



Test report No. : 33BE0179-HO-J-R1

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FCC ID : A3LGTI9105

Issued date : January 17, 2013

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SAR TEST REPORT

Test Report No. : 33BE0179-HO-J-R1

Applicant : SAMSUNG ELECTRONICS CO., LTD.

Type of Equipment : Smart phone with GSM/GPRS/EDGE850/1900 and WCDMA850/1900, BT(EDR, LE), 802.11a/b/g/n(mobile hot spot)

Model No. : GT-I9105

FCC ID : A3LGTI9105

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

Test Result : **Complied**

Reported SAR(1g) Value

FCC Part 22H	Head	: 0.058 W/kg
	Body	: 0.798 W/kg
FCC Part 24E	Head	: 0.382 W/kg
	Body	: 1.11 W/kg
FCC Part15.247	Head	: 0.143 W/kg
	Body	: 0.098 W/kg
FCC Part15.407	Head	: 0.031 W/kg
	Body	: 0.120W/kg

The highest reported SAR(1g) Value for the device is 1.11 W/kg.

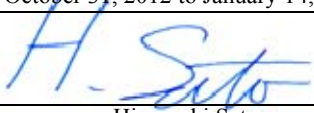
Simultaneous transmission test was excluded.

The highest sum of SAR(1g) for the simultaneous transmitting antennas Value for the device is 1.35 W/kg.

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3. This sample tested is in compliance with the limits of the above regulation.
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6. This report is a revised version of 33BE0179-HO-J. 33BE0179-HO-J is replaced with this report.

Date of test: October 31, 2012 to January 14, 2013

**Representative
test engineer:**


Hisayoshi Sato
Engineer of WiSE Japan, UL Verification Service

Approved by :


Takahiro Hatakeda
Leader of WiSE Japan, UL Verification Service



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SECTION 1: Customer information

Company Name : SAMSUNG ELECTRONICS CO., LTD.
Address : 416, MAETAN 3-DONG, YEONGTONG-GU SUWON-CITY,
GYEONGGI-DO 443-742, SOUTH KOREA

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

2.1 Identification of E.U.T.

Type of Equipment : Smart phone with GSM/GPRS/EDGE850/1900 and
WCDMA850/1900, BT(EDR, LE), 802.11a/b/g/n(mobile hot spot)
Model No. : GT-I9105
Serial No. : FJ-241-E
Rating : Li-ion Battery (M/N;EB-F1A2GBU)
DC3.7V/ 1650mAh
Option Battery : N/A
Body-wornAccessory : Ear phone (typical)
Device category : Portable
Antenna to antenna separation : 23 mm from WWAN antenna to WLAN/BT antenna
distance : 0cm from WLAN antenna to Bluetooth antenna
(shared with BT)
Simultaneous transmission : WWAN can transmit simultaneously with WLAN
WWAN can transmit simultaneously with Bluetooth
WLAN cannot transmit simultaneously with Bluetooth
Receipt Date of Sample* : November 30, 2012
Modification of EUT : No Modification by the test lab

* Receipt Date of prior check sample(model No.: GT-I9105P (FCC ID: A3LGTI9105P)): October 29, 2012

2.2 Product description

Radio Specification

Bluetooth (BDR/EDR)

Equipment Type	Transceiver
Frequency of Operation	2402-2480MHz
Type of Modulation	FHSS
Bandwidth & Channel spacing	1MHz & 1MHz
Antenna Type	LDS
Antenna Gain	-1.2dBi

Bluetooth (Low Energy)

Equipment Type	Transceiver
Frequency of Operation	2402-2480MHz
Type of Modulation	DSSS
Bandwidth & Channel spacing	1MHz & 2MHz
Antenna Type	LDS
Antenna Gain	-1.2dBi

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

Equipment Type	Transceiver	
Frequency of Operation	2412-2462MHz	5180-5240MHz 5260-5320MHz 5500-5700MHz 5745-5825MHz
Type of Modulation	DSSS, OFDM	OFDM
Bandwidth & Channel spacing	20MHz & 5MHz	20MHz & 20MHz
Antenna Type	LDS	
Antenna Gain	2.4G: -1.2dBi	5G: 0.68dBi

GSM

Equipment Type	Transceiver
Frequency of Operation	[Up Link] GSM850: 824 – 849MHz PCS: 1850 – 1910MHz [Down Link] GSM850: 869 – 894MHz PCS: 1930 – 1990MHz
Type of Modulation	GMSK , 8PSK
Emission Designator	GSM850: 248KGXW, 254KG7W PCS: 248KGXW, 257KG7W
Antenna Type	MID
Antenna Gain	GSM850: -7.11dBi PCS: -4.38dBi

W-CDMA

Equipment Type	Transceiver
Frequency of Operation	[Up Link] Band V: 824 – 849MHz Band II: 1850 – 1910MHz [Down Link] Band V: 869 – 894MHz Band II: 1930 – 1990MHz
Type of Modulation	QPSK
Emission Designator	Band V: 4M15F9W Band II: 4M14F9W
Antenna Type	MID
Antenna Gain	Band V: -7.11dBi Band II: -4.38dBi

Note

The difference with another model: GT-I9105P (FCC ID: A3LGTI9105P) is as follows.

The differences between the GT-I9105 and the GT-I9105P are:

1. NFC chipset is removed.
2. H/W
 - NFC Chipset(BCM20793 and RLC) is removed from A3LGTI9105P
 - GT-I9105 and GT-I9105P use same PCB
 - NFC Antenna which is inside of battery pack of GT-I9105P is removed.
3. S/W
 - NFC S/W function(Menu) is removed from A3LGTI9105P

All other things are identical to GT-I9105P.

GT-I9105P is used by the prior SAR test. The worst mode of GT-I9105P (FCC ID: A3LGTI9105P) was evaluated in this test report.

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;

- ☒ **KDB450824D01(v01r01)** SAR Prob Cal and Ver Meas
- ☒ **KDB450824D02(v01r01)** Dipole SAR Validation Verification
- ☒ **KDB447498D01(v05)** Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies
- ☐ **KDB447498D02(v02)** SAR Measurement Procedures for USB Dongle Transmitters
- ☒ **KDB648474D04(v01)** SAR Evaluation Considerations for Wireless Handsets
- ☒ **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(v02)** 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 616217D04(v01)** SAR Evaluation Considerations for Laptop, Notebook, Netbook and Tablet Computers
- ☒ **KDB865664D01(v01)** SAR Measurement Requirements for 100MHz to 6 GHz
- ☒ **KDB248227D01(v01r02)** SAR Measurement Procedures for 802.11a/b/g Transmitters

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	FCC OET BULLETIN 65, SUPPLEMENT C	Exemption*
	SAR	SAR	
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			

* Since SAR exclusion threshold conditions are corresponded by KDB 447498 D01, an SAR test is not required.

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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**

The prior SAR test was done using another model GT-I9105P of the completely same structure as EUT.

In order to determine the worst mode of each band of EUT(model No.: GT-I9105), the prior SAR test was done using the sample of GT-I9105P.

It tested in the worst mode of each frequency band of a prior SAR test.

No.	Capable Tx configurations	Head SAR	Body-worn SAR	Body SAR (HotSpot)	Note
1	WWAN	Voice: GSM :850MHz,1900MHz	Yes	Exemption*1	-
2		GPRS/EGPRS :850MHz,1900MHz	Yes	Exemption*1	Yes
3		AMR/12.2kRMC : Band V,Band II	Yes	Exemption*1	-
4		12.2kRMC,HSPA: BandV, BandII	Yes	Exemption*1	Yes
5	WLAN	WLAN 2.4G	Yes	Exemption*1	Yes
6		WLAN 5G	Yes	Yes	- *2
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(10mm),according to KDB 941225 D06 Hotspot SAR procedure.

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

*3 Since SAR exclusion threshold conditions are corresponded by KDB 447498 D01, an SAR test is not required.

<Prior check result for determining worst mode>:

The used model No.: GT-I9105P (FCC ID: A3LGTI9105P)

A below table is a result of a prior SAR test.

The column which is red is in worst mode of each frequency band.

Mode	1g Head SAR [W/kg]	1g Body-worn SAR [W/kg]	1g Body SAR [W/kg]
GSM850	0.297	Exemption	0.763
PCS1900	0.237	Exemption	1.010
WCDMA band V	0.236	Exemption	0.564
WCDMA band II	0.276	Exemption	1.04
WLAN 11b/g/n(2.4G)	0.127	Exemption	0.098
WLAN 11a/n(5G)	0.055	0.100	-
Bluetooth	Exemption		

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<Stand-alone SAR result>

The used model No.: GT-I9105 (FCC ID: A3LGTI9105)

It tested in the worst mode of each frequency band of a prior SAR test.

Measured SAR

Mode	1g Head SAR [W/kg]	1g Body-worn SAR [W/kg]	1g BodySAR [W/kg]
GSM850	0.057	Exemption	0.794
PCS1900	Not test *1	Exemption	Not test *1
WCDMA band V	Not test *1	Exemption	Not test *1
WCDMA band II	0.314	Exemption	0.939
WLAN 11b/g/n(2.4G)	0.125	Exemption	0.082
WLAN 11a/n(5G)	0.028	0.109	-
Bluetooth	Exemption		

Scaled SAR

Mode	1g Head SAR [W/kg]	1g Body-worn SAR [W/kg]	1g BodySAR [W/kg]
GSM850	0.058	-	0.798
PCS1900	-	-	-
WCDMA band V	-	-	-
WCDMA band II	0.382	-	1.11
WLAN 11b/g/n(2.4G)	0.143	-	0.098
WLAN 11a/n(5G)	0.031	0.120	-
Bluetooth	-		

Note

*1 The difference with another model: GT-I9105P (FCC ID: A3LGTI9105P) is as follows.

The differences between the GT-I9105 and the GT-I9105P are:

1. NFC chipset is removed.
2. H/W
 - NFC Chipset(BCM20793 and RLC) is removed from A3LGTI9105P
 - GT-I9105 and GT-I9105P use same PCB
 - NFC Antenna which is inside of battery pack of GT-I9105P is removed.
3. S/W
 - NFC S/W function(Menu) is removed from A3LGTI9105P

All other things are identical to GT-I9105P.

GT-I9105P is used by the prior SAR test. The worst mode of GT-I9105P (FCC ID: A3LGTI9105P) was evaluated in this test report.

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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 SAR (HotSpot)	Note
1	WWAN+WLAN	GSM + WLAN2.4G	Yes	-
2	N	GPRS + WLAN2.4G	Yes	-
3		12.2kRMC +WLAN2.4G	Yes	-
4		GSM + WLAN5G	No	-
5		GPRS + WLAN5G	No	-
6		12.2kRMC +WLAN5G	No	-
7	WWAN+Bluetooth	Exemption		
8	WLAN+Bluetooth			

<WWAN + WLAN >

Simultaneous transmitter evaluation based on the KDB447498D01 Refer to the clause 4.3.2..

Step1	Standalone SAR test exclusion considerations. Refer to Section 6.
Step2	Measured Stand-alone SAR for WWAN.
Step3	Measured Stand-alone SAR for WLAN.
Step4	Simultaneous transmission is possible (WWAN+ WLAN) Simultaneous transmission SAR test exclusion considerations
Step5	1.6W/kg > $\sum$ 1g SAR (WWAN + WLAN) Head: 0.525 W/kg Body: 1.21 W/kg Refer to Section 12
Step6	SAR test for simultaneous transmission is not measured..

<WWAN + Bluetooth >

Simultaneous transmitter evaluation based on the KDB447498D01 Refer to the clause 4.3.2..

Step1	Standalone SAR test exclusion considerations. Refer to Section 6.
Step2	Measured Stand-alone SAR for WWAN.
Step3	No measured Stand-alone SAR for Bluetooth.
Step4	Simultaneous transmission is possible (WWAN+ Bluetooth) Simultaneous transmission SAR test exclusion considerations.
Step5	Estimated SAR for Bluetooth is calculated.
Step6	1.6W/kg > $\sum$ 1g SAR (WWAN + Bluetooth) Head: 0.618 W/kg Body: 1.35W/kg Refer to Section 12.
Step7	No simultaneous transmission.

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SECTION 5 : Description of the operating mode**5.1 Output power operating modes**

<The sample which performed the prior check for determining worst mode>

The used model No.: GT-I9105P (FCC ID: A3LGTI9105P)

Band	Duty cycle or Multi class(GSM)	Test Frequency	Mode
GSM850	Multi class 33	824.2MHz (128ch) 836.6MHz(190ch) 848.8MHz(251ch)	GSM GPRS (CS-1) EGPRS (MCS1/MCS5)
PCS1900	Multi class 33	1850.2MHz(512ch) 1880.0MHz(661ch) 1909.8MHz(810ch)	
WCDMA V	100%	826.4MHz (4132ch) 836.6MHz(4183ch) 846.6MHz(4233ch)	
WCDMA II	100%	1852.4MHz(9262ch) 1880.0MHz(9400ch) 1907.6MHz(9538ch)	AMR 12.2k RMC HSDPA HSUPA
WWAN setting			
The communication link was set up with the Wireless Communications Test Set (Agilent). The EUT was command to operate at maximum transmit power. GSM850 :PCL 5 PCS1900 :PCL 0 W-CDMA :All up bits			

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)	
IEEE802.11a	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	
Bluetooth	72%(DH5)	2402-2480MHz	2402MHz(1ch) 2441MHz(39ch) 2480MHz(79ch)	FHSS (GFSK, π /4DQPSK,8DPSK, LE)

WLAN, Bluetooth Setting**Power of the EUT was set by the software as follows:**

Software name & version: HW Rev 1.0, SW: 19105.001

[Power Setting]

11b: 16dBm

11g: 14dBm

11n-20(2.4GHz): 12dBm

11a: 12dBm

11n-20(5GHz): 10dBm

Bluetooth: Maximum power of the EUT was transmitted on Bluetooth testing mode.

*The above setting of the 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.

<EUT>

The used model No.: GT-I9105 (FCC ID: A3LGTI9105)

Band	Duty cycle or Multi class(GSM)	Test Frequency	Mode
GSM850	Multi class 33	836.6MHz(190ch)	GPRS (CS-1) EGPRS (MCS-1)
WCDMA II	100%	1852.4MHz(9262ch) 1880.0MHz(9400ch)	12.2k RMC
WWAN setting			
The communication link was set up with the Wireless Communications Test Set (Agilent). The EUT was command to operate at maximum transmit power. GSM850 :PCL 5 W-CDMA :All up bits			

Mode	Duty cycle	Frequency Band	Test Frequency	Modulation
IEEE802.11b	100%	2412-2462MHz	2437MHz(6ch)	DSSS (DBPSK)
IEEE802.11a	100%	5180-5320MHz	5180MHz(36ch)	OFDM (BPSK)
	100%	5500-5700MHz	5620MHz(124ch)	OFDM (BPSK)
	100%	5745-5825MHz	5745MHz(149ch)	OFDM (BPSK)
WLAN Setting				
Power of the EUT was set by the software as follows: Software name & version: HW Rev 1.0, SW: 19105.001 [Power Setting] 11b: 16dBm 11a: 12dBm *The above setting of the 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 > 5(GSM850),0(PCS1900)

[GPRS]

*Connection Type > Type B
*Power control level > 5(GSM850),0(PCS1900)
*Coding Scheme > CS-1

[EGPRS]

*Connection Type > Type B
*Power control level > 5(GSM850),0(PCS1900)
*Coding Scheme > MCS-1 & MCS-5

1) GSM850

<The sample which performed the prior check for determining worst mode>

The used model No.: GT-I9105P (FCC ID: A3LGTI9105P)

GSM850 SAR Power												
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	128	824.2	9.46	9.94	3.66	23.06	18.85	9.94	3.91	32.70
			190	836.6	9.44	9.94	3.66	23.04	18.91	9.94	3.91	32.76
			251	848.8	9.65	9.94	3.66	23.25	18.91	9.94	3.91	32.76
GPRS (CS1)	1slot	8.3	128	824.2	9.45	9.94	3.66	23.05	18.84	9.94	3.91	32.69
			190	836.6	9.34	9.94	3.66	22.94	18.89	9.94	3.91	32.74
			251	848.8	9.33	9.94	3.66	22.93	18.90	9.94	3.91	32.75
	2slots	4.2	128	824.2	10.31	9.94	3.66	23.91	16.82	9.94	3.91	30.67
			190	836.6	10.51	9.94	3.66	24.11	16.87	9.94	3.91	30.72
			251	848.8	10.47	9.94	3.66	24.07	16.88	9.94	3.91	30.73
	3slots	2.8	128	824.2	10.21	9.94	3.66	23.81	15.05	9.94	3.91	28.90
			190	836.6	10.24	9.94	3.66	23.84	15.12	9.94	3.91	28.97
			251	848.8	10.37	9.94	3.66	23.97	15.12	9.94	3.91	28.97
	4slots	2.1	128	824.2	10.52	9.94	3.66	24.12	14.36	9.94	3.91	28.21
			190	836.6	10.76	9.94	3.66	24.36	14.46	9.94	3.91	28.31
			251	848.8	10.67	9.94	3.66	24.27	14.43	9.94	3.91	28.28
EGPRS (MCS1)	1slot	8.3	128	824.2	9.28	9.94	3.66	22.88	18.82	9.94	3.91	32.67
			190	836.6	9.21	9.94	3.66	22.81	18.87	9.94	3.91	32.72
			251	848.8	9.26	9.94	3.66	22.86	18.86	9.94	3.91	32.71
	2slots	4.2	128	824.2	10.43	9.94	3.66	24.03	16.78	9.94	3.91	30.63
			190	836.6	10.40	9.94	3.66	24.00	16.79	9.94	3.91	30.64
			251	848.8	10.45	9.94	3.66	24.05	16.86	9.94	3.91	30.71
	3slots	2.8	128	824.2	10.20	9.94	3.66	23.80	15.02	9.94	3.91	28.87
			190	836.6	10.23	9.94	3.66	23.83	15.07	9.94	3.91	28.92
			251	848.8	10.40	9.94	3.66	24.00	15.09	9.94	3.91	28.94
	4slots	2.1	128	824.2	10.44	9.94	3.66	24.04	14.37	9.94	3.91	28.22
			190	836.6	10.62	9.94	3.66	24.22	14.40	9.94	3.91	28.25
			251	848.8	10.70	9.94	3.66	24.30	14.42	9.94	3.91	28.27
EGPRS (MCS5)	1slot	8.3	128	824.2	3.23	9.94	3.66	16.83	13.49	9.94	3.91	27.34
			190	836.6	3.17	9.94	3.66	16.77	13.55	9.94	3.91	27.40
			251	848.8	3.34	9.94	3.66	16.94	13.56	9.94	3.91	27.41
	2slots	4.2	128	824.2	4.07	9.94	3.66	17.67	12.15	9.94	3.91	26.00
			190	836.6	4.13	9.94	3.66	17.73	12.17	9.94	3.91	26.02
			251	848.8	4.28	9.94	3.66	17.88	12.12	9.94	3.91	25.97
	3slots	2.8	128	824.2	3.38	9.94	3.66	16.98	11.04	9.94	3.91	24.89
			190	836.6	3.56	9.94	3.66	17.16	11.04	9.94	3.91	24.89
			251	848.8	3.53	9.94	3.66	17.13	11.03	9.94	3.91	24.88
	4slots	2.1	128	824.2	3.38	9.94	3.66	16.98	10.56	9.94	3.91	24.41
			190	836.6	3.54	9.94	3.66	17.14	10.61	9.94	3.91	24.46
			251	848.8	3.62	9.94	3.66	17.22	10.53	9.94	3.91	24.38

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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<EUT>

The used model No.: GT-I9105 (FCC ID: A3LGTI9105)

It tested in the worst mode of each frequency band of a prior SAR test.

GSM850 SAR Power												
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]
GPRS (CS1)	4slots	2.1	190	836.6	10.85	9.94	3.66	24.45	14.63	9.94	3.91	28.48
EGPRS (MCS1)	4slots	2.1	190	836.6	10.82	9.94	3.66	24.42	14.58	9.94	3.91	28.43

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

Slotted AVG Results = Agilent Reading + Cable Loss

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2) PCS1900

<The sample which performed the prior check for determining worst mode>

The used model No.: GT-I9105P (FCC ID: A3LGT19105P)

PCS1900 SAR Power												
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	7.03	9.96	3.79	20.78	18.85	9.96	4.16	32.97
			661	1880.0	6.88	9.96	3.79	20.63	18.91	9.96	4.16	33.03
			810	1909.8	6.38	9.97	3.80	20.15	18.91	9.97	4.16	33.04
GPRS (CS1)	1slot	8.3	512	1850.2	6.82	9.96	3.79	20.57	18.84	9.96	4.16	32.96
			661	1880.0	6.69	9.96	3.79	20.44	18.89	9.96	4.16	33.01
			810	1909.8	6.29	9.97	3.80	20.06	18.90	9.97	4.16	33.03
	2slots	4.2	512	1850.2	8.06	9.96	3.79	21.81	16.82	9.96	4.16	30.94
			661	1880.0	7.94	9.96	3.79	21.69	16.87	9.96	4.16	30.99
			810	1909.8	7.73	9.97	3.80	21.50	16.88	9.97	4.16	31.01
	3slots	2.8	512	1850.2	7.95	9.96	3.79	21.70	15.05	9.96	4.16	29.17
			661	1880.0	7.80	9.96	3.79	21.55	15.12	9.96	4.16	29.24
			810	1909.8	7.30	9.97	3.80	21.07	15.12	9.97	4.16	29.25
	4slots	2.1	512	1850.2	7.79	9.96	3.79	21.54	14.20	9.96	4.16	28.32
			661	1880.0	7.61	9.96	3.79	21.36	14.28	9.96	4.16	28.40
			810	1909.8	7.03	9.97	3.80	20.80	14.27	9.97	4.16	28.40
EGPRS (MCS1)	1slot	8.3	512	1850.2	6.89	9.96	3.79	20.64	16.30	9.96	4.16	30.42
			661	1880.0	6.78	9.96	3.79	20.53	16.22	9.96	4.16	30.34
			810	1909.8	6.37	9.97	3.80	20.14	15.92	9.97	4.16	30.05
	2slots	4.2	512	1850.2	8.07	9.96	3.79	21.82	14.60	9.96	4.16	28.72
			661	1880.0	8.04	9.96	3.79	21.79	14.59	9.96	4.16	28.71
			810	1909.8	7.65	9.97	3.80	21.42	14.27	9.97	4.16	28.40
	3slots	2.8	512	1850.2	8.08	9.96	3.79	21.83	13.08	9.96	4.16	27.20
			661	1880.0	7.85	9.96	3.79	21.60	12.99	9.96	4.16	27.11
			810	1909.8	7.40	9.97	3.80	21.17	12.64	9.97	4.16	26.77
	4slots	2.1	512	1850.2	7.84	9.96	3.79	21.59	12.07	9.96	4.16	26.19
			661	1880.0	7.70	9.96	3.79	21.45	11.94	9.96	4.16	26.06
			810	1909.8	7.14	9.97	3.80	20.91	11.57	9.97	4.16	25.70
EGPRS (MCS5)	1slot	8.3	512	1850.2	2.60	9.96	3.79	16.35	12.91	9.96	4.16	27.03
			661	1880.0	2.75	9.96	3.79	16.50	12.91	9.96	4.16	27.03
			810	1909.8	2.65	9.97	3.80	16.42	12.85	9.97	4.16	26.98
	2slots	4.2	512	1850.2	3.41	9.96	3.79	17.16	11.35	9.96	4.16	25.47
			661	1880.0	3.53	9.96	3.79	17.28	11.44	9.96	4.16	25.56
			810	1909.8	3.57	9.97	3.80	17.34	11.51	9.97	4.16	25.64
	3slots	2.8	512	1850.2	2.77	9.96	3.79	16.52	10.20	9.96	4.16	24.32
			661	1880.0	3.02	9.96	3.79	16.77	10.22	9.96	4.16	24.34
			810	1909.8	3.00	9.97	3.80	16.77	10.24	9.97	4.16	24.37
	4slots	2.1	512	1850.2	2.78	9.96	3.79	16.53	9.70	9.96	4.16	23.82
			661	1880.0	2.87	9.96	3.79	16.62	9.70	9.96	4.16	23.82
			810	1909.8	2.87	9.97	3.80	16.64	9.69	9.97	4.16	23.82

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 W-CDMA

Maximum output power for W-CDMA and HSPA was verified on the high, middle and low channels according to the procedures described in section 5.2 of 3GPP TS 34.121 and "KDB 941225 document".

The WCDMA and HSPA modes of EUT were verified each channel and "sub-tests" according to Release-6 procedures in section 5.2 of 3GPP TS 34.121.

[Rel.99]

The communication test set was using a 12.2k RMC (reference measurement channel) with TPC (transmit power control) set to all "1's" configured in Test Loop Mode 1.

[HSDPA]

The communication test set was using an FRC (Fixed reference channel) with H-set 1 and 12.2kbps RMC with TPC (transmit power control) set to all "1's". Output power was measured according requirements for HS-DPCCH Sub-test 1-4.

Table C.10.1.4: β values for transmitter characteristics tests with HS-DPCCH

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS} (Note 1, Note 2)	CM (dB) (Note 3)	MPR (dB) (Note 3)
1	2/15	15/15	64	2/15	4/15	0.0	0.0
2	12/15	15/15	64	12/15	24/15	1.0	0.0
	(Note 4)	(Note 4)		(Note 4)			
3	15/15	8/15	64	15/8	30/15	1.5	0.5
4	15/15	4/15	64	15/4	30/15	1.5	0.5

Note 1: Δ_{ACK} , Δ_{NACK} and $\Delta_{CQI} = 30/15$ with $\beta_{hs} = 30/15 * \beta_c$.

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

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

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

Test Equipment Setting Summary Table

The following table is the key parameters that was configured in test equipment.

