		709	22.05	21.15
	50RB	711	22.04	21.18
		710	22.18	21.30
		709	22.12	21.11

11.5 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	4.34	4.37	4.96
EDR2M-4_DQPSK	5.53	5.57	6.16
EDR3M-8DPSK	5.88	5.96	6.60

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

802.11b（dBm）

Channel\data rate	1Mbps	2Mbps	5.5Mbps	11Mbps
1	17.28	17.25	17.31	17.29
6	16.85	16.84	16.84	16.83
11	16.89	16.86	16.87	16.85

802.11g（dBm）

Channel\data rate	6Mbps	9Mbps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps
1	13.78	13.75	13.74	13.74	13.73	13.75	13.74	13.76
6	13.39	13.40	13.41	13.42	13.29	13.34	13.33	13.31
11	13.33	13.38	13.44	13.46	13.45	13.43	13.34	13.37

802.11n（dBm）- HT20 (2.4G)

Channel\data rate	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
1	10.39	10.38	10.37	10.31	10.28	10.27	10.22	10.24
6	9.98	9.97	9.94	9.89	9.89	9.86	9.86	9.85
11	10.46	10.45	10.44	10.41	10.37	10.33	10.31	10.30

802.11a（dBm）

Channel\data rate	6Mbps	9Mbps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps
36(5180 MHz)	13.72	13.64	13.66	13.58	13.59	13.54	13.46	13.28
40(5200 MHz)	12.51	12.97	13.07	12.52	12.91	12.52	12.42	12.89
44(5220 MHz)	12.70	12.71	13.21	13.08	12.54	12.53	12.52	13.01
48(5240 MHz)	12.56	12.45	12.49	12.43	12.41	12.41	12.40	12.33
149(5745 MHz)	14.62	14.75	14.71	14.72	14.68	14.58	14.57	14.63
153(5765 MHz)	12.49	12.47	12.44	12.92	12.38	12.85	12.44	12.33
157(5785 MHz)	12.21	12.25	12.27	12.15	12.09	12.17	12.06	12.12
161(5805 MHz	12.76	12.75	12.71	12.71	12.69	12.63	12.66	12.63
165(5825 MHz)	13.05	13.12	13.04	13.00	13.03	12.96	12.83	12.86

802.11n（dBm）- HT20 (5G)

Channel\data rate	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
36(5180 MHz)	12.21	12.13	11.75	11.63	12.08	12.07	11.99	11.63
40(5200 MHz)	11.93	11.86	11.91	11.77	11.32	11.69	11.16	11.73
44(5220 MHz)	12.07	11.43	11.98	11.97	11.88	11.89	11.85	11.88
48(5240 MHz)	11.42	11.44	11.49	11.38	11.31	11.24	11.21	11.22
149(5745 MHz)	13.76	13.72	13.62	13.64	13.65	13.57	13.45	13.51
153(5765 MHz)	11.96	11.82	11.51	11.31	11.79	11.31	11.38	11.71
157(5785 MHz)	11.11	10.65	10.81	11.17	10.74	11.07	11.15	10.62
161(5805 MHz	11.79	11.84	11.78	11.79	12.21	11.67	11.66	11.64
165(5825 MHz)	12.08	12.04	11.93	11.96	11.85	11.91	11.85	12.27

802.11n（dBm）- HT40 (5G)

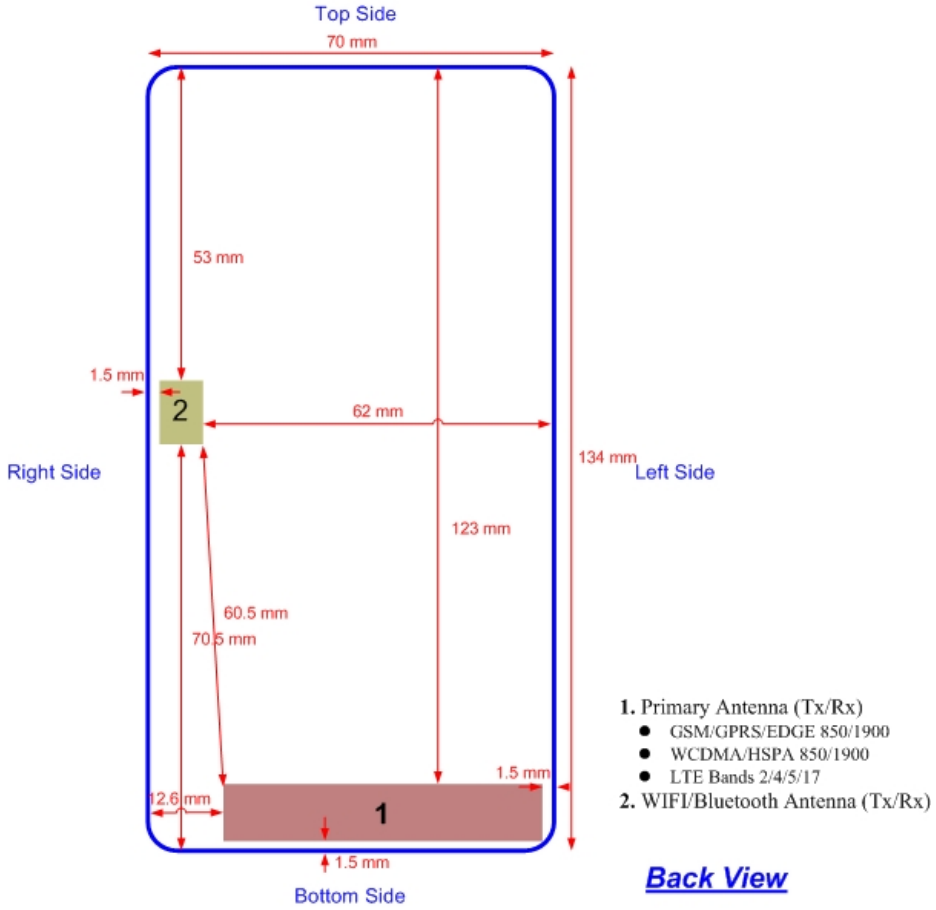
Channel\data rate	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
38(5190 MHz)	12.11	12.53	12.00	12.58	11.98	12.39	11.86	11.88
46(5230 MHz)	12.09	12.08	12.08	11.93	11.87	11.91	11.92	11.97
151(5755 MHz)	12.43	12.39	12.79	12.30	12.11	12.19	12.23	12.19
159(5795 MHz)	11.22	11.25	11.28	11.26	11.11	11.10	11.08	10.76

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	No	Yes	No	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

Appendix A

SAR Test Exclusion Thresholds for 100 MHz – 6 GHz and ≤ 50 mm

Approximate SAR Test Exclusion Power Thresholds at Selected Frequencies and Test Separation Distances are illustrated in the following Table.

MHz	5	10	15	20	25	mm
150	39	77	116	155	194	SAR Test Exclusion Threshold (mW)
300	27	55	82	110	137	
450	22	45	67	89	112	
835	16	33	49	66	82	
900	16	32	47	63	79	
1500	12	24	37	49	61	
1900	11	22	33	44	54	
2450	10	19	29	38	48	
3600	8	16	24	32	40	
5200	7	13	20	26	33	
5400	6	13	19	26	32	
5800	6	12	19	25	31	

Picture 12.2 Power Thresholds

Table 12.1: Standalone SAR test exclusion considerations

Band/Mode	F(GHz)	SAR test exclusion threshold (mW)	RF output power		SAR test exclusion
			dBm	mW	
Bluetooth	2.441	19	6.60	4.57	Yes
2.4GHz WLAN 802.11 b	2.45	19	17.31	53.83	No
5GHz WLAN 802.11 a	5.745	12	14.75	29.85	No
5GHz WLAN 802.11 n	5.745	12	13.76	23.77	No

13 Evaluation of Simultaneous

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

	Position	Main antenna	WiFi	Sum
Highest reported SAR value for Head	Left hand, Touch cheek	0.61	0.22	**0.83**
	Right hand, Touch cheek	0.57	0.29	**0.86**
Highest reported SAR value for Body	Rear	1.07	0.29	**1.36**
	Bottom	1.25	/	**/**

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	0.61	0.10	**0.71**
	Right hand, Touch cheek	0.57	0.10	**0.67**
Highest reported SAR value for Body	Rear	1.07	0.10	**1.17**
	Bottom	1.25	0.10	**1.35**

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

Table 13.3: Estimated SAR for Bluetooth

Mode/Band	F (GHz)	Distance (mm)	Upper limit of power *		Estimated$_{1g}$ (W/kg)
			dBm	mW	
Bluetooth	2.441	10	7	5.01	0.10

* - 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 < 1.6W/kg. 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 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-g SAR is the highest measured SAR in each exposure configuration, wireless mode and frequency band combination or more than 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.

Table 14.1: Duty Cycle

Mode	Duty Cycle
Speech for GSM850/1900	1:8.3
GPRS&EGPRS for GSM850/1900	1:4
WCDMA850/1900&LTE&WiFi	1:1

14.1 The evaluation of multi-batteries

We'll perform the head measurement in all bands with the primary battery depending on the evaluation of multi-batteries and retest on highest value point with other batteries. Then, repeat the measurement in the Body test.

Table 14.2: The evaluation of multi-batteries for Head Test

Frequency		Mode	Side	Test Position	Battery Type	SAR(1g)	Power Drift(dB)
MHz	Ch.					(W/kg)	
1860	18700	1RB_High	Left	Touch	TLi022A1	0.540	0.14
1860	18700	1RB_High	Left	Touch	TLi022A2	0.527	0.09

Note: According to the values in the above table, the battery, TLi022A1, is the primary battery. We'll perform the head measurement with this battery and retest on highest value point with others.

Table 14.3: The evaluation of multi-batteries for Body Test

Frequency		Mode	Test Position	Spacing (mm)	Battery Type	SAR(1g)	Power Drift(dB)
MHz	Ch.					(W/kg)	
1900	19100	1RB_High	Bottom	10	TLi022A1	1.05	-0.08
1900	19100	1RB_High	Bottom	10	TLi022A2	1.01	0.07

Note: According to the values in the above table, the battery, TLi022A1, is the primary battery. We'll perform the Body measurement with this battery and retest on highest value point with others.

14.2 SAR results for Fast SAR

Table 14.4: SAR Values (GSM 850 MHz Band - Head) with battery TLi022A1

Ambient Temperature: 22.6 ℃ Liquid Temperature: 22.1 ℃											
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	/	32.78	33	0.158	**0.17**	0.227	**0.24**	-0.12
836.6	190	Left	Touch	/	32.74	33	0.153	**0.16**	0.220	**0.23**	0.13
824.2	128	Left	Touch	/	32.61	33	0.193	**0.21**	0.247	**0.27**	0.14
848.8	251	Left	Tilt	/	32.78	33	0.120	**0.13**	0.172	**0.18**	-0.04
836.6	190	Left	Tilt	/	32.74	33	0.121	**0.13**	0.173	**0.18**	0.00
824.2	128	Left	Tilt	/	32.61	33	0.130	**0.14**	0.186	**0.20**	-0.16
848.8	251	Right	Touch	/	32.78	33	0.182	**0.19**	0.266	**0.28**	-0.10
836.6	190	Right	Touch	/	32.74	33	0.170	**0.18**	0.247	**0.26**	0.07
824.2	128	Right	Touch	Fig.1	32.61	33	0.215	**0.24**	0.276	**0.30**	0.12
848.8	251	Right	Tilt	/	32.78	33	0.125	**0.13**	0.180	**0.19**	-0.02
836.6	190	Right	Tilt	/	32.74	33	0.125	**0.13**	0.178	**0.19**	0.04
824.2	128	Right	Tilt	/	32.61	33	0.141	**0.15**	0.202	**0.22**	0.10

Table 14.5: SAR Values (GSM 850 MHz Band - Body) with battery TLi022A1

Ambient Temperature: 22.6 ℃ Liquid Temperature: 22.1 ℃											
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	/	31.72	32	0.444	**0.47**	0.569	**0.61**	0.09
848.8	251	GPRS (2)	Rear	Fig.2	31.68	32	0.653	**0.70**	0.960	**1.03**	-0.19
836.6	190	GPRS (2)	Rear	/	31.72	32	0.602	**0.64**	0.779	**0.83**	-0.06
824.2	128	GPRS (2)	Rear	/	31.63	32	0.689	**0.75**	0.898	**0.98**	-0.13
836.6	190	GPRS (2)	Left	/	31.72	32	0.404	**0.43**	0.575	**0.61**	0.19
836.6	190	GPRS (2)	Right	/	31.72	32	0.532	**0.57**	0.749	**0.80**	-0.04
836.6	190	GPRS (2)	Bottom	/	31.72	32	0.074	**0.08**	0.126	**0.13**	0.11
848.8	251	EGPRS (2)	Rear	/	31.63	32	0.614	**0.67**	0.795	**0.87**	0.07
848.8	251	Speech	Rear Headset	/	32.78	33	0.347	**0.37**	0.451	**0.47**	0.04

