	50RB (0)	711	24	22.20	1	21.16	2
		707.5	24	22.15	1	21.21	2
		704	24	22.14	1	21.18	2

11.6 Wi-Fi and BT Measurement result

The output power of BT antenna is as following:

Mode	Conducted Power (dBm)		
	Channel 0 (2402MHz)	Channel 39 (2441MHz)	Channel 78 (2480MHz)
GFSK	5.7	5.49	5.57

The average conducted power for Wi-Fi is as following: for head

802.11b (dBm)

Channel\data rate	1Mbps	2Mbps	5.5Mbps	11Mbps
1	17.45	/	/	/
6	17.65	/	/	/
11	17.92	17.82	17.70	17.37

802.11g (dBm)

Channel\data rate	6Mbps	9Mbps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps
1	14.85	/	/	/	/	/	/	/
6	15.27	/	/	/	/	/	/	/
11	15.58	15.40	15.19	14.85	14.50	13.95	13.49	13.31

802.11n (dBm) - HT20 (2.4G)

Channel\data rate	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
1	12.88	/	/	/	/	/	/	/
6	13.35	/	/	/	/	/	/	/
11	13.75	13.31	12.95	12.61	12.09	11.67	11.49	11.30

The average conducted power for Wi-Fi is as following: for body

802.11b (dBm)

Channel\data rate	1Mbps	2Mbps	5.5Mbps	11Mbps
1	17.47	/	/	/
6	17.45	/	/	/
11	17.99	17.89	17.67	17.43

802.11g (dBm)

Channel\data rate	6Mbps	9Mbps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps
1	15.05	/	/	/	/	/	/	/
6	15.02	/	/	/	/	/	/	/
11	15.54	15.37	15.18	14.84	14.49	13.92	13.46	13.29

802.11n (dBm) - HT20 (2.4G)

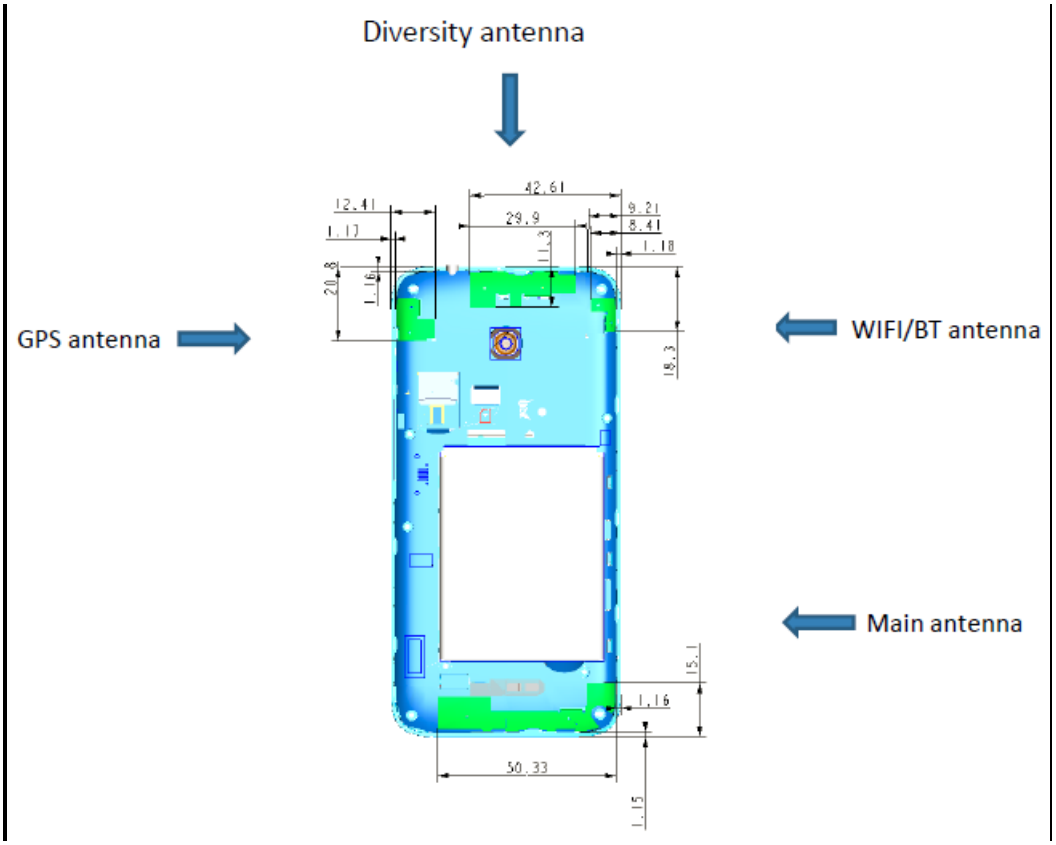
Channel\data rate	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
1	13.06	/	/	/	/	/	/	/
6	13.02	/	/	/	/	/	/	/
11	13.62	13.21	12.83	12.48	11.95	11.49	11.32	11.12

12 Simultaneous TX SAR Considerations

12.1 Introduction

The following procedures adopted from “FCC SAR Considerations for Cell Phones with Multiple Transmitters” are applicable to handsets with built-in unlicensed transmitters such as 802.11 a/b/g and Bluetooth devices which may simultaneously transmit with the licensed transmitter.
For this device, the BT and Wi-Fi can transmit simultaneous with other transmitters.

12.2 Transmit Antenna Separation Distances



Picture 12.1 Antenna Locations

12.3 SAR Measurement Positions

According to the KDB941225 D06 Hot Spot SAR v01, the edges with less than 2.5 cm distance to the antennas need to be tested for SAR.

SAR measurement positions						
Mode	Front	Rear	Left edge	Right edge	Top edge	Bottom edge
Main antenna	Yes	Yes	Yes	Yes	No	Yes
WLAN	Yes	Yes	Yes	No	Yes	No

12.4 Standalone SAR Test Exclusion Considerations

Standalone 1-g head or body SAR evaluation by measurement or numerical simulation is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied. The 1-g SAR test exclusion threshold for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

[(max. power of channel, including tune-up tolerance, mW) / (min. test separation distance, mm)] · [√f(GHz)] ≤ 3.0 for 1-g SAR, where

- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison

Table 12.1: Standalone SAR test exclusion considerations

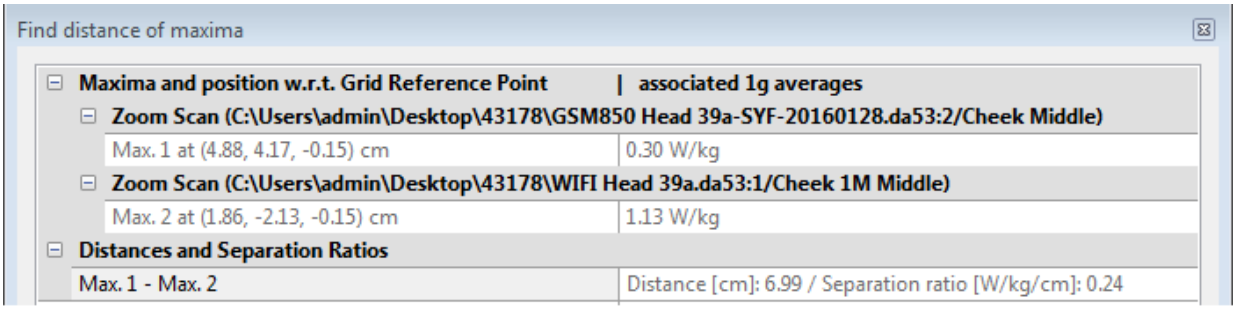
Band/Mode	F(GHz)	Position	SAR test exclusion threshold (mW)	RF output power		SAR test exclusion
				dBm	mW	
Bluetooth	2.441	Head	9.60	6	3.98	Yes
		Body	19.20	6	3.98	Yes
2.4GHz WLAN 802.11 b	2.45	Head	9.58	18	63.10	No
		Body	19.17	18	63.10	No

13 Evaluation of Simultaneous

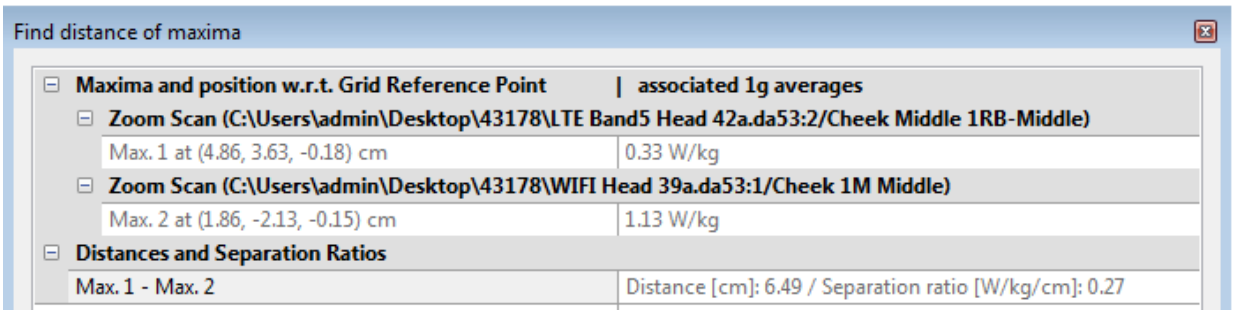
Table 13.1: The sum of reported SAR values for main antenna and WLAN

	Band	Position	Main antenna	WLAN	Sum	Distance (mm)	Ratio
Maximum reported SAR value for Head	LTE Band 2	Left hand, Touch cheek	0.79	0.58	**1.37**	**/**	**/**
	GSM 850	Right hand, Touch cheek	0.37	1.25	**1.62**	69.9	**0.03**
	LTE Band 5		0.37	1.25	**1.62**	64.9	**0.03**
Maximum reported SAR value for Body	LTE Band 4	Rear	1.30	0.29	**1.59**	/	**/**
	LTE Band 2	Bottom	1.27	/	**1.27**	/	**/**

According to the KDB 447498 D01, when the sum of SAR is larger than the limit, SAR test exclusion is determined by the SAR to peak location separation ratio. The ratio is determined by (SAR1 + SAR2)$^{1.5}$/Ri, rounded to two decimal digits, and must be ≤ 0.04 for all antenna pairs in the configuration to qualify for 1-g SAR test exclusion.



Picture 13.1 Distance evaluation for GSM 850 and WLAN



Picture 13.2 Distance evaluation for LTE Band 5 and WLAN

Table 13.2: The sum of reported SAR values for main antenna and Bluetooth

	Position	Main antenna	BT*	Sum
Highest reported SAR value for Head	Left hand, Touch cheek	0.79	0.17	**0.96**
Highest reported SAR value for Body	Rear	1.30	0.08	**1.38**

BT* - Estimated SAR for Bluetooth (see the table 13.3)

Table 13.3: Estimated SAR for Bluetooth

Position	F (GHz)	Distance (mm)	Upper limit of power *		Estimated$_{1g}$ (W/kg)
			dBm	mW	
Head	2.441	5	6	3.98	0.17
Body	2.441	10	6	3.98	0.08

* - Maximum possible output power declared by manufacturer

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)]·[√f(GHz)/x] W/kg for test separation distances ≤ 50 mm;
where x = 7.5 for 1-g SAR.
When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion

Conclusion:
According to the above tables, the sum of reported SAR values is > 1.6 W/kg, but the SAR to peak location separation ratio < 0.04. So the simultaneous transmission SAR with volume scans is not required.

14 SAR Test Result

It is determined by user manual for the distance between the EUT and the phantom bottom.
The distance is 10mm or 15mm and just applied to the condition of body worn accessory.
It is performed for all SAR measurements with area scan based 1-g SAR estimation (Fast SAR). A zoom scan measurement is added when the estimated 1-gSAR is the highest measured SAR in each exposure configuration, wireless mode and frequency band combination or >1.2W/kg.
The calculated SAR is obtained by the following formula:

$$\text{Reported SAR} = \text{Measured SAR} \times 10^{(P_{Target} - P_{Measured})/10}$$

Where P_{Target} is the power of manufacturing upper limit;
$P_{Measured}$ is the measured power in chapter 11.

Duty Cycle	
Speech for GSM850/1900	1:8.3
GPRS&EGPRS for GSM850	1:4
GPRS&EGPRS for GSM1900	1:2.67
WCDMA & LTE	1:1

14.1 SAR results for Fast SAR

Table 14.1-1: SAR Values (GSM 850 MHz Band - Head)

Ambient Temperature: 23.0 °C					Liquid Temperature: 22.5°C						
Frequency		Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.										
848.8	251	Left	Touch	/	32.56	33.5	0.202	**0.25**	0.293	**0.36**	-0.02
836.6	190	Left	Touch	Fig.1	32.50	33.5	0.237	**0.30**	0.309	**0.39**	0.03
824.2	128	Left	Touch	/	32.66	33.5	0.198	**0.24**	0.286	**0.35**	0.09
836.6	190	Left	Tilt	/	32.50	33.5	0.177	**0.22**	0.255	**0.32**	-0.14
836.6	190	Right	Touch	/	32.50	33.5	0.231	**0.29**	0.297	**0.37**	-0.10
836.6	190	Right	Tilt	/	32.50	33.5	0.205	**0.26**	0.300	**0.38**	0.05

Table 14.1-2: SAR Values (GSM 850 MHz Band - Body)

Ambient Temperature: 23.0 °C						Liquid Temperature: 22.5°C					
Frequency		Mode (number of timeslots)	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.										
836.6	190	GPRS (2)	Front	/	30.37	30.5	0.244	**0.25**	0.347	**0.36**	-0.01
848.8	251	GPRS (2)	Rear	Fig.2	30.34	30.5	0.44	**0.46**	0.76	**0.79**	-0.07
836.6	190	GPRS (2)	Rear	/	30.37	30.5	0.306	**0.31**	0.441	**0.45**	-0.08
824.2	128	GPRS (2)	Rear	/	30.47	30.5	0.305	**0.31**	0.44	**0.44**	-0.08
836.6	190	GPRS (2)	Left	/	30.37	30.5	0.243	**0.25**	0.36	**0.37**	-0.19

836.6	190	GPRS (2)	Right	/	30.37	30.5	0.152	**0.16**	0.224	**0.23**	-0.07
836.6	190	GPRS (2)	Bottom	/	30.37	30.5	0.078	**0.08**	0.129	**0.13**	-0.08
848.8	251	EGPRS (2)	Rear	/	30.35	30.5	0.308	**0.32**	0.441	**0.46**	-0.03

Note1: The distance between the EUT and the phantom bottom is 10mm.

Table 14.1-3: SAR Values (GSM 1900 MHz Band - Head)

Ambient Temperature: 23.0 °C Liquid Temperature: 22.5°C											
Frequency		Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.										
1909.8	810	Left	Touch	Fig.3	29.64	30.5	0.197	**0.24**	0.322	**0.39**	0.14
1880	661	Left	Touch	/	29.50	30.5	0.177	**0.22**	0.304	**0.38**	0.19
1850.2	512	Left	Touch	/	29.35	30.5	0.164	**0.21**	0.281	**0.37**	0.13
1880	661	Left	Tilt	/	29.50	30.5	0.051	**0.06**	0.087	**0.11**	0.04
1880	661	Right	Touch	/	29.50	30.5	0.095	**0.12**	0.154	**0.19**	-0.03
1880	661	Right	Tilt	/	29.50	30.5	0.068	**0.09**	0.117	**0.15**	0.05

Table 14.1-4: SAR Values (GSM 1900 MHz Band - Body)

Ambient Temperature: 23.0 °C Liquid Temperature: 22.5°C											
Frequency		Mode (number of timeslots)	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.										
1880	661	GPRS (3)	Front	/	25.94	27	0.33	**0.42**	0.591	**0.75**	-0.03
1909.8	810	GPRS (3)	Rear	/	26.00	27	0.428	**0.54**	0.771	**0.97**	-0.13
1880	661	GPRS (3)	Rear	/	25.94	27	0.397	**0.51**	0.737	**0.94**	-0.02
1850.2	512	GPRS (3)	Rear	/	25.95	27	0.385	**0.49**	0.7	**0.89**	-0.04
1850.2	512	GPRS (3)	Left	/	25.94	27	0.148	**0.19**	0.259	**0.33**	-0.17
1850.2	512	GPRS (3)	Right	/	25.94	27	0.0216	**0.03**	0.0374	**0.05**	-0.11
1909.8	810	GPRS (3)	Bottom	Fig.4	25.94	27	0.473	**0.60**	0.926	**1.18**	-0.09
1880	661	GPRS (3)	Bottom	/	25.94	27	0.36	**0.46**	0.747	**0.95**	-0.09
1850.2	512	GPRS (3)	Bottom	/	25.94	27	0.335	**0.43**	0.692	**0.88**	-0.07
1909.8	810	EGPRS (3)	Bottom	/	25.98	27	0.398	**0.50**	0.781	**0.99**	-0.16

Note1: The distance between the EUT and the phantom bottom is 10mm.

Table 14.1-5: SAR Values (WCDMA 850 MHz Band - Head)

Ambient Temperature: 23.0 °C Liquid Temperature: 22.5°C											
Frequency		Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.										
846.6	4233	Left	Touch	/	23.45	24	0.248	**0.28**	0.361	**0.41**	0.13
836.4	4182	Left	Touch	/	23.28	24	0.246	**0.29**	0.358	**0.42**	0.02
826.4	4132	Left	Touch	Fig.5	23.27	24	0.279	**0.33**	0.370	**0.44**	0.17
836.4	4182	Left	Tilt	/	23.28	24	0.150	**0.18**	0.218	**0.26**	0.03

836.4	4182	Right	Touch	/	23.28	24	0.174	**0.21**	0.216	**0.25**	-0.04
836.4	4182	Right	Tilt	/	23.28	24	0.119	**0.14**	0.176	**0.21**	-0.03

Table 14.1-6: SAR Values (WCDMA 850 MHz Band - Body)

Ambient Temperature: 23.0 °C Liquid Temperature: 22.5°C										
Frequency		Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.									
836.4	4182	Front	/	23.38	24	0.204	**0.24**	0.289	**0.33**	0.04
846.6	4233	Rear	/	23.37	24	0.241	**0.28**	0.353	**0.41**	0.11
836.4	4182	Rear	Fig.6	23.38	24	0.308	**0.36**	0.412	**0.48**	0.05
826.4	4132	Rear	/	23.28	24	0.241	**0.28**	0.351	**0.41**	-0.05
836.4	4182	Left	/	23.38	24	0.177	**0.20**	0.263	**0.30**	0.11
836.4	4182	Right	/	23.38	24	0.178	**0.21**	0.264	**0.30**	0.06
836.4	4182	Bottom	/	23.38	24	0.0702	**0.08**	0.106	**0.12**	-0.02

Note1: The distance between the EUT and the phantom bottom is 10mm.

Table 14.1-7: SAR Values (WCDMA 1700 MHz Band - Head)

Ambient Temperature: 23.0 °C Liquid Temperature: 22.5°C											
Frequency		Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.										
1752.6	1513	Left	Touch	Fig.7	23.57	24	0.335	**0.37**	0.531	**0.59**	0.19
1732.4	1412	Left	Touch	/	23.60	24	0.331	**0.36**	0.521	**0.57**	0.14
1712.4	1312	Left	Touch	/	23.55	24	0.270	**0.30**	0.444	**0.49**	0.13
1732.4	1412	Left	Tilt	/	23.60	24	0.070	**0.08**	0.113	**0.12**	0.16
1732.4	1412	Right	Touch	/	23.60	24	0.158	**0.17**	0.238	**0.26**	0.15
1732.4	1412	Right	Tilt	/	23.60	24	0.058	**0.06**	0.094	**0.10**	0.15

Table 14.1-8: SAR Values (WCDMA 1700 MHz Band - Body)

Ambient Temperature: 23.0 °C Liquid Temperature: 22.5°C										
Frequency		Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.									
1732.4	1412	Front	/	23.45	24	0.369	**0.42**	0.637	**0.72**	-0.09
1752.6	1513	Rear	/	23.45	24	0.502	**0.57**	0.805	**0.91**	-0.08
1732.4	1412	Rear	/	23.45	24	0.561	**0.64**	0.91	**1.03**	-0.11
1712.4	1312	Rear	Fig.8	23.39	24	0.654	**0.75**	0.993	**1.14**	-0.01
1732.4	1412	Left	/	23.45	24	0.112	**0.13**	0.196	**0.22**	0.11
1732.4	1412	Right	/	23.45	24	0.0751	**0.09**	0.132	**0.15**	-0.03
1732.4	1412	Bottom	/	23.45	24	0.331	**0.38**	0.65	**0.74**	0.06

Note1: The distance between the EUT and the phantom bottom is 10mm.

Table 14.1-9: SAR Values (WCDMA 1900 MHz Band - Head)

Ambient Temperature: 23.0 °C Liquid Temperature: 22.5°C											
Frequency		Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.										
1907.6	9538	Left	Touch	/	23.83	24	0.359	**0.37**	0.636	**0.66**	0.17
1880	9400	Left	Touch	/	23.78	24	0.409	**0.43**	0.672	**0.71**	0.13
1852.4	9262	Left	Touch	Fig.9	23.68	24	0.427	**0.46**	0.708	**0.76**	0.10
1880	9400	Left	Tilt	/	23.78	24	0.144	**0.15**	0.192	**0.20**	0.06
1880	9400	Right	Touch	/	23.78	24	0.198	**0.21**	0.333	**0.35**	0.07
1880	9400	Right	Tilt	/	23.78	24	0.127	**0.13**	0.219	**0.23**	0.05

Table 14.1-10: SAR Values (WCDMA 1900 MHz Band - Body) – AP ON

Ambient Temperature: 23.0 °C Liquid Temperature: 22.5°C										
Frequency		Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.									
1880	9400	Front	/	22.49	22.5	0.344	**0.34**	0.608	**0.61**	-0.04
1880	9400	Rear	/	22.49	22.5	0.389	**0.39**	0.674	**0.68**	-0.07
1880	9400	Left	/	22.49	22.5	0.154	**0.15**	0.277	**0.28**	0.07
1880	9400	Right	/	22.49	22.5	0.0299	**0.03**	0.0515	**0.05**	0.10
1907.6	9538	Bottom	Fig.10	22.47	22.5	0.521	**0.53**	1.03	**1.04**	0.03
1880	9400	Bottom	/	22.49	22.5	0.412	**0.41**	0.824	**0.83**	-0.02
1852.4	9262	Bottom	/	22.50	22.5	0.363	**0.36**	0.724	**0.72**	-0.04

Note1: The distance between the EUT and the phantom bottom is 10mm.

Table 14.1-11: SAR Values (WCDMA 1900 MHz Band - Body) – AP OFF

Ambient Temperature: 23.0 °C Liquid Temperature: 22.5°C										
Frequency		Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.									
1880	9400	Front	/	23.49	24	0.252	**0.28**	0.429	**0.48**	-0.08
1907.6	9538	Rear	Fig.11	23.39	24	0.329	**0.38**	0.547	**0.63**	0.11
1880	9400	Rear	/	23.49	24	0.298	**0.33**	0.5	**0.56**	0.00
1852.4	9262	Rear	/	23.46	24	0.276	**0.31**	0.466	**0.53**	-0.01

Note1: The distance between the EUT and the phantom bottom is 15mm.

Table 14.1-12: SAR Values (LTE Band2 - Head)

Ambient Temperature: 23.0 °C												
Frequency		Mode	Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.											
1900	19100	1RB_Mid	Left	Touch	Fig.12	24.32	24.8	0.433	**0.48**	0.699	**0.78**	-0.10
1900	19100	1RB_Mid	Left	Tilt	/	24.32	24.8	0.135	**0.15**	0.227	**0.25**	-0.14
1900	19100	1RB_Mid	Right	Touch	/	24.32	24.8	0.168	**0.19**	0.209	**0.23**	0.00
1900	19100	1RB_Mid	Right	Tilt	/	24.32	24.8	0.128	**0.14**	0.221	**0.25**	0.08
1860	18700	50RB_Low	Left	Touch	/	23.17	23.8	0.307	**0.35**	0.532	**0.62**	0.06
1860	18700	50RB_Low	Left	Tilt	/	23.17	23.8	0.115	**0.13**	0.187	**0.22**	0.00
1860	18700	50RB_Low	Right	Touch	/	23.17	23.8	0.154	**0.18**	0.264	**0.31**	-0.11
1860	18700	50RB_Low	Right	Tilt	/	23.17	23.8	0.106	**0.12**	0.178	**0.21**	0.02

Note1: The LTE mode is QPSK_20MHz.

Table 14.1-13: SAR Values (LTE Band2 - Body) – AP ON

Ambient Temperature: 23.0 °C												
Frequency		Mode	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)	
MHz	Ch.											
1900	19100	1RB_Low	Front	/	22.40	23	0.38	**0.44**	0.678	**0.78**	-0.09	
1900	19100	1RB_Low	Rear	/	22.40	23	0.431	**0.49**	0.729	**0.84**	-0.18	
1880	18900	1RB_Low	Rear	/	22.25	23	0.412	**0.49**	0.696	**0.83**	0.08	
1860	18700	1RB_Mid	Rear	/	22.11	23	0.392	**0.48**	0.661	**0.81**	-0.04	
1900	19100	1RB_Low	Left	/	22.40	23	0.143	**0.16**	0.252	**0.29**	0.03	
1900	19100	1RB_Low	Right	/	22.40	23	0.0366	**0.04**	0.0627	**0.07**	-0.11	
1900	19100	1RB_Low	Bottom	Fig.13	22.40	23	0.576	**0.66**	1.11	**1.27**	-0.19	
1880	18900	1RB_Low	Bottom	/	22.25	23	0.458	**0.54**	0.88	**1.05**	-0.02	
1860	18700	1RB_Mid	Bottom	/	22.11	23	0.435	**0.53**	0.836	**1.03**	0.12	
1900	19100	50RB_Low	Front	/	22.16	23	0.368	**0.45**	0.655	**0.80**	-0.11	
1900	19100	50RB_Low	Rear	/	22.16	23	0.408	**0.50**	0.69	**0.84**	-0.13	
1880	18900	50RB_Low	Rear	/	22.08	23	0.401	**0.50**	0.678	**0.84**	0.02	
1860	18700	50RB_Low	Rear	/	21.97	23	0.379	**0.48**	0.64	**0.81**	0.00	
1900	19100	50RB_Low	Left	/	22.16	23	0.14	**0.17**	0.246	**0.30**	-0.06	
1900	19100	50RB_Low	Right	/	22.16	23	0.0327	**0.04**	0.0559	**0.07**	0.08	
1900	19100	50RB_Low	Bottom	/	22.16	23	0.495	**0.60**	0.962	**1.17**	-0.05	
1880	18900	50RB_Low	Bottom	/	22.08	23	0.476	**0.59**	0.916	**1.13**	0.09	
1860	18700	50RB_Low	Bottom	/	21.97	23	0.429	**0.54**	0.82	**1.04**	-0.03	
1900	19100	100RB	Rear	/	22.05	23	0.387	**0.48**	0.659	**0.82**	-0.09	
1900	19100	100RB	Bottom	/	22.05	23	0.492	**0.61**	0.958	**1.19**	-0.01	

Note1: The distance between the EUT and the phantom bottom is 10mm.

Note2: The LTE mode is QPSK_20MHz.

Table 14.1-14: SAR Values (LTE Band2 - Body) – AP OFF

Ambient Temperature: 23.0 °C Liquid Temperature: 22.5°C											
Frequency		Mode	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.										
1900	19100	1RB_Mid	Front	/	24.03	24.8	0.255	**0.30**	0.417	**0.50**	-0.02
1900	19100	1RB_Mid	Rear	Fig.14	24.03	24.8	0.403	**0.48**	0.659	**0.79**	0.04
1900	19100	50RB_Low	Front	/	22.53	23.8	0.209	**0.28**	0.343	**0.46**	-0.12
1900	19100	50RB_Low	Rear	/	22.53	23.8	0.289	**0.39**	0.502	**0.67**	-0.01

Note1: The distance between the EUT and the phantom bottom is 15mm.

Note2: The LTE mode is QPSK_20MHz.

