15	9/15	15/15	0
	β_{ec}	209/225	12/15	30/15	2/15	5/15
HSDPA Specific Settings	β_c/β_d	11/15	6/15	15/9	2/15	-
	β_{hs}	22/15	12/15	30/15	4/15	5/15
	CM(dB)	1.0	3.0	2.0	3.0	1.0
	MPR(dB)	0	2	1	2	0
	DACK	8				
	DNAK	8				
	DCQI	8				
HSUPA Specific Settings	Ack-Nack repetition factor	3				
	CQI Feedback	4ms				
	CQI Repetition Factor	2				
	$A_{hs} = \beta_{hs}/\beta_c$	30/15				
	DE-DPCCH	6	8	8	5	7
	DHARQ	0	0	0	0	0
	AG Index	20	12	15	17	21
	ETFCI	75	67	92	71	81
	Associated Max UL Data Rate kbps	242.1	174.9	482.8	205.8	308.9
	Reference E_FCl	E-TFCI 11 E E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO23 E-TFCI 75 E-TFCI PO26 E-TFCI 81 E-TFCI PO 27	E-TFCI 11 E-TFCI PO 4 E-TFCI 67 E-TFCI PO4 E-TFCI 71 E-TFCI 92 E-TFCI 75 E-TFCI PO 18	E-TFCI 11 E E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO23 E-TFCI 75 E-TFCI PO26 E-TFCI 81 E-TFCI PO 27		

HSPA+

Sub-test	β_c (Note3)	β_d	β_{HS} (Note1)	β_{ec}	β_{ed} (2xSF2) (Note 4)	β_{ed} (2xSF4) (Note 4)	CM (dB) (Note 2)	MPR (dB) (Note 2)	AG Index (Note 4)	E-TFCI (Note 5)	E-TFCI (boost)
1	1	0	30/15	30/15	β_{ed1} : 30/15 β_{ed2} : 30/15	β_{ed3} : 24/15 β_{ed4} : 24/15	3.5	2.5	14	105	105

Note 1: Δ_{ACK} , Δ_{NACK} and Δ_{CQI} = 30/15 with $\beta_{hs} = 30/15 * \beta_c$.
 Note 2: CM = 3.5 and the MPR is based on the relative CM difference, MPR = MAX(CM-1,0).
 Note 3: DPDCH is not configured, therefore the β_c is set to 1 and β_d = 0 by default.
 Note 4: β_{ed} can not be set directly; it is set by Absolute Grant Value.
 Note 5: All the sub-tests require the UE to transmit 2SF2+2SF4 16QAM EDCH and they apply for UE using E-DPDCH category 7. E-DCH TTI is set to 2ms TTI and E-DCH table index = 2. To support these E-DCH configurations DPDCH is not allocated. The UE is signalled to use the extrapolation algorithm.

The following tests were conducted according to the test requirements in Table C.11.1.4 of 3GPP TS 34.121-1

DC-HSDPA

The following tests were conducted according to the test requirements in Table C.8.1.12 of 3GPP TS 34.121-1

Table C.8.1.12: Fixed Reference Channel H-Set 12

Parameter	Unit	Value
Nominal Avg. Inf. Bit Rate	kbps	60
Inter-TTI Distance	TTI's	1
Number of HARQ Processes	Processes	6
Information Bit Payload (N_{INF})	Bits	120
Number Code Blocks	Blocks	1
Binary Channel Bits Per TTI	Bits	960
Total Available SML's in UE	SML's	19200
Number of SML's per HARQ Proc.	SML's	3200
Coding Rate		0.15
Number of Physical Channel Codes	Codes	1
Modulation		QPSK
Note 1:	The RMC is intended to be used for DC-HSDPA mode and both cells shall transmit with identical parameters as listed in the table.	
Note 2:	Maximum number of transmission is limited to 1, i.e., retransmission is not allowed. The redundancy and constellation version 0 shall be used.	

Maximum Target Output Power

Mode/Band	Max Target Power(dBm)		
	Channel		
	Low	Middle	High
GSM 850	32.8	32.8	32.8
GPRS 1 TX Slot	31.6	31.6	31.6
GPRS 2 TX Slot	31	31	31
GPRS 3 TX Slot	29.4	29.4	29.4
GPRS 4 TX Slot	28.8	28.8	28.8
PCS 1900	30.1	30.1	30.1
GPRS 1 TX Slot	29.7	29.7	29.7
GPRS 2 TX Slot	28.8	28.8	28.8
GPRS 3 TX Slot	27.9	27.9	27.9
GPRS 4 TX Slot	26.7	26.7	26.7
WCDMA850	22.7	22.7	22.7
HSDPA	21.6	21.6	21.6
HSUPA	21.5	21.5	21.5
DC-HSDPA	21.3	21.3	21.3
HSPA+	21.2	21.2	21.2
WCDMA1900	22.5	22.5	22.5
HSDPA	22.8	22.8	22.8
HSUPA	22.3	22.3	22.3
DC-HSDPA	21.8	21.8	21.8
HSPA+	21.2	21.2	21.2
WLAN	9.6	9.6	9.6
Bluetooth BDR/EDR	1.6	1.6	1.6
Bluetooth LE	-5.8	-5.8	-5.8

Test Results:**GSM:**

Band	Channel No.	Frequency (MHz)	RF Output Power (dBm)
GSM 850	128	824.2	32.67
	190	836.6	32.64
	251	848.8	32.68
PCS 1900	512	1850.2	29.75
	661	1880	29.9
	810	1909.8	30.01

GPRS:

Band	Channel No.	Frequency (MHz)	RF Output Power (dBm)			
			1 slot	2 slots	3 slots	4 slots
GSM 850	128	824.2	31.37	30.36	29.34	28.65
	190	836.6	31.21	30.87	29.28	28.5
	251	848.8	31.54	30.85	29.64	28.62
PCS 1900	512	1850.2	29.63	28.64	27.62	26.55
	661	1880	29.57	28.35	27.83	26.38
	810	1909.8	29.34	28.68	27.68	26.57

For SAR, the time based average power is relevant, the difference in between depends on the duty cycle of the TDMA signal.

Number of Time slot	1	2	3	4
Duty Cycle	1:8	1:4	1:2.66	1:2
Time based Ave. power compared to slotted Ave. power	-9 dB	-6 dB	-4.25 dB	-3 dB
Crest Factor	8	4	2.66	2

The time based average power for GPRS

Band	Channel No.	Frequency (MHz)	Time based average Power (dBm)			
			1 slot	2 slot	3 slots	4 slots
GSM 850	128	824.2	22.37	24.36	25.09	25.65
	190	836.6	22.21	24.87	25.03	25.5
	251	848.8	22.54	24.85	25.39	25.62
PCS 1900	512	1850.2	20.63	22.64	23.37	23.55
	661	1880	20.57	22.35	23.58	23.38
	810	1909.8	20.34	22.68	23.43	23.57

Note:

1. Rohde & Schwarz Radio Communication Tester (CMU200) was used for the measurement of GSM peak and average output power for active timeslots.
2. For GSM voice, 1 timeslot has been activated with power level 5 (850 MHz band) and 0 (1900 MHz band).
3. For GPRS, 1, 2, 3 and 4 timeslots has been activated separately with power level 3(850 MHz band) and 3(1900 MHz band).