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

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Table 14.6: SAR Values (GSM 1900 MHz Band - Head) with battery TLi022A1

Ambient Temperature: 22.7 °C Liquid Temperature: 22.2 °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	/	29.52	30.2	0.098	**0.11**	0.169	**0.20**	-0.14
1880	661	Left	Touch	/	29.55	30.2	0.103	**0.12**	0.176	**0.20**	0.11
1850.2	512	Left	Touch	Fig.3	29.35	30.2	0.121	**0.15**	0.192	**0.23**	0.13
1909.8	810	Left	Tilt	/	29.52	30.2	0.041	**0.05**	0.073	**0.09**	0.11
1880	661	Left	Tilt	/	29.55	30.2	0.046	**0.05**	0.082	**0.10**	0.06
1850.2	512	Left	Tilt	/	29.35	30.2	0.051	**0.06**	0.087	**0.11**	0.14
1909.8	810	Right	Touch	/	29.52	30.2	0.066	**0.08**	0.113	**0.13**	-0.16
1880	661	Right	Touch	/	29.55	30.2	0.078	**0.09**	0.132	**0.15**	0.11
1850.2	512	Right	Touch	/	29.35	30.2	0.097	**0.12**	0.155	**0.19**	0.03
1909.8	810	Right	Tilt	/	29.52	30.2	0.039	**0.05**	0.069	**0.08**	0.03
1880	661	Right	Tilt	/	29.55	30.2	0.041	**0.05**	0.072	**0.08**	-0.17
1850.2	512	Right	Tilt	/	29.35	30.2	0.046	**0.06**	0.081	**0.10**	-0.19

Table 14.7: SAR Values (GSM 1900 MHz Band - Body) with battery TLi022A1

Ambient Temperature: 22.7 °C Liquid Temperature: 22.2 °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 (2)	Front	/	29.55	30.2	0.334	**0.39**	0.524	**0.61**	0.02
1880	661	GPRS (2)	Rear	/	29.55	30.2	0.391	**0.45**	0.606	**0.70**	-0.06
1880	661	GPRS (2)	Left	/	29.55	30.2	0.126	**0.15**	0.216	**0.25**	0.08
1880	661	GPRS (2)	Right	/	29.55	30.2	0.087	**0.10**	0.147	**0.17**	-0.05
1909.8	810	GPRS (2)	Bottom	Fig.4	29.78	30.2	0.394	**0.43**	0.740	**0.82**	-0.03
1880	661	GPRS (2)	Bottom	/	29.55	30.2	0.352	**0.41**	0.655	**0.76**	-0.03
1850.2	512	GPRS (2)	Bottom	/	29.45	30.2	0.349	**0.41**	0.646	**0.77**	-0.03
1909.8	810	EGPRS (2)	Bottom	/	29.74	30.2	0.382	**0.42**	0.705	**0.78**	-0.05
1909.8	810	Speech	Bottom Headset	/	29.52	30.2	0.215	**0.25**	0.403	**0.47**	0.04

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

Table 14.8: SAR Values (WCDMA 850 MHz Band - Head) with battery TLi022A1

Ambient Temperature: 22.6 °C Liquid Temperature: 22.1 °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	/	23.80	24.5	0.237	**0.28**	0.341	**0.40**	-0.13
836.4	4182	Left	Touch	/	23.85	24.5	0.221	**0.26**	0.317	**0.37**	0.19
826.4	4132	Left	Touch	/	23.89	24.5	0.334	**0.38**	0.429	**0.49**	0.09
846.6	4233	Left	Tilt	/	23.80	24.5	0.198	**0.23**	0.285	**0.33**	0.06
836.4	4182	Left	Tilt	/	23.85	24.5	0.183	**0.21**	0.262	**0.30**	0.02
826.4	4132	Left	Tilt	/	23.89	24.5	0.219	**0.25**	0.313	**0.36**	0.09
846.6	4233	Right	Touch	/	23.80	24.5	0.267	**0.31**	0.387	**0.45**	-0.04
836.4	4182	Right	Touch	/	23.85	24.5	0.254	**0.30**	0.368	**0.43**	0.19
826.4	4132	Right	Touch	Fig.5	23.89	24.5	0.381	**0.44**	0.491	**0.57**	-0.04
846.6	4233	Right	Tilt	/	23.80	24.5	0.202	**0.24**	0.289	**0.34**	-0.06
836.4	4182	Right	Tilt	/	23.85	24.5	0.187	**0.22**	0.267	**0.31**	0.08
826.4	4132	Right	Tilt	/	23.89	24.5	0.238	**0.27**	0.341	**0.39**	0.03

Table 14.9: SAR Values (WCDMA 850 MHz Band - Body) with battery TLi022A1

Ambient Temperature: 22.6 °C Liquid Temperature: 22.1 °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	/	23.85	24.5	0.355	**0.41**	0.455	**0.53**	-0.13
846.6	4233	Rear	/	23.80	24.5	0.539	**0.63**	0.700	**0.82**	0.17
836.4	4182	Rear	/	23.85	24.5	0.471	**0.55**	0.610	**0.71**	0.07
826.4	4132	Rear	Fig.6	23.89	24.5	0.598	**0.69**	0.780	**0.90**	0.15
836.4	4182	Left	/	23.85	24.5	0.295	**0.34**	0.417	**0.48**	0.16
836.4	4182	Right	/	23.85	24.5	0.401	**0.47**	0.568	**0.66**	-0.05
836.4	4182	Bottom	/	23.85	24.5	0.064	**0.07**	0.108	**0.13**	0.02
826.4	4132	Rear Headset	/	23.89	24.5	0.475	**0.55**	0.623	**0.72**	0.16

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

Table 14.10: SAR Values (WCDMA 1900 MHz Band - Head) with battery TLi022A1

Ambient Temperature: 22.7°C Liquid Temperature: 22.2°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	/	23.66	24.2	0.247	**0.28**	0.432	**0.49**	-0.08
1880	9400	Left	Touch	/	23.53	24.2	0.235	**0.27**	0.409	**0.48**	0.15
1852.4	9262	Left	Touch	Fig.7	23.45	24.2	0.293	**0.35**	0.458	**0.54**	0.14
1907.6	9538	Left	Tilt	/	23.66	24.2	0.071	**0.08**	0.131	**0.15**	0.14
1880	9400	Left	Tilt	/	23.53	24.2	0.073	**0.09**	0.130	**0.15**	0.16
1852.4	9262	Left	Tilt	/	23.45	24.2	0.088	**0.10**	0.156	**0.19**	-0.15
1907.6	9538	Right	Touch	/	23.66	24.2	0.151	**0.17**	0.254	**0.29**	0.11
1880	9400	Right	Touch	/	23.53	24.2	0.145	**0.17**	0.244	**0.28**	0.19
1852.4	9262	Right	Touch	/	23.45	24.2	0.197	**0.23**	0.312	**0.37**	0.15
1907.6	9538	Right	Tilt	/	23.66	24.2	0.084	**0.10**	0.149	**0.17**	0.13
1880	9400	Right	Tilt	/	23.53	24.2	0.077	**0.09**	0.136	**0.16**	0.13
1852.4	9262	Right	Tilt	/	23.45	24.2	0.098	**0.12**	0.172	**0.20**	-0.03

Table 14.11: SAR Values (WCDMA 1900 MHz Band - Body) with battery TLi022A1

Ambient Temperature: 22.7°C Liquid Temperature: 22.2°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	/	23.53	24.2	0.346	**0.40**	0.553	**0.65**	0.00
1880	9400	Rear	/	23.53	24.2	0.361	**0.42**	0.599	**0.70**	-0.02
1880	9400	Left	/	23.53	24.2	0.144	**0.17**	0.248	**0.29**	0.02
1880	9400	Right	/	23.53	24.2	0.086	**0.10**	0.138	**0.16**	0.09
1907.6	9538	Bottom	Fig.8	23.66	24.2	0.467	**0.53**	0.887	**1.00**	-0.06
1880	9400	Bottom	/	23.53	24.2	0.383	**0.45**	0.725	**0.85**	-0.05
1852.4	9262	Bottom	/	23.45	24.2	0.384	**0.46**	0.719	**0.85**	0.03
1907.6	9538	Bottom Headset	/	23.66	24.2	0.446	**0.51**	0.826	**0.94**	-0.03
1880	9400	Bottom Headset	/	23.53	24.2	0.377	**0.44**	0.695	**0.81**	-0.03
1852.4	9262	Bottom Headset	/	23.45	24.2	0.353	**0.42**	0.646	**0.77**	-0.01

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

Table 14.12: SAR Values (LTE Band2 - Head) with battery TLi022A1

Ambient Temperature: 22.7 °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.											
1860	18700	1RB_High	Left	Touch	Fig.9	23.94	24.5	0.336	**0.38**	0.540	**0.61**	0.14
1860	18700	1RB_High	Left	Tilt	/	23.94	24.5	0.129	**0.15**	0.218	**0.25**	-0.02
1860	18700	1RB_High	Right	Touch	/	23.94	24.5	0.238	**0.27**	0.374	**0.43**	-0.11
1860	18700	1RB_High	Right	Tilt	/	23.94	24.5	0.109	**0.12**	0.190	**0.22**	0.04
1860	18700	50RB_High	Left	Touch	/	22.89	23.5	0.274	**0.32**	0.439	**0.51**	0.06
1860	18700	50RB_High	Left	Tilt	/	22.89	23.5	0.107	**0.12**	0.181	**0.21**	0.06
1860	18700	50RB_High	Right	Touch	/	22.89	23.5	0.192	**0.22**	0.302	**0.35**	-0.06
1860	18700	50RB_High	Right	Tilt	/	22.89	23.5	0.088	**0.10**	0.152	**0.17**	0.09

Note1: The LTE mode is QPSK_20MHz.

Table 14.13: SAR Values (LTE Band2 - Body) with battery TLi022A1

Ambient Temperature: 22.7 °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_High	Front	/	23.74	24.5	0.525	**0.63**	0.812	**0.97**	0.07	
1880	18900	1RB_High	Front	/	23.86	24.5	0.476	**0.55**	0.736	**0.85**	-0.04	
1860	18700	1RB_High	Front	/	23.94	24.5	0.485	**0.55**	0.750	**0.85**	-0.06	
1900	19100	1RB_High	Rear	/	23.74	24.5	0.496	**0.59**	0.857	**1.02**	-0.09	
1880	18900	1RB_High	Rear	/	23.86	24.5	0.450	**0.52**	0.777	**0.90**	0.08	
1860	18700	1RB_High	Rear	/	23.94	24.5	0.458	**0.52**	0.791	**0.90**	-0.05	
1860	18700	1RB_High	Left	/	23.94	24.5	0.257	**0.29**	0.442	**0.50**	-0.01	
1860	18700	1RB_High	Right	/	23.94	24.5	0.173	**0.20**	0.288	**0.33**	0.09	
1900	19100	1RB_High	Bottom	Fig.10	23.74	24.5	0.574	**0.68**	1.05	**1.25**	-0.08	
1880	18900	1RB_High	Bottom	/	23.86	24.5	0.511	**0.59**	0.951	**1.10**	-0.02	
1860	18700	1RB_High	Bottom	/	23.94	24.5	0.533	**0.61**	0.967	**1.10**	-0.03	
1860	18700	50RB_High	Front	/	22.89	23.5	0.375	**0.43**	0.582	**0.67**	-0.13	
1860	18700	50RB_High	Rear	/	22.89	23.5	0.346	**0.40**	0.597	**0.69**	-0.14	
1860	18700	50RB_High	Left	/	22.89	23.5	0.201	**0.23**	0.346	**0.40**	-0.05	
1860	18700	50RB_High	Right	/	22.89	23.5	0.129	**0.15**	0.214	**0.25**	-0.07	
1900	19100	50RB_High	Bottom	/	22.76	23.5	0.511	**0.61**	0.951	**1.13**	-0.01	
1880	18900	50RB_High	Bottom	/	22.82	23.5	0.380	**0.44**	0.704	**0.82**	0.00	
1860	18700	50RB_High	Bottom	/	22.89	23.5	0.441	**0.51**	0.815	**0.94**	0.08	
1860	18700	100RB	Bottom	/	22.82	23.5	0.397	**0.46**	0.723	**0.85**	-0.01	

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

Note2: The LTE mode is QPSK_20MHz.

