

14.1 SAR results

Table 14-1 GSM850 #1 Head

Ambient Temperature:			GSM850 #1 Head			Liquid Temperature:		
Mode	Device orientation	SAR measurement	Measured SAR [W/kg]			Reported SAR [W/kg]		
			CH251 848.8 MHz	CH190 836.6 MHz	CH128 824.2 MHz	CH251 848.8 MHz		
GSM	Tune-up		32.50	32.50	32.50	Scaling factor*		
	Slot Average Power [dBm]		31.93	31.98	31.90	1.14	1.13	1.15
	Left Cheek	1g SAR		0.145			0.16	
		10g SAR		0.116			0.13	
		Deviation		-0.12			-0.12	
	Left Tilt	1g SAR		0.096			0.11	
		10g SAR		0.077			0.09	
		Deviation		-0.08			-0.08	
	Right Cheek	1g SAR	0.214	0.206	0.152	0.24	0.23	0.17
		10g SAR	0.167	0.162	0.119	0.19	0.18	0.14
		Deviation	-0.03	0.15	-0.15	-0.03	0.15	-0.15
	Right Tilt	1g SAR		0.099			0.11	
		10g SAR		0.082			0.09	
		Deviation		0.01			0.01	

Table 14-2 GSM850 #1 Body

Ambient Temperature:			GSM850 #1 Body			Liquid Temperature:		
Mode	Device orientation	SAR measurement	Measured SAR [W/kg]			Reported SAR [W/kg]		
			CH251 848.8 MHz	CH190 836.6 MHz	CH128 824.2 MHz	CH251 848.8 MHz		
GPRS 4 Txslots	Tune-up		28.50	28.50	28.50	Scaling factor*		
	Slot Average Power [dBm]		27.66	27.68	27.55	1.21	1.21	1.24
	Front	1g SAR		0.224			0.27	
		10g SAR		0.167			0.20	
		Deviation		-0.19			-0.19	
	Rear	1g SAR	0.312	0.284	0.271	0.38	0.34	0.34
		10g SAR	0.243	0.223	0.208	0.29	0.27	0.26
		Deviation	-0.01	0.02	0.03	-0.01	0.02	0.03
	Left edge	1g SAR		0.159			0.19	
		10g SAR		0.108			0.13	
		Deviation		-0.11			-0.11	
	Right edge	1g SAR		0.198			0.24	
		10g SAR		0.141			0.17	
		Deviation		-0.17			-0.17	
EGPRS GMSK 4 Txslots	Bottom edge	1g SAR		0.101			0.12	
		10g SAR		0.058			0.07	
		Deviation		0.1			0.10	
	Tune-up		28.50	28.50	28.50	Scaling factor*		
	Slot Average Power [dBm]		27.61	27.64	27.53	1.23	1.22	1.25
	Worst case check	1g SAR	0.277			0.34		
		10g SAR	0.211			0.26		
		Deviation	0.06			0.06		

Table 14-3 PCS1900 #1 Head

PCS1900 #1 Head							
Ambient Temperature:			22.5		Liquid Temperature: 22.3		
Mode	Device orientation	SAR measurement	Measured SAR [W/kg]			Reported SAR [W/kg]	
			CH810 1909.8	CH661 1880 MHz	CH512 1850.2		
GSM	Tune-up		30.30	30.30	30.30	Scaling factor*	
	Slot Average Power [dBm]		29.91	29.79	29.79	1.09	
	Left Cheek	1g SAR	0.188	0.165	0.186	0.21	
		10g SAR	0.119	0.105	0.116	0.13	
		Deviation	0.02	0.03	-0.15	0.02	
	Left Tilt	1g SAR		0.077		0.09	
		10g SAR		0.047		0.05	
		Deviation		-0.17		-0.17	
	Right Cheek	1g SAR		0.092		0.10	
		10g SAR		0.059		0.07	
		Deviation		-0.16		-0.16	
	Right Tilt	1g SAR		0.046		0.05	
		10g SAR		0.029		0.03	
		Deviation		0.05		0.05	

Table 14-4 PCS1900 #1 Body

PCS1900 #1 Body							
Ambient Temperature: 22.5			Liquid Temperature: 22.3				
Mode	Device orientation	SAR measurement	Measured SAR [W/kg]			Reported SAR [W/kg]	
			CH810 1909.8	CH661 1880 MHz	CH512 1850.2		
GPRS 4 Txslots	Tune-up		25.00	25.00	25.00	Scaling factor*	
	Slot Average Power [dBm]		24.29	24.11	24.07	1.18	
	Front	1g SAR		0.359		0.44	
		10g SAR		0.198		0.24	
		Deviation		0.09		0.09	
	Rear	1g SAR		0.319		0.39	
		10g SAR		0.187		0.23	
		Deviation		-0.03		-0.03	
	Left edge	1g SAR		0.098		0.12	
		10g SAR		0.061		0.07	
		Deviation		0.08		0.08	
	Right edge	1g SAR		0.045		0.06	
		10g SAR		0.024		0.03	
		Deviation		-0.01		-0.01	
	Bottom edge	1g SAR	0.54	0.518	0.566	0.64	
		10g SAR	0.294	0.278	0.304	0.35	
		Deviation	0.03	0.18	-0.14	0.03	
EGPRS GMSK 4 Txslots	Tune-up		25.00	25.00	25.00	Scaling factor*	
	Slot Average Power [dBm]		24.28	24.09	24.07	1.18	
	Worst case check	1g SAR			0.546		
		10g SAR			0.293		
		Deviation			-0.02	-0.02	

Table 14-5 WCDMA1900-BII #1Head

WCDMA1900-BII #1Head							
Ambient Temperature: 22.5			Liquid Temperature: 22.3				
Mode	Device orientation	SAR measurement	Measured SAR [W/kg]			Reported SAR [W/kg]	
			CH9538 1907.6 MHz	CH9400 1880 MHz	CH9262 1852.4 MHz		
RMC	Tune-up		23.50	23.50	23.50	Scaling factor*	
	Slot Average Power [dBm]		22.98	22.92	22.94	1.13 1.14 1.14	
	Left Cheek	1g SAR	0.308	0.31	0.406	0.35 0.35 0.46	
		10g SAR	0.197	0.199	0.259	0.22 0.23 0.29	
		Deviation	0.01	0.12	-0.09	0.01 0.12 -0.09	
	Left Tilt	1g SAR		0.131		0.15	
		10g SAR		0.081		0.09	
		Deviation		-0.17		-0.17	
	Right Cheek	1g SAR		0.168		0.19	
		10g SAR		0.108		0.12	
		Deviation		-0.15		-0.15	
	Right Tilt	1g SAR		0.087		0.10	
		10g SAR		0.057		0.07	
		Deviation		0.02		0.02	

Table 14-6 WCDMA1900-BII #1Body

WCDMA1900-BII #1Body							
Ambient Temperature: 22.5			Liquid Temperature: 22.3				
Mode	Device orientation	SAR measurement	Measured SAR [W/kg]			Reported SAR [W/kg]	
			CH9538 1907.6 MHz	CH9400 1880 MHz	CH9262 1852.4 MHz		
RMC	Tune-up		23.50	23.50	23.50	Scaling factor*	
	Slot Average Power [dBm]		22.98	22.92	22.94	1.13 1.14 1.14	
	Front	1g SAR	0.578	0.755	0.721	0.65 0.86 0.82	
		10g SAR	0.342	0.436	0.432	0.39 0.50 0.49	
		Deviation	0.11	0.19	-0.03	0.11 0.19 -0.03	
	Rear	1g SAR	0.553	0.701	0.678	0.62 0.80 0.77	
		10g SAR	0.342	0.407	0.415	0.39 0.47 0.47	
		Deviation	0.02	-0.01	0.11	0.02 -0.01 0.11	
	Left edge	1g SAR		0.22		0.25	
		10g SAR		0.138		0.16	
		Deviation		0.13		0.13	
	Right edge	1g SAR		0.062		0.07	
		10g SAR		0.044		0.05	
		Deviation		0.17		0.17	
	Bottom edge	1g SAR	0.891	1.11	1.17	1.00 1.27 1.33	
		10g SAR	0.482	0.617	0.634	0.54 0.71 0.72	
		Deviation	0.13	-0.13	-0.14	0.13 -0.13 -0.14	
RMC	Bottom edge 0mm	1g SAR			8.07		
		10g SAR			3.1		
		Deviation			-0.02		

Table 14-7 WCDMA1700-BIV #1Head

WCDMA1700-BIV #1Head							
Ambient Temperature: 22.5			Liquid Temperature: 22.3				
Mode	Device orientation	SAR measurement	Measured SAR [W/kg]			Reported SAR [W/kg]	
			CH1513 1752.6 MHz	CH1412 1732.4 MHz	CH1312 1712.4 MHz		
RMC	Tune-up		24.00	24.00	24.00	Scaling factor*	
	Slot Average Power [dBm]		23.30	23.25	23.28	1.17	
	Left Cheek	1g SAR	0.306	0.3	0.336	0.36	
		10g SAR	0.199	0.194	0.223	0.23	
		Deviation	-0.18	-0.05	0.03	-0.18	
	Left Tilt	1g SAR		0.064		0.08	
		10g SAR		0.036		0.04	
		Deviation		-0.06		-0.06	
	Right Cheek	1g SAR		0.254		0.30	
		10g SAR		0.163		0.19	
		Deviation		-0.19		-0.19	
	Right Tilt	1g SAR		0.091		0.11	
		10g SAR		0.057		0.07	
		Deviation		-0.15		-0.15	

Table 14-8 WCDMA1700-BIV #1Body

WCDMA1700-BIV #1Body							
Ambient Temperature: 22.5			Liquid Temperature: 22.3				
Mode	Device orientation	SAR measurement	Measured SAR [W/kg]			Reported SAR [W/kg]	
			CH1513 1752.6 MHz	CH1412 1732.4 MHz	CH1312 1712.4 MHz		
RMC	Tune-up		24.00	24.00	24.00	Scaling factor*	
	Slot Average Power [dBm]		23.30	23.25	23.28	1.17	
	Front	1g SAR	0.854	0.964	1.01	1.00	
		10g SAR	0.528	0.596	0.634	0.62	
		Deviation	0.15	-0.07	0	0.15	
	Rear	1g SAR	0.816	0.902	0.833	0.96	
		10g SAR	0.498	0.561	0.508	0.59	
		Deviation	-0.03	0.16	-0.15	-0.03	
	Left edge	1g SAR		0.292		0.35	
		10g SAR		0.18		0.21	
		Deviation		0.01		0.01	
	Right edge	1g SAR		0.173		0.21	
		10g SAR		0.143		0.17	
		Deviation		0.05		0.05	
	Bottom edge	1g SAR	0.879	0.944	0.987	1.03	
		10g SAR	0.469	0.508	0.521	0.55	
		Deviation	-0.14	0.06	0.14	-0.14	

Table 14-9 WCDMA850-BV #1Head

WCDMA850-BV #1Head							
Ambient Temperature: 22.5			Liquid Temperature: 22.3				
Mode	Device orientation	SAR measurement	Measured SAR [W/kg]			Reported SAR [W/kg]	
			CH4233 846.6 MHz	CH4182 835.4 MHz	CH4132 826.4 MHz		
RMC	Tune-up		24.00	24.00	24.00	Scaling factor*	
	Slot Average Power [dBm]		23.14	23.24	23.19	1.22	
	Left Cheek	1g SAR		0.194		0.23	
		10g SAR		0.156		0.19	
		Deviation		0.01		0.01	
	Left Tilt	1g SAR		0.131		0.16	
		10g SAR		0.105		0.13	
		Deviation		0.02		0.02	
	Right Cheek	1g SAR	0.284	0.282	0.231	0.35	
		10g SAR	0.221	0.219	0.182	0.27	
		Deviation	0.03	-0.07	-0.09	0.03	
	Right Tilt	1g SAR		0.132		0.16	
		10g SAR		0.108		0.13	
		Deviation		-0.05		-0.05	

