

Table 14.1-17: SAR Values (LTE Band2 - Body)

Ambient Temperature: 22.9 °C						Liquid Temperature: 22.5 °C					
Frequency		Mode	Test Position	Figure No./ Note	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)
Ch.	MHz										
18700	1860	1RB-Mid	Front	/	20.62	21	0.334	0.36	0.572	0.62	0.09
18700	1860	1RB-Mid	Rear	/	20.62	21	0.333	0.36	0.610	0.67	0.12
18700	1860	1RB-Mid	Left	/	20.62	21	0.235	0.26	0.376	0.41	0.05
18700	1860	1RB-Mid	Right	/	20.62	21	0.041	0.04	0.065	0.07	0.14
18700	1860	1RB-Mid	Bottom	Fig.17	20.62	21	0.324	0.35	0.643	0.70	-0.11
18700	1860	50RB_Mid	Front	/	20.36	21	0.309	0.36	0.531	0.62	0.06
18700	1860	50RB_Mid	Rear	/	20.36	21	0.312	0.36	0.573	0.66	0.02
18700	1860	50RB_Mid	Left	/	20.36	21	0.239	0.28	0.382	0.44	0.10
18700	1860	50RB_Mid	Right	/	20.36	21	0.043	0.05	0.068	0.08	0.08
18700	1860	50RB_Mid	Bottom	/	20.36	21	0.308	0.36	0.608	0.70	0.01
19100	1900	1RB-Mid	Front	D	22.55	23	2.28	2.53	5.28	5.86	0.17
19100	1900	1RB-Mid	Rear	D	22.55	23	2.30	2.55	5.08	5.63	-0.19
19100	1900	1RB-Mid	Bottom	D	22.55	23	1.03	1.14	2.72	3.02	0.14
18700	1860	1RB-Mid	Bottom	B2	20.62	21	0.235	0.26	0.376	0.41	0.05

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

Note2: The LTE mode is QPSK_20MHz.

D: The distance between the EUT and the phantom bottom is 0mm.Test with Sensor ON Low Power.

Table 14.1-18: SAR Values (LTE Band2 - Body)

Ambient Temperature: 22.9 °C						Liquid Temperature: 22.5 °C					
Frequency		Mode	Test Position	Figure No./ Note	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)
Ch.	MHz										
19100	1900	1RB-Mid	Front	Fig.18	24.5	24.7	0.263	0.28	0.411	0.43	-0.03
19100	1900	1RB-Mid	Rear	/	24.5	24.7	0.256	0.27	0.358	0.37	0.14
19100	1900	50RB-Low	Front	/	23.27	23.7	0.198	0.22	0.311	0.34	0.08
19100	1900	50RB-Low	Rear	/	23.27	23.7	0.214	0.24	0.298	0.33	0.02
19100	1900	1RB-Mid	Front	B2	24.5	24.7	0.251	0.26	0.398	0.42	0.05

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

Note2: The LTE mode is QPSK_20MHz.

Table 14.1-19: SAR Values (LTE Band4 - Head)

Ambient Temperature: 22.9 °C						Liquid Temperature: 22.5 °C						
Frequency		Mode	Side	Test Position	Figure No./ Note	Conduct ed 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)	Powe r Drift (dB)
Ch.	MHz											
20050	1720	1RB-Mid	L	Cheek	Fig.19	23.97	24.2	0.200	0.21	0.302	0.32	0.12
20050	1720	1RB-Mid	L	Tilt	/	23.97	24.2	0.061	0.06	0.095	0.10	0.03
20050	1720	1RB-Mid	R	Cheek	/	23.97	24.2	0.160	0.17	0.145	0.15	-0.09
20050	1720	1RB-Mid	R	Tilt	/	23.97	24.2	0.065	0.07	0.102	0.11	0.03
20050	1720	50RB-High	L	Cheek	/	22.74	23.2	0.149	0.17	0.249	0.28	-0.07
20050	1720	50RB-High	L	Tilt	/	22.74	23.2	0.052	0.06	0.082	0.09	0.16
20050	1720	50RB-High	R	Cheek	/	22.74	23.2	0.083	0.09	0.123	0.14	0.19
20050	1720	50RB-High	R	Tilt	/	22.74	23.2	0.054	0.06	0.086	0.10	0.03
20050	1720	1RB-Mid	L	Cheek	/	23.97	24.2	0.161	0.17	0.276	0.29	0.01

Note1: The LTE mode is QPSK_20MHz.

Table 14.1-20: SAR Values (LTE Band4 - Body)

Ambient Temperature: 22.9 °C						Liquid Temperature: 22.5 °C					
Frequency		Mode	Test Position	Figure No./Note	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)
Ch.	MHz										
20300	1745	1RB_High	Front	/	17.38	18	0.268	0.31	0.512	0.59	0.09
20300	1745	1RB_High	Rear	/	17.38	18	0.226	0.26	0.414	0.48	0.12
20300	1745	1RB_High	Left	/	17.38	18	0.068	0.08	0.107	0.12	0.05
20300	1745	1RB_High	Right	/	17.38	18	0.04	0.05	0.064	0.07	-0.13
20300	1745	1RB_High	Bottom	Fig.20	17.38	18	0.325	0.37	0.601	0.69	0.10
20300	1745	50RB_Low	Front	/	17.16	18	0.285	0.35	0.545	0.66	0.02
20300	1745	50RB_Low	Rear	/	17.16	18	0.221	0.27	0.405	0.49	0.11
20300	1745	50RB_Low	Left	/	17.16	18	0.066	0.08	0.106	0.13	0.08
20300	1745	50RB_Low	Right	/	17.16	18	0.036	0.04	0.058	0.07	0.04
20300	1745	50RB_Low	Bottom	/	17.16	18	0.319	0.39	0.598	0.73	-0.07
20300	1745	1RB_High	Front	D	21.71	22.5	2.00	2.40	4.92	5.90	0.08
20300	1745	1RB_High	Rear	D	21.71	22.5	2.16	2.59	5.00	6.00	0.16
20300	1745	1RB_High	Bottom	D	21.71	22.5	1.28	1.54	3.08	3.69	-0.14
20300	1745	1RB_High	Bottom	B2	17.38	18	0.318	0.37	0.596	0.69	0.14

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

Note2: The LTE mode is QPSK_20MHz.

D: The distance between the EUT and the phantom bottom is 0mm.Test with Sensor ON Low Power.

Table 14.1-21: SAR Values (LTE Band4 - Body)

Ambient Temperature: 22.9 °C						Liquid Temperature: 22.5 °C					
Frequency		Mode	Test Position	Figure No./Note	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)
Ch.	MHz										
20300	1745	1RB_High	Front	Fig.21	23.96	24.2	0.536	0.57	0.951	1.01	-0.01
20175	1732.5	1RB_High	Front	/	23.7	24.2	0.466	0.52	0.828	0.93	0.02
20050	1720	1RB_Mid	Front	/	23.97	24.2	0.459	0.48	0.819	0.86	0.08
20300	1745	1RB_High	Rear	/	23.96	24.2	0.489	0.52	0.863	0.91	-0.06
20175	1732.5	1RB_High	Rear	/	23.7	24.2	0.415	0.47	0.731	0.82	0.12
20050	1720	1RB_Mid	Rear	/	23.97	24.2	0.388	0.41	0.680	0.72	-0.05
20300	1745	50RB-High	Front	/	22.74	23.2	0.369	0.41	0.661	0.73	0.13
20300	1745	50RB-High	Rear	/	22.74	23.2	0.323	0.36	0.565	0.63	0.08
20300	1745	100RB	Front	/	22.69	23.2	0.325	0.37	0.587	0.66	0.10
20300	1745	100RB	Rear	/	22.69	23.2	0.362	0.41	0.64	0.72	0.14
20300	1745	1RB_High	Front	B2	23.96	24.2	0.478	0.51	0.838	0.89	-0.06

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

Note2: The LTE mode is QPSK_20MHz.

Table 14.1-22: SAR Values (LTE Band5 - Head)

Ambient Temperature: 22.9°C						Liquid Temperature: 22.5°C						
Frequency		Mode	Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz											
20600	844	1RB-Mid	L	Cheek	Fig.22	23.42	24.3	0.203	0.25	0.266	0.33	-0.06
20600	844	1RB-Mid	L	Tilt	/	23.42	24.3	0.135	0.17	0.179	0.22	0.04
20600	844	1RB-Mid	R	Cheek	/	23.42	24.3	0.199	0.24	0.265	0.32	-0.01
20600	844	1RB-Mid	R	Tilt	/	23.42	24.3	0.091	0.11	0.160	0.20	0.02
20600	844	25RB_Mid	L	Cheek	/	22.25	23.3	0.147	0.19	0.192	0.24	-0.07
20600	844	25RB_Mid	L	Tilt	/	22.25	23.3	0.105	0.13	0.139	0.18	0.01
20600	844	25RB_Mid	R	Cheek	/	22.25	23.3	0.151	0.19	0.202	0.26	0.05
20600	844	25RB_Mid	R	Tilt	/	22.25	23.3	0.090	0.12	0.154	0.20	-0.06
20600	844	1RB-Mid	L	Cheek	B2	23.42	24.3	0.184	0.23	0.249	0.30	0.02

Note1: The LTE mode is QPSK_10MHz.

Table 14.1-23: SAR Values (LTE Band5 - Body)

Ambient Temperature: 22.9°C						Liquid Temperature: 22.5°C					
Frequency		Mode	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
20600	844	1RB-Mid	Front	/	23.42	24.3	0.215	0.26	0.275	0.34	0.08
20600	844	1RB-Mid	Rear	Fig.23	23.42	24.3	0.249	0.30	0.319	0.39	0.11
20600	844	1RB-Mid	Left	/	23.42	24.3	0.136	0.17	0.194	0.24	0.04
20600	844	1RB-Mid	Right	/	23.42	24.3	0.185	0.23	0.265	0.32	-0.13
20600	844	1RB-Mid	Bottom	/	23.42	24.3	0.035	0.04	0.062	0.08	0.06
20600	844	25RB_Mid	Front	/	22.25	23.3	0.160	0.20	0.205	0.26	0.17
20600	844	25RB_Mid	Rear	/	22.25	23.3	0.189	0.24	0.242	0.31	0.03
20600	844	25RB_Mid	Left	/	22.25	23.3	0.105	0.13	0.148	0.19	0.04
20600	844	25RB_Mid	Right	/	22.25	23.3	0.143	0.18	0.205	0.26	0.18
20600	844	25RB_Mid	Bottom	/	22.25	23.3	0.027	0.03	0.050	0.06	0.10
20600	844	1RB-Mid	Rear	/	23.42	24.3	0.231	0.28	0.304	0.37	-0.02

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

Note2: The LTE mode is QPSK_10MHz.

Table 14.1-24: SAR Values (LTE Band5 - Body)

Ambient Temperature: 22.9°C						Liquid Temperature: 22.5°C					
Frequency		Mode	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
20600	844	1RB-Mid	Front	/	23.42	24.3	0.112	0.14	0.145	0.18	0.08
20600	844	1RB-Mid	Rear	Fig.24	23.42	24.3	0.128	0.16	0.166	0.20	0.12
20600	844	25RB_Mid	Front	/	22.25	23.3	0.084	0.11	0.108	0.14	-0.03
20600	844	25RB_Mid	Rear	/	22.25	23.3	0.095	0.12	0.122	0.16	0.14
20600	844	1RB-Mid	Rear	B2	23.42	24.3	0.124	0.15	0.162	0.20	0.05

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

Note2: The LTE mode is QPSK_10MHz.

Table 14.1-25: SAR Values (LTE Band12 - Head)

Ambient Temperature: 22.9 °C						Liquid Temperature: 22.5 °C						
Frequency		Mode	Side	Test Position	Figure No./ Note	Conduct ed 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)
Ch.	MHz											
23130	711	1RB-Mid	L	Cheek	Fig.25	22.71	23.4	0.222	0.26	0.280	0.33	0.04
23130	711	1RB-Mid	L	Tilt	/	22.71	23.4	0.170	0.20	0.215	0.25	-0.01
23130	711	1RB-Mid	R	Cheek	/	22.71	23.4	0.214	0.25	0.273	0.32	0.06
23130	711	1RB-Mid	R	Tilt	/	22.71	23.4	0.130	0.15	0.211	0.25	-0.05
23130	711	25RB_Low	L	Cheek	/	21.37	22.4	0.175	0.22	0.218	0.28	0.03
23130	711	25RB_Low	L	Tilt	/	21.37	22.4	0.127	0.16	0.159	0.20	0.08
23130	711	25RB_Low	R	Cheek	/	21.37	22.4	0.165	0.21	0.209	0.27	0.01
23130	711	25RB_Low	R	Tilt	/	21.37	22.4	0.099	0.12	0.157	0.20	0.01
23130	711	1RB-Mid	L	Cheek	B2	22.71	23.4	0.191	0.22	0.246	0.29	-0.02

Note1: The LTE mode is QPSK_10MHz.

Table 14.1-26: SAR Values (LTE Band12 - Body)

Ambient Temperature: 22.9℃						Liquid Temperature: 22.5℃					
Frequency		Mode	Test Position	Figure No./Note	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)
Ch.	MHz										
23130	711	1RB-Mid	Front	/	22.71	23.4	0.186	0.22	0.230	0.27	0.09
23130	711	1RB-Mid	Rear	Fig.26	22.71	23.4	0.190	0.22	0.240	0.28	0.05
23130	711	1RB-Mid	Left	/	22.71	23.4	0.187	0.22	0.235	0.28	0.14
23130	711	1RB-Mid	Right	/	22.71	23.4	0.078	0.09	0.114	0.13	-0.06
23130	711	1RB-Mid	Bottom	/	22.71	23.4	0.017	0.02	0.024	0.03	0.08
23130	711	25RB_Low	Front	/	21.37	22.4	0.154	0.20	0.172	0.22	0.12
23130	711	25RB_Low	Rear	/	21.37	22.4	0.143	0.18	0.180	0.23	0.06
23130	711	25RB_Low	Left	/	21.37	22.4	0.141	0.18	0.178	0.23	0.11
23130	711	25RB_Low	Right	/	21.37	22.4	0.057	0.07	0.101	0.13	0.16
23130	711	25RB_Low	Bottom	/	21.37	22.4	0.011	0.01	0.016	0.02	0.05
23130	711	1RB-Mid	Rear	B2	22.71	23.4	0.179	0.21	0.223	0.26	0.10

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

Note2: The LTE mode is QPSK_10MHz.

Table 14.1-27: SAR Values (LTE Band12 - Body)

Ambient Temperature: 22.9℃						Liquid Temperature: 22.5℃					
Frequency		Mode	Test Position	Figure No./Note	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)
Ch.	MHz										
23130	711	1RB-Mid	Front	/	22.71	23.4	0.140	0.16	0.177	0.21	0.02
23130	711	1RB-Mid	Rear	Fig.27	22.71	23.4	0.167	0.20	0.211	0.25	-0.05
23130	711	25RB_Low	Front	/	21.37	22.4	0.106	0.13	0.134	0.17	0.11
23130	711	25RB_Low	Rear	/	21.37	22.4	0.125	0.16	0.157	0.20	-0.09
23130	711	1RB-Mid	Rear	B2	22.71	23.4	0.162	0.19	0.206	0.24	0.14

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

Note2: The LTE mode is QPSK_10MHz.

Table 14.1-28: SAR Values (LTE Band30 - Head)

Ambient Temperature: 22.9 °C						Liquid Temperature: 22.5 °C						
Frequency		Mode	Side	Test Position	Figure No./ Note	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)
Ch.	MHz											
27710	2310	1RB-Mid	L	Cheek	/	23.41	23.9	0.033	0.04	0.053	0.06	0.05
27710	2310	1RB-Mid	L	Tilt	/	23.41	23.9	0.022	0.02	0.043	0.05	-0.09
27710	2310	1RB-Mid	R	Cheek	Fig.28	23.41	23.9	0.070	0.08	0.124	0.14	-0.04
27710	2310	1RB-Mid	R	Tilt	/	23.41	23.9	0.022	0.02	0.043	0.05	0.01
27710	2310	25RB_Low	L	Cheek	/	22.26	22.9	0.025	0.03	0.041	0.05	-0.04
27710	2310	25RB_Low	L	Tilt	/	22.26	22.9	0.017	0.02	0.032	0.04	-0.01
27710	2310	25RB_Low	R	Cheek	/	22.26	22.9	0.051	0.06	0.091	0.11	0.06
27710	2310	25RB_Low	R	Tilt	/	22.26	22.9	0.016	0.02	0.032	0.04	0.02
27710	2310	1RB-Mid	R	Cheek	B2	23.41	23.9	0.064	0.07	0.116	0.13	-0.10

Note1: The LTE mode is QPSK_10MHz.

Table 14.1-29: SAR Values (LTE Band30 - Body) AP ON

Ambient Temperature: 22.9°C						Liquid Temperature: 22.5°C					
Frequency		Mode	Test Position	Figure No./Note	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)
Ch.	MHz										
27710	2310	1RB-Mid	Front	Fig.29	20.4	21	0.276	0.32	0.597	0.69	0.13
27710	2310	1RB-Mid	Rear	/	20.4	21	0.220	0.25	0.426	0.49	0.01
27710	2310	1RB-Mid	Left	/	20.4	21	0.024	0.03	0.045	0.05	-0.04
27710	2310	1RB-Mid	Right	/	20.4	21	0.094	0.11	0.169	0.19	-0.01
27710	2310	1RB-Mid	Bottom	/	20.4	21	0.251	0.29	0.513	0.59	0.08
27710	2310	25RB_Mid	Front	/	20.32	21	0.271	0.32	0.591	0.69	0.01
27710	2310	25RB_Mid	Rear	/	20.32	21	0.218	0.25	0.419	0.49	0.07
27710	2310	25RB_Mid	Left	/	20.32	21	0.022	0.03	0.041	0.05	-0.02
27710	2310	25RB_Mid	Right	/	20.32	21	0.095	0.11	0.170	0.20	-0.06
27710	2310	25RB_Mid	Bottom	/	20.32	21	0.241	0.28	0.494	0.58	-0.14
27710	2310	1RB-Mid	Front	B2	20.4	21	0.273	0.31	0.593	0.68	-0.08

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

Note2: The LTE mode is QPSK_10MHz.

Table 14.1-30: SAR Values (LTE Band30 - Body) AP OFF

Ambient Temperature: 22.9°C						Liquid Temperature: 22.5°C					
Frequency		Mode	Test Position	Figure No./Note	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)
Ch.	MHz										
27710	2310	1RB-Mid	Front	Fig.30	23.41	23.9	0.214	0.24	0.430	0.48	0.06
27710	2310	1RB-Mid	Rear	/	23.41	23.9	0.232	0.26	0.420	0.47	-0.05
27710	2310	25RB_Low	Front	/	22.26	22.9	0.172	0.20	0.345	0.40	0.08
27710	2310	25RB_Low	Rear	/	22.26	22.9	0.174	0.20	0.315	0.37	0.06
27710	2310	1RB-Mid	Front	B2	23.41	23.9	0.210	0.24	0.425	0.48	-0.04

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

Note2: The LTE mode is QPSK_10MHz.

14.2 SAR results for Standard procedure

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

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

Ambient Temperature: 22.9 °C						Liquid Temperature: 22.5°C					
Frequency		Side	Test Position	Figure No./Note	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)
Ch.	MHz										
251	848.8	R	Cheek	Fig.1	31.71	33.5	0.212	0.32	0.276	0.42	0.08

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

Ambient Temperature: 22.9 °C						Liquid Temperature: 22.5°C					
Frequency		Mode (number of timeslots)	Test Position	Figure No./Note	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)
Ch.	MHz										
190	836.6	GPRS (2)	Front	Fig.2	29.91	31	0.263	0.34	0.334	0.43	-0.01

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

Table 14.2-3: SAR Values (GSM 850 MHz Band - Body)

Ambient Temperature: 22.9 °C						Liquid Temperature: 22.5°C					
Frequency		Mode (number of timeslots)	Test Position	Figure No./Note	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)
Ch.	MHz										
128	824.2	GPRS (2)	Rear	Fig.3	29.98	31	0.221	0.28	0.285	0.36	0.04

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

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

Ambient Temperature: 22.9 °C						Liquid Temperature: 22.5°C					
Frequency		Side	Test Position	Figure No./Note	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)
Ch.	MHz										
661	1880	L	Cheek	Fig.4	29.6	30.5	0.191	0.23	0.302	0.37	0.03

Table 14.2-5: SAR Values (GSM 1900 MHz Band - Body)

Ambient Temperature: 22.9 °C						Liquid Temperature: 22.5°C					
Frequency		Mode (number of timeslots)	Test Position	Figure No./Note	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)
Ch.	MHz										
512	1850.2	GPRS (2)	Front	Fig.5	27.7	28.5	0.280	0.34	0.595	0.72	0.09

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

Table 14.2-6: SAR Values (GSM 1900 MHz Band - Body)

Ambient Temperature: 22.9 °C						Liquid Temperature: 22.5 °C					
Frequency		Mode (number of timeslots)	Test Position	Figure No./Note	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)
Ch.	MHz										
661	1880	GPRS (2)	Front	Fig.6	27.92	28.5	0.195	0.22	0.383	0.44	-0.05

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

Table 14.2-7: SAR Values (WCDMA 850 MHz Band - Head)

Ambient Temperature: 22.9 °C						Liquid Temperature: 22.5°C					
Frequency		Side	Test Position	Figure No./Note	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)
Ch.	MHz										
4182	836.4	L	Cheek	Fig.7	24.01	24.5	0.153	0.17	0.200	0.22	0.11

Table 14.2-8: SAR Values (WCDMA 850 MHz Band - Body)

Ambient Temperature: 22.9 °C						Liquid Temperature: 22.5 °C				
Frequency		Test Position	Figure No./Note	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)
Ch.	MHz									
4233	846.6	Rear	Fig.8	23.9	24.5	0.331	0.38	0.424	0.49	-0.10

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

Table 14.2-9: SAR Values (WCDMA 850 MHz Band - Body)

Ambient Temperature: 22.9 °C						Liquid Temperature: 22.5 °C				
Frequency		Test Position	Figure No./Note	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)
Ch.	MHz									
4233	846.6	Rear	Fig.9	23.9	24.5	0.209	0.24	0.272	0.31	0.00

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

Table 14.2-10: SAR Values (WCDMA 1700 MHz Band - Head)

Ambient Temperature: 22.9 °C						Liquid Temperature: 22.5 °C					
Frequency		Side	Test Position	Figure No./Note	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)
Ch.	MHz										
1738	1752.6	L	Cheek	Fig.10	23.69	24	0.311	0.33	0.479	0.51	0.09

Table 14.2-11: SAR Values (WCDMA 1700 MHz Band - Body) AP ON

Ambient Temperature: 22.9 °C						Liquid Temperature: 22.5 °C				
Frequency		Test Position	Figure No./Note	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)
Ch.	MHz									
1738	1752.6	Bottom	Fig.11	16.68	18	0.320	0.43	0.593	0.80	-0.05

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

Table 14.2-12: SAR Values (WCDMA 1700 MHz Band - Body) AP OFF

Ambient Temperature: 22.9°C						Liquid Temperature: 22.5°C				
Frequency		Test Position	Figure No./Note	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)
Ch.	MHz									
1738	1752.6	Front	Fig.12	23.69	24	0.657	0.71	1.19	1.28	0.00

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

Table 14.2-13: SAR Values (WCDMA 1900 MHz Band - Head)

Ambient Temperature: 22.9°C						Liquid Temperature: 22.5°C					
Frequency		Side	Test Position	Figure No./Note	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)
Ch.	MHz										
9662	1852.4	L	Cheek	/	23.58	24	0.324	0.36	0.508	0.56	0.06

Table 14.2-14: SAR Values (WCDMA 1900 MHz Band - Body) AP ON

Ambient Temperature: 22.9°C						Liquid Temperature: 22.5°C				
Frequency		Test Position	Figure No./Note	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)
Ch.	MHz									
9662	1852.4	Front	Fig.14	19.66	21	0.225	0.31	0.435	0.59	-0.07

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

Table 14.2-15: SAR Values (WCDMA 1900 MHz Band - Body) AP OFF

Ambient Temperature: 22.9°C						Liquid Temperature: 22.5°C				
Frequency		Test Position	Figure No./Note	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)
Ch.	MHz									
9662	1852.4	Rear	Fig.15	23.58	24	0.306	0.34	0.476	0.52	0.05

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

Table 14.2-16: SAR Values (LTE Band2 - Head)

Ambient Temperature: 22.9°C Liquid Temperature: 22.5°C												
Frequency		Mode	Side	Test Position	Figure No./ Note	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)
Ch.	MHz											
19100	1900	1RB-Mid	L	Cheek	Fig.16	24.5	24.7	0.448	0.47	0.720	0.75	0.09

Note1: The LTE mode is QPSK_20MHz.

Table 14.2-17: SAR Values (LTE Band2 - Body)

Ambient Temperature: 22.9 °C						Liquid Temperature: 22.5 °C					
Frequency		Mode	Test Position	Figure No./ Note	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)
Ch.	MHz										
18700	1860	1RB-Mid	Bottom	Fig.17	20.62	21	0.324	0.35	0.643	0.70	-0.11

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

Note2: The LTE mode is QPSK_20MHz.

Table 14.2-18: SAR Values (LTE Band2 - Body)

Ambient Temperature: 22.9 °C						Liquid Temperature: 22.5 °C					
Frequency		Mode	Test Position	Figure No./ Note	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)
Ch.	MHz										
19100	1900	1RB-Mid	Front	Fig.18	24.5	24.7	0.263	0.28	0.411	0.43	-0.03

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

Note2: The LTE mode is QPSK_20MHz.