Subtest	Mode	Loopback Mode	Rel99 RMC	HSDPA FRC	HSUPA Test	Common Setting		β_c/β_d	MPR	Power Class 3 limit
						β_c	β_d			
	Rel99	Test Mode 1	12.2kbps RMC	-	-			8/15		24(+1.7/-3.7dB)
1	Rel6 HSDPA	Test Mode 1	12.2kbps RMC	H-Set 1 (HPSK)	-	2/15	15/15	2/15	0	24(+1.7/-3.7dB)
2	Rel6 HSDPA	Test Mode 1	12.2kbps RMC	H-Set 1 (HPSK)	-	12/15	15/15	12/15	0	24(+1.7/-3.7dB)
3	Rel6 HSDPA	Test Mode 1	12.2kbps RMC	H-Set 1 (HPSK)	-	15/15	8/15	15/8	0.5	23.5(+2.2/-3.7dB)
4	Rel6 HSDPA	Test Mode 1	12.2kbps RMC	H-Set 1 (HPSK)	-	15/15	4/15	15/4	0.5	23.5(+2.2/-3.7dB)

Subtest	HSDPA Specific Settings						
	Δ_{ACK}	Δ_{NACK}	Δ_{CQI}	Ack-Nack repetition factor	CQI Feedback	CQI Repetition Factor	$A_{hs} = \beta_{hs}/\beta_c$
Rel 6 HSDPA							
1	8	8	8	3	4ms	2	30/15
2	8	8	8	3	4ms	2	30/15
3	8	8	8	3	4ms	2	30/15
4	8	8	8	3	4ms	2	30/15

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3) WCDMA V

<The sample which performed the prior check for determining worst mode>

The used model No.: GT-I9105P (FCC ID: A3LGTI9105P)

WCDMA V band					
Normal					
Mode	Ch	Frequency [MHz]	Reading AVG [dBm]	Cable loss [dB]	Result [dBm]
AMR	4132	826.4	22.46	0.29	22.75
	4183	836.6	22.47	0.29	22.76
	4233	846.6	21.90	0.29	22.19
RMC 12.2kbps	4132	826.4	23.37	0.29	23.66
	4183	836.6	23.15	0.29	23.44
	4233	846.6	22.71	0.29	23.00
HSDPA Subtest1	4132	826.4	23.33	0.29	23.62
	4183	836.6	22.93	0.29	23.22
	4233	846.6	22.60	0.29	22.89
HSDPA Subtest2	4132	826.4	22.60	0.29	22.89
	4183	836.6	22.48	0.29	22.77
	4233	846.6	22.11	0.29	22.40
HSDPA Subtest3	4132	826.4	21.83	0.29	22.12
	4183	836.6	21.84	0.29	22.13
	4233	846.6	21.95	0.29	22.24
HSDPA Subtest4	4132	826.4	21.68	0.29	21.97
	4183	836.6	21.40	0.29	21.69
	4233	846.6	21.42	0.29	21.71
HSUPA Subtest1	4132	826.4	21.27	0.29	21.56
	4183	836.6	20.30	0.29	20.59
	4233	846.6	21.31	0.29	21.60
HSUPA Subtest2	4132	826.4	20.87	0.29	21.16
	4183	836.6	22.18	0.29	22.47
	4233	846.6	20.36	0.29	20.65
HSUPA Subtest3	4132	826.4	19.64	0.29	19.93
	4183	836.6	20.32	0.29	20.61
	4233	846.6	20.13	0.29	20.42
HSUPA Subtest4	4132	826.4	21.25	0.29	21.54
	4183	836.6	19.91	0.29	20.20
	4233	846.6	19.12	0.29	19.41
HSUPA Subtest5	4132	826.4	19.79	0.29	20.08
	4183	836.6	19.63	0.29	19.92
	4233	846.6	20.66	0.29	20.95

Results = Reading + Loss

: Maximum power mode

:SAR test channel

Note: HSUPA

The enhanced power reduction may result in around 1dB of variance from the MPR target values depending on HSPA channel configuration (e.g. 34.121 subtest) and characteristics of hardware RF design.

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4) WCDMA II

<The sample which performed the prior check for determining worst mode>

The used model No.: GT-I9105P (FCC ID: A3LGTI9105P)

WCDMA II band					
Normal					
Mode	Ch	Frequency [MHz]	Reading AVG [dBm]	Cable [dB]	Result [dBm]
AMR	9262	1852.4	21.32	0.45	21.77
	9400	1880.0	21.36	0.45	21.81
	9538	1907.6	21.42	0.45	21.87
RMC 12.2kbps	9262	1852.4	21.84	0.45	22.29
	9400	1880.0	21.74	0.45	22.19
	9538	1907.6	21.92	0.45	22.37
HSDPA Subtest1	9262	1852.4	21.71	0.45	22.16
	9400	1880.0	21.36	0.45	21.81
	9538	1907.6	21.10	0.45	21.55
HSDPA Subtest2	9262	1852.4	21.12	0.45	21.57
	9400	1880.0	21.62	0.45	22.07
	9538	1907.6	21.31	0.45	21.76
HSDPA Subtest3	9262	1852.4	21.09	0.45	21.54
	9400	1880.0	21.11	0.45	21.56
	9538	1907.6	21.82	0.45	22.27
HSDPA Subtest4	9262	1852.4	21.50	0.45	21.95
	9400	1880.0	21.26	0.45	21.71
	9538	1907.6	21.28	0.45	21.73
HSUPA Subtest1	9262	1852.4	19.70	0.45	20.15
	9400	1880.0	18.59	0.45	19.04
	9538	1907.6	19.57	0.45	20.02
HSUPA Subtest2	9262	1852.4	19.09	0.45	19.54
	9400	1880.0	20.40	0.45	20.85
	9538	1907.6	19.54	0.45	19.99
HSUPA Subtest3	9262	1852.4	18.50	0.45	18.95
	9400	1880.0	19.52	0.45	19.97
	9538	1907.6	19.05	0.45	19.50
HSUPA Subtest4	9262	1852.4	20.46	0.45	20.91
	9400	1880.0	19.75	0.45	20.20
	9538	1907.6	18.75	0.45	19.20
HSUPA Subtest5	9262	1852.4	19.75	0.45	20.20
	9400	1880.0	19.31	0.45	19.76
	9538	1907.6	20.62	0.45	21.07

Results = Reading + Loss

: Maximum power mode

: SAR test channel

Note: HSUPA

The enhanced power reduction may result in around 1dB of variance from the MPR target values depending on HSPA channel configuration (e.g. 34.121 subtest) and characteristics of hardware RF design.

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<EUT>

The used model No.: GT-I9105 (FCC ID: A3LGTI9105)

It tested in the worst mode of each frequency band of a prior SAR test.

WCDMA II band					
Normal					
Mode	Ch	Frequency [MHz]	Reading AVG [dBm]	Cable [dB]	Result [dBm]
RMC 12.2kbps	9262	1852.4	21.81	0.45	22.26
RMC 12.2kbps	9400	1880.0	21.70	0.45	22.15

Results = Reading + Loss

Output power measurement for WLAN

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

<The sample which performed the prior check for determining worst mode>

The used model No.: GT-I9105P (FCC ID: A3LGTI9105P)

[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	7.31	4.66	0.00	10.07	17.38	14.73	54.70	29.72
2.0	2437	7.42	4.59	0.00	10.07	17.49	14.66	56.10	29.24
5.5	2437	7.46	4.45	0.00	10.07	17.53	14.52	56.62	28.31
11.0	2437	7.53	4.27	0.00	10.07	17.60	14.34	57.54	27.16

:Worst data rate

IEEE802.11b 1Mbps

Ch	Frequency [MHz]	P/M Reading [dBm]		Cable Loss [dB]	Atten. [dB]	Result			
		PK	AVG			[dBm]		[mW]	
1	2412	7.16	4.55	0.00	10.07	17.23	14.62	52.84	28.97
6	2437	7.31	4.66	0.00	10.07	17.38	14.73	54.70	29.72
11	2462	7.12	4.48	0.00	10.07	17.19	14.55	52.36	28.51

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	7.31	4.17	0.00	10.07	17.38	14.24	54.70	26.55
6	2437	7.53	4.27	0.00	10.07	17.60	14.34	57.54	27.16
11	2462	7.57	4.16	0.00	10.07	17.64	14.23	58.08	26.49

:SAR test channel

Sample Calculation:

Result = Reading + Cable Loss + Attenuator

[IEEE802.11g] Rate Check

Rate [Mbps]	Frequency [MHz]	P/M Reading [dBm]		Cable Loss [dB]	Atten. [dB]	Result			
		PK	AVG			[dBm]		[mW]	
6.0	2437	11.60	2.68	0.00	10.07	21.67	12.75	146.89	18.84
9.0	2437	11.53	2.56	0.00	10.07	21.60	12.63	144.54	18.32
12.0	2437	11.30	2.40	0.00	10.07	21.37	12.47	137.09	17.66
18.0	2437	11.31	2.18	0.00	10.07	21.38	12.25	137.40	16.79
24.0	2437	11.34	1.99	0.00	10.07	21.41	12.06	138.36	16.07
36.0	2437	11.42	1.55	0.00	10.07	21.49	11.62	140.93	14.52
48.0	2437	11.45	1.21	0.00	10.07	21.52	11.28	141.91	13.43
54.0	2437	11.43	1.09	0.00	10.07	21.50	11.16	141.25	13.06

:Worst data rate

IEEE802.11g 6Mbps <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	11.54	2.67	0.00	10.07	21.61	12.74	144.88	18.79
6	2437	11.60	2.68	0.00	10.07	21.67	12.75	146.89	18.84
11	2462	11.35	2.62	0.00	10.07	21.42	12.69	138.68	18.58

Sample Calculation:

Result = Reading + Cable Loss + Attenuator

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[IEEE802.11n-20] Rate Check

Rate	Frequency [MHz]	P/M Reading [dBm]		Cable Loss [dB]	Atten. [dB]	Result			
		PK	AVG			[dBm]		[mW]	
MCS0	2437	10.40	0.75	0.00	10.07	20.47	10.82	111.43	12.08
MCS1	2437	10.23	0.38	0.00	10.07	20.30	10.45	107.15	11.09
MCS2	2437	10.18	0.13	0.00	10.07	20.25	10.20	105.93	10.47
MCS3	2437	10.22	-0.04	0.00	10.07	20.29	10.03	106.91	10.07
MCS4	2437	10.34	-0.44	0.00	10.07	20.41	9.63	109.90	9.18
MCS5	2437	10.14	-0.86	0.00	10.07	20.21	9.21	104.95	8.34
MCS6	2437	10.27	-0.90	0.00	10.07	20.34	9.17	108.14	8.26
MCS7	2437	10.15	-1.07	0.00	10.07	20.22	9.00	105.20	7.94

:Worst data rate

IEEE802.11n-20 MCS0 <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	10.45	0.72	0.00	10.07	20.52	10.79	112.72	11.99
6	2437	10.40	0.75	0.00	10.07	20.47	10.82	111.43	12.08
11	2462	10.04	0.60	0.00	10.07	20.11	10.67	102.57	11.67

Sample Calculation:

Result = Reading + Cable Loss + Attenuator

<EUT>

The used model No.: GT-I9105 (FCC ID: A3LGT19105)

It tested in the worst mode of each frequency band of a prior SAR test.

IEEE802.11b 1Mbps

Ch	Frequency [MHz]	P/M Reading [dBm]		Cable Loss [dB]	Atten. [dB]	Result			
		PK	AVG			[dBm]		[mW]	
6	2437	7.52	4.84	0.00	10.07	17.59	14.91	57.41	30.97

Sample Calculation:

Result = Reading + Cable Loss + Attenuator

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

<The sample which performed the prior check for determining worst mode>

The used model No.: GT-I9105P (FCC ID: A3LGTI9105P)

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

Rate [Mbps]	Freq. [MHz]	P/M Reading [dBm]		Cable Loss [dB]	Atten. [dB]	Result			
		PK	AVG			[dBm]		[mW]	
						PK	AVG	PK	AVG
6.0	5240	9.80	-1.38	0.00	10.10	19.90	8.72	97.72	7.45
9.0	5240	9.87	-1.47	0.00	10.10	19.97	8.63	99.31	7.29
12.0	5240	9.65	-1.62	0.00	10.10	19.75	8.48	94.41	7.05
18.0	5240	9.78	-1.81	0.00	10.10	19.88	8.29	97.27	6.75
24.0	5240	9.64	-2.10	0.00	10.10	19.74	8.00	94.19	6.31
36.0	5240	9.49	-2.45	0.00	10.10	19.59	7.65	90.99	5.82
48.0	5240	9.81	-2.85	0.00	10.10	19.91	7.25	97.95	5.31
54.0	5240	9.69	-2.94	0.00	10.10	19.79	7.16	95.28	5.20

IEEE802.11a 5180-5240MHz band 6Mbps

Ch	Freq. [MHz]	P/M Reading [dBm]		Cable Loss [dB]	Atten. [dB]	Result			
		PK	AVG			[dBm]		[mW]	
						PK	AVG	PK	AVG
36	5180	9.96	-1.21	0.00	10.10	20.06	8.89	101.39	7.74
40	5200	9.85	-1.25	0.00	10.10	19.95	8.85	98.86	7.67
44	5220	9.86	-1.34	0.00	10.10	19.96	8.76	99.08	7.52
48	5240	9.80	-1.38	0.00	10.10	19.90	8.72	97.72	7.45

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]		Cable Loss [dB]	Atten. [dB]	Result			
		PK	AVG			[dBm]		[mW]	
						PK	AVG	PK	AVG
MCS0	5240	7.30	-3.54	0.00	10.10	17.40	6.56	54.95	4.53
MCS1	5240	7.17	-3.82	0.00	10.10	17.27	6.28	53.33	4.25
MCS2	5240	7.01	-4.02	0.00	10.10	17.11	6.08	51.40	4.06
MCS3	5240	6.96	-4.27	0.00	10.10	17.06	5.83	50.82	3.83
MCS4	5240	7.28	-4.57	0.00	10.10	17.38	5.53	54.70	3.57
MCS5	5240	7.20	-4.93	0.00	10.10	17.30	5.17	53.70	3.29
MCS6	5240	7.19	-4.99	0.00	10.10	17.29	5.11	53.58	3.24
MCS7	5240	7.26	-5.25	0.00	10.10	17.36	4.85	54.45	3.05

: Worst data rate

IEEE802.11n-20 5180-5240MHz band MCS3

Ch	Freq. [MHz]	P/M Reading [dBm]		Cable Loss [dB]	Atten. [dB]	Result			
		PK	AVG			[dBm]		[mW]	
						PK	AVG	PK	AVG
36	5180	7.46	-3.37	0.00	10.10	17.56	6.73	57.02	4.71
40	5200	7.45	-3.44	0.00	10.10	17.55	6.66	56.89	4.63
44	5220	7.32	-3.53	0.00	10.10	17.42	6.57	55.21	4.54
48	5240	7.30	-3.54	0.00	10.10	17.40	6.56	54.95	4.53

Sample Calculation: Result = Reading + Cable Loss + Attenuator

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<EUT>

The used model No.: GT-I9105 (FCC ID: A3LGTI9105)

It tested in the worst mode of each frequency band of a prior SAR test.

IEEE802.11a 5180-5240MHz band 6Mbps

Ch	Freq. [MHz]	P/M Reading [dBm]		Cable Loss [dB]	Atten. [dB]	Result			
						[dBm]		[mW]	
		PK	AVG			PK	AVG	PK	AVG
36	5180	9.34	-1.03	0.00	10.10	19.44	9.07	87.90	8.07

Sample Calculation: Result = Reading + Cable Loss + Attenuator

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

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

Rate [Mbps]	Freq. [MHz]	P/M Reading [dBm]		Cable Loss [dB]	Atten. [dB]	Result			
		PK	AVG			[dBm]		[mW]	
6.0	5260	9.81	-1.48	0.00	10.09	19.90	8.61	97.72	7.26
9.0	5260	9.74	-1.59	0.00	10.09	19.83	8.50	96.16	7.08
12.0	5260	9.53	-1.73	0.00	10.09	19.62	8.36	91.62	6.85
18.0	5260	9.55	-1.99	0.00	10.09	19.64	8.10	92.04	6.46
24.0	5260	9.70	-2.16	0.00	10.09	19.79	7.93	95.28	6.21
36.0	5260	9.52	-2.56	0.00	10.09	19.61	7.53	91.41	5.66
48.0	5260	9.63	-3.00	0.00	10.09	19.72	7.09	93.76	5.12
54.0	5260	9.66	-3.03	0.00	10.09	19.75	7.06	94.41	5.08

IEEE802.11a 5260-5320MHz band 6Mbps

Ch	Freq. [MHz]	P/M Reading [dBm]		Cable Loss [dB]	Atten. [dB]	Result			
		PK	AVG			[dBm]		[mW]	
52	5260	9.81	-1.48	0.00	10.09	19.90	8.61	97.72	7.26
56	5280	9.79	-1.51	0.00	10.09	19.88	8.58	97.27	7.21
60	5300	9.70	-1.56	0.00	10.09	19.79	8.53	95.28	7.13
64	5320	9.67	-1.62	0.00	10.09	19.76	8.47	94.62	7.03

Sample Calculation: Result = Reading + Cable Loss + Attenuator

: Worst data rate

: SAR test channel

*: This channel was tested instead of an adjacent" default test channel".

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

Rate [Mbps]	Freq. [MHz]	P/M Reading [dBm]		Cable Loss [dB]	Atten. [dB]	Result			
		PK	AVG			[dBm]		[mW]	
MCS0	5260	7.31	-3.63	0.00	10.09	17.40	6.46	54.95	4.43
MCS1	5260	7.30	-3.95	0.00	10.09	17.39	6.14	54.83	4.11
MCS2	5260	6.90	-4.18	0.00	10.09	16.99	5.91	50.00	3.90
MCS3	5260	6.83	-4.27	0.00	10.09	16.92	5.82	49.20	3.82
MCS4	5260	7.15	-4.74	0.00	10.09	17.24	5.35	52.97	3.43
MCS5	5260	7.16	-4.95	0.00	10.09	17.25	5.14	53.09	3.27
MCS6	5260	6.83	-5.23	0.00	10.09	16.92	4.86	49.20	3.06
MCS7	5260	7.28	-5.35	0.00	10.09	17.37	4.74	54.58	2.98

: Worst data rate

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

Ch	Freq. [MHz]	P/M Reading [dBm]		Cable Loss [dB]	Atten. [dB]	Result			
		PK	AVG			[dBm]		[mW]	
52	5260	7.31	-3.63	0.00	10.09	17.40	6.46	54.95	4.43
56	5280	7.22	-3.81	0.00	10.09	17.31	6.28	53.83	4.25
60	5300	7.16	-3.77	0.00	10.09	17.25	6.32	53.09	4.29
64	5320	7.03	-3.75	0.00	10.09	17.12	6.34	51.52	4.31

t = Reading + Cable Loss + Attenuator

: Channel of SAR testing

*: This channel was tested instead of an adjacent" default test channel".

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

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

Rate [Mbps]	Freq. [MHz]	P/M Reading [dBm]		Cable Loss [dB]	Atten. [dB]	Result			
		PK	AVG			[dBm]		[mW]	
						PK	AVG	PK	AVG
6.0	5580	9.85	-1.27	0.00	10.09	19.94	8.82	98.63	7.62
9.0	5580	9.94	-1.41	0.00	10.09	20.03	8.68	100.69	7.38
12.0	5580	9.66	-1.53	0.00	10.09	19.75	8.56	94.41	7.18
18.0	5580	9.79	-1.73	0.00	10.09	19.88	8.36	97.27	6.85
24.0	5580	9.82	-2.01	0.00	10.09	19.91	8.08	97.95	6.43
36.0	5580	9.71	-2.35	0.00	10.09	19.80	7.74	95.50	5.94
48.0	5580	9.95	-2.72	0.00	10.09	20.04	7.37	100.93	5.46
54.0	5580	9.78	-2.80	0.00	10.09	19.87	7.29	97.05	5.36

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

Ch	Freq. [MHz]	P/M Reading [dBm]		Cable Loss [dB]	Atten. [dB]	Result			
		PK	AVG			[dBm]		[mW]	
						PK	AVG	PK	AVG
100	5500	9.84	-1.35	0.00	10.09	19.93	8.74	98.40	7.48
104	5520	9.89	-1.31	0.00	10.09	19.98	8.78	99.54	7.55
108	5540	9.95	-1.28	0.00	10.09	20.04	8.81	100.93	7.60
112	5560	9.85	-1.28	0.00	10.09	19.94	8.81	98.63	7.60
116	5580	9.85	-1.27	0.00	10.09	19.94	8.82	98.63	7.62
120	5600	9.96	-1.26	0.00	10.08	20.04	8.82	100.93	7.62
124	5620	9.90	-1.24	0.00	10.08	19.98	8.84	99.54	7.66
128	5640	9.80	-1.31	0.00	10.08	19.88	8.77	97.27	7.53
132	5660	9.85	-1.25	0.00	10.08	19.93	8.83	98.40	7.64
136	5680	9.87	-1.25	0.00	10.08	19.95	8.83	98.86	7.64
140	5700	9.87	-1.25	0.00	10.08	19.95	8.83	98.86	7.64

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]		Cable Loss [dB]	Atten. [dB]	Result			
		PK	AVG			[dBm]		[mW]	
MCS0	5580	7.40	-3.37	0.00	10.09	17.49	6.72	56.10	4.70
MCS1	5580	7.48	-3.66	0.00	10.09	17.57	6.43	57.15	4.40
MCS2	5580	7.33	-3.87	0.00	10.09	17.42	6.22	55.21	4.19
MCS3	5580	7.43	-4.05	0.00	10.09	17.52	6.04	56.49	4.02
MCS4	5580	7.42	-4.44	0.00	10.09	17.51	5.65	56.36	3.67
MCS5	5580	7.30	-4.78	0.00	10.09	17.39	5.31	54.83	3.40
MCS6	5580	7.38	-4.89	0.00	10.09	17.47	5.20	55.85	3.31
MCS7	5580	7.43	-5.02	0.00	10.09	17.52	5.07	56.49	3.21

: Worst data rate

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

Ch	Freq. [MHz]	P/M Reading [dBm]		Cable Loss [dB]	Atten. [dB]	Result			
		PK	AVG			[dBm]		[mW]	
100	5500	7.52	-3.40	0.00	10.09	20.69	6.69	129.42	4.67
104	5520	7.40	-3.38	0.00	10.09	20.68	6.71	116.95	4.69
108	5540	7.50	-3.40	0.00	10.09	21.06	6.69	127.64	4.67
112	5560	7.50	-3.44	0.00	10.09	21.12	6.65	129.42	4.62
116	5580	7.40	-3.37	0.00	10.09	20.92	6.72	123.59	4.70
120	5600	7.51	-3.36	0.00	10.08	20.98	6.72	125.31	4.70
124	5620	7.32	-3.39	0.00	10.08	20.87	6.69	122.18	4.67
128	5640	7.34	-3.36	0.00	10.08	20.95	6.72	124.45	4.70
132	5660	7.29	-3.48	0.00	10.08	20.92	6.60	123.59	4.57
136	5680	7.53	-3.33	0.00	10.08	20.98	6.75	125.31	4.73
140	5700	7.26	-3.35	0.00	10.08	20.87	6.73	122.18	4.71

t = Reading + Cable Loss + Attenuator

* : This channel was tested instead of an adjacent "default test channel".

<EUT>

The used model No.: GT-I9105 (FCC ID: A3LGTI9105)

It tested in the worst mode of each frequency band of a prior SAR test.

IEEE802.11a 5500-5700MHz band 6Mbps

Ch	Freq. [MHz]	P/M Reading [dBm]		Cable Loss [dB]	Atten. [dB]	Result			
		PK	AVG			[dBm]		[mW]	
124	5620	10.27	-1.10	0.00	10.08	20.35	8.98	108.39	7.91

Sample Calculation: Result = Reading + Cable Loss + Attenuator

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9) WLAN (11a/n(5745-5825MHz):

[IEEE802.11a 5745-5825MHz band] Rate Check

Rate [Mbps]	Freq. [MHz]	P/M Reading [dBm]		Cable Loss [dB]	Atten. [dB]	Result			
		PK	AVG			[dBm]		[mW]	
						PK	AVG	PK	AVG
6.0	5785.0	10.10	-1.08	0.00	10.07	20.17	8.99	103.99	7.93
9.0	5785.0	9.92	-1.19	0.00	10.07	19.99	8.88	99.77	7.73
12.0	5785.0	9.77	-1.34	0.00	10.07	19.84	8.73	96.38	7.46
18.0	5785.0	9.90	-1.62	0.00	10.07	19.97	8.45	99.31	7.00
24.0	5785.0	9.89	-1.82	0.00	10.07	19.96	8.25	99.08	6.68
36.0	5785.0	9.76	-2.18	0.00	10.07	19.83	7.89	96.16	6.15
48.0	5785.0	9.92	-2.54	0.00	10.07	19.99	7.53	99.77	5.66
54.0	5785.0	10.00	-2.68	0.00	10.07	20.07	7.39	101.62	5.48

IEEE802.11a 5745-5825MHz band 6Mbps

Ch	Freq. [MHz]	P/M Reading [dBm]		Cable Loss [dB]	Atten. [dB]	Result			
		PK	AVG			[dBm]		[mW]	
						PK	AVG	PK	AVG
149	5745.0	10.14	-1.03	0.00	10.07	20.21	9.04	104.95	8.02
153	5765.0	10.18	-1.09	0.00	10.07	20.25	8.98	105.93	7.91
157	5785.0	10.10	-1.08	0.00	10.07	20.17	8.99	103.99	7.93
161	5805.0	10.03	-1.11	0.00	10.07	20.10	8.96	102.33	7.87
165	5825.0	10.03	-1.13	0.00	10.07	20.10	8.94	102.33	7.83

Sample Calculation: Result = Reading + Cable Loss + Attenuator

: Worst data rate

: SAR test channel

[IEEE802.11n-20 5745-5825MHz band] Rate Check

Rate [Mbps]	Freq. [MHz]	P/M Reading [dBm]		Cable Loss [dB]	Atten. [dB]	Result			
		PK	AVG			[dBm]		[mW]	
						PK	AVG	PK	AVG
MCS0	5785.0	7.70	-3.14	0.00	10.07	17.77	6.93	59.84	4.93
MCS1	5785.0	7.63	-3.41	0.00	10.07	17.70	6.66	58.88	4.63
MCS2	5785.0	7.36	-3.60	0.00	10.07	17.43	6.47	55.34	4.44
MCS3	5785.0	7.52	-3.77	0.00	10.07	17.59	6.30	57.41	4.27
MCS4	5785.0	7.65	-4.14	0.00	10.07	17.72	5.93	59.16	3.92
MCS5	5785.0	7.51	-4.55	0.00	10.07	17.58	5.52	57.28	3.56
MCS6	5785.0	7.63	-4.66	0.00	10.07	17.70	5.41	58.88	3.48
MCS7	5785.0	7.69	-4.72	0.00	10.07	17.76	5.35	59.70	3.43

: Worst data rate

IEEE802.11n-20 5745-5825MHz band MCS0

Ch	Freq. [MHz]	P/M Reading [dBm]		Cable Loss [dB]	Atten. [dB]	Result			
		PK	AVG			[dBm]		[mW]	
						PK	AVG	PK	AVG
149	5745.0	7.65	-3.11	0.00	10.07	17.72	6.96	59.16	4.97
153	5765.0	7.64	-3.05	0.00	10.07	17.71	7.02	59.02	5.04
157	5785.0	7.70	-3.14	0.00	10.07	17.77	6.93	59.84	4.93
161	5805.0	7.64	-3.08	0.00	10.07	17.71	6.99	59.02	5.00
165	5825.0	7.45	-3.21	0.00	10.07	17.52	6.86	56.49	4.85

Sample Calculation: Result = Reading + Cable Loss + Attenuator

*: This channel was tested instead of an adjacent" default test channel".

