



SAR TEST REPORT

Test Report No. : 33CE0171-HO-I-R1

Applicant : Sharp Corporation, Communication Systems Group.

Type of Equipment : Cellular Phone

Model No. : 200SH

FCC ID : APYHRO00181

Test regulation : FCC47CFR 2.1093
FCC OET Bulletin 65, Supplement C (Edition 01-01)

Test Result : **Complied**

FCC15.247(2.4G)	Head	: 0.415 W/kg
	Body	: 0.090 W/kg
FCC15.407(5.2G/5.3G/5.6G)	Head	: 0.726W/kg
	Body	: 0.066 W/kg
FCC Part 24E	Head	: 0.372 W/kg
	Body	: 0.471 W/kg
Simultaneous transmission SAR result		
	Head	: 1.098 W/kg
	Body	: 0.561 W/kg

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2. The results in this report apply only to the sample tested.
3. This sample tested is in compliance with the limits of the above regulation.
4. The test results in this report are traceable to the national or international standards.
5. This test report must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

This report is a revised version of 33CE0171-HO-I. 33CE0171-HO-I is replaced with this report.

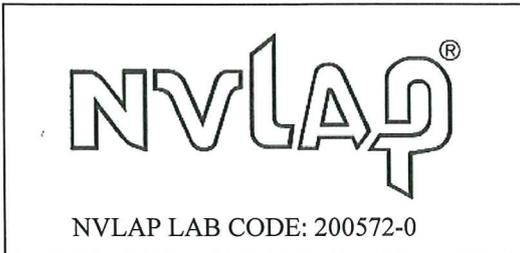
Date of test: October 17 to November 22, 2012

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SECTION 1 : Customer information

Company Name : Sharp Corporation, Communication Systems Group.
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Contact Person : Hiroyuki Uwatoko

SECTION 2 : Equipment under test (E.U.T.)

2.1 Identification of E.U.T.

Type of Equipment : Cellular Phone
Model No. : 200SH
Serial No. : 004401/11/441658/5, 004401/11/441642/9
Rating : DC3.7V-4.0V
Option Battery : N/A
Body-wornAccessory : Ear phone (typical)
Device category : Portable
Antenna to antenna separation distance : 10 cm from WWAN antenna to WLAN/BT antenna
Simultaneous transmission : WWAN can transmit simultaneously with WLAN
WLAN(2.4GHz) cannot transmit simultaneously with WLAN(5GHz)
Receipt Date of Sample : October 13, 2012
Country of Mass-production : China
Condition of EUT : Production prototype
(Not for Sale: This sample is equivalent to mass-produced items.)
Modification of EUT : No Modification by the test lab

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2.2 Product description

Model No.: 200SH (referred to as the EUT in this report) is Cellular Phone.

General Specification

Clock frequency(ies) in the system : CPU: 1.512GHz (max)
RTC: 32.768kHz
Source oscillation: 19.2MHz / 27MHz (CPU) / 27.12MHz (NFC)

Radio Specification

RFID

Equipment Type	Transceiver
Frequency of Operation	13.56MHz
Type of Modulation	ASK
Antenna Type	Loop antenna
Antenna Gain	0dBi

Bluetooth (BDR/EDR)

Equipment Type	Transceiver
Frequency of Operation	2402-2480MHz
Type of Modulation	FHSS
Bandwidth & Channel spacing	1MHz & 1MHz
Antenna Type	L Type
Antenna Gain	0dBi

Bluetooth (Low Energy)

Equipment Type	Transceiver
Frequency of Operation	2402-2480MHz
Type of Modulation	Digital modulation
Bandwidth & Channel spacing	1MHz & 2MHz
Antenna Type	L Type
Antenna Gain	0dBi

WLAN (IEEE802.11a/b/g/n-20)

Equipment Type	Transceiver	
Frequency of Operation	2412-2462MHz	5180-5240MHz 5260-5320MHz 5500-5700MHz
Type of Modulation	DSSS, OFDM	OFDM
Bandwidth & Channel spacing	20MHz & 5MHz	20MHz & 20MHz
Antenna Type	L Type	
Antenna Gain	0dBi	

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WLAN (IEEE802.11n-40)

Equipment Type	Transceiver
Frequency of Operation	5190-5230MHz 5270-5310MHz 5510-5670MHz
Type of Modulation	OFDM
Bandwidth & Channel spacing	40MHz & 40MHz
Antenna Type	L Type
Antenna Gain	0dBi

GSM (PCS 1900)

Equipment Type	Transceiver
Frequency of Operation	[Up Link] 1850 – 1910MHz [Down Link] 1930 – 1990MHz
Type of Modulation	GMSK
Emission Designator	249KGXW
Antenna Type	L Type
Antenna Gain	0dBi

SECTION 3 : Test standard information

3.1 Test Specification

Title : **Supplement C (Edition 01-01) to OET Bulletin 65 (Edition 97-01):**

Supplement C (Edition 01-01) - Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions
OET Bulletin 65 (Edition 97-01) - Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields

: **IEEE Std 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 Supplement C

In additions;

- KDB450824 D01** SAR Prob Cal and Ver Meas v01r01
- KDB450824 D01** Dipole SAR Validation Verification v01
- KDB447498D01(v04)** Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies
- KDB447498D02(v02)** SAR Measurement Procedures for USB Dongle Transmitters
- KDB648474D01** SAR Evaluation Considerations for Handsets with Multiple Transmitters and Antennas
- KDB941225D01(v02)** SAR Measurement Procedures for 3G Devices
- KDB941225D02(v02v01)** 3GPP R6 HSPA and R7 HSPA+ SAR Guidance
- KDB941225D03(v01)** Recommended SAR Test Reduction Procedures for GSM/GPRS/EDGE
- KDB941225D04(v01)** Evaluating SAR for GSM/(E)GPRS Dual Transfer Mode
- KDB941225D05(v01)** SAR for LTE Devices
- KDB941225D06(v01)** SAR test procedures for devices incorporating SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities (Hot Spot SAR)
- KDB941225D07(v01)** SAR Evaluation Procedures for UMPC Mini-Tablet Devices
- KDB 616217 D01(v01r01)** SAR Evaluation Considerations for Laptop Computer with antennas Built-in on Display Screen
- KDB 616217 D03(v01)** SAR Evaluation Considerations for Laptop/Notebook/Netbook and Tablet
- KDB865664** SAR Measurement Requirements for 3 to 6 GHz
- KDB248227(rev.1.2)** SAR Measurement Procedures for 802.11a/b/g Transmitters

In this test, it is not measured based on the KDB document of the new version updated in October, 2012.

It has measured based on the KDB document of a previous version.

The test procedure based on the document of KDB of a previous version is valid till December 31, 2012.

Reference

[1]ANSI, ANSI/IEEE C95.1-1992: IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz, The Institute of Electrical and Electronics Engineers, Inc., New York, NY 10017, 1992.

[2]SPEAG uncertainty document (AN 15-7/AN19-17) for DASY 5 System from SPEAG (Shimid & Partner Engineering AG).

3.2 Procedure

Transmitter	WWAN	WLAN	Bluetooth
Test Procedure	FCC OET BULLETIN 65, SUPPLEMENT C SAR	FCC OET BULLETIN 65, SUPPLEMENT C SAR	Exemption (Power < 12mW)
Category	FCC47CFR 2.1093	FCC47CFR 2.1093	FCC47CFR 2.1093
Note: UL Japan, Inc. 's SAR Work Procedures 13-EM-W0429 and 13-EM-W0430			

Bluetooth mode is excluded from SAR test since power was $1/2 * 60/f_{[GHz]}[mW]$.

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3.3 Exposure limit

(A) Limits for Occupational/Controlled Exposure (W/kg)

Spatial Average (averaged over the whole body)	Spatial Peak (averaged over any 1g of tissue)	Spatial Peak (hands/wrists/feet/ankles averaged over 10g)
0.4	8.0	20.0

(B) Limits for General population/Uncontrolled Exposure (W/kg)

Spatial Average (averaged over the whole body)	Spatial Peak (averaged over any 1g of tissue)	Spatial Peak (hands/wrists/feet/ankles averaged over 10g)
0.08	1.6	4.0

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

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

NOTE:GENERAL POPULATION/UNCONTROLLED EXPOSURE SPATIAL PEAK(averaged over any 1g of tissue) LIMIT 1.6 W/kg
--

3.4 Test Location

*Shielded room for SAR testings

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SECTION 4 : Test result

4.1 Stand-alone SAR result

No.	Capable Tx configurations		Head SAR	Body-worn SAR	Body SAR (HotSpot)	Note
1	WWAN	GSM : 1900MHz	Yes	Exemption*1	-	-
2		GPRS : 1900MHz	Yes	Exemption*1	Yes	With VOIP
5	WLAN	WLAN 2.4G	Yes	Exemption*1	Yes	With VOIP
6		WLAN 5G	Yes	Yes	- *2	With VOIP
7	Bluetooth	Bluetooth BDR/EDR	Exemption*3			-

Note

*1 It is not necessary to test Body-worn SAR if the test separation distance(10mm) for hotspot mode is more conservative than Body-worn test(15mm),according to KDB 941225 D06 Hotspot SAR procedure.

*2 WLAN 5GHz has not a mobile hotspot function.

*3 Bluetooth power is less than $1/2 * 60/f_{[GHz]}[mW]$.

Mode	1g Head SAR [W/kg]	1g Body-worn SAR [W/kg]	1g BodySAR [W/kg]
PCS1900	0.372	Exemption	0.471
WLAN 11b/g/n(2.4G)	0.415	Exemption	0.090
WLAN 11a/n(5G) 15.407	0.726	0.066	-
Bluetooth	Exemption		

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4.2 Simultaneous transmission SAR result

<Simultaneous Procedure>

This EUT has the unlicensed transmitter such as WLAN (802.11a/b/g/n) & Bluetooth devices besides licensed transmitter WWAN (GSM/WCDMA), and the following simultaneous transmission is possible.

No.	Capable Tx configurations	Head SAR	Body-worn SAR	Body SAR (HotSpot)	Note
1	WWAN+WLA	GSM + WLAN2.4G	Yes	-	-
2	N	GPRS + WLAN2.4G	Yes	-	Yes
4		GSM + WLAN5G	Yes	Yes	-
5		GPRS + WLAN5G	Yes	Yes	-
7		WWAN+Bluetooth	Exemption		
8	WLAN+Bluetooth				

<WWAN + WLAN >

Simultaneous transmitter evaluation based on the KDB648474. Refer to the Section 8.

Step1.	WWAN antenna is >5cm from WLAN antenna
Step2.	WLAN power > 2Pref (=60/f _[GHz]).
Step3.	Stand-alone SAR for WLAN
Step4.	Simultaneous transmission is possible (WWAN + WLAN)
Step5.	∑1g SAR (WWAN + WLAN) < 1.6W/kg Head: 1.098W/kg Body:0.561W/kg
Step6.	No simultaneous transmission.

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SECTION 5 : Description of the operating mode

5.1 Output power operating modes

Band	Duty cycle or Multi class(GSM)	Test Frequency	Mode
PCS1900	Multi class 12	1850.2MHz(512ch) 1880.0MHz(661ch) 1909.8MHz(810ch)	GSM GPRS (CS-1)
WWAN Setting			
The communication link was set up with the Wireless Communications Test Set (Agilent M/N: E5515C). The EUT was command to operate at maximum transmit power. PCS1900 :PCL 0			

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Mode	Duty cycle	Frequency Band	Test Frequency	Modulation
IEEE802.11b	100%	2412-2462MHz	2412MHz (1ch) 2437MHz(6ch) 2462MHz(11ch)	DSSS (DBPSK.DQPSK.CCK)
IEEE802.11g	100%	2412-2462MHz	2412MHz (1ch) 2437MHz(6ch) 2462MHz(11ch)	OFDM (BPSK.QPSK.16QAM,64QAM)
IEEE802.11n20 (2.4G)	100%	2412-2462MHz	2412MHz (1ch) 2437MHz(6ch) 2462MHz(11ch)	
IEEE802.11n40 (2.4G)	100%	2422-2452MHz	2422MHz (3ch) 2437MHz(6ch) 2452MHz(9ch)	
IEEE802.11a	100%	5180-5240MHz	All channel	
	100%	5260-5320MHz	All channel	
	100%	5500-5700MHz	All channel	
	100%	5745-5825MHz	All channel	
IEEE802.11n20 (5G)	100%	5180-5240MHz	All channel	
	100%	5260-5320MHz	All channel	
	100%	5500-5700MHz	All channel	
	100%	5745-5825MHz	All channel	
IEEE802.11n40 (5G)	100%	5190-5230MHz	All channel	
	100%	5270-5310MHz	All channel	
	100%	5510-5670MHz	All channel	
	100%	5755-5795MHz	All channel	
Bluetooth (Reference)	77.6%(DH5) 77.4%(3DH5)	2402-2480MHz	2402MHz(1ch) 2441MHz(39ch) 2480MHz(79ch)	FHSS (GFSK, π /4DQPSK,8DPSK)

WLAN Setting

Power of the EUT was set by the software as follows;

[Power settings]

<IEEE 802.11b/g/n-20 Power Setting>

Max power

<BT LE Power Setting>

Max power

[Software]

F8295

*This setting of software is the worst case.

Any conditions under the normal use do not exceed the condition of setting.

In addition, end users cannot change the settings of the output power of the product.

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5.2 Output power measurement results

Output power measurement for GSM

[GSM]

*Connection Type > AUTO
*Power control level > 0(PCS1900)

[GPRS]

*Connection Type > Type B
*Power control level > 0(PCS1900)
*Coding Scheme > CS-1

1) PCS1900

PCS1900 SAR Power (Normal)												
Mode	Crest Factor (typical)	Ch	Frequency [MHz]	Time-based Average				Average frame power				
				Reading [dBm]	Atten. [dB]	Cable Loss [dB]	Result [dBm]	Reading [dBm]	Atten. [dB]	Cable Loss [dB]	Result [dBm]	
GSM	1slot	8.3	512	1850.2	5.34	10.03	4.05	19.42	15.25	10.03	4.10	29.38
			661	1880.0	5.53	10.03	4.05	19.61	15.18	10.03	4.10	29.31
			810	1909.8	5.40	10.04	4.07	19.51	15.21	10.04	4.12	29.37
GPRS (CS1)	1slot	8.3	512	1850.2	5.26	10.03	4.05	19.34	15.22	10.03	4.10	29.35
			661	1880.0	5.44	10.03	4.05	19.52	15.15	10.03	4.10	29.28
			810	1909.8	5.51	10.04	4.07	19.62	15.18	10.04	4.12	29.34
	2slots	4.2	512	1850.2	6.11	10.03	4.05	20.19	13.40	10.03	4.10	27.53
			661	1880.0	6.13	10.03	4.05	20.21	13.41	10.03	4.10	27.54
			810	1909.8	6.22	10.04	4.07	20.33	13.40	10.04	4.12	27.56
	3slots	2.8	512	1850.2	6.01	10.03	4.05	20.09	12.11	10.03	4.10	26.24
			661	1880.0	6.14	10.03	4.05	20.22	12.12	10.03	4.10	26.25
			810	1909.8	6.23	10.04	4.07	20.34	12.13	10.04	4.12	26.29
	4slots	2.1	512	1850.2	6.88	10.03	4.05	20.96	11.62	10.03	4.10	25.75
			661	1880.0	6.64	10.03	4.05	20.72	11.58	10.03	4.10	25.71
			810	1909.8	6.67	10.04	4.07	20.78	11.66	10.04	4.12	25.82

Time based AVG Results = P/M Reading + Atten.Loss + Cable Loss

Slotted AVG Results = Agilent Reading + Cable Loss

Maximum time based AVG power mode

SAR test channel

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Output power measurement for WLAN

2) WLAN (11b/g/n(2.4G))

[IEEE802.11b] Rate Check

Rate [Mbps]	Freq. [MHz]	P/M Reading [dBm]		Cable Loss [dB]	Atten. [dB]	Result			
		PK	AVG			[dBm]		[mW]	
1.0	2437	7.43	4.42	0.30	10.08	17.81	14.80	60.39	30.20
2.0	2437	7.39	4.36	0.30	10.08	17.77	14.74	59.84	29.79
5.5	2437	7.45	4.40	0.30	10.08	17.83	14.78	60.67	30.06
11.0	2437	7.51	4.38	0.30	10.08	17.89	14.76	61.52	29.92

IEEE802.11b 1Mbps

Ch	Frequency [MHz]	P/M Reading [dBm]		Cable Loss [dB]	Atten. [dB]	Result			
		PK	AVG			[dBm]		[mW]	
1	2412	7.19	4.14	0.30	10.08	17.57	14.52	57.15	28.31
6	2437	7.43	4.42	0.30	10.08	17.81	14.80	60.39	30.20
11	2462	7.31	4.38	0.30	10.09	17.70	14.77	58.88	29.99

IEEE802.11b 11Mbps <Peak power result for maximum data rate in FCC 15.247 test>

Ch	Frequency [MHz]	P/M Reading [dBm]		Cable Loss [dB]	Atten. [dB]	Result			
		PK	AVG			[dBm]		[mW]	
1	2412	7.33	4.18	0.30	10.08	17.71	14.56	59.02	28.58
6	2437	7.51	4.38	0.30	10.08	17.89	14.76	61.52	29.92
11	2462	7.36	4.26	0.30	10.09	17.75	14.65	59.57	29.17

[IEEE802.11g] Rate Check

Rate [Mbps]	Freq. [MHz]	P/M Reading [dBm]		Cable Loss [dB]	Atten. [dB]	Result			
		PK	AVG			[dBm]		[mW]	
6.0	2437	10.67	2.16	0.30	10.08	22.91	12.54	195.43	17.95
9.0	2437	10.64	2.11	0.30	10.08	22.83	12.49	191.87	17.74
12.0	2437	10.75	2.10	0.30	10.08	22.93	12.48	196.34	17.70
18.0	2437	10.74	2.09	0.30	10.08	22.91	12.47	195.43	17.66
24.0	2437	10.80	2.02	0.30	10.08	22.90	12.40	194.98	17.38
36.0	2437	10.72	1.86	0.30	10.08	22.66	12.24	184.50	16.75
48.0	2437	10.76	1.89	0.30	10.08	22.73	12.27	187.50	16.87
54.0	2437	10.75	1.87	0.30	10.08	22.70	12.25	186.21	16.79

IEEE802.11g 6Mbps

Ch	Frequency [MHz]	P/M Reading [dBm]		Cable Loss [dB]	Atten. [dB]	Result			
		PK	AVG			[dBm]		[mW]	
1	2412	9.16	-0.41	0.30	10.08	19.54	9.97	89.95	9.93
6	2437	10.67	2.16	0.30	10.08	21.05	12.54	127.35	17.95
11	2462	8.95	-1.00	0.30	10.09	19.34	9.39	85.90	8.69

IEEE802.11g 24Mbps <Peak power result for maximum data rate in FCC 15.247 test>

Ch	Frequency [MHz]	P/M Reading [dBm]		Cable Loss [dB]	Atten. [dB]	Result			
		PK	AVG			[dBm]		[mW]	
1	2412	9.35	-0.56	0.30	10.08	19.73	9.82	93.97	9.59
6	2437	10.80	2.02	0.30	10.08	21.18	12.40	131.22	17.38
11	2462	9.35	-0.75	0.30	10.09	19.74	9.64	94.19	9.20

Sample Calculation:

Result = Reading + Cable Loss (no used) + Attenuator

 : Worst data rate

 : SAR test channel

[IEEE802.11n 20Mband] Rate Check

Rate [Mbps]	Freq. [MHz]	P/M Reading [dBm]		Cable Loss [dB]	Atten. [dB]	Result			
		PK	AVG			[dBm]		[mW]	
MCS0	2437	9.69	0.43	0.30	10.08	20.20	10.81	104.71	12.05
MCS1	2437	9.76	0.36	0.30	10.08	20.20	10.74	104.71	11.86
MCS2	2437	9.74	0.31	0.30	10.08	20.13	10.69	103.04	11.72
MCS3	2437	9.82	0.34	0.30	10.08	20.24	10.72	105.68	11.80
MCS4	2437	9.55	-0.02	0.30	10.08	19.61	10.36	91.41	10.86
MCS5	2437	9.81	0.18	0.30	10.08	20.07	10.56	101.62	11.38
MCS6	2437	9.72	0.08	0.30	10.08	19.88	10.46	97.27	11.12
MCS7	2437	9.80	0.14	0.30	10.08	20.02	10.52	100.46	11.27

IEEE802.11n 20Mband MCS0

Ch	Frequency [MHz]	P/M Reading [dBm]		Cable Loss [dB]	Atten. [dB]	Result			
		PK	AVG			[dBm]		[mW]	
1	2412	8.54	-1.53	0.30	10.08	18.92	8.85	77.98	7.67
6	2437	9.69	0.43	0.30	10.08	20.07	10.81	101.62	12.05
11	2462	8.94	-0.94	0.30	10.09	19.33	9.45	85.70	8.81

IEEE802.11n 20Mband MCS3 <Peak power result for maximum data rate in FCC 15.247 test>

Ch	Frequency [MHz]	P/M Reading [dBm]		Cable Loss [dB]	Atten. [dB]	Result			
		PK	AVG			[dBm]		[mW]	
1	2412	8.97	-1.10	0.30	10.08	19.35	9.28	86.10	8.47
6	2437	9.82	0.34	0.30	10.08	20.20	10.72	104.71	11.80
11	2462	9.13	-1.05	0.30	10.09	19.52	9.34	89.54	8.59

Sample Calculation:

Result = Reading + Cable Loss (no used) + Attenuator

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3) WLAN (11a/n(5180-5240MHz):

[IEEE802.11a 5180-5240MHz band] Rate Check

Rate [Mbps]	Freq. [MHz]	P/M Reading [dBm] AVG	Cable Loss [dB]	Atten. [dB]	Result	
					[dBm] AVG	[mW] AVG
6.0	5240	0.52	0.50	10.00	11.02	12.65
9.0	5240	0.48	0.50	10.00	10.98	12.53
12.0	5240	0.24	0.50	10.00	10.74	11.86
18.0	5240	0.26	0.50	10.00	10.76	11.91
24.0	5240	0.28	0.50	10.00	10.78	11.97
36.0	5240	0.14	0.50	10.00	10.64	11.59
48.0	5240	0.04	0.50	10.00	10.54	11.32
54.0	5240	0.05	0.50	10.00	10.55	11.35

IEEE802.11a 5180-5240MHz band 6Mbps

Ch	Freq. [MHz]	P/M Reading [dBm] AVG	Cable Loss [dB]	Atten. [dB]	Result	
					[dBm] AVG	[mW] AVG
36	5180	0.05	0.50	10.00	10.55	11.35
40	5200	0.66	0.50	10.00	11.16	13.06
44	5220	0.54	0.50	10.00	11.04	12.71
48	5240	0.52	0.50	10.00	11.02	12.65

Sample Calculation: Result = Reading + Cable Loss + Attenuator

: Worst data rate

: SAR test channel

[IEEE802.11n-20 5180-5240MHz band] Rate Check

Rate [Mbps]	Freq. [MHz]	P/M Reading [dBm] AVG	Cable Loss [dB]	Atten. [dB]	Result	
					[dBm] AVG	[mW] AVG
MCS0	5240	-0.35	0.50	10.00	10.15	10.35
MCS1	5240	-0.58	0.50	10.00	9.92	9.82
MCS2	5240	-0.62	0.50	10.00	9.88	9.73
MCS3	5240	-0.56	0.50	10.00	9.94	9.86
MCS4	5240	-0.44	0.50	10.00	10.06	10.14
MCS5	5240	-0.52	0.50	10.00	9.98	9.95
MCS6	5240	-0.62	0.50	10.00	9.88	9.73
MCS7	5240	-0.64	0.50	10.00	9.86	9.68

IEEE802.11n-20 5180-5240MHz band MCS0

Ch	Freq. [MHz]	P/M Reading [dBm] AVG	Cable Loss [dB]	Atten. [dB]	Result	
					[dBm] AVG	[mW] AVG
36	5180	-0.74	0.50	10.00	9.76	9.46
40	5200	-0.90	0.50	10.00	9.60	9.12
44	5220	-1.17	0.50	10.00	9.33	8.57
48	5240	-0.35	0.50	10.00	10.15	10.35

[IEEE802.11n-40 5190-5230MHz band] Rate Check

Rate [Mbps]	Freq. [MHz]	P/M Reading [dBm] AVG	Cable Loss [dB]	Atten. [dB]	Result	
					[dBm] AVG	[mW] AVG
MCS0	5230	0.71	0.50	10.00	11.21	13.21
MCS1	5230	0.70	0.50	10.00	11.20	13.18
MCS2	5230	0.68	0.50	10.00	11.18	13.12
MCS3	5230	0.62	0.50	10.00	11.12	12.94
MCS4	5230	0.59	0.50	10.00	11.09	12.85
MCS5	5230	0.54	0.50	10.00	11.04	12.71
MCS6	5230	0.52	0.50	10.00	11.02	12.65
MCS7	5230	0.51	0.50	10.00	11.01	12.62

IEEE802.11n-40 5190-5230MHz band MCS0

Ch	Freq. [MHz]	P/M Reading [dBm] AVG	Cable Loss [dB]	Atten. [dB]	Result	
					[dBm] AVG	[mW] AVG
38	5190	0.11	0.50	10.00	10.61	11.51
46	5230	0.71	0.50	10.00	11.21	13.21

Sample Calculation: Result = Reading + Cable Loss + Attenuator

: Worst data rate

: SAR test channel

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4) WLAN (11a/n(5260-5320MHz):

[IEEE802.11a 5260-5320MHz band] Rate Check

Rate [Mbps]	Freq. [MHz]	P/M Reading [dBm] AVG	Cable Loss [dB]	Atten. [dB]	Result	
					[dBm] AVG	[mW] AVG
6.0	5260	0.31	0.50	9.99	10.80	12.02
9.0	5260	0.24	0.50	9.99	10.73	11.83
12.0	5260	0.24	0.50	9.99	10.73	11.83
18.0	5260	0.15	0.50	9.99	10.64	11.59
24.0	5260	0.11	0.50	9.99	10.60	11.48
36.0	5260	0.09	0.50	9.99	10.58	11.43
48.0	5260	-0.02	0.50	9.99	10.47	11.14
54.0	5260	0.02	0.50	9.99	10.51	11.25

IEEE802.11a 5260-5320MHz band 6Mbps

Ch	Freq. [MHz]	P/M Reading [dBm] AVG	Cable Loss [dB]	Atten. [dB]	Result	
					[dBm] AVG	[mW] AVG
52	5260	0.31	0.50	9.99	10.80	12.02
56	5280	0.06	0.50	9.99	10.55	11.35
60	5300	0.32	0.50	9.99	10.81	12.05
64	5320	0.15	0.50	9.99	10.64	11.59

Sample Calculation: Result = Reading + Cable Loss + Attenuator

: Worst data rate

: SAR test channel

[IEEE802.11n-20 5260-5320MHz band] Rate Check

Rate [Mbps]	Freq. [MHz]	P/M Reading [dBm] AVG	Cable Loss [dB]	Atten. [dB]	Result	
					[dBm] AVG	[mW] AVG
MCS0	5260	-0.39	0.50	9.99	10.10	10.23
MCS1	5260	-0.52	0.50	9.99	9.97	9.93
MCS2	5260	-0.73	0.50	9.99	9.76	9.46
MCS3	5260	-0.53	0.50	9.99	9.96	9.91
MCS4	5260	-0.61	0.50	9.99	9.88	9.73
MCS5	5260	-1.01	0.50	9.99	9.48	8.87
MCS6	5260	-0.97	0.50	9.99	9.52	8.95
MCS7	5260	-1.01	0.50	9.99	9.48	8.87

IEEE802.11n-20 5260-5320MHz band MCS0

Ch	Freq. [MHz]	P/M Reading [dBm] AVG	Cable Loss [dB]	Atten. [dB]	Result	
					[dBm] AVG	[mW] AVG
52	5260	-0.39	0.50	9.99	10.10	10.23
56	5280	-0.67	0.50	9.99	9.82	9.59
60	5300	-0.41	0.50	9.99	10.08	10.19
64	5320	-0.52	0.50	9.99	9.97	9.93

[IEEE802.11n-40 5270-5310MHz band] Rate Check

Rate [Mbps]	Freq. [MHz]	P/M Reading [dBm] AVG	Cable Loss [dB]	Atten. [dB]	Result	
					[dBm] AVG	[mW] AVG
MCS0	5270	0.51	0.50	9.99	11.00	12.59
MCS1	5270	0.49	0.50	9.99	10.98	12.53
MCS2	5270	0.39	0.50	9.99	10.88	12.25
MCS3	5270	0.20	0.50	9.99	10.69	11.72
MCS4	5270	0.08	0.50	9.99	10.57	11.40
MCS5	5270	0.04	0.50	9.99	10.53	11.30
MCS6	5270	0.01	0.50	9.99	10.50	11.22
MCS7	5270	-0.02	0.50	9.99	10.47	11.14

IEEE802.11n-40 5270-5310MHz band MCS0

Ch	Freq. [MHz]	P/M Reading [dBm] AVG	Cable Loss [dB]	Atten. [dB]	Result	
					[dBm] AVG	[mW] AVG
54	5270	0.51	0.50	9.99	11.00	12.59
62	5310	0.79	0.50	9.99	11.28	13.43

Sample Calculation: Result = Reading + Cable Loss + Attenuator

: Worst data rate

: SAR test channel

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5) WLAN (11a/n(5500-5700MHz):

[IEEE802.11a 5500-5700MHz band] Rate Check

Rate [Mbps]	Freq. [MHz]	P/M Reading [dBm] AVG	Cable Loss [dB]	Atten. [dB]	Result	
					[dBm] AVG	[mW] AVG
6.0	5580	0.94	0.50	9.99	11.43	13.90
9.0	5580	0.91	0.50	9.99	11.40	13.80
12.0	5580	0.89	0.50	9.99	11.38	13.74
18.0	5580	0.87	0.50	9.99	11.36	13.68
24.0	5580	0.82	0.50	9.99	11.31	13.52
36.0	5580	0.77	0.50	9.99	11.26	13.37
48.0	5580	0.71	0.50	9.99	11.20	13.18
54.0	5580	0.69	0.50	9.99	11.18	13.12

[IEEE802.11a 5500-5700MHz band] band 6Mbps

Ch	Freq. [MHz]	P/M Reading [dBm] AVG	Cable Loss [dB]	Atten. [dB]	Result	
					[dBm] AVG	[mW] AVG
100	5500	0.73	0.50	9.99	11.22	13.24
104	5520	0.80	0.50	9.99	11.29	13.46
108	5540	0.87	0.50	9.99	11.36	13.68
112	5560	0.92	0.50	9.99	11.41	13.84
116	5580	0.94	0.50	9.99	11.43	13.90
120	5600	0.80	0.50	9.99	11.29	13.46
124	5620	0.68	0.50	9.99	11.17	13.09
128	5640	0.93	0.50	9.99	11.42	13.87
132	5660	0.87	0.50	9.99	11.36	13.68
136	5680	1.21	0.50	9.99	11.70	14.79
140	5700	1.11	0.50	9.99	11.60	14.45

Sample Calculation: Result = Reading + Cable Loss + Attenuator

: Worst data rate

: SAR test channel

[IEEE802.11n-20 5500-5700MHz band] Rate Check

Rate [Mbps]	Freq. [MHz]	P/M Reading [dBm] AVG	Cable Loss [dB]	Atten. [dB]	Result	
					[dBm] AVG	[mW] AVG
MCS0	5580	-0.03	0.50	9.99	10.46	11.12
MCS1	5580	-0.06	0.50	9.99	10.43	11.04
MCS2	5580	-0.09	0.50	9.99	10.40	10.96
MCS3	5580	-0.15	0.50	9.99	10.34	10.81
MCS4	5580	-0.21	0.50	9.99	10.28	10.67
MCS5	5580	-0.23	0.50	9.99	10.26	10.62
MCS6	5580	-0.27	0.50	9.99	10.22	10.52
MCS7	5580	-0.29	0.50	9.99	10.20	10.47

: Worst data rate

[IEEE802.11n-20 5500-5700MHz band] band MCS0

Ch	Freq. [MHz]	P/M Reading [dBm] AVG	Cable Loss [dB]	Atten. [dB]	Result	
					[dBm] AVG	[mW] AVG
100	5500	-0.22	0.50	9.99	10.27	10.64
104	5520	-0.31	0.50	9.99	10.18	10.42
108	5540	-0.57	0.50	9.99	9.92	9.82
112	5560	-0.30	0.50	9.99	10.19	10.45
116	5580	-0.03	0.50	9.99	10.46	11.12
120	5600	-0.19	0.50	9.99	10.30	10.72
124	5620	-0.32	0.50	9.99	10.17	10.40
128	5640	-0.35	0.50	9.99	10.14	10.33
132	5660	-0.11	0.50	9.99	10.38	10.91
136	5680	0.07	0.50	9.99	10.56	11.38
140	5700	0.13	0.50	9.99	10.62	11.53

Sample Calculation: Result = Reading + Cable Loss + Attenuator

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[IEEE802.11n-40 5500-5700MHz band] Rate Check

Rate [Mbps]	Freq. [MHz]	P/M Reading [dBm] AVG	Cable Loss [dB]	Atten. [dB]	Result	
					[dBm] AVG	[mW] AVG
MCS0	5550	1.12	0.50	9.99	11.61	14.49
MCS1	5550	1.11	0.50	9.99	11.60	14.45
MCS2	5550	1.08	0.50	9.99	11.57	14.35
MCS3	5550	1.01	0.50	9.99	11.50	14.13
MCS4	5550	0.97	0.50	9.99	11.46	14.00
MCS5	5550	0.92	0.50	9.99	11.41	13.84
MCS6	5550	0.92	0.50	9.99	11.41	13.84
MCS7	5550	0.91	0.50	9.99	11.40	13.80

[IEEE802.11n-40 5500-5700MHz band] band MCS0

Ch	Freq. [MHz]	P/M Reading [dBm] AVG	Cable Loss [dB]	Atten. [dB]	Result	
					[dBm] AVG	[mW] AVG
102	5510	1.48	0.50	9.99	11.97	15.74
110	5550	1.12	0.50	9.99	11.61	14.49
118	5590	1.69	0.50	9.99	12.18	16.52
126	5630	1.40	0.50	9.99	11.89	15.45
134	5670	1.51	0.50	9.99	12.00	15.85

Sample Calculation: Result = Reading + Cable Loss + Attenuator

: Worst data rate

: SAR test channel

6) Bluetooth

Mode	Frequency [MHz]	P/M Reading [dBm] PK	Cable Loss [dB]	Atten. [dB]	Result	
					[dBm] PK	[mW] PK
DH5	2402.0	-10.55	1.66	10.00	1.11	1.29
	2441.0	-11.39	1.67	10.00	0.28	1.07
	2480.0	-11.12	1.68	10.00	0.56	1.14
3DH5	2402.0	-9.46	1.66	10.00	2.20	1.66
	2441.0	-10.52	1.67	10.00	1.15	1.30
	2480.0	-9.84	1.68	10.00	1.84	1.53

Sample Calculation: Result = Reading + Cable Loss + Attenuator

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5.3 SAR testing operating modes

The operating mode for SAR testing was decided by the output power

1) SAR measurement for GSM

Band	Test Frequency	Mode	Crest factor	Note
Head SAR				
PCS1900	1880.0MHz(661ch) *1	GSM GPRS (CS-1) 4 slots *2	8.3 2.1	VoIP is available with GPRS.
Body SAR				
PCS1900	1880.0MHz(661ch) *1	GSM GPRS (CS-1) 4 slots *2	8.3 2.1	Hotspot is available with GPRS.
WWAN Setting				
The communication link was set up with the Wireless Communications Test Set (Agilent M/N: E5515C). The EUT was command to operate at maximum transmit power. PCS1900 :PCL 0				

*1 The other channel was not required since maximum average output power channel SAR value is less than 0.8W/kg.