Table 14.2-19: SAR Values (LTE Band4 - Head)

Ambient Temperature: 22.9°C													Liquid Temperature: 22.5°C			
Frequency		Mode	Side	Test Position	Figure No./ Note	Conduct ed 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)	Powe r Drift (dB)				
Ch.	MHz															
20050	1720	1RB-Mid	L	Cheek	Fig.19	23.97	24.2	0.200	0.21	0.302	0.32	0.12				

Note1: The LTE mode is QPSK_20MHz.

Table 14.2-20: SAR Values (LTE Band4 - Body)

Ambient Temperature: 22.9 °C						Liquid Temperature: 22.5 °C					
Frequency		Mode	Test Position	Figure No./Note	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)
Ch.	MHz										
20300	1745	1RB_High	Bottom	Fig.20	17.38	18	0.325	0.37	0.601	0.69	0.10

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

Note2: The LTE mode is QPSK_20MHz.

Table 14.2-21: SAR Values (LTE Band4 - Body)

Ambient Temperature: 22.9 °C						Liquid Temperature: 22.5 °C					
Frequency		Mode	Test Position	Figure No./Note	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)
Ch.	MHz										
20300	1745	1RB_High	Front	Fig.21	23.96	24.2	0.536	0.57	0.951	1.01	-0.01

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

Note2: The LTE mode is QPSK_20MHz.

Table 14.2-22: SAR Values (LTE Band5 - Head)

Ambient Temperature: 22.9°C Liquid Temperature: 22.5°C												
Frequency		Mode	Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz											
20600	844	1RB-Mid	L	Cheek	Fig.22	23.42	24.3	0.203	0.25	0.266	0.33	-0.06

Note1: The LTE mode is QPSK_10MHz.

Table 14.2-23: SAR Values (LTE Band5 - Body)

Ambient Temperature: 22.9°C						Liquid Temperature: 22.5°C					
Frequency		Mode	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
20600	844	1RB-Mid	Rear	Fig.23	23.42	24.3	0.249	0.30	0.319	0.39	0.11

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

Note2: The LTE mode is QPSK_10MHz.

Table 14.2-24: SAR Values (LTE Band5 - Body)

Ambient Temperature: 22.9°C						Liquid Temperature: 22.5°C					
Frequency		Mode	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
20600	844	1RB-Mid	Rear	Fig.24	23.42	24.3	0.128	0.16	0.166	0.20	0.12

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

Note2: The LTE mode is QPSK_10MHz.

Table 14.2-25: SAR Values (LTE Band12 - Head)

Ambient Temperature: 22.9°CLiquid Temperature: 22.5°C												
Frequency		Mode	Side	Test Position	Figure No./ Note	Conduct ed 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)
Ch.	MHz											
23130	711	1RB-Mid	L	Cheek	Fig.25	22.71	23.4	0.222	0.26	0.280	0.33	0.04

Note1: The LTE mode is QPSK_10MHz.

Table 14.2-26: SAR Values (LTE Band12 - Body)

Ambient Temperature: 22.9°C						Liquid Temperature: 22.5°C					
Frequency		Mode	Test Position	Figure No./ Note	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)
Ch.	MHz										
23130	711	1RB-Mid	Rear	Fig.26	22.71	23.4	0.190	0.22	0.240	0.28	0.05

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

Note2: The LTE mode is QPSK_10MHz.

Table 14.2-27: SAR Values (LTE Band12 - Body)

Ambient Temperature: 22.9 °C						Liquid Temperature: 22.5 °C					
Frequency		Mode	Test Position	Figure No./Note	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)
Ch.	MHz										
23130	711	1RB-Mid	Rear	Fig.27	22.71	23.4	0.167	0.20	0.211	0.25	-0.05

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

Note2: The LTE mode is QPSK_10MHz.

Table 14.2-28: SAR Values (LTE Band30 - Head)

Ambient Temperature: 22.9 °C						Liquid Temperature: 22.5 °C						
Frequency		Mode	Side	Test Position	Figure No./ Note	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)
Ch.	MHz											
27710	2310	1RB-Mid	R	Cheek	Fig.28	23.41	23.9	0.070	0.08	0.124	0.14	-0.04

Note1: The LTE mode is QPSK_10MHz.

Table 14.2-29: SAR Values (LTE Band30 - Body) AP ON

Ambient Temperature: 22.9 °C						Liquid Temperature: 22.5 °C					
Frequency		Mode	Test Position	Figure No./Note	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)
Ch.	MHz										
27710	2310	1RB-Mid	Front	Fig.29	20.4	21	0.276	0.32	0.597	0.69	0.13

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

Note2: The LTE mode is QPSK_10MHz.

Table 14.2-30: SAR Values (LTE Band30 - Body) AP OFF

Ambient Temperature: 22.9 °C						Liquid Temperature: 22.5 °C					
Frequency		Mode	Test Position	Figure No./Note	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)
Ch.	MHz										
27710	2310	1RB-Mid	Front	Fig.30	23.41	23.9	0.214	0.24	0.430	0.48	0.06

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

Note2: The LTE mode is QPSK_10MHz.

14.3 WLAN Evaluation

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

Head Evaluation (Test with low power)

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

Ambient Temperature: 22.9 °C						Liquid Temperature: 22.5°C					
Frequency		Side	Test Position	Figure No./ Note	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	L	Cheek	/	11.88	13	0.228	0.30	0.526	0.68	0.07
2437	6	L	Tilt	/	11.88	13	0.144	0.19	0.379	0.49	0.08
2437	6	R	Cheek	/	11.88	13	0.069	0.09	0.169	0.22	-0.05
2437	6	R	Tilt	/	11.88	13	0.056	0.07	0.138	0.18	0.05

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

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

Ambient Temperature: 22.9 °C						Liquid Temperature: 22.5°C					
Frequency		Side	Test Position	Figure No./ Note	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	Fig.31	11.88	13	0.204	0.26	0.622	0.80	0.07
2437	6	Left	Tilt	/	11.88	13	0.167	0.22	0.541	0.70	0.08

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

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

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

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

Ambient Temperature: 22.9 °C					Liquid Temperature: 22.5°C		
Frequency		Side	Test Position	Actual duty factor	maximum duty factor	Reported SAR (1g)(W/kg)	Scaled reported SAR (1g)(W/kg)
MHz	Ch.						
2462	11	Left	Cheek	97.45%	100%	0.80	0.82

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

Body Evaluation (Test with normal power)

Table 14.3-4: SAR Values(WLAN - Body)– 802.11b 1Mbps (Fast SAR) 10mm

Ambient Temperature: 22.9 °C						Liquid Temperature: 22.5°C				
Frequency		Test Position	Figure No./ Note	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	/	16.99	18	0.157	0.20	0.307	0.39	-0.10
2437	6	Rear	/	16.99	18	0.057	0.07	0.117	0.15	-0.05
2437	6	Right	/	16.99	18	0.050	0.06	0.096	0.12	0.13
2437	6	Top	/	16.99	18	0.093	0.12	0.197	0.25	-0.04
2437	6	Front	B2	16.99	18	0.137	0.17	0.292	0.37	0.10

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

Table 14.3-5: SAR Values(WLAN - Body)– 802.11b 1Mbps (Full SAR) 10mm

Ambient Temperature: 22.9 °C					Liquid Temperature: 22.5°C					
Frequency		Test Position	Figure No./ Note	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	Fig.32	16.99	18	0.151	0.19	0.354	0.45	-0.10

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

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

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

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

Ambient Temperature: 22.9 °C				Liquid Temperature: 22.5 °C		
Frequency		Test Position	Actual duty factor	maximum duty factor	Reported SAR (1g)(W/kg)	Scaled reported SAR (1g)(W/kg)
MHz	Ch.					
2437	6	Front	97.45%	100%	0.45	0.46

SAR is not required for OFDM because the 802.11b adjusted SAR ≤ 1.2 W/kg. **Table 14.3-4: SAR**

Table 14.3-7: SAR Values (WLAN - Body)– 802.11b 1Mbps (Fast SAR) 15mm

Ambient Temperature: 22.9 °C						Liquid Temperature: 22.5°C				
Frequency		Test Position	Figure No./ Note	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	/	16.99	18	0.062	0.08	0.119	0.15	0.01
2437	6	Rear	/	16.99	18	0.025	0.03	0.044	0.06	0.14
2437	6	Front	B2	16.99	18	0.049	0.06	0.099	0.12	-0.10

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

Table 14.3-8: SAR Values(WLAN - Body)– 802.11b 1Mbps (Full SAR) 15mm

Ambient Temperature: 22.9 °C						Liquid Temperature: 22.5°C				
Frequency		Test Position	Figure No./ Note	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	Fig.33	16.99	18	0.064	0.08	0.135	0.17	0.01

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

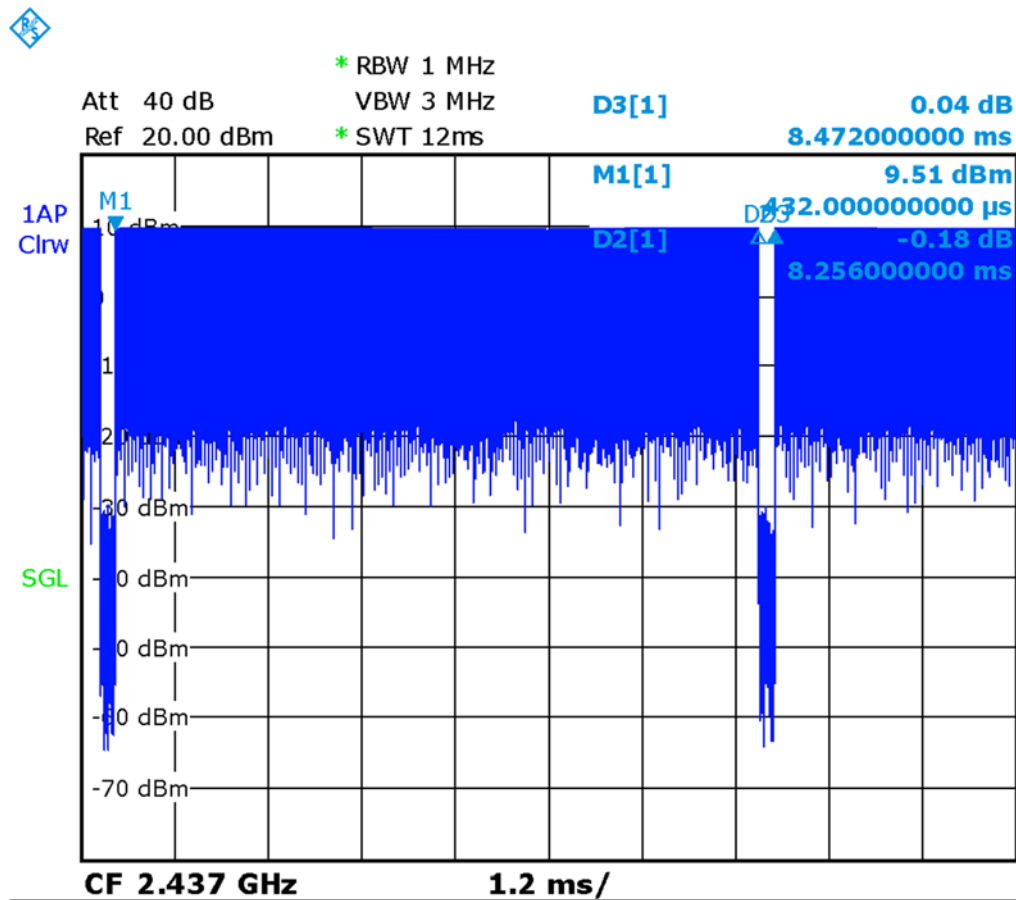
Note2: For all positions/configurations tested using the initial test position and subsequent test positions, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel until the reported SAR is ≤ 1.2 W/kg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

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

Table 14.3-9: SAR Values (WLAN - Body) – 802.11b 1Mbps (Scaled Reported SAR)

Ambient Temperature: 22.9 °C				Liquid Temperature: 22.5°C		
Frequency		Test Position	Actual duty factor	maximum duty factor	Reported SAR (1g)(W/kg)	Scaled reported SAR (1g)(W/kg)
MHz	Ch.					
2437	6	Front	97.45%	100%	0.17	0.17

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



Picture 14.1 Duty factor plot (CH6)

14.4 WLAN Evaluation For 5G

Table 14.4-1: OFDM mode specified maximum output power of WLAN antenna (Low Power)

802.11 mode	a	g	n		ac			
Ch. BW(MHz)	20	20	20	40	20	40	80	160
U-NII-1	X		X	X				
U-NII-2A	X		X	X				
U-NII-2C	X		X	X				
U-NII-3	X		X	X				
§ 15.247 (5.8 GHz)								

X: maximum(conducted) output power(mW), including tolerance, specified for production units

Table 14.4-2: Maximum output power specified of WLAN antenna (Low Power)

802.11 mode	a	g	n		ac			
Ch. BW(MHz)	20	20	20	40	20	40	80	160
U-NII-1	16		16	13				
U-NII-2A	16		16	13				
U-NII-2C	16		16	13				
U-NII-3	16		16	13				
§ 15.247 (5.8 GHz)								

- The maximum output power specified for production units is the same for all channels, modulations and data rates in each channel bandwidth configuration of the 802.11a/g/n/ac modes.
- The blue highlighted cells represent highest output configurations in each standalone or aggregated frequency band, with tune-up tolerance included.

Table 14.4-3: Maximum output power measured of WLAN antenna, for the applicable OFDM configurations according to the default power measurement procedures for selection initial test configurations

802.11 mode	a	n		ac		
BW(MHz)	20	20	40	20	40	80
U-NII-1	36/40/44/48 13/13/12/13	36/40/44/48 Lower power	38/46 Lower power	36/40/44/48 Lower power	38/46 Lower power	42 Lower power
U-NII-2A	52/56/60/64 12/12/12/13	52/56/60/64 Lower power	54/62 Lower power	52/56/60/64 Lower power	54/62 Lower power	58 Lower power
U-NII-2C	100/104/108/112 13/11/10/10 116/120/124/128/132 /136/140/144 10/11/12/12/12/13/12 /11	100/104/108/112 116/120/124/128 /132/136/140/14 4 Lower power	102/110/118/ 126/134/142 Lower power	100/104/108/112 116/120/124/128 /132/136/140/14 4 Lower power	102/110/118/ 126/134/142 Lower power	106/122/138 Lower power
U-NII-3	149/153/157/161/165 11/11/11/12/13	149/153/157/161 /165 Lower power	151/159 Lower power	149/153/157/161 /165 Lower power	151/159 Lower power	155 Lower power

- Channels with measured maximum power within 0.25dB are considered to have the same measured output. Channels selected for initial test configuration are highlighted in yellow.

Table 14.4-4: OFDM mode specified maximum output power of WLAN antenna (Normal Power)

802.11 mode	a	g	n		ac			
Ch. BW(MHz)	20	20	20	40	20	40	80	160
U-NII-1	X		X	X				
U-NII-2A	X		X	X				
U-NII-2C	X		X	X				
U-NII-3	X		X	X				
§ 15.247 (5.8 GHz)								

X: maximum(conducted) output power(mW), including tolerance, specified for production units

Table 14.4-5: Maximum output power specified of WLAN antenna (Normal Power)

802.11 mode	a	g	n		ac			
Ch. BW(MHz)	20	20	20	40	20	40	80	160
U-NII-1	50		50	40				
U-NII-2A	50		50	40				
U-NII-2C	50		50	40				
U-NII-3	50		50	40				
§ 15.247 (5.8 GHz)								

- The maximum output power specified for production units is the same for all channels, modulations and data rates in each channel bandwidth configuration of the 802.11a/g/n/ac modes.
- The **blue highlighted** cells represent highest output configurations in each standalone or aggregated frequency band, with tune-up tolerance included.

Table 14.4-6: Maximum output power measured of WLAN antenna, for the applicable OFDM configurations according to the default power measurement procedures for selection initial test configurations

802.11 mode	a	n		ac		
BW(MHz)	20	20	40	20	40	80
U-NII-1	36/40/44/48 39/35/35/36	36/40/44/48 Lower power	38/46 Lower power	36/40/44/48 Lower power	38/46 Lower power	42 Lower power
U-NII-2A	52/56/60/64 36/38/39/39	52/56/60/64 Lower power	54/62 Lower power	52/56/60/64 Lower power	54/62 Lower power	58 Lower power
U-NII-2C	100/104/108/112 38/35/34/32 116/120/124/128/132 /136/140/144 32/34/36/37/38/39/35 /34	100/104/108/112 116/120/124/128 /132/136/140/14 4 Lower power	102/110/118/ 126/134/142 Lower power	100/104/108/112 116/120/124/128 /132/136/140/14 4 Lower power	102/110/118/ 126/134/142 Lower power	106/122/138 Lower power
U-NII-3	149/153/157/161/ 165 32/34/36/37/40	149/153/157/161 /165 Lower power	151/159 Lower power	149/153/157/161 /165 Lower power	151/159 Lower power	155 Lower power

- Channels with measured maximum power within 0.25dB are considered to have the same measured output. Channels selected for initial test configuration are **highlighted in yellow**.

Table 14.4-4: Reported SAR of initial test configuration for Head (Low Power)

802.11 mode	a	n		ac		
BW(MHz)	20	20	40	20	40	80
U-NII-1	36/40/44/48 U-NII-2A exclusion applied	36/40/44/48	38/46	36/40/44/48	38/46	42
U-NII-2A	52/56/60/64 0.83	52/56/60/64	54/62	52/56/60/64	54/62	58
U-NII-2C	100/104/108/112 116/120/124/128/132/ 136/140/144 0.66	100/104/108/112 116/120/124/128/ 132/136/140/144	102/110/118/ 126/134/142	100/104/108/112 116/120/124/128/ 132/136/140/144	102/110/118/ 126/134/142	106/122 /138
U-NII-3	149/153/157/161/165 0.65	149/153/157/161 /165	151/159	149/153/157/161 /165	151/159	155

U-NII-1 and U-NII-2A bands have the same specified maximum output and tolerance; SAR is measured for U-NII-2A band first. Adjusted SAR of U-NII-2A band is $\leq 1.2\text{W/kg}$, SAR is not required for U-NII-1 band.

Table 14.4-5: Reported SAR of initial test configuration for Body (Normal Power) 10mm

802.11 mode	a	n		ac		
BW(MHz)	20	20	40	20	40	80
U-NII-1	36/40/44/48 U-NII-2A exclusion applied	36/40/44/48	38/46	36/40/44/48	38/46	42
U-NII-2A	52/56/60/64 0.32	52/56/60/64	54/62	52/56/60/64	54/62	58
U-NII-2C	100/104/108/112 116/120/124/128/132/ 136/140/144 0.26	100/104/108/112 116/120/124/128/ 132/136/140/144	102/110/118/ 126/134/142	100/104/108/112 116/120/124/128/ 132/136/140/144	102/110/118/ 126/134/142	106/122 /138
U-NII-3	149/153/157/161/165 0.25	149/153/157/161 /165	151/159	149/153/157/161 /165	151/159	155

U-NII-1 and U-NII-2A bands have the same specified maximum output and tolerance; SAR is measured for U-NII-2A band first. Adjusted SAR of U-NII-2A band is $\leq 1.2\text{W/kg}$, SAR is not required for U-NII-1 band.

Table 14.4-6: Reported SAR of initial test configuration for Body (Normal Power) 15mm

802.11 mode	a	n		ac		
BW(MHz)	20	20	40	20	40	80
U-NII-1	36/40/44/48 U-NII-2A exclusion applied	36/40/44/48	38/46	36/40/44/48	38/46	42
U-NII-2A	52/56/60/64 0.16	52/56/60/64	54/62	52/56/60/64	54/62	58
U-NII-2C	100/104/108/112 116/120/124/128/132/ 136/140/144 0.12	100/104/108/112 116/120/124/128/ 132/136/140/144	102/110/118/ 126/134/142	100/104/108/112 116/120/124/128/ 132/136/140/144	102/110/118/ 126/134/142	106/122 /138
U-NII-3	149/153/157/161/165 0.12	149/153/157/161 /165	151/159	149/153/157/161 /165	151/159	155

U-NII-1 and U-NII-2A bands have the same specified maximum output and tolerance; SAR is measured for U-NII-2A band first. Adjusted SAR of U-NII-2A band is $\leq 1.2\text{W/kg}$, SAR is not required for U-NII-1 band.

Table 14.4-7: SAR Values (WLAN - Head) – 802.11a 6Mbps

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.										
5320	64	L	Cheek	Fig.34	11.13	12	0.188	0.23	0.619	0.76	0.16
5320	64	L	Tilt	/	11.13	12	0.167	0.20	0.474	0.58	0.10
5320	64	R	Cheek	/	11.13	12	0.124	0.15	0.340	0.42	0.17
5320	64	R	Tilt	/	11.13	12	0.128	0.16	0.366	0.45	0.06
5680	136	L	Cheek	/	10.97	12	0.124	0.16	0.360	0.46	0.13
5680	136	L	Tilt	/	10.97	12	0.142	0.18	0.470	0.60	0.09
5680	136	R	Cheek	/	10.97	12	0.117	0.15	0.353	0.45	-0.14
5680	136	R	Tilt	/	10.97	12	0.128	0.16	0.362	0.46	-0.03
5825	165	L	Cheek	/	11.06	12	0.138	0.17	0.478	0.59	-0.08
5825	165	L	Tilt	/	11.06	12	0.117	0.15	0.348	0.43	0.03
5825	165	R	Cheek	/	11.06	12	0.123	0.15	0.353	0.44	0.06
5825	165	R	Tilt	/	11.06	12	0.119	0.15	0.339	0.42	-0.04
5320	64	L	Cheek	B2	11.13	12	0.183	0.22	0.611	0.75	0.16

Table 14.4-8: SAR Values (WLAN - Body) – 802.11a 6Mbps

Frequency		Test Position	D (mm)	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.										
5300	60	Front	10	Fig.35	15.86	17	0.080	0.10	0.224	0.29	-0.11
5300	60	Rear	10	/	15.86	17	0.032	0.04	0.087	0.11	-0.08
5300	60	Right	10	/	15.86	17	0.030	0.04	0.067	0.09	0.05
5300	60	Top	10	/	15.86	17	0.079	0.10	0.201	0.26	0.04
5680	136	Front	10	/	15.87	17	0.068	0.09	0.185	0.24	-0.05
5680	136	Rear	10	/	15.87	17	0.029	0.04	0.078	0.10	0.02
5680	136	Right	10	/	15.87	17	0.033	0.04	0.076	0.10	0.13
5680	136	Top	10	/	15.87	17	0.070	0.09	0.177	0.23	0.07
5825	165	Front	10	/	15.99	17	0.061	0.08	0.153	0.19	0.04
5825	165	Rear	10	/	15.99	17	0.015	0.02	0.051	0.06	0.04
5825	165	Right	10	/	15.99	17	0.015	0.02	0.045	0.06	0.08
5825	165	Top	10	/	15.99	17	0.071	0.09	0.180	0.23	0.08
5300	60	Front	10	B2	15.86	17	0.069	0.09	0.185	0.24	0.04

Table 14.4-9: SAR Values (WLAN - Body) – 802.11a 6Mbps

Frequency		Test Position	D (mm)	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.										
5300	60	Front	15	Fig.36	15.86	17	0.049	0.06	0.117	0.15	0.12
5300	60	Rear	15	/	15.86	17	0.038	0.05	0.083	0.11	-0.06
5680	136	Front	15	/	15.87	17	0.028	0.04	0.089	0.11	0.02
5680	136	Rear	15	/	15.87	17	0.014	0.02	0.042	0.05	-0.02
5825	165	Front	15	/	15.99	17	0.030	0.04	0.086	0.11	0.04
5825	165	Rear	15	/	15.99	17	0.013	0.02	0.036	0.05	0.09
5300	60	Front	15	B2	15.86	17	0.043	0.06	0.106	0.14	0.05

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

Table 14.4-10: SAR Values (WLAN - Head) – 802.11a 6Mbps (Scaled Reported SAR)

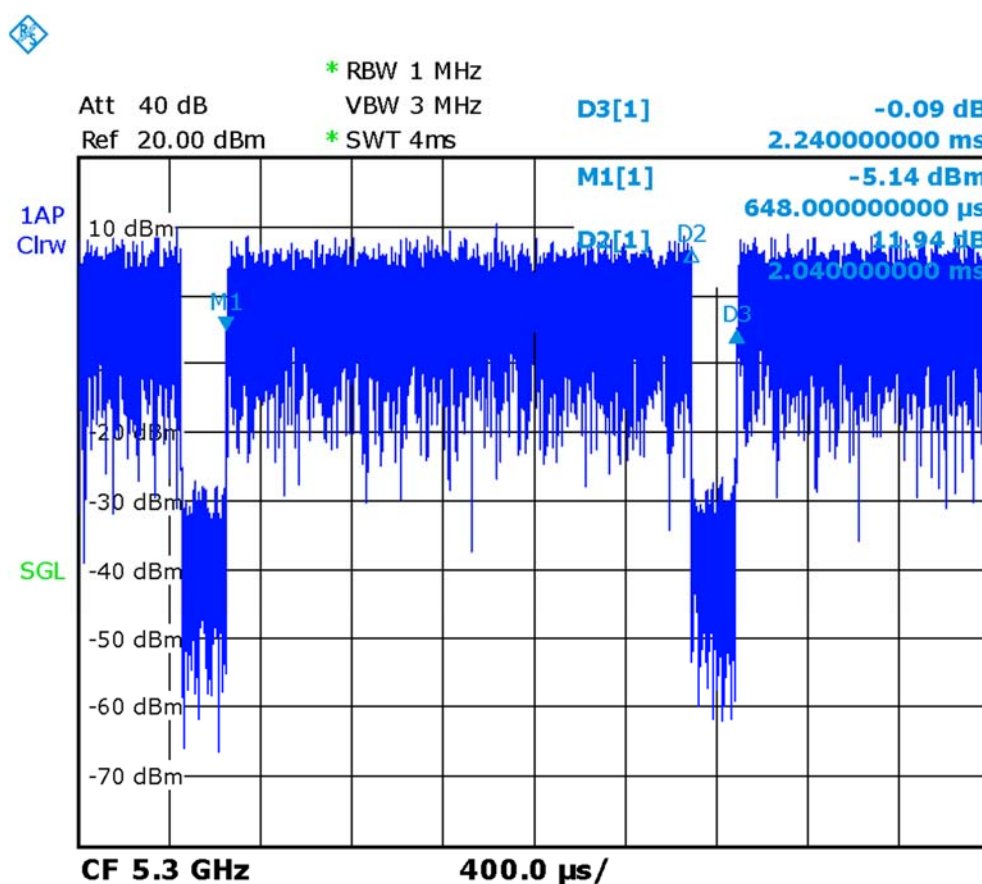
Frequency		Side	Test Position	Actual duty factor	maximum duty factor	Reported SAR (1g) (W/kg)	Scaled reported SAR (1g) (W/kg)
MHz	Ch.						
5320	64	Left	Cheek	91.03%	100%	0.76	0.83

