

## 14 SAR Test Result

It is determined by user manual for the distance between the EUT and the phantom bottom.

The distance is 10 mm 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  $P_{\text{Target}}$  is the power of manufacturing upper limit;

$P_{\text{Measured}}$  is the measured power in chapter 11.

**Table 14.1: Duty Cycle**

Mode	Duty Cycle
Speech for GSM850/1900	1:8.3
GPRS&EGPRS	1:8.3
WCDMA&LTE	1:1

### 14.1 SAR results for Fast SAR

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

Ambient Temperature: 22.4 °C				Liquid Temperature: 22.2°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	L	Cheek	/	32.55	33.3	0.117	<b>0.14</b>	0.169	<b>0.20</b>	-0.06
190	836.6	L	Cheek	/	32.45	33.3	0.204	<b>0.25</b>	0.296	<b>0.36</b>	-0.05
128	824.2	L	Cheek	Fig.1	32.73	33.3	0.260	<b>0.30</b>	0.334	<b>0.38</b>	0.01
190	836.6	L	Tilt	/	32.45	33.3	0.129	<b>0.16</b>	0.186	<b>0.23</b>	-0.07
190	836.6	R	Cheek	/	32.45	33.3	0.152	<b>0.18</b>	0.218	<b>0.27</b>	0.17
190	836.6	R	Tilt	/	32.45	33.3	0.104	<b>0.13</b>	0.150	<b>0.18</b>	0.07

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

Ambient Temperature: 22.4 °C      Liquid Temperature: 22.2°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 (1)	Front	/	32.42	33.3	0.270	<b>0.33</b>	0.331	<b>0.41</b>	0.09
251	848.8	GPRS (1)	Rear	/	32.52	33.3	0.215	<b>0.26</b>	0.268	<b>0.32</b>	0.12
190	836.6	GPRS (1)	Rear	/	32.42	33.3	0.361	<b>0.44</b>	0.451	<b>0.55</b>	-0.04
128	824.2	GPRS (1)	Rear	Fig.2	32.68	33.3	0.394	<b>0.45</b>	0.505	<b>0.58</b>	0.01
190	836.6	GPRS (1)	Left	/	32.42	33.3	0.225	<b>0.28</b>	0.311	<b>0.38</b>	0.15
190	836.6	GPRS (1)	Right	/	32.42	33.3	0.221	<b>0.27</b>	0.303	<b>0.37</b>	0.08
190	836.6	GPRS (1)	Bottom	/	32.42	33.3	0.079	<b>0.10</b>	0.120	<b>0.15</b>	0.02
128	824.2	EGPRS (1)	Rear	/	32.64	33.3	0.376	<b>0.44</b>	0.459	<b>0.53</b>	0.11

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

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

Ambient Temperature: 22.4 °C      Liquid Temperature: 22.2°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										
810	1909.8	L	Cheek	/	29.72	30.3	0.069	<b>0.08</b>	0.109	<b>0.12</b>	0.04
661	1880	L	Cheek	Fig.3	29.86	30.3	0.081	<b>0.09</b>	0.126	<b>0.14</b>	0.13
512	1850.2	L	Cheek	/	30.01	30.3	0.080	<b>0.09</b>	0.125	<b>0.13</b>	0.11
661	1880	L	Tilt	/	29.86	30.3	0.027	<b>0.03</b>	0.045	<b>0.05</b>	-0.04
661	1880	R	Cheek	/	29.86	30.3	0.071	<b>0.08</b>	0.108	<b>0.12</b>	0.09
661	1880	R	Tilt	/	29.86	30.3	0.022	<b>0.02</b>	0.034	<b>0.04</b>	-0.02

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

		Ambient Temperature: 22.4 °C				Liquid Temperature: 22.2°C					
Frequency		Mode (number of timeslots)	Test Position	Figure No./N ote	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 (1)	Front	/	29.85	30.3	0.374	<b>0.41</b>	0.680	<b>0.75</b>	0.01
810	1909.8	GPRS (1)	Rear	/	29.72	30.3	0.465	<b>0.53</b>	0.859	<b>0.98</b>	-0.04
661	1880	GPRS (1)	Rear	/	29.85	30.3	0.435	<b>0.48</b>	0.795	<b>0.88</b>	0.13
512	1850.2	GPRS (1)	Rear	/	29.98	30.3	0.337	<b>0.36</b>	0.616	<b>0.66</b>	0.09
661	1880	GPRS (1)	Left	/	29.85	30.3	0.078	<b>0.09</b>	0.125	<b>0.14</b>	0.02
661	1880	GPRS (1)	Right	/	29.85	30.3	0.047	<b>0.05</b>	0.073	<b>0.08</b>	0.05
810	1909.8	GPRS (1)	Bottom	Fig.4	29.72	30.3	0.599	<b>0.68</b>	1.16	<b>1.33</b>	-0.08
661	1880	GPRS (1)	Bottom	/	29.85	30.3	0.518	<b>0.57</b>	1.00	<b>1.11</b>	-0.09
512	1850.2	GPRS (1)	Bottom	/	29.98	30.3	0.438	<b>0.47</b>	0.845	<b>0.91</b>	-0.04
810	1909.8	EGPRS (1)	Bottom	/	29.75	30.3	0.598	<b>0.68</b>	1.13	<b>1.28</b>	-0.11

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

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

		Ambient Temperature: 22.4 °C				Liquid Temperature: 22.2°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	/	23.43	24	0.115	<b>0.13</b>	0.167	<b>0.19</b>	0.05
4182	836.4	L	Tilt	/	23.43	24	0.088	<b>0.10</b>	0.126	<b>0.14</b>	-0.01
4233	846.6	R	Cheek	/	23.41	24	0.110	<b>0.13</b>	0.160	<b>0.18</b>	0.18
4182	836.4	R	Cheek	/	23.43	24	0.116	<b>0.13</b>	0.168	<b>0.19</b>	0.01
4132	826.4	R	Cheek	Fig.5	23.31	24	0.146	<b>0.17</b>	0.189	<b>0.22</b>	0.04
4182	836.4	R	Tilt	/	23.43	24	0.084	<b>0.10</b>	0.120	<b>0.14</b>	-0.03

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

		Ambient Temperature: 22.4 °C				Liquid Temperature: 22.2°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									
4182	836.4	Front	/	23.43	24	0.225	<b>0.26</b>	0.289	<b>0.33</b>	0.09
4233	846.6	Rear	/	23.41	24	0.271	<b>0.31</b>	0.346	<b>0.40</b>	0.12
4182	836.4	Rear	Fig.6	23.43	24	0.328	<b>0.37</b>	0.421	<b>0.48</b>	0.03
4132	826.4	Rear	/	23.31	24	0.320	<b>0.38</b>	0.408	<b>0.48</b>	0.04
4182	836.4	Left	/	23.43	24	0.213	<b>0.24</b>	0.308	<b>0.35</b>	-0.08
4182	836.4	Right	/	23.43	24	0.177	<b>0.20</b>	0.258	<b>0.29</b>	0.14
4182	836.4	Bottom	/	23.43	24	0.078	<b>0.09</b>	0.128	<b>0.15</b>	0.02

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

**Table 14.1-7: SAR Values (WCDMA 1900 MHz Band - Head)**

Ambient Temperature: 22.4 °C Liquid Temperature: 22.2°C											
Frequency		Side	Test Position	Figure No./Not e	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										
9938	1907.6	L	Cheek	/	22.35	23	0.117	<b>0.14</b>	0.207	<b>0.24</b>	0.03
9800	1880	L	Cheek	/	22.26	23	0.137	<b>0.16</b>	0.240	<b>0.28</b>	0.01
9662	1852.4	L	Cheek	Fig.7	22.33	23	0.177	<b>0.21</b>	0.279	<b>0.33</b>	-0.04
9800	1880	L	Tilt	/	22.26	23	0.029	<b>0.03</b>	0.058	<b>0.07</b>	0.19
9800	1880	R	Cheek	/	22.26	23	0.136	<b>0.16</b>	0.239	<b>0.28</b>	0.12
9800	1880	R	Tilt	/	22.26	23	0.032	<b>0.04</b>	0.056	<b>0.07</b>	0.08

**Table 14.1-8: SAR Values (WCDMA 1900 MHz Band - Body) AP ON**

Ambient Temperature: 22.4 °C Liquid Temperature: 22.2°C										
Frequency		Test Position	Figure No./Not e	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									
9800	1880	Front	/	22.26	23	0.335	<b>0.40</b>	0.608	<b>0.72</b>	0.02
9938	1907.6	Rear	/	22.35	23	0.412	<b>0.48</b>	0.784	<b>0.91</b>	-0.05
9800	1880	Rear	/	22.26	23	0.407	<b>0.48</b>	0.776	<b>0.92</b>	-0.11
9662	1852.4	Rear	/	22.33	23	0.352	<b>0.41</b>	0.712	<b>0.83</b>	0.09
9800	1880	Left	/	22.26	23	0.065	<b>0.08</b>	0.101	<b>0.12</b>	0.13
9800	1880	Right	/	22.26	23	0.043	<b>0.05</b>	0.067	<b>0.08</b>	-0.08
9938	1907.6	Bottom	Fig.8	22.35	23	0.536	<b>0.62</b>	1.05	<b>1.22</b>	-0.01
9800	1880	Bottom	/	22.26	23	0.528	<b>0.63</b>	1.02	<b>1.21</b>	0.07
9662	1852.4	Bottom	/	22.33	23	0.508	<b>0.59</b>	1.00	<b>1.17</b>	0.11

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

**Table 14.1-9: SAR Values (WCDMA 1900 MHz Band - Body) AP OFF**

Ambient Temperature: 22.4 °C Liquid Temperature: 22.2°C										
Frequency		Test Position	Figure No./Not e	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									
9800	1880	Front	/	20.3	20.5	0.270	<b>0.28</b>	0.462	<b>0.48</b>	0.04
9938	1907.6	Rear	/	20.45	20.5	0.354	<b>0.36</b>	0.617	<b>0.62</b>	-0.06
9800	1880	Rear	Fig.9	20.3	20.5	0.382	<b>0.40</b>	0.665	<b>0.70</b>	0.00
9662	1852.4	Rear	/	20.47	20.5	0.380	<b>0.38</b>	0.654	<b>0.66</b>	0.09

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

**Table 14.1-10: SAR Values (LTE Band2 - Head)**

Ambient Temperature: 22.4 °C				Liquid Temperature: 22.2°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-Low	L	Cheek	/	22.79	23	0.173	<b>0.18</b>	0.265	<b>0.28</b>	0.04
19100	1900	1RB-Low	L	Tilt	/	22.79	23	0.048	<b>0.05</b>	0.076	<b>0.08</b>	-0.07
19100	1900	1RB-Low	R	Cheek	Fig.10	22.79	23	0.195	<b>0.20</b>	0.306	<b>0.32</b>	0.02
19100	1900	1RB-Low	R	Tilt	/	22.79	23	0.039	<b>0.04</b>	0.068	<b>0.07</b>	-0.11
18900	1880	50RB-Mid	L	Cheek	/	21.5	22	0.139	<b>0.16</b>	0.213	<b>0.24</b>	0.06
18900	1880	50RB-Mid	L	Tilt	/	21.5	22	0.034	<b>0.04</b>	0.052	<b>0.06</b>	-0.02
18900	1880	50RB-Mid	R	Cheek	/	21.5	22	0.144	<b>0.16</b>	0.225	<b>0.25</b>	-0.12
18900	1880	50RB-Mid	R	Tilt	/	21.5	22	0.028	<b>0.03</b>	0.051	<b>0.06</b>	-0.09

Note1: The LTE mode is QPSK\_20MHz.

**Table 14.1-11: SAR Values (LTE Band2 - Body) AP ON**

Ambient Temperature: 22.4 °C				Liquid Temperature: 22.2°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	/	21.64	22	0.362	<b>0.39</b>	0.668	<b>0.73</b>	0.03
19100	1900	1RB-Mid	Rear	/	21.46	22	0.416	<b>0.47</b>	0.775	<b>0.88</b>	-0.02
18900	1880	1RB-Low	Rear	/	21.55	22	0.406	<b>0.45</b>	0.756	<b>0.84</b>	0.11
18700	1860	1RB_Mid	Rear	/	21.64	22	0.402	<b>0.44</b>	0.739	<b>0.80</b>	0.06
18700	1860	1RB_Mid	Left	/	21.64	22	0.073	<b>0.08</b>	0.122	<b>0.13</b>	0.07
18700	1860	1RB_Mid	Right	/	21.64	22	0.030	<b>0.03</b>	0.047	<b>0.05</b>	0.03
19100	1900	1RB-Mid	Bottom	/	21.46	22	0.521	<b>0.59</b>	1.01	<b>1.14</b>	0.05
18900	1880	1RB-Low	Bottom	/	21.55	22	0.507	<b>0.56</b>	0.982	<b>1.09</b>	0.11
18700	1860	1RB_Mid	Bottom	/	21.64	22	0.494	<b>0.54</b>	0.942	<b>1.02</b>	0.06
18700	1860	50RB-Low	Front	/	21.37	22	0.349	<b>0.40</b>	0.642	<b>0.74</b>	0.07
19100	1900	50RB-Low	Rear	/	21.27	22	0.395	<b>0.47</b>	0.738	<b>0.87</b>	0.03
18900	1880	50RB-Low	Rear	/	21.32	22	0.393	<b>0.46</b>	0.731	<b>0.85</b>	0.03
18700	1860	50RB-Low	Rear	/	21.37	22	0.417	<b>0.48</b>	0.767	<b>0.89</b>	0.05
18700	1860	50RB-Low	Left	/	21.37	22	0.071	<b>0.08</b>	0.121	<b>0.14</b>	0.11
18700	1860	50RB-Low	Right	/	21.37	22	0.031	<b>0.04</b>	0.048	<b>0.06</b>	0.06
19100	1900	50RB-Low	Bottom	Fig.11	21.27	22	0.522	<b>0.62</b>	1.02	<b>1.21</b>	-0.02
18900	1880	50RB-Low	Bottom	/	21.32	22	0.498	<b>0.58</b>	0.972	<b>1.14</b>	0.11
18700	1860	50RB-Low	Bottom	/	21.37	22	0.495	<b>0.57</b>	0.963	<b>1.11</b>	0.06
18700	1860	100RB	Rear	/	21.27	22	0.395	<b>0.47</b>	0.729	<b>0.86</b>	0.07
18700	1860	100RB	Bottom	/	21.27	22	0.520	<b>0.62</b>	1.00	<b>1.18</b>	0.03

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

Note2: The LTE mode is QPSK\_20MHz.

**Table 14.1-12: SAR Values (LTE Band2 - Body) AP OFF**

		Ambient Temperature: 22.4 °C			Liquid Temperature: 22.2°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										
18900	1880	1RB-Low	Front	/	22.79	23	0.380	<b>0.40</b>	0.633	<b>0.66</b>	0.07
19100	1900	1RB-Mid	Rear	/	22.73	23	0.443	<b>0.47</b>	0.765	<b>0.81</b>	-0.09
18900	1880	1RB-Low	Rear	Fig.12	22.79	23	0.454	<b>0.48</b>	0.771	<b>0.81</b>	0.00
18700	1860	1RB_Mid	Rear	/	22.72	23	0.451	<b>0.48</b>	0.764	<b>0.81</b>	0.05
18700	1860	50RB_High	Front	/	21.5	22	0.272	<b>0.31</b>	0.452	<b>0.51</b>	-0.06
18700	1860	50RB_High	Rear	/	21.5	22	0.340	<b>0.38</b>	0.574	<b>0.64</b>	-0.04
18700	1860	100RB	Rear	/	21.45	22	0.343	<b>0.39</b>	0.587	<b>0.67</b>	0.01

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

Note2: The LTE mode is QPSK\_20MHz.

**Table 14.1-13: SAR Values(LTE Band4 - Head)**

		Ambient Temperature: 22.4 °C			Liquid Temperature: 22.2°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											
20300	1745	1RB_Mid	L	Cheek	/	23.79	24	0.087	<b>0.09</b>	0.151	<b>0.16</b>	-0.02
20300	1745	1RB_Mid	L	Tilt	/	23.79	24	0.059	<b>0.06</b>	0.092	<b>0.10</b>	0.06
20300	1745	1RB_Mid	R	Cheek	Fig.13	23.79	24	0.164	<b>0.17</b>	0.248	<b>0.26</b>	0.04
20300	1745	1RB_Mid	R	Tilt	/	23.79	24	0.069	<b>0.07</b>	0.110	<b>0.12</b>	-0.01
20175	1732.5	50RB-High	L	Cheek	/	23.75	23	0.074	<b>0.06</b>	0.131	<b>0.11</b>	0.12
20175	1732.5	50RB-High	L	Tilt	/	23.75	23	0.049	<b>0.04</b>	0.072	<b>0.06</b>	0.03
20175	1732.5	50RB-High	R	Cheek	/	23.75	23	0.136	<b>0.11</b>	0.205	<b>0.17</b>	-0.11
20175	1732.5	50RB-High	R	Tilt	/	23.75	23	0.056	<b>0.05</b>	0.090	<b>0.08</b>	0.09

Note1: The LTE mode is QPSK\_20MHz.

**Table 14.1-14: SAR Values (LTE Band4 - Body) AP ON**

Ambient Temperature: 22.4 °C				Liquid Temperature: 22.2°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-Low	Front	/	22.99	23	0.324	<b>0.32</b>	0.623	<b>0.62</b>	0.01
20300	1745	1RB-Low	Rear	/	22.99	23	0.349	<b>0.35</b>	0.644	<b>0.65</b>	-0.04
20300	1745	1RB-Low	Left	/	22.99	23	0.059	<b>0.06</b>	0.096	<b>0.10</b>	-0.11
20300	1745	1RB-Low	Right	/	22.99	23	0.049	<b>0.05</b>	0.076	<b>0.08</b>	0.08
20300	1745	1RB-Low	Bottom	/	22.99	23	0.481	<b>0.48</b>	0.935	<b>0.94</b>	0.07
20175	1732.5	1RB_Mid	Bottom	/	22.97	23	0.471	<b>0.47</b>	0.917	<b>0.92</b>	0.12
20050	1720	1RB_Mid	Bottom	/	22.9	23	0.455	<b>0.47</b>	0.886	<b>0.91</b>	0.15
20300	1745	50RB-Low	Front	/	22.68	23	0.338	<b>0.36</b>	0.639	<b>0.69</b>	0.09
20300	1745	50RB-Low	Rear	/	22.68	23	0.338	<b>0.36</b>	0.626	<b>0.67</b>	0.06
20300	1745	50RB-Low	Left	/	22.68	23	0.060	<b>0.06</b>	0.099	<b>0.11</b>	0.02
20300	1745	50RB-Low	Right	/	22.68	23	0.048	<b>0.05</b>	0.076	<b>0.08</b>	-0.05
20300	1745	50RB-Low	Bottom	/	22.68	23	0.482	<b>0.52</b>	0.944	<b>1.02</b>	-0.01
20175	1732.5	50RB-Mid	Bottom	/	22.67	23	0.480	<b>0.52</b>	0.935	<b>1.01</b>	-0.08
20050	1720	50RB-Low	Bottom	/	22.44	23	0.456	<b>0.52</b>	0.888	<b>1.01</b>	-0.14
20300	1745	100RB	Bottom	Fig.14	22.68	23	0.497	<b>0.54</b>	0.971	<b>1.05</b>	0.05
20175	1732.5	100RB	Bottom	/	22.67	23	0.482	<b>0.52</b>	0.944	<b>1.02</b>	-0.08
20050	1720	100RB	Bottom	/	22.53	23	0.469	<b>0.52</b>	0.908	<b>1.01</b>	-0.12

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

Note2: The LTE mode is QPSK\_20MHz.

**Table 14.1-15: SAR Values (LTE Band4 - Body) AP OFF**

Ambient Temperature: 22.4 °C				Liquid Temperature: 22.2°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										
20050	1720	1RB_Mid	Front	/	23.79	24	0.313	<b>0.33</b>	0.521	<b>0.55</b>	-0.13
20050	1720	1RB_Mid	Rear	Fig.15	23.79	24	0.358	<b>0.38</b>	0.595	<b>0.62</b>	-0.19
20175	1732.5	50RB_High	Front	/	23.75	23	0.247	<b>0.21</b>	0.435	<b>0.37</b>	0.01
20175	1732.5	50RB_High	Rear	/	23.75	23	0.272	<b>0.23</b>	0.484	<b>0.41</b>	-0.06

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

Note2: The LTE mode is QPSK\_20MHz.

**Table 14.1-16: SAR Values(LTE Band5 - Head)**

Ambient Temperature: 22.4°C      Liquid Temperature: 22.2°C												
Frequency		Mode	Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz											
20525	836.5	1RB_Mid	L	Cheek	/	23.78	24	0.132	<b>0.14</b>	0.202	<b>0.21</b>	0.04
20525	836.5	1RB_Mid	L	Tilt	/	23.78	24	0.138	<b>0.14</b>	0.172	<b>0.18</b>	0.13
20525	836.5	1RB_Mid	R	Cheek	Fig.16	23.78	24	0.165	<b>0.17</b>	0.213	<b>0.22</b>	0.06
20525	836.5	1RB_Mid	R	Tilt	/	23.78	24	0.111	<b>0.12</b>	0.137	<b>0.14</b>	-0.12
20600	844	25RB-Mid	L	Cheek	/	22.54	23	0.124	<b>0.14</b>	0.155	<b>0.17</b>	-0.16
20600	844	25RB-Mid	L	Tilt	/	22.54	23	0.098	<b>0.11</b>	0.122	<b>0.14</b>	0.15
20600	844	25RB-Mid	R	Cheek	/	22.54	23	0.123	<b>0.14</b>	0.159	<b>0.18</b>	0.03
20600	844	25RB-Mid	R	Tilt	/	22.54	23	0.090	<b>0.10</b>	0.111	<b>0.12</b>	0.07

Note1: The LTE mode is QPSK\_10MHz.

