

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:

$$\left[\frac{\text{max. power of channel, including tune-up tolerance, mW}}{\text{min. test separation distance, mm}} \right] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0 \text{ for 1-g SAR, where}$$

- $f(\text{GHz})$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before 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	8.09	6.44	Yes
		Body	19.20	8.09	6.44	Yes
2.4GHz WLAN 802.11 b	2.45	Head	9.58	19.16	82.41	No
		Body	19.17	19.16	82.41	No

13 Evaluation of Simultaneous

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

	Position	Main antenna		WiFi	Sum	Distance (mm)	Ratio
		Band	value				
Maximum reported SAR value for Head	Left hand, Touch cheek	W1900	1.27	0.68	1.95^[1]	71.5	0.04
		LTE B2	0.99	0.68	1.67^[1]	68.5	0.03
	Right hand, Touch cheek	W1900	0.71	1.38	2.09^[1]	90.3	0.03
		LTE B2	0.52	1.38	1.90^[1]	86.0	0.03
		LTE B2	0.47	1.38	1.85^[1]	86.0	0.03
		LTE B4	0.64	1.38	2.02^[1]	85.9	0.03
		LTE B4	0.61	1.38	1.99^[1]	86.7	0.03
		LTE B12	0.43	1.38	1.81^[1]	81.2	0.03
		LTE B12	0.31	1.38	1.69^[1]	73.3	0.03
Maximum reported SAR value for Body	Rear	PCS1900	0.78	0.51	1.29	/	/

[1] – 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 $(SAR1 + SAR2)^{1.5}/R_i$, 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.

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

	Position	Main antenna	BT	Sum
Maximum reported SAR value for Head	Left hand, Touch cheek	1.27	0.33 ^[2]	1.60
Maximum reported SAR value for Body	Rear	0.78	0.17 ^[2]	0.95

[2] - Estimated SAR for Bluetooth (see the table 13.3)

Table 13.3: Estimated SAR for Bluetooth

Mode/Band	F (GHz)	Position	Distance (mm)	Upper limit of power *		Estimated _{1g} (W/kg)
				dBm	mW	
Bluetooth	2.441	Head	5	9	7.94	0.33
Bluetooth	2.441	Body	10	9	7.94	0.17

* - 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:

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

where $x = 7.5$ for 1-g SAR.

When the minimum test separation distance is $< 5 \text{ mm}$, 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 $> 1.6 \text{ W/kg}$ but the 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 for AP ON and 15mm for AP OFF 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 more than 1.2W/kg.

The calculated SAR is obtained by the following formula:

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

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	1:4
WCDMA & LTE & WiFi	1:1

14.1 SAR results for Fast SAR

Table 14.2: SAR Values (GSM 850 MHz Band - Head) – AP OFF

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.										
848.8	251	Left	Touch	/	33.15	34.0	0.005	0.01	0.008	0.01	0.09
836.6	190	Left	Touch	/	33.14	34.0	0.007	0.01	0.010	0.01	0.07
824.2	128	Left	Touch	Fig.1	32.88	34.0	0.008	0.01	0.011	0.01	0.08
848.8	251	Left	Tilt	/	33.15	34.0	0.004	0.00	0.006	0.01	0.03
836.6	190	Left	Tilt	/	33.14	34.0	0.006	0.01	0.008	0.01	-0.07
824.2	128	Left	Tilt	/	32.88	34.0	0.006	0.01	0.009	0.01	-0.06
848.8	251	Right	Touch	/	33.15	34.0	0.005	0.01	0.009	0.01	0.09
836.6	190	Right	Touch	/	33.14	34.0	0.005	0.01	0.006	0.01	0.06
824.2	128	Right	Touch	/	32.88	34.0	0.007	0.01	0.011	0.01	0.04
848.8	251	Right	Tilt	/	33.15	34.0	0.002	0.00	0.004	0.00	0.07
836.6	190	Right	Tilt	/	33.14	34.0	0.005	0.01	0.008	0.01	0.04
824.2	128	Right	Tilt	/	32.88	34.0	0.007	0.01	0.011	0.01	0.06

Table 14.3: SAR Values (GSM 850 MHz Band-Body) – AP OFF

Ambient Temperature: 22.5 °C						Liquid Temperature: 22.0 °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	/	31.82	33.0	0.012	0.02	0.021	0.03	0.08
848.8	251	GPRS (2)	Rear	/	31.84	33.0	0.017	0.02	0.025	0.03	-0.01
836.6	190	GPRS (2)	Rear	Fig.2	31.82	33.0	0.016	0.02	0.027	0.03	-0.11
824.2	128	GPRS (2)	Rear	/	31.50	33.0	0.016	0.02	0.024	0.03	0.06
836.6	190	GPRS (2)	Left	/	31.82	33.0	0.012	0.02	0.017	0.02	-0.01
836.6	190	GPRS (2)	Right	/	31.82	33.0	0.015	0.02	0.023	0.03	-0.02
836.6	190	GPRS (2)	Bottom	/	31.82	33.0	0.005	0.01	0.007	0.01	0.12
836.6	190	EGPRS (2)	Rear	/	31.75	33.0	0.015	0.02	0.026	0.03	-0.05

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

Table 14.4: SAR Values (GSM1900 MHz Band - Head) – AP OFF

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.										
1909.8	810	Left	Touch	Fig.3	30.44	31.0	0.194	0.22	0.337	0.38	0.08
1880	661	Left	Touch	/	30.40	31.0	0.169	0.19	0.304	0.35	0.09
1850.2	512	Left	Touch	/	30.22	31.0	0.168	0.20	0.299	0.36	0.03
1909.8	810	Left	Tilt	/	30.44	31.0	0.033	0.04	0.059	0.07	0.06
1880	661	Left	Tilt	/	30.40	31.0	0.028	0.03	0.049	0.06	0.08
1850.2	512	Left	Tilt	/	30.22	31.0	0.032	0.04	0.056	0.07	0.12
1909.8	810	Right	Touch	/	30.44	31.0	0.095	0.11	0.157	0.18	0.13
1880	661	Right	Touch	/	30.40	31.0	0.088	0.10	0.145	0.17	0.12
1850.2	512	Right	Touch	/	30.22	31.0	0.088	0.11	0.148	0.18	0.12
1909.8	810	Right	Tilt	/	30.44	31.0	0.060	0.07	0.111	0.13	0.10
1880	661	Right	Tilt	/	30.40	31.0	0.051	0.06	0.093	0.11	0.07
1850.2	512	Right	Tilt	/	30.22	31.0	0.049	0.06	0.088	0.11	0.11

Table 14.5: SAR Values (GSM 1900 MHz Band-Body) – AP OFF

Ambient Temperature: 22.5 °C						Liquid Temperature: 22.0 °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	/	28.44	30.0	0.235	0.34	0.389	0.56	-0.07
1880	661	GPRS (2)	Rear	/	28.44	30.0	0.313	0.45	0.548	0.78	-0.07
1880	661	GPRS (2)	Left	/	28.44	30.0	0.106	0.15	0.188	0.27	-0.06
1880	661	GPRS (2)	Right	/	28.44	30.0	0.039	0.06	0.066	0.09	-0.06
1909.8	810	GPRS (2)	Bottom	/	28.36	30.0	0.272	0.40	0.554	0.81	0.01
1880	661	GPRS (2)	Bottom	/	28.44	30.0	0.297	0.43	0.603	0.86	0.01
1850.2	512	GPRS (2)	Bottom	Fig.4	28.26	30.0	0.349	0.52	0.650	0.97	-0.04
1850.2	512	EGPRS (2)	Bottom	/	28.27	30.0	0.301	0.45	0.608	0.91	-0.03

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

Table 14.6: SAR Values (WCDMA850 MHz Band - Head) – AP OFF

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.										
846.6	4233	Left	Touch	/	22.92	24.5	0.004	0.01	0.006	0.01	0.05
836.4	4182	Left	Touch	/	22.96	24.5	0.005	0.01	0.008	0.01	0.09
826.4	4132	Left	Touch	Fig.5	22.51	24.5	0.009	0.01	0.013	0.02	0.07
846.6	4233	Left	Tilt	/	22.92	24.5	0.003	0.00	0.006	0.01	0.03
836.4	4182	Left	Tilt	/	22.96	24.5	0.004	0.01	0.006	0.01	0.06
826.4	4132	Left	Tilt	/	22.51	24.5	0.005	0.01	0.007	0.01	0.04
846.6	4233	Right	Touch	/	22.92	24.5	0.004	0.01	0.005	0.01	-0.07
836.4	4182	Right	Touch	/	22.96	24.5	0.006	0.01	0.008	0.01	0.08
826.4	4132	Right	Touch	/	22.51	24.5	0.006	0.01	0.007	0.01	0.06
846.6	4233	Right	Tilt	/	22.92	24.5	0.000	0.00	0.001	0.00	-0.07
836.4	4182	Right	Tilt	/	22.96	24.5	0.004	0.01	0.006	0.01	-0.07
826.4	4132	Right	Tilt	/	22.51	24.5	0.005	0.01	0.010	0.02	-0.06

Table 14.7: SAR Values (WCDMA 850 MHz Band-Body) – AP OFF

Ambient Temperature: 22.5 °C						Liquid Temperature: 22.0 °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	/	22.96	24.5	0.010	0.01	0.015	0.02	-0.06
846.6	4233	Rear	/	22.92	24.5	0.012	0.02	0.017	0.02	0.16
836.4	4182	Rear	/	22.96	24.5	0.013	0.02	0.019	0.03	0.03
826.4	4132	Rear	Fig.6	22.51	24.5	0.013	0.02	0.021	0.03	0.05
836.4	4182	Left	/	22.96	24.5	0.004	0.01	0.007	0.01	0.13
836.4	4182	Right	/	22.96	24.5	0.006	0.01	0.010	0.01	0.12
836.4	4182	Bottom	/	22.96	24.5	0.004	0.01	0.006	0.01	0.07

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

Table 14.8: SAR Values (WCDMA1700 MHz Band - Head) – AP OFF

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.										
1752.6	1513	Left	Touch	/	24.10	25.0	0.255	0.31	0.441	0.54	-0.04
1732.4	1412	Left	Touch	Fig.7	24.26	25.0	0.289	0.34	0.462	0.55	0.09
1712.4	1312	Left	Touch	/	24.07	25.0	0.245	0.30	0.422	0.52	0.05
1752.6	1513	Left	Tilt	/	24.10	25.0	0.077	0.09	0.124	0.15	0.01
1732.4	1412	Left	Tilt	/	24.26	25.0	0.071	0.08	0.144	0.17	0.03
1712.4	1312	Left	Tilt	/	24.07	25.0	0.060	0.07	0.102	0.13	0.02
1752.6	1513	Right	Touch	/	24.10	25.0	0.223	0.27	0.374	0.46	0.12
1732.4	1412	Right	Touch	/	24.26	25.0	0.218	0.26	0.364	0.43	0.10
1712.4	1312	Right	Touch	/	24.07	25.0	0.202	0.25	0.336	0.42	0.08
1752.6	1513	Right	Tilt	/	24.10	25.0	0.079	0.10	0.136	0.17	0.03
1732.4	1412	Right	Tilt	/	24.26	25.0	0.070	0.08	0.116	0.14	0.10
1712.4	1312	Right	Tilt	/	24.07	25.0	0.061	0.08	0.102	0.13	0.14

Table 14.9: SAR Values (WCDMA1700 MHz Band-Body) – AP OFF

Ambient Temperature: 22.5 °C						Liquid Temperature: 22.0 °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	/	24.26	25.0	0.285	0.34	0.449	0.53	0.01
1732.4	1412	Rear	/	24.26	25.0	0.292	0.35	0.460	0.55	0.01
1732.4	1412	Left	/	24.26	25.0	0.091	0.11	0.151	0.18	0.04
1732.4	1412	Right	/	24.26	25.0	0.051	0.06	0.083	0.10	0.16
1752.6	1513	Bottom	Fig.8	24.10	25.0	0.299	0.37	0.527	0.65	-0.01
1732.4	1412	Bottom	/	24.26	25.0	0.272	0.32	0.497	0.59	0.00
1712.4	1312	Bottom	/	24.07	25.0	0.230	0.28	0.419	0.52	0.01

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

Table 14.10: SAR Values (WCDMA1700 MHz Band-Body) – AP ON

Ambient Temperature: 22.5 °C						Liquid Temperature: 22.0 °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	/	21.20	21.5	0.262	0.28	0.424	0.45	-0.01
1732.4	1412	Rear	/	21.20	21.5	0.308	0.33	0.487	0.52	-0.03
1732.4	1412	Left	/	21.20	21.5	0.078	0.08	0.133	0.14	0.07
1732.4	1412	Right	/	21.20	21.5	0.048	0.05	0.080	0.09	0.12
1752.6	1513	Bottom	Fig.9	21.20	21.5	0.293	0.31	0.565	0.61	0.00
1732.4	1412	Bottom	/	21.20	21.5	0.263	0.28	0.532	0.57	-0.01
1712.4	1312	Bottom	/	21.04	21.5	0.234	0.26	0.472	0.52	-0.02

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

Table 14.11: SAR Values (WCDMA1900 MHz Band - Head) – AP OFF

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.										
1907.6	9538	Left	Touch	/	23.81	24.5	0.481	0.56	0.871	1.02	0.04
1880	9400	Left	Touch	/	24.02	24.5	0.532	0.59	0.958	1.07	0.02
1852.4	9262	Left	Touch	Fig.10	24.12	24.5	0.686	0.75	1.16	1.27	0.09
1907.6	9538	Left	Tilt	/	23.81	24.5	0.126	0.15	0.231	0.27	0.13
1880	9400	Left	Tilt	/	24.02	24.5	0.143	0.16	0.260	0.29	0.10
1852.4	9262	Left	Tilt	/	24.12	24.5	0.161	0.18	0.288	0.31	0.03
1907.6	9538	Right	Touch	/	23.81	24.5	0.257	0.30	0.427	0.50	0.08
1880	9400	Right	Touch	/	24.02	24.5	0.279	0.31	0.472	0.53	0.08
1852.4	9262	Right	Touch	/	24.12	24.5	0.394	0.43	0.648	0.71	0.11
1907.6	9538	Right	Tilt	/	23.81	24.5	0.172	0.20	0.316	0.37	0.05
1880	9400	Right	Tilt	/	24.02	24.5	0.189	0.21	0.343	0.38	0.02
1852.4	9262	Right	Tilt	/	24.12	24.5	0.204	0.22	0.364	0.40	0.06

Table 14.12: SAR Values (WCDMA1900 MHz Band-Body) – AP OFF

Ambient Temperature: 22.5 °C						Liquid Temperature: 22.0 °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	/	24.02	24.5	0.306	0.34	0.493	0.55	-0.04
1880	9400	Rear	/	24.02	24.5	0.403	0.45	0.689	0.77	-0.04
1880	9400	Left	/	24.02	24.5	0.139	0.16	0.236	0.26	0.00
1880	9400	Right	/	24.02	24.5	0.057	0.06	0.094	0.10	-0.06
1907.6	9538	Bottom	/	23.81	24.5	0.379	0.44	0.701	0.82	-0.01
1880	9400	Bottom	Fig.11	24.02	24.5	0.503	0.56	0.868	0.97	-0.06
1852.4	9262	Bottom	/	24.12	24.5	0.457	0.50	0.839	0.92	0.02

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

Table 14.13: SAR Values (WCDMA1900 MHz Band-Body) – AP ON

Ambient Temperature: 22.5 °C						Liquid Temperature: 22.0 °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	/	20.82	21.5	0.225	0.26	0.383	0.45	0.10
1880	9400	Rear	/	20.82	21.5	0.305	0.36	0.517	0.60	0.02
1880	9400	Left	/	20.82	21.5	0.125	0.15	0.225	0.26	-0.06
1880	9400	Right	/	20.82	21.5	0.040	0.05	0.067	0.08	-0.09
1907.6	9538	Bottom	/	20.61	21.5	0.291	0.36	0.564	0.69	-0.05
1880	9400	Bottom	Fig.12	20.82	21.5	0.366	0.43	0.692	0.81	-0.06
1852.4	9262	Bottom	/	21.07	21.5	0.310	0.34	0.603	0.67	-0.06

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

Table 14.14: SAR Values (LTE Band2 - Head) – AP OFF

Ambient Temperature: 22.5 °C						Liquid Temperature: 22.0 °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_Low	Left	Touch	Fig.13	23.63	25.0	0.421	0.58	0.723	0.99	-0.14
1880	18900	1RB_Low	Left	Touch	/	23.43	25.0	0.393	0.56	0.677	0.97	0.09
1860	18700	1RB_Low	Left	Touch	/	23.43	25.0	0.397	0.57	0.679	0.97	-0.08
1900	19100	1RB_Low	Left	Tilt	/	23.63	25.0	0.119	0.16	0.218	0.30	0.14
1900	19100	1RB_Low	Right	Touch	/	23.63	25.0	0.218	0.30	0.377	0.52	0.04
1900	19100	1RB_Low	Right	Tilt	/	23.63	25.0	0.154	0.21	0.272	0.37	0.11
1900	19100	50RB_High	Left	Touch	/	22.36	24.0	0.302	0.44	0.541	0.79	0.04
1880	18900	50RB_High	Left	Touch	/	22.33	24.0	0.295	0.43	0.529	0.78	0.06
1860	18700	50RB_High	Left	Touch	/	22.51	24.0	0.339	0.48	0.607	0.86	0.09
1860	18700	50RB_High	Left	Tilt	/	22.51	24.0	0.091	0.13	0.164	0.23	0.16
1860	18700	50RB_High	Right	Touch	/	22.51	24.0	0.194	0.27	0.337	0.47	0.08
1860	18700	50RB_High	Right	Tilt	/	22.51	24.0	0.125	0.18	0.218	0.31	-0.09
1860	18700	100RB	Left	Touch	/	22.46	24.0	0.331	0.47	0.575	0.82	-0.02

Note: The LTE mode is QPSK_20MHz.