Table 14.1-15: SAR Values (LTE Band4 - Head)

Ambient Temperature: 23.0 °C Liquid Temperature: 22.5°C												
Frequency		Mode	Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.											
1745	20300	1RB_Mid	Left	Touch	Fig.15	24.18	24.5	0.423	**0.46**	0.686	**0.74**	0.03
1745	20300	1RB_Mid	Left	Tilt	/	24.18	24.5	0.107	**0.12**	0.173	**0.19**	0.13
1745	20300	1RB_Mid	Right	Touch	/	24.18	24.5	0.155	**0.17**	0.239	**0.26**	0.08
1745	20300	1RB_Mid	Right	Tilt	/	24.18	24.5	0.089	**0.10**	0.140	**0.15**	0.08
1745	20300	50RB_Mid	Left	Touch	/	22.79	23.5	0.296	**0.35**	0.519	**0.61**	0.13
1745	20300	50RB_Mid	Left	Tilt	/	22.79	23.5	0.080	**0.09**	0.130	**0.15**	-0.04
1745	20300	50RB_Mid	Right	Touch	/	22.79	23.5	0.115	**0.14**	0.179	**0.21**	0.07
1745	20300	50RB_Mid	Right	Tilt	/	22.79	23.5	0.067	**0.08**	0.105	**0.12**	-0.02

Note1: The LTE mode is QPSK_20MHz.

Table 14.1-16: SAR Values (LTE Band4 - Body)

Ambient Temperature: 23.0 °C Liquid Temperature: 22.5°C											
Frequency		Mode	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.										
1732.5	20175	1RB_Mid	Front	/	23.90	24.5	0.397	**0.46**	0.657	**0.75**	0.04
1745	20300	1RB_Mid	Rear	/	23.61	24.5	0.555	**0.68**	0.893	**1.10**	0.06
1732.5	20175	1RB_Mid	Rear	/	23.90	24.5	0.615	**0.71**	0.948	**1.09**	0.12
1720	20050	1RB_Mid	Rear	Fig.16	23.66	24.5	0.666	**0.81**	1.04	**1.26**	-0.07
1732.5	20175	1RB_Mid	Left	/	23.90	24.5	0.154	**0.18**	0.277	**0.32**	0.01
1732.5	20175	1RB_Mid	Right	/	23.90	24.5	0.0526	**0.06**	0.0867	**0.10**	0.06
1732.5	20175	1RB_Mid	Bottom	/	23.90	24.5	0.308	**0.35**	0.603	**0.69**	-0.12
1732.5	20175	50RB_Mid	Front	/	22.38	23.5	0.309	**0.40**	0.515	**0.67**	-0.08

1745	20300	50RB_Mid	Rear	/	22.18	23.5	0.446	**0.61**	0.718	**0.97**	0.07
1732.5	20175	50RB_Mid	Rear	/	22.38	23.5	0.459	**0.59**	0.745	**0.96**	-0.16
1720	20050	50RB_Mid	Rear	/	22.37	23.5	0.473	**0.61**	0.773	**1.00**	-0.10
1732.5	20175	50RB_Mid	Left	/	22.38	23.5	0.123	**0.16**	0.222	**0.29**	0.02
1732.5	20175	50RB_Mid	Right	/	22.38	23.5	0.0415	**0.05**	0.0676	**0.09**	0.18
1732.5	20175	50RB_Mid	Bottom	/	22.38	23.5	0.26	**0.34**	0.502	**0.65**	0.18
1732.5	20175	100RB	Rear	/	22.30	23.5	0.464	**0.61**	0.735	**0.97**	-0.10

Note1: The distance between the EUT and the phantom bottom is 10mm.

Note2: The LTE mode is QPSK_20MHz.

Table 14.1-17: SAR Values (LTE Band5 - Head)

Ambient Temperature: 23.0 °C Liquid Temperature: 22.5°C												
Frequency		Mode	Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.											
836.5	20525	1RB_Mid	Left	Touch	Fig.17	24.00	24.5	0.292	**0.33**	0.394	**0.44**	-0.12
836.5	20525	1RB_Mid	Left	Tilt	/	24.00	24.5	0.240	**0.27**	0.349	**0.39**	-0.06
836.5	20525	1RB_Mid	Right	Touch	/	24.00	24.5	0.256	**0.29**	0.329	**0.37**	-0.07
836.5	20525	1RB_Mid	Right	Tilt	/	24.00	24.5	0.204	**0.23**	0.300	**0.34**	0.01
829	20450	25RB_High	Left	Touch	/	22.95	23.5	0.203	**0.23**	0.308	**0.35**	-0.04
829	20450	25RB_High	Left	Tilt	/	22.95	23.5	0.174	**0.20**	0.254	**0.29**	0.02
829	20450	25RB_High	Right	Touch	/	22.95	23.5	0.179	**0.20**	0.260	**0.30**	-0.04
829	20450	25RB_High	Right	Tilt	/	22.95	23.5	0.162	**0.18**	0.238	**0.27**	-0.05

Note1: The LTE mode is QPSK_10MHz.

Table 14.1-18: SAR Values (LTE Band5 - Body)

Ambient Temperature: 23.0 °C Liquid Temperature: 22.5°C											
Frequency		Mode	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.										
836.5	20525	1RB_Mid	Front	/	23.69	24.5	0.222	**0.27**	0.310	**0.37**	0.02
836.5	20525	1RB_Mid	Rear	Fig.18	23.69	24.5	0.326	**0.39**	0.434	**0.52**	0.15
836.5	20525	1RB_Mid	Left	/	23.69	24.5	0.214	**0.26**	0.322	**0.39**	0.12
836.5	20525	1RB_Mid	Right	/	23.69	24.5	0.195	**0.23**	0.293	**0.35**	-0.11
836.5	20525	1RB_Mid	Bottom	/	23.69	24.5	0.062	**0.07**	0.099	**0.12**	-0.13
836.5	20525	25RB_Low	Front	/	22.63	23.5	0.18	**0.22**	0.245	**0.30**	0.18
836.5	20525	25RB_Low	Rear	/	22.63	23.5	0.232	**0.28**	0.33	**0.40**	0.05
836.5	20525	25RB_Low	Left	/	22.63	23.5	0.18	**0.22**	0.27	**0.33**	-0.02
836.5	20525	25RB_Low	Right	/	22.63	23.5	0.165	**0.20**	0.247	**0.30**	0.12
836.5	20525	25RB_Low	Bottom	/	22.63	23.5	0.049	**0.06**	0.077	**0.09**	-0.11

Note1: The distance between the EUT and the phantom bottom is 10mm.

Note2: The LTE mode is QPSK_10MHz.

Table 14.1-19: SAR Values (LTE Band12 - Head)

Ambient Temperature: 23.0 °C												
Liquid Temperature: 22.5 °C												
Frequency		Mode	Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.											
707.5	23095	1RB_Mid	Left	Touch	Fig.19	23.66	24	0.232	**0.25**	0.304	**0.33**	-0.02
707.5	23095	1RB_Mid	Left	Tilt	/	23.66	24	0.133	**0.14**	0.191	**0.21**	-0.04
707.5	23095	1RB_Mid	Right	Touch	/	23.66	24	0.150	**0.16**	0.216	**0.23**	0.01
707.5	23095	1RB_Mid	Right	Tilt	/	23.66	24	0.111	**0.12**	0.161	**0.17**	-0.05
711	23130	25RB_Mid	Left	Touch	/	22.45	23	0.155	**0.18**	0.237	**0.27**	0.06
711	23130	25RB_Mid	Left	Tilt	/	22.45	23	0.088	**0.10**	0.126	**0.14**	0.01
711	23130	25RB_Mid	Right	Touch	/	22.45	23	0.117	**0.13**	0.170	**0.19**	-0.01
711	23130	25RB_Mid	Right	Tilt	/	22.45	23	0.078	**0.09**	0.112	**0.13**	-0.04

Note1: The LTE mode is QPSK_10MHz.

Table 14.1-20: SAR Values (LTE Band12 - Body)

Ambient Temperature: 23.0 °C												
Liquid Temperature: 22.5 °C												
Frequency		Mode	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)	
MHz	Ch.											
704	23060	1RB_Mid	Front	/	23.56	24	0.204	**0.23**	0.288	**0.32**	0.17	
704	23060	1RB_Mid	Rear	Fig.20	23.56	24	0.352	**0.39**	0.471	**0.52**	0.17	
704	23060	1RB_Mid	Left	/	23.56	24	0.203	**0.22**	0.299	**0.33**	0.12	
704	23060	1RB_Mid	Right	/	23.56	24	0.106	**0.12**	0.155	**0.17**	-0.11	
704	23060	1RB_Mid	Bottom	/	23.56	24	0.048	**0.05**	0.073	**0.08**	-0.13	
704	23060	25RB_Mid	Front	/	22.35	23	0.182	**0.21**	0.254	**0.30**	0.18	
704	23060	25RB_Mid	Rear	/	22.35	23	0.255	**0.30**	0.37	**0.42**	-0.02	
704	23060	25RB_Mid	Left	/	22.35	23	0.184	**0.21**	0.271	**0.31**	-0.02	
704	23060	25RB_Mid	Right	/	22.35	23	0.097	**0.11**	0.141	**0.16**	0.12	
704	23060	25RB_Mid	Bottom	/	22.35	23	0.042	**0.05**	0.063	**0.07**	-0.11	

Note1: The distance between the EUT and the phantom bottom is 10mm.

Note2: The LTE mode is QPSK_10MHz.

14.2 SAR results for Standard procedure

There is zoom scan measurement to be added for the highest measured SAR in each exposure configuration/band.

Table 14.2-1: SAR Values (GSM 850 MHz Band - Head)

Ambient Temperature: 23.0 °C Liquid Temperature: 22.5°C											
Frequency		Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.										
836.6	190	Left	Touch	Fig.1	32.50	33.5	0.237	**0.30**	0.309	**0.39**	0.03

Table 14.2-2: SAR Values (GSM 850 MHz Band - Body)

Ambient Temperature: 23.0 °C Liquid Temperature: 22.5°C											
Frequency		Mode (number of timeslots)	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.										
848.8	251	GPRS (2)	Rear	Fig.2	30.34	30.5	0.44	**0.46**	0.76	**0.79**	-0.07

Note1: The distance between the EUT and the phantom bottom is 10mm.

Table 14.2-3: SAR Values (GSM 1900 MHz Band - Head)

Ambient Temperature: 23.0 °C Liquid Temperature: 22.5°C											
Frequency		Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.										
1909.8	810	Left	Touch	Fig.3	29.64	30.5	0.197	**0.24**	0.322	**0.39**	0.14

Table 14.2-4: SAR Values (GSM 1900 MHz Band - Body)

Ambient Temperature: 23.0 °C Liquid Temperature: 22.5°C											
Frequency		Mode (number of timeslots)	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.										
1909.8	810	GPRS (3)	Bottom	Fig.4	25.94	27	0.473	**0.60**	0.926	**1.18**	-0.09

Note1: The distance between the EUT and the phantom bottom is 10mm.

Table 14.2-5: SAR Values (WCDMA 850 MHz Band - Head)

Ambient Temperature: 23.0 °C Liquid Temperature: 22.5°C											
Frequency		Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.										
826.4	4132	Left	Touch	Fig.5	23.27	24	0.279	**0.33**	0.370	**0.44**	0.17

Table 14.2-6: SAR Values (WCDMA 850 MHz Band - Body)

Ambient Temperature: 23.0 °C Liquid Temperature: 22.5°C										
Frequency		Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.									
836.4	4182	Rear	Fig.6	23.38	24	0.308	**0.36**	0.412	**0.48**	0.05

Note1: The distance between the EUT and the phantom bottom is 10mm.

Table 14.2-7: SAR Values (WCDMA 1700 MHz Band - Head)

Ambient Temperature: 23.0 °C Liquid Temperature: 22.5°C											
Frequency		Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.										
1752.6	1513	Left	Touch	Fig.7	23.57	24	0.335	**0.37**	0.531	**0.59**	0.19

Table 14.2-8: SAR Values (WCDMA 1700 MHz Band - Body)

Ambient Temperature: 23.0 °C Liquid Temperature: 22.5°C										
Frequency		Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.									
1712.4	1312	Rear	Fig.8	23.39	24	0.654	**0.75**	0.993	**1.14**	-0.01

Note1: The distance between the EUT and the phantom bottom is 10mm.

Table 14.2-9: SAR Values (WCDMA 1900 MHz Band - Head)

Ambient Temperature: 23.0 °C Liquid Temperature: 22.5°C											
Frequency		Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.										
1852.4	9262	Left	Touch	Fig.9	23.68	24	0.427	**0.46**	0.708	**0.76**	0.10

Table 14.2-10: SAR Values (WCDMA 1900 MHz Band - Body) – AP ON

Ambient Temperature: 23.0 °C Liquid Temperature: 22.5°C										
Frequency		Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.									
1907.6	9538	Bottom	Fig.10	22.47	22.5	0.521	**0.53**	1.03	**1.04**	0.03

Note1: The distance between the EUT and the phantom bottom is 10mm.

Table 14.2-11: SAR Values (WCDMA 1900 MHz Band - Body) – AP OFF

Ambient Temperature: 23.0 °C Liquid Temperature: 22.5°C										
Frequency		Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.									
1907.6	9538	Rear	Fig.11	23.39	24	0.329	**0.38**	0.547	**0.63**	0.11

Note1: The distance between the EUT and the phantom bottom is 15mm.

Table 14.2-12: SAR Values (LTE Band2 - Head)

Ambient Temperature: 23.0 °C Liquid Temperature: 22.5°C												
Frequency		Mode	Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.											
1900	19100	1RB_Mid	Left	Touch	Fig.12	24.32	24.8	0.433	**0.48**	0.699	**0.78**	-0.10

Note1: The LTE mode is QPSK_20MHz.

Table 14.2-13: SAR Values (LTE Band2 - Body) – AP ON

Ambient Temperature: 23.0 °C Liquid Temperature: 22.5°C												
Frequency		Mode	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.										
1900	19100	1RB_Low	Bottom	Fig.13	22.40	23	0.576	**0.66**	1.11	**1.27**	-0.19

Note1: The distance between the EUT and the phantom bottom is 10mm.
Note2: The LTE mode is QPSK_20MHz.

Table 14.2-14: SAR Values (LTE Band2 - Body) – AP OFF

Ambient Temperature: 23.0 °C Liquid Temperature: 22.5°C												
Frequency		Mode	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.										
1900	19100	1RB_Mid	Rear	Fig.14	24.03	24.8	0.403	**0.48**	0.659	**0.79**	0.04

Note1: The distance between the EUT and the phantom bottom is 15mm.
Note2: The LTE mode is QPSK_20MHz.

Table 14.2-15: SAR Values (LTE Band4 - Head)

Ambient Temperature: 23.0 °C Liquid Temperature: 22.5°C												
Frequency		Mode	Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.											
1745	20300	1RB_Mid	Left	Touch	Fig.15	24.18	24.5	0.423	**0.46**	0.686	**0.74**	0.03

Note1: The LTE mode is QPSK_20MHz.

Table 14.2-16: SAR Values (LTE Band4 - Body)

Ambient Temperature: 23.0 °C Liquid Temperature: 22.5°C												
Frequency		Mode	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)	
MHz	Ch.											
1720	20050	1RB_Mid	Rear	Fig.16	23.66	24.5	0.666	**0.81**	1.04	**1.26**	-0.07	

Note1: The distance between the EUT and the phantom bottom is 10mm.
Note2: The LTE mode is QPSK_20MHz.

Table 14.2-17: SAR Values (LTE Band5 - Head)

Ambient Temperature: 23.0 °C Liquid Temperature: 22.5°C												
Frequency		Mode	Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.											
836.5	20525	1RB_Mid	Left	Touch	Fig.17	24.00	24.5	0.292	**0.33**	0.394	**0.44**	-0.12

Note1: The LTE mode is QPSK_10MHz.

Table 14.2-18: SAR Values (LTE Band5 - Body)

Ambient Temperature: 23.0 °C Liquid Temperature: 22.5°C												
Frequency		Mode	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)	
MHz	Ch.											
836.5	20525	1RB_Mid	Rear	Fig.18	23.69	24.5	0.326	**0.39**	0.434	**0.52**	0.15	

Note1: The distance between the EUT and the phantom bottom is 10mm.
Note2: The LTE mode is QPSK_10MHz.

Table 14.2-19: SAR Values (LTE Band12 - Head)

Ambient Temperature: 23.0 °C Liquid Temperature: 22.5 °C												
Frequency		Mode	Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.											
707.5	23095	1RB_Mid	Left	Touch	Fig.19	23.66	24	0.232	**0.25**	0.304	**0.33**	-0.02

Note1: The LTE mode is QPSK_10MHz.

Table 14.2-20: SAR Values (LTE Band12 - Body)

Ambient Temperature: 23.0 °C Liquid Temperature: 22.5 °C												
Frequency		Mode	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)	
MHz	Ch.											
704	23060	1RB_Mid	Rear	Fig.20	23.56	24	0.352	**0.39**	0.471	**0.52**	0.17	

Note1: The distance between the EUT and the phantom bottom is 10mm.

Note2: The LTE mode is QPSK_10MHz.

14.3 WLAN Evaluation

According to the KDB248227 D01, SAR is measured for 2.4GHz 802.11b DSSS using the initial test position procedure.

Head Evaluation

Table 14.3-1: SAR Values (WLAN - Head) – 802.11b 1Mbps (Fast SAR)

Ambient Temperature: 23.0 °C					Liquid Temperature: 22.5 °C						
Frequency		Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.										
2462	11	Left	Touch	/	17.92	18	0.283	**0.29**	0.527	**0.54**	-0.19
2462	11	Left	Tilt	/	17.92	18	0.255	**0.26**	0.493	**0.50**	-0.08
2462	11	Right	Touch	/	17.92	18	0.512	**0.52**	1.08	**1.10**	0.01
2462	11	Right	Tilt	/	17.92	18	0.328	**0.33**	0.681	**0.69**	-0.03

As shown above table, the initial test position for head is “Right Touch”. So the head SAR of WLAN is presented as below:

Table 14.3-2: SAR Values (WLAN - Head) – 802.11b 1Mbps (Full SAR)

Ambient Temperature: 23.0 °C					Liquid Temperature: 22.5 °C						
Frequency		Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.										
2462	11	Right	Touch	/	17.92	18	0.473	**0.48**	1.04	**1.06**	0.01
2462	11	Right	Tilt	/	17.92	18	0.292	**0.30**	0.632	**0.64**	-0.03
2437	6	Right	Touch	Fig.21	17.65	18	0.524	**0.57**	1.13	**1.22**	-0.12
2412	1	Right	Touch	/	17.45	18	0.510	**0.58**	1.07	**1.21**	-0.15
2462	11	Left	Touch	/	17.92	18	0.292	**0.30**	0.556	**0.57**	-0.19

Note1: When the reported SAR of the initial test position is > 0.4 W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position using subsequent highest estimated 1-g SAR conditions determined by area scans, on the highest maximum output power channel, until the reported SAR is ≤ 0.8 W/kg.
Note2: For all positions/configurations tested using the initial test position and subsequent test positions, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel until the reported SAR is ≤ 1.2 W/kg or all required channels are tested.

According to the KDB248227 D01, The reported SAR must be scaled to 100% transmission duty factor to determine compliance at the maximum tune-up tolerance limit. The scaled reported SAR is presented as below.

Table 14.3-3: SAR Values (WLAN - Head) – 802.11b 1Mbps (Scaled Reported SAR)

Ambient Temperature: 23.0 °C					Liquid Temperature: 22.5 °C		
Frequency		Side	Test Position	Actual duty factor	maximum duty factor	Reported SAR (1g) (W/kg)	Scaled reported SAR (1g) (W/kg)
MHz	Ch.						
2437	6	Right	Touch	97.85%	100%	**1.22**	**1.25**
2462	11	Left	Touch	97.85%	100%	**0.57**	**0.58**

SAR is not required for OFDM because the 802.11b adjusted SAR ≤ 1.2 W/kg.

Body Evaluation

Table 14.3-4: SAR Values (WLAN - Body) – 802.11b 1Mbps (Fast SAR)

Ambient Temperature: 23.0 °C				Liquid Temperature: 22.5 °C						
Frequency		Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.									
2462	11	Front	/	17.99	18	0.109	**0.11**	0.208	**0.21**	-0.06
2462	11	Rear	/	17.99	18	0.128	**0.13**	0.272	**0.27**	0.04
2462	11	Right	/	17.99	18	0.0252	**0.03**	0.0459	**0.05**	0.17
2462	11	Top	/	17.99	18	0.0859	**0.09**	0.166	**0.17**	0.16

As shown above table, the initial test position for body is “Rear”. So the body SAR of WLAN is presented as below:

Table 14.3-5: SAR Values (WLAN - Body) – 802.11b 1Mbps (Full SAR)

Ambient Temperature: 23.0 °C				Liquid Temperature: 22.5 °C						
Frequency		Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.									
2462	11	Rear	Fig.22	17.99	18	0.133	**0.13**	0.28	**0.28**	0.04

Note1: When the reported SAR of the initial test position is > 0.4 W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position using subsequent highest estimated 1-g SAR conditions determined by area scans, on the highest maximum output power channel, until the reported SAR is ≤ 0.8 W/kg.

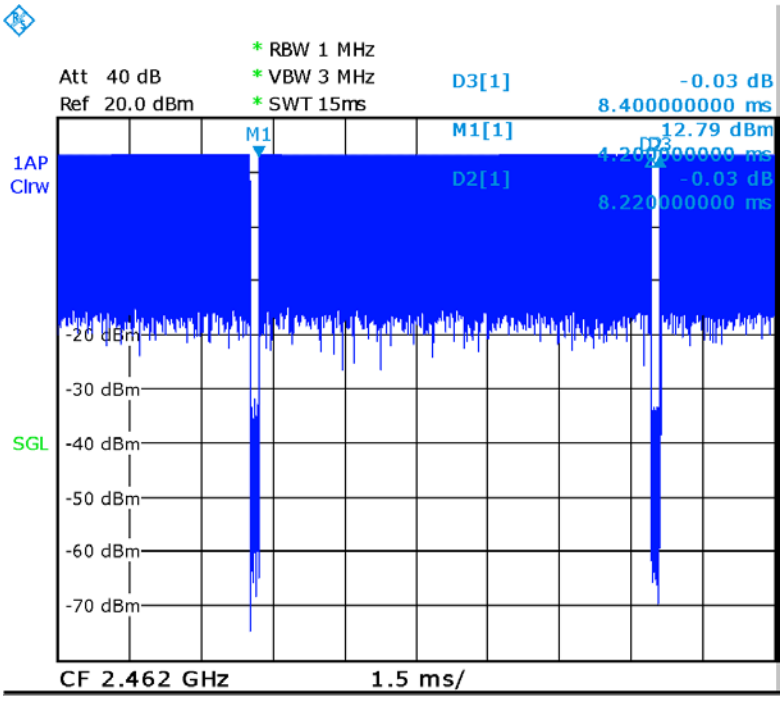
Note2: For all positions/configurations tested using the initial test position and subsequent test positions, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel until the reported SAR is ≤ 1.2 W/kg or all required channels are tested.

According to the KDB248227 D01, The reported SAR must be scaled to 100% transmission duty factor to determine compliance at the maximum tune-up tolerance limit. The scaled reported SAR is presented as below.

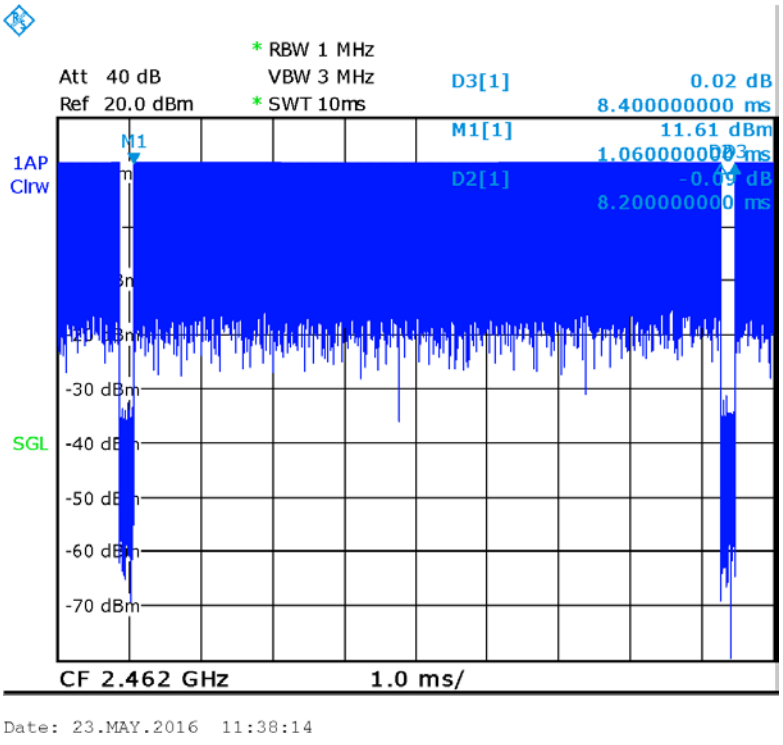
Table 14.3-6: SAR Values (WLAN - Body) – 802.11b 1Mbps (Scaled Reported SAR)

Ambient Temperature: 23.0 °C				Liquid Temperature: 22.5 °C		
Frequency		Test Position	Actual duty factor	maximum duty factor	Reported SAR (1g) (W/kg)	Scaled reported SAR (1g) (W/kg)
MHz	Ch.					
2462	11	Rear	97.61%	100%	**0.28**	**0.29**

SAR is not required for OFDM because the 802.11b adjusted SAR ≤ 1.2 W/kg.



Picture 14.1 The plot of duty factor for head



Picture 14.2 The plot of duty factor for body

15 SAR Measurement Variability

SAR measurement variability must be assessed for each frequency band, which is determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media are required for SAR measurements in a frequency band, the variability measurement procedures should be applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium.

The following procedures are applied to determine if repeated measurements are required.