Table 14.4-11: SAR Values (WLAN - Body) – 802.11a 6Mbps (Scaled Reported SAR)

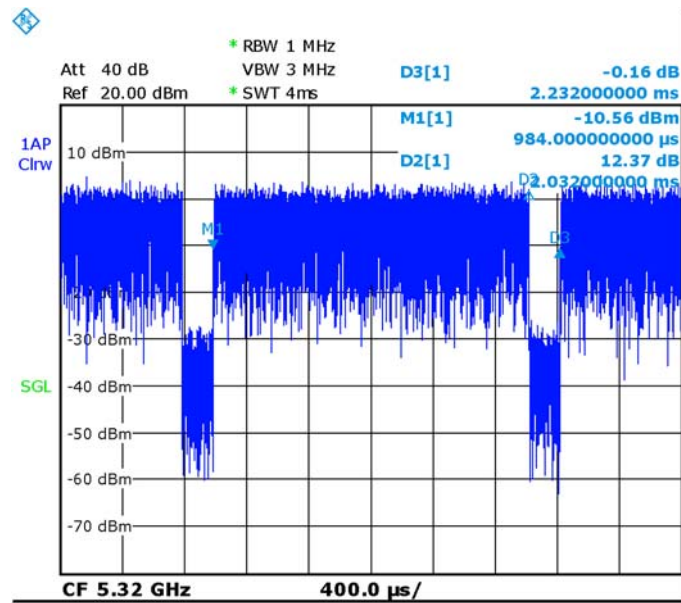
Frequency		Test Position	D (mm)	Actual duty factor	maximum duty factor	Reported SAR (1g) (W/kg)	Scaled reported SAR (1g) (W/kg)
MHz	Ch.						
5300	60	Front	10	91.07%	100%	0.29	0.32

Table 14.4-12: SAR Values (WLAN - Body) – 802.11a 6Mbps (Scaled Reported SAR)

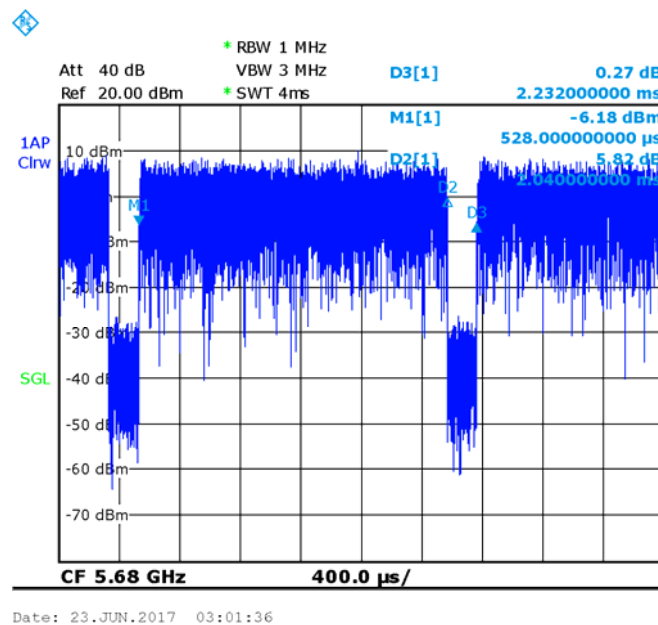
Frequency		Test Position	D (mm)	Actual duty factor	maximum duty factor	Reported SAR (1g) (W/kg)	Scaled reported SAR (1g) (W/kg)
MHz	Ch.						
5300	60	Front	15	91.07%	100%	0.15	0.16



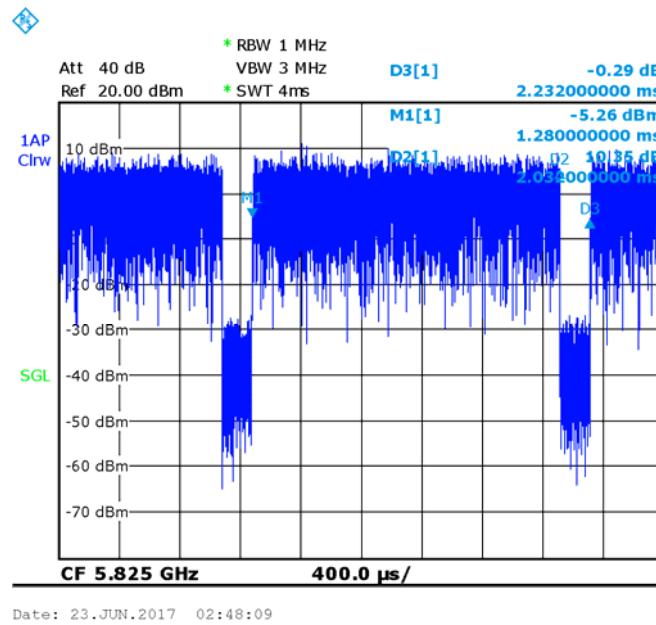
Picture 14.2 The plot of duty factor for CH60 91.07%



Picture 14.3 The plot of duty factor for CH64 91.03%



Picture 14.4 The plot of duty factor for CH136 91.48%



Picture 14.5 The plot of duty factor for CH165 91.03%

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 ($\sim 10\%$ 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 W1700 (1g)

Frequency		Phantom Position	Test Distance	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
Ch.	MHz						
1738	1752.6	Front	15	1.19	1.17	1.02	/

Table 15.2: SAR Measurement Variability for Body LTE B4 (1g)

Frequency		Mode	Test Position	Spacing (mm)	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
Ch.	MHz							
20300	1745	1RB_High	Front	15	0.951	0.949	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	6.0	N	1	1	1	6.0	6.0	∞
2	Isotropy	B	4.7	R	$\sqrt{3}$	0.7	0.7	1.9	1.9	∞
3	Boundary effect	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞
4	Linearity	B	4.7	R	$\sqrt{3}$	1	1	2.7	2.7	∞
5	Detection limit	B	1.0	N	1	1	1	0.6	0.6	∞
6	Readout electronics	B	0.3	R	$\sqrt{3}$	1	1	0.3	0.3	∞
7	Response time	B	0.8	R	$\sqrt{3}$	1	1	0.5	0.5	∞
8	Integration time	B	2.6	R	$\sqrt{3}$	1	1	1.5	1.5	∞
9	RF ambient conditions-noise	B	0	R	$\sqrt{3}$	1	1	0	0	∞
10	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	$u_c' = \sqrt{\sum_{i=1}^{21} c_i^2 u_i^2}$					9.55	9.43	257
Expanded uncertainty (confidence interval of 95 %)	$u_e = 2u_c$					19.1	18.9	

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

No.	Error Description	Type	Uncertainty value	Probably Distribution	Div.	(Ci) 1g	(Ci) 10g	Std. Unc. (1g)	Std. Unc. (10g)	Degree of freedom
Measurement system										
1	Probe calibration	B	6.55	N	1	1	1	6.55	6.55	∞
2	Isotropy	B	4.7	R	$\sqrt{3}$	0.7	0.7	1.9	1.9	∞
3	Boundary effect	B	2.0	R	$\sqrt{3}$	1	1	1.2	1.2	∞
4	Linearity	B	4.7	R	$\sqrt{3}$	1	1	2.7	2.7	∞
5	Detection limit	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞
6	Readout electronics	B	0.3	R	$\sqrt{3}$	1	1	0.3	0.3	∞
7	Response time	B	0.8	R	$\sqrt{3}$	1	1	0.5	0.5	∞
8	Integration time	B	2.6	R	$\sqrt{3}$	1	1	1.5	1.5	∞
9	RF ambient conditions-noise	B	0	R	$\sqrt{3}$	1	1	0	0	∞
10	RF ambient conditions-reflection	B	0	R	$\sqrt{3}$	1	1	0	0	∞
11	Probe positioned mech. restrictions	B	0.8	R	$\sqrt{3}$	1	1	0.5	0.5	∞
12	Probe positioning with respect to phantom shell	B	6.7	R	$\sqrt{3}$	1	1	3.9	3.9	∞
13	Post-processing	B	4.0	R	$\sqrt{3}$	1	1	2.3	2.3	∞
Test sample related										
14	Test sample positioning	A	3.3	N	1	1	1	3.3	3.3	71
15	Device holder uncertainty	A	3.4	N	1	1	1	3.4	3.4	5
16	Drift of output power	B	5.0	R	$\sqrt{3}$	1	1	2.9	2.9	∞
Phantom and set-up										
17	Phantom uncertainty	B	4.0	R	$\sqrt{3}$	1	1	2.3	2.3	∞
18	Liquid conductivity (target)	B	5.0	R	$\sqrt{3}$	0.64	0.43	1.8	1.2	∞
19	Liquid conductivity (meas.)	A	2.06	N	1	0.64	0.43	1.32	0.89	43
20	Liquid permittivity	B	5.0	R	$\sqrt{3}$	0.6	0.49	1.7	1.4	∞

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

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

No.	Error Description	Type	Uncertainty value	Probably Distribution	Div.	(Ci) 1g	(Ci) 10g	Std. Unc. (1g)	Std. Unc. (10g)	Degree of freedom
Measurement system										
1	Probe calibration	B	6.0	N	1	1	1	6.0	6.0	∞
2	Isotropy	B	4.7	R	$\sqrt{3}$	0.7	0.7	1.9	1.9	∞
3	Boundary effect	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞
4	Linearity	B	4.7	R	$\sqrt{3}$	1	1	2.7	2.7	∞
5	Detection limit	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞
6	Readout electronics	B	0.3	R	$\sqrt{3}$	1	1	0.3	0.3	∞
7	Response time	B	0.8	R	$\sqrt{3}$	1	1	0.5	0.5	∞
8	Integration time	B	2.6	R	$\sqrt{3}$	1	1	1.5	1.5	∞
9	RF ambient conditions-noise	B	0	R	$\sqrt{3}$	1	1	0	0	∞
10	RF ambient conditions-reflection	B	0	R	$\sqrt{3}$	1	1	0	0	∞
11	Probe positioned mech. Restrictions	B	0.4	R	$\sqrt{3}$	1	1	0.2	0.2	∞
12	Probe positioning with respect to phantom shell	B	2.9	R	$\sqrt{3}$	1	1	1.7	1.7	∞
13	Post-processing	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞
14	Fast SAR z-Approximation	B	7.0	R	$\sqrt{3}$	1	1	4.0	4.0	∞
Test sample related										
15	Test sample positioning	A	3.3	N	1	1	1	3.3	3.3	71
16	Device holder uncertainty	A	3.4	N	1	1	1	3.4	3.4	5
17	Drift of output power	B	5.0	R	$\sqrt{3}$	1	1	2.9	2.9	∞
Phantom and set-up										
18	Phantom uncertainty	B	4.0	R	$\sqrt{3}$	1	1	2.3	2.3	∞

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

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

No.	Error Description	Type	Uncertainty value	Probably Distribution	Div.	(Ci) 1g	(Ci) 10g	Std. Unc. (1g)	Std. Unc. (10g)	Degree of freedom
Measurement system										
1	Probe calibration	B	6.55	N	1	1	1	6.55	6.55	∞
2	Isotropy	B	4.7	R	$\sqrt{3}$	0.7	0.7	1.9	1.9	∞
3	Boundary effect	B	2.0	R	$\sqrt{3}$	1	1	1.2	1.2	∞
4	Linearity	B	4.7	R	$\sqrt{3}$	1	1	2.7	2.7	∞
5	Detection limit	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞
6	Readout electronics	B	0.3	R	$\sqrt{3}$	1	1	0.3	0.3	∞
7	Response time	B	0.8	R	$\sqrt{3}$	1	1	0.5	0.5	∞
8	Integration time	B	2.6	R	$\sqrt{3}$	1	1	1.5	1.5	∞
9	RF ambient conditions-noise	B	0	R	$\sqrt{3}$	1	1	0	0	∞
10	RF ambient conditions-reflection	B	0	R	$\sqrt{3}$	1	1	0	0	∞
11	Probe positioned mech. Restrictions	B	0.8	R	$\sqrt{3}$	1	1	0.5	0.5	∞
12	Probe positioning with respect to phantom shell	B	6.7	R	$\sqrt{3}$	1	1	3.9	3.9	∞
13	Post-processing	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞
14	Fast SAR z-Approximation	B	14.0	R	$\sqrt{3}$	1	1	8.1	8.1	∞
Test sample related										
15	Test sample positioning	A	3.3	N	1	1	1	3.3	3.3	71
16	Device holder	A	3.4	N	1	1	1	3.4	3.4	5

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

17 MAIN TEST INSTRUMENTS

Table 17.1: List of Main Instruments

No.	Name	Type	Serial Number	Calibration Date	Valid Period
01	Network analyzer	E5071C	MY46110673	January 13, 2017	One year
02	Power meter	NRVD	102083	September 22, 2016	One year
03	Power sensor	NRV-Z5	100595		
04	Signal Generator	E4438C	MY49071430	January 13, 2017	One Year
05	Amplifier	60S1G4	0331848	No Calibration Requested	
06	BTS	E5515C	MY50263375	January 16, 2017	One year
07	BTS	CMW500	159890	November 25, 2016	One year
08	E-field Probe	SPEAG EX3DV4	3846	January 13, 2017	One year
09	DAE	SPEAG DAE4	1331	January 19, 2017	One year
10	Dipole Validation Kit	SPEAG D750V3	1017	July 20, 2016	One year
11	Dipole Validation Kit	SPEAG D835V2	4d069	July 20, 2016	One year
12	Dipole Validation Kit	SPEAG D1750V2	1003	July 21, 2016	One year
13	Dipole Validation Kit	SPEAG D1900V2	5d101	July 28, 2016	One year
14	Dipole Validation Kit	SPEAG D2300V2	1018	July 25, 2016	One year
15	Dipole Validation Kit	SPEAG D2450V2	853	July 25, 2016	One year
16	Dipole Validation Kit	SPEAG D2600V2	1012	July 25, 2016	One year
17	Dipole Validation Kit	SPEAG D5GHZV2	1060	July 27, 2016	One year

END OF REPORT BODY

ANNEX A Graph Results

850 Right Cheek High

Date: 2017-6-3

Electronics: DAE4 Sn1331

Medium: Head 850 MHz

Medium parameters used (interpolated): $f = 848.8$ MHz; $\sigma = 0.899$ mho/m; $\epsilon_r = 40.86$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.9°C Liquid Temperature: 22.5°C

Communication System: GSM 850 GPRS Frequency: 848.8 MHz Duty Cycle: 1:8.3

Probe: EX3DV4 – SN3846 ConvF(9.33, 9.33, 9.33)

Area Scan (71x131x1): Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.304 W/kg

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

Reference Value = 8.776 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.349 W/kg

SAR(1 g) = 0.276 W/kg; SAR(10 g) = 0.212 W/kg

Maximum value of SAR (measured) = 0.304 W/kg

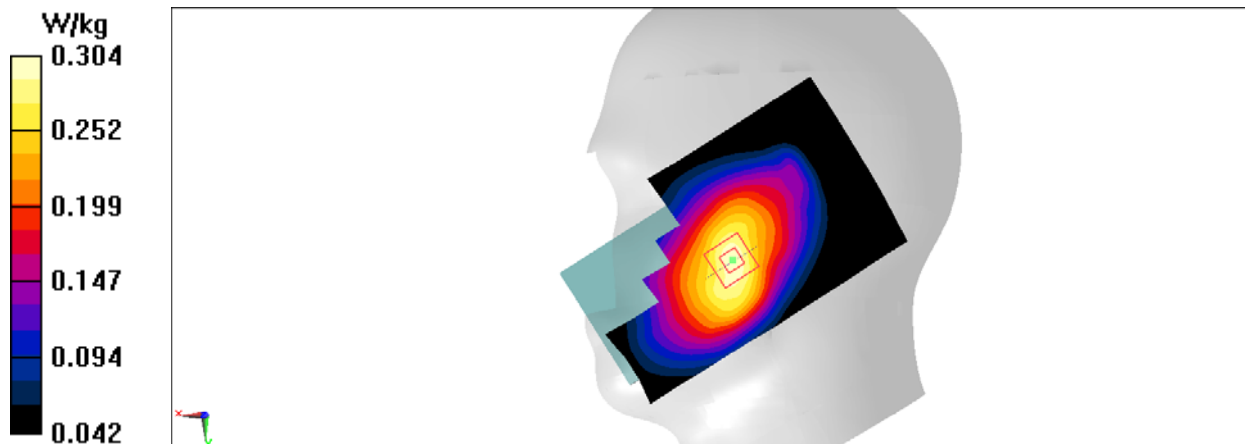


Fig.1 850MHz

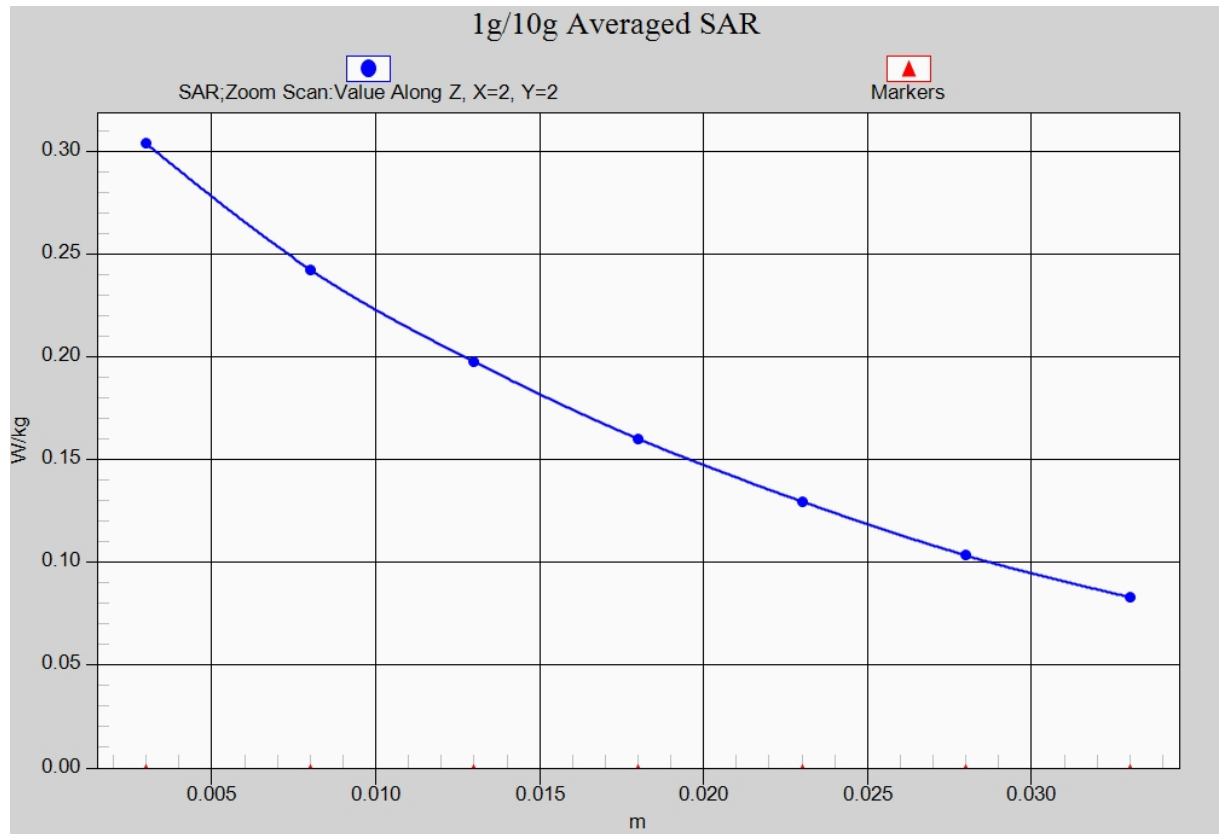


Fig. 1-1 Z-Scan at power reference point (850 MHz)

850 Body Front Middle 10mm

Date: 2017-6-3

Electronics: DAE4 Sn1331

Medium: Body 850 MHz

Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.980$ mho/m; $\epsilon_r = 55.22$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.9°C Liquid Temperature: 22.5°C

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

Probe: EX3DV4 – SN3846 ConvF(9.52, 9.52, 9.52)

Area Scan (121x71x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.366 W/kg

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

Reference Value = 18.69 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.415 W/kg

SAR(1 g) = 0.334 W/kg; SAR(10 g) = 0.263 W/kg

Maximum value of SAR (measured) = 0.362 W/kg

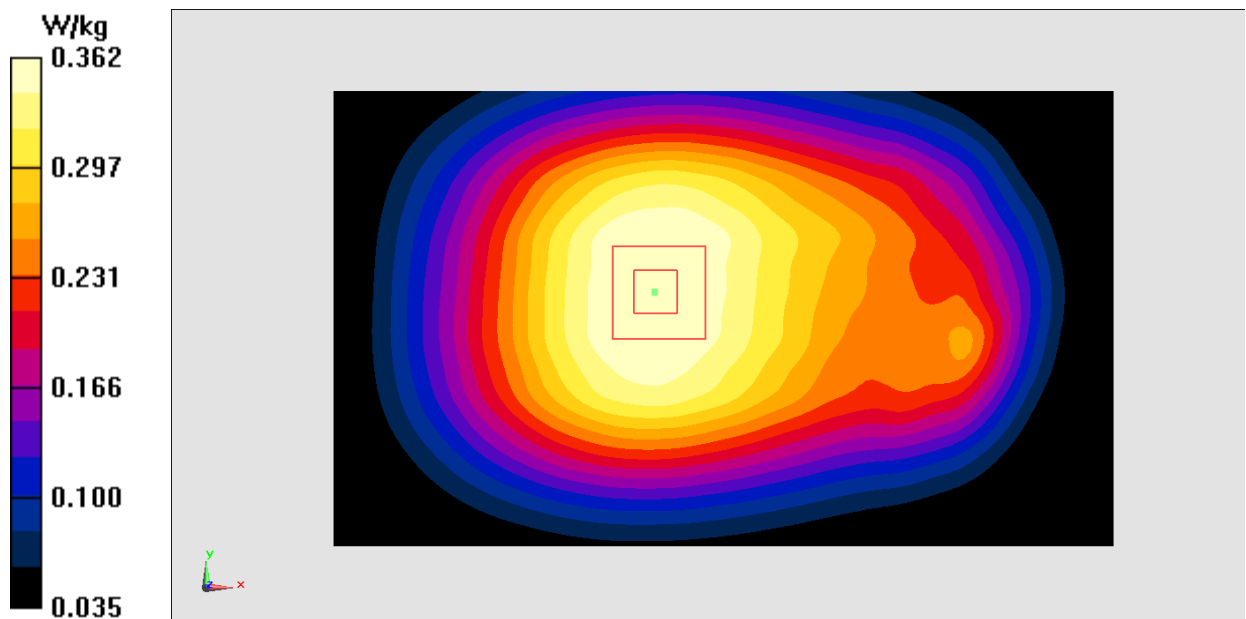


Fig.2 850 MHz

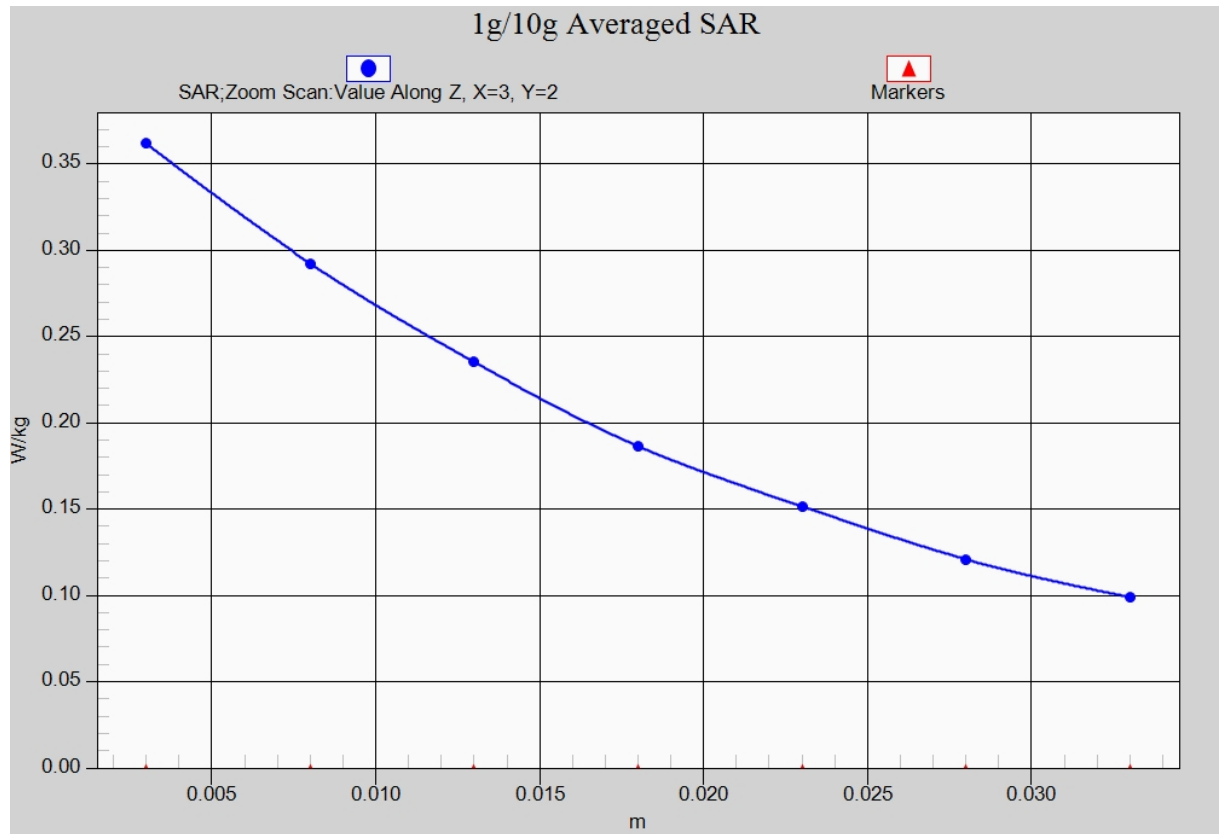


Fig. 2-1 Z-Scan at power reference point (850 MHz)

