SAR EVALUATION REPORT

For

DOPPIO MOBILE INTERNATIONAL LIMITED

ROOM 1708,17/F HART AVENUE PLAZA,5-9 HART AVENUE TSIM SHA TSUI,KOWLOON, HONG KONG

FCC ID: N2GSG351

Report Type:	**Product Type:**
Original Report	Doppio Onix

Test Engineer:	Rocky Xiao
Report Number:	RDG151126003-20
Report Date:	2015-12-04
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<table>
<tr><th colspan="4">Attestation of Test Results</th></tr>
<tr><td rowspan="7">EUT Information</td><td>Company Name</td><td colspan="2">DOPPIO MOBILE INTERNATIONAL LIMITED</td></tr>
<tr><td>Product Name</td><td colspan="2">Doppio Onix</td></tr>
<tr><td>EUT Description</td><td colspan="2">Mobile phone</td></tr>
<tr><td>FCC ID</td><td colspan="2">N2GSG351</td></tr>
<tr><td>Tested Model</td><td colspan="2">SG351</td></tr>
<tr><td>Serial Number</td><td colspan="2">151126003</td></tr>
<tr><td>Test Date</td><td colspan="2">2015-12-01 ,2015-12-02</td></tr>
<tr><td colspan="2">MODE</td><td>Max. SAR Level(s) Reported(W/Kg)</td><td>Limit(W/Kg)</td></tr>
<tr><td rowspan="2">GSM 850</td><td>1g Head SAR</td><td>0.134</td><td rowspan="11">1. 6</td></tr>
<tr><td>1g Body SAR</td><td>0.725</td></tr>
<tr><td rowspan="2">PCS 1900</td><td>1g Head SAR</td><td>0.347</td></tr>
<tr><td>1g Body SAR</td><td>0.927</td></tr>
<tr><td rowspan="2">WCDMA 850</td><td>1g Head SAR</td><td>0.126</td></tr>
<tr><td>1g Body SAR</td><td>0.363</td></tr>
<tr><td rowspan="2">WCDMA 1900</td><td>1g Head SAR</td><td>0.714</td></tr>
<tr><td>1g Body SAR</td><td>1.156</td></tr>
<tr><td rowspan="2">Simultaneous</td><td>1g Head SAR</td><td>1.094</td></tr>
<tr><td>1g Body SAR</td><td>1.336</td></tr>
<tr><td>Hotspot</td><td>1g Body SAR</td><td>1.336</td></tr>
<tr><td rowspan="6">Applicable Standards</td><td colspan="3">ANSI / IEEE C95.1 : 2005
IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fileds,3 kHz to 300 GHz.</td></tr>
<tr><td colspan="3">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.</td></tr>
<tr><td colspan="3">FCC 47 CFR part 2.1093
Radiofrequency radiation exposure evaluation: portable devices</td></tr>
<tr><td colspan="3">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</td></tr>
<tr><td colspan="3">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)</td></tr>
<tr><td colspan="3">KDB procedures
KDB 447498 D01 General RF Exposure Guidance v06
KDB 648474 D04 Handset SAR v01r03
KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04
KDB 865664 D02 RF Exposure Reporting v01r02
KDB 941225 D01 3G SAR Procedures v03r01
KDB 941225 D06 Hotspot Mode v02r01</td></tr>
<tr><td colspan="4">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.</td></tr>
</table>

TABLE OF CONTENTS

DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	RDG151126003-20	Original Report	2015-12-04

EUT DESCRIPTION

This report has been prepared on behalf of *DOPPIO MOBILE INTERNATIONAL LIMITED* and their product, Model: SG351, FCC ID: N2GSG351 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
Multi-slot Class:	Class12
Operation Mode :	GSM Voice, GPRS/EDGE Data, WCDMA R99 (Voice + Data),HSUPA Rel 6,HSDPA Rel 7 DC-HSDPA Rel 8, HSPA+ Rel 8 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 : 31.7 dBm PCS 1900: 29.3 dBm WCDMA 850: 21.69 dBm WCDMA 1900: 21.94 dBm WLAN: 9.32 dBm Bluetooth: 3.38 dBm BLE:-5.71 dBm
Dimensions (L*W*H):	11.5 cm (L) × 6.1 cm (W) × 1.0 cm (H)
Power Source:	3.7 VDC Rechargeable Battery
Normal Operation:	Head and Body-worn

REFERENCE, STANDARDS, AND GUILDELINES

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

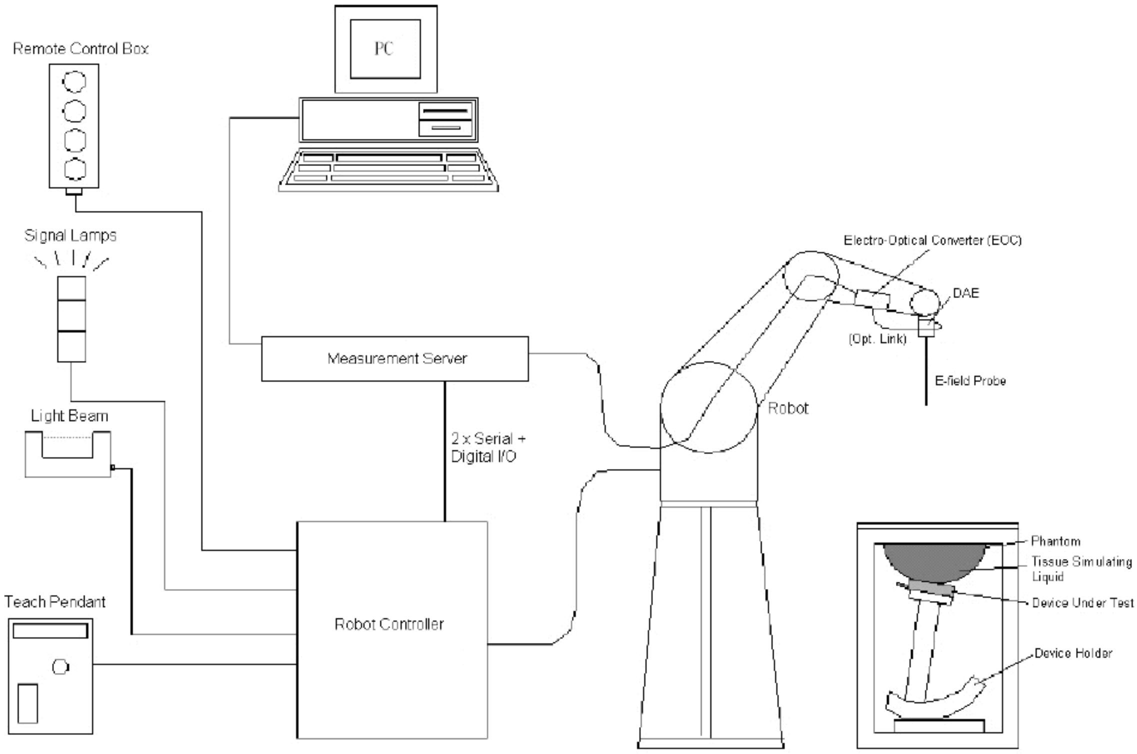
The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.69 Pulongcun, Puxinhu Industrial Zone, Tangxia, Dongguan, Guangdong, China

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 µW/g to > 100 mW/g Linearity: ± 0.2 dB (noise: typically < 1 µW/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/m^3 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	
	εr	σ (S/m)	εr	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

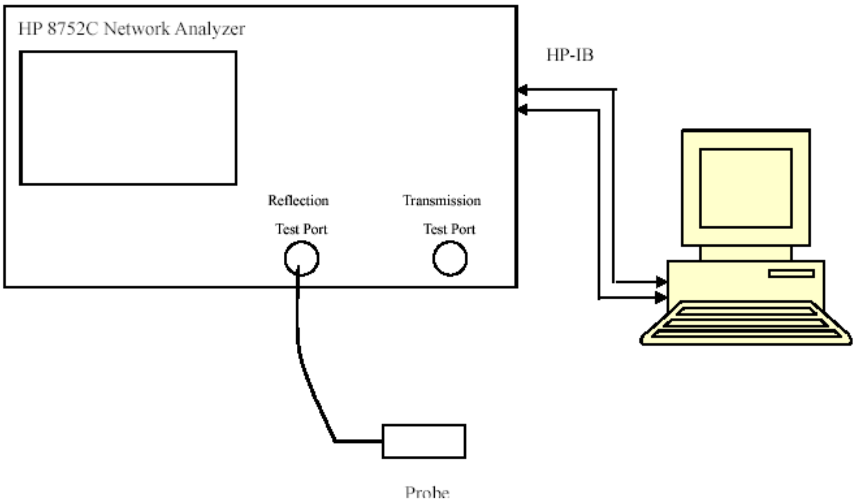
EQUIPMENT LIST AND CALIBRATION

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	109038	2015/7/28	2016/7/27
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	2015/10/27	2016/10/27
Power Meter	EPM-441A	GB37481494	2015/11/3	2016/11/3
Power Meter Sensor	8481A	T-03-EM-127	2015/11/3	2016/11/3
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	Ơ (S/m)	ε_r	Ơ (S/m)	$\Delta\varepsilon_r$	ΔƠ (S/m)	
824.2	Head	42.925	0.878	41.5	0.9	3.43	-2.44	±5
	Body	55.157	0.963	55.2	0.97	-0.08	-0.72	±5
826.4	Head	42.881	0.88	41.5	0.9	3.33	-2.22	±5
	Body	55.126	0.966	55.2	0.97	-0.13	-0.41	±5
836.6	Head	42.853	0.892	41.5	0.9	3.26	-0.89	±5
	Body	55.116	0.977	55.2	0.97	-0.15	0.72	±5
846.6	Head	42.795	0.896	41.5	0.9	3.12	-0.44	±5
	Body	55.027	0.986	55.2	0.97	-0.31	1.65	±5
848.8	Head	42.722	0.895	41.5	0.9	2.94	-0.56	±5
	Body	54.992	0.987	55.2	0.97	-0.38	1.75	±5

**Liquid Verification above was performed on 2015-12-01.*

Frequency	Liquid Type	Liquid Parameter		Target Value		Delta (%)		Tolerance (%)
		ε_r	Ơ (S/m)	ε_r	Ơ (S/m)	$\Delta\varepsilon_r$	ΔƠ (S/m)	
1850.2	Head	39.853	1.358	40	1.4	-0.37	-3	±5
	Body	55.295	1.478	53.3	1.52	3.74	-2.76	±5
1852.4	Head	39.861	1.355	40	1.4	-0.35	-3.21	±5
	Body	55.211	1.474	53.3	1.52	3.59	-3.03	±5
1880	Head	39.759	1.386	40	1.4	-0.6	-1	±5
	Body	53.723	1.543	53.3	1.52	0.79	1.51	±5
1907.6	Head	39.578	1.414	40	1.4	-1.05	1	±5
	Body	53.598	1.493	53.3	1.52	0.56	-1.78	±5
1909.8	Head	39.572	1.412	40	1.4	-1.07	0.86	±5
	Body	53.367	1.493	53.3	1.52	0.13	-1.78	±5

**Liquid Verification above was performed on 2015-12-02.*

Please refer to the following tables.

835 MHz Head			835 MHz Body		
Frequency (MHz)	e'	e''	Frequency (MHz)	e'	e''
824	42.9126	19.1536	824	55.137	21.0561
824.5	42.943	19.1559	824.5	55.1873	20.9295
825	42.9725	19.1476	825	55.1325	21.0098
825.5	42.9318	19.1759	825.5	55.1779	20.9815
826	42.9348	19.1194	826	55.0883	21.0408
826.5	42.868	19.1719	826.5	55.1351	21.0114
827	42.9039	19.1596	827	55.0057	21.0145
827.5	42.8806	19.1824	827.5	55.1734	20.9699
828	42.9744	19.198	828	55.14	20.9854
828.5	42.9214	19.1793	828.5	55.1736	21.0352
829	42.9373	19.252	829	55.1182	20.9547
829.5	42.9028	19.1422	829.5	55.0964	20.92
830	43.0057	19.1957	830	55.1333	20.9526
830.5	42.9543	19.2045	830.5	55.1342	20.9887
831	42.962	19.1726	831	55.1297	20.9606
831.5	42.8648	19.1578	831.5	55.1482	20.9811
832	42.9849	19.1905	832	55.1923	20.9736
832.5	42.9185	19.2444	832.5	55.0886	20.9319
833	42.9881	19.1721	833	55.1149	20.906
833.5	42.9029	19.2297	833.5	55.1104	20.9385
834	42.9138	19.1946	834	55.1703	21.0248
834.5	42.9094	19.2002	834.5	55.1063	20.9332
835	42.9461	19.2193	835	55.1006	20.9365
835.5	42.9143	19.1758	835.5	55.0789	20.9841
836	42.9113	19.1776	836	55.1105	21.0317
836.5	42.8525	19.165	836.5	55.1247	20.9983
837	42.8538	19.2154	837	55.0813	20.99
837.5	42.8777	19.2058	837.5	55.0415	20.8991
838	42.8426	19.197	838	55.0752	20.9853
838.5	42.8976	19.2004	838.5	55.1251	21.0038
839	42.9361	19.2038	839	55.0825	20.9902
839.5	42.9038	19.1669	839.5	55.0824	21.0041
840	42.9162	19.1003	840	55.0542	21.0116
840.5	42.8754	19.0607	840.5	55.16	20.9767
841	42.9038	19.2143	841	55.0802	21.014
841.5	42.8806	19.1582	841.5	55.016	20.9644
842	42.876	19.1086	842	55.0931	20.9549
842.5	42.8333	19.1619	842.5	55.0024	20.9584
843	42.8078	19.0573	843	55.0585	20.9645
843.5	42.8121	19.0926	843.5	55.0105	20.9576
844	42.7961	19.0748	844	55.0856	20.9173
844.5	42.8417	18.9948	844.5	55.0875	21.0373
845	42.7685	19.0584	845	55.1144	20.9833
845.5	42.8472	19.0625	845.5	55.0308	20.9373
846	42.8423	19.022	846	55.0473	20.9945
846.5	42.808	19.0278	846.5	55.0314	20.9433
847	42.7406	19.1014	847	55.0114	20.9817
847.5	42.7162	19.0019	847.5	55.0636	20.9876
848	42.7801	19.0192	848	54.9879	20.9952
848.5	42.7309	18.9902	848.5	54.9735	20.9166
849	42.716	18.9385	849	55.0037	20.9141