Table 14.15: SAR Values (LTE Band2 -Body) – AP OFF

Ambient Temperature: 22.5 °C						Liquid Temperature: 22.0 °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	/	23.63	25.0	0.244	0.33	0.421	0.58	0.04
1900	19100	1RB_Low	Rear	/	23.63	25.0	0.350	0.48	0.582	0.80	0.01
1900	19100	1RB_Low	Left	/	23.63	25.0	0.107	0.15	0.181	0.25	0.16
1900	19100	1RB_Low	Right	/	23.63	25.0	0.040	0.06	0.068	0.09	0.09
1900	19100	1RB_Low	Bottom	Fig.14	23.63	25.0	0.359	0.49	0.623	0.85	0.01
1880	18900	1RB_Low	Bottom	/	23.43	25.0	0.336	0.48	0.583	0.84	0.04
1860	18700	1RB_Low	Bottom	/	23.43	25.0	0.332	0.48	0.578	0.83	-0.05
1860	18700	50RB_High	Front	/	22.51	24.0	0.214	0.30	0.351	0.49	-0.08
1860	18700	50RB_High	Rear	/	22.51	24.0	0.302	0.43	0.529	0.75	-0.03
1860	18700	50RB_High	Left	/	22.51	24.0	0.091	0.13	0.153	0.22	0.09
1860	18700	50RB_High	Right	/	22.51	24.0	0.026	0.04	0.059	0.08	0.01
1860	18700	50RB_High	Bottom	/	22.51	24.0	0.249	0.35	0.452	0.64	0.09
1860	18700	100RB	Bottom	/	22.46	24.0	0.236	0.34	0.429	0.61	-0.07

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

Note2: The LTE mode is QPSK_20MHz.

Table 14.16: SAR Values (LTE Band2 -Body) – AP ON

Ambient Temperature: 22.5 °C						Liquid Temperature: 22.0 °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.										
1860	18700	1RB_High	Front	/	20.58	21.5	0.215	0.27	0.381	0.47	0.18
1860	18700	1RB_High	Rear	/	20.58	21.5	0.250	0.31	0.461	0.57	0.06
1860	18700	1RB_High	Left	/	20.58	21.5	0.091	0.11	0.162	0.20	-0.04
1860	18700	1RB_High	Right	/	20.58	21.5	0.032	0.04	0.053	0.07	0.10
1860	18700	1RB_High	Bottom	Fig.15	20.58	21.5	0.305	0.38	0.571	0.71	-0.19
1860	18700	50RB_High	Front	/	20.49	21.5	0.225	0.28	0.395	0.50	-0.03
1860	18700	50RB_High	Rear	/	20.49	21.5	0.255	0.32	0.471	0.59	0.03
1860	18700	50RB_High	Left	/	20.49	21.5	0.103	0.13	0.184	0.23	0.07
1860	18700	50RB_High	Right	/	20.49	21.5	0.035	0.04	0.058	0.07	0.06
1860	18700	50RB_High	Bottom	/	20.49	21.5	0.267	0.34	0.531	0.67	0.02

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

Note2: The LTE mode is QPSK_20MHz.

Table 14.17: SAR Values (LTE Band4 - Head) – AP OFF

Ambient Temperature: 22.5 °C						Liquid Temperature: 22.0 °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.											
1745	20300	1RB_High	Left	Touch	Fig.16	23.68	25.0	0.391	0.53	0.635	0.86	0.17
1732.5	20175	1RB_High	Left	Touch	/	23.61	25.0	0.379	0.52	0.617	0.85	-0.11
1720	20050	1RB_High	Left	Touch	/	23.61	25.0	0.377	0.52	0.613	0.84	-0.05
1745	20300	1RB_High	Left	Tilt	/	23.68	25.0	0.051	0.07	0.082	0.11	-0.10
1745	20300	1RB_High	Right	Touch	/	23.68	25.0	0.275	0.37	0.471	0.64	0.05
1745	20300	1RB_High	Right	Tilt	/	23.68	25.0	0.069	0.09	0.120	0.16	0.09
1720	20050	50RB_High	Left	Touch	/	22.63	24.0	0.275	0.38	0.474	0.65	0.09
1720	20050	50RB_High	Left	Tilt	/	22.63	24.0	0.050	0.07	0.093	0.13	0.06
1720	20050	50RB_High	Right	Touch	/	22.63	24.0	0.262	0.36	0.446	0.61	0.04
1720	20050	50RB_High	Right	Tilt	/	22.63	24.0	0.058	0.08	0.100	0.14	0.05
1732.5	20175	100RB	Left	Touch	/	22.61	24.0	0.277	0.38	0.453	0.62	-0.01

Note: The LTE mode is QPSK_20MHz.

Table 14.18: SAR Values (LTE Band4 -Body) – AP OFF

Ambient Temperature: 22.5 °C						Liquid Temperature: 22.0 °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.										
1745	20300	1RB_High	Front	/	23.68	25.0	0.331	0.45	0.528	0.72	0.00
1745	20300	1RB_High	Rear	Fig.17	23.68	25.0	0.350	0.47	0.564	0.76	-0.04
1745	20300	1RB_High	Left	/	23.68	25.0	0.117	0.16	0.195	0.26	0.04
1745	20300	1RB_High	Right	/	23.68	25.0	0.032	0.04	0.051	0.07	-0.12
1745	20300	1RB_High	Bottom	/	23.68	25.0	0.287	0.39	0.529	0.72	-0.01
1720	20050	50RB_High	Front	/	22.63	24.0	0.281	0.39	0.447	0.61	-0.04
1720	20050	50RB_High	Rear	/	22.63	24.0	0.302	0.41	0.477	0.65	-0.05
1720	20050	50RB_High	Left	/	22.63	24.0	0.029	0.04	0.046	0.06	0.03
1720	20050	50RB_High	Right	/	22.63	24.0	0.055	0.07	0.099	0.14	-0.04
1720	20050	50RB_High	Bottom	/	22.63	24.0	0.220	0.30	0.402	0.55	-0.14

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

Note2: The LTE mode is QPSK_20MHz.

Table 14.19: SAR Values (LTE Band4 -Body) – AP ON

Ambient Temperature: 22.5 °C						Liquid Temperature: 22.0 °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.										
1732.5	20175	1RB_Low	Front	/	20.74	21.5	0.243	0.29	0.397	0.47	-0.12
1732.5	20175	1RB_Low	Rear	/	20.74	21.5	0.251	0.30	0.428	0.51	0.13
1732.5	20175	1RB_Low	Left	/	20.74	21.5	0.072	0.09	0.124	0.15	0.04
1732.5	20175	1RB_Low	Right	/	20.74	21.5	0.041	0.05	0.068	0.08	0.17
1732.5	20175	1RB_Low	Bottom	/	20.74	21.5	0.231	0.28	0.456	0.54	0.04
1720	20050	50RB_Low	Front	/	20.66	21.5	0.220	0.27	0.366	0.44	-0.03
1720	20050	50RB_Low	Rear	Fig.18	20.66	21.5	0.301	0.37	0.483	0.59	-0.08
1720	20050	50RB_Low	Left	/	20.66	21.5	0.058	0.07	0.099	0.12	0.11
1720	20050	50RB_Low	Right	/	20.66	21.5	0.036	0.04	0.058	0.07	0.11
1720	20050	50RB_Low	Bottom	/	20.66	21.5	0.211	0.26	0.415	0.50	0.01

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

Note2: The LTE mode is QPSK_20MHz.

Table 14.20: SAR Values(LTE Band12 - Head) – AP OFF

Ambient Temperature: 22.5 °C							Liquid Temperature: 22.0 °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.											
707.5	23095	1RB_High	Left	Touch	Fig.19	23.67	25.0	0.258	0.35	0.326	0.44	0.19
707.5	23095	1RB_High	Left	Tilt	/	23.67	25.0	0.130	0.18	0.185	0.25	0.14
707.5	23095	1RB_High	Right	Touch	/	23.67	25.0	0.251	0.34	0.317	0.43	0.11
707.5	23095	1RB_High	Right	Tilt	/	23.67	25.0	0.132	0.18	0.188	0.26	0.12
707.5	23095	25RB_High	Left	Touch	/	22.67	24.0	0.160	0.22	0.229	0.31	0.19
707.5	23095	25RB_High	Left	Tilt	/	22.67	24.0	0.098	0.13	0.140	0.19	0.16
707.5	23095	25RB_High	Right	Touch	/	22.67	24.0	0.160	0.22	0.229	0.31	0.15
707.5	23095	25RB_High	Right	Tilt	/	22.67	24.0	0.094	0.13	0.135	0.18	0.10

Note1: The LTE mode is QPSK_10MHz.

Table 14.21: SAR Values (LTE Band12-Body) – AP OFF

Ambient Temperature: 22.5 °C						Liquid Temperature: 22.0 °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.										
707.5	23095	1RB_High	Front	/	23.67	25.0	0.243	0.33	0.340	0.46	0.05
707.5	23095	1RB_High	Rear	Fig.20	23.67	25.0	0.321	0.44	0.420	0.57	0.06
707.5	23095	1RB_High	Left	/	23.67	25.0	0.158	0.21	0.228	0.31	-0.01
707.5	23095	1RB_High	Right	/	23.67	25.0	0.103	0.14	0.149	0.20	-0.01
707.5	23095	1RB_Low	Bottom	/	23.67	25.0	0.034	0.05	0.051	0.07	0.06
707.5	23095	25RB_High	Front	/	22.67	24.0	0.190	0.26	0.267	0.36	0.01
707.5	23095	25RB_High	Rear	/	22.67	24.0	0.234	0.32	0.330	0.45	0.07
707.5	23095	25RB_High	Left	/	22.67	24.0	0.120	0.16	0.174	0.24	-0.02
707.5	23095	25RB_High	Right	/	22.67	24.0	0.079	0.11	0.114	0.15	0.02
707.5	23095	25RB_High	Bottom	/	22.67	24.0	0.025	0.03	0.037	0.05	-0.02

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

Note2: The LTE mode is QPSK_10MHz.

Table 14.22: SAR Values (LTE Band12-Body) – AP ON

Ambient Temperature: 22.5 °C						Liquid Temperature: 22.0 °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.										
707.5	23095	1RB_High	Front	/	20.61	21.5	0.146	0.18	0.205	0.25	0.00
707.5	23095	1RB_High	Rear	/	20.61	21.5	0.169	0.21	0.239	0.29	-0.18
707.5	23095	1RB_High	Left	/	20.61	21.5	0.102	0.13	0.149	0.18	0.02
707.5	23095	1RB_High	Right	/	20.61	21.5	0.097	0.12	0.142	0.17	-0.01
707.5	23095	1RB_Low	Bottom	/	20.61	21.5	0.033	0.04	0.053	0.06	-0.03
707.5	23095	25RB_High	Front	/	20.57	21.5	0.148	0.18	0.208	0.26	0.03
707.5	23095	25RB_High	Rear	Fig.21	20.57	21.5	0.184	0.23	0.241	0.30	0.00
707.5	23095	25RB_High	Left	/	20.57	21.5	0.098	0.12	0.143	0.18	-0.02
707.5	23095	25RB_High	Right	/	20.57	21.5	0.096	0.12	0.140	0.17	-0.04
707.5	23095	25RB_High	Bottom	/	20.57	21.5	0.033	0.04	0.052	0.06	0.00

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

Note2: The LTE mode is QPSK_10MHz.