Table 14.14: SAR Values (LTE Band4 - Head) with battery TLi022A1

Ambient Temperature: 22.7°C Liquid Temperature: 22.2°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_High	Left	Touch	/	22.60	23.2	0.224	**0.26**	0.352	**0.40**	0.19
1745	20300	1RB_High	Left	Tilt	/	22.60	23.2	0.122	**0.14**	0.203	**0.23**	0.14
1745	20300	1RB_High	Right	Touch	Fig.11	22.60	23.2	0.230	**0.26**	0.363	**0.42**	-0.11
1745	20300	1RB_High	Right	Tilt	/	22.60	23.2	0.138	**0.16**	0.235	**0.27**	0.01
1732.5	20175	50RB_High	Left	Touch	/	21.69	22.2	0.174	**0.20**	0.272	**0.31**	0.17
1732.5	20175	50RB_High	Left	Tilt	/	21.69	22.2	0.098	**0.11**	0.162	**0.18**	0.10
1732.5	20175	50RB_High	Right	Touch	/	21.69	22.2	0.169	**0.19**	0.268	**0.30**	0.05
1732.5	20175	50RB_High	Right	Tilt	/	21.69	22.2	0.118	**0.13**	0.198	**0.22**	-0.10

Note1: The LTE mode is QPSK_20MHz.

Table 14.15: SAR Values (LTE Band4 - Body) with battery TLi022A1

Ambient Temperature: 22.7°C Liquid Temperature: 22.2°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.										
1745	20300	1RB_High	Front	/	22.60	23.2	0.479	**0.55**	0.740	**0.85**	0.06
1732.5	20175	1RB_High	Front	/	22.40	23.2	0.508	**0.61**	0.785	**0.94**	-0.07
1720	20050	1RB_High	Front	/	22.46	23.2	0.482	**0.57**	0.745	**0.88**	0.06
1745	20300	1RB_High	Rear	/	22.60	23.2	0.540	**0.62**	0.842	**0.97**	-0.04
1732.5	20175	1RB_High	Rear	Fig.12	22.40	23.2	0.570	**0.69**	0.894	**1.07**	0.04
1720	20050	1RB_High	Rear	/	22.46	23.2	0.542	**0.64**	0.848	**1.01**	0.02
1745	20300	1RB_High	Left	/	22.60	23.2	0.146	**0.17**	0.248	**0.28**	-0.06
1745	20300	1RB_High	Right	/	22.60	23.2	0.079	**0.09**	0.127	**0.15**	-0.07
1745	20300	1RB_High	Bottom	/	22.60	23.2	0.338	**0.39**	0.594	**0.68**	-0.10
1732.5	20175	50RB_High	Front	/	21.69	22.2	0.361	**0.41**	0.559	**0.63**	0.17
1732.5	20175	50RB_High	Rear	/	21.69	22.2	0.415	**0.47**	0.649	**0.73**	0.03
1732.5	20175	50RB_High	Left	/	21.69	22.2	0.110	**0.12**	0.186	**0.21**	-0.14
1732.5	20175	50RB_High	Right	/	21.69	22.2	0.081	**0.09**	0.131	**0.15**	0.05
1732.5	20175	50RB_High	Bottom	/	21.69	22.2	0.253	**0.28**	0.443	**0.50**	0.08
1745	20300	100RB	Rear	/	21.55	22.2	0.447	**0.52**	0.704	**0.82**	-0.01

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

Note2: The LTE mode is QPSK_20MHz.

Table 14.16: SAR Values (LTE Band5 - Head) with battery TLi022A1

Ambient Temperature: 22.6 °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.											
844	20600	1RB_Mid	Left	Touch	/	23.35	24.2	0.281	**0.34**	0.359	**0.44**	0.13
844	20600	1RB_Mid	Left	Tilt	/	23.35	24.2	0.222	**0.27**	0.286	**0.35**	-0.11
844	20600	1RB_Mid	Right	Touch	Fig.13	23.35	24.2	0.312	**0.38**	0.405	**0.49**	0.17
844	20600	1RB_Mid	Right	Tilt	/	23.35	24.2	0.220	**0.27**	0.288	**0.35**	0.01
844	20600	25RB_Low	Left	Touch	/	22.35	23.2	0.213	**0.26**	0.274	**0.33**	0.17
844	20600	25RB_Low	Left	Tilt	/	22.35	23.2	0.167	**0.20**	0.213	**0.26**	0.12
844	20600	25RB_Low	Right	Touch	/	22.35	23.2	0.224	**0.27**	0.291	**0.35**	0.10
844	20600	25RB_Low	Right	Tilt	/	22.35	23.2	0.170	**0.21**	0.219	**0.27**	0.13

Note1: The LTE mode is QPSK_10MHz.

Table 14.17: SAR Values (LTE Band5 - Body) with battery TLi022A1

Ambient Temperature: 22.6 °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.											
844	20600	1RB_Mid	Front	/	23.35	24.2	0.351	**0.43**	0.448	**0.54**	0.19	
844	20600	1RB_Mid	Rear	Fig.14	23.35	24.2	0.471	**0.57**	0.612	**0.74**	0.07	
844	20600	1RB_Mid	Left	/	23.35	24.2	0.274	**0.33**	0.394	**0.48**	0.10	
844	20600	1RB_Mid	Right	/	23.35	24.2	0.387	**0.47**	0.550	**0.67**	0.13	
844	20600	1RB_Mid	Bottom	/	23.35	24.2	0.080	**0.10**	0.139	**0.17**	0.04	
844	20600	25RB_Low	Front	/	22.35	23.2	0.279	**0.34**	0.359	**0.44**	0.01	
844	20600	25RB_Low	Rear	/	22.35	23.2	0.379	**0.46**	0.494	**0.60**	0.10	
844	20600	25RB_Low	Left	/	22.35	23.2	0.216	**0.26**	0.310	**0.38**	0.07	
844	20600	25RB_Low	Right	/	22.35	23.2	0.292	**0.36**	0.416	**0.51**	-0.04	
844	20600	25RB_Low	Bottom	/	22.35	23.2	0.058	**0.07**	0.101	**0.12**	0.12	

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

Note2: The LTE mode is QPSK_10MHz.

Table 14.18: SAR Values (LTE Band17 - Head) with battery TLi022A1

Ambient Temperature: 22.6 °C						Liquid Temperature: 22.1 °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.											
710	23790	1RB_High	Left	Touch	Fig.15	23.26	24.2	0.208	**0.26**	0.268	**0.33**	-0.08
710	23790	1RB_High	Left	Tilt	/	23.26	24.2	0.136	**0.17**	0.165	**0.20**	0.06
710	23790	1RB_High	Right	Touch	/	23.26	24.2	0.216	**0.27**	0.264	**0.33**	0.02
710	23790	1RB_High	Right	Tilt	/	23.26	24.2	0.123	**0.15**	0.148	**0.18**	0.04
711	23800	25RB_Mid	Left	Touch	/	22.31	23.2	0.159	**0.20**	0.202	**0.25**	0.18
711	23800	25RB_Mid	Left	Tilt	/	22.31	23.2	0.106	**0.13**	0.128	**0.16**	0.08
711	23800	25RB_Mid	Right	Touch	/	22.31	23.2	0.157	**0.19**	0.192	**0.24**	0.19
711	23800	25RB_Mid	Right	Tilt	/	22.31	23.2	0.095	**0.12**	0.113	**0.14**	0.17

Note1: The LTE mode is QPSK_10MHz.

Table 14.19: SAR Values (LTE Band17 - Body) with battery TLi022A1

Ambient Temperature: 22.6 °C						Liquid Temperature: 22.1 °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.											
710	23790	1RB_High	Front	/	23.26	24.2	0.264	**0.33**	0.336	**0.42**	-0.14	
710	23790	1RB_High	Rear	Fig.16	23.26	24.2	0.403	**0.50**	0.527	**0.65**	0.03	
710	23790	1RB_High	Left	/	23.26	24.2	0.190	**0.24**	0.264	**0.33**	0.07	
710	23790	1RB_High	Right	/	23.26	24.2	0.159	**0.20**	0.218	**0.27**	0.16	
710	23790	1RB_High	Bottom	/	23.26	24.2	0.030	**0.04**	0.047	**0.06**	0.04	
711	23800	25RB_Mid	Front	/	22.31	23.2	0.189	**0.23**	0.240	**0.29**	0.02	
711	23800	25RB_Mid	Rear	/	22.31	23.2	0.277	**0.34**	0.358	**0.44**	0.10	
711	23800	25RB_Mid	Left	/	22.31	23.2	0.141	**0.17**	0.197	**0.24**	0.09	
711	23800	25RB_Mid	Right	/	22.31	23.2	0.124	**0.15**	0.171	**0.21**	0.01	
711	23800	25RB_Mid	Bottom	/	22.31	23.2	0.023	**0.03**	0.039	**0.05**	-0.02	

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

Note2: The LTE mode is QPSK_10MHz.

Table 14.20: SAR Values (Wi-Fi 802.11b - Head) with battery TLi022A1

Ambient Temperature: 22.6 ℃ Liquid Temperature: 22.1 ℃											
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.										
2437	6	Left	Touch	/	16.85	18.5	0.078	**0.11**	0.153	**0.22**	0.13
2437	6	Left	Tilt	/	16.85	18.5	0.022	**0.03**	0.041	**0.06**	-0.14
2437	6	Right	Touch	Fig.17	16.85	18.5	0.095	**0.14**	0.195	**0.29**	0.14
2437	6	Right	Tilt	/	16.85	18.5	0.020	**0.03**	0.037	**0.05**	0.11

Table 14.21: SAR Values (Wi-Fi 802.11b - Body) with battery TLi022A1

Ambient Temperature: 22.6 ℃ Liquid Temperature: 22.1 ℃										
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.									
2437	6	Front	/	16.85	18.5	0.018	**0.03**	0.033	**0.05**	0.10
2437	6	Rear	Fig.18	16.85	18.5	0.103	**0.15**	0.200	**0.29**	0.16
2437	6	Right	/	16.85	18.5	0.095	**0.14**	0.190	**0.28**	0.15

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

Table 14.22: SAR Values (Wi-Fi 802.11a - Head) with battery TLi022A1

Ambient Temperature: 22.5 ℃ Liquid Temperature: 22.0 ℃											
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.										
5745	149	Left	Touch	/	14.62	15	0.015	**0.02**	0.049	**0.05**	0.19
5745	149	Left	Tilt	/	14.62	15	0.0022	**0.00**	0.016	**0.02**	0.10
5745	149	Right	Touch	Fig.19	14.62	15	0.034	**0.04**	0.105	**0.11**	-0.17
5745	149	Right	Tilt	/	14.62	15	0.030	**0.03**	0.090	**0.10**	0.17

Table 14.23: SAR Values (Wi-Fi 802.11a - Body) with battery TLi022A1

Ambient Temperature: 22.5 ℃ Liquid Temperature: 22.0 ℃										
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.									
5745	149	Front	/	14.62	15	0.000506	**0.00**	0.00501	**0.01**	0.10
5745	149	Rear	Fig.20	14.62	15	0.085	**0.09**	0.236	**0.26**	0.16
5745	149	Right	/	14.62	15	0.039	**0.04**	0.100	**0.11**	0.06

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

Table 14.24: SAR Values (Wi-Fi 802.11n - Head) with battery TLi022A1

Ambient Temperature: 22.5 ℃ Liquid Temperature: 22.0 ℃											
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.										
5745	149	Left	Touch	/	13.76	14	0.00853	**0.01**	0.027	**0.03**	0.14
5745	149	Left	Tilt	/	13.76	14	0.00121	**0.00**	0.00998	**0.01**	-0.17
5745	149	Right	Touch	Fig.19	13.76	14	0.020	**0.02**	0.063	**0.07**	0.14
5745	149	Right	Tilt	/	13.76	14	0.015	**0.02**	0.047	**0.05**	0.08

Table 14.25: SAR Values (Wi-Fi 802.11n - Body) with battery TLi022A1

Ambient Temperature: 22.5 ℃ Liquid Temperature: 22.0 ℃										
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.									
5745	149	Front	/	13.76	14	0.000132	**0.00**	0.000341	**0.00**	0.15
5745	149	Rear	Fig.20	13.76	14	0.047	**0.05**	0.124	**0.13**	-0.16
5745	149	Right	/	13.76	14	0.015	**0.02**	0.038	**0.04**	0.11

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

Table 14.26: SAR Values (LTE Band2 - Head) with battery TLi022A2

Ambient Temperature: 22.7 ℃ Liquid Temperature: 22.2 ℃												
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.											
1860	18700	1RB_High	Left	Touch	/	23.94	24.5	0.328	**0.37**	0.527	**0.60**	0.09

Note1: The LTE mode is QPSK_20MHz.