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<EUT>

The used model No.: GT-I9105 (FCC ID: A3LGTI9105)

It tested in the worst mode of each frequency band of a prior SAR test.

IEEE802.11a 5745-5825MHz band 6Mbps

Ch	Freq. [MHz]	P/M Reading [dBm]		Cable Loss [dB]	Atten. [dB]	Result			
		PK	AVG			[dBm]		[mW]	
						PK	AVG	PK	AVG
149	5745	10.35	-1.03	0.00	10.07	20.42	9.04	110.15	8.02

Sample Calculation: Result = Reading + Cable Loss + Attenuator

10) Bluetooth

Mode	Frequency [MHz]	P/M Reading [dBm] AVG	Cable Loss [dB]	Atten. [dB]	Result	
					[dBm] AVG	[mW] AVG
DH5	2402.0	-9.44	0.35	16.21	7.12	5.15
	2441.0	-9.52	0.36	16.21	7.05	5.07
	2480.0	-9.74	0.36	16.21	6.83	4.82
2DH5	2402.0	-11.67	0.35	16.21	4.89	3.08
	2441.0	-11.70	0.36	16.21	4.87	3.07
	2480.0	-11.89	0.36	16.21	4.68	2.94
3DH5	2402.0	-11.66	0.35	16.21	4.90	3.09
	2441.0	-11.69	0.36	16.21	4.88	3.08
	2480.0	-11.66	0.36	16.21	4.91	3.10
LE	2402.0	-9.12	1.36	10.00	2.24	1.67
	2441.0	-8.58	1.37	10.00	2.79	1.90
	2480.0	-8.51	1.38	10.00	2.87	1.94

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

<The sample which performed the prior check for determining worst mode>

The used model No.: GT-I9105P (FCC ID: A3LGTI9105P)

1) SAR measurement for GSM, W-CDMA

Band	Test Frequency	Mode	Crest factor	Note
GSM850	836.6MHz(190ch) *1	GSM GPRS (CS-1) 4 slots *2 EGPRS (MCS-1) 4 slots *3	8.3 2.1 2.1	VoIP is available with EGPRS not GPRS. *7 1)
PCS1900	1850.2MHz(512ch) 1880.0MHz(661ch) 1909.8MHz(810ch)	GSM GPRS (CS-1) 2 slots *4 EGPRS (MCS-1) 2 slots *5	8.3 4.2 4.2	VoIP is available with EGPRS not GPRS.
WCDMA V	836.6MHz (4183ch) *1	12.2k RMC *6	1	*7 1)
WCDMA II	1880.0MHz(9400ch) *1	12.2k RMC *6	1	
WWAN				
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. GSM850 :PCL 5 PCS1900 :PCL 0 W-CDMA :All up bits				

*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.

*3 The EGPRS 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 EGPRS 4up mode in Edge mode.

*4 The GPRS 2up 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 2up mode.

*5 The EGPRS 2up 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 EGPRS 2up mode in Edge mode.

*6 The 12.2k RMC mode was maximum average power. The AMR/HSDPA/HSUPA 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 12.2k RMC mode.

*7

1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg

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				*
	5.745	149	√		√	
	5.765	153		*		*
	5.785	157	√			*
	5.805	161		*	√	
	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			√	
	5.755	151	√		√	
	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
IEEE802.11b	2437MHz(6ch) *1	DBPSK(1Mbps) *3	1	Hotspot is available in 2.4GHz only *6 1)
IEEE802.11g	Not required			
IEEE802.11n20 (2.4G)	Not required			
IEEE802.11n40 (2.4G)	Not required			
IEEE802.11a	5180MHz(36ch) *2	BPSK(6Mbps) *4	1	*6 1)
	5620MHz(124ch) *2	BPSK(6Mbps) *4	1	*6 1)
	5745MHz(149ch) *1	BPSK(6Mbps) *4	1	*6 1)
IEEE802.11n20 (5G)	Not required *4			
Bluetooth	Exemption *5			

WLAN**Power of the EUT was set by the software as follows:**

Software name & version: HW Rev 1.0, SW: 19105.001

[Power Setting]

11b: 16dBm

11g: 14dBm

11n-20(2.4GHz): 12dBm

11a: 12dBm

11n-20(5GHz): 10dBm

11n-40(5GHz): 10dBm

*The above setting of the 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.

*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 The 11a mode was maximum average power. The 11n 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 11a mode.

*5 Since SAR exclusion threshold conditions are corresponded by KDB 447498 D01, an SAR test is not required.

*6 1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg.

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<EUT>

The used model No.: GT-I9105 (FCC ID: A3LGTI9105)

It tested in the worst mode of each frequency band of a prior SAR test.

1) SAR measurement for GSM, W-CDMA

Band	Test Frequency	Mode	Crest factor	Note
GSM850	836.6MHz(190ch)	GPRS (CS-1) 4 slots EGPRS (MCS-1) 4 slots	2.1	*1 1)
WCDMA II	1852.4MHz(9262ch) 1880.0MHz(9400ch)	12.2k RMC	1	
WWAN				
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. GSM850 :PCL 5 W-CDMA :All up bits				

2) SAR measurement for WLAN

Mode	Test Frequency	Modulation	Crest factor	Note
IEEE802.11b	2437MHz(6ch)	DBPSK(1Mbps)	1	*1 1)
IEEE802.11a	5180MHz(36ch)	BPSK(6Mbps)	1	*1 1)
	5620MHz(124ch)	BPSK(6Mbps)	1	*1 1)
	5745MHz(149ch)	BPSK(6Mbps)	1	*1 1)
WLAN				
Power of the EUT was set by the software as follows:				
Software name & version: HW Rev 1.0, SW: 19105.001 [Power Setting] 11b: 16dBm 11a: 12dBm				
*The above setting of the 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.				

*1

1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg

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%

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

from E-field relations with power.

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

Therefore, The correlation of power and the E-field

$X_{\text{dB}} = 10\log(P) = 10\log(E)^2 = 20\log(E)$

Therefore,

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

SECTION 6 SAR test exclusion considerations**6.1 Standalone SAR test exclusion considerations**

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

$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot$

$[\sqrt{f(\text{GHz})}] \leq 3.0$ for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

□ $f(\text{GHz})$ is the RF channel transmit frequency in GHz

□ Power and distance are rounded to the nearest mW and mm before calculation¹⁷

□ The result is rounded to one decimal place for comparison

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

<The sample which performed the prior check for determining worst mode>

The used model No.: GT-I9105P (FCC ID: A3LGTI9105P)

Band	Mode (Max power)	Frequency (Max power)	Upper power of spec	Min. distance *2	Standalone SAR tested
GSM850	GPRS 4slots	836.6MHz(190ch)	24.55dBm/ 285.10mW	<5mm	☒
PCS1900	GPRS 2slots	1850.2MHz(512ch)	21.97dBm/ 168.66 mW	<5mm	☒
WCDMA V	12.2k RMC	826.4MHz(4132ch)	24.00dBm/ 251.19 mW	<5mm	☒
WCDMA II	12.2k RMC	1907.6MHz(9538ch)	23.00dBm/ 199.53 mW	<5mm	☒

Mode	Modulation (Max power)	Frequency (Max power)	Upper power of spec	Min. distance *2	Standalone SAR tested
IEEE802.11b	DBPSK(1Mbps)	2437MHz(6ch)	15.50 dBm/ 35.48 mW	<5mm	☒
IEEE802.11a 5180-5320MHz	BPSK(6Mbps)	5180MHz(36ch)	9.50 dBm/ 8.91 mW	<5mm	☒
IEEE802.11a 5500-5700MHz	BPSK(6Mbps)	5620MHz(124ch)	8.84 dBm/ 7.66 mW	<5mm	☒
IEEE802.11a 5745-5825MHz	BPSK(6Mbps)	5745MHz(149ch)	9.04 dBm/ 8.02 mW	<5mm	☒

Mode	Modulation	Frequency	Upper power of spec	Min. distance *2	Standalone SAR tested
Bluetooth	DH5	2480MHz(79ch)	7.50 dBm/ 5.15 mW	<5mm	☐

*1 Refer to Appendix 4

<EUT>

The used model No.: GT-I9105 (FCC ID: A3LGTI9105)

It tested in the worst mode for SAR of each frequency band of a prior SAR test.

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SECTION 7 : Description of the Head/Body setup**7.1 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 D04 was also incorporated.

ii) Test mode

GSM850/PCS1900	Voice mode (GSM)/VOIP mode(Worst mode in Data transmission in Edge mode)
WCDMA V/II	12.2kRMC
WLAN	VOIP mode (11b)

iii) Test position

No.	Phantom	Position	WWAN		WLAN	
			Tested	Antenna	Tested	Antenna
1	Left	Cheek	☒	Fixed	☒	Fixed
2	Left	Tilt	☒	Fixed	☒	Fixed
3	Right	Cheek	☒	Fixed	☒	Fixed
4	Right	Tilt	☒	Fixed	☒	Fixed

Additional position

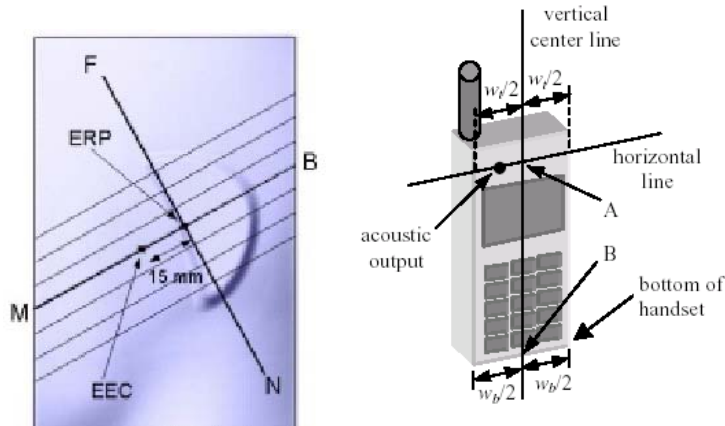
No.	Phantom	Position	WWAN		WLAN	
			Tested	Antenna	Tested *	Antenna
1	Flat	Front	☐	Fixed	☒	Fixed

*Only WLAN 5GHz band(5180 – 5825MHz)

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”.

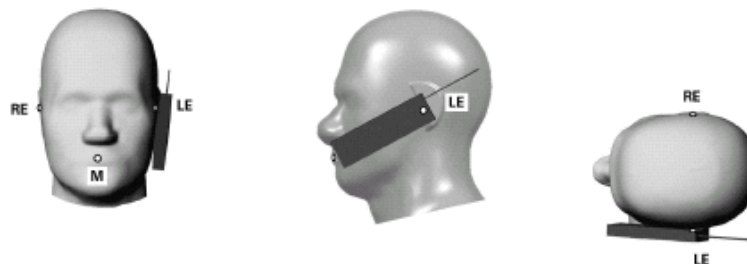


Cheek position

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

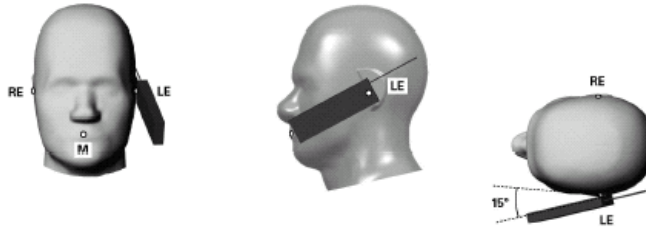
This test position is established:

- 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 D04.

The SAR required in these regions of SAM should be measured using a flat phantom.

The phone should be positioned with a separation distance of 4 mm between the ear reference point (ERP) and the outer surface of the flat phantom shell. While maintaining this distance at the ERP location, the low (bottom) edge of the phone is lowered from the phantom to establish the same separation distance between the peak SAR location identified by the truncated partial SAR distribution measured with the SAM phantom. The distance from the peak SAR location to the phone should be determined by the straight line passing perpendicularly through the phantom surface.

<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.

7.2 Description of the Body setup

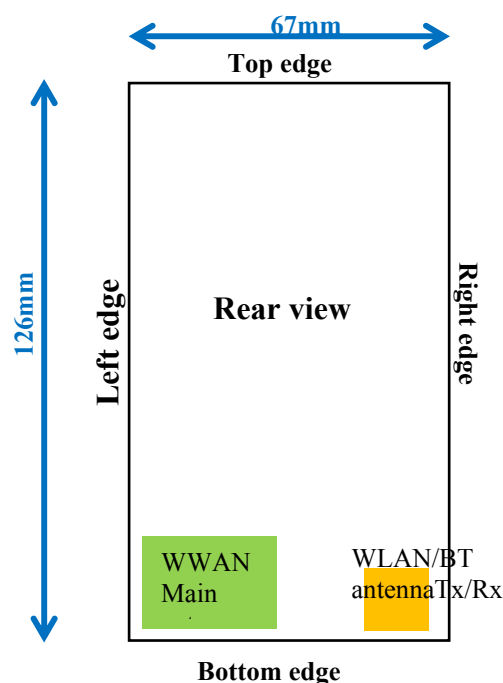
i) Procedure for SAR testing

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

ii) Test mode

GSM850/PCS1900	Data transmission mode (GPRS)/ Voice mode (GSM)
WCDMA V/II	Data transmission mode (12.2kRMC)
WLAN	Data transmission mode (11b)

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): 126x67x12

<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	☒	Fixed	<25mm	☒	Fixed	< 25mm
2	Rear	10mm	☒	Fixed	<25mm	☒	Fixed	< 25mm
3	Left edge	10mm	☒	Fixed	<25mm	☐	Fixed	54mm
4	Right edge	10mm	☐	Fixed	38mm	☒	Fixed	<25mm
5	Top edge	10mm	☐	Fixed	108mm	☐	Fixed	117mm
6	Bottom edge	10mm	☒	Fixed	<25mm	☒	Fixed	<25mm

7.3 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 10 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 (10mm).

ii) Test mode

WLAN	Data transmission mode (11a)
------	------------------------------

iii) Test position

No.	Position	Test distance	WWAN		WLAN	
			Tested	Antenna	Tested	Antenna
1	Front	10mm	☐	Fixed	☒	Fixed
2	Rear	10mm	☐	Fixed	☒	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 8 : Test surrounding**8.1 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.

<0.3 – 3GHz range>

Error Description	Uncertain value ±	Probability distribution	divisor	(ci) 1g	Standard (1g)	vi or veff
Measurement System						
Probe calibration	± 6.00	Normal	1	1	± 6.00	∞
Axial isotropy of the probe	± 4.7	Rectangular	√3	0.7	± 1.9	∞
Spherical isotropy of the probe	± 9.6	Rectangular	√3	0.7	± 3.9	∞
Boundary effects	± 2.0	Rectangular	√3	1	± 1.2	∞
Probe linearity	± 4.7	Rectangular	√3	1	± 2.7	∞
Detection limit	± 1.0	Rectangular	√3	1	± 0.6	∞
Modulation response	± 2.4	Rectangular	√3	1	± 1.4	∞
Readout electronics	± 0.3	Normal	1	1	± 0.3	∞
Response time	± 0.8	Rectangular	√3	1	± 0.5	∞
Integration time	± 2.6	Rectangular	√3	1	± 1.5	∞
RF ambient Noise	± 3.0	Rectangular	√3	1	± 1.7	∞
RF ambient Reflections	± 3.0	Rectangular	√3	1	± 1.7	∞
Probe Positioner	± 0.8	Rectangular	√3	1	± 0.5	∞
Probe positioning	± 6.7	Rectangular	√3	1	± 3.9	∞
Max SAR Eval.	± 4.0	Rectangular	√3	1	± 2.3	∞
Test Sample Related						
Device positioning	± 2.9	Normal	1	1	± 2.9	56
Device holder uncertainty	± 3.6	Normal	1	1	± 3.6	7
Power drift	± 5.0	Rectangular	√3	1	± 2.9	∞
Power Scaling	+ 0.0	Rectangular	√3	1	± 0.0	∞
Phantom and Setup						
Phantom uncertainty	± 4.0	Rectangular	√3	1	± 2.3	∞
Liquid conductivity (target)	± 5.0	Rectangular	√3	0.64	± 1.8	∞
Liquid conductivity (meas.)	+ 4.9	Rectangular	1	0.64	+ 3.1	∞
Liquid permittivity (target)	± 5.0	Rectangular	√3	0.6	± 1.7	∞
Liquid permittivity (meas.)	- 4.8	Rectangular	1	0.6	- 2.9	∞
Liquid conductivity - temp.unc (below 2deg.C.)	± 1.7	Rectangular	√3	0.78	± 0.8	∞
Liquid permittivity - temp.unc (below 2deg.C.)	± 0.3	Rectangular	√3	0.23	± 0.0	∞
Combined Standard Uncertainty						
					± 12.374	
Expanded Uncertainty (k=2)						
					± 24.7	

<3 – 6GHz range>

Error Description	Uncertain value $\pm$	Probability distribution	divisor	(ci) lg	Standard (1g)	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	± 2.0	Rectangular	$\sqrt{3}$	1	± 1.2	∞
Probe linearity	± 4.7	Rectangular	$\sqrt{3}$	1	± 2.7	∞
Detection limit	± 1.0	Rectangular	$\sqrt{3}$	1	± 0.6	∞
Modulation response	± 2.4	Rectangular	$\sqrt{3}$	1	± 1.4	∞
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	± 0.8	Rectangular	$\sqrt{3}$	1	± 0.5	∞
Probe positioning	± 6.7	Rectangular	$\sqrt{3}$	1	± 3.9	∞
Max.SAR Eval.	± 4.0	Rectangular	$\sqrt{3}$	1	± 2.3	∞
Test Sample Related						
Device positioning	± 2.9	Normal	1	1	± 2.9	23
Device holder uncertainty	± 3.6	Normal	1	1	± 3.6	6
Power drift	± 5.0	Rectangular	$\sqrt{3}$	1	± 2.9	∞
Power Scaling	+ 0.0	Rectangular	$\sqrt{3}$	1	± 0.0	∞
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.)	+ 4.6	Rectangular	1	0.64	+ 2.9	∞
Liquid permittivity (target)	± 5.0	Rectangular	$\sqrt{3}$	0.6	± 1.7	∞
Liquid permittivity (meas.)	- 4.7	Rectangular	1	0.6	- 2.8	∞
Liquid conductivity - temp.unc (below 2deg.C.)	± 1.7	Rectangular	$\sqrt{3}$	0.78	± 0.8	∞
Liquid permittivity - temp.unc (below 2deg.C.)	± 0.3	Rectangular	$\sqrt{3}$	0.23	± 0.0	∞
Combined Standard Uncertainty						
					± 12.590	
Expanded Uncertainty (k=2)						
					± 25.2	

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SECTION 9 : Results of prior SAR test(Model No.: GT-I9105P (FCC ID: A3LGTI9105P))**<The sample which performed the prior check for determining worst mode>**

The used model No.: GT-I9105P (FCC ID: A3LGTI9105P)

In order to determine the worst mode of each band of EUT(model No.: GT-I9105), the prior SAR test was done using the sample of GT-I9105P.

9.1 GSM 850MHz 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 DATA transmitter for VOIP mode (EGPRS)

The test was performed at the worst position of Step1.

Note:

1)The EGPRS 4up mode was maximum based time average power. The power of other mode was lower than EGPRS 4up mode.The SAR is not required for GPRS mode because this EUT has not a VOIP function.

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

3) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/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 [%]
9-Nov	24.0	55	HSL900	23.5	835	ϵ_r	41.5	41.0	-1.2	+/-5
						σ [mho/m]	0.90	0.87	-3.3	+/-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							
190	836.6	GSM	Left	Fixed	Cheek	0	0.212
190	836.6	GSM	Left	Fixed	Tilt	0	0.181
190	836.6	GSM	Right	Fixed	Cheek	0	0.239
190	836.6	GSM	Right	Fixed	Tilt	0	0.174
Step.2 VOIP mode (EGPRS)							
190	836.6	EGPRS 4slots	Right	Fixed	Cheek	0	0.297

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9.2 GSM 850MHz Body SAR**(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 BODY SAR is not required for EGPRS mode because the maximum average output power for EGPRS mode is less than 1/4dB higher than that measured GPRS mode. The GPRS 4up mode was maximum based time average power.

The power of other mode was lower than GPRS 4up mode.

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

3) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/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 [%]
9-Nov	24.0	55	MSL 900	23.5	835	ϵ_r	55.2	53.2	-3.6	+/-5
						σ [mho/m]	0.97	0.96	-0.8	+/-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							
190	836.6	GPRS 4slots	Flat	Fixed	Front	10	0.430
190	836.6	GPRS 4slots	Flat	Fixed	Rear	10	0.763
190	836.6	GPRS 4slots	Flat	Fixed	Left edge	10	0.703
190	836.6	GPRS 4slots	Flat	Fixed	Bottom edge	10	0.195
Step.2 Voice mode (GSM)							
190	836.6	GSM	Flat	Fixed	Rear	10	0.616

9.3 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 DATA transmitter for VOIP mode (EGPRS)

The test was performed at the worst position of Step1.

Note:

1)The EGPRS 2up mode was maximum based time average power. The power of other mode was lower than EGPRS 2up mode. The SAR is not required for GPRS mode because this EUT has not a VOIP function.

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

3) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/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 [%]
1-Nov	24.0	52	HSL 1800	23.5	1880	ϵ_r	40.0	38.5	-3.8	+/-5
						σ [mho/m]	1.40	1.47	4.9	+/-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							
661	1880.0	GSM	Left	Fixed	Cheek	0	0.189
661	1880.0	GSM	Left	Fixed	Tilt	0	0.044
661	1880.0	GSM	Right	Fixed	Cheek	0	0.134
661	1880.0	GSM	Right	Fixed	Tilt	0	0.023
Step.2 VOIP mode (EGPRS)							
661	1880.0	EGPRS 2 slot	Left	Fixed	Cheek	0	0.237

9.4 PCS1900MHz Body SAR**(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.
- Step3. The changing to the channels (Low, High)
The test was performed at the worst condition of Step1 to Step2.
- Step4. The repeated measurement.
The test was performed at the worst condition of Step1 to Step3.

Note:

- 1)The BODY SAR is not required for EGPRS mode because the maximum average output power for EGPRS mode is less than 1/4dB higher than that measured GPRS mode. The GPRS 2up mode was maximum based time average power. The power of other mode was lower than GPRS 2up mode.
- 2)The other channel was not required since middle channel SAR value is less than 0.8W/kg.
- 3) When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.
Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg ($\sim 10\%$ from the 1-g SAR limit). Perform a third repeated measurement only if the original, first or second repeated measurement is ≥ 1.5 W/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 [%]
31-Oct	24.0	55	MSL 1800	23.5	1880	ϵ_r	53.3	51.1	-4.2	+/-5
						σ [mho/m]	1.52	1.51	-0.5	+/-5
14-Jan	24.0	50	MSL 1800	23.5	1880	ϵ_r	53.3	51.2	-3.9	+/-5
						σ [mho/m]	1.52	1.54	1.3	+/-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 2slots	Flat	Fixed	Front	10	0.278
661	1880.0	GPRS 2slots	Flat	Fixed	Rear	10	0.881
661	1880.0	GPRS 2slots	Flat	Fixed	Left edge	10	0.273
661	1880.0	GPRS 2slots	Flat	Fixed	Bottom edge	10	0.592
Step.2 Voice mode (GSM)							
661	1880.0	GSM	Flat	Fixed	Rear	10	0.766
Step.3 Frequency change							
512	1850.2	GPRS 2slots	Flat	Fixed	Rear	10	1.01
810	1909.8	GPRS 2slots	Flat	Fixed	Rear	10	0.744
Step.4 Repeated measurement							
512	1850.2	GPRS 2slots	Flat	Fixed	Rear	10	0.977

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9.5 WCDMA Band V Head SAR**(1)Method of measurement**

Step1. The searching for the worst position

The test was performed in the middle channel.

Note:

1)The SAR is not required for AMR mode because the maximum average output power for AMR mode is less than 1/4dB higher than that measured 12.2k RMC mode.

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

3) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/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 [%]
9-Nov	24.0	55	HSL900	23.5	835	ϵ_r	41.5	41.0	-1.2	+/-5
						σ [mho/m]	0.90	0.87	-3.3	+/-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							
4183	836.6	12.2k RMC	Left	Fixed	Cheek	0	0.204
4183	836.6	12.2k RMC	Left	Fixed	Tilt	0	0.164
4183	836.6	12.2k RMC	Right	Fixed	Cheek	0	0.236
4183	836.6	12.2k RMC	Right	Fixed	Tilt	0	0.176

9.6 WCDMA Band V Body SAR**(1)Method of measurement****<Body (Hotspot mode)>**

Step1. The searching for the worst position

The test was performed in the middle channel.

Note:

1)The BODY SAR is not required for HSDPA mode because the maximum average output power for HSDPA mode is less than 1/4dB higher than that measured 12.2k RMC mode.

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

3) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/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 [%]
8-Nov	24.0	55	MSL 900	23.5	835	ϵ_r	55.2	53.2	-3.6	+/-5
						σ [mho/m]	0.97	0.96	-0.8	+/-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							
4183	836.6	12.2k RMC	Flat	Fixed	Front	10	0.302
4183	836.6	12.2k RMC	Flat	Fixed	Rear	10	0.564
4183	836.6	12.2k RMC	Flat	Fixed	Left edge	10	0.490
4183	836.6	12.2k RMC	Flat	Fixed	Bottom edge	10	0.132

9.7 WCDMA Band II Head SAR**(1)Method of measurement**

Step1. The searching for the worst position

The test was performed in the middle channel.