850 Body Front Low 15mm

Date: 2017-6-3

Electronics: DAE4 Sn1331

Medium: Body 850 MHz

Medium parameters used (interpolated): $f = 824.2$ MHz; $\sigma = 0.965$ mho/m; $\epsilon_r = 56.05$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.9°C Liquid Temperature: 22.5°C

Communication System: GSM 850 GPRS Frequency: 824.2 MHz Duty Cycle: 1:4

Probe: EX3DV4 – SN7307 ConvF(9.52, 9.52, 9.52)

Area Scan (121x71x1): Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.311 W/kg

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

Reference Value = 17.13 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.354 W/kg

SAR(1 g) = 0.285 W/kg; SAR(10 g) = 0.221 W/kg

Maximum value of SAR (measured) = 0.310 W/kg

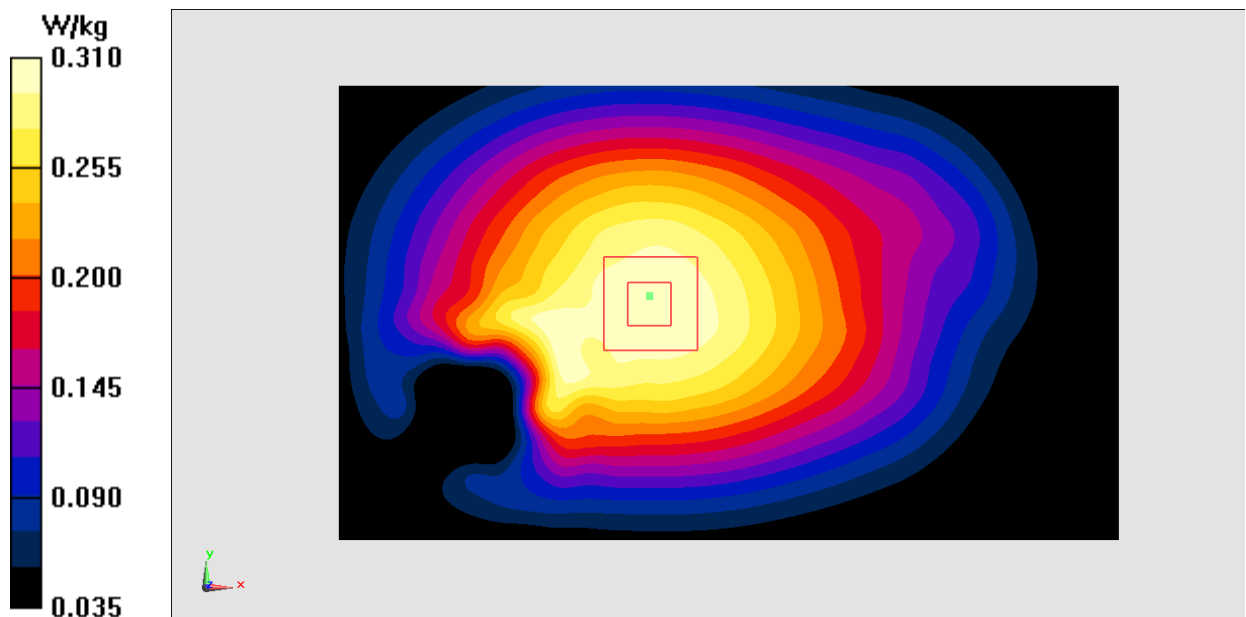


Fig.3 850 MHz

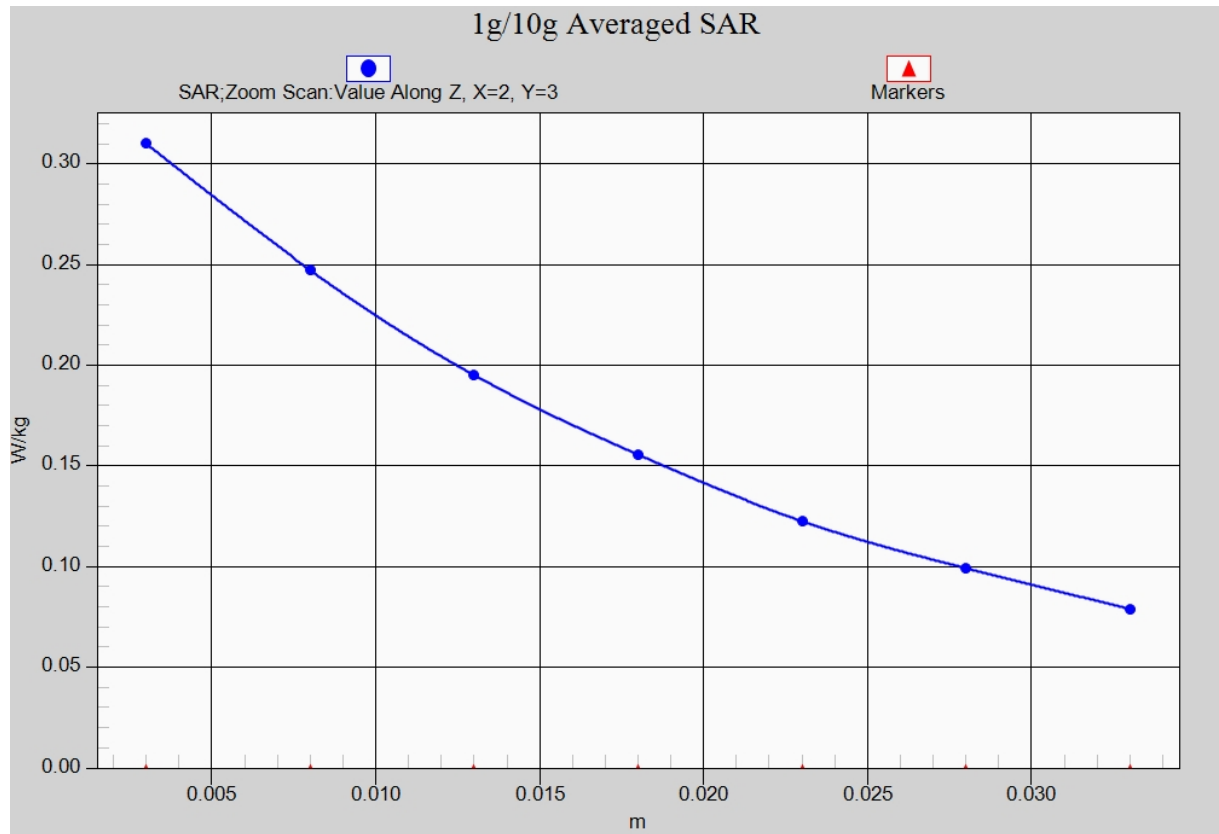


Fig. 3-1 Z-Scan at power reference point (850 MHz)

1900 Left Cheek Middle

Date: 2017-6-5

Electronics: DAE4 Sn1331

Medium: Head 1900 MHz

Medium parameters used (interpolated): $f = 1880$ MHz; $\sigma = 1.386$ mho/m; $\epsilon_r = 41.33$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.9°C Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz GRPS Frequency: 1880 MHz Duty Cycle: 1:8.3

Probe: EX3DV4– SN3846 ConvF(7.89, 7.89, 7.89)

Area Scan (71x131x1): Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.375 W/kg

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

Reference Value = 3.984 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.442 W/kg

SAR(1 g) = 0.302 W/kg; SAR(10 g) = 0.191 W/kg

Maximum value of SAR (measured) = 0.350 W/kg

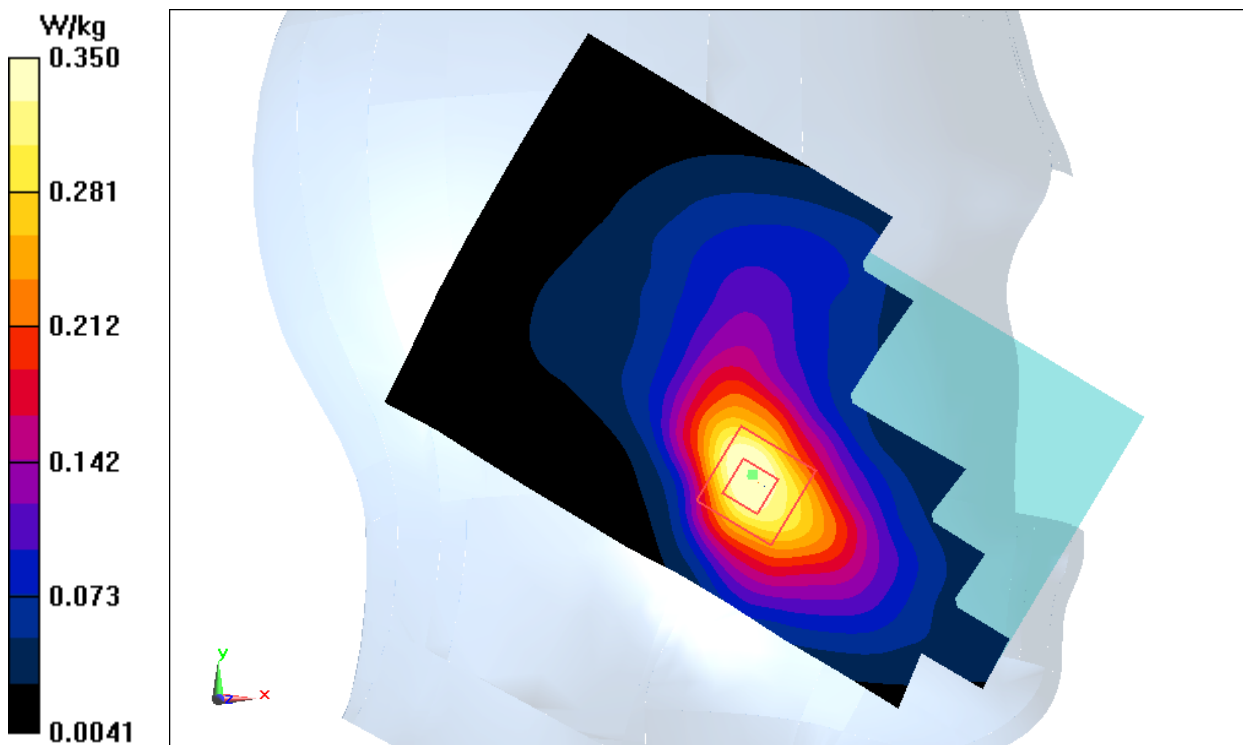


Fig.4 1900 MHz

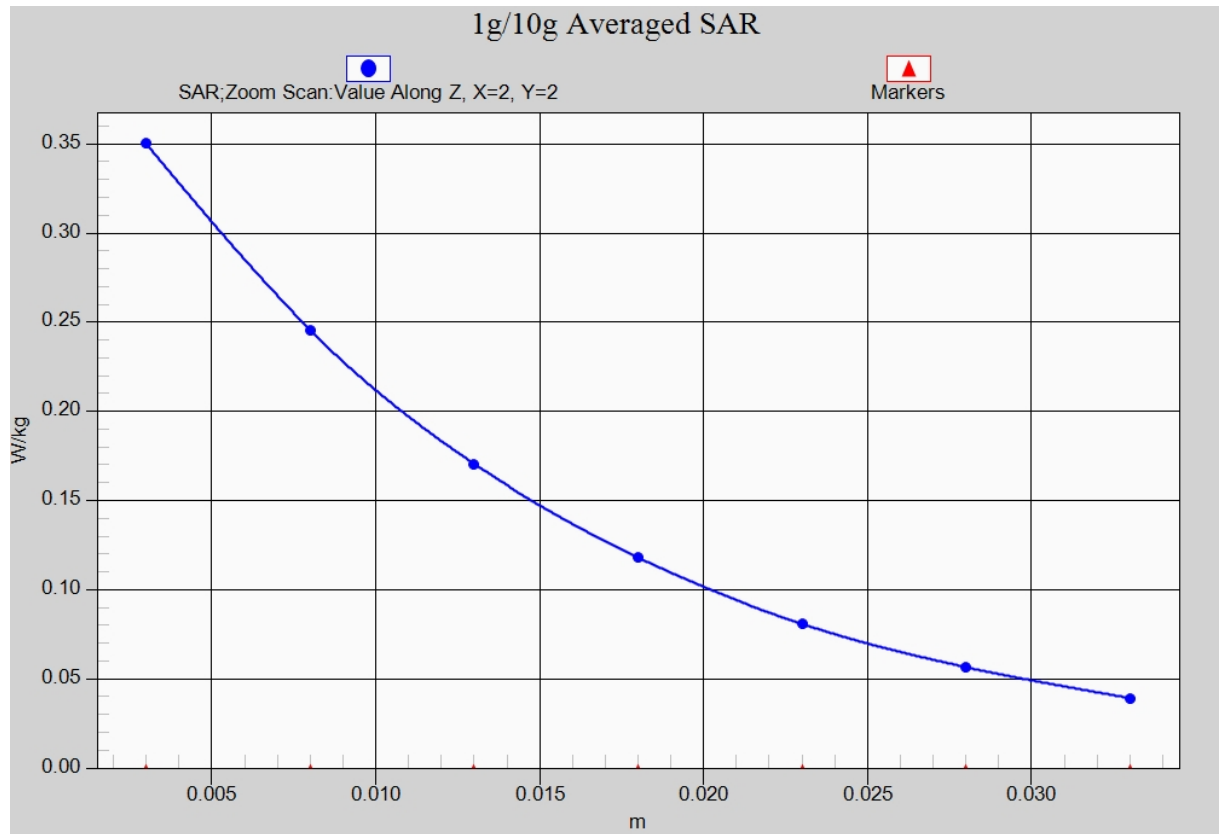


Fig. 4-1 Z-Scan at power reference point (1900 MHz)

1900 Body Front Low 10mm

Date: 2017-6-5

Electronics: DAE4 Sn1331

Medium: Body 1900 MHz

Medium parameters used: $f = 1850.2$ MHz; $\sigma = 1.507$ mho/m; $\epsilon_r = 55.59$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.9°C Liquid Temperature: 22.5°C

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

Probe: EX3DV4- SN7307 ConvF(7.67, 7.67, 7.67)

Area Scan (121x71x1): Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.624 W/kg

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

Reference Value = 7.584 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 1.16 W/kg

SAR(1 g) = 0.595 W/kg; SAR(10 g) = 0.280 W/kg

Maximum value of SAR (measured) = 0.743 W/kg

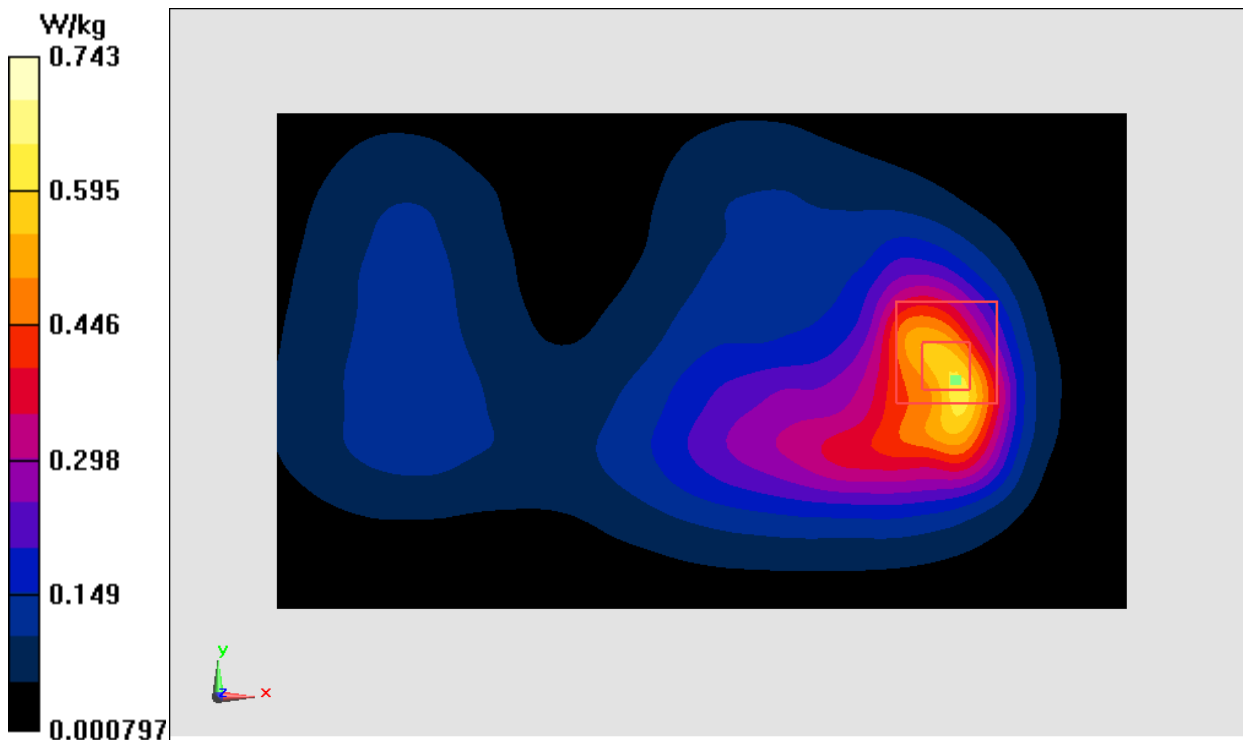


Fig.5 1900 MHz

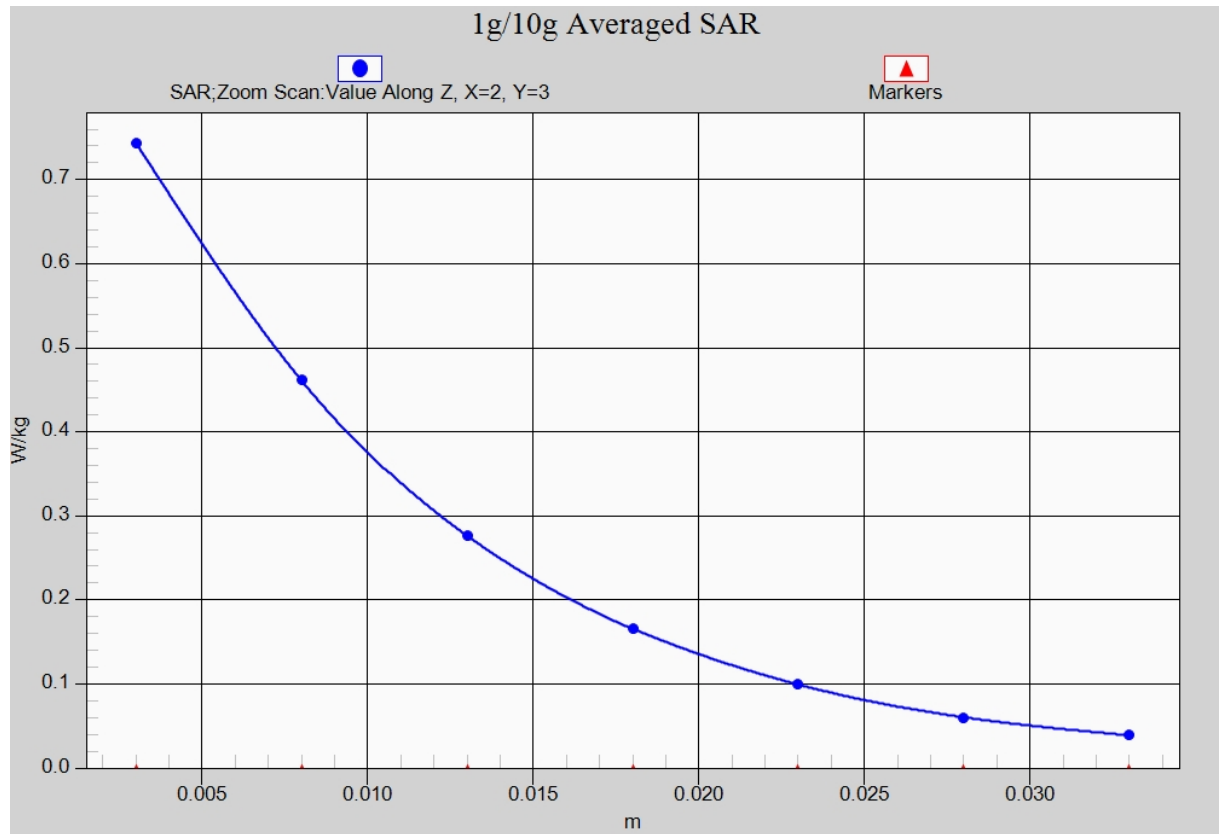


Fig. 5-1 Z-Scan at power reference point (1900 MHz)

1900 Body Front High 15mm

Date: 2017-6-5

Electronics: DAE4 Sn1331

Medium: Body 1900 MHz

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.532$ mho/m; $\epsilon_r = 54.74$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.9°C Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz GPRS Frequency: 1880 MHz Duty Cycle: 1:4

Probe: EX3DV4- SN7307 ConvF(7.67, 7.67, 7.67)

Area Scan (121x71x1): Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.338 W/kg

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

Reference Value = 5.558 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 0.697 W/kg

SAR(1 g) = 0.383 W/kg; SAR(10 g) = 0.195 W/kg

Maximum value of SAR (measured) = 0.319 W/kg

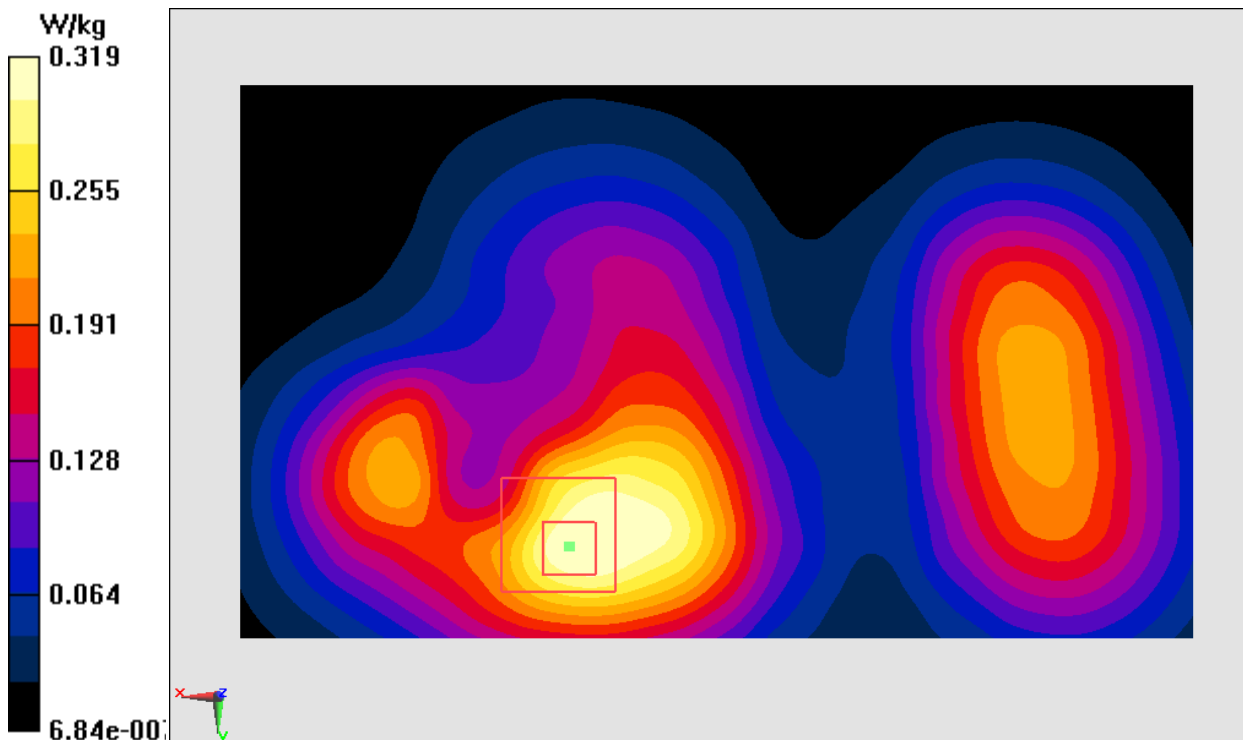


Fig.6 1900 MHz

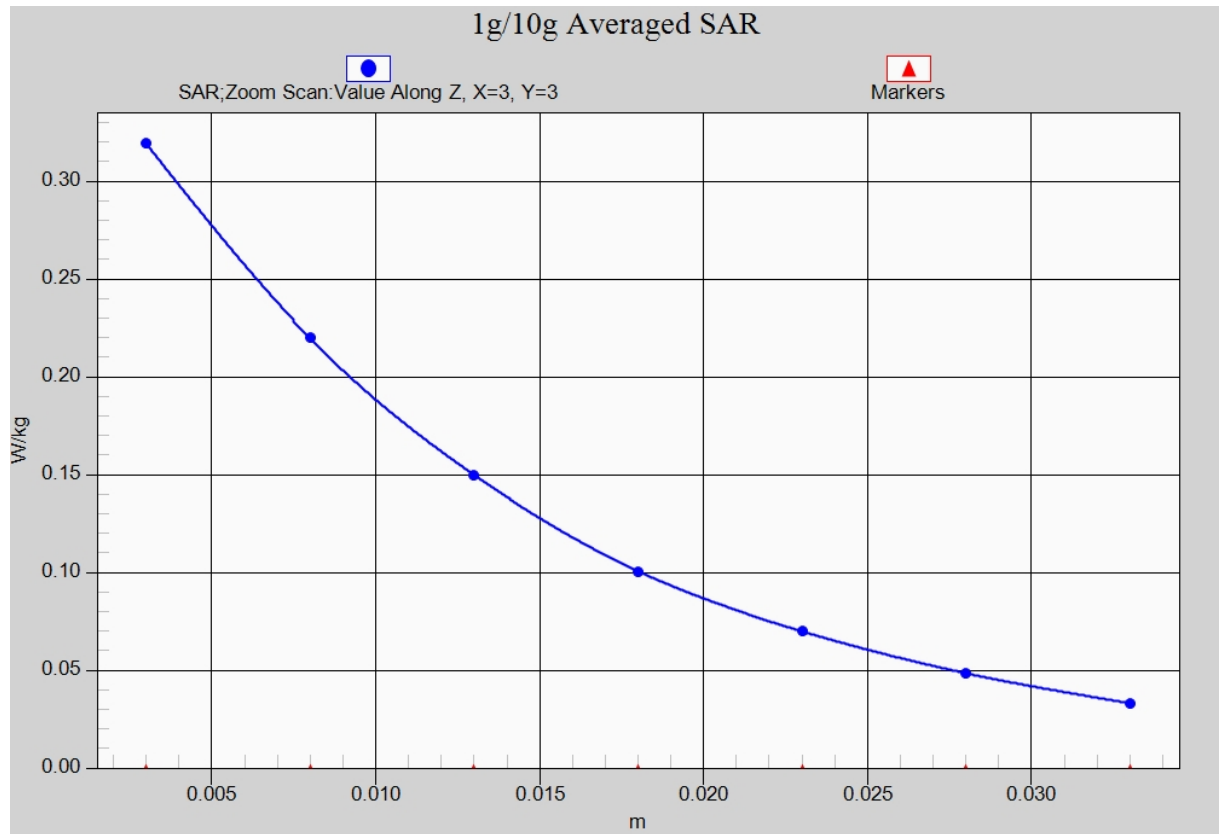


Fig. 6-1 Z-Scan at power reference point (1900 MHz)