Table 14.27: SAR Values (LTE Band2 - Body) with battery TLi022A1

Ambient Temperature: 22.7 ℃ Liquid Temperature: 22.2 ℃											
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_High	Bottom	/	23.74	24.5	0.557	**0.66**	1.01	**1.20**	0.07

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

Note2: The LTE mode is QPSK_20MHz.

14.3 SAR results for Standard procedure

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

Table 14.28: SAR Values (GSM 850 MHz Band - Head) with battery TLi022A1

Ambient Temperature: 22.6 ℃ Liquid Temperature: 22.1 ℃											
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.										
824.2	128	Right	Touch	Fig.1	32.61	33	0.215	**0.24**	0.276	**0.30**	0.12

Table 14.29: SAR Values (GSM 850 MHz Band - Body) with battery TLi022A1

Ambient Temperature: 22.6 ℃ Liquid Temperature: 22.1 ℃											
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	31.68	32	0.653	**0.70**	0.960	**1.03**	-0.19

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

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Table 14.30: SAR Values (GSM 1900 MHz Band - Head) with battery TLi022A1

Ambient Temperature: 22.7 ℃ Liquid Temperature: 22.2 ℃											
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.										
1850.2	512	Left	Touch	Fig.3	29.35	30.2	0.121	**0.15**	0.192	**0.23**	0.13

Table 14.31: SAR Values (GSM 1900 MHz Band - Body) with battery TLi022A1

Ambient Temperature: 22.7 ℃ Liquid Temperature: 22.2 ℃											
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 (2)	Bottom	Fig.4	29.78	30.2	0.394	**0.43**	0.740	**0.82**	-0.03

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

Table 14.32: SAR Values (WCDMA 850 MHz Band - Head) with battery TLi022A1

Ambient Temperature: 22.6 ℃ Liquid Temperature: 22.1 ℃											
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	Right	Touch	Fig.5	23.89	24.5	0.381	**0.44**	0.491	**0.57**	-0.04

Table 14.33: SAR Values (WCDMA 850 MHz Band - Body) with battery TLi022A1

Ambient Temperature: 22.6 ℃ Liquid Temperature: 22.1 ℃										
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.									
826.4	4132	Rear	Fig.6	23.89	24.5	0.598	**0.69**	0.780	**0.90**	0.15

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

Table 14.34: SAR Values (WCDMA 1900 MHz Band - Head) with battery TLi022A1

Ambient Temperature: 22.7 ℃ Liquid Temperature: 22.2 ℃											
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.7	23.45	24.2	0.293	**0.35**	0.458	**0.54**	0.14

Table 14.35: SAR Values (WCDMA 1900 MHz Band - Body) with battery TLi022A1

Ambient Temperature: 22.7 ℃ Liquid Temperature: 22.2 ℃										
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.8	23.66	24.2	0.467	**0.53**	0.887	**1.00**	-0.06

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

Table 14.36: SAR Values (LTE Band2 - Head) with battery TLi022A1

Ambient Temperature: 22.7 ℃ Liquid Temperature: 22.2 ℃												
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.											
1860	18700	1RB_High	Left	Touch	Fig.9	23.94	24.5	0.336	**0.38**	0.540	**0.61**	0.14

Note1: The LTE mode is QPSK_20MHz.

Table 14.37: SAR Values (LTE Band2 - Body) with battery TLi022A1

Ambient Temperature: 22.7 ℃ Liquid Temperature: 22.2 ℃											
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_High	Bottom	Fig.10	23.74	24.5	0.574	**0.68**	1.05	**1.25**	-0.08

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

Note2: The LTE mode is QPSK_20MHz.

Table 14.38: SAR Values (LTE Band4 - Head) with battery TLi022A1

Ambient Temperature: 22.7 °C						Liquid Temperature: 22.2 °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_High	Right	Touch	Fig.11	22.60	23.2	0.23	**0.26**	0.363	**0.42**	-0.10

Note1: The LTE mode is QPSK_20MHz.

Table 14.39: SAR Values (LTE Band4 - Body) with battery TLi022A1

Ambient Temperature: 22.7 °C						Liquid Temperature: 22.2 °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_High	Rear	Fig.12	22.40	23.2	0.570	**0.69**	0.894	**1.07**	0.04	

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

Note2: The LTE mode is QPSK_20MHz.

Table 14.39: SAR Values (LTE Band5 - Head) with battery TLi022A1

Ambient Temperature: 22.6 °C						Liquid Temperature: 22.1 °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.											
844	20600	1RB_Mid	Right	Touch	Fig.13	23.35	24.2	0.312	**0.38**	0.405	**0.49**	0.17

Note1: The LTE mode is QPSK_10MHz.

Table 14.40: SAR Values (LTE Band5 - Body) with battery TLi022A1

Ambient Temperature: 22.6 °C						Liquid Temperature: 22.1 °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.											
844	20600	1RB_Mid	Rear	Fig.14	23.35	24.2	0.471	**0.57**	0.612	**0.74**	0.07	

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

Note2: The LTE mode is QPSK_10MHz.

Table 14.41: SAR Values (LTE Band17 - Head) with battery TLi022A1

Ambient Temperature: 22.6 °C						Liquid Temperature: 22.1 °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.											
710	23790	1RB_High	Left	Touch	Fig.15	23.26	24.2	0.208	**0.26**	0.268	**0.33**	-0.08

Note1: The LTE mode is QPSK_10MHz.

Table 14.42: SAR Values (LTE Band17 - Body) with battery TLi022A1

Ambient Temperature: 22.6 °C						Liquid Temperature: 22.1 °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.											
710	23790	1RB_High	Rear	Fig.16	23.26	24.2	0.403	**0.50**	0.527	**0.65**	0.03	

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

Note2: The LTE mode is QPSK_10MHz.

Table 14.43: SAR Values (Wi-Fi 802.11b - Head) with battery TLi022A1

Ambient Temperature: 22.6 °C						Liquid Temperature: 22.1 °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.										
2437	6	Right	Touch	Fig.17	16.85	18.5	0.095	**0.14**	0.195	**0.29**	0.14

Table 14.44: SAR Values (Wi-Fi 802.11b - Body) with battery TLi022A1

Ambient Temperature: 22.6 °C						Liquid Temperature: 22.1 °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.									
2437	6	Rear	Fig.18	16.85	18.5	0.103	**0.15**	0.200	**0.29**	0.16

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

Table 14.45: SAR Values (Wi-Fi 802.11a - Head) with battery TLi022A1

Ambient Temperature: 22.5 °C						Liquid Temperature: 22.0 °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.										
5745	149	Right	Touch	Fig.19	14.62	15	0.034	**0.04**	0.105	**0.11**	-0.17

Table 14.46: SAR Values (Wi-Fi 802.11a - Body) with battery TLi022A1

Ambient Temperature: 22.5℃ Liquid Temperature: 22.0℃										
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.									
5745	149	Rear	Fig.20	14.62	15	0.085	**0.09**	0.236	**0.26**	0.16

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

Table 14.47: SAR Values (Wi-Fi 802.11n - Head) with battery TLi022A1

Ambient Temperature: 22.5℃ Liquid Temperature: 22.0℃											
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.										
5745	149	Right	Touch	Fig.19	13.76	14	0.019	**0.02**	0.061	**0.06**	-0.13

Table 14.48: SAR Values (Wi-Fi 802.11n - Body) with battery TLi022A1

Ambient Temperature: 22.5℃ Liquid Temperature: 22.0℃										
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.									
5745	149	Rear	Fig.20	13.76	14	0.047	**0.05**	0.124	**0.13**	-0.16

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

Table 14.49: SAR Values (LTE Band2 - Head) with battery TLi022A2

Ambient Temperature: 22.7℃ Liquid Temperature: 22.2℃												
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.											
1860	18700	1RB_High	Left	Touch	/	23.94	24.5	0.328	**0.37**	0.527	**0.60**	0.09

Note1: The LTE mode is QPSK_20MHz.

Table 14.50: SAR Values (LTE Band2 - Body) with battery TLi022A1

Ambient Temperature: 22.7℃ Liquid Temperature: 22.2℃											
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_High	Bottom	/	23.74	24.5	0.557	**0.66**	1.01	**1.20**	0.07

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

Note2: The LTE mode is QPSK_20MHz.

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 Body GSM 850 (1g)

Frequency		Test Position	Spacing (mm)	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
MHz	Ch.						
848.8	251	Rear	10	0.960	0.958	1.00	/

Table 15.2: SAR Measurement Variability for Body WCDMA 1900 (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	9538	Bottom	10	0.887	0.885	1.00	/

Table 15.3: SAR Measurement Variability for Body LTE Band2 (1g)

Frequency		Mode	Test Position	Spacing (mm)	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
MHz	Ch.							
1900	19100	1RB_High	Bottom	10	1.05	1.04	1.01	/

Table 15.4: SAR Measurement Variability for Body LTE Band4 (1g)

Frequency		Mode	Test Position	Spacing (mm)	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
MHz	Ch.							
1732.5	20175	1RB_High	Rear	10	0.894	0.891	1.00	/

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	5.5	N	1	1	1	5.5	5.5	∞
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	∞
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	$u_c^{'} = \sqrt{\sum_{i=1}^{21} c_i^2 u_i^2}$					9.25	9.12	257
Expanded uncertainty (confidence interval of 95 %)	$u_e = 2u_c$					18.5	18.2	

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	6.5	N	1	1	1	6.5	6.5	∞
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		$u_c' = \sqrt{\sum_{i=1}^{21} c_i^2 u_i^2}$						10.8	10.7	257
Expanded uncertainty (confidence interval of 95 %)		$u_e = 2u_c$						21.6	21.4	

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	5.5	N	1	1	1	5.5	5.5	∞
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		$u_c' = \sqrt{\sum_{i=1}^{22} c_i^2 u_i^2}$						10.1	9.95	257
Expanded uncertainty (confidence interval of 95 %)		$u_e = 2u_c$						20.2	19.9	

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	6.5	N	1	1	1	6.5	6.5	∞
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	A	3.3	N	1	1	1	3.3	3.3	71

	positioning									
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		$u_c^{'} = \sqrt{\sum_{i=1}^{22} c_i^2 u_i^2}$						13.3	13.2	257
Expanded uncertainty (confidence interval of 95 %)		$u_e = 2u_c$						26.6	26.4	

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	February 15, 2013	One year
02	Power meter	NRVD	102083	September 11, 2012	One year
03	Power sensor	NRV-Z5	100542		
04	Signal Generator	E4438C	MY49070393	November 13, 2012	One Year
05	Amplifier	60S1G4	0331848	No Calibration Requested	
06	BTS	E5515C	MY50263375	January 30, 2013	One year
07	E-field Probe	SPEAG EX3DV4	3846	December 20, 2012	One year
08	DAE	SPEAG DAE4	771	November 20, 2012	One year
09	Dipole Validation Kit	SPEAG D750V3	1045	September 29, 2011	Three years
10	Dipole Validation Kit	SPEAG D835V2	443	May 03, 2012	Three years
11	Dipole Validation Kit	SPEAG D1750V2	1003	May 08, 2012	Three years
12	Dipole Validation Kit	SPEAG D1900V2	541	May 09, 2012	Three years
13	Dipole Validation Kit	SPEAG D2450V2	853	May 02, 2012	Three years
14	Dipole Validation Kit	SPEAG D5GHzV2	1040	June 19, 2012	Three years

END OF REPORT BODY

ANNEX A Graph Results

850 Right Cheek Low

Date: 2013-7-13
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used: f = 825 MHz; σ = 0.907 mho/m; εr = 42.478; ρ = 1000 kg/m^3
Ambient Temperature: 22.6°C Liquid Temperature: 22.1°C
Communication System: GSM 850 Frequency: 824.2 MHz Duty Cycle: 1:8.3
Probe: EX3DV4 - SN3846 ConvF(9.18, 9.18, 9.18)

Cheek Low/Area Scan (61x111x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.293 W/kg

Cheek Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.256 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 0.337 W/kg
SAR(1 g) = 0.276 W/kg; SAR(10 g) = 0.215 W/kg
Maximum value of SAR (measured) = 0.289 W/kg