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

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

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

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

Table 15.1: SAR Measurement Variability for Head WLAN (1g)

Frequency		Side	Test Position	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
MHz	Ch.						
2437	6	Right	Touch	1.13	1.12	1.01	/

Table 15.2: SAR Measurement Variability for Body GSM1900 (1g)

Frequency		Test Position	Spacing (mm)	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
MHz	Ch.						
1909.8	810	Bottom	10	0.926	0.923	1.00	/

Table 15.3: SAR Measurement Variability for Body WCDMA1700 (1g)

Frequency		Test Position	Spacing (mm)	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
MHz	Ch.						
1712.4	1537	Rear	10	0.993	0.997	1.00	/

Table 15.4: SAR Measurement Variability for Body WCDMA1900 (1g)

Frequency		Test Position	Spacing (mm)	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
MHz	Ch.						
1907.6	9938	Bottom	10	1.03	1.01	1.02	/

Table 15.5: SAR Measurement Variability for Body LTE Band2 (1g)

Frequency		Test Position	Spacing (mm)	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
MHz	Ch.						
1900	19100	Bottom	10	1.11	1.09	1.02	/

Table 15.5: SAR Measurement Variability for Body LTE Band4 (1g)

Frequency		Test Position	Spacing (mm)	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
MHz	Ch.						
1720	20050	Rear	10	1.04	1.05	1.01	/

16 Measurement Uncertainty

16.1 Measurement Uncertainty for Normal SAR Tests (300MHz~3GHz)

No.	Error Description	Type	Uncertainty value	Probably Distribution	Div.	(Ci) 1g	(Ci) 10g	Std. Unc. (1g)	Std. Unc. (10g)	Degree of freedom
Measurement system										
1	Probe calibration	B	6.0	N	1	1	1	6.0	6.0	∞
2	Isotropy	B	4.7	R	$\sqrt{3}$	0.7	0.7	1.9	1.9	∞
3	Boundary effect	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞
4	Linearity	B	4.7	R	$\sqrt{3}$	1	1	2.7	2.7	∞
5	Detection limit	B	1.0	N	1	1	1	0.6	0.6	∞
6	Readout electronics	B	0.3	R	$\sqrt{3}$	1	1	0.3	0.3	∞
7	Response time	B	0.8	R	$\sqrt{3}$	1	1	0.5	0.5	∞
8	Integration time	B	2.6	R	$\sqrt{3}$	1	1	1.5	1.5	∞
9	RF ambient conditions-noise	B	0	R	$\sqrt{3}$	1	1	0	0	∞
10	RFambient conditions-reflection	B	0	R	$\sqrt{3}$	1	1	0	0	∞
11	Probe positioned mech. restrictions	B	0.4	R	$\sqrt{3}$	1	1	0.2	0.2	∞
12	Probe positioning with respect to phantom shell	B	2.9	R	$\sqrt{3}$	1	1	1.7	1.7	∞
13	Post-processing	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞
Test sample related										
14	Test sample positioning	A	3.3	N	1	1	1	3.3	3.3	71
15	Device holder uncertainty	A	3.4	N	1	1	1	3.4	3.4	5
16	Drift of output power	B	5.0	R	$\sqrt{3}$	1	1	2.9	2.9	∞
Phantom and set-up										
17	Phantom uncertainty	B	4.0	R	$\sqrt{3}$	1	1	2.3	2.3	∞
18	Liquid conductivity (target)	B	5.0	R	$\sqrt{3}$	0.64	0.43	1.8	1.2	∞
19	Liquid conductivity (meas.)	A	2.06	N	1	0.64	0.43	1.32	0.89	43
20	Liquid permittivity (target)	B	5.0	R	$\sqrt{3}$	0.6	0.49	1.7	1.4	∞
21	Liquid permittivity (meas.)	A	1.6	N	1	0.6	0.49	1.0	0.8	521

Combined standard uncertainty	$u_c' = \sqrt{\sum_{i=1}^{21} c_i^2 u_i^2}$					9.55	9.43	257
Expanded uncertainty (confidence interval of 95 %)	$u_e = 2u_c$					19.1	18.9	

16.2 Measurement Uncertainty for Normal SAR Tests (3~6GHz)

No.	Error Description	Type	Uncertainty value	Probably Distribution	Div.	(Ci) 1g	(Ci) 10g	Std. Unc. (1g)	Std. Unc. (10g)	Degree of freedom
Measurement system										
1	Probe calibration	B	6.55	N	1	1	1	6.55	6.55	∞
2	Isotropy	B	4.7	R	$\sqrt{3}$	0.7	0.7	1.9	1.9	∞
3	Boundary effect	B	2.0	R	$\sqrt{3}$	1	1	1.2	1.2	∞
4	Linearity	B	4.7	R	$\sqrt{3}$	1	1	2.7	2.7	∞
5	Detection limit	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞
6	Readout electronics	B	0.3	R	$\sqrt{3}$	1	1	0.3	0.3	∞
7	Response time	B	0.8	R	$\sqrt{3}$	1	1	0.5	0.5	∞
8	Integration time	B	2.6	R	$\sqrt{3}$	1	1	1.5	1.5	∞
9	RF ambient conditions-noise	B	0	R	$\sqrt{3}$	1	1	0	0	∞
10	RF ambient conditions-reflection	B	0	R	$\sqrt{3}$	1	1	0	0	∞
11	Probe positioned mech. restrictions	B	0.8	R	$\sqrt{3}$	1	1	0.5	0.5	∞
12	Probe positioning with respect to phantom shell	B	6.7	R	$\sqrt{3}$	1	1	3.9	3.9	∞
13	Post-processing	B	4.0	R	$\sqrt{3}$	1	1	2.3	2.3	∞
Test sample related										
14	Test sample positioning	A	3.3	N	1	1	1	3.3	3.3	71
15	Device holder uncertainty	A	3.4	N	1	1	1	3.4	3.4	5
16	Drift of output power	B	5.0	R	$\sqrt{3}$	1	1	2.9	2.9	∞
Phantom and set-up										
17	Phantom uncertainty	B	4.0	R	$\sqrt{3}$	1	1	2.3	2.3	∞
18	Liquid conductivity (target)	B	5.0	R	$\sqrt{3}$	0.64	0.43	1.8	1.2	∞
19	Liquid conductivity (meas.)	A	2.06	N	1	0.64	0.43	1.32	0.89	43

20	Liquid permittivity (target)	B	5.0	R	$\sqrt{3}$	0.6	0.49	1.7	1.4	∞
21	Liquid permittivity (meas.)	A	1.6	N	1	0.6	0.49	1.0	0.8	521
Combined standard uncertainty		$u_c' = \sqrt{\sum_{i=1}^{21} c_i^2 u_i^2}$						10.7	10.6	257
Expanded uncertainty (confidence interval of 95 %)		$u_e = 2u_c$						21.4	21.1	

16.3 Measurement Uncertainty for Fast SAR Tests (300MHz~3GHz)

No.	Error Description	Type	Uncertainty value	Probably Distribution	Div.	(Ci) 1g	(Ci) 10g	Std. Unc. (1g)	Std. Unc. (10g)	Degree of freedom
Measurement system										
1	Probe calibration	B	6.0	N	1	1	1	6.0	6.0	∞
2	Isotropy	B	4.7	R	$\sqrt{3}$	0.7	0.7	1.9	1.9	∞
3	Boundary effect	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞
4	Linearity	B	4.7	R	$\sqrt{3}$	1	1	2.7	2.7	∞
5	Detection limit	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞
6	Readout electronics	B	0.3	R	$\sqrt{3}$	1	1	0.3	0.3	∞
7	Response time	B	0.8	R	$\sqrt{3}$	1	1	0.5	0.5	∞
8	Integration time	B	2.6	R	$\sqrt{3}$	1	1	1.5	1.5	∞
9	RF ambient conditions-noise	B	0	R	$\sqrt{3}$	1	1	0	0	∞
10	RF ambient conditions-reflection	B	0	R	$\sqrt{3}$	1	1	0	0	∞
11	Probe positioned mech. Restrictions	B	0.4	R	$\sqrt{3}$	1	1	0.2	0.2	∞
12	Probe positioning with respect to phantom shell	B	2.9	R	$\sqrt{3}$	1	1	1.7	1.7	∞
13	Post-processing	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞
14	Fast SAR z-Approximation	B	7.0	R	$\sqrt{3}$	1	1	4.0	4.0	∞
Test sample related										
15	Test sample positioning	A	3.3	N	1	1	1	3.3	3.3	71
16	Device holder uncertainty	A	3.4	N	1	1	1	3.4	3.4	5
17	Drift of output power	B	5.0	R	$\sqrt{3}$	1	1	2.9	2.9	∞

Phantom and set-up										
18	Phantom uncertainty	B	4.0	R	$\sqrt{3}$	1	1	2.3	2.3	∞
19	Liquid conductivity (target)	B	5.0	R	$\sqrt{3}$	0.64	0.43	1.8	1.2	∞
20	Liquid conductivity (meas.)	A	2.06	N	1	0.64	0.43	1.32	0.89	43
21	Liquid permittivity (target)	B	5.0	R	$\sqrt{3}$	0.6	0.49	1.7	1.4	∞
22	Liquid permittivity (meas.)	A	1.6	N	1	0.6	0.49	1.0	0.8	521
Combined standard uncertainty		$u_c' = \sqrt{\sum_{i=1}^{22} c_i^2 u_i^2}$						10.4	10.3	257
Expanded uncertainty (confidence interval of 95 %)		$u_e = 2u_c$						20.8	20.6	

16.4 Measurement Uncertainty for Fast SAR Tests (3~6GHz)

No.	Error Description	Type	Uncertainty value	Probably Distribution	Div.	(Ci) 1g	(Ci) 10g	Std. Unc. (1g)	Std. Unc. (10g)	Degree of freedom
Measurement system										
1	Probe calibration	B	6.55	N	1	1	1	6.55	6.55	∞
2	Isotropy	B	4.7	R	$\sqrt{3}$	0.7	0.7	1.9	1.9	∞
3	Boundary effect	B	2.0	R	$\sqrt{3}$	1	1	1.2	1.2	∞
4	Linearity	B	4.7	R	$\sqrt{3}$	1	1	2.7	2.7	∞
5	Detection limit	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞
6	Readout electronics	B	0.3	R	$\sqrt{3}$	1	1	0.3	0.3	∞
7	Response time	B	0.8	R	$\sqrt{3}$	1	1	0.5	0.5	∞
8	Integration time	B	2.6	R	$\sqrt{3}$	1	1	1.5	1.5	∞
9	RF ambient conditions-noise	B	0	R	$\sqrt{3}$	1	1	0	0	∞
10	RF ambient conditions-reflection	B	0	R	$\sqrt{3}$	1	1	0	0	∞
11	Probe positioned mech. Restrictions	B	0.8	R	$\sqrt{3}$	1	1	0.5	0.5	∞
12	Probe positioning with respect to phantom shell	B	6.7	R	$\sqrt{3}$	1	1	3.9	3.9	∞
13	Post-processing	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞
14	Fast SAR z-Approximation	B	14.0	R	$\sqrt{3}$	1	1	8.1	8.1	∞
Test sample related										

15	Test sample positioning	A	3.3	N	1	1	1	3.3	3.3	71
16	Device holder uncertainty	A	3.4	N	1	1	1	3.4	3.4	5
17	Drift of output power	B	5.0	R	$\sqrt{3}$	1	1	2.9	2.9	∞
Phantom and set-up										
18	Phantom uncertainty	B	4.0	R	$\sqrt{3}$	1	1	2.3	2.3	∞
19	Liquid conductivity (target)	B	5.0	R	$\sqrt{3}$	0.64	0.43	1.8	1.2	∞
20	Liquid conductivity (meas.)	A	2.06	N	1	0.64	0.43	1.32	0.89	43
21	Liquid permittivity (target)	B	5.0	R	$\sqrt{3}$	0.6	0.49	1.7	1.4	∞
22	Liquid permittivity (meas.)	A	1.6	N	1	0.6	0.49	1.0	0.8	521
Combined standard uncertainty		$u_c^{'} = \sqrt{\sum_{i=1}^{22} c_i^2 u_i^2}$						13.5	13.4	257
Expanded uncertainty (confidence interval of 95 %)		$u_e = 2u_c$						27.0	26.8	

17 MAIN TEST INSTRUMENTS

Table 17.1: List of Main Instruments

No.	Name	Type	Serial Number	Calibration Date	Valid Period
01	Network analyzer	E5071C	MY46110673	January 26, 2016	One year
02	Power meter	NRVD	102196	March 03, 2016	One year
03	Power sensor	NRV-Z5	100596		
04	Signal Generator	E4438C	MY49071430	February 01, 2016	One Year
05	Amplifier	60S1G4	0331848	No Calibration Requested	
06	BTS	E5515C	MY50263375	January 30, 2016	One year
07	BTS	CMW500	129942	March 03, 2016	One year
08	E-field Probe	SPEAG EX3DV4	3617	August 26, 2015	One year
09	DAE	SPEAG DAE4	777	August 26, 2015	One year
10	Dipole Validation Kit	SPEAG D750V3	1017	July 23, 2015	One year
11	Dipole Validation Kit	SPEAG D835V2	4d069	July 23, 2015	One year
12	Dipole Validation Kit	SPEAG D1750V2	1003	July 16, 2015	One year
13	Dipole Validation Kit	SPEAG D1900V2	5d101	July 23, 2015	One year
14	Dipole Validation Kit	SPEAG D2450V2	853	July 24, 2015	One year

END OF REPORT BODY

ANNEX A Graph Results

850 Left Cheek Middle

Date: 2016-1-11
Electronics: DAE4 Sn777
Medium: Head 850 MHz
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.916 mho/m; εr = 41.849; ρ = 1000 kg/m^3
Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 850 Frequency: 836.6 MHz Duty Cycle: 1:8.3
Probe: EX3DV4 - SN3617 ConvF(9.56, 9.56, 9.56)

Area Scan (71x111x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.345 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.052 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.411 W/kg
SAR(1 g) = 0.309 W/kg; SAR(10 g) = 0.237 W/kg
Maximum value of SAR (measured) = 0.341 W/kg

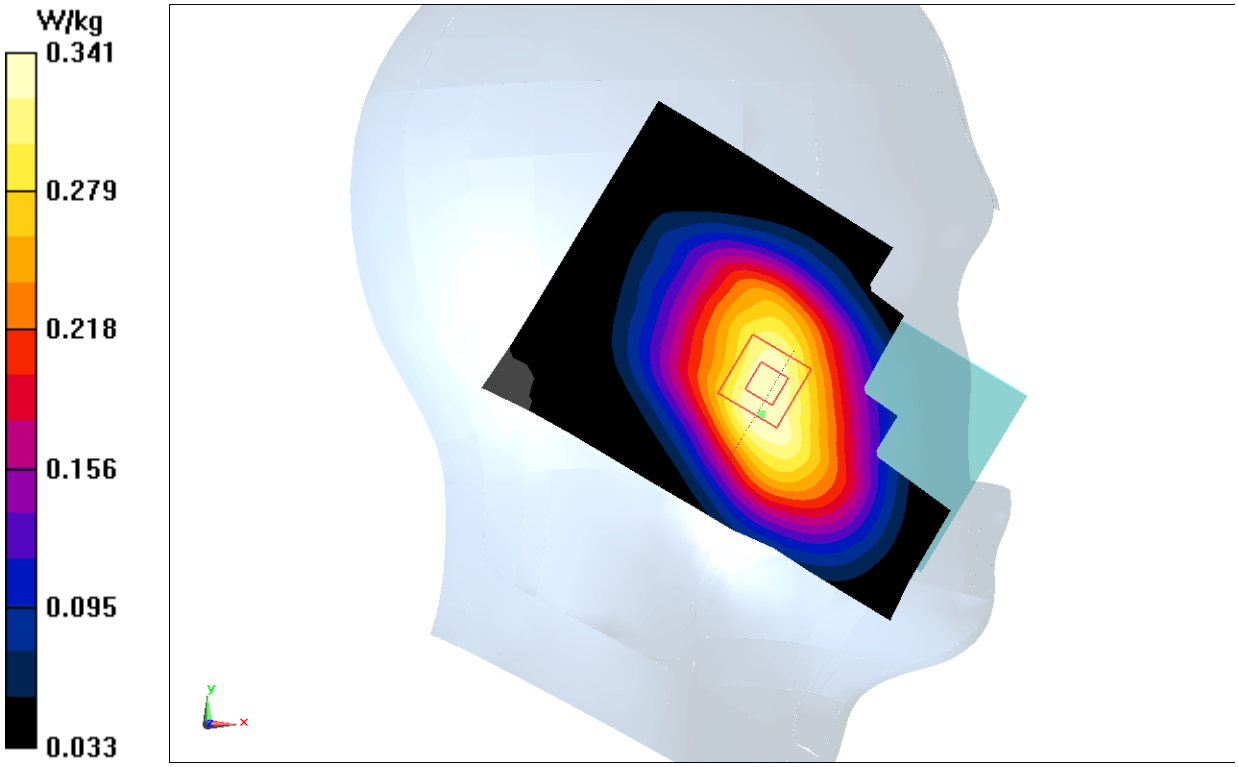


Fig.1 850MHz

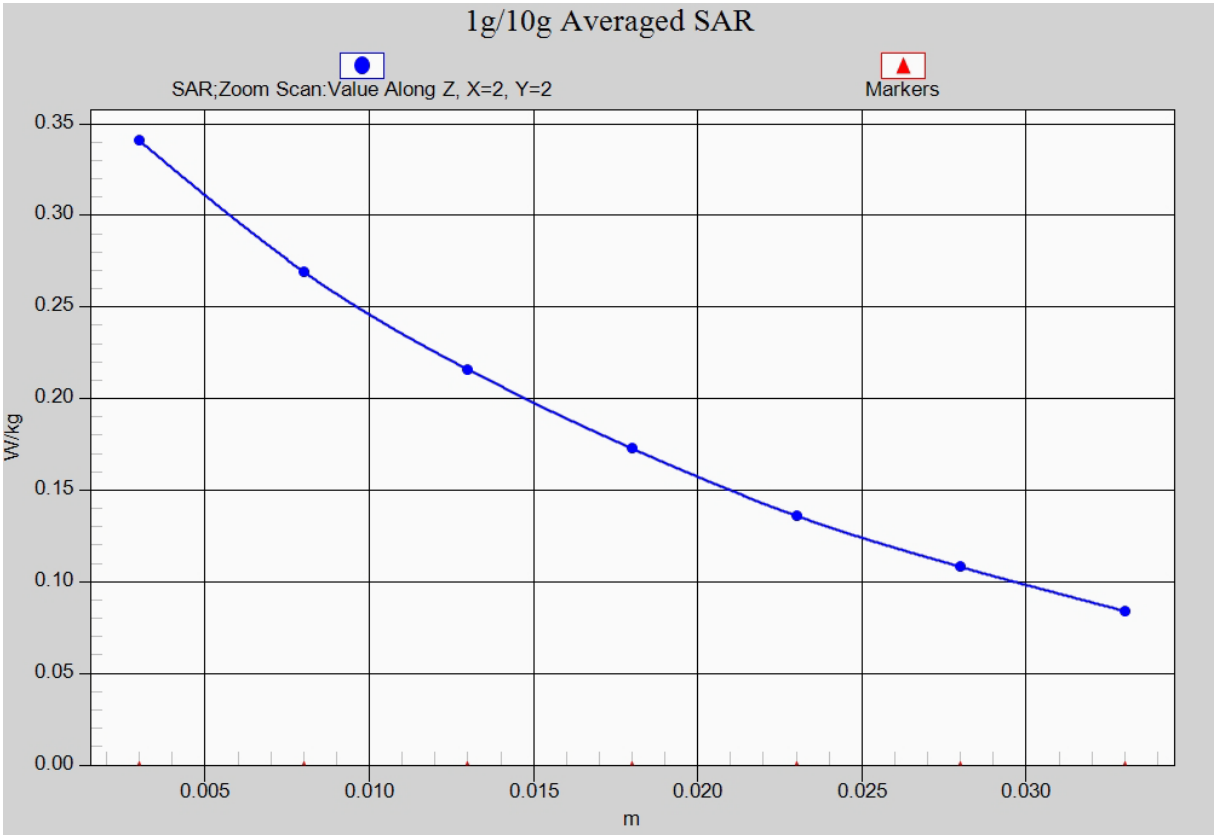


Fig. 1-1 Z-Scan at power reference point (850 MHz)

850 Body Rear High

Date: 2016-05-11
Electronics: DAE4 Sn777
Medium: Body 850 MHz
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.994 mho/m; εr = 56.053; ρ = 1000 kg/m^3
Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 850 GPRS Frequency: 848.8 MHz Duty Cycle: 1:4
Probe: EX3DV4 - SN3617 ConvF(9.71, 9.71, 9.71)

Area Scan (111x71x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.522 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 21.03 V/m; Power Drift = -0.07dB
Peak SAR (extrapolated) = 1.65 W/kg
SAR(1 g) = 0.760 W/kg; SAR(10 g) = 0.440 W/kg
Maximum value of SAR (measured) = 0.489 W/kg

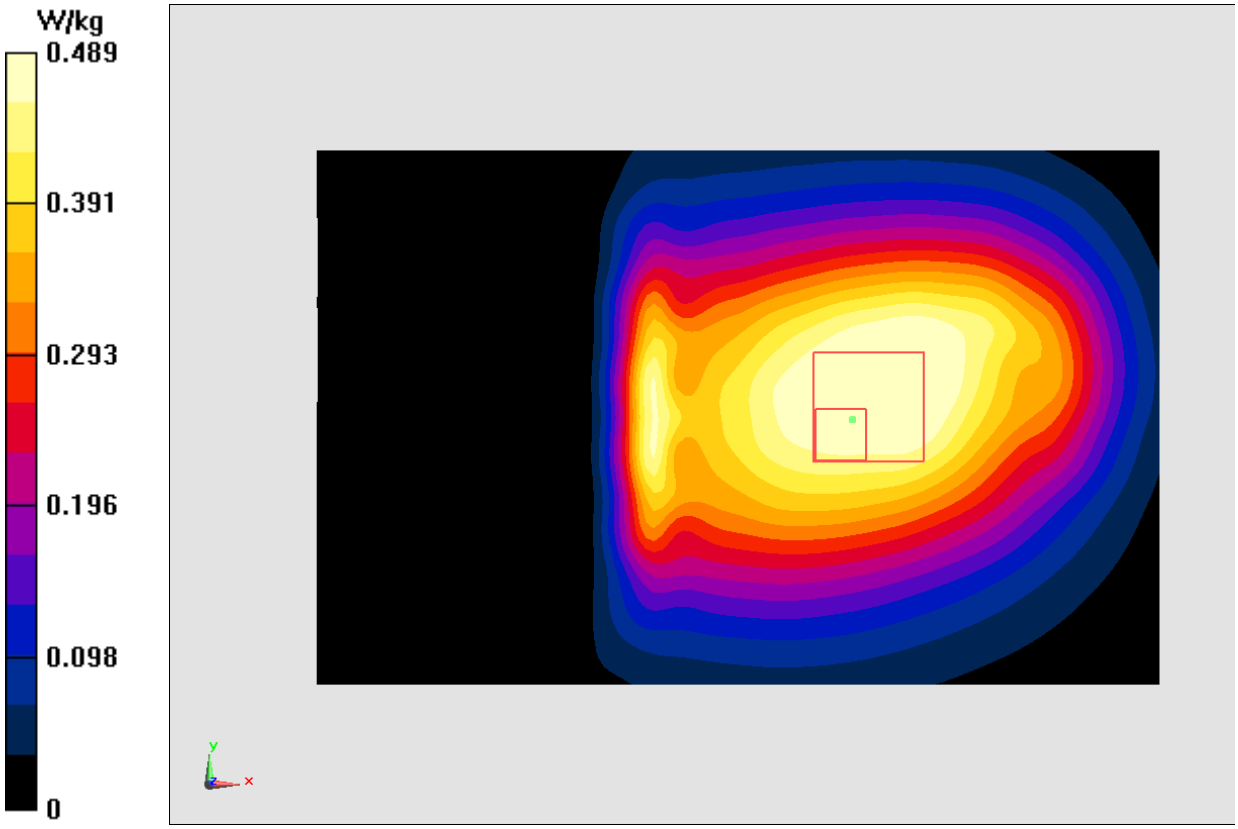


Fig.2 850 MHz

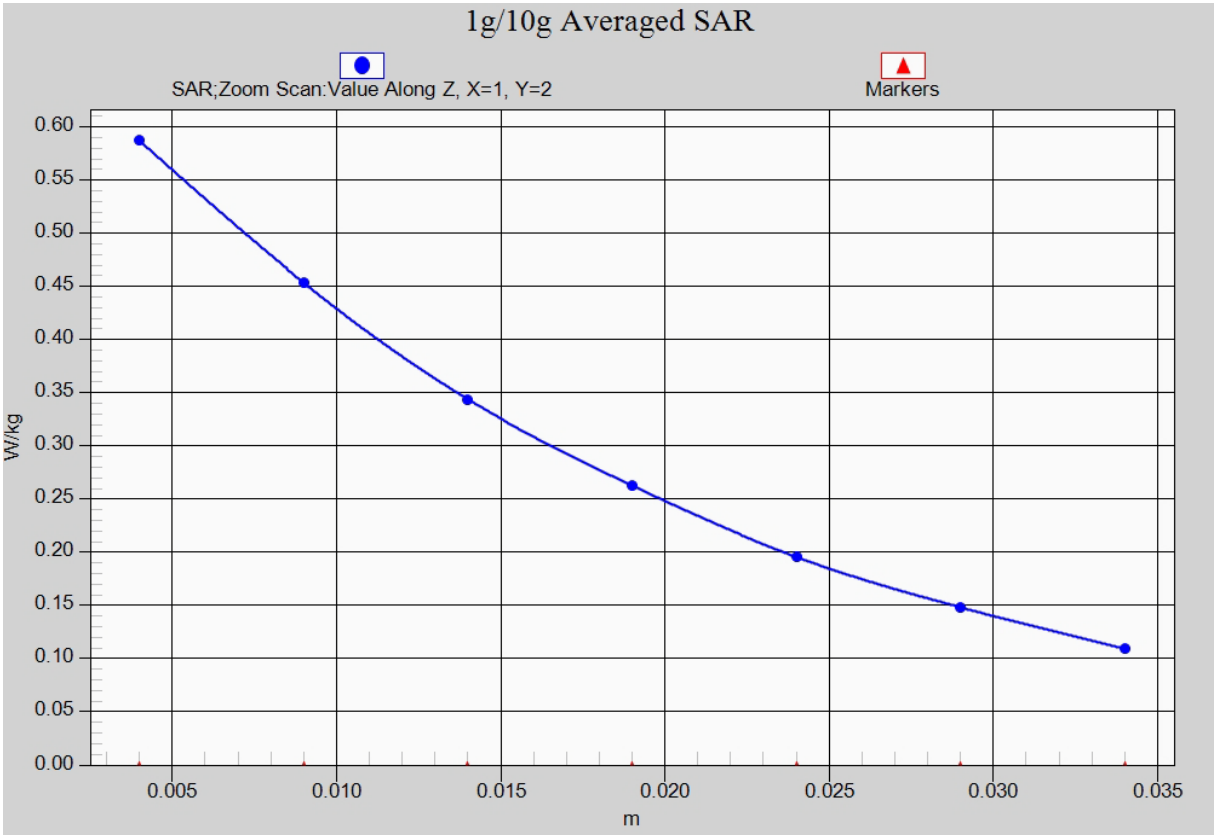


Fig. 2-1 Z-Scan at power reference point (850 MHz)

1900 Left Cheek High
Date: 2016-1-13
Electronics: DAE4 Sn777
Medium: Head 1900 MHz
Medium parameters use: f = 1910 MHz; σ = 1.403 mho/m; εr = 41.9; ρ = 1000 kg/m^3
Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 1900MHz Frequency: 1909.8 MHz Duty Cycle: 1:8.3
Probe: EX3DV4 - SN3617 ConvF(8.07, 8.07, 8.07)

Area Scan (71x111x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.387 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.041 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 0.488 W/kg
SAR(1 g) = 0.322 W/kg; SAR(10 g) = 0.197 W/kg
Maximum value of SAR (measured) = 0.377 W/kg