Note:

1)The SAR is not required for AMR mode because the maximum average output power for AMR mode is less than 1/4dB higher than that measured 12.2k RMC mode.

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

3) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/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 [%]
1-Nov	24.0	52	HSL 1800	23.5	1880	ϵ_r	40.0	38.5	-3.8	+/-5
						σ [mho/m]	1.40	1.47	4.9	+/-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							
9400	1880.0	12.2k RMC	Left	Fixed	Cheek	0	0.276
9400	1880.0	12.2k RMC	Left	Fixed	Tilt	0	0.065
9400	1880.0	12.2k RMC	Right	Fixed	Cheek	0	0.242
9400	1880.0	12.2k RMC	Right	Fixed	Tilt	0	0.041

9.8 WCDMA Band II Body SAR**(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 channels (Low, High)
The test was performed at the worst condition of from Step1.
- Step3. The repeated measurement.
The test was performed at the worst condition of Step1 to Step2.

Note:

- 1)The BODY SAR is not required for HSDPA mode because the maximum average output power for HSDPA mode is less than 1/4dB higher than that measured 12.2k RMC mode.
- 2)The other channel was not required since middle channel SAR value is less than 0.8W/kg
- 3) When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.
Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg ($\sim 10\%$ from the 1-g SAR limit). Perform a third repeated measurement only if the original, first or second repeated measurement is ≥ 1.5 W/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 [%]
31-Oct	24.0	55	MSL 1800	23.5	1880	ϵ_r	53.3	51.1	-4.2	+/-5
						σ [mho/m]	1.52	1.51	-0.5	+/-5
14-Jan	24.0	50	MSL 1800	23.5	1880	ϵ_r	53.3	51.2	-3.9	+/-5
						σ [mho/m]	1.52	1.54	1.3	+/-5

ϵ_r : Relative Permittivity / σ : Conductivity

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

(3)Result of Body SAR

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							
9400	1880.0	12.2k RMC	Flat	Fixed	Front	10	0.409
9400	1880.0	12.2k RMC	Flat	Fixed	Rear	10	1.02
9400	1880.0	12.2k RMC	Flat	Fixed	Left edge	10	0.240
9400	1880.0	12.2k RMC	Flat	Fixed	Bottom edge	10	0.565
Step.2 Channel change (If SAR level in Step.1 > 0.8 w/kg)							
9262	1852.4	12.2k RMC	Flat	Fixed	Rear	10	1.04
9538	1907.6	12.2k RMC	Flat	Fixed	Rear	10	0.980
Step.3 Repeated measurement							
9262	1852.4	12.2k RMC	Flat	Fixed	Rear	10	0.934

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9.9 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 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.

3) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/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 [%]
12-Nov	24.0	60	HSL 2450	23.5	2450	ϵ_r	39.2	37.3	-4.8	+/-5
						σ [mho/m]	1.80	1.87	3.7	+/-5

ϵ_r : Relative Permittivity / σ : Conductivity

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

(3)Result of HEAD SAR

6)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	0.127
6	2437	11b 1Mbps	Left	Fixed	Tilt	0	0.029
6	2437	11b 1Mbps	Right	Fixed	Cheek	0	0.070
6	2437	11b 1Mbps	Right	Fixed	Tilt	0	0.047

9.10 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.

3) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/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 [%]
11-Nov	24.0	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

5)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	0.087
6	2437	11b 1Mbps	Flat	Fixed	Rear	10	0.098
6	2437	11b 1Mbps	Flat	Fixed	Right edge	10	0.067
6	2437	11b 1Mbps	Flat	Fixed	Bottom edge	10	0.035

9.11 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

Note:

- 1) The 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 and 5500-5700MHz band, the other channel was not required since maximum average output power channel SAR value is less than 0.4W/kg.
- 3) For 5745-5825MHz band, the other channel was not required since maximum average output power channel SAR value is less than 0.8W/kg.
- 4) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/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 [%]
13-Nov	24.0	47	HSL 3-6GHz	23.5	5200	ϵ_r	36.0	35.0	-2.7	+/-5
						σ [mho/m]	4.66	4.69	0.6	+/-5
13-Nov	24.0	47	HSL 3-6GHz	23.5	5600	ϵ_r	35.5	34.5	-2.9	+/-5
						σ [mho/m]	5.07	5.04	-0.7	+/-5
13-Nov	24.0	47	HSL 3-6GHz	23.5	5700	ϵ_r	35.4	34.1	-3.6	+/-5
						σ [mho/m]	5.17	5.26	1.8	+/-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 (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							
36	5180	11a 6Mbps	Left	Fixed	Cheek	0	0.027
36	5180	11a 6Mbps	Left	Fixed	Tilt	0	0.012
36	5180	11a 6Mbps	Right	Fixed	Cheek	0	Tight region
36	5180	11a 6Mbps	Right	Fixed	Tilt	0	Tight region

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							
124	5620	11a 6Mbps	Left	Fixed	Cheek	0	0.019
124	5620	11a 6Mbps	Left	Fixed	Tilt	0	0.018
124	5620	11a 6Mbps	Right	Fixed	Cheek	0	Tight region
124	5620	11a 6Mbps	Right	Fixed	Tilt	0	Tight region

HEAD SAR MEASUREMENT RESULTS (5745-5825MHz)							
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							
149	5745	11a 6Mbps	Left	Fixed	Cheek	0	0.023
149	5745	11a 6Mbps	Left	Fixed	Tilt	0	0.020
149	5745	11a 6Mbps	Right	Fixed	Cheek	0	Tight region
149	5745	11a 6Mbps	Right	Fixed	Tilt	0	Tight region

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9.12 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

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.

3) For 5745-5825MHz band, the other channel was not required since maximum average output power channel SAR value is less than 0.8W/kg.

4) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/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 [%]
3-Dec	24.0	42	MSL 3-6GHz	23.5	5200	ϵ_r	49.0	47.1	-4.0	+/-5
						σ [mho/m]	5.30	5.43	2.4	+/-5
3-Dec	24.0	42	MSL 3-6GHz	23.5	5600	ϵ_r	48.5	46.2	-4.7	+/-5
						σ [mho/m]	5.77	6.00	4.0	+/-5
3-Dec	24.0	42	MSL 3-6GHz	23.5	5700	ϵ_r	48.3	46.1	-4.7	+/-5
						σ [mho/m]	5.88	6.15	4.6	+/-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(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							
36	5180	11a 6Mbps	Flat	Fixed	Front	10	0.055
36	5180	11a 6Mbps	Flat	Fixed	Rear	10	0.100

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							
124	5620	11a 6Mbps	Flat	Fixed	Front	10	0.035
124	5620	11a 6Mbps	Flat	Fixed	Rear	10	0.034

BODY SAR MEASUREMENT RESULTS(5745-5825MHz)							
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							
149	5745	11a 6Mbps	Flat	Fixed	Front	10	0.071
149	5745	11a 6Mbps	Flat	Fixed	Rear	10	0.039

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SECTION 10 : Measurement results(Model No.: GT-I9105 (FCC ID: A3LGTI9105))

<EUT>

The used model No.: GT-I9105 (FCC ID: A3LGTI9105)

Worst mode was determined from the result of the prior SAR test of the Section 9. This result is formal data.

10.1 GSM 850MHz Head SAR**(1)Method of measurement**

Step1. Measurement of the worst mode of the prior SAR test.

Note:

1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/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 [%]
31-Jan	24.0	38	HSL900	23.5	835	ϵ_r	41.5	41.2	-0.7	+/-5
						σ [mho/m]	0.90	0.88	-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 Measurement of the worst mode of the prior SAR test.							
190	836.6	EGPRS 4slots	Right	Fixed	Cheek	0	0.057

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10.2 GSM 850MHz Body SAR**(1)Method of measurement****<Body (Hotspot mode)>****(1)Method of measurement**

Step1. Measurement of the worst mode of the prior SAR test.

Note:

1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/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 [%]
5-Dec	24.0	48	MSL 900	23.5	835	ϵ_r	55.2	55.5	0.6	+/-5
						σ [mho/m]	0.97	0.97	0.3	+/-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 Measurement of the worst mode of the prior SAR test.							
190	836.6	GPRS 4slots	Flat	Fixed	Rear	10	0.794

10.3 WCDMA Band II Head SAR**(1)Method of measurement**

Step1. Measurement of the worst mode of the prior SAR test.

Note:

1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/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 [%]
31-Jan	24.0	38	HSL 1800	23.5	1880	ϵ_r	40.0	38.5	-3.9	+/-5
						σ [mho/m]	1.40	1.44	3.0	+/-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 Measurement of the worst mode of the prior SAR test.							
9400	1880.0	12.2k RMC	Left	Fixed	Cheek	0	0.314

10.4 WCDMA Band II Body SAR**(1)Method of measurement****<Body (Hotspot mode)>****(1)Method of measurement**

Step1. Measurement of the worst mode of the prior SAR test.

Step2. The repeated measurement.

The test was performed at the worst condition of Step1.

Note:

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

Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg ($\sim 10\%$ from the 1-g SAR limit). Perform a third repeated measurement only if the original, first or second repeated measurement is ≥ 1.5 W/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 [%]
3-Dec	24.0	42	MSL 1800	23.5	1880	ϵ_r	53.3	51.0	-4.4	+/-5
						σ [mho/m]	1.52	1.57	3.0	+/-5
14-Jan	24.0	50	MSL 1800	23.5	1880	ϵ_r	53.3	51.2	-3.9	+/-5
						σ [mho/m]	1.52	1.54	1.3	+/-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 Measurement of the worst mode of the prior SAR test.							
9262	1852.4	12.2k RMC	Flat	Fixed	Rear	10	0.939
Step.2 Repeated measurement							
9262	1852.4	12.2k RMC	Flat	Fixed	Rear	10	0.934

10.5 WLAN 2.4G Head SAR**(1)Method of measurement**

Step1. Measurement of the worst mode of the prior SAR test.

Note:

1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/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 [%]
3-Dec	24.0	42	HSL 2450	23.5	2450	ϵ_r	39.2	37.7	-3.8	+/-5
						σ [mho/m]	1.80	1.89	4.8	+/-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 Measurement of the worst mode of the prior SAR test.							
6	2437	11b 1Mbps	Left	Fixed	Cheek	0	0.125

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10.6 WLAN 2.4G Body SAR**(1)Method of measurement****<Body (Hotspot mode)>**

Step1. Measurement of the worst mode of the prior SAR test.

Note:

1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/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 [%]
31-Jan	24.0	38	MSL 2450	23.5	2450	ϵ_r	52.7	50.9	-3.5	+/-5
						σ [mho/m]	1.95	2.03	4.1	+/-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 Measurement of the worst mode of the prior SAR test.							
6	2437	11b 1Mbps	Flat	Fixed	Rear	10	0.082

10.7 WLAN 5G Head SAR**(1)Method of measurement**

Step1. Measurement of the worst mode of the prior SAR test.

SAR test in Mouse and Jaw Regions of the SAM Phantom

WLAN antenna is located near the lower edge of EUT. Therefor Head SAR for WLAN(5180 – 5825MHz) applied the measurement procedure using a flat phantom according to the KDB648474 D04.

Step2. The measurement at Flat phantom

The test was positioned 14mm against the lower edge from flat phantom.

Note:

1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/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 [%]
13-Nov	24.0	47	HSL 3-6GHz	23.5	5200	ϵ_r	36.0	35.0	-2.7	+/-5
						σ [mho/m]	4.66	4.69	0.6	+/-5
13-Nov	24.0	47	HSL 3-6GHz	23.5	5600	ϵ_r	35.5	34.5	-2.9	+/-5
						σ [mho/m]	5.07	5.04	-0.7	+/-5
13-Nov	24.0	47	HSL 3-6GHz	23.5	5700	ϵ_r	35.4	34.1	-3.6	+/-5
						σ [mho/m]	5.17	5.26	1.8	+/-5
1-Feb	24.0	42	HSL 3-6GHz	23.5	5200	ϵ_r	36.0	35.1	-2.6	+/-5
						σ [mho/m]	4.66	4.70	0.9	+/-5
1-Feb	24.0	42	HSL 3-6GHz	23.5	5600	ϵ_r	35.5	34.4	-3.2	+/-5
						σ [mho/m]	5.07	5.16	1.8	+/-5
1-Feb	24.0	42	HSL 3-6GHz	23.5	5700	ϵ_r	35.4	34.2	-3.4	+/-5
						σ [mho/m]	5.17	5.28	2.1	+/-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 (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 Measurement of the worst mode of the prior SAR test.							
36	5180	11a 6Mbps	Left	Fixed	Cheek	0	Tight region
Step.2 Measurement at flat phantom							
36	5180	11a 6Mbps	Flat	Fixed	Front	14	0.028

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 Measurement of the worst mode of the prior SAR test.							
124	5620	11a 6Mbps	Left	Fixed	Cheek	0	Tight region
Step.2 Measurement at flat phantom							
124	5620	11a 6Mbps	Flat	Fixed	Front	14	0.024

HEAD SAR MEASUREMENT RESULTS (5745-5825MHz)							
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 Measurement of the worst mode of the prior SAR test.							
149	5745	11a 6Mbps	Left	Fixed	Cheek	0	Tight region
Step.2 Measurement at flat phantom							
149	5745	11a 6Mbps	Flat	Fixed	Front	14	0.025

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

Step1. Measurement of the worst mode of the prior SAR test.

Note:

1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/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 [%]
3-Dec	24.0	42	MSL 3-6GHz	23.5	5200	ϵ_r	49.0	47.1	-4.0	+/-5
						σ [mho/m]	5.30	5.43	2.4	+/-5
21-Jan	24.0	44	MSL 3-6GHz	23.5	5600	ϵ_r	48.5	46.3	-4.5	+/-5
						σ [mho/m]	5.77	6.00	4.0	+/-5
21-Jan	24.0	44	MSL 3-6GHz	23.5	5700	ϵ_r	48.3	46.1	-4.7	+/-5
						σ [mho/m]	5.88	6.15	4.6	+/-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(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 Measurement of the worst mode of the prior SAR test.							
36	5180	11a 6Mbps	Flat	Fixed	Rear	10	0.109

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 Measurement of the worst mode of the prior SAR test.							
124	5620	11a 6Mbps	Flat	Fixed	Front	10	0.029

BODY SAR MEASUREMENT RESULTS(5745-5825MHz)							
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 Measurement of the worst mode of the prior SAR test.							
149	5745	11a 6Mbps	Flat	Fixed	Front	10	0.040

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SECTION 11 : Scaled SAR results(Model No.: GT-I9105 (FCC ID: A3LGTI9105))**11.1 Scaled Head SAR**

Mode	Measured Max power	Upper power of spec	Measured SAR [W/kg]	Scaled SAR [W/kg]
GSM850 EGPRS 4slots 836.6MHz	24.42dBm/ 276.69 mW	24.49dBm/ 281.19mW	0.057	0.058
WCDMA II 12.2k RMC 1880.0MHz	22.15dBm/ 164.06 mW	23.00dBm/ 199.53 mW	0.314	0.382

Mode	Measured Max power	Upper power of spec	Measured SAR [W/kg]	Scaled SAR [W/kg]
IEEE802.11b 2437MHz 1Mbps	14.73 dBm/ 29.72 mW	15.50 dBm/ 35.48 mW	0.125	0.143
IEEE802.11a (5180-5320MHz) 5180MHz 6Mbps	9.07 dBm/ 8.07 mW	9.50 dBm/ 8.91 mW	0.028	0.031
IEEE802.11a (5500-5700MHz) 5620MHz 6Mbps	8.98 dBm/ 7.91 mW	9.50 dBm/ 8.91 mW	0.024	0.027
IEEE802.11a (5745-5825MHz) 5745MHz 6Mbps	9.04 dBm/ 8.02 mW	9.50 dBm/ 8.91 mW	0.025	0.028

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11.2 Scaled Body SAR

Mode	Measured Max power	Upper power of spec	Measured SAR [W/kg]	Scaled SAR [W/kg]
GSM850 EGPRS 4slots 836.6MHz	24.45dBm/ 278.61 mW	24.55dBm/ 285.10mW	0.794	0.798
WCDMA II 12.2k RMC 1852.4MHz	22.26dBm/ 168.27 mW	23.00dBm/ 199.53 mW	0.939	1.113

Mode	Measured Max power	Upper power of spec	Measured SAR [W/kg]	Scaled SAR [W/kg]
IEEE802.11b 2437MHz 1Mbps	14.73 dBm/ 29.72 mW	15.50 dBm/ 35.48 mW	0.082	0.098
IEEE802.11a (5180-5320MHz) 5180MHz 6Mbps	9.07 dBm/ 8.07 mW	9.50 dBm/ 8.91 mW	0.109	0.120
IEEE802.11a (5500-5700MHz) 5620MHz 6Mbps	8.98 dBm/ 7.91 mW	9.50 dBm/ 8.91 mW	0.029	0.033
IEEE802.11a (5745-5825MHz) 5745MHz 6Mbps	9.04 dBm/ 8.02 mW	9.50 dBm/ 8.91 mW	0.040	0.044

SECTION 12 : Simultaneous transmission SAR test exclusion considerations(Model No.: GT-I9105 (FCC ID: A3LGTI9105))**12.1 Estimated SAR is calculated about Bluetooth**

When standalone SAR test exclusion applies to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to following to determine simultaneous transmission SAR test exclusion:

(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm) $\cdot[\sqrt{f(\text{GHz})}/x]$ W/kg for test separation distances ≤ 50 mm;

where $x = 7.5$ for 1-g SAR, and $x = 18.75$ for 10-g SAR.

Mode	Measured Max power	Upper power of spec	Min. distance	Estimated SAR
Bluetooth	7.12 dBm/ 5.15 mW (DH5 2402MHz (1ch))	7.50 dBm/ 5.62 mW	<5mm	0.236 W/kg (max power: 5.62 mW, min distance: 5 mm, fGHz): 2480MHz (79ch) *1, x: 7.5)

*1 The upper frequency of the frequency band of Bluetooth was used in order to calculate the maximum estimated SAR.

12.2 Result of SUM SAR1g of Head

SUM SAR1g (GSM850 + WLAN(2.4G) or + Bluetooth)				
Stand alone worst SAR(1g) [W/kg]			SUM SAR(1g)[W/kg]	SUM SAR(1g)[W/kg]
GSM850*1	WLAN 2.4G*1	Bluetooth*2	WWAN + WLAN(2.4G)	WWAN + Bluetooth
0.058	0.143	0.236	0.201	0.294

SUM SAR1g (WCDMA II + WLAN(2.4G) or + Bluetooth)				
Stand alone worst SAR(1g) [W/kg]			SUM SAR(1g)[W/kg]	SUM SAR(1g)[W/kg]
WCDMA II*1	WLAN 2.4G*1	Bluetooth*2	WWAN + WLAN(2.4G)	WWAN + Bluetooth
0.382	0.143	0.236	0.525	0.618

*1 Scaled SAR. Refer to Section 11.

*2 Estimated SAR.

12.3 Result of SUM SAR1g of Body

SUM Σ SAR1g (GSM850 + WLAN(2.4G) or + Bluetooth)				
Stand alone worst SAR(1g) [W/kg]			SUM SAR(1g)[W/kg]	SUM SAR(1g)[W/kg]
GSM850*1	WLAN 2.4G*1	Bluetooth*2	WWAN + WLAN(2.4G)	WWAN + Bluetooth
0.798	0.098	0.236	0.896	1.034

SUM Σ SAR1g (WCDMA II + WLAN(2.4G) or + Bluetooth)				
Stand alone worst SAR(1g) [W/kg]			SUM SAR(1g)[W/kg]	SUM SAR(1g)[W/kg]
WCDMA II*1	WLAN 2.4G*1	Bluetooth*2	WWAN + WLAN(2.4G)	WWAN + Bluetooth
1.113	0.098	0.236	1.211	1.349

*1 Scaled SAR. Refer to Section 11.

*2 Estimated SAR.

SECTION 13 : Test instruments

<October 31 to December 3, 2012>

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
MRFA-08	Pre Amplifier	TSJ	TCBP0206	-	SAR	2012/03/22 * 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-05	Dipole Antenna	Schmid&Partner Engineering AG	D900V2	155	SAR	2010/12/06 * 36
MDA-06	Dipole Antenna	Schmid&Partner Engineering AG	D1800V2	2d040	SAR	2010/12/09 * 36
MDA-07	Dipole Antenna	Schmid&Partner Engineering AG	D2450V2	713	SAR	2010/09/13 * 36
MDA-08	Dipole Antenna	Schmid&Partner Engineering AG	D5GHzV2	1020	SAR	2011/08/23 * 24
MRENT-52	Dipole Antenna	Schmid&Partner Engineering AG	D5GHzV2	1039	SAR	2012/04/17 * 24
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/MSL900					Daily check	Target value ± 5%
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)
MOS-14	Thermo-Hygrometer	Custom	CTH-201	-	Power Measurement	2012/02/06 * 12
MPSC-01	Power splitters/Combiners	Mini-Circuit	ZFSC-2-2500	0124	Power Measurement	2012/09/12 * 12
MCC-99	Microwave Cable 1G-40GHz	Schner	SUCOFLEX102	30820/2	Power Measurement	2012/05/09 * 12
MAT-24	Attenuator(10dB)(above1 GHz)	Agilent	8493C	71389	Power Measurement	2012/06/27 * 12
MPSE-17	Power sensor	Anritsu	MA2411B	0738285	Power Measurement	2012/06/01 * 12
MPM-12	Power Meter	Anritsu	ML2495A	0825002	Power Measurement	2012/06/01 * 12
MURC-02	Wireless Communication Test Set	Agilent	E5515C	GB47050683	Power Measurement	2011/11/26 * 12
MAT-22	Attenuator(10dB) 1-18GHz	Orient Microwave	BX10-0476-00	-	Power Measurement	2012/03/27 * 12
MCC-99	Microwave Cable 1G-40GHz	Schner	SUCOFLEX102	30820/2	Power Measurement	2012/05/09 * 12
MPD-01	PowerDivider DC to 26.5GHz	Agilent	11636B	52258	Power Measurement	2012/03/27 * 12
MPM-08	Power Meter	Anritsu	ML2495A	6K00003338	Power Measurement	2012/10/08 * 12
MPSE-11	Power sensor	Anritsu	MA2411B	011737	Power Measurement	2012/10/08 * 12
MBTR15	CBT Bluetooth Tester	Rohde & Schwarz	CBT	100401	Power Measurement	2011/05/25 * 24
MCC-137	Microwave cable	HUBER+SUHNER	SUCOFLEX 102	37954/2	Power Measurement	2012/10/19 * 12
MOS-19	Thermo-Hygrometer	Custom	CTH-201	0001	Power Measurement	2011/12/09 * 12
MMM-16	DIGITAL HiTESTER	Hioki	3805	070900532	Power Measurement	2012/01/13 * 12
MDPS-12	DC Power Supply	Kikusui	PAK35-10A	LF002314	Power Measurement	Pre Check

<December 3 and 5, 2012>

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
MRFA-08	Pre Amplifier	TSJ	TCBP0206	-	SAR	2012/03/22 * 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
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-05	Dipole Antenna	Schmid&Partner Engineering AG	D900V2	155	SAR	2010/12/06 * 36
MDA-06	Dipole Antenna	Schmid&Partner Engineering AG	D1800V2	2d040	SAR	2010/12/09 * 36
MDA-07	Dipole Antenna	Schmid&Partner Engineering AG	D2450V2	713	SAR	2010/09/13 * 36
MRENT-52	Dipole Antenna	Schmid&Partner Engineering AG	D5GHzV2	1039	SAR	2012/04/17 * 24
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/MSL900					Daily check	Target value $\pm$ 5%
HSL/MSL1800					Daily check	Target value $\pm$ 5%
HSL/MSL2450					Daily check	Target value $\pm$ 5%
HSL/MSL 3-6GHz					Daily check	Target value $\pm$ 5%
SAR room					Daily check	Ambient Noise<0.012W/kg

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
MOS-26	Thermo-Hygrometer	CUSTOM	CTH-201	A08Q29	Power Measurement	2012/05/14 * 12
MPSC-01	Power splitters/Combiners	Mini-Circuit	ZFSC-2-2500	0124	Power Measurement	2012/09/12 * 12
MCC-99	Microwave Cable 1G-40GHz	Schner	SUCOFLEX102	30820/2	Power Measurement	2012/05/09 * 12
MAT-24	Attenuator(10dB) (above1GHz)	Agilent	8493C	71389	Power Measurement	2012/06/27 * 12
MPSE-17	Power sensor	Anritsu	MA2411B	0738285	Power Measurement	2012/06/01 * 12
MPM-12	Power Meter	Anritsu	ML2495A	0825002	Power Measurement	2012/06/01 * 12
MURC-02	Wireless Communication Test Set	Agilent	E5515C	GB47050683	Power Measurement	2012/11/26 * 12

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<January 14 to February 1, 2013>

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(0.8-2.5GHz)	2012/08/28 * 12
MRFA-08	Pre Amplifier	TSJ	TCBP0206	-	SAR	2012/03/22 * 12
MHDC-11	Dual Directional Coupler	Hewlett Packard	778D	16605	SAR(0.1-2GHz)	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
MNCK-01	Type N Calibration Kit	Agilent	85032F	MY41495257	SAR	2012/09/18 * 12
MPB-07	Dosimetric E-Field Probe	Schmid&Partner Engineering AG	EX3DV4	3825	SAR	2012/12/10 * 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-05	Dipole Antenna	Schmid&Partner Engineering AG	D900V2	155	SAR	2010/12/06 * 36
MDA-06	Dipole Antenna	Schmid&Partner Engineering AG	D1800V2	2d040	SAR	2010/12/09 * 36
MDA-07	Dipole Antenna	Schmid&Partner Engineering AG	D2450V2	713	SAR	2010/09/13 * 36
MRENT-52	Dipole Antenna	Schmid&Partner Engineering AG	D5GHzV2	1039	SAR	2012/04/17 * 24
MDA-08	Dipole Antenna	Schmid&Partner Engineering AG	D5GHzV2	1020	SAR	2013/01/11 * 24
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
MSL1800					Daily check	Target value ± 5%
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)
MOS-26	Thermo-Hygrometer	CUSTOM	CTH-201	A08Q29	Power Measurement	2012/05/14 * 12
MPSC-01	Power splitters/Combiners	Mini-Circuit	ZFSC-2-2500	0124	Power Measurement	2012/09/12 * 12
MCC-99	Microwave Cable 1G-40GHz	Schner	SUCOFLEX102	30820/2	Power Measurement	2012/05/09 * 12
MAT-24	Attenuator(10dB) (above1GHz)	Agilent	8493C	71389	Power Measurement	2012/06/27 * 12
MPSE-17	Power sensor	Anritsu	MA2411B	0738285	Power Measurement	2012/06/01 * 12
MPM-12	Power Meter	Anritsu	ML2495A	0825002	Power Measurement	2012/06/01 * 12
MURC-02	Wireless Communication Test Set	Agilent	E5515C	GB47050683	Power Measurement	2012/11/26 * 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.

