SAR Test Report

Project Number: 3374150
Report Number: 3374150EMC05 **Revision Level:** 4
Client: Medicalgorithmics S.A.

Equipment Under Test: Mobile Computer/ PocketECG transmitter
Model Name: PocketECG transmitter

Applicable Standards: IEEE STD 1528: 2013
EN 62209-2:2010

Report issued on: 31 October 2014
Test Result: Compliant

Equipment Class	Mode	Band	Frequency (MHz)	Measured Conducted Power (dBm)	SAR	
					1g Head W/kg	1g Body W/kg
PCE	GSM	850	824.2 - 848.8	32.3	N/A	1.437
PCE	GSM	1950	1850.2 - 1909.8	30.1	N/A	1.417
PCE	WCDMA	Band V	826.4 - 846.6	23.2	N/A	0.695
PCE	WCDMA	Band II	1852.4 - 1907.6	23.0	N/A	1.298
DTS	WiFi	US	2412 - 2462	17.4	N/A	0.346
DSS/DTS	Bluetooth	US	2402 - 2480	7.4	N/A	
DTS/UNII	WiFi	US	5150-5850	13.6	N/A	0.265

Tested by: Fendy Liauw, Engineering Technician

Reviewed by: David Schramm, EMC Manager

Remarks: This report details the results of the testing carried out on one sample, the results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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1 GENERAL INFORMATION

1.1 CLIENT INFORMATION

Name: Medicalgorithmics S.A
Address: Al. Jerozolimskie 81
City, State, Zip, Country: 02-001 Warsaw, Poland

1.2 TEST LABORATORY

Name: SGS North America, Inc.
Address: 620 Old Peachtree Road NW, Suite 100
City, State, Zip, Country: Suwanee, GA 30024, USA

Accrediting Body: A2LA
Type of lab: Testing Laboratory
Certificate Number: 3212.01

1.3 GENERAL INFORMATION OF EUT

Model Number: PocketECG III
Hardware Version: R904
Software Version: 10.001-6.000-8287
Android Version: 2.3.4
Serial Number: P3TR13-00002A(WiFi)
P3TR13-00004A(Cellular)
Build Version: 10.001-6.000-8287(WiFi)
IMEI: Not Provided
Antenna: Integral
Rated Voltage: 3.7 VDC 1700mAh Rechargeable Battery

Sample Received Date: 10 December 2013
Dates of testing: 24 February to 11 March 2014

Mode	Band	Frequency (MHz)	Operating Modes	Simultaneous with other modes?
GSM/GPRS/EGPRS	850	824-849	Data	No
GSM/GPRS/EGPRS	1900	1850-1910	Data	No
WCDMA	Band II	1852-1907	Data	No
WCDMA	Band V	826-847	Data	No
WiFi	2.4 GHz / 5 GHz	2412 - 5825	Data	No
Bluetooth	2.4 GHz	2402 - 2480	Data	No

1.4 Nominal and Maximum Power Specifications

Mode / Band		Type	Modulated Average dBm
GSM/GPRS/EGPRS	850	Maximum	33.0
		Nominal	32.0
GSM/GPRS/EGPRS	1900	Maximum	31.0
		Nominal	30.0
WCDMA	II	Maximum	24.0
		Nominal	23.0
WCDMA	V	Maximum	24.0
		Nominal	23.0
IEEE 802.11b	2.4GHz	Maximum	19.3
		Nominal	18.3
IEEE 802.11a	5GHz	Maximum	14.5
		Nominal	13.5

1.5 EQUIPMENT UNDER TEST

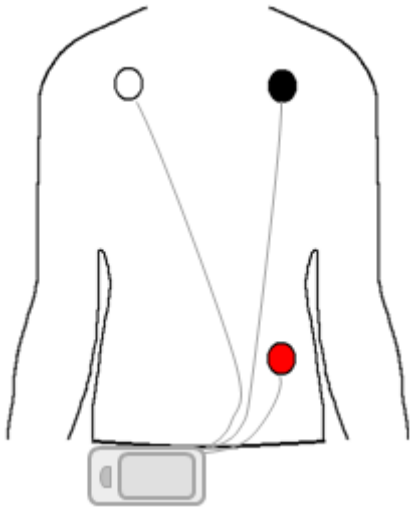
EUT	Pocket ECG Transmitter
Normal operation:	Worn on body (LCD facing-up; LCD facing-down)
Body Worn Accessories:	B1 - Pouch provides 10mm spacing. Can be worn left or right side. Tests performed without pouch due to its non-metallic construction.
EUT Positioning:	EUT can be seated in Positions P1 - screen towards body and P2 - screen away from body
Device category:	Portable
Exposure category:	General Population/Uncontrolled Exposure

1.6 DUT Accessories

No provided accessories

Per MedicAlgorithmics guidance.

The device is going to be attached to the belt as shown in the figure below. The assumed distance between its front/back to user body should be 10 mm during testing.



2 TEST METHODOLOGY

Testing was performed in accordance with the FCC OET Bulleting 65 Supplement C 01-01, IEEE STD 1528: 2003, IC RSS 102 Issue 4, as well as the following:

- IEC 62209-2
- FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r01
- FCC KDB 865664 D02 RF Exposure Reporting v01r01
- FCC KDB 447498 D01 General RF Exposure Guidance v05r01
- FCC KDB 648474 D04 Handset SAR v01r01
- FCC KDB 941225 D01 SAR test for 3G devices v02
- FCC KDB 941225 D02 HSPA and 1x Advanced v02r02
- FCC KDB 941225 D03 SAR Test Reduction GSM GPRS EDGE vo1

2.1 EUT OPERATION CONDITIONS

Base station simulator was used to control the EUT for maximum power. For UMTS, 3GPP TS 34.121 was the guiding document to ensure all the setting were correct. In addition to using TPC with “All 1”, the WCDMA settings were as follows:

Subtests HSDPA

Sub-test	βc	βd	βd (SF)	βc/βd	βHS (Note1, Note 2)	CM (dB) (Note 3)	MPR (dB) (Note 3)
1	2/15	15/15	64	2/15	4/15	0.0	0.0
2	12/15 (Note 4)	15/15 (Note 4)	64	12/15 (Note 4)	24/15	1.0	0.0
3	15/15	8/15	64	15/8	30/15	1.5	0.5
4	15/15	4/15	64	15/4	30/15	1.5	0.5

Note 1: $?_{ACK}$, $?_{NACK}$ and $?_{CQI}$ = 30/15 with β_{hs} = 30/15 * β_c .

Note 2: For the HS-DPCCH power mask requirement test in clause 5.2C, 5.7A, and the Error Vector Magnitude (EVM) with HS-DPCCH test in clause 5.13.1A, and HSDPA EVM with phase discontinuity in clause 5.13.1AA, $?_{ACK}$ and $?_{NACK}$ = 30/15 with β_{hs} = 30/15 * β_c , and $?_{CQI}$ = 24/15 with β_{hs} = 24/15 * β_c .

Note 3: CM = 1 for β_c/β_d =12/15, β_{hs}/β_c=24/15. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.

Note 4: For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to β_c = 11/15 and β_d = 15/15.

Subtests HSUPA

Subtest	Mode	Loopback Mode	Rel99 RMC	HSDPA FRC	HSUPA Test	Number of E-DPDCH Channels
1	Rel6 HSUPA	Test Mode 1	12.2kbps RMC	H-Set1	HSUPA Loopback	1
2	Rel6 HSUPA	Test Mode 1	12.2kbps RMC	H-Set1	HSUPA Loopback	1
3	Rel6 HSUPA	Test Mode 1	12.2kbps RMC	H-Set1	HSUPA Loopback	2
4	Rel6 HSUPA	Test Mode 1	12.2kbps RMC	H-Set1	HSUPA Loopback	1
5	Rel6 HSUPA	Test Mode 1	12.2kbps RMC	H-Set1	HSUPA Loopback	1

Subtest	Max UL Data Rate (kb/s)	βc/βd	βhs	βed	CM
1	242.1	11/15	22/15	1309/225	1
2	161.3	6/15	12/15	94/75	3
3	524.7	15/9	30/15	47/15	2
4	197.6	2/15	4/15	56/75	3
5	299.6	15/15	30/15	134/15	1

For WiFi, commands were sent through a serial communication port to control frequency, modulation, data rates, and power levels. The maximum power settings were used.

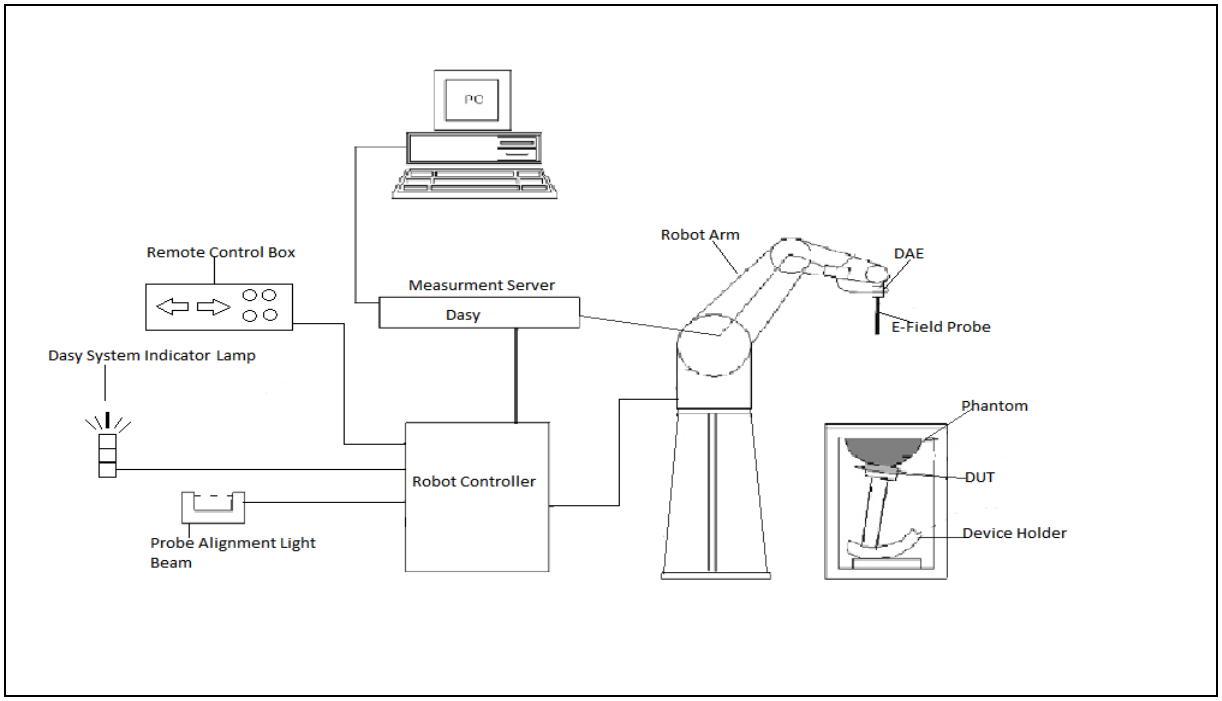
3 TEST EQUIPMENT

Equipment	Model	Manufacturer	Serial Number	Cal Date	Cal Int
Dasy5 Controller	SP1D	Stäubli	S-1188	NA	
PC	Compaq 8000 Elite	HP	CZC1231RWS	NA	
Probe Alignment Beam	LB5/80	Speag	SEUKS030AA	NA	
Data Acquisition Electronics	DAE4	Speag	1287	NA	
Oval Phantom	ELI5	Speag	1146	NA	
Device Holder	SD 00 HO1 HA	Speag	NA	NA	
System Validation Dipole	D835V2	Speag	4d123	10/25/13	3yr
System Validation Dipole	D1900V2	Speag	5d144	10/23/13	3yr
System Validation Dipole	D2450V2	Speag	890	5/11/12	3yr
System Validation Dipole	D5GHZV2	Speag	1149	3/12/2013	3yr
E-Field Probe	EX3DV4	Speag	3812	1/24/14	1yr
RF Cable	HS84133232	Huber & Suhner	247436001	10/16/13	1yr
RF Cable	SF106	Huber & Suhner	247439001	8/6/13	1yr
Network Analyzer	E5062A	Agilent	MY44202574	7/26/13	1yr
Network Analyzer	ZVL	Rohde & Schwarz	1303.6509K06-101584-DZ	9/27/2013	1yr
Power Meter	E4419B	Agilent	G839511059	8/26/13	1yr
Power Sensor	E9300B	Agilent	2702A61269	8/19/13	1yr
Power Sensor	E9300B	Agilent	MY41094585	8/19/13	1yr
Dual Directional Coupler	778D	Hewlett Packard	2604A13577	10/22/13	2yr
Dual Directional Coupler	11692D	Hewlett Packard	1212A02572	9/22/13	2yr
Signal Generator	SMB100A	Rohde & Schwarz	104999	6/18/13	3yr
Thermometer	DTM3000	LKM Electronic	2952	6/5/13	1yr
Dielectric Probe Kit	Dak-3.5	Speag	1109	1/19/14	1yr
Communications System	CMW500	Rohde & Schwarz	127717	6/18/13	3yr

Note: Calibration dates are specified in the mm/dd/yy format. The dipoles are validated annually according to FCC KDB 865664 Section 3.2.2. SAR values of the dipoles are referenced in system verification.

Dipole Validation Log											
per KDB 865664 Dipole SAR validation Verfication v01r01											
Date	Tester	Object	Serial Number	Temp °C	RH	Tissue Type	Reported Return Loss	Reported Impedance	Measured Return Loss dB	Measured Impedance	Within tolerance
5/2/2014	DJS	D2450V2	890	23.4	42%	Head	-28.6	53.8+j0.8	-25.4	54.1+j0.5	Yes

3.1 Test System Block Diagram



The Dasy5 SAR test system consists of:

- 1 Stäubli Robot and system controller cabinet
- 1 Electro Optical Converter mounted on robots arm
- Robot stand
- Robot remote controller
- Light beam for E-field probe alignment
- DASY5 measurement server
- SAM Twin Phantom
- Hand-Held/ Laptop device holder
- HP PC with DASY5 software
- Data Acquisition Electronics(DAE)
- System validation dipole kit
- Head/Body simulating liquid
- E-field probe
- Warning lamps

Specifications listed bellow correspond with defined parameters in IEEE 1528 and IEC 62209-1	
Twin SAM Phantom:	Specific Anthropomorphic Mannequin
Material:	Vinylester, fiber glass reinforced
Shell Thickness:	2 ± 0.2mm (6 ± 0.2mm at ear point)
Dimensions (wooden support incl):	1000mm length, 500mm width, adjustable feet for height
Filling Volume:	approx. 25L
ELI Phantom	
Material:	Vinylester, fiber glass reinforced
Shell Thickness:	2.0 ± 0.2mm (bottom plate)
Dimensions:	Major axis: 600, Minor axis: 400
Filling Volume:	approx. 30L
EX3DV4 Probe:	Isotropic E-Field Probe
Directivity:	±0.3dB in TSL(rotation around probe axis), ±0.5 dB in TSL (roation normal to probe axis)
Dimensions:	Overall length: 337mm (tip 20mm), Tip diameter: 2.5mm (Body: 12mm), Typical distance from probe tip to dipole centers: 1mm
Mounting Device for Hand-Held Transmitters:	Enables mounting and enables rotation of the mounted transmitter to specified spherical coordinates
	Transmitter devices can be accurately positioned according to IEC 62209-1, IEEE 1528, FCC or other specifications
Material:	Polyoxymethylene

4 LIQUID PARAMETERS CHECK

The tissue dielectric parameters shall be measured at the beginning of the test or within 24 hours of the first SAR test. All dielectric parameters should be within the tolerance values shown in Table 4-1. For frequencies in 300 MHz to just under 6 GHz, the measured conductivity and relative permittivity should be within ±5% of the target values in table 1. The measured permittivity tolerances can be relaxed to no more than the ±10%. All efforts should be made to obtain the target values as closely as possible.

Table 4-1

Target dielectric properties of tissue equivalent material in the 300-6000 MHz frequency range

Frequency MHz	Relative permittivity (ε_r)	Conductivity(σ) (S/m)
750	41.9	8.9
835	41.5	9.0
900	41.5	9.7
1450	40.5	3.0
1800	40.0	5.0
1900	40.0	5.0
1950	40.0	5.0
2000	40.0	5.0
2100	39.8	5.9
2450	39.2	9.0
2600	39.0	10.6
3000	38.5	6.0
3500	37.9	11.1
4000	37.4	7.3
4500	36.8	12.4
5000	36.2	8.5
5200	36.0	10.6
5400	35.8	12.6
5600	35.5	5.7
5800	35.3	7.7
6000	35.1	9.8

Table 4-2

Tissue Simulating Liquid Formulations

	835 MHz		1900 MHz		2450 MHz		5200-5800 MHz	
	Head	Body	Head	Body	Head	Body	Head	Body
Bactericide	0.10	0.10					See Note 1	See Note 2
DGBE								
HEC	1.00	1.00						
NaCL	1.45	0.94	1.03	0.70	0.00	0.30		
Sucrose	57.00	44.90						
Polysorbate (Tween) 20			46.10	28.00	45.25	28.00		
Water	40.45	53.06	52.87	71.30	55.75	71.70		

Note 1: Speag proprietary - Water 50-65%; Mineral Oil 10-30%; Emulsifiers 8-25%; NaCL 0-1.5%; Hexylene Glycol 1.0-2.8%
Note 2: Speag proprietary - Water 60-80%; Esters, Emulsifiers, Inhibitors 20-40%; NaCL 0-1.5%; Oleic acid 10-28%

4.1 Tissue Verification Measured

Note: Per KDB 865564 Section 2.4, SAR error compensation algorithms have been implemented inclunding the guidance that the algorithm only scales the measurement upward.

Date	Tissue Type	Frequency (MHz)	Measured Permittivity, ε	Measured Condcutivity, σ, S/m	Target Permittivity, ε	Target Condcutivity, σ, S/m	% dev, σ	% dev, ε
2/7/2014	2450B	2412	49.6	2.04	52.7	1.95	-5.9%	4.6%
2/7/2014	2450B	2442	49.5	2.01	52.7	1.95	-6.1%	3.1%
2/7/2014	2450B	2462	49.5	2.06	52.7	1.95	-6.1%	5.6%
2/24/2014	1900B	1850.2	50.9	1.57	53.3	1.5	-4.6%	3.0%
2/24/2014	1900B	1852.4	50.9	1.57	53.3	1.5	-4.6%	3.2%
2/24/2014	1900B	1880	50.8	1.60	53.3	1.5	-4.7%	5.1%
2/24/2014	1900B	1907.6	50.7	1.62	53.3	1.5	-4.9%	6.8%
2/24/2014	1900B	1909.8	50.7	1.63	53.3	1.5	-4.9%	7.0%
2/25/2014	1900B	1850.2	50.5	1.56	53.3	1.5	-5.3%	2.4%
2/25/2014	1900B	1852.4	50.5	1.56	53.3	1.5	-5.3%	2.5%
2/25/2014	1900B	1880	50.4	1.59	53.3	1.5	-5.5%	4.3%
2/25/2014	1900B	1907.6	50.3	1.61	53.3	1.5	-5.7%	6.0%
2/25/2014	1900B	1909.8	50.3	1.61	53.3	1.5	-5.7%	6.1%
2/26/2014	850B	824.2	54.2	0.97	55.2	1.0	-1.8%	0.2%
2/26/2014	850B	826.5	54.2	0.97	55.2	1.0	-1.8%	0.4%
2/26/2014	850B	836.4	54.1	0.98	55.2	1.0	-2.0%	1.4%
2/26/2014	850B	837.5	54.1	0.99	55.2	1.0	-2.0%	1.5%
2/26/2014	850B	846.6	54.0	0.99	55.2	1.0	-2.2%	2.4%
2/26/2014	850B	848.8	54.0	1.00	55.2	1.0	-2.2%	2.7%
2/27/2014	850B	824	53.8	0.97	55.2	1.0	-2.5%	0.0%
2/27/2014	850B	826	53.8	0.97	55.2	1.0	-2.5%	0.0%
2/27/2014	850B	836	53.7	0.98	55.2	1.0	-2.7%	1.3%
2/27/2014	850B	837	53.7	0.98	55.2	1.0	-2.7%	1.4%
2/27/2014	850B	846	53.6	0.99	55.2	1.0	-2.9%	2.3%
2/27/2014	850B	848	53.6	0.99	55.2	1.0	-2.9%	2.6%
2/28/2014	850B	824	52.6	0.97	55.2	1.0	-4.7%	-0.4%
2/28/2014	850B	826	52.6	0.97	55.2	1.0	-4.7%	-0.2%
2/28/2014	850B	836	52.5	0.98	55.2	1.0	-4.9%	0.9%
2/28/2014	850B	837	52.5	0.98	55.2	1.0	-4.9%	0.9%
2/28/2014	850B	846	52.4	0.99	55.2	1.0	-5.1%	1.8%
2/28/2014	850B	848	52.4	0.99	55.2	1.0	-5.1%	2.0%

Tissue Verification Continued

3/4/2014	5G-B	5180	46.6	5.29	49.0	5.3	-4.9%	-0.2%
3/4/2014	5G-B	5240	47.2	5.44	49.0	5.3	-3.6%	2.7%
3/4/2014	5G-B	5260	47.0	5.42	49.0	5.3	-4.0%	2.2%
3/4/2014	5G-B	5320	46.8	5.50	48.8	5.4	-4.0%	1.2%
3/4/2014	5G-B	5500	47.0	5.83	48.6	5.7	-3.3%	3.2%
3/4/2014	5G-B	5580	46.6	5.96	48.5	5.7	-3.9%	3.7%
3/4/2014	5G-B	5680	46.3	5.92	48.4	5.9	-4.4%	1.1%
3/4/2014	5G-B	5745	46.3	6.10	48.2	6.0	-3.9%	1.7%
3/4/2014	5G-B	5785	46.0	6.08	48.2	6.0	-4.6%	1.3%
3/4/2014	5G-B	5825	46.3	6.24	48.2	6.0	-3.9%	4.1%
3/5/2014	5G-B	5180	46.4	5.29	49.0	5.3	-5.3%	-0.1%
3/5/2014	5G-B	5240	46.6	5.41	49.0	5.3	-4.9%	2.1%
3/5/2014	5G-B	5260	46.8	5.46	49.0	5.3	-4.6%	2.9%
3/5/2014	5G-B	5320	46.4	5.47	48.8	5.4	-5.0%	0.6%
3/5/2014	5G-B	5500	46.0	5.63	48.6	5.7	-5.3%	-0.3%
3/5/2014	5G-B	5580	46.2	5.89	48.5	5.7	-4.7%	2.6%
3/5/2014	5G-B	5680	45.9	5.94	48.4	5.9	-5.1%	1.4%
3/5/2014	5G-B	5745	46.0	6.11	48.2	6.0	-4.6%	1.8%
3/5/2014	5G-B	5785	46.0	6.11	48.2	6.0	-4.6%	1.9%
3/5/2014	5G-B	5825	45.5	6.07	48.2	6.0	-5.6%	1.2%
3/6/2014	5G-B	5180	47.5	5.33	49.0	5.3	-3.1%	0.6%
3/6/2014	5G-B	5240	47.6	5.53	49.0	5.3	-3.0%	4.4%
3/6/2014	5G-B	5260	47.1	5.39	49.0	5.3	-3.9%	1.7%
3/6/2014	5G-B	5320	46.7	5.33	48.8	5.4	-4.2%	-1.9%
3/6/2014	5G-B	5500	46.6	5.63	48.6	5.7	-4.1%	-0.4%
3/6/2014	5G-B	5580	46.6	5.78	48.5	5.7	-4.0%	0.7%
3/6/2014	5G-B	5680	46.4	5.89	48.4	5.9	-4.0%	0.5%
3/6/2014	5G-B	5745	46.4	6.06	48.2	6.0	-3.8%	1.0%
3/6/2014	5G-B	5785	46.3	6.08	48.2	6.0	-3.9%	1.3%
3/6/2014	5G-B	5825	46.1	6.13	48.2	6.0	-4.4%	2.2%
3/7/2014	5G-B	5180	47.5	5.43	49.0	5.3	-3.2%	2.5%
3/7/2014	5G-B	5240	47.0	5.46	49.0	5.3	-4.1%	3.0%
3/7/2014	5G-B	5260	47.0	5.50	49.0	5.3	-4.0%	3.8%
3/7/2014	5G-B	5320	47.0	5.59	48.8	5.4	-3.8%	2.7%
3/7/2014	5G-B	5500	46.7	5.82	48.6	5.7	-3.9%	3.0%
3/7/2014	5G-B	5580	46.4	5.90	48.5	5.7	-4.3%	2.8%
3/7/2014	5G-B	5680	46.5	6.12	48.4	5.9	-4.0%	4.4%
3/7/2014	5G-B	5745	46.2	6.14	48.2	6.0	-4.3%	2.4%
3/7/2014	5G-B	5785	46.0	6.18	48.2	6.0	-4.6%	3.0%
3/7/2014	5G-B	5825	45.9	6.23	48.2	6.0	-4.8%	3.9%

Tissue Verification Continued

3/10/2014	5G-B	5180	47.2	5.33	49.0	5.3	-3.7%	0.6%
3/10/2014	5G-B	5240	47.5	5.52	49.0	5.3	-3.1%	4.2%
3/10/2014	5G-B	5260	47.4	5.50	49.0	5.3	-3.2%	3.7%
3/10/2014	5G-B	5320	47.2	5.55	48.8	5.4	-3.4%	2.1%
3/10/2014	5G-B	5500	46.9	5.78	48.6	5.7	-3.5%	2.2%
3/10/2014	5G-B	5580	46.7	5.87	48.5	5.7	-3.6%	2.3%
3/10/2014	5G-B	5680	46.6	6.02	48.4	5.9	-3.8%	2.8%
3/10/2014	5G-B	5745	46.4	6.09	48.2	6.0	-3.8%	1.5%
3/10/2014	5G-B	5785	46.3	6.18	48.2	6.0	-3.9%	3.0%
3/10/2014	5G-B	5825	46.3	6.24	48.2	6.0	-4.0%	4.0%
3/11/2014	5G-B	5180	47.3	5.31	49.0	5.3	-3.4%	0.2%
3/11/2014	5G-B	5240	46.8	5.28	49.0	5.3	-4.6%	-0.4%
3/11/2014	5G-B	5260	47.4	5.44	49.0	5.3	-3.3%	2.7%
3/11/2014	5G-B	5320	46.8	5.44	48.8	5.4	-4.0%	-0.1%
3/11/2014	5G-B	5500	46.5	5.63	48.6	5.7	-4.4%	-0.4%
3/11/2014	5G-B	5580	46.5	5.75	48.5	5.7	-4.2%	0.2%
3/11/2014	5G-B	5680	46.2	5.89	48.4	5.9	-4.5%	0.6%
3/11/2014	5G-B	5745	46.3	6.03	48.2	6.0	-4.0%	0.4%
3/11/2014	5G-B	5785	46.4	6.09	48.2	6.0	-3.7%	1.5%
3/11/2014	5G-B	5825	46.4	6.19	48.2	6.0	-3.8%	3.1%

Per KDB 865564 Section 2.4, SAR error compensation algorithms have been implemented.