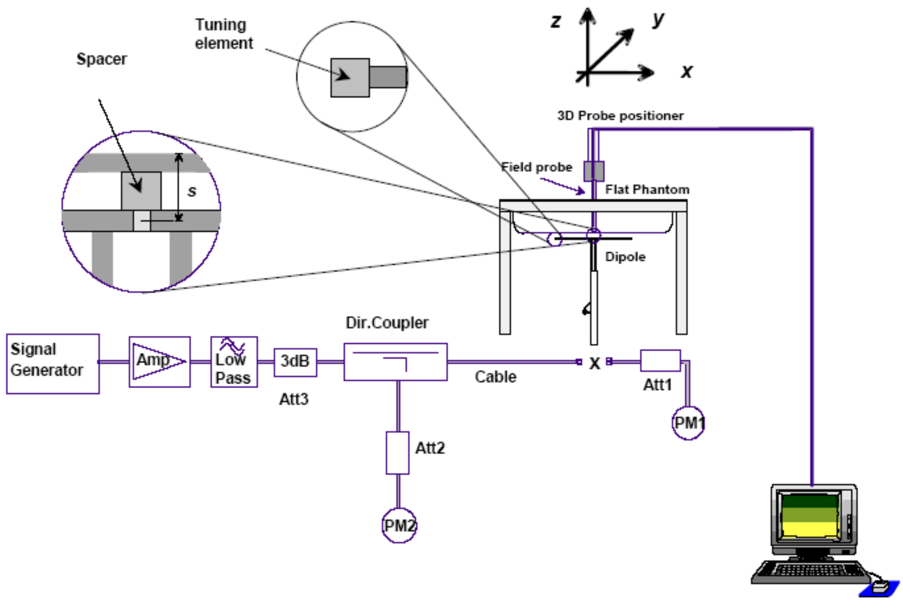
1900 MHz Head			1900 MHz Body		
Frequency (MHz)	e'	e''	Frequency (MHz)	e'	e''
1850	39.8513	13.2038	1850	55.2734	14.3725
1851	39.8585	13.182	1851	55.3794	14.3595
1852	39.8534	13.1584	1852	55.2345	14.335
1853	39.8728	13.1562	1853	55.1764	14.2866
1854	39.8717	13.1835	1854	55.0707	14.1969
1855	39.8536	13.2099	1855	55.0369	14.2499
1856	39.8783	13.1788	1856	54.933	14.2572
1857	39.8811	13.2137	1857	54.7253	14.2037
1858	39.8679	13.1775	1858	54.6136	14.1267
1859	39.7941	13.2258	1859	54.5687	14.0527
1860	39.804	13.2147	1860	54.4532	14.1879
1861	39.8412	13.2173	1861	54.5266	14.076
1862	39.9114	13.2283	1862	54.3725	14.1086
1863	39.835	13.1479	1863	54.2057	14.104
1864	39.8158	13.1622	1864	54.1627	14.1601
1865	39.8659	13.1938	1865	54.0821	14.17
1866	39.8245	13.2142	1866	53.9633	14.1516
1867	39.7824	13.1912	1867	53.907	14.145
1868	39.8207	13.2148	1868	53.8191	14.2058
1869	39.8686	13.3106	1869	53.7061	14.183
1870	39.8393	13.2453	1870	53.6587	14.2797
1871	39.8426	13.216	1871	53.6295	14.3028
1872	39.7929	13.1763	1872	53.6759	14.3611
1873	39.8065	13.1805	1873	53.6531	14.4309
1874	39.7395	13.2725	1874	53.6005	14.412
1875	39.7753	13.2222	1875	53.6131	14.5021
1876	39.7539	13.2183	1876	53.6162	14.547
1877	39.7755	13.2554	1877	53.6859	14.631
1878	39.7713	13.2321	1878	53.5954	14.6996
1879	39.7333	13.2576	1879	53.6922	14.637
1880	39.759	13.2542	1880	53.7231	14.7567
1881	39.7132	13.2034	1881	53.7665	14.7748
1882	39.7593	13.2647	1882	53.7623	14.8108
1883	39.7543	13.2666	1883	53.799	14.8092
1884	39.7312	13.242	1884	53.8638	14.7909
1885	39.6891	13.306	1885	53.9536	14.8319
1886	39.7033	13.2846	1886	54.1089	14.7704
1887	39.6532	13.2941	1887	54.1605	14.7689
1888	39.6558	13.2419	1888	54.2569	14.8099
1889	39.6749	13.3184	1889	54.224	14.711
1890	39.6712	13.3074	1890	54.2829	14.7443
1891	39.6947	13.3099	1891	54.3154	14.7535
1892	39.7044	13.2856	1892	54.4023	14.7237
1893	39.6397	13.2893	1893	54.3494	14.7006
1894	39.6958	13.2747	1894	54.3037	14.6543
1895	39.6324	13.3067	1895	54.355	14.6055
1896	39.6802	13.281	1896	54.4544	14.4922
1897	39.663	13.3033	1897	54.4253	14.4601
1898	39.6402	13.3074	1898	54.4005	14.4402
1899	39.6401	13.2565	1899	54.2335	14.3842
1900	39.6601	13.3657	1900	54.1689	14.355

1900 MHz Head			1900 MHz Body		
Frequency (MHz)	e'	e''	Frequency (MHz)	e'	e''
1901	39.6718	13.3232	1901	54.15	14.2729
1902	39.6283	13.3269	1902	54.0572	14.2388
1903	39.6377	13.276	1903	53.9662	14.2071
1904	39.6376	13.3253	1904	53.8672	14.135
1905	39.6371	13.3422	1905	53.7876	14.1627
1906	39.6149	13.3789	1906	53.7331	14.1384
1907	39.5794	13.327	1907	53.6207	14.1222
1908	39.5775	13.3291	1908	53.5823	14.0413
1909	39.569	13.3457	1909	53.4435	14.0469
1910	39.5731	13.2864	1910	53.3481	14.0596

System Accuracy Verification

Prior to the assessment, the system validation kit was used to test whether the system was operating within its specifications of ±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 (%)
2015-12-01	835	Head	1g	9.69	9.43	2.76	±10
		Body	1g	9.97	9.55	4.40	±10
2015-12-02	1900	Head	1g	41.5	40.7	1.97	±10
		Body	1g	40.9	40.8	0.25	±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

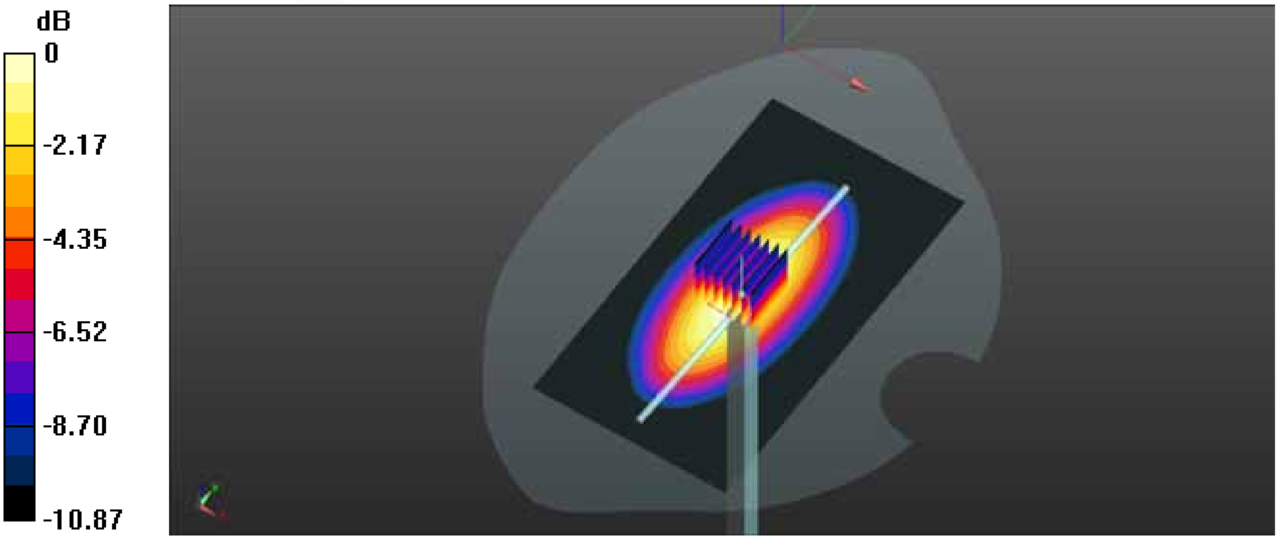
Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used: f = 835 MHz; σ = 0.892 S/m; ε_r = 42.946; ρ = 1000 kg/m^3
Phantom section: Flat Section

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) = 11.5 W/kg

System Performance 835 MHz Head /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 109.9 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 16.9 W/kg
SAR(1 g) = 9.69 W/kg; SAR(10 g) = 6.37 W/kg
Maximum value of SAR (measured) = 12.0 W/kg



0 dB = 12.0 W/kg = 10.79 dBW/kg

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

System Performance 835 MHz Body

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

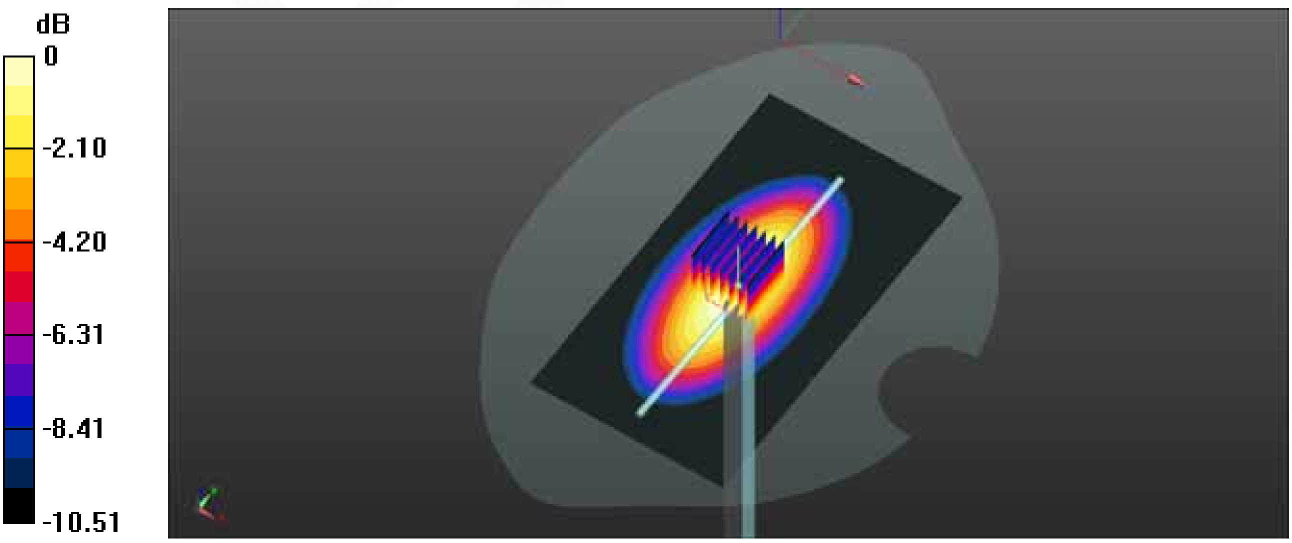
Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used: f = 835 MHz; σ = 0.972 S/m; ε_r = 55.101; ρ = 1000 kg/m^3
Phantom section: Flat Section

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) = 11.1 W/kg

System Performance 835 MHz Body /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 108.3 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 15.3 W/kg
SAR(1 g) = 9.97 W/kg; SAR(10 g) = 6.62 W/kg
Maximum value of SAR (measured) = 11.7 W/kg



