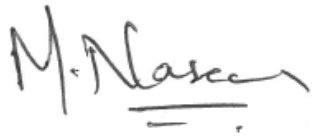
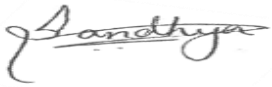
TEST REPORT

Test of: SCRAM Remote Breath

To: KDB 865664 D01 SAR Measurement 100MHz to 6GHz

Test Report Serial No:
UL-SAR-RPA10036315JD02A V3.0

Version 3.0 superseded all previous report versions

This Test Report Is Issued Under The Authority Of Richelieu Quoi, SAR Technology Consultant:	 pp (APPROVED SIGNATORY)
Checked By: Sandhya Menon	 (APPROVED SIGNATORY)
Issue Date:	**07 April 2014**
Test Dates:	**6th January to 9th January 2014**

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1. Customer Information

Company Name:	Alcohol Monitoring Systems Inc
Address:	1241 West Mineral Avenue, Littleton, Colorado 80120 United States

2. Summary of Test Results

Test Name	Specification Reference	Result
Specific Absorption Rate – GSM850	KDB 865664 D01 SAR Measurement 100MHz to 6 GHz	✓
Specific Absorption Rate – PCS1900	KDB 865664 D01 SAR Measurement 100MHz to 6 GHz	✓
Specific Absorption Rate –UMTS FDD 2	KDB 865664 D01 SAR Measurement 100MHz to 6 GHz	✓
Specific Absorption Rate – UMTS FDD 5	KDB 865664 D01 SAR Measurement 100MHz to 6 GHz	✓
Key to Results	✓ = Complied ✗ = Did not comply	

2.1. Highest Standalone Reported SAR for Hand-Held SAR Configuration

Individual Transmitter Evaluation per Band:

Exposure Configuration	Technology Band	Mode	Highest Reported 10g –SAR (W/kg)	Equipment Class	Max Rated Avg Power + Max Tolerance [dBm]
Hand-Held (Separation Distance 0mm)	GSM850	Data	0.976	PCE	33.5
Hand-Held (Separation Distance 0mm)	PCS1900	Data	0.844	PCE	30.5
Hand-Held (Separation Distance 0mm)	UMTS FDD 2	Data	1.309	PCE	24.5
Hand-Held (Separation Distance 0mm)	UMTS FDD 5	Data	0.686	PCE	24.5

2.2. Highest Reported Simultaneous Transmission SAR Analysis:

The Simultaneous Transmission SAR Analysis was not required as this feature is not supported by the EUT.

2.3. SAR measurement variability and measurement uncertainty analysis:

Exposure Configuration	Technology Band	Measured 10g –SAR (W/kg)	Equipment Class	Max Meas. Source base Avg Power [dBm]	Ratio of Largest to Smallest SAR Measured
Hand-Held (Separation Distance 0mm)	GSM850	0.890	PCE	33.1	1.16
	GSM850	0.769			
	UMTS Band 2	1.140	PCE	23.9	1.02
	UMTS Band 2	1.110			

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	GPRS							
	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	-1.0 ~ +0.5	30.0	-1.0 ~ +0.5	28.2	-1.0 ~ +0.5	27.0	-1.0 ~ +0.5
PCS1900	30.0	-1.0 ~ +0.5	27.0	-1.0 ~ +0.5	25.2	-1.0 ~ +0.5	24.0	-1.0 ~ +0.5

Bands	EDGE GMSK (MCS1-4)							
	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	-1.0 ~ +0.5	30.0	-1.0 ~ +0.5	28.2	-1.0 ~ +0.5	27.0	-1.0 ~ +0.5
PCS1900	30.0	-1.0 ~ +0.5	27.0	-1.0 ~ +0.5	25.2	-1.0 ~ +0.5	24.0	-1.0 ~ +0.5

Bands	EDGE 8PSK (MCS5-9)							
	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	-1.0 ~ +0.5	24.0	-1.0 ~ +0.5	22.2	-1.0 ~ +0.5	21.0	-1.0 ~ +0.5
PCS1900	26.0	-1.0 ~ +0.5	23.0	-1.0 ~ +0.5	21.2	-1.0 ~ +0.5	20.0	-1.0 ~ +0.5

Bands				
	Target (dBm)	Tolerance ± (dB)	Target (dBm)	Tolerance ± (dB)
UMTS FDD 2	24.0	-1.0 ~ + 0.5	24.0	-1.0 ~ + 0.5
UMTS FDD 5	24.0	-1.0 ~ + 0.5	24.0	-1.0 ~ + 0.5

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 as indicated by manufacturer.

3. Test Specification, Methods and Procedures

3.1. Test Specification

Reference:	KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r02
Title:	SAR Measurement Requirements for 100 MHz to 6 GHz
Purpose of Test:	Field probes, tissue dielectric properties, SAR scans, measurement accuracy and variability of the measured results are discussed. The field probe and SAR scan requirements are derived from criteria considered in draft standard IEEE P1528-2011. The similar requirements in Supplement C 01-01 are generally superseded by the procedures in this document, and which are required to be used to qualify for TCB equipment approval.
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:

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

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.

FCC KDB Publication:

KDB 447498 D01 General RF Exposure Guidance v05r01

KDB 941225 D01 SAR test for 3G devices v02

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

KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r02

KDB 865664 D02 RF Exposure Reporting v01r01

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:	Portable Breath Alcohol Monitor	
Brand Name:	Scram Remote Breath	
Model Name / Number:	SCRAM Remote Breath/ 19669	
Serial Number:	25	32
IMEI Number:	359999040790776	359999040419756
Hardware Version Number:	A	
Software Version Number:	Not Specified	
FCC ID Number:	P8M-AMSCGJMW1	
IC Number:	8549A-AMSCGJMW1	
Country of Manufacture:	China	
Date of Receipt:	02 January 2014	

Note(s):

1. IMEI: 359999040790776 used to perform SAR measurements only.
2. IMEI: 359999040419756 used to perform conducted power measurements only.

4.2. Description of EUT

The Equipment Under Test is a 'Portable Breath Alcohol Monitor' with GSM850, PCS1900 and UMTS FDD 2/5 Bands. It supports GPRS/EDGE with multi-slots class 12 and HSPA with HSDPA (Category 10) and HSUPA (Category 6).

4.3. Modifications Incorporated in the EUT

There were no modification during the course of testing the device

4.4. Accessories

The following accessories were supplied with the EUT during testing

Description:	Battery
Brand Name:	None stated
Model Name or Number:	None Stated
Serial Number:	Not specified
Cable Length and Type:	Not Applicable
Country of Manufacture:	China
Connected to Port	Unique to manufacturer

4.5. Support Equipment

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

Description:	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

4.6. Additional Information Related to Testing

Equipment Category	2G GSM / PCS		TDMA 850 / 1900	GPRS, EDGE Data
	3G UMTS Band		FDD 2 / 5	RMC12.2
Type of Unit	Portable Transceiver			
Intended Operating Environment:	Within GSM, UMTS Coverage for General Population / Uncontrolled Exposure category.			
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 2	Communication Test Set configured to allow to EUT to transmit at a maximum power as per KDB 941225 D01.		
	UMTS FDD 5	Communication Test Set configured to allow to EUT to transmit at a maximum power as per KDB 941225 D01.		
Transmitter Frequency Range:	GSM 850	824 to 849 MHz		
	PCS1900	1850 to 1910 MHz		
	UMTS FDD 2	1852 to 1908 MHz		
	UMTS FDD 5	826 to 847 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 2	9262	Low	1852.4
		9400	Middle	1880.0
		9538	High	1907.6
	UMTS FDD 5	4132	Low	826.4
		4183	Middle	836.6
		4233	High	846.6

Additional Information Related to Testing (Continued)		
Modulation(s):	GMSK (GPRS):	217 Hz
	QPSK(UMTS / HSDPA/HSPA):	0Hz
Modulation Scheme (Crest Factor for technologies SAR tested):	GMSK (GPRS850/GPRS1900 1Tx):	8.3
	QPSK(UMTS FDD / HSDPA):	1
Antenna Type:	Internal integral	
Antenna Length:	Unknown	
Number of Antenna Positions:	WWAN ~ UMTS / GSM	1 fixed
Power Supply Requirement:	7.2 V (Nominal)	
Battery Type(s):	In built Li-ion	

5. Deviations from the Test Specification

Test was performed as per reference documents and FCC KDB publication procedures listed in section 3.2 of this report.

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:

- 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 1 Uplink time slots with CS1 for GPRS.
- 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 1 Uplink time slots with CS1 for GPRS.
- UMTS FDD 2, 5 – RMC 12.2kbps allocated mode with Communication Test Set configured to allow the EUT to transmit at a maximum as per KDB 941225 D01.

6.2. Configuration and Peripherals

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

- Standalone fully charged battery powered.
- Hand-held configurations (Front, Back, Left Hand Side, Right Hand Side and Top) were evaluated.

Hand-Held 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 then 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.

6.3 SAR Test Exclusion Consideration

Configuration(s)	Antenna to Edge Separation	SAR Required
Front	< 25 mm	Yes
Back	< 25 mm	Yes
Left Hand Side	< 25 mm	Yes
Right Hand Side	< 25 mm	Yes
Top	< 25 mm	Yes
Bottom	> 100 mm	No

Note:

1. Please refer the ***PHT/10036315/015: Internal View of EUT (Back of EUT)*** for the detail Edges of the EUT and the Transmitting Antenna Location.

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. RF Output Average Power Measurement: GSM

7.2.1. GSM850

GPRS (GMSK) – Coding Scheme: CS1

Channel Number	Frequency (MHZ)	Avg Burst Power (dBm)				Frame Power (dBm)			
		1Uplink	2Uplink	3Uplink	4Uplink	1Uplink	2Uplink	3Uplink	4Uplink
128	824.2	33.0	29.1	27.5	26.4	24.0	23.1	23.2	23.4
190	836.6	33.1	29.3	27.6	26.3	24.1	23.3	23.3	23.3
251	848.8	33.1	29.5	27.5	26.2	24.1	23.5	23.2	23.2

EDGE (GMSK) – Coding Scheme: MCS4

Channel Number	Frequency (MHZ)	Avg Burst Power (dBm)				Frame Power (dBm)			
		1Uplink	2Uplink	3Uplink	4Uplink	1Uplink	2Uplink	3Uplink	4Uplink
128	824.2	33.0	29.1	27.5	26.4	24.0	23.1	23.2	23.4
190	836.6	33.1	29.3	27.6	26.3	24.1	23.3	23.3	23.3
251	848.8	33.1	29.5	27.5	26.2	24.1	23.5	23.2	23.2

EDGE (8PSK) – Coding Scheme: MCS9

Channel Number	Frequency (MHZ)	Avg Burst Power (dBm)				Frame Power (dBm)			
		1Uplink	2Uplink	3Uplink	4Uplink	1Uplink	2Uplink	3Uplink	4Uplink
128	824.2	26.0	23.0	21.3	20.2	17.0	17.0	17.0	17.2
190	836.6	26.1	23.0	21.2	20.1	17.1	17.0	16.9	17.1
251	848.8	26.3	23.1	21.5	20.5	17.3	17.1	17.2	17.5

Note:

Scale factor for uplink time slot:

1. 1 Uplink: time slot ratio = 8:1 => 10*log(8/1) = 9.03 dB
2. 2 Uplink: time slot ratio = 8:2 => 10*log(8/2) = 6.02 dB
3. 3 Uplink: time slot ratio = 8:3 => 10*log(8/3) = 4.26 dB
4. 4 Uplink: time slot ratio = 8:4 => 10*log(8/4) = 3.01 dB
5. The worst-case configuration and mode for SAR testing is determined to be as follows:
   - Hand-held: GMSK (GPRS) mode with **1 uplink**, based on the output power measurements above

7.2.2. PCS1900

GPRS (GMSK) – Coding Scheme: CS1

Channel Number	Frequency (MHZ)	Avg Burst Power (dBm)				Frame Power (dBm)			
		1Uplink	2Uplink	3Uplink	4Uplink	1Uplink	2Uplink	3Uplink	4Uplink
512	1850.2	29.8	26.7	24.7	23.3	20.8	20.7	20.4	20.3
661	1880.0	30.0	26.7	24.6	23.3	21.0	20.7	20.3	20.3
810	1909.8	30.3	26.9	24.8	23.4	21.3	20.9	20.5	20.4

EDGE (GMSK) – Coding Scheme: MCS4

Channel Number	Frequency (MHZ)	Avg Burst Power (dBm)				Frame Power (dBm)			
		1Uplink	2Uplink	3Uplink	4Uplink	1Uplink	2Uplink	3Uplink	4Uplink
512	1850.2	29.8	26.7	24.7	23.3	20.8	20.7	20.4	20.3
661	1880.0	30.0	26.7	24.6	23.3	21.0	20.7	20.3	20.3
810	1909.8	30.3	26.9	24.8	23.4	21.3	20.9	20.5	20.4

EDGE (8PSK) – Coding Scheme: MCS9

Channel Number	Frequency (MHZ)	Avg Burst Power (dBm)				Frame Power (dBm)			
		1Uplink	2Uplink	3Uplink	4Uplink	1Uplink	2Uplink	3Uplink	4Uplink
512	1850.2	26.1	22.9	21.4	19.9	17.1	16.9	17.1	16.9
661	1880.0	26.1	22.9	21.4	19.9	17.1	16.9	17.1	16.9
810	1909.8	25.5	22.5	20.8	19.5	16.5	16.5	16.5	16.5

Note:

Scale factor for uplink time slot:

1. 1 Uplink: time slot ratio = 8:1 => 10*log(8/1) = 9.03 dB
2. 2 Uplink: time slot ratio = 8:2 => 10*log(8/2) = 6.02 dB
3. 3 Uplink: time slot ratio = 8:3 => 10*log(8/3) = 4.26 dB
4. 4 Uplink: time slot ratio = 8:4 => 10*log(8/4) = 3.01 dB
5. The worst-case configuration and mode for SAR testing is determined to be as follows:
   - Hand-held: GMSK (GPRS) mode with **1 uplink**, based on the output power measurements above

7.3. RF Output Average Power Measurement: WCDMA

7.3.1. RMC / HSDPA / HSUPA

Modes		HSDPA				HSUPA					WCDMA
Sets		1	2	3	4	1	2	3	4	5	Voice / RMC 12.2kbps
Band	Channel	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]
1900 (Band 2)	9262 9662	22.3	22.1	21.7	21.5	19.4	18.4	18.7	18.1	23.9	23.9
	9400 9800	21.9	21.8	21.3	21.2	19.3	18.6	18.5	18.2	23.5	23.6
	9538 9938	21.5	21.5	21.0	21.0	19.3	18.3	18.5	18.1	23.3	23.4
850 (Band 5)	4132 4357	22.6	22.6	22.1	22.0	21.0	19.4	19.3	18.9	23.7	24.1
	4183 4408	22.4	22.5	21.9	21.8	20.9	19.4	19.5	19.1	23.7	24.0
	4233 4458	22.5	22.5	21.9	21.9	21.0	19.2	19.1	18.8	23.8	24.0
ßc		2	12	15	15	11	6	15	2	15	
ßd		15	15	8	4	15	15	9	15	15	
ΔACK, ΔNACK, ΔCQI		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 / HSUPA release 6.

Sub-test Setup for Release 5 HSDPA

Sub-test	β_c	β_d	B_d *(SF)*	β_c/β_d	β_{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: Δ_{ACK}, Δ_{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	β_{hs} (1)	B_{oc}	B_{od}	B_{od} *(SF)*	B_{od} *(codes)*	CM (2) (dB)	MPR (dB)	AG Index (4)	E-TFCI
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: Δ_{ACK}, Δ_{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 Table 5.1g.

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

7.4. Test Results

For All SAR measurement in this report the SAR limit tested to is 4.0 W/Kg

7.4.1.Specific Absorption Rate – GPRS 850 Hand-Held Configuration 10g

Test Summary:

Tissue Volume:	10g
Maximum Measured Level (W/kg):	0.890
Maximum Reported Level (W/kg):	0.976
Environmental Conditions:	
Temperature Variation in Lab (°C):	24.0 to 24.0
Temperature Variation in Liquid (°C):	22.4 to 22.4

Results:

Scan Number	EUT Position	Channel Number	Meas. Avg Power (dBm)	Max Rated Power (dBm)	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Mod.
001	Front	190	33.1	33.5	0.262	0.287	1, 2	GMSK
002	Back	190	33.1	33.5	0.798	0.875	1, 2	GMSK
003	Left Hand Side	190	33.1	33.5	0.332	0.364	1, 2	GMSK
004	Right Hand Side	190	33.1	33.5	0.257	0.282	1, 2	GMSK
005	Top	190	33.1	33.5	0.132	0.145	1, 2	GMSK
006	Back	128	33.0	33.5	0.554	0.622	1, 2, 3	GMSK
007	Back	251	33.1	33.5	0.890	0.976	1, 2, 3	GMSK
-	Back	251	33.1	33.5	0.769	0.843	1, 2, 3, 4	GMSK

Note(s):

1. Data - SAR measurements were performed using 1 uplink timeslots
2. SAR measurements were performed with the closest edge of the EUT at a separation distance of 0mm from the 'SAM' phantom flat section.
3. Testing was performed on Low and High channels on the worst case configuration.
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

7.4.2.Specific Absorption Rate - GPRS 1900 Hand-Held Configuration 10g Test Summary:

Tissue Volume:	10g
Maximum Measured Level (W/kg):	0.718
Maximum Reported Level (W/kg):	0.844

Environmental Conditions:

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

Results:

Scan Number	EUT Position	Channel Number	Meas. Avg Power (dBm)	Max Rated Power (dBm)	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Mod.
008	Front	661	30.0	30.5	0.215	0.241	1, 2	GMSK
009	Back	661	30.0	30.5	0.688	0.772	1, 2	GMSK
010	Left Hand Side	661	30.0	30.5	0.608	0.682	1, 2	GMSK
011	Right Hand Side	661	30.0	30.5	0.067	0.075	1, 2	GMSK
012	Top	661	30.0	30.5	0.140	0.157	1, 2	GMSK
013	Back	512	29.8	30.5	0.718	0.844	1, 2, 3	GMSK
014	Back	810	30.3	30.5	0.646	0.676	1, 2, 3	GMSK

Note(s):

1. Data - SAR measurements were performed using 1 uplink timeslots
2. SAR measurements were performed with the closest edge of the EUT at a separation distance of 0mm from the 'SAM' phantom flat section.
3. Testing was performed on Low and High channels on the worst case configuration.

*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

7.4.3.Specific Absorption Rate - UMTS-FDD 2 Hand-Held Configuration 10g Test Summary:

Tissue Volume:	10g
Maximum Measured Level (W/kg):	1.140
Maximum Reported Level (W/kg):	1.309

Environmental Conditions:

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

Results:

Scan Number	EUT Position	Channel Number	Meas. Avg Power (dBm)	Max Rated Power (dBm)	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Mod.
015	Front	9400	23.6	24.5	0.248	0.305	1, 2	QPSK
016	Back	9400	23.6	24.5	0.780	0.960	1, 2	QPSK
017	Left Hand Side	9400	23.6	24.5	0.683	1.840	1, 2	QPSK
018	Right Hand Side	9400	23.6	24.5	0.070	0.086	1, 2	QPSK
019	Top	9400	23.6	24.5	0.179	0.220	1, 2	QPSK
020	Back	9262	23.9	24.5	1.140	1.309	1, 2, 3	QPSK
021	Back	9538	23.4	24.5	0.803	1.034	1, 2, 3	QPSK
-	Back	9262	23.9	24.5	1.110	1.274	1, 2, 3, 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. SAR measurements were performed with the closest edge of the EUT at a separation distance of 0mm from the 'SAM' phantom flat section.
3. Testing was performed on Low and High channels on the worst case configuration.
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 - SAR is not required for RMC+HSPA or RMC+DC-HSDPA (HSDPA/HSUPA) channels when the maximum average output power is less than ¼ dB higher than that measured on the corresponding RMC channels and SAR level reported in ‘RMC 12.2kbps’ is <75% SAR limit.

7.4.4.Specific Absorption Rate - UMTS-FDD 5 Hand-Held Configuration 10g Test Summary:

Tissue Volume:	10g
Maximum Measured Level (W/kg):	0.611
Maximum Reported Level (W/kg):	0.686

Environmental Conditions:

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

Results:

Scan Number	EUT Position	Channel Number	Meas. Avg Power (dBm)	Max Rated Power (dBm)	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Mod.
022	Front	4183	24.0	24.5	0.185	0.208	1, 2	QPSK
023	Back	4183	24.0	24.5	0.510	0.572	1, 2	QPSK
024	Left Hand Side	4183	24.0	24.5	0.061	0.069	1, 2	QPSK
025	Right Hand Side	4183	24.0	24.5	0.292	0.328	1, 2	QPSK
026	Top	4183	24.0	24.5	0.101	0.113	1, 2	QPSK
027	Back	4132	24.1	24.5	0.577	0.633	1, 2, 3	QPSK
028	Back	4233	24.0	24.5	0.611	0.686	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 0mm from the 'SAM' phantom flat section.
3. Testing was performed on Low and High channels on the worst case configuration.

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

7.4.5. 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 / GPRS / EDGE 850 / UMTS FDD 5 Hand-held Configuration 10g	95%	±19.00%
Specific Absorption Rate- PCS / GPRS / EDGE 1900 / UMTS FDD 2 Hand-held Configuration 10g	95%	±18.48%

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.

