



TEST REPORT

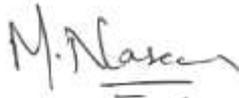
Test of: SO-04E

To: OET Bulletin 65 Supplement C: (2001-01)
IEEE1528: 2003

FCC ID: PY7PM-0320

Test Report Serial No:
UL-SAR-RP91945JD02A V5.0

Version 5.0 supersedes all previous versions

This Test Report Is Issued Under The Authority Of Richelieu Quoi, SAR Technology Consultant:	 (APPROVED SIGNATORY)
Checked By: Naseer Mirza	 (APPROVED SIGNATORY)
Issue Date:	03 May 2013
Test Dates:	07 February 2013 to 01 March 2013

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1. Customer Information

Company Name:	Sony Mobile Communications AB
Address:	Nya Vattentorget 22188 Lund Sweden

2. Summary of Test Results

Test Name	Specification Reference	Result
Specific Absorption Rate - GSM 850	OET Bulletin 65 Supplement C: (2001-01)	
Specific Absorption Rate - PCS 1900	OET Bulletin 65 Supplement C: (2001-01)	
Specific Absorption Rate - UMTS FDD 5	OET Bulletin 65 Supplement C: (2001-01)	
Specific Absorption Rate - Wi-Fi 802.11b/g/n 2.4 GHz	OET Bulletin 65 Supplement C: (2001-01)	
Specific Absorption Rate- Wi-Fi 802.11a /n 5.0 GHz	OET Bulletin 65 Supplement C: (2001-01)	

Key to Results = Complied = Did not comply

2.1. Highest Reported SAR

Individual Transmitter Evaluation per Band:					
Exposure Configuration	Technology Band	Highest Reported 1g -SAR (W/kg)	Equipment Class	Max Rated Source base Avg Power + Max Tolerance [dBm]	Highest Reported 1g-SAR (W/kg)
HEAD (Separation Distance 0mm)	GSM850	1.037	PCE	24.5	1.048
	PCS1900	0.657		21.5	
	UMTS FDD 5	1.048		24.5	
	WLAN 2.4 GHz	0.385	DTS	15.0	0.385
	WLAN 5.8 GHz	0.262		10.7	
	WLAN 5.2/5.3/5.6 GHz	0.224	NII	10.7	0.224
HOTSPOT (Separation Distance 10mm)	GSM850	1.424	PCE	26.5	1.424
	PCS1900	1.107		20.0	
	UMTS FDD 5	1.250		24.5	
	WLAN 2.4 GHz	0.183	DTS	15.0	0.183
	WLAN 5.8 GHz	-		-	
	WLAN 5.2/5.3/5.6 GHz	-	NII	-	-
BODY-WORN (Separation Distance 15mm)	GSM850	0.836	PCE	24.5	0.965
	PCS1900	0.553		21.5	
	UMTS FDD 5	0.965		24.5	
	WLAN 2.4 GHz	0.065	DTS	15.0	0.065
	WLAN 5.8 GHz	-		-	
	WLAN 5.2/5.3/5.6 GHz	-	NII	-	-

2.2. Highest Reported SAR (Continued):

Simultaneous transmission SAR test exclusion is determined for each operating configuration and exposure condition according to the reported standalone SAR of each applicable simultaneous transmitting antenna.

Simultaneous Transmitter Evaluation:						
Exposure Configuration	Technology Band	Highest Reported 1g SAR (W/kg)	Equipment Class	Max Rated Source base Avg Power + Max Tolerance [dBm]	Highest Reported Sum-SAR 1g-SAR (W/kg)	SPLSR Ratio
HEAD (Separation Distance 0mm)	GSM850	0.975	PCE	24.5	1.347	N/A
	WLAN 2.4GHz	0.372	DTS	15.0		
HOTSPOT (Separation Distance 10mm)	GSM850	1.424	PCE	26.5	1.512	N/A
	WLAN 2.4GHz	0.088	DTS	15.0		
	GSM850	1.424	PCE	26.5	1.608*	0.015
	Bluetooth 2.4 GHz	0.184	DSS	9.5		
BODY-WORN (Separation Distance 15mm)	UMTS FDD 5	0.965	PCE	24.5	1.030	N/A
	WLAN 2.4GHz	0.065	DTS	15.0		
	UMTS FDD 5	0.965	PCE	24.5	1.088	N/A
	Bluetooth 2.4 GHz	0.123	DSS	9.5		

Note(s):

- As per FCC KDB 447498 D01, the individual test positions of each exposure conditions were considered separately for the sum of 1g reported SAR Simultaneous Transmission test exclusion. See section 7.4 for Worst case simultaneous transmission analysis.
- See section 7.4 for calculations - As per FCC KDB publication 447498, for cases where sum of WWAN and WLAN (or WPAN) exceed 1.6W/kg, the SAR to peak location separation ratio distance is calculated as shown below
 - SAR peak location separation ratio (SPLSR) for each antenna pair in each simultaneous transmission configuration is given by $(SAR_1 + SAR_2)^{1.5} / R_1 \leq 0.04$ for 1-g, where R_1 is the antenna separation distance in mm.
 - The SPLSR value is below the threshold ratio of 0.04 as indicated in the table above.

2.3. SAR measurement variability and measurement uncertainty analysis:

Exposure Configuration	Technology Band	Measured 1g -SAR (W/Kg)	Equipment Class	Max Meas. Source base Avg Power [dBm]	Ratio of Largest to Smallest SAR Measured
HOTSPOT (Separation Distance 10mm)	GSM850 (Original)	1.240	PCE	25.9	1.02
	GSM850 (Repeated)	1.210			
	GSM1900 (Original)	1.010		19.6	1.07
	GSM1900 (Repeated)	0.942			
	UMTS FDD 5 (Original)	0.982		23.7	1.03
	UMTS FDD 5 (Repeated)	0.957			

Note(s):

1. The following step below were followed as per KDB publication 865664 D01:

1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg; steps 2) through 4) do not apply.

2) When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.

3) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).

4) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

2.4. Location of Tests

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

2.5.Nominal and Maximum Output power:

Note: The following source based average rated powers for GSM/GPRS/EDGE are without consideration of uplink time slot.

Bands	Speech (Voice Mode) (Power Back-off Disabled)	
	Target (dBm)	Tolerance ± (dB)
GSM850	33.0	-1.0 ~ +0.5
PCS1900	30.0	-1.0 ~ +0.5

Bands	Speech (Voice Mode) (Power Back-off Enabled)	
	Target (dBm)	Tolerance ± (dB)
GSM850	33.0	-1.0 ~ +0.5
PCS1900	28.0	-1.0 ~ +0.5

Bands	GPRS (Power Back-off Disabled)							
	Tx Slot 1		Tx Slot 2		Tx Slot 3		Tx Slot 4	
	Target (dBm)	Tolerance ± (dB)	Target (dBm)	Tolerance ± (dB)	Target (dBm)	Tolerance ± (dB)	Target (dBm)	Tolerance ± (dB)
GSM850	33.0	-1.5 ~ +0.5	31.0	-1.5 ~ +0.5	30.0	-1.5 ~ +0.5	29.0	-1.5 ~ +0.5
PCS1900	30.0	-1.5 ~ +0.5	27.0	-1.5 ~ +0.5	25.0	-1.5 ~ +0.5	24.0	-1.5 ~ +0.5

Bands	GPRS (Power Back-off Enabled)							
	Tx Slot 1		Tx Slot 2		Tx Slot 3		Tx Slot 4	
	Target (dBm)	Tolerance ± (dB)	Target (dBm)	Tolerance ± (dB)	Target (dBm)	Tolerance ± (dB)	Target (dBm)	Tolerance ± (dB)
GSM850	33.0	-1.5 ~ +0.5	31.0	-1.5 ~ +0.5	30.0	-1.5 ~ +0.5	29.0	-1.5 ~ +0.5
PCS1900	28.0	-1.5 ~ +0.5	25.5	-1.5 ~ +0.5	22.0	-1.5 ~ +0.5	21.0	-1.5 ~ +0.5

Bands	EDGE GMSK (MCS1-4) (Power Back-off Disabled)							
	Tx Slot 1		Tx Slot 2		Tx Slot 3		Tx Slot 4	
	Target (dBm)	Tolerance ± (dB)	Target (dBm)	Tolerance ± (dB)	Target (dBm)	Tolerance ± (dB)	Target (dBm)	Tolerance ± (dB)
GSM850	33.0	-1.5 ~ +0.5	31.0	-1.5 ~ +0.5	30.0	-1.5 ~ +0.5	29.0	-1.5 ~ +0.5
PCS1900	30.0	-1.5 ~ +0.5	27.0	-1.5 ~ +0.5	25.0	-1.5 ~ +0.5	24.0	-1.5 ~ +0.5

Bands	EDGE GMSK (MCS1-4) (Power Back-off Enabled)							
	Tx Slot 1		Tx Slot 2		Tx Slot 3		Tx Slot 4	
	Target (dBm)	Tolerance ± (dB)	Target (dBm)	Tolerance ± (dB)	Target (dBm)	Tolerance ± (dB)	Target (dBm)	Tolerance ± (dB)
GSM850	33.0	-1.5 ~ +0.5	31.0	-1.5 ~ +0.5	30.0	-1.5 ~ +0.5	29.0	-1.5 ~ +0.5
PCS1900	30.0	-1.5 ~ +0.5	27.0	-1.5 ~ +0.5	23.0	-1.5 ~ +0.5	22.0	-1.5 ~ +0.5

Nominal and Maximum Output power (Continued):

Bands	EDGE 8PSK (MCS5-9) (Power Back-off Disabled)							
	Tx Slot 1		Tx Slot 2		Tx Slot 3		Tx Slot 4	
	Target (dBm)	Tolerance ± (dB)	Target (dBm)	Tolerance ± (dB)	Target (dBm)	Tolerance ± (dB)	Target (dBm)	Tolerance ± (dB)
GSM850	27.0	-1.5 ~ +1.0	25.0	-1.5 ~ +1.0	24.0	-1.5 ~ +1.0	23.0	-1.5 ~ +1.0
PCS1900	26.0	-1.5 ~ +1.0	24.5	-1.5 ~ +1.0	23.5	-1.5 ~ +1.0	22.5	-1.5 ~ +1.0

Bands	EDGE 8PSK (MCS5-9) (Power Back-off Disabled)							
	Tx Slot 1		Tx Slot 2		Tx Slot 3		Tx Slot 4	
	Target (dBm)	Tolerance ± (dB)	Target (dBm)	Tolerance ± (dB)	Target (dBm)	Tolerance ± (dB)	Target (dBm)	Tolerance ± (dB)
GSM850	27.0	-1.5 ~ +1.0	25.0	-1.5 ~ +1.0	24.0	-1.5 ~ +1.0	23.0	-1.5 ~ +1.0
PCS1900	26.0	-1.5 ~ +1.0	24.5	-1.5 ~ +1.0	21.5	-1.5 ~ +1.0	20.5	-1.5 ~ +1.0

Bands (Power Back-off Disabled)	CS		HS	
	Target (dBm)	Tolerance ± (dB)	Target (dBm)	Tolerance ± (dB)
UMTS FDD 5	24.0	-1.0 ~ +0.5	24.0	-1.0 ~ +0.5

	WLAN Modes (Power Back-off Disabled)					
	2.4 GHz 802.11b		2.4 GHz 802.11g		2.4 GHz 802.11n	
	1 Mbps	11 Mbps	6 Mbps	54 Mbps	6.5 Mbps	65 Mbps
Max Power {Target + Upper Tolerance} (dBm)	15.0	15.0	11.5	11.5	10.5	10.5

WLAN Modes (Power Back-off Disabled)								
5.0 GHz 802.11a								
	5.2 GHz 802.11a		5.3 GHz 802.11a		5.6 GHz 802.11a		5.8 GHz 802.11a	
	6 Mbps	54 Mbps						
Max Power {Target + Upper Tolerance} (dBm)	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7

WLAN Modes (Power Back-off Disabled)								
5.0 GHz 802.11n HT20								
	5.2 GHz 802.11n		5.3 GHz 802.11n		5.6 GHz 802.11n		5.8 GHz 802.11n	
	6.5 Mbps	65 Mbps						
Max Power {Target + Upper Tolerance} (dBm)	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7

Nominal and Maximum Output power (Continued):

WLAN Modes (Power Back-off Disabled)								
5.0 GHz 802.11n HT40								
	5.2 GHz 802.11n		5.3 GHz 802.11n		5.6 GHz 802.11n		5.8 GHz 802.11n	
	13.5 Mbps	135 Mbps						
Max Power {Target + Upper Tolerance} (dBm)	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7

Band	Max Power {Target (dBm) + Upper Tolerance (dB)}
Bluetooth	9.5

Note:

1. As per KDB865664 D02 SAR Reporting v01, 2.1.4(a), the nominal and maximum average source based rated power, declared by manufacturer are shown in the above tables.
2. These are specified maximum allowed average power for all the wireless modes and frequency bands supported.

3. Test Specification, Methods and Procedures

3.1. Test Specification

Reference:	OET Bulletin 65 Supplement C: (2001-01)
Title:	Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields.
Purpose of Test:	To determine whether the equipment met the basic restrictions as defined in OET Bulletin 65 Supplement C: (2001-01) using the SAR averaging method as described in the test specification above.

The Equipment Under Test complied with the Specific Absorption Rate for general population/uncontrolled exposure limit of 1.6 W/kg as specified in FCC 47 CFR part 2 (2.1093) and ANSI C95.1-1992 and has been tested in accordance with the reference documents in section 3.2 of this report.

3.2. Methods and Procedures Reference Documentation

The methods and procedures used were as detailed in:

Federal Communications Commission, "Evaluating compliance with FCC Guidelines for human exposure to radio frequency electromagnetic fields", OET Bulletin 65 Supplement C, FCC, Washington, D.C, 20554, 2001.

Thomas Schmid, Oliver Egger and Neils Kuster, "Automated E-field scanning system for dosimetric assessments", IEEE Transaction on microwave theory and techniques, Vol. 44, pp. 105-113, January 1996.

Neils Kuster, Ralph Kastle and Thomas Schmid, "Dosimetric evaluation of mobile communications equipment with know precision", IEICE Transactions of communications, Vol. E80-B, No.5, pp. 645-652, May 1997.

IEEE 1528: 2003

IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques

FCC KDB Publication:

KDB 248227 D01 "SAR measurements for 802.11a/b/g v01r02"

KDB 447498 D01 General RF Exposure Guidance v05

KDB 648474 D04 SAR Handsets Multi Xmitter and Ant v01

KDB 941225 D01 SAR test for 3G devices v02

KDB 941225 D03 " SAR Test Reduction GSM/GPRS/EDGE v01"

KDB 941225 D06 "Hot Spot SAR v01"

KDB 865664 D01 SAR measurement 100 MHz to 6 GHz v01

KDB 865664 D02 SAR Reporting v01

3.3. Definition of Measurement Equipment

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

4. Equipment Under Test (EUT)

4.1. Identification of Equipment Under Test (EUT)

Description:	Mobile Handset
Brand Name:	Sony
Model Name or Number:	SO-04E
Type Number:	PM-0320-BV
Serial Number:	CB5A1NUBQ2
IMEI Number:	00440254-041326-1
Hardware Version Number:	AP1
Software Version Number:	10.2.D.0.102
Hardware Revision of GSM Module:	None Stated
Software Revision of GSM Module:	None Stated
FCC ID Number:	PY7PM-0320
Country of Manufacture:	China
Date of Receipt:	05 February 2013

Note(s):

This sample was used to perform WWAN SAR evaluation measurements on bands GSM850, PCS1900, UMTS FDD 5 only. The sample supports simultaneous transmission with the WWAN and WLAN. Wireless Personal Hotspot is also supported and was evaluated as per KDB 941225 D06 "Hot Spot SAR v01"

Description:	Mobile Handset
Brand Name:	Sony
Model Name or Number:	SO-04E
Type Number:	PM-0320-BV
Serial Number:	CB5A1NUBKH
IMEI Number:	00440254-041315-4
Hardware Version Number:	AP1
Software Version Number:	atp_dogo_dcm_0_0_36_0_d
Hardware Revision of GSM Module:	None Stated
Software Revision of GSM Module:	None Stated
FCC ID Number:	PY7PM-0320
Country of Manufacture:	China
Date of Receipt:	05 February 2013

Note(s):

This sample was used to perform WLAN SAR evaluation measurements on bands WLAN 2.4GHz Head and WLAN 5GHz Head only. The sample supports simultaneous transmission with the WWAN and WLAN. Wireless Personal Hotspot is also supported and was evaluated as per KDB 941225 D06 "Hot Spot SAR v01"

Identification of Equipment Under Test (EUT) (Continued):

Description:	Mobile Handset
Brand Name:	Sony
Model Name or Number:	SO-04E
Type Number:	PM-0320-BV
Serial Number:	CB5A1NUBJ3
IMEI Number:	00440254-041319-6
Hardware Version Number:	AP1
Software Version Number:	atp_dogo_dcm_0_0_36_0_d
Hardware Revision of GSM Module:	None Stated
Software Revision of GSM Module:	None Stated
FCC ID Number:	PY7PM-0320
Country of Manufacture:	China
Date of Receipt:	05 February 2013

Note(s):

This sample was used to perform WLAN SAR evaluation measurements on bands WLAN 2.4GHz Body only. The sample supports simultaneous transmission with the WWAN and WLAN. Wireless Personal Hotspot is also supported and was evaluated as per KDB 941225 D06 "Hot Spot SAR v01"

Description:	Mobile Handset
Brand Name:	Sony
Model Name or Number:	SO-04E
Type Number:	PM-0320-BV
Serial Number:	CB5A1NUBHR
IMEI Number:	00440254-041454-1
Hardware Version Number:	AP1
Software Version Number:	10.2.D.0.102
Hardware Revision of GSM Module:	None Stated
Software Revision of GSM Module:	None Stated
FCC ID Number:	PY7PM-0320
Country of Manufacture:	China
Date of Receipt:	05 February 2013

Note(s):

This sample was used to perform WWAN conducted power measurements only. The sample supports simultaneous transmission with the WWAN and WLAN. Wireless Personal Hotspot is also supported and was evaluated as per KDB 941225 D06 "Hot Spot SAR v01"

Identification of Equipment Under Test (EUT) (Continued):

Description:	Mobile Handset
Brand Name:	Sony
Model Name or Number:	SO-04E
Type Number:	PM-0320-BV
Serial Number:	CB5A1NUBK7
IMEI Number:	00440254-041456-6
Hardware Version Number:	AP1
Software Version Number:	atp_dogo_dcm_0_0_36_0_d
Hardware Revision of GSM Module:	None Stated
Software Revision of GSM Module:	None Stated
FCC ID Number:	PY7PM-0320
Country of Manufacture:	China
Date of Receipt:	05 February 2013

Note(s):

This sample was used to perform WLAN conducted power measurements only. The sample supports simultaneous transmission with the WWAN and WLAN. Wireless Personal Hotspot is also supported and was evaluated as per KDB 941225 D06 "Hot Spot SAR v01"

'Auto RF Power Back-off' mode facility is available on 'Hotspot Mode Configuration of PCS1900 band only. There is no power back-off to the WLAN 2.4 GHz or WLAN 5.0 GHz.

4.2. Description of EUT

The Equipment Under Test is a Smart Phone with GSM 2G Quad Band, 3G Quad band, LTE Tri Band and Wi-Fi bands. The EUT has GPRS Class 12 / EDGE Class 12, UMTS FDD 1, 5, 6, 19 With HSPA (with HSDPA Category 10 and HSUPA Category 6) , LTE Band 1, 19, 21, WLAN 802.11 a/b/g/n, Bluetooth Class 1, Personal hotspot mode with 'Auto RF Power Back-Off' and RFID mode capabilities.

4.3. Modifications Incorporated in the EUT

EUT (IMEI: 00440254-041326-1) is used to perform GSM850, PCS1900, UMTS FDD 5 SAR measurements only.

EUT (IMEI: 00440254-041315-4) is used to perform WLAN 2.4GHz Head and WLAN 5GHz Head SAR measurements only.

EUT (IMEI: 00440254-041319-6) is used to perform WLAN 2.4GHz Body SAR measurements only.

EUT (IMEI: 00440254-041454-1) is used to perform WWAN conducted power measurements only.

EUT (IMEI: 00440254-041456-6) is used to perform WLAN conducted power measurements

4.4. Accessories

The following accessories were supplied with the EUT during testing:

Description:	Battery
Brand Name:	Sony
Model Name or Number:	BA950
Serial Number:	002495
Cable Length and Type:	Not Applicable
Country of Manufacture:	China
Connected to Port	5 pin contact

Description:	Battery
Brand Name:	Sony
Model Name or Number:	BA950
Serial Number:	001542
Cable Length and Type:	Not Applicable
Country of Manufacture:	China
Connected to Port	5 pin contact

Description:	Personal Hands-Free Kit (PHF)
Brand Name:	Sony
Model Name or Number:	MH750
Serial Number:	12060C160061850
Cable Length and Type:	~1.2 m
Country of Manufacture:	None Stated
Connected to Port	3.5mm Audio jack and custom type

Accessories (Continued)

Description:	Memory Card
Brand Name:	None Stated (Generic)
Model Name or Number:	None Stated
Serial Number:	None Stated
Cable Length and Type:	Not Applicable
Country of Manufacture:	China
Connected to Port	Dedicated Micro SD Slot

Description:	Dummy Battery
Brand Name:	None Stated
Model Name or Number:	None Stated
Serial Number:	None Stated
Cable Length and Type:	~0.5m
Country of Manufacture:	None Stated
Connected to Port	5 pin contact

Note(s):

This Dummy Battery was only used to perform conducted power measurements.

4.5. Support Equipment

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

Description:	Wireless Communication Test Set
Brand Name:	Agilent
Model Name or Number:	8960 Series 10 (E5515C)
Serial Number:	GB46311280
Cable Length and Type:	~4.0m Utiflex Cable
Connected to Port:	RF (Input / Output) Air Link

Description:	Wireless Communication Test Set
Brand Name:	Agilent
Model Name or Number:	8960 Series 10 (E5515E)
Serial Number:	GB46200666
Cable Length and Type:	~4.0m Utiflex Cable
Connected to Port:	RF (Input / Output) Air Link

Description:	Radio Communication Analyzer
Brand Name:	Anritsu
Model Name or Number:	MT8820C
Serial Number:	6200938937
Cable Length and Type:	~4.0m Utiflex Cable
Connected to Port:	RF (Input / Output) Air Link

4.6. Additional Information Related to Testing

Equipment Category	GSM/GPRS850 PCS/GPRS1900 UMTS FDD 5 WiFi802.11 a/b/g/n			
Type of Unit	Portable Transceiver			
Intended Operating Environment:	Within GSM, UMTS, WiFi and <i>Bluetooth</i> Coverage			
Transmitter Maximum Output Power Characteristics:	GSM850	Communication Test Set was configured to allow the EUT to transmit at a maximum power using Power Control Level (PCL) setting of 5.		
	PCS1900	Communication Test Set was configured to allow the EUT to transmit at a maximum power using Power Control Level (PCL) setting of 0.		
	UMTS FDD 5	Communication Test Set configured to allow to EUT to transmit at a maximum power as per KDB 941225 D01.		
	2.4 GHz Wi-Fi 802.11b/g/n	Test Software was used to configure the EUT to transmit at a maximum power of up to 15.0dBm.		
	5.0 GHz Wi-Fi 802.11a/n (HT20 / HT40)	Test Software was used to configure the EUT to transmit at a maximum power of up to 10.2dBm.		
	<i>Bluetooth</i>	:= 8.91 mW or ~9.50 dBm		
Transmitter Frequency Range:	GSM850	824 to 849 MHz		
	PCS1900	1850 to 1910 MHz		
	UMTS FDD 5	826 to 847 MHz		
	2.4 GHz Wi-Fi 802.11b/g/n	2412 to 2462 MHz		
	5.0 GHz Wi-Fi 802.11a/n (HT20 / HT40)	5180 to 5825 MHz		
Transmitter Frequency Allocation of EUT When Under Test:	Bands	Channel Number	Channel Description	Frequency (MHz)
	GSM850	128	Low	824.2
		190	Middle	836.6
		251	High	848.8
	PCS1900	512	Low	1850.2
		661	Middle	1880.0
		810	High	1909.8
	UMTS FDD 5	4132	Low	826.4
		4183	Middle	836.6
		4233	High	846.6
	2.4 GHz Wi-Fi 802.11b/g/n	1	Low	2412.0
		6	Middle	2437.0
		11	High	2462.0

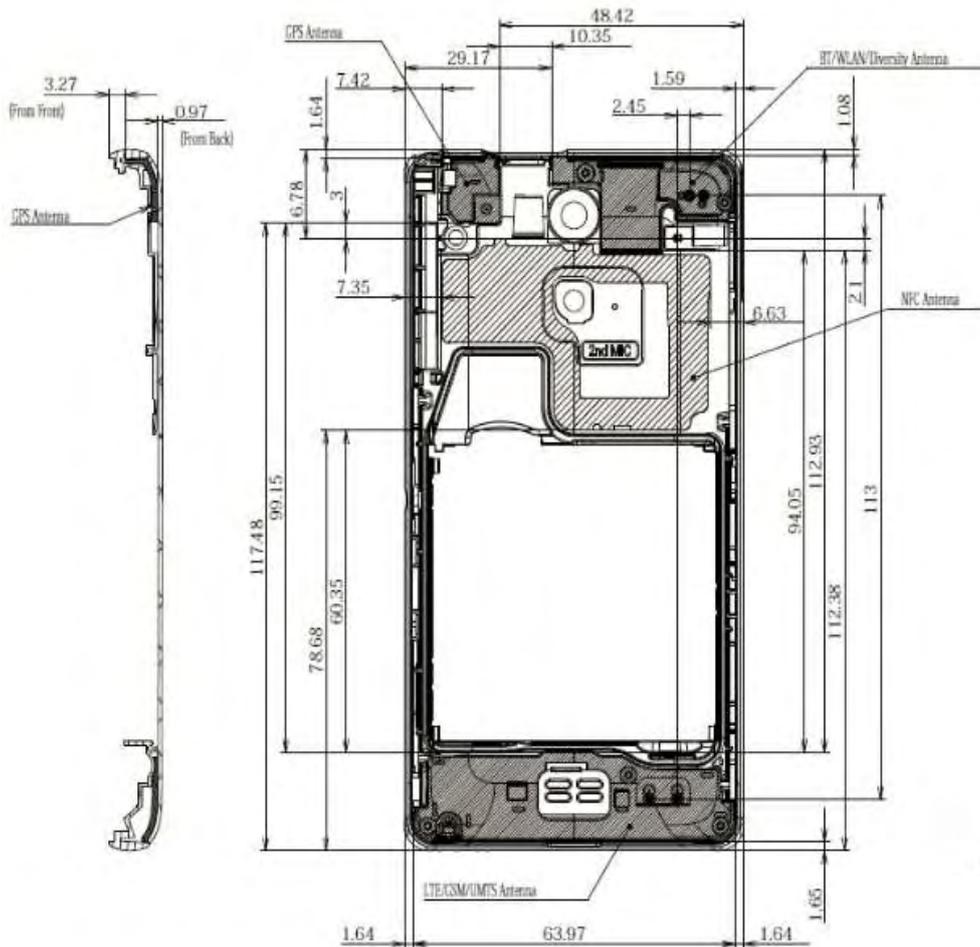
Additional Information Related to Testing (Continued)

Transmitter Frequency Allocation of EUT When Under Test:

Band: 5.0 GHz Wi-Fi 802.11a/n (HT20 / HT40)	
Channel Number	Frequency (MHz)
36	5180.0
38	5190.0
40	5200.0
44	5220.0
46	5230.0
48	5240.0
52	5260.0
54	5270.0
56	5280.0
60	5300.0
62	5310.0
64	5320.0
100	5500.0
102	5510.0
104	5520.0
108	5540.0
110	5550.0
112	5560.0
116	5580.0
118	5590.0
120	5600.0
124	5620.0
126	5630.0
128	5640.0
132	5660.0
134	5670.0
136	5680.0
140	5700.0
149	5745.0
151	5755.0
153	5765.0
157	5785.0
159	5795.0
161	5805.0
165	5825.0

Additional Information Related to Testing (Continued):

Modulation(s):	GMSK (GSM/ GPRS): 217 Hz QPSK(UMTS / HSDPA / HSUPA):0Hz DBPSK, BPSK, CCK (Wi-Fi): 0 Hz
Modulation Scheme (Crest Factor):	GSMK (GSM): 8.3 GMSK (GPRS850): 2 GMSK (GPRS1900): 4 QPSK(UMTS FDD / HSDPA / HSUPA): 1 DBPSK, BPSK, CCK (Wi-Fi): 1
Antenna Type:	Internal integral
Antenna Length:	Unknown
Number of Antenna Positions:	1 fixed (WWAN) 1 fixed (WLAN/ <i>Bluetooth</i> /Diversity) 1 fixed (GPS) 1 fixed (NFC) 1 Extendable and Retractable (DTV)
Power Supply Requirement:	3.7V
Battery Type(s):	Li-ion



5. Deviations from the Test Specification

Test was performed as per KDB 248227 D01 "SAR measurements for 802.11a/b/g v01r02", KDB 447498 D01 General RF Exposure Guidance v05, KDB 648474 D04 SAR Handsets Multi Xmitter and Ant v01, KDB 941225 D01 SAR test for 3G devices v02, KDB 941225 D03 " SAR Test Reduction GSM/GPRS/EDGE v01", KDB 941225 D06 "Hot Spot SAR v01" , KDB 865664 D01 SAR measurement 100 MHz to 6 GHz v01, KDB 865664 D02 SAR Reporting v01 , according to the handset procedures in IEEE Std 1528-2003 and OET Bulletin 65 Supplement C 01-01. The assessment for Personal Wireless Hotspot was also evaluated as per the FCC KDB 941225 D06 "Hot Spot SAR v01".

For technologies bands supporting personal hotspot mode, SAR was evaluated on all the sides and surfaces within 25mm of the transmitting antenna (WWAN or WLAN) as per FCC KDB 941225 D06 "Hot Spot SAR v01".

GPRS class 12 / uplink setup of 1-uplink, 2-uplink, 3-uplink and 4-uplink were all evaluated to find the setting with the highest power reference point (unit v/m) as per the DASY4 system. 4-uplink was found to give the highest power reference point measurement on the DASY4 system (unit v/m) for GPRS850 and 2-uplink was found to give the highest power reference point measurement on the DASY4 system (unit v/m) for GPRS1900. All settings were performed with the device in a fixed position Front facing phantom at 0mm separation to ensure there were no positioning errors. The following values were measured relative to the uplink settings:

GPRS Mode	GPRS850 Power reference (v/m)	GPRS1900 Power reference (v/m)
1 uplink	14.24	8.68
2 uplink	16.40	8.80
3 uplink	18.06	8.47
4 uplink	18.97	8.44

Note: Power reference point measurements are from the DASY4 system and used to check the device power drift although the units are v/m. For informational purpose to ensure the worst case uplink time slot is also verified by the DASY4 SAR system, this was use as per above comment at a fixed point.

As per 648474 D04 SAR Handsets Multi Xmitter and Ant v01, "When the reported SAR for a body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset". Hence, Body worn configurations were not evaluated with PHF attached.

6. Operation and Configuration of the EUT during Testing

6.1. Operating Modes

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

- GSM850 – Voice allocated mode with Communication Test Set configured to allow the EUT to transmit at a maximum power using Power Control Level (PCL) setting of 5.
- GPRS850 – Data allocated mode with Communication Test Set configured to allow the EUT to transmit at a maximum power using Power Control Level (PCL) setting of 5. Tested using 4 Uplink time slots with CS1 for GPRS.
- PCS1900 – Voice allocated mode with Communication Test Set configured to allow the EUT to transmit at a maximum power using Power Control Level (PCL) setting of 0.
- GPRS1900 – Data allocated mode with Communication Test Set configured to allow the EUT to transmit at a maximum power using Power Control Level (PCL) setting of 0. Tested using 2 Uplink time slots with CS1 for GPRS.

GSM850: Power Table Settings used for Test Set	
Power Control Level PCL	Nominal Power (dBm)
0 ... 2	39
3	37
4	35
5	33
6	31
7	29
8	27
9	25
10	23
11	21
12	19
13	17
14	15
15	13
16	11
17	9
18	7
19 ... 31	5

PCS1900: Power Table Settings used for Test Set	
Power Control Level PCL	Nominal Power (dBm)
22 ... 29	Reserved
30	33
31	32
0	30
1	28
2	26
3	24
4	22
5	20
6	18
7	16
8	14
9	12
10	10
11	8
12	6
13	4
14	2
15	0
16 ... 21	Reserved

- UMTS FDD 5 Call allocated mode with Communication Test Set configured to allow the EUT to transmit at a maximum as per KDB 941225 D01.
- UMTS FDD 5 - RMC 12.2kbps + HSUPA with Test loop mode 1 and TPC bits configured to all "1's", Sub-test 5, AG Index set to 21 and E-TFCI set to 81 with Communication Test Set configured to allow to EUT to transmit at a maximum power as per KDB 941225 D01.
- UMTS FDD 5 - RMC 12.2kbps + HSDPA with Test loop mode 1 and TPC bits configured to all "1's", Sub-test 1 with Communication Test Set configured to allow to EUT to transmit at a maximum power as per KDB 941225 D01.

Operating Modes (Continued)

- 2.4 GHz WiFi802.11b/g/n Data allocated mode using 'HyperTerminal' software to excise mode 'b', 'g' and 'n', with maximum power of up to 15.0 dBm for 'b' mode and 11.5 dBm for 'g' and 10.5 dBm for 'n' modes.
- 5.0 GHz WiFi802.11a/n Data allocated mode using 'HyperTerminal' software to excise mode 'a' and 'n', with maximum power of up to 10.2 dBm for 'a' mode and 9.1 dBm for 'n' modes.
- **Activating the 'Portable Wi-Fi hotspot' mode**

Go to the home screen of the EUT:

1. Press the '*Applications*' icon on the screen of the device and then tap "*Settings*".
2. On the Settings screen, tap the "*Wireless & networks*" option, followed by "*Portable Wi-Fi hotspot*".
3. Click the check mark beside it to turn on the hotspot and the EUT starts acting like a wireless access point. (It should also see a message in the notification bar when it's activated.)
4. Once '*Portable Wi-Fi Hotspot*' mode is activated, it is active until it is deactivated by the user.

'Auto RF Power Back-off' mode facility is available on 'Hotspot Mode Configuration of PCS1900 only. There is no power back-off to the WLAN 2.4 GHz or WLAN 5.0 GHz.

Once the 'Portable Wi-Fi hotspot' mode is activated, the 'Auto RF Power Reduction' mode is active. This enables 'Power Back-Off' and the RF power gets reduced on the specific band on which it is supported. This option is available in the device to 'Reduce the RF Power' and to comply with the *Standard* for the measured SAR and conducted power level. Once 'Auto RF Power Back-off' mode is activated, power reduction applies until 'Portable Wi-Fi hotspot' is deactivated by the user.

6.1. Configuration and Peripherals

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

- Standalone fully charged battery powered.
- Head, Hotspot Mode and Body-worn configurations were evaluated.
- GPRS Class 12: setup for 1-uplink, 2-uplink, 3-uplink and 4-uplink were evaluated to find the setting with the highest power reference measurements. 4-uplink was found to give the highest power reference point measurement on the DASY4 system (unit v/m) for GPRS850. 2-uplink was found to give the highest power reference point measurement on the DASY4 system (unit v/m) for GPRS1900. All settings were performed with the device in a fixed position 'Back facing phantom' at 0mm separation to ensure there were no positioning errors.
- GSM, GPRS and EDGE power measurement were all measured as per FCC pubs. 941225 D03. Although power reduction was allowed SAR test was performed on GPRS using GMSK. Test reduction was applied to EDGE using GMSK and 8PSK modulation scheme.

Head Configuration

- a) The EUT was placed in a normal operating position with the centre of the ear-piece aligned with the ear canal on the phantom.
- b) With the ear-piece touching the phantom the centre line of the EUT was aligned with an imaginary plane (X and Y axis) consisting of three lines connecting both ears and the mouth.
- c) For the cheek position the EUT was gradually moved towards the cheek until any point of the mouth-piece or keypad touched the cheek.
- d) For the tilted position the EUT was positioned as for the cheek position, and then the horizontal angle was increased by fifteen degrees (the phone keypad was moved away from the cheek by fifteen degrees).
- e) SAR measurements were evaluated at maximum power and the unit was operated for an appropriate period prior to the evaluation in order to minimise the drift.
- f) The device was keyed to operate continuously in the transmit mode for the duration of the test.
- g) The location of the maximum spatial SAR distribution (hot spot) was determined relative to the EUT and its antenna.
- h) The EUT was transmitting at full power throughout the duration of the test powered by a fully charged battery.

Body Configuration

- a) The EUT was placed in a normal operating position where the centre of EUT was aligned with the centre reference point on the flat section of the 'SAM' phantom.
- b) With the EUT touching the phantom at an imaginary centre line. The EUT was aligned with a marked plane (X and Y axis) consisting of two lines.
- c) For the touch-safe position the EUT was gradually moved towards the flat section of the 'SAM' phantom until any point of the EUT touched the phantom.
- d) For position(s) greater than 0mm separation the EUT was positioned as per the touch-safe position, and then the vertical height was decreased/adjusted as required.
- e) SAR measurements were evaluated at maximum power and the unit was operated for an appropriate period prior to the evaluation in order to minimise the drift.
- f) The device was keyed to operate continuously in the transmit mode for the duration of the test.
- g) The location of the maximum spatial SAR distribution (hot spot) was determined relative to the EUT and its antenna.
- h) The EUT was transmitting at full power throughout the duration of the test powered by a fully charged battery.

6.2. Configuration Consideration

Technology Antenna	Configuration	Antenna-to-User Separation	Position	Antenna-to-Edge Separation	Evaluation Considered
WWAN	Head	0mm	Touch Left	<25mm	Yes
			Tilt Left	<25mm	Yes
			Touch Right	<25mm	Yes
			Tilt Right	<25mm	Yes
	Hotspot	10mm	Front	<25mm	Yes
			Back	<25mm	Yes
			Top Edge	>25mm	No
			Bottom Edge	<25mm	Yes
			Right Edge	<25mm	Yes
			Left Edge	<25mm	Yes
	Body	15mm	Front	<25mm	Yes
			Back	<25mm	Yes
WLAN	Head	0mm	Touch Left	<25mm	Yes
			Tilt Left	<25mm	Yes
			Touch Right	<25mm	Yes
			Tilt Right	<25mm	Yes
	Hotspot	10mm	Front	<25mm	Yes
			Back	<25mm	Yes
			Top Edge	<25mm	Yes
			Bottom Edge	>25mm	No
			Right Edge	>25mm	No
			Left Edge	<25mm	Yes
	Body	15mm	Front	<25mm	Yes
			Back	<25mm	Yes

Note(s):

1. Test distances are as per FCC KDB publication 447498 D01v05 for mobile handsets.
2. Bluetooth standalone SAR is excluded as the output power meets the exclusion threshold:

“

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

$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f_{\text{GHz}}}] \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR,}^{16} \text{ where}$$

- f_{GHz} is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation¹⁷
- The result is rounded to one decimal place for comparison

” Taken from FCC KDB publication 447498 D01v05

6.3. SAR Test Exclusion Consideration

Frequency Band	Configuration(s)		
	Head	Hotspot Mode	Body-worn
GSM850	No	No	No
PCS1900	No	No	No
UMTS FDD 5	No	No	No
WLAN 2.4 GHz	No	No	No
WLAN 5.0 GHz	No	Yes	Yes
<i>Bluetooth</i>	N/A	Yes	Yes

Note:

- As per KDB 447498 D01 General RF Exposure Guidance v05, The Frequency Bands with Rated Power including Upper tolerance, which qualify for **Standalone SAR Test Exclusion**, are as per the above table.

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:

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

- $f_{(\text{GHz})}$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest *mW* and *mm* before calculation
- The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

Applying the above formula for WLAN 5.0GHz Hotspot Mode we get:

- For 5200MHz, $[(11.7)/10] * [\sqrt{5.2}] = 2.7 \leq 3.0$
- For 5500MHz, $[(11.7)/10] * [\sqrt{5.5}] = 2.7 \leq 3.0$
- For 5800MHz, $[(11.7)/10] * [\sqrt{5.8}] = 2.8 \leq 3.0$

Applying the above formula for WLAN 5.0GHz Body-worn we get:

- For 5200MHz, $[(11.7)/15] * [\sqrt{5.2}] = 1.8 \leq 3.0$
- For 5500MHz, $[(11.7)/15] * [\sqrt{5.5}] = 1.8 \leq 3.0$
- For 5800MHz, $[(11.7)/15] * [\sqrt{5.8}] = 1.9 \leq 3.0$

Hence, testing is not required on WLAN 5.0GHz Hotspot Mode and Body-worn.

Bluetooth Head configuration is not applicable and NOT most conservative, hence it is NOT Applicable for SAR Test Evaluation, whereas, Hotspot and Body-worn is. The SAR exclusion consideration is explained below.

Applying the above formula for *Bluetooth* Hotspot Mode we get:

- For 2450MHz, $[(8.91)/10] * [\sqrt{2.45}] = 1.4 \leq 3.0$

Applying the above formula for *Bluetooth* Body-worn we get:

- For 2450MHz, $[(8.91)/15] * [\sqrt{2.45}] = 0.9 \leq 3.0$

Hence, testing is not required on *Bluetooth* Hotspot Mode and Body-worn configurations.

- The details for the **Maximum Rated Power** and tolerance(s) can be found in section 2.5.

7. Measurements, Examinations and Derived Results

7.1. General Comments

This section contains test results only.

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

7.2. Conducted Power Measurements

7.2.1. Conducted Average Power Measurement 2G: GSM850 Power Back-off Disabled

Channel Number	Frequency (MHZ)	Power (dBm)	Avg. Burst Power with consideration for uplink time slot (dBm)	Note
128	824.2	32.9	23.9	Conducted, GMSK
190	836.6	32.8	23.8	Conducted, GMSK
251	848.8	32.8	23.8	Conducted, GMSK

GPRS850 - Measured Average Power without consideration for Uplink time slots:

Channel Number	Frequency (MHZ)	Power (dBm) 1Uplink	Power (dBm) 2Uplink	Power (dBm) 3Uplink	Power (dBm) 4Uplink	Note
128	824.2	32.9	31.3	29.8	28.9	Conducted, GMSK
190	836.6	32.8	31.2	29.9	28.7	Conducted, GMSK
251	848.8	32.9	31.2	29.9	28.8	Conducted, GMSK

GPRS850 - Calculated Value with consideration for Uplink time slots:

Channel Number	Frequency (MHZ)	Power (dBm) 1Uplink	Power (dBm) 2Uplink	Power (dBm) 3Uplink	Power (dBm) 4Uplink	Note
128	824.2	23.9	25.3	25.5	25.9	Conducted, GMSK
190	836.6	23.8	25.2	25.6	25.7	Conducted, GMSK
251	848.8	23.9	25.2	25.6	25.8	Conducted, GMSK

EDGE850 - Measured Average Power without consideration for Uplink time slots:

Channel Number	Frequency (MHZ)	Power (dBm) 1Uplink	Power (dBm) 2Uplink	Power (dBm) 3Uplink	Power (dBm) 4Uplink	Note
128	824.2	32.9	31.3	29.8	28.9	Conducted, GMSK
190	836.6	32.8	31.2	29.9	28.7	Conducted, GMSK
251	848.8	32.9	31.2	29.9	28.8	Conducted, GMSK

EDGE850 - Calculated Value with consideration for Uplink time slots:

Channel Number	Frequency (MHZ)	Power (dBm) 1Uplink	Power (dBm) 2Uplink	Power (dBm) 3Uplink	Power (dBm) 4Uplink	Note
128	824.2	23.9	25.3	25.5	25.9	Conducted, GMSK
190	836.6	23.8	25.2	25.6	25.7	Conducted, GMSK
251	848.8	23.9	25.2	25.6	25.8	Conducted, GMSK

Note:

Scale factor for uplink time slot:

- 1 Uplink: time slot ratio = 8:1 => $10 \cdot \log(8/1) = 9.03 \text{ dB}$
- 2 Uplink: time slot ratio = 8:2 => $10 \cdot \log(8/2) = 6.02 \text{ dB}$
- 3 Uplink: time slot ratio = 8:3 => $10 \cdot \log(8/3) = 4.26 \text{ dB}$
- 4 Uplink: time slot ratio = 8:4 => $10 \cdot \log(8/4) = 3.01 \text{ dB}$

EDGE (MCS9 ~ 8PSK)**EDGE850 - Measured Average Power without consideration for Uplink time slots:
Power Back-off Disabled**

Channel Number	Frequency (MHZ)	Power (dBm) 1Uplink	Power (dBm) 2Uplink	Power (dBm) 3Uplink	Power (dBm) 4Uplink	Note
128	824.2	27.0	24.9	24.0	22.8	Conducted, 8PSK
190	836.6	26.9	24.8	23.9	22.8	Conducted, 8PSK
251	848.8	26.9	24.8	23.9	22.8	Conducted, 8PSK

EDGE850 - Calculated Value with consideration for Uplink time slots:

Channel Number	Frequency (MHZ)	Power (dBm) 1Uplink	Power (dBm) 2Uplink	Power (dBm) 3Uplink	Power (dBm) 4Uplink	Note
128	824.2	18.0	18.9	19.7	19.8	Conducted, 8PSK
190	836.6	17.9	18.8	19.6	19.8	Conducted, 8PSK
251	848.8	17.9	18.8	19.6	19.8	Conducted, 8PSK

Note:**Scale factor for uplink time slot:**

1. 1 Uplink: time slot ratio = 8:1 => $10 \cdot \log(8/1) = 9.03 \text{ dB}$
2. 2 Uplink: time slot ratio = 8:2 => $10 \cdot \log(8/2) = 6.02 \text{ dB}$
3. 3 Uplink: time slot ratio = 8:3 => $10 \cdot \log(8/3) = 4.26 \text{ dB}$
4. 4 Uplink: time slot ratio = 8:4 => $10 \cdot \log(8/4) = 3.01 \text{ dB}$

7.2.2. Conducted Average Power Measurement 2G: PCS1900 Power Back-off Disabled

Channel Number	Frequency (MHZ)	Power (dBm)	Avg. Burst Power with consideration for uplink time slot (dBm)	Note
512	1850.2	29.7	20.7	Conducted, GMSK
661	1880.0	29.7	20.7	Conducted, GMSK
810	1909.8	29.8	20.8	Conducted, GMSK

GPRS1900 - Measured Average Power without consideration for Uplink time slots:

Channel Number	Frequency (MHZ)	Power (dBm) 1Uplink	Power (dBm) 2Uplink	Power (dBm) 3Uplink	Power (dBm) 4Uplink	Note
512	1850.2	29.7	26.8	24.9	24.0	Conducted, GMSK
661	1880.0	29.7	26.9	25.0	24.1	Conducted, GMSK
810	1909.8	29.8	26.9	24.9	24.1	Conducted, GMSK

GPRS1900 - Calculated Value with consideration for Uplink time slots:

Channel Number	Frequency (MHZ)	Power (dBm) 1Uplink	Power (dBm) 2Uplink	Power (dBm) 3Uplink	Power (dBm) 4Uplink	Note
512	1850.2	20.7	20.8	20.6	21.0	Conducted, GMSK
661	1880.0	20.7	20.9	20.7	21.1	Conducted, GMSK
810	1909.8	20.8	20.9	20.6	21.1	Conducted, GMSK

EDGE1900 - Measured Average Power without consideration for Uplink time slots:

Channel Number	Frequency (MHZ)	Power (dBm) 1Uplink	Power (dBm) 2Uplink	Power (dBm) 3Uplink	Power (dBm) 4Uplink	Note
512	1850.2	29.7	26.8	24.9	24.0	Conducted, GMSK
661	1880.0	29.7	26.9	25.0	24.1	Conducted, GMSK
810	1909.8	29.8	26.9	24.9	24.1	Conducted, GMSK

EDGE1900 - Calculated Value with consideration for Uplink time slots:

Channel Number	Frequency (MHZ)	Power (dBm) 1Uplink	Power (dBm) 2Uplink	Power (dBm) 3Uplink	Power (dBm) 4Uplink	Note
512	1850.2	20.7	20.8	20.6	21.0	Conducted, GMSK
661	1880.0	20.7	20.9	20.7	21.1	Conducted, GMSK
810	1909.8	20.8	20.9	20.6	21.1	Conducted, GMSK

Note:

Scale factor for uplink time slot:

- 1 Uplink: time slot ratio = 8:1 => $10 \cdot \log(8/1) = 9.03 \text{ dB}$
- 2 Uplink: time slot ratio = 8:2 => $10 \cdot \log(8/2) = 6.02 \text{ dB}$
- 3 Uplink: time slot ratio = 8:3 => $10 \cdot \log(8/3) = 4.26 \text{ dB}$
- 4 Uplink: time slot ratio = 8:4 => $10 \cdot \log(8/4) = 3.01 \text{ dB}$

EDGE (MCS9 ~ 8PSK):**EDGE1900 - Measured Average Power without consideration for Uplink time slots:
Power Back-off Disabled**

Channel Number	Frequency (MHZ)	Power (dBm) 1Uplink	Power (dBm) 2Uplink	Power (dBm) 3Uplink	Power (dBm) 4Uplink	Note
512	1850.2	25.9	24.4	23.4	22.3	Conducted, 8PSK
661	1880.0	25.9	24.4	23.4	22.3	Conducted, 8PSK
810	1909.8	25.9	24.4	23.4	22.3	Conducted, 8PSK

EDGE1900 - Calculated Value with consideration for Uplink time slots:

Channel Number	Frequency (MHZ)	Power (dBm) 1Uplink	Power (dBm) 2Uplink	Power (dBm) 3Uplink	Power (dBm) 4Uplink	Note
512	1850.2	16.9	18.4	19.1	19.3	Conducted, 8PSK
661	1880.0	16.9	18.4	19.1	19.3	Conducted, 8PSK
810	1909.8	16.9	18.4	19.1	19.3	Conducted, 8PSK

Note:**Scale factor for uplink time slot:**

1. 1 Uplink: time slot ratio = 8:1 => $10 \cdot \log(8/1) = 9.03 \text{ dB}$
2. 2 Uplink: time slot ratio = 8:2 => $10 \cdot \log(8/2) = 6.02 \text{ dB}$
3. 3 Uplink: time slot ratio = 8:3 => $10 \cdot \log(8/3) = 4.26 \text{ dB}$
4. 4 Uplink: time slot ratio = 8:4 => $10 \cdot \log(8/4) = 3.01 \text{ dB}$

7.2.3. Conducted Average Power Measurement 2G: PCS1900 Power Back-off Enabled

Channel Number	Frequency (MHZ)	Power (dBm)	Avg. Burst Power with consideration for uplink time slot (dBm)	Note
512	1850.2	27.9	18.9	Conducted, GMSK
661	1880.0	27.9	18.9	Conducted, GMSK
810	1909.8	28.1	19.1	Conducted, GMSK

GPRS1900 - Measured Average Power without consideration for Uplink time slots:

Channel Number	Frequency (MHZ)	Power (dBm) 1Uplink	Power (dBm) 2Uplink	Power (dBm) 3Uplink	Power (dBm) 4Uplink	Note
512	1850.2	27.9	25.5	22.0	21.1	Conducted, GMSK
661	1880.0	27.9	25.6	22.1	21.1	Conducted, GMSK
810	1909.8	28.1	25.6	22.0	21.1	Conducted, GMSK

GPRS1900 - Calculated Value with consideration for Uplink time slots:

Channel Number	Frequency (MHZ)	Power (dBm) 1Uplink	Power (dBm) 2Uplink	Power (dBm) 3Uplink	Power (dBm) 4Uplink	Note
512	1850.2	18.9	19.5	17.7	18.1	Conducted, GMSK
661	1880.0	18.9	19.6	17.8	18.1	Conducted, GMSK
810	1909.8	19.1	19.6	17.7	18.1	Conducted, GMSK

EDGE1900 - Measured Average Power without consideration for Uplink time slots:

Channel Number	Frequency (MHZ)	Power (dBm) 1Uplink	Power (dBm) 2Uplink	Power (dBm) 3Uplink	Power (dBm) 4Uplink	Note
512	1850.2	27.9	25.5	22.0	21.1	Conducted, GMSK
661	1880.0	27.9	25.6	22.1	21.1	Conducted, GMSK
810	1909.8	28.1	25.6	22.0	21.1	Conducted, GMSK

EDGE1900 - Calculated Value with consideration for Uplink time slots:

Channel Number	Frequency (MHZ)	Power (dBm) 1Uplink	Power (dBm) 2Uplink	Power (dBm) 3Uplink	Power (dBm) 4Uplink	Note
512	1850.2	18.9	19.5	17.7	18.1	Conducted, GMSK
661	1880.0	18.9	19.6	17.8	18.1	Conducted, GMSK
810	1909.8	19.1	19.6	17.7	18.1	Conducted, GMSK

Note:

Scale factor for uplink time slot:

- 1 Uplink: time slot ratio = 8:1 => $10 \cdot \log(8/1) = 9.03 \text{ dB}$
- 2 Uplink: time slot ratio = 8:2 => $10 \cdot \log(8/2) = 6.02 \text{ dB}$
- 3 Uplink: time slot ratio = 8:3 => $10 \cdot \log(8/3) = 4.26 \text{ dB}$
- 4 Uplink: time slot ratio = 8:4 => $10 \cdot \log(8/4) = 3.01 \text{ dB}$

EDGE (MCS9 ~ 8PSK):**EDGE1900 - Measured Average Power without consideration for Uplink time slots:
Power Back-off Enabled**

Channel Number	Frequency (MHZ)	Power (dBm) 1Uplink	Power (dBm) 2Uplink	Power (dBm) 3Uplink	Power (dBm) 4Uplink	Note
512	1850.2	25.9	24.4	21.9	20.8	Conducted, 8PSK
661	1880.0	25.9	24.4	21.9	20.8	Conducted, 8PSK
810	1909.8	25.9	24.4	22.0	20.9	Conducted, 8PSK

EDGE1900 - Calculated Value with consideration for Uplink time slots:

Channel Number	Frequency (MHZ)	Power (dBm) 1Uplink	Power (dBm) 2Uplink	Power (dBm) 3Uplink	Power (dBm) 4Uplink	Note
512	1850.2	16.9	18.4	17.6	17.8	Conducted, 8PSK
661	1880.0	16.9	18.4	17.6	17.8	Conducted, 8PSK
810	1909.8	16.9	18.4	17.7	17.9	Conducted, 8PSK

Note:**Scale factor for uplink time slot:**

1. 1 Uplink: time slot ratio = 8:1 => $10 \cdot \log(8/1) = 9.03 \text{ dB}$
2. 2 Uplink: time slot ratio = 8:2 => $10 \cdot \log(8/2) = 6.02 \text{ dB}$
3. 3 Uplink: time slot ratio = 8:3 => $10 \cdot \log(8/3) = 4.26 \text{ dB}$
4. 4 Uplink: time slot ratio = 8:4 => $10 \cdot \log(8/4) = 3.01 \text{ dB}$

**7.2.4. Conducted Average Power Measurement 3G:
Power Back-off Disabled**

Modes		HSDPA				HSUPA					WCDMA
Sets		1	2	3	4	1	2	3	4	5	Voice / RMC 12.2kbps
Band	Channel	Power [dBm]									
UMTS FDD 5	4132 4357	23.7	23.7	23.3	23.3	23.0	22.0	22.4	22.1	23.5	23.7
	4183 4408	23.9	23.8	23.3	23.3	23.2	22.3	22.5	22.2	23.6	23.9
	4233 4458	23.8	23.8	23.3	23.3	23.5	21.9	22.3	22.2	23.5	23.8
β_c		2	12	15	15	11	6	15	2	15	
β_d		15	15	8	4	15	15	9	15	15	
$\Delta_{ACK}, \Delta_{NACK}, \Delta_{CQI}$		8	8	8	8	8	8	8	8	8	
AGV		-	-	-	-	20	12	15	17	21	

The module power levels were measured in both HSPA and 3G RMC 12.2kbps modes and compared to ensure the correct mode of operation had been established.

The following tables taken from FCC 3G SAR procedures (KDB 941225 D01 SAR test for 3G devices v02) below were applied using an Agilent 8960 series 10 wireless communications test set which supports 3G / HSDPA release 5 / HSPA release 6.

Sub-test Setup for Release 5 HSDPA

Sub-test	β_c	β_d	B_d (SF)	β_c / β_d	$\beta_{hs}^{(1)}$	SM (dB) ⁽²⁾
1	2/15	15/15	64	2/15	4/15	0.0
2	12/15 ⁽³⁾	15/15 ⁽³⁾	64	12/15 ⁽³⁾	24/15	1.0
3	15/15	8/15	64	15/8	30/15	1.5
4	15/15	4/15	64	15/4	30/15	1.5

Note 1: $\Delta_{ACK}, \Delta_{NACK}$ and $\Delta_{CQI} = 8 \Leftrightarrow A_{hs} = \beta_{hs} / \beta_c = 30/15 \Leftrightarrow \beta_{hs} = 30/15 * \beta_c$

Note 2: CM = 1 for $\beta_c / \beta_d = 12/15, B_{hs} / \beta_c = 24/15$

Note 3: 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 $\beta_c = 11/15$ and $\beta_d = 15/15$

Sub-test Setup for Release 6 HSUPA

Sub-test	β_c	β_d	B_d (SF)	β_c/β_d	$\beta_{hs}^{(1)}$	B_{oc}	B_{od}	B_{od} (SF)	B_{od} (codes)	CM ⁽²⁾ (dB)	Power Back-off (dB)	AG ⁽⁴⁾ Index	E-TFC I
1	11/15 ⁽³⁾	15/15 ⁽³⁾	64	11/15 ⁽³⁾	22/15	209/225	1039/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	31/15	B _{al1} : 47/15 B _{al2} : 47/15	4	1	2.0	1.0	15	92
4	2/15	15/15	64	2/15	2/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15 ⁽⁴⁾	15/15 ⁽⁴⁾	64	15/15 ⁽⁴⁾	24/15	24/15	134/15	4	1	1.0	0.0	21	81

Note 1: $\Delta_{ACK}, \Delta_{NACK}$ and $\Delta_{CQI} = 8 \Leftrightarrow A_{hs} = \beta_{hs}/\beta_c = 30/15 \Leftrightarrow \beta_{hs} = 30/15 * \beta_c$

Note 2: CM = 1 for $\beta_c/\beta_d = 12/15, B_{hs}/\beta_c = 24/15$. For all other combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH AND E-DPCCH for the Power Back-off is based on the relative CM difference.

Note 3: For subtest 1 the β_c/β_d ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 10/15$ and $\beta_d = 15/15$.

Note 4: For subtest 5 the β_c/β_d ratio of 15/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 14/15$ and $\beta_d = 15/15$.

Note 5: Testing UE using E-DPDCH Physical Layer category 1 Sub-test 3 is not required according to TS 25.306 Tavle 5.1g.

Note 6: B_{od} can not be set directly; it is set by Absolute Grant Value.

**7.2.5. Conducted Power Measurements Wi-Fi 802.11b/g/n
802.11b/g
Power Back-off Disabled**

Channel Number	Frequency (MHZ)	TX Power (dBm)	Note
1	2412.0	15.0	2.4GHz 802.11b (1Mbps)
6	2437.0	14.9	
11	2462.0	14.7	
1	2412.0	14.5	2.4GHz 802.11b (11Mbps)
6	2437.0	14.6	
11	2462.0	14.7	
1	2412.0	11.5	2.4GHz 802.11g (6Mbps)
6	2437.0	11.5	
11	2462.0	11.3	
1	2412.0	10.8	2.4GHz 802.11g (54Mbps)
6	2437.0	10.7	
11	2462.0	10.2	

802.11n

Channel Number	Frequency (MHZ)	TX Power (dBm)	Note
1	2412.0	10.5	2.4GHz 802.11n (MCS0 6.5Mbps)
6	2437.0	10.5	
11	2462.0	10.3	
1	2412.0	9.4	2.4GHz 802.11n (MCS7 65Mbps)
6	2437.0	9.5	
11	2462.0	9.2	

**7.2.6. Conducted Power Measurements Wi-Fi 802.11a/n (5.0 GHz)
802.11a (5.0 GHz)
Power Back-off Disabled**

Channel Number	Frequency (MHZ)	TX Power (dBm) 6 Mbps	TX Power (dBm) 54 Mbps	Note
36*	5180.0	9.5	9.6	5.2 GHz
40	5200.0	9.8	9.8	
44	5220.0	9.9	9.3	
48*	5240.0	9.9	9.5	
52*	5260.0	10.2	9.6	5.3 GHz
56	5280.0	10.1	9.6	
60	5300.0	10.0	9.9	
64*	5320.0	9.7	9.3	
100	5500.0	9.5	9.4	5.6 GHz
104*	5520.0	9.5	9.2	
108	5540.0	9.5	9.3	
112	5560.0	9.5	9.3	
116*	5580.0	9.3	9.1	
120	5600.0	9.3	9.2	
124*	5620.0	9.3	9.8	
128	5640.0	9.8	9.2	
132	5660.0	9.7	9.6	
136*	5680.0	9.9	9.6	
140	5700.0	9.9	9.5	5.8 GHz
149*	5745.0	9.6	9.3	
153	5765.0	9.9	9.3	
157*	5785.0	10.0	9.3	
161	5805.0	9.8	9.3	
165*	5825.0	9.8	9.1	

* Default test Channels

**802.11n (5.0 GHz) (HT20)
Power Back-off Disabled**

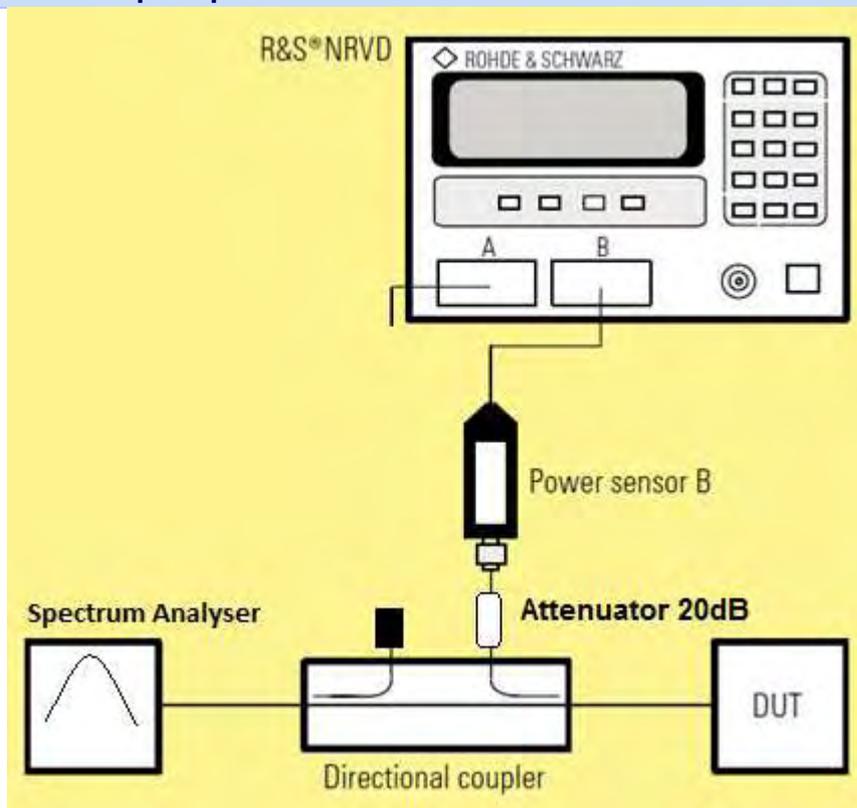
Channel Number	Frequency (MHZ)	TX Power (dBm) 6.5 Mbps	TX Power (dBm) 65 Mbps	Note
36*	5180.0	8.3	8.6	5.2 GHz
40	5200.0	9.0	8.7	
44	5220.0	8.4	8.3	
48*	5240.0	8.0	8.4	
52*	5260.0	8.7	8.5	5.3 GHz
56	5280.0	8.7	8.7	
60	5300.0	8.7	8.5	
64*	5320.0	8.6	9.0	
100	5500.0	7.8	8.3	5.6 GHz
104*	5520.0	8.7	7.8	
108	5540.0	8.5	7.8	
112	5560.0	8.2	8.1	
116*	5580.0	8.5	8.4	
120	5600.0	8.2	8.2	
124*	5620.0	8.3	8.8	
128	5640.0	8.1	8.3	
132	5660.0	8.7	8.7	
136*	5680.0	8.2	8.1	
140	5700.0	8.0	8.1	5.8 GHz
149*	5745.0	8.5	8.3	
153	5765.0	8.5	8.3	
157*	5785.0	8.6	8.5	
161	5805.0	8.5	8.5	
165*	5825.0	8.4	8.1	

* Default test Channels

**802.11n (5.0 GHz) (HT40)
Power Back-off Disabled**

Channel Number	Frequency (MHZ)	TX Power (dBm) 13.5 Mbps	TX Power (dBm) 135 Mbps	Note
38	5190.0	8.4	8.4	5.2 GHz
46	5230.0	7.9	8.4	
54	5270.0	8.2	8.2	5.3 GHz
62	5310.0	8.6	8.6	
102	5510.0	8.0	8.0	5.6 GHz
110	5550.0	8.1	8.0	
118	5590.0	8.0	7.9	
126	5630.0	9.0	8.3	
134	5670.0	8.8	8.6	
151	5755.0	8.5	8.3	5.8 GHz
159	5795.0	9.1	9.0	

Test setup for power measurements



7.3. Test Results

For All SAR measurement in this report the SAR limit tested to is 1.6 W/Kg

7.3.1. Specific Absorption Rate - GSM 850 Head Configuration 1g**Power Back-off Disabled****Test Summary:**

Tissue Volume:	1g
Maximum Measured Level (W/kg):	0.883
Maximum Reported Level (W/kg):	1.037

Environmental Conditions:

Temperature Variation in Lab (°C):	24.0 to 24.0
Temperature Variation in Liquid (°C):	22.5 to 22.5

Results:

EUT Position	EUT Position	Channel Number	Meas. Avg. Power (dBm)	Max Rated Power (dBm)	Meas. Level (W/Kg)	Reported SAR (W/kg)	Note(s)	Mod.
1	Touch Left	190	23.8	24.5	0.834	0.980	1	GMSK
2	Touch Left	128	23.9	24.5	0.783	0.899	1	GMSK
3	Touch Left	251	23.8	24.5	0.883	1.037	1	GMSK
4	Tilt Left	190	23.8	24.5	0.378	0.444	1	GMSK
5	Touch Right	190	23.8	24.5	0.815	0.958	1	GMSK
6	Touch Right	128	23.9	24.5	0.777	0.892	1	GMSK
7	Touch Right	251	23.8	24.5	0.830	0.975	1	GMSK
8	Tilt Right	190	23.8	24.5	0.374	0.439	1	GMSK
9	Touch Left Antenna Extended	251	23.8	24.5	0.676	0.794	1, 2	GMSK

Note(s):

1. Voice Mode
2. Worst case configuration repeated with DTV Antenna Extended.

7.3.2. Specific Absorption Rate - GPRS 850 Hotspot Mode Configuration 1g Power Back-off Disabled Test Summary:

Tissue Volume:	1g
Maximum Measured Level (W/kg):	1.240
Maximum Reported Level (W/kg):	1.424

Environmental Conditions:

Temperature Variation in Lab (°C):	24.0 to 24.0
Temperature Variation in Liquid (°C):	22.0 to 22.0

Results:

EUT Position	EUT Position	Channel Number	Meas. Avg. Power (dBm)	Max Rated Power (dBm)	Meas. Level (W/Kg)	Reported SAR (W/kg)	Note(s)	Mod.
10	Front	190	25.7	26.5	1.180	1.419	1, 2	GMSK
11	Front	128	25.9	26.5	1.240	1.424	1, 2, 4	GMSK
12	Front	251	25.8	26.5	1.190	1.398	1, 2	GMSK
13	Back	190	25.7	26.5	1.020	1.226	1, 2	GMSK
14	Back	128	25.9	26.5	1.050	1.206	1, 2	GMSK
15	Back	251	25.8	26.5	1.020	1.198	1, 2	GMSK
16	Left Hand Side	190	25.7	26.5	0.809	0.973	1, 2	GMSK
17	Left Hand Side	128	25.9	26.5	0.856	0.983	1, 2	GMSK
18	Left Hand Side	251	25.8	26.5	0.746	0.876	1, 2	GMSK
19	Right Hand Side	190	25.7	26.5	0.736	0.885	1, 2	GMSK
20	Bottom	190	25.7	26.5	0.196	0.236	1, 2	GMSK
21	Front Antenna Extended	128	25.9	26.5	1.140	1.309	1, 2, 3	GMSK

Note(s):

1. Data - SAR measurements were performed using 4 uplink timeslots
2. EUT supports Hotspot: As per FCC KDB procedure SAR measurements were performed with the EUT at a separation distance of 10mm from the 'SAM' phantom flat section.
3. Worst case configuration repeated with Antenna DTV Extended.
4. As per 865664 D01, the highest SAR measured > 0.8 W/kg has been re-measured and included in the report in section 2.3 under **SAR Measurement Variability and Measurement Uncertainty Analysis Results** Table.

*KDB 941225 D03 - SAR is not required for EDGE technology when the maximum average output power is lower than that measured on the corresponding GPRS channels

7.3.3. Specific Absorption Rate - GSM 850 Body-Worn Configuration 1g Power Back-off Disabled Test Summary:

Tissue Volume:	1g
Maximum Measured Level (W/kg):	0.728
Maximum Reported Level (W/kg):	0.836

Environmental Conditions:

Temperature Variation in Lab (°C):	23.0 to 23.0
Temperature Variation in Liquid (°C):	20.0 to 20.0

Results:

EUT Position	EUT Position	Channel Number	Meas. Avg. Power (dBm)	Max Rated Power (dBm)	Meas. Level (W/Kg)	Reported SAR (W/kg)	Note(s)	Mod.
22	Front	128	23.9	24.5	0.728	0.836	1, 2	GMSK
23	Back	128	23.9	24.5	0.649	0.745	1, 2	GMSK
24	Front Antenna Extended	128	23.9	24.5	0.599	0.688	1, 2, 3	GMSK

Note(s):

1. Voice Mode - Worst case and most conservative channel of GPRS hotspot mode is applied to GSM Body-worn.
2. SAR measurements were performed with the closest edge of the EUT at a separation distance of 15mm from the 'SAM' phantom flat section.
3. Worst case configuration repeated with DTV Antenna Extended.

7.3.4. Specific Absorption Rate - PCS 1900 Head Configuration 1g Power Back-off Disabled Test Summary:

Tissue Volume:	1g
Maximum Measured Level (W/kg):	0.559
Maximum Reported Level (W/kg):	0.657

Environmental Conditions:

Temperature Variation in Lab (°C):	24.0 to 24.0
Temperature Variation in Liquid (°C):	22.4 to 22.4

Results:

EUT Position	EUT Position	Channel Number	Meas. Avg. Power (dBm)	Max Rated Power (dBm)	Meas. Level (W/Kg)	Reported SAR (W/kg)	Note(s)	Mod.
25	Touch Left	661	20.7	21.5	0.491	0.590	1	GMSK
26	Tilt Left	661	20.7	21.5	0.143	0.172	1	GMSK
27	Touch Right	661	20.7	21.5	0.234	0.281	1	GMSK
28	Tilt Right	661	20.7	21.5	0.124	0.149	1	GMSK
29	Touch Left	512	20.7	21.5	0.402	0.483	1	GMSK
30	Touch Left	810	20.8	21.5	0.559	0.657	1	GMSK
31	Touch Left Antenna Extended	810	20.8	21.5	0.480	0.564	1, 2	GMSK

Note(s):

1. Voice Mode
2. Worst case configuration repeated with DTV Antenna Extended.

* PCS1900 Band also supports 'Auto RF Power Back Off' on Voice Mode. The SAR was evaluated with **Power Back-Off Disabled** which is more conservative than **Power Back-Off Enabled**.

7.3.5. Specific Absorption Rate - GPRS 1900 Hotspot Mode Configuration 1g Power Back-off Enabled Test Summary:

Tissue Volume:	1g
Maximum Measured Level (W/kg):	1.010
Maximum Reported Level (W/kg):	1.107

Environmental Conditions:

Temperature Variation in Lab (°C):	24.0 to 24.0
Temperature Variation in Liquid (°C):	23.1 to 23.1

Results:

EUT Position	EUT Position	Channel Number	Meas. Avg. Power (dBm)	Max Rated Power (dBm)	Meas. Level (W/Kg)	Reported SAR (W/kg)	Note(s)	Mod.
32	Front	661	19.6	20.0	0.522	0.572	1, 2	GMSK
33	Back	661	19.6	20.0	0.502	0.550	1, 2	GMSK
34	Left Hand Side	661	19.6	20.0	0.151	0.166	1, 2	GMSK
35	Right Hand Side	661	19.6	20.0	0.024	0.026	1, 2	GMSK
36	Bottom	661	19.6	20.0	0.767	0.841	1, 2	GMSK
37	Bottom	512	19.5	20.0	0.610	0.684	1, 2	GMSK
38	Bottom	810	19.6	20.0	1.010	1.107	1, 2, 3	GMSK

Note(s):

1. Data - SAR measurements were performed using 2 uplink timeslots
2. EUT supports Hotspot: As per FCC KDB procedure SAR measurements were performed with the EUT at a separation distance of 10mm from the 'SAM' phantom flat section.
3. As per 865664 D01, the highest SAR measured > 0.8 W/kg has been re-measured and included in the report in section 2.3 under **SAR Measurement Variability and Measurement Uncertainty Analysis Results** Table.

*Bottom edge configuration with DTV Antenna Extended is NOT required, as DTV Antenna to Bottom edge separation is >130mm.

*KDB 941225 D03 - SAR is not required for EDGE technology when the maximum average output power is lower than that measured on the corresponding GPRS channels

7.3.6. Specific Absorption Rate - GPRS 1900 Body-Worn Configuration 1g Power Back-off Disabled Test Summary:

Tissue Volume:	1g
Maximum Measured Level (W/kg):	0.719
Maximum Reported Level (W/kg):	0.826

Environmental Conditions:

Temperature Variation in Lab (°C):	24.0 to 24.0
Temperature Variation in Liquid (°C):	23.1 to 23.1

Results:

EUT Position	EUT Position	Channel Number	Meas. Avg. Power (dBm)	Max Rated Power (dBm)	Meas. Level (W/Kg)	Reported SAR (W/kg)	Note(s)	Mod.
39	Front	661	20.9	21.5	0.367	0.421	1, 2, 3	GMSK
40	Front	512	20.8	21.5	0.332	0.390	1, 2, 3	GMSK
41	Front	810	20.9	21.5	0.417	0.479	1, 2, 3	GMSK
42	Front Antenna Extended	810	20.9	21.5	0.719	0.826	1, 2, 3, 4	GMSK

Note(s):

1. Data - SAR measurements were performed using 2 uplink timeslots
2. Worst case and most conservative configuration of GPRS hotspot mode (Power reduction Enabled) is applied to GPRS Body-worn (Power Reduction Disabled).
3. SAR measurements were performed with the closest edge of the EUT at a separation distance of 15mm from the 'SAM' phantom flat section.
4. Worst case configuration repeated with DTV Antenna Extended.

7.3.7. Specific Absorption Rate - PCS 1900 Body-Worn Configuration 1g Power Back-off Disabled Test Summary:

Tissue Volume:	1g
Maximum Measured Level (W/kg):	0.471
Maximum Reported Level (W/kg):	0.553

Environmental Conditions:

Temperature Variation in Lab (°C):	24.0 to 24.0
Temperature Variation in Liquid (°C):	23.1 to 23.1

Results:

EUT Position	EUT Position	Channel Number	Meas. Avg. Power (dBm)	Max Rated Power (dBm)	Meas. Level (W/Kg)	Reported SAR (W/kg)	Note(s)	Mod.
43	Front	810	20.8	21.5	0.428	0.503	1, 2	GMSK
44	Back	810	20.8	21.5	0.471	0.553	1, 2	GMSK
45	Back Antenna Extended	810	20.8	21.5	0.429	0.504	1, 2, 3	GMSK

Note(s):

1. Voice Mode
2. SAR measurements were performed with the closest edge of the EUT at a separation distance of 15mm from the 'SAM' phantom flat section.
3. Worst case configuration repeated with DTV Antenna Extended.

7.3.8. Specific Absorption Rate - UMTS-FDD 5 Head Configuration 1g Power Back-off Disabled Test Summary:

Tissue Volume:	1g
Maximum Measured Level (W/kg):	0.892
Maximum Reported Level (W/kg):	1.048

Environmental Conditions:

Temperature Variation in Lab (°C):	24.0 to 24.0
Temperature Variation in Liquid (°C):	23.0 to 23.0

Results:

EUT Position	EUT Position	Channel Number	Meas. Avg. Power (dBm)	Max Rated Power (dBm)	Meas. Level (W/Kg)	Reported SAR (W/kg)	Note(s)	Mod.
46	Touch Left	4183	23.9	24.5	0.708	0.813	1	QPSK
47	Tilt Left	4183	23.9	24.5	0.396	0.455	1	QPSK
48	Touch Right	4183	23.9	24.5	0.715	0.821	1	QPSK
49	Tilt Right	4183	23.9	24.5	0.410	0.471	1	QPSK
50	Touch Right	4132	23.7	24.5	0.819	0.985	1	QPSK
51	Touch Right	4233	23.8	24.5	0.892	1.048	1	QPSK
52	Touch Right Antenna Extended	4233	23.8	24.5	0.832	0.978	1, 2	QPSK

Note(s):

1. Circuit Switch (CS) - RMC 12.2kbps with Test loop mode 1 and TPC bits configured to All "1's"
2. Worst case configuration repeated with DTV Antenna Extended.

7.3.9. Specific Absorption Rate - UMTS-FDD 5 Hotspot Mode Configuration 1g Power Back-off Disabled Test Summary:

Tissue Volume:	1g
Maximum Measured Level (W/kg):	1.040
Maximum Reported Level (W/kg):	1.250

Environmental Conditions:

Temperature Variation in Lab (°C):	24.0 to 24.0
Temperature Variation in Liquid (°C):	22.0 to 22.0

Results:

EUT Position	EUT Position	Channel Number	Meas. Avg. Power (dBm)	Max Rated Power (dBm)	Meas. Level (W/Kg)	Reported SAR (W/kg)	Note(s)	Mod.
53	Front	4183	23.9	24.5	0.886	1.017	1, 2	QPSK
54	Back	4183	23.9	24.5	0.735	0.844	1, 2	QPSK
55	Left Hand Side	4183	23.9	24.5	0.819	0.940	1, 2	QPSK
56	Left Hand Side	4132	23.7	24.5	0.882	1.060	1, 2	QPSK
57	Left Hand Side	4233	23.8	24.5	0.791	0.929	1, 2	QPSK
58	Right Hand Side	4183	23.9	24.5	0.710	0.815	1, 2	QPSK
59	Bottom	4183	23.9	24.5	0.098	0.113	1, 2	QPSK
60	Front	4132	23.7	24.5	0.982	1.181	1, 2, 3	QPSK
61	Front	4233	23.8	24.5	0.918	1.079	1, 2	QPSK
62	Front Antenna Extended	4132	23.7	24.5	1.040	1.250	1, 2, 4	QPSK

Note(s):

1. Circuit Switch (CS) - RMC 12.2kbps with Test loop mode 1 and TPC bits configured to All "1's"
2. EUT supports Hotspot: As per FCC KDB procedure SAR measurements were performed with the EUT at a separation distance of 10mm from the 'SAM' phantom flat section.
3. As per 865664 D01, the highest SAR measured > 0.8 W/kg has been re-measured and included in the report in section 2.3 under **SAR Measurement Variability and Measurement Uncertainty Analysis Results** Table.
4. Worst case configuration repeated with DTV Antenna Extended.

*KDB 941225 - SAR is not required for RMC+HSPA (HSDPA/HSUPA) channels when the maximum average output power is less than ¼ dB higher than that measured on the corresponding RMC channels and 1g SAR level measured in 'RMC 12.2kbps' is <75% SAR limit.

7.3.10. Specific Absorption Rate - UMTS-FDD 5 Body-Worn Configuration 1g Power Back-off Disabled

Test Summary:

Tissue Volume:	1g
Maximum Measured Level (W/kg):	0.803
Maximum Reported Level (W/kg):	0.965

Environmental Conditions:

Temperature Variation in Lab (°C):	24.0 to 24.0
Temperature Variation in Liquid (°C):	22.0 to 22.0

Results:

EUT Position	EUT Position	Channel Number	Meas. Avg. Power (dBm)	Max Rated Power (dBm)	Meas. Level (W/Kg)	Reported SAR (W/kg)	Note(s)	Mod.
63	Front	4132	23.7	24.5	0.787	0.946	1, 2	QPSK
64	Back	4132	23.7	24.5	0.639	0.768	1, 2	QPSK
65	Front Antenna Extended	4132	23.7	24.5	0.803	0.965	1, 2, 3	QPSK

Note(s):

1. Circuit Switch (CS) - RMC 12.2kbps with Test loop mode 1 and TPC bits configured to All "1's"
2. SAR measurements were performed with the closest edge of the EUT at a separation distance of 15mm from the 'SAM' phantom flat section.
3. Worst case configuration repeated with DTV Antenna Extended.

*KDB 941225 - SAR is not required for RMC+HSPA (HSDPA/HSUPA) channels when the maximum average output power is less than ¼ dB higher than that measured on the corresponding RMC channels and 1g SAR level measured in 'RMC 12.2kbps' is <75% SAR limit.

7.3.11. Specific Absorption Rate - Wi-Fi 2450 Head Configuration 1g Power Back-off Disabled Test Summary:

Tissue Volume:	1g
Maximum Measured Level (W/kg):	0.385
Maximum Reported Level (W/kg):	0.385

Environmental Conditions:

Temperature Variation in Lab (°C):	24.0 to 24.0
Temperature Variation in Liquid (°C):	23.6 to 23.6

Results:

EUT Position	EUT Position	Channel Number	Meas. Avg. Power (dBm)	Max Rated Power (dBm)	Meas. Level (W/Kg)	Reported SAR (W/kg)	Note(s)	Mod.
66	Touch Left	6	14.9	15.0	0.248	0.254	1	DBPSK
67	Tilt Left	6	14.9	15.0	0.217	0.222	1	DBPSK
68	Touch Right	6	14.9	15.0	0.334	0.342	1	DBPSK
69	Tilt Right	6	14.9	15.0	0.268	0.274	1	DBPSK
70	Touch Right	1	15.0	15.0	0.372	0.372	1	DBPSK
71	Touch Right	11	14.7	15.0	0.324	0.347	1	DBPSK
72	Touch Right Extended Antenna	1	15.0	15.0	0.385	0.385	1, 2	DBPSK

Note(s):

1. WLAN 802.11b 1Mbps
2. Worst case configuration repeated with DTV Antenna Extended.

*KDB 248227 - SAR is not required for 802.11g/n channels when the maximum average output power is equal to that measured on the corresponding 802.11b channels.

7.3.12.Specific Absorption Rate - Wi-Fi 2450 Hotspot Mode Configuration 1g Power Back-off Disabled Test Summary:

Tissue Volume:	1g
Maximum Measured Level (W/kg):	0.171
Maximum Reported Level (W/kg):	0.183

Environmental Conditions:

Temperature Variation in Lab (°C):	24.0 to 24.0
Temperature Variation in Liquid (°C):	23.0 to 23.0

Results:

EUT Position	EUT Position	Channel Number	Meas. Avg. Power (dBm)	Max Rated Power (dBm)	Meas. Level (W/Kg)	Reported SAR (W/kg)	Note(s)	Mod.
73	Front	6	14.9	15.0	0.086	0.088	1, 2	DBPSK
74	Back	6	14.9	15.0	0.091	0.093	1, 2	DBPSK
75	Left Hand Side	6	14.9	15.0	0.063	0.064	1, 2	DBPSK
76	Top	6	14.9	15.0	0.140	0.143	1, 2	DBPSK
77	Top	1	15.0	15.0	0.160	0.160	1, 2	DBPSK
78	Top	11	14.7	15.0	0.171	0.183	1, 2	DBPSK

Note(s):

1. WLAN 802.11b 1Mbps
2. EUT supports Hotspot: As per FCC KDB procedure SAR measurements were performed with the EUT at a separation distance of 10mm from the 'SAM' phantom flat section.

*Top configuration with DTV Antenna Extended is NOT required as Top edge with Antenna Extended is not achievable.

*KDB 248227 - SAR is not required for 802.11g/n channels when the maximum average output power is equal to that measured on the corresponding 802.11b channels.

7.3.13. Specific Absorption Rate - Wi-Fi 2450 Body-Worn Configuration 1g Power Back-off Disabled Test Summary:

Tissue Volume:	1g
Maximum Measured Level (W/kg):	0.061
Maximum Reported Level (W/kg):	0.065

Environmental Conditions:

Temperature Variation in Lab (°C):	24.0 to 24.0
Temperature Variation in Liquid (°C):	23.0 to 23.0

Results:

EUT Position	EUT Position	Channel Number	Meas. Avg. Power (dBm)	Max Rated Power (dBm)	Meas. Level (W/Kg)	Reported SAR (W/kg)	Note(s)	Mod.
79	Front	11	14.7	15.0	0.061	0.065	1, 2, 3	DBPSK
80	Back	11	14.7	15.0	0.056	0.060	1, 2, 3	DBPSK
81	Front Antenna Extended	11	14.7	15.0	0.061	0.065	1, 2, 3, 4	DBPSK

Note(s):

1. WLAN 802.11b 1Mbps
2. SAR measurements were performed with the closest edge of the EUT at a separation distance of 15mm from the 'SAM' phantom flat section.
3. Worst case and most conservative channel from Hotspot mode and used for Body-worn Configuration.
4. Worst case configuration repeated with DTV Antenna Extended.

*KDB 248227 - SAR is not required for 802.11g/n channels when the maximum average output power is equal to that measured on the corresponding 802.11b channels..

7.3.14. Specific Absorption Rate - Wi-Fi 802.11a 5.0 GHz Head Configuration 1g Power Back-off Disabled Test Summary:

Tissue Volume:	1g
Maximum Measured Level (W/kg):	0.223
Maximum Reported Level (W/kg):	0.262

Environmental Conditions:

Temperature Variation in Lab (°C):	24.0 to 24.0
Temperature Variation in Liquid (°C):	23.6 to 23.6

Results:

EUT Position	EUT Position	Channel Number	Meas. Avg. Power (dBm)	Max Rated Power (dBm)	Meas. Level (W/Kg)	Reported SAR (W/kg)	Note(s)	Mod.
82	Touch Left	48	9.9	10.7	0.162	0.195	1, 2	BPSK
83	Tilt Left	48	9.9	10.7	0.162	0.195	1, 2	BPSK
84	Touch Right	48	9.9	10.7	0.151	0.182	1, 2	BPSK
85	Tilt Right	48	9.9	10.7	0.150	0.180	1, 2	BPSK
86	Tilt Left	52	10.2	10.7	0.140	0.157	1, 2	BPSK
87	Tilt Left	136	9.9	10.7	0.186	0.224	1, 3	BPSK
88	Tilt Left	157	10.0	10.7	0.196	0.230	1, 2	BPSK
89	Tilt Left Antenna Extended	157	10.0	10.7	0.223	0.262	1, 2, 4	BPSK

Note(s):

1. WLAN 802.11a 6Mbps
2. For frequency bands with an operating range of < 100 MHz, when the reported SAR for the highest output power channel within is ≤ 0.8 W/kg, SAR for the remaining channels is not required. Per KDB 447498, section 4.3.3
3. For frequency bands with an operating range of < 200 MHz, when the reported SAR for the highest output power channel within is ≤ 0.4 W/kg, SAR for the remaining channels is not required. Per KDB 447498, section 4.3.3
4. Worst case configuration repeated with DTV Antenna Extended.

*KDB 248227 - SAR is not required for **802.11n** HT20 /HT40 channels as the maximum average output power is less than $\frac{1}{4}$ dB higher than **802.11a**.

7.4. Simultaneous Transmission SAR Analysis

Simultaneous transmission analysis of worst cases is shown in the tables below.

Overall Worst Case:

1. WWAN+WLAN
2. WWAN+WPAN

EUT Position	Reported SAR 1g (W/kg)			Maximum Sum of SAR
	WWAN GPRS850	WLAN Wi-Fi	WPAN Bluetooth 2.4 GHz	
Front	1.424	0.088		1.512
Front	1.424		0.184	1.608

Normal Analysis:

Head Configuration 1g – Worst cases measurements WWAN + WLAN

EUT Position	Reported SAR 1g (W/Kg)				Sum of WWAN & WLAN
	WWAN		WLAN		
	GSM850	PCS1900	FDD 5	Wi-Fi	
Touch Left	1.037			0.254	1.291
Touch Right	0.975			0.372	1.347
Tilt Left	0.444			0.222	0.666
Tilt Right	0.439			0.274	0.713
Touch Left		0.657		0.254	0.911
Touch Right		0.281		0.372	0.653
Tilt Left		0.172		0.222	0.394
Tilt Right		0.149		0.274	0.423
Touch Left			0.813	0.254	1.067
Touch Right			1.048	0.372	1.420
Tilt Left			0.455	0.222	0.677
Tilt Right			0.471	0.274	0.745

Simultaneous Transmission SAR Analysis (Continued)

Hotspot Mode Configuration 1g – Worst cases measurements WWAN+WLAN

EUT Position	Reported SAR 1g (W/Kg)				Sum of WWAN & WLAN
	WWAN			WLAN	
	GSM850	PCS1900	UMTS FDD 5	Wi-Fi	
Front	1.424			0.088	1.512
Back	1.226			0.093	1.319
Left Hand Side	0.983			0.064	1.047
Right Hand Side	0.885				0.885
Bottom	0.236				0.236
Top				0.183	0.183
Front		0.572		0.088	0.660
Back		0.550		0.093	0.643
Left Hand Side		0.166		0.064	0.230
Right Hand Side		0.026			0.026
Bottom		1.107			1.107
Top				0.183	0.183
Front			1.181	0.088	1.269
Back			0.844	0.093	0.937
Left Hand Side			1.060	0.064	1.124
Right Hand Side			0.815		0.815
Bottom			0.113		0.113
Top				0.183	0.183

Body-Worn Configuration 1g – Worst cases measurements WWAN+WLAN

EUT Position	Reported SAR 1g (W/Kg)				Sum of WWAN & WLAN
	WWAN			WLAN	
	GSM850	PCS1900	UMTS FDD 5	Wi-Fi	
Front	0.836			0.065	0.901
Back	0.745			0.060	0.805
Front		0.826		0.065	0.891
Back		0.553		0.060	0.613
Front			0.965	0.065	1.030
Back			0.768	0.060	0.828

Note(s):

1. The sum of reported SAR for WWAN and WLAN does not exceed 1.6W/kg in any of the above cases and hence, the SAR to peak location separation ratio distance was not calculated.
2. The highest of 1-g reported SAR value between 2.4 GHz and 5.0 GHz is chosen to determine WWAN+WLAN worst case measurements.

Simultaneous Transmission SAR Analysis (continued)

Hotspot Mode Configuration 1g – Worst cases measurements WWAN+WPAN

EUT Position	Reported SAR 1g (W/Kg)				Sum of WWAN & WPAN
	GSM850	PCS1900	UMTS FDD 5	WPAN <i>Bluetooth</i>	
Front	1.424			0.184	1.608
Back	1.226			0.184	1.410
Left Hand Side	0.983			0.184	1.167
Right Hand Side	0.885				0.885
Bottom	0.236				0.236
Top				0.184	0.184
Front		0.572		0.184	0.756
Back		0.550		0.184	0.734
Left Hand Side		0.166		0.184	0.350
Right Hand Side		0.026			0.026
Bottom		1.107			1.107
Top				0.184	0.184
Front			1.181	0.184	1.365
Back			0.844	0.184	1.028
Left Hand Side			1.060	0.184	1.244
Right Hand Side			0.815		0.815
Bottom			0.113		0.113
Top				0.184	0.184

Simultaneous Transmission SAR Analysis (Continued)
Body-Worn Configuration 1g – Worst cases measurements WWAN+WPAN

EUT Position	Reported SAR 1g (W/Kg)				Sum of WWAN & WPAN
	WWAN		UMTS FDD 5	WPAN	
	GSM850	PCS1900		Bluetooth	
Front	0.836			0.123	0.959
Back	0.745			0.123	0.868
Front		0.826		0.123	0.949
Back		0.553		0.123	0.676
Front			0.965	0.123	1.088
Back			0.768	0.123	0.891

Note(s):

- As per FCC KDB publication 447498 D01, for cases where sum of WWAN and WLAN (or WPAN) exceed 1.6W/kg, the SAR to peak location separation ratio distance is calculated as shown below
 - SAR peak location separation ratio (SPLSR) for each antenna pair in each simultaneous transmission configuration is given by $(SAR_1 + SAR_2)^{1.5} / R_i \leq 0.04$ for 1-g, where R_i is the separation distance between peak SAR locations for the antenna pair in mm.
 - One case that was found to exceed 1.6W/kg when summed up. These instances are of WWAN and Bluetooth, KDB 447498 states, when SAR is estimated for both antennas, the peak location separation should be determined by the closest physical separation of the antennas, according to the feed-point or geometric center of the antennas, whichever is more conservative. The coordinates of the peaks, whether measured or translated, should be clearly identified in the SAR report.
 - The separation distance between the feed points of WWAN and BT antenna as provided by the customer is 113.0mm. Since, the end to end separation distance between WWAN and BT antenna was more conservative (94.05mm), this was used for the SPLSR calculations.

Applying the formula to (1) we get, $SPLSR = (1.424+0.184)^{1.5} / 94.05 = 0.015 < 0.04$

Hence, Simultaneous transmission is not required.