WCDMA 850 Left Cheek Middle

Date: 2017-6-3

Electronics: DAE4 Sn1331

Medium: Head 850 MHz

Medium parameters used (interpolated): $f = 836.4$ MHz; $\sigma = 0.885$ mho/m; $\epsilon_r = 41.48$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.9°C Liquid Temperature: 22.5°C

Communication System: WCDMA; Frequency: 836.4 MHz; Duty Cycle: 1:1

Probe: EX3DV4 – SN3846 ConvF(9.33, 9.33, 9.33)

Area Scan (71x131x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.222 W/kg

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

Reference Value = 6.367 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 0.259 W/kg

SAR(1 g) = 0.200 W/kg; SAR(10 g) = 0.153 W/kg

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

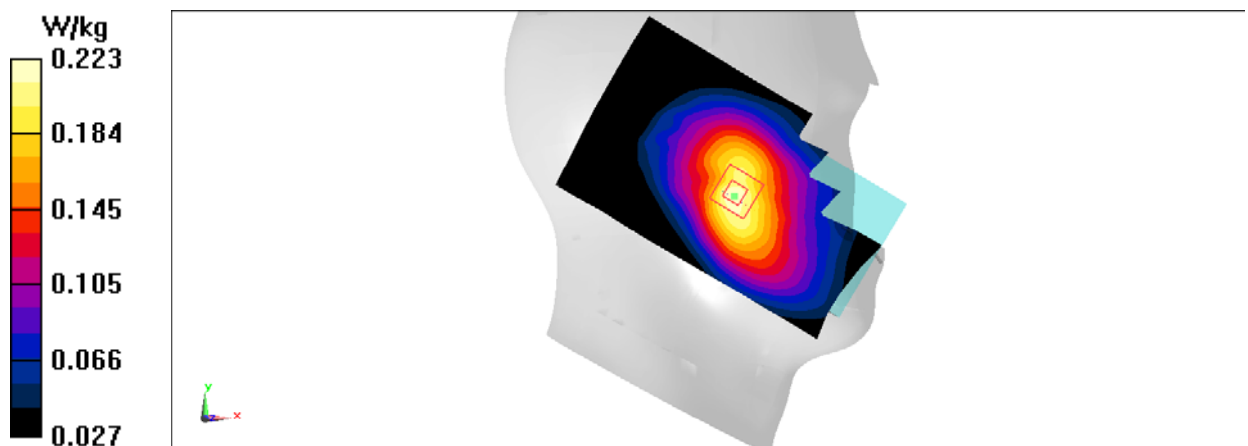


Fig.7 WCDMA 850

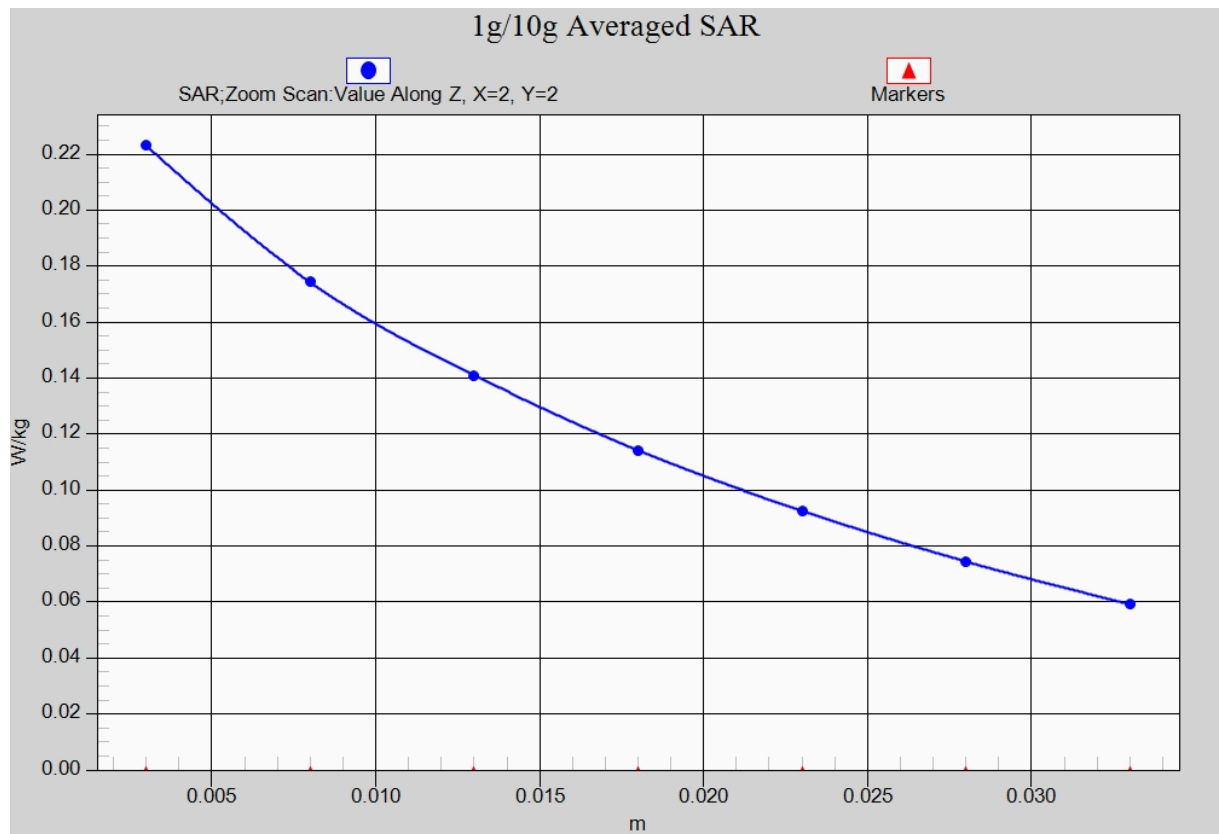


Fig. 7-1 Z-Scan at power reference point (850 MHz)

WCDMA 850 Body Rear High 10mm

Date: 2017-6-3

Electronics: DAE4 Sn1331

Medium: Body 850 MHz

Medium parameters used (interpolated): $f = 846.6$ MHz; $\sigma = 0.992$ mho/m; $\epsilon_r = 54.56$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.9°C Liquid Temperature: 22.5°C

Communication System: WCDMA; Frequency: 846.6 MHz; Duty Cycle: 1:1

Probe: EX3DV4 – SN3846 ConvF(9.52, 9.52, 9.52)

Area Scan (121x71x1): Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.467 W/kg

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

Reference Value = 21.70 V/m; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 0.526 W/kg

SAR(1 g) = 0.424 W/kg; SAR(10 g) = 0.331 W/kg

Maximum value of SAR (measured) = 0.462 W/kg

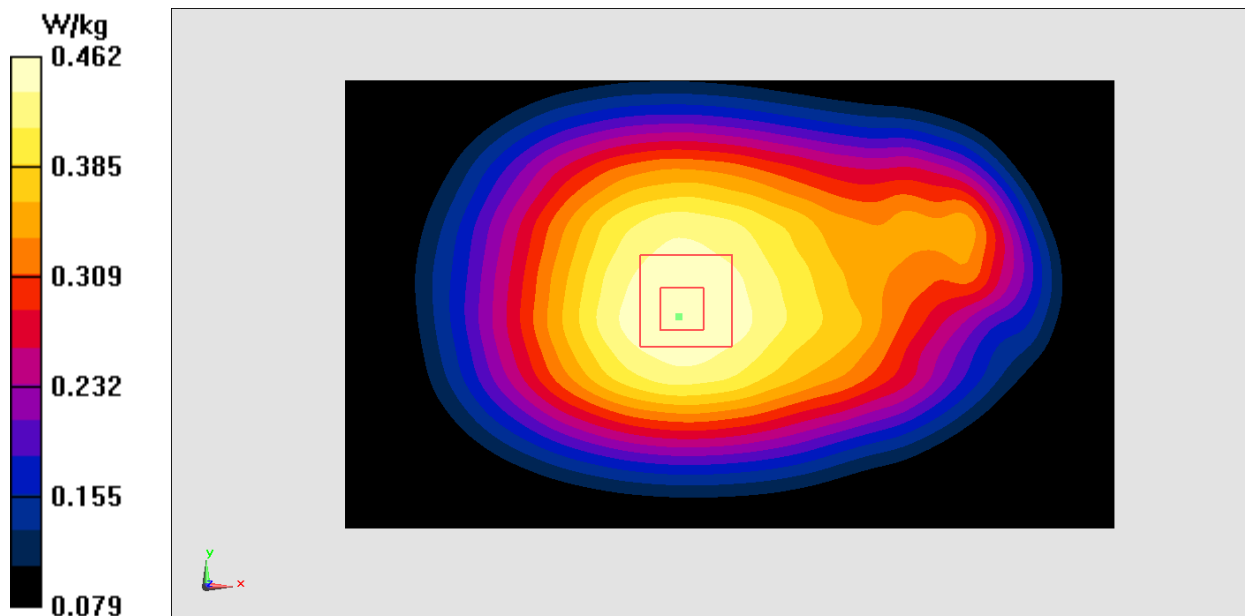


Fig.8 WCDMA 850

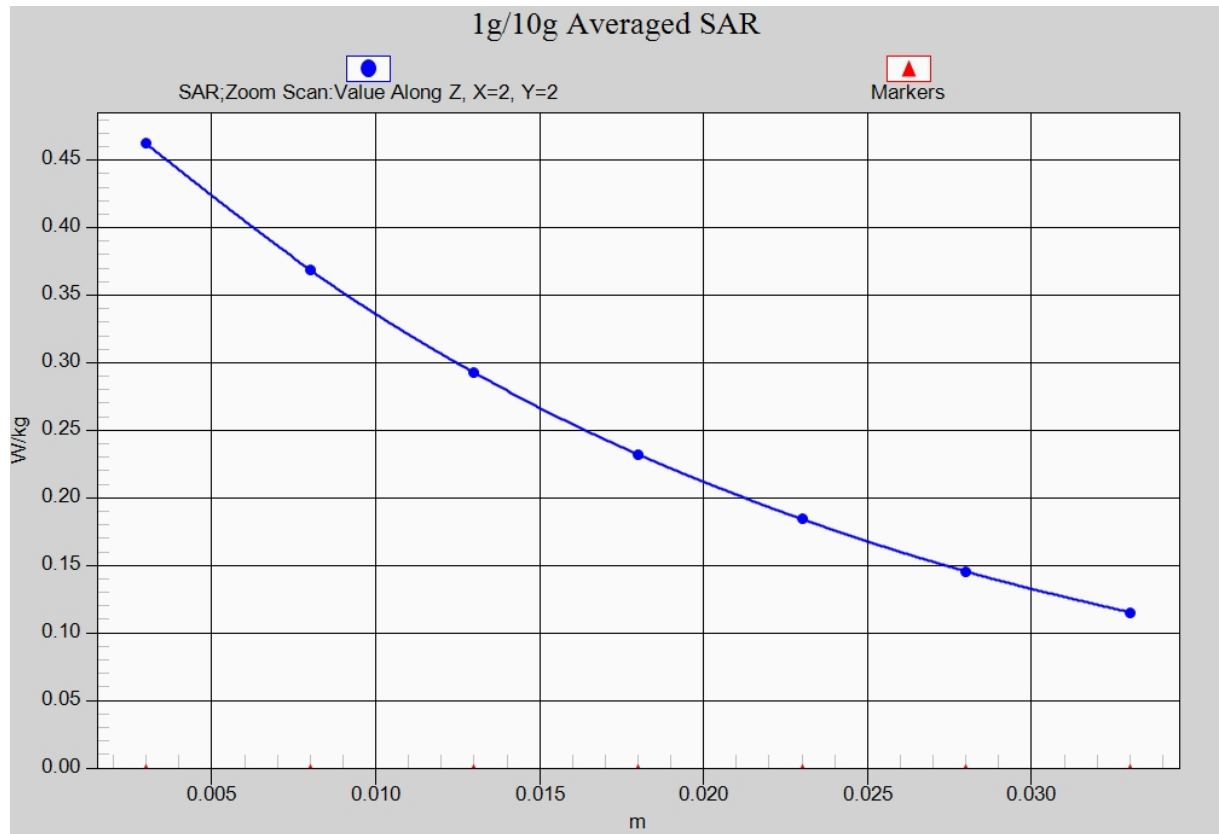


Fig. 8-1 Z-Scan at power reference point (WCDMA850)

WCDMA 850 Body Rear High 15mm

Date: 2017-6-3

Electronics: DAE4 Sn1331

Medium: Body 850 MHz

Medium parameters used (interpolated): $f = 846.6$ MHz; $\sigma = 0.992$ mho/m; $\epsilon_r = 54.56$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.9°C Liquid Temperature: 22.5°C

Communication System: WCDMA; Frequency: 846.6 MHz; Duty Cycle: 1:1

Probe: EX3DV4 – SN3846 ConvF(9.52, 9.52, 9.52)

Area Scan (121x71x1): Interpolated grid: dx=1.000mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.304 W/kg

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

Reference Value = 15.63 V/m; Power Drift = -0.00 dB

Peak SAR (extrapolated) = 0.340 W/kg

SAR(1 g) = 0.272 W/kg; SAR(10 g) = 0.209 W/kg

Maximum value of SAR (measured) = 0.297 W/kg

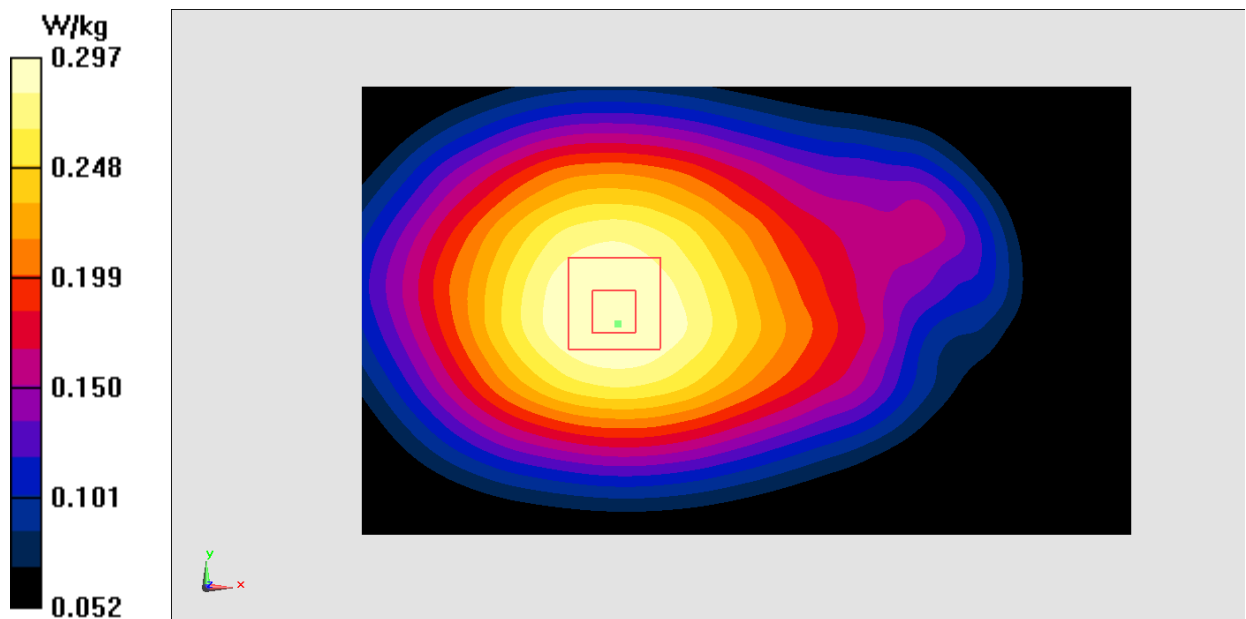


Fig.9 WCDMA 850

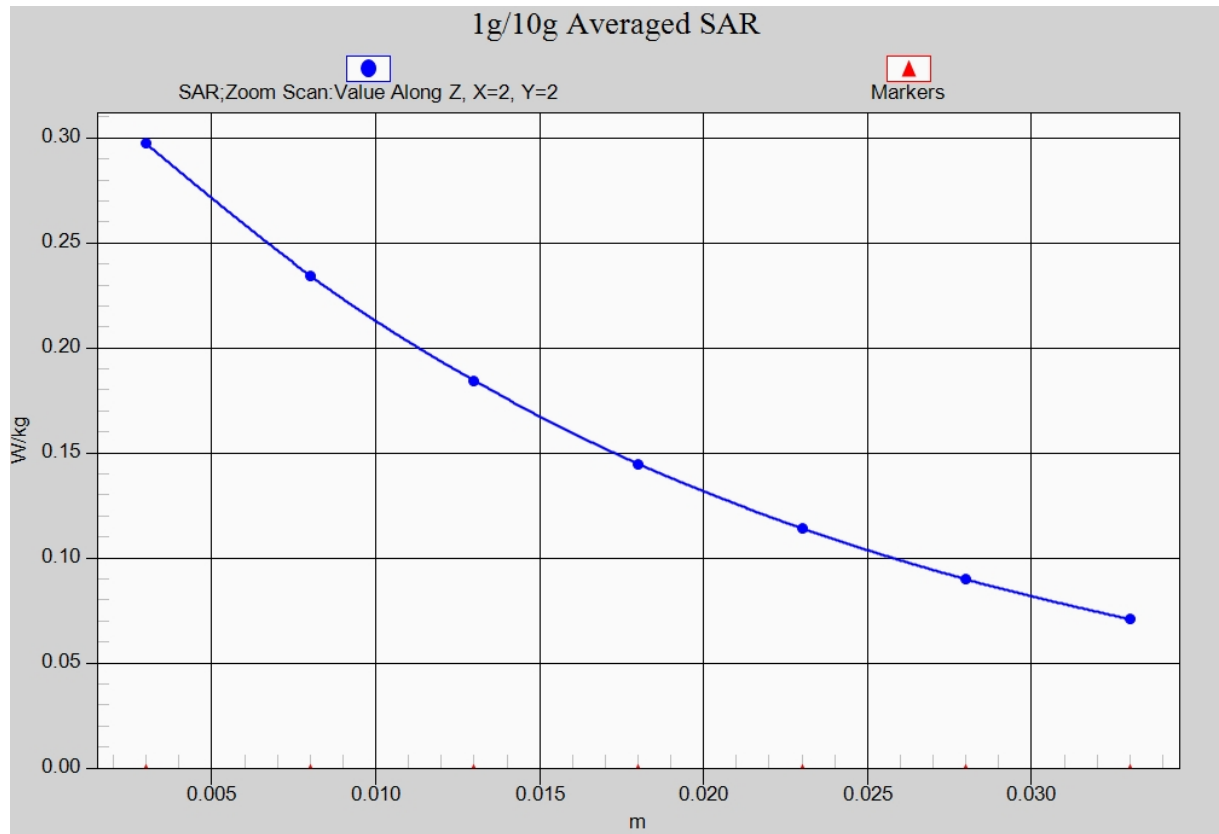


Fig. 9-1 Z-Scan at power reference point (WCDMA850)

WCDMA 1700 Left Cheek High

Date: 2017-6-4

Electronics: DAE4 Sn1331

Medium: Head 1750 MHz

Medium parameters used (interpolated): $f = 1752.6$ MHz; $\sigma = 1.385$ mho/m; $\epsilon_r = 39.79$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.9°C Liquid Temperature: 22.5°C

Communication System: WCDMA 1750 Frequency: 1752.6 MHz Duty Cycle: 1:1

Probe: EX3DV4– SN3846 ConvF(8.16, 8.16, 8.16)

Area Scan (71x131x1): Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.596 W/kg

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

Reference Value = 5.650 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.681 W/kg