**Table 14.1-17: SAR Values (LTE Band5-Body)**

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)
Ch.	MHz										
20525	836.5	1RB_Mid	Front	/	23.78	24	0.210	<b>0.22</b>	0.293	<b>0.31</b>	0.09
20525	836.5	1RB_Mid	Rear	Fig.17	23.78	24	0.259	<b>0.27</b>	0.336	<b>0.35</b>	0.06
20525	836.5	1RB_Mid	Left	/	23.78	24	0.152	<b>0.16</b>	0.234	<b>0.25</b>	-0.03
20525	836.5	1RB_Mid	Right	/	23.78	24	0.157	<b>0.17</b>	0.241	<b>0.25</b>	0.15
20525	836.5	1RB_Mid	Bottom	/	23.78	24	0.063	<b>0.07</b>	0.107	<b>0.11</b>	0.1
20600	844	25RB-Mid	Front	/	22.54	23	0.147	<b>0.16</b>	0.205	<b>0.23</b>	-0.12
20600	844	25RB-Mid	Rear	/	22.54	23	0.180	<b>0.20</b>	0.250	<b>0.28</b>	0.08
20600	844	25RB-Mid	Left	/	22.54	23	0.111	<b>0.12</b>	0.170	<b>0.19</b>	0.11
20600	844	25RB-Mid	Right	/	22.54	23	0.114	<b>0.13</b>	0.175	<b>0.19</b>	0.06
20600	844	25RB-Mid	Bottom	/	22.54	23	0.049	<b>0.05</b>	0.083	<b>0.09</b>	-0.13

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

Note2: The LTE mode is QPSK\_10MHz.

**Table 14.1-18: SAR Values(LTE Band7 - Head)**

Ambient Temperature: 22.4 °C							Liquid Temperature: 22.2°C					
Frequency		Mode	Side	Test Position	Figure No./ Note	Conducted Power (dBm)	Max.tuned-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											
21350	2560	1RB_Mid	L	Cheek	Fig.18	23.19	24	0.170	<b>0.20</b>	0.312	<b>0.38</b>	-0.08
21350	2560	1RB_Mid	L	Tilt	/	23.19	24	0.056	<b>0.07</b>	0.113	<b>0.14</b>	0.02
21350	2560	1RB_Mid	R	Cheek		23.19	24	0.114	<b>0.14</b>	0.208	<b>0.25</b>	-0.01
21350	2560	1RB_Mid	R	Tilt	/	23.19	24	0.072	<b>0.09</b>	0.129	<b>0.16</b>	-0.05
21350	2560	50RB-High	L	Cheek	/	21.91	23	0.134	<b>0.17</b>	0.245	<b>0.32</b>	0.02
21350	2560	50RB-High	L	Tilt	/	21.91	23	0.047	<b>0.06</b>	0.092	<b>0.12</b>	0.08
21350	2560	50RB-High	R	Cheek	/	21.91	23	0.088	<b>0.11</b>	0.162	<b>0.21</b>	0.12
21350	2560	50RB-High	R	Tilt	/	21.91	23	0.057	<b>0.07</b>	0.104	<b>0.13</b>	-0.5

Note1: The LTE mode is QPSK\_20MHz.

**Table 14.1-19: SAR Values (LTE Band7 - Body) AP ON**

		Ambient Temperature: 22.4 °C			Liquid Temperature: 22.2°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										
21350	2560	1RB_Low	Front	/	21.92	22	0.171	<b>0.17</b>	0.348	<b>0.35</b>	0.02
21350	2560	1RB_Low	Rear	/	21.92	22	0.443	<b>0.45</b>	0.985	<b>1.00</b>	0.07
21100	2535	1RB_High	Rear	/	21.85	22	0.377	<b>0.39</b>	0.799	<b>0.83</b>	-0.04
20850	2510	1RB_Mid	Rear	/	21.89	22	0.364	<b>0.37</b>	0.785	<b>0.81</b>	0.12
21350	2560	1RB_Low	Left	/	21.92	22	0.145	<b>0.15</b>	0.278	<b>0.28</b>	0.05
21350	2560	1RB_Low	Right	/	21.92	22	0.024	<b>0.02</b>	0.045	<b>0.05</b>	-0.08
21350	2560	1RB_Low	Bottom	Fig.19	21.92	22	0.483	<b>0.49</b>	1.09	<b>1.11</b>	-0.13
21100	2535	1RB_High	Bottom	/	21.85	22	0.446	<b>0.46</b>	1.01	<b>1.05</b>	-0.11
20850	2510	1RB_Mid	Bottom	/	21.89	22	0.407	<b>0.42</b>	0.921	<b>0.94</b>	0.15
20850	2510	50RB-Mid	Front	/	21.76	22	0.166	<b>0.18</b>	0.338	<b>0.36</b>	0.14
21350	2560	50RB-High	Rear	/	21.71	22	0.424	<b>0.45</b>	0.940	<b>1.00</b>	0.07
21100	2535	50RB-Mid	Rear	/	21.64	22	0.369	<b>0.40</b>	0.802	<b>0.87</b>	0.06
20850	2510	50RB-Mid	Rear	/	21.76	22	0.349	<b>0.37</b>	0.754	<b>0.80</b>	0.01
20850	2510	50RB-Mid	Left	/	21.76	22	0.136	<b>0.14</b>	0.259	<b>0.27</b>	-0.05
20850	2510	50RB-Mid	Right	/	21.76	22	0.022	<b>0.02</b>	0.041	<b>0.04</b>	-0.09
21350	2560	50RB-High	Bottom	/	21.71	22	0.458	<b>0.49</b>	1.04	<b>1.11</b>	-0.03
21100	2535	50RB-Mid	Bottom	/	21.64	22	0.434	<b>0.47</b>	0.984	<b>1.07</b>	0.07
20850	2510	50RB-Mid	Bottom	/	21.76	22	0.404	<b>0.43</b>	0.911	<b>0.96</b>	0.13
21350	2560	100RB	Bottom	/	21.63	22	0.391	<b>0.43</b>	0.855	<b>0.93</b>	0.02
21100	2535	100RB	Bottom	/	21.59	22	0.389	<b>0.43</b>	0.853	<b>0.94</b>	0.03
20850	2510	100RB	Bottom	/	21.75	22	0.393	<b>0.42</b>	0.858	<b>0.91</b>	0.08
20850	2510	100RB	Bottom	/	21.75	22	0.461	<b>0.49</b>	1.05	<b>1.11</b>	-0.06

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

Note2: The LTE mode is QPSK\_20MHz.

**Table 14.1-20: SAR Values (LTE Band7 - Body) AP OFF**

		Ambient Temperature: 22.4 °C			Liquid Temperature: 22.2°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										
21350	2560	1RB_Mid	Front	/	23.19	24	0.110	<b>0.13</b>	0.208	<b>0.25</b>	0.04
21350	2560	1RB_Mid	Rear	Fig.20	23.19	24	0.239	<b>0.29</b>	0.478	<b>0.58</b>	0.02
21350	2560	50RB-High	Front	/	21.91	23	0.083	<b>0.11</b>	0.160	<b>0.21</b>	0.19
21350	2560	50RB-High	Rear	/	21.91	23	0.189	<b>0.24</b>	0.377	<b>0.48</b>	0.08

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

Note2: The LTE mode is QPSK\_20MHz.

**Table 14.1-21: SAR Values(LTE Band12 - Head)**

		Ambient Temperature: 22.4 °C				Liquid Temperature: 22.2°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											
23095	707.5	1RB_Mid	L	Cheek	Fig.21	23.67	24	0.154	<b>0.17</b>	0.194	<b>0.21</b>	-0.14
23095	707.5	1RB_Mid	L	Tilt	/	23.67	24	0.102	<b>0.11</b>	0.126	<b>0.14</b>	0.04
23095	707.5	1RB_Mid	R	Cheek	/	23.67	24	0.129	<b>0.14</b>	0.160	<b>0.17</b>	0.13
23095	707.5	1RB_Mid	R	Tilt	/	23.67	24	0.096	<b>0.10</b>	0.118	<b>0.13</b>	-0.16
23130	711	25RB-Mid	L	Cheek	/	22.58	23	0.127	<b>0.14</b>	0.158	<b>0.17</b>	0.07
23130	711	25RB-Mid	L	Tilt	/	22.58	23	0.083	<b>0.09</b>	0.104	<b>0.11</b>	0.17
23130	711	25RB-Mid	R	Cheek	/	22.58	23	0.107	<b>0.12</b>	0.132	<b>0.15</b>	-0.02
23130	711	25RB-Mid	R	Tilt	/	22.58	23	0.078	<b>0.09</b>	0.096	<b>0.11</b>	-0.05

Note1: The LTE mode is QPSK\_10MHz.

**Table 14.1-22: SAR Values (LTE Band12 - Body)**

		Ambient Temperature: 22.4 °C				Liquid Temperature: 22.2°C						
Frequency		Mode	Test Position	Figure No./N ote	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											
23095	707.5	1RB_Mid	Front	/	23.67	24	0.657	<b>0.71</b>	0.189	<b>0.20</b>	0.080	
23095	707.5	1RB_Mid	Rear	Fig.22	23.67	24	0.212	<b>0.23</b>	0.270	<b>0.29</b>	-0.09	
23095	707.5	1RB_Mid	Left	/	23.67	24	0.151	<b>0.16</b>	0.197	<b>0.21</b>	0.040	
23095	707.5	1RB_Mid	Right	/	23.67	24	0.098	<b>0.11</b>	0.128	<b>0.14</b>	0.110	
23095	707.5	1RB_Mid	Bottom	/	23.67	24	0.032	<b>0.03</b>	0.051	<b>0.06</b>	0.040	
23130	711	25RB-Mid	Front	/	22.58	23	0.117	<b>0.13</b>	0.142	<b>0.16</b>	-0.010	
23130	711	25RB-Mid	Rear	/	22.58	23	0.171	<b>0.19</b>	0.218	<b>0.24</b>	0.130	
23130	711	25RB-Mid	Left	/	22.58	23	0.122	<b>0.13</b>	0.161	<b>0.18</b>	0.080	
23130	711	25RB-Mid	Right	/	22.58	23	0.079	<b>0.09</b>	0.103	<b>0.11</b>	0.040	
23130	711	25RB-Mid	Bottom	/	22.58	23	0.025	<b>0.03</b>	0.040	<b>0.04</b>	0.120	

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

Note2: The LTE mode is QPSK\_10MHz.

**Table 14.1-23: SAR Values (WCDMA 1700 MHz Band - Head)**

Ambient Temperature: 22.5 °C      Liquid Temperature: 22.0°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										
1513	1752.6	L	Cheek	/	21.65	23	0.122	<b>0.17</b>	0.190	<b>0.26</b>	0.09
1412	1732.4	L	Cheek	/	21.77	23	0.131	<b>0.17</b>	0.204	<b>0.27</b>	0.14
1312	1712.4	L	Cheek	Fig.23	21.74	23	0.134	<b>0.18</b>	0.207	<b>0.28</b>	0.11
1412	1732.4	L	Tilt	/	21.77	23	0.043	<b>0.06</b>	0.071	<b>0.09</b>	-0.09
1412	1732.4	R	Cheek	/	21.77	23	0.105	<b>0.14</b>	0.159	<b>0.21</b>	0.11
1412	1732.4	R	Tilt	/	21.77	23	0.035	<b>0.05</b>	0.057	<b>0.08</b>	0.04

**Table 14.1-24: SAR Values (WCDMA 1700 MHz Band - Body) AP ON**

Ambient Temperature: 22.5 °C      Liquid Temperature: 22.0°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									
1412	1732.5	Front	/	20.29	20.5	0.408	<b>0.43</b>	0.763	<b>0.80</b>	0.03
1412	1732.5	Rear	/	20.29	20.5	0.400	<b>0.42</b>	0.734	<b>0.77</b>	0.12
1412	1732.5	Left	/	20.29	20.5	0.096	<b>0.10</b>	0.157	<b>0.16</b>	-0.04
1412	1732.5	Right	/	20.29	20.5	0.083	<b>0.09</b>	0.134	<b>0.14</b>	0.05
1513	1752.6	Bottom	Fig.24	20.12	20.5	0.589	<b>0.64</b>	1.15	<b>1.26</b>	0.09
1412	1732.5	Bottom	/	20.29	20.5	0.568	<b>0.60</b>	1.12	<b>1.17</b>	0.09
1312	1712.4	Bottom	/	20.17	20.5	0.493	<b>0.53</b>	0.966	<b>1.04</b>	0.11

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

**Table 14.1-25: SAR Values (WCDMA 1700 MHz Band - Body) AP OFF**

Ambient Temperature: 22.5 °C      Liquid Temperature: 22.0°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									
1513	1752.6	Front	Fig.25	21.65	23	0.240	<b>0.33</b>	0.399	<b>0.54</b>	-0.07
1412	1732.5	Front	/	21.77	23	0.223	<b>0.30</b>	0.365	<b>0.48</b>	-0.11
1312	1712.4	Front	/	21.74	23	0.207	<b>0.28</b>	0.335	<b>0.45</b>	0.09
1412	1732.5	Rear	/	21.77	23	0.218	<b>0.29</b>	0.357	<b>0.47</b>	0.02

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

## 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: 22.4 °C				Liquid Temperature: 22.2°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										
128	824.2	L	Cheek	Fig.1	32.73	33.3	0.260	<b>0.30</b>	0.334	<b>0.38</b>	0.01

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

		Ambient Temperature: 22.4 °C				Liquid Temperature: 22.2°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 (1)	Rear	Fig.2	32.68	33.3	0.394	<b>0.45</b>	0.505	<b>0.58</b>	0.01

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

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

		Ambient Temperature: 22.4 °C				Liquid Temperature: 22.2°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.3	29.86	30.3	0.081	<b>0.09</b>	0.126	<b>0.14</b>	0.13

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

		Ambient Temperature: 22.4 °C				Liquid Temperature: 22.2°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 (1)	Bottom	Fig.4	29.72	30.3	0.599	<b>0.68</b>	1.16	<b>1.33</b>	-0.08

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

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

Ambient Temperature: 22.4 °C      Liquid Temperature: 22.2°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										
4132	826.4	R	Cheek	Fig.5	23.31	24	0.146	0.17	0.189	0.22	0.04

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

Ambient Temperature: 22.4 °C      Liquid Temperature: 22.2°C										
Frequency		Test Position	Figure No./N ote	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	Rear	Fig.6	23.43	24	0.328	0.37	0.421	0.48	0.03

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

**Table 14.2-7: SAR Values(WCDMA 1900 MHz Band - Head)**

Ambient Temperature: 22.4 °C      Liquid Temperature: 22.2°C											
Frequency		Side	Test Position	Figure No./Not e	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	Fig.7	22.33	23	0.177	0.21	0.279	0.33	-0.04

**Table 14.2-8: SAR Values (WCDMA 1900 MHz Band - Body) AP ON**

Ambient Temperature: 22.4 °C      Liquid Temperature: 22.2°C										
Frequency		Test Position	Figure No./Not e	Conducte d 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									
9938	1907.6	Bottom	Fig.8	22.35	23	0.536	0.62	1.05	1.22	-0.01

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

**Table 14.2-9: SAR Values (WCDMA 1900 MHz Band - Body) AP OFF**

Ambient Temperature: 22.4 °C      Liquid Temperature: 22.2°C										
Frequency		Test Position	Figure No./Not e	Conducte d 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									
9800	1880	Rear	Fig.9	20.3	20.5	0.382	0.40	0.665	0.70	0.00

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

**Table 14.2-10: SAR Values (LTE Band2 - Head)**

Ambient Temperature: 22.4 °C				Liquid Temperature: 22.2°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-Low	R	Cheek	Fig.10	22.79	23	0.195	<b>0.20</b>	0.306	<b>0.32</b>	0.02

Note1: The LTE mode is QPSK\_20MHz.

**Table 14.2-11: SAR Values (LTE Band2 - Body) AP ON**

Ambient Temperature: 22.4 °C				Liquid Temperature: 22.2°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	50RB-Low	Bottom	Fig.11	21.27	22	0.522	<b>0.62</b>	1.02	<b>1.21</b>	-0.02

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

Note2: The LTE mode is QPSK\_20MHz.

**Table 14.2-12: SAR Values (LTE Band2 - Body) AP OFF**

Ambient Temperature: 22.4 °C				Liquid Temperature: 22.2°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										
18900	1880	1RB-Low	Rear	Fig.12	22.79	23	0.454	<b>0.48</b>	0.771	<b>0.81</b>	0.00

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

Note2: The LTE mode is QPSK\_20MHz.

**Table 14.2-13: SAR Values(LTE Band4 - Head)**

Ambient Temperature: 22.4 °C				Liquid Temperature: 22.2°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											
20300	1745	1RB_Mid	R	Cheek	Fig.13	23.79	24	0.164	<b>0.17</b>	0.248	<b>0.26</b>	0.04

Note1: The LTE mode is QPSK\_20MHz.

**Table 14.2-14: SAR Values (LTE Band4 - Body) AP ON**

Ambient Temperature: 22.4 °C				Liquid Temperature: 22.2°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	100RB	Bottom	Fig.14	22.68	23	0.497	<b>0.54</b>	0.971	<b>1.05</b>	0.05

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

Note2: The LTE mode is QPSK\_20MHz.

**Table 14.2-15: SAR Values (LTE Band4 - Body) AP OFF**

Ambient Temperature: 22.4 °C				Liquid Temperature: 22.2°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										
20050	1720	1RB_Mid	Rear	Fig.15	23.79	24	0.358	<b>0.38</b>	0.595	<b>0.62</b>	-0.19

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

Note2: The LTE mode is QPSK\_20MHz.

**Table 14.2-16: SAR Values(LTE Band5 - Head)**

Ambient Temperature: 22.4°C				Liquid Temperature: 22.2°C								
Frequency		Mode	Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz											
20525	836.5	1RB_Mid	R	Cheek	Fig.16	23.78	24	0.165	<b>0.17</b>	0.213	<b>0.22</b>	0.06

Note1: The LTE mode is QPSK\_10MHz.

**Table 14.2-17: SAR Values (LTE Band5-Body)**

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)
Ch.	MHz										
20525	836.5	1RB_Mid	Rear	Fig.17	23.78	24	0.259	<b>0.27</b>	0.336	<b>0.35</b>	0.06

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

Note2: The LTE mode is QPSK\_10MHz.

**Table 14.2-18: SAR Values(LTE Band7 - Head)**

Ambient Temperature: 22.4 °C				Liquid Temperature: 22.2°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											
21350	2560	1RB_Mid	L	Cheek	Fig.18	23.19	24	0.170	0.20	0.312	0.38	-0.08

Note1: The LTE mode is QPSK\_20MHz.

**Table 14.2-19: SAR Values (LTE Band7 - Body) AP ON**

Ambient Temperature: 22.4 °C				Liquid Temperature: 22.2°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										
21350	2560	1RB_Low	Bottom	Fig.19	21.92	22	0.483	0.49	1.09	1.11	-0.13

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

Note2: The LTE mode is QPSK\_20MHz.

**Table 14.2-20: SAR Values (LTE Band7 - Body) AP OFF**

Ambient Temperature: 22.4 °C				Liquid Temperature: 22.2°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										
21350	2560	1RB_Mid	Rear	Fig.20	23.19	24	0.239	0.29	0.478	0.58	0.02

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

Note2: The LTE mode is QPSK\_20MHz.

**Table 14.2-21: SAR Values(LTE Band12 - Head)**

Ambient Temperature: 22.4 °C				Liquid Temperature: 22.2°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											
23095	707.5	1RB_Mid	L	Cheek	Fig.21	23.67	24	0.154	0.17	0.194	0.21	-0.14

Note1: The LTE mode is QPSK\_10MHz.

**Table 14.2-22: SAR Values (LTE Band12 - Body)**

Ambient Temperature: 22.4 °C				Liquid Temperature: 22.2°C							
Frequency		Mode	Test Position	Figure No./N ote	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										
23095	707.5	1RB_Mid	Rear	Fig.22	23.67	24	0.212	0.23	0.270	0.29	-0.09

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

Note2: The LTE mode is QPSK\_10MHz.

**Table 14.2-23: SAR Values (WCDMA 1700 MHz Band - Head)**

Ambient Temperature: 22.5 °C      Liquid Temperature: 22.0°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										
1312	1712.4	L	Cheek	Fig.23	21.74	23	0.134	<b>0.18</b>	0.207	<b>0.28</b>	0.11

**Table 14.2-24: SAR Values (WCDMA 1700 MHz Band - Body) AP ON**

Ambient Temperature: 22.5 °C      Liquid Temperature: 22.0°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									
1513	1752.6	Bottom	Fig.24	20.12	20.5	0.589	<b>0.64</b>	1.15	<b>1.26</b>	0.09

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

**Table 14.2-25: SAR Values (WCDMA 1700 MHz Band - Body) AP OFF**

Ambient Temperature: 22.5 °C      Liquid Temperature: 22.0°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									
1513	1752.6	Front	Fig.25	21.65	23	0.240	<b>0.33</b>	0.399	<b>0.54</b>	-0.07

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

### 14.3 WLAN Evaluation

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

#### Head Evaluation

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

Frequency		Ambient Temperature: 22.5 °C			Liquid Temperature: 22.0 °C						
MHz	Ch.	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)
2437	6	Left	Touch	/	17.72	18	0.155	<b>0.17</b>	0.301	<b>0.32</b>	0.14
2437	6	Left	Tilt	/	17.72	18	0.172	<b>0.18</b>	0.340	<b>0.36</b>	-0.07
2437	6	Right	Touch	/	17.72	18	0.309	<b>0.33</b>	0.587	<b>0.63</b>	0.02
2437	6	Right	Tilt	/	17.72	18	0.219	<b>0.23</b>	0.422	<b>0.45</b>	-0.16

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

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

Frequency		Ambient Temperature: 22.5 °C			Liquid Temperature: 22.0 °C						
MHz	Ch.	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)
2437	6	Right	Touch	Fig.26	17.72	18	0.349	<b>0.37</b>	0.740	<b>0.79</b>	0.02
2437	6	Right	Tilt	/	17.72	18	0.230	<b>0.25</b>	0.496	<b>0.53</b>	-0.16
2437	6	Left	Touch	/	17.72	18	0.156	<b>0.17</b>	0.306	<b>0.33</b>	0.14

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)**

Frequency		Ambient Temperature: 22.5 °C			Liquid Temperature: 22.0 °C		
MHz	Ch.	Side	Test Position	Actual duty factor	maximum duty factor	Reported SAR (1g)(W/kg)	Scaled reported SAR (1g)(W/kg)
2437	6	Right	Touch	98.87%	100%	<b>0.79</b>	<b>0.80</b>
2437	6	Left	Touch	98.87%	100%	<b>0.33</b>	<b>0.33</b>

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

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

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.			(dBm)	(dBm)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(dB)
2437	6	Front	/	17.72	18	0.082	<b>0.09</b>	0.152	<b>0.16</b>	-0.16
2437	6	Rear	/	17.72	18	0.087	<b>0.09</b>	0.176	<b>0.19</b>	-0.07
2437	6	Right	/	17.72	18	0.061	<b>0.07</b>	0.122	<b>0.13</b>	0.06
2437	6	Top	/	17.72	18	0.058	<b>0.06</b>	0.107	<b>0.11</b>	0.13

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

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

Ambient Temperature: 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.			(dBm)	(dBm)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(dB)
2437	6	Rear 10mm	Fig.27	17.72	18	0.085	<b>0.09</b>	0.183	<b>0.20</b>	-0.07

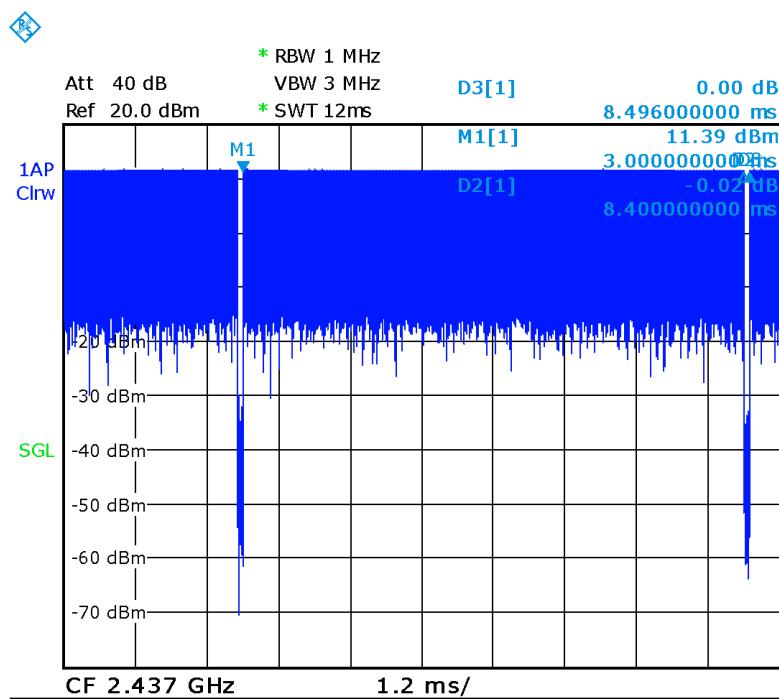
Note1: When the reported SAR of the initial test position is > 0.4 W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position using subsequent highest estimated 1-g SAR conditions determined by area scans, on the highest maximum output power channel, until 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: 22.5 °C				Liquid Temperature: 22.0 °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	Rear 10mm	98.87%	100%	<b>0.20</b>	<b>0.20</b>	
2437	6	Front 10mm	98.87%	100%	<b>0.16</b>	<b>0.16</b>	

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



Picture 14.1 The plot of duty factor

## 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  $\geq 0.80$  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  $\geq 1.45$  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  $\geq 1.5$  W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is  $> 1.20$ .