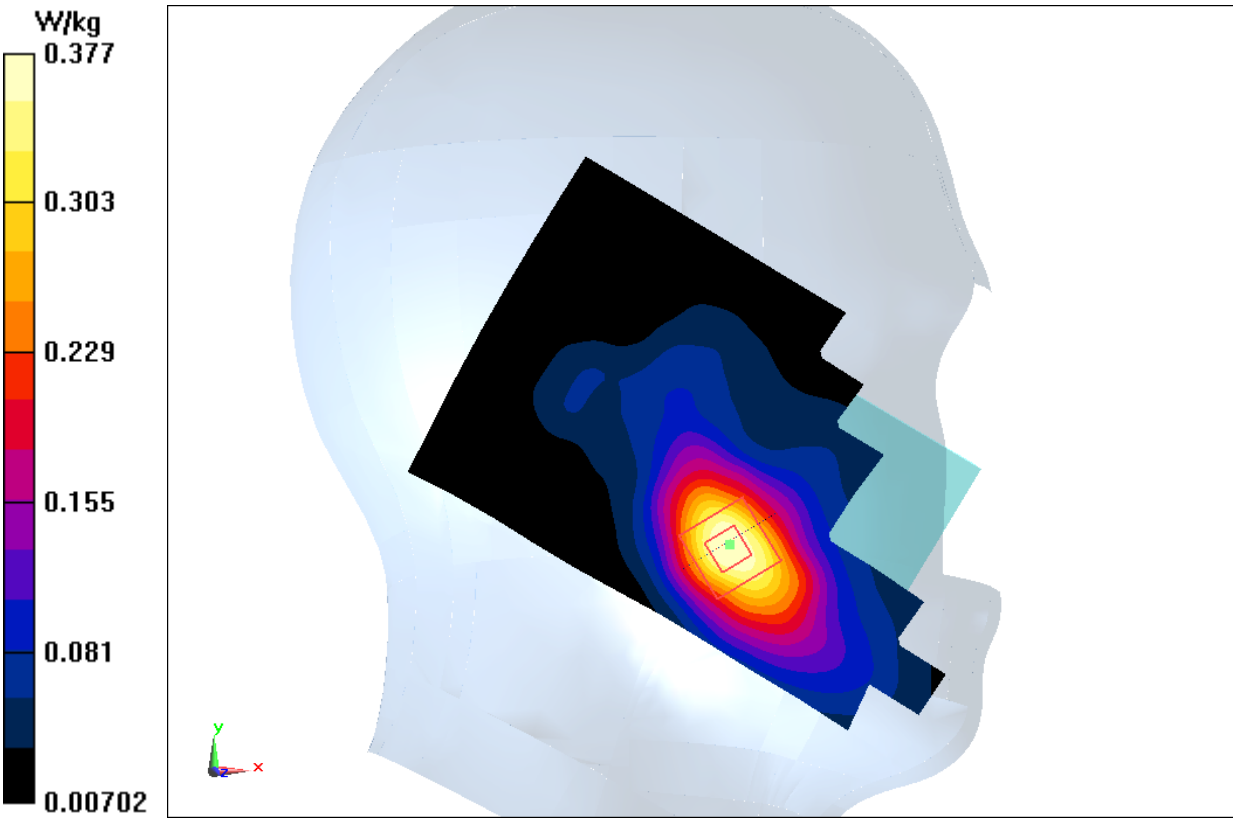


Fig.3 1900 MHz

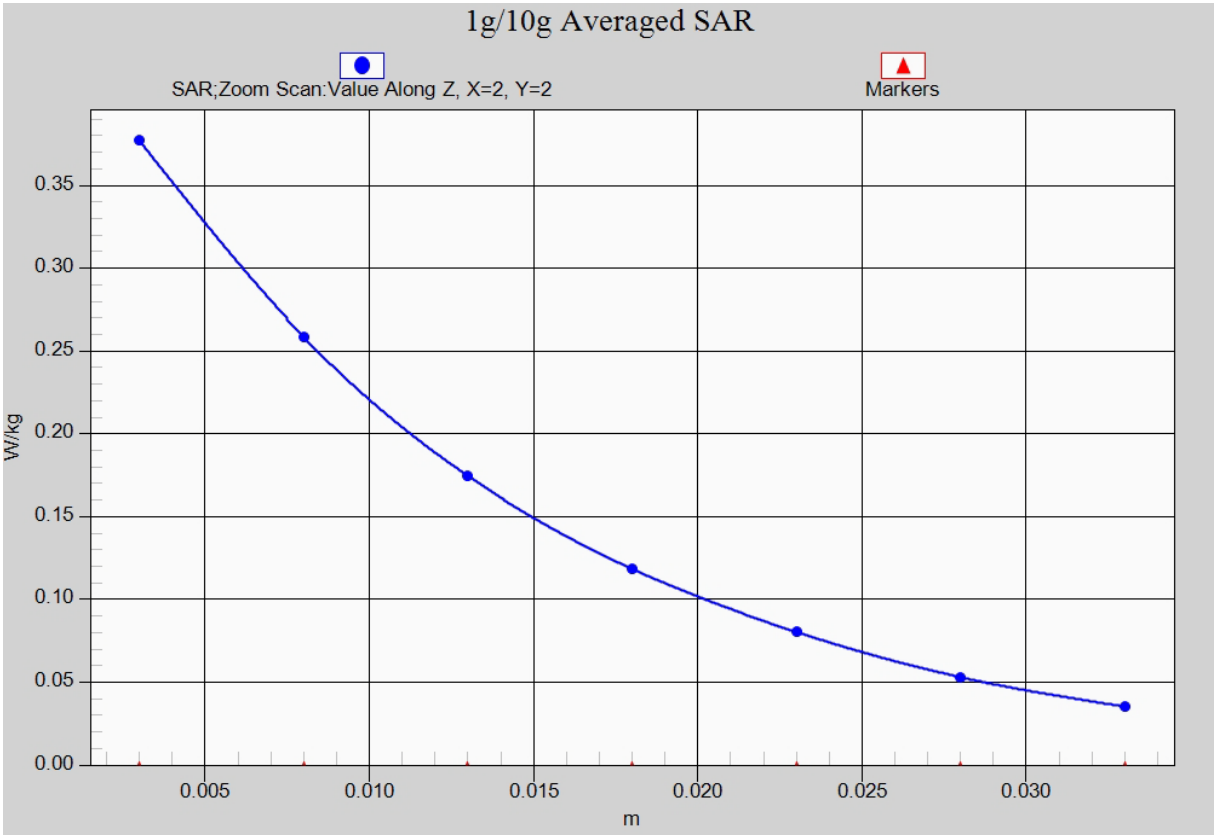


Fig. 3-1 Z-Scan at power reference point (1900 MHz)

1900 Body Bottom High

Date: 2016-05-13
Electronics: DAE4 Sn777
Medium: Body 1900 MHz
Medium parameters used: f = 1910 MHz; σ = 1.532 mho/m; εr = 54.086; ρ = 1000 kg/m^3
Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 1900MHz GPRS Frequency: 1910 MHz Duty Cycle: 1:2.67
Probe: EX3DV4 - SN3617 ConvF(7.74, 7.74, 7.74)

Area Scan (111x71x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.14 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 18.75 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 1.62 W/kg
SAR(1 g) = 0.926 W/kg; SAR(10 g) = 0.473 W/kg
Maximum value of SAR (measured) = 1.17 W/kg

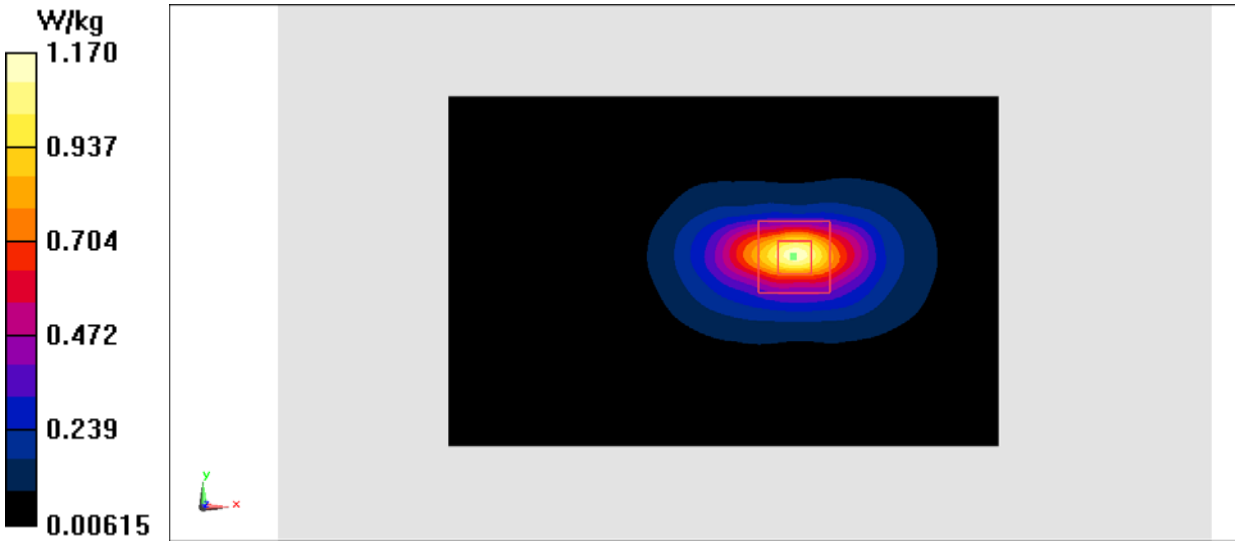


Fig.4 1900 MHz

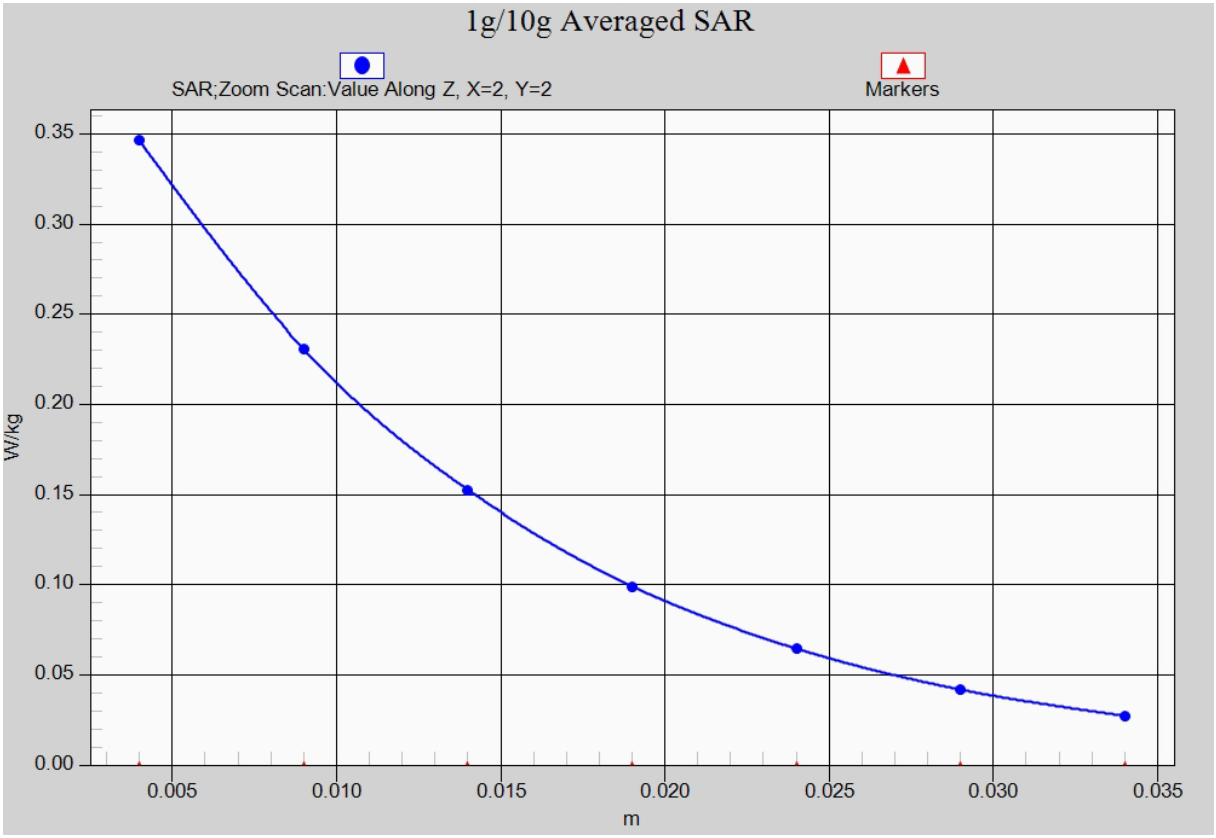


Fig.4-1 Z-Scan at power reference point (1900 MHz)

WCDMA 850 Left Cheek Low

Date: 2016-1-11
Electronics: DAE4 Sn777
Medium: Head 850 MHz
Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.909 mho/m; εr = 41.928; ρ = 1000 kg/m^3
Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C
Communication System: WCDMA; Frequency: 826.4 MHz; Duty Cycle: 1:1
Probe: EX3DV4 - SN3617 ConvF(9.56, 9.56, 9.56)

Area Scan (71x111x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.408 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.43 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 0.485 W/kg
SAR(1 g) = 0.370 W/kg; SAR(10 g) = 0.279 W/kg
Maximum value of SAR (measured) = 0.410 W/kg

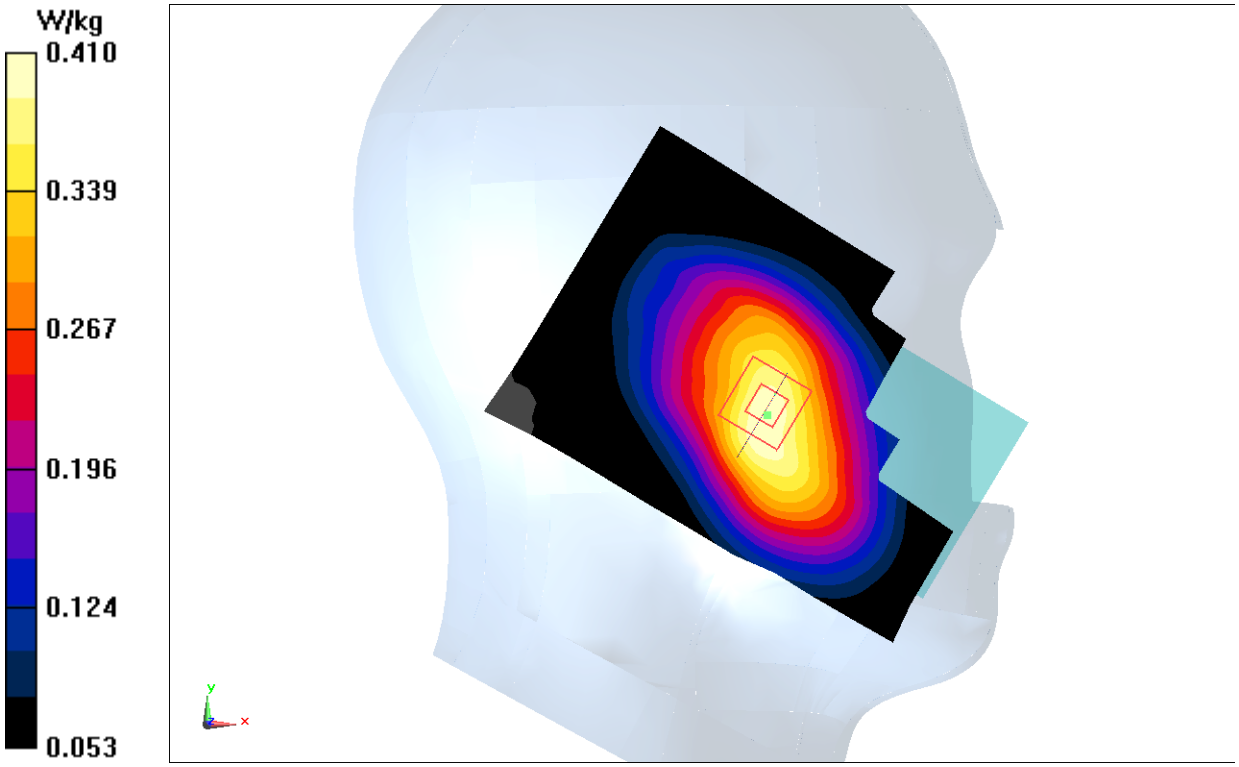


Fig.5 WCDMA 850

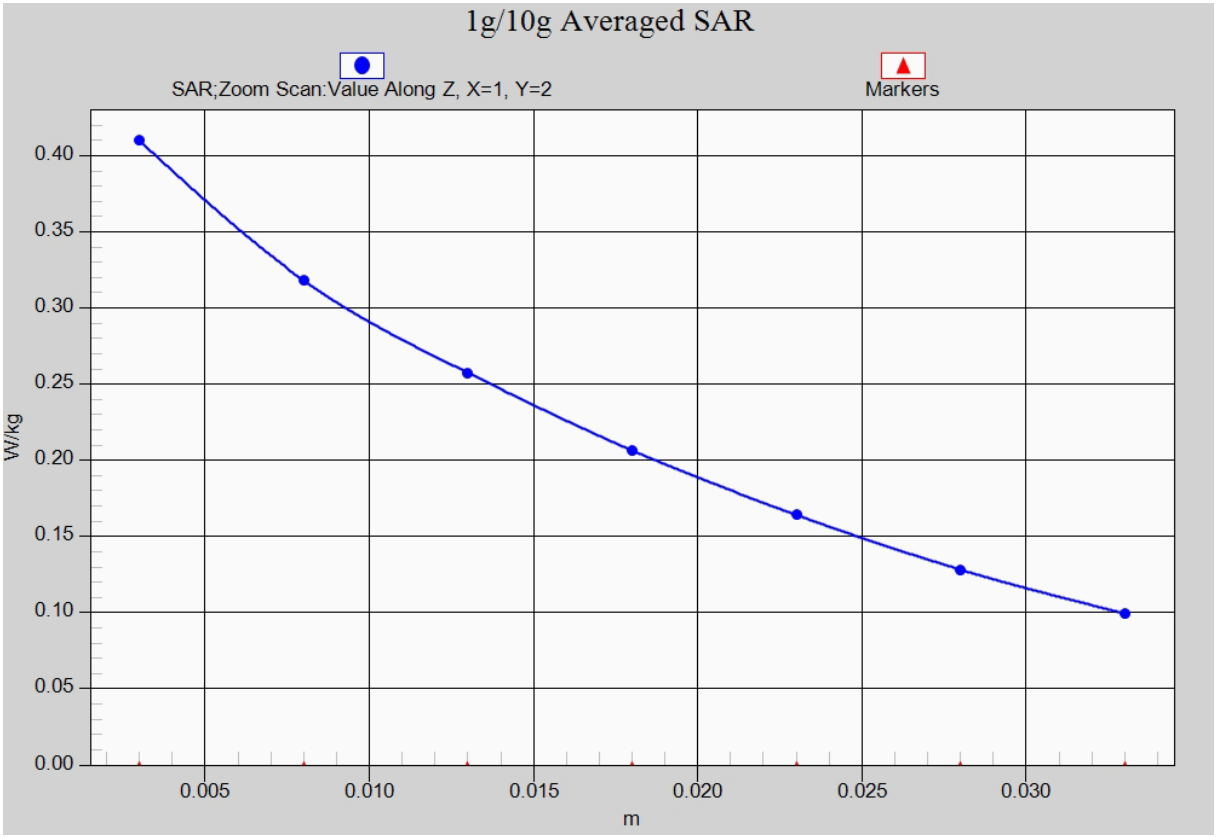


Fig. 5-1 Z-Scan at power reference point (WCDMA 850)

WCDMA 850 Body Rear Middle

Date: 2016-05-11
Electronics: DAE4 Sn777
Medium: Body 850 MHz
Medium parameters used (interpolated): f = 836.4 MHz; σ = 0.984 mho/m; εr = 56.214; ρ = 1000 kg/m^3
Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C
Communication System: WCDMA; Frequency: 836.4 MHz; Duty Cycle: 1:1
Probe: EX3DV4 - SN3617 ConvF(9.71, 9.71, 9.71)

Area Scan (111x71x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.470 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 19.55 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.537 W/kg
SAR(1 g) = 0.412 W/kg; SAR(10 g) = 0.308 W/kg
Maximum value of SAR (measured) = 0.431 W/kg

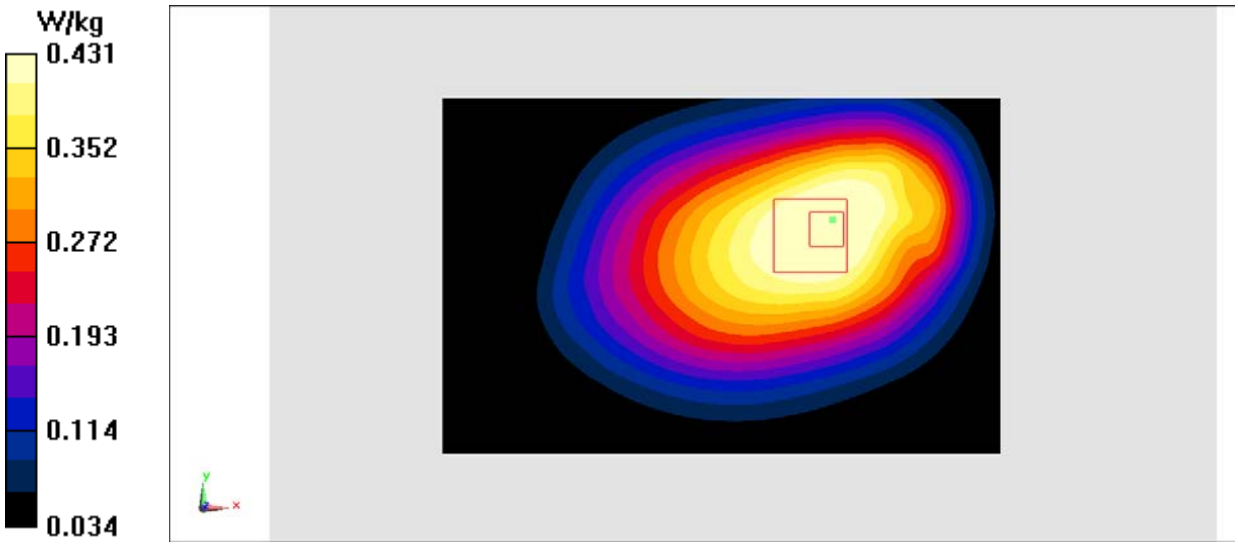


Fig.6 WCDMA 850

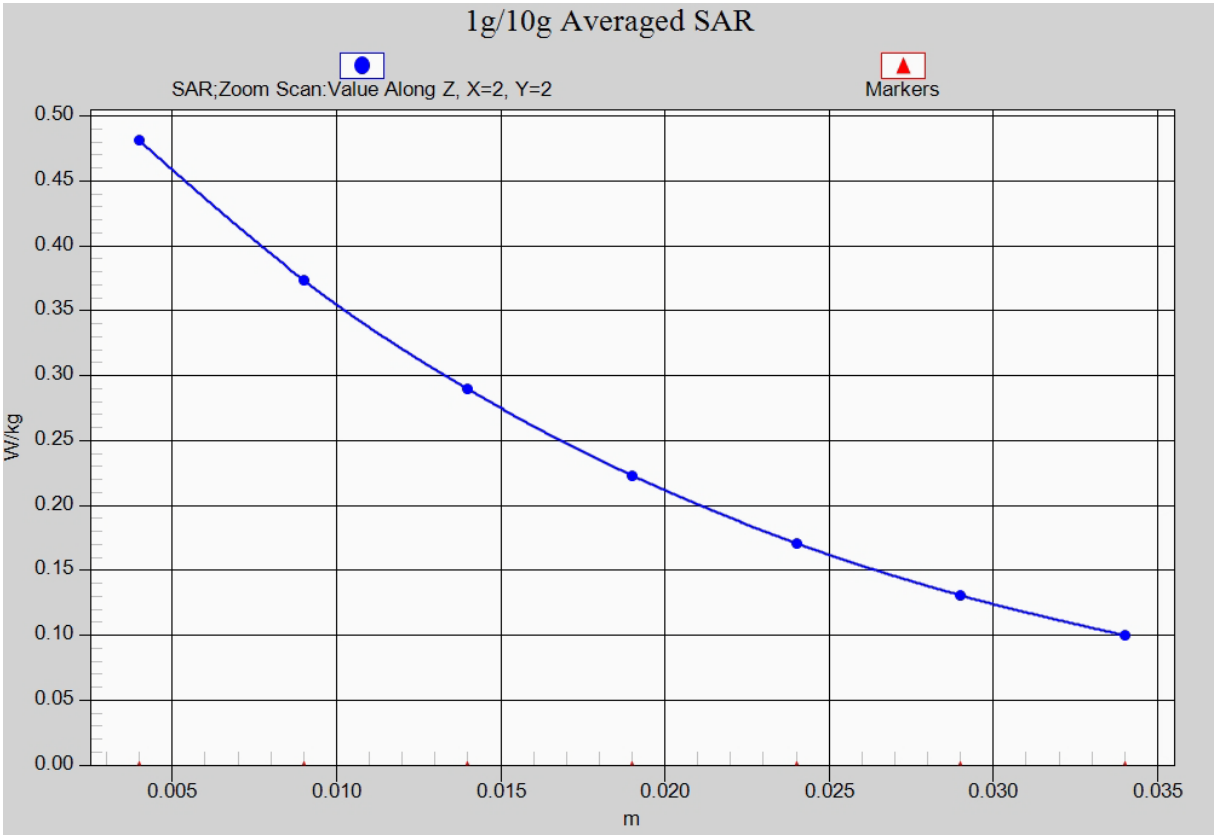


Fig. 6-1 Z-Scan at power reference point (WCDMA850)

WCDMA 1700 Left Cheek High

Date: 2016-1-12
Electronics: DAE4 Sn777
Medium: Head 1750 MHz
Medium parameters used (interpolated): f = 1752.6 MHz; σ = 1.354 mho/m; εr = 41.395; ρ = 1000 kg/m^3
Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C
Communication System: WCDMA 1700 Frequency: 1752.6 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3617 ConvF(8.34, 8.34, 8.34)

Area Scan (71x111x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.676 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.605 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 0.807 W/kg
SAR(1 g) = 0.531 W/kg; SAR(10 g) = 0.335 W/kg
Maximum value of SAR (measured) = 0.678 W/kg

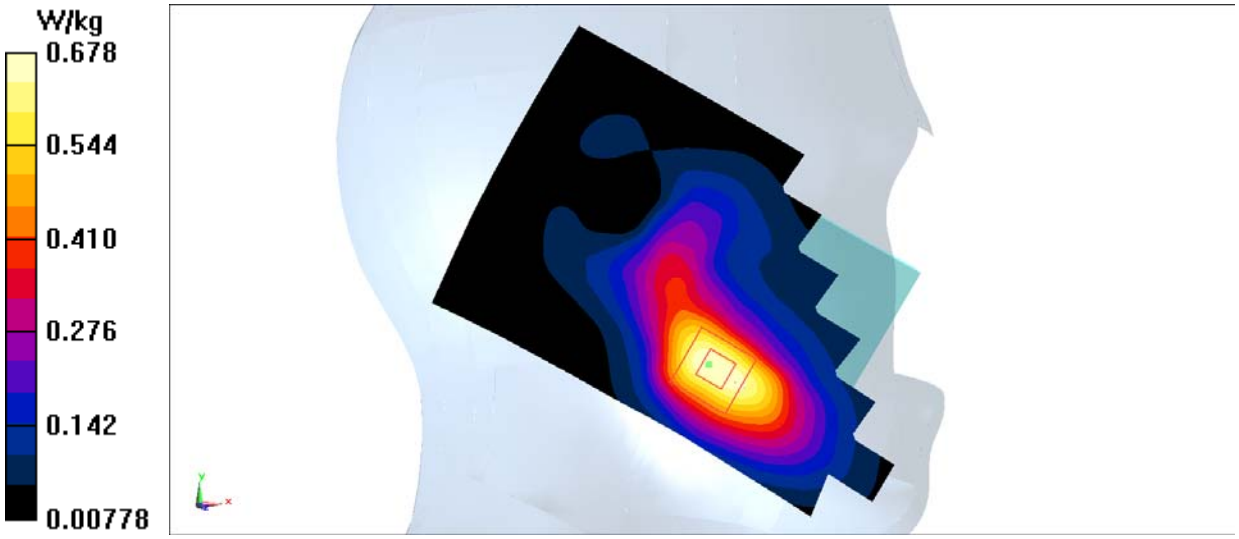


Fig.7 1700MHz

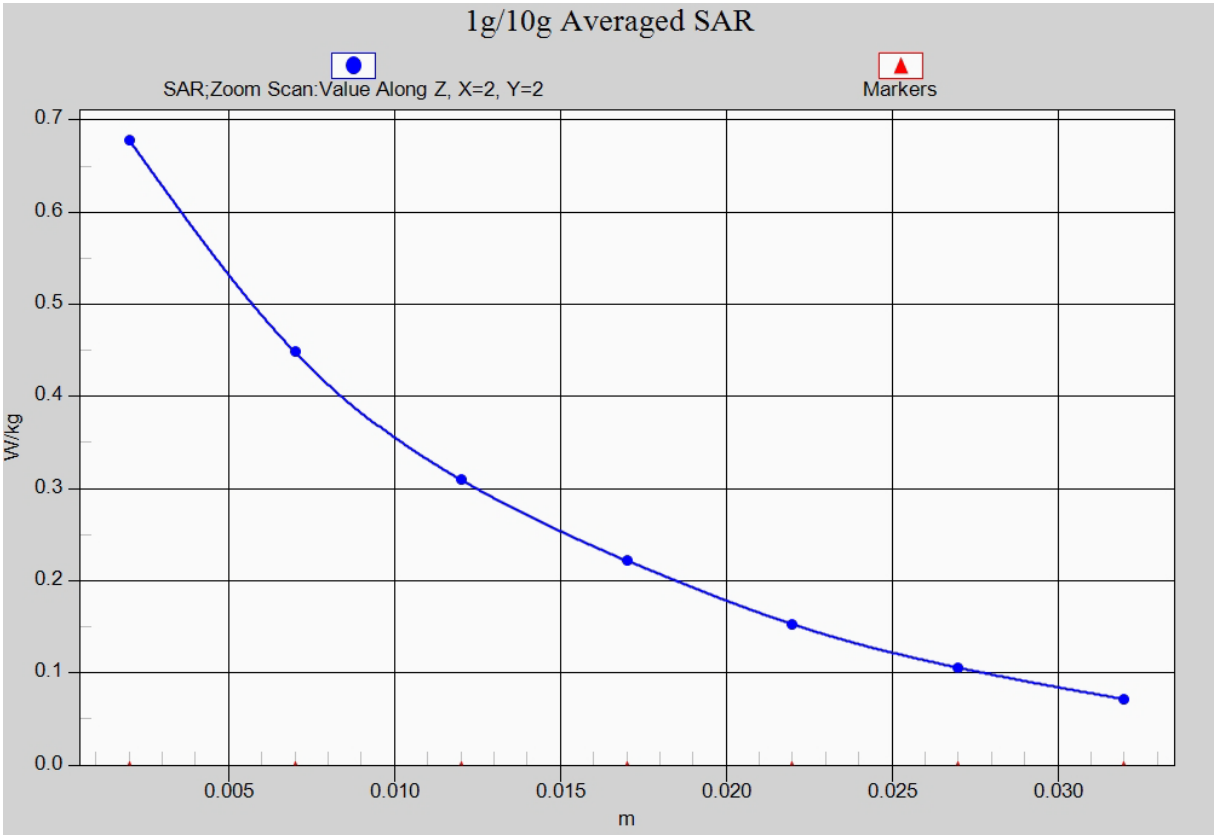


Fig. 7-1 Z-Scan at power reference point (1700 MHz)