WCDMA:**Results (12.2kbps RMC)**

Band	Channel No.	Frequency (MHz)	RF Output Power (dBm)
WCDMA 850	4132	826.4	22.61
	4183	836.6	22.53
	4233	846.6	22.32
WCDMA 1900	9262	1852.4	22.12
	9400	1880	22.14
	9538	1907.6	22.4

Results (HSDPA)

Band	Channel No.	Frequency (MHz)	RF Output Power (dBm)			
			Subset 1	Subset 2	Subset 3	Subset 4
WCDMA 850	4132	826.4	21.44	21.42	21.33	21.31
	4183	836.6	21.48	21.46	21.43	21.35
	4233	846.6	21.24	21.2	21.16	21.07
WCDMA 1900	9262	1852.4	21.88	22.74	22.54	22.48
	9400	1880	21.95	21.65	21.54	21.37
	9538	1907.6	22.24	22.18	22.04	21.86

Results (HSUPA)

Band	Channel No.	Frequency (MHz)	RF Output Power (dBm)				
			Subset 1	Subset 2	Subset 3	Subset 4	Subset 5
WCDMA 850	4132	826.4	21.38	21.34	21.3	21.27	21.23
	4183	836.6	21.41	21.37	21.25	21.24	21.16
	4233	846.6	21.29	21.24	21.19	21.14	21.13
WCDMA 1900	9262	1852.4	21.87	21.71	21.65	21.52	21.47
	9400	1880	21.97	21.74	21.63	21.59	21.56
	9538	1907.6	22.17	22.04	21.93	21.85	21.73

Results (DC-HSDPA):

Band	Channel No.	Frequency (MHz)	RF Output Power (dBm)			
			Subset 1	Subset 2	Subset 3	Subset 4
WCDMA 850	4132	826.4	21.16	21.14	21.12	21.07
	4183	836.6	21.12	21.1	21.08	21.05
	4233	846.6	21.1	21.07	21.09	21.04
WCDMA 1900	9262	1852.4	21.73	21.52	21.62	21.48
	9400	1880	21.54	21.44	21.32	21.25
	9538	1907.6	21.65	21.53	21.42	21.37

Results (HSPA+)

Band	Channel No.	Frequency (MHz)	RF Output Power (dBm)
WCDMA 850	4132	826.4	21.02
	4183	836.6	21.01
	4233	846.6	21.05
WCDMA 1900	9262	1852.4	20.98
	9400	1880	21.05
	9538	1907.6	21.13

Note:

1. The default test configuration is to measure SAR with an established radio link between the EUT and a communication test set using a 12.2 kbps RMC (reference measurement Channel) Configured in Test Loop Model 1.
2. KDB 941225 D01-Body SAR is not required for HSDPA/HSUPA/HSPA+/DC-HSDPA when the maximum average output of each RF channel is less than $\frac{1}{4}$ dB higher than measured 12.2kbps RMC or the maximum SAR for 12.2kbps RMC is < 75% of SAR limit.

Bluetooth

Mode	Channel No.	Channel frequency (MHz)	RF Output Power (dBm)
BDR(GFSK)	0	2402	1.25
	39	2441	1.17
	78	2480	0.69
EDR(4-DQPSK)	0	2402	1.32
	39	2441	1.46
	78	2480	0.21
EDR(8-DPSK)	0	2402	1.05
	39	2441	0.92
	78	2480	0.51
Bluetooth LE	0	2402	-5.98
	19	2440	-5.86
	39	2480	-6.45

WLAN

Mode	Channel No.	Channel frequency (MHz)	RF Output Power (dBm)
802.11b	1	2412	9.29
	6	2437	9.48
	11	2462	9.16
802.11g	1	2412	9.21
	6	2437	9.18
	11	2462	9.38
802.11n HT20	1	2412	9.34
	6	2437	9.36
	11	2462	9.45
802.11n HT40	3	2422	9.32
	6	2437	9.43
	9	2452	9.37

Note:

The output power was tested under data rate 1Mbps for 802.11b, 6Mbps for 802.11g, 6.5Mbps for 802.11n HT20, 13.5Mbps for 802.11n HT40.

SAR MEASUREMENT RESULTS

This page summarizes the results of the performed dosimetric evaluation.

The EUT is capable of function as a WLAN to cellular mobile hotspot. Additional SAR test was performed according to KDB941225 D06. Test was performed with a separation of 1cm between the EUT and the flat phantom. The EUT was positioned for SAR tests with the front and back surfaces facing the edge. Each transmit band was utilized for SAR testing. The tested mode has been selected within each band that exhibits the highest time average output power.

SAR Test Data

Environmental Conditions

Temperature:	22.5-24	23-24
Relative Humidity:	30 %	27 %
ATM Pressure:	1005 mbar	1007 mbar
Test Date:	2015-10-21	2015-10-22

Testing was performed by Rocky Xiao

GSM 850:

EUT Position	Frequency (MHz)	Test Mode	Power Drift (dB)	Max. Meas. Power (dBm)	Max. Rated Power (dBm)	1g SAR (W/Kg)			
						Scaled Factor	Meas. SAR	Scaled SAR	Plot
Head Flat	824.2	GSM	0.02	32.67	32.8	1.03	0.118	0.122	/
	836.6	GSM	0.07	32.64	32.8	1.038	0.118	0.122	/
	848.8	GSM	0.06	32.68	32.8	1.028	0.122	0.125	1#
Body-Back-Headset (0mm)	824.2	GSM	-0.12	32.67	32.8	1.03	0.935	0.963	/
	836.6	GSM	0.03	32.64	32.8	1.038	0.967	1.004	/
	848.8	GSM	0.04	32.68	32.8	1.028	0.927	0.953	/
Body-Back (0mm)	824.2	GPRS	0.15	28.65	28.8	1.035	1.215	1.258	/
	836.6	GPRS	0.07	28.5	28.8	1.072	1.195	1.281	/
	848.8	GPRS	0.01	28.62	28.8	1.042	1.26	1.313	2#
Body-Right (0mm)	824.2	GPRS	/	/	/	/	/	/	/
	836.6	GPRS	0.15	28.5	28.8	1.072	0.318	0.341	/
	848.8	GPRS	/	/	/	/	/	/	/
Body-Bottom (0mm)	824.2	GPRS	/	/	/	/	/	/	/
	836.6	GPRS	0.1	28.5	28.8	1.072	0.549	0.612	/
	848.8	GPRS	/	/	/	/	/	/	/

Note:

1. When the 1-g SAR is $\leq 0.8\text{W/Kg}$, testing for other channels are optional.
2. The EUT transmit and receive through the same GSM antenna while testing SAR.
3. When SAR or MPE is not measured at the maximum power level allowed for production units, the results must be scaled to the maximum tune-up tolerance limit according to the power applied to the individual channels tested to determine compliance.
4. When the maximum output power variation across the required test channels is $> \frac{1}{2} \text{dB}$, instead of the middle channel, the highest output power channel must be used.
5. The Multi-slot Classes of EUT is Class 12 which has maximum 4 Downlink slots and 4 Uplink slots, the maximum active slots is 5, when perform the multiple slots scan, 1DL+4UL is the worst case.

PCS Band:

EUT Position	Frequency (MHz)	Test Mode	Power Drift (dB)	Max. Meas. Power (dBm)	Max. Rated Power (dBm)	1g SAR (W/Kg)			
						Scaled Factor	Meas. SAR	Scaled SAR	Plot
Head Flat	1850.2	GSM	0.01	29.75	30.1	1.084	0.075	0.081	/
	1880	GSM	0.1	29.9	30.1	1.047	0.076	0.08	/
	1909.8	GSM	0.09	30.01	30.1	1.021	0.081	0.083	3#
Body-Back-Headset (0mm)	1850.2	GSM	/	/	/	/	/	/	/
	1880	GSM	-0.01	27.83	27.9	1.016	0.578	0.587	/
	1909.8	GSM	/	/	/	/	/	/	/
Body-Back (0mm)	1850.2	GPRS	/	/	/	/	/	/	/
	1880.0	GPRS	-0.01	27.83	27.9	1.016	0.617	0.64	/
	1909.8	GPRS	/	/	/	/	/	/	/
Body-Right (0mm)	1850.2	GPRS	/	/	/	/	/	/	/
	1880.0	GPRS	0.04	27.83	27.9	1.016	0.377	0.383	/
	1909.8	GPRS	/	/	/	/	/	/	/
Body-Bottom (0mm)	1850.2	GPRS	0.08	27.62	27.9	1.067	1.262	1.347	/
	1880.0	GPRS	-0.15	27.83	27.9	1.016	1.36	1.382	4#
	1909.8	GPRS	0.07	27.68	27.9	1.052	1.281	1.348	/

Note:

1. When the 1-g SAR is $\leq 0.8\text{W/Kg}$, testing for other channels are optional.
2. The EUT transmit and receive through the same GSM antenna while testing SAR.
3. When SAR or MPE is not measured at the maximum power level allowed for production units, the results must be scaled to the maximum tune-up tolerance limit according to the power applied to the individual channels tested to determine compliance.
4. When the maximum output power variation across the required test channels is $> \frac{1}{2} \text{dB}$, instead of the middle channel, the highest output power channel must be used.
5. The Multi-slot Classes of EUT is Class 12 which has maximum 4 Downlink slots and 4 Uplink slots, the maximum active slots is 5, when perform the multiple slots scan, 2DL+3UL is the worst case.