0 dB = 11.7 W/kg = 10.68 dBW/kg

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

System Performance 1900 MHz Head

DUT: D1900V2; Type: 1900 MHz; Serial: 5d206

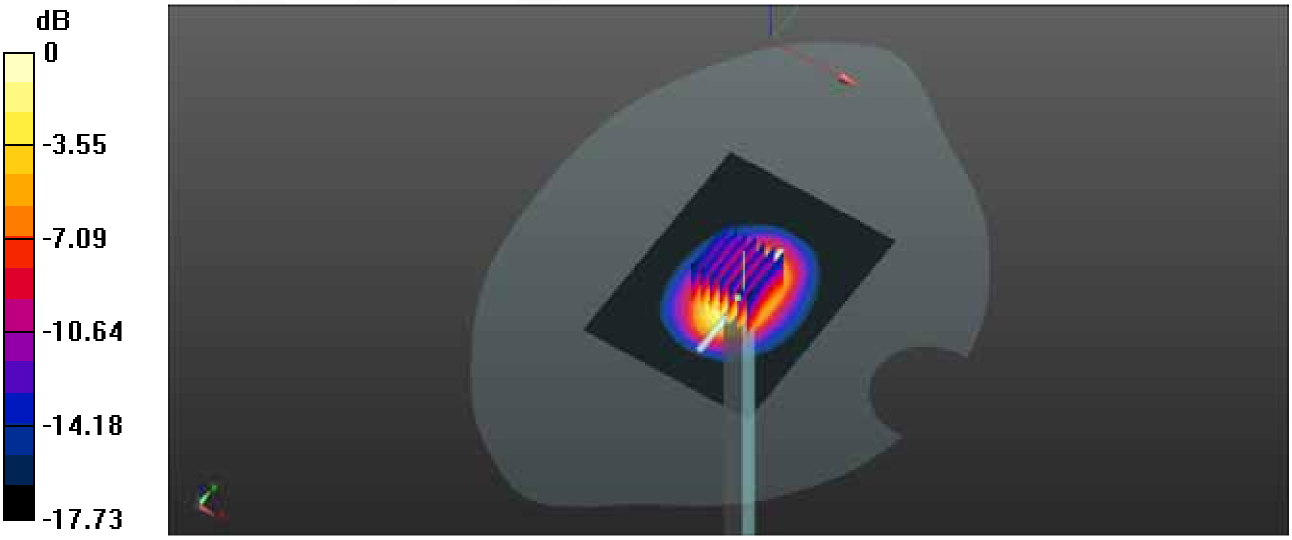
Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.412 S/m; ε_r = 39.66; ρ = 1000 kg/m^3
Phantom section: Flat Section

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) = 49.8 W/kg

System Performance 1900 MHz Head /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 178.2 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 76.9 W/kg
SAR(1 g) = 41.5 W/kg; SAR(10 g) = 21.6 W/kg
Maximum value of SAR (measured) = 46.7 W/kg



0 dB = 46.7 W/kg = 16.69 dBW/kg

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

System Performance 1900 MHz Body

DUT: D1900V2; Type: 1900 MHz; Serial: 5d206

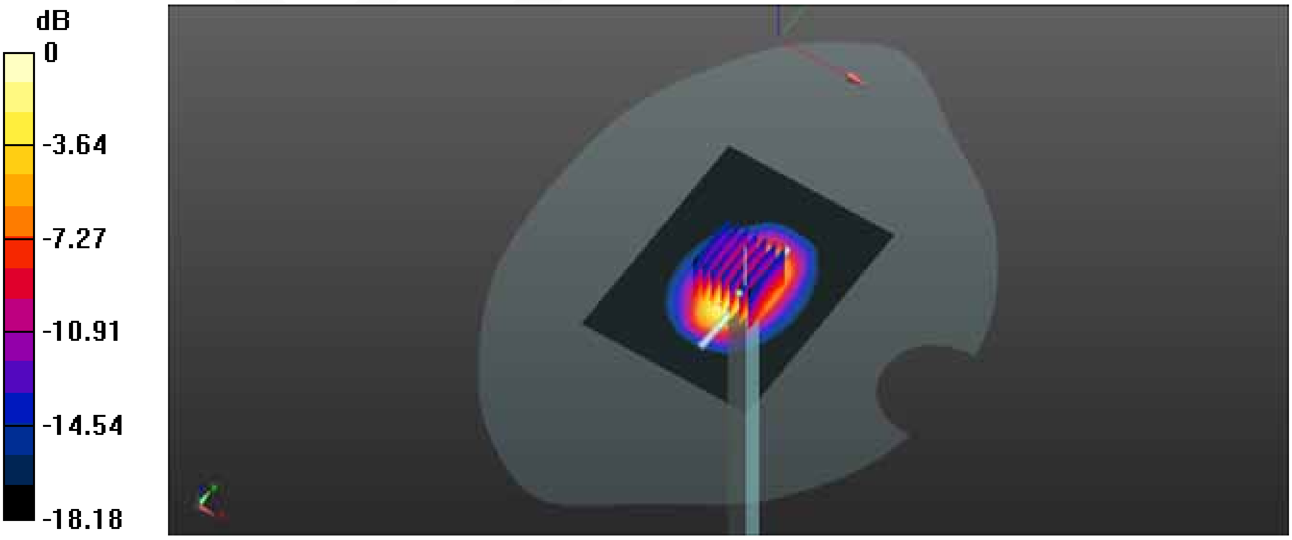
Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.517 S/m; ε_r = 54.169; ρ = 1000 kg/m^3
Phantom section: Flat Section

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) = 49.9 W/kg

System Performance 1900 MHz Body /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 178.3 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 76.4 W/kg
SAR(1 g) = 40.9 W/kg; SAR(10 g) = 20.6 W/kg
Maximum value of SAR (measured) = 46.8 W/kg



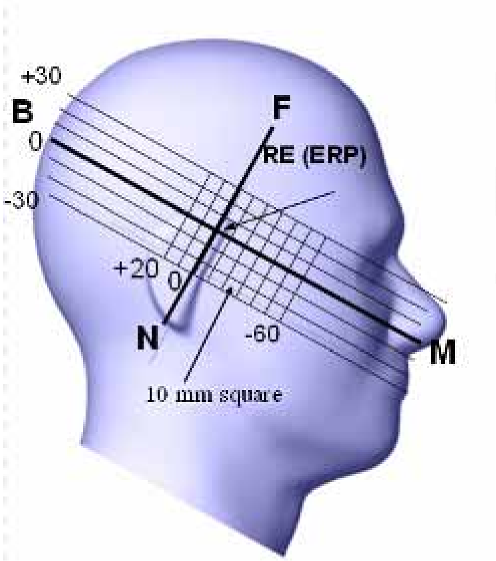
0 dB = 46.8 W/kg = 16.68 dBW/kg

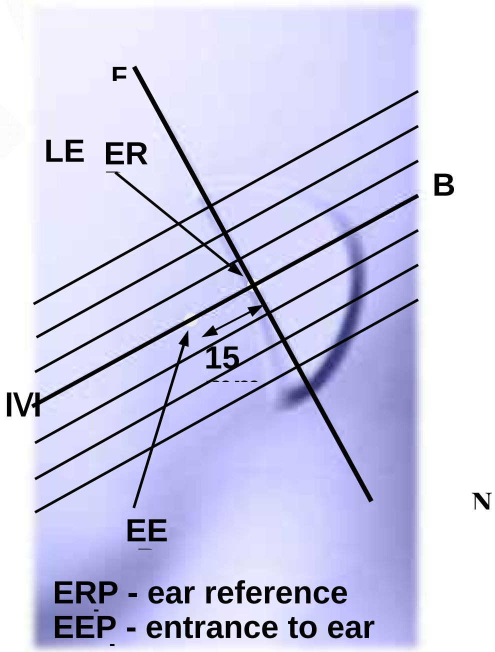
EUT TEST STRATEGY AND METHODOLOGY

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 ¼ 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.

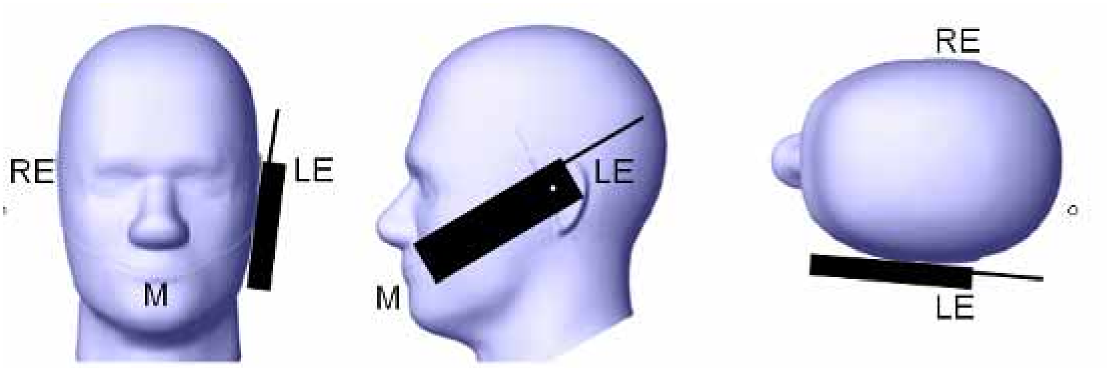
This test position is established:

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

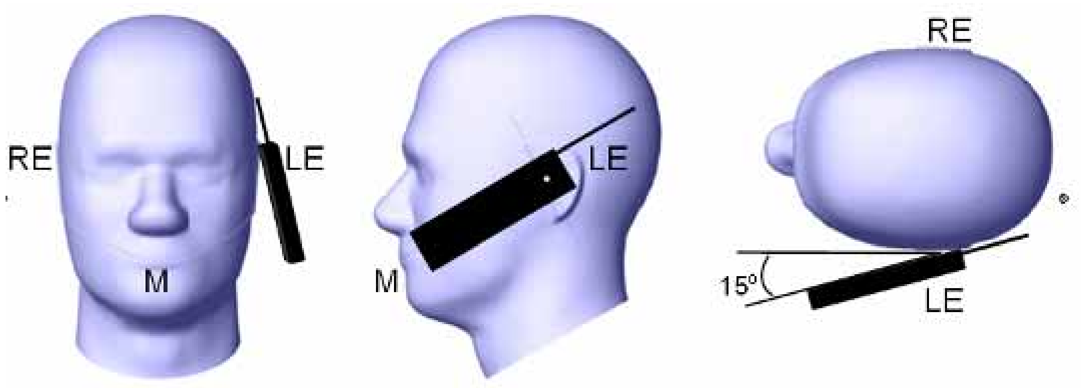
With the handset aligned in the "Cheek/Touch Position":

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.

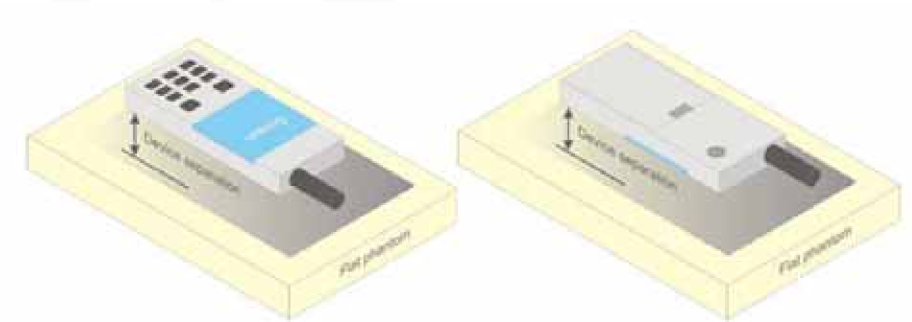


Figure 5 – Test positions for body-worn devices

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 v06
KDB 648474 D04 Handset SAR v01r03
KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04
KDB 865664 D02 RF Exposure Reporting v01r02
KDB 941225 D01 3G SAR Procedures v03r01
KDB 941225 D06 Hotspot Mode v02r01

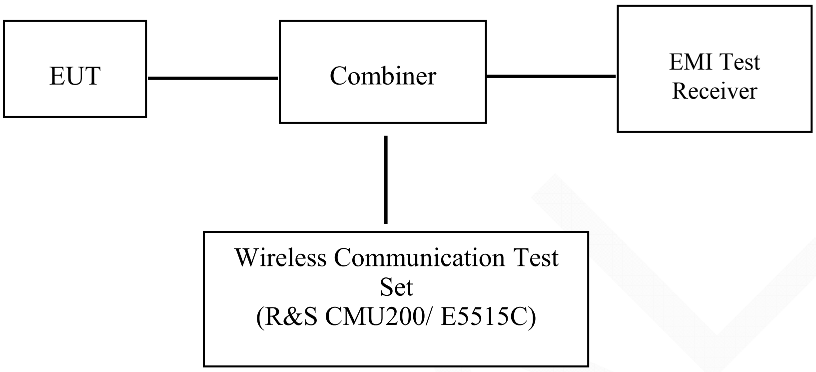
CONDUCTED OUTPUT POWER MEASUREMENT

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.