*2 The GPRS 4up mode was maximum time-based average power. The other slots SAR is not required for other mode because the maximum average output power for other mode is less than 1/4dB higher than that measured GPRS 4up mode.

2) SAR measurement for WLAN

Decision of SAR test channel

The operating mode for SAR testing was decided by the output power

The average output power for 802.11a was measured on all channels in each frequency band.

Mode	GHz	Channel	"Default Test Channel"			
			FCC 15.247		UNII	
			802.11b	802.11g		
802.11 b/g/n20	2.412	1	√	Δ		
	2.437	6	√	Δ		
	2.462	11	√	Δ		
802.11a/n20	5.18	36			√	
	5.20	40				*
	5.22	44				*
	5.24	48			√	
	5.26	52			√	
	5.28	56				*
	5.30	60				*
	5.32	64			√	
	5.50	100				*
	5.52	104			√	
	5.54	108				*
	5.56	112				*
	5.58	116			√	
	5.60	120				*
	5.62	124			√	
	5.64	128				*
	5.66	132				*
	5.68	136			√	
	5.70	140				*
	UNII or FCC 15.247	5.745	149	√		√
5.765		153		*		*
5.785		157	√			*
5.805		161		*	√	
FCC 15.247	5.825	165	√			
802.11n40	5.19	38			√	
	5.23	46			√	
	5.27	54			√	
	5.31	62			√	
	5.51	102			√	
	5.55	110			√	
	5.59	118				*
	5.63	126			√	
	5.67	134			√	
	UNII or FCC 15.247	5.755	151	√		√
FCC 15.247	5.795	159	√		√	

√ = "default test channels"

* = Possible 802.11a channels with maximum average output > the "default test channels"

Δ = Possible 802.11g channels with maximum average output ¼ dB ≥ the "default test channels"

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Mode	Test Frequency	Modulation	Crest factor	Note
Head SAR				
IEEE802.11b	2437MHz(6ch) *1	DBPSK(1Mbps) *3	1	VoIP is available with WLAN.
IEEE802.11g	Not required *3			
IEEE802.11n20 (2.4G)	Not required *3			
IEEE802.11a	5200MHz(40ch)	BPSK(6Mbps) *4	1	
	5300MHz(60ch)	BPSK(6Mbps) *4	1	
	5680MHz(136ch)	BPSK(6Mbps) *4	1	
IEEE802.11n20 (5G)	Not required			
IEEE802.11n40 (5G)	5230MHz(46ch) *1	BPSK(MCS0) *5	1	
	5310MHz(62ch) *1	BPSK(MCS0) *5	1	
	5590MHz(118ch)	BPSK(MCS0) *5	1	
	5510MHz(102ch) 5630MHz(126ch) 5670MHz(134ch)			
Bluetooth	Exemption *6			
Body SAR				
IEEE802.11b	2437MHz(6ch) *1	DBPSK(1Mbps) *3	1	Hotspot is available in 2.4GHz only
IEEE802.11g	Not required *3			
IEEE802.11n20 (2.4G)	Not required *3			
IEEE802.11a	5200MHz(40ch)	BPSK(6Mbps) *4	1	
	5680MHz(136ch)	BPSK(6Mbps) *4	1	
IEEE802.11n20 (5G)	Not required			
IEEE802.11n40 (5G)	5310MHz(62ch) *2	BPSK(MCS0) *5	1	
	5590MHz(118ch) *2	BPSK(MCS0) *5	1	
Bluetooth	Exemption *6			
WLAN Setting				
Power of the EUT was set by the software as follows;				
[Power settings] Max power				
[Software] F8295				
*This setting of software is the worst case. Any conditions under the normal use do not exceed the condition of setting. In addition, end users cannot change the settings of the output power of the product.				

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*1 The other channel was not required since maximum average output power channel SAR value is less than 0.8W/kg.

*2 The other channel was not required since maximum average output power channel SAR value is less than 0.4W/kg.

*3 The 11b mode was maximum average power. The 11g/n SAR is not required for other mode because the maximum average output power for other mode is less than 1/4dB higher than that measured 11b mode.

*4 SAR is required for the lowest data rate mode.

*5 SAR is required for the data rate of the maximum output power.

*6 Bluetooth mode is excluded from SAR test since power was $< 1/2 * 60/f(\text{GHz}) \text{ mW}$.

5.4 Confirmation before SAR testing

Correlation of Output Power between EMC and SAR tests

It was checked that the antenna port power was correlated within 0~+5% (FCC requirements)

SAR power is equal to DATA of EMC test based on the following reason.

- EMC and SAR tests are performed with the same test sample such as serial number under the same condition.
- EMC and SAR tests are performed at the same laboratory.

5.5 Confirmation after SAR testing

It was checked that the power drift [W] is within +/-5%. The verification of power drift during the SAR test is that DASY5 system calculates the power drift by measuring the E-field at the same location at beginning and the end of the scan measurement for each test position.

DASY5 system calculation Power drift value[dB] = $20\log(E_a)/(E_b)$

Before SAR testing : $E_b[V/m]$

After SAR testing : $E_a[V/m]$

Limit of power drift[W] = +/-5%

$X[dB] = 10\log(P) = 10\log(1.05/1) = 10\log(1.05) - 10\log(1) = 0.212dB$

from E-field relations with power.

$p = E^2/\eta = E^2/$

Therefore, The correlation of power and the E-field

$XdB = 10\log(P) = 10\log(E)^2 = 20\log(E)$

Therefore,

The calculated power drift of DASY5 System must be the less than +/-0.212dB.

SECTION 6 : Description of the Head/Body setup

6.1 Test position for Head setup

i) Procedure for SAR testing

The EUT was tested in accordance with FCC OET Bulletin 65 Supplement C: 2001-01 and IEEE 1528: 2003 for both the “Cheek/Touch” and “Ear/Tilt” positions at the left and right sides of the SAM phantom head region. The FCC KDB 648474 D01 was also incorporated.

ii) Test mode

PCS1900	Voice mode (GSM)/VOIP mode(Worst mode in Data transmission)
WLAN	VOIP mode (11a/b/n(2.4GHz, 5GHz))

iii) Test position

No.	Phantom	Position	WWAN		WLAN	
			Tested	Antenna	Tested	Antenna
1	Left	Cheek	<input checked="" type="checkbox"/>	Fixed	<input checked="" type="checkbox"/>	Fixed
2	Left	Cheek	<input checked="" type="checkbox"/>	Fixed	<input checked="" type="checkbox"/>	Fixed
3	Right	Tilt	<input checked="" type="checkbox"/>	Fixed	<input checked="" type="checkbox"/>	Fixed
4	Right	Tilt	<input checked="" type="checkbox"/>	Fixed	<input checked="" type="checkbox"/>	Fixed

Additional position

No.	Phantom	Position	WWAN		WLAN	
			Tested	Antenna	Tested	Antenna
1	Flat	Front	<input checked="" type="checkbox"/>	Fixed	<input type="checkbox"/>	Fixed

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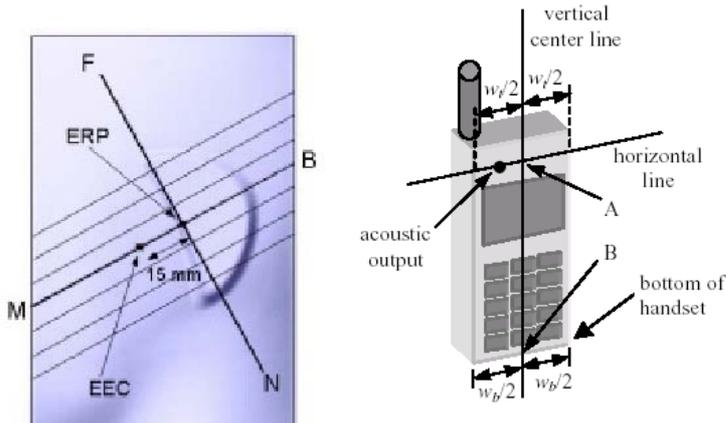
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Initial ear position

A handset should be initially positioned with the earpiece region pressed against the ear spacer of a head phantom.

The device should be positioned parallel to the “N-F” line defined along the base of the ear spacer that contains the “ear reference point”. The “test device reference point” is aligned to the “ear reference point” on the head phantom and the “vertical centerline” is aligned to the “phantom reference plane”.

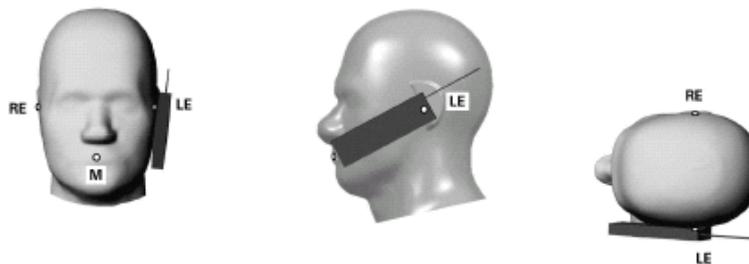


Cheek position

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

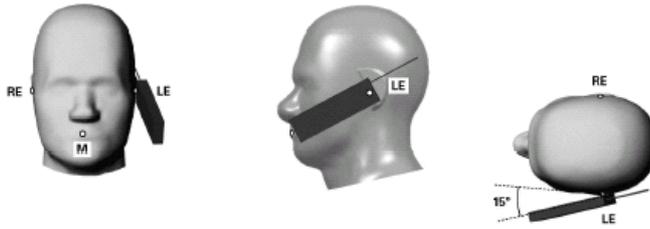
This test position is established:

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



Tilt position

If the earpiece of the handset is not in full contact with the phantom's ear spacer and the peak SAR location for the "Cheek/Touch" position is located at the ear spacer region or corresponds to the earpiece region of the handset, the device should be returned to the "initial ear position" by rotating it away from the mouth until the earpiece is in full contact with the ear spacer. Otherwise the handset should be moved away from the cheek perpendicular to the line passes through both "ear reference points" for approximate 2-3 cm. While it is in this position, the handset is tilted away from the mouth with respect to the "test device reference point" by 15°. After the tilt, it is then moved back toward the head perpendicular to the line passes through both "ear reference points" until the device touches the phantom or the ear spacer. If the antenna touches the head first, the positioning process should be repeated with a tilt angle less than 15° so that the device and its antenna would touch the phantom simultaneously.



SAR test in Mouse and Jaw Regions of the SAM Phantom

The measurement procedure using a flat phantom according to the KDB648474 D01.

The SAR required in these regions of SAM should be measured using a flat phantom. Rectangular shaped phones should be positioned with its bottom edge positioned from the flat phantom with the same distance provided by the cheek touching position using SAM. The ear reference point (ERP, as defined for SAM) of the phone should be positioned ½ cm from the flat phantom shell.

Clam-shell phones should be positioned with the hinge against a smooth edge of the flat phantom where the upper half of the phone is unfolded and extended beyond the phantom side wall. The lower half of the phone is secured in the test device holder at a fixed distance below the flat phantom determined by the minimum separation along the lower edge of the phone in the cheek touching position using SAM.

<Antenna position>

The antennas use for WWAN and WLAN are both separate in a single fixed position. The antennas are integral part of the device.

6.2 Description of the Body setup

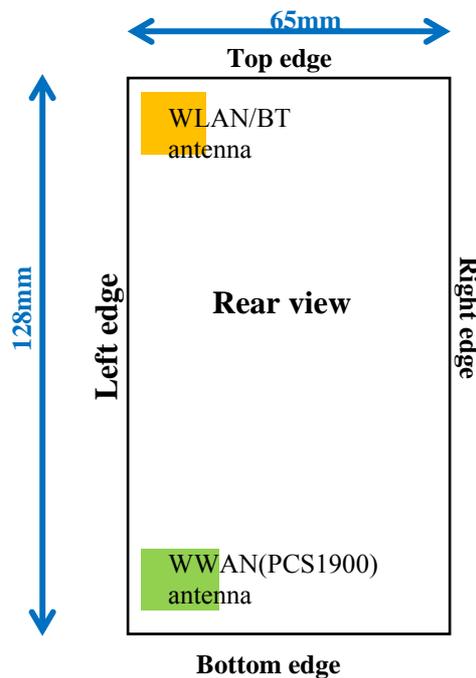
i) Procedure for SAR testing

-The tested procedure was performed according to the KDB941225 D06 (SAR Evaluation Procedures for portable Devices with Wireless Router Capabilities)

ii) Test mode

PCS1900	Data transmission mode (GPRS)/ Voice mode (GSM)
WLAN	Data transmission mode (11a/b/n(2.4GHz))

iii) Test position



<Test position>

Test position is required to the edge within 2.5cm from antenna, according to the KDB 941225 D06.

Device dimensions (HxWxD):128x65x10.4

<Antenna position>

The antennas use for WWAN and WLAN are both separate in a single fixed position. The antennas are integral part of the device

No.	Position	Test distance	WWAN			WLAN		
			Tested	Antenna	Separation from user	Tested	Antenna	Separation from user
1	Front	10mm	<input checked="" type="checkbox"/>	Fixed	<25mm	<input checked="" type="checkbox"/>	Fixed	< 25mm
2	Rear	10mm	<input checked="" type="checkbox"/>	Fixed	<25mm	<input checked="" type="checkbox"/>	Fixed	< 25mm
3	Left edge	10mm	<input checked="" type="checkbox"/>	Fixed	<25mm	<input checked="" type="checkbox"/>	Fixed	< 25mm
4	Right edge	10mm	<input type="checkbox"/>	Fixed	36mm	<input type="checkbox"/>	Fixed	51mm
5	Top edge	10mm	<input type="checkbox"/>	Fixed	116mm	<input checked="" type="checkbox"/>	Fixed	< 25mm
6	Bottom edge	10mm	<input checked="" type="checkbox"/>	Fixed	<25mm	<input type="checkbox"/>	Fixed	112mm

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6.3 Description of the Body-worn setup

i) Procedure for SAR testing

The EUT was tested in accordance with FCC OET Bulletin 65 Supplement C: 2001-01. Test performed at 15 mm from a flat section

According to KDB 941225 D06 Hotspot SAR procedure, test Body-worn for WWAN & WLAN 2.4GHz not necessary since the test separation distance (10mm) for hotspot mode is more conservative than Body-worn test (15mm).

ii) Test mode

WLAN	Data transmission mode (11a/n(5GHz))
-------------	---

iii) Test position

No.	Position	Test distance	WWAN		WLAN	
			Tested	Antenna	Tested	Antenna
1	Front	15mm	<input type="checkbox"/>	Fixed	<input checked="" type="checkbox"/>	Fixed
2	Rear	15mm	<input type="checkbox"/>	Fixed	<input checked="" type="checkbox"/>	Fixed

<Antenna position>

The antennas use for WWAN and WLAN are both separate in a single fixed position. The antennas are integral part of the device.

SECTION 7 : Test surrounding

7.1 Measurement uncertainty

The uncertainty budget has been determined for the DASY5 measurement system according to the SPEAG documents[2] and is given in the following Table.

<WLAN 300M-3GHz>

Error Description	Uncertainty value \pm	Probability distribution	divisor	(ci) lg	Standard (lg)	vi or veff
Measurement System						
Probe calibration	± 6.00	Normal	1	1	± 6.00	∞
Axial isotropy of the probe	± 4.7	Rectangular	$\sqrt{3}$	0.7	± 1.9	∞
Spherical isotropy of the probe	± 9.6	Rectangular	$\sqrt{3}$	0.7	± 3.9	∞
Boundary effects	± 1.0	Rectangular	$\sqrt{3}$	1	± 0.6	∞
Probe linearity	± 4.7	Rectangular	$\sqrt{3}$	1	± 2.7	∞
Detection limit	± 1.0	Rectangular	$\sqrt{3}$	1	± 0.6	∞
Readout electronics	± 0.3	Normal	1	1	± 0.3	∞
Response time	± 0.8	Rectangular	$\sqrt{3}$	1	± 0.5	∞
Integration time	± 2.6	Rectangular	$\sqrt{3}$	1	± 1.5	∞
RF ambient Noise	± 3.0	Rectangular	$\sqrt{3}$	1	± 1.7	∞
RF ambient Reflections	± 3.0	Rectangular	$\sqrt{3}$	1	± 1.7	∞
Probe Positioner	± 0.4	Rectangular	$\sqrt{3}$	1	± 0.2	∞
Probe positioning	± 2.9	Rectangular	$\sqrt{3}$	1	± 1.7	∞
Max.SAR Eval.	± 1.0	Rectangular	$\sqrt{3}$	1	± 0.6	∞
Test Sample Related						
Device positioning	± 2.9	Normal	1	1	± 2.9	18
Device holder uncertainty	± 3.6	Normal	1	1	± 3.6	8
Power drift	± 5.0	Rectangular	$\sqrt{3}$	1	± 2.9	∞
Phantom and Setup						
Phantom uncertainty	± 4.0	Rectangular	$\sqrt{3}$	1	± 2.3	∞
Liquid conductivity (target)	± 5.0	Rectangular	$\sqrt{3}$	0.64	± 1.8	∞
Liquid conductivity (meas.)	+ 5.0	Rectangular	1	0.64	+ 3.2	∞
Liquid permittivity (target)	± 5.0	Rectangular	$\sqrt{3}$	0.6	± 1.7	∞
Liquid permittivity (meas.)	- 4.6	Rectangular	1	0.6	- 2.8	∞
Combined Standard Uncertainty					± 11.571	
Expanded Uncertainty (k=2)					± 23.1	

<WLAN 3-6GHz>

Error Description	Uncertainty value \pm	Probability distribution	divisor	(ci) lg	Standard (lg)	vi or veff
Measurement System						
Probe calibration	± 6.55	Normal	1	1	± 6.55	∞
Axial isotropy of the probe	± 4.7	Rectangular	$\sqrt{3}$	0.7	± 1.9	∞
Spherical isotropy of the probe	± 9.6	Rectangular	$\sqrt{3}$	0.7	± 3.9	∞
Boundary effects	± 1.0	Rectangular	$\sqrt{3}$	1	± 0.6	∞
Probe linearity	± 4.7	Rectangular	$\sqrt{3}$	1	± 2.7	∞
Detection limit	± 1.0	Rectangular	$\sqrt{3}$	1	± 0.6	∞
Readout electronics	± 0.3	Normal	1	1	± 0.3	∞
Response time	± 0.8	Rectangular	$\sqrt{3}$	1	± 0.5	∞
Integration time	± 2.6	Rectangular	$\sqrt{3}$	1	± 1.5	∞
RF ambient Noise	± 3.0	Rectangular	$\sqrt{3}$	1	± 1.7	∞
RF ambient Reflections	± 3.0	Rectangular	$\sqrt{3}$	1	± 1.7	∞
Probe Positioner	± 0.4	Rectangular	$\sqrt{3}$	1	± 0.2	∞
Probe positioning	± 2.9	Rectangular	$\sqrt{3}$	1	± 1.7	∞
Max.SAR Eval.	± 1.0	Rectangular	$\sqrt{3}$	1	± 0.6	∞
Test Sample Related						
Device positioning	± 2.9	Normal	1	1	± 2.9	32
Device holder uncertainty	± 3.6	Normal	1	1	± 3.6	5
Power drift	± 5.0	Rectangular	$\sqrt{3}$	1	± 2.9	∞
Phantom and Setup						
Phantom uncertainty	± 4.0	Rectangular	$\sqrt{3}$	1	± 2.3	∞
Liquid conductivity (target)	± 5.0	Rectangular	$\sqrt{3}$	0.64	± 1.8	∞
Liquid conductivity (meas.)	+ 4.9	Rectangular	1	0.64	+ 3.1	∞
Liquid permittivity (target)	± 5.0	Rectangular	$\sqrt{3}$	0.6	± 1.7	∞
Liquid permittivity (meas.)	- 3.9	Rectangular	1	0.6	- 2.3	∞
Combined Standard Uncertainty					± 11.757	
Expanded Uncertainty (k=2)					± 23.5	

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SECTION 8 : Measurement results

8.1 PCS1900 MHz Head SAR

(1)Method of measurement

- Step1. The searching for the worst position
The test was performed in the middle channel.
- Step2. The changing to the Multi slot of DATA transmitter for VOIP mode (GPRS)
The test was performed at the worst position of Step1.

Reference measurement

SAR test in Mouse and Jaw Regions of the SAM Phantom
WWAN antenna is located near the lower edge of EUT. Therefore Head SAR for WWAN applied the measurement procedure using a flat phantom according to the KDB648474 D01.

- Step3. The measurement at Flat phantom
The test was positioned 10mm against the lower edge from flat phantom.
The test was performed in mode of the maximum average output power

Note:

- 1) The GPRS 4up mode was maximum time-based average power. The other slots SAR is not required for other mode because the maximum average output power for other mode is less than 1/4dB higher than that measured GPRS 4up mode.
2)The other channel was not required since middle channel SAR value is less than 0.8W/kg.

(2)Simulated Tissue Liquid Parameter confirmation

The dielectric parameters were checked prior to assessment using the HP85070D dielectric probe kit.
The dielectric parameters measurement is reported in each correspondent section.

DIELECTRIC PARAMETERS MEASUREMENT RESULTS										
Date	Ambient Temp. [deg.c]	Relative Humidity [%]	Liquid type	Liquid Temp. [deg.c]	Measured Frequency [MHz]	Parameters	Target Value*1	Measured	Deviation [%]	Limit [%]
23-Oct	24.0	67	HSL 1800	24.0	1880	ϵ_r	40.0	38.5	-3.8	+/-5
						σ [mho/m]	1.40	1.47	5.0	+/-5
22-Nov	24.0	55	HSL 1800	23.5	1880	ϵ_r	40.0	38.5	-3.7	+/-5
						σ [mho/m]	1.40	1.43	2.4	+/-5

ϵ_r : Relative Permittivity / σ : Conductivity

*1 The Target value is a parameter defined in FCC OET65.

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(3)Result of HEAD SAR

HEAD SAR MEASUREMENT RESULTS							
Frequency		Modulation	Phantom Section	EUT Set-up Conditions			SAR(1g) [W/kg]
Channel	[MHz]			Antenna	Position	Separation [mm]	Maximum value of multi-peak
Step.1 Position searching							
661	1880.0	GSM	Left	Fixed	Cheek	0	0.201
661	1880.0	GSM	Left	Fixed	Tilt	0	0.077
661	1880.0	GSM	Right	Fixed	Cheek	0	0.270
661	1880.0	GSM	Right	Fixed	Tilt	0	0.076
Step.2 VOIP mode (GPRS)							
661	1880.0	GPRS 4slots	Right	Fixed	Cheek	0	0.372
Step.3 Measurement at flat phantom (Reference measurement)							
661	1880.0	GPRS 4slots	Flat	Fixed	Front	10	0.327

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8.2 PCS1900MHz Body**(1)Method of measurement****<Body (Hotspot mode)>**

Step1. The searching for the worst position

The test was performed in the middle channel.

Step2. The changing to the voice mode (GSM)

The test was performed at the worst condition of Step1.

Note:

1) The GPRS 4up mode was maximum time-based average power. The other slots SAR is not required for other mode because the maximum average output power for other mode is less than 1/4dB higher than that measured GPRS 4up mode.

2)The other channel was not required since middle channel SAR value is less than 0.8W/kg.

(2)Simulated Tissue Liquid Parameter confirmation

The dielectric parameters were checked prior to assessment using the HP85070D dielectric probe kit.

The dielectric parameters measurement is reported in each correspondent section.

DIELECTRIC PARAMETERS MEASUREMENT RESULTS										
Date	Ambient Temp. [deg.c]	Relative Humidity [%]	Liquid type	Liquid Temp. [deg.c]	Measured Frequency [MHz]	Parameters	Target Value*1	Measured	Deviation [%]	Limit [%]
22-Oct	24.0	67	MSL 1800	24.0	1880	ϵ_r	53.3	51.1	-4.1	+/-5
						σ [mho/m]	1.52	1.51	-0.7	+/-5
21-Nov	24.0	55	MSL 1800	23.5	1880	ϵ_r	53.3	51.1	-4.1	+/-5
						σ [mho/m]	1.52	1.52	-0.1	+/-5

 ϵ_r : Relative Permittivity / σ : Conductivity

*1 The Target value is a parameter defined in FCC OET65.

(3)Result of Body SAR

BODY SAR MEASUREMENT RESULTS							
Frequency		Modulation	Phantom Section	EUT Set-up Conditions			SAR(1g) [W/kg]
Channel	[MHz]			Antenna	Position	Separation [mm]	Maximum value of multi-peak
Step.1 Position searching							
661	1880.0	GPRS 4slots	Flat	Fixed	Front	10	0.395
661	1880.0	GPRS 4slots	Flat	Fixed	Rear	10	0.471
661	1880.0	GPRS 4slots	Flat	Fixed	Left edge	10	0.165
661	1880.0	GPRS 4slots	Flat	Fixed	Bottom edge	10	0.155
Step.2 Voice mode (GSM)							
661	1880.0	GSM	Flat	Fixed	Rear	10	0.341

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8.3 WLAN 2.4G Head SAR

(1)Method of measurement

Step1. The searching for the worst position

The test was performed in mode of the maximum average output power

Note:

1)The HEAD SAR is not required for 11g/n mode because the maximum average output power for 11g/n mode is less than 1/4dB higher than that measured 11b mode.

2) The other channel was not required since maximum average output power channel SAR value is less than 0.8W/kg.

(2)Simulated Tissue Liquid Parameter confirmation

The dielectric parameters were checked prior to assessment using the HP85070D dielectric probe kit.

The dielectric parameters measurement is reported in each correspondent section.

DIELECTRIC PARAMETERS MEASUREMENT RESULTS										
Date	Ambient Temp. [deg.c]	Relative Humidity [%]	Liquid type	Liquid Temp. [deg.c]	Measured Frequency [MHz]	Parameters	Target Value*1	Measured	Deviation [%]	Limit [%]
18-Oct	24.0	58	HSL 2450	23.5	2450	ϵ_r	39.2	37.5	-4.2	+/-5
						σ [mho/m]	1.80	1.84	2.3	+/-5

ϵ_r : Relative Permittivity / σ : Conductivity

*1 The Target value is a parameter defined in FCC OET65.

(3)Result of HEAD SAR

HEAD SAR MEASUREMENT RESULTS							
Frequency		Modulation	Phantom Section	EUT Set-up Conditions			SAR(1g) [W/kg]
Channel	[MHz]			Antenna	Position	Separation [mm]	Maximum value of multi-peak
Step.1 Position searching							
6	2437	11b 1Mbps	Left	Fixed	Cheek	0	0.415
6	2437	11b 1Mbps	Left	Fixed	Tilt	0	0.328
6	2437	11b 1Mbps	Right	Fixed	Cheek	0	0.176
6	2437	11b 1Mbps	Right	Fixed	Tilt	0	0.219

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8.4 WLAN 2.4G Body SAR

(1)Method of measurement

<Body (Hotspot mode)>

Step1. The searching for the worst position

The test was performed in mode of the maximum average output power

Note:

- 1)The BODY SAR is not required for 11g/n mode because the maximum average output power for 11g/n mode is less than 1/4dB higher than that measured 11b mode.
- 2)The other channel was not required since maximum average output power channel SAR value is less than 0.8W/kg.

(2)Simulated Tissue Liquid Parameter confirmation

The dielectric parameters were checked prior to assessment using the HP85070D dielectric probe kit.

The dielectric parameters measurement is reported in each correspondent section.

DIELECTRIC PARAMETERS MEASUREMENT RESULTS										
Date	Ambient Temp. [deg.c]	Relative Humidity [%]	Liquid type	Liquid Temp. [deg.c]	Measured Frequency [MHz]	Parameters	Target Value*1	Measured	Deviation [%]	Limit [%]
17-Oct	24	60	MSL 2450	23.5	2450	ϵ_r	52.7	50.3	-4.6	+/-5
						σ [mho/m]	1.95	2.00	2.6	+/-5

ϵ_r : Relative Permittivity / σ : Conductivity

*1 The Target value is a parameter defined in FCC OET65.

(3)Result of Body SAR

BODY SAR MEASUREMENT RESULTS							
Frequency		Modulation	Phantom Section	EUT Set-up Conditions			SAR(1g) [W/kg]
Channel	[MHz]			Antenna	Position	Separation [mm]	Maximum value of multi-peak
Step.1 Position searching							
6	2437	11b 1Mbps	Flat	Fixed	Front	10	0.090
6	2437	11b 1Mbps	Flat	Fixed	Rear	10	0.071
6	2437	11b 1Mbps	Flat	Fixed	Left edge	10	0.075
6	2437	11b 1Mbps	Flat	Fixed	Top edge	10	0.065

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8.5 WLAN 5G Head SAR

(1)Method of measurement

- Step1. The searching for the worst position
The test was performed in mode of the maximum average output power
- Step2. The searching for the worst transmitter mode.
The other mode was performed at the worst position of Step.1.
- Step3. The changing to the channels
The test was performed at the worst condition of Step1 and Step 2.

Note:

- 1) For 5180-5240MHz and 5260-5320MHz band, the other channel was not required since maximum average output power channel SAR value is less than 0.8W/kg.
- 2) For 5500-5700MHz band, the other channel was not required since maximum average output power channel SAR value is less than 0.4W/kg.
- 3) SAR is required for the lowest data rate and the data rate of the maximum output power.

(2)Simulated Tissue Liquid Parameter confirmation

The dielectric parameters were checked prior to assessment using the HP85070D dielectric probe kit.
The dielectric parameters measurement is reported in each correspondent section.

DIELECTRIC PARAMETERS MEASUREMENT RESULTS										
Date	Ambient Temp. [deg.c]	Relative Humidity [%]	Liquid type	Liquid Temp. [deg.c]	Measured Frequency [MHz]	Parameters	Target Value*1	Measured	Deviation [%]	Limit [%]
24-Oct	24.0	60	HSL 3-6GHz	23.5	5200	ϵ_r	36.0	34.7	-3.6	+/-5
						σ [mho/m]	4.66	4.64	-0.4	+/-5
24-Oct	24.0	60	HSL 3-6GHz	23.5	5300	ϵ_r	35.9	34.5	-3.8	+/-5
						σ [mho/m]	4.76	4.75	-0.2	+/-5
24-Oct	24.0	60	HSL 3-6GHz	23.5	5500	ϵ_r	35.6	34.4	-3.4	+/-5
						σ [mho/m]	4.96	4.95	-0.1	+/-5
24-Oct	24.0	60	HSL 3-6GHz	23.5	5600	ϵ_r	35.5	34.2	-3.6	+/-5
						σ [mho/m]	5.07	5.07	0.0	+/-5
24-Oct	24.0	60	HSL 3-6GHz	23.5	5700	ϵ_r	35.4	34.0	-3.9	+/-5
						σ [mho/m]	5.17	5.18	0.2	+/-5

ϵ_r : Relative Permittivity / σ : Conductivity

*1 The Target value is a parameter defined in FCC OET65.

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(3)Result of HEAD SAR

HEAD SAR MEASUREMENT RESULTS (5180-5240MHz)							
Frequency		Modulation	Phantom Section	EUT Set-up Conditions			SAR(1g) [W/kg]
Channel	[MHz]			Antenna	Position	Separation [mm]	Maximum value of multi-peak
Step.1 Position searching							
46	5230	11n-40 MCS0	Left	Fixed	Cheek	0	0.437
46	5230	11n-40 MCS0	Left	Fixed	Tilt	0	0.451
46	5230	11n-40 MCS0	Right	Fixed	Cheek	0	0.532
46	5230	11n-40 MCS0	Right	Fixed	Tilt	0	0.649
Step.2 Mode change							
40	5200	11a 6Mbps	Right	Fixed	Tilt	0	0.575

HEAD SAR MEASUREMENT RESULTS (5260-5320MHz)							
Frequency		Modulation	Phantom Section	EUT Set-up Conditions			SAR(1g) [W/kg]
Channel	[MHz]			Antenna	Position	Separation [mm]	Maximum value of multi-peak
Step.1 Position searching							
62	5310	11n-40 MCS0	Left	Fixed	Cheek	0	0.548
62	5310	11n-40 MCS0	Left	Fixed	Tilt	0	0.476
62	5310	11n-40 MCS0	Right	Fixed	Cheek	0	0.697
62	5310	11n-40 MCS0	Right	Fixed	Tilt	0	0.578
Step.2 Mode change							
60	5300	11a 6Mbps	Right	Fixed	Cheek	0	0.542

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HEAD SAR MEASUREMENT RESULTS (5500-5700MHz)							
Frequency		Modulation	Phantom Section	EUT Set-up Conditions			SAR(1g) [W/kg]
Channel	[MHz]			Antenna	Position	Separation [mm]	Maximum value of multi-peak
Step.1 Position searching							
118	5590	11n-40 MCS0	Left	Fixed	Cheek	0	0.610
118	5590	11n-40 MCS0	Left	Fixed	Tilt	0	0.601
118	5590	11n-40 MCS0	Right	Fixed	Cheek	0	0.726
118	5590	11n-40 MCS0	Right	Fixed	Tilt	0	0.629
Step.2 Mode change							
136	5680	11a 6Mbps	Right	Fixed	Cheek	0	0.601
Step.3 Channel change (>0.4W/kg)							
102	5510	11n-40 MCS0	Left	Fixed	Cheek	0	0.603
126	5630	11n-40 MCS0	Left	Fixed	Cheek	0	0.600
134	5670	11n-40 MCS0	Left	Fixed	Cheek	0	0.638
102	5510	11n-40 MCS0	Left	Fixed	Tilt	0	0.694
126	5630	11n-40 MCS0	Left	Fixed	Tilt	0	0.623
134	5670	11n-40 MCS0	Left	Fixed	Tilt	0	0.695
102	5510	11n-40 MCS0	Right	Fixed	Cheek	0	0.678
126	5630	11n-40 MCS0	Right	Fixed	Cheek	0	0.576
134	5670	11n-40 MCS0	Right	Fixed	Cheek	0	0.620
102	5510	11n-40 MCS0	Right	Fixed	Tilt	0	0.555
126	5630	11n-40 MCS0	Right	Fixed	Tilt	0	0.568
134	5670	11n-40 MCS0	Right	Fixed	Tilt	0	0.612

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8.6 WLAN 5GHz Body-worn SAR**(1)Method of measurement**

- Step1. The searching for the worst position
The test was performed in mode of the maximum average output power
- Step2. The searching for the worst transmitter mode.
The other mode was performed at the worst position of Step.1.

Note:

- 1)The Body-worn SAR is not required for 11n mode because the maximum average output power for 11n mode is less than 1/4dB higher than that measured 11a mode.
- 2)For 5180-5320MHz band & 5500-5700MHz band, the other channel was not required since maximum average output power channel SAR value is less than 0.4W/kg.

(2)Simulated Tissue Liquid Parameter confirmation

The dielectric parameters were checked prior to assessment using the HP85070D dielectric probe kit.

The dielectric parameters measurement is reported in each correspondent section.