Table 14-10 WCDMA850-BV #1Body

WCDMA850-BV #1Body							
Ambient Temperature: 22.5			Liquid Temperature: 22.3				
Mode	Device orientation	SAR measurement	Measured SAR [W/kg]			Reported SAR [W/kg]	
			CH4233 846.6 MHz	CH4182 835.4 MHz	CH4132 826.4 MHz		
RMC	Tune-up		24.00	24.00	24.00	Scaling factor*	
	Slot Average Power [dBm]		23.14	23.24	23.19	1.22	
	Front	1g SAR		0.253		0.30	
		10g SAR		0.197		0.23	
		Deviation		0.03		0.03	
	Rear	1g SAR	0.313	0.314	0.294	0.38	
		10g SAR	0.245	0.246	0.228	0.30	
		Deviation	-0.07	0.04	-0.02	-0.07	
	Left edge	1g SAR		0.143		0.17	
		10g SAR		0.1		0.12	
		Deviation		0.01		0.01	
	Right edge	1g SAR		0.236		0.28	
		10g SAR		0.167		0.20	
		Deviation		0.13		0.13	
	Bottom edge	1g SAR		0.105		0.13	
		10g SAR		0.063		0.08	
		Deviation		-0.08		-0.08	

Table 14-11 LTE1900-FDD2 #1 Head

LTE1900-FDD2 #1 Head								
Ambient Temperature: 22.5			Liquid Temperature: 22.3					
Mode	Device orientation	SAR measurement	Measured SAR [W/kg]			Reported SAR [W/kg]		
			19100	18900	18700			
			M	M	M			
20MHz QPSK1RB	Tune-up		23.50	23.50	23.50	Scaling factor*		
	Measured Power [dBm]		23.03	23.07	23.08	1.11	1.10	1.10
	Left Cheek	1g SAR			0.385			0.42
		10g SAR			0.24			0.26
		Deviation			0.03			0.03
	Left Tilt	1g SAR			0.124			0.14
		10g SAR			0.077			0.08
		Deviation			0.14			0.14
	Right Cheek	1g SAR			0.257			0.28
		10g SAR			0.155			0.17
		Deviation			0.13			0.13
	Right Tilt	1g SAR			0.17			0.19
		10g SAR			0.103			0.11
		Deviation			0.16			0.16
TRUE	Device orientation	SAR measurement	Measured SAR [W/kg]			Reported SAR [W/kg]		
			19100	18900	18700	19100	18900	18700
			L	L	H	L	L	H
20MHz QPSK50% RB	Tune-up		22.50	22.50	22.50	Scaling factor*		
	Measured Power [dBm]		21.99	22.27	22.10	1.12	1.05	1.10
	Left Cheek	1g SAR			0.334			0.35
		10g SAR			0.245			0.26
		Deviation			0.05			0.05
	Left Tilt	1g SAR			0.136			0.14
		10g SAR			0.081			0.09
		Deviation			0.15			0.15
	Right Cheek	1g SAR			0.219			0.23
		10g SAR			0.132			0.14
		Deviation			0.11			0.11
	Right Tilt	1g SAR			0.089			0.09
		10g SAR			0.057			0.06
		Deviation			0.12			0.12
Mode	Device orientation	SAR measurement	Measured SAR [W/kg]			Reported SAR [W/kg]		
			19100	18900	18700	19100	18900	18700
20MHz QPSK100% RB	Tune-up		22.50	22.50	22.50	Scaling factor*		
	Measured Power [dBm]		21.99	22.23	22.07	1.12	1.06	1.10
	Left Cheek	1g SAR						
		10g SAR						
		Deviation						

Table 14-12 LTE1900-FDD2 #1 Body

LTE1900-FDD2 #1 Body								
Ambient Temperature: 22.5				Liquid Temperature: 22.3				
Mode	Device orientation	SAR measurement	Measured SAR [W/kg]			Reported SAR [W/kg]		
			19100	18900	18700	19100	18900	
20MHz QPSK1RB	Tune-up		23.50	23.50	23.50	Scaling factor*		
	Measured Power [dBm]		23.03	23.07	23.08	1.11	1.10	
	Front	1g SAR	0.672	0.661	0.782	0.75	0.73	
		10g SAR	0.389	0.39	0.453	0.43	0.43	
		Deviation	0.05	0.14	0.06	0.05	0.14	
	Rear	1g SAR			0.714		0.79	
		10g SAR			0.424		0.47	
		Deviation			0.11		0.11	
	Left edge	1g SAR			0.246		0.27	
		10g SAR			0.156		0.17	
		Deviation			0.1		0.10	
	Right edge	1g SAR			0.075		0.08	
		10g SAR			0.046		0.05	
		Deviation			0.16		0.16	
	Bottom edge	1g SAR	0.981	1.12	1.28	1.09	1.24	
		10g SAR	0.513	0.663	0.675	0.57	0.73	
		Deviation	0.04	0.02	0.07	0.04	0.02	
Mode	Device orientation	SAR measurement	Measured SAR [W/kg]			Reported SAR [W/kg]		
			19100	18900	18700	19100	18900	
			L	L	H			
			Tune-up		22.50	22.50	22.50	
20MHz QPSK50% RB	Measured Power [dBm]		21.99	22.27	22.10	1.12	1.05	
	Front	1g SAR		0.633			0.67	
		10g SAR		0.369			0.39	
		Deviation		0.13			0.13	
	Rear	1g SAR		0.608			0.64	
		10g SAR		0.356			0.38	
		Deviation		0.07			0.07	
	Left edge	1g SAR		0.179			0.19	
		10g SAR		0.113			0.12	
		Deviation		0.09			0.09	
	Right edge	1g SAR		0.05			0.05	
		10g SAR		0.032			0.03	
		Deviation		0.13			0.13	
	Bottom edge	1g SAR	0.951	0.941	0.891	1.07	0.99	
		10g SAR	0.551	0.497	0.488	0.62	0.52	
		Deviation	0.07	0.07	0.03	0.07	0.07	
Mode	Device orientation	SAR measurement	Measured SAR [W/kg]			Reported SAR [W/kg]		
			19100	18900	18700	19100	18900	
			Tune-up		22.50	22.50	22.50	
			Measured Power [dBm]		21.99	22.23	22.07	
20MHz QPSK100% RB	Front	1g SAR		0.62			0.66	
		10g SAR		0.367			0.39	
		Deviation		0.07			0.07	
20MHz QPSK100% RB	Rear	1g SAR		0.552			0.59	
		10g SAR		0.389			0.41	
		Deviation		0.01			0.01	
20MHz QPSK100% RB	Bottom edge	1g SAR		1.045			1.11	
		10g SAR		0.567			0.60	
		Deviation		0.1			0.10	
20MHz QPSK1RB	Bottom 0mm	1g SAR			9.55		10.53	
		10g SAR			3.52		3.88	
		Deviation			-0.12		-0.12	

Table 14-13 LTE1700-FDD4 #1 Head

LTE1700-FDD4 #1 Head								
Ambient Temperature: 22.5			Liquid Temperature: 22.3					
Mode	Device orientation	SAR measurement	Measured SAR [W/kg]			Reported SAR [W/kg]		
			20300	20175	20050	20300		
			M	M	M	M		
20MHz QPSK1RB	Tune-up		24.00	24.00	24.00	Scaling factor*		
	Measured Power [dBm]		23.04	23.06	23.06	1.25	1.24	1.24
	Left Cheek	1g SAR		0.237			0.29	
		10g SAR		0.158			0.20	
		Deviation		-0.14			-0.14	
	Left Tilt	1g SAR		0.076			0.09	
		10g SAR		0.043			0.05	
		Deviation		0.13			0.13	
	Right Cheek	1g SAR		0.27			0.34	
		10g SAR		0.179			0.22	
		Deviation		-0.18			-0.18	
	Right Tilt	1g SAR		0.101			0.13	
		10g SAR		0.059			0.07	
		Deviation		0.13			0.13	
TRUE	Device orientation	SAR measurement	Measured SAR [W/kg]			Reported SAR [W/kg]		
			20300	20175	20050	20300	20175	20050
			H	L	H	H	L	H
20MHz QPSK50% RB	Tune-up		23.00	23.00	23.00	Scaling factor*		
	Measured Power [dBm]		21.93	21.93	21.95	1.28	1.28	1.27
	Left Cheek	1g SAR			0.209			0.27
		10g SAR			0.138			0.18
		Deviation			-0.19			-0.19
	Left Tilt	1g SAR			0.063			0.08
		10g SAR			0.037			0.05
		Deviation			-0.05			-0.05
	Right Cheek	1g SAR			0.237			0.30
		10g SAR			0.154			0.20
		Deviation			0.03			0.03
	Right Tilt	1g SAR			0.062			0.08
		10g SAR			0.037			0.05
		Deviation			-0.16			-0.16
Mode	Device orientation	SAR measurement	Measured SAR [W/kg]			Reported SAR [W/kg]		
			20300	20175	20050	20300	20175	20050
			H	L	H	H	L	H
20MHz QPSK100% RB	Tune-up		23.00	23.00	23.00	Scaling factor*		
	Measured Power [dBm]		21.89	21.91	21.89	1.29	1.29	1.29
	Left Cheek	1g SAR						
		10g SAR						
		Deviation						

Table 14-14 LTE1700-FDD4 #1 Body

LTE1700-FDD4 #1 Body								
Ambient Temperature: 22.5			Liquid Temperature: 22.3					
Mode	Device orientation	SAR measurement	Measured SAR [W/kg]			Reported SAR [W/kg]		
			20300	20175	20050	20300		
			M	M	M	M		
20MHz QPSK1RB	Tune-up		24.00	24.00	24.00	Scaling factor*		
	Measured Power [dBm]		23.04	23.06	23.06	1.25	1.24	1.24
	Front	1g SAR	0.759	0.81	0.764	0.95	1.01	0.95
		10g SAR	0.465	0.509	0.472	0.58	0.63	0.59
		Deviation	-0.15	-0.03	-0.11	-0.15	-0.03	-0.11
	Rear	1g SAR	0.696	0.768	0.787	0.87	0.95	0.98
		10g SAR	0.425	0.46	0.485	0.53	0.57	0.60
		Deviation	0.12	0.05	-0.1	0.12	0.05	-0.10
	Left edge	1g SAR		0.261			0.32	
		10g SAR		0.154			0.19	
		Deviation		0.06			0.06	
	Right edge	1g SAR		0.146			0.18	
		10g SAR		0.093			0.12	
		Deviation		0.03			0.03	
	Bottom edge	1g SAR	0.797	0.817	0.806	0.99	1.01	1.00
		10g SAR	0.419	0.444	0.425	0.52	0.55	0.53
		Deviation	0.06	-0.04	0.09	0.06	-0.04	0.09
20MHz QPSK50% RB	Mode	Device orientation	Measured SAR [W/kg]			Reported SAR [W/kg]		
			20300	20175	20050	20300	20175	20050
			H	L	H			
		Tune-up		23.00	23.00	23.00	Scaling factor*	
		Measured Power [dBm]		21.93	21.93	21.95	1.28	1.28
	Front	1g SAR	0.546	0.614	0.643	0.70	0.79	0.82
		10g SAR	0.333	0.376	0.391	0.43	0.48	0.50
		Deviation	0	-0.19	0.09	0.00	-0.19	0.09
	Rear	1g SAR			0.61			0.78
		10g SAR			0.369			0.47
		Deviation			-0.05			-0.05
	Left edge	1g SAR			0.204			0.26
		10g SAR			0.122			0.16
		Deviation			-0.06			-0.06
	Right edge	1g SAR			0.108			0.14
		10g SAR			0.069			0.09
		Deviation			-0.04			-0.04
	Bottom edge	1g SAR	0.584	0.601	0.643	0.75	0.77	0.82
		10g SAR	0.308	0.316	0.346	0.39	0.40	0.44
		Deviation	0.07	0.08	0.13	0.07	0.08	0.13
20MHz QPSK100% RB	Mode	Device orientation	Measured SAR [W/kg]			Reported SAR [W/kg]		
			20300	20175	20050	20300	20175	20050
		Tune-up		23.00	23.00	23.00	Scaling factor*	
		Measured Power [dBm]		21.89	21.91	21.89	1.29	1.29
	Front	1g SAR			0.62			0.80
		10g SAR			0.38			0.49
		Deviation			0.01			0.01
	20MHz QPSK100% RB	Rear	1g SAR		0.591			0.76
			10g SAR		0.358			0.46
			Deviation		-0.06			-0.06
	20MHz QPSK100% RB	Bottom edge	1g SAR		0.615			0.79
			10g SAR		0.323			0.42
			Deviation		-0.06			-0.06

Table 14-15 LTE850-FDD5 #1 Head

LTE850-FDD5 #1 Head								
Ambient Temperature: 22.5				Liquid Temperature: 22.3				
Mode	Device orientation	SAR measurement	Measured SAR [W/kg]			Reported SAR [W/kg]		
			20600	20525	20450	20600		
			M	M	M	M		
10MHz QPSK1RB	Tune-up		24.50	24.50	24.50	Scaling factor*		
	Measured Power [dBm]		23.93	23.97	23.91	1.14	1.13	1.15
	Left Cheek	1g SAR		0.268			0.30	
		10g SAR		0.211			0.24	
		Deviation		0.05			0.05	
	Left Tilt	1g SAR		0.184			0.21	
		10g SAR		0.144			0.16	
		Deviation		0.1			0.10	
	Right Cheek	1g SAR		0.276			0.31	
		10g SAR		0.215			0.24	
		Deviation		0.18			0.18	
	Right Tilt	1g SAR		0.202			0.23	
		10g SAR		0.165			0.19	
		Deviation		0.01			0.01	
TRUE	Device orientation	SAR measurement	Measured SAR [W/kg]			Reported SAR [W/kg]		
			20600	20525	20450	20600	20525	20450
			H	L	H	H	L	H
	Tune-up		23.50	23.50	23.50	Scaling factor*		
	Measured Power [dBm]		22.86	22.85	22.81	1.16	1.16	1.17
10MHz QPSK50% RB	Left Cheek	1g SAR	0.187			0.22		
		10g SAR	0.149			0.17		
		Deviation	0.18			0.18		
	Left Tilt	1g SAR	0.162			0.19		
		10g SAR	0.128			0.15		
		Deviation	-0.17			-0.17		
	Right Cheek	1g SAR	0.234			0.27		
		10g SAR	0.181			0.21		
		Deviation	0.13			0.13		
	Right Tilt	1g SAR	0.096			0.11		
		10g SAR	0.079			0.09		
		Deviation	0.18			0.18		
Mode	Device orientation	SAR measurement	Measured SAR [W/kg]			Reported SAR [W/kg]		
			20600	20525	20450	20600	20525	20450
	Tune-up		23.50	23.50	23.50	Scaling factor*		
10MHz QPSK100% RB	Measured Power [dBm]		22.81	22.81	22.79	1.17	1.17	1.18
	Left Cheek	1g SAR						
		10g SAR						
		Deviation						

Table 14-16 LTE850-FDD5 #1 Body

LTE850-FDD5 #1 Body									
Ambient Temperature: 22.5			Liquid Temperature: 22.3						
Mode	Device orientation	SAR measurement	Measured SAR [W/kg]			Reported SAR [W/kg]			
			20600	20525	20450	20600			
			M	M	M	M			
10MHz QPSK1RB	Tune-up		24.50	24.50	24.50	Scaling factor*			
	Measured Power [dBm]		23.93	23.97	23.91	1.14	1.13	1.15	
	Front	1g SAR		0.277			0.31		
		10g SAR		0.217			0.25		
		Deviation		0.04			0.04		
	Rear	1g SAR		0.343			0.39		
		10g SAR		0.269			0.30		
		Deviation		0			0.00		
	Left edge	1g SAR		0.209			0.24		
		10g SAR		0.148			0.17		
		Deviation		0.14			0.14		
	Right edge	1g SAR		0.278			0.31		
		10g SAR		0.199			0.22		
		Deviation		0.08			0.08		
	Bottom edge	1g SAR		0.132			0.15		
		10g SAR		0.078			0.09		
		Deviation		-0.04			-0.04		
10MHz QPSK50% RB	Mode	Device orientation	Measured SAR [W/kg]			Reported SAR [W/kg]			
			20600	20525	20450	20600	20525	20450	
			H	L	H				
	Tune-up		23.50	23.50	23.50	Scaling factor*			
	Measured Power [dBm]		22.86	22.85	22.81	1.16	1.16	1.17	
	Front	1g SAR	0.23			0.27			
		10g SAR	0.18			0.21			
		Deviation	-0.09			-0.09			
	Rear	1g SAR	0.273			0.32			
		10g SAR	0.214			0.25			
		Deviation	0.08			0.08			
	Left edge	1g SAR	0.172			0.20			
		10g SAR	0.122			0.14			
		Deviation	-0.06			-0.06			
	Right edge	1g SAR	0.236			0.27			
		10g SAR	0.17			0.20			
		Deviation	0.03			0.03			
	Bottom edge	1g SAR	0.139			0.16			
		10g SAR	0.08			0.09			
		Deviation	0.12			0.12			
10MHz QPSK100% RB	Mode	Device orientation	Measured SAR [W/kg]			Reported SAR [W/kg]			
			20600	20525	20450	20600	20525	20450	
			H	L	H				
	Tune-up		23.50	23.50	23.50	Scaling factor*			
	Measured Power [dBm]		22.81	22.81	22.79	1.17	1.17	1.18	
	Front	1g SAR							
		10g SAR							
		Deviation							

Table 14-17 LTE700-FDD12 #1 Head

LTE700-FDD12 #1 Head								
Ambient Temperature: 22.5			Liquid Temperature: 22.3					
Mode	Device orientation	SAR measurement	Measured SAR [W/kg]			Reported SAR [W/kg]		
			23130	23095	23060	23130		
			M	M	M	M		
10MHz QPSK1RB	Tune-up		24.50	24.50	24.50	Scaling factor*		
	Measured Power [dBm]		24.02	24.10	24.03	1.12	1.10	1.11
	Left Cheek	1g SAR		0.272			0.30	
		10g SAR		0.216			0.24	
		Deviation		0.05			0.05	
	Left Tilt	1g SAR		0.234			0.26	
		10g SAR		0.188			0.21	
		Deviation		-0.14			-0.14	
	Right Cheek	1g SAR		0.332			0.36	
		10g SAR		0.262			0.29	
		Deviation		0.05			0.05	
	Right Tilt	1g SAR		0.186			0.20	
		10g SAR		0.147			0.16	
		Deviation		-0.07			-0.07	
TRUE	Device orientation	Measured SAR [W/kg]			Reported SAR [W/kg]			
		23130	23095	23060	23130	23095	23060	
		M	H	M	M	H	M	
	Tune-up		23.50	23.50	23.50	Scaling factor*		
	Measured Power [dBm]		22.94	23.08	22.99	1.14	1.10	1.12
10MHz QPSK50% RB	Left Cheek	1g SAR		0.265			0.29	
		10g SAR		0.213			0.23	
		Deviation		0.09			0.09	
	Left Tilt	1g SAR		0.19			0.21	
		10g SAR		0.153			0.17	
		Deviation		-0.05			-0.05	
	Right Cheek	1g SAR		0.276			0.30	
		10g SAR		0.218			0.24	
		Deviation		-0.19			-0.19	
	Right Tilt	1g SAR		0.152			0.17	
		10g SAR		0.123			0.14	
		Deviation		0.05			0.05	
Mode	Device orientation	Measured SAR [W/kg]			Reported SAR [W/kg]			
		23130	23095	23060	23130	23095	23060	
		M	H	M	M	H	M	
	Tune-up		23.50	23.50	23.50	Scaling factor*		
10MHz QPSK100% RB	Measured Power [dBm]		22.82	23.05	22.94	1.17	1.11	1.14
	Left Cheek	1g SAR						
		10g SAR						
		Deviation						

Table 14-18 LTE700-FDD12 #1 Body

LTE700-FDD12 #1 Body								
Ambient Temperature: 22.5			Liquid Temperature: 22.3					
Mode	Device orientation	SAR measurement	Measured SAR [W/kg]			Reported SAR [W/kg]		
			23130	23095	23060	23130		
10MHz QPSK1RB	Front	M	M	M	M	M		
		Tune-up	24.50	24.50	24.50	Scaling factor*		
		Measured Power [dBm]	24.02	24.10	24.03	1.12	1.10	1.11
	Rear	1g SAR		0.297			0.33	
		10g SAR		0.237			0.26	
		Deviation		0.04			0.04	
	Left edge	1g SAR		0.385			0.42	
		10g SAR		0.304			0.33	
		Deviation		-0.1			-0.10	
	Right edge	1g SAR		0.233			0.26	
		10g SAR		0.171			0.19	
		Deviation		0.19			0.19	
	Bottom edge	1g SAR		0.307			0.34	
		10g SAR		0.225			0.25	
		Deviation		0.04			0.04	
10MHz QPSK50% RB	Front	1g SAR		0.098			0.11	
		10g SAR		0.06			0.07	
		Deviation		-0.02			-0.02	
	Rear	M	H	M				
		Tune-up	23.50	23.50	23.50	Scaling factor*		
		Measured Power [dBm]	22.94	23.08	22.99	1.14	1.10	1.12
	Left edge	1g SAR		0.237			0.26	
		10g SAR		0.189			0.21	
		Deviation		0.08			0.08	
	Right edge	1g SAR		0.306			0.34	
		10g SAR		0.242			0.27	
		Deviation		0.04			0.04	
	Bottom edge	1g SAR		0.185			0.20	
		10g SAR		0.134			0.15	
		Deviation		-0.06			-0.06	
10MHz QPSK100% RB	Front	1g SAR		0.239			0.26	
		10g SAR		0.175			0.19	
		Deviation		0.18			0.18	
	Left edge	1g SAR		0.077			0.08	
		10g SAR		0.047			0.05	
		Deviation		0.11			0.11	
	Rear	M	H	M				
		Tune-up	23.50	23.50	23.50	Scaling factor*		
		Measured Power [dBm]	22.82	23.05	22.94	1.17	1.11	1.14

Table 14-19 LTE700-FDD14 #1 Head

LTE700-FDD14 #1 Head								
Ambient Temperature: 22.5				Liquid Temperature: 22.3				
Mode	Device orientation	SAR measurement	Measured SAR [W/kg]		Reported SAR [W/kg]			
			/	/	23330	/		
10MHz QPSK1RB	Left Cheek	/	/	24.00	Scaling factor*			
		Measured Power [dBm]	/	23.34	1.00	1.00		
		1g SAR		0.25		0.29		
	Left Tilt	10g SAR		0.197		0.23		
		Deviation		0.02		0.02		
		1g SAR		0.215		0.25		
	Right Cheek	10g SAR		0.167		0.19		
		Deviation		0.09		0.09		
		1g SAR		0.181		0.21		
10MHz QPSK50% RB	Right Tilt	10g SAR		0.14		0.16		
		Deviation		0.04		0.04		
		1g SAR		0.141		0.16		
	Left Cheek	10g SAR		0.114		0.13		
		Deviation		-0.1		-0.10		
	TRUE	SAR measurement	Measured SAR [W/kg]		Reported SAR [W/kg]			
			/	/	23330	/		
10MHz QPSK100% RB	Left Cheek	/	/	H	/	H		
		Measured Power [dBm]	/	23.00	Scaling factor*			
		1g SAR		0.189		0.23		
	Left Tilt	10g SAR		0.149		0.18		
		Deviation		0.14		0.14		
		1g SAR		0.162		0.20		
	Right Cheek	10g SAR		0.127		0.15		
		Deviation		0.13		0.13		
		1g SAR		0.137		0.17		
Mode	Right Tilt	10g SAR		0.106		0.13		
		Deviation		0.16		0.16		
		1g SAR		0.107		0.13		
	Left Cheek	10g SAR		0.091		0.11		
		Deviation		0.06		0.06		
10MHz QPSK100% RB	Device orientation	SAR measurement	Measured SAR [W/kg]		Reported SAR [W/kg]			
			/	M	23330	/		
	Tune-up		23.00	23.00	23.00	Scaling factor*		
	Measured Power [dBm]		0.00	0.00	22.12	199.53	199.53	
	Left Cheek	1g SAR						
		10g SAR						
		Deviation						

Table 14-20 LTE700-FDD14 #1 Body

LTE700-FDD14 #1 Body								
Ambient Temperature: 22.5				Liquid Temperature: 22.3				
Mode	Device orientation	SAR measurement	Measured SAR [W/kg]			Reported SAR [W/kg]		
			H	M	23330	H		
10MHz QPSK1RB	Front	H	H	M		H		
		1g SAR			0.295			
		10g SAR			0.214			
	Rear	Deviation			0.03			
		1g SAR			0.347			
		10g SAR			0.275			
		Deviation			-0.01			
	Left edge	1g SAR			0.23			
		10g SAR			0.151			
		Deviation			-0.09			
	Right edge	1g SAR			0.327			
		10g SAR			0.215			
		Deviation			0.11			
	Bottom edge	1g SAR			0.151			
		10g SAR			0.081			
		Deviation			0.18			
LTE700-FDD14 #1 Body								
Mode	Device orientation	SAR measurement	Measured SAR [W/kg]			Reported SAR [W/kg]		
			H	M	23330	H		
10MHz QPSK50% RB	Tune-up		23.00	23.00	23.00	Scaling factor*		
	Measured Power [dBm]		0.00	0.00	22.17	199.53	199.53	
	Front	1g SAR			0.225		0.27	
		10g SAR			0.163		0.20	
		Deviation			0.03		0.03	
	Rear	1g SAR			0.265		0.32	
		10g SAR			0.193		0.23	
		Deviation			0.04		0.04	
	Left edge	1g SAR			0.166		0.20	
		10g SAR			0.108		0.13	
		Deviation			-0.08		-0.08	
	Right edge	1g SAR			0.253		0.31	
		10g SAR			0.166		0.20	
		Deviation			0.09		0.09	
	Bottom edge	1g SAR			0.112		0.14	
		10g SAR			0.061		0.07	
		Deviation			0.01		0.01	

14.2 Full SAR

Test Band	Channel	Frequency	Tune-Up	Measured Power	Test Position	Measured 10g SAR	Measured 1g SAR	Reported 10g SAR	Reported 1g SAR	Power Drift	Figure
GSM850	251	848.8 MHz	32.5	31.93	Right Cheek	0.167	0.214	0.19	0.24	-0.03	Fig A.1
GSM850	251	848.8 MHz	28.5	27.66	Rear	0.243	0.312	0.29	0.38	-0.01	Fig A.2
PCS1900	512	1850.2 MHz	30.3	29.79	Left Cheek	0.116	0.186	0.13	0.21	-0.15	Fig A.3
PCS1900	512	1850.2 MHz	25	24.07	Bottom edge	0.304	0.566	0.38	0.70	-0.14	Fig A.4
WCDMA1900-BII	9262	1852.4 MHz	23.5	22.94	Left Cheek	0.259	0.406	0.29	0.46	-0.09	Fig A.5
WCDMA1900-BII	9262	1852.4 MHz	23.5	22.94	Bottom edge	0.634	1.17	0.72	1.33	-0.14	Fig A.6
WCDMA1700-BIV	1312	1712.4 MHz	24	23.28	Left Cheek	0.223	0.336	0.26	0.40	0.03	Fig A.7
WCDMA1700-BIV	1312	1712.4 MHz	24	23.28	Front	0.634	1.01	0.75	1.19	0	Fig A.8
WCDMA850-BV	4233	846.6 MHz	24	23.14	Right Cheek	0.221	0.284	0.27	0.35	0.03	Fig A.9
WCDMA850-BV	4233	846.6 MHz	24	23.14	Rear	0.245	0.313	0.30	0.38	-0.07	Fig A.10
LTE1900-FDD2	18700	1860 MHz	23.5	23.08	Left Cheek	0.24	0.385	0.26	0.42	0.03	Fig A.11
LTE1900-FDD2	18700	1860 MHz	23.5	23.08	Bottom edge	0.675	1.28	0.74	1.41	0.07	Fig A.12
LTE1700-FDD4	20175	1732.5 MHz	24	23.06	Right Cheek	0.179	0.27	0.22	0.34	-0.18	Fig A.13
LTE1700-FDD4	20175	1732.5 MHz	24	23.06	Bottom edge	0.444	0.817	0.55	1.01	-0.04	Fig A.14
LTE850-FDD5	20525	836.5 MHz	24.5	23.97	Right Cheek	0.215	0.276	0.24	0.31	0.18	Fig A.15
LTE850-FDD5	20525	836.5 MHz	24.5	23.97	Rear	0.269	0.343	0.30	0.39	0	Fig A.16
LTE700-FDD12	23095	707.5 MHz	24.5	24.10	Right Cheek	0.262	0.332	0.29	0.36	0.05	Fig A.17
LTE700-FDD12	23095	707.5 MHz	24.5	24.10	Rear	0.304	0.385	0.33	0.42	-0.1	Fig A.18
LTE700-FDD14	23330	793 MHz	24	23.34	Left Cheek	0.197	0.25	0.23	0.29	0.02	Fig A.19
LTE700-FDD14	23330	793 MHz	24	23.34	Rear	0.275	0.347	0.32	0.40	-0.01	Fig A.20

14.3 WLAN Evaluation

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

Note1: When the reported SAR of the initial test position is $> 0.4 \text{ W/kg}$, 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 $\leq 0.8 \text{ W/kg}$.

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

Note3: 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.

Table 14-21 WLAN2450 #1 Head Fast SAR

WLAN2450 #1 Head Fast SAR								
Ambient Temperature: 22.5				Liquid Temperature: 22.3				
Rate	Device orientation	SAR measurement	Measured SAR [W/kg]			Reported SAR [W/kg]		
			11	6	1			
			2462 MHz	2437 MHz	2412 MHz			
802.11b 11Mbps	Tune up		21	21	21	Scaling factor*		
	Slot Average Power [dBm]		20.81	20.55	20.35	1.04	1.11	1.16
	Left Cheek	1g Fast SAR	1.08	0.964		1.13	1.07	
		10g SAR	0.557	0.479		0.58	0.53	
		Deviation	-0.17	-0.06		-0.17	-0.06	
	Left Tilt	1g Fast SAR	0.889			0.93		
		10g SAR	0.445			0.46		
		Deviation	-0.04			-0.04		
	Right Cheek	1g Fast SAR	0.519			0.54		
		10g SAR	0.266			0.28		
		Deviation	-0.11			-0.11		
	Right Tilt	1g Fast SAR	0.548			0.57		
		10g SAR	0.266			0.28		
		Deviation	0.05			0.05		

Table 14-22 WLAN2450 #1 Head Full SAR

WLAN2450 #1 Head Full SAR								
Ambient Temperature: 22.5				Liquid Temperature: 22.3				
Rate	Device orientation	SAR measurement	Measured SAR [W/kg]			Reported SAR [W/kg]		
			11	6	1			
			2462 MHz	2437 MHz	2412 MHz			
802.11b 11Mbps	Tune up		21	21	21	Scaling factor*		
	Slot Average Power [dBm]		20.81	20.55	20.35	1.04	1.11	1.16
	Left Cheek	1g Full SAR	1.23	1.04		1.29	1.15	
		10g SAR	0.568	0.492		0.59	0.55	
		Deviation	-0.17	-0.06		-0.17	-0.06	
	Left Tilt	1g Full SAR	1.02			1.07		
		10g SAR	0.442			0.46		
		Deviation	-0.04			-0.04		
	Right Tilt	1g Full SAR	0.569			0.59		
		10g SAR	0.264			0.28		
		Deviation	0.05			0.05		

Table 14-23 WLAN2450 #1 Body Fast SAR

WLAN2450 #1 Body Fast SAR				Liquid Temperature: 22.3					
Rate	Device orientation	SAR measurement	Measured SAR [W/kg]			Reported SAR [W/kg]			
			11	6	1	11	6	1	
			2462 MHz	2437 MHz	2412 MHz				
802.11b 11Mbps	Tune up		21	21	21	Scaling factor*			
	Slot Average Power [dBm]		20.81	20.55	20.35	1.04	1.11	1.16	
	Front	1g Fast SAR	0.306			0.32			
		10g SAR	0.162			0.17			
		Deviation	0.06			0.06			
	Rear	1g Fast SAR	0.483			0.50			
		10g SAR	0.221			0.23			
		Deviation	0.05			0.05			
	Top edge	1g Fast SAR	0.276			0.29			
		10g SAR	0.139			0.15			
		Deviation	0.05			0.05			
	Right edge	1g Fast SAR	0.172			0.18			
		10g SAR	0.089			0.09			
		Deviation	0.15			0.15			

Table 14-24 WLAN2450 #1 Body Full SAR

WLAN2450 #1 Body Full SAR				Liquid Temperature: 22.3					
Rate	Device orientation	SAR measurement	Measured SAR [W/kg]			Reported SAR [W/kg]			
			11	6	1	11	6	1	
			2462 MHz	2437 MHz	2412 MHz				
802.11b 11Mbps	Tune up		21	21	21	Scaling factor*			
	Slot Average Power [dBm]		20.81	20.55	20.35	1.04	1.11	1.16	
	Front	1g Full SAR	0.309			0.32			
		10g SAR	0.167			0.17			
		Deviation	0.06			0.06			
	Rear	1g Full SAR	0.497			0.52			
		10g SAR	0.226			0.24			
		Deviation	0.05			0.05			

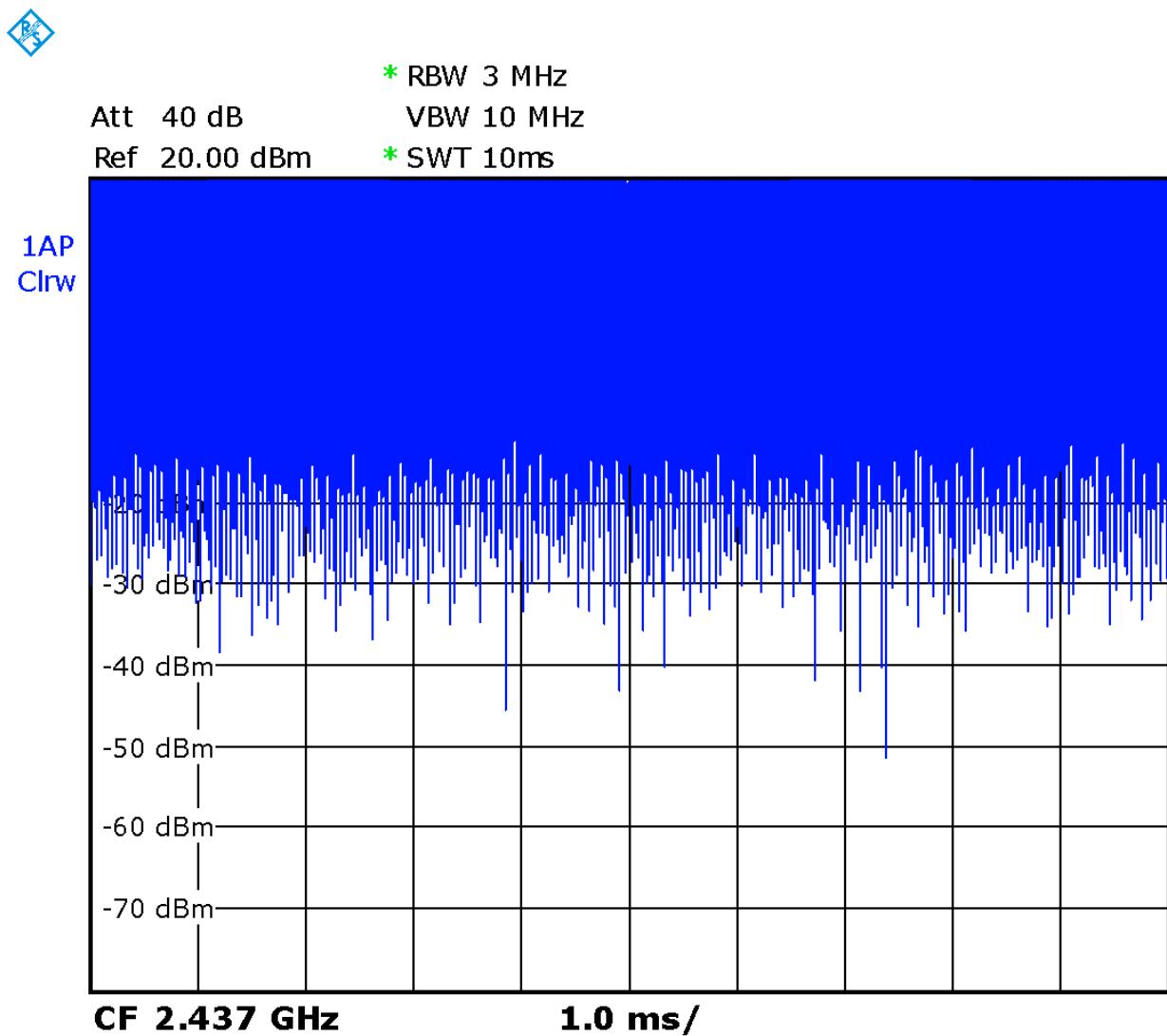
SAR is not required for OFDM because the 802.11b adjusted SAR $\leq 1.2 \text{ W/kg}$.

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						
Frequency		Test Position	Actual duty factor	maximum duty factor	Reported SAR(1g)(W/kg)	Scaled reported SAR(1g)(W/kg)
MHz	Ch.					Figure

2462 MHz	11	Left Cheek	100.00%	100%	1.29	1.29	Fig.A.21
----------	----	------------	---------	------	------	------	----------

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						
Frequency		Test Position	Actual duty factor	maximum duty factor	Reported SAR(1g)(W/kg)	Scaled reported SAR(1g)(W/kg)
MHz	Ch.					Figure

2462 MHz	11	Rear	100.00%	100%	0.52	0.52	Fig.A.22
----------	----	------	---------	------	------	------	----------



Picture 14.1 Duty factor plot

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 .

Mode	CH	Freq	Test Position	Original SAR (W/kg)	First Repeated SAR(W/kg)	The Ratio
WCDMA1900-BII	9262	1852.4 MHz	Bottom edge	1.17	1.15	1.02
WCDMA1700-BIV	1312	1712.4 MHz	Front	1.01	0.99	1.02
LTE1900-FDD2	18700	1860 MHz	Bottom edge	1.28	1.25	1.02
LTE1700-FDD4	20175	1732.5 MHz	Bottom edge	0.817	0.811	1.01
WLAN2450	11	2462 MHz	Left Cheek	1.23	1.21	1.02

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

17 MAIN TEST INSTRUMENTS

Table 17.1: List of Main Instruments

No.	Name	Type	Serial Number	Calibration Date	Valid Period
01	Network analyzer	E5071C	MY46110673	January 24, 2018	One year
02	Power meter	NRVD	102083	November 01, 2017	One year
03	Power sensor	NRV-Z5	100542		
04	Signal Generator	E4438C	MY49071430	January 2,2018	One Year
05	Amplifier	60S1G4	0331848	No Calibration Requested	
06	BTS	E5515C	MY50263375	January 23, 2018	One year
07	BTS	CMW500	149646	October 31, 2017	One year
08	E-field Probe	SPEAG EX3DV4	7464	September 12,2017	One year
09	DAE	SPEAG DAE4	1525	October 2, 2017	One year
10	Dipole Validation Kit	SPEAG D750V3	1017	July 19, 2017	One year
11	Dipole Validation Kit	SPEAG D835V2	4d069	July 19, 2017	One year
12	Dipole Validation Kit	SPEAG D1750V2	1003	July 21, 2017	One year
13	Dipole Validation Kit	SPEAG D1900V2	5d101	July 26, 2017	One year
14	Dipole Validation Kit	SPEAG D2450V2	853	July 21, 2017	One year

END OF REPORT BODY

ANNEX A Graph Results

GSM850_CH251 Right Cheek

Date: 7/5/2018

Electronics: DAE4 Sn1525

Medium: head 835 MHz

Medium parameters used: $f = 848.8 \text{ MHz}$; $\sigma = 0.912 \text{ mho/m}$; $\epsilon_r = 41.28$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 22.5°C , Liquid Temperature: 22.3°C

Communication System: GSM850 848.8 MHz Duty Cycle: 1:8.3

Probe: EX3DV4 – SN7464 ConvF(10.28,10.28,10.28)

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

Maximum value of SAR (interpolated) = 0.233 W/kg

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

Reference Value = 5.05 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.267 W/kg

SAR(1 g) = 0.214 W/kg; SAR(10 g) = 0.167 W/kg

Maximum value of SAR (measured) = 0.23 W/kg

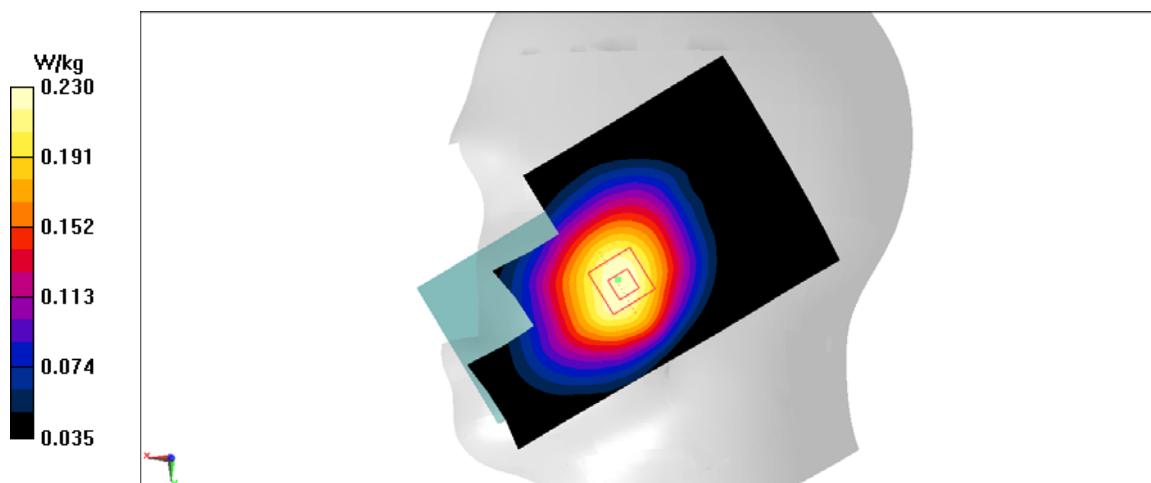


Fig A.1

GSM850_CH251 Rear

Date: 7/5/2018

Electronics: DAE4 Sn1525

Medium: body 835 MHz

Medium parameters used: $f = 848.8$ MHz; $\sigma = 0.965$ mho/m; $\epsilon_r = 54.38$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: GSM850 848.8 MHz Duty Cycle: 1:2

Probe: EX3DV4 – SN7464 ConvF(10.21,10.21,10.21)

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

Maximum value of SAR (interpolated) = 0.34 W/kg

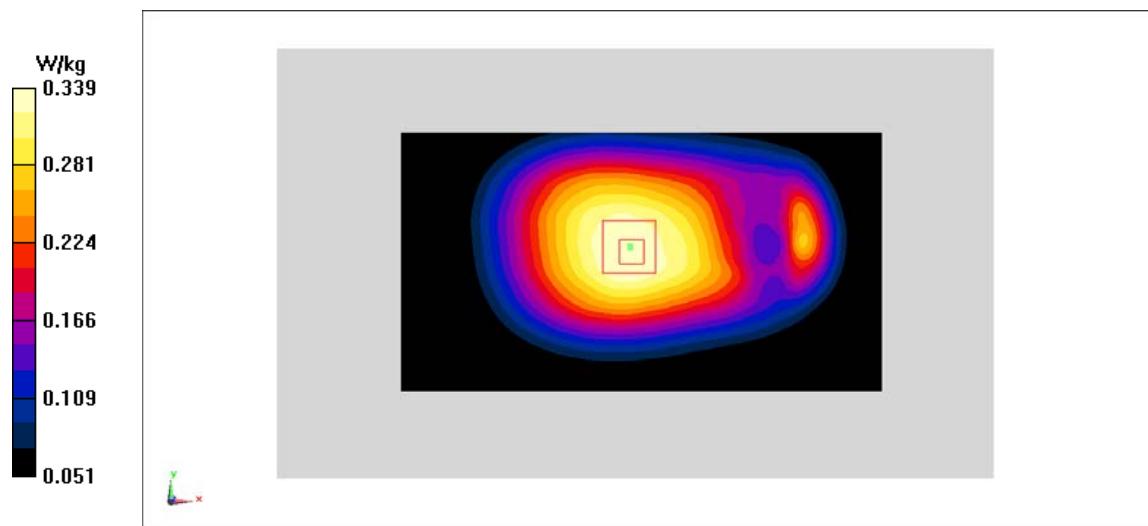
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 19.02 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.389 W/kg

SAR(1 g) = 0.312 W/kg; SAR(10 g) = 0.243 W/kg

Maximum value of SAR (measured) = 0.339 W/kg

**Fig A.2**

PCS1900_CH512 Left Cheek

Date: 7/7/2018

Electronics: DAE4 Sn1525

Medium: head 1900 MHz

Medium parameters used: $f = 1850.2$ MHz; $\sigma = 1.346$ mho/m; $\epsilon_r = 39.6$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: PCS1900 1850.2 MHz Duty Cycle: 1:8.3

Probe: EX3DV4 – SN7464 ConvF(8.39,8.39,8.39)

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

Maximum value of SAR (interpolated) = 0.209 W/kg

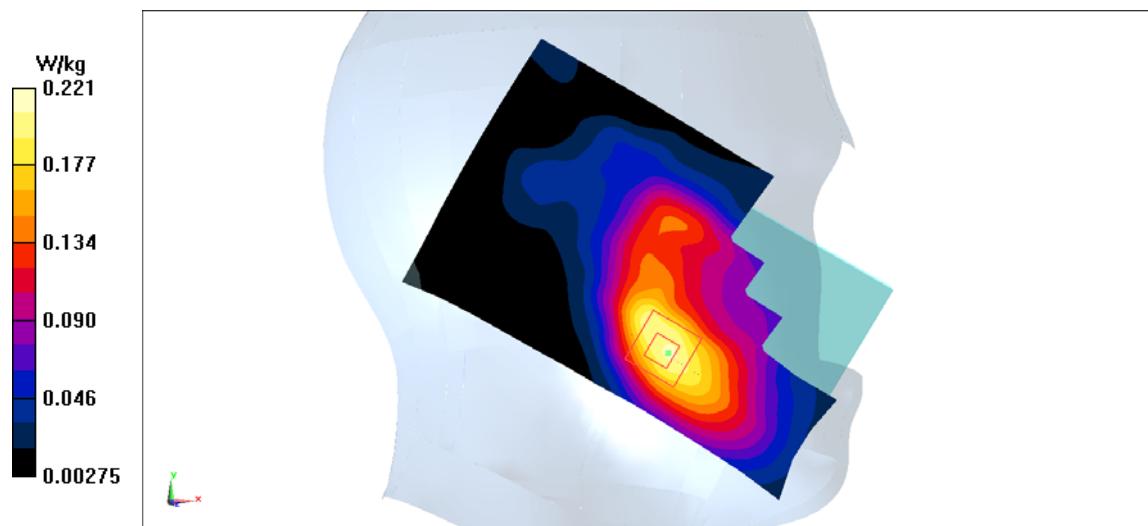
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.44 V/m; Power Drift = -0.15 dB

Peak SAR (extrapolated) = 0.285 W/kg

SAR(1 g) = 0.186 W/kg; SAR(10 g) = 0.116 W/kg

Maximum value of SAR (measured) = 0.221 W/kg

**Fig A.3**

PCS1900_CH512 Bottom edge

Date: 7/7/2018

Electronics: DAE4 Sn1525

Medium: body 1900 MHz

Medium parameters used: $f = 1850.2$ MHz; $\sigma = 1.461$ mho/m; $\epsilon_r = 52.75$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: PCS1900 1850.2 MHz Duty Cycle: 1:2

Probe: EX3DV4 – SN7464 ConvF(8.32,8.32,8.32)

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

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

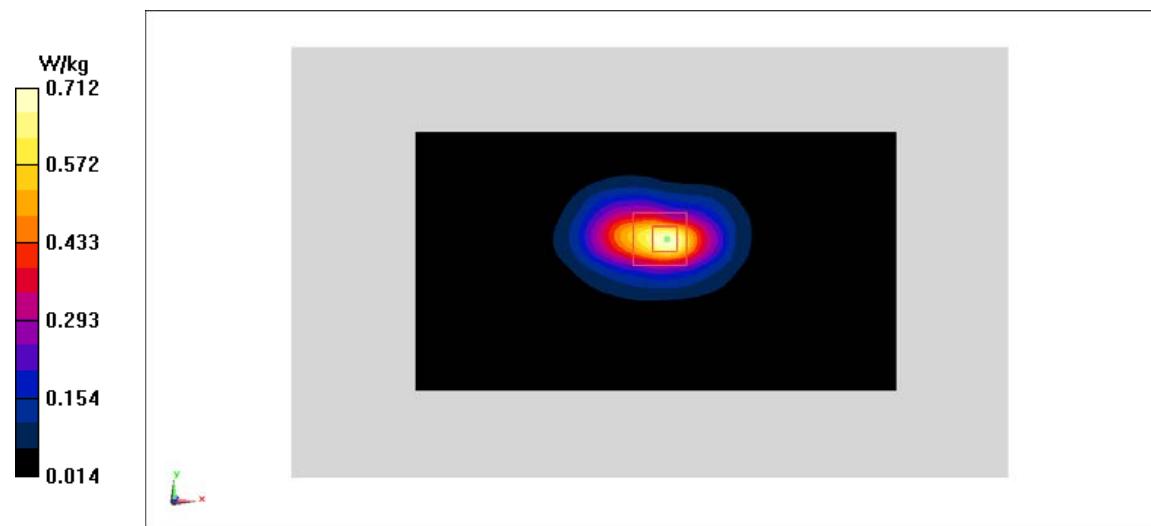
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 15.33 V/m; Power Drift = -0.14 dB

Peak SAR (extrapolated) = 0.974 W/kg

SAR(1 g) = 0.566 W/kg; SAR(10 g) = 0.304 W/kg

Maximum value of SAR (measured) = 0.712 W/kg

**Fig A.4**

WCDMA1900-BII_CH9262 Left Cheek

Date: 7/7/2018

Electronics: DAE4 Sn1525

Medium: head 1900 MHz

Medium parameters used: $f = 1852.4$ MHz; $\sigma = 1.347$ mho/m; $\epsilon_r = 39.6$; $\rho = 1000$ kg/m 3

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: WCDMA1900-BII 1852.4 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7464 ConvF(8.39,8.39,8.39)

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

Maximum value of SAR (interpolated) = 0.455 W/kg

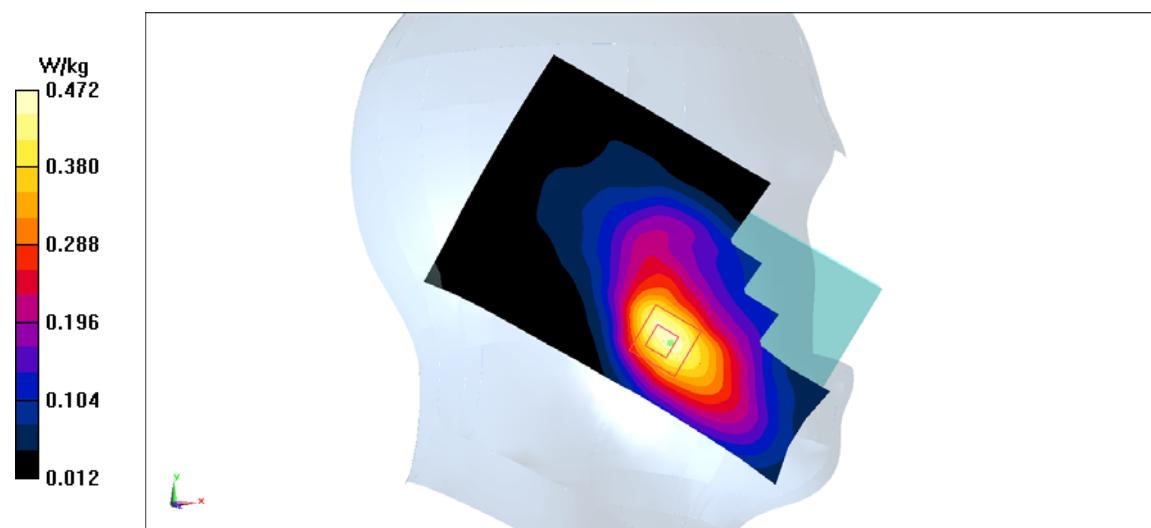
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.661 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 0.605 W/kg

SAR(1 g) = 0.406 W/kg; SAR(10 g) = 0.259 W/kg

Maximum value of SAR (measured) = 0.472 W/kg

**Fig A.5**

WCDMA1900-BII_CH9262 Bottom edge

Date: 7/7/2018

Electronics: DAE4 Sn1525

Medium: body 1900 MHz

Medium parameters used: $f = 1852.4$ MHz; $\sigma = 1.463$ mho/m; $\epsilon_r = 52.75$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: WCDMA1900-BII 1852.4 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7464 ConvF(8.32,8.32,8.32)

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

Maximum value of SAR (interpolated) = 1.48 W/kg

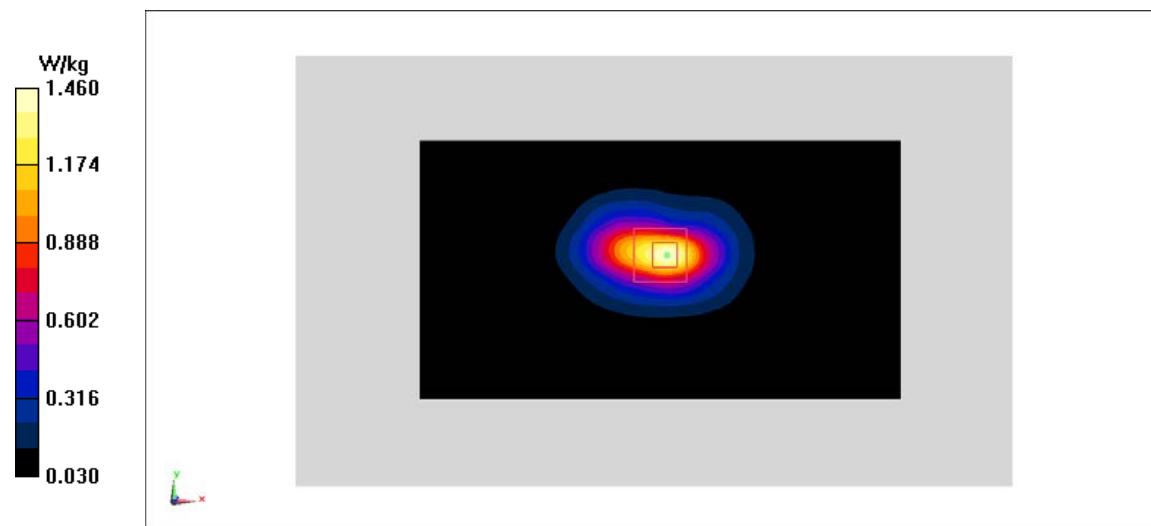
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 26.55 V/m; Power Drift = -0.14 dB

Peak SAR (extrapolated) = 1.97 W/kg

SAR(1 g) = 1.17 W/kg; SAR(10 g) = 0.634 W/kg

Maximum value of SAR (measured) = 1.46 W/kg

**Fig A.6**

WCDMA1700-BIV_CH1312 Left Cheek

Date: 7/6/2018

Electronics: DAE4 Sn1525

Medium: head 1750 MHz

Medium parameters used: $f = 1712.4$ MHz; $\sigma = 1.352$ mho/m; $\epsilon_r = 40.08$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: WCDMA1700-BIV 1712.4 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7464 ConvF(8.70,8.70,8.70)

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

Maximum value of SAR (interpolated) = 0.378 W/kg

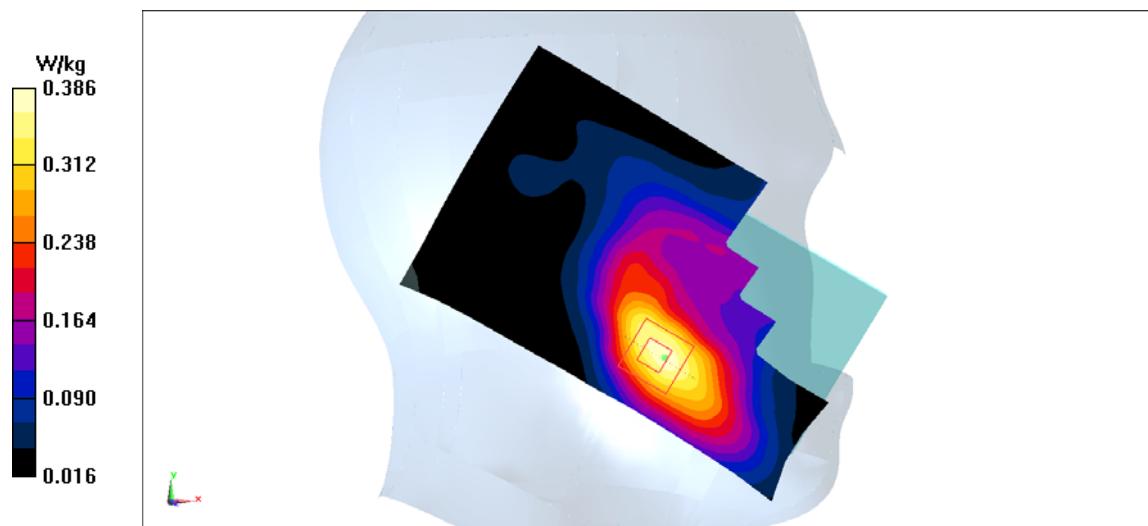
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.458 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.479 W/kg

SAR(1 g) = 0.336 W/kg; SAR(10 g) = 0.223 W/kg

Maximum value of SAR (measured) = 0.386 W/kg

**Fig A.7**

WCDMA1700-BIV_CH1312 Front

Date: 7/6/2018

Electronics: DAE4 Sn1525

Medium: body 1750 MHz

Medium parameters used: $f = 1712.4$ MHz; $\sigma = 1.437$ mho/m; $\epsilon_r = 54.24$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: WCDMA1700-BIV 1712.4 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7464 ConvF(8.60,8.60,8.60)

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

Maximum value of SAR (interpolated) = 1.18 W/kg

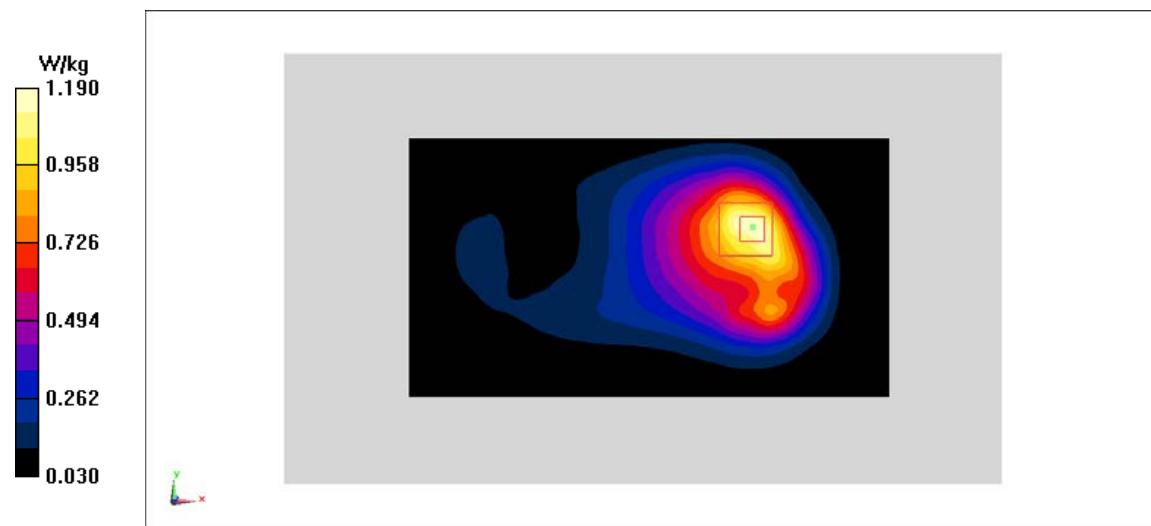
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 14.92 V/m; Power Drift = 0 dB

Peak SAR (extrapolated) = 1.53 W/kg

SAR(1 g) = 1.01 W/kg; SAR(10 g) = 0.634 W/kg

Maximum value of SAR (measured) = 1.19 W/kg

**Fig A.8**

WCDMA850-BV_CH4233 Right Cheek

Date: 7/5/2018

Electronics: DAE4 Sn1525

Medium: head 835 MHz

Medium parameters used: $f = 846.6$ MHz; $\sigma = 0.91$ mho/m; $\epsilon_r = 41.29$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: WCDMA850-BV 846.6 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7464 ConvF(10.28,10.28,10.28)

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

Maximum value of SAR (interpolated) = 0.313 W/kg

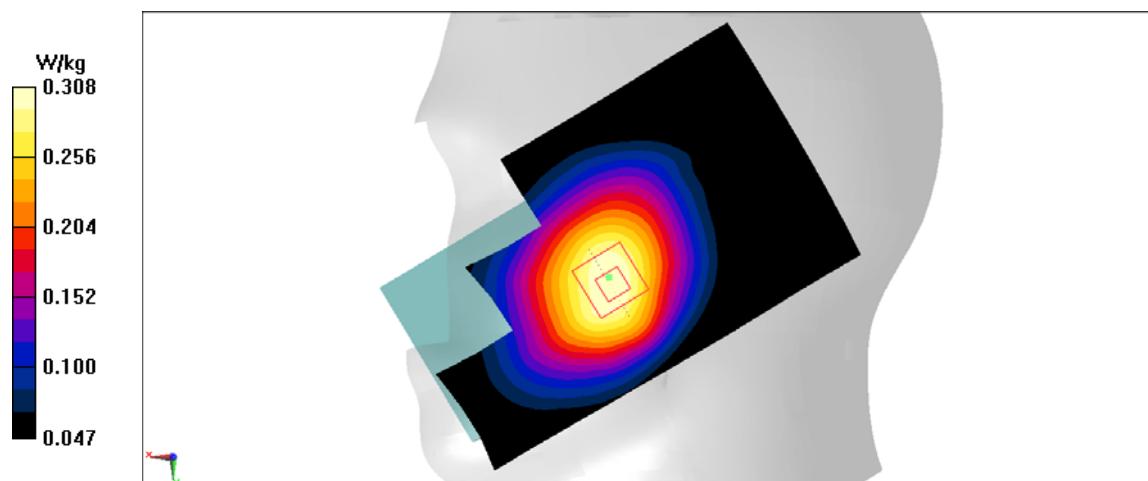
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.527 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.358 W/kg

SAR(1 g) = 0.284 W/kg; SAR(10 g) = 0.221 W/kg

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

**Fig A.9**

WCDMA850-BV_CH4233 Rear

Date: 7/5/2018

Electronics: DAE4 Sn1525

Medium: body 835 MHz

Medium parameters used: $f = 846.6$ MHz; $\sigma = 0.963$ mho/m; $\epsilon_r = 54.39$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: WCDMA850-BV 846.6 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7464 ConvF(10.21,10.21,10.21)

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

Maximum value of SAR (interpolated) = 0.339 W/kg

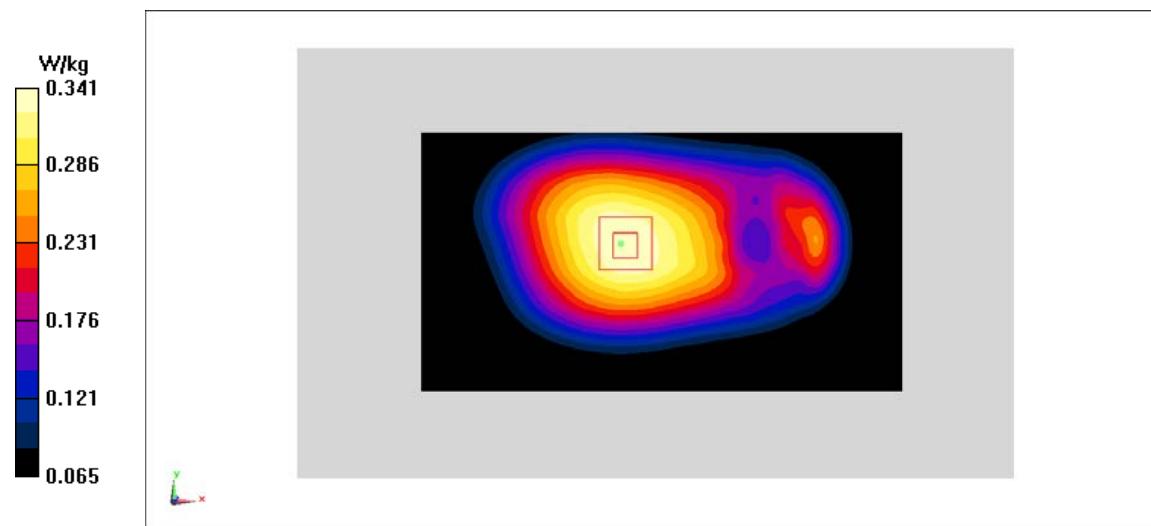
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 18.61 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 0.385 W/kg

SAR(1 g) = 0.313 W/kg; SAR(10 g) = 0.245 W/kg

Maximum value of SAR (measured) = 0.341 W/kg

**Fig A.10**

LTE1900-FDD2_CH18700 Left Cheek

Date: 7/7/2018

Electronics: DAE4 Sn1525

Medium: head 1900 MHz

Medium parameters used: $f = 1860$ MHz; $\sigma = 1.355$ mho/m; $\epsilon_r = 39.59$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: LTE1900-FDD2 1860 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7464 ConvF(8.39,8.39,8.39)

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

Maximum value of SAR (interpolated) = 0.447 W/kg

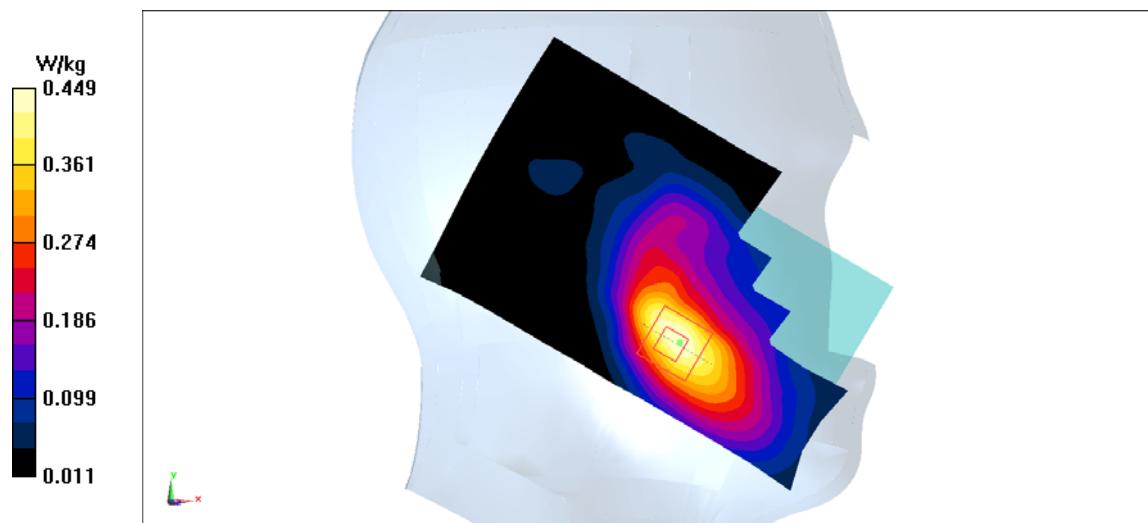
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.168 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.592 W/kg

SAR(1 g) = 0.385 W/kg; SAR(10 g) = 0.24 W/kg

Maximum value of SAR (measured) = 0.449 W/kg

**Fig A.11**

LTE1900-FDD2_CH18700 Bottom edge

Date: 7/7/2018

Electronics: DAE4 Sn1525

Medium: body 1900 MHz

Medium parameters used: $f = 1860$ MHz; $\sigma = 1.471$ mho/m; $\epsilon_r = 52.74$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: LTE1900-FDD2 1860 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7464 ConvF(8.32,8.32,8.32)

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

Maximum value of SAR (interpolated) = 1.56 W/kg

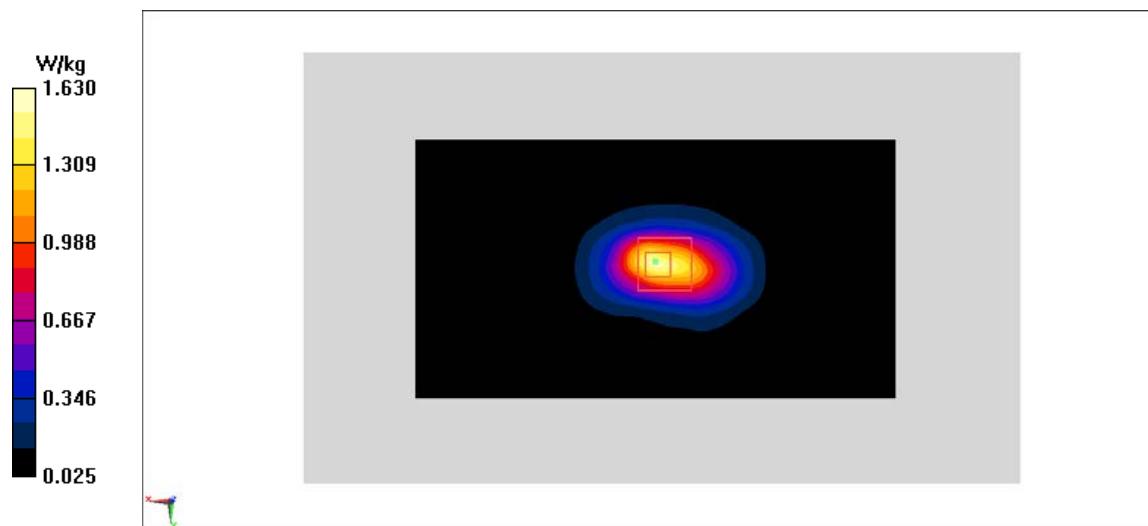
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 27.25 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 2.21 W/kg

SAR(1 g) = 1.28 W/kg; SAR(10 g) = 0.675 W/kg

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

**Fig A.12**

LTE1700-FDD4_CH20175 Right Cheek

Date: 7/6/2018

Electronics: DAE4 Sn1525

Medium: head 1750 MHz

Medium parameters used: $f = 1732.5$ MHz; $\sigma = 1.371$ mho/m; $\epsilon_r = 40.05$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: LTE1700-FDD4 1732.5 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7464 ConvF(8.70,8.70,8.70)

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

Maximum value of SAR (interpolated) = 0.298 W/kg

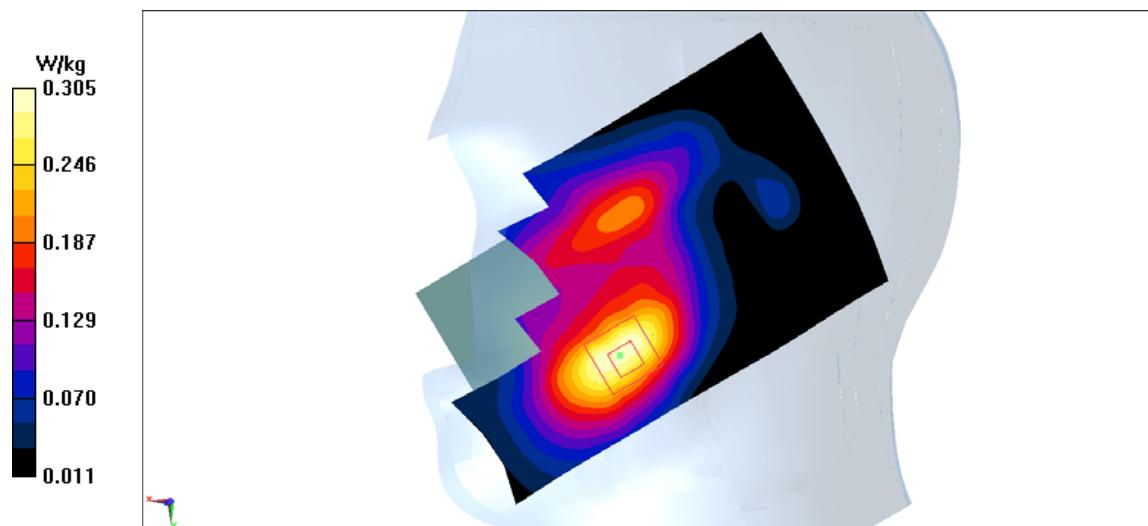
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.217 V/m; Power Drift = -0.18 dB

Peak SAR (extrapolated) = 0.384 W/kg

SAR(1 g) = 0.27 W/kg; SAR(10 g) = 0.179 W/kg

Maximum value of SAR (measured) = 0.305 W/kg

**Fig A.13**

LTE1700-FDD4_CH20175 Bottom edge

Date: 7/6/2018

Electronics: DAE4 Sn1525

Medium: body 1750 MHz

Medium parameters used: $f = 1732.5$ MHz; $\sigma = 1.456$ mho/m; $\epsilon_r = 54.21$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: LTE1700-FDD4 1732.5 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7464 ConvF(8.60,8.60,8.60)

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

Maximum value of SAR (interpolated) = 1.04 W/kg

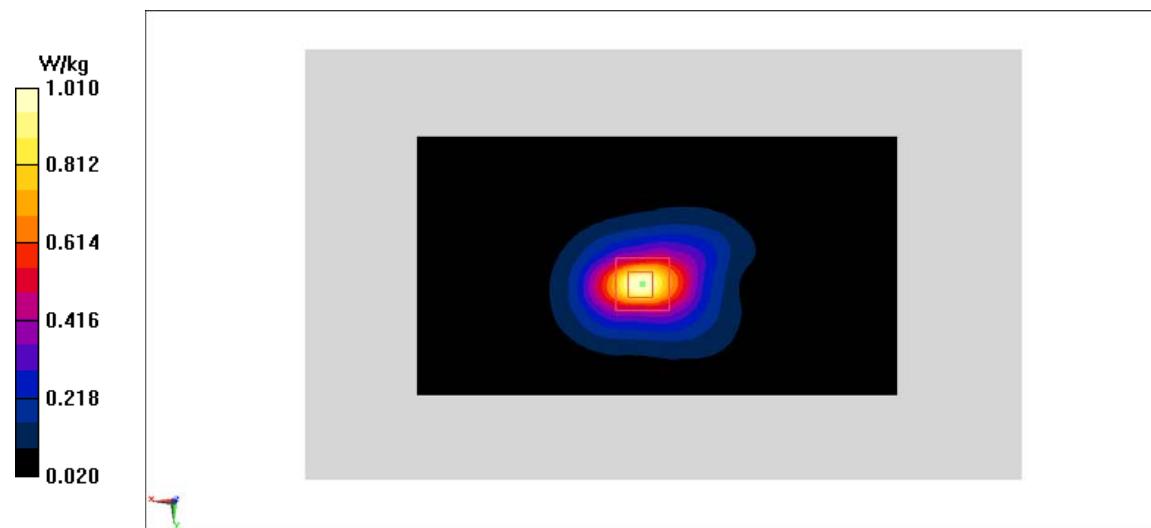
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 19.8 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 1.34 W/kg

SAR(1 g) = 0.817 W/kg; SAR(10 g) = 0.444 W/kg

Maximum value of SAR (measured) = 1.01 W/kg

**Fig A.14**

LTE850-FDD5_CH20525 Right Cheek

Date: 7/5/2018

Electronics: DAE4 Sn1525

Medium: head 835 MHz

Medium parameters used: $f = 836.5$ MHz; $\sigma = 0.9$ mho/m; $\epsilon_r = 41.3$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: LTE850-FDD5 836.5 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7464 ConvF(10.28,10.28,10.28)

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

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

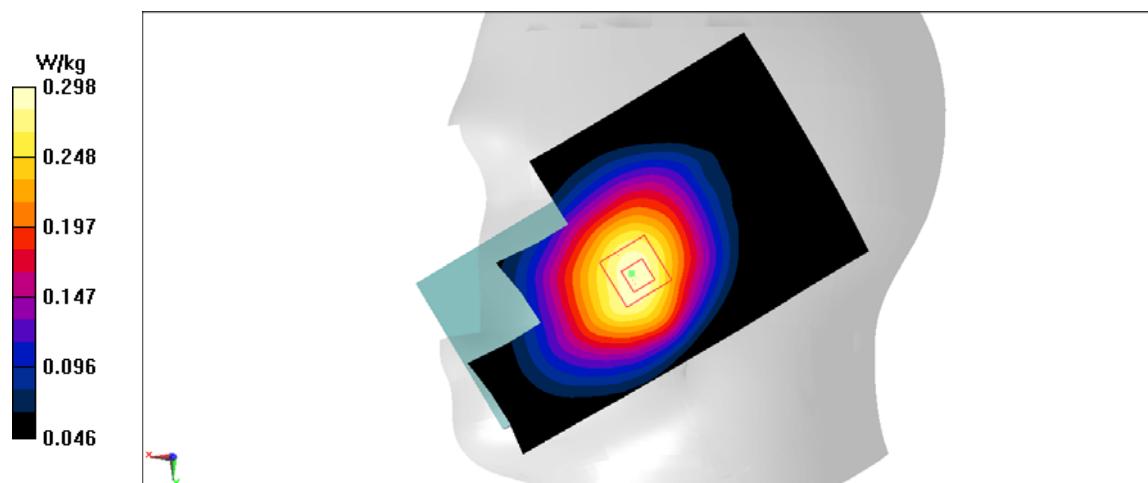
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.292 V/m; Power Drift = 0.18 dB

Peak SAR (extrapolated) = 0.347 W/kg

SAR(1 g) = 0.276 W/kg; SAR(10 g) = 0.215 W/kg

Maximum value of SAR (measured) = 0.298 W/kg

**Fig A.15**

LTE850-FDD5_CH20525 Rear

Date: 7/5/2018

Electronics: DAE4 Sn1525

Medium: body 835 MHz

Medium parameters used: $f = 836.5$ MHz; $\sigma = 0.953$ mho/m; $\epsilon_r = 54.4$; $\rho = 1000$ kg/m 3

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: LTE850-FDD5 836.5 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7464 ConvF(10.21,10.21,10.21)

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

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

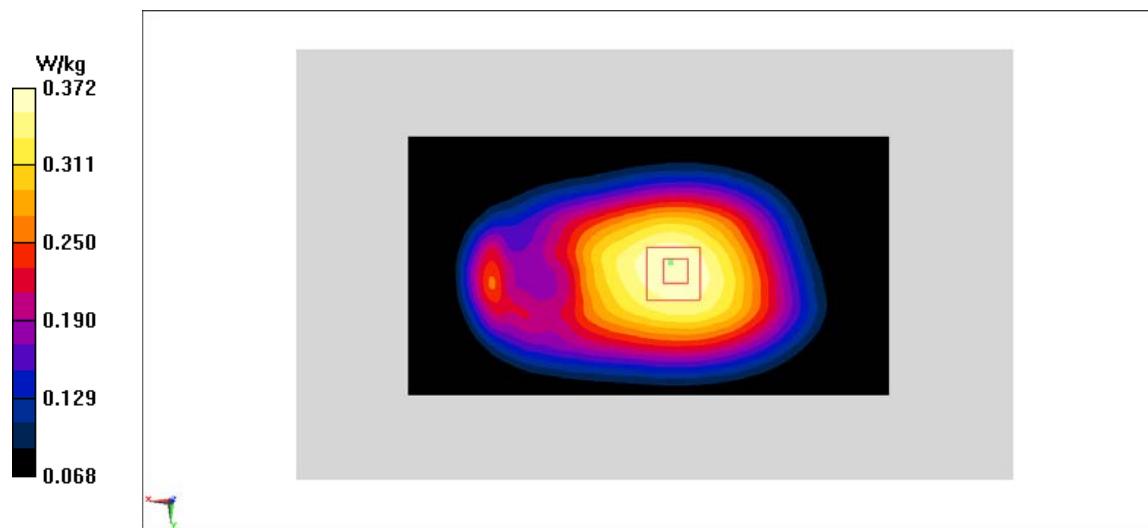
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 19.85 V/m; Power Drift = 0 dB

Peak SAR (extrapolated) = 0.42 W/kg

SAR(1 g) = 0.343 W/kg; SAR(10 g) = 0.269 W/kg

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

**Fig A.16**

LTE700-FDD12_CH23095 Right Cheek

Date: 7/4/2018

Electronics: DAE4 Sn1525

Medium: head 750 MHz

Medium parameters used: $f = 707.5$ MHz; $\sigma = 0.862$ mho/m; $\epsilon_r = 42.17$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: LTE700-FDD12 707.5 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7464 ConvF(10.57,10.57,10.57)

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

Maximum value of SAR (interpolated) = 0.358 W/kg

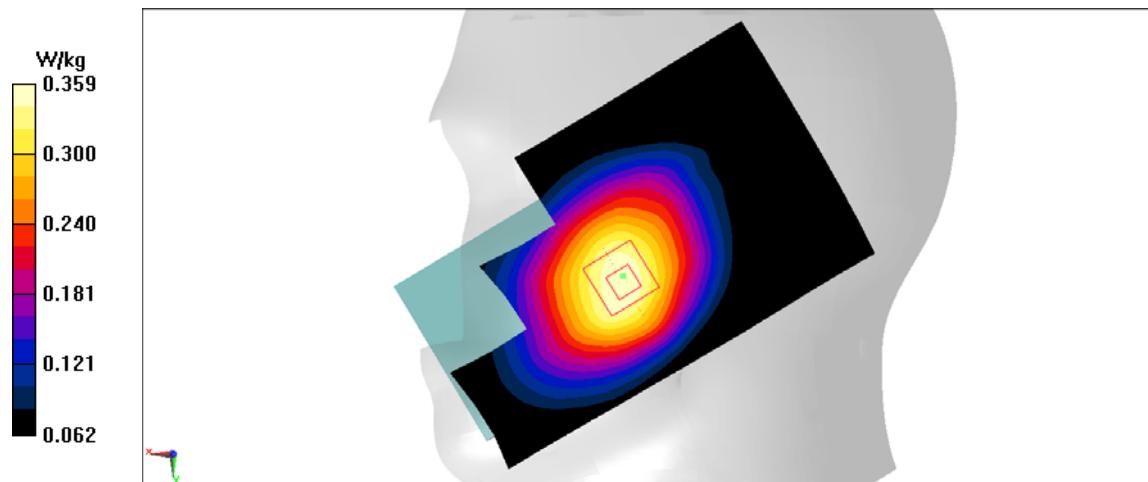
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.351 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.41 W/kg

SAR(1 g) = 0.332 W/kg; SAR(10 g) = 0.262 W/kg

Maximum value of SAR (measured) = 0.359 W/kg

**Fig A.17**

LTE700-FDD12_CH23095 Rear

Date: 7/4/2018

Electronics: DAE4 Sn1525

Medium: body 750 MHz

Medium parameters used: $f = 707.5$ MHz; $\sigma = 0.922$ mho/m; $\epsilon_r = 54.86$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: LTE700-FDD12 707.5 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7464 ConvF(10.63,10.63,10.63)

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

Maximum value of SAR (interpolated) = 0.418 W/kg

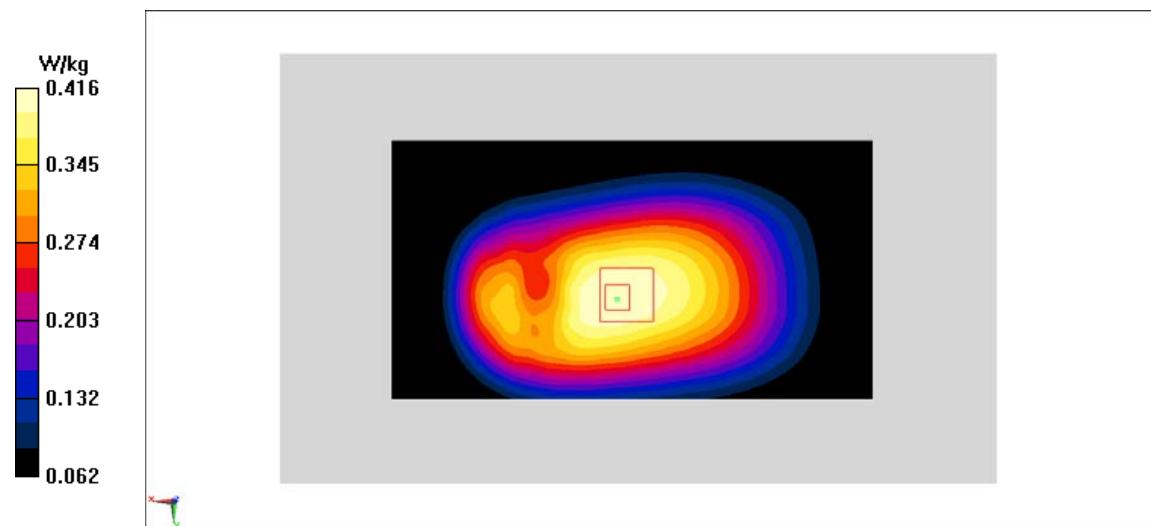
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 21.46 V/m; Power Drift = -0.1 dB

Peak SAR (extrapolated) = 0.469 W/kg

SAR(1 g) = 0.385 W/kg; SAR(10 g) = 0.304 W/kg

Maximum value of SAR (measured) = 0.416 W/kg

**Fig A.18**