GSM/WCDMA

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/GPRS/EGPRS

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
> 27 dBm for EGPRS 850
> 26 dBm for EGPRS 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 stabe)
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) and MCS5 (EGPRS)
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
	β_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
	MPR(dB)	0	0	0.5	0.5
HSDPA Specific Settings	DACK	8			
	DNAK	8			
	DCQI	8			
	Ack-Nack repetition factor	3			
	CQI Feedback	4ms			
	CQI Repetition Factor	2			
	Ahs=βhs/ βc	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
	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
HSDPA Specific Settings	DACK	8				
	DNAK	8				
	DCQI	8				
	Ack-Nack repetition factor	3				
	CQI Feedback	4ms				
	CQI Repetition Factor	2				
	$Ahs=\beta_{hs}/\beta_c$	30/15				
HSUPA Specific Settings	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_FCIs	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 PO4 E-TFCI 92 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_{ed}1: 30/15 β_{ed}2: 30/15	β_{ed}3: 24/15 β_{ed}4: 24/15	3.5	2.5	14	105	105

Note 1: Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with β_{hs} = 30/15 * β_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

Max Target Power(dBm)			
Mode/Band	Channel		
	Low	Middle	High
GSM 850	31.8	31.8	31.8
GPRS 1 TX Slot	31.7	31.7	31.7
GPRS 2 TX Slot	31	31	31
GPRS 3 TX Slot	29.6	29.6	29.6
GPRS 4 TX Slot	28.8	28.8	28.8
EDGE 1 TX Slot	26.9	26.9	26.9
EDGE 2 TX Slot	25.7	25.7	25.7
EDGE 3 TX Slot	23.7	23.7	23.7
EDGE 4 TX Slot	22.3	22.3	22.3
PCS 1900	29.4	29.4	29.4
GPRS 1 TX Slot	29.1	29.1	29.1
GPRS 2 TX Slot	28.1	28.1	28.1
GPRS 3 TX Slot	26.4	26.4	26.4
GPRS 4 TX Slot	25.6	25.6	25.6
EDGE 1 TX Slot	25.4	25.4	25.4
EDGE 2 TX Slot	24.1	24.1	24.1
EDGE 3 TX Slot	21.9	21.9	21.9
EDGE 4 TX Slot	20.4	20.4	20.4
WCDMA850	21.8	21.8	21.8
HSDPA	20.5	20.5	20.5
HSUPA	20.5	20.5	20.5
DC-HSDPA	20.6	20.6	20.6
HSPA+	20.5	20.5	20.5
WCDMA1900	22	22	22
HSDPA	20.8	20.8	20.8
HSUPA	20.7	20.7	20.7
DC-HSDPA	20.6	20.6	20.6
HSPA+	20.6	20.6	20.6
WLAN	9.4	9.4	9.4
Bluetooth BDR/EDR	3.9	3.9	3.9
Bluetooth LE	-5.6	-5.6	-5.6

Test Results:

GSM:

Band	Channel No.	Frequency (MHz)	RF Output Power (dBm)
GSM 850	128	824.2	**31.7**
	190	836.6	31.4
	251	848.8	31.6
PCS 1900	512	1850.2	**29.3**
	661	1880	29
	810	1909.8	28.5

GPRS:

Band	Channel No.	Frequency (MHz)	RF Output Power (dBm)			
			1 slot	2 slots	3 slots	4 slots
GSM 850	128	824.2	31.64	30.91	29.48	28.65
	190	836.6	31.34	30.54	28.91	28.03
	251	848.8	31.58	30.76	29.04	28.13
PCS 1900	512	1850.2	28.95	28.04	26.28	25.45
	661	1880	28.71	27.75	25.91	25.08
	810	1909.8	28.38	27.37	25.61	24.71

EGPRS:

Band	Channel No.	Frequency (MHz)	RF Output Power (dBm)			
			1 slot	2 slots	3 slots	4 slots
GSM 850	128	824.2	26.76	25.62	23.56	22.17
	190	836.6	26.23	25.13	23.01	21.61
	251	848.8	25.7	24.61	22.41	21.03
PCS 1900	512	1850.2	25.28	24.01	21.79	20.29
	661	1880	24.65	23.37	21.16	19.76
	810	1909.8	23.93	22.77	20.46	19.06

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	22.64	24.91	25.23	**25.65**
	190	836.6	22.34	24.54	24.66	25.03
	251	848.8	22.58	24.76	24.79	25.13
PCS 1900	512	1850.2	19.95	22.04	22.03	**22.45**
	661	1880	19.71	21.75	21.66	22.08
	810	1909.8	19.38	21.37	21.36	21.71

The time based average power for EGPRS

Band	Channel No.	Frequency (MHz)	Time based average Power (dBm)			
			1 slot	2 slot	3 slots	4 slots
GSM 850	128	824.2	17.76	19.62	19.31	19.17
	190	836.6	17.23	19.13	18.76	18.61
	251	848.8	16.7	18.61	18.16	18.03
PCS 1900	512	1850.2	16.28	18.01	17.54	17.29
	661	1880	15.65	17.37	16.91	16.76
	810	1909.8	14.93	16.77	16.21	16.06

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).
4. According to KDB941225D06-SAR for EGPRS mode are not required when the source-based time-averaged output power for data mode is lower than that in the normal GPRS mode

WCDMA:

Results (12.2kbps RMC)

Band	Channel No.	Frequency (MHz)	RF Output Power (dBm)
WCDMA 850	4132	826.4	**21.69**
	4183	836.6	21.31
	4233	846.6	21.25
WCDMA 1900	9262	1852.4	**21.94**
	9400	1880	21.23
	9538	1907.6	21.47

Results (HSDPA)

Band	Channel No.	Frequency (MHz)	RF Output Power (dBm)			
			Subset 1	Subset 2	Subset 3	Subset 4
WCDMA 850	4132	826.4	20.34	20.39	20.27	20.22
	4183	836.6	20.12	20.22	20.13	20.25
	4233	846.6	20.08	20	20.2	20.18
WCDMA 1900	9262	1852.4	20.52	20.61	20.66	20.54
	9400	1880	20.09	20.05	20.15	20.11
	9538	1907.6	20.11	20.09	20.04	20.11

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	20.42	20.23	20.32	20.26	20.42
	4183	836.6	20.21	20.19	20.08	20.15	20.03
	4233	846.6	20.24	20.02	20.17	20.26	20.1
WCDMA1900	9262	1852.4	20.52	20.64	20.43	20.63	20.4
	9400	1880	20.12	20.01	20.09	20.2	20.06
	9538	1907.6	20	20.18	20.19	20.01	20.14

Results (DC-HSDPA):

Band	Frequency (MHz)	RF Output Power (dBm)			
		Subset 1	Subset 2	Subset 3	Subset 4
WCDMA 850	826.4	20.96	20.86	20.76	20.91
	836.6	21.84	21.84	21.73	21.85
	846.6	21.26	21.3	21.27	21.14
WCDMA1900	1852.4	21.02	20.85	21.08	20.81
	1880	20.81	20.93	20.98	20.91
	1907.6	20.9	20.82	21	20.87

Results (HSPA+)

Band	Frequency (MHz)	RF Output Power (dBm)
WCDMA 850	826.4	20.91
	836.6	21.74
	846.6	21.27
WCDMA1900	1852.4	20.93
	1880	21.04
	1907.6	20.82

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 ¼ 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	3.38
	39	2441	3.74
	78	2480	**3.76**
EDR(4-DQPSK)	0	2402	2.63
	39	2441	3.04
	78	2480	3.11
EDR(8-DPSK)	0	2402	2.74
	39	2441	3.16
	78	2480	3.26
Bluetooth LE	0	2402	-6.03
	19	2440	-5.83
	39	2480	-5.71

WLAN

Mode	Channel No.	Channel frequency (MHz)	RF Output Power (dBm)
802.11b	1	2412	9.27
	6	2437	9.19
	11	2462	9.12
802.11g	1	2412	8.91
	6	2437	**9.32**
	11	2462	9.18
802.11n HT20	1	2412	8.82
	6	2437	8.86
	11	2462	9.11
802.11n HT40	3	2422	9.00
	6	2437	9.05
	9	2452	9.11

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:	22-23 ℃	22-23 ℃
Relative Humidity:	28 %	29 %
ATM Pressure:	1013 mbar	1011 mbar
Test Date:	2015-12-01	2015-12-02

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
Left Head Cheek	824.2	GSM	/	/	/	/	/	/	/
	836.6	GSM	0.17	31.4	31.8	1.096	0.102	0.112	/
	848.8	GSM	/	/	/	/	/	/	/
Left Head Tilt	824.2	GSM	/	/	/	/	/	/	/
	836.6	GSM	-0.2	31.4	31.8	1.096	0.062	0.068	/
	848.8	GSM	/	/	/	/	/	/	/
Right Head Cheek	824.2	GSM	0.11	31.7	31.8	1.023	0.131	0.134	1#
	836.6	GSM	0.03	31.4	31.8	1.096	0.118	0.129	/
	848.8	GSM	0.14	31.6	31.8	1.047	0.122	0.128	/
Right Head Tilt	824.2	GSM	/	/	/	/	/	/	/
	836.6	GSM	0.11	31.4	31.8	1.096	0.076	0.083	/
	848.8	GSM	/	/	/	/	/	/	/
Body-Back-Headset (10mm)	824.2	GSM	/	/	/	/	/	/	/
	836.6	GSM	0.01	31.4	31.8	1.096	0.521	0.571	/
	848.8	GSM	/	/	/	/	/	/	/
Body-Back (10mm)	824.2	GPRS	-0.06	28.65	28.8	1.035	0.7	0.725	2#
	836.6	GPRS	0.15	28.03	28.8	1.194	0.595	0.71	/
	848.8	GPRS	0.2	28.13	28.8	1.167	0.604	0.705	/
Body-Left (10mm)	824.2	GPRS	/	/	/	/	/	/	/
	836.6	GPRS	0.04	28.03	28.8	1.194	0.16	0.191	/
	848.8	GPRS	/	/	/	/	/	/	/
Body-Right (10mm)	824.2	GPRS	/	/	/	/	/	/	/
	836.6	GPRS	0.15	28.03	28.8	1.194	0.129	0.154	/
	848.8	GPRS	/	/	/	/	/	/	/
Body-Bottom (10mm)	824.2	GPRS	/	/	/	/	/	/	/
	836.6	GPRS	-0.1	28.03	28.8	1.194	0.283	0.326	/
	848.8	GPRS	/	/	/	/	/	/	/

Note:
1. When the 1-g SAR is ≤ 0.8W/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 > ½ 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
Left Head Cheek	1850.2	GSM	-0.03	29.3	29.4	1.023	0.339	0.347	**3#**
	1880	GSM	0.07	29	29.4	1.096	0.303	0.332	/
	1909.8	GSM	0.02	28.5	29.4	1.23	0.271	0.333	/
Left Head Tilt	1850.2	GSM	/	/	/	/	/	/	/
	1880	GSM	-0.03	29	29.4	1.096	0.21	0.23	/
	1909.8	GSM	/	/	/	/	/	/	/
Right Head Cheek	1850.2	GSM	/	/	/	/	/	/	/
	1880	GSM	-0.14	29	29.4	1.096	0.256	0.281	/
	1909.8	GSM	/	/	/	/	/	/	/
Right Head Tilt	1850.2	GSM	/	/	/	/	/	/	/
	1880	GSM	0.18	29	29.4	1.096	0.159	0.174	/
	1909.8	GSM	/	/	/	/	/	/	/
Body-Back-Headset (10mm)	1850.2	GSM	/	/	/	/	/	/	/
	1880	GSM	-0.19	29	29.4	1.096	0.681	0.746	/
	1909.8	GSM	/	/	/	/	/	/	/
Body-Back (10mm)	1850.2	GPRS	-0.06	25.45	25.6	1.035	0.896	0.927	**4#**
	1880	GPRS	0.07	25.08	25.6	1.127	0.794	0.895	/
	1909.8	GPRS	0.06	24.71	25.6	1.227	0.724	0.888	/
Body-Left (10mm)	1850.2	GPRS	/	/	/	/	/	/	/
	1880	GPRS	-0.01	25.08	25.6	1.127	0.246	0.277	/
	1909.8	GPRS	/	/	/	/	/	/	/
Body-Right (10mm)	1850.2	GPRS	/	/	/	/	/	/	/
	1880	GPRS	-0.1	25.08	25.6	1.127	0.145	0.163	/
	1909.8	GPRS	/	/	/	/	/	/	/
Body-Bottom (10mm)	1850.2	GPRS	/	/	/	/	/	/	/
	1880	GPRS	-0.1	25.08	25.6	1.127	0.36	0.417	/
	1909.8	GPRS	/	/	/	/	/	/	/

Note:
1. When the 1-g SAR is ≤ 0.8W/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 > ½ 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.