Table 14.23: SAR Values (Wi-Fi 802.11b - Head) – AP OFF

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.										
2437	6	Left	Touch	/	18.81	20.0	0.278	0.37	0.515	0.68	-0.01
2437	6	Left	Tilt	/	18.81	20.0	0.258	0.34	0.490	0.64	-0.06
2462	11	Right	Touch	/	18.81	20.0	0.413	0.54	0.852	1.12	0.04
2437	6	Right	Touch	Fig.22	18.81	20.0	0.502	0.66	1.050	1.38	-0.10
2412	1	Right	Touch	/	18.92	20.0	0.430	0.55	0.878	1.13	0.08
2462	11	Right	Tilt	/	18.81	20.0	0.406	0.53	0.862	1.13	0.04
2437	6	Right	Tilt	/	18.81	20.0	0.417	0.55	0.870	1.14	0.03
2412	1	Right	Tilt	/	18.92	20.0	0.434	0.56	0.928	1.19	0.07

Table 14.24: SAR Values (Wi-Fi 802.11b - Body) – AP OFF

Ambient Temperature: 22.5 °C						Liquid Temperature: 22.0 °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	Front	/	18.81	20.0	0.122	0.16	0.232	0.31	-0.01
2437	6	Rear	Fig.23	18.81	20.0	0.184	0.24	0.385	0.51	0.07
2437	6	Left	/	18.81	20.0	0.089	0.12	0.177	0.23	0.04
2437	6	Top	/	18.81	20.0	0.137	0.18	0.280	0.37	-0.16

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

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 14.25: SAR Values (GSM 850 MHz Band - Head) – AP OFF

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.										
824.2	128	Left	Touch	Fig.1	32.88	34.0	0.008	0.01	0.011	0.01	0.08

Table 14.26: SAR Values (GSM 850 MHz Band-Body) – AP OFF

Ambient Temperature: 22.5 °C						Liquid Temperature: 22.0 °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)	Rear	Fig.2	31.82	33.0	0.016	0.02	0.027	0.03	-0.11

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

Table 14.27: SAR Values (GSM1900 MHz Band - Head) – AP OFF

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.										
1909.8	810	Left	Touch	Fig.3	30.44	31.0	0.194	0.22	0.337	0.38	0.08

Table 14.28: SAR Values (GSM 1900 MHz Band-Body) – AP OFF

Ambient Temperature: 22.5 °C						Liquid Temperature: 22.0 °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.										
1850.2	512	GPRS (2)	Bottom	Fig.4	28.26	30.0	0.349	0.52	0.650	0.97	-0.04

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

Table 14.29: SAR Values (WCDMA850 MHz Band - Head) – AP OFF

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.										
826.4	4132	Left	Touch	Fig.5	22.51	24.5	0.009	0.01	0.013	0.02	0.07

Table 14.30: SAR Values (WCDMA 850 MHz Band-Body) – AP OFF

Ambient Temperature: 22.5 °C						Liquid Temperature: 22.0 °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.									
826.4	4132	Rear	Fig.6	22.51	24.5	0.013	0.02	0.021	0.03	0.05

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

Table 14.31: SAR Values (WCDMA1700 MHz Band - Head) – AP OFF

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.										
1732.4	1412	Left	Touch	Fig.7	24.26	25.0	0.289	0.34	0.462	0.55	0.09

Table 14.32: SAR Values (WCDMA1700 MHz Band-Body) – AP OFF

Ambient Temperature: 22.5 °C						Liquid Temperature: 22.0 °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.									
1752.6	1513	Bottom	Fig.8	24.10	25.0	0.299	0.37	0.527	0.65	-0.01

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

Table 14.33: SAR Values (WCDMA1700 MHz Band-Body) – AP ON

Ambient Temperature: 22.5 °C						Liquid Temperature: 22.0 °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.									
1752.6	1513	Bottom	Fig.9	21.20	21.5	0.293	0.31	0.565	0.61	0.00

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

Table 14.34: SAR Values (WCDMA1900 MHz Band - Head) – AP OFF

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.										
1852.4	9262	Left	Touch	Fig.10	24.12	24.5	0.686	0.75	1.16	1.27	0.09

Table 14.35: SAR Values (WCDMA1900 MHz Band-Body) – AP OFF

Ambient Temperature: 22.5 °C						Liquid Temperature: 22.0 °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	Bottom	Fig.11	24.02	24.5	0.503	0.56	0.868	0.97	-0.06

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

Table 14.36: SAR Values (WCDMA1900 MHz Band-Body) – AP ON

Ambient Temperature: 22.5 °C						Liquid Temperature: 22.0 °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	Bottom	Fig.12	20.82	21.5	0.366	0.43	0.692	0.81	-0.06

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

Table 14.37: SAR Values (LTE Band2 - Head) – AP OFF

Ambient Temperature: 22.5 °C						Liquid Temperature: 22.0 °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_Low	Left	Touch	Fig.13	23.63	25.0	0.421	0.58	0.723	0.99	-0.14

Note: The LTE mode is QPSK_20MHz.

Table 14.38: SAR Values (LTE Band2 -Body) – AP OFF

Ambient Temperature: 22.5 °C						Liquid Temperature: 22.0 °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	Bottom	Fig.14	23.63	25.0	0.359	0.49	0.623	0.85	0.01

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

Note2: The LTE mode is QPSK_20MHz.

Table 14.39: SAR Values (LTE Band2 -Body) – AP ON

Ambient Temperature: 22.5 °C						Liquid Temperature: 22.0 °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.										
1860	18700	1RB_High	Bottom	Fig.15	20.58	21.5	0.305	0.38	0.571	0.71	-0.19

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

Note2: The LTE mode is QPSK_20MHz.

Table 14.40: SAR Values (LTE Band4 - Head) – AP OFF

Ambient Temperature: 22.5 °C						Liquid Temperature: 22.0 °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.											
1745	20300	1RB_High	Left	Touch	Fig.16	23.68	25.0	0.391	0.53	0.635	0.86	0.17

Note: The LTE mode is QPSK_20MHz.

Table 14.41: SAR Values (LTE Band4 -Body) – AP OFF

Ambient Temperature: 22.5 °C						Liquid Temperature: 22.0 °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.										
1745	20300	1RB_High	Rear	Fig.17	23.68	25.0	0.350	0.47	0.564	0.76	-0.04

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

Note2: The LTE mode is QPSK_20MHz.

Table 14.42: SAR Values (LTE Band4 -Body) – AP ON

Ambient Temperature: 22.5 °C						Liquid Temperature: 22.0 °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.										
1720	20050	50RB_Low	Rear	Fig.18	20.66	21.5	0.301	0.37	0.483	0.59	-0.08

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

Note2: The LTE mode is QPSK_20MHz.

Table 14.43: SAR Values(LTE Band12 - Head) – AP OFF

Ambient Temperature: 22.5 °C						Liquid Temperature: 22.0 °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.											
707.5	23095	1RB_High	Left	Touch	Fig.19	23.67	25.0	0.258	0.35	0.326	0.44	0.19

Note1: The LTE mode is QPSK_10MHz.

Table 14.44: SAR Values (LTE Band12-Body) – AP OFF

Ambient Temperature: 22.5 °C						Liquid Temperature: 22.0 °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.										
707.5	23095	1RB_High	Rear	Fig.20	23.67	25.0	0.321	0.44	0.420	0.57	0.06

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

Note2: The LTE mode is QPSK_10MHz.

Table 14.45: SAR Values (LTE Band12-Body) – AP ON

Ambient Temperature: 22.5 °C						Liquid Temperature: 22.0 °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.										
707.5	23095	25RB_High	Rear	Fig.21	20.57	21.5	0.184	0.23	0.241	0.30	0.00

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

Note2: The LTE mode is QPSK_10MHz.

Table 14.46: SAR Values (Wi-Fi 802.11b - Head) – AP OFF

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.										
2437	6	Right	Touch	Fig.22	18.81	20.0	0.502	0.66	1.050	1.38	-0.10

Table 14.47: SAR Values (Wi-Fi 802.11b - Body) – AP OFF

Ambient Temperature: 22.5 °C					Liquid Temperature: 22.0 °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.23	18.81	20.0	0.184	0.24	0.385	0.51	0.07

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

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 WCDMA1900 (1g)

Frequency		Side	Test Position	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
MHz	Ch.						
1852.4	9262	Left	Touch	1.16	1.14	1.02	/

Table 15.2: 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.						
1880	9400	Bottom	10	0.868	0.859	1.01	/

Table 15.3: SAR Measurement Variability for Head WiFi (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	1.05	1.02	1.03	/

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	RFambient 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 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		$u_c' = \sqrt{\sum_{i=1}^{22} c_i^2 u_i^2}$						13.3	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 15,2014	One year
02	Power meter	NRVD	102196	March 15,2014	One year
03	Power sensor	NRV-Z5	100596		
04	Signal Generator	E4438C	MY49071430	February 08, 2014	One Year
05	Amplifier	60S1G4	0331848	No Calibration Requested	
06	BTS	E5515C	MY50263375	January 30, 2014	One year
07	BTS	CMW500	129942	March 11, 2014	One year
08	E-field Probe	SPEAG EX3DV4	3846	September 24, 2014	One year
09	DAE	SPEAG DAE4	777	September 17, 2014	One year
10	Dipole Validation Kit	SPEAG D750V3	1017	August 28, 2014	One year
11	Dipole Validation Kit	SPEAG D835V2	4d069	August 28, 2014	One year
12	Dipole Validation Kit	SPEAG D1750V2	1003	August 18, 2014	One year
13	Dipole Validation Kit	SPEAG D1900V2	5d101	July 23, 2014	One year
14	Dipole Validation Kit	SPEAG D2450V2	853	July 24, 2014	One year

END OF REPORT BODY

ANNEX A Graph Results

850 Left Cheek Low – AP OFF

Date: 2015-1-15

Electronics: DAE4 Sn777

Medium: Head 850 MHz

Medium parameters used: $f = 825 \text{ MHz}$; $\sigma = 0.914 \text{ S/m}$; $\epsilon_r = 41.314$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 22.5°C Liquid Temperature: 22.0°C

Communication System: GSM 850 Frequency: 824.4 MHz Duty Cycle: 1:8.3

Probe: EX3DV4 - SN3846 ConvF(9.18, 9.18, 9.18)

Cheek Low/Area Scan (71x111x1): Interpolated grid: $dx=1.000 \text{ mm}$, $dy=1.000 \text{ mm}$
Maximum value of SAR (interpolated) = 0.0201 W/kg

Cheek Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$
Reference Value = 0 V/m ; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 0.0140 W/kg
SAR(1 g) = 0.011 W/kg ; SAR(10 g) = 0.00811 W/kg
Maximum value of SAR (measured) = 0.0127 W/kg

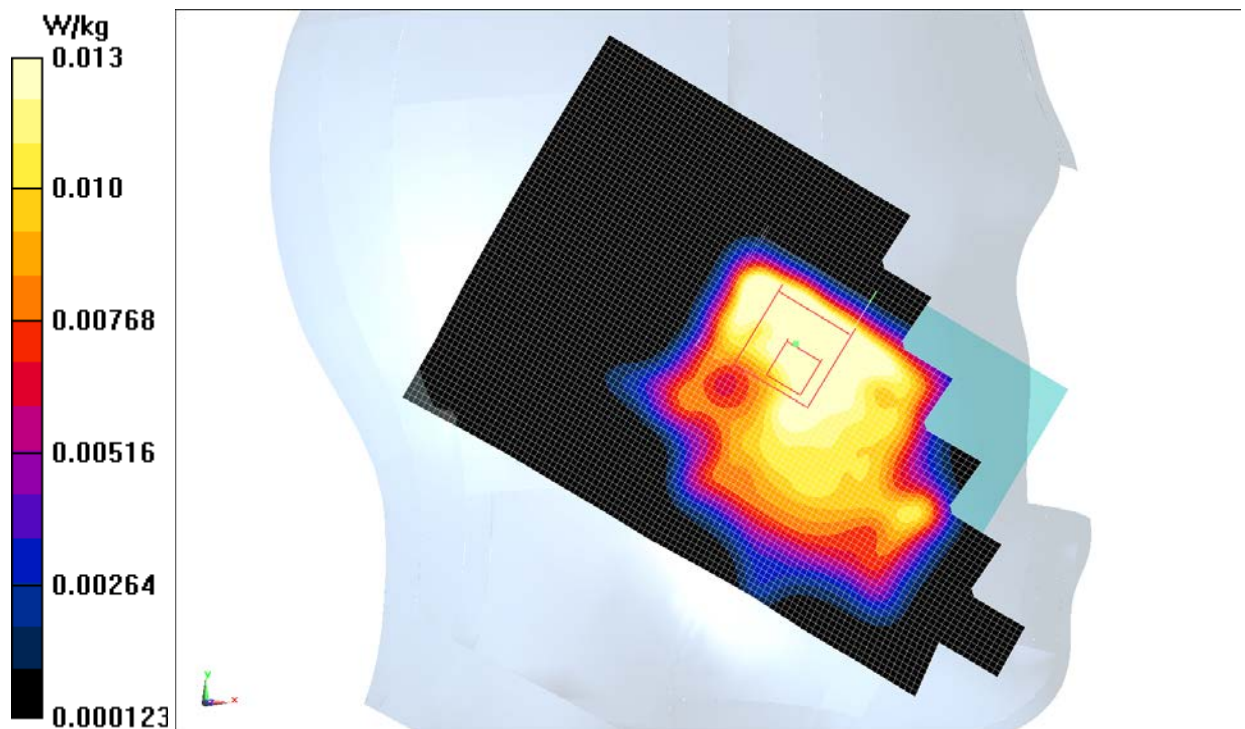


Fig.1 850MHz

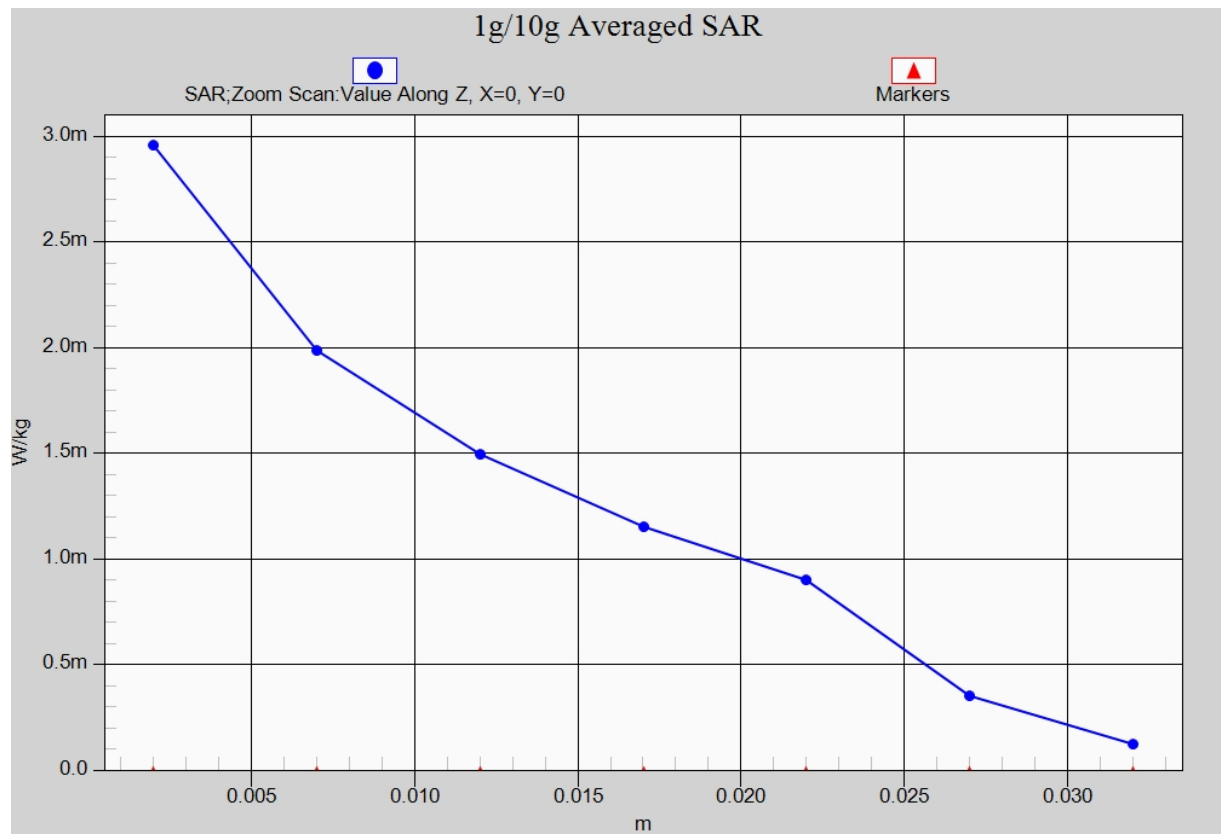


Fig. 1-1 Z-Scan at power reference point (850 MHz)

850 Body Rear Middle – AP OFF

Date: 2015-1-15

Electronics: DAE4 Sn777

Medium: Body 850 MHz

Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.936$ S/m; $\epsilon_r = 54.569$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5 °C Liquid Temperature: 22.0 °C

Communication System: GSM 850 GPRS Frequency: 836.6 MHz Duty Cycle: 1:4

Probe: EX3DV4 - SN3846 ConvF(9.09, 9.09, 9.09)

Rear Middle/Area Scan (111x61x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.0383 W/kg

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

Reference Value = 5.382 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 0.0470 W/kg