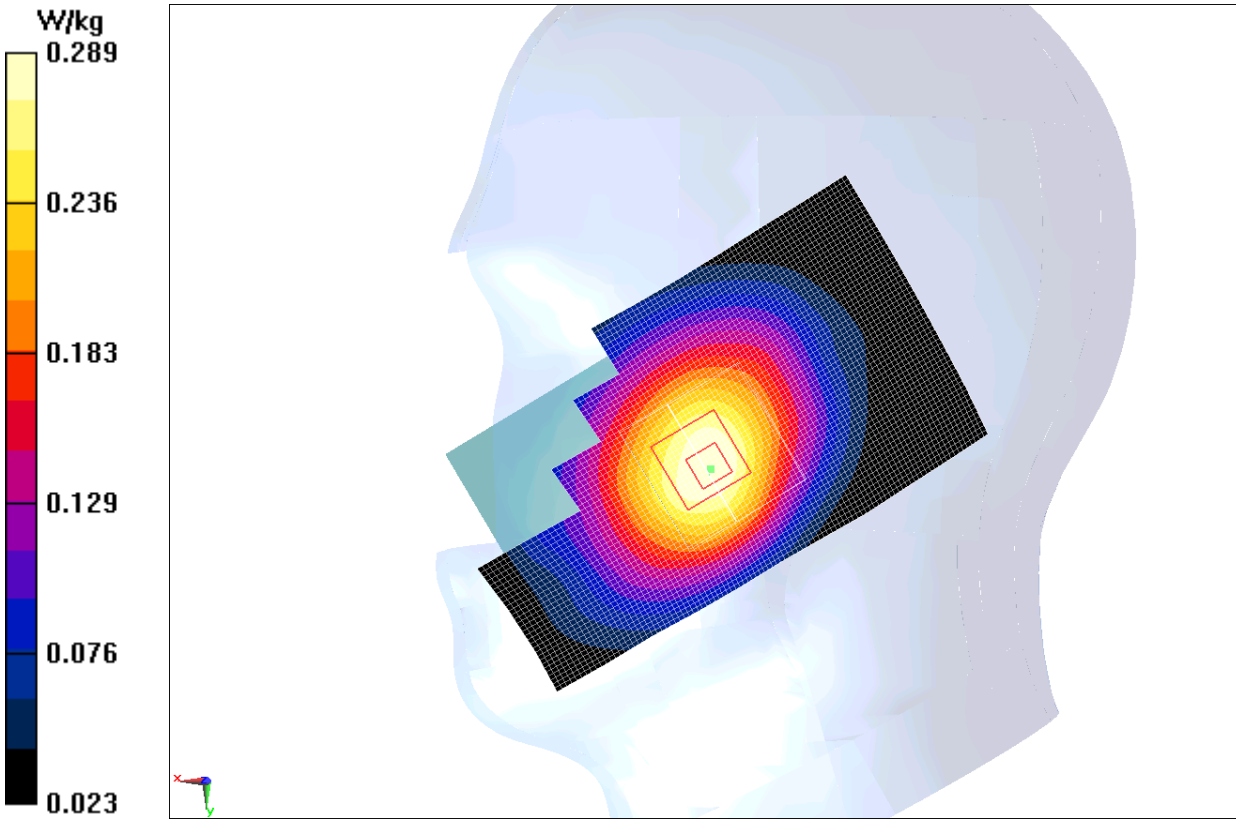

Fig.1 850MHz CH128

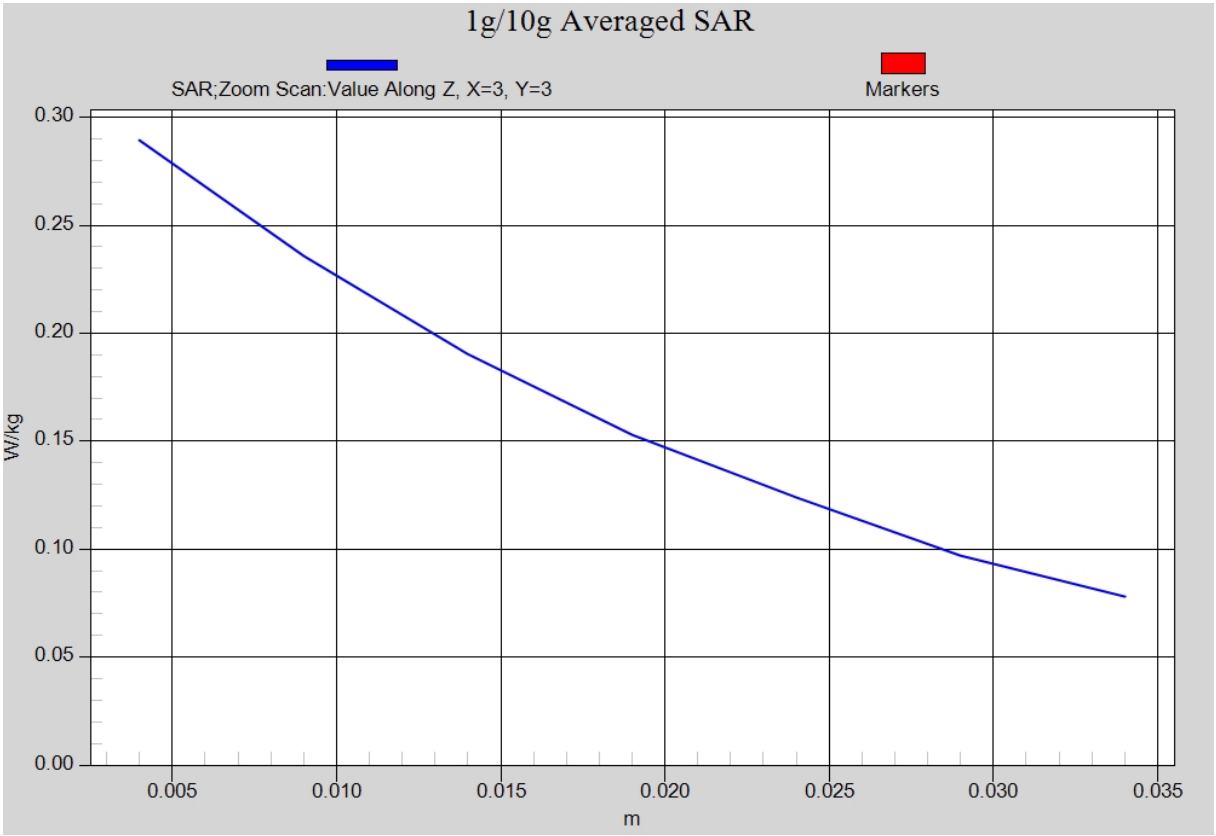

Fig. 1-1 Z-Scan at power reference point (850 MHz CH128)

850 Body Rear High

Date: 2013-7-13
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.977 mho/m; εr = 54.409; ρ = 1000 kg/m^3
Ambient Temperature: 22.6°C Liquid Temperature: 22.1°C
Communication System: GSM 850 GPRS Frequency: 848.8 MHz Duty Cycle: 1:4
Probe: EX3DV4 - SN3846 ConvF(9.04, 9.04, 9.04)

Rear High/Area Scan (61x111x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.865 W/kg

Rear High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 23.671 V/m; Power Drift = -0.19 dB
Peak SAR (extrapolated) = 1.59 W/kg
SAR(1 g) = 0.960 W/kg; SAR(10 g) = 0.653 W/kg
Maximum value of SAR (measured) = 0.882 W/kg

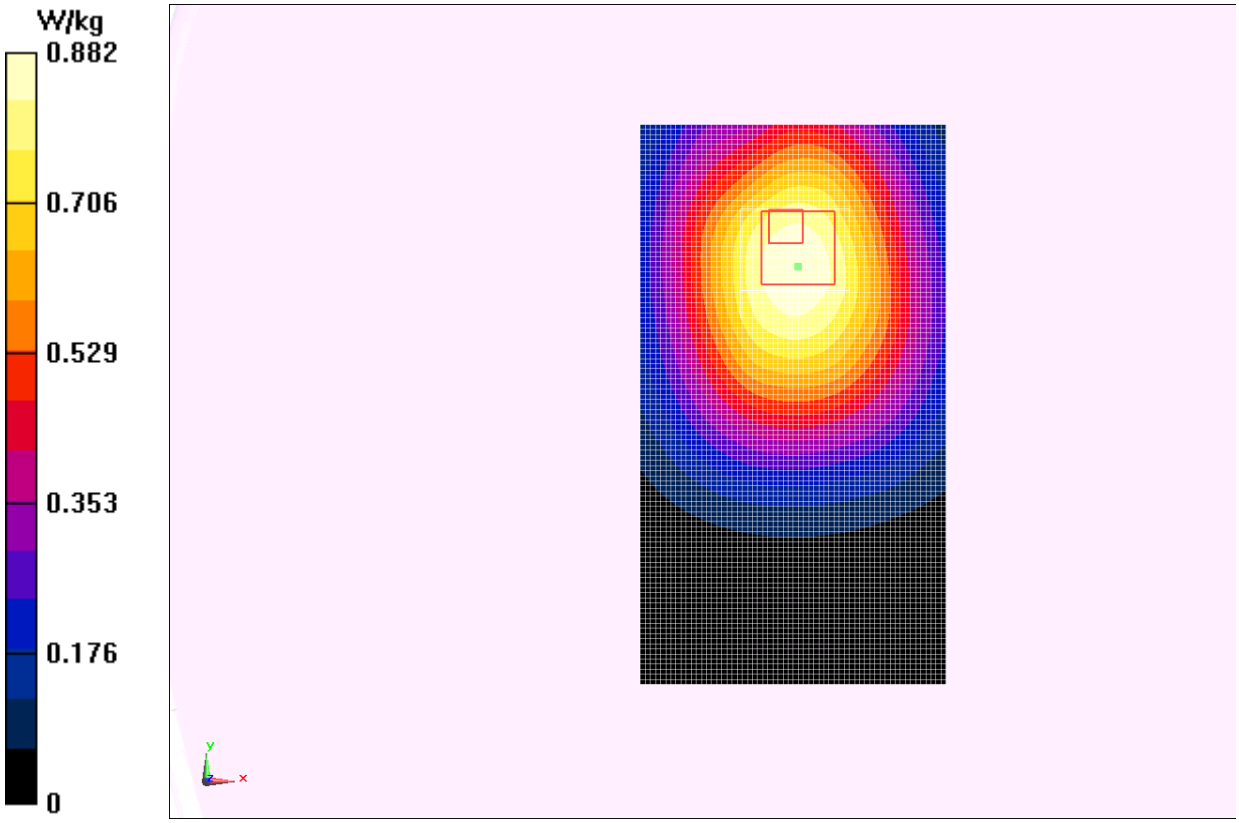

Fig.2 850 MHz CH251

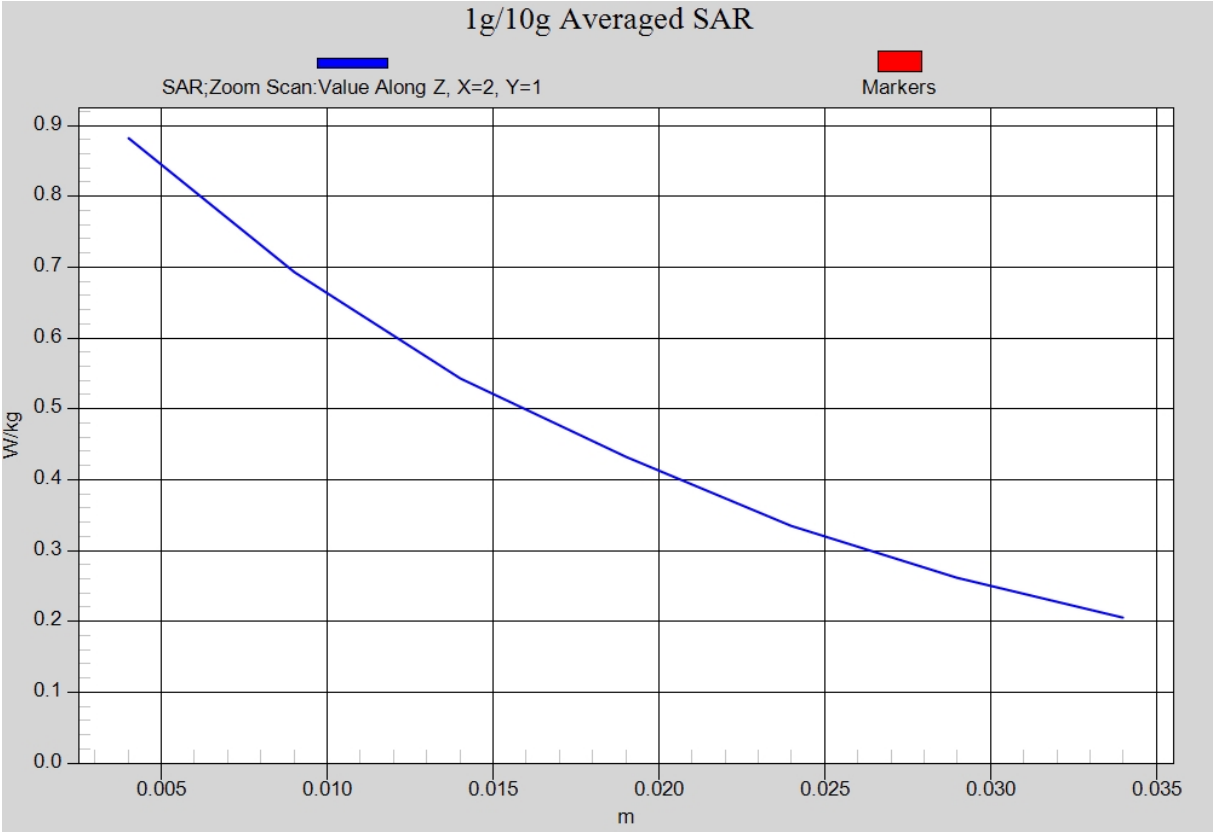

Fig. 2-1 Z-Scan at power reference point (850 MHz CH251)