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
Left Head Cheek	826.4	RMC	/	/	/	/	/	/	/
	836.6	RMC	-0.05	21.31	21.8	1.119	0.093	0.104	/
	846.6	RMC	/	/	/	/	/	/	/
Left Head Tilt	826.4	RMC	/	/	/	/	/	/	/
	836.6	RMC	0.06	21.31	21.8	1.119	0.063	0.07	/
	846.6	RMC	/	/	/	/	/	/	/
Right Head Cheek	826.4	RMC	0.09	21.69	21.8	1.026	0.123	0.126	**5#**
	836.6	RMC	0.06	21.31	21.8	1.119	0.109	0.122	/
	846.6	RMC	0.1	21.25	21.8	1.135	0.108	0.123	/
Right Head Tilt	826.4	RMC	/	/	/	/	/	/	/
	836.6	RMC	0.12	21.31	21.8	1.119	0.069	0.077	/
	846.6	RMC	/	/	/	/	/	/	/
Body-Back (10mm)	826.4	RMC	-0.04	21.69	21.8	1.026	0.354	0.363	**6#**
	836.6	RMC	0.14	21.31	21.8	1.119	0.317	0.355	/
	846.6	RMC	0.12	21.25	21.8	1.135	0.31	0.352	/
Body-Left (10mm)	826.4	RMC	/	/	/	/	/	/	/
	836.6	RMC	-0.01	21.31	21.8	1.119	0.08	0.09	/
	846.6	RMC	/	/	/	/	/	/	/
Body-Right (10mm)	826.4	RMC	/	/	/	/	/	/	/
	836.6	RMC	-0.12	21.31	21.8	1.119	0.076	0.085	/
	846.6	RMC	/	/	/	/	/	/	/
Body-Bottom (10mm)	826.4	RMC	/	/	/	/	/	/	/
	836.6	RMC	0.19	21.31	21.8	1.119	0.157	0.174	/
	846.6	RMC	/	/	/	/	/	/	/

Note:
1. When the 1-g SAR is≤ 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 ¼ 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
Left Head Cheek	1852.4	RMC	0.18	21.94	22	1.014	0.704	0.714	**7#**
	1880	RMC	0.02	21.23	22	1.194	0.576	0.688	/
	1907.6	RMC	0.1	21.47	22	1.13	0.615	0.695	/
Left Head Tilt	1852.4	RMC	/	/	/	/	/	/	/
	1880	RMC	-0.18	21.23	22	1.194	0.371	0.443	/
	1907.6	RMC	/	/	/	/	/	/	/
Right Head Cheek	1852.4	RMC	/	/	/	/	/	/	/
	1880	RMC	-0.08	21.23	22	1.194	0.48	0.573	/
	1907.6	RMC	/	/	/	/	/	/	/
Right Head Tilt	1852.4	RMC	/	/	/	/	/	/	/
	1880	RMC	-0.18	21.23	22	1.194	0.317	0.378	/
	1907.6	RMC	/	/	/	/	/	/	/
Body-Back (10mm)	1852.4	RMC	-0.06	21.94	22	1.014	1.14	1.156	**8#**
	1880	RMC	0.11	21.23	22	1.194	0.944	1.127	/
	1907.6	RMC	0.06	21.47	22	1.13	0.972	1.098	/
Body-Left (10mm)	1852.4	RMC	/	/	/	/	/	/	/
	1880	RMC	0.14	21.23	22	1.194	0.314	0.375	/
	1907.6	RMC	/	/	/	/	/	/	/
Body-Right (10mm)	1852.4	RMC	/	/	/	/	/	/	/
	1880	RMC	0.08	21.23	22	1.194	0.178	0.213	/
	1907.6	RMC	/	/	/	/	/	/	/
Body-Bottom (10mm)	1852.4	RMC	/	/	/	/	/	/	/
	1880	RMC	-0.04	21.23	22	1.194	0.433	0.539	/
	1907.6	RMC	/	/	/	/	/	/	/

Note:
1. When the 1-g SAR is≤ 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 ¼ 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	√	×	66
GSM + WLAN	√	√	66
WCDMA + Bluetooth	√	×	66
WCDMA + WLAN	√	√	66

Standalone SAR test exclusion considerations

Mode	Frequency (MHz)	Pavg (dBm)	Pavg (mW)	Distance (mm)	Calculated value	Threshold (1-g)	SAR Test Exclusion
WLAN	2462	9.4	8.71	0	2.7	3	YES
Bluetooth	2480	3.9	2.45	0	0.8	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:
[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] · [√f(GHz)] ≤ 3.0 for 1-g SAR and ≤7.5 for 10-g extremity SAR, where
1. f(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 (GHz)	Pavg (dBm)	Pavg (mW)	Distance (mm)	Estimated 1-g (W/kg)
WLAN Head	2462	9.4	8.71	0	0.36
WLAN Body	2462	9.4	8.71	10	0.18
BT Head	2480	3.9	2.45	0	0.107
BT Body	2480	3.9	2.45	10	0.053

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:
[(max. power of channel, including tune-up tolerance , mW)/(min. test separation distance, mm)] · [√f(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)		ΣSAR < 1.6W/kg
		SAR1	SAR2	
GSM 850+Bluetooth	Left Head Cheek	0.112	0.107	0.219
	Left Head Tilt	0.068	0.107	0.175
	Right Head Cheek	0.134	0.107	0.241
	Right Head Tilt	0.083	0.107	0.19
	Body-Back-Headset	0.571	0.053	0.624
GPRS 850 + Bluetooth	Body-Back	0.725	0.053	0.778
	Body- Left	0.191	0.053	0.244
	Body- Right	0.154	0.053	0.207
	Body-Bottom	0.326	0.053	0.379
PCS1900 +Bluetooth	Left Head Cheek	0.347	0.107	0.454
	Left Head Tilt	0.23	0.107	0.337
	Right Head Cheek	0.281	0.107	0.388
	Right Head Tilt	0.174	0.107	0.281
	Body-Back-Headset	0.746	0.053	0.799
GPRS 1900 + Bluetooth	Body-Back	0.927	0.053	0.98
	Body- Left	0.277	0.053	0.33
	Body- Right	0.163	0.053	0.216
	Body-Bottom	0.417	0.053	0.47
WCDMA 850+Bluetooth	Left Head Cheek	0.104	0.107	0.211
	Left Head Tilt	0.07	0.107	0.177
	Right Head Cheek	0.126	0.107	0.233
	Right Head Tilt	0.077	0.107	0.184
	Body-Back	0.363	0.053	0.416
	Body- Left	0.09	0.053	0.143
	Body- Right	0.085	0.053	0.138
	Body-Bottom	0.174	0.053	0.227
WCDMA 1900+Bluetooth	Left Head Cheek	0.714	0.107	0.821
	Left Head Tilt	0.443	0.107	0.55
	Right Head Cheek	0.573	0.107	0.68
	Right Head Tilt	0.378	0.107	0.485
	Body-Back	1.156	0.053	1.209
	Body- Left	0.375	0.053	0.428
	Body- Right	0.213	0.053	0.266
	Body-Bottom	0.539	0.053	0.592

Mode(SAR1+SAR2)	Position	Reported SAR(W/kg)		ΣSAR < 1.6W/kg
		SAR1	SAR2	
GSM 850+ WLAN	Left Head Cheek	0.112	0.38	0.492
	Left Head Tilt	0.068	0.38	0.448
	Right Head Cheek	0.134	0.38	0.514
	Right Head Tilt	0.083	0.38	0.463
	Body-Back-Headset	0.571	0.18	0.751
GPRS 850 + WLAN (Hotspot)	Body-Back	0.725	0.18	0.905
	Body- Left	0.191	0.18	0.371
	Body- Right	0.154	0.18	0.334
	Body-Bottom	0.326	0.18	0.506
PCS1900 + WLAN	Left Head Cheek	0.347	0.38	0.727
	Left Head Tilt	0.23	0.38	0.61
	Right Head Cheek	0.281	0.38	0.661
	Right Head Tilt	0.174	0.38	0.554
	Body-Back-Headset	0.746	0.18	0.926
GPRS 1900 + WLAN (Hotspot)	Body-Back	0.927	0.18	1.107
	Body- Left	0.277	0.18	0.457
	Body- Right	0.163	0.18	0.343
	Body-Bottom	0.417	0.18	0.597
WCDMA 850+ WLAN	Left Head Cheek	0.104	0.38	0.484
	Left Head Tilt	0.07	0.38	0.45
	Right Head Cheek	0.126	0.38	0.506
	Right Head Tilt	0.077	0.38	0.457
WCDMA 850+ WLAN (Hotspot)	Body-Back	0.363	0.18	0.543
	Body- Left	0.09	0.18	0.27
	Body- Right	0.085	0.18	0.265
	Body-Bottom	0.174	0.18	0.354
WCDMA 1900+ WLAN	Left Head Cheek	0.714	0.38	1.094
	Left Head Tilt	0.443	0.38	0.823
	Right Head Cheek	0.573	0.38	0.953
	Right Head Tilt	0.378	0.38	0.758
WCDMA 1900+ WLAN (Hotspot)	Body-Back	1.156	0.18	**1.336**
	Body- Left	0.375	0.18	0.555
	Body- Right	0.213	0.18	0.393
	Body-Bottom	0.539	0.18	0.719

Note:
Hotspot mode SAR is only required for the edges within 25mm from the transmitting antenna located.

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 Right Cheek Low Channel

DUT: Doppio Onix; Type: SG351

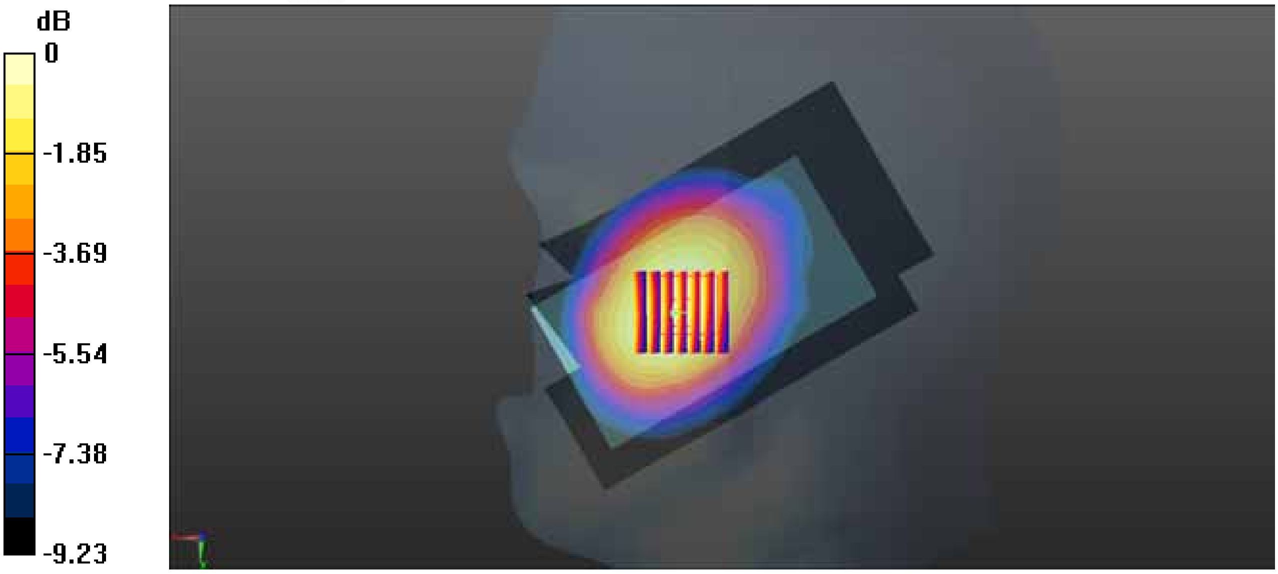
Communication System: Generic GSM; Frequency: 824.2 MHz;Duty Cycle: 1: 8
Medium parameters used: f = 824.2 MHz; σ = 0.878 S/m; ε_r = 42.925; ρ = 1000 kg/m^3
Phantom section: Right Section

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 Right Cheek/Area Scan (61x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.141 W/kg

Head/GSM 850 Right Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.312 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 0.165 W/kg
SAR(1 g) = 0.131 W/kg; SAR(10 g) = 0.099 W/kg
Maximum value of SAR (measured) = 0.137 W/kg



0 dB = 0.137 W/kg = -8.63 dBW/kg

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

Test Plot 2#:GSM 850 Back Low Channel

DUT: Doppio Onix; Type: SG351

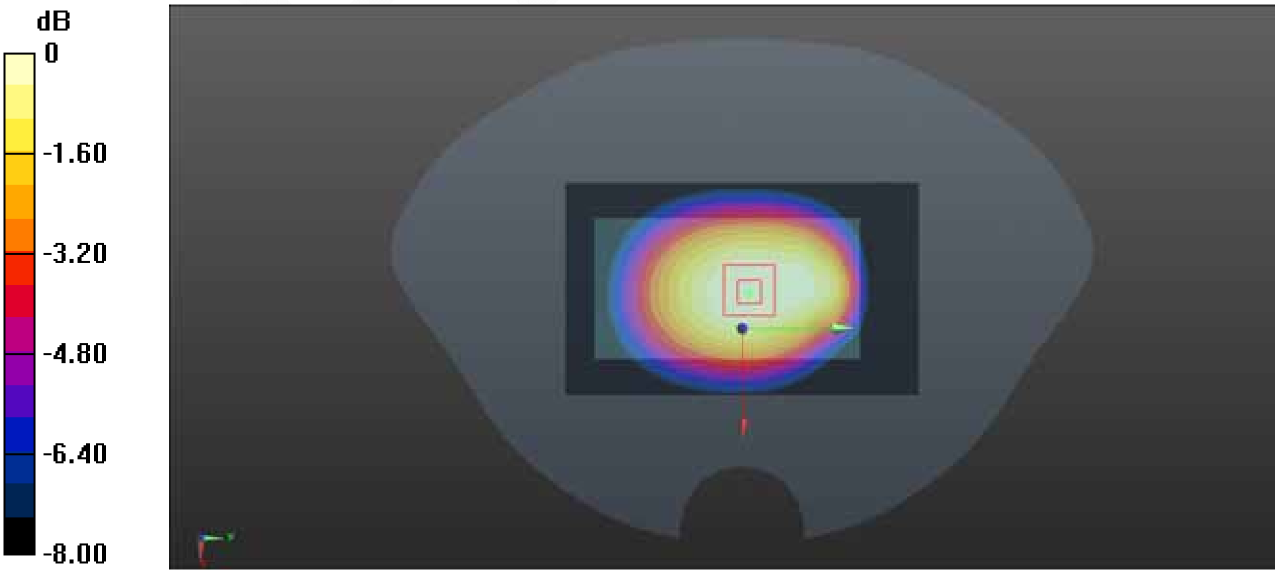
Communication System: Generic GPRS-4 SLOTS; Frequency: 824.2 MHz;Duty Cycle: 1:2
Medium parameters used: f = 824.2 MHz; σ = 0.963 S/m; ε_r = 55.157; ρ = 1000 kg/m^3
Phantom section: Flat Section