WCDMA 1700 Body Rear Low
Date: 2016-05-12
Electronics: DAE4 Sn777
Medium: Body 1750 MHz
Medium parameters used (interpolated): f = 1712.4 MHz; σ = 1.386 mho/m; εr = 54.526; ρ = 1000 kg/m^3
Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C
Communication System: WCDMA 1700 Frequency: 1712.4 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3617 ConvF(7.96, 7.96, 7.96)

Area Scan (111x71x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.13 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.47 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.45 W/kg
SAR(1 g) = 0.993 W/kg; SAR(10 g) = 0.654 W/kg
Maximum value of SAR (measured) = 1.04 W/kg

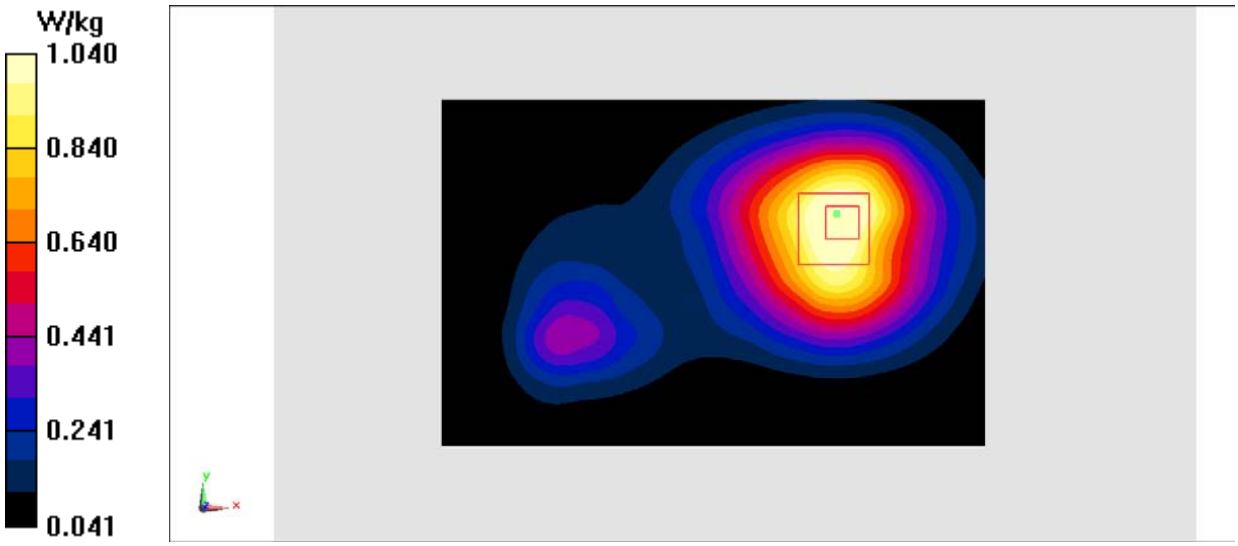


Fig.8 1700 MHz

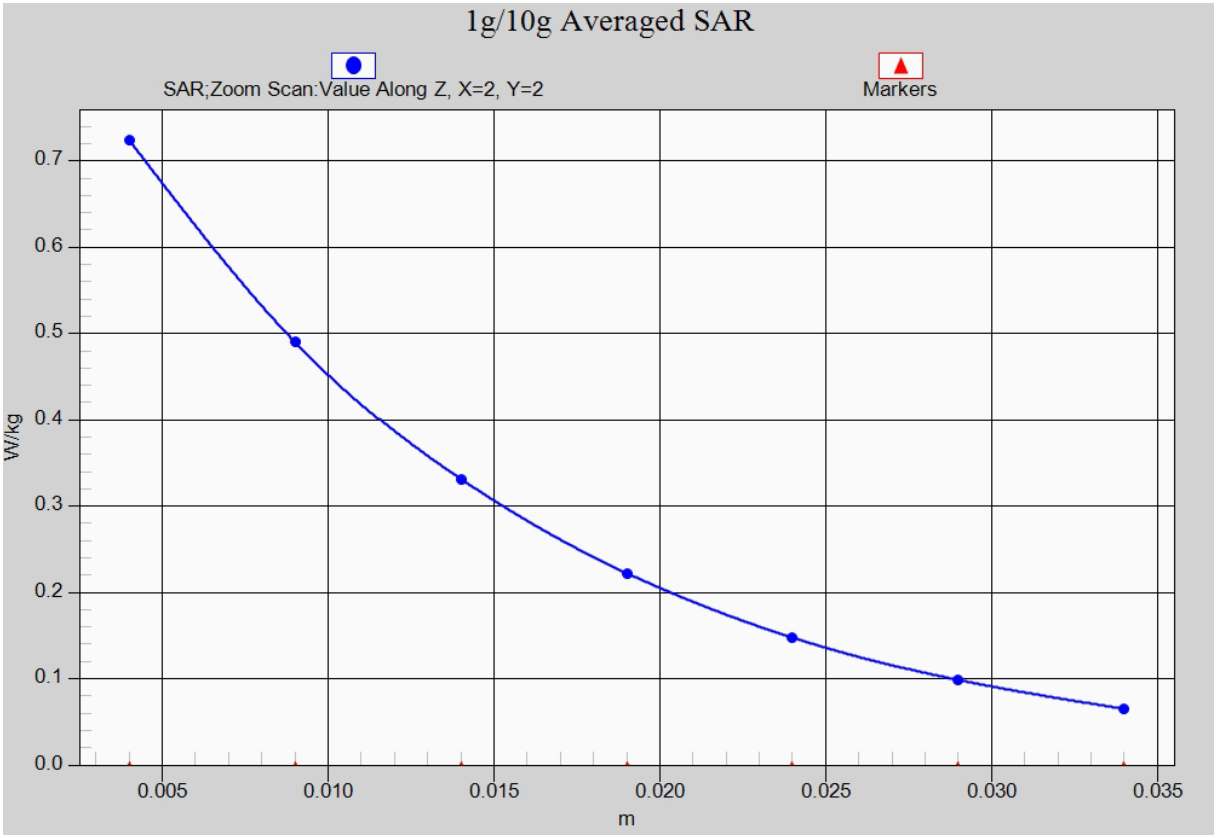


Fig. 8-1 Z-Scan at power reference point (1700 MHz)

WCDMA 1900 Left Cheek Low

Date: 2016-1-13
Electronics: DAE4 Sn777
Medium: Head 1900 MHz
Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.33 mho/m; εr = 41.987; ρ = 1000 kg/m^3
Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C
Communication System: WCDMA 1900 Frequency: 1852.4 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3617 ConvF(8.07, 8.07, 8.07)

Area Scan (71x111x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.857 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.272 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 1.08 W/kg
SAR(1 g) = 0.708 W/kg; SAR(10 g) = 0.427 W/kg
Maximum value of SAR (measured) = 0.844 W/kg

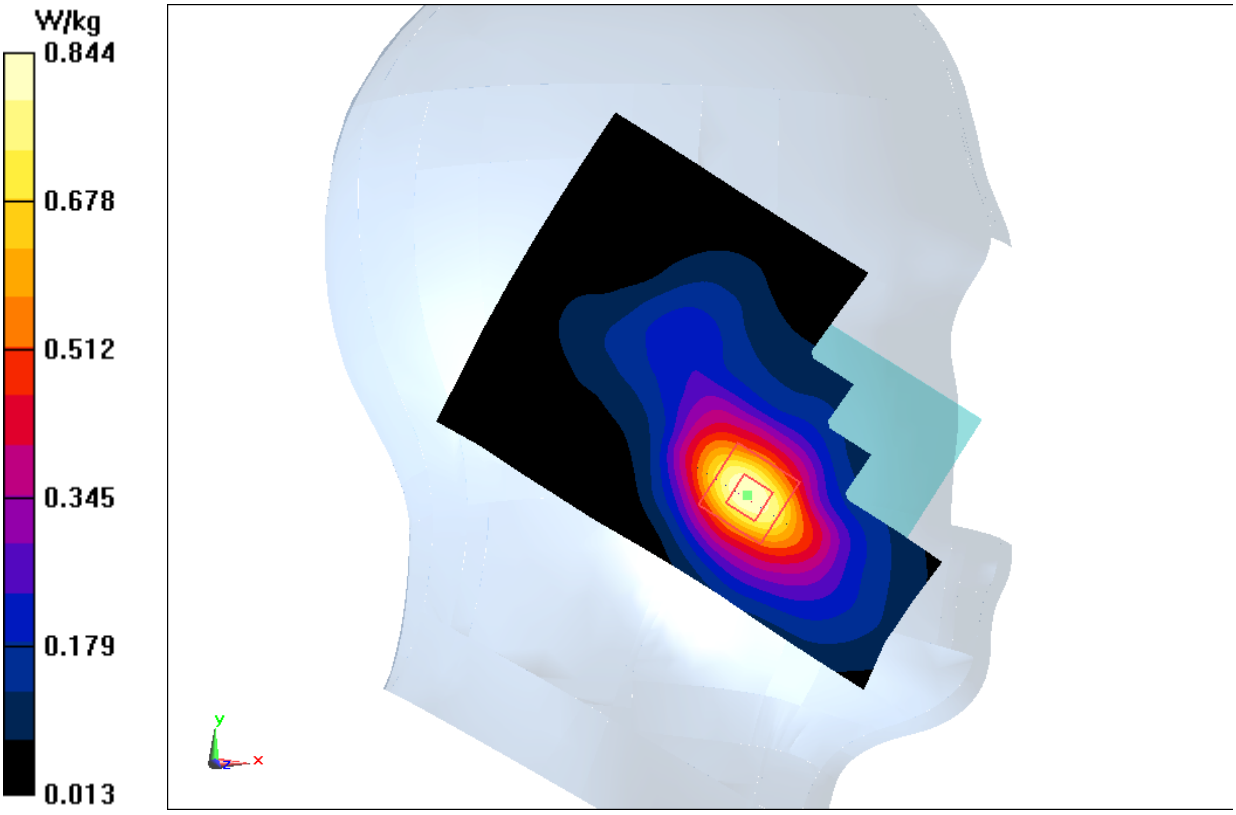


Fig.9 WCDMA1900

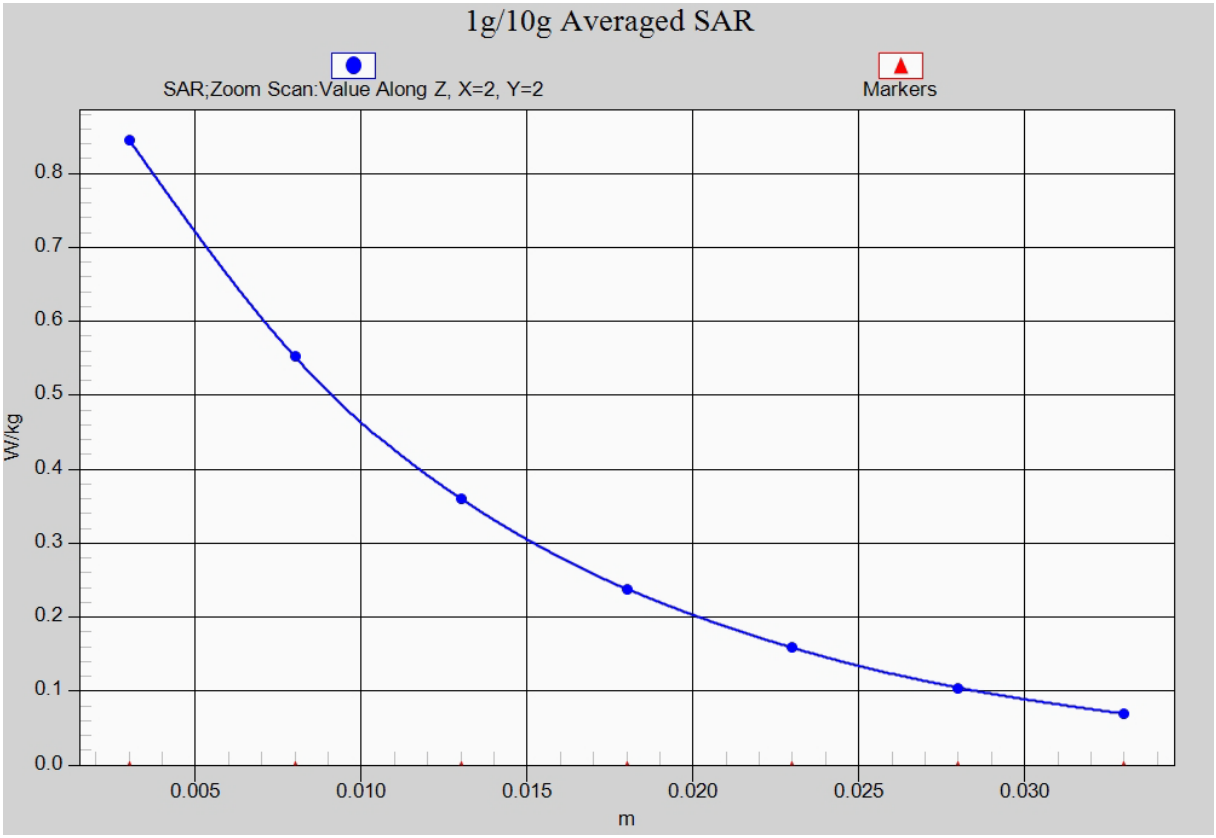


Fig. 9-1 Z-Scan at power reference point (WCDMA1900)

WCDMA 1900 Body Bottom High – AP ON
Date: 2016-05-13
Electronics: DAE4 Sn777
Medium: Body 1900 MHz
Medium parameters used: f = 1907.6 MHz; σ = 1.663 mho/m; εr = 54.253; ρ = 1000 kg/m^3
Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C
Communication System: WCDMA 1900 Frequency: 1907.6 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3617 ConvF(7.74, 7.74, 7.74)

Area Scan (111x71x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.24 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 23.77 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.76 W/kg
SAR(1 g) = 1.03 W/kg; SAR(10 g) = 0.521 W/kg
Maximum value of SAR (measured) = 1.31 W/kg

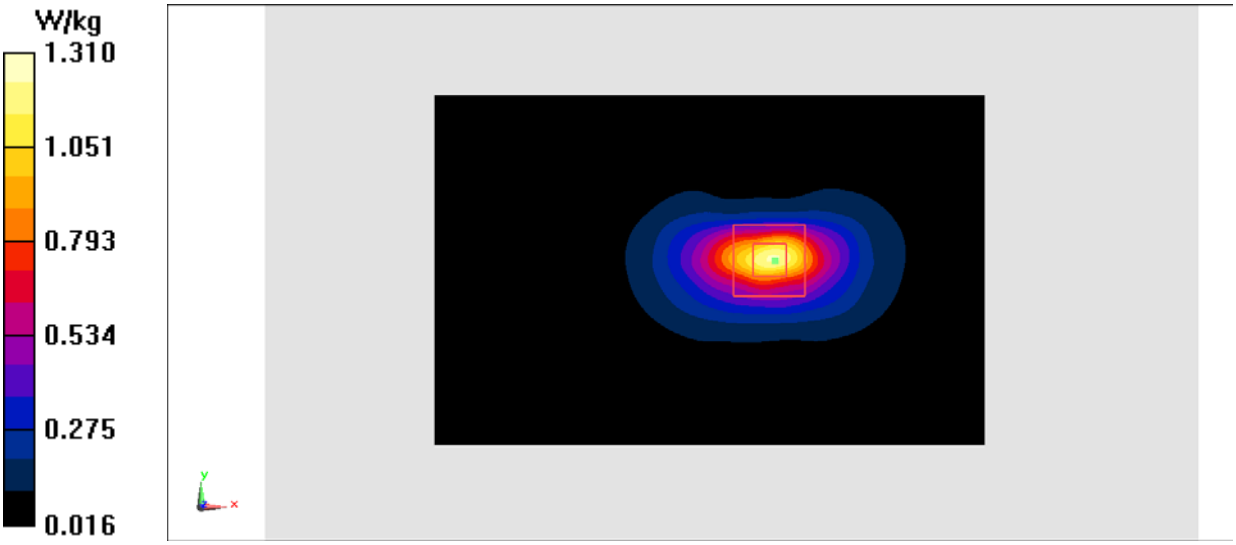


Fig.10 WCDMA1900

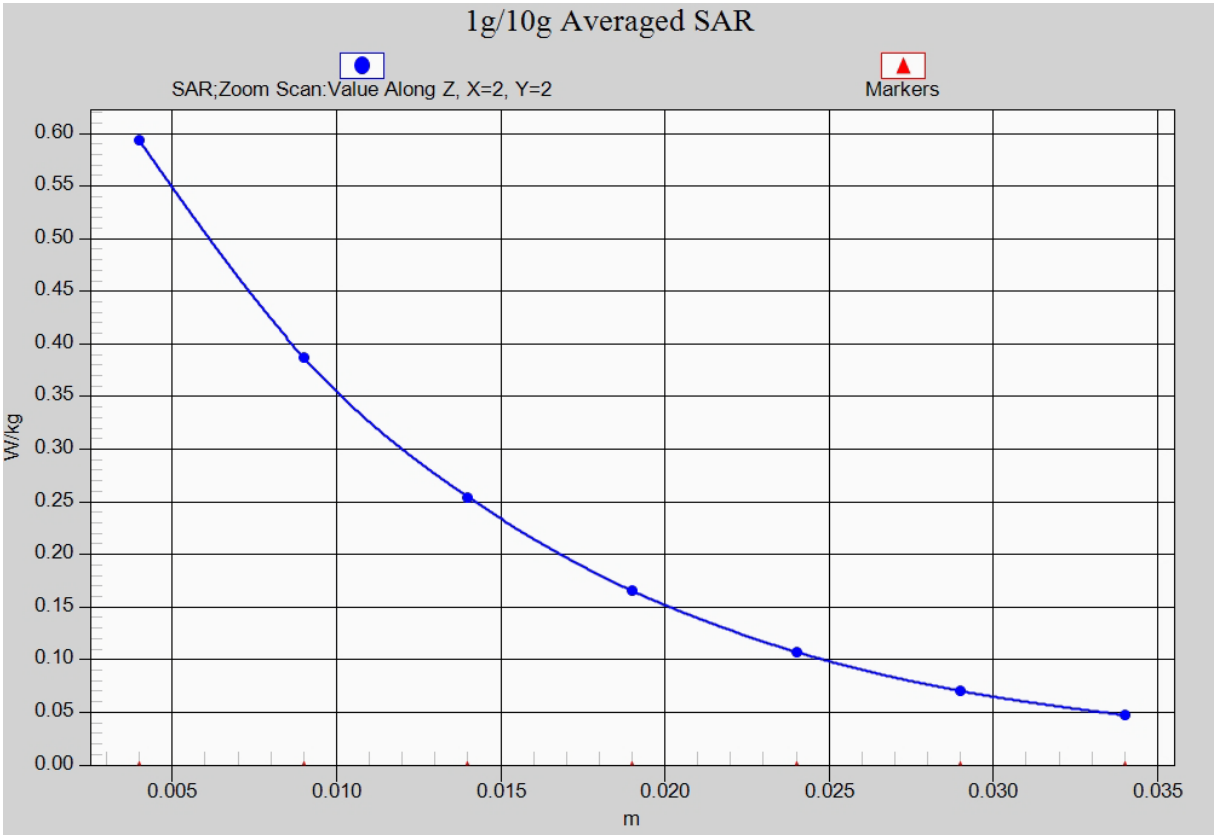


Fig. 10-1 Z-Scan at power reference point (WCDMA1900)

WCDMA 1900 Body Rear High – AP OFF
Date: 2016-05-13
Electronics: DAE4 Sn777
Medium: Body 1900 MHz
Medium parameters used: f = 1907.6 MHz; σ = 1.663 mho/m; εr = 54.253; ρ = 1000 kg/m^3
Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C
Communication System: WCDMA 1900 Frequency: 1907.6 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3617 ConvF(7.74, 7.74, 7.74)

Area Scan (111x71x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.640 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.18 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 0.845 W/kg
SAR(1 g) = 0.547 W/kg; SAR(10 g) = 0.329 W/kg
Maximum value of SAR (measured) = 0.655 W/kg

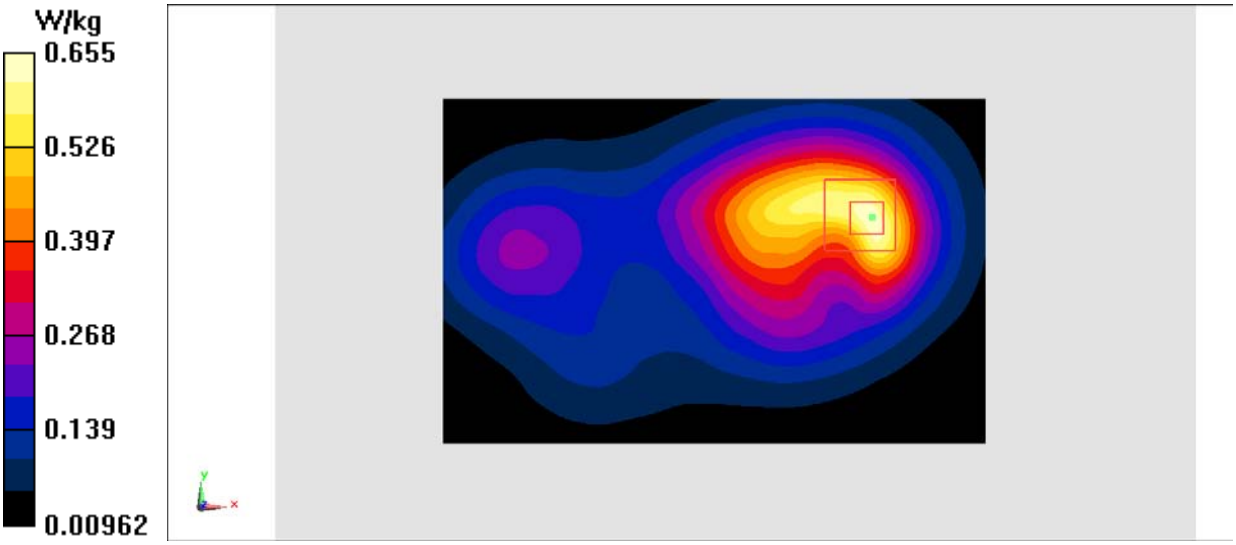


Fig.10 WCDMA1900

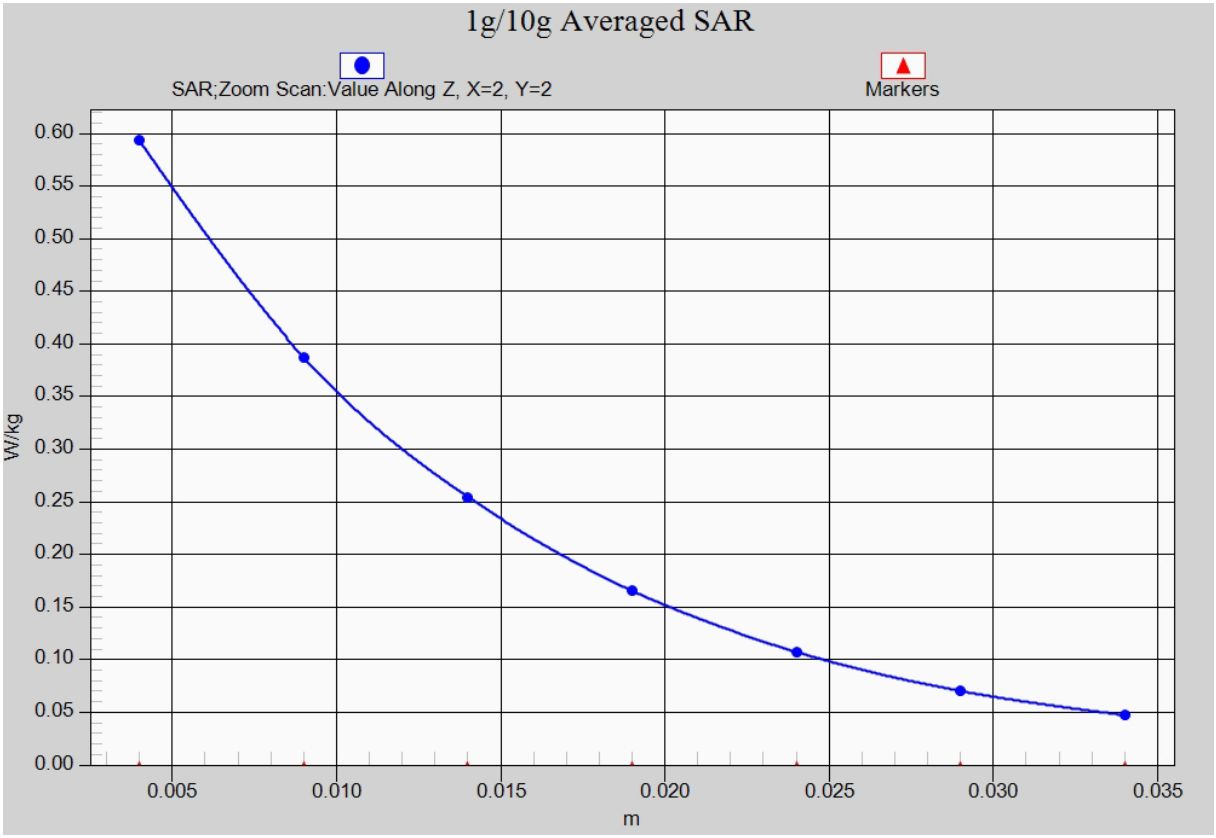


Fig. 10-1 Z-Scan at power reference point (WCDMA1900)

LTE Band2 Left Cheek High with QPSK_20M_1RB_Middle
Date: 2016-1-13
Electronics: DAE4 Sn777
Medium: Head 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.395 mho/m; εr = 40.645; ρ = 1000 kg/m^3
Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C
Communication System: LTE Band2 Frequency: 1900 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3617 ConvF(8.07, 8.07, 8.07)

Area Scan (71x111x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.866 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.749 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 1.05 W/kg
SAR(1 g) = 0.699 W/kg; SAR(10 g) = 0.433 W/kg
Maximum value of SAR (measured) = 0.821 W/kg