**Table 15.1: SAR Measurement Variability for Body GSM1900 (1g)**

Frequency		Test Position	Spacing (mm)	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
Ch.	MHz						
810	1909.8	Bottom	10	1.16	1.14	1.02	/

**Table 15.2: SAR Measurement Variability for Body W1900 (1g) AP ON**

Frequency		Test Position	Spacing (mm)	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
Ch.	MHz						
9800	1880	Bottom	10	1.23	1.21	1.02	/

**Table 15.3: SAR Measurement Variability for Body LTE B2 (1g) AP ON**

Frequency		Mode	Test Position	Spacing (mm)	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
Ch.	MHz							
19100	1900	50RB_Low	Bottom	10	1.02	0.998	1.02	/

**Table 15.4: SAR Measurement Variability for Body LTE B4 (1g) AP ON**

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	100RB	Bottom	10	0.971	0.969	1.00	/

**Table 15.5: SAR Measurement Variability for Body LTE B7 (1g) AP ON**

Frequency		Mode	Test Position	Spacing (mm)	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
Ch.	MHz							
21350	2560	1RB_Low	Bottom	10	1.09	1.07	1.02	/

**Table 15.6: SAR Measurement Variability for Body W1700 (1g) AP ON**

Frequency		Test Position	Spacing (mm)	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
Ch.	MHz						
1513	1752.6	Bottom	10	1.15	1.14	1.01	/

## 16 Measurement Uncertainty

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

No.	Error Description	Type	Uncertainty value	Probably Distribution	Div.	(Ci) 1g	(Ci) 10g	Std. Unc. (1g)	Std. Unc. (10g)	Degree of freedom
<b>Measurement system</b>										
1	Probe calibration	B	6.0	N	1	1	1	6.0	6.0	$\infty$
2	Isotropy	B	4.7	R	$\sqrt{3}$	0.7	0.7	1.9	1.9	$\infty$
3	Boundary effect	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	$\infty$
4	Linearity	B	4.7	R	$\sqrt{3}$	1	1	2.7	2.7	$\infty$
5	Detection limit	B	1.0	N	1	1	1	0.6	0.6	$\infty$
6	Readout electronics	B	0.3	R	$\sqrt{3}$	1	1	0.3	0.3	$\infty$
7	Response time	B	0.8	R	$\sqrt{3}$	1	1	0.5	0.5	$\infty$
8	Integration time	B	2.6	R	$\sqrt{3}$	1	1	1.5	1.5	$\infty$
9	RF ambient conditions-noise	B	0	R	$\sqrt{3}$	1	1	0	0	$\infty$
10	RF ambient conditions-reflection	B	0	R	$\sqrt{3}$	1	1	0	0	$\infty$
11	Probe positioned mech. restrictions	B	0.4	R	$\sqrt{3}$	1	1	0.2	0.2	$\infty$
12	Probe positioning with respect to phantom shell	B	2.9	R	$\sqrt{3}$	1	1	1.7	1.7	$\infty$
13	Post-processing	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	$\infty$
<b>Test sample related</b>										
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	$\infty$
<b>Phantom and set-up</b>										
17	Phantom uncertainty	B	4.0	R	$\sqrt{3}$	1	1	2.3	2.3	$\infty$
18	Liquid conductivity (target)	B	5.0	R	$\sqrt{3}$	0.64	0.43	1.8	1.2	$\infty$
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	$\infty$
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	$\infty$
2	Isotropy	B	4.7	R	$\sqrt{3}$	0.7	0.7	1.9	1.9	$\infty$
3	Boundary effect	B	2.0	R	$\sqrt{3}$	1	1	1.2	1.2	$\infty$
4	Linearity	B	4.7	R	$\sqrt{3}$	1	1	2.7	2.7	$\infty$
5	Detection limit	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	$\infty$
6	Readout electronics	B	0.3	R	$\sqrt{3}$	1	1	0.3	0.3	$\infty$
7	Response time	B	0.8	R	$\sqrt{3}$	1	1	0.5	0.5	$\infty$
8	Integration time	B	2.6	R	$\sqrt{3}$	1	1	1.5	1.5	$\infty$
9	RF ambient conditions-noise	B	0	R	$\sqrt{3}$	1	1	0	0	$\infty$
10	RF ambient conditions-reflection	B	0	R	$\sqrt{3}$	1	1	0	0	$\infty$
11	Probe positioned mech. restrictions	B	0.8	R	$\sqrt{3}$	1	1	0.5	0.5	$\infty$
12	Probe positioning with respect to phantom shell	B	6.7	R	$\sqrt{3}$	1	1	3.9	3.9	$\infty$
13	Post-processing	B	4.0	R	$\sqrt{3}$	1	1	2.3	2.3	$\infty$

#### 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	$\infty$

#### Phantom and set-up

17	Phantom uncertainty	B	4.0	R	$\sqrt{3}$	1	1	2.3	2.3	$\infty$
18	Liquid conductivity (target)	B	5.0	R	$\sqrt{3}$	0.64	0.43	1.8	1.2	$\infty$
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	$\infty$

	(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	$\infty$
2	Isotropy	B	4.7	R	$\sqrt{3}$	0.7	0.7	1.9	1.9	$\infty$
3	Boundary effect	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	$\infty$
4	Linearity	B	4.7	R	$\sqrt{3}$	1	1	2.7	2.7	$\infty$
5	Detection limit	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	$\infty$
6	Readout electronics	B	0.3	R	$\sqrt{3}$	1	1	0.3	0.3	$\infty$
7	Response time	B	0.8	R	$\sqrt{3}$	1	1	0.5	0.5	$\infty$
8	Integration time	B	2.6	R	$\sqrt{3}$	1	1	1.5	1.5	$\infty$
9	RF ambient conditions-noise	B	0	R	$\sqrt{3}$	1	1	0	0	$\infty$
10	RF ambient conditions-reflection	B	0	R	$\sqrt{3}$	1	1	0	0	$\infty$
11	Probe positioned mech. Restrictions	B	0.4	R	$\sqrt{3}$	1	1	0.2	0.2	$\infty$
12	Probe positioning with respect to phantom shell	B	2.9	R	$\sqrt{3}$	1	1	1.7	1.7	$\infty$
13	Post-processing	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	$\infty$
14	Fast SAR z-Approximation	B	7.0	R	$\sqrt{3}$	1	1	4.0	4.0	$\infty$

#### 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	$\infty$

#### Phantom and set-up

18	Phantom uncertainty	B	4.0	R	$\sqrt{3}$	1	1	2.3	2.3	$\infty$
----	---------------------	---	-----	---	------------	---	---	-----	-----	----------

19	Liquid conductivity (target)	B	5.0	R	$\sqrt{3}$	0.64	0.43	1.8	1.2	$\infty$
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	$\infty$
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.	Std. Unc. (10g)	Degree of freedom
-----	-------------------	------	-------------------	-----------------------	------	---------	----------	-----------	-----------------	-------------------

##### Measurement system

1	Probe calibration	B	6.55	N	1	1	1	6.55	6.55	$\infty$
2	Isotropy	B	4.7	R	$\sqrt{3}$	0.7	0.7	1.9	1.9	$\infty$
3	Boundary effect	B	2.0	R	$\sqrt{3}$	1	1	1.2	1.2	$\infty$
4	Linearity	B	4.7	R	$\sqrt{3}$	1	1	2.7	2.7	$\infty$
5	Detection limit	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	$\infty$
6	Readout electronics	B	0.3	R	$\sqrt{3}$	1	1	0.3	0.3	$\infty$
7	Response time	B	0.8	R	$\sqrt{3}$	1	1	0.5	0.5	$\infty$
8	Integration time	B	2.6	R	$\sqrt{3}$	1	1	1.5	1.5	$\infty$
9	RF ambient conditions-noise	B	0	R	$\sqrt{3}$	1	1	0	0	$\infty$
10	RF ambient conditions-reflection	B	0	R	$\sqrt{3}$	1	1	0	0	$\infty$
11	Probe positioned mech. Restrictions	B	0.8	R	$\sqrt{3}$	1	1	0.5	0.5	$\infty$
12	Probe positioning with respect to phantom shell	B	6.7	R	$\sqrt{3}$	1	1	3.9	3.9	$\infty$
13	Post-processing	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	$\infty$
14	Fast SAR z-Approximation	B	14.0	R	$\sqrt{3}$	1	1	8.1	8.1	$\infty$

##### 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	$\infty$
<b>Phantom and set-up</b>										
18	Phantom uncertainty	B	4.0	R	$\sqrt{3}$	1	1	2.3	2.3	$\infty$
19	Liquid conductivity (target)	B	5.0	R	$\sqrt{3}$	0.64	0.43	1.8	1.2	$\infty$
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	$\infty$
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 D2450V2	853	July 25, 2016	One year
15	Dipole Validation Kit	SPEAG D2600V2	1012	July 25, 2016	One year
16	Network analyzer	E5071C	MY46110673	January 26, 2016	One year
17	Power meter	NRVD	102196	March 03, 2016	One year
18	Power sensor	NRV-Z5	100596		
19	Signal Generator	E4438C	MY49071430	February 01, 2016	One Year
20	Amplifier	60S1G4	0331848	No Calibration Requested	
21	E-field Probe	SPEAG EX3DV4	7307	February 19, 2016	One year
22	DAE	SPEAG DAE4	1331	January 21, 2016	One year
23	Dipole Validation Kit	SPEAG D2450V2	853	July25, 2016	One year
24	Dipole Validation Kit	SPEAG D1800V2	2d010	June 5, 2017	One year

\*\*\*END OF REPORT BODY\*\*\*

## ANNEX A Graph Results

### 850 Left Cheek Low

Date: 2017-5-24

Electronics: DAE4 Sn1331

Medium: Head 850 MHz

Medium parameters used (interpolated):  $f = 824.2$  MHz;  $\sigma = 0.878$  mho/m;  $\epsilon_r = 42.09$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.4°C      Liquid Temperature: 22.2°C

Communication System: GSM 850 Frequency: 824.2 MHz Duty Cycle: 1:8.3

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

**Area Scan (71x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.361 W/kg

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

Reference Value = 6.344 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.414 W/kg

**SAR(1 g) = 0.334 W/kg; SAR(10 g) = 0.260 W/kg**

Maximum value of SAR (measured) = 0.361 W/kg

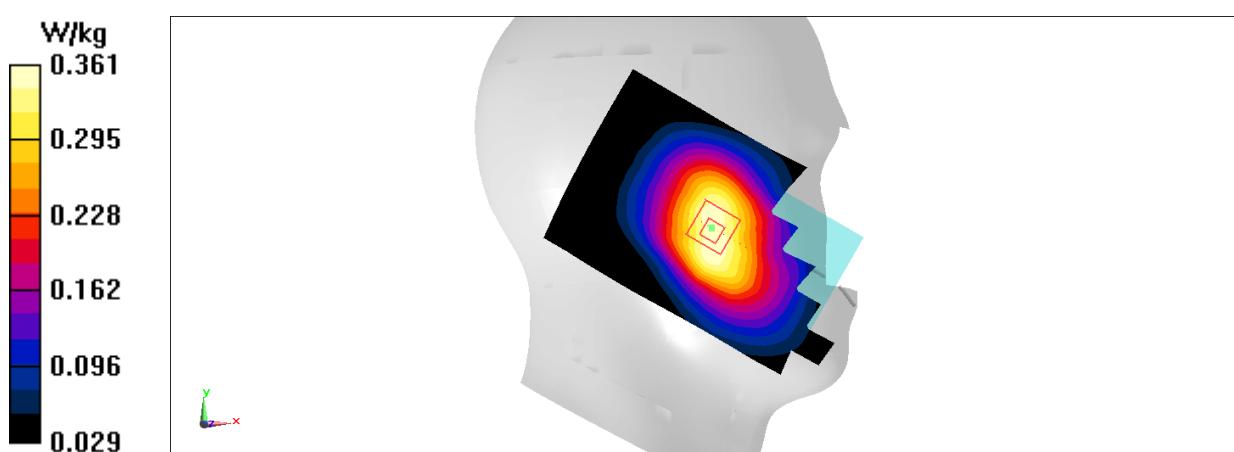
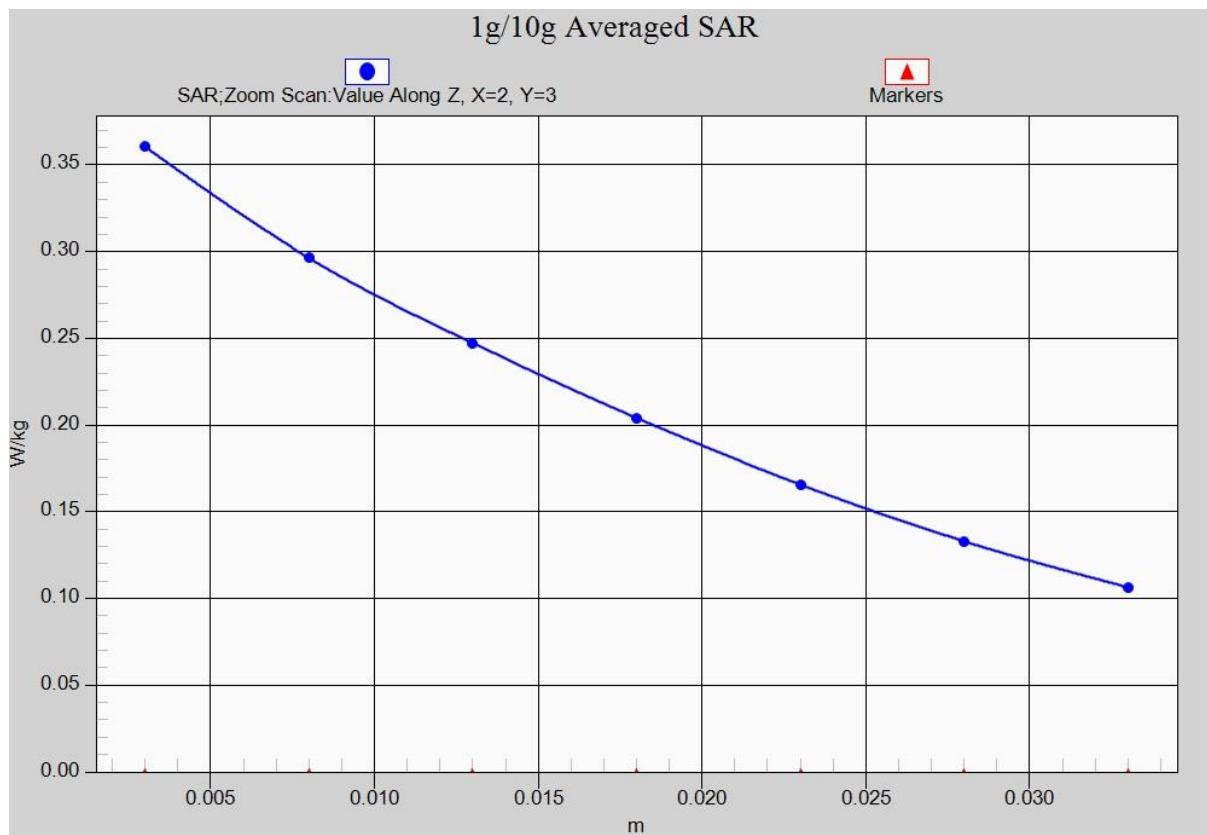


Fig.1 850MHz



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

## 850 Body Rear Low

Date: 2017-5-24

Electronics: DAE4 Sn1331

Medium: Body 850 MHz

Medium parameters used (interpolated):  $f = 824.2$  MHz;  $\sigma = 0.952$  mho/m;  $\epsilon_r = 54.99$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.4°C Liquid Temperature: 22.2°C

Communication System: GSM 850 GPRS Frequency: 824.2 MHz Duty Cycle: 1:8.3

Probe: EX3DV4 – SN3846ConvF(9.52, 9.52, 9.52)

**Area Scan (111x61x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.548 W/kg

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

Reference Value = 22.62 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.627 W/kg

**SAR(1 g) = 0.505 W/kg; SAR(10 g) = 0.394 W/kg**

Maximum value of SAR (measured) = 0.550 W/kg

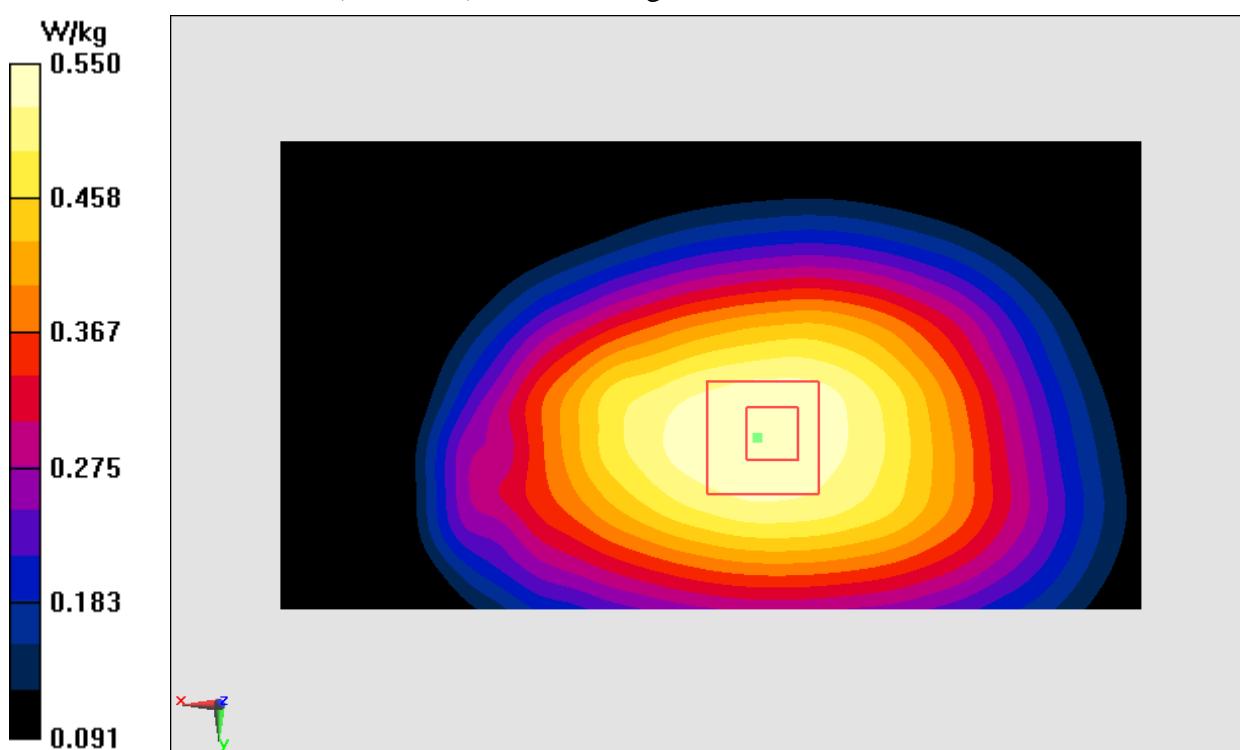
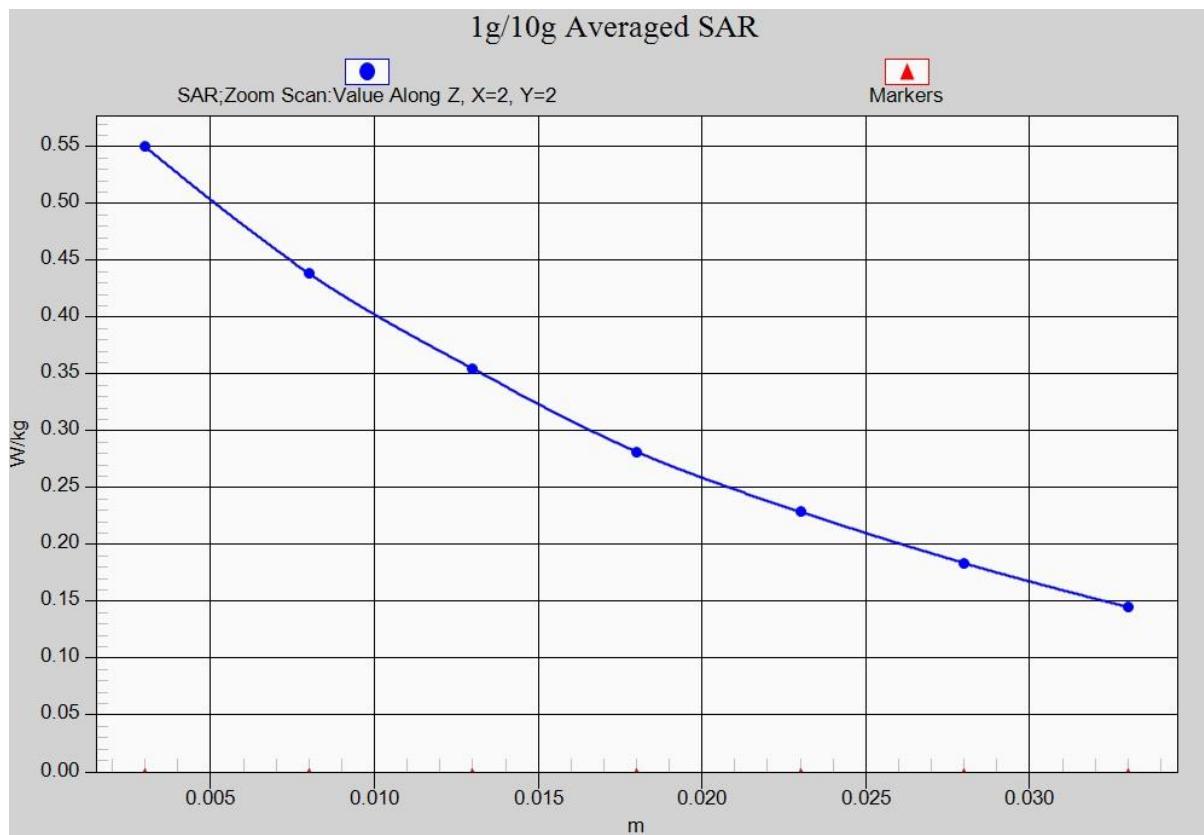