WCDMA 850 Band:

EUT Position	Frequency (MHz)	Test Mode	Power Drift (dB)	Max. Meas. Power (dBm)	Max. Rated Power (dBm)	1g SAR (W/Kg)			
						Scaled Factor	Meas. SAR	Scaled SAR	Plot
Head Flat	826.4	RMC	-0.06	22.61	22.7	1.021	0.158	0.161	5#
	836.6	RMC	0.06	22.53	22.7	1.04	0.151	0.157	/
	846.6	RCM	0.16	22.32	22.7	1.091	0.14	0.153	/
Body-Back (0mm)	826.4	RMC	-0.11	22.61	22.7	1.021	1.21	1.235	6#
	836.6	RMC	0.18	22.53	22.7	1.04	1.143	1.189	/
	846.6	RMC	0.17	22.32	22.7	1.091	1.087	1.186	/
Body-Right (0mm)	826.4	RMC	0.11	22.53	22.7	1.04	0.211	0.219	/
	836.6	RMC	/	/	/	/	/	/	/
	846.6	RMC	/	/	/	/	/	/	/
Body-Bottom (0mm)	826.4	RMC	0.2	22.53	22.7	1.04	0.561	0.547	/
	836.6	RMC	/	/	/	/	/	/	/
	846.6	RMC	/	/	/	/	/	/	/

Note:

1. When the 1-g SAR is $\leq 0.8\text{W/Kg}$, testing for other channels are optional.
2. The EUT transmit and receive through the same antenna while testing SAR.
3. The default test configuration is to measure SAR with an established radio link between the EUT and a communication test set using a 12.2 kbps RMC (reference measurement Channel) Configured in Test Loop Model.
4. KDB 941225 D01-Body SAR is not required for HSDPA/HSUPA/HSPA+/DC-HSDPA when the maximum average output of each RF channel is less than $\frac{1}{4}$ dB higher than measured 12.2kbps RMC or the maximum SAR for 12.2kbps RMC is $< 75\%$ of SAR limit.
5. When SAR or MPE is not measured at the maximum power level allowed for production units, the results must be scaled to the maximum tune-up tolerance limit according to the power applied to the individual channels tested to determine compliance.

WCDMA 1900 Band:

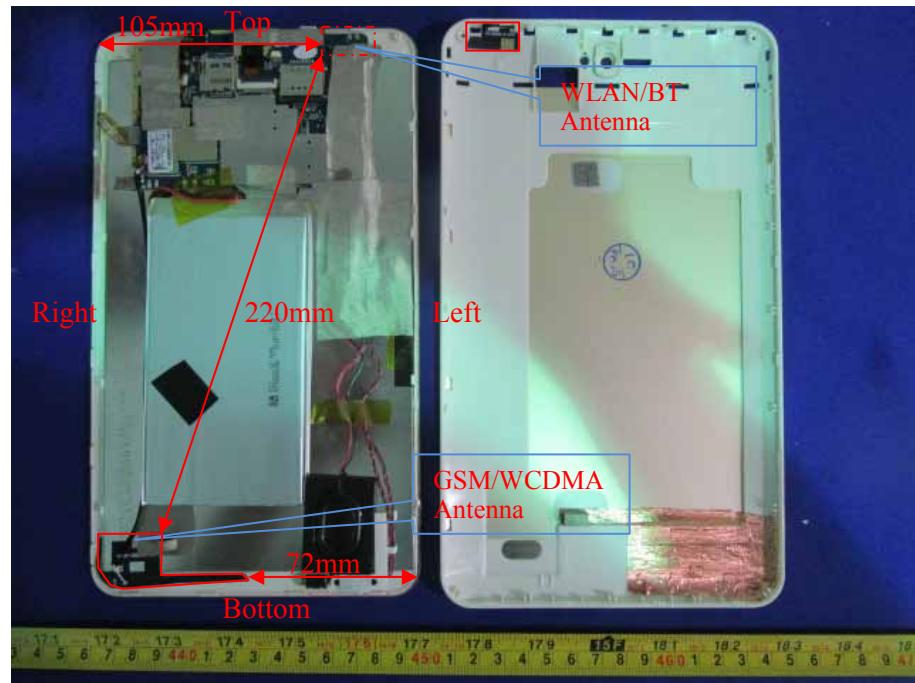
EUT Position	Frequency (MHz)	Test Mode	Power Drift (dB)	Max. Meas. Power (dBm)	Max. Rated Power (dBm)	1g SAR (W/Kg)			
						Scaled Factor	Meas. SAR	Scaled SAR	Plot
Head Flat	1852.4	RMC	0.03	22.12	22.5	1.091	0.07	0.076	/
	1880	RMC	0.08	22.14	22.5	1.086	0.068	0.074	/
	1907.6	RMC	-0.14	22.4	22.5	1.023	0.076	0.078	7#
Body-Back (0mm)	1852.4	RMC	/	/	/	/	/	/	/
	1880.0	RMC	/	/	/	/	/	/	/
	1907.6	RMC	0.14	22.14	22.5	1.086	0.46	0.522	/
Body-Right (0mm)	1852.4	RMC	/	/	/	/	/	/	/
	1880.0	RMC	/	/	/	/	/	/	/
	1907.6	RMC	0.04	22.14	22.5	1.086	0.201	0.218	/
Body-Bottom (0mm)	1852.4	RMC	0	22.12	22.5	1.091	1.005	1.096	/
	1880.0	RMC	0.1	22.14	22.5	1.086	1.024	1.112	/
	1907.6	RMC	-0.14	22.4	22.5	1.023	1.12	1.146	8#

Note:

1. When the 1-g SAR is \leq 0.8W/Kg, testing for other channels are optional.
2. The EUT transmit and receive through the same antenna while testing SAR.
3. The default test configuration is to measure SAR with an established radio link between the EUT and a communication test set using a 12.2 kbps RMC (reference measurement Channel) Configured in Test Loop Model.
4. KDB 941225 D01-Body SAR is not required for HSDPA/HSUPA/HSPA+/DC-HSDPA when the maximum average output of each RF channel is less than $\frac{1}{4}$ dB higher than measured 12.2kbps RMC or the maximum SAR for 12.2kbps RMC is < 75% of SAR limit.
5. When SAR or MPE is not measured at the maximum power level allowed for production units, the results must be scaled to the maximum tune-up tolerance limit according to the power applied to the individual channels tested to determine compliance.

SAR SIMULTANEOUS TRANSMISSION DESCRIPTION

BT& WLAN and GSM&WCDMA Antennas Location:



Simultaneous Transmission:

Description of Simultaneous Transmit Capabilities			Antennas Distance (mm)
Transmitter Combination	Simultaneous?	Hotspot?	
GSM + WCDMA	×	×	0
GSM + Bluetooth	√	×	220
GSM + WLAN	√	√	220
WCDMA + Bluetooth	√	×	220
WCDMA + WLAN	√	√	220

Standalone SAR test exclusion considerations

Mode	Frequency (MHz)	Pavg (dBm)	Pavg (mW)	Distance (mm)	Calculated value	Threshold (1-g)	SAR Test Exclusion
WLAN	2462	9.6	9.12	0	2.9	3	YES
Bluetooth	2480	1.6	1.45	0	0.5	3	YES

NOTE:

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where}$

1. $f(\text{GHz})$ is the RF channel transmit frequency in GHz.

2. Power and distance are rounded to the nearest mW and mm before calculation.

3. The result is rounded to one decimal place for comparison.

4. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test Exclusion.

Standalone SAR estimation:

Mode	Frequency (MHz)	Pavg (dBm)	Pavg (mW)	Distance (mm)	Estimated 1-g (W/kg)
WLAN Head	2462	9.6	9.12	0	0.387
WLAN Body	2462	9.6	9.12	10	0.194
BT Head	2480	1.6	1.45	0	0.067
BT Body	2480	1.6	1.45	10	0.034

When standalone SAR test exclusion applies to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to following to determine simultaneous transmission SAR test exclusion:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}/x]$

W/kg for test separation distances ≤ 50 mm;

where $x = 7.5$ for 1-g SAR.