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, 12 mm x 12 mm or 10mm x 10mm. 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.”

2. Measurement data of prior SAR test(Model No.: GT-I9105P (FCC ID: A3LGTI9105P))

i) GSM850 Head

GT-I9105P GSM850 GSM Left cheek 836.6MHz

Communication System: GSM850; Communication System Band: Exported from older format (data unavailable - please correct).; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042

Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.875$ mho/m; $\epsilon_r = 40.988$; $\rho = 1000$ kg/m³

Phantom section: Left Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(9.39, 9.39, 9.39); 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 (61x91x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

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

Maximum value of SAR (interpolated) = 0.249 W/kg

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

Reference Value = 4.540 V/m; Power Drift = -0.12 dB

Peak SAR (extrapolated) = 0.266 W/kg

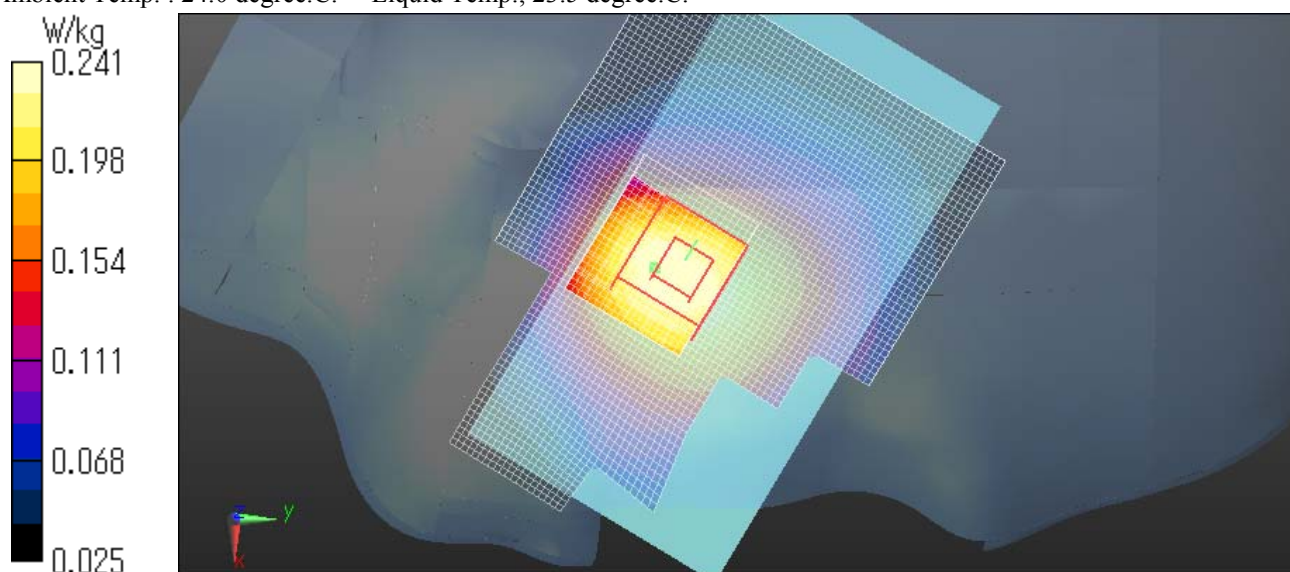
SAR(1 g) = 0.212 W/kg; SAR(10 g) = 0.159 W/kg

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

Maximum value of SAR (measured) = 0.241 W/kg

Date: 2012/11/09

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



GT-I9105P GSM850 GSM Left tilt 836.6MHz

Communication System: GSM850; Communication System Band: Exported from older format (data unavailable - please correct).; Frequency: 836.6 MHz; Duty Cycle: 1:8.30042

Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.875$ mho/m; $\epsilon_r = 40.988$; $\rho = 1000$ kg/m³

Phantom section: Left Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(9.39, 9.39, 9.39); 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 (61x91x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

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

Maximum value of SAR (interpolated) = 0.207 W/kg

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

Reference Value = 10.327 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 0.231 W/kg

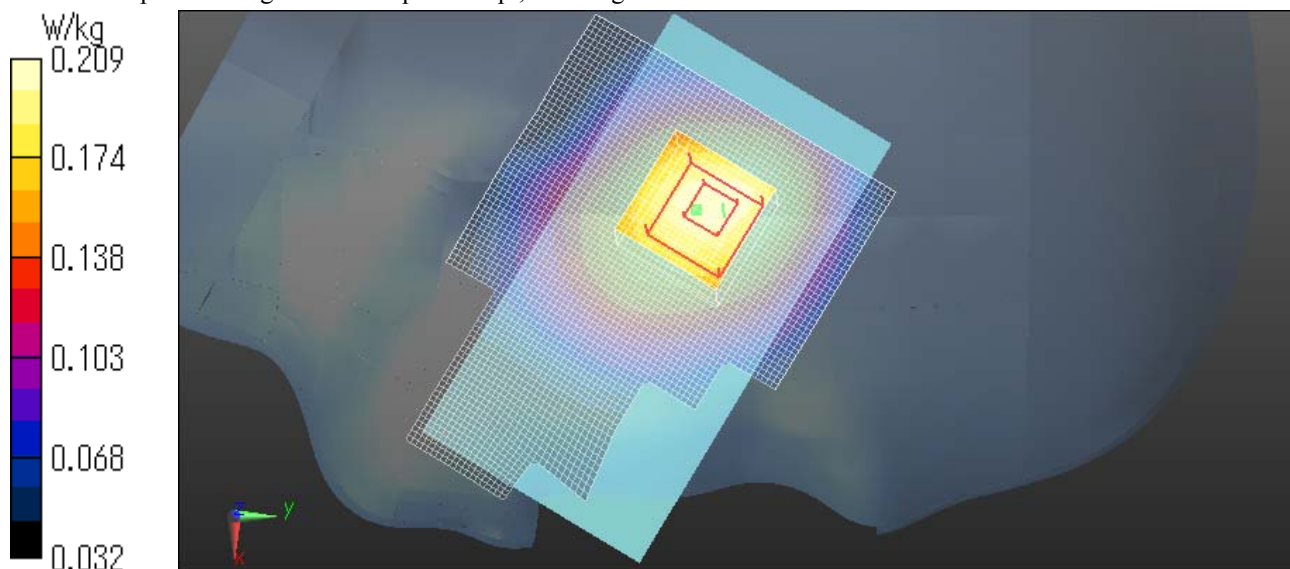
SAR(1 g) = 0.181 W/kg; SAR(10 g) = 0.138 W/kg

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

Maximum value of SAR (measured) = 0.209 W/kg

Date: 2012/11/09

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



GT-I9105P GSM850 GSM Right cheek 836.6MHz

Communication System: GSM850; Communication System Band: Exported from older format (data unavailable - please correct).; Frequency: 836.6 MHz; Duty Cycle: 1:8.30042

Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.875$ mho/m; $\epsilon_r = 40.988$; $\rho = 1000$ kg/m³

Phantom section: Right Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(9.39, 9.39, 9.39); 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 (61x91x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

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

Maximum value of SAR (interpolated) = 0.280 W/kg

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

Reference Value = 4.252 V/m; Power Drift = 0.19 dB

Peak SAR (extrapolated) = 0.307 W/kg

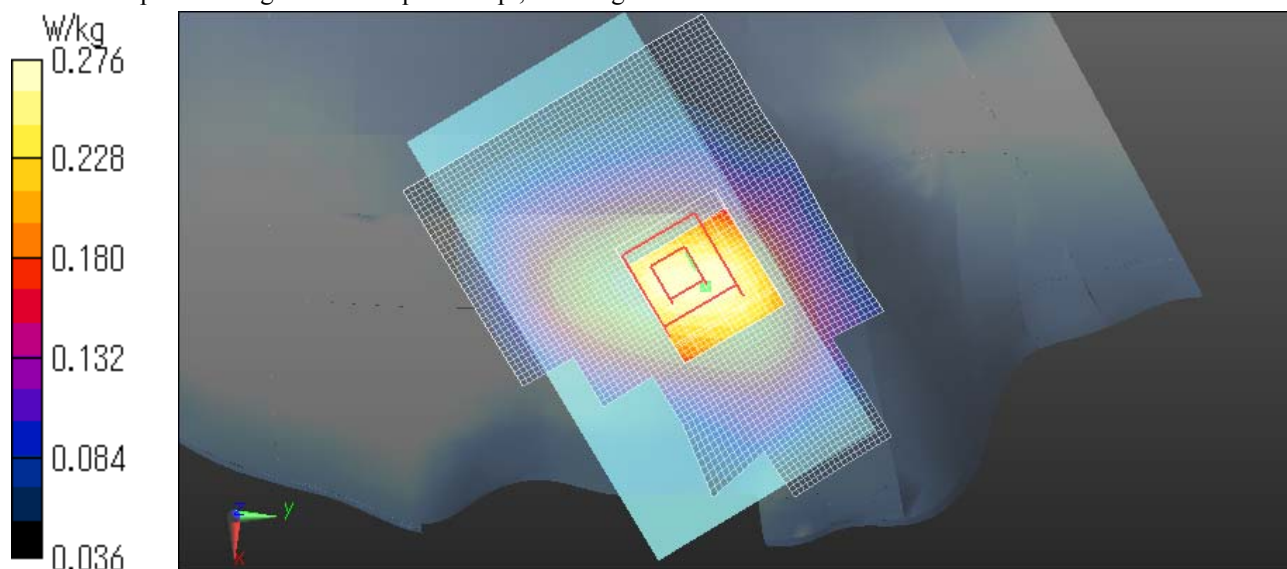
SAR(1 g) = 0.239 W/kg; SAR(10 g) = 0.179 W/kg

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

Maximum value of SAR (measured) = 0.276 W/kg

Date: 2012/11/09

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



GT-I9105P GSM850 GSM Right tilt 836.6MHz

Communication System: GSM850; Communication System Band: Exported from older format (data unavailable - please correct).; Frequency: 836.6 MHz; Duty Cycle: 1:8.30042

Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.875$ mho/m; $\epsilon_r = 40.988$; $\rho = 1000$ kg/m³

Phantom section: Right Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(9.39, 9.39, 9.39); 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 (61x91x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

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

Maximum value of SAR (interpolated) = 0.202 W/kg

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

Reference Value = 9.129 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.219 W/kg

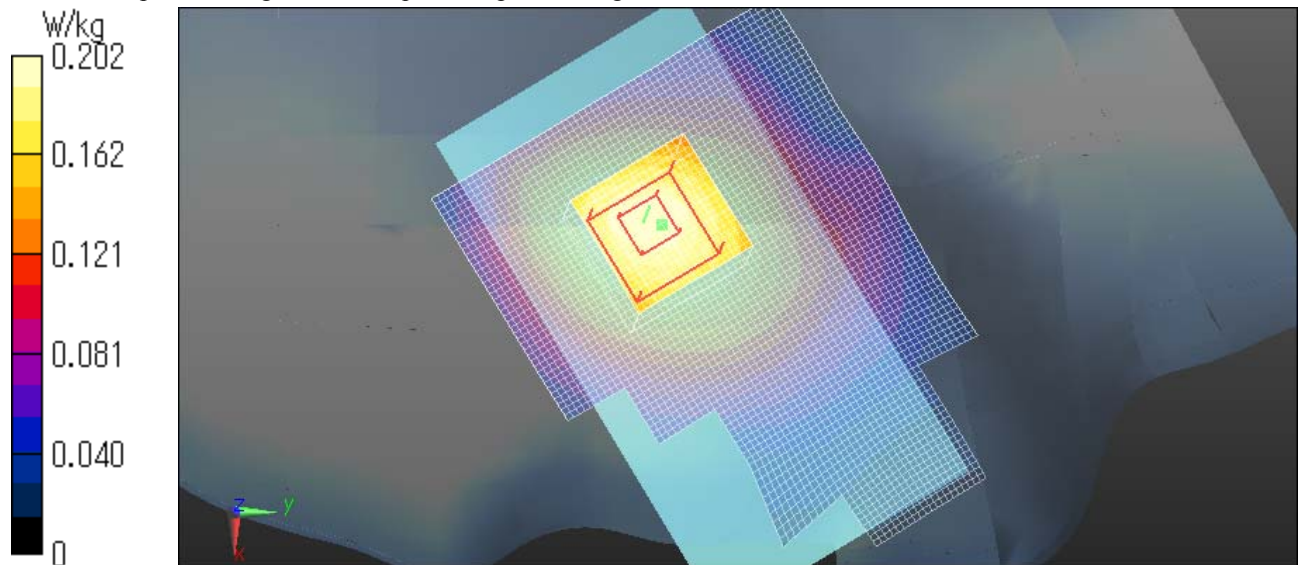
SAR(1 g) = 0.174 W/kg; SAR(10 g) = 0.134 W/kg

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

Maximum value of SAR (measured) = 0.199 W/kg

Date: 2012/11/09

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



GT-I9105P GSM850 EGPRS 4slots Right cheek 836.6MHz

Communication System: GSM850; Communication System Band: Exported from older format (data unavailable - please correct).; Frequency: 836.6 MHz; Duty Cycle: 1:2.09991

Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.875$ mho/m; $\epsilon_r = 40.988$; $\rho = 1000$ kg/m³

Phantom section: Right Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(9.39, 9.39, 9.39); 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 (61x91x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

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

Maximum value of SAR (interpolated) = 0.356 W/kg

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

Reference Value = 4.503 V/m; Power Drift = 0.15 dB

Peak SAR (extrapolated) = 0.385 W/kg

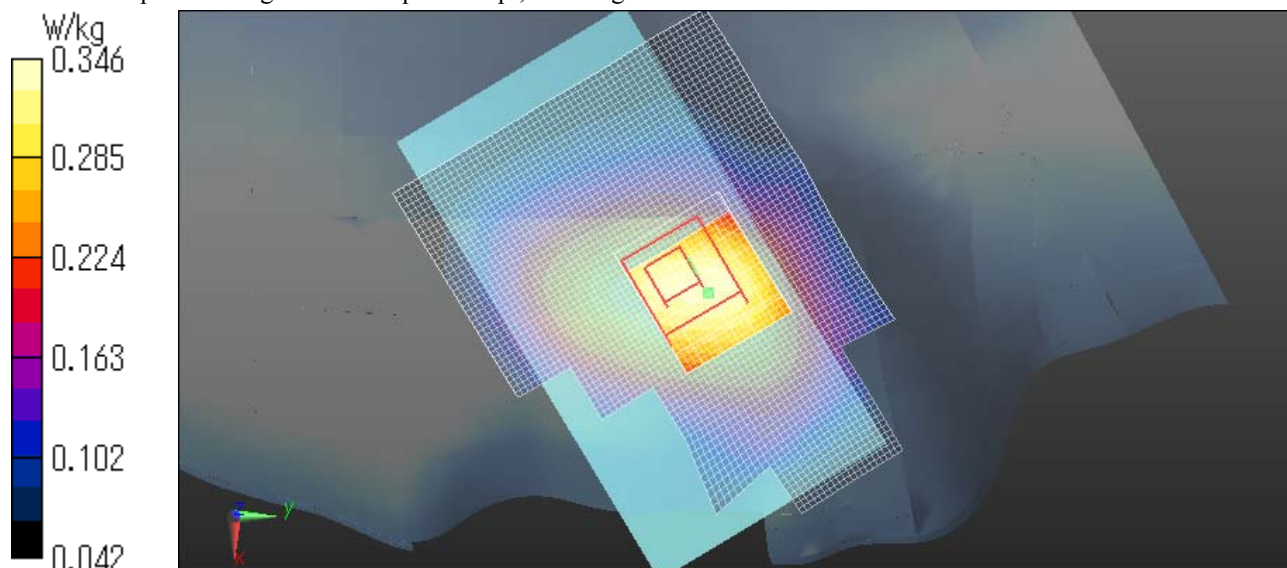
SAR(1 g) = 0.297 W/kg; SAR(10 g) = 0.221 W/kg

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

Maximum value of SAR (measured) = 0.346 W/kg

Date: 2012/11/09

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



ii) GSM850 Body

GT-I9105P GSM850 GPRS 4slots Front 10mm 836.6MHz

Communication System: GSM850; Communication System Band: Exported from older format (data unavailable - please correct).; Frequency: 836.6 MHz; Duty Cycle: 1:2.09991

Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.964$ mho/m; $\epsilon_r = 53.227$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(9.61, 9.61, 9.61); 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;

Measurement SW: DASY52, Version 52.8 (3);

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

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

Maximum value of SAR (interpolated) = 0.483 W/kg

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

Reference Value = 23.107 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.540 W/kg

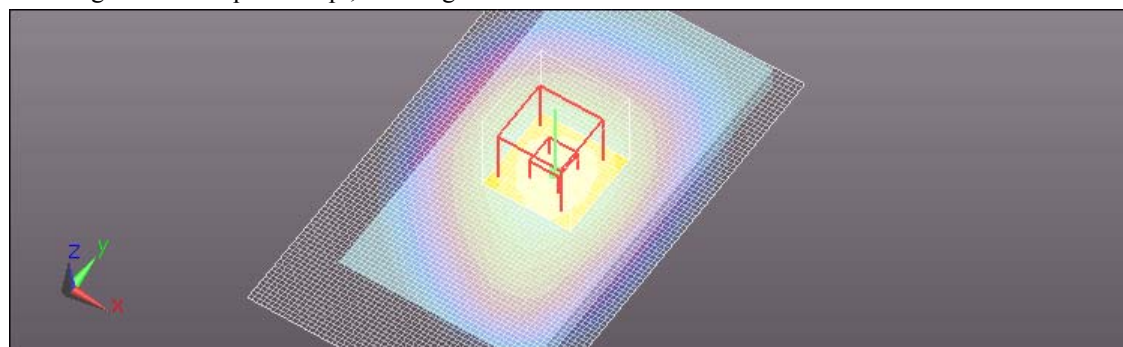
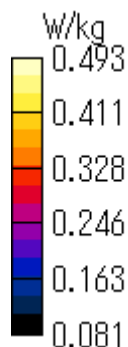
SAR(1 g) = 0.430 W/kg; SAR(10 g) = 0.332 W/kg

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

Maximum value of SAR (measured) = 0.493 W/kg

Date: 2012/11/09

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



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GT-I9105P GSM850 GPRS 4slots Rear 10mm 836.6MHz

Communication System: GSM850; Communication System Band: Exported from older format (data unavailable - please correct).; Frequency: 836.6 MHz; Duty Cycle: 1:2.09991

Medium parameters used (interpolated): $f = 836.6 \text{ MHz}$; $\sigma = 0.964 \text{ mho/m}$; $\epsilon_r = 53.227$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(9.61, 9.61, 9.61); 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;

Measurement SW: DASY52, Version 52.8 (3);

Area Scan (61x101x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

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

Maximum value of SAR (interpolated) = 0.830 W/kg

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

Reference Value = 30.063 V/m ; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.969 W/kg

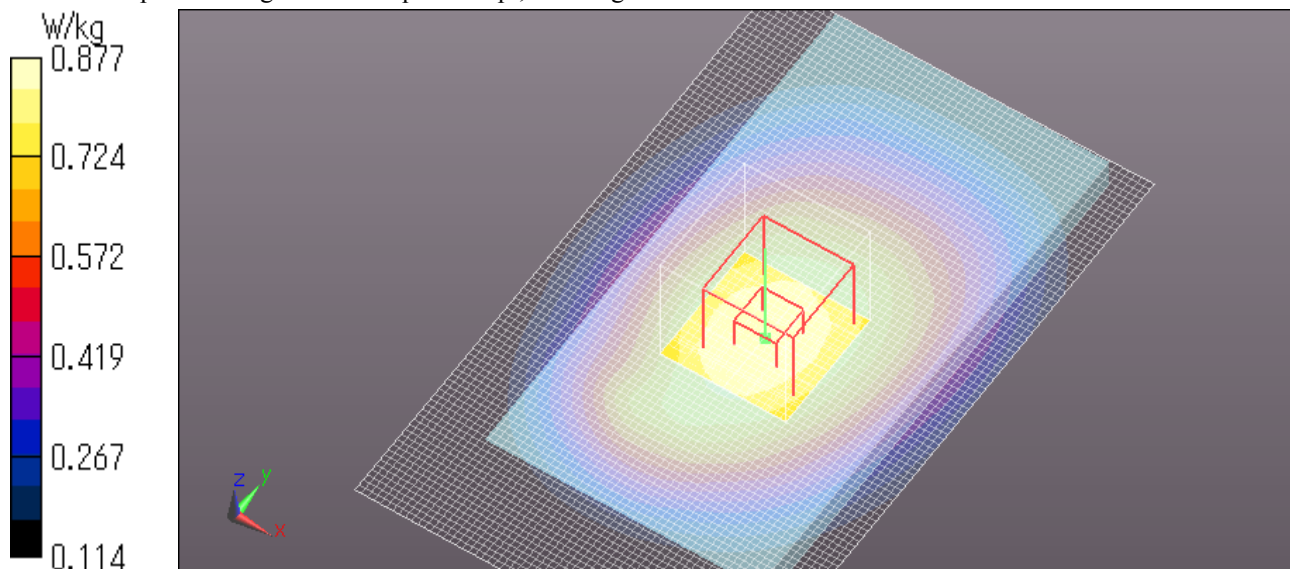
SAR(1 g) = 0.763 W/kg ; SAR(10 g) = 0.583 W/kg

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

Maximum value of SAR (measured) = 0.877 W/kg

Date: 2012/11/09

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



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Z Scan at Maximum SAR position in GSM850 band

GT-I9105P GSM850 GPRS 4slots Rear 10mm 836.6MHz

Communication System: GSM850; Communication System Band: Exported from older format (data unavailable - please correct).; Frequency: 836.6 MHz; Duty Cycle: 1:2.09991

Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.964$ mho/m; $\epsilon_r = 53.227$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(9.61, 9.61, 9.61); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection)

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

Phantom: ELI 4.0; Type: QDOVA001BA;

Measurement SW: DASY52, Version 52.8 (3);

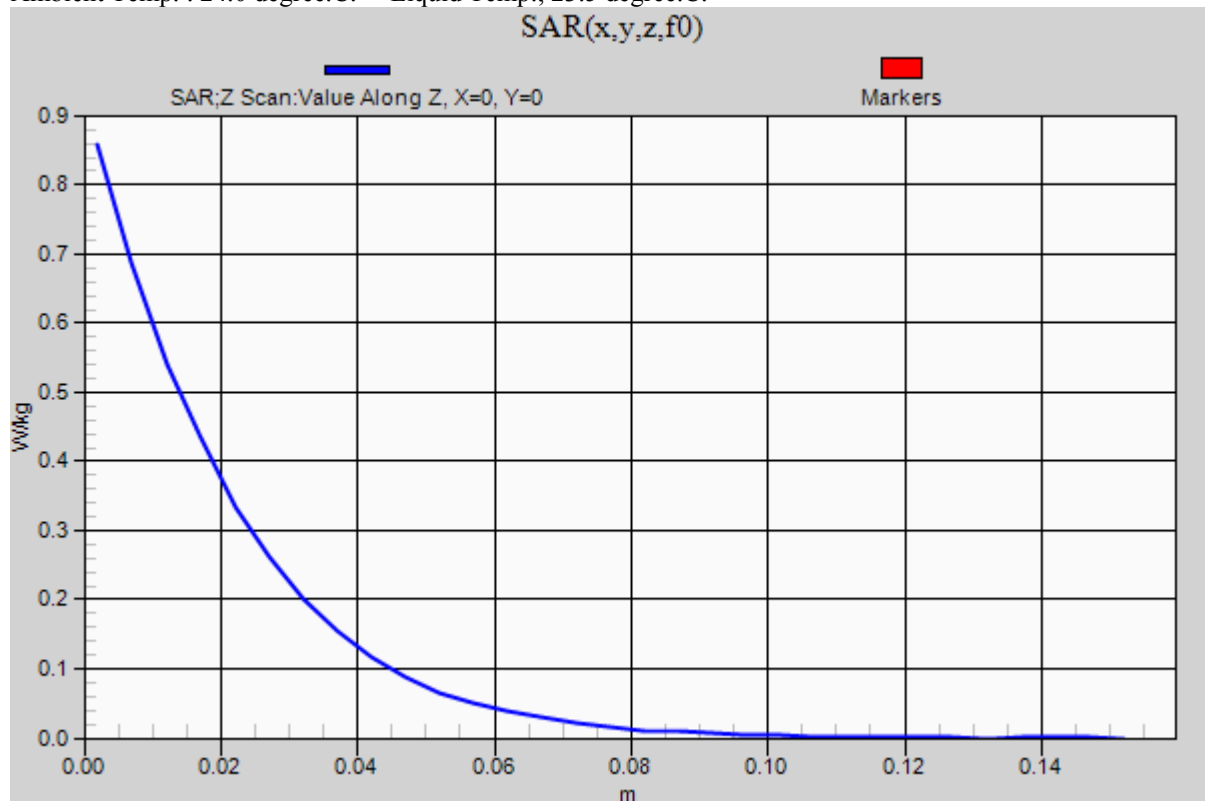
Z Scan (1x1x31): Measurement grid: dx=20mm, dy=20mm, dz=5mm

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

Maximum value of SAR (measured) = 0.858 W/kg

Date: 2012/11/09

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



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GT-I9105P GSM850 GPRS 4slots Left edge 10mm 836.6MHz

Communication System: WCDMA V 835M; Communication System Band: WCDMA V band; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.964$ mho/m; $\epsilon_r = 53.227$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(9.61, 9.61, 9.61); 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;

Measurement SW: DASY52, Version 52.8 (3);

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

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

Maximum value of SAR (interpolated) = 0.844 W/kg

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

Reference Value = 29.958 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 1.00 W/kg