SAR(1 g) = 0.027 W/kg; SAR(10 g) = 0.016 W/kg

Maximum value of SAR (measured) = 0.0312 W/kg

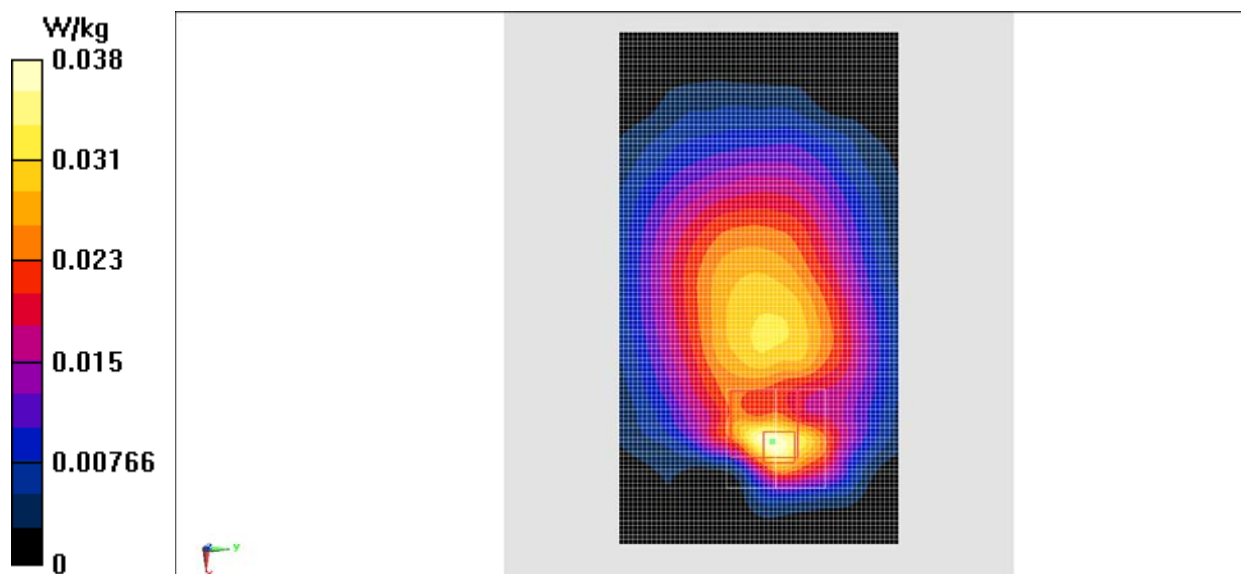


Fig.2 850 MHz

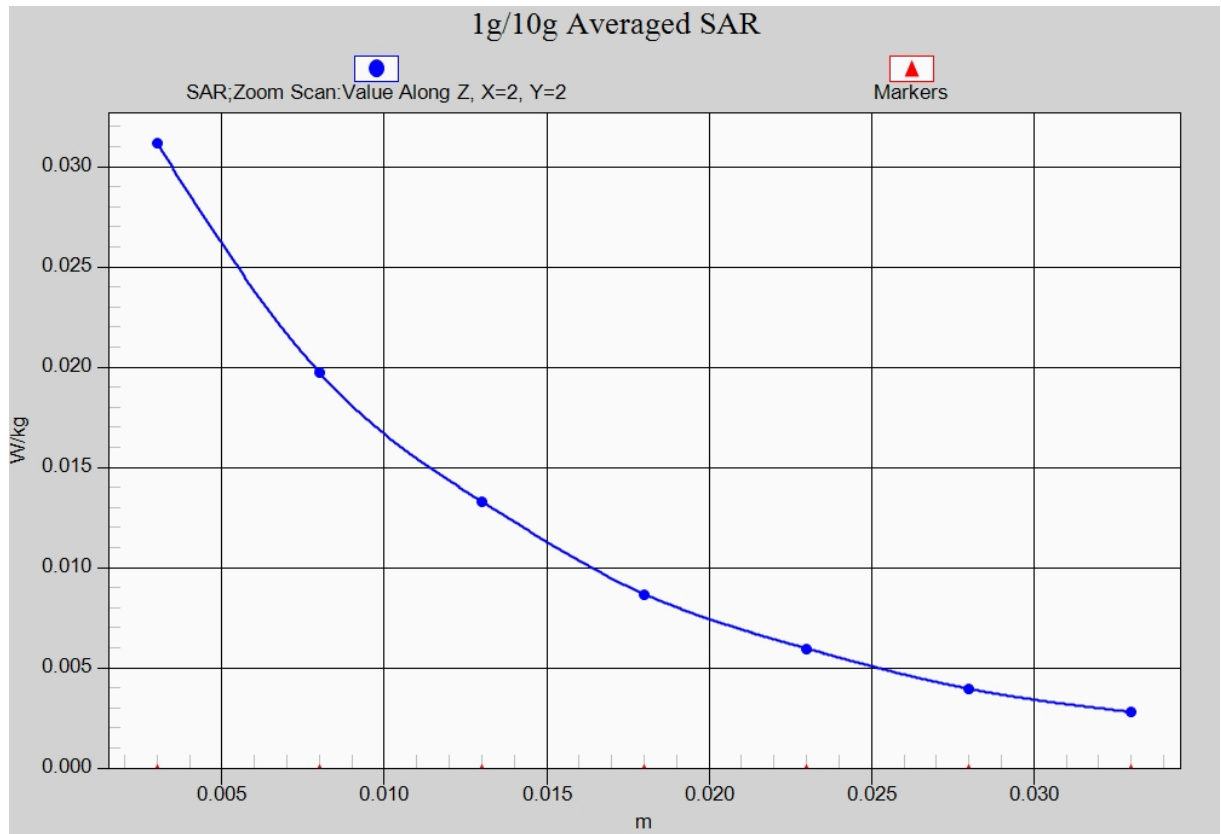


Fig. 2-1 Z-Scan at power reference point (850 MHz)

1900 Left Cheek High – AP OFF

Date: 2015-1-18

Electronics: DAE4 Sn777

Medium: Head 1900 MHz

Medium parameters used: $f = 1910$ MHz; $\sigma = 1.4$ S/m; $\epsilon_r = 40.834$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5 °C Liquid Temperature: 22.0 °C

Communication System: GSM 1900MHz Frequency: 1909.8 MHz Duty Cycle: 1:8.3

Probe: EX3DV4 - SN3846 ConvF(7.26, 7.26, 7.26)

Cheek High/Area Scan (61x111x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.385 W/kg

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

Reference Value = 4.150 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.547 W/kg

SAR(1 g) = 0.337 W/kg; SAR(10 g) = 0.194 W/kg

Maximum value of SAR (measured) = 0.370 W/kg

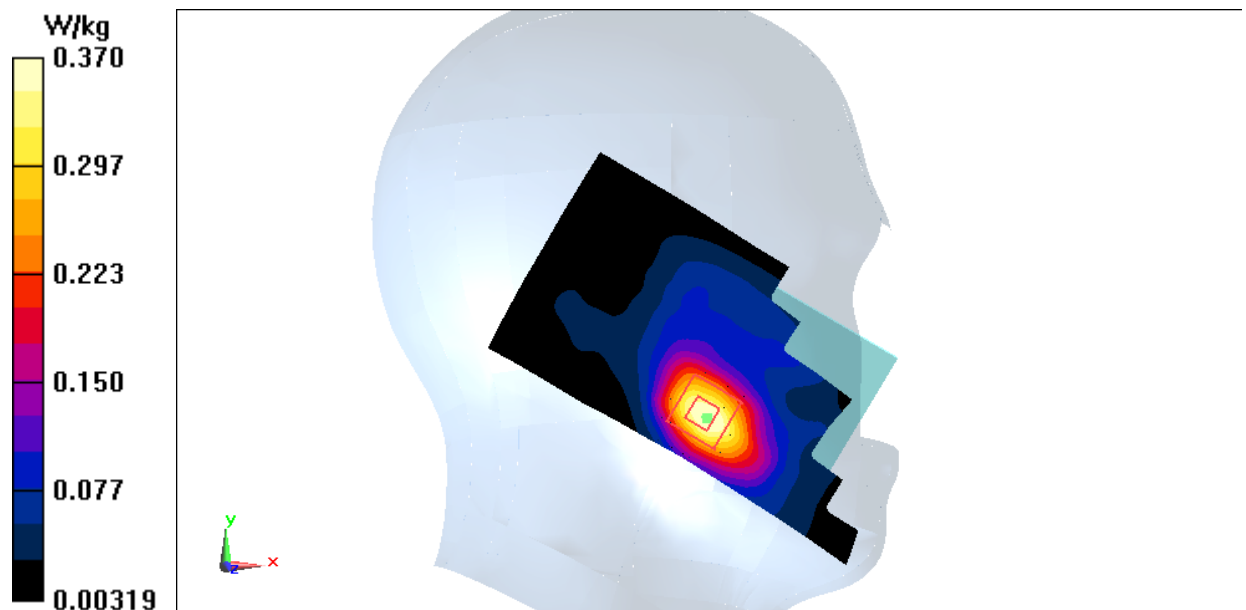


Fig.3 1900 MHz

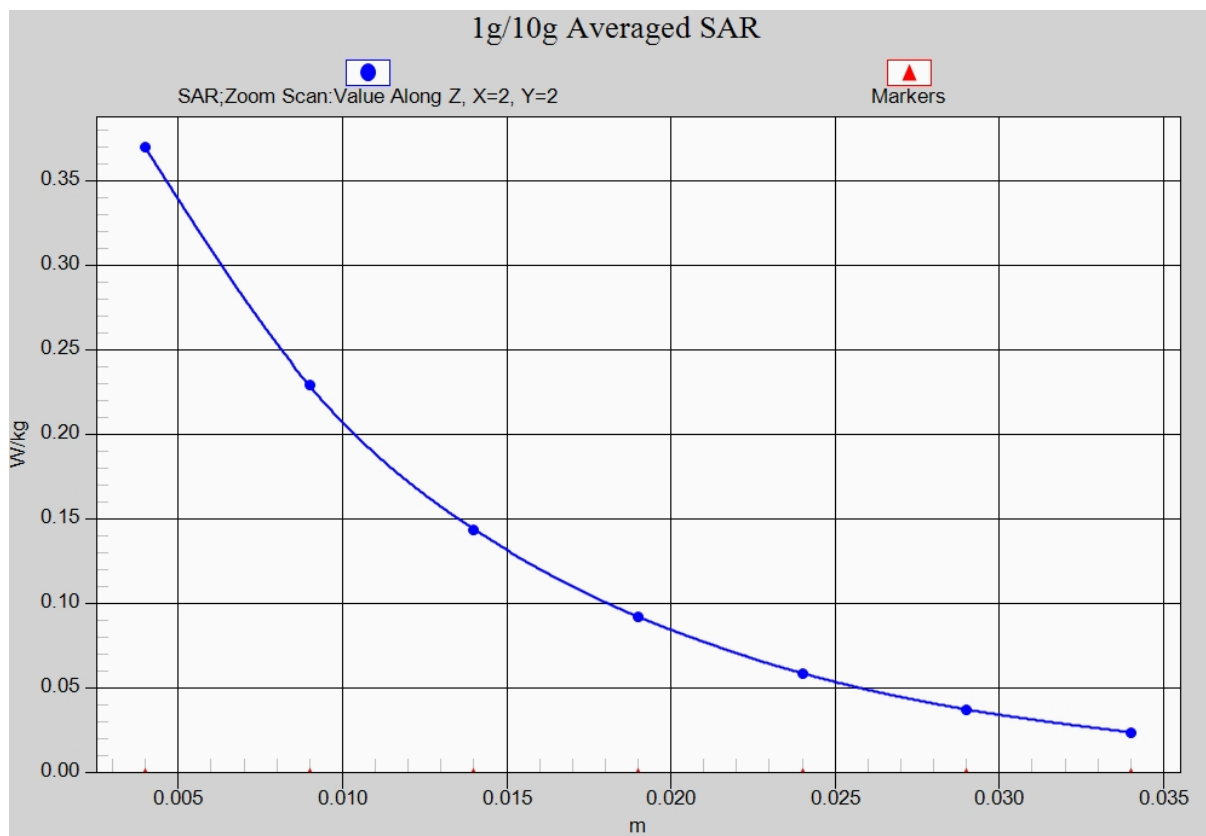


Fig. 3-1 Z-Scan at power reference point (1900 MHz)

1900 Body Bottom Low – AP OFF

Date: 2015-1-18

Electronics: DAE4 Sn777

Medium: Body 1900 MHz

Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.475$ S/m; $\epsilon_r = 54.458$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5 °C Liquid Temperature: 22.0 °C

Communication System: GSM 1900MHz GPRS Frequency: 1850.2 MHz Duty Cycle: 1:4

Probe: EX3DV4 - SN3846 ConvF(7.15, 7.15, 7.15)

Bottom Low/Area Scan (61x41x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.809 W/kg

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

Reference Value = 22.66 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 1.08 W/kg