When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test Exclusion

Simultaneous and Hotspot SAR test exclusion considerations:

Mode(SAR1+SAR2)	Position	Reported SAR (W/kg)		Σ SAR < 1.6W/kg
		SAR1	SAR2	
GSM 850+BT	Head Flat	0.125	0.067	0.192
	Body-Back-Headset	1.004	0.034	1.038
	Body-Back	1.313	0.034	1.347
	Body-Right	0.341	0.034	0.375
	Body-Bottom	0.612	0.034	0.646
PCS 1900+BT	Head Flat	0.083	0.067	0.15
	Body-Back-Headset	0.587	0.034	0.621
	Body-Back	0.64	0.034	0.674
	Body-Right	0.383	0.034	0.417
	Body-Bottom	1.382	0.034	1.416
WCDMA 850+BT	Head Flat	0.161	0.067	0.228
	Body-Back	1.235	0.034	1.269
	Body-Right	0.219	0.034	0.253
	Body-Bottom	0.547	0.034	0.581
WCDMA 1900+BT	Head Flat	0.078	0.034	0.112
	Body-Back	0.522	0.067	0.589
	Body-Right	0.218	0.034	0.252
	Body-Bottom	1.146	0.034	1.18

Mode(SAR1+SAR2)	Position	Reported SAR (W/kg)		Σ SAR < 1.6W/kg
		SAR1	SAR2	
GSM 850+WLAN	Head Flat	0.125	0.387	0.512
	Body-Back-Headset	1.004	0.194	1.198
GSM 850+ WLAN(Hotspot)	Body-Bottom	0.612	0.194	0.806
	Body-Right	0.341	0.194	0.535
	Body-Back	1.313	0.194	1.507
PCS 1900+ WLAN	Head Flat	0.083	0.387	0.47
	Body-Back-Headset	0.587	0.194	0.781
PCS 1900+ WLAN(Hotspot)	Body-Bottom	1.382	0.194	1.576
	Body-Right	0.383	0.194	0.577
	Body-Back	0.64	0.194	0.834
WCDMA 850+ WLAN	Head Flat	0.161	0.387	0.548
WCDMA 850+ WLAN(Hotspot)	Body-Bottom	0.547	0.194	0.741
	Body-Right	0.219	0.194	0.413
	Body-Back	1.235	0.194	1.429
WCDMA 1900+ WLAN	Head Flat	0.078	0.387	0.465
WCDMA 1900+ WLAN(Hotspot)	Body-Bottom	1.146	0.194	1.34
	Body-Right	0.218	0.194	0.412
	Body-Back	0.522	0.194	0.716

Note:

- 1.KDB 941225 D06 Hotspot mode SAR is only required for the edges within 25mm from the transmitting antenna located. for the data modes.
- 2.The distance of the BT/WLAN antenna are more than 25mm from the bottom and right sides, and the distance of the GSM/WCDMA antenna are more than 25mm from the top and left sides. Hotspot mode SAR for bottom, left and right sides are not required.

Conclusion:

Σ SAR < 1.6 W/kg therefore simultaneous transmission SAR with Volume Scans is **not** required.

SAR Plots (Summary of the Highest SAR Values)

Test Laboratory: Bay Area Compliance Labs Corp.(Dongguan)

Test Plot 1#: GSM 850 Head Flat High Channel

DUT: Equal Max; Type: S900A

Communication System: Generic GSM; Frequency: 848.8 MHz; Duty Cycle: 1: 8

Medium parameters used: $f = 848.8$ MHz; $\sigma = 0.896$ S/m; $\epsilon_r = 42.69$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7329; ConvF(9.17, 9.17, 9.17); Calibrated: 2015/2/5;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1459; Calibrated: 2015/9/18
- Phantom: SAM (30deg probe tilt) with CRP v5.0_20150321; Type: QD000P40CD; Serial: TP:1874
- Measurement SW: DASY52, Version 52.8 (8);

Head/GSM 850 Flat/Area Scan (101x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.127 W/kg

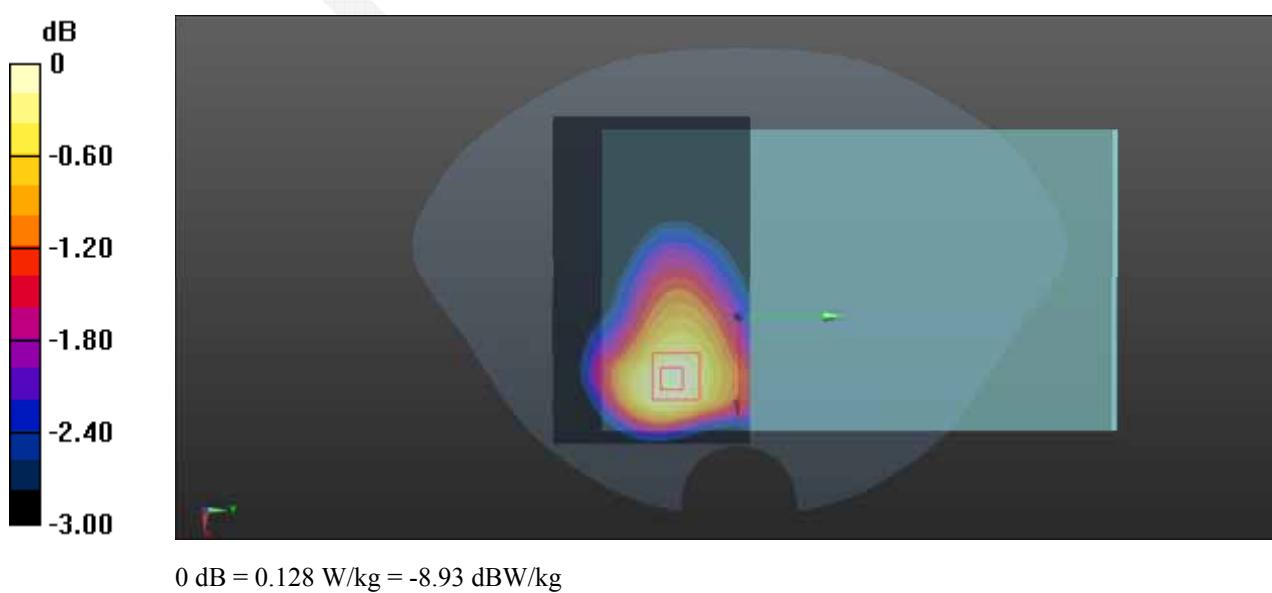
Head/GSM 850 Flat/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.528 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.163 W/kg

SAR(1 g) = 0.122 W/kg; SAR(10 g) = 0.090 W/kg

Maximum value of SAR (measured) = 0.128 W/kg



Test Laboratory: Bay Area Compliance Labs Corp.(Dongguan)**Test Plot 2#:GSM 850 Back High Channel****DUT: Equal Max; Type: S900A**

Communication System: Generic GPRS-4 slots; Frequency: 848.8 MHz; Duty Cycle: 1:2

Medium parameters used: $f = 848.8$ MHz; $\sigma = 0.988$ S/m; $\epsilon_r = 55.003$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7329; ConvF(9.17, 9.17, 9.17); Calibrated: 2015/2/5;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1459; Calibrated: 2015/9/18
- Phantom: SAM (30deg probe tilt) with CRP v5.0_20150321; Type: QD000P40CD; Serial: TP:1874
- Measurement SW: DASY52, Version 52.8 (8);

Body/GSM 850 Back/Area Scan (101x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 2.53 W/kg

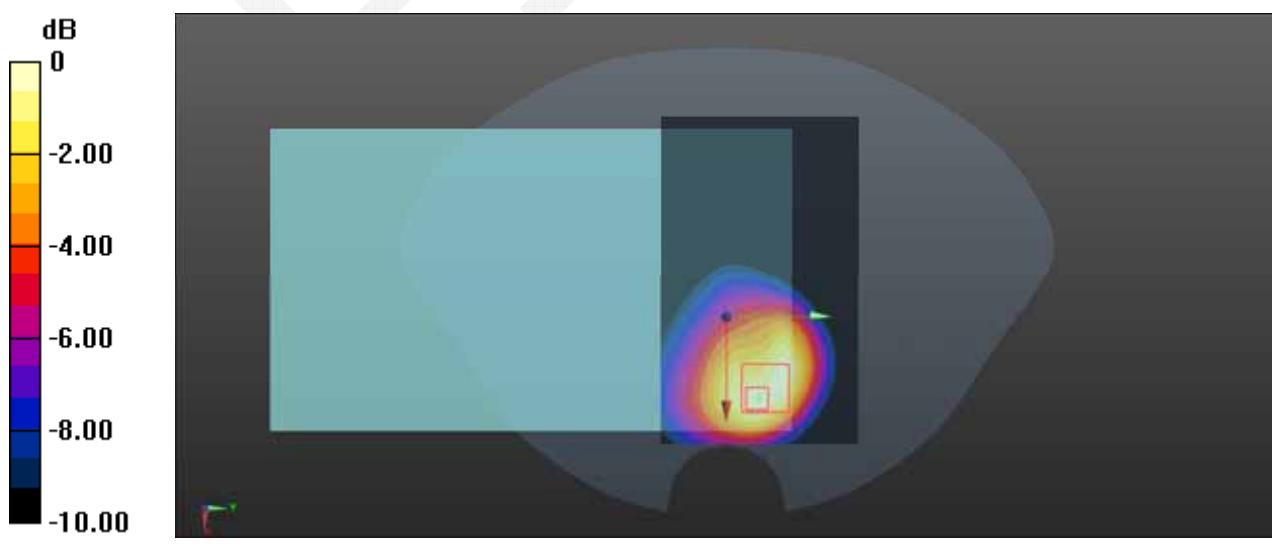
Body/GSM 850 Back/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 15.18 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 2.44 W/kg