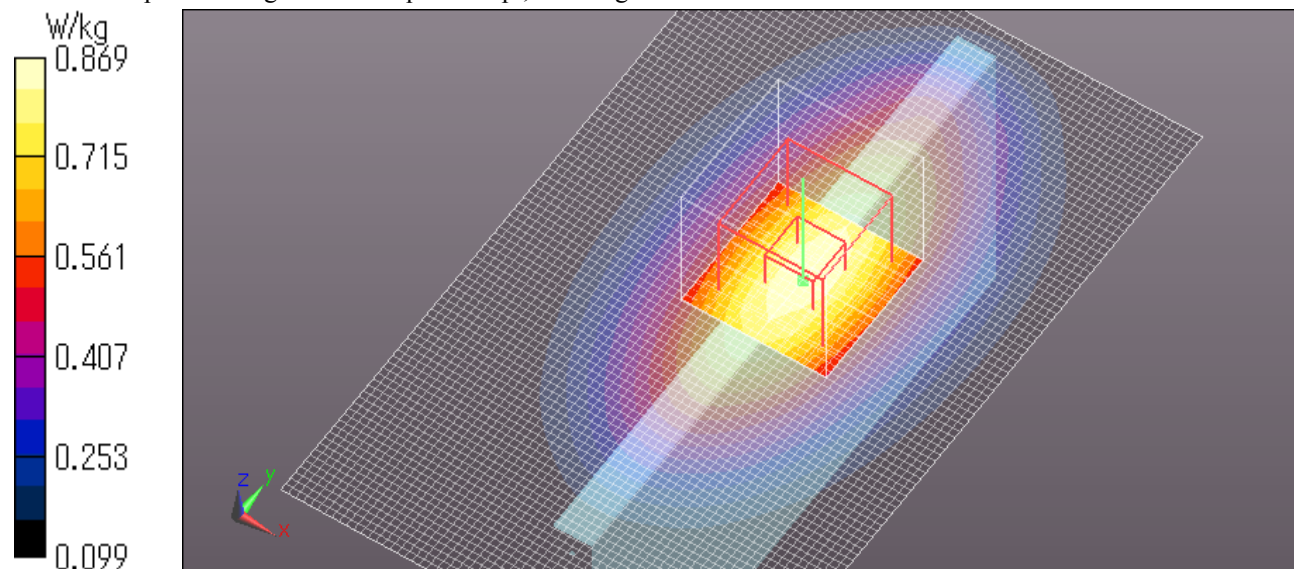
SAR(1 g) = 0.703 W/kg; SAR(10 g) = 0.484 W/kg

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

Maximum value of SAR (measured) = 0.869 W/kg

Date: 2012/11/09

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



GT-I9105P GSM850 GPRS 4slots Bottom edge10mm 836.6MHz

Communication System: GSM850; Communication System Band: Exported from older format (data unavailable - please correct).; Frequency: 836.6 MHz; Duty Cycle: 1:2.09991

Medium parameters used (interpolated): $f = 836.6 \text{ MHz}$; $\sigma = 0.964 \text{ mho/m}$; $\epsilon_r = 53.227$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(9.61, 9.61, 9.61); 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;

Measurement SW: DASY52, Version 52.8 (3);

Area Scan (61x81x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

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

Maximum value of SAR (interpolated) = 0.284 W/kg

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

Reference Value = 15.630 V/m ; Power Drift = -0.20 dB

Peak SAR (extrapolated) = 0.334 W/kg

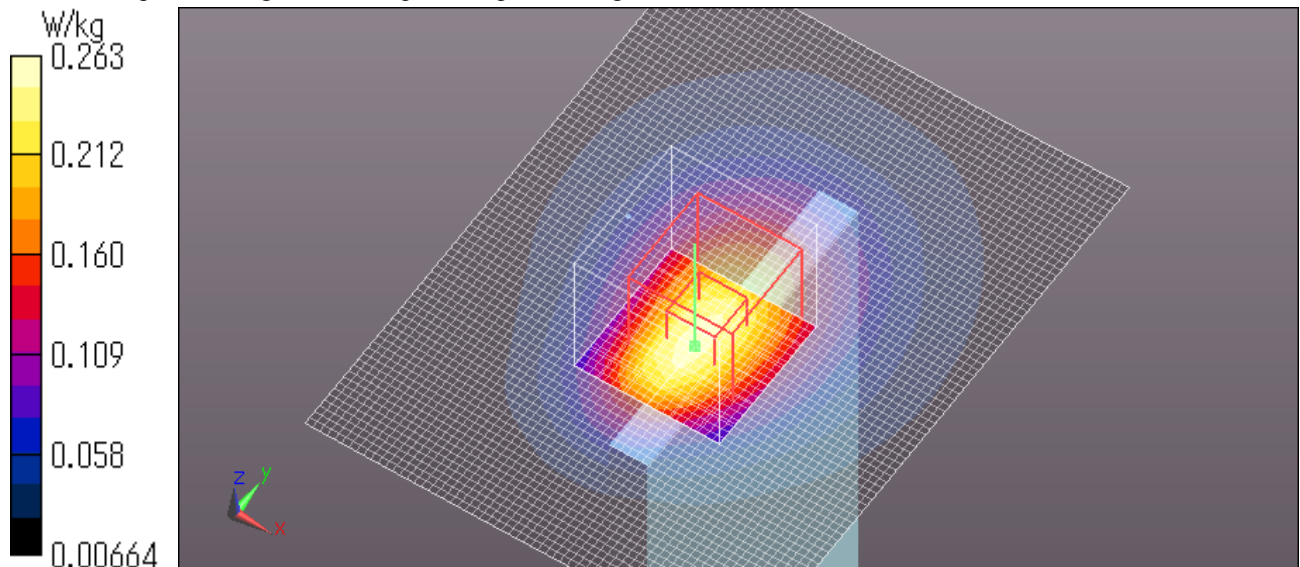
SAR(1 g) = 0.195 W/kg ; SAR(10 g) = 0.118 W/kg

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

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

Date: 2012/11/09

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



GT-I9105P GSM850 GSM Rear 10mm 836.6MHz

Communication System: GSM850; Communication System Band: Exported from older format (data unavailable - please correct).; Frequency: 836.6 MHz; Duty Cycle: 1:8.30042

Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.964$ mho/m; $\epsilon_r = 53.227$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(9.61, 9.61, 9.61); 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;

Measurement SW: DASY52, Version 52.8 (3);

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

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

Maximum value of SAR (interpolated) = 0.698 W/kg

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

Reference Value = 27.209 V/m; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 0.773 W/kg

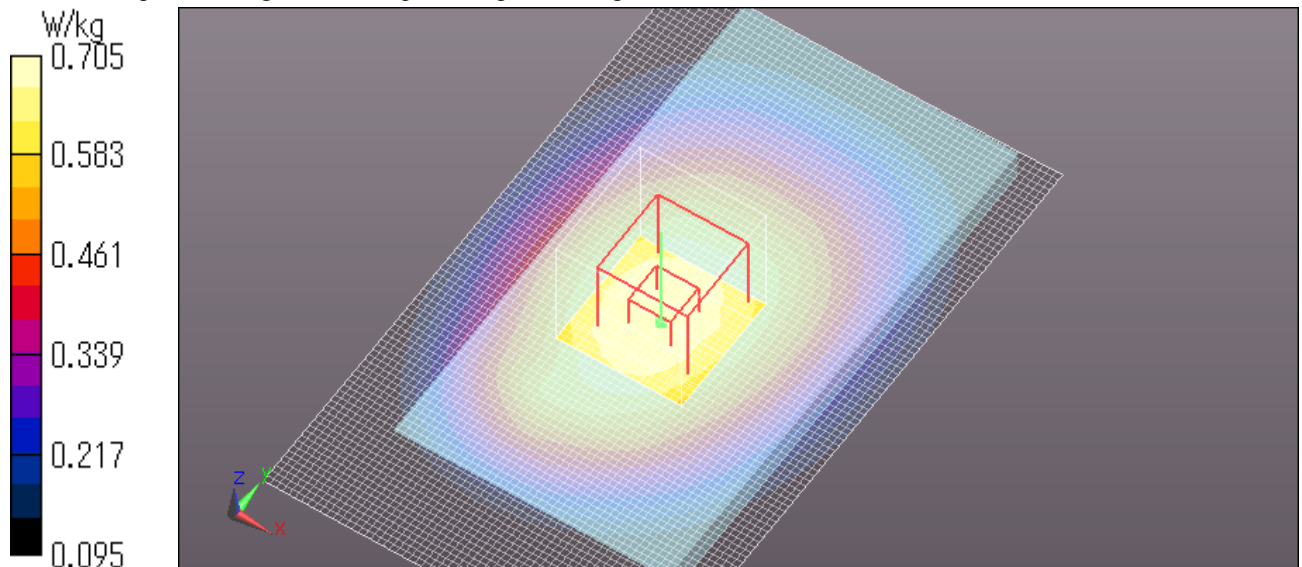
SAR(1 g) = 0.616 W/kg; SAR(10 g) = 0.471 W/kg

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

Maximum value of SAR (measured) = 0.705 W/kg

Date: 2012/11/09

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



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iii) PCS1900 Head

GT-I9105P PCS1900 GSM Left cheek 1880MHz

Communication System: Generic GSM; Communication System Band: PCS 1900 (1850.0 - 1910.0 MHz); Frequency: 1880 MHz; Duty Cycle: 1:8.30042

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.469$ mho/m; $\epsilon_r = 38.499$; $\rho = 1000$ kg/m³

Phantom section: Left 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 (61x91x1): Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 0.234 W/kg

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

Reference Value = 1.717 V/m; Power Drift = -0.13 dB

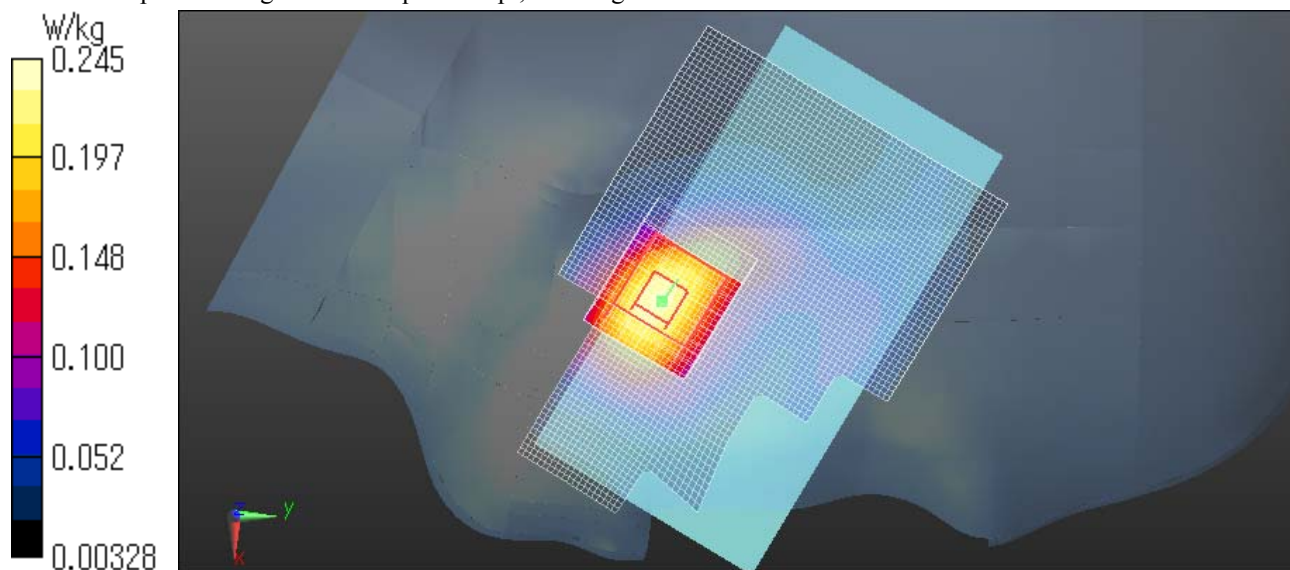
Peak SAR (extrapolated) = 0.305 W/kg

SAR(1 g) = 0.189 W/kg; SAR(10 g) = 0.112 W/kg

Maximum value of SAR (measured) = 0.245 W/kg

Date: 2012/11/01

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



GT-I9105P PCS1900 GSM Left tilt 1880MHz

Communication System: Generic GSM; Communication System Band: PCS 1900 (1850.0 - 1910.0 MHz); Frequency: 1880 MHz; Duty Cycle: 1:8.30042

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.469$ mho/m; $\epsilon_r = 38.499$; $\rho = 1000$ kg/m³

Phantom section: Left 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 (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 (61x91x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.0748 W/kg

Area Scan 2 (61x21x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.0621 W/kg

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

Reference Value = 1.171 V/m; Power Drift = -0.08 dB

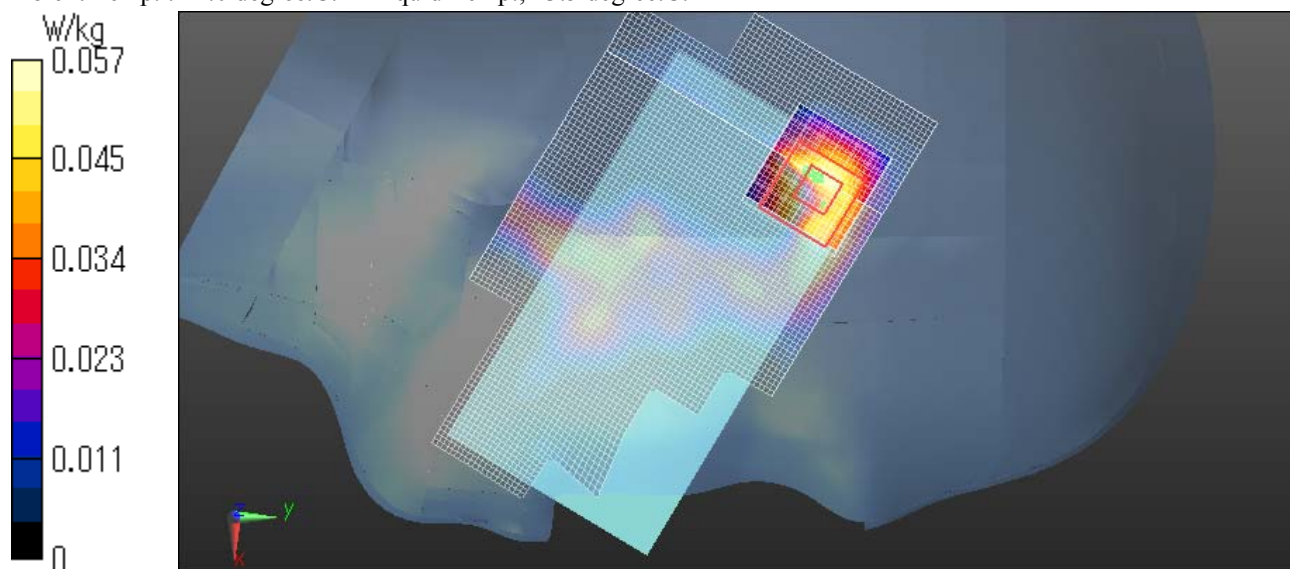
Peak SAR (extrapolated) = 0.0700 W/kg

SAR(1 g) = 0.044 W/kg; SAR(10 g) = 0.024 W/kg

Maximum value of SAR (measured) = 0.0568 W/kg

Date: 2012/11/01

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



GT-I9105P PCS1900 GSM Right cheek 1880MHz

Communication System: Generic GSM; Communication System Band: PCS 1900 (1850.0 - 1910.0 MHz); Frequency: 1880 MHz; Duty Cycle: 1:8.30042

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.469$ 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 (61x91x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.161 W/kg

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

Reference Value = 1.937 V/m; Power Drift = -0.12 dB

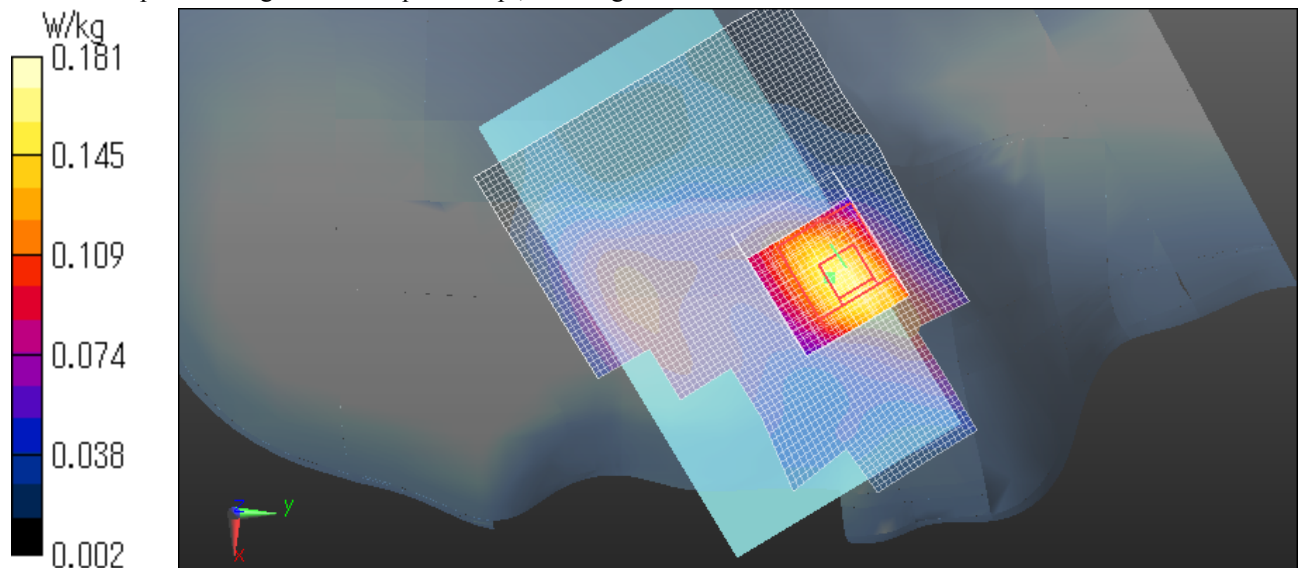
Peak SAR (extrapolated) = 0.223 W/kg

SAR(1 g) = 0.134 W/kg; SAR(10 g) = 0.075 W/kg

Maximum value of SAR (measured) = 0.181 W/kg

Date: 2012/11/01

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



GT-I9105P PCS1900 GSM Right tilt 1880MHz

Communication System: Generic GSM; Communication System Band: PCS 1900 (1850.0 - 1910.0 MHz); Frequency: 1880 MHz; Duty Cycle: 1:8.30042

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.469$ 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 (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 (61x111x1): Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 0.0569 W/kg

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

Reference Value = 2.058 V/m; Power Drift = 0.17 dB

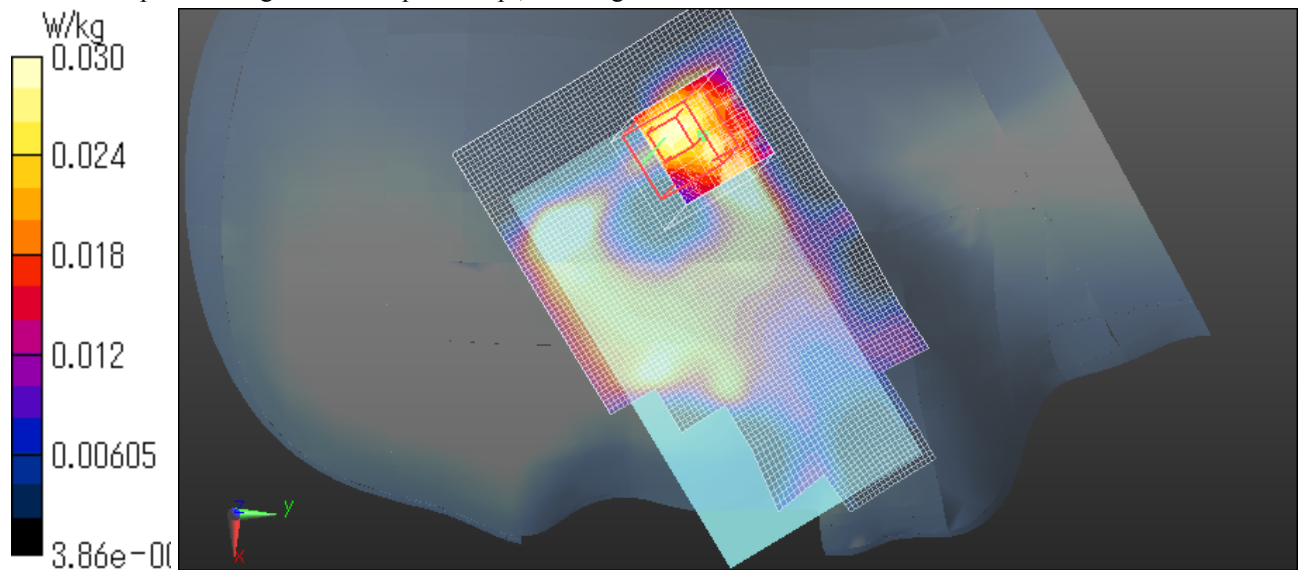
Peak SAR (extrapolated) = 0.0350 W/kg

SAR(1 g) = 0.023 W/kg; SAR(10 g) = 0.013 W/kg

Maximum value of SAR (measured) = 0.0301 W/kg

Date: 2012/11/01

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



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GT-I9105P PCS1900 EGPRS 2slots Left cheek 1880MHz

Communication System: Generic GSM; Communication System Band: PCS 1900 (1850.0 - 1910.0 MHz); Frequency: 1880 MHz; Duty Cycle: 1:4.19952

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.469$ mho/m; $\epsilon_r = 38.499$; $\rho = 1000$ kg/m³

Phantom section: Left 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 (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 (61x91x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.321 W/kg

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

Reference Value = 1.937 V/m; Power Drift = -0.19 dB

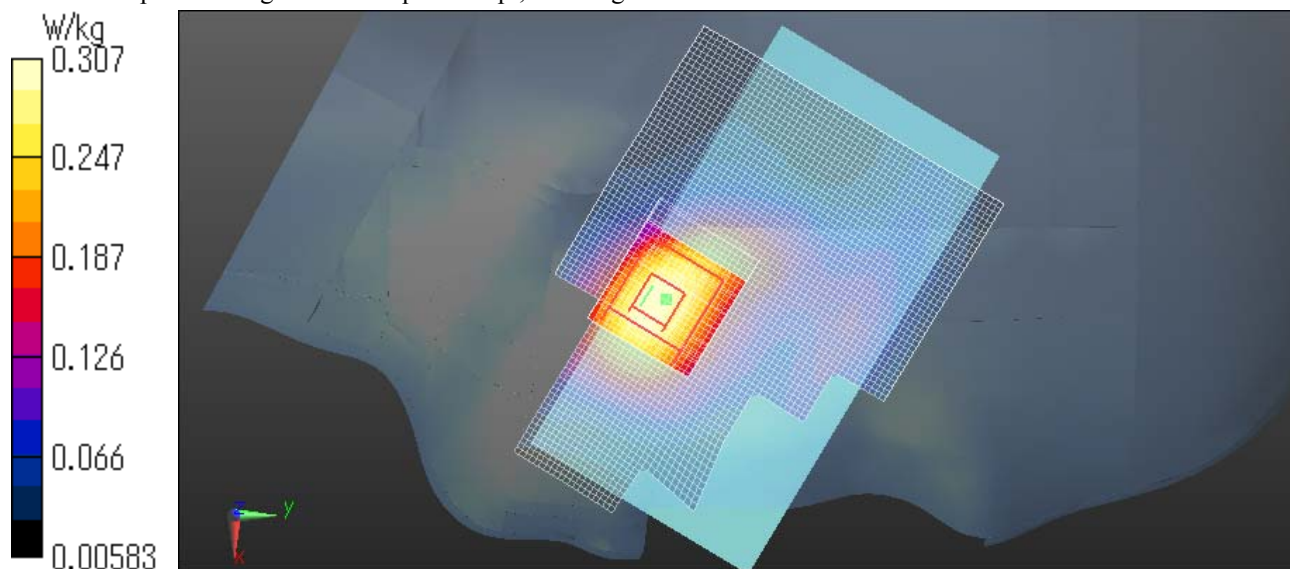
Peak SAR (extrapolated) = 0.378 W/kg

SAR(1 g) = 0.237 W/kg; SAR(10 g) = 0.143 W/kg

Maximum value of SAR (measured) = 0.307 W/kg

Date: 2012/11/02

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



iv) PCS1900 Body

GT-I9105P PCS1900 GPRS 2slots Front 10mm 1880MHz

Communication System: PCS1900; 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: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(7.48, 7.48, 7.48); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection)

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

Phantom: ELI 4.0; Type: QDOVA001BA;

Measurement SW: DASY52, Version 52.8 (3);

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

Maximum value of SAR (interpolated) = 0.372 W/kg

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

Reference Value = 8.121 V/m; Power Drift = -0.10 dB

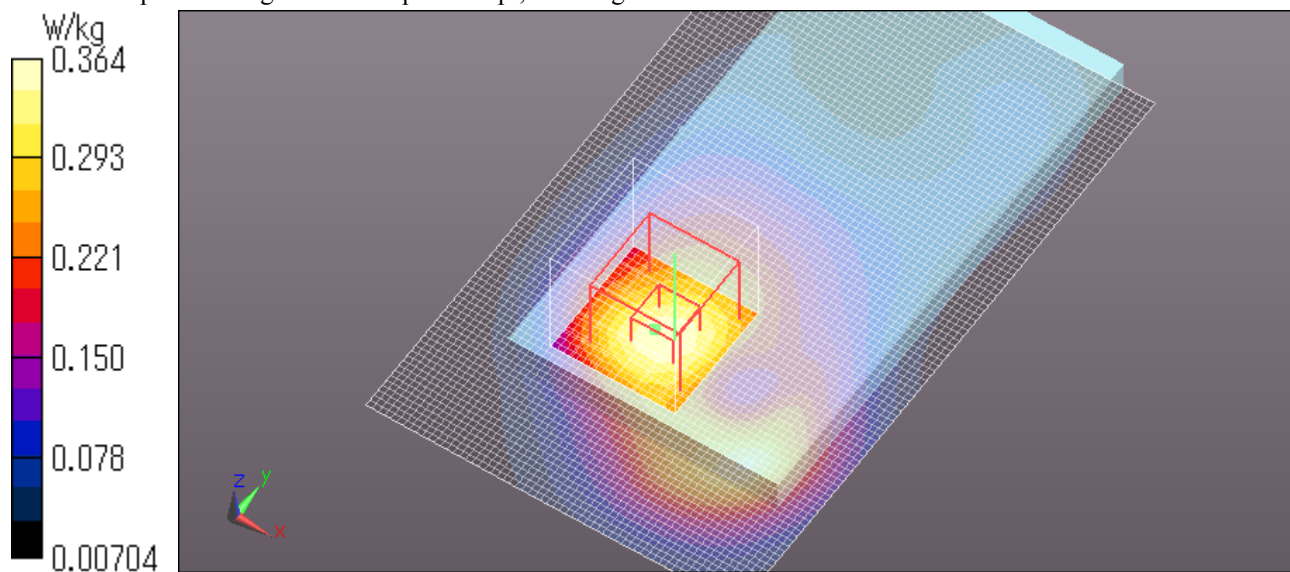
Peak SAR (extrapolated) = 0.447 W/kg

SAR(1 g) = 0.278 W/kg; SAR(10 g) = 0.167 W/kg

Maximum value of SAR (measured) = 0.364 W/kg

Date: 2012/10/31

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



GT-I9105P PCS1900 GPRS 2slots Rear 10mm 1880.0MHz

Communication System: PCS1900; Communication System Band: PCS1900; Frequency: 1880 MHz; Duty Cycle: 1:4.19952