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 (61x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.751 W/kg

Body/GSM 850 Back/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 28.27 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 0.891 W/kg
SAR(1 g) = 0.700 W/kg; SAR(10 g) = 0.523 W/kg
Maximum value of SAR (measured) = 0.737 W/kg



0 dB = 0.737 W/kg = -1.33 dBW/kg

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

Test Plot 3#:PCS 1900 Left Cheek Low Channel

DUT: Doppio Onix; Type: SG351

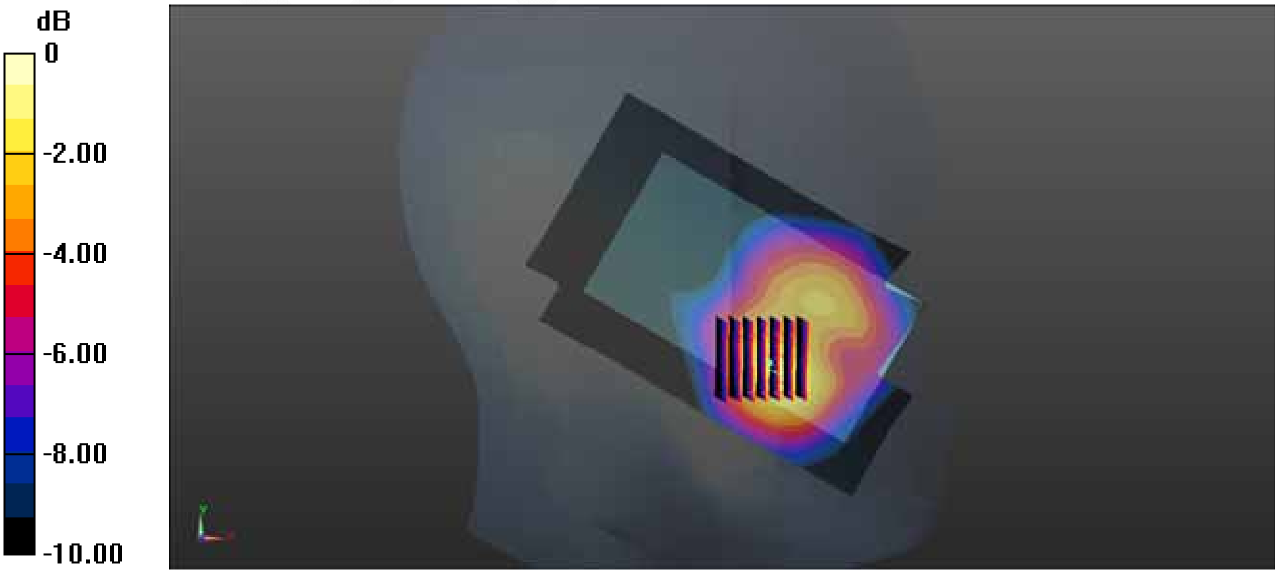
Communication System: Generic GSM; Frequency: 1850.2 MHz;Duty Cycle: 1:8
Medium parameters used: f = 1850.2 MHz; σ = 1.358 S/m; ε_r = 39.853; ρ = 1000 kg/m^3
Phantom section: Left Section

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);

Head/PCS 1900 Left Cheek/Area Scan (61x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.370 W/kg

Head/PCS 1900 Left Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.703 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.542 W/kg
SAR(1 g) = 0.339 W/kg; SAR(10 g) = 0.197 W/kg
Maximum value of SAR (measured) = 0.372 W/kg



0 dB = 0.372 W/kg = -4.29 dBW/kg

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

Test Plot 4#:PCS 1900 Back Low Channel

DUT: Doppio Onix; Type: SG351

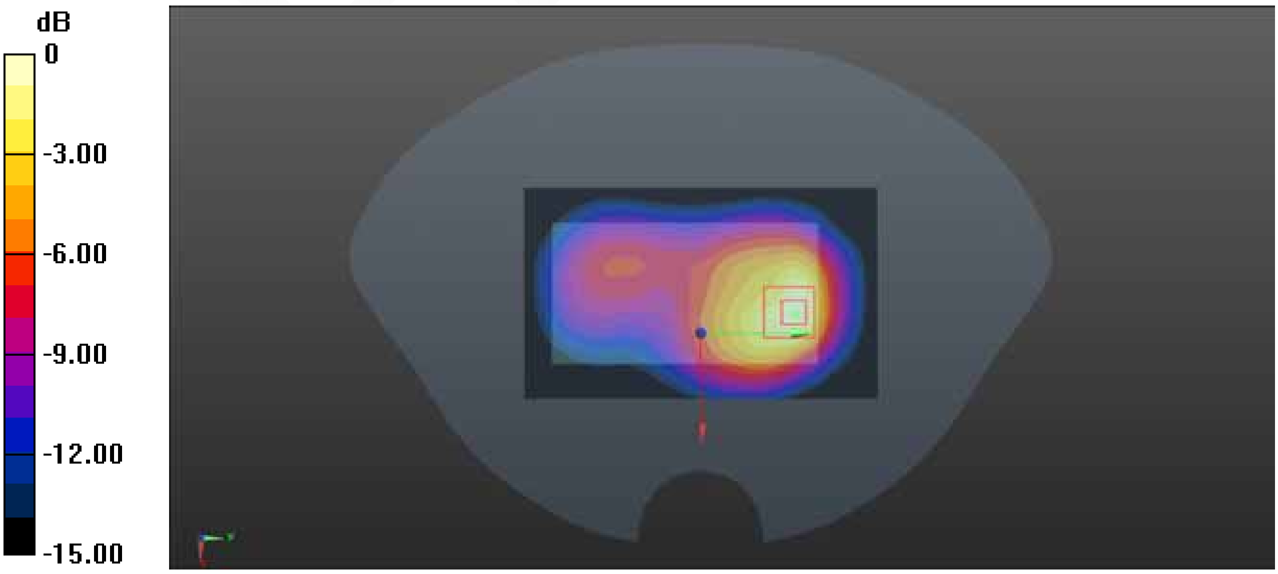
Communication System: Generic GPRS-4 SLOTS; Frequency: 1850.2 MHz;Duty Cycle: 1:2
Medium parameters used: f = 1850.2 MHz; σ = 1.478 S/m; ε_r = 55.295; ρ = 1000 kg/m^3
Phantom section: Flat Section

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 Back/Area Scan (61x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.03 W/kg

Body/PCS 1900 Back/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.48 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 1.67 W/kg
SAR(1 g) = 0.896 W/kg; SAR(10 g) = 0.461 W/kg
Maximum value of SAR (measured) = 1.01 W/kg



0 dB = 1.01 W/kg = 0.04 dBW/kg

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

Test Plot 5#:WCDMA 850 Right Cheek Low Channel

DUT: Doppio Onix; Type: SG351

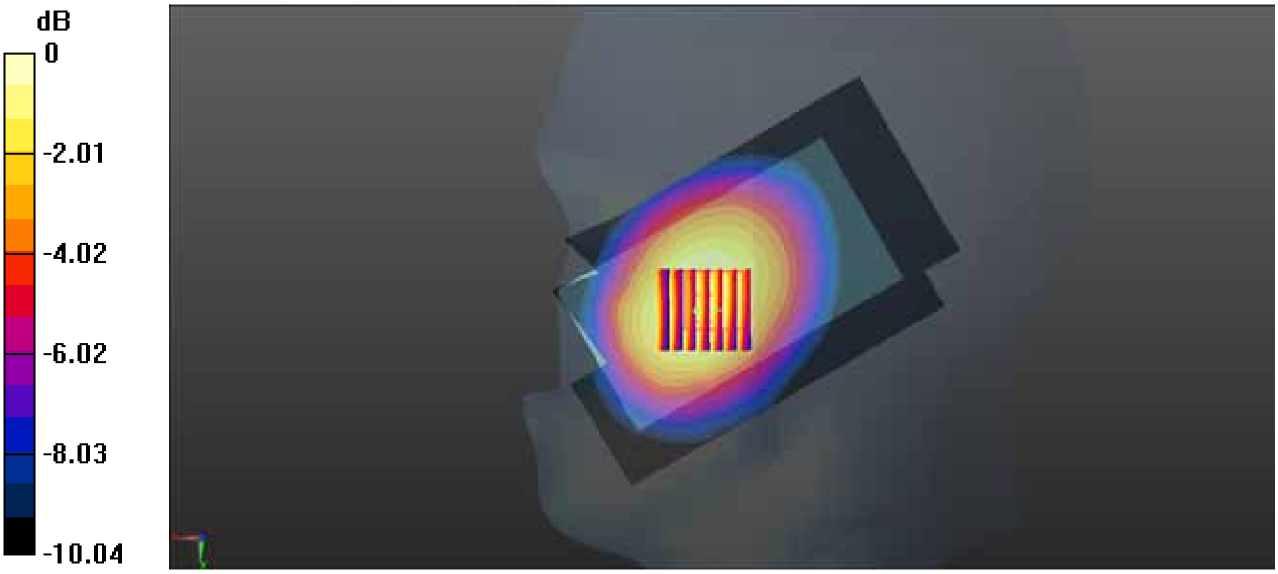
Communication System: BAND V; Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium parameters used: f = 826.4 MHz; σ = 0.88 S/m; ε_r = 42.881; ρ = 1000 kg/m^3
Phantom section: Right Section

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 Right Cheek/Area Scan (61x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.131 W/kg

Head/WCDMA 850 Right Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.291 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.154 W/kg
SAR(1 g) = 0.123 W/kg; SAR(10 g) = 0.092 W/kg
Maximum value of SAR (measured) = 0.129 W/kg



0 dB = 0.129 W/kg = -8.89 dBW/kg

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

Test Plot 6#:WCDMA 850 Back Low Channel

DUT: Doppio Onix; Type: SG351

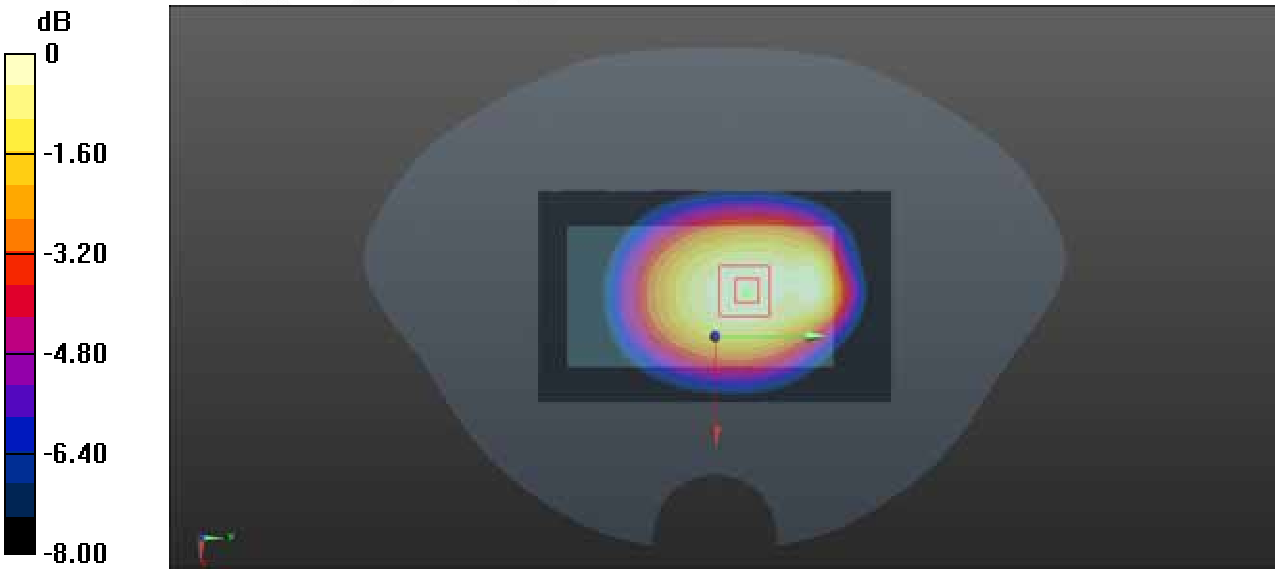
Communication System: BAND V; Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium parameters used: f = 826.4 MHz; σ = 0.966 S/m; ε_r = 55.126; ρ = 1000 kg/m^3
Phantom section: Flat Section