1900 Left Cheek Low
Date: 2013-7-15
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.366 mho/m; εr = 39.417; ρ = 1000 kg/m^3
Ambient Temperature: 22.7°C Liquid Temperature: 22.2°C
Communication System: GSM 1900MHz Frequency: 1850.2 MHz Duty Cycle: 1:8.3
Probe: EX3DV4 - SN3846 ConvF(8.01, 8.01, 8.01)

Cheek Low/Area Scan (61x111x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.208 W/kg

Cheek Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.338 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 0.296 W/kg
SAR(1 g) = 0.192 W/kg; SAR(10 g) = 0.121 W/kg
Maximum value of SAR (measured) = 0.210 W/kg

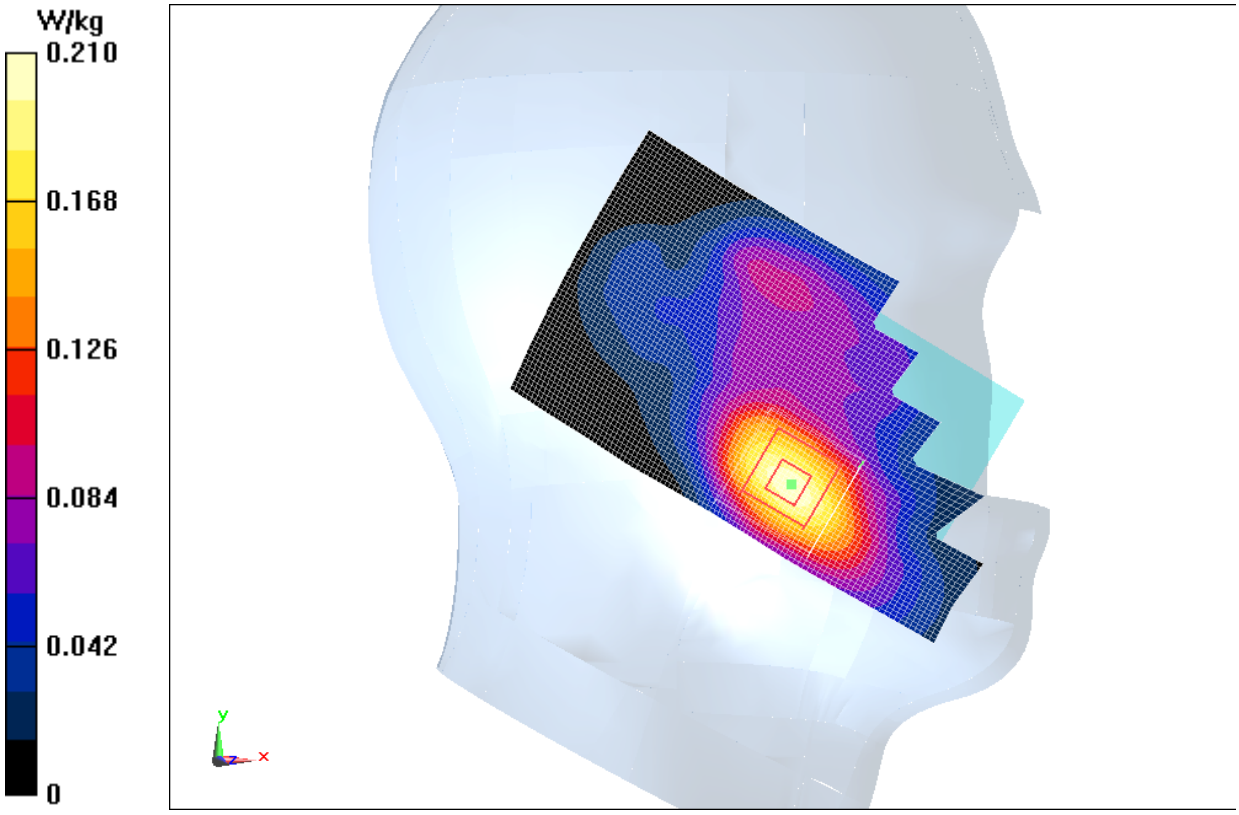

Fig.3 1900 MHz CH512

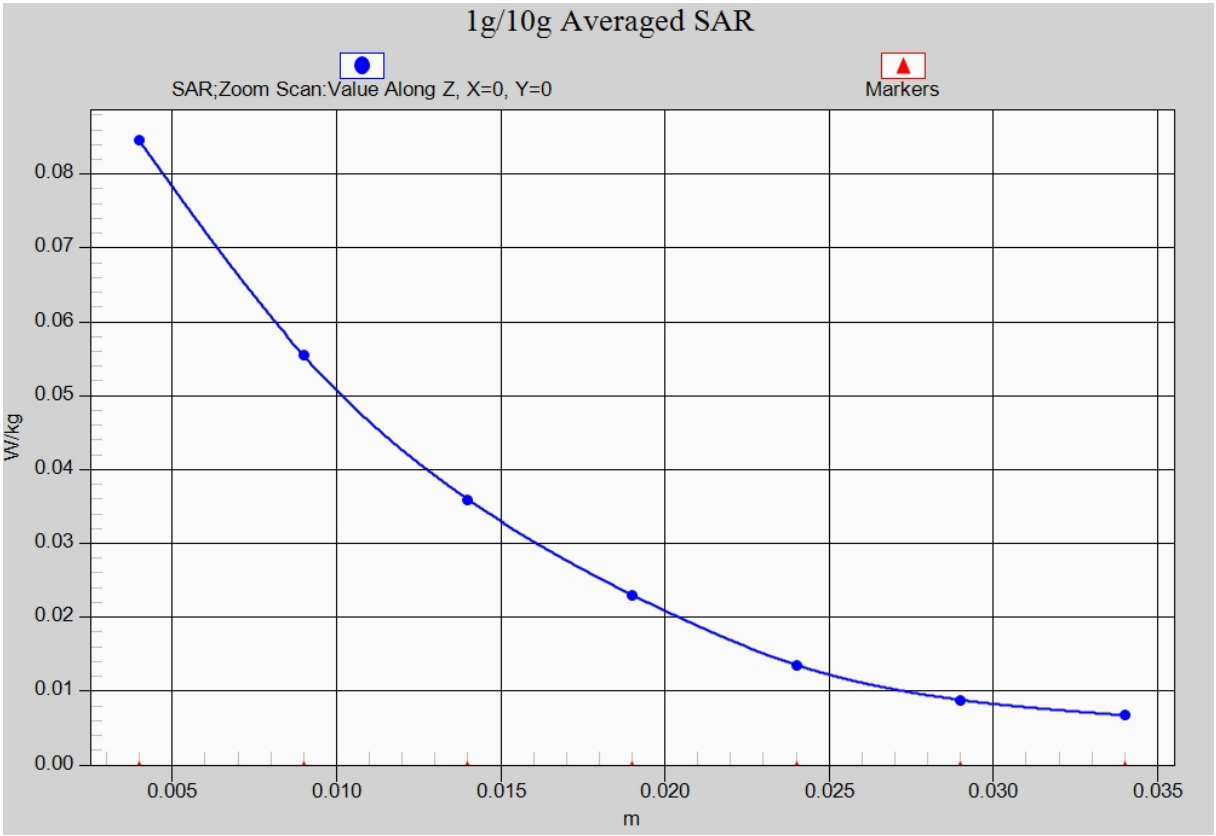

Fig. 3-1 Z-Scan at power reference point (1900 MHz CH512)

1900 Body Bottom Edge High

Date: 2013-7-15
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used: f = 1910 MHz; σ = 1.55 mho/m; εr = 52.216; ρ = 1000 kg/m^3
Ambient Temperature: 22.7°C Liquid Temperature: 22.2°C
Communication System: GSM 1900MHz GPRS Frequency: 1909.8 MHz Duty Cycle: 1:4
Probe: EX3DV4 - SN3846 ConvF(7.37, 7.37, 7.37)

Bottom Edge High/Area Scan (71x111x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.806 W/kg

Bottom Edge High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 22.573 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 1.26 W/kg
SAR(1 g) = 0.740 W/kg; SAR(10 g) = 0.394 W/kg
Maximum value of SAR (measured) = 0.845 W/kg