- The sum of reported SAR for WWAN and WPAN does exceed 1.6W/kg in one of the above cases and hence, the SAR to peak location separation ratio distance was calculated in 7.5.
- Bluetooth estimated SAR result is calculated as per the formula below following FCC KDB publication 447498.
- Separation distance of 10mm was used for hotspot mode and 15mm for body-worn configuration.

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:

- $(max. \text{ power of channel, including tune-up tolerance, mW}) / (min. \text{ test separation distance, mm}) \cdot [\sqrt{f_{GHz}} / x] \text{ W/kg}$ for test separation distances $\leq 50 \text{ mm}$;
 where $x = 7.5$ for 1-g SAR, and $x = 18.75$ for 10-g SAR.
 - 10mm Bluetooth estimated SAR level:**
 Estimated *Bluetooth* SAR = $(8.91\text{Mw}/10\text{mm}) \cdot (\sqrt{2.4} / 7.5) = 0.184 \text{ W/kg}$
 - 15mm Bluetooth estimated SAR level:**
 Estimated *Bluetooth* SAR = $(8.91\text{Mw}/15\text{mm}) \cdot (\sqrt{2.4} / 7.5) = 0.123 \text{ W/kg}$

8. Measurement Uncertainty

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

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

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

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

Test Name	Confidence Level	Calculated Uncertainty
Specific Absorption Rate-GSM 850/ UMTS FDD 5 Head Configuration 1g	95%	±19.94%
Specific Absorption Rate-GSM / GPRS / EDGE 850 / UMTS FDD 5 Body Configurations 1g	95%	±20.07%
Specific Absorption Rate-PCS 1900 Head Configuration 1g	95%	±20.72%
Specific Absorption Rate-GSM / GPRS / EDGE 1900 Body Configuration 1g	95%	±20.00%
Specific Absorption Rate-Wi-Fi 2450 MHz Head Configuration 1g	95%	±19.47%
Specific Absorption Rate-Wi-Fi 2450 MHz Body Configuration 1g	95%	±19.90%
Specific Absorption Rate-Wi-Fi 5GHz Head Configuration 1g	95%	±20.14%

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

8.1. Specific Absorption Rate Uncertainty –GSM 850 / UMTS FDD 5 Head Configuration 1g

Type	Source of uncertainty	+ Value	- Value	Probability Distribution	Divisor	C _i (1g)	Standard Uncertainty		U _i or U _{eff}
							+ u (%)	- u (%)	
B	Probe calibration	6.000	6.000	normal (k=1)	1.0000	1.0000	6.000	6.000	∞
B	Axial Isotropy	0.250	0.250	normal (k=1)	1.0000	1.0000	0.250	0.250	∞
B	Hemispherical Isotropy	1.300	1.300	normal (k=1)	1.0000	1.0000	1.300	1.300	∞
B	Spatial Resolution	0.500	0.500	Rectangular	1.7321	1.0000	0.289	0.289	∞
B	Boundary Effect	0.769	0.769	Rectangular	1.7321	1.0000	0.444	0.444	∞
B	Linearity	0.600	0.600	Rectangular	1.7321	1.0000	0.346	0.346	∞
B	Detection Limits	0.200	0.200	Rectangular	1.7321	1.0000	0.115	0.115	∞
B	Readout Electronics	0.160	0.160	normal (k=1)	1.0000	1.0000	0.160	0.160	∞
B	Response Time	0.000	0.000	Rectangular	1.7321	1.0000	0.000	0.000	∞
B	Integration Time	1.730	1.730	Rectangular	1.7321	1.0000	0.999	0.999	∞
B	RF Ambient conditions	3.000	3.000	Rectangular	1.7321	1.0000	1.732	1.732	∞
B	Probe Positioner Mechanical Restrictions	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Probe Positioning with regard to Phantom Shell	2.850	2.850	Rectangular	1.7321	1.0000	1.645	1.645	∞
B	Extrapolation and integration / Maximum SAR evaluation	5.080	5.080	Rectangular	1.7321	1.0000	2.933	2.933	∞
A	Test Sample Positioning	2.400	2.400	normal (k=1)	1.0000	1.0000	2.400	2.400	10
A	Device Holder uncertainty	0.154	0.154	normal (k=1)	1.0000	1.0000	0.154	0.154	10
B	Phantom Uncertainty	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Drift of output power	5.000	5.000	Rectangular	1.7321	1.0000	2.887	2.887	∞
B	Liquid Conductivity (target value)	5.000	5.000	Rectangular	1.7321	0.6400	1.848	1.848	∞
A	Liquid Conductivity (measured value)	4.920	4.920	normal (k=1)	1.0000	0.6400	3.149	3.149	5
B	Liquid Permittivity (target value)	5.000	5.000	Rectangular	1.7321	0.6000	1.732	1.732	∞
A	Liquid Permittivity (measured value)	4.970	4.970	normal (k=1)	1.0000	0.6000	2.982	2.982	5
	Combined standard uncertainty			t-distribution			10.17	10.17	>250
	Expanded uncertainty			k = 1.96			19.94	19.94	>250

8.2. Specific Absorption Rate-GSM / GPRS / EDGE 850 / UMTS FDD 5 Body Configuration 1g

Type	Source of uncertainty	+ Value	- Value	Probability Distribution	Divisor	C _i (1g)	Standard Uncertainty		v _i or v _{eff}
							+ u (%)	- u (%)	
B	Probe calibration	6.000	6.000	normal (k=1)	1.0000	1.0000	6.000	6.000	∞
B	Axial Isotropy	0.250	0.250	normal (k=1)	1.0000	1.0000	0.250	0.250	∞
B	Hemispherical Isotropy	1.300	1.300	normal (k=1)	1.0000	1.0000	1.300	1.300	∞
B	Spatial Resolution	0.500	0.500	Rectangular	1.7321	1.0000	0.289	0.289	∞
B	Boundary Effect	0.769	0.769	Rectangular	1.7321	1.0000	0.444	0.444	∞
B	Linearity	0.600	0.600	Rectangular	1.7321	1.0000	0.346	0.346	∞
B	Detection Limits	0.200	0.200	Rectangular	1.7321	1.0000	0.115	0.115	∞
B	Readout Electronics	0.160	0.160	normal (k=1)	1.0000	1.0000	0.160	0.160	∞
B	Response Time	0.000	0.000	Rectangular	1.7321	1.0000	0.000	0.000	∞
B	Integration Time	1.730	1.730	Rectangular	1.7321	1.0000	0.999	0.999	∞
B	RF Ambient conditions	3.000	3.000	Rectangular	1.7321	1.0000	1.732	1.732	∞
B	Probe Positioner Mechanical Restrictions	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Probe Positioning with regard to Phantom Shell	2.850	2.850	Rectangular	1.7321	1.0000	1.645	1.645	∞
B	Extrapolation and integration /Maximum SAR evaluation	5.080	5.080	Rectangular	1.7321	1.0000	2.933	2.933	∞
A	Test Sample Positioning	2.900	2.900	normal (k=1)	1.0000	1.0000	2.900	2.900	10
A	Device Holder uncertainty	0.154	0.154	normal (k=1)	1.0000	1.0000	0.154	0.154	10
B	Phantom Uncertainty	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Drift of output power	5.000	5.000	Rectangular	1.7321	1.0000	2.887	2.887	∞
B	Liquid Conductivity (target value)	5.000	5.000	Rectangular	1.7321	0.6400	1.848	1.848	∞
A	Liquid Conductivity (measured value)	4.690	4.690	normal (k=1)	1.0000	0.6400	3.002	3.002	5
B	Liquid Permittivity (target value)	5.000	5.000	Rectangular	1.7321	0.6000	1.732	1.732	∞
A	Liquid Permittivity (measured value)	4.860	4.860	normal (k=1)	1.0000	0.6000	2.916	2.916	5
	Combined standard uncertainty			t-distribution			10.24	10.24	>250
	Expanded uncertainty			k = 1.96			20.07	20.07	>250

8.3. Specific Absorption Rate-PCS 1900 Head Configuration 1g

Type	Source of uncertainty	+ Value	- Value	Probability Distribution	Divisor	C _i (1g)	Standard Uncertainty		U _i or U _{eff}
							+ u (%)	- u (%)	
B	Probe calibration	6.000	6.000	normal (k=1)	1.0000	1.0000	6.000	6.000	∞
B	Axial Isotropy	0.250	0.250	normal (k=1)	1.0000	1.0000	0.250	0.250	∞
B	Hemispherical Isotropy	1.300	1.300	normal (k=1)	1.0000	1.0000	1.300	1.300	∞
B	Spatial Resolution	0.500	0.500	Rectangular	1.7321	1.0000	0.289	0.289	∞
B	Boundary Effect	0.769	0.769	Rectangular	1.7321	1.0000	0.444	0.444	∞
B	Linearity	0.600	0.600	Rectangular	1.7321	1.0000	0.346	0.346	∞
B	Detection Limits	0.200	0.200	Rectangular	1.7321	1.0000	0.115	0.115	∞
B	Readout Electronics	0.160	0.160	normal (k=1)	1.0000	1.0000	0.160	0.160	∞
B	Response Time	0.000	0.000	Rectangular	1.7321	1.0000	0.000	0.000	∞
B	Integration Time	1.730	1.730	Rectangular	1.7321	1.0000	0.999	0.999	∞
B	RF Ambient conditions	3.000	3.000	Rectangular	1.7321	1.0000	1.732	1.732	∞
B	Probe Positioner Mechanical Restrictions	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Probe Positioning with Regard to Phantom Shell	2.850	2.850	Rectangular	1.7321	1.0000	1.645	1.645	∞
B	Extrapolation and integration / Maximum SAR evaluation	5.080	5.080	Rectangular	1.7321	1.0000	2.933	2.933	∞
A	Test Sample Positioning	3.800	3.800	normal (k=1)	1.0000	1.0000	3.800	3.800	10
A	Device Holder uncertainty	0.154	0.154	normal (k=1)	1.0000	1.0000	0.154	0.154	10
B	Phantom Uncertainty	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Drift of output power	5.000	5.000	Rectangular	1.7321	1.0000	2.887	2.887	∞
B	Liquid Conductivity (target value)	5.000	5.000	Rectangular	1.7321	0.6400	1.848	1.848	∞
A	Liquid Conductivity (measured value)	4.900	4.900	normal (k=1)	1.0000	0.6400	3.136	3.136	5
B	Liquid Permittivity (target value)	5.000	5.000	Rectangular	1.7321	0.6000	1.732	1.732	∞
A	Liquid Permittivity (measured value)	4.880	4.880	normal (k=1)	1.0000	0.6000	2.928	2.928	5
	Combined standard uncertainty			t-distribution			10.57	10.57	>200
	Expanded uncertainty			k = 1.96			20.72	20.72	>200

8.4. Specific Absorption Rate-PCS / GPRS / EDGE 1900 Body Configuration 1g

Type	Source of uncertainty	+ Value	- Value	Probability Distribution	Divisor	C _i (1g)	Standard Uncertainty		v _i or v _{eff}
							+ u (%)	- u (%)	
B	Probe calibration	6.000	6.000	normal (k=1)	1.0000	1.0000	6.000	6.000	∞
B	Axial Isotropy	0.250	0.250	normal (k=1)	1.0000	1.0000	0.250	0.250	∞
B	Hemispherical Isotropy	1.300	1.300	normal (k=1)	1.0000	1.0000	1.300	1.300	∞
B	Spatial Resolution	0.500	0.500	Rectangular	1.7321	1.0000	0.289	0.289	∞
B	Boundary Effect	0.769	0.769	Rectangular	1.7321	1.0000	0.444	0.444	∞
B	Linearity	0.600	0.600	Rectangular	1.7321	1.0000	0.346	0.346	∞
B	Detection Limits	0.200	0.200	Rectangular	1.7321	1.0000	0.115	0.115	∞
B	Readout Electronics	0.160	0.160	normal (k=1)	1.0000	1.0000	0.160	0.160	∞
B	Response Time	0.000	0.000	Rectangular	1.7321	1.0000	0.000	0.000	∞
B	Integration Time	1.730	1.730	Rectangular	1.7321	1.0000	0.999	0.999	∞
B	RF Ambient conditions	3.000	3.000	Rectangular	1.7321	1.0000	1.732	1.732	∞
B	Probe Positioner Mechanical Restrictions	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Probe Positioning with regard to Phantom Shell	2.850	2.850	Rectangular	1.7321	1.0000	1.645	1.645	∞
B	Extrapolation and integration / Maximum SAR evaluation	5.080	5.080	Rectangular	1.7321	1.0000	2.933	2.933	∞
A	Test Sample Positioning	2.500	2.500	normal (k=1)	1.0000	1.0000	2.500	2.500	10
A	Device Holder uncertainty	0.154	0.154	normal (k=1)	1.0000	1.0000	0.154	0.154	10
B	Phantom Uncertainty	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Drift of output power	5.000	5.000	Rectangular	1.7321	1.0000	2.887	2.887	∞
B	Liquid Conductivity (target value)	5.000	5.000	Rectangular	1.7321	0.6400	1.848	1.848	∞
A	Liquid Conductivity (measured value)	4.940	4.940	normal (k=1)	1.0000	0.6400	3.162	3.162	5
B	Liquid Permittivity (target value)	5.000	5.000	Rectangular	1.7321	0.6000	1.732	1.732	∞
A	Liquid Permittivity (measured value)	4.980	4.980	normal (k=1)	1.0000	0.6000	2.988	2.988	5
	Combined standard uncertainty			t-distribution			10.20	10.20	>250
	Expanded uncertainty			k = 1.96			20.00	20.00	>250

8.5. Specific Absorption Rate-Wi-Fi 2450 MHz Head Configuration 1g

Type	Source of uncertainty	+ Value	- Value	Probability Distribution	Divisor	C _i (1g)	Standard Uncertainty		v _i or v _{eff}
							+ u (%)	- u (%)	
B	Probe calibration	6.000	6.000	normal (k=1)	1.0000	1.0000	6.000	6.000	∞
B	Axial Isotropy	0.250	0.250	normal (k=1)	1.0000	1.0000	0.250	0.250	∞
B	Hemispherical Isotropy	1.300	1.300	normal (k=1)	1.0000	1.0000	1.300	1.300	∞
B	Spatial Resolution	0.500	0.500	Rectangular	1.7321	1.0000	0.289	0.289	∞
B	Boundary Effect	0.769	0.769	Rectangular	1.7321	1.0000	0.444	0.444	∞
B	Linearity	0.600	0.600	Rectangular	1.7321	1.0000	0.346	0.346	∞
B	Detection Limits	0.200	0.200	Rectangular	1.7321	1.0000	0.115	0.115	∞
B	Readout Electronics	0.160	0.160	normal (k=1)	1.0000	1.0000	0.160	0.160	∞
B	Response Time	0.000	0.000	Rectangular	1.7321	1.0000	0.000	0.000	∞
B	Integration Time	0.000	0.000	Rectangular	1.7321	1.0000	0.000	0.000	∞
B	RF Ambient conditions	3.000	3.000	Rectangular	1.7321	1.0000	1.732	1.732	∞
B	Probe Positioner Mechanical Restrictions	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Probe Positioning with regard to Phantom Shell	2.850	2.850	Rectangular	1.7321	1.0000	1.645	1.645	∞
B	Extrapolation and integration / Maximum SAR evaluation	5.080	5.080	Rectangular	1.7321	1.0000	2.933	2.933	∞
A	Test Sample Positioning	2.000	2.000	normal (k=1)	1.0000	1.0000	2.000	2.000	10
A	Device Holder uncertainty	0.154	0.154	normal (k=1)	1.0000	1.0000	0.154	0.154	10
B	Phantom Uncertainty	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Drift of output power	5.000	5.000	Rectangular	1.7321	1.0000	2.887	2.887	∞
B	Liquid Conductivity (target value)	5.000	5.000	Rectangular	1.7321	0.6400	1.848	1.848	∞
A	Liquid Conductivity (measured value)	4.410	4.410	normal (k=1)	1.0000	0.6400	2.822	2.822	5
B	Liquid Permittivity (target value)	5.000	5.000	Rectangular	1.7321	0.6000	1.732	1.732	∞
A	Liquid Permittivity (measured value)	4.930	4.930	normal (k=1)	1.0000	0.6000	2.958	2.958	5
	Combined standard uncertainty			t-distribution			9.93	9.93	>300
	Expanded uncertainty			k = 1.96			19.47	19.47	>300

8.6. Specific Absorption Rate-Wi-Fi 2450 MHz Body Configuration 1g

Type	Source of uncertainty	+ Value	- Value	Probability Distribution	Divisor	C _i (1g)	Standard Uncertainty		v _i or v _{eff}
							+ u (%)	- u (%)	
B	Probe calibration	6.000	6.000	normal (k=1)	1.0000	1.0000	6.000	6.000	∞
B	Axial Isotropy	0.250	0.250	normal (k=1)	1.0000	1.0000	0.250	0.250	∞
B	Hemispherical Isotropy	1.300	1.300	normal (k=1)	1.0000	1.0000	1.300	1.300	∞
B	Spatial Resolution	0.500	0.500	Rectangular	1.7321	1.0000	0.289	0.289	∞
B	Boundary Effect	0.769	0.769	Rectangular	1.7321	1.0000	0.444	0.444	∞
B	Linearity	0.600	0.600	Rectangular	1.7321	1.0000	0.346	0.346	∞
B	Detection Limits	0.200	0.200	Rectangular	1.7321	1.0000	0.115	0.115	∞
B	Readout Electronics	0.160	0.160	normal (k=1)	1.0000	1.0000	0.160	0.160	∞
B	Response Time	0.000	0.000	Rectangular	1.7321	1.0000	0.000	0.000	∞
B	Integration Time	0.000	0.000	Rectangular	1.7321	1.0000	0.000	0.000	∞
B	RF Ambient conditions	3.000	3.000	Rectangular	1.7321	1.0000	1.732	1.732	∞
B	Probe Positioner Mechanical Restrictions	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Probe Positioning with regard to Phantom Shell	2.850	2.850	Rectangular	1.7321	1.0000	1.645	1.645	∞
B	Extrapolation and integration / Maximum SAR evaluation	5.080	5.080	Rectangular	1.7321	1.0000	2.933	2.933	∞
A	Test Sample Positioning	2.570	2.570	normal (k=1)	1.0000	1.0000	2.570	2.570	10
A	Device Holder uncertainty	0.154	0.154	normal (k=1)	1.0000	1.0000	0.154	0.154	10
B	Phantom Uncertainty	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Drift of output power	5.000	5.000	Rectangular	1.7321	1.0000	2.887	2.887	∞
B	Liquid Conductivity (target value)	5.000	5.000	Rectangular	1.7321	0.6400	1.848	1.848	∞
A	Liquid Conductivity (measured value)	4.900	4.900	normal (k=1)	1.0000	0.6400	3.136	3.136	5
B	Liquid Permittivity (target value)	5.000	5.000	Rectangular	1.7321	0.6000	1.732	1.732	∞
A	Liquid Permittivity (measured value)	4.920	4.920	normal (k=1)	1.0000	0.6000	2.952	2.952	5
	Combined standard uncertainty			t-distribution			10.15	10.15	>250
	Expanded uncertainty			k = 1.96			19.90	19.90	>250

8.7. Specific Absorption Rate-Wi-Fi 5GHz Head Configuration 1g

Type	Source of uncertainty	+ Value	- Value	Probability Distribution	Divisor	C _i (1g)	Standard Uncertainty		v _i or v _{eff}
							+ u (%)	- u (%)	
B	Probe calibration	6.550	6.550	normal (k=1)	1.0000	1.0000	6.550	6.550	∞
B	Axial Isotropy	0.250	0.250	normal (k=1)	1.0000	1.0000	0.250	0.250	∞
B	Hemispherical Isotropy	1.300	1.300	normal (k=1)	1.0000	1.0000	1.300	1.300	∞
B	Spatial Resolution	0.500	0.500	Rectangular	1.7321	1.0000	0.289	0.289	∞
B	Boundary Effect	0.769	0.769	Rectangular	1.7321	1.0000	0.444	0.444	∞
B	Linearity	0.600	0.600	Rectangular	1.7321	1.0000	0.346	0.346	∞
B	Detection Limits	0.200	0.200	Rectangular	1.7321	1.0000	0.115	0.115	∞
B	Readout Electronics	0.160	0.160	normal (k=1)	1.0000	1.0000	0.160	0.160	∞
B	Response Time	0.000	0.000	Rectangular	1.7321	1.0000	0.000	0.000	∞
B	Integration Time	0.000	0.000	Rectangular	1.7321	1.0000	0.000	0.000	∞
B	RF Ambient conditions	3.000	3.000	Rectangular	1.7321	1.0000	1.732	1.732	∞
B	Probe Positioner Mechanical Restrictions	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Probe Positioning with regard to Phantom Shell	2.850	2.850	Rectangular	1.7321	1.0000	1.645	1.645	∞
B	Extrapolation and integration / Maximum SAR evaluation	5.080	5.080	Rectangular	1.7321	1.0000	2.933	2.933	∞
A	Test Sample Positioning	2.540	2.540	normal (k=1)	1.0000	1.0000	2.540	2.540	10
A	Device Holder uncertainty	0.154	0.154	normal (k=1)	1.0000	1.0000	0.154	0.154	10
B	Phantom Uncertainty	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Drift of output power	5.000	5.000	Rectangular	1.7321	1.0000	2.887	2.887	∞
B	Liquid Conductivity (target value)	5.000	5.000	Rectangular	1.7321	0.6400	1.848	1.848	∞
A	Liquid Conductivity (measured value)	4.690	4.690	normal (k=1)	1.0000	0.6400	3.002	3.002	5
B	Liquid Permittivity (target value)	5.000	5.000	Rectangular	1.7321	0.6000	1.732	1.732	∞
A	Liquid Permittivity (measured value)	3.830	3.830	normal (k=1)	1.0000	0.6000	2.298	2.298	5
	Combined standard uncertainty			t-distribution			10.28	10.28	>400
	Expanded uncertainty			k = 1.96			20.14	20.14	>400

Appendix 1. Test Equipment Used

UL No.	Instrument	Manufacturer	Type No.	Serial No.	Date Last Calibrated	Cal. Interval (Months)
A034	Narda 20W Termination	Narda	374BNM	8706	Calibrated as part of system	-
A1097	SMA Directional Coupler	MiDISCO	MDC6223-30	None	Calibrated as part of system	-
A1137	3Db Attenuator	Narda	779	04690	Calibrated as part of system	-
A1174	Dielectric Probe Kit	Agilent Technologies	85070C	Us99360072	Calibrated before use	-
A1328	Handset Positioner	Schmid & Partner Engineering AG	Modification	SD 000 H01 DA	-	-
A1182	Handset Positioner	Schmid & Partner Engineering AG	V3.0	None	-	-
A2111	Data Acquisition Electronics	Schmid & Partner Engineering AG	DAE3	432	02 May 2012	12
A2110	Data Acquisition Electronics	Schmid & Partner Engineering AG	DAE3	431	20 Sept 2012	12
A1234	Data Acquisition Electronics	Schmid & Partner Engineering AG	DAE3	450	22 Jan 2013	12
A2077	Probe	Schmid & Partner Engineering AG	EX3 DV4	3814	24 Sep 2012	12
A2243	Probe	Schmid & Partner Engineering AG	ES3DV3	3304	31 Aug 2012	12
A2113	Probe	Schmid & Partner Engineering AG	ET3 DV6	1587	11 May 2012	12
A1185	Probe	Schmid & Partner Engineering AG	ET3 DV6	1528	26 Jul 2012	12
A2201	900 MHz Dipole Kit	Schmid & Partner Engineering AG	D900V2	035	16 Aug 2012	12
A2200	1900 MHz Dipole Kit	Schmid & Partner Engineering AG	D1900V2	537	14 Aug 2012	12
A2202	2440 MHz Dipole Kit	Schmid & Partner Engineering AG	D2440V2	701	13 Aug 2012	12
A1377	5.0 GHz Dipole Kit	Schmid & Partner Engineering AG	D5GHzV2	1016	20 Feb 2013	12
A1497	Amplifier	Mini-Circuits	zhl-42w (sma)	e020105	Calibrated as part of system	-

UL No.	Instrument	Manufacturer	Type No.	Serial No.	Date Last Calibrated	Cal. Interval (Months)
A1566	SAM Phantom	Schmid & Partner Engineering AG	SAM a (Site 56)	002	Calibrated before use	-
A1238	SAM Phantom	Schmid & Partner Engineering AG	SAM b (Site 56)	001	Calibrated before use	-
A2125	SAM Phantom	Schmid & Partner Engineering AG	SAM b (Site 57)	TP-1031	Calibrated before use	-
A2124	SAM Phantom	Schmid & Partner Engineering AG	SAM a (Site 57)	TP-1030	Calibrated before use	-
A2252	2mm Oval Phantom	Schmid & Partner Engineering AG	Eli5	1177	Calibrated before use	-
A215	20 Db Attenuator	Narda	766-20	9402	Calibrated as part of system	-
A1531	Antenna	AARONIA AG	7025	02458	-	-
FA2263	Digital Camera	Samsung	PL211	9453C90B 607487L	-	-
M1015	Network Analyser	Agilent Technologies	8753ES	US39172406	09 Oct 2012	12
C1145	Cable	Rosenberger MICRO-COAX	FA147A F003003030	41843-1	Calibrated as part of system	-
C1146	Cable	Rosenberger MICRO-COAX	FA147A F030003030	41752-1	Calibrated as part of system	-
G0528	Robot Power Supply	Schmid & Partner Engineering AG	DASY4	None	Calibrated before use	-
GO591	Robot Power Supply	Schmid & Partner Engineering AG	DASY4	None	Calibrated before use	-
G0592	Robot Power Supply	Schmid & Partner Engineering AG	DASY53	None	Calibrated before use	-
G087	PSU	Thurlby Thandar	CPX200	100701	Calibrated before use	-
M1047	Robot Arm	Staubli	RX908 L	F00/SD8 9A1/A/01	Calibrated before use	-
M1653	Robot Arm	Staubli	RX908 L	F01/5J8 6A1/C/01	Calibrated before use	-
M1680	Robot Arm	Staubli	TX60 L	F12/5MZ7 A1/A/01	Calibrated before use	-
M1159	Signal Generator	Agilent Technologies	E8241A	US42110332	Internal Checked 10 Dec 2012	4
M1647	Signal Generator	Hewlett Packward	8648C	3537A01598	01 Jun 2012	12
M1071	Spectrum Analyzer	Agilent	HP8590E	3647U00514	(Monitoring use only)	-
M1270	Digital Thermometer	RS	N/A	N/A	Internal Checked 13 May 2012	12

UL No.	Instrument	Manufacturer	Type No.	Serial No.	Date Last Calibrated	Cal. Interval (Months)
M1023	Dual Channel Power Meter	R & S	NRVD	863715/030	18 July 2012	12
S256	SAR Lab	UL	Site 56	N/A	Calibrated before use	-
S512	SAR Lab	UL	Site 57	N/A	Calibrated before use	-
S513	SAR Lab	UL	Site 58	N/A	Calibrated before use	-

Note:

All the assets were in calibration during the course of testing.

A.1.1. Calibration Certificates

This section contains the calibration certificates and data for the Probe(s) and Dipole(s) used, which are not included in the total number of pages for this report.

Checked by *R. J. J. J.* DATE: 26-SEPT-2012

**Calibration Laboratory of
Schmid & Partner
Engineering AG**
Zeughausstrasse 43, 8004 Zurich, Switzerland



S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS) **ASSET A2077**
The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **RFI**

Certificate No: **EX3-3814_Sep12**

CALIBRATION CERTIFICATE

Object: **EX3DV4 - SN:3814**

Calibration procedure(s): **QA CAL-01.v8, QA CAL-14.v3, QA CAL-23.v4, QA CAL-25.v4
Calibration procedure for dosimetric E-field probes**

Calibration date: **September 24, 2012**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	29-Mar-12 (No. 217-01508)	Apr-13
Power sensor E4412A	MY41498087	29-Mar-12 (No. 217-01508)	Apr-13
Reference 3 dB Attenuator	SN: S5054 (3c)	27-Mar-12 (No. 217-01531)	Apr-13
Reference 20 dB Attenuator	SN: S5086 (20b)	27-Mar-12 (No. 217-01529)	Apr-13
Reference 30 dB Attenuator	SN: S5129 (30b)	27-Mar-12 (No. 217-01532)	Apr-13
Reference Probe ES3DV2	SN: 3013	29-Dec-11 (No. ES3-3013_Dec11)	Dec-12
DAE4	SN: 660	20-Jun-12 (No. DAE4-660_Jun12)	Jun-13
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Apr-11)	In house check: Apr-13
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-11)	In house check: Oct-12

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	<i>[Signature]</i>
Approved by:	Katja Pokovic	Technical Manager	<i>[Signature]</i>

Issued: September 24, 2012

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.



Accredited by the Swiss Accreditation Service (SAS)

The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Glossary:

TSL	tissue simulating liquid
NORM _{x,y,z}	sensitivity in free space
ConvF	sensitivity in TSL / NORM _{x,y,z}
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C	modulation dependent linearization parameters
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., $\vartheta = 0$ is normal to probe axis

Calibration is Performed According to the Following Standards:

- IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005

Methods Applied and Interpretation of Parameters:

- NORM_{x,y,z}**: Assessed for E-field polarization $\vartheta = 0$ ($f \leq 900$ MHz in TEM-cell; $f > 1800$ MHz: R22 waveguide). NORM_{x,y,z} are only intermediate values, i.e., the uncertainties of NORM_{x,y,z} does not affect the E²-field uncertainty inside TSL (see below ConvF).
- NORM(f)_{x,y,z}** = NORM_{x,y,z} * frequency_response (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of ConvF.
- DCP_{x,y,z}**: DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- PAR**: PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- A_{x,y,z}; B_{x,y,z}; C_{x,y,z}, VR_{x,y,z}; A, B, C** are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. VR is the maximum calibration range expressed in RMS voltage across the diode.
- ConvF and Boundary Effect Parameters**: Assessed in flat phantom using E-field (or Temperature Transfer Standard for $f \leq 800$ MHz) and inside waveguide using analytical field distributions based on power measurements for $f > 800$ MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORM_{x,y,z} * ConvF whereby the uncertainty corresponds to that given for ConvF. A frequency dependent ConvF is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- Spherical isotropy (3D deviation from isotropy)**: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- Sensor Offset**: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.

Probe EX3DV4

SN:3814

Manufactured: September 2, 2011
Calibrated: September 24, 2012

Calibrated for DASY/EASY Systems
(Note: non-compatible with DASY2 system!)

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3814

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu\text{V}/(\text{V}/\text{m})^2$) ^A	0.53	0.50	0.44	± 10.1 %
DCP (mV) ^B	99.9	93.7	98.7	

Modulation Calibration Parameters

UID	Communication System Name	PAR		A dB	B dB	C dB	VR mV	Unc ^E (k=2)
0	CW	0.00	X	0.00	0.00	1.00	172.6	±3.0 %
			Y	0.00	0.00	1.00	154.1	
			Z	0.00	0.00	1.00	144.1	

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

^A The uncertainties of NormX,Y,Z do not affect the E²-field uncertainty inside TSL (see Pages 5 and 6).

^B Numerical linearization parameter: uncertainty not required.

^E Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3814

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
1450	40.5	1.20	8.56	8.56	8.56	0.19	2.04	± 12.0 %
2450	39.2	1.80	6.89	6.89	6.89	0.33	0.97	± 12.0 %
2600	39.0	1.96	6.81	6.81	6.81	0.34	1.00	± 12.0 %
5200	36.0	4.66	5.06	5.06	5.06	0.42	1.80	± 13.1 %
5300	35.9	4.76	4.73	4.73	4.73	0.42	1.80	± 13.1 %
5500	35.6	4.96	4.54	4.54	4.54	0.45	1.80	± 13.1 %
5600	35.5	5.07	4.26	4.26	4.26	0.50	1.80	± 13.1 %
5800	35.3	5.27	4.50	4.50	4.50	0.45	1.80	± 13.1 %

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3814

Calibration Parameter Determined in Body Tissue Simulating Media

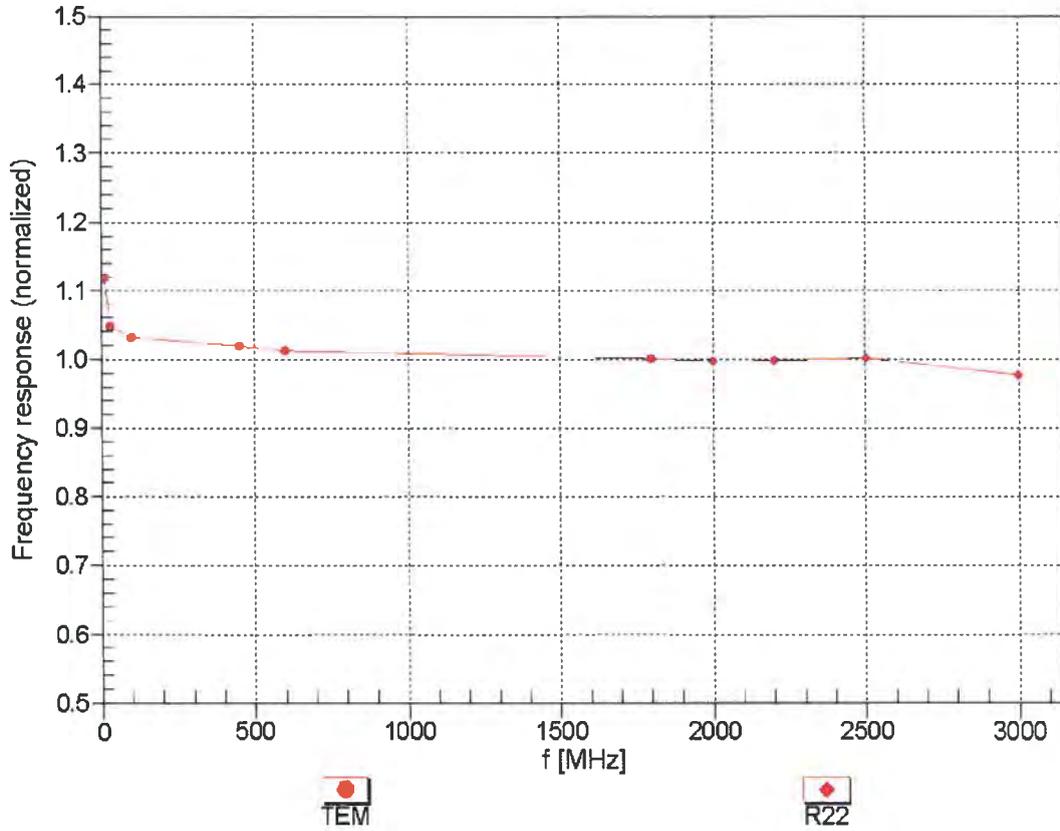
f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
1450	54.0	1.30	8.26	8.26	8.26	0.23	1.40	± 12.0 %
2450	52.7	1.95	7.41	7.41	7.41	0.80	0.66	± 12.0 %
2600	52.5	2.16	7.08	7.08	7.08	0.79	0.61	± 12.0 %
3700	51.0	3.55	6.27	6.27	6.27	0.22	2.24	± 13.1 %
5200	49.0	5.30	4.39	4.39	4.39	0.52	1.90	± 13.1 %
5300	48.9	5.42	4.11	4.11	4.11	0.55	1.90	± 13.1 %
5500	48.6	5.65	4.02	4.02	4.02	0.52	1.90	± 13.1 %
5600	48.5	5.77	3.71	3.71	3.71	0.60	1.90	± 13.1 %
5800	48.2	6.00	3.97	3.97	3.97	0.60	1.90	± 13.1 %

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

Frequency Response of E-Field

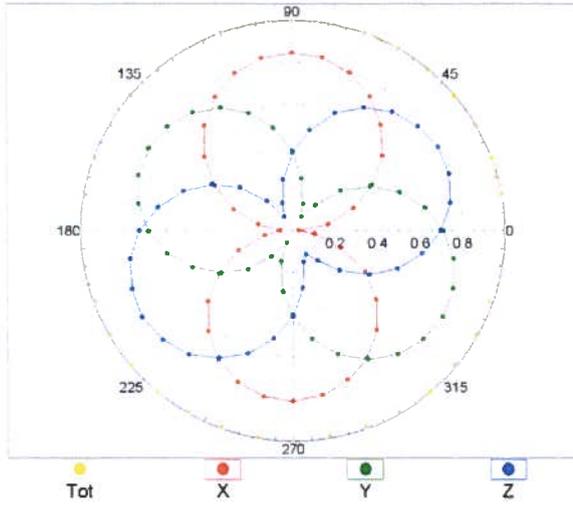
(TEM-Cell:ifi110 EXX, Waveguide: R22)



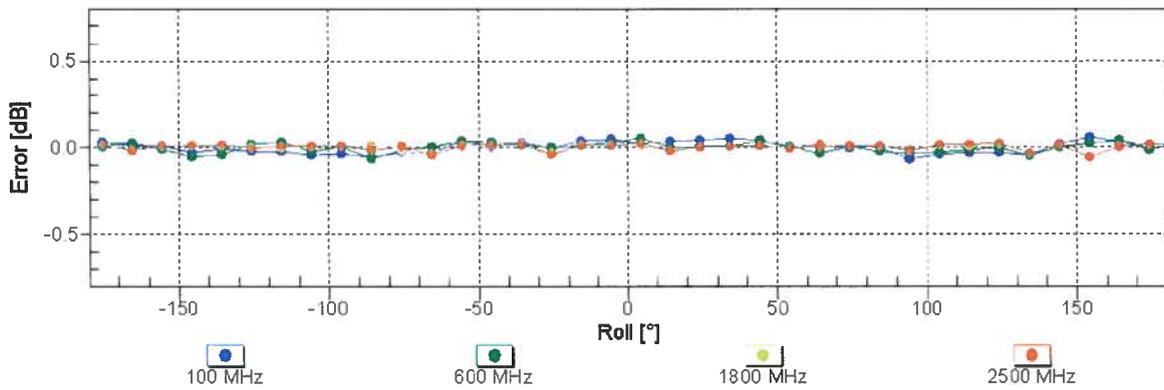
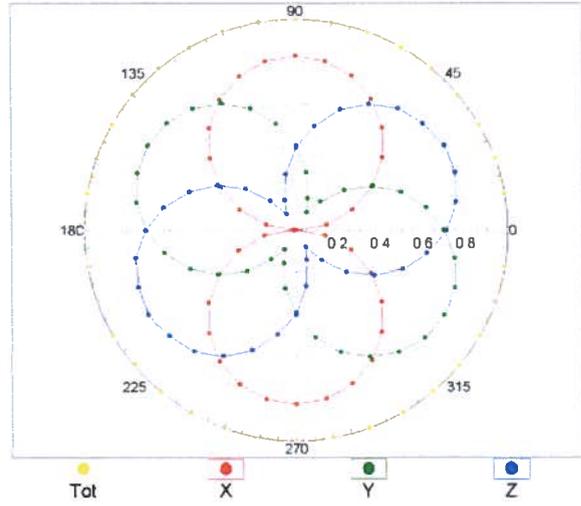
Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ (k=2)

Receiving Pattern (ϕ), $\vartheta = 0^\circ$

f=600 MHz,TEM

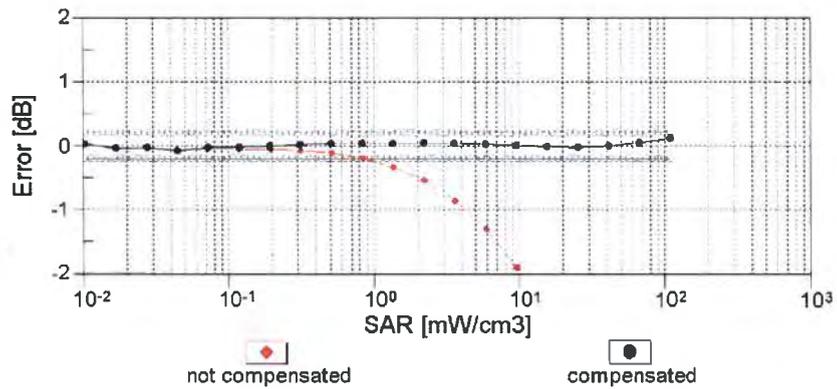
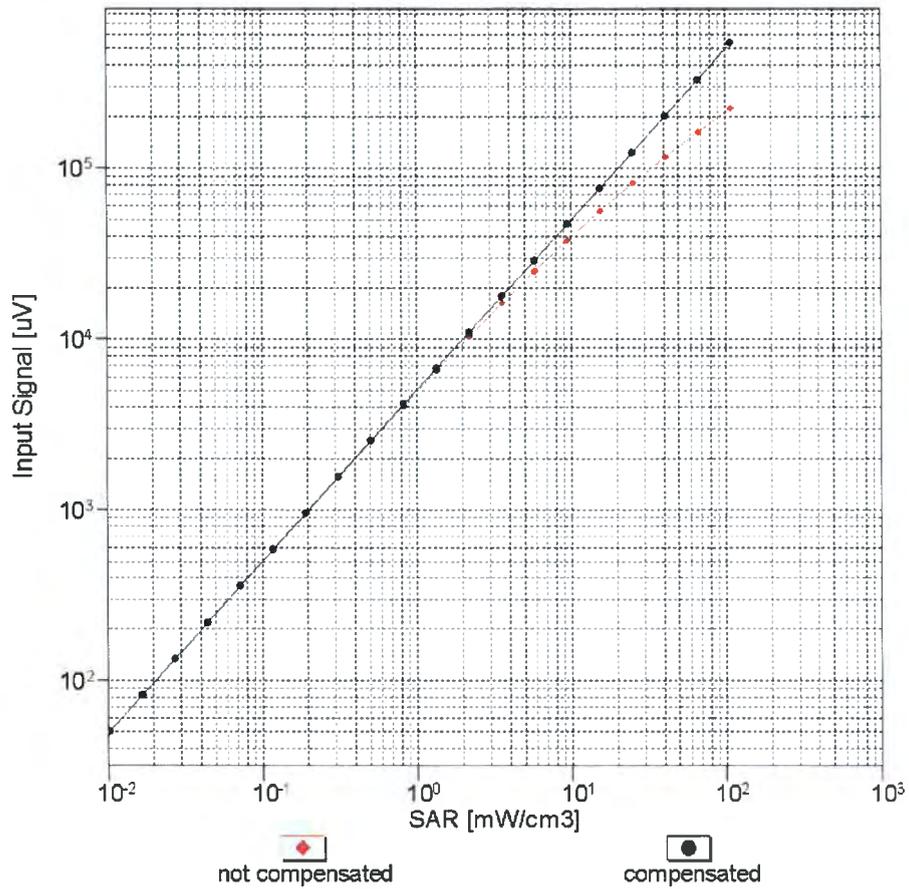


f=1800 MHz,R22



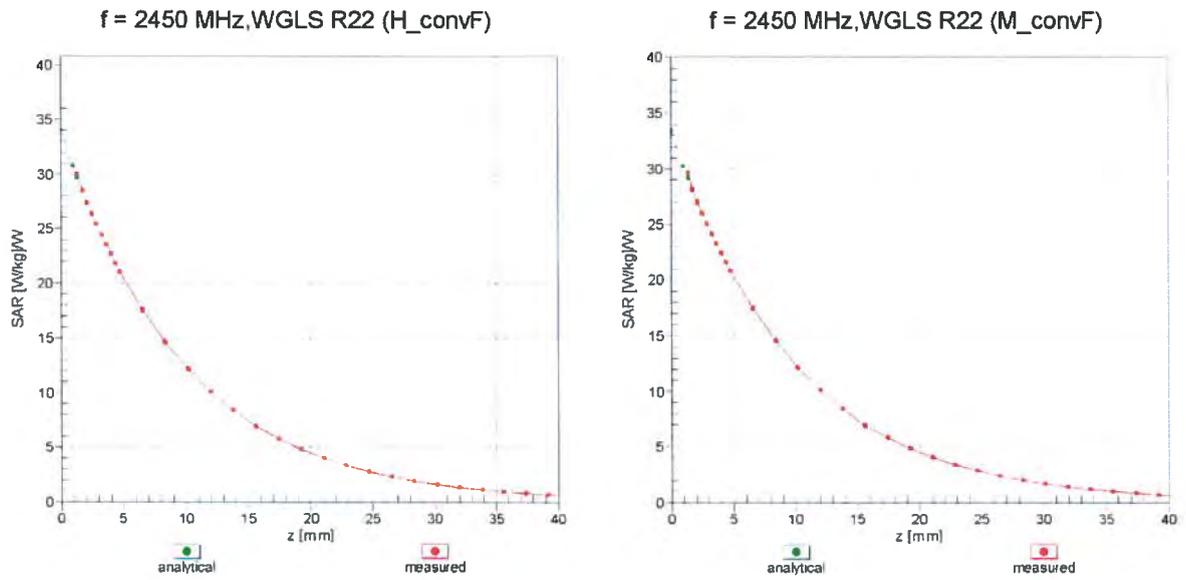
Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ (k=2)

Dynamic Range $f(\text{SAR}_{\text{head}})$ (TEM cell , $f = 900 \text{ MHz}$)

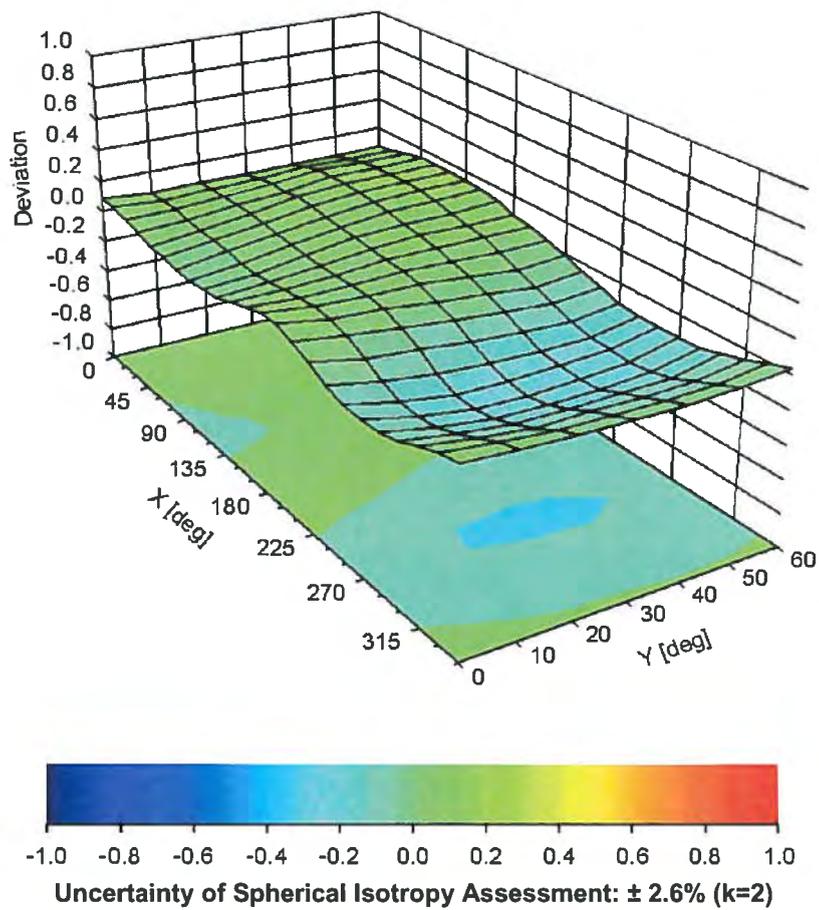


Uncertainty of Linearity Assessment: ± 0.6% (k=2)

Conversion Factor Assessment



Deviation from Isotropy in Liquid Error (ϕ, θ), f = 900 MHz



DASY/EASY - Parameters of Probe: EX3DV4 - SN:3814

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	-65.7
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	9 mm
Tip Diameter	2.5 mm
Probe Tip to Sensor X Calibration Point	1 mm
Probe Tip to Sensor Y Calibration Point	1 mm
Probe Tip to Sensor Z Calibration Point	1 mm
Recommended Measurement Distance from Surface	2 mm

checked by *R.B.* DATE: 18-09-2012

**Calibration Laboratory of
Schmid & Partner
Engineering AG**
Zeughausstrasse 43, 8004 Zurich, Switzerland



**S
C
S** Schweizerischer Kalibrierdienst
Service suisse d'étalonnage
Servizio svizzero di taratura
Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS) *ASSOT: A2243* Accreditation No.: **SCS 108**
The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Client **RFI** Certificate No: **ES3-3304_Aug12**

CALIBRATION CERTIFICATE

Object	ES3DV3 - SN:3304
Calibration procedure(s)	QA CAL-01.v8, QA CAL-23.v4, QA CAL-25.v4 Calibration procedure for dosimetric E-field probes
Calibration date:	August 31, 2012

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	29-Mar-12 (No. 217-01508)	Apr-13
Power sensor E4412A	MY41498087	29-Mar-12 (No. 217-01508)	Apr-13
Reference 3 dB Attenuator	SN: S5054 (3c)	27-Mar-12 (No. 217-01531)	Apr-13
Reference 20 dB Attenuator	SN: S5086 (20b)	27-Mar-12 (No. 217-01529)	Apr-13
Reference 30 dB Attenuator	SN: S5129 (30b)	27-Mar-12 (No. 217-01532)	Apr-13
Reference Probe ES3DV2	SN: 3013	29-Dec-11 (No. ES3-3013_Dec11)	Dec-12
DAE4	SN: 660	20-Jun-12 (No. DAE4-660_Jun12)	Jun-13
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Apr-11)	In house check: Apr-13
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-11)	In house check: Oct-12

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: September 3, 2012

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.



Accredited by the Swiss Accreditation Service (SAS)

Accreditation No.: **SCS 108**

The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Glossary:

TSL	tissue simulating liquid
NORM _{x,y,z}	sensitivity in free space
ConvF	sensitivity in TSL / NORM _{x,y,z}
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C	modulation dependent linearization parameters
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., $\vartheta = 0$ is normal to probe axis

Calibration is Performed According to the Following Standards:

- IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005

Methods Applied and Interpretation of Parameters:

- NORM_{x,y,z}**: Assessed for E-field polarization $\vartheta = 0$ ($f \leq 900$ MHz in TEM-cell; $f > 1800$ MHz: R22 waveguide). NORM_{x,y,z} are only intermediate values, i.e., the uncertainties of NORM_{x,y,z} does not affect the E²-field uncertainty inside TSL (see below *ConvF*).
- NORM(f)_{x,y,z}** = NORM_{x,y,z} * *frequency_response* (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of *ConvF*.
- DCP_{x,y,z}**: DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- PAR**: PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- A_{x,y,z}; B_{x,y,z}; C_{x,y,z}; VR_{x,y,z}**: A, B, C are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. VR is the maximum calibration range expressed in RMS voltage across the diode.
- ConvF and Boundary Effect Parameters**: Assessed in flat phantom using E-field (or Temperature Transfer Standard for $f \leq 800$ MHz) and inside waveguide using analytical field distributions based on power measurements for $f > 800$ MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORM_{x,y,z} * *ConvF* whereby the uncertainty corresponds to that given for *ConvF*. A frequency dependent *ConvF* is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- Spherical isotropy (3D deviation from isotropy)**: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- Sensor Offset**: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.

Probe ES3DV3

SN:3304

Manufactured: August 27, 2010
Calibrated: August 31, 2012

Calibrated for DASY/EASY Systems
(Note: non-compatible with DASY2 system!)

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3304

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu\text{V}/(\text{V}/\text{m})^2$) ^A	1.14	1.33	1.33	$\pm 10.1 \%$
DCP (mV) ^B	104.7	101.1	103.7	

Modulation Calibration Parameters

UID	Communication System Name	PAR		A dB	B dB	C dB	VR mV	Unc ^E (k=2)
0	CW	0.00	X	0.00	0.00	1.00	146.4	$\pm 3.8 \%$
			Y	0.00	0.00	1.00	159.8	
			Z	0.00	0.00	1.00	158.8	

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

^A The uncertainties of NormX,Y,Z do not affect the E²-field uncertainty inside TSL (see Pages 5 and 6).

^B Numerical linearization parameter: uncertainty not required.

^E Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3304

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
750	41.9	0.89	6.44	6.44	6.44	0.29	1.92	± 12.0 %
835	41.5	0.90	6.17	6.17	6.17	0.27	1.96	± 12.0 %
900	41.5	0.97	6.09	6.09	6.09	0.33	1.75	± 12.0 %
1750	40.1	1.37	5.47	5.47	5.47	0.61	1.36	± 12.0 %
1900	40.0	1.40	5.24	5.24	5.24	0.80	1.18	± 12.0 %
2100	39.8	1.49	5.24	5.24	5.24	0.80	1.16	± 12.0 %
2450	39.2	1.80	4.59	4.59	4.59	0.78	1.22	± 12.0 %
2600	39.0	1.96	4.40	4.40	4.40	0.75	1.28	± 12.0 %

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3304

Calibration Parameter Determined in Body Tissue Simulating Media

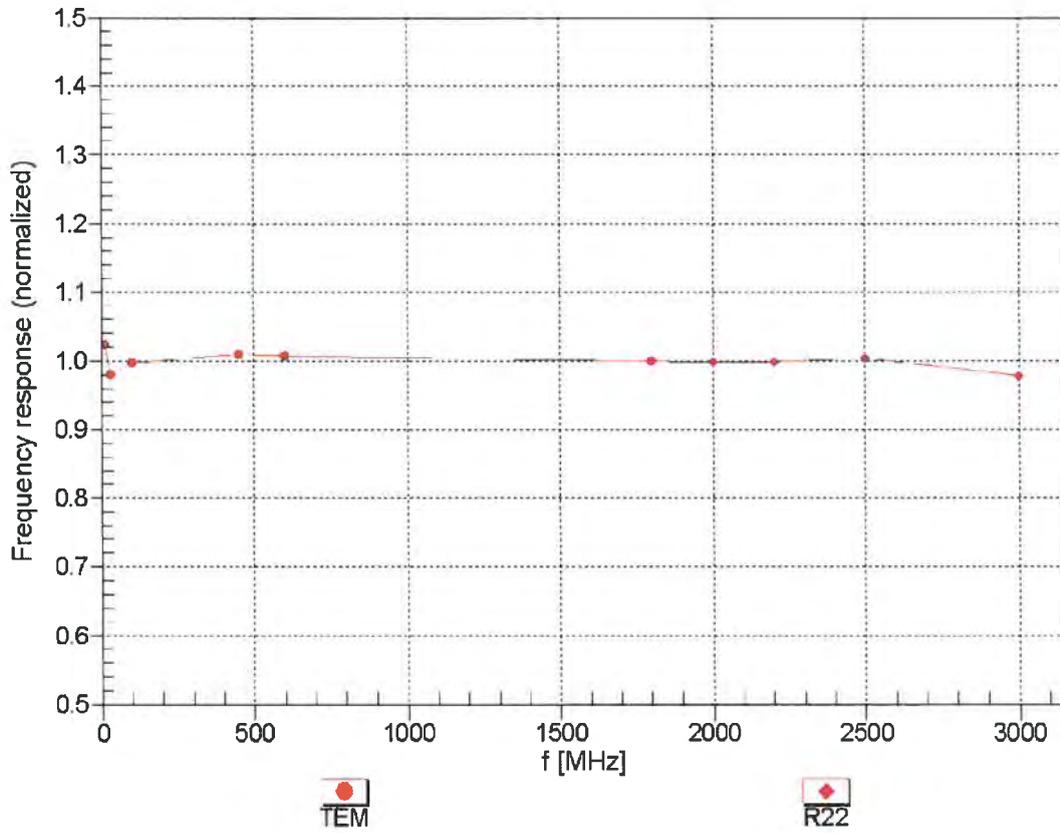
f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
750	55.5	0.96	6.25	6.25	6.25	0.58	1.30	± 12.0 %
835	55.2	0.97	6.13	6.13	6.13	0.60	1.32	± 12.0 %
900	55.0	1.05	6.11	6.11	6.11	0.80	1.18	± 12.0 %
1750	53.4	1.49	5.15	5.15	5.15	0.45	1.78	± 12.0 %
1900	53.3	1.52	4.88	4.88	4.88	0.70	1.35	± 12.0 %
2100	53.2	1.62	4.94	4.94	4.94	0.64	1.43	± 12.0 %
2450	52.7	1.95	4.32	4.32	4.32	0.74	1.09	± 12.0 %
2600	52.5	2.16	4.16	4.16	4.16	0.68	0.99	± 12.0 %

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

Frequency Response of E-Field

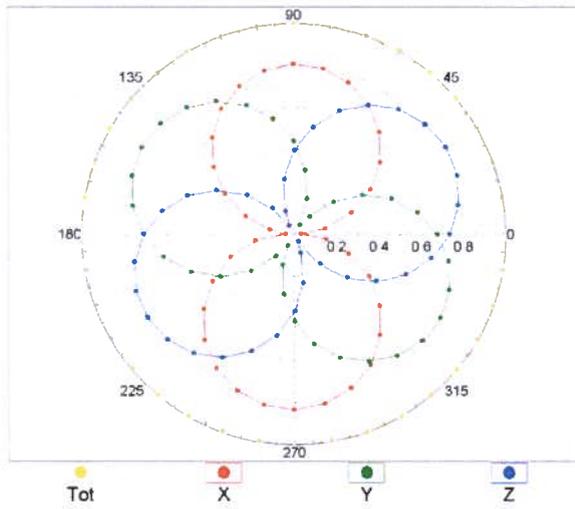
(TEM-Cell:ifi110 EXX, Waveguide: R22)



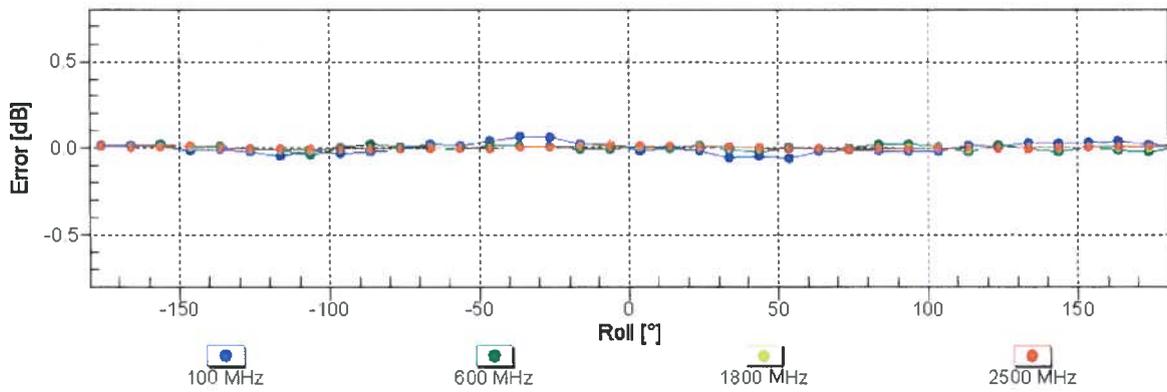
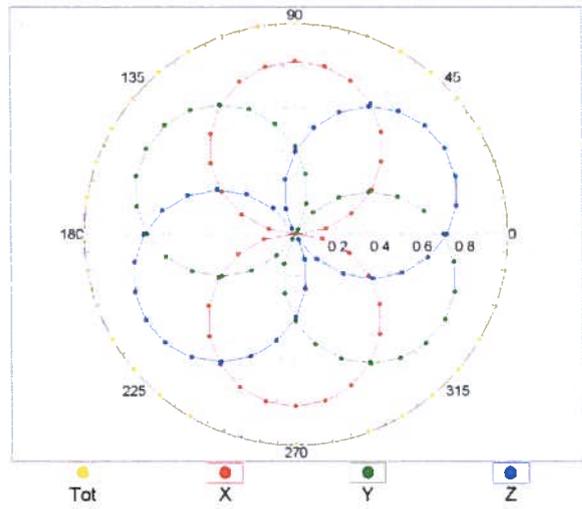
Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ (k=2)

Receiving Pattern (ϕ), $\theta = 0^\circ$

f=600 MHz, TEM

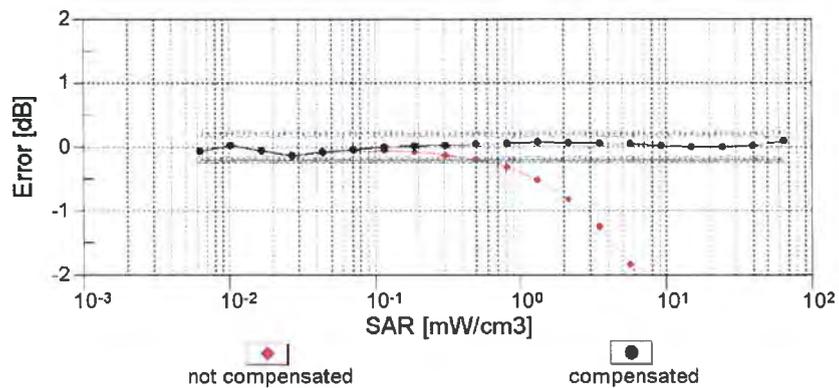
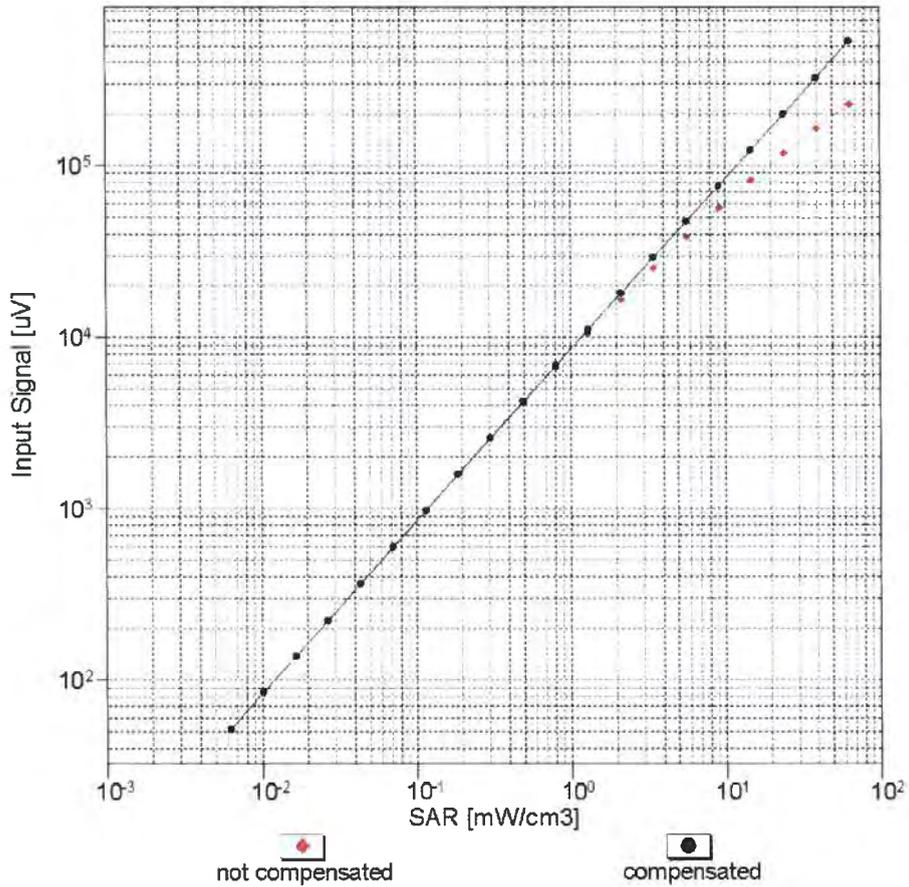


f=1800 MHz, R22



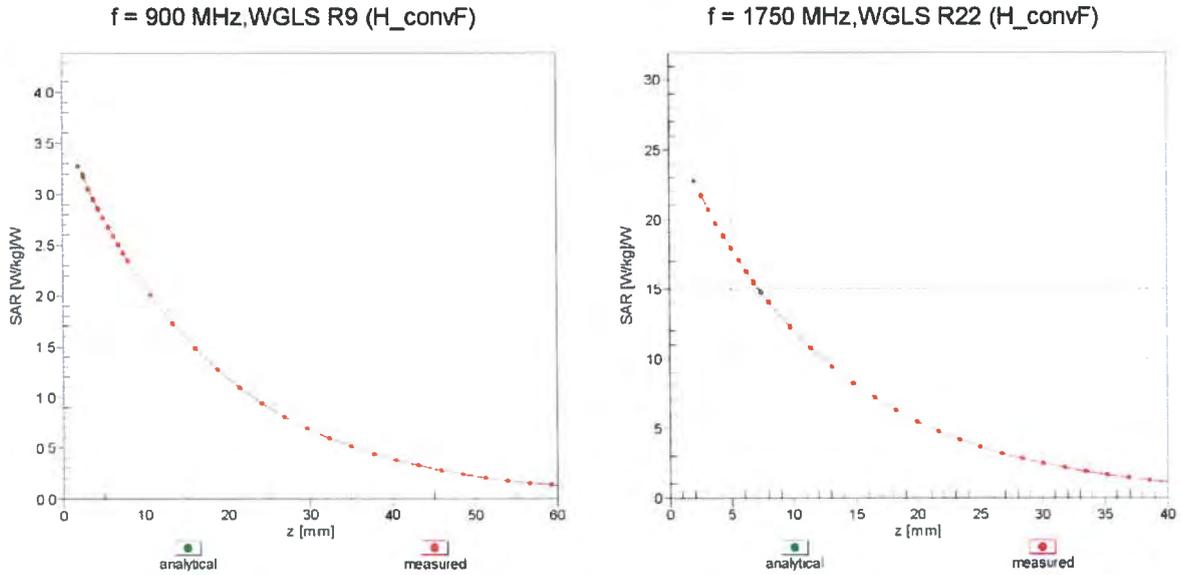
Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ (k=2)

Dynamic Range $f(\text{SAR}_{\text{head}})$ (TEM cell, $f = 900 \text{ MHz}$)

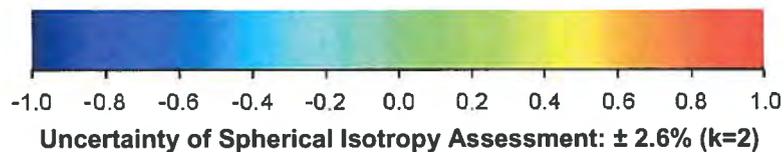
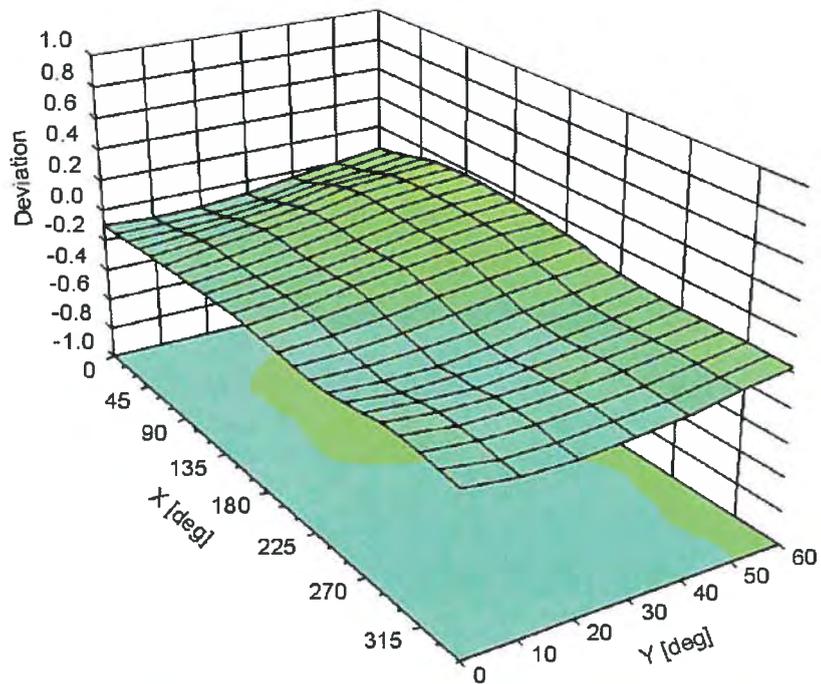


Uncertainty of Linearity Assessment: $\pm 0.6\%$ ($k=2$)

Conversion Factor Assessment



Deviation from Isotropy in Liquid Error (ϕ, θ), f = 900 MHz



DASY/EASY - Parameters of Probe: ES3DV3 - SN:3304

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	33.7
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	10 mm
Tip Diameter	4 mm
Probe Tip to Sensor X Calibration Point	2 mm
Probe Tip to Sensor Y Calibration Point	2 mm
Probe Tip to Sensor Z Calibration Point	2 mm
Recommended Measurement Distance from Surface	3 mm

Checked by *R. D.*

17-MAY-2012

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland



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Swiss Calibration Service

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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

ASSET A2113

Client

RFI

Certificate No: ET3-1587_May12

CALIBRATION CERTIFICATE

Object: ET3DV6 - SN:1587

Calibration procedure(s): QA CAL-01.v8, QA CAL-23.v4, QA CAL-25.v4
Calibration procedure for dosimetric E-field probes

Calibration date: May 11, 2012

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	29-Mar-12 (No. 217-01508)	Apr-13
Power sensor E4412A	MY41498087	29-Mar-12 (No. 217-01508)	Apr-13
Reference 3 dB Attenuator	SN: S5054 (3c)	27-Mar-12 (No. 217-01531)	Apr-13
Reference 20 dB Attenuator	SN: S5086 (20b)	27-Mar-12 (No. 217-01529)	Apr-13
Reference 30 dB Attenuator	SN: S5129 (30b)	27-Mar-12 (No. 217-01532)	Apr-13
Reference Probe ES3DV2	SN: 3013	29-Dec-11 (No. ES3-3013_Dec11)	Dec-12
DAE4	SN: 660	10-Jan-12 (No. DAE4-660_Jan12)	Jan-13
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Apr-11)	In house check: Apr-13
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-11)	In house check: Oct-12

	Name	Function	Signature
Calibrated by:	Claudio Leubler	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: May 11, 2012

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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Glossary:

TSL	tissue simulating liquid
NORM _{x,y,z}	sensitivity in free space
ConvF	sensitivity in TSL / NORM _{x,y,z}
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C	modulation dependent linearization parameters
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., $\vartheta = 0$ is normal to probe axis

Calibration is Performed According to the Following Standards:

- IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005

Methods Applied and Interpretation of Parameters:

- NORM_{x,y,z}**: Assessed for E-field polarization $\vartheta = 0$ ($f \leq 900$ MHz in TEM-cell; $f > 1800$ MHz: R22 waveguide). NORM_{x,y,z} are only intermediate values, i.e., the uncertainties of NORM_{x,y,z} does not affect the E²-field uncertainty inside TSL (see below ConvF).
- NORM(f)_{x,y,z}** = NORM_{x,y,z} * frequency_response (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of ConvF.
- DCP_{x,y,z}**: DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- PAR**: PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- A_{x,y,z}; B_{x,y,z}; C_{x,y,z}; VR_{x,y,z}; A, B, C** are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. VR is the maximum calibration range expressed in RMS voltage across the diode.
- ConvF and Boundary Effect Parameters**: Assessed in flat phantom using E-field (or Temperature Transfer Standard for $f \leq 800$ MHz) and inside waveguide using analytical field distributions based on power measurements for $f > 800$ MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORM_{x,y,z} * ConvF whereby the uncertainty corresponds to that given for ConvF. A frequency dependent ConvF is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- Spherical isotropy (3D deviation from isotropy)**: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- Sensor Offset**: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.

Probe ET3DV6

SN:1587

Manufactured: May 7, 2001
Calibrated: May 11, 2012

Calibrated for DASY/EASY Systems
(Note: non-compatible with DASY2 system!)

DASY/EASY - Parameters of Probe: ET3DV6 - SN:1587

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu\text{V}/(\text{V}/\text{m})^2$) ^A	2.14	1.92	1.79	$\pm 10.1\%$
DCP (mV) ^B	99.0	97.5	99.1	

Modulation Calibration Parameters

UID	Communication System Name	PAR		A dB	B dB	C dB	VR mV	Unc ^E (k=2)
0	CW	0.00	X	0.00	0.00	1.00	119.0	$\pm 2.7\%$
			Y	0.00	0.00	1.00	114.6	
			Z	0.00	0.00	1.00	111.6	

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k=2$, which for a normal distribution corresponds to a coverage probability of approximately 95%.

^A The uncertainties of NormX,Y,Z do not affect the E^2 -field uncertainty inside TSL (see Pages 5 and 6)

^B Numerical linearization parameter; uncertainty not required.

^E Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

DASY/EASY - Parameters of Probe: ET3DV6 - SN:1587

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
835	41.5	0.90	6.33	6.33	6.33	0.24	3.00	± 12.0 %
900	41.5	0.97	6.18	6.18	6.18	0.28	3.00	± 12.0 %
1750	40.1	1.37	5.47	5.47	5.47	0.58	2.35	± 12.0 %
1900	40.0	1.40	5.18	5.18	5.18	0.80	1.68	± 12.0 %
2450	39.2	1.80	4.52	4.52	4.52	0.80	1.95	± 12.0 %

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

DASY/EASY - Parameters of Probe: ET3DV6 - SN:1587

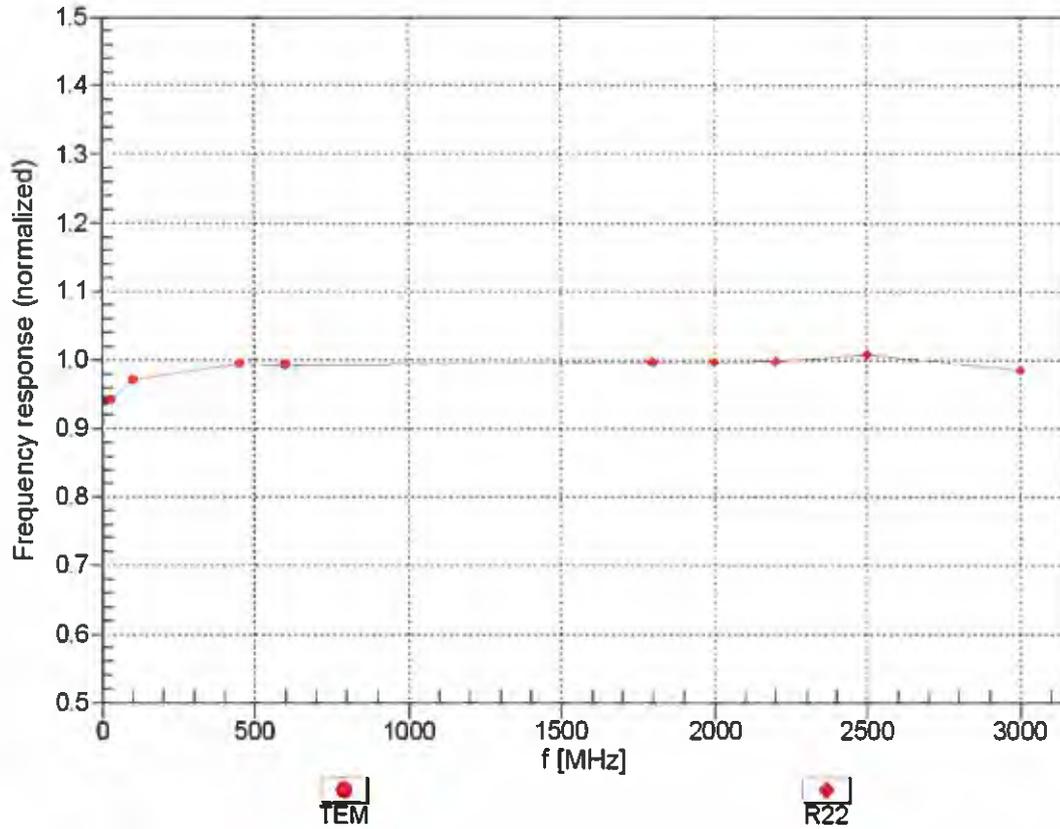
Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
835	55.2	0.97	6.28	6.28	6.28	0.30	3.00	± 12.0 %
900	55.0	1.05	6.26	6.26	6.26	0.37	2.56	± 12.0 %
1750	53.4	1.49	4.92	4.92	4.92	0.74	2.18	± 12.0 %
1900	53.3	1.52	4.69	4.69	4.69	0.77	2.38	± 12.0 %
2450	52.7	1.95	4.13	4.13	4.13	0.80	2.02	± 12.0 %

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

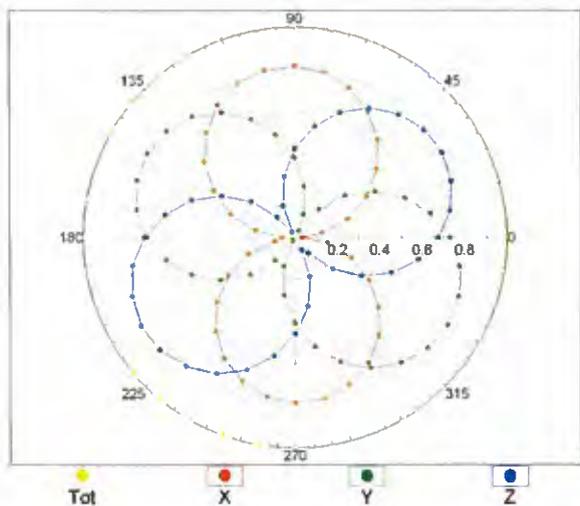
Frequency Response of E-Field (TEM-Cell: ifi110 EXX, Waveguide: R22)



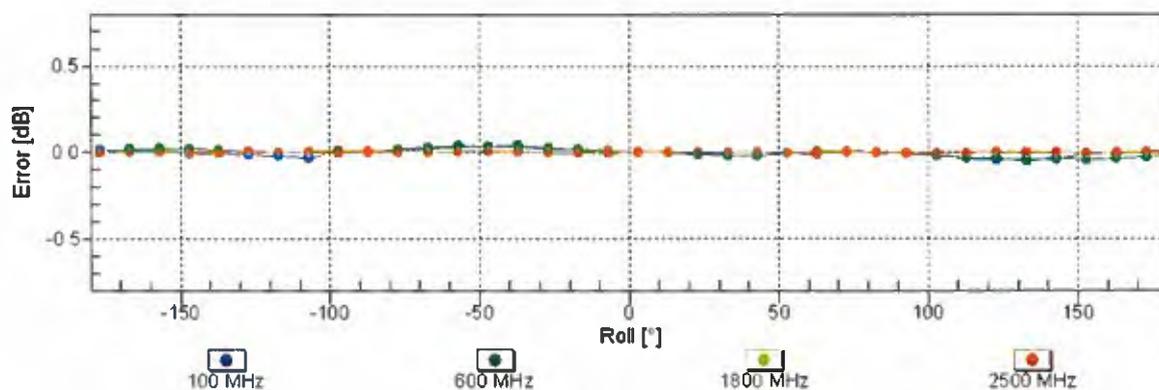
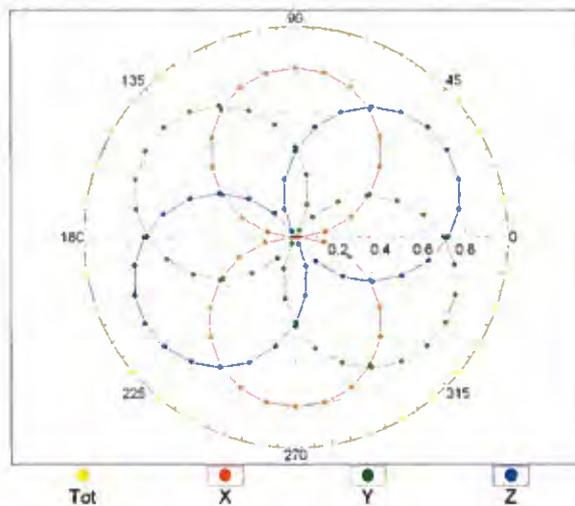
Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ (k=2)

Receiving Pattern (ϕ), $\vartheta = 0^\circ$

f=600 MHz,TEM

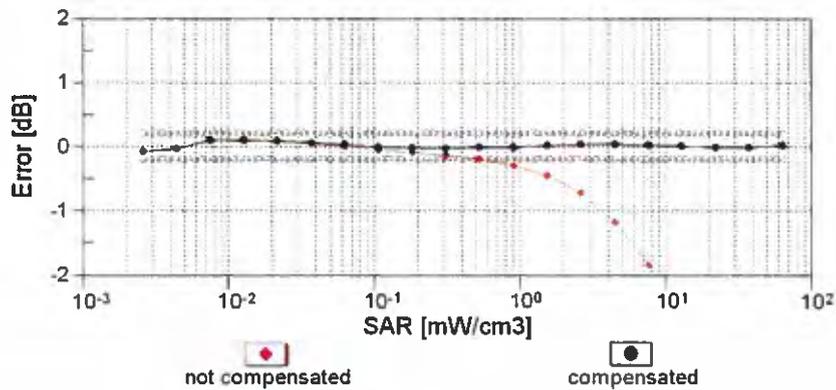
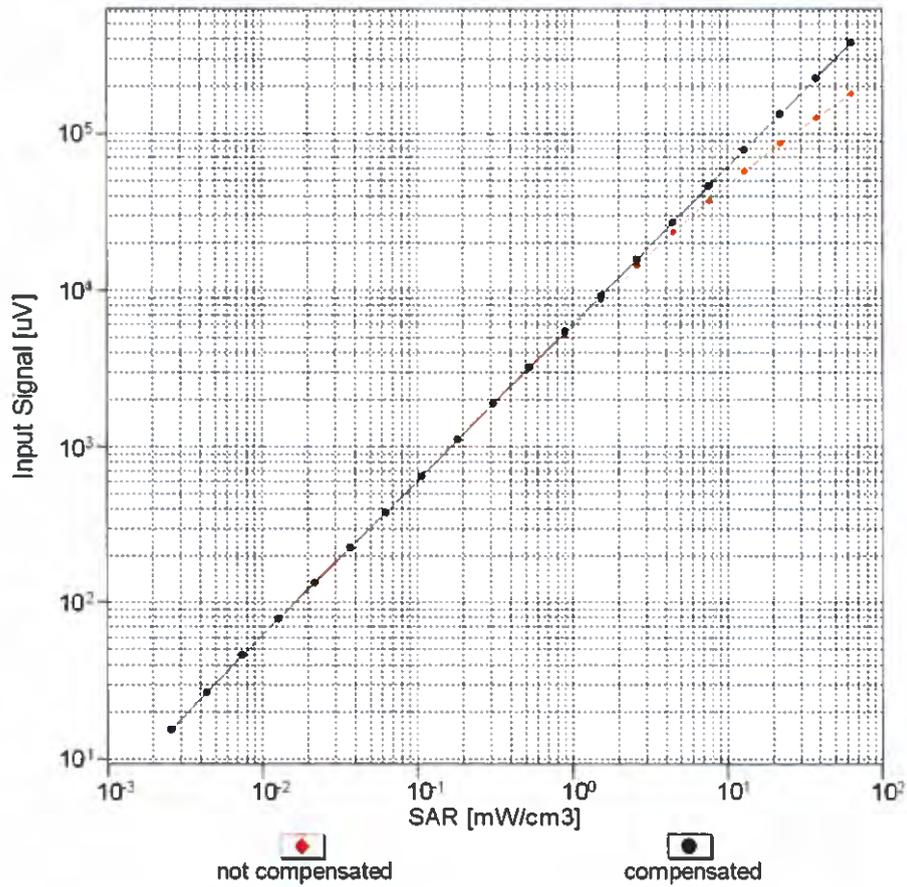


f=1800 MHz,R22



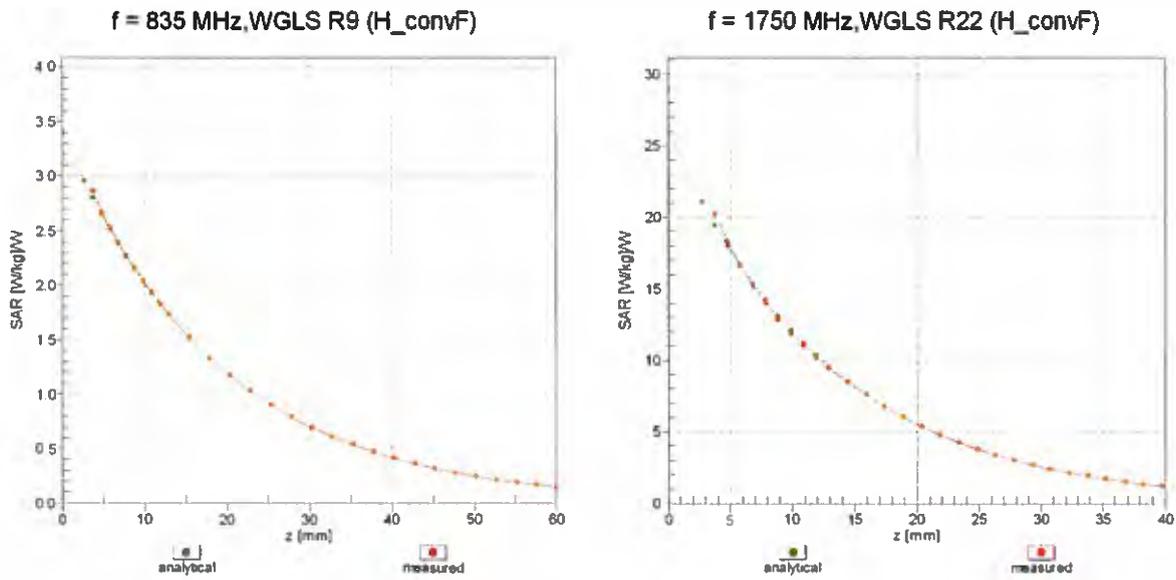
Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ (k=2)

Dynamic Range $f(\text{SAR}_{\text{head}})$ (TEM cell , $f = 900 \text{ MHz}$)

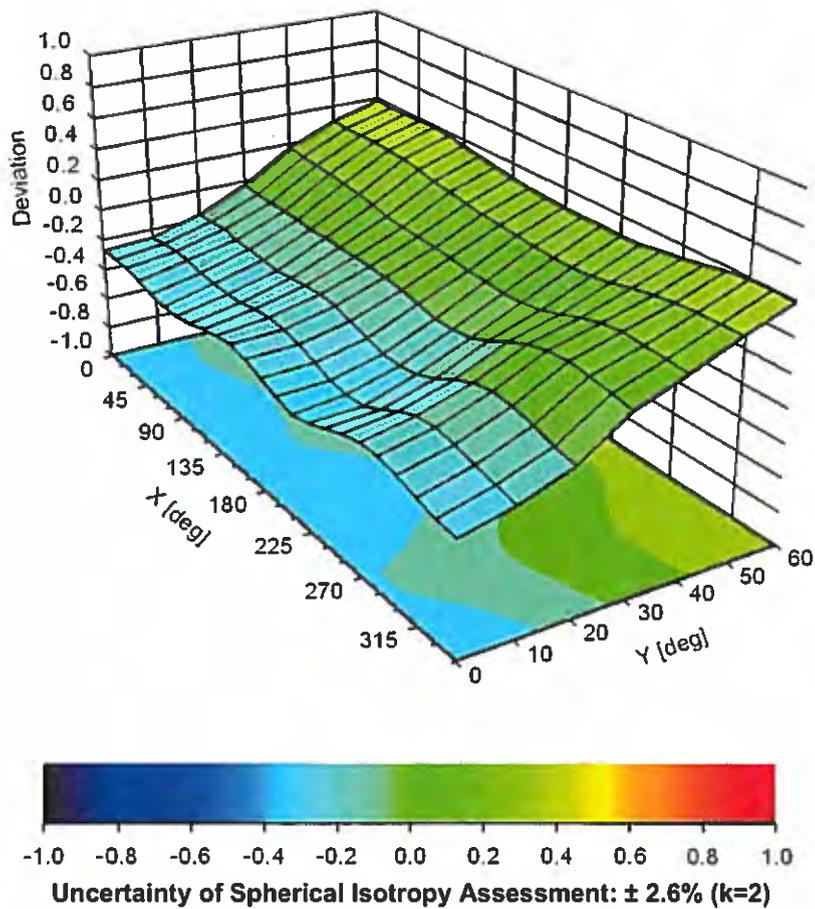


Uncertainty of Linearity Assessment: $\pm 0.6\%$ ($k=2$)

Conversion Factor Assessment



Deviation from Isotropy in Liquid Error (ϕ, θ), f = 900 MHz



DASY/EASY - Parameters of Probe: ET3DV6 - SN:1587

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	72.9
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	enabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	10 mm
Tip Diameter	6.8 mm
Probe Tip to Sensor X Calibration Point	2.7 mm
Probe Tip to Sensor Y Calibration Point	2.7 mm
Probe Tip to Sensor Z Calibration Point	2.7 mm
Recommended Measurement Distance from Surface	4 mm

Checked by *RQD* 16 Aug 2012
 Asset: A1185

**Calibration Laboratory of
 Schmid & Partner
 Engineering AG**
 Zeughausstrasse 43, 8004 Zurich, Switzerland



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Accreditation No.: **SCS 108**

Client **RFI**

Certificate No: **ET3-1528_Jul12**

CALIBRATION CERTIFICATE

Object **ET3DV6 - SN:1528**

Calibration procedure(s) **QA CAL-01.v8, QA CAL-12.v7, QA CAL-23.v4, QA CAL-25.v4
 Calibration procedure for dosimetric E-field probes**

Calibration date: **July 26, 2012**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
 The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)*C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	29-Mar-12 (No. 217-01508)	Apr-13
Power sensor E4412A	MY41498087	29-Mar-12 (No. 217-01508)	Apr-13
Reference 3 dB Attenuator	SN: S5054 (3c)	27-Mar-12 (No. 217-01531)	Apr-13
Reference 20 dB Attenuator	SN: S5086 (20b)	27-Mar-12 (No. 217-01529)	Apr-13
Reference 30 dB Attenuator	SN: S5129 (30b)	27-Mar-12 (No. 217-01532)	Apr-13
Reference Probe ES3DV2	SN: 3013	29-Dec-11 (No. ES3-3013_Dec11)	Dec-12
DAE4	SN: 660	20-Jun-12 (No. DAE4-660_Jun12)	Jun-13
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Apr-11)	In house check: Apr-13
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-11)	In house check: Oct-12

Calibrated by:	Name Jeton Kastrati	Function Laboratory Technician	Signature <i>[Signature]</i>
Approved by:	Name Katja Pokovic	Function Technical Manager	Signature <i>[Signature]</i>

Issued: July 26, 2012

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Accreditation No.: **SCS 108**

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Glossary:

TSL	tissue simulating liquid
NORM _{x,y,z}	sensitivity in free space
ConvF	sensitivity in TSL / NORM _{x,y,z}
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C	modulation dependent linearization parameters
Polarization ϕ	ϕ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., $\vartheta = 0$ is normal to probe axis

Calibration is Performed According to the Following Standards:

- IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005

Methods Applied and Interpretation of Parameters:

- NORM_{x,y,z}**: Assessed for E-field polarization $\vartheta = 0$ ($f \leq 900$ MHz in TEM-cell; $f > 1800$ MHz: R22 waveguide). NORM_{x,y,z} are only intermediate values, i.e., the uncertainties of NORM_{x,y,z} does not affect the E²-field uncertainty inside TSL (see below ConvF).
- NORM(f)_{x,y,z}** = NORM_{x,y,z} * frequency_response (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of ConvF.
- DCP_{x,y,z}**: DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- PAR**: PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- A_{x,y,z}; B_{x,y,z}; C_{x,y,z}; VR_{x,y,z}**: A, B, C are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. VR is the maximum calibration range expressed in RMS voltage across the diode.
- ConvF and Boundary Effect Parameters**: Assessed in flat phantom using E-field (or Temperature Transfer Standard for $f \leq 800$ MHz) and inside waveguide using analytical field distributions based on power measurements for $f > 800$ MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORM_{x,y,z} * ConvF whereby the uncertainty corresponds to that given for ConvF. A frequency dependent ConvF is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- Spherical isotropy (3D deviation from isotropy)**: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- Sensor Offset**: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.

Probe ET3DV6

SN:1528

Manufactured: March 21, 2000
Calibrated: July 26, 2012

Calibrated for DASY/EASY Systems
(Note: non-compatible with DASY2 system!)

DASY/EASY - Parameters of Probe: ET3DV6 - SN:1528

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu\text{V}/(\text{V}/\text{m})^2$) ^A	1.45	1.86	1.61	$\pm 10.1 \%$
DCP (mV) ^B	95.5	97.5	100.3	

Modulation Calibration Parameters

UID	Communication System Name	PAR		A dB	B dB	C dB	VR mV	Unc ^E (k=2)
0	CW	0.00	X	0.00	0.00	1.00	166.6	$\pm 1.9 \%$
			Y	0.00	0.00	1.00	160.4	
			Z	0.00	0.00	1.00	170.5	

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k=2$, which for a normal distribution corresponds to a coverage probability of approximately 95%.

^A The uncertainties of NormX,Y,Z do not affect the E^2 -field uncertainty inside TSL (see Pages 5 and 6).

^B Numerical linearization parameter: uncertainty not required.