5 SAR MEASUREMENT SYSTEM VERIFICATION

The system performance verification verifies the system operates within the ±10% limit. Each performance check is performed prior to any SAR testing to measure accuracy.

5.1 PERFORMANCE CHECK MEASUREMENT CONDITIONS

- Measurements are performed in the flat section of the SAM phantom
- Phantom is filled with Head or Body simulating liquids
- DASY5 system parameters are tested using a Isotropic E-field probe
- The dipole is mounted on an extendable tripod that is positioned below the flat phantom center. The dipole is oriented parallel with the body's axis. The standard measuring distance is 10 mm above 1 GHz or 15 mm below 1 GHz from the dipole to the simulating liquids surface.
- A grid spacing of 15 mm is aligned with the dipole
- 7x7x7 cube is selected for a zoom scan
- A 2.5-3 mm distance is set between the probe and phantom surface
- Dipole input power(forward power) is set to 100 mW
- Results are normalized to 1 W input power

5.2 SYSTEM VERIFICATION

System Check Target & Measured									
Date	Ambient Temp (°C)	Liquid Temp (°C)	Input Power (W)	Tissue Frequency (MHz)	Dipole SN	Measured SAR1g (W/kg) Zoom	1W Target SAR1g (W/kg)	Measured Normalized to 1W SAR1g (W/kg)	Dev. (%)
2/6/2014	23.5	22.1	0.100	2450B	890	5.39	50.60	53.90	6.5%
2/10/2014	24.8	24.3	0.100	2450B	890	5.36	50.60	53.60	5.9%
2/24/2014	24.6	23.0	0.100	1900B	5d144	4.21	40.90	42.10	2.9%
2/25/2014	23.6	21.9	0.100	1900B	5d144	4.18	40.90	41.80	2.2%
2/26/2014	24.2	23.6	0.100	850B	4d123	0.95	9.32	9.52	2.1%
2/27/2014	23.4	22.8	0.100	850B	4d123	0.99	9.32	9.94	6.7%
3/4/2014	24.3	23.0	0.100	5G-B	1149	7.90	74.70	79.00	5.8%
3/5/2014	24.3	23.0	0.100	5G-B	1149	7.88	76.40	78.80	3.1%
3/6/2014	24.3	23.0	0.100	5G-B	1149	8.26	82.10	82.60	0.6%
3/7/2014	23.7	22.1	0.100	5G-B	1149	7.94	74.70	79.40	6.3%
3/10/2014	23.1	22.9	0.100	5G-B	1149	7.55	76.40	75.50	-1.2%
3/11/2014	23.5	23.0	0.100	5G-B	1149	8.23	76.40	82.30	7.7%

6 SAR MEASUREMENT PROCEDURE

- Area Scan is used for a fast scan in two dimension to find the area of high field values before any finer measurement around the hotspot. The routines implemented in the DASY5 software can find the maximum locations.
- Zoom Scan is used to assess the peak spatial values within a cubic averaging volume containing 1g and 10g of simulated tissue. The scan measures a 7x7x7 area within the cube. Once measurement is done the values are displayed within the job's label.
- Power Drift will measure the field at the same location as the most recent power reference measurement within the same procedure and settings. The Power Drift Measurement gives the field difference in dB.
- Z- Scan measure points along a straight vertical line. The lines run along the z-axis of a one dimensial grid. To get a reasonable extrapolation the extrapolated distance should not be larger than the step size in z direction.

6.1 HEAD SAR CONFIGURATION

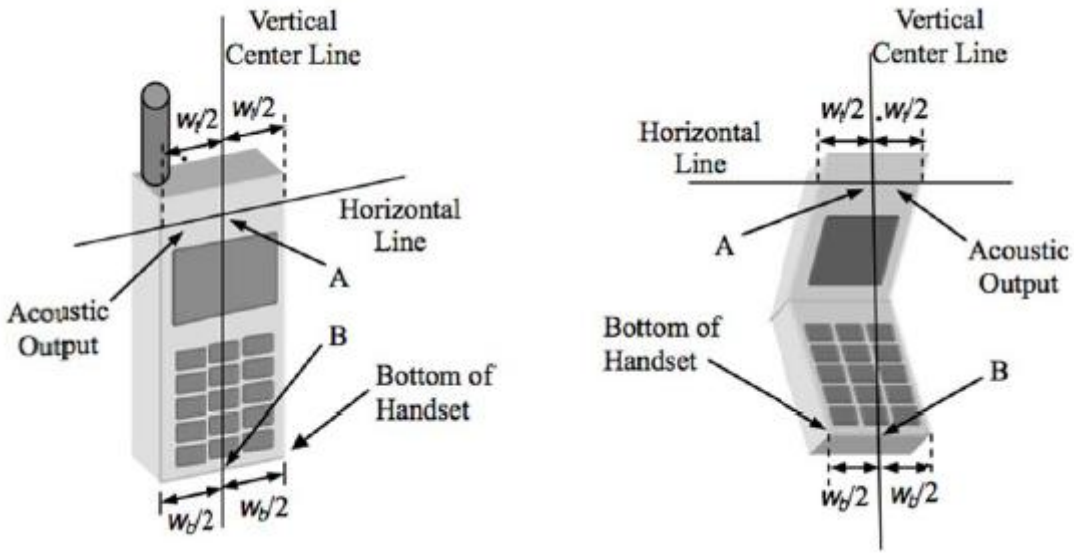
6.1.1 SAM SPECIFICATIONS

The Specific Anthropomorphic Mannequin (SAM) phantom corresponds to specifications defined in IEEE 1528 and IEC 62209-1. It allows dosimetric evaluation of the left, right, hand phone usage as well as body mounted usage at the flat region of the phantom

6.1.2 HANDSET REFERENCE POINTS

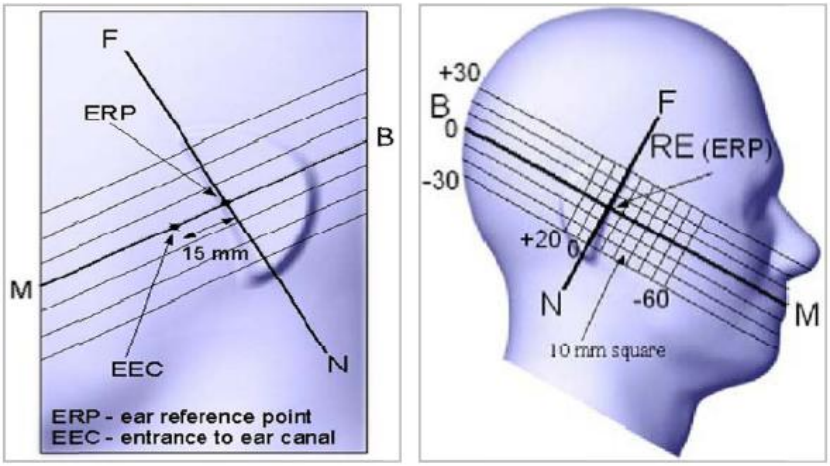
In order to identify reference points on the handset, define two imaginary lines on the handset

- The vertical centreline passes through two points on the front side of the handset. The midpoint of the width at the acoustic output and the midpoint of the width of the bottom of handset.
- The horizontal line is perpendicular to the vertical centreline and passes through the center of the acoustic output.
- The two lines intersect at point A.



6.1.3 EAR REFERENCE

This category includes most wireless handsets. The handset should have its earpieces located within the upper part of the device or along the centerline. The handset should be positioned with the earpiece region pressed against the ear spacer of the phantom.



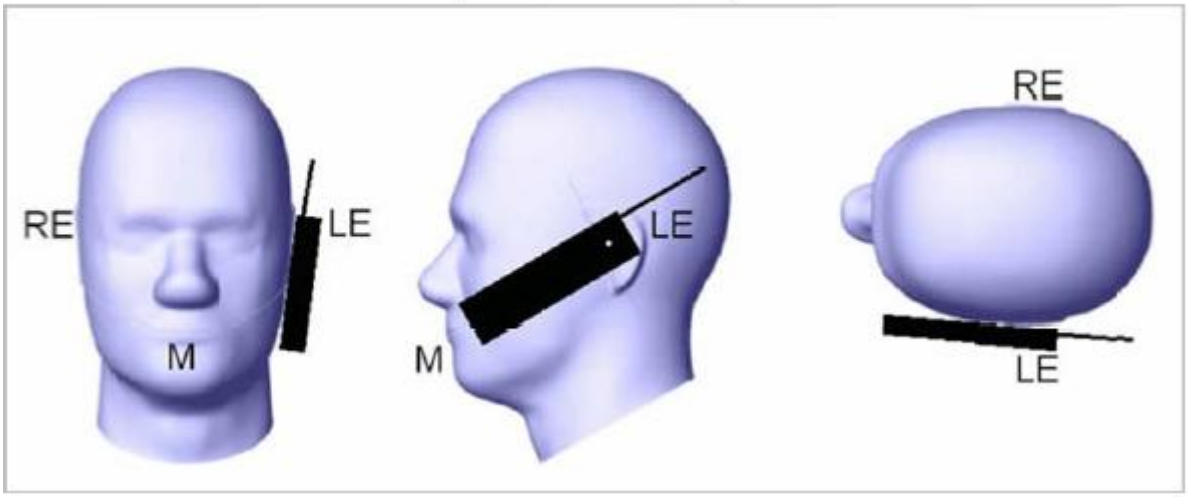
6.1.4 CHEEK POSITIONS

The device is attached toward the mouth part of the phantom by pivoting against the ear reference point

The test position is established when:

- Any point on the display, keypad or mouthpiece portion of the EUT is in contact with the phantom

Cheek / Touch Position

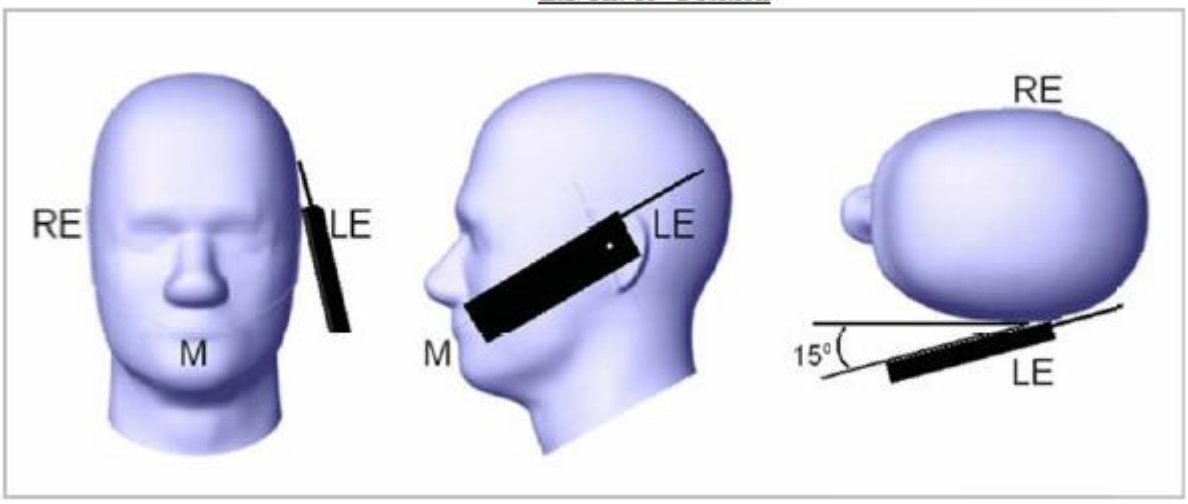


6.1.5 TILT POSITION

The test position is established when:

- Repeat the cheek touch position setup
- While maintaining the orientation of the handset move the handset away from the pinna along the line passing through RE and LE far enough to allow a rotation of the handset away from the cheek by 15°.
- Rotate the handset around the horizontal line by 15°
- While maintain the orientation of the handset move the handset towards the phantom on the line passing through RE and LE until any part of the handset touches the ear.
- The tilt position is obtained when the contact point is on the pinna and the antenna is at the back of the phantoms head.

Ear/Tilt 15° Position

- 

7 CONDUCTED OUTPUT POWER VERIFICATION

7.1 GSM

Mode	Type	Test mode	Burst Average Power, dBm					
			Cellular Band, GSM850			PCS Band, GSM1900		
			128 824.2MHz	190 836.6MHz	251 848.8MHz	512 1850.2MHz	661 1880MHz	810 1909.8MHz
GPRS	Data	1 slot	32.48	32.49	32.39	30.11	30.01	29.95
		2 slot	32.20	32.29	32.15	30.04	29.93	29.86
EDGE	Data	1 slot	26.70	26.34	26.39	25.60	25.80	25.25
		2 slot	26.55	26.24	26.17	25.78	25.59	24.66
		3 slot	26.43	26.00	26.24	25.82	25.25	25.60
		4 slot	26.00	25.92	26.07	25.75	24.95	24.89

Mode	Type	Test mode	Frame Average Power, dBm					
			Cellular Band, GSM850			PCS Band, GSM1900		
			128 824.2MHz	190 836.6MHz	251 848.8MHz	512 1850.2MHz	661 1880MHz	810 1909.8MHz
GPRS	Data	1 slot	23.45	23.46	23.36	21.08	20.98	20.92
		2 slot	26.18	26.27	26.13	24.02	23.91	23.84
EDGE	Data	1 slot	17.67	17.31	17.36	16.57	16.77	16.22
		2 slot	20.53	20.22	20.15	19.76	19.57	18.64
		3 slot	22.17	21.74	21.98	21.56	20.99	21.34
		4 slot	22.99	22.91	23.06	22.74	21.94	21.88

See Section 2.1 EUT OPERATION CONDITIONS for WCDMA settings.
R99 = RF Output Power Results for WCDMA R99
HSDPA = RF Output Power Results for HSDPA Rel6
HSPA = RF Output Power Results for HSPA (HSDPA & HSUPA) Rel6

7.2 WCDMA BAND 5

7.2.1 LOW CHANNEL

Mode	Band	Frequency	Channel	Subtest	Mod.	Measured	Unit
R99	Band 5	826.4	4132			22.92	dBm
HSDPA	Band 5	826.4	4132	Subtest1	QPSK	22.63	dBm
HSDPA	Band 5	826.4	4132	Subtest1	16QAM	22.66	dBm
HSDPA	Band 5	826.4	4132	Subtest2	QPSK	22.74	dBm
HSDPA	Band 5	826.4	4132	Subtest2	16QAM	22.28	dBm
HSDPA	Band 5	826.4	4132	Subtest3	QPSK	22.16	dBm
HSDPA	Band 5	826.4	4132	Subtest3	16QAM	22.19	dBm
HSDPA	Band 5	826.4	4132	Subtest4	QPSK	22.22	dBm
HSDPA	Band 5	826.4	4132	Subtest4	16QAM	22.31	dBm
HSPA	Band 5	826.4	4132	Subtest1		22.74	dBm
HSPA	Band 5	826.4	4132	Subtest2		21.67	dBm
HSPA	Band 5	826.4	4132	Subtest3		22.14	dBm
HSPA	Band 5	826.4	4132	Subtest4		21.92	dBm
HSPA	Band 5	826.4	4132	Subtest5		22.76	dBm

7.2.2 MID CHANNEL

Mode	Band	Frequency	Channel	Subtest	Mod.	Measured	Unit
R99	Band 5	836.4	4182			23.06	dBm
HSDPA	Band 5	836.4	4182	Subtest1	QPSK	22.52	dBm
HSDPA	Band 5	836.4	4182	Subtest1	16QAM	22.62	dBm
HSDPA	Band 5	836.4	4182	Subtest2	QPSK	22.27	dBm
HSDPA	Band 5	836.4	4182	Subtest2	16QAM	22.71	dBm
HSDPA	Band 5	836.4	4182	Subtest3	QPSK	22.26	dBm
HSDPA	Band 5	836.4	4182	Subtest3	16QAM	22.23	dBm
HSDPA	Band 5	836.4	4182	Subtest4	QPSK	22.25	dBm
HSDPA	Band 5	836.4	4182	Subtest4	16QAM	22.19	dBm
HSPA	Band 5	836.4	4182	Subtest1		22.27	dBm
HSPA	Band 5	836.4	4182	Subtest2		21.97	dBm
HSPA	Band 5	836.4	4182	Subtest3		22.15	dBm
HSPA	Band 5	836.4	4182	Subtest4		22.05	dBm
HSPA	Band 5	836.4	4182	Subtest5		22.42	dBm

7.2.3 HIGH CHANNEL

Mode	Band	Frequency	Channel	Subtest	Mod.	Measured	Unit
R99	Band 5	846.6	4233			23.19	dBm
HSDPA	Band 5	846.6	4233	Subtest1	QPSK	22.72	dBm
HSDPA	Band 5	846.6	4233	Subtest1	16QAM	22.8	dBm
HSDPA	Band 5	846.6	4233	Subtest2	QPSK	22.83	dBm
HSDPA	Band 5	846.6	4233	Subtest2	16QAM	22.28	dBm
HSDPA	Band 5	846.6	4233	Subtest3	QPSK	22.3	dBm
HSDPA	Band 5	846.6	4233	Subtest3	6QAM	22.49	dBm
HSDPA	Band 5	846.6	4233	Subtest4	QPSK	22.29	dBm
HSDPA	Band 5	846.6	4233	Subtest4	16QAM	22.27	dBm
HSPA	Band 5	846.6	4233	Subtest1		22.78	dBm
HSPA	Band 5	846.6	4233	Subtest2		21.97	dBm
HSPA	Band 5	846.6	4233	Subtest3		22.07	dBm
HSPA	Band 5	846.6	4233	Subtest4		21.95	dBm
HSPA	Band 5	846.6	4233	Subtest5		22.73	dBm

7.3 WCDMA BAND 2

7.3.1 LOW CHANNEL

Mode	Band	Frequency	Channel	Subtest	Mod.	Measured	Unit
R99	Band 2	1852.4	9262			22.91	dBm
HSDPA	Band 2	1852.4	9262	Subtest1	QPSK	22.05	dBm
HSDPA	Band 2	1852.4	9262	Subtest1	16QAM	22.06	dBm
HSDPA	Band 2	1852.4	9262	Subtest2	QPSK	22.18	dBm
HSDPA	Band 2	1852.4	9262	Subtest2	16QAM	22.13	dBm
HSDPA	Band 2	1852.4	9262	Subtest3	QPSK	19.3	dBm
HSDPA	Band 2	1852.4	9262	Subtest3	6QAM	21.49	dBm
HSDPA	Band 2	1852.4	9262	Subtest4	QPSK	21.23	dBm
HSDPA	Band 2	1852.4	9262	Subtest4	16QAM	21.19	dBm
HSPA	Band 2	1852.4	9262	Subtest1		22.05	dBm
HSPA	Band 2	1852.4	9262	Subtest2		20.73	dBm
HSPA	Band 2	1852.4	9262	Subtest3		20.89	dBm
HSPA	Band 2	1852.4	9262	Subtest4		21.4	dBm
HSPA	Band 2	1852.4	9262	Subtest5		22.62	dBm

7.3.2 MID CHANNEL

Mode	Band	Frequency	Channel	Subtest	Mod.	Measured	Unit
R99	Band 2	1880.0	9400			22.96	dBm
HSDPA	Band 2	1880.0	9400	Subtest1	QPSK	22.05	dBm
HSDPA	Band 2	1880.0	9400	Subtest1	16QAM	22.11	dBm
HSDPA	Band 2	1880.0	9400	Subtest2	QPSK	22.35	dBm
HSDPA	Band 2	1880.0	9400	Subtest2	16QAM	22.3	dBm
HSDPA	Band 2	1880.0	9400	Subtest3	QPSK	21.37	dBm
HSDPA	Band 2	1880.0	9400	Subtest3	6QAM	21.45	dBm
HSDPA	Band 2	1880.0	9400	Subtest4	QPSK	21.18	dBm
HSDPA	Band 2	1880.0	9400	Subtest4	16QAM	21.13	dBm
HSPA	Band 2	1880.0	9400	Subtest1		21.71	dBm
HSPA	Band 2	1880.0	9400	Subtest2		20.69	dBm
HSPA	Band 2	1880.0	9400	Subtest3		20.78	dBm
HSPA	Band 2	1880.0	9400	Subtest4		21.29	dBm
HSPA	Band 2	1880.0	9400	Subtest5		21.94	dBm

7.3.3 HIGH CHANNEL

Mode	Band	Frequency	Channel	Subtest	Mod.	Measured	Unit
R99	Band 2	1907.6	9538			22.84	dBm
HSDPA	Band 2	1907.6	9538	Subtest1	QPSK	22.35	dBm
HSDPA	Band 2	1907.6	9538	Subtest1	16QAM	22.31	dBm
HSDPA	Band 2	1907.6	9538	Subtest2	QPSK	22.39	dBm
HSDPA	Band 2	1907.6	9538	Subtest2	16QAM	22.36	dBm
HSDPA	Band 2	1907.6	9538	Subtest3	QPSK	21.68	dBm
HSDPA	Band 2	1907.6	9538	Subtest3	6QAM	21.63	dBm
HSDPA	Band 2	1907.6	9538	Subtest4	QPSK	21.41	dBm
HSDPA	Band 2	1907.6	9538	Subtest4	16QAM	21.47	dBm
HSPA	Band 2	1907.6	9538	Subtest1		22.07	dBm
HSPA	Band 2	1907.6	9538	Subtest2		20.89	dBm
HSPA	Band 2	1907.6	9538	Subtest3		21.41	dBm
HSPA	Band 2	1907.6	9538	Subtest4		21.22	dBm
HSPA	Band 2	1907.6	9538	Subtest5		22.78	dBm