SAR(1 g) = 1.26 W/kg; SAR(10 g) = 0.73 W/kg

Maximum value of SAR (measured) = 1.50 W/kg



Test Laboratory: Bay Area Compliance Labs Corp.(Dongguan)**Test Plot 3#:PCS 1900 Head Flat High Channel****DUT: Equal Max; Type: S900A**

Communication System: Generic GSM; Frequency: 1909.8 MHz; Duty Cycle: 1:8

Medium parameters used: $f = 1909.8$ MHz; $\sigma = 1.413$ S/m; $\epsilon_r = 39.591$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7329; ConvF(7.56, 7.56, 7.56); Calibrated: 2015/2/5;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1459; Calibrated: 2015/9/18
- Phantom: SAM (30deg probe tilt) with CRP v5.0_20150321; Type: QD000P40CD; Serial: TP:1874
- Measurement SW: DASY52, Version 52.8 (8);

Head/PCS 1900 Flat/Area Scan (101x51x1): Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 0.0560 W/kg

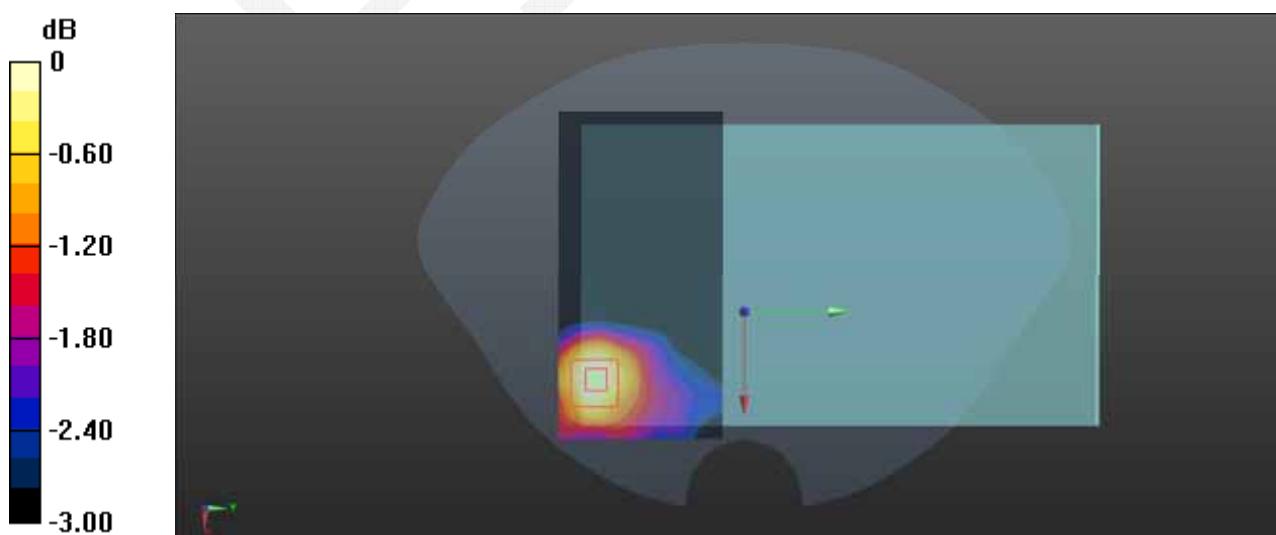
Head/PCS 1900 Flat/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 2.780 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.131 W/kg

SAR(1 g) = 0.081 W/kg; SAR(10 g) = 0.053 W/kg

Maximum value of SAR (measured) = 0.0939 W/kg



0 dB = 0.0939 W/kg = -10.27 dBW/kg

Test Laboratory: Bay Area Compliance Labs Corp.(Dongguan)**Test Plot 4#:PCS 1900 Bottom Middle Channel****DUT: Equal Max; Type: S900A**

Communication System: Generic GPRS-3 slots; Frequency: 1880 MHz; Duty Cycle: 1:2.66

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.545$ S/m; $\epsilon_r = 53.717$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7329; ConvF(7.56, 7.56, 7.56); Calibrated: 2015/2/5;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1459; Calibrated: 2015/9/18
- Phantom: SAM (30deg probe tilt) with CRP v5.0_20150321; Type: QD000P40CD; Serial: TP:1874
- Measurement SW: DASY52, Version 52.8 (8);

Body/PCS 1900 Bottom/Area Scan (101x41x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.546 W/kg

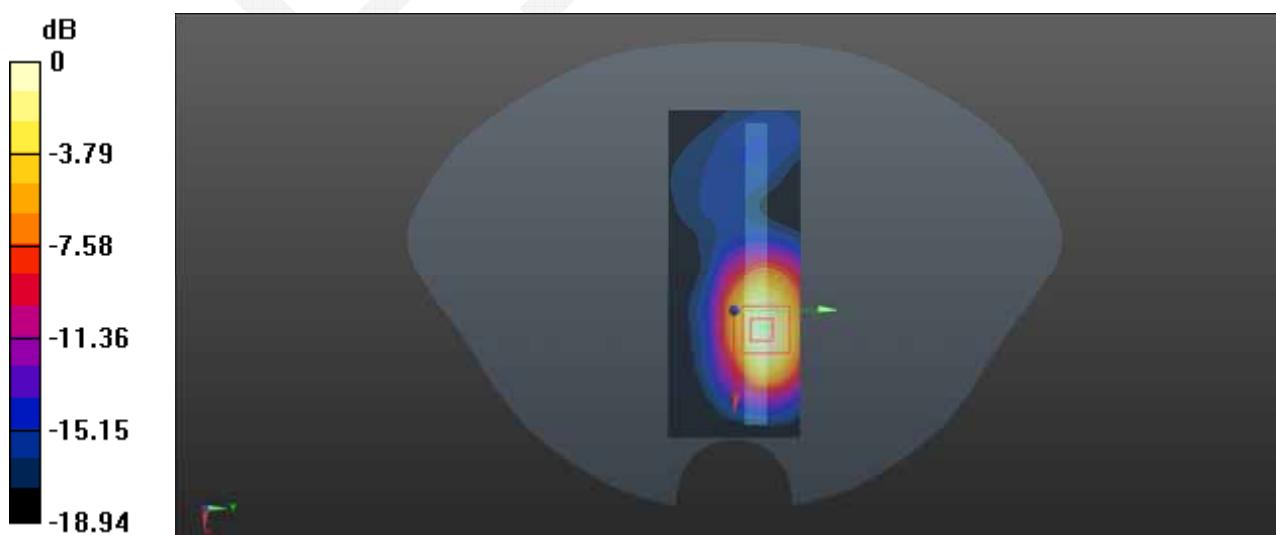
Body/PCS 1900 Bottom/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 12.286 V/m; Power Drift = -0.15 dB

Peak SAR (extrapolated) = 1.964 W/kg

SAR(1 g) = 1.36 W/kg; SAR(10 g) = 0.730 W/kg

Maximum value of SAR (measured) = 1.52 W/kg



Test Laboratory: Bay Area Compliance Labs Corp.(Dongguan)**Test Plot 5#:WCDMA 850 Back Low Channel****DUT: Equal Max; Type: S900A**

Communication System: BAND V; Frequency: 826.4 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 826.4$ MHz; $\sigma = 0.879$ S/m; $\epsilon_r = 42.871$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7329; ConvF(9.17, 9.17, 9.17); Calibrated: 2015/2/5;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1459; Calibrated: 2015/9/18
- Phantom: SAM (30deg probe tilt) with CRP v5.0_20150321; Type: QD000P40CD; Serial: TP:1874
- Measurement SW: DASY52, Version 52.8 (8);

Head/WCDMA 850 Back/Area Scan (101x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.166 W/kg