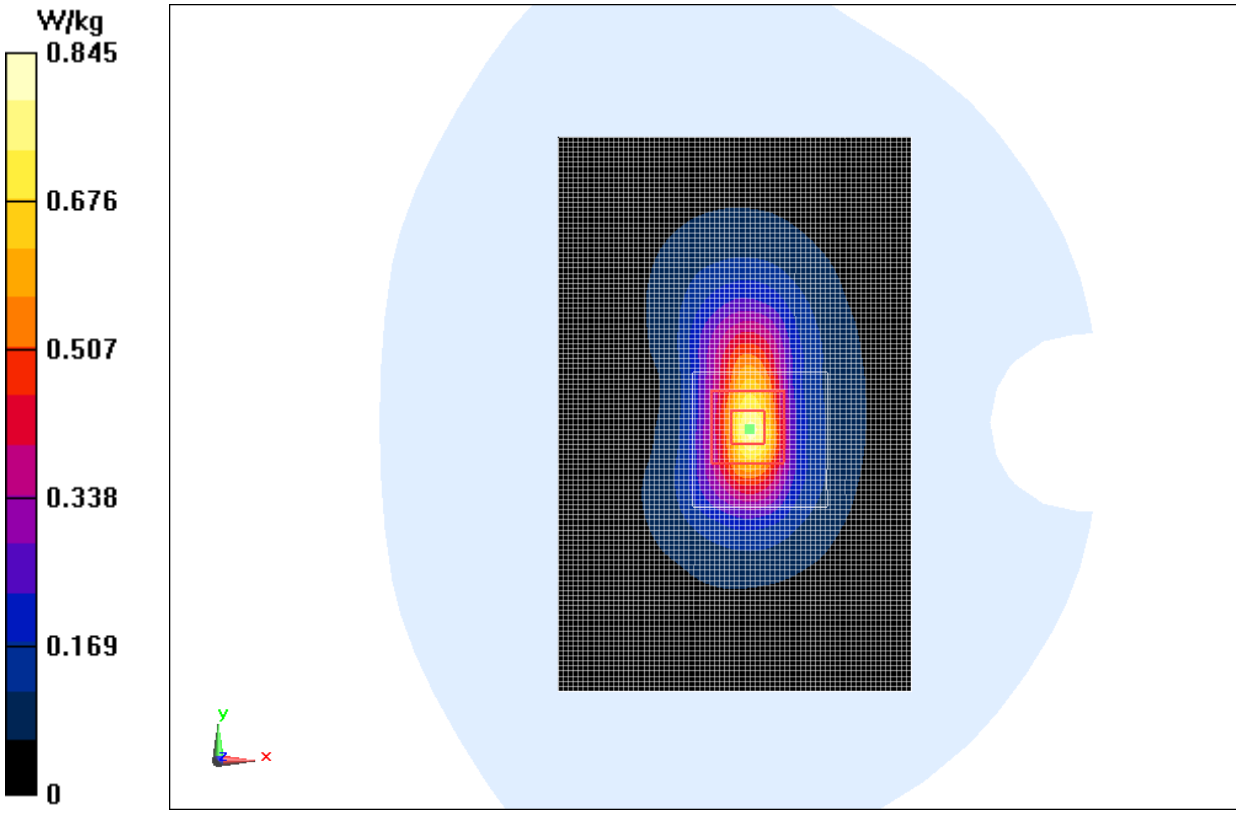

Fig.4 1900 MHz CH810

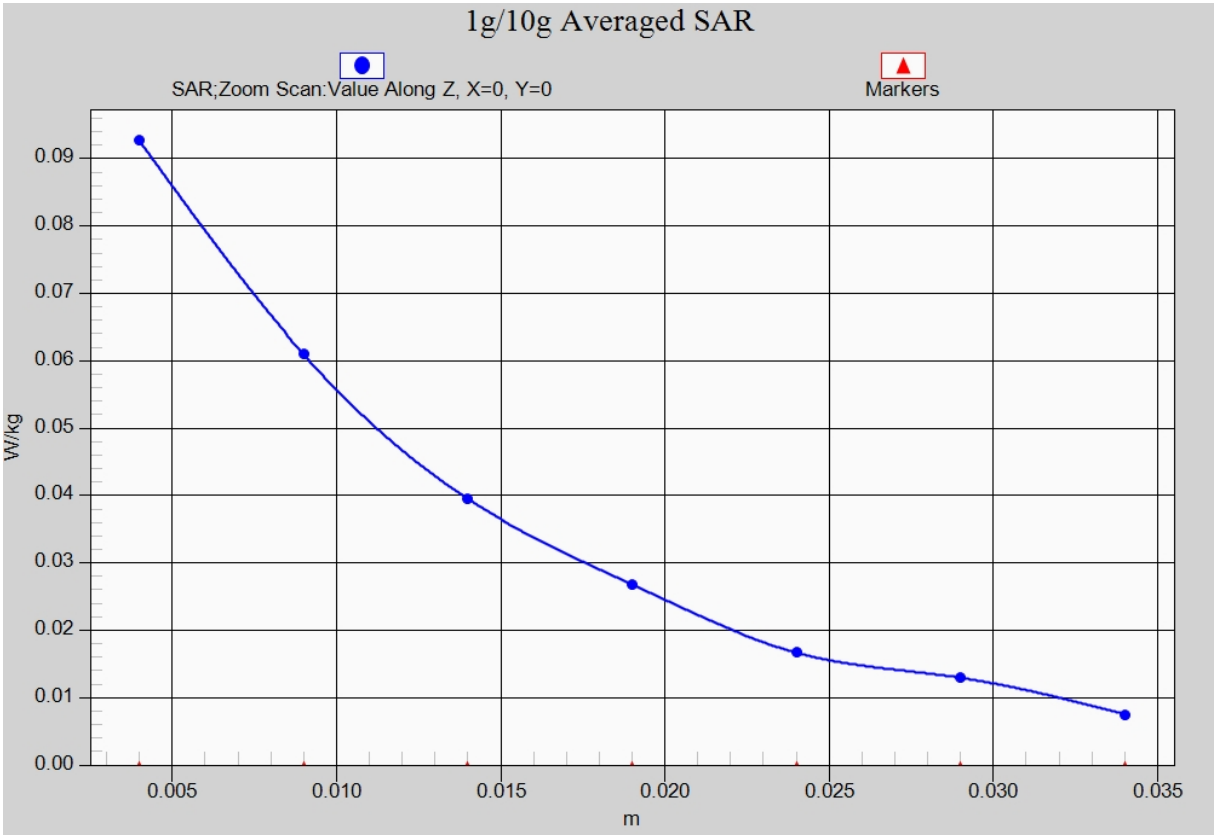

Fig.4-1 Z-Scan at power reference point (1900 MHz CH810)

WCDMA 850 Right Cheek Low

Date: 2013-7-13
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.908 mho/m; εr = 42.461; ρ = 1000 kg/m^3
Ambient Temperature: 22.6°C Liquid Temperature: 22.1°C
Communication System: WCDMA; Frequency: 826.4 MHz; Duty Cycle: 1:1
Probe: EX3DV4 - SN3846 ConvF(9.18, 9.18, 9.18)

Cheek Low/Area Scan (61x111x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.521 W/kg

Cheek Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.256 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.594 W/kg
SAR(1 g) = 0.491 W/kg; SAR(10 g) = 0.381 W/kg
Maximum value of SAR (measured) = 0.513 W/kg

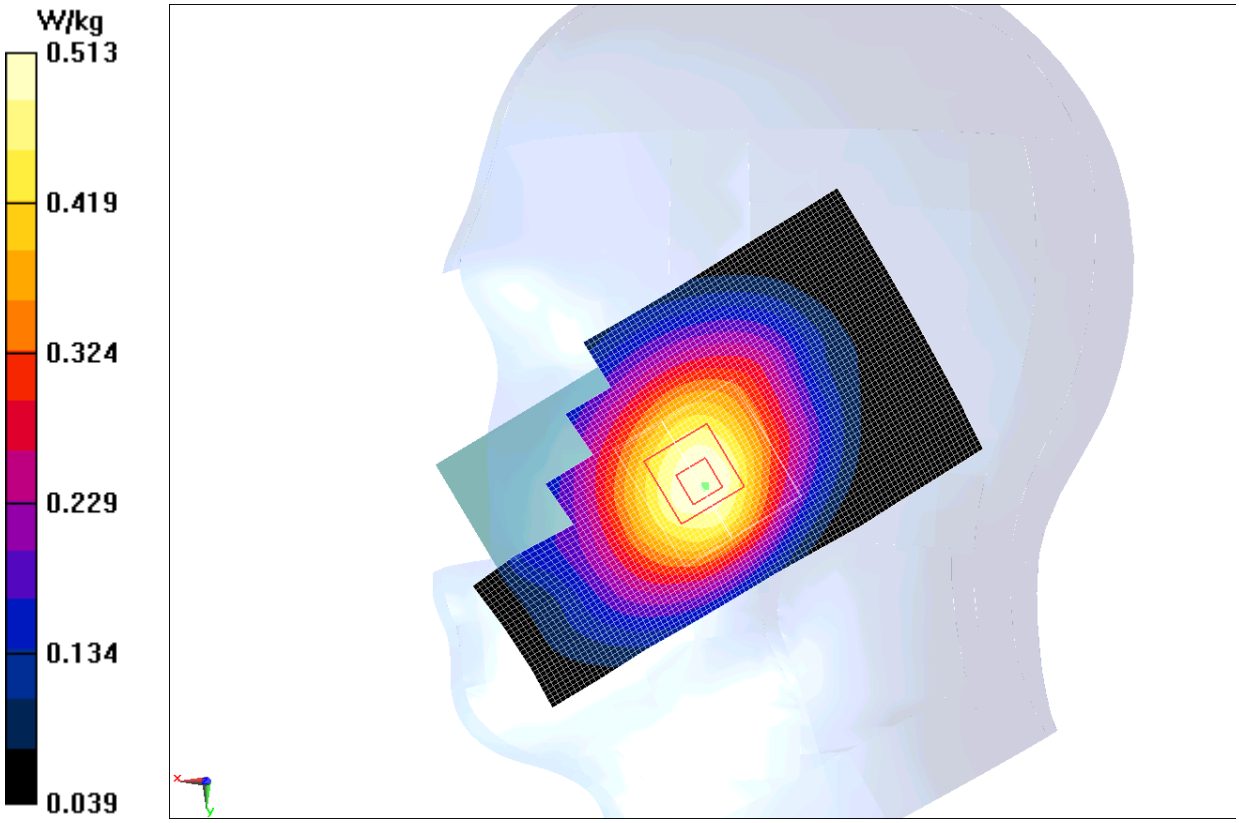

Fig.5 WCDMA 850 CH4132

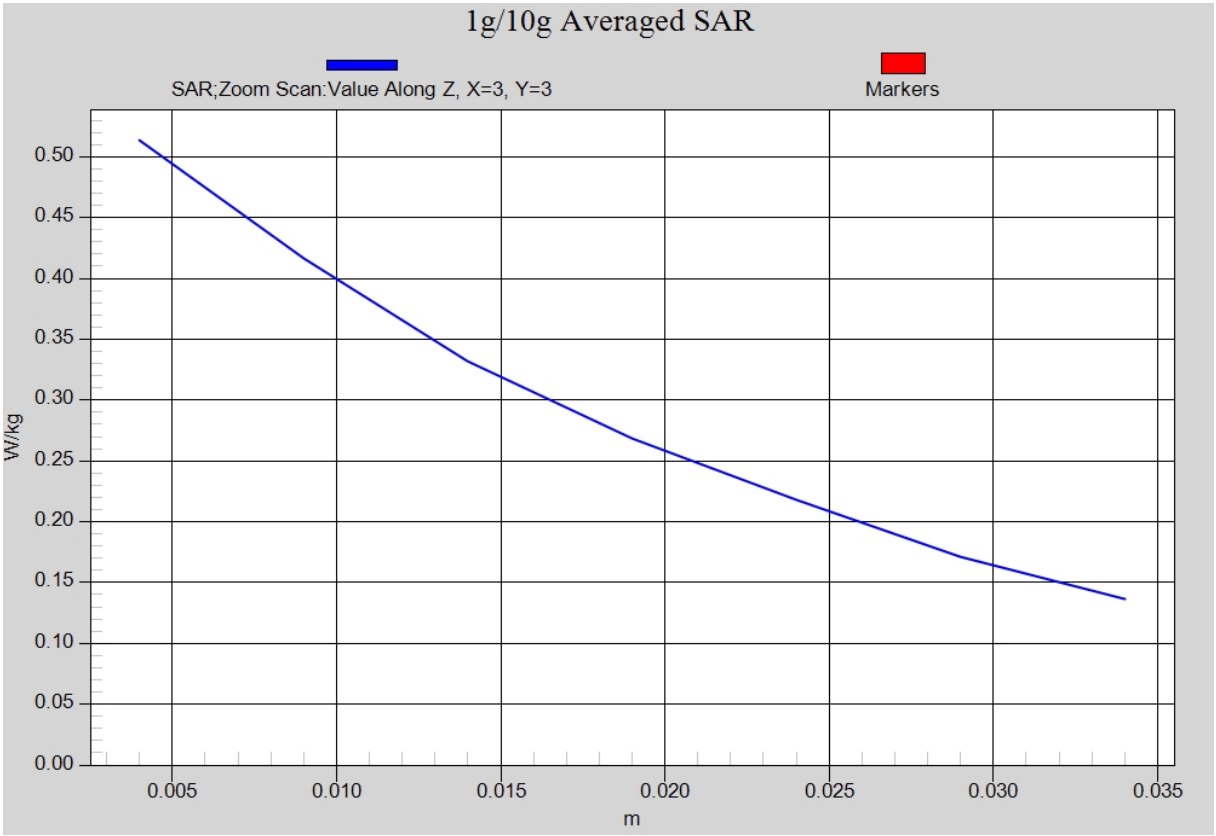

Fig. 5-1 Z-Scan at power reference point (WCDMA 850 CH4132)

WCDMA 850 Body Rear Low
Date: 2013-7-13
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.955 mho/m; εr = 54.676; ρ = 1000 kg/m^3
Ambient Temperature: 22.6°C Liquid Temperature: 22.1°C
Communication System: WCDMA; Frequency: 826.4 MHz; Duty Cycle: 1:1
Probe: EX3DV4 - SN3846 ConvF(9.04, 9.04, 9.04)

Rear Low/Area Scan (61x111x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.802 W/kg

Rear Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 26.833 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 0.957 W/kg
SAR(1 g) = 0.780 W/kg; SAR(10 g) = 0.598 W/kg
Maximum value of SAR (measured) = 0.820 W/kg