SAR(1 g) = 0.650 W/kg; SAR(10 g) = 0.349 W/kg

Maximum value of SAR (measured) = 0.815 W/kg

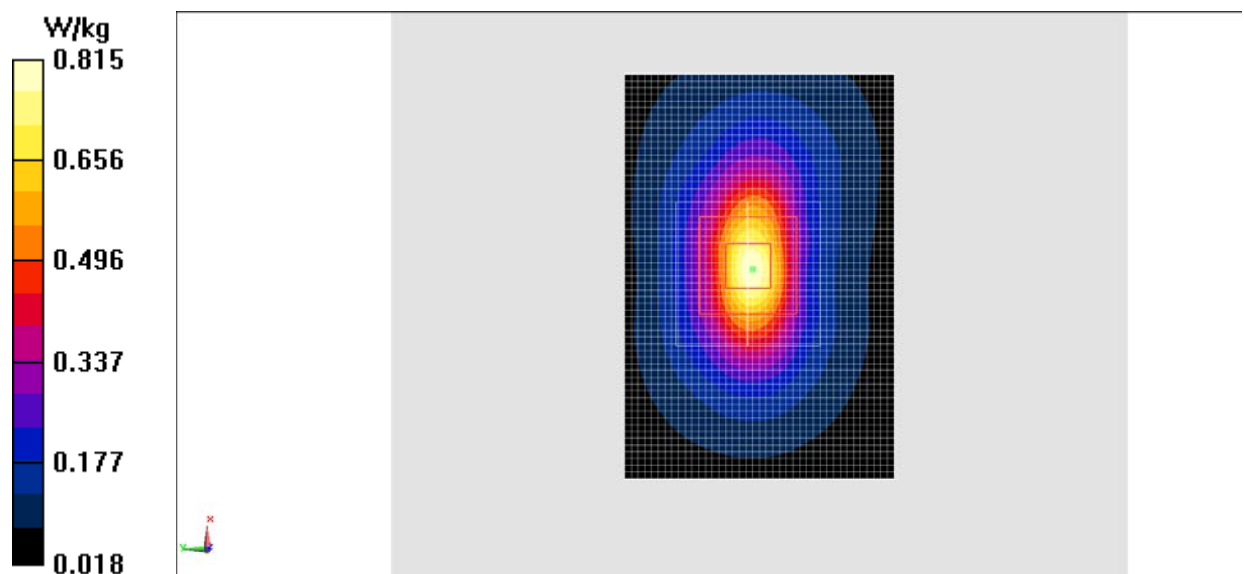


Fig.4 1900 MHz

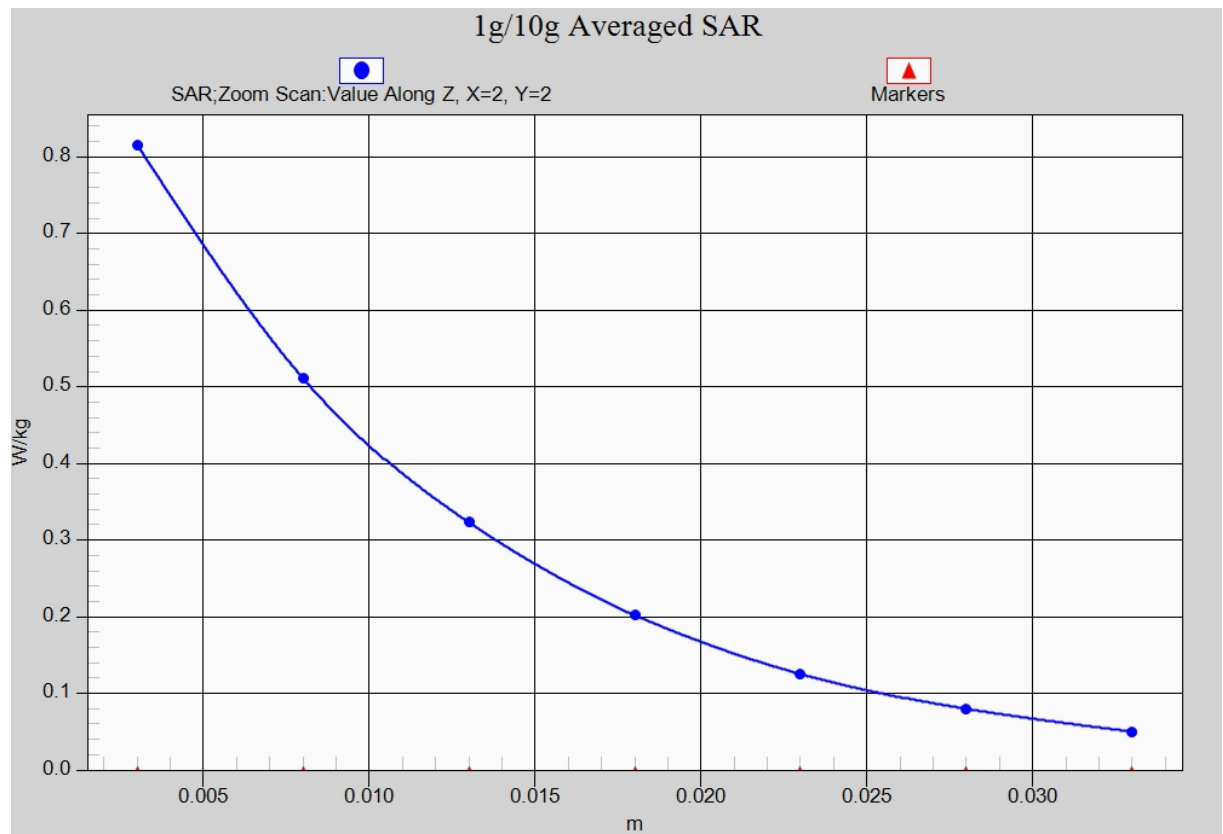


Fig.4-1 Z-Scan at power reference point (1900 MHz)

WCDMA 850 Left Cheek Low – AP OFF

Date: 2015-1-15

Electronics: DAE4 Sn777

Medium: Head 850 MHz

Medium parameters used (interpolated): $f = 826.4$ MHz; $\sigma = 0.915$ S/m; $\epsilon_r = 41.299$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5 °C Liquid Temperature: 22.0 °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 (71x111x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.0159 W/kg

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

Reference Value = 0 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 0.0160 W/kg

SAR(1 g) = 0.013 W/kg; SAR(10 g) = 0.0092 W/kg

Maximum value of SAR (measured) = 0.0132 W/kg

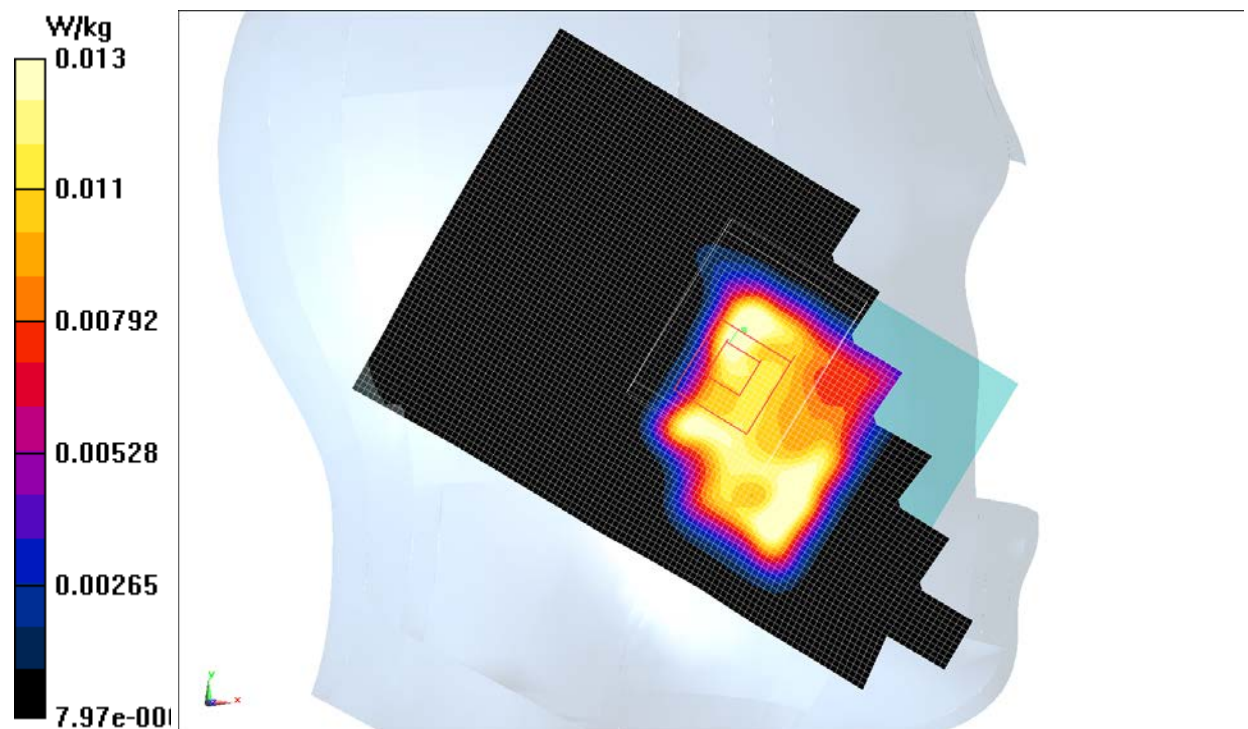


Fig.5 WCDMA 850

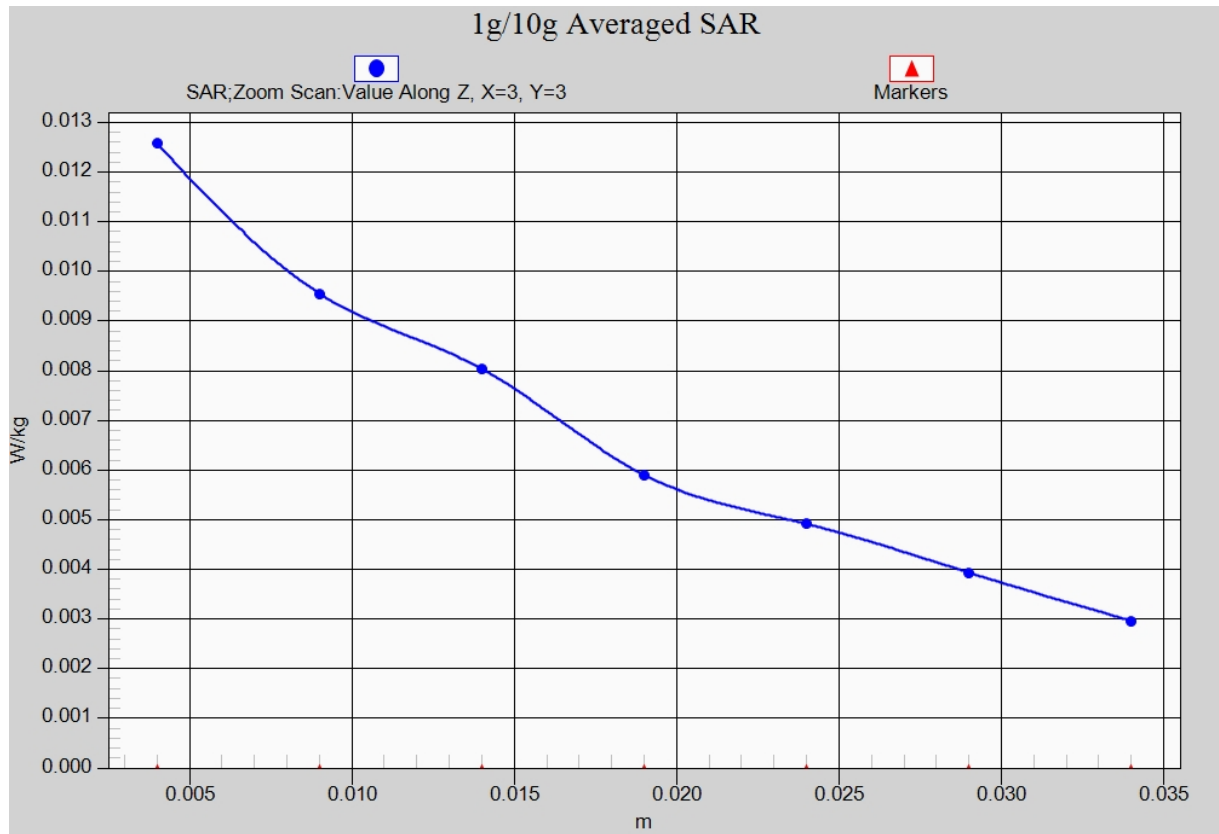


Fig. 5-1 Z-Scan at power reference point (WCDMA 850)

WCDMA 850 Body Rear Low – AP OFF

Date: 2015-1-15

Electronics: DAE4 Sn777

Medium: Body 850 MHz

Medium parameters used (interpolated): $f = 826.4$ MHz; $\sigma = 0.98$ S/m; $\epsilon_r = 54.154$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5 °C Liquid Temperature: 22.0 °C

Communication System: WCDMA; Frequency: 826.4 MHz; Duty Cycle: 1:1

Probe: EX3DV4 - SN3846 ConvF(9.09, 9.09, 9.09)

Rear Low/Area Scan (111x61x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.0266 W/kg

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

Reference Value = 4.725 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.0390 W/kg

SAR(1 g) = 0.021 W/kg; SAR(10 g) = 0.013 W/kg

Maximum value of SAR (measured) = 0.0255 W/kg

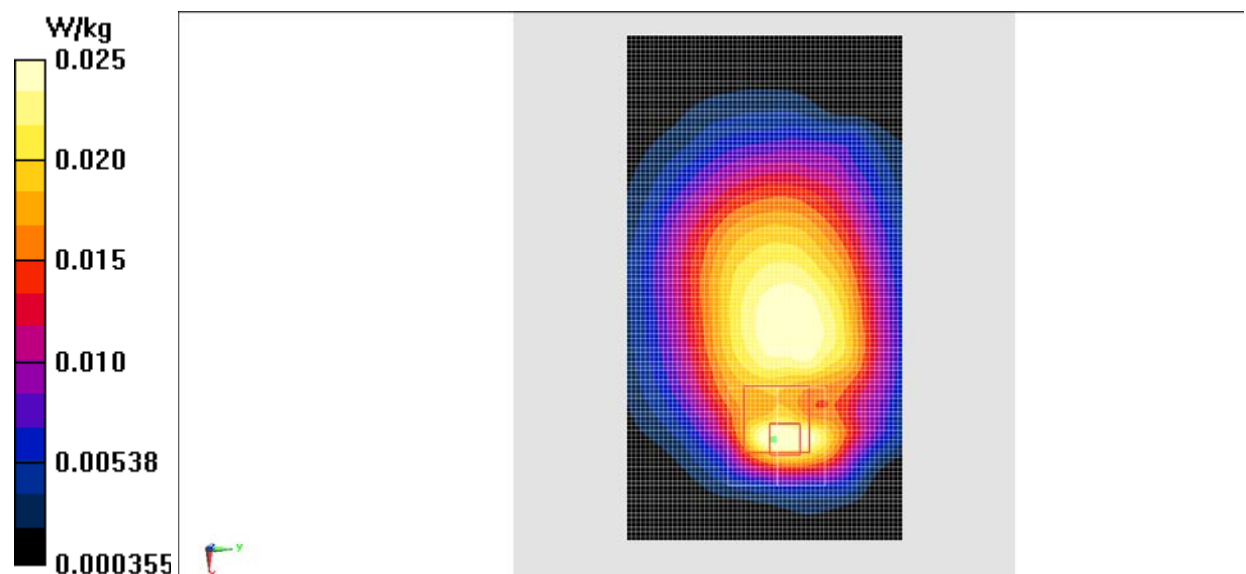


Fig.6 WCDMA 850

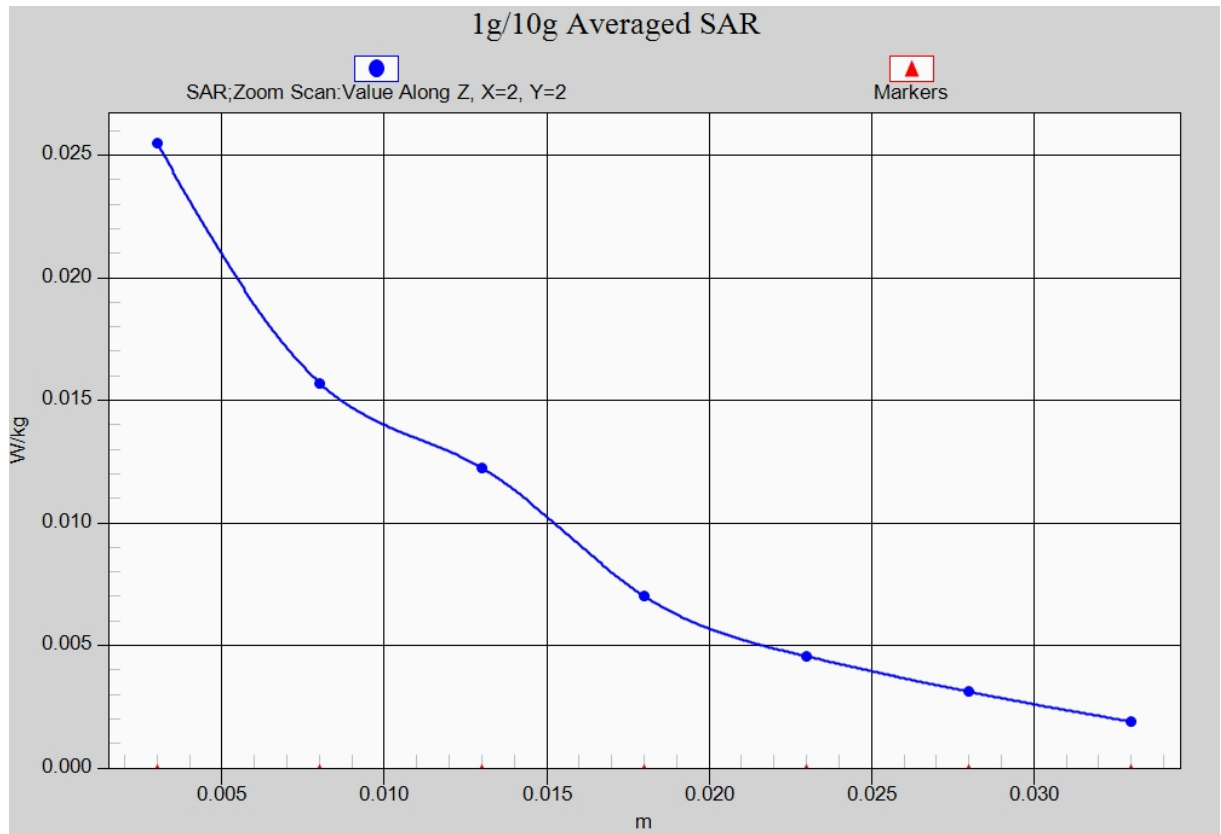


Fig. 6-1 Z-Scan at power reference point (WCDMA850)