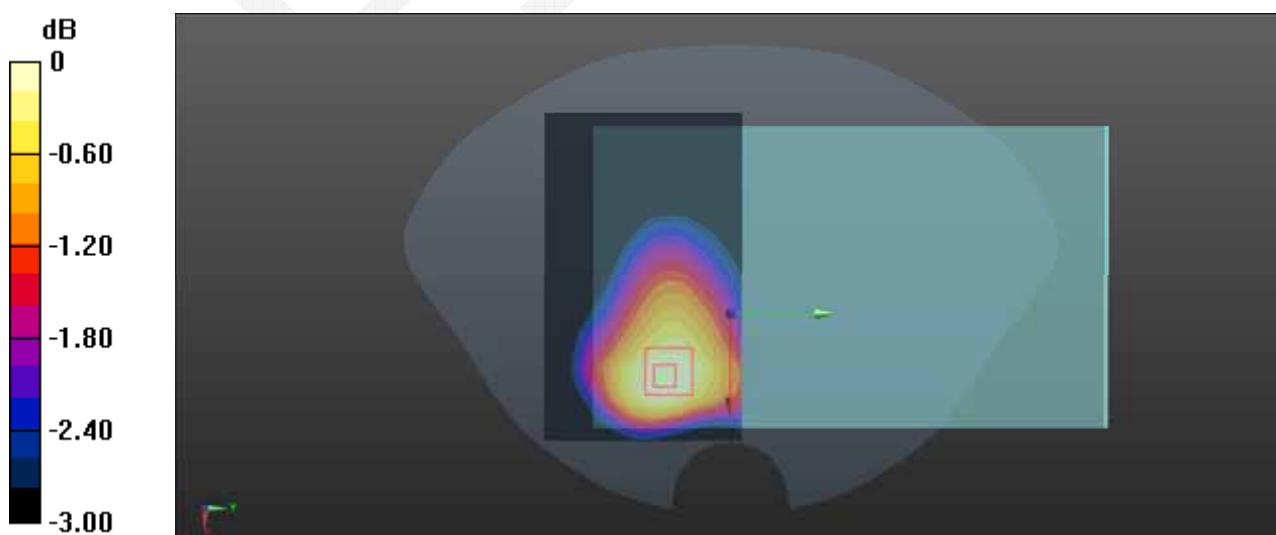
Head/WCDMA 850 Back/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.935 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.209 W/kg

SAR(1 g) = 0.158 W/kg; SAR(10 g) = 0.117 W/kg

Maximum value of SAR (measured) = 0.166 W/kg



Test Laboratory: Bay Area Compliance Labs Corp.(Dongguan)**Test Plot 6#:WCDMA 850 Back Low Channel****DUT: Equal Max; Type: S900A**

Communication System: BAND V; Frequency: 826.4 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 826.4$ MHz; $\sigma = 0.966$ S/m; $\epsilon_r = 55.156$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7329; ConvF(9.17, 9.17, 9.17); Calibrated: 2015/2/5;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1459; Calibrated: 2015/9/18
- Phantom: SAM (30deg probe tilt) with CRP v5.0_20150321; Type: QD000P40CD; Serial: TP:1874
- Measurement SW: DASY52, Version 52.8 (8);

Body/WCDMA 850 Back/Area Scan (101x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 2.04 W/kg

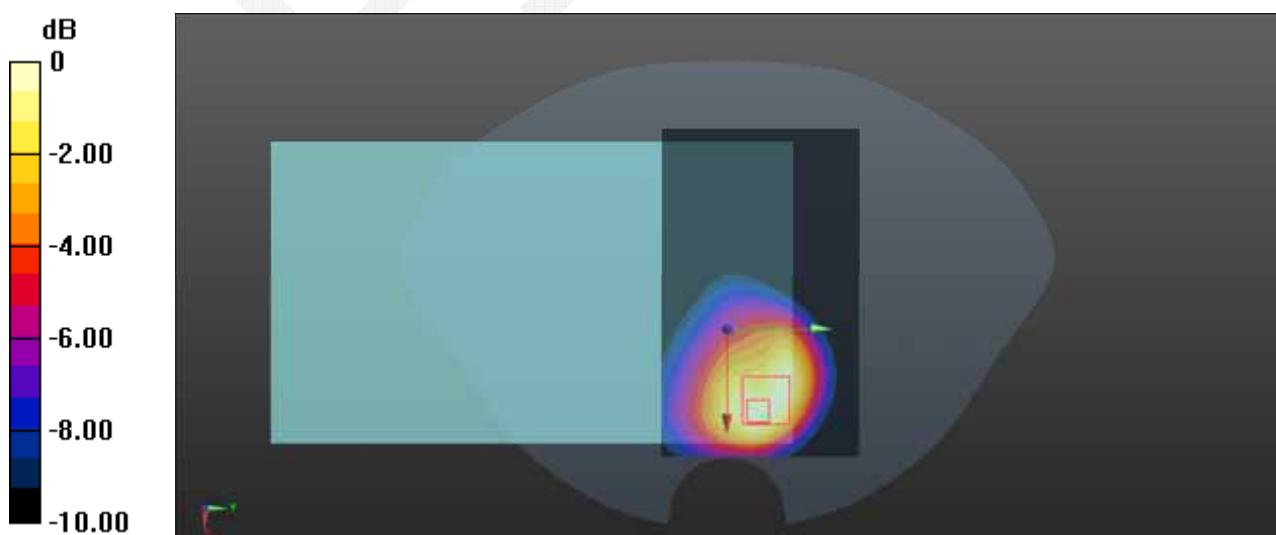
Body/WCDMA 850 Back/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 11.46 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 1.58 W/kg

SAR(1 g) = 1.21 W/kg; SAR(10 g) = 0.68 W/kg

Maximum value of SAR (measured) = 1.40 W/kg



Test Laboratory: Bay Area Compliance Labs Corp.(Dongguan)**Test Plot 7#:WCDMA 1900 Back High Channel****DUT: Equal Max; Type: S900A**

Communication System: BAND II; Frequency: 1907.6 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1907.6$ MHz; $\sigma = 1.413$ S/m; $\epsilon_r = 39.57$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7329; ConvF(7.56, 7.56, 7.56); Calibrated: 2015/2/5;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1459; Calibrated: 2015/9/18
- Phantom: SAM (30deg probe tilt) with CRP v5.0_20150321; Type: QD000P40CD; Serial: TP:1874
- Measurement SW: DASY52, Version 52.8 (8);

Head/WCDMA 1900 Flat/Area Scan (101x51x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.0495 W/kg

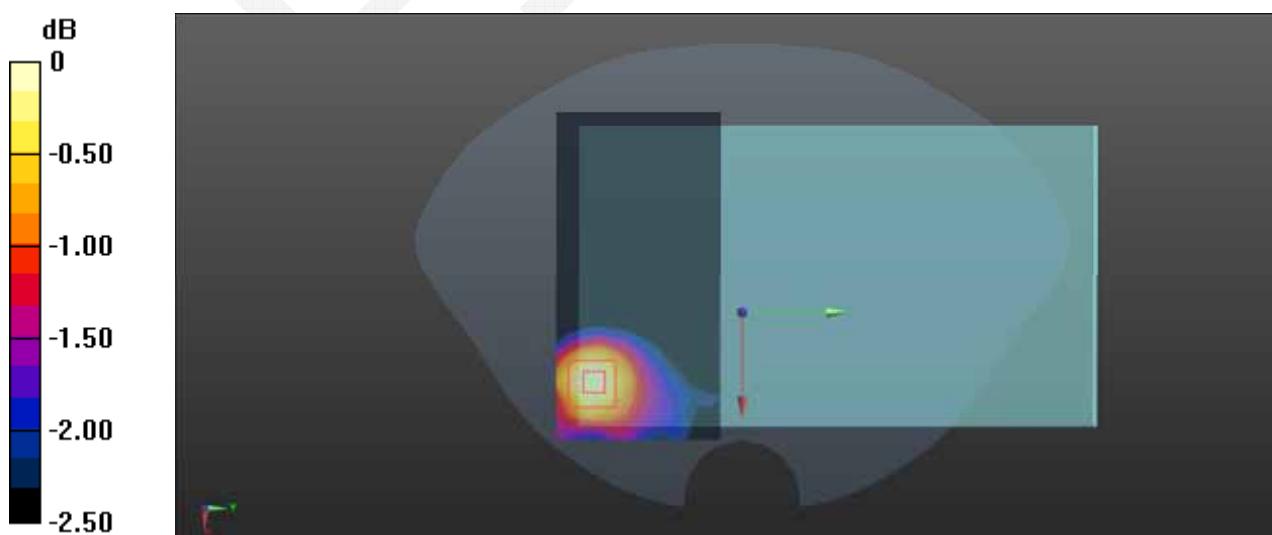
Head/WCDMA 1900 Flat/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.982 V/m; Power Drift = -0.14 dB