^E Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

DASY/EASY - Parameters of Probe: ET3DV6 - SN:1528

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
450	43.5	0.87	7.01	7.01	7.01	0.23	2.32	± 13.4 %
750	41.9	0.89	6.37	6.37	6.37	0.49	2.16	± 12.0 %
835	41.5	0.90	6.06	6.06	6.06	0.61	1.95	± 12.0 %
900	41.5	0.97	5.95	5.95	5.95	0.30	3.00	± 12.0 %
1450	40.5	1.20	5.22	5.22	5.22	0.49	2.80	± 12.0 %
1750	40.1	1.37	5.12	5.12	5.12	0.80	2.07	± 12.0 %
1900	40.0	1.40	4.92	4.92	4.92	0.80	2.10	± 12.0 %
2150	39.7	1.53	4.65	4.65	4.65	0.80	2.00	± 12.0 %
2450	39.2	1.80	4.31	4.31	4.31	0.80	1.74	± 12.0 %

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

DASY/EASY - Parameters of Probe: ET3DV6 - SN:1528

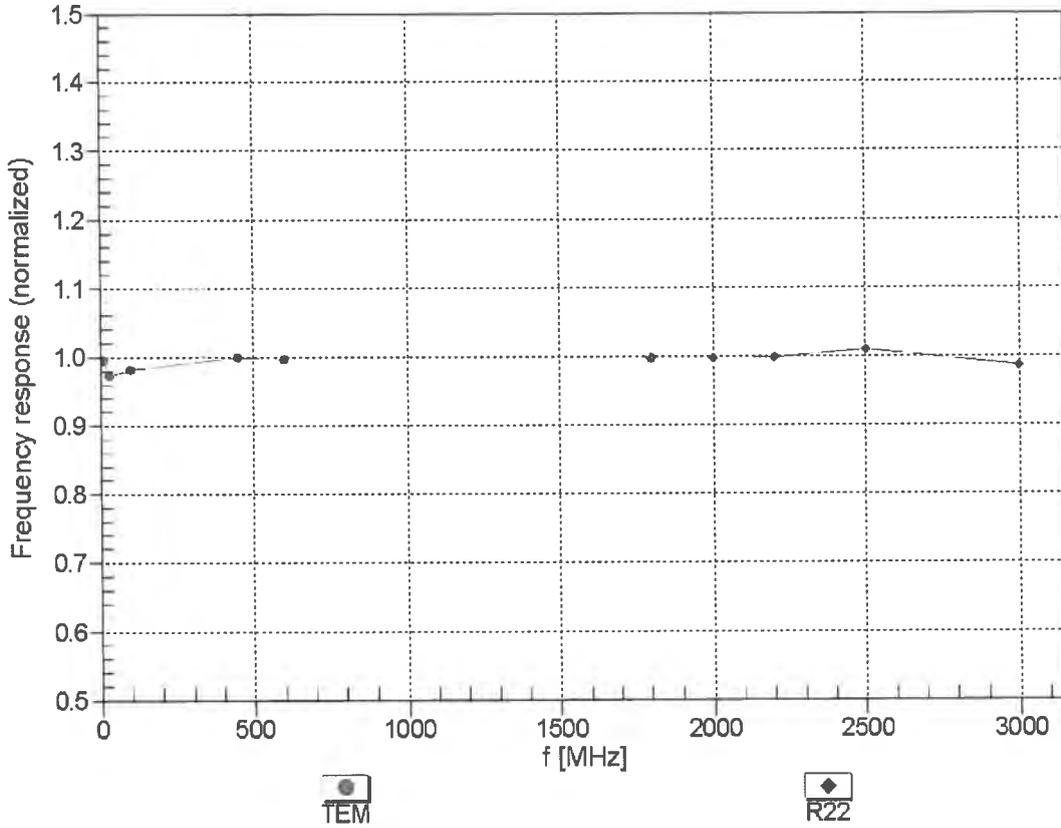
Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
450	56.7	0.94	7.47	7.47	7.47	0.16	2.32	± 13.4 %
750	55.5	0.96	6.17	6.17	6.17	0.33	2.75	± 12.0 %
835	55.2	0.97	5.99	5.99	5.99	0.33	3.00	± 12.0 %
900	55.0	1.05	5.92	5.92	5.92	0.55	2.18	± 12.0 %
1450	54.0	1.30	5.11	5.11	5.11	0.76	2.07	± 12.0 %
1750	53.4	1.49	4.64	4.64	4.64	0.80	2.45	± 12.0 %
1900	53.3	1.52	4.42	4.42	4.42	0.80	2.33	± 12.0 %
2150	53.1	1.66	4.37	4.37	4.37	0.80	1.93	± 12.0 %
2450	52.7	1.95	3.99	3.99	3.99	0.56	0.98	± 12.0 %

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

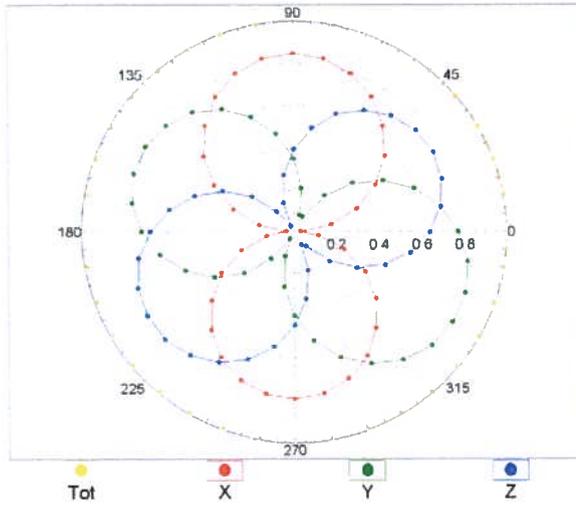
Frequency Response of E-Field (TEM-Cell:ifi110 EXX, Waveguide: R22)



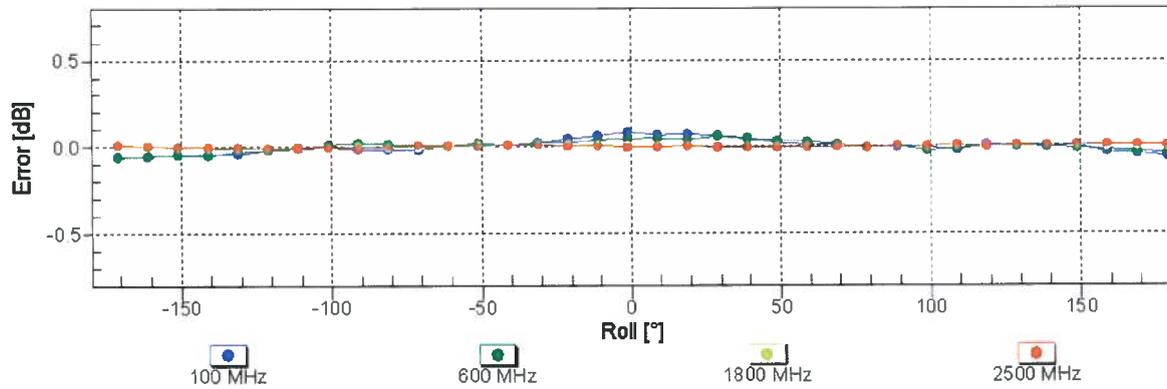
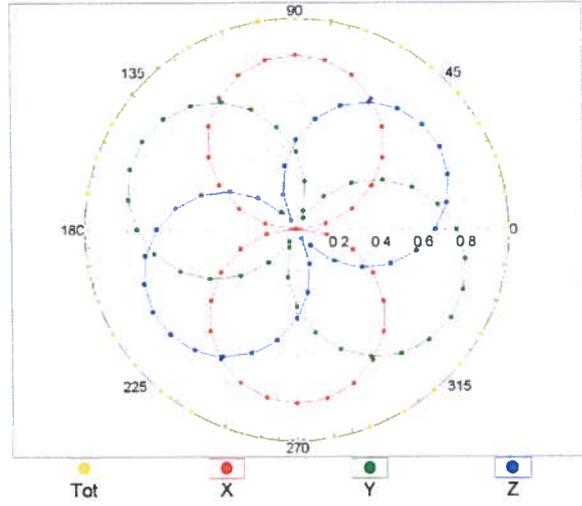
Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ (k=2)

Receiving Pattern (ϕ), $\vartheta = 0^\circ$

f=600 MHz,TEM

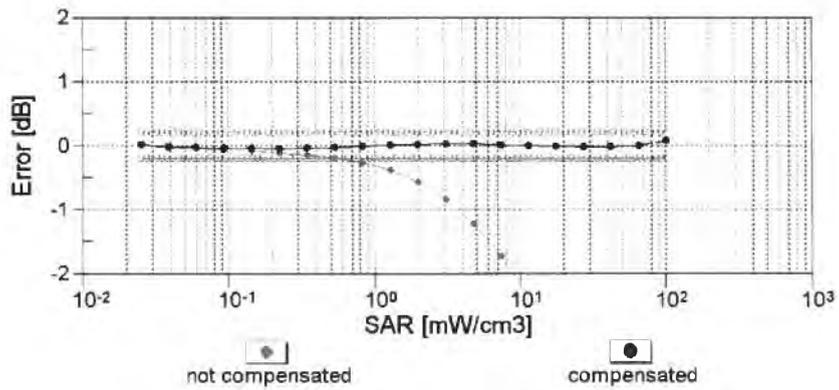
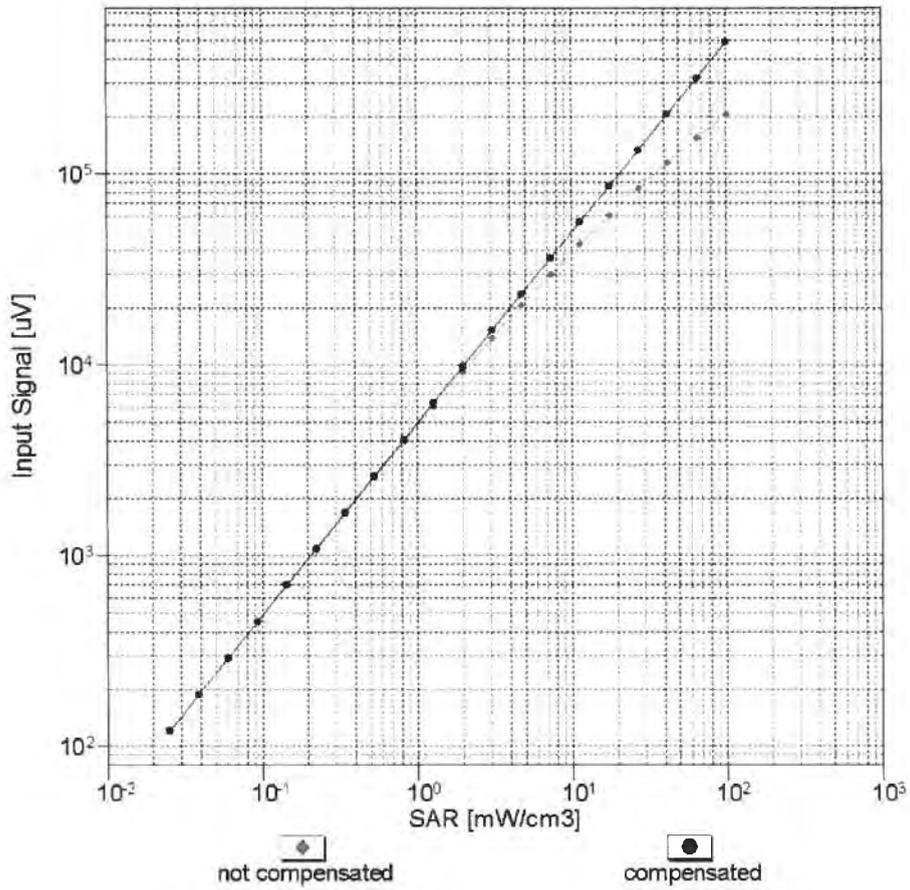


f=1800 MHz,R22



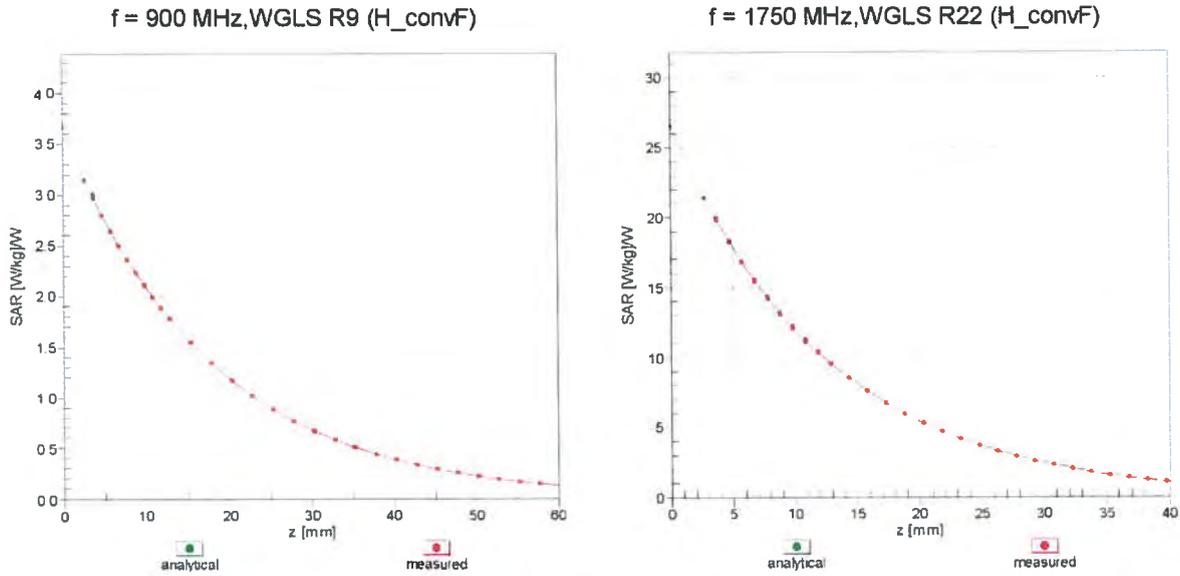
Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ (k=2)

Dynamic Range $f(\text{SAR}_{\text{head}})$ (TEM cell , $f = 900 \text{ MHz}$)

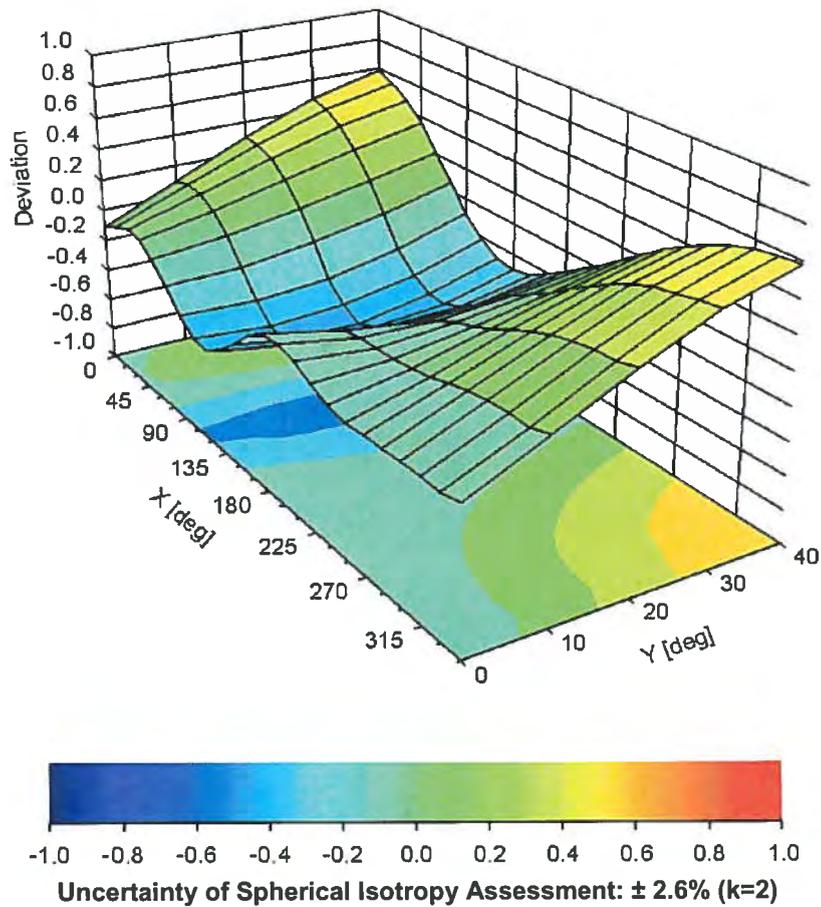


Uncertainty of Linearity Assessment: $\pm 0.6\%$ ($k=2$)

Conversion Factor Assessment



Deviation from Isotropy in Liquid Error (ϕ, θ), f = 900 MHz



DASY/EASY - Parameters of Probe: ET3DV6 - SN:1528

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	18.9
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	enabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	10 mm
Tip Diameter	6.8 mm
Probe Tip to Sensor X Calibration Point	2.7 mm
Probe Tip to Sensor Y Calibration Point	2.7 mm
Probe Tip to Sensor Z Calibration Point	2.7 mm
Recommended Measurement Distance from Surface	4 mm



Check by *[Signature]*

DATE: 7-August 2012

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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **RFI**

Certificate No: **D900V2-035_Aug12**

CALIBRATION CERTIFICATE

Object **D900V2 - SN: 035**

Calibration procedure(s) **QA CAL-05.v8
Calibration procedure for dipole validation kits above 700 MHz**

Calibration date: **August 16, 2012**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	05-Oct-11 (No. 217-01451)	Oct-12
Power sensor HP 8481A	US37292783	05-Oct-11 (No. 217-01451)	Oct-12
Reference 20 dB Attenuator	SN: 5058 (20k)	27-Mar-12 (No. 217-01530)	Apr-13
Type-N mismatch combination	SN: 5047.2 / 06327	27-Mar-12 (No. 217-01533)	Apr-13
Reference Probe ES3DV3	SN: 3205	30-Dec-11 (No. ES3-3205_Dec11)	Dec-12
DAE4	SN: 601	27-Jun-12 (No. DAE4-601_Jun12)	Jun-13

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-11)	In house check: Oct-13
RF generator R&S SMT-06	100005	04-Aug-99 (in house check Oct-11)	In house check: Oct-13
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-11)	In house check: Oct-12

Calibrated by: **Israe El-Naouq** Function: **Laboratory Technician**

Signature: *[Signature]*

Approved by: **Katja Pokovic** Technical Manager

[Signature]

Issued: August 16, 2012

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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

- IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
- Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

- DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

- Measurement Conditions:** Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL:** The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- Feed Point Impedance and Return Loss:** These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- Electrical Delay:** One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- SAR measured:** SAR measured at the stated antenna input power.
- SAR normalized:** SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters:** The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k=2$, which for a normal distribution corresponds to a coverage probability of approximately 95%.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V52.8.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	900 MHz \pm 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.5	0.97 mho/m
Measured Head TSL parameters	(22.0 \pm 0.2) °C	40.6 \pm 6 %	0.96 mho/m \pm 6 %
Head TSL temperature change during test	< 0.5 °C	---	---

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.62 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	10.5 mW / g \pm 17.0 % (k=2)

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.68 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	6.74 mW / g \pm 16.5 % (k=2)

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	55.0	1.05 mho/m
Measured Body TSL parameters	(22.0 \pm 0.2) °C	52.6 \pm 6 %	1.06 mho/m \pm 6 %
Body TSL temperature change during test	< 0.5 °C	---	---

SAR result with Body TSL

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	2.74 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	10.8 mW / g \pm 17.0 % (k=2)

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.76 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	6.96 mW / g \pm 16.5 % (k=2)

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	48.8 Ω - 5.8 j Ω
Return Loss	- 24.4 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	47.5 Ω - 5.5 j Ω
Return Loss	- 24.2 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.404 ns
----------------------------------	----------

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	February 26, 1998

DASY5 Validation Report for Head TSL

Date: 16.08.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 900 MHz; Type: D900V2; Serial: D900V2 - SN: 035

Communication System: CW; Frequency: 900 MHz

Medium parameters used: $f = 900$ MHz; $\sigma = 0.96$ mho/m; $\epsilon_r = 40.6$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(5.97, 5.97, 5.97); Calibrated: 30.12.2011;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 27.06.2012
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.8.2(969); SEMCAD X 14.6.6(6824)

Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

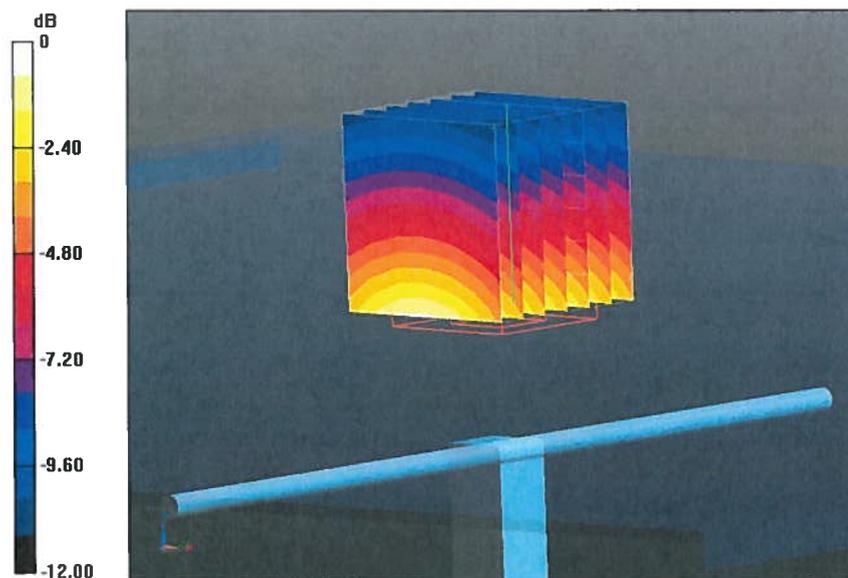
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 56.325 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 3.926 mW/g

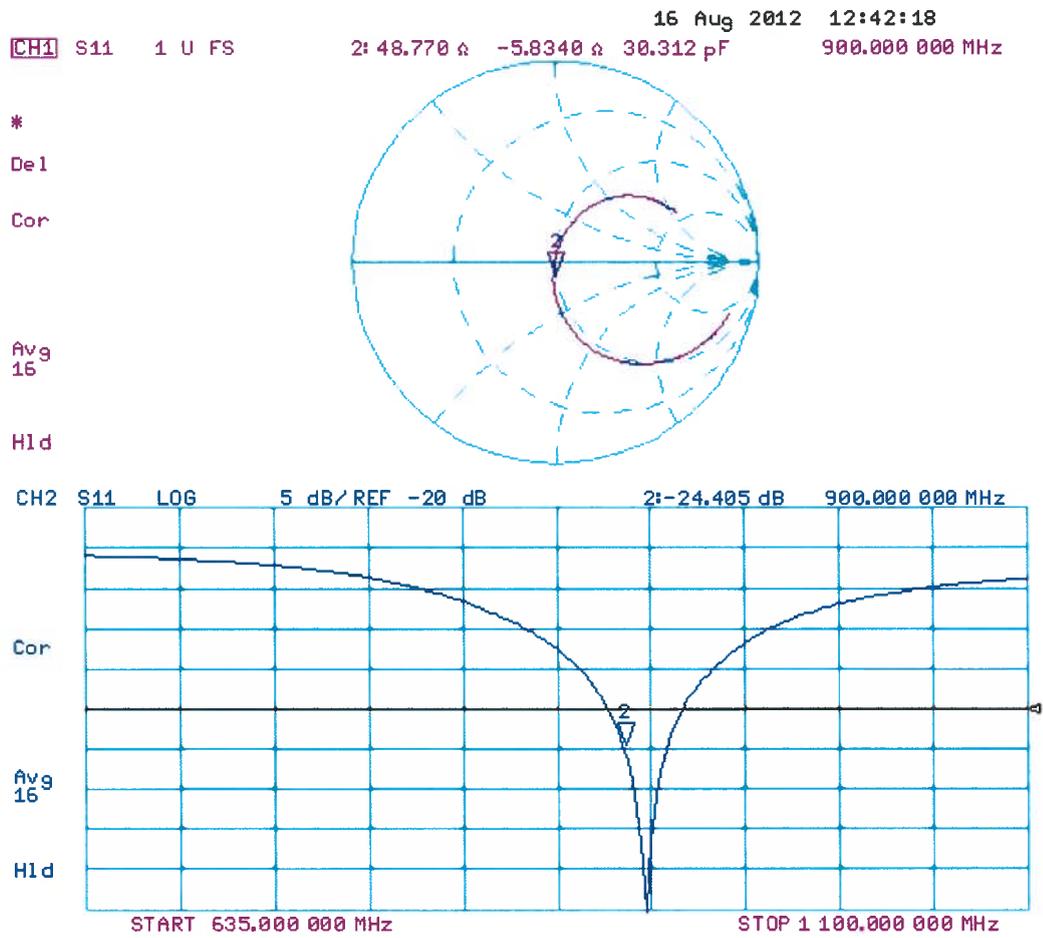
SAR(1 g) = 2.62 mW/g; SAR(10 g) = 1.68 mW/g

Maximum value of SAR (measured) = 3.06 W/kg



0 dB = 3.06 W/kg = 9.71 dB W/kg

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 16.08.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 900 MHz; Type: D900V2; Serial: D900V2 - SN: 035

Communication System: CW; Frequency: 900 MHz

Medium parameters used: $f = 900$ MHz; $\sigma = 1.06$ mho/m; $\epsilon_r = 52.6$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(5.94, 5.94, 5.94); Calibrated: 30.12.2011;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 27.06.2012
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.8.2(969); SEMCAD X 14.6.6(6824)

Dipole Calibration for Body Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

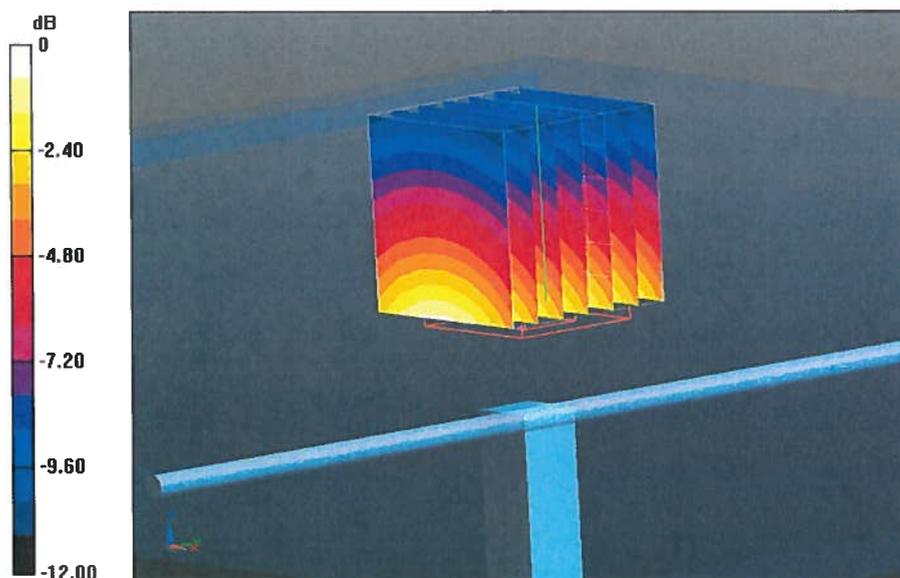
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 56.325 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 4.184 mW/g

SAR(1 g) = 2.74 mW/g; SAR(10 g) = 1.76 mW/g

Maximum value of SAR (measured) = 3.18 W/kg

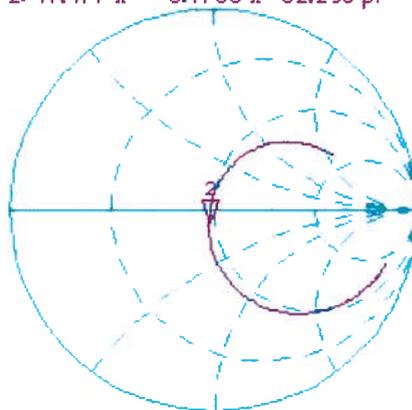


0 dB = 3.18 W/kg = 10.05 dB W/kg

Impedance Measurement Plot for Body TSL

16 Aug 2012 10:15:24
[CH1] S11 1 U FS 2: 47.477 Ω -5.4766 Ω 32.290 pF 900.000 000 MHz

*
De1
Cor



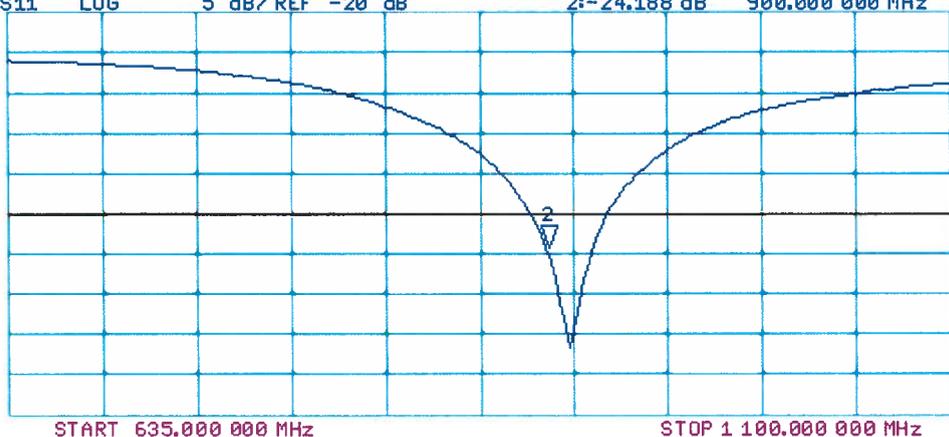
Avg
16
H1d

CH2 S11 LOG 5 dB/REF -20 dB 2:-24.188 dB 900.000 000 MHz

Cor

Avg
16

H1d



START 635.000 000 MHz

STOP 1 1000.000 000 MHz



Checked by *AS*

Date: *Sept 1 2012*
AS

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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Client RFI

Certificate No: D1900V2-537_Aug12

CALIBRATION CERTIFICATE

Object D1900V2 - SN: 537

Calibration procedure(s) QA CAL-05.v8
Calibration procedure for dipole validation kits above 700 MHz

Calibration date: August 14, 2012

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature $(22 \pm 3)^\circ\text{C}$ and humidity $< 70\%$.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	05-Oct-11 (No. 217-01451)	Oct-12
Power sensor HP 8481A	US37292783	05-Oct-11 (No. 217-01451)	Oct-12
Reference 20 dB Attenuator	SN: 5058 (20k)	27-Mar-12 (No. 217-01530)	Apr-13
Type-N mismatch combination	SN: 5047.2 / 06327	27-Mar-12 (No. 217-01533)	Apr-13
Reference Probe ES3DV3	SN: 3205	30-Dec-11 (No. ES3-3205_Dec11)	Dec-12
DAE4	SN: 601	27-Jun-12 (No. DAE4-601_Jun12)	Jun-13
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-11)	In house check: Oct-13
RF generator R&S SMT-06	100005	04-Aug-99 (in house check Oct-11)	In house check: Oct-13
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-11)	In house check: Oct-12

Calibrated by: **Name** Israe El-Naouq **Function** Laboratory Technician

Signature
Israe El-Naouq

Approved by: **Name** Katja Pokovic **Function** Technical Manager

Signature
Katja Pokovic

Issued: August 14, 2012

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.



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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

- a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
- c) Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

- d) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k=2$, which for a normal distribution corresponds to a coverage probability of approximately 95%.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V52.8.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1900 MHz \pm 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	40.0	1.40 mho/m
Measured Head TSL parameters	(22.0 \pm 0.2) °C	39.9 \pm 6 %	1.38 mho/m \pm 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	9.78 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	39.4 mW / g \pm 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	5.16 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	20.7 mW / g \pm 16.5 % (k=2)

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	53.3	1.52 mho/m
Measured Body TSL parameters	(22.0 \pm 0.2) °C	52.5 \pm 6 %	1.53 mho/m \pm 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	10.2 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	40.5 mW / g \pm 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	5.37 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	21.4 mW / g \pm 16.5 % (k=2)

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	48.1 Ω - 5.7 j Ω
Return Loss	- 24.3 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	44.0 Ω - 5.2 j Ω
Return Loss	- 21.5 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.181 ns
----------------------------------	----------

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	March 22, 2001

DASY5 Validation Report for Head TSL

Date: 14.08.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 537

Communication System: CW; Frequency: 1900 MHz

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.38$ mho/m; $\epsilon_r = 39.9$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(5.01, 5.01, 5.01); Calibrated: 30.12.2011;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 27.06.2012
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.8.2(969); SEMCAD X 14.6.6(6824)

Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

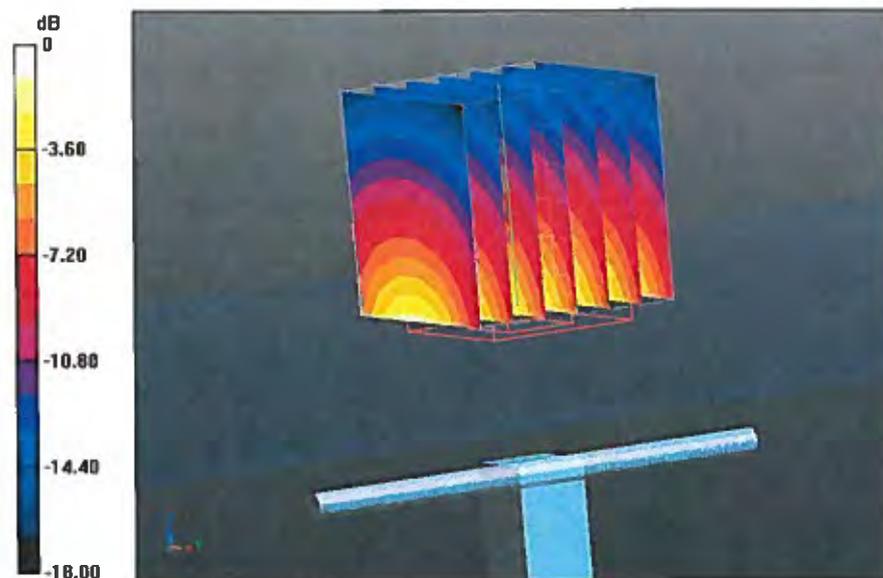
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 94.874 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 17.436 mW/g

SAR(1 g) = 9.78 mW/g; SAR(10 g) = 5.16 mW/g

Maximum value of SAR (measured) = 11.9 W/kg



0 dB = 11.9 W/kg = 21.51 dB W/kg

Impedance Measurement Plot for Head TSL

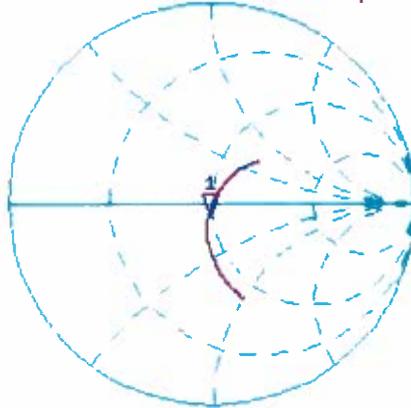
14 Aug 2012 10:37:50

CH1 S11 1 U FS

1: 48.121 Ω -5.7168 Ω 14.653 pF

1 900.000 000 MHz

*
Del
Cor



Avg
16

H1d

CH2 S11 LOG

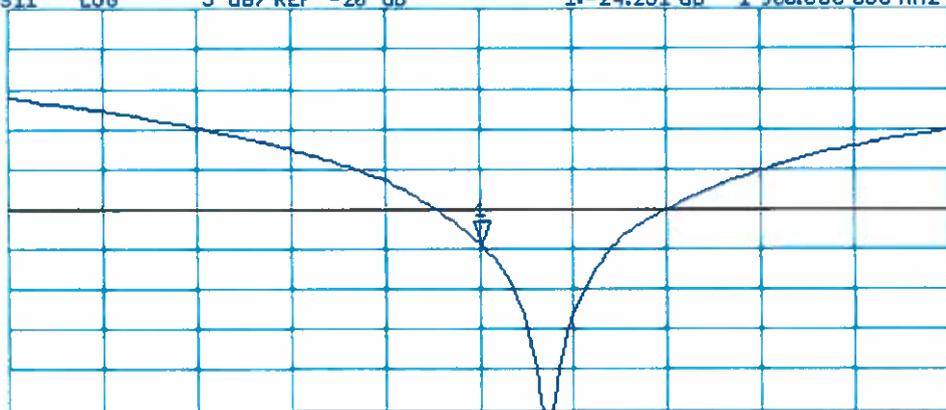
5 dB/REF -20 dB

1: -24.251 dB 1 900.000 000 MHz

Cor

Avg
16

H1d



START 1 700.000 000 MHz

STOP 2 100.000 000 MHz

DASY5 Validation Report for Body TSL

Date: 14.08.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 537

Communication System: CW; Frequency: 1900 MHz

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.53$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.62, 4.62, 4.62); Calibrated: 30.12.2011;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 27.06.2012
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.8.2(969); SEMCAD X 14.6.6(6824)

Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

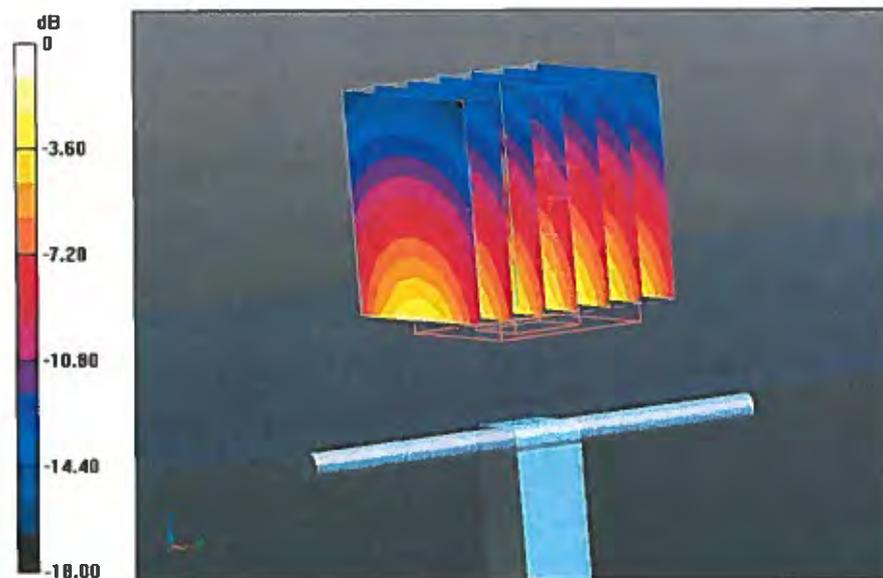
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 94.874 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 17.899 mW/g

SAR(1 g) = 10.2 mW/g; SAR(10 g) = 5.37 mW/g

Maximum value of SAR (measured) = 12.8 W/kg



0 dB = 12.8 W/kg = 22.14 dB W/kg

Impedance Measurement Plot for Body TSL

14 Aug 2012 10:37:24

[CH1] S11 1 U FS

1: 44.012 Ω -5.2129 Ω 16.069 pF

1 900.000 000 MHz

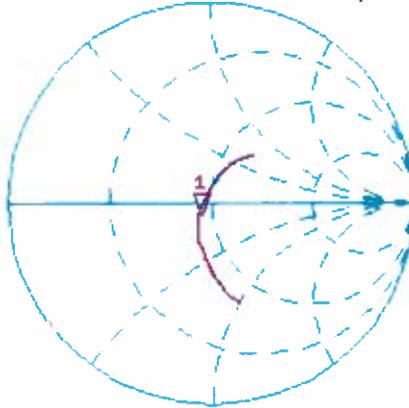
*

De1

Cor

Avg
16

H1d

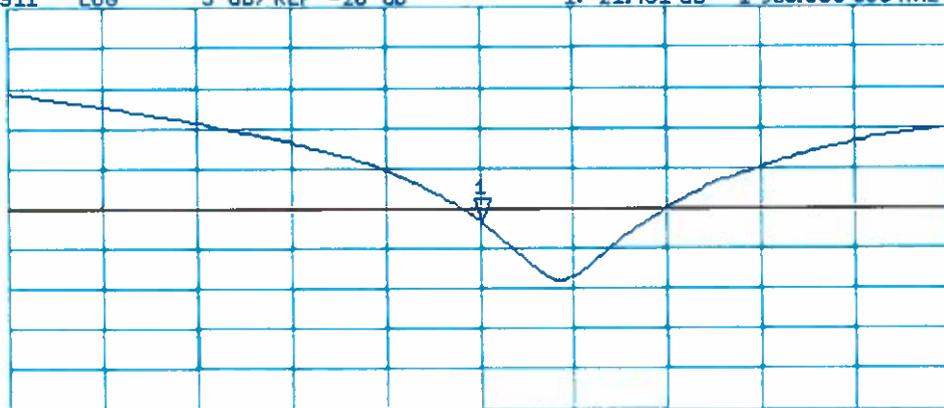


CH2 S11 LOG 5 dB/REF -20 dB 1:-21.481 dB 1 900.000 000 MHz

Cor

Avg
16

H1d



START 1 700.000 000 MHz

STOP 2 100.000 000 MHz

Checked by *R. Pokovic* DATE: 7 ^{Sept} August 2012

**Calibration Laboratory of
Schmid & Partner
Engineering AG**
Zeughausstrasse 43, 8004 Zurich, Switzerland



S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS) *ASSET: A 2202*
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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **RFI**

Certificate No: **D2440V2-701_Aug12**

CALIBRATION CERTIFICATE

Object **D2440V2 - SN: 701**

Calibration procedure(s) **QA CAL-05.v8
Calibration procedure for dipole validation kits above 700 MHz**

Calibration date: **August 13, 2012**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	05-Oct-11 (No. 217-01451)	Oct-12
Power sensor HP 8481A	US37292783	05-Oct-11 (No. 217-01451)	Oct-12
Reference 20 dB Attenuator	SN: 5058 (20k)	27-Mar-12 (No. 217-01530)	Apr-13
Type-N mismatch combination	SN: 5047.2 / 06327	27-Mar-12 (No. 217-01533)	Apr-13
Reference Probe ES3DV3	SN: 3205	30-Dec-11 (No. ES3-3205_Dec11)	Dec-12
DAE4	SN: 601	27-Jun-12 (No. DAE4-601_Jun12)	Jun-13

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-11)	In house check: Oct-13
RF generator R&S SMT-06	100005	04-Aug-99 (in house check Oct-11)	In house check: Oct-13
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-11)	In house check: Oct-12

Calibrated by:	Name Israe El-Naouq	Function Laboratory Technician	Signature <i>Israe El-Naouq</i>
Approved by:	Katja Pokovic	Technical Manager	<i>Katja Pokovic</i>

Issued: August 13, 2012

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.



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Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

- IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
- Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

- DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

- Measurement Conditions:** Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL:** The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- Feed Point Impedance and Return Loss:** These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- Electrical Delay:** One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- SAR measured:** SAR measured at the stated antenna input power.
- SAR normalized:** SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters:** The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k=2$, which for a normal distribution corresponds to a coverage probability of approximately 95%.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V52.8.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	2450 MHz \pm 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	39.2	1.80 mho/m
Measured Head TSL parameters	(22.0 \pm 0.2) °C	39.2 \pm 6 %	1.81 mho/m \pm 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	13.1 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	52.3 mW / g \pm 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.06 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	24.2 mW / g \pm 16.5 % (k=2)

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	52.7	1.95 mho/m
Measured Body TSL parameters	(22.0 \pm 0.2) °C	51.3 \pm 6 %	1.99 mho/m \pm 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	13.2 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	52.0 mW / g \pm 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	6.09 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	24.1 mW / g \pm 16.5 % (k=2)

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	48.4 Ω - 8.2 j Ω
Return Loss	- 21.5 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	45.8 Ω - 6.9 j Ω
Return Loss	- 21.5 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.141 ns
----------------------------------	----------

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	August 24, 2000

DASY5 Validation Report for Head TSL

Date: 13.08.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2440 MHz; Type: D2440V2; Serial: D2440V2 - SN: 701

Communication System: CW; Frequency: 2450 MHz

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.81$ mho/m; $\epsilon_r = 39.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.45, 4.45, 4.45); Calibrated: 30.12.2011;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 27.06.2012
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.8.2(969); SEMCAD X 14.6.6(6824)

Dipole Calibration for Head Tissue/ $P_{in}=250$ mW, $d=10$ mm/Zoom Scan (7x7x7)/Cube 0:

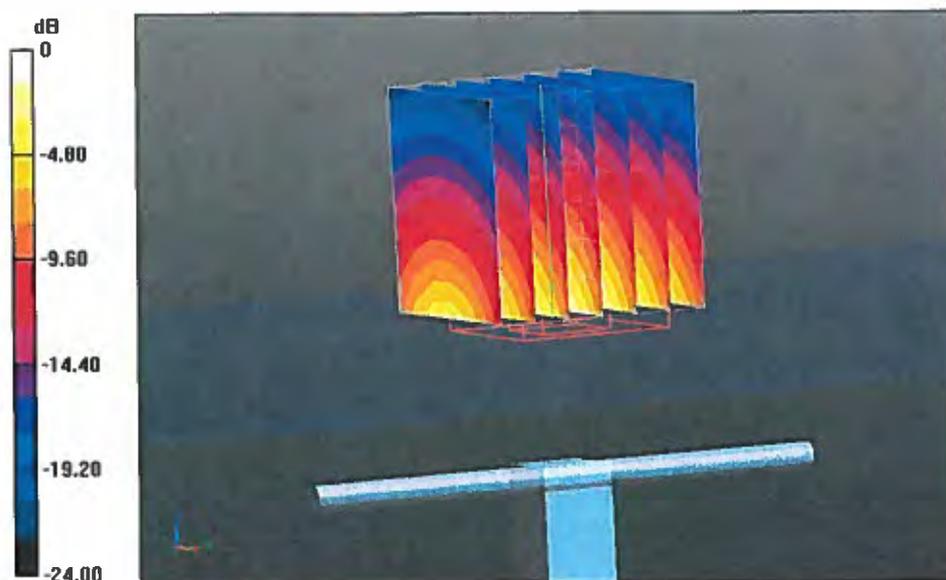
Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 99.955 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 27.027 mW/g

SAR(1 g) = 13.1 mW/g; SAR(10 g) = 6.06 mW/g

Maximum value of SAR (measured) = 16.8 W/kg



0 dB = 16.8 W/kg = 24.51 dB W/kg

Impedance Measurement Plot for Head TSL

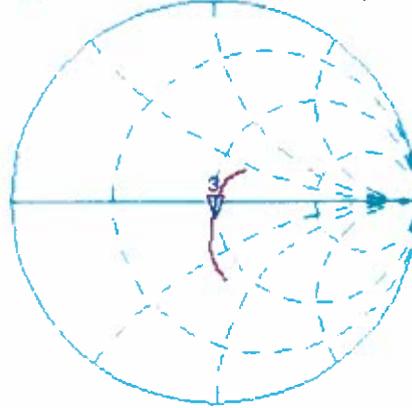
13 Aug 2012 11:12:49

CH1 S11 1 U FS

3: 48.377 Ω -8.1641 Ω 7.9570 pF

2 450.000 000 MHz

*
De1
CA
Avg
16
H1d



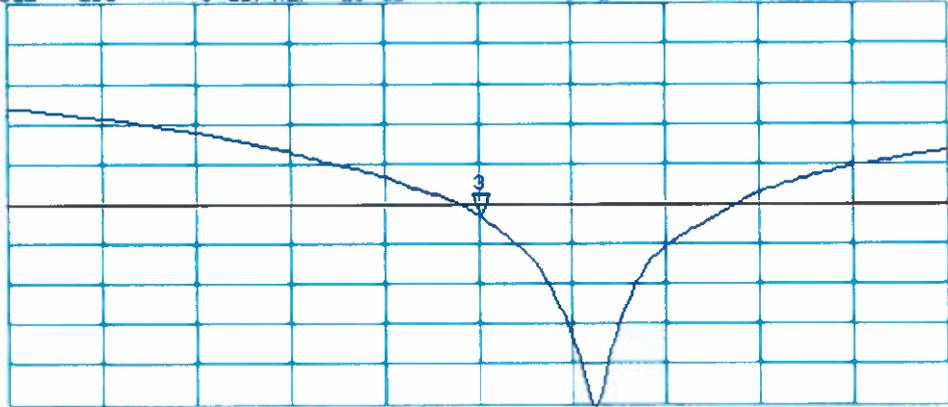
CH2 S11 LOG

5 dB/REF -20 dB

3: -21.482 dB

2 450.000 000 MHz

CA
Avg
16
H1d



START 2 250.000 000 MHz

STOP 2 650.000 000 MHz

DASY5 Validation Report for Body TSL

Date: 13.08.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2440 MHz; Type: D2440V2; Serial: D2440V2 - SN: 701

Communication System: CW; Frequency: 2450 MHz

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.99$ mho/m; $\epsilon_r = 51.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.26, 4.26, 4.26); Calibrated: 30.12.2011;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 27.06.2012
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.8.2(969); SEMCAD X 14.6.6(6824)

Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

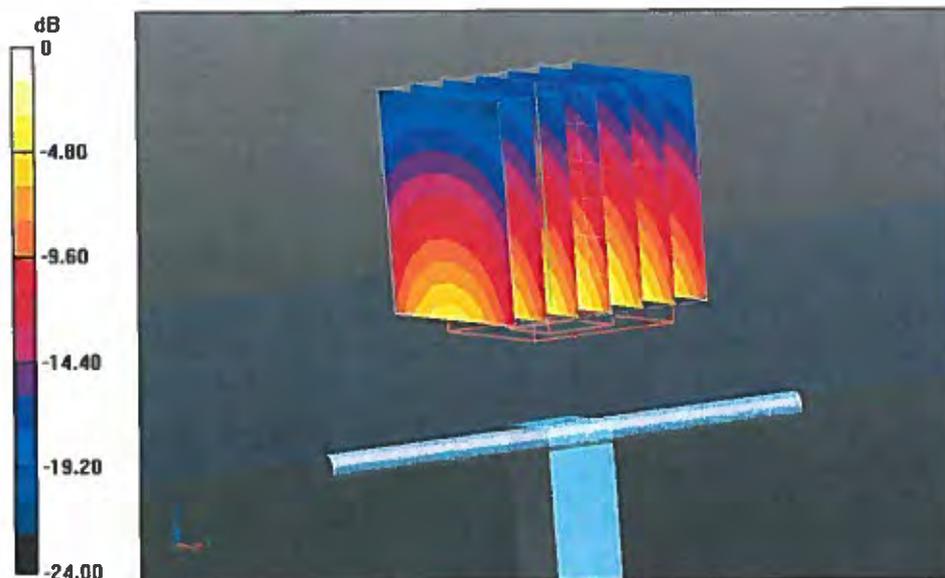
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 96.149 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 26.944 mW/g

SAR(1 g) = 13.2 mW/g; SAR(10 g) = 6.09 mW/g

Maximum value of SAR (measured) = 17.1 W/kg



0 dB = 17.1 W/kg = 24.66 dB W/kg

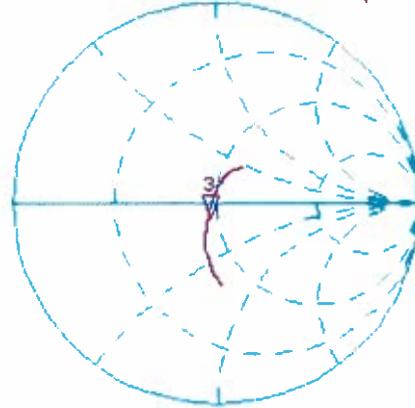
Impedance Measurement Plot for Body TSL

13 Aug 2012 11:12:17

CH1 S11 1 U FS

3: 45.754 Ω -6.8809 Ω 9.4409 pF 2 450.000 000 MHz

*
De1
CA



Avg
16

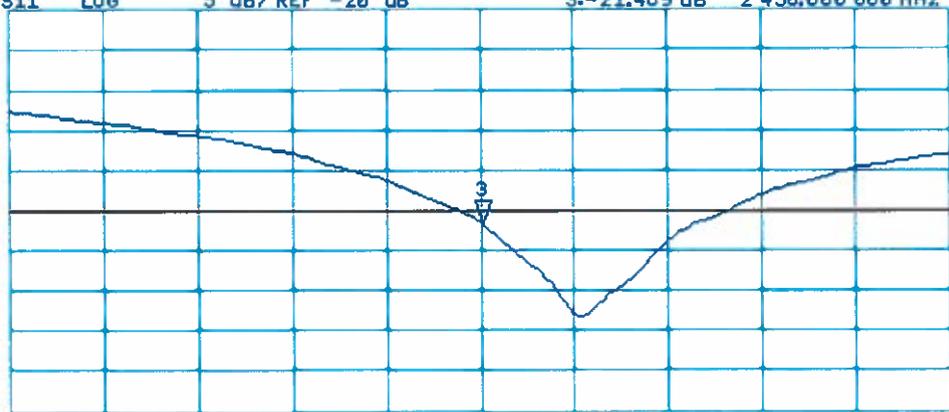
H1d

CH2 S11 LOG 5 dB/REF -20 dB 3:-21.489 dB 2 450.000 000 MHz

CA

Avg
16

H1d



START 2 250.000 000 MHz

STOP 2 650.000 000 MHz



Checked by *AE*
DATE: 26-FEB-2013

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Client RFI

A1377

Certificate No: D5GHzV2-1016_Feb13

CALIBRATION CERTIFICATE

Object: D5GHzV2 - SN: 1016

Calibration procedure(s): QA CAL-22.v2
Calibration procedure for dipole validation kits between 3-6 GHz

Calibration date: February 20, 2013

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature $(22 \pm 3)^\circ\text{C}$ and humidity $< 70\%$.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	01-Nov-12 (No. 217-01640)	Oct-13
Power sensor HP 8481A	US37292783	01-Nov-12 (No. 217-01640)	Oct-13
Reference 20 dB Attenuator	SN: 5058 (20k)	27-Mar-12 (No. 217-01530)	Apr-13
Type-N mismatch combination	SN: 5047.3 / 06327	27-Mar-12 (No. 217-01533)	Apr-13
Reference Probe EX3DV4	SN: 3503	28-Dec-12 (No. EX3-3503_Dec12)	Dec-13
DAE4	SN: 601	27-Jun-12 (No. DAE4-601_Jun12)	Jun-13
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-11)	In house check: Oct-13
RF generator R&S SMT-06	100005	04-Aug-99 (in house check Oct-11)	In house check: Oct-13
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-12)	In house check: Oct-13

Calibrated by:	Name Israe El-Naouq	Function Laboratory Technician	Signature <i>Israe El-Naouq</i>
Approved by:	Katja Pokovic	Technical Manager	<i>[Signature]</i>

Issued: February 20, 2013

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.



Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

- a) IEC 62209-2, "Evaluation of Human Exposure to Radio Frequency Fields from Handheld and Body-Mounted Wireless Communication Devices in the Frequency Range of 30 MHz to 6 GHz: Human models, Instrumentation, and Procedures"; Part 2: "Procedure to determine the Specific Absorption Rate (SAR) for including accessories and multiple transmitters", March 2010
- b) Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

- c) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k=2$, which for a normal distribution corresponds to a coverage probability of approximately 95%.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V52.8.5
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy = 4.0 mm, dz = 1.4 mm	Graded Ratio = 1.4 (Z direction)
Frequency	5200 MHz ± 1 MHz 5500 MHz ± 1 MHz 5800 MHz ± 1 MHz	

Head TSL parameters at 5200 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	36.0	4.66 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	34.7 ± 6 %	4.47 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL at 5200 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	7.88 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	78.1 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.26 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	22.3 W/kg ± 19.5 % (k=2)

Head TSL parameters at 5500 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.6	4.96 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	34.2 ± 6 %	4.74 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL at 5500 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.34 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	82.5 W / kg ± 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.38 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	23.5 W/kg ± 19.5 % (k=2)

Head TSL parameters at 5800 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.3	5.27 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	33.9 ± 6 %	5.05 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL at 5800 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	7.78 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	77.0 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.22 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	21.9 W/kg ± 19.5 % (k=2)

Body TSL parameters at 5200 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	49.0	5.30 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	46.9 ± 6 %	5.36 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL at 5200 MHz

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.58 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	75.1 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.13 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	21.1 W/kg ± 19.5 % (k=2)

Body TSL parameters at 5500 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.6	5.65 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	46.3 ± 6 %	5.71 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL at 5500 MHz

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.98 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	79.0 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.23 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	22.0 W/kg ± 19.5 % (k=2)

Body TSL parameters at 5800 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.2	6.00 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	45.9 ± 6 %	6.12 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL at 5800 MHz

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.51 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	74.4 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.09 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	20.6 W/kg ± 19.5 % (k=2)

Appendix

Antenna Parameters with Head TSL at 5200 MHz

Impedance, transformed to feed point	52.7 Ω - 9.7 j Ω
Return Loss	- 20.2 dB

Antenna Parameters with Head TSL at 5500 MHz

Impedance, transformed to feed point	48.5 Ω - 0.8 j Ω
Return Loss	- 35.3 dB

Antenna Parameters with Head TSL at 5800 MHz

Impedance, transformed to feed point	57.1 Ω + 7.1 j Ω
Return Loss	- 20.6 dB

Antenna Parameters with Body TSL at 5200 MHz

Impedance, transformed to feed point	53.2 Ω - 9.1 j Ω
Return Loss	- 20.6 dB

Antenna Parameters with Body TSL at 5500 MHz

Impedance, transformed to feed point	48.7 Ω - 0.2 j Ω
Return Loss	- 37.3 dB

Antenna Parameters with Body TSL at 5800 MHz

Impedance, transformed to feed point	57.1 Ω + 8.7 j Ω
Return Loss	- 19.6 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.199 ns
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After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	November 14, 2003

DASY5 Validation Report for Head TSL

Date: 20.02.2013

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 5GHz; Type: D5GHzV2; Serial: D5GHzV2 - SN: 1016

Communication System: CW; Frequency: 5200 MHz, Frequency: 5500 MHz, Frequency: 5800 MHz
Medium parameters used: $f = 5200$ MHz; $\sigma = 4.47$ S/m; $\epsilon_r = 34.7$; $\rho = 1000$ kg/m³, Medium parameters used: $f = 5500$ MHz; $\sigma = 4.74$ S/m; $\epsilon_r = 34.2$; $\rho = 1000$ kg/m³, Medium parameters used: $f = 5800$ MHz; $\sigma = 5.05$ S/m; $\epsilon_r = 33.9$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: EX3DV4 - SN3503; ConvF(5.41, 5.41, 5.41); Calibrated: 28.12.2012, ConvF(4.91, 4.91, 4.91); Calibrated: 28.12.2012, ConvF(4.81, 4.81, 4.81); Calibrated: 28.12.2012;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 27.06.2012
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.8.5(1059); SEMCAD X 14.6.8(7028)

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5200 MHz/Zoom Scan,

dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 64.875 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 29.2 W/kg

SAR(1 g) = 7.88 W/kg; SAR(10 g) = 2.26 W/kg

Maximum value of SAR (measured) = 18.5 W/kg

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5500 MHz/Zoom Scan,

dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 65.120 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 33.0 W/kg

SAR(1 g) = 8.34 W/kg; SAR(10 g) = 2.38 W/kg

Maximum value of SAR (measured) = 20.1 W/kg

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5800 MHz/Zoom Scan,

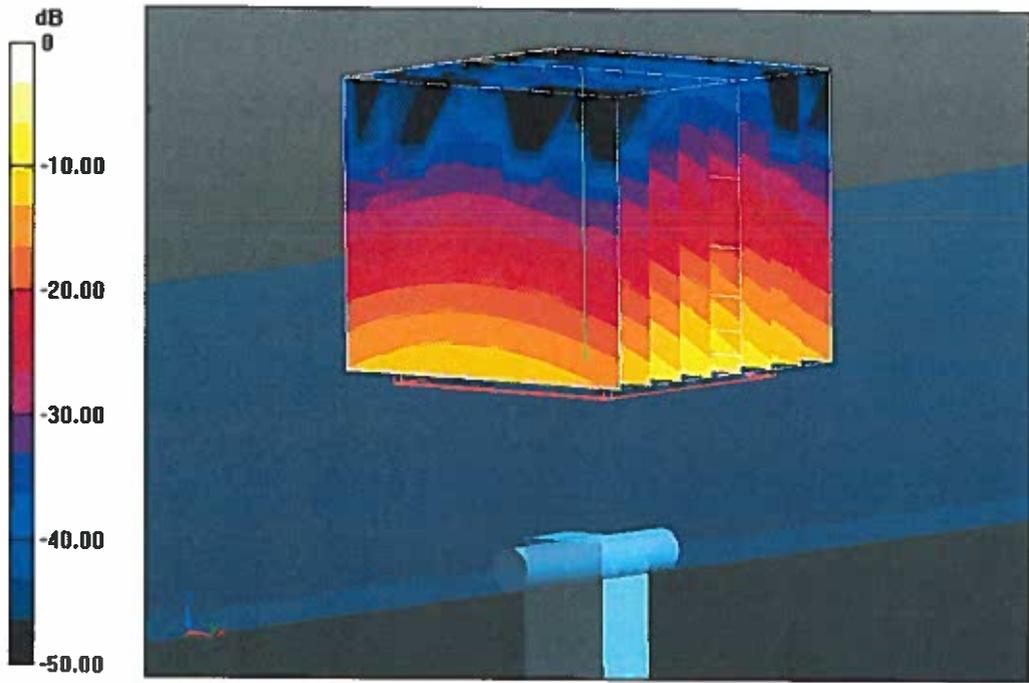
dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 61.682 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 32.4 W/kg

SAR(1 g) = 7.78 W/kg; SAR(10 g) = 2.22 W/kg

Maximum value of SAR (measured) = 19.1 W/kg



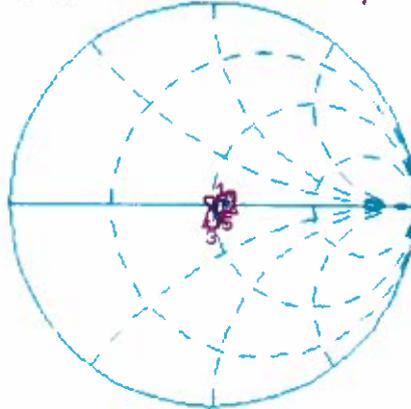
0 dB = 19.1 W/kg = 12.81 dBW/kg

Impedance Measurement Plot for Head TSL

20 Feb 2013 11:09:31

CH1 S11 1 U FS 1: 52.730 Ω -9.7266 Ω 3.1467 pF 5 200.000 000 MHz

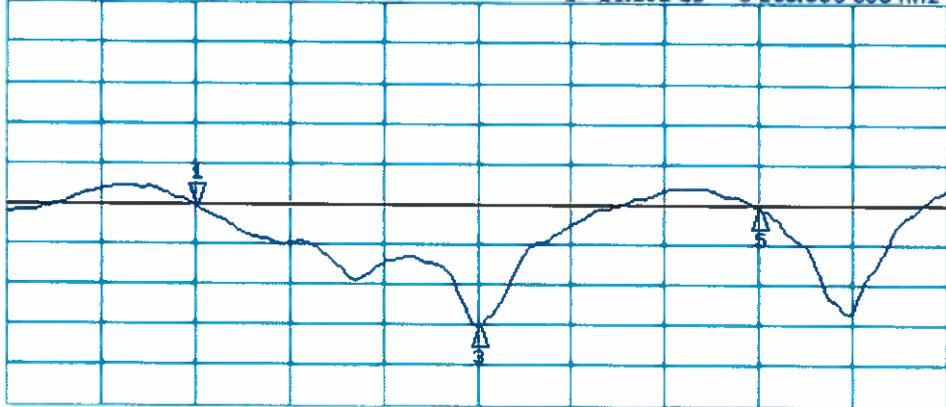
*
Del
Cor
Avg
16
H1d



CH1 Markers
3: 48.516 Ω
-826.17 m Ω
5.50000 GHz
5: 57.070 Ω
7.1133 Ω
5.80000 GHz

CH2 S11 LOG 5 dB/REF -20 dB 1: -20.182 dB 5 200.000 000 MHz

Cor
Avg
16
H1d



CH2 Markers
3: -35.277 dB
5.50000 GHz
5: -20.584 dB
5.80000 GHz

START 5 000.000 000 MHz

STOP 6 000.000 000 MHz

DASY5 Validation Report for Body TSL

Date: 14.02.2013

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 5GHz; Type: D5GHzV2; Serial: D5GHzV2 - SN: 1016

Communication System: CW; Frequency: 5200 MHz, Frequency: 5500 MHz, Frequency: 5800 MHz
Medium parameters used: $f = 5200$ MHz; $\sigma = 5.36$ S/m; $\epsilon_r = 46.9$; $\rho = 1000$ kg/m³, Medium parameters used: $f = 5500$ MHz; $\sigma = 5.71$ S/m; $\epsilon_r = 46.3$; $\rho = 1000$ kg/m³, Medium parameters used: $f = 5800$ MHz; $\sigma = 6.12$ S/m; $\epsilon_r = 45.9$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: EX3DV4 - SN3503; ConvF(4.91, 4.91, 4.91); Calibrated: 28.12.2012, ConvF(4.43, 4.43, 4.43); Calibrated: 28.12.2012, ConvF(4.38, 4.38, 4.38); Calibrated: 28.12.2012;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 27.06.2012
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.8.5(1059); SEMCAD X 14.6.8(7028)

Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5200 MHz/Zoom Scan,

dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 60.072 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 30.6 W/kg

SAR(1 g) = 7.58 W/kg; SAR(10 g) = 2.13 W/kg

Maximum value of SAR (measured) = 18.0 W/kg

Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5500 MHz/Zoom Scan,

dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 59.550 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 35.1 W/kg

SAR(1 g) = 7.98 W/kg; SAR(10 g) = 2.23 W/kg

Maximum value of SAR (measured) = 19.5 W/kg

Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5800 MHz/Zoom Scan,

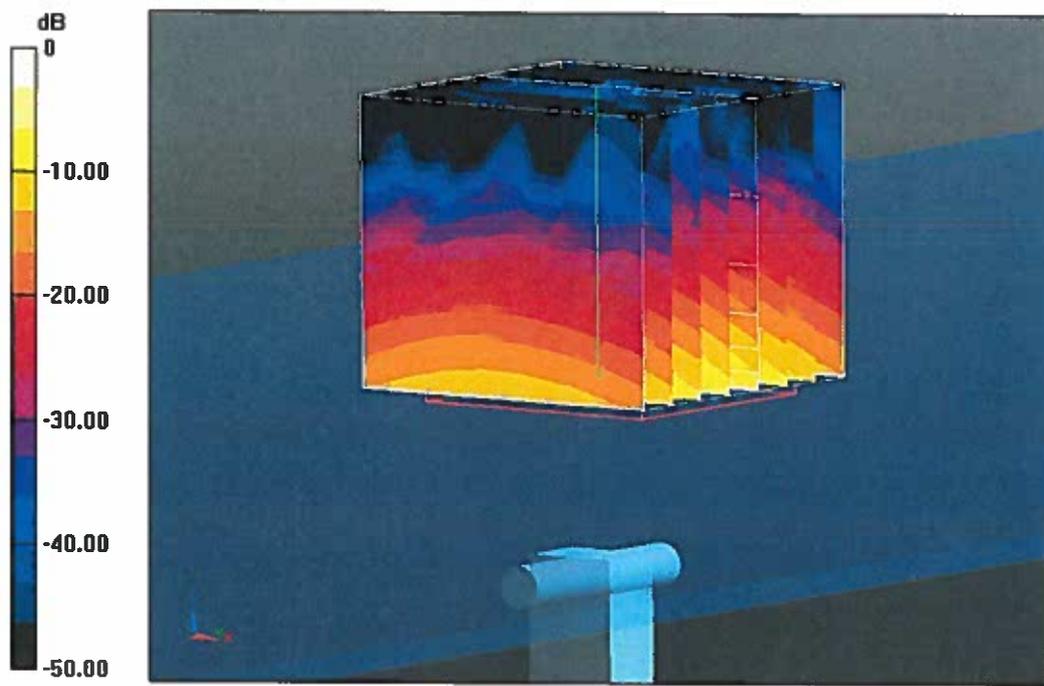
dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 56.431 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 35.6 W/kg

SAR(1 g) = 7.51 W/kg; SAR(10 g) = 2.09 W/kg

Maximum value of SAR (measured) = 18.8 W/kg



0 dB = 18.8 W/kg = 12.74 dBW/kg

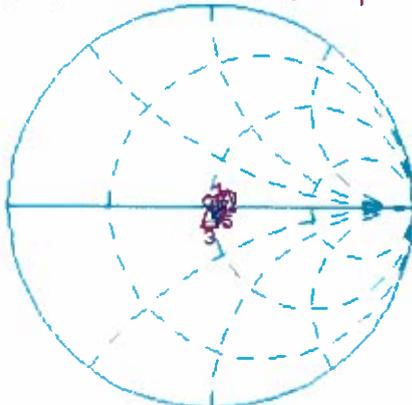
Impedance Measurement Plot for Body TSL

14 Feb 2013 15:49:54

CH1 S11 1 U FS

1: 53.227 Ω -9.1348 Ω 3.3506 pF 5 200.000 000 MHz

*
De1
Cor
Avg
16
H1d

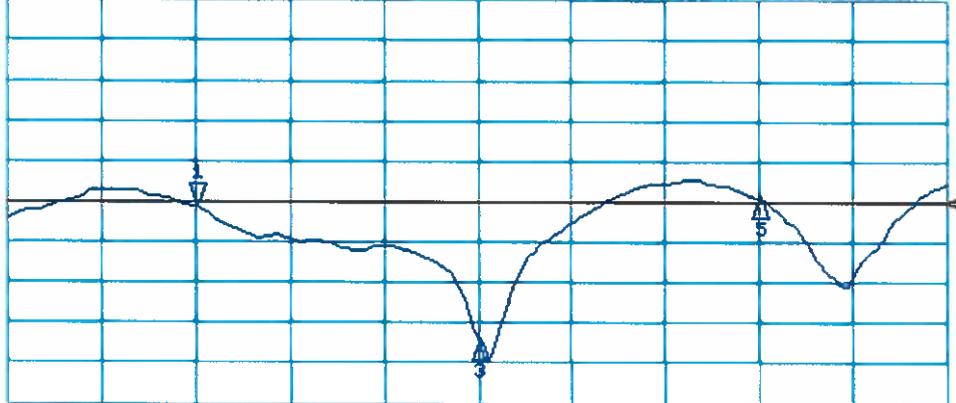


CH1 Markers

3: 48.672 Ω
-234.38 m Ω
5.50000 GHz
5: 57.105 Ω
8.7227 Ω
5.80000 GHz

CH2 S11 LOG 5 dB/REF -20 dB 1:-20.587 dB 5 200.000 000 MHz

Cor
Avg
16
H1d



CH2 Markers

3:-37.282 dB
5.50000 GHz
5:-19.598 dB
5.80000 GHz

START 5 000.000 000 MHz

STOP 6 000.000 000 MHz

Appendix 2. Measurement Methods

A.2.1. Evaluation Procedure

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

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

(ii) For body worn devices or devices which can be operated within 20 cm of the body, the flat section of the SAM phantom was used were the size of the device(s) is normal. for bigger devices and base station the 2mm Oval phantom is used for evaluation. The type of device being evaluated dictated the distance of the EUT to the outer surface of the phantom flat section.
- b) The SAR was determined by a pre-defined procedure within the DASY4 software. The exposed region of the phantom was scanned near the inner surface with a grid spacing of 20mm x 20mm or appropriate resolution.
- c) A 5x5x7 matrix for measurement < 2.0 GHz, 7x7x7 matrix for measurement 2.0 GHz to 3.0 GHz, and 7x7x12 for > 5.0 GHz was performed around the greatest spatial SAR distribution found during the area scan of the applicable exposed region. SAR values were then calculated using a 3-D spline interpolation algorithm and averaged over spatial volumes of 1 and 10 grams.
- d) If the EUT had any appreciable drift over the course of the evaluation, then the EUT was re-evaluated. Any unusual anomalies over the course of the test also warranted a re-evaluation.

A.2.2. Specific Absorption Rate (SAR) Measurements to OET Bulletin 65 Supplement C: (2001-01)

Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields

SAR measurements were performed in accordance with Appendix D of the standard FCC OET Bulletin 65 Supplement C: 2001, IEEE 1528 and FCC KDB procedures, against appropriate limits for each measurement position in accordance with the standard. In some cases the FCC was contacted using a PBA or KDB process to ensure test is performed correctly.

The test was performed in a shielded enclosure with the temperature controlled to remain between +18.0°C and +25.0°C. The tissue equivalent material fluid temperature was controlled to give a maximum variation of $\pm 2.0^\circ\text{C}$

Prior to any SAR measurements on the EUT, system Check and material dielectric property measurements were conducted. In the absence of a detailed procedure within the specification, system Check and material dielectric property measurements were performed in accordance with Appendix C and Appendix D of FCC OET Bulletin 65 Supplement C: 2001 and FCC KDB publication 865664 D01.

Following the successful system Check and material dielectric property measurements, a SAR versus time sweep shall be performed within 10 mm of the phantom inner surface. If the EUT power output is stable after three minutes then the measurement probe will perform a coarse surface level scan at each test position in order to ascertain the location of the maximum local SAR level. Once this area had been established, a 5x5x7 cube of 175 points for frequency below 2.0 GHz, above 2.0GHz up to 3.0 GHz 7x7x7 cube of 343 points and a 7x7x12 cube of 588 points for frequency 5.0 GHz and above will be centred at the area of concern. Extrapolation and interpolation will then be carried out on the 27g of tissue and the highest averaged SAR over a 1g cube determined.

Once the maximum interpolated SAR measurement is complete; the coarse scan is visually assessed to check for secondary peaks within 50% of the maximum SAR level. If there are any further SAR measurements required, extra 5x5x7 or 7x7x7 or 7x7x12 cubes shall be centred on each of these extra local SAR maxima.

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

Appendix 3. SAR Distribution Scans

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

Scan Reference Number	Title
SCN/91945JD02/001	Touch Left GSM CH190
SCN/91945JD02/002	Touch Left GSM CH128
SCN/91945JD02/003	Touch Left GSM CH251
SCN/91945JD02/004	Tilt Left GSM CH190
SCN/91945JD02/005	Touch Right GSM CH190
SCN/91945JD02/006	Touch Right GSM CH128
SCN/91945JD02/007	Touch Right GSM CH251
SCN/91945JD02/008	Tilt Right GSM CH190
SCN/91945JD02/009	Touch Left Antenna Extended GSM CH251
SCN/91945JD02/010	Front of EUT Facing Phantom GPRS CH190
SCN/91945JD02/011	Front of EUT Facing Phantom GPRS CH128
SCN/91945JD02/012	Front of EUT Facing Phantom GPRS CH251
SCN/91945JD02/013	Back of EUT Facing Phantom GPRS CH190
SCN/91945JD02/014	Back of EUT Facing Phantom GPRS CH128
SCN/91945JD02/015	Back of EUT Facing Phantom GPRS CH251
SCN/91945JD02/016	Left Hand Side of EUT Facing Phantom GPRS CH190
SCN/91945JD02/017	Left Hand Side of EUT Facing Phantom GPRS CH128
SCN/91945JD02/018	Left Hand Side of EUT Facing Phantom GPRS CH251
SCN/91945JD02/019	Right Hand Side of EUT Facing Phantom GPRS CH190
SCN/91945JD02/020	Bottom of EUT Facing Phantom GPRS CH190
SCN/91945JD02/021	Front of EUT Facing Phantom with Antenna Extended GPRS CH128
SCN/91945JD02/022	Front of EUT Facing Phantom GSM CH128
SCN/91945JD02/023	Back of EUT Facing Phantom GSM CH128
SCN/91945JD02/024	Front of EUT Facing Phantom with Antenna Extended GSM CH128
SCN/91945JD02/025	Touch Left PCS CH661
SCN/91945JD02/026	Tilt Left PCS CH661
SCN/91945JD02/027	Touch Right PCS CH661
SCN/91945JD02/028	Tilt Right PCS CH661
SCN/91945JD02/029	Touch Left PCS CH512
SCN/91945JD02/030	Touch Left PCS CH810
SCN/91945JD02/031	Touch Left with Antenna Extended PCS CH810

SAR Distribution Scans (Continued):

Scan Reference Number	Title
SCN/91945JD02/032	Front of EUT Facing Phantom GPRS CH661
SCN/91945JD02/033	Back of EUT Facing Phantom GPRS CH661
SCN/91945JD02/034	Left side of EUT Facing Phantom GPRS CH661
SCN/91945JD02/035	Right side of EUT Facing Phantom GPRS CH661
SCN/91945JD02/036	Bottom of EUT Facing Phantom GPRS CH661
SCN/91945JD02/037	Bottom of EUT Facing Phantom GPRS CH512
SCN/91945JD02/038	Bottom of EUT Facing Phantom GPRS CH810
SCN/91945JD02/039	Front of EUT Facing Phantom at 15mm Separation GPRS CH512
SCN/91945JD02/040	Front of EUT Facing Phantom at 15mm Separation GPRS CH661
SCN/91945JD02/041	Front of EUT Facing Phantom at 15mm Separation GPRS CH810
SCN/91945JD02/042	Front of EUT Facing Phantom with Antenna Extended at 15mm Separation GPRS CH810
SCN/91945JD02/043	Front of EUT Facing Phantom at 15mm PCS CH810
SCN/91945JD02/044	Back of EUT Facing Phantom at 15mm PCS CH810
SCN/91945JD02/045	Back of EUT Facing Phantom with Extended Antenna PCS CH810
SCN/91945JD02/046	Touch Left UMTS FDD 5 CH4183
SCN/91945JD02/047	Tilt Left UMTS FDD 5 CH4183
SCN/91945JD02/048	Touch Right UMTS FDD 5 CH4183
SCN/91945JD02/049	Tilt Right UMTS FDD 5 CH4183
SCN/91945JD02/050	Touch Right UMTS FDD 5 CH4132
SCN/91945JD02/051	Touch Right UMTS FDD 5 CH4233
SCN/91945JD02/052	Touch Right Antenna Extended UMTS FDD 5 CH4233
SCN/91945JD02/053	Front of EUT Facing Phantom UMTS FDD 5 CH4183
SCN/91945JD02/054	Back of EUT Facing Phantom UMTS FDD 5 CH4183
SCN/91945JD02/055	Left Hand Side of EUT Facing Phantom UMTS FDD 5 CH4183
SCN/91945JD02/056	Left Hand Side of EUT Facing Phantom UMTS FDD 5 CH4132
SCN/91945JD02/057	Left Hand Side of EUT Facing Phantom UMTS FDD 5 CH4233
SCN/91945JD02/058	Right Hand Side of EUT Facing Phantom UMTS FDD 5 CH4183
SCN/91945JD02/059	Bottom of EUT Facing Phantom UMTS FDD 5 CH4183
SCN/91945JD02/060	Front of EUT Facing Phantom UMTS FDD 5 CH4132
SCN/91945JD02/061	Front of EUT Facing Phantom with Antenna Extended UMTS FDD 5 CH4132
SCN/91945JD02/062	Front of EUT Facing Phantom UMTS FDD 5 CH4233
SCN/91945JD02/063	Front of EUT Facing Phantom UMTS FDD 5 CH4132
SCN/91945JD02/064	Back of EUT Facing Phantom UMTS FDD 5 CH4132
SCN/91945JD02/065	Front of EUT Facing Phantom with Extended Antenna UMTS FDD 5 CH4132

SAR Distribution Scans (Continued):

Scan Reference Number	Title
SCN/91945JD02/066	Touch Left WiFi 802.11b 1Mbps CH6
SCN/91945JD02/067	Tilt Left WiFi 802.11b 1Mbps CH6
SCN/91945JD02/068	Touch Right WiFi 802.11b 1Mbps CH6
SCN/91945JD02/069	Tilt Right WiFi 802.11b 1Mbps CH6
SCN/91945JD02/070	Touch Right WiFi 802.11b 1Mbps CH1
SCN/91945JD02/071	Touch Right WiFi 802.11b 1Mbps CH11
SCN/91945JD02/072	Touch Right Antenna Extended WiFi 802.11b 1Mbps CH1
SCN/91945JD02/073	Front of EUT Facing Phantom 802.11b 1Mbps CH6
SCN/91945JD02/074	Back of EUT Facing Phantom 802.11b 1Mbps CH6
SCN/91945JD02/075	Left Side of EUT Facing Phantom 802.11b 1Mbps CH6
SCN/91945JD02/076	Top of EUT Facing Phantom 802.11b 1Mbps CH6
SCN/91945JD02/077	Top of EUT Facing Phantom 802.11b 1Mbps CH1
SCN/91945JD02/078	Top of EUT Facing Phantom 802.11b 1Mbps CH11
SCN/91945JD02/079	Front of EUT Facing Phantom at 15mm 802.11b 1Mbps CH11
SCN/91945JD02/080	Back of EUT Facing Phantom at 15mm 802.11b 1Mbps CH11
SCN/91945JD02/081	Front of EUT Facing Phantom at 15mm with Antenna Extended 802.11b 1Mbps CH11
SCN/91945JD02/082	Touch Left WiFi 802.11a 6Mbps CH48
SCN/91945JD02/083	Tilt Left WiFi 802.11a 6Mbps CH48
SCN/91945JD02/084	Touch Right WiFi 802.11a 6Mbps CH48
SCN/91945JD02/085	Tilt Right WiFi 802.11a 6Mbps CH48
SCN/91945JD02/086	Tilt Left WiFi 802.11a 6Mbps CH52
SCN/91945JD02/087	Tilt Left WiFi 802.11a 6Mbps CH136
SCN/91945JD02/088	Tilt Left WiFi 802.11a 6Mbps CH157
SCN/91945JD02/089	Tilt Left Antenna Extended WiFi 802.11a 6Mbps CH157

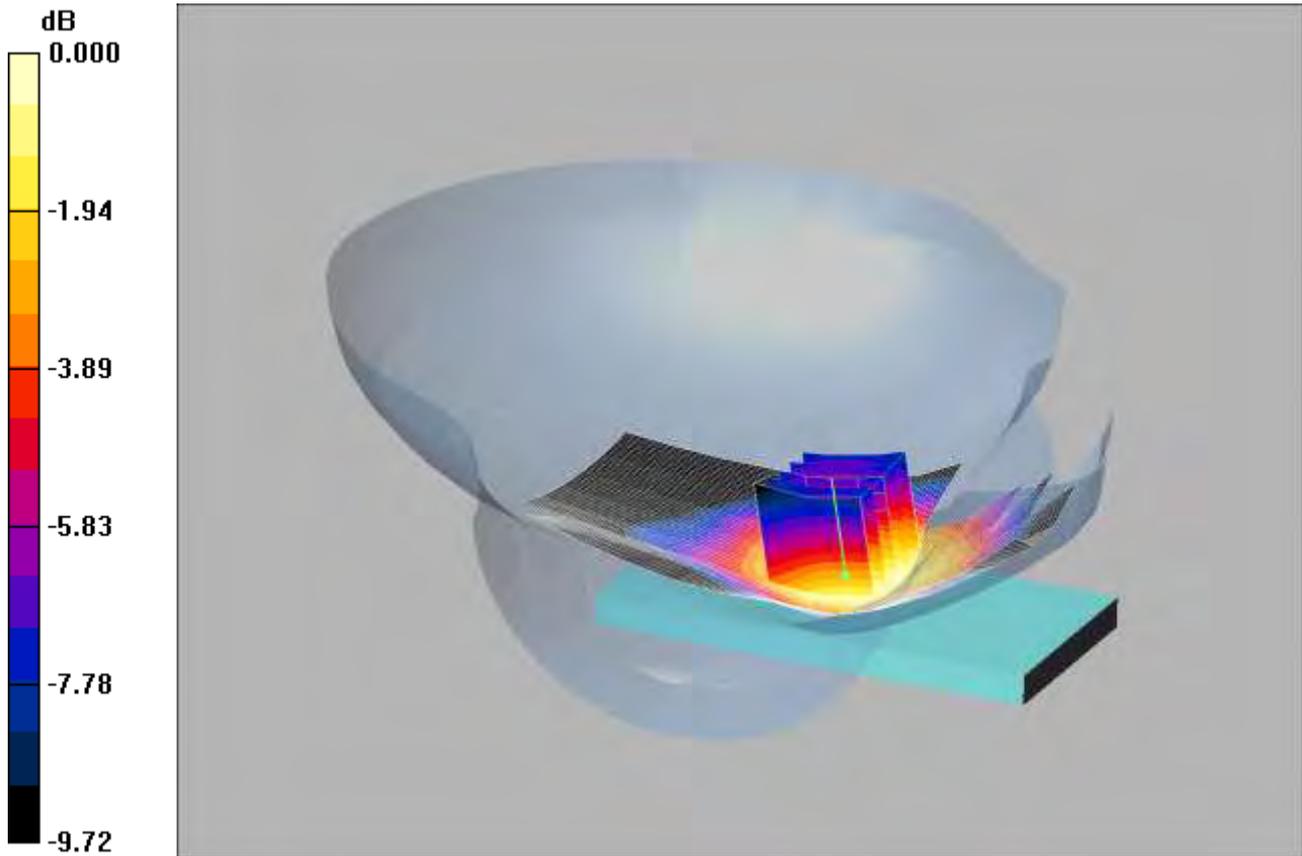
SAR Distribution Scans (Continued):

Scan Reference Number	Title
SCN/91945JD02/090	System Performance Check 900MHz Head 07 02 13
SCN/91945JD02/091	System Performance Check 900MHz Head 11 02 13
SCN/91945JD02/092	System Performance Check 900MHz Head 12 02 13
SCN/91945JD02/093	System Performance Check 900MHz Head 22 02 13
SCN/91945JD02/094	System Performance Check 900MHz Body 15 02 13
SCN/91945JD02/095	System Performance Check 900MHz Body 18 02 13
SCN/91945JD02/096	System Performance Check 900MHz Body 21 02 13
SCN/91945JD02/097	System Performance Check 900MHz Body 22 02 13
SCN/91945JD02/098	System Performance Check 900MHz Body 23 02 13
SCN/91945JD02/099	System Performance Check 900MHz Body 25 02 13
SCN/91945JD02/100	System Performance Check 1900MHz Head 09 02 13
SCN/91945JD02/101	System Performance Check 1900MHz Body 12 02 13
SCN/91945JD02/102	System Performance Check 1900MHz Body 13 02 13
SCN/91945JD02/103	System Performance Check 2450MHz Head 01 03 13
SCN/91945JD02/104	System Performance Check 2450MHz Body 28 02 13
SCN/91945JD02/105	System Performance Check 5200MHz Head 27 02 13
SCN/91945JD02/106	System Performance Check 5200MHz Head 28 02 13
SCN/91945JD02/107	System Performance Check 5500MHz Head 27 02 13
SCN/91945JD02/108	System Performance Check 5500MHz Head 28 02 13
SCN/91945JD02/109	System Performance Check 5800MHz Head 28 02 13

SCN/91945JD02/001: Touch Left GSM CH190

Date: 07/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: CB5A1NUBQ2



0 dB = 0.881mW/g

Communication System: GSM 850 MHz; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium: 900 MHz HSL Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.923$ mho/m; $\epsilon_r = 41$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.33, 6.33, 6.33); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Touch Left - Middle/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.862 mW/g

Touch Left - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.5 V/m; Power Drift = -0.077 dB

Peak SAR (extrapolated) = 1.11 W/kg

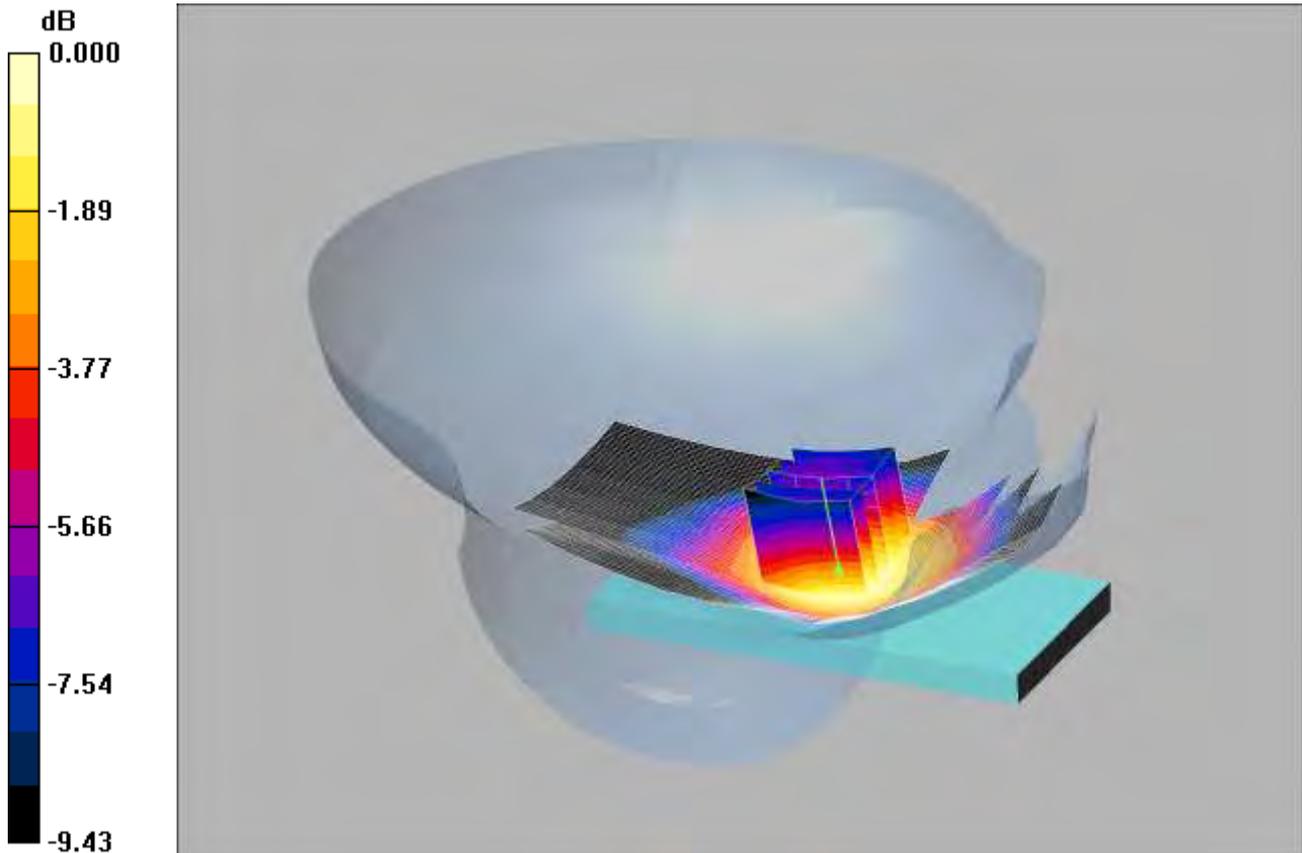
SAR(1 g) = 0.834 mW/g; SAR(10 g) = 0.601 mW/g

Maximum value of SAR (measured) = 0.881 mW/g

SCN/91945JD02/002: Touch Left GSM CH128

Date: 07/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: CB5A1NUBQ2



0 dB = 0.822mW/g

Communication System: GSM 850 MHz; Frequency: 824.2 MHz; Duty Cycle: 1:8.3

Medium: 900 MHz HSL Medium parameters used (interpolated): $f = 824.2$ MHz; $\sigma = 0.915$ mho/m; $\epsilon_r = 41.1$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.33, 6.33, 6.33); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Touch Left - Low/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.802 mW/g

Touch Left - Low/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.3 V/m; Power Drift = 0.132 dB

Peak SAR (extrapolated) = 1.03 W/kg

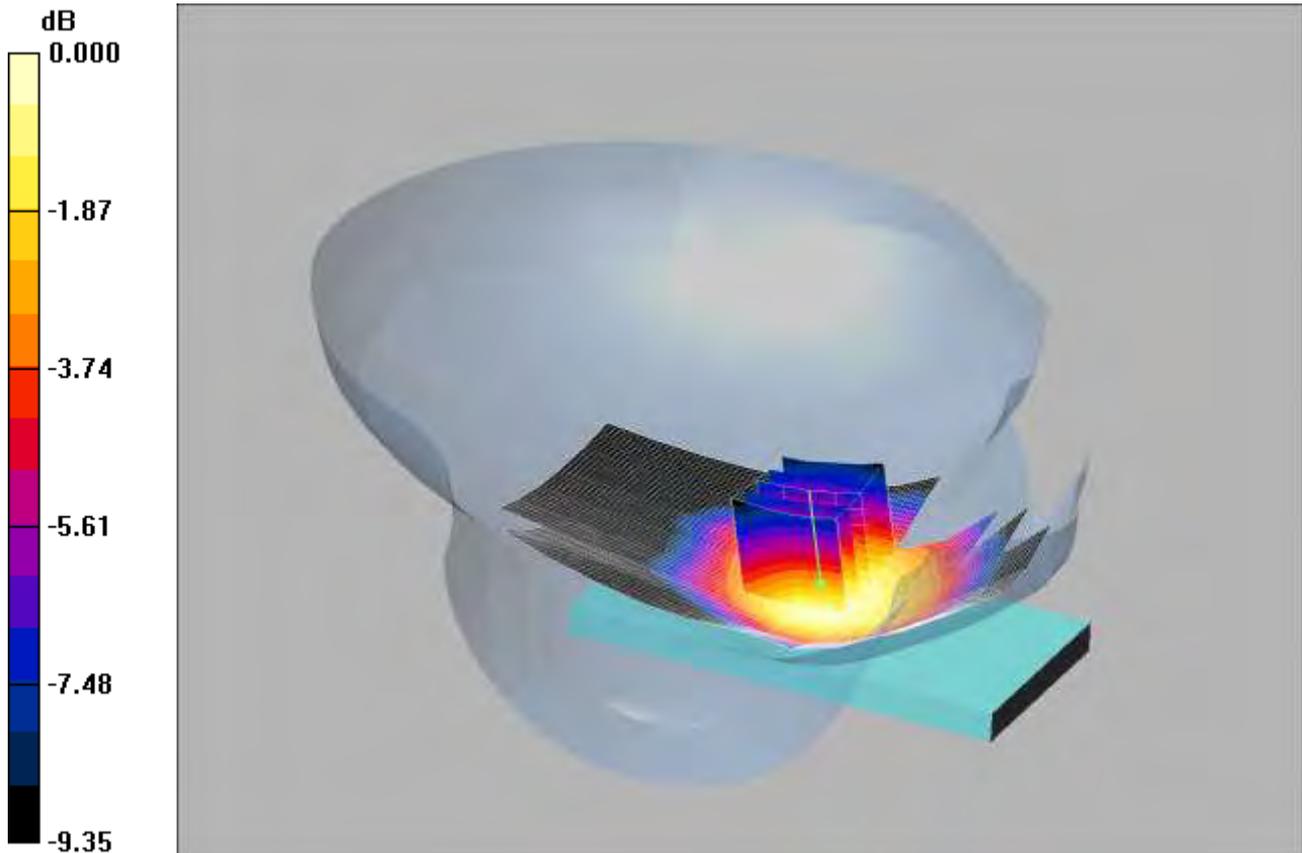
SAR(1 g) = 0.783 mW/g; SAR(10 g) = 0.566 mW/g