7.4 WLAN 2.4 GHz

Mode	Freq (MHz)	Channel	Power	802.11b Conducted Power (dBm)			
				Data rate (Mbps)			
				1	2	5.5	11
802.11b	2412	1	dBm	17.21	17.21	17.06	17.23
802.11b	2437	6	dBm	17.39	**17.40**	17.14	17.37
802.11b	2462	11	dBm	17.39	17.38	17.19	17.36

Mode	Freq (MHz)	Channel	Power	802.11g Conducted Power (dBm)							
				Data rate (Mbps)							
				6	9	12	18	24	36	48	54
802.11g	2412	1	dBm	17.15	17.16	17.13	17.14	17.17	17.14	13.26	11.16
802.11g	2437	6	dBm	17.32	17.32	**17.34**	17.33	17.29	17.32	13.29	11.22
802.11g	2462	11	dBm	17.30	**17.34**	**17.34**	17.31	17.28	17.32	13.31	11.26

Mode	Freq (MHz)	Channel	Power	802.11n, 2.4GHz 400ns GI, Conducted Power (dBm)							
				Data rate (Mbps)							
				MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
802.11n	2412	1	dBm	14.61	14.61	14.61	14.65	14.64	12.15	12.12	10.06
802.11n	2437	6	dBm	14.71	14.72	14.83	14.79	14.76	12.32	12.23	10.20
802.11n	2462	11	dBm	14.72	14.73	**14.84**	14.75	14.73	12.33	12.25	10.21

	FCC Default Test Channels (802.11g and n modes testing not required for North America due to o/p < 0.25 dB higher than b mode) per KDB 248227
	Additional testing required for Europe, South America and Japan (except 2472 MHz b mode n/a for Japan)
	Upper Channel for Japan only (802.11b only)
*	Mid channel for Europe and South America

7.5 WLAN 5 GHz

Mode	Freq (MHz)	Channel	802.11a UNII Conducted Power (dBm)							
			Data rate (Mbps)							
			6	9	12	18	24	36	48	54
802.11a	5180	36	**9.89**	9.72	9.74	9.74	9.74	9.75	9.75	9.73
802.11a	5200	40	9.58	9.65	9.62	9.68	9.57	9.61	9.60	9.57
802.11a	5220	44	9.68	9.74	9.68	9.65	9.67	9.72	9.69	9.64
802.11a	5240	48	9.65	9.73	9.68	9.77	9.77	9.71	9.68	9.74

Mode	Freq (MHz)	Channel	802.11n, 20 MHz BW, 5GHz 400ns GI, Conducted Power (dBm)							
			Data rate (Mbps)							
			MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
802.11n	5180	36	**8.45**	8.41	8.36	8.40	8.40	8.44	8.38	7.65
802.11n	5200	40	8.30	8.23	8.26	8.22	8.28	8.28	8.21	7.55
802.11n	5220	44	8.39	8.30	8.24	8.29	8.25	8.25	8.26	7.63
802.11n	5240	48	8.36	8.31	8.35	8.29	8.28	8.28	8.26	7.59

8 2G-3G BODY SAR MEASUREMENT RESULTS

Frequency MHz	CH	Mode	Service	Data Rate Mbps	Max Pwr dBm	Meas Pwr dBm	Power Drift dB	Position	Duty Cycle	1g SAR W/kg	Scaled SAR 1g W/kg	Plot #
1850.2	512	GSM1900	GPRS 2 slt	Data	31.00	30.08	0.16	P1	2:8	0.916	1.132	
1850.2	512	GSM1900	GPRS 2 slt	Data	31.00	30.08	0.36	P2	2:8	0.708	0.875	
1880.0	661	GSM1900	GPRS 2 slt	Data	31.00	29.93	0.18	P1	2:8	0.927	1.186	
1880.0	661	GSM1900	GPRS 2 slt	Data	31.00	29.93	0.03	P2	2:8	0.746	0.954	
1909.8	810	GSM1900	GPRS 2 slt	Data	31.00	29.86	0.30	P1	2:8	1.160	1.508	1
1909.8	810	GSM1900	GPRS 2 slt	Data	31.00	29.86	0.39	P1	2:8	1.090	1.417	2-zoom
1909.8	810	GSM1900	GPRS 2 slt	Data	31.00	29.86	0.29	P2	2:8	0.744	0.967	
824.2	128	GSM850	GPRS 2 slt	Data	33.00	32.20	0.23	P1	2:8	0.901	1.083	
824.2	128	GSM850	GPRS 2 slt	Data	33.00	32.20	0.10	P2	2:8	0.854	1.027	
836.4	190	GSM850	GPRS 2 slt	Data	33.00	32.29	0.01	P1	2:8	1.100	1.295	
836.4	190	GSM850	GPRS 2 slt	Data	33.00	32.29	0.00	P1	2:8	1.220	1.437	3
836.4	190	GSM850	GPRS 2 slt	Data	33.00	32.29	0.07	P2	2:8	0.807	0.950	
848.8	251	GSM850	GPRS 2 slt	Data	33.00	32.15	0.03	P1	2:8	0.892	1.085	
848.8	251	GSM850	GPRS 2 slt	Data	33.00	32.15	0.19	P2	2:8	0.875	1.064	

Frequency MHz	CH	Mode	Service	Data Rate Mbps	Max Pwr dBm	Meas Pwr dBm	Power Drift dB	Position	Duty Cycle	1g SAR W/kg	Scaled SAR 1g W/kg	Plot #
836.4	4182	Band V	UMTS	Data	24.00	23.06	0.20	P1	1:1	0.386	0.479	
836.4	4182	Band V	UMTS	Data	24.00	23.06	0.19	P2	1:1	0.432	0.536	
826.5	782	Band V	UMTS	Data	24.00	22.92	0.02	P2	1:1	0.516	0.662	
826.5	782	Band V	UMTS	Data	24.00	22.92	0.02	P2	1:1	0.542	0.695	4
846.6	4233	Band V	UMTS	Data	24.00	23.19	0.11	P2	1:1	0.459	0.553	
1880.0	9400	Band II	UMTS	Data	24.00	22.96	0.18	P1	1:1	0.789	1.002	
1880.0	9400	Band II	UMTS	Data	24.00	22.96	0.21	P2	1:1	0.544	0.691	
1852.4	9262	Band II	UMTS	Data	24.00	22.91	0.00	P1	1:1	1.170	1.504	5
1852.4	9262	Band II	UMTS	Data	24.00	22.91	0.03	P1	1:1	1.010	1.298	6-zoom
1852.4	9262	Band II	UMTS	Data	24.00	22.91	0.13	P2	1:1	0.802	1.031	
1907.6	9538	Band II	UMTS	Data	24.00	22.84	0.02	P1	1:1	0.713	0.931	
1907.6	9538	Band II	UMTS	Data	24.00	22.84	0.23	P2	1:1	0.464	0.606	

9 WI-FI BODY SAR MEASUREMENT RESULTS

Frequency MHz	CH	Mode	Service	Data Rate Mbps	Max Pwr dBm	Meas Pwr dBm	Power Drift dB	Position		Duty Cycle	1g SAR W/kg	Scaling factor	Scaled SAR 1g W/kg	Plot #
2437.0	6	802.11b	DSSS	1	19.30	17.39	0.31	B1	P1	1:1	0.173	1.552	0.269	
2437.0	6	802.11b	DSSS	1	19.30	17.39	0.05	B1	P2	1:1	0.068	1.552	0.106	
2412.0	1	802.11b	DSSS	1	19.30	17.21	0.32	B1	P1	1:1	0.117	1.618	0.189	
2462.0	11	802.11b	DSSS	1	19.30	17.39	0.09	B1	P1	1:1	0.288	1.552	0.447	7
2462.0	11	802.11b	DSSS	1	19.30	17.39	0.31	B1	P1	1:1	0.223	1.552	0.346	8-zoom

Note 1: Drift measurement not required since area scan is less than 0.1 W/kg

5180.0	36	802.11a	DSSS	6	14.50	9.89	0.15	B1	P1	1:1	0.062	2.891	0.179	9
5180.0	36	802.11a	DSSS	6	14.50	9.89	0.20	B1	P2	1:1	0.049	2.891	0.142	
5240.0	48	802.11a	DSSS	6	14.50	9.65	0.33	B1	P1	1:1	0.052	3.055	0.159	

5825.0	165	802.11a	DSSS	24	14.50	13.14	0.25	B1	P1	1:1	0.147	1.368	0.201	
5825.0	165	802.11a	DSSS	24	14.50	13.14	0.01	B1	P2	1:1	0.100	1.368	0.137	
5785.0	157	802.11a	DSSS	24	14.50	12.91	0.09	B1	P1	1:1	0.184	1.442	0.265	12
5745.0	149	802.11a	DSSS	6	14.50	12.84	0.06	B1	P1	1:1	0.172	1.466	0.252	

10 UNCERTAINTY BUDGET

Test Name:	SAR 62209-2 (0.3 to 6 GHz range)
Instrument(s) Used:	SAR Measurement Sytem
Standard(s) Reference:	IEC 62209-2:2010

Symbol	Source of Uncertainty	Value	Probability Distribution	Divisor	ci (1g)	ci (10g)	Std. Unc. (1g)	Std. Unc. (10g)	vi or veff
	MEASUREMENT DESCRIPTION								
	Probe Calibration	6.6%	N1	1	1	1	6.6%	6.6%	inf
	Axial Isotropy	4.7%	R	1.732	0.7	0.7	1.9%	1.9%	inf
	Hemispherical Isotropy	9.6%	R	1.732	0.7	0.7	3.9%	3.9%	inf
	Linearity	4.7%	R	1.732	1	1	2.7%	2.7%	inf
	System Detection Limits	1.0%	R	1.732	1	1	0.6%	0.6%	inf
	Modulation Response	2.4%	R	1.732	1	1	1.4%	1.4%	inf
	Boundary Effects	2.0%	R	1.732	1	1	1.2%	1.2%	inf
	Readout Electronics	0.3%	N1	1	1	1	0.3%	0.3%	inf
	Response Time	0.8%	R	1.732	1	1	0.5%	0.5%	inf
	Integration Time	2.6%	R	1.732	1	1	1.5%	1.5%	inf
	RF Ambient Noise	3.0%	R	1.732	1	1	1.7%	1.7%	inf
	RF Ambient Reflections	3.0%	R	1.732	1	1	1.7%	1.7%	inf
	Probe Positioner	0.8%	R	1.732	1	1	0.5%	0.5%	inf
	Probe Positioning	6.7%	R	1.732	1	1	3.9%	3.9%	inf
	Post Processing	4.0%	R	1.732	1	1	2.3%	2.3%	inf
	TEST SAMPLE RELATED								
	Device Positioning	2.9%	N1	1	1	1	2.9%	2.9%	inf
	Device Holder	3.6%	N1	1	1	1	3.6%	3.6%	inf
	Power Drift	5.0%	R	1.732	1	1	2.9%	2.9%	inf
	Power Scaling	0.0%	R	1.732	1	1	0.0%	0.0%	inf
	PHANTOM AND SETUP								
	Phantom Uncertainty	7.9%	R	1.732	1	1	4.6%	4.6%	inf
	SAR correction	1.9%	R	1.732	1	0.84	1.1%	0.9%	inf
	Liquid Conductivity(meas.)	2.5%	N1	1	0.78	0.71	2.0%	1.8%	inf
	Liquid Permittivity(meas.)	2.5%	N1	1	0.26	0.26	0.7%	0.7%	inf
	Temp. unc. - Conductivity	1.7%	R	1.732	0.78	0.71	0.8%	0.7%	inf
	Temp. unc. - Permittivity	0.3%	R	1.732	0.23	0.26	0.0%	0.0%	inf
			n1	1	1	1	0.0%	0.0%	inf

uc(Fs)	Combined Standard Uncertainty	N1	1	12.6%	12.5%
U(Fs)	Expanded Uncertainty	Normal k=	2	**25.1%**	**25.1%**

The Expanded Uncertainty is 25.1% for a Normal k factor equal to 2

11 SAR PLOTS

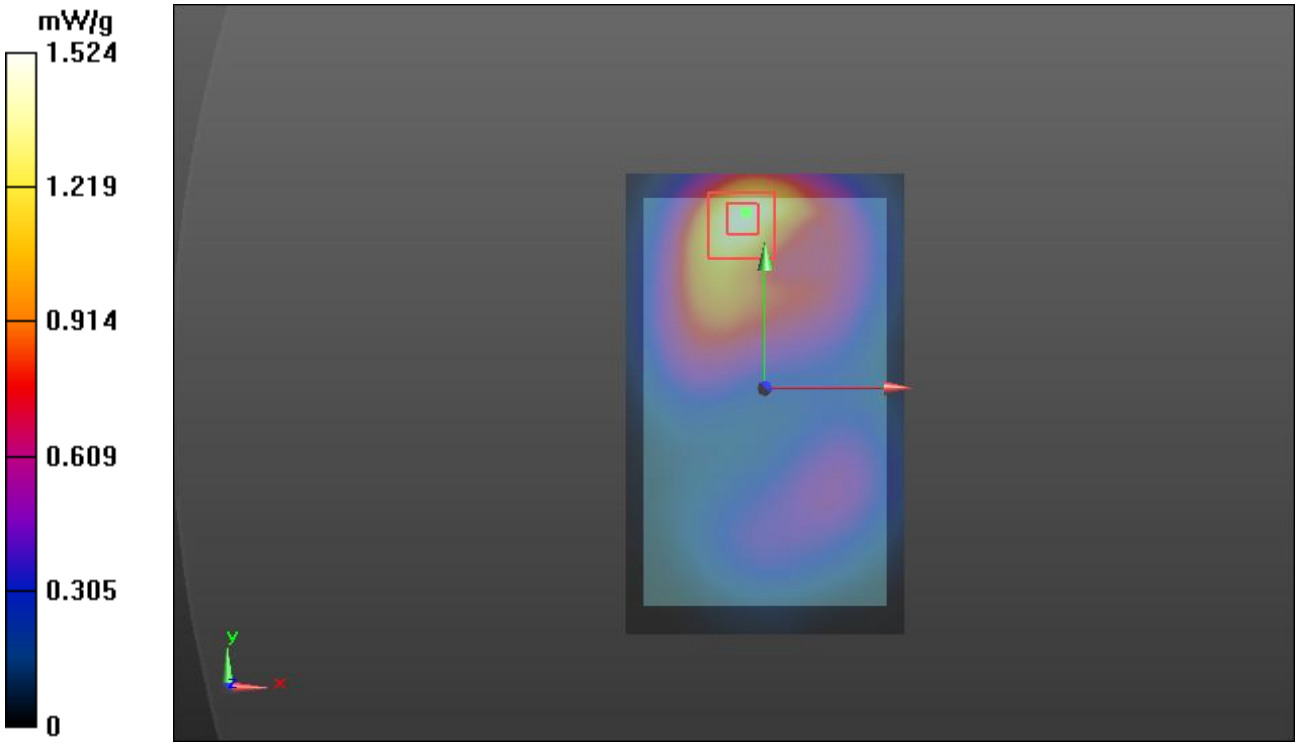
Plot # 1

Date/Time: 2/26/2014 8:17:30 AM

Communication System: Generic GSM; Communication System Band: PCS 1900 (1850.0 - 1910.0 MHz);
Frequency: 1909.8 MHz;Communication System PAR: 9.191 dB; PMF: 2.88104
Medium parameters used: f = 1910 MHz; σ = 1.614 mho/m; εr = 50.25; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:
Probe: EX3DV4 - SN3812; ConvF(7.19, 7.19, 7.19); Calibrated: 1/24/2014;
Sensor-Surface: 2.5mm (Mechanical Surface Detection), z = 1.0
Electronics: DAE4 Sn1287; Calibrated: 10/4/2011
Phantom: ELI v5.0; Type: QDOVA002AA; Serial: 1146
DASY52 52.8.1(838); SEMCAD X 14.6.5(6469)

Configuration/1909.8MHz BSL, BG5 P1/Area Scan (91x151x1): Measurement grid: dx=10mm, dy=10mm
Reference Value = 12.939 V/m; Power Drift = 0.30 dB
Fast SAR: SAR(1 g) = 1.16 mW/g; SAR(10 g) = 0.659 mW/g (SAR corrected for target medium)
Maximum value of SAR (interpolated) = 1.52 mW/g



Plot #2

Date/Time: 2/26/2014 11:15:39 AM

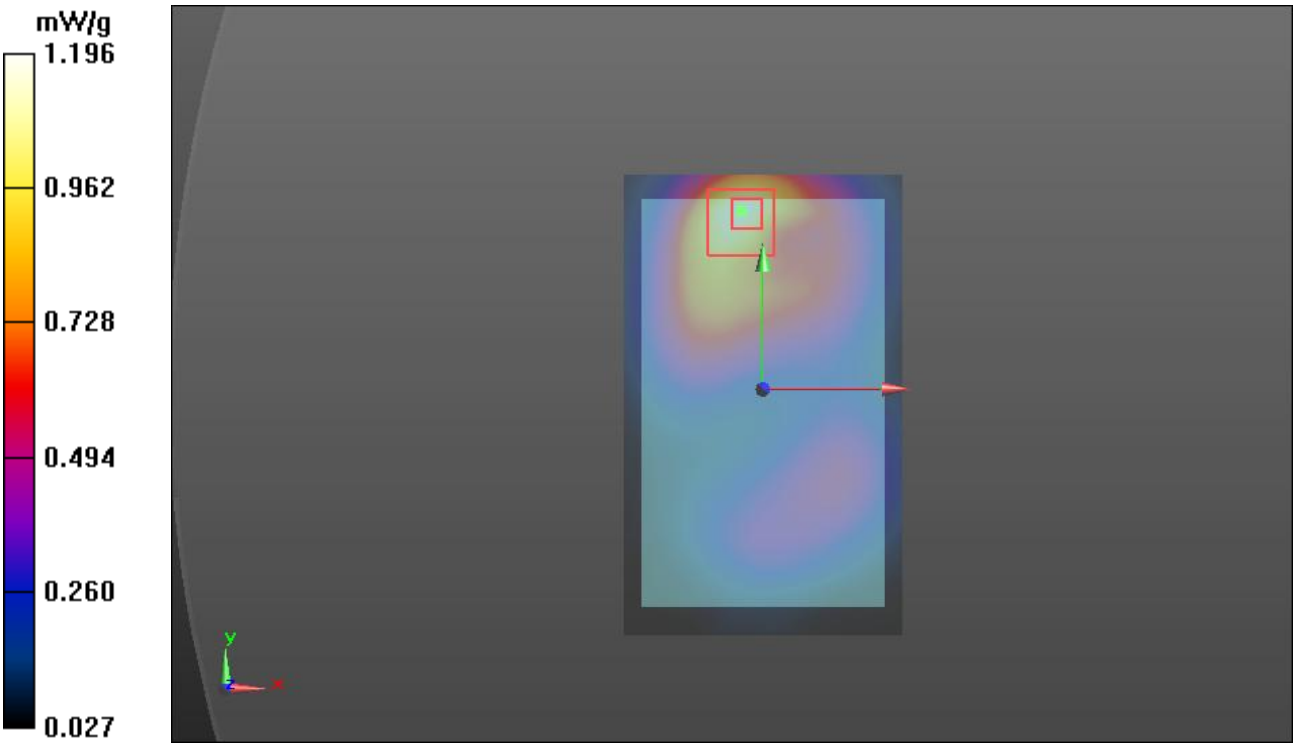
Communication System: Generic GSM; Communication System Band: PCS 1900 (1850.0 - 1910.0 MHz);
Frequency: 1909.8 MHz;Communication System PAR: 9.191 dB; PMF: 2.88104
Medium parameters used: f = 1910 MHz; σ = 1.614 mho/m; ε_r = 50.25; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

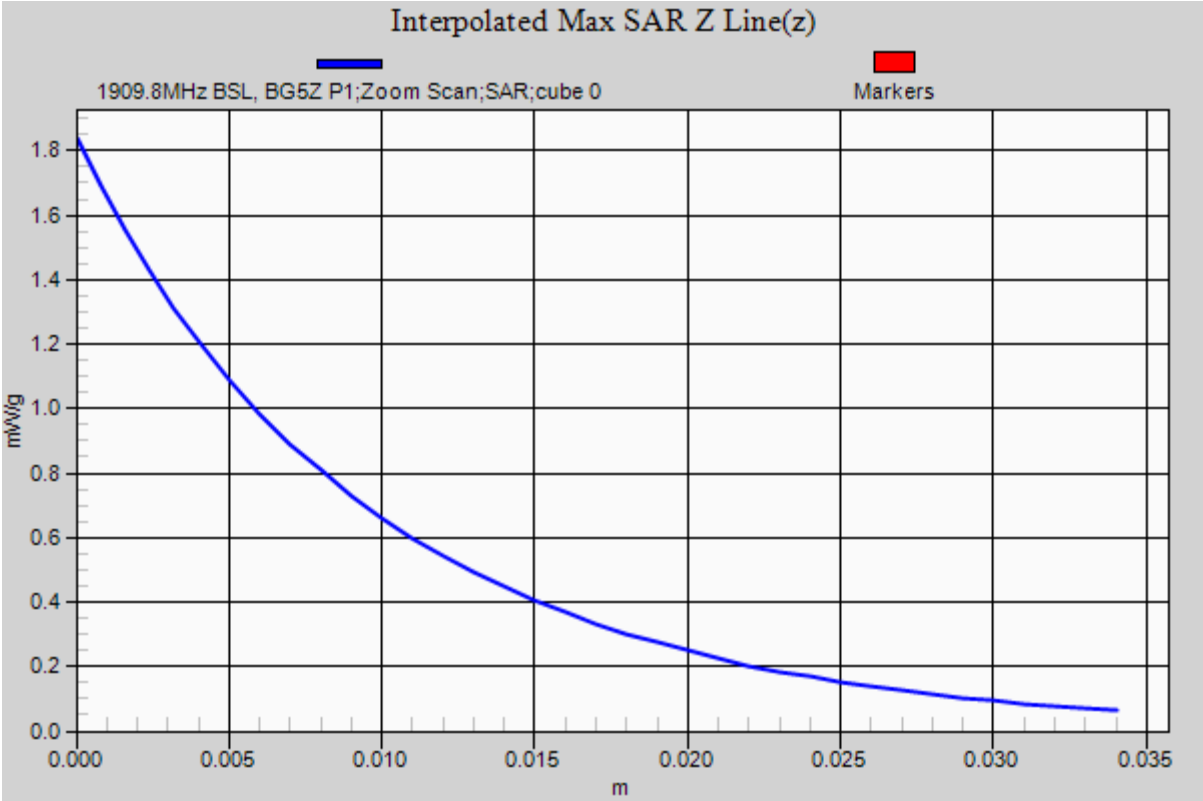
DASY Configuration:

- Probe: EX3DV4 - SN3812; ConvF(7.19, 7.19, 7.19); Calibrated: 1/24/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection), Sensor-Surface: 2.5mm (Mechanical Surface Detection), z = 31.0
- Electronics: DAE4 Sn1287; Calibrated: 10/4/2011
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: 1146
- DASY52 52.8.1(838); SEMCAD X 14.6.5(6469)

Configuration/1909.8MHz BSL, BG5Z P1/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.263 V/m; Power Drift = 0.39 dB
Peak SAR (extrapolated) = 1.837 mW/g
SAR(1 g) = 1.09 mW/g; SAR(10 g) = 0.633 mW/g (SAR corrected for target medium)
Maximum value of SAR (measured) = 1.20 mW/g

Configuration/1909.8MHz BSL, BG5Z P1/Area Scan (91x151x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 1.33 mW/g




Interpolated Max SAR Z Line(z)
1909.8MHz BSL, BG5Z P1;Zoom Scan;SAR;cube 0
Markers
mW/g
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0.000
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