Fig.2 850 MHz



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

## 1900 Left Cheek Middle

Date: 2017-5-26

Electronics: DAE4 Sn1331

Medium: Head 1900 MHz

Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.380 \text{ mho/m}$ ;  $\epsilon_r = 36.69$ ;  $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature:  $22.4^\circ\text{C}$  Liquid Temperature:  $22.2^\circ\text{C}$

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

Probe: EX3DV4- SN3846ConvF(7.89, 7.89, 7.89)

**Area Scan (71x121x1):** Interpolated grid:  $dx=1.000 \text{ mm}$ ,  $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 0.142 W/kg

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

Reference Value = 2.780 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.185 W/kg

**SAR(1 g) = 0.126 W/kg; SAR(10 g) = 0.081 W/kg**

Maximum value of SAR (measured) = 0.147 W/kg

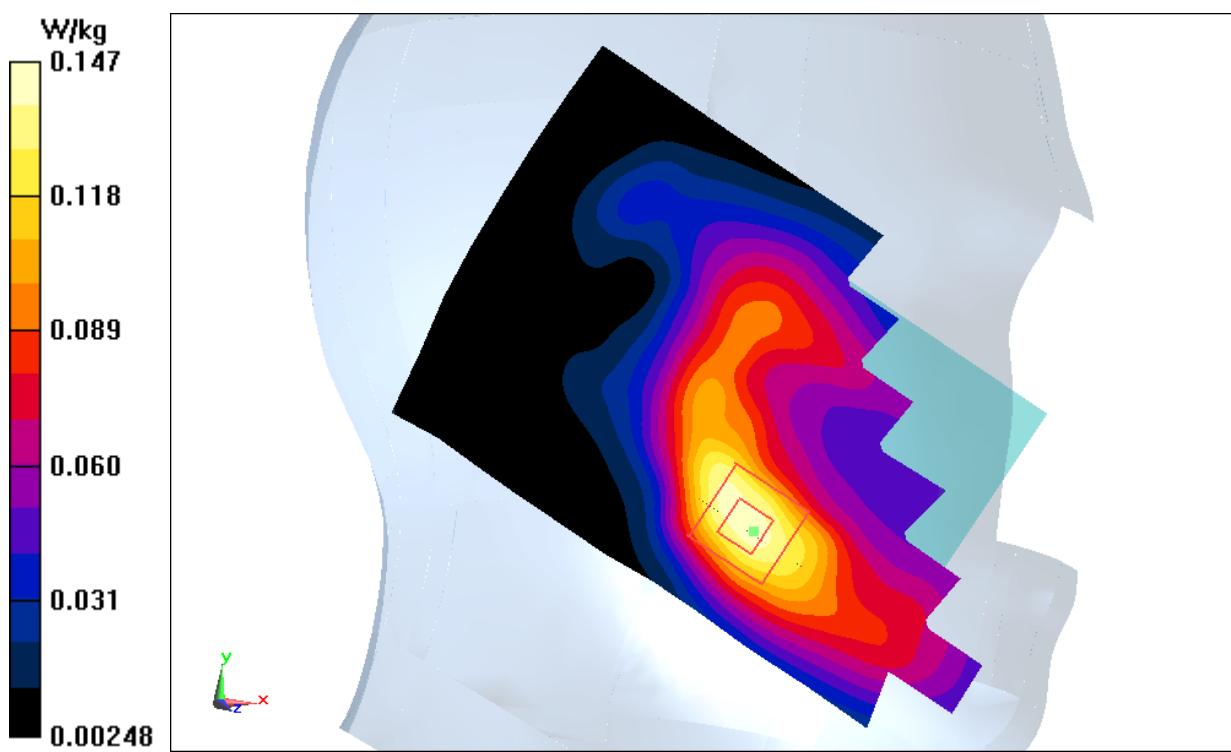


Fig.3 1900 MHz

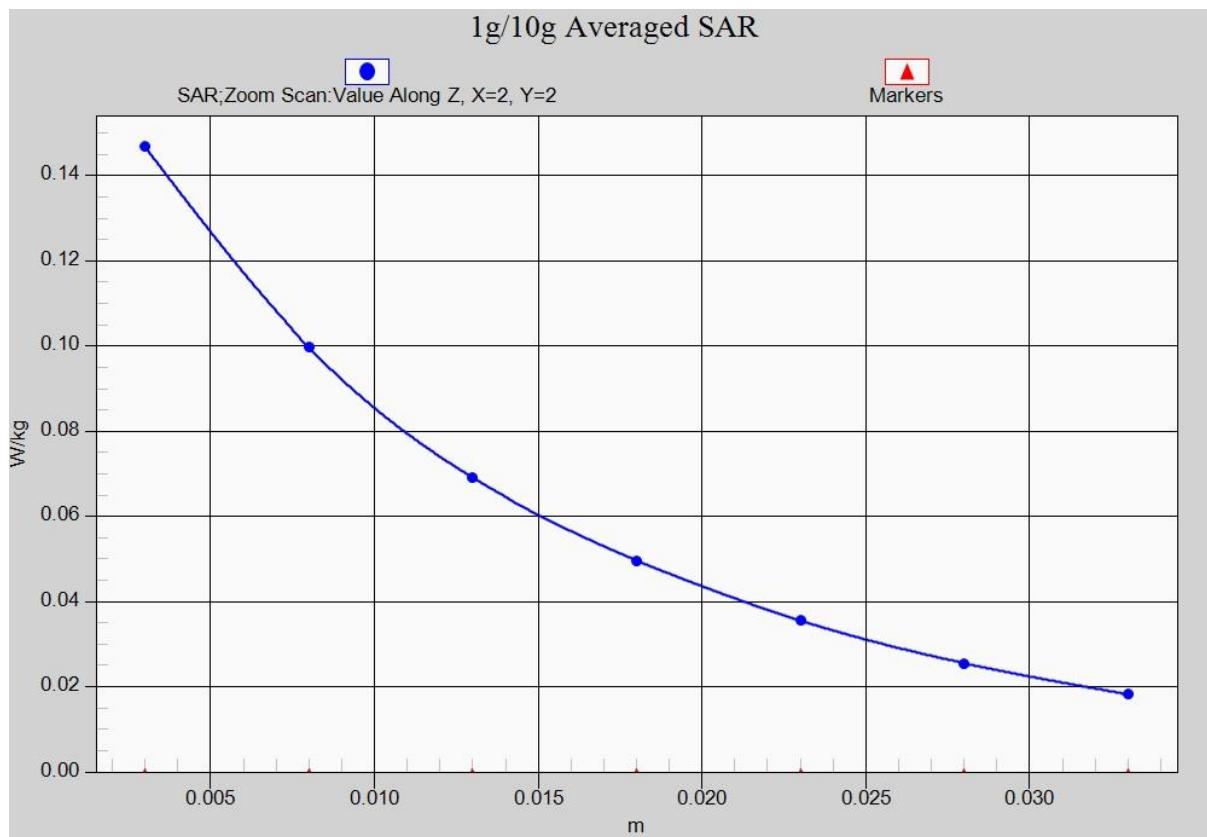


Fig. 3-1Z-Scan at power reference point (1900 MHz)

## 1900 Body Bottom High

Date: 2017-5-26

Electronics: DAE4 Sn1331

Medium: Body 1900 MHz

Medium parameters used:  $f = 1909.8 \text{ MHz}$ ;  $\sigma = 1.514 \text{ mho/m}$ ;  $\epsilon_r = 53.04$ ;  $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature:  $22.4^\circ\text{C}$  Liquid Temperature:  $22.2^\circ\text{C}$

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

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

**Area Scan (111x61x1):** Interpolated grid:  $dx=1.000 \text{ mm}$ ,  $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 1.61 W/kg

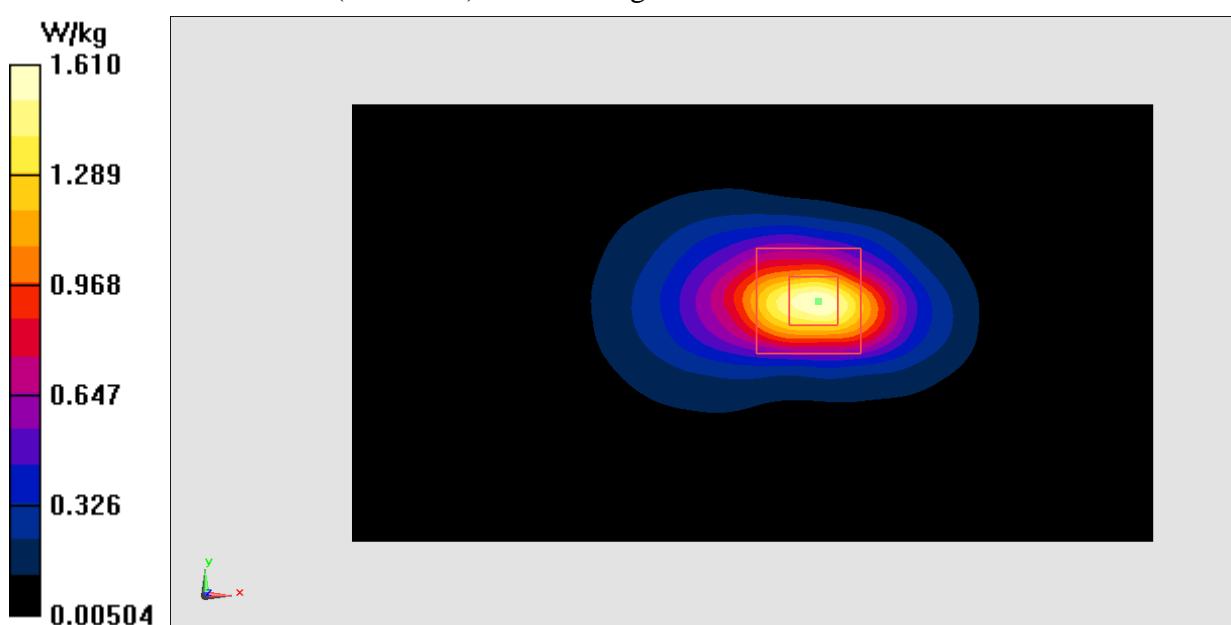
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 23.11 V/m; Power Drift = -0.08 dB

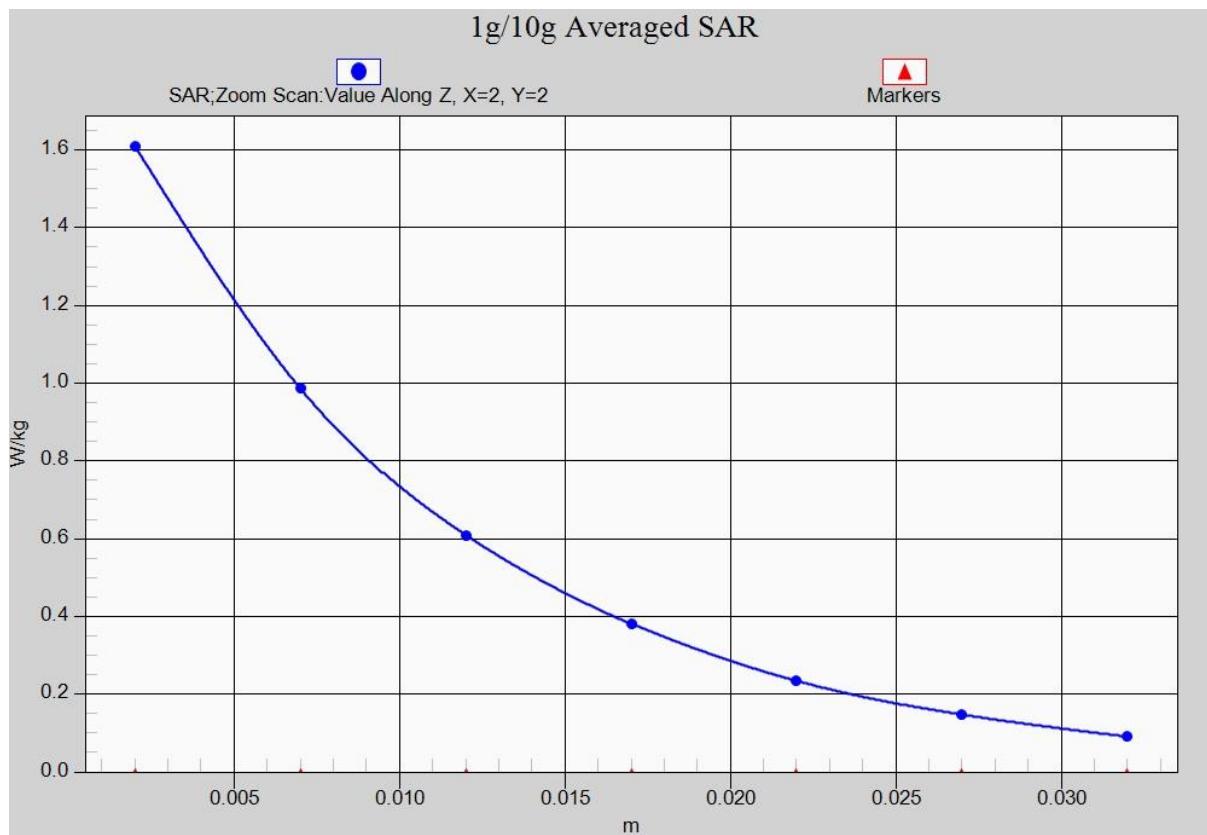
Peak SAR (extrapolated) = 2.00 W/kg

**SAR(1 g) = 1.16 W/kg; SAR(10 g) = 0.599 W/kg**

Maximum value of SAR (measured) = 1.61 W/kg



**Fig.4 1900 MHz**



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

## WCDMA 850 Right Cheek Low

Date: 2017-5-24

Electronics: DAE4 Sn1331

Medium: Head 850 MHz

Medium parameters used (interpolated):  $f = 826.4$  MHz;  $\sigma = 0.880$  mho/m;  $\epsilon_r = 41.98$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.4°C      Liquid Temperature: 22.2°C

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

Probe: EX3DV4 – SN3846ConvF(9.33, 9.33, 9.33)

**Area Scan (71x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

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

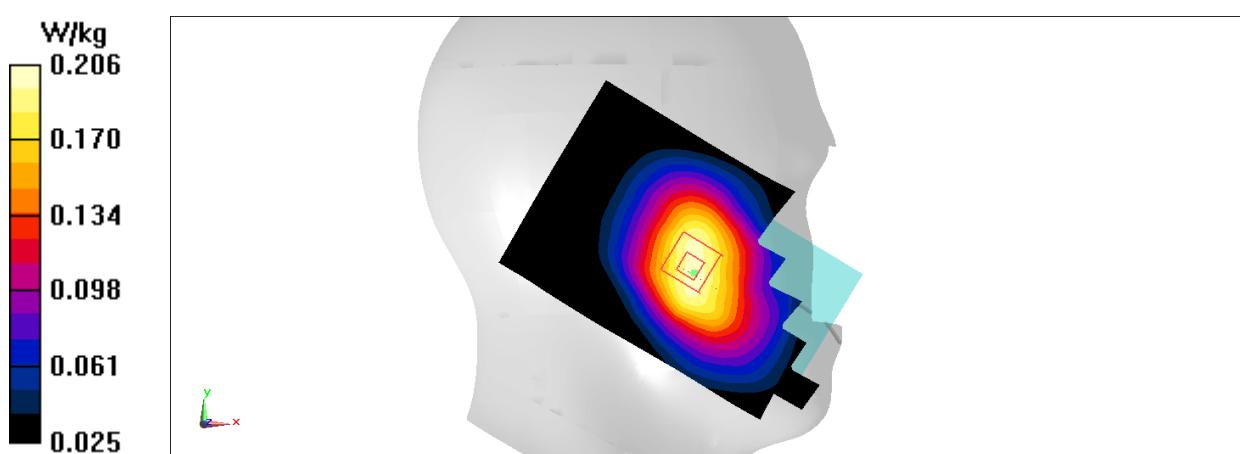
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.240 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.237 W/kg

**SAR(1 g) = 0.189 W/kg; SAR(10 g) = 0.146 W/kg**

Maximum value of SAR (measured) = 0.206 W/kg



**Fig.5 WCDMA 850**

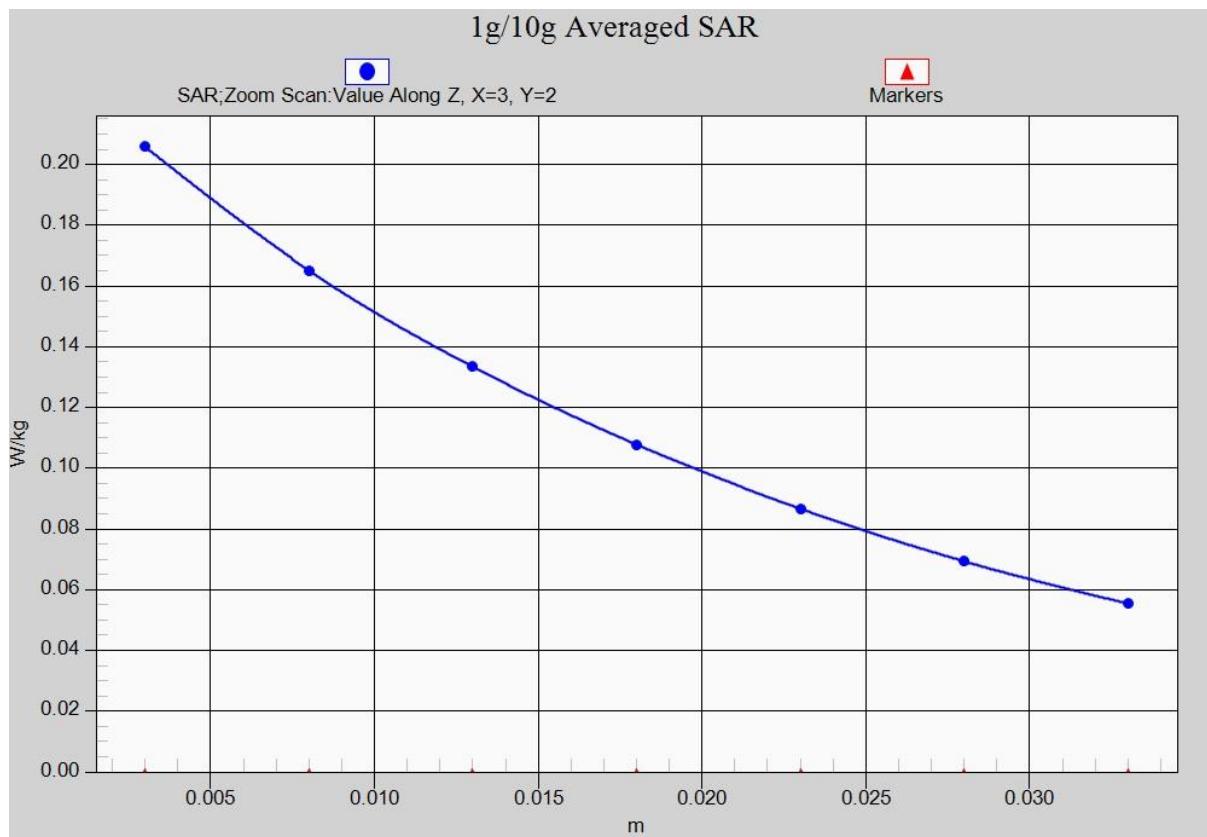


Fig. 5-1Z-Scan at power reference point (850 MHz)

## WCDMA 850 Body Rear Middle

Date: 2017-5-24

Electronics: DAE4 Sn1331

Medium: Body 850 MHz

Medium parameters used (interpolated):  $f = 836.4$  MHz;  $\sigma = 0.966$  mho/m;  $\epsilon_r = 54.20$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.4°C      Liquid Temperature: 22.2°C

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

Probe: EX3DV4 – SN3846ConvF(9.52, 9.52, 9.52)