Note:

1. See Appendix 2 section A.2.3 for table calculations and parameters

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	-
M1755	DAK Fluid probe	Schmid & Partner Engineering AG	SM DAK 040 CA	1089	Calibrated before use	-
A1182	Handset Positioner	Schmid & Partner Engineering AG	V3.0	None	-	-
A2109	Data Acquisition Electronics	Schmid & Partner Engineering AG	DAE3	417	17 April 2013	12
A2112	Probe	Schmid & Partner Engineering AG	ET3DV6	1586	22 April 2013	12
A1329	900 MHz Dipole Kit	Schmid & Partner Engineering AG	D900V2	185	22 May 2013	12
A1237	1900 MHz Dipole Kit	Schmid & Partner Engineering AG	D1900V2	540	23 May 2013	12
A1566	SAM Phantom	Schmid & Partner Engineering AG	SAM (Site 56)	TP-1207	Calibrated before use	-
A1238	SAM Phantom	Schmid & Partner Engineering AG	SAM (Site 56)	TP-1192	Calibrated before use	-
A215	20 dB Attenuator	Narda	766-20	9402	Calibrated as part of system	-
A1137	3dB Attenuator	Narda	779	04690	Calibrated as part of system	-
A2263	Digital Camera	Samsung	PL211	9453C90B 607487I	-	-
M1015	Network Analyser	Agilent Technologies	8753ES	US39172406	04 Oct 2013	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	-
G0591	Robot Power Supply	Schmid & Partner Engineering AG	DASY4	F01/5J86A1/C/01	Calibrated before use	-
G087	PSU	Thurlby Thandar	CPX200	100701	Calibrated before use	-
M1653	Robot Arm	Staubli	RX908 L	F01/5J8 6A1/C/01	Calibrated before use	-
M1647	Signal Generator	Hewlett Packward	8648C	3537A01598	Internal Checked 17 Sept 2013	4
M1071	Spectrum Analyzer	Agilent	HP8590E	3647U00514	(Monitoring use only)	-
M1651	Digital Thermometer	Dickson	FH325	08021393	03 May 2013	12
M1023	Dual Channel Power Meter	R & S	NRVD	863715/030	06 Jun 2013	12
S512	SAR Lab	UL	Site 56	N/A	Calibrated before use	-

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 : [signature] : 2-May-2013

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 A2112 **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: ET3-1586_Apr13**

CALIBRATION CERTIFICATE

Object ET3DV6 - SN:1586

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: April 22, 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 ± 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	04-Apr-13 (No. 217-01733)	Apr-14
Power sensor E4412A	MY41498087	04-Apr-13 (No. 217-01733)	Apr-14
Reference 3 dB Attenuator	SN: S5054 (3c)	04-Apr-13 (No. 217-01737)	Apr-14
Reference 20 dB Attenuator	SN: S5277 (20x)	04-Apr-13 (No. 217-01735)	Apr-14
Reference 30 dB Attenuator	SN: S5129 (30b)	04-Apr-13 (No. 217-01738)	Apr-14
Reference Probe ES3DV2	SN: 3013	28-Dec-12 (No. ES3-3013_Dec12)	Dec-13
DAE4	SN: 660	31-Jan-13 (No. DAE4-660_Jan13)	Jan-14
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Apr-13)	In house check: Apr-15
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-12)	In house check: Oct-13

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

Issued: April 22, 2013

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) **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
NORMx,y,z	sensitivity in free space
ConvF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C, D	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., ϑ = 0 is normal to probe axis

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

Methods Applied and Interpretation of Parameters:

- *NORMx,y,z:* Assessed for E-field polarization ϑ = 0 (f ≤ 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not affect the E^2-field uncertainty inside TSL (see below *ConvF*).
- *NORM(f)x,y,z = NORMx,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*.
- *DCPx,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
- *Ax,y,z; Bx,y,z; Cx,y,z; Dx,y,z; VRx,y,z*: *A, B, C, D* 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 ≤ 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 *NORMx,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:1586

Manufactured: May 7, 2001
Calibrated: April 22, 2013

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

DASY/EASY - Parameters of Probe: ET3DV6 - SN:1586

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)[A]	1.86	1.90	1.93	± 10.1 %
DCP (mV)[B]	99.7	98.7	98.8	

Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB√μV	C	D dB	VR mV	Unc[E] (k=2)
0	CW	X	0.0	0.0	1.0	0.00	198.4	±1.7 %
		Y	0.0	0.0	1.0		150.8	
		Z	0.0	0.0	1.0		148.2	

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:1586

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	7.33	7.33	7.33	0.21	2.26	± 13.4 %
750	41.9	0.89	6.82	6.82	6.82	0.34	2.52	± 12.0 %
835	41.5	0.90	6.52	6.52	6.52	0.38	2.39	± 12.0 %
900	41.5	0.97	6.40	6.40	6.40	0.51	2.05	± 12.0 %
1750	40.1	1.37	5.60	5.60	5.60	0.77	2.10	± 12.0 %
1900	40.0	1.40	5.33	5.33	5.33	0.80	1.98	± 12.0 %
2100	39.8	1.49	5.31	5.31	5.31	0.80	1.92	± 12.0 %
2450	39.2	1.80	4.65	4.65	4.65	0.70	2.05	± 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:1586

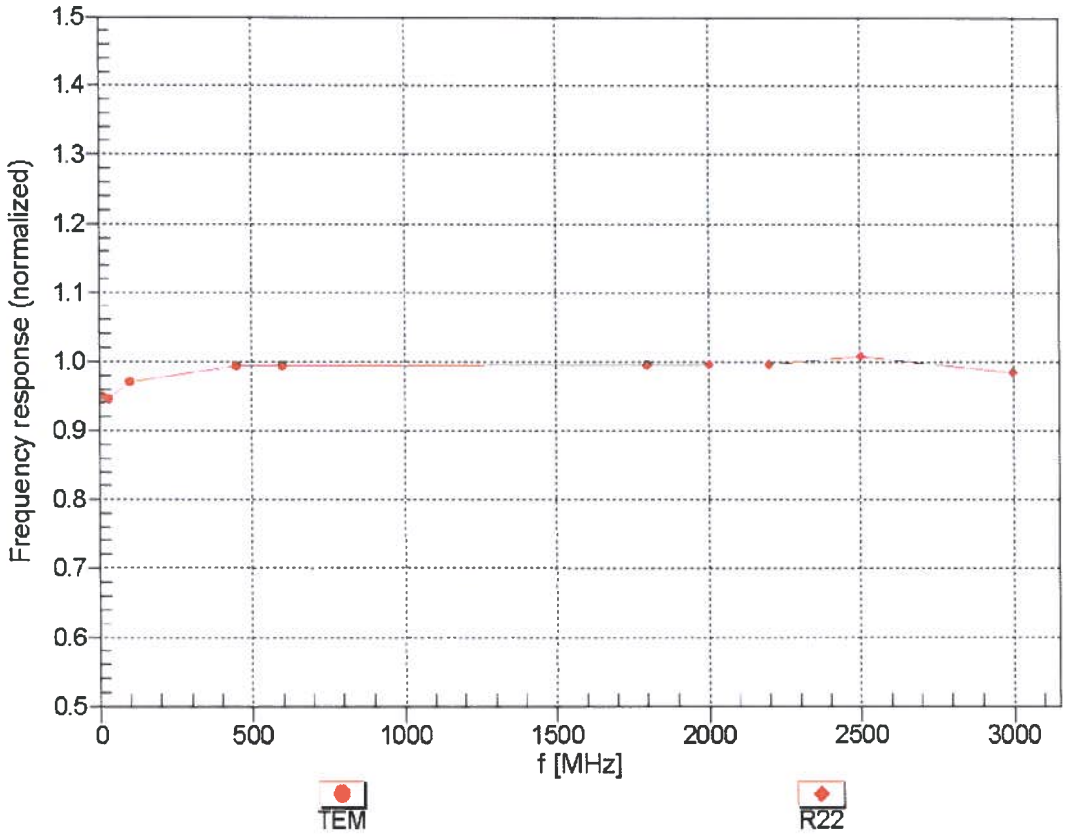
Calibration Parameter Determined in Body Tissue Simulating Media

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	7.90	7.90	7.90	0.16	2.18	± 13.4 %
750	55.5	0.96	6.52	6.52	6.52	0.28	3.00	± 12.0 %
835	55.2	0.97	6.36	6.36	6.36	0.32	2.78	± 12.0 %
900	55.0	1.05	6.26	6.26	6.26	0.34	3.00	± 12.0 %
1750	53.4	1.49	4.90	4.90	4.90	0.80	2.40	± 12.0 %
1900	53.3	1.52	4.69	4.69	4.69	0.80	2.27	± 12.0 %
2100	53.2	1.62	4.78	4.78	4.78	0.80	2.08	± 12.0 %
2450	52.7	1.95	4.15	4.15	4.15	0.65	1.90	± 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

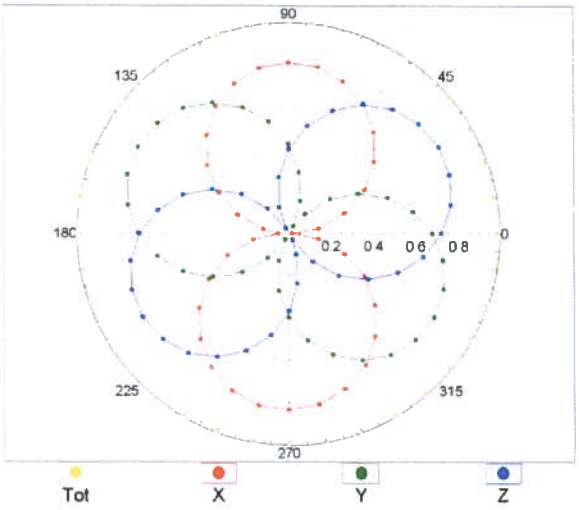
(TEM-Cell:ifi110 EXX, Waveguide: R22)



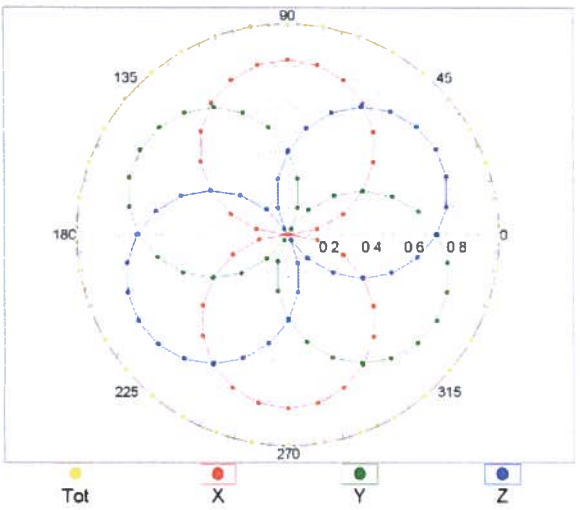
Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

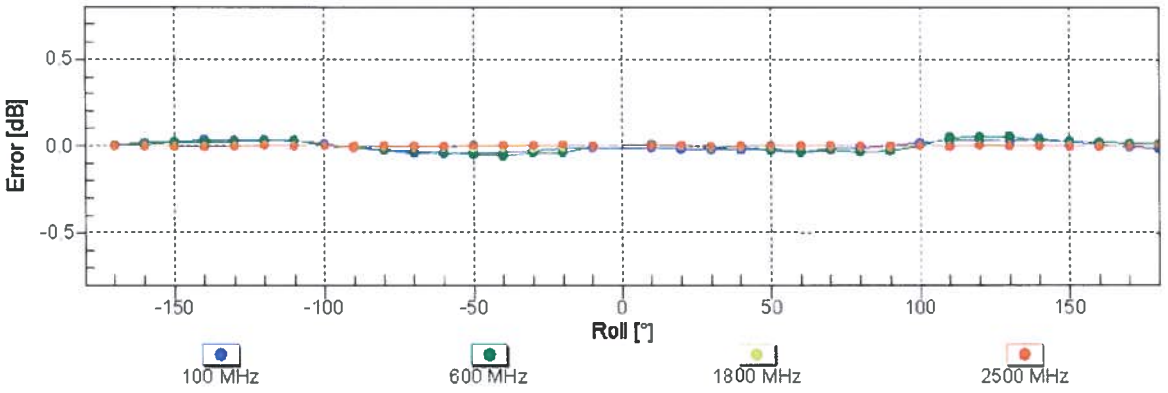
Receiving Pattern (ϕ), ϑ = 0°

f=600 MHz,TEM



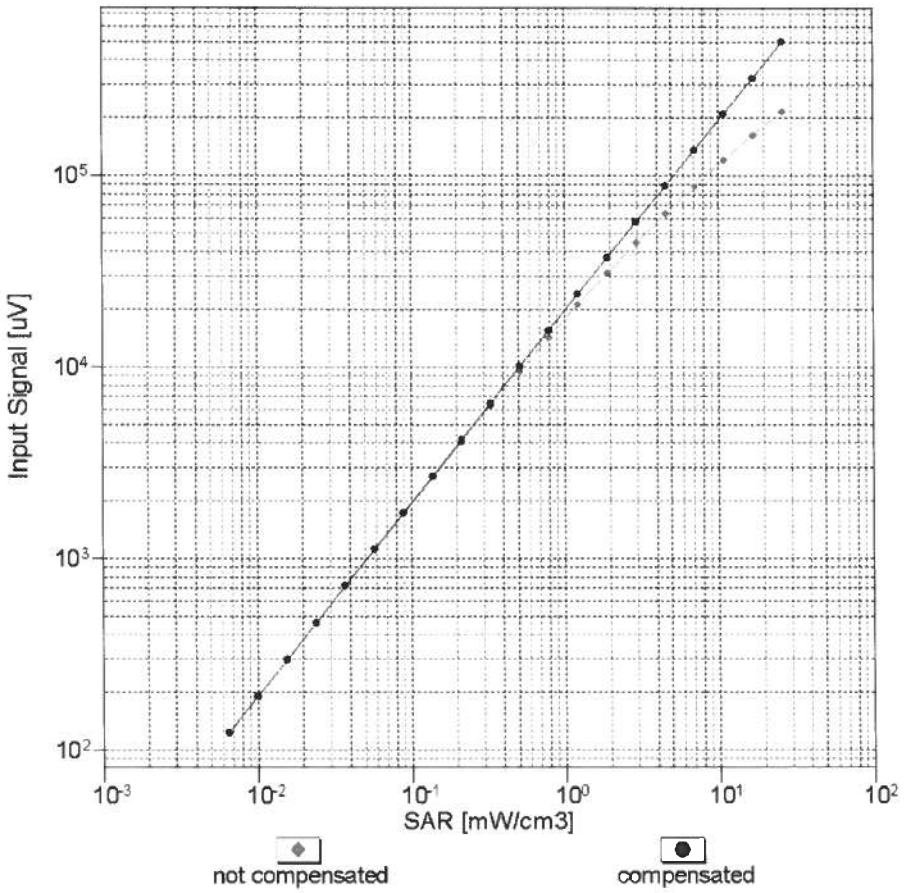
f=1800 MHz,R22

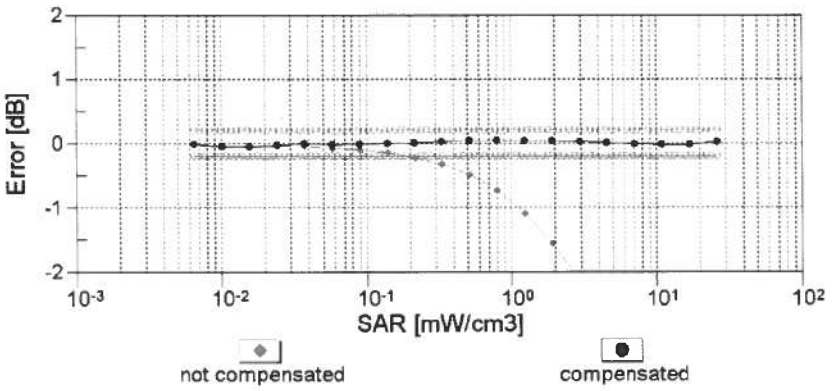




Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

Dynamic Range f(SAR_{head})
(TEM cell , f = 900 MHz)

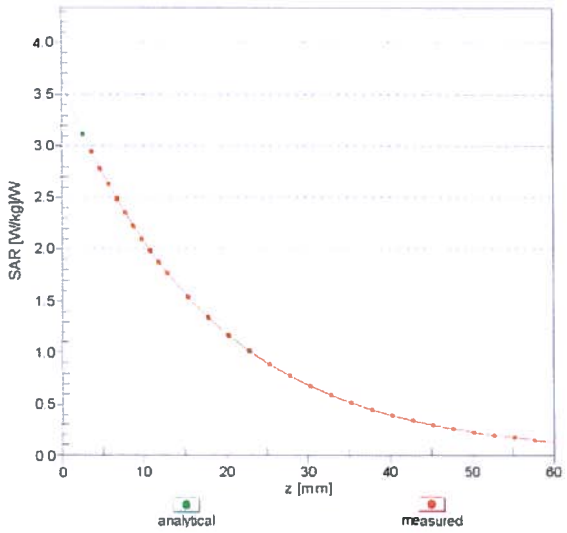




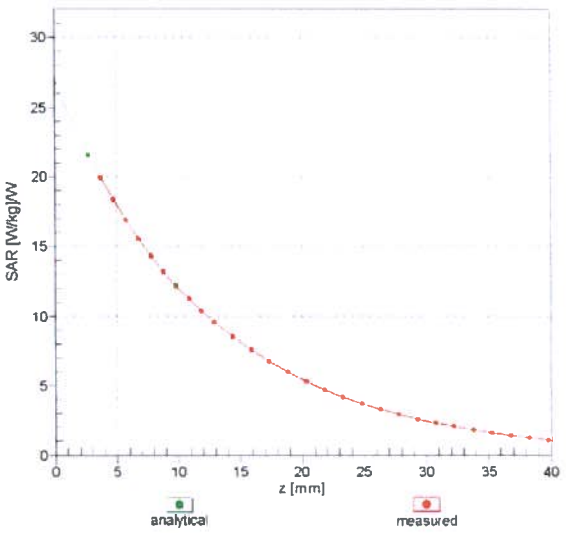
Uncertainty of Linearity Assessment: ± 0.6% (k=2)

Conversion Factor Assessment

f = 900 MHz,WGLS R9 (H_convF)

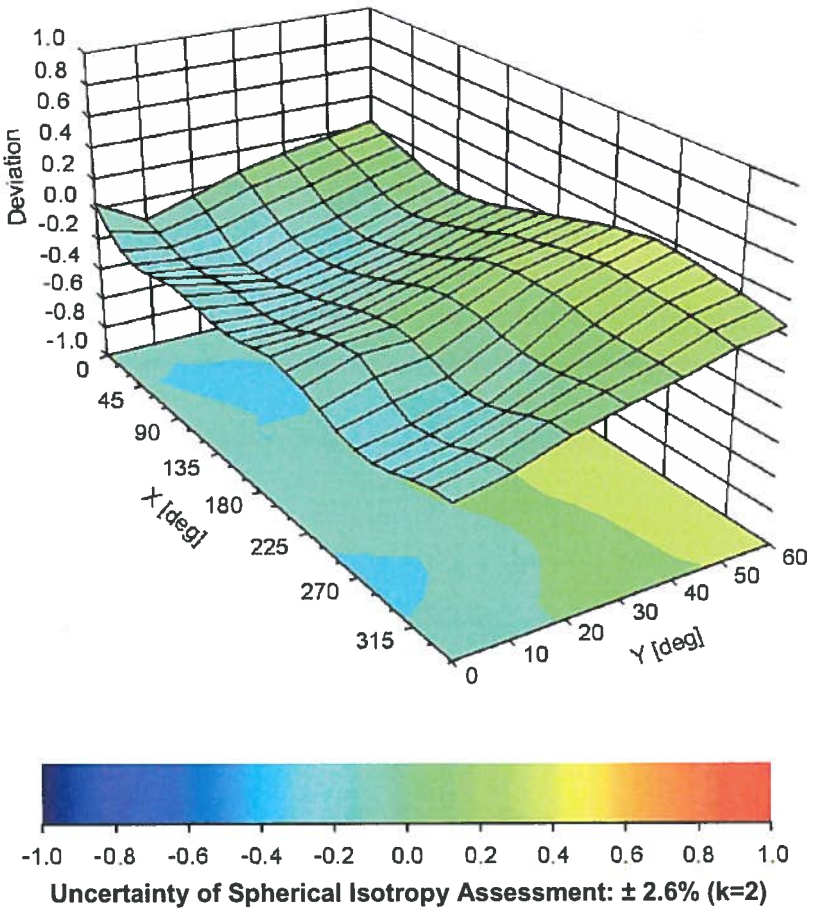


f = 1750 MHz,WGLS R22 (H_convF)



Deviation from Isotropy in Liquid

Error (ϕ, ϑ), f = 900 MHz



Uncertainty of Spherical Isotropy Assessment: ± 2.6% (k=2)

DASY/EASY - Parameters of Probe: ET3DV6 - SN:1586

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	-50
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 R. Thus A1329 DATE: 21-JUNE-2013

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

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Accreditation No.: SCS 108

Client UL-RFI

Certificate No: D900V2-185_May13

CALIBRATION CERTIFICATE

Object: D900V2 - SN: 185

Calibration procedure(s): QA CAL-05.v9
Calibration procedure for dipole validation kits above 700 MHz

Calibration date: May 22, 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 ± 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	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)	04-Apr-13 (No. 217-01736)	Apr-14
Type-N mismatch combination	SN: 5047.3 / 06327	04-Apr-13 (No. 217-01739)	Apr-14
Reference Probe ES3DV3	SN: 3205	28-Dec-12 (No. ES3-3205_Dec12)	Dec-13
DAE4	SN: 601	25-Apr-13 (No. DAE4-601_Apr13)	Apr-14

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

	Name	Function	Signature
Calibrated by:	Leif Klysner	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: May 22, 2013

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	V52.8.6
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 ± 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 ± 0.2) °C	40.2 ± 6 %	0.97 mho/m ± 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	2.73 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**10.8 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.75 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**6.97 W/kg ± 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 ± 0.2) °C	54.4 ± 6 %	1.02 mho/m ± 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	2.63 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**10.7 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.71 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**6.95 W/kg ± 16.5 % (k=2)**

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	50.8 Ω - 8.8 jΩ
Return Loss	- 21.2 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	45.9 Ω - 8.1 jΩ
Return Loss	- 20.5 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.403 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	May 27, 2003

DASY5 Validation Report for Head TSL

Date: 21.05.2013

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 900 MHz; Type: D900V2; Serial: D900V2 - SN: 185

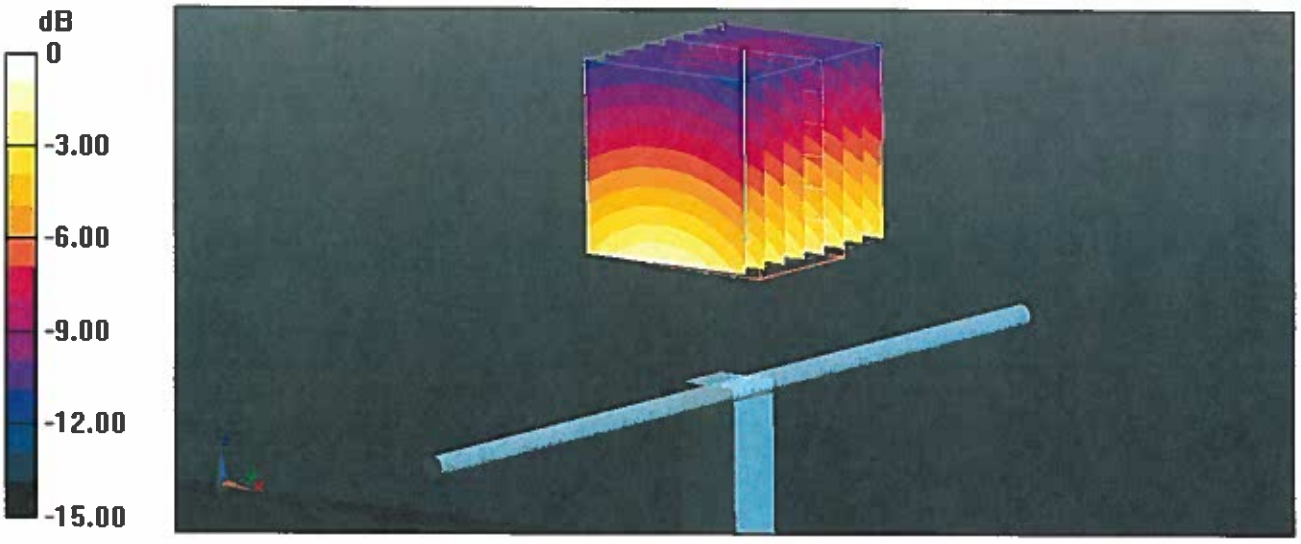
Communication System: UID 0 - CW ; Frequency: 900 MHz
Medium parameters used: f = 900 MHz; σ = 0.97 S/m; ε_r = 40.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(5.95, 5.95, 5.95); Calibrated: 28.12.2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 25.04.2013
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.8.6(1115); SEMCAD X 14.6.9(7117)