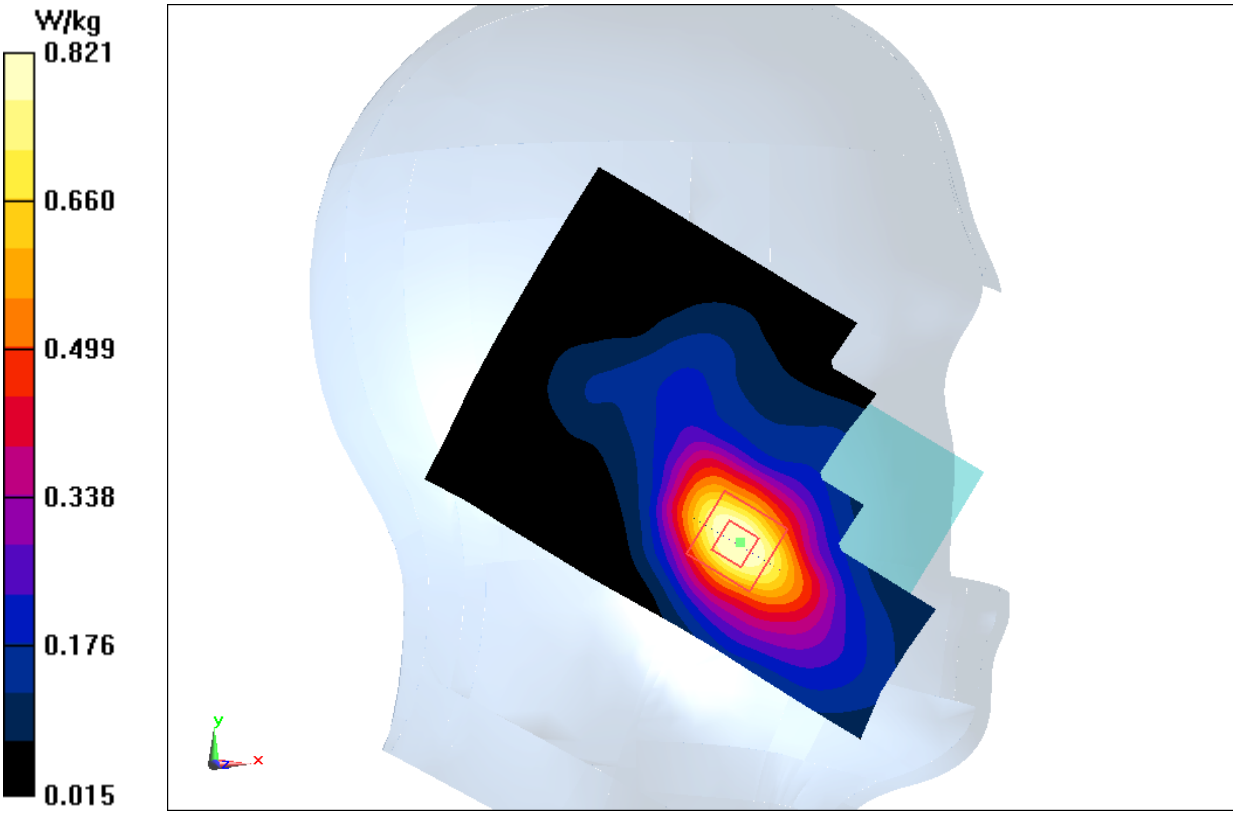


Fig.11 LTE Band2

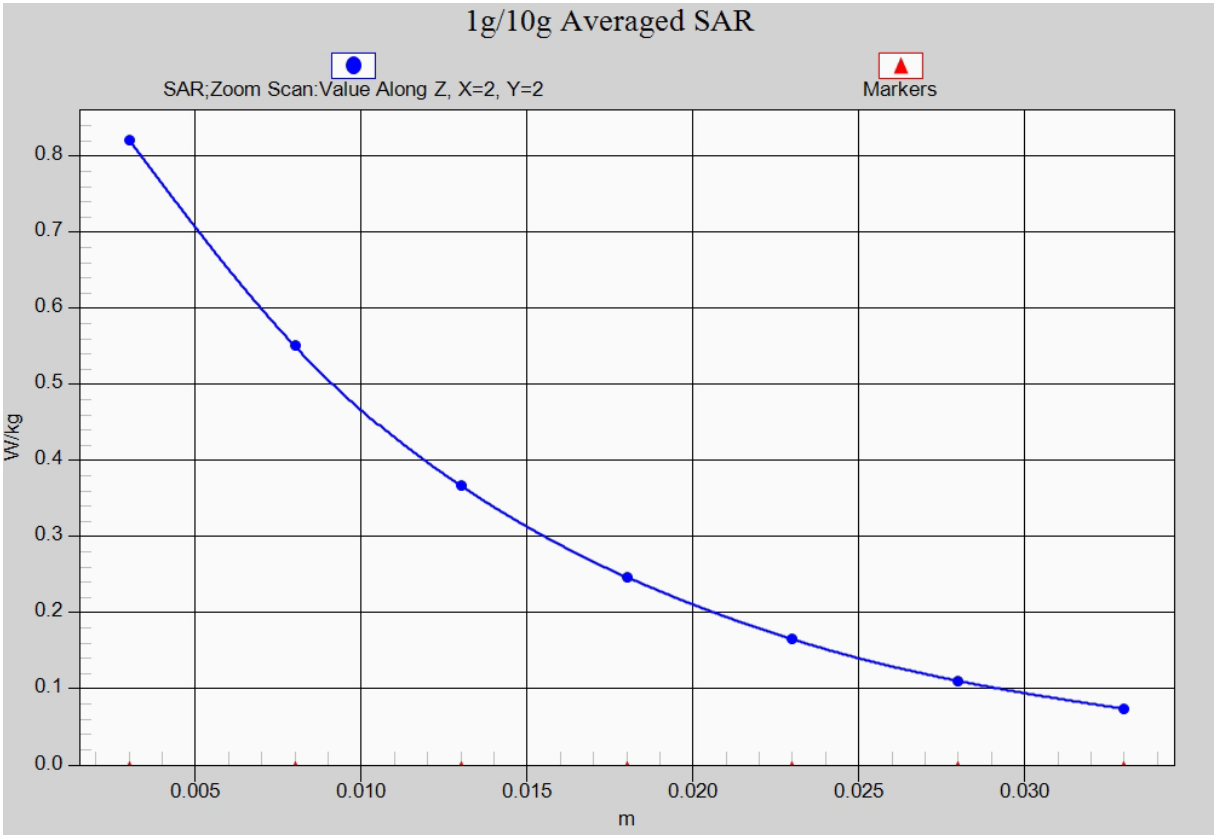


Fig. 11-1 Z-Scan at power reference point (LTE Band2)

LTE Band2 Body Bottom High with QPSK_20M_1RB_Low – AP ON
Date: 2016-05-13
Electronics: DAE4 Sn777
Medium: Body 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.573 mho/m; εr = 54.15; ρ = 1000 kg/m^3
Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C
Communication System: LTE Band2 Frequency: 1900 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3617 ConvF(7.74, 7.74, 7.74)

Area Scan (111x71x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.37 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 25.07 V/m; Power Drift = -0.19 dB
Peak SAR (extrapolated) = 1.93 W/kg
SAR(1 g) = 1.11 W/kg; SAR(10 g) = 0.576 W/kg
Maximum value of SAR (measured) = 1.37 W/kg

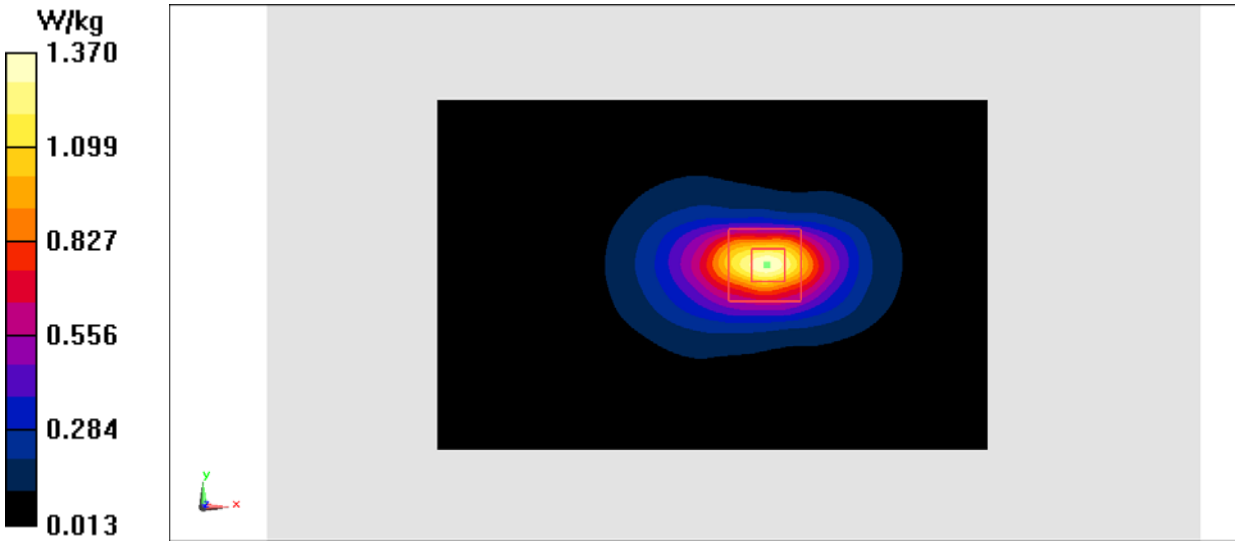


Fig.12 LTE Band2

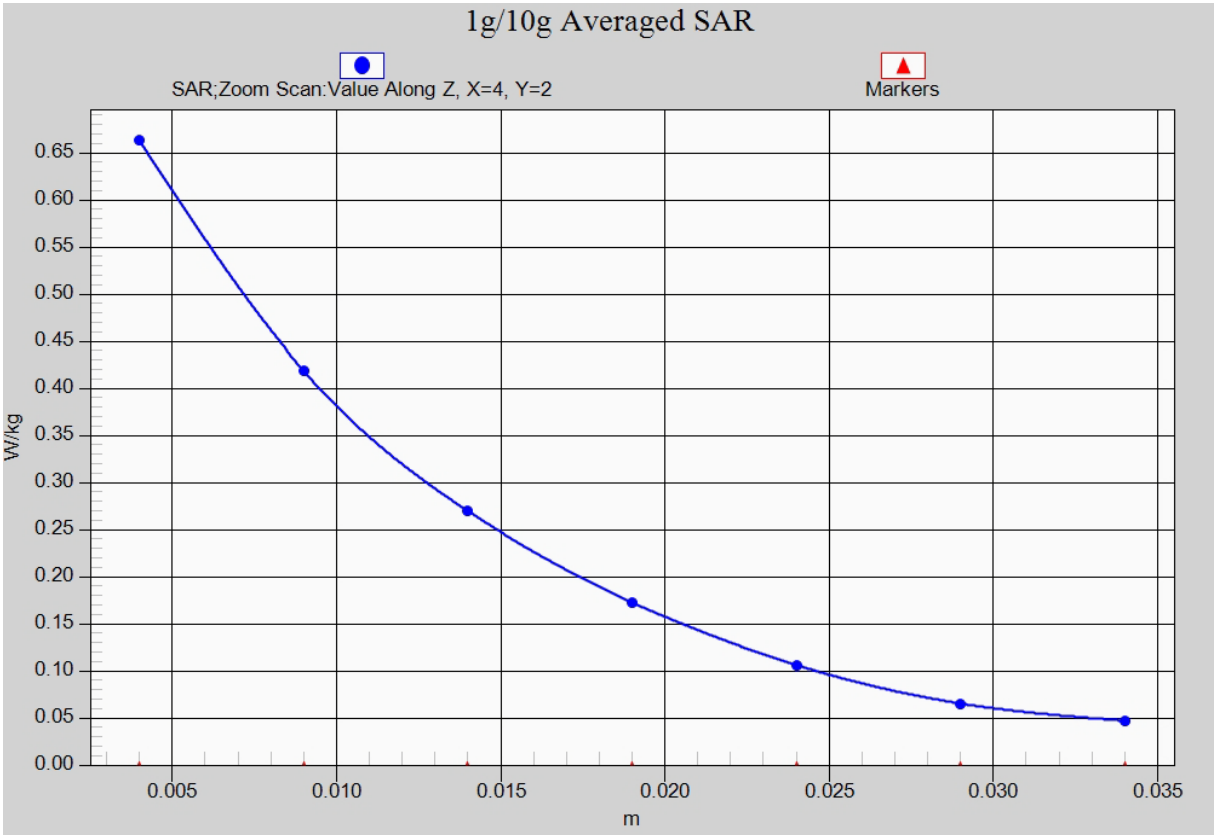


Fig. 12-1 Z-Scan at power reference point (LTE Band2)

LTE Band2 Body Rear High with QPSK_20M_1RB_Middle – AP OFF
Date: 2016-05-13
Electronics: DAE4 Sn777
Medium: Body 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.573 mho/m; εr = 54.15; ρ = 1000 kg/m^3
Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C
Communication System: LTE Band2 Frequency: 1900 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3617 ConvF(7.74, 7.74, 7.74)

Area Scan (111x71x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.835 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.92 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 1.03 W/kg
SAR(1 g) = 0.659 W/kg; SAR(10 g) = 0.403 W/kg
Maximum value of SAR (measured) = 0.775 W/kg

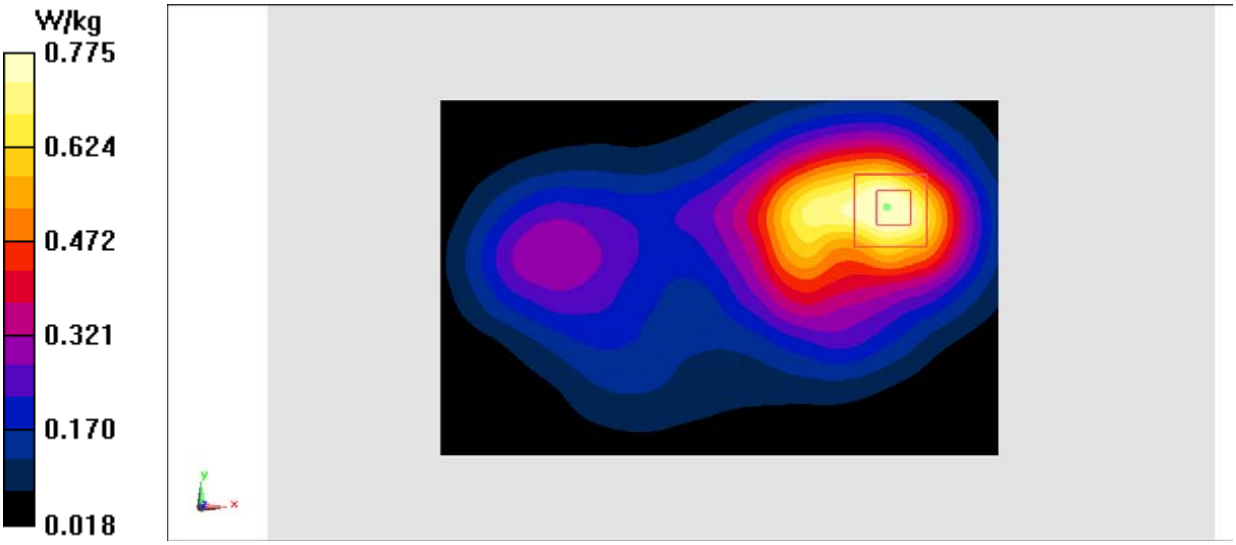


Fig.12 LTE Band2

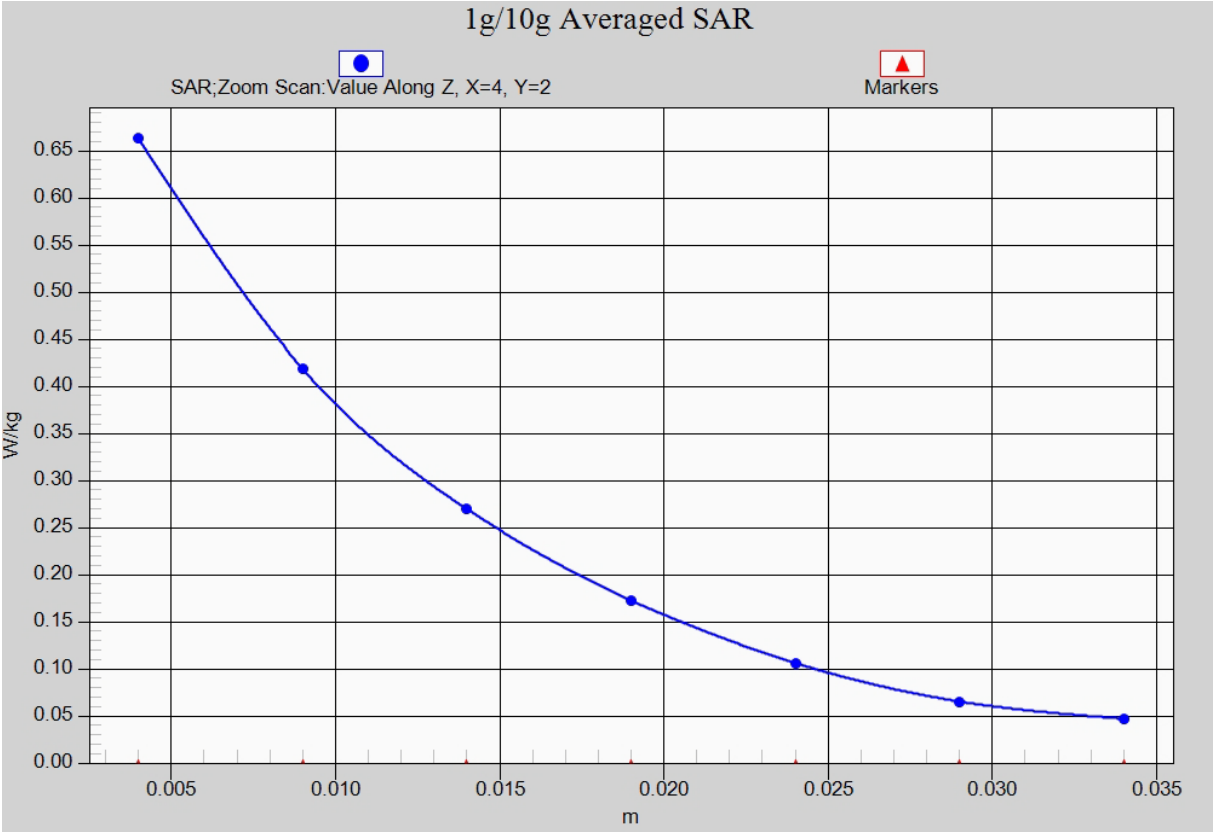


Fig. 12-1 Z-Scan at power reference point (LTE Band2)

LTE Band4 Left Cheek High with QPSK_20M_1RB_Middle

Date: 2016-1-12
Electronics: DAE4 Sn777
Medium: Head 1750 MHz
Medium parameters used: f = 1745 MHz; σ = 1.344 mho/m; εr = 41.456; ρ = 1000 kg/m^3
Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C
Communication System: LTE Band4 Frequency: 1745 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3617 ConvF(8.34, 8.34, 8.34)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.906 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.753 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.06 W/kg
SAR(1 g) = 0.686 W/kg; SAR(10 g) = 0.423 W/kg
Maximum value of SAR (measured) = 0.888 W/kg

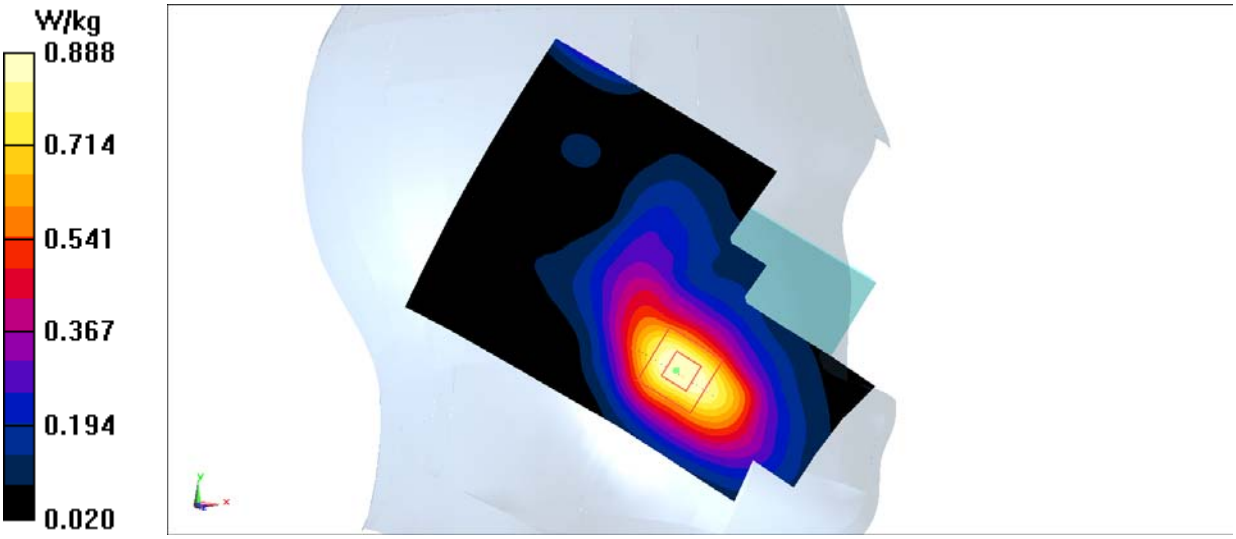


Fig.13 LTE Band4

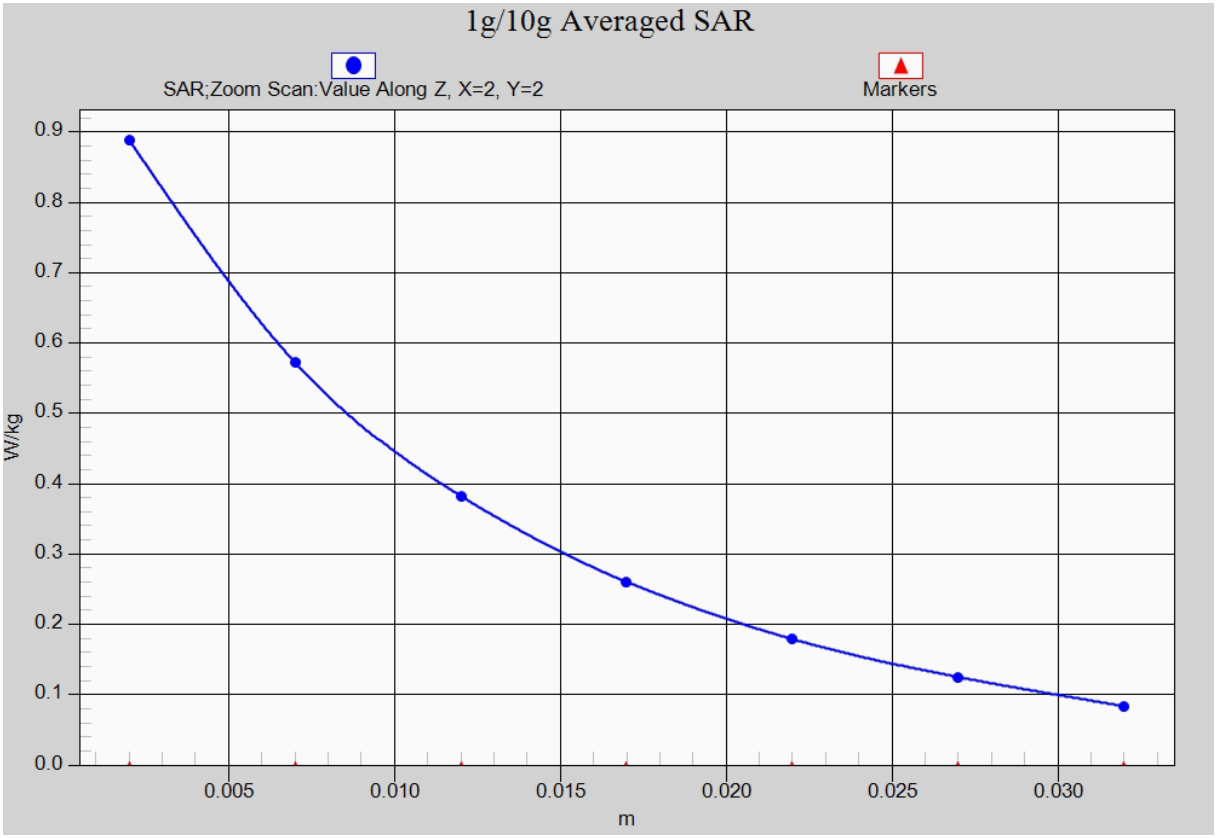


Fig. 13-1 Z-Scan at power reference point (LTE Band4)

LTE Band4 Body Rear Low with QPSK_20M_1RB_Middle
Date: 2016-05-12
Electronics: DAE4 Sn777
Medium: Body 1750 MHz
Medium parameters used: f = 1720 MHz; σ = 1.448 mho/m; εr = 52.843; ρ = 1000 kg/m^3
Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C
Communication System: LTE Band4 Frequency: 1720 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3617 ConvF(7.96, 7.96, 7.96)

Area Scan (111x71x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.19 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.74 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 1.58 W/kg
SAR(1 g) = 1.04 W/kg; SAR(10 g) = 0.666 W/kg
Maximum value of SAR (measured) = 1.21 W/kg

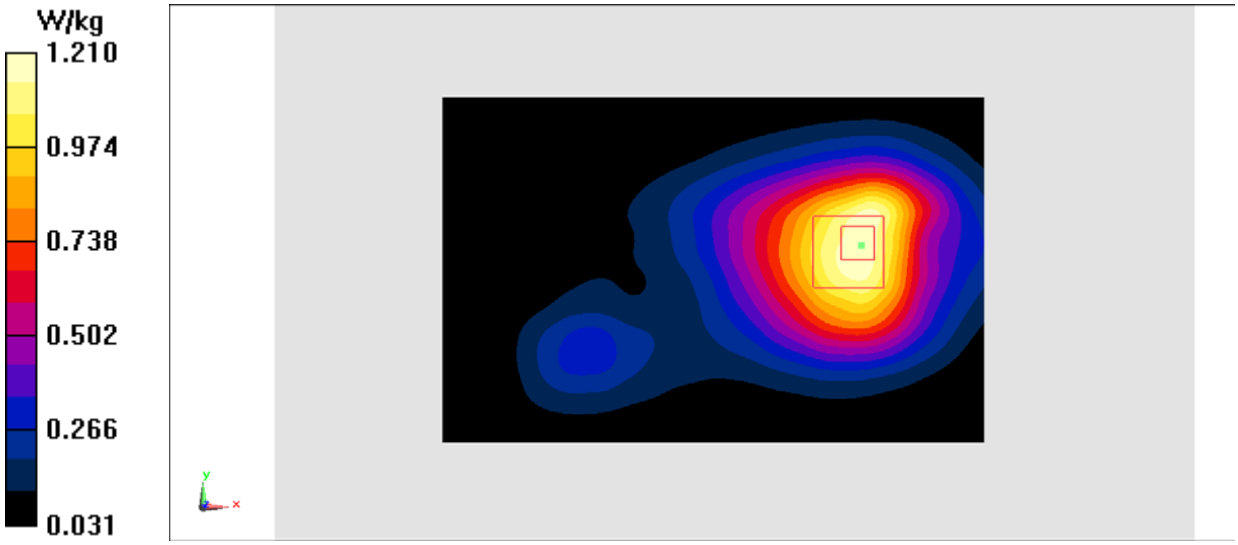


Fig.14 LTE Band4

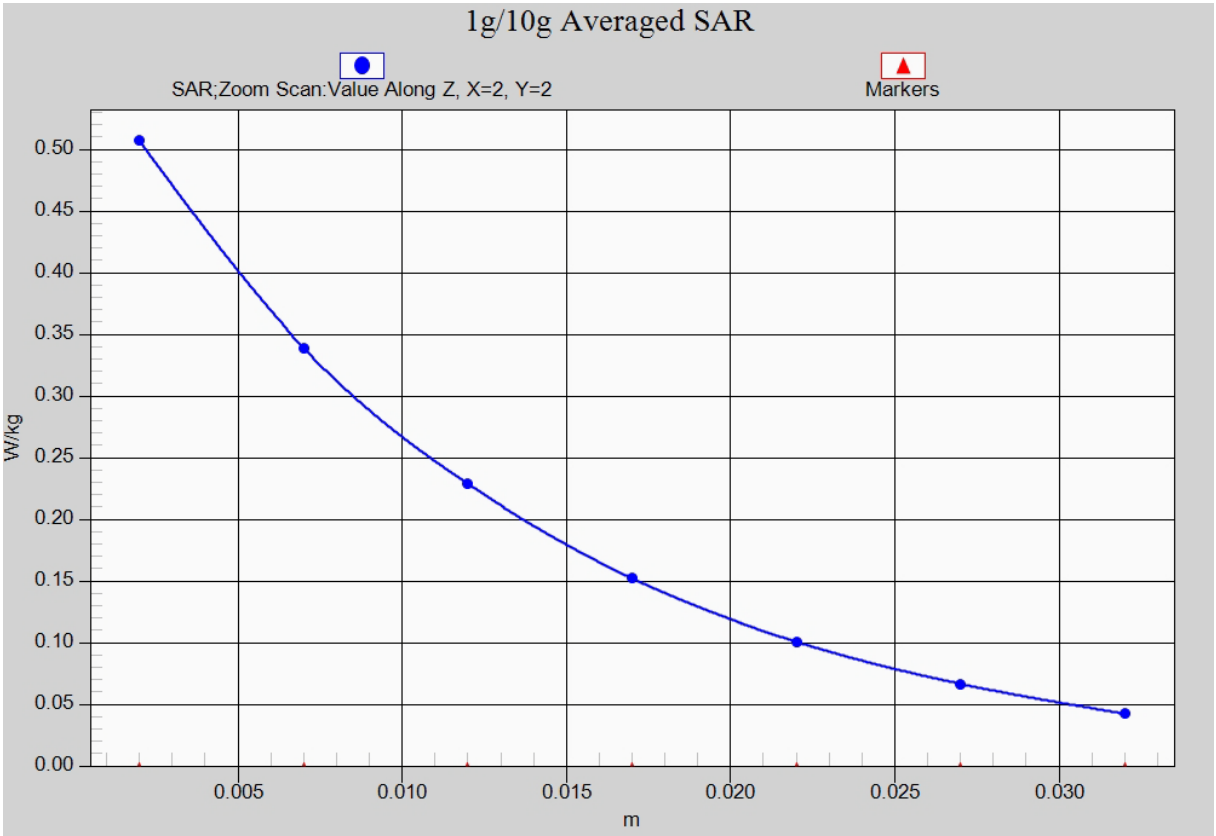


Fig. 14-1 Z-Scan at power reference point (LTE Band4)