SAR(1 g) = 0.479 W/kg; SAR(10 g) = 0.311 W/kg

Maximum value of SAR (measured) = 0.555 W/kg

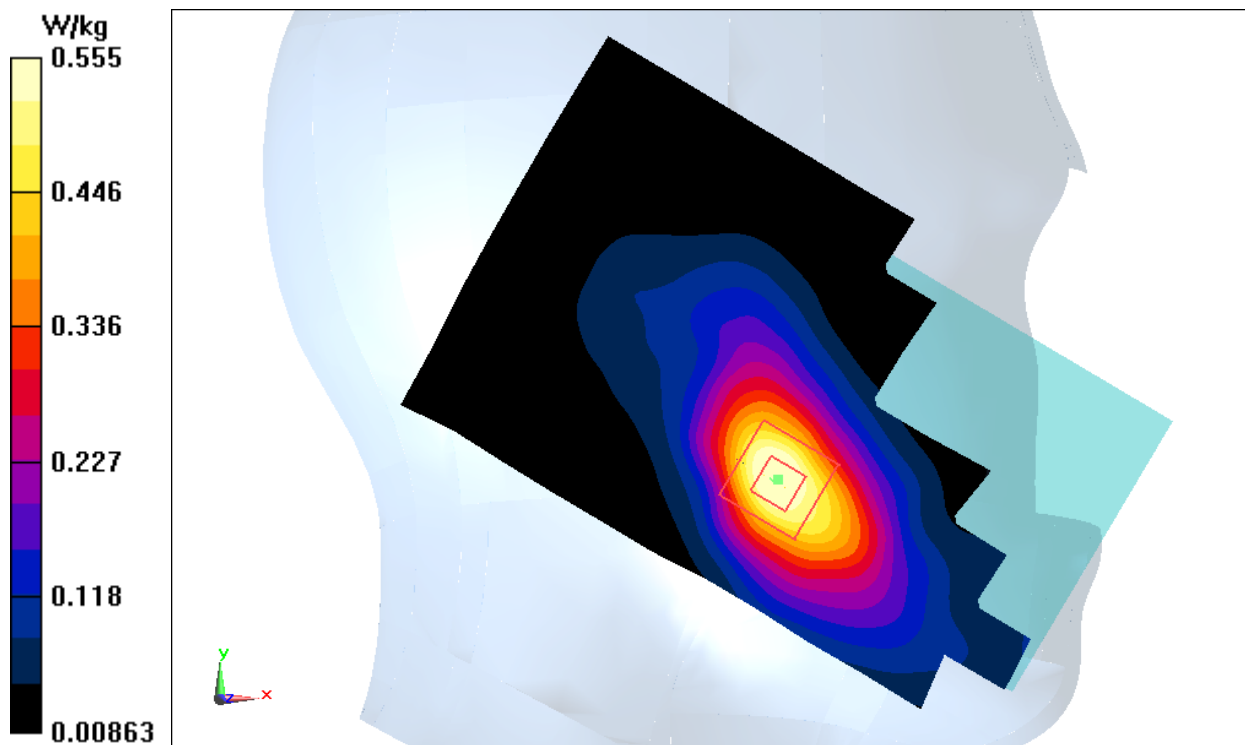


Fig.10 WCDMA1700

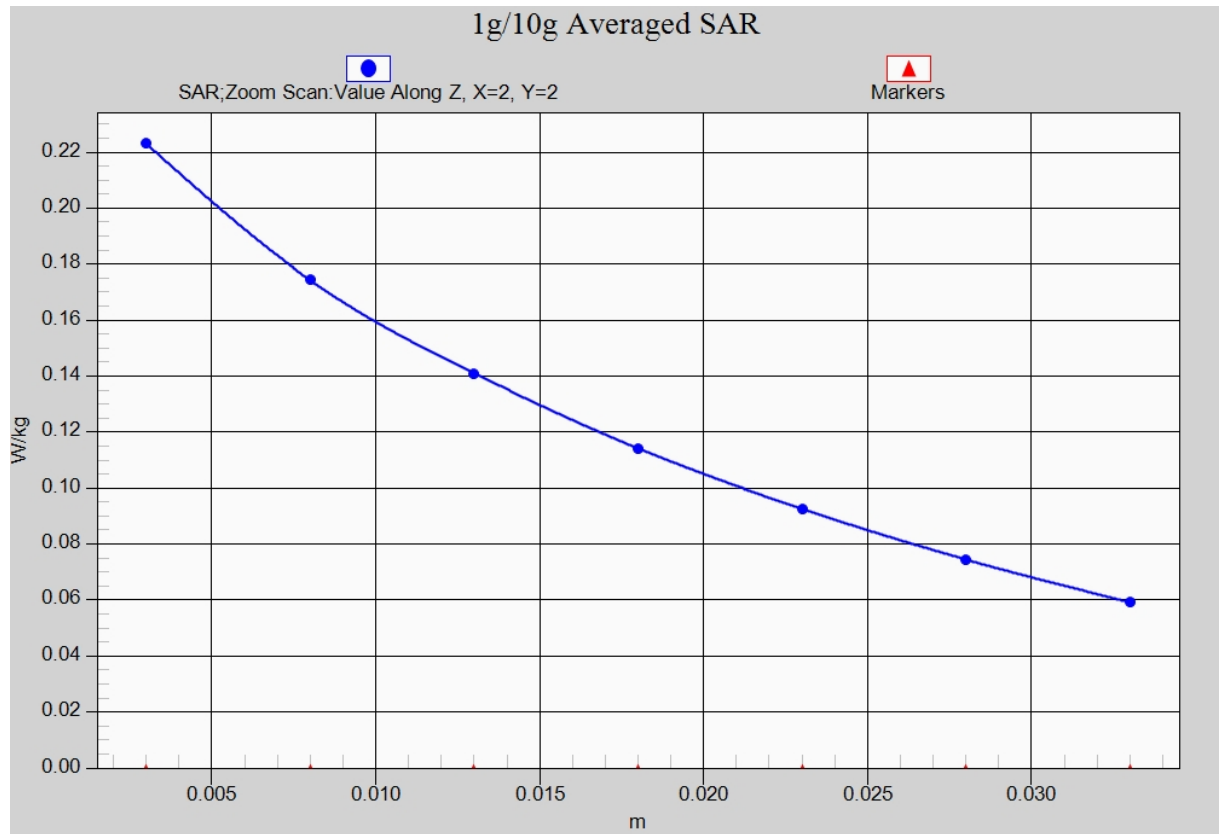


Fig. 10-1 Z-Scan at power reference point (WCDMA1700)

WCDMA 1700 Body Bottom high 10mm

Date: 2017-6-4

Electronics: DAE4 Sn1331

Medium: Body 1750 MHz

Medium parameters used: $f = 1752.6$ MHz; $\sigma = 1.479$ mho/m; $\epsilon_r = 53.18$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.9°C Liquid Temperature: 22.5°C

Communication System: WCDMA 1900 Frequency: 1752.6 MHz Duty Cycle: 1:1

Probe: EX3DV4- SN3846 ConvF(7.90, 7.90, 7.90)

Area Scan (121x71x1): Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.759 W/kg

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

Reference Value = 21.50 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 0.997 W/kg

SAR(1 g) = 0.593 W/kg; SAR(10 g) = 0.320 W/kg

Maximum value of SAR (measured) = 0.730 W/kg

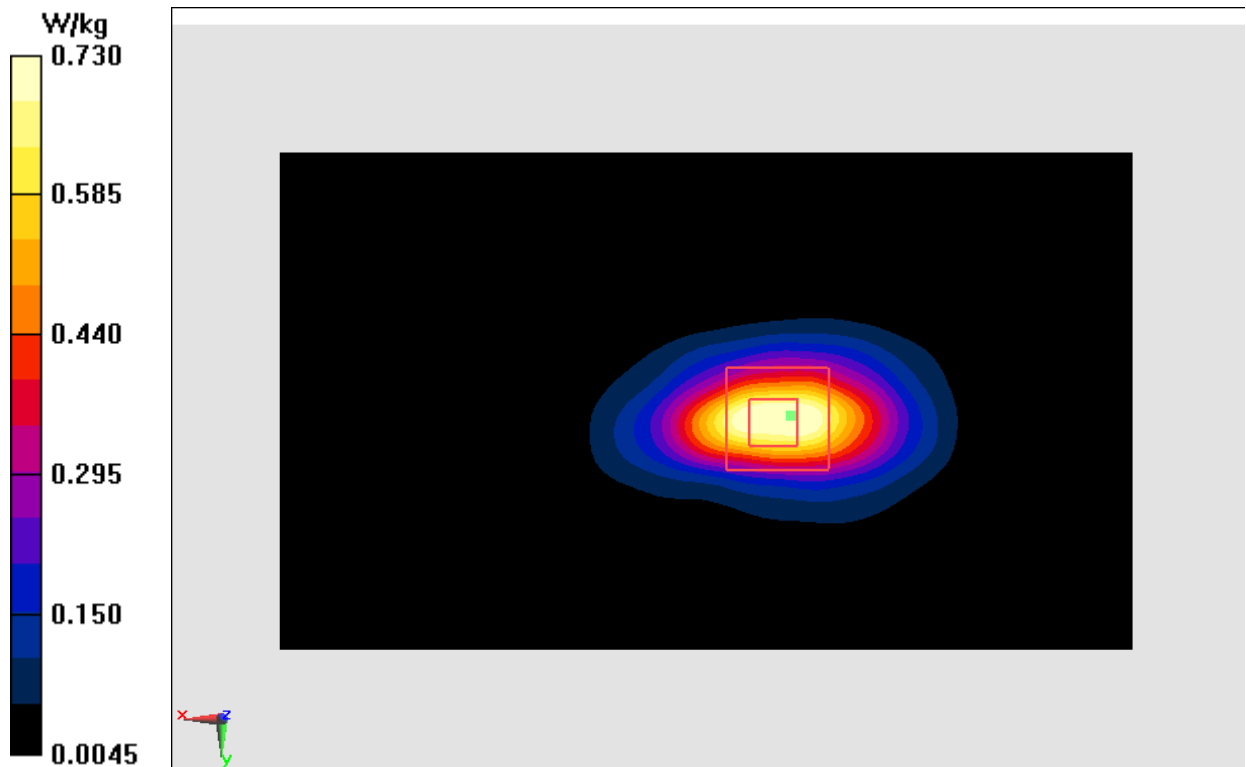


Fig.11 WCDMA1700

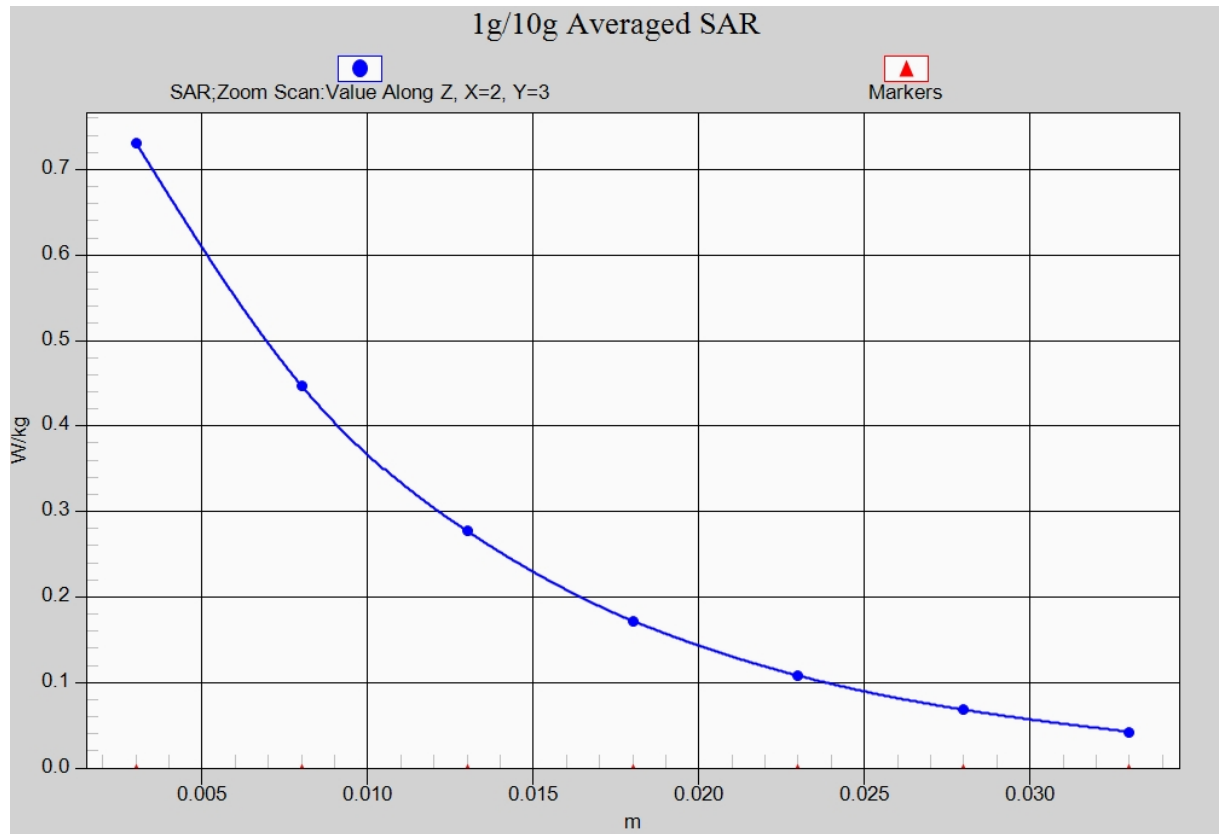


Fig. 11-1 Z-Scan at power reference point (WCDMA1700)

WCDMA 1700 Body Front High 15mm

Date: 2017-6-4

Electronics: DAE4 Sn1331

Medium: Body 1750 MHz

Medium parameters used: $f = 1752.6$ MHz; $\sigma = 1.479$ mho/m; $\epsilon_r = 53.18$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.9°C Liquid Temperature: 22.5°C

Communication System: WCDMA 1900 Frequency: 1752.6 MHz Duty Cycle: 1:1

Probe: EX3DV4- SN3846 ConvF(7.90, 7.90, 7.90)

Area Scan (121x71x1): Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

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

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

Reference Value = 8.215 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 2.00 W/kg

SAR(1 g) = 1.19 W/kg; SAR(10 g) = 0.657 W/kg

Maximum value of SAR (measured) = 1.47 W/kg

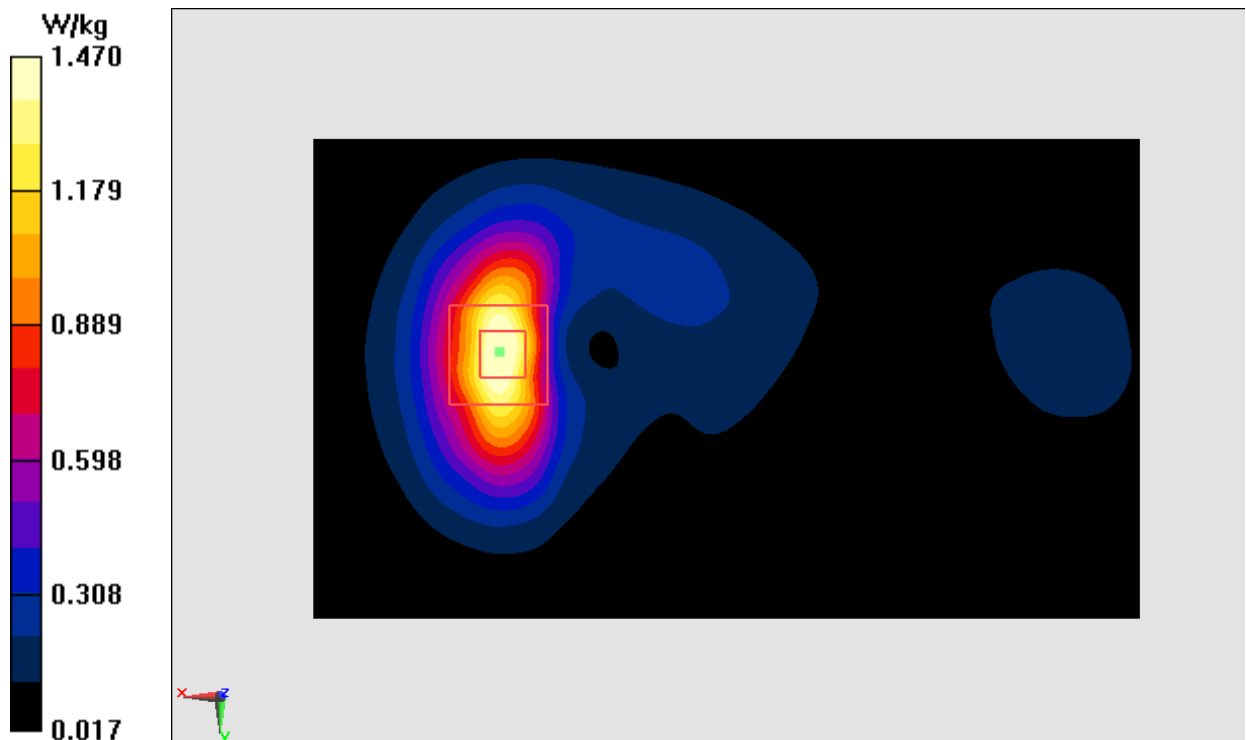


Fig.12 WCDMA1700

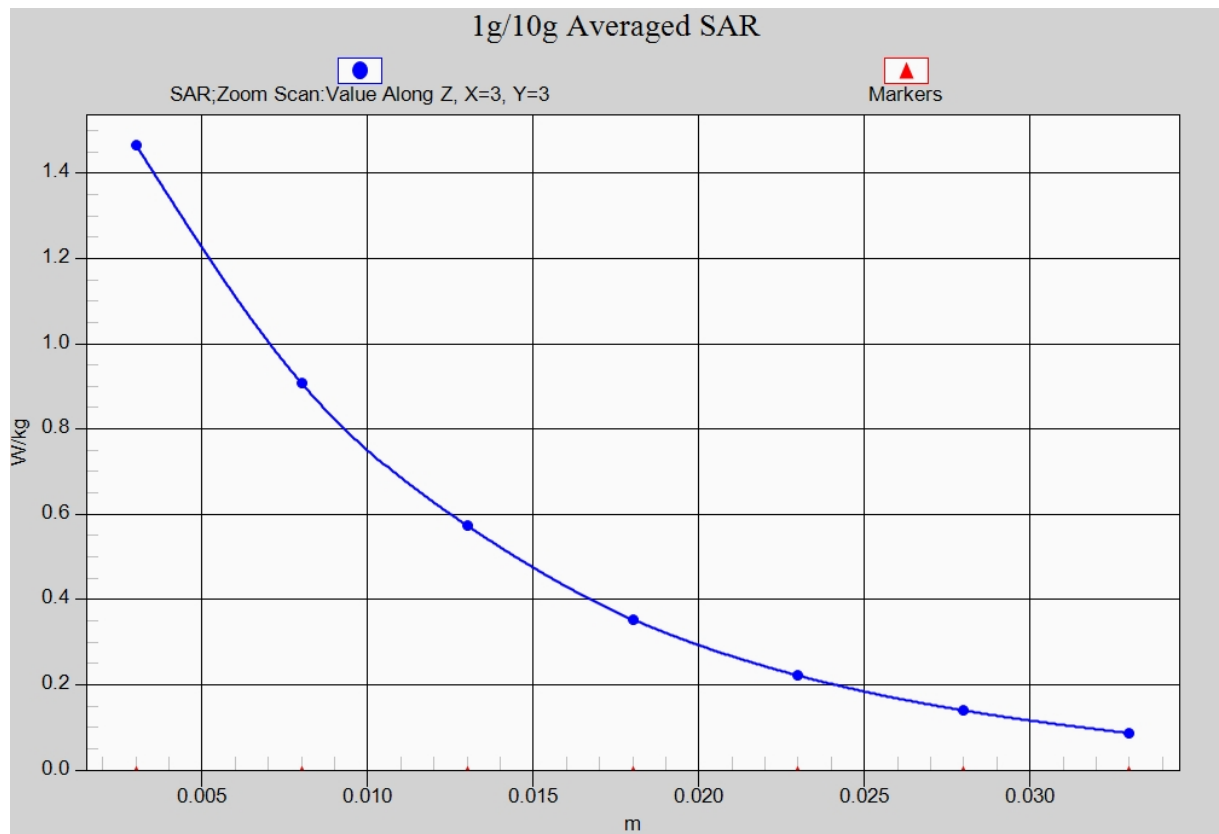


Fig. 12-1 Z-Scan at power reference point (WCDMA1700)

WCDMA 1900 Left Cheek Low

Date: 2017-6-5

Electronics: DAE4 Sn1331

Medium: Head 1900 MHz

Medium parameters used (interpolated): $f = 1852.4$ MHz; $\sigma = 1.366$ mho/m; $\epsilon_r = 41.92$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.9°C Liquid Temperature: 22.5°C

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

Probe: EX3DV4– SN3846 ConvF(7.89, 7.89, 7.89)

Area Scan (71x131x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.622 W/kg

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

Reference Value = 5.908 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.737 W/kg

SAR(1 g) = 0.508 W/kg; SAR(10 g) = 0.324 W/kg

Maximum value of SAR (measured) = 0.593 W/kg

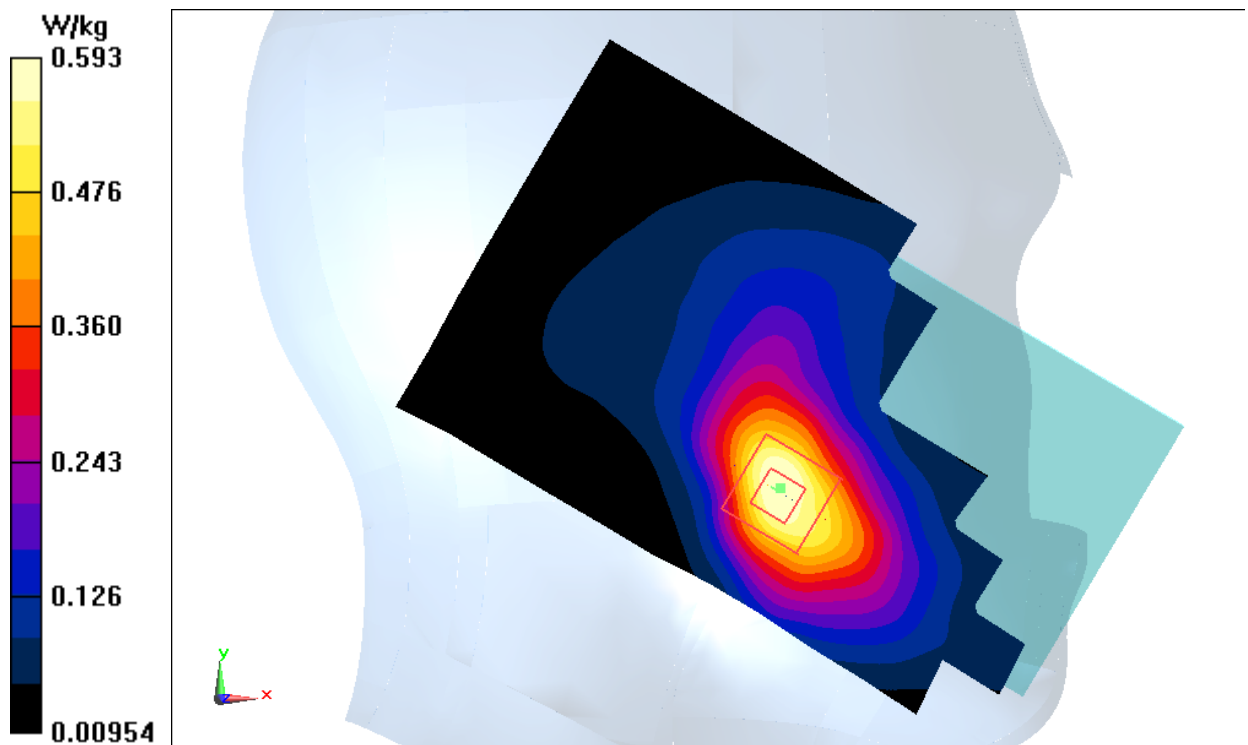


Fig.13 WCDMA1900

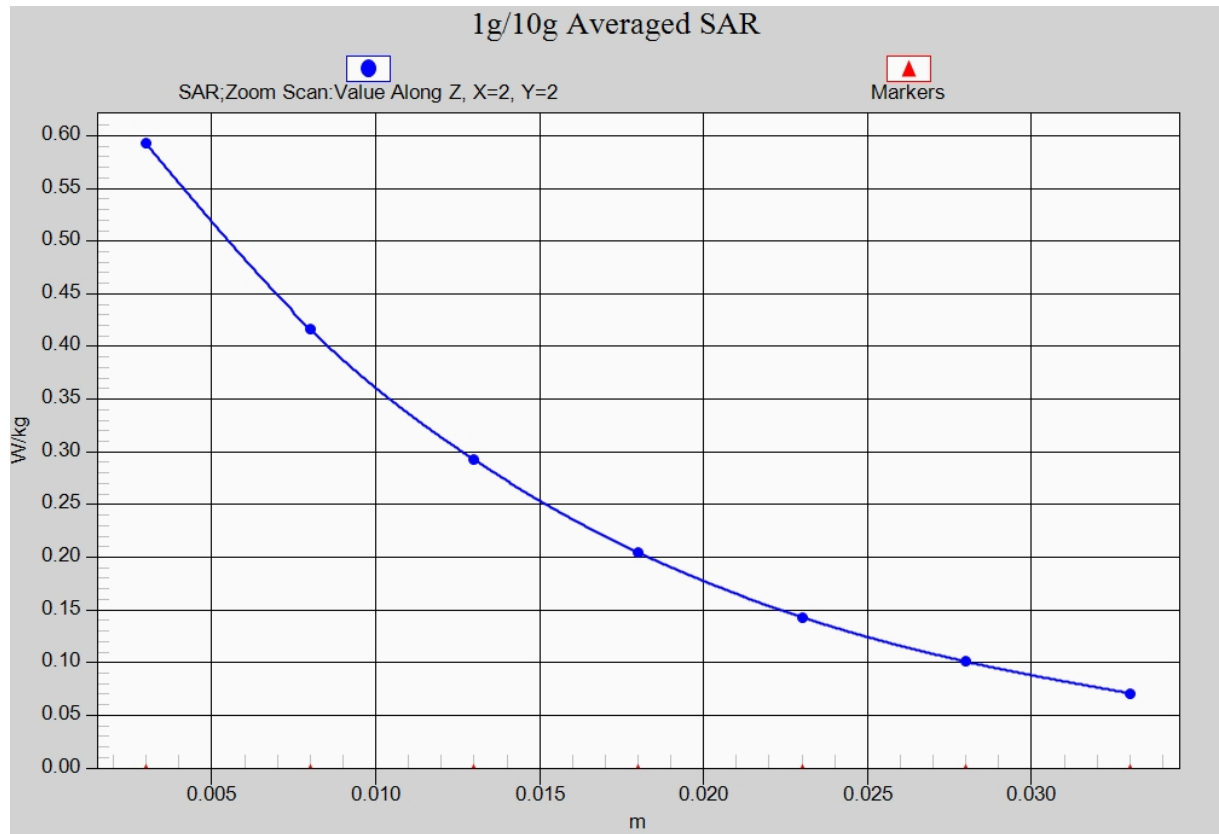


Fig. 13-1 Z-Scan at power reference point (WCDMA1900)

WCDMA 1900 Body Front Low 10mm

Date: 2017-6-5

Electronics: DAE4 Sn1331

Medium: Body 1900 MHz

Medium parameters used (interpolated): $f = 1852.4$ MHz; $\sigma = 1.509$ mho/m; $\epsilon_r = 55.53$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.9°C Liquid Temperature: 22.5°C

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

Probe: EX3DV4– SN3846 ConvF(7.57, 7.57, 7.57)

Area Scan (121x71x1): Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.488 W/kg

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

Reference Value = 7.667 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 0.777 W/kg