DIELECTRIC PARAMETERS MEASUREMENT RESULTS										
Date	Ambient Temp. [deg.c]	Relative Humidity [%]	Liquid type	Liquid Temp. [deg.c]	Measured Frequency [MHz]	Parameters	Target Value*1	Measured	Deviation [%]	Limit [%]
23-Oct	24.0	55	MSL 3-6GHz	23.5	5200	ϵ_r	49.0	49.1	0.1	+/-5
						σ [mho/m]	5.30	5.46	3.0	+/-5
23-Oct	24.0	55	MSL 3-6GHz	23.5	5300	ϵ_r	48.9	48.8	-0.2	+/-5
						σ [mho/m]	5.42	5.60	3.3	+/-5
23-Oct	24.0	55	MSL 3-6GHz	23.5	5600	ϵ_r	48.5	48.2	-0.7	+/-5
						σ [mho/m]	5.77	6.02	4.4	+/-5
23-Oct	24.0	55	MSL 3-6GHz	23.5	5700	ϵ_r	48.3	47.9	-0.7	+/-5
						σ [mho/m]	5.88	6.17	4.9	+/-5

ϵ_r : Relative Permittivity / σ : Coconductivity

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(3)Result of Body SAR

BODY SAR MEASUREMENT RESULTS(5180-5320MHz)							
Frequency		Modulation	Phantom Section	EUT Set-up Conditions			SAR(1g) [W/kg]
Channel	[MHz]			Antenna	Position	Separation [mm]	Maximum value of multi-peak
Step.1 Position searching							
62	5310	11n-40 MCS0	Flat	Fixed	Front	15	0.066
62	5310	11n-40 MCS0	Flat	Fixed	Rear	15	0.043
Step.2 Mode change							
40	5200	11a 6Mbps	Flat	Fixed	Front	15	0.044

BODY SAR MEASUREMENT RESULTS(5500-5700MHz)							
Frequency		Modulation	Phantom Section	EUT Set-up Conditions			SAR(1g) [W/kg]
Channel	[MHz]			Antenna	Position	Separation [mm]	Maximum value of multi-peak
Step.1 Position searching							
118	5590	11n-40 MCS0	Flat	Fixed	Front	15	0.055
118	5590	11n-40 MCS0	Flat	Fixed	Rear	15	0.038
Step.2 Mode change							
136	5680	11a 6Mbps	Flat	Fixed	Front	15	0.050

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8.7 Simultaneous transmission evaluation for HEAD

Result of SUM Σ SAR1g

SUM Σ SAR1g (PCS1900 +WLAN(2.4G/5G))				
Stand alone worst SAR(1g) [W/kg]			SUM SAR(1g)[W/kg]	SUM SAR(1g)[W/kg]
PCS1900	WLAN	WLAN 5G	WWAN + WLAN(2.4G)	WWAN + WLAN(5G)
0.372	0.415	0.726	0.787	1.098
: Highest SUM Σ SAR1g Head simultaneous transmission				

8.8 Simultaneous transmission evaluation for Body

Result of SUM Σ SAR1g

SUM Σ SAR1g (PCS1900 +WLAN(2.4G/5G))				
Stand alone worst SAR(1g) [W/kg]			SUM SAR(1g)[W/kg]	SUM SAR(1g)[W/kg]
PCS1900	WLAN	WLAN 5G	WWAN + WLAN(2.4G)	WWAN + WLAN(5G)
0.471	0.090	0.066	0.561	0.537
: Highest SUM Σ SAR1g Head simultaneous transmission				

SECTION 9 : Test instruments

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
MPM-01	Power Meter	Agilent	E4417A	GB41290639	SAR	2012/03/05 * 12
MPSE-01	Power Sensor	Agilent	E9300B	US40010300	SAR	2012/02/29 * 12
MPSE-03	Power sensor	Agilent	E9327A	US40440576	SAR	2012/03/07 * 12
MAT-15	Attenuator(30dB)	Agilent	8498A	US40010300	SAR	2012/03/15 * 12
MSG-10	Signal Generator	Agilent	N5181A	MY47421098	SAR	2012/10/08 * 12
MRFA-12	RF Power Amplifier	MILMEGA	AS0825-65	1015249	SAR	2012/08/28 * 12
MHDC-11	Dual Directional Coupler	Hewlett Packard	778D	16605	SAR	Pre Check
MHDC-12	Dual Directional Coupler	Hewlett Packard	772D	2839A0016	SAR	Pre Check
MNA-01	Network Analyzer	Agilent/HP	E8358A	US41080381	SAR	2012/09/14 * 12
MDPK-01	Dielectric probe kit	Agilent	85070D	702	SAR	2012/08/14 * 12
MPB-07	Dosimetric E-Field Probe	Schmid&Partner Engineering AG	EX3DV4	3825	SAR	2011/12/16 * 12
MRENT-82	Dosimetric E-Field Probe	Schmid&Partner Engineering AG	EX3DV4	3540	SAR	2012/07/19 * 12
MDAE-01	Data Acquisition Electronics	Schmid&Partner Engineering AG	DAE4	509	SAR	2012/07/13 * 12
COTS-MSAR-03	Dasy5	Schmid&Partner Engineering AG	DASY52.6.1.408	-	SAR	-
COTS-MSAR-02	S-Parameter Network Analyzer	Agilent	-	-	SAR	-
MDA-06	Dipole Antenna	Schmid&Partner Engineering AG	D1800V2	2d040	SAR	2011/11/23 * 36
KSDA-01	Dipole Antenna	Schmid&Partner Engineering AG	D2450V2	822	SAR	2012/01/10 * 12
KSDA-02	Dipole Antenna	Schmid&Partner Engineering AG	D5GHzV2	1070	SAR	2012/02/16 * 12
MPSAM-02	SAM Phantom	Schmid&Partner Engineering AG	SAM Twin Phantom V4.0	1333	SAR	2012/05/07 * 12
MPF-02	2mmOval Flat Phantom ERI 4.0	Schmid&Partner Engineering AG	QD VA 001B (ERI4.0)	1045	SAR	2012/05/08 * 12
MDH-01	Device holder	Schmid&Partner Engineering AG	Mounting device for transmitter	-	SAR	Pre Check
MOS-26	Thermo-Hygrometer	CUSTOM	CTH-201	A08Q29	SAR	2012/05/14 * 12
MOS-10	Digital thermometer	HANNA	Checktemp-2	MOS-10	SAR	2012/08/06 * 12
MBM-13	Barometer	Sunoh	SBR121	837	SAR	2011/03/14 * 36
HSL/MSL1800					Daily check	Target value ± 5%
HSL/MSL2450					Daily check	Target value ± 5%
HSL/MSL 3-6GHz					Daily check	Target value ± 5%
SAR room					Daily check	Ambient Noise<0.012W/kg

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Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
MBM-12	Barometer	Sunoh	SBR121	873	Power measurement	2012/02/20 * 36
MPSE-17	Power sensor	Anritsu	MA2411B	0738285	Power measurement	2012/06/01 * 12
MAT-22	Attenuator(10dB) 1-18GHz	Orient Microwave	BX10-0476-00	-	Power measurement	2012/03/27 * 12
MOS-14	Thermo-Hygrometer	Custom	CTH-201	-	Power measurement	2012/02/06 * 12
MBM-10	Barometer	Sunoh	SBR121	832	Power measurement	2010/12/13 * 36
MAT-20	Attenuator(10dB)(above1 GHz)	HIROSE ELECTRIC CO.,LTD.	AT-110	-	Power measurement	2012/01/12 * 12
MCC-137	Microwave cable	HUBER+SUHNER	SUCOFLEX 102	37954/2	Power measurement	2012/10/19 * 12
MOS-04	Digital Humidity Indicator	N.T	NT-1800	MOS04	Power measurement	2012/02/06 * 12
MURC-02	Wireless Communication Test Set	Agilent	E5515C	GB47050683	Power measurement	2011/11/26 * 12
MPSC-01	Power splitters/Combiners	Mini-Circuit	ZFSC-2-2500	0124	Power measurement	2012/09/12 * 12
MCC-36	Microwave Cable	Hirose Electric	U.FL-2LP-066-A-(200)	-	Power measurement	2012/09/05 * 12
MAT-25	Attenuator(10dB)(above1 GHz)	Agilent	8493C	71642	Power measurement	2012/06/27 * 12

The expiration date of the calibration is the end of the expired month.

All equipment is calibrated with valid calibrations. Each measurement data is traceable to the national or international standards.

As for some calibrations performed after the tested dates, those test equipment have been controlled by means of an unbroken chains of calibrations.

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APPENDIX 1 : SAR Measurement data

1. Evaluation procedure

The evaluation was performed with the following procedure:

Step 1: Measurement of the E-field at a fixed location above the ear point or central position of flat phantom was used as a reference value for assessing the power drop.

Step 2: The SAR distribution at the exposed side of head or body position was measured at a distance of each device from the inner surface of the shell. The area covered the entire dimension of the antenna of EUT and the horizontal grid spacing was 15 mm x 15 mm for below 3GHz. (or 10mm x 10mm for above 3GHz.). Based on these data, the area of the maximum absorption was determined by spline interpolation.

Step 3: Around this point found in the Step 2 (area scan), a volume of 30mm x 30mm x 30mm or more was assessed by measuring 7 x 7 x 7 points at least for below 3GHz and a volume of 28 mm x 28mm x 22.5mm or more was assessed by measuring 8 x 8 x 6(ratio step method (*1)) points at least for 5GHz band.

And for any secondary peaks found in the Step2 which are within 2dB of maximum peak and not with this Step3 (Zoom scan) is repeated. On the basis of this data set, the spatial peak SAR value was evaluated under the following procedure:

(1). The data at the surface were extrapolated, since the center of the dipoles is 1mm(EX3DV4) away from the tip of the probe and the distance between the surface and the lowest measuring point is 1.3 mm. The extrapolation was based on a least square algorithm [4]. A polynomial of the fourth order was calculated through the points in z-axes.

This polynomial was then used to evaluate the points between the surface and the probe tip.

(2). The maximum interpolated value was searched with a straightforward algorithm. Around this maximum the SAR values averaged over the spatial volumes (1 g or 10 g) were computed by the 3D-Spline interpolation algorithm. The 3D-Spline is composed of three one-dimensional splines with the "Not a knot"-condition (in x, y and z-directions) [4], [5]. The volume was integrated with the trapezoidal-algorithm. One thousand points (10 x 10 x 10) were interpolated to calculate the average.

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

Step 4: Re-measurement of the E-field at the same location as in Step 1.

***1. Ratio step method parameters used;**

The first measurement point: 2mm from the phantom surface, the initial grid separation: 2mm, subsequent graded grid ratio: 1.5

These parameters comply with the requirement of the KDB 865664.

In the section of SAR Scan Procedures-Zoom Scan, in KDB 865664 (October 2006 revised, publication date: April 16, 2007): SAR Measurement Requirements

for 3-6GHz, the graded grids requirement is as follows;

“When graded grids are used (z), the first measurement point should be within 3mm of the phantom surface for measurements below 4.5GHz and within 2mm at or above 4.5GHz. The initial grid separation, closest to the phantom, should be 2.0mm. A subsequent graded ration of 1.5 is recommended and less than 2.0 is required.”

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2. Measurement data

i) PCS1900 Head

200SH PCS1900 GSM Head 1880.0MHz Left Cheek

Communication System: GSM 1800; Communication System Band: PCS1900; Frequency: 1880 MHz; Duty Cycle: 1:8.30042

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.472$ mho/m; $\epsilon_r = 38.499$; $\rho = 1000$ kg/m³

Phantom section: Left Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(8.43, 8.43, 8.43); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: SAM with CRP; Type: SAM;

Measurement SW: DASYS2, Version 52.8 (3);

Area Scan (71x101x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.251 W/kg

Zoom Scan (8x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.508 V/m; Power Drift = -0.16 dB

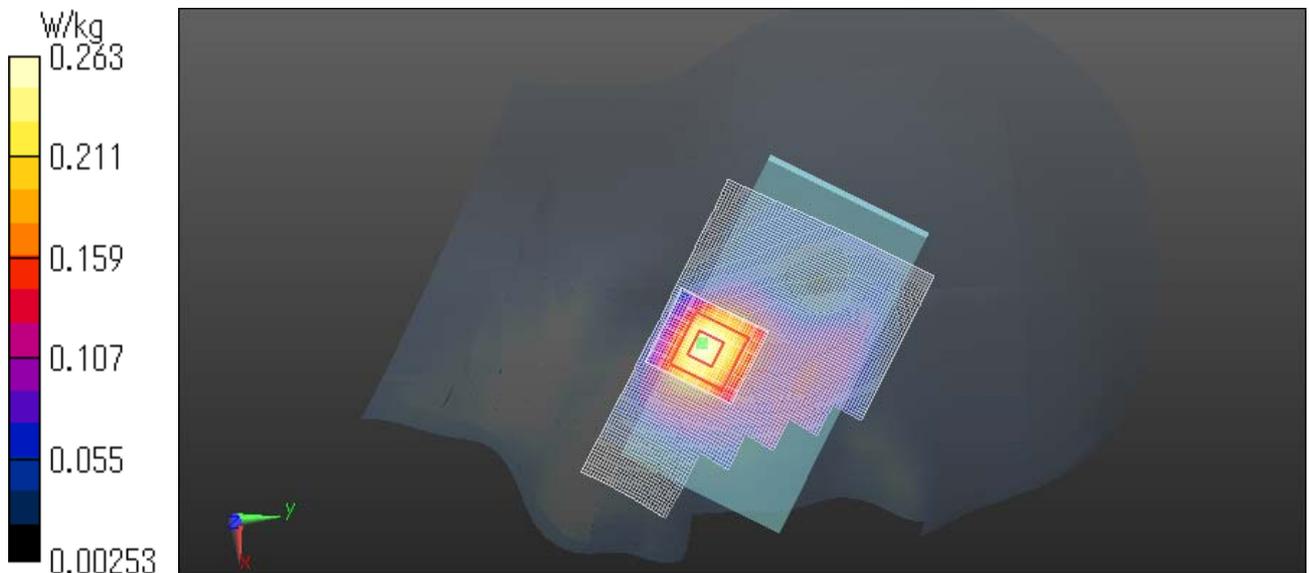
Peak SAR (extrapolated) = 0.318 W/kg

SAR(1 g) = 0.201 W/kg; SAR(10 g) = 0.120 W/kg

Maximum value of SAR (measured) = 0.263 W/kg

Date: 2012/10/23

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 24.0 degree.C.



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200SH PCS1900 GSM Head 1880.0MHz Left Tilt

Communication System: GSM 1800; Communication System Band: PCS1900; Frequency: 1880 MHz; Duty Cycle: 1:8.30042

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.472$ mho/m; $\epsilon_r = 38.499$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Measurement Standard: DASYS5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(8.43, 8.43, 8.43); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: SAM with CRP; Type: SAM;

Measurement SW: DASYS2, Version 52.8 (3);

Area Scan 2 (71x21x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.0936 W/kg

Area Scan (71x11x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.106 W/kg

Zoom Scan (8x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.501 V/m; Power Drift = -0.15 dB

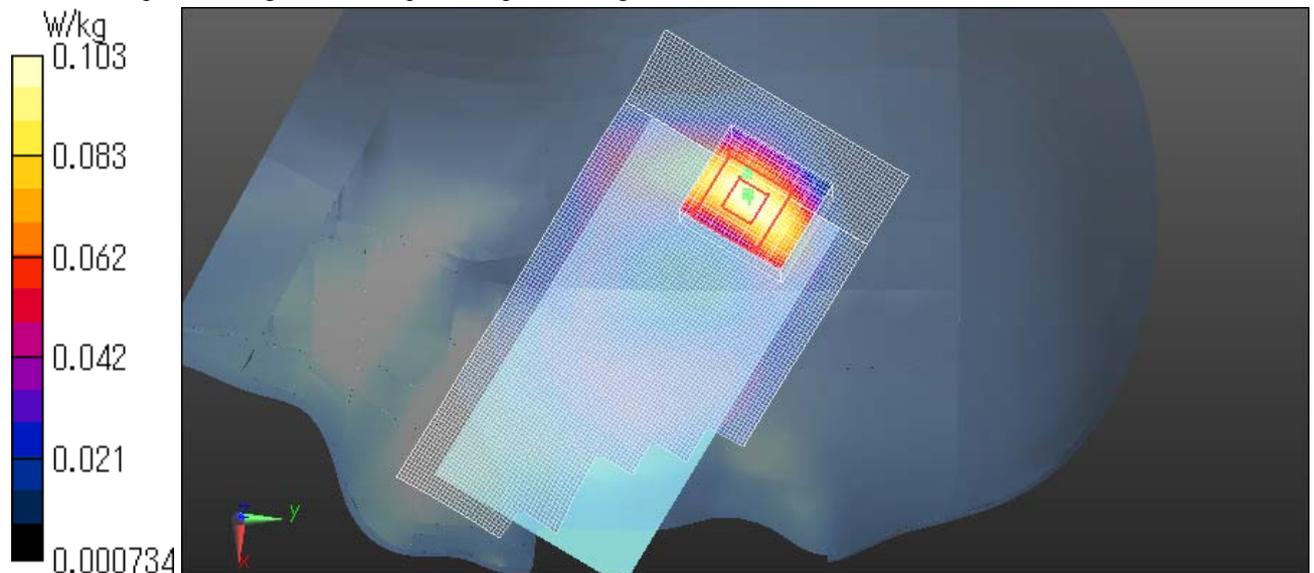
Peak SAR (extrapolated) = 0.129 W/kg

SAR(1 g) = 0.077 W/kg; SAR(10 g) = 0.043 W/kg

Maximum value of SAR (measured) = 0.103 W/kg

Date: 2012/10/23

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 24.0 degree.C.



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200SH PCS1900 GSM Head 1880.0MHz Right Cheek

Communication System: GSM 1800; Communication System Band: PCS1900; Frequency: 1880 MHz; Duty Cycle: 1:8.30042

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.472$ mho/m; $\epsilon_r = 38.499$; $\rho = 1000$ kg/m³

Phantom section: Right Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(8.43, 8.43, 8.43); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: SAM with CRP; Type: SAM;

Measurement SW: DASYS2, Version 52.8 (3);

Area Scan (71x101x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.315 W/kg

Zoom Scan 2 (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.673 V/m; Power Drift = -0.11 dB

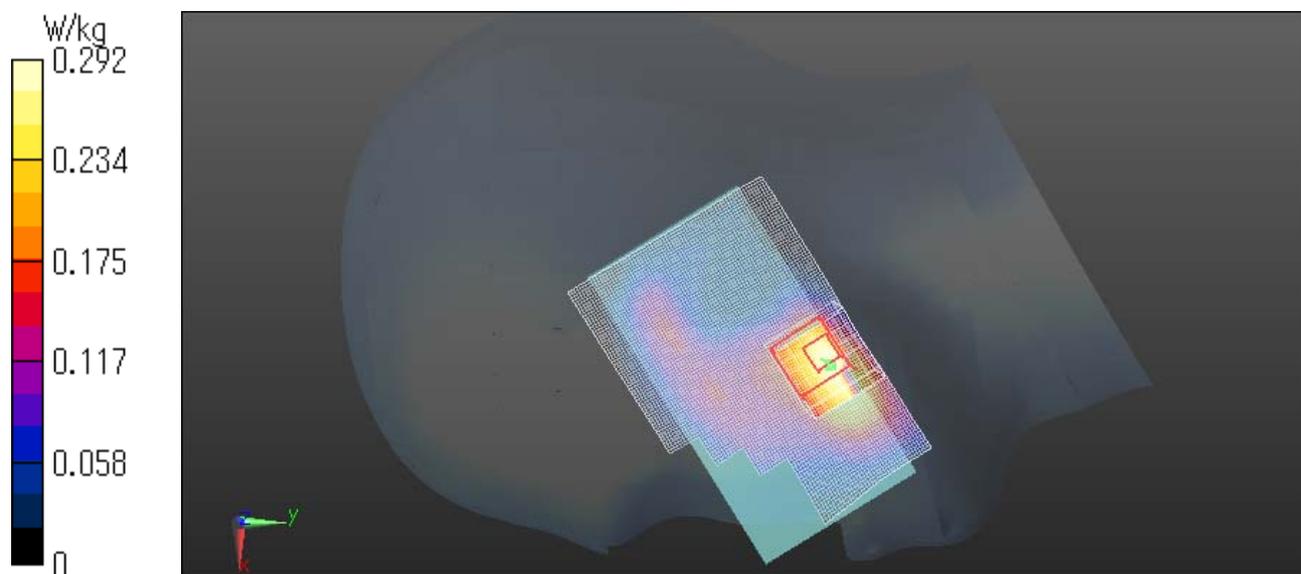
Peak SAR (extrapolated) = 0.868 W/kg

SAR(1 g) = 0.270 W/kg; SAR(10 g) = 0.124 W/kg

Maximum value of SAR (measured) = 0.292 W/kg

Date: 2012/10/23

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 24.0 degree.C.



200SH PCS1900 GSM Head 1880.0MHz Right Tilt

Communication System: GSM 1800; Communication System Band: PCS1900; Frequency: 1880 MHz; Duty Cycle: 1:8.30042

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.472$ mho/m; $\epsilon_r = 38.499$; $\rho = 1000$ kg/m³

Phantom section: Right Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(8.43, 8.43, 8.43); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: SAM with CRP; Type: SAM;

Measurement SW: DASY52, Version 52.8 (3);

Area Scan 3 (71x111x1): Interpolated grid: $dx=1.200$ mm, $dy=1.200$ mm

Maximum value of SAR (interpolated) = 0.102 W/kg

Zoom Scan 2 (7x7x7)/Cube 0: Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 8.078 V/m; Power Drift = -0.09 dB

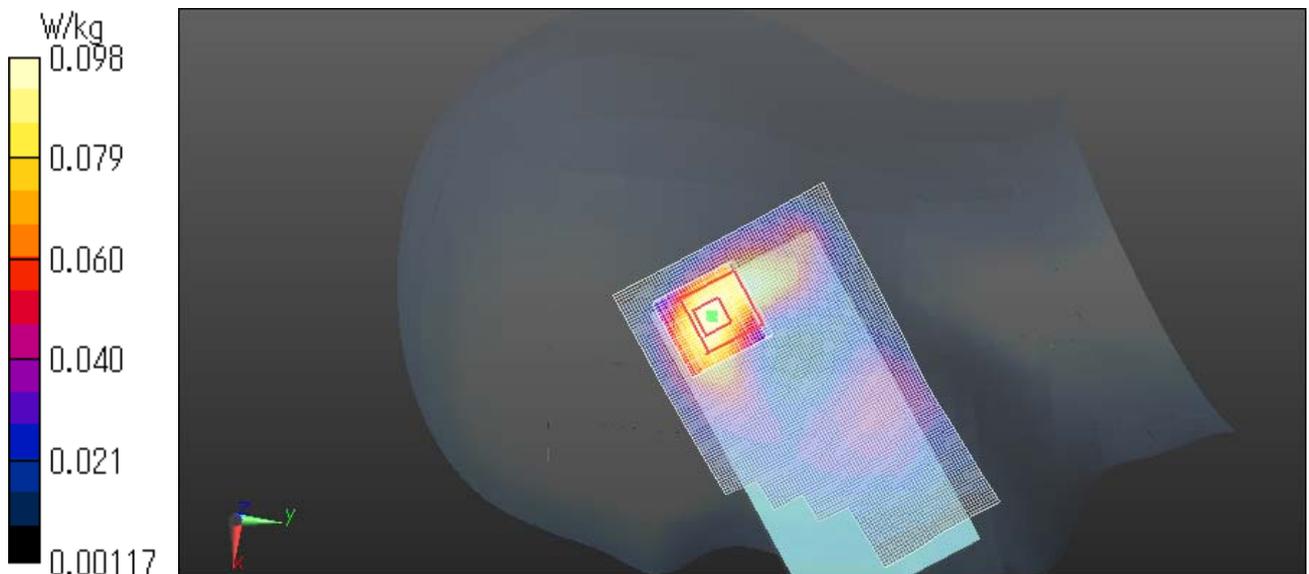
Peak SAR (extrapolated) = 0.118 W/kg

SAR(1 g) = 0.076 W/kg; SAR(10 g) = 0.046 W/kg

Maximum value of SAR (measured) = 0.0984 W/kg

Date: 2012/10/23

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 24.0 degree.C.



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200SH PCS1900 GPRS 4Slots Head 1880.0MHz Right Cheek

Communication System: GSM 1800; Communication System Band: PCS1900; Frequency: 1880 MHz; Duty Cycle: 1:2.09991

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.433$ mho/m; $\epsilon_r = 38.521$; $\rho = 1000$ kg/m³

Phantom section: Right Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3540; ConvF(8.68, 8.68, 8.68); Calibrated: 2012/07/19;

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: SAM with CRP; Type: SAM;

Measurement SW: DASYS2, Version 52.8 (3);

Area Scan 2 (71x101x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.524 W/kg

Zoom Scan 2 (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.560 V/m; Power Drift = 0.14 dB

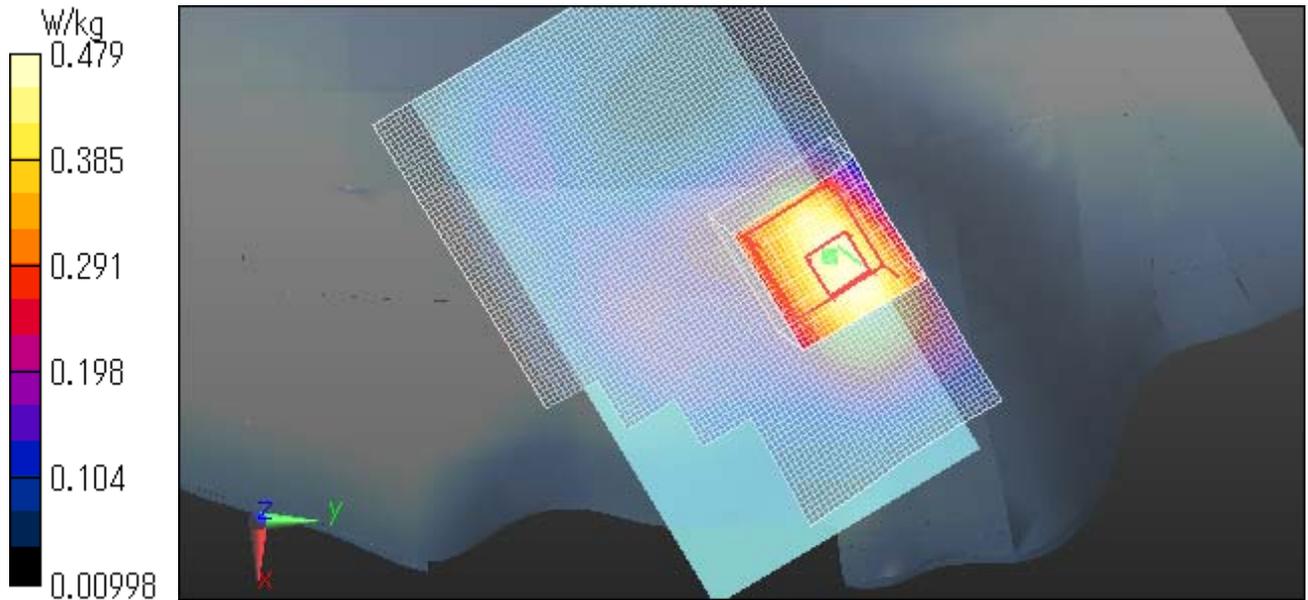
Peak SAR (extrapolated) = 0.946 W/kg

SAR(1 g) = 0.372 W/kg; SAR(10 g) = 0.215 W/kg

Maximum value of SAR (measured) = 0.479 W/kg

Date: 2012/11/22

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



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Z Scan at Maximum Head SAR position in PCS1900

200SH PCS1900 GPRS 4Slots Head 1880.0MHz Right Cheek

Communication System: GSM 1800; Communication System Band: PCS1900; Frequency: 1880 MHz; Duty Cycle: 1:2.09991

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.433$ mho/m; $\epsilon_r = 38.521$; $\rho = 1000$ kg/m³

Phantom section: Right Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3540; ConvF(8.68, 8.68, 8.68); Calibrated: 2012/07/19;

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: SAM with CRP; Type: SAM;

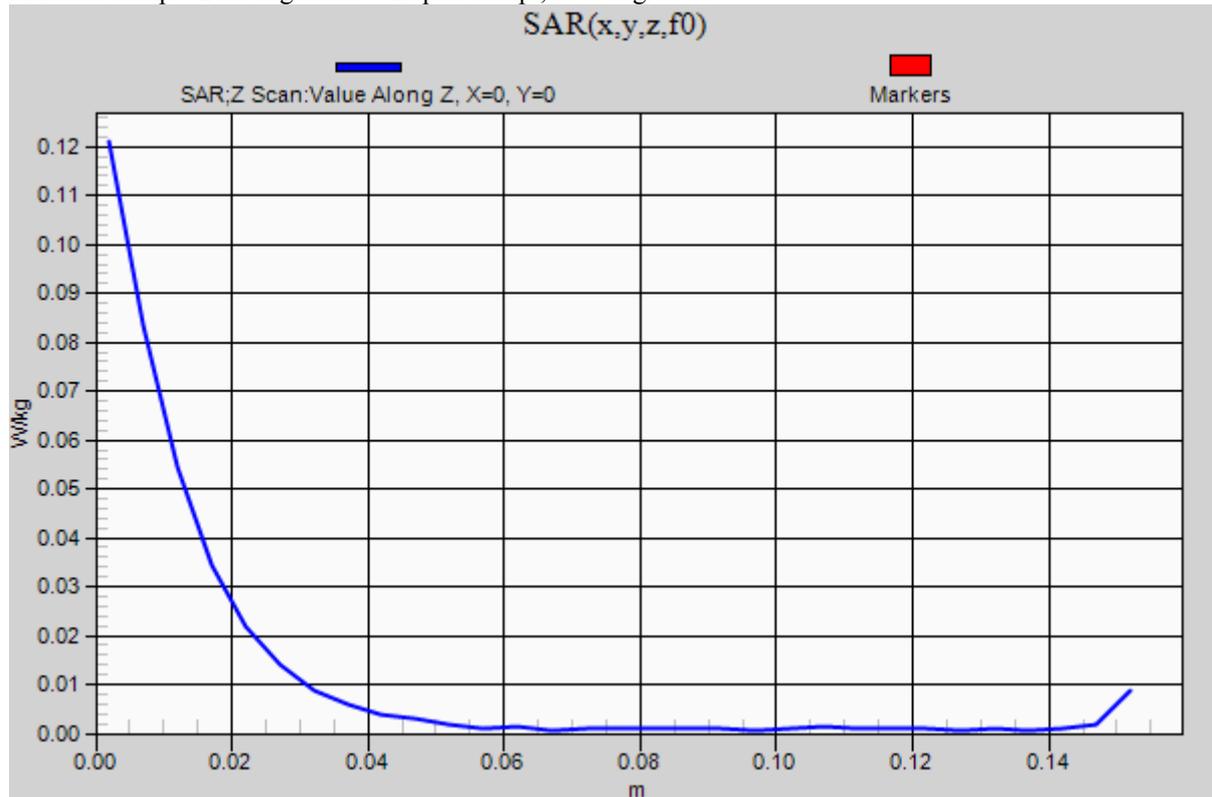
Measurement SW: DASYS2, Version 52.8 (3);

Z Scan (1x1x31): Measurement grid: dx=20mm, dy=20mm, dz=5mm

Maximum value of SAR (measured) = 0.121 W/kg

Date: 2012/11/22

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



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200SH PCS1900 GPRS 4slots Head 1880.0MHz Front(Top 5mm, Bottom 10mm) Reference data

Communication System: GSM 1800; Communication System Band: PCS1900; Frequency: 1880 MHz; Duty Cycle: 1:2.09991

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.433$ mho/m; $\epsilon_r = 38.521$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3540; ConvF(8.68, 8.68, 8.68); Calibrated: 2012/07/19;

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: SAM with CRP; Type: SAM;

Measurement SW: DASYS2, Version 52.8 (3);

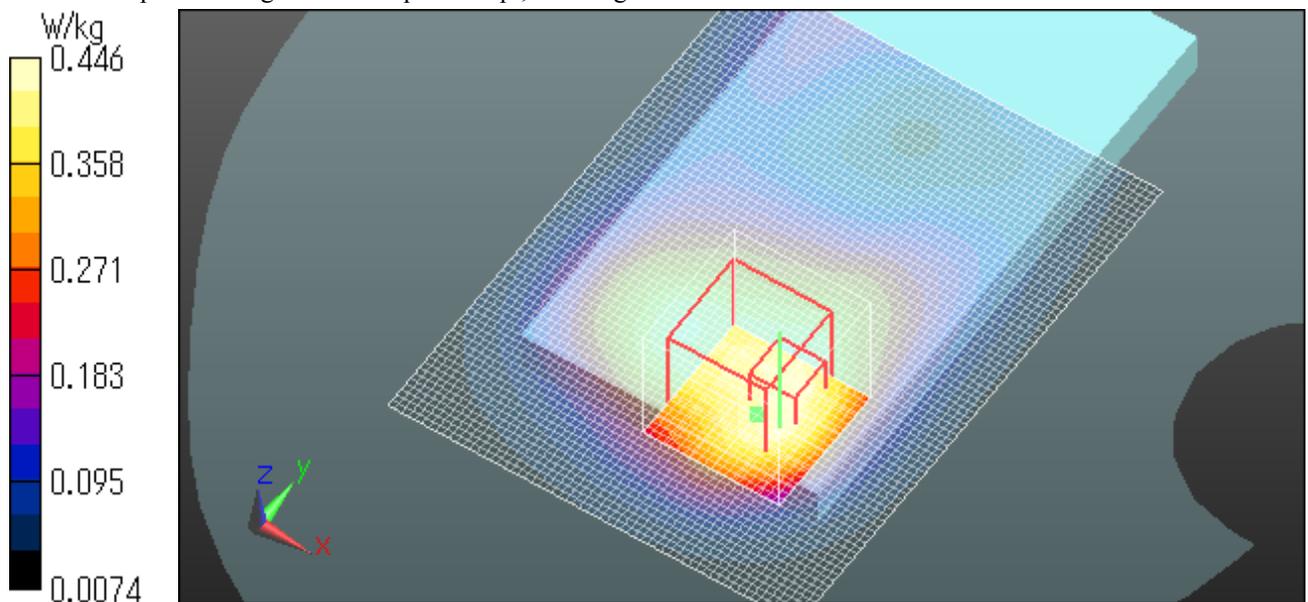
Area Scan (61x81x1): Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm
Maximum value of SAR (interpolated) = 0.483 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm
Reference Value = 7.425 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 0.576 W/kg
SAR(1 g) = 0.327 W/kg; SAR(10 g) = 0.198 W/kg

Maximum value of SAR (measured) = 0.446 W/kg

Date: 2012/11/22

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



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ii) **PCS1900 Body**

200SH PCS1900 GPRS 4Slots Front 10mm 1880.0MHz

Communication System: GSM 1800; Communication System Band: PCS1900; Frequency: 1880 MHz; Duty Cycle: 1:2.09991

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.518$ mho/m; $\epsilon_r = 51.112$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3540; ConvF(8.24, 8.24, 8.24); Calibrated: 2012/07/19;

Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx

Measurement SW: DASYS2, Version 52.8 (3);

Area Scan (61x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.510 W/kg

Zoom Scan (9x8x4)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.626 V/m; Power Drift = 0.01 dB