LTE Band5 Left Cheek Middle with QPSK_10M_1RB_Middle

Date: 2016-1-11
Electronics: DAE4 Sn777
Medium: Head 850 MHz
Medium parameters used (interpolated): f = 836.5 MHz; σ = 0.916 mho/m; εr = 41.861; ρ = 1000 kg/m^3
Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C
Communication System: LTE Band5 Frequency: 836.5 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3617 ConvF(9.56, 9.56, 9.56)

Area Scan (71x111x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.471 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.910 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 0.521 W/kg
SAR(1 g) = 0.394 W/kg; SAR(10 g) = 0.292 W/kg
Maximum value of SAR (measured) = 0.420 W/kg

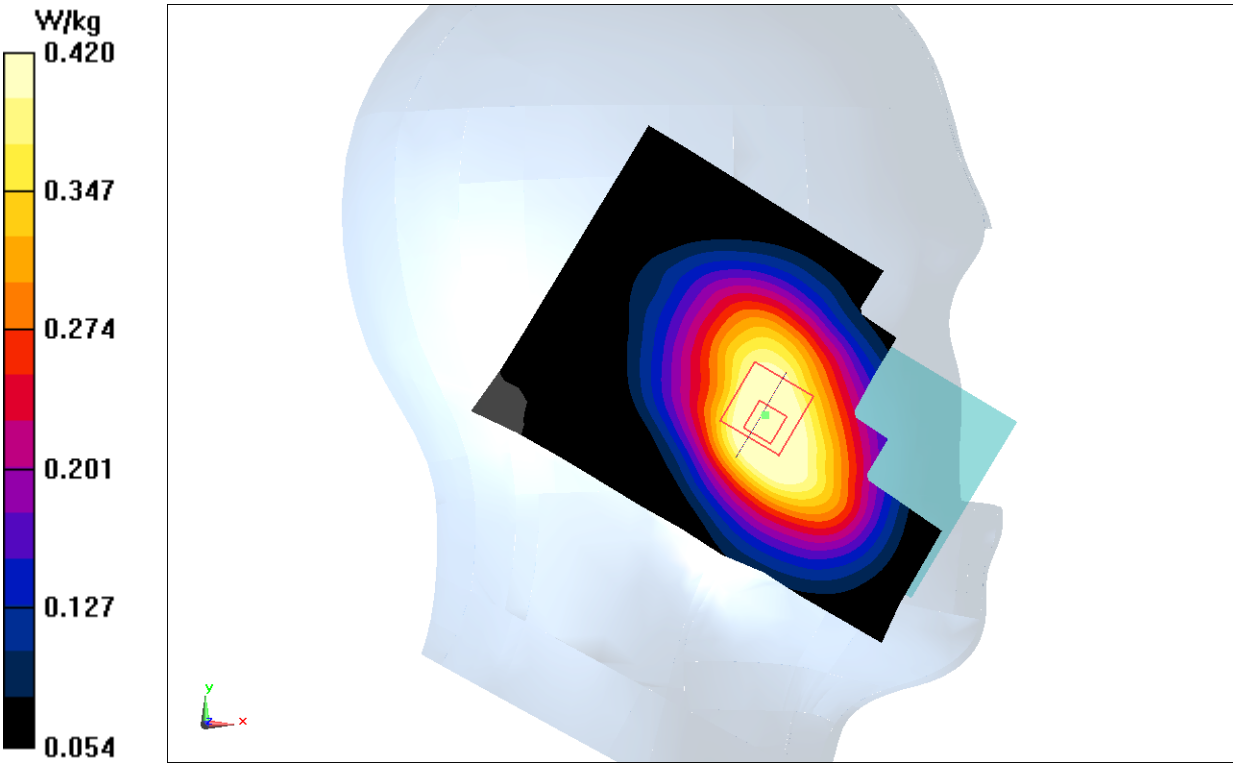


Fig.15 LTE Band5

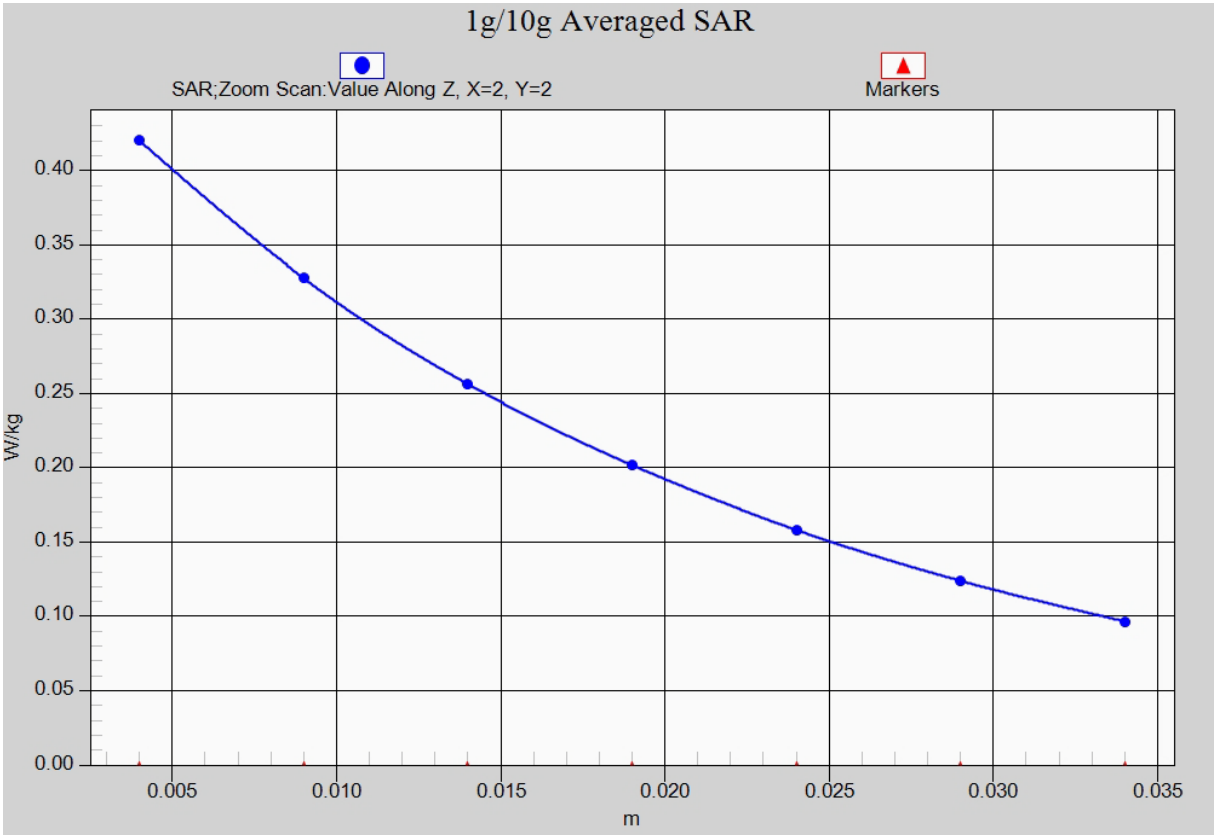


Fig. 15-1 Z-Scan at power reference point (LTE Band5)

LTE Band5 Body Rear Middle with QPSK_10M_1RB_Middle
Date: 2016-05-11
Electronics: DAE4 Sn777
Medium: Body 850 MHz
Medium parameters used (interpolated): f = 836.5 MHz; σ = 0.994 mho/m; εr = 56.084; ρ = 1000 kg/m^3
Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C
Communication System: LTE Band5 Frequency: 836.5 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3617 ConvF(9.71, 9.71, 9.71)

Area Scan (111x71x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.476 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 19.36 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 0.562 W/kg
SAR(1 g) = 0.434 W/kg; SAR(10 g) = 0.326 W/kg
Maximum value of SAR (measured) = 0.457 W/kg

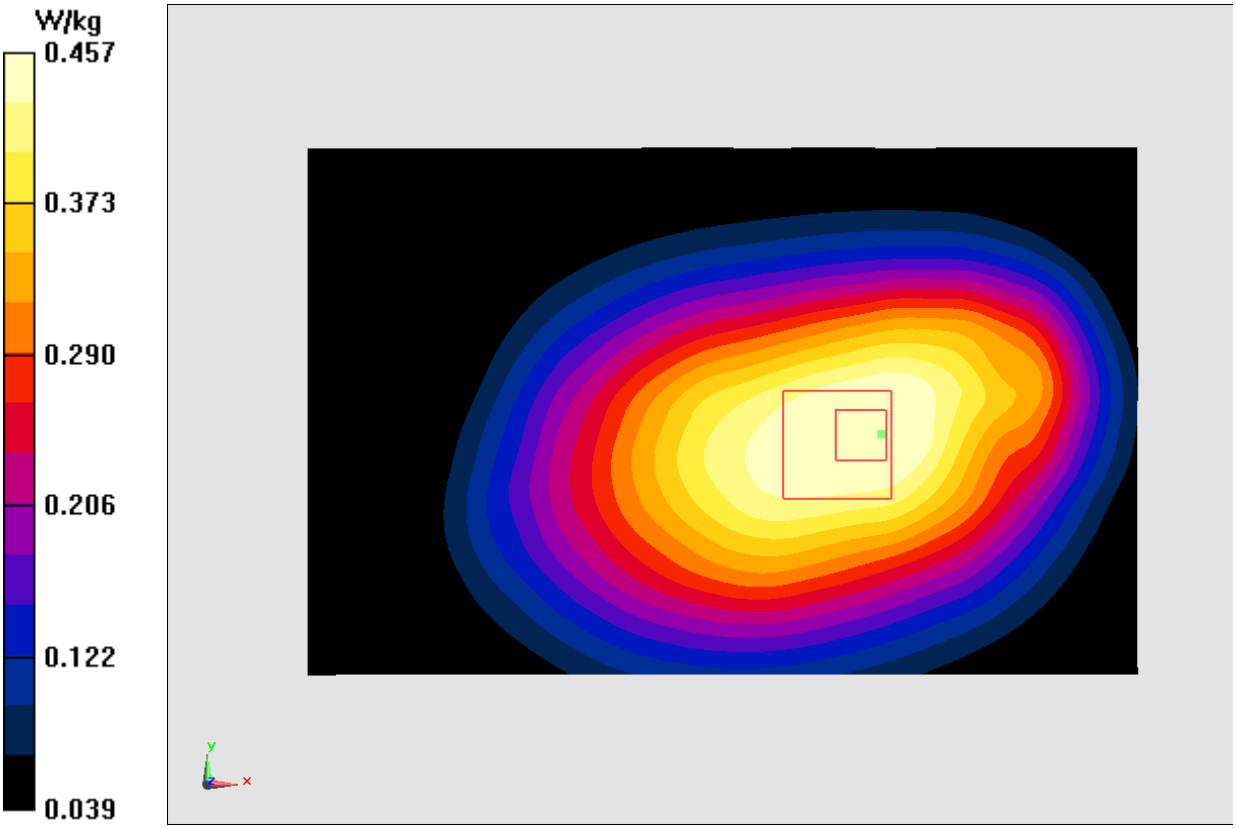


Fig.16 LTE Band5

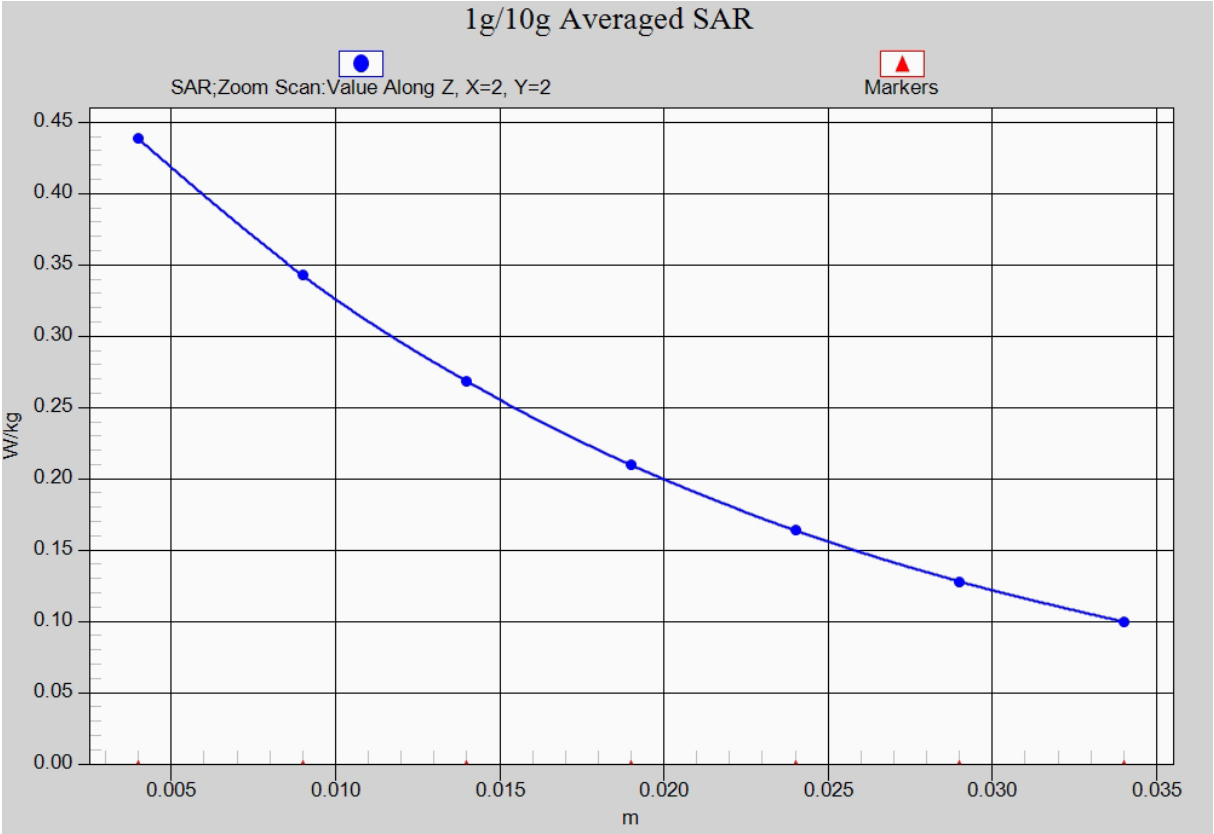


Fig. 16-1 Z-Scan at power reference point (LTE Band5)

LTE Band12 Left Cheek Middle with QPSK_10M_1RB_Middle

Date: 2016-1-8
Electronics: DAE4 Sn777
Medium: Head 750 MHz
Medium parameters used (interpolated): f = 707.5 MHz; σ = 0.871 mho/m; εr = 42.864; ρ = 1000 kg/m^3
Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C
Communication System: LTE Band12 Frequency: 707.5 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3617 ConvF(9.98, 9.98, 9.98)

Area Scan (71x111x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.349 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.155 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.387 W/kg
SAR(1 g) = 0.304 W/kg; SAR(10 g) = 0.232 W/kg
Maximum value of SAR (measured) = 0.319 W/kg

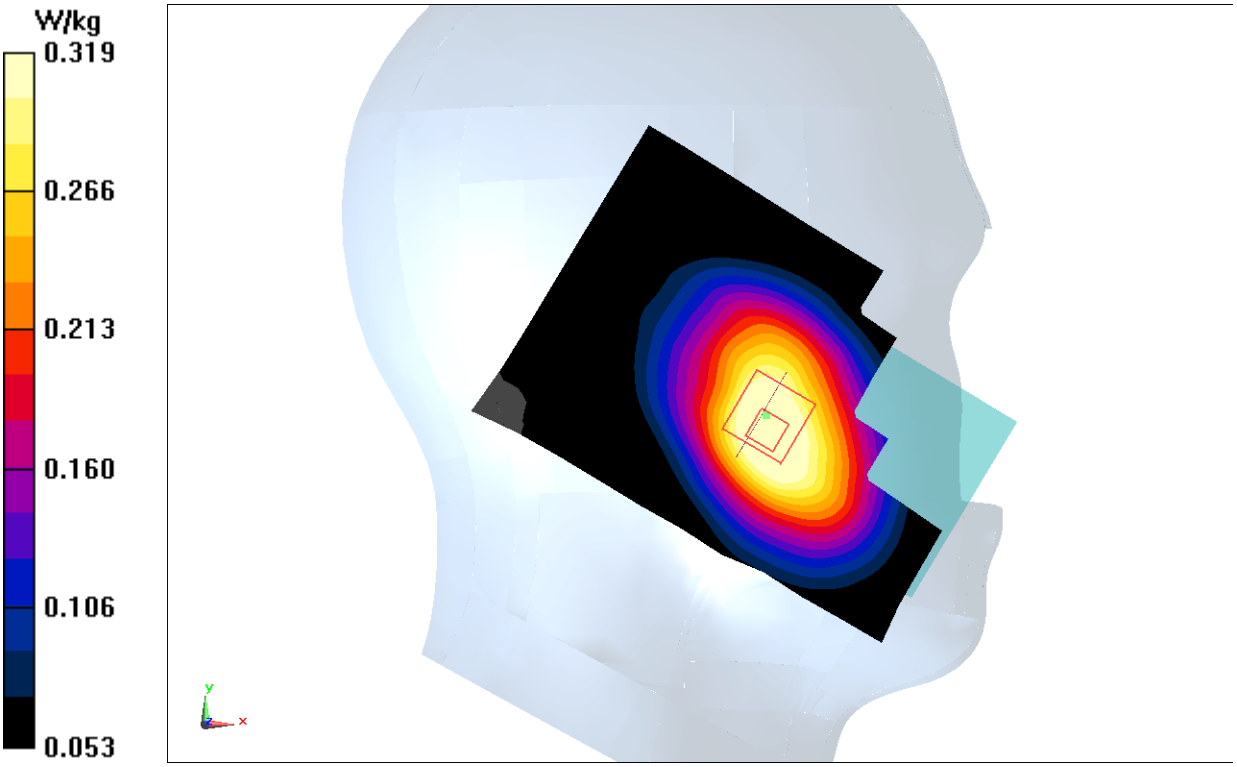


Fig.17 LTE Band12

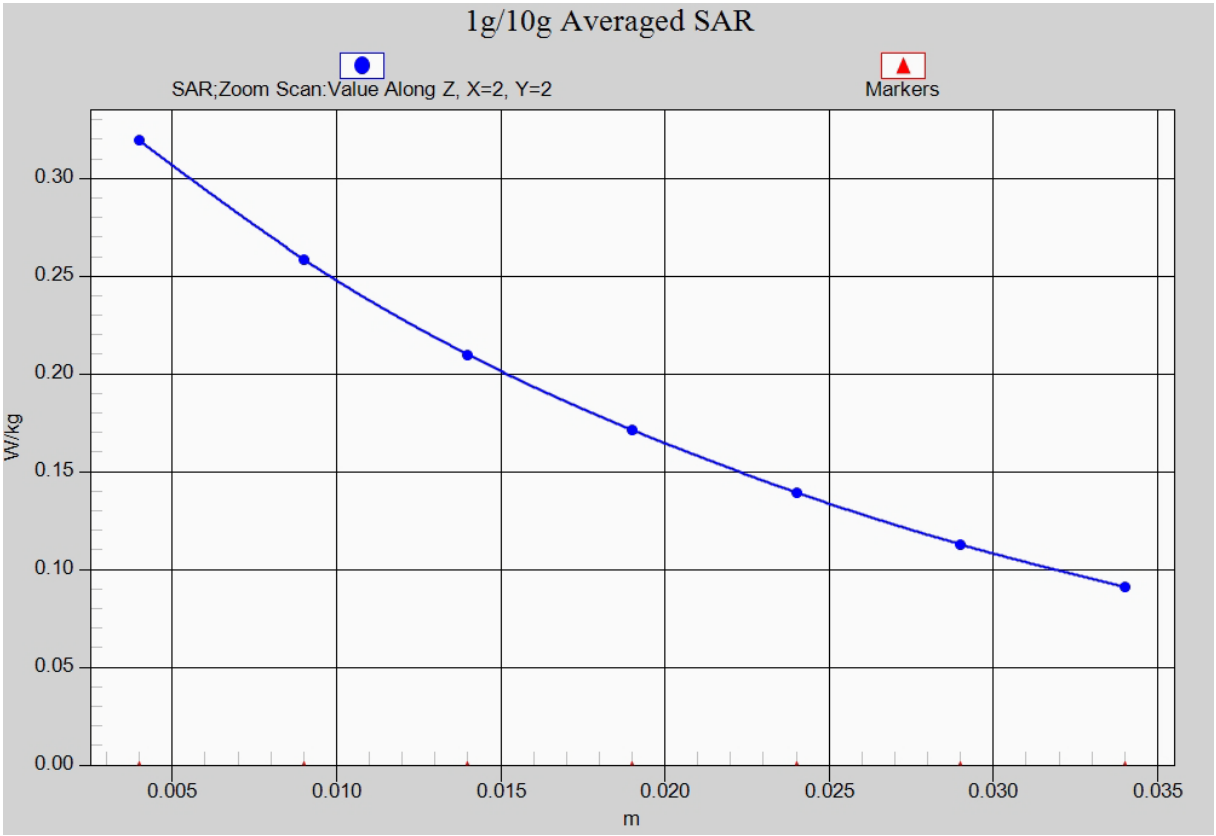


Fig. 17-1 Z-Scan at power reference point (LTE Band12)

LTE Band12 Body Rear Low with QPSK_10M_1RB_Middle
Date: 2016-05-10
Electronics: DAE4 Sn777
Medium: Body 750 MHz
Medium parameters used (interpolated): f = 704 MHz; σ = 0.825 mho/m; εr = 56.942; ρ = 1000 kg/m^3
Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C
Communication System: LTE Band12 Frequency: 704 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3617 ConvF(9.76, 9.76, 9.76)

Area Scan (111x71x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.520 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 20.11 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 0.618 W/kg
SAR(1 g) = 0.471 W/kg; SAR(10 g) = 0.352 W/kg
Maximum value of SAR (measured) = 0.494 W/kg

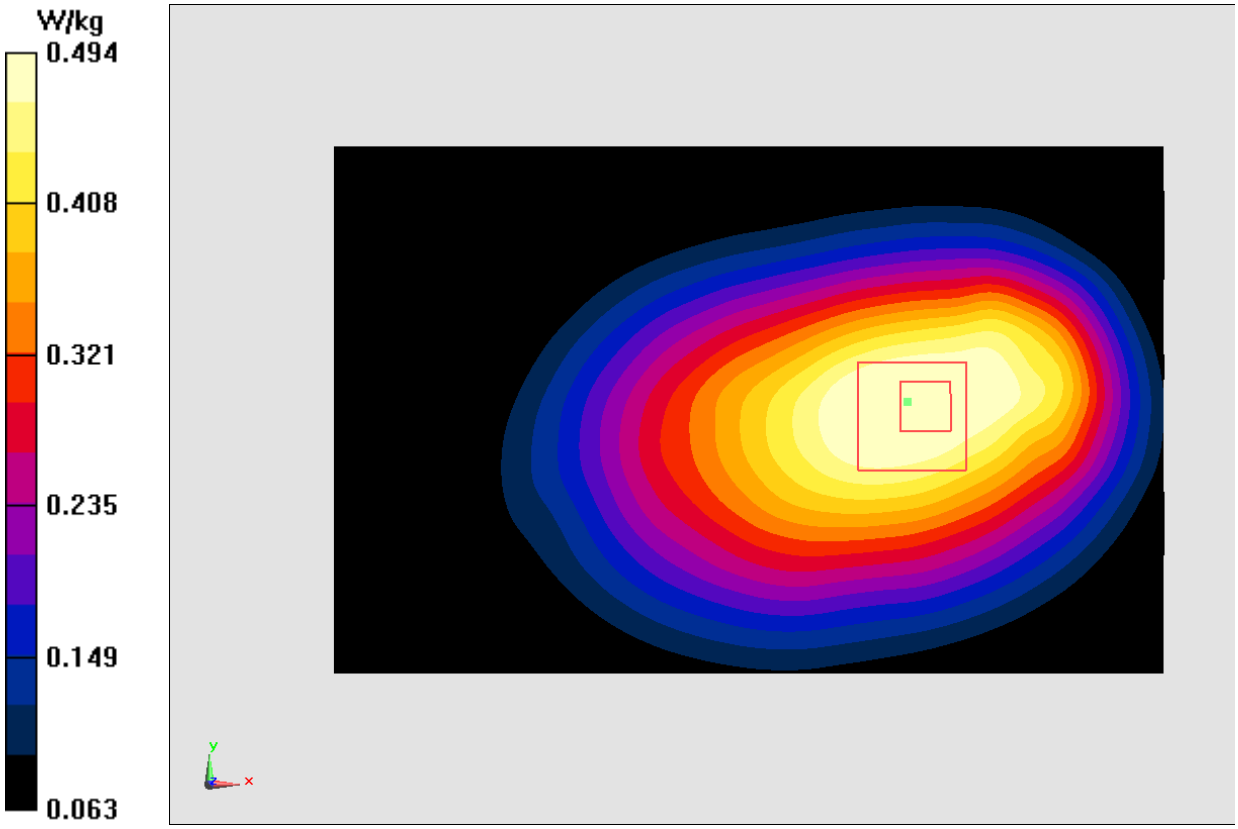


Fig.18 LTE Band12

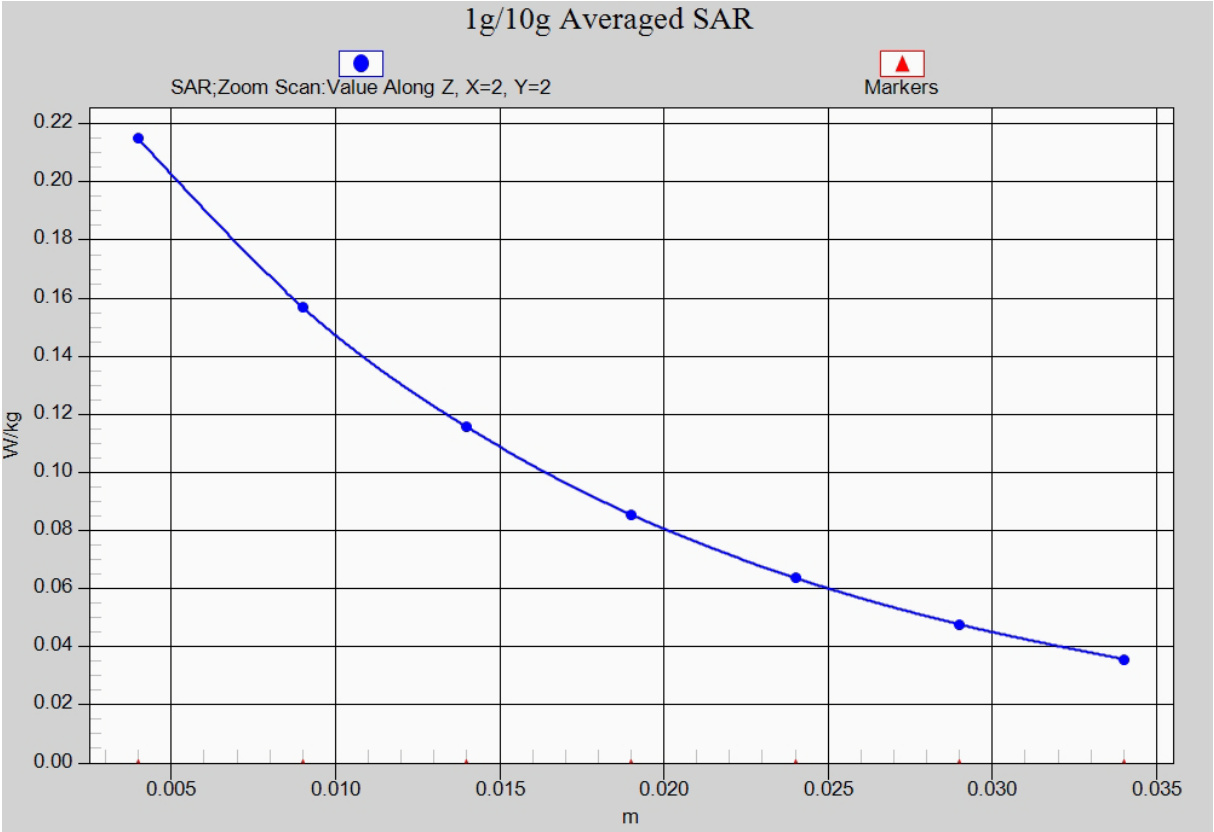


Fig. 18-1 Z-Scan at power reference point (LTE Band12)