Peak SAR (extrapolated) = 0.138 W/kg

SAR(1 g) = 0.076 W/kg; SAR(10 g) = 0.050 W/kg

Maximum value of SAR (measured) = 0.0821 W/kg



0 dB = 0.0821 W/kg = -10.86 dBW/kg

Test Laboratory: Bay Area Compliance Labs Corp.(Dongguan)**Test Plot 8#:WCDMA 1900 Bottom High Channel****DUT: Equal Max; Type: S900A**

Communication System: BAND II; Frequency: 1907.6 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1907.6$ MHz; $\sigma = 1.49$ S/m; $\epsilon_r = 53.615$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7329; ConvF(7.56, 7.56, 7.56); Calibrated: 2015/2/5;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1459; Calibrated: 2015/9/18
- Phantom: SAM (30deg probe tilt) with CRP v5.0_20150321; Type: QD000P40CD; Serial: TP:1874
- Measurement SW: DASY52, Version 52.8 (8);

Body/WCDMA 1900 Bottom/Area Scan (101x41x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 2.13 W/kg

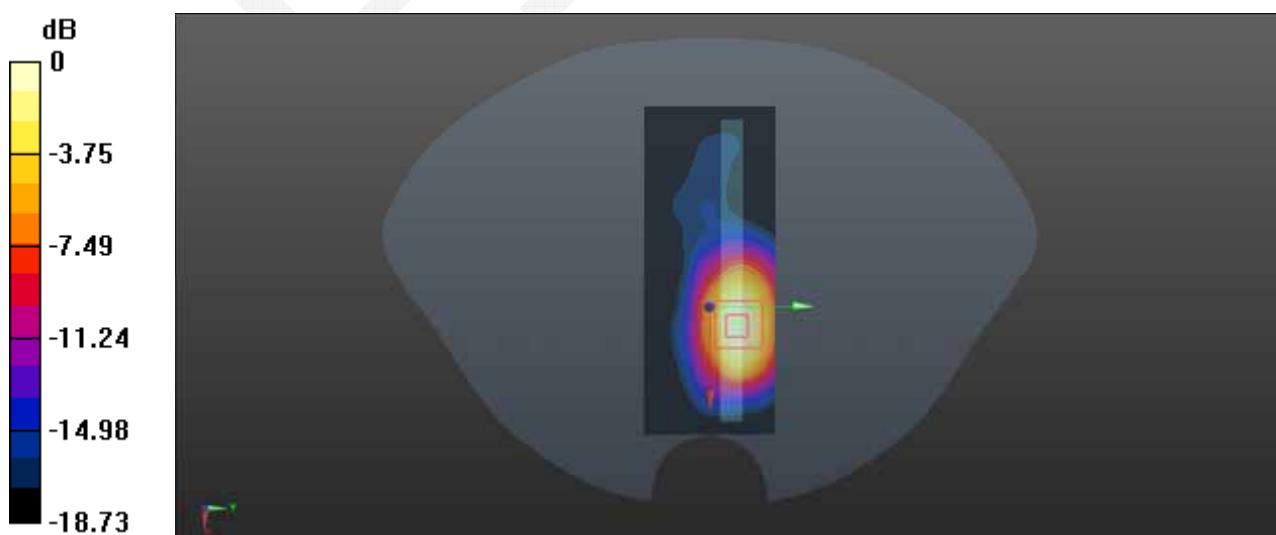
Body/WCDMA 1900 Bottom/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.999 V/m; Power Drift = -0.14 dB

Peak SAR (extrapolated) = 2.12 W/kg

SAR(1 g) = 1.12 W/kg; SAR(10 g) = 0.659 W/kg

Maximum value of SAR (measured) = 1.37 W/kg



APPENDIX A MEASUREMENT UNCERTAINTY

The uncertainty budget has been determined for the measurement system and is given in the following Table.

Measurement uncertainty evaluation for IEEE1528-2013 SAR test

Source of uncertainty	Tolerance/uncertainty ± %	Probability distribution	Divisor	ci (1 g)	ci (10 g)	Standard uncertainty ± %, (1 g)	Standard uncertainty ± %, (10 g)
Measurement system							
Probe calibration	6.55	N	1	1	1	6.6	6.6
Axial Isotropy	4.7	R	$\sqrt{3}$	1	1	2.7	2.7
Hemispherical Isotropy	9.6	R	$\sqrt{3}$	0	0	0.0	0.0
Boundary effect	1.0	R	$\sqrt{3}$	1	1	0.6	0.6
Linearity	4.7	R	$\sqrt{3}$	1	1	2.7	2.7
Detection limits	1.0	R	$\sqrt{3}$	1	1	0.6	0.6
Readout electronics	0.3	N	1	1	1	0.3	0.3
Response time	0.0	R	$\sqrt{3}$	1	1	0.0	0.0
Integration time	0.0	R	$\sqrt{3}$	1	1	0.0	0.0
RF ambient conditions – noise	1.0	R	$\sqrt{3}$	1	1	0.6	0.6
RF ambient conditions–reflections	1.0	R	$\sqrt{3}$	1	1	0.6	0.6
Probe positioner mech. Restrictions	0.8	R	$\sqrt{3}$	1	1	0.5	0.5
Probe positioning with respect to phantom shell	6.7	R	$\sqrt{3}$	1	1	3.9	3.9
Post-processing	2.0	R	$\sqrt{3}$	1	1	1.2	1.2
Test sample related							
Test sample positioning	2.8	N	1	1	1	2.8	2.8
Device holder uncertainty	6.3	N	1	1	1	6.3	6.3
Drift of output power	5.0	R	$\sqrt{3}$	1	1	2.9	2.9
Phantom and set-up							
Phantom uncertainty (shape and thickness tolerances)	4.0	R	$\sqrt{3}$	1	1	2.3	2.3
Liquid conductivity target)	5.0	R	$\sqrt{3}$	0.64	0.43	1.8	1.2
Liquid conductivity meas.)	2.5	N	1	0.64	0.43	1.6	1.1
Liquid permittivity target)	5.0	R	$\sqrt{3}$	0.6	0.49	1.7	1.4
Liquid permittivity meas.)	2.5	N	1	0.6	0.49	1.5	1.2
Combined standard uncertainty		RSS				12.2	12.0
Expanded uncertainty 95 % confidence interval)						24.3	23.9