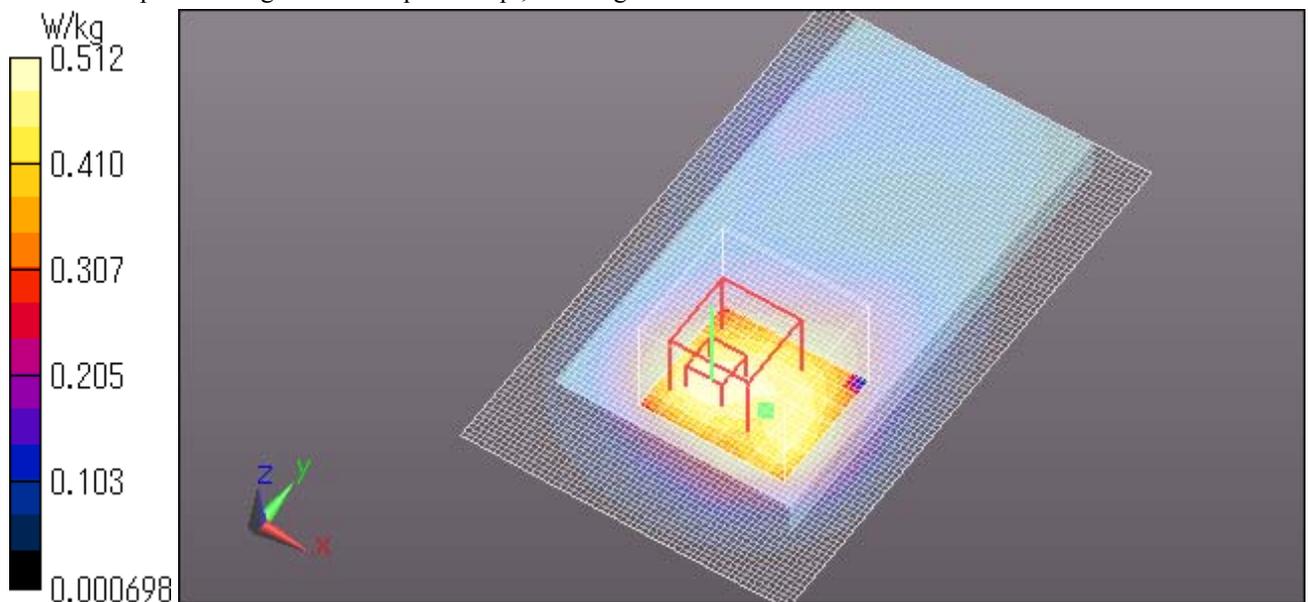
Peak SAR (extrapolated) = 0.615 W/kg

SAR(1 g) = 0.395 W/kg; SAR(10 g) = 0.249 W/kg

Maximum value of SAR (measured) = 0.512 W/kg

Date: 2012/11/21

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



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200SH PCS1900 GPRS 4Slots Rear 10mm 1880.0MHz

Communication System: GSM 1800; Communication System Band: PCS1900; Frequency: 1880 MHz; Duty Cycle: 1:2.09991

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.518$ mho/m; $\epsilon_r = 51.112$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASYS5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration

Probe: EX3DV4 - SN3540; ConvF(8.24, 8.24, 8.24); Calibrated: 2012/07/19;

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx

Measurement SW: DASYS2, Version 52.8 (3);

Area Scan (61x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.654 W/kg

Zoom Scan (7x7x4)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.725 V/m; Power Drift = -0.10 dB

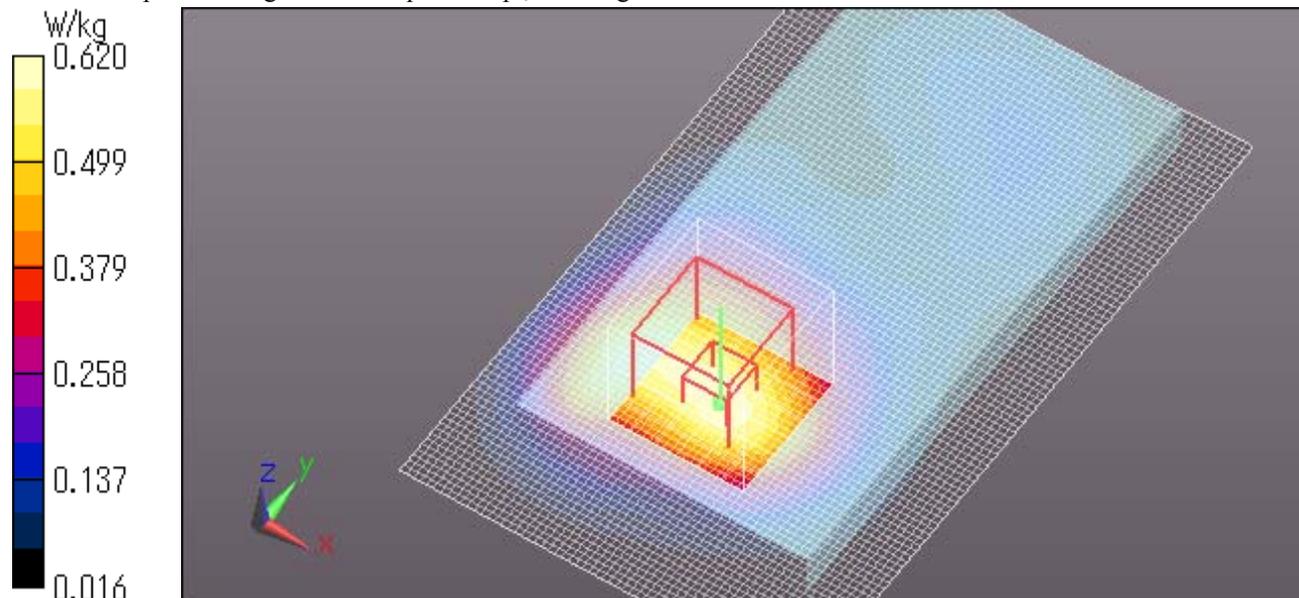
Peak SAR (extrapolated) = 0.747 W/kg

SAR(1 g) = 0.471 W/kg; SAR(10 g) = 0.292 W/kg

Maximum value of SAR (measured) = 0.620 W/kg

Date: 2012/11/21

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



Z Scan at Maximum Body SAR position in PCS1900

200SH PCS1900 GPRS 4Slots Rear 10mm 1880.0MHz

Communication System: GSM 1800; Communication System Band: PCS1900; Frequency: 1880 MHz; Duty Cycle: 1:2.09991

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.518$ mho/m; $\epsilon_r = 51.112$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3540; ConvF(8.24, 8.24, 8.24); Calibrated: 2012/07/19;

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx

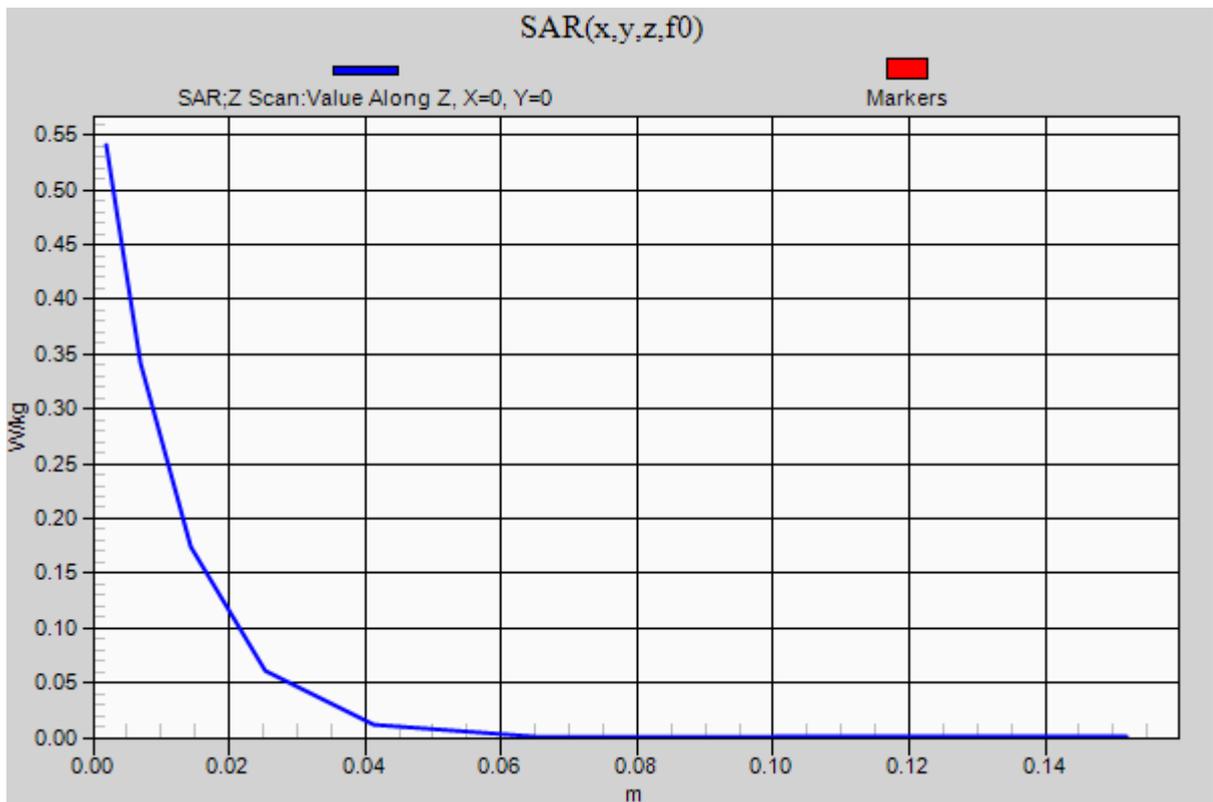
Measurement SW: DASY52, Version 52.8 (3);

Z Scan (1x1x8): Measurement grid: $dx=20$ mm, $dy=20$ mm, $dz=5$ mm

Maximum value of SAR (measured) = 0.543 W/kg

Date: 2012/11/21

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



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200SH PCS1900 GPRS 4Slots Left edge 10mm 1880.0MHz

Communication System: GSM 1800; Communication System Band: PCS1900; Frequency: 1880 MHz; Duty Cycle: 1:2.09991

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.518$ mho/m; $\epsilon_r = 51.112$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3540; ConvF(8.24, 8.24, 8.24); Calibrated: 2012/07/19;

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx

Measurement SW: DASYS2, Version 52.8 (3);

Area Scan (61x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.232 W/kg

Zoom Scan (7x7x4)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.281 V/m; Power Drift = -0.12 dB

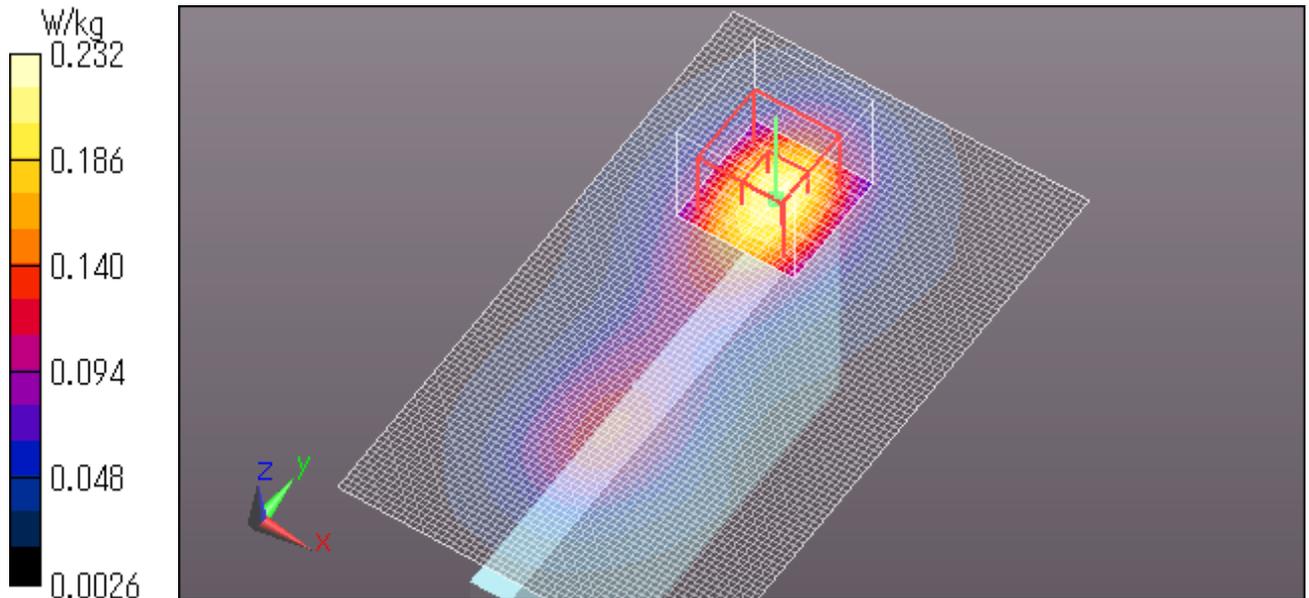
Peak SAR (extrapolated) = 0.439 W/kg

SAR(1 g) = 0.165 W/kg; SAR(10 g) = 0.092 W/kg

Maximum value of SAR (measured) = 0.223 W/kg

Date: 2012/11/21

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



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200SH PCS1900 GPRS 4Slots Bottom edge 10mm 1880.0MHz

Communication System: GSM 1800; Communication System Band: PCS1900; Frequency: 1880 MHz; Duty Cycle: 1:2.09991

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.518$ mho/m; $\epsilon_r = 51.112$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASYS5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration

Probe: EX3DV4 - SN3540; ConvF(8.24, 8.24, 8.24); Calibrated: 2012/07/19;

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx

Measurement SW: DASYS2, Version 52.8 (3);

Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.213 W/kg

Zoom Scan (7x9x4)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 11.767 V/m; Power Drift = -0.09 dB

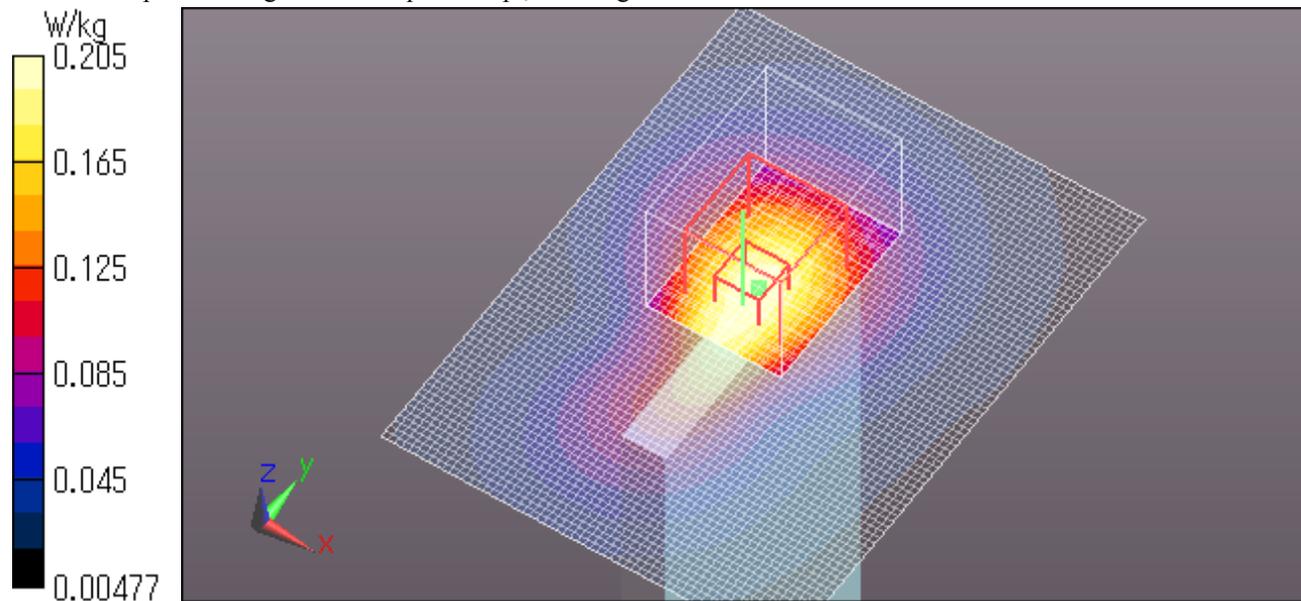
Peak SAR (extrapolated) = 0.251 W/kg

SAR(1 g) = 0.155 W/kg; SAR(10 g) = 0.090 W/kg

Maximum value of SAR (measured) = 0.205 W/kg

Date: 2012/11/21

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



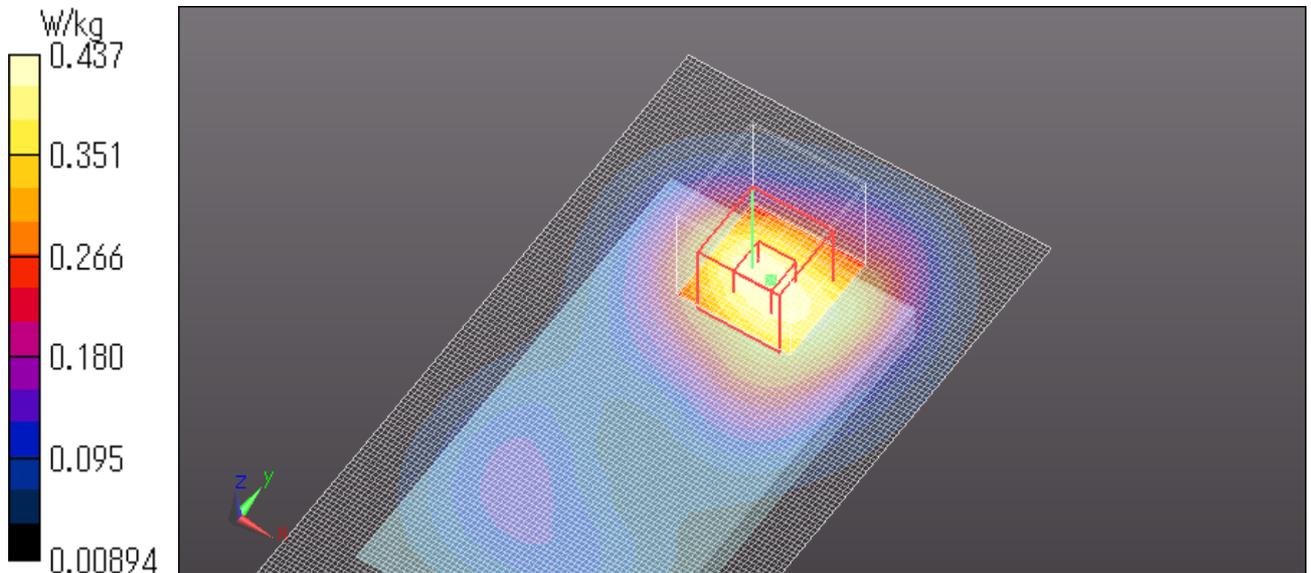
200SH PCS1900 GSM Rear 10mm 1880.0MHz

Communication System: GSM 1800; Communication System Band: PCS1900; Frequency: 1880 MHz; Duty Cycle: 1:8.30042
Medium parameters used: $f = 1880$ MHz; $\sigma = 1.512$ mho/m; $\epsilon_r = 51.062$; $\rho = 1000$ kg/m³
Phantom section: Flat Section
Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3825; ConvF(7.48, 7.48, 7.48); Calibrated: 2011/12/16; \${Probe: Calibration Date}
Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
Measurement SW: DASYS2, Version 52.8 (3);

Area Scan (81x151x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.445 W/kg

Zoom Scan (7x7x4)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.031 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 0.527 W/kg
SAR(1 g) = 0.341 W/kg; SAR(10 g) = 0.214 W/kg
Maximum value of SAR (measured) = 0.437 W/kg

Date: 2012/10/22
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 24.0 degree.C.



iii) **WLAN 2.4GHz Head**

200SH WLAN 11b 1Mbps Left cheek 2437MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: WLAN 11b/g/n; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 1.835$ mho/m; $\epsilon_r = 37.38$; $\rho = 1000$ kg/m³

Phantom section: Left Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(7.44, 7.44, 7.44); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: SAM with CRP; Type: SAM;

Measurement SW: DASY52, Version 52.8 (3);

Area Scan (71x71x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.685 W/kg

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

Reference Value = 8.582 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.998 W/kg

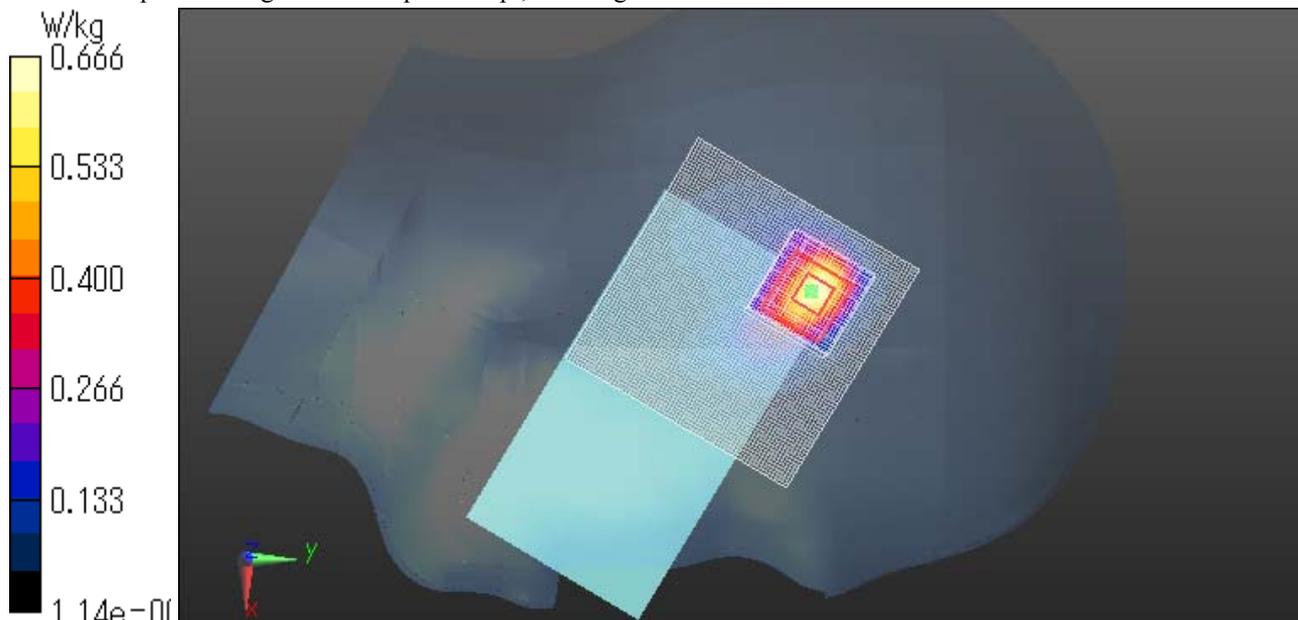
SAR(1 g) = 0.415 W/kg; SAR(10 g) = 0.178 W/kg

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.666 W/kg

Date: 2012/10/18

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



Z Scan at Maximum Head SAR position in WLAN 2.4GHz band

200SH WLAN 11b 1Mbps Left cheek 2437MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: WLAN 11b/g/n; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 1.835$ mho/m; $\epsilon_r = 37.38$; $\rho = 1000$ kg/m³

Phantom section: Left Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(7.44, 7.44, 7.44); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: SAM with CRP; Type: SAM;

Measurement SW: DASYS2, Version 52.8 (3);

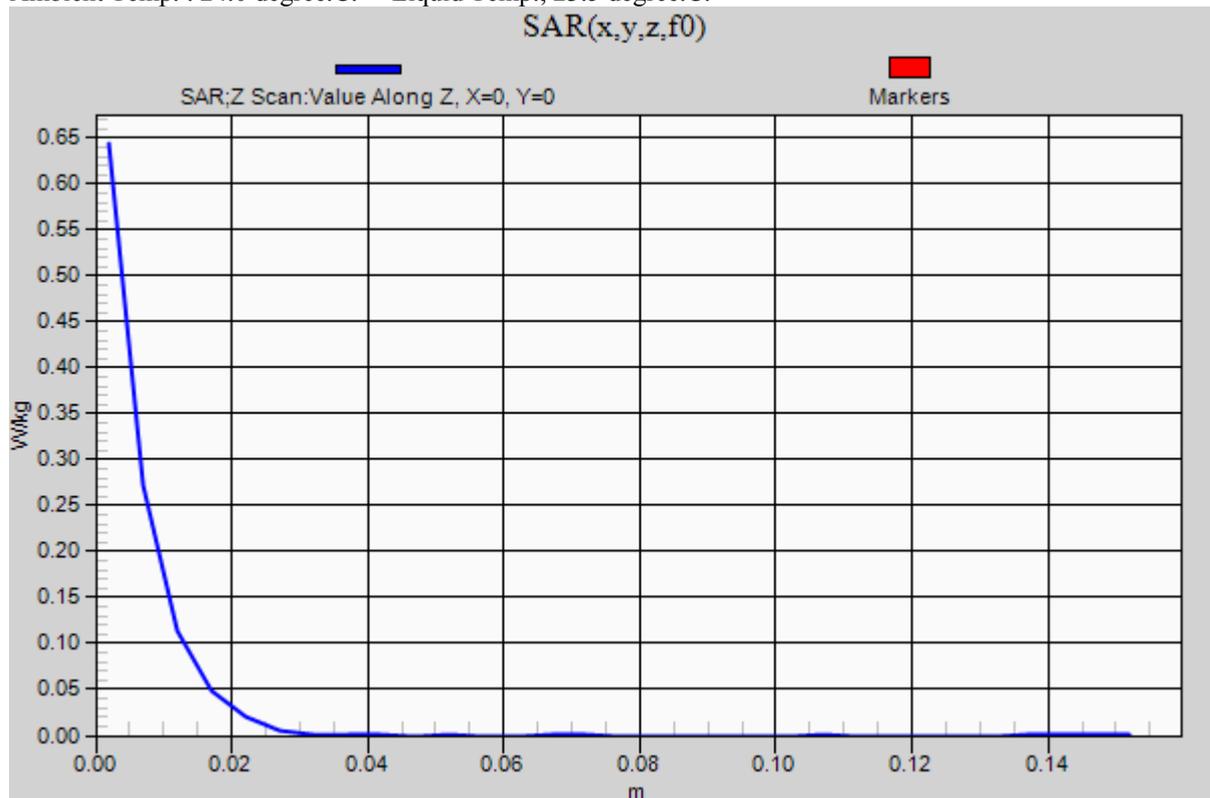
Z Scan (1x1x31): Measurement grid: dx=20mm, dy=20mm, dz=5mm

Info: [Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.644 W/kg

Date: 2012/10/18

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



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200SH WLAN 11b 1Mbps Left tilt 2437MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: WLAN 11b/g/n; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 1.835$ mho/m; $\epsilon_r = 37.38$; $\rho = 1000$ kg/m³

Phantom section: Left Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(7.44, 7.44, 7.44); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: SAM with CRP; Type: SAM;

Measurement SW: DASYS2, Version 52.8 (3);

Area Scan (71x71x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.542 W/kg

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

Reference Value = 10.193 V/m; Power Drift = 0.19 dB

Peak SAR (extrapolated) = 0.787 W/kg

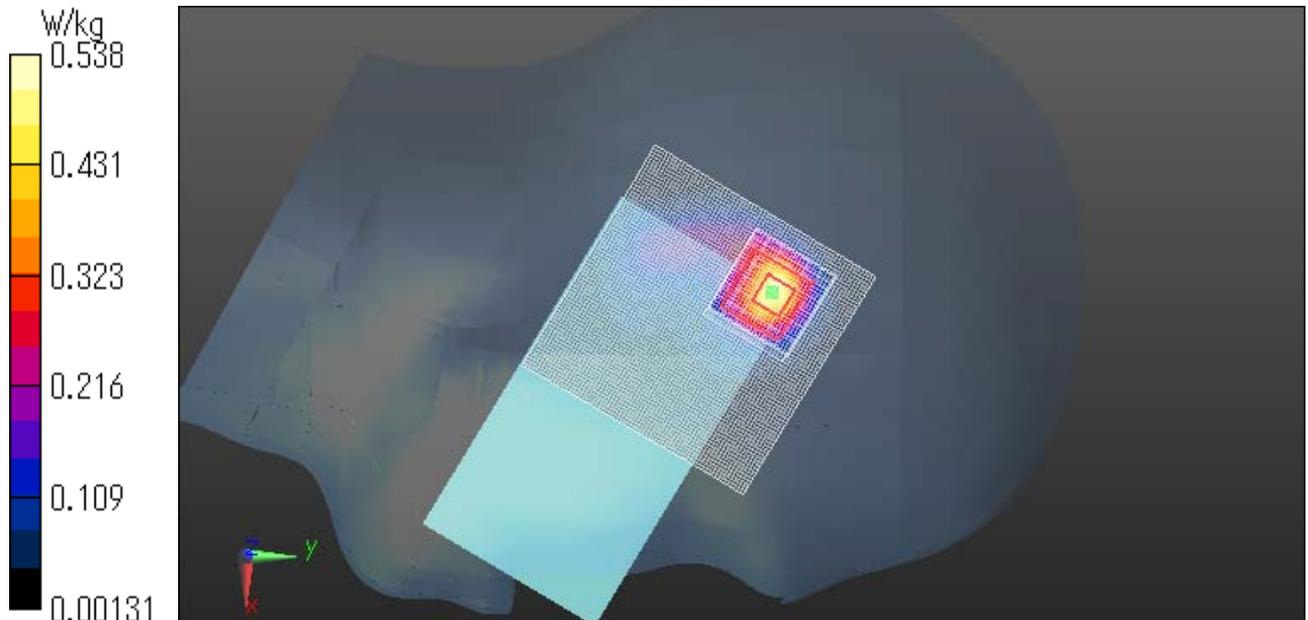
SAR(1 g) = 0.328 W/kg; SAR(10 g) = 0.139 W/kg

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.538 W/kg

Date: 2012/10/18

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



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200SH WLAN 11b 1Mbps Right cheek 2437MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: WLAN 11b/g/n; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 1.845$ mho/m; $\epsilon_r = 37.593$; $\rho = 1000$ kg/m³

Phantom section: Right Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(7.44, 7.44, 7.44); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: SAM with CRP; Type: SAM;

Measurement SW: DASYS2, Version 52.8 (3);

Area Scan (71x71x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.272 W/kg

Zoom Scan 2 (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.105 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.402 W/kg

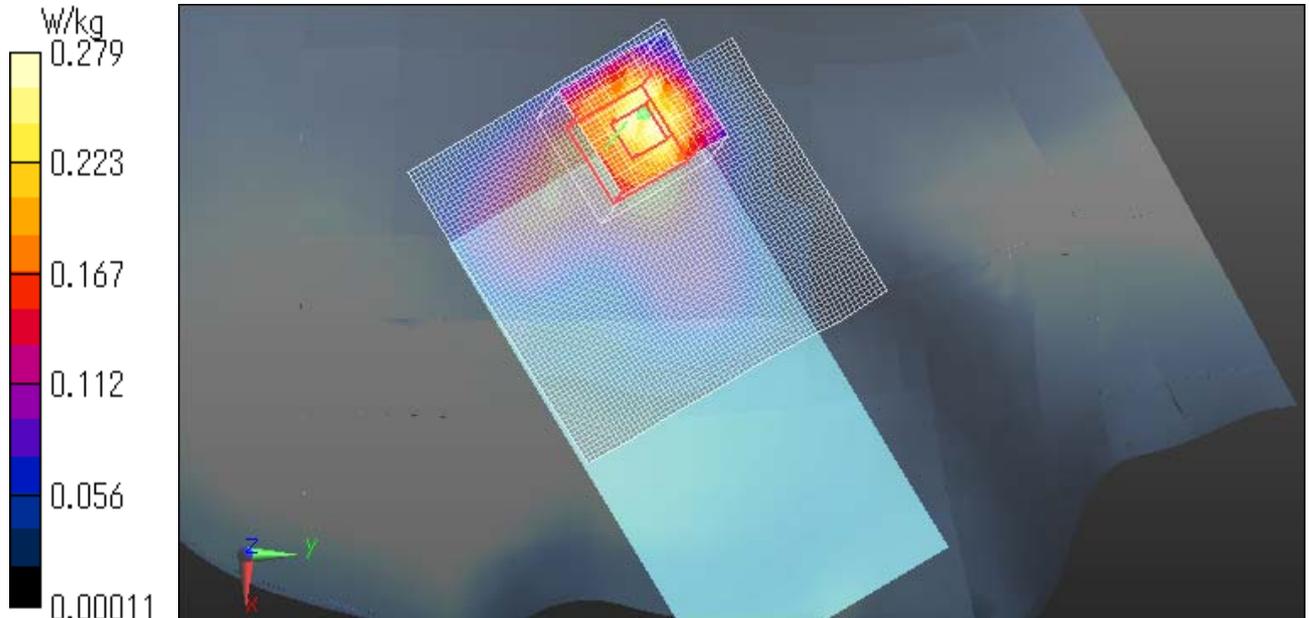
SAR(1 g) = 0.176 W/kg; SAR(10 g) = 0.087 W/kg

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.279 W/kg

Date: 2012/10/18

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



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200SH WLAN 11b 1Mbps Right tilt 2437MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: WLAN 11b/g/n; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 1.845$ mho/m; $\epsilon_r = 37.593$; $\rho = 1000$ kg/m³

Phantom section: Right Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(7.44, 7.44, 7.44); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: SAM with CRP; Type: SAM;

Measurement SW: DASY52, Version 52.8 (3);

Area Scan (71x71x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.347 W/kg

Zoom Scan 2 (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.970 V/m; Power Drift = 0.15 dB

Peak SAR (extrapolated) = 0.433 W/kg

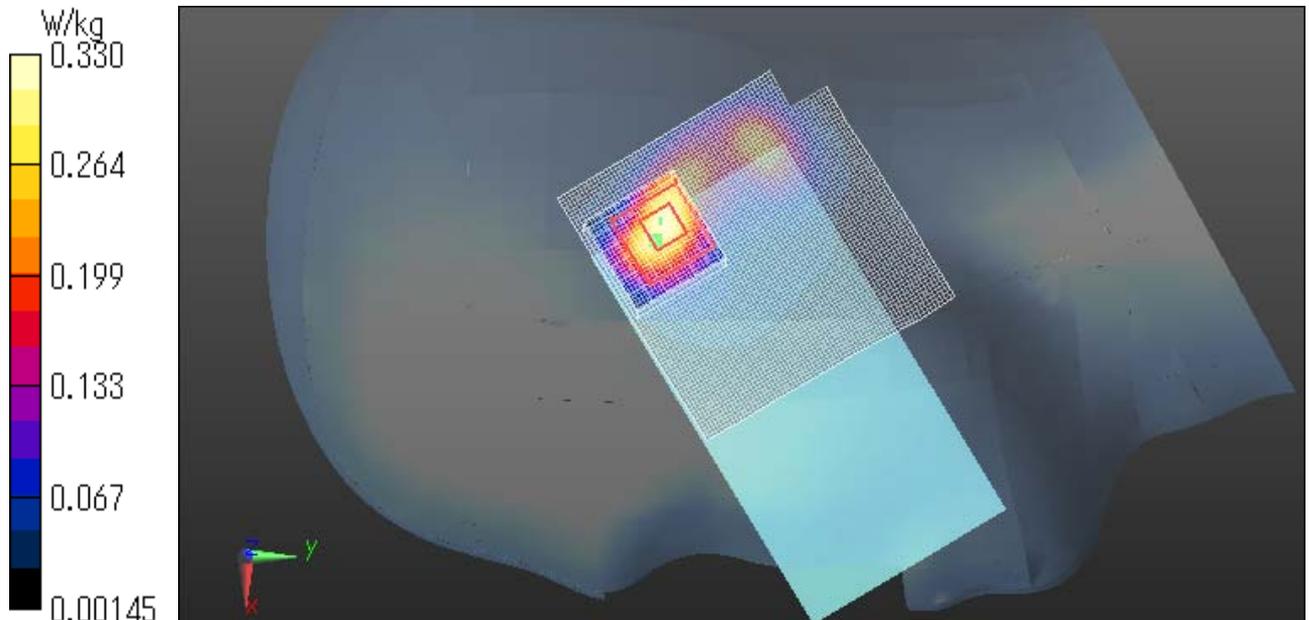
SAR(1 g) = 0.219 W/kg; SAR(10 g) = 0.102 W/kg

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.330 W/kg

Date: 2012/10/18

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



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iv) **WLAN 2.4GHz Body**

200SH WLAN 11b 1Mbps Front 10mm 2437MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: WLAN 11b/g/n; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 1.987$ mho/m; $\epsilon_r = 50.351$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(7.23, 7.23, 7.23); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx

Measurement SW: DASY52, Version 52.8 (3);

Area Scan 2 (81x151x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.132 W/kg

Zoom Scan 2 (7x7x4)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 0.609 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.178 W/kg

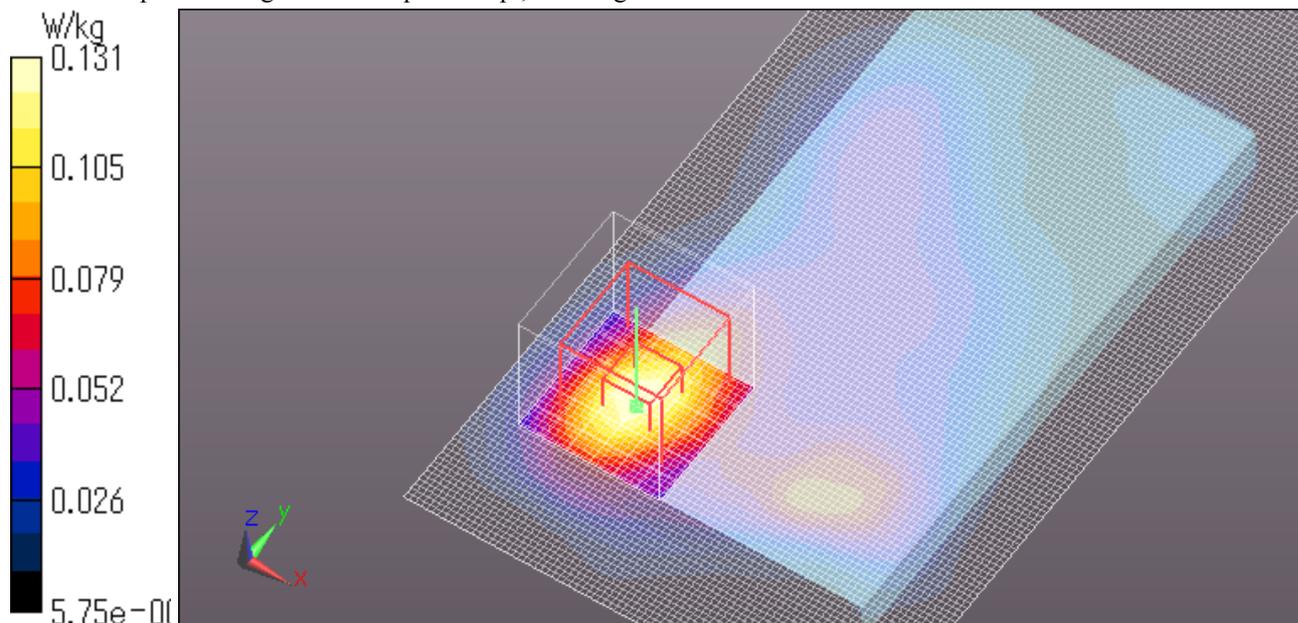
SAR(1 g) = 0.090 W/kg; SAR(10 g) = 0.044 W/kg

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.131 W/kg

Date: 2012/10/17

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



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Z Scan at Maximum Body SAR position in WLAN 2.4GHz band

200SH WLAN 11b 1Mbps Front 2437MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: WLAN 11b/g/n; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 1.987$ mho/m; $\epsilon_r = 50.351$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(7.23, 7.23, 7.23); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx

Measurement SW: DASY52, Version 52.8 (3);

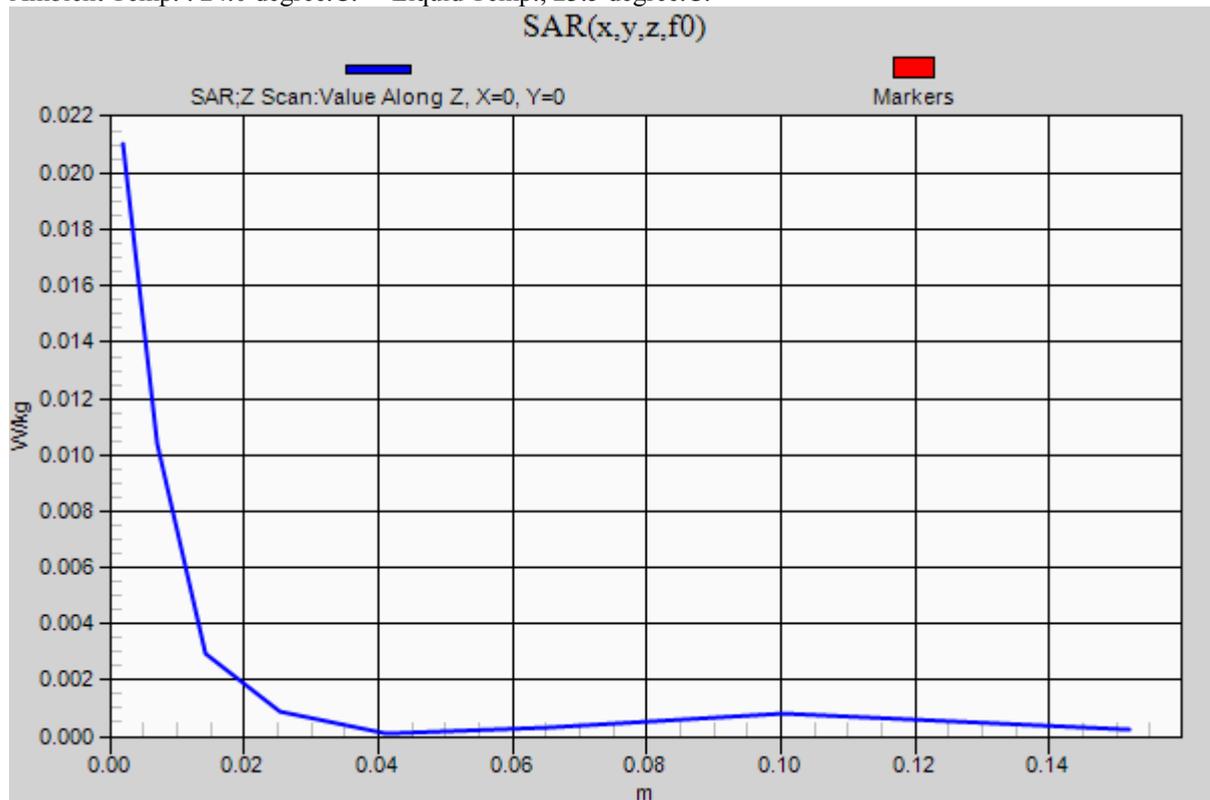
Z Scan (1x1x8): Measurement grid: dx=20mm, dy=20mm, dz=5mm

Info: [Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0210 W/kg

Date: 2012/10/17

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



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200SH WLAN 11b 1Mbps Rear 10mm 2437MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: WLAN 11b/g/n; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 1.987$ mho/m; $\epsilon_r = 50.351$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(7.23, 7.23, 7.23); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx

Measurement SW: DASY52, Version 52.8 (3);

Area Scan 2 (81x151x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.104 W/kg

Area Scan 2 2 (11x151x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0533 W/kg

Zoom Scan 2 (7x7x4)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.350 V/m; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 0.147 W/kg

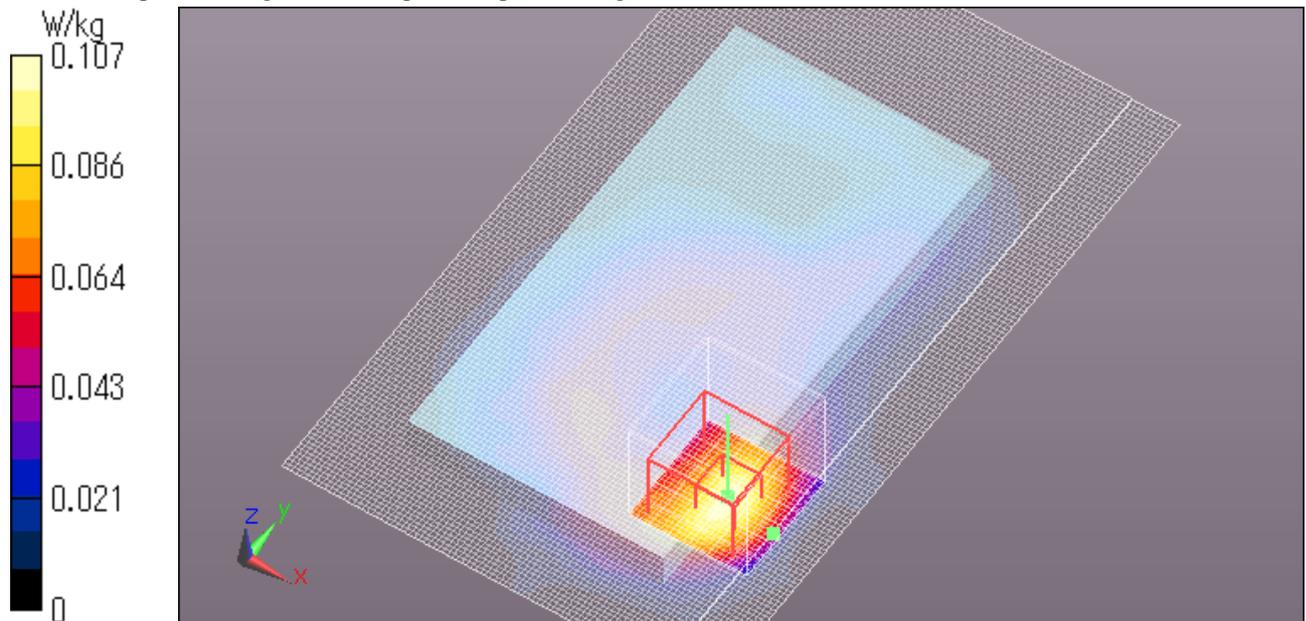
SAR(1 g) = 0.071 W/kg; SAR(10 g) = 0.035 W/kg

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.107 W/kg

Date: 2012/10/17

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



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200SH WLAN 11b 1Mbps Left edge 10mm 2437MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: WLAN 11b/g/n; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 1.987$ mho/m; $\epsilon_r = 50.351$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(7.23, 7.23, 7.23); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx

Measurement SW: DASYS2, Version 52.8 (3);

Area Scan 2 (81x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.110 W/kg

Zoom Scan 2 (7x7x4)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.915 V/m; Power Drift = 0.16 dB

Peak SAR (extrapolated) = 0.152 W/kg

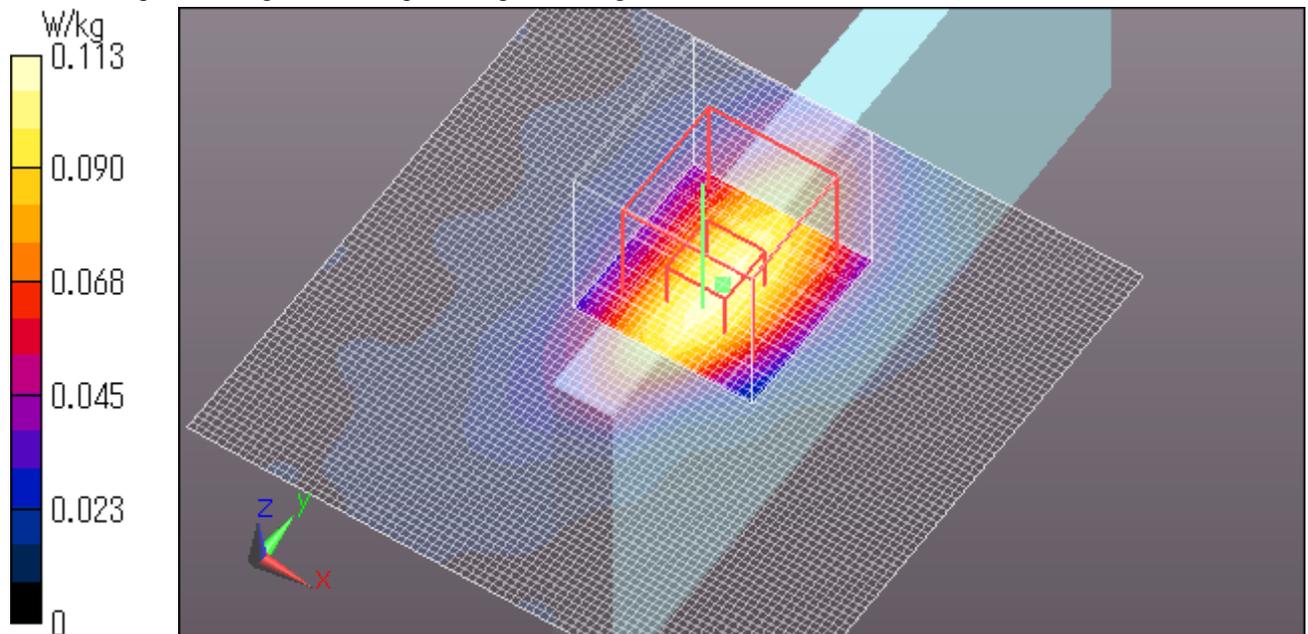
SAR(1 g) = 0.075 W/kg; SAR(10 g) = 0.038 W/kg

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.113 W/kg

Date: 2012/10/17

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



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200SH WLAN 11b 1Mbps Top edge 10mm 2437MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: WLAN 11b/g/n; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 1.987$ mho/m; $\epsilon_r = 50.351$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(7.23, 7.23, 7.23); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx

Measurement SW: DASY52, Version 52.8 (3);

Area Scan 2 (81x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0929 W/kg

Zoom Scan 2 (7x7x4)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.787 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.124 W/kg

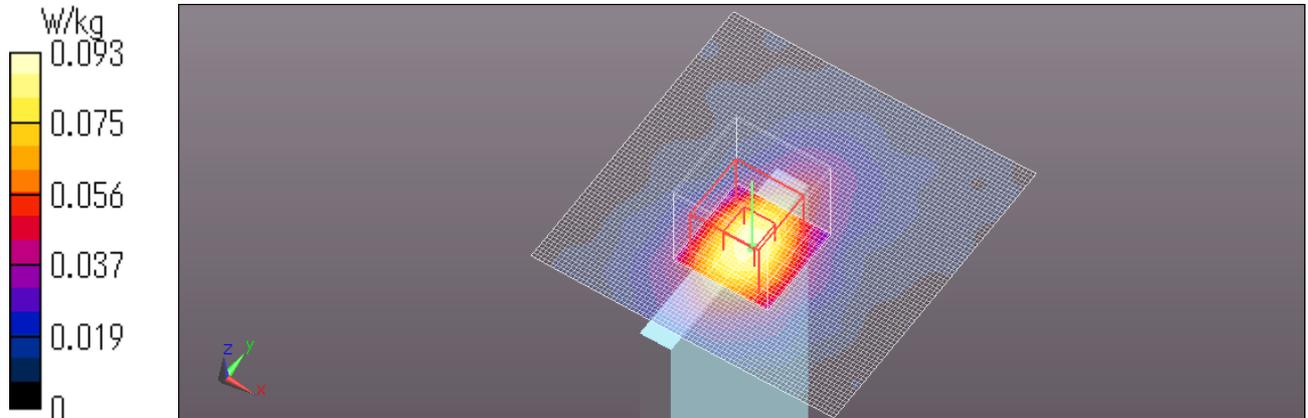
SAR(1 g) = 0.065 W/kg; SAR(10 g) = 0.033 W/kg

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0934 W/kg

Date: 2012/10/17

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



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v) **WLAN 5180-5240MHz Head**

200SH WLAN 11n40 MCS0 Head Left cheek 5230MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: 11a/n ; Frequency: 5230 MHz;Duty Cycle: 1:1
Medium parameters used: $f = 5230$ MHz; $\sigma = 4.674$ mho/m; $\epsilon_r = 34.657$; $\rho = 1000$ kg/m³

Phantom section: Left Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(5.35, 5.35, 5.35); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: SAM with CRP; Type: SAM;

Measurement SW: DASY52, Version 52.8 (3);

Area Scan (81x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.978 W/kg

Zoom Scan (8x8x6)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 2.001 V/m; Power Drift = 0.12 dB

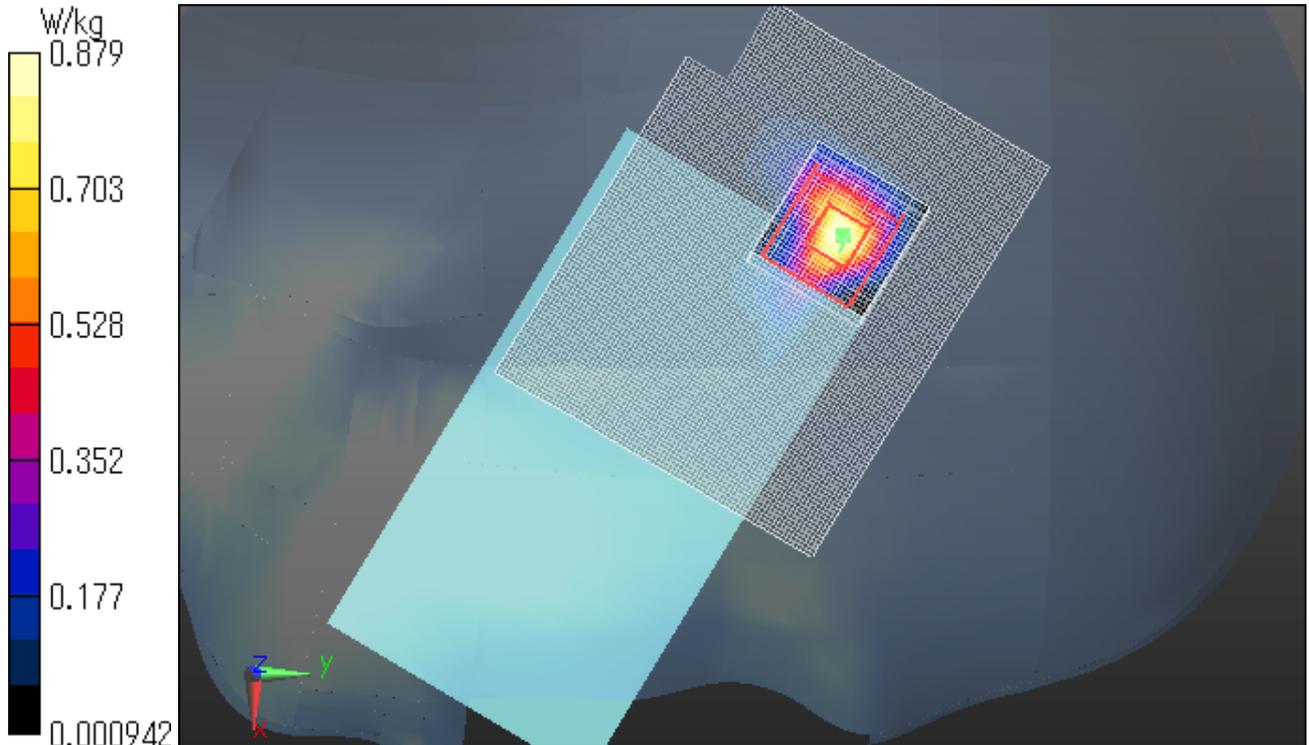
Peak SAR (extrapolated) = 1.70 W/kg

SAR(1 g) = 0.437 W/kg; SAR(10 g) = 0.128 W/kg

Maximum value of SAR (measured) = 0.879 W/kg

Date: 2012/10/24

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



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200SH WLAN 11n40 MCS0 Head Left tilt 5230MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: 11a/n ; Frequency: 5230 MHz;Duty Cycle: 1:1
Medium parameters used: $f = 5230$ MHz; $\sigma = 4.674$ mho/m; $\epsilon_r = 34.657$; $\rho = 1000$ kg/m³

Phantom section: Left Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(5.35, 5.35, 5.35); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: SAM with CRP; Type: SAM;

Measurement SW: DASY52, Version 52.8 (3);

Area Scan (81x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.926 W/kg

Zoom Scan (8x8x6)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 4.686 V/m; Power Drift = -0.12 dB

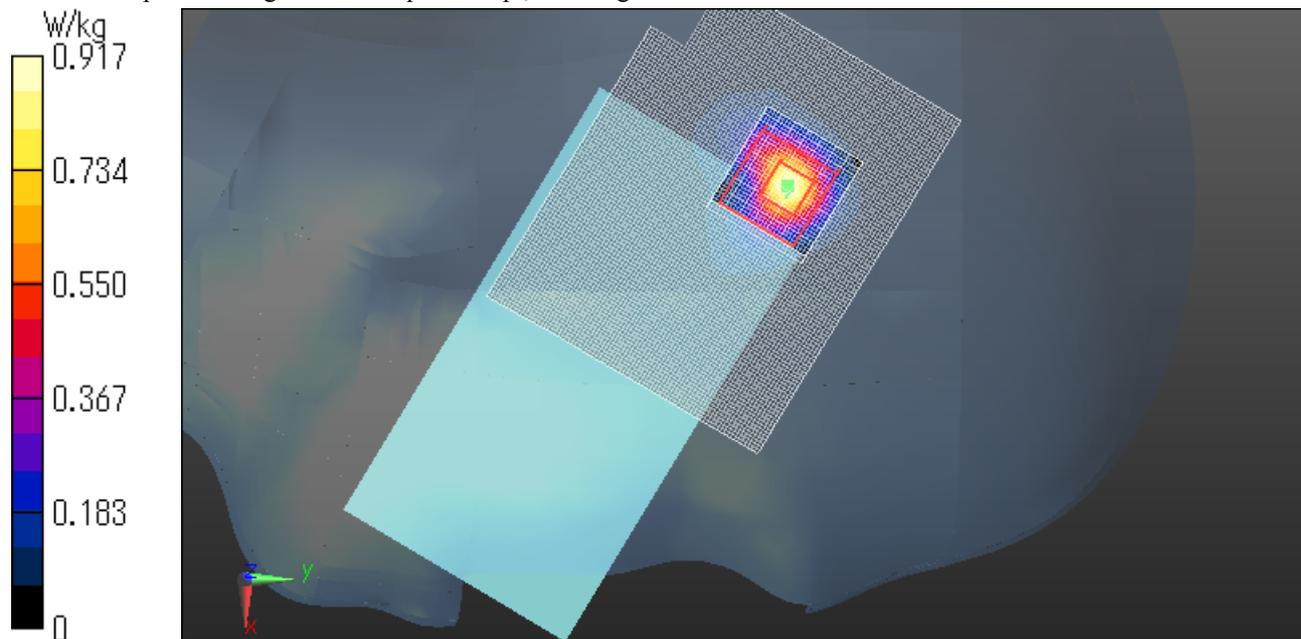
Peak SAR (extrapolated) = 1.75 W/kg

SAR(1 g) = 0.451 W/kg; SAR(10 g) = 0.128 W/kg

Maximum value of SAR (measured) = 0.917 W/kg

Date: 2012/10/24

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



200SH WLAN 11n40 MCS0 Head Right cheek 5230MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: 11a/n ; Frequency: 5230 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 5230$ MHz; $\sigma = 4.674$ mho/m; $\epsilon_r = 34.657$; $\rho = 1000$ kg/m³

Phantom section: Right Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(5.35, 5.35, 5.35); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: SAM with CRP; Type: SAM;

Measurement SW: DASY52, Version 52.8 (3);

Area Scan (81x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.22 W/kg

Zoom Scan 2 2 (8x8x6)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 4.111 V/m; Power Drift = 0.18 dB

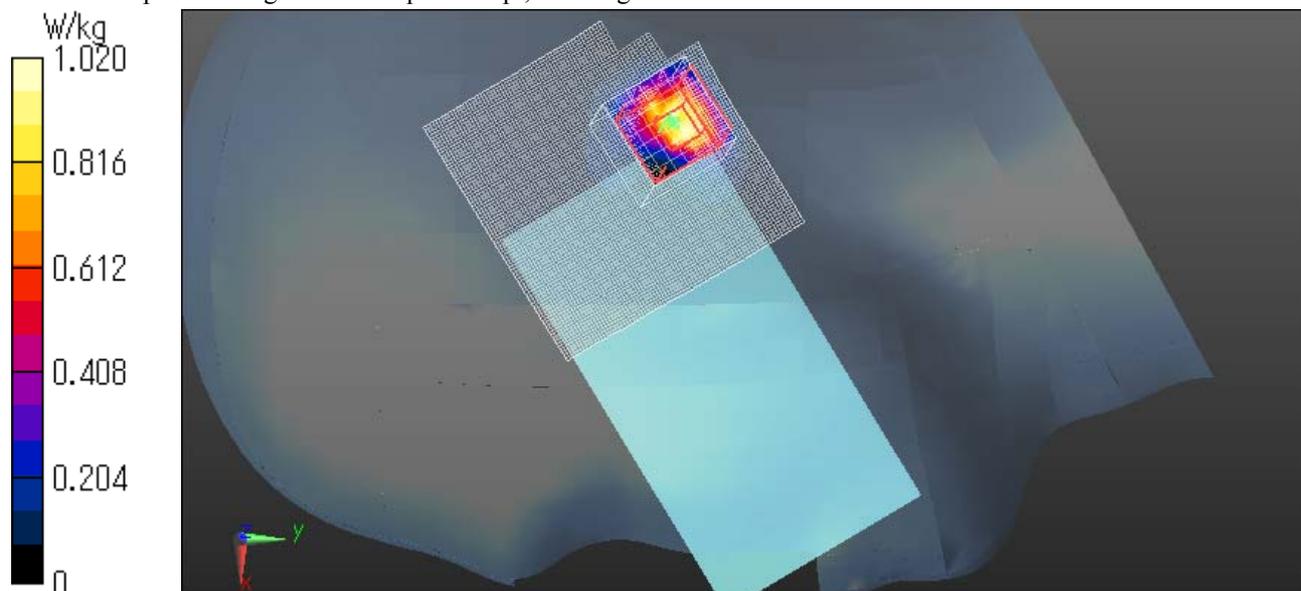
Peak SAR (extrapolated) = 3.64 W/kg

SAR(1 g) = 0.532 W/kg; SAR(10 g) = 0.177 W/kg

Maximum value of SAR (measured) = 1.02 W/kg

Date: 2012/10/24

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



200SH WLAN 11n40 MCS0 Head Right tilt 5230MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: 11a/n ; Frequency: 5230 MHz;Duty Cycle: 1:1
Medium parameters used: $f = 5230$ MHz; $\sigma = 4.674$ mho/m; $\epsilon_r = 34.657$; $\rho = 1000$ kg/m³

Phantom section: Right Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(5.35, 5.35, 5.35); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: SAM with CRP; Type: SAM;

Measurement SW: DASY52, Version 52.8 (3);

Area Scan (81x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.71 W/kg

Zoom Scan 2 2 (8x8x6)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 3.627 V/m; Power Drift = -0.04 dB

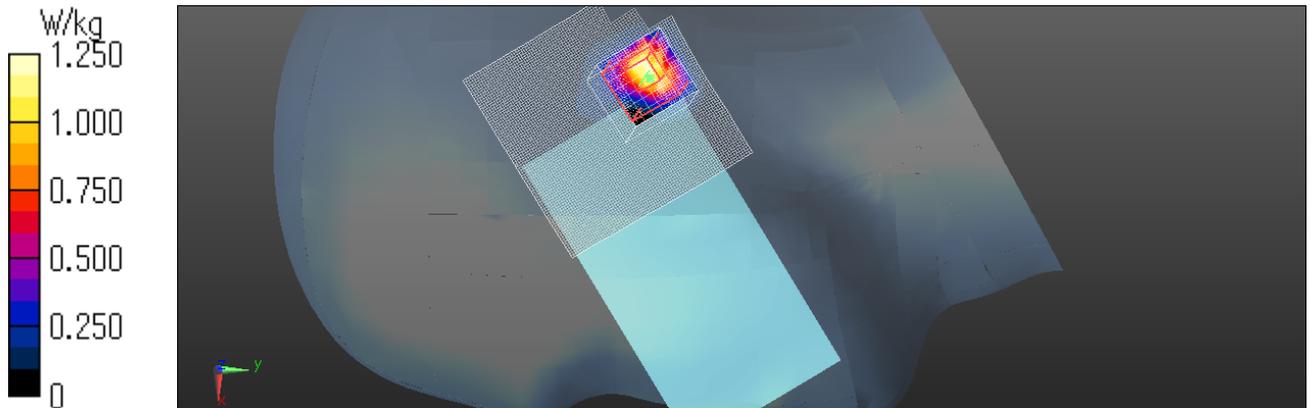
Peak SAR (extrapolated) = 3.08 W/kg

SAR(1 g) = 0.649 W/kg; SAR(10 g) = 0.213 W/kg

Maximum value of SAR (measured) = 1.25 W/kg

Date: 2012/10/24

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



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Z Scan at Maximum Body SAR position in WLAN 5180MHz-5240MHz band

200SH WLAN 11n40 MCS0 Head Right tilt 5230MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: 11a/n ; Frequency: 5230 MHz;Duty Cycle: 1:1
Medium parameters used: $f = 5230$ MHz; $\sigma = 4.674$ mho/m; $\epsilon_r = 34.657$; $\rho = 1000$ kg/m³

Phantom section: Right Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(5.35, 5.35, 5.35); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: SAM with CRP; Type: SAM;

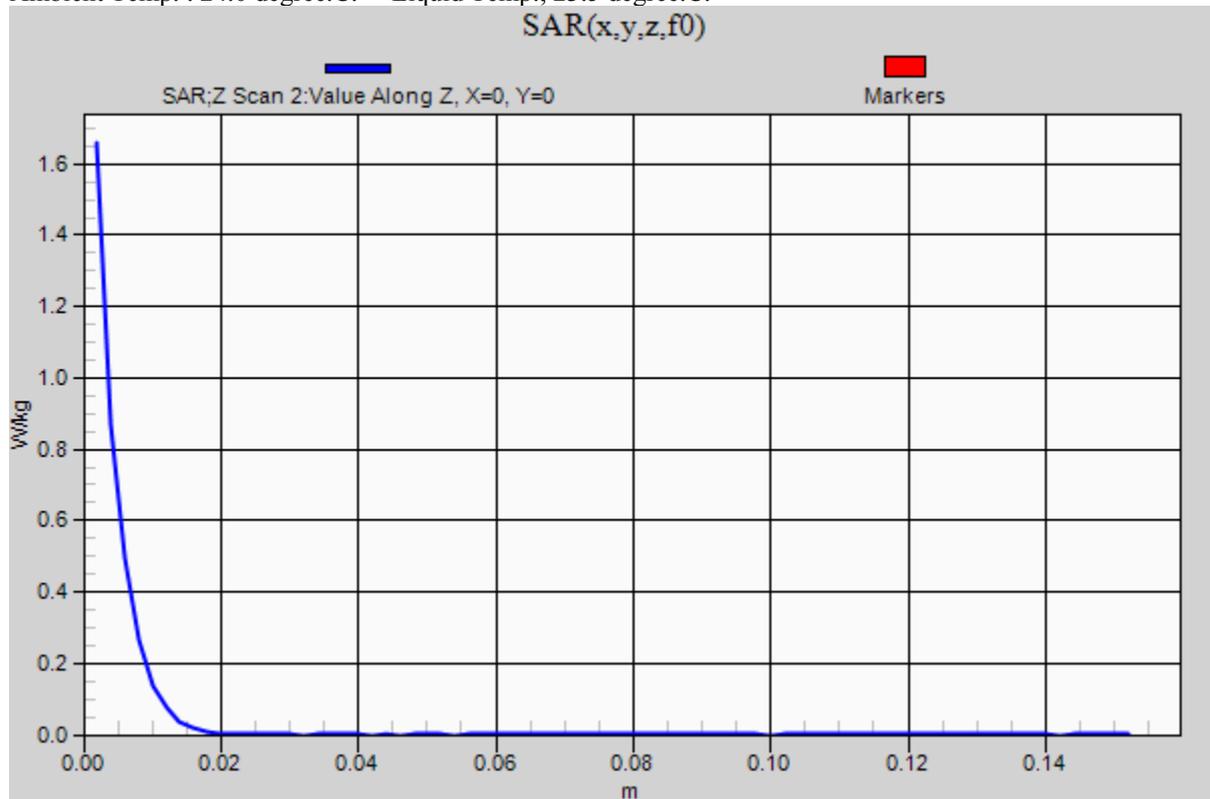
Measurement SW: DASY52, Version 52.8 (3);

Z Scan 2 (1x1x76): Measurement grid: dx=20mm, dy=20mm, dz=2mm

Maximum value of SAR (measured) = 1.66 W/kg

Date: 2012/10/24

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



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200SH WLAN 11a 6Mbps Head Right tilt 5200MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: 11a/n ; Frequency: 5200 MHz;Duty Cycle: 1:1
Medium parameters used: $f = 5200$ MHz; $\sigma = 4.64$ mho/m; $\epsilon_r = 34.712$; $\rho = 1000$ kg/m³

Phantom section: Right Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(5.35, 5.35, 5.35); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: SAM with CRP; Type: SAM;

Measurement SW: DASYS2, Version 52.8 (3);

Area Scan (81x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.29 W/kg

Area Scan 2 (81x21x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.603 W/kg

Zoom Scan 2 2 (8x8x6)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 4.872 V/m; Power Drift = -0.18 dB

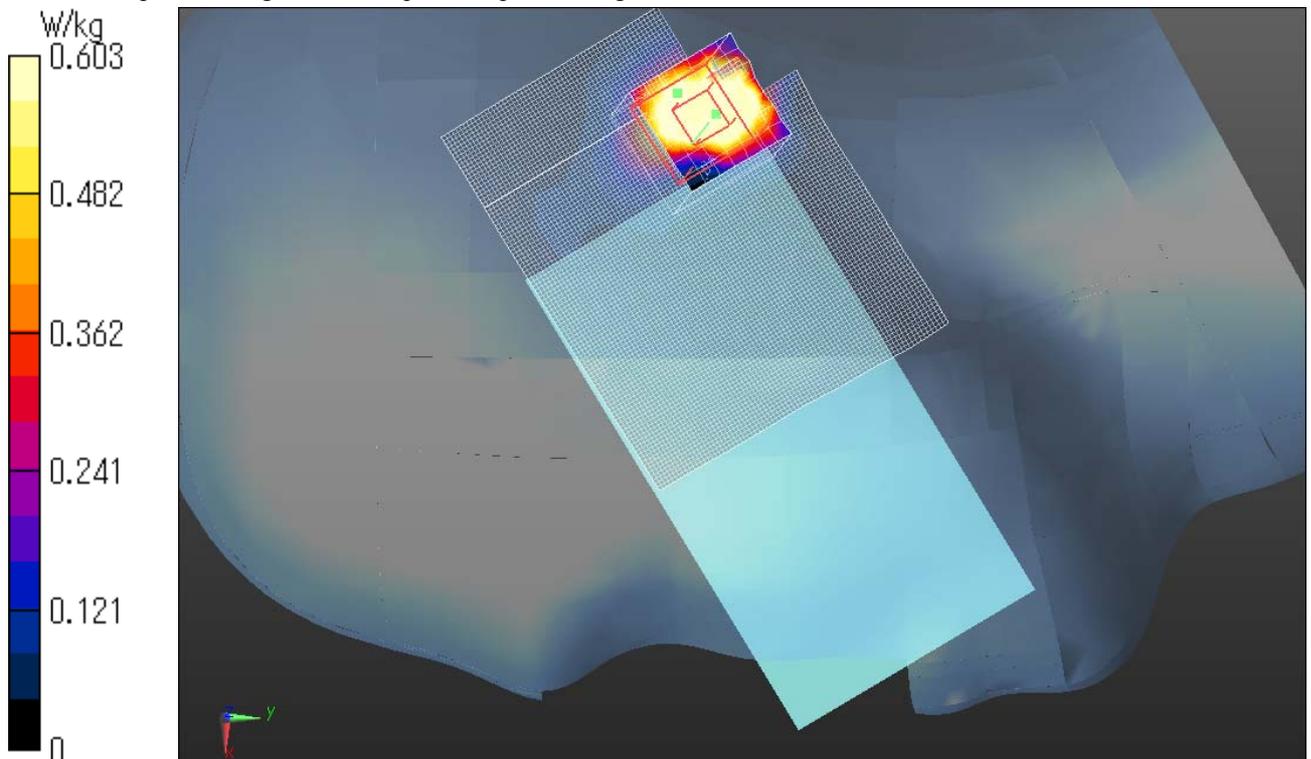
Peak SAR (extrapolated) = 4.29 W/kg

SAR(1 g) = 0.575 W/kg; SAR(10 g) = 0.196 W/kg

Maximum value of SAR (measured) = 1.19 W/kg

Date: 2012/10/24

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



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vi) **WLAN 5260-5320MHz Head**