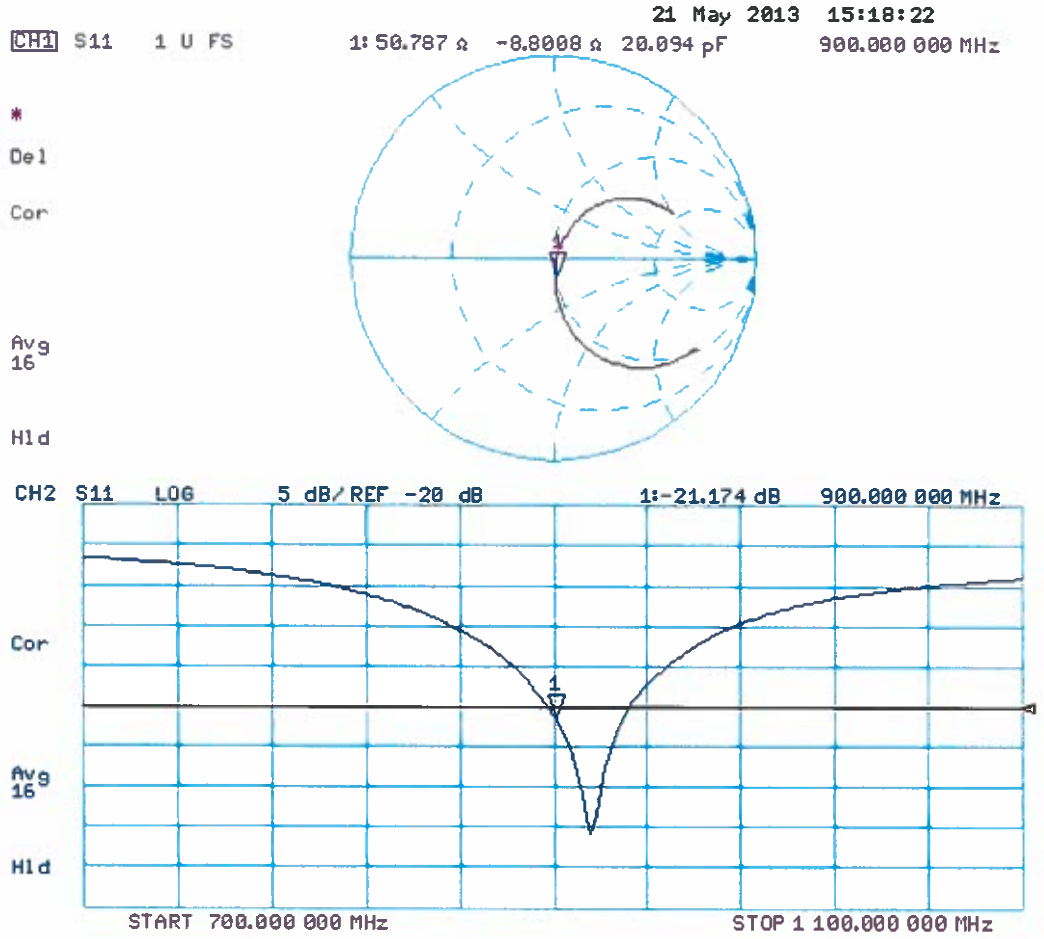
Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x8x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 59.912 V/m; Power Drift = -0.27 dB
Peak SAR (extrapolated) = 4.18 W/kg
SAR(1 g) = 2.73 W/kg; SAR(10 g) = 1.75 W/kg
Maximum value of SAR (measured) = 3.21 W/kg



0 dB = 3.21 W/kg = 5.07 dBW/kg

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 22.05.2013

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 900 MHz; Type: D900V2; Serial: D900V2 - SN: 185

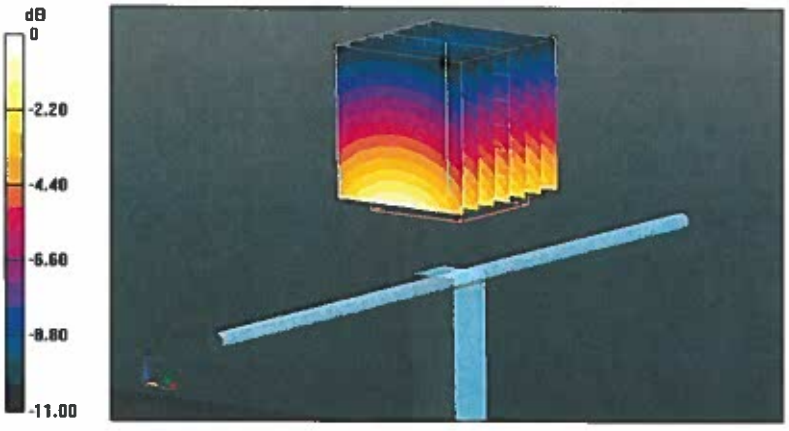
Communication System: UID 0 - CW ; Frequency: 900 MHz
Medium parameters used: f = 900 MHz; σ = 1.02 S/m; ε_r = 54.4; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(5.95, 5.95, 5.95); Calibrated: 28.12.2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 25.04.2013
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.8.6(1115); SEMCAD X 14.6.9(7117)

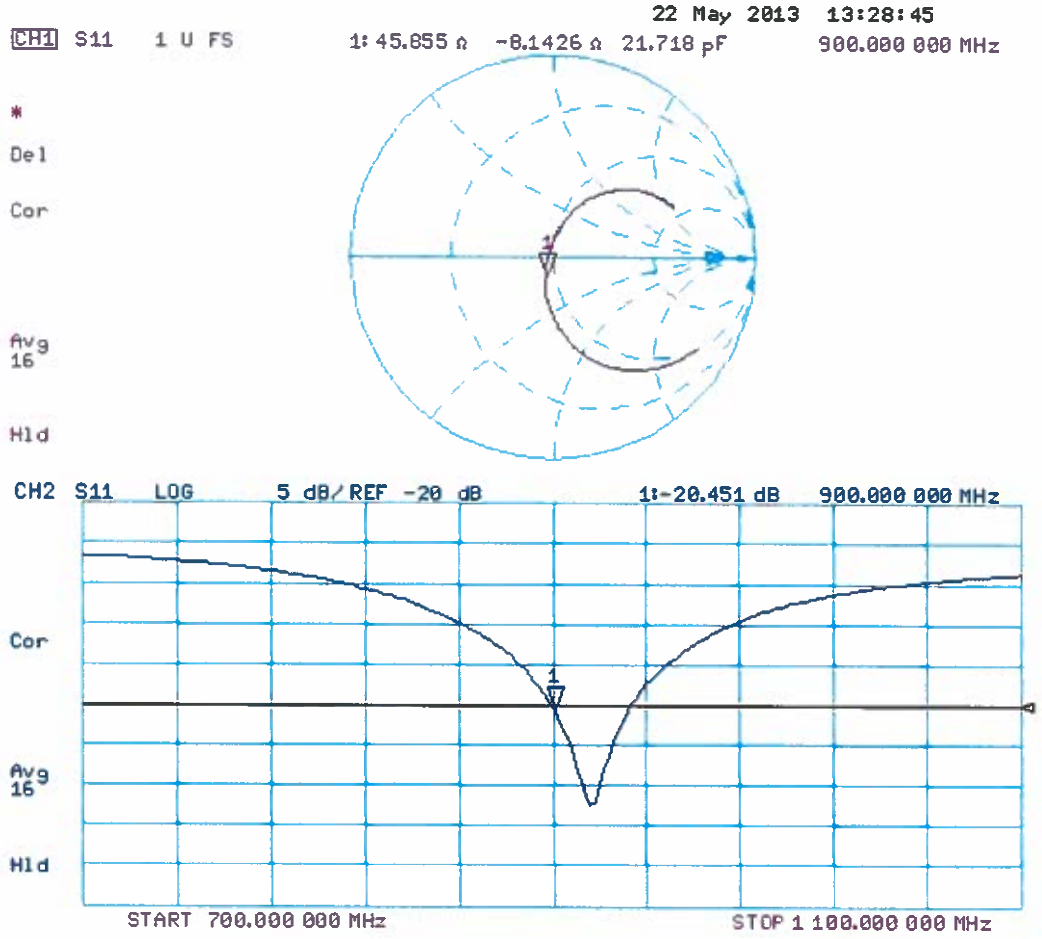
Dipole Calibration for Body Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 57.028 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 3.89 W/kg
SAR(1 g) = 2.63 W/kg; SAR(10 g) = 1.71 W/kg
Maximum value of SAR (measured) = 3.09 W/kg



0 dB = 3.09 W/kg = 4.90 dBW/kg

Impedance Measurement Plot for Body TSL



Checked by A1237 DATE: 24-JUNE-2013

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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 UL-RFI

Certificate No: D1900V2-540_May13

CALIBRATION CERTIFICATE

Object	D1900V2 - SN: 540
Calibration procedure(s)	QA CAL-05.v9 Calibration procedure for dipole validation kits above 700 MHz
Calibration date:	May 23, 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 ± 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	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)	04-Apr-13 (No. 217-01736)	Apr-14
Type-N mismatch combination	SN: 5047.3 / 06327	04-Apr-13 (No. 217-01739)	Apr-14
Reference Probe ES3DV3	SN: 3205	28-Dec-12 (No. ES3-3205_Dec12)	Dec-13
DAE4	SN: 601	25-Apr-13 (No. DAE4-601_Apr13)	Apr-14

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

	Name	Function	Signature
Calibrated by:	Dimce Iliev	Laboratory Technician	D. Iliev
Approved by:	Katja Pokovic	Technical Manager	

Issued: May 24, 2013

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

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Swiss Calibration Service

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) 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	V52.8.6
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 ± 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 ± 0.2) °C	39.3 ± 6 %	1.35 mho/m ± 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	10.0 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**40.7 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	5.28 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**21.4 W/kg ± 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 ± 0.2) °C	53.6 ± 6 %	1.49 mho/m ± 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 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**41.3 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	250 mW input power	5.44 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**21.9 W/kg ± 16.5 % (k=2)**

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	53.7 Ω + 4.6 jΩ
Return Loss	- 24.9 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	48.7 Ω + 5.0 jΩ
Return Loss	- 25.7 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.120 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	July 26, 2001

DASY5 Validation Report for Head TSL

Date: 23.05.2013

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 540

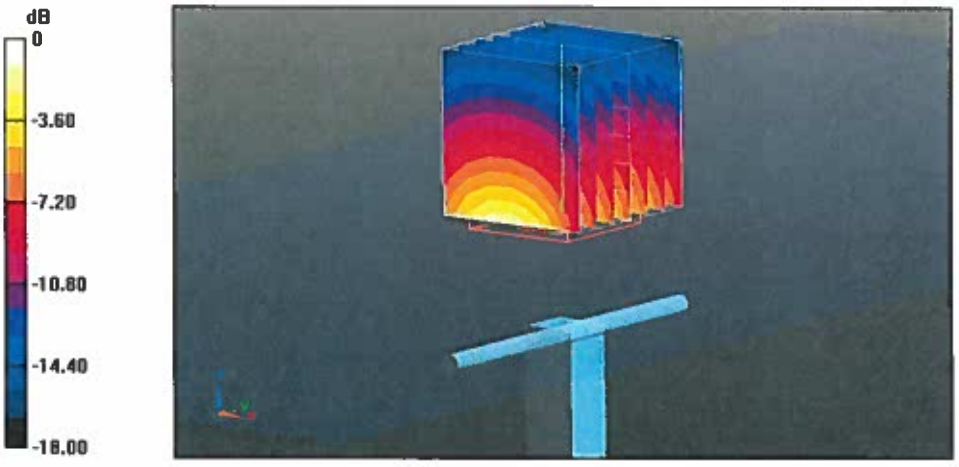
Communication System: UID 0 - CW ; Frequency: 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.35 S/m; ε_r = 39.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.98, 4.98, 4.98); Calibrated: 28.12.2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 25.04.2013
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.8.6(1115); SEMCAD X 14.6.9(7117)

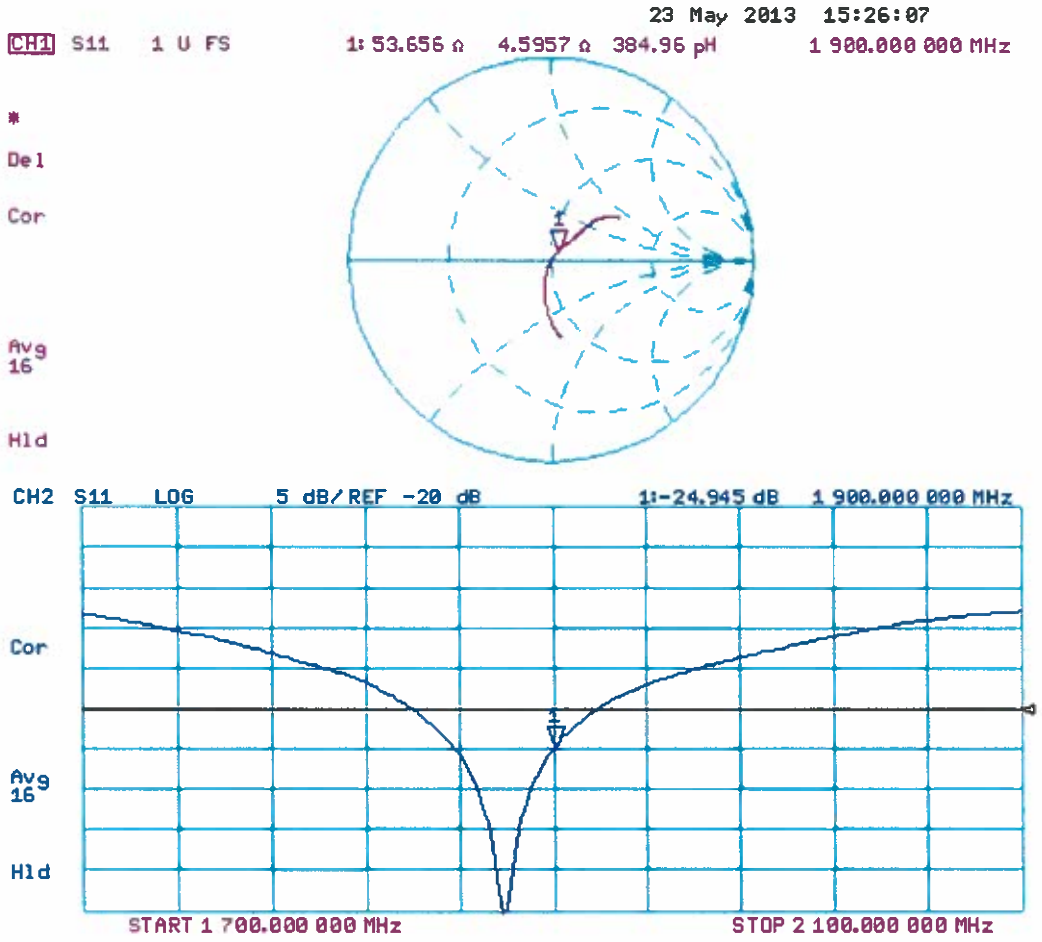
Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 96.521 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 18.0 W/kg
SAR(1 g) = 10 W/kg; SAR(10 g) = 5.28 W/kg
Maximum value of SAR (measured) = 12.4 W/kg



0 dB = 12.4 W/kg = 10.93 dBW/kg

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 23.05.2013

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 540

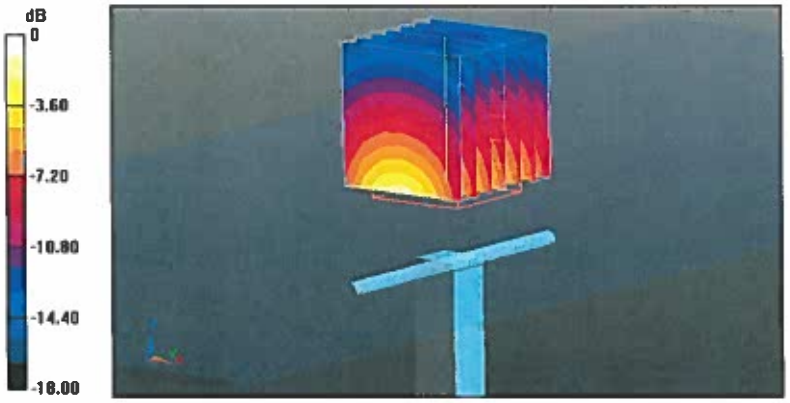
Communication System: UID 0 - CW ; Frequency: 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.49 S/m; ε_r = 53.6; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.6, 4.6, 4.6); Calibrated: 28.12.2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 25.04.2013
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.8.6(1115); SEMCAD X 14.6.9(7117)

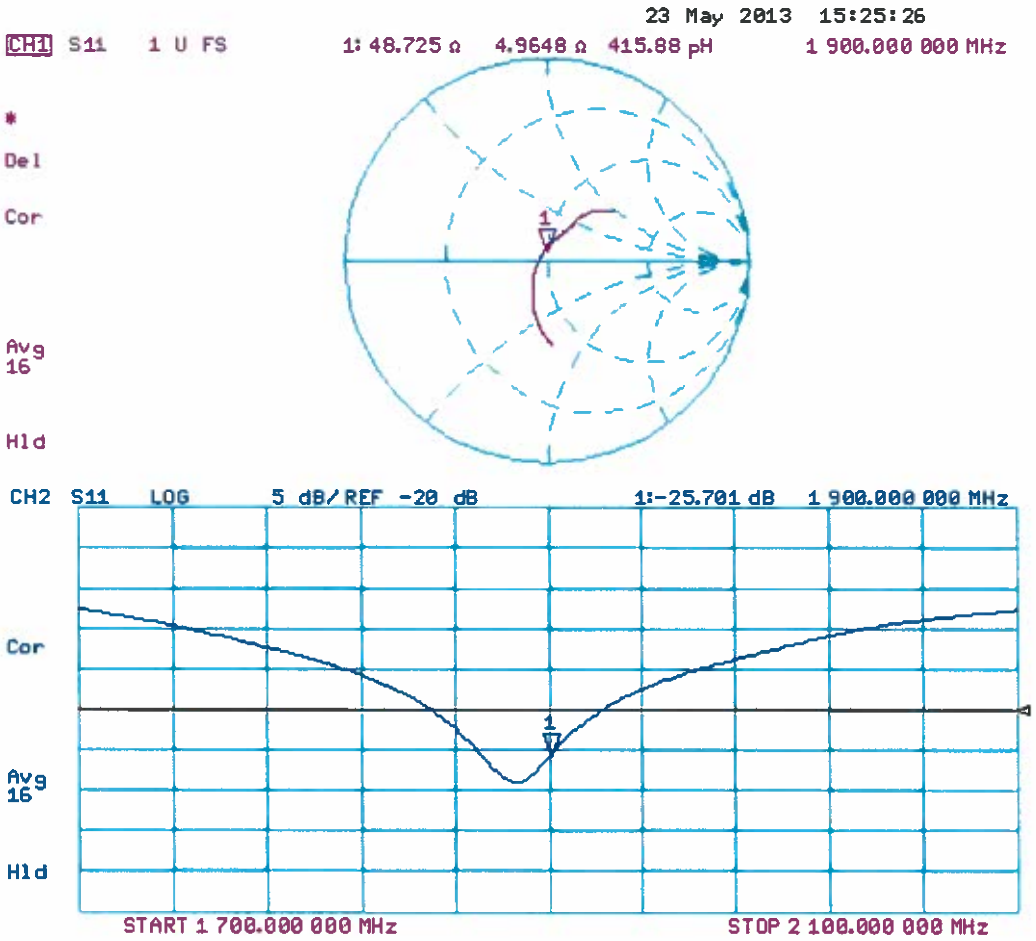
Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 96.521 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 17.3 W/kg
SAR(1 g) = 10.2 W/kg; SAR(10 g) = 5.44 W/kg
Maximum value of SAR (measured) = 12.7 W/kg



0 dB = 12.7 W/kg = 11.04 dBW/kg

Impedance Measurement Plot for Body TSL



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 865664 D01 SAR Measurement 100 MHz to 6MHz

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

SAR measurements were performed in accordance with 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 +18.0ºC and +25.0ºC. The tissue equivalent material fluid temperature was controlled to give a maximum variation of ± 2.0ºC

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 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.

A.2.3. Measurement Uncertainty Tables

A.2.3.1 Specific Absorption Rate-GSM / GPRS / EDGE 850 / UMTS FDD 5 Hand-held Configuration 10g

Type	Source of uncertainty	+ Value	- Value	Probability Distribution	Divisor	$c_{i\ (10g)}$	Standard Uncertainty		υ_i or υ_{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	2.700	2.700	normal (k=1)	1.0000	1.0000	2.700	2.700	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	0.4300	1.241	1.241	∞
A	Liquid Conductivity (measured value)	5.000	5.000	normal (k=1)	1.0000	0.4300	2.150	2.150	5
B	Liquid Permittivity (target value)	5.000	5.000	Rectangular	1.7321	0.4900	1.415	1.415	∞
A	Liquid Permittivity (measured value)	5.000	5.000	normal (k=1)	1.0000	0.4900	2.450	2.450	5
	Combined standard uncertainty			t-distribution			9.69	9.69	>500
	Expanded uncertainty			k = 1.96			19.00	19.00	>500

A.2.3.2 Specific Absorption Rate-PCS / GPRS / EDGE 1900 / UMTS FDD 2 Hand-held
Configuration 10g

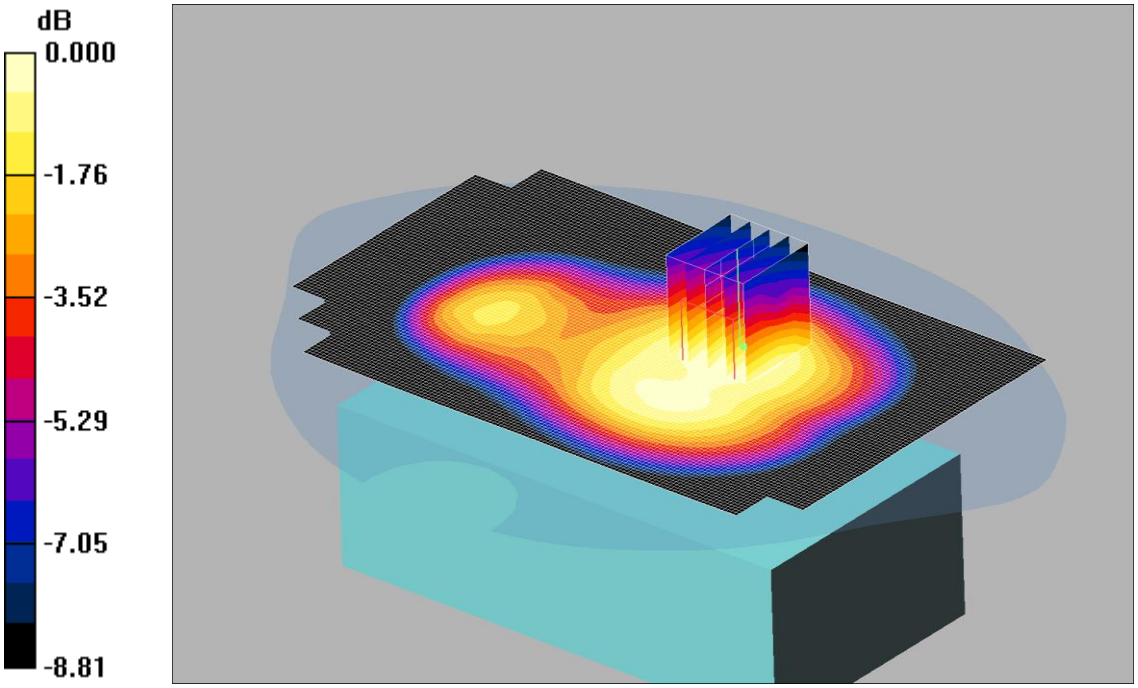
Type	Source of uncertainty	+ Value	- Value	Probability Distribution	Divisor	$c_{i\ (10g)}$	Standard Uncertainty		υ_i or υ_{eff}
							+ u (%)	- u (%)	
B	Probe calibration	6.000	6.000	normal (k=1)	1.0000	1.0000	6.000	6.000	∞
B	Axial Isotropy	0.250	0.250	normal (k=1)	1.0000	1.0000	0.250	0.250	∞
B	Hemispherical 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	1.500	1.500	normal (k=1)	1.0000	1.0000	1.500	1.500	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	0.4300	1.241	1.241	∞
A	Liquid Conductivity (measured value)	5.000	5.000	normal (k=1)	1.0000	0.4300	2.150	2.150	5
B	Liquid Permittivity (target value)	5.000	5.000	Rectangular	1.7321	0.4900	1.415	1.415	∞
A	Liquid Permittivity (measured value)	5.000	5.000	normal (k=1)	1.0000	0.4900	2.450	2.450	5
	Combined standard uncertainty			t-distribution			9.43	9.43	>500
	Expanded uncertainty			k = 1.96			18.48	18.48	>500