Measurement uncertainty evaluation for IEC62209-2 SAR test

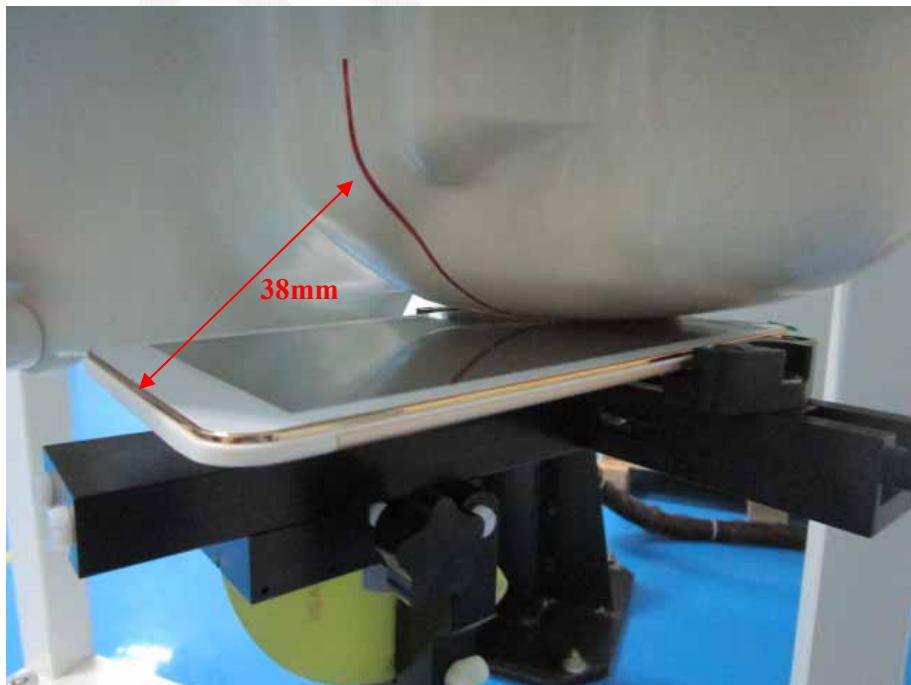
Source of uncertainty	Tolerance/uncertainty $\pm \%$	Probability distribution	Divisor	ci (1 g)	ci (10 g)	Standard uncertainty $\pm \%, (1 \text{ g})$	Standard uncertainty $\pm \%, (10 \text{ g})$
Measurement system							
Probe calibration	6.55	N	1	1	1	6.6	6.6
Axial Isotropy	4.7	R	$\sqrt{3}$	1	1	2.7	2.7
Hemispherical Isotropy	9.6	R	$\sqrt{3}$	0	0	0.0	0.0
Linearity	4.7	R	$\sqrt{3}$	1	1	2.7	2.7
Modulation Response	0.0	R	$\sqrt{3}$	1	1	0.0	0.0
Detection limits	1.0	R	$\sqrt{3}$	1	1	0.6	0.6
Boundary effect	1.0	R	$\sqrt{3}$	1	1	0.6	0.6
Readout electronics	0.3	N	1	1	1	0.3	0.3
Response time	0.0	R	$\sqrt{3}$	1	1	0.0	0.0
Integration time	0.0	R	$\sqrt{3}$	1	1	0.0	0.0
RF ambient conditions – noise	1.0	R	$\sqrt{3}$	1	1	0.6	0.6
RF ambient conditions–reflections	1.0	R	$\sqrt{3}$	1	1	0.6	0.6
Probe positioner mech. Restrictions	0.8	R	$\sqrt{3}$	1	1	0.5	0.5
Probe positioning with respect to phantom shell	6.7	R	$\sqrt{3}$	1	1	3.9	3.9
Post-processing	2.0	R	$\sqrt{3}$	1	1	1.2	1.2
Test sample related							
Device holder Uncertainty	6.3	N	1	1	1	6.3	6.3
Test sample positioning	2.8	N	1	1	1	2.8	2.8
Power scaling	4.5	R	$\sqrt{3}$	1	1	2.6	2.6
Drift of output power	5.0	R	$\sqrt{3}$	1	1	2.9	2.9
Phantom and set-up							
Phantom uncertainty (shape and thickness tolerances)	4.0	R	$\sqrt{3}$	1	1	2.3	2.3
Algorithm for correcting SAR for deviations in permittivity and conductivity	1.9	N	1	1	0.84	1.1	0.9
Liquid conductivity (meas.)	2.5	N	1	0.64	0.43	1.6	1.1
Liquid permittivity (meas.)	2.5	N	1	0.6	0.49	1.5	1.2
Temp. unc. - Conductivity	1.7	R	$\sqrt{3}$	0.78	0.71	0.8	0.7
Temp. unc. - Permittivity	0.3	R	$\sqrt{3}$	0.23	0.26	0.0	0.0
Combined standard uncertainty		RSS				12.2	12.1
Expanded uncertainty 95 % confidence interval)						24.5	24.2

APPENDIX B EUT TEST POSITION PHOTOS

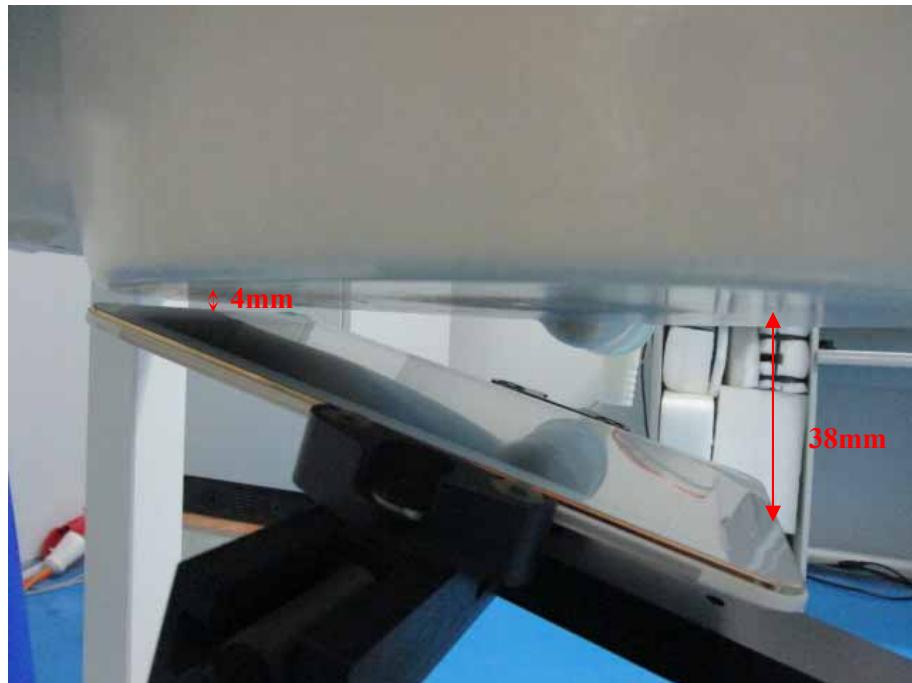
Liquid depth $\geq 15\text{cm}$



Left Head Cheek Setup Photo



Head Flat Setup Photo



Body Worn Back Setup Photo(0mm)



Body Worn Headset Setup Photo(0mm)



Body Worn Bottom Setup Photo(0mm)



Body Worn Right Setup Photo(0mm)



APPENDIX C EUT PHOTOS

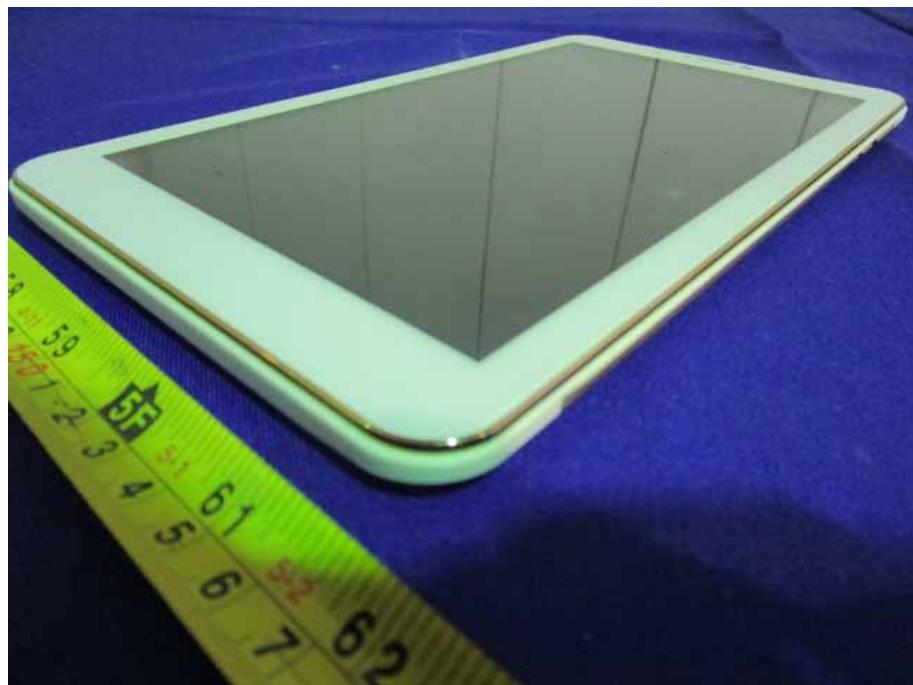
EUT-Front View



EUT-Back View



EUT-Side View-1



EUT-Side View-2



EUT – Cover off View

DECLARATION LETTER

Declaration of Alteration

To Whom It May Concern,

We, Posh Mobile Limited, hereby declare that there are some differences between our Multiple Models and testing products. Details as below:

(This is for your reference only.)

Products Description	Name	Equal Max	
	Brand	POSH	
	Manufacturer	Shenzhen Posh Mobile Limited	
	Project No.	RDG151008002, RDG151008002-20	
Differences Description			
Testing Products	Multiple Models	Differences Items	Details
S900A	S900B	Model name.	They are same motherboard, and just have the different model name.

Notes: Testing products-the products tested by BACL

Multiple Model- have the same or similar appearance, structure, PCB, Material and function to the testing products, and only are different for little parameters.

Besides the differences in the table above, we declare the products are identical. We guarantee all the information provided above is true, and notice that we'll bear all the consequences caused by any false information or concealing

Best Regards,

Signature:

Print Name: K.N. Chong

Title: Manager



APPENDIX D CALIBRATION CERTIFICATES

Please Refer to the Attachment.

***** END OF REPORT *****

END