Plot #3

Date/Time: 2/28/2014 9:15:59 AM

Communication System: Generic GSM; Communication System Band: GSM 850 (824.0 - 849.0 MHz);
Frequency: 836.4 MHz;Communication System PAR: 9.191 dB; PMF: 2.88104
Medium parameters used (interpolated): f = 836.4 MHz; σ = 0.983 mho/m; ε_r = 53.698; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

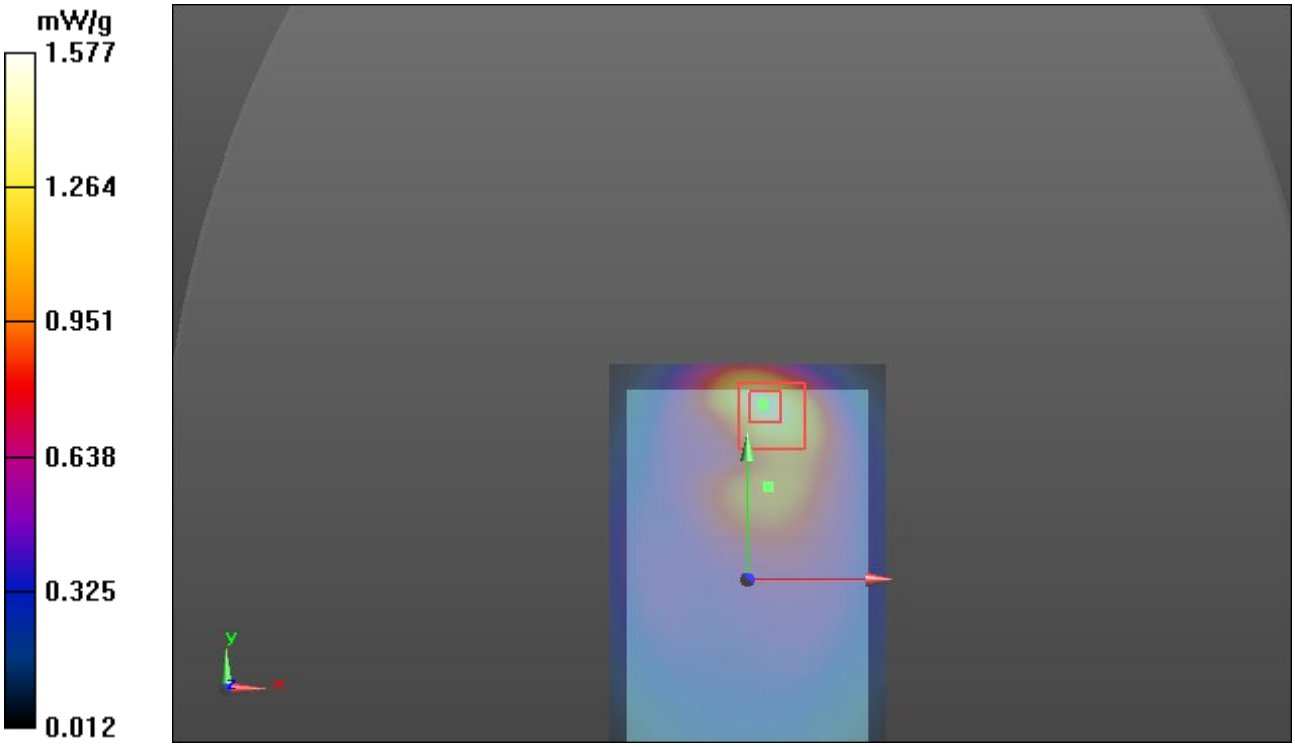
DASY Configuration:

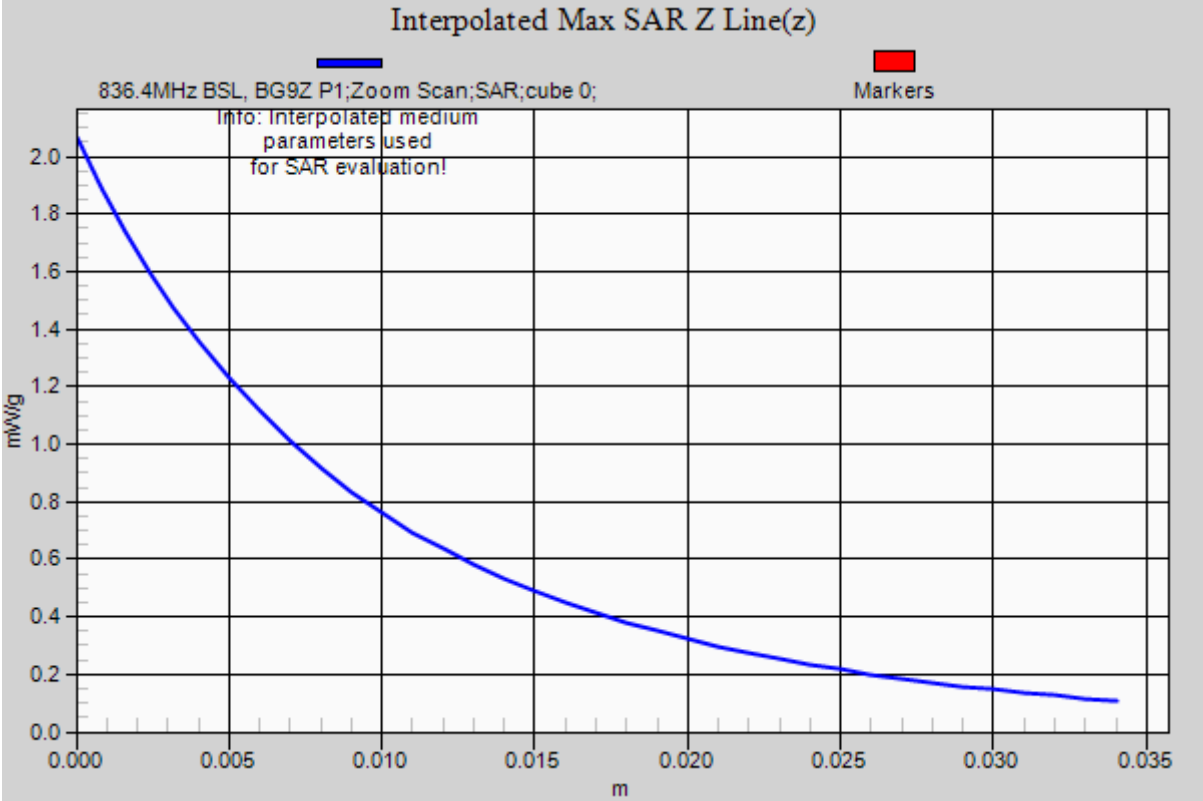
- Probe: EX3DV4 - SN3812; ConvF(8.91, 8.91, 8.91); Calibrated: 1/24/2014;
- Sensor-Surface: 2.5mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1287; Calibrated: 10/4/2011
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: 1146
- DASY52 52.8.1(838); SEMCAD X 14.6.5(6469)

Configuration/836.4MHz BSL, BG9Z P1/Area Scan (91x151x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 1.58 mW/g

Configuration/836.4MHz BSL, BG9Z P1/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 23.972 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 2.065 mW/g
SAR(1 g) = 1.22 mW/g; SAR(10 g) = 0.718 mW/g (SAR corrected for target medium)
Maximum value of SAR (measured) = 1.35 mW/g




Interpolated Max SAR Z Line(z)
836.4MHz BSL, BG9Z P1;Zoom Scan;SAR;cube 0;
Markers
Info: Interpolated medium parameters used for SAR evaluation!
mW/g
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0.000
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

Plot #4

Date/Time: 2/28/2014 2:35:36 PM

Communication System: CW; Communication System Band: FullSpan (0.0 - 6000.0 MHz); Frequency: 826.5 MHz;Communication System PAR: 0 dB; PMF: 1
Medium parameters used (interpolated): f = 826.5 MHz; σ = 0.969 mho/m; ε_r = 52.59; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

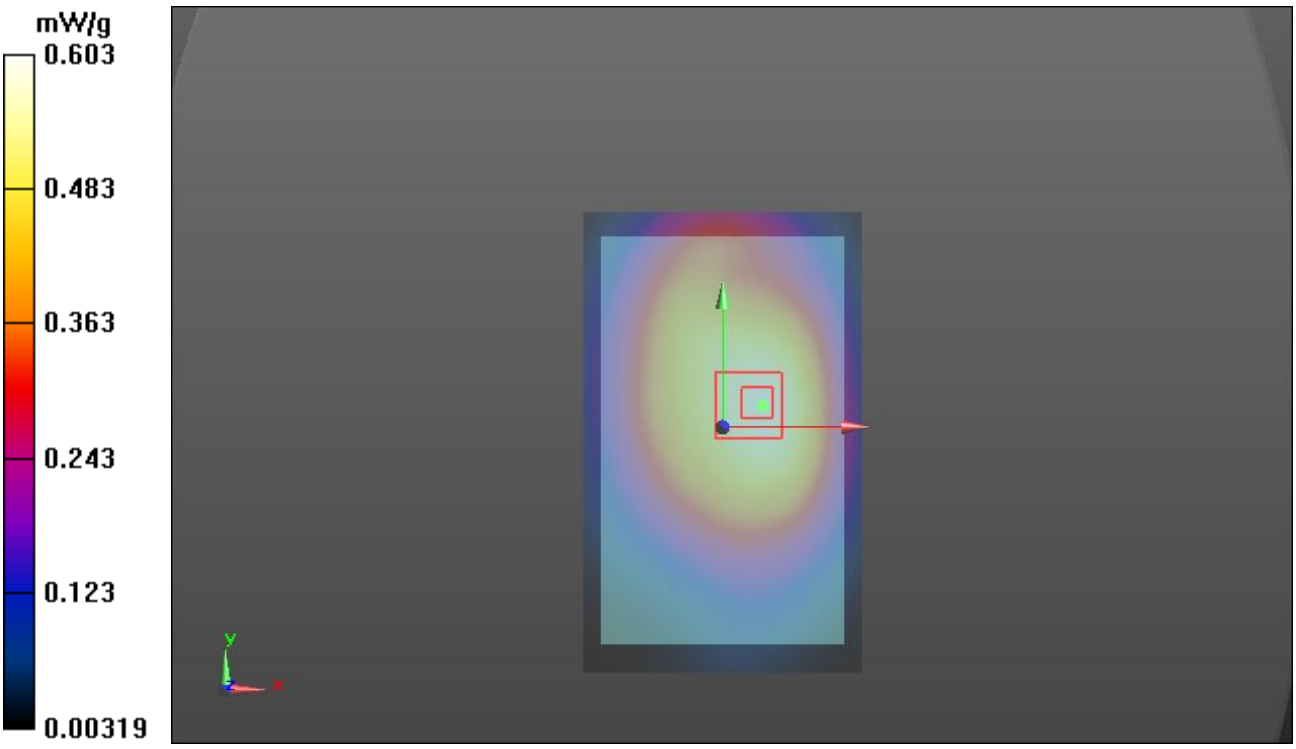
DASY Configuration:

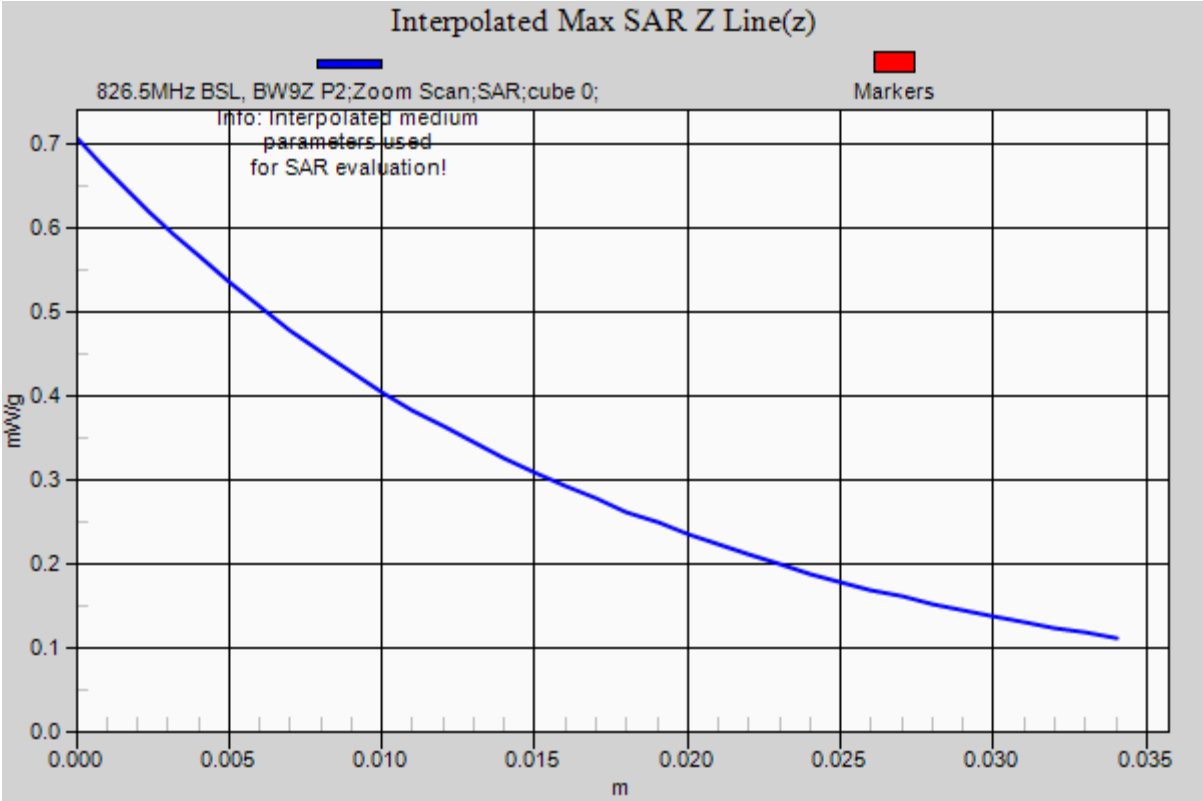
- Probe: EX3DV4 - SN3812; ConvF(8.91, 8.91, 8.91); Calibrated: 1/24/2014;
- Sensor-Surface: 2.5mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1287; Calibrated: 10/4/2011
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: 1146
- DASY52 52.8.1(838); SEMCAD X 14.6.5(6469)

Configuration/826.5MHz BSL, BW9Z P2/Area Scan (91x151x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.603 mW/g

Configuration/826.5MHz BSL, BW9Z P2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 23.830 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.705 mW/g
SAR(1 g) = 0.542 mW/g; SAR(10 g) = 0.410 mW/g (SAR corrected for target medium)
Maximum value of SAR (measured) = 0.573 mW/g




Interpolated Max SAR Z Line(z)
826.5MHz BSL, BW9Z P2;Zoom Scan;SAR;cube 0;
Markers
Info: Interpolated medium
parameters used
for SAR evaluation!
mW/g
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
0.000
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

Plot #5

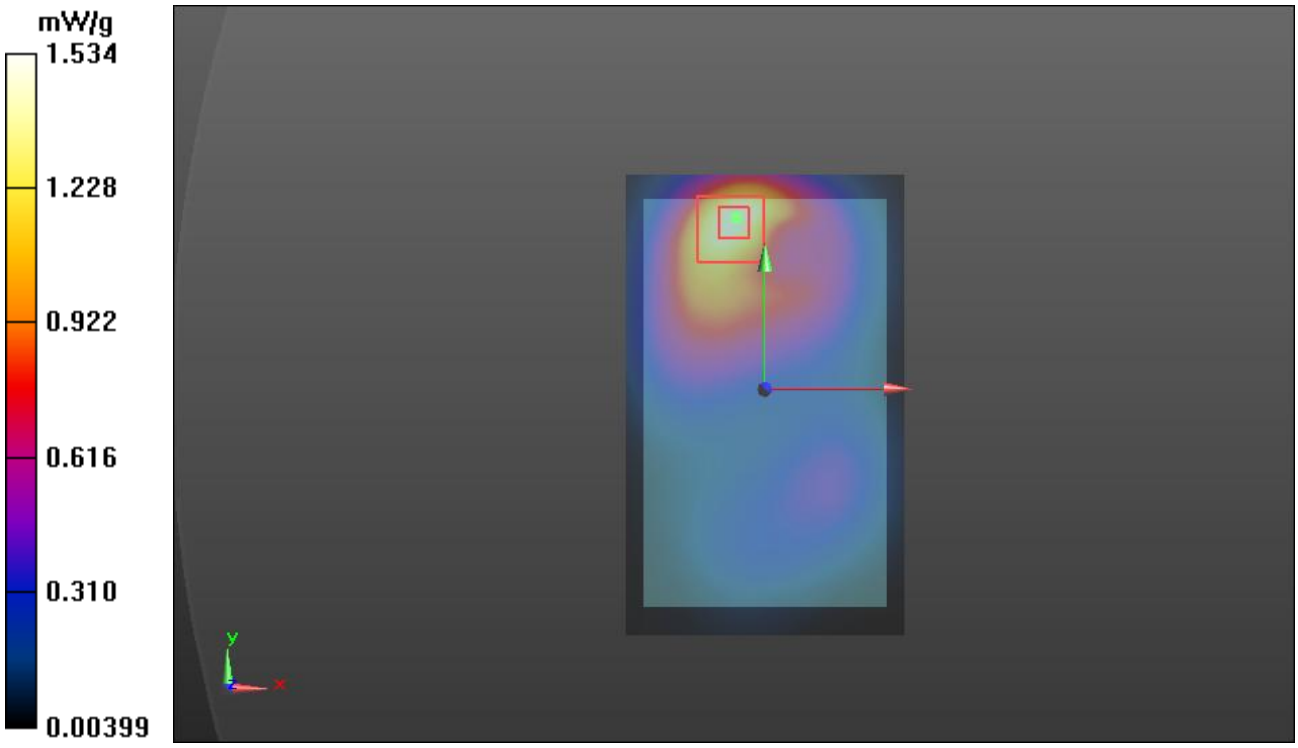
Date/Time: 2/25/2014 9:35:20 AM

Communication System: CW; Communication System Band: FullSpan (0.0 - 6000.0 MHz); Frequency: 1852.4 MHz;Communication System PAR: 0 dB; PMF: 1
Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.569 mho/m; ε_r = 50.866; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3812; ConvF(7.19, 7.19, 7.19); Calibrated: 1/24/2014;
- Sensor-Surface: 2.5mm (Mechanical Surface Detection), z = 1.0
- Electronics: DAE4 Sn1287; Calibrated: 10/4/2011
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: 1146
- DASY52 52.8.1(838); SEMCAD X 14.6.5(6469)

Configuration/1852.4MHz BSL, B3P1/Area Scan (91x151x1): Measurement grid: dx=10mm, dy=10mm
Reference Value = 13.841 V/m; Power Drift = -0.00 dB
Fast SAR: SAR(1 g) = 1.17 mW/g; SAR(10 g) = 0.665 mW/g (SAR corrected for target medium)
Maximum value of SAR (interpolated) = 1.53 mW/g



Plot #6

Date/Time: 2/25/2014 11:13:06 AM

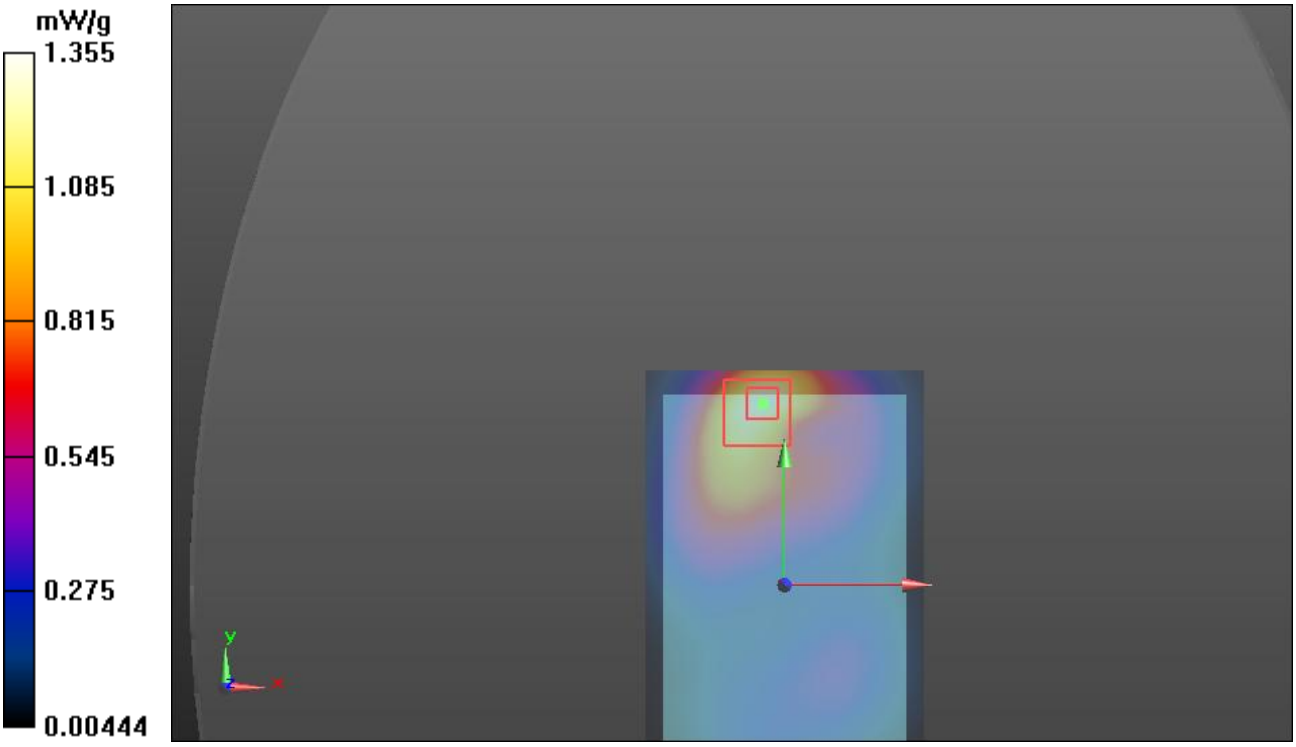
Communication System: CW; Communication System Band: FullSpan (0.0 - 6000.0 MHz); Frequency: 1852.4 MHz;Communication System PAR: 0 dB; PMF: 1
Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.569 mho/m; ε_r = 50.866; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

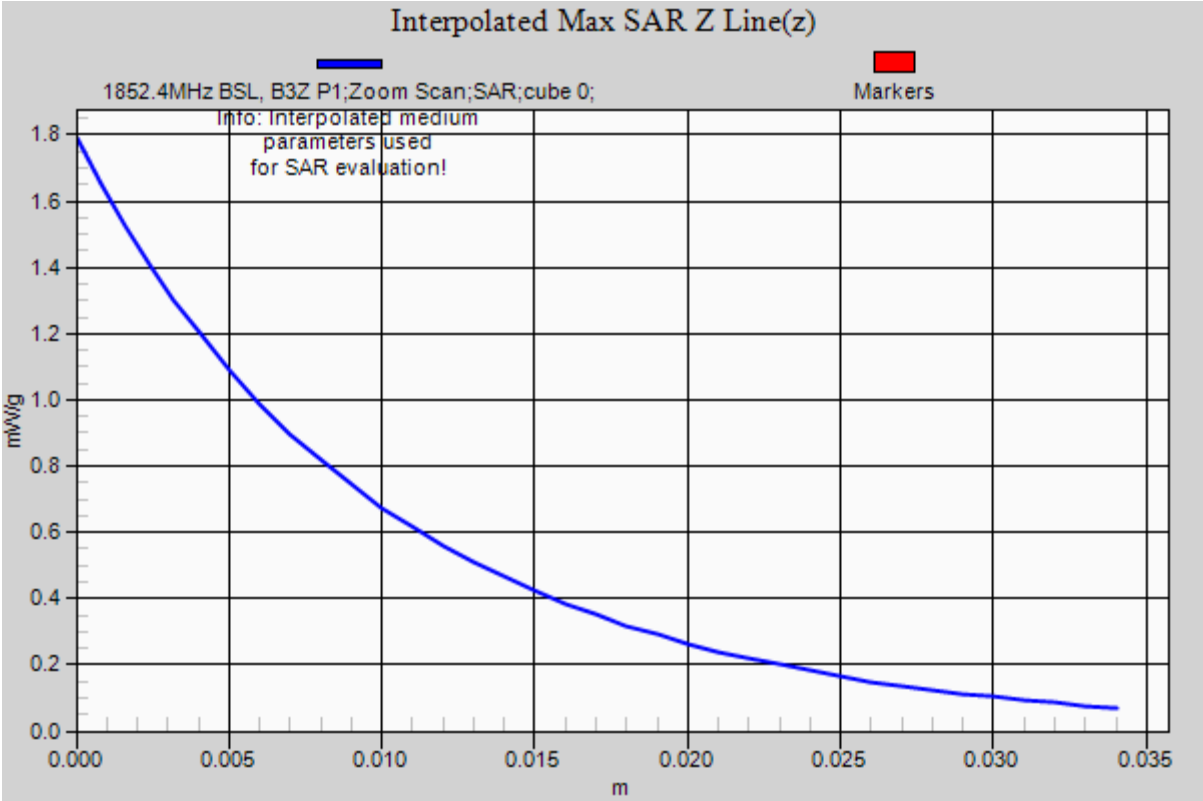
DASY Configuration:

- Probe: EX3DV4 - SN3812; ConvF(7.19, 7.19, 7.19); Calibrated: 1/24/2014;
- Sensor-Surface: 2.5mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1287; Calibrated: 10/4/2011
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: 1146
- DASY52 52.8.1(838); SEMCAD X 14.6.5(6469)

Configuration/1852.4MHz BSL, B3Z P1/Area Scan (91x151x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 1.35 mW/g

Configuration/1852.4MHz BSL, B3Z P1/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.051 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 1.789 mW/g
SAR(1 g) = 1.09 mW/g; SAR(10 g) = 0.633 mW/g (SAR corrected for target medium)
Maximum value of SAR (measured) = 1.21 mW/g




Interpolated Max SAR Z Line(z)
1852.4MHz BSL, B3Z P1;Zoom Scan;SAR;cube 0;
Markers
Info: Interpolated medium
parameters used
for SAR evaluation!
mW/g
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0.000
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

Plot #7

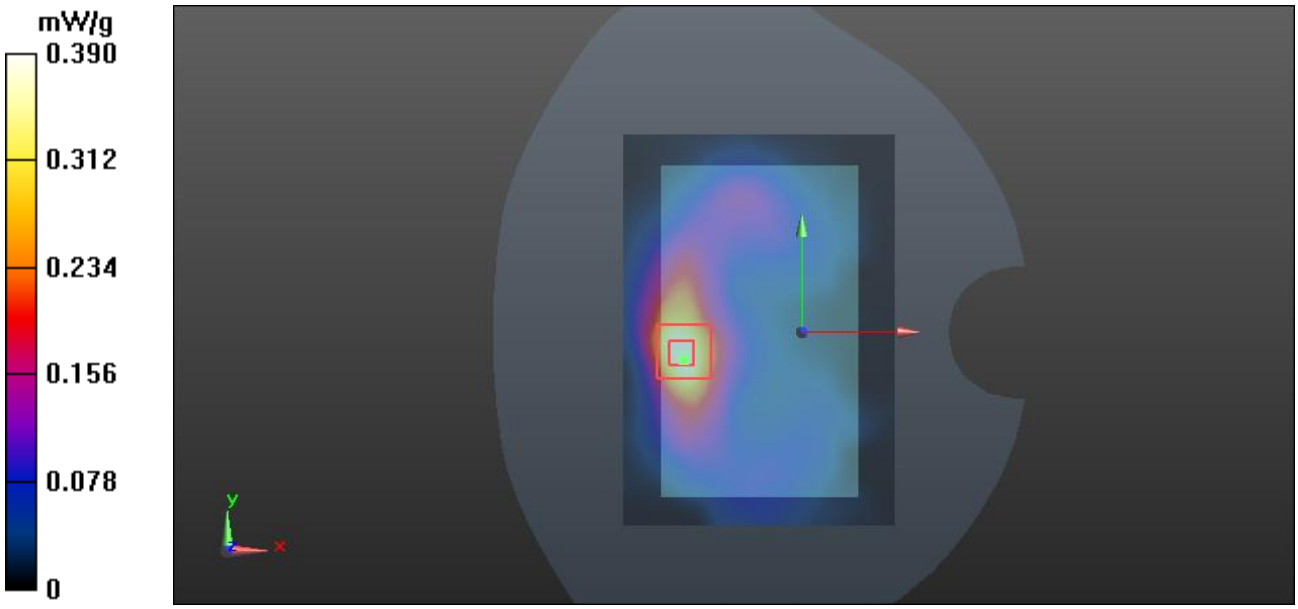
Date/Time: 2/7/2014 8:47:02 AM

Communication System: CW; Communication System Band: FullSpan (0.0 - 6000.0 MHz); Frequency: 2462 MHz;Communication System PAR: 0 dB; PMF: 1
Medium parameters used: f = 2462 MHz; σ = 2.07 mho/m; ε_r = 49.73; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3812; ConvF(7.01, 7.01, 7.01); Calibrated: 12/12/2012;
- Sensor-Surface: 2.5mm (Mechanical Surface Detection), z = 1.0
- Electronics: DAE4 Sn1287; Calibrated: 10/4/2011
- Phantom: SAM with CRP v5.0; Type: QD000P40CD; Serial: TP:1665
- DASY52 52.8.1(838); SEMCAD X 14.6.5(6469)

Configuration/D5 P1/Area Scan (91x131x1): Measurement grid: dx=12mm, dy=12mm
Reference Value = 5.508 V/m; Power Drift = 0.09 dB
Fast SAR: SAR(1 g) = 0.288 mW/g; SAR(10 g) = 0.150 mW/g (SAR corrected for target medium)
Maximum value of SAR (interpolated) = 0.390 mW/g



Plot #8

Date/Time: 2/7/2014 10:31:40 AM

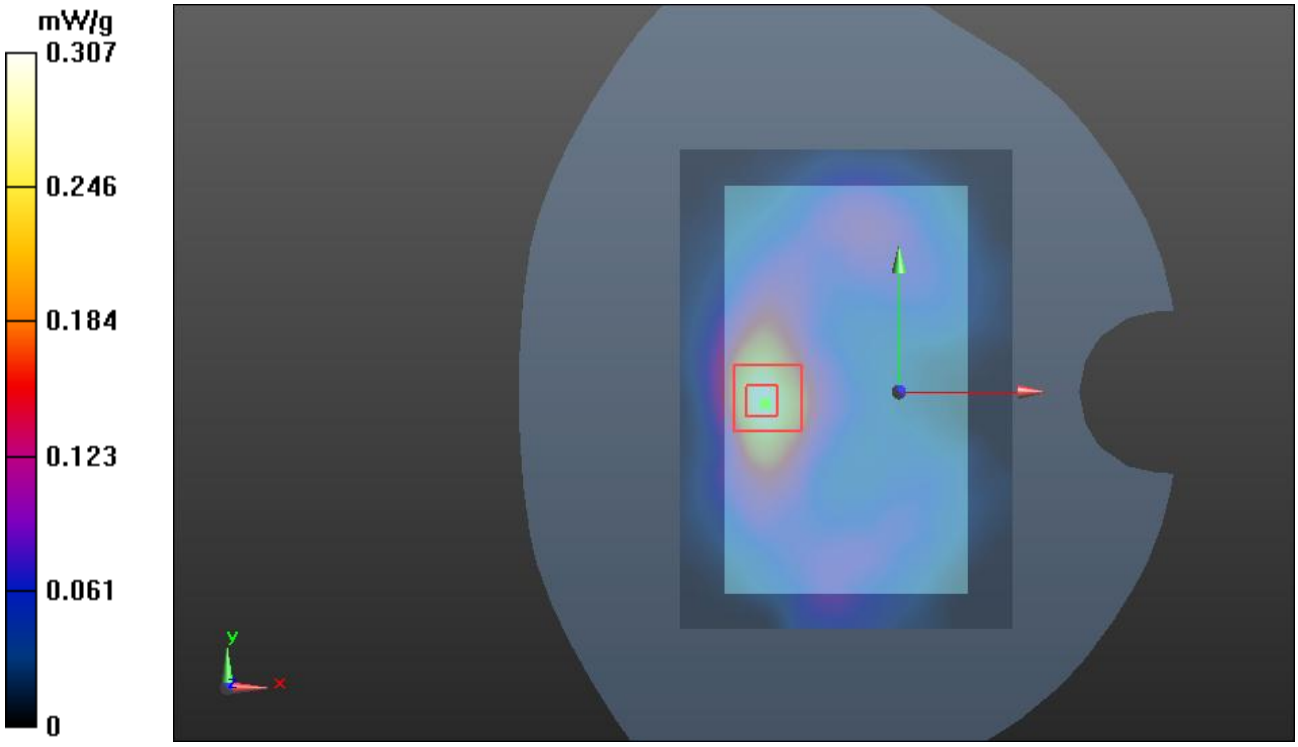
Communication System: CW; Communication System Band: FullSpan (0.0 - 6000.0 MHz); Frequency: 2462 MHz;Communication System PAR: 0 dB; PMF: 1
Medium parameters used: f = 2462 MHz; σ = 2.07 mho/m; ε_r = 49.73; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

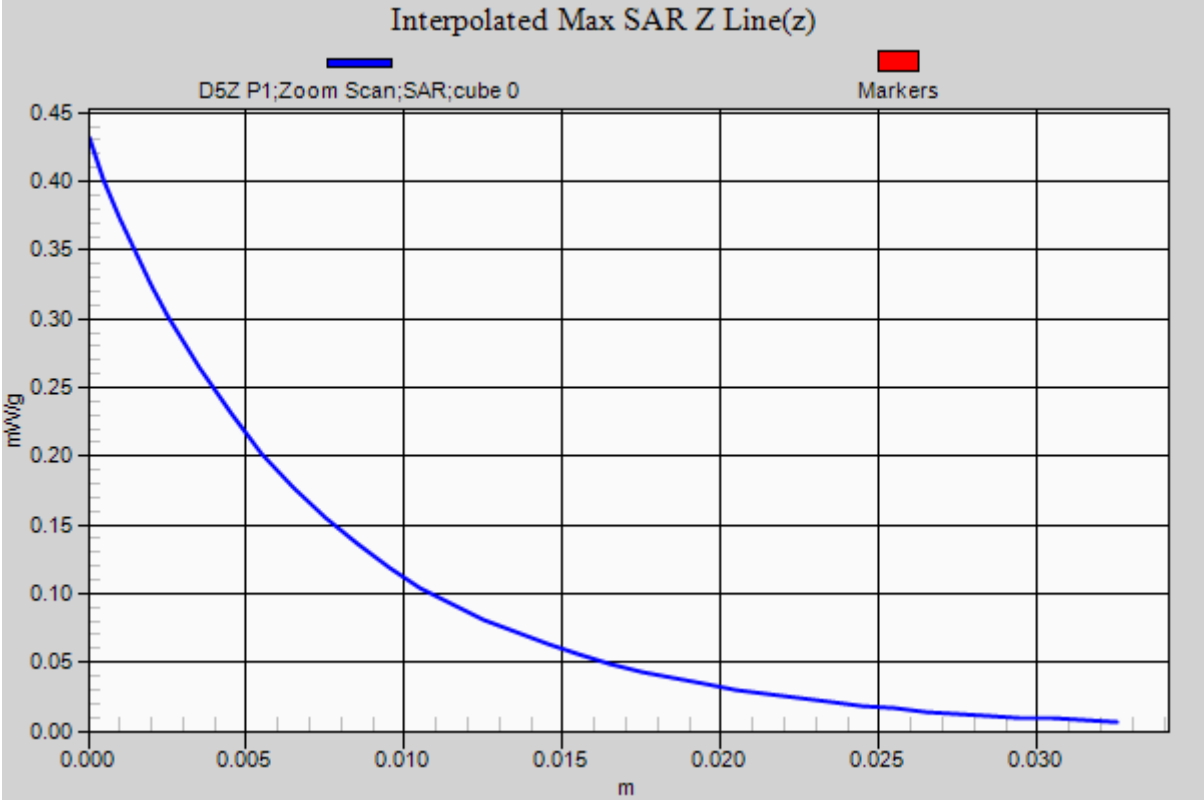
DASY Configuration:

- Probe: EX3DV4 - SN3812; ConvF(7.01, 7.01, 7.01); Calibrated: 12/12/2012;
- Sensor-Surface: 2.5mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1287; Calibrated: 10/4/2011
- Phantom: SAM with CRP v5.0; Type: QD000P40CD; Serial: TP:1665
- DASY52 52.8.1(838); SEMCAD X 14.6.5(6469)

Configuration/D5Z P1/Area Scan (91x131x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.307 mW/g

Configuration/D5Z P1/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.079 V/m; Power Drift = 0.31 dB
Peak SAR (extrapolated) = 0.432 mW/g
SAR(1 g) = 0.223 mW/g; SAR(10 g) = 0.117 mW/g (SAR corrected for target medium)
Maximum value of SAR (measured) = 0.303 mW/g




Interpolated Max SAR Z Line(z)
D5Z P1;Zoom Scan;SAR;cube 0
Markers
mW/g
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
0.000
0.005
0.010
0.015
0.020
0.025
0.030
m

Plot #9

Date/Time: 3/7/2014 12:37:25 PM

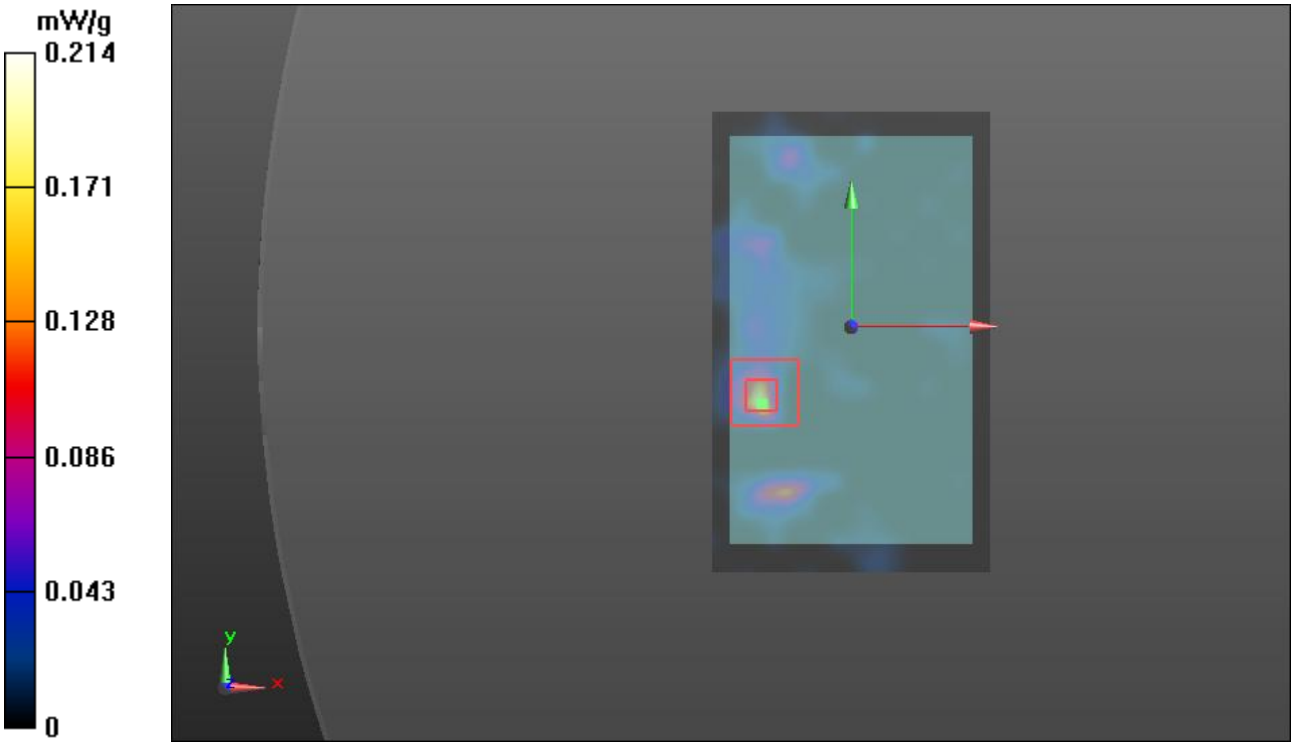
Communication System: CW; Communication System Band: FullSpan (0.0 - 6000.0 MHz); Frequency: 5180 MHz;Communication System PAR: 0 dB; PMF: 1
Medium parameters used: f = 5180 MHz; σ = 5.434 mho/m; ε_r = 47.453; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

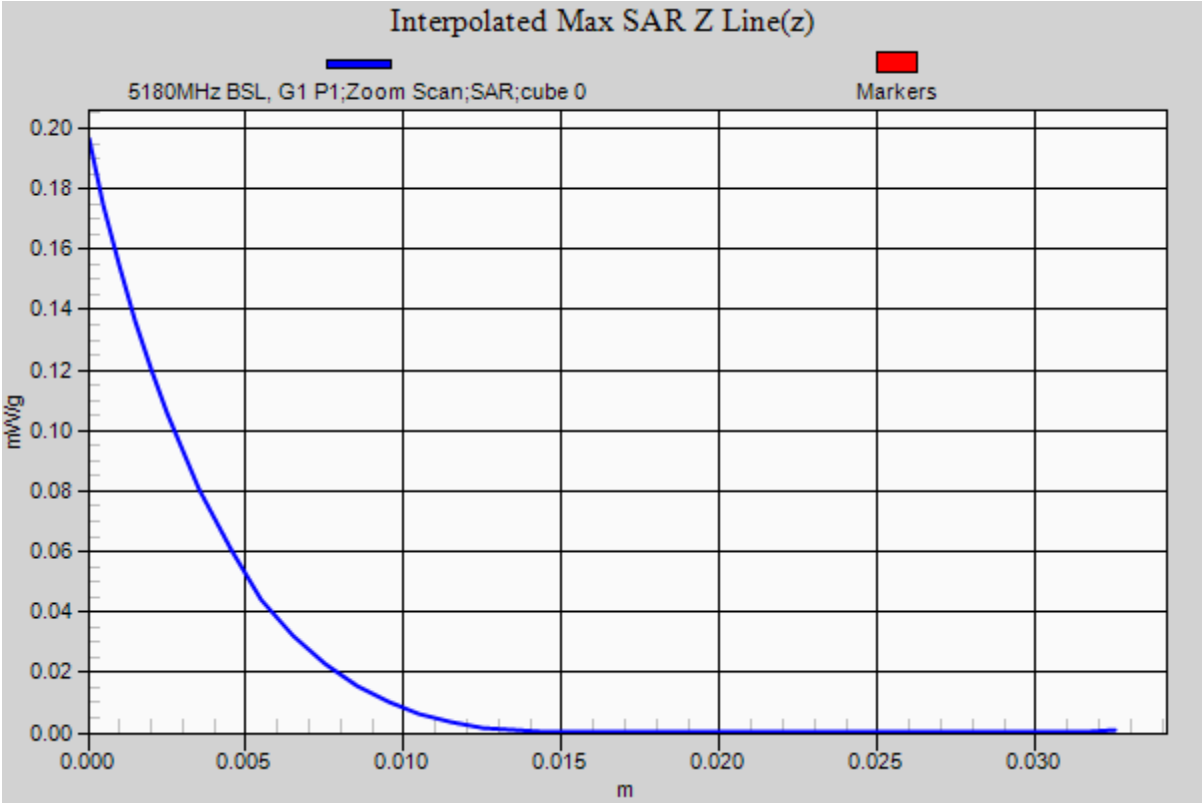
DASY Configuration:

- Probe: EX3DV4 - SN3812; ConvF(4.6, 4.6, 4.6); Calibrated: 1/24/2014;
- Sensor-Surface: 2.5mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1287; Calibrated: 10/4/2011
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: 1146
- DASY52 52.8.1(838); SEMCAD X 14.6.5(6469)

Configuration/5180MHz BSL, G1 P1/Area Scan (91x151x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.214 mW/g

Configuration/5180MHz BSL, G1 P1/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.048 V/m; Power Drift = -0.15 dB
Peak SAR (extrapolated) = 0.196 mW/g
SAR(1 g) = 0.062 mW/g; SAR(10 g) = 0.020 mW/g (SAR corrected for target medium)
Maximum value of SAR (measured) = 0.106 mW/g




Interpolated Max SAR Z Line(z)
5180MHz BSL, G1 P1;Zoom Scan;SAR;cube 0
Markers
mW/g
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
0.000
0.005
0.010
0.015
0.020
0.025
0.030
m

Plot #12

Date/Time: 3/11/2014 8:32:33 AM

Communication System: CW; Communication System Band: FullSpan (0.0 - 6000.0 MHz); Frequency: 5785 MHz;Communication System PAR: 0 dB; PMF: 1
Medium parameters used: f = 5785 MHz; σ = 6.179 mho/m; ε_r = 46.31; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

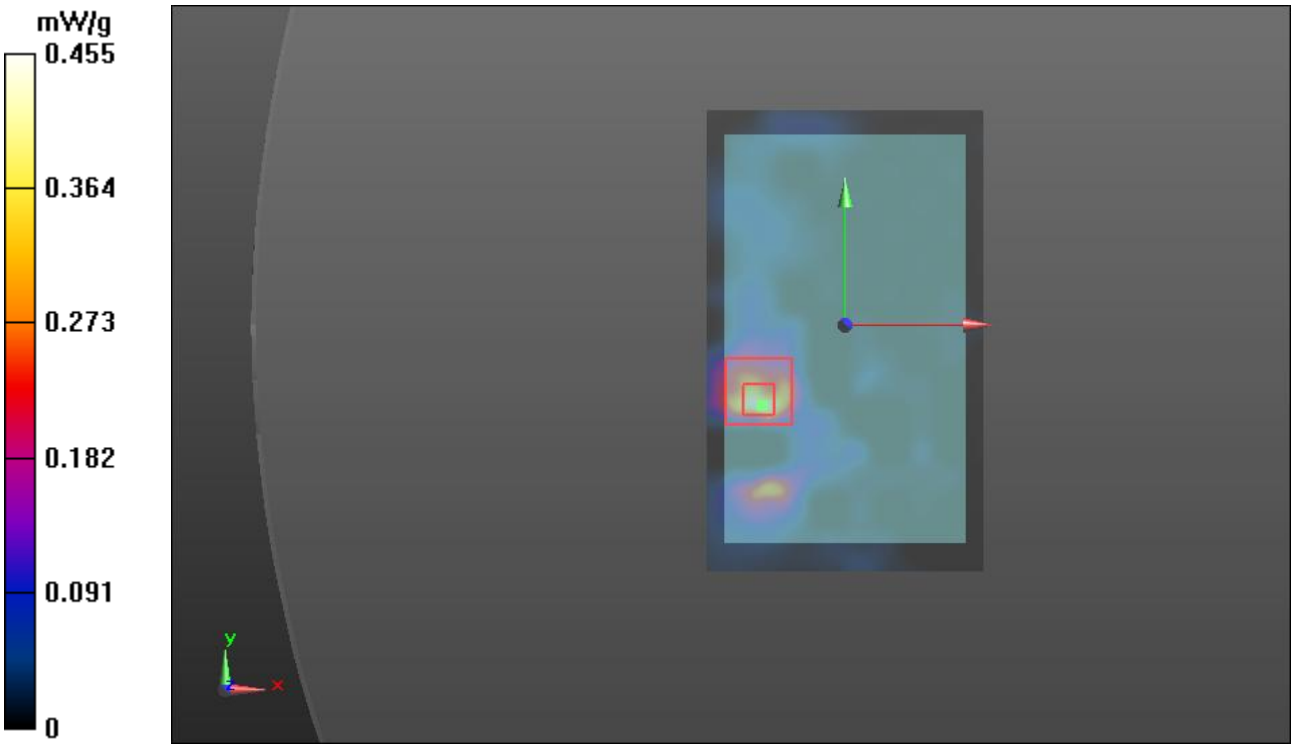
DASY Configuration:

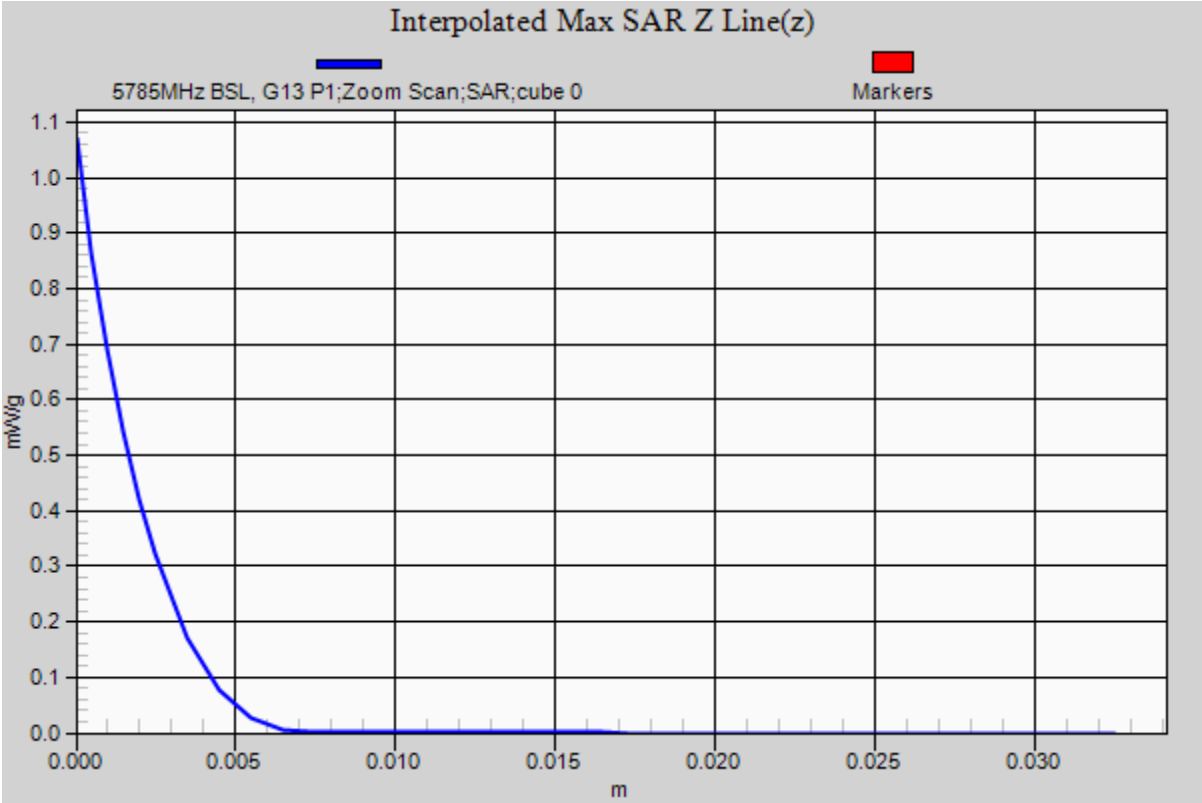
- Probe: EX3DV4 - SN3812; ConvF(4.23, 4.23, 4.23); Calibrated: 1/24/2014;
- Sensor-Surface: 2.5mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1287; Calibrated: 10/4/2011
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: 1146
- DASY52 52.8.1(838); SEMCAD X 14.6.5(6469)

Configuration/5785MHz BSL, G13 P1/Area Scan (91x151x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.455 mW/g

Configuration/5785MHz BSL, G13 P1/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.251 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 1.070 mW/g
SAR(1 g) = 0.184 mW/g; SAR(10 g) = 0.063 mW/g (SAR corrected for target medium)

Maximum value of SAR (measured) = 0.316 mW/g




Interpolated Max SAR Z Line(z)
5785MHz BSL, G13 P1;Zoom Scan;SAR;cube 0
Markers
mW/g
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
0.000
0.005
0.010
0.015
0.020
0.025
0.030
m

12 SYSTEM CHECK PLOTS

Plot #13

Date/Time: 2/24/2014 12:27:16 PM

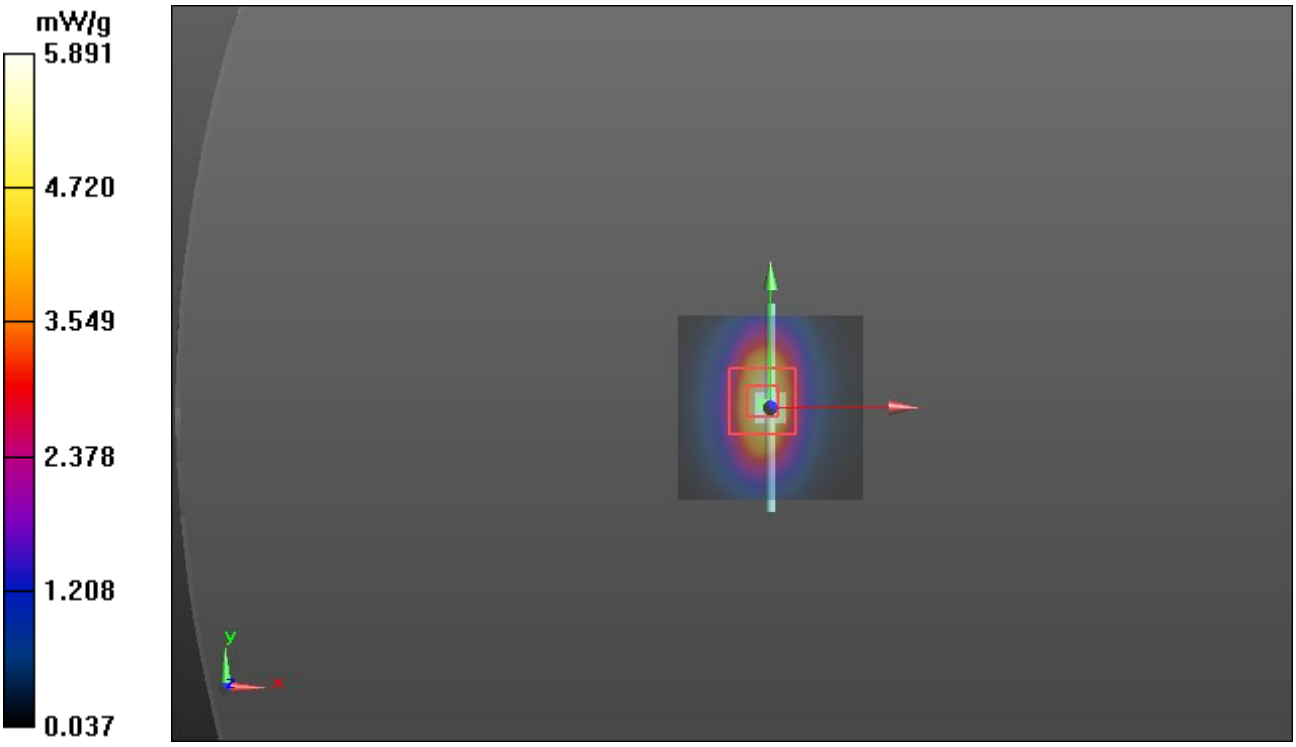
Communication System: CW; Communication System Band: D1900 (1900.0 MHz); Frequency: 1900 MHz;Communication System PAR: 0 dB; PMF: 1
Medium parameters used: f = 1900 MHz; σ = 1.617 mho/m; ε_r = 50.703; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

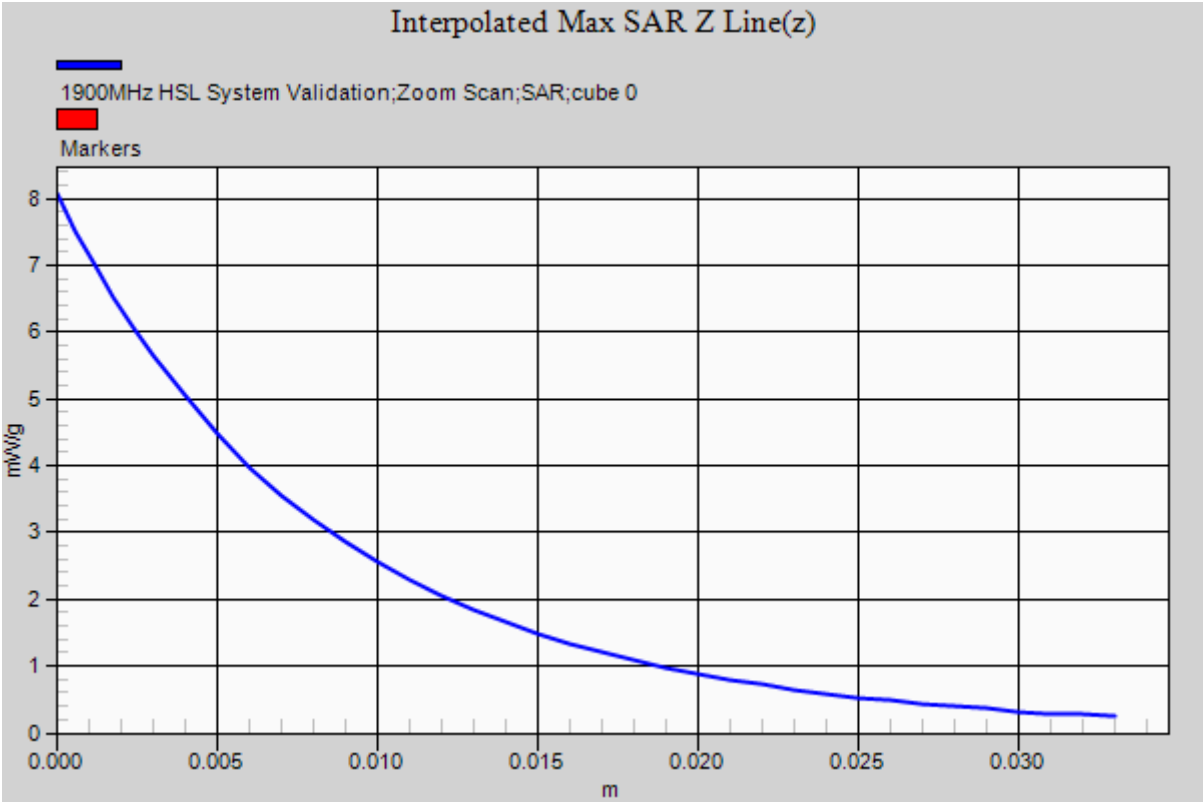
DASY Configuration:

- Probe: EX3DV4 - SN3812; ConvF(7.19, 7.19, 7.19); Calibrated: 1/24/2014;
- Sensor-Surface: 3mm (Mechanical Surface Detection), z = 1.0, 16.0
- Electronics: DAE4 Sn1287; Calibrated: 10/4/2011
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: 1146
- DASY52 52.8.1(838); SEMCAD X 14.6.5(6469)

Configuration/1900MHz HSL System Validation/Area Scan (51x51x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 5.89 mW/g

Configuration/1900MHz HSL System Validation/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 60.053 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 8.080 mW/g
SAR(1 g) = 4.21 mW/g; SAR(10 g) = 2.22 mW/g (SAR corrected for target medium)
Maximum value of SAR (measured) = 5.65 mW/g


mW/g
5.891
4.720
3.549
2.378
1.208
0.037
y
x


Interpolated Max SAR Z Line(z)
1900MHz HSL System Validation;Zoom Scan;SAR;cube 0
Markers
mW/g
0
1
2
3
4
5
6
7
8
0.000
0.005
0.010
0.015
0.020
0.025
0.030
m

Plot #14

Date/Time: 2/25/2014 1:02:44 PM

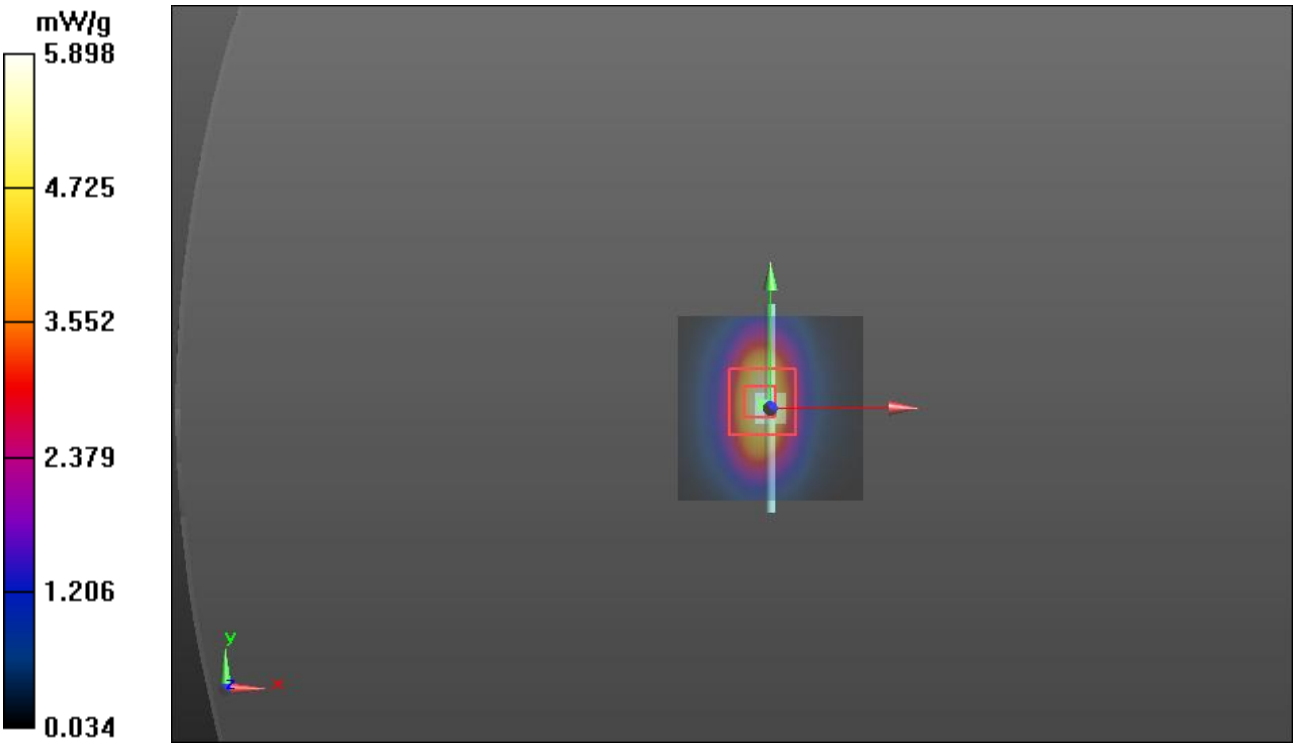
Communication System: CW; Communication System Band: D1900 (1900.0 MHz); Frequency: 1900 MHz;Communication System PAR: 0 dB; PMF: 1
Medium parameters used: f = 1900 MHz; σ = 1.605 mho/m; ε_r = 50.288; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

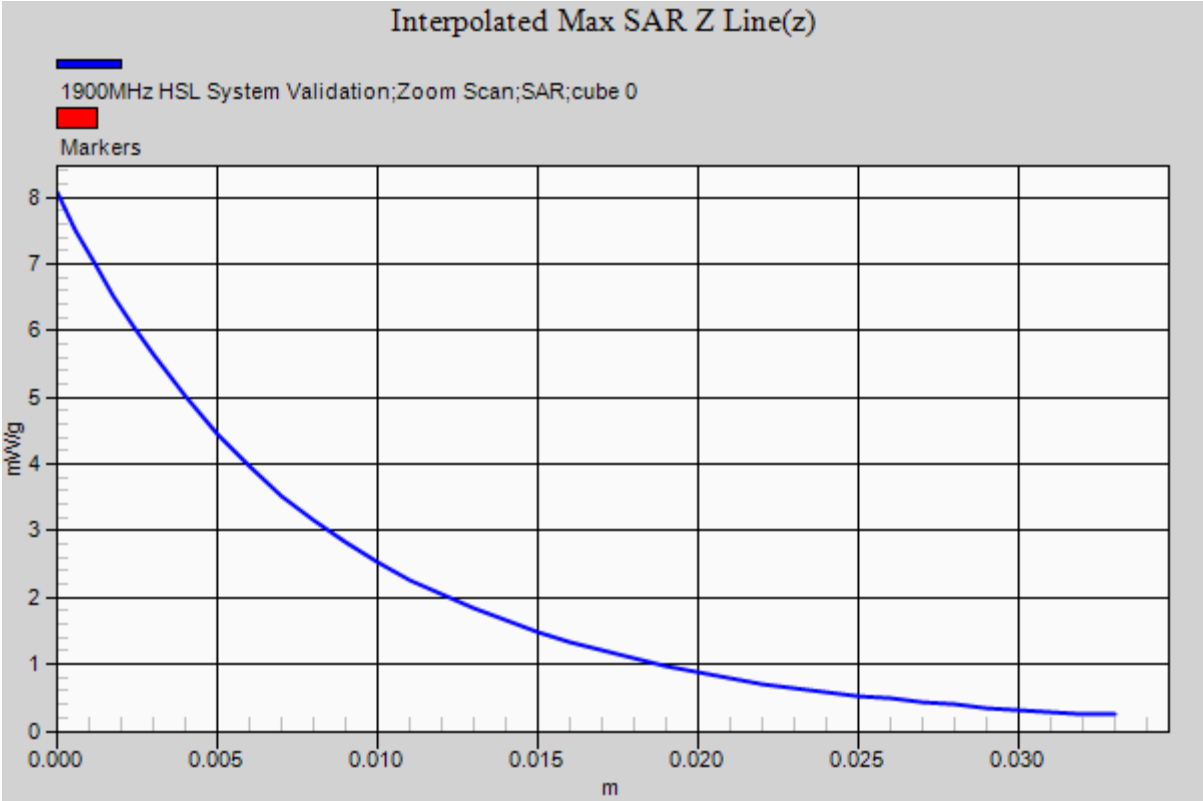
DASY Configuration:

- Probe: EX3DV4 - SN3812; ConvF(7.19, 7.19, 7.19); Calibrated: 1/24/2014;
- Sensor-Surface: 3mm (Mechanical Surface Detection), z = 1.0, 16.0
- Electronics: DAE4 Sn1287; Calibrated: 10/4/2011
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: 1146
- DASY52 52.8.1(838); SEMCAD X 14.6.5(6469)

Configuration/1900MHz HSL System Validation/Area Scan (51x51x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 5.90 mW/g

Configuration/1900MHz HSL System Validation/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 59.319 V/m; Power Drift = 0.30 dB
Peak SAR (extrapolated) = 8.078 mW/g
SAR(1 g) = 4.18 mW/g; SAR(10 g) = 2.18 mW/g (SAR corrected for target medium)
Maximum value of SAR (measured) = 5.64 mW/g




Interpolated Max SAR Z Line(z)
1900MHz HSL System Validation;Zoom Scan;SAR;cube 0
Markers
mW/g
8
7
6
5
4
3
2
1
0
0.000
0.005
0.010
0.015
0.020
0.025
0.030
m

Plot #15

Date/Time: 2/27/2014 8:12:45 AM

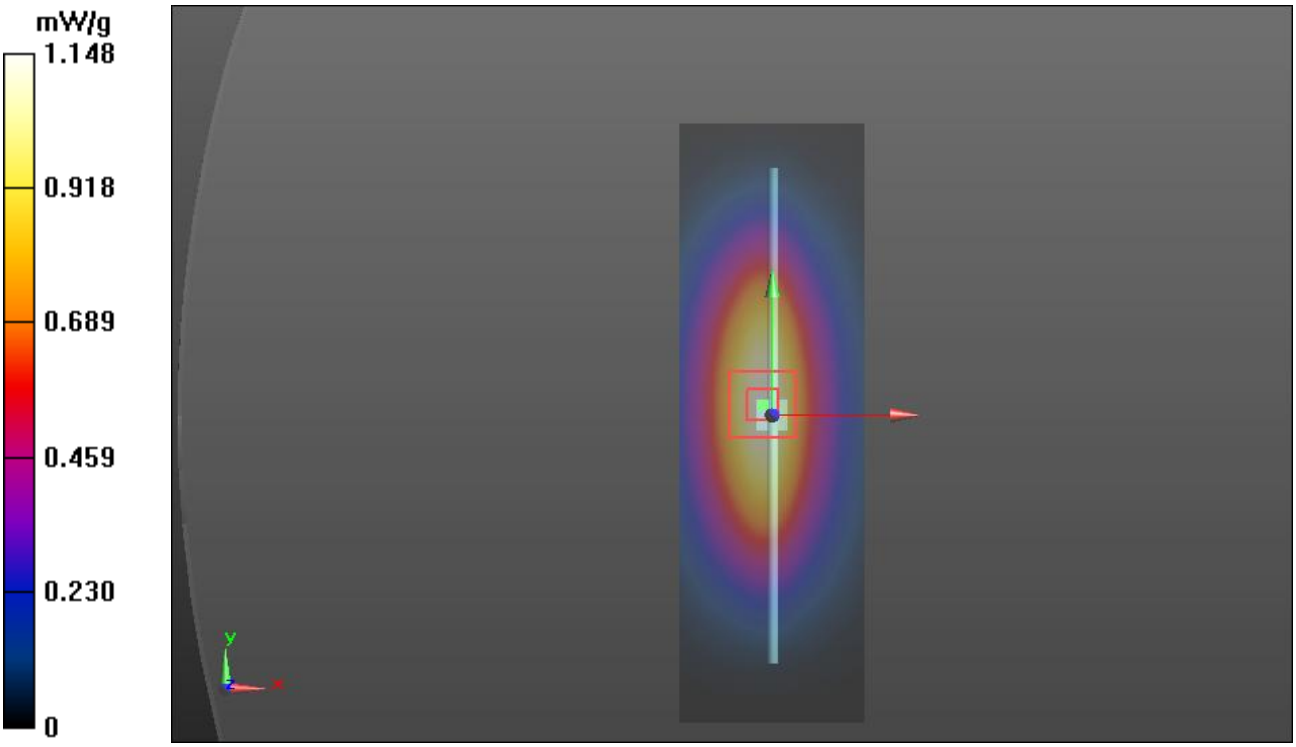
Communication System: CW; Communication System Band: D835 (835.0 MHz); Frequency: 835 MHz;Communication System PAR: 0 dB; PMF: 1
Medium parameters used: f = 835 MHz; σ = 0.983 mho/m; ε_r = 54.097; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

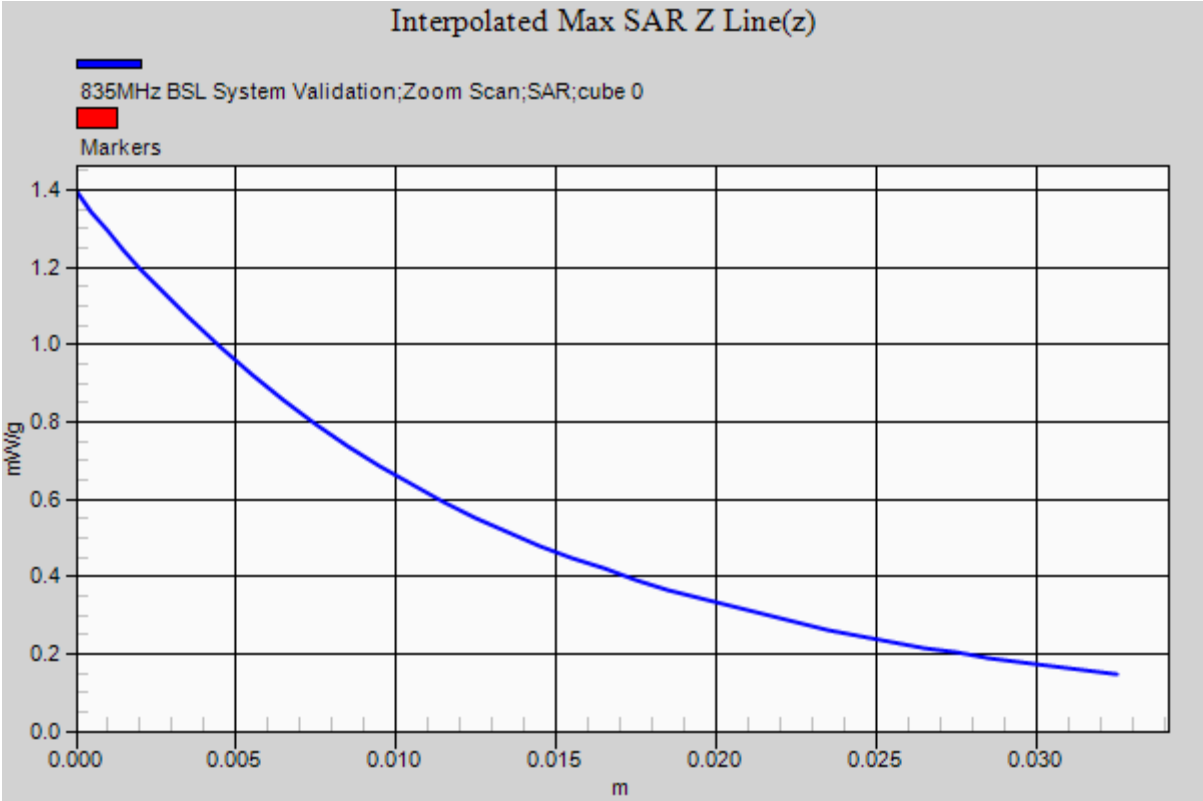
DASY Configuration:

- Probe: EX3DV4 - SN3812; ConvF(8.91, 8.91, 8.91); Calibrated: 1/24/2014;
- Sensor-Surface: 2.5mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1287; Calibrated: 10/4/2011
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: 1146
- DASY52 52.8.1(838); SEMCAD X 14.6.5(6469)

Configuration/835MHz BSL System Validation/Area Scan (41x131x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.15 mW/g

Configuration/835MHz BSL System Validation/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 34.189 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 1.394 mW/g
SAR(1 g) = 0.952 mW/g; SAR(10 g) = 0.632 mW/g (SAR corrected for target medium)
Maximum value of SAR (measured) = 1.16 mW/g




Interpolated Max SAR Z Line(z)
835MHz BSL System Validation;Zoom Scan;SAR;cube 0
Markers
mW/g
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0.000
0.005
0.010
0.015
0.020
0.025
0.030
m

Plot #16

Date/Time: 2/28/2014 8:09:58 AM

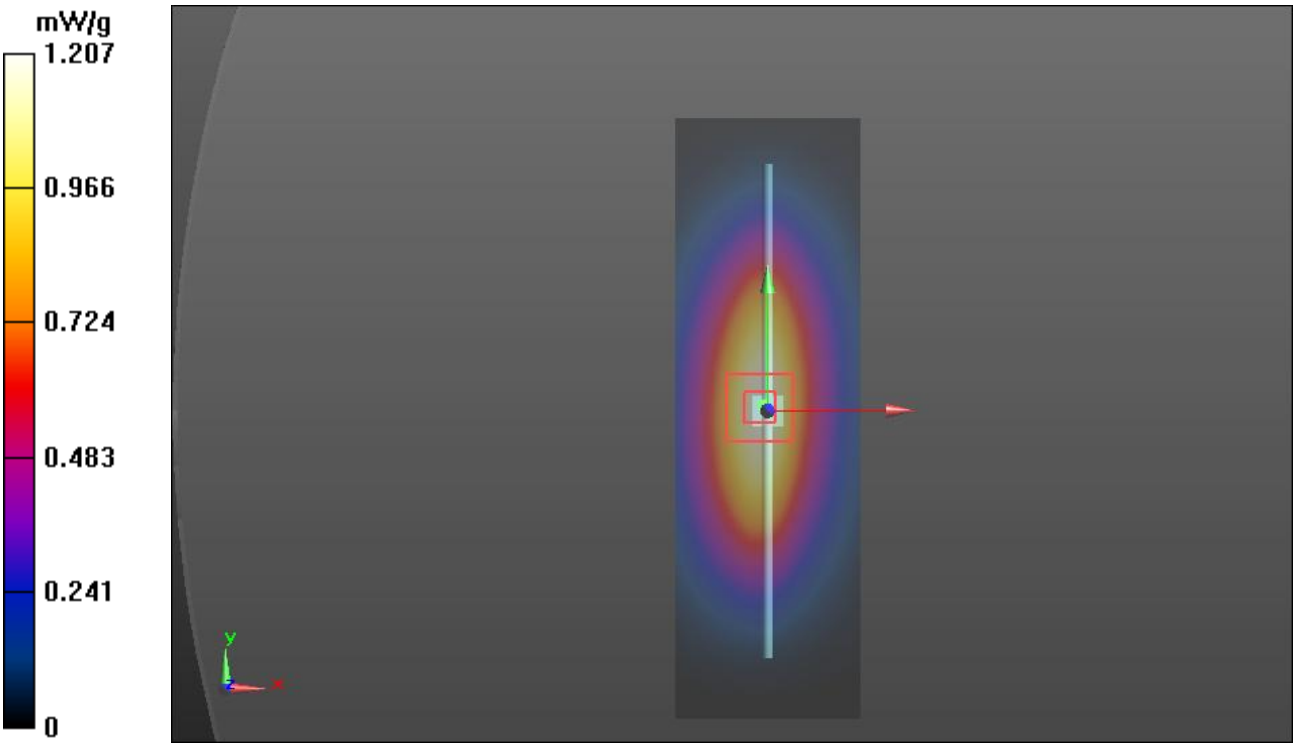
Communication System: CW; Communication System Band: D835 (835.0 MHz); Frequency: 835 MHz;Communication System PAR: 0 dB; PMF: 1
Medium parameters used: f = 835 MHz; σ = 0.982 mho/m; ε_r = 53.714; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

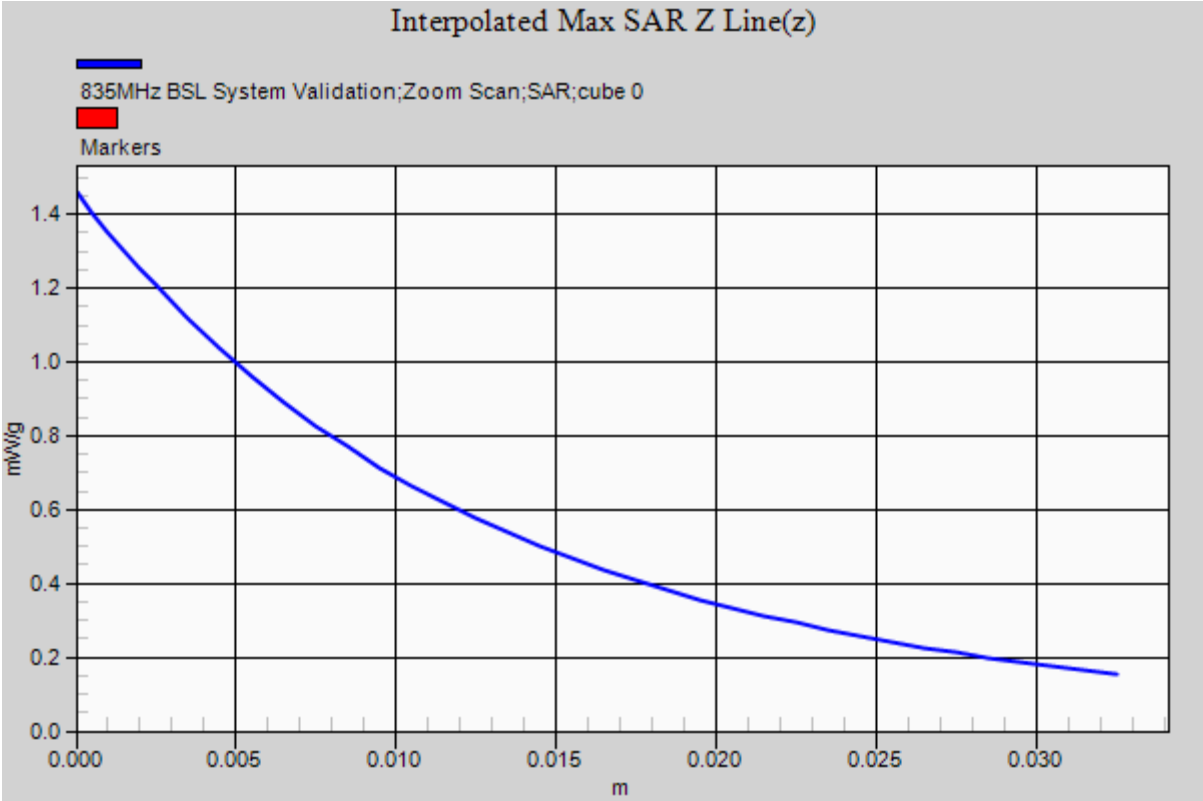
DASY Configuration:

- Probe: EX3DV4 - SN3812; ConvF(8.91, 8.91, 8.91); Calibrated: 1/24/2014;
- Sensor-Surface: 2.5mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn1287; Calibrated: 10/4/2011
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: 1146
- DASY52 52.8.1(838); SEMCAD X 14.6.5(6469)

Configuration/835MHz BSL System Validation/Area Scan (41x131x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.21 mW/g

Configuration/835MHz BSL System Validation/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 35.335 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.461 mW/g
SAR(1 g) = 0.994 mW/g; SAR(10 g) = 0.660 mW/g (SAR corrected for target medium)
Maximum value of SAR (measured) = 1.21 mW/g




Interpolated Max SAR Z Line(z)
835MHz BSL System Validation;Zoom Scan;SAR;cube 0
Markers
mW/g
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0.000
0.005
0.010
0.015
0.020
0.025
0.030
m

Plot #17

Date/Time: 3/4/2014 1:56:13 PM

Communication System: CW; Communication System Band: D5GHz (5000.0 - 6000.0 MHz); Frequency: 5200 MHz;Communication System PAR: 0 dB; PMF: 1
Medium parameters used: f = 5200 MHz; σ = 5.38 mho/m; ε_r = 47.063; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

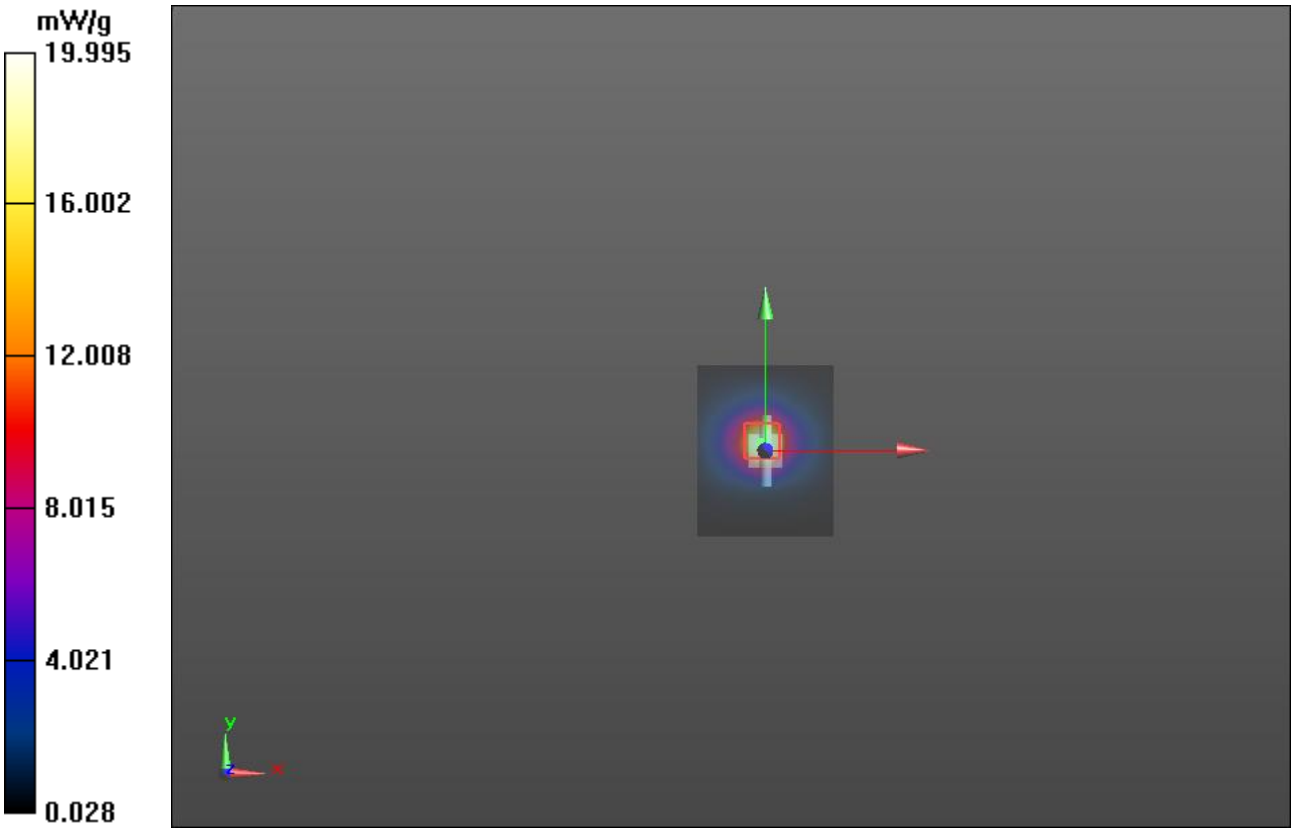
DASY Configuration:

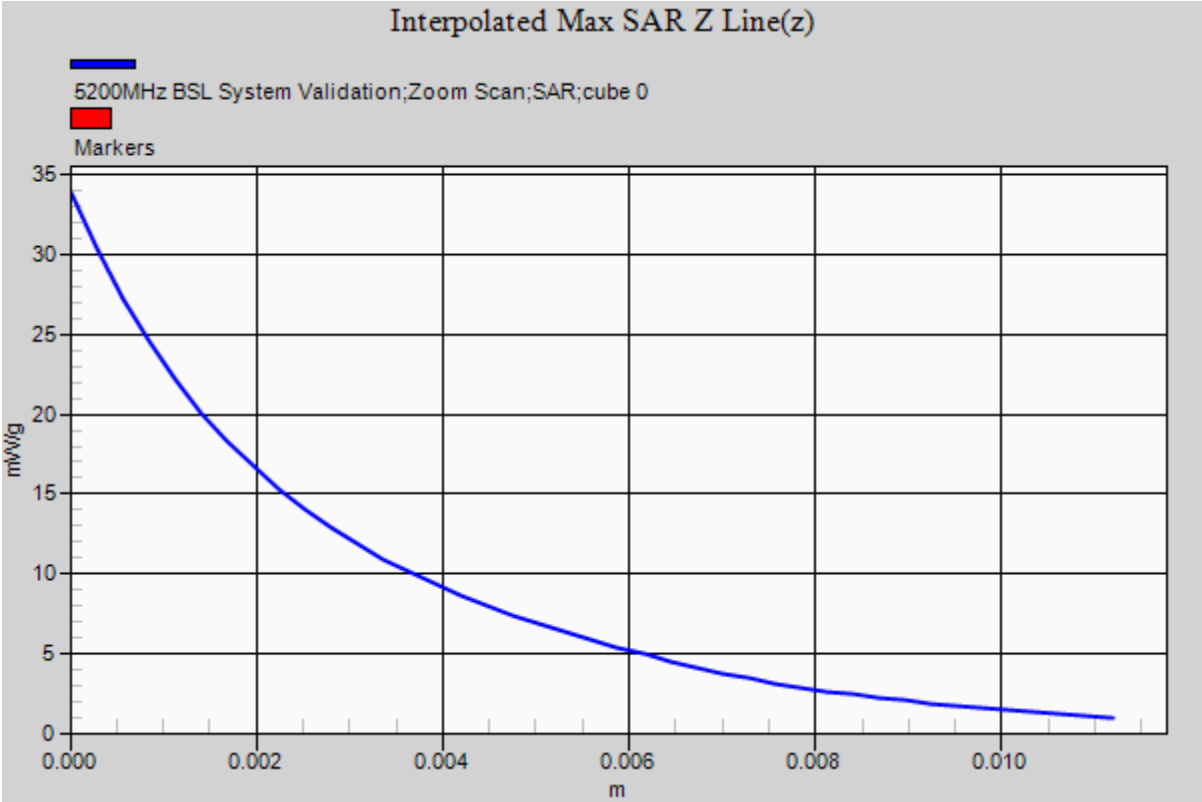
- Probe: EX3DV4 - SN3812; ConvF(4.6, 4.6, 4.6); Calibrated: 1/24/2014;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), z = 31.0
- Electronics: DAE4 Sn1287; Calibrated: 10/4/2011
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: 1146
- DASY52 52.8.1(838); SEMCAD X 14.6.5(6469)

Configuration/5200MHz BSL System Validation/Zoom Scan (9x9x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 51.334 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 33.927 mW/g
SAR(1 g) = 7.9 mW/g; SAR(10 g) = n.a. (SAR corrected for target medium)

Maximum value of SAR (measured) = 20.0 mW/g

Configuration/5200MHz BSL System Validation/Area Scan (41x51x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 20.6 mW/g


mW/g
19.995
16.002
12.008
8.015
4.021
0.028
y
x


Interpolated Max SAR Z Line(z)
5200MHz BSL System Validation;Zoom Scan;SAR;cube 0
Markers
mW/g
35
30
25
20
15
10
5
0
0.000
0.002
0.004
0.006
0.008
0.010
m

Plot #20

Date/Time: 3/7/2014 11:07:21 AM

Communication System: CW; Communication System Band: D5GHz (5000.0 - 6000.0 MHz); Frequency: 5200 MHz;Communication System PAR: 0 dB; PMF: 1
Medium parameters used: f = 5200 MHz; σ = 5.391 mho/m; ε_r = 46.928; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

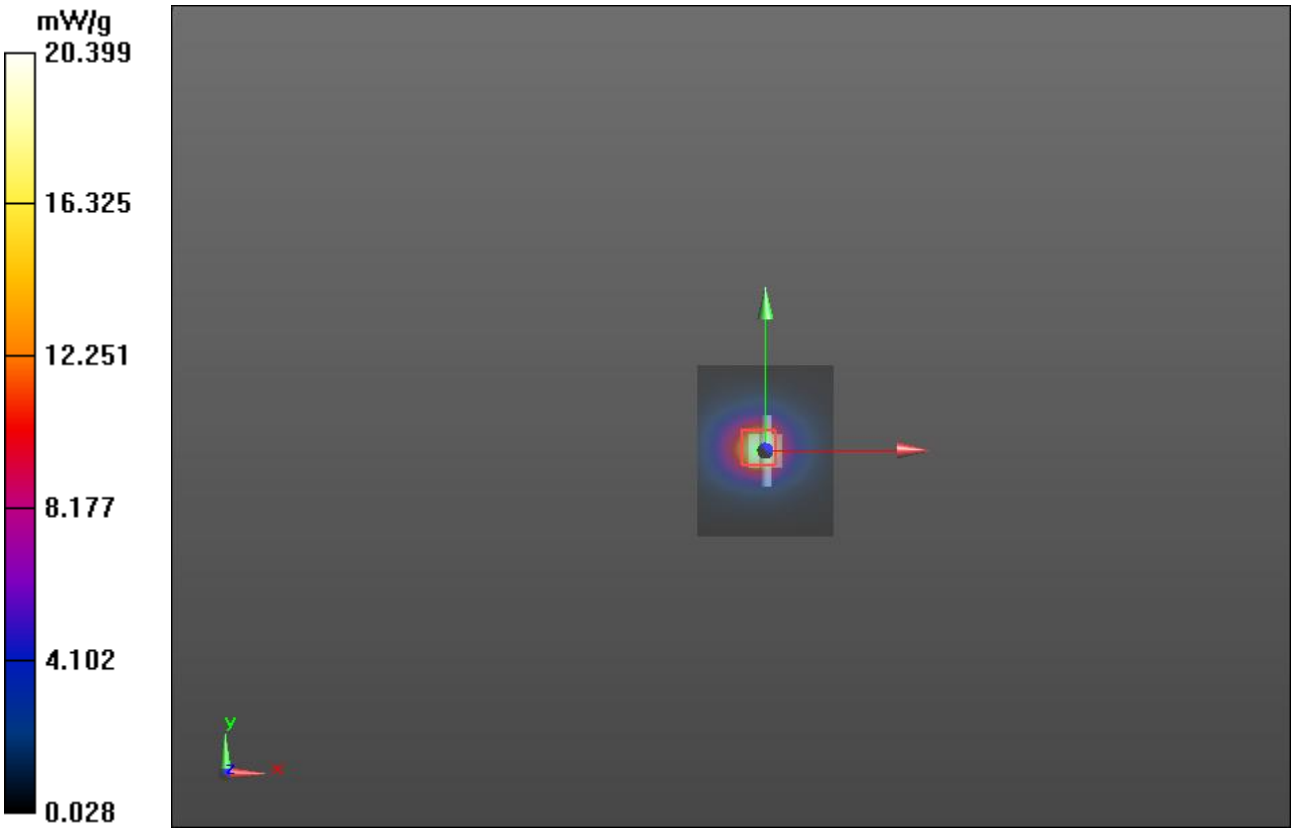
DASY Configuration:

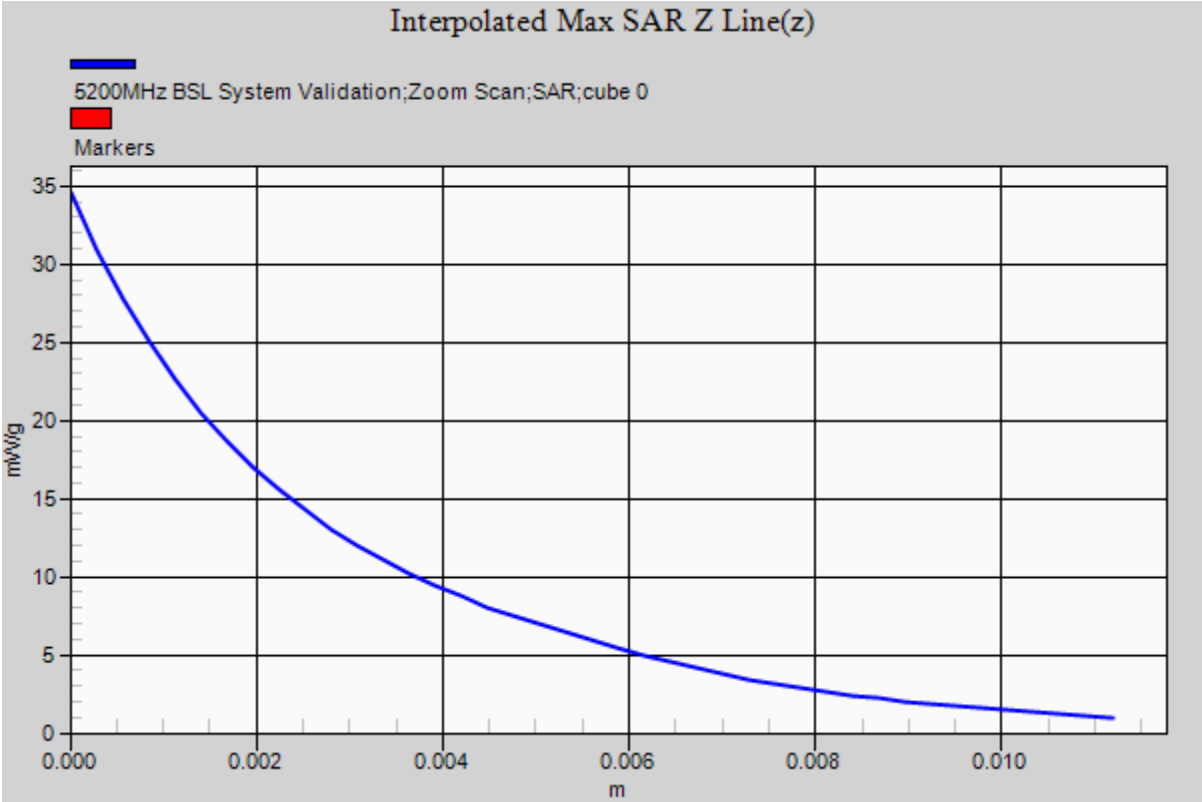
- Probe: EX3DV4 - SN3812; ConvF(4.6, 4.6, 4.6); Calibrated: 1/24/2014;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), z = 31.0
- Electronics: DAE4 Sn1287; Calibrated: 10/4/2011
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: 1146
- DASY52 52.8.1(838); SEMCAD X 14.6.5(6469)