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
001	Front of EUT Facing Phantom GPRS CH190
002	Back of EUT Facing Phantom GPRS CH190
003	Left Hand Side of EUT Facing Phantom GPRS CH190
004	Right Hand Side of EUT Facing Phantom GPRS CH190
005	Top of EUT Facing Phantom GPRS CH190
006	Back of EUT Facing Phantom GPRS CH127
007	Back of EUT Facing Phantom GPRS CH251
008	Front of EUT Facing Phantom GPRS CH661
009	Back of EUT Facing Phantom GPRS CH661
010	Left Hand Side of EUT Facing Phantom GPRS CH661
011	Right Hand Side of EUT Facing Phantom GPRS CH661
012	Top of EUT Facing Phantom GPRS CH661
013	Back of EUT Facing Phantom GPRS CH512
014	Back of EUT Facing Phantom GPRS CH810
015	Front of EUT Facing Phantom UMTS FDD 2 CH9400
016	Back of EUT Facing Phantom UMTS FDD 2 CH9400
017	Left Hand Side of EUT Facing Phantom UMTS FDD 2 CH9400
018	Right Hand Side of EUT Facing Phantom UMTS FDD 2 CH9400
019	Top of EUT Facing Phantom UMTS FDD 2 CH9400
020	Back of EUT Facing Phantom UMTS FDD 2 CH9262
021	Back of EUT Facing Phantom UMTS FDD 2 CH9538
022	Front of EUT Facing Phantom UMTS FDD 5 CH4183
023	Back of EUT Facing Phantom UMTS FDD 5 CH4183
024	Left Hand Side of EUT Facing Phantom UMTS FDD 5 CH4183
025	Right Hand Side of EUT Facing Phantom UMTS FDD 5 CH4183
026	Top of EUT Facing Phantom UMTS FDD 5 CH4183
027	Back of EUT Facing Phantom UMTS FDD 5 CH4132
028	Back of EUT Facing Phantom UMTS FDD 5 CH4233
029	System Performance Check 900MHz Body 03 01 14
030	System Performance Check 900MHz Body 06 01 14
031	System Performance Check 900MHz Body 07 01 14
032	System Performance Check 1900MHz Body 07 01 14
033	System Performance Check 1900MHz Body 08 01 14
034	System Performance Check 1900MHz Body 09 01 14

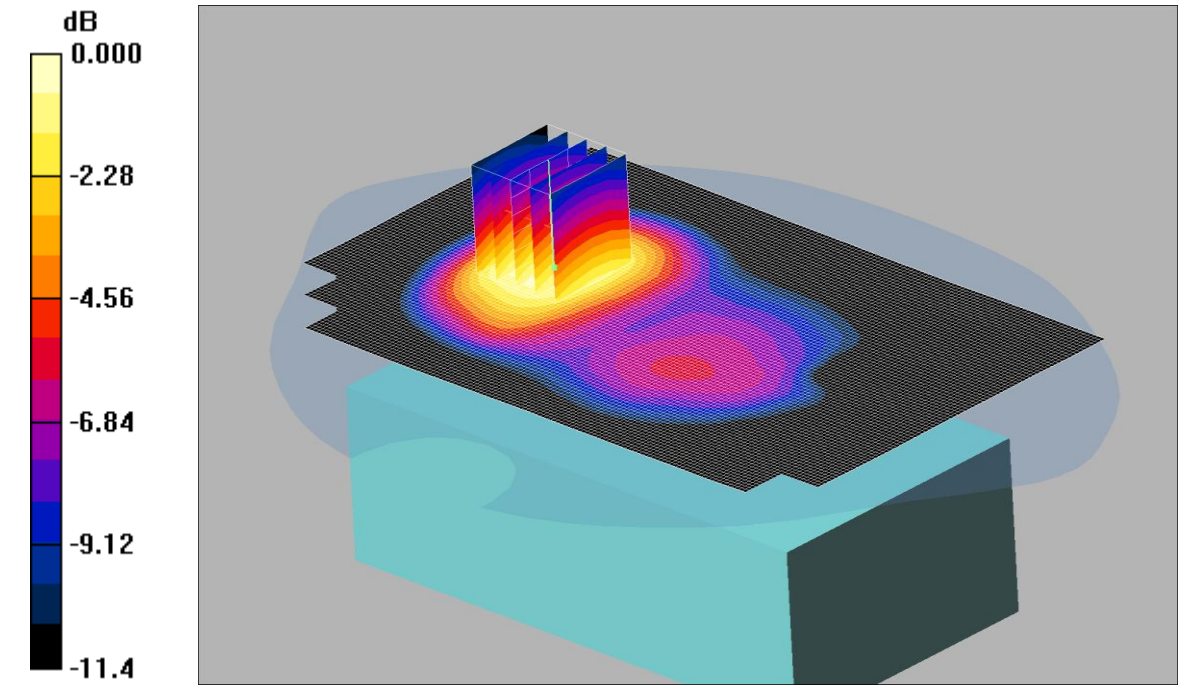
001: Front of EUT Facing Phantom GPRS CH190
Date: 03/01/2014
DUT: Scram Remote Breath; Type: Portable Breath Alcohol Monitor; Serial: 25



0 dB = 0.374mW/g

Communication System: GPRS 850 MHz 1TX; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium: 900 MHz MSL Medium parameters used (interpolated): f = 836.6 MHz; σ = 1 mho/m; ε_r = 53; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ET3DV6 - SN1586; ConvF(6.36, 6.36, 6.36);
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn417; Calibrated: 17/04/2013
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186
Front of EUT Facing Phantom - Middle 2 2/Area Scan (91x151x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.380 mW/g
Front of EUT Facing Phantom - Middle 2 2/Zoom Scan (5x5x7) 2 2 (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.0 V/m; Power Drift = -0.069 dB
Peak SAR (extrapolated) = 0.458 W/kg
SAR(1 g) = 0.353 mW/g; SAR(10 g) = 0.262 mW/g
Maximum value of SAR (measured) = 0.374 mW/g

002: Back of EUT Facing Phantom GPRS CH190
Date: 03/01/2014
DUT: Scram Remote Breath; Type: Portable Breath Alcohol Monitor; Serial: 25



0 dB = 1.23mW/g

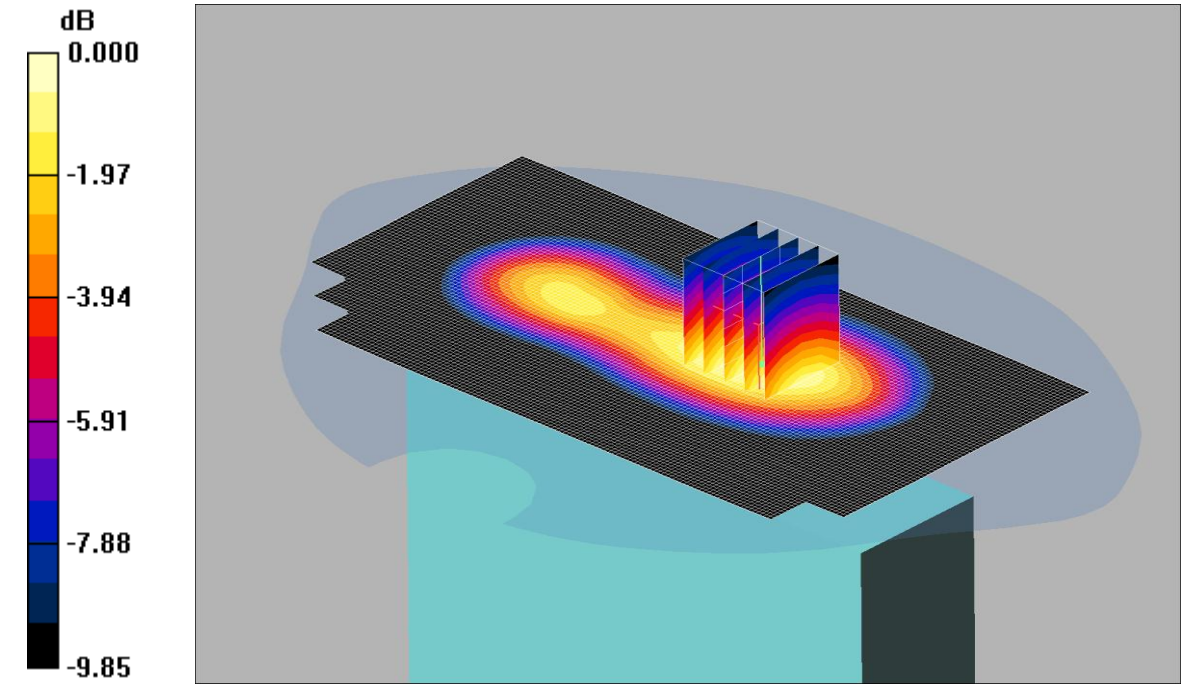
Communication System: GPRS 850 MHz 1TX; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium: 900 MHz MSL Medium parameters used (interpolated): f = 836.6 MHz; σ = 1 mho/m; ε_r = 53; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ET3DV6 - SN1586; ConvF(6.36, 6.36, 6.36);
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn417; Calibrated: 17/04/2013
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Back of EUT Facing Phantom - Middle 2/Area Scan (91x151x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.22 mW/g

Back of EUT Facing Phantom - Middle 2/Zoom Scan (5x5x7) 2 2 (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.5 V/m; Power Drift = 0.029 dB
Peak SAR (extrapolated) = 1.49 W/kg
SAR(1 g) = 1.15 mW/g; SAR(10 g) = 0.798 mW/g

Maximum value of SAR (measured) = 1.23 mW/g

003: Left Hand Side of EUT Facing Phantom GPRS CH190
Date: 03/01/2014
DUT: Scram Remote Breath; Type: Portable Breath Alcohol Monitor; Serial: 25

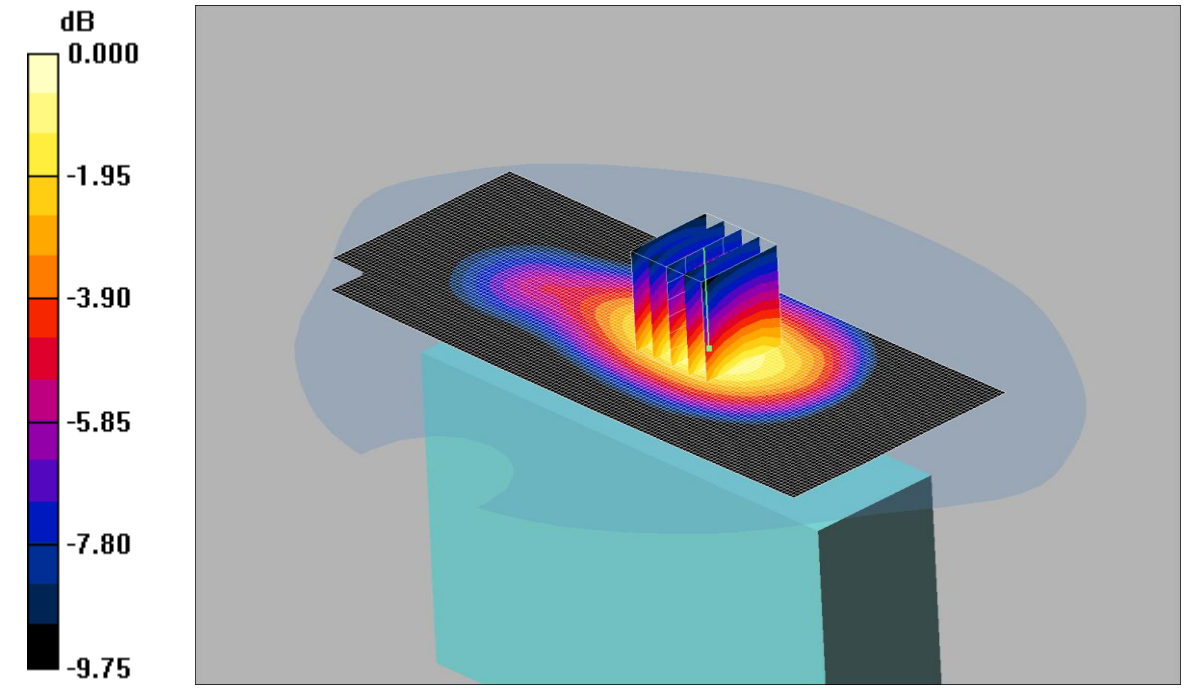


0 dB = 0.525mW/g

Communication System: GPRS 850 MHz 1TX; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium: 900 MHz MSL Medium parameters used (interpolated): f = 836.6 MHz; σ = 1 mho/m; ε_r = 53; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ET3DV6 - SN1586; ConvF(6.36, 6.36, 6.36);
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn417; Calibrated: 17/04/2013
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186**Left Hand Side of EUT Facing Phantom - Middle 2/Area Scan (81x151x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.526 mW/g

Left Hand Side of EUT Facing Phantom - Middle 2/Zoom Scan (5x5x7) 2 2 (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.7 V/m; Power Drift = 0.040 dB
Peak SAR (extrapolated) = 0.667 W/kg
SAR(1 g) = 0.486 mW/g; SAR(10 g) = 0.332 mW/g
Maximum value of SAR (measured) = 0.525 mW/g

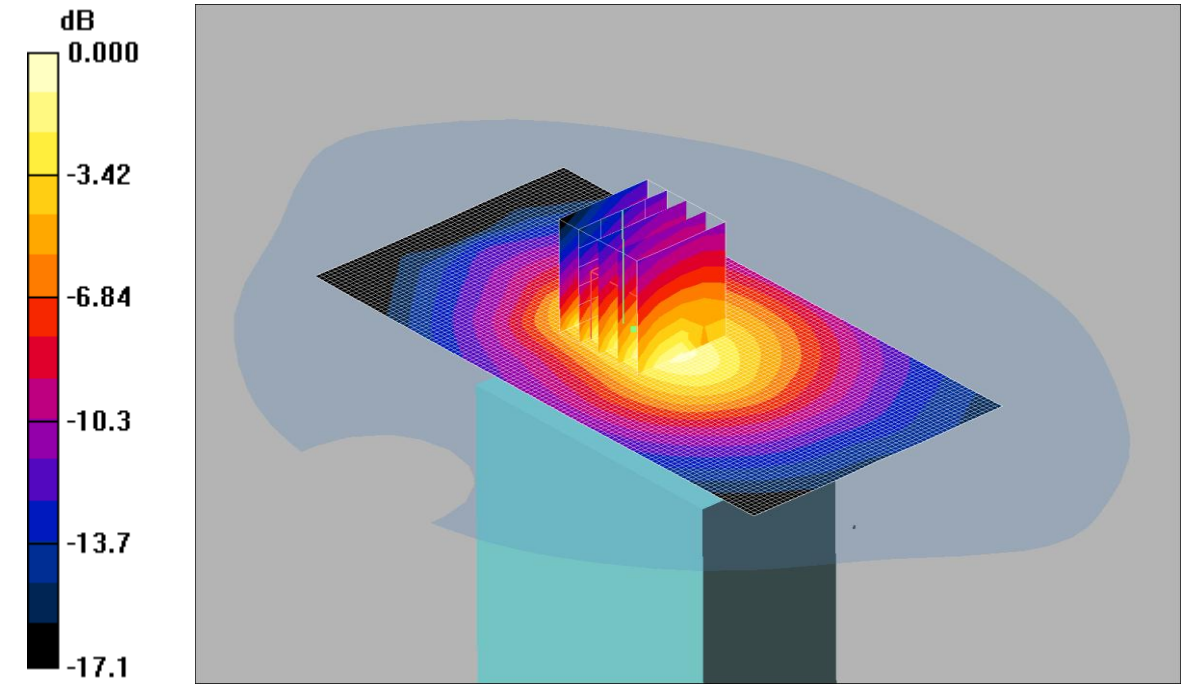
004: Right Hand Side of EUT Facing Phantom GPRS CH190
Date: 03/01/2014
DUT: Scram Remote Breath; Type: Portable Breath Alcohol Monitor; Serial: 25



0 dB = 0.401mW/g

Communication System: GPRS 850 MHz 1TX; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium: 900 MHz MSL Medium parameters used (interpolated): f = 836.6 MHz; σ = 1 mho/m; ε_r = 53; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ET3DV6 - SN1586; ConvF(6.36, 6.36, 6.36);
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn417; Calibrated: 17/04/2013
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186**Right Hand Side of EUT Facing Phantom - Middle 2/Area Scan (61x151x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.403 mW/g
Right Hand Side of EUT Facing Phantom - Middle 2/Zoom Scan (5x5x7) 2 2 (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.1 V/m; Power Drift = -0.148 dB
Peak SAR (extrapolated) = 0.502 W/kg
SAR(1 g) = 0.374 mW/g; SAR(10 g) = 0.257 mW/g
Maximum value of SAR (measured) = 0.401 mW/g

005: Top of EUT Facing Phantom GPRS CH190
Date: 03/01/2014
DUT: Scram Remote Breath; Type: Portable Breath Alcohol Monitor; Serial: 25

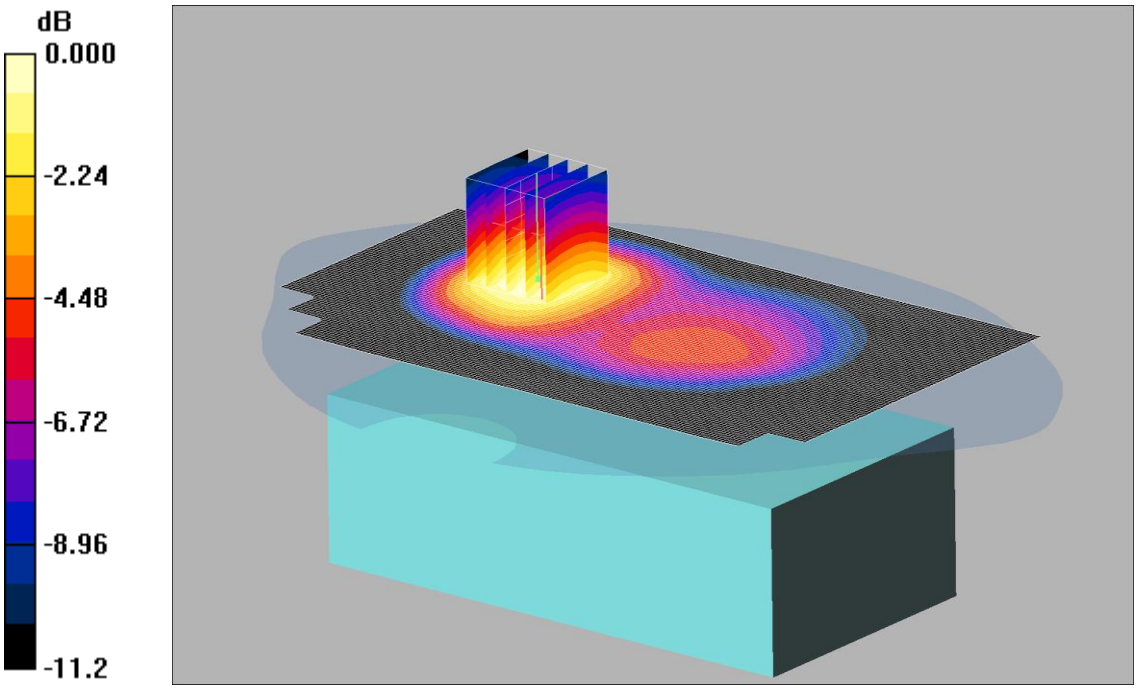


0 dB = 0.262mW/g

Communication System: GPRS 850 MHz 1TX; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium: 900 MHz MSL Medium parameters used (interpolated): f = 836.6 MHz; σ = 1 mho/m; ε_r = 53; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ET3DV6 - SN1586; ConvF(6.36, 6.36, 6.36);
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn417; Calibrated: 17/04/2013
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186
Top of EUT Facing Phantom - Middle/Area Scan (61x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.292 mW/g

Top of EUT Facing Phantom - Middle/Zoom Scan (5x5x7) 2 2 2 (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.1 V/m; Power Drift = 0.119 dB
Peak SAR (extrapolated) = 0.541 W/kg
SAR(1 g) = 0.239 mW/g; SAR(10 g) = 0.132 mW/g
Maximum value of SAR (measured) = 0.262 mW/g

006: Back of EUT Facing Phantom GPRS CH127
Date: 03/01/2014
DUT: Scram Remote Breath; Type: Portable Breath Alcohol Monitor; Serial: 25



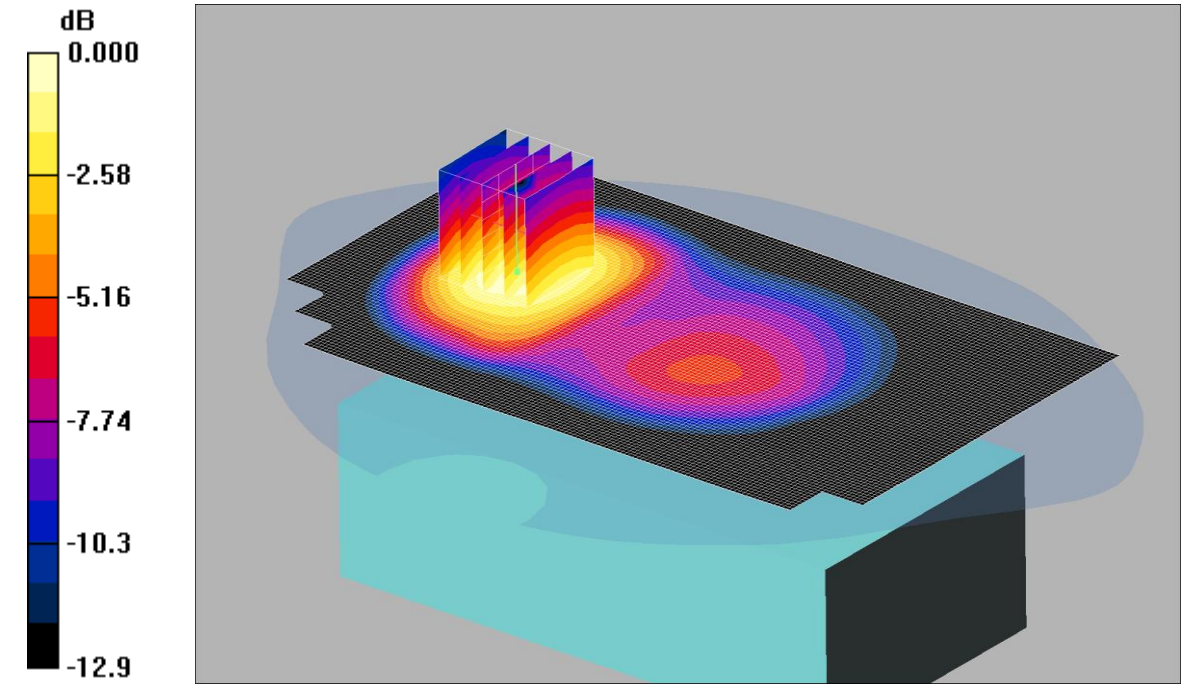
0 dB = 0.851mW/g

Communication System: GPRS 850 MHz 1TX; Frequency: 824.2 MHz;Duty Cycle: 1:8.3
Medium: 900 MHz MSL Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.997 mho/m; ε_r = 53.1; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ET3DV6 - SN1586; ConvF(6.36, 6.36, 6.36);
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn417; Calibrated: 17/04/2013
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Back of EUT Facing Phantom - Low/Area Scan (91x151x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.866 mW/g