WCDMA 1700 Left Cheek Middle – AP OFF

Date: 2015-1-17

Electronics: DAE4 Sn777

Medium: Head 1750 MHz

Medium parameters used (interpolated): $f = 1732.4$ MHz; $\sigma = 1.328$ S/m; $\epsilon_r = 41.326$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5 °C Liquid Temperature: 22.0 °C

Communication System: WCDMA 1700 Frequency: 1732.4 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3846 ConvF(7.64, 7.64, 7.64)

Cheek Middle/Area Scan (61x111x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.516 W/kg

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

Reference Value = 4.168 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.693 W/kg

SAR(1 g) = 0.462 W/kg; SAR(10 g) = 0.289 W/kg

Maximum value of SAR (measured) = 0.502 W/kg

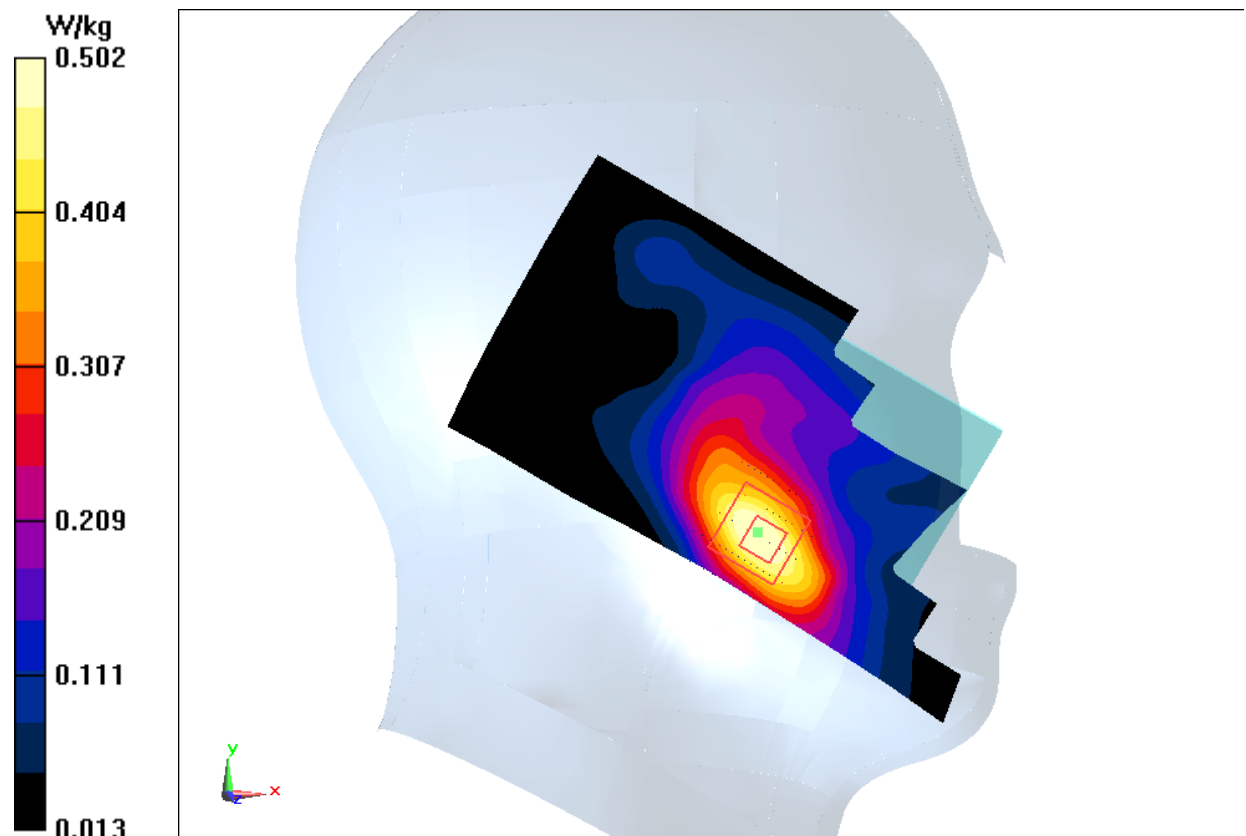


Fig.7 WCDMA1700

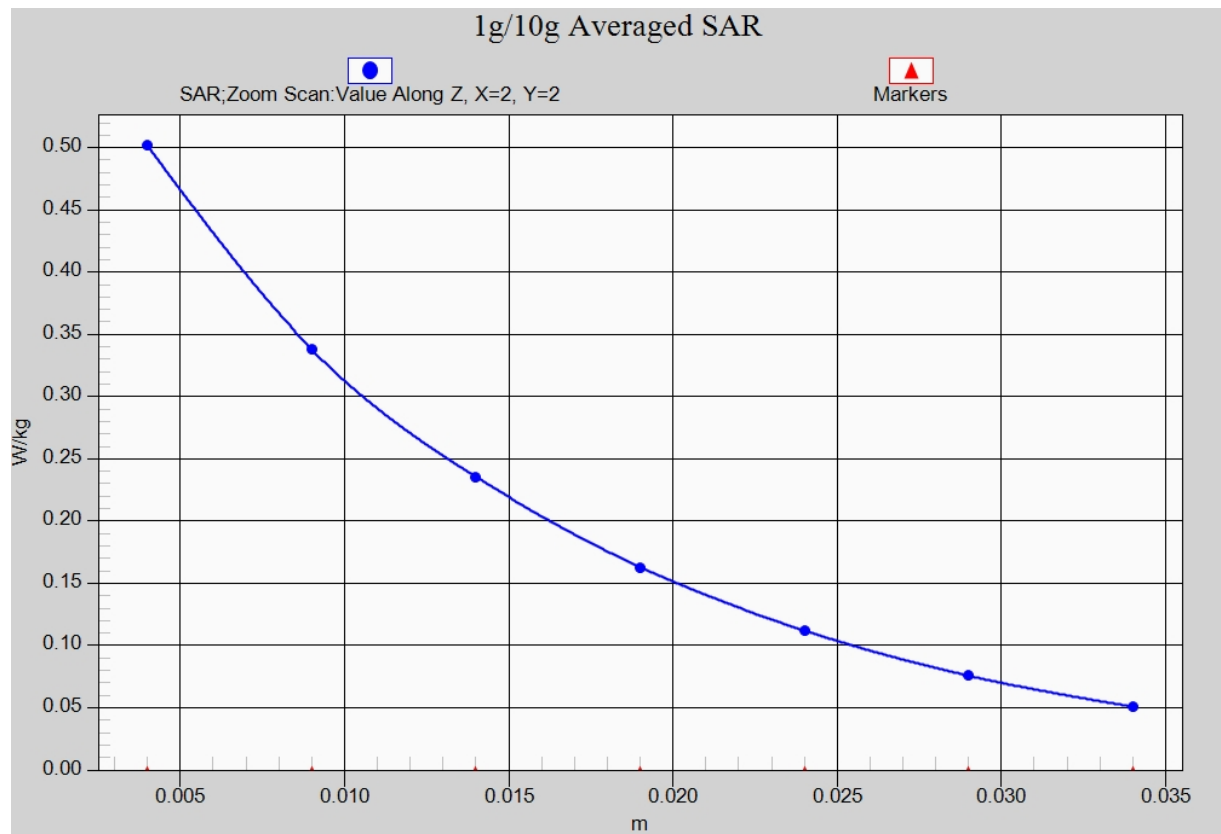


Fig. 7-1 Z-Scan at power reference point (WCDMA1700)

WCDMA 1700 Body Bottom High – AP OFF

Date: 2015-1-17

Electronics: DAE4 Sn777

Medium: Body 1900 MHz

Medium parameters used(interpolated): $f = 1752.6$ MHz; $\sigma = 1.465$ S/m; $\epsilon_r = 51.971$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5 °C Liquid Temperature: 22.0 °C

Communication System: WCDMA 1700 Frequency: 1880 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3846 ConvF(7.43, 7.43, 7.43)

Bottom High/Area Scan (61x41x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.643 W/kg

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

Reference Value = 20.26 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.841 W/kg

SAR(1 g) = 0.527 W/kg; SAR(10 g) = 0.299 W/kg

Maximum value of SAR (measured) = 0.643 W/kg

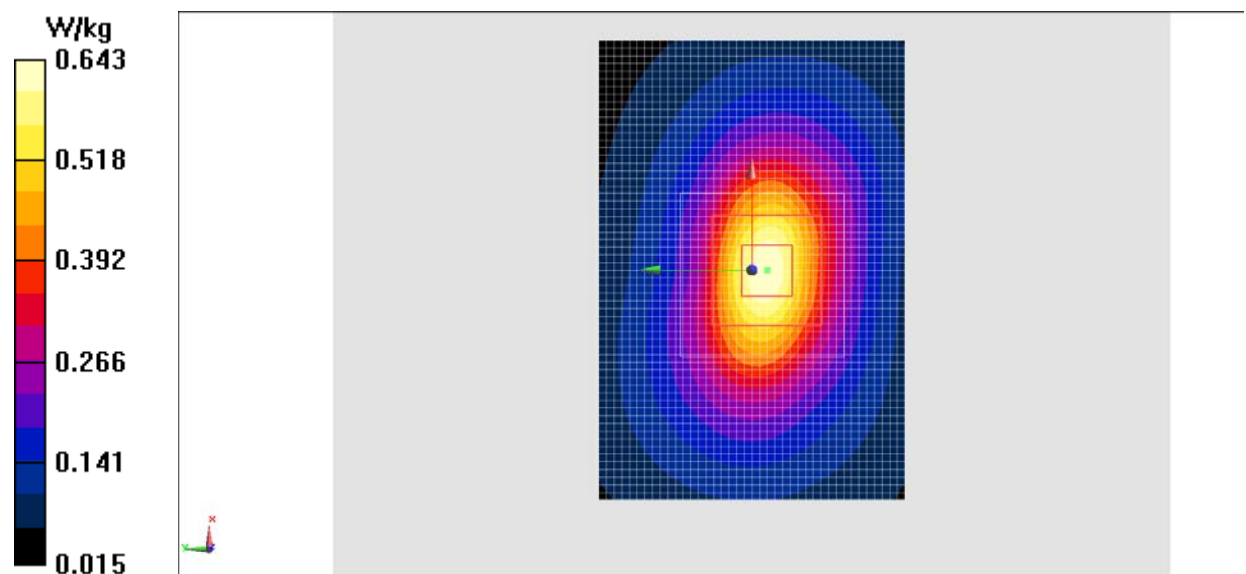


Fig.8 WCDMA1900

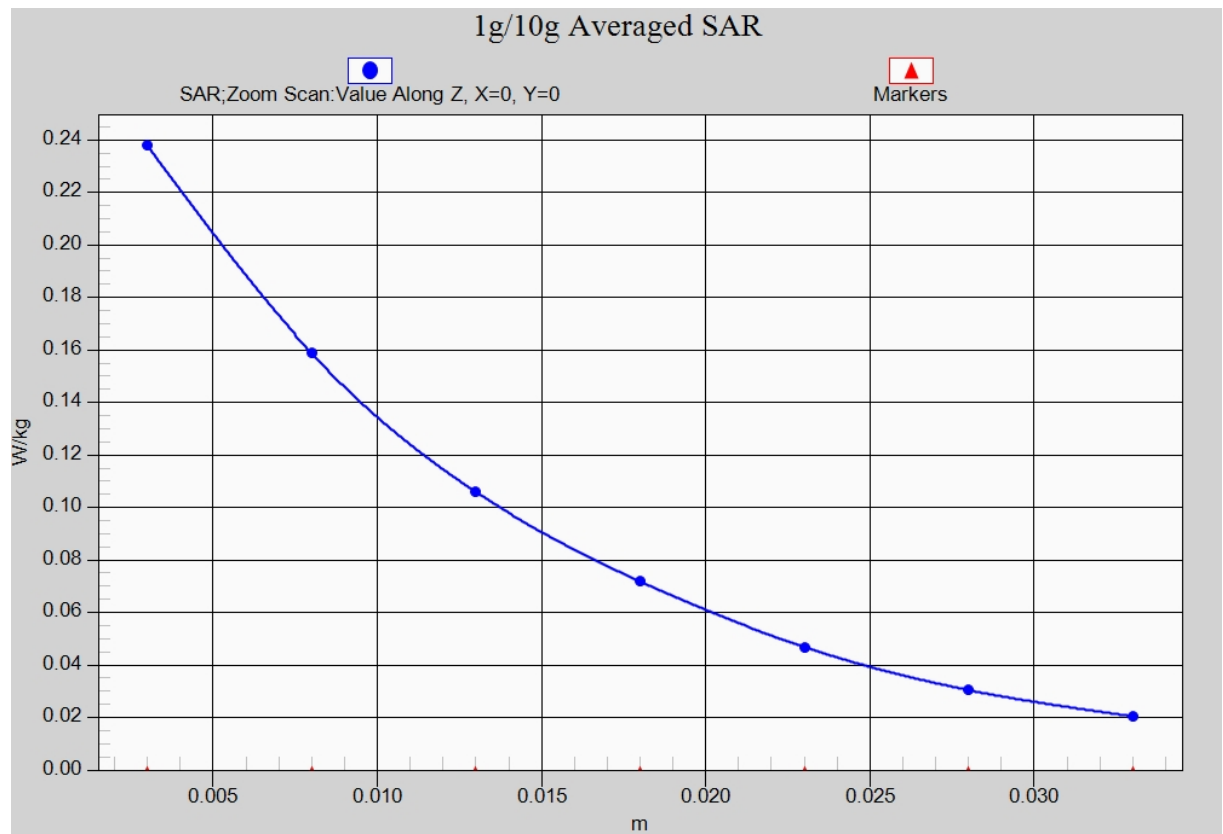


Fig. 8-1 Z-Scan at power reference point (WCDMA1900)

WCDMA 1700 Body Bottom High – AP ON

Date: 2015-1-17

Electronics: DAE4 Sn777

Medium: Body 1900 MHz

Medium parameters used(interpolated): $f = 1752.6$ MHz; $\sigma = 1.465$ S/m; $\epsilon_r = 51.971$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5 °C Liquid Temperature: 22.0 °C

Communication System: WCDMA 1700 Frequency: 1880 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3846 ConvF(7.43, 7.43, 7.43)

Bottom High/Area Scan (61x41x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.715 W/kg

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

Reference Value = 21.38 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 0.973 W/kg