Configuration/5200MHz BSL System Validation/Zoom Scan (9x9x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 51.936 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 34.604 mW/g
SAR(1 g) = 7.94 mW/g; SAR(10 g) = n.a. (SAR corrected for target medium)

Maximum value of SAR (measured) = 20.4 mW/g

Configuration/5200MHz BSL System Validation/Area Scan (41x51x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 21.3 mW/g


mW/g
20.399
16.325
12.251
8.177
4.102
0.028
y
x


Interpolated Max SAR Z Line(z)
5200MHz BSL System Validation;Zoom Scan;SAR;cube 0
Markers
mW/g
35
30
25
20
15
10
5
0
0.000
0.002
0.004
0.006
0.008
0.010
m

Plot #21

Date/Time: 3/10/2014 10:50:21 AM

Communication System: CW; Communication System Band: D5GHz (5000.0 - 6000.0 MHz); Frequency: 5800 MHz;Communication System PAR: 0 dB; PMF: 1
Medium parameters used: f = 5800 MHz; σ = 6.233 mho/m; ε_r = 46.72; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

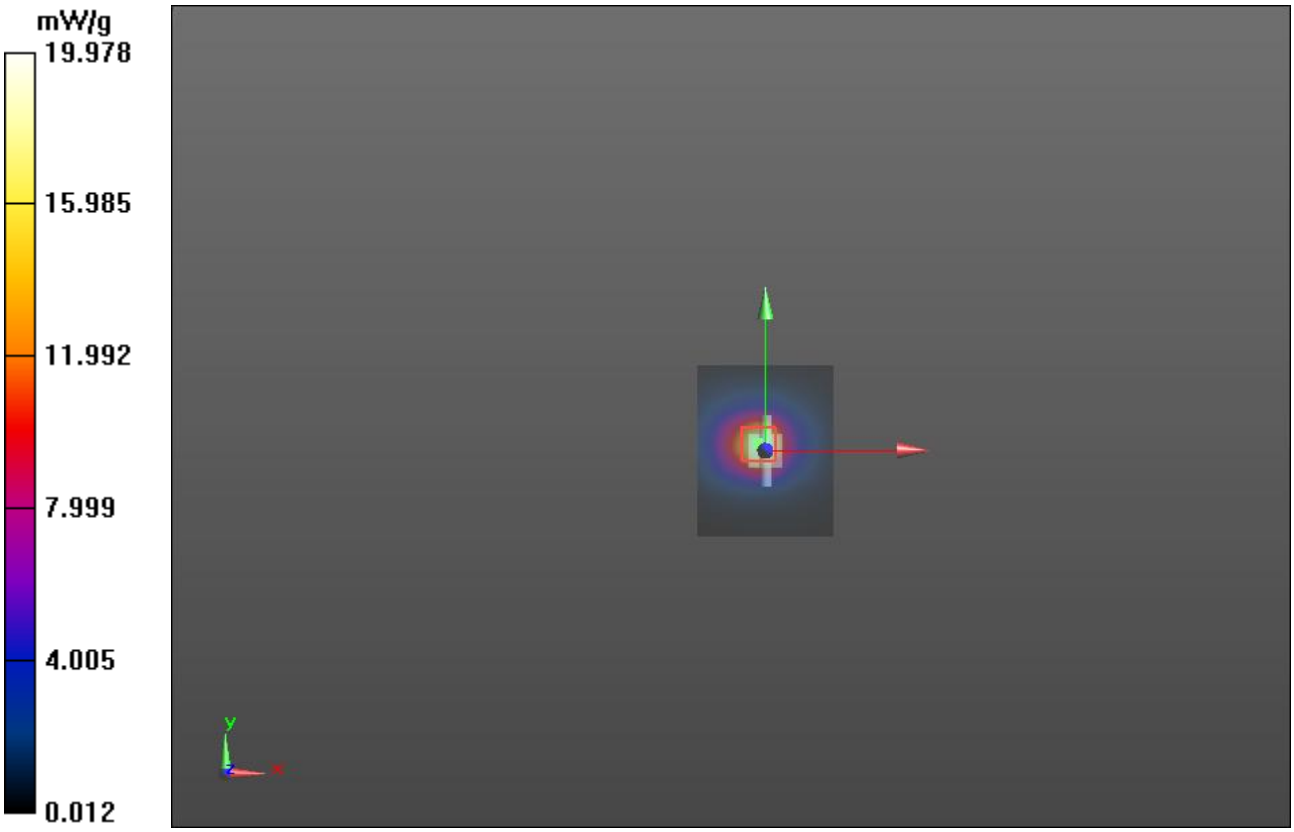
DASY Configuration:

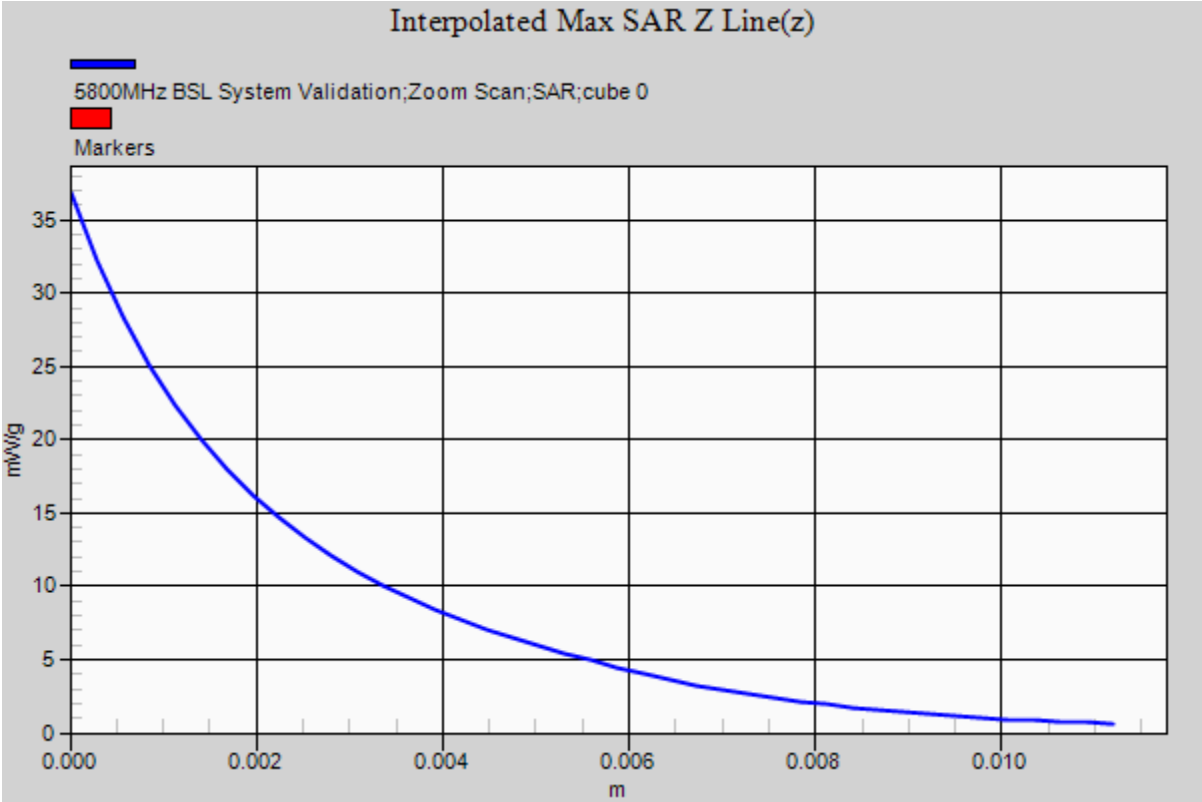
- Probe: EX3DV4 - SN3812; ConvF(4.23, 4.23, 4.23); Calibrated: 1/24/2014;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), z = 31.0
- Electronics: DAE4 Sn1287; Calibrated: 10/4/2011
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: 1146
- DASY52 52.8.1(838); SEMCAD X 14.6.5(6469)

Configuration/5800MHz BSL System Validation/Zoom Scan (9x9x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 46.510 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 36.880 mW/g
SAR(1 g) = 7.55 mW/g; SAR(10 g) = n.a. (SAR corrected for target medium)

Maximum value of SAR (measured) = 20.0 mW/g

Configuration/5800MHz BSL System Validation/Area Scan (41x51x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 19.2 mW/g


mW/g
19.978
15.985
11.992
7.999
4.005
0.012
y
x


Interpolated Max SAR Z Line(z)
5800MHz BSL System Validation;Zoom Scan;SAR;cube 0
Markers
mW/g
35
30
25
20
15
10
5
0
0.000
0.002
0.004
0.006
0.008
0.010
m

Plot #23

Date/Time: 2/6/2014 8:47:52 AM

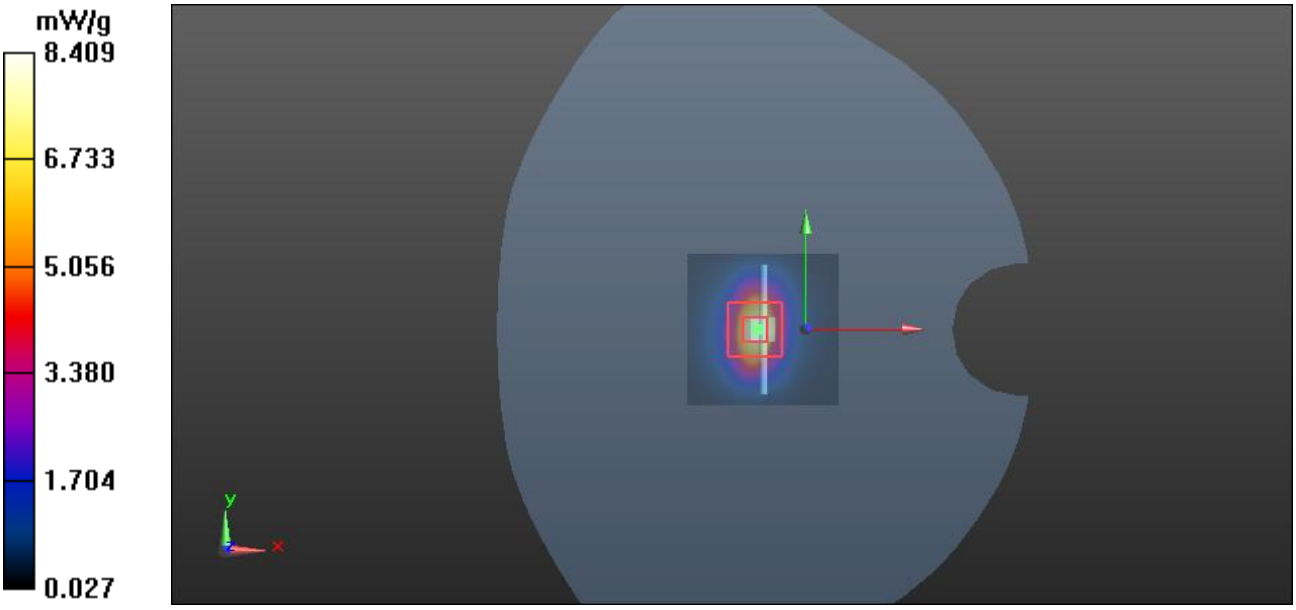
Communication System: CW; Communication System Band: D2450 (2450.0 MHz); Frequency: 2450 MHz;Communication System PAR: 0 dB; PMF: 1
Medium parameters used: f = 2450 MHz; σ = 2.062 mho/m; ε_r = 50.085; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

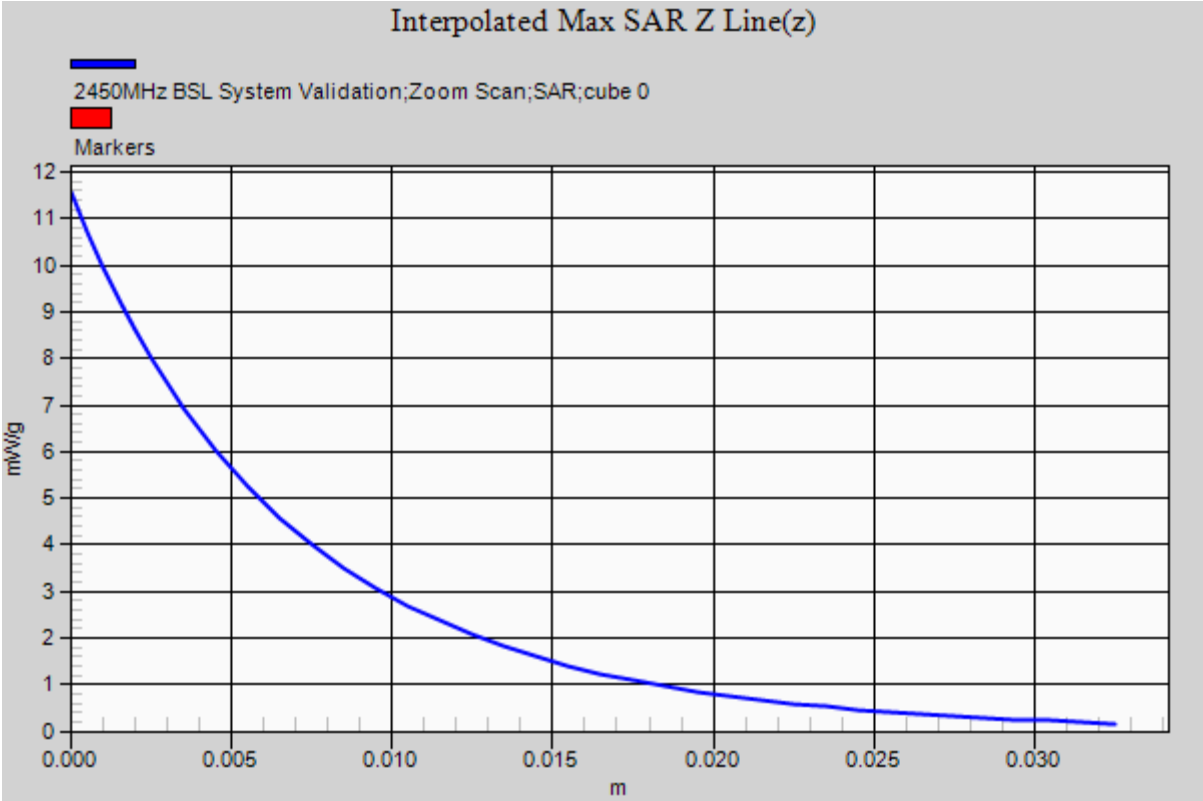
DASY Configuration:

- Probe: EX3DV4 - SN3812; ConvF(7.01, 7.01, 7.01); Calibrated: 12/12/2012;
- Sensor-Surface: 2.5mm (Mechanical Surface Detection), z = 1.0, 16.0
- Electronics: DAE4 Sn1287; Calibrated: 10/4/2011
- Phantom: SAM with CRP v5.0; Type: QD000P40CD; Serial: TP:1665
- DASY52 52.8.1(838); SEMCAD X 14.6.5(6469)

Configuration/2450MHz BSL System Validation/Area Scan (51x51x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 8.41 mW/g

Configuration/2450MHz BSL System Validation/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 60.145 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 11.576 mW/g
SAR(1 g) = 5.39 mW/g; SAR(10 g) = 2.53 mW/g (SAR corrected for target medium)
Maximum value of SAR (measured) = 7.99 mW/g




Interpolated Max SAR Z Line(z)
2450MHz BSL System Validation;Zoom Scan;SAR;cube 0
Markers
mW/g
12
11
10
9
8
7
6
5
4
3
2
1
0
0.000
0.005
0.010
0.015
0.020
0.025
0.030
m

Plot #24

Date/Time: 2/10/2014 10:05:16 AM

2450MHz BSL System Check 10Feb2014

DUT: Dipole 2450 MHz D2450V2; Type: D2450V2; Serial: D2450V2 - SN:890

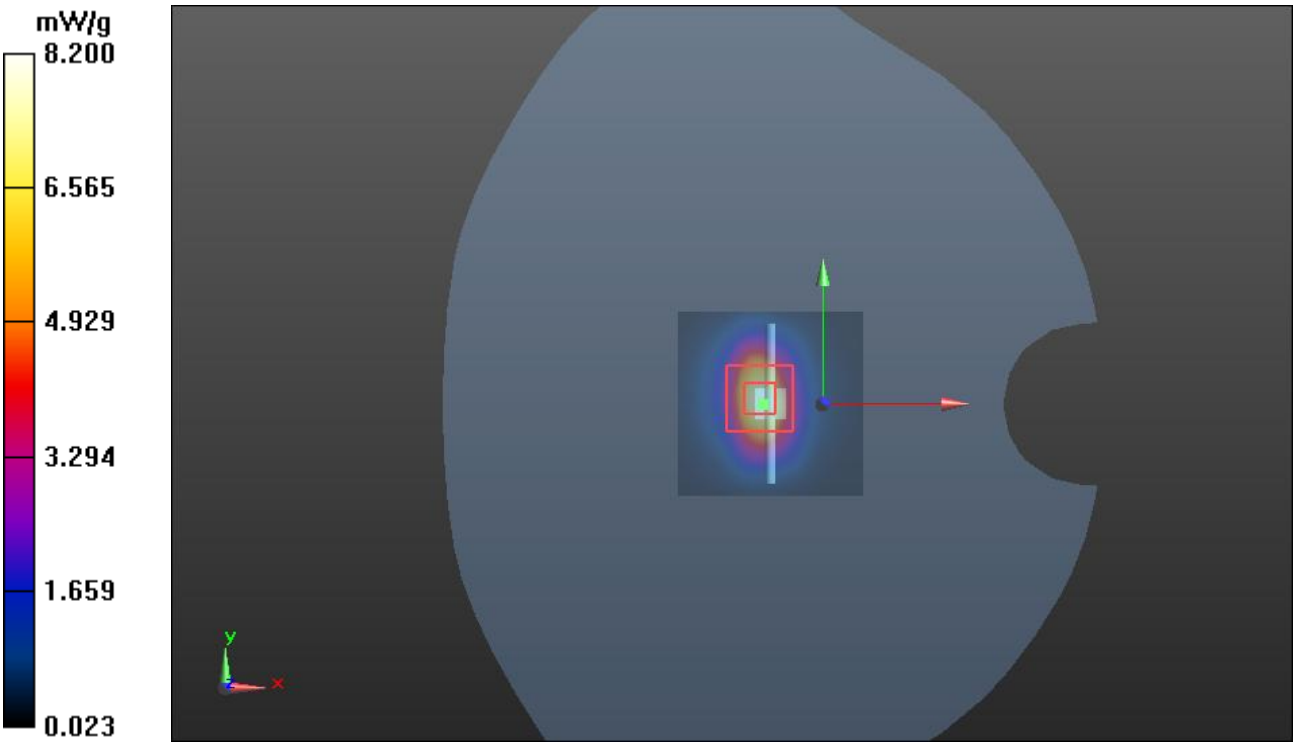
Communication System: CW; Communication System Band: D2450 (2450.0 MHz); Frequency: 2450 MHz;Communication System PAR: 0 dB; PMF: 1
Medium parameters used: f = 2450 MHz; σ = 2.022 mho/m; ε_r = 49.289; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

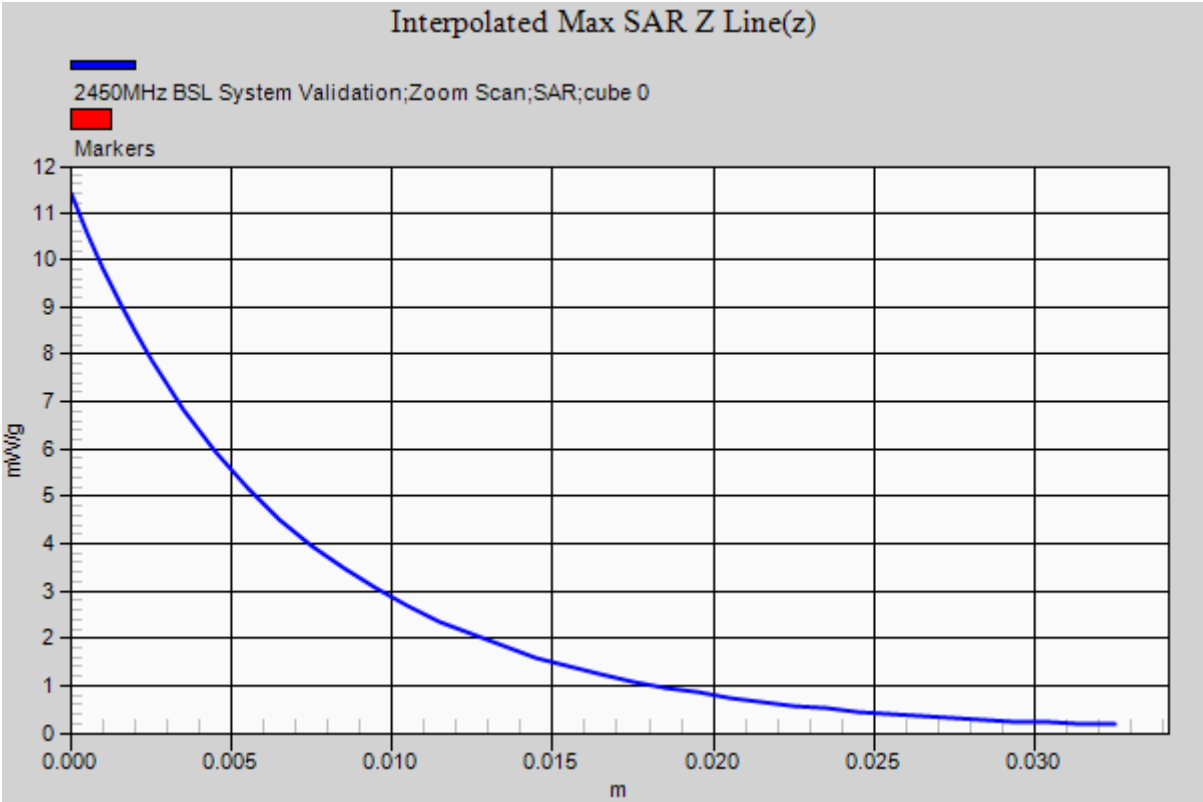
DASY Configuration:

- Probe: EX3DV4 - SN3812; ConvF(7.01, 7.01, 7.01); Calibrated: 12/12/2012;
- Sensor-Surface: 2.5mm (Mechanical Surface Detection), z = 1.0, 16.0
- Electronics: DAE4 Sn1287; Calibrated: 10/4/2011
- Phantom: SAM with CRP v5.0; Type: QD000P40CD; Serial: TP:1665
- DASY52 52.8.1(838); SEMCAD X 14.6.5(6469)

Configuration/2450MHz BSL System Validation/Area Scan (51x51x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 8.20 mW/g

Configuration/2450MHz BSL System Validation/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 60.012 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 11.408 mW/g
SAR(1 g) = 5.36 mW/g; SAR(10 g) = 2.51 mW/g (SAR corrected for target medium)
Maximum value of SAR (measured) = 7.83 mW/g


mW/g
8.200
6.565
4.929
3.294
1.659
0.023
y
x


Interpolated Max SAR Z Line(z)
2450MHz BSL System Validation;Zoom Scan;SAR;cube 0
Markers
mW/g
0
1
2
3
4
5
6
7
8
9
10
11
12
0.000
0.005
0.010
0.015
0.020
0.025
0.030
m

13 REVISION HISTORY

Revision Level	Description of changes	Revision Date
0	Initial release	15 August 2014
1	Addition of 5GHz dipole information to Test Equipment. Addition of 2450Body data to System Verification.	15 October 2014
2	Removed the data for 5GHz bands that have been disabled. Clarified simultaneous operation. Clarifed error compensation algorithm. Removed reference to old KDB.	30 October 2014
3	Added note regarding Bluetooth and simultaneous	31 October 2014
4	Corrected table on cover page.	31 October 2014