Maximum value of SAR (measured) = 0.822 mW/g

SCN/91945JD02/003: Touch Left GSM CH251

Date: 07/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: CB5A1NUBQ2



0 dB = 0.945mW/g

Communication System: GSM 850 MHz; Frequency: 848.8 MHz; Duty Cycle: 1:8.3

Medium: 900 MHz HSL Medium parameters used (interpolated): $f = 848.8$ MHz; $\sigma = 0.931$ mho/m; $\epsilon_r = 40.9$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.33, 6.33, 6.33); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Touch Left - High/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.933 mW/g

Touch Left - High/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.63 V/m; Power Drift = -0.020 dB

Peak SAR (extrapolated) = 1.15 W/kg

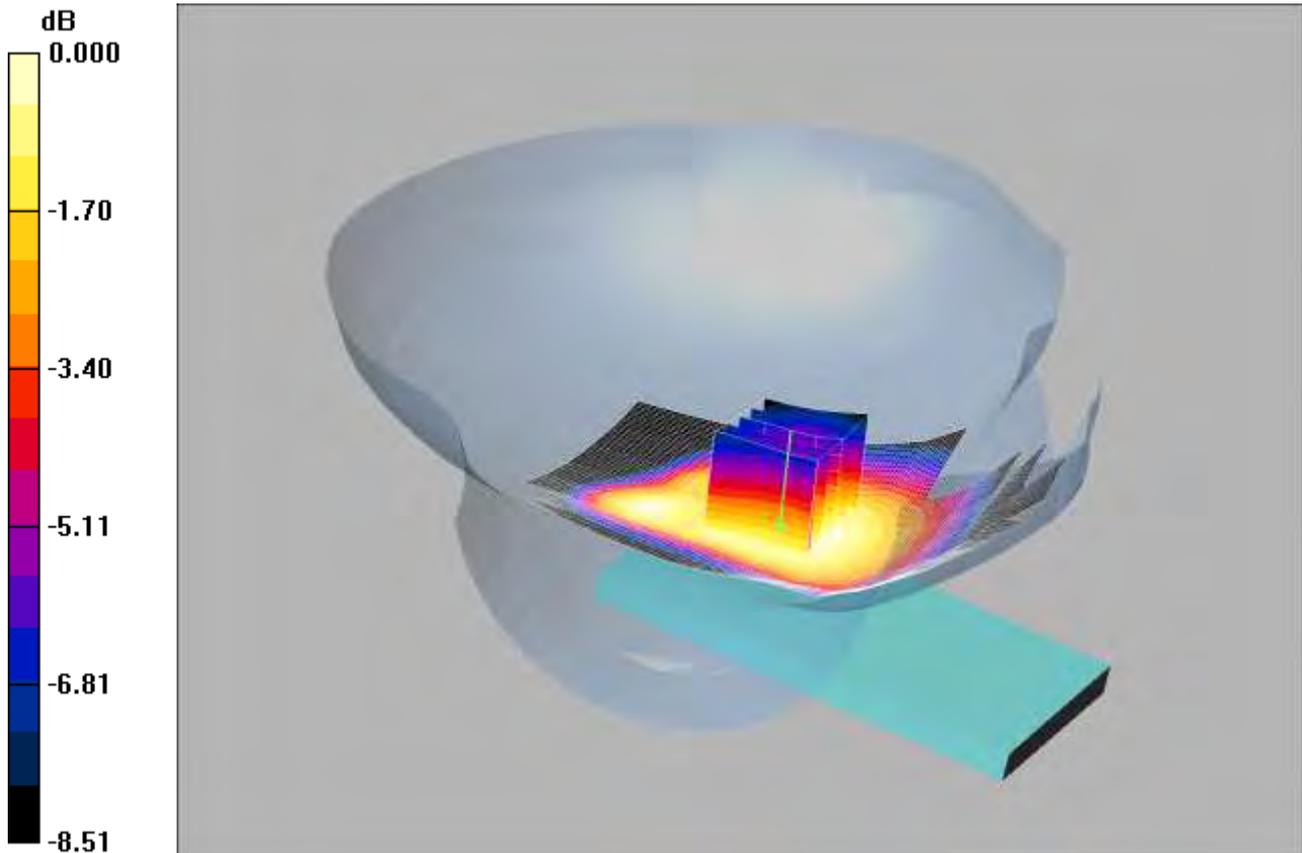
SAR(1 g) = 0.883 mW/g; SAR(10 g) = 0.648 mW/g

Maximum value of SAR (measured) = 0.945 mW/g

SCN/91945JD02/004: Tilt Left GSM CH190

Date: 07/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: CB5A1NUBQ2



0 dB = 0.397mW/g

Communication System: GSM 850 MHz; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium: 900 MHz HSL Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.923$ mho/m; $\epsilon_r = 41$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.33, 6.33, 6.33); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Tilt Left - Middle/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.407 mW/g

Tilt Left - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 18.2 V/m; Power Drift = -0.094 dB

Peak SAR (extrapolated) = 0.458 W/kg

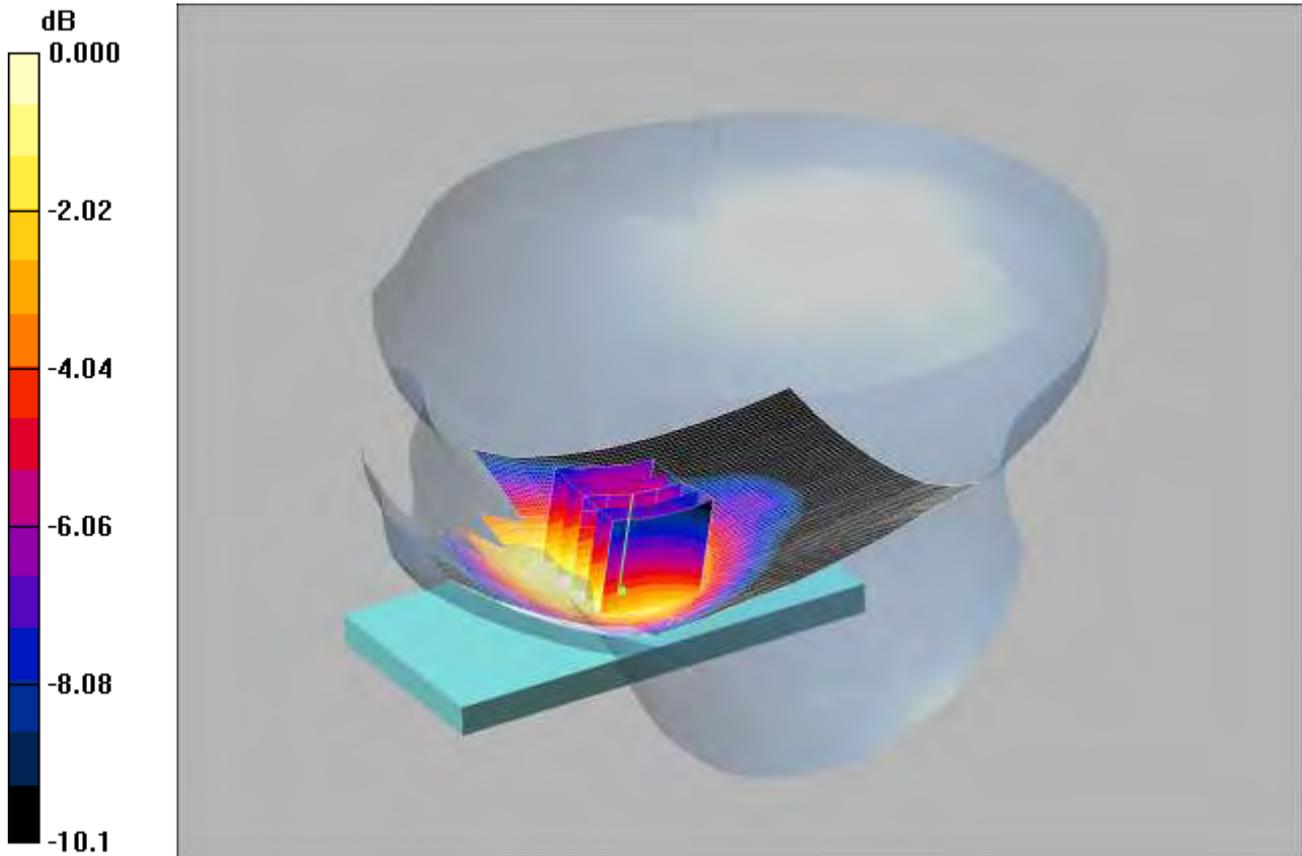
SAR(1 g) = 0.378 mW/g; SAR(10 g) = 0.291 mW/g

Maximum value of SAR (measured) = 0.397 mW/g

SCN/91945JD02/005: Touch Right GSM CH190

Date: 07/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: CB5A1NUBQ2



0 dB = 0.855mW/g

Communication System: GSM 850 MHz; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium: 900 MHz HSL Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.905$ mho/m; $\epsilon_r = 40.5$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.33, 6.33, 6.33); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Touch Right - Middle/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.898 mW/g

Touch Right - Middle/Zoom Scan (5x5x7) 2 (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.6 V/m; Power Drift = 0.104 dB

Peak SAR (extrapolated) = 1.05 W/kg

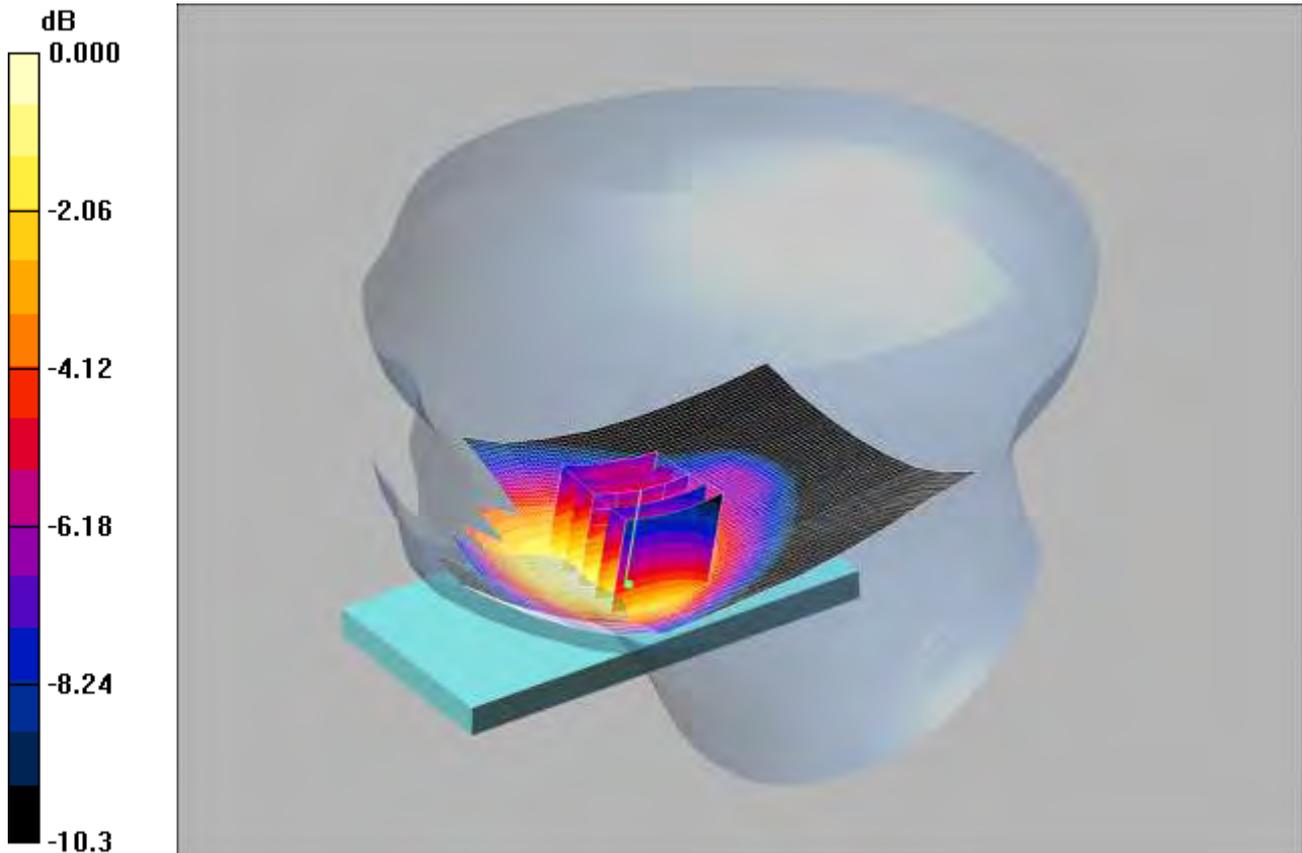
SAR(1 g) = 0.815 mW/g; SAR(10 g) = 0.612 mW/g

Maximum value of SAR (measured) = 0.855 mW/g

SCN/91945JD02/006: Touch Right GSM CH128

Date: 07/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: CB5A1NUBQ2



0 dB = 0.814mW/g

Communication System: GSM 850 MHz; Frequency: 824.2 MHz; Duty Cycle: 1:8.3

Medium: 900 MHz HSL Medium parameters used (interpolated): $f = 824.2$ MHz; $\sigma = 0.897$ mho/m; $\epsilon_r = 40.5$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.33, 6.33, 6.33); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Touch Right - Low/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.848 mW/g

Touch Right - Low/Zoom Scan (5x5x7) 2 (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.8 V/m; Power Drift = -0.170 dB

Peak SAR (extrapolated) = 1.02 W/kg

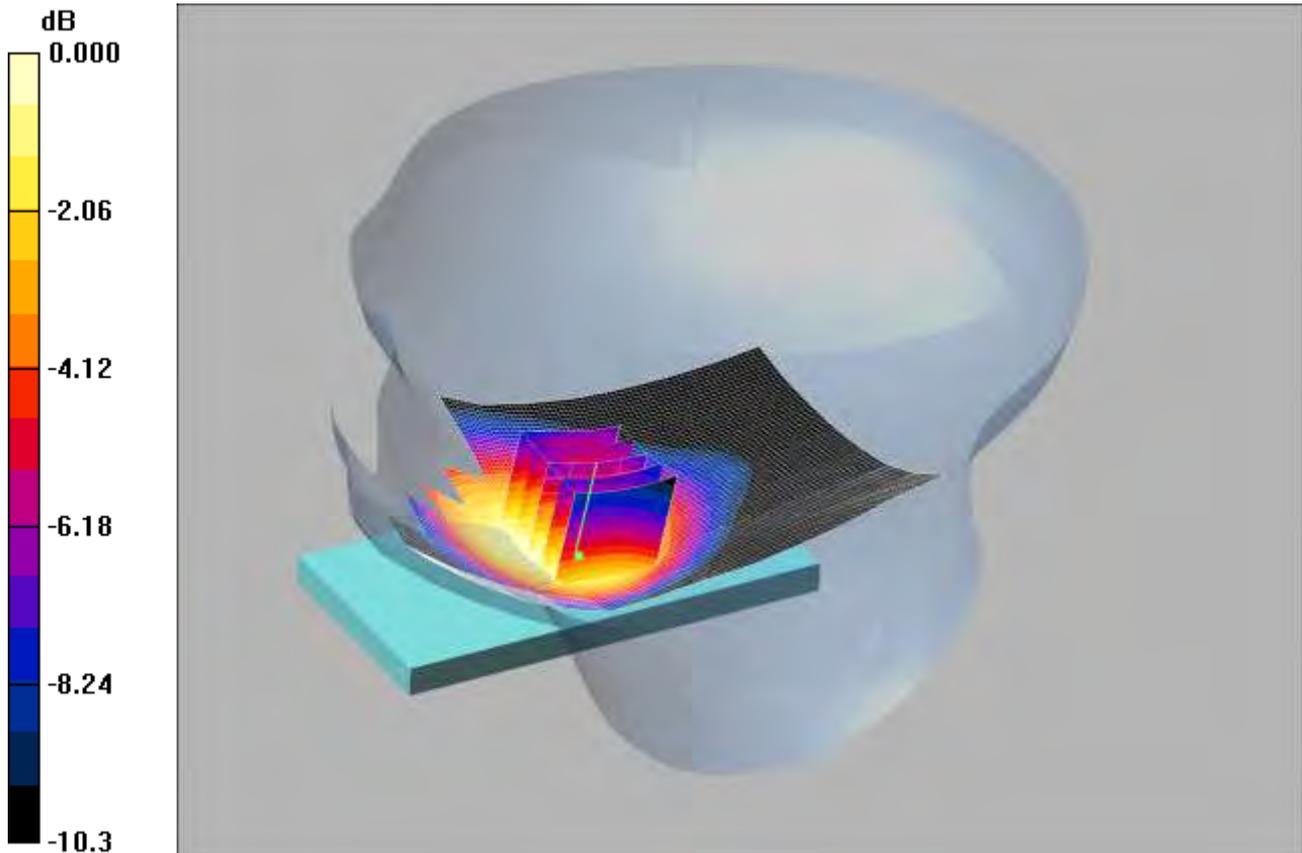
SAR(1 g) = 0.777 mW/g; SAR(10 g) = 0.580 mW/g

Maximum value of SAR (measured) = 0.814 mW/g

SCN/91945JD02/007: Touch Right GSM CH251

Date: 07/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: CB5A1NUBQ2



0 dB = 0.877mW/g

Communication System: GSM 850 MHz; Frequency: 848.8 MHz; Duty Cycle: 1:8.3

Medium: 900 MHz HSL Medium parameters used (interpolated): $f = 848.8$ MHz; $\sigma = 0.913$ mho/m; $\epsilon_r = 40.4$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.33, 6.33, 6.33); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Touch Right - High/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.914 mW/g

Touch Right - High/Zoom Scan (5x5x7) 2 (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.2 V/m; Power Drift = 0.030 dB

Peak SAR (extrapolated) = 1.05 W/kg

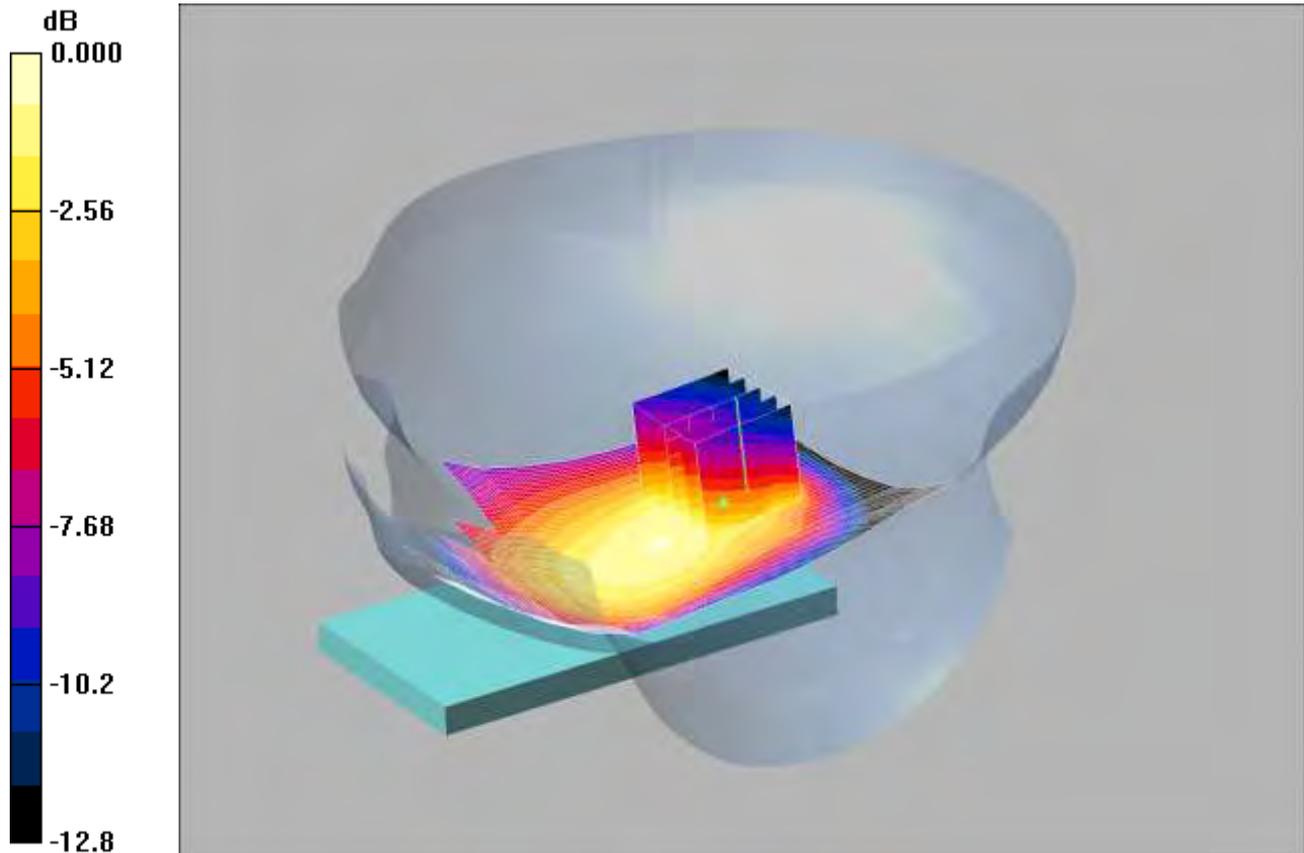
SAR(1 g) = 0.830 mW/g; SAR(10 g) = 0.625 mW/g

Maximum value of SAR (measured) = 0.877 mW/g

SCN/91945JD02/008: Tilt Right GSM CH190

Date: 07/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: CB5A1NUBQ2



0 dB = 0.412mW/g

Communication System: GSM 850 MHz; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium: 900 MHz HSL Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.905$ mho/m; $\epsilon_r = 40.5$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.33, 6.33, 6.33); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Tilt Right - Middle 2/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.389 mW/g

Tilt Right - Middle 2/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 16.5 V/m; Power Drift = 0.023 dB

Peak SAR (extrapolated) = 0.803 W/kg

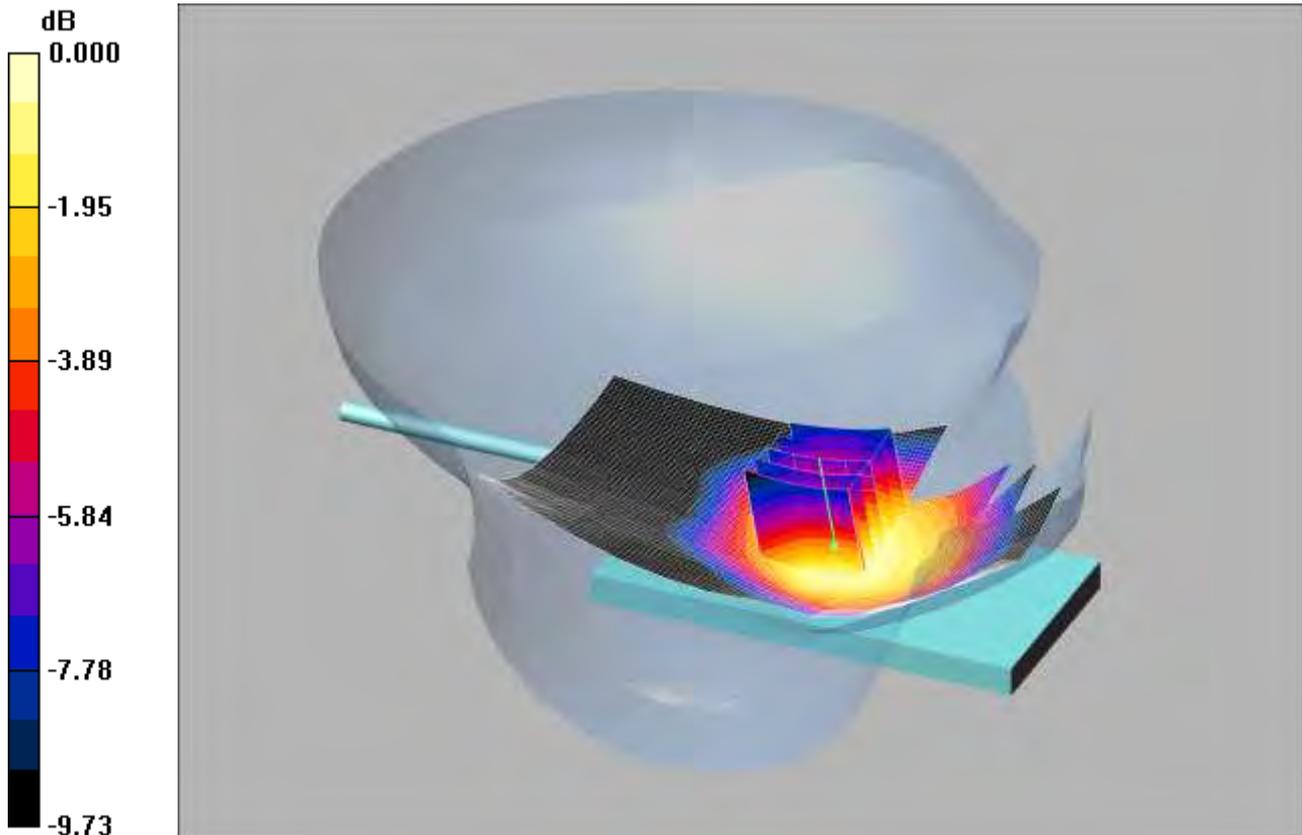
SAR(1 g) = 0.374 mW/g; SAR(10 g) = 0.215 mW/g

Maximum value of SAR (measured) = 0.412 mW/g

SCN/91945JD02/009: Touch Left Antenna Extended GSM CH251

Date: 22/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: CB5A1NUBQ2



0 dB = 0.719mW/g

Communication System: GSM 850 MHz; Frequency: 848.8 MHz; Duty Cycle: 1:8.3

Medium: 900 MHz HSL Medium parameters used (interpolated): $f = 848.8$ MHz; $\sigma = 0.919$ mho/m; $\epsilon_r = 40.3$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.33, 6.33, 6.33); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Touch Left - High/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.701 mW/g

Touch Left - High/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.49 V/m; Power Drift = -0.008 dB

Peak SAR (extrapolated) = 0.872 W/kg

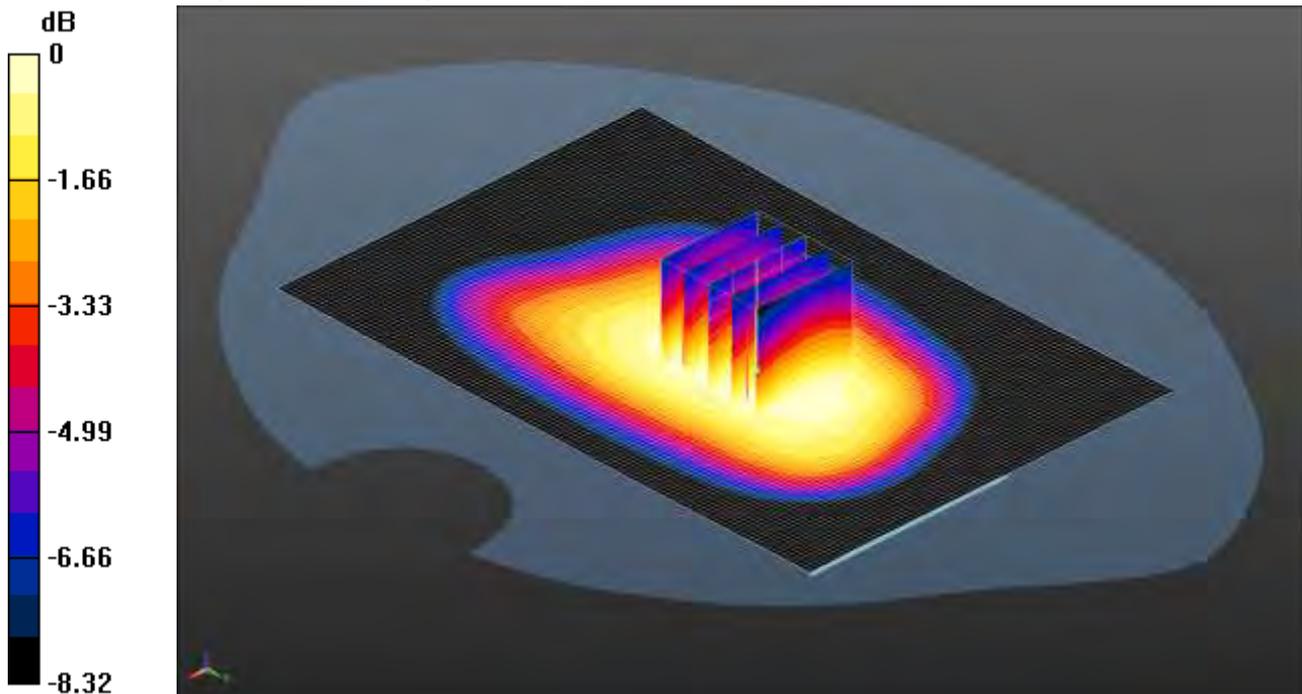
SAR(1 g) = 0.676 mW/g; SAR(10 g) = 0.498 mW/g

Maximum value of SAR (measured) = 0.719 mW/g

SCN/91945JD02/010: Front of EUT Facing Phantom GPRS CH190

Date: 21/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 1.23 W/kg = 0.90 dBW/kg

Communication System: GPRS 4Tx; Frequency: 836.6 MHz; Duty Cycle: 1:1.99986

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 1.049$ mho/m; $\epsilon_r = 54.155$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(5.99, 5.99, 5.99); Calibrated: 26/07/2012;

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM B (Site 58); Type: Twin Phantom; Serial: TP:1020

- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Front of EUT Facing Phantom Middle/Area Scan (81x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.24 W/kg

Configuration/Front of EUT Facing Phantom Middle/Zoom Scan 2 (5x5x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm

Reference Value = 35.958 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 1.38 W/kg

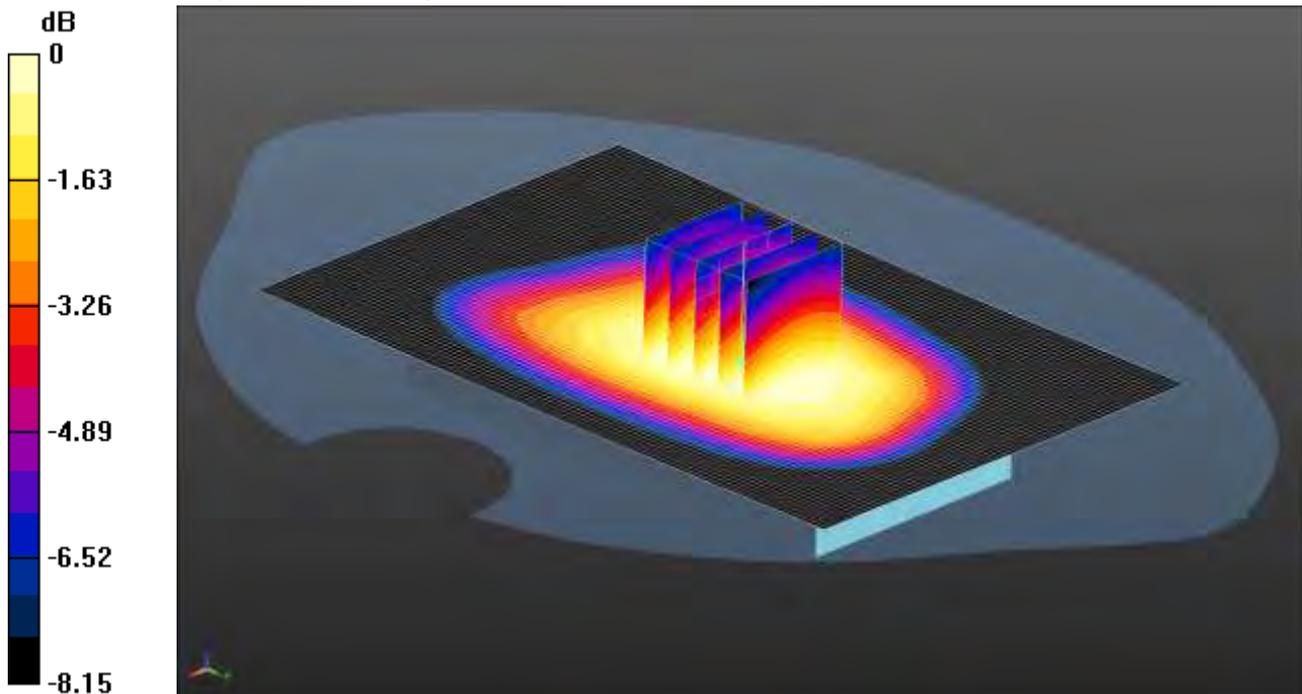
SAR(1 g) = 1.18 W/kg; SAR(10 g) = 0.926 W/kg

Maximum value of SAR (measured) = 1.23 W/kg

SCN/91945JD02/011: Front of EUT Facing Phantom GPRS CH128

Date: 23/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 1.29 W/kg = 1.11 dBW/kg

Communication System: GPRS 4Tx; Frequency: 824.2 MHz; Duty Cycle: 1:1.99986

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 824.2$ MHz; $\sigma = 1.006$ mho/m; $\epsilon_r = 54.153$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(5.99, 5.99, 5.99); Calibrated: 26/07/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn432; Calibrated: 02/05/2012
- Phantom: SAM B (Site 58); Type: Twin Phantom; Serial: TP:1020
- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Front of EUT Facing Phantom Low/Area Scan (81x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.32 W/kg

Configuration/Front of EUT Facing Phantom Low/Zoom Scan 2 2 (5x5x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm

Reference Value = 38.084 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 1.45 W/kg

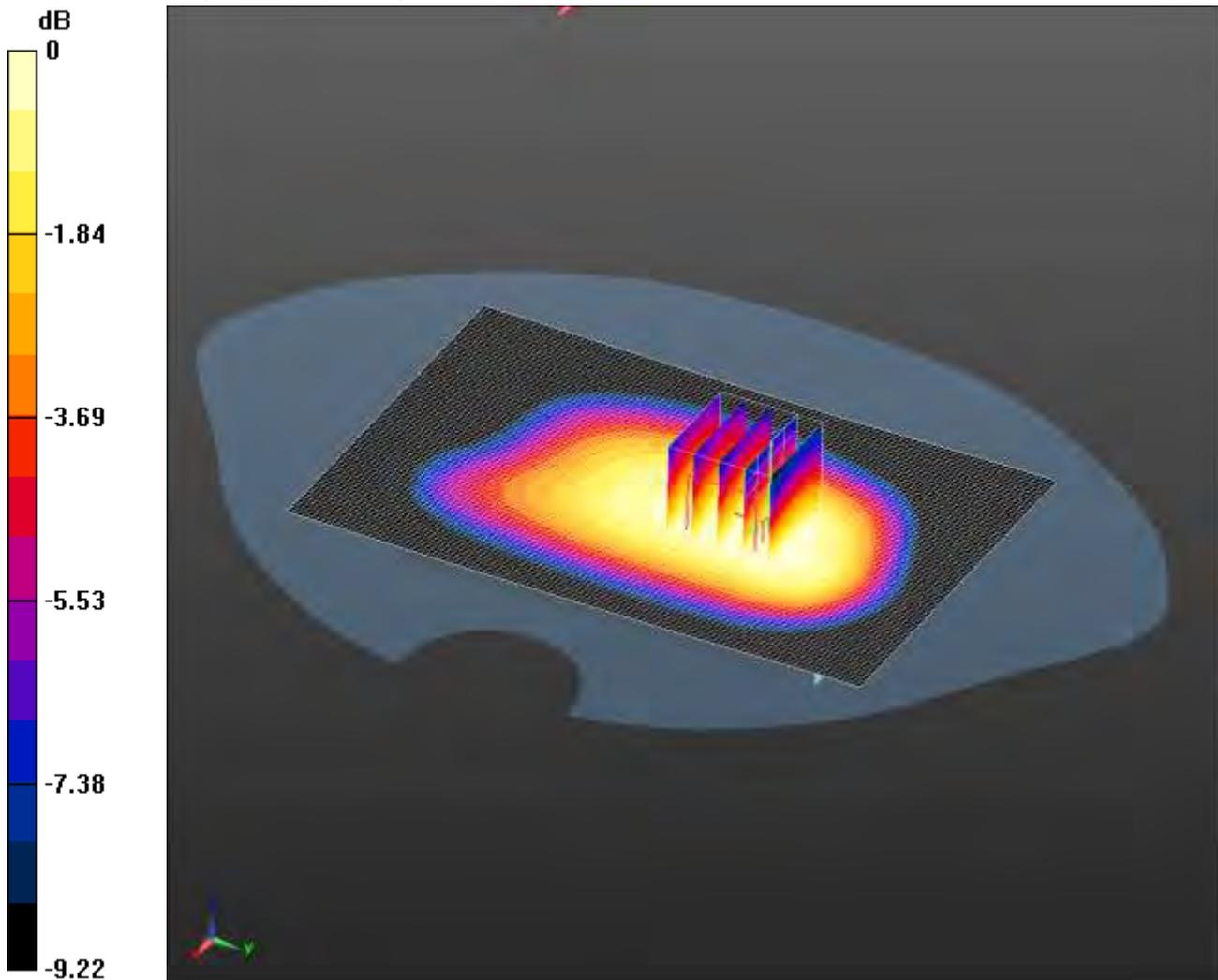
SAR(1 g) = 1.24 W/kg; SAR(10 g) = 0.974 W/kg

Maximum value of SAR (measured) = 1.29 W/kg

SCN/91945JD02/012: Front of EUT Facing Phantom GPRS CH251

Date: 21/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 1.25 W/kg = 0.97 dBW/kg

Communication System: GPRS 4Tx; Frequency: 848.8 MHz; Duty Cycle: 1:1.99986

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 848.8$ MHz; $\sigma = 1.059$ mho/m; $\epsilon_r = 54.128$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(5.99, 5.99, 5.99); Calibrated: 26/07/2012;

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM B (Site 58); Type: Twin Phantom; Serial: TP:1020

- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Front of EUT Facing Phantom High/Area Scan (81x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.26 W/kg

Configuration/Front of EUT Facing Phantom High/Zoom Scan 2 2 (5x5x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm

Reference Value = 33.530 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 1.46 W/kg

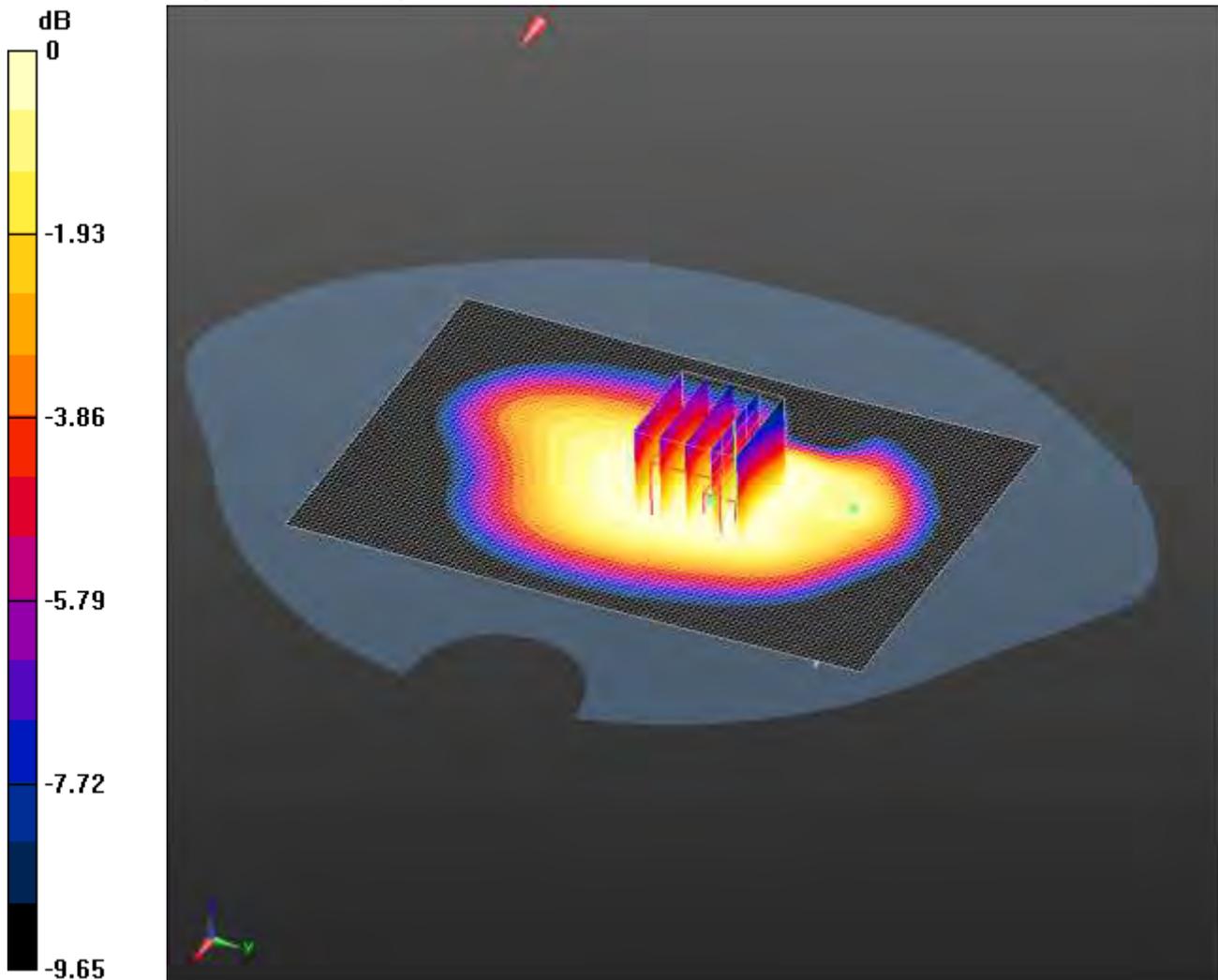
SAR(1 g) = 1.19 W/kg; SAR(10 g) = 0.916 W/kg

Maximum value of SAR (measured) = 1.25 W/kg

SCN/91945JD02/013: Back of EUT Facing Phantom GPRS CH190

Date: 22/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 1.07 W/kg = 0.29 dBW/kg

Communication System: GPRS 4Tx; Frequency: 836.6 MHz; Duty Cycle: 1:1.99986

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 1.049$ mho/m; $\epsilon_r = 54.155$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(5.99, 5.99, 5.99); Calibrated: 26/07/2012;

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM B (Site 58); Type: Twin Phantom; Serial: TP:1020

- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Back of EUT Facing Phantom Middle/Area Scan (81x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.13 W/kg

Configuration/Back of EUT Facing Phantom Middle/Zoom Scan 2 (5x5x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm

Reference Value = 33.600 V/m; Power Drift = 0.12 dB

Peak SAR (extrapolated) = 1.29 W/kg

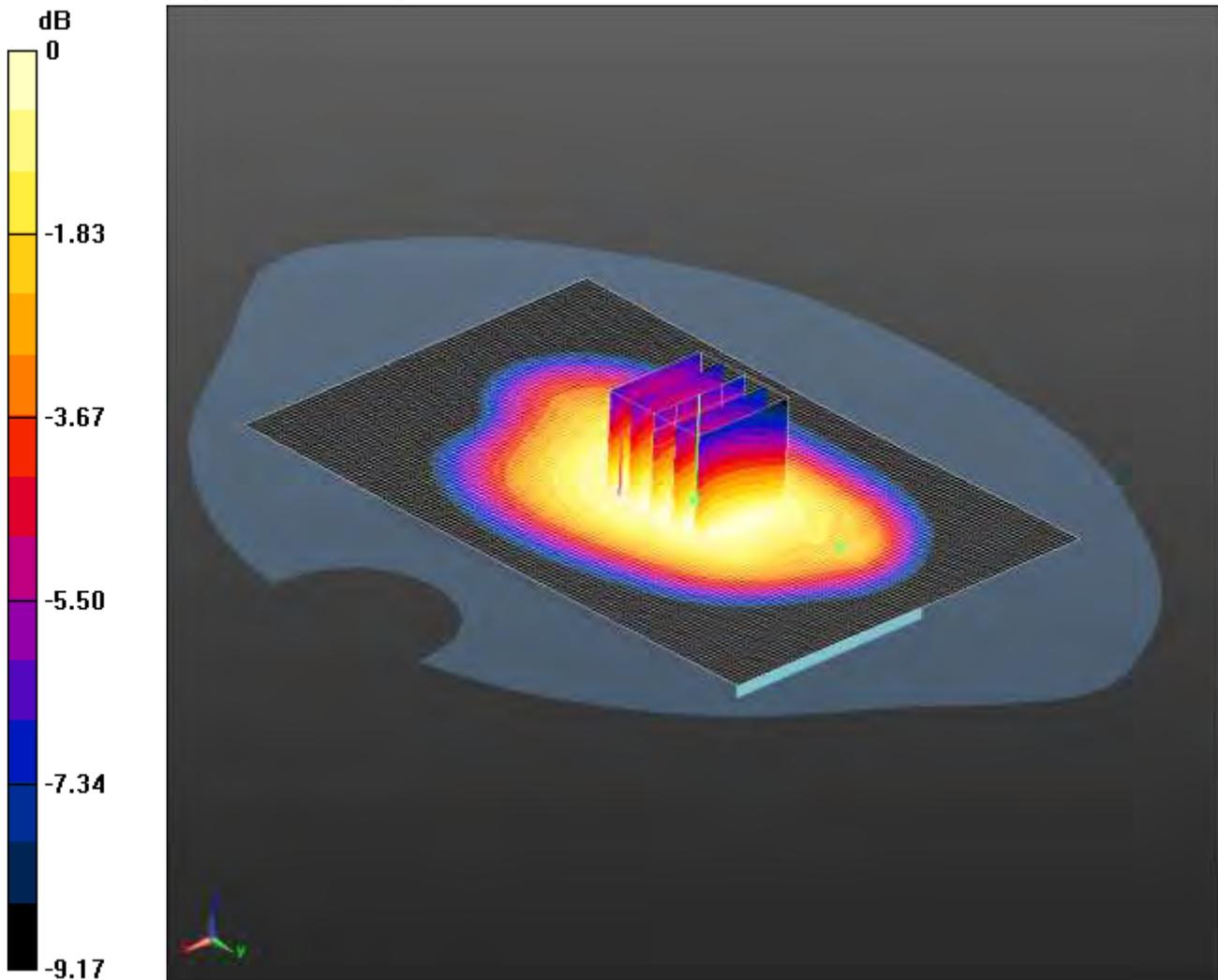
SAR(1 g) = 1.02 W/kg; SAR(10 g) = 0.792 W/kg

Maximum value of SAR (measured) = 1.07 W/kg

SCN/91945JD02/014: Back of EUT Facing Phantom GPRS CH128

Date: 22/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 1.10 W/kg = 0.41 dBW/kg

Communication System: GPRS 4Tx; Frequency: 824.2 MHz; Duty Cycle: 1:1.99986

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 824.2$ MHz; $\sigma = 1.04$ mho/m; $\epsilon_r = 54.184$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(5.99, 5.99, 5.99); Calibrated: 26/07/2012;

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM B (Site 58); Type: Twin Phantom; Serial: TP:1020

- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Back of EUT Facing Phantom Low/Area Scan (81x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.04 W/kg

Configuration/Back of EUT Facing Phantom Low/Zoom Scan 2 2 2 2 (5x5x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm

Reference Value = 33.216 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 1.27 W/kg

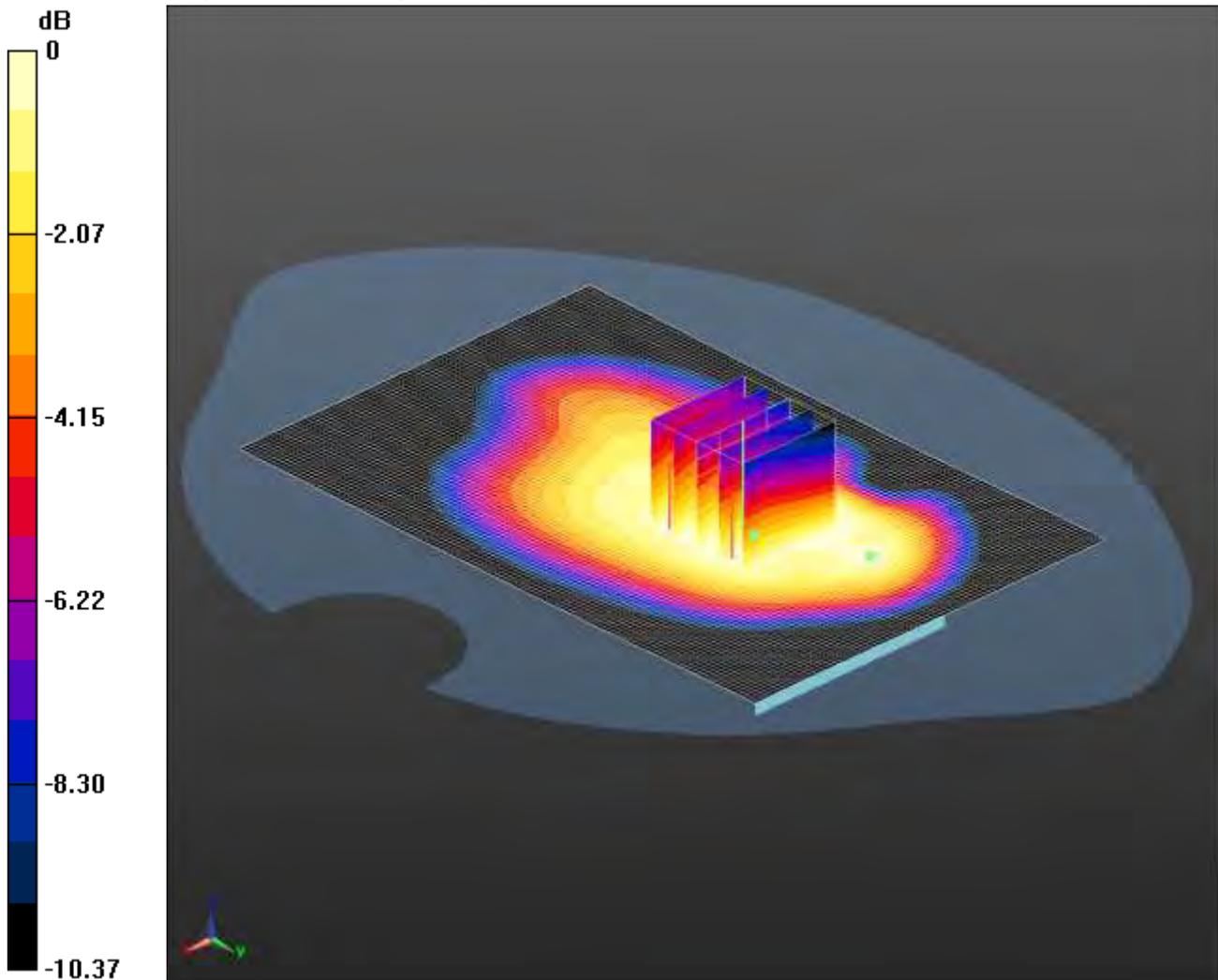
SAR(1 g) = 1.05 W/kg; SAR(10 g) = 0.826 W/kg

Maximum value of SAR (measured) = 1.10 W/kg

SCN/91945JD02/015: Back of EUT Facing Phantom GPRS CH251

Date: 23/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 1.06 W/kg = 0.25 dBW/kg

Communication System: GPRS 4Tx; Frequency: 848.8 MHz; Duty Cycle: 1:1.99986

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 848.8$ MHz; $\sigma = 1.024$ mho/m; $\epsilon_r = 54.092$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(5.99, 5.99, 5.99); Calibrated: 26/07/2012;

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM B (Site 58); Type: Twin Phantom; Serial: TP:1020

- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Back of EUT Facing Phantom High/Area Scan (81x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.10 W/kg

Configuration/Back of EUT Facing Phantom High/Zoom Scan 2 2 (5x5x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm

Reference Value = 31.880 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 1.32 W/kg

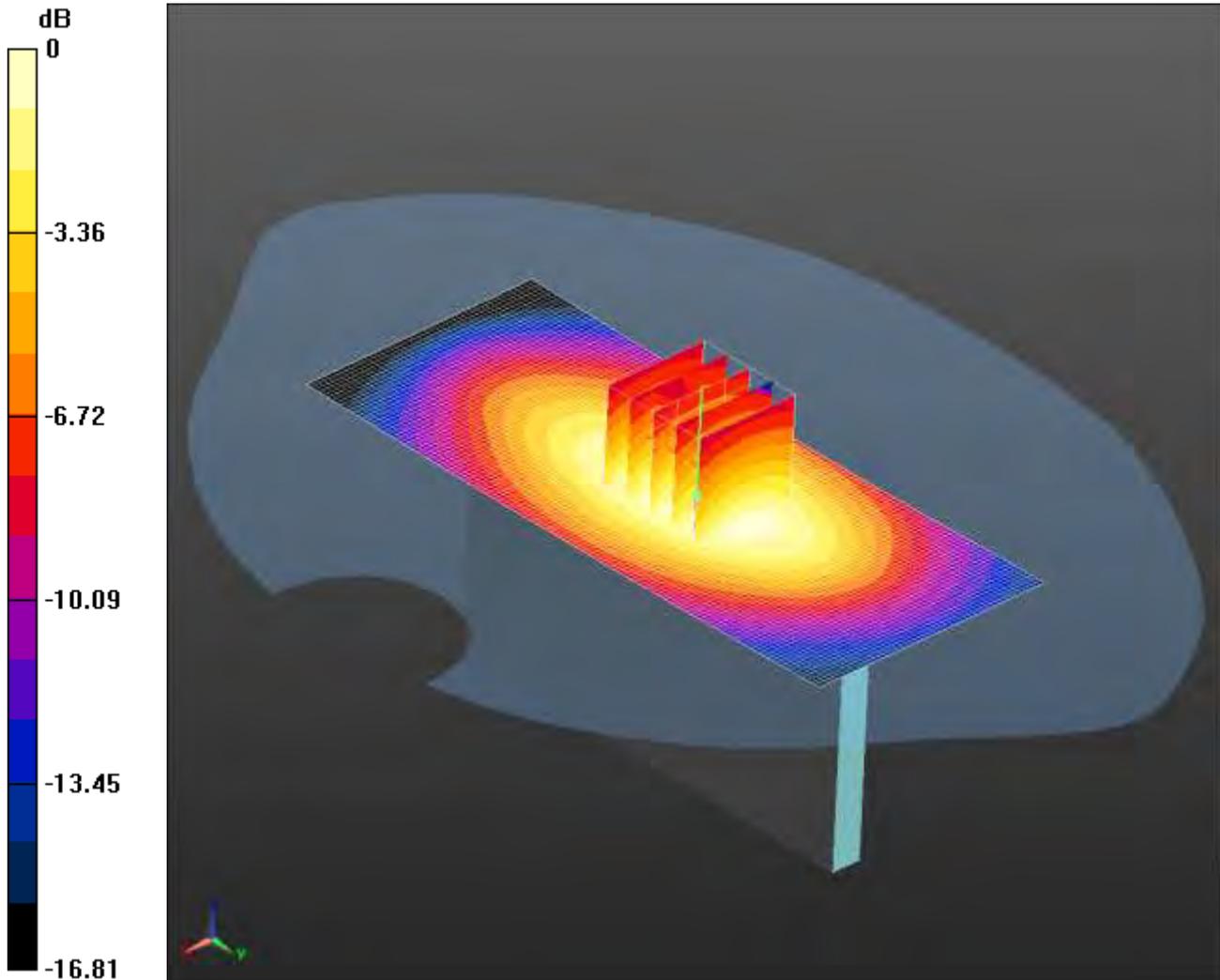
SAR(1 g) = 1.02 W/kg; SAR(10 g) = 0.760 W/kg

Maximum value of SAR (measured) = 1.06 W/kg

SCN/91945JD02/016: Left Hand Side of EUT Facing Phantom GPRS CH190

Date: 23/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.868 W/kg = -0.61 dBW/kg

Communication System: GPRS 4Tx; Frequency: 836.6 MHz; Duty Cycle: 1:1.99986

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 1.015$ mho/m; $\epsilon_r = 54.122$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(5.99, 5.99, 5.99); Calibrated: 26/07/2012;

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM B (Site 58); Type: Twin Phantom; Serial: TP:1020

- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Left Hand Side of EUT Facing Phantom Middle/Area Scan (51x121x1): Interpolated grid:

dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.879 W/kg

Configuration/Left Hand Side of EUT Facing Phantom Middle/Zoom Scan 2 (5x5x7)/Cube 0: Measurement

grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 30.910 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 1.08 W/kg

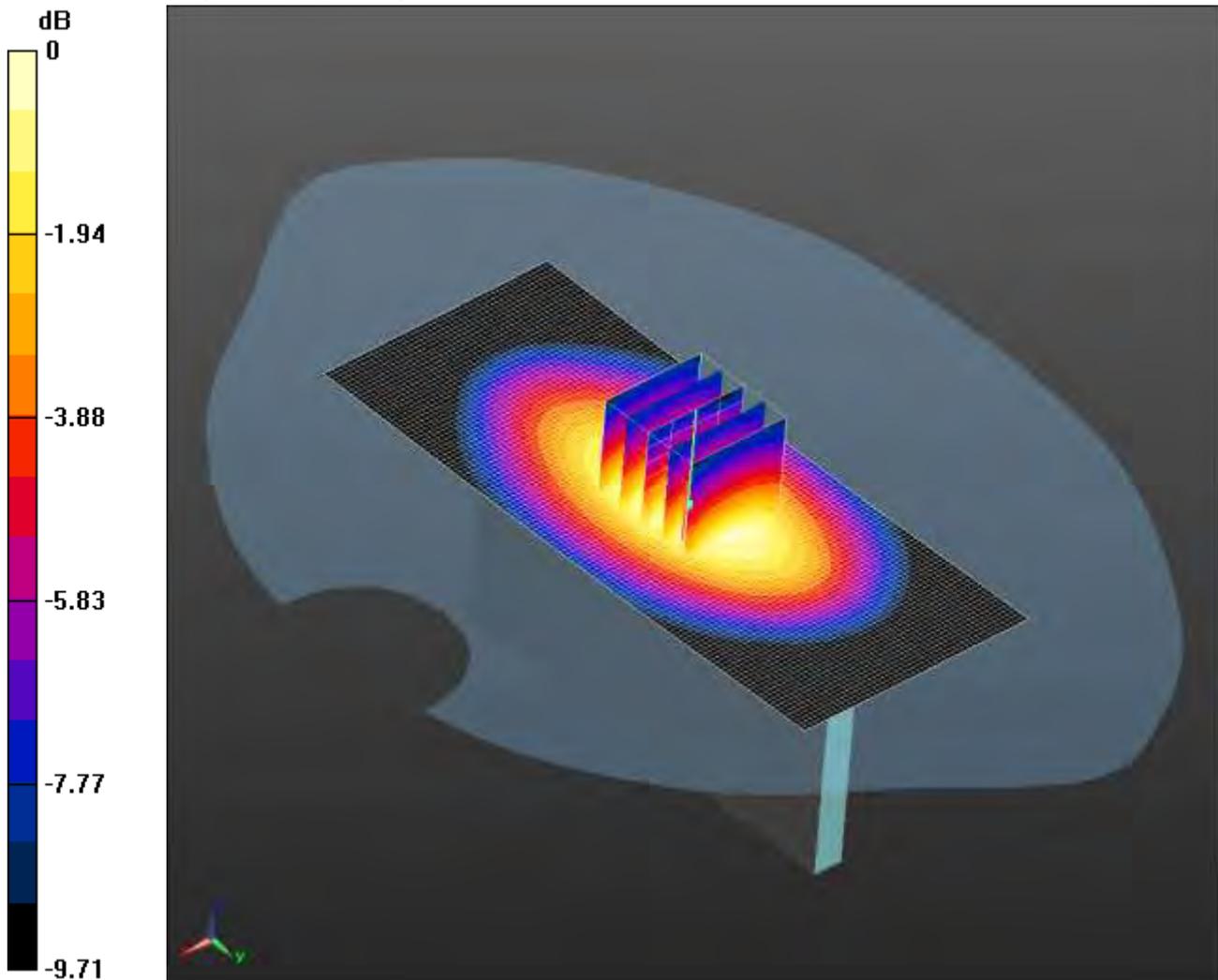
SAR(1 g) = 0.809 W/kg; SAR(10 g) = 0.571 W/kg

Maximum value of SAR (measured) = 0.868 W/kg

SCN/91945JD02/017: Left Hand Side of EUT Facing Phantom GPRS CH128

Date: 23/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.910 W/kg = -0.41 dBW/kg

Communication System: GPRS 4Tx; Frequency: 824.2 MHz; Duty Cycle: 1:1.99986

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 824.2$ MHz; $\sigma = 1.006$ mho/m; $\epsilon_r = 54.153$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(5.99, 5.99, 5.99); Calibrated: 26/07/2012;

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM B (Site 58); Type: Twin Phantom; Serial: TP:1020

- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Left Hand Side of EUT Facing Phantom Low/Area Scan (51x121x1): Interpolated grid:

$dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 0.895 W/kg

Configuration/Left Hand Side of EUT Facing Phantom Low/Zoom Scan 2 (5x5x7)/Cube 0: Measurement

grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 30.868 V/m; Power Drift = -0.00 dB

Peak SAR (extrapolated) = 1.12 W/kg

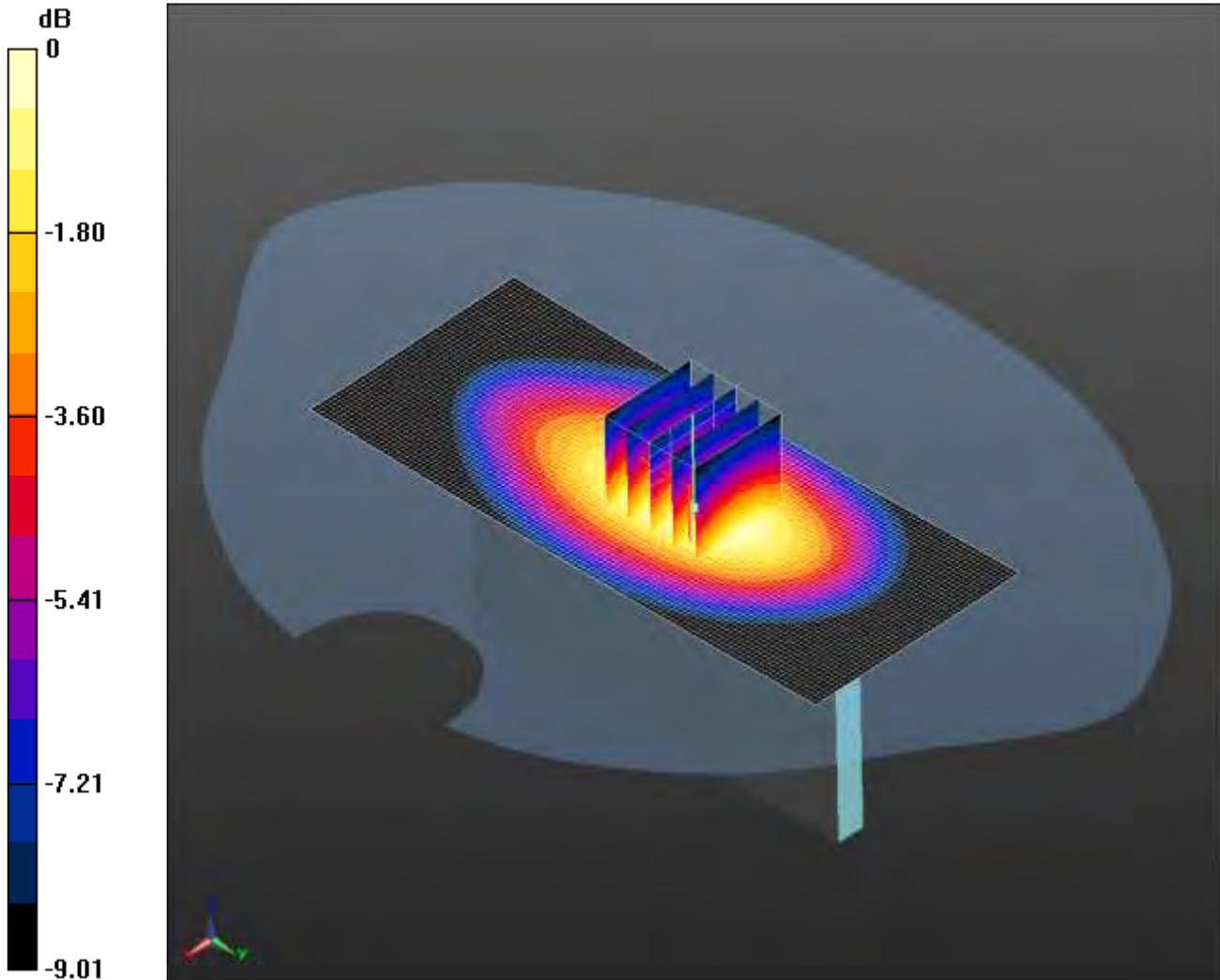
SAR(1 g) = 0.856 W/kg; SAR(10 g) = 0.608 W/kg

Maximum value of SAR (measured) = 0.910 W/kg

SCN/91945JD02/018: Left Hand Side of EUT Facing Phantom GPRS CH251

Date: 23/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.795 W/kg = -1.00 dBW/kg

Communication System: GPRS 4Tx; Frequency: 848.8 MHz; Duty Cycle: 1:1.99986

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 848.8$ MHz; $\sigma = 1.024$ mho/m; $\epsilon_r = 54.092$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(5.99, 5.99, 5.99); Calibrated: 26/07/2012;

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM B (Site 58); Type: Twin Phantom; Serial: TP:1020

- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Left Hand Side of EUT Facing Phantom High/Area Scan (51x121x1): Interpolated grid:

$dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 0.794 W/kg

Configuration/Left Hand Side of EUT Facing Phantom High/Zoom Scan 2 (5x5x7)/Cube 0: Measurement

grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 28.246 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.971 W/kg

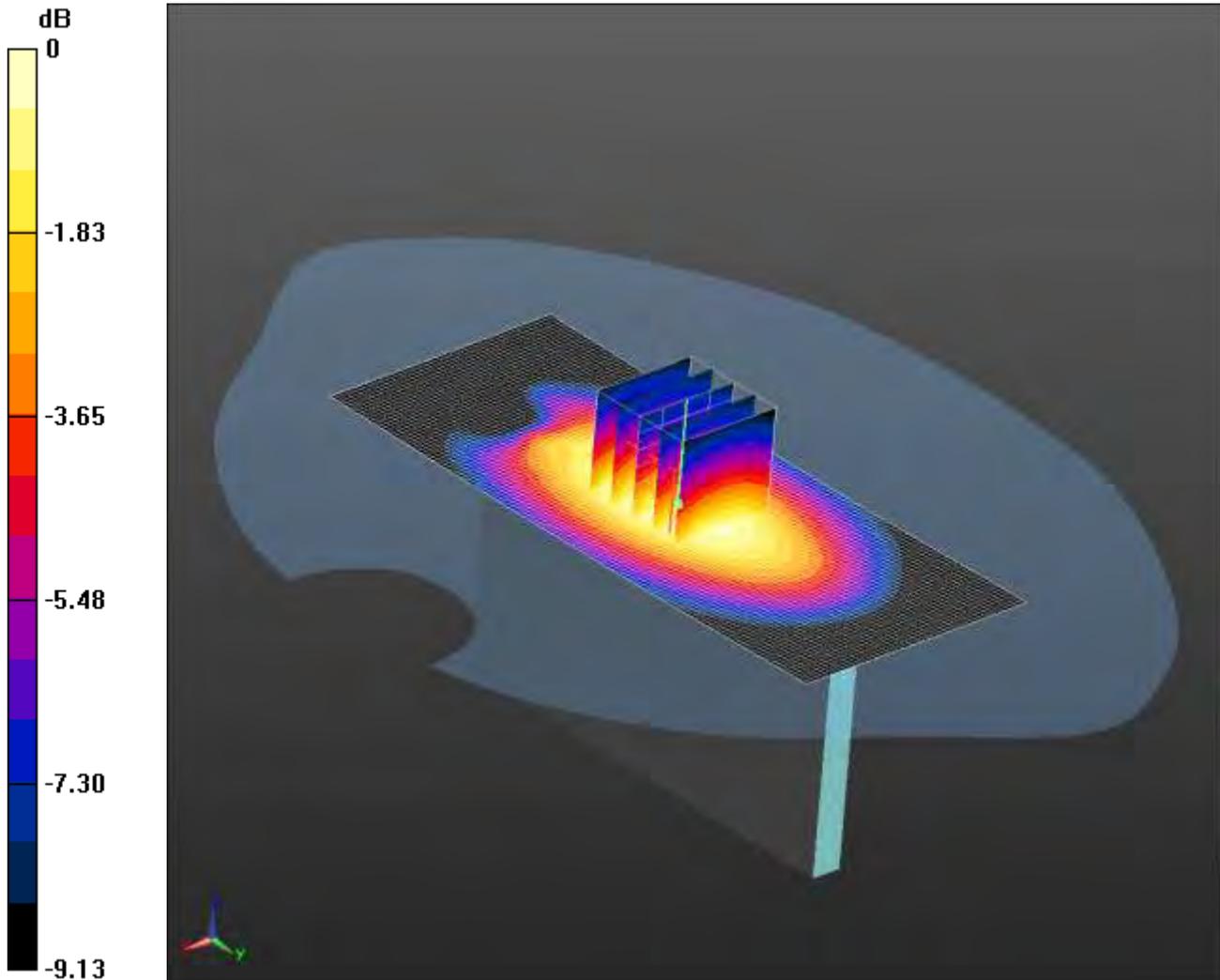
SAR(1 g) = 0.746 W/kg; SAR(10 g) = 0.529 W/kg

Maximum value of SAR (measured) = 0.795 W/kg

SCN/91945JD02/019: Right Hand Side of EUT Facing Phantom GPRS CH190

Date: 23/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.785 W/kg = -1.05 dBW/kg

Communication System: GPRS 4Tx; Frequency: 836.6 MHz; Duty Cycle: 1:1.99986

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 1.015$ mho/m; $\epsilon_r = 54.122$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(5.99, 5.99, 5.99); Calibrated: 26/07/2012;

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM B (Site 58); Type: Twin Phantom; Serial: TP:1020

- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Right Hand Side of EUT Facing Phantom Middle/Area Scan (51x121x1): Interpolated grid:

$dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 0.774 W/kg

Configuration/Right Hand Side of EUT Facing Phantom Middle/Zoom Scan 2 (5x5x7)/Cube 0: Measurement

grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 29.712 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 0.972 W/kg

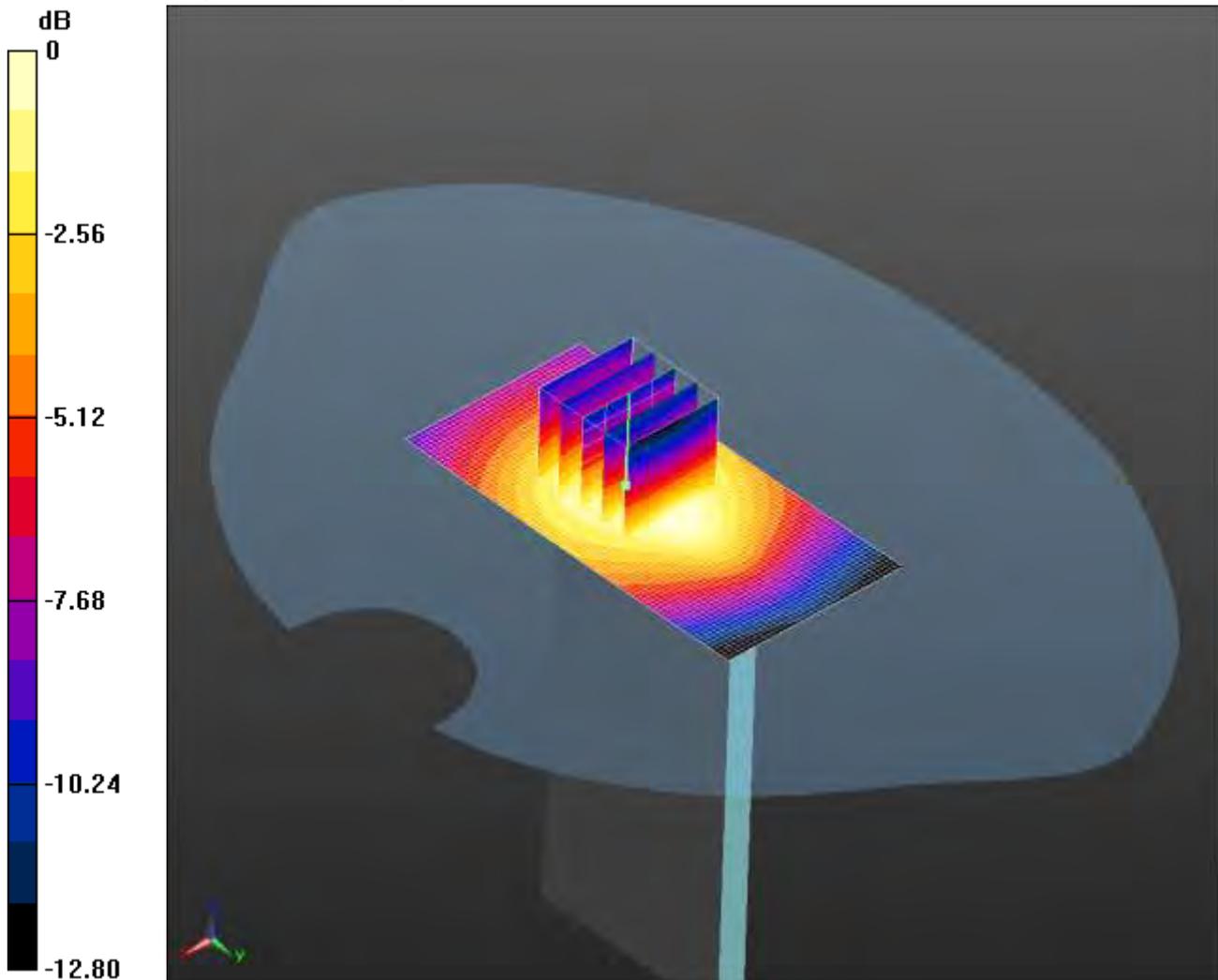
SAR(1 g) = 0.736 W/kg; SAR(10 g) = 0.521 W/kg

Maximum value of SAR (measured) = 0.785 W/kg

SCN/91945JD02/020: Bottom of EUT Facing Phantom GPRS CH190

Date: 23/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.207 W/kg = -6.84 dBW/kg

Communication System: GPRS 4Tx; Frequency: 836.6 MHz; Duty Cycle: 1:1.99986

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 1.015$ mho/m; $\epsilon_r = 54.122$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(5.99, 5.99, 5.99); Calibrated: 26/07/2012;

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM B (Site 58); Type: Twin Phantom; Serial: TP:1020

- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Bottom of EUT Facing Phantom Middle/Area Scan (41x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.217 W/kg

Configuration/Bottom of EUT Facing Phantom Middle/Zoom Scan 2 2 (5x5x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.462 V/m; Power Drift = -0.15 dB

Peak SAR (extrapolated) = 0.362 W/kg

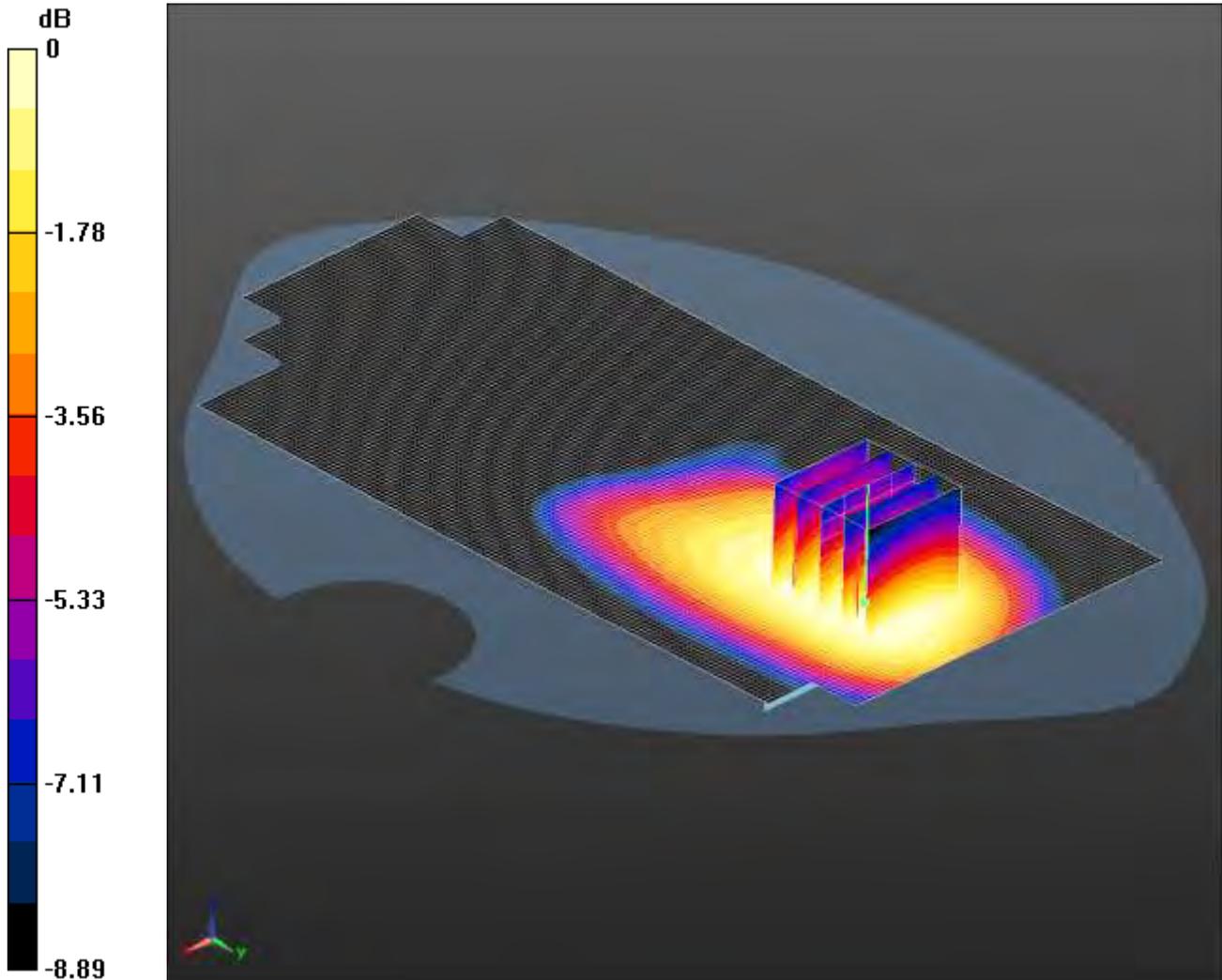
SAR(1 g) = 0.196 W/kg; SAR(10 g) = 0.122 W/kg

Maximum value of SAR (measured) = 0.207 W/kg

SCN/91945JD02/021: Front of EUT Facing Phantom with Antenna Extended GPRS CH128

Date: 23/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 1.19 W/kg = 0.76 dBW/kg

Communication System: GPRS 4Tx; Frequency: 824.2 MHz; Duty Cycle: 1:1.99986

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 824.2$ MHz; $\sigma = 1.006$ mho/m; $\epsilon_r = 54.153$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(5.99, 5.99, 5.99); Calibrated: 26/07/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn432; Calibrated: 02/05/2012
- Phantom: SAM B (Site 58); Type: Twin Phantom; Serial: TP:1020
- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Front of EUT Facing Phantom with Antenna Extended Low/Area Scan (81x161x1):

Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 1.24 W/kg

Configuration/Front of EUT Facing Phantom with Antenna Extended Low/Zoom Scan 2 2 2 (5x5x7)/Cube

0: Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 19.643 V/m; Power Drift = -0.24 dB

Peak SAR (extrapolated) = 1.38 W/kg

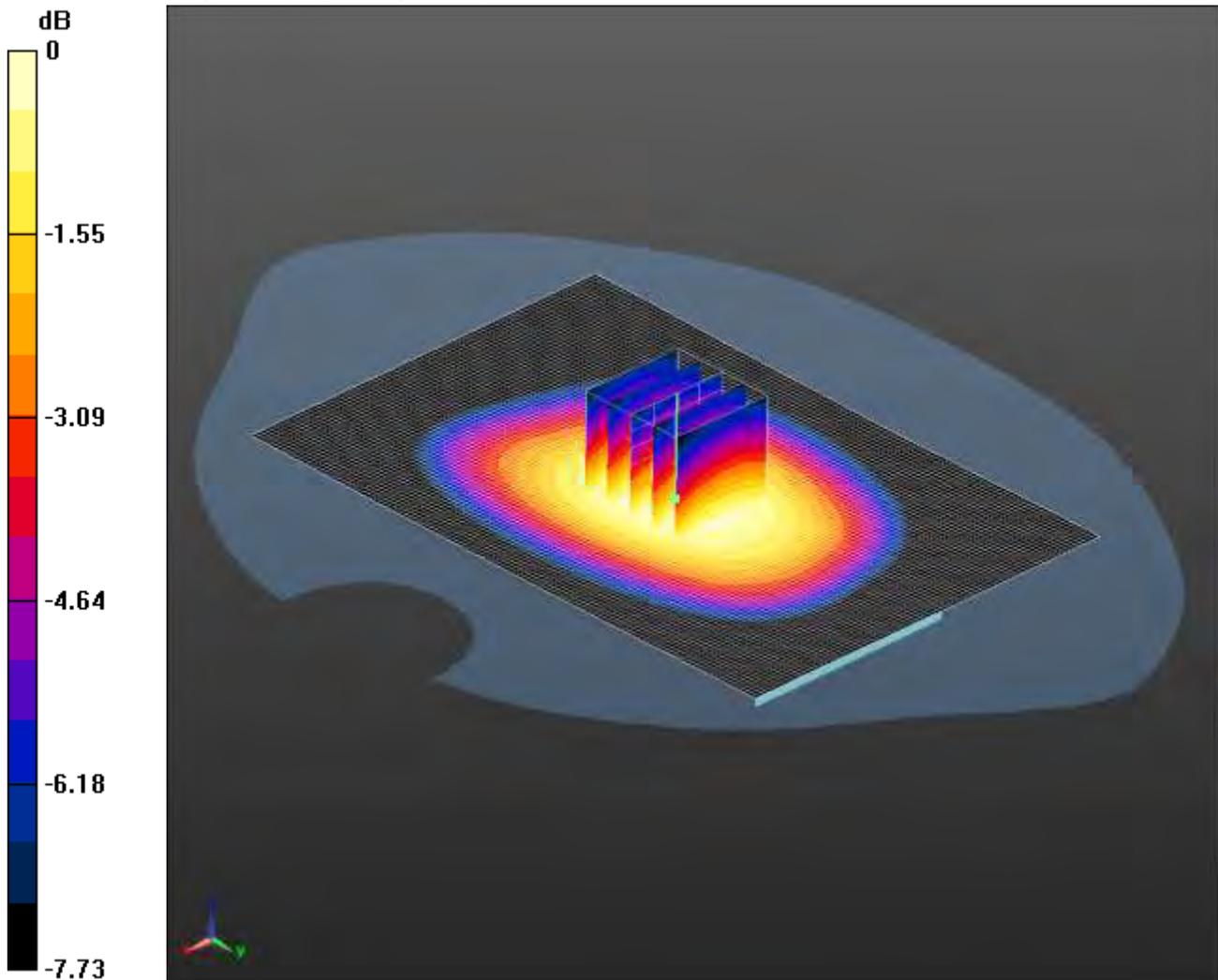
SAR(1 g) = 1.14 W/kg; SAR(10 g) = 0.884 W/kg

Maximum value of SAR (measured) = 1.19 W/kg

SCN/91945JD02/022: Front of EUT Facing Phantom GSM CH128

Date: 25/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.762 W/kg = -1.18 dBW/kg

Communication System: Generic GSM; Frequency: 824.2 MHz; Duty Cycle: 1:8.30042

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 824.2$ MHz; $\sigma = 0.993$ mho/m; $\epsilon_r = 54.28$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(5.99, 5.99, 5.99); Calibrated: 26/07/2012;

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM B (Site 58); Type: Twin Phantom; Serial: TP:1020

- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Front of EUT Facing Phantom Low/Area Scan (81x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.744 W/kg

Configuration/Front of EUT Facing Phantom Low/Zoom Scan 2 (5x5x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm

Reference Value = 28.294 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.870 W/kg

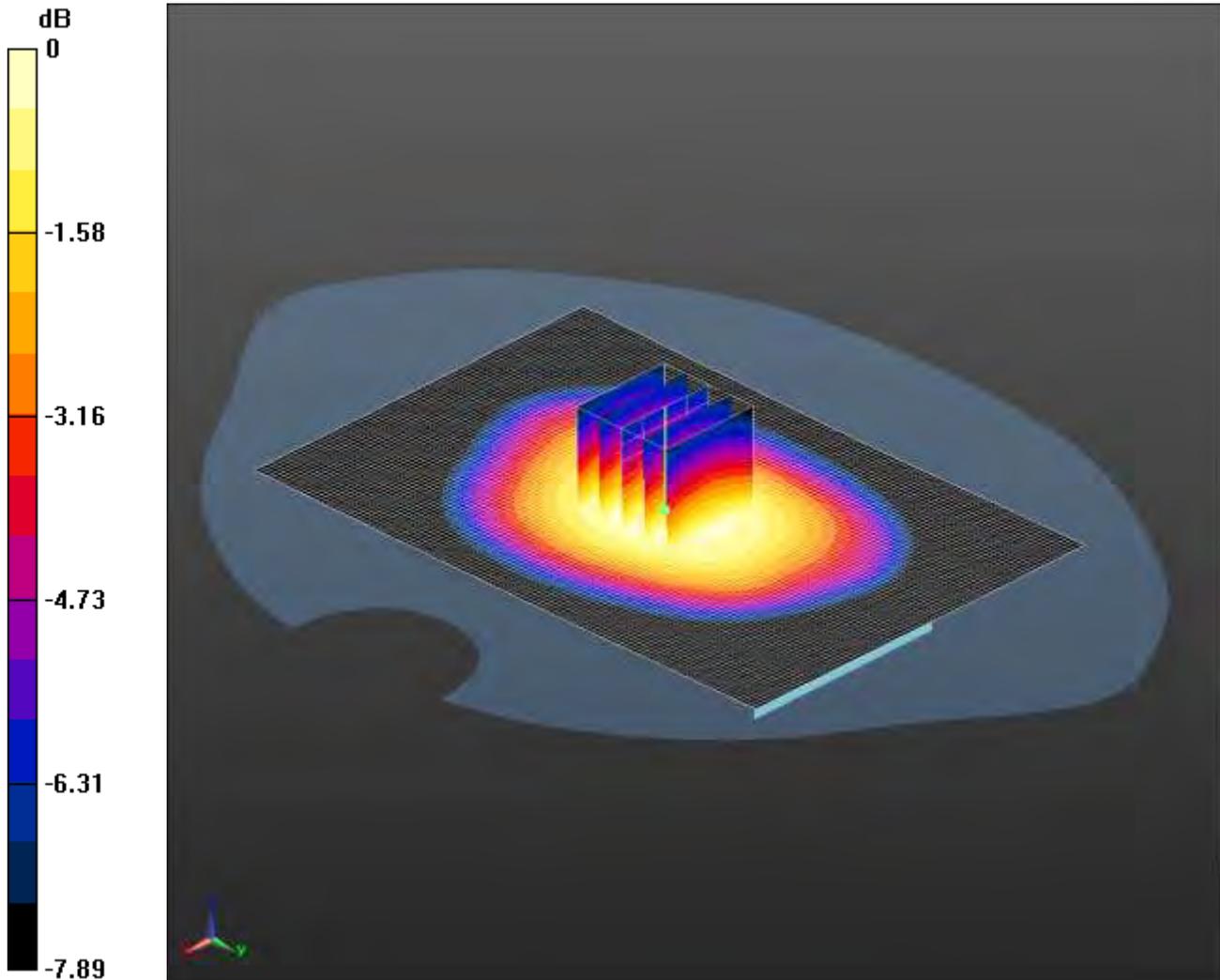
SAR(1 g) = 0.728 W/kg; SAR(10 g) = 0.564 W/kg

Maximum value of SAR (measured) = 0.762 W/kg

SCN/91945JD02/023: Back of EUT Facing Phantom GSM CH128

Date: 25/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.681 W/kg = -1.67 dBW/kg

Communication System: Generic GSM; Frequency: 824.2 MHz; Duty Cycle: 1:8.30042

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 824.2$ MHz; $\sigma = 0.993$ mho/m; $\epsilon_r = 54.28$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(5.99, 5.99, 5.99); Calibrated: 26/07/2012;

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM B (Site 58); Type: Twin Phantom; Serial: TP:1020

- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Back of EUT Facing Phantom Low/Area Scan (81x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.665 W/kg

Configuration/Back of EUT Facing Phantom Low/Zoom Scan 2 2 2 (5x5x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm

Reference Value = 27.055 V/m; Power Drift = -0.00 dB

Peak SAR (extrapolated) = 0.792 W/kg

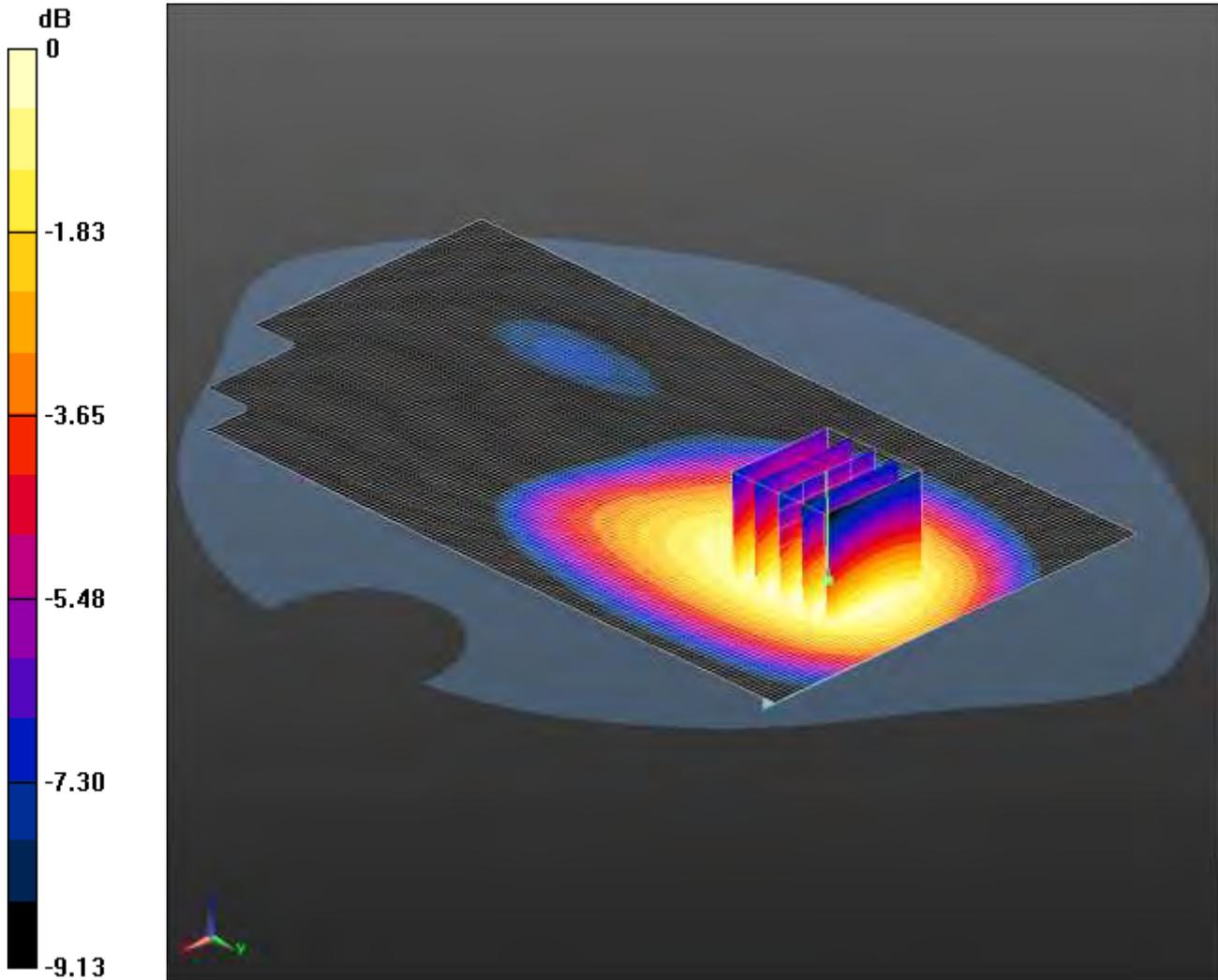
SAR(1 g) = 0.649 W/kg; SAR(10 g) = 0.499 W/kg

Maximum value of SAR (measured) = 0.681 W/kg

SCN/91945JD02/024: Front of EUT Facing Phantom with Antenna Extended GSM CH128

Date: 25/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.627 W/kg = -2.03 dBW/kg

Communication System: Generic GSM; Frequency: 824.2 MHz; Duty Cycle: 1:8.30042

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 824.2$ MHz; $\sigma = 0.993$ mho/m; $\epsilon_r = 54.28$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(5.99, 5.99, 5.99); Calibrated: 26/07/2012;