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(7.48, 7.48, 7.48); 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;

Measurement SW: DASY52, Version 52.8 (3);

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

Maximum value of SAR (interpolated) = 1.23 W/kg

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

Reference Value = 10.850 V/m; Power Drift = -0.10 dB

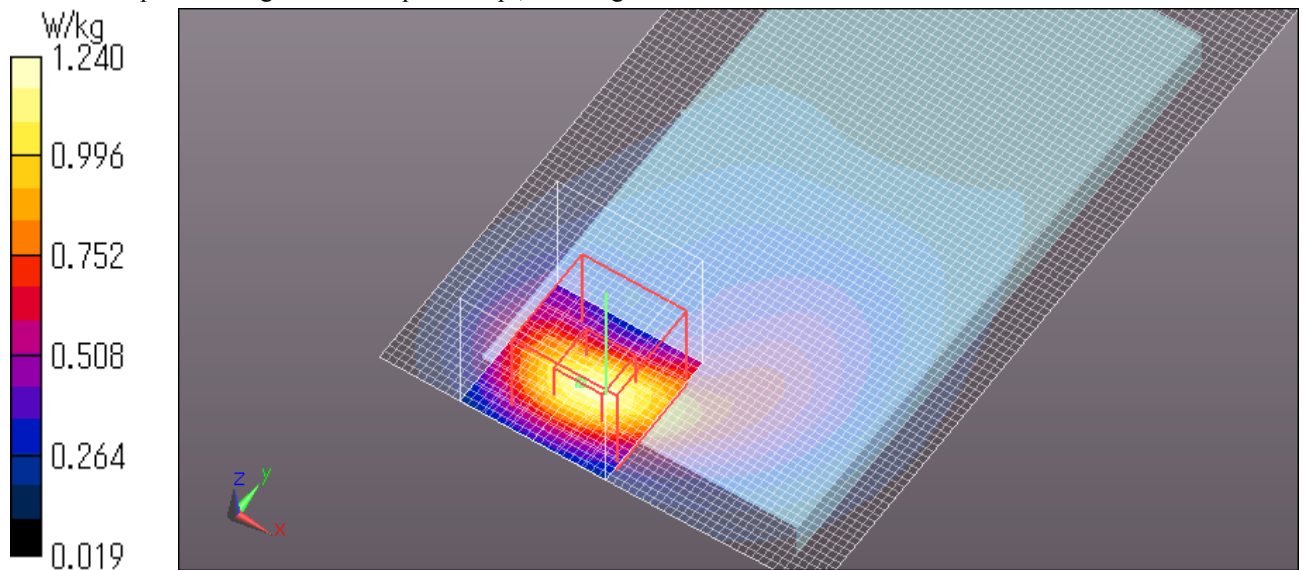
Peak SAR (extrapolated) = 1.56 W/kg

SAR(1 g) = 0.881 W/kg; SAR(10 g) = 0.454 W/kg

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

Date: 2012/10/31

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



GT-I9105P PCS1900 GPRS 2slots Left edge 10mm 1880MHz

Communication System: PCS1900; 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: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(7.48, 7.48, 7.48); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection)

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

Phantom: ELI 4.0; Type: QDOVA001BA;

Measurement SW: DASY52, Version 52.8 (3);

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

Maximum value of SAR (interpolated) = 0.373 W/kg

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

Reference Value = 6.665 V/m; Power Drift = -0.13 dB

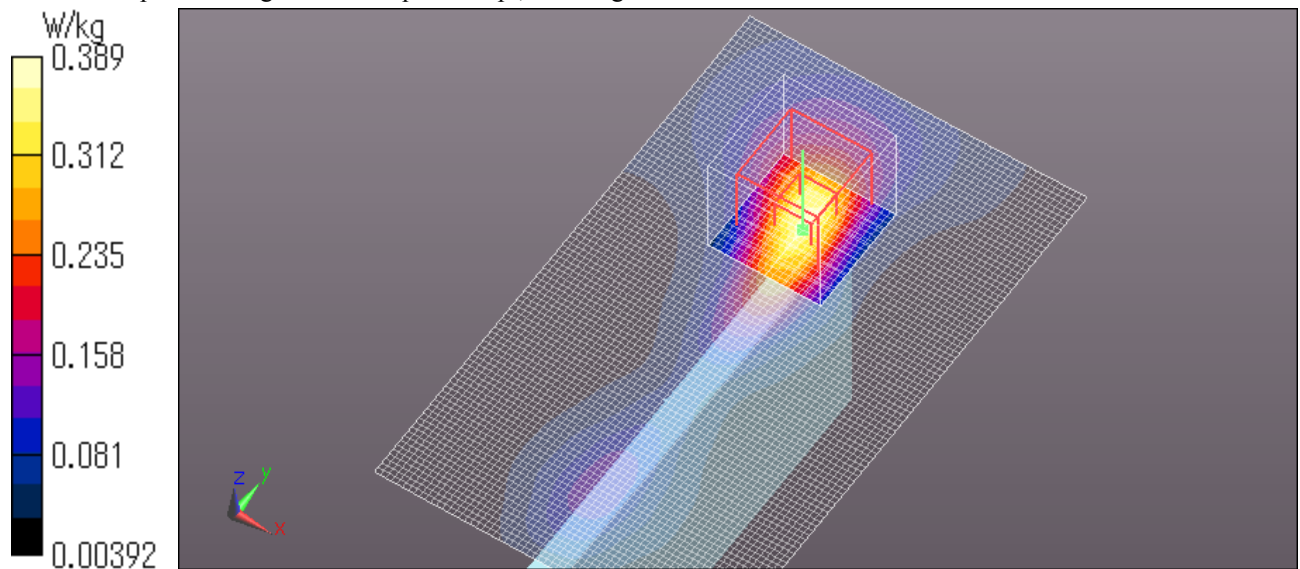
Peak SAR (extrapolated) = 0.505 W/kg

SAR(1 g) = 0.273 W/kg; SAR(10 g) = 0.140 W/kg

Maximum value of SAR (measured) = 0.389 W/kg

Date: 2012/10/31

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



GT-I9105P PCS1900 GPRS 2slots Bottom edge 10mm 1880.0MHz

Communication System: PCS1900; Communication System Band: PCS1900; Frequency: 1880 MHz; Duty Cycle: 1:4.19952

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(7.48, 7.48, 7.48); 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;

Measurement SW: DASY52, Version 52.8 (3);

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

Maximum value of SAR (interpolated) = 0.784 W/kg

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

Reference Value = 18.562 V/m; Power Drift = 0.08 dB

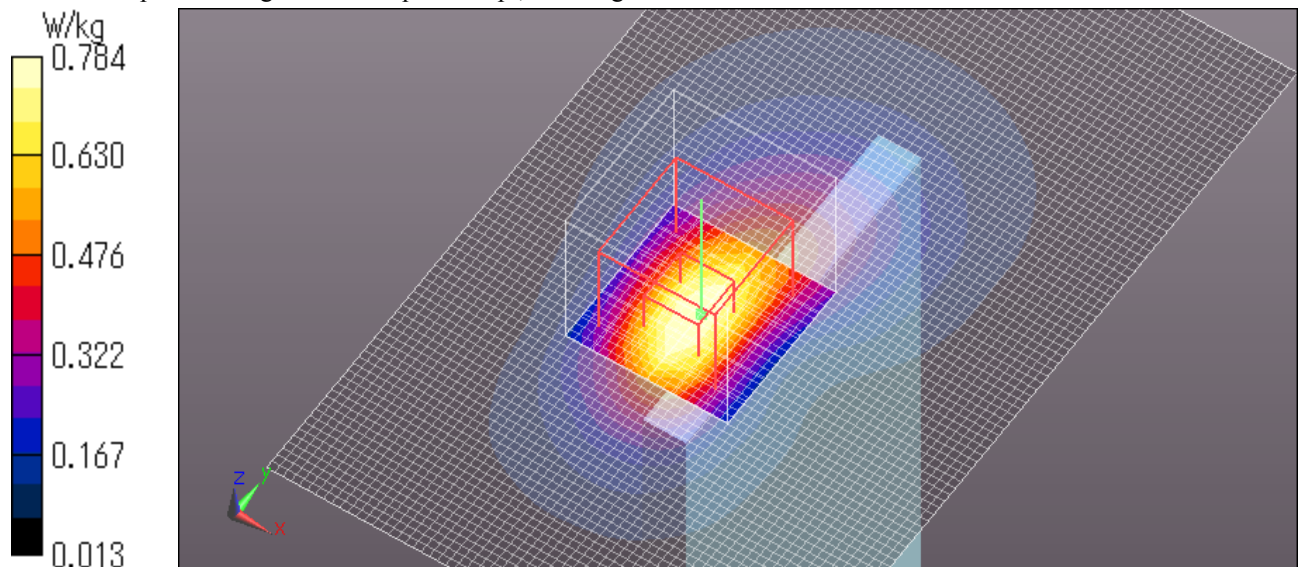
Peak SAR (extrapolated) = 1.06 W/kg

SAR(1 g) = 0.592 W/kg; SAR(10 g) = 0.306 W/kg

Maximum value of SAR (measured) = 0.833 W/kg

Date: 2012/10/31

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



GT-I9105P PCS1900 GSM Rear 10mm 1880MHz

Communication System: PCS1900; 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: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(7.48, 7.48, 7.48); 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;

Measurement SW: DASY52, Version 52.8 (3);

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

Maximum value of SAR (interpolated) = 0.965 W/kg

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

Reference Value = 10.980 V/m; Power Drift = -0.07 dB

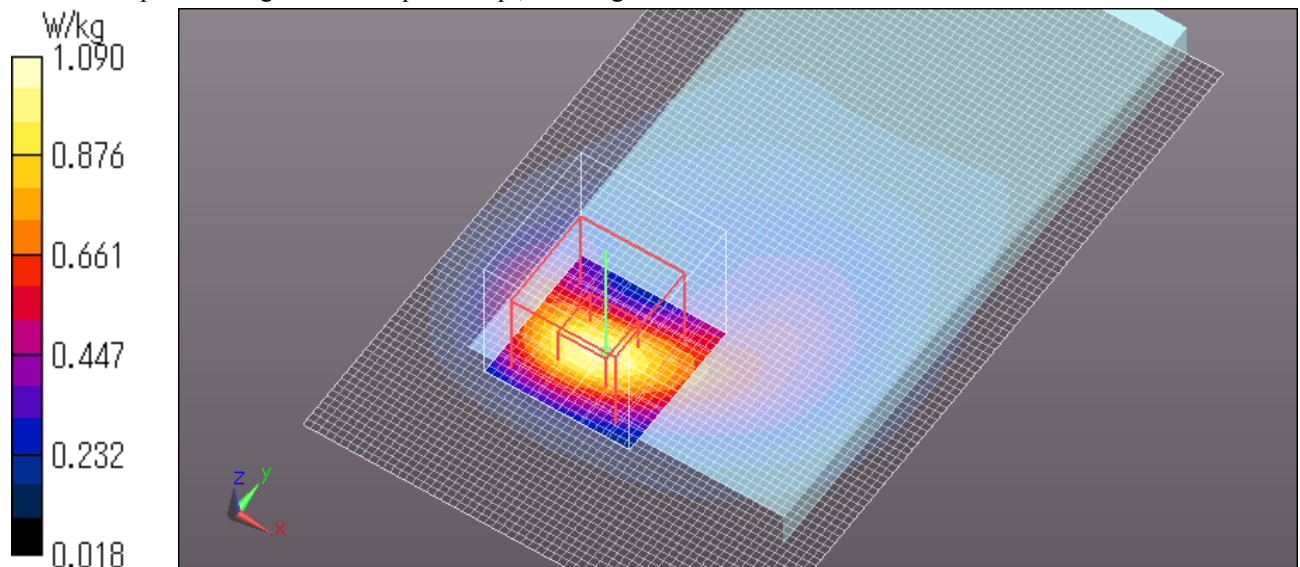
Peak SAR (extrapolated) = 1.37 W/kg

SAR(1 g) = 0.766 W/kg; SAR(10 g) = 0.390 W/kg

Maximum value of SAR (measured) = 1.09 W/kg

Date: 2012/10/31

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



GT-I9105P PCS1900 GPRS 2slots Rear 10mm 1850.2MHz

Communication System: PCS1900; Communication System Band: PCS1900; Frequency: 1850.2 MHz; Duty Cycle: 1:4.19952

Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.482$ mho/m; $\epsilon_r = 51.157$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(7.48, 7.48, 7.48); 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;

Measurement SW: DASY52, Version 52.8 (3);

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

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

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

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

Reference Value = 11.412 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 1.76 W/kg

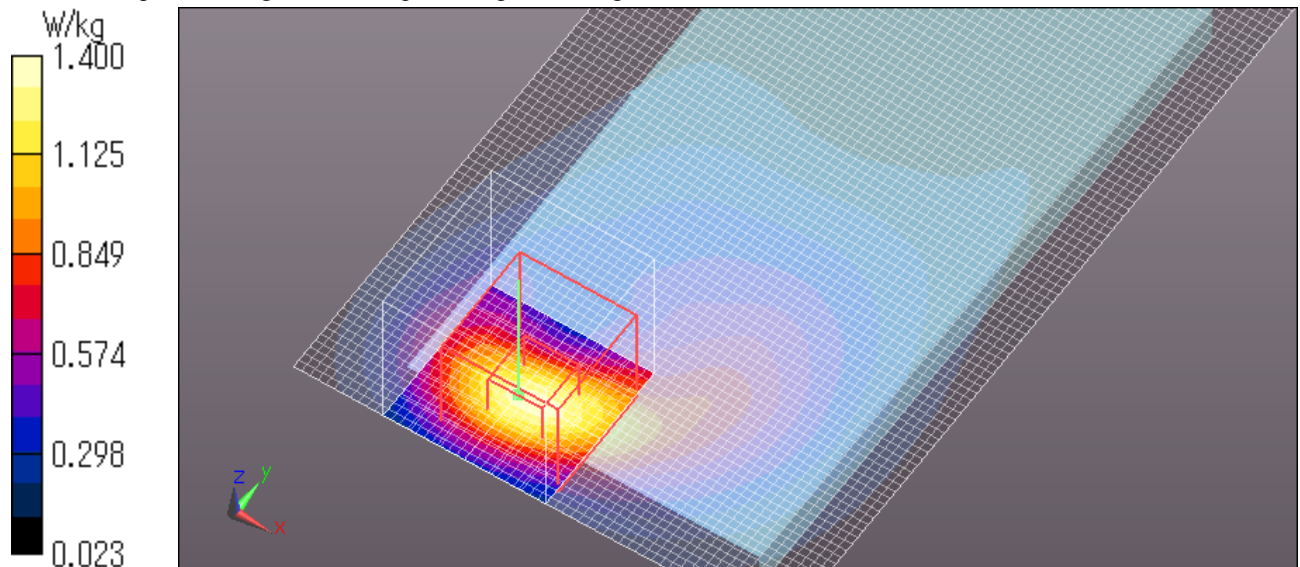
SAR(1 g) = 1.01 W/kg; SAR(10 g) = 0.528 W/kg

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

Maximum value of SAR (measured) = 1.40 W/kg

Date: 2012/10/31

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



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Z Scan at Maximum Body SAR position in PCS1900 band**GT-I9105P PCS1900 GPRS 2slots Rear 10mm 1850.2MHz**

Communication System: PCS1900; Communication System Band: PCS1900; Frequency: 1850.2 MHz; Duty Cycle: 1:4.19952

Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.482$ mho/m; $\epsilon_r = 51.157$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(7.48, 7.48, 7.48); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection)

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

Phantom: ELI 4.0; Type: QDOVA001BA;

Measurement SW: DASY52, Version 52.8 (3);

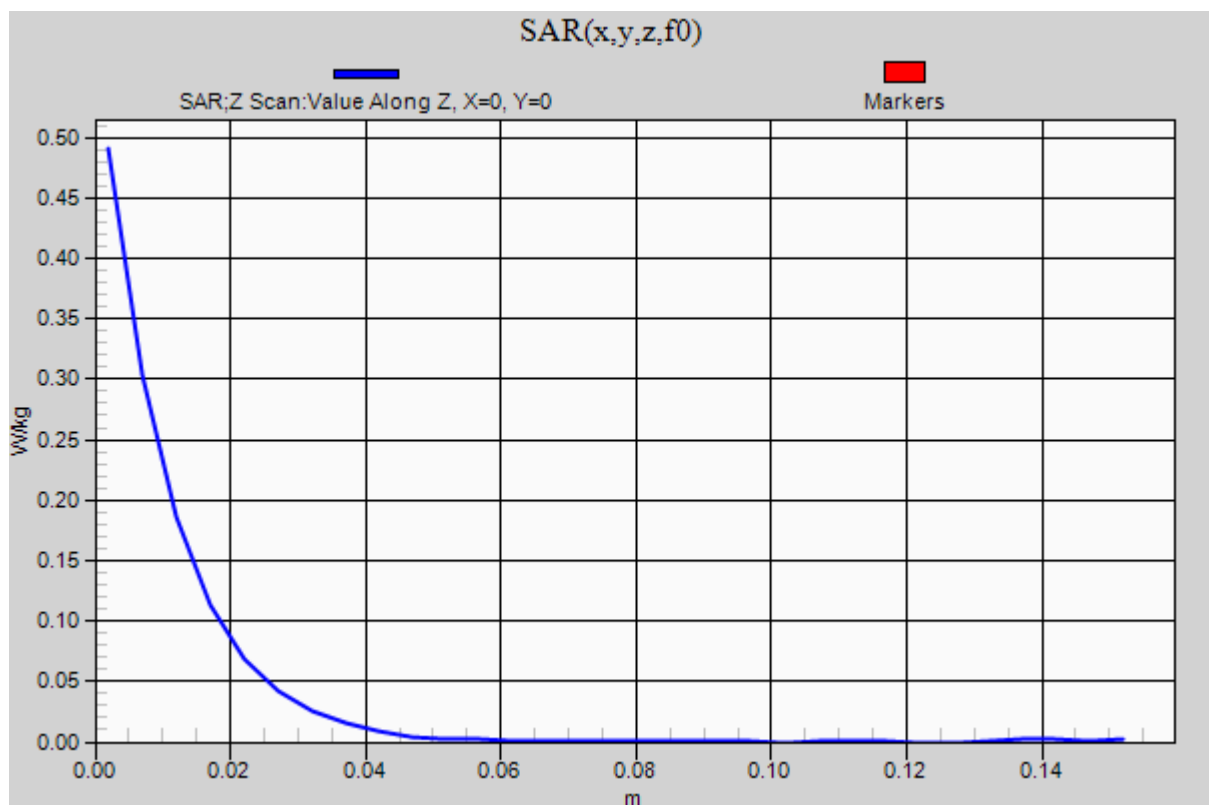
Z Scan (1x1x31): Measurement grid: dx=20mm, dy=20mm, dz=5mm

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

Maximum value of SAR (measured) = 0.491 W/kg

Date: 2012/10/31

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



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GT-I9105P PCS1900 GPRS 2slots Rear 10mm 1909.8MHz

Communication System: PCS1900; Communication System Band: PCS1900; Frequency: 1909.8 MHz; Duty Cycle: 1:4.19952

Medium parameters used: $f = 1910$ MHz; $\sigma = 1.544$ mho/m; $\epsilon_r = 50.974$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(7.48, 7.48, 7.48); 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;

Measurement SW: DASY52, Version 52.8 (3);

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

Maximum value of SAR (interpolated) = 1.05 W/kg

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

Reference Value = 9.344 V/m; Power Drift = -0.09 dB

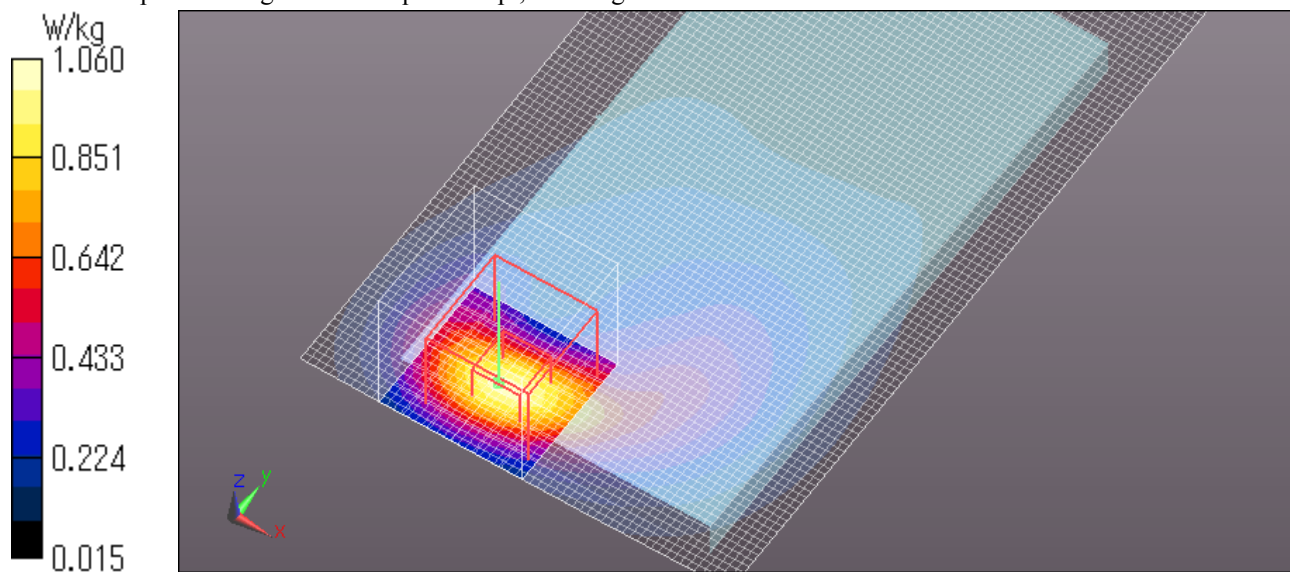
Peak SAR (extrapolated) = 1.34 W/kg

SAR(1 g) = 0.744 W/kg; SAR(10 g) = 0.375 W/kg

Maximum value of SAR (measured) = 1.06 W/kg

Date: 2012/10/31

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



GT-I9105P PCS1900 GPRS 2slots Rear 10mm 1850.4MHz Repetition

Communication System: PCS1900; Communication System Band: PCS1900; Frequency: 1850.2 MHz; Duty Cycle: 1:4.19952

Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.539$ mho/m; $\epsilon_r = 51.21$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(7.59, 7.59, 7.59); Calibrated: 2012/12/10; {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;

Measurement SW: DASY52, Version 52.8 (3);

Area Scan 3 (51x71x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

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

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

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

Reference Value = 3.914 V/m; Power Drift = -0.14 dB

Peak SAR (extrapolated) = 1.70 W/kg

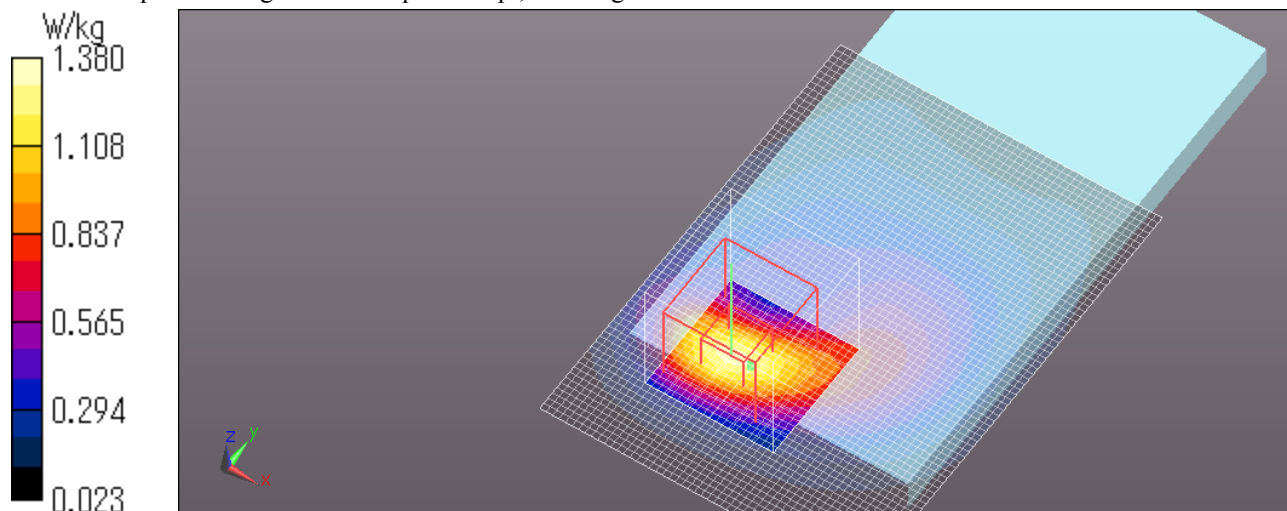
SAR(1 g) = 0.977 W/kg; SAR(10 g) = 0.507 W/kg

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

Maximum value of SAR (measured) = 1.38 W/kg

Date: 2013/01/14

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



v) WCDMA V Head

GT-I9105P WCDMA V 12.2k RMC Left cheek 836.6MHz

Communication System: WCDMA V 835M; Communication System Band: WCDMA V band; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.875$ mho/m; $\epsilon_r = 40.988$; $\rho = 1000$ kg/m³