200SH WLAN 11n40 MCS0 Head Left cheek 5310MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: 11a/n ; Frequency: 5310 MHz;Duty Cycle: 1:1
Medium parameters used: $f = 5310$ MHz; $\sigma = 4.762$ mho/m; $\epsilon_r = 34.491$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Measurement Standard: DASYS5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(5.08, 5.08, 5.08); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: SAM with CRP; Type: SAM;

Measurement SW: DASYS2, Version 52.8 (3);

Area Scan (81x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.22 W/kg

Zoom Scan (8x8x6)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 3.857 V/m; Power Drift = -0.17 dB

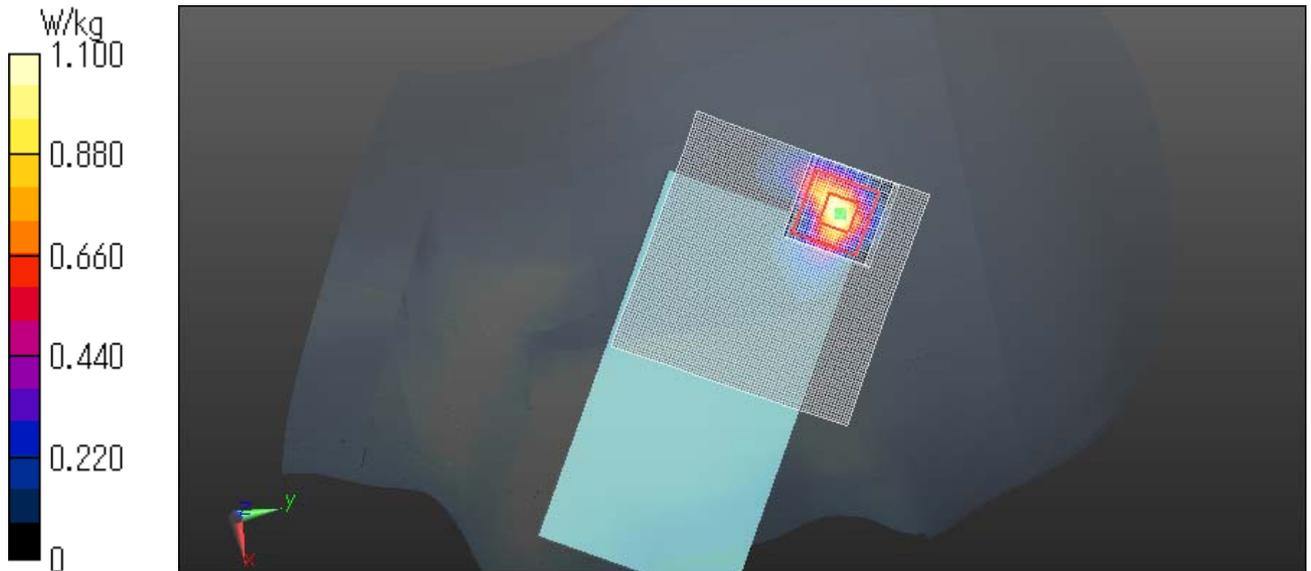
Peak SAR (extrapolated) = 2.16 W/kg

SAR(1 g) = 0.548 W/kg; SAR(10 g) = 0.166 W/kg

Maximum value of SAR (measured) = 1.10 W/kg

Date: 2012/10/24

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



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200SH WLAN 11n40 MCS0 Head Left tilt 5310MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: 11a/n ; Frequency: 5310 MHz;Duty Cycle: 1:1
Medium parameters used: $f = 5310$ MHz; $\sigma = 4.762$ mho/m; $\epsilon_r = 34.491$; $\rho = 1000$ kg/m³

Phantom section: Left Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(5.08, 5.08, 5.08); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: SAM with CRP; Type: SAM;

Measurement SW: DASY52, Version 52.8 (3);

Area Scan (81x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.922 W/kg

Zoom Scan (8x8x6)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 4.970 V/m; Power Drift = 0.12 dB

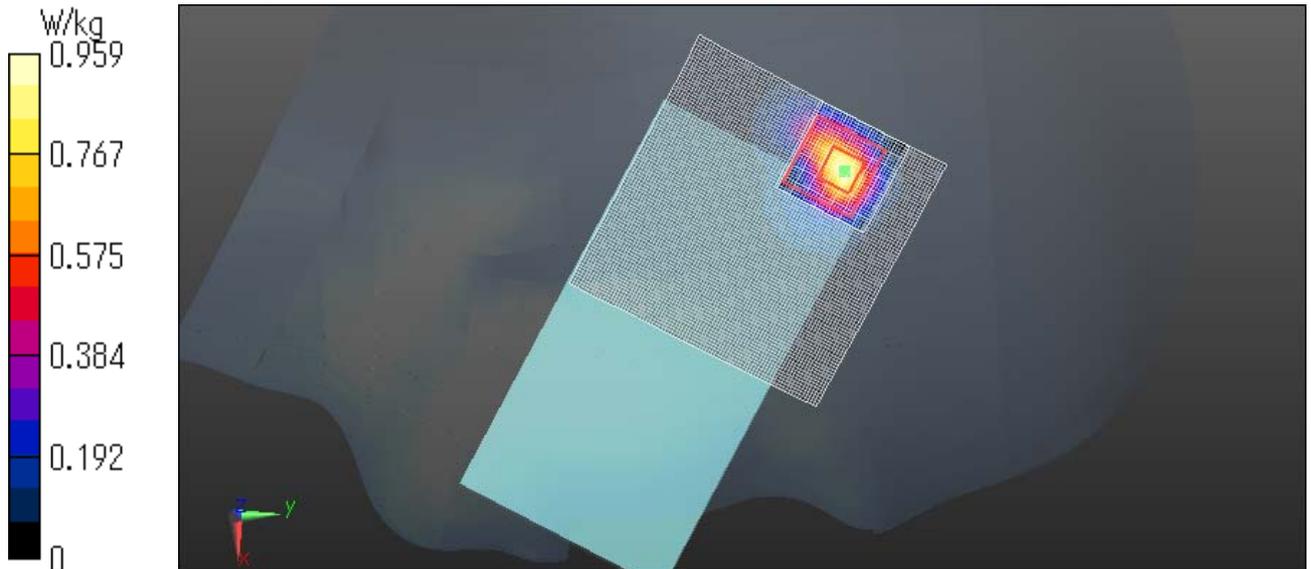
Peak SAR (extrapolated) = 1.87 W/kg

SAR(1 g) = 0.476 W/kg; SAR(10 g) = 0.142 W/kg

Maximum value of SAR (measured) = 0.959 W/kg

Date: 2012/10/24

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



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200SH WLAN 11n40 MCS0 Head Right cheek 5310MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: 11a/n ; Frequency: 5310 MHz;Duty Cycle: 1:1
Medium parameters used: $f = 5310$ MHz; $\sigma = 4.762$ mho/m; $\epsilon_r = 34.491$; $\rho = 1000$ kg/m³

Phantom section: Right Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(5.08, 5.08, 5.08); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: SAM with CRP; Type: SAM;

Measurement SW: DASY52, Version 52.8 (3);

Area Scan (81x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.41 W/kg

Zoom Scan 2 2 (8x8x6)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 4.183 V/m; Power Drift = -0.10 dB

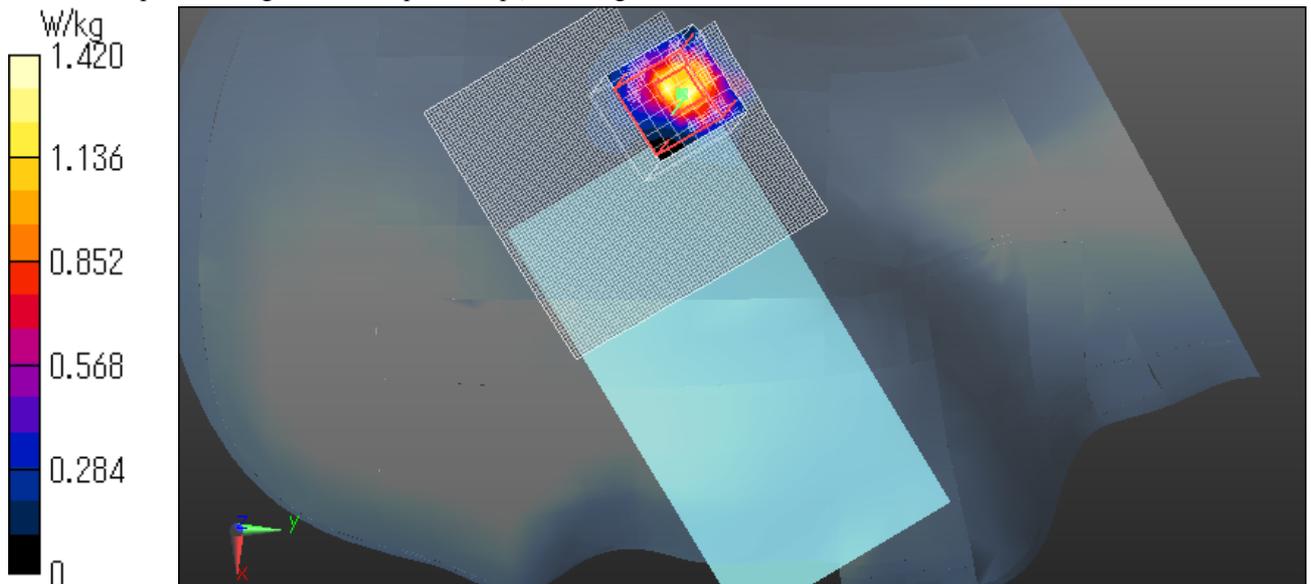
Peak SAR (extrapolated) = 3.96 W/kg

SAR(1 g) = 0.697 W/kg; SAR(10 g) = 0.224 W/kg

Maximum value of SAR (measured) = 1.42 W/kg

Date: 2012/10/24

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



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Z Scan at Maximum Head SAR position in WLAN 5260MHz-5320MHz band

200SH WLAN 11n40 MCS0 Head Right tilt 5310MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: 11a/n ; Frequency: 5310 MHz;Duty Cycle: 1:1
Medium parameters used: $f = 5310$ MHz; $\sigma = 4.762$ mho/m; $\epsilon_r = 34.491$; $\rho = 1000$ kg/m³

Phantom section: Right Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(5.08, 5.08, 5.08); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: SAM with CRP; Type: SAM;

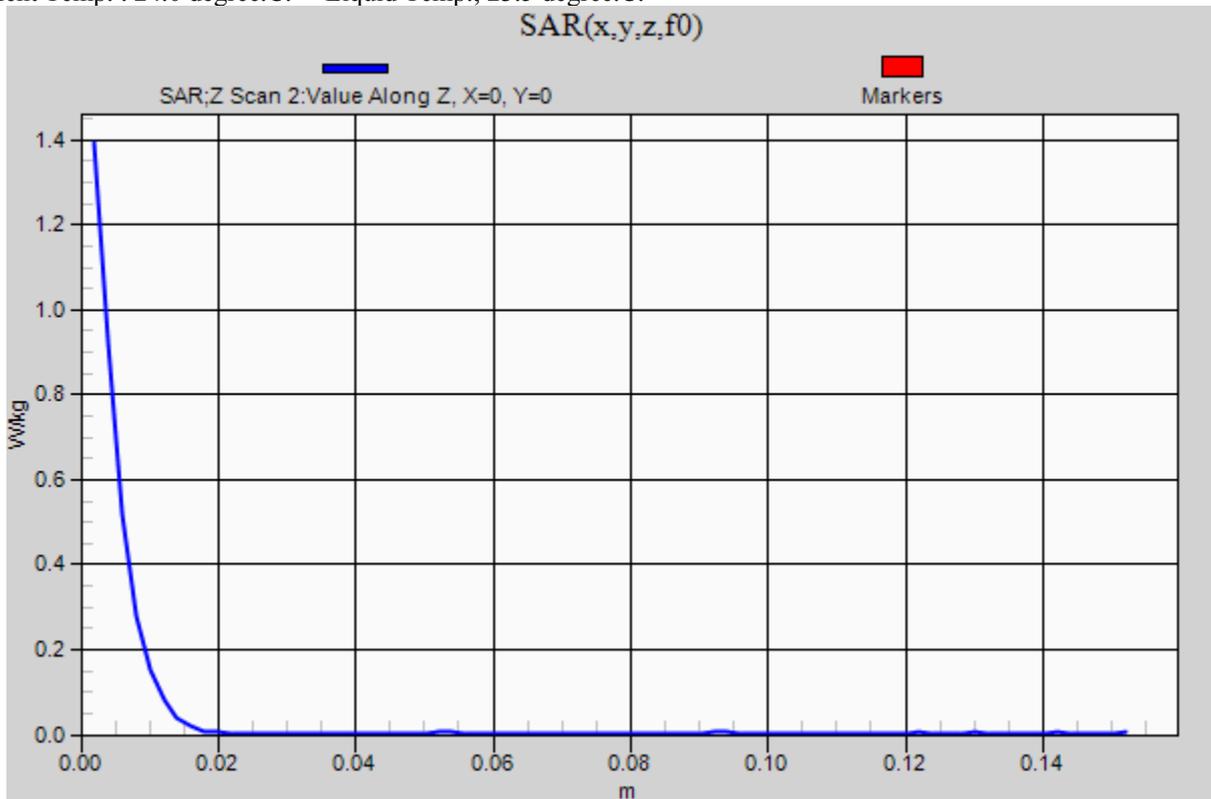
Measurement SW: DASYS2, Version 52.8 (3);

Z Scan 2 (1x1x76): Measurement grid: dx=20mm, dy=20mm, dz=2mm

Maximum value of SAR (measured) = 1.39 W/kg

Date: 2012/10/24

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



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200SH WLAN 11n40 MCS0 Head Right tilt 5310MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: 11a/n ; Frequency: 5310 MHz;Duty Cycle: 1:1
Medium parameters used: $f = 5310$ MHz; $\sigma = 4.762$ mho/m; $\epsilon_r = 34.491$; $\rho = 1000$ kg/m³

Phantom section: Right Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(5.08, 5.08, 5.08); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: SAM with CRP; Type: SAM;

Measurement SW: DASY52, Version 52.8 (3);

Area Scan (81x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.05 W/kg

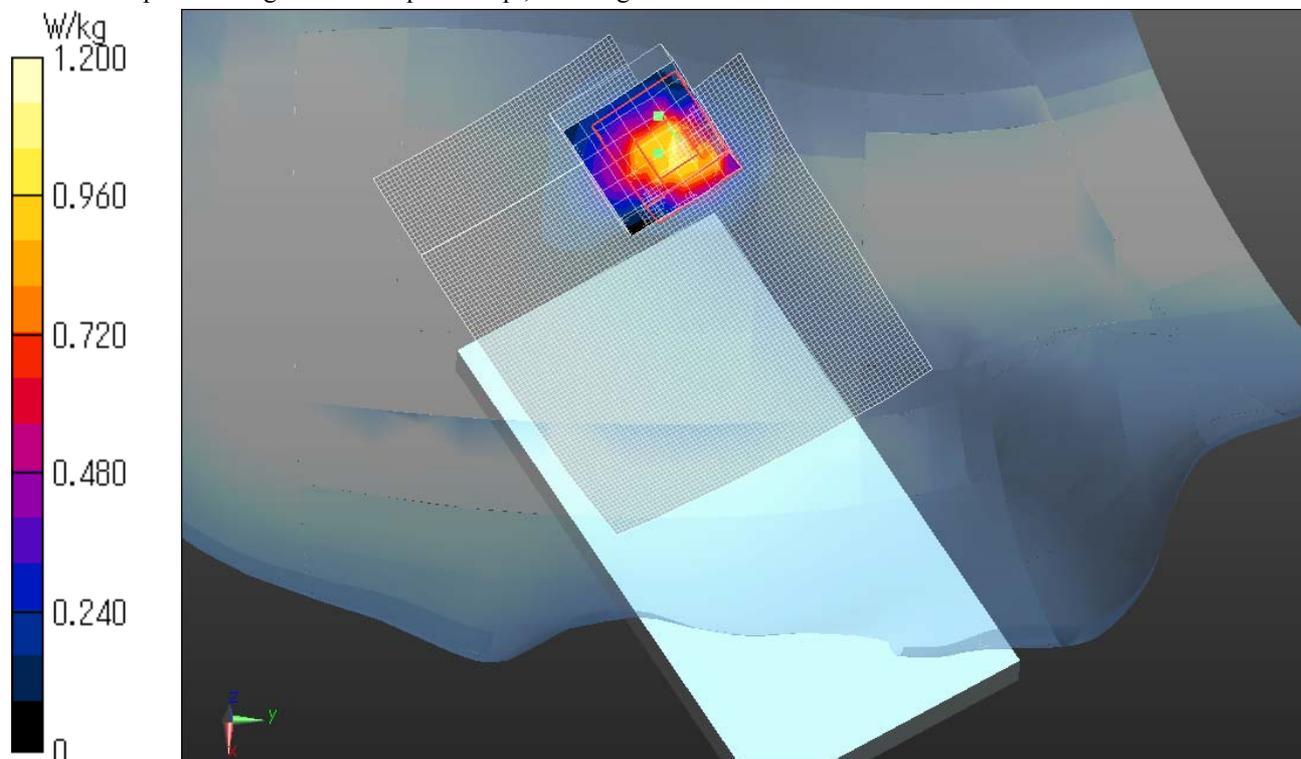
Area Scan 2 (81x21x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.783 W/kg

Zoom Scan 2 2 (8x8x6)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 3.341 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 3.26 W/kg
SAR(1 g) = 0.578 W/kg; SAR(10 g) = 0.192 W/kg

Maximum value of SAR (measured) = 1.20 W/kg

Date: 2012/10/24

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



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200SH WLAN 11a 6Mbps Head Right cheek 5300MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: 11a/n ; Frequency: 5300 MHz;Duty Cycle: 1:1
Medium parameters used: $f = 5300 \text{ MHz}$; $\sigma = 4.751 \text{ mho/m}$; $\epsilon_r = 34.516$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(5.08, 5.08, 5.08); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: SAM with CRP; Type: SAM;

Measurement SW: DASY52, Version 52.8 (3);

Area Scan (81x81x1): Interpolated grid: $dx=1.000 \text{ mm}$, $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 1.39 W/kg

Zoom Scan 2 2 (8x8x6)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=2\text{mm}$

Reference Value = 5.264 V/m; Power Drift = -0.14 dB

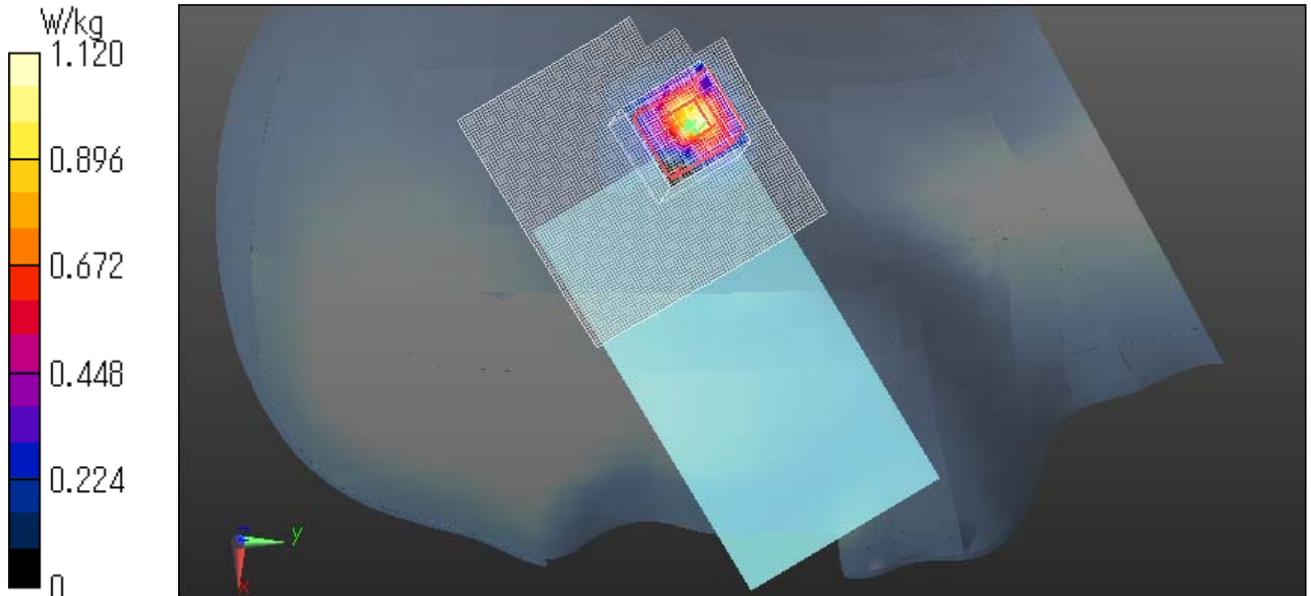
Peak SAR (extrapolated) = 2.03 W/kg

SAR(1 g) = 0.542 W/kg; SAR(10 g) = 0.169 W/kg

Maximum value of SAR (measured) = 1.12 W/kg

Date: 2012/10/24

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



vii) **WLAN 5500-5700MHz Head**

200SH WLAN 11n40 MCS0 Head Left cheek 5590MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: 11a/n; Frequency: 5590 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5590$ MHz; $\sigma = 5.056$ mho/m; $\epsilon_r = 34.216$; $\rho = 1000$ kg/m³

Phantom section: Left Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(4.38, 4.38, 4.38); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: SAM with CRP; Type: SAM;

Measurement SW: DASY52, Version 52.8 (3);

Area Scan (81x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.55 W/kg

Area Scan 2 (81x21x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.480 W/kg

Zoom Scan (8x8x6)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 2.475 V/m; Power Drift = 0.13 dB

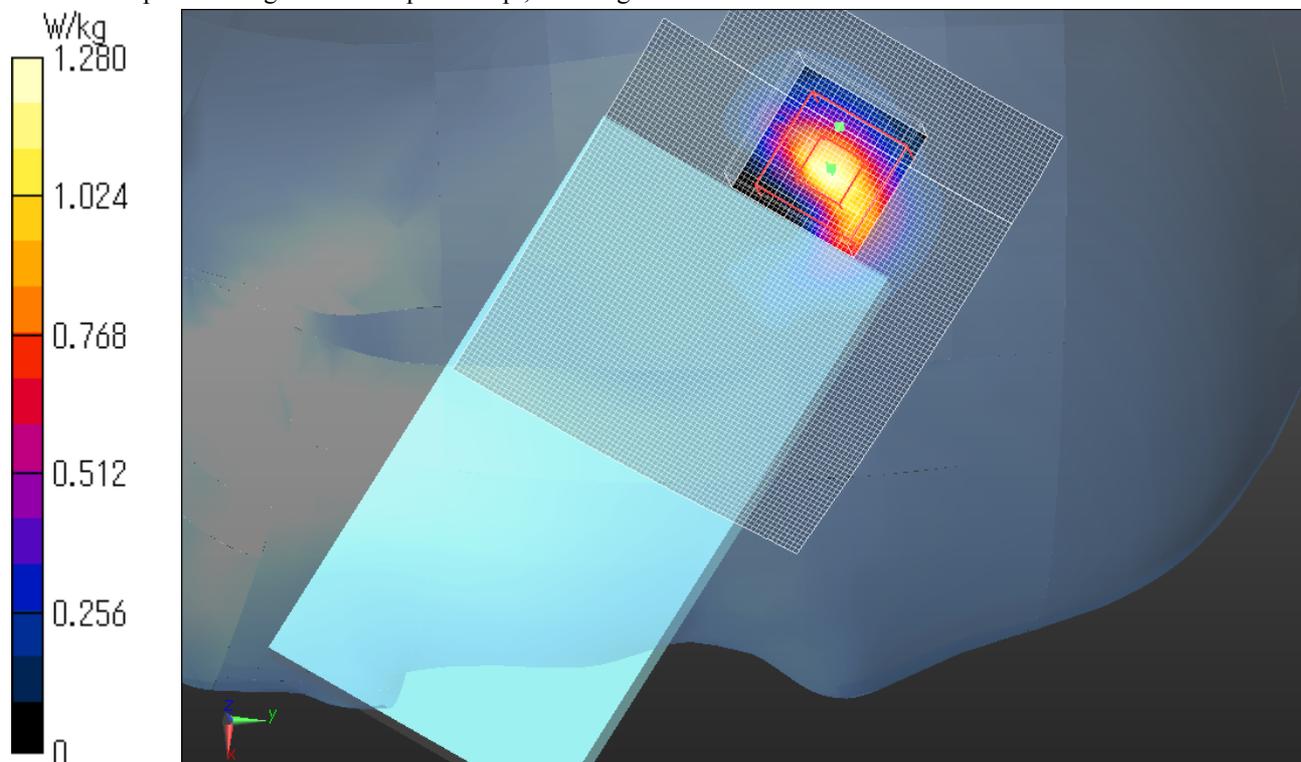
Peak SAR (extrapolated) = 2.26 W/kg

SAR(1 g) = 0.610 W/kg; SAR(10 g) = 0.184 W/kg

Maximum value of SAR (measured) = 1.28 W/kg

Date: 2012/10/24

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



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200SH WLAN 11n40 MCS0 Head Left tilt 5590MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: 11a/n; Frequency: 5590 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 5590$ MHz; $\sigma = 5.056$ mho/m; $\epsilon_r = 34.216$; $\rho = 1000$ kg/m³

Phantom section: Left Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(4.38, 4.38, 4.38); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: SAM with CRP; Type: SAM;

Measurement SW: DASY52, Version 52.8 (3);

Area Scan (81x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.12 W/kg

Area Scan 2 (81x21x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.317 W/kg

Zoom Scan (8x8x6)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 8.909 V/m; Power Drift = -0.10 dB

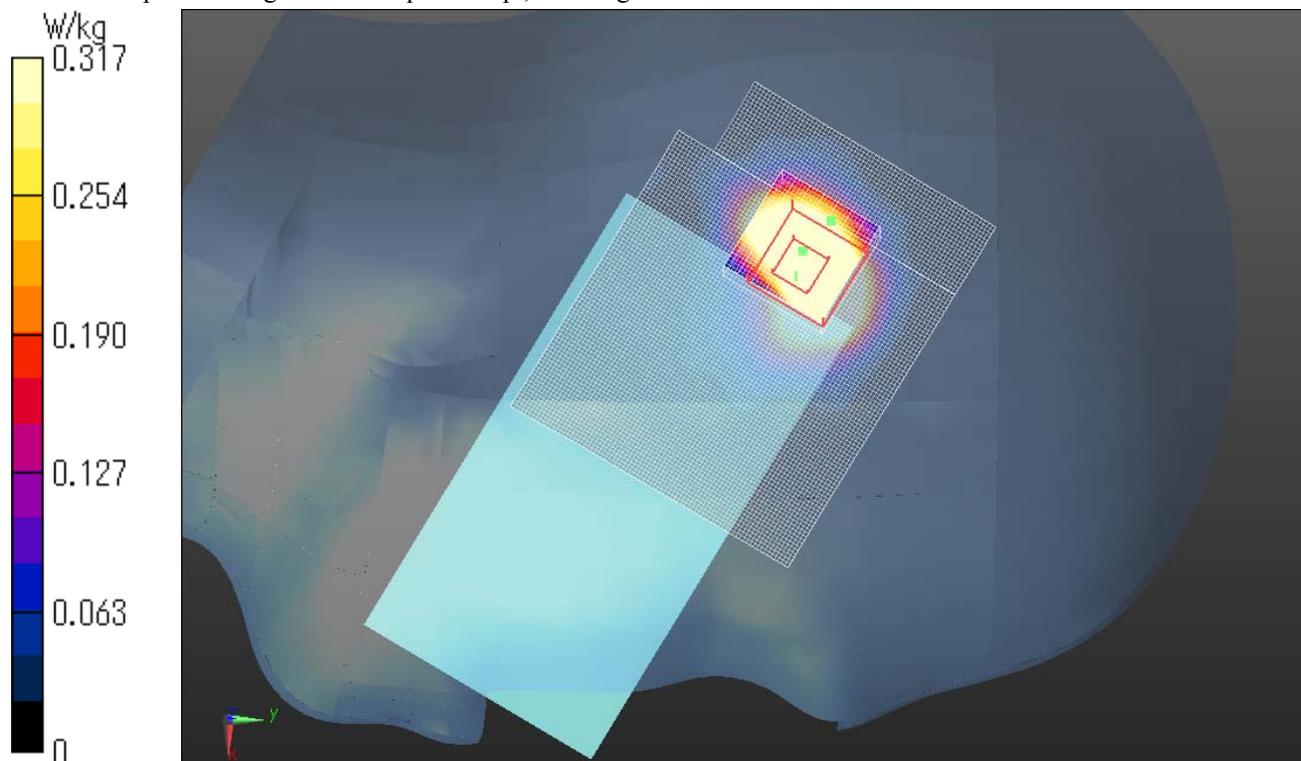
Peak SAR (extrapolated) = 2.28 W/kg

SAR(1 g) = 0.601 W/kg; SAR(10 g) = 0.184 W/kg

Maximum value of SAR (measured) = 1.19 W/kg

Date: 2012/10/24

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



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200SH WLAN 11n40 MCS0 Head Right cheek 5590MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: 11a/n; Frequency: 5590 MHz;Duty Cycle: 1:1
Medium parameters used: $f = 5590$ MHz; $\sigma = 5.056$ mho/m; $\epsilon_r = 34.216$; $\rho = 1000$ kg/m³

Phantom section: Right Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(4.38, 4.38, 4.38); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: SAM with CRP; Type: SAM;

Measurement SW: DASY52, Version 52.8 (3);

Area Scan (81x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.64 W/kg

Zoom Scan 2 2 (8x8x6)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 5.286 V/m; Power Drift = 0.08 dB

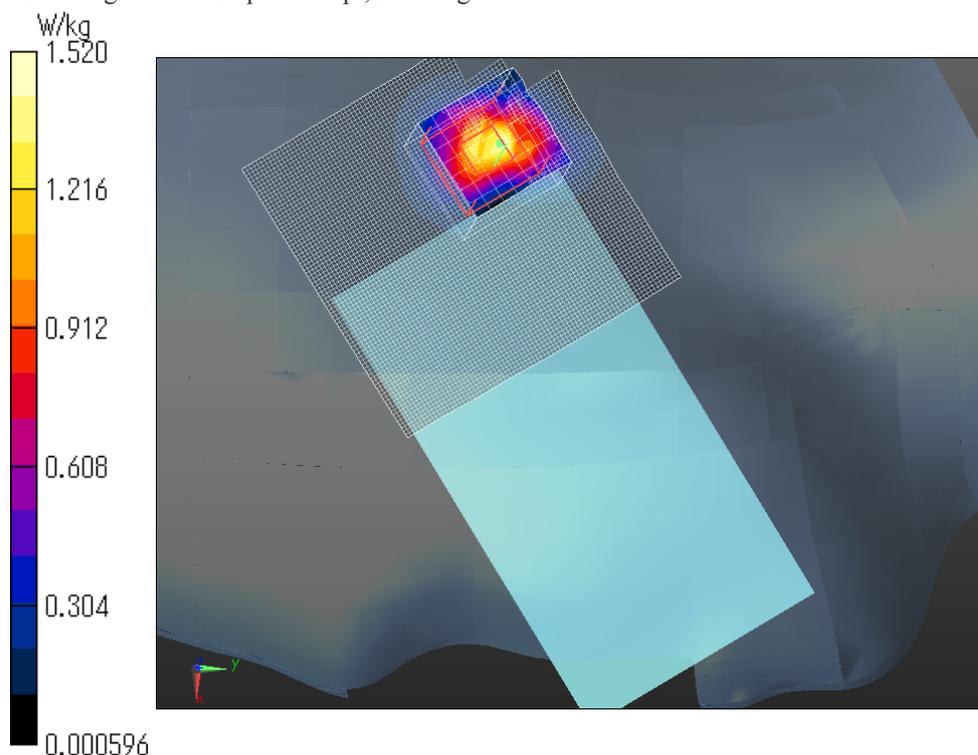
Peak SAR (extrapolated) = 2.51 W/kg

SAR(1 g) = 0.726 W/kg; SAR(10 g) = 0.242 W/kg

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

Date: 2012/10/24

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



Z Scan at Maximum Head SAR position in WLAN 5500MHz-5700MHz band

200SH WLAN 11n40 MCS0 Head Right cheek 5590MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: 11a/n; Frequency: 5590 MHz;Duty Cycle: 1:1
Medium parameters used: $f = 5590$ MHz; $\sigma = 5.056$ mho/m; $\epsilon_r = 34.216$; $\rho = 1000$ kg/m³

Phantom section: Right Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(4.38, 4.38, 4.38); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: SAM with CRP; Type: SAM;

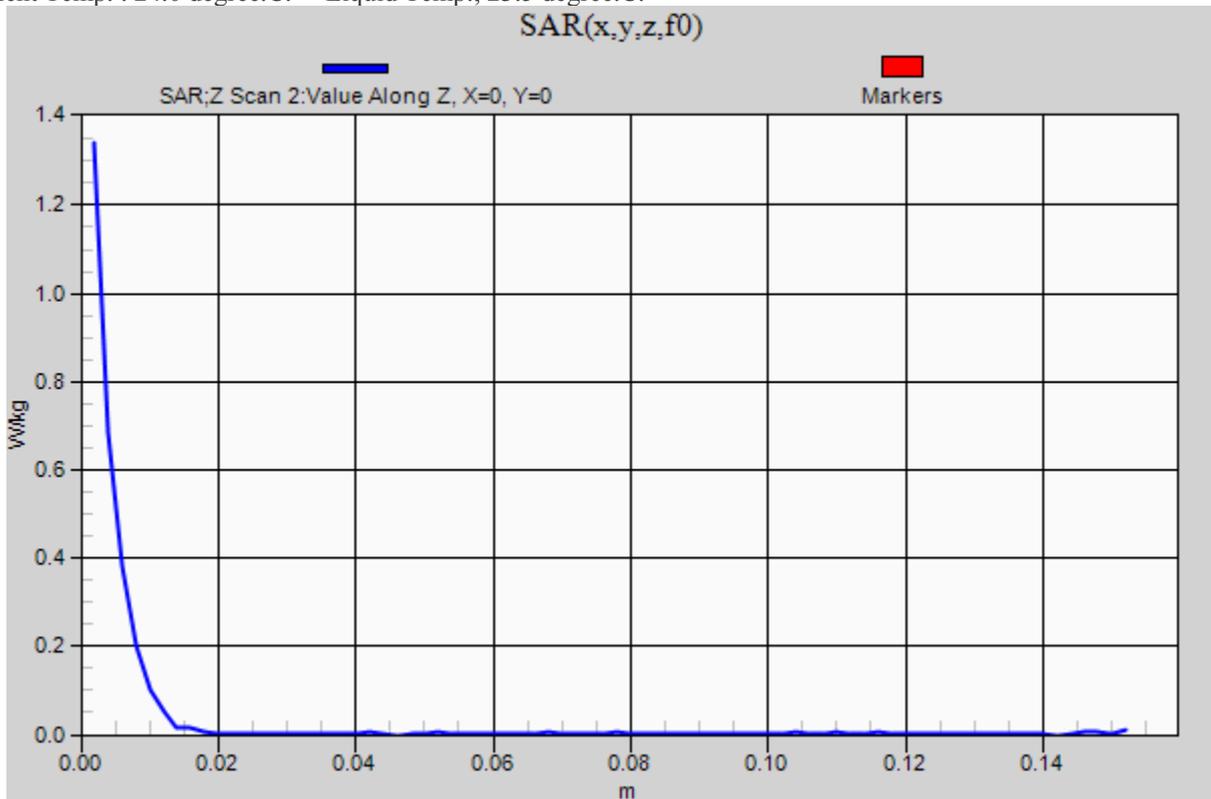
Measurement SW: DASYS2, Version 52.8 (3);