SAR(1 g) = 0.435 W/kg; SAR(10 g) = 0.225 W/kg

Maximum value of SAR (measured) = 0.559 W/kg

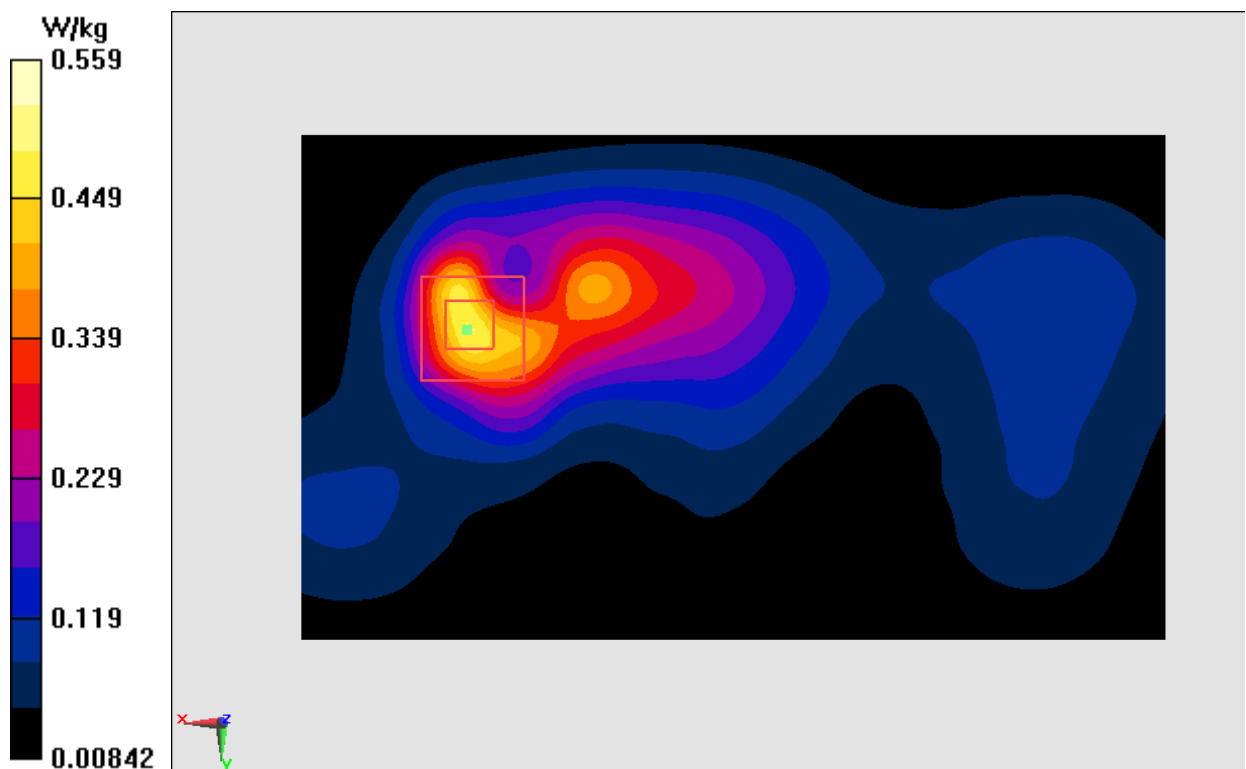


Fig.14 WCDMA1900

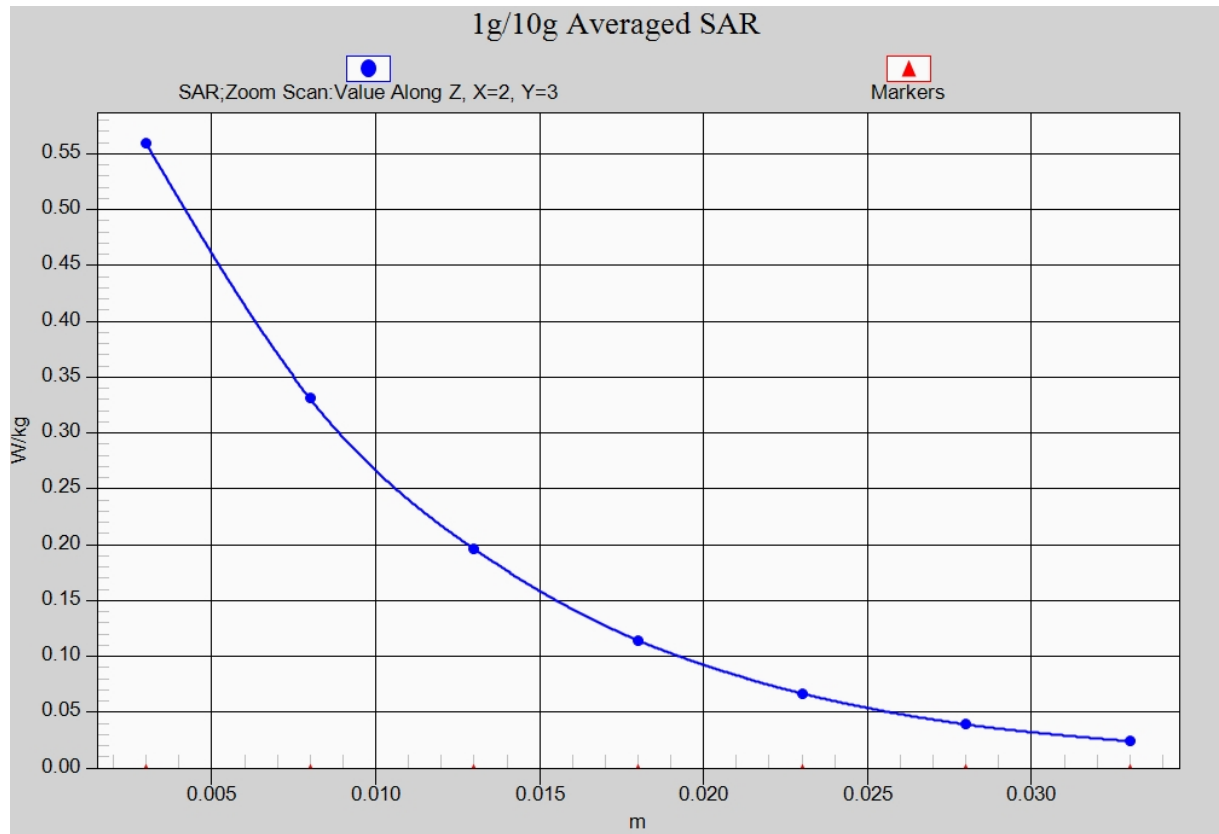


Fig. 14-1 Z-Scan at power reference point (WCDMA1900)

WCDMA 1900 Body Rear Low 15mm

Date: 2017-6-5

Electronics: DAE4 Sn1331

Medium: Body 1900 MHz

Medium parameters used (interpolated): $f = 1852.4$ MHz; $\sigma = 1.509$ mho/m; $\epsilon_r = 55.53$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.9°C Liquid Temperature: 22.5°C

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

Probe: EX3DV4- SN3846 ConvF(7.57, 7.57, 7.57)

Area Scan (121x71x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.553 W/kg

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

Reference Value = 6.167 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.699 W/kg

SAR(1 g) = 0.476 W/kg; SAR(10 g) = 0.306 W/kg

Maximum value of SAR (measured) = 0.552 W/kg

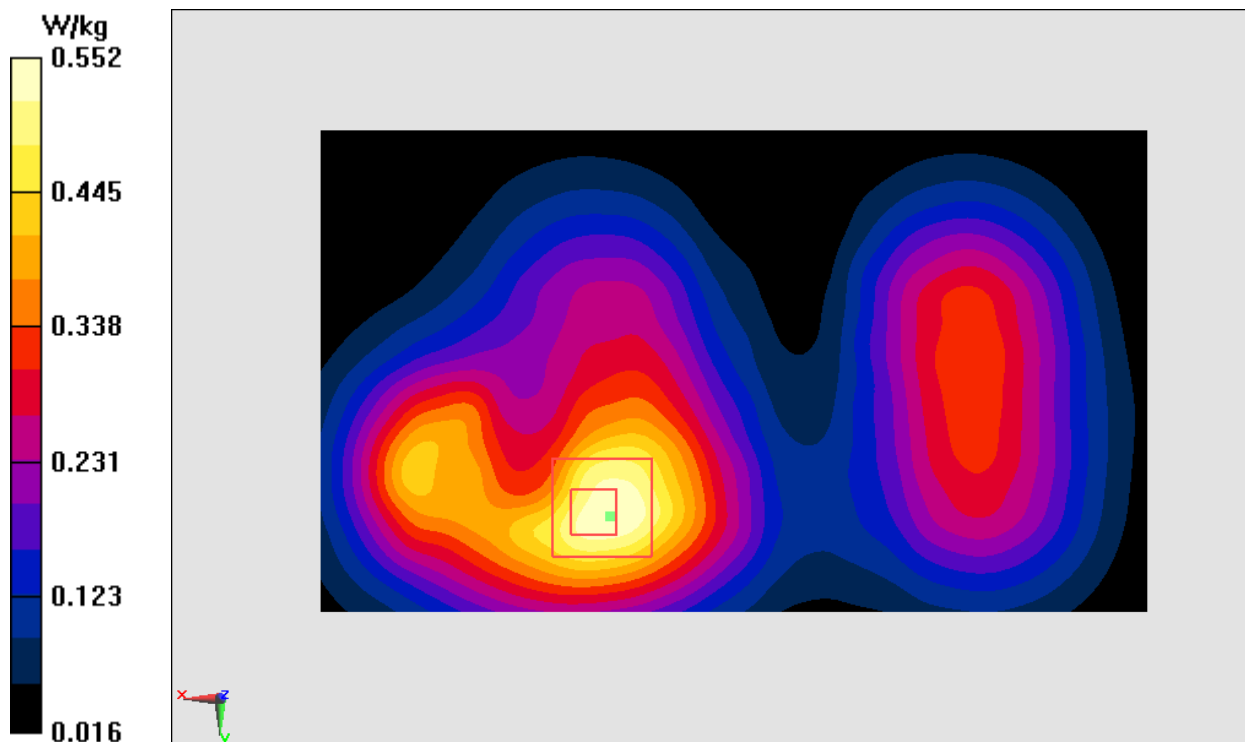


Fig.15 WCDMA1900

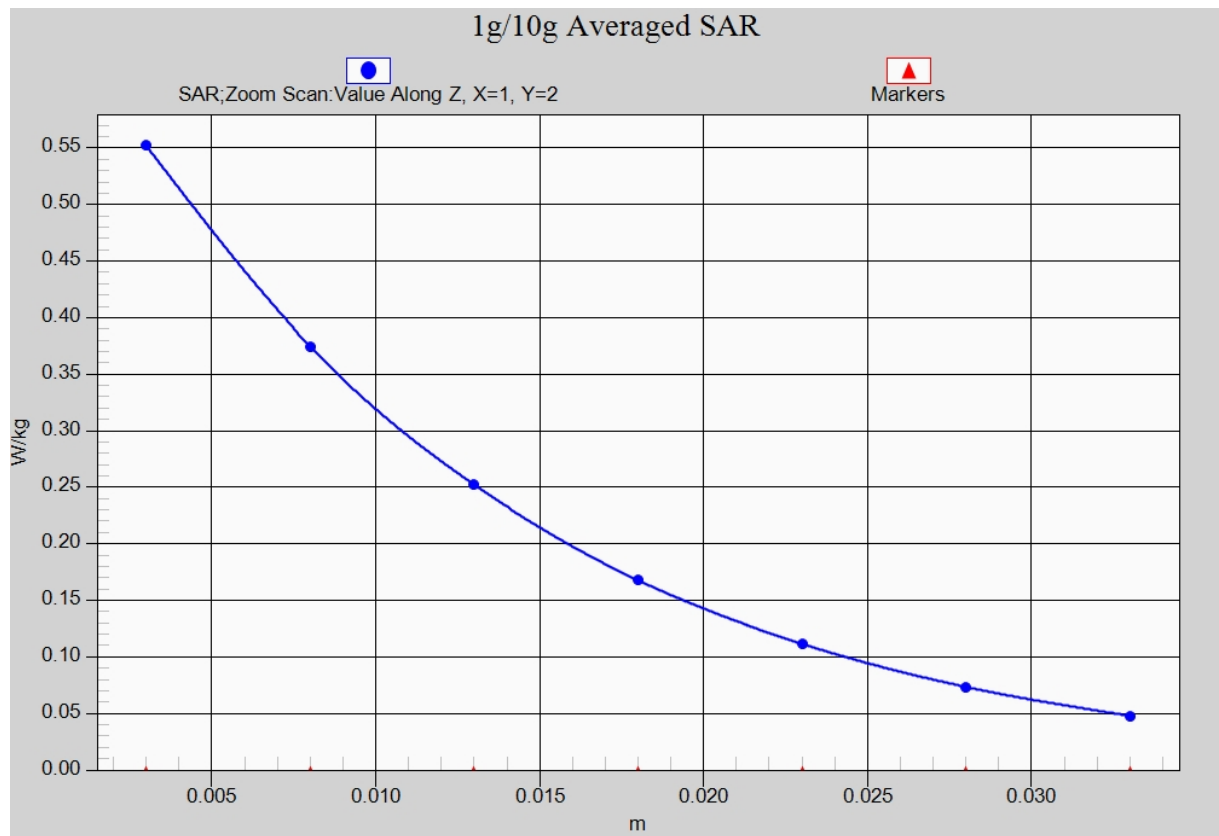


Fig. 15-1 Z-Scan at power reference point (WCDMA1900)

LTE Band2 Left Cheek High with QPSK_20M_1RB_Middle

Date: 2017-6-5

Electronics: DAE4 Sn1331

Medium: Head 1900 MHz

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.401$ mho/m; $\epsilon_r = 40.90$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.9°C Liquid Temperature: 22.5°C

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

Probe: EX3DV4- SN3846 ConvF(7.89, 7.89, 7.89)

Area Scan (71x131x1): Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.896 W/kg

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

Reference Value = 6.845 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 1.11 W/kg

SAR(1 g) = 0.720 W/kg; SAR(10 g) = 0.448 W/kg

Maximum value of SAR (measured) = 0.866 W/kg

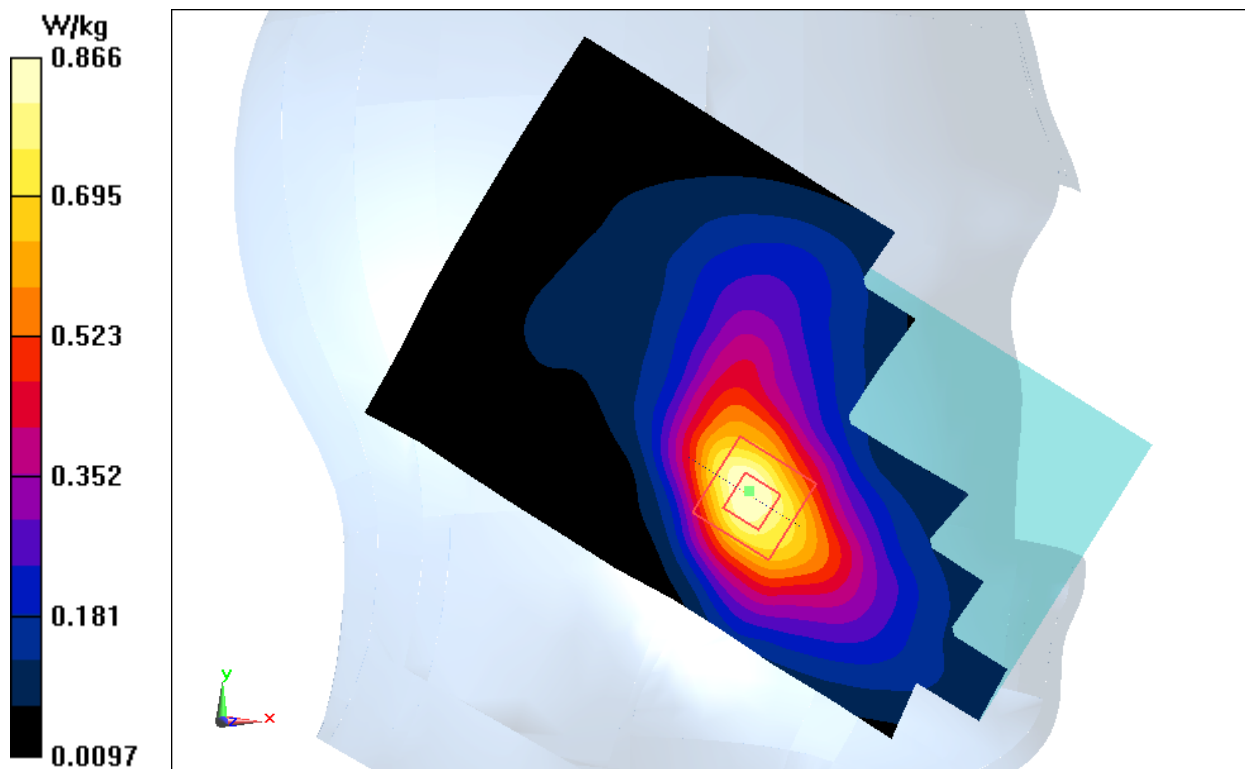


Fig.16 LTE Band2

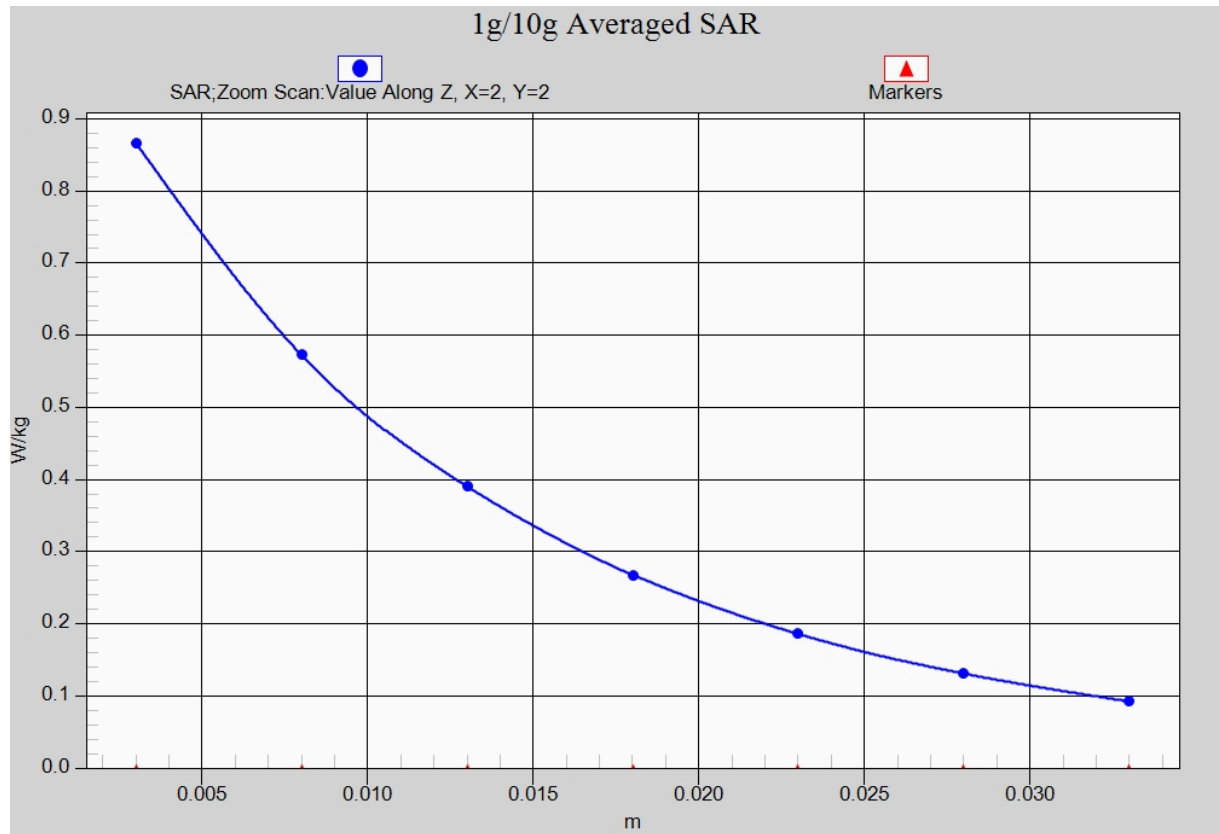


Fig. 16-1 Z-Scan at power reference point (LTE Band2)

LTE Band2 Body Bottom Low with QPSK_20M_1RB_Middle 10mm

Date: 2017-6-5

Electronics: DAE4 Sn1331

Medium: Body 1900 MHz

Medium parameters used: $f = 1860$ MHz; $\sigma = 1.515$ mho/m; $\epsilon_r = 55.31$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.9°C Liquid Temperature: 22.5°C

Communication System: LTE Band2 Frequency: 1860 MHz Duty Cycle: 1:1

Probe: EX3DV4- SN3846 ConvF(7.57, 7.57, 7.57)

Area Scan (121x71x1): Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.753 W/kg

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

Reference Value = 22.89 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 1.12 W/kg

SAR(1 g) = 0.643 W/kg; SAR(10 g) = 0.324 W/kg

Maximum value of SAR (measured) = 0.813 W/kg

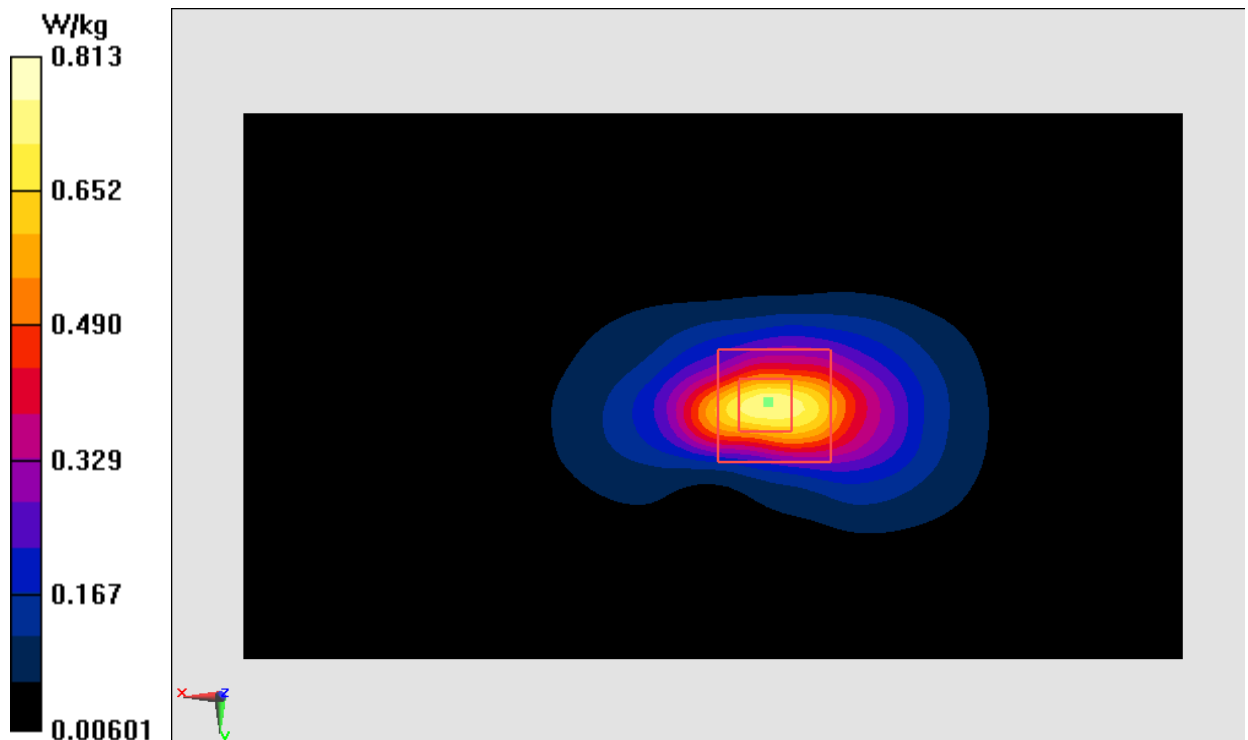


Fig.17 LTE Band2

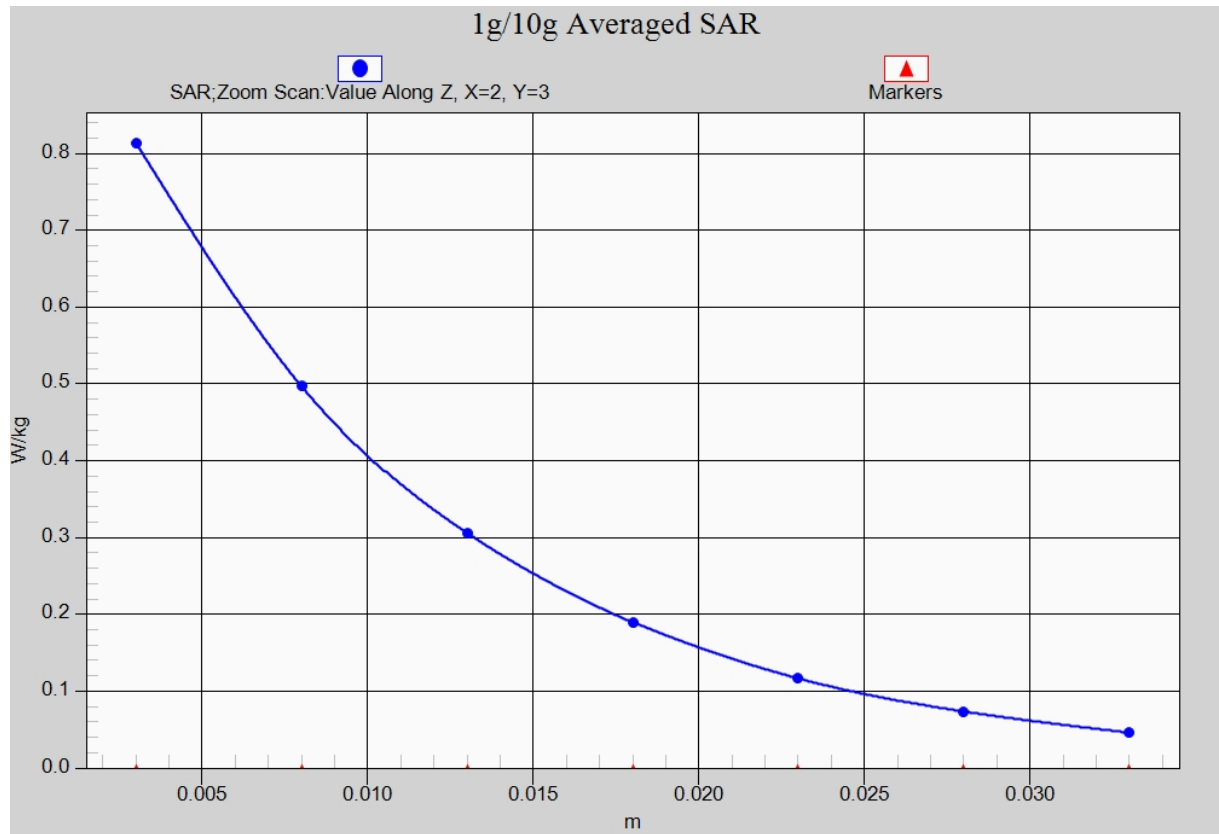


Fig. 17-1 Z-Scan at power reference point (LTE Band2)