**Area Scan (111x61x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

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

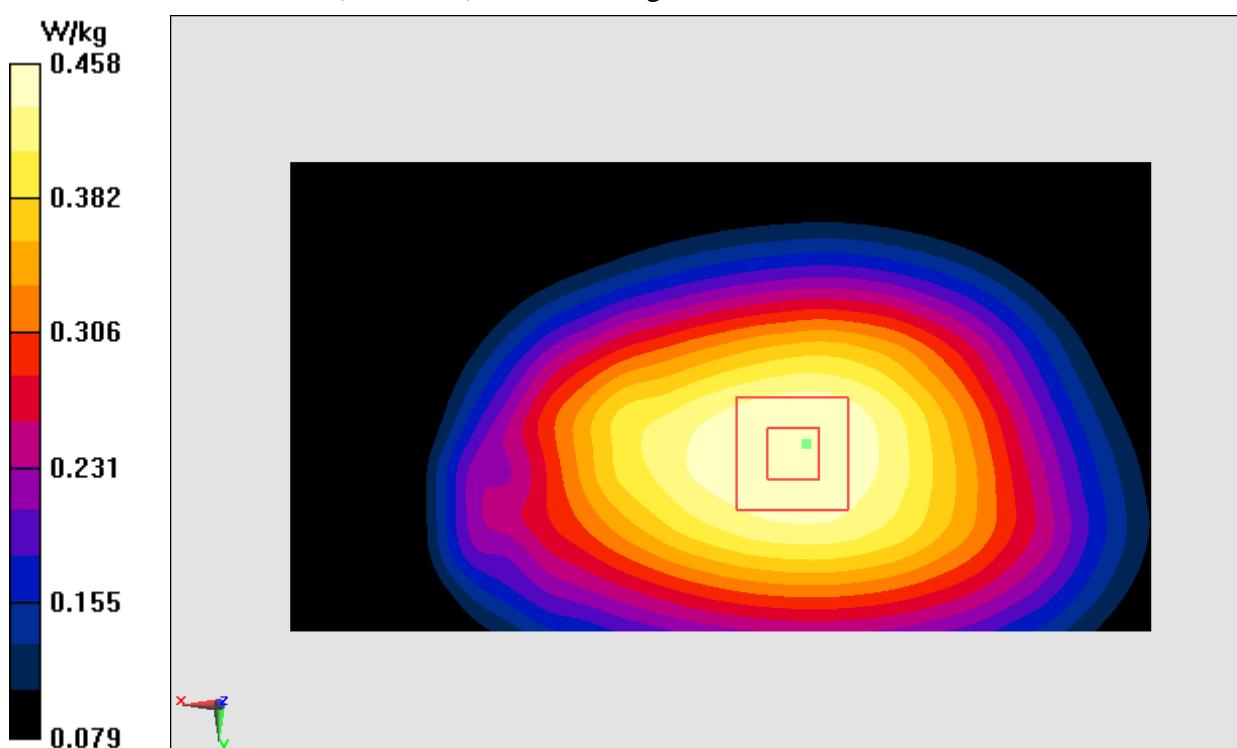
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 20.56 V/m; Power Drift = 0.03 dB

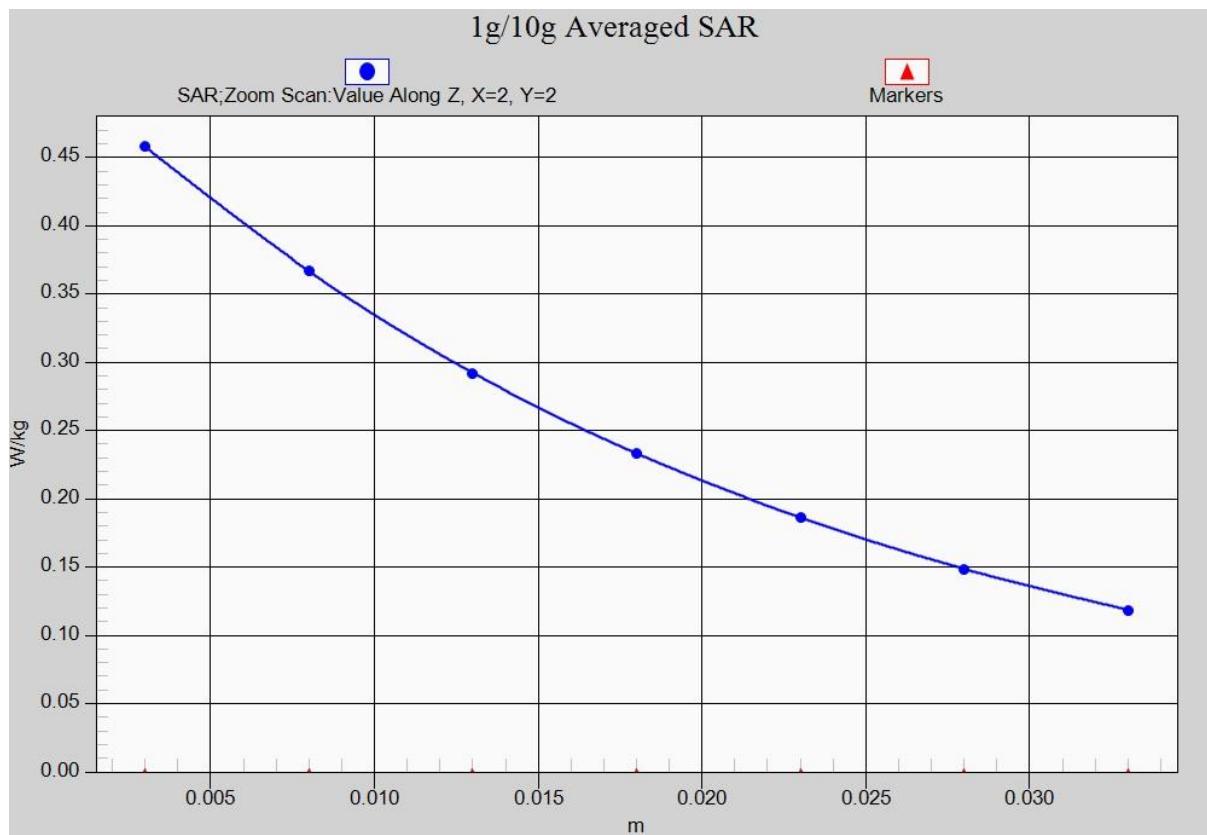
Peak SAR (extrapolated) = 0.519 W/kg

**SAR(1 g) = 0.421 W/kg; SAR(10 g) = 0.328 W/kg**

Maximum value of SAR (measured) = 0.458 W/kg



**Fig.6 WCDMA 850**



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

## WCDMA 1900 Left Cheek Low

Date: 2017-5-26

Electronics: DAE4 Sn1331

Medium: Head 1900 MHz

Medium parameters used:  $f = 1852.4$  MHz;  $\sigma = 1.360$  mho/m;  $\epsilon_r = 40.26$ ;  $\rho = 1000$  kg/m $^3$

Ambient Temperature: 22.4°C      Liquid Temperature: 22.2°C

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

Probe: EX3DV4– SN3846ConvF(7.89, 7.89, 7.89)

**Area Scan (71x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.318 W/kg

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

Reference Value = 4.613 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.411 W/kg

**SAR(1 g) = 0.279 W/kg; SAR(10 g) = 0.177 W/kg**

Maximum value of SAR (measured) = 0.324 W/kg

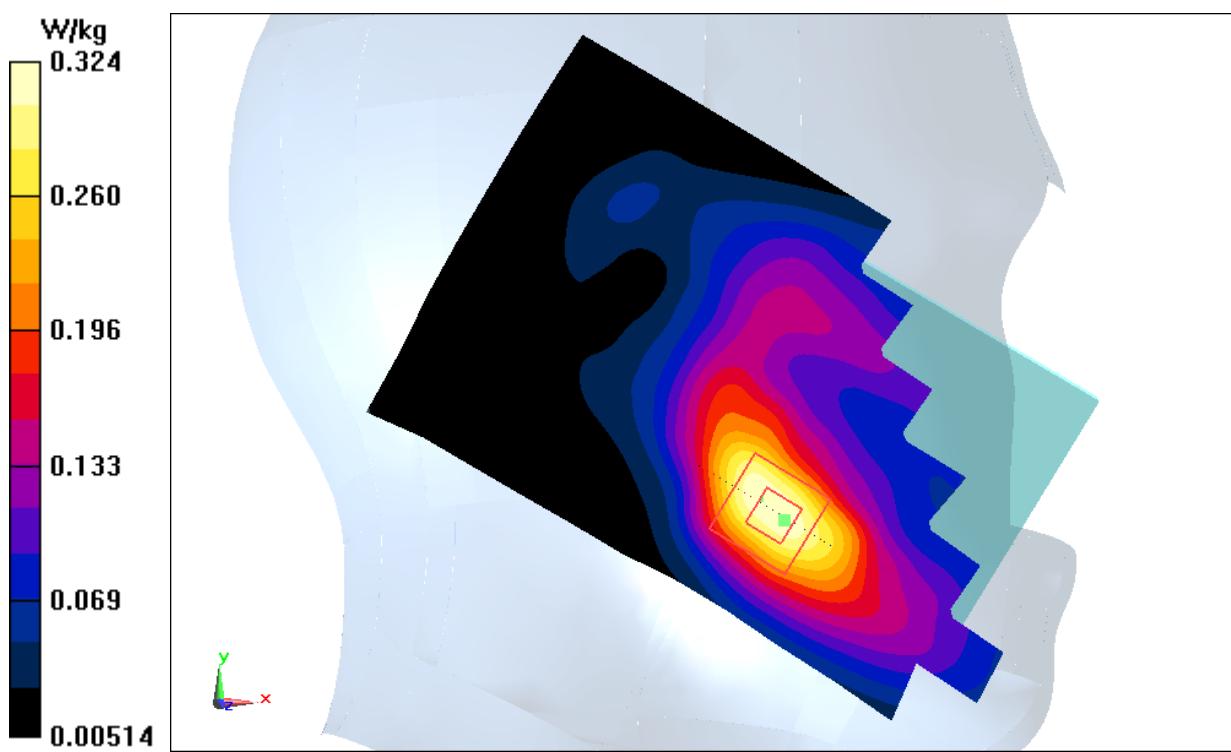
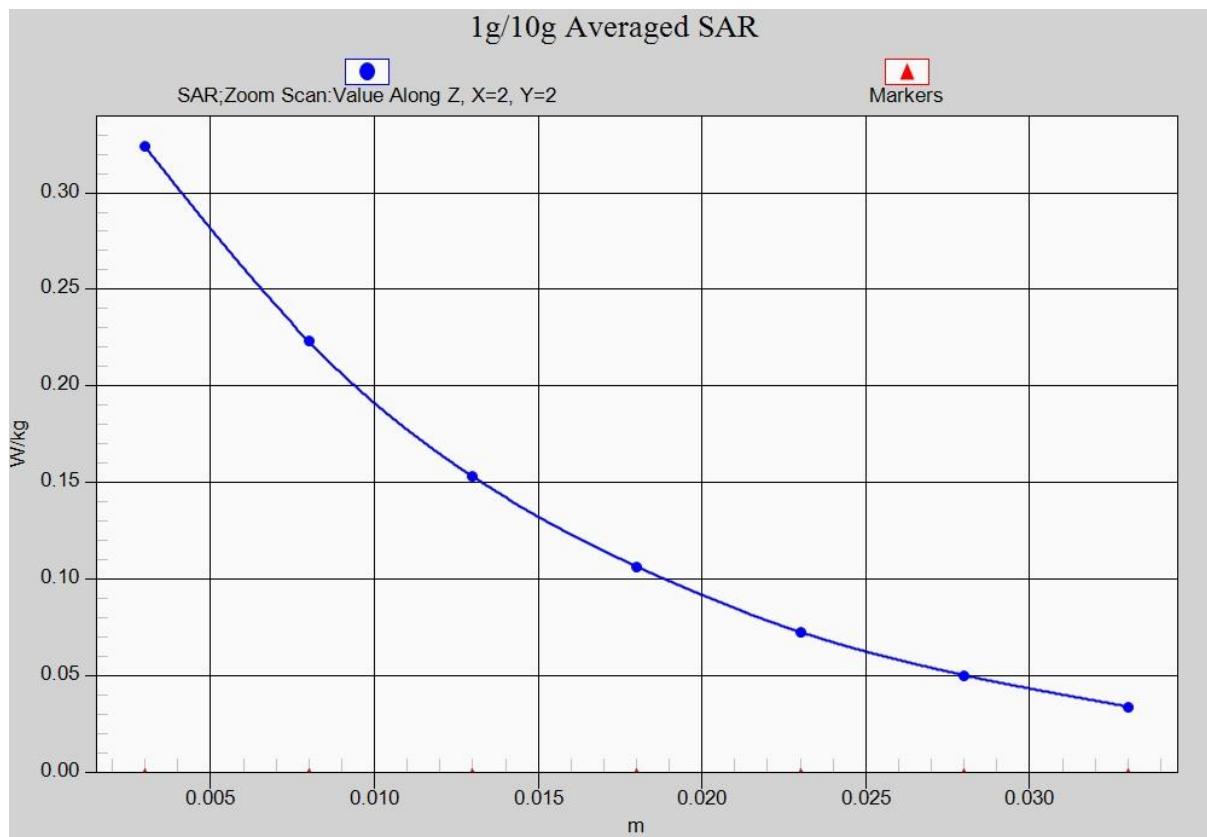


Fig.7WCDMA1900



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

## WCDMA 1900 Body Bottom High AP ON

Date: 2017-5-26

Electronics: DAE4 Sn1331

Medium: Body 1900 MHz

Medium parameters used:  $f = 1907.6 \text{ MHz}$ ;  $\sigma = 1.512 \text{ mho/m}$ ;  $\epsilon_r = 53.10$ ;  $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature:  $22.4^\circ\text{C}$  Liquid Temperature:  $22.2^\circ\text{C}$

Communication System: WCDMA 1900 Frequency: 1907.6 MHz Duty Cycle: 1:1

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

**Area Scan (111x61x1):** Interpolated grid:  $dx=1.000 \text{ mm}$ ,  $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 1.43 W/kg

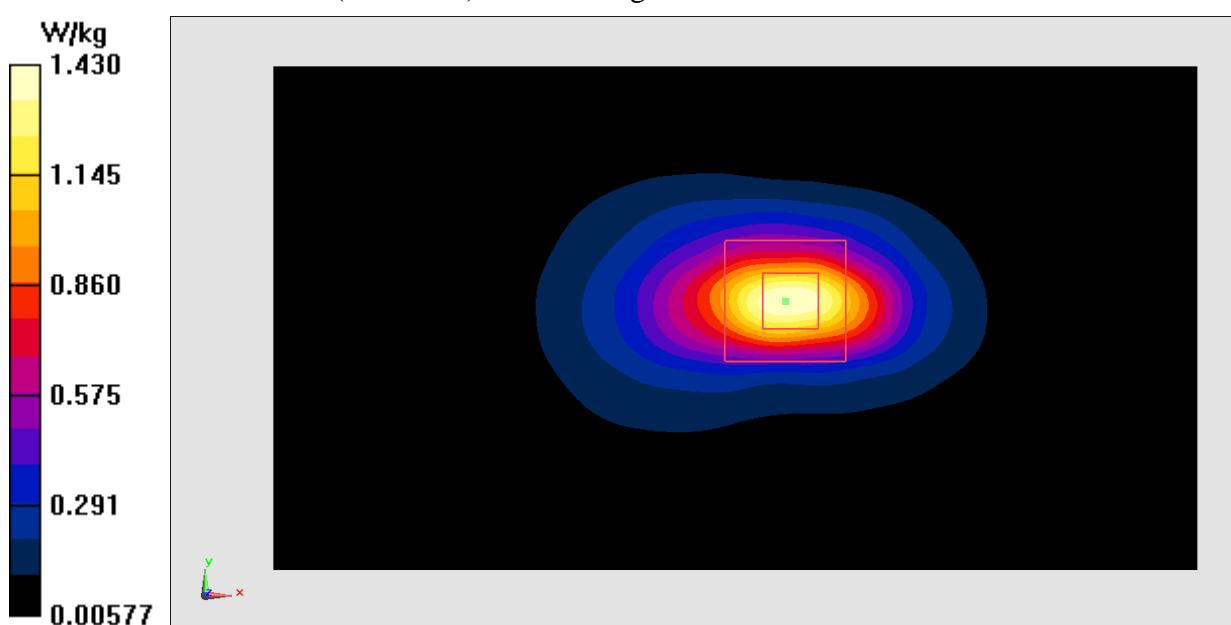
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 23.89 V/m; Power Drift = -0.01 dB

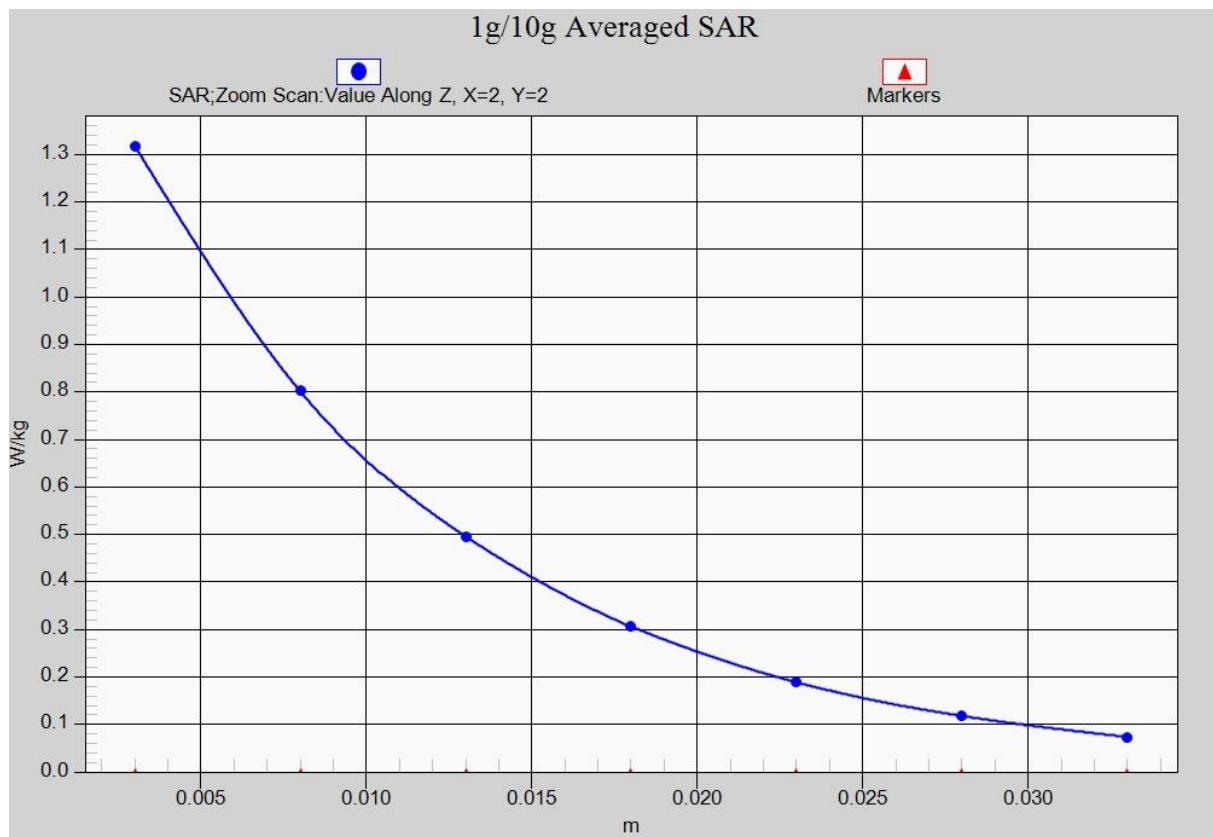
Peak SAR (extrapolated) = 1.83 W/kg

**SAR(1 g) = 1.05 W/kg; SAR(10 g) = 0.536 W/kg**

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



**Fig.8WCDMA1900**



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

## WCDMA 1900 Body Rear Middle AP OFF

Date: 2017-5-26

Electronics: DAE4 Sn1331

Medium: Body 1900 MHz

Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.49 \text{ mho/m}$ ;  $\epsilon_r = 53.87$ ;  $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature:  $22.4^\circ\text{C}$  Liquid Temperature:  $22.2^\circ\text{C}$

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

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

**Area Scan (121x71x1):** Interpolated grid:  $dx=1.000 \text{ mm}$ ,  $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 0.836 W/kg

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

Reference Value = 9.291 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 1.03 W/kg