Back of EUT Facing Phantom - Low/Zoom Scan (5x5x7) 2 2 (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.8 V/m; Power Drift = 0.043 dB
Peak SAR (extrapolated) = 1.04 W/kg
SAR(1 g) = 0.796 mW/g; SAR(10 g) = 0.554 mW/g
Maximum value of SAR (measured) = 0.851 mW/g

007: Back of EUT Facing Phantom GPRS CH251
Date: 03/01/2014
DUT: Scram Remote Breath; Type: Portable Breath Alcohol Monitor; Serial: 25



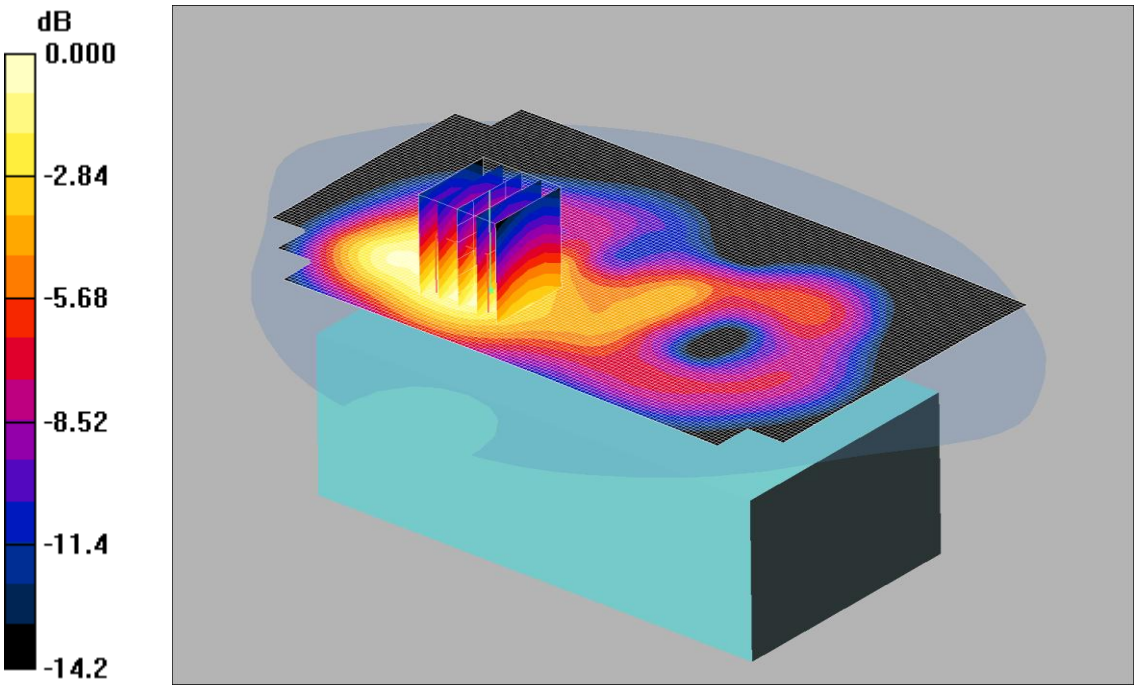
0 dB = 1.37mW/g

Communication System: GPRS 850 MHz 1TX; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium: 900 MHz MSL Medium parameters used (interpolated): f = 848.8 MHz; σ = 1.01 mho/m; ε_r = 53; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ET3DV6 - SN1586; ConvF(6.36, 6.36, 6.36);
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn417; Calibrated: 17/04/2013
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Back of EUT Facing Phantom - High/Area Scan (91x151x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.43 mW/g

Back of EUT Facing Phantom - High/Zoom Scan (5x5x7) 2 2 (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.8 V/m; Power Drift = 0.025 dB
Peak SAR (extrapolated) = 1.71 W/kg
SAR(1 g) = 1.28 mW/g; SAR(10 g) = 0.890 mW/g
Maximum value of SAR (measured) = 1.37 mW/g

008: Front of EUT Facing Phantom GPRS CH661
Date: 08/01/2014
DUT: Scram Remote Breath; Type: Portable Breath Alcohol Monitor; Serial: 25



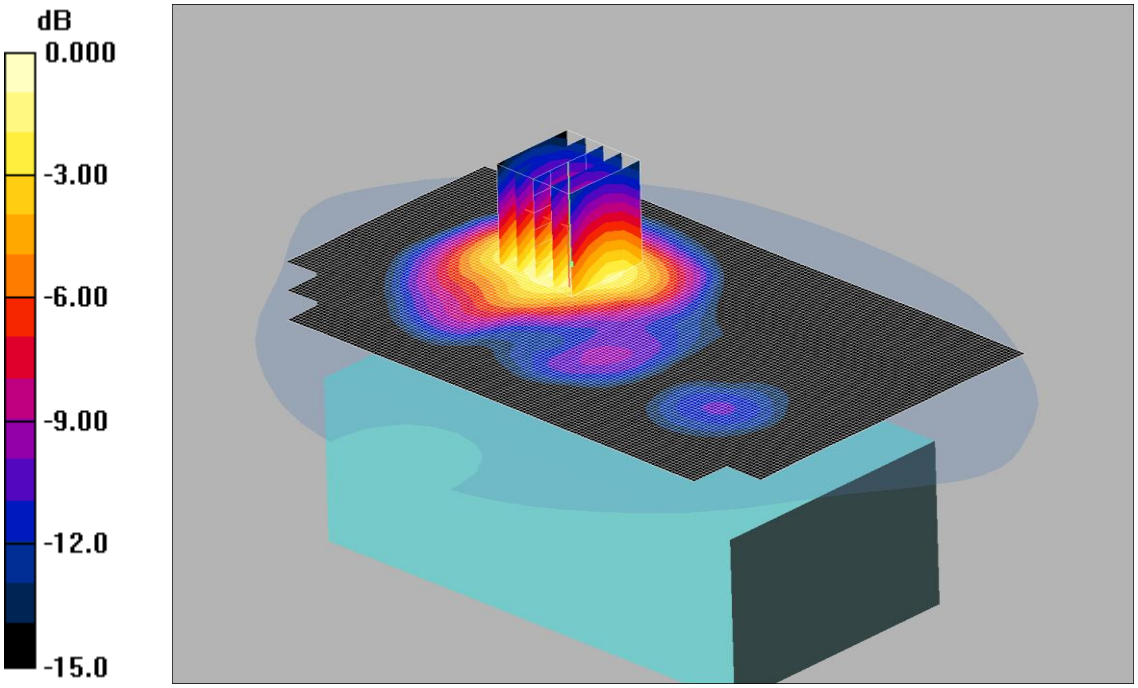
0 dB = 0.367mW/g

Communication System: GPRS 1900 1Tx; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium: 1900 MHz MSL Medium parameters used (interpolated): f = 1880 MHz; σ = 1.52 mho/m; ε_r = 53.8; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ET3DV6 - SN1586; ConvF(4.69, 4.69, 4.69);
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn417; Calibrated: 17/04/2013
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1192
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Front of EUT Facing Phantom - Middle 2/Area Scan (91x151x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.373 mW/g

Front of EUT Facing Phantom - Middle 2/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.16 V/m; Power Drift = -0.086 dB
Peak SAR (extrapolated) = 0.480 W/kg
SAR(1 g) = 0.337 mW/g; SAR(10 g) = 0.215 mW/g
Maximum value of SAR (measured) = 0.367 mW/g

009: Back of EUT Facing Phantom GPRS CH661
Date: 08/01/2014
DUT: Scram Remote Breath; Type: Portable Breath Alcohol Monitor; Serial: 25

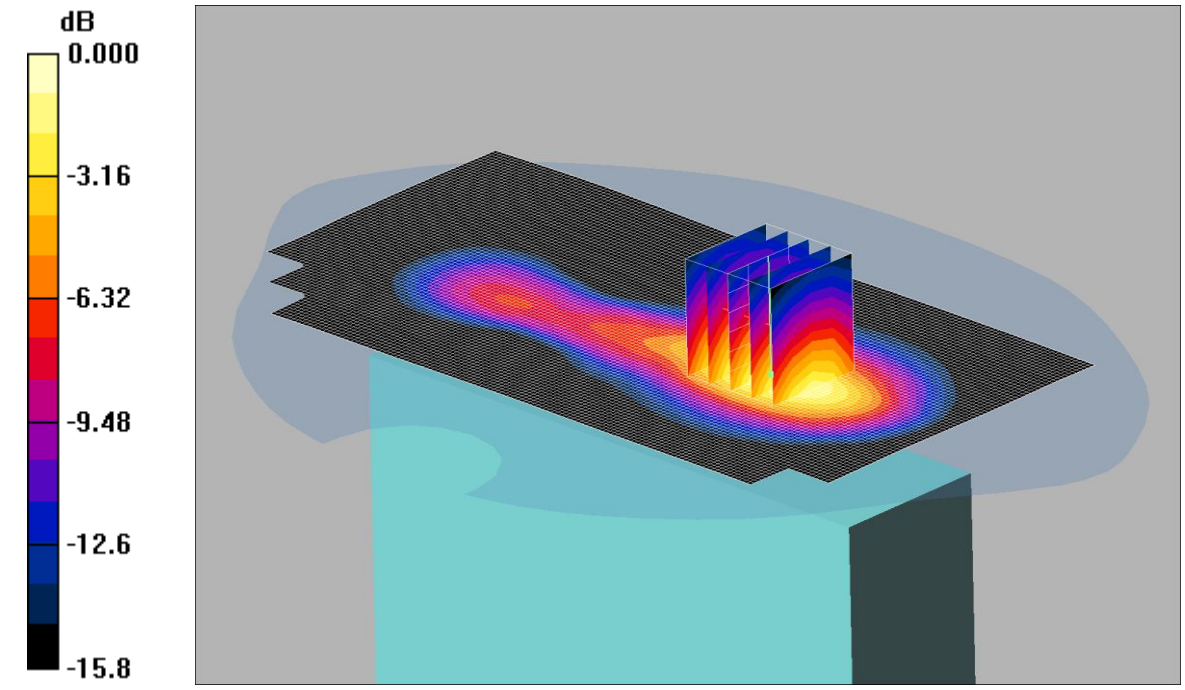


0 dB = 1.21mW/g

Communication System: GPRS 1900 1Tx; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium: 1900 MHz MSL Medium parameters used (interpolated): f = 1880 MHz; σ = 1.52 mho/m; ε_r = 53.8; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ET3DV6 - SN1586; ConvF(4.69, 4.69, 4.69);
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn417; Calibrated: 17/04/2013
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1192
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186
Back of EUT Facing Phantom - Middle/Area Scan (91x151x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.23 mW/g

Back of EUT Facing Phantom - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.32 V/m; Power Drift = 0.004 dB
Peak SAR (extrapolated) = 1.68 W/kg
SAR(1 g) = 1.11 mW/g; SAR(10 g) = 0.688 mW/g
Maximum value of SAR (measured) = 1.21 mW/g

010: Left Hand Side of EUT Facing Phantom GPRS CH661
Date: 08/01/2014
DUT: Scram Remote Breath; Type: Portable Breath Alcohol Monitor; Serial: 25



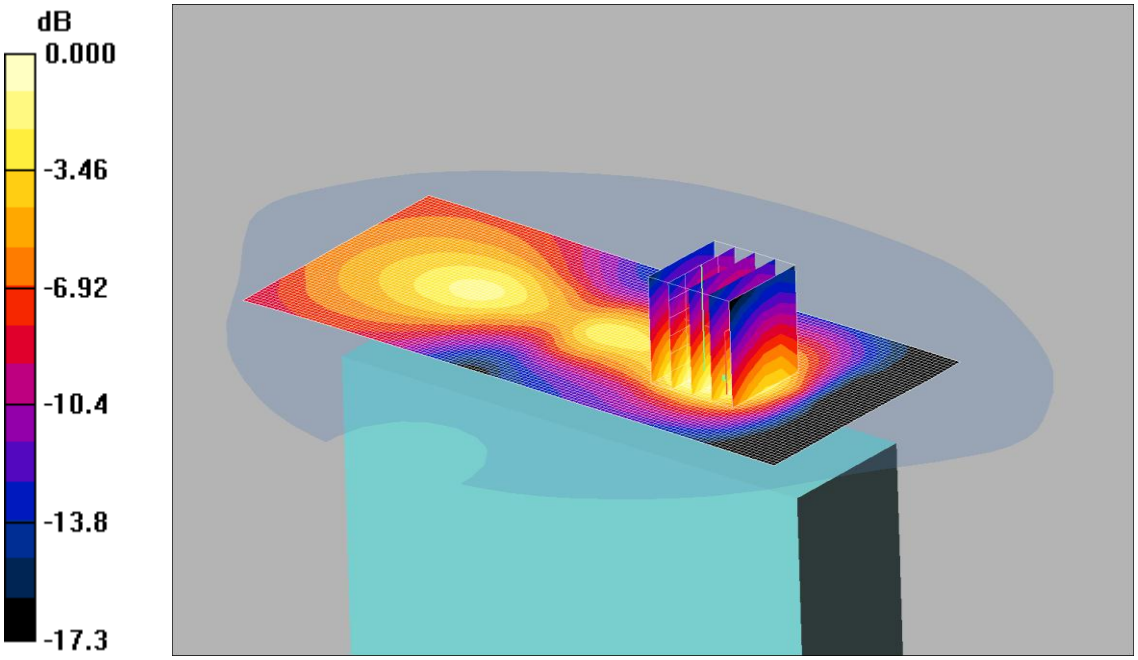
0 dB = 1.16mW/g

Communication System: GPRS 1900 1Tx; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium: 1900 MHz MSL Medium parameters used (interpolated): f = 1880 MHz; σ = 1.52 mho/m; ε_r = 53.8; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ET3DV6 - SN1586; ConvF(4.69, 4.69, 4.69);
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn417; Calibrated: 17/04/2013
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1192
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Left Hand Side of EUT Facing Phantom - Middle 2/Area Scan (81x151x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.16 mW/g

Left Hand Side of EUT Facing Phantom - Middle 2/Zoom Scan (5x5x7) 2 2 (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.8 V/m; Power Drift = 0.027 dB
Peak SAR (extrapolated) = 1.63 W/kg
SAR(1 g) = 1.05 mW/g; SAR(10 g) = 0.608 mW/g
Maximum value of SAR (measured) = 1.16 mW/g

011: Right Hand Side of EUT Facing Phantom GPRS CH661
Date: 08/01/2014
DUT: Scram Remote Breath; Type: Portable Breath Alcohol Monitor; Serial: 25



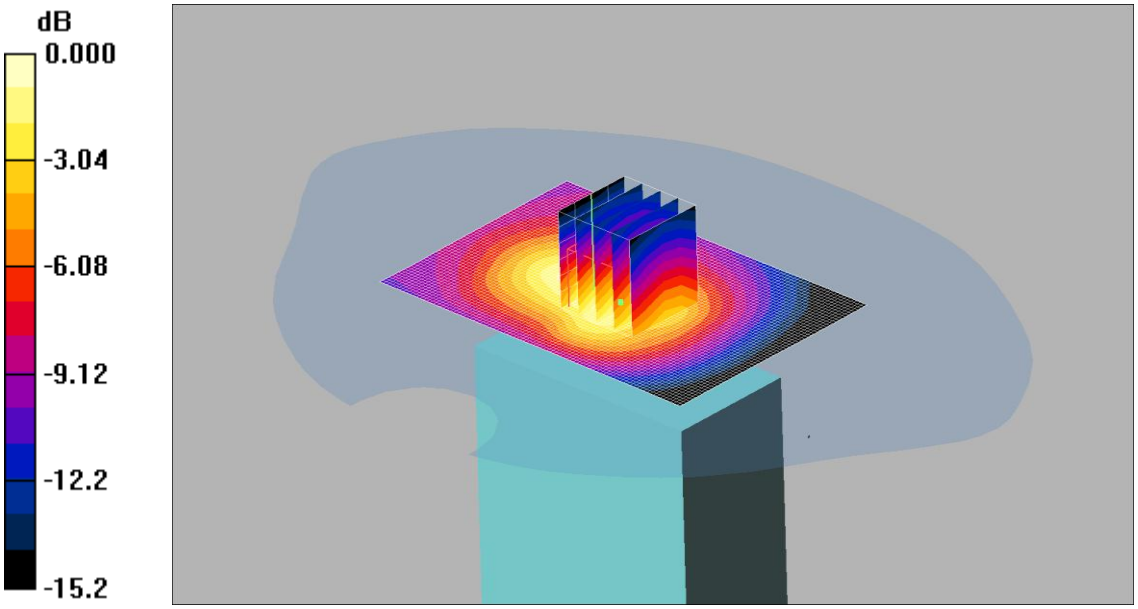
0 dB = 0.122mW/g

Communication System: GPRS 1900 1Tx; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium: 1900 MHz MSL Medium parameters used (interpolated): f = 1880 MHz; σ = 1.52 mho/m; ε_r = 53.8; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ET3DV6 - SN1586; ConvF(4.69, 4.69, 4.69);
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn417; Calibrated: 17/04/2013
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1192
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Right Hand Side of EUT Facing Phantom - Middle 2/Area Scan (61x141x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.137 mW/g

Right Hand Side of EUT Facing Phantom - Middle 2/Zoom Scan (5x5x7) 2 2 (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.71 V/m; Power Drift = -0.110 dB
Peak SAR (extrapolated) = 0.178 W/kg
SAR(1 g) = 0.113 mW/g; SAR(10 g) = 0.067 mW/g
Maximum value of SAR (measured) = 0.122 mW/g

012: Top of EUT Facing Phantom GPRS CH661
Date: 08/01/2014
DUT: Scram Remote Breath; Type: Portable Breath Alcohol Monitor; Serial: 25



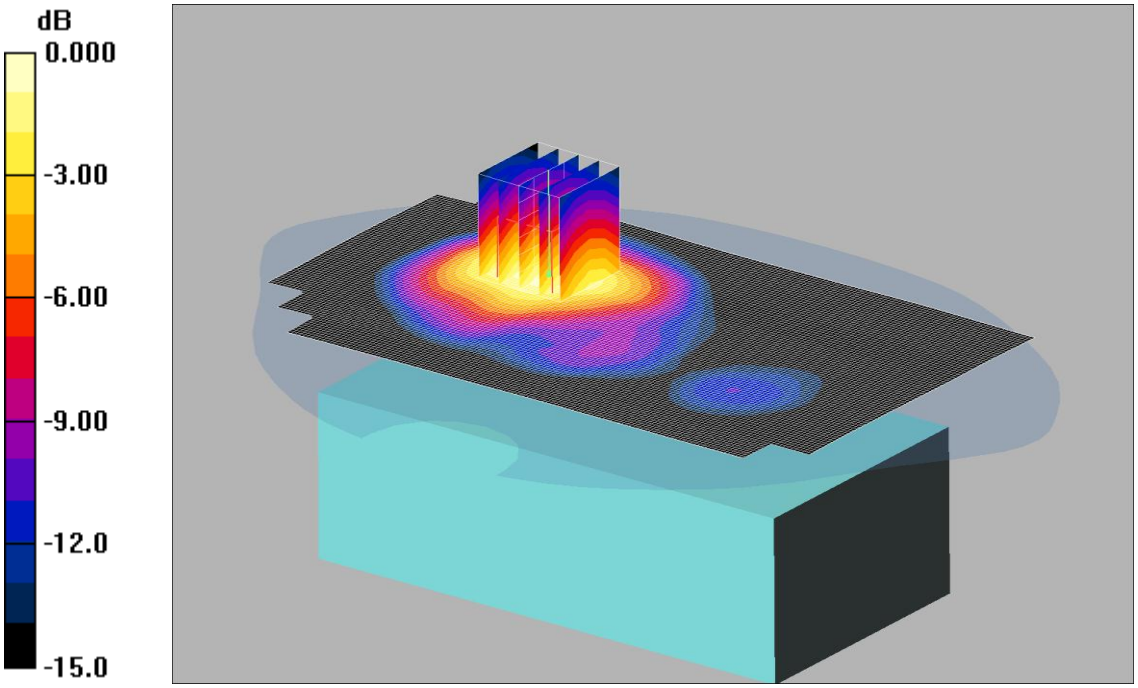
0 dB = 0.260mW/g

Communication System: GPRS 1900 1Tx; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium: 1900 MHz MSL Medium parameters used (interpolated): f = 1880 MHz; σ = 1.52 mho/m; ε_r = 53.8; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ET3DV6 - SN1586; ConvF(4.69, 4.69, 4.69);
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn417; Calibrated: 17/04/2013
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1192
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Top of EUT Facing Phantom - Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.253 mW/g

Top of EUT Facing Phantom - Middle/Zoom Scan (5x5x7) 2 2 2 (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.3 V/m; Power Drift = -0.102 dB
Peak SAR (extrapolated) = 0.424 W/kg
SAR(1 g) = 0.239 mW/g; SAR(10 g) = 0.140 mW/g
Maximum value of SAR (measured) = 0.260 mW/g

013: Back of EUT Facing Phantom GPRS CH512
Date: 08/01/2014
DUT: Scram Remote Breath; Type: Portable Breath Alcohol Monitor; Serial: 25

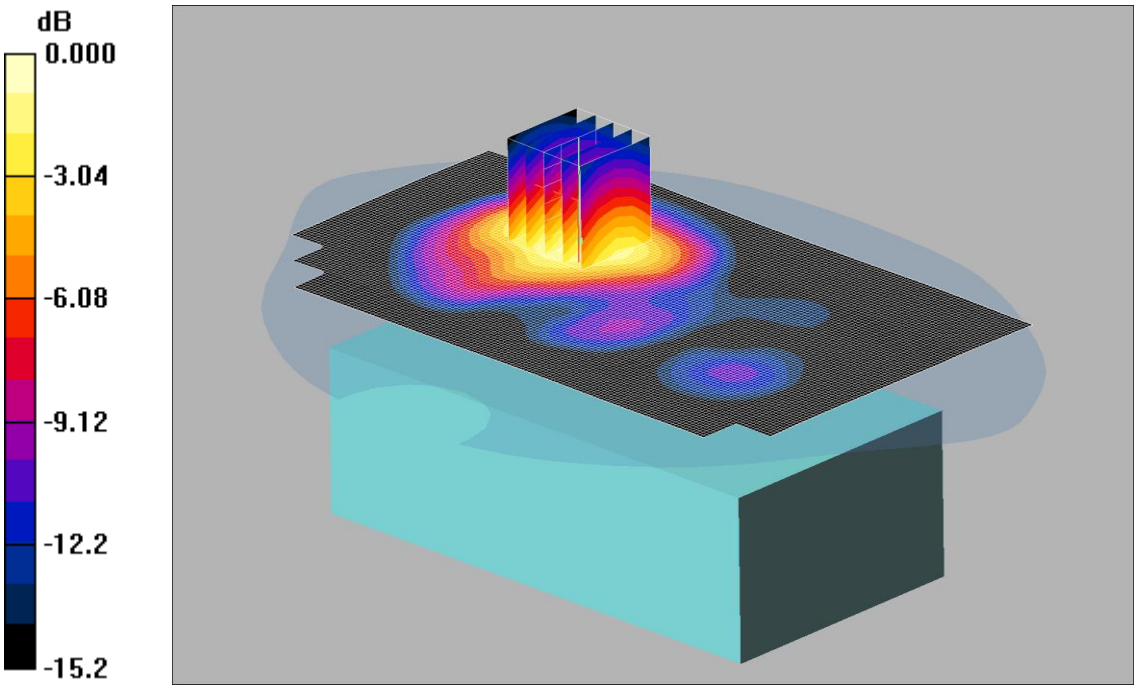


0 dB = 1.26mW/g

Communication System: GPRS 1900 1Tx; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3
Medium: 1900 MHz MSL Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.49 mho/m; ε_r = 53.9; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ET3DV6 - SN1586; ConvF(4.69, 4.69, 4.69);
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn417; Calibrated: 17/04/2013
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1192
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186
Back of EUT Facing Phantom - Low/Area Scan (91x151x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.29 mW/g