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM B (Site 58); Type: Twin Phantom; Serial: TP:1020

- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Front of EUT Facing Phantom with Antenna Extended Low/Area Scan (81x151x1):

Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 0.642 W/kg

Configuration/Front of EUT Facing Phantom with Antenna Extended Low/Zoom Scan 2 (5x5x7)/Cube 0:

Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 24.234 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.731 W/kg

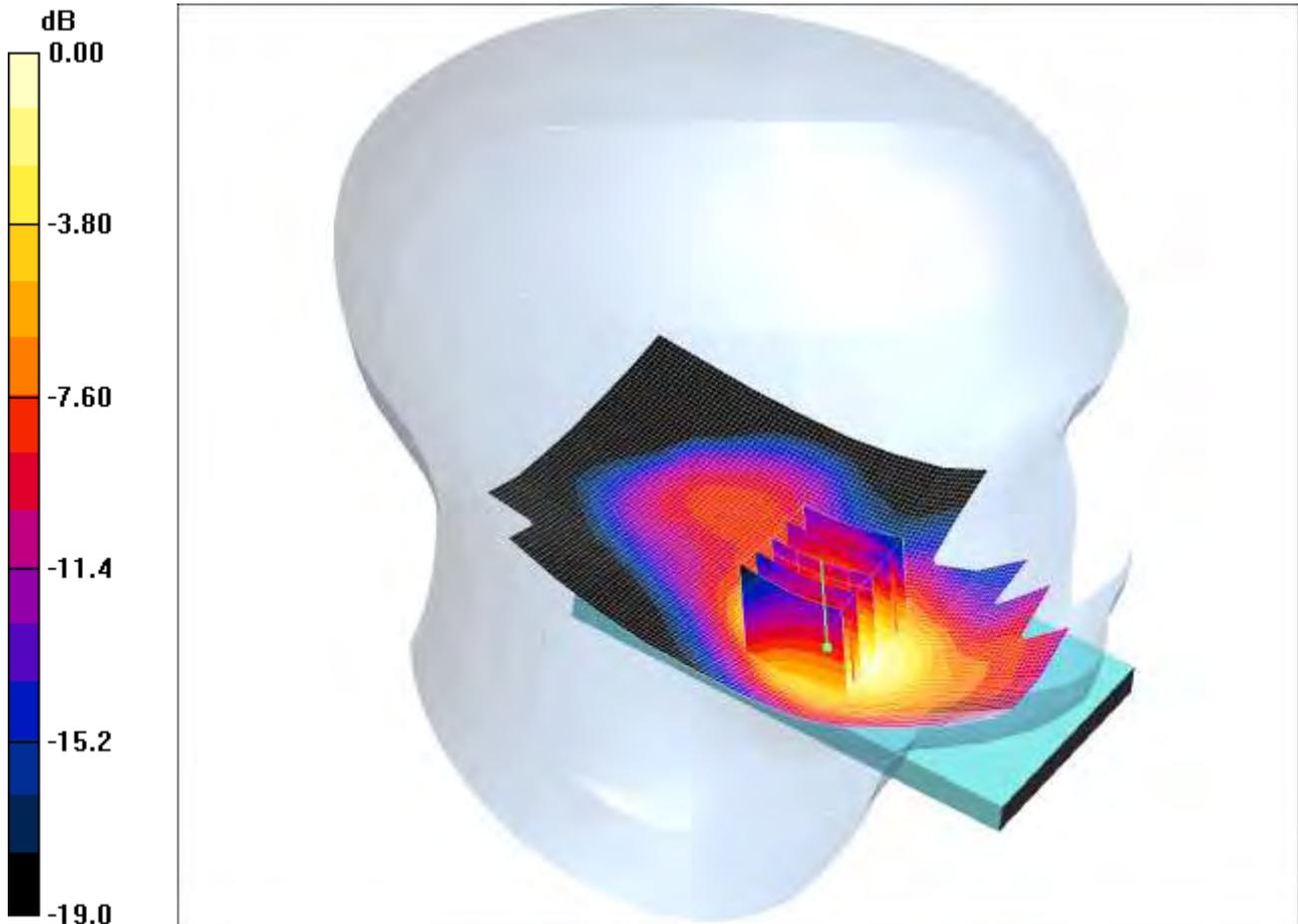
SAR(1 g) = 0.599 W/kg; SAR(10 g) = 0.461 W/kg

Maximum value of SAR (measured) = 0.627 W/kg

SCN/91945JD02/025: Touch Left PCS CH661

Date: 09/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.517mW/g

Communication System: PCS 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: 1900 MHz HSL Medium parameters used (interpolated): $f = 1880$ MHz; $\sigma = 1.42$ mho/m; $\epsilon_r = 39.7$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3304; ConvF(5.24, 5.24, 5.24); Calibrated: 31/08/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn450; Calibrated: 22/01/2013

- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031

- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Touch Left - Middle/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.568 mW/g

Touch Left - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.83 V/m; Power Drift = 0.083 dB

Peak SAR (extrapolated) = 0.733 W/kg

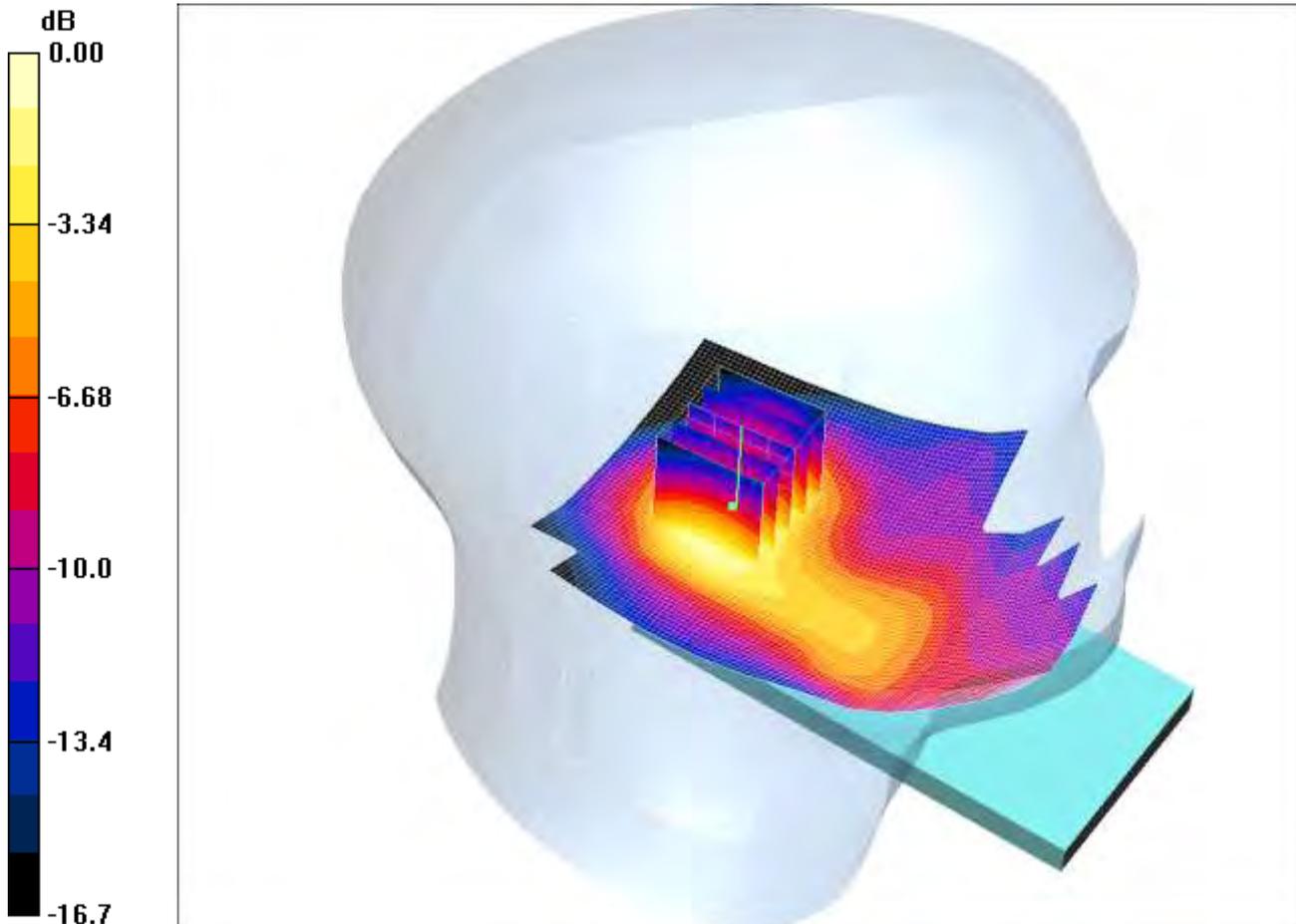
SAR(1 g) = 0.491 mW/g; SAR(10 g) = 0.294 mW/g

Maximum value of SAR (measured) = 0.517 mW/g

SCN/91945JD02/026: Tilt Left PCS CH661

Date: 09/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.154mW/g

Communication System: PCS 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: 1900 MHz HSL Medium parameters used (interpolated): $f = 1880$ MHz; $\sigma = 1.42$ mho/m; $\epsilon_r = 39.7$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3304; ConvF(5.24, 5.24, 5.24); Calibrated: 31/08/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn450; Calibrated: 22/01/2013

- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031

- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Tilt Left - Middle/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.178 mW/g

Tilt Left - Middle/Zoom Scan (5x5x7) 2 (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.96 V/m; Power Drift = 0.162 dB

Peak SAR (extrapolated) = 0.233 W/kg

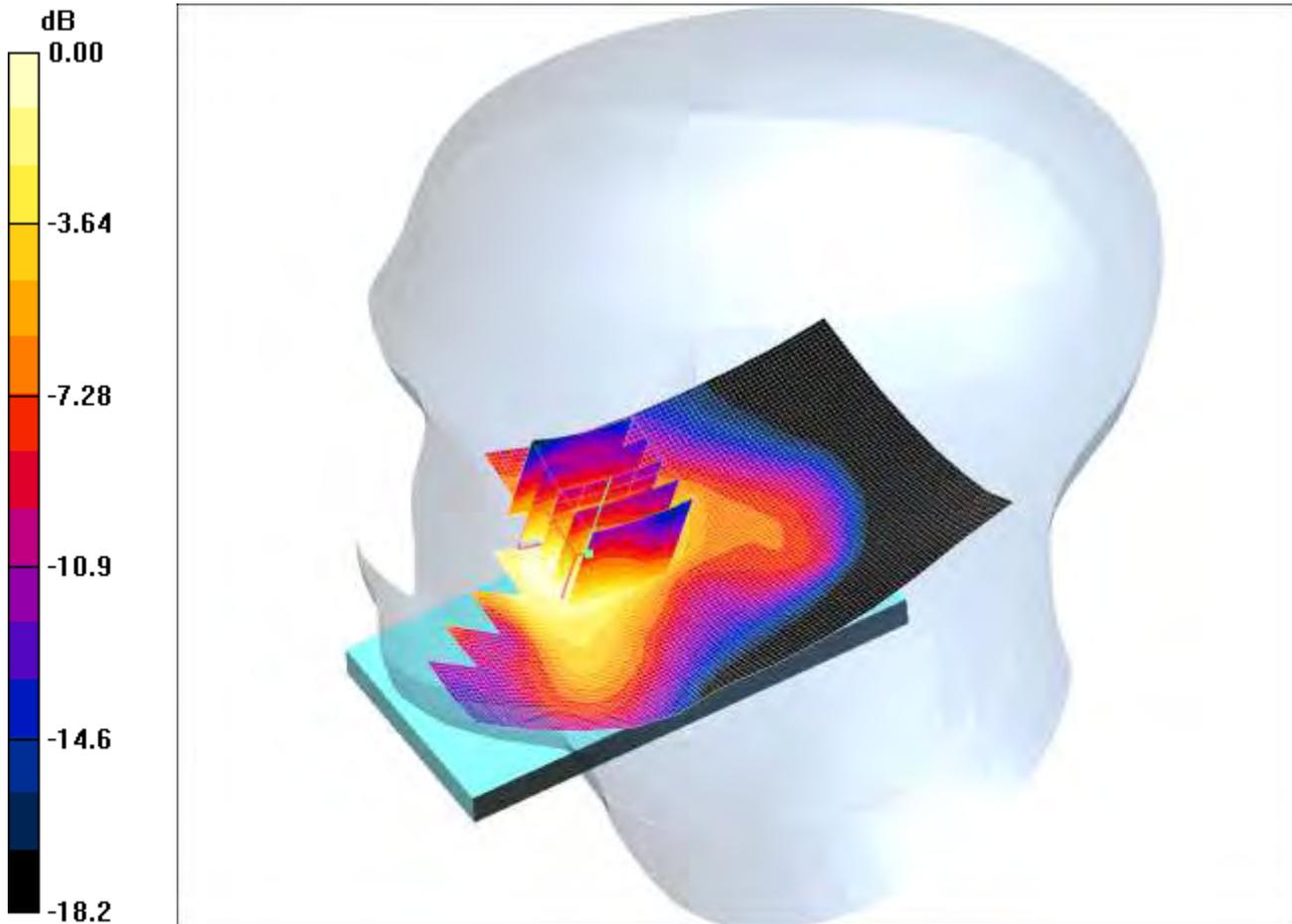
SAR(1 g) = 0.143 mW/g; SAR(10 g) = 0.083 mW/g

Maximum value of SAR (measured) = 0.154 mW/g

SCN/91945JD02/027: Touch Right PCS CH661

Date: 09/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: CB5A1NUBQ2



0 dB = 0.256mW/g

Communication System: PCS 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: 1900 MHz HSL Medium parameters used (interpolated): $f = 1880$ MHz; $\sigma = 1.42$ mho/m; $\epsilon_r = 39.7$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3304; ConvF(5.24, 5.24, 5.24); Calibrated: 31/08/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn450; Calibrated: 22/01/2013

- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031

- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Touch Right - Middle/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.269 mW/g

Touch Right - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 13.2 V/m; Power Drift = 0.048 dB

Peak SAR (extrapolated) = 0.364 W/kg

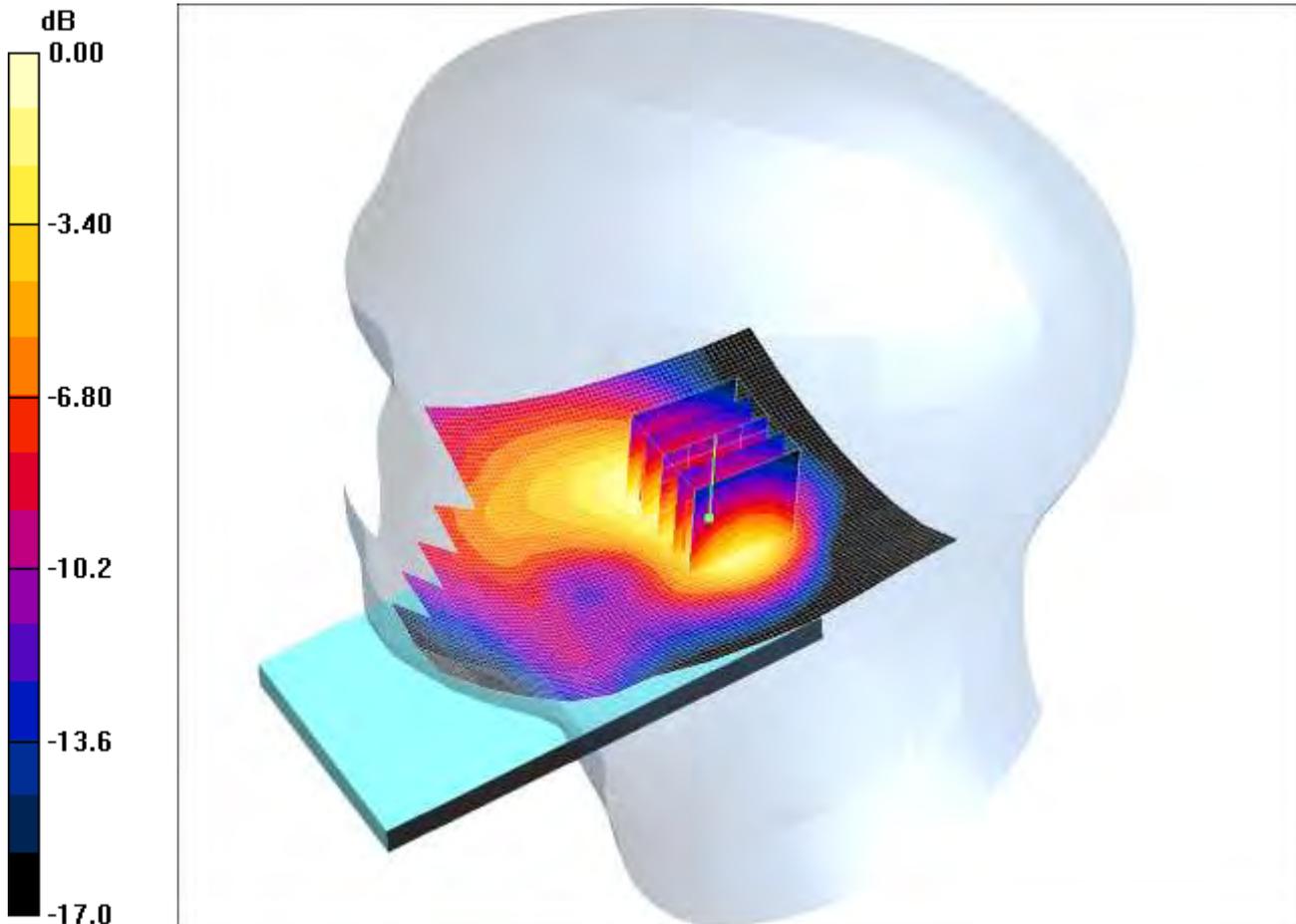
SAR(1 g) = 0.234 mW/g; SAR(10 g) = 0.146 mW/g

Maximum value of SAR (measured) = 0.256 mW/g

SCN/91945JD02/028: Tilt Right PCS CH661

Date: 09/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: CB5A1NUBQ2



0 dB = 0.135mW/g

Communication System: PCS 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: 1900 MHz HSL Medium parameters used (interpolated): $f = 1880$ MHz; $\sigma = 1.42$ mho/m; $\epsilon_r = 39.7$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3304; ConvF(5.24, 5.24, 5.24); Calibrated: 31/08/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn450; Calibrated: 22/01/2013

- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031

- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Tilt Right - Middle/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.140 mW/g

Tilt Right - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.33 V/m; Power Drift = -0.057 dB

Peak SAR (extrapolated) = 0.202 W/kg

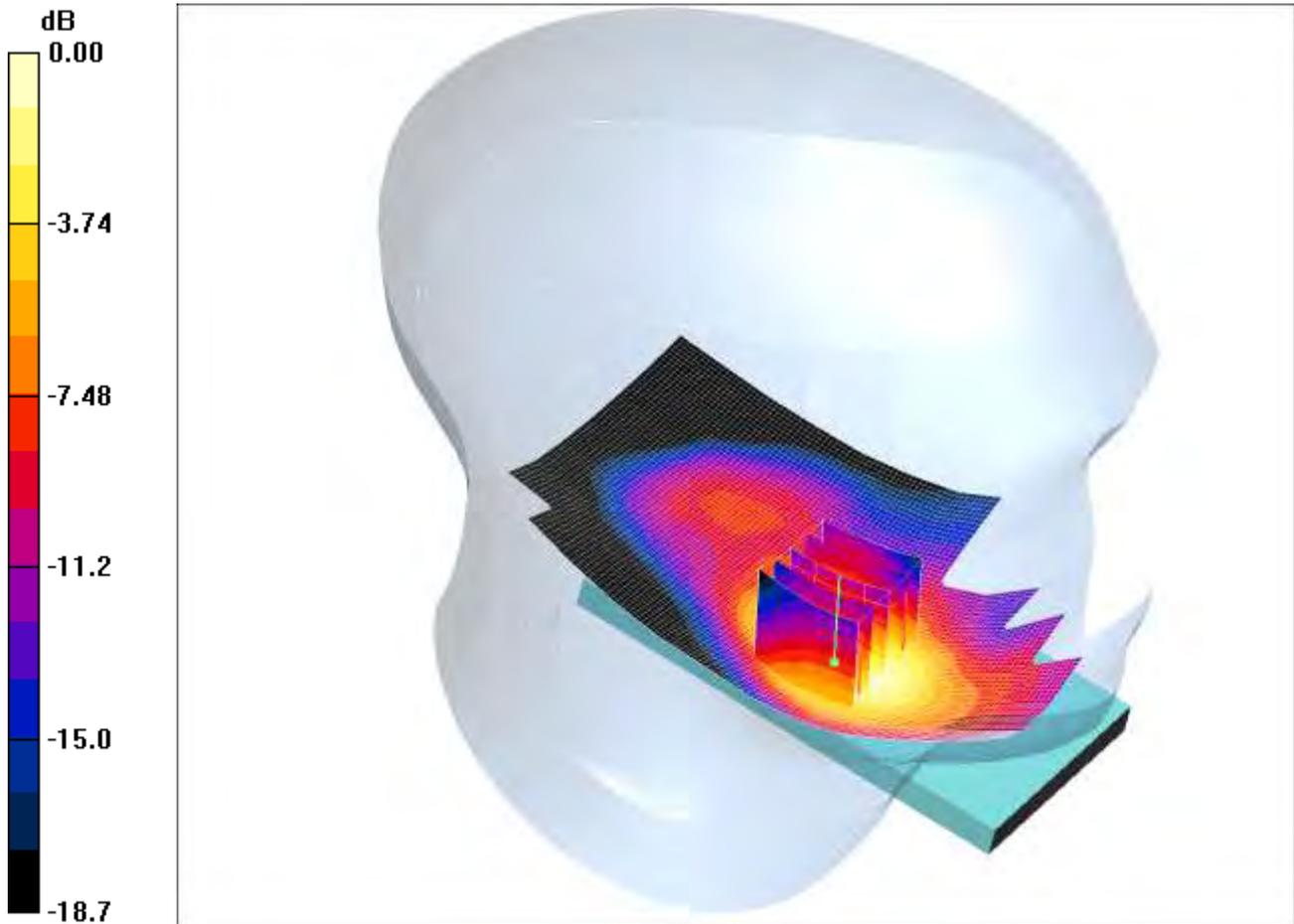
SAR(1 g) = 0.124 mW/g; SAR(10 g) = 0.075 mW/g

Maximum value of SAR (measured) = 0.135 mW/g

SCN/91945JD02/029: Touch Left PCS CH512

Date: 09/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.421mW/g

Communication System: PCS 1900; Frequency: 1850.2 MHz; Duty Cycle: 1:8.3

Medium: 1900 MHz HSL Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 39.8$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3304; ConvF(5.24, 5.24, 5.24); Calibrated: 31/08/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn450; Calibrated: 22/01/2013
- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Touch Left - Low/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.451 mW/g

Touch Left - Low/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.79 V/m; Power Drift = 0.163 dB

Peak SAR (extrapolated) = 0.602 W/kg

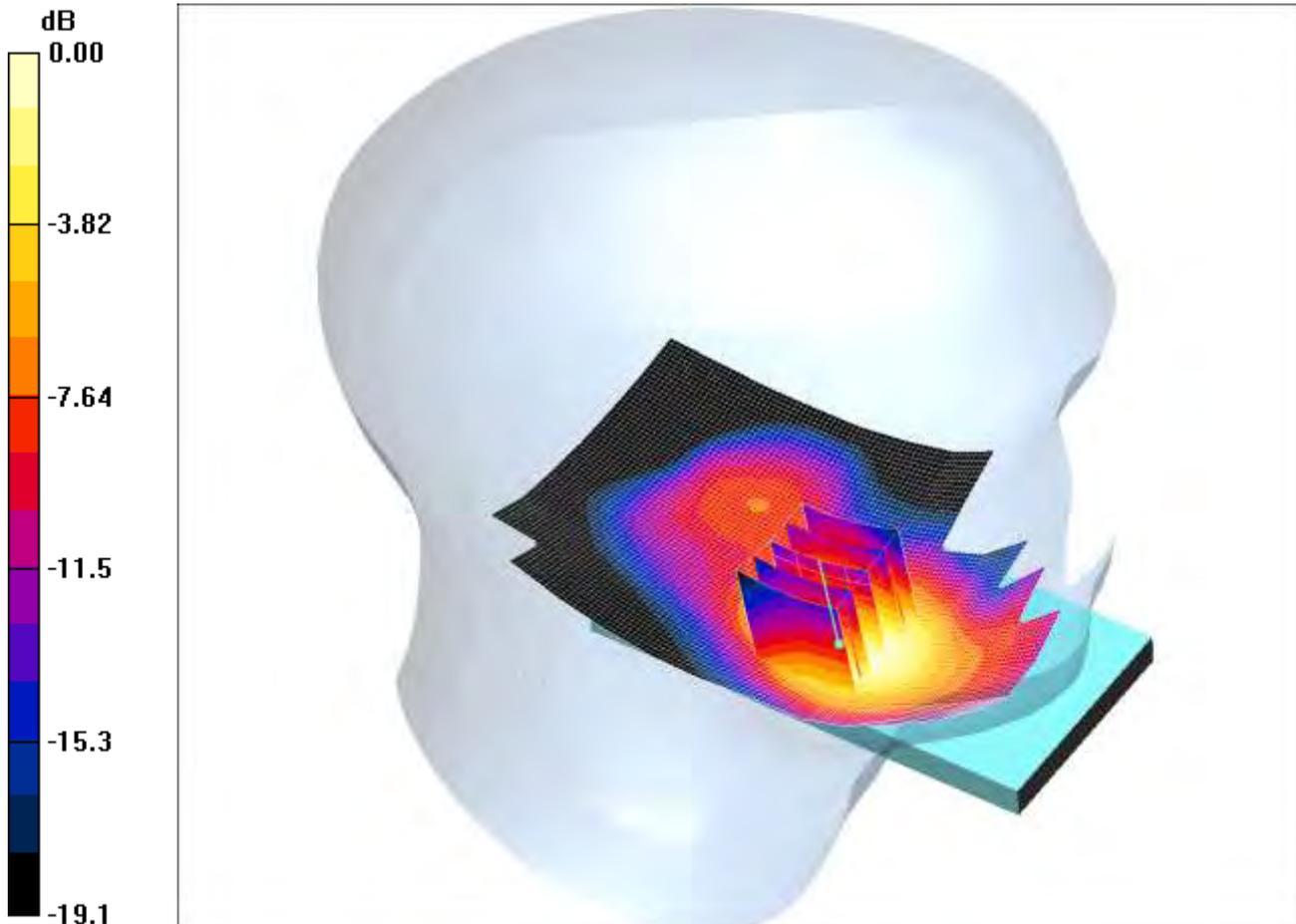
SAR(1 g) = 0.402 mW/g; SAR(10 g) = 0.242 mW/g

Maximum value of SAR (measured) = 0.421 mW/g

SCN/91945JD02/030: Touch Left PCS CH810

Date: 09/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.592mW/g

Communication System: PCS 1900; Frequency: 1909.8 MHz; Duty Cycle: 1:8.3

Medium: 1900 MHz HSL Medium parameters used (interpolated): $f = 1909.8$ MHz; $\sigma = 1.45$ mho/m; $\epsilon_r = 39.6$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3304; ConvF(5.24, 5.24, 5.24); Calibrated: 31/08/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn450; Calibrated: 22/01/2013

- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031

- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Touch Left -High/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.642 mW/g

Touch Left -High/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.92 V/m; Power Drift = -0.031 dB

Peak SAR (extrapolated) = 0.866 W/kg

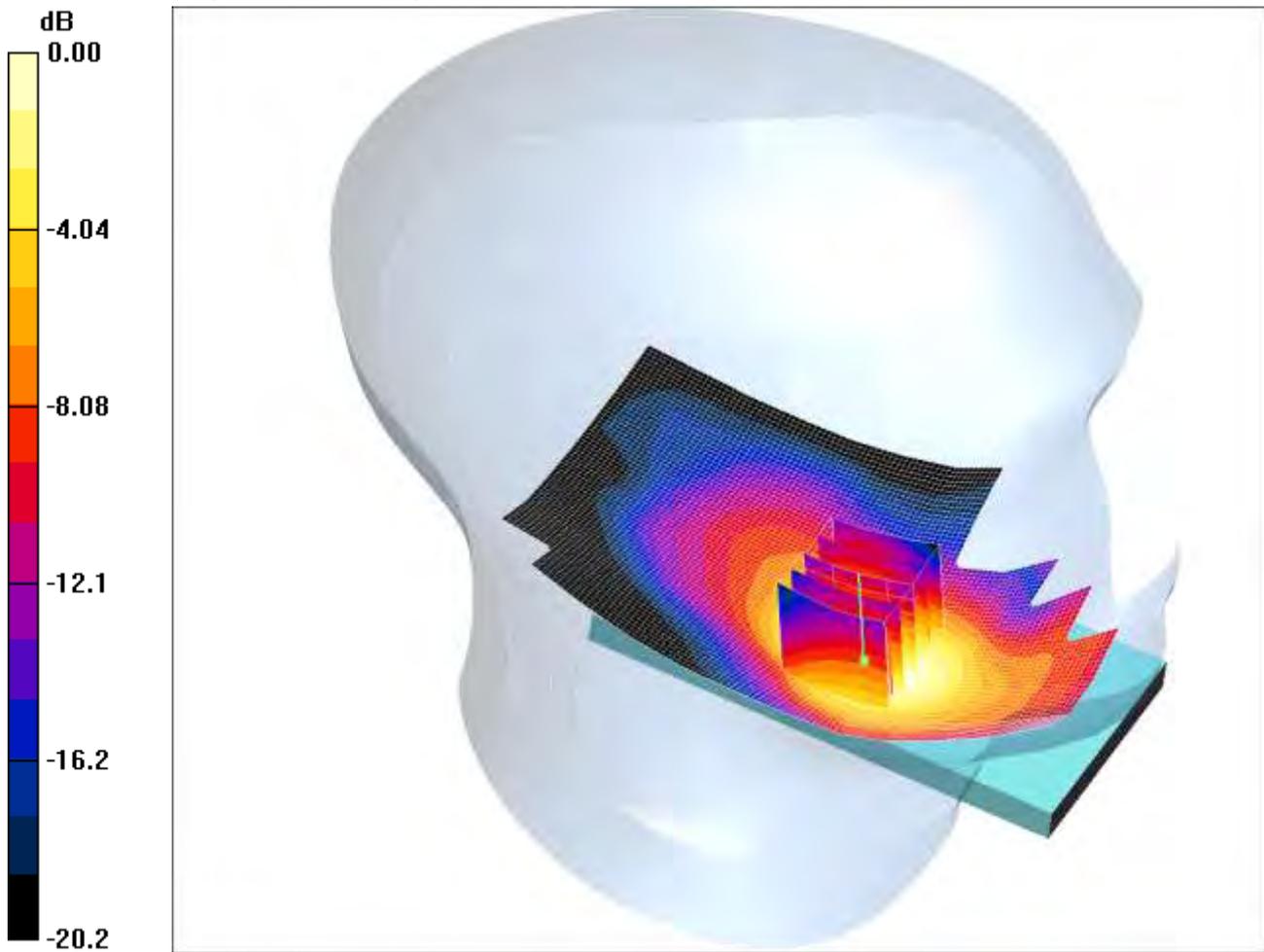
SAR(1 g) = 0.559 mW/g; SAR(10 g) = 0.329 mW/g

Maximum value of SAR (measured) = 0.592 mW/g

SCN/91945JD02/031: Touch Left with Antenna Extended PCS CH810

Date: 09/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.508mW/g

Communication System: PCS 1900; Frequency: 1909.8 MHz; Duty Cycle: 1:8.3

Medium: 1900 MHz HSL Medium parameters used (interpolated): $f = 1909.8$ MHz; $\sigma = 1.45$ mho/m; $\epsilon_r = 39.6$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3304; ConvF(5.24, 5.24, 5.24); Calibrated: 31/08/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn450; Calibrated: 22/01/2013

- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031

- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Touch Left with Antenna Extended -High/Area Scan (71x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.545 mW/g

Touch Left with Antenna Extended -High/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm,

dy=8mm, dz=5mm

Reference Value = 4.07 V/m; Power Drift = 0.164 dB

Peak SAR (extrapolated) = 0.737 W/kg

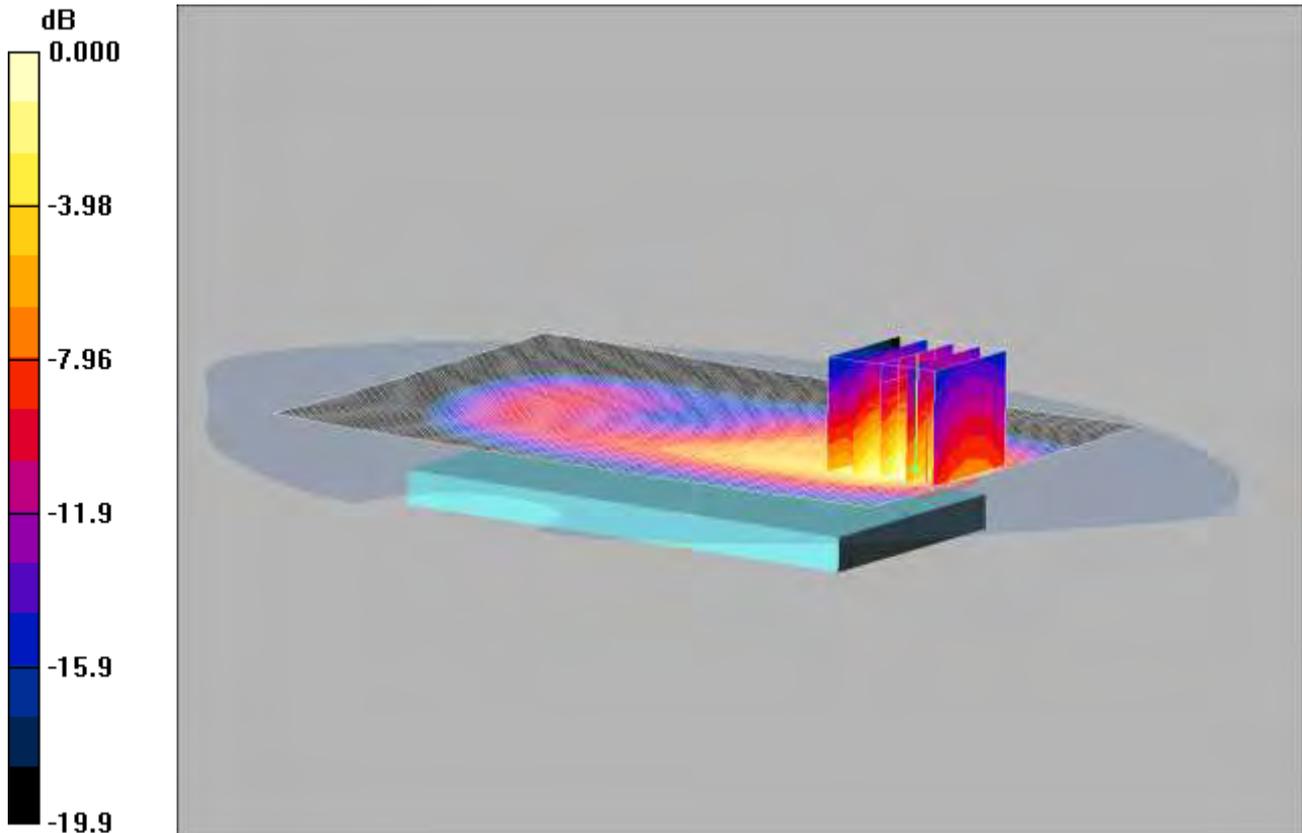
SAR(1 g) = 0.480 mW/g; SAR(10 g) = 0.284 mW/g

Maximum value of SAR (measured) = 0.508 mW/g

 SCN/91945JD02/032: Front of EUT Facing Phantom GPRS CH661

Date: 12/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: CB5A1NUBQ2



0 dB = 0.572mW/g

Communication System: GPRS 1900 2Tx; Frequency: 1880 MHz; Duty Cycle: 1:4

Medium: 1900 MHz MSL Medium parameters used (interpolated): $f = 1880$ MHz; $\sigma = 1.48$ mho/m; $\epsilon_r = 51.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.69, 4.69, 4.69); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Front of EUT Facing Phantom- Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.510 mW/g

Front of EUT Facing Phantom- Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.72 V/m; Power Drift = -0.112 dB

Peak SAR (extrapolated) = 0.850 W/kg

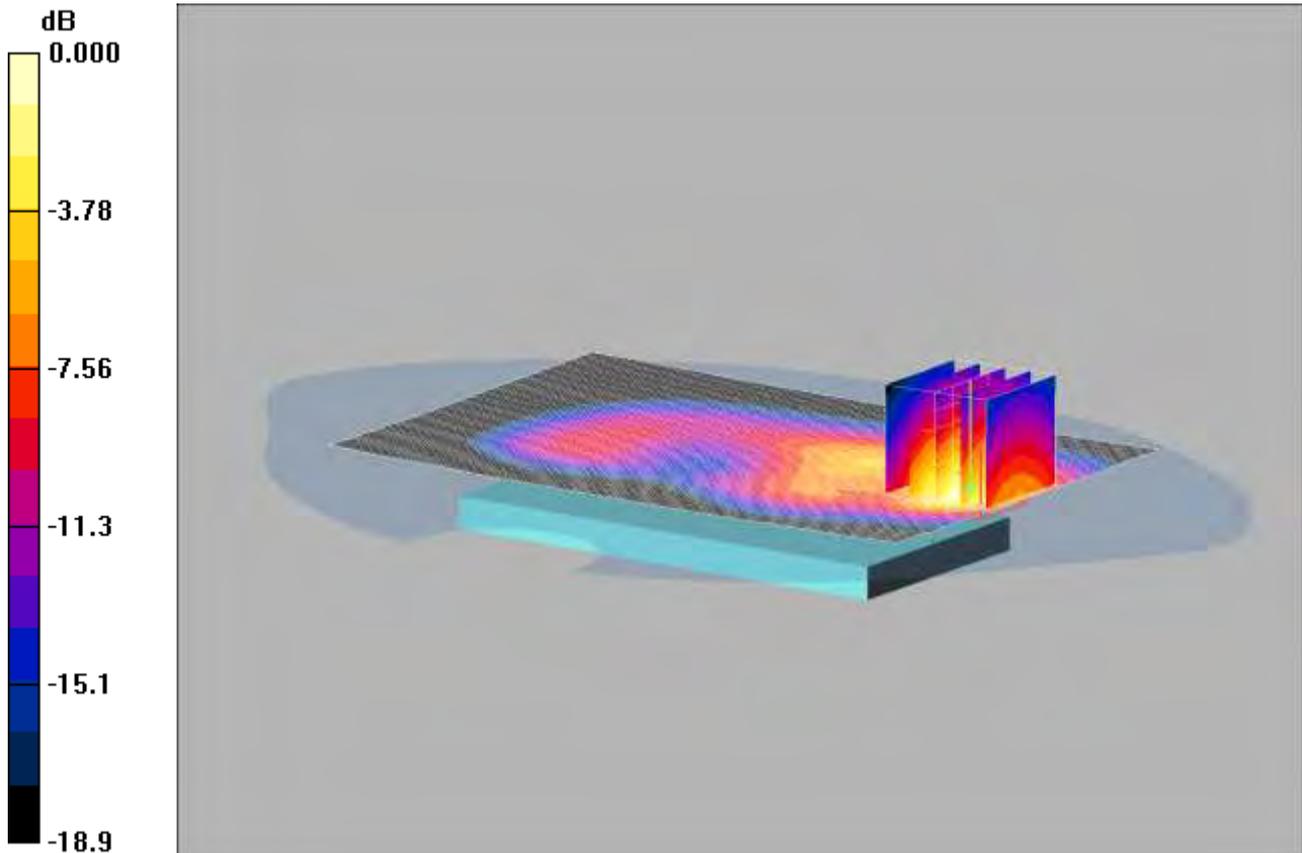
SAR(1 g) = 0.522 mW/g; SAR(10 g) = 0.271 mW/g

Maximum value of SAR (measured) = 0.572 mW/g

SCN/91945JD02/033: Back of EUT Facing Phantom GPRS CH661

Date: 12/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: CB5A1NUBQ2



0 dB = 0.568mW/g

Communication System: GPRS 1900 2Tx; Frequency: 1880 MHz; Duty Cycle: 1:4

Medium: 1900 MHz MSL Medium parameters used (interpolated): $f = 1880$ MHz; $\sigma = 1.48$ mho/m; $\epsilon_r = 51.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.69, 4.69, 4.69); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Back of EUT Facing Phantom- Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.540 mW/g

Back of EUT Facing Phantom- Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.22 V/m; Power Drift = 0.133 dB

Peak SAR (extrapolated) = 0.808 W/kg

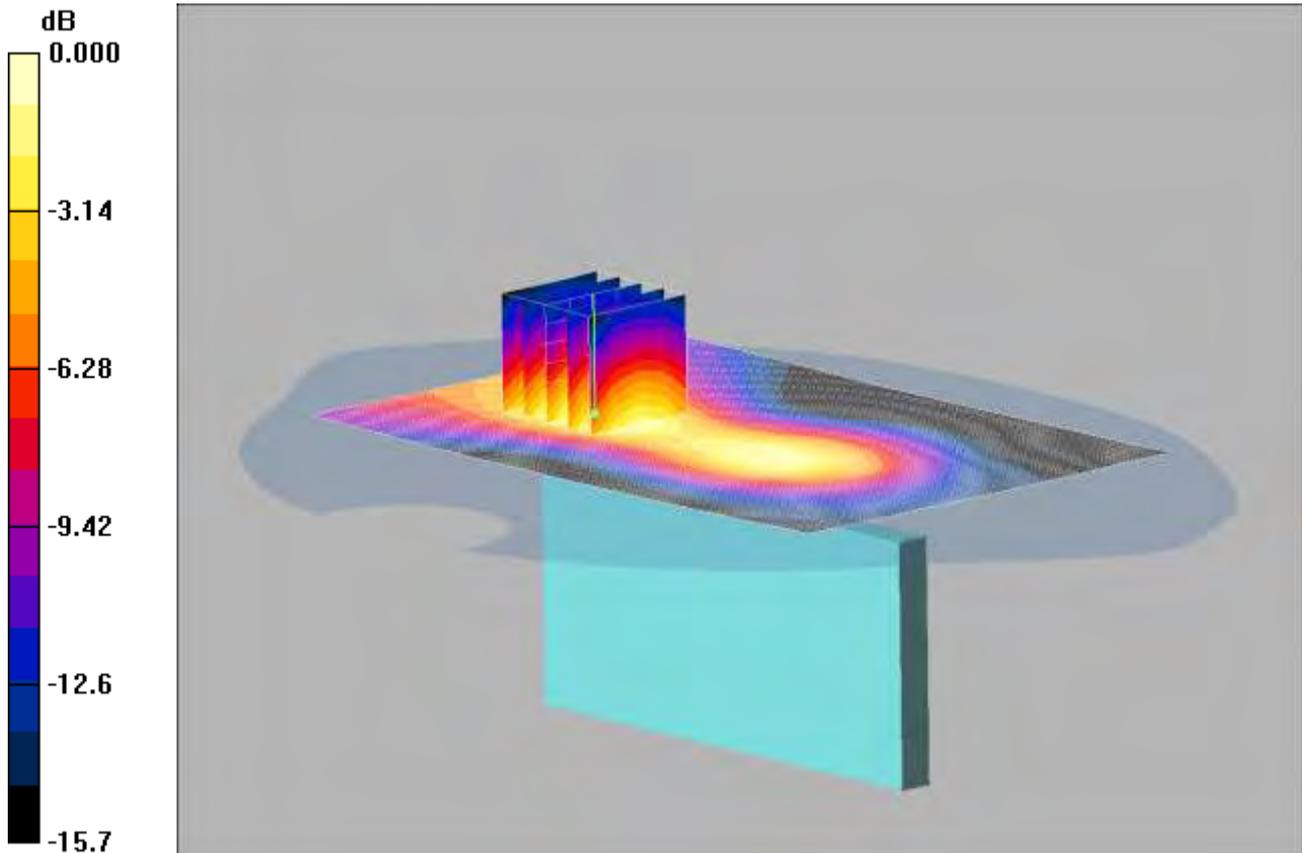
SAR(1 g) = 0.502 mW/g; SAR(10 g) = 0.271 mW/g

Maximum value of SAR (measured) = 0.568 mW/g

SCN/91945JD02/034: Left side of EUT Facing Phantom GPRS CH661

Date: 12/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: CB5A1NUBQ2



0 dB = 0.166mW/g

Communication System: GPRS 1900 2Tx; Frequency: 1880 MHz; Duty Cycle: 1:4

Medium: 1900 MHz MSL Medium parameters used (interpolated): $f = 1880$ MHz; $\sigma = 1.48$ mho/m; $\epsilon_r = 51.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.69, 4.69, 4.69); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Left side of EUT Facing Phantom- Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.161 mW/g

Left side of EUT Facing Phantom- Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.56 V/m; Power Drift = 0.150 dB

Peak SAR (extrapolated) = 0.234 W/kg

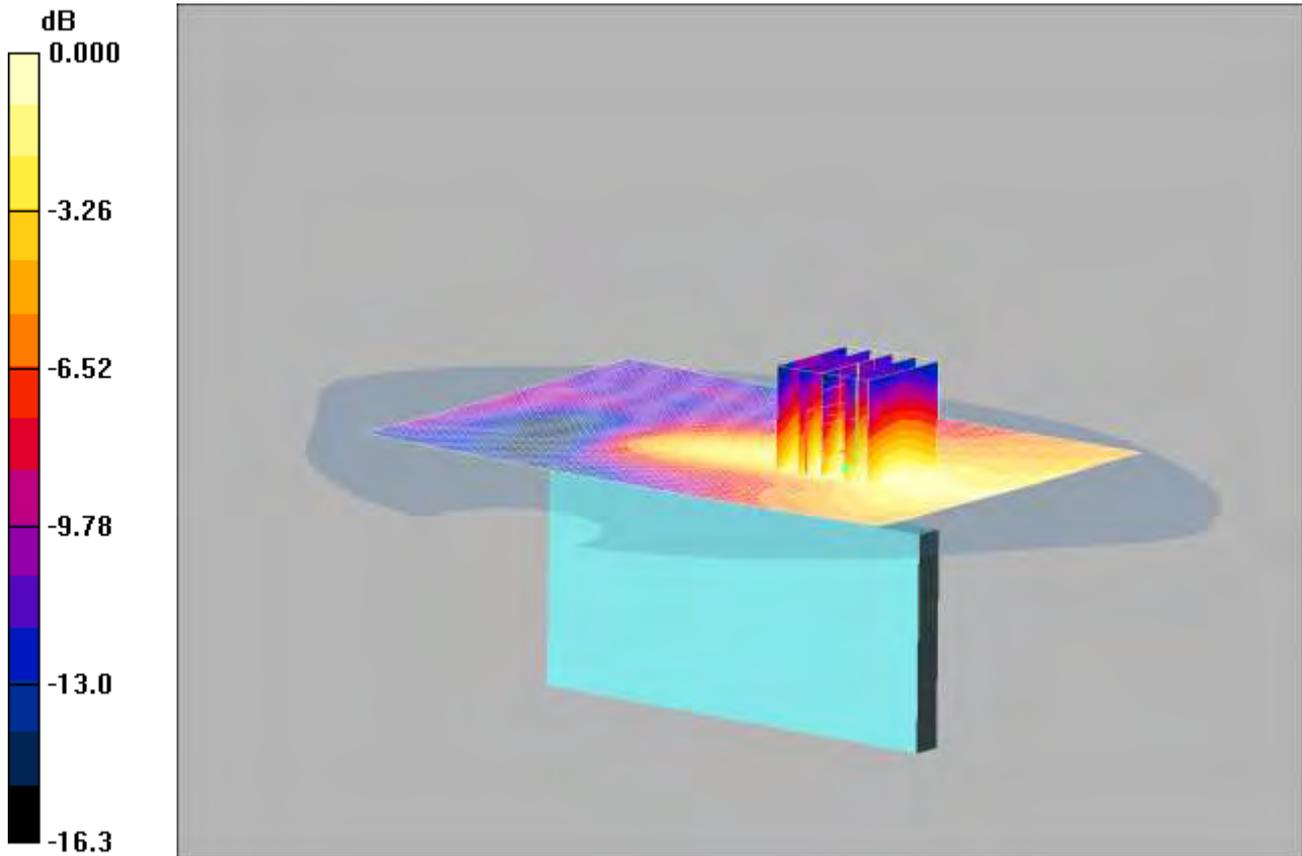
SAR(1 g) = 0.151 mW/g; SAR(10 g) = 0.090 mW/g

Maximum value of SAR (measured) = 0.166 mW/g

SCN/91945JD02/035: Right side of EUT Facing Phantom GPRS CH661

Date: 12/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: CB5A1NUBQ2



0 dB = 0.025mW/g

Communication System: GPRS 1900 2Tx; Frequency: 1880 MHz; Duty Cycle: 1:4

Medium: 1900 MHz MSL Medium parameters used (interpolated): $f = 1880$ MHz; $\sigma = 1.48$ mho/m; $\epsilon_r = 51.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.69, 4.69, 4.69); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Right side of EUT Facing Phantom- Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.021 mW/g

Right side of EUT Facing Phantom- Middle/Zoom Scan (5x5x7) 2 (5x5x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.24 V/m; Power Drift = 0.138 dB

Peak SAR (extrapolated) = 0.037 W/kg

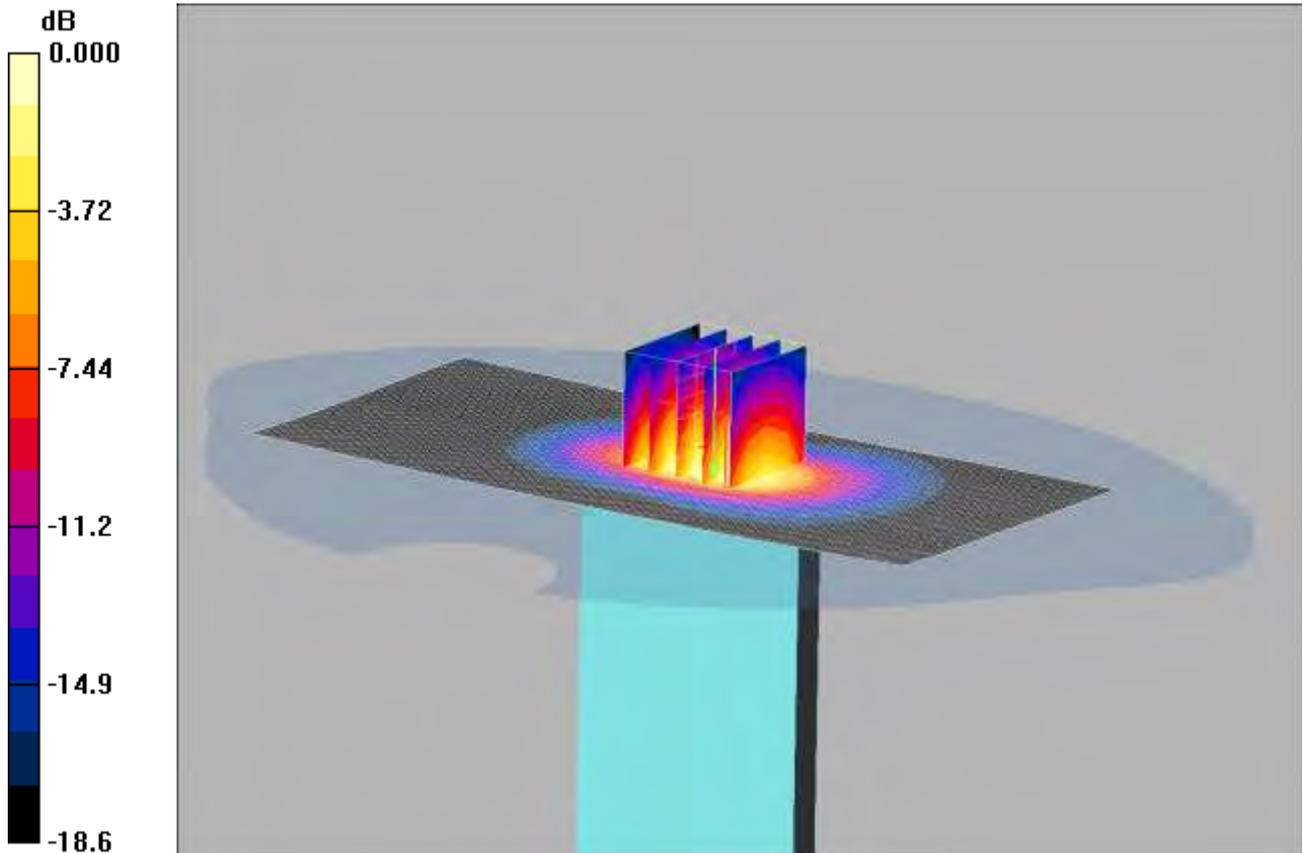
SAR(1 g) = 0.024 mW/g; SAR(10 g) = 0.015 mW/g

Maximum value of SAR (measured) = 0.025 mW/g

SCN/91945JD02/036: Bottom of EUT Facing Phantom GPRS CH661

Date: 13/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: CB5A1NUBQ2



0 dB = 0.859mW/g

Communication System: GPRS 1900 2Tx; Frequency: 1880 MHz; Duty Cycle: 1:4

Medium: 1900 MHz MSL Medium parameters used (interpolated): $f = 1880$ MHz; $\sigma = 1.48$ mho/m; $\epsilon_r = 51.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.69, 4.69, 4.69); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Bottom of EUT Facing Phantom- Middle/Area Scan 2 (61x131x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.857 mW/g

Bottom of EUT Facing Phantom- Middle/Zoom Scan (5x5x7) 2 2 2 (5x5x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm

Reference Value = 24.0 V/m; Power Drift = 0.028 dB

Peak SAR (extrapolated) = 1.27 W/kg

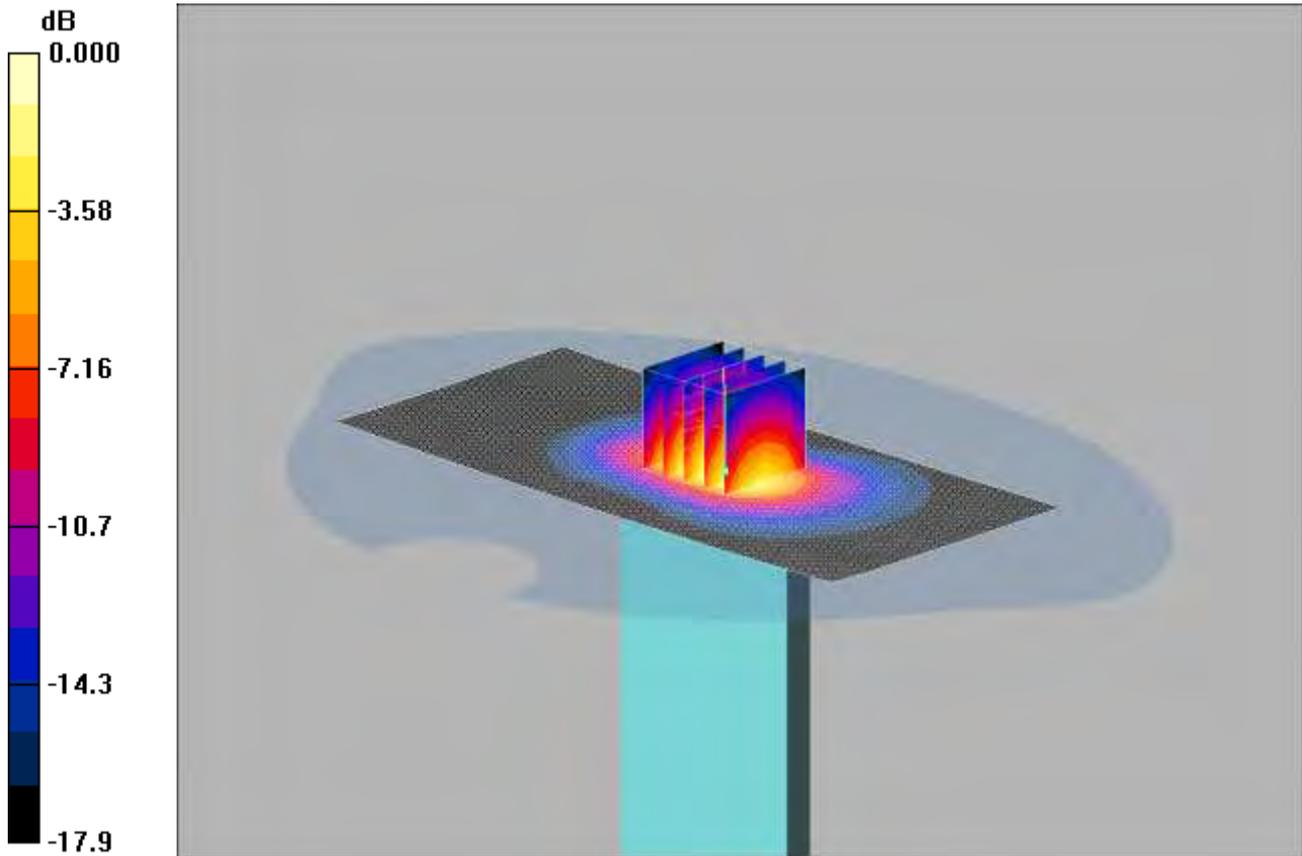
SAR(1 g) = 0.767 mW/g; SAR(10 g) = 0.402 mW/g

Maximum value of SAR (measured) = 0.859 mW/g

SCN/91945JD02/037: Bottom of EUT Facing Phantom GPRS CH512

Date: 13/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: CB5A1NUBQ2



0 dB = 0.687mW/g

Communication System: GPRS 1900 2Tx; Frequency: 1850.2 MHz; Duty Cycle: 1:4

Medium: 1900 MHz MSL Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.45$ mho/m; $\epsilon_r = 51.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.69, 4.69, 4.69); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Bottom of EUT Facing Phantom- Low/Area Scan (61x131x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.687 mW/g

Bottom of EUT Facing Phantom- Low/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 21.9 V/m; Power Drift = 0.053 dB

Peak SAR (extrapolated) = 0.976 W/kg

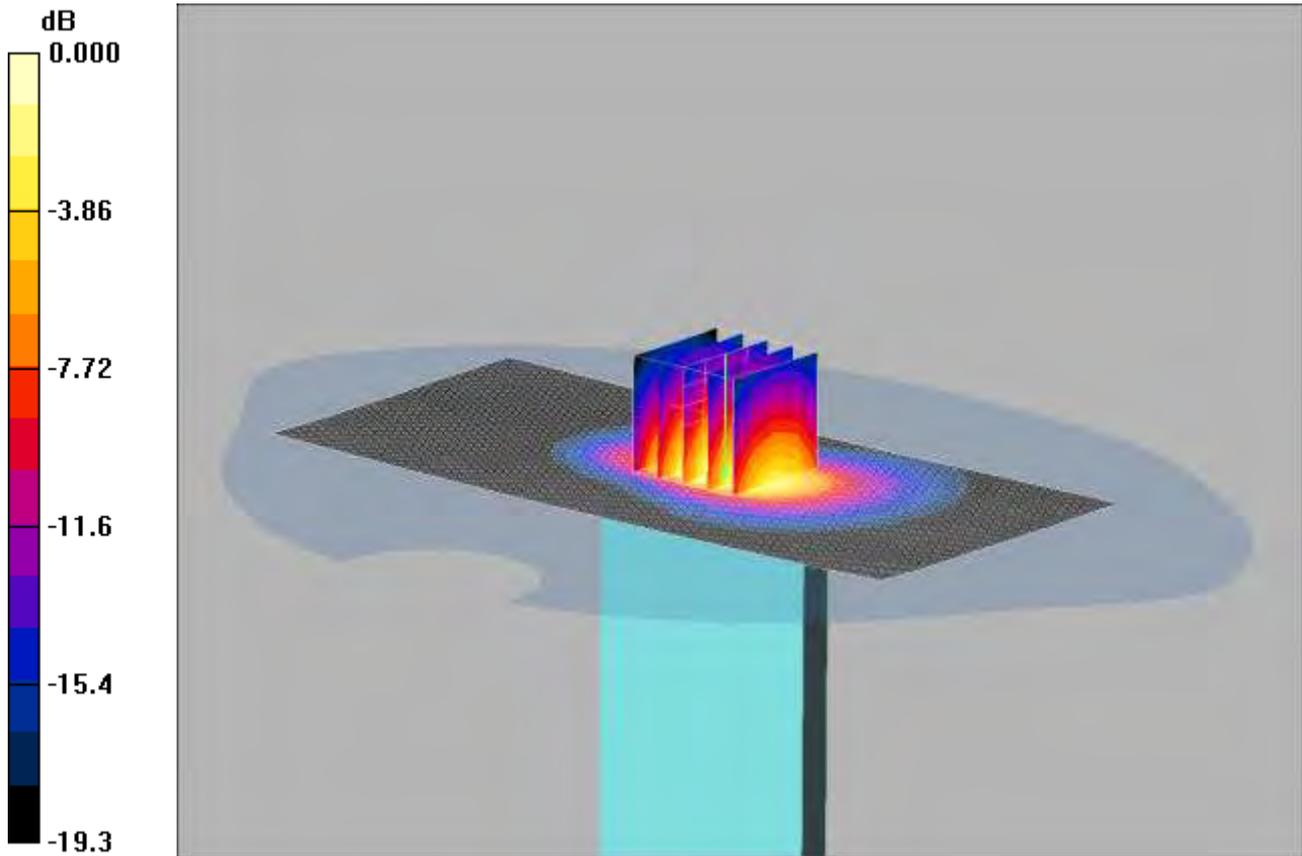
SAR(1 g) = 0.610 mW/g; SAR(10 g) = 0.321 mW/g

Maximum value of SAR (measured) = 0.687 mW/g

SCN/91945JD02/038: Bottom of EUT Facing Phantom GPRS CH810

Date: 13/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: CB5A1NUBQ2



0 dB = 1.15mW/g

Communication System: GPRS 1900 2Tx; Frequency: 1909.8 MHz; Duty Cycle: 1:4

Medium: 1900 MHz MSL Medium parameters used (interpolated): $f = 1909.8$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 51.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.69, 4.69, 4.69); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Bottom of EUT Facing Phantom- High/Area Scan (61x131x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.30 mW/g

Bottom of EUT Facing Phantom- High/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 25.2 V/m; Power Drift = -0.016 dB

Peak SAR (extrapolated) = 1.67 W/kg

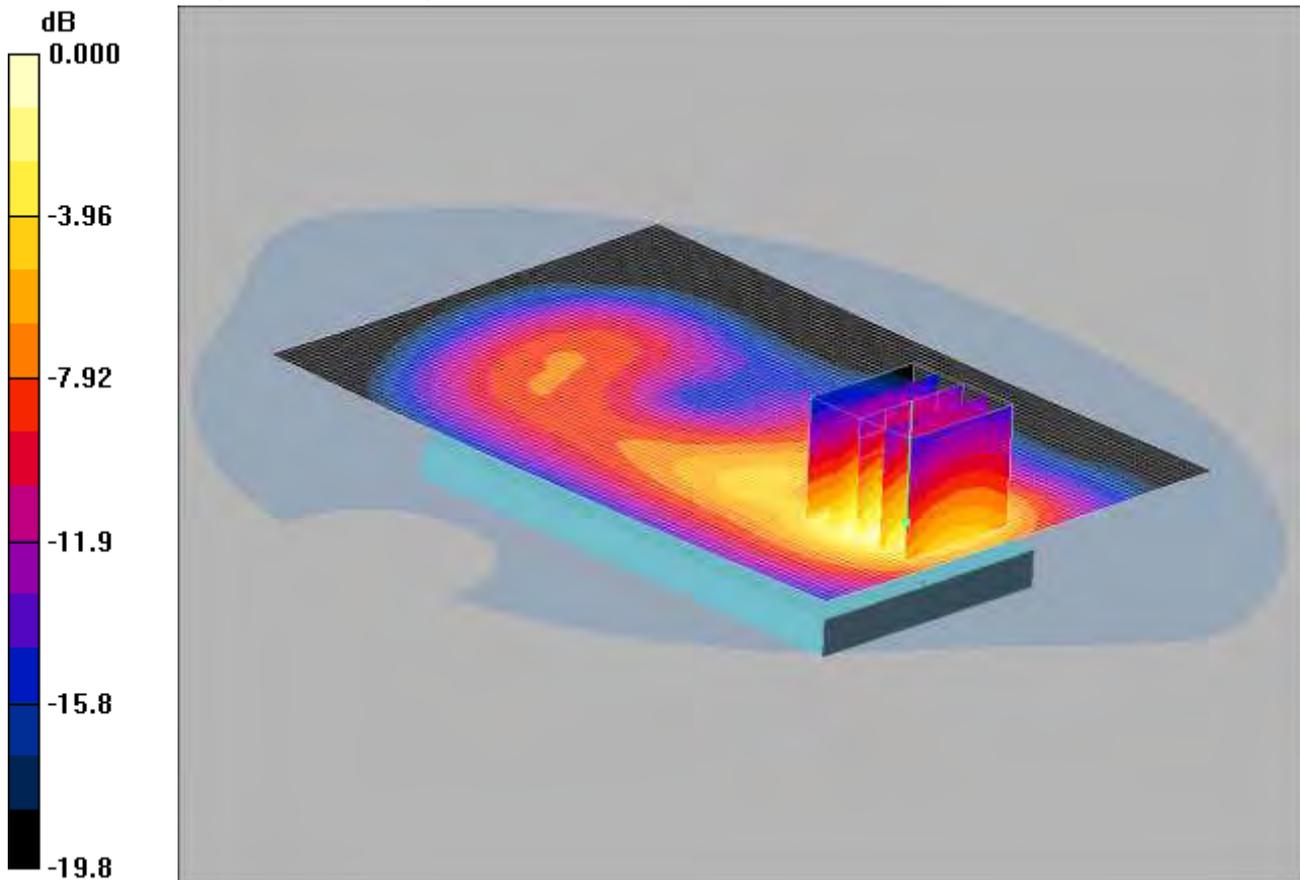
SAR(1 g) = 1.01 mW/g; SAR(10 g) = 0.519 mW/g

Maximum value of SAR (measured) = 1.15 mW/g

SCN/91945JD02/039: Front of EUT Facing Phantom at 15mm Separation GPRS CH661

Date: 13/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: CB5A1NUBQ2



0 dB = 0.408mW/g

Communication System: GPRS 1900 2Tx; Frequency: 1880 MHz; Duty Cycle: 1:4

Medium: 1900 MHz MSL Medium parameters used (interpolated): $f = 1880$ MHz; $\sigma = 1.48$ mho/m; $\epsilon_r = 51.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.69, 4.69, 4.69); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Front of EUT Facing Phantom- Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.375 mW/g

Front of EUT Facing Phantom- Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.61 V/m; Power Drift = 0.083 dB

Peak SAR (extrapolated) = 0.622 W/kg

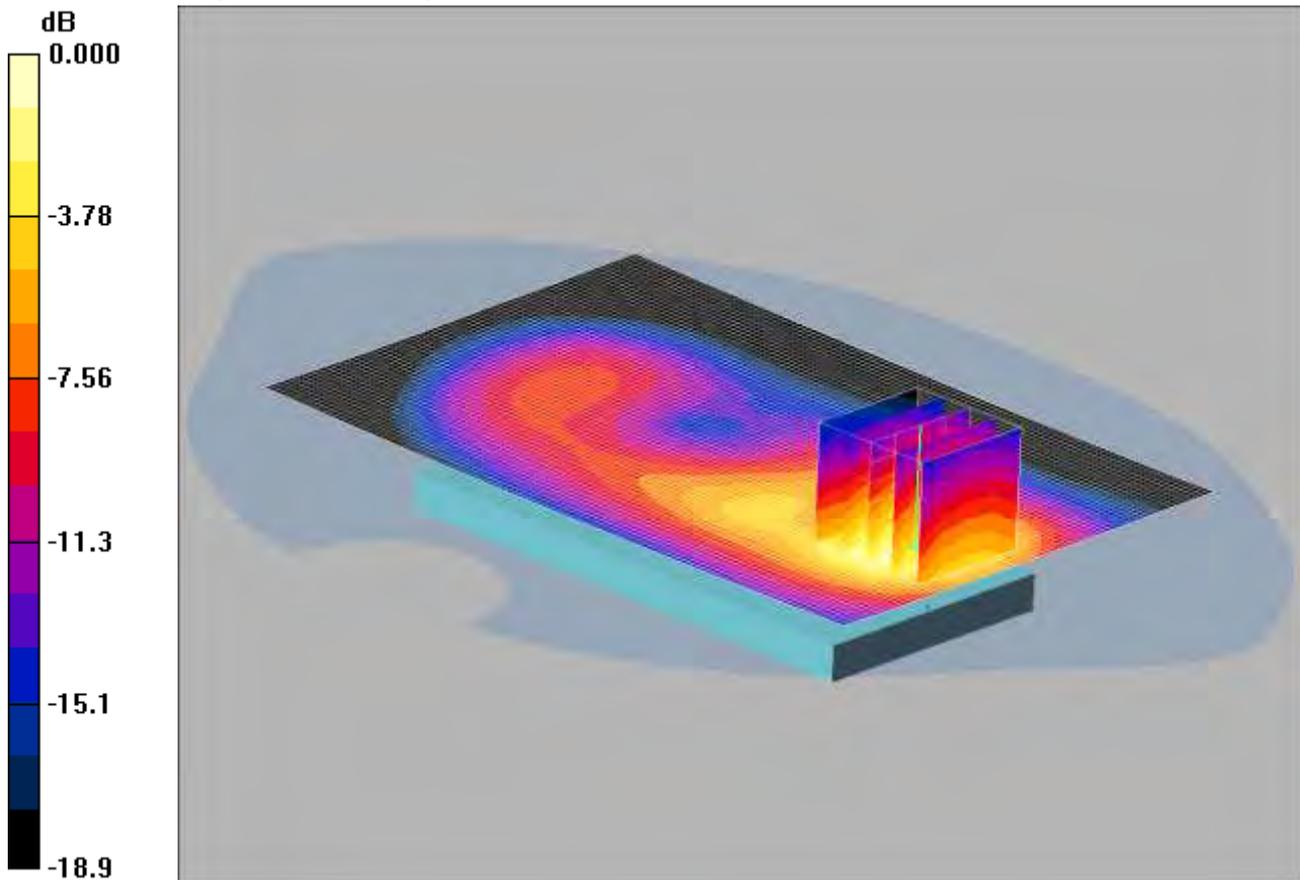
SAR(1 g) = 0.367 mW/g; SAR(10 g) = 0.206 mW/g

Maximum value of SAR (measured) = 0.408 mW/g

SCN/91945JD02/040: Front of EUT Facing Phantom at 15mm Separation GPRS CH512

Date: 13/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: CB5A1NUBQ2



0 dB = 0.370mW/g

Communication System: GPRS 1900 2Tx; Frequency: 1850.2 MHz; Duty Cycle: 1:4

Medium: 1900 MHz MSL Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.45$ mho/m; $\epsilon_r = 51.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.69, 4.69, 4.69); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Front of EUT Facing Phantom- Low/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.338 mW/g

Front of EUT Facing Phantom- Low/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.27 V/m; Power Drift = -0.014 dB

Peak SAR (extrapolated) = 0.504 W/kg

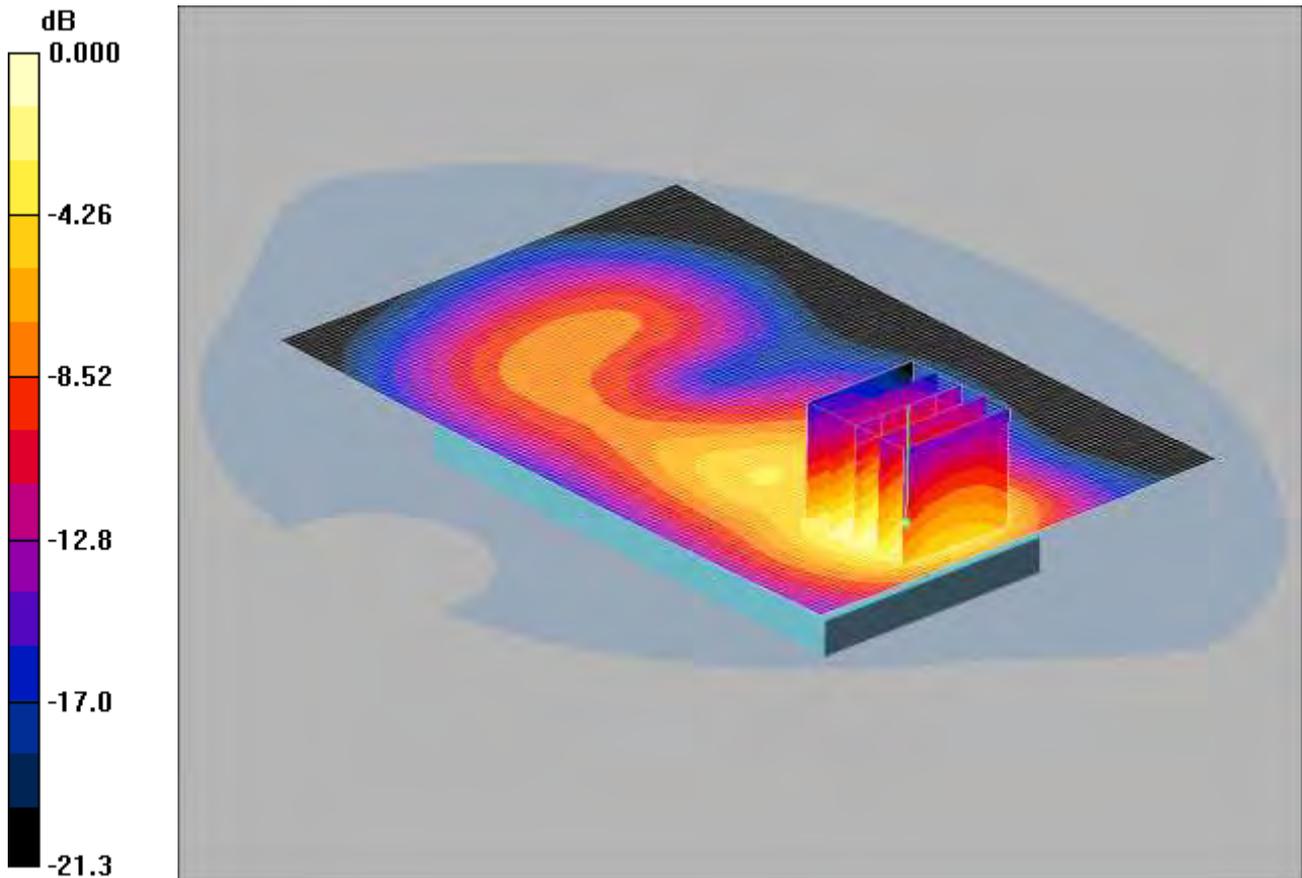
SAR(1 g) = 0.332 mW/g; SAR(10 g) = 0.189 mW/g

Maximum value of SAR (measured) = 0.370 mW/g

SCN/91945JD02/041: Front of EUT Facing Phantom at 15mm Separation GPRS CH810

Date: 13/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: CB5A1NUBQ2



0 dB = 0.467mW/g

Communication System: GPRS 1900 2Tx; Frequency: 1909.8 MHz; Duty Cycle: 1:4

Medium: 1900 MHz MSL Medium parameters used (interpolated): $f = 1909.8 \text{ MHz}$; $\sigma = 1.51 \text{ mho/m}$; $\epsilon_r = 51.4$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.69, 4.69, 4.69); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Front of EUT Facing Phantom- High/Area Scan (81x121x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.430 mW/g

Front of EUT Facing Phantom- High/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 6.68 V/m; Power Drift = -0.149 dB

Peak SAR (extrapolated) = 0.672 W/kg

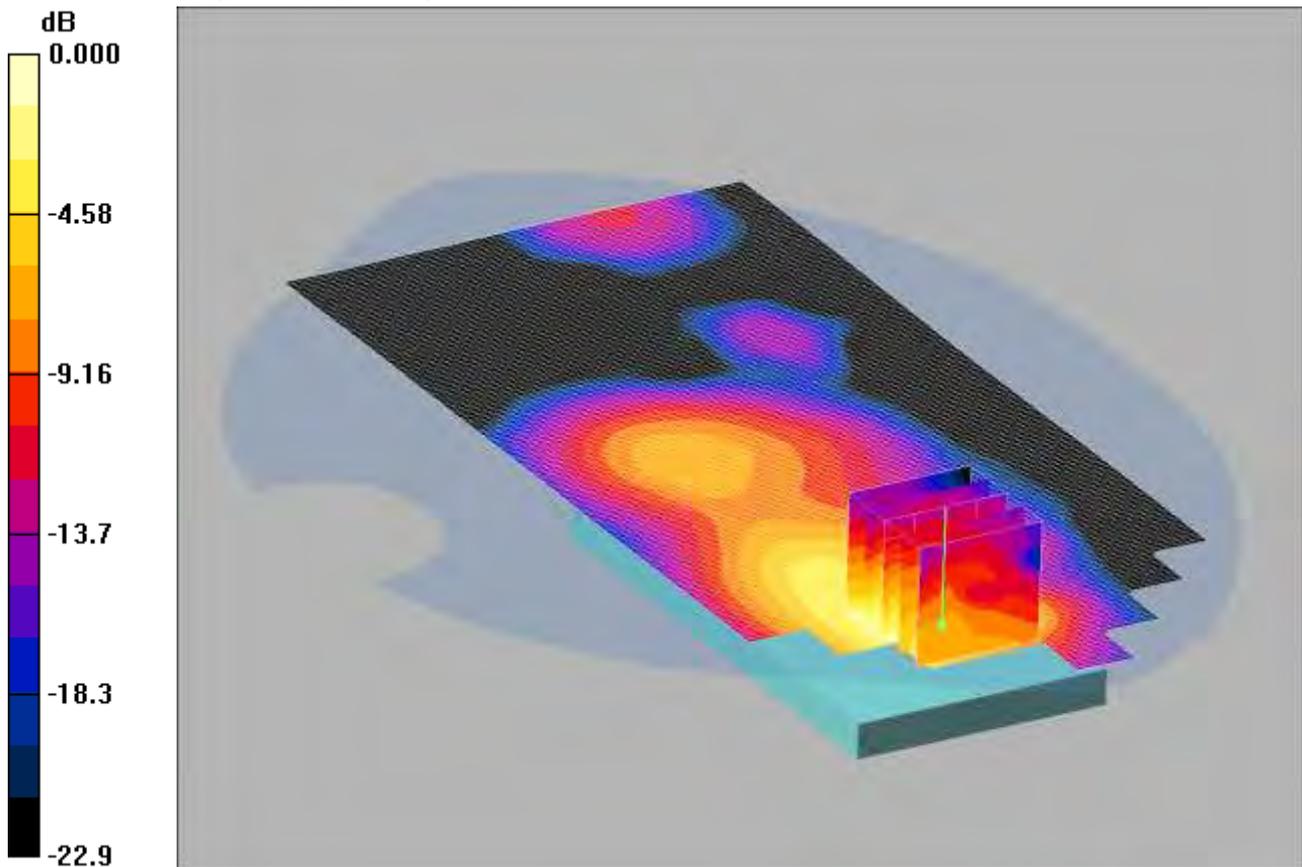
SAR(1 g) = 0.417 mW/g; SAR(10 g) = 0.233 mW/g

Maximum value of SAR (measured) = 0.467 mW/g

SCN/91945JD02/042: Front of EUT Facing Phantom at 15mm Separation GPRS CH810

Date 13/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: CB5A1NUBQ2



0 dB = 0.782mW/g

Communication System: GPRS 1900 2Tx; Frequency: 1909.8 MHz; Duty Cycle: 1:4

Medium: 1900 MHz MSL Medium parameters used (interpolated): $f = 1909.8$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 51.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.69, 4.69, 4.69); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Front of EUT Facing Phantom- High/Area Scan (81x171x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.733 mW/g

Front of EUT Facing Phantom- High/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.41 V/m; Power Drift = -0.011 dB

Peak SAR (extrapolated) = 1.17 W/kg

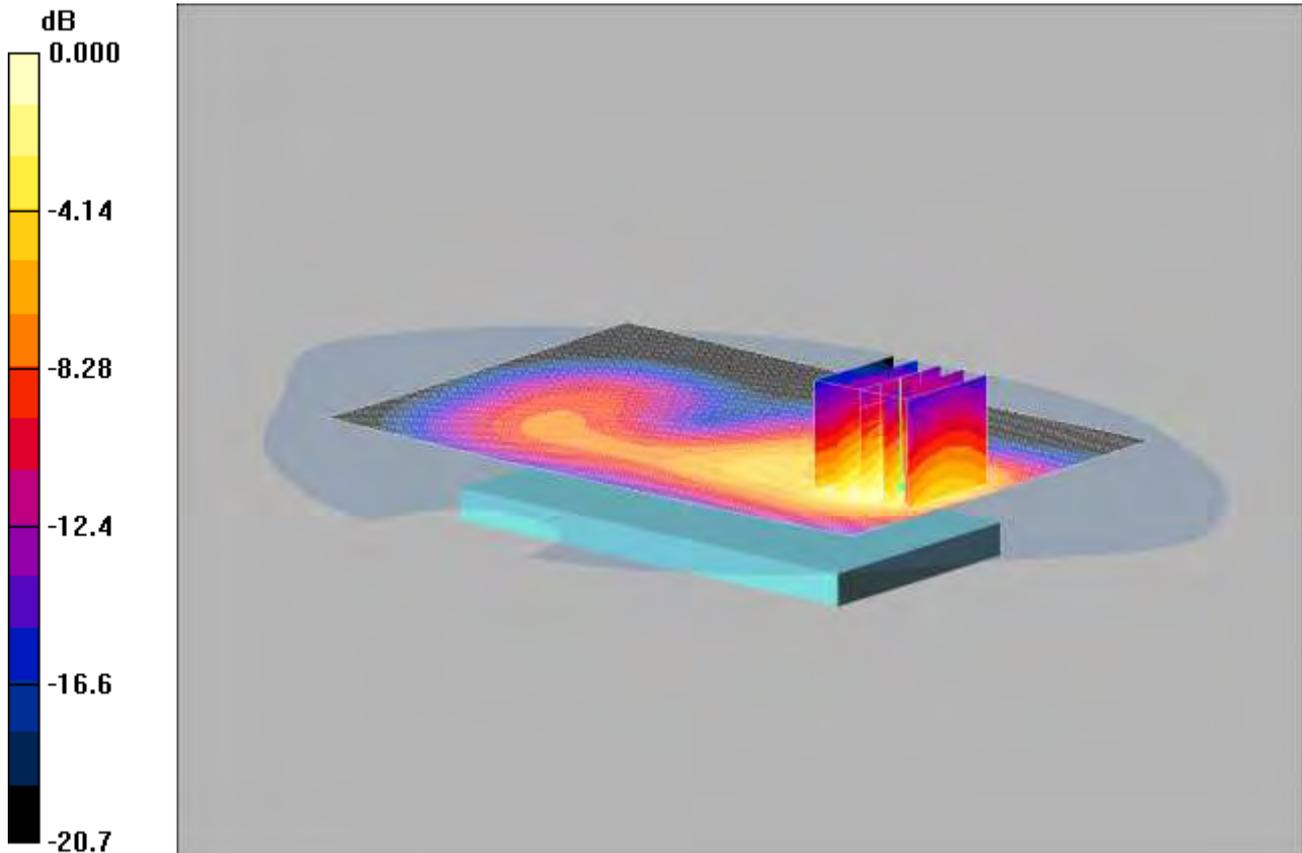
SAR(1 g) = 0.719 mW/g; SAR(10 g) = 0.378 mW/g

Maximum value of SAR (measured) = 0.782 mW/g

SCN/91945JD02/043: Front of EUT Facing Phantom at 15mm PCS CH810

Date: 13/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: CB5A1NUBQ2



0 dB = 0.482mW/g

Communication System: PCS 1900; Frequency: 1909.8 MHz; Duty Cycle: 1:8.3

Medium: 1900 MHz MSL Medium parameters used (interpolated): $f = 1909.8$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 51.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.69, 4.69, 4.69); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Front of EUT Facing Phantom- High/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.446 mW/g

Front of EUT Facing Phantom- High/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.91 V/m; Power Drift = -0.036 dB

Peak SAR (extrapolated) = 0.684 W/kg

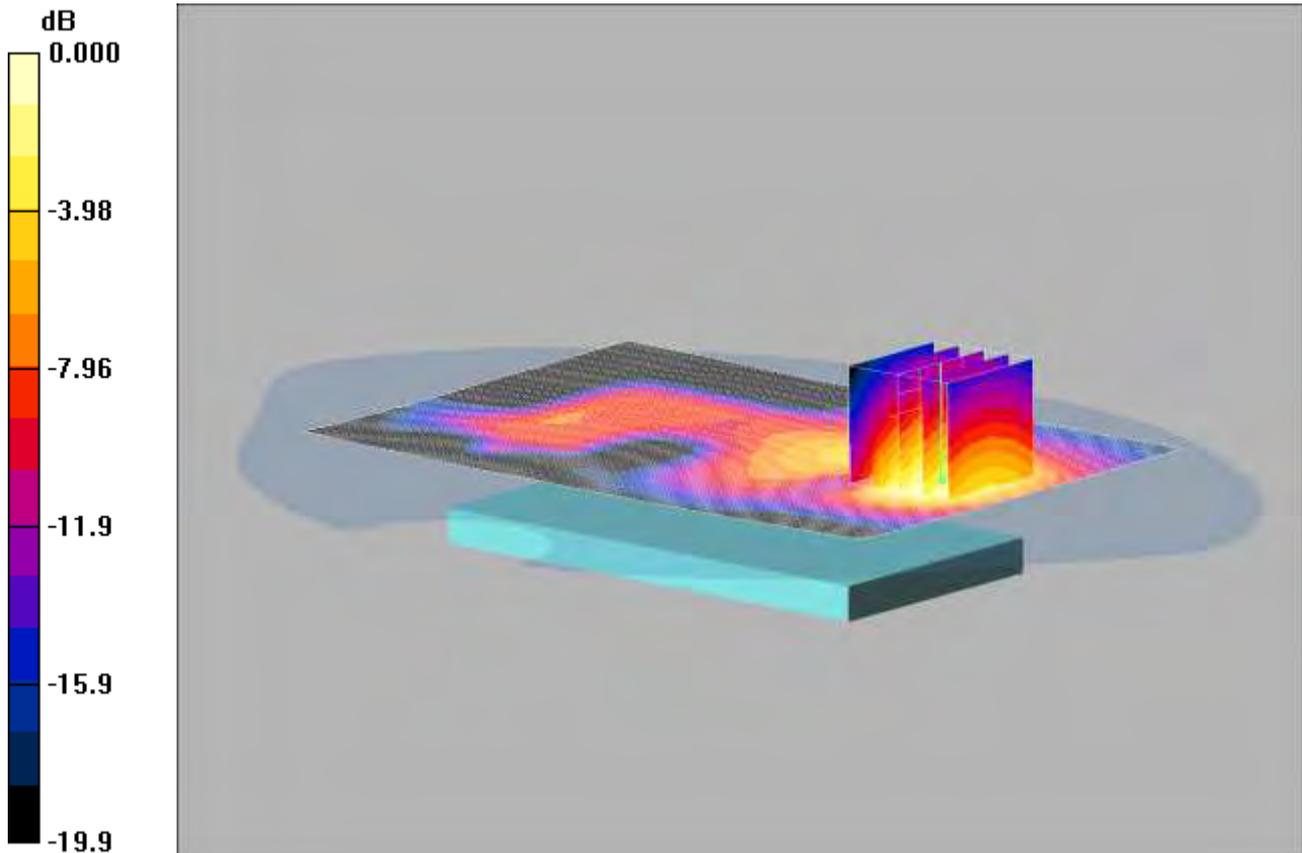
SAR(1 g) = 0.428 mW/g; SAR(10 g) = 0.238 mW/g

Maximum value of SAR (measured) = 0.482 mW/g

SCN/91945JD02/044: Back of EUT Facing Phantom at 15mm PCS CH810

Date: 13/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: CB5A1NUBQ2



0 dB = 0.526mW/g

Communication System: PCS 1900; Frequency: 1909.8 MHz; Duty Cycle: 1:8.3

Medium: 1900 MHz MSL Medium parameters used (interpolated): $f = 1909.8$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 51.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.69, 4.69, 4.69); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Back of EUT Facing Phantom- High/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.533 mW/g

Back of EUT Facing Phantom- High/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.59 V/m; Power Drift = 0.023 dB

Peak SAR (extrapolated) = 0.753 W/kg

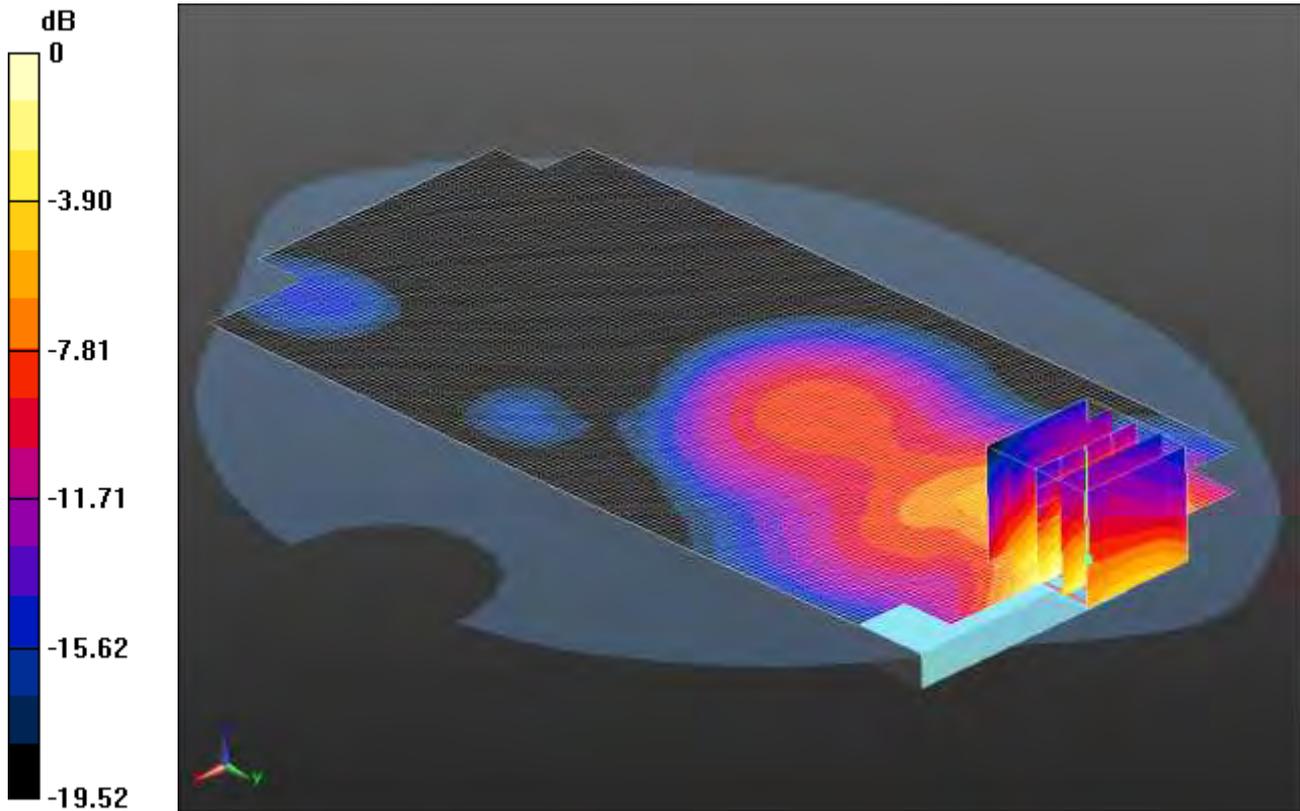
SAR(1 g) = 0.471 mW/g; SAR(10 g) = 0.266 mW/g

Maximum value of SAR (measured) = 0.526 mW/g

SCN/91945JD02/045: Back of EUT Facing Phantom with Extended Antenna PCS CH810

Date: 13/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: CB5A1NUBQ2



0 dB = 0.470 W/kg = -3.28 dBW/kg

Communication System: Generic GSM; Frequency: 1909.8 MHz; Duty Cycle: 1:8.30042

Medium: 1900 MHz MSL Medium parameters used (interpolated): $f = 1909.8$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 51.363$;

$\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.69, 4.69, 4.69); Calibrated: 11/05/2012;

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM A (Site 58); Type: QD000P40Ca; Serial: TP:1193

- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Front of EUT Facing Phantom with Extended Antenna- High/Area Scan (81x161x1): Interpolated

grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 0.470 W/kg

Configuration/Front of EUT Facing Phantom with Extended Antenna- High/Zoom Scan (5x5x7) (5x5x7)/Cube 0:

Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 4.929 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.683 W/kg