**SAR(1 g) = 0.655 W/kg; SAR(10 g) = 0.382 W/kg**

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

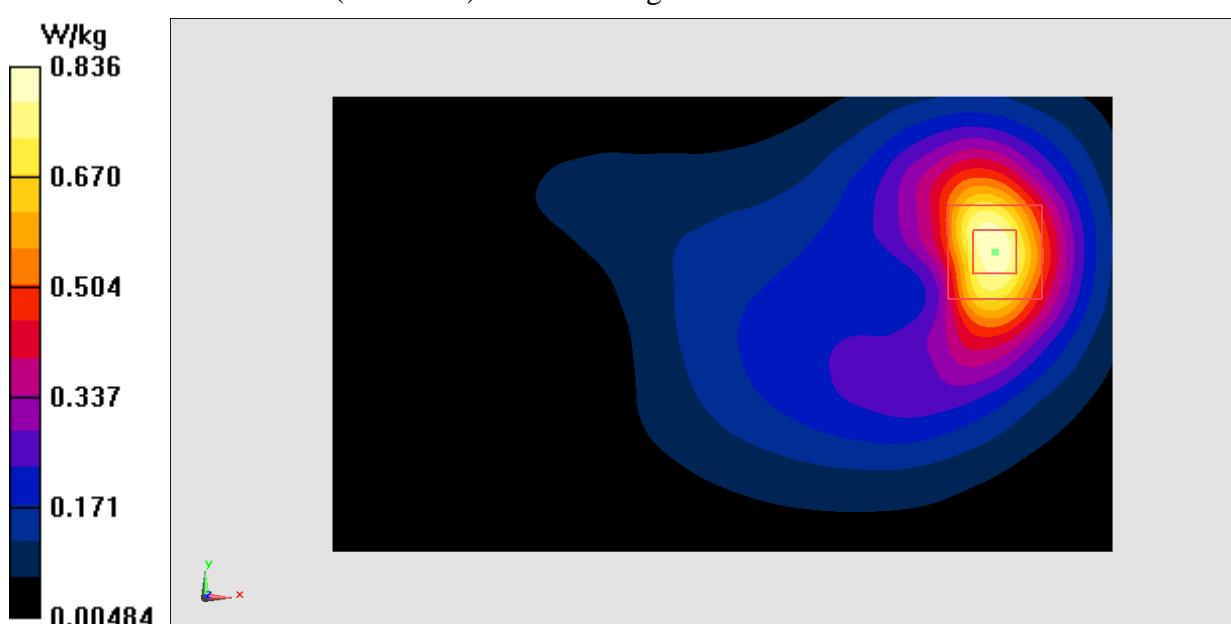


Fig.9WCDMA1900

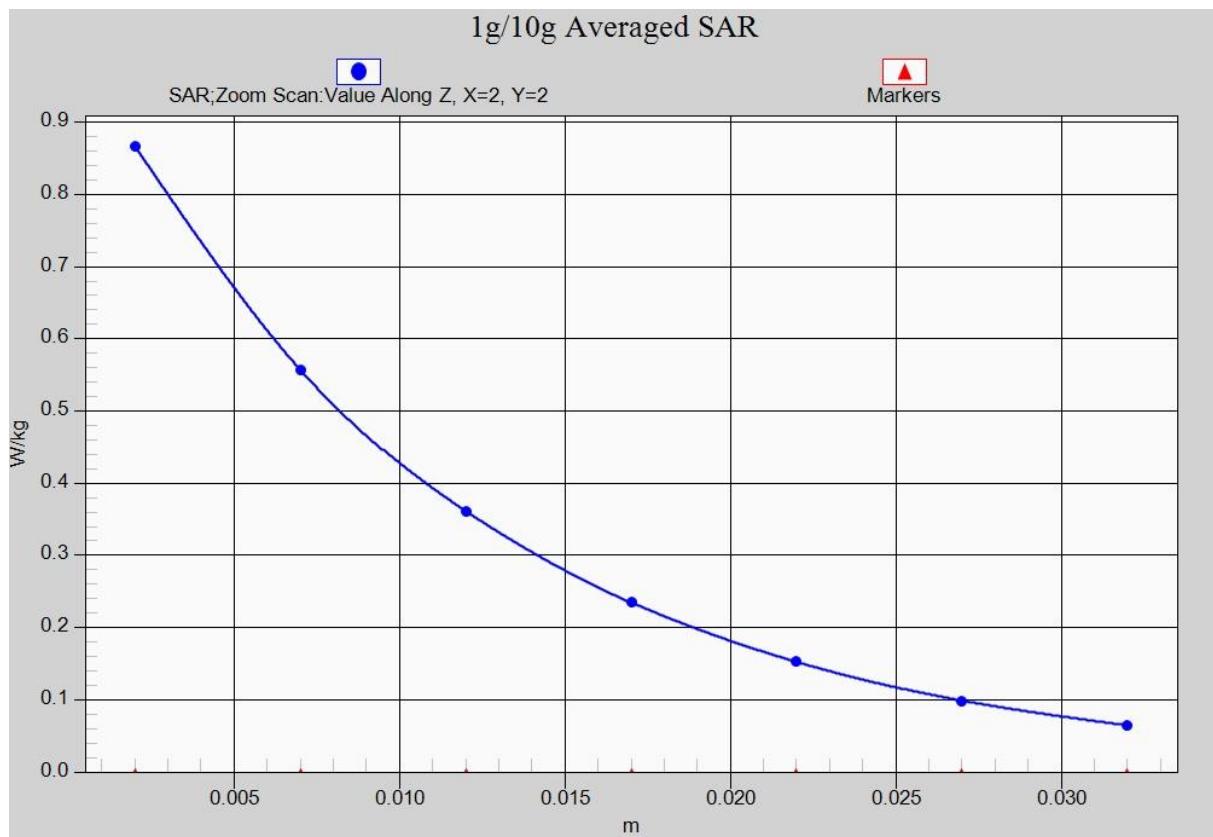


Fig. 9-1 Z-Scan at power reference point (WCDMA1900)

**LTE Band2 Right Cheek Middle with QPSK\_20M\_1RB\_Low**

Date: 2017-5-26

Electronics: DAE4 Sn1331

Medium: Head 1900 MHz

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.380$  mho/m;  $\epsilon_r = 39.69$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.4°C      Liquid Temperature: 22.2°C

Communication System: LTE Band2 Frequency: 1880 MHz Duty Cycle: 1:1

Probe: EX3DV4– SN3846ConvF(7.89, 7.89, 7.89)

**Area Scan (71x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.363 W/kg

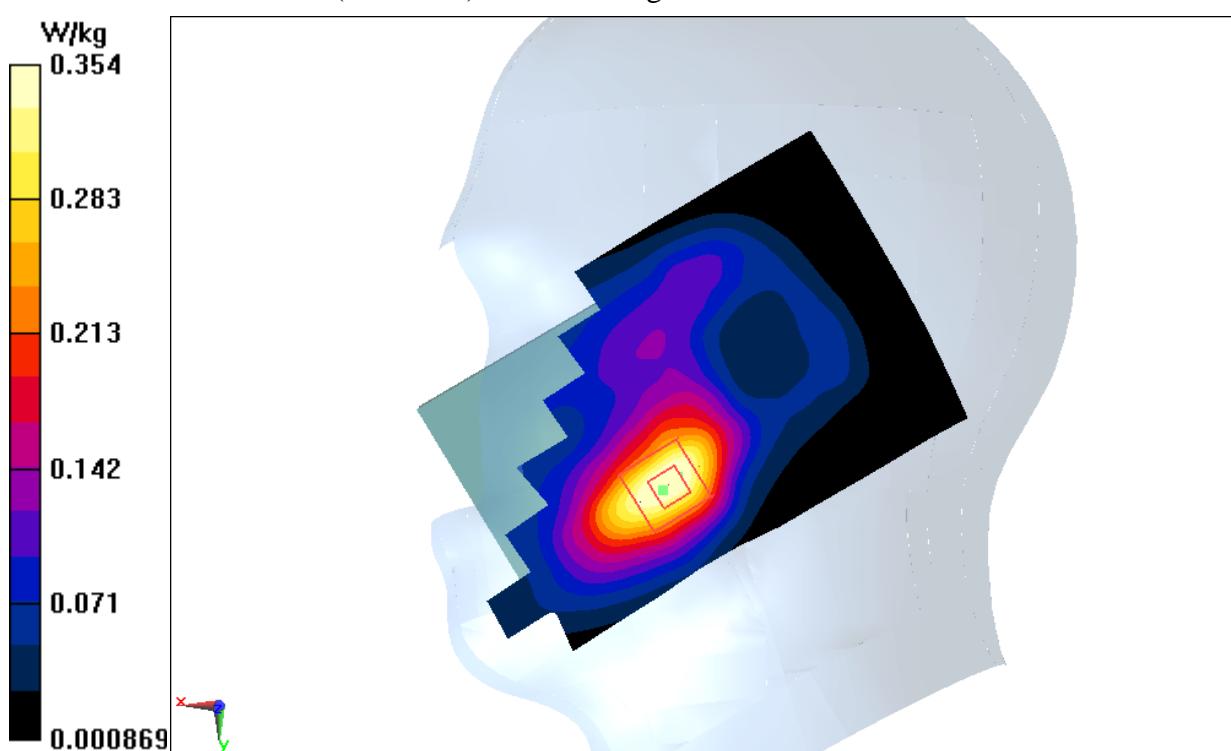
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

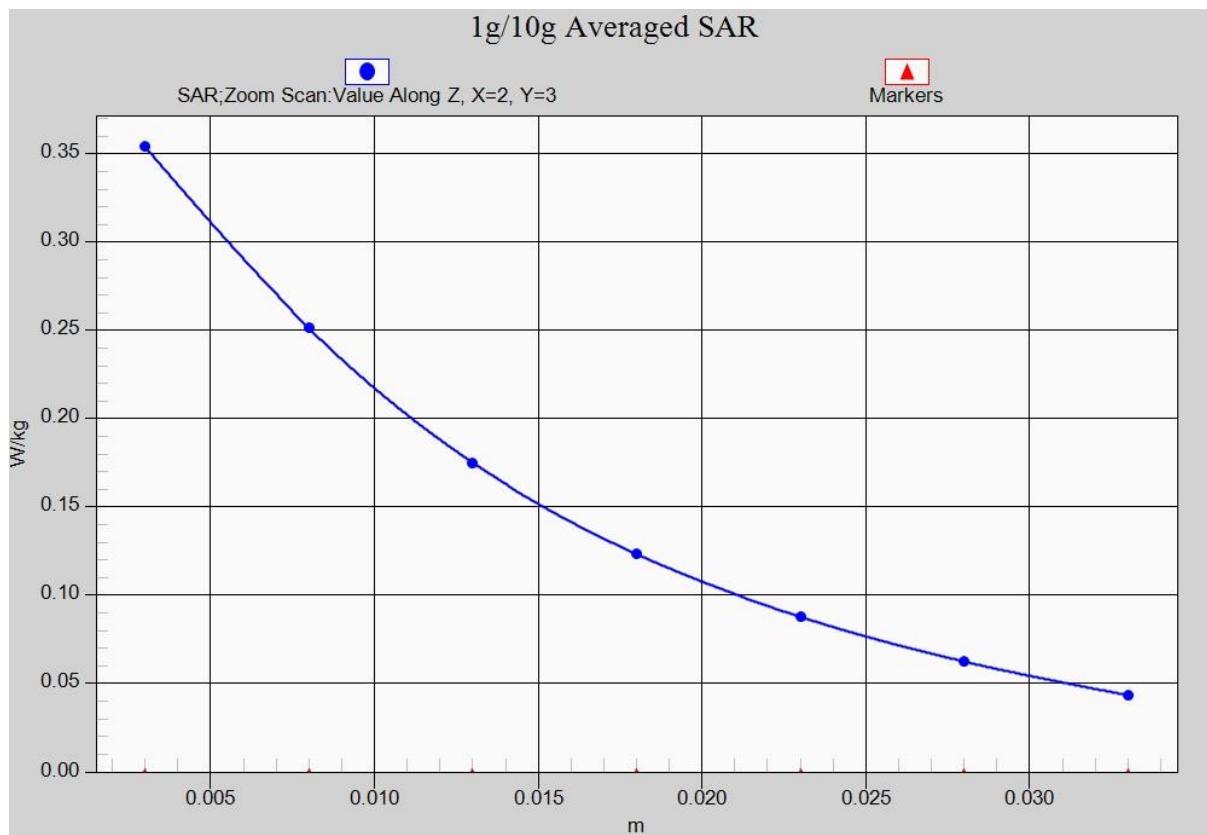
Reference Value = 5.385 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.444 W/kg

**SAR(1 g) = 0.306 W/kg; SAR(10 g) = 0.195 W/kg**

Maximum value of SAR (measured) = 0.354 W/kg

**Fig.10 LTE Band2**



**Fig. 10-1 Z-Scan at power reference point (LTE Band2)**

**LTE Band2 Body Bottom High with QPSK\_20M\_50RB\_Low AP ON**

Date: 2017-5-26

Electronics: DAE4 Sn1331

Medium: Body 1900 MHz

Medium parameters used:  $f = 1900 \text{ MHz}$ ;  $\sigma = 1.506 \text{ mho/m}$ ;  $\epsilon_r = 53.31$ ;  $\rho = 1000 \text{ kg/m}^3$ Ambient Temperature:  $22.4^\circ\text{C}$  Liquid Temperature:  $22.2^\circ\text{C}$ 

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:  $dx=1.000 \text{ mm}$ ,  $dy=1.000 \text{ mm}$ 

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

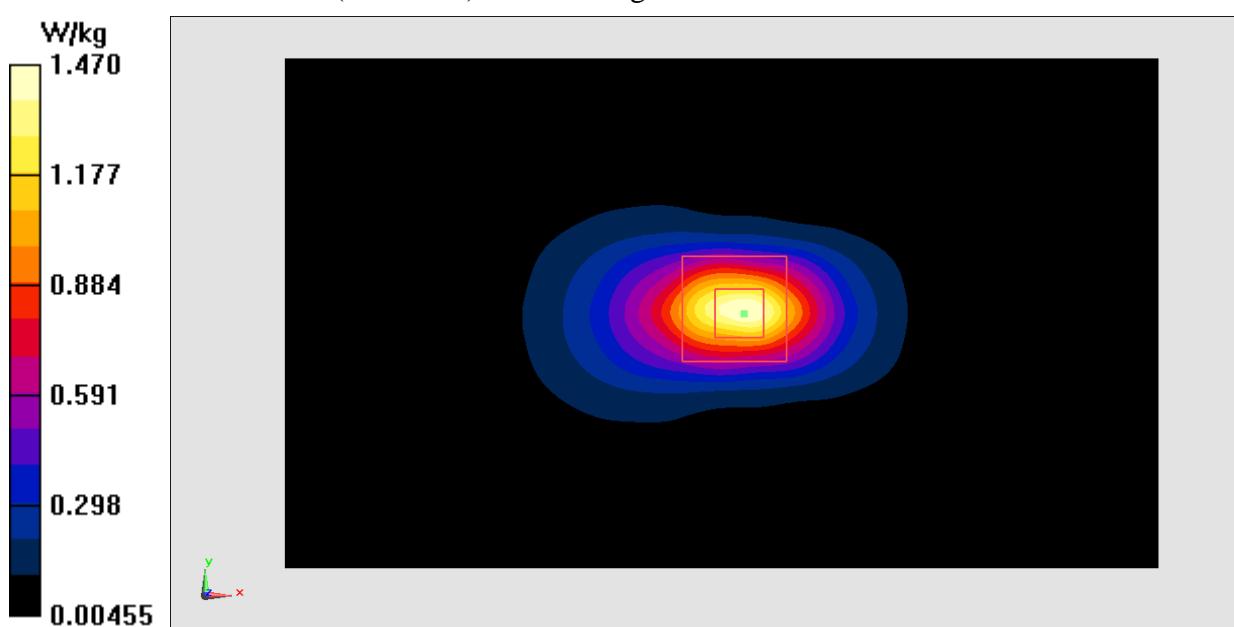
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$ 

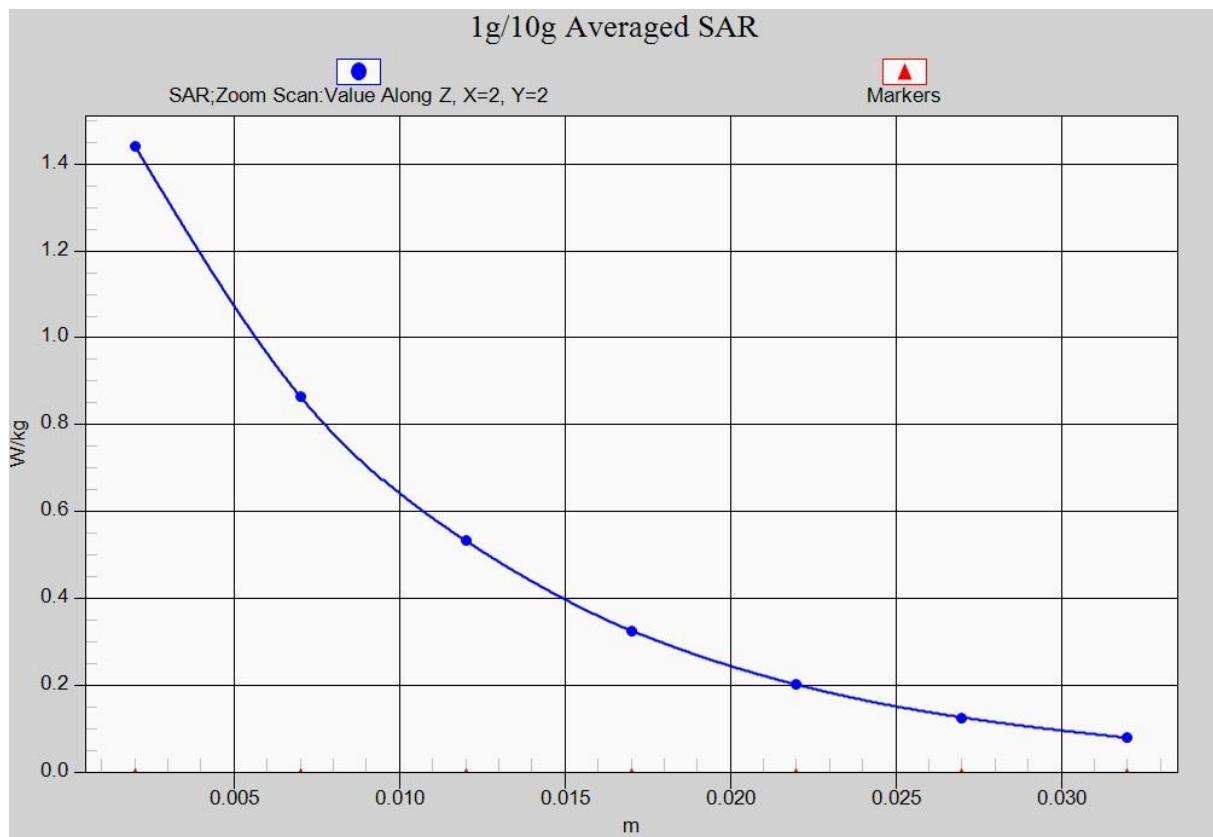
Reference Value = 27.84 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 1.77 W/kg

**SAR(1 g) = 1.02 W/kg; SAR(10 g) = 0.522 W/kg**

Maximum value of SAR (measured) = 1.44 W/kg

**Fig.11 LTE Band2**



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

**LTE Band2 Body Rear Middle with QPSK\_20M\_1RB\_Low AP OFF**

Date: 2017-5-26

Electronics: DAE4 Sn1331

Medium: Body 1900 MHz

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.490$  mho/m;  $\epsilon_r = 53.87$ ;  $\rho = 1000$  kg/m $^3$ 

Ambient Temperature: 22.4°C      Liquid Temperature: 22.2°C

Communication System: LTE Band2 Frequency: 1880 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) = 0.957 W/kg

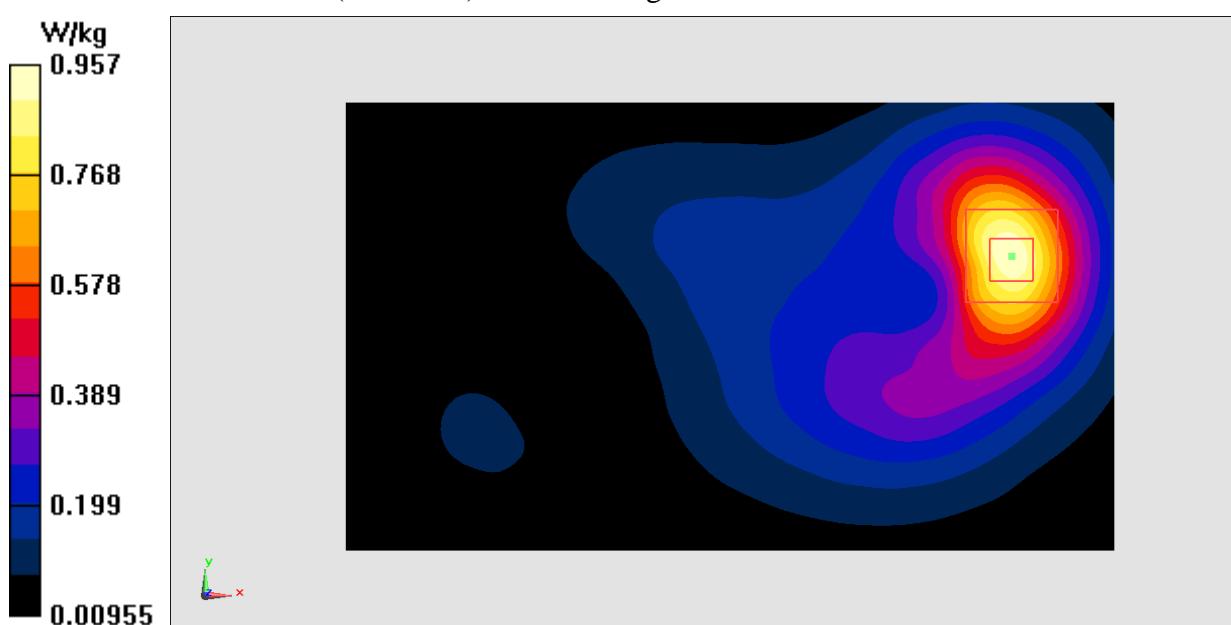
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.619 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 1.21 W/kg

**SAR(1 g) = 0.771 W/kg; SAR(10 g) = 0.454 W/kg**

Maximum value of SAR (measured) = 0.999 W/kg

**Fig.12 LTE Band2**

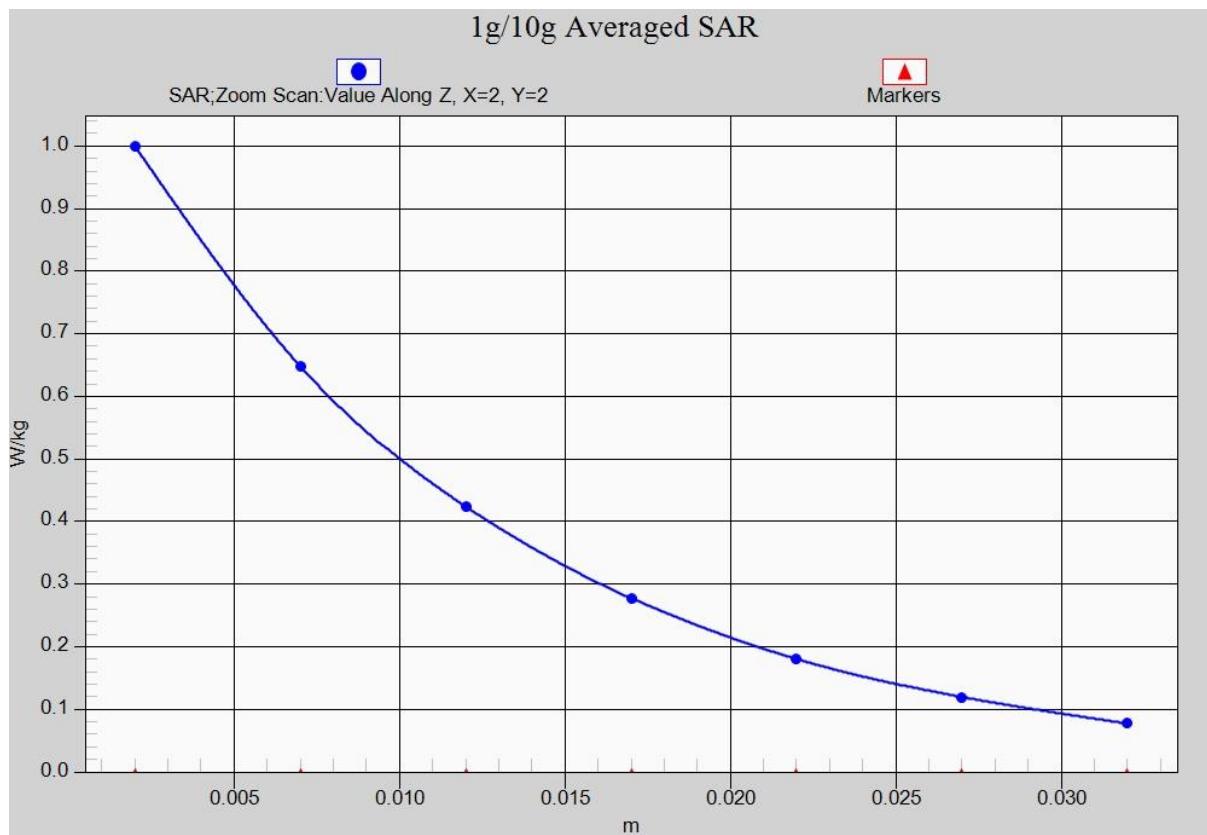


Fig. 12-1 Z-Scan at power reference point (LTE Band2)