Wifi 802.11b Right Cheek Channel 6

Date: 2016-1-14
Electronics: DAE4 Sn777
Medium: Head 2450 MHz
Medium parameters used (interpolated): f = 2437 MHz; σ = 1.814 mho/m; ε_r = 39.973; ρ = 1000 kg/m^3
Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C
Communication System: WLan 2450 Frequency: 2437 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3617 ConvF(7.24, 7.24, 7.24)

Area Scan (81x141x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.68 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 16.99 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 2.56 W/kg
SAR(1 g) = 1.13 W/kg; SAR(10 g) = 0.524 W/kg
Maximum value of SAR (measured) = 1.47 W/kg

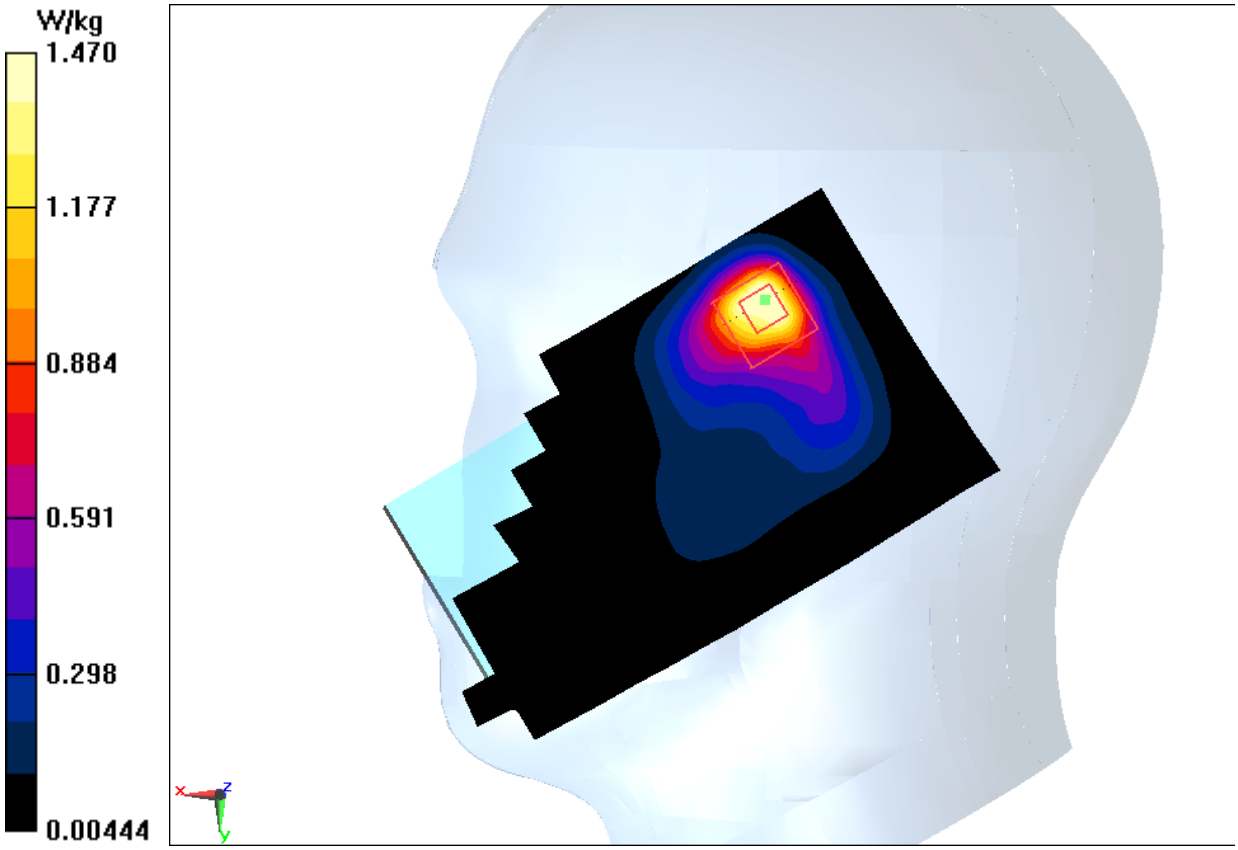


Fig.21 2450 MHz

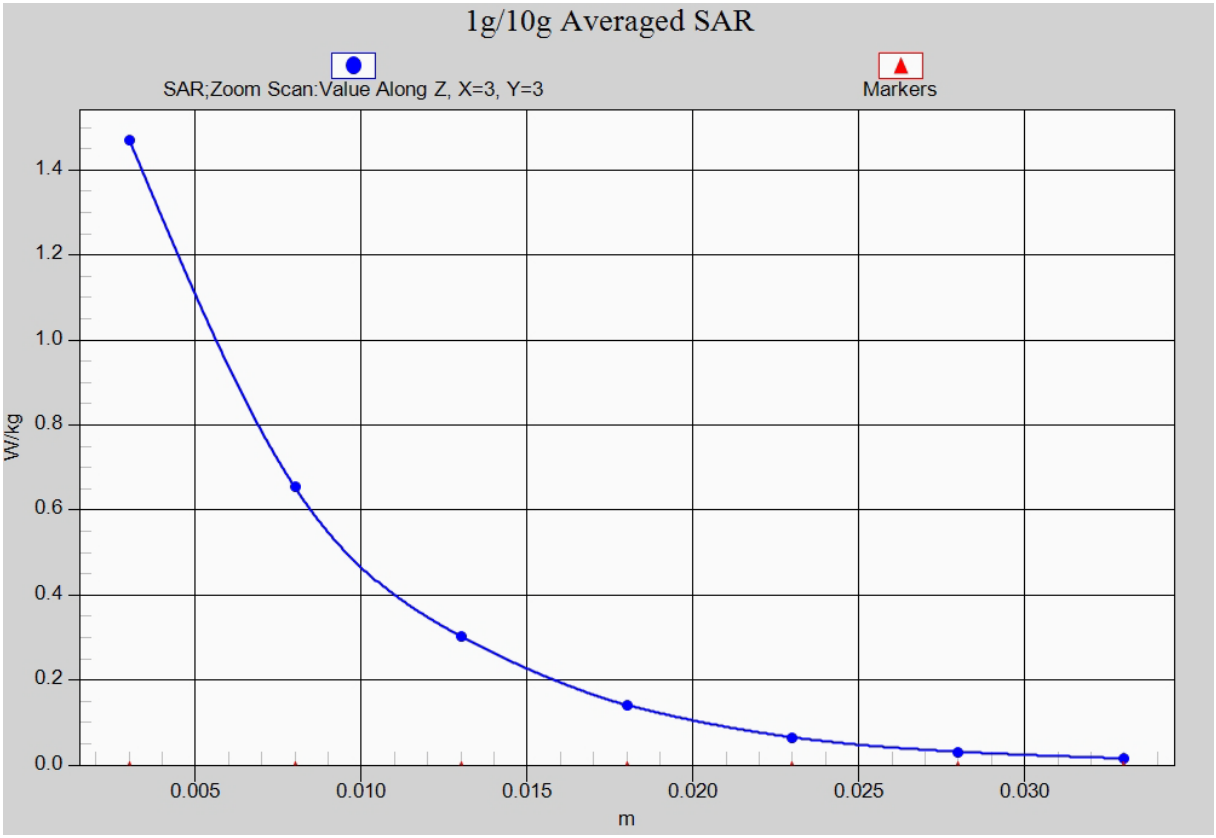


Fig. 21-1 Z-Scan at power reference point (2450 MHz)

Wifi 802.11b Body Rear Channel 11
Date: 2016-05-14
Electronics: DAE4 Sn777
Medium: Body 2450 MHz
Medium parameters used (interpolated): f = 2462 MHz; σ = 2.009 mho/m; ε_r = 51.784; ρ = 1000 kg/m^3
Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C
Communication System: WLan 2450 Frequency: 2462 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3617 ConvF(7.35, 7.35, 7.35)

Area Scan (141x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.370 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.011 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.558 W/kg
SAR(1 g) = 0.280 W/kg; SAR(10 g) = 0.133 W/kg
Maximum value of SAR (measured) = 0.324 W/kg

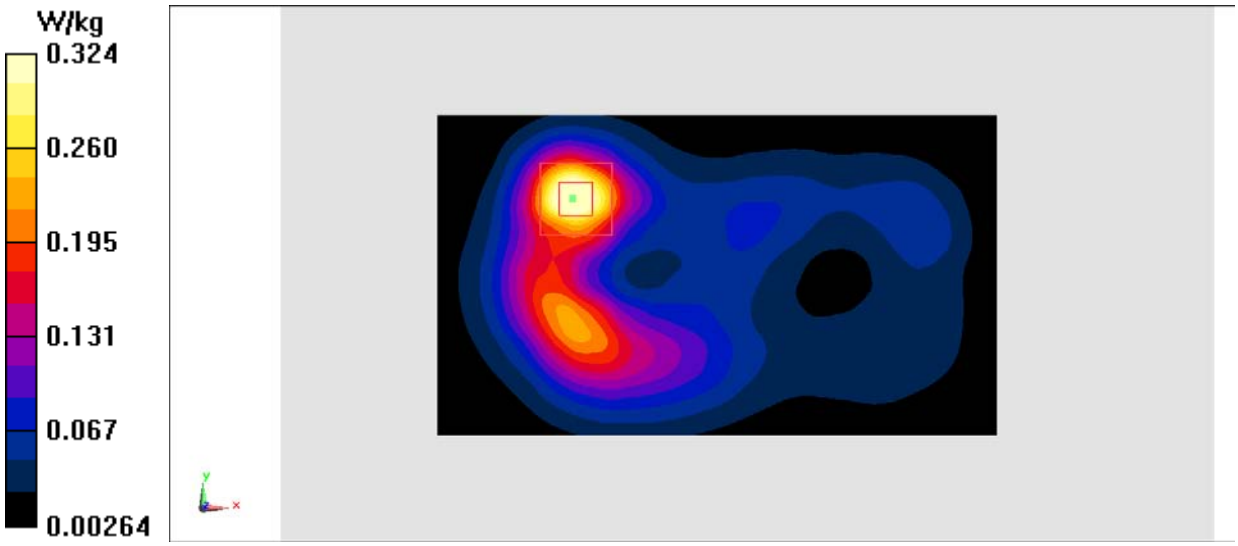


Fig.22 2450 MHz

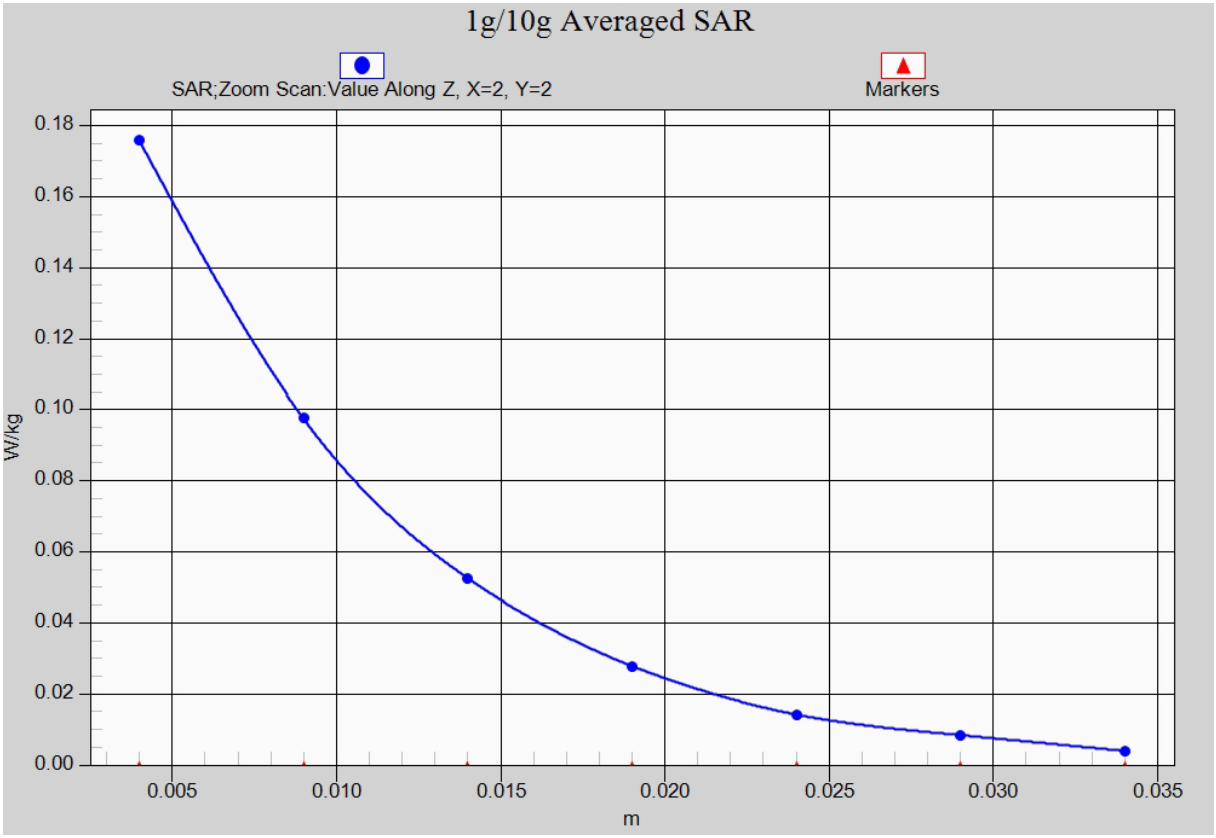


Fig. 22-1 Z-Scan at power reference point (2450 MHz)

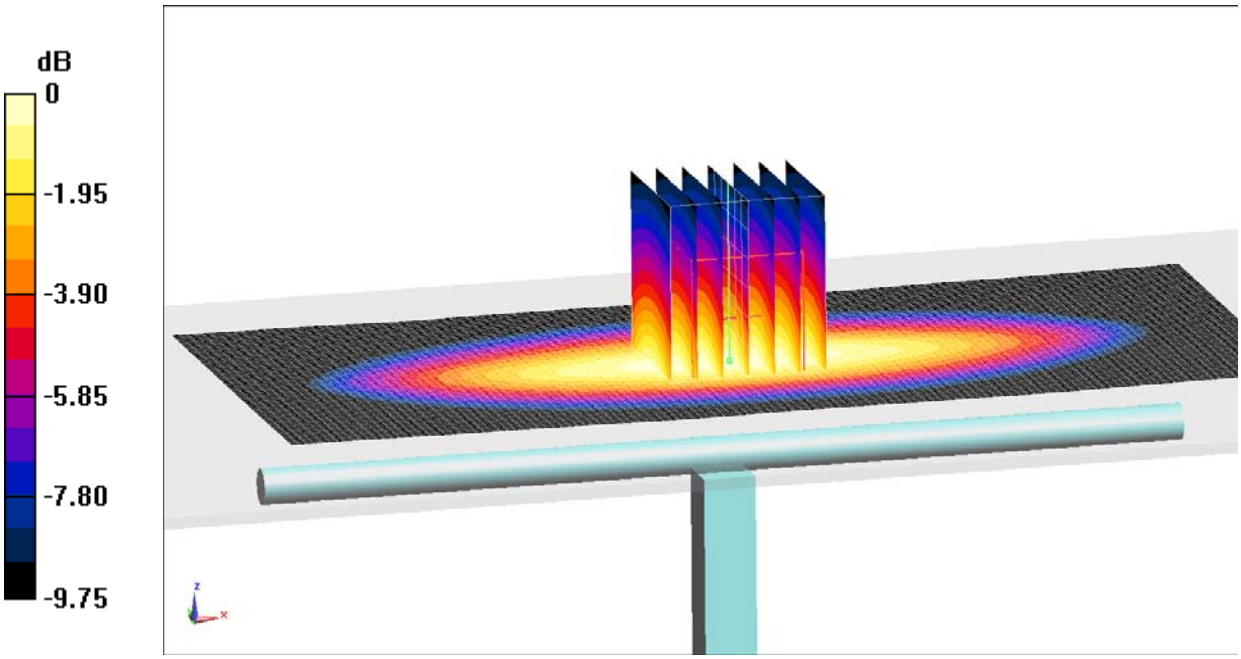
ANNEX B System Verification Results

750MHz

Date: 2016-01-08
Electronics: DAE4 Sn777
Medium: Head 750 MHz
Medium parameters used: f = 750 MHz; σ = 0.912 mho/m; ε_r = 43.08; ρ = 1000 kg/m^3
Ambient Temperature: 22.2°C Liquid Temperature: 21.7°C
Communication System: CW Frequency: 750 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3617 ConvF(9.98, 9.98, 9.98)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 49.848 V/m; Power Drift = -0.09 dB
Fast SAR: SAR(1 g) = 2.08 W/kg; SAR(10 g) = 1.37 W/kg
Maximum value of SAR (interpolated) = 2.23 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 49.848 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 2.88 W/kg
SAR(1 g) = 2.07 W/kg; SAR(10 g) = 1.35 W/kg
Maximum value of SAR (measured) = 2.19 W/kg



0 dB = 2.19 W/kg = 3.40 dB W/kg

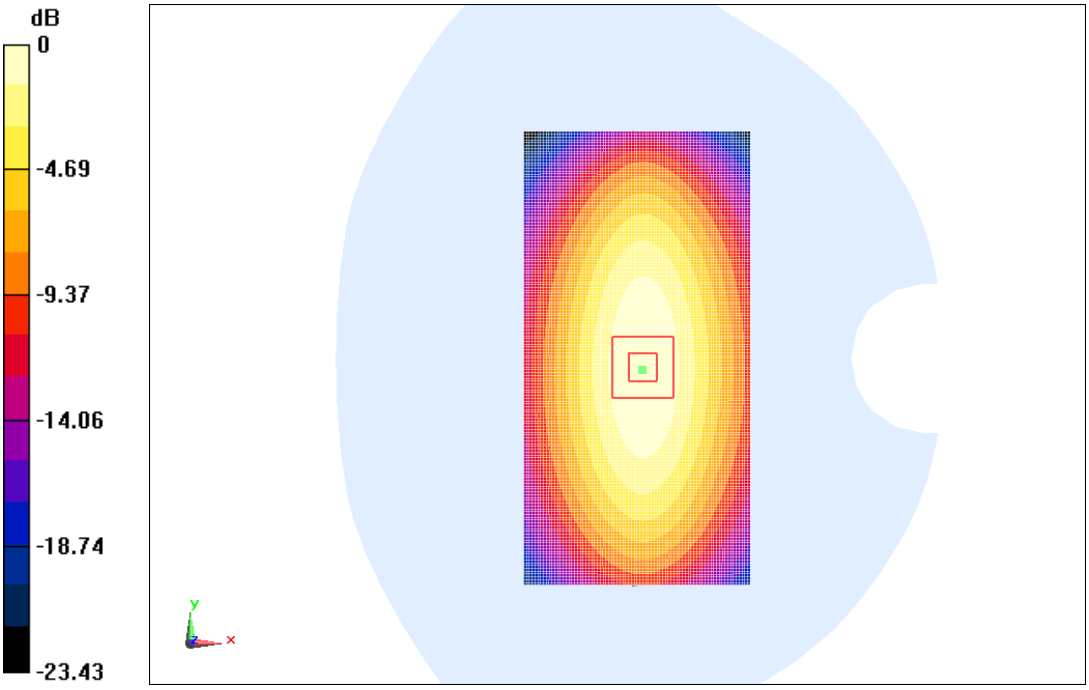
Fig.B.1 validation 750MHz 250mW

835MHz

Date: 2016-01-11
Electronics: DAE4 Sn777
Medium: Head 850 MHz
Medium parameters used: f = 835 MHz; σ = 0.915 S/m; ε_r = 41.85; ρ = 1000 kg/m^3
Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C
Communication System: CW Frequency: 835 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN3617 ConvF(9.56, 9.56, 9.56)

System Validation /Area Scan (81x161x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 50.281 V/m; Power Drift = 0.07 dB
Fast SAR: SAR(1 g) = 2.23 W/kg; SAR(10 g) = 1.44 W/kg
Maximum value of SAR (interpolated) = 2.49 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 50.281 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 3.58 W/kg
SAR(1 g) = 2.27 W/kg; SAR(10 g) = 1.47 W/kg
Maximum value of SAR (measured) = 2.54 W/kg



0 dB = 2.54 W/kg = 4.01 dBW/kg

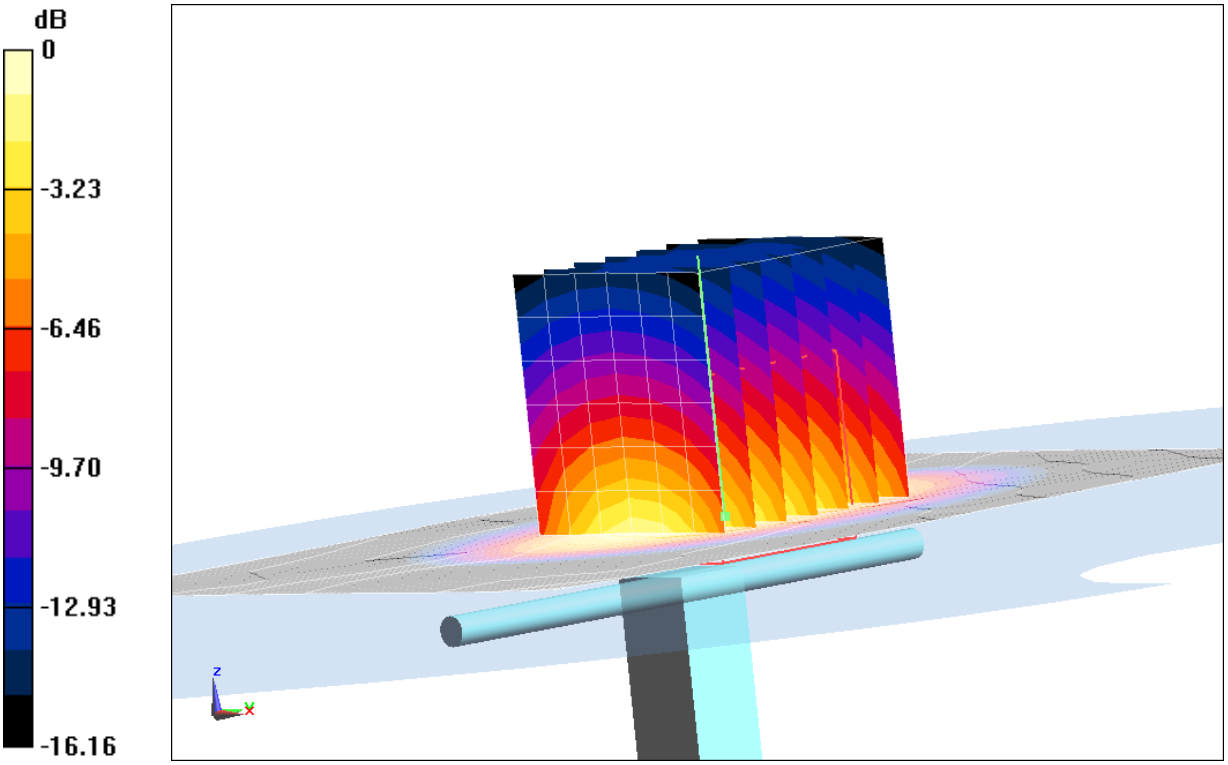
Fig.B.2 validation 835MHz 250mW

1750MHz

Date: 2016-01-12
Electronics: DAE4 Sn777
Medium: Head 1750 MHz
Medium parameters used: f=1750 MHz; σ =1.351 mho/m; εr = 41.41; ρ = 1000 kg/m^3
Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C
Communication System: CW Frequency: 1750 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3617 ConvF(8.34, 8.34, 8.34)

System Validation/Area Scan (81x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 90.78 V/m; Power Drift = -0.05 dB
Fast SAR: SAR(1 g) = 8.99 W/kg; SAR(10 g) = 4.80 W/kg
Maximum value of SAR (interpolated) = 10.03 W/kg

System Validation/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 90.78 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 15.64 W/kg
SAR(1 g) = 9.12 W/kg; SAR(10 g) = 4.90 W/kg
Maximum value of SAR (measured) = 10.14 W/kg



0 dB = 10.14 W/kg = 10.07 dB W/kg

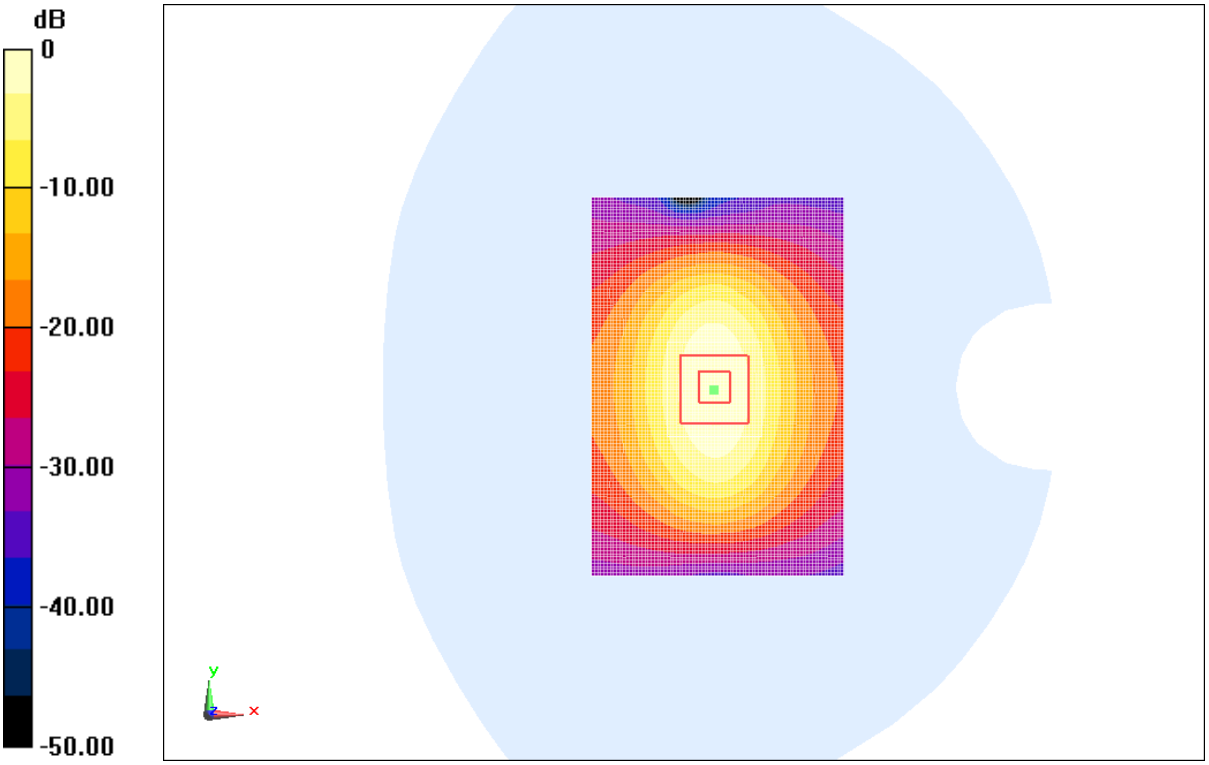
Fig.B.3 validation 1750MHz 250mW

1900MHz

Date: 2016-01-13
Electronics: DAE4 Sn777
Medium: Head 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.394 S/m; ε_r = 40.64; ρ = 1000 kg/m^3
Ambient Temperature: 23.0°C Liquid Temperature: 22.5°C
Communication System: CW Frequency: 1900 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3617 ConvF(8.07, 8.07, 8.07)

System Validation /Area Scan (81x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 90.339 V/m; Power Drift = 0.05 dB
Fast SAR: SAR(1 g) = 10.55 W/kg; SAR(10 g) = 5.61 W/kg
Maximum value of SAR (interpolated) = 11.98 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 90.339 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 18.99 W/kg
SAR(1 g) = 10.35 W/kg; SAR(10 g) = 5.43 W/kg
Maximum value of SAR (measured) = 11.75 W/kg



0 dB = 11.75 W/kg = 10.70 dBW/kg

Fig.B.4 validation 1900MHz 250mW