Back of EUT Facing Phantom - Low/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.1 V/m; Power Drift = -0.076 dB
Peak SAR (extrapolated) = 1.70 W/kg
SAR(1 g) = 1.15 mW/g; SAR(10 g) = 0.718 mW/g
Maximum value of SAR (measured) = 1.26 mW/g

014: Back of EUT Facing Phantom GPRS CH810
Date: 08/01/2014
DUT: Scram Remote Breath; Type: Portable Breath Alcohol Monitor; Serial: 25



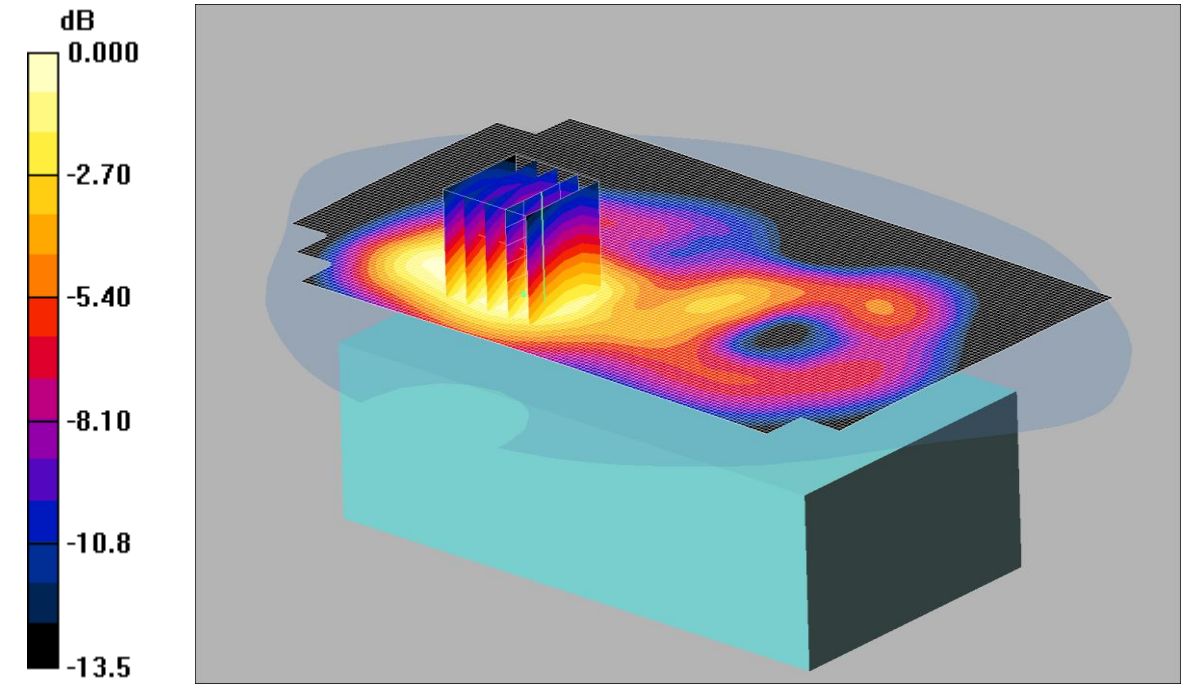
0 dB = 1.16mW/g

Communication System: GPRS 1900 1Tx; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium: 1900 MHz MSL Medium parameters used (interpolated): f = 1909.8 MHz; σ = 1.55 mho/m; ε_r = 53.7; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ET3DV6 - SN1586; ConvF(4.69, 4.69, 4.69);
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn417; Calibrated: 17/04/2013
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1192
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Back of EUT Facing Phantom - High/Area Scan (91x151x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.19 mW/g

Back of EUT Facing Phantom - High/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.61 V/m; Power Drift = -0.094 dB
Peak SAR (extrapolated) = 1.66 W/kg
SAR(1 g) = 1.06 mW/g; SAR(10 g) = 0.646 mW/g
Maximum value of SAR (measured) = 1.16 mW/g

015: Front of EUT Facing Phantom UMTS FDD 2 CH9400
Date: 07/01/2014
DUT: Scram Remote Breath; Type: Portable Breath Alcohol Monitor; Serial: 25

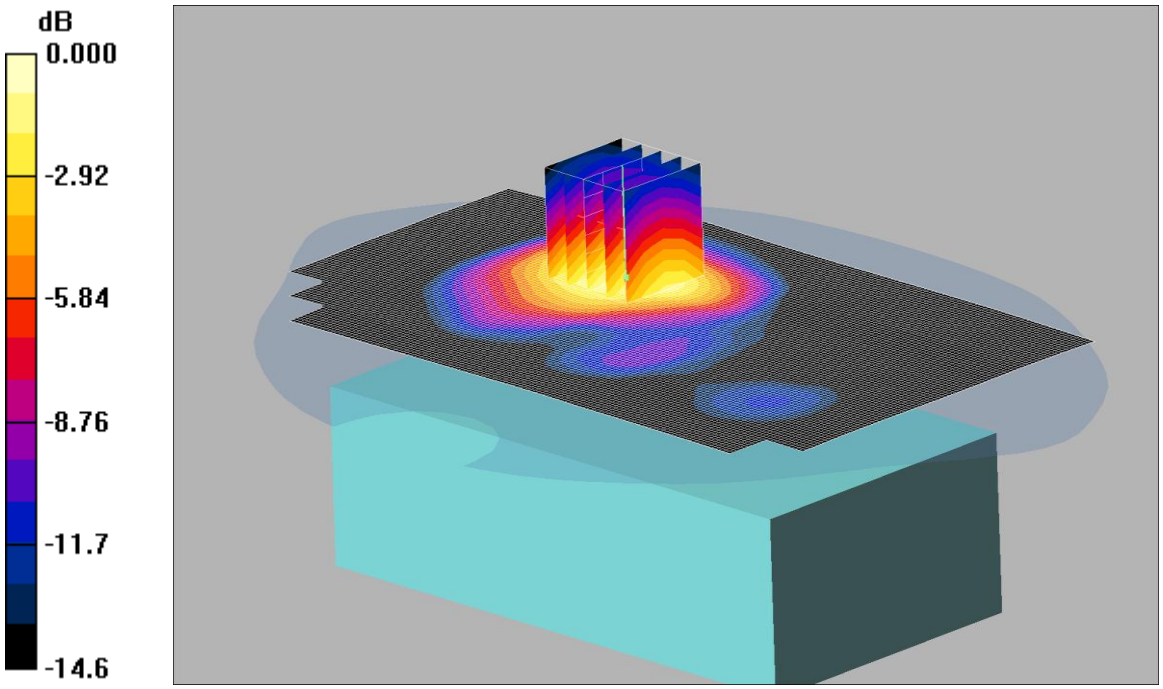


0 dB = 0.410mW/g

Communication System: UMTS-FDD II; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: 1900 MHz MSL Medium parameters used (interpolated): f = 1880 MHz; σ = 1.51 mho/m; ε_r = 54; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ET3DV6 - SN1586; ConvF(4.69, 4.69, 4.69);
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn417; Calibrated: 17/04/2013
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1192
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186
Front of EUT Facing Phantom - Middle/Area Scan (91x151x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.447 mW/g

Front of EUT Facing Phantom - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.00 V/m; Power Drift = -0.024 dB
Peak SAR (extrapolated) = 0.549 W/kg
SAR(1 g) = 0.386 mW/g; SAR(10 g) = 0.248 mW/g
Maximum value of SAR (measured) = 0.410 mW/g

016: Back of EUT Facing Phantom UMTS FDD 2 CH9400
Date: 07/01/2014
DUT: Scram Remote Breath; Type: Portable Breath Alcohol Monitor; Serial: 25



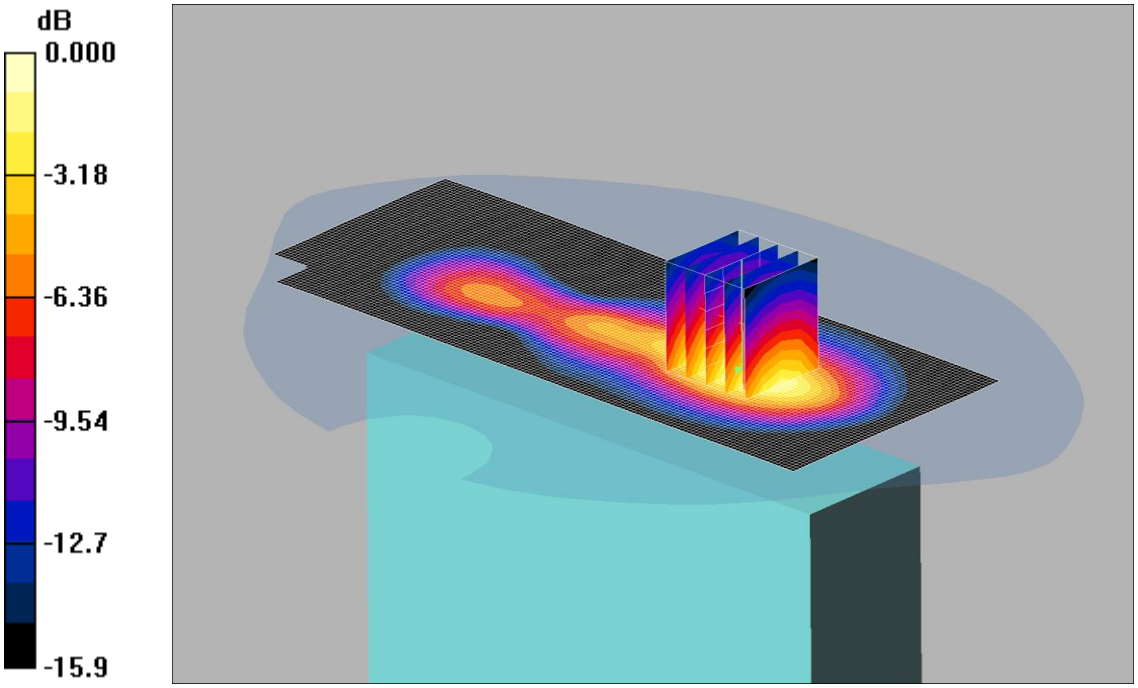
0 dB = 1.36mW/g

Communication System: UMTS-FDD II; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: 1900 MHz MSL Medium parameters used (interpolated): f = 1880 MHz; σ = 1.51 mho/m; ε_r = 54; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ET3DV6 - SN1586; ConvF(4.69, 4.69, 4.69);
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn417; Calibrated: 17/04/2013
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1192
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Back of EUT Facing Phantom - Middle/Area Scan (91x151x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.32 mW/g

Back of EUT Facing Phantom - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.71 V/m; Power Drift = 0.007 dB
Peak SAR (extrapolated) = 1.93 W/kg
SAR(1 g) = 1.26 mW/g; SAR(10 g) = 0.780 mW/
Maximum value of SAR (measured) = 1.36 mW/g

017: Left Hand Side of EUT Facing Phantom UMTS FDD 2 CH9400
Date: 07/01/2014
DUT: Scram Remote Breath; Type: Portable Breath Alcohol Monitor; Serial: 25



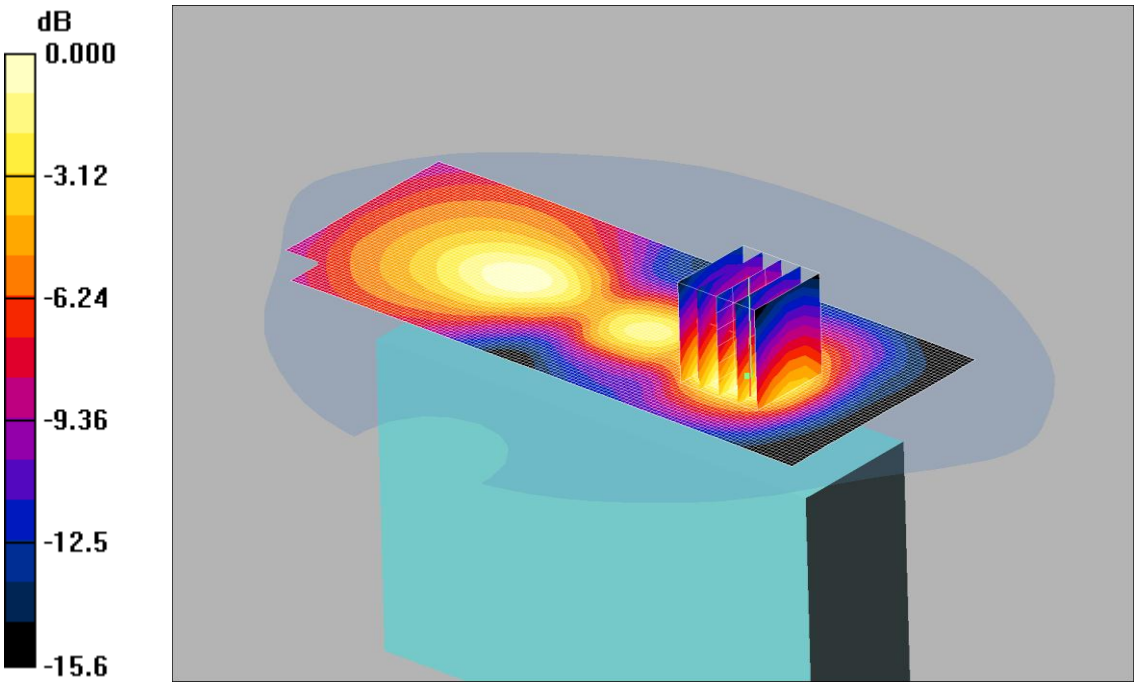
0 dB = 1.29mW/g

Communication System: UMTS-FDD II; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: 1900 MHz MSL Medium parameters used (interpolated): f = 1880 MHz; σ = 1.51 mho/m; ε_r = 54; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ET3DV6 - SN1586; ConvF(4.69, 4.69, 4.69);
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn417; Calibrated: 17/04/2013
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1192
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Left Hand Side of EUT Facing Phantom - Middle 2/Area Scan (61x151x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.30 mW/g

Left Hand Side of EUT Facing Phantom - Middle 2/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.7 V/m; Power Drift = -0.002 dB
Peak SAR (extrapolated) = 1.86 W/kg
SAR(1 g) = 1.18 mW/g; SAR(10 g) = 0.683 mW/g
Maximum value of SAR (measured) = 1.29 mW/g

018: Right Hand Side of EUT Facing Phantom UMTS FDD 2 CH9400
Date: 07/01/2014
DUT: Scram Remote Breath; Type: Portable Breath Alcohol Monitor; Serial: 25



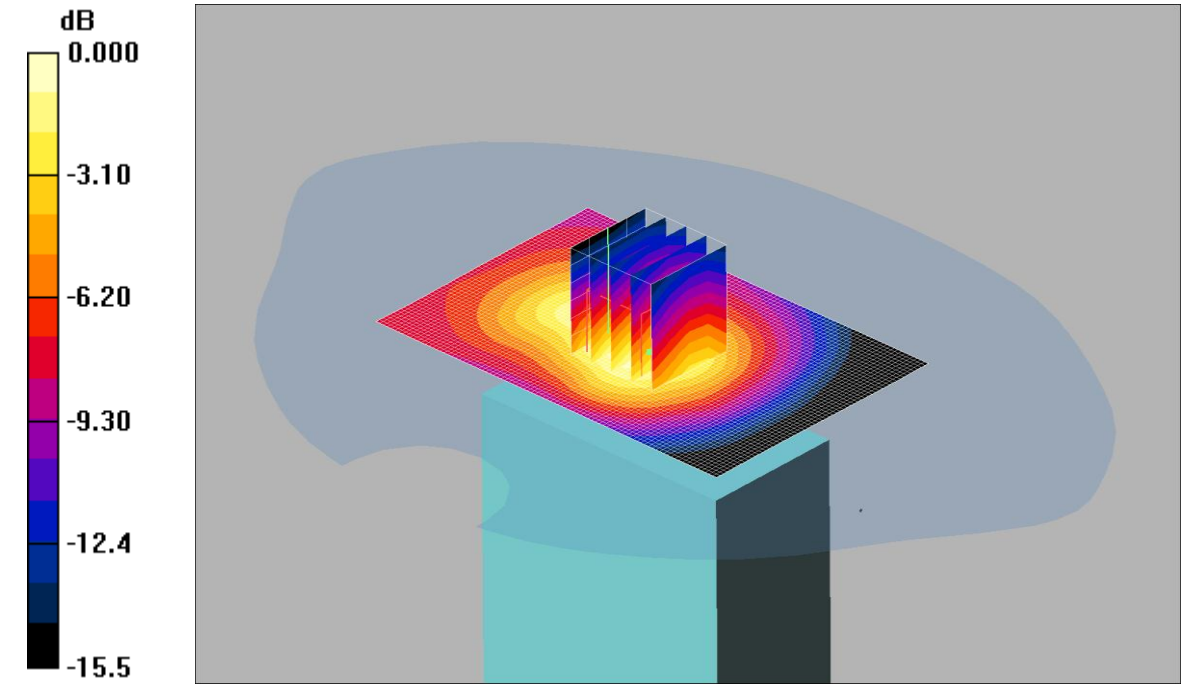
0 dB = 0.125mW/g

Communication System: UMTS-FDD II; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: 1900 MHz MSL Medium parameters used (interpolated): f = 1880 MHz; σ = 1.51 mho/m; ε_r = 54; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ET3DV6 - SN1586; ConvF(4.69, 4.69, 4.69);
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn417; Calibrated: 17/04/2013
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1192
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Right Hand Side of EUT Facing Phantom - Middle/Area Scan (61x151x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.144 mW/g

Right Hand Side of EUT Facing Phantom - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.47 V/m; Power Drift = -0.011 dB
Peak SAR (extrapolated) = 0.178 W/kg
SAR(1 g) = 0.116 mW/g; SAR(10 g) = 0.070 mW/g
Maximum value of SAR (measured) = 0.125 mW/g

019: Top of EUT Facing Phantom UMTS FDD 2 CH9400
Date: 08/01/2014
DUT: Scram Remote Breath; Type: Portable Breath Alcohol Monitor; Serial: 25



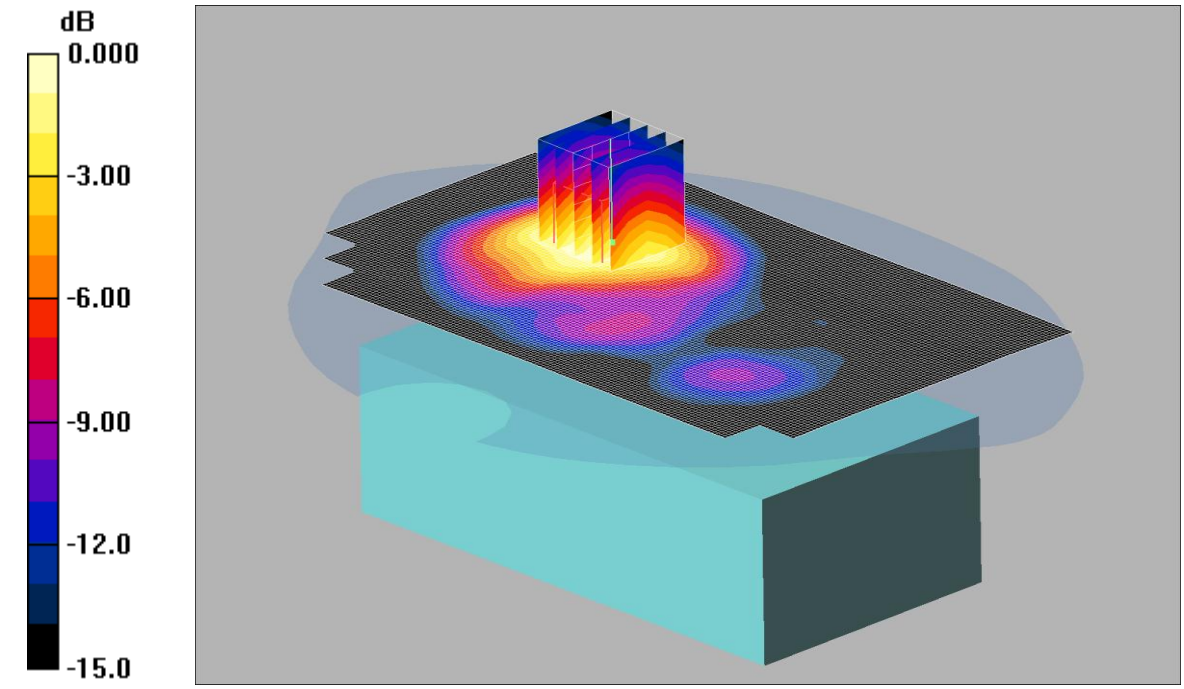
0 dB = 0.342mW/g

Communication System: UMTS-FDD II; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: 1900 MHz MSL Medium parameters used (interpolated): f = 1880 MHz; σ = 1.52 mho/m; ε_r = 53.8; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ET3DV6 - SN1586; ConvF(4.69, 4.69, 4.69);
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn417; Calibrated: 17/04/2013
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1192
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Top of EUT Facing Phantom - Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.367 mW/g

Top of EUT Facing Phantom - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.0 V/m; Power Drift = -0.052 dB
Peak SAR (extrapolated) = 0.569 W/kg
SAR(1 g) = 0.302 mW/g; SAR(10 g) = 0.179 mW/g
Maximum value of SAR (measured) = 0.342 mW/g

020: Back of EUT Facing Phantom UMTS FDD 2 CH9262
Date: 09/01/2014
DUT: Scram Remote Breath; Type: Portable Breath Alcohol Monitor; Serial: 25



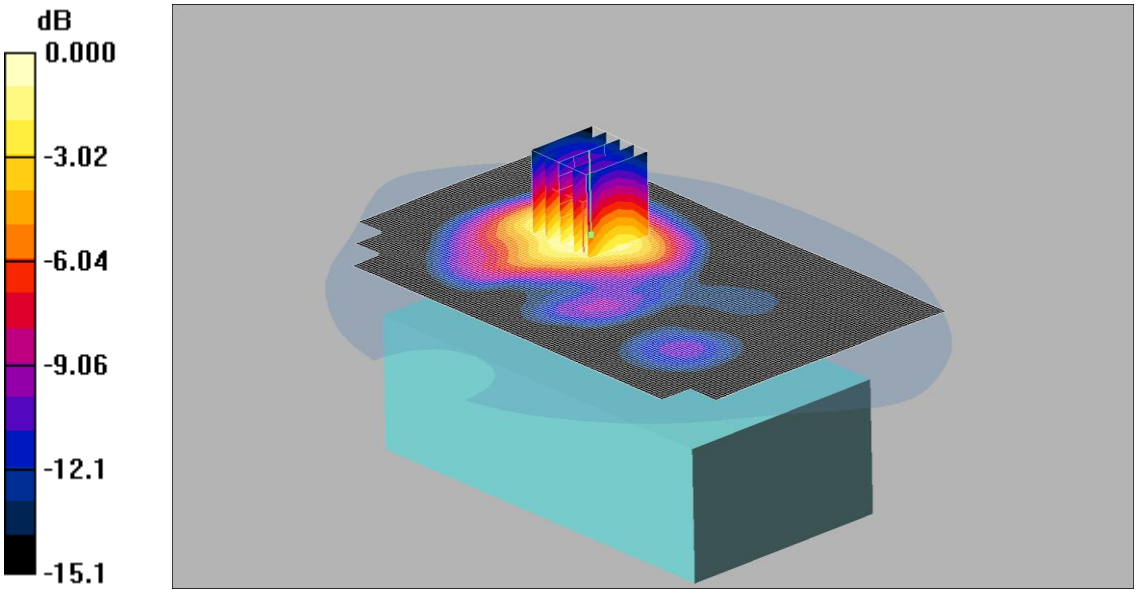
0 dB = 1.96mW/g

Communication System: UMTS-FDD II; Frequency: 1852.4 MHz;Duty Cycle: 1:1
Medium: 1900 MHz MSL Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.49 mho/m; ε_r = 53.9; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ET3DV6 - SN1586; ConvF(4.69, 4.69, 4.69);
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn417; Calibrated: 17/04/2013
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1192
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Back of EUT Facing Phantom - Low/Area Scan (91x151x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.25 mW/g