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 (61x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.375 W/kg

Body/WCDMA 850 Back/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 18.99 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.451 W/kg
SAR(1 g) = 0.354 W/kg; SAR(10 g) = 0.265 W/kg
Maximum value of SAR (measured) = 0.373 W/kg



0 dB = 0.373 W/kg = -4.28 dBW/kg

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

Test Plot 7#:WCDMA 1900 Left Cheek Low Channel

DUT: Doppio Onix; Type: SG351

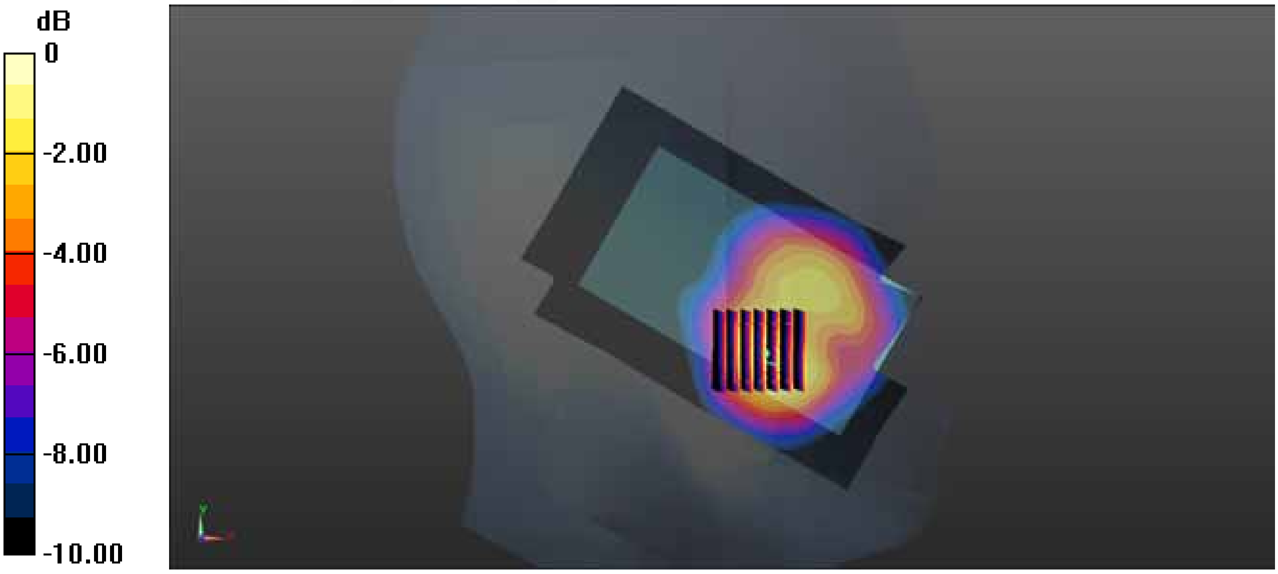
Communication System: BAND II; Frequency: 1852.4 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1852.4 MHz; σ = 1.355 S/m; ε_r = 39.861; ρ = 1000 kg/m^3
Phantom section: Left Section

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);

Head/WCDMA 1900 Left Cheek/Area Scan (61x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.784 W/kg

Head/WCDMA 1900 Left Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.107 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 1.15 W/kg
SAR(1 g) = 0.704 W/kg; SAR(10 g) = 0.402 W/kg
Maximum value of SAR (measured) = 0.768 W/kg



0 dB = 0.768 W/kg = -1.15 dBW/kg

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

Test Plot 8#: WCDMA 1900 Back Low Channel

DUT: Doppio Onix; Type: SG351

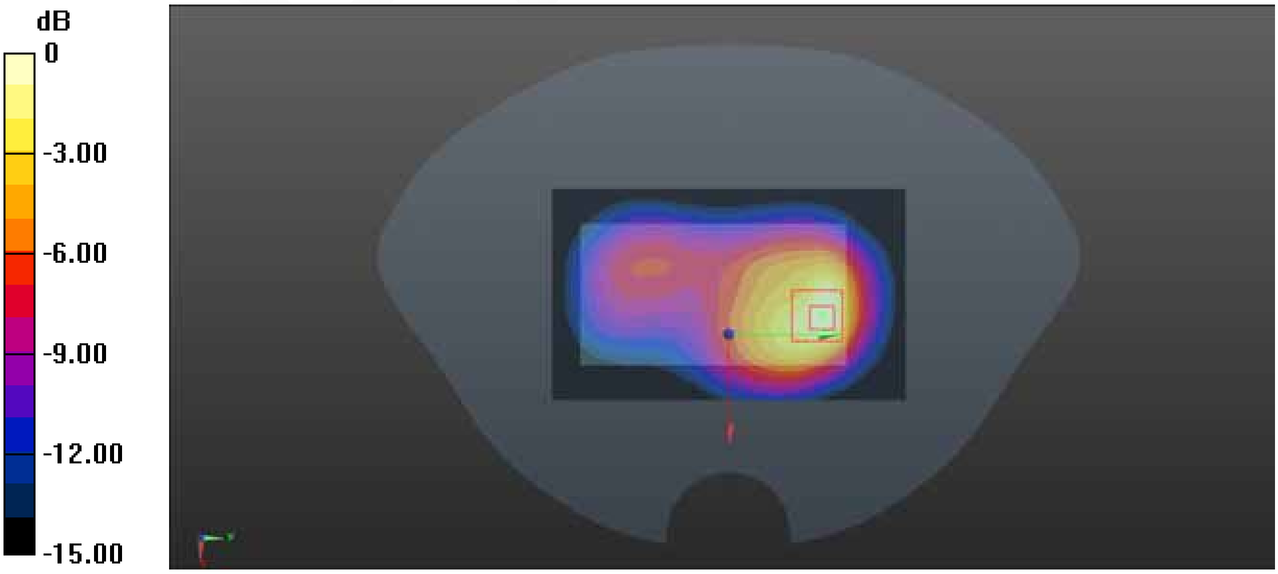
Communication System: BAND II; Frequency: 1852.4 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1852.4 MHz; σ = 1.474 S/m; ε_r = 55.211; ρ = 1000 kg/m^3
Phantom section: Flat Section

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 Back/Area Scan (61x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.32 W/kg

Body/WCDMA 1900 Back/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.84 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 2.13 W/kg
SAR(1 g) = 1.14 W/kg; SAR(10 g) = 0.588 W/kg
Maximum value of SAR (measured) = 1.30 W/kg



0 dB = 1.30 W/kg = 1.14 dBW/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	√3	1	1	2.7	2.7
Hemispherical Isotropy	9.6	R	√3	0	0	0.0	0.0
Boundary effect	1.0	R	√3	1	1	0.6	0.6
Linearity	4.7	R	√3	1	1	2.7	2.7
Detection limits	1.0	R	√3	1	1	0.6	0.6
Readout electronics	0.3	N	1	1	1	0.3	0.3
Response time	0.0	R	√3	1	1	0.0	0.0
Integration time	0.0	R	√3	1	1	0.0	0.0
RF ambient conditions – noise	1.0	R	√3	1	1	0.6	0.6
RF ambient conditions–reflections	1.0	R	√3	1	1	0.6	0.6
Probe positioner mech. Restrictions	0.8	R	√3	1	1	0.5	0.5
Probe positioning with respect to phantom shell	6.7	R	√3	1	1	3.9	3.9
Post-processing	2.0	R	√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	√3	1	1	2.9	2.9
Phantom and set-up							
Phantom uncertainty (shape and thickness tolerances)	4.0	R	√3	1	1	2.3	2.3
Liquid conductivity target)	5.0	R	√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	√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

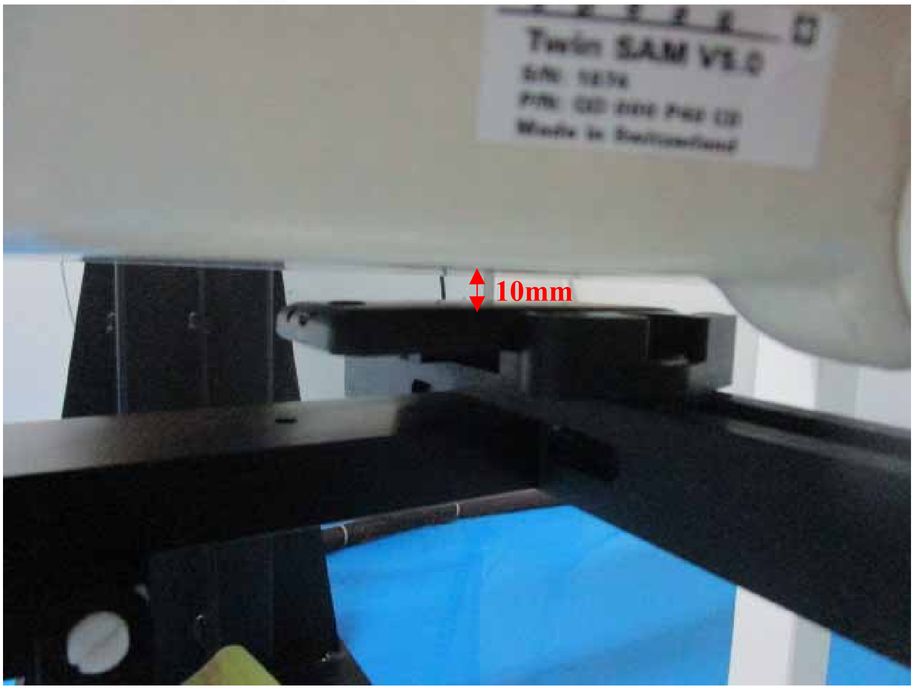
Measurement uncertainty evaluation for IEC62209-2 SAR test

Source of uncertainty	Tolerance/ uncertainty ± %	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	√3	1	1	2.7	2.7
Hemispherical Isotropy	9.6	R	√3	0	0	0.0	0.0
Linearity	4.7	R	√3	1	1	2.7	2.7
Modulation Response	0.0	R	√3	1	1	0.0	0.0
Detection limits	1.0	R	√3	1	1	0.6	0.6
Boundary effect	1.0	R	√3	1	1	0.6	0.6
Readout electronics	0.3	N	1	1	1	0.3	0.3
Response time	0.0	R	√3	1	1	0.0	0.0
Integration time	0.0	R	√3	1	1	0.0	0.0
RF ambient conditions – noise	1.0	R	√3	1	1	0.6	0.6
RF ambient conditions–reflections	1.0	R	√3	1	1	0.6	0.6
Probe positioner mech. Restrictions	0.8	R	√3	1	1	0.5	0.5
Probe positioning with respect to phantom shell	6.7	R	√3	1	1	3.9	3.9
Post-processing	2.0	R	√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	√3	1	1	2.6	2.6
Drift of output power	5.0	R	√3	1	1	2.9	2.9
Phantom and set-up							
Phantom uncertainty (shape and thickness tolerances)	4.0	R	√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	√3	0.78	0.71	0.8	0.7
Temp. unc. - Permittivity	0.3	R	√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