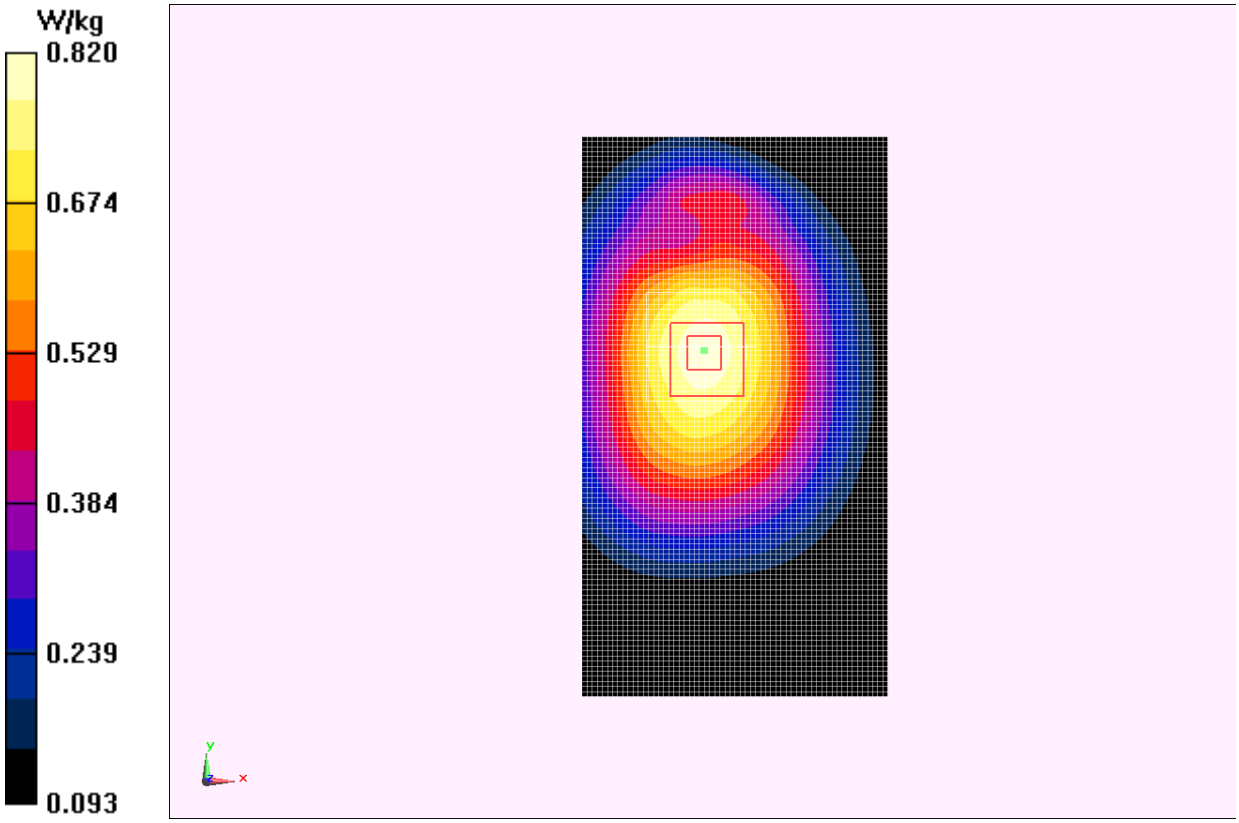

Fig.6 WCDMA 850 CH4132

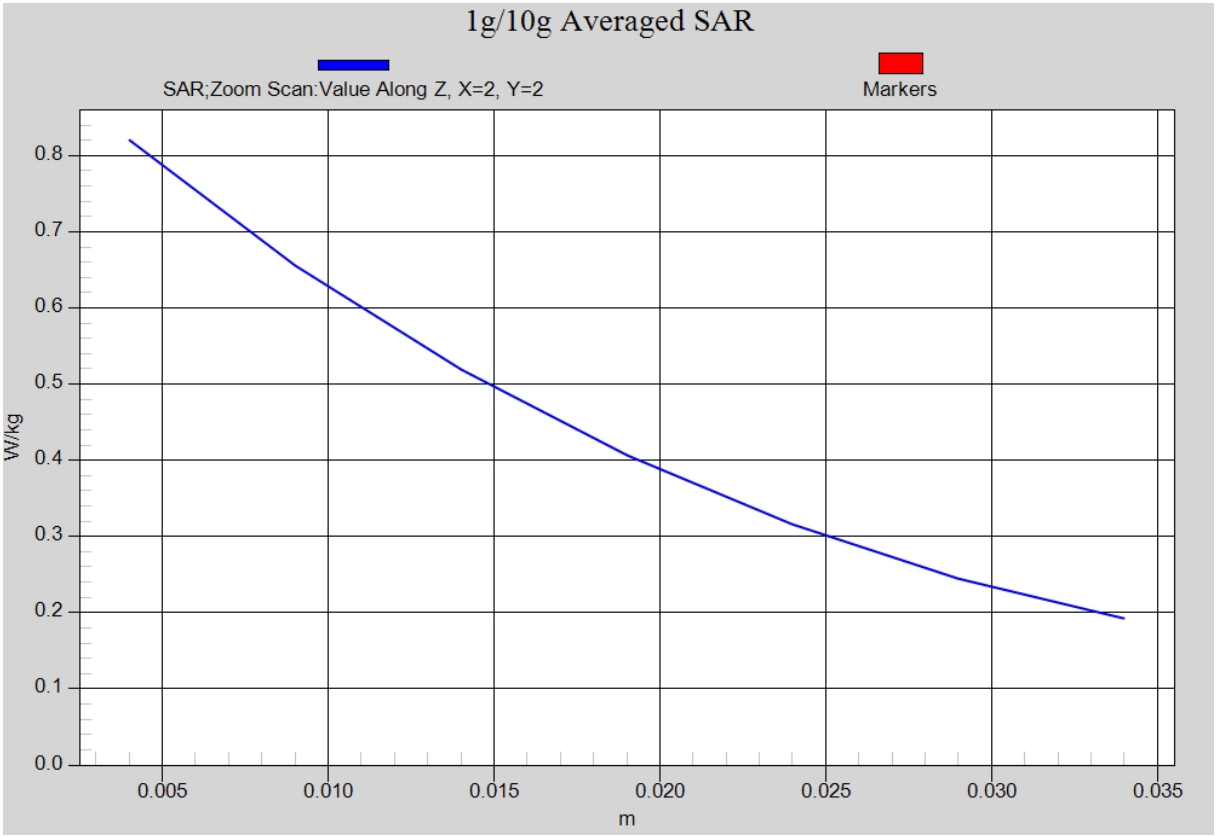

Fig. 6-1 Z-Scan at power reference point (WCDMA850 CH4132)

WCDMA 1900 Left Cheek Low
Date: 2013-7-15
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.367 mho/m; εr = 39.405; ρ = 1000 kg/m^3
Ambient Temperature: 22.7°C Liquid Temperature: 22.2°C
Communication System: WCDMA 1900 Frequency: 1852.4 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN3846 ConvF(8.01, 8.01, 8.01)

Cheek Low/Area Scan (61x111x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.507 W/kg

Cheek Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.422 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 0.684 W/kg
SAR(1 g) = 0.458 W/kg; SAR(10 g) = 0.293 W/kg
Maximum value of SAR (measured) = 0.492 W/kg

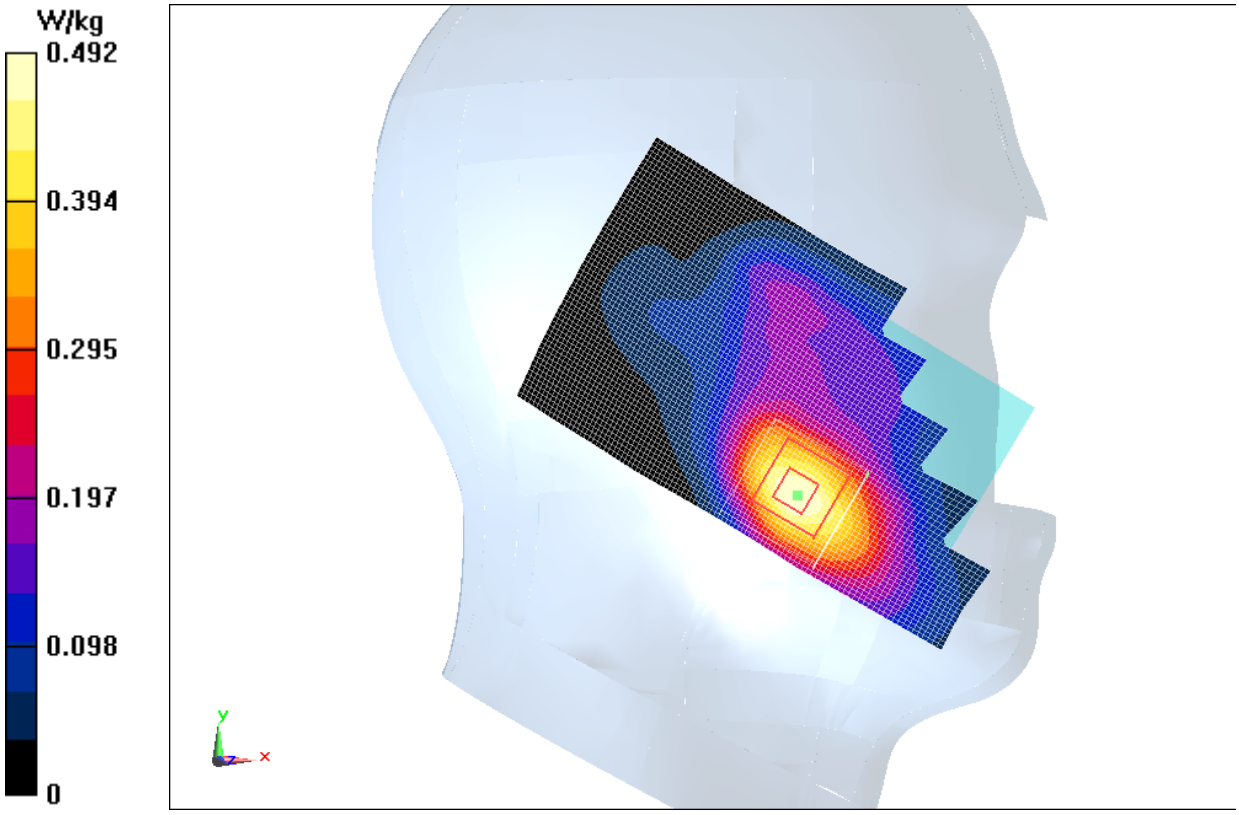

Fig.7 WCDMA1900 CH9262

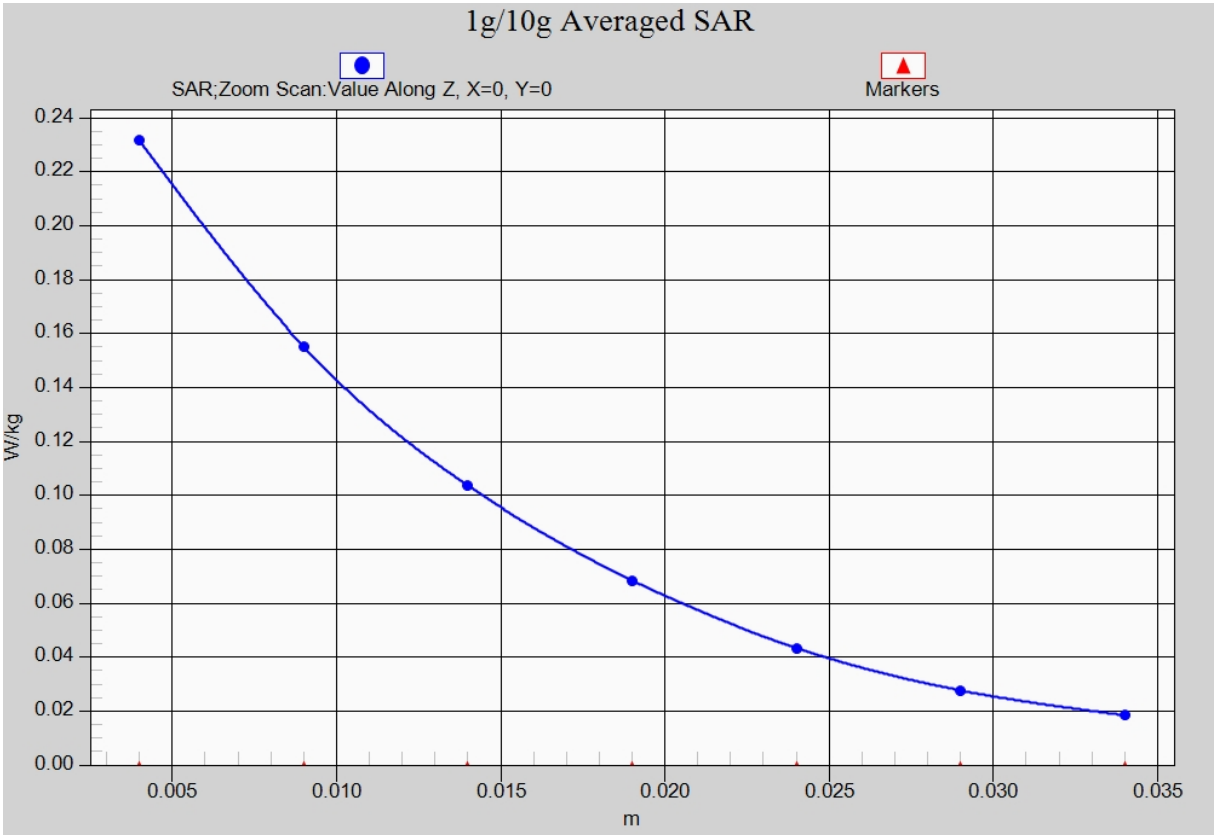

Fig. 7-1 Z-Scan at power reference point (WCDMA1900 CH9262)