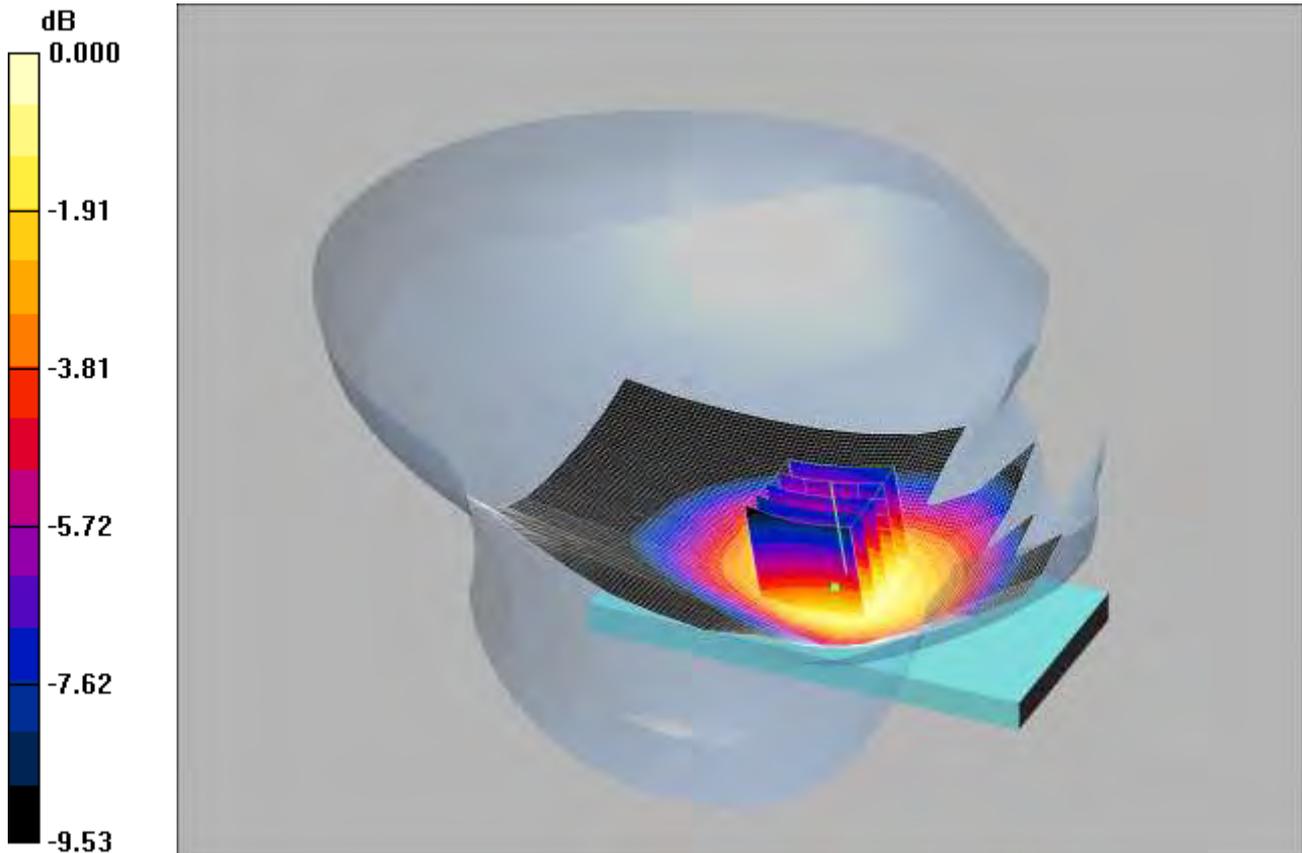
SAR(1 g) = 0.429 W/kg; SAR(10 g) = 0.246 W/kg

Maximum value of SAR (measured) = 0.470 W/kg

SCN/91945JD02/046: Touch Left UMTS FDD 5 CH4183

Date: 11/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: CB5A1NUBQ2



0 dB = 0.737mW/g

Communication System: UMTS-UMTS FDD 5; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium: 900 MHz HSL Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.927$ mho/m; $\epsilon_r = 41.1$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.33, 6.33, 6.33); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Touch Left - Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.772 mW/g

Touch Left - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.74 V/m; Power Drift = 0.013 dB

Peak SAR (extrapolated) = 0.922 W/kg

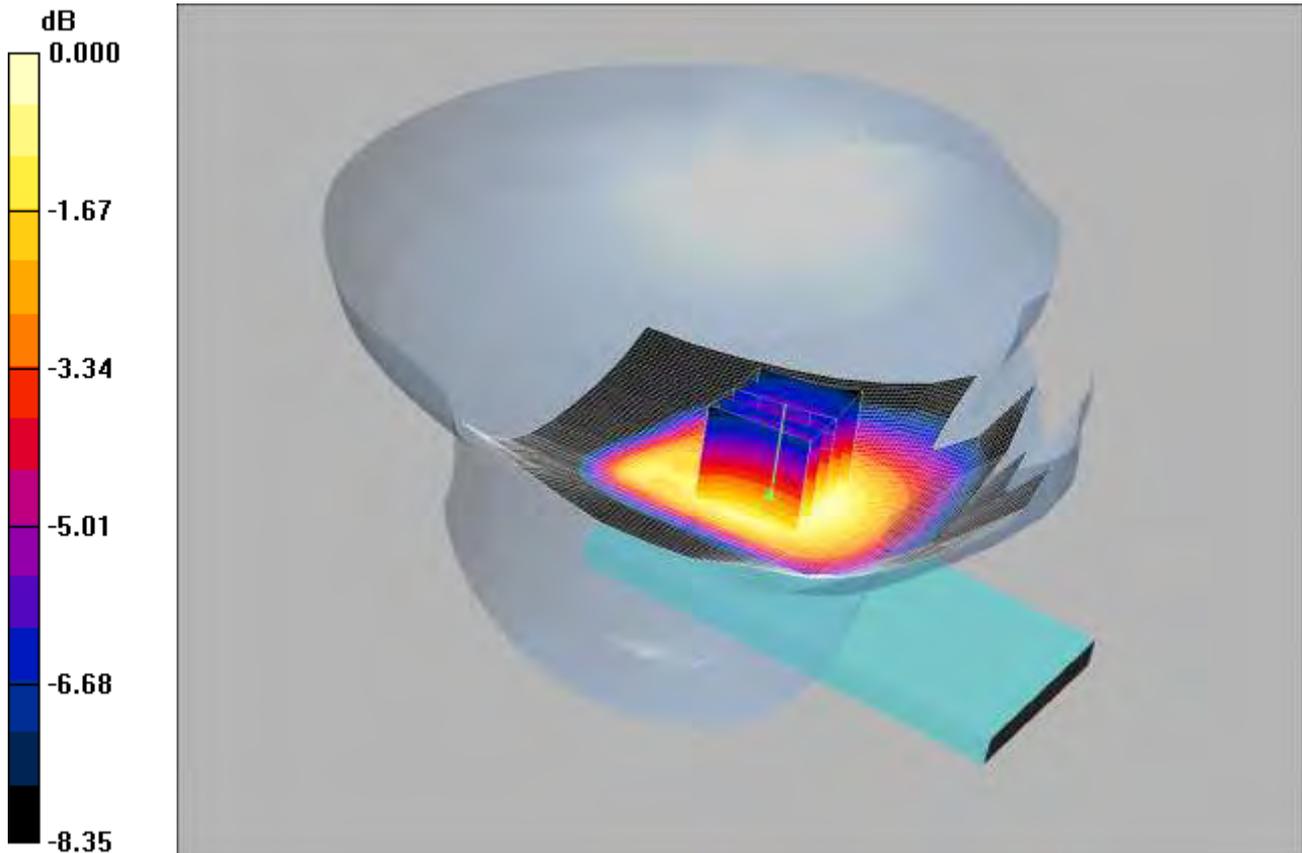
SAR(1 g) = 0.708 mW/g; SAR(10 g) = 0.514 mW/g

Maximum value of SAR (measured) = 0.737 mW/g

SCN/91945JD02/047: Tilt Left UMTS FDD 5 CH4183

Date: 11/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: CB5A1NUBQ2



0 dB = 0.417mW/g

Communication System: UMTS-FDD 5; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium: 900 MHz HSL Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.927$ mho/m; $\epsilon_r = 41.1$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.33, 6.33, 6.33); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Tilt Left - Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.418 mW/g

Tilt Left - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.8 V/m; Power Drift = 0.098 dB

Peak SAR (extrapolated) = 0.489 W/kg

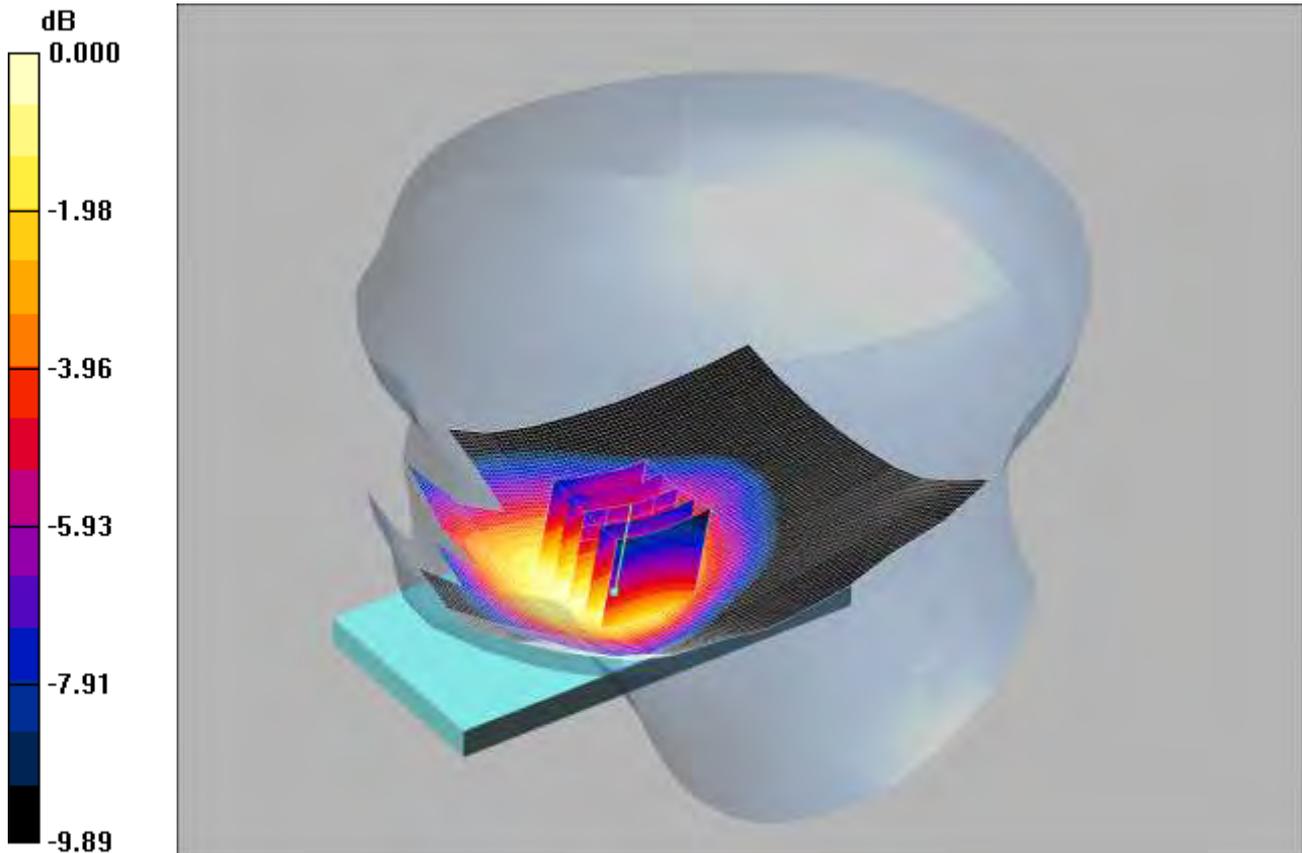
SAR(1 g) = 0.396 mW/g; SAR(10 g) = 0.302 mW/g

Maximum value of SAR (measured) = 0.417 mW/g

SCN/91945JD02/048: Touch Right UMTS FDD 5 CH4183

Date: 11/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: CB5A1NUBQ2



0 dB = 0.747mW/g

Communication System: UMTS-FDD 5; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium: 900 MHz HSL Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.927$ mho/m; $\epsilon_r = 41.1$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.33, 6.33, 6.33); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Touch Right - Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.789 mW/g

Touch Right - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.1 V/m; Power Drift = -0.147 dB

Peak SAR (extrapolated) = 0.928 W/kg

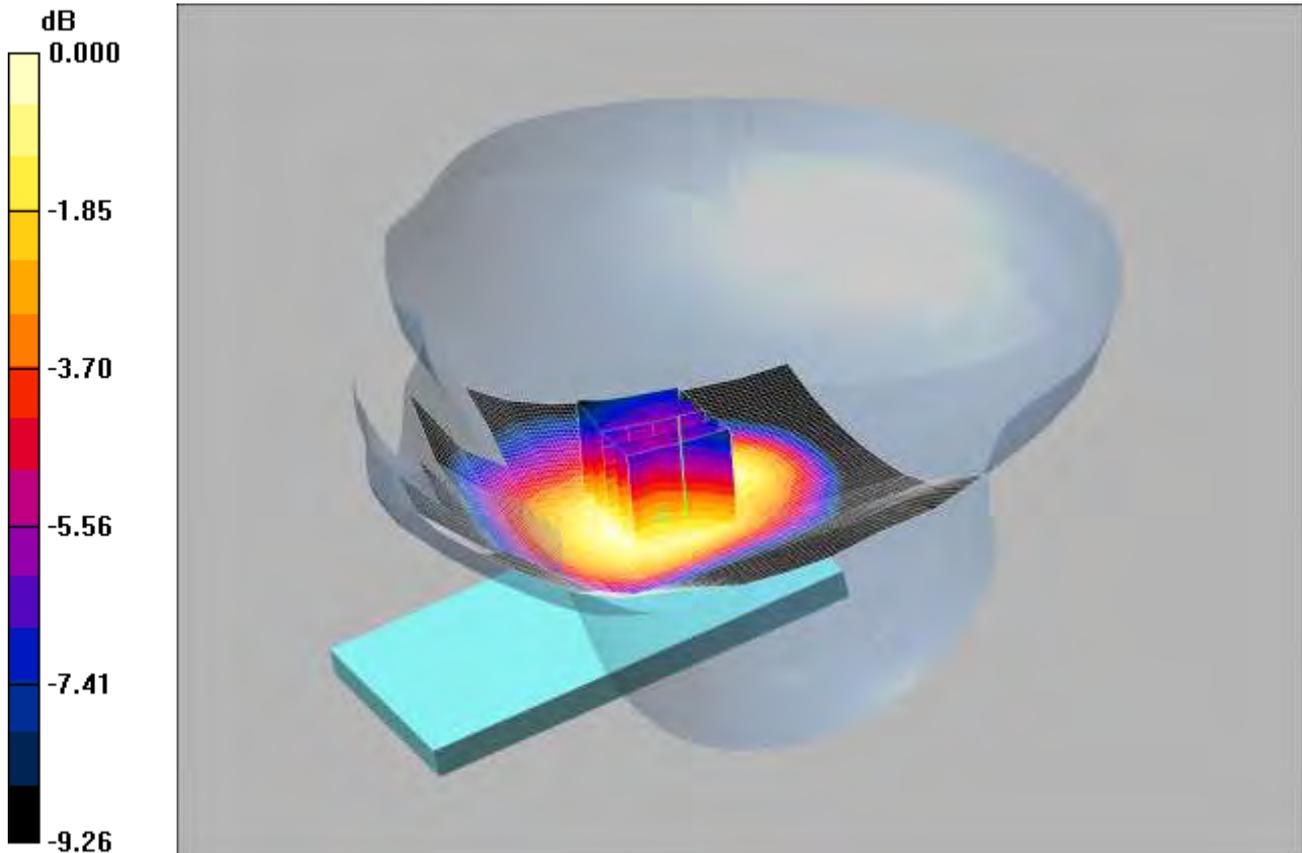
SAR(1 g) = 0.715 mW/g; SAR(10 g) = 0.532 mW/g

Maximum value of SAR (measured) = 0.747 mW/g

SCN/91945JD02/049: Tilt Right UMTS FDD 5 CH4183

Date: 11/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: CB5A1NUBQ2



0 dB = 0.430mW/g

Communication System: UMTS-FDD 5; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium: 900 MHz HSL Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.927$ mho/m; $\epsilon_r = 41.1$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.33, 6.33, 6.33); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Tilt Right - Middle/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.442 mW/g

Tilt Right - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.5 V/m; Power Drift = 0.004 dB

Peak SAR (extrapolated) = 0.502 W/kg

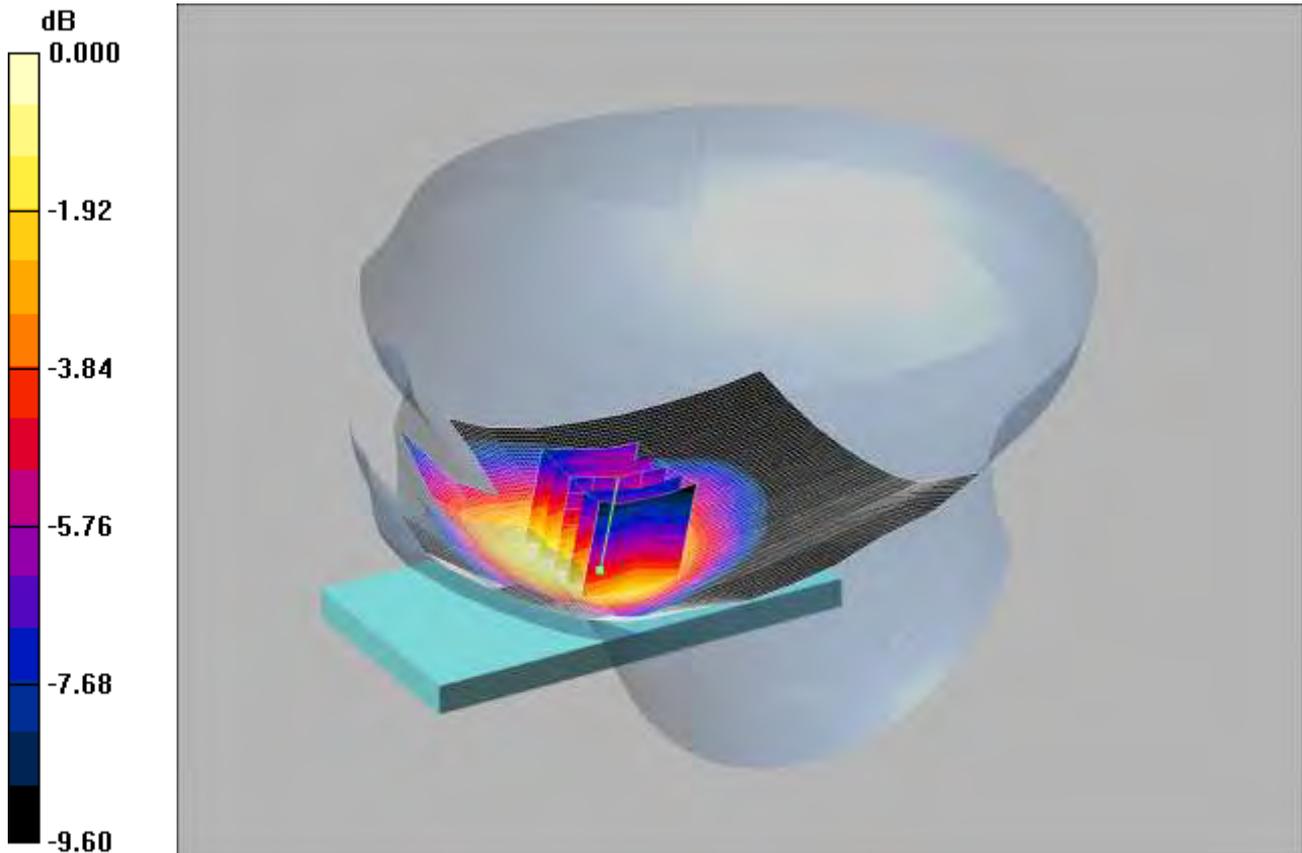
SAR(1 g) = 0.410 mW/g; SAR(10 g) = 0.310 mW/g

Maximum value of SAR (measured) = 0.430 mW/g

SCN/91945JD02/050: Touch Right UMTS FDD 5 CH4132

Date: 11/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: CB5A1NUBQ2



0 dB = 0.859mW/g

Communication System: UMTS-FDD 5; Frequency: 826.4 MHz; Duty Cycle: 1:1

Medium: 900 MHz HSL Medium parameters used (interpolated): $f = 826.4$ MHz; $\sigma = 0.92$ mho/m; $\epsilon_r = 41.2$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.33, 6.33, 6.33); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Touch Right - Low/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.872 mW/g

Touch Right - Low/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.9 V/m; Power Drift = 0.032 dB

Peak SAR (extrapolated) = 1.05 W/kg

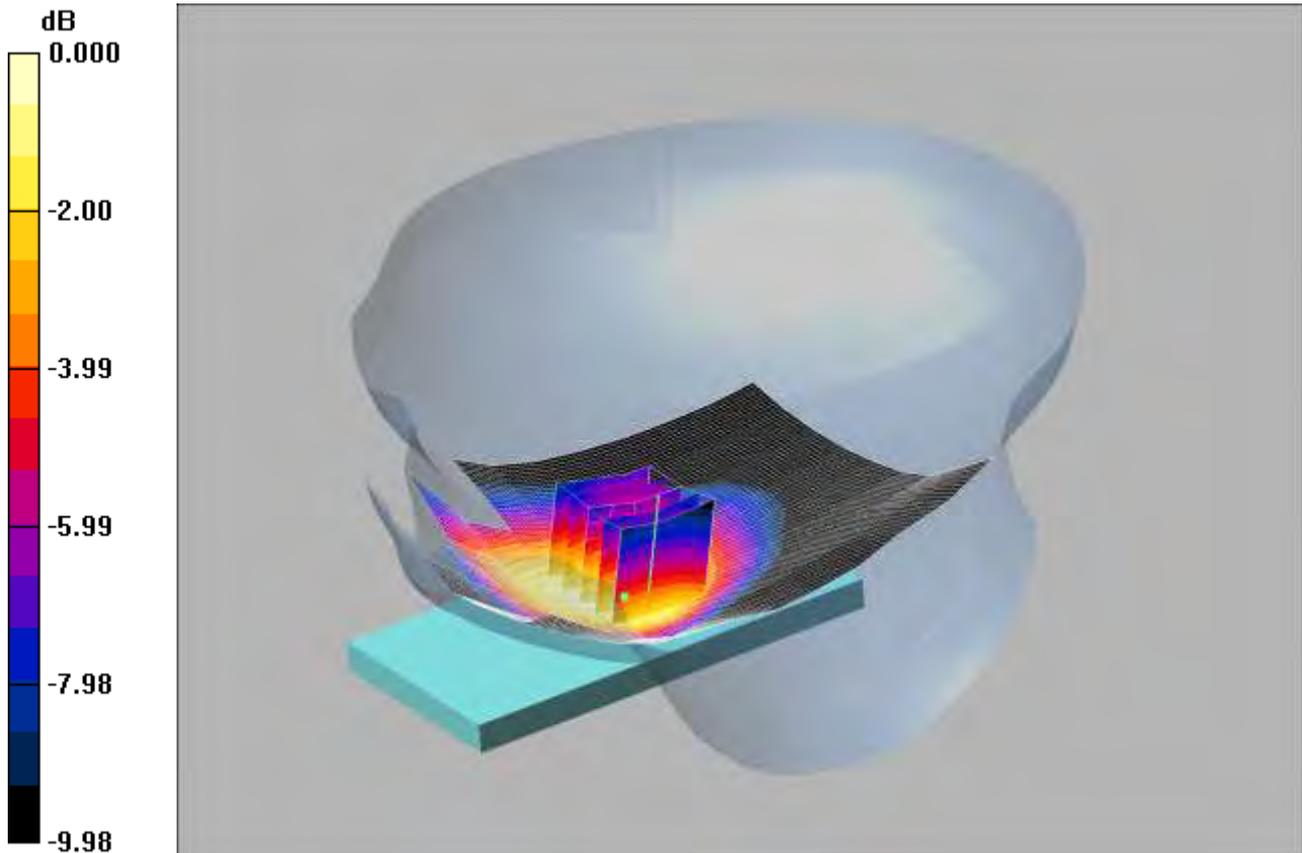
SAR(1 g) = 0.819 mW/g; SAR(10 g) = 0.612 mW/g

Maximum value of SAR (measured) = 0.859 mW/g

SCN/91945JD02/051: Touch Right UMTS FDD 5 CH4233

Date: 12/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: CB5A1NUBQ2



0 dB = 0.934mW/g

Communication System: UMTS-FDD 5; Frequency: 846.6 MHz; Duty Cycle: 1:1

Medium: 900 MHz HSL Medium parameters used (interpolated): $f = 846.6$ MHz; $\sigma = 0.934$ mho/m; $\epsilon_r = 41.1$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.33, 6.33, 6.33); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Touch Right - High/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.996 mW/g

Touch Right - High/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.1 V/m; Power Drift = -0.042 dB

Peak SAR (extrapolated) = 1.17 W/kg

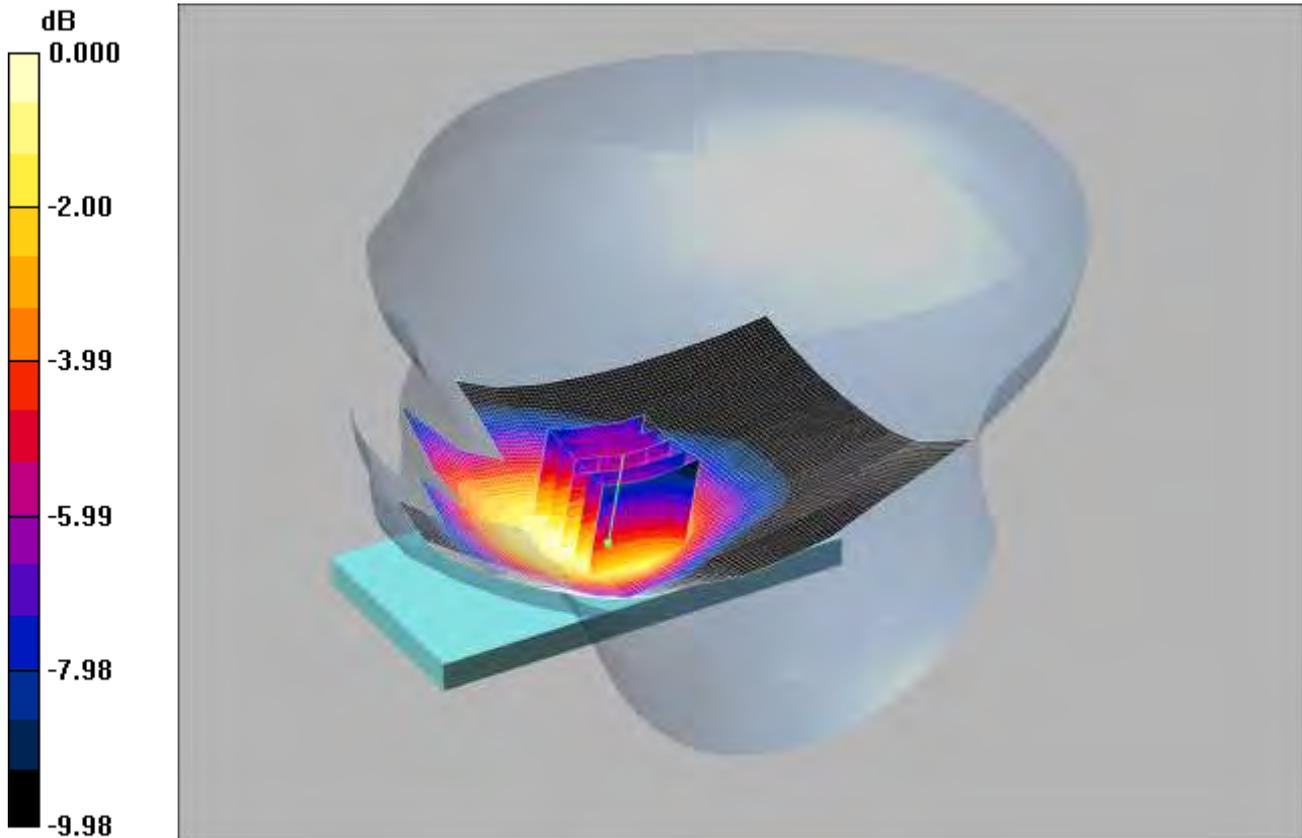
SAR(1 g) = 0.892 mW/g; SAR(10 g) = 0.655 mW/g

Maximum value of SAR (measured) = 0.934 mW/g

SCN/91945JD02/052: Touch Right Antenna Extended UMTS FDD 5 CH4233

Date: 22/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: CB5A1NUBQ2



0 dB = 0.872mW/g

Communication System: UMTS-FDD 5; Frequency: 846.6 MHz; Duty Cycle: 1:1

Medium: 900 MHz HSL Medium parameters used (interpolated): $f = 846.6$ MHz; $\sigma = 0.918$ mho/m; $\epsilon_r = 40.3$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.33, 6.33, 6.33); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Touch Right - High/Area Scan (81x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.932 mW/g

Touch Right - High/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.3 V/m; Power Drift = -0.046 dB

Peak SAR (extrapolated) = 1.13 W/kg

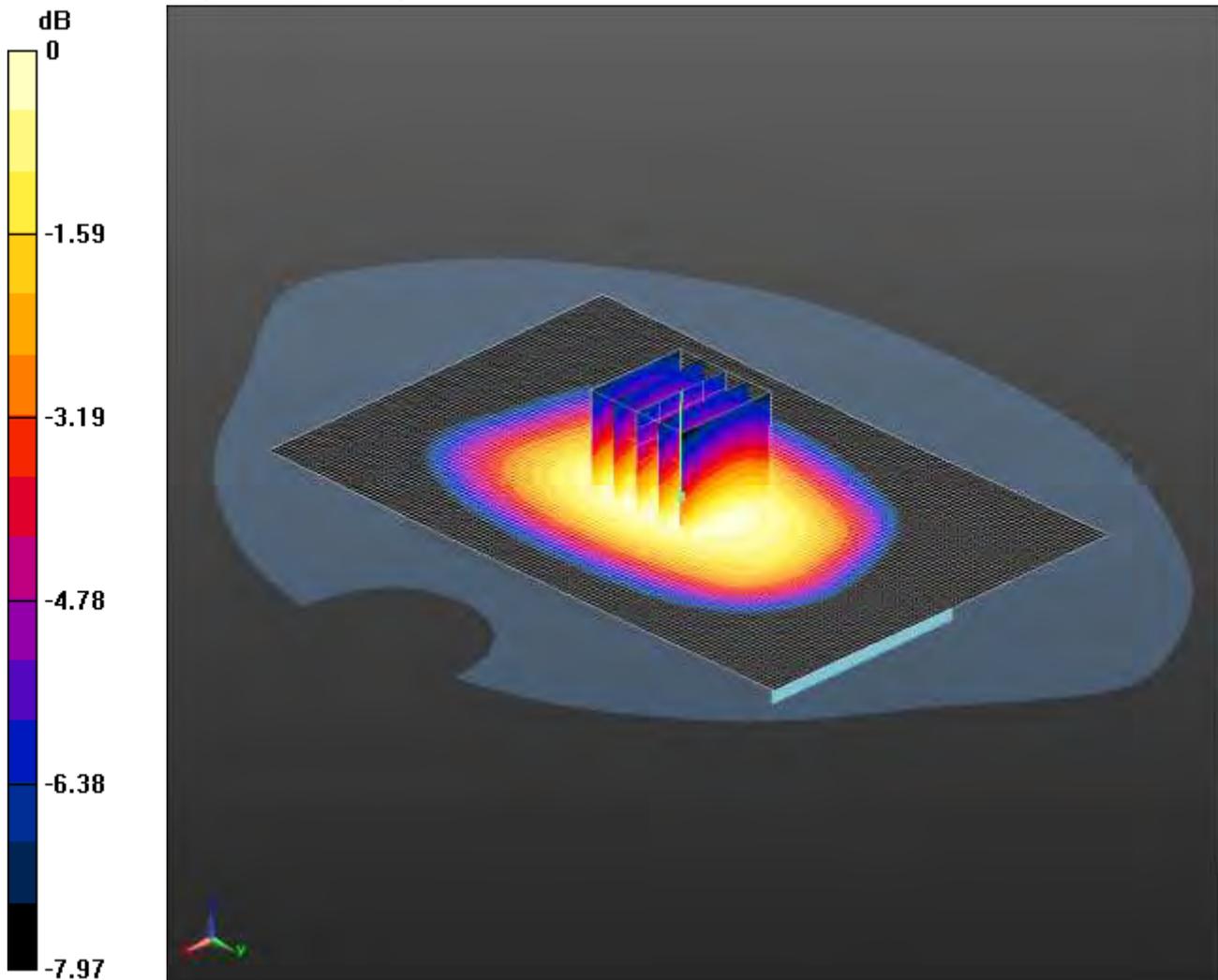
SAR(1 g) = 0.832 mW/g; SAR(10 g) = 0.608 mW/g

Maximum value of SAR (measured) = 0.872 mW/g

SCN/91945JD02/053: Front of EUT Facing Phantom UMTS FDD 5 CH4183

Date: 15/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.926 W/kg = -0.33 dBW/kg

Communication System: UMTS FDD ; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.965$ mho/m; $\epsilon_r = 53.415$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(5.99, 5.99, 5.99); Calibrated: 26/07/2012;

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM B; Type: QD000P40CC; Serial: TP:xxxx

- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Front of EUT Facing Phantom Middle/Area Scan (81x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.939 W/kg

Configuration/Front of EUT Facing Phantom Middle/Zoom Scan 2 (5x5x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm

Reference Value = 32.497 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 1.04 W/kg

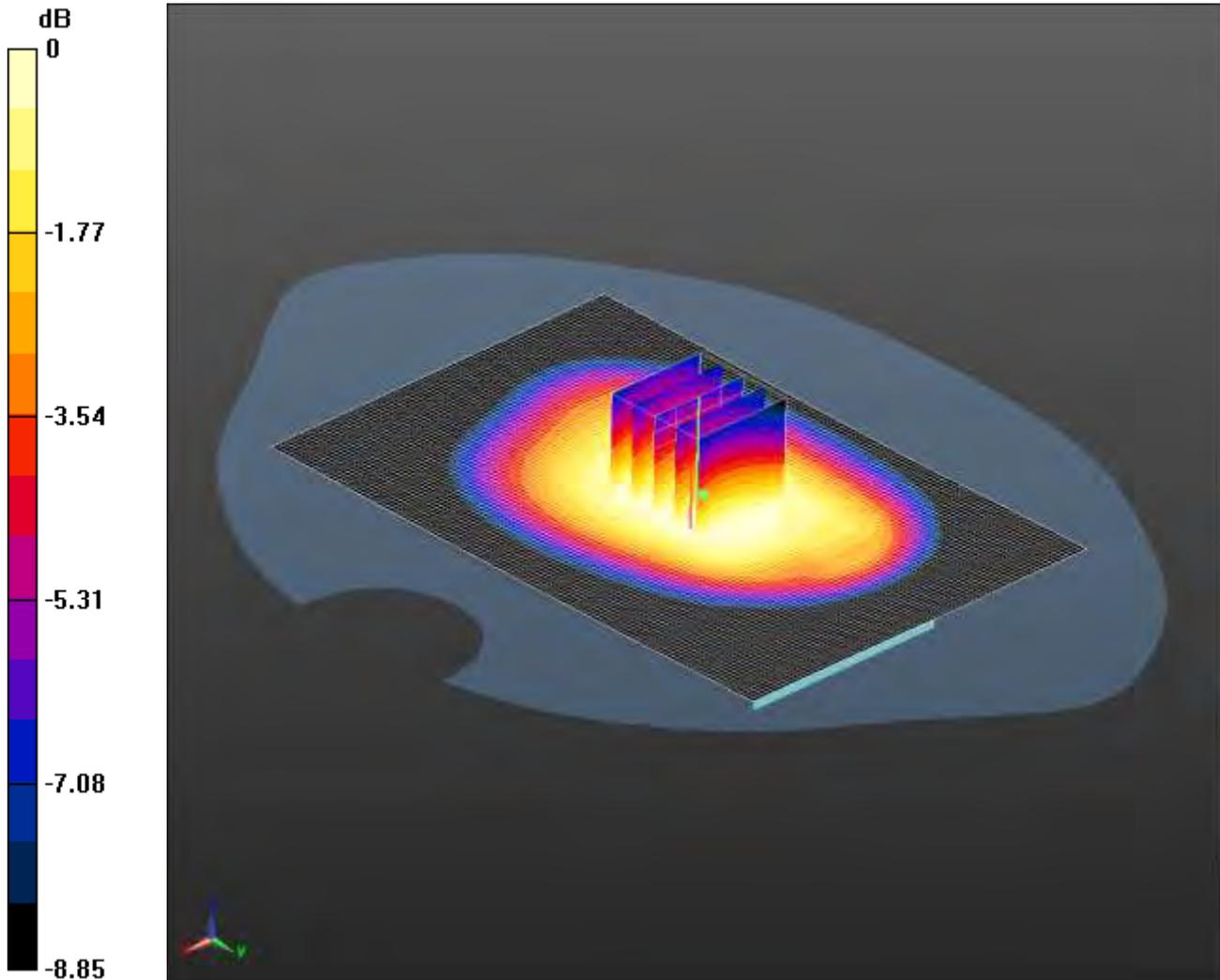
SAR(1 g) = 0.886 W/kg; SAR(10 g) = 0.689 W/kg

Maximum value of SAR (measured) = 0.926 W/kg

SCN/91945JD02/054: Back of EUT Facing Phantom UMTS FDD 5 CH4183

Date: 15/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.767 W/kg = -1.15 dBW/kg

Communication System: UMTS FDD ; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.965$ mho/m; $\epsilon_r = 53.415$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(5.99, 5.99, 5.99); Calibrated: 26/07/2012;

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM B; Type: QD000P40CC; Serial: TP:xxxx

- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Back of EUT Facing Phantom Middle/Area Scan (81x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.761 W/kg

Configuration/Back of EUT Facing Phantom Middle/Zoom Scan 2 2 (5x5x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm

Reference Value = 29.506 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 0.875 W/kg

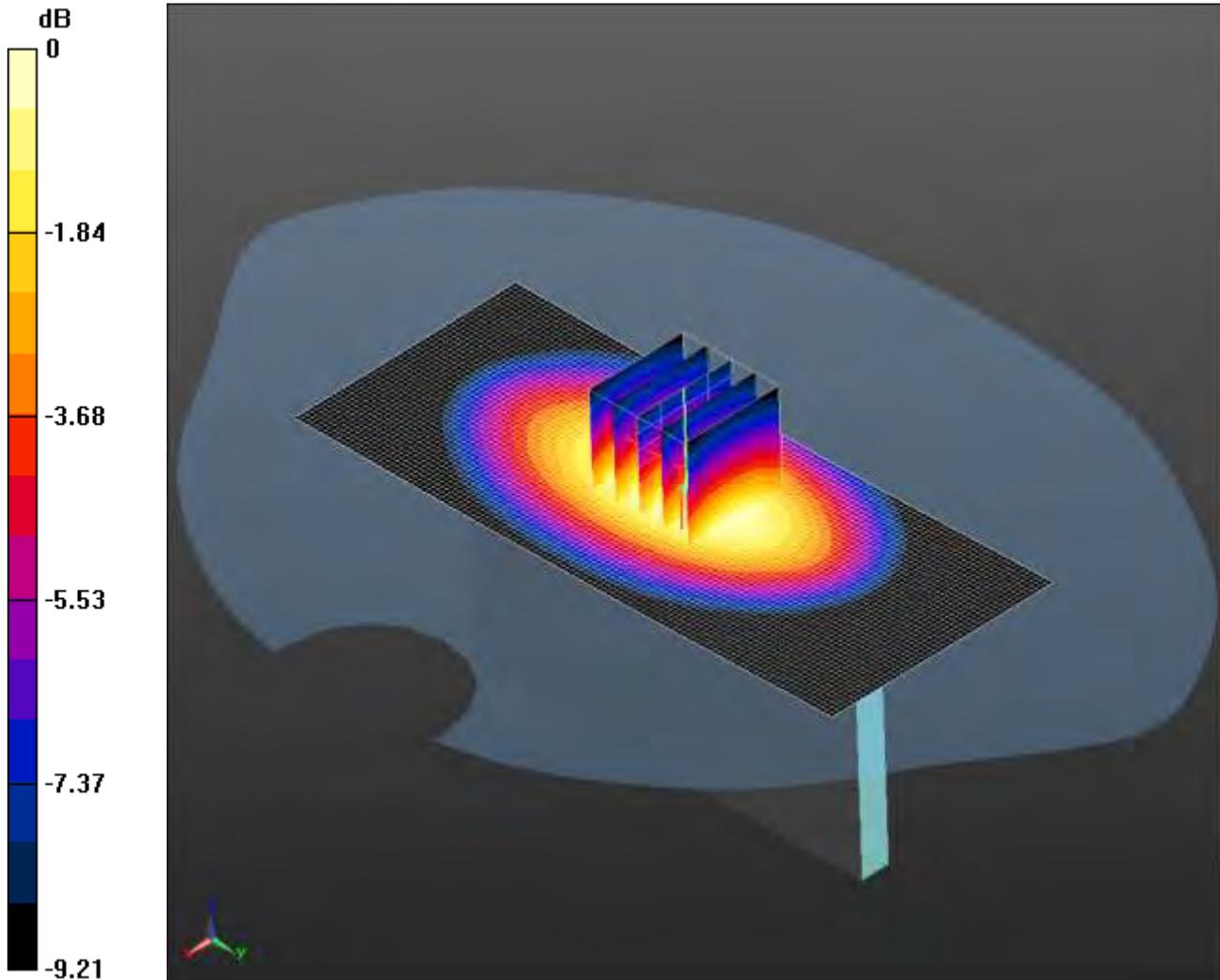
SAR(1 g) = 0.735 W/kg; SAR(10 g) = 0.574 W/kg

Maximum value of SAR (measured) = 0.767 W/kg

SCN/91945JD02/055: Left Hand Side of EUT Facing Phantom UMTS FDD 5 CH4183

Date: 15/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.875 W/kg = -0.58 dBW/kg

Communication System: UMTS FDD ; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.965$ mho/m; $\epsilon_r = 53.415$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(5.99, 5.99, 5.99); Calibrated: 26/07/2012;

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM B; Type: QD000P40CC; Serial: TP:xxxx

- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Left Hand Side of EUT Facing Phantom Middle/Area Scan (51x121x1): Interpolated grid:

$dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 0.881 W/kg

Configuration/Left Hand Side of EUT Facing Phantom Middle/Zoom Scan 2 (5x5x7)/Cube 0: Measurement

grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 31.047 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 1.07 W/kg

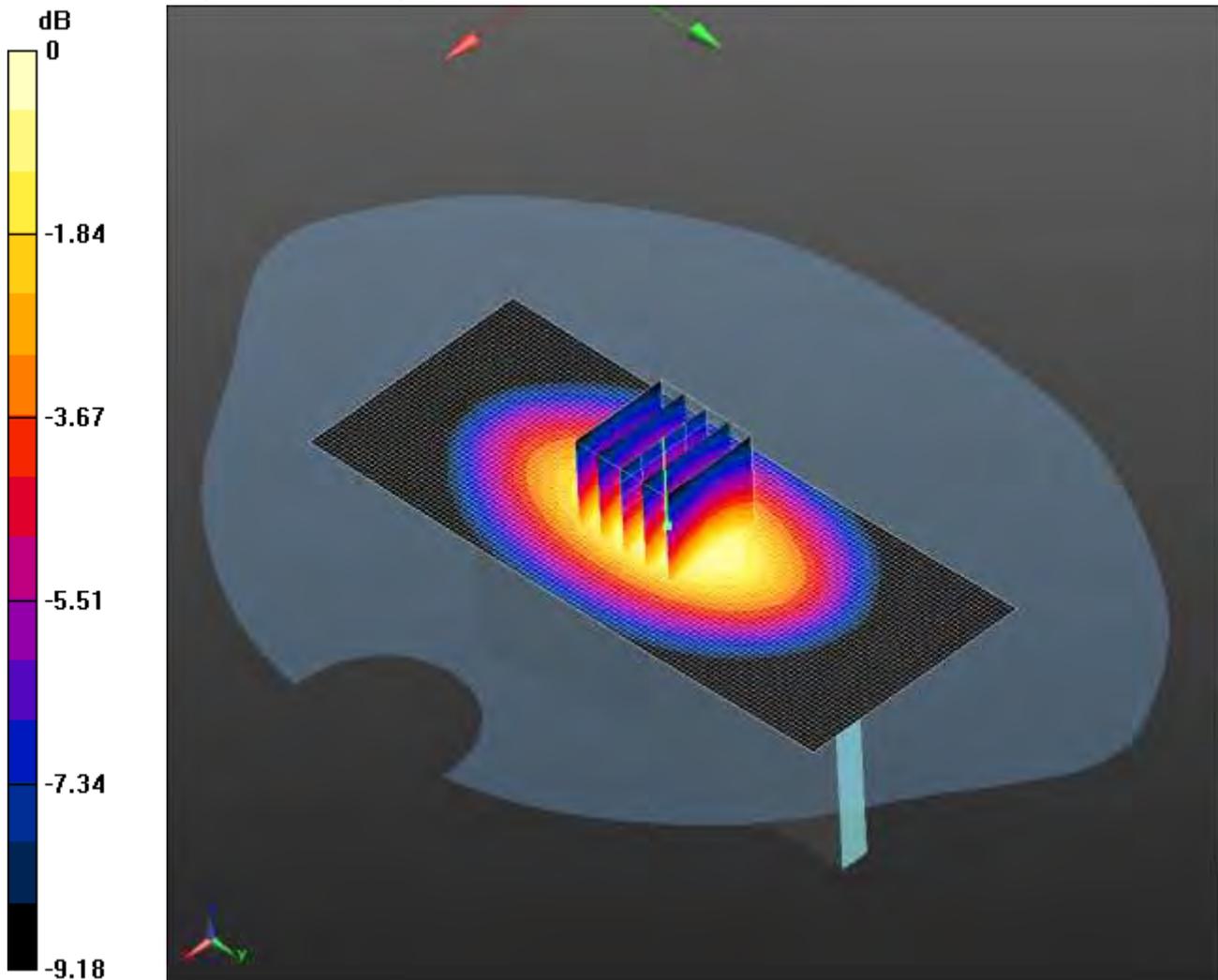
SAR(1 g) = 0.819 W/kg; SAR(10 g) = 0.572 W/kg

Maximum value of SAR (measured) = 0.875 W/kg

SCN/91945JD02/056: Left Hand Side of EUT Facing Phantom UMTS FDD 5 CH4132

Date: 22/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.948 W/kg = -0.23 dBW/kg

Communication System: UMTS FDD ; Frequency: 826.4 MHz; Duty Cycle: 1:1

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 826.4$ MHz; $\sigma = 1.041$ mho/m; $\epsilon_r = 54.179$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(5.99, 5.99, 5.99); Calibrated: 26/07/2012;

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM B (Site 58); Type: Twin Phantom; Serial: TP:1020

- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Left Hand Side of EUT Facing Phantom Low/Area Scan (51x121x1): Interpolated grid:

$dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 0.907 W/kg

Configuration/Left Hand Side of EUT Facing Phantom Low/Zoom Scan 2 (5x5x7)/Cube 0: Measurement

grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 31.012 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 1.16 W/kg

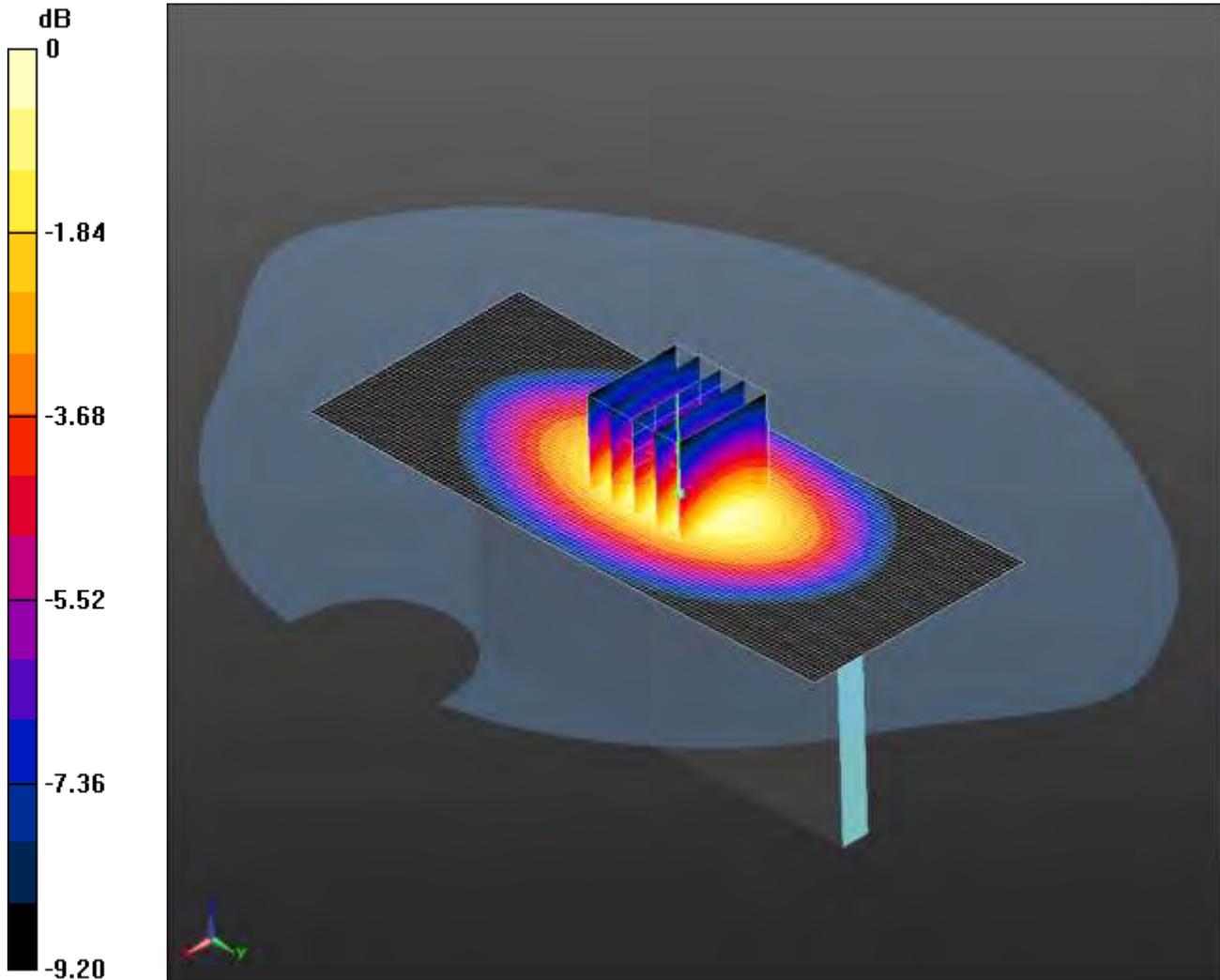
SAR(1 g) = 0.882 W/kg; SAR(10 g) = 0.616 W/kg

Maximum value of SAR (measured) = 0.948 W/kg

SCN/91945JD02/057: Left Hand Side of EUT Facing Phantom UMTS FDD 5 CH4233

Date: 22/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.849 W/kg = -0.71 dBW/kg

Communication System: UMTS FDD ; Frequency: 846.6 MHz; Duty Cycle: 1:1

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 846.6$ MHz; $\sigma = 1.057$ mho/m; $\epsilon_r = 54.133$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(5.99, 5.99, 5.99); Calibrated: 26/07/2012;

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM B (Site 58); Type: Twin Phantom; Serial: TP:1020

- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Left Hand Side of EUT Facing Phantom High/Area Scan (51x121x1): Interpolated grid:

$dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 0.838 W/kg

Configuration/Left Hand Side of EUT Facing Phantom High/Zoom Scan 2 (5x5x7)/Cube 0: Measurement

grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 29.276 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 1.04 W/kg

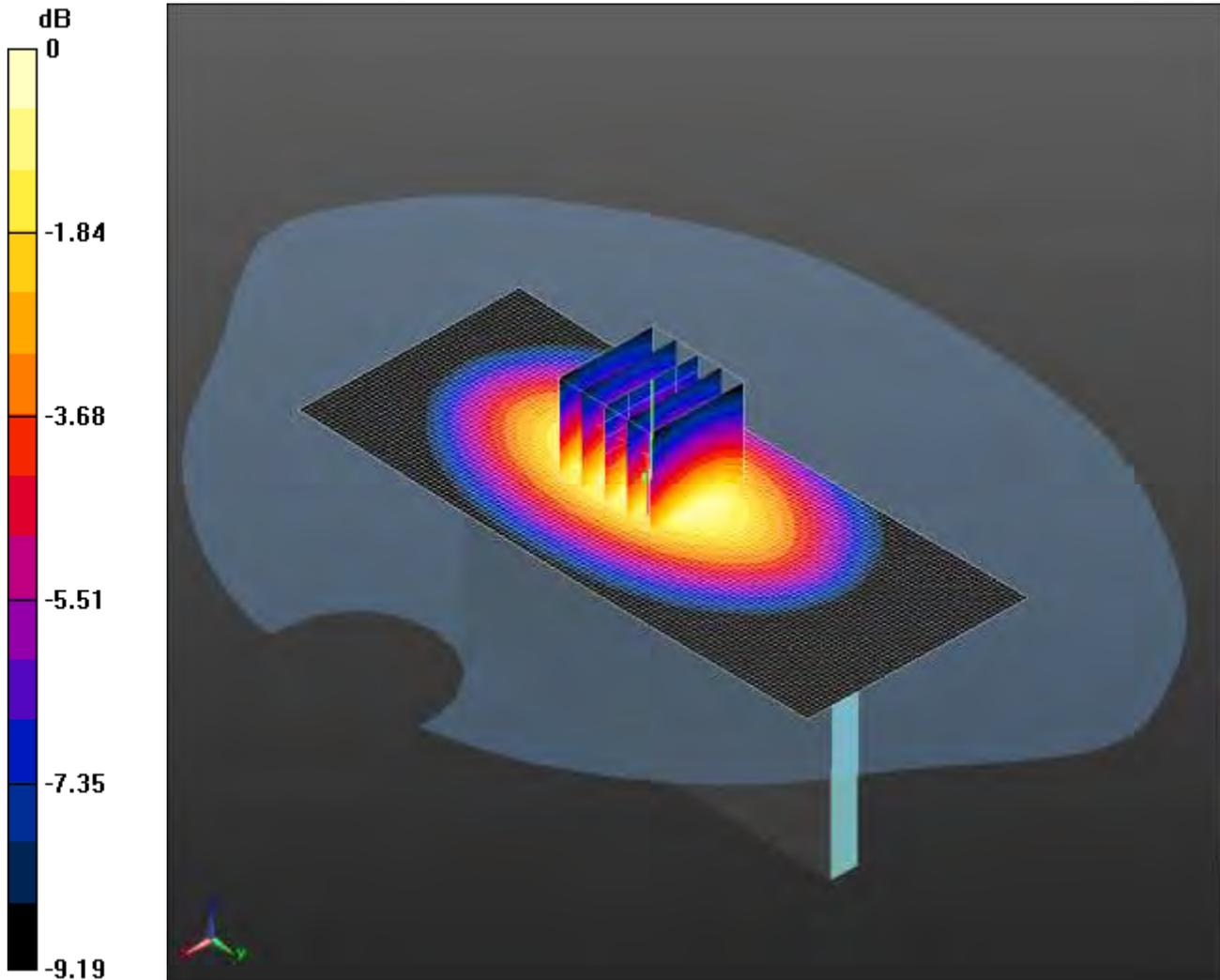
SAR(1 g) = 0.791 W/kg; SAR(10 g) = 0.554 W/kg

Maximum value of SAR (measured) = 0.849 W/kg

SCN/91945JD02/058: Right Hand Side of EUT Facing Phantom UMTS FDD 5 CH4183

Date: 15/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.766 W/kg = -1.16 dBW/kg

Communication System: UMTS FDD ; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.965$ mho/m; $\epsilon_r = 53.415$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(5.99, 5.99, 5.99); Calibrated: 26/07/2012;

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM B; Type: QD000P40CC; Serial: TP:xxxx

- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Right Hand Side of EUT Facing Phantom Middle/Area Scan (51x121x1): Interpolated grid:

$dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 0.735 W/kg

Configuration/Right Hand Side of EUT Facing Phantom Middle/Zoom Scan 2 (5x5x7)/Cube 0: Measurement

grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 28.055 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.937 W/kg

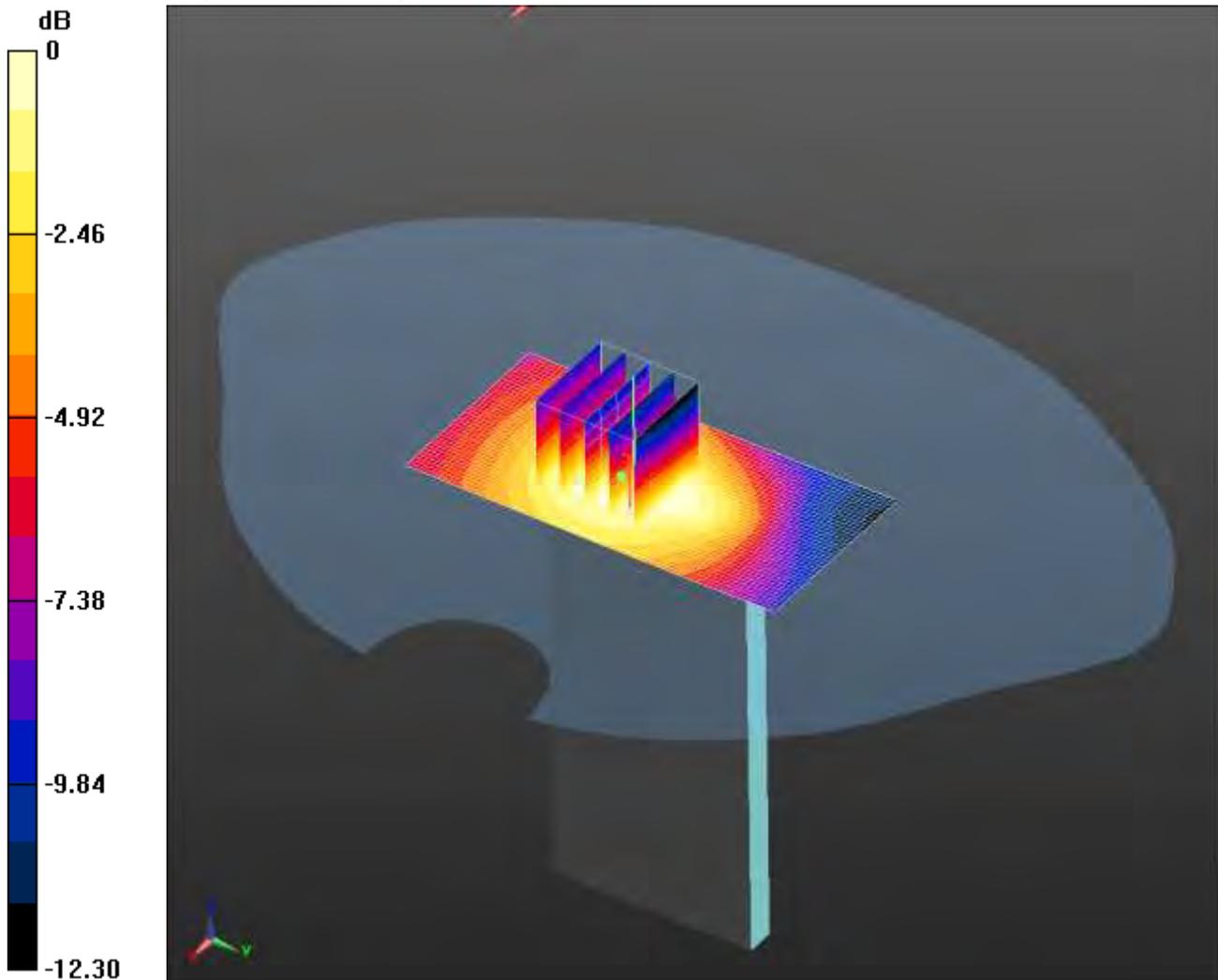
SAR(1 g) = 0.710 W/kg; SAR(10 g) = 0.497 W/kg

Maximum value of SAR (measured) = 0.766 W/kg

SCN/91945JD02/059: Bottom of EUT Facing Phantom UMTS FDD 5 CH4183

Date: 18/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.103 W/kg = -9.87 dBW/kg

Communication System: UMTS FDD ; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.994$ mho/m; $\epsilon_r = 53.967$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(5.99, 5.99, 5.99); Calibrated: 26/07/2012;

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM B; Type: QD000P40CC; Serial: TP:xxxx

- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Bottom of EUT Facing Phantom Middle/Area Scan (41x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.106 W/kg

Configuration/Bottom of EUT Facing Phantom Middle/Zoom Scan 2 (5x5x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.549 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.171 W/kg

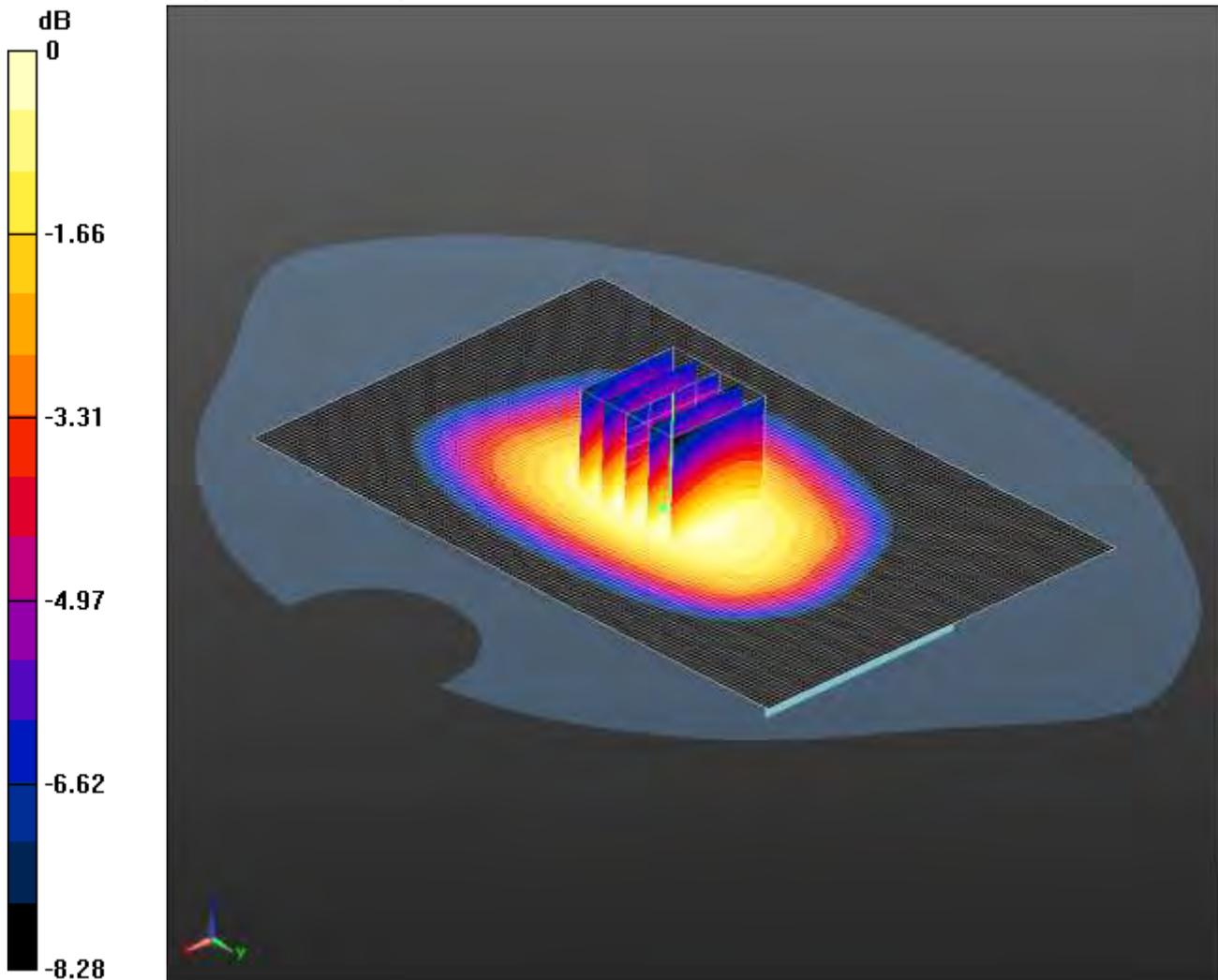
SAR(1 g) = 0.098 W/kg; SAR(10 g) = 0.063 W/kg

Maximum value of SAR (measured) = 0.103 W/kg

SCN/91945JD02/060: Front of EUT Facing Phantom UMTS FDD 5 CH4132

Date: 18/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 1.03 W/kg = 0.13 dBW/kg

Communication System: UMTS FDD ; Frequency: 826.4 MHz; Duty Cycle: 1:1

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 826.4$ MHz; $\sigma = 0.985$ mho/m; $\epsilon_r = 53.985$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(5.99, 5.99, 5.99); Calibrated: 26/07/2012;

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM B; Type: QD000P40CC; Serial: TP:xxxx

- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Front of EUT Facing Phantom - Low/Area Scan (81x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.01 W/kg

Configuration/Front of EUT Facing Phantom - Low/Zoom Scan 2 2 (5x5x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm

Reference Value = 33.818 V/m; Power Drift = -0.16 dB

Peak SAR (extrapolated) = 1.17 W/kg

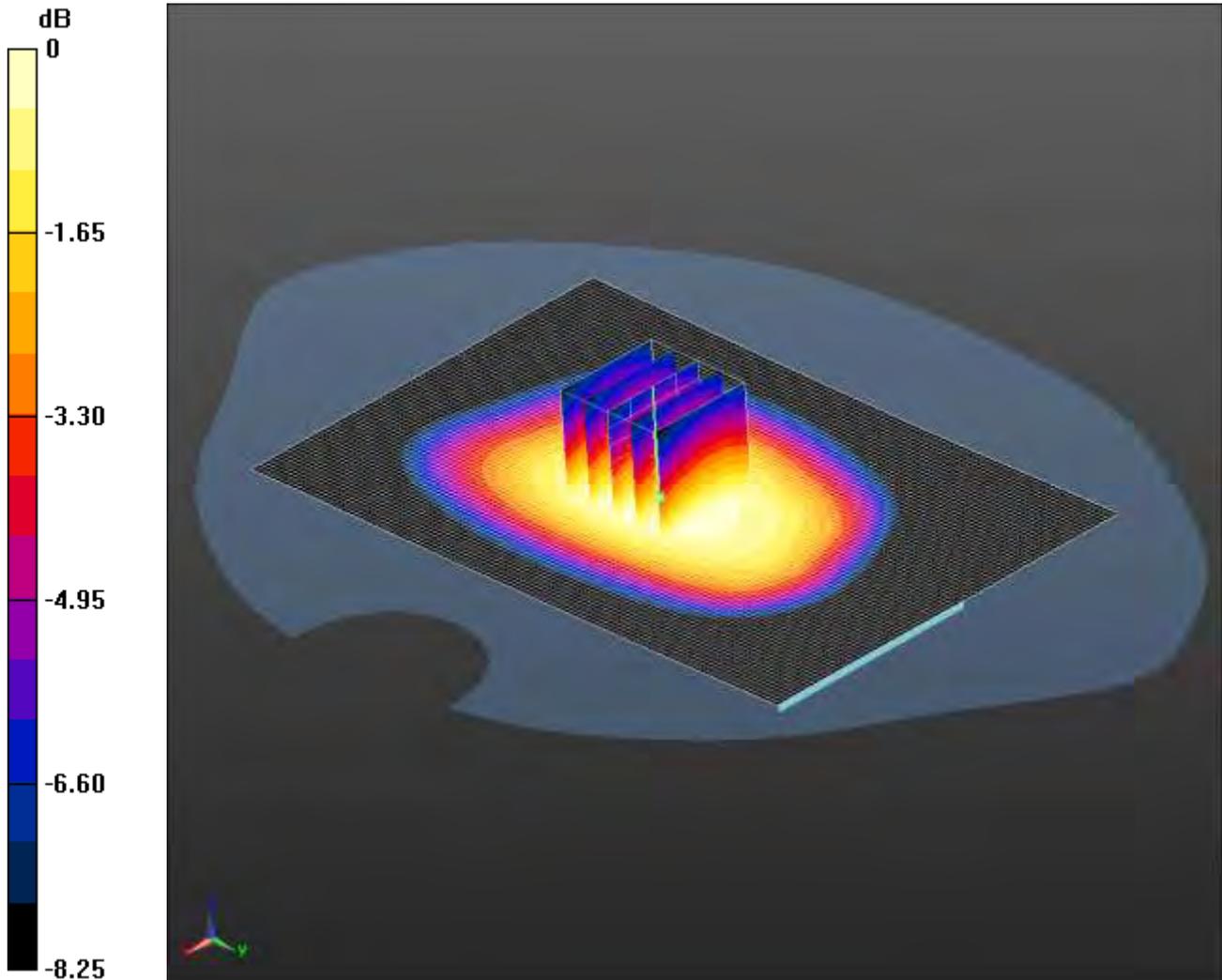
SAR(1 g) = 0.982 W/kg; SAR(10 g) = 0.762 W/kg

Maximum value of SAR (measured) = 1.03 W/kg

SCN/91945JD02/061: Front of EUT Facing Phantom UMTS FDD 5 CH4233

Date: 18/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.964 W/kg = -0.16 dBW/kg

Communication System: UMTS FDD ; Frequency: 846.6 MHz; Duty Cycle: 1:1

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 846.6$ MHz; $\sigma = 1.002$ mho/m; $\epsilon_r = 53.948$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(5.99, 5.99, 5.99); Calibrated: 26/07/2012;

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM B; Type: QD000P40CC; Serial: TP:xxxx

- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Front of EUT Facing Phantom - High/Area Scan (81x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.955 W/kg

Configuration/Front of EUT Facing Phantom - High/Zoom Scan 2 (5x5x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm

Reference Value = 32.671 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 1.09 W/kg

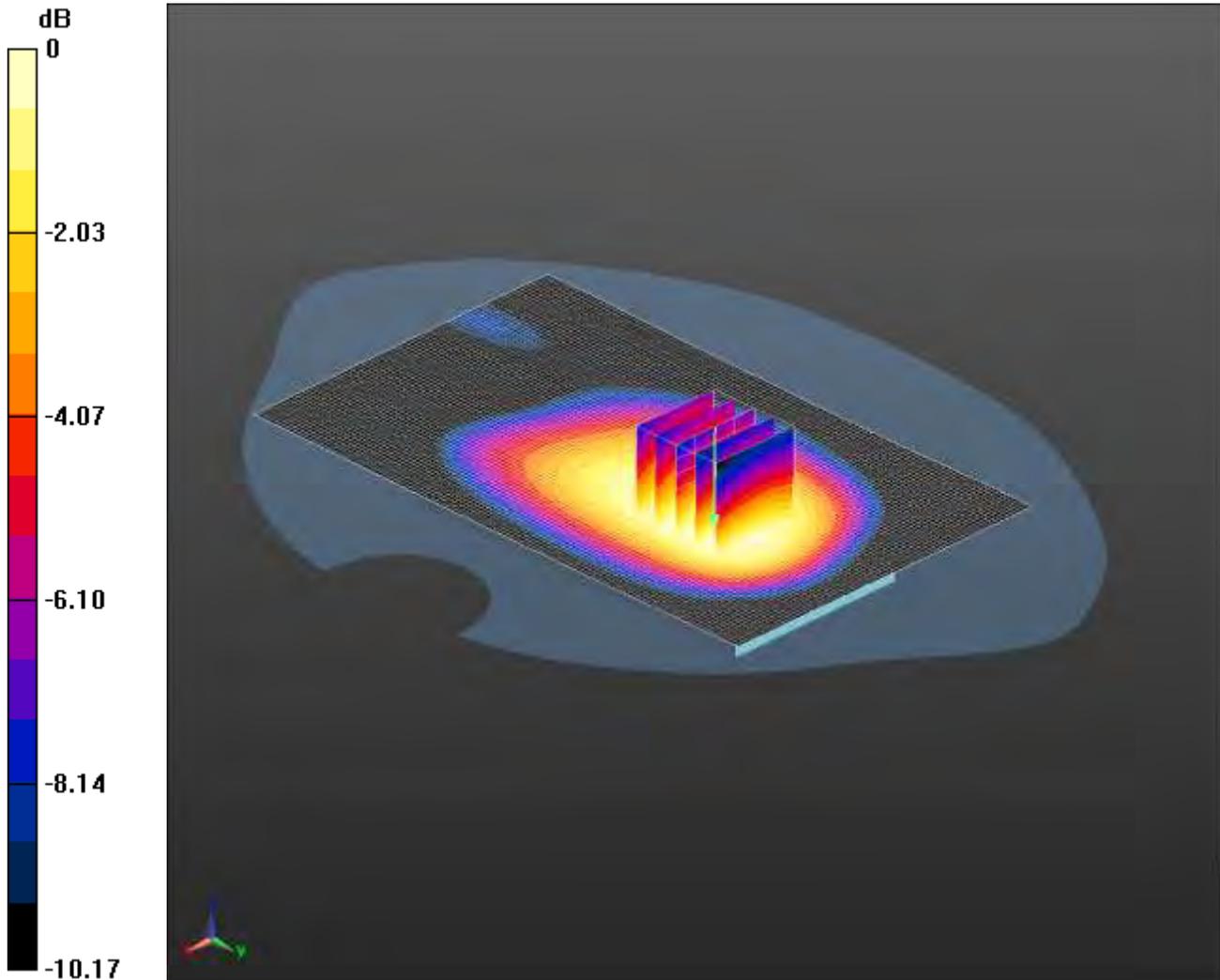
SAR(1 g) = 0.918 W/kg; SAR(10 g) = 0.711 W/kg

Maximum value of SAR (measured) = 0.964 W/kg

SCN/91945JD02/062: Front of EUT Facing Phantom with Antenna Extended UMTS FDD 5 CH4132

Date: 22/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 1.09 W/kg = 0.37 dBW/kg

Communication System: UMTS FDD ; Frequency: 826.4 MHz; Duty Cycle: 1:1

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 826.4$ MHz; $\sigma = 1.041$ mho/m; $\epsilon_r = 54.179$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(5.99, 5.99, 5.99); Calibrated: 26/07/2012;

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM B (Site 58); Type: Twin Phantom; Serial: TP:1020

- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Front of EUT Facing Phantom with Extended Antenna - Low 2/Area Scan (81x131x1):

Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 1.09 W/kg

Configuration/Front of EUT Facing Phantom with Extended Antenna - Low 2/Zoom Scan 2 (5x5x7)/Cube

0: Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 29.818 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 1.30 W/kg

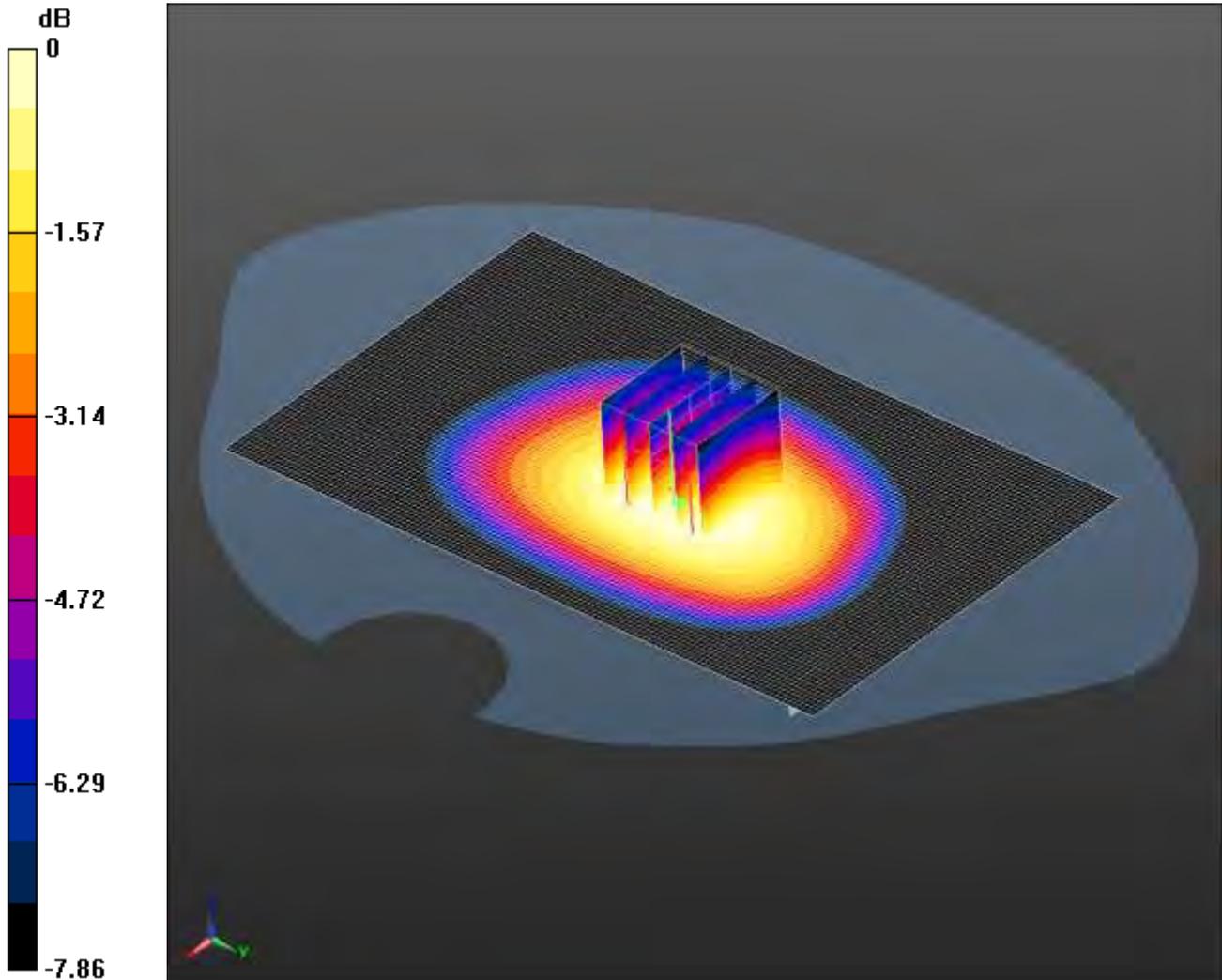
SAR(1 g) = 1.04 W/kg; SAR(10 g) = 0.792 W/kg

Maximum value of SAR (measured) = 1.09 W/kg

SCN/91945JD02/063: Front of EUT Facing Phantom UMTS FDD 5 CH4132

Date: 18/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.821 W/kg = -0.86 dBW/kg

Communication System: UMTS FDD ; Frequency: 826.4 MHz; Duty Cycle: 1:1

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 826.4$ MHz; $\sigma = 0.985$ mho/m; $\epsilon_r = 53.985$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(5.99, 5.99, 5.99); Calibrated: 26/07/2012;

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM B; Type: QD000P40CC; Serial: TP:xxxx

- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Front of EUT Facing Phantom - Low/Area Scan (81x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.829 W/kg

Configuration/Front of EUT Facing Phantom - Low/Zoom Scan 2 2 (5x5x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm

Reference Value = 29.641 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.939 W/kg

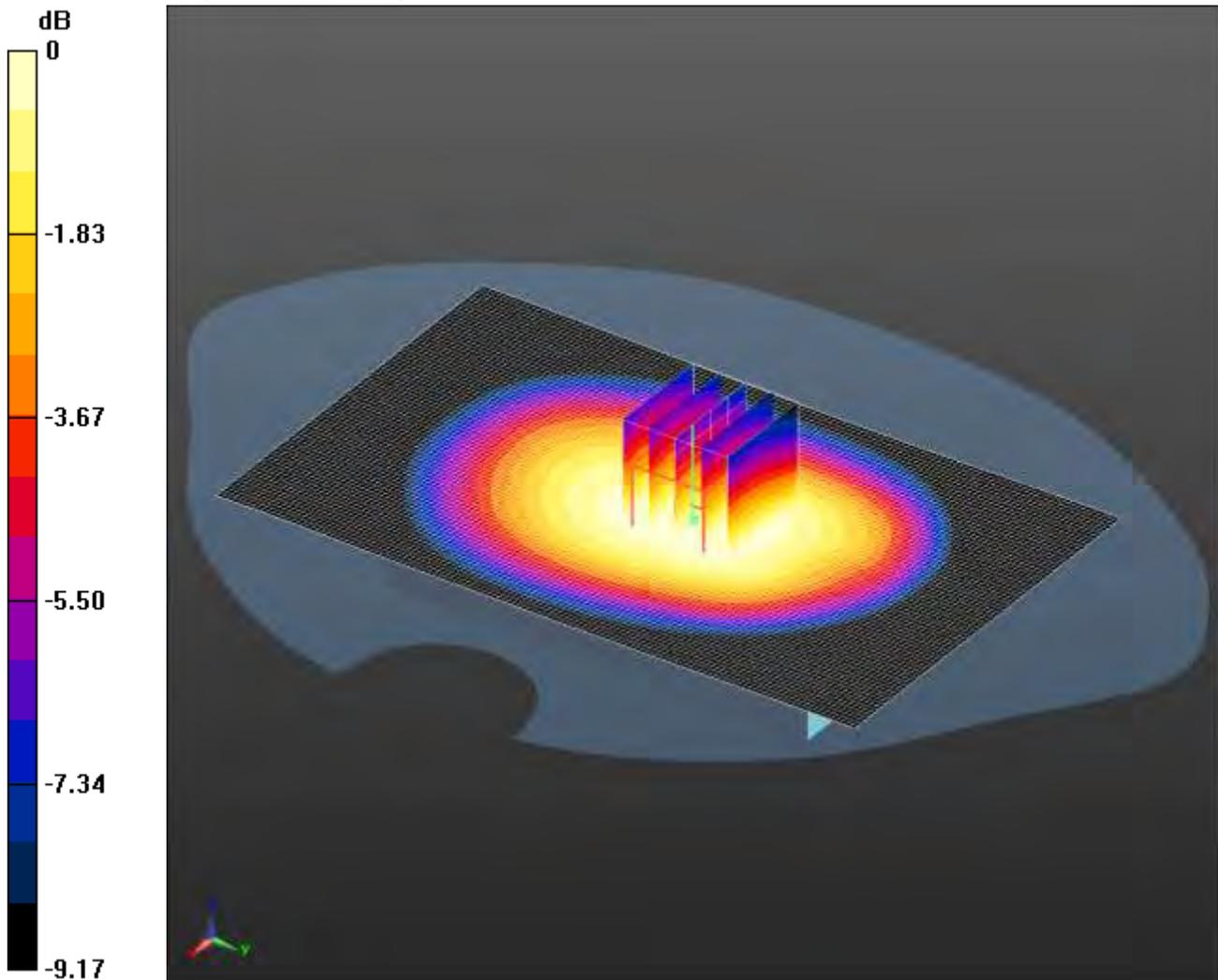
SAR(1 g) = 0.787 W/kg; SAR(10 g) = 0.607 W/kg

Maximum value of SAR (measured) = 0.821 W/kg

SCN/91945JD02/064: Back of EUT Facing Phantom UMTS FDD 5 CH4132

Date: 18/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.667 W/kg = -1.76 dBW/kg

Communication System: UMTS FDD ; Frequency: 826.4 MHz; Duty Cycle: 1:1

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 826.4$ MHz; $\sigma = 0.985$ mho/m; $\epsilon_r = 53.985$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(5.99, 5.99, 5.99); Calibrated: 26/07/2012;

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM B; Type: QD000P40CC; Serial: TP:xxxx

- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Back of EUT Facing Phantom - Low/Area Scan (81x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.668 W/kg

Configuration/Back of EUT Facing Phantom - Low/Zoom Scan 2 2 (5x5x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm

Reference Value = 26.841 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.775 W/kg

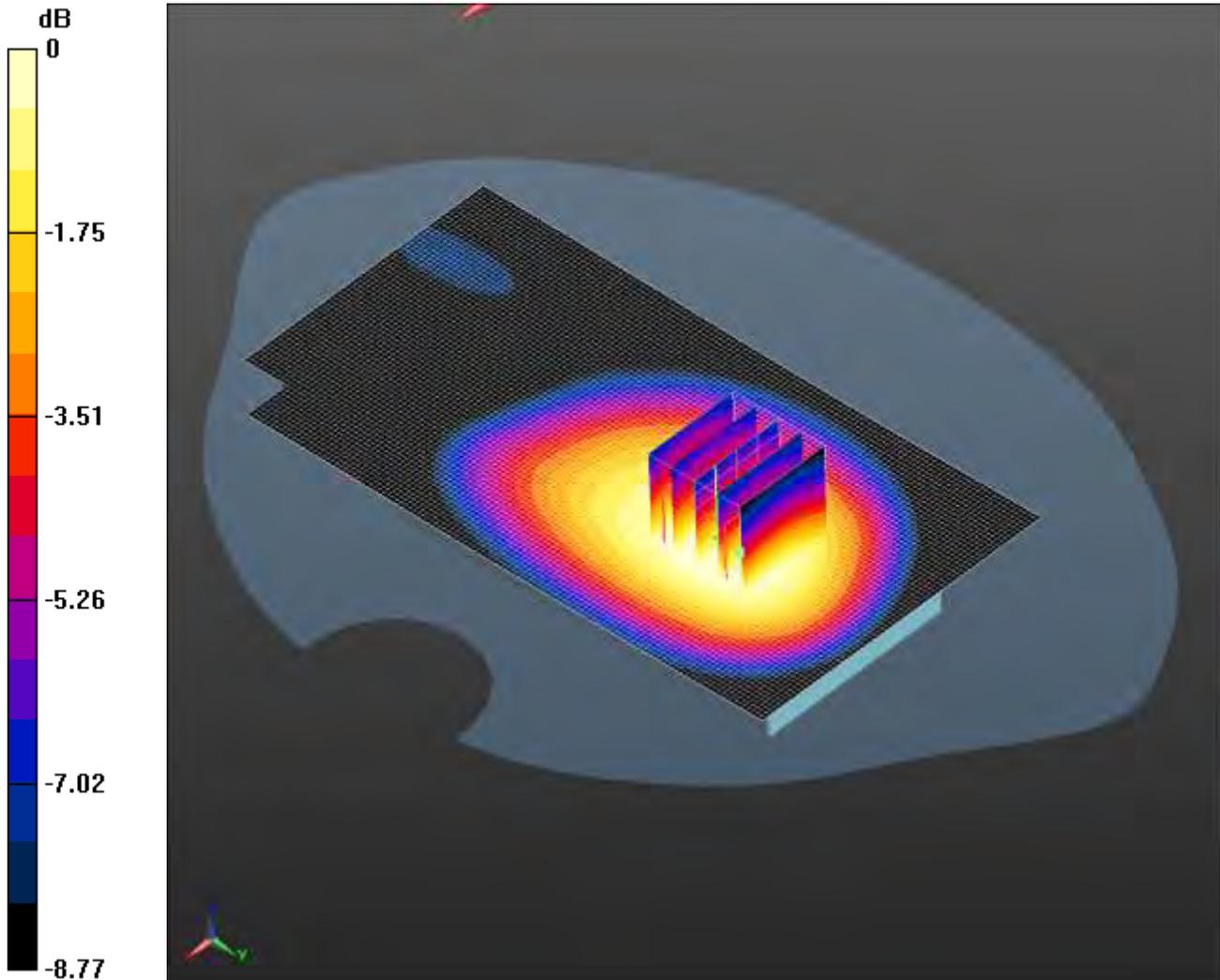
SAR(1 g) = 0.639 W/kg; SAR(10 g) = 0.492 W/kg

Maximum value of SAR (measured) = 0.667 W/kg

SCN/91945JD02/065: Front of EUT Facing Phantom with Extended Antenna UMTS FDD 5 CH4132

Date: 22/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.847 W/kg = -0.72 dBW/kg

Communication System: UMTS FDD ; Frequency: 826.4 MHz; Duty Cycle: 1:1

Medium: 900 MHz MSL Medium parameters used (interpolated): $f = 826.4$ MHz; $\sigma = 1.041$ mho/m; $\epsilon_r = 54.179$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(5.99, 5.99, 5.99); Calibrated: 26/07/2012;

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM B (Site 58); Type: Twin Phantom; Serial: TP:1020

- ; SEMCAD X Version 14.6.7 (6848)

Configuration/Front of EUT Facing Phantom with Extended Antenna - Low/Area Scan (71x131x1):

Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 0.850 W/kg

Configuration/Front of EUT Facing Phantom with Extended Antenna - Low/Zoom Scan 2 2 2 (5x5x7)/Cube

0: Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 26.205 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.980 W/kg

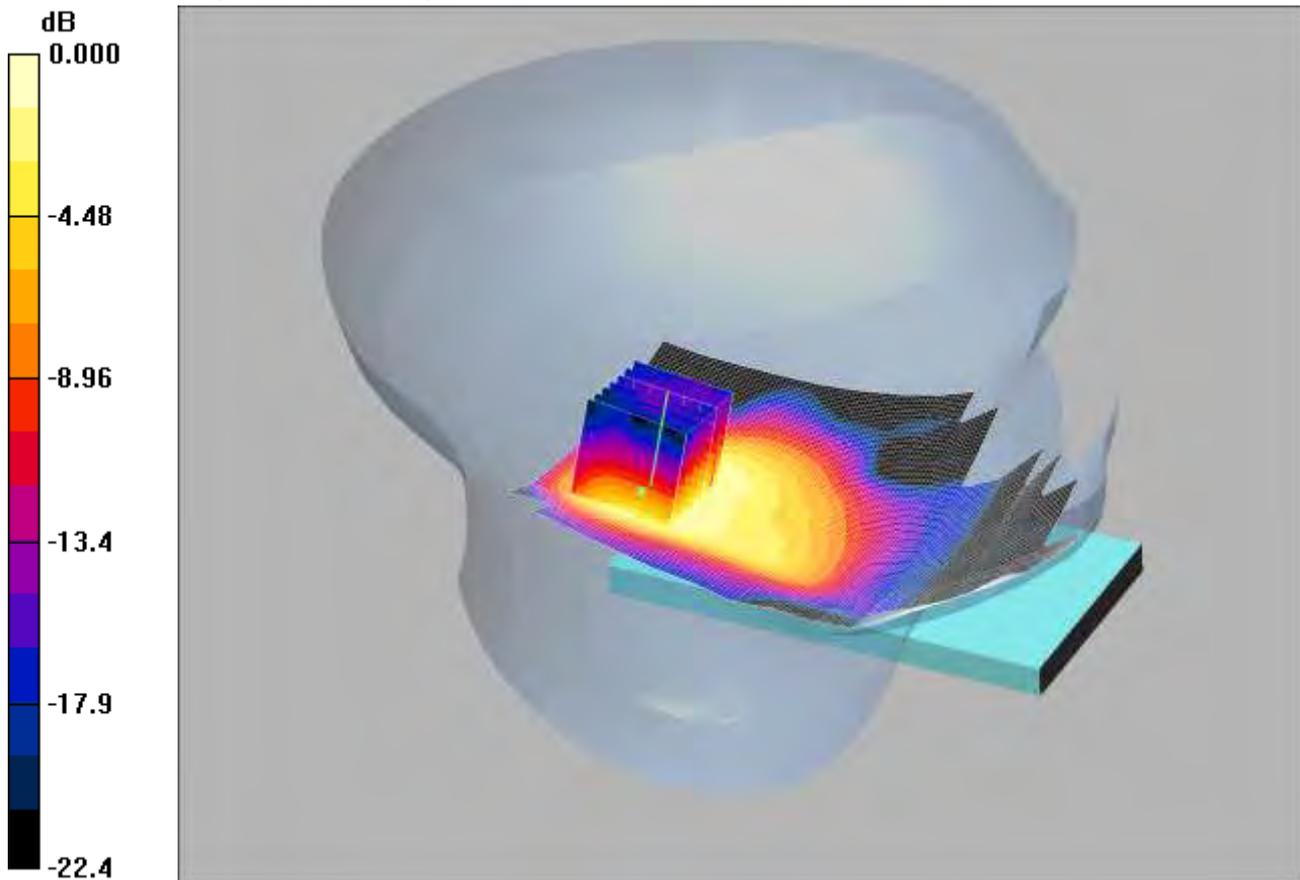
SAR(1 g) = 0.803 W/kg; SAR(10 g) = 0.610 W/kg

Maximum value of SAR (measured) = 0.847 W/kg

SCN/91945JD02/066: Touch Left WiFi 802.11b 1Mbps CH6

Date: 01/03/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.284mW/g

Communication System: WLAN; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: 2450 MHz HSL Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 1.78$ mho/m; $\epsilon_r = 38.9$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(6.89, 6.89, 6.89); Calibrated: 24/09/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Touch Left- Middle/Area Scan (91x141x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.285 mW/g

Touch Left- Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 11.3 V/m; Power Drift = -0.092 dB