**LTE Band4 Right Cheek High with QPSK\_20M\_1RB\_Middle**

Date: 2017-5-25

Electronics: DAE4 Sn1331

Medium: Head 1750 MHz

Medium parameters used  $f = 1745$  MHz;  $\sigma = 1.347$  mho/m;  $\epsilon_r = 40.01$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.4°C      Liquid Temperature: 22.2°C

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

Probe: EX3DV4 – SN3846ConvF(8.16, 8.16, 8.16)

**Area Scan (81x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.343 W/kg

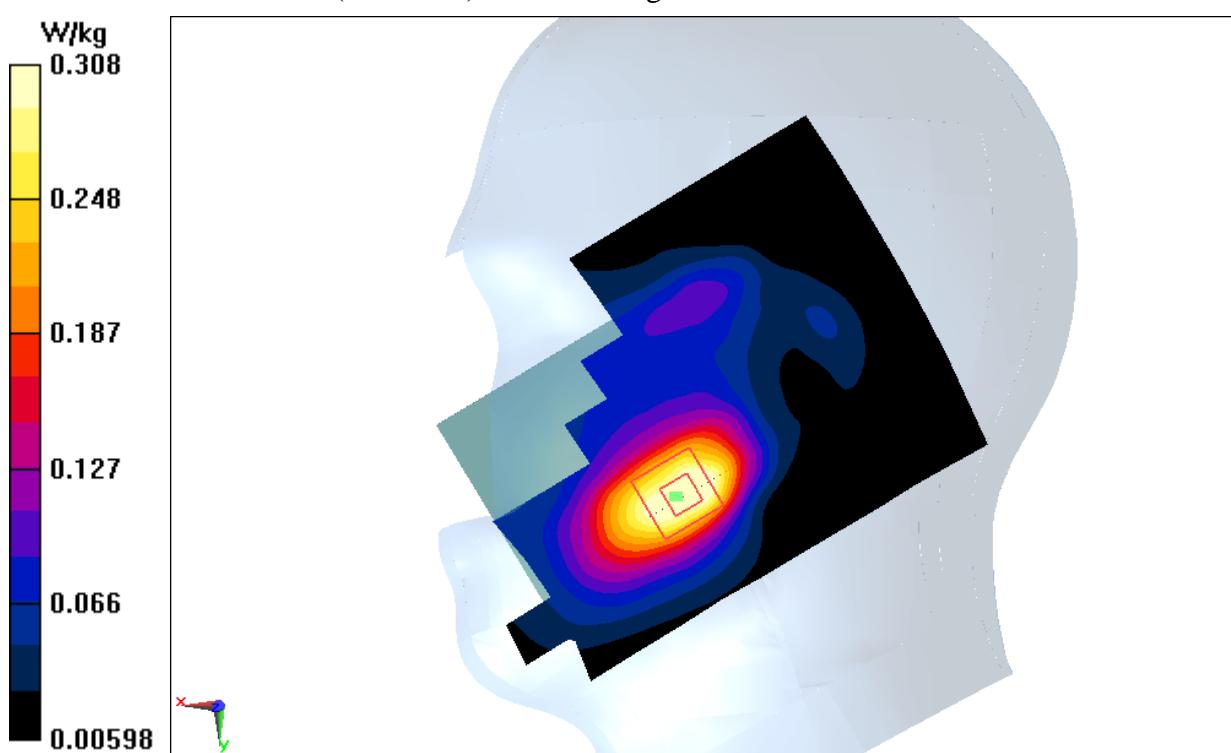
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.543 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.356 W/kg

**SAR(1 g) = 0.248 W/kg; SAR(10 g) = 0.164 W/kg**

Maximum value of SAR (measured) = 0.308 W/kg

**Fig.13 LTE Band4**

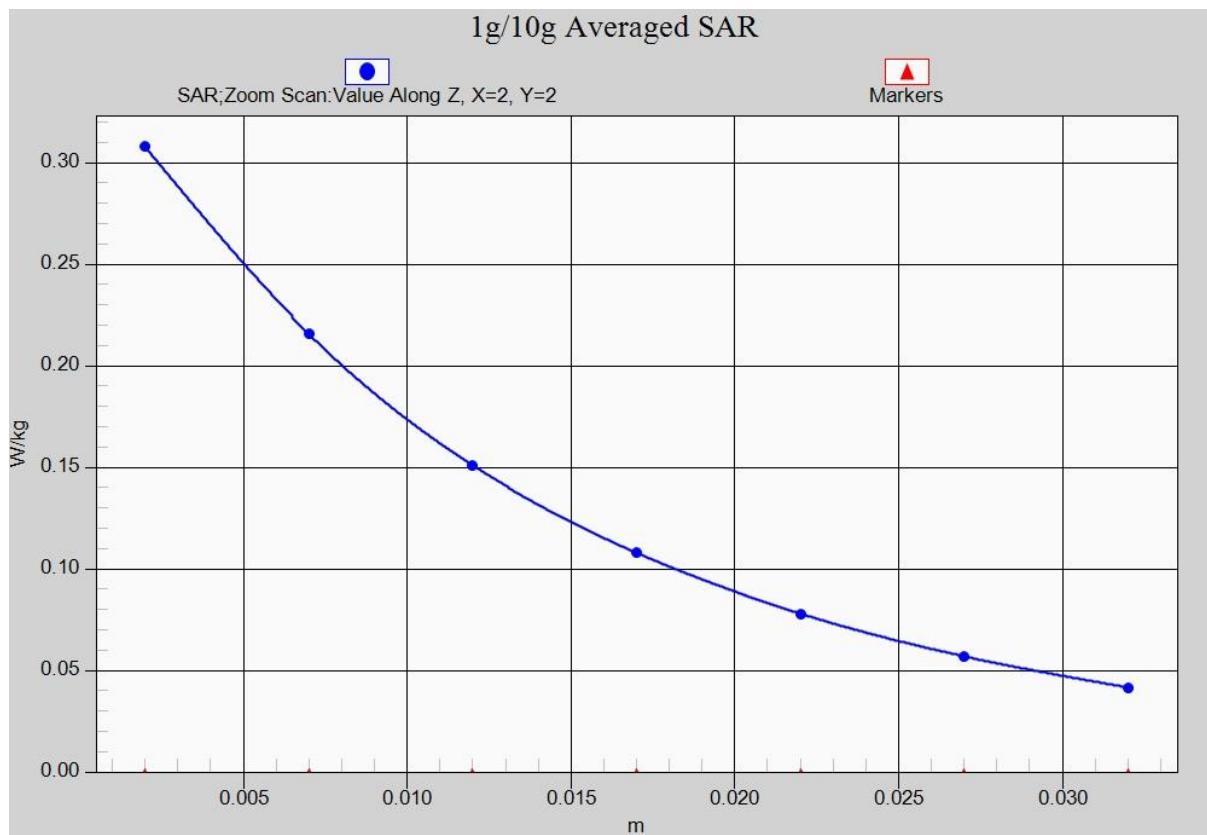


Fig. 13-1 Z-Scan at power reference point (LTE Band4)

**LTE Band4 Body Bottom High with QPSK\_20M\_100RB AP ON**

Date: 2017-5-25

Electronics: DAE4 Sn1331

Medium: Body 1750 MHz

Medium parameters used:  $f = 1745 \text{ MHz}$ ;  $\sigma = 1.507 \text{ mho/m}$ ;  $\epsilon_r = 53.30$ ;  $\rho = 1000 \text{ kg/m}^3$ Ambient Temperature:  $22.4^\circ\text{C}$  Liquid Temperature:  $22.2^\circ\text{C}$ 

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

Probe: EX3DV4 – SN3846ConvF(7.90, 7.90, 7.90)

**Area Scan (121x71x1):** Interpolated grid:  $dx=1.000 \text{ mm}$ ,  $dy=1.000 \text{ mm}$ 

Maximum value of SAR (interpolated) = 1.36 W/kg

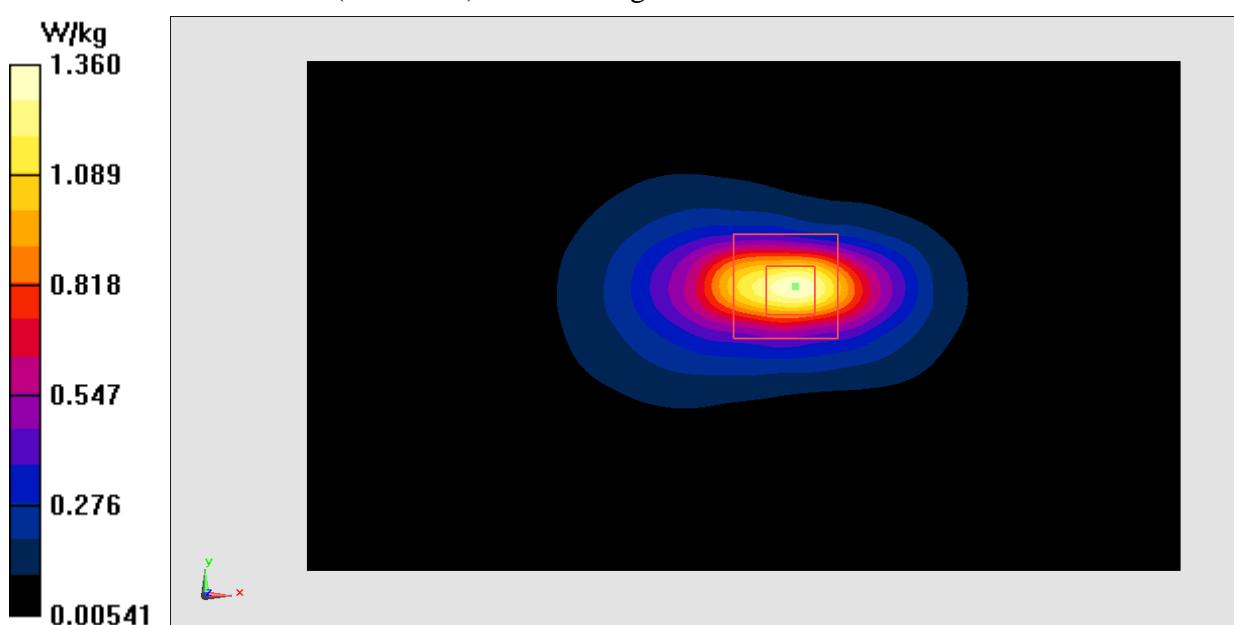
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$ 

Reference Value = 20.73 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 1.69 W/kg

**SAR(1 g) = 0.971 W/kg; SAR(10 g) = 0.497 W/kg**

Maximum value of SAR (measured) = 1.34 W/kg

**Fig.14 LTE Band4**

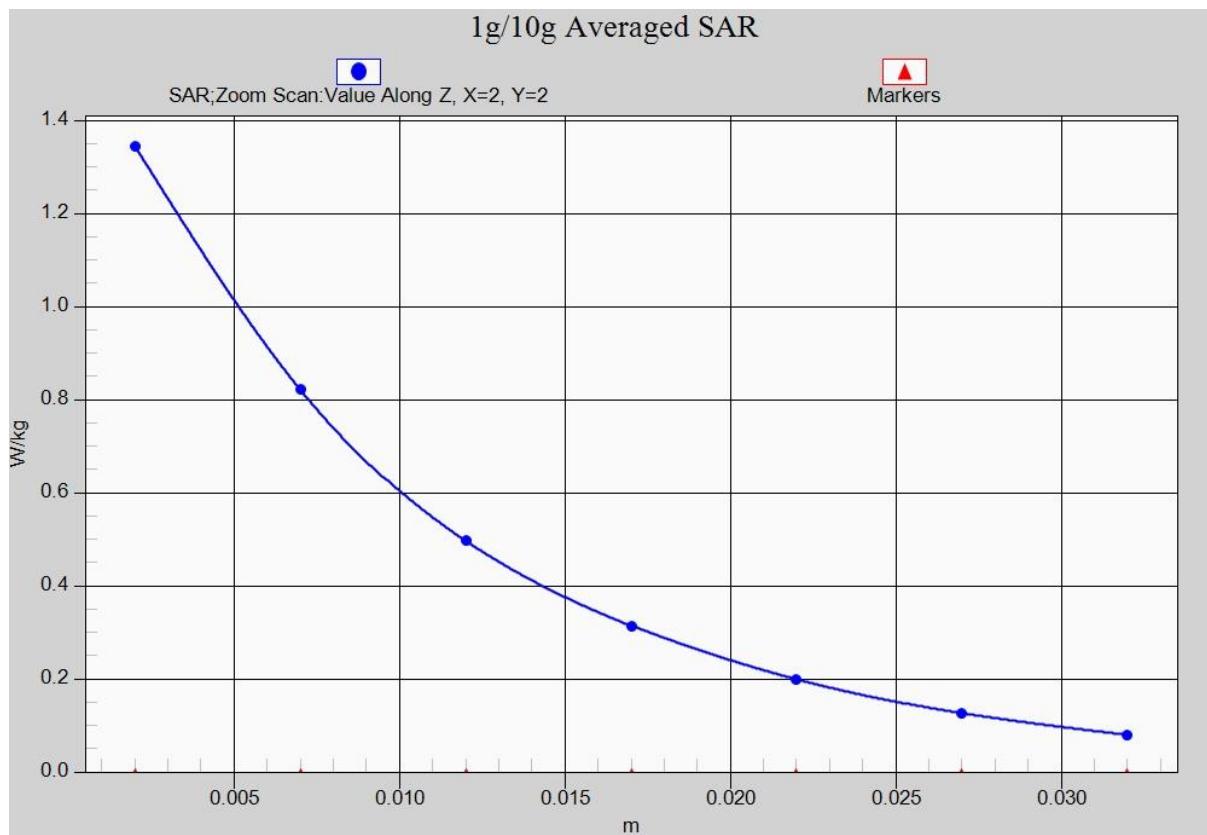


Fig. 14-1 Z-Scan at power reference point (LTE Band4)

**LTE Band4 Body Rear High with QPSK\_20M\_1RB\_Middle AP OFF**

Date: 2017-5-25

Electronics: DAE4 Sn1331

Medium: Body 1750 MHz

Medium parameters used:  $f = 1745 \text{ MHz}$ ;  $\sigma = 1.507 \text{ mho/m}$ ;  $\epsilon_r = 53.30$ ;  $\rho = 1000 \text{ kg/m}^3$ Ambient Temperature:  $22.4^\circ\text{C}$  Liquid Temperature:  $22.2^\circ\text{C}$ 

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

Probe: EX3DV4 – SN3846ConvF(7.90, 7.90, 7.90)

**Area Scan (111x61x1):** Interpolated grid:  $dx=1.000 \text{ mm}$ ,  $dy=1.000 \text{ mm}$ 

Maximum value of SAR (interpolated) = 0.751 W/kg

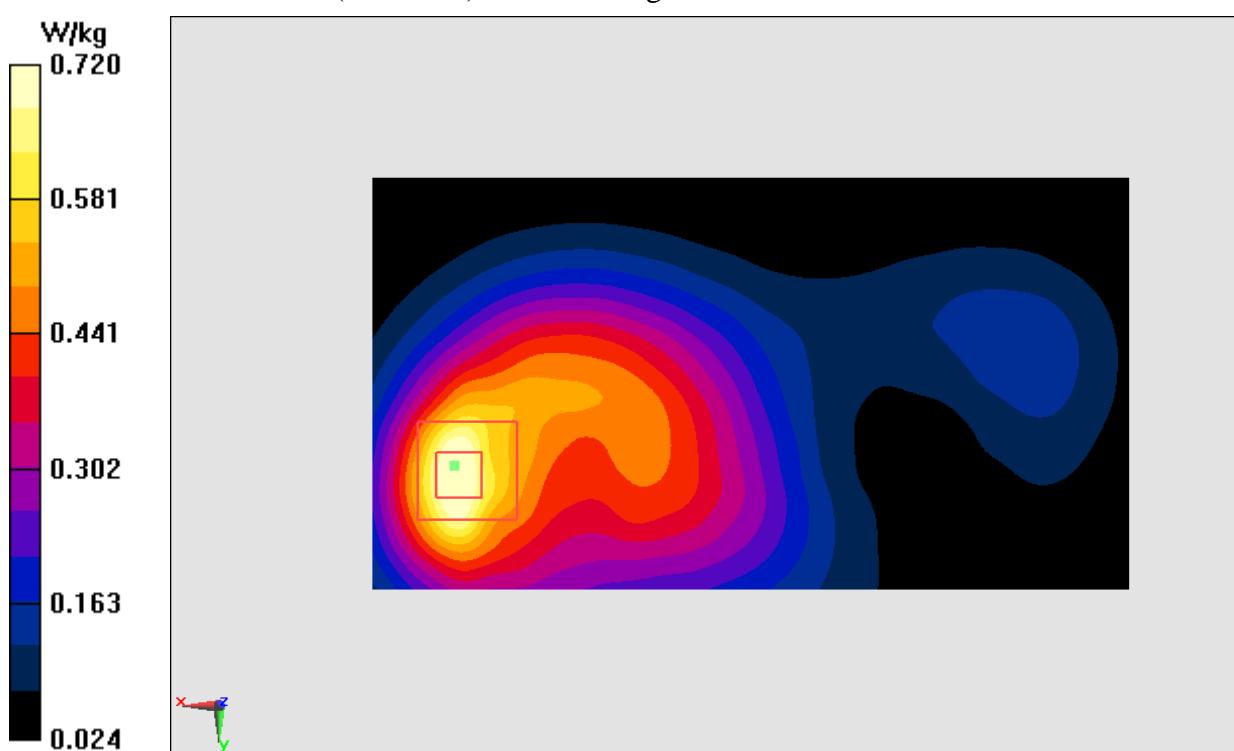
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$ 

Reference Value = 10.14 V/m; Power Drift = -0.19 dB

Peak SAR (extrapolated) = 0.927 W/kg

**SAR(1 g) = 0.595 W/kg; SAR(10 g) = 0.358 W/kg**

Maximum value of SAR (measured) = 0.720 W/kg

**Fig.15 LTE Band4**

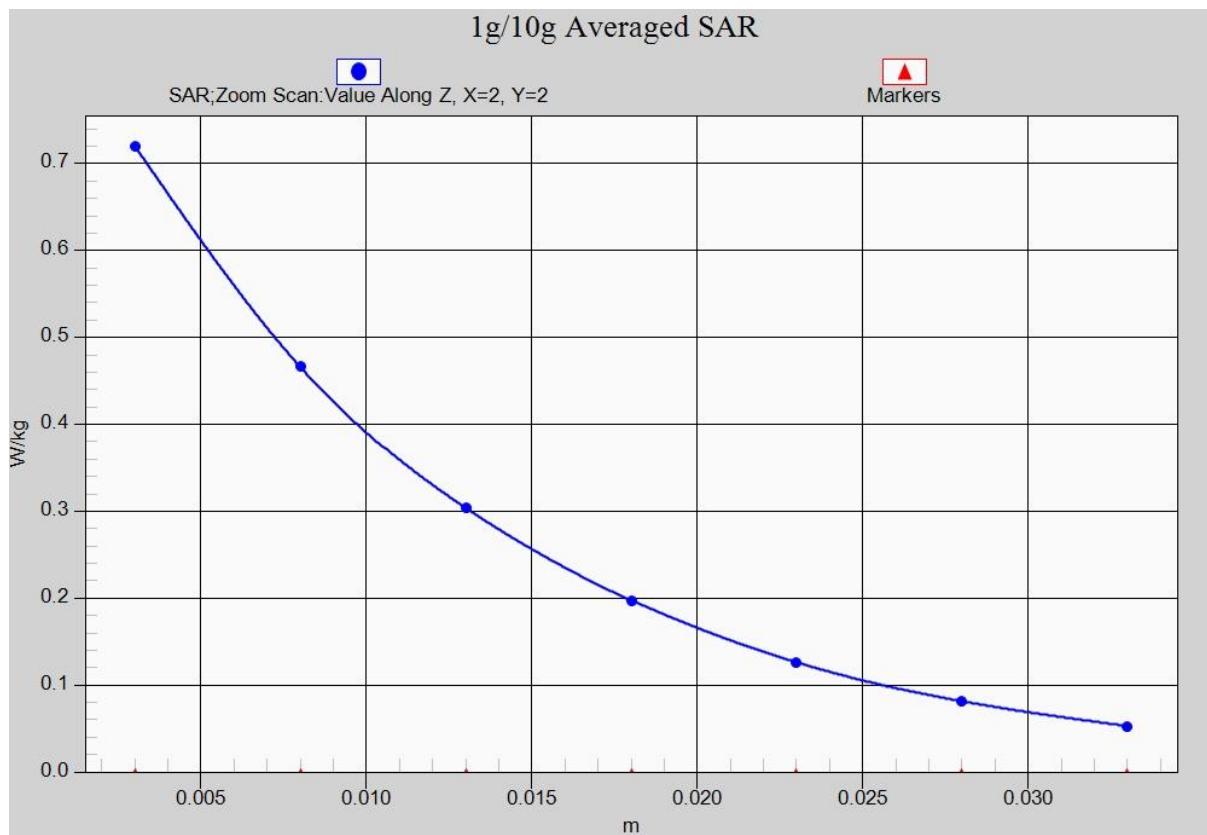


Fig. 15-1 Z-Scan at power reference point (LTE Band4)