Phantom section: Left Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(9.39, 9.39, 9.39); 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 (61x91x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

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

Maximum value of SAR (interpolated) = 0.242 W/kg

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

Reference Value = 4.814 V/m; Power Drift = 0.12 dB

Peak SAR (extrapolated) = 0.254 W/kg

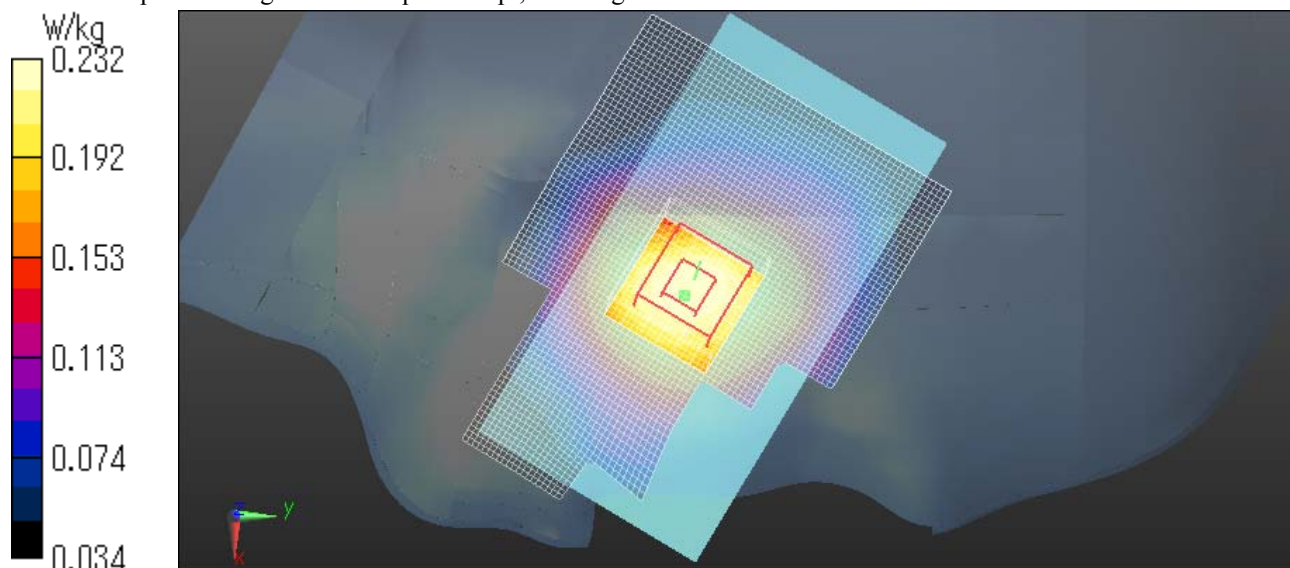
SAR(1 g) = 0.204 W/kg; SAR(10 g) = 0.155 W/kg

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

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

Date: 2012/11/09

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



GT-I9105P WCDMA V 12.2k RMC Left tilt 836.6MHz

Communication System: WCDMA V 835M; Communication System Band: WCDMA V band; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.875$ mho/m; $\epsilon_r = 40.988$; $\rho = 1000$ kg/m³

Phantom section: Left Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(9.39, 9.39, 9.39); 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 (61x91x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

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

Maximum value of SAR (interpolated) = 0.195 W/kg

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

Reference Value = 9.576 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 0.207 W/kg

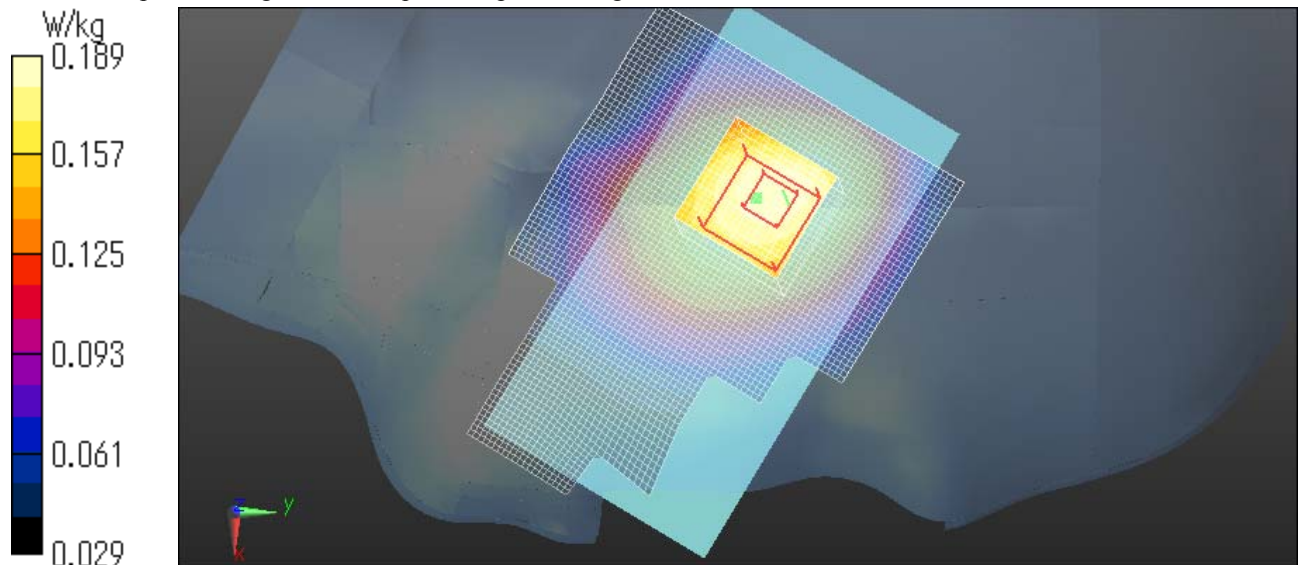
SAR(1 g) = 0.164 W/kg; SAR(10 g) = 0.126 W/kg

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

Maximum value of SAR (measured) = 0.189 W/kg

Date: 2012/11/09

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



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GT-I9105P WCDMA V 12.2k RMC Right cheek 836.6MHz

Communication System: WCDMA V 835M; Communication System Band: WCDMA V band; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.875$ mho/m; $\epsilon_r = 40.988$; $\rho = 1000$ kg/m³

Phantom section: Right Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(9.39, 9.39, 9.39); 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 (61x91x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

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

Maximum value of SAR (interpolated) = 0.281 W/kg

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

Reference Value = 4.358 V/m; Power Drift = 0.14 dB

Peak SAR (extrapolated) = 0.297 W/kg

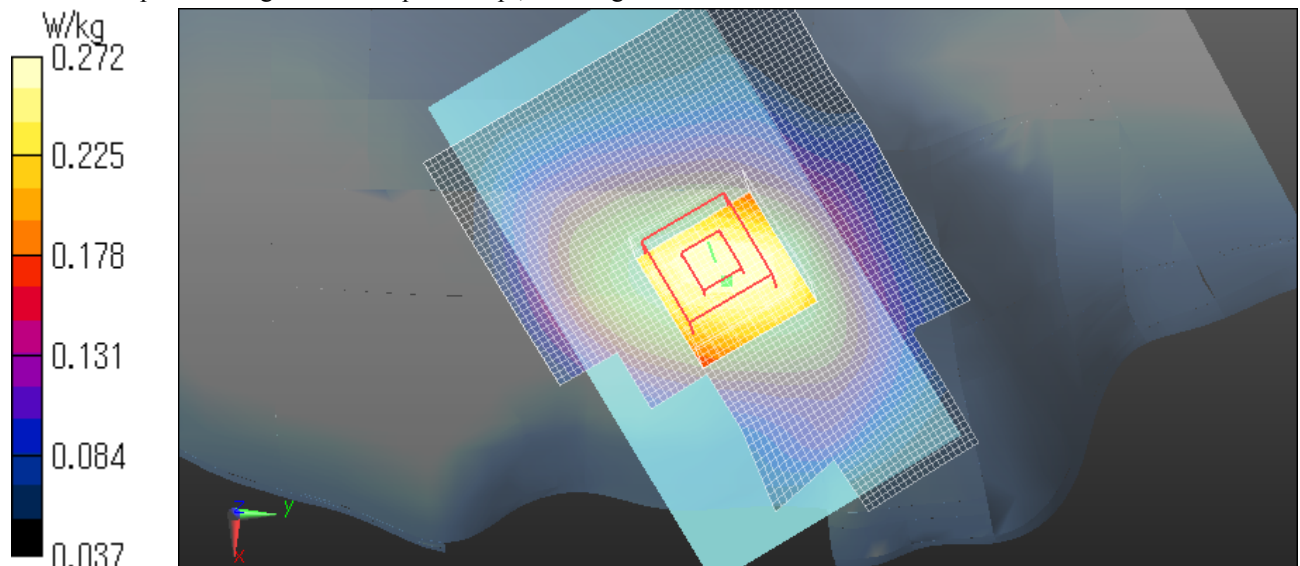
SAR(1 g) = 0.236 W/kg; SAR(10 g) = 0.179 W/kg

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

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

Date: 2012/11/09

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



GT-I9105P WCDMA V 12.2k RMC Right tilt 836.6MHz

Communication System: WCDMA V 835M; Communication System Band: WCDMA V band; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.875$ mho/m; $\epsilon_r = 40.988$; $\rho = 1000$ kg/m³

Phantom section: Right Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(9.39, 9.39, 9.39); 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 (61x91x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

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

Maximum value of SAR (interpolated) = 0.215 W/kg

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

Reference Value = 8.377 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.218 W/kg

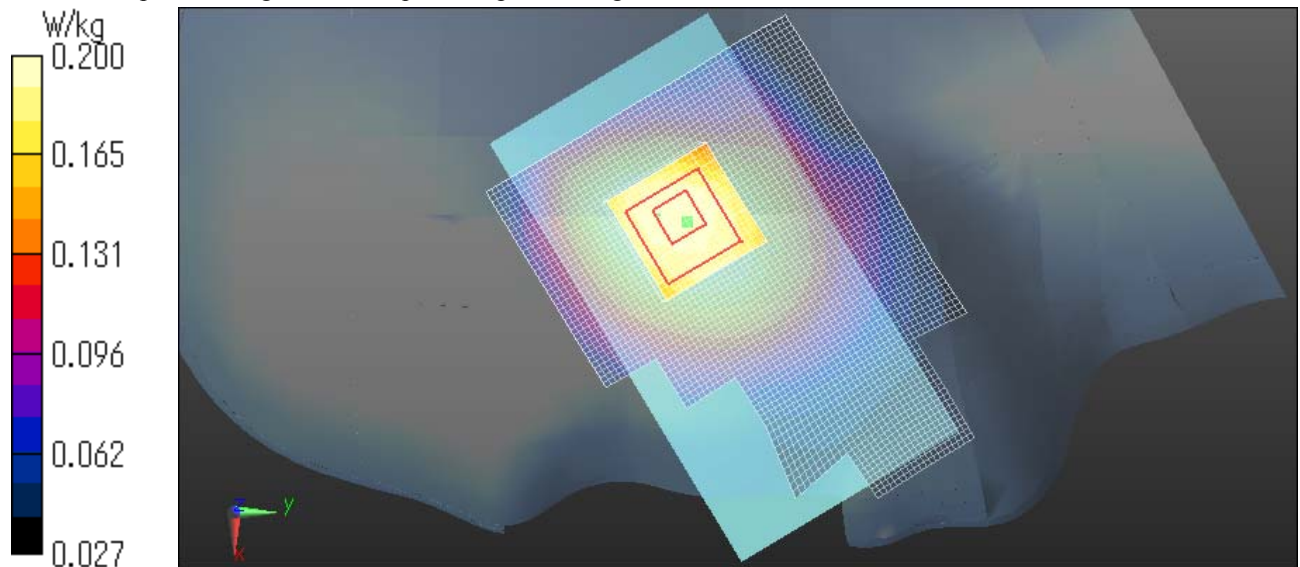
SAR(1 g) = 0.176 W/kg; SAR(10 g) = 0.137 W/kg

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

Maximum value of SAR (measured) = 0.200 W/kg

Date: 2012/11/09

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



vi) WCDMA V Body

GT-I9105P WCDMA V 12.2k RMC Front 10mm 836.6MHz

Communication System: WCDMA V 835M; Communication System Band: WCDMA V band; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.964$ mho/m; $\epsilon_r = 53.227$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(9.61, 9.61, 9.61); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection)

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

Phantom: ELI 4.0; Type: QDOVA001BA;

Measurement SW: DASY52, Version 52.8 (3);

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

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

Maximum value of SAR (interpolated) = 0.349 W/kg

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

Reference Value = 19.590 V/m; Power Drift = -0.16 dB

Peak SAR (extrapolated) = 0.378 W/kg

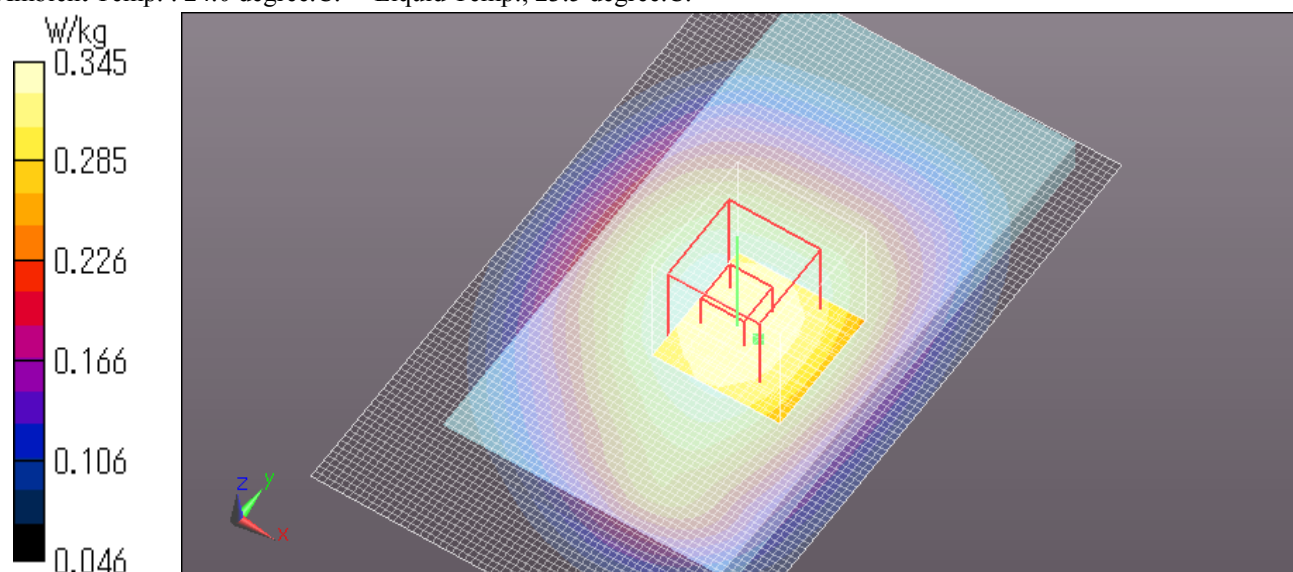
SAR(1 g) = 0.302 W/kg; SAR(10 g) = 0.232 W/kg

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

Maximum value of SAR (measured) = 0.345 W/kg

Date: 2012/11/08

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



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GT-I9105P WCDMA V 12.2k RMC Rear 10mm 836.6MHz

Communication System: WCDMA V 835M; Communication System Band: WCDMA V band; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.964$ mho/m; $\epsilon_r = 53.227$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(9.61, 9.61, 9.61); 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;

Measurement SW: DASY52, Version 52.8 (3);

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

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

Maximum value of SAR (interpolated) = 0.653 W/kg

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

Reference Value = 26.508 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.709 W/kg

SAR(1 g) = 0.564 W/kg; SAR(10 g) = 0.432 W/kg

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

Maximum value of SAR (measured) = 0.646 W/kg

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

Reference Value = 26.508 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.683 W/kg

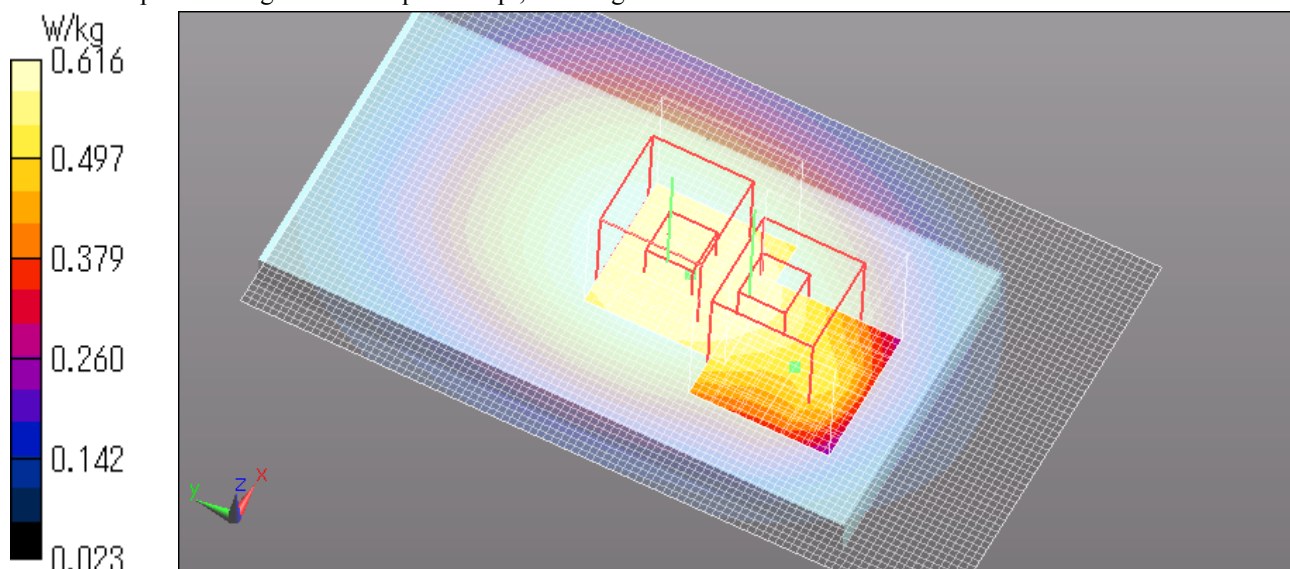
SAR(1 g) = 0.502 W/kg; SAR(10 g) = 0.334 W/kg

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

Maximum value of SAR (measured) = 0.616 W/kg

Date: 2012/11/08

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



Z Scan at Maximum Body SAR position in WCDMA V band

GT-I9105P WCDMA V 12.2k RMC Rear 10mm 836.6MHz

Communication System: WCDMA V 835M; Communication System Band: WCDMA V band; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.964$ mho/m; $\epsilon_r = 53.227$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(9.61, 9.61, 9.61); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection)

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

Phantom: ELI 4.0; Type: QDOVA001BA;

Measurement SW: DASY52, Version 52.8 (3);

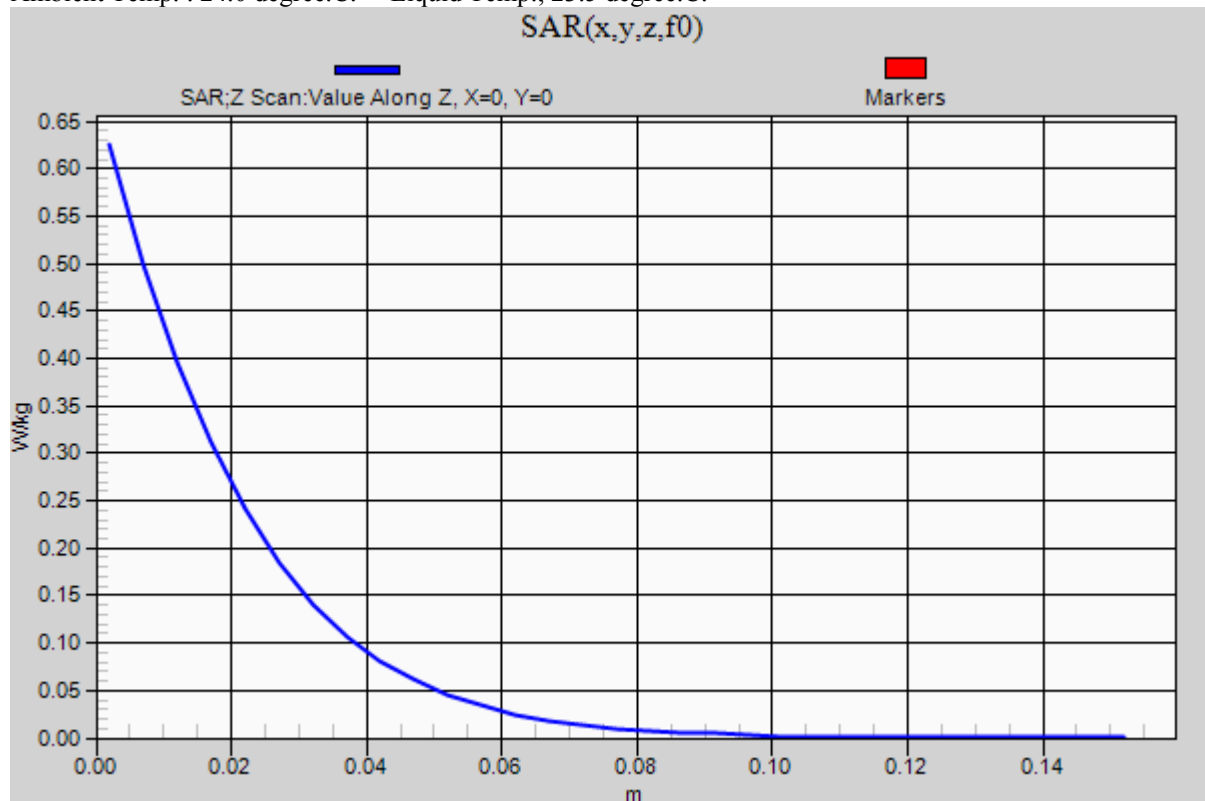
Z Scan (1x1x31): Measurement grid: dx=20mm, dy=20mm, dz=5mm

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.625 W/kg

Date: 2012/11/08

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



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GT-I9105P WCDMA V 12.2k RMC Left edge 10mm 836.6MHz

Communication System: WCDMA V 835M; Communication System Band: WCDMA V band; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.964$ mho/m; $\epsilon_r = 53.227$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(9.61, 9.61, 9.61); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection)

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

Phantom: ELI 4.0; Type: QDOVA001BA;

Measurement SW: DASY52, Version 52.8 (3);

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

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

Maximum value of SAR (interpolated) = 0.607 W/kg

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

Reference Value = 23.475 V/m; Power Drift = -0.15 dB

Peak SAR (extrapolated) = 0.703 W/kg

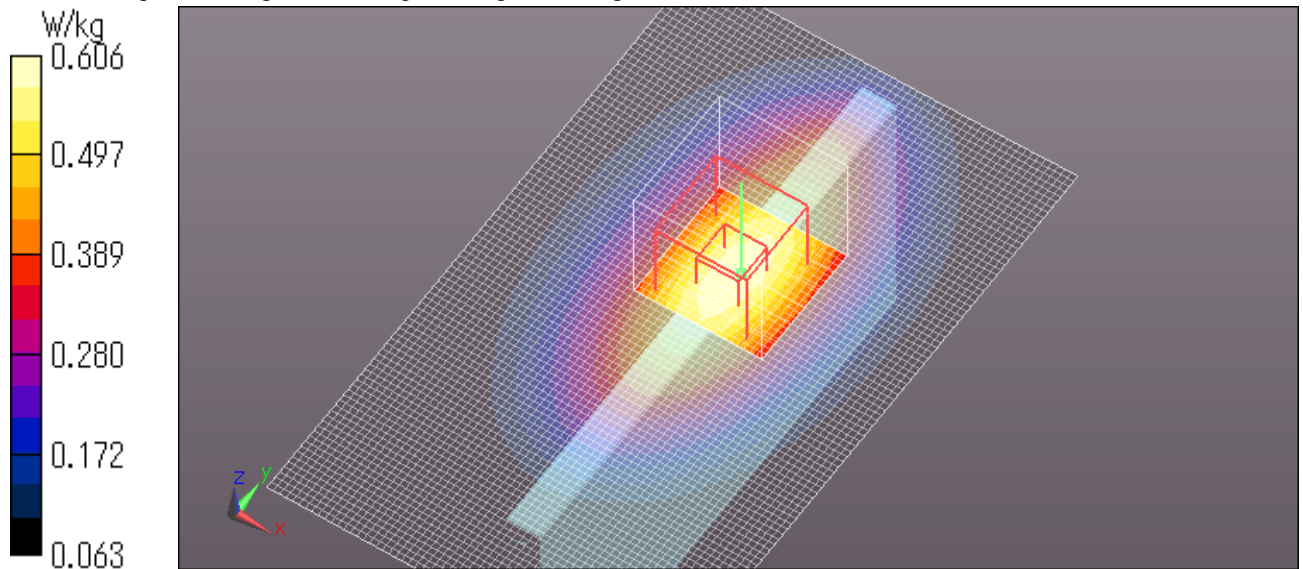
SAR(1 g) = 0.490 W/kg; SAR(10 g) = 0.335 W/kg

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

Maximum value of SAR (measured) = 0.606 W/kg

Date: 2012/11/08

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



GT-I9105P WCDMA V 12.2k RMC Bottom 10mm 836.6MHz

Communication System: WCDMA V 835M; Communication System Band: WCDMA V band; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.964$ mho/m; $\epsilon_r = 53.227$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY5 Configuration

Probe: EX3DV4 - SN3825; ConvF(9.61, 9.61, 9.61); Calibrated: 2011/12/16;

Sensor-Surface: 2mm (Mechanical Surface Detection)

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

Phantom: ELI 4.0; Type: QDOVA001BA;

Measurement SW: DASY52, Version 52.8 (3);

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

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

Maximum value of SAR (interpolated) = 0.184 W/kg

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

Reference Value = 12.621 V/m; Power Drift = -0.18 dB

Peak SAR (extrapolated) = 0.226 W/kg

SAR(1 g) = 0.132 W/kg; SAR(10 g) = 0.079 W/kg

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

Maximum value of SAR (measured) = 0.176 W/kg

Date: 2012/11/08

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