Peak SAR (extrapolated) = 0.481 W/kg

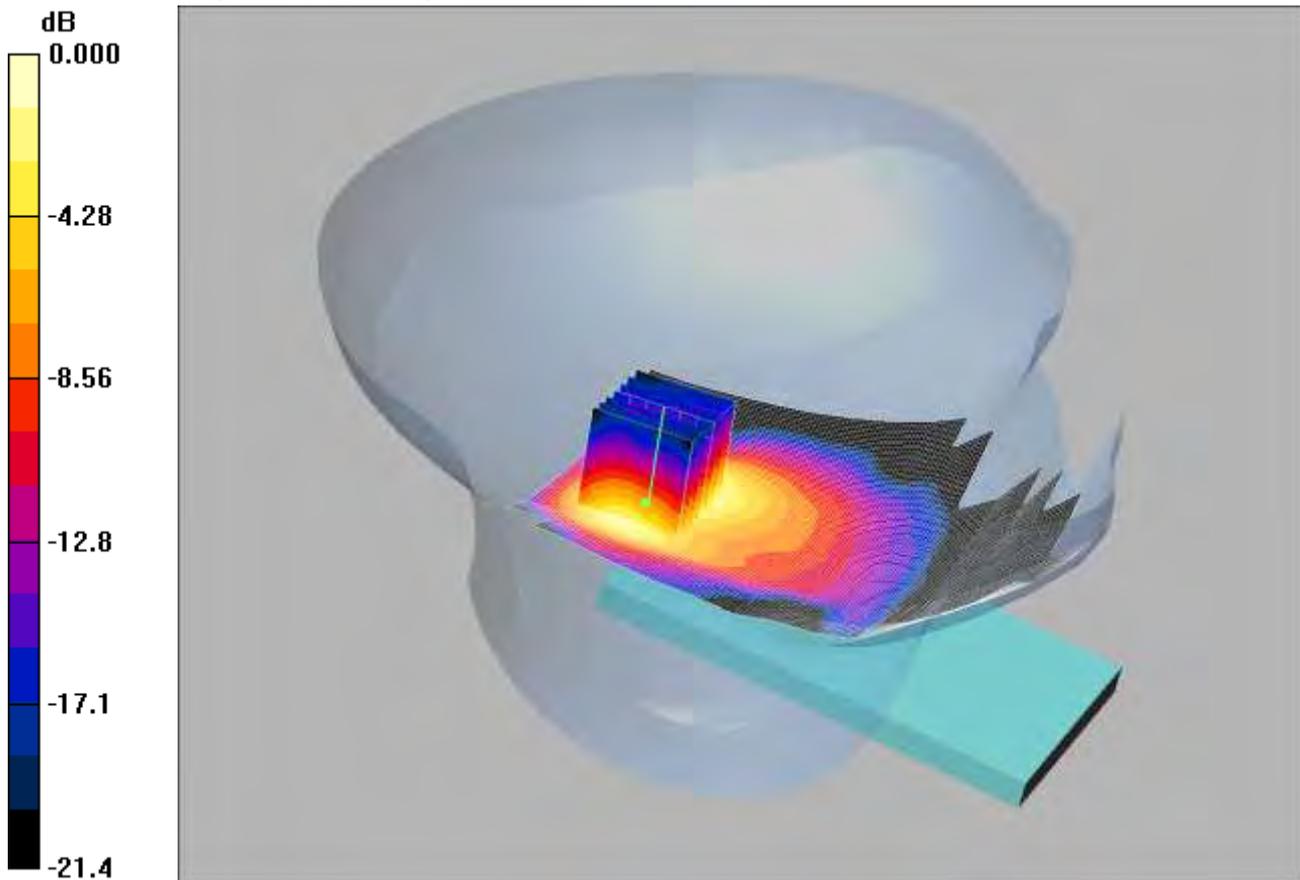
SAR(1 g) = 0.248 mW/g; SAR(10 g) = 0.125 mW/g

Maximum value of SAR (measured) = 0.284 mW/g

SCN/91945JD02/067: Tilt Left WiFi 802.11b 1Mbps CH6

Date: 01/03/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.247mW/g

Communication System: WLAN; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: 2450 MHz HSL Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 1.78$ mho/m; $\epsilon_r = 38.9$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(6.89, 6.89, 6.89); Calibrated: 24/09/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Tilt Left- Middle/Area Scan (91x141x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.244 mW/g

Tilt Left- Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.8 V/m; Power Drift = 0.070 dB

Peak SAR (extrapolated) = 0.422 W/kg

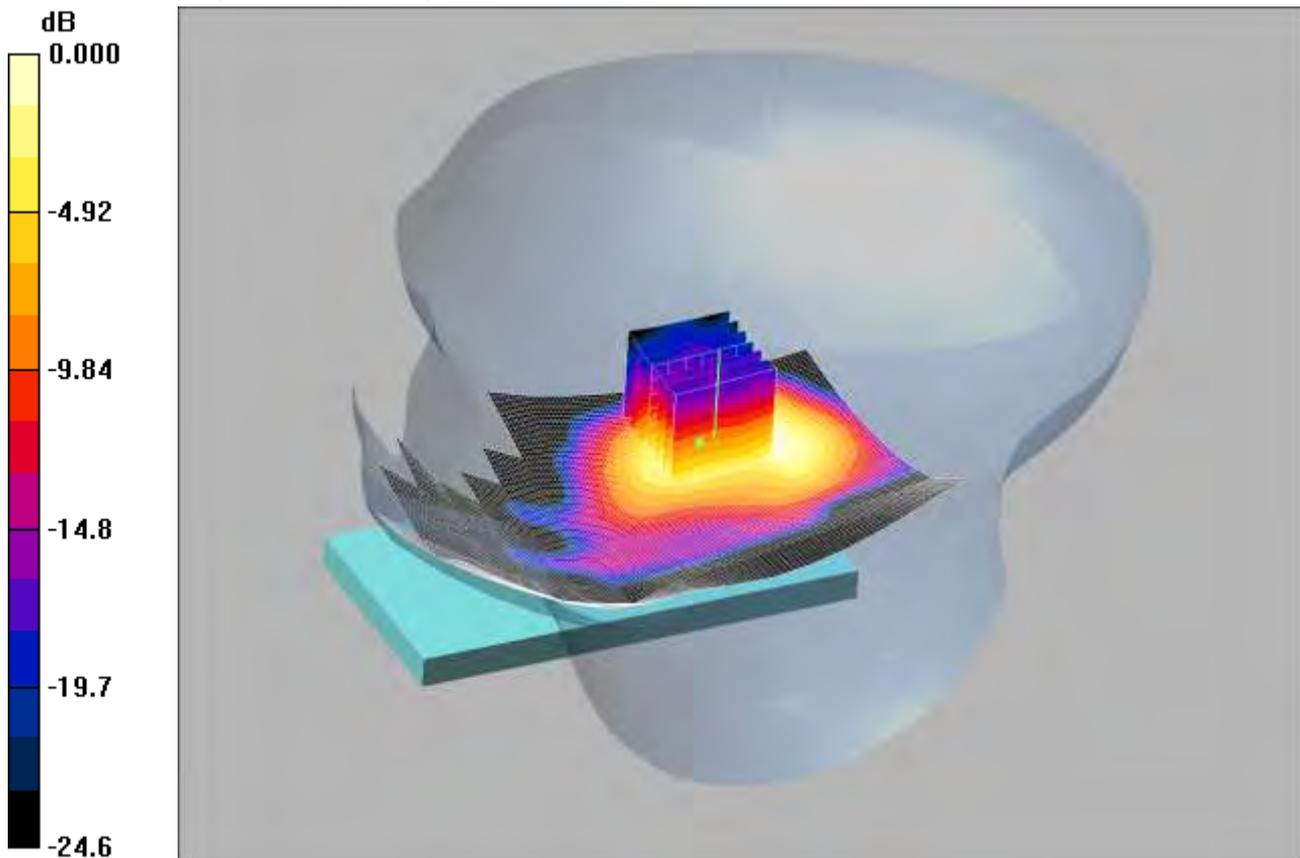
SAR(1 g) = 0.217 mW/g; SAR(10 g) = 0.107 mW/g

Maximum value of SAR (measured) = 0.247 mW/g

SCN/91945JD02/068: Touch Right WiFi 802.11b 1Mbps CH6

Date: 01/03/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.380mW/g

Communication System: WLAN; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: 2450 MHz HSL Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 1.78$ mho/m; $\epsilon_r = 38.9$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(6.89, 6.89, 6.89); Calibrated: 24/09/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Touch Right- Middle/Area Scan (91x141x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.377 mW/g

Touch Right- Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.21 V/m; Power Drift = 0.028 dB

Peak SAR (extrapolated) = 0.743 W/kg

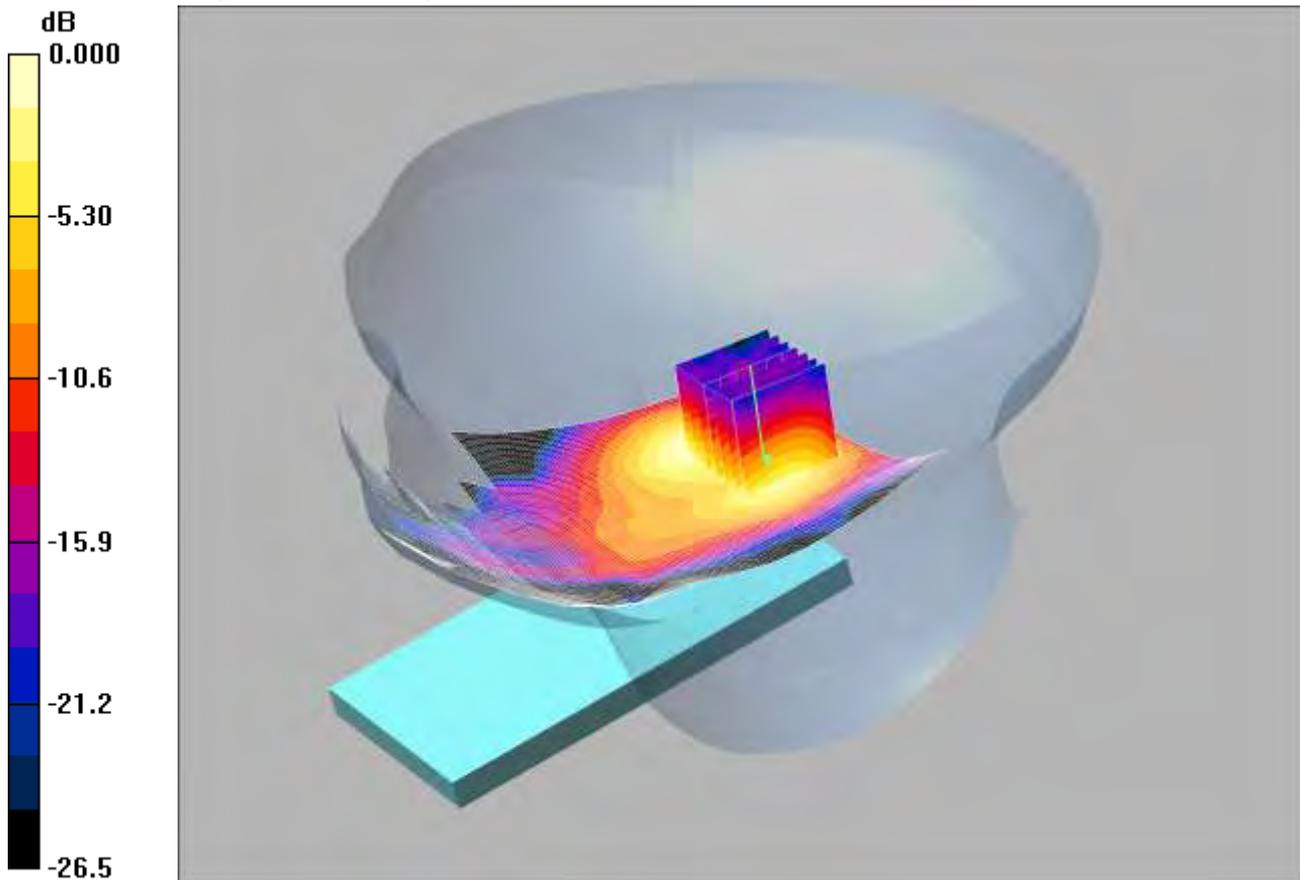
SAR(1 g) = 0.334 mW/g; SAR(10 g) = 0.161 mW/g

Maximum value of SAR (measured) = 0.380 mW/g

SCN/91945JD02/069: Tilt Right WiFi 802.11b 1Mbps CH6

Date: 01/03/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.314mW/g

Communication System: WLAN; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: 2450 MHz HSL Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 1.78$ mho/m; $\epsilon_r = 38.9$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(6.89, 6.89, 6.89); Calibrated: 24/09/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Tilt Right- Middle/Area Scan (91x141x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.288 mW/g

Tilt Right- Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.8 V/m; Power Drift = -0.103 dB

Peak SAR (extrapolated) = 0.558 W/kg

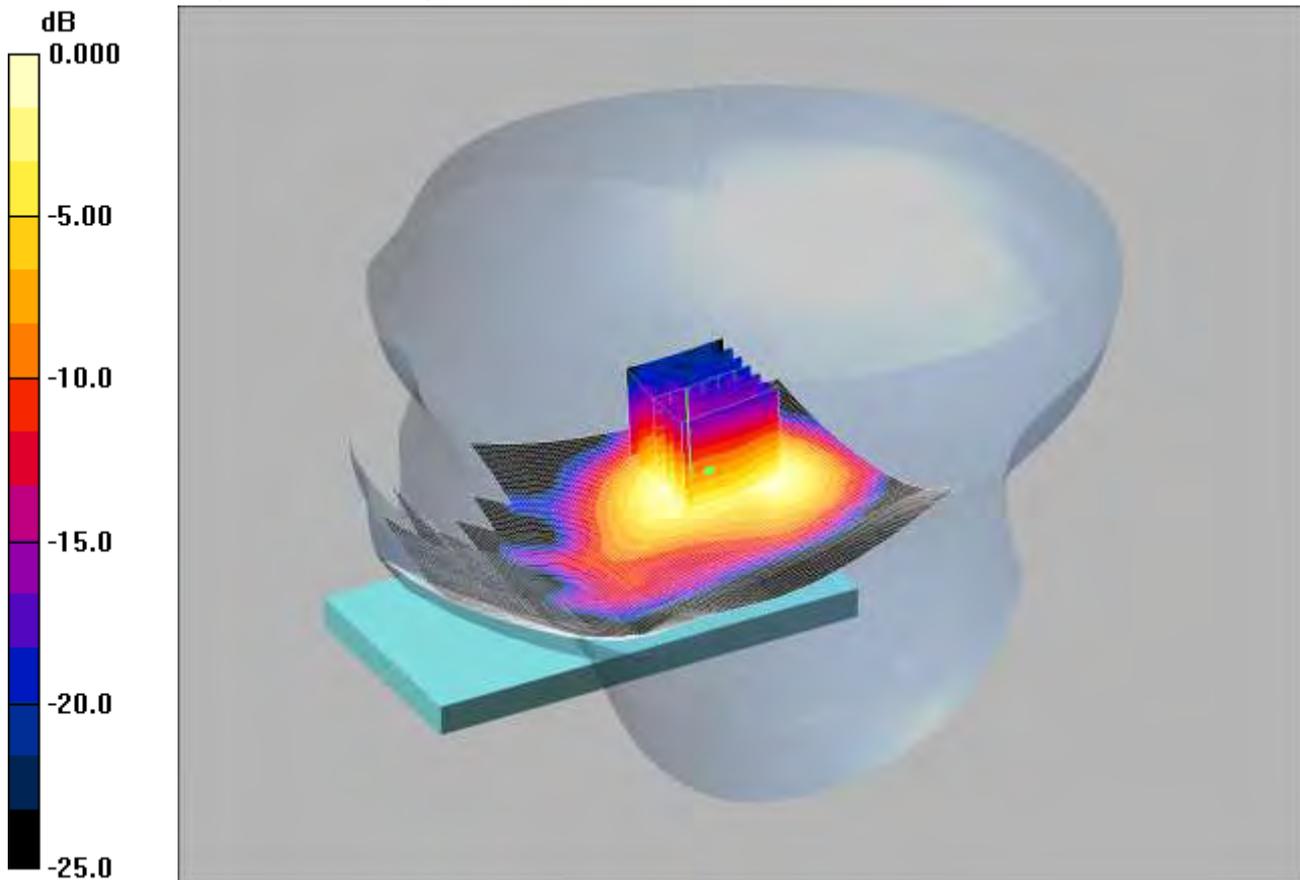
SAR(1 g) = 0.268 mW/g; SAR(10 g) = 0.123 mW/g

Maximum value of SAR (measured) = 0.314 mW/g

SCN/91945JD02/070: Touch Right WiFi 802.11b 1Mbps CH1

Date: 01/03/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.419mW/g

Communication System: WLAN; Frequency: 2412 MHz; Duty Cycle: 1:1

Medium: 2450 MHz HSL Medium parameters used (interpolated): $f = 2412$ MHz; $\sigma = 1.75$ mho/m; $\epsilon_r = 39$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(6.89, 6.89, 6.89); Calibrated: 24/09/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Touch Right- Low/Area Scan (91x141x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.432 mW/g

Touch Right- Low/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.73 V/m; Power Drift = 0.078 dB

Peak SAR (extrapolated) = 0.792 W/kg

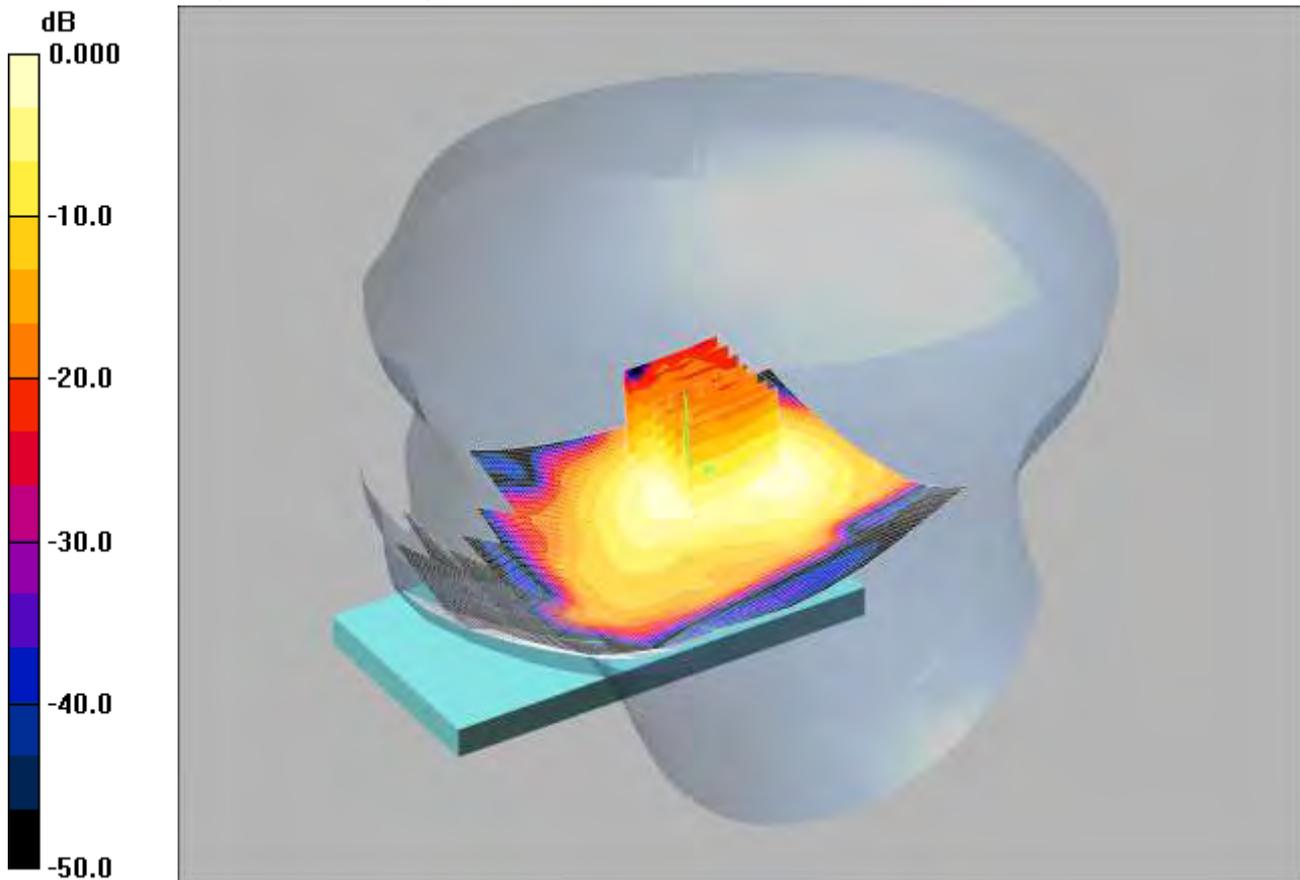
SAR(1 g) = 0.372 mW/g; SAR(10 g) = 0.184 mW/g

Maximum value of SAR (measured) = 0.419 mW/g

SCN/91945JD02/071: Touch Right WiFi 802.11b 1Mbps CH11

Date: 01/03/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.364mW/g

Communication System: WLAN; Frequency: 2462 MHz; Duty Cycle: 1:1

Medium: 2450 MHz HSL Medium parameters used (interpolated): $f = 2462$ MHz; $\sigma = 1.81$ mho/m; $\epsilon_r = 38.8$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(6.89, 6.89, 6.89); Calibrated: 24/09/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Touch Right- High/Area Scan (91x141x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.378 mW/g

Touch Right- High/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.62 V/m; Power Drift = 0.081 dB

Peak SAR (extrapolated) = 0.713 W/kg

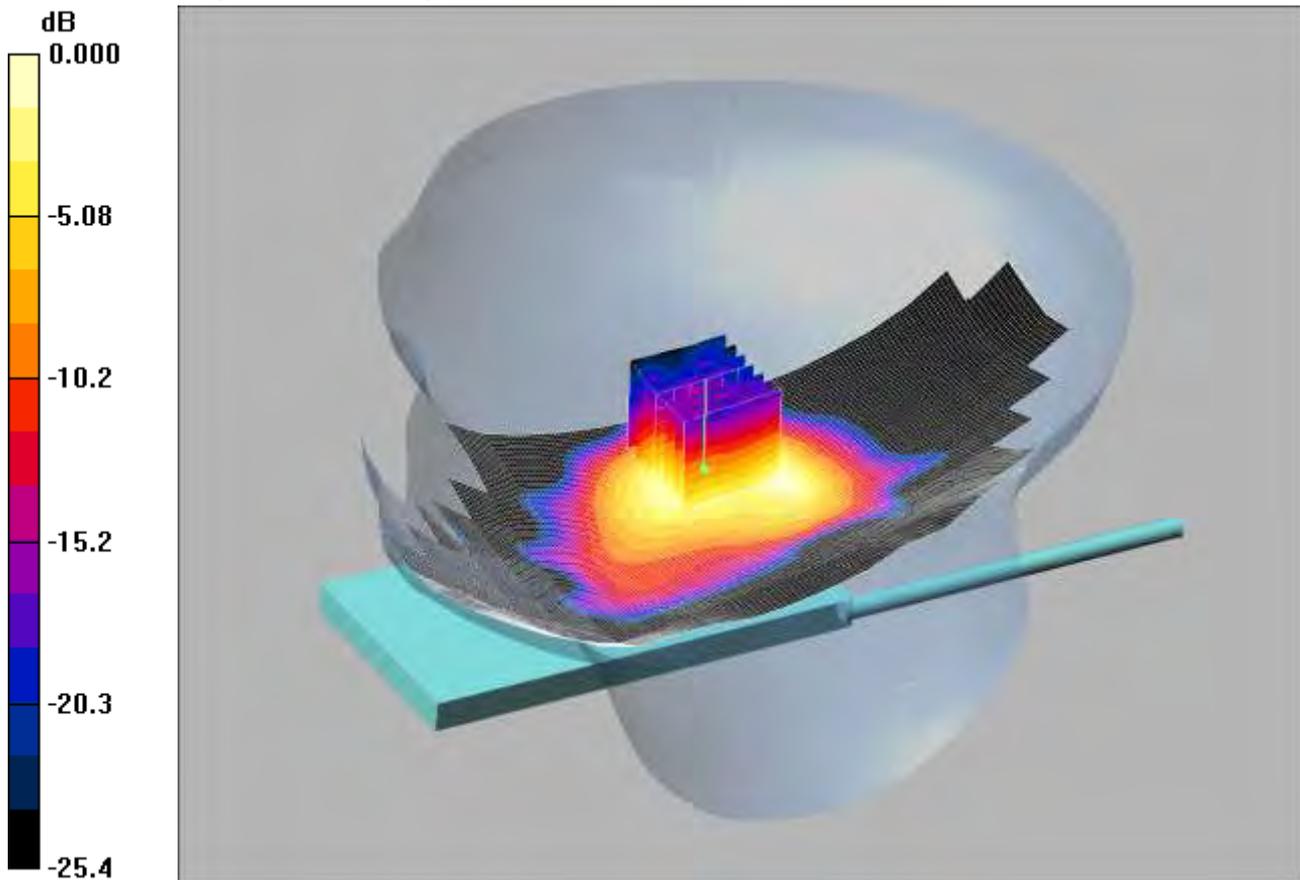
SAR(1 g) = 0.324 mW/g; SAR(10 g) = 0.158 mW/g

Maximum value of SAR (measured) = 0.364 mW/g

SCN/91945JD02/072: Touch Right Antenna Extended WiFi 802.11b 1Mbps CH1

Date: 01/03/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: CB5A1NUBQ2



0 dB = 0.439mW/g

Communication System: WLAN; Frequency: 2412 MHz; Duty Cycle: 1:1

Medium: 2450 MHz HSL Medium parameters used (interpolated): $f = 2412$ MHz; $\sigma = 1.75$ mho/m; $\epsilon_r = 39$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(6.89, 6.89, 6.89); Calibrated: 24/09/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Touch Right- Low/Area Scan (91x201x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.441 mW/g

Touch Right- Low/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.0 V/m; Power Drift = 0.052 dB

Peak SAR (extrapolated) = 0.825 W/kg

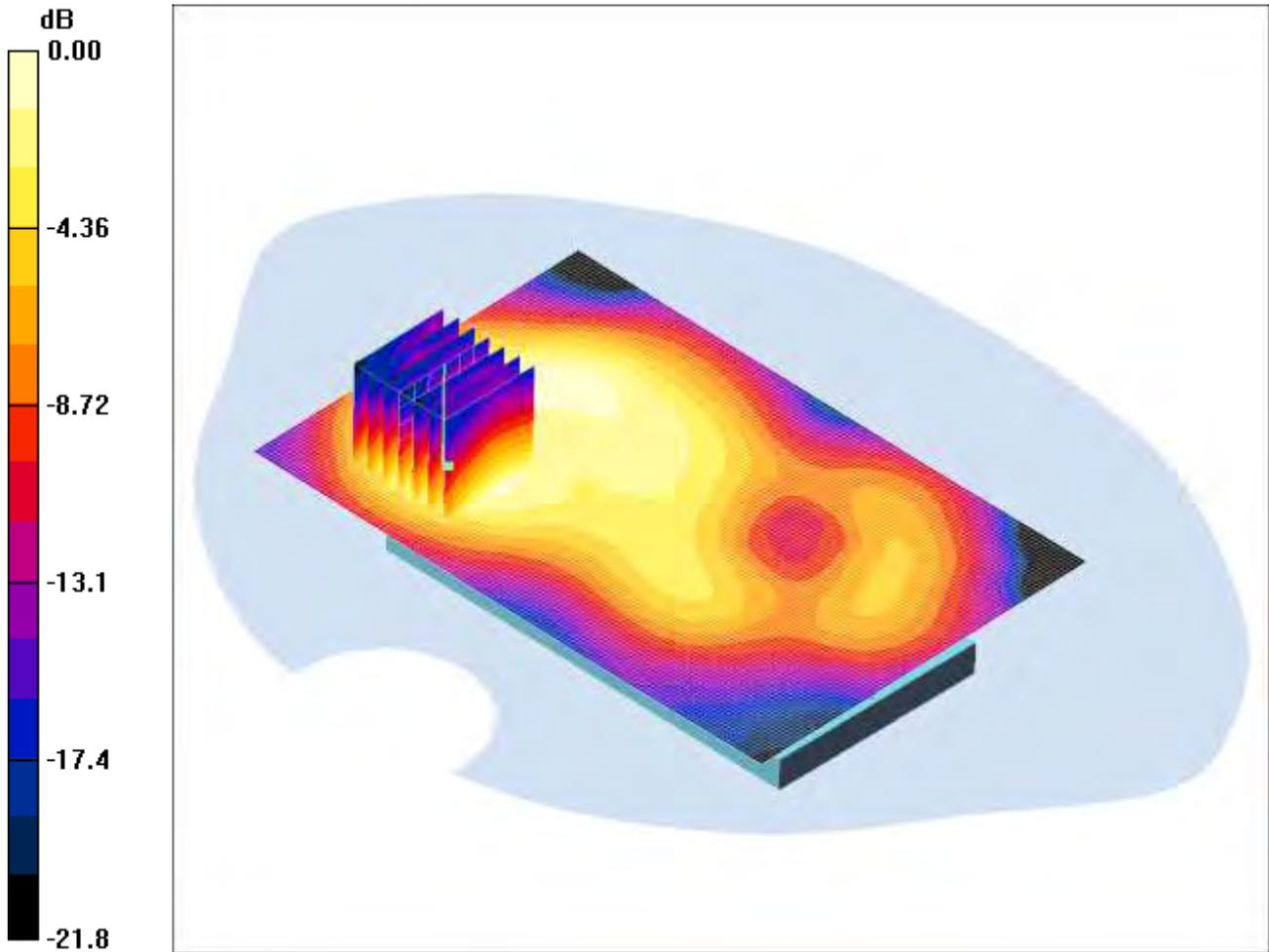
SAR(1 g) = 0.385 mW/g; SAR(10 g) = 0.187 mW/g

Maximum value of SAR (measured) = 0.439 mW/g

SCN/91945JD02/073: Front of EUT Facing Phantom 802.11b 1Mbps CH6

Date: 28/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.092mW/g

Communication System: WLAN; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: 2450 MHz MSL Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 2.01$ mho/m; $\epsilon_r = 51.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3304; ConvF(4.32, 4.32, 4.32); Calibrated: 31/08/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn450; Calibrated: 22/01/2013

- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031

- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Front of EUT Facing Phantom- Middle/Area Scan (91x141x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.094 mW/g

Front of EUT Facing Phantom- Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.56 V/m; Power Drift = -0.024 dB

Peak SAR (extrapolated) = 0.169 W/kg

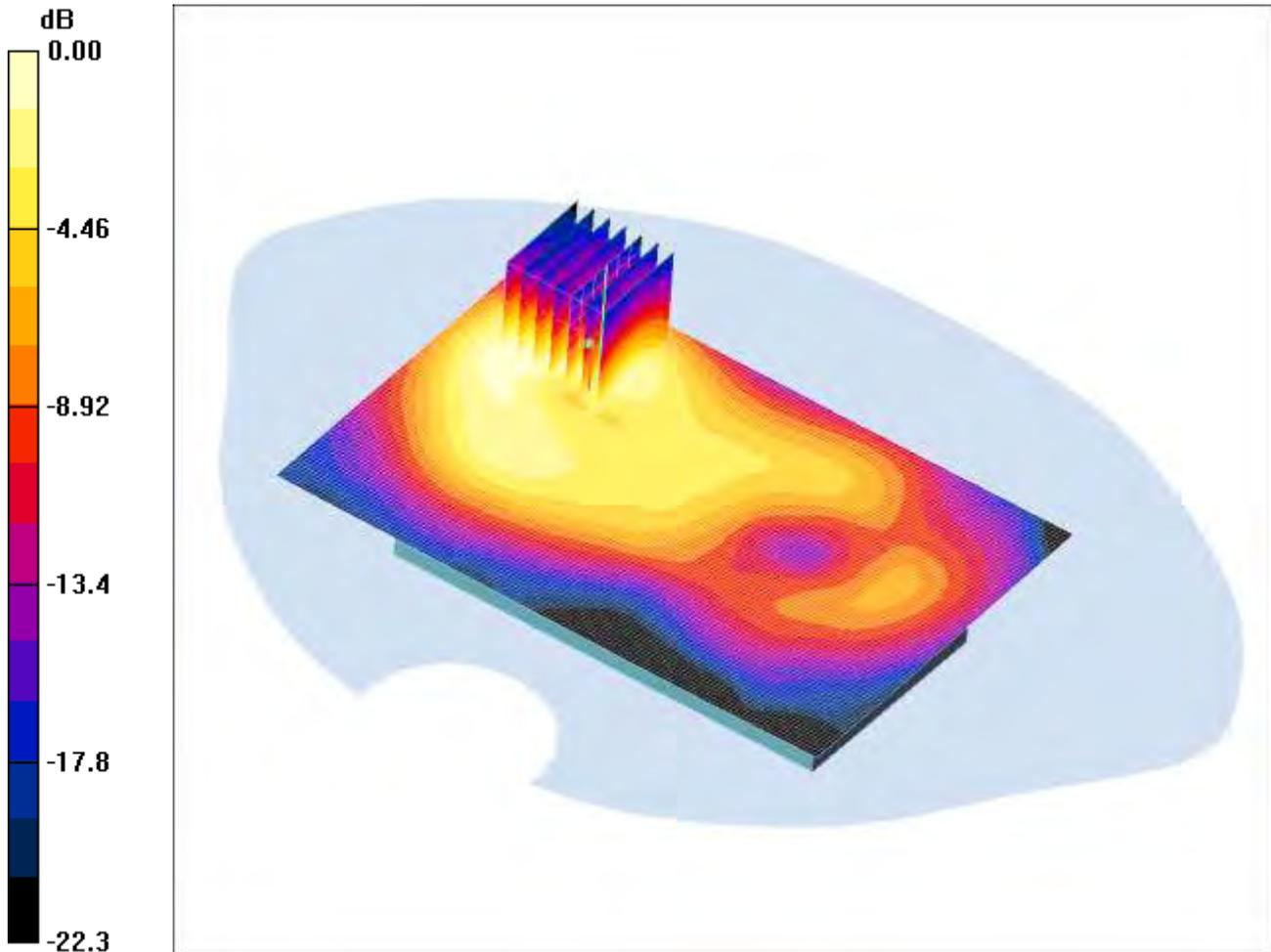
SAR(1 g) = 0.086 mW/g; SAR(10 g) = 0.046 mW/g

Maximum value of SAR (measured) = 0.092 mW/g

SCN/91945JD02/074: Back of EUT Facing Phantom 802.11b 1Mbps CH6

Date: 28/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.101mW/g

Communication System: WLAN; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: 2450 MHz MSL Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 2.01$ mho/m; $\epsilon_r = 51.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3304; ConvF(4.32, 4.32, 4.32); Calibrated: 31/08/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn450; Calibrated: 22/01/2013

- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031

- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Back of EUT Facing Phantom- Middle/Area Scan (91x141x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.099 mW/g

Back of EUT Facing Phantom- Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.61 V/m; Power Drift = -0.042 dB

Peak SAR (extrapolated) = 0.188 W/kg

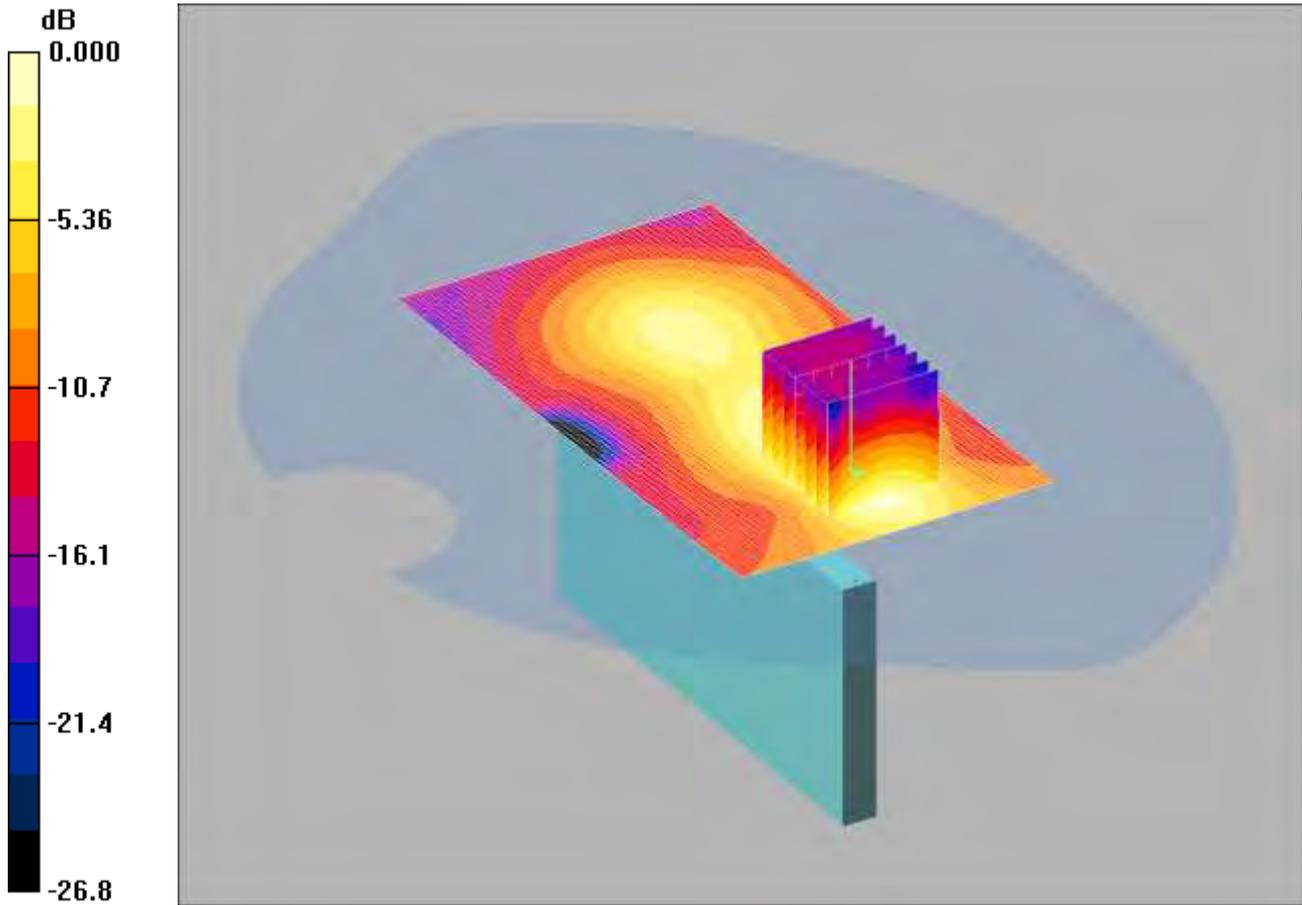
SAR(1 g) = 0.091 mW/g; SAR(10 g) = 0.046 mW/g

Maximum value of SAR (measured) = 0.101 mW/g

SCN/91945JD02/075: Left Side of EUT Facing Phantom 802.11b 1Mbps CH6

Date: 28/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.070mW/g

Communication System: WLAN; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: 2450 MHz MSL Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 2.01$ mho/m; $\epsilon_r = 51.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3304; ConvF(4.32, 4.32, 4.32); Calibrated: 31/08/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn450; Calibrated: 22/01/2013

- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031

- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 172

Left Side of EUT Facing Phantom- Middle/Area Scan (71x131x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.072 mW/g

Left Side of EUT Facing Phantom- Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.20 V/m; Power Drift = 0.097 dB

Peak SAR (extrapolated) = 0.129 W/kg

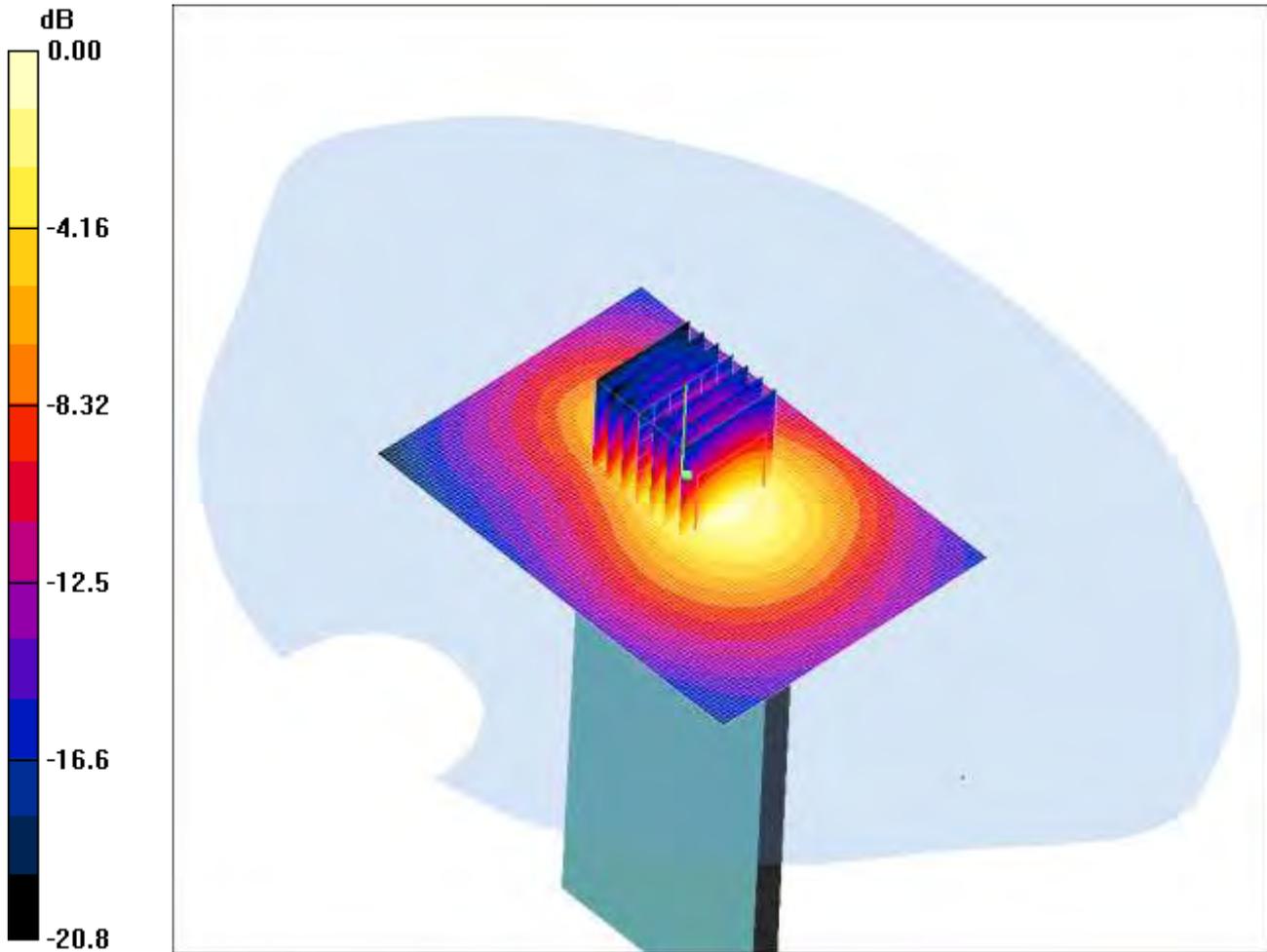
SAR(1 g) = 0.063 mW/g; SAR(10 g) = 0.033 mW/g

Maximum value of SAR (measured) = 0.070 mW/g

SCN/91945JD02/076: Top of EUT Facing Phantom 802.11b 1Mbps CH6

Date: 28/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.156mW/g

Communication System: WLAN; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: 2450 MHz MSL Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 2.01$ mho/m; $\epsilon_r = 51.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3304; ConvF(4.32, 4.32, 4.32); Calibrated: 31/08/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn450; Calibrated: 22/01/2013

- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031

- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Top of EUT Facing Phantom- Middle/Area Scan (71x101x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.162 mW/g

Top of EUT Facing Phantom- Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm,

dy=5mm, dz=5mm

Reference Value = 8.26 V/m; Power Drift = 0.030 dB

Peak SAR (extrapolated) = 0.270 W/kg

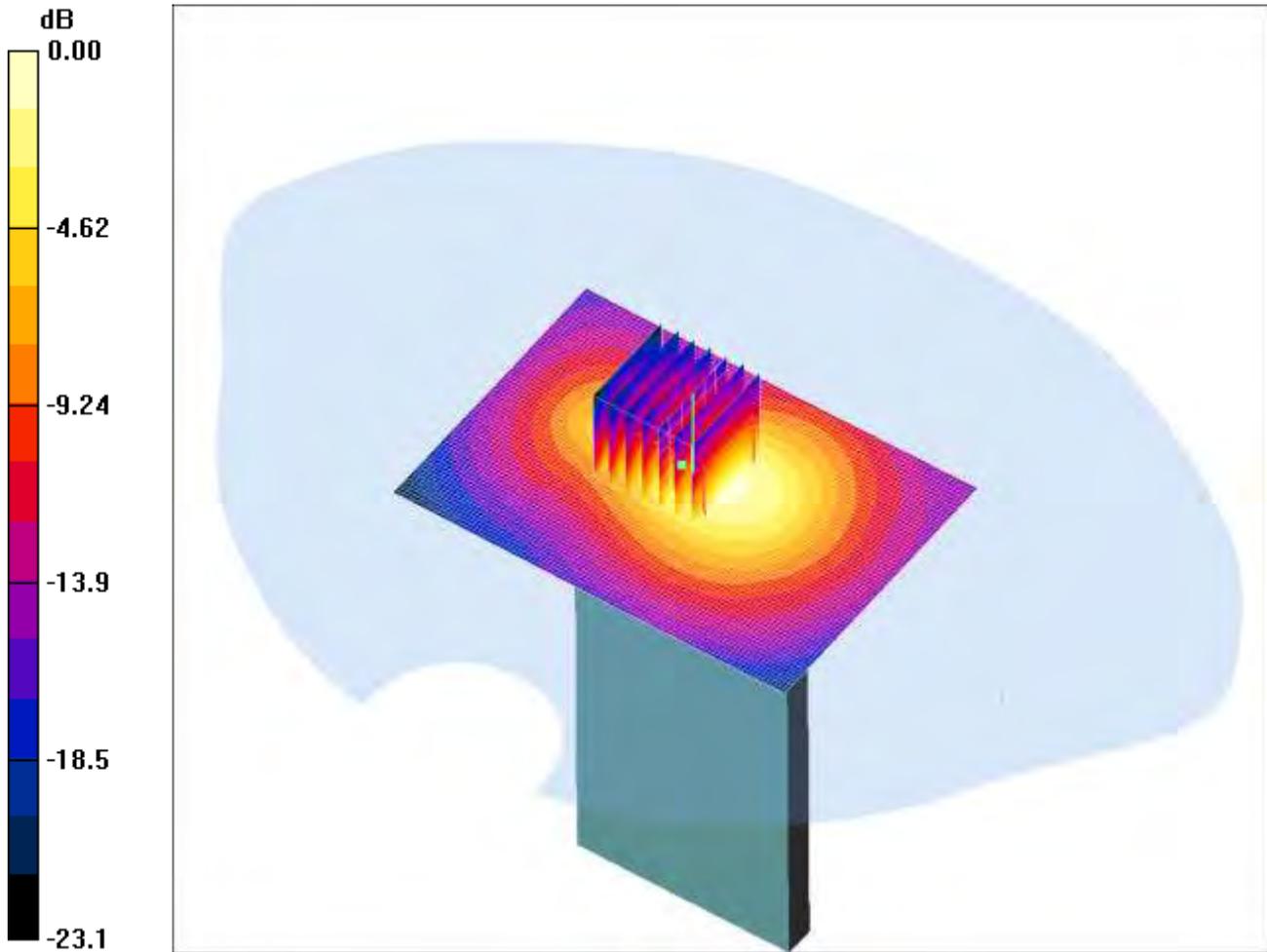
SAR(1 g) = 0.140 mW/g; SAR(10 g) = 0.071 mW/g

Maximum value of SAR (measured) = 0.156 mW/g

SCN/91945JD02/077: Top of EUT Facing Phantom 802.11b 1Mbps CH1

Date: 28/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.176mW/g

Communication System: WLAN; Frequency: 2412 MHz; Duty Cycle: 1:1

Medium: 2450 MHz MSL Medium parameters used (interpolated): $f = 2412$ MHz; $\sigma = 1.98$ mho/m; $\epsilon_r = 51.6$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3304; ConvF(4.32, 4.32, 4.32); Calibrated: 31/08/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn450; Calibrated: 22/01/2013

- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031

- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Top of EUT Facing Phantom- Low/Area Scan (71x101x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.180 mW/g

Top of EUT Facing Phantom- Low/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm,

dy=5mm, dz=5mm

Reference Value = 8.82 V/m; Power Drift = 0.041 dB

Peak SAR (extrapolated) = 0.312 W/kg

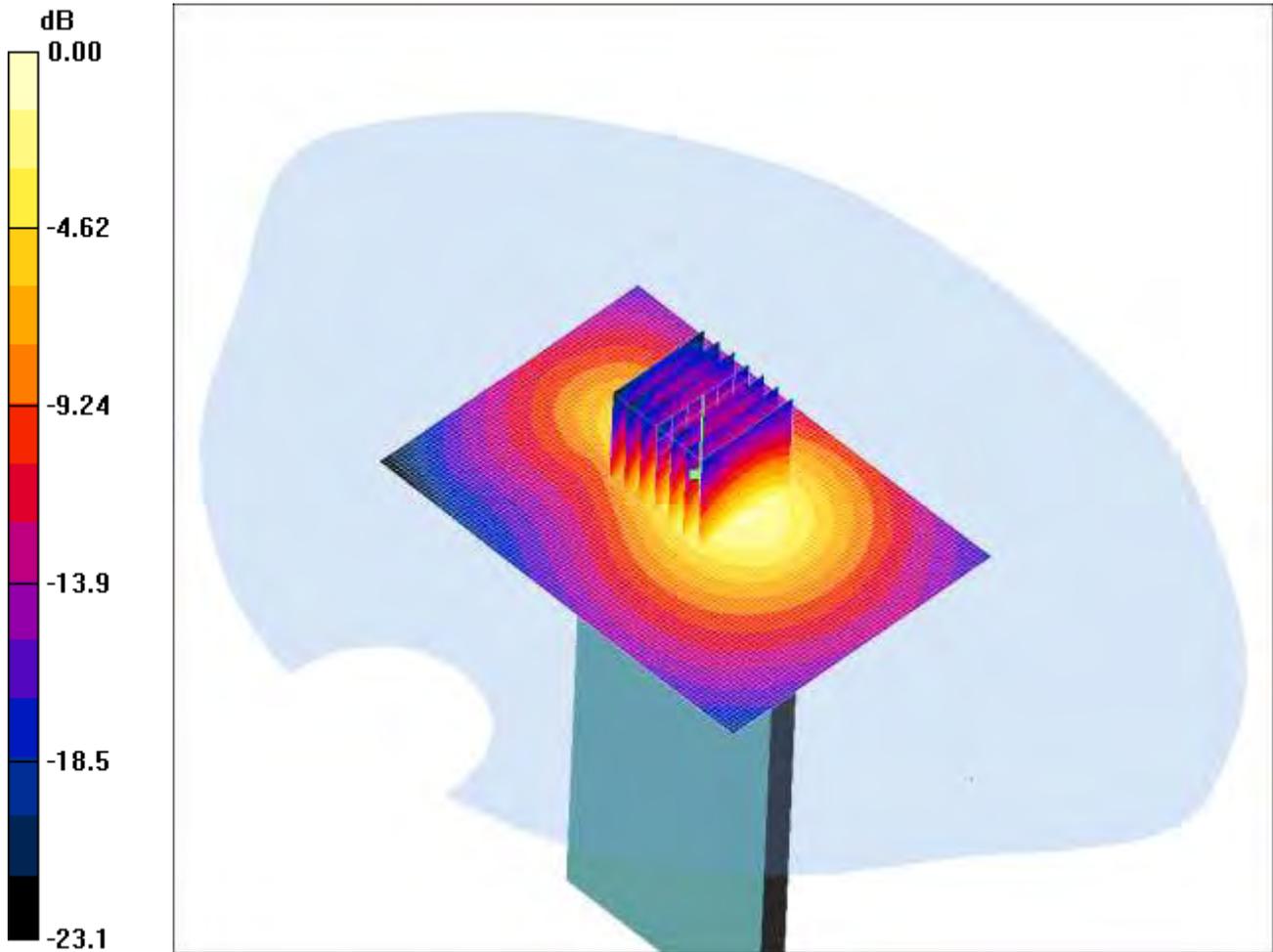
SAR(1 g) = 0.160 mW/g; SAR(10 g) = 0.081 mW/g

Maximum value of SAR (measured) = 0.176 mW/g

SCN/91945JD02/078: Top of EUT Facing Phantom 802.11b 1Mbps CH11

Date: 28/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.190mW/g

Communication System: WLAN; Frequency: 2462 MHz; Duty Cycle: 1:1

Medium: 2450 MHz MSL Medium parameters used (interpolated): $f = 2462$ MHz; $\sigma = 2.04$ mho/m; $\epsilon_r = 51.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3304; ConvF(4.32, 4.32, 4.32); Calibrated: 31/08/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn450; Calibrated: 22/01/2013

- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031

- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Top of EUT Facing Phantom- High/Area Scan (71x101x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.192 mW/g

Top of EUT Facing Phantom- High/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.31 V/m; Power Drift = 0.102 dB

Peak SAR (extrapolated) = 0.342 W/kg

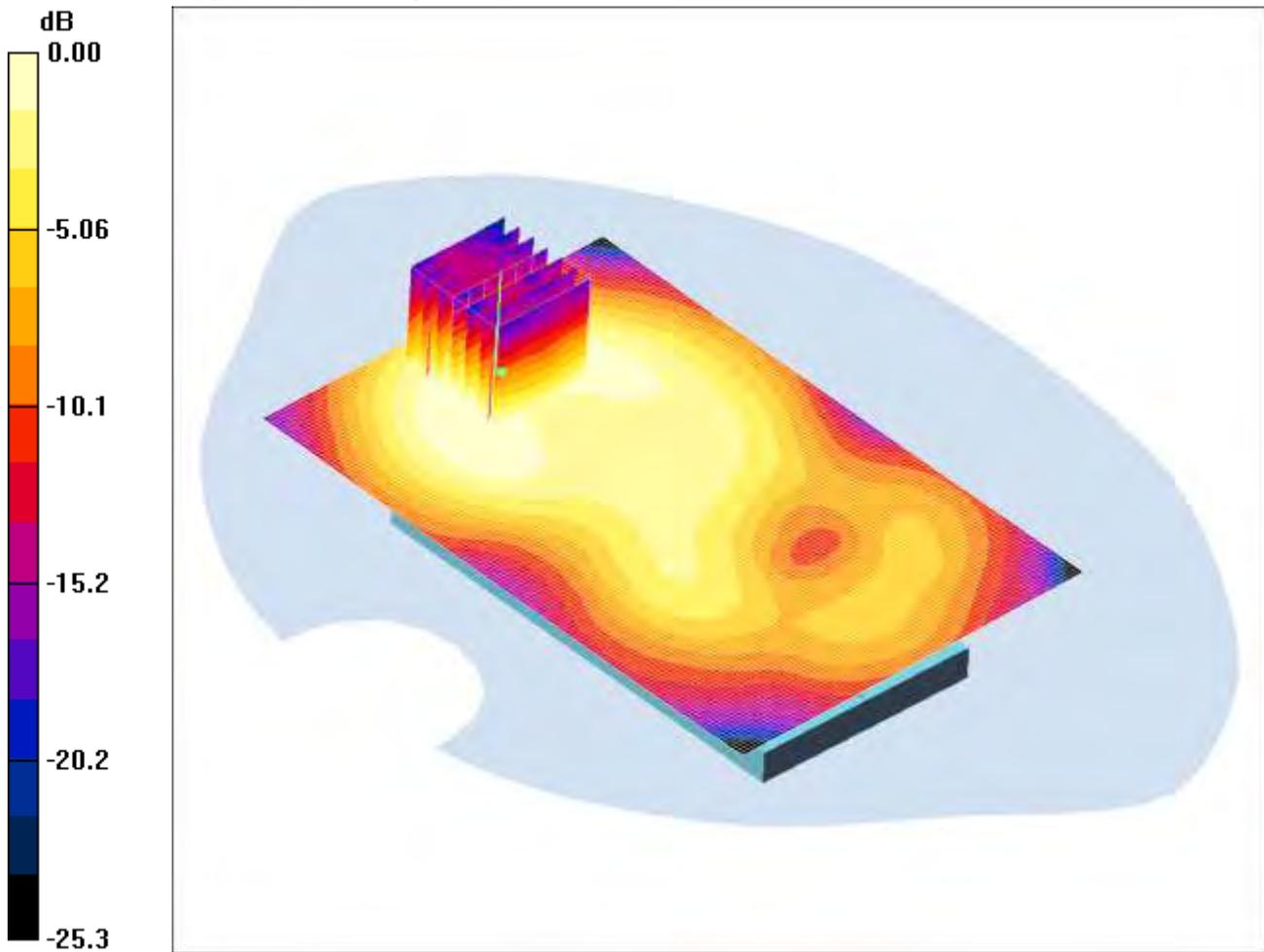
SAR(1 g) = 0.171 mW/g; SAR(10 g) = 0.084 mW/g

Maximum value of SAR (measured) = 0.190 mW/g

SCN/91945JD02/079: Front of EUT Facing Phantom at 15mm 802.11b 1Mbps CH11

Date: 28/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.067mW/g

Communication System: WLAN; Frequency: 2462 MHz; Duty Cycle: 1:1

Medium: 2450 MHz MSL Medium parameters used (interpolated): $f = 2462$ MHz; $\sigma = 2.04$ mho/m; $\epsilon_r = 51.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3304; ConvF(4.32, 4.32, 4.32); Calibrated: 31/08/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn450; Calibrated: 22/01/2013

- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031

- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Front of EUT Facing Phantom at 15mm- High/Area Scan (91x141x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.065 mW/g

Front of EUT Facing Phantom at 15mm- High/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid:

dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.58 V/m; Power Drift = 0.018 dB

Peak SAR (extrapolated) = 0.113 W/kg

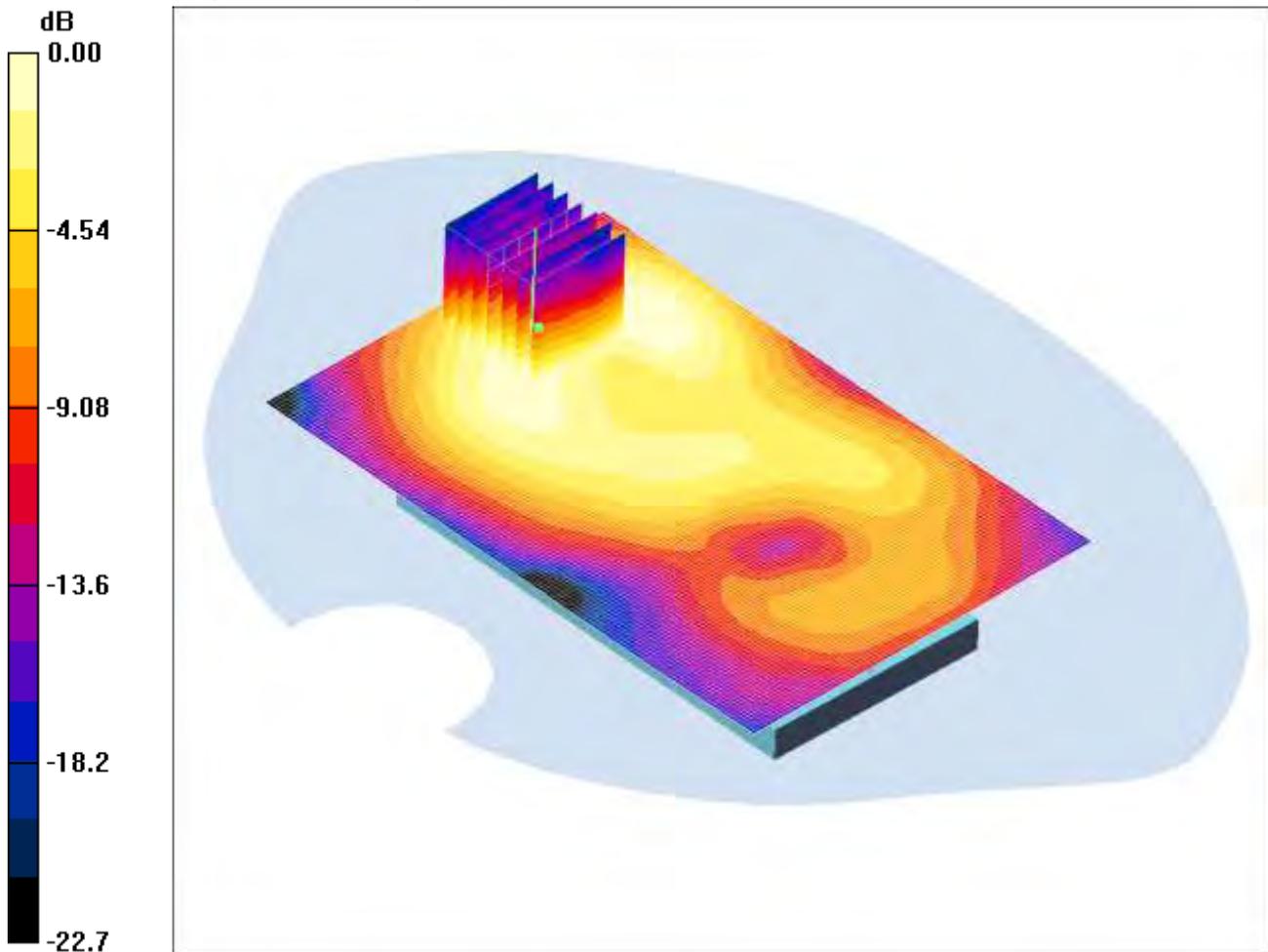
SAR(1 g) = 0.061 mW/g; SAR(10 g) = 0.034 mW/g

Maximum value of SAR (measured) = 0.067 mW/g

SCN/91945JD02/080: Back of EUT Facing Phantom at 15mm 802.11b 1Mbps CH11

Date: 28/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.061mW/g

Communication System: WLAN; Frequency: 2462 MHz; Duty Cycle: 1:1

Medium: 2450 MHz MSL Medium parameters used (interpolated): $f = 2462$ MHz; $\sigma = 2.04$ mho/m; $\epsilon_r = 51.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3304; ConvF(4.32, 4.32, 4.32); Calibrated: 31/08/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn450; Calibrated: 22/01/2013

- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031

- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Back of EUT Facing Phantom- High/Area Scan (91x141x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.059 mW/g

Back of EUT Facing Phantom- High/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.22 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.106 W/kg

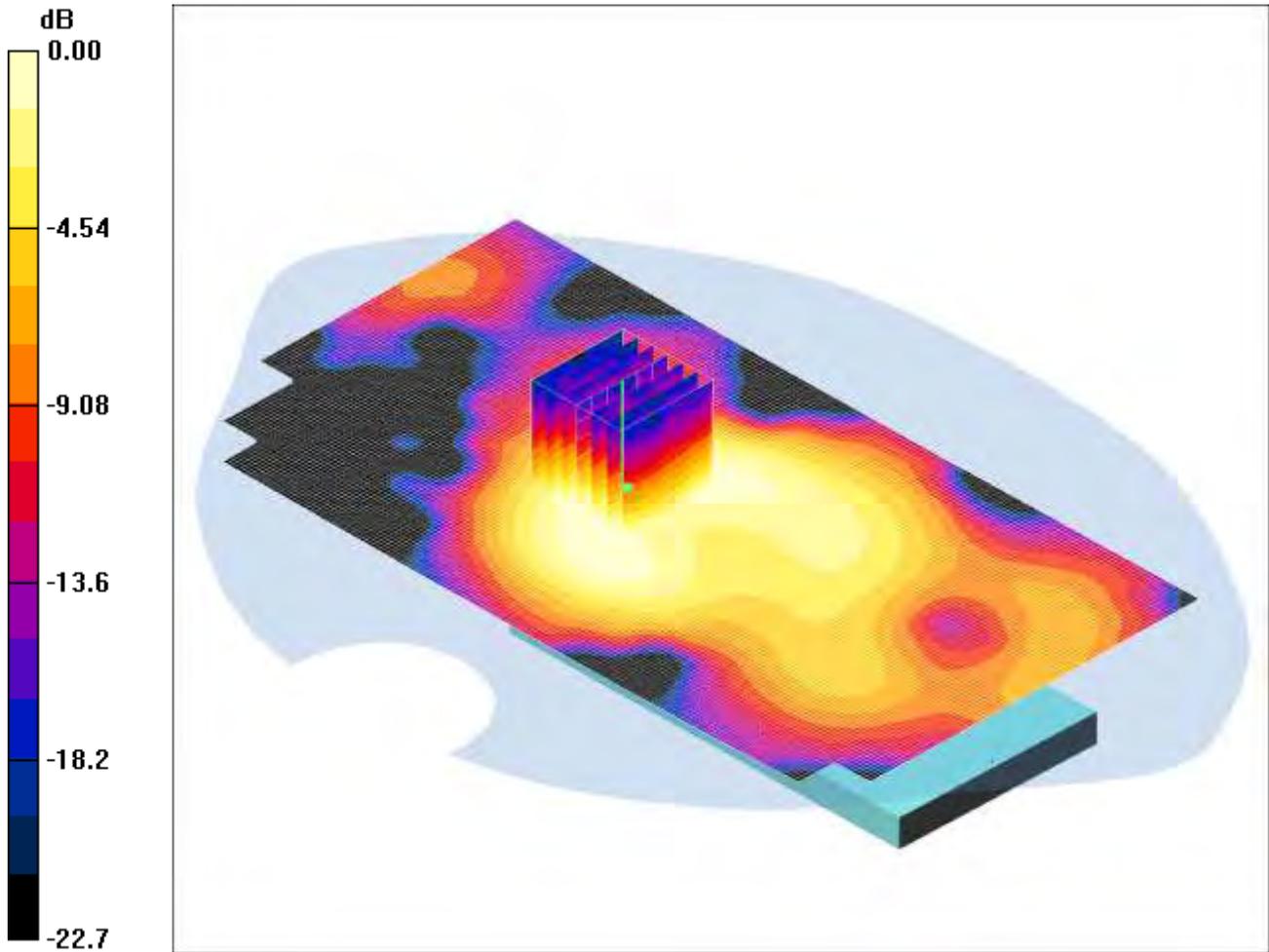
SAR(1 g) = 0.056 mW/g; SAR(10 g) = 0.031 mW/g

Maximum value of SAR (measured) = 0.061 mW/g

SCN/91945JD02/081: Front of EUT Facing Phantom at 15mm with Antenna Extended 802.11b 1Mbps CH11

Date: 28/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.066mW/g

Communication System: WLAN; Frequency: 2462 MHz; Duty Cycle: 1:1

Medium: 2450 MHz MSL Medium parameters used (interpolated): $f = 2462$ MHz; $\sigma = 2.04$ mho/m; $\epsilon_r = 51.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3304; ConvF(4.32, 4.32, 4.32); Calibrated: 31/08/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn450; Calibrated: 22/01/2013

- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031

- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Front of EUT Facing Phantom at 15mm with Antenna Extended- High/Area Scan (101x191x1):

Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.068 mW/g

Front of EUT Facing Phantom at 15mm with Antenna Extended- High/Zoom Scan (7x7x7) (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.79 V/m; Power Drift = 0.020 dB

Peak SAR (extrapolated) = 0.114 W/kg

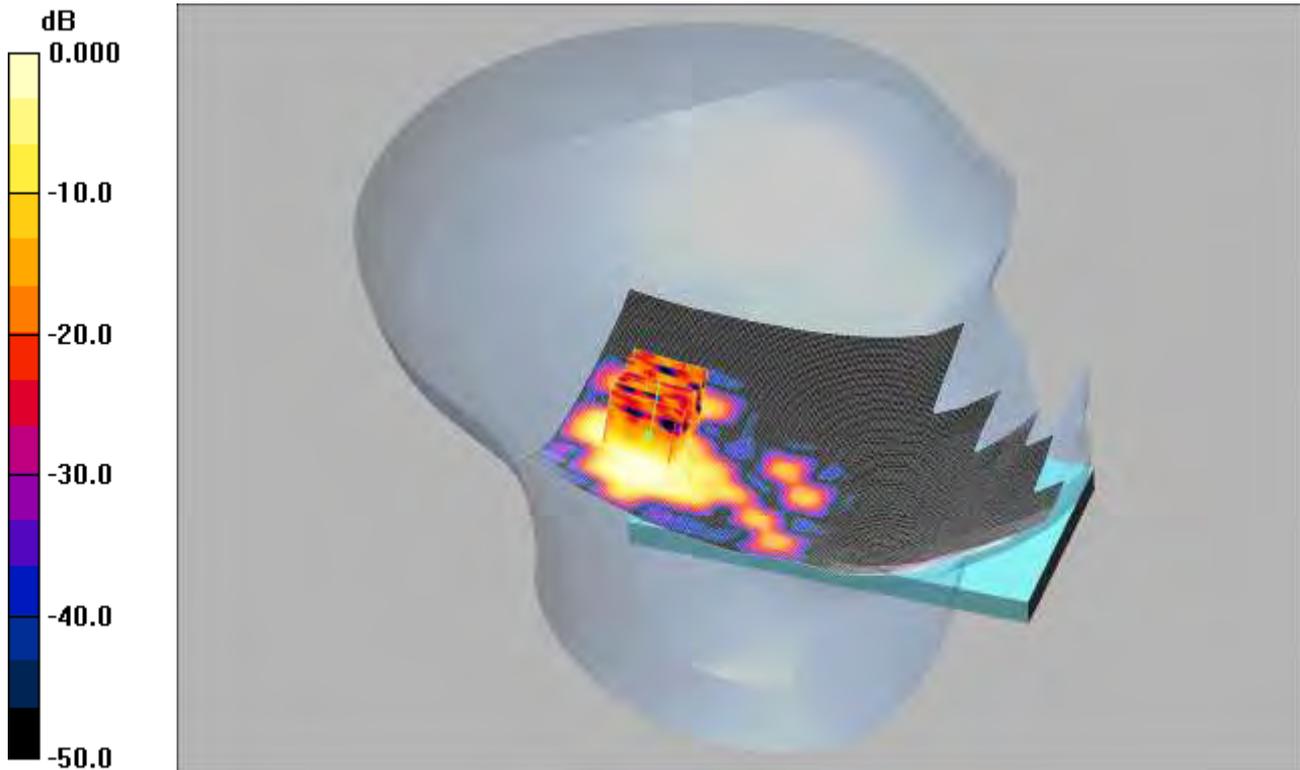
SAR(1 g) = 0.061 mW/g; SAR(10 g) = 0.033 mW/g

Maximum value of SAR (measured) = 0.066 mW/g

SCN/91945JD02/082: Touch Left WiFi 802.11a 6Mbps CH48

Date: 27/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.212mW/g

Communication System: WLAN 802.11a UNII; Frequency: 5240 MHz; Duty Cycle: 1:1

Medium: 5200/5500 MHz HSL Medium parameters used (interpolated): $f = 5240$ MHz; $\sigma = 4.62$ mho/m; $\epsilon_r = 35.9$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(5.06, 5.06, 5.06); Calibrated: 24/09/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Touch Left- Middle/Area Scan (111x181x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.245 mW/g

Touch Left- Middle/Zoom Scan (7x7x12) (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 5.69 V/m; Power Drift = 0.008 dB

Peak SAR (extrapolated) = 0.513 W/kg

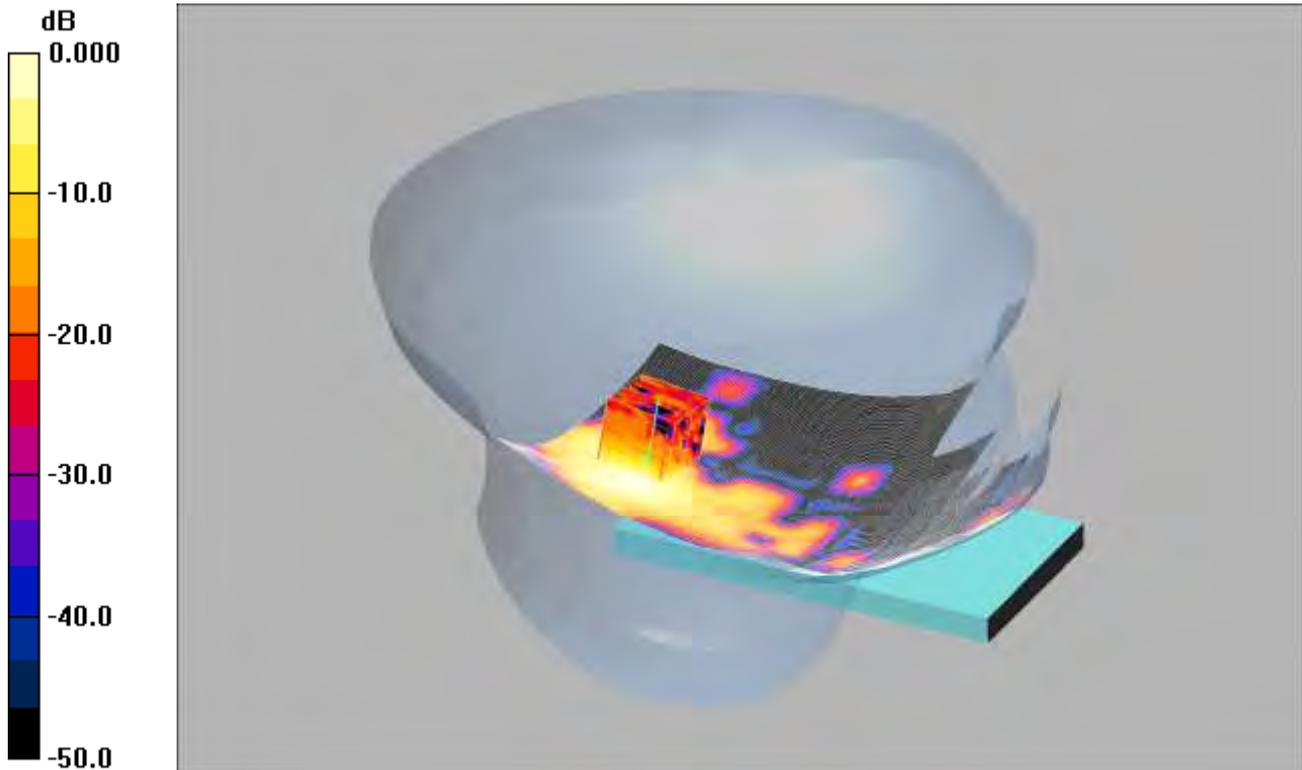
SAR(1 g) = 0.162 mW/g; SAR(10 g) = 0.046 mW/g

Maximum value of SAR (measured) = 0.212 mW/g

SCN/91945JD02/083: Tilt Left WiFi 802.11a 6Mbps CH48

Date: 27/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.319mW/g

Communication System: WLAN 802.11a UNII; Frequency: 5240 MHz; Duty Cycle: 1:1

Medium: 5200/5500 MHz HSL Medium parameters used (interpolated): $f = 5240$ MHz; $\sigma = 4.62$ mho/m; $\epsilon_r = 35.9$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(5.06, 5.06, 5.06); Calibrated: 24/09/2012
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Tilt Left- Middle/Area Scan (111x181x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.388 mW/g

Tilt Left- Middle/Zoom Scan (7x7x12) (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 4.33 V/m; Power Drift = -0.015 dB

Peak SAR (extrapolated) = 1.58 W/kg

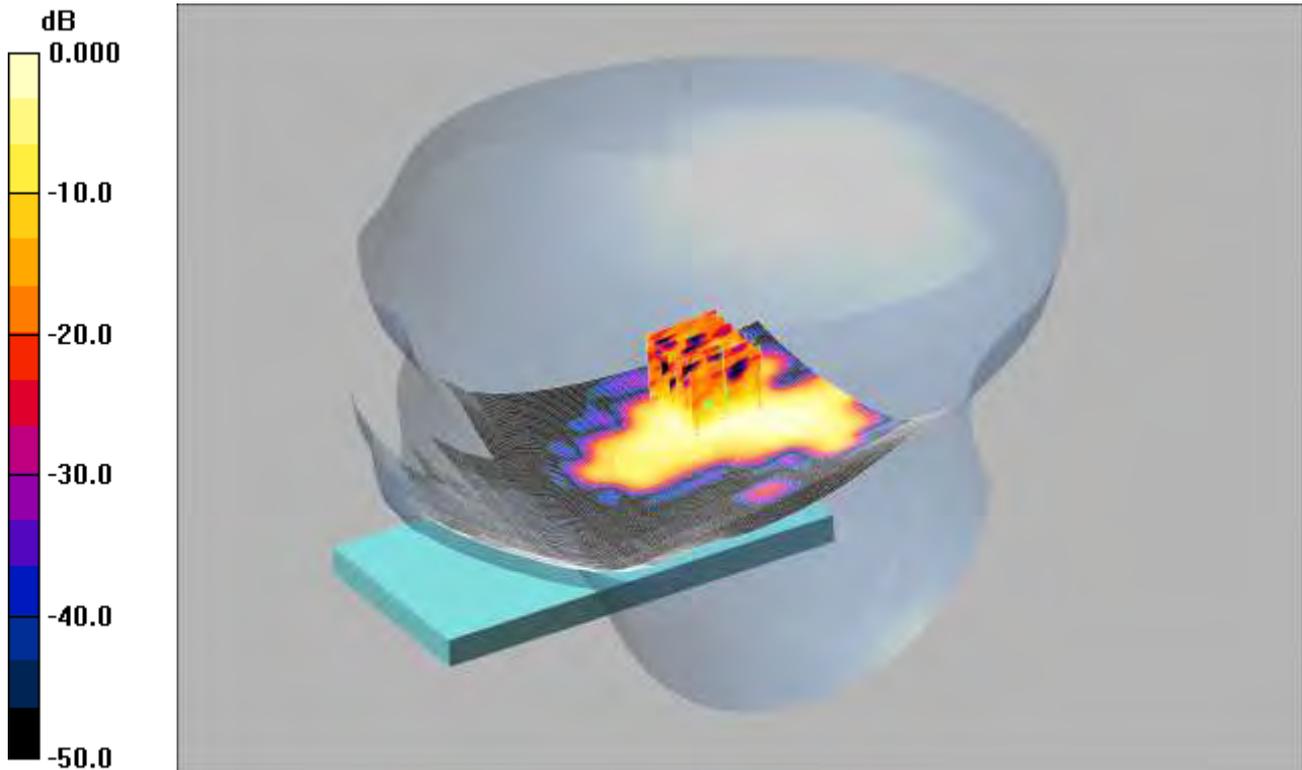
SAR(1 g) = 0.162 mW/g; SAR(10 g) = 0.048 mW/g

Maximum value of SAR (measured) = 0.319 mW/g

SCN/91945JD02/084: Touch Right WiFi 802.11a 6Mbps CH48

Date: 28/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.177mW/g

Communication System: WLAN 802.11a UNII; Frequency: 5240 MHz; Duty Cycle: 1:1

Medium: 5200/5500/5800 MHz HSL Medium parameters used (interpolated): $f = 5240$ MHz; $\sigma = 4.68$ mho/m; $\epsilon_r = 36.6$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(5.06, 5.06, 5.06); Calibrated: 24/09/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Touch Rightt- Middle/Area Scan (111x181x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.191 mW/g

Touch Rightt- Middle/Zoom Scan (7x7x12) (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 5.44 V/m; Power Drift = 0.196 dB

Peak SAR (extrapolated) = 0.477 W/kg

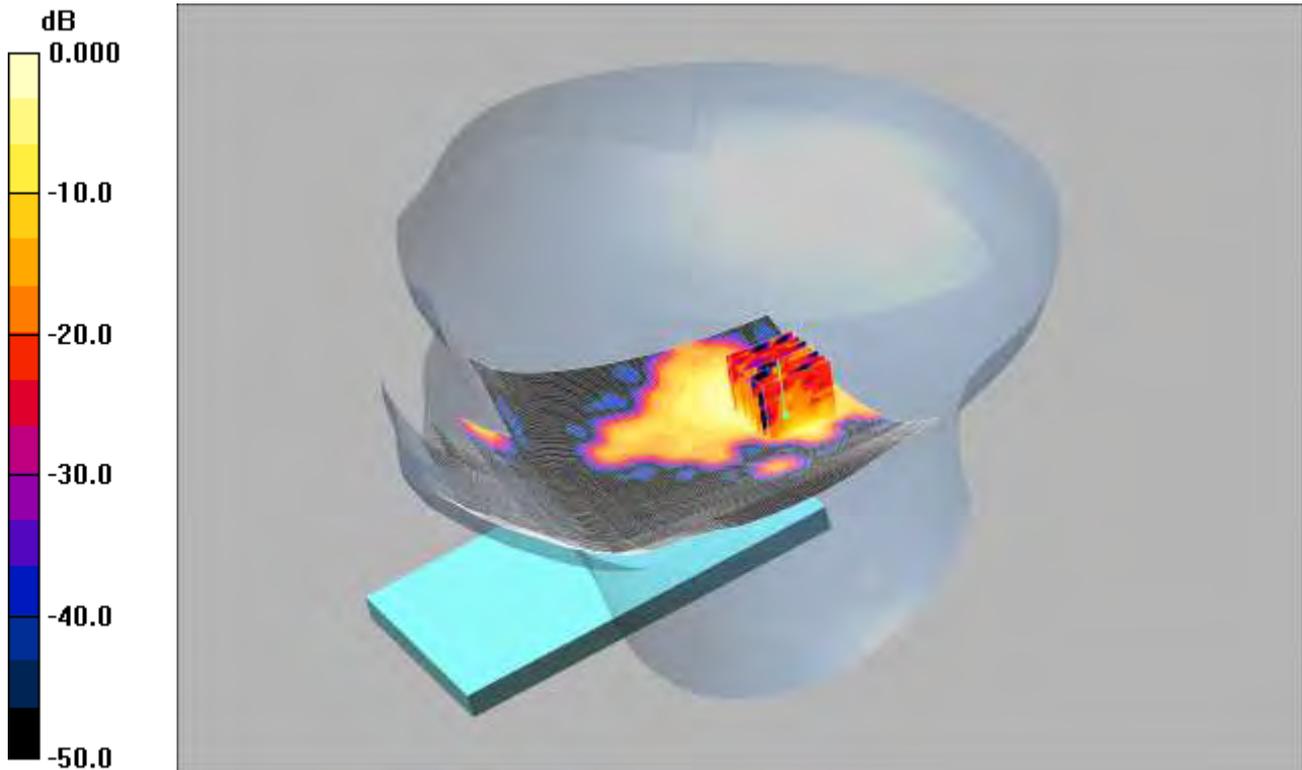
SAR(1 g) = 0.151 mW/g; SAR(10 g) = 0.048 mW/g

Maximum value of SAR (measured) = 0.177 mW/g

SCN/91945JD02/085: Tilt Right WiFi 802.11a 6Mbps CH48

Date: 28/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.304mW/g

Communication System: WLAN 802.11a UNII; Frequency: 5240 MHz; Duty Cycle: 1:1

Medium: 5200/5500/5800 MHz HSL Medium parameters used (interpolated): $f = 5240$ MHz; $\sigma = 4.68$ mho/m; $\epsilon_r = 36.6$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(5.06, 5.06, 5.06); Calibrated: 24/09/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection) Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Tilt Rightt- Middle/Area Scan (111x181x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.165 mW/g

Tilt Rightt- Middle/Zoom Scan (7x7x12) (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 5.34 V/m; Power Drift = 0.007 dB

Peak SAR (extrapolated) = 0.615 W/kg

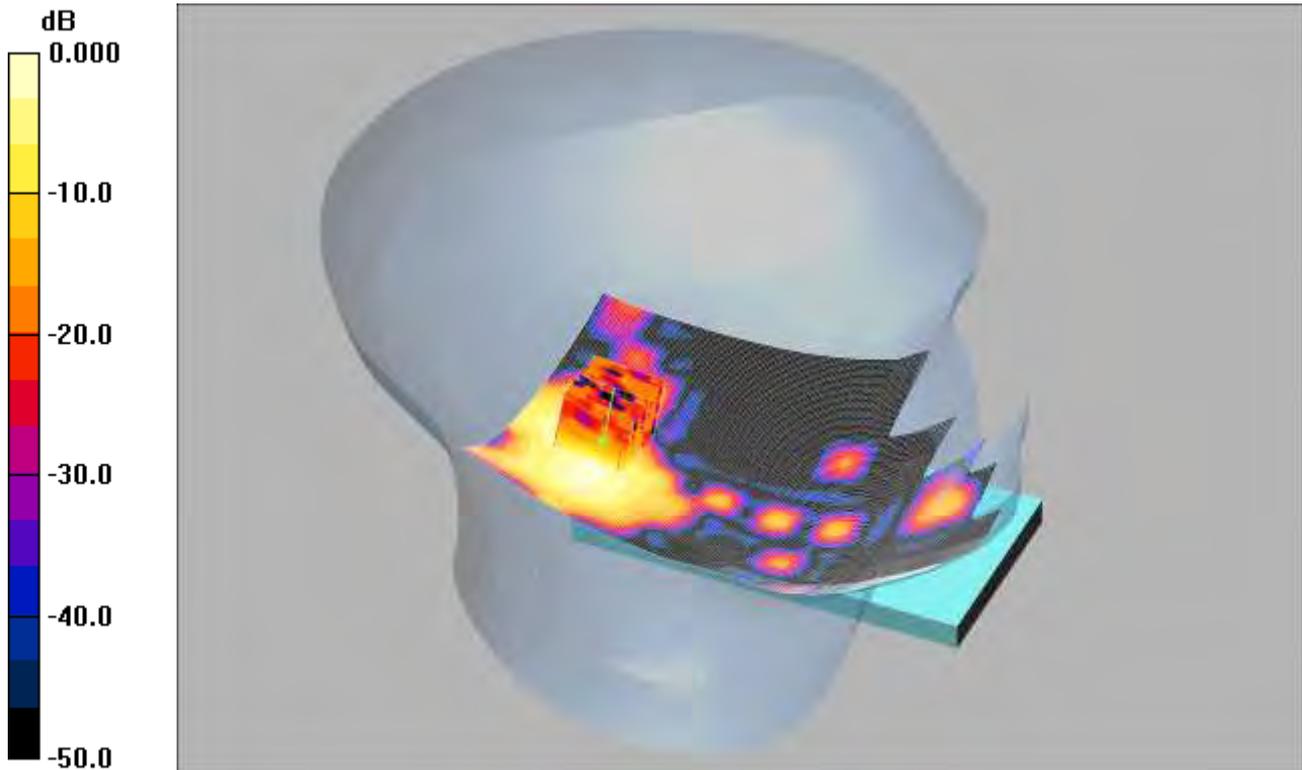
SAR(1 g) = 0.150 mW/g; SAR(10 g) = 0.046 mW/g

Maximum value of SAR (measured) = 0.304 mW/g

SCN/91945JD02/086: Tilt Left WiFi 802.11a 6Mbps CH52

Date: 28/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.285mW/g

Communication System: WLAN 802.11a UNII; Frequency: 5260 MHz; Duty Cycle: 1:1

Medium: 5200/5500/5800 MHz HSL Medium parameters used (interpolated): $f = 5260$ MHz; $\sigma = 4.7$ mho/m; $\epsilon_r = 36.5$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(4.73, 4.73, 4.73); Calibrated: 24/09/2012

- Sensor-Surface: 2mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Tilt Left- Middle/Area Scan (111x181x1): Measurement grid: $dx=10$ mm, $dy=10$ mm

Maximum value of SAR (interpolated) = 0.320 mW/g

Tilt Left- Middle/Zoom Scan (7x7x12) (7x7x12)/Cube 0: Measurement grid: $dx=4$ mm, $dy=4$ mm, $dz=2$ mm

Reference Value = 4.07 V/m; Power Drift = -0.006 dB

Peak SAR (extrapolated) = 0.577 W/kg

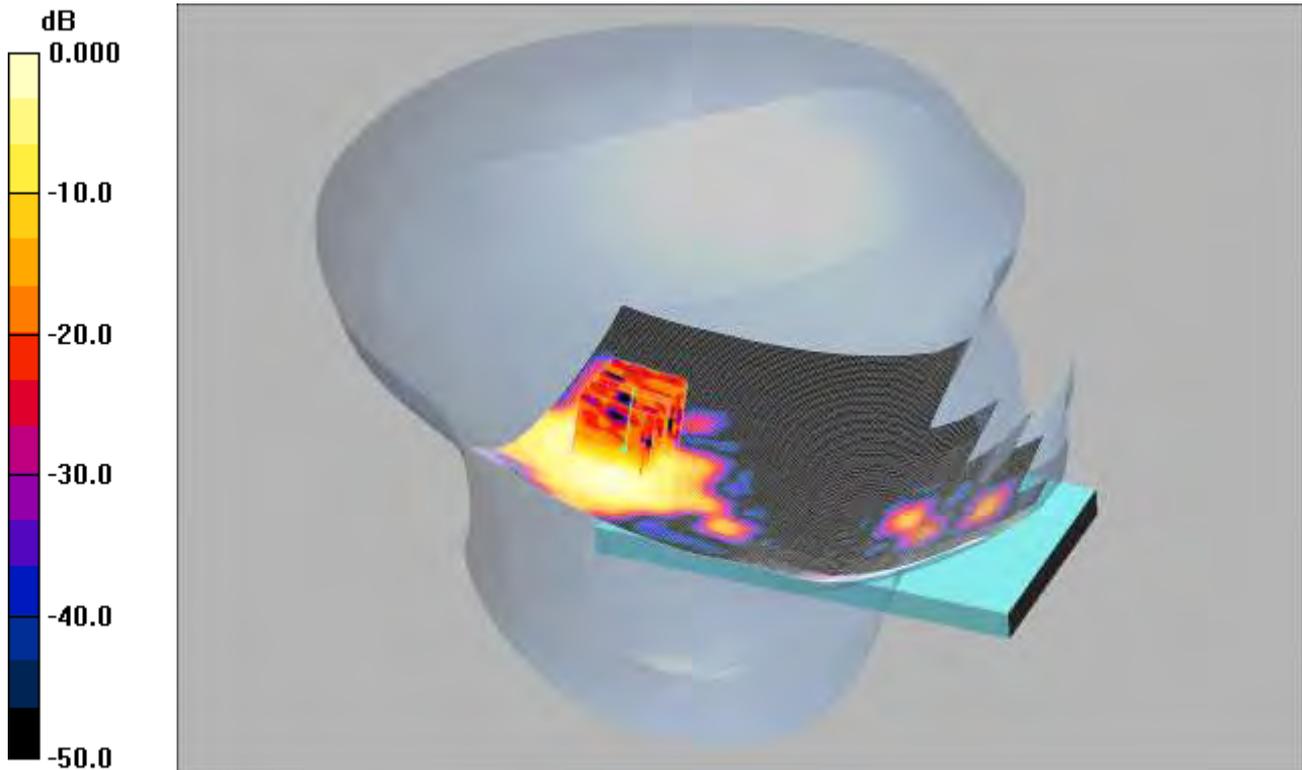
SAR(1 g) = 0.140 mW/g; SAR(10 g) = 0.041 mW/g

Maximum value of SAR (measured) = 0.285 mW/g

SCN/91945JD02/087: Tilt Left WiFi 802.11a 6Mbps CH136

Date: 28/0/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.396mW/g

Communication System: WLAN 802.11a UNII; Frequency: 5680 MHz; Duty Cycle: 1:1

Medium: 5200/5500/5800 MHz HSL Medium parameters used (interpolated): $f = 5680$ MHz; $\sigma = 5.17$ mho/m; $\epsilon_r = 36.2$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(4.26, 4.26, 4.26); Calibrated: 24/09/2012

- Sensor-Surface: 2mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Tilt Left- Middle/Area Scan (111x181x1): Measurement grid: $dx=10$ mm, $dy=10$ mm

Maximum value of SAR (interpolated) = 0.424 mW/g

Tilt Left- Middle/Zoom Scan (7x7x12) (7x7x12)/Cube 0: Measurement grid: $dx=4$ mm, $dy=4$ mm, $dz=2$ mm

Reference Value = 4.35 V/m; Power Drift = -0.146 dB

Peak SAR (extrapolated) = 0.714 W/kg

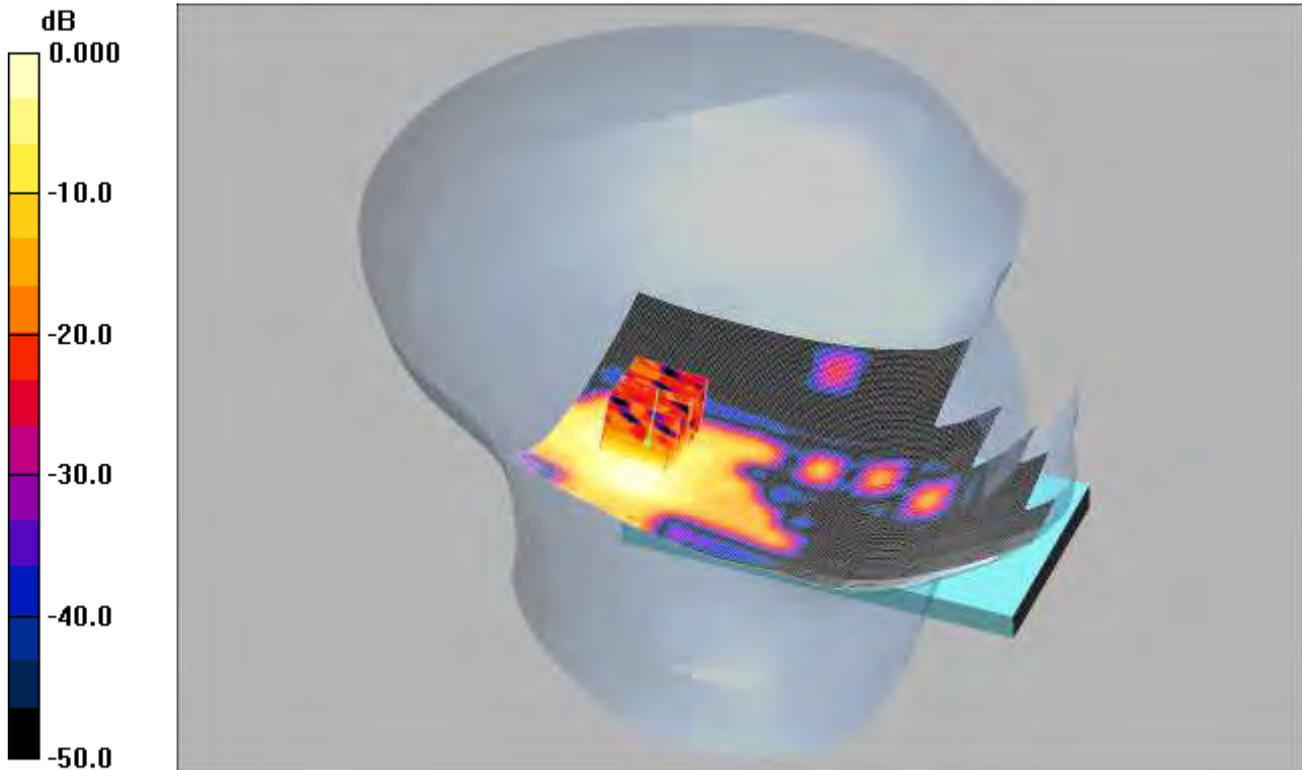
SAR(1 g) = 0.186 mW/g; SAR(10 g) = 0.053 mW/g