LTE Band2 Body Front High with QPSK_20M_1RB_Middle 15mm

Date: 2017-6-5

Electronics: DAE4 Sn1331

Medium: Body 1900 MHz

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.548$ mho/m; $\epsilon_r = 54.17$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.9°C Liquid Temperature: 22.5°C

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

Probe: EX3DV4- SN3846 ConvF(7.57, 7.57, 7.57)

Area Scan (121x71x1): Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.484 W/kg

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

Reference Value = 10.03 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.610 W/kg

SAR(1 g) = 0.411 W/kg; SAR(10 g) = 0.263 W/kg

Maximum value of SAR (measured) = 0.474 W/kg

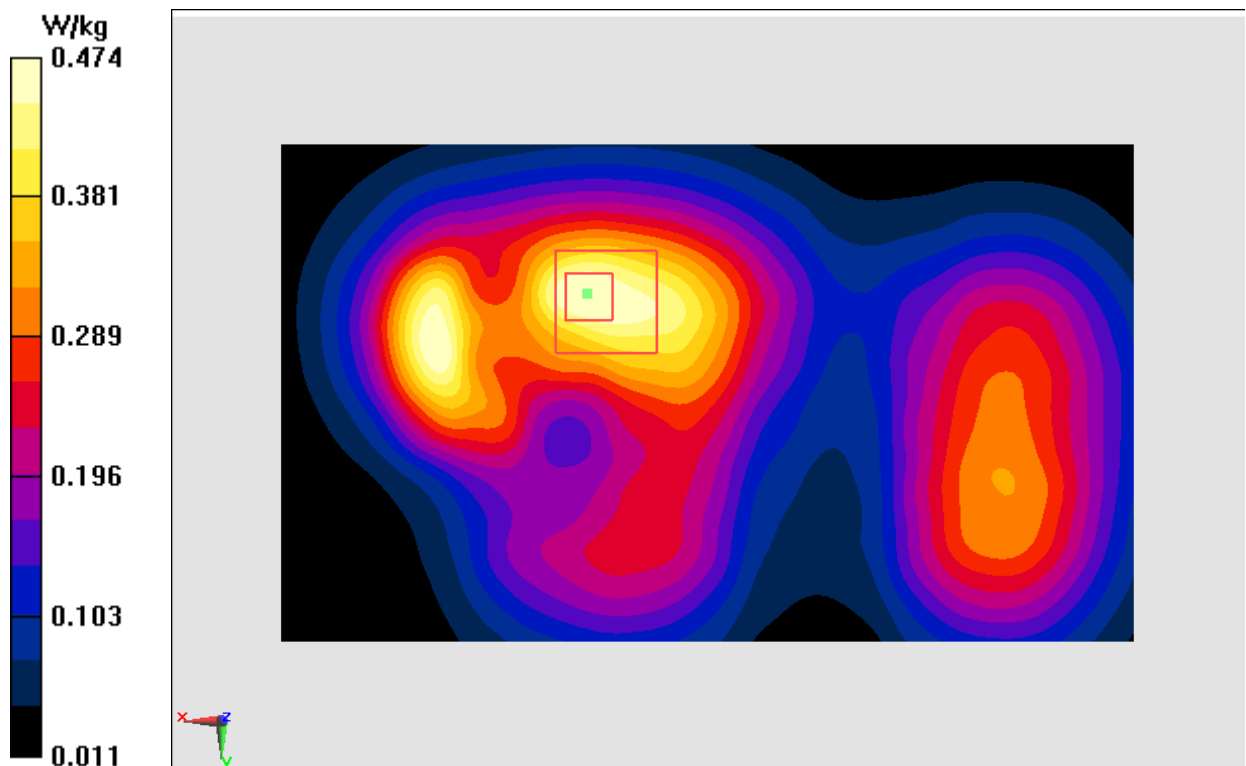


Fig.18 LTE Band2

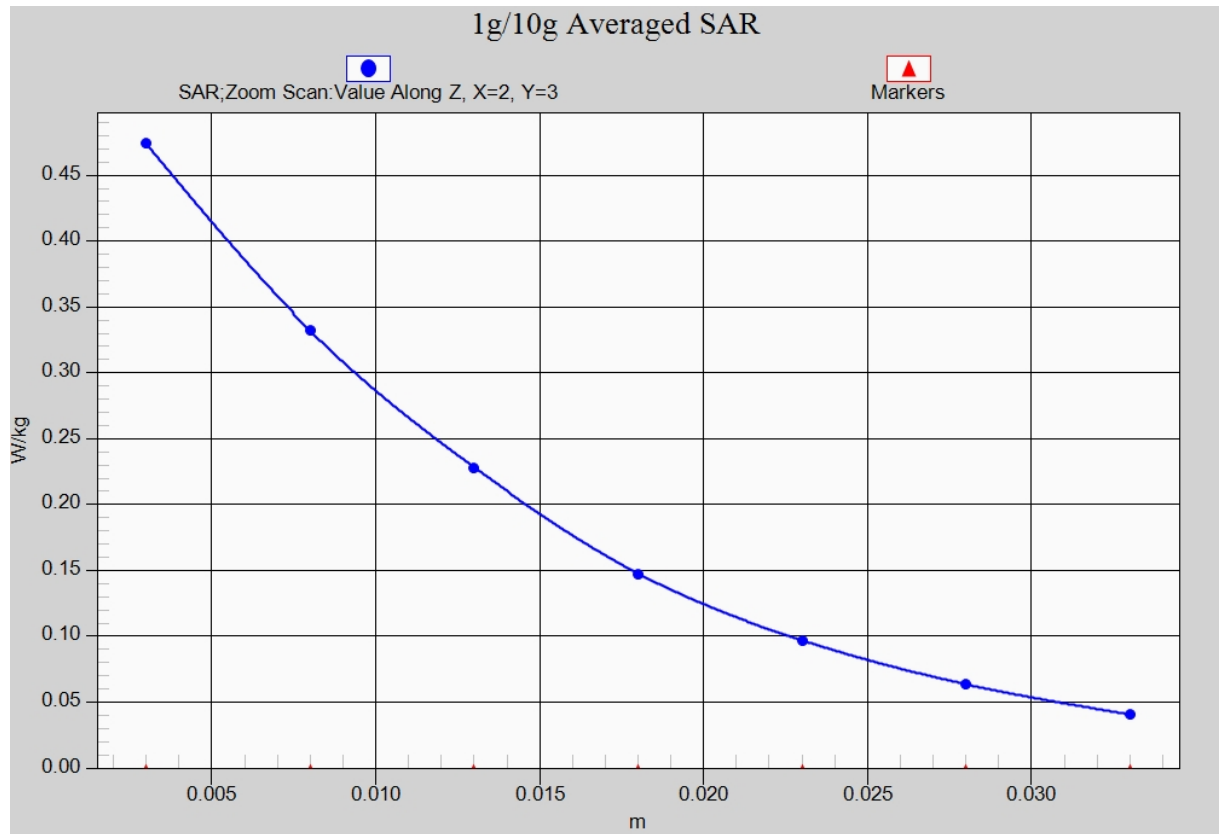


Fig. 18-1 Z-Scan at power reference point (LTE Band2)

LTE Band4 Left Cheek Low with QPSK_20M_1RB_Middle

Date: 2017-6-4

Electronics: DAE4 Sn1331

Medium: Head 1750 MHz

Medium parameters used $f = 1720$ MHz; $\sigma = 1.359$ mho/m; $\epsilon_r = 40.53$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.9°C Liquid Temperature: 22.5°C

Communication System: LTE Band4 Frequency: 1720MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN3846 ConvF(8.16, 8.16, 8.16)

Area Scan (71x131x1): Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

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

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

Reference Value = 4.678 V/m; Power Drift = 0.12 dB

Peak SAR (extrapolated) = 0.438 W/kg

SAR(1 g) = 0.302 W/kg; SAR(10 g) = 0.200 W/kg

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

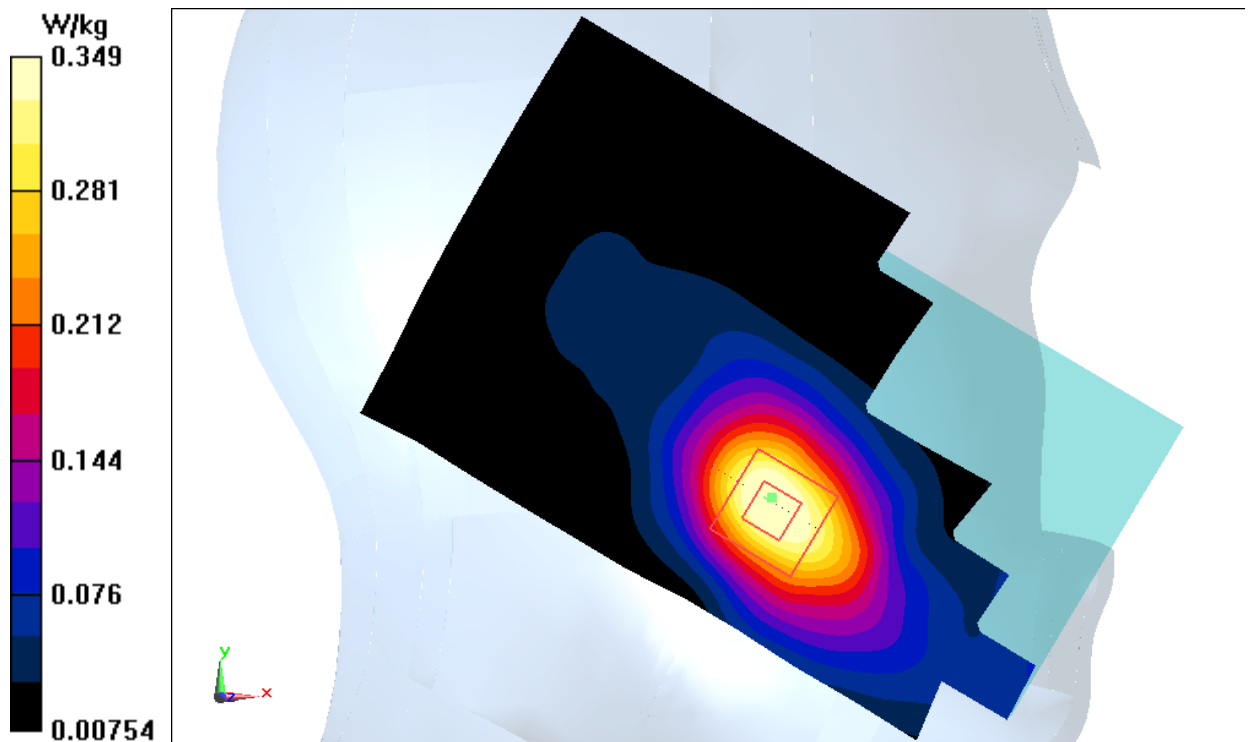


Fig.19 LTE Band4

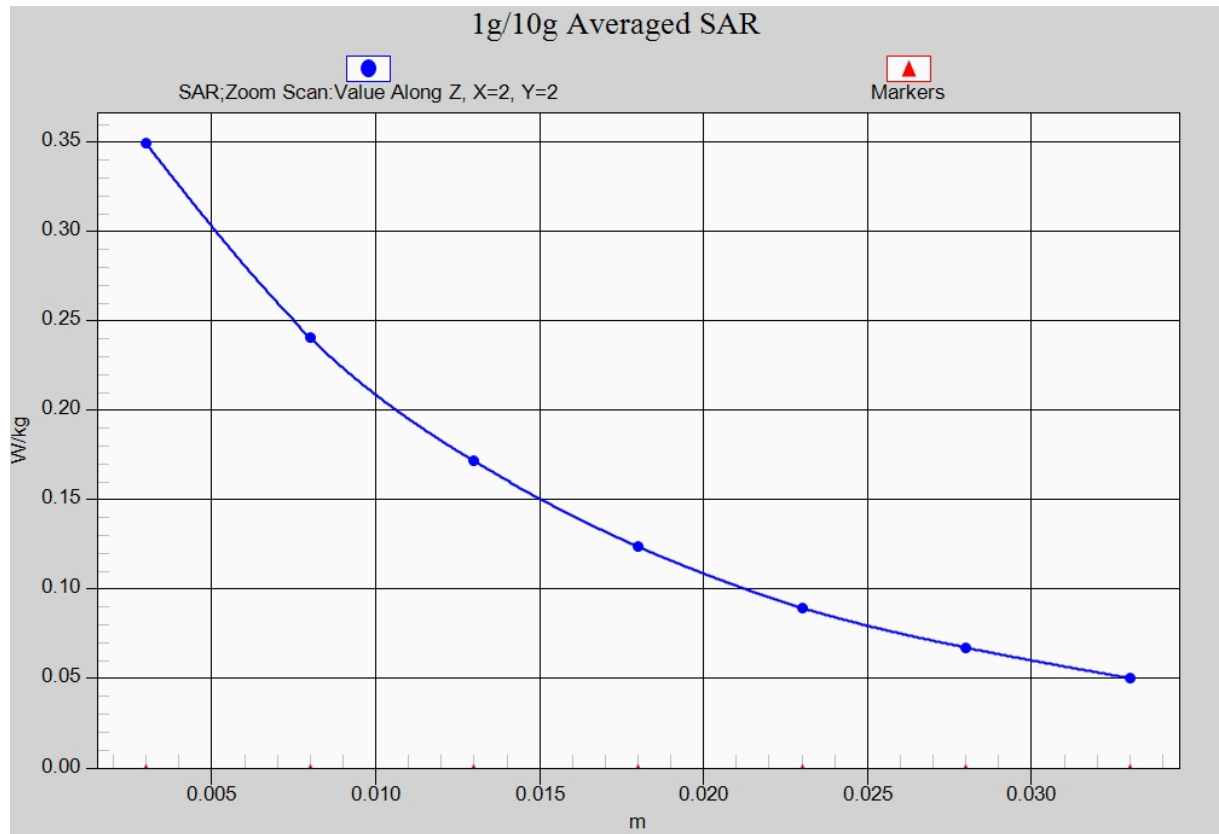


Fig. 19-1 Z-Scan at power reference point (LTE Band4)

LTE Band4 Body Bottom High with QPSK_20M_1RB_High 10mm

Date: 2017-6-4

Electronics: DAE4 Sn1331

Medium: Body 1750 MHz

Medium parameters used: $f = 1745$ MHz; $\sigma = 1.473$ mho/m; $\epsilon_r = 53.41$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.9°C Liquid Temperature: 22.5°C

Communication System: LTE Band4 Frequency: 1745 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN3846 ConvF(7.90, 7.90, 7.90)

Area Scan (121x71x1): Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.796 W/kg

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

Reference Value = 20.77 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 1.00 W/kg

SAR(1 g) = 0.601 W/kg; SAR(10 g) = 0.325 W/kg

Maximum value of SAR (measured) = 0.740 W/kg

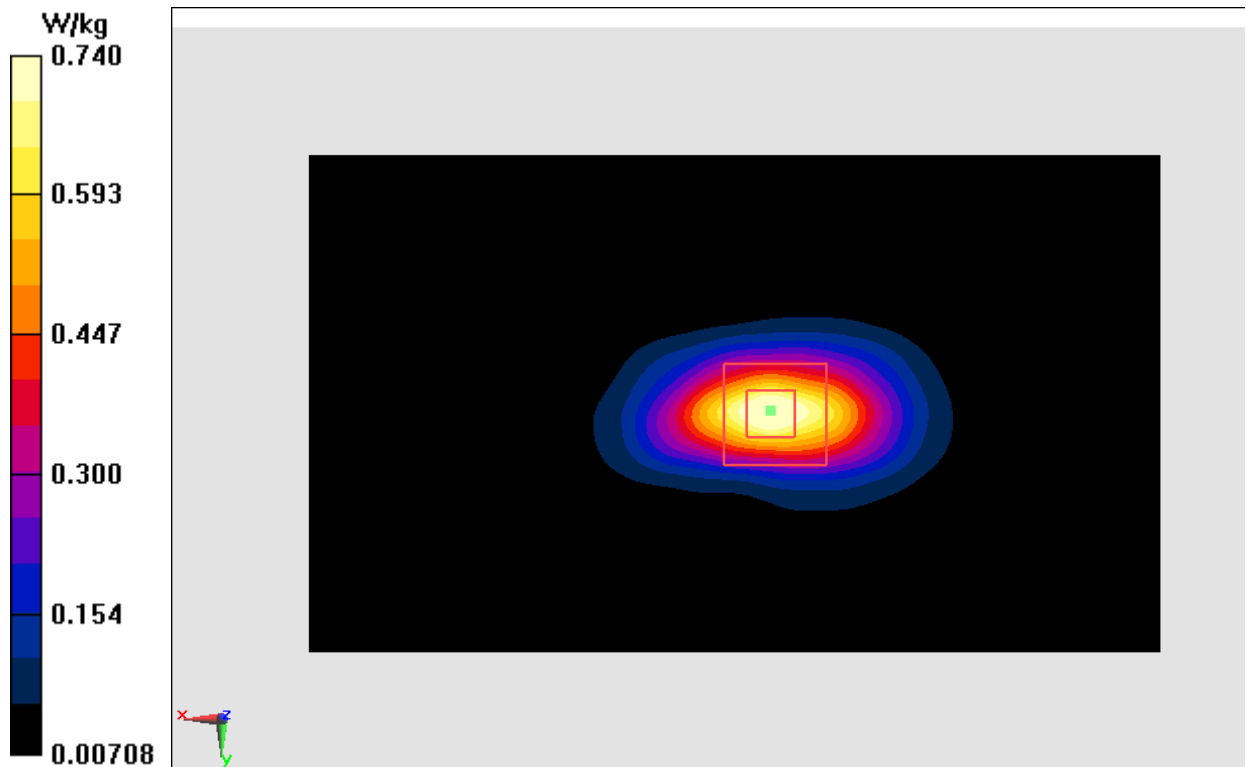


Fig.20 LTE Band4

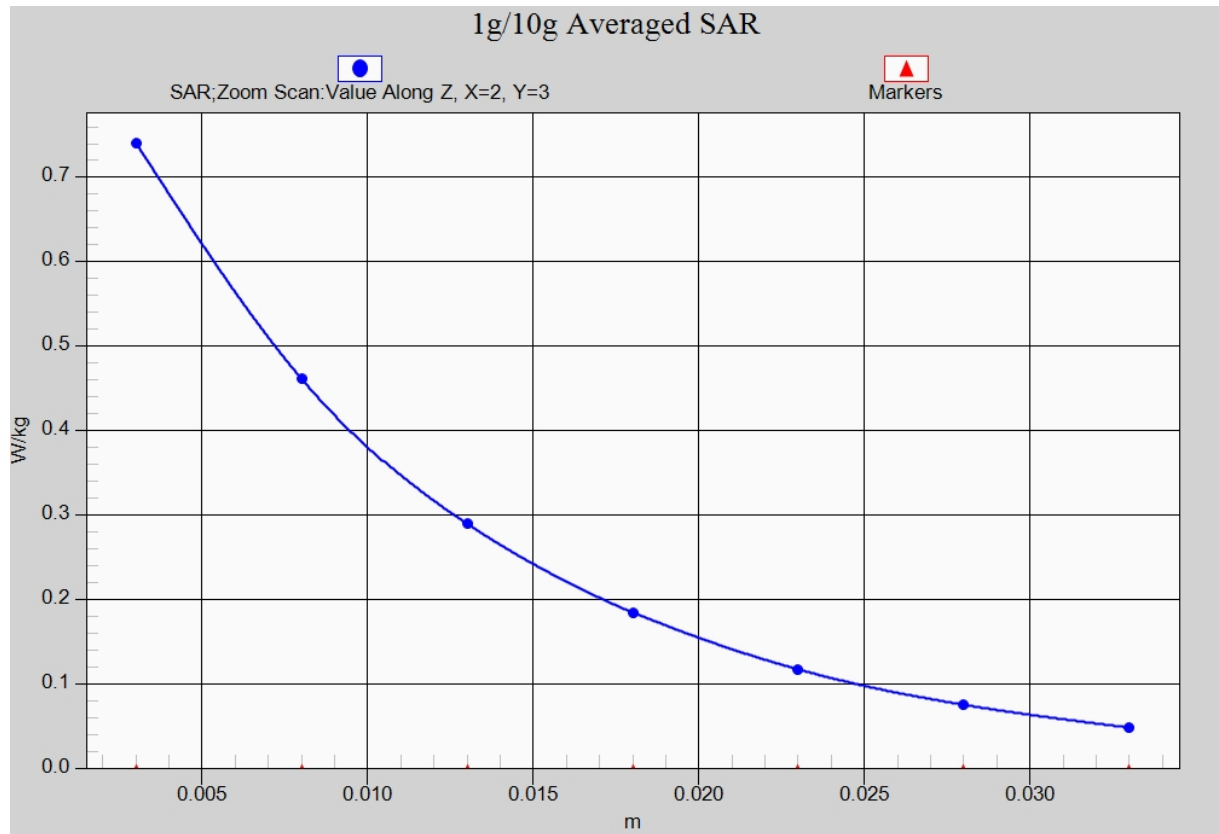


Fig. 20-1 Z-Scan at power reference point (LTE Band4)

LTE Band4 Body Front High with QPSK_20M_1RB_High 15mm

Date: 2017-6-4

Electronics: DAE4 Sn1331

Medium: Body 1750 MHz

Medium parameters used: $f = 1745$ MHz; $\sigma = 1.473$ mho/m; $\epsilon_r = 53.41$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.9°C Liquid Temperature: 22.5°C

Communication System: LTE Band4 Frequency: 1745 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN3846 ConvF(7.90, 7.90, 7.90)

Area Scan (121x71x1): Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 1.17 W/kg

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

Reference Value = 7.196 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 1.56 W/kg

SAR(1 g) = 0.951 W/kg; SAR(10 g) = 0.536 W/kg

Maximum value of SAR (measured) = 1.14 W/kg

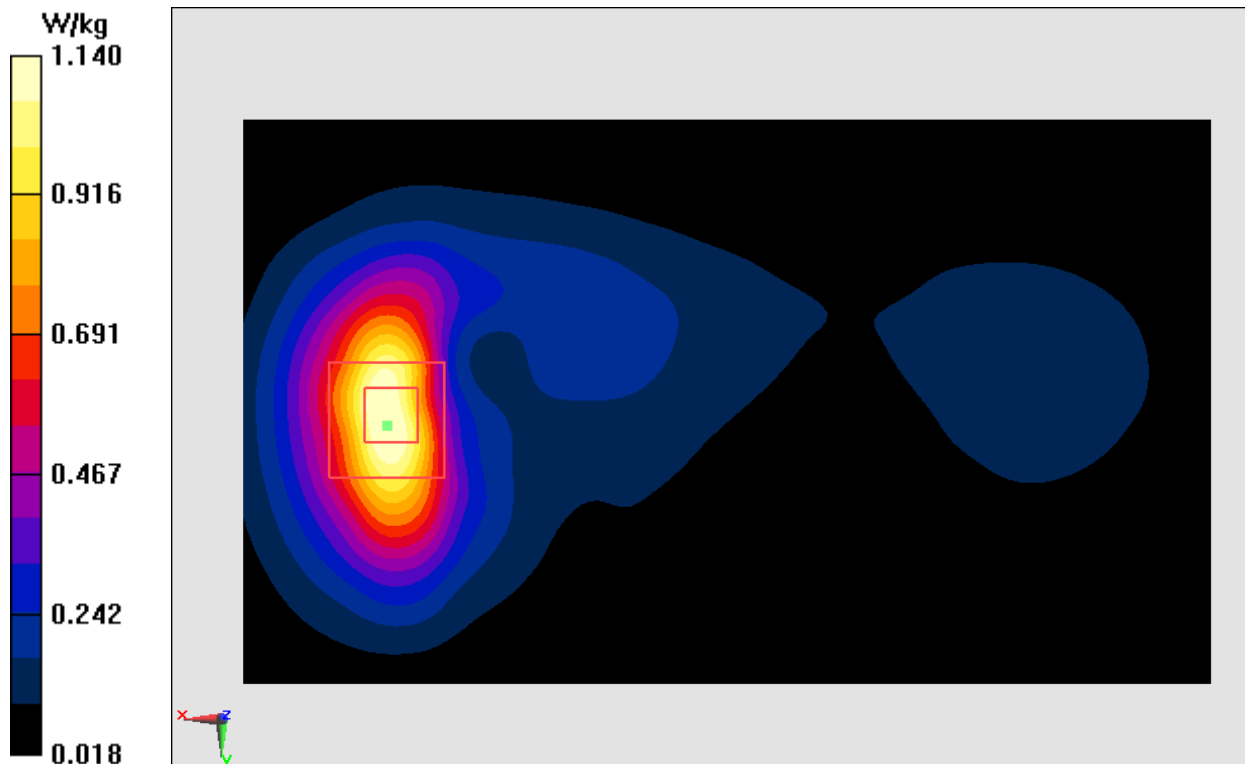


Fig.21 LTE Band4