Z Scan 2 (1x1x76): Measurement grid: dx=20mm, dy=20mm, dz=2mm

Maximum value of SAR (measured) = 1.34 W/kg

Date: 2012/10/24

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



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200SH WLAN 11n40 MCS0 Head Right tilt 5590MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: 11a/n; Frequency: 5590 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 5590$ MHz; $\sigma = 5.056$ mho/m; $\epsilon_r = 34.216$; $\rho = 1000$ kg/m³

Phantom section: Right Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(4.38, 4.38, 4.38); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: SAM with CRP; Type: SAM;

Measurement SW: DASY52, Version 52.8 (3);

Area Scan (81x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.59 W/kg

Zoom Scan 2 2 (8x8x6)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 4.898 V/m; Power Drift = -0.10 dB

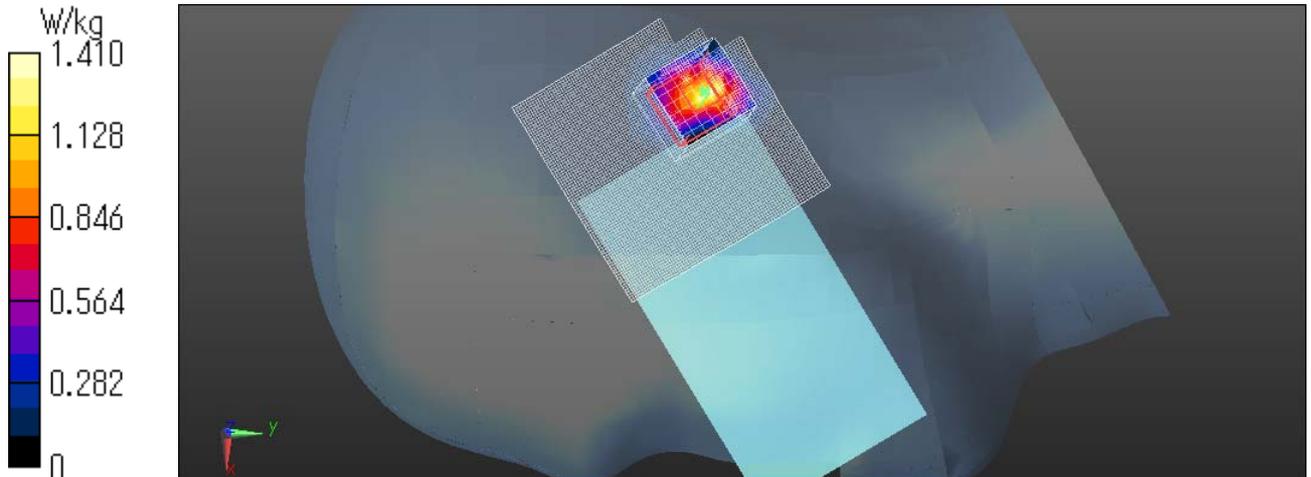
Peak SAR (extrapolated) = 2.47 W/kg

SAR(1 g) = 0.629 W/kg; SAR(10 g) = 0.213 W/kg

Maximum value of SAR (measured) = 1.41 W/kg

Date: 2012/10/24

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



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200SH WLAN 11a 6Mbps Head Right cheek 5680MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: 11a/n; Frequency: 5680 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 5680$ MHz; $\sigma = 5.16$ mho/m; $\epsilon_r = 34.064$; $\rho = 1000$ kg/m³

Phantom section: Right Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(4.38, 4.38, 4.38); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: SAM with CRP; Type: SAM;

Measurement SW: DASY52, Version 52.8 (3);

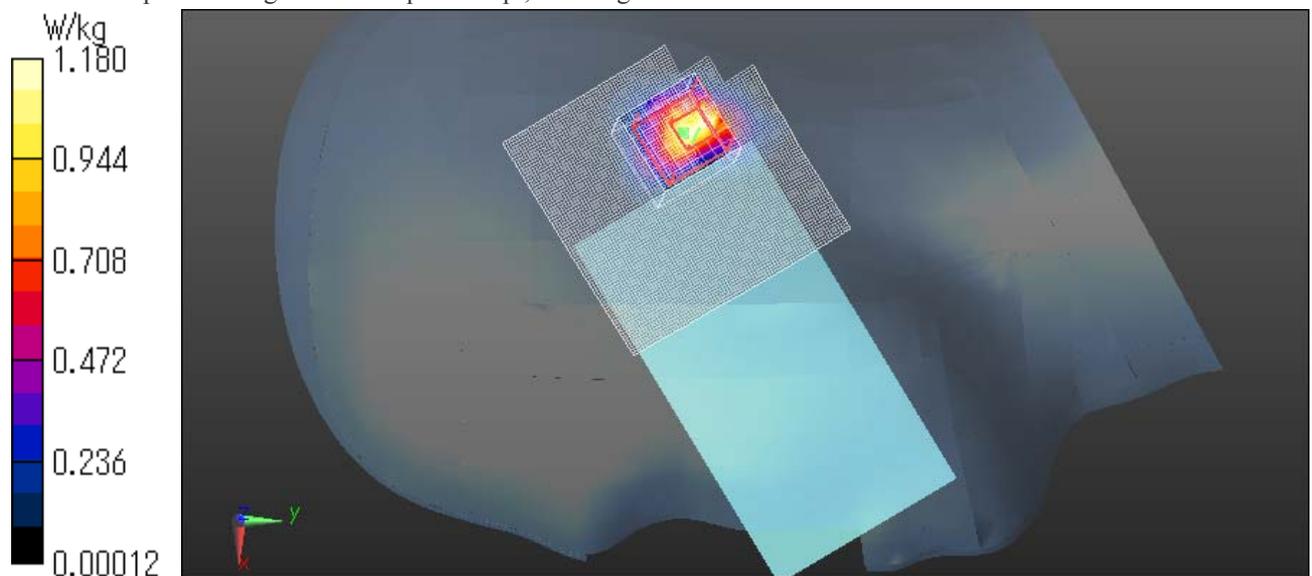
Area Scan (81x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.21 W/kg

Zoom Scan 2 2 (8x8x6)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 8.592 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 2.18 W/kg
SAR(1 g) = 0.601 W/kg; SAR(10 g) = 0.202 W/kg

Maximum value of SAR (measured) = 1.18 W/kg

Date: 2012/10/24

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



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200SH WLAN 11n40 MCS0 Head Left cheek 5510MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: 11a/n; Frequency: 5510 MHz;Duty Cycle: 1:1
Medium parameters used: $f = 5510$ MHz; $\sigma = 4.965$ mho/m; $\epsilon_r = 34.359$; $\rho = 1000$ kg/m³

Phantom section: Left Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(4.68, 4.68, 4.68); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: SAM with CRP; Type: SAM;

Measurement SW: DASY52, Version 52.8 (3);

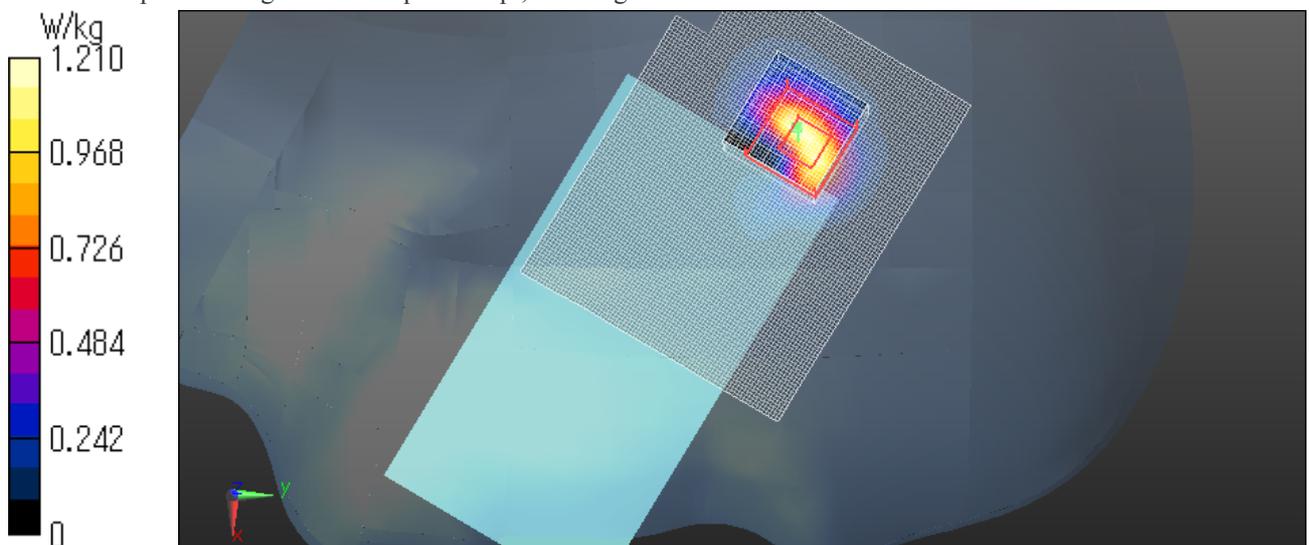
Area Scan (81x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.27 W/kg

Zoom Scan (8x8x6)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 3.376 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 2.96 W/kg
SAR(1 g) = 0.603 W/kg; SAR(10 g) = 0.190 W/kg

Maximum value of SAR (measured) = 1.21 W/kg

Date: 2012/10/24

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



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200SH WLAN 11n40 MCS0 Head Left cheek 5630MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: 11a/n; Frequency: 5630 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 5630$ MHz; $\sigma = 5.101$ mho/m; $\epsilon_r = 34.153$; $\rho = 1000$ kg/m³

Phantom section: Left Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(4.38, 4.38, 4.38); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: SAM with CRP; Type: SAM;

Measurement SW: DASY52, Version 52.8 (3);

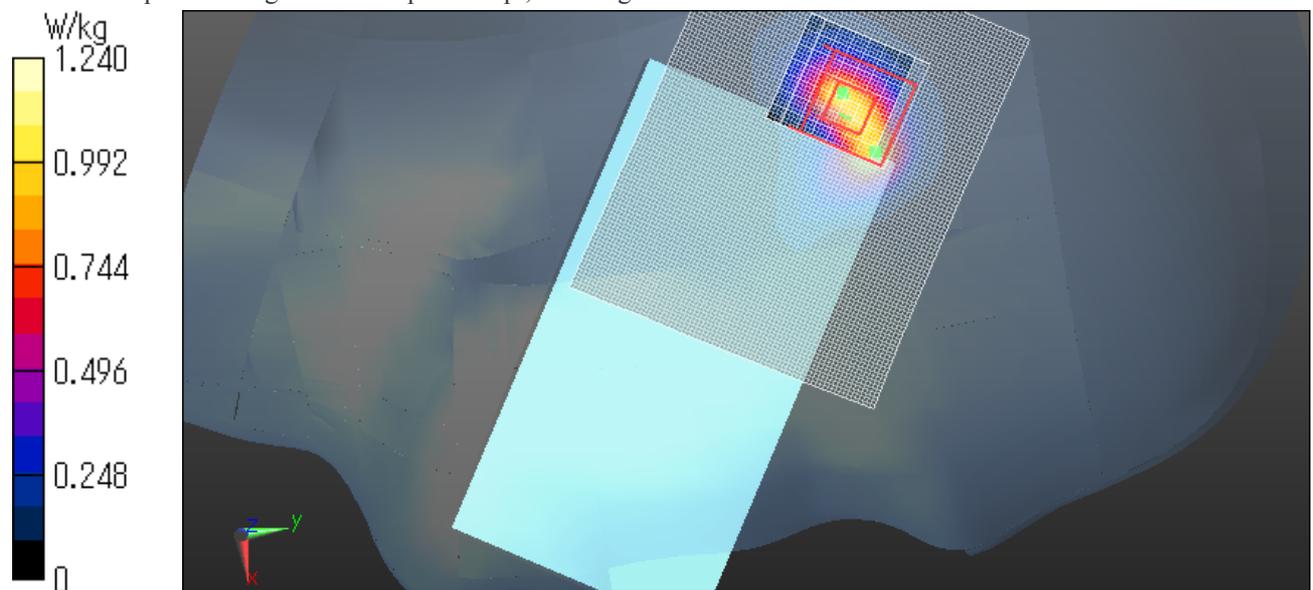
Area Scan (81x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.03 W/kg

Zoom Scan (8x8x6)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 3.689 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 2.22 W/kg
SAR(1 g) = 0.600 W/kg; SAR(10 g) = 0.186 W/kg

Maximum value of SAR (measured) = 1.24 W/kg

Date: 2012/10/24

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



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200SH WLAN 11n40 MCS0 Head Left cheek 5670MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: 11a/n; Frequency: 5670 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 5670$ MHz; $\sigma = 5.148$ mho/m; $\epsilon_r = 34.077$; $\rho = 1000$ kg/m³

Phantom section: Left Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(4.38, 4.38, 4.38); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: SAM with CRP; Type: SAM;

Measurement SW: DASY52, Version 52.8 (3);

Area Scan (81x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.26 W/kg

Zoom Scan (8x8x6)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 4.524 V/m; Power Drift = 0.17 dB

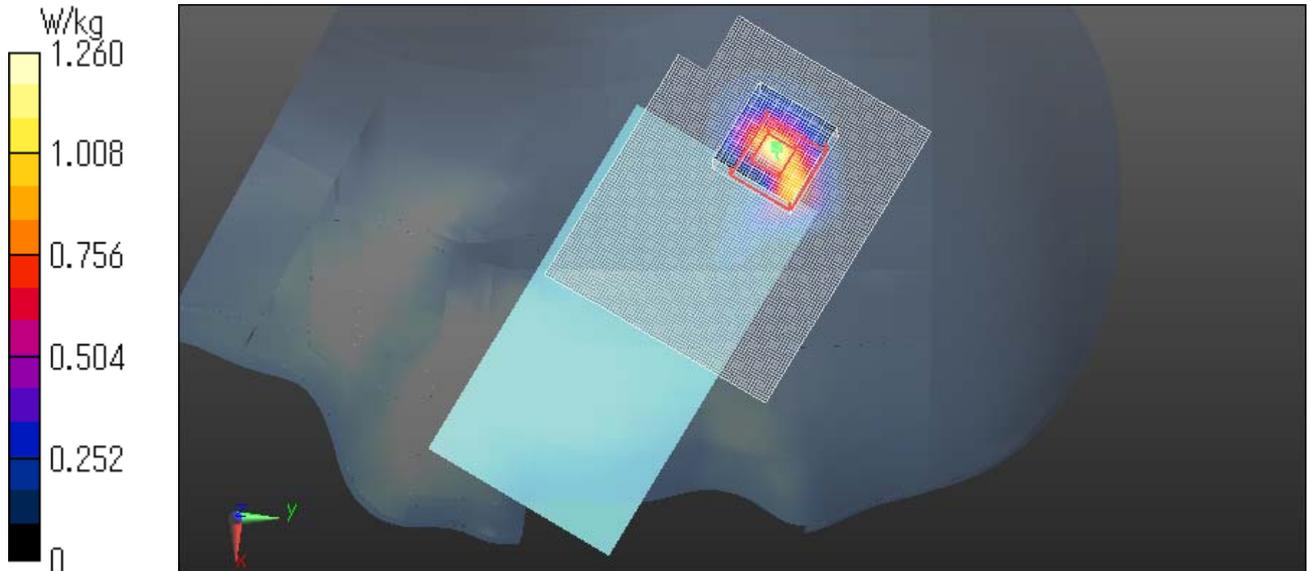
Peak SAR (extrapolated) = 2.55 W/kg

SAR(1 g) = 0.638 W/kg; SAR(10 g) = 0.203 W/kg

Maximum value of SAR (measured) = 1.26 W/kg

Date: 2012/10/24

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



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200SH WLAN 11n40 MCS0 Head Left tilt 5510MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: 11a/n; Frequency: 5510 MHz;Duty Cycle: 1:1
Medium parameters used: $f = 5510$ MHz; $\sigma = 4.965$ mho/m; $\epsilon_r = 34.359$; $\rho = 1000$ kg/m³

Phantom section: Left Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(4.68, 4.68, 4.68); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: SAM with CRP; Type: SAM;

Measurement SW: DASY52, Version 52.8 (3);

Area Scan (81x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.54 W/kg

Zoom Scan (8x8x6)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 1.520 V/m; Power Drift = 0.17 dB

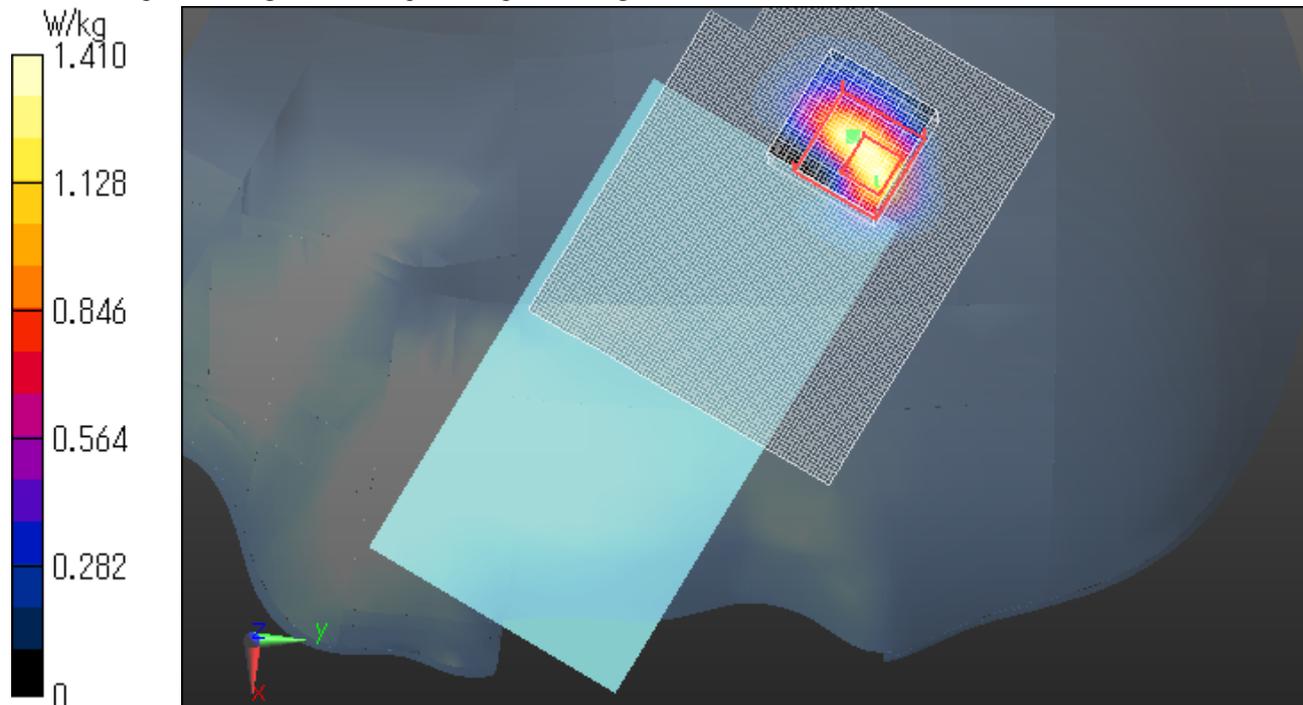
Peak SAR (extrapolated) = 2.55 W/kg

SAR(1 g) = 0.694 W/kg; SAR(10 g) = 0.217 W/kg

Maximum value of SAR (measured) = 1.41 W/kg

Date: 2012/10/24

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



200SH WLAN 11n40 MCS0 Head Left tilt 5630MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: 11a/n; Frequency: 5630 MHz;Duty Cycle: 1:1
Medium parameters used: $f = 5630$ MHz; $\sigma = 5.101$ mho/m; $\epsilon_r = 34.153$; $\rho = 1000$ kg/m³

Phantom section: Left Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(4.38, 4.38, 4.38); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: SAM with CRP; Type: SAM;

Measurement SW: DASY52, Version 52.8 (3);

Area Scan (81x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.16 W/kg

Zoom Scan (8x8x6)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 2.241 V/m; Power Drift = 0.19 dB

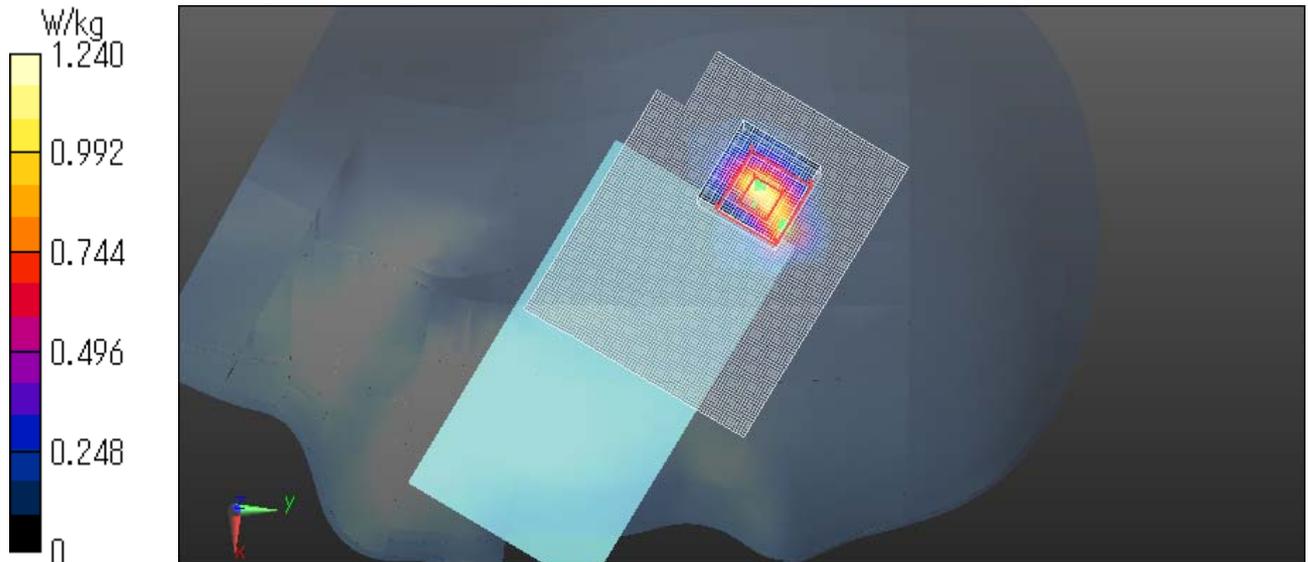
Peak SAR (extrapolated) = 2.34 W/kg

SAR(1 g) = 0.623 W/kg; SAR(10 g) = 0.190 W/kg

Maximum value of SAR (measured) = 1.24 W/kg

Date: 2012/10/24

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



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200SH WLAN 11n40 MCS0 Head Left tilt 5670MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: 11a/n; Frequency: 5670 MHz;Duty Cycle: 1:1
Medium parameters used: $f = 5670$ MHz; $\sigma = 5.148$ mho/m; $\epsilon_r = 34.077$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Measurement Standard: DASYS5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(4.38, 4.38, 4.38); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: SAM with CRP; Type: SAM;

Measurement SW: DASYS2, Version 52.8 (3);

Area Scan (81x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.15 W/kg

Zoom Scan (8x8x6)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 6.798 V/m; Power Drift = 0.16 dB

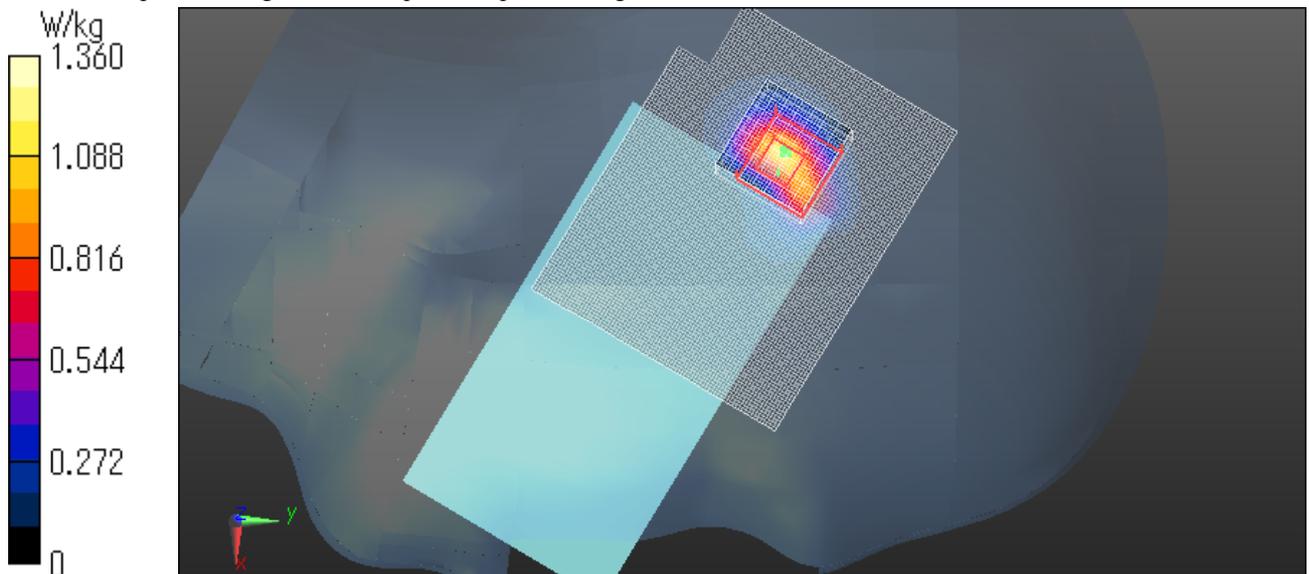
Peak SAR (extrapolated) = 2.69 W/kg

SAR(1 g) = 0.695 W/kg; SAR(10 g) = 0.212 W/kg

Maximum value of SAR (measured) = 1.36 W/kg

Date: 2012/10/24

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



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200SH WLAN 11n40 MCS0 Head Right cheek 5510MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: 11a/n; Frequency: 5510 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 5510$ MHz; $\sigma = 4.965$ mho/m; $\epsilon_r = 34.359$; $\rho = 1000$ kg/m³

Phantom section: Right Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(4.68, 4.68, 4.68); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: SAM with CRP; Type: SAM;

Measurement SW: DASY52, Version 52.8 (3);

Area Scan (81x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.55 W/kg

Zoom Scan 2 2 (8x8x6)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 5.320 V/m; Power Drift = -0.17 dB

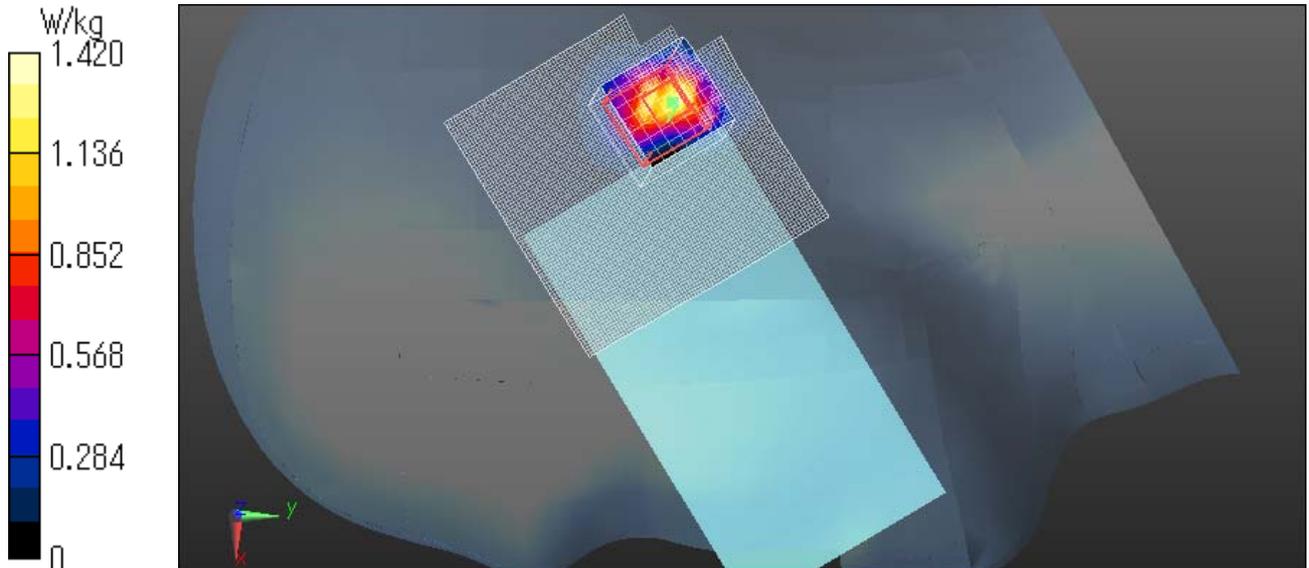
Peak SAR (extrapolated) = 2.57 W/kg

SAR(1 g) = 0.678 W/kg; SAR(10 g) = 0.225 W/kg

Maximum value of SAR (measured) = 1.42 W/kg

Date: 2012/10/24

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



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200SH WLAN 11n40 MCS0 Head Right cheek 5630MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: 11a/n; Frequency: 5630 MHz;Duty Cycle: 1:1
Medium parameters used: $f = 5630$ MHz; $\sigma = 5.101$ mho/m; $\epsilon_r = 34.153$; $\rho = 1000$ kg/m³

Phantom section: Right Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(4.38, 4.38, 4.38); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: SAM with CRP; Type: SAM;

Measurement SW: DASY52, Version 52.8 (3);

Area Scan (81x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.51 W/kg

Zoom Scan 2 2 (8x8x6)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 5.286 V/m; Power Drift = -0.10 dB

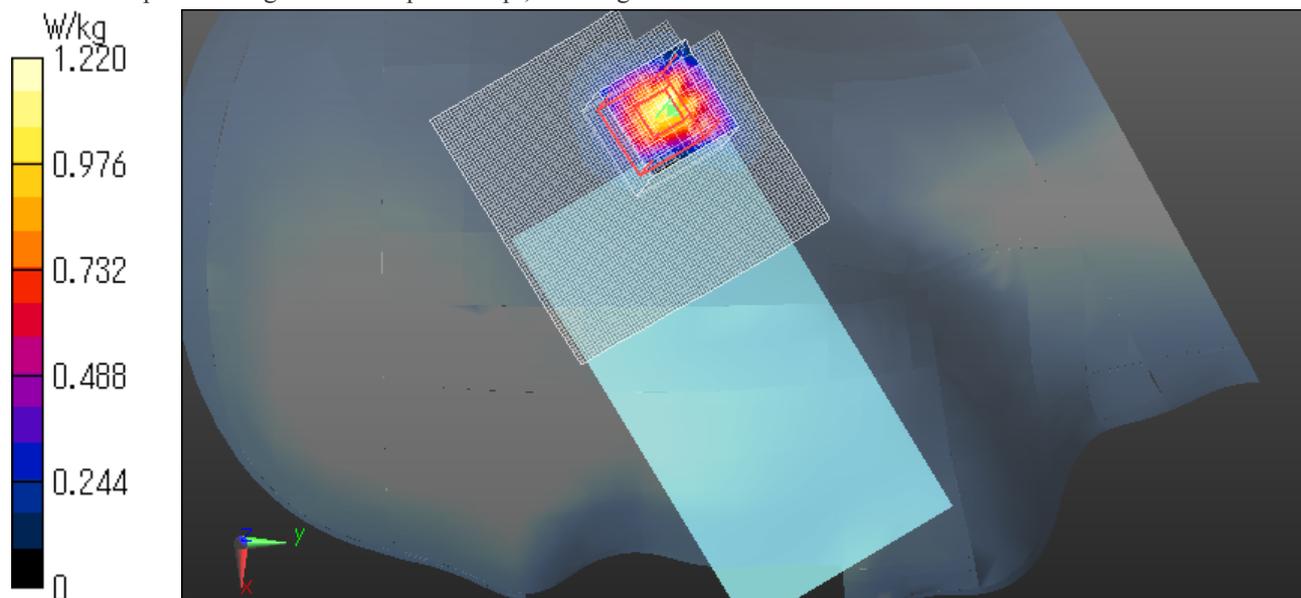
Peak SAR (extrapolated) = 2.29 W/kg

SAR(1 g) = 0.576 W/kg; SAR(10 g) = 0.198 W/kg

Maximum value of SAR (measured) = 1.22 W/kg

Date: 2012/10/24

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



200SH WLAN 11n40 MCS0 Head Right cheek 5670MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: 11a/n; Frequency: 5670 MHz;Duty Cycle: 1:1
Medium parameters used: $f = 5670$ MHz; $\sigma = 5.148$ mho/m; $\epsilon_r = 34.077$; $\rho = 1000$ kg/m³

Phantom section: Right Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(4.38, 4.38, 4.38); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: SAM with CRP; Type: SAM;

Measurement SW: DASY52, Version 52.8 (3);

Area Scan (81x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

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

Zoom Scan 2 2 (8x8x6)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 4.642 V/m; Power Drift = -0.12 dB

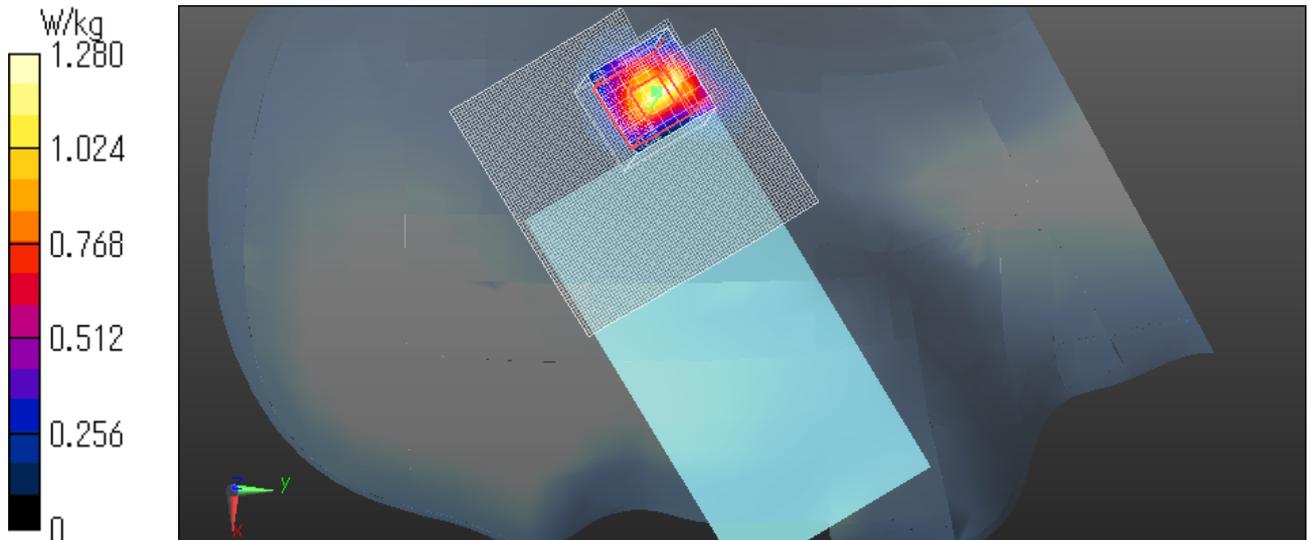
Peak SAR (extrapolated) = 2.35 W/kg

SAR(1 g) = 0.620 W/kg; SAR(10 g) = 0.213 W/kg

Maximum value of SAR (measured) = 1.28 W/kg

Date: 2012/10/24

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



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200SH WLAN 11n40 MCS0 Head Right tilt 5510MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: 11a/n; Frequency: 5510 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 5510$ MHz; $\sigma = 4.965$ mho/m; $\epsilon_r = 34.359$; $\rho = 1000$ kg/m³