Maximum value of SAR (measured) = 0.396 mW/g

SCN/91945JD02/088: Tilt Left WiFi 802.11a 6Mbps CH157

Date: 28/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: PM-0320-BV



0 dB = 0.422mW/g

Communication System: WLAN 802.11a UNII; Frequency: 5785 MHz; Duty Cycle: 1:1

Medium: 5200/5500/5800 MHz HSL Medium parameters used (interpolated): $f = 5785$ MHz; $\sigma = 5.29$ mho/m; $\epsilon_r = 36$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(4.5, 4.5, 4.5); Calibrated: 24/09/2012

- Sensor-Surface: 2mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Tilt Left- Middle/Area Scan (111x181x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.380 mW/g

Tilt Left- Middle/Zoom Scan (7x7x12) (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 4.37 V/m; Power Drift = -0.074 dB

Peak SAR (extrapolated) = 0.864 W/kg

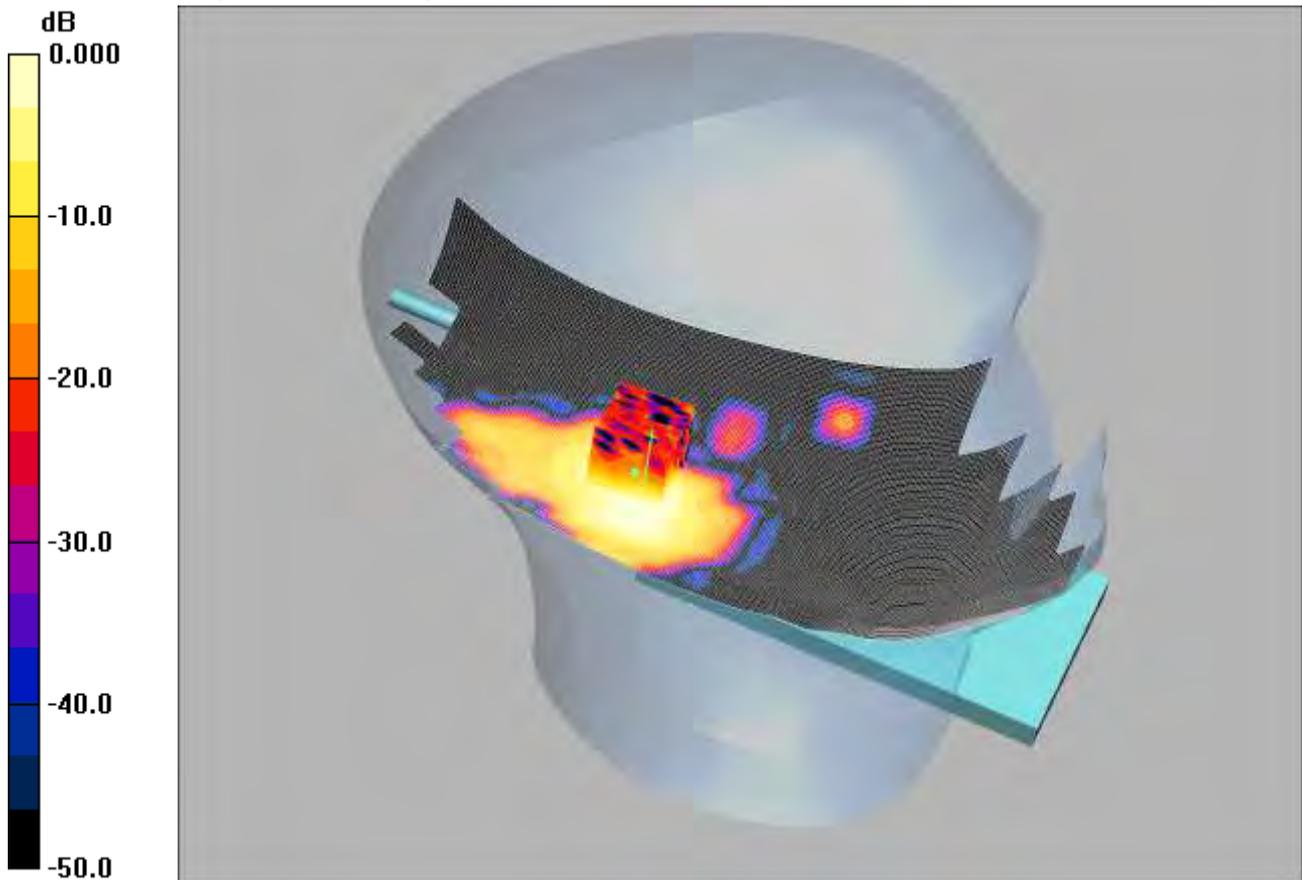
SAR(1 g) = 0.196 mW/g; SAR(10 g) = 0.055 mW/g

Maximum value of SAR (measured) = 0.422 mW/g

SCN/91945JD02/089: Tilt Left Antenna Extended WiFi 802.11a 6Mbps CH157

Date 28/02/2013

DUT: Sony Dogo Maki; Type: Dogo Maki; Serial: CB5A1NUBQ2



0 dB = 0.450mW/g

Communication System: WLAN 802.11a UNII; Frequency: 5785 MHz; Duty Cycle: 1:1

Medium: 5200/5500/5800 MHz HSL Medium parameters used (interpolated): $f = 5785 \text{ MHz}$; $\sigma = 5.29 \text{ mho/m}$; $\epsilon_r = 36$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(4.5, 4.5, 4.5); Calibrated: 24/09/2012

- Sensor-Surface: 2mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Tilt Left- Middle/Area Scan (111x241x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Maximum value of SAR (interpolated) = 0.546 mW/g

Tilt Left- Middle/Zoom Scan (7x7x12) (7x7x12)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=2\text{mm}$

Reference Value = 5.97 V/m; Power Drift = -0.174 dB

Peak SAR (extrapolated) = 1.49 W/kg

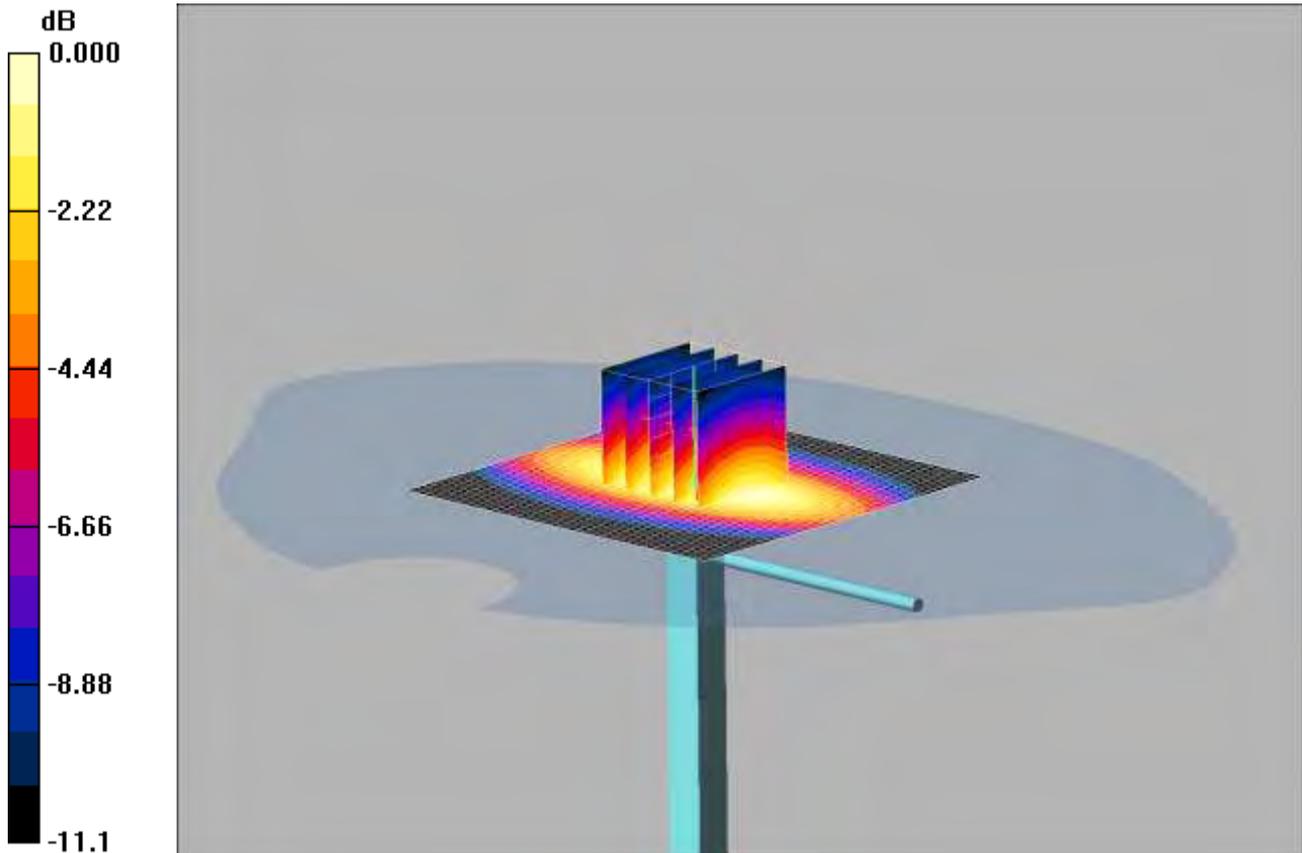
SAR(1 g) = 0.223 mW/g; SAR(10 g) = 0.067 mW/g

Maximum value of SAR (measured) = 0.450 mW/g

 SCN/91945JD02/090: System Performance Check 900MHz Head 07 02 13

Date: 07/02/2013

DUT: Dipole 900 MHz; SN: 035; Type: D900V2; Serial: SN035



0 dB = 2.91mW/g

Communication System: CW; Frequency: 900 MHz; Duty Cycle: 1:1

Medium: 900 MHz HSL Medium parameters used: $f = 900$ MHz; $\sigma = 0.95$ mho/m; $\epsilon_r = 40.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.18, 6.18, 6.18); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

d=15mm, Pin=250mW 2/Area Scan (51x51x1): Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (interpolated) = 2.95 mW/g

d=15mm, Pin=250mW 2/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 57.5 V/m; Power Drift = -0.005 dB

Peak SAR (extrapolated) = 3.84 W/kg

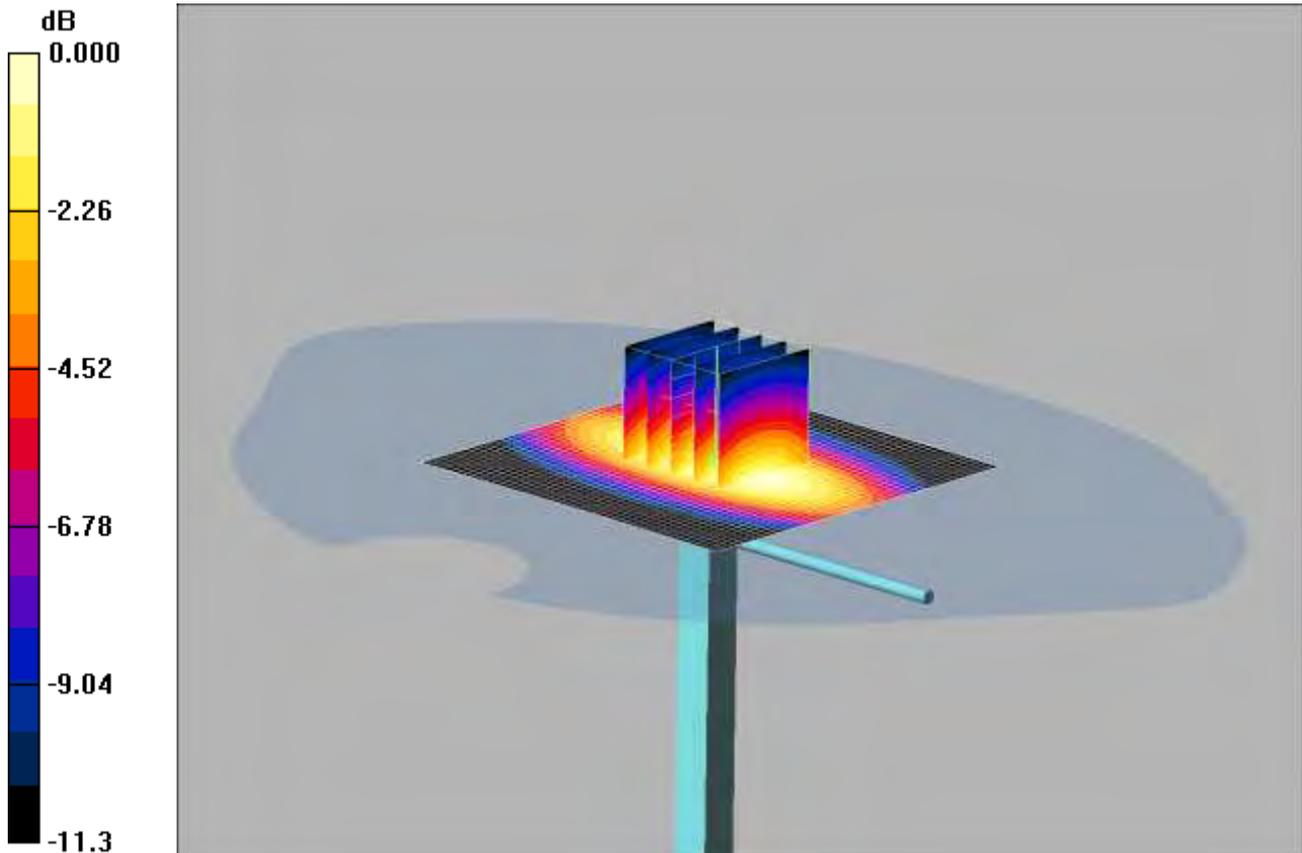
SAR(1 g) = 2.68 mW/g; SAR(10 g) = 1.74 mW/g

Maximum value of SAR (measured) = 2.91 mW/g

SCN/91945JD02/091: System Performance Check 900MHz Head 11 02 13

Date: 11/02/2013

DUT: Dipole 900 MHz; SN: 035; Type: D900V2; Serial: SN035



0 dB = 2.93mW/g

Communication System: CW; Frequency: 900 MHz; Duty Cycle: 1:1

Medium: 900 MHz HSL Medium parameters used: $f = 900$ MHz; $\sigma = 0.97$ mho/m; $\epsilon_r = 40.8$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.18, 6.18, 6.18); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

d=15mm, Pin=250mW 2/Area Scan (51x51x1): Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (interpolated) = 2.96 mW/g

d=15mm, Pin=250mW 2/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 56.8 V/m; Power Drift = 0.010 dB

Peak SAR (extrapolated) = 3.92 W/kg

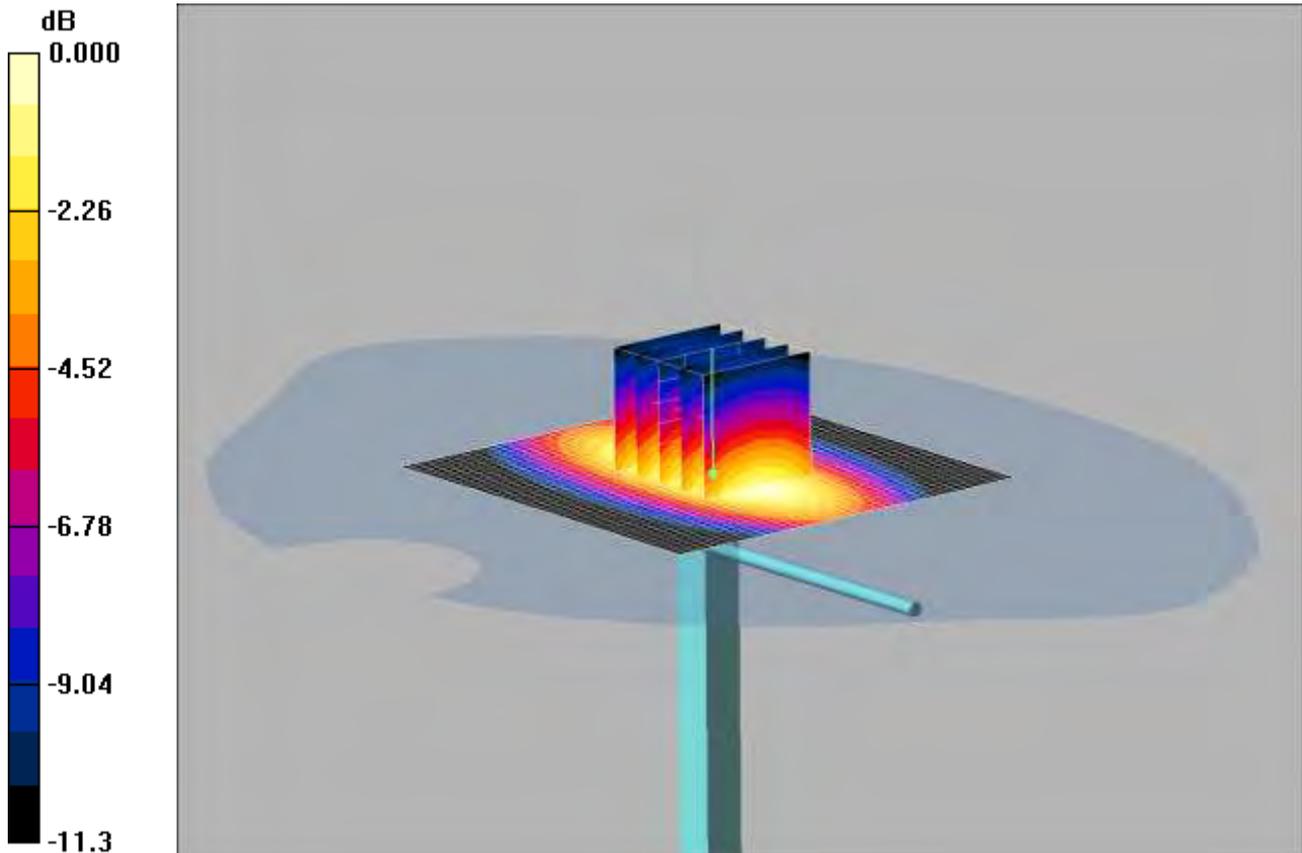
SAR(1 g) = 2.69 mW/g; SAR(10 g) = 1.73 mW/g

Maximum value of SAR (measured) = 2.93 mW/g

SCN/91945JD02/092: System Performance Check 900MHz Head 12 02 13

Date: 12/02/2013

DUT: Dipole 900 MHz; SN: 035; Type: D900V2; Serial: SN035



0 dB = 2.76mW/g

Communication System: CW; Frequency: 900 MHz; Duty Cycle: 1:1

Medium: 900 MHz HSL Medium parameters used: $f = 900$ MHz; $\sigma = 0.97$ mho/m; $\epsilon_r = 40.8$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.18, 6.18, 6.18); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

d=15mm, Pin=250mW 2/Area Scan (51x51x1): Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (interpolated) = 2.78 mW/g

d=15mm, Pin=250mW 2/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 55.1 V/m; Power Drift = -0.028 dB

Peak SAR (extrapolated) = 3.69 W/kg

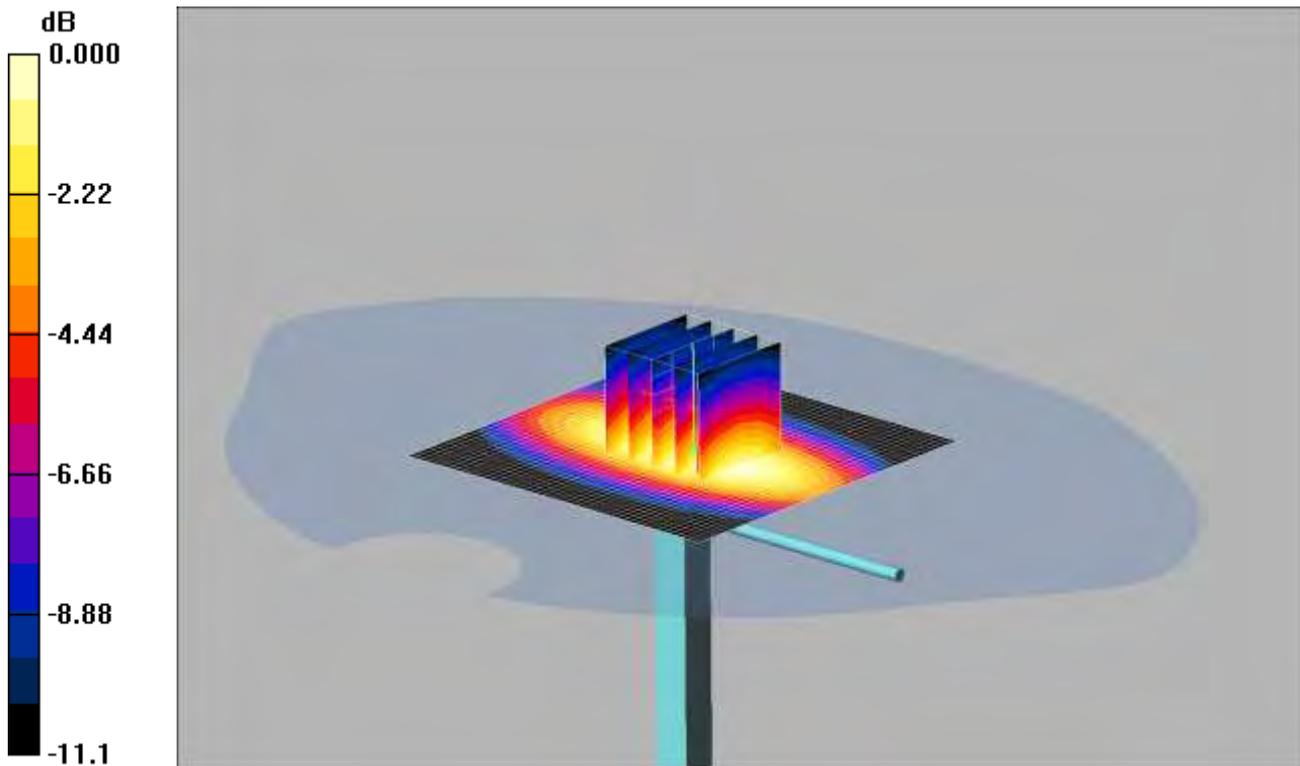
SAR(1 g) = 2.53 mW/g; SAR(10 g) = 1.63 mW/g

Maximum value of SAR (measured) = 2.76 mW/g

SCN/91945JD02/093: System Performance Check 900MHz Head 22 02 13

Date: 22/02/2013

DUT: Dipole 900 MHz; SN: 035; Type: D900V2; Serial: SN035



0 dB = 2.79mW/g

Communication System: CW; Frequency: 900 MHz; Duty Cycle: 1:1

Medium: 900 MHz HSL Medium parameters used: $f = 900$ MHz; $\sigma = 0.949$ mho/m; $\epsilon_r = 40$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(6.18, 6.18, 6.18); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

d=15mm, Pin=250mW 2/Area Scan (51x51x1): Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (interpolated) = 2.84 mW/g

d=15mm, Pin=250mW 2/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 56.5 V/m; Power Drift = -0.015 dB

Peak SAR (extrapolated) = 3.75 W/kg

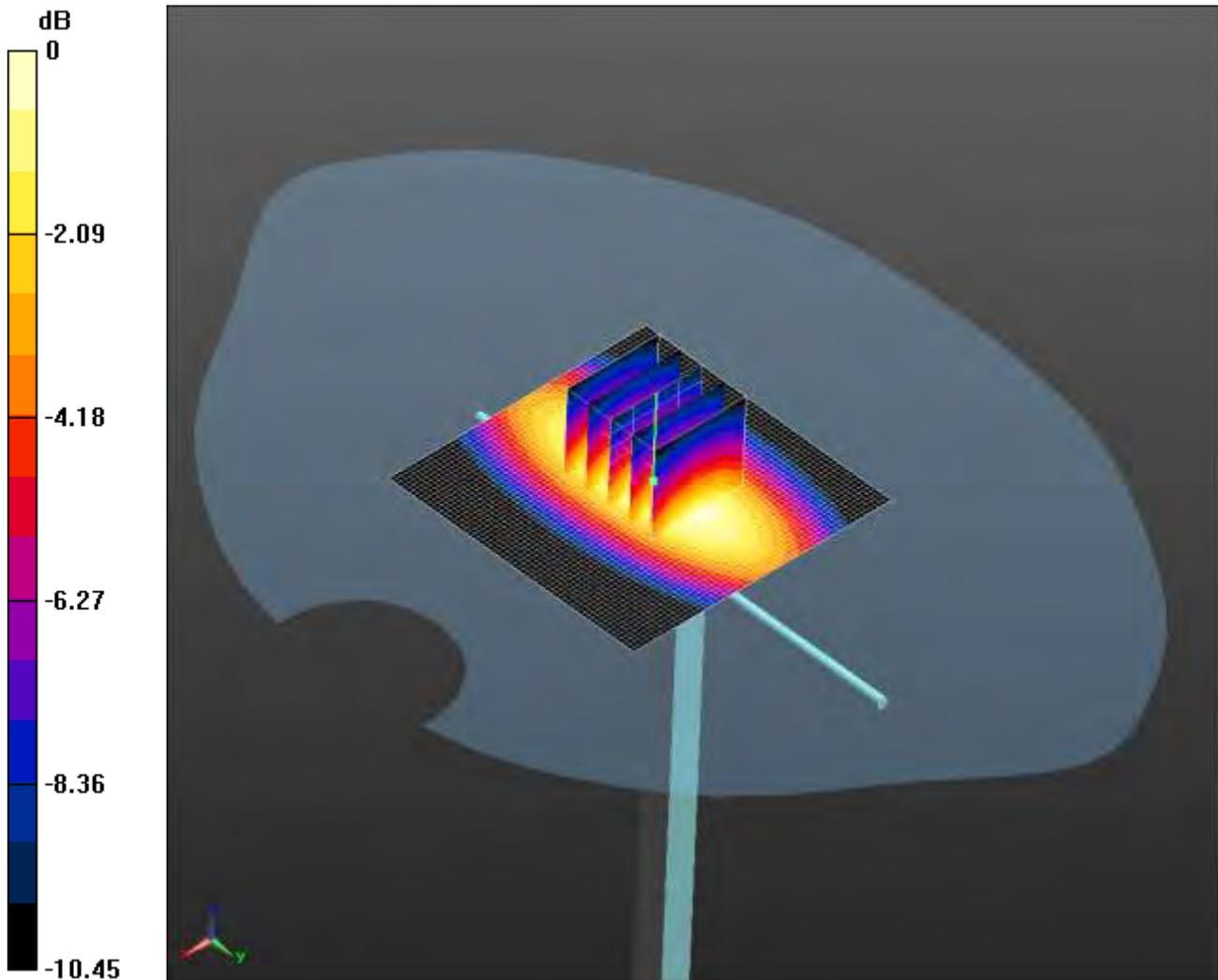
SAR(1 g) = 2.58 mW/g; SAR(10 g) = 1.67 mW/g

Maximum value of SAR (measured) = 2.79 mW/g

SCN/91945JD02/094: System Performance Check 900MHz Body 15 02 13

Date: 15/02/2013

DUT: Dipole 900 MHz D900V2; Type: D900V2; Serial: D900V2 - SN:035



0 dB = 2.96 W/kg = 4.71 dBW/kg

Communication System: CW; Frequency: 900 MHz; Duty Cycle: 1:1

Medium: 900 MHz MSL Medium parameters used: $f = 900$ MHz; $\sigma = 1.01$ mho/m; $\epsilon_r = 53.054$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(5.92, 5.92, 5.92); Calibrated: 26/07/2012;

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM B (Site 58); Type: Twin Phantom; Serial: TP:1020

- ; SEMCAD X Version 14.6.7 (6848)

SAR/d=15mm, Pin=250 mW, dist=15.0mm (ET-Probe) 2 2/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 2.97 W/kg

SAR/d=15mm, Pin=250 mW, dist=15.0mm (ET-Probe) 2 2/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 56.693 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 3.84 W/kg

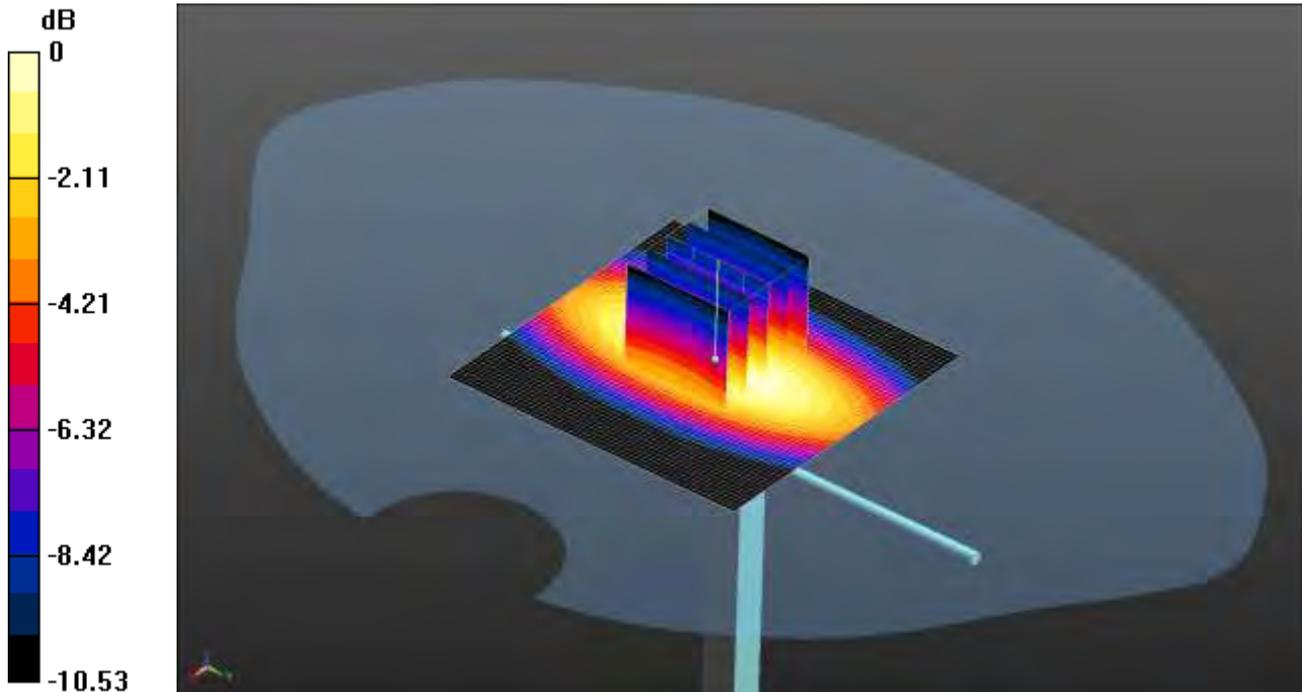
SAR(1 g) = 2.72 W/kg; SAR(10 g) = 1.79 W/kg

Maximum value of SAR (measured) = 2.96 W/kg

SCN/91945JD02/095: System Performance Check 900MHz Body 18 02 13

Date: 18/02/2013

DUT: Dipole 900 MHz D900V2; Type: D900V2; Serial: D900V2 - SN:035



0 dB = 2.97 W/kg = 4.73 dBW/kg

Communication System: CW; Frequency: 900 MHz; Duty Cycle: 1:1

Medium: 900 MHz MSL Medium parameters used: $f = 900 \text{ MHz}$; $\sigma = 1.028 \text{ mho/m}$; $\epsilon_r = 53.656$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(5.92, 5.92, 5.92); Calibrated: 26/07/2012;

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM B (Site 58); Type: Twin Phantom; Serial: TP:1020

- ; SEMCAD X Version 14.6.7 (6848)

SAR/d=15mm, Pin=250 mW, dist=15.0mm (ET-Probe) 2/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 2.96 W/kg

SAR/d=15mm, Pin=250 mW, dist=15.0mm (ET-Probe) 2/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 56.183 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 3.86 W/kg

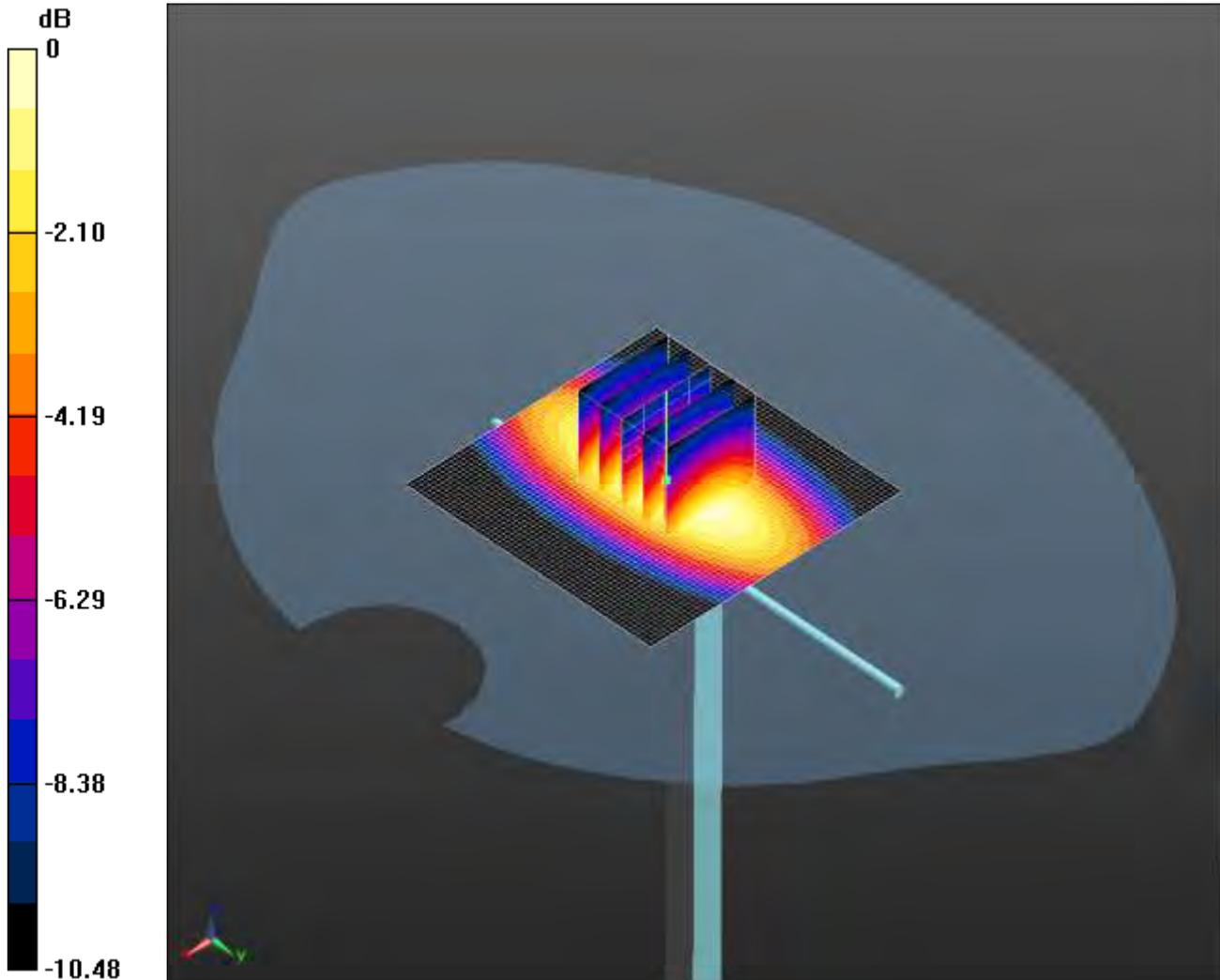
SAR(1 g) = 2.73 W/kg; SAR(10 g) = 1.79 W/kg

Maximum value of SAR (measured) = 2.97 W/kg

SCN/91945JD02/096: System Performance Check 900MHz Body 21 02 13

Date: 21/02/2013

DUT: Dipole 900 MHz D900V2; Type: D900V2; Serial: D900V2 - SN:035



0 dB = 2.92 W/kg = 4.65 dBW/kg

Communication System: CW; Frequency: 900 MHz; Duty Cycle: 1:1

Medium: 900 MHz MSL Medium parameters used: $f = 900$ MHz; $\sigma = 1.084$ mho/m; $\epsilon_r = 53.839$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(5.92, 5.92, 5.92); Calibrated: 26/07/2012;

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM B (Site 58); Type: Twin Phantom; Serial: TP:1020

- ; SEMCAD X Version 14.6.7 (6848)

SAR/d=15mm, Pin=250 mW, dist=15.0mm (ET-Probe) 2 2/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 2.93 W/kg

SAR/d=15mm, Pin=250 mW, dist=15.0mm (ET-Probe) 2 2/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement

grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 54.272 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 3.78 W/kg

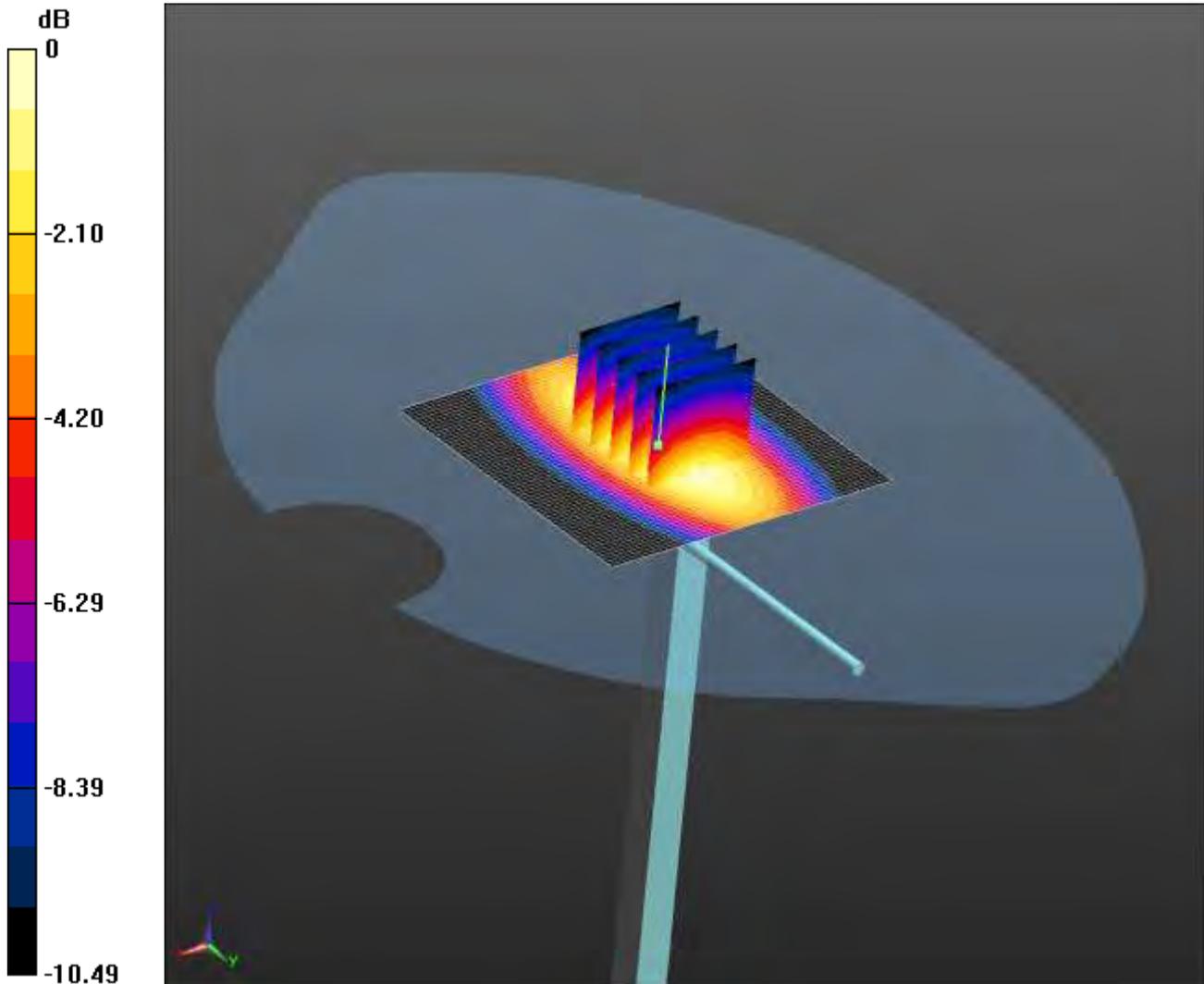
SAR(1 g) = 2.68 W/kg; SAR(10 g) = 1.77 W/kg

Maximum value of SAR (measured) = 2.92 W/kg

SCN/91945JD02/097: System Performance Check 900MHz Body 22 02 13

Date: 22/02/2013

DUT: Dipole 900 MHz D900V2; Type: D900V2; Serial: D900V2 - SN:035



0 dB = 2.99 W/kg = 4.76 dBW/kg

Communication System: CW; Frequency: 900 MHz; Duty Cycle: 1:1

Medium: 900 MHz MSL Medium parameters used: $f = 900$ MHz; $\sigma = 1.084$ mho/m; $\epsilon_r = 53.839$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(5.92, 5.92, 5.92); Calibrated: 26/07/2012;

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM B (Site 58); Type: Twin Phantom; Serial: TP:1020

- ; SEMCAD X Version 14.6.7 (6848)

SAR/d=15mm, Pin=250 mW, dist=15.0mm (ET-Probe) 2 2/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 2.99 W/kg

SAR/d=15mm, Pin=250 mW, dist=15.0mm (ET-Probe) 2 2/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement

grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 54.838 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 3.88 W/kg

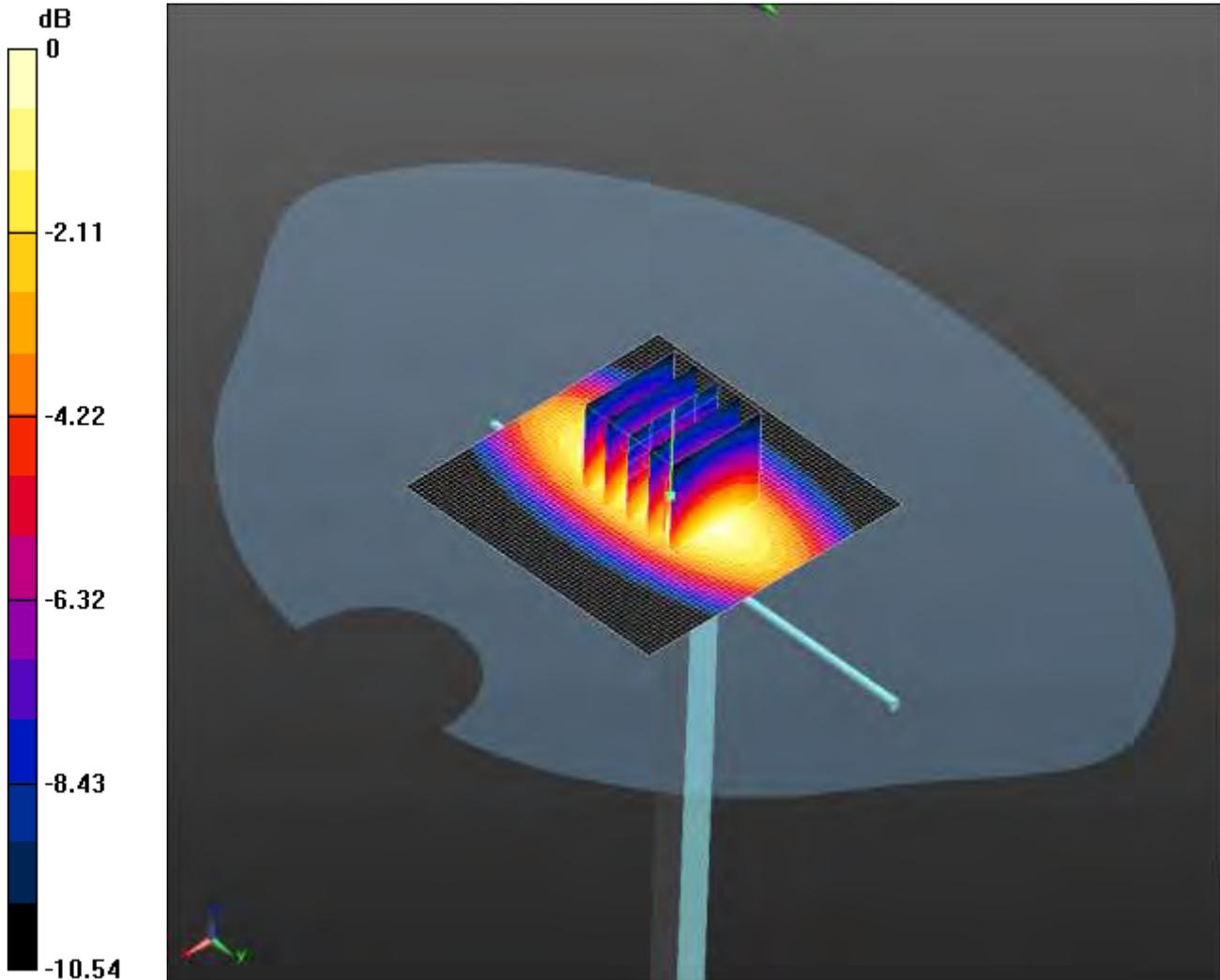
SAR(1 g) = 2.75 W/kg; SAR(10 g) = 1.81 W/kg

Maximum value of SAR (measured) = 2.99 W/kg

SCN/91945JD02/098: System Performance Check 900MHz Body 23 02 13

Date: 23/02/2013

DUT: Dipole 900 MHz D900V2; Type: D900V2; Serial: D900V2 - SN:035



0 dB = 2.92 W/kg = 4.65 dBW/kg

Communication System: CW; Frequency: 900 MHz; Duty Cycle: 1:1

Medium: 900 MHz MSL Medium parameters used: $f = 900$ MHz; $\sigma = 1.054$ mho/m; $\epsilon_r = 53.775$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(5.92, 5.92, 5.92); Calibrated: 26/07/2012;

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM B (Site 58); Type: Twin Phantom; Serial: TP:1020

- ; SEMCAD X Version 14.6.7 (6848)

SAR/d=15mm, Pin=250 mW, dist=15.0mm (ET-Probe) 2 2/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 2.95 W/kg

SAR/d=15mm, Pin=250 mW, dist=15.0mm (ET-Probe) 2 2/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 54.981 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 3.78 W/kg

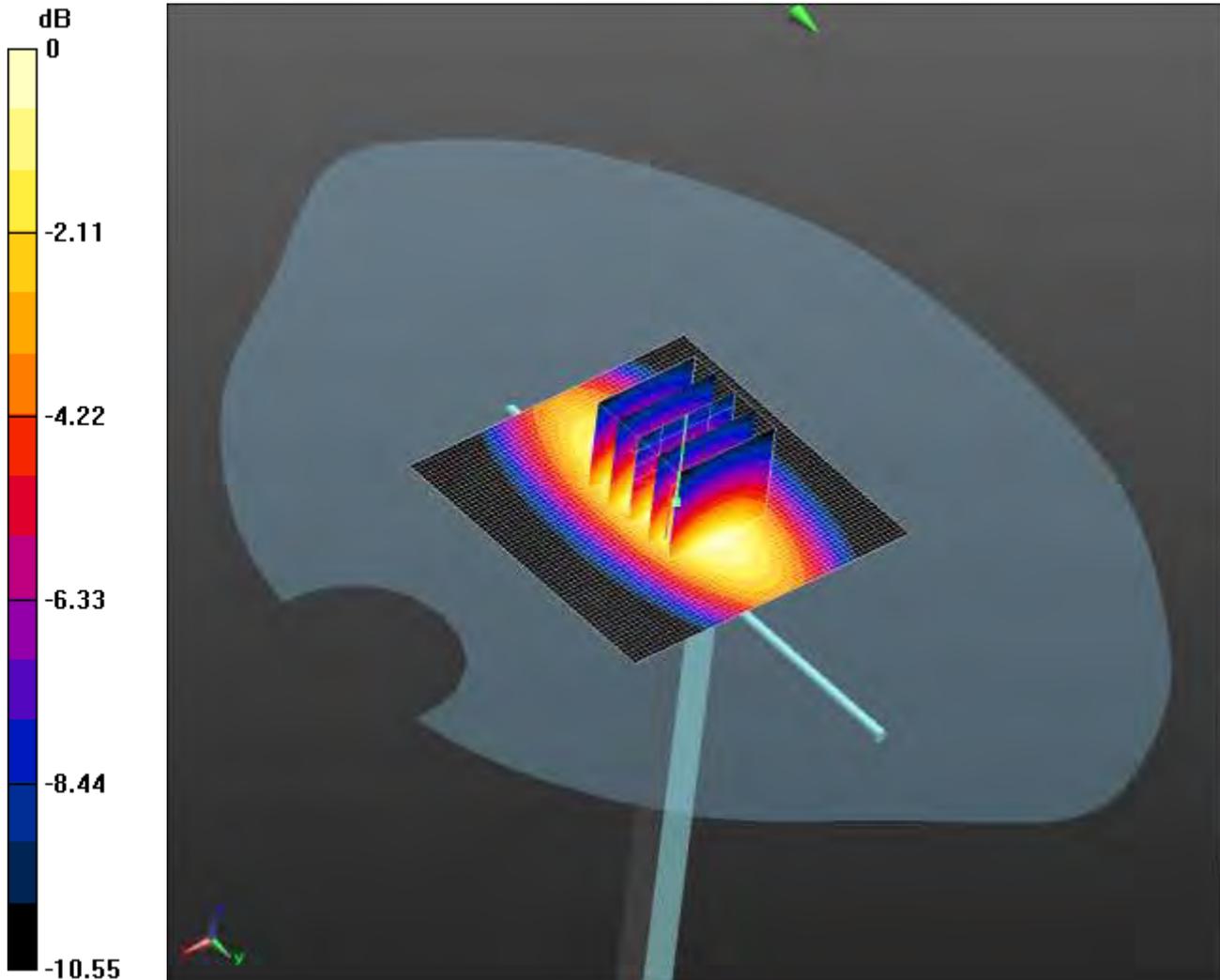
SAR(1 g) = 2.68 W/kg; SAR(10 g) = 1.76 W/kg

Maximum value of SAR (measured) = 2.92 W/kg

SCN/91945JD02/099: System Performance Check 900MHz Body 25 02 13

Date: 25/02/2013

DUT: Dipole 900 MHz D900V2; Type: D900V2; Serial: D900V2 - SN:035



0 dB = 2.99 W/kg = 4.76 dBW/kg

Communication System: CW; Frequency: 900 MHz; Duty Cycle: 1:1

Medium: 900 MHz MSL Medium parameters used: $f = 900$ MHz; $\sigma = 1.04$ mho/m; $\epsilon_r = 53.917$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1528; ConvF(5.92, 5.92, 5.92); Calibrated: 26/07/2012;

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn432; Calibrated: 02/05/2012

- Phantom: SAM B (Site 58); Type: Twin Phantom; Serial: TP:1020

- ; SEMCAD X Version 14.6.7 (6848)

SAR/d=15mm, Pin=250 mW, dist=15.0mm (ET-Probe) 2 2/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 3.02 W/kg

SAR/d=15mm, Pin=250 mW, dist=15.0mm (ET-Probe) 2 2/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement

grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 55.879 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 3.89 W/kg

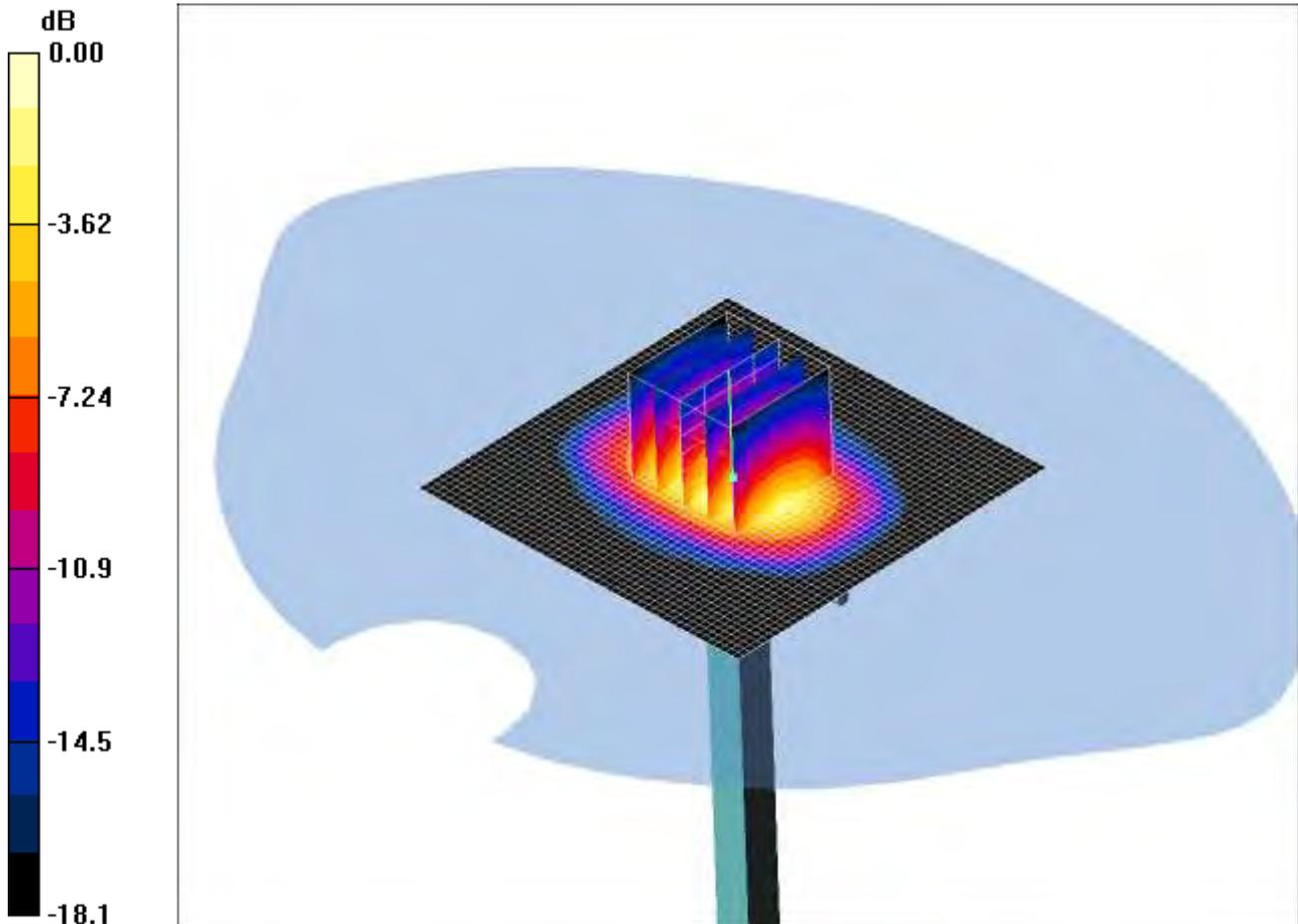
SAR(1 g) = 2.76 W/kg; SAR(10 g) = 1.82 W/kg

Maximum value of SAR (measured) = 2.99 W/kg

SCN/91945JD02/100: System Performance Check 1900MHz Head 09 02 13

Date: 09/02/2013

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: SN537



0 dB = 11.3mW/g

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

Medium: 1900 MHz HSL Medium parameters used: $f = 1900$ MHz; $\sigma = 1.44$ mho/m; $\epsilon_r = 39.6$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3304; ConvF(5.24, 5.24, 5.24); Calibrated: 31/08/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn450; Calibrated: 22/01/2013

- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031

- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

d=10mm, Pin=250mW/Area Scan (51x51x1): Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (interpolated) = 16.0 mW/g

d=10mm, Pin=250mW/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 90.1 V/m; Power Drift = -0.059 dB

Peak SAR (extrapolated) = 18.8 W/kg

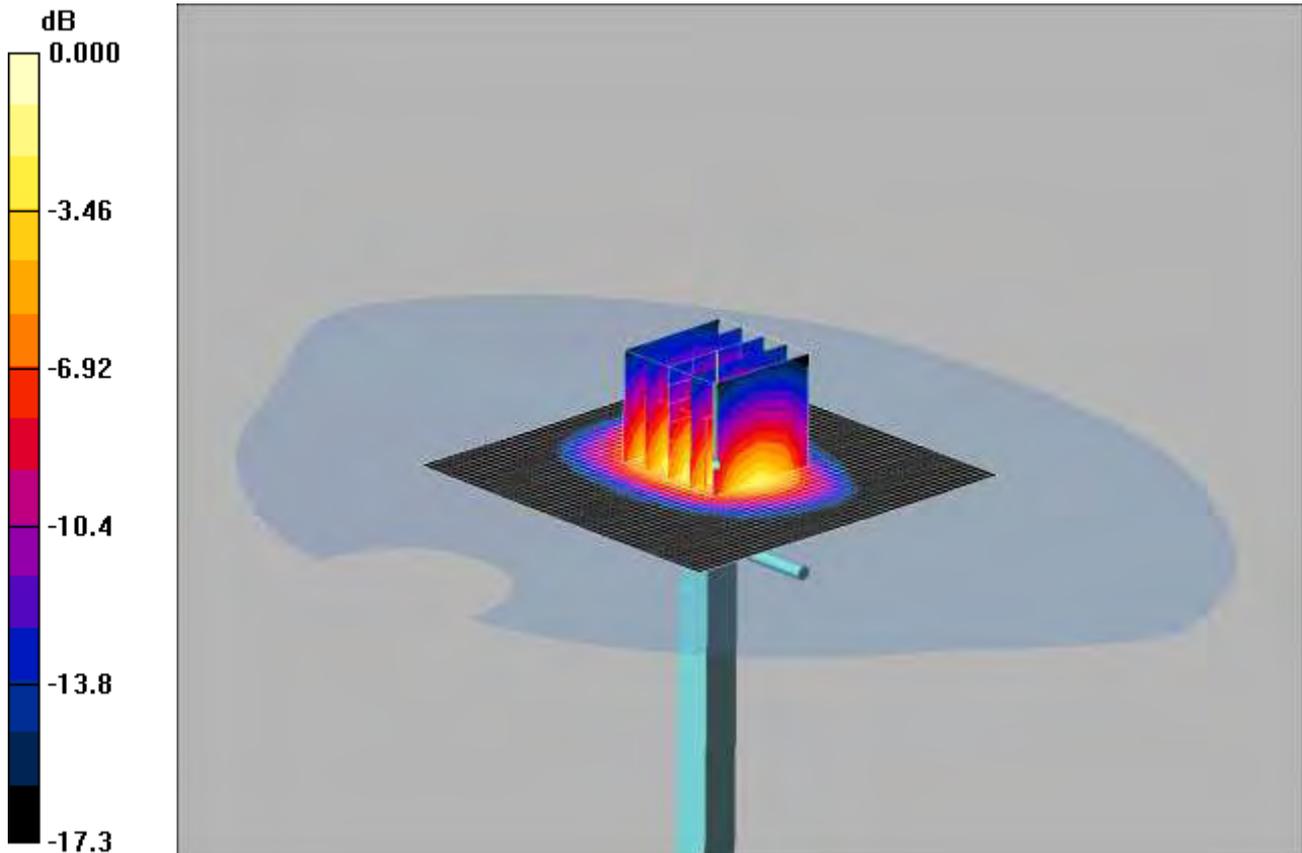
SAR(1 g) = 10.1 mW/g; SAR(10 g) = 5.22 mW/g

Maximum value of SAR (measured) = 11.3 mW/g

SCN/91945JD02/101: System Performance Check 1900MHz Body 12 02 13

Date: 12/02/2013

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: SN537



0 dB = 11.4mW/g

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

Medium: 1900 MHz MSL Medium parameters used: $f = 1900 \text{ MHz}$; $\sigma = 1.5 \text{ mho/m}$; $\epsilon_r = 51.4$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.69, 4.69, 4.69); Calibrated: 11/05/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

d=10mm, Pin=250mW/Area Scan (51x51x1): Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (interpolated) = 14.3 mW/g

d=10mm, Pin=250mW/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 90.3 V/m; Power Drift = 0.002 dB

Peak SAR (extrapolated) = 16.7 W/kg

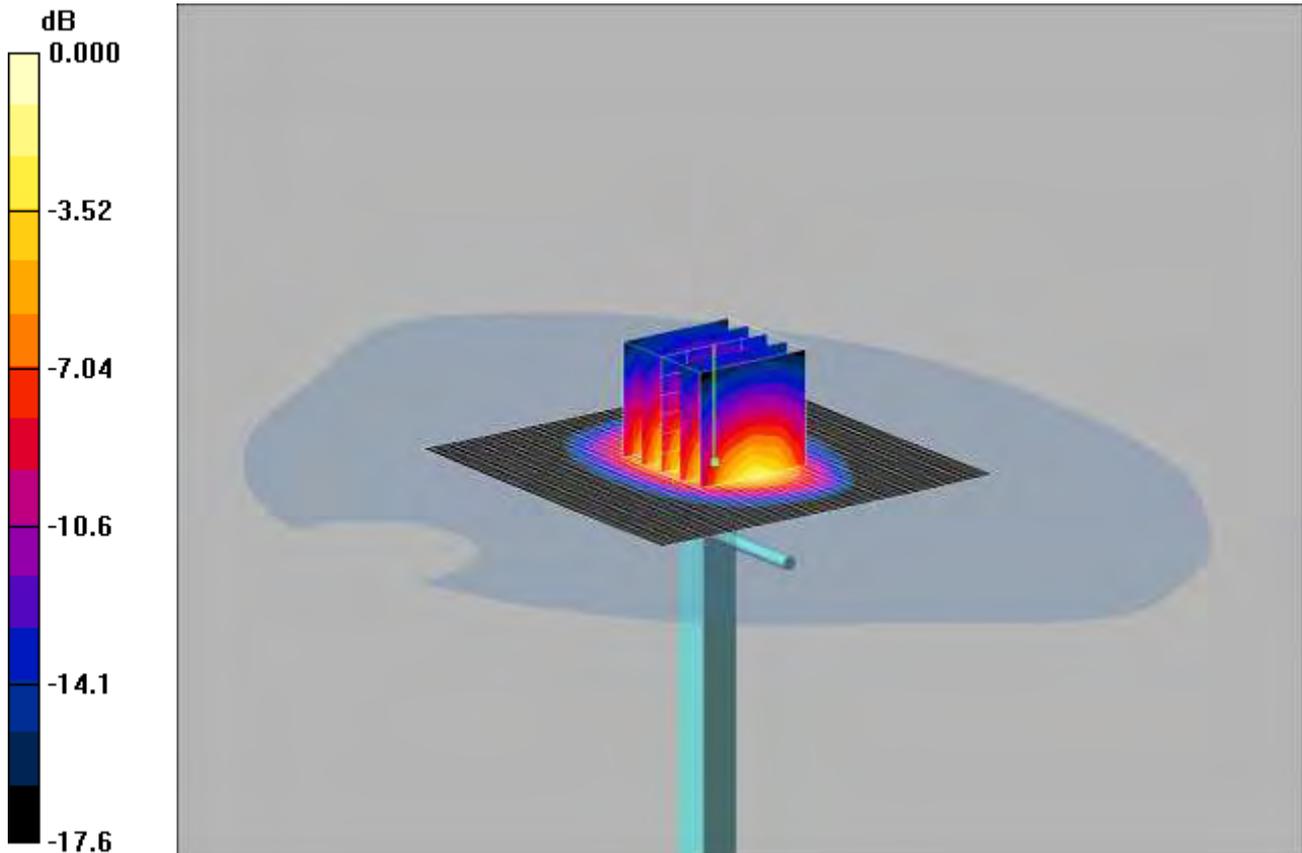
SAR(1 g) = 10.2 mW/g; SAR(10 g) = 5.47 mW/g

Maximum value of SAR (measured) = 11.4 mW/g

SCN/91945JD02/102: System Performance Check 1900MHz Body 13 02 13

Date: 13/02/2013

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: SN537



0 dB = 11.1mW/g

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

Medium: 1900 MHz MSL Medium parameters used: $f = 1900$ MHz; $\sigma = 1.5$ mho/m; $\epsilon_r = 51.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1587; ConvF(4.69, 4.69, 4.69); Calibrated: 11/05/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

d=10mm, Pin=250mW/Area Scan (51x51x1): Measurement grid: dx=20mm, dy=20mm

Maximum value of SAR (interpolated) = 14.5 mW/g

d=10mm, Pin=250mW/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 91.0 V/m; Power Drift = -0.045 dB

Peak SAR (extrapolated) = 16.3 W/kg

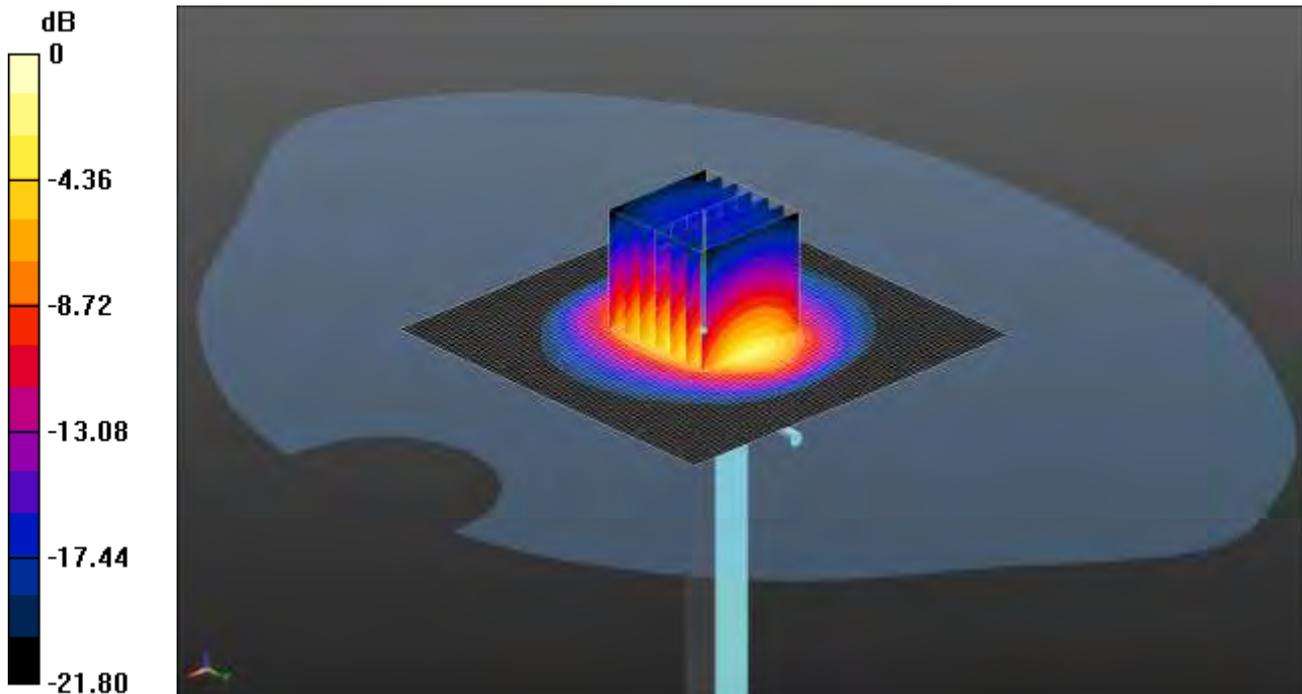
SAR(1 g) = 9.92 mW/g; SAR(10 g) = 5.3 mW/g

Maximum value of SAR (measured) = 11.1 mW/g

SCN/91945JD02/103: System Performance Check 2450MHz Head 01 03 13

Date: 01/03/2013

DUT: Dipole 2440 MHz; Type: D2440V2; Serial: D2440V2 - SN:701



0 dB = 15.4 W/kg = 11.88 dBW/kg

Communication System: CW; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: 2450 MHz HSL Medium parameters used: $f = 2450$ MHz; $\sigma = 1.796$ mho/m; $\epsilon_r = 38.856$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(6.89, 6.89, 6.89); Calibrated: 24/09/2012;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn431; Calibrated: 20/09/2012
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- ; SEMCAD X Version 14.6.7 (6848)

Configuration/d=10mm, Pin=250mW 2/Area Scan (81x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 15.8 W/kg

Configuration/d=10mm, Pin=250mW 2/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 93.449 V/m; Power Drift = -0.18 dB

Peak SAR (extrapolated) = 28.3 W/kg

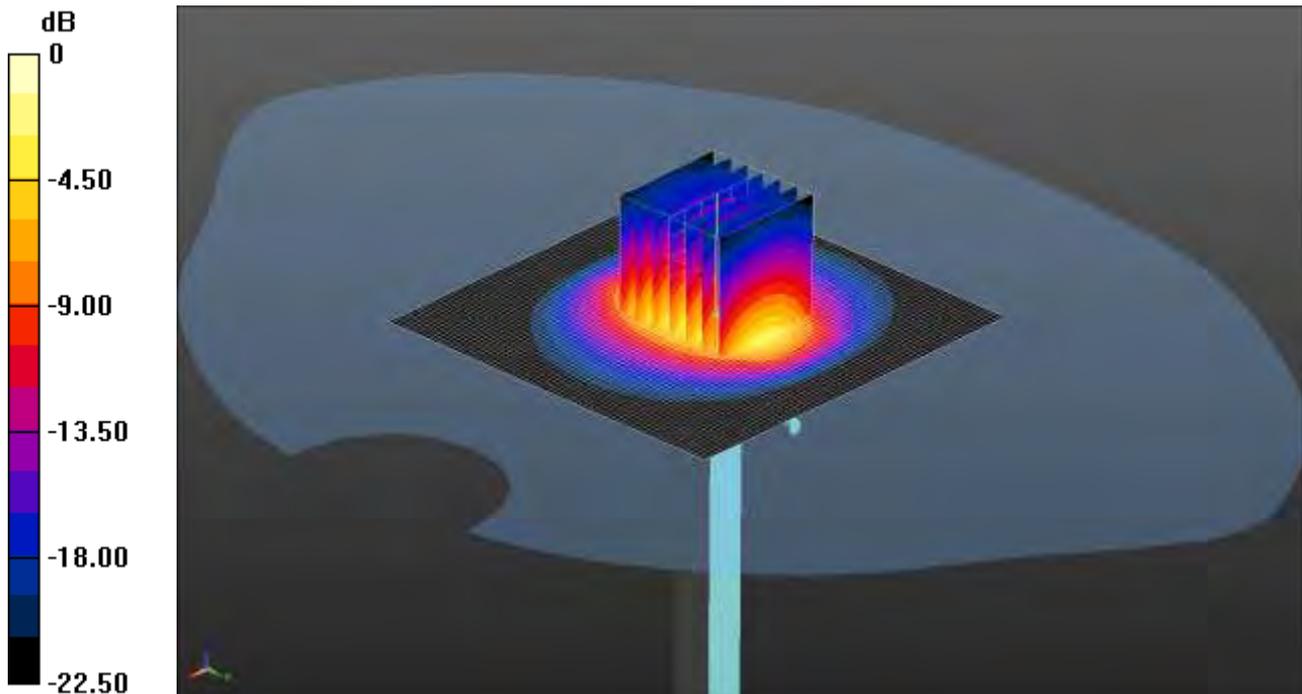
SAR(1 g) = 13.5 mW/g; SAR(10 g) = 6.22 mW/g

Maximum value of SAR (measured) = 15.4 W/kg

SCN/91945JD02/104: System Performance Check 2450MHz Body 28 02 13

Date: 28/02/2013

DUT: Dipole 2440 MHz; Type: D2440V2; Serial: D2440V2 - SN:701



0 dB = 15.1 W/kg = 11.79 dBW/kg

Communication System: CW; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: 2450 MHz MSL Medium parameters used: $f = 2450$ MHz; $\sigma = 2.026$ mho/m; $\epsilon_r = 51.498$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3304; ConvF(4.32, 4.32, 4.32); Calibrated: 31/08/2012;

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn450; Calibrated: 22/01/2013

- Phantom: SAM 12b (Site 57); Type: SAM 4.0; Serial: TP:1031

- ; SEMCAD X Version 14.6.7 (6848)

Configuration/d=10mm, Pin=250mW 2/Area Scan (81x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 15.5 W/kg

Configuration/d=10mm, Pin=250mW 2/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 86.455 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 28.5 W/kg

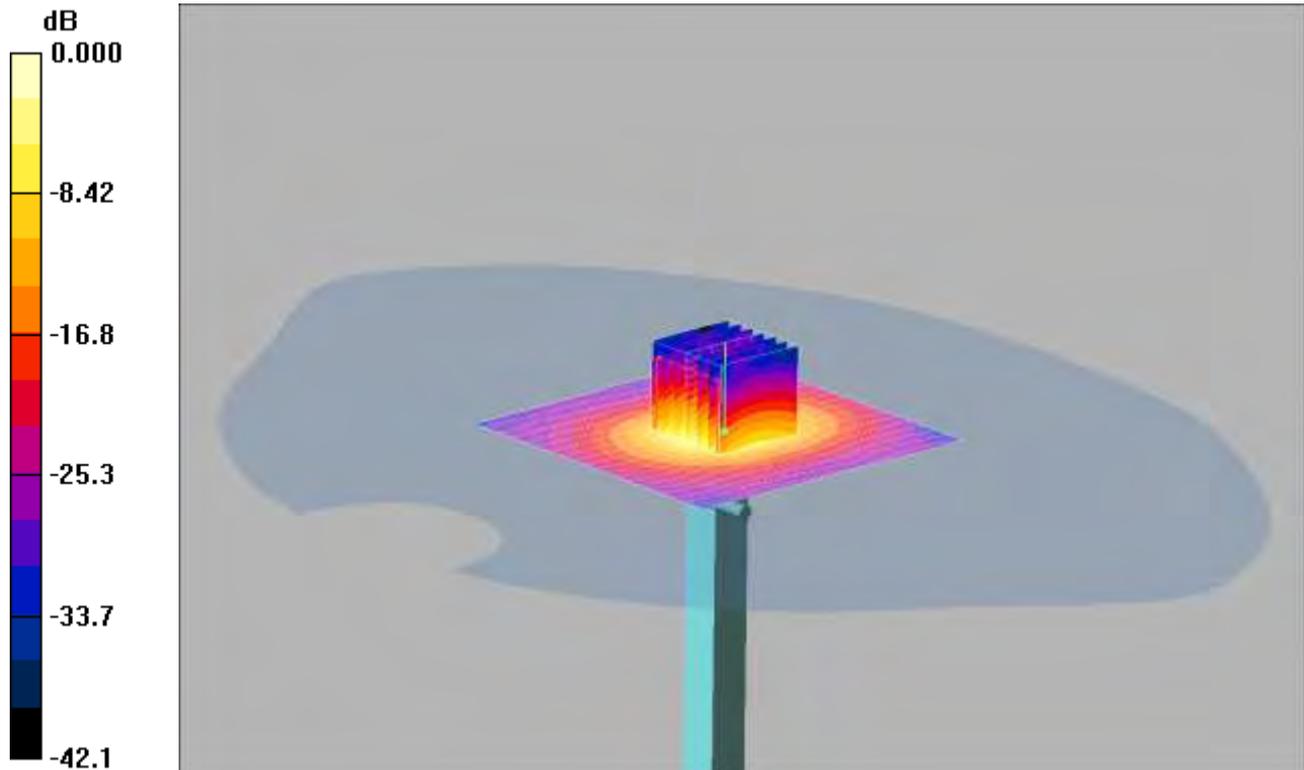
SAR(1 g) = 13.2 W/kg; SAR(10 g) = 5.95 W/kg

Maximum value of SAR (measured) = 15.1 W/kg

SCN/91945JD02/105: System Performance Check 5200MHz Head 27 02 13

Date: 27/02/2013

DUT: 5GHz Dipole; Type: D5GHzV2; Serial: SN 1016



0 dB = 9.77mW/g

Communication System: CW; Frequency: 5200 MHz; Duty Cycle: 1:1

Medium: 5200/5500/5800 MHz HSL Medium parameters used: $f = 5200$ MHz; $\sigma = 4.59$ mho/m; $\epsilon_r = 36$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(5.06, 5.06, 5.06); Calibrated: 24/09/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

d=10mm, Pin=100mW/Area Scan (81x81x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 9.83 mW/g

d=10mm, Pin=100mW/Zoom Scan (7x7x12) (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 47.0 V/m; Power Drift = 0.074 dB

Peak SAR (extrapolated) = 24.4 W/kg

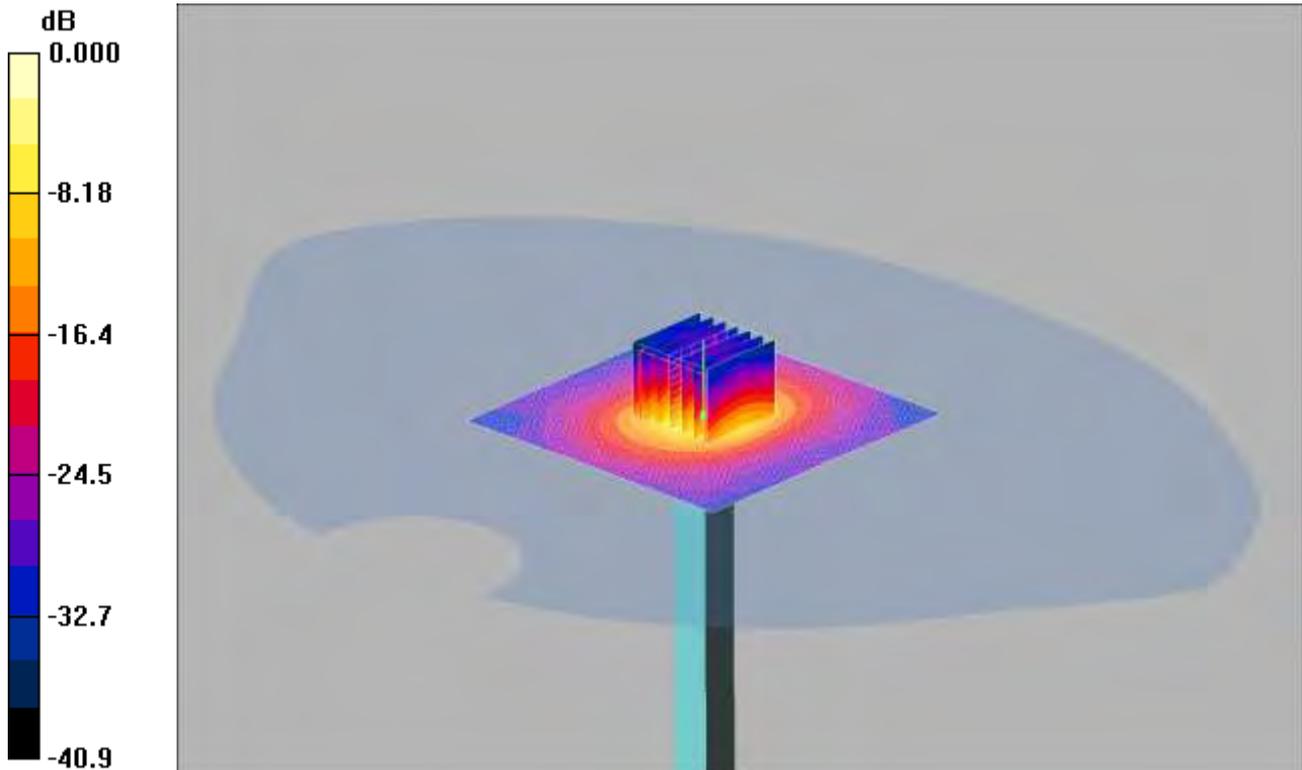
SAR(1 g) = 7.77 mW/g; SAR(10 g) = 2.26 mW/g

Maximum value of SAR (measured) = 9.77 mW/g

SCN/91945JD02/106: System Performance Check 5200MHz Head 28 02 13

Date: 28/02/2013

DUT: 5GHz Dipole; Type: D5GHzV2; Serial: SN 1016



0 dB = 16.4mW/g

Communication System: CW; Frequency: 5200 MHz; Duty Cycle: 1:1

Medium: 5200/5500/5800 MHz HSL Medium parameters used: $f = 5200$ MHz; $\sigma = 4.64$ mho/m; $\epsilon_r = 36.7$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(5.06, 5.06, 5.06); Calibrated: 24/09/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection) Sensor-Surface: 2mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

d=10mm, Pin=100mW 2/Area Scan (81x81x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 9.09 mW/g

d=10mm, Pin=100mW 2/Zoom Scan (7x7x12) (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 45.4 V/m; Power Drift = 0.094 dB

Peak SAR (extrapolated) = 31.3 W/kg

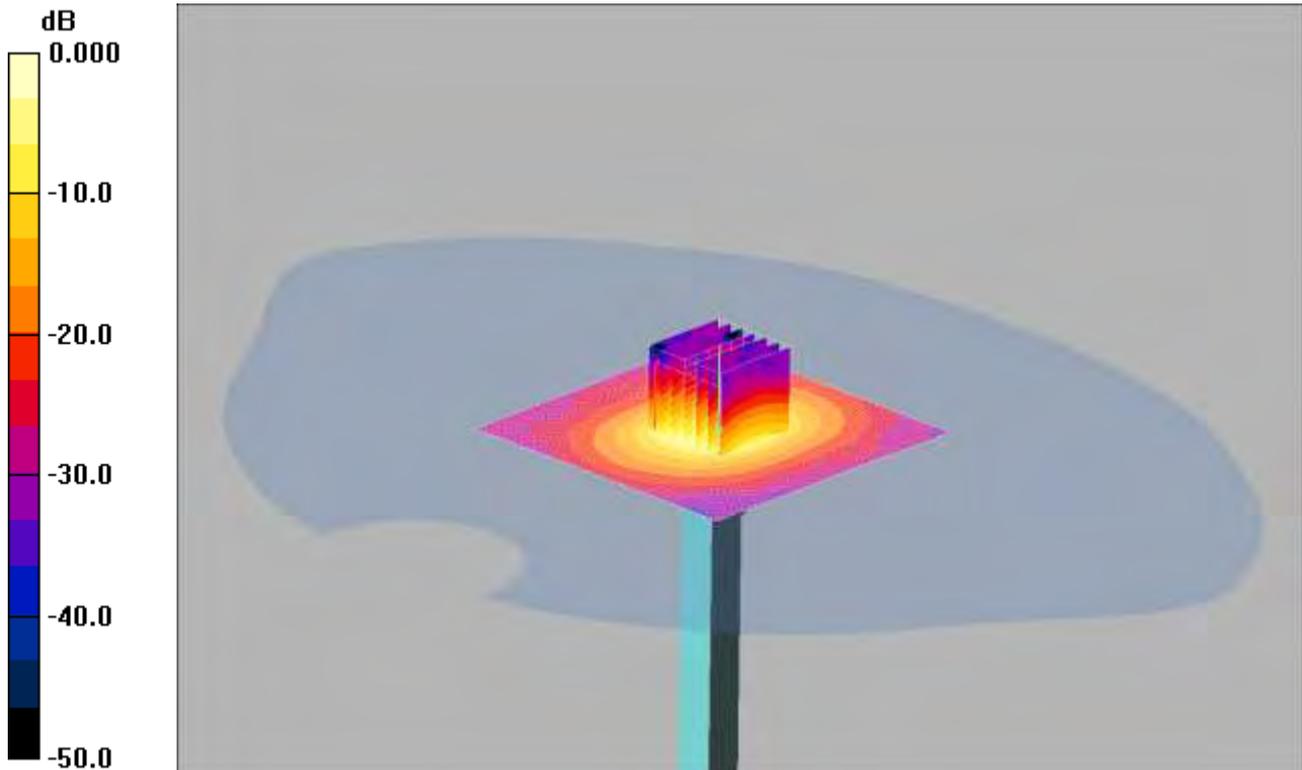
SAR(1 g) = 7.89 mW/g; SAR(10 g) = 2.27 mW/g

Maximum value of SAR (measured) = 16.4 mW/g

SCN/91945JD02/107: System Performance Check 5500MHz Head 27 02 13

Date: 27/02/2013

DUT: 5GHz Dipole; Type: D5GHzV2; Serial: SN 1016



0 dB = 9.86mW/g

Communication System: CW; Frequency: 5500 MHz; Duty Cycle: 1:1

Medium: 5200/5500/5800 MHz HSL Medium parameters used: $f = 5500$ MHz; $\sigma = 4.9$ mho/m; $\epsilon_r = 35.6$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(4.54, 4.54, 4.54); Calibrated: 24/09/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

d=10mm, Pin=100mW/Area Scan (81x81x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 9.70 mW/g

d=10mm, Pin=100mW/Zoom Scan (7x7x12) (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 45.6 V/m; Power Drift = -0.004 dB

Peak SAR (extrapolated) = 26.1 W/kg

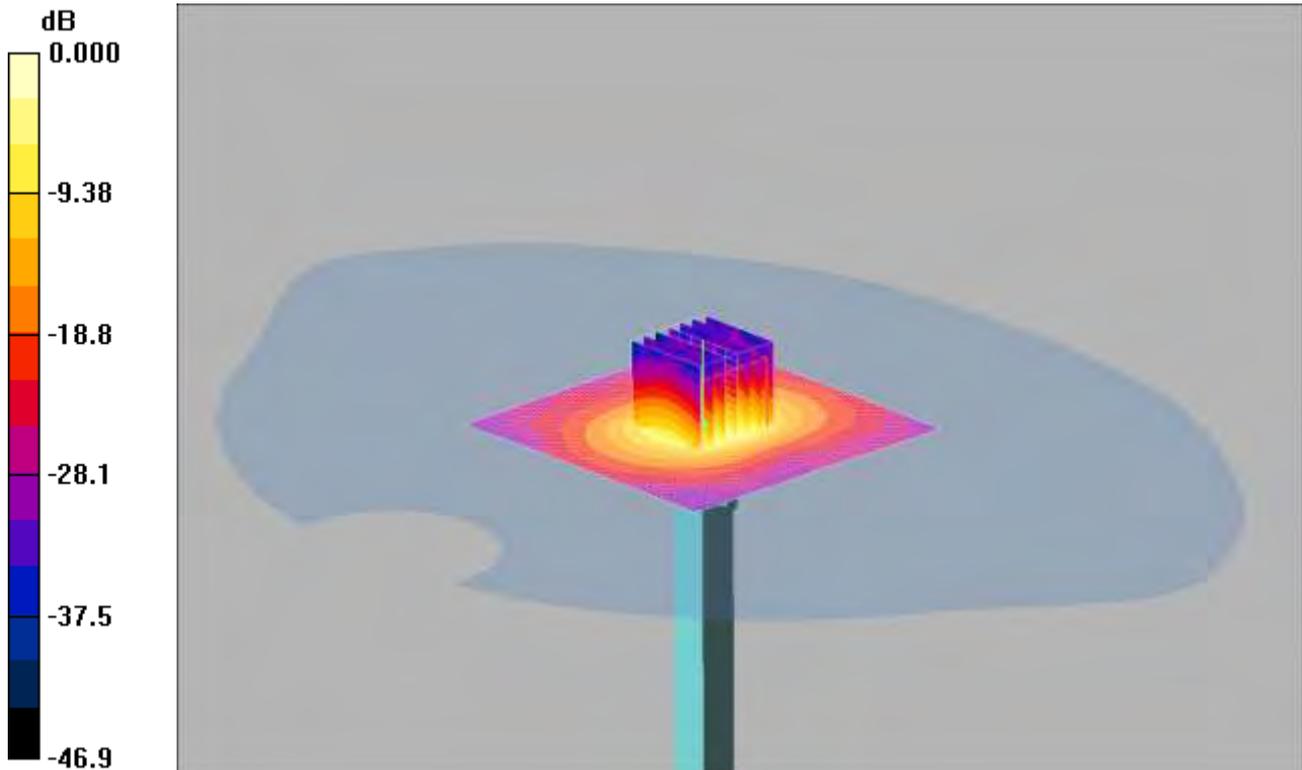
SAR(1 g) = 7.92 mW/g; SAR(10 g) = 2.26 mW/g

Maximum value of SAR (measured) = 9.86 mW/g

SCN/91945JD02/108: System Performance Check 5500MHz Head 28 02 13

Date: 28/02/2013

DUT: 5GHz Dipole; Type: D5GHzV2; Serial: SN 1016



0 dB = 10.1mW/g

Communication System: CW; Frequency: 5500 MHz; Duty Cycle: 1:1

Medium: 5200/5500/5800 MHz HSL Medium parameters used: $f = 5500$ MHz; $\sigma = 4.98$ mho/m; $\epsilon_r = 36.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(4.54, 4.54, 4.54); Calibrated: 24/09/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

d=10mm, Pin=100mW/Area Scan (81x81x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 10.2 mW/g

d=10mm, Pin=100mW/Zoom Scan (7x7x12) (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 46.3 V/m; Power Drift = 0.024 dB

Peak SAR (extrapolated) = 26.5 W/kg

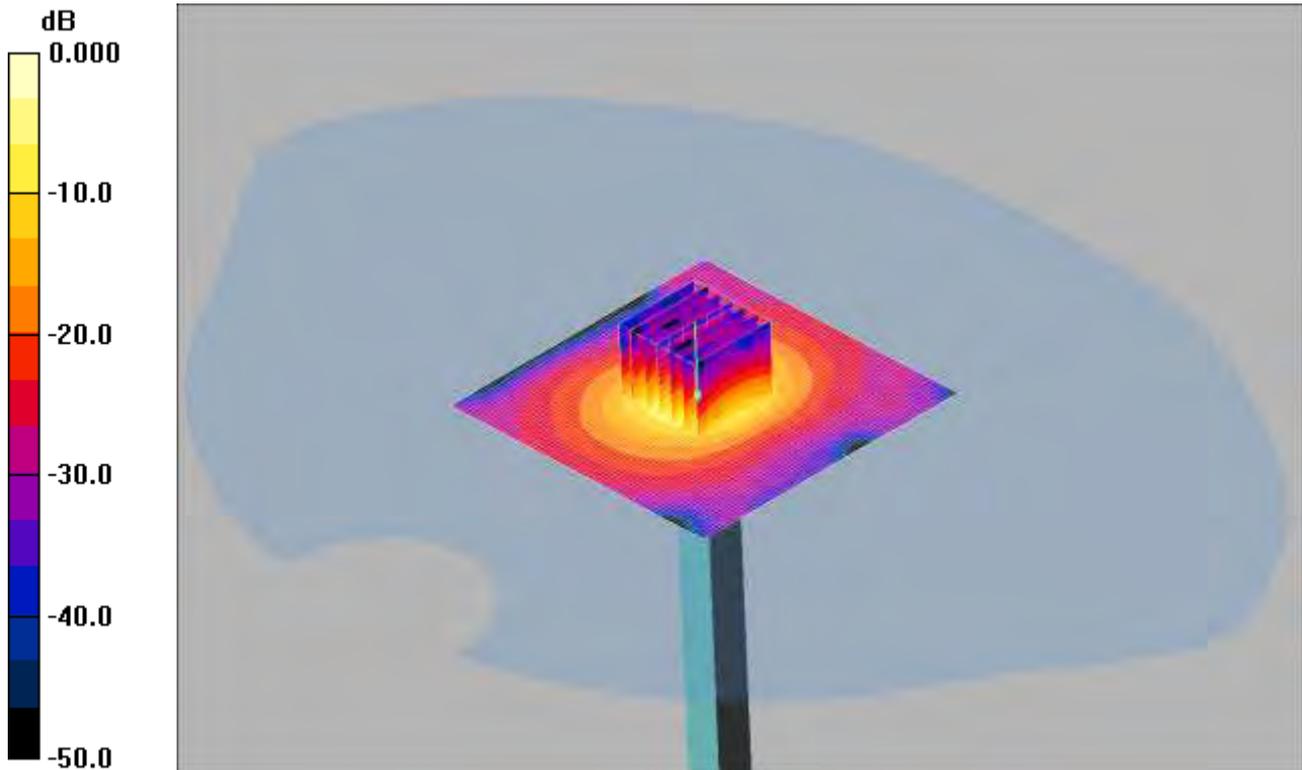
SAR(1 g) = 8.16 mW/g; SAR(10 g) = 2.35 mW/g

Maximum value of SAR (measured) = 10.1 mW/g

SCN/91945JD02/109: System Performance Check 5800MHz Head 28 02 13

Date: 28/02/2013

DUT: 5GHz Dipole; Type: D5GHzV2; Serial: SN 1016



0 dB = 16.0mW/g

Communication System: CW; Frequency: 5800 MHz; Duty Cycle: 1:1

Medium: 5200/5500/5800 MHz HSL Medium parameters used: $f = 5800$ MHz; $\sigma = 5.3$ mho/m; $\epsilon_r = 36$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3814; ConvF(4.5, 4.5, 4.5); Calibrated: 24/09/2012

- Sensor-Surface: 4mm (Mechanical Surface Detection) Sensor-Surface: 2mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn431; Calibrated: 20/09/2012

- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1020

- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

d=10mm, Pin=100mW/Area Scan (81x81x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 8.50 mW/g

d=10mm, Pin=100mW/Zoom Scan (7x7x12) 2 2 (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 41.2 V/m; Power Drift = -0.113 dB

Peak SAR (extrapolated) = 32.9 W/kg

SAR(1 g) = 7.72 mW/g; SAR(10 g) = 2.18 mW/g

Maximum value of SAR (measured) = 16.0 mW/g