Back of EUT Facing Phantom - Low/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.2 V/m; Power Drift = -0.003 dB
Peak SAR (extrapolated) = 2.69 W/kg
SAR(1 g) = 1.81 mW/g; SAR(10 g) = 1.14 mW/g
Maximum value of SAR (measured) = 1.96 mW/g

021: Back of EUT Facing Phantom UMTS FDD 2 CH9538
Date: 09/01/2014
DUT: Scram Remote Breath; Type: Portable Breath Alcohol Monitor; Serial: 25

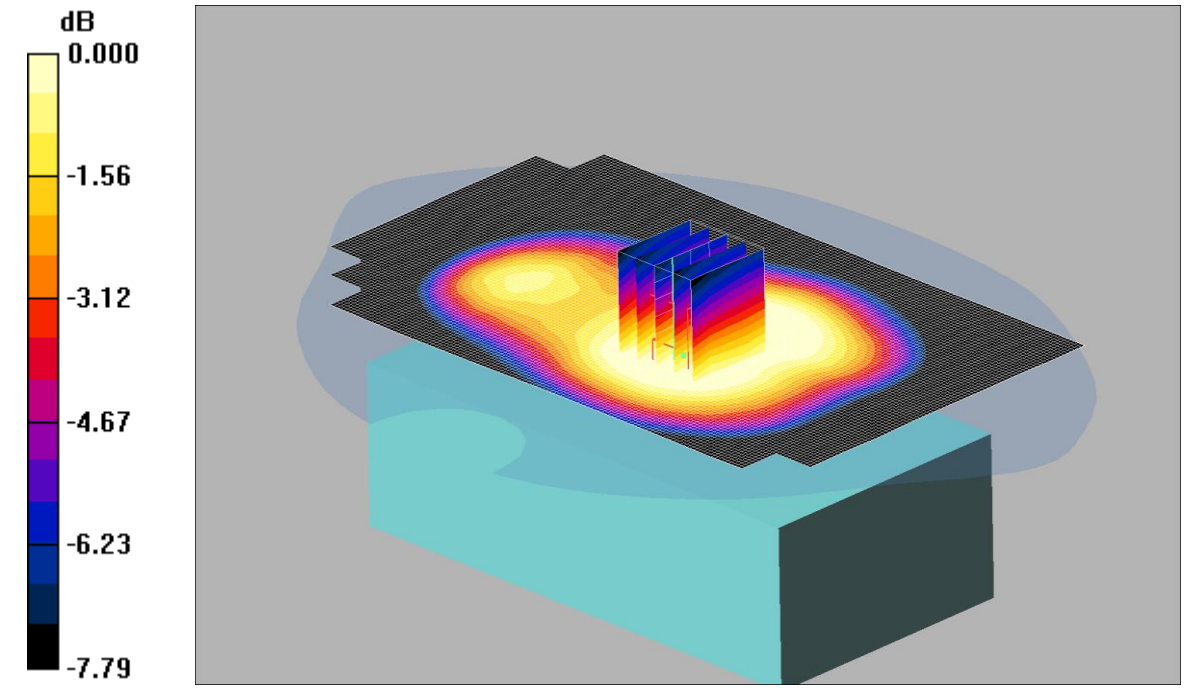


0 dB = 1.43mW/g

Communication System: UMTS-FDD II; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium: 1900 MHz MSL Medium parameters used (interpolated): f = 1907.6 MHz; σ = 1.55 mho/m; ε_r = 53.7; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ET3DV6 - SN1586; ConvF(4.69, 4.69, 4.69);
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn417; Calibrated: 17/04/2013
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1192
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Back of EUT Facing Phantom - High/Area Scan (91x151x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.50 mW/g
Back of EUT Facing Phantom - High/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.88 V/m; Power Drift = -0.070 dB
Peak SAR (extrapolated) = 2.01 W/kg
SAR(1 g) = 1.3 mW/g; SAR(10 g) = 0.803 mW/g
Maximum value of SAR (measured) = 1.43 mW/g

022: Front of EUT Facing Phantom UMTS FDD 5 CH4183
Date: 06/01/2014
DUT: Scram Remote Breath; Type: Portable Breath Alcohol Monitor; Serial: 25



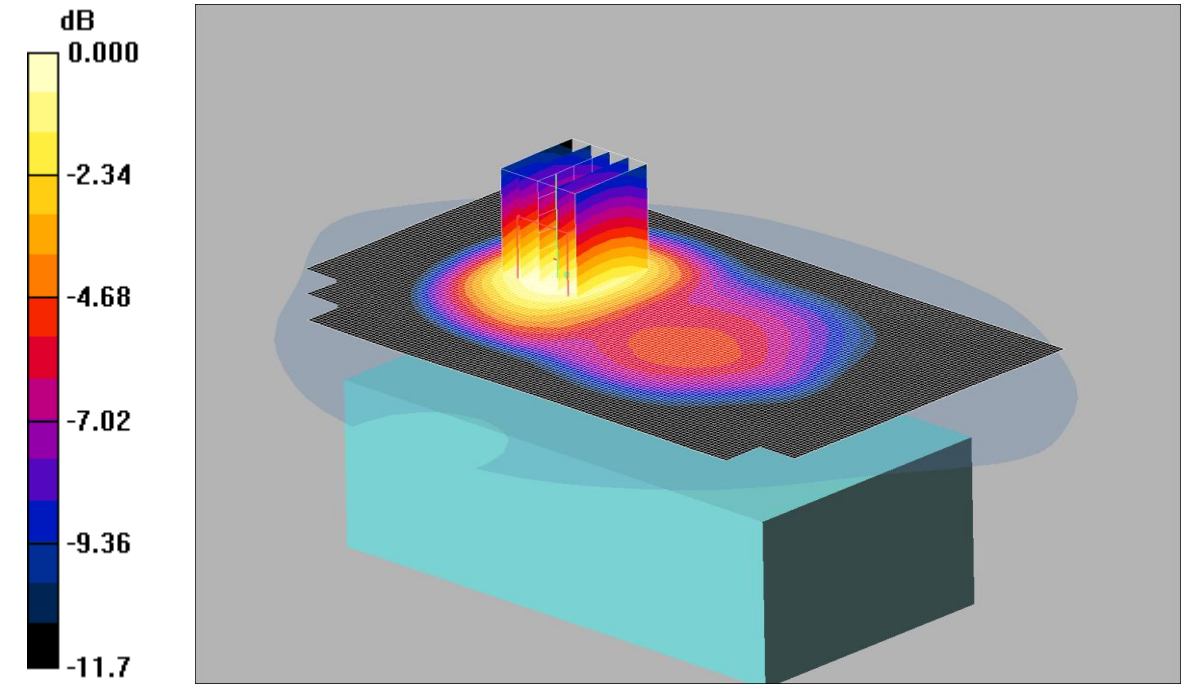
0 dB = 0.261mW/g

Communication System: UMTS-FDD 5; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium: 900 MHz MSL Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.992 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ET3DV6 - SN1586; ConvF(6.36, 6.36, 6.36);
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn417; Calibrated: 17/04/2013
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Front of EUT Facing Phantom - Middle/Area Scan (91x151x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.324 mW/g

Front of EUT Facing Phantom - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.5 V/m; Power Drift = -0.014 dB
Peak SAR (extrapolated) = 0.308 W/kg
SAR(1 g) = 0.246 mW/g; SAR(10 g) = 0.185 mW/g
Maximum value of SAR (measured) = 0.261 mW/g

023: Back of EUT Facing Phantom UMTS FDD 5 CH4183
Date: 06/01/2014
DUT: Scram Remote Breath; Type: Portable Breath Alcohol Monitor; Serial: 25



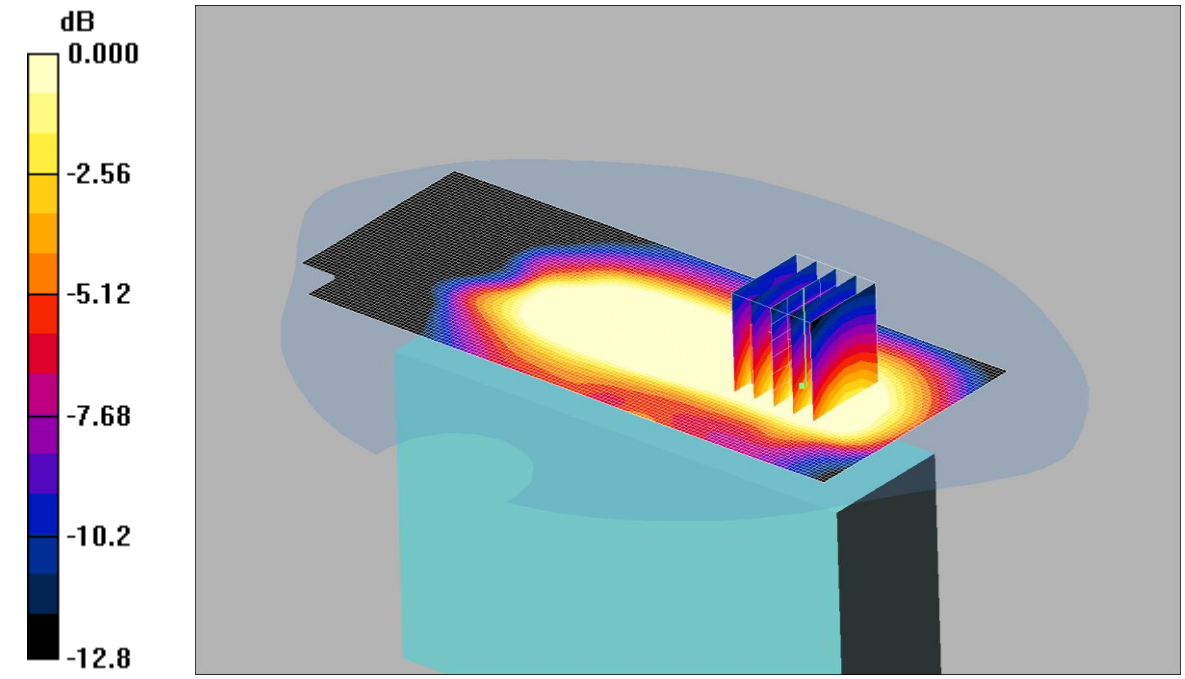
0 dB = 0.774mW/g

Communication System: UMTS-FDD 5; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium: 900 MHz MSL Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.992 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ET3DV6 - SN1586; ConvF(6.36, 6.36, 6.36);
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn417; Calibrated: 17/04/2013
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Back of EUT Facing Phantom - Middle/Area Scan 2 (91x151x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.819 mW/g

Back of EUT Facing Phantom - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.8 V/m; Power Drift = -0.162 dB
Peak SAR (extrapolated) = 0.968 W/kg
SAR(1 g) = 0.735 mW/g; SAR(10 g) = 0.510 mW/g
Maximum value of SAR (measured) = 0.774 mW/g

024: Left Hand Side of EUT Facing Phantom UMTS FDD 5 CH4183
Date: 06/01/2014
DUT: Scram Remote Breath; Type: Portable Breath Alcohol Monitor; Serial: 25

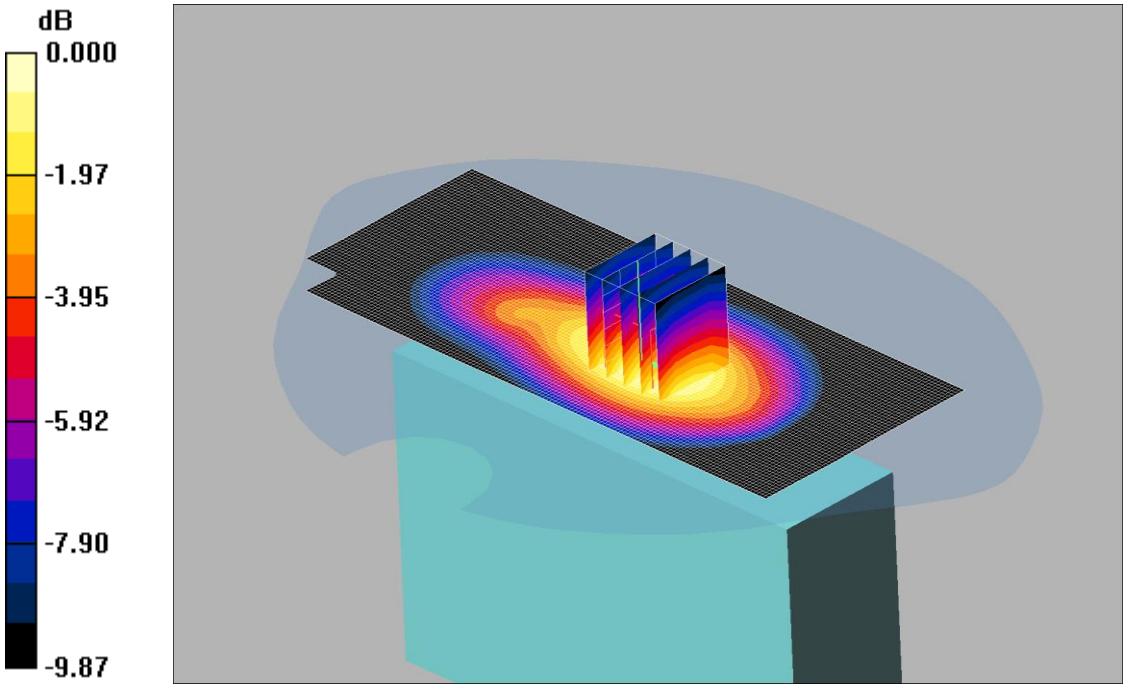


0 dB = 0.110mW/g

Communication System: UMTS-FDD 5; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium: 900 MHz MSL Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.992 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ET3DV6 - SN1586; ConvF(6.36, 6.36, 6.36);
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn417; Calibrated: 17/04/2013
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186
Left Hand Side of EUT Facing Phantom - Middle/Area Scan (61x151x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.439 mW/g

Left Hand Side of EUT Facing Phantom - Middle/Zoom Scan (5x5x7) 2 2 2 2 (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.8 V/m; Power Drift = -0.014 dB
Peak SAR (extrapolated) = 0.166 W/kg
SAR(1 g) = 0.101 mW/g; SAR(10 g) = 0.061 mW/g
Maximum value of SAR (measured) = 0.110 mW/g

025: Right Hand Side of EUT Facing Phantom UMTS FDD 5 CH4183
Date: 07/01/2014
DUT: Scram Remote Breath; Type: Portable Breath Alcohol Monitor; Serial: 25



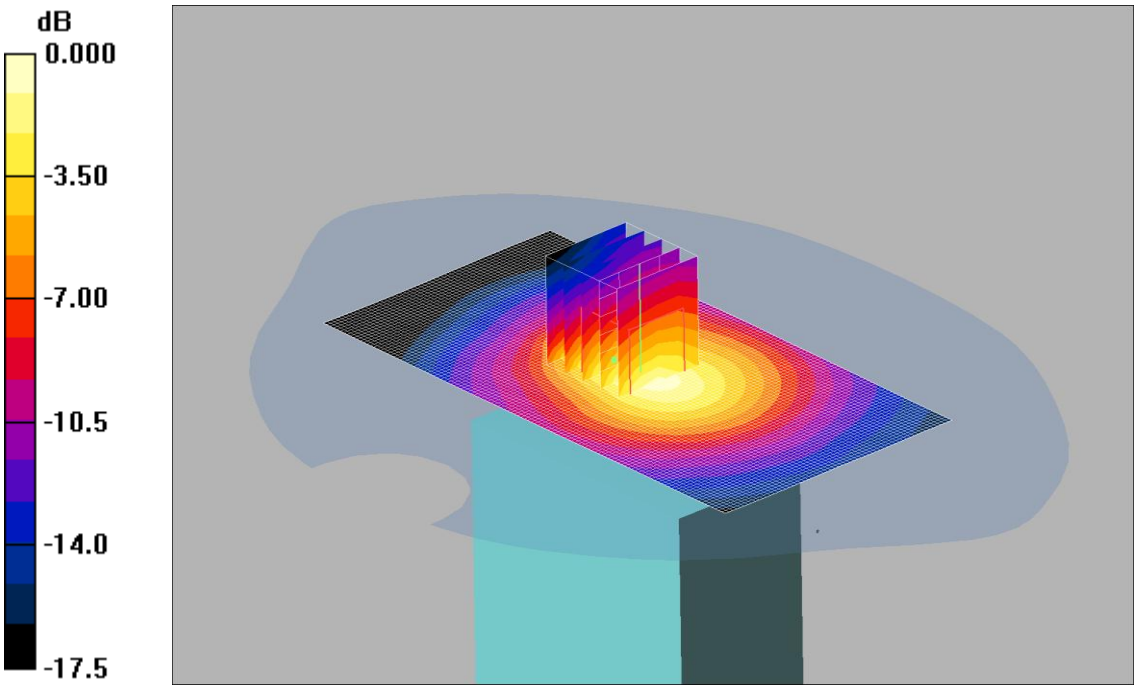
0 dB = 0.458mW/g

Communication System: UMTS-FDD 5; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium: 900 MHz MSL Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.992 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ET3DV6 - SN1586; ConvF(6.36, 6.36, 6.36);
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn417; Calibrated: 17/04/2013
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Right Hand Side of EUT Facing Phantom - Middle 2/Area Scan (61x151x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.494 mW/g

Right Hand Side of EUT Facing Phantom - Middle 2/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.3 V/m; Power Drift = -0.041 dB
Peak SAR (extrapolated) = 0.577 W/kg
SAR(1 g) = 0.427 mW/g; SAR(10 g) = 0.292 mW/g
Maximum value of SAR (measured) = 0.458 mW/g

026: Top of EUT Facing Phantom UMTS FDD 5 CH4183
Date: 07/01/2014
DUT: Scram Remote Breath; Type: Portable Breath Alcohol Monitor; Serial: 25



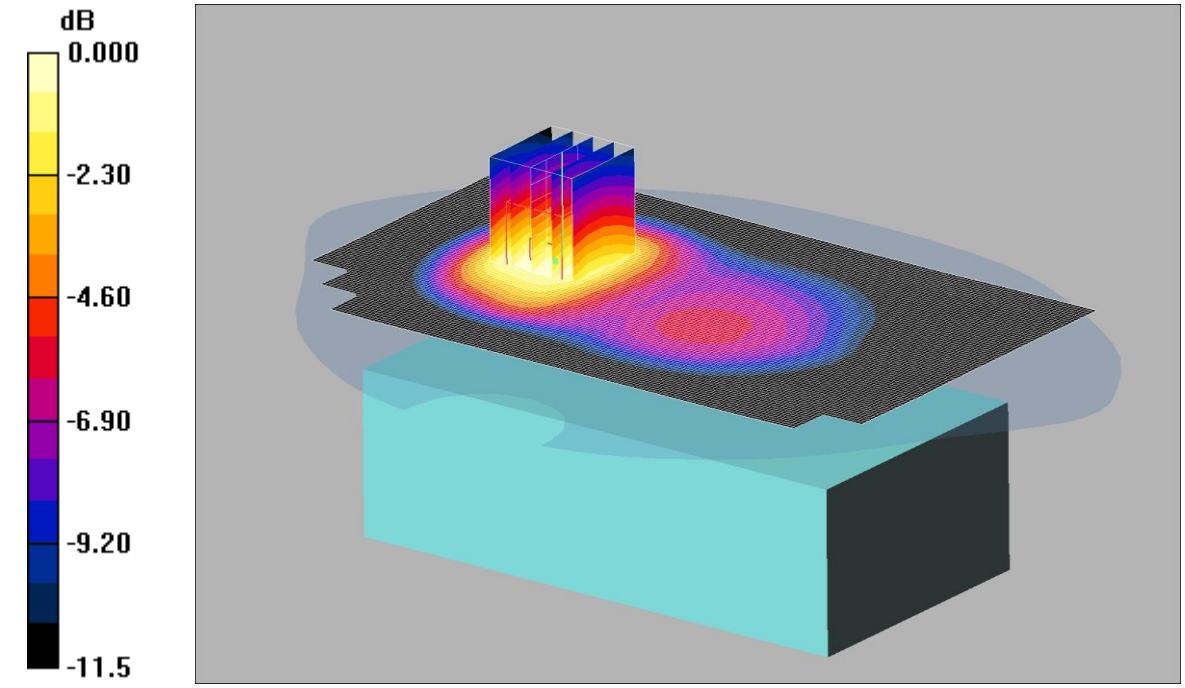
0 dB = 0.201mW/g

Communication System: UMTS-FDD 5; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium: 900 MHz MSL Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.992 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ET3DV6 - SN1586; ConvF(6.36, 6.36, 6.36);
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn417; Calibrated: 17/04/2013
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Top of EUT Facing Phantom - Middle/Area Scan (61x121x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.221 mW/g

Top of EUT Facing Phantom - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.3 V/m; Power Drift = -0.149 dB
Peak SAR (extrapolated) = 0.437 W/kg
SAR(1 g) = 0.181 mW/g; SAR(10 g) = 0.101 mW/g
Maximum value of SAR (measured) = 0.201 mW/g

027: Back of EUT Facing Phantom UMTS FDD 5 CH4132
Date: 07/01/2014
DUT: Scram Remote Breath; Type: Portable Breath Alcohol Monitor; Serial: 25