Phantom section: Right Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(4.68, 4.68, 4.68); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: SAM with CRP; Type: SAM;

Measurement SW: DASY52, Version 52.8 (3);

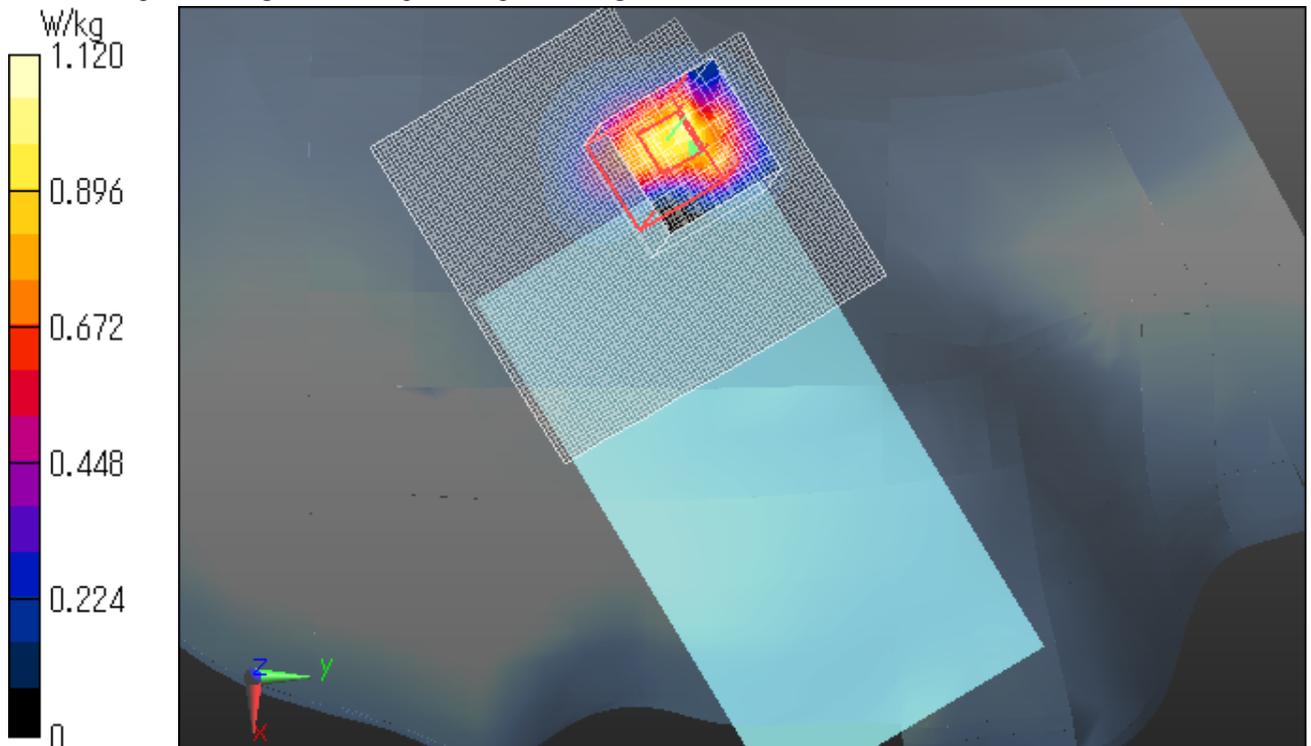
Area Scan (81x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.61 W/kg

Zoom Scan 2 2 (8x8x6)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 5.189 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 2.22 W/kg
SAR(1 g) = 0.555 W/kg; SAR(10 g) = 0.195 W/kg

Maximum value of SAR (measured) = 1.12 W/kg

Date: 2012/10/24

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



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200SH WLAN 11n40 MCS0 Head Right tilt 5630MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: 11a/n; Frequency: 5630 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 5630$ MHz; $\sigma = 5.101$ mho/m; $\epsilon_r = 34.153$; $\rho = 1000$ kg/m³

Phantom section: Right Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(4.38, 4.38, 4.38); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: SAM with CRP; Type: SAM;

Measurement SW: DASY52, Version 52.8 (3);

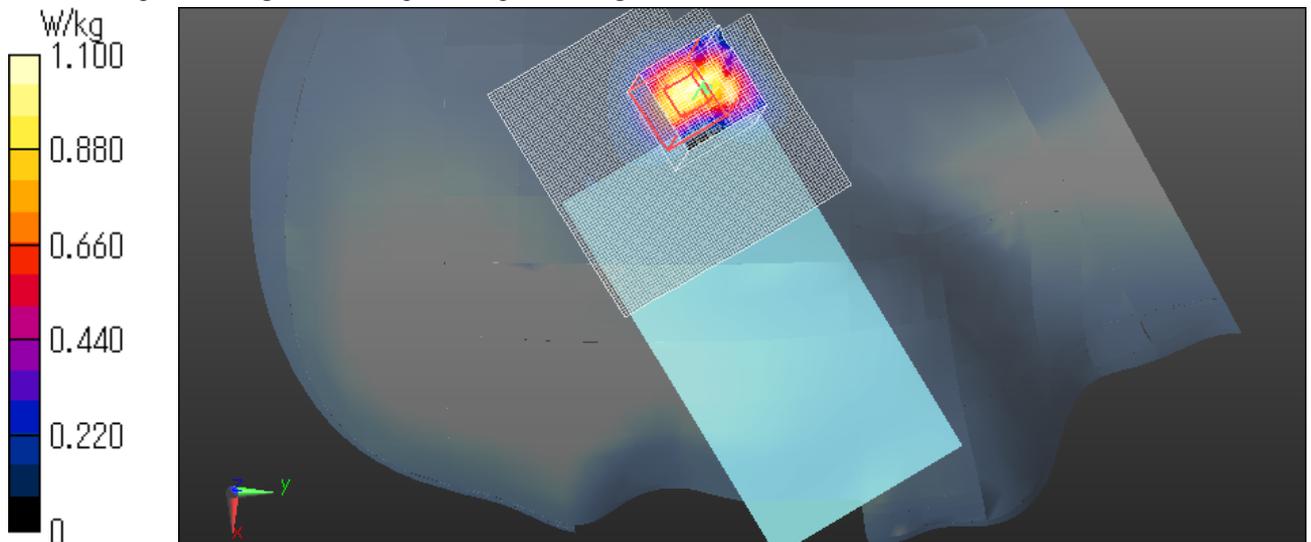
Area Scan (81x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.49 W/kg

Zoom Scan 2 2 (8x8x6)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 6.056 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 2.04 W/kg
SAR(1 g) = 0.568 W/kg; SAR(10 g) = 0.204 W/kg

Maximum value of SAR (measured) = 1.10 W/kg

Date: 2012/10/24

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



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200SH WLAN 11n40 MCS0 Head Right tilt 5670MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: 11a/n; Frequency: 5670 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5670$ MHz; $\sigma = 5.148$ mho/m; $\epsilon_r = 34.077$; $\rho = 1000$ kg/m³

Phantom section: Right Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(4.38, 4.38, 4.38); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: SAM with CRP; Type: SAM;

Measurement SW: DASY52, Version 52.8 (3);

Area Scan (81x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.39 W/kg

Zoom Scan 2 2 (8x8x6)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 8.708 V/m; Power Drift = -0.15 dB

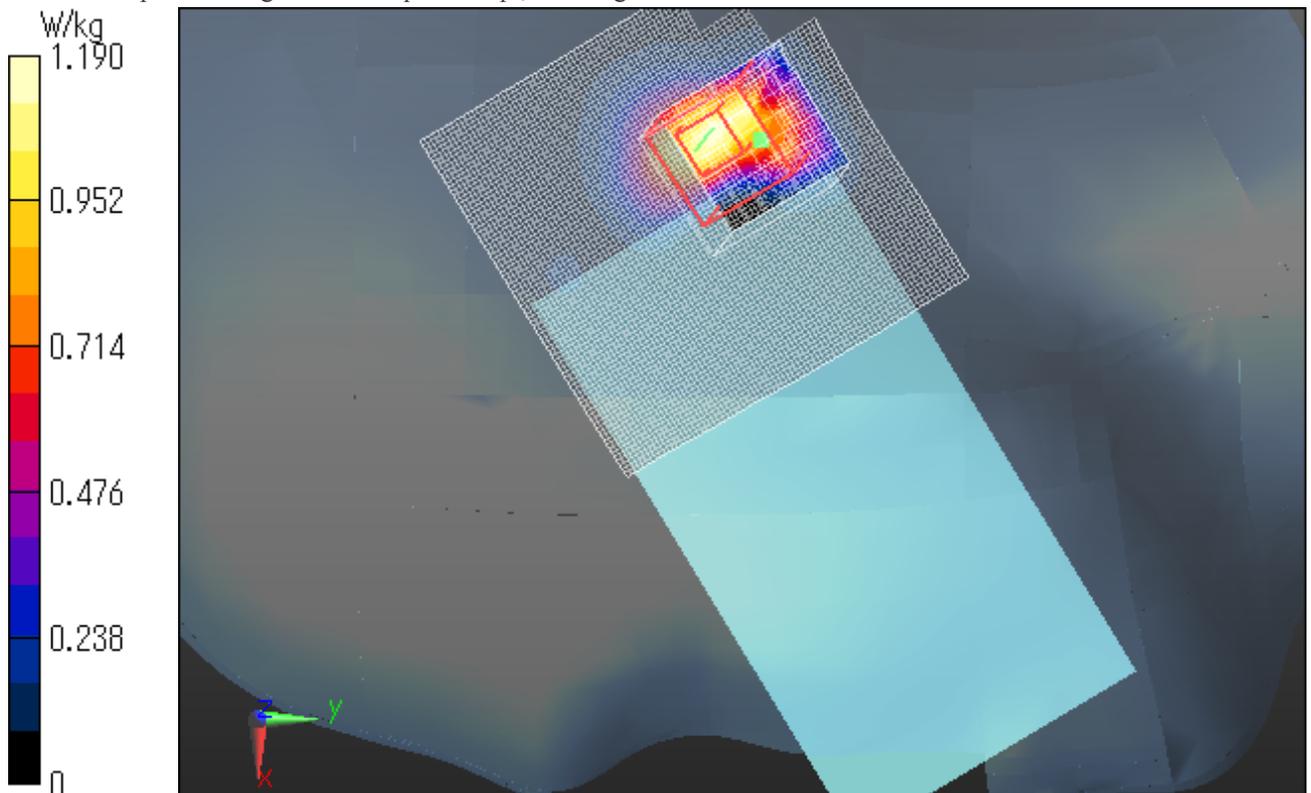
Peak SAR (extrapolated) = 2.28 W/kg

SAR(1 g) = 0.612 W/kg; SAR(10 g) = 0.216 W/kg

Maximum value of SAR (measured) = 1.19 W/kg

Date: 2012/10/24

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



viii) **WLAN 5180-5320MHz Body**

200SH WLAN 11n40 MCS0 Body Front 5310MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: 11a/n ; Frequency: 5310 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 5310$ MHz; $\sigma = 5.613$ mho/m; $\epsilon_r = 48.786$; $\rho = 1000$ kg/m³
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3825; ConvF(4.22, 4.22, 4.22); Calibrated: 2011/12/16;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
Measurement SW: DASY52, Version 52.8 (3);

Area Scan 2 (101x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.139 W/kg

Zoom Scan 2 2 (8x8x6)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 1.032 V/m; Power Drift = -0.17 dB

Peak SAR (extrapolated) = 0.229 W/kg

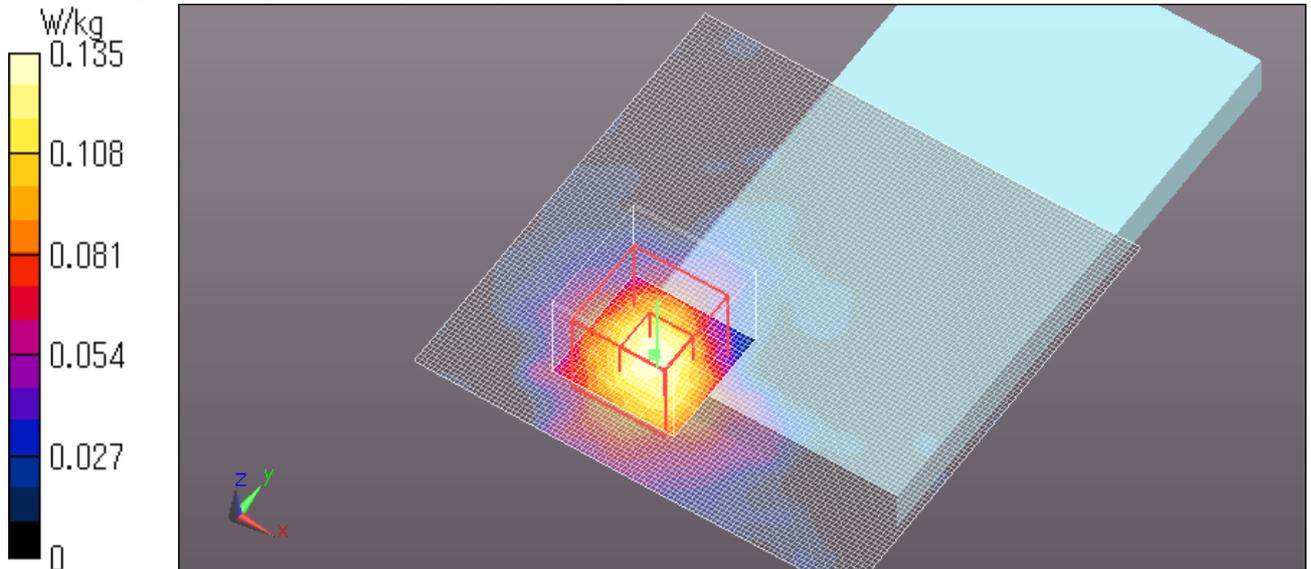
SAR(1 g) = 0.066 W/kg; SAR(10 g) = 0.024 W/kg

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.135 W/kg

Date: 2012/10/23

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



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Z Scan at Maximum Body SAR position in WLAN 5180MHz-5320MHz band

200SH WLAN 11n40 MCS0 Body Front 5310MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: 11a/n ; Frequency: 5310 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 5310$ MHz; $\sigma = 5.613$ mho/m; $\epsilon_r = 48.786$; $\rho = 1000$ kg/m³
Phantom section: Flat Section
Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3825; ConvF(4.22, 4.22, 4.22); Calibrated: 2011/12/16;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
Measurement SW: DASYS2, Version 52.8 (3);

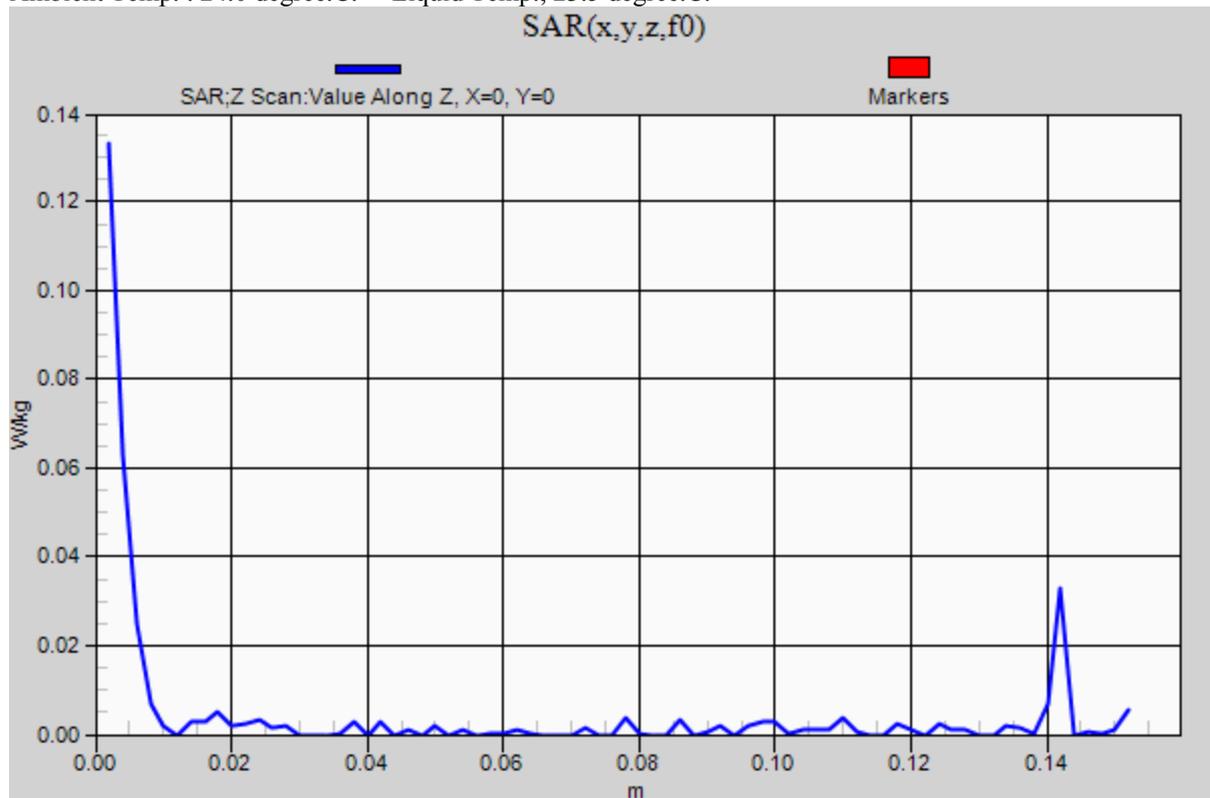
Z Scan (1x1x76): Measurement grid: dx=20mm, dy=20mm, dz=2mm

Info: [Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.133 W/kg

Date: 2012/10/23

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



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200SH WLAN 11n40 MCS0 Body Rear 5310MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: 11a/n ; Frequency: 5310 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 5310$ MHz; $\sigma = 5.613$ mho/m; $\epsilon_r = 48.786$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(4.22, 4.22, 4.22); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx

Measurement SW: DASY52, Version 52.8 (3);

Area Scan 2 (101x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0890 W/kg

Zoom Scan 2 2 (8x8x6)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 2.011 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 0.166 W/kg

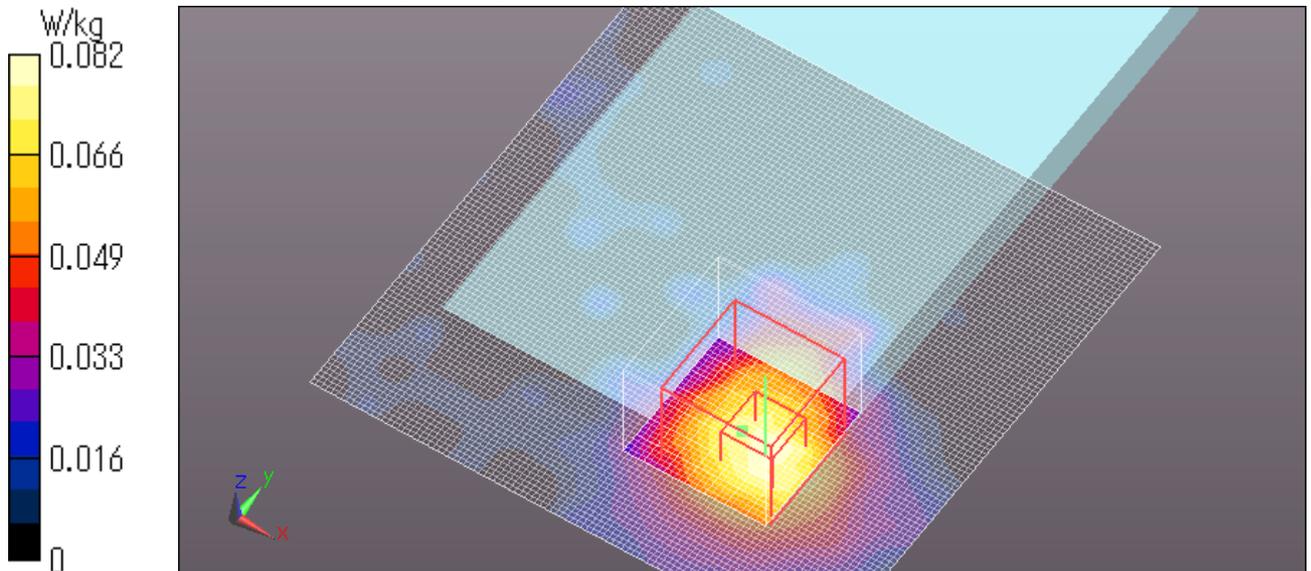
SAR(1 g) = 0.043 W/kg; SAR(10 g) = 0.017 W/kg

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0823 W/kg

Date: 2012/10/23

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



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200SH WLAN 11a 6Mbps Body Front 5200MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: 11a/n ; Frequency: 5200 MHz;Duty Cycle: 1:1
Medium parameters used: $f = 5200$ MHz; $\sigma = 5.457$ mho/m; $\epsilon_r = 49.067$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(4.45, 4.45, 4.45); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx

Measurement SW: DASY52, Version 52.8 (3);

Area Scan 2 (101x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.105 W/kg

Zoom Scan 2 2 (8x8x6)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 4.830 V/m; Power Drift = -0.11 dB

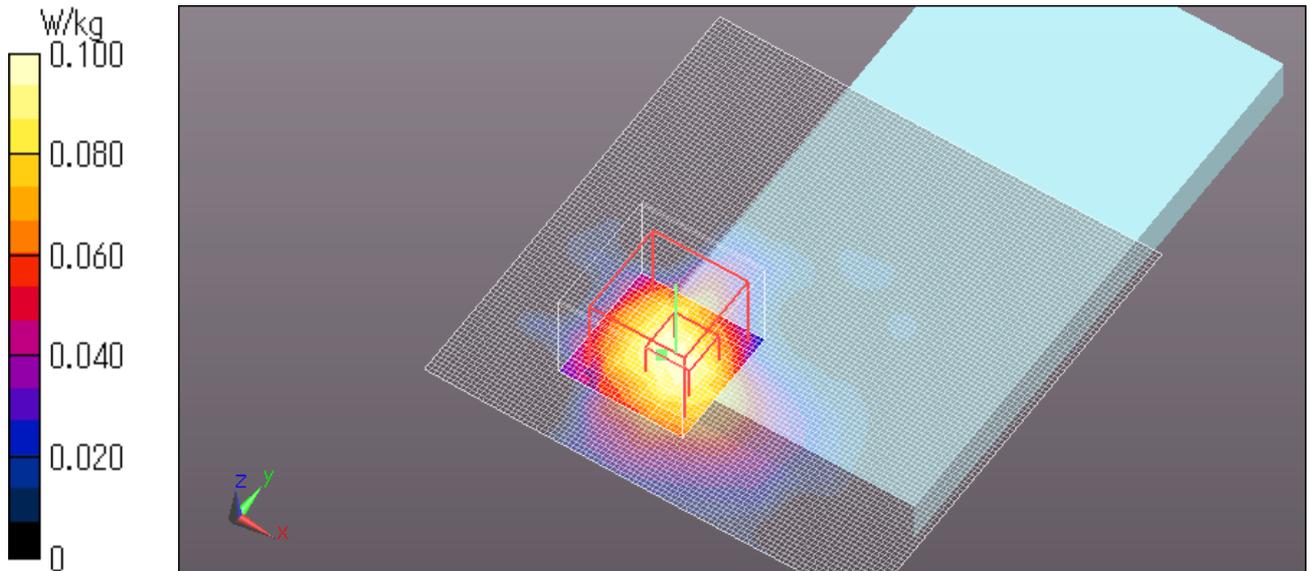
Peak SAR (extrapolated) = 0.301 W/kg

SAR(1 g) = 0.044 W/kg; SAR(10 g) = 0.018 W/kg

Maximum value of SAR (measured) = 0.0995 W/kg

Date: 2012/10/23

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



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ix) **WLAN 5500-5700MHz Body**

200SH WLAN 11n40 MCS0 Body Front 5590MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: 11a/n; Frequency: 5590 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 5590$ MHz; $\sigma = 6.007$ mho/m; $\epsilon_r = 48.192$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(3.59, 3.59, 3.59); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx

Measurement SW: DASYS2, Version 52.8 (3);

Area Scan 2 (101x101x1): Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.195 W/kg

Zoom Scan 2 2 (8x8x6)/Cube 0: Measurement grid: $dx=4$ mm, $dy=4$ mm, $dz=2$ mm

Reference Value = 0.974 V/m; Power Drift = -0.19 dB

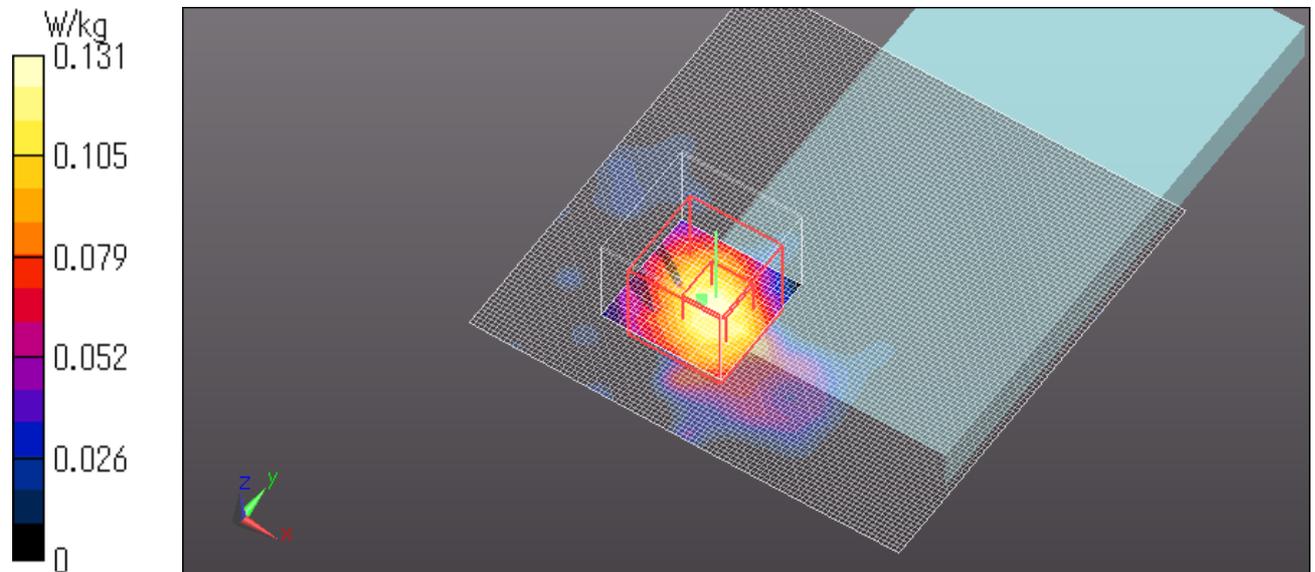
Peak SAR (extrapolated) = 0.437 W/kg

SAR(1 g) = 0.055 W/kg; SAR(10 g) = 0.022 W/kg

Maximum value of SAR (measured) = 0.131 W/kg

Date: 2012/10/23

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



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Z Scan at Maximum Body SAR position in WLAN 5500MHz-5700MHz band

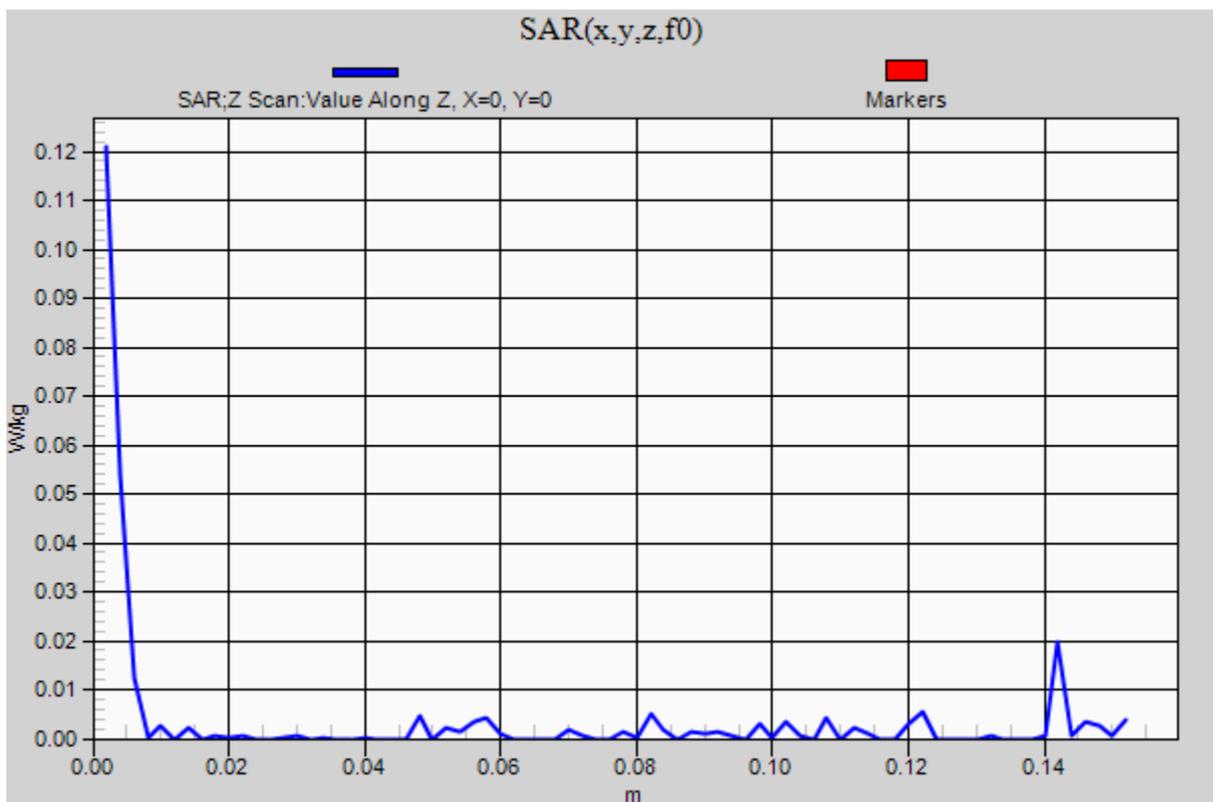
200SH WLAN 11n40 MCS0 Body Front 5590MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: 11a/n; Frequency: 5590 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 5590$ MHz; $\sigma = 6.007$ mho/m; $\epsilon_r = 48.192$; $\rho = 1000$ kg/m³
Phantom section: Flat Section
Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3825; ConvF(3.59, 3.59, 3.59); Calibrated: 2011/12/16;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
Measurement SW: DASYS2, Version 52.8 (3);

Z Scan (1x1x76): Measurement grid: dx=20mm, dy=20mm, dz=2mm
Maximum value of SAR (measured) = 0.121 W/kg

Date: 2012/10/23

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



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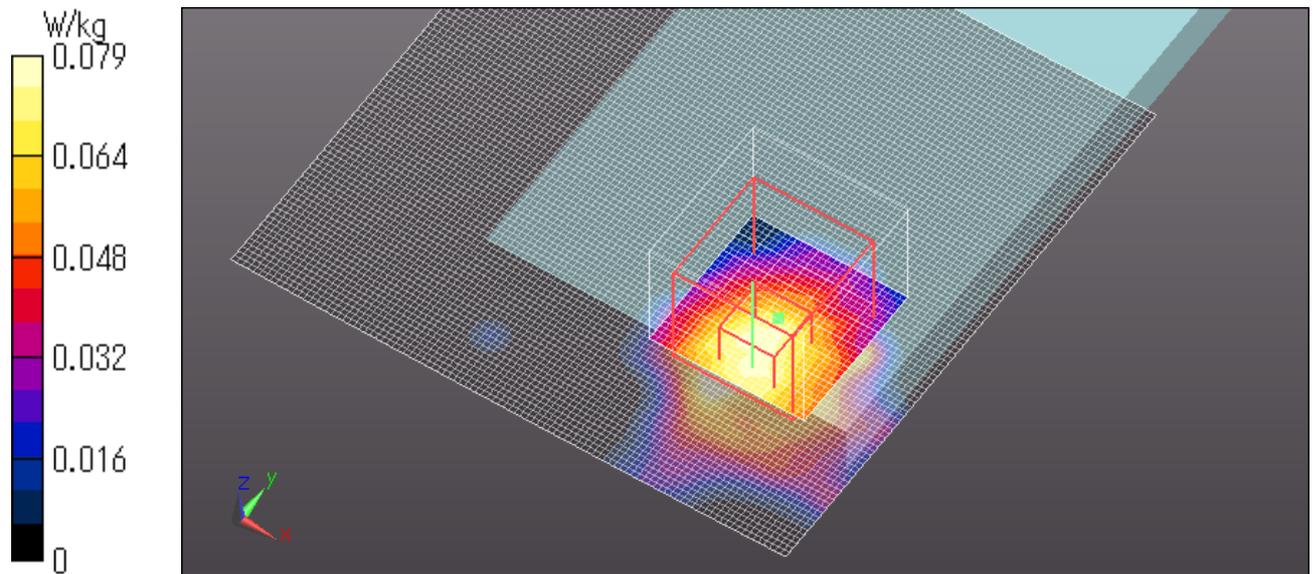
200SH WLAN 11n40 MCS0 Body Rear 5590MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: 11a/n; Frequency: 5590 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 5590$ MHz; $\sigma = 6.007$ mho/m; $\epsilon_r = 48.192$; $\rho = 1000$ kg/m³
Phantom section: Flat Section
Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration
Probe: EX3DV4 - SN3825; ConvF(3.59, 3.59, 3.59); Calibrated: 2011/12/16;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn509; Calibrated: 2012/07/13
Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx
Measurement SW: DASYS2, Version 52.8 (3);

Area Scan 2 (101x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.104 W/kg

Zoom Scan 2 2 (8x8x6)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0.749 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 0.316 W/kg
SAR(1 g) = 0.038 W/kg; SAR(10 g) = 0.015 W/kg
Maximum value of SAR (measured) = 0.0794 W/kg

Date: 2012/10/23
Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.



200SH WLAN 11a 6Mbps Body Front 5680MHz

Communication System: WLAN 11a/b/g/n ; Communication System Band: 11a/n; Frequency: 5590 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 5590$ MHz; $\sigma = 6.007$ mho/m; $\epsilon_r = 48.192$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASYS5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(3.59, 3.59, 3.59); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn509; Calibrated: 2012/07/13

Phantom: ELI 4.0; Type: QDOVA001BA; Serial: xxxx

Measurement SW: DASYS2, Version 52.8 (3);

Area Scan 2 (101x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.142 W/kg

Zoom Scan 2 2 (8x8x6)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 0.845 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.471 W/kg

SAR(1 g) = 0.050 W/kg; SAR(10 g) = 0.020 W/kg

Maximum value of SAR (measured) = 0.102 W/kg

Date: 2012/10/23

Ambient Temp. : 24.0 degree.C. Liquid Temp.; 23.5 degree.C.