**LTE Band5 Right Cheek Middle with QPSK\_10M\_1RB\_Middle**

Date: 2017-5-24

Electronics: DAE4 Sn1331

Medium: Head 850 MHz

Medium parameters used (interpolated):  $f = 836.5$  MHz;  $\sigma = 0.891$  mho/m;  $\epsilon_r = 41.48$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.4°C      Liquid Temperature: 22.2°C

Communication System: LTE Band5 Frequency: 836.5 MHz Duty Cycle: 1:1

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

**Area Scan (71x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.235 W/kg

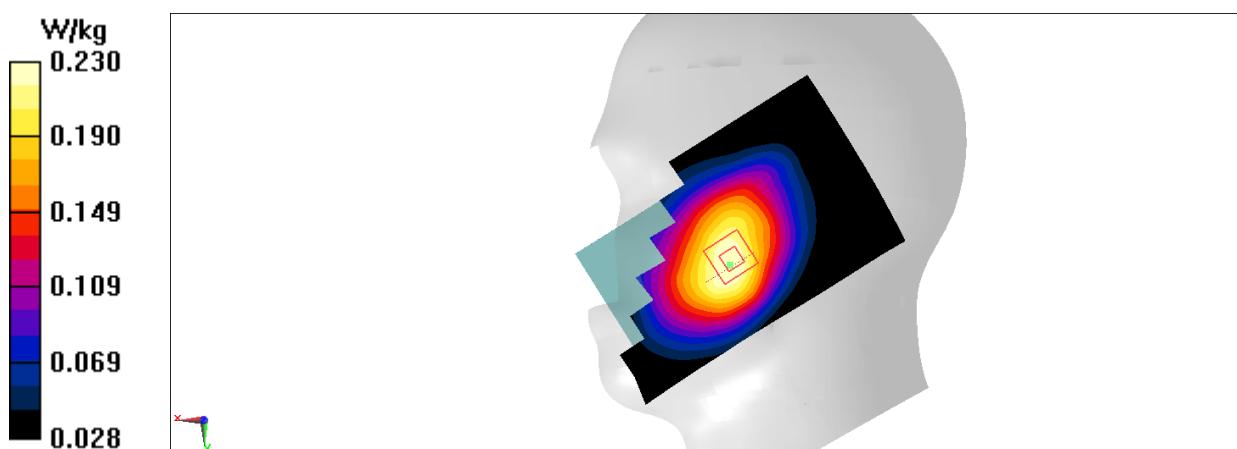
**Right/Cheek 1RB-M/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.767 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.262 W/kg

**SAR(1 g) = 0.213 W/kg; SAR(10 g) = 0.165 W/kg**

Maximum value of SAR (measured) = 0.230 W/kg

**Fig.16 LTE Band5**

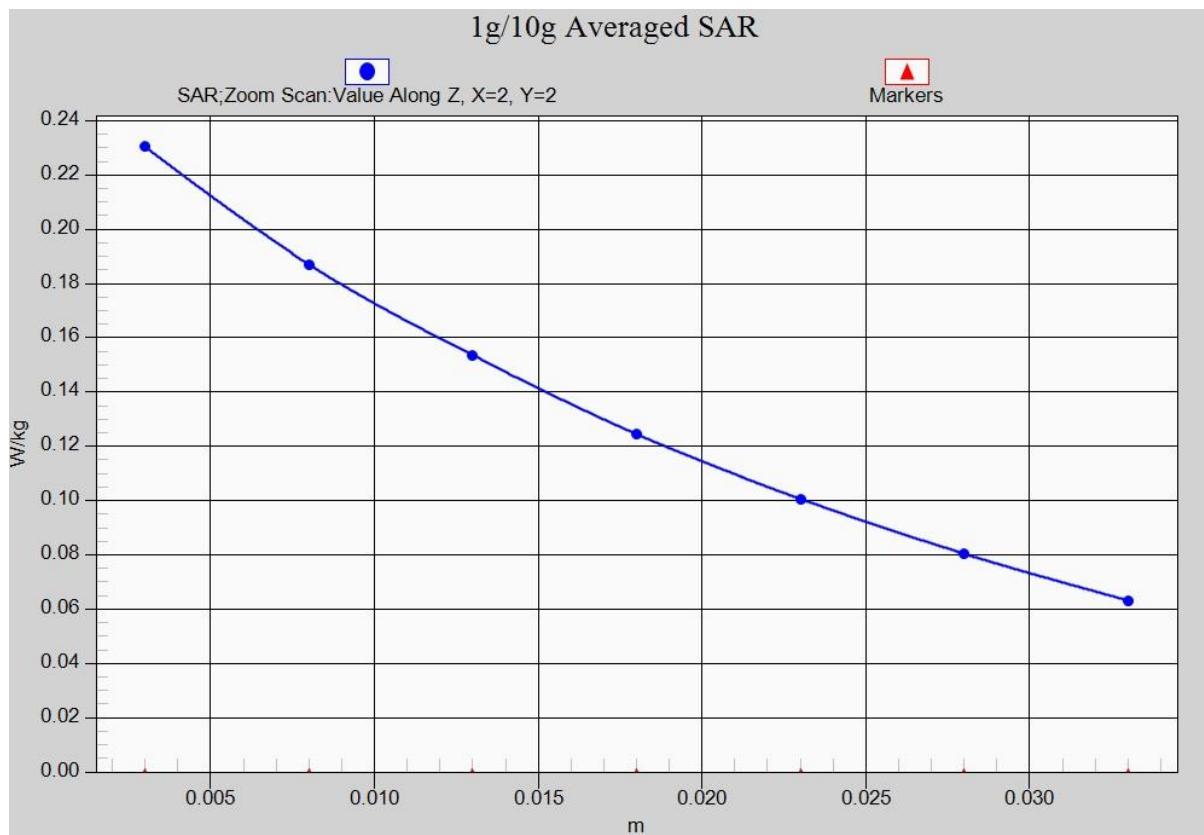


Fig. 16-1 Z-Scan at power reference point (LTE Band5)

**LTE Band5 Body Rear Middle with QPSK\_10M\_1RB\_Middle**

Date: 2017-5-24

Electronics: DAE4 Sn1331

Medium: Body 850 MHz

Medium parameters used (interpolated):  $f = 836.5$  MHz;  $\sigma = 0.966$  mho/m;  $\epsilon_r = 54.19$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.4°C      Liquid Temperature: 22.2°C

Communication System: LTE Band5 Frequency: 836.5 MHz Duty Cycle: 1:1

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

**Area Scan (111x61x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

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

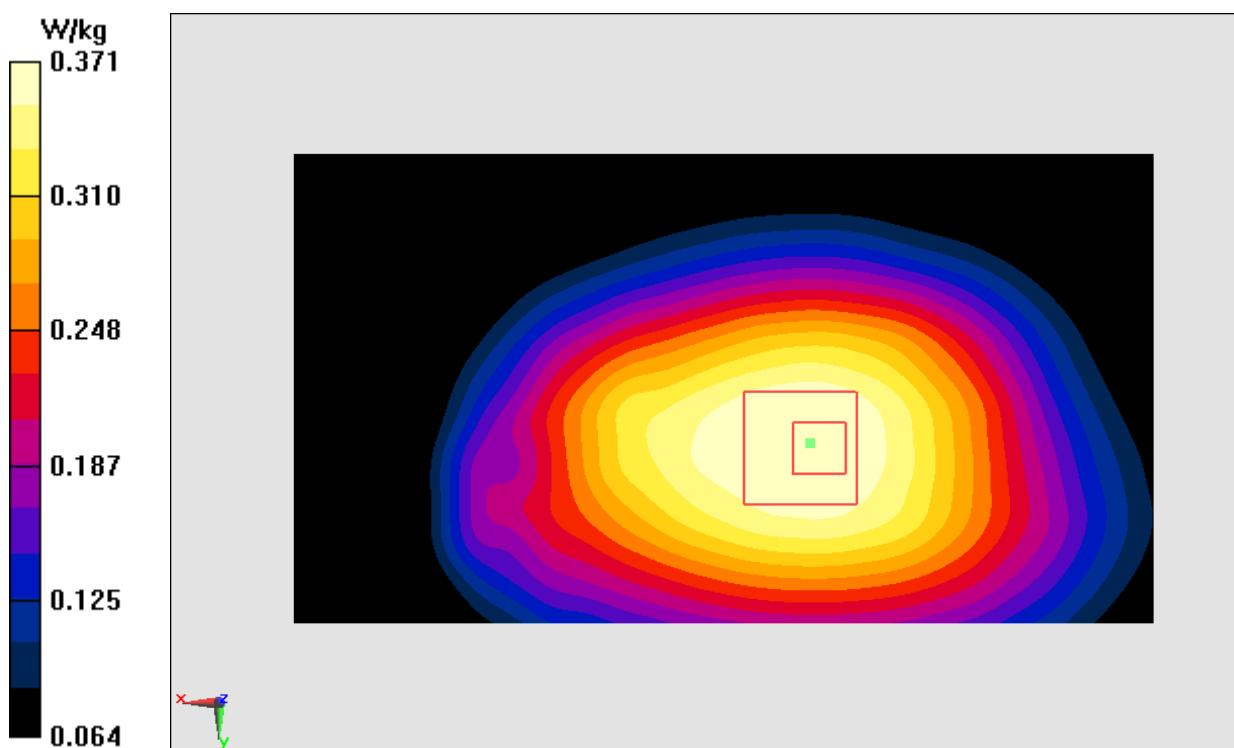
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

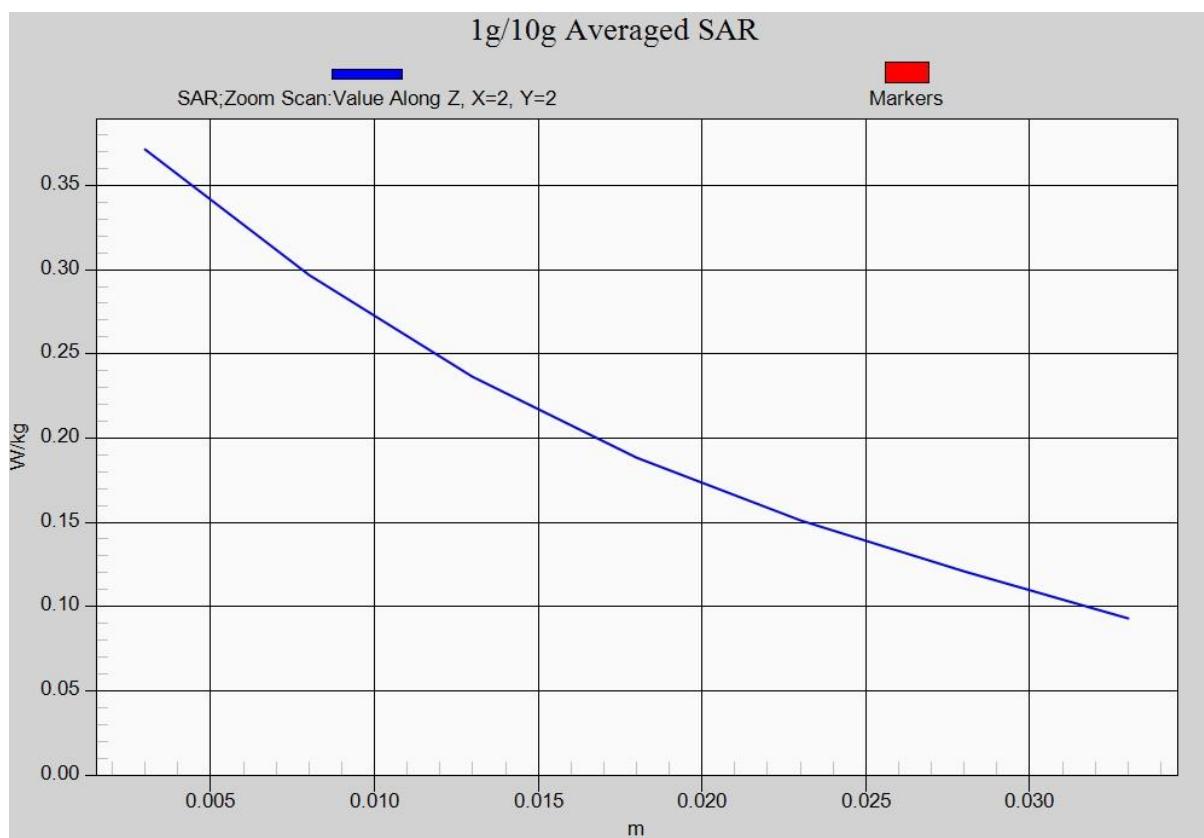
Reference Value = 18.32 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.421 W/kg

**SAR(1 g) = 0.336 W/kg; SAR(10 g) = 0.259 W/kg**

Maximum value of SAR (measured) = 0.371 W/kg

**Fig.17LTE Band5**



**Fig. 17-1 Z-Scan at power reference point (LTE Band5)**

**LTE Band7 Left Cheek High with QPSK\_20M\_1RB\_Middle**

Date: 2017-5-28

Electronics: DAE4 Sn1331

Medium: Head2600 MHz

Medium parameters used:  $f = 2560$  MHz;  $\sigma = 1.901$  mho/m;  $\epsilon_r = 39.74$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.4°C      Liquid Temperature: 22.2°C

Communication System: LTE Band7 Frequency: 2560 MHz Duty Cycle: 1:1

Probe: EX3DV4– SN3846 ConvF(7.12, 7.12, 7.12)

**Area Scan (71x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.388 W/kg

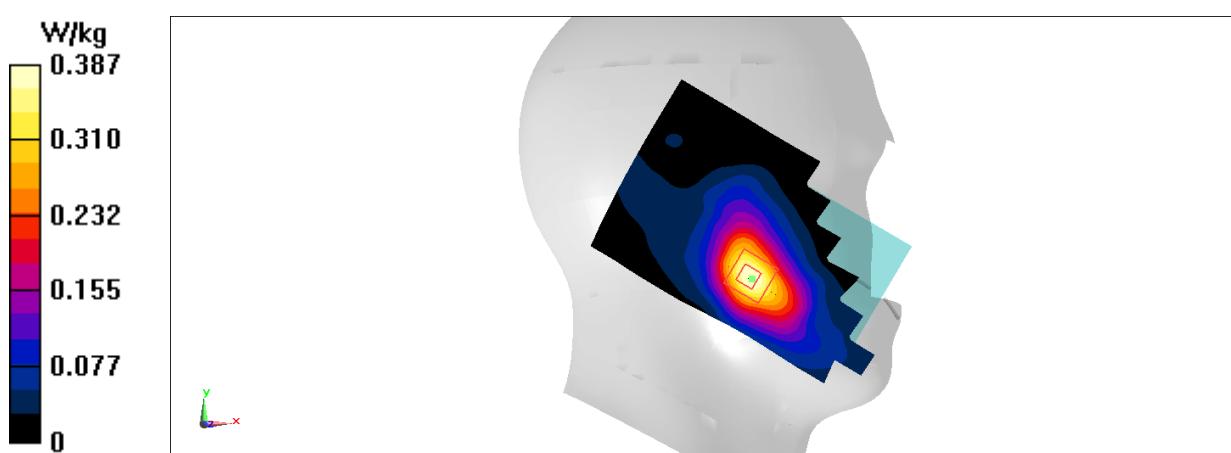
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.951 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 0.564 W/kg

**SAR(1 g) = 0.312 W/kg; SAR(10 g) = 0.170 W/kg**

Maximum value of SAR (measured) = 0.387 W/kg

**Fig.18 LTE Band7**

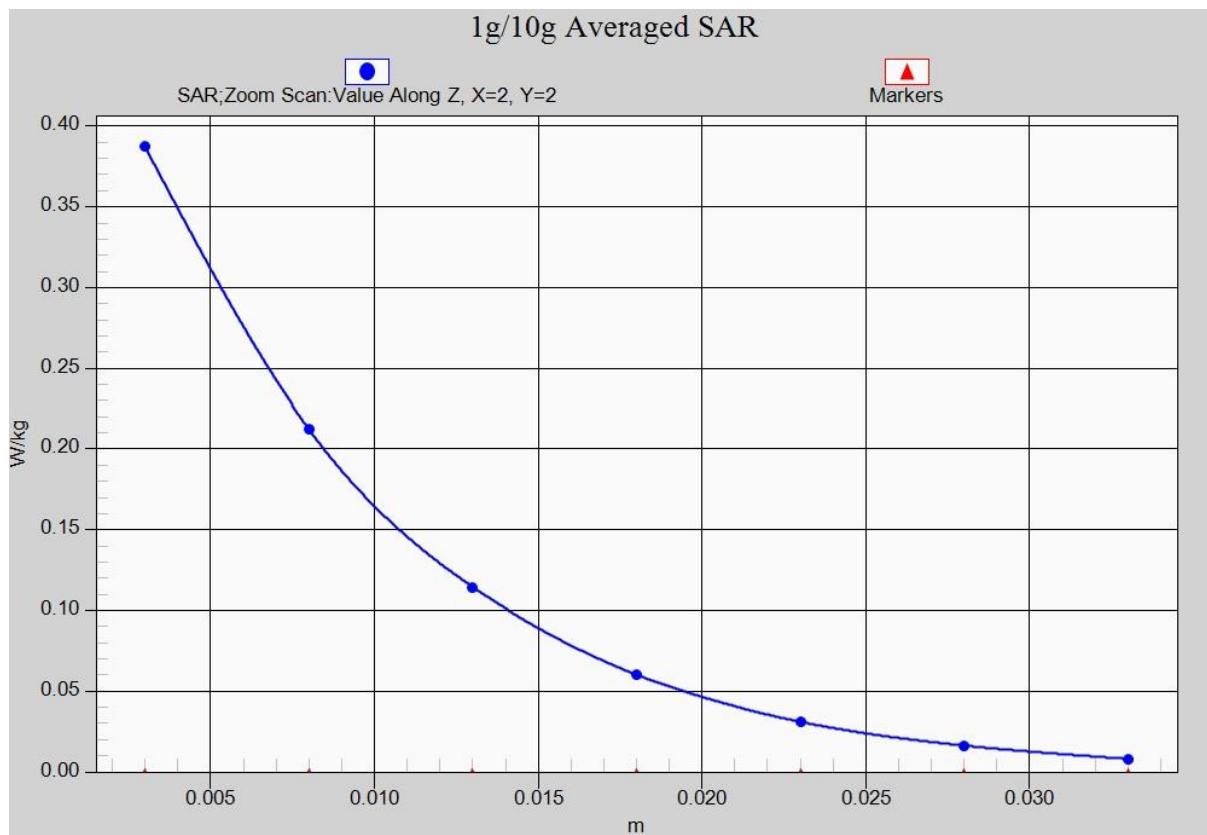


Fig. 18-1 Z-Scan at power reference point (LTE Band7)

**LTE Band7 Body Bottom High with QPSK\_20M\_1RB\_Low AP ON**

Date: 2017-5-28

Electronics: DAE4 Sn1331

Medium: Body2600 MHz

Medium parameters used:  $f = 2560$  MHz;  $\sigma = 2.102$  mho/m;  $\epsilon_r = 53.41$ ;  $\rho = 1000$  kg/m $^3$ 

Ambient Temperature: 22.4°C      Liquid Temperature: 22.2°C

Communication System: LTE Band7 Frequency: 2560 MHz Duty Cycle: 1:1

Probe: EX3DV4– SN3846 ConvF(7.25, 7.25, 7.25)

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

Maximum value of SAR (interpolated) = 1.63 W/kg

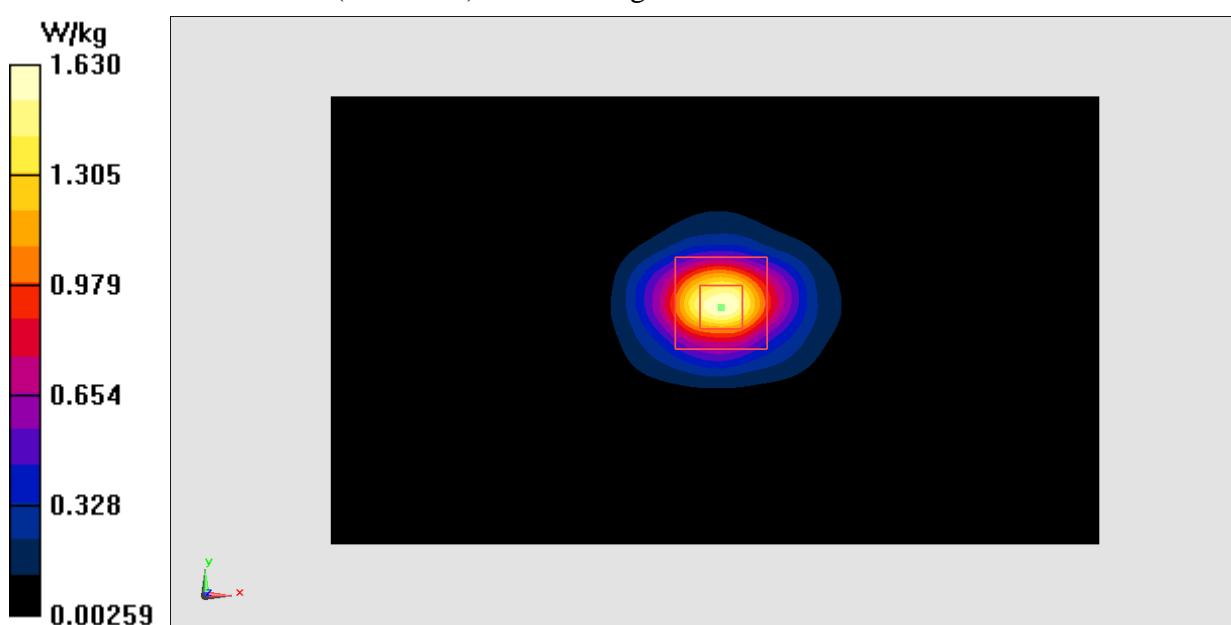
**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 22.44 V/m; Power Drift = -0.13 dB

Peak SAR (extrapolated) = 2.22 W/kg

**SAR(1 g) = 1.09 W/kg; SAR(10 g) = 0.483 W/kg**

Maximum value of SAR (measured) = 1.66 W/kg

**Fig.19 LTE Band7**