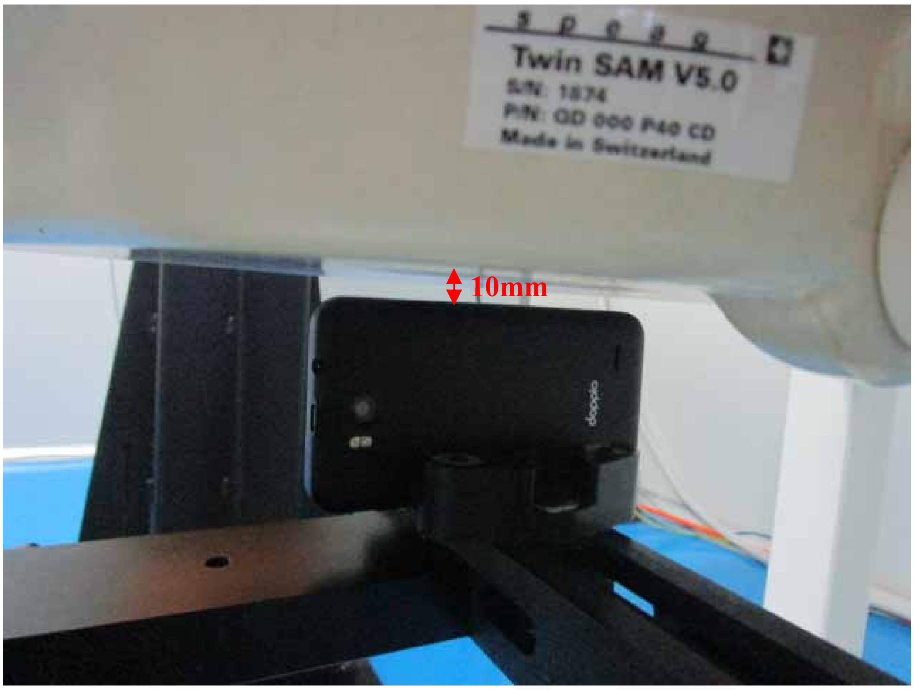
APPENDIX B EUT TEST POSITION PHOTOS

Liquid depth ≥ 15cm

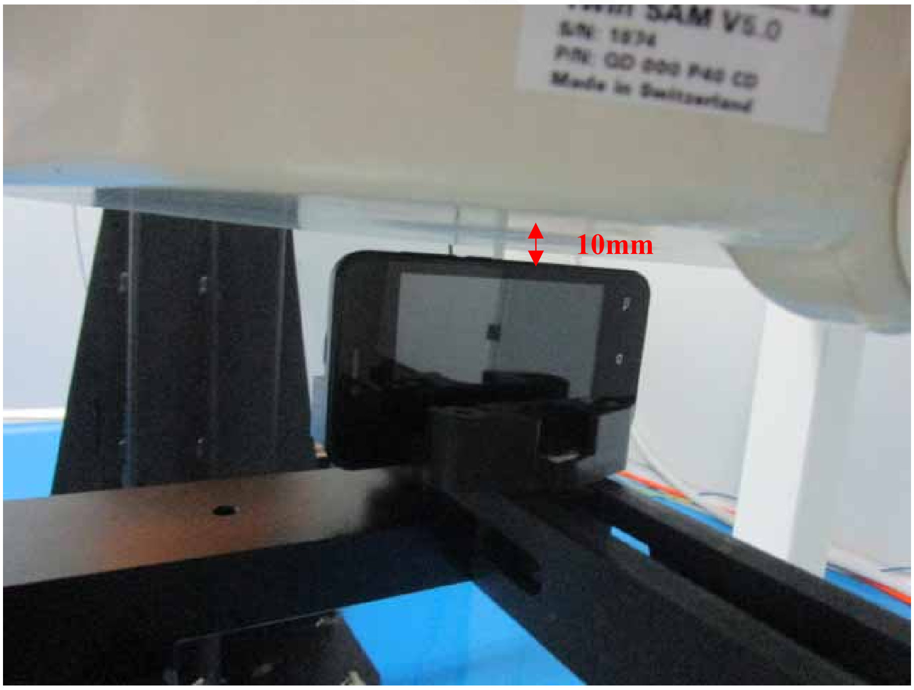
Body-worn Back Setup Photo



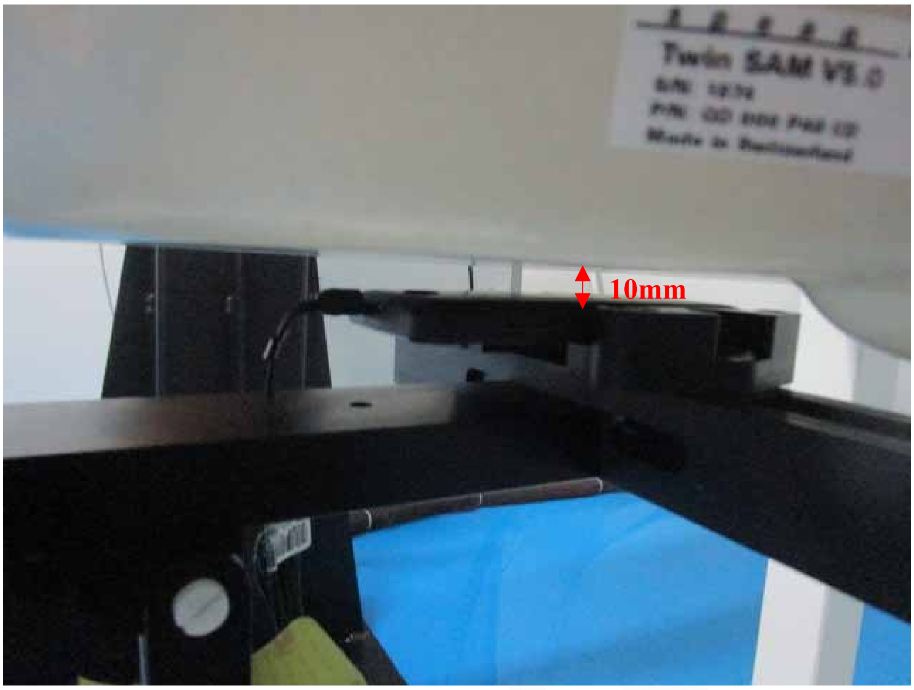
Body-worn Left Setup Photo



Body-worn Right Setup Photo

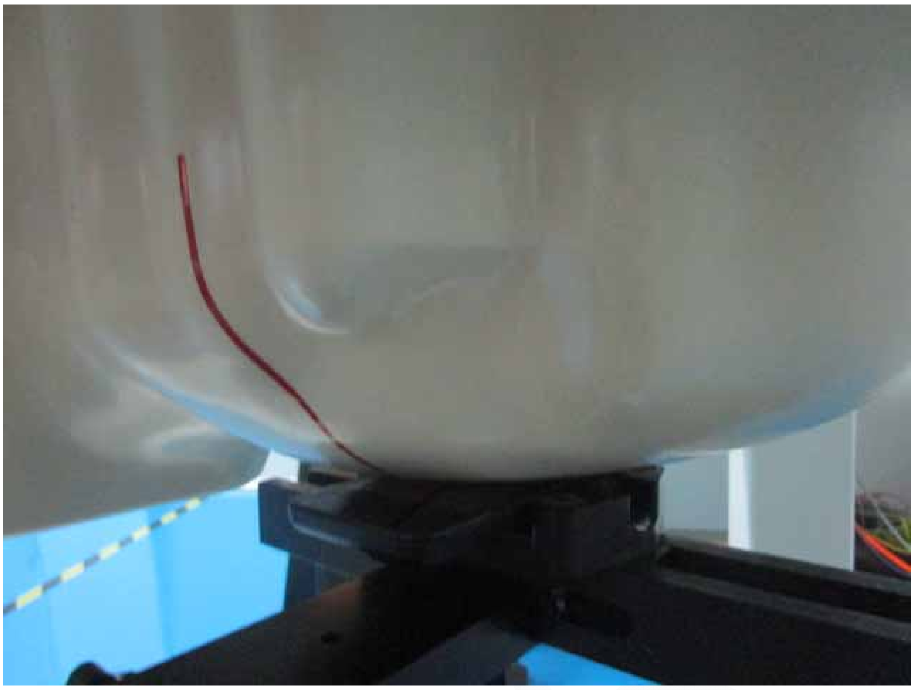


Body-worn Headset Setup Photo

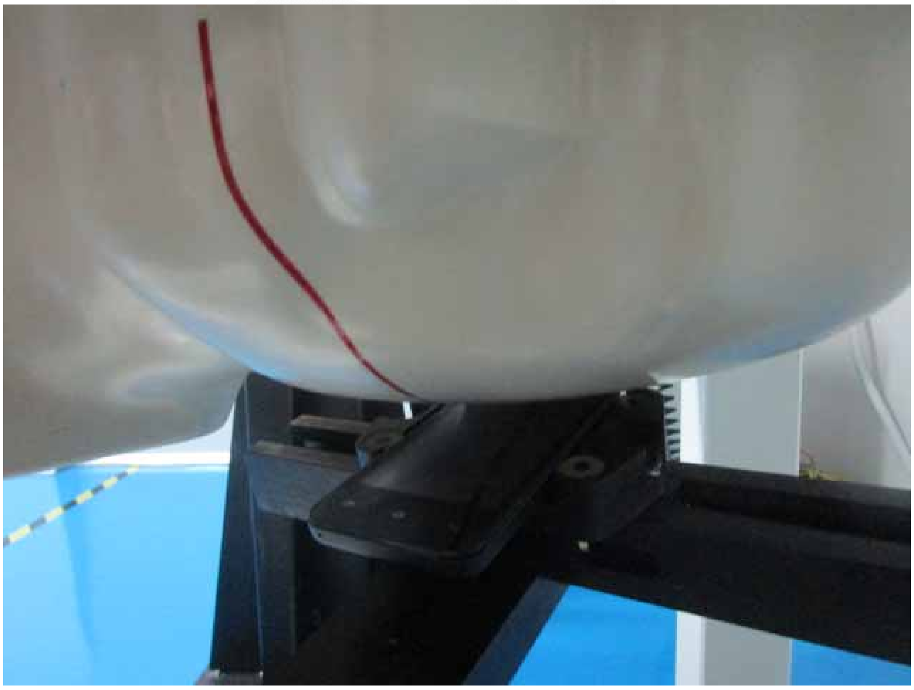


Body-worn Bottom Setup Photo

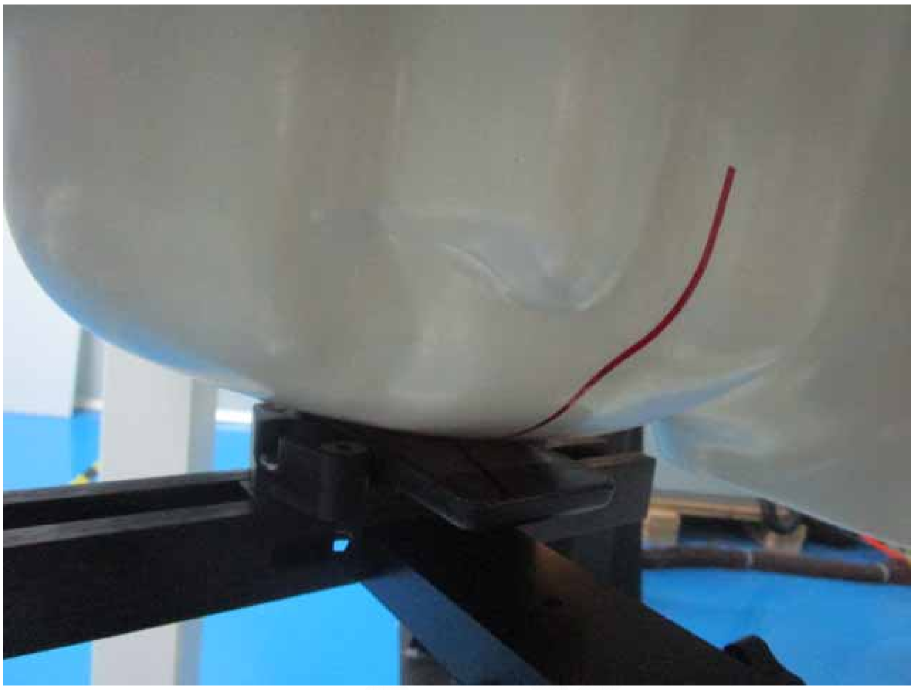
Left Head Touch Setup Photo



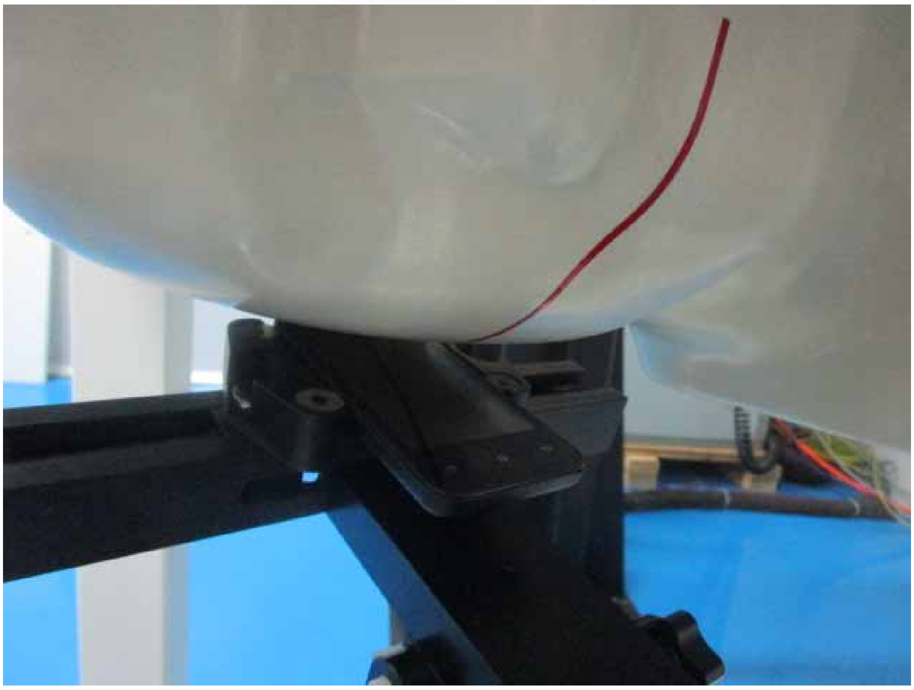
Left Head Tilt Setup Photo



Right Head Touch Setup Photo



Right Head Tilt Setup Photo



APPENDIX C EUT PHOTOS

EUT – Front View

EUT –Back View

EUT – Side View-1

EUT – Side View-2

EUT – Cover off View

APPENDIX D CALIBRATION CERTIFICATES

Please Refer to the Attachment.

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