SAR(1 g) = 0.565 W/kg; SAR(10 g) = 0.293 W/kg

Maximum value of SAR (measured) = 0.723 W/kg

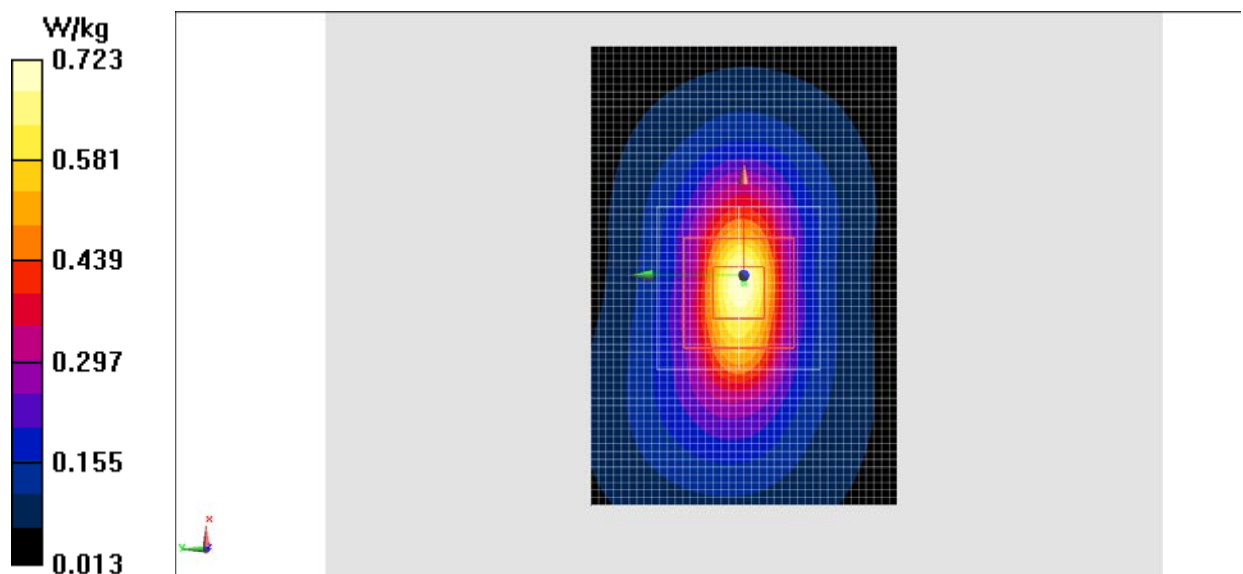


Fig.9 WCDMA1900

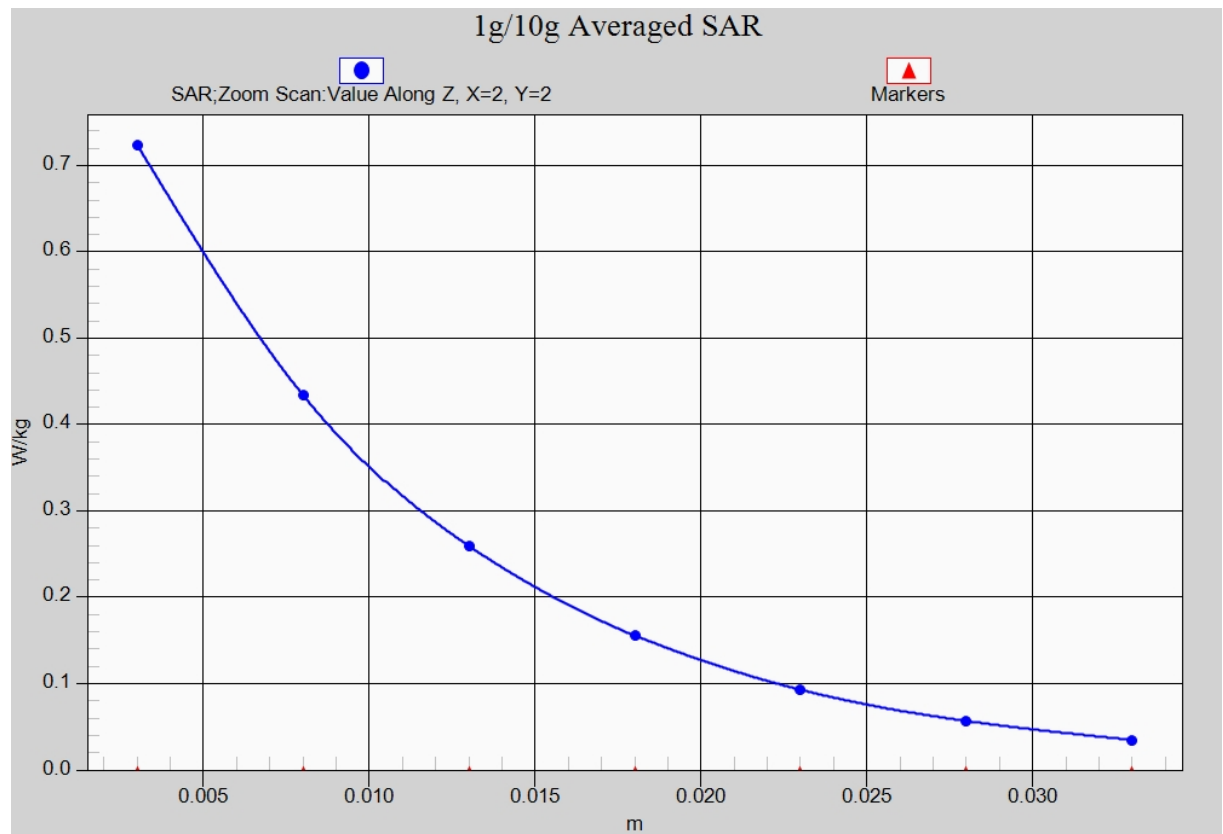


Fig. 9-1 Z-Scan at power reference point (WCDMA1900)

WCDMA 1900 Left Cheek Low – AP OFF

Date: 2015-1-18

Electronics: DAE4 Sn777

Medium: Head 1900 MHz

Medium parameters used (interpolated): $f = 1852.4$ MHz; $\sigma = 1.349$ S/m; $\epsilon_r = 41.094$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5 °C Liquid Temperature: 22.0 °C

Communication System: WCDMA 1900 Frequency: 1852.4 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3846 ConvF(7.26, 7.26, 7.26)

Cheek Low/Area Scan (61x111x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.32 W/kg

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

Reference Value = 8.469 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 1.85 W/kg

SAR(1 g) = 1.16 W/kg; SAR(10 g) = 0.686 W/kg

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

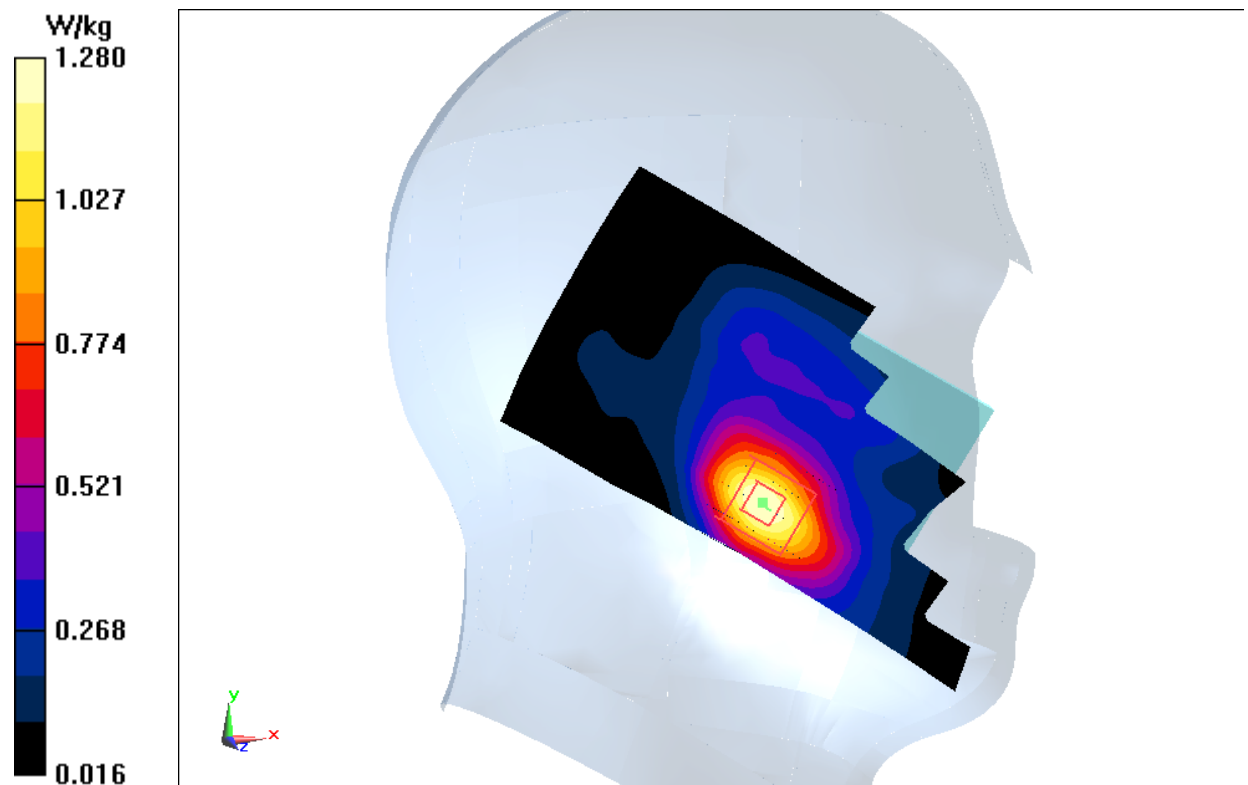


Fig.10 WCDMA1900

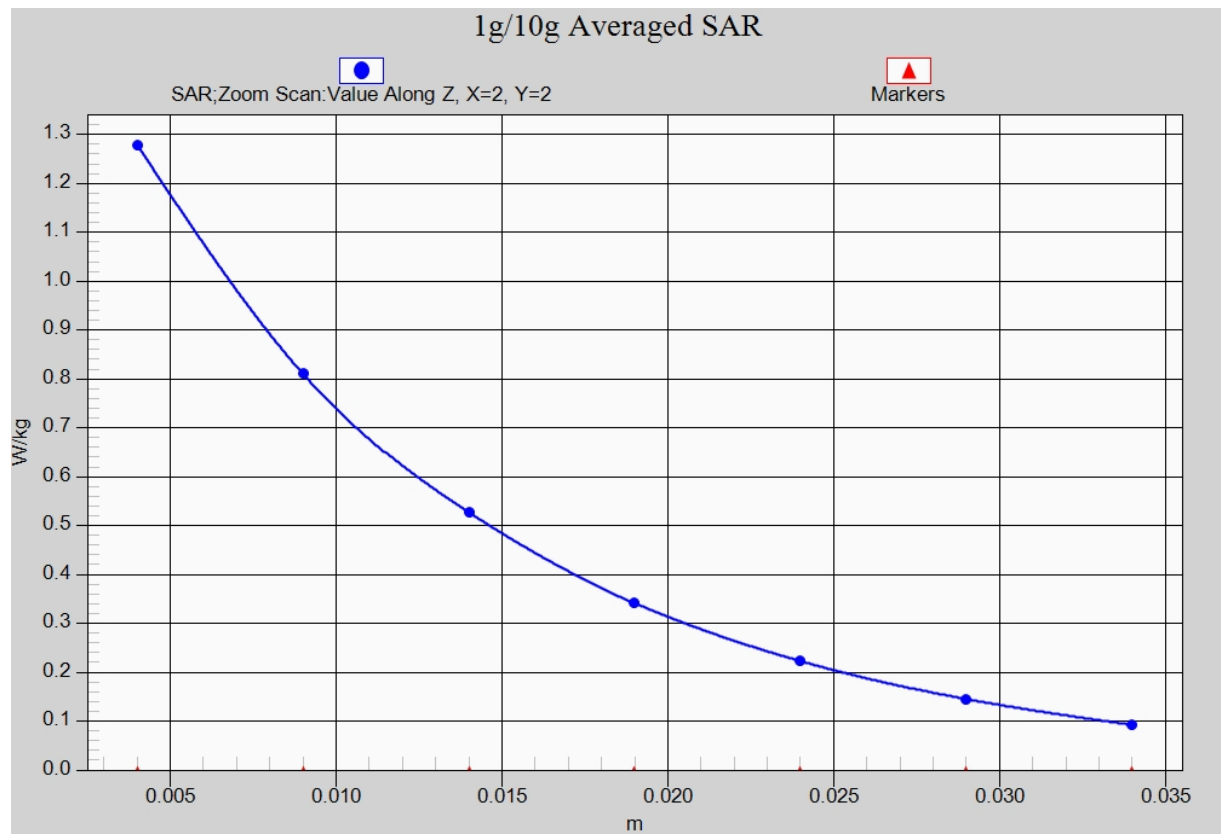


Fig. 10-1 Z-Scan at power reference point (WCDMA1900)

WCDMA 1900 Body Bottom Middle – AP OFF

Date: 2015-1-18

Electronics: DAE4 Sn777

Medium: Body 1900 MHz

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.505$ S/m; $\epsilon_r = 54.348$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5 °C Liquid Temperature: 22.0 °C

Communication System: WCDMA 1900 Frequency: 1880 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3846 ConvF(7.15, 7.15, 7.15)

Bottom Middle/Area Scan (61x41x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

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

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

Reference Value = 25.57 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 1.37 W/kg

SAR(1 g) = 0.868 W/kg; SAR(10 g) = 0.503 W/kg

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

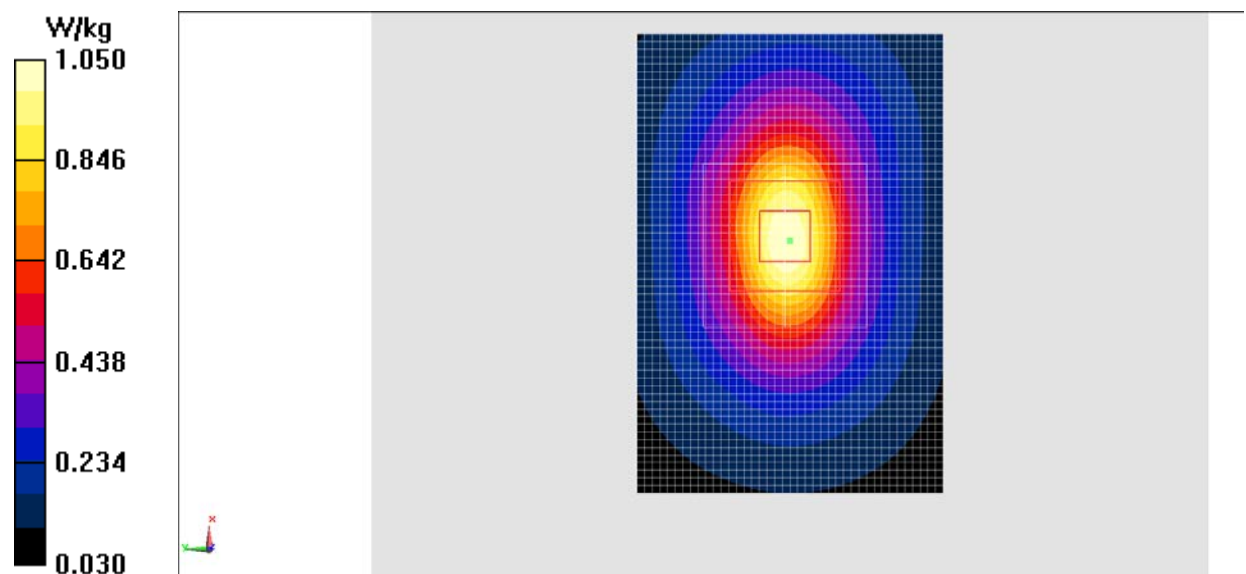


Fig.11 WCDMA1900

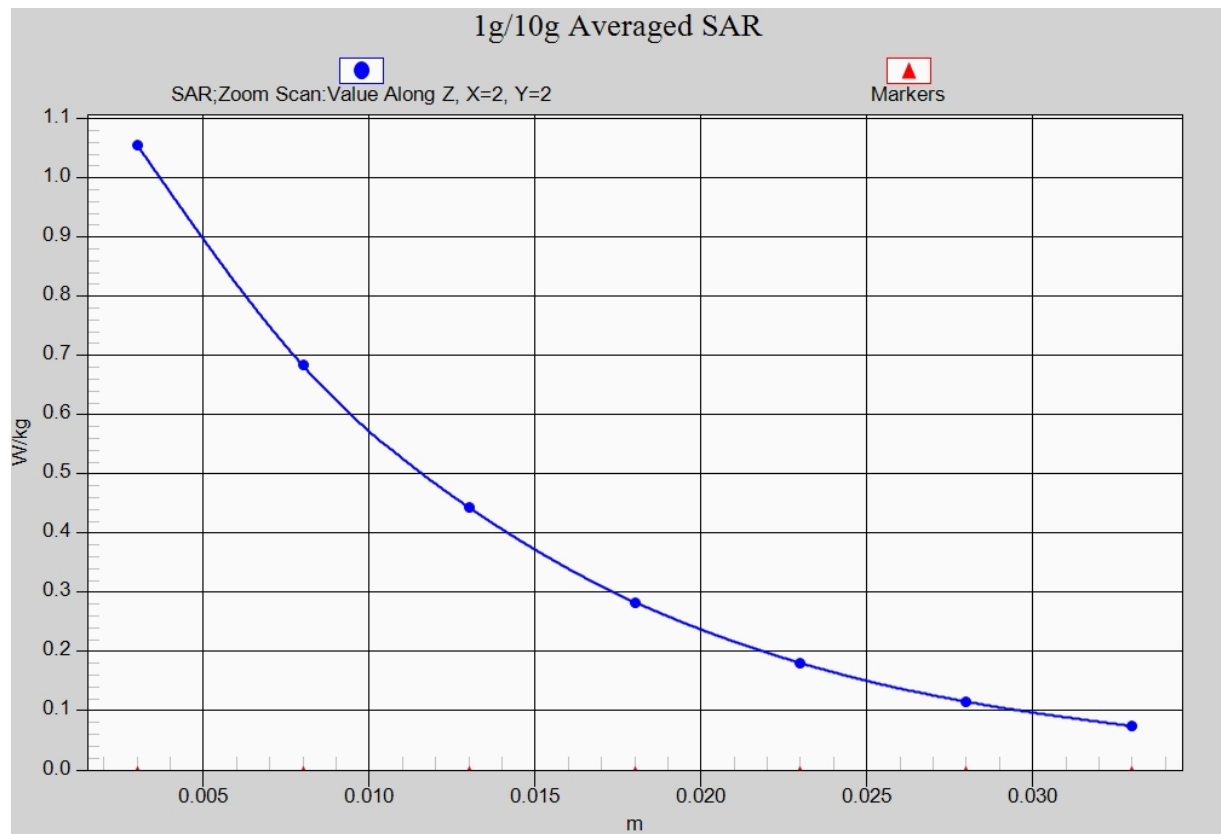


Fig. 11-1 Z-Scan at power reference point (WCDMA1900)