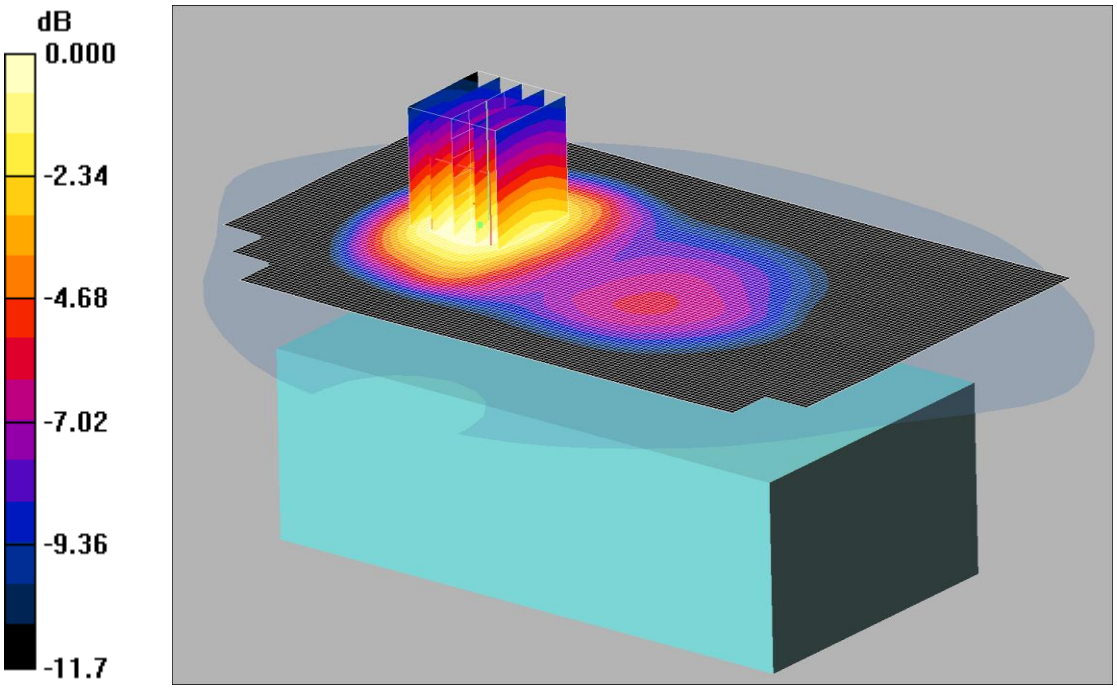
0 dB = 0.893mW/g

Communication System: UMTS-FDD 5; Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium: 900 MHz MSL Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.986 mho/m; ε_r = 53.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ET3DV6 - SN1586; ConvF(6.36, 6.36, 6.36);
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn417; Calibrated: 17/04/2013
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Back of EUT Facing Phantom - Low/Area Scan (91x151x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.878 mW/g

Back of EUT Facing Phantom - Low/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.1 V/m; Power Drift = 0.001 dB
Peak SAR (extrapolated) = 1.09 W/kg
SAR(1 g) = 0.832 mW/g; SAR(10 g) = 0.577 mW/g
Maximum value of SAR (measured) = 0.893 mW/g

028: Back of EUT Facing Phantom UMTS FDD 5 CH4233
Date: 07/01/2014
DUT: Scram Remote Breath; Type: Portable Breath Alcohol Monitor; Serial: 25



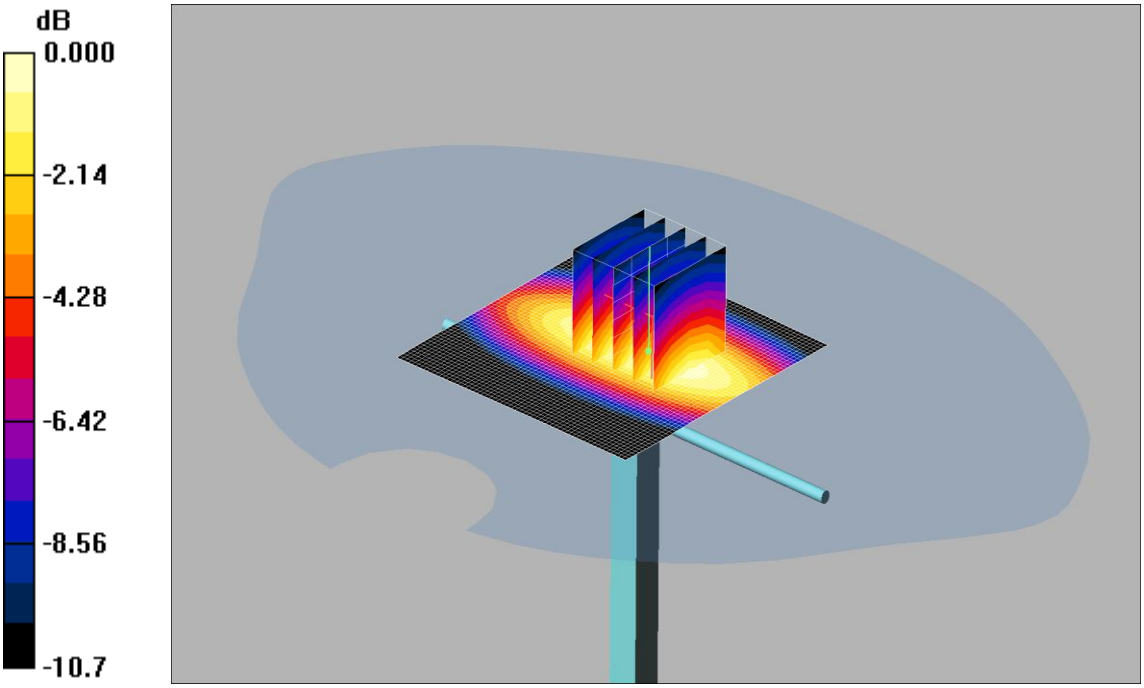
0 dB = 0.928mW/g

Communication System: UMTS-FDD 5; Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium: 900 MHz MSL Medium parameters used (interpolated): f = 846.6 MHz; σ = 0.998 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ET3DV6 - SN1586; ConvF(6.36, 6.36, 6.36);
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn417; Calibrated: 17/04/2013
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Back of EUT Facing Phantom - High/Area Scan (91x151x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.989 mW/g

Back of EUT Facing Phantom - High/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.6 V/m; Power Drift = -0.106 dB
Peak SAR (extrapolated) = 1.16 W/kg
SAR(1 g) = 0.879 mW/g; SAR(10 g) = 0.611 mW/g
Maximum value of SAR (measured) = 0.928 mW/g

029: System Performance Check 900MHz Body 03 01 14
Date: 03/01/2014
DUT: Dipole 900 MHz; SN: 185; Type: D900V2; Serial: SN185

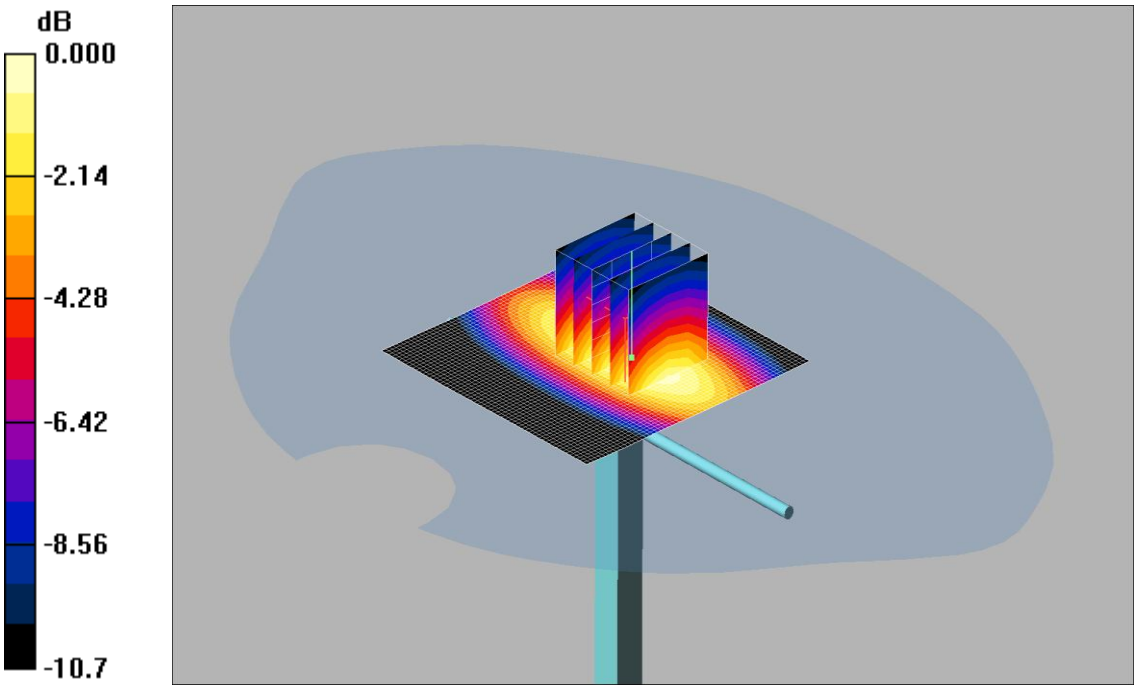


0 dB = 2.89mW/g

Communication System: CW; Frequency: 900 MHz;Duty Cycle: 1:1
Medium: 900 MHz MSL Medium parameters used: f = 900 MHz; σ = 1.05 mho/m; ε_r = 52.6; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ET3DV6 - SN1586; ConvF(6.26, 6.26, 6.26);
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn417; Calibrated: 17/04/2013
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186
d=15mm, Pin=250mW 2/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.89 mW/g

d=15mm, Pin=250mW 2/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 55.0 V/m; Power Drift = -0.062 dB
Peak SAR (extrapolated) = 3.71 W/kg
SAR(1 g) = 2.65 mW/g; SAR(10 g) = 1.74 mW/g
Maximum value of SAR (measured) = 2.89 mW/g

030: System Performance Check 900MHz Body 06 01 14
Date: 06/01/2014
DUT: Dipole 900 MHz; SN: 185; Type: D900V2; Serial: SN185



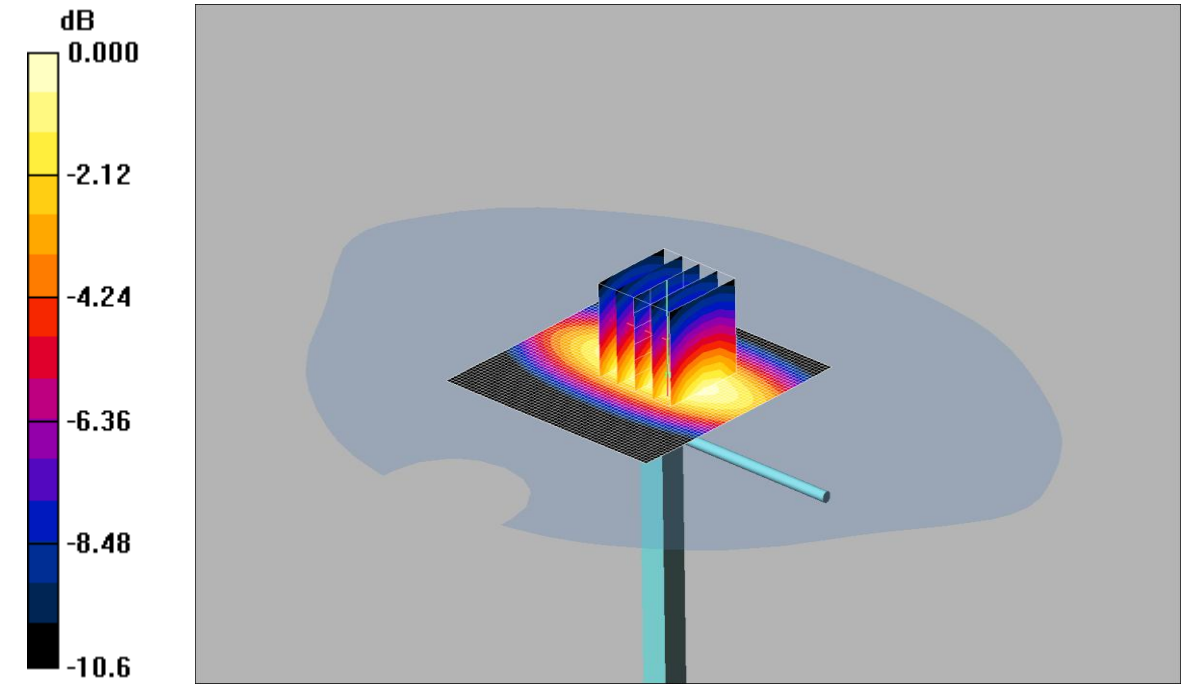
0 dB = 2.94mW/g

Communication System: CW; Frequency: 900 MHz;Duty Cycle: 1:1
Medium: 900 MHz MSL Medium parameters used: f = 900 MHz; σ = 1.03 mho/m; ε_r = 52.9; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ET3DV6 - SN1586; ConvF(6.26, 6.26, 6.26);
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn417; Calibrated: 17/04/2013
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

d=15mm, Pin=250mW 2/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.94 mW/g

d=15mm, Pin=250mW 2/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 55.9 V/m; Power Drift = -0.150 dB
Peak SAR (extrapolated) = 3.76 W/kg
SAR(1 g) = 2.7 mW/g; SAR(10 g) = 1.77 mW/g
Maximum value of SAR (measured) = 2.94 mW/g

031: System Performance Check 900MHz Body 07 01 14
Date: 07/01/2014
DUT: Dipole 900 MHz; SN: 185; Type: D900V2; Serial: SN185

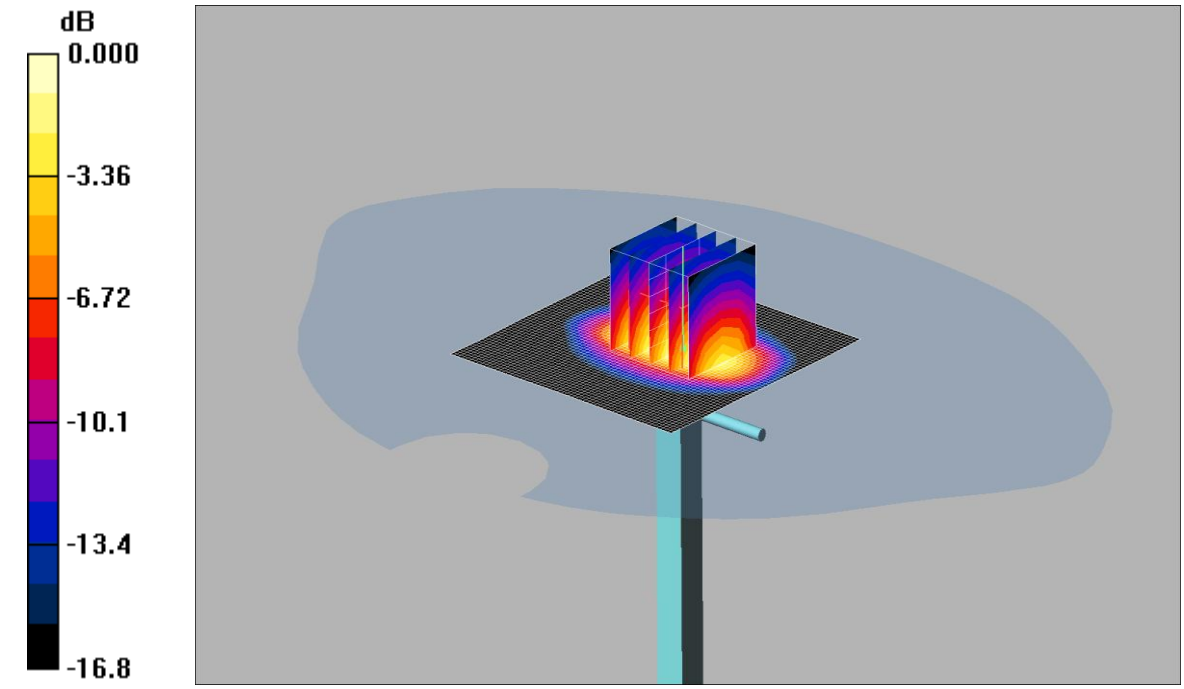


0 dB = 2.89mW/g

Communication System: CW; Frequency: 900 MHz;Duty Cycle: 1:1
Medium: 900 MHz MSL Medium parameters used: f = 900 MHz; σ = 1.03 mho/m; ε_r = 52.9; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ET3DV6 - SN1586; ConvF(6.26, 6.26, 6.26);
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn417; Calibrated: 17/04/2013
- Phantom: SAM 12a (Site 56); Type: SAM 4.0; Serial: TP:1020
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186
d=15mm, Pin=250mW 2/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.93 mW/g

d=15mm, Pin=250mW 2/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 55.5 V/m; Power Drift = -0.115 dB
Peak SAR (extrapolated) = 3.70 W/kg
SAR(1 g) = 2.66 mW/g; SAR(10 g) = 1.75 mW/g
Maximum value of SAR (measured) = 2.89 mW/g

032: System Performance Check 1900MHz Body 07 01 14
Date: 07/01/2014
DUT: Dipole 1900 MHz; SN540; Type: D1900V2; Serial: SN540

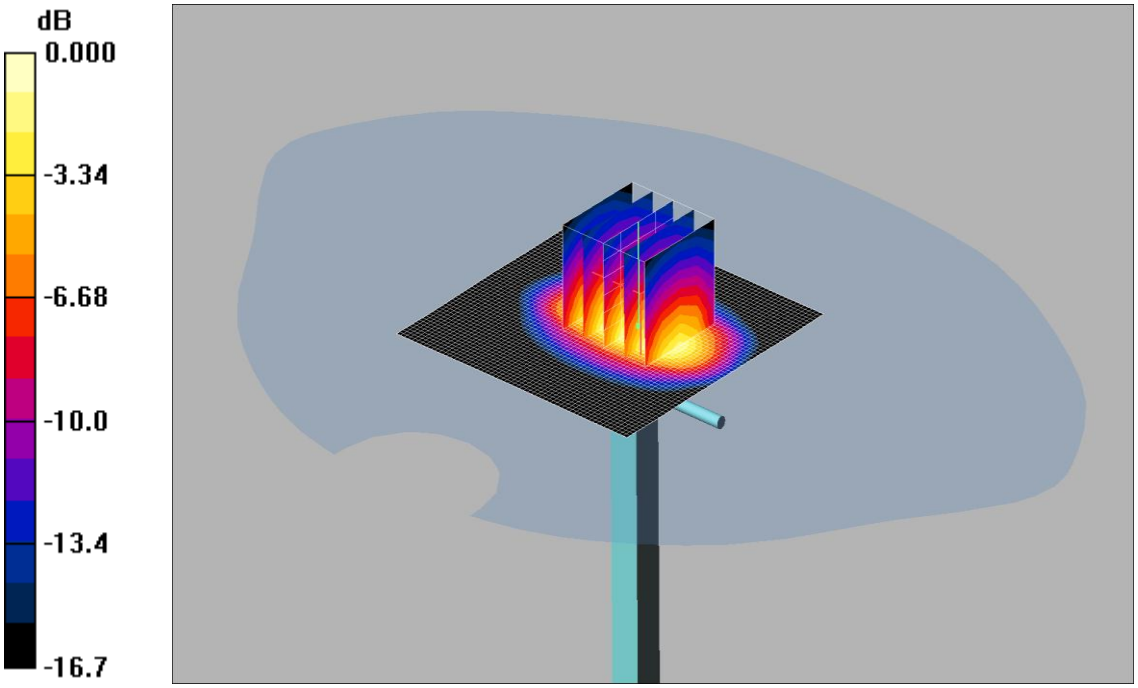


0 dB = 11.2mW/g

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: 1900 MHz MSL Medium parameters used: f = 1900 MHz; σ = 1.53 mho/m; ε_r = 53.9; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ET3DV6 - SN1586; ConvF(4.69, 4.69, 4.69);
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn417; Calibrated: 17/04/2013
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1192
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186
d=10mm, Pin=250mW 2/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 12.8 mW/g

d=10mm, Pin=250mW 2/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 92.6 V/m; Power Drift = -0.099 dB
Peak SAR (extrapolated) = 16.5 W/kg
SAR(1 g) = 9.93 mW/g; SAR(10 g) = 5.3 mW/g
Maximum value of SAR (measured) = 11.2 mW/g

033: System Performance Check 1900MHz Body 08 01 14
Date: 08/01/2014
DUT: Dipole 1900 MHz; SN540; Type: D1900V2; Serial: SN540

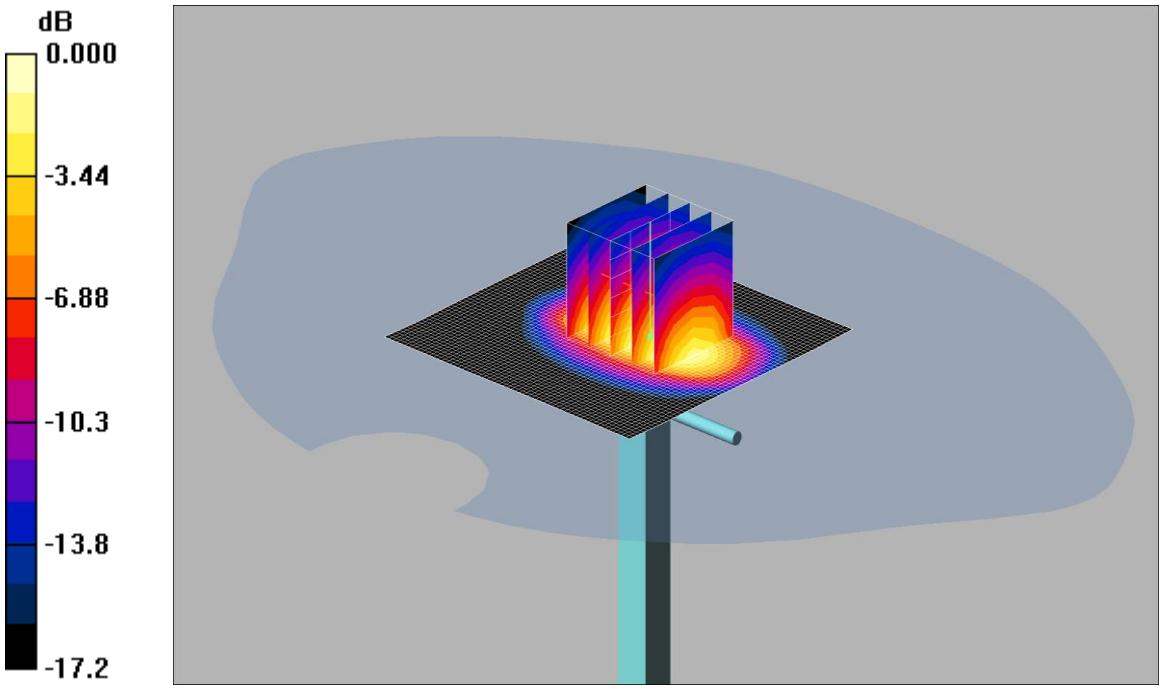


0 dB = 11.1mW/g

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: 1900 MHz MSL Medium parameters used: f = 1900 MHz; σ = 1.54 mho/m; εr = 53.8; ρ = 1000 kg/m3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ET3DV6 - SN1586; ConvF(4.69, 4.69, 4.69);
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn417; Calibrated: 17/04/2013
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1192
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186
d=10mm, Pin=250mW 2/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 12.8 mW/g

d=10mm, Pin=250mW 2/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 92.1 V/m; Power Drift = -0.161 dB
Peak SAR (extrapolated) = 16.4 W/kg
SAR(1 g) = 9.88 mW/g; SAR(10 g) = 5.29 mW/g
Maximum value of SAR (measured) = 11.1 mW/g

034: System Performance Check 1900MHz Body 08 01 14
Date: 09/01/2014
DUT: Dipole 1900 MHz; SN540; Type: D1900V2; Serial: SN540



0 dB = 11.5mW/g

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: 1900 MHz MSL Medium parameters used: f = 1900 MHz; σ = 1.54 mho/m; εr = 53.8; ρ = 1000 kg/m3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ET3DV6 - SN1586; ConvF(4.69, 4.69, 4.69);
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn417; Calibrated: 17/04/2013
- Phantom: SAM 12b (Site 56); Type: SAM 4.0; Serial: TP:1192
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186
d=10mm, Pin=250mW 2/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 12.9 mW/g

d=10mm, Pin=250mW 2/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 91.1 V/m; Power Drift = 0.048 dB
Peak SAR (extrapolated) = 17.0 W/kg
SAR(1 g) = 10.2 mW/g; SAR(10 g) = 5.47 mW/g
Maximum value of SAR (measured) = 11.5 mW/g