LTE B12 (750MHz) / Setup Path Loss = 4.7 (TS9)						
Bandwidth	UL Channel	UL Freq. MHz	# RBs	Offset RBs	QPSK	16QAM
1.4 MHz	23017	699.7	1	1	22.27	21.75
				3	22.39	21.83
				5	22.27	21.73
			3	1	22.38	21.60
				2	22.40	21.61
				3	22.34	21.53
			6	0	21.33	20.54
	23095	707.5	1	1	21.59	21.70
				3	21.63	21.78
				5	21.43	21.59
			3	1	21.66	21.56
				2	21.65	21.55
				3	21.62	21.52
			6	0	21.46	20.62
	23172	715.3	1	1	21.23	21.15
				3	21.17	21.13
				5	20.90	20.85
			3	1	21.21	20.92
				2	21.19	20.89
				3	21.02	20.70
			6	0	20.67	19.94

Bandwidth	UL Channel	UL Freq. MHz	# RBs	Offset RBs	QPSK	16QAM
3 MHz	23025	700.5	1	1	21.66	21.87
				7	21.75	22.08
				14	21.87	21.96
			7	1	21.53	21.42
				4	21.59	21.46
				8	21.46	21.35
			15	0	21.62	20.81
	23095	707.5	1	1	22.55	21.79
				7	22.61	21.86
				14	22.57	21.77
			7	1	22.12	22.06
				4	22.19	22.14
				8	22.04	22.01
			15	0	21.59	20.77
	23164	714.5	1	1	21.69	21.68
				7	21.35	21.43
				14	21.07	21.13
			7	1	21.35	21.06
				4	21.42	21.11
				8	21.21	20.98
			15	0	21.03	20.24

LTE B12 (750MHz) / Setup Path Loss = 4.7 (TS9)						
Bandwidth	UL Channel	UL Freq. MHz	# RBs	Offset RBs	QPSK	16QAM
5 MHz	23035	701.5	1	1	22.33	21.59
				12	22.56	21.83
				24	22.43	21.68
			12	1	21.69	20.64
				7	21.71	20.79
				13	21.76	20.81
			25	0	21.69	20.76
	23095	707.5	1	1	21.74	21.74
				12	21.61	21.73
				24	21.59	21.67
			12	1	21.51	20.51
				7	21.56	20.67
				13	21.68	20.72
			25	0	21.55	20.66
	23154	713.5	1	1	22.76	22.11
				12	22.16	21.74
				24	21.75	21.21
			12	1	21.69	20.77
				7	21.32	20.45
				13	20.90	20.03
			25	0	21.32	20.47

Bandwidth	UL Channel	UL Freq. MHz	# RBs	Offset RBs	QPSK	16QAM
10 MHz	23060	704.0	1	1	21.89	22.00
				24	21.72	21.90
				49	21.09	21.38
			25	1	21.69	20.00
				13	21.78	20.81
				25	21.58	20.65
			50	0	21.59	20.73
	23095	707.5	1	1	22.74	22.06
				24	22.48	21.77
				49	22.69	21.95
			25	1	21.45	20.53
				13	21.62	20.65
				25	21.72	20.87
			50	0	21.65	20.70
	23129	711.0	1	1	21.95	21.93
				24	21.66	21.83
				49	20.93	21.06
			25	1	21.97	21.04
				13	21.89	20.98
				25	21.27	20.40
			50	0	21.52	20.79

LTE B17 (750MHz) / Setup Path Loss = 4.7 (TS9)						
Bandwidth	UL Channel	UL Freq. MHz	# RBs	Offset RBs	QPSK	16QAM
5 MHz	23035	701.5	1	1	22.33	21.59
				12	22.56	21.83
				24	22.43	21.68
			12	1	21.69	20.64
				7	21.71	20.79
				13	21.76	20.81
			25	0	21.69	20.76
	23095	707.5	1	1	21.74	21.74
				12	21.61	21.73
				24	21.59	21.67
			12	1	21.51	20.51
				7	21.56	20.67
				13	21.68	20.72
			25	0	21.55	20.66
	23154	713.5	1	1	22.76	22.11
				12	22.16	21.74
				24	21.75	21.21
			12	1	21.69	20.77
				7	21.32	20.45
				13	20.90	20.03
			25	0	21.32	20.47

Bandwidth	UL Channel	UL Freq. MHz	# RBs	Offset RBs	QPSK	16QAM
10 MHz	23060	704.0	1	1	21.89	22.00
				24	21.72	21.90
				49	21.09	21.38
			25	1	21.69	20.00
				13	21.78	20.81
				25	21.58	20.65
			50	0	21.59	20.73
	23095	707.5	1	1	22.74	22.06
				24	22.48	21.77
				49	22.69	21.95
			25	1	21.45	20.53
				13	21.62	20.65
				25	21.72	20.87
			50	0	21.65	20.70
	23129	711.0	1	1	21.95	21.93
				24	21.66	21.83
				49	20.93	21.06
			25	1	21.97	21.04
				13	21.89	20.98
				25	21.27	20.40
			50	0	21.52	20.79

Table 10.5.2 Test Reduction Table – LTE

Band/ Frequency (MHz)	Side	Required Test Channel	Bandwidth	Modulation	RB Allocation	RB Offset	Tested/ Reduced
Band 2 1850-1910 MHz	A	18700	20 MHz	QPSK	50	0	Tested
		18900					Tested
		19100					Tested
		18700			100	0	Reduced[1]
		18900					Reduced[1]
		19100					Reduced[1]
		18700			1	49	Tested
		18900					Tested
		19100					Tested
		18700				99	Reduced[2]
		18900					Reduced[2]
		19100					Reduced[2]
		18700		16QAM	50	25	Reduced[3]
		18900					Reduced[3]
		19100					Reduced[3]
		18700			100	0	Reduced[1]
		18900					Reduced[1]
		19100					Reduced[1]
		18700			1	49	Reduced[4]
		18900					Reduced[4]
		19100					Reduced[4]
		18700				99	Reduced[4]
		18900					Reduced[4]
		19100					Reduced[4]
		All lower bandwidths (15 MHz, 10 MHz, 5 MHz, 3 MHz, 1.4 MHz)					Reduced[5]
	B	18700	20 MHz	QPSK	50	25	Reduced[6]
		18900					Tested
		19100					Reduced[6]
		18700			100	0	Reduced[1]
		18900					Reduced[1]
		19100					Reduced[1]
		18700			1	49	Reduced[2]
		18900					Tested
		19100					Reduced[2]
		18700				99	Reduced[2]
		18900					Reduced[2]
		19100					Reduced[2]
		18700		16QAM	50	25	Reduced[3]
		18900					Reduced[3]
		19100					Reduced[3]
		18700			100	0	Reduced[1]
		18900					Reduced[1]
		19100					Reduced[1]
		18700			1	49	Reduced[4]
		18900					Reduced[4]
		19100					Reduced[4]
		18700				99	Reduced[4]
		18900					Reduced[4]
		19100					Reduced[4]
		All lower bandwidths (15 MHz, 10 MHz, 5 MHz, 3 MHz, 1.4 MHz)					Reduced[5]

Reduced[1] – If the SAR value in the 50% RB testing is less than 1.45 W/kg, the 100% RB testing is reduced per KDB941225 D05 3) A) I) page 4.

Reduced[2] - If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 3) B) I) page 4.

Reduced[3] - If the SAR value in the 50% RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) A) I) page 4.

Reduced[4]- If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) B) I) page 5.

Reduced[5]- If the conducted power is within ±0.5 dB, all testing where the SAR value is less than 1.45 W/kg is reduced per KDB941225 D05 5) B) I) page 5.

Reduced[6]- If the SAR value measured on the middle channel is less than 0.8 W/kg and the conducted power is within ±0.5 dB, the remaining channels are reduced per KDB941225 D05 page 4 footnote 2.

Band/ Frequency (MHz)	Side	Required Test Channel	Bandwidth	Modulation	RB Allocation	RB Offset	Tested/ Reduced
Band 2 1850-1910 MHz	C	18700	20 MHz	QPSK	50	25	Reduced[6]
		18900					Tested
		19100					Reduced[6]
		18700			100	0	Reduced[1]
		18900					Reduced[1]
		19100					Reduced[1]
		18700			1	49	Reduced[6]
		18900					Tested
		19100					Reduced[6]
		18700				99	Reduced[2]
		18900					Reduced[2]
		19100					Reduced[2]
		18700		16QAM	50	25	Reduced[3]
		18900					Reduced[3]
		19100					Reduced[3]
		18700			100	0	Reduced[1]
		18900					Reduced[1]
		19100					Reduced[1]
		18700			1	49	Reduced[4]
		18900					Reduced[4]
		19100					Reduced[4]
		18700				99	Reduced[4]
		18900					Reduced[4]
		19100					Reduced[4]
		All lower bandwidths (15 MHz, 10 MHz, 5 MHz, 3 MHz, 1.4 MHz)					Reduced[5]
	D	18700	20 MHz	QPSK	50	25	Reduced[6]
		18900					Tested
		19100					Reduced[6]
		18700			100	0	Reduced[1]
		18900					Reduced[1]
		19100					Reduced[1]
		18700			1	49	Reduced[6]
		18900					Tested
		19100					Reduced[6]
		18700				99	Reduced[2]
		18900					Reduced[2]
		19100					Reduced[2]
		18700		16QAM	50	25	Reduced[3]
		18900					Reduced[3]
		19100					Reduced[3]
		18700			100	0	Reduced[1]
		18900					Reduced[1]
		19100					Reduced[1]
		18700			1	49	Reduced[4]
		18900					Reduced[4]
		19100					Reduced[4]
		18700				99	Reduced[4]
		18900					Reduced[4]
		19100					Reduced[4]
		All lower bandwidths (15 MHz, 10 MHz, 5 MHz, 3 MHz, 1.4 MHz)					Reduced[5]

Reduced[1] – If the SAR value in the 50% RB testing is less than 1.45 W/kg, the 100% RB testing is reduced per KDB941225 D05 3) A) I) page 4.

Reduced[2] - If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 3) B) I) page 4.

Reduced[3] - If the SAR value in the 50% RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) A) I) page 4.

Reduced[4]- If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) B) I) page 5.

Reduced[5]- If the conducted power is within ±0.5 dB, all testing where the SAR value is less than 1.45 W/kg is reduced per KDB941225 D05 5) B) I) page 5.

Reduced[6]- If the SAR value measured on the middle channel is less than 0.8 W/kg and the conducted power is within ±0.5 dB, the remaining channels are reduced per KDB941225 D05 page 4 footnote 2.

Band/ Frequency (MHz)	Side	Required Test Channel	Bandwidth	Modulation	RB Allocation	RB Offset	Tested/ Reduced
Band 2 1850-1910 MHz	E	18700	20 MHz	QPSK	50	25	Reduced[6]
		18900					Tested
		19100					Reduced[6]
		18700			100	0	Reduced[1]
		18900					Reduced[1]
		19100					Reduced[1]
		18700			1	49	Reduced[6]
		18900					Tested
		19100					Reduced[6]
		18700				99	Reduced[2]
		18900					Reduced[2]
		19100					Reduced[2]
		18700		16QAM	50	25	Reduced[3]
		18900					Reduced[3]
		19100					Reduced[3]
		18700			100	0	Reduced[1]
		18900					Reduced[1]
		19100					Reduced[1]
		18700			1	49	Reduced[4]
		18900					Reduced[4]
		19100					Reduced[4]
		18700				99	Reduced[4]
		18900					Reduced[4]
		19100					Reduced[4]
		All lower bandwidths (15 MHz, 10 MHz, 5 MHz, 3 MHz, 1.4 MHz)					Reduced[5]

Reduced[1] – If the SAR value in the 50% RB testing is less than 1.45 W/kg, the 100% RB testing is reduced per KDB941225 D05 3) A) I) page 4.

Reduced[2] - If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 3) B) I) page 4.

Reduced[3] - If the SAR value in the 50% RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) A) I) page 4.

Reduced[4]- If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) B) I) page 5.

Reduced[5]- If the conducted power is within ±0.5 dB, all testing where the SAR value is less than 1.45 W/kg is reduced per KDB941225 D05 5) B) I) page 5.

Reduced[6]- If the SAR value measured on the middle channel is less than 0.8 W/kg and the conducted power is within ±0.5 dB, the remaining channels are reduced per KDB941225 D05 page 4 footnote 2.

Side F Reduced based on distance in KDB 447498 D01 v06 (See below calculations).

Maximum power: 223.9 mW
Closest Distance to Side F: 110.0 mm

[{[(3.0)/(√1.91)]*50 mm}]+[{110-50 mm}*10]=708 mW which is greater than 223.9 mW

Band/ Frequency (MHz)	Side	Required Test Channel	Bandwidth	Modulation	RB Allocation	RB Offset	Tested/ Reduced
Band 4 1710-1755 MHz	A	20050	20 MHz	QPSK	50	25	Tested
		20175					Tested
		20300					Tested
		20050			100	0	Reduced[1]
		20175					Reduced[1]
		20300					Reduced[1]
		20050			1	49	Tested
		20175					Tested
		20300					Tested
		20050				99	Reduced[2]
		20175					Reduced[2]
		20300					Reduced[2]
		20050		16QAM	50	25	Reduced[3]
		20175					Reduced[3]
		20300					Reduced[3]
		20050			100	0	Reduced[1]
		20175					Reduced[1]
		20300					Reduced[1]
		20050			1	49	Reduced[4]
		20175					Reduced[4]
		20300					Reduced[4]
		20050				99	Reduced[4]
		20175					Reduced[4]
		20300					Reduced[4]
		All lower bandwidths (15 MHz, 10 MHz, 5 MHz, 3 MHz, 1.4 MHz)					Reduced[5]
	B	20050	20 MHz	QPSK	50	25	Reduced[6]
		20175					Tested
		20300					Reduced[6]
		20050			100	0	Reduced[1]
		20175					Reduced[1]
		20300					Reduced[1]
		20050			1	49	Reduced[6]
		20175					Tested
		20300					Reduced[6]
		20050				99	Reduced[2]
		20175					Reduced[2]
		20300					Reduced[2]
		20050		16QAM	50	25	Reduced[3]
		20175					Reduced[3]
		20300					Reduced[3]
		20050			100	0	Reduced[1]
		20175					Reduced[1]
		20300					Reduced[1]
		20050			1	49	Reduced[4]
		20175					Reduced[4]
		20300					Reduced[4]
		20050				99	Reduced[4]
		20175					Reduced[4]
		20300					Reduced[4]
		All lower bandwidths (15 MHz, 10 MHz, 5 MHz, 3 MHz, 1.4 MHz)					Reduced[5]

Reduced[1] – If the SAR value in the 50% RB testing is less than 1.45 W/kg, the 100% RB testing is reduced per KDB941225 D05 3) A) I) page 4.

Reduced[2] - If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 3) B) I) page 4.

Reduced[3] - If the SAR value in the 50% RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) A) I) page 4.

Reduced[4]- If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) B) I) page 5.

Reduced[5]- If the conducted power is within ±0.5 dB, all testing where the SAR value is less than 1.45 W/kg is reduced per KDB941225 D05 5) B) I) page 5.

Reduced[6]- If the SAR value measured on the middle channel is less than 0.8 W/kg and the conducted power is within ±0.5 dB, the remaining channels are reduced per KDB941225 D05 page 4 footnote 2.

Band/ Frequency (MHz)	Side	Required Test Channel	Bandwidth	Modulation	RB Allocation	RB Offset	Tested/ Reduced
Band 4 1710-1755 MHz	C	20050	20 MHz	QPSK	50	25	Tested
		20175					Tested
		20300					Tested
		20050			100	0	Reduced[1]
		20175					Reduced[1]
		20300					Reduced[1]
		20050			1	49	Tested
		20175					Tested
		20300					Tested
		20050				99	Reduced[2]
		20175					Reduced[2]
		20300					Reduced[2]
		20050		16QAM	50	25	Reduced[3]
		20175					Reduced[3]
		20300					Reduced[3]
		20050			100	0	Reduced[1]
		20175					Reduced[1]
		20300					Reduced[1]
		20050			1	49	Reduced[4]
		20175					Reduced[4]
		20300					Reduced[4]
		20050				99	Reduced[4]
		20175					Reduced[4]
		20300					Reduced[4]
		All lower bandwidths (15 MHz, 10 MHz, 5 MHz, 3 MHz, 1.4 MHz)					Reduced[5]
	D	20050	20 MHz	QPSK	50	25	Reduced[6]
		20175					Tested
		20300					Reduced[6]
		20050			100	0	Reduced[1]
		20175					Reduced[1]
		20300					Reduced[1]
		20050			1	49	Reduced[6]
		20175					Tested
		20300					Reduced[6]
		20050				99	Reduced[2]
		20175					Reduced[2]
		20300					Reduced[2]
		20050		16QAM	50	25	Reduced[3]
		20175					Reduced[3]
		20300					Reduced[3]
		20050			100	0	Reduced[1]
		20175					Reduced[1]
		20300					Reduced[1]
		20050			1	49	Reduced[4]
		20175					Reduced[4]
		20300					Reduced[4]
		20050				99	Reduced[4]
		20175					Reduced[4]
		20300					Reduced[4]
		All lower bandwidths (15 MHz, 10 MHz, 5 MHz, 3 MHz, 1.4 MHz)					Reduced[5]

Reduced[1] – If the SAR value in the 50% RB testing is less than 1.45 W/kg, the 100% RB testing is reduced per KDB941225 D05 3) A) I) page 4.

Reduced[2] - If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 3) B) I) page 4.

Reduced[3] - If the SAR value in the 50% RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) A) I) page 4.

Reduced[4]- If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) B) I) page 5.

Reduced[5]- If the conducted power is within ±0.5 dB, all testing where the SAR value is less than 1.45 W/kg is reduced per KDB941225 D05 5) B) I) page 5.

Reduced[6]- If the SAR value measured on the middle channel is less than 0.8 W/kg and the conducted power is within ±0.5 dB, the remaining channels are reduced per KDB941225 D05 page 4 footnote 2.

Band/ Frequency (MHz)	Side	Required Test Channel	Bandwidth	Modulation	RB Allocation	RB Offset	Tested/ Reduced
Band 4 1710-1755 MHz	E	20050	20 MHz	QPSK	50	25	Reduced[6]
		20175					Tested
		20300					Reduced[6]
		20050			100	0	Reduced[1]
		20175					Reduced[1]
		20300					Reduced[1]
		20050			1	49	Reduced[6]
		20175					Tested
		20300					Reduced[6]
		20050				99	Reduced[2]
		20175					Reduced[2]
		20300					Reduced[2]
		20050		16QAM	50	25	Reduced[3]
		20175					Reduced[3]
		20300					Reduced[3]
		20050			100	0	Reduced[1]
		20175					Reduced[1]
		20300					Reduced[1]
		20050			1	49	Reduced[4]
		20175					Reduced[4]
		20300					Reduced[4]
		20050				99	Reduced[4]
		20175					Reduced[4]
		20300					Reduced[4]
		All lower bandwidths (15 MHz, 10 MHz, 5 MHz, 3 MHz, 1.4 MHz)					Reduced[5]

Reduced[1] – If the SAR value in the 50% RB testing is less than 1.45 W/kg, the 100% RB testing is reduced per KDB941225 D05 3) A) I) page 4.

Reduced[2] - If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 3) B) I) page 4.

Reduced[3] - If the SAR value in the 50% RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) A) I) page 4.

Reduced[4]- If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) B) I) page 5.

Reduced[5]- If the conducted power is within ±0.5 dB, all testing where the SAR value is less than 1.45 W/kg is reduced per KDB941225 D05 5) B) I) page 5.

Reduced[6]- If the SAR value measured on the middle channel is less than 0.8 W/kg and the conducted power is within ±0.5 dB, the remaining channels are reduced per KDB941225 D05 page 4 footnote 2.

Side F Reduced based on distance in KDB 447498 D01 v06 (See below calculations).

Maximum power: 223.9 mW
Closest Distance to Side F: 110.0 mm

[{[(3.0)/(√1.755)]*50 mm}]+[{110-50 mm}*10]=685 mW which is greater than 223.9 mW

Band/ Frequency (MHz)	Side	Required Test Channel	Bandwidth	Modulation	RB Allocation	RB Offset	Tested/ Reduced
Band 5 824-849 MHz	A	20450	10 MHz	QPSK	25	12	Reduced[6]
		20525					Tested
		20600					Reduced[6]
		20450			50	0	Reduced[1]
		20525					Reduced[1]
		20600					Reduced[1]
		20450			1	12	Reduced[6]
		20525					Tested
		20600					Reduced[6]
		20450				24	Reduced[2]
		20525					Reduced[2]
		20600					Reduced[2]
		20450		16QAM	25	12	Reduced[3]
		20525					Reduced[3]
		20600					Reduced[3]
		20450			50	0	Reduced[1]
		20525					Reduced[1]
		20600					Reduced[1]
		20450			1	12	Reduced[4]
		20525					Reduced[4]
		20600					Reduced[4]
		20450				24	Reduced[4]
		20525					Reduced[4]
		20600					Reduced[4]
		All lower bandwidths (5 MHz)					Reduced[5]
	B	20450	10 MHz	QPSK	25	12	Reduced[6]
		20525					Tested
		20600					Reduced[6]
		20450			50	0	Reduced[1]
		20525					Reduced[1]
		20600					Reduced[1]
		20450			1	12	Reduced[6]
		20525					Tested
		20600					Reduced[6]
		20450				24	Reduced[2]
		20525					Reduced[2]
		20600					Reduced[2]
		20450		16QAM	25	12	Reduced[3]
		20525					Reduced[3]
		20600					Reduced[3]
		20450			50	0	Reduced[1]
		20525					Reduced[1]
		20600					Reduced[1]
		20450			1	12	Reduced[4]
		20525					Reduced[4]
		20600					Reduced[4]
		20450				24	Reduced[4]
		20525					Reduced[4]
		20600					Reduced[4]
		All lower bandwidths (5 MHz)					Reduced[5]

Reduced[1] – If the SAR value in the 50% RB testing is less than 1.45 W/kg, the 100% RB testing is reduced per KDB941225 D05 3) A) I) page 4.

Reduced[2] - If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 3) B) I) page 4.

Reduced[3] - If the SAR value in the 50% RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) A) I) page 4.

Reduced[4]- If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) B) I) page 5.

Reduced[5]- If the conducted power is within ±0.5 dB, all testing where the SAR value is less than 1.45 W/kg is reduced per KDB941225 D05 5) B) I) page 5.

Reduced[6]- If the SAR value measured on the middle channel is less than 0.8 W/kg and the conducted power is within ±0.5 dB, the remaining channels are reduced per KDB941225 D05 page 4 footnote 2.

Band/ Frequency (MHz)	Side	Required Test Channel	Bandwidth	Modulation	RB Allocation	RB Offset	Tested/ Reduced
Band 5 824-849 MHz	C	20450	10 MHz	QPSK	25	12	Reduced[6]
		20525					Tested
		20600					Reduced[6]
		20450			50	0	Reduced[1]
		20525					Reduced[1]
		20600					Reduced[1]
		20450			1	12	Reduced[6]
		20525					Tested
		20600					Reduced[6]
		20450				24	Reduced[2]
		20525					Reduced[2]
		20600					Reduced[2]
		20450		16QAM	25	12	Reduced[3]
		20525					Reduced[3]
		20600					Reduced[3]
		20450			50	0	Reduced[1]
		20525					Reduced[1]
		20600					Reduced[1]
		20450			1	12	Reduced[4]
		20525					Reduced[4]
		20600					Reduced[4]
		20450				24	Reduced[4]
		20525					Reduced[4]
		20600					Reduced[4]
		All lower bandwidths (5 MHz)					Reduced[5]
	D	20450	10 MHz	QPSK	25	12	Reduced[6]
		20525					Tested
		20600					Reduced[6]
		20450			50	0	Reduced[1]
		20525					Reduced[1]
		20600					Reduced[1]
		20450			1	12	Reduced[6]
		20525					Tested
		20600					Reduced[6]
		20450				24	Reduced[2]
		20525					Reduced[2]
		20600					Reduced[2]
		20450		16QAM	25	12	Reduced[3]
		20525					Reduced[3]
		20600					Reduced[3]
		20450			50	0	Reduced[1]
		20525					Reduced[1]
		20600					Reduced[1]
		20450			1	12	Reduced[4]
		20525					Reduced[4]
		20600					Reduced[4]
		20450				24	Reduced[4]
		20525					Reduced[4]
		20600					Reduced[4]
		All lower bandwidths (5 MHz)					Reduced[5]

Reduced[1] – If the SAR value in the 50% RB testing is less than 1.45 W/kg, the 100% RB testing is reduced per KDB941225 D05 3) A) I) page 4.

Reduced[2] - If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 3) B) I) page 4.

Reduced[3] - If the SAR value in the 50% RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) A) I) page 4.

Reduced[4]- If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) B) I) page 5.

Reduced[5]- If the conducted power is within ±0.5 dB, all testing where the SAR value is less than 1.45 W/kg is reduced per KDB941225 D05 5) B) I) page 5.

Reduced[6]- If the SAR value measured on the middle channel is less than 0.8 W/kg and the conducted power is within ±0.5 dB, the remaining channels are reduced per KDB941225 D05 page 4 footnote 2.

Band/ Frequency (MHz)	Side	Required Test Channel	Bandwidth	Modulation	RB Allocation	RB Offset	Tested/ Reduced
Band 5 824-849 MHz	E	20450	10 MHz	QPSK	25	12	Reduced[6]
		20525					Tested
		20600					Reduced[6]
		20450			50	0	Reduced[1]
		20525					Reduced[1]
		20600					Reduced[1]
		20450			1	12	Reduced[6]
		20525					Tested
		20600					Reduced[6]
		20450				24	Reduced[2]
		20525					Reduced[2]
		20600					Reduced[2]
		20450		16QAM	25	12	Reduced[3]
		20525					Reduced[3]
		20600					Reduced[3]
		20450			50	0	Reduced[1]
		20525					Reduced[1]
		20600					Reduced[1]
		20450			1	12	Reduced[4]
		20525					Reduced[4]
		20600					Reduced[4]
		20450				24	Reduced[4]
		20525					Reduced[4]
		20600					Reduced[4]
		All lower bandwidths (5 MHz)					Reduced[5]

Reduced[1] – If the SAR value in the 50% RB testing is less than 1.45 W/kg, the 100% RB testing is reduced per KDB941225 D05 3) A) I) page 4.

Reduced[2] - If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 3) B) I) page 4.

Reduced[3] - If the SAR value in the 50% RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) A) I) page 4.

Reduced[4]- If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) B) I) page 5.

Reduced[5]- If the conducted power is within ±0.5 dB, all testing where the SAR value is less than 1.45 W/kg is reduced per KDB941225 D05 5) B) I) page 5.

Reduced[6]- If the SAR value measured on the middle channel is less than 0.8 W/kg and the conducted power is within ±0.5 dB, the remaining channels are reduced per KDB941225 D05 page 4 footnote 2.

Side F Reduced based on distance in KDB 447498 D01 v06 (See below calculations).

Maximum power: 251.2 mW
Closest Distance to Side F: 110.0 mm

[{[(3.0)/(√0.849)]*50 mm}]+[{110-50 mm}*10]=762 mW which is greater than 251.2 mW

Band/ Frequency (MHz)	Side	Required Test Channel	Bandwidth	Modulation	RB Allocation	RB Offset	Tested/ Reduced
Band 7 2500-2570 MHz	A	20850	20 MHz	QPSK	50	25	Tested
		21100					Tested
		21350					Tested
		20850			100	0	Reduced[1]
		21100					Reduced[1]
		21350					Reduced[1]
		20850			1	49	Tested
		21100					Tested
		21350					Tested
		20850				99	Reduced[1]
		21100					Reduced[1]
		21350					Reduced[1]
		20850		16QAM	50	25	Reduced[3]
		21100					Reduced[3]
		21350					Reduced[3]
		20850			100	0	Reduced[1]
		21100					Reduced[1]
		21350					Reduced[1]
		20850			1	49	Reduced[4]
		21100					Reduced[4]
		21350					Reduced[4]
		20850				99	Reduced[4]
		21100					Reduced[4]
		21350					Reduced[4]
		All lower bandwidths (15 MHz, 10 MHz, 5 MHz)					Reduced[5]
	B	20850	20 MHz	QPSK	50	25	Reduced[6]
		21100					Tested
		21350					Reduced[6]
		20850			100	0	Reduced[1]
		21100					Reduced[1]
		21350					Reduced[1]
		20850			1	49	Reduced[2]
		21100					Reduced[2]
		21350					Reduced[2]
		20850				99	Reduced[6]
		21100					Tested
		21350					Reduced[6]
		20850		16QAM	50	25	Reduced[3]
		21100					Reduced[3]
		21350					Reduced[3]
		20850			100	0	Reduced[1]
		21100					Reduced[1]
		21350					Reduced[1]
		20850			1	49	Reduced[4]
		21100					Reduced[4]
		21350					Reduced[4]
		20850				99	Reduced[4]
		21100					Reduced[4]
		21350					Reduced[4]
		All lower bandwidths (15 MHz, 10 MHz, 5 MHz)					Reduced[5]

Reduced[1] – If the SAR value in the 50% RB testing is less than 1.45 W/kg, the 100% RB testing is reduced per KDB941225 D05 3) A) I) page 4.

Reduced[2] - If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 3) B) I) page 4.

Reduced[3] - If the SAR value in the 50% RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) A) I) page 4.

Reduced[4]- If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) B) I) page 5.

Reduced[5]- If the conducted power is within ±0.5 dB, all testing where the SAR value is less than 1.45 W/kg is reduced per KDB941225 D05 5) B) I) page 5.

Reduced[6]- If the SAR value measured on the middle channel is less than 0.8 W/kg and the conducted power is within ±0.5 dB, the remaining channels are reduced per KDB941225 D05 page 4 footnote 2.

Band/ Frequency (MHz)	Side	Required Test Channel	Bandwidth	Modulation	RB Allocation	RB Offset	Tested/ Reduced
Band 7 2500-2570 MHz	C	20850	20 MHz	QPSK	50	25	Reduced[6]
		21100					Tested
		21350					Reduced[6]
		20850			100	0	Reduced[1]
		21100					Reduced[1]
		21350					Reduced[1]
		20850			1	49	Reduced[6]
		21100					Tested
		21350					Reduced[6]
		20850				99	Reduced[6]
		21100					Reduced[6]
		21350					Reduced[6]
		20850		16QAM	50	25	Reduced[3]
		21100					Reduced[3]
		21350					Reduced[3]
		20850			100	0	Reduced[1]
		21100					Reduced[1]
		21350					Reduced[1]
		20850			1	49	Reduced[4]
		21100					Reduced[4]
		21350					Reduced[4]
		20850				99	Reduced[4]
		21100					Reduced[4]
		21350					Reduced[4]
		All lower bandwidths (15 MHz, 10 MHz, 5 MHz)					Reduced[5]
	D	20850	20 MHz	QPSK	50	25	Tested
		21100					Tested
		21350					Tested
		20850			100	0	Reduced[1]
		21100					Reduced[1]
		21350					Reduced[1]
		20850			1	49	Reduced[2]
		21100					Reduced[2]
		21350					Reduced[2]
		20850				99	Tested
		21100					Tested
		21350					Tested
		20850		16QAM	50	25	Reduced[3]
		21100					Reduced[3]
		21350					Reduced[3]
		20850			100	0	Reduced[1]
		21100					Reduced[1]
		21350					Reduced[1]
		20850			1	49	Reduced[4]
		21100					Reduced[4]
		21350					Reduced[4]
		20850				99	Reduced[4]
		21100					Reduced[4]
		21350					Reduced[4]
		All lower bandwidths (15 MHz, 10 MHz, 5 MHz)					Reduced[5]

Reduced[1] – If the SAR value in the 50% RB testing is less than 1.45 W/kg, the 100% RB testing is reduced per KDB941225 D05 3) A) I) page 4.

Reduced[2] - If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 3) B) I) page 4.

Reduced[3] - If the SAR value in the 50% RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) A) I) page 4.

Reduced[4]- If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) B) I) page 5.

Reduced[5]- If the conducted power is within ±0.5 dB, all testing where the SAR value is less than 1.45 W/kg is reduced per KDB941225 D05 5) B) I) page 5.

Reduced[6]- If the SAR value measured on the middle channel is less than 0.8 W/kg and the conducted power is within ±0.5 dB, the remaining channels are reduced per KDB941225 D05 page 4 footnote 2.

Band/ Frequency (MHz)	Side	Required Test Channel	Bandwidth	Modulation	RB Allocation	RB Offset	Tested/ Reduced
Band 7 2500-2570 MHz	E	20850	20 MHz	QPSK	50	25	Reduced[6]
		21100					Tested
		21350					Reduced[6]
		20850			100	0	Reduced[1]
		21100					Reduced[1]
		21350					Reduced[1]
		20850			1	49	Reduced[2]
		21100					Reduced[2]
		21350					Reduced[2]
		20850				99	Reduced[6]
		21100					Tested
		21350					Reduced[6]
		20850		16QAM	50	25	Reduced[3]
		21100					Reduced[3]
		21350					Reduced[3]
		20850			100	0	Reduced[1]
		21100					Reduced[1]
		21350					Reduced[1]
		20850			1	49	Reduced[4]
		21100					Reduced[4]
		21350					Reduced[4]
		20850				99	Reduced[4]
		21100					Reduced[4]
		21350					Reduced[4]
		All lower bandwidths (15 MHz, 10 MHz, 5 MHz)					Reduced[5]

Reduced[1] – If the SAR value in the 50% RB testing is less than 1.45 W/kg, the 100% RB testing is reduced per KDB941225 D05 3) A) I) page 4.

Reduced[2] - If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 3) B) I) page 4.

Reduced[3] - If the SAR value in the 50% RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) A) I) page 4.

Reduced[4]- If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) B) I) page 5.

Reduced[5]- If the conducted power is within ±0.5 dB, all testing where the SAR value is less than 1.45 W/kg is reduced per KDB941225 D05 5) B) I) page 5.

Reduced[6]- If the SAR value measured on the middle channel is less than 0.8 W/kg and the conducted power is within ±0.5 dB, the remaining channels are reduced per KDB941225 D05 page 4 footnote 2.

Side F Reduced based on distance in KDB 447498 D01 v06 (See below calculations).

Maximum power: 223.9 mW
Closest Distance to Side F: 110.0 mm

[{[(3.0)/(√2.70)]*50 mm}]+[{70-50 mm}*10]=291 mW which is greater than 223.9 mW

Band/ Frequency (MHz)	Side	Required Test Channel	Bandwidth	Modulation	RB Allocation	RB Offset	Tested/ Reduced
Band 13 777-787 MHz	A	23230	10 MHz	QPSK	25	12	Tested
		23230			50	0	Reduced[1]
		23230			1	12	Tested
		23230				24	Reduced[2]
		23230		16QAM	25	12	Reduced[3]
		23230			50	0	Reduced[1]
		23230			1	12	Reduced[4]
		23230				24	Reduced[4]
		All lower bandwidths (5 MHz)					Reduced[5]
	B	23230	10 MHz	QPSK	25	12	Tested
		23230			50	0	Reduced[1]
		23230			1	12	Tested
		23230				24	Reduced[2]
		23230		16QAM	25	12	Reduced[3]
		23230			50	0	Reduced[1]
		23230			1	12	Reduced[4]
		23230				24	Reduced[4]
		All lower bandwidths (5 MHz)					Reduced[5]

Reduced[1] – If the SAR value in the 50% RB testing is less than 1.45 W/kg, the 100% RB testing is reduced per KDB941225 D05 3) A) I) page 4.

Reduced[2] - If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 3) B) I) page 4.

Reduced[3] - If the SAR value in the 50% RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) A) I) page 4.

Reduced[4]- If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) B) I) page 5.

Reduced[5]- If the conducted power is within ±0.5 dB, all testing where the SAR value is less than 1.45 W/kg is reduced per KDB941225 D05 5) B) I) page 5.

Reduced[6]- If the SAR value measured on the middle channel is less than 0.8 W/kg and the conducted power is within ±0.5 dB, the remaining channels are reduced per KDB941225 D05 page 4 footnote 2.

Band/ Frequency (MHz)	Side	Required Test Channel	Bandwidth	Modulation	RB Allocation	RB Offset	Tested/ Reduced
Band 13 777-787 MHz	C	23230	10 MHz	QPSK	25	12	Tested
		23230			50	0	Reduced[1]
		23230			1	12	Tested
		23230				24	Reduced[2]
		23230		16QAM	25	12	Reduced[3]
		23230			50	0	Reduced[1]
		23230			1	12	Reduced[4]
		23230				24	Reduced[4]
		All lower bandwidths (5 MHz)					Reduced[5]
	D	23230	10 MHz	QPSK	25	12	Tested
		23230			50	0	Reduced[1]
		23230			1	12	Tested
		23230				24	Reduced[2]
		23230		16QAM	25	12	Reduced[3]
		23230			50	0	Reduced[1]
		23230			1	12	Reduced[4]
		23230				24	Reduced[4]
		All lower bandwidths (5 MHz)					Reduced[5]

Reduced[1] – If the SAR value in the 50% RB testing is less than 1.45 W/kg, the 100% RB testing is reduced per KDB941225 D05 3) A) I) page 4.

Reduced[2] - If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 3) B) I) page 4.

Reduced[3] - If the SAR value in the 50% RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) A) I) page 4.

Reduced[4]- If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) B) I) page 5.

Reduced[5]- If the conducted power is within ±0.5 dB, all testing where the SAR value is less than 1.45 W/kg is reduced per KDB941225 D05 5) B) I) page 5.

Reduced[6]- If the SAR value measured on the middle channel is less than 0.8 W/kg and the conducted power is within ±0.5 dB, the remaining channels are reduced per KDB941225 D05 page 4 footnote 2.

Band/ Frequency (MHz)	Side	Required Test Channel	Bandwidth	Modulation	RB Allocation	RB Offset	Tested/ Reduced
Band 13 777-787 MHz	E	23230	10 MHz	QPSK	25	12	Tested
		23230			50	0	Reduced[1]
		23230			1	12	Tested
		23230				24	Reduced[2]
		23230		16QAM	25	12	Reduced[3]
		23230			50	0	Reduced[1]
		23230			1	12	Reduced[4]
		23230				24	Reduced[4]
		All lower bandwidths (5 MHz)					Reduced[5]

Reduced[1] – If the SAR value in the 50% RB testing is less than 1.45 W/kg, the 100% RB testing is reduced per KDB941225 D05 3) A) I) page 4.

Reduced[2] - If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 3) B) I) page 4.

Reduced[3] - If the SAR value in the 50% RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) A) I) page 4.

Reduced[4]- If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) B) I) page 5.

Reduced[5]- If the conducted power is within ±0.5 dB, all testing where the SAR value is less than 1.45 W/kg is reduced per KDB941225 D05 5) B) I) page 5.

Reduced[6]- If the SAR value measured on the middle channel is less than 0.8 W/kg and the conducted power is within ±0.5 dB, the remaining channels are reduced per KDB941225 D05 page 4 footnote 2.

Side F Reduced based on distance in KDB 447498 D01 v06 (See below calculations).

Maximum power: 223.9 mW
Closest Distance to Side F: 110.0 mm

[{[(3.0)/(√0.787)]*50 mm}]+[{110-50 mm}*10]=769 mW which is greater than 223.9 mW

Band/ Frequency (MHz)	Side	Required Test Channel	Bandwidth	Modulation	RB Allocation	RB Offset	Tested/ Reduced
Band 12 699-716 MHz	A	23060	10 MHz	QPSK	25	12	Reduced[6]
		23095					Tested
		23129					Reduced[6]
		23060			50	0	Reduced[1]
		23095					Reduced[1]
		23129					Reduced[1]
		23060			1	12	Reduced[6]
		23095					Tested
		23129					Reduced[6]
		23060				24	Reduced[2]
		23095					Reduced[2]
		23129					Reduced[2]
		23060		16QAM	25	12	Reduced[3]
		23095					Reduced[3]
		23129					Reduced[3]
		23060			50	0	Reduced[1]
		23095					Reduced[1]
		23129					Reduced[1]
		23060			1	12	Reduced[4]
		23095					Reduced[4]
		23129					Reduced[4]
		23060				24	Reduced[4]
		23095					Reduced[4]
		23129					Reduced[4]
		All lower bandwidths (5 MHz)					Reduced[5]
	B	23060	10 MHz	QPSK	25	12	Reduced[6]
		23095					Tested
		23129					Reduced[6]
		23060			50	0	Reduced[1]
		23095					Reduced[1]
		23129					Reduced[1]
		23060			1	12	Reduced[6]
		23095					Tested
		23129					Reduced[6]
		23060				24	Reduced[2]
		23095					Reduced[2]
		23129					Reduced[2]
		23060		16QAM	25	12	Reduced[3]
		23095					Reduced[3]
		23129					Reduced[3]
		23060			50	0	Reduced[1]
		23095					Reduced[1]
		23129					Reduced[1]
		23060			1	12	Reduced[4]
		23095					Reduced[4]
		23129					Reduced[4]
		23060				24	Reduced[4]
		23095					Reduced[4]
		23129					Reduced[4]
		All lower bandwidths (5 MHz)					Reduced[5]

Reduced[1] – If the SAR value in the 50% RB testing is less than 1.45 W/kg, the 100% RB testing is reduced per KDB941225 D05 3) A) I) page 4.

Reduced[2] - If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 3) B) I) page 4.

Reduced[3] - If the SAR value in the 50% RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) A) I) page 4.

Reduced[4]- If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) B) I) page 5.

Reduced[5]- If the conducted power is within ±0.5 dB, all testing where the SAR value is less than 1.45 W/kg is reduced per KDB941225 D05 5) B) I) page 5.

Reduced[6]- If the SAR value measured on the middle channel is less than 0.8 W/kg and the conducted power is within ±0.5 dB, the remaining channels are reduced per KDB941225 D05 page 4 footnote 2.

Band/ Frequency (MHz)	Side	Required Test Channel	Bandwidth	Modulation	RB Allocation	RB Offset	Tested/ Reduced
Band 12 699-716 MHz	C	23060	10 MHz	QPSK	25	12	Reduced[6]
		23095					Tested
		23129					Reduced[6]
		23060			50	0	Reduced[1]
		23095					Reduced[1]
		23129					Reduced[1]
		23060			1	12	Reduced[6]
		23095					Tested
		23129					Reduced[6]
		23060				24	Reduced[2]
		23095					Reduced[2]
		23129					Reduced[2]
		23060		16QAM	25	12	Reduced[3]
		23095					Reduced[3]
		23129					Reduced[3]
		23060			50	0	Reduced[1]
		23095					Reduced[1]
		23129					Reduced[1]
		23060			1	12	Reduced[4]
		23095					Reduced[4]
		23129					Reduced[4]
		23060				24	Reduced[4]
		23095					Reduced[4]
		23129					Reduced[4]
		All lower bandwidths (5 MHz)					Reduced[5]
	D	23060	10 MHz	QPSK	25	12	Reduced[6]
		23095					Tested
		23129					Reduced[6]
		23060			50	0	Reduced[1]
		23095					Reduced[1]
		23129					Reduced[1]
		23060			1	12	Reduced[6]
		23095					Tested
		23129					Reduced[6]
		23060				24	Reduced[2]
		23095					Reduced[2]
		23129					Reduced[2]
		23060		16QAM	25	12	Reduced[3]
		23095					Reduced[3]
		23129					Reduced[3]
		23060			50	0	Reduced[1]
		23095					Reduced[1]
		23129					Reduced[1]
		23060			1	12	Reduced[4]
		23095					Reduced[4]
		23129					Reduced[4]
		23060				24	Reduced[4]
		23095					Reduced[4]
		23129					Reduced[4]
		All lower bandwidths (5 MHz)					Reduced[5]

Reduced[1] – If the SAR value in the 50% RB testing is less than 1.45 W/kg, the 100% RB testing is reduced per KDB941225 D05 3) A) I) page 4.

Reduced[2] - If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 3) B) I) page 4.

Reduced[3] - If the SAR value in the 50% RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) A) I) page 4.

Reduced[4]- If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) B) I) page 5.

Reduced[5]- If the conducted power is within ±0.5 dB, all testing where the SAR value is less than 1.45 W/kg is reduced per KDB941225 D05 5) B) I) page 5.

Reduced[6]- If the SAR value measured on the middle channel is less than 0.8 W/kg and the conducted power is within ±0.5 dB, the remaining channels are reduced per KDB941225 D05 page 4 footnote 2.

Band/ Frequency (MHz)	Side	Required Test Channel	Bandwidth	Modulation	RB Allocation	RB Offset	Tested/ Reduced
Band 12 699-716 MHz	E	23060	10 MHz	QPSK	25	12	Reduced[6]
		23095					Tested
		23129					Reduced[6]
		23060			50	0	Reduced[1]
		23095					Reduced[1]
		23129					Reduced[1]
		23060			1	12	Reduced[6]
		23095					Tested
		23129					Reduced[6]
		23060				24	Reduced[2]
		23095					Reduced[2]
		23129					Reduced[2]
		23060		16QAM	25	12	Reduced[3]
		23095					Reduced[3]
		23129					Reduced[3]
		23060			50	0	Reduced[1]
		23095					Reduced[1]
		23129					Reduced[1]
		23060			1	12	Reduced[4]
		23095					Reduced[4]
		23129					Reduced[4]
		23060				24	Reduced[4]
		23095					Reduced[4]
		23129					Reduced[4]
		All lower bandwidths (5 MHz)					Reduced[5]

Reduced[1] – If the SAR value in the 50% RB testing is less than 1.45 W/kg, the 100% RB testing is reduced per KDB941225 D05 3) A) I) page 4.

Reduced[2] - If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 3) B) I) page 4.

Reduced[3] - If the SAR value in the 50% RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) A) I) page 4.

Reduced[4]- If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) B) I) page 5.

Reduced[5]- If the conducted power is within ±0.5 dB, all testing where the SAR value is less than 1.45 W/kg is reduced per KDB941225 D05 5) B) I) page 5.

Reduced[6]- If the SAR value measured on the middle channel is less than 0.8 W/kg and the conducted power is within ±0.5 dB, the remaining channels are reduced per KDB941225 D05 page 4 footnote 2.

Side F Reduced based on distance in KDB 447498 D01 v06 (See below calculations).

Maximum power: 251.2 mW
Closest Distance to Side F: 110.0 mm

[{[(3.0)/(√0.849)]*50 mm}]+[{110-50 mm}*10]=762 mW which is greater than 251.2 mW

Band/ Frequency (MHz)	Side	Required Test Channel	Bandwidth	Modulation	RB Allocation	RB Offset	Tested/ Reduced
Band 17 704-716 MHz	A	23780	10 MHz	QPSK	25	12	Reduced[6]
		23790					Tested
		23800					Reduced[6]
		23780			50	0	Reduced[1]
		23790					Reduced[1]
		23800					Reduced[1]
		23780			1	12	Reduced[6]
		23790					Tested
		23800					Reduced[6]
		23780				24	Reduced[2]
		23790					Reduced[2]
		23800					Reduced[2]
		23780		16QAM	25	12	Reduced[3]
		23790					Reduced[3]
		23800					Reduced[3]
		23780			50	0	Reduced[1]
		23790					Reduced[1]
		23800					Reduced[1]
		23780			1	12	Reduced[4]
		23790					Reduced[4]
		23800					Reduced[4]
		23780				24	Reduced[4]
		23790					Reduced[4]
		23800					Reduced[4]
		All lower bandwidths (5 MHz)					Reduced[5]
	B	23780	10 MHz	QPSK	25	12	Reduced[6]
		23790					Tested
		23800					Reduced[6]
		23780			50	0	Reduced[1]
		23790					Reduced[1]
		23800					Reduced[1]
		23780			1	12	Reduced[6]
		23790					Tested
		23800					Reduced[6]
		23780				24	Reduced[2]
		23790					Reduced[2]
		23800					Reduced[2]
		23780		16QAM	25	12	Reduced[3]
		23790					Reduced[3]
		23800					Reduced[3]
		23780			50	0	Reduced[1]
		23790					Reduced[1]
		23800					Reduced[1]
		23780			1	12	Reduced[4]
		23790					Reduced[4]
		23800					Reduced[4]
		23780				24	Reduced[4]
		23790					Reduced[4]
		23800					Reduced[4]
		All lower bandwidths (5 MHz)					Reduced[5]

Reduced[1] – If the SAR value in the 50% RB testing is less than 1.45 W/kg, the 100% RB testing is reduced per KDB941225 D05 3) A) I) page 4.

Reduced[2] - If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 3) B) I) page 4.

Reduced[3] - If the SAR value in the 50% RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) A) I) page 4.

Reduced[4]- If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) B) I) page 5.

Reduced[5]- If the conducted power is within ±0.5 dB, all testing where the SAR value is less than 1.45 W/kg is reduced per KDB941225 D05 5) B) I) page 5.

Reduced[6]- If the SAR value measured on the middle channel is less than 0.8 W/kg and the conducted power is within ±0.5 dB, the remaining channels are reduced per KDB941225 D05 page 4 footnote 2.

Band/ Frequency (MHz)	Side	Required Test Channel	Bandwidth	Modulation	RB Allocation	RB Offset	Tested/ Reduced
Band 17 704-716 MHz	C	23780	10 MHz	QPSK	25	12	Reduced[6]
		23790					Tested
		23800					Reduced[6]
		23780			50	0	Reduced[1]
		23790					Reduced[1]
		23800					Reduced[1]
		23780			1	12	Reduced[6]
		23790					Tested
		23800					Reduced[6]
		23780				24	Reduced[2]
		23790					Reduced[2]
		23800					Reduced[2]
		23780		16QAM	25	12	Reduced[3]
		23790					Reduced[3]
		23800					Reduced[3]
		23780			50	0	Reduced[1]
		23790					Reduced[1]
		23800					Reduced[1]
		23780			1	12	Reduced[4]
		23790					Reduced[4]
		23800					Reduced[4]
		23780				24	Reduced[4]
		23790					Reduced[4]
		23800					Reduced[4]
		All lower bandwidths (5 MHz)					Reduced[5]
	D	23780	10 MHz	QPSK	25	12	Reduced[6]
		23790					Tested
		23800					Reduced[6]
		23780			50	0	Reduced[1]
		23790					Reduced[1]
		23800					Reduced[1]
		23780			1	12	Reduced[6]
		23790					Tested
		23800					Reduced[6]
		23780				24	Reduced[2]
		23790					Reduced[2]
		23800					Reduced[2]
		23780		16QAM	25	12	Reduced[3]
		23790					Reduced[3]
		23800					Reduced[3]
		23780			50	0	Reduced[1]
		23790					Reduced[1]
		23800					Reduced[1]
		23780			1	12	Reduced[4]
		23790					Reduced[4]
		23800					Reduced[4]
		23780				24	Reduced[4]
		23790					Reduced[4]
		23800					Reduced[4]
		All lower bandwidths (5 MHz)					Reduced[5]

Reduced[1] – If the SAR value in the 50% RB testing is less than 1.45 W/kg, the 100% RB testing is reduced per KDB941225 D05 3) A) I) page 4.

Reduced[2] - If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 3) B) I) page 4.

Reduced[3] - If the SAR value in the 50% RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) A) I) page 4.

Reduced[4]- If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) B) I) page 5.

Reduced[5]- If the conducted power is within ±0.5 dB, all testing where the SAR value is less than 1.45 W/kg is reduced per KDB941225 D05 5) B) I) page 5.

Reduced[6]- If the SAR value measured on the middle channel is less than 0.8 W/kg and the conducted power is within ±0.5 dB, the remaining channels are reduced per KDB941225 D05 page 4 footnote 2.

Band/ Frequency (MHz)	Side	Required Test Channel	Bandwidth	Modulation	RB Allocation	RB Offset	Tested/ Reduced
Band 17 704-716 MHz	E	23780	10 MHz	QPSK	25	12	Reduced[6]
		23790					Tested
		23800					Reduced[6]
		23780			50	0	Reduced[1]
		23790					Reduced[1]
		23800					Reduced[1]
		23780			1	12	Reduced[6]
		23790					Tested
		23800					Reduced[6]
		23780				24	Reduced[2]
		23790					Reduced[2]
		23800					Reduced[2]
		23780		16QAM	25	12	Reduced[3]
		23790					Reduced[3]
		23800					Reduced[3]
		23780			50	0	Reduced[1]
		23790					Reduced[1]
		23800					Reduced[1]
		23780			1	12	Reduced[4]
		23790					Reduced[4]
		23800					Reduced[4]
		23780				24	Reduced[4]
		23790					Reduced[4]
		23800					Reduced[4]
		All lower bandwidths (5 MHz)					Reduced[5]

Reduced[1] – If the SAR value in the 50% RB testing is less than 1.45 W/kg, the 100% RB testing is reduced per KDB941225 D05 3) A) I) page 4.

Reduced[2] - If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 3) B) I) page 4.

Reduced[3] - If the SAR value in the 50% RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) A) I) page 4.

Reduced[4]- If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) B) I) page 5.

Reduced[5]- If the conducted power is within ±0.5 dB, all testing where the SAR value is less than 1.45 W/kg is reduced per KDB941225 D05 5) B) I) page 5.

Reduced[6]- If the SAR value measured on the middle channel is less than 0.8 W/kg and the conducted power is within ±0.5 dB, the remaining channels are reduced per KDB941225 D05 page 4 footnote 2.

Side F Reduced based on distance in KDB 447498 D01 v06 (See below calculations).

Maximum power: 251.2 mW
Closest Distance to Side F: 110.0 mm

[{[(3.0)/(√0.849)]*50 mm}]+[{110-50 mm}*10]=762 mW which is greater than 251.2 mW

SAR Data Summary – 750 MHz Body – LTE Band 12

MEASUREMENT RESULTS

Gap	Plot	Position	Frequency		BW/ Modulation	RB Size	RB Offset	MPR Target	End Power	Measured SAR (W/kg)	Reported SAR (W/kg)
			MHz	Ch.					(dBm)		
10 mm	1	Side A	707.5	23095	10 MHz/QPSK	1	24	0	22.48	0.558	0.71
	-----		707.5	23095	10 MHz/QPSK	25	12	1	21.78	0.445	0.53
	-----	Side B	707.5	23095	10 MHz/QPSK	1	24	0	22.48	0.171	0.22
	-----		707.5	23095	10 MHz/QPSK	25	12	1	21.78	0.142	0.17
	-----	Side C	707.5	23095	10 MHz/QPSK	1	24	0	22.48	0.537	0.68
	-----		707.5	23095	10 MHz/QPSK	25	12	1	21.78	0.461	0.54
	-----	Side D	707.5	23095	10 MHz/QPSK	1	24	0	22.48	0.337	0.43
	-----		707.5	23095	10 MHz/QPSK	25	12	1	21.78	0.251	0.30
	-----	Side E	707.5	23095	10 MHz/QPSK	1	24	0	22.48	0.0412	0.05
	-----		707.5	23095	10 MHz/QPSK	25	12	1	21.78	0.0343	0.04

Body
1.6 W/kg (mW/g)
averaged over 1 gram

1. Battery is fully charged for all tests.
   Power Measured ☒Conducted ☐ERP ☐EIRP
2. SAR Measurement
   Phantom Configuration ☐Left Head ☒Eli4 ☐Right Head
   SAR Configuration ☐Head ☒Body
3. Test Signal Call Mode ☒Test Code ☐Base Station Simulator
4. Test Configuration ☐With Belt Clip ☐Without Belt Clip ☒N/A
5. Tissue Depth is at least 15.0 cm

Jay M. Moulton
Vice President

SAR Data Summary – 750 MHz Body – LTE Band 13

MEASUREMENT RESULTS											
Gap	Plot	Position	Frequency		BW/ Modulation	RB Size	RB Offset	MPR Target	End Power (dBm)	Measured SAR (W/kg)	Reported SAR (W/kg)
			MHz	Ch.							
10 mm	2	Side A	782.0	23230	10 MHz/QPSK	1	24	0	22.56	0.497	0.62
	-----		782.0	23230	10 MHz/QPSK	25	12	1	21.73	0.401	0.48
	-----	Side B	782.0	23230	10 MHz/QPSK	1	24	0	22.56	0.164	0.20
	-----		782.0	23230	10 MHz/QPSK	25	12	1	21.73	0.132	0.16
	-----	Side C	782.0	23230	10 MHz/QPSK	1	24	0	22.56	0.439	0.55
	-----		782.0	23230	10 MHz/QPSK	25	12	1	21.73	0.354	0.42
	-----	Side D	782.0	23230	10 MHz/QPSK	1	24	0	22.56	0.248	0.31
	-----		782.0	23230	10 MHz/QPSK	25	12	1	21.73	0.196	0.23
	-----	Side E	782.0	23230	10 MHz/QPSK	1	24	0	22.56	0.0404	0.05
	-----		782.0	23230	10 MHz/QPSK	25	12	1	21.73	0.0312	0.04

Body 1.6 W/kg (mW/g) averaged over 1 gram

1. Battery is fully charged for all tests.
   Power Measured ☒Conducted ☐ERP ☐EIRP
2. SAR Measurement
   Phantom Configuration ☐Left Head ☒Eli4 ☐Right Head
   SAR Configuration ☐Head ☒Body
3. Test Signal Call Mode ☒Test Code ☐Base Station Simulator
4. Test Configuration ☐With Belt Clip ☐Without Belt Clip ☒N/A
5. Tissue Depth is at least 15.0 cm

Jay M. Moulton
Vice President

SAR Data Summary – 750 MHz Body – LTE Band 17

MEASUREMENT RESULTS											
Gap	Plot	Position	Frequency		BW/ Modulation	RB Size	RB Offset	MPR Target	End Power (dBm)	Measured SAR (W/kg)	Reported SAR (W/kg)
			MHz	Ch.							
10 mm	3	Side A	710.0	23790	10 MHz/QPSK	1	24	0	22.48	0.570	0.72
	-----		710.0	23790	10 MHz/QPSK	25	12	1	21.78	0.465	0.55
	-----	Side B	710.0	23790	10 MHz/QPSK	1	24	0	22.48	0.143	0.18
	-----		710.0	23790	10 MHz/QPSK	25	12	1	21.78	0.111	0.13
	-----	Side C	710.0	23790	10 MHz/QPSK	1	24	0	22.48	0.475	0.60
	-----		710.0	23790	10 MHz/QPSK	25	12	1	21.78	0.382	0.45
	-----	Side D	710.0	23790	10 MHz/QPSK	1	24	0	22.48	0.312	0.40
	-----		710.0	23790	10 MHz/QPSK	25	12	1	21.78	0.207	0.24
	-----	Side E	710.0	23790	10 MHz/QPSK	1	24	0	22.48	0.0435	0.06
	-----		710.0	23790	10 MHz/QPSK	25	12	1	21.78	0.032	0.04

Body
1.6 W/kg (mW/g)
averaged over 1 gram

1. Battery is fully charged for all tests.
   Power Measured ☒Conducted ☐ERP ☐EIRP
2. SAR Measurement
   Phantom Configuration ☐Left Head ☒Eli4 ☐Right Head
   SAR Configuration ☐Head ☒Body
3. Test Signal Call Mode ☒Test Code ☐Base Station Simulator
4. Test Configuration ☐With Belt Clip ☐Without Belt Clip ☒N/A
5. Tissue Depth is at least 15.0 cm

Jay M. Moulton
Vice President

SAR Data Summary – 835 MHz Body - CDMA

MEASUREMENT RESULTS

Gap	Plot	Frequency		Modulation	Position	End Power	Reverse Channel	Forward Channel	Measured SAR	Reported SAR
		MHz	Ch.			(dBm)			(W/kg)	(W/kg)
10 mm	----	824.70	1013	CDMA	Side A	23.76	153.6 kbps	2 Slot 307.2 kbps	0.817	0.97
	16	836.52	384	CDMA		23.66	153.6 kbps	2 Slot 307.2 kbps	0.853	1.04
	----	848.31	777	CDMA		23.41	153.6 kbps	2 Slot 307.2 kbps	0.629	0.81
	----	836.52	384	CDMA	Side B	23.66	153.6 kbps	2 Slot 307.2 kbps	0.645	0.78
	----	836.52	384	CDMA	Side C	23.66	153.6 kbps	2 Slot 307.2 kbps	0.355	0.43
	----	836.52	384	CDMA	Side D	23.66	153.6 kbps	2 Slot 307.2 kbps	0.280	0.34
	----	836.52	384	CDMA	Side E	23.66	153.6 kbps	2 Slot 307.2 kbps	0.0816	0.10
	----	836.52	384	CDMA	Side A	23.66	153.6 kbps	2 Slot 307.2 kbps	0.841	1.02

Body
1.6 W/kg (mW/g)
averaged over 1 gram

1. Battery is fully charged for all tests.
   Power Measured ☒Conducted ☐ERP ☐EIRP
2. SAR Measurement
   Phantom Configuration ☐Left Head ☒Eli4 ☐Right Head
   SAR Configuration ☐Head ☒Body
3. Test Signal Call Mode ☒Test Code ☐Base Station Simulator
4. Test Configuration ☐With Belt Clip ☐Without Belt Clip ☒N/A
5. Tissue Depth is at least 15.0 cm

Jay M. Moulton
Vice President

SAR Data Summary – 835 MHz Body - WCDMA

MEASUREMENT RESULTS

Gap	Plot	Frequency		Modulation	Position	End Power	RMC	Test Set Up	Measured SAR	Reported SAR
		MHz	Ch.			(dBm)			(W/kg)	(W/kg)
10 mm	4	836.6	4183	WCDMA	Side A	23.13	12.2 kbps	Test Loop 1	0.433	0.47
	----	836.6	4183	WCDMA	Side B	23.13	12.2 kbps	Test Loop 1	0.122	0.13
	----	836.6	4183	WCDMA	Side C	23.13	12.2 kbps	Test Loop 1	0.371	0.40
	----	836.6	4183	WCDMA	Side D	23.13	12.2 kbps	Test Loop 1	0.160	0.17
	----	836.6	4183	WCDMA	Side E	23.13	12.2 kbps	Test Loop 1	0.0493	0.05

Body
1.6 W/kg (mW/g)
averaged over 1 gram

1. Battery is fully charged for all tests.
   Power Measured ☒Conducted ☐ERP ☐EIRP
2. SAR Measurement
   Phantom Configuration ☐Left Head ☒Eli4 ☐Right Head
   SAR Configuration ☐Head ☒Body
3. Test Signal Call Mode ☒Test Code ☐Base Station Simulator
4. Test Configuration ☐With Belt Clip ☐Without Belt Clip ☒N/A
5. Tissue Depth is at least 15.0 cm

Jay M. Moulton
Vice President

SAR Data Summary – 835 MHz Body - GPRS

MEASUREMENT RESULTS

Gap	Plot	Frequency		Rev Level/ Modulation	Position	End Power	TX Level	Multislot Configuration	Measured SAR (W/kg)	Reported SAR (W/kg)
		MHz	Ch.			(dBm)				
10 mm	5	836.6	190	GMSK	Side A	32.15	5	2 Slot	0.390	0.60
	----	836.6	190	GMSK	Side B	32.15	5	2 Slot	0.120	0.18
	----	836.6	190	GMSK	Side C	32.15	5	2 Slot	0.332	0.51
	----	836.6	190	GMSK	Side D	32.15	5	2 Slot	0.160	0.25
	----	836.6	190	GMSK	Side E	32.15	5	2 Slot	0.0419	0.06
						Body 1.6 W/kg (mW/g) averaged over 1 gram				

1. Battery is fully charged for all tests.
   Power Measured ☒Conducted ☐ERP ☐EIRP
2. SAR Measurement
   Phantom Configuration ☐Left Head ☒Eli4 ☐Right Head
   SAR Configuration ☐Head ☒Body
3. Test Signal Call Mode ☒Test Code ☐Base Station Simulator
4. Test Configuration ☐With Belt Clip ☐Without Belt Clip ☒N/A
5. Tissue Depth is at least 15.0 cm

Jay M. Moulton
Vice President

SAR Data Summary – 835 MHz Body – LTE Band 5

MEASUREMENT RESULTS											
Gap	Plot	Position	Frequency		BW/ Modulation	RB Size	RB Offset	MPR Target	End Power	Measured SAR	Reported SAR
			MHz	Ch.					(dBm)	(W/kg)	(W/kg)
10 mm	-----	Side A	829.0	20450	10 MHz/QPSK	1	24	0	21.72	0.521	0.88
	6		836.5	20525	10 MHz/QPSK	1	24	0	22.48	0.660	0.94
	-----		844.0	20599	10 MHz/QPSK	1	24	0	21.66	0.509	0.87
	-----		836.5	20525	10 MHz/QPSK	25	12	1	21.62	0.530	0.73
	-----	Side B	836.5	20525	10 MHz/QPSK	1	24	0	22.48	0.205	0.29
	-----		836.5	20525	10 MHz/QPSK	25	12	1	21.62	0.163	0.22
	-----	Side C	836.5	20525	10 MHz/QPSK	1	24	0	22.48	0.536	0.76
	-----		836.5	20525	10 MHz/QPSK	25	12	1	21.62	0.433	0.60
	-----	Side D	836.5	20525	10 MHz/QPSK	1	24	0	22.48	0.314	0.45
	-----		836.5	20525	10 MHz/QPSK	25	12	1	21.62	0.259	0.36
	-----	Side E	836.5	20525	10 MHz/QPSK	1	24	0	22.48	0.056	0.08
	-----		836.5	20525	10 MHz/QPSK	25	12	1	21.62	0.0474	0.07
	-----	Repeat	836.5	20525	10 MHz/QPSK	1	24	0	22.48	0.651	0.92

Body
1.6 W/kg (mW/g)
averaged over 1 gram

1. Battery is fully charged for all tests.
   Power Measured ☒Conducted ☐ERP ☐EIRP
2. SAR Measurement
   Phantom Configuration ☐Left Head ☒Eli4 ☐Right Head
   SAR Configuration ☐Head ☒Body
3. Test Signal Call Mode ☒Test Code ☐Base Station Simulator
4. Test Configuration ☐With Belt Clip ☐Without Belt Clip ☒N/A
5. Tissue Depth is at least 15.0 cm

Jay M. Moulton
Vice President

SAR Data Summary – 1750 MHz Body – LTE Band 4

MEASUREMENT RESULTS

Gap	Plot	Position	Frequency		BW/ Modulation	RB Size	RB Offset	MPR Target	End Power	Measured SAR (W/kg)	Reported SAR (W/kg)
			MHz	Ch.					(dBm)		
10 mm	-----	Side A	1720.0	20050	20 MHz/QPSK	1	49	0	22.74	0.991	1.18
	-----		1732.5	20175	20 MHz/QPSK	1	49	0	22.69	1.06	1.28
	-----		1745.0	20300	20 MHz/QPSK	1	49	0	22.84	1.03	1.20
	-----		1720.0	20050	20 MHz/QPSK	50	24	1	21.34	0.775	1.01
	-----		1732.5	20175	20 MHz/QPSK	50	24	1	22.12	0.853	0.93
	-----		1745.0	20300	20 MHz/QPSK	50	24	1	21.98	0.912	1.03
	-----	Side B	1732.5	20175	20 MHz/QPSK	1	49	0	22.69	0.358	0.43
	-----		1732.5	20175	20 MHz/QPSK	50	24	1	22.12	0.298	0.33
	-----	Side C	1720.0	20050	20 MHz/QPSK	1	49	0	22.74	0.910	1.08
	-----		1732.5	20175	20 MHz/QPSK	1	49	0	22.69	1.01	1.22
	7		1745.0	20300	20 MHz/QPSK	1	49	0	22.84	1.11	1.29
	-----		1720.0	20050	20 MHz/QPSK	50	24	1	21.34	0.733	0.96
	-----		1732.5	20175	20 MHz/QPSK	50	24	1	22.12	0.869	0.95
	-----		1745.0	20300	20 MHz/QPSK	50	24	1	21.98	0.936	1.06
	-----	Side D	1732.5	20175	20 MHz/QPSK	1	49	0	22.69	0.360	0.43
	-----		1732.5	20175	20 MHz/QPSK	50	24	1	22.12	0.305	0.33
	-----	Side E	1732.5	20175	20 MHz/QPSK	1	49	0	22.69	0.249	0.30
	-----		1732.5	20175	20 MHz/QPSK	50	24	1	22.12	0.206	0.23
	-----	Repeat	1720.0	20050	20 MHz/QPSK	1	49	0	22.84	1.09	1.27

Body
1.6 W/kg (mW/g)
averaged over 1 gram

1. Battery is fully charged for all tests.
   Power Measured ☒Conducted ☐ERP ☐EIRP
2. SAR Measurement
   Phantom Configuration ☐Left Head ☒Eli4 ☐Right Head
   SAR Configuration ☐Head ☒Body
3. Test Signal Call Mode ☒Test Code ☐Base Station Simulator
4. Test Configuration ☐With Belt Clip ☐Without Belt Clip ☒N/A
5. Tissue Depth is at least 15.0 cm

Jay M. Moulton
Vice President

SAR Data Summary – 1750 MHz Body - WCDMA

MEASUREMENT RESULTS										
Gap	**Plot**	**Frequency**		**Rev Level/ Modulation**	**Position**	**End Power**	**RMC**	**Test Set Up**	**Measured SAR (W/kg)**	**Reported SAR (W/kg)**
		MHz	**Ch.**			**(dBm)**				
10 mm	8	1712.4	1312	WCDMA	Side A	22.19	12.2 kbps	Test Loop 1	1.02	1.38
	----	1732.6	1413	WCDMA		23.50	12.2 kbps	Test Loop 1	1.10	1.10
	----	1752.6	1513	WCDMA		23.26	12.2 kbps	Test Loop 1	1.21	1.28
	----	1732.6	1413	WCDMA	Side B	23.50	12.2 kbps	Test Loop 1	0.687	0.69
	----	1732.6	1413	WCDMA	Side C	23.50	12.2 kbps	Test Loop 1	0.328	0.33
	----	1732.6	1413	WCDMA	Side D	23.50	12.2 kbps	Test Loop 1	0.406	0.41
	----	1732.6	1413	WCDMA	Side E	23.50	12.2 kbps	Test Loop 1	0.156	0.16
	----	1712.4	1312	WCDMA	Repeat	22.19	12.2 kbps	Test Loop 1	0.999	1.35
						Body 1.6 W/kg (mW/g) averaged over 1 gram				

1. Battery is fully charged for all tests.
   Power Measured ☒Conducted ☐ERP ☐EIRP
2. SAR Measurement
   Phantom Configuration ☐Left Head ☒Eli4 ☐Right Head
   SAR Configuration ☐Head ☒Body
3. Test Signal Call Mode ☒Test Code ☐Base Station Simulator
4. Test Configuration ☐With Belt Clip ☐Without Belt Clip ☒N/A
5. Tissue Depth is at least 15.0 cm

Jay M. Moulton
Vice President

SAR Data Summary – 1900 MHz Body - CDMA

MEASUREMENT RESULTS

Gap	Plot	Frequency		Rev Level/ Modulation	Position	End Power	Reverse Channel	Forward Channel	Measured SAR (W/kg)	Reported SAR (W/kg)
		MHz	Ch.			(dBm)				
10 mm	----	1851.25	25	WCDMA	Side A	22.85	153.6 kbps	2 Slot 307.2 kbps	1.18	1.37
	17	1880.00	600	WCDMA		23.15	153.6 kbps	2 Slot 307.2 kbps	1.28	1.39
	----	1909.75	1175	WCDMA		22.63	153.6 kbps	2 Slot 307.2 kbps	1.12	1.37
	----	1880.00	600	WCDMA	Side B	23.15	153.6 kbps	2 Slot 307.2 kbps	0.725	0.79
	----	1880.00	600	WCDMA	Side C	23.15	153.6 kbps	2 Slot 307.2 kbps	0.336	0.36
	----	1880.00	600	WCDMA	Side D	23.15	153.6 kbps	2 Slot 307.2 kbps	0.528	0.57
	----	1880.00	600	WCDMA	Side E	23.15	153.6 kbps	2 Slot 307.2 kbps	0.349	0.38
	----	1880.00	600	WCDMA	Repeat	23.15	153.6 kbps	2 Slot 307.2 kbps	1.26	1.37
						Body 1.6 W/kg (mW/g) averaged over 1 gram				

1. Battery is fully charged for all tests.
   Power Measured ☒Conducted ☐ERP ☐EIRP
2. SAR Measurement
   Phantom Configuration ☐Left Head ☒Eli4 ☐Right Head
   SAR Configuration ☐Head ☒Body
3. Test Signal Call Mode ☒Test Code ☐Base Station Simulator
4. Test Configuration ☐With Belt Clip ☐Without Belt Clip ☒N/A
5. Tissue Depth is at least 15.0 cm

Jay M. Moulton
Vice President

SAR Data Summary – 1900 MHz Body - WCDMA

MEASUREMENT RESULTS										
Gap	**Plot**	**Frequency**		**Rev Level/ Modulation**	**Position**	**End Power**	**RMC**	**Test Set Up**	**Measured SAR (W/kg)**	**Reported SAR (W/kg)**
		MHz	**Ch.**			**(dBm)**				
10 mm	----	1852.4	9262	WCDMA	Side A	23.05	12.2 kbps	Test Loop 1	1.07	1.19
	9	1880.0	9400	WCDMA		23.32	12.2 kbps	Test Loop 1	1.36	1.42
	----	1907.6	9538	WCDMA		23.38	12.2 kbps	Test Loop 1	1.20	1.23
	----	1852.4	9262	WCDMA	Side B	23.02	12.2 kbps	Test Loop 1	0.352	0.39
	----	1880.0	9400	WCDMA	Side C	23.02	12.2 kbps	Test Loop 1	0.615	0.69
	----	1852.4	9262	WCDMA	Side D	23.02	12.2 kbps	Test Loop 1	0.419	0.47
	----	1852.4	9262	WCDMA	Side E	23.02	12.2 kbps	Test Loop 1	0.348	0.39
	----	1907.6	9538	WCDMA	Repeat	23.32	12.2 kbps	Test Loop 1	1.32	1.38
						Body 1.6 W/kg (mW/g) averaged over 1 gram				

1. Battery is fully charged for all tests.
   Power Measured ☒Conducted ☐ERP ☐EIRP
2. SAR Measurement
   Phantom Configuration ☐Left Head ☒Eli4 ☐Right Head
   SAR Configuration ☐Head ☒Body
3. Test Signal Call Mode ☒Test Code ☐Base Station Simulator
4. Test Configuration ☐With Belt Clip ☐Without Belt Clip ☒N/A
5. Tissue Depth is at least 15.0 cm

Jay M. Moulton
Vice President

SAR Data Summary – 1900 MHz Body - GPRS

MEASUREMENT RESULTS

Gap	Plot	Frequency		Rev Level/ Modulation	Position	End Power	TX Level	Multislot Configuration	Measured SAR (W/kg)	Reported SAR (W/kg)
		MHz	Ch.			(dBm)				
10 mm	----	1850.2	512	GMSK	Side A	26.64	0	2 Slot	0.598	0.82
	10	1880.0	661	GMSK		26.72	0	2 Slot	0.667	0.90
	----	1909.8	810	GMSK		26.47	0	2 Slot	0.567	0.81
	----	1880.0	661	GMSK	Side B	26.72	0	2 Slot	0.172	0.23
	----	1880.0	661	GMSK	Side C	26.72	0	2 Slot	0.285	0.38
	----	1880.0	661	GMSK	Side D	26.72	0	2 Slot	0.174	0.23
	----	1880.0	661	GMSK	Side E	26.72	0	2 Slot	0.167	0.22
	----	Repeated		GMSK	Side A	26.72	0	2 Slot	0.651	0.87
						Body 1.6 W/kg (mW/g) averaged over 1 gram				

1. Battery is fully charged for all tests.
   Power Measured ☒Conducted ☐ERP ☐EIRP
2. SAR Measurement
   Phantom Configuration ☐Left Head ☒Eli4 ☐Right Head
   SAR Configuration ☐Head ☒Body
3. Test Signal Call Mode ☒Test Code ☐Base Station Simulator
4. Test Configuration ☐With Belt Clip ☐Without Belt Clip ☒N/A
5. Tissue Depth is at least 15.0 cm

Jay M. Moulton
Vice President

SAR Data Summary – 1900 MHz Body – LTE Band 2

MEASUREMENT RESULTS											
Gap	Plot	Position	Frequency		BW/ Modulation	RB Size	RB Offset	MPR Target	End Power	Measured SAR	Reported SAR
			MHz	Ch.					(dBm)	(W/kg)	(W/kg)
10 mm	11	Side A	1860.0	18700	20 MHz/QPSK	1	49	0	22.99	1.15	1.29
	-----		1880.0	18900	20 MHz/QPSK	1	49	0	22.82	1.14	1.33
	-----		1900.0	19100	20 MHz/QPSK	1	49	0	22.06	0.948	1.32
	-----		1860.0	18700	20 MHz/QPSK	50	24	1	22.38	0.986	1.28
	-----		1880.0	18900	20 MHz/QPSK	50	4	1	22.59	1.09	1.34
	-----		1900.0	19100	20 MHz/QPSK	50	24	1	22.61	1.06	1.30
	-----	Side B	1880.0	18900	20 MHz/QPSK	1	49	0	22.82	0.431	0.50
	-----		1880.0	18900	20 MHz/QPSK	50	24	1	22.59	0.349	0.43
	-----	Side C	1880.0	18900	20 MHz/QPSK	1	49	0	22.82	0.626	0.73
	-----		1880.0	18900	20 MHz/QPSK	50	24	1	22.59	0.527	0.65
	-----	Side D	1880.0	18900	20 MHz/QPSK	1	49	0	22.82	0.442	0.52
	-----		1880.0	18900	20 MHz/QPSK	50	24	1	22.59	0.369	0.46
	-----	Side E	1880.0	18900	20 MHz/QPSK	1	49	0	22.82	0.347	0.41
	-----		1880.0	18900	20 MHz/QPSK	50	24	1	22.59	0.272	0.34
	-----	Repeat	1860.0	18700	20 MHz/QPSK	1	49	0	22.99	1.13	1.27

Body
1.6 W/kg (mW/g)
averaged over 1 gram

1. Battery is fully charged for all tests.
   Power Measured ☒Conducted ☐ERP ☐EIRP
2. SAR Measurement
   Phantom Configuration ☐Left Head ☒Eli4 ☐Right Head
   SAR Configuration ☐Head ☒Body
3. Test Signal Call Mode ☒Test Code ☐Base Station Simulator
4. Test Configuration ☐With Belt Clip ☐Without Belt Clip ☒N/A
5. Tissue Depth is at least 15.0 cm

Jay M. Moulton
Vice President

SAR Data Summary – 2550 MHz Body – LTE Band 7

MEASUREMENT RESULTS											
Gap	Plot	Position	Frequency		BW/ Modulation	RB Size	RB Offset	MPR Target	End Power (dBm)	Measured SAR (W/kg)	Reported SAR (W/kg)
			MHz	Ch.							
10 mm	-----	Side A	2507.5	20850	20 MHz/QPSK	1	49	0	23.24	1.02	1.08
	-----		2535.0	21100	20 MHz/QPSK	1	49	0	23.36	1.16	1.20
	-----		2562.5	21350	20 MHz/QPSK	1	49	0	23.33	1.26	1.31
	-----		2507.5	20850	20 MHz/QPSK	50	24	1	22.13	0.983	1.07
	-----		2535.0	21100	20 MHz/QPSK	50	24	1	22.17	1.03	1.11
	-----		2562.5	21350	20 MHz/QPSK	50	24	1	22.18	1.14	1.23
	-----	Side B	2535.0	21100	20 MHz/QPSK	1	49	0	23.36	0.0455	0.05
	-----		2535.0	21100	20 MHz/QPSK	50	24	1	22.17	0.0365	0.04
	-----	Side C	2535.0	21100	20 MHz/QPSK	1	49	0	23.36	0.504	0.52
	-----		2535.0	21100	20 MHz/QPSK	50	24	1	22.17	0.416	0.45
	-----	Side D	2507.5	20850	20 MHz/QPSK	1	49	0	23.24	1.16	1.23
	12		2535.0	21100	20 MHz/QPSK	1	49	0	23.36	1.35	1.39
	-----		2562.5	21350	20 MHz/QPSK	1	49	0	23.33	1.32	1.37
	-----		2507.5	20850	20 MHz/QPSK	50	24	1	22.13	0.991	1.08
	-----		2535.0	21100	20 MHz/QPSK	50	24	1	22.17	1.11	1.20
	-----		2562.5	21350	20 MHz/QPSK	50	24	1	22.18	1.22	1.31
	-----	Side E	2535.0	21100	20 MHz/QPSK	1	49	0	23.36	0.122	0.13
	-----		2535.0	21100	20 MHz/QPSK	50	24	1	22.17	0.100	0.11
	-----	Repeat	2535.0	21100	20 MHz/QPSK	1	49	0	23.36	1.32	1.36

Body
1.6 W/kg (mW/g)
averaged over 1 gram

1. Battery is fully charged for all tests.
   Power Measured ☒Conducted ☐ERP ☐EIRP
2. SAR Measurement
   Phantom Configuration ☐Left Head ☒Eli4 ☐Right Head
   SAR Configuration ☐Head ☒Body
3. Test Signal Call Mode ☒Test Code ☐Base Station Simulator
4. Test Configuration ☐With Belt Clip ☐Without Belt Clip ☒N/A
5. Tissue Depth is at least 15.0 cm

Jay M. Moulton
Vice President

SAR Data Summary – 2450 MHz Body 802.11b

MEASUREMENT RESULTS									
Gap	**Plot**	**Position**	**Frequency**		**Modulation**	**Antenna**	**End Power**	**Measured SAR (W/kg)**	**Reported SAR (W/kg)**
			MHz	**Ch.**			**(dBm)**		
10 mm	13	Side A	2437	6	DSSS	Chain 0	18.0	0.413	0.41
	-----		2462	11	DSSS		17.9	0.387	0.40
	-----	Side B	2437	6	DSSS		18.0	0.0138	0.01
	-----	Side C	2437	6	DSSS		18.0	0.145	0.15
	-----	Side A	2437	6	DSSS	Chain 1	18.0	0.235	0.24
	-----	Side C	2437	6	DSSS		18.0	0.031	0.03
	-----	Side D	2437	6	DSSS		18.0	0.0121	0.01
						Body 1.6 W/kg (mW/g) averaged over 1 gram			

1. Battery is fully charged for all tests.
   Power Measured ☒Conducted ☐ERP ☐EIRP
2. SAR Measurement
   Phantom Configuration ☐Left Head ☒Eli4 ☐Right Head
   SAR Configuration ☐Head ☒Body
3. Test Signal Call Mode ☒Test Code ☐Base Station Simulator
4. Test Configuration ☐With Belt Clip ☐Without Belt Clip ☒N/A
5. Tissue Depth is at least 15.0 cm

Jay M. Moulton
Vice President

SAR Data Summary – 5200 MHz Body 802.11a

MEASUREMENT RESULTS

Gap	Plot	Position	Frequency		Modulation	Antenna	End Power	Measured SAR (W/kg)	Reported SAR (W/kg)
			MHz	Ch.			(dBm)		
10 mm	14	Side A	5220	44	OFDM	Chain 0	9.3	0.249	0.29
	-----	Side B	5220	44	OFDM		9.3	0.0128	0.02
	-----	Side C	5220	44	OFDM		9.3	0.0785	0.09
	-----	Side A	5220	44	OFDM	Chain 1	11.9	0.118	0.12
	-----	Side C	5220	44	OFDM		11.9	0.138	0.14
	-----	Side D	5220	44	OFDM		11.9	0.0112	0.01

Body
1.6 W/kg (mW/g)
averaged over 1 gram

1. Battery is fully charged for all tests.
   Power Measured ☒Conducted ☐ERP ☐EIRP
2. SAR Measurement
   Phantom Configuration ☐Left Head ☒Eli4 ☐Right Head
   SAR Configuration ☐Head ☒Body
3. Test Signal Call Mode ☒Test Code ☐Base Station Simulator
4. Test Configuration ☐With Belt Clip ☐Without Belt Clip ☒N/A
5. Tissue Depth is at least 15.0 cm

Jay M. Moulton
Vice President

SAR Data Summary – 5800 MHz Body 802.11a

MEASUREMENT RESULTS									
Gap	**Plot**	**Position**	**Frequency**		**Modulation**	**Antenna**	**End Power**	**Measured SAR (W/kg)**	**Reported SAR (W/kg)**
			MHz	**Ch.**			**(dBm)**		
10 mm	-----	Side A	5785	157	OFDM	Chain 0	19.4	0.335	0.34
	-----	Side B	5785	157	OFDM		19.4	0.0172	0.02
	15	Side C	5785	157	OFDM		19.4	0.131	0.13
	-----	Side A	5785	157	OFDM	Chain 1	19.4	0.216	0.22
	-----	Side C	5785	157	OFDM		19.4	0.0649	0.07
	-----	Side D	5785	157	OFDM		19.4	0.136	0.14
						Body 1.6 W/kg (mW/g) averaged over 1 gram			

1. Battery is fully charged for all tests.
   Power Measured ☒Conducted ☐ERP ☐EIRP
2. SAR Measurement
   Phantom Configuration ☐Left Head ☒Eli4 ☐Right Head
   SAR Configuration ☐Head ☒Body
3. Test Signal Call Mode ☒Test Code ☐Base Station Simulator
4. Test Configuration ☐With Belt Clip ☐Without Belt Clip ☒N/A
5. Tissue Depth is at least 15.0 cm

Jay M. Moulton
Vice President

SAR Data Summary – Simultaneous Transmit (Worst Case)

MEASUREMENT RESULTS								
Plot	Frequency (WLAN)		Frequency (WWAN)		WWAN Technology	SAR (W/kg) WLAN	SAR (W/kg) WWAN	Total SAR (W/kg)
	MHz	Ch.	MHz	Ch.				
-----	2437	6	1880.0	9400	WCDMA Band 2	0.41	1.42	1.91
					Body 1.6 W/kg (mW/g) averaged over 1 gram			

The worst case condition is in the 2.4 GHz band. The WWAN and WLAN antennas are a minimum of 55 mm apart. Using the highest reported SAR to calculate the simultaneous Tx using peak separation ratio, the highest ratio would be 0.04 which meets the requirements of KDB 447498 section 4.3.2 3) on page 13. The calculation is shown below.

Simultaneous Separation Ratio Calculation

$(SAR_1 + SAR_2)^{1.5}/R_i \leq 0.04$ rounded to two digits

$(0.41 + 1.42)^{1.5}/55 = 0.04$

SAR Data Summary – Simultaneous Transmit (WLAN MIMO)

MEASUREMENT RESULTS							
Plot	Frequency (WLAN)		Frequency (WLAN)		SAR (W/kg) WLAN	SAR (W/kg) WWAN	Total SAR (W/kg)
	MHz	Ch.	MHz	Ch.			
-----	2437	6	2462	11	0.41	0.40	0.81
					Body 1.6 W/kg (mW/g) averaged over 1 gram		

The sum of the two transmitters is less than the limit; therefore, the simultaneous transmission meets the requirements of KDB447498 D01 v06 section 4.3.2 page 11.

11. Test Equipment List

Table 11.1 Equipment Specifications

Type	Calibration Due Date	Calibration Done Date	Serial Number
Staubli Robot TX60L	N/A	N/A	F07/55M6A1/A/01
Measurement Controller CS8c	N/A	N/A	1012
ELI4 Flat Phantom	N/A	N/A	1251
ELI4 Flat Phantom	N/A	N/A	2037
Device Holder	N/A	N/A	N/A
Data Acquisition Electronics 4	01/14/2017	01/14/2016	1321
Data Acquisition Electronics 4	04/25/2018	04/25/2017	1321
Data Acquisition Electronics 4	01/10/2019	01/10/2018	1321
SPEAG E-Field Probe ES3DV3	02/16/2017	02/16/2016	3311
SPEAG E-Field Probe EX3DV4	01/27/2017	01/27/2016	3833
SPEAG E-Field Probe EX3DV4	01/23/2018	01/23/2017	3833
SPEAG E-Field Probe EX3DV4	04/20/2019	04/20/2018	3662
Speag Validation Dipole D750V2	08/10/2017	08/10/2016	1053
Speag Validation Dipole D835V2	08/10/2018	08/10/2016	4d131
Speag Validation Dipole D1750V2	08/13/2018	08/13/2016	1061
Speag Validation Dipole D1900V2	08/13/2018	08/13/2016	5d147
Speag Validation Dipole D2450V2	08/10/2017	08/10/2016	881
Speag Validation Dipole D2550V2	08/10/2017	08/10/2016	1003
Speag Validation Dipole D5GHzV2	08/11/2017	08/11/2016	1119
Agilent N1911A Power Meter	05/20/2017	05/20/2015	GB45100254
Agilent N1922A Power Sensor	06/25/2017	06/25/2015	MY45240464
Advantest R3261A Spectrum Analyzer	03/26/2017	03/26/2015	31720068
Agilent (HP) 8350B Signal Generator	03/26/2017	03/26/2015	2749A10226
Agilent (HP) 83525A RF Plug-In	03/26/2017	03/26/2015	2647A01172
Agilent (HP) 8753C Vector Network Analyzer	03/26/2017	03/26/2015	3135A01724
Agilent (HP) 85047A S-Parameter Test Set	03/26/2017	03/26/2015	2904A00595
Agilent (HP) 8960 Base Station Sim.	03/31/2017	03/31/2015	MY48360364
Anritsu MT8820C	07/28/2017	07/28/2015	6201176199
Agilent N1911A Power Meter	05/20/2019	03/20/2017	GB45100254
Agilent N1922A Power Sensor	06/21/2019	06/21/2017	MY45240464
Advantest R3261A Spectrum Analyzer	03/26/2019	03/20/2017	31720068
Agilent (HP) 8350B Signal Generator	03/26/2019	03/20/2017	2749A10226
Agilent (HP) 83525A RF Plug-In	03/26/2019	03/20/2017	2647A01172
Agilent (HP) 8753C Vector Network Analyzer	03/26/2019	03/20/2017	3135A01724
Agilent (HP) 85047A S-Parameter Test Set	03/26/2019	03/20/2017	2904A00595
Agilent (HP) 8960 Base Station Sim.	03/27/2019	03/27/2017	MY48360364
Anritsu MT8820C	07/28/2019	07/28/2017	6201176199
Agilent 778D Dual Directional Coupler	N/A	N/A	MY48220184
MiniCircuits BW-N20W5+ Fixed 20 dB Attenuator	N/A	N/A	N/A
MiniCircuits SPL-10.7+ Low Pass Filter	N/A	N/A	R8979513746
Aprel Dielectric Probe Assembly	N/A	N/A	0011
Body Equivalent Matter (750 MHz)	N/A	N/A	N/A
Body Equivalent Matter (835 MHz)	N/A	N/A	N/A
Body Equivalent Matter (1750 MHz)	N/A	N/A	N/A
Body Equivalent Matter (1900 MHz)	N/A	N/A	N/A
Body Equivalent Matter (2450 MHz)	N/A	N/A	N/A
Body Equivalent Matter (2550 MHz)	N/A	N/A	N/A
Body Equivalent Matter (5 Ghz)	N/A	N/A	N/A

12. Conclusion

The SAR measurement indicates that the EUT complies with the RF radiation exposure limits of the FCC/IC. These measurements are taken to simulate the RF effects exposure under worst-case conditions. Precise laboratory measures were taken to assure repeatability of the tests. The tested device complies with the requirements in respect to all parameters subject to the test. The test results and statements relate only to the item(s) tested.

Please note that the absorption and distribution of electromagnetic energy in the body is a very complex phenomena that depends on the mass, shape, and size of the body; the orientation of the body with respect to the field vectors; and, the electrical properties of both the body and the environment. Other variables that may play a substantial role in possible biological effects are those that characterize the environment (e.g. ambient temperature, air velocity, relative humidity, and body insulation) and those that characterize the individual (e.g. age, gender, activity level, debilitation, or disease). Because innumerable factors may interact to determine the specific biological outcome of an exposure to electromagnetic fields, any protection guide shall consider maximal amplification of biological effects as a result of field-body interactions, environmental conditions, and physiological variables.

13. References

[1] Federal Communications Commission, ET Docket 93-62, Guidelines for Evaluating the Environmental Effects of Radio Frequency Radiation, August 1996

[2] ANSI/IEEE C95.1 – 1992, American National Standard Safety Levels with respect to Human Exposure to Radio Frequency Electromagnetic Fields, 300kHz to 100GHz, New York: IEEE, 1992.

[3] ANSI/IEEE C95.3 – 2002, IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields – RF and Microwave, New York: IEEE, 2002.

[4] International Electrotechnical Commission, IEC 62209-2 (Edition 1.0), Human Exposure to radio frequency fields from hand-held and body mounted wireless communication devices – Human models, instrumentation, and procedures – Part 2: Procedure to determine the specific absorption rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz), March 2010.

[5] IEEE Standard 1528 – 2013, IEEE Recommended Practice for Determining the Peak-Spatial Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communication Devices: Measurement Techniques, June 2013.

[6] Industry Canada, RSS – 102 Issue 5, Radio Frequency Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands), March 2015.

[7] Health Canada, Safety Code 6, Limits of Human Exposure to Radiofrequency Electromagnetic Fields in the Frequency Range from 3kHz to 300 GHz, 2009.

Appendix A – System Validation Plots and Data

```
**********************************************************
Test Result for UIM Dielectric Parameter
Thu 01/Dec/2016
Freq   Frequency(GHz)
FCC_eH Limits for Head Epsilon
FCC_sH Limits for Head Sigma
FCC_eB Limits for Body Epsilon
FCC_sB Limits for Body Sigma
Test_e Epsilon  of  UIM
Test_s Sigma of UIM
**********************************************************
```

Freq	FCC_eB	FCC_sB	Test_e	Test_s
0.7000	55.73	0.96	55.59	0.95
0.7040	55.714	0.96	55.574	0.954*
0.7075	55.70	0.96	55.56	0.958*
0.7090	55.694	0.96	55.554	0.959*
0.7100	55.69	0.96	55.55	0.96
0.7110	55.686	0.96	55.546	0.96*
0.7200	55.65	0.96	55.51	0.96
0.7300	55.61	0.96	55.46	0.97
0.7400	55.57	0.96	55.42	0.97
0.7500	55.53	0.96	55.38	0.98
0.7600	55.49	0.96	55.33	0.98
0.7700	55.45	0.96	55.29	0.99
0.7800	55.41	0.97	55.25	0.99
0.7820	55.404	0.97	55.24	0.992*
0.7900	55.38	0.97	55.20	1.00
0.8000	55.34	0.97	55.16	1.00

* value interpolated

```
************************************************************
Test Result for UIM Dielectric Parameter
Fri 02/Dec/2016
Freq   Frequency(GHz)
FCC_eH Limits for Head Epsilon
FCC_sH Limits for Head Sigma
FCC_eB Limits for Body Epsilon
FCC_sB Limits for Body Sigma
Test_e Epsilon  of  UIM
Test_s Sigma of UIM
************************************************************
Freq         FCC_eB FCC_sB Test_e Test_s
0.8050       55.32  0.97   56.05  0.96
0.8150       55.28  0.97   56.00  0.98
0.8242       55.243 0.97   55.954 0.98*
0.8250       55.24  0.97   55.95  0.98
0.8264       55.234 0.97   55.944 0.981*
0.8290       55.224 0.97   55.934 0.984*
0.8350       55.20  0.97   55.91  0.99
0.8365       55.196 0.972  55.903 0.99*
0.8366       55.195 0.972  55.902 0.99*
0.8440       55.173 0.979  55.865 0.99*
0.8450       55.17  0.98   55.86  0.99
0.8466       55.165 0.982  55.857 0.992*
0.8488       55.159 0.984  55.852 0.994*
0.8550       55.14  0.99   55.84  1.00
0.8650       55.11  1.01   55.80  1.01
0.8750       55.08  1.02   55.78  1.03
0.8850       55.05  1.03   55.73  1.03
0.8950       55.02  1.04   55.70  1.04

* value interpolated


************************************************************
Test Result for UIM Dielectric Parameter
Thu 01/Dec/2016
Freq   Frequency(GHz)
FCC_eH Limits for Head Epsilon
FCC_sH Limits for Head Sigma
FCC_eB Limits for Body Epsilon
FCC_sB Limits for Body Sigma
Test_e Epsilon  of  UIM
Test_s Sigma of UIM
************************************************************
Freq         FCC_eB FCC_sB Test_e Test_s
1.7100       53.53  1.47   53.39  1.47
1.7200       53.51  1.47   53.36  1.48
1.7300       53.48  1.48   53.32  1.49
1.7325       53.475 1.48   53.313 1.493*
1.7400       53.46  1.48   53.29  1.50
1.7450       53.445 1.485  53.28  1.505*
1.7500       53.43  1.49   53.27  1.51
1.7600       53.41  1.49   53.25  1.52
1.7700       53.38  1.50   53.22  1.53
1.7800       53.35  1.51   53.20  1.54

* value interpolated
```

```
************************************************************
Test Result for UIM Dielectric Parameter
Tue 29/Aug/2017
Freq   Frequency(GHz)
FCC_eH Limits for Head Epsilon
FCC_sH Limits for Head Sigma
FCC_eB Limits for Body Epsilon
FCC_sB Limits for Body Sigma
Test_e Epsilon  of  UIM
Test_s Sigma of UIM
************************************************************
Freq         FCC_eB FCC_sB Test_e Test_s
1.7100       53.53  1.47   53.55  1.48
1.7124       53.525 1.47   53.543 1.482*
1.7200       53.51  1.47   53.52  1.49
1.7300       53.48  1.48   53.38  1.50
1.7326       53.475 1.48   53.375 1.503*
1.7400       53.46  1.48   53.36  1.51
1.7500       53.43  1.49   53.32  1.52
1.7526       53.425 1.49   53.315 1.523*
1.7600       53.41  1.49   53.30  1.53
1.7700       53.38  1.50   53.27  1.55
1.7800       53.35  1.51   53.23  1.55

* value interpolated


************************************************************
Test Result for UIM Dielectric Parameter
Fri 02/Dec/2016
Freq   Frequency(GHz)
FCC_eH Limits for Head Epsilon
FCC_sH Limits for Head Sigma
FCC_eB Limits for Body Epsilon
FCC_sB Limits for Body Sigma
Test_e Epsilon  of  UIM
Test_s Sigma of UIM
************************************************************
Freq         FCC_eB FCC_sB Test_e Test_s
1.8400       53.30  1.52   52.61  1.51
1.8500       53.30  1.52   52.59  1.52
1.8502       53.30  1.52   52.59  1.52*
1.8524       53.30  1.52   52.585 1.522*
1.8600       53.30  1.52   52.57  1.53
1.8700       53.30  1.52   52.54  1.53
1.8800       53.30  1.52   52.52  1.54
1.8900       53.30  1.52   52.50  1.55
1.9000       53.30  1.52   52.48  1.55
1.9076       53.30  1.52   52.465 1.558*
1.9088       53.30  1.52   52.462 1.559*
1.9100       53.30  1.52   52.46  1.56
1.9200       53.30  1.52   52.43  1.57

* value interpolated
```

```
************************************************************
Test Result for UIM Dielectric Parameter
Sat 03/Dec/2016
Freq   Frequency(GHz)
FCC_eH Limits for Head Epsilon
FCC_sH Limits for Head Sigma
FCC_eB Limits for Body Epsilon
FCC_sB Limits for Body Sigma
Test_e Epsilon  of  UIM
Test_s Sigma of UIM
************************************************************
Freq         FCC_eB FCC_sB Test_e Test_s
2.4900       52.65  2.01   52.52  2.03
2.5000       52.64  2.02   52.50  2.04
2.5100       52.62  2.04   52.48  2.05
2.5200       52.61  2.05   52.46  2.06
2.5300       52.60  2.06   52.44  2.08
2.5350       52.595 2.07   52.43  2.09*
2.5400       52.59  2.08   52.42  2.10
2.5500       52.57  2.09   52.40  2.11
2.5600       52.56  2.11   52.38  2.12
2.5700       52.55  2.12   52.36  2.14
2.5800       52.53  2.13   52.34  2.15
2.5900       52.52  2.15   52.32  2.17

* value interpolated


************************************************************
Test Result for UIM Dielectric Parameter
Sat 03/Dec/2016
Freq   Frequency(GHz)
FCC_eH Limits for Head Epsilon
FCC_sH Limits for Head Sigma
FCC_eB Limits for Body Epsilon
FCC_sB Limits for Body Sigma
Test_e Epsilon  of  UIM
Test_s Sigma of UIM
************************************************************
Freq         FCC_eB FCC_sB Test_e Test_s
2.4100       52.75  1.91   52.59  1.91
2.4120       52.748 1.912  52.586 1.912*
2.4200       52.74  1.92   52.57  1.92
2.4300       52.73  1.93   52.55  1.93
2.4370       52.716 1.937  52.536 1.944*
2.4400       52.71  1.94   52.53  1.95
2.4500       52.70  1.95   52.51  1.96
2.4600       52.69  1.96   52.49  1.97
2.4620       52.686 1.964  52.486 1.972*
2.4700       52.67  1.98   52.47  1.98
2.4800       52.66  1.99   52.45  2.00

* value interpolated
```

```
************************************************************
Test Result for UIM Dielectric Parameter
Mon 05/Dec/2016
Freq   Frequency(GHz)
FCC_eH Limits for Head Epsilon
FCC_sH Limits for Head Sigma
FCC_eB Limits for Body Epsilon
FCC_sB Limits for Body Sigma
Test_e Epsilon  of  UIM
Test_s Sigma of UIM
************************************************************
```

Freq	FCC_eB	FCC_sB	Test_e	Test_s
5.1000	49.15	5.18	49.02	5.17
5.1200	49.12	5.21	48.99	5.20
5.1400	49.10	5.23	48.96	5.22
5.1600	49.07	5.25	48.93	5.24
5.1800	49.04	5.28	48.91	5.27
5.2000	49.01	5.30	48.88	5.30
5.2100	49.00	5.31	48.87	5.31*
5.2200	48.99	5.32	48.86	5.32
5.2400	48.96	5.35	48.83	5.34
5.2600	48.93	5.37	48.80	5.36
5.2800	48.91	5.39	48.77	5.38
5.2900	48.895	5.405	48.755	5.39*
5.3000	48.88	5.42	48.74	5.40
5.3200	48.85	5.44	48.72	5.43
5.3400	48.82	5.46	48.69	5.45
5.3600	48.80	5.49	48.66	5.47
5.3800	48.77	5.51	48.63	5.50
5.4000	48.74	5.53	48.61	5.53
5.4200	48.72	5.56	48.59	5.56
5.4400	48.69	5.58	48.56	5.59
5.4600	48.66	5.60	48.53	5.62
5.4800	48.63	5.63	48.50	5.64
5.5000	48.61	5.65	48.48	5.67
5.5200	48.58	5.67	48.45	5.69
5.5400	48.55	5.70	48.42	5.72
5.5600	48.53	5.72	48.39	5.74
5.5800	48.50	5.74	48.37	5.76
5.6000	48.47	5.77	48.34	5.79
5.6200	48.44	5.79	48.31	5.81
5.6400	48.42	5.81	48.28	5.83
5.6600	48.39	5.84	48.25	5.85
5.6800	48.36	5.86	48.22	5.88
5.7000	48.34	5.88	48.19	5.90
5.7200	48.31	5.91	48.16	5.93
5.7400	48.28	5.93	48.13	5.95
5.7450	48.273	5.935	48.125	5.958*
5.7600	48.25	5.95	48.11	5.98
5.7750	48.235	5.973	48.088	5.995*
5.7800	48.23	5.98	48.08	6.00
5.7850	48.223	5.985	48.073	6.008*
5.8000	48.20	6.00	48.05	6.03
5.8200	48.17	6.02	48.02	6.05
5.8250	48.165	6.028	48.013	6.055*
5.8400	48.15	6.05	47.99	6.07

* value interpolated

```
************************************************************
Test Result for UIM Dielectric Parameter
Tue 01/May/2018
Freq   Frequency(GHz)
FCC_eH Limits for Head Epsilon
FCC_sH Limits for Head Sigma
FCC_eB Limits for Body Epsilon
FCC_sB Limits for Body Sigma
Test_e Epsilon  of  UIM
Test_s Sigma of UIM
************************************************************
Freq         FCC_eB FCC_sB Test_e Test_s
0.8050       55.32  0.97   54.97  0.97
0.8150       55.28  0.97   54.92  0.98
0.8250       55.24  0.97   54.87  0.99
0.8264       55.234 0.97   54.864 0.991*
0.8350       55.20  0.97   54.83  1.00
0.8366       55.195 0.972  54.824 1.002*
0.8450       55.17  0.98   54.79  1.01
0.8466       55.165 0.982  54.785 1.012*
0.8550       55.14  0.99   54.76  1.02
0.8650       55.11  1.01   54.73  1.03
0.8750       55.08  1.02   54.70  1.04

* value interpolated


************************************************************
Test Result for UIM Dielectric Parameter
Tue 01/May/2018
Freq   Frequency(GHz)
FCC_eH Limits for Head Epsilon
FCC_sH Limits for Head Sigma
FCC_eB Limits for Body Epsilon
FCC_sB Limits for Body Sigma
Test_e Epsilon  of  UIM
Test_s Sigma of UIM
************************************************************
Freq         FCC_eB FCC_sB Test_e Test_s
1.8400       53.30  1.52   52.83  1.50
1.8500       53.30  1.52   52.81  1.51
1.8524       53.30  1.52   52.805 1.512*
1.8600       53.30  1.52   52.79  1.52
1.8700       53.30  1.52   52.77  1.53
1.8800       53.30  1.52   52.74  1.53
1.8900       53.30  1.52   52.76  1.54
1.9000       53.30  1.52   52.74  1.55
1.9076       53.30  1.52   52.717 1.558*
1.9100       53.30  1.52   52.71  1.56
1.9200       53.30  1.52   52.69  1.56

* value interpolated
```

RF Exposure Lab

Plot 1

DUT: Dipole 750 MHz D750V3; Type: D750V3; Serial: D750V3 - SN:1053

Communication System: CW; Frequency: 750 MHz; Duty Cycle: 1:1
Medium: MSL750; Medium parameters used: f = 750 MHz; σ = 0.98 S/m; ε_r = 55.38; ρ = 1000 kg/m^3
Phantom section: Flat Section

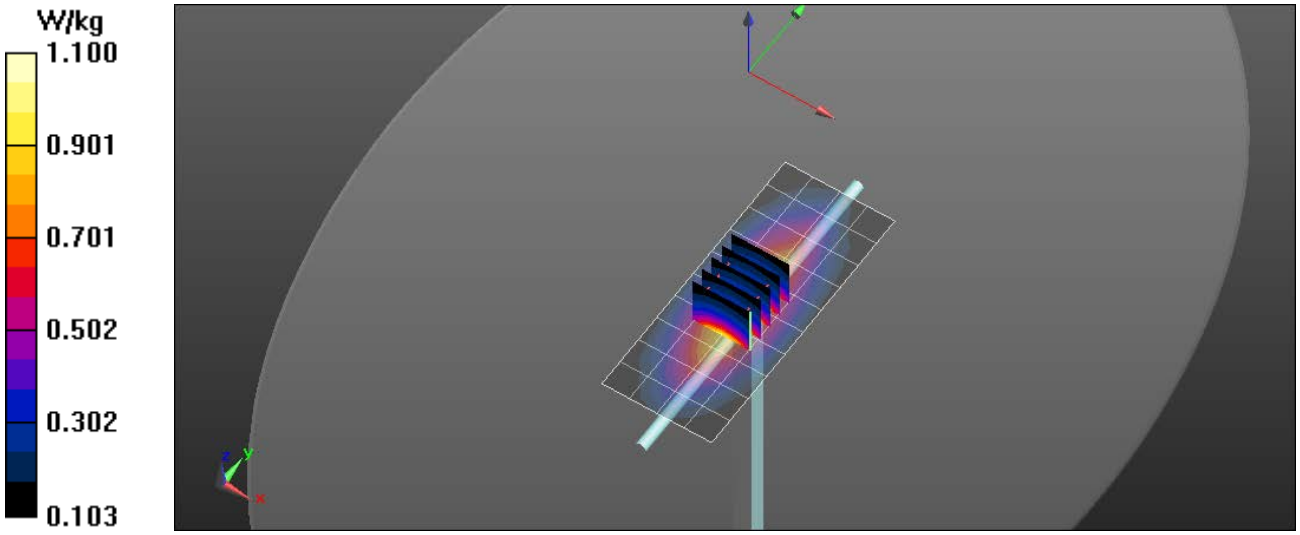
Test Date: Date: 12/4/2016; Ambient Temp: 23 °C; Tissue Temp: 21 °C

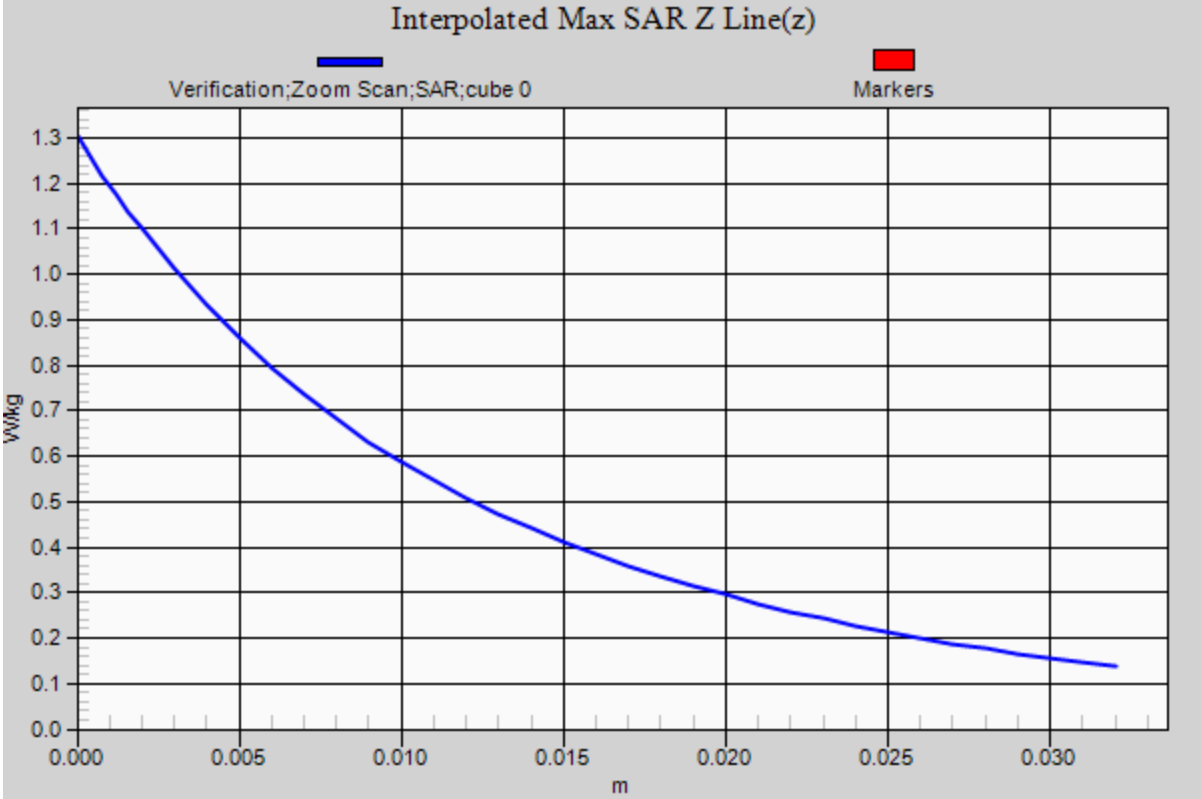
Probe: EX3DV4 - SN3833; ConvF(9.23, 9.23, 9.23); Calibrated: 1/27/2016;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1321; Calibrated: 1/14/2016
Phantom: ELI v5.0; Type: QDOVA001BB; Serial: 1251
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Procedure Notes:

750 MHz/Verification/Area Scan (5x11x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.09 W/kg

750 MHz/Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 31.143 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 1.31 W/kg
P_{in}= 100 mW
SAR(1 g) = 0.852 W/kg; SAR(10 g) = 0.551 W/kg
Maximum value of SAR (measured) = 1.10 W/kg





RF Exposure Lab

Plot 2

DUT: Dipole 835 MHz D835V2; Type: D835V2; Serial: D835V2 - SN:4d131

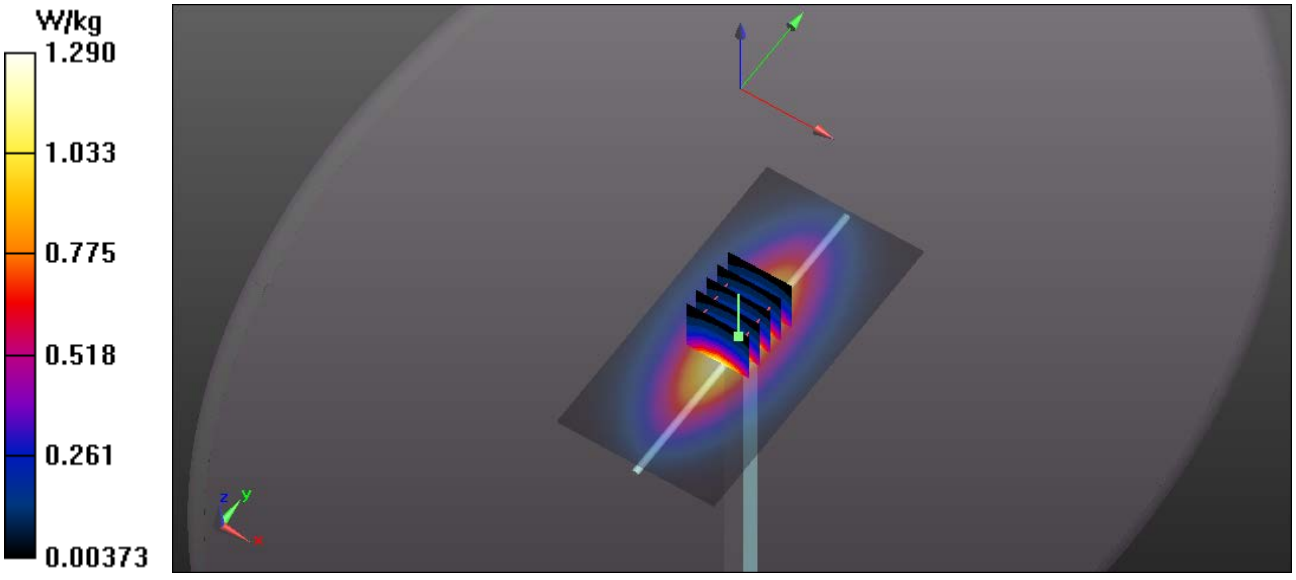
Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: MSL835; Medium parameters used: f = 835 MHz; σ = 0.99 S/m; ε_r = 55.91; ρ = 1000 kg/m^3
Phantom section: Flat Section

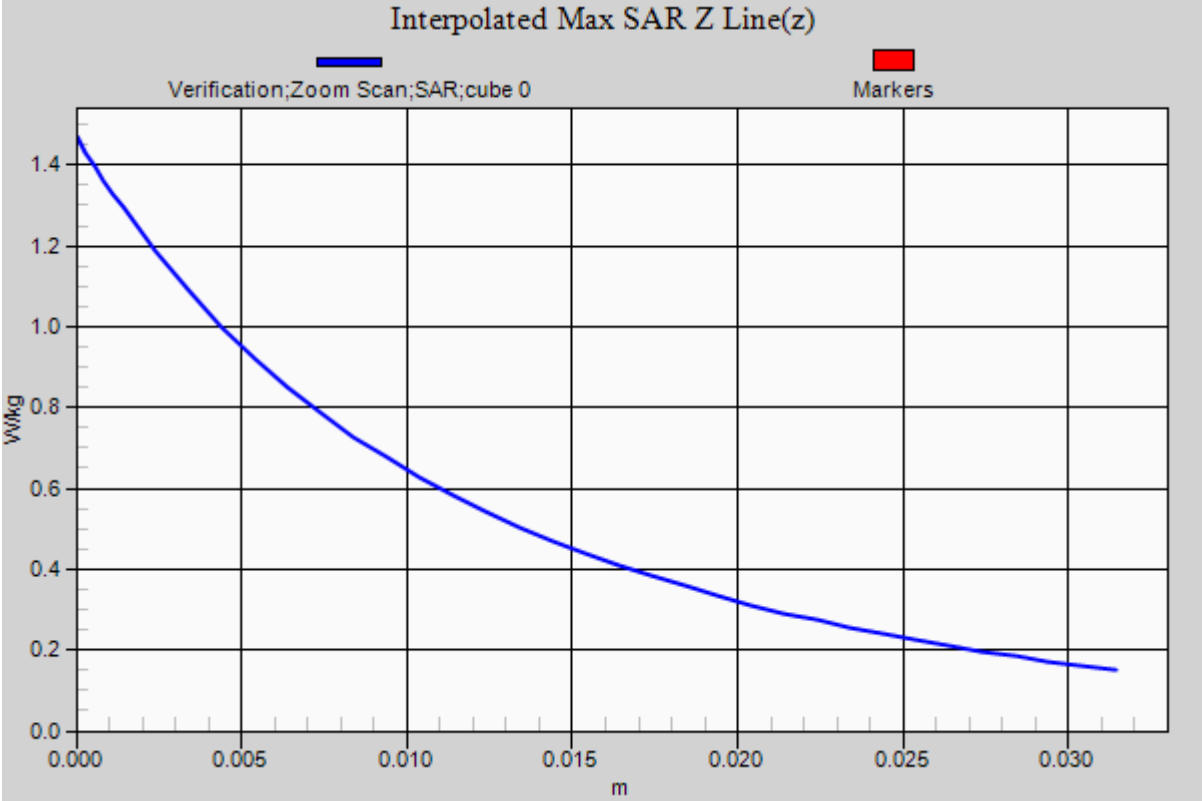
Test Date: Date: 12/2/2016; Ambient Temp: 23 °C; Tissue Temp: 21 °C
Probe: EX3DV4 - SN3833; ConvF(8.73, 8.73, 8.73); Calibrated: 1/27/2016;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1321; Calibrated: 1/14/2016
Phantom: ELI v5.0; Type: QDOVA001BB; Serial: 1251
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Procedure Notes:

835 MHz Body/Verification/Area Scan (81x161x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.27 W/kg

835 MHz Body/Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 52.435 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 1.42 W/kg
P_{in}= 100 mW
SAR(1 g) = 0.947 W/kg; SAR(10 g) = 0.625 W/kg
Maximum value of SAR (measured) = 1.28 W/kg





RF Exposure Lab

Plot 3

DUT: Dipole 1750 MHz D1750V2; Type: D1750V2; Serial: D1750V2 - SN:1061

Communication System: CW; Frequency: 1750 MHz; Duty Cycle: 1:1
Medium: MSL1750; Medium parameters used: f = 1750 MHz; σ = 1.51 S/m; ε_r = 53.27; ρ = 1000 kg/m^3
Phantom section: Flat Section

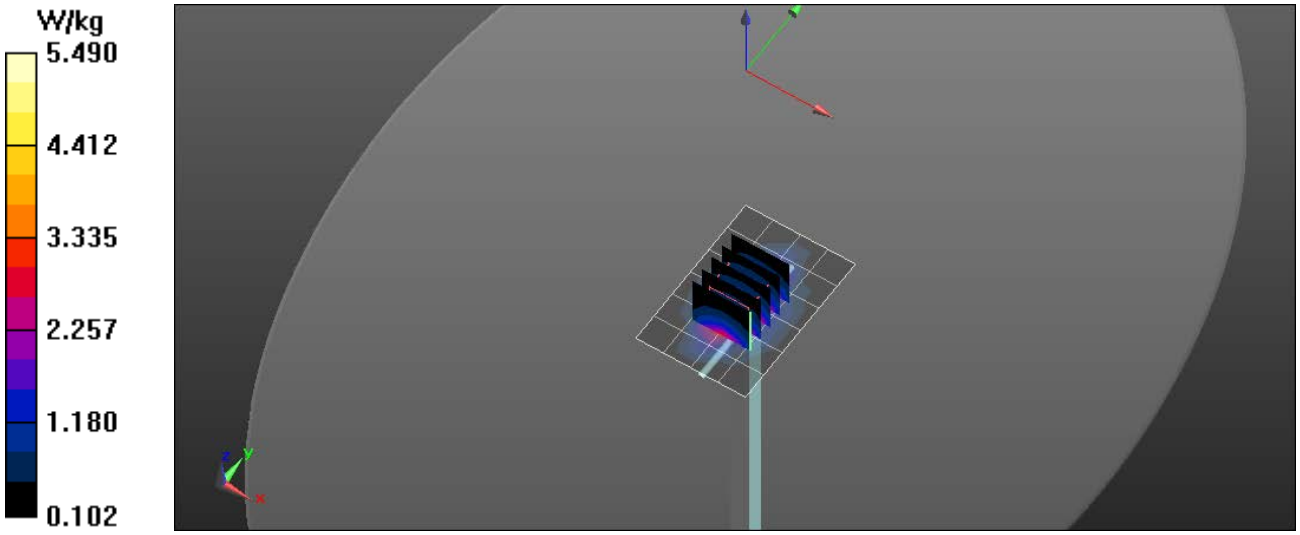
Test Date: Date: 12/1/2016; Ambient Temp: 23 °C; Tissue Temp: 21 °C

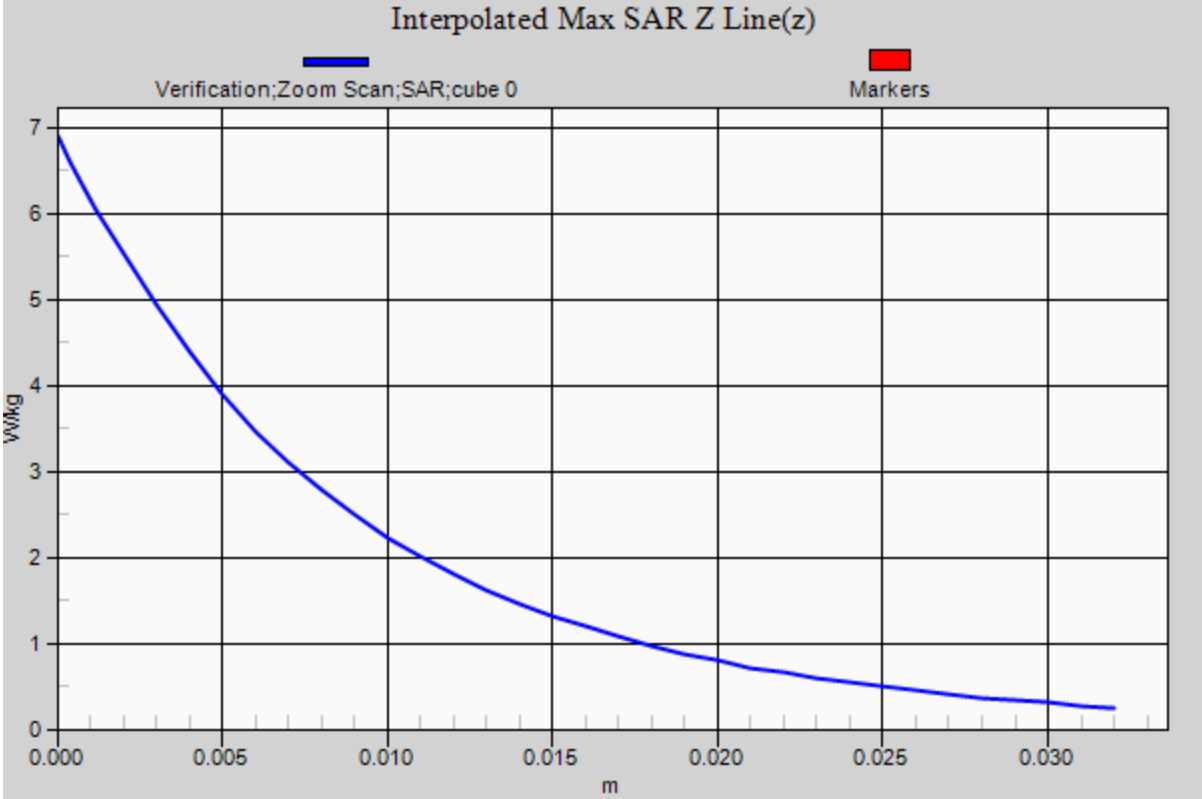
Probe: EX3DV4 - SN3833; ConvF(7.32, 7.32, 7.32); Calibrated: 1/27/2016;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1321; Calibrated: 1/14/2016
Phantom: ELI v5.0; Type: QDOVA001BB; Serial: 1251
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Procedure Notes:

1750 MHz/Verification/Area Scan (5x7x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 5.31 W/kg

1750 MHz/Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 31.489 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 6.92 W/kg
P_{in}= 100 mW
SAR(1 g) = 3.81 W/kg; SAR(10 g) = 2 W/kg
Maximum value of SAR (measured) = 5.47 W/kg





RF Exposure Lab

Plot 4

DUT: Dipole 1900 MHz D1900V2; Type: D1900V2; Serial: D1900V2 - SN:5d147

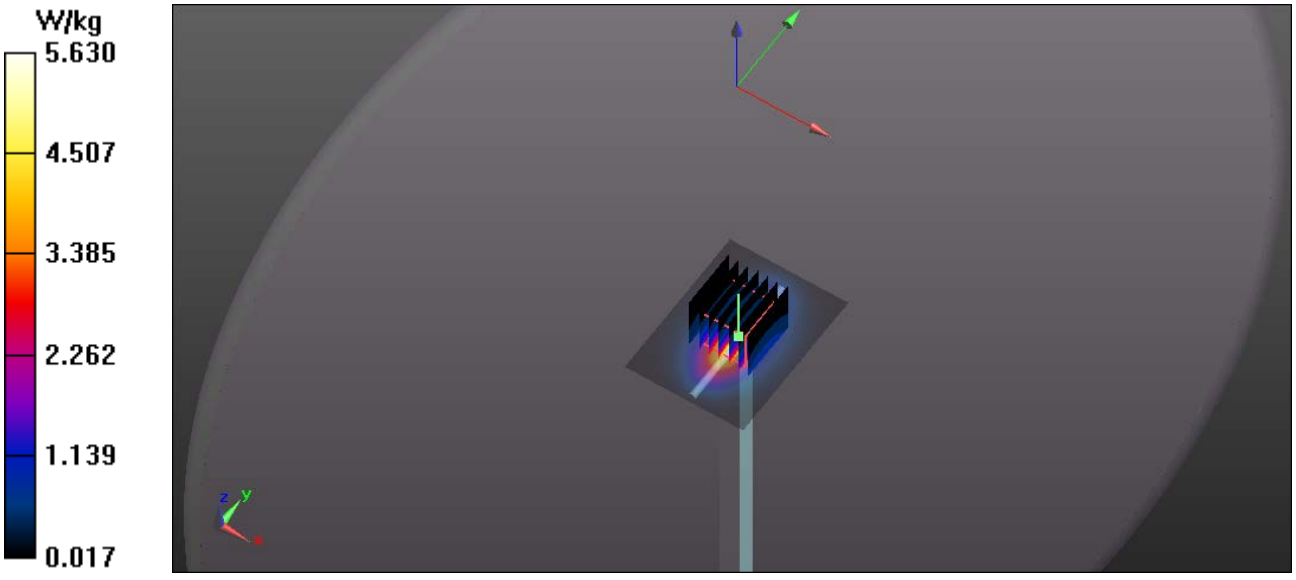
Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: MSL1900; Medium parameters used: f = 1900 MHz; σ = 1.55 S/m; ε_r = 52.48; ρ = 1000 kg/m^3
Phantom section: Flat Section

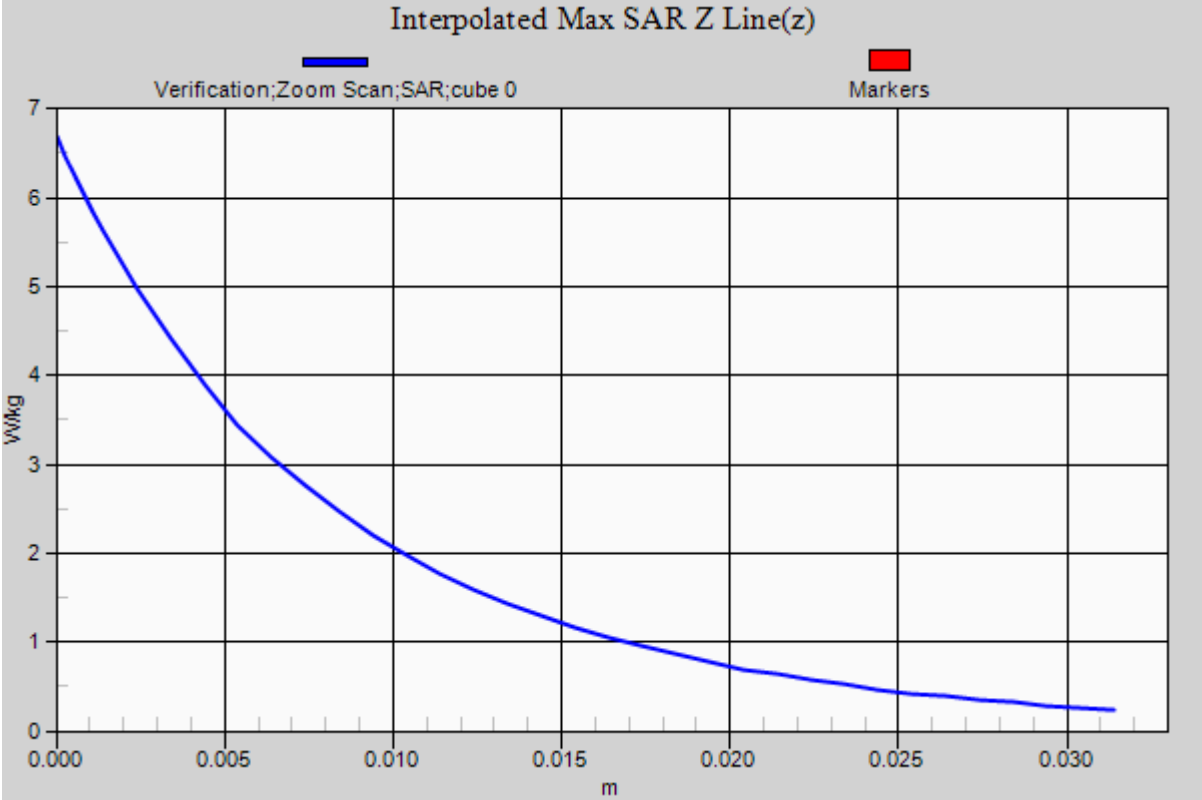
Test Date: Date: 12/2/2016; Ambient Temp: 23 °C; Tissue Temp: 21 °C
Probe: EX3DV4 - SN3833; ConvF(7.13, 7.13, 7.13); Calibrated: 1/27/2016;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1321; Calibrated: 1/14/2016
Phantom: ELI v5.0; Type: QDOVA001BB; Serial: 1251
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Procedure Notes:

1900 MHz Body/Verification/Area Scan (61x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 5.59 W/kg

1900 MHz Body/Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 52.559 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 6.67 W/kg
P_{in}= 100 mW
SAR(1 g) = 4.01 W/kg; SAR(10 g) = 2.06 W/kg
Maximum value of SAR (measured) = 5.62 W/kg





RF Exposure Lab

Plot 5

DUT: Dipole 2550 MHz D2550V2; Type: D2550V2; Serial: D2550V2 - SN:1003

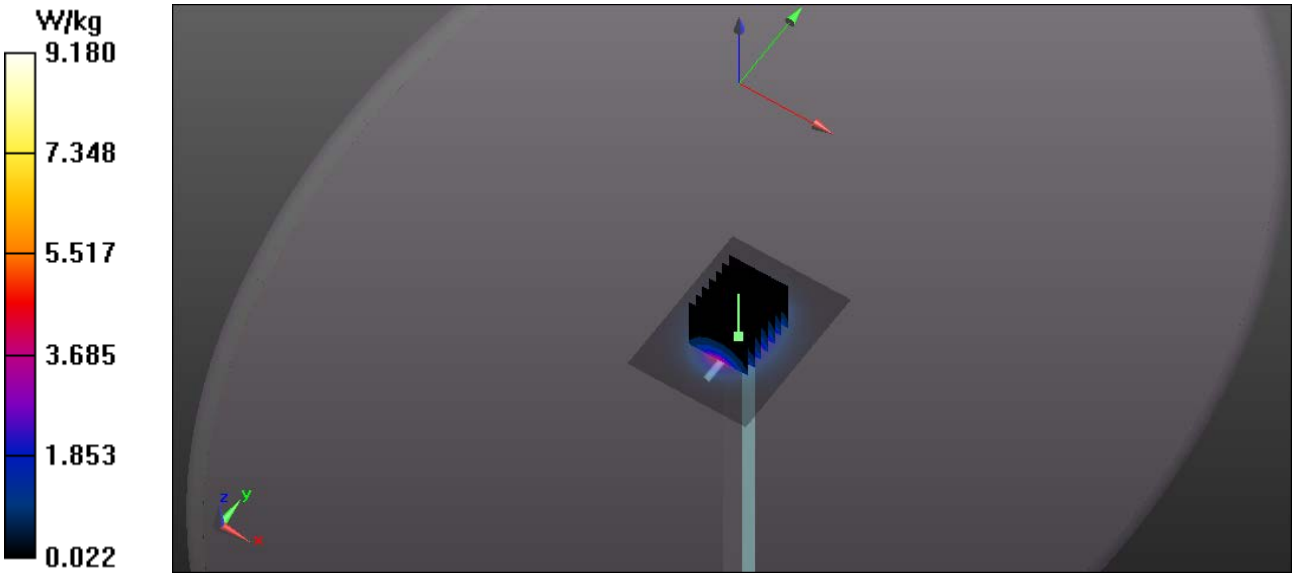
Communication System: CW; Frequency: 2550 MHz; Duty Cycle: 1:1
Medium: MSL2600; Medium parameters used: f = 2550 MHz; σ = 2.11 S/m; ε_r = 52.4; ρ = 1000 kg/m^3
Phantom section: Flat Section

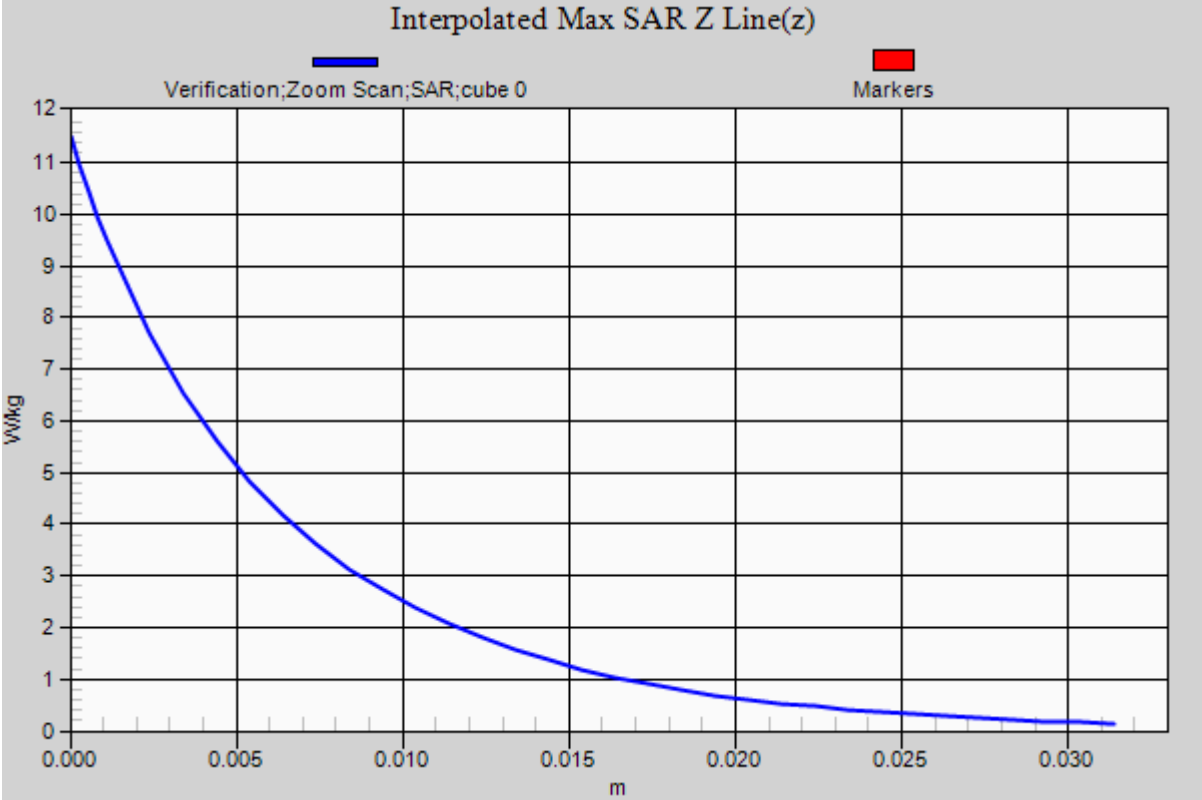
Test Date: Date: 12/3/2016; Ambient Temp: 23 °C; Tissue Temp: 21 °C
Probe: EX3DV4 - SN3311; ConvF(4.17, 4.17, 4.17); Calibrated: 2/16/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1321; Calibrated: 1/14/2016
Phantom: ELI v5.0; Type: QDOVA001BB; Serial: 1251
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Procedure Notes:

2550 MHz Body/Verification/Area Scan (61x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 9.17 W/kg

2550 MHz Body/Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 54.222 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 11.4 W/kg
P_{in}= 100 mW
SAR(1 g) = 5.4 W/kg; SAR(10 g) = 2.43 W/kg
Maximum value of SAR (measured) = 8.99 W/kg





RF Exposure Lab

Plot 6

DUT: Dipole 2450 MHz D2450V2; Type: D2450V2; Serial: D2450V2 - SN: 881

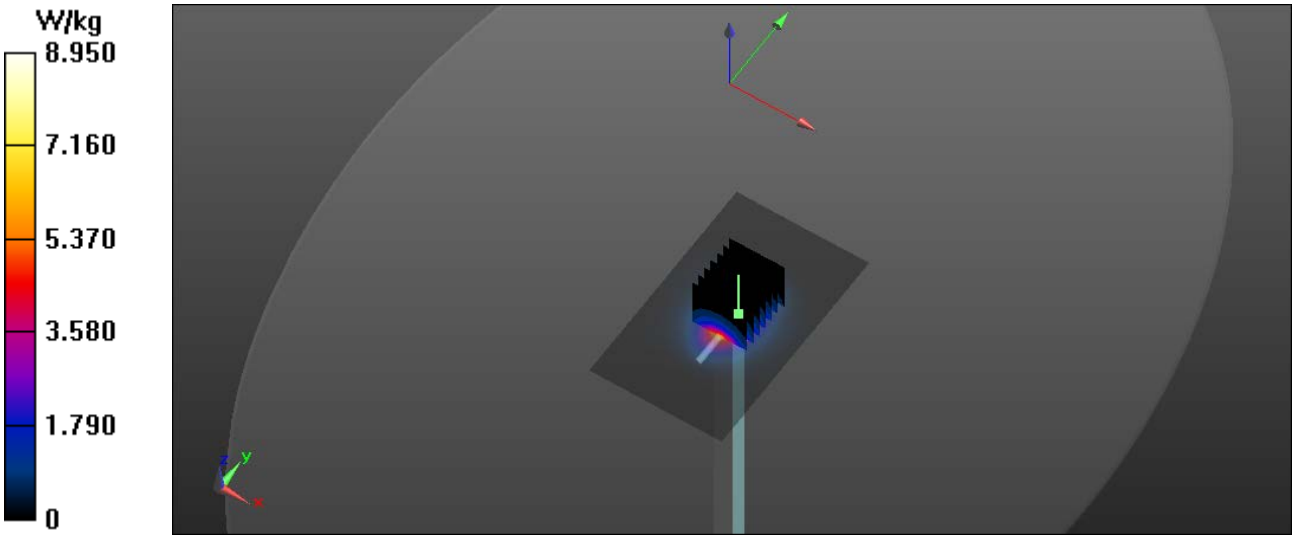
Communication System: CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: MSL2450; Medium parameters used: f = 2450 MHz; σ = 1.96 S/m; ε_r = 52.51; ρ = 1000 kg/m^3
Phantom section: Flat Section

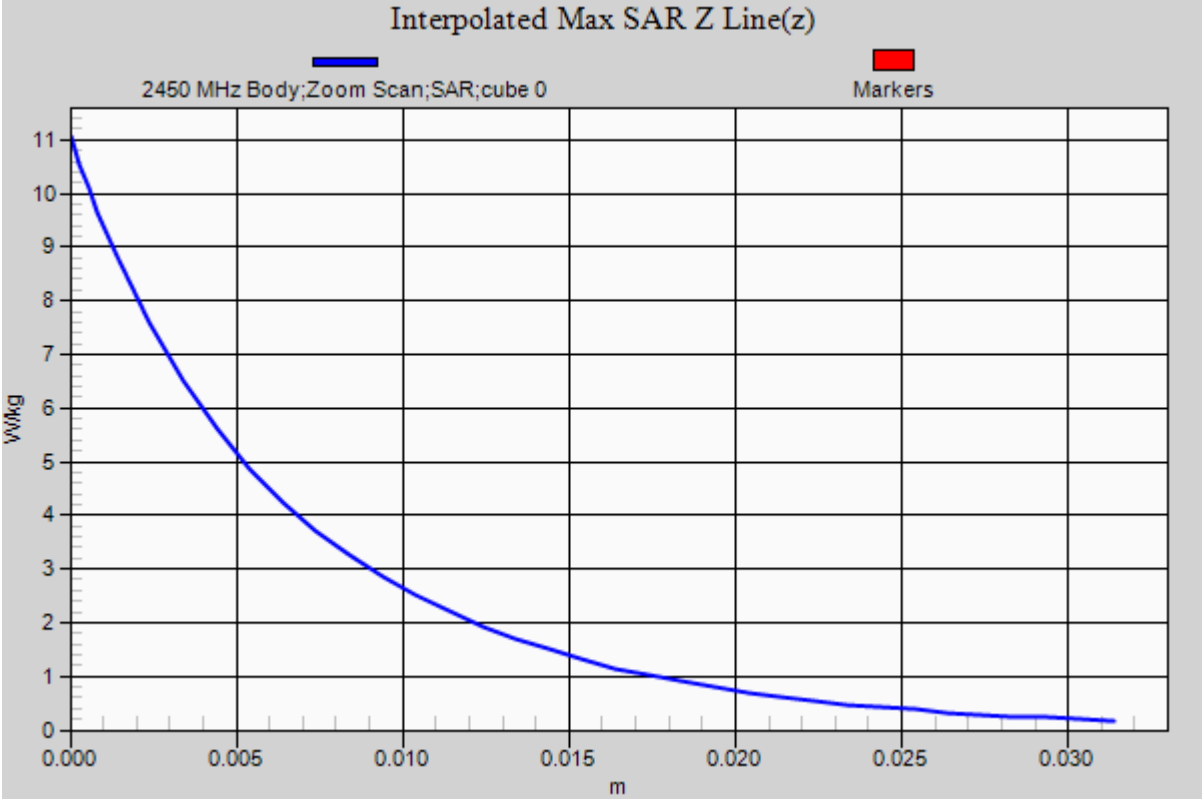
Test Date: Date: 12/3/2016; Ambient Temp: 23 °C; Tissue Temp: 21 °C
Probe: EX3DV4 - SN3833; ConvF(6.87, 6.87, 6.87); Calibrated: 1/27/2016;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1321; Calibrated: 1/14/2016
Phantom: ELI v5.0; Type: QDOVA001BB; Serial: 1251
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Procedure Notes:

Body Verification/2450 MHz/Area Scan (61x101x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 8.87 W/kg

Body Verification/2450 MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 53.517 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 11.13 W/kg
P_{in}= 100 mW
SAR(1 g) = 5.19 W/kg; SAR(10 g) = 2.43 W/kg
Maximum value of SAR (measured) = 8.92 W/kg





RF Exposure Lab

Plot 7

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN: 1119

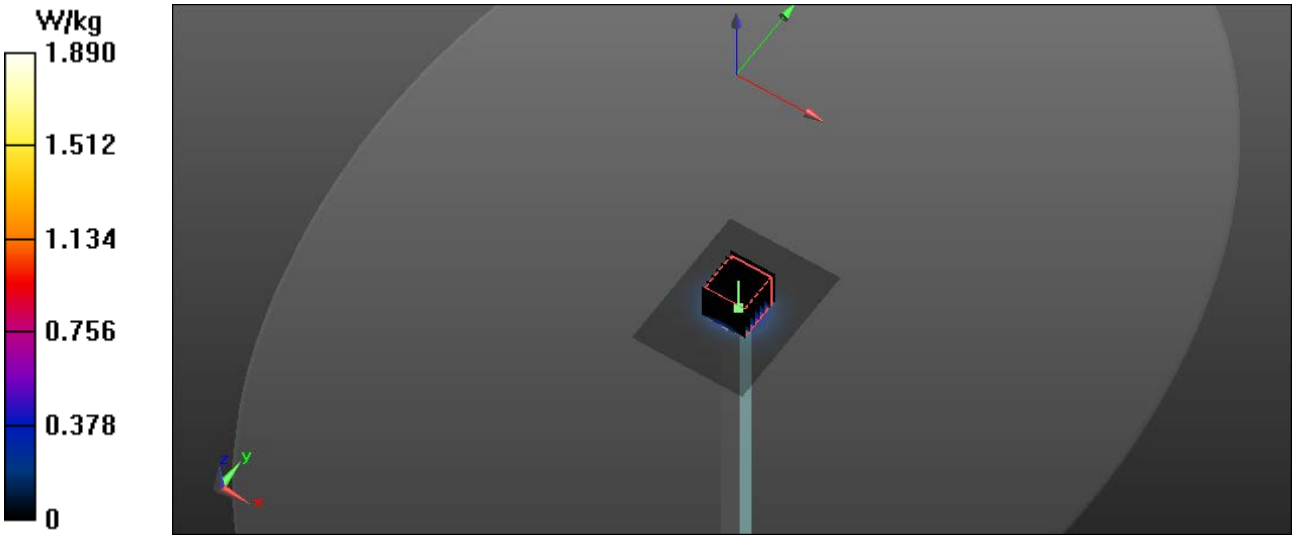
Communication System: CW; Frequency: 5200 MHz; Duty Cycle: 1:1
Medium: MSL 3-6 GHz; Medium parameters used: f = 5200 MHz; σ = 5.3 S/m; ε_r = 48.88; ρ = 1000 kg/m^3
Phantom section: Flat Section

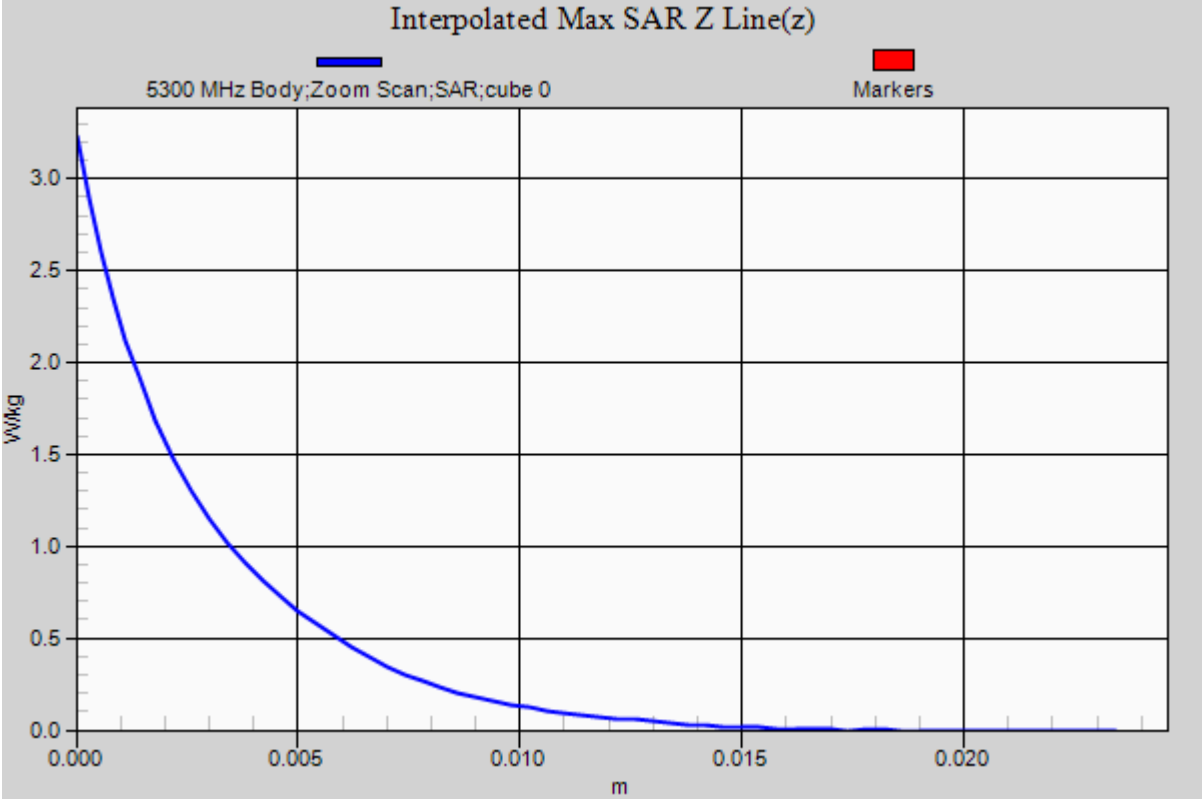
Test Date: Date: 12/5/2016; Ambient Temp: 23 °C; Tissue Temp: 21 °C
Probe: EX3DV4 - SN3833; ConvF(4.03, 4.03, 4.03); Calibrated: 1/27/2016;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1321; Calibrated: 1/14/2016
Phantom: ELI v5.0; Type: QDOVA001BB; Serial: 1251
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Procedure Notes:

Body Verification/5200 MHz/Area Scan (61x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.88 W/kg

Body Verification/5200 MHz/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 12.256 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 3.2 W/kg
Pin=10 mW
SAR(1 g) = 0.78 W/kg; SAR(10 g) = 0.213 W/kg
Maximum value of SAR (measured) = 1.9 W/kg





RF Exposure Lab

Plot 8

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN: 1119

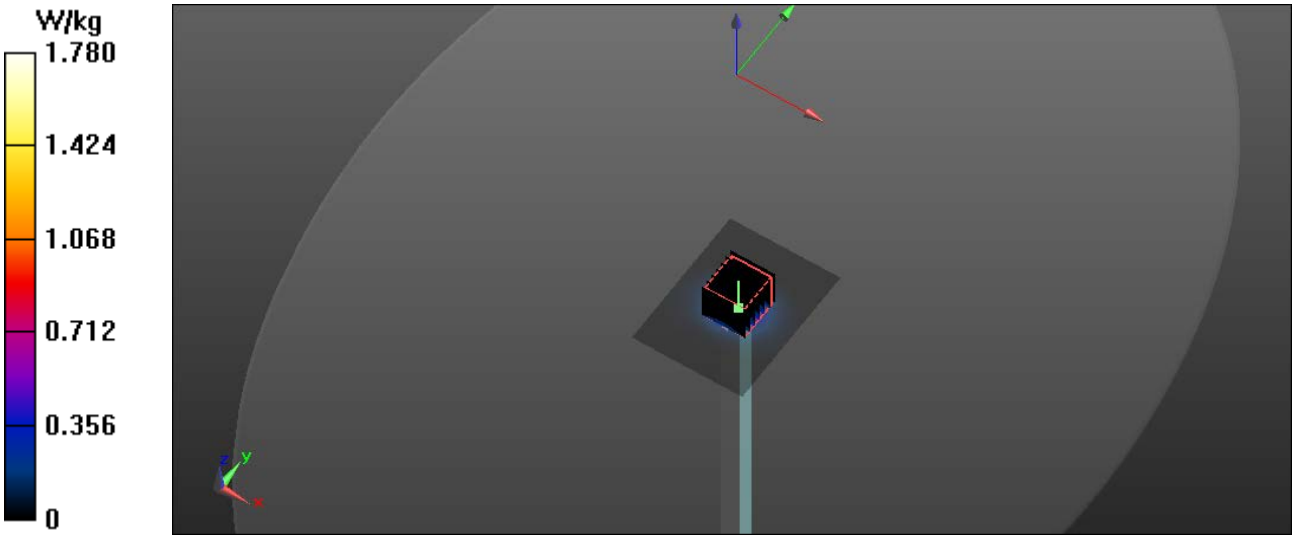
Communication System: CW; Frequency: 5800 MHz; Duty Cycle: 1:1
Medium: MSL 3-6 GHz; Medium parameters used: f = 5800 MHz; σ = 6.03 S/m; ε_r = 48.05; ρ = 1000 kg/m^3
Phantom section: Flat Section

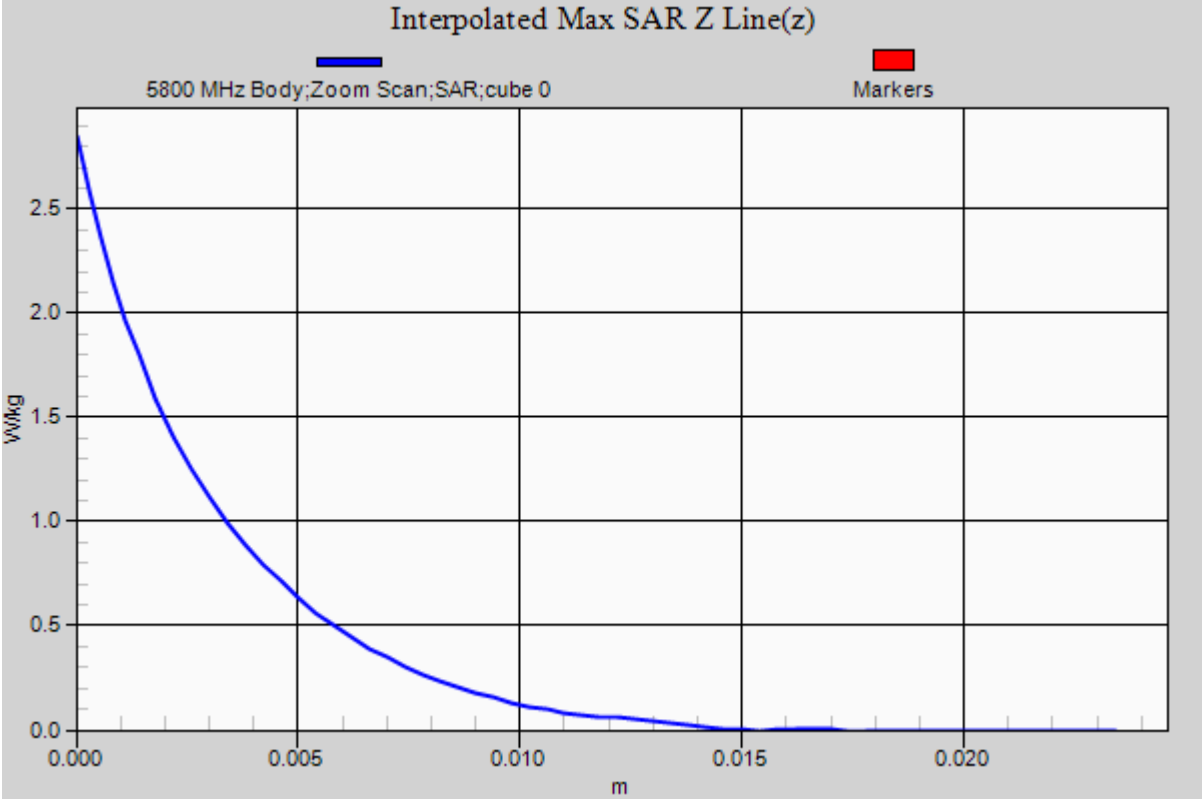
Test Date: Date: 12/5/2016; Ambient Temp: 23 °C; Tissue Temp: 21 °C
Probe: EX3DV4 - SN3833; ConvF(3.49, 3.49, 3.49); Calibrated: 1/27/2016;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1321; Calibrated: 1/14/2016
Phantom: ELI v5.0; Type: QDOVA001BB; Serial: 1251
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Procedure Notes:

Body Verification/5800 MHz/Area Scan (61x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.78 W/kg

Body Verification/5800 MHz/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 12.689 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 2.91 W/kg
Pin=10 mW
SAR(1 g) = 0.791 W/kg; SAR(10 g) = 0.214 W/kg
Maximum value of SAR (measured) = 1.77 W/kg





RF Exposure Lab

Plot 9

DUT: Dipole 1750 MHz D1750V2; Type: D1750V2; Serial: D1750V2 - SN:1061

Communication System: CW; Frequency: 1750 MHz; Duty Cycle: 1:1
Medium: MSL1750; Medium parameters used: f = 1750 MHz; σ = 1.52 S/m; ε_r = 53.32; ρ = 1000 kg/m^3
Phantom section: Flat Section

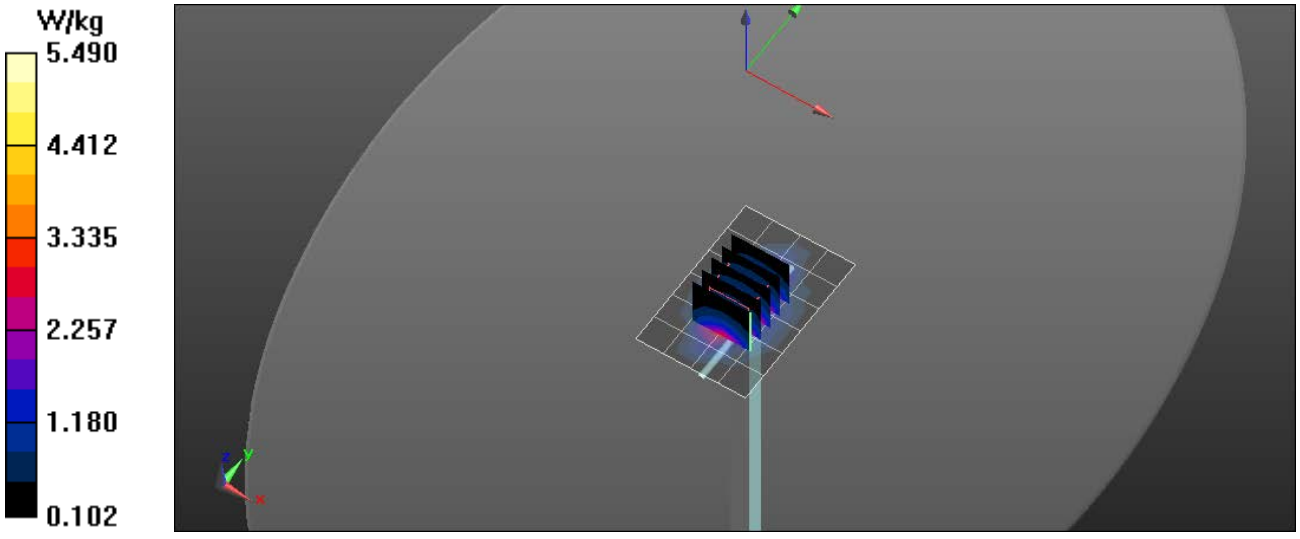
Test Date: Date: 8/29/2017; Ambient Temp: 23 °C; Tissue Temp: 21 °C

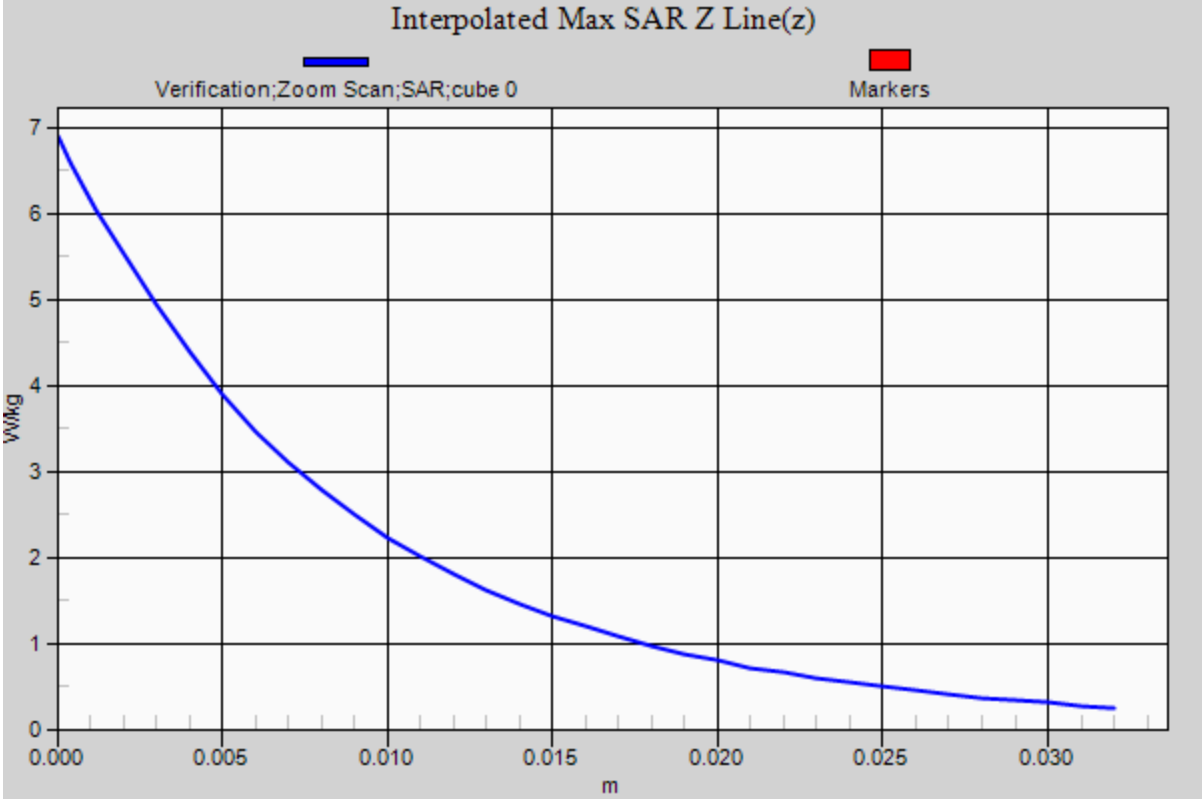
Probe: EX3DV4 - SN3833; ConvF(7.4, 7.4, 7.4); Calibrated: 1/23/2017;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1321; Calibrated: 4/25/2017
Phantom: ELI v5.0; Type: QDOVA002AA; Serial: 2037
Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

Procedure Notes:

1750 MHz/Verification/Area Scan (5x7x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 5.33 W/kg

1750 MHz/Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 31.227 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 6.89 W/kg
SAR(1 g) = 3.85 W/kg; SAR(10 g) = 2.03 W/kg
Maximum value of SAR (measured) = 5.49 W/kg





RF Exposure Lab

Plot 10

DUT: Dipole 835 MHz D835V2; Type: D835V2; Serial: D835V2 - SN:4d131

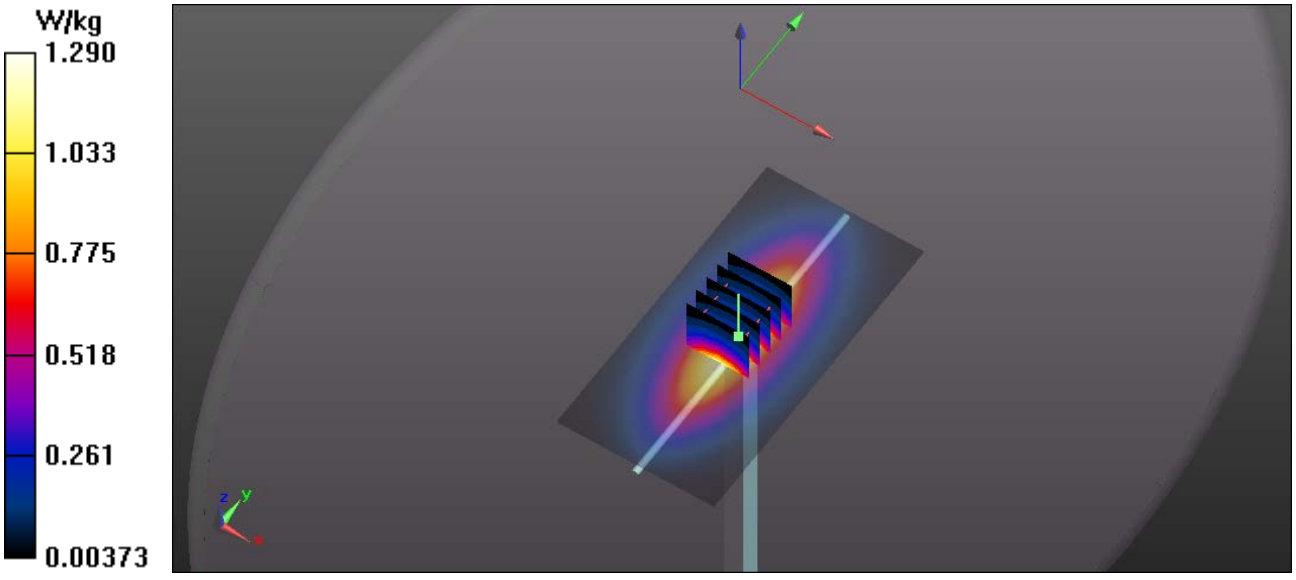
Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: MSL835; Medium parameters used: f = 835 MHz; σ = 1 S/m; ε_r = 54.83; ρ = 1000 kg/m^3
Phantom section: Flat Section

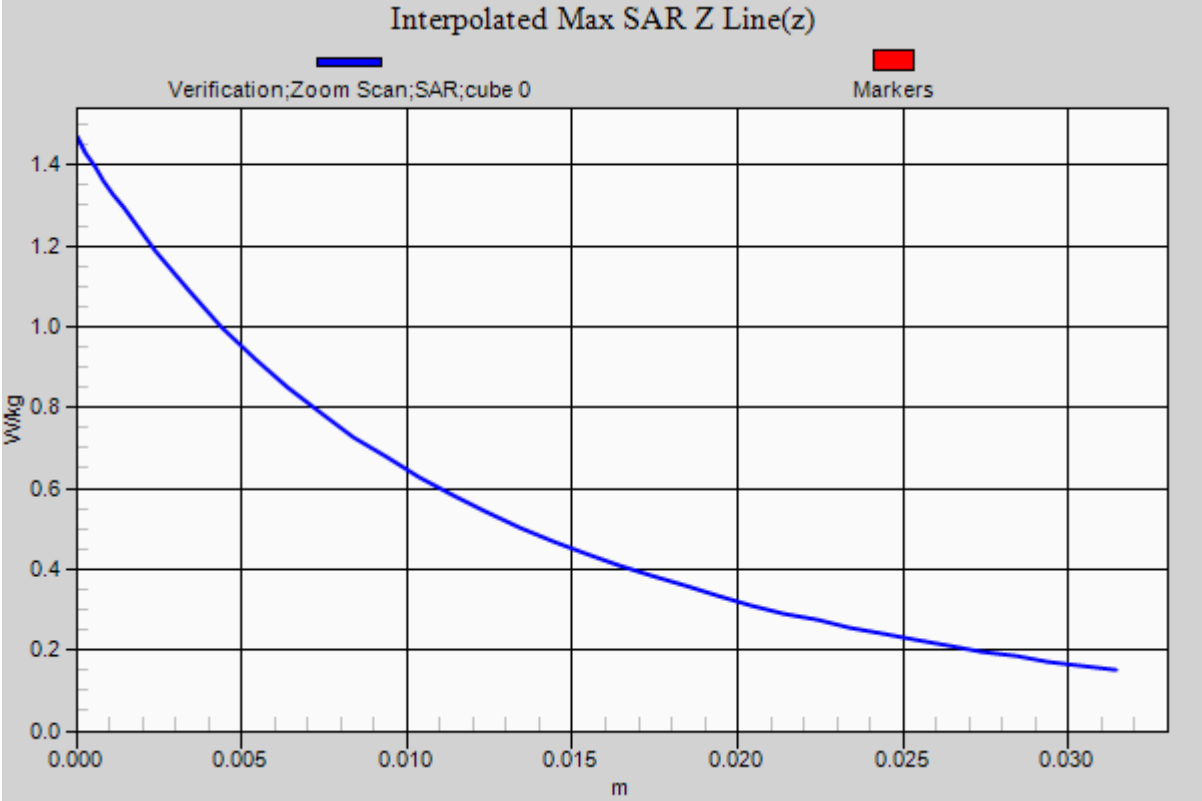
Test Date: Date: 5/1/2018; Ambient Temp: 23 °C; Tissue Temp: 21 °C
Probe: EX3DV4 - SN3662; ConvF(9.21, 9.21, 9.21); Calibrated: 4/20/2018;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1321; Calibrated: 1/10/2018
Phantom: ELI v5.0; Type: QDOVA002AA; Serial: 2037
Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

Procedure Notes:

835 MHz Body/Verification/Area Scan (81x161x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.26 W/kg

835 MHz Body/Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 52.796 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.44 W/kg
P_{in}= 100 mW
SAR(1 g) = 0.932 W/kg; SAR(10 g) = 0.615 W/kg
Maximum value of SAR (measured) = 1.29 W/kg





RF Exposure Lab

Plot 11

DUT: Dipole 1900 MHz D1900V2; Type: D1900V2; Serial: D1900V2 - SN:5d147

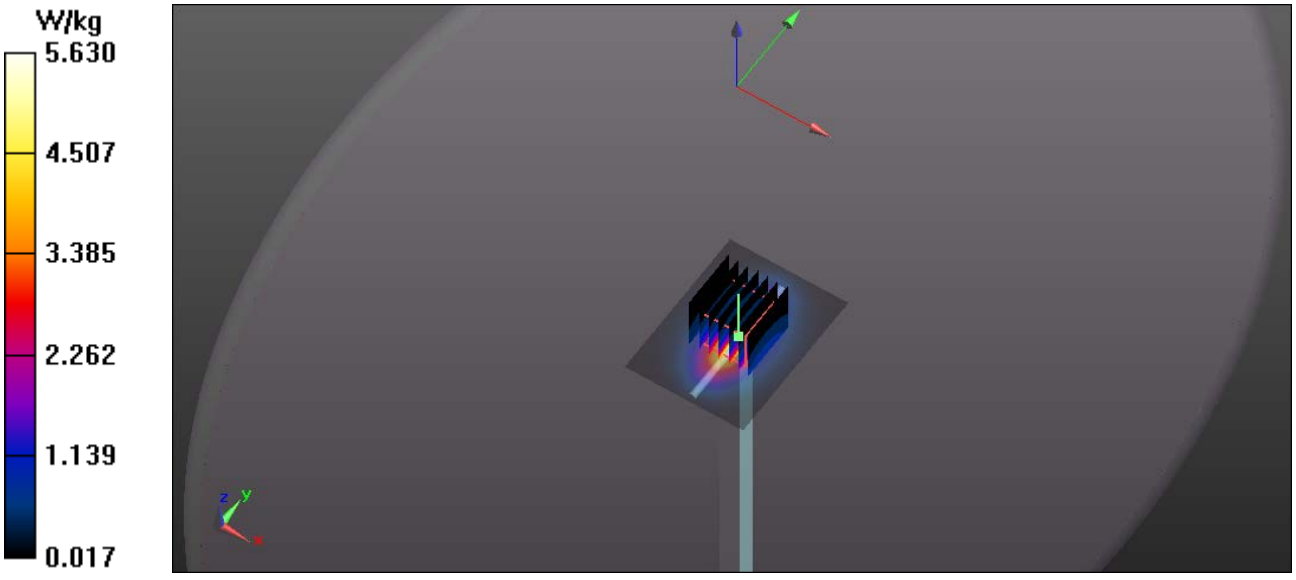
Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: MSL1900; Medium parameters used: f = 1900 MHz; σ = 1.55 S/m; ε_r = 52.74; ρ = 1000 kg/m^3
Phantom section: Flat Section

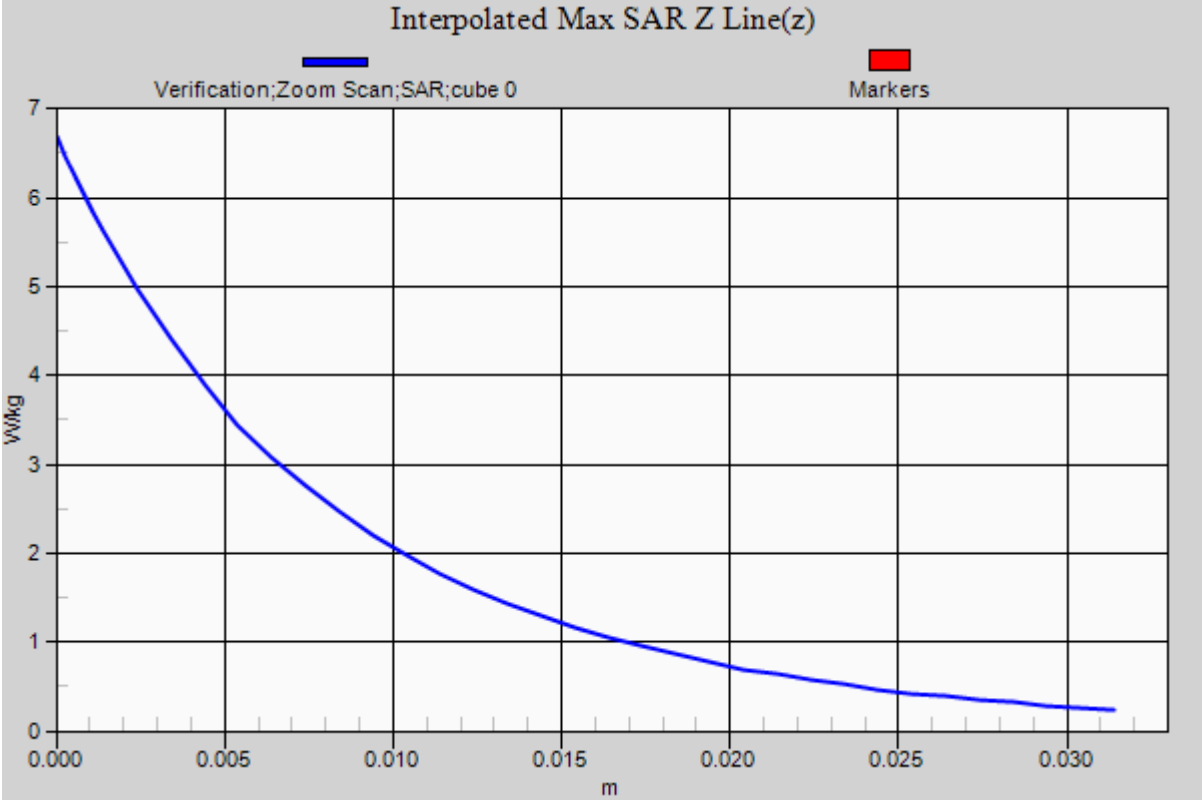
Test Date: Date: 5/1/2018; Ambient Temp: 23 °C; Tissue Temp: 21 °C
Probe: EX3DV4 - SN3662; ConvF(7.61, 7.61, 7.61); Calibrated: 4/20/2018;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1321; Calibrated: 1/10/2018
Phantom: ELI v5.0; Type: QDOVA002AA; Serial: 2037
Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

Procedure Notes:

1900 MHz Body/Verification/Area Scan (61x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 5.6 W/kg

1900 MHz Body/Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 52.657 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 6.65 W/kg
P_{in}= 100 mW
SAR(1 g) = 4.05 W/kg; SAR(10 g) = 2.11 W/kg
Maximum value of SAR (measured) = 5.61 W/kg





Appendix B – SAR Test Data Plots

RF Exposure Lab

Plot 1

DUT: MIFI7000; Type: MIFI; Serial: SZ17061900013

Communication System: LTE (SC-FDMA, 1 RB, 10 MHz, QPSK); Frequency: 707.5 MHz; Duty Cycle: 1:1
Medium: MSL750; Medium parameters used (interpolated): f = 707.5 MHz; σ = 0.958 S/m; ε_r = 55.56; ρ = 1000 kg/m^3
Phantom section: Flat Section

Test Date: Date: 12/1/2016; Ambient Temp: 23 °C; Tissue Temp: 21 °C

Probe: EX3DV4 - SN3833; ConvF(9.23, 9.23, 9.23); Calibrated: 1/27/2016;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1321; Calibrated: 1/14/2016
Phantom: ELI v5.0; Type: QDOVA001BB; Serial: 1251
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

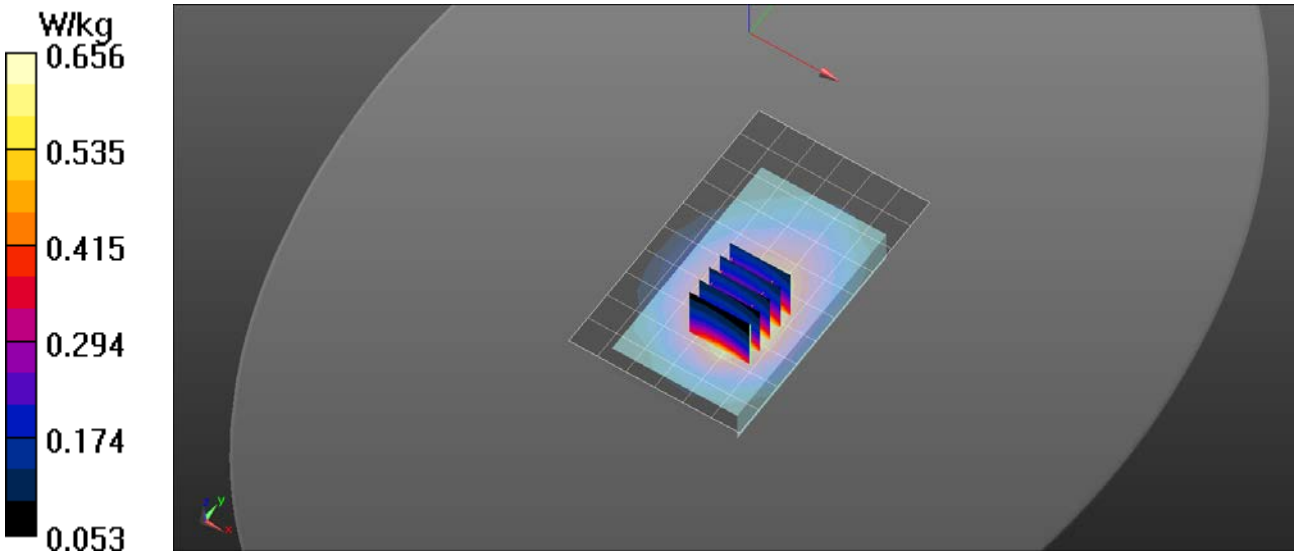
Procedure Notes:

750 MHz B12 LTE/Front 1 RB Mid/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.627 W/kg

750 MHz B12 LTE/Front 1 RB Mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.01 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.733 W/kg
SAR(1 g) = 0.558 W/kg; SAR(10 g) = 0.406 W/kg

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.656 W/kg



RF Exposure Lab

Plot 2

DUT: MIFI7000; Type: MIFI; Serial: SZ17061900013

Communication System: LTE (SC-FDMA, 1 RB, 10 MHz, QPSK); Frequency: 782 MHz; Duty Cycle: 1:1
Medium: MSL750; Medium parameters used (interpolated): f = 782 MHz; σ = 0.992 S/m; ε_r = 55.24; ρ = 1000 kg/m^3
Phantom section: Flat Section

Test Date: Date: 12/1/2016; Ambient Temp: 23 °C; Tissue Temp: 21 °C

Probe: EX3DV4 - SN3833; ConvF(9.23, 9.23, 9.23); Calibrated: 1/27/2016;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1321; Calibrated: 1/14/2016
Phantom: ELI v5.0; Type: QDOVA001BB; Serial: 1251
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

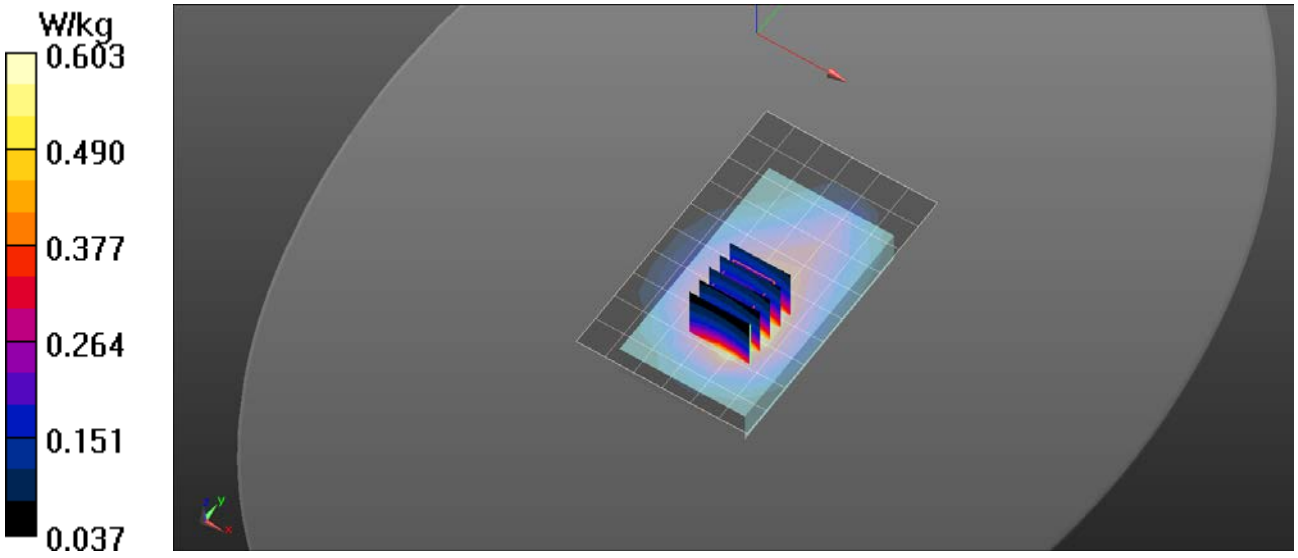
Procedure Notes:

750 MHz B13 LTE/Front 1RB Mid/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.574 W/kg

750 MHz B13 LTE/Front 1RB Mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.13 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.684 W/kg
SAR(1 g) = 0.497 W/kg; SAR(10 g) = 0.346 W/kg

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.603 W/kg



RF Exposure Lab

Plot 3

DUT: MIFI7000; Type: MIFI; Serial: SZ17061900013

Communication System: LTE (SC-FDMA, 1 RB, 10 MHz, QPSK); Frequency: 710 MHz; Duty Cycle: 1:1
Medium: MSL750; Medium parameters used: f = 710 MHz; σ = 0.96 S/m; ε_r = 55.55; ρ = 1000 kg/m^3
Phantom section: Flat Section

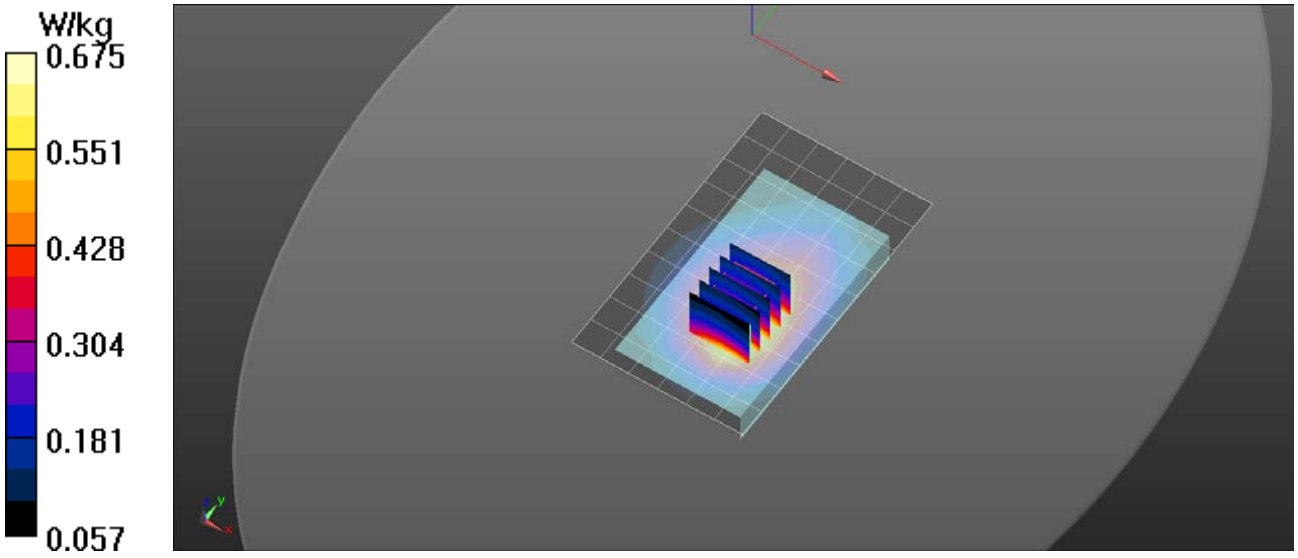
Test Date: Date: 12/1/2016; Ambient Temp: 23 °C; Tissue Temp: 21 °C

Probe: EX3DV4 - SN3833; ConvF(9.23, 9.23, 9.23); Calibrated: 1/27/2016;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1321; Calibrated: 1/14/2016
Phantom: ELI v5.0; Type: QDOVA001BB; Serial: 1251
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Procedure Notes:

750 MHz B17 LTE/Front 1 RB Mid/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.664 W/kg

750 MHz B17 LTE/Front 1 RB Mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.57 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 0.753 W/kg
SAR(1 g) = 0.570 W/kg; SAR(10 g) = 0.413 W/kg
Maximum value of SAR (measured) = 0.675 W/kg



RF Exposure Lab

Plot 4

DUT: MIFI7000; Type: MIFI; Serial: SZ17061900013

Communication System: UMTS (WCDMA); Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium: MSL835; Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.99 S/m; ε_r = 55.902; ρ = 1000 kg/m^3
Phantom section: Flat Section

Test Date: Date: 12/3/2016; Ambient Temp: 23 °C; Tissue Temp: 21 °C

Probe: EX3DV4 - SN3833; ConvF(8.73, 8.73, 8.73); Calibrated: 1/27/2016;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1321; Calibrated: 1/14/2016
Phantom: ELI v5.0; Type: QDOVA001BB; Serial: 1251
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

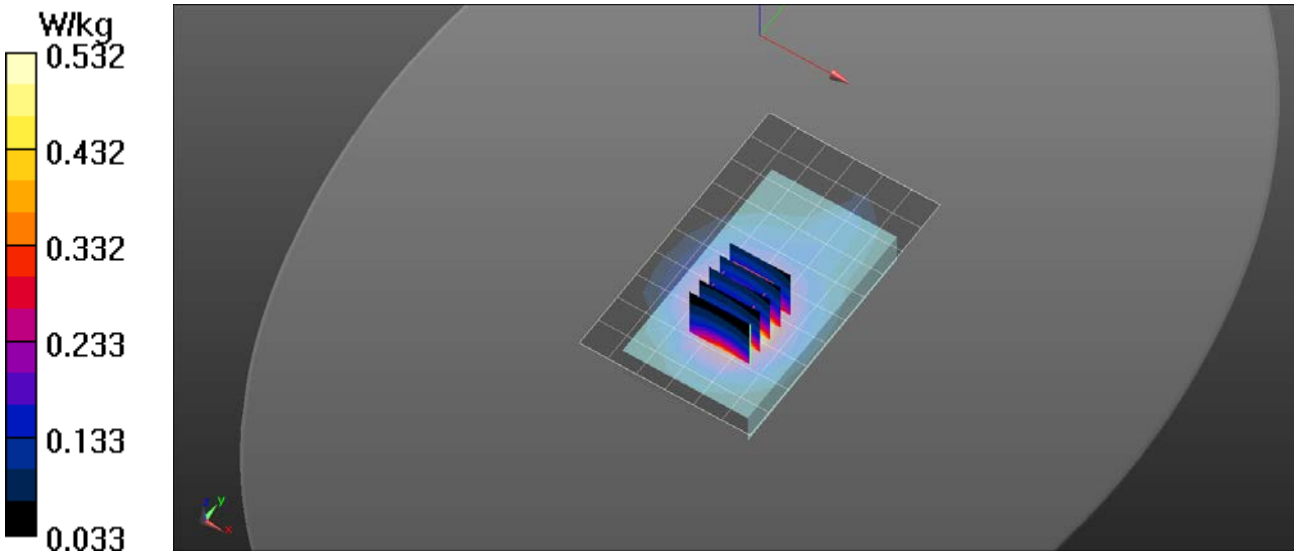
Procedure Notes:

835 MHz WCDMA/Front Mid/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.473 W/kg

835 MHz WCDMA/Front Mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.50 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 0.608 W/kg
SAR(1 g) = 0.433 W/kg; SAR(10 g) = 0.295 W/kg

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.532 W/kg



RF Exposure Lab

Plot 5

DUT: MIFI7000; Type: MIFI; Serial: SZ17061900013

Communication System: GPRS 2-Slot (GMSK); Frequency: 836.6 MHz; Duty Cycle: 1:4.00037
Medium: MSL835; Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.99 S/m; ε_r = 55.902; ρ = 1000 kg/m^3
Phantom section: Flat Section

Test Date: Date: 12/2/2016; Ambient Temp: 23 °C; Tissue Temp: 21 °C

Probe: EX3DV4 - SN3833; ConvF(8.73, 8.73, 8.73); Calibrated: 1/27/2016;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1321; Calibrated: 1/14/2016
Phantom: ELI v5.0; Type: QDOVA001BB; Serial: 1251
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

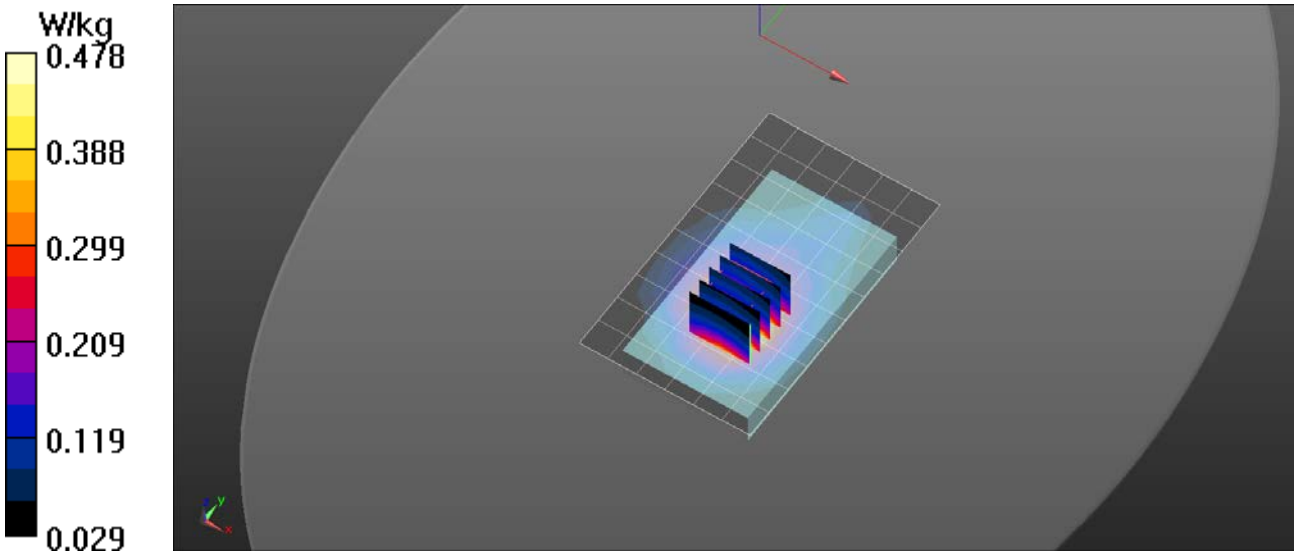
Procedure Notes:

835 MHz GPRS/Front Mid/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.445 W/kg

835 MHz GPRS/Front Mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.17 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.553 W/kg
SAR(1 g) = 0.390 W/kg; SAR(10 g) = 0.268 W/kg

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.478 W/kg



RF Exposure Lab

Plot 6

DUT: MIFI7000; Type: MIFI; Serial: SZ17061900013

Communication System: LTE (SC-FDMA, 1 RB, 10 MHz, QPSK); Frequency: 836.5 MHz; Duty Cycle: 1:1
Medium: MSL835; Medium parameters used (interpolated): f = 836.5 MHz; σ = 0.99 S/m; ε_r = 55.903; ρ = 1000 kg/m^3
Phantom section: Flat Section

Test Date: Date: 12/3/2016; Ambient Temp: 23 °C; Tissue Temp: 21 °C

Probe: EX3DV4 - SN3833; ConvF(8.73, 8.73, 8.73); Calibrated: 1/27/2016;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1321; Calibrated: 1/14/2016
Phantom: ELI v5.0; Type: QDOVA001BB; Serial: 1251
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

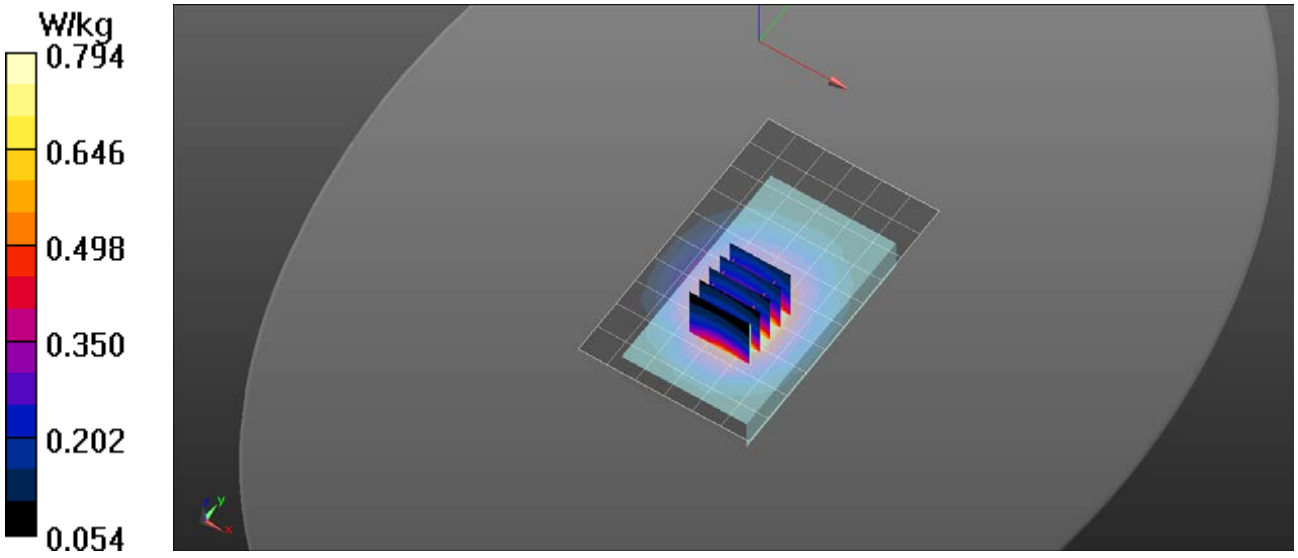
Procedure Notes:

835 MHz B5 LTE/Front 1RB Mid/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.768 W/kg

835 MHz B5 LTE/Front 1RB Mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.44 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.900 W/kg
SAR(1 g) = 0.660 W/kg; SAR(10 g) = 0.464 W/kg

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.794 W/kg



RF Exposure Lab

Plot 7

DUT: MIFI7000; Type: MIFI; Serial: SZ17061900013

Communication System: LTE (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 1770 MHz; Duty Cycle: 1:1
Medium: MSL1750; Medium parameters used: f = 1770 MHz; σ = 1.53 S/m; ε_r = 53.22; ρ = 1000 kg/m^3
Phantom section: Flat Section

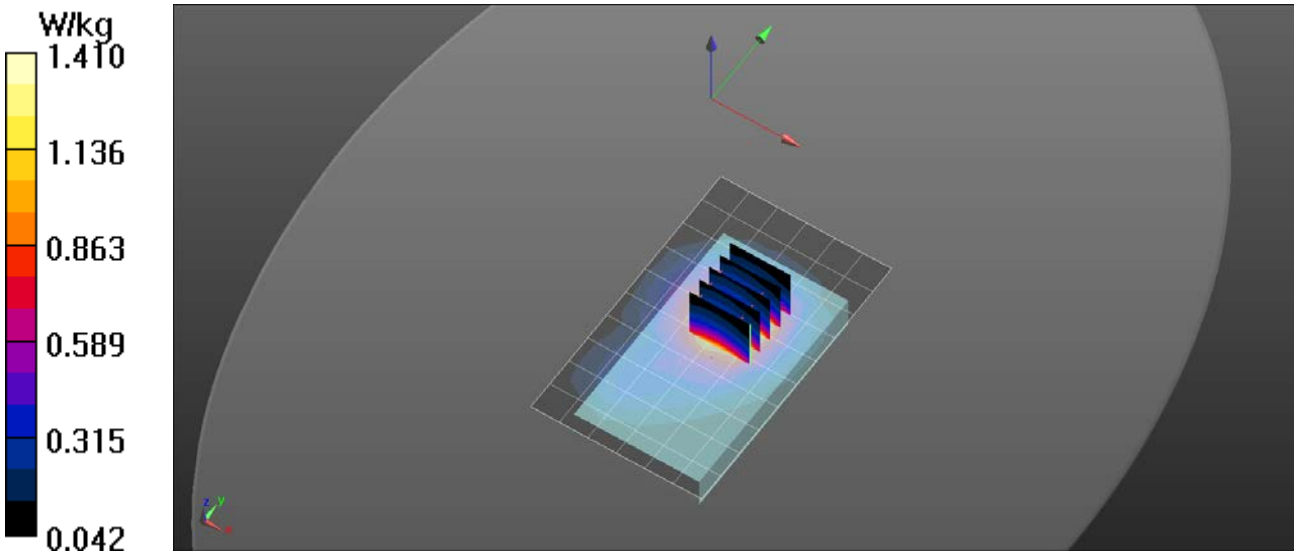
Test Date: Date: 12/1/2016; Ambient Temp: 23 °C; Tissue Temp: 21 °C

Probe: EX3DV4 - SN3833; ConvF(7.32, 7.32, 7.32); Calibrated: 1/27/2016;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1321; Calibrated: 1/14/2016
Phantom: ELI v5.0; Type: QDOVA001BB; Serial: 1251
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Procedure Notes:

1750 MHz B66 LTE/Back 1RB High/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.37 W/kg

1750 MHz B66 LTE/Back 1RB High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.98 V/m; Power Drift = -0.00 dB
Peak SAR (extrapolated) = 1.67 W/kg
SAR(1 g) = 1.11 W/kg; SAR(10 g) = 0.706 W/kg
Maximum value of SAR (measured) = 1.41 W/kg



RF Exposure Lab

Plot 8

DUT: MIFI7000; Type: MIFI; Serial: Test

Communication System: UMTS (WCDMA); Frequency: 1712.4 MHz; Duty Cycle: 1:1
Medium: MSL1750; Medium parameters used (interpolated): f = 1712.4 MHz; σ = 1.482 S/m; ε_r = 53.543; ρ = 1000 kg/m^3
Phantom section: Flat Section

Test Date: Date: 8/29/2017; Ambient Temp: 23 °C; Tissue Temp: 21 °C

Probe: EX3DV4 - SN3833; ConvF(7.4, 7.4, 7.4); Calibrated: 1/23/2017;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1321; Calibrated: 4/25/2017
Phantom: ELI v5.0; Type: QDOVA002AA; Serial: 2037
Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

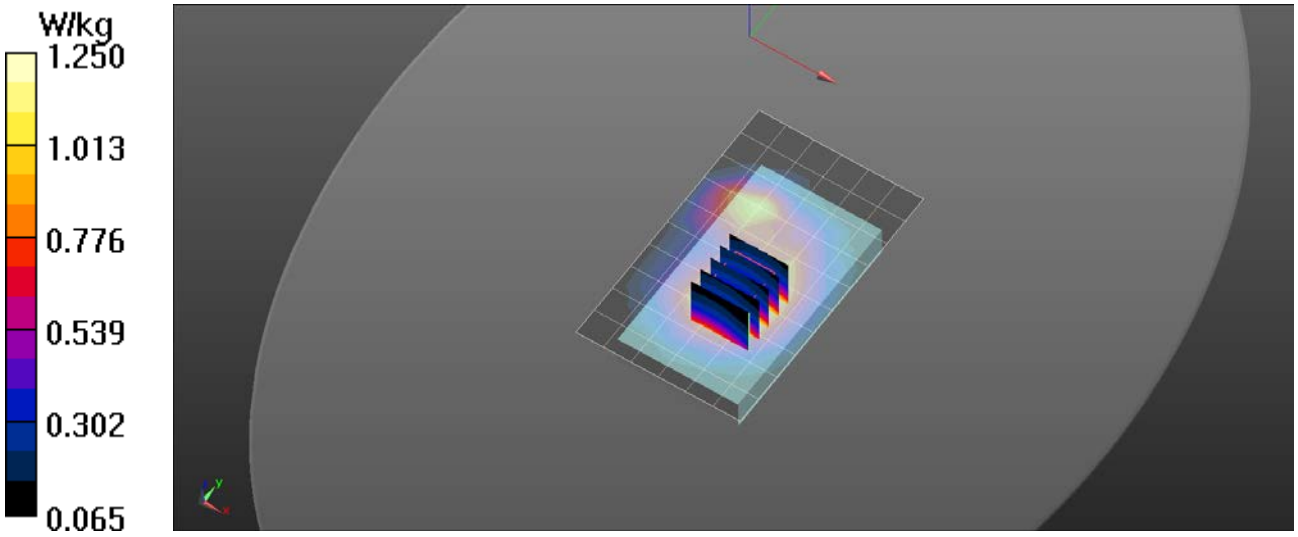
Procedure Notes:

1750 MHz WCDMA/Front Low/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.21 W/kg

1750 MHz WCDMA/Front Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.57 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 1.47 W/kg
SAR(1 g) = 1.02 W/kg; SAR(10 g) = 0.688 W/kg

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.25 W/kg



RF Exposure Lab

Plot 9

DUT: MIFI7000; Type: MIFI; Serial: SZ17061900013

Communication System: UMTS (WCDMA); Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: MSL1900; Medium parameters used: f = 1880 MHz; σ = 1.54 S/m; ε_r = 52.52; ρ = 1000 kg/m^3
Phantom section: Flat Section

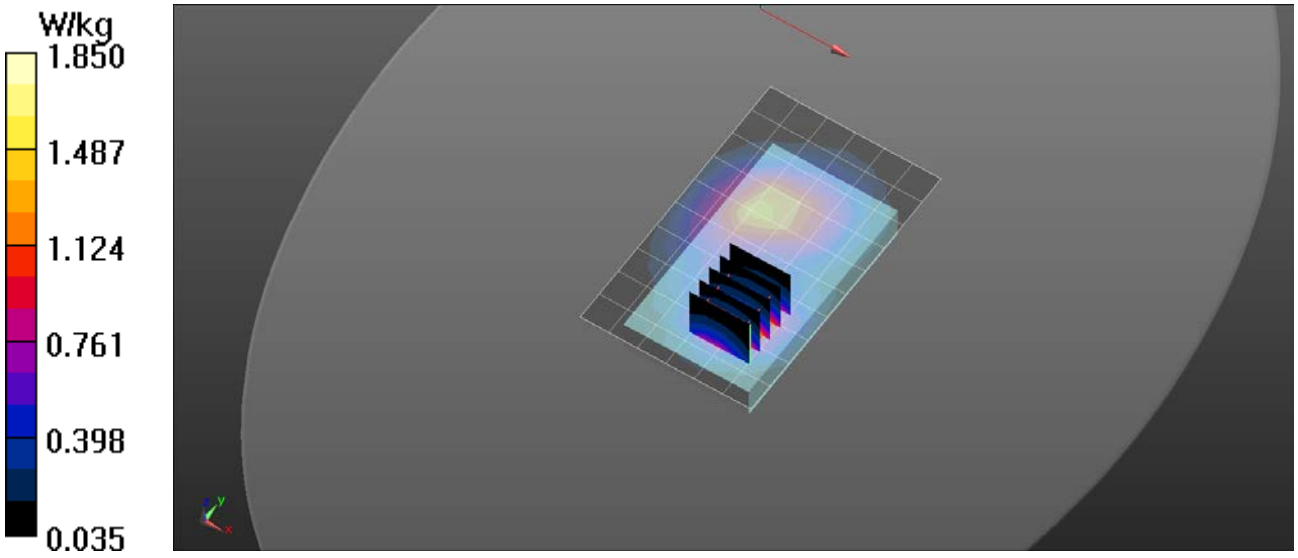
Test Date: Date: 12/2/2016; Ambient Temp: 23 °C; Tissue Temp: 21 °C

Probe: EX3DV4 - SN3833; ConvF(7.13, 7.13, 7.13); Calibrated: 1/27/2016;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1321; Calibrated: 1/14/2016
Phantom: ELI v5.0; Type: QDOVA001BB; Serial: 1251
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Procedure Notes:

1900 MHz WCDMA/Front Mid/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.68 W/kg

1900 MHz WCDMA/Front Mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.57 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 2.29 W/kg
SAR(1 g) = 1.36 W/kg; SAR(10 g) = 0.757 W/kg
Maximum value of SAR (measured) = 1.85 W/kg



RF Exposure Lab

Plot 10

DUT: MIFI7000; Type: MIFI; Serial: SZ17061900013

Communication System: GPRS 2-Slot (GMSK); Frequency: 1880 MHz; Duty Cycle: 1:4.00037
Medium: MSL1900; Medium parameters used: f = 1880 MHz; σ = 1.54 S/m; ε_r = 52.52; ρ = 1000 kg/m^3
Phantom section: Flat Section

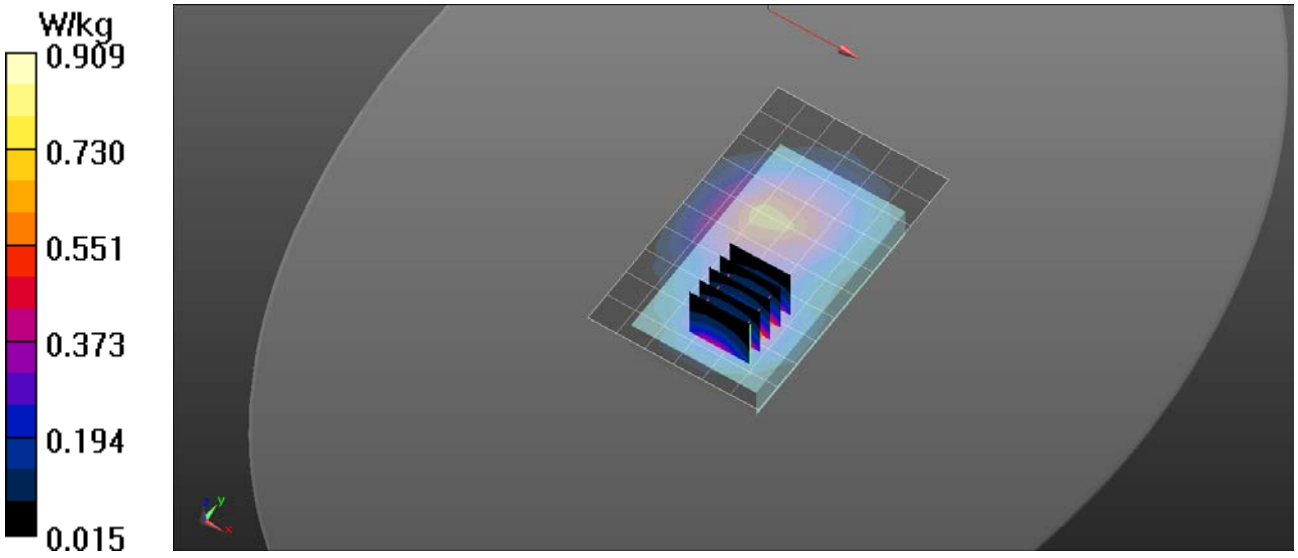
Test Date: Date: 12/2/2016; Ambient Temp: 23 °C; Tissue Temp: 21 °C

Probe: EX3DV4 - SN3833; ConvF(7.13, 7.13, 7.13); Calibrated: 1/27/2016;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1321; Calibrated: 1/14/2016
Phantom: ELI v5.0; Type: QDOVA001BB; Serial: 1251
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Procedure Notes:

1900 MHz GPRS/Front Mid/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.827 W/kg

1900 MHz GPRS/Front Mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.39 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 1.13 W/kg
SAR(1 g) = 0.667 W/kg; SAR(10 g) = 0.372 W/kg
Maximum value of SAR (measured) = 0.909 W/kg



RF Exposure Lab

Plot 11

DUT: MIFI7000; Type: MIFI; Serial: SZ17061900013

Communication System: LTE (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 1860 MHz; Duty Cycle: 1:1
Medium: MSL1900; Medium parameters used: f = 1860 MHz; σ = 1.53 S/m; ε_r = 52.57; ρ = 1000 kg/m^3
Phantom section: Flat Section

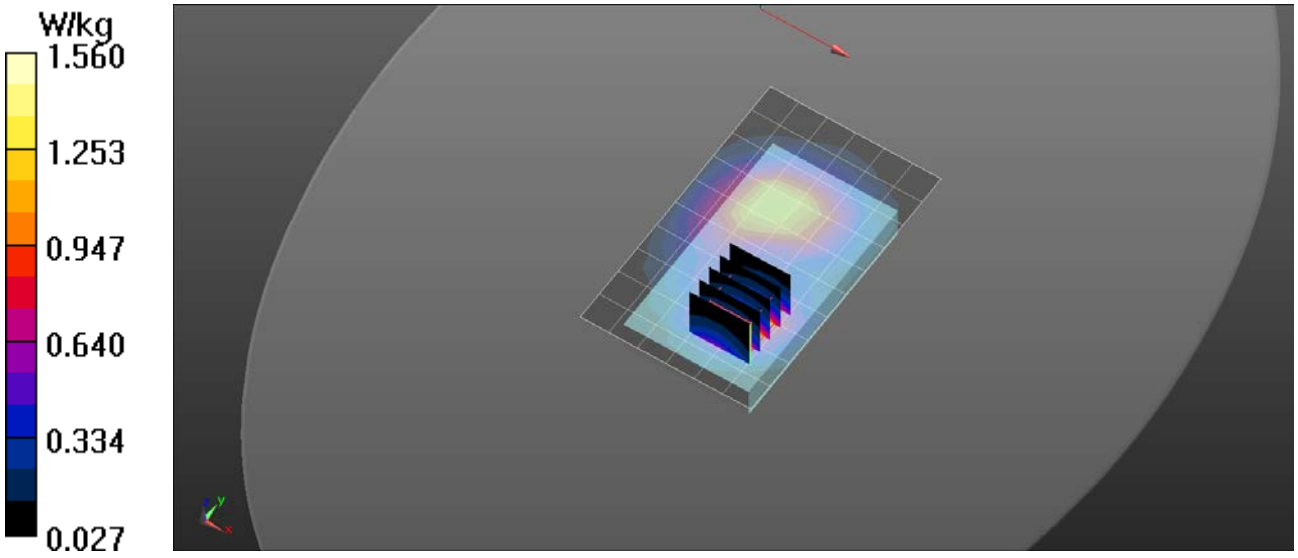
Test Date: Date: 12/2/2016; Ambient Temp: 23 °C; Tissue Temp: 21 °C

Probe: EX3DV4 - SN3833; ConvF(7.13, 7.13, 7.13); Calibrated: 1/27/2016;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1321; Calibrated: 1/14/2016
Phantom: ELI v5.0; Type: QDOVA001BB; Serial: 1251
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Procedure Notes:

1900 MHz B2 LTE/Front 1RB Low/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.41 W/kg

1900 MHz B2 LTE/Front 1RB Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.39 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 1.92 W/kg
SAR(1 g) = 1.15 W/kg; SAR(10 g) = 0.641 W/kg
Maximum value of SAR (measured) = 1.56 W/kg



RF Exposure Lab

Plot 12

DUT: MIFI7000; Type: MIFI; Serial: SZ17061900013

Communication System: LTE (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 2535 MHz; Duty Cycle: 1:1
Medium: MSL2550; Medium parameters used (interpolated): f = 2535 MHz; σ = 2.09 S/m; ε_r = 52.43; ρ = 1000 kg/m^3
Phantom section: Flat Section

Test Date: Date: 12/3/2016; Ambient Temp: 23 °C; Tissue Temp: 21 °C

Probe: ES3DV3 - SN3311; ConvF(4.17, 4.17, 4.17); Calibrated: 2/16/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1321; Calibrated: 1/14/2016
Phantom: ELI v5.0; Type: QDOVA001BB; Serial: 1251
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

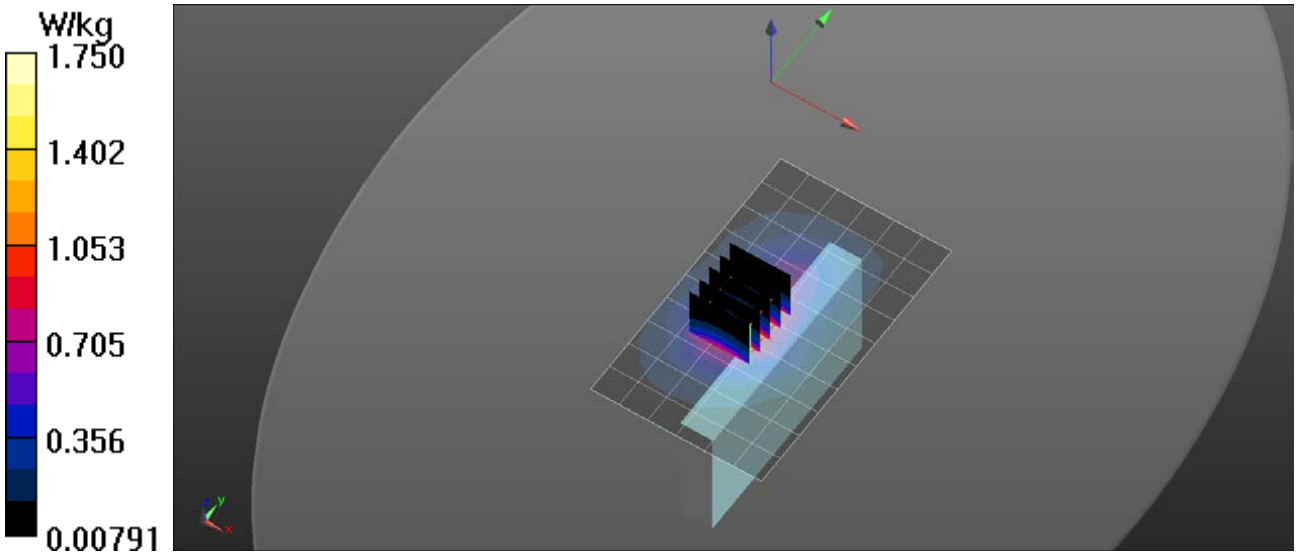
Procedure Notes:

2600 MHz B7 LTE/Right 1RB Mid/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.40 W/kg

2600 MHz B7 LTE/Right 1RB Mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.34 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 2.78 W/kg
SAR(1 g) = 1.35 W/kg; SAR(10 g) = 0.665 W/kg

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.75 W/kg



RF Exposure Lab

Plot 13

DUT: MIFI7000; Type: MIFI; Serial: SZ17061900013

Communication System: WiFi 802.11b (DSSS, 1 Mbps); Frequency: 2437 MHz; Duty Cycle: 1:1
Medium: MSL2450; Medium parameters used (interpolated): f = 2437 MHz; σ = 1.944 S/m; ε_r = 52.536; ρ = 1000 kg/m^3
Phantom section: Flat Section

Test Date: Date: 12/3/2016; Ambient Temp: 23 °C; Tissue Temp: 21 °C

Probe: EX3DV4 - SN3833; ConvF(6.87, 6.87, 6.87); Calibrated: 1/27/2016;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1321; Calibrated: 1/14/2016
Phantom: ELI v5.0; Type: QDOVA001BB; Serial: 1251
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

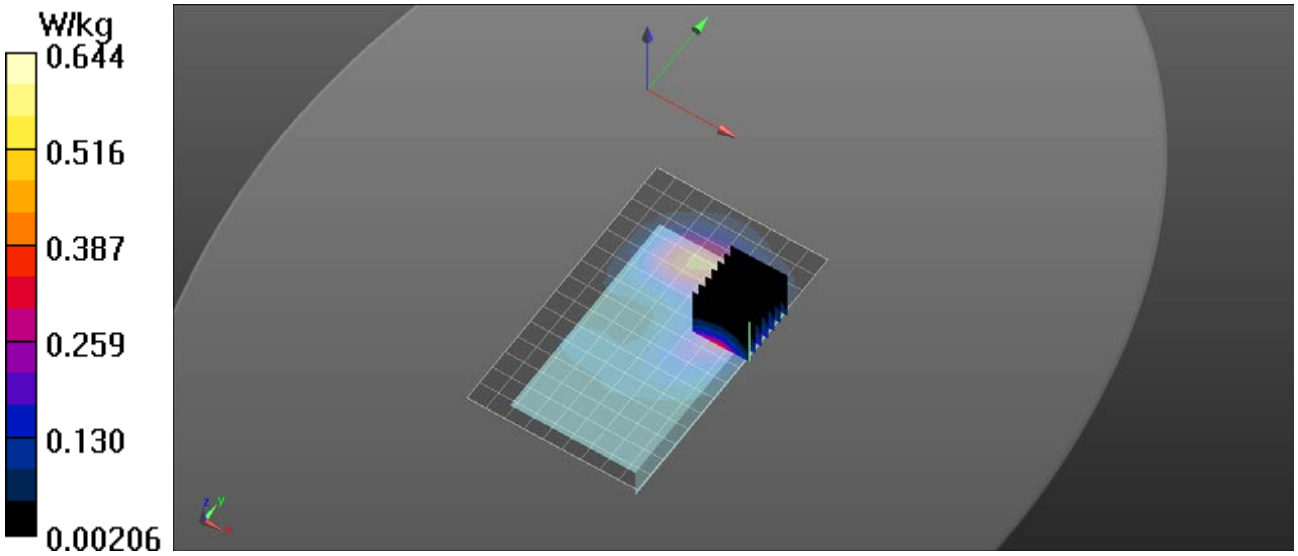
Procedure Notes:

2450 MHz WiFi/Front Tx1 Mid/Area Scan (10x16x1): Measurement grid: dx=10mm, dy=10mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.541 W/kg

2450 MHz WiFi/Front Tx1 Mid/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.165 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.890 W/kg
SAR(1 g) = 0.413 W/kg; SAR(10 g) = 0.187 W/kg

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.644 W/kg



RF Exposure Lab

Plot 14

DUT: MIFI7000; Type: MIFI; Serial: SZ17061900013

Communication System: WiFi 802.11a (OFDM, 6 Mbps); Frequency: 5220 MHz; Duty Cycle: 1:1
Medium: MSL 3-6 GHz; Medium parameters used: f = 5220 MHz; σ = 5.32 S/m; ε_r = 48.86; ρ = 1000 kg/m^3
Phantom section: Flat Section

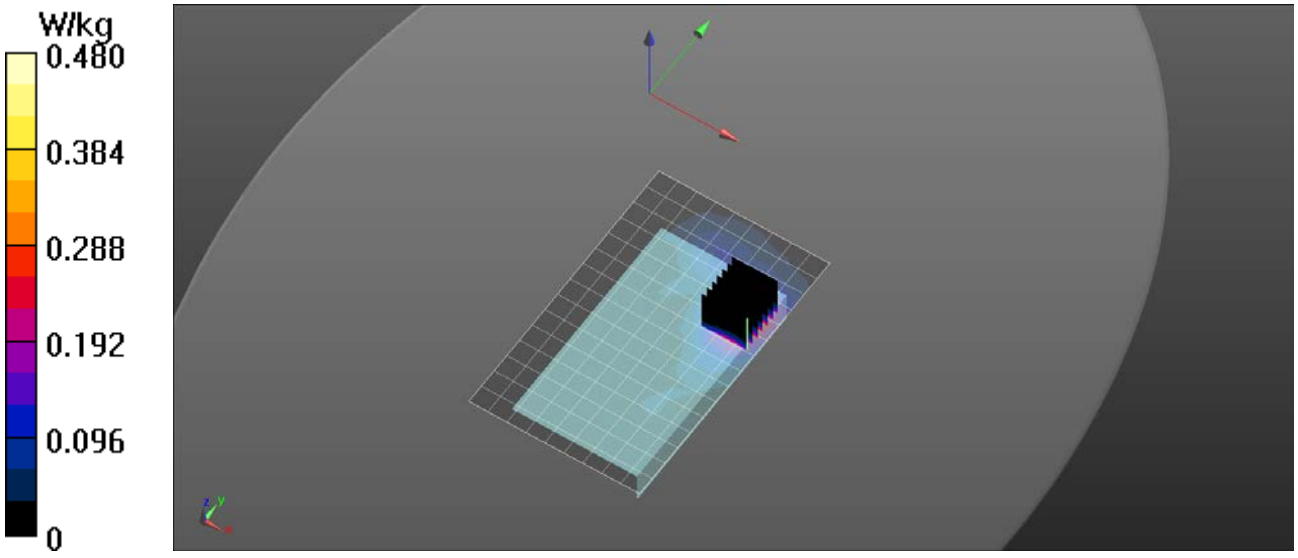
Test Date: Date: 12/5/2016; Ambient Temp: 23 °C; Tissue Temp: 21 °C

Probe: EX3DV4 - SN3833; ConvF(4.03, 4.03, 4.03); Calibrated: 1/27/2016;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1321; Calibrated: 1/14/2016
Phantom: ELI v5.0; Type: QDOVA001BB; Serial: 1251
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Procedure Notes:

5200 MHz WiFi/Front Tx1 44/Area Scan (10x16x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.410 W/kg

5200 MHz WiFi/Front Tx1 44/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 2.713 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.831 W/kg
SAR(1 g) = 0.249 W/kg
Maximum value of SAR (measured) = 0.480 W/kg



RF Exposure Lab

Plot 15

DUT: MIFI7000; Type: MIFI; Serial: SZ17061900013

Communication System: WiFi 802.11a (OFDM, 6 Mbps); Frequency: 5785 MHz; Duty Cycle: 1:1
Medium: MSL 3-6 GHz; Medium parameters used (interpolated): f = 5785 MHz; σ = 6.008 S/m; ε_r = 48.073; ρ = 1000 kg/m^3
Phantom section: Flat Section

Test Date: Date: 12/5/2016; Ambient Temp: 23 °C; Tissue Temp: 21 °C

Probe: EX3DV4 - SN3833; ConvF(3.49, 3.49, 3.49); Calibrated: 1/27/2016;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1321; Calibrated: 1/14/2016
Phantom: ELI v5.0; Type: QDOVA001BB; Serial: 1251
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

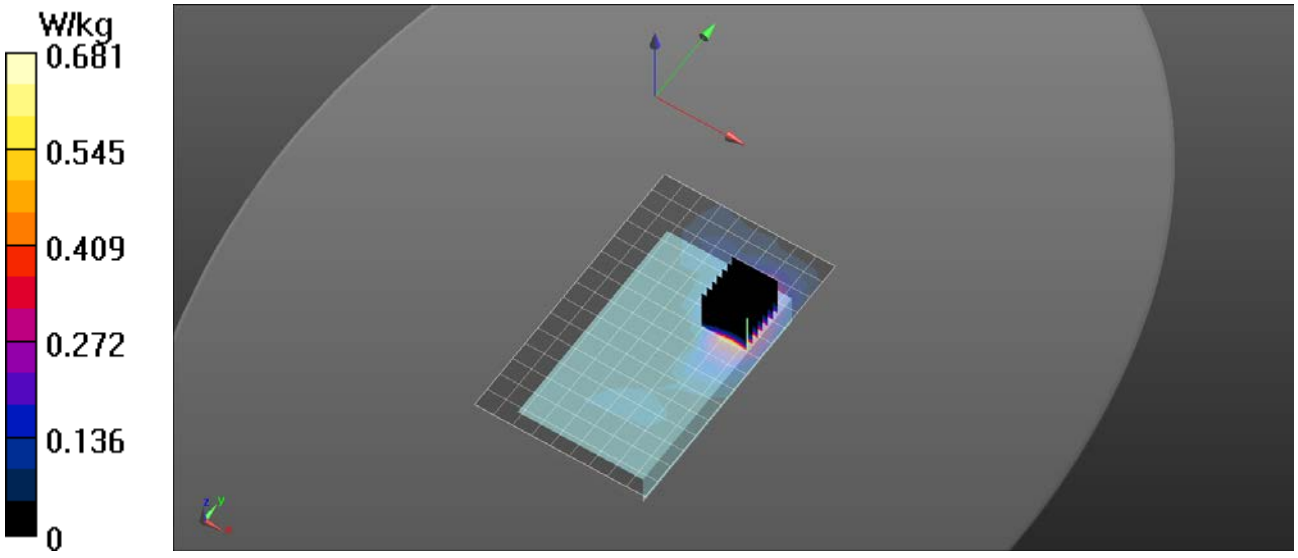
Procedure Notes:

5800 MHz WiFi/Front Tx1 157/Area Scan (10x16x1): Measurement grid: dx=10mm, dy=10mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.624 W/kg

5800 MHz WiFi/Front Tx1 157/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 1.194 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 1.27 W/kg
SAR(1 g) = 0.335 W/kg

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.681 W/kg



RF Exposure Lab

Plot 16

DUT: MIFI7000; Type: MIFI; Serial: SV150917A00717

Communication System: CDMA2000 (1xEV-DO); Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: MSL835; Medium parameters used (interpolated): f = 836.52 MHz; σ = 1.002 S/m; ε_r = 54.824; ρ = 1000 kg/m^3
Phantom section: Flat Section

Test Date: Date: 5/1/2018; Ambient Temp: 23 °C; Tissue Temp: 21 °C

Probe: EX3DV4 - SN3662; ConvF(9.21, 9.21, 9.21); Calibrated: 4/20/2018;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1321; Calibrated: 1/10/2018
Phantom: ELI v5.0; Type: QDOVA002AA; Serial: 2037
Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

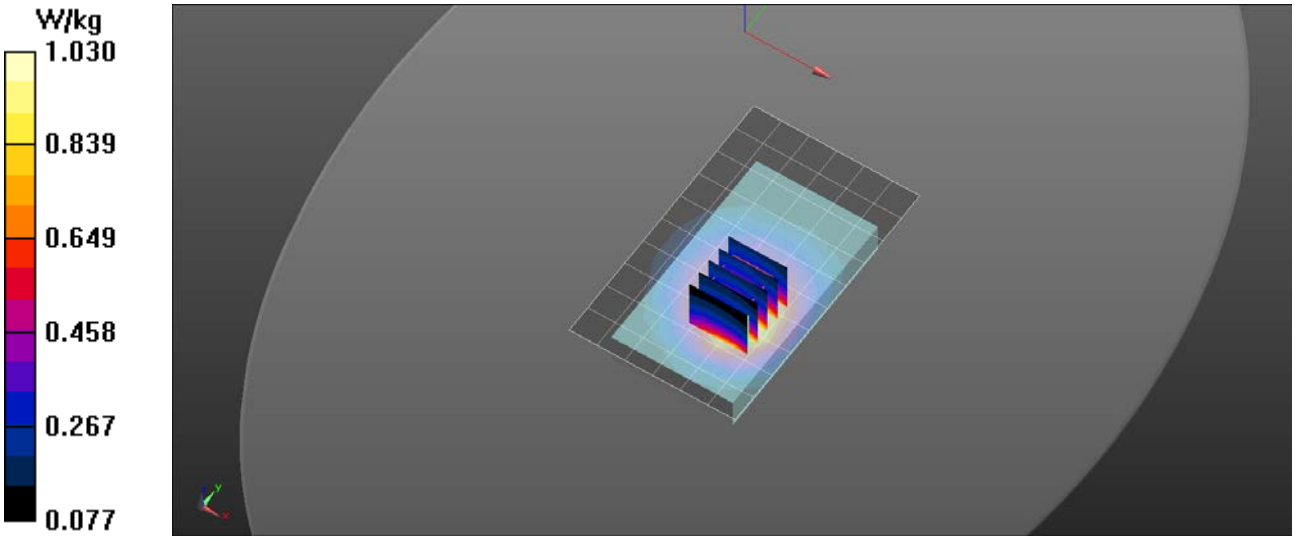
Procedure Notes:

835 MHz CDMA/Front Mid/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.03 W/kg

835 MHz CDMA/Front Mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.01 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 1.14 W/kg
SAR(1 g) = 0.853 W/kg; SAR(10 g) = 0.599 W/kg

Info: Interpolated medium parameters used for SAR evaluation.



RF Exposure Lab

Plot 17

DUT: MIFI7000; Type: MIFI; Serial: SV150917A00717

Communication System: CDMA2000 (1xEV-DO); Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: MSL1900; Medium parameters used: f = 1880 MHz; σ = 1.53 S/m; ε_r = 52.74; ρ = 1000 kg/m^3
Phantom section: Flat Section

Test Date: Date: 5/1/2018; Ambient Temp: 23 °C; Tissue Temp: 21 °C

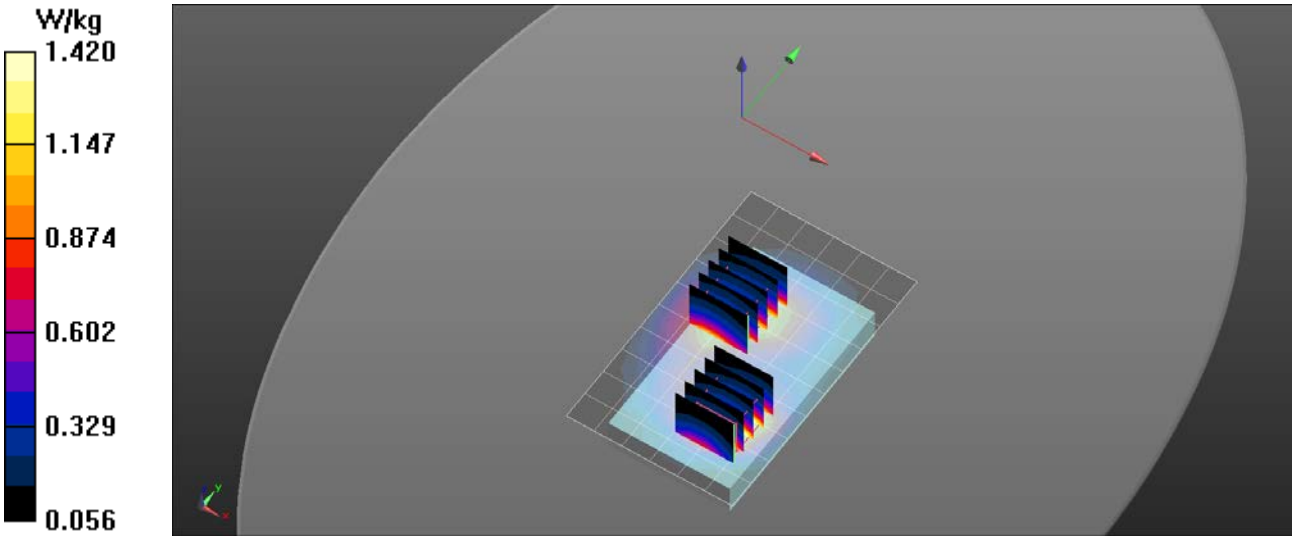
Probe: EX3DV4 - SN3662; ConvF(7.61, 7.61, 7.61); Calibrated: 4/20/2018;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1321; Calibrated: 1/10/2018
Phantom: ELI v5.0; Type: QDOVA002AA; Serial: 2037
Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

Procedure Notes:

1900 MHz CDMA/Front Mid/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.79 W/kg

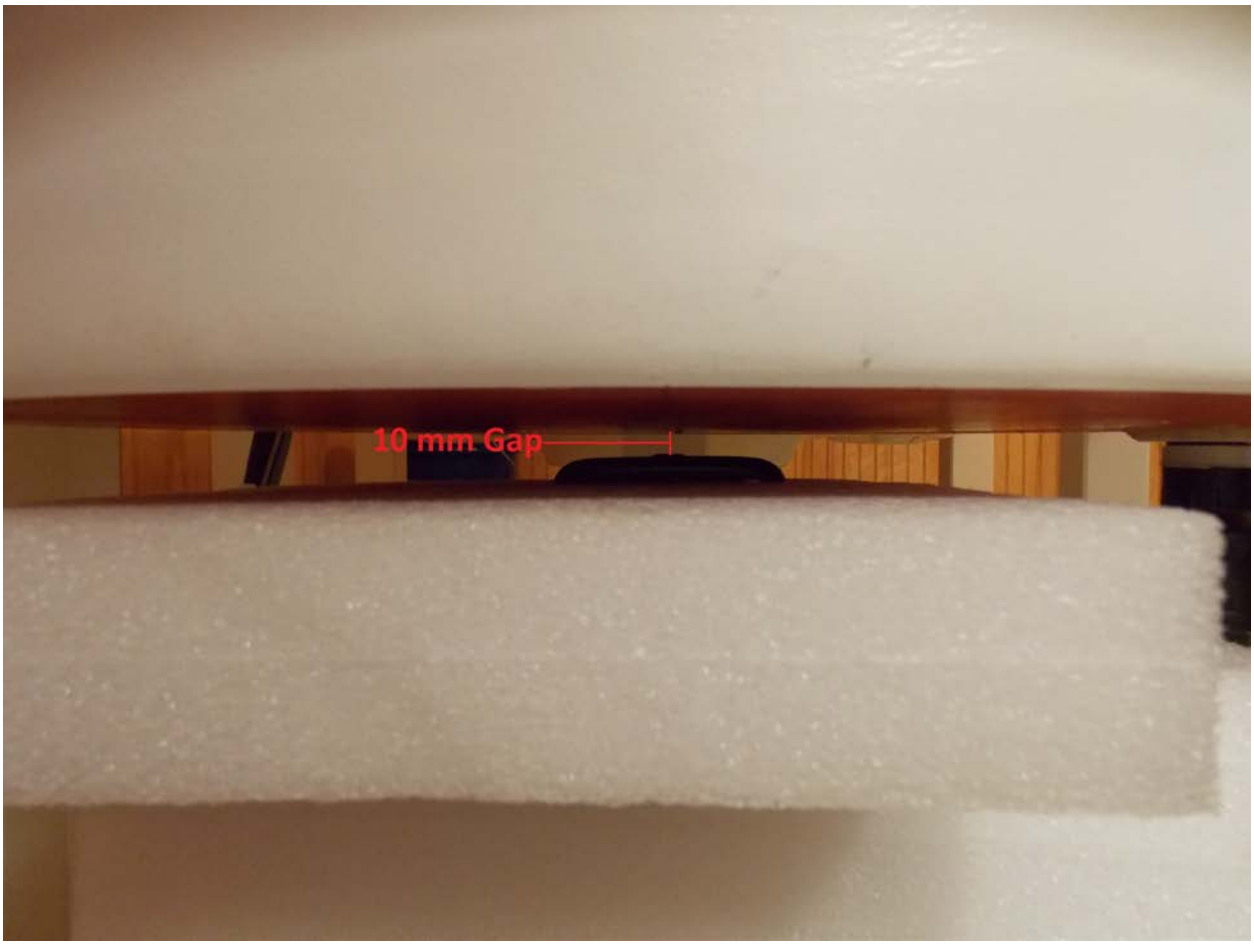
1900 MHz CDMA/Front Mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.12 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 2.54 W/kg
SAR(1 g) = 1.28 W/kg; SAR(10 g) = 0.722 W/kg
Maximum value of SAR (measured) = 2.01 W/kg

1900 MHz CDMA/Front Mid/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.12 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 1.70 W/kg
SAR(1 g) = 1.11 W/kg; SAR(10 g) = 0.699 W/kg
Maximum value of SAR (measured) = 1.42 W/kg

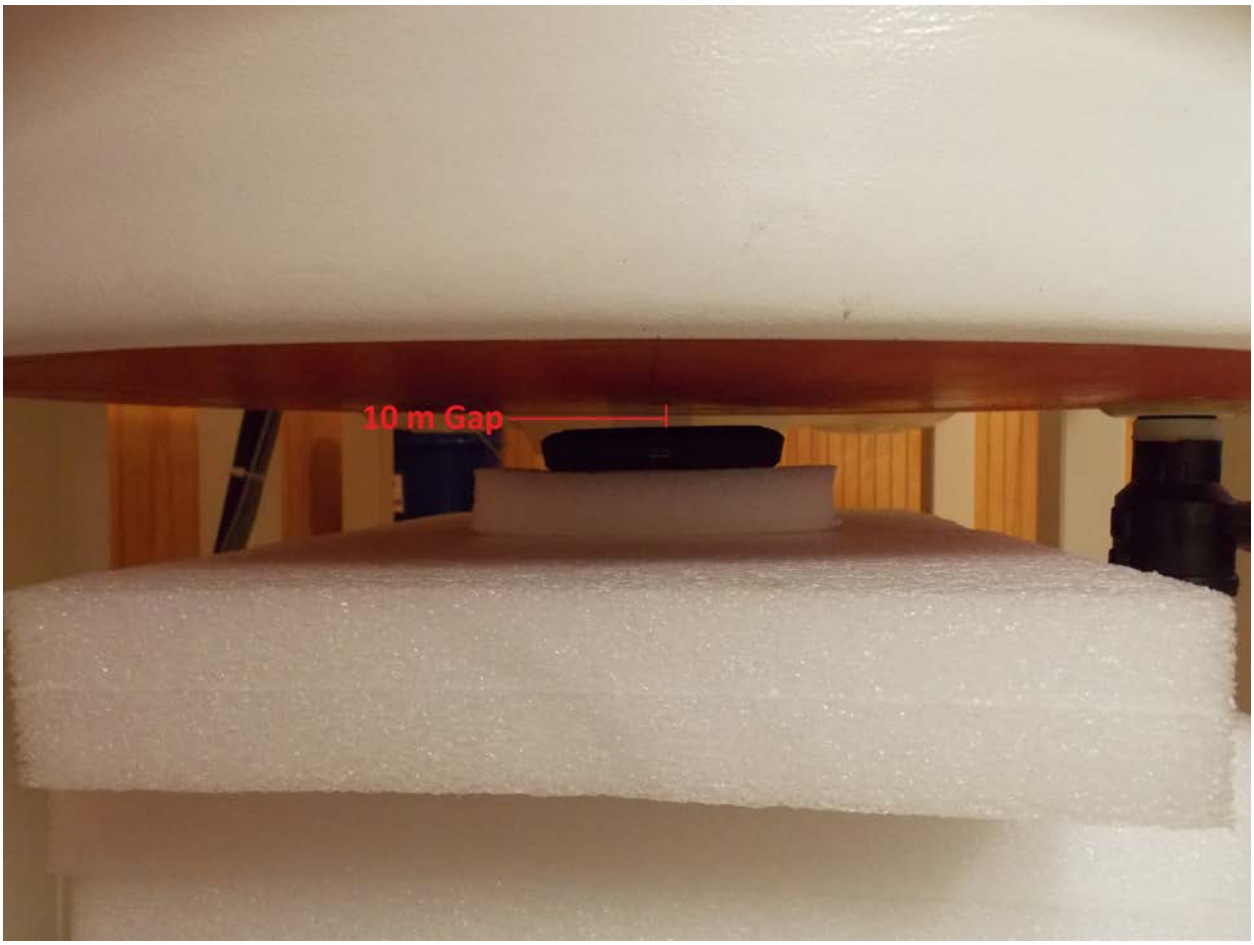


Appendix C – SAR Test Setup Photos

Test Position Side A 10 mm Gap



Test Position Side B 10 mm Gap



Test Position Side C 10 mm Gap

Test Position Side D 10 mm Gap

Test Position Side E 10 mm Gap

Test and Antenna Locations

Front of Device

Back of Device

Appendix D – Probe Calibration Data Sheets

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

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C Service suisse d'étalonnage
S Servizio svizzero di taratura
Swiss Calibration Service

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Accreditation No.: SCS 0108

Client RF Exposure Lab

Certificate No: ES3-3311_Feb16

CALIBRATION CERTIFICATE

Object: ES3DV3 - SN:3311

Calibration procedure(s): QA CAL-01.v9, QA CAL-12.v9, QA CAL-23.v5, QA CAL-25.v6
Calibration procedure for dosimetric E-field probes

Calibration date: February 16, 2016

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	01-Apr-15 (No. 217-02128)	Mar-16
Power sensor E4412A	MY41498087	01-Apr-15 (No. 217-02128)	Mar-16
Reference 3 dB Attenuator	SN: S5054 (3c)	01-Apr-15 (No. 217-02129)	Mar-16
Reference 20 dB Attenuator	SN: S5277 (20x)	01-Apr-15 (No. 217-02132)	Mar-16
Reference 30 dB Attenuator	SN: S5129 (30b)	01-Apr-15 (No. 217-02133)	Mar-16
Reference Probe ES3DV2	SN: 3013	31-Dec-15 (No. ES3-3013_Dec15)	Dec-16
DAE4	SN: 660	23-Dec-15 (No. DAE4-660_Dec15)	Dec-16
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Apr-13)	In house check: Apr-16
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-15)	In house check: Oct-16

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: February 18, 2016

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

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Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS) **Accreditation No.: SCS 0108**

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Glossary:

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConvF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C, D	modulation dependent linearization parameters
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., $\vartheta = 0$ is normal to probe axis
Connector Angle	information used in DASY system to align probe sensor X to the robot coordinate system

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Methods Applied and Interpretation of Parameters:

- *NORMx,y,z:* Assessed for E-field polarization $\vartheta = 0$ ($f \leq 900$ MHz in TEM-cell; $f > 1800$ MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not affect the E^2-field uncertainty inside TSL (see below *ConvF*).
- *NORM(f)x,y,z = NORMx,y,z * frequency_response* (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of *ConvF*.
- *DCPx,y,z:* DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- *PAR:* PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- *Ax,y,z; Bx,y,z; Cx,y,z; Dx,y,z; VRx,y,z: A, B, C, D* are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. *VR* is the maximum calibration range expressed in RMS voltage across the diode.
- *ConvF and Boundary Effect Parameters:* Assessed in flat phantom using E-field (or Temperature Transfer Standard for $f \leq 800$ MHz) and inside waveguide using analytical field distributions based on power measurements for $f > 800$ MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to *NORMx,y,z * ConvF* whereby the uncertainty corresponds to that given for *ConvF*. A frequency dependent *ConvF* is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- *Spherical isotropy (3D deviation from isotropy)*: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- *Sensor Offset*: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- *Connector Angle*: The angle is assessed using the information gained by determining the *NORMx* (no uncertainty required).

Probe ES3DV3

SN:3311

Manufactured: July 5, 2011
Calibrated: February 16, 2016

Calibrated for DASY/EASY Systems
(Note: non-compatible with DASY2 system!)

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3311

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)[A]	1.28	1.07	0.47	± 10.1 %
DCP (mV)[B]	103.8	103.5	101.2	

Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB√μV	C	D dB	VR mV	Unc[E] (k=2)
0	CW	X	0.0	0.0	1.0	0.00	220.4	±3.0 %
		Y	0.0	0.0	1.0		222.4	
		Z	0.0	0.0	1.0		211.8	

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

[A] The uncertainties of Norm X,Y,Z do not affect the E^2-field uncertainty inside TSL (see Pages 5 and 6).
[B] Numerical linearization parameter: uncertainty not required.
[E] Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3311

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unc (k=2)
300	45.3	0.87	7.52	7.52	7.52	0.15	1.71	± 13.3 %
600	42.7	0.88	6.73	6.73	6.73	0.15	1.50	± 13.3 %
835	41.5	0.90	6.43	6.43	6.43	0.40	1.75	± 12.0 %
1640	40.3	1.29	5.49	5.49	5.49	0.47	1.54	± 12.0 %
2300	39.5	1.67	4.92	4.92	4.92	0.79	1.24	± 12.0 %
2450	39.2	1.80	4.64	4.64	4.64	0.80	1.30	± 12.0 %
2600	39.0	1.96	4.44	4.44	4.44	0.80	1.35	± 12.0 %

[C] Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Above 5 GHz frequency validity can be extended to ± 110 MHz.

[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

[G] Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3311

Calibration Parameter Determined in Body Tissue Simulating Media

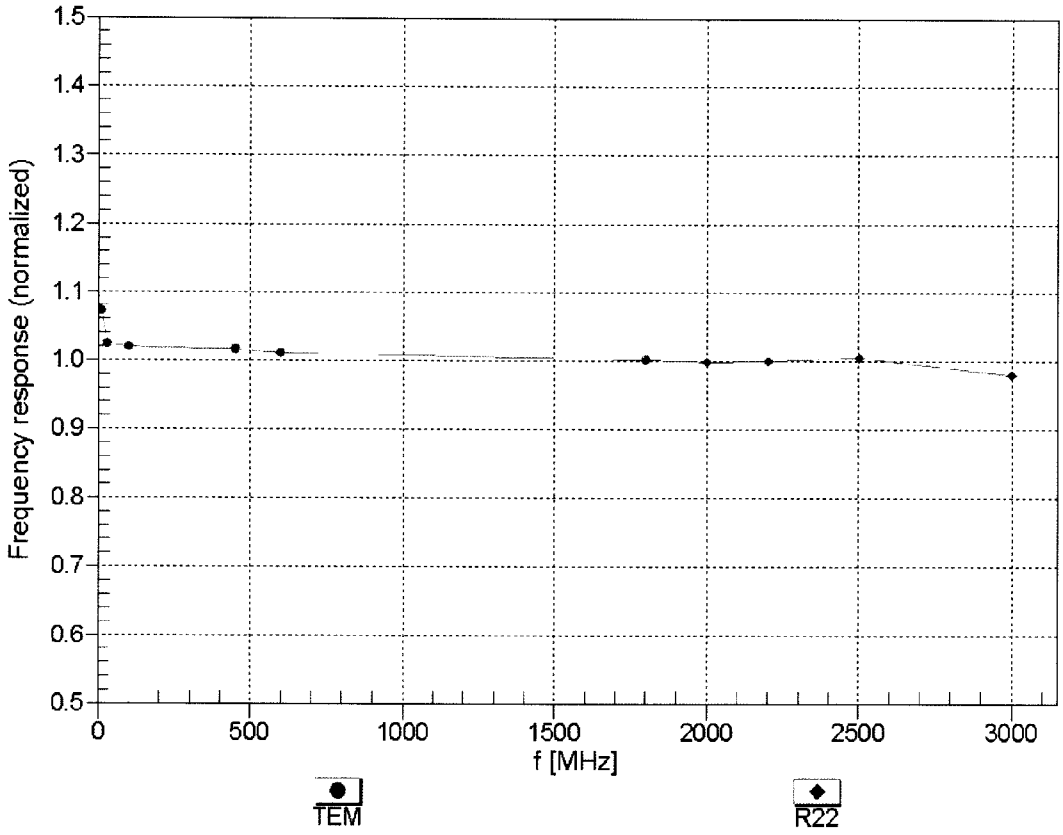
f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unc (k=2)
300	58.2	0.92	7.31	7.31	7.31	0.13	1.00	± 13.3 %
600	56.1	0.95	6.76	6.76	6.76	0.12	1.50	± 13.3 %
835	55.2	0.97	6.33	6.33	6.33	0.62	1.40	± 12.0 %
1640	53.8	1.40	5.33	5.33	5.33	0.51	1.53	± 12.0 %
2300	52.9	1.81	4.69	4.69	4.69	0.80	1.25	± 12.0 %
2450	52.7	1.95	4.43	4.43	4.43	0.80	1.20	± 12.0 %
2600	52.5	2.16	4.17	4.17	4.17	0.80	1.22	± 12.0 %

[C] Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Above 5 GHz frequency validity can be extended to ± 110 MHz.

[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

[G] Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

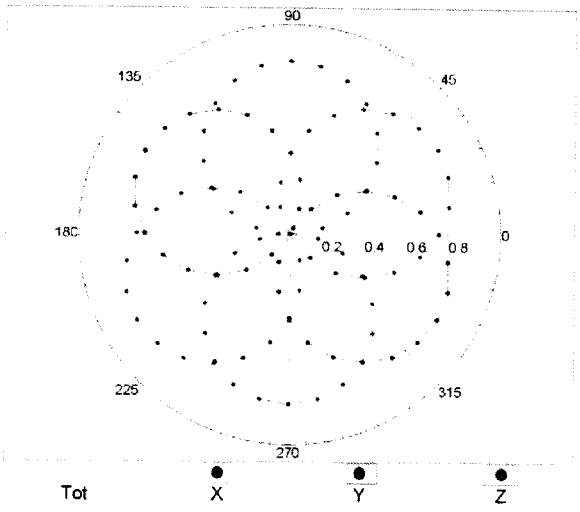
Frequency Response of E-Field
(TEM-Cell:ifi110 EXX, Waveguide: R22)



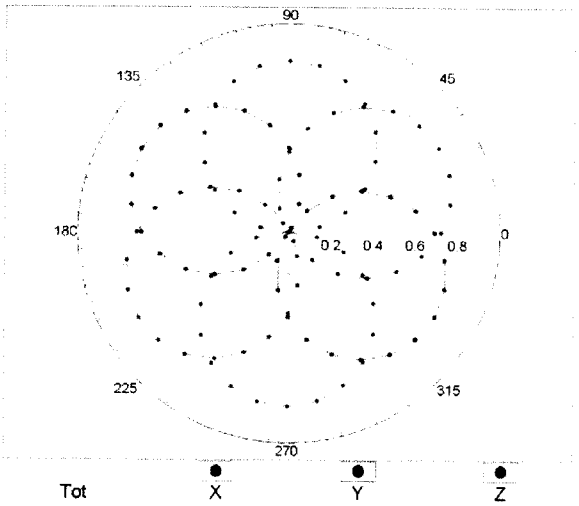
Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

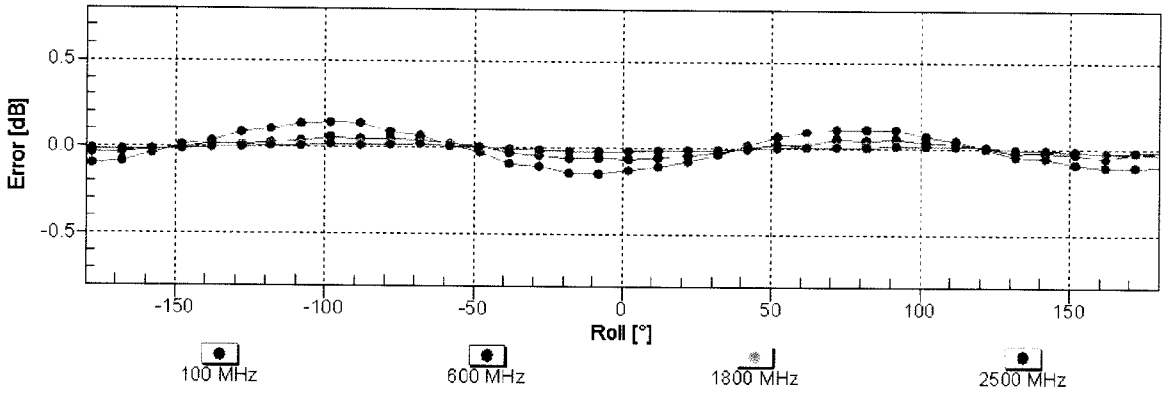
Receiving Pattern (ϕ), ϑ = 0°

f=600 MHz,TEM



f=1800 MHz,R22

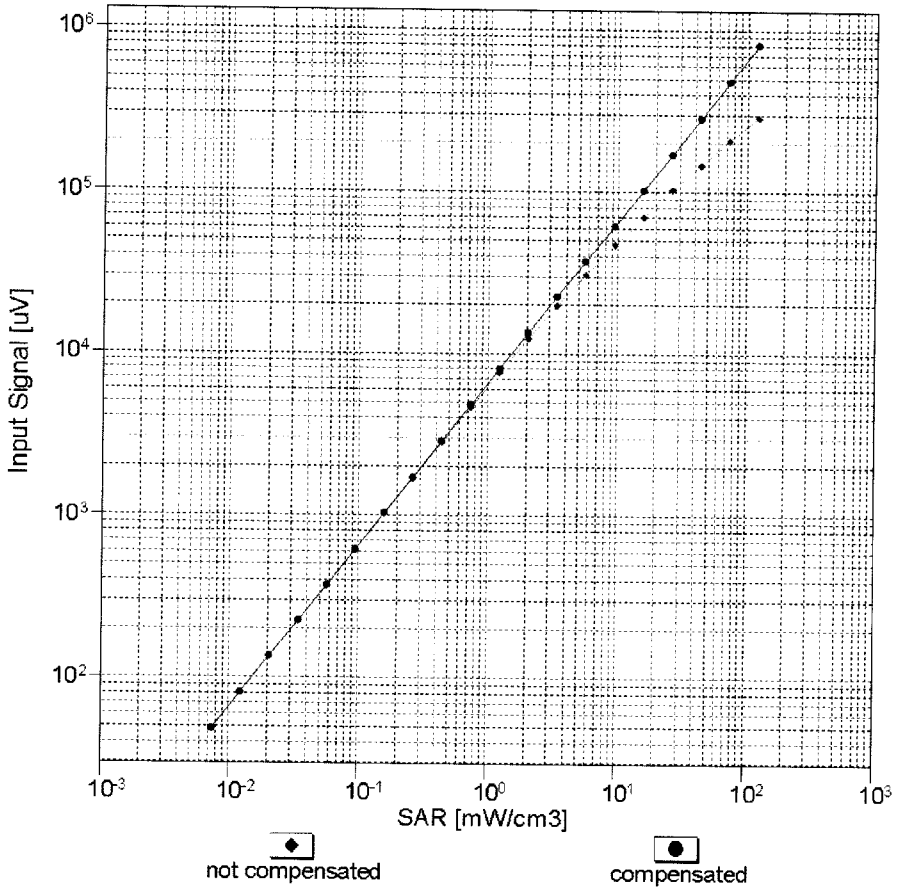


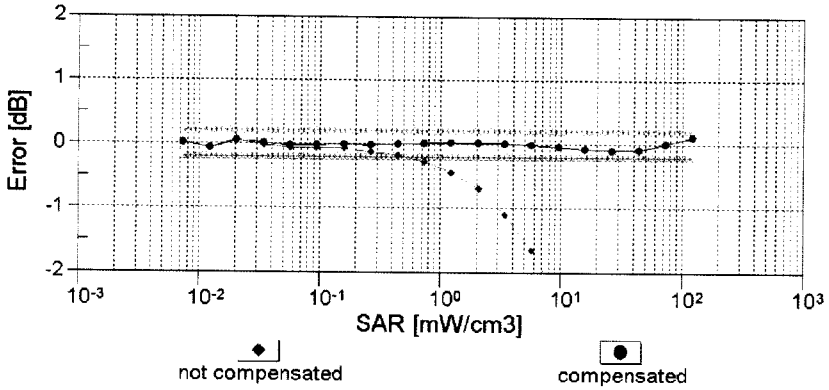


Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

Dynamic Range f(SAR_{head})

(TEM cell , f_{eval}= 1900 MHz)

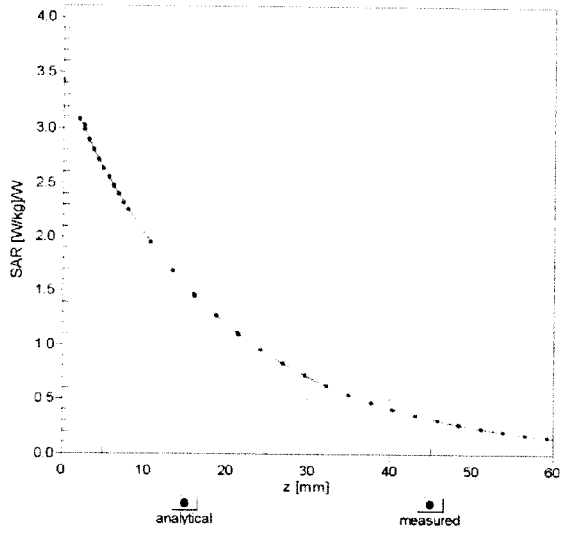




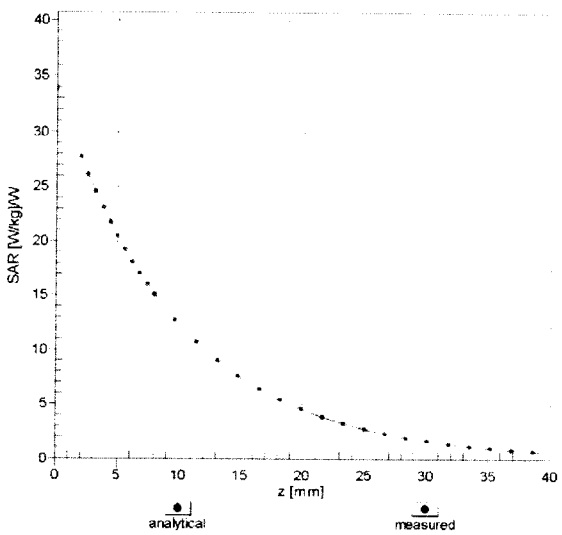
Uncertainty of Linearity Assessment: ± 0.6% (k=2)

Conversion Factor Assessment

f = 835 MHz,WGLS R9 (H_convF)

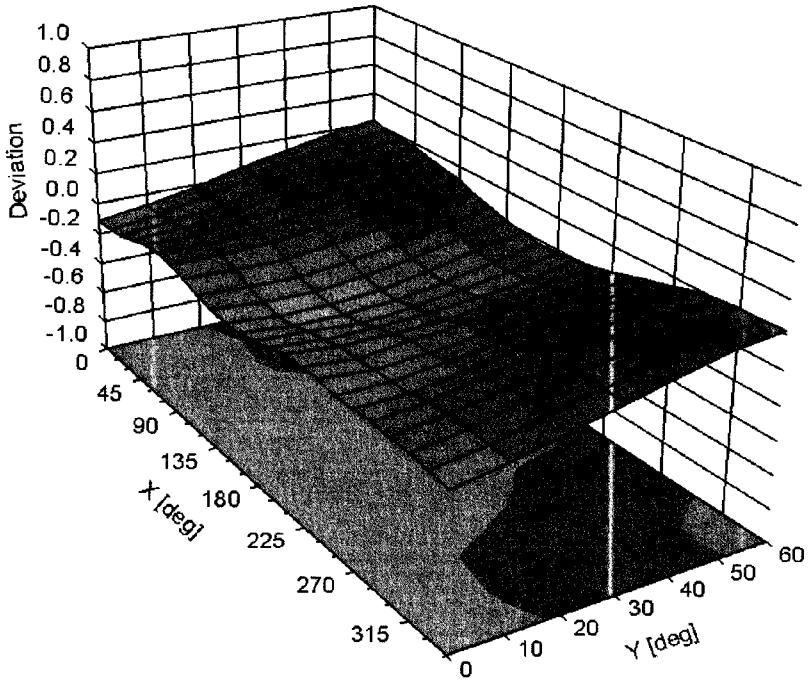


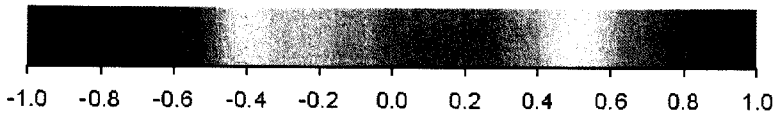
f = 2300 MHz,WGLS R22 (H_convF)



Deviation from Isotropy in Liquid

Error (ϕ, ϑ), f = 900 MHz





Uncertainty of Spherical Isotropy Assessment: ± 2.6% (k=2)

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3311

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	61.9
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	10 mm
Tip Diameter	4 mm
Probe Tip to Sensor X Calibration Point	2 mm
Probe Tip to Sensor Y Calibration Point	2 mm
Probe Tip to Sensor Z Calibration Point	2 mm
Recommended Measurement Distance from Surface	3 mm

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Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

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Accreditation No.: SCS 0108

Client RF Exposure Lab

Certificate No: EX3-3662_Apr18

CALIBRATION CERTIFICATE

Object: EX3DV4 - SN:3662

Calibration procedure(s): QA CAL-01.v9, QA CAL-14.v4, QA CAL-23.v5, QA CAL-25.v6
Calibration procedure for dosimetric E-field probes

Calibration date: April 20, 2018

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-18 (No. 217-02672/02673)	Apr-19
Power sensor NRP-Z91	SN: 103244	04-Apr-18 (No. 217-02672)	Apr-19
Power sensor NRP-Z91	SN: 103245	04-Apr-18 (No. 217-02673)	Apr-19
Reference 20 dB Attenuator	SN: S5277 (20x)	04-Apr-18 (No. 217-02682)	Apr-19
Reference Probe ES3DV2	SN: 3013	30-Dec-17 (No. ES3-3013_Dec17)	Dec-18
DAE4	SN: 660	21-Dec-17 (No. DAE4-660_Dec17)	Dec-18
Secondary Standards	ID	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB41293874	06-Apr-16 (in house check Jun-16)	In house check: Jun-18
Power sensor E4412A	SN: MY41498087	06-Apr-16 (in house check Jun-16)	In house check: Jun-18
Power sensor E4412A	SN: 000110210	06-Apr-16 (in house check Jun-16)	In house check: Jun-18
RF generator HP 8648C	SN: US3642U01700	04-Aug-99 (in house check Jun-16)	In house check: Jun-18
Network Analyzer HP 8753E	SN: US37390585	18-Oct-01 (in house check Oct-17)	In house check: Oct-18

	Name	Function	Signature
Calibrated by:	Leif Klysner	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: April 20, 2018

Calibration Laboratory of
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Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

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Accredited by the Swiss Accreditation Service (SAS) **Accreditation No.: SCS 0108**

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Glossary:

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ConvF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C, D	modulation dependent linearization parameters
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., ϑ = 0 is normal to probe axis
Connector Angle	information used in DASY system to align probe sensor X to the robot coordinate system

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
b) IEC 62209-1, ", "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Methods Applied and Interpretation of Parameters:

- *NORMx,y,z:* Assessed for E-field polarization ϑ = 0 (f ≤ 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not affect the E^2-field uncertainty inside TSL (see below *ConvF*).
- *NORM(f)x,y,z = NORMx,y,z * frequency_response* (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of *ConvF*.
- *DCPx,y,z:* DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- *PAR:* PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- *Ax,y,z; Bx,y,z; Cx,y,z; Dx,y,z; VRx,y,z: A, B, C, D* are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. *VR* is the maximum calibration range expressed in RMS voltage across the diode.
- *ConvF and Boundary Effect Parameters:* Assessed in flat phantom using E-field (or Temperature Transfer Standard for f ≤ 800 MHz) and inside waveguide using analytical field distributions based on power measurements for f > 800 MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to *NORMx,y,z * ConvF* whereby the uncertainty corresponds to that given for *ConvF*. A frequency dependent *ConvF* is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- *Spherical isotropy (3D deviation from isotropy)*: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- *Sensor Offset*: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- *Connector Angle*: The angle is assessed using the information gained by determining the *NORMx* (no uncertainty required).

Probe EX3DV4

SN:3662

Manufactured: October 20, 2008
Calibrated: April 20, 2018

Calibrated for DASY/EASY Systems
(Note: non-compatible with DASY2 system!)

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3662

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)[A]	0.44	0.45	0.48	± 10.1 %
DCP (mV)[B]	102.6	97.6	96.4	

Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB√μV	C	D dB	VR mV	Unc[E] (k=2)
0	CW	X	0.0	0.0	1.0	0.00	136.8	±3.3 %
		Y	0.0	0.0	1.0		132.2	
		Z	0.0	0.0	1.0		148.8	

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

[A] The uncertainties of Norm X,Y,Z do not affect the E^2-field uncertainty inside TSL (see Pages 5 and 6).
[B] Numerical linearization parameter: uncertainty not required.
[E] Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3662

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unc (k=2)
750	41.9	0.89	9.80	9.80	9.80	0.43	0.90	± 12.0 %
900	41.5	0.97	9.29	9.29	9.29	0.40	0.91	± 12.0 %
1750	40.1	1.37	8.29	8.29	8.29	0.29	0.84	± 12.0 %
1900	40.0	1.40	8.01	8.01	8.01	0.37	0.80	± 12.0 %
2300	39.5	1.67	7.71	7.71	7.71	0.35	0.80	± 12.0 %
2450	39.2	1.80	7.39	7.39	7.39	0.28	0.91	± 12.0 %
2600	39.0	1.96	7.14	7.14	7.14	0.36	0.85	± 12.0 %
3500	37.9	2.91	7.08	7.08	7.08	0.25	1.20	± 13.1 %
3700	37.7	3.12	6.99	6.99	6.99	0.25	1.20	± 13.1 %
5250	35.9	4.71	5.04	5.04	5.04	0.35	1.80	± 13.1 %
5600	35.5	5.07	4.81	4.81	4.81	0.40	1.80	± 13.1 %
5750	35.4	5.22	4.89	4.89	4.89	0.40	1.80	± 13.1 %

[C] Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Above 5 GHz frequency validity can be extended to ± 110 MHz.

[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

[G] Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3662

Calibration Parameter Determined in Body Tissue Simulating Media

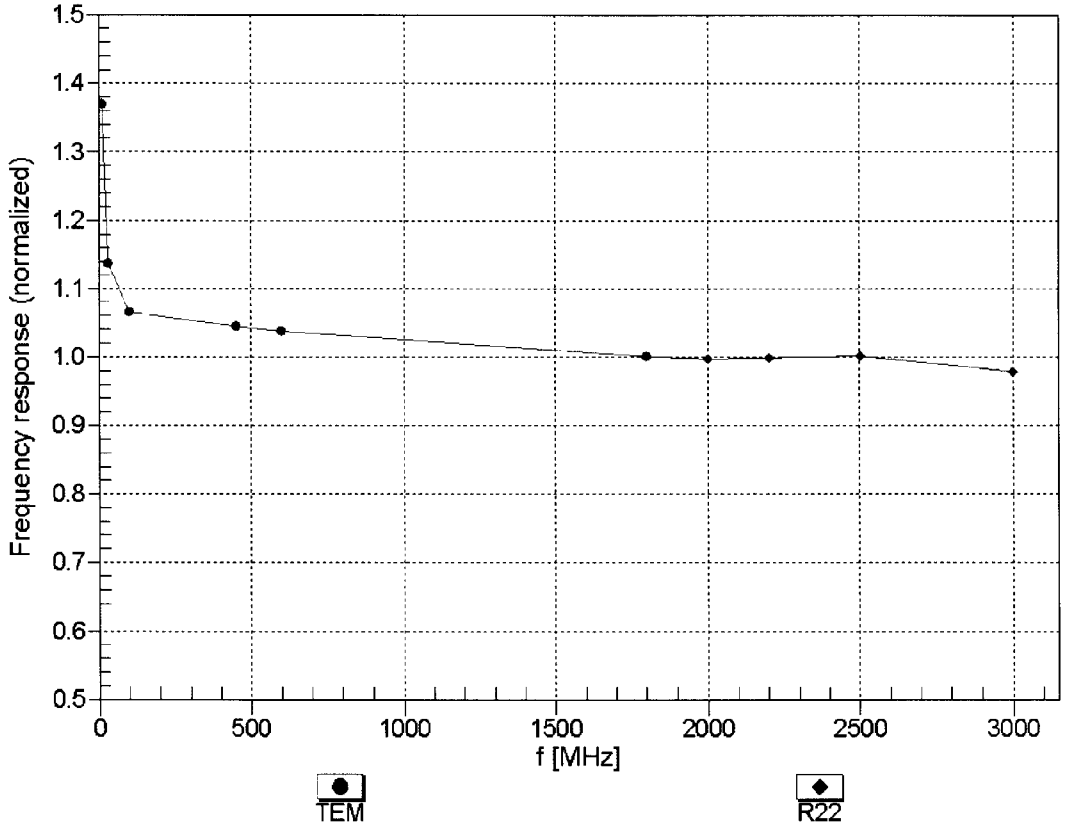
f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unc (k=2)
750	55.5	0.96	9.62	9.62	9.62	0.37	0.98	± 12.0 %
900	55.0	1.05	9.21	9.21	9.21	0.44	0.84	± 12.0 %
1750	53.4	1.49	7.96	7.96	7.96	0.45	0.80	± 12.0 %
1900	53.3	1.52	7.61	7.61	7.61	0.44	0.80	± 12.0 %
2300	52.9	1.81	7.33	7.33	7.33	0.41	0.80	± 12.0 %
2450	52.7	1.95	7.29	7.29	7.29	0.36	0.87	± 12.0 %
2600	52.5	2.16	7.15	7.15	7.15	0.26	0.99	± 12.0 %
3500	51.3	3.31	7.00	7.00	7.00	0.25	1.20	± 13.1 %
3700	51.0	3.55	6.71	6.71	6.71	0.23	1.20	± 13.1 %
5250	48.9	5.36	4.46	4.46	4.46	0.45	1.90	± 13.1 %
5600	48.5	5.77	3.91	3.91	3.91	0.50	1.90	± 13.1 %
5750	48.3	5.94	4.08	4.08	4.08	0.50	1.90	± 13.1 %

[C] Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Above 5 GHz frequency validity can be extended to ± 110 MHz.

[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

[G] Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

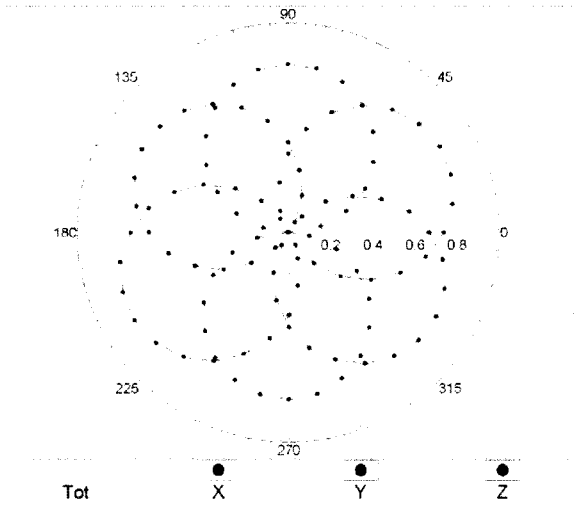
Frequency Response of E-Field
(TEM-Cell:ifi110 EXX, Waveguide: R22)



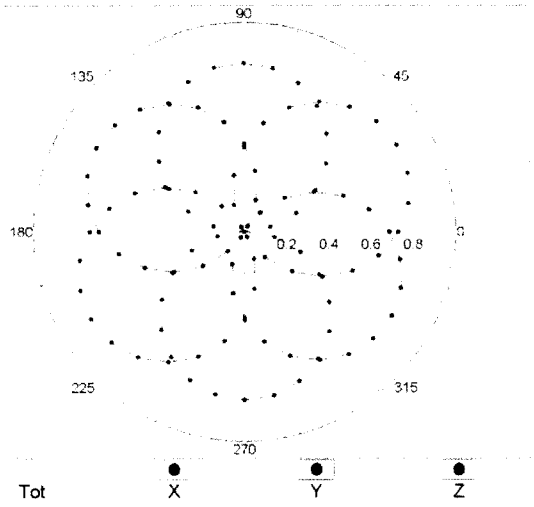
Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

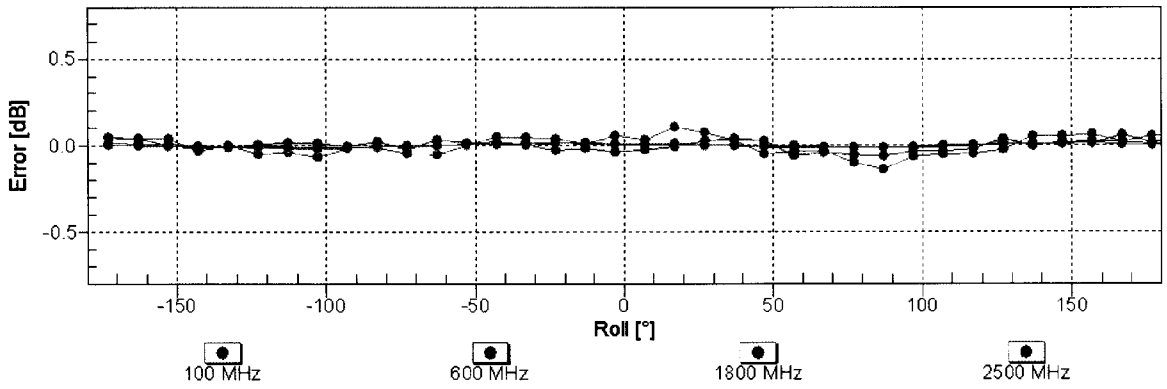
Receiving Pattern (ϕ), ϑ = 0°

f=600 MHz,TEM



f=1800 MHz,R22

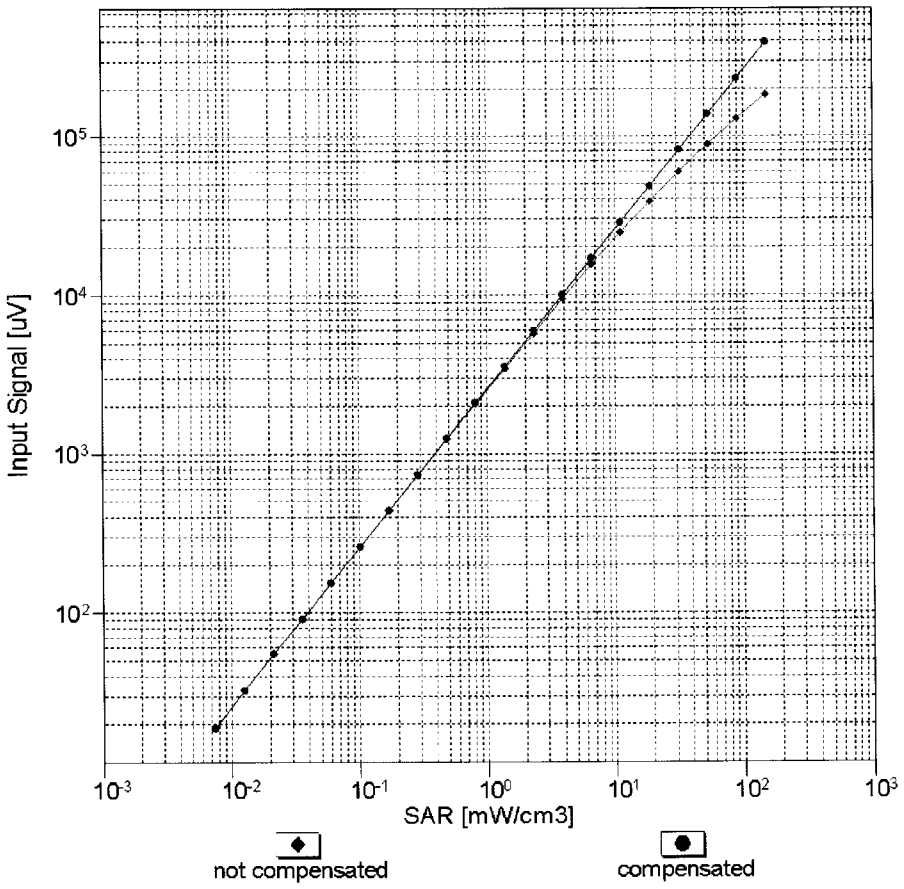