WCDMA 1900 Body Bottom Middle – AP ON

Date: 2015-1-18

Electronics: DAE4 Sn777

Medium: Body 1900 MHz

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.505$ S/m; $\epsilon_r = 54.348$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5 °C Liquid Temperature: 22.0 °C

Communication System: WCDMA 1900 Frequency: 1880 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3846 ConvF(7.15, 7.15, 7.15)

Bottom Middle/Area Scan (61x41x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.823 W/kg

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

Reference Value = 21.08 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 1.14 W/kg

SAR(1 g) = 0.692 W/kg; SAR(10 g) = 0.366 W/kg

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

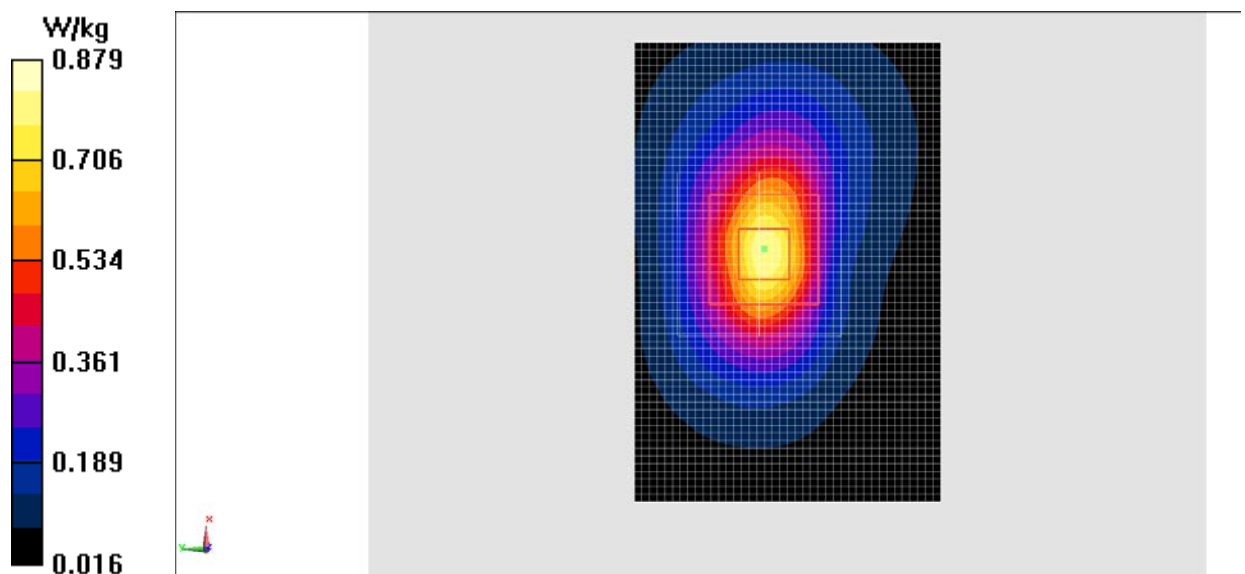


Fig.12 WCDMA1900

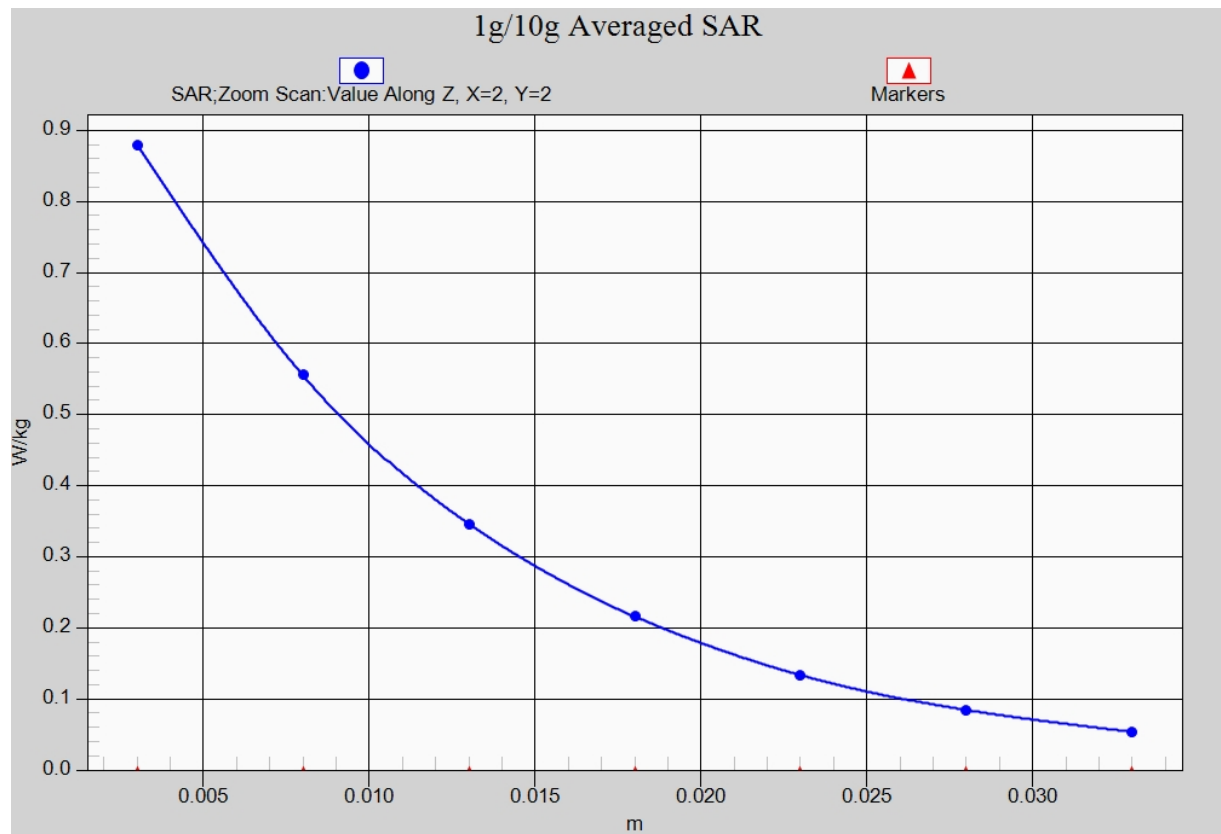


Fig. 12-1 Z-Scan at power reference point (WCDMA1900)

LTE Band2 Left Cheek High with QPSK_20M_1RB_Low – AP OFF

Date: 2015-1-18

Electronics: DAE4 Sn777

Medium: Head 1900 MHz

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.356$ mho/m; $\epsilon_r = 40.775$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5 °C Liquid Temperature: 22.0 °C

Communication System: LTE Band2 Frequency: 1900 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3846 ConvF(7.26, 7.26, 7.26)

Cheek High/Area Scan (61x111x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

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

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

Reference Value = 8.446 V/m; Power Drift = -0.14 dB

Peak SAR (extrapolated) = 1.17 W/kg

SAR(1 g) = 0.723 W/kg; SAR(10 g) = 0.421 W/kg

Maximum value of SAR (measured) = 0.804 W/kg

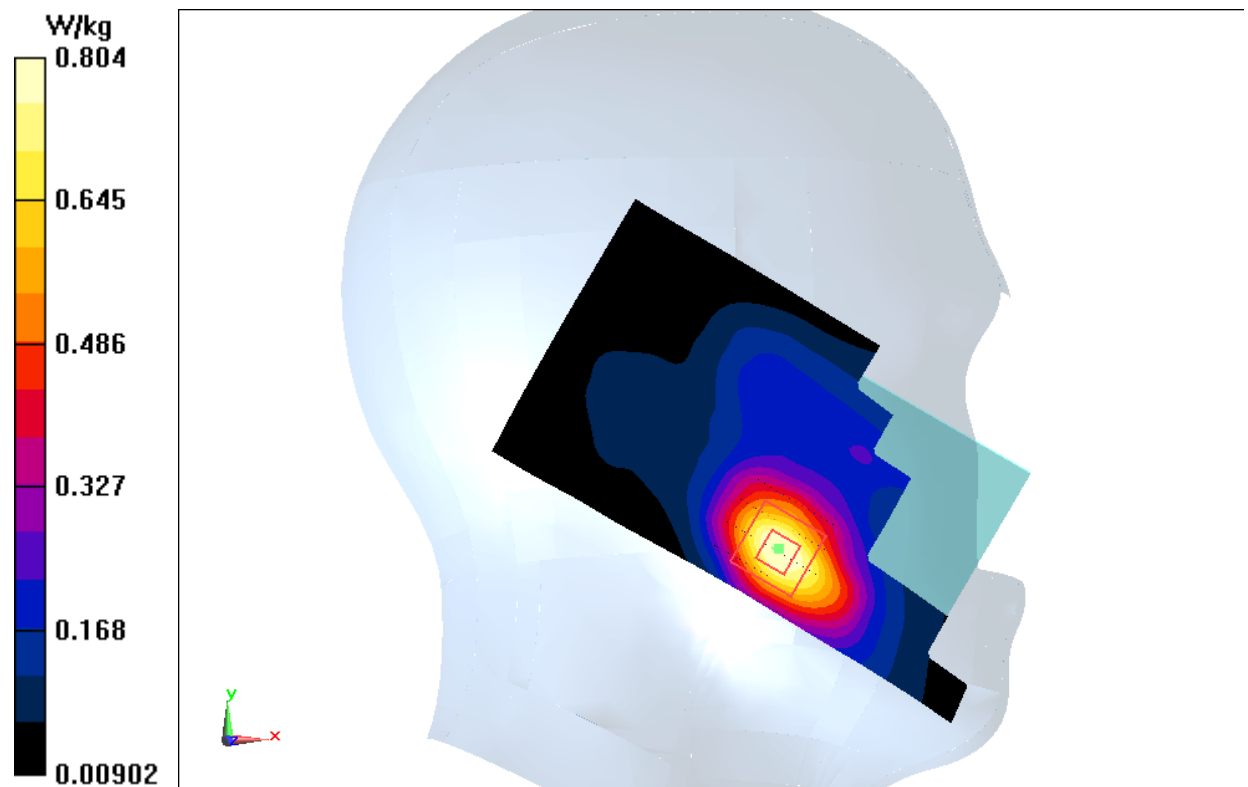


Fig.13 LTE Band2

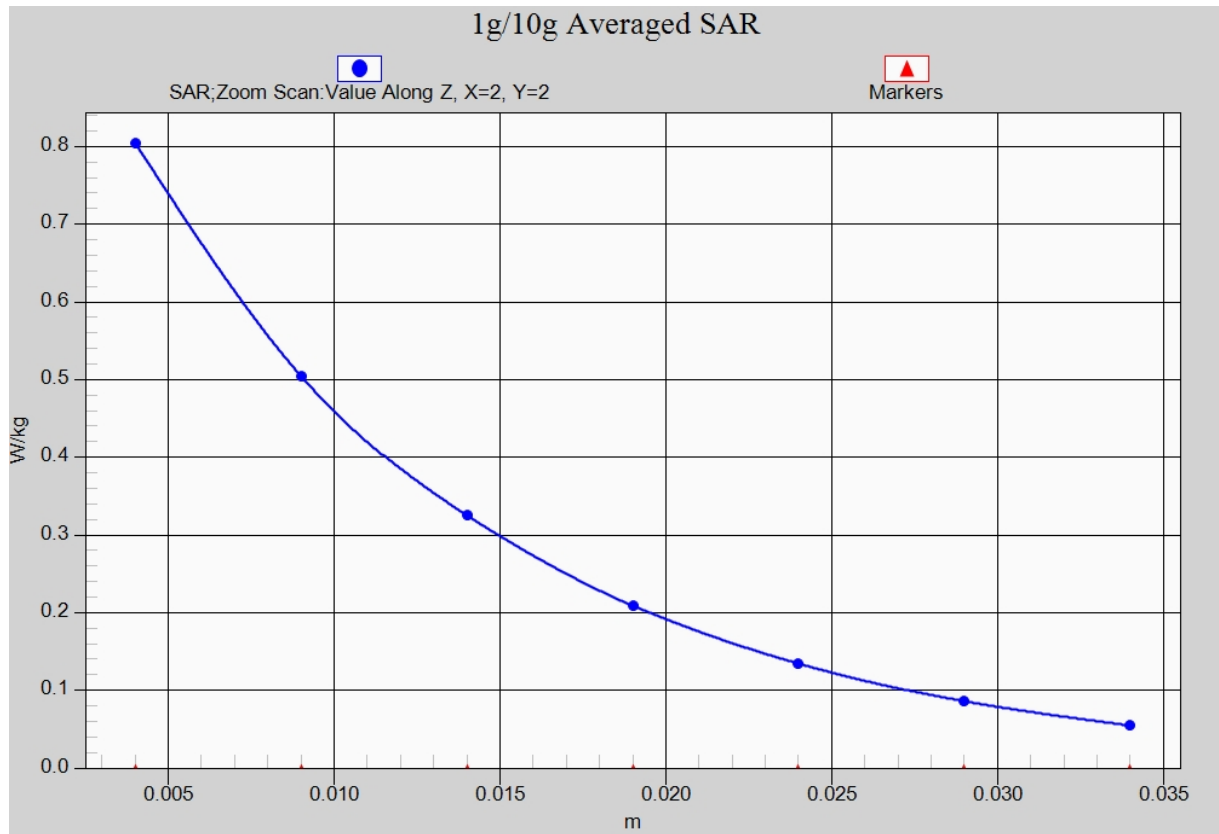


Fig. 13-1 Z-Scan at power reference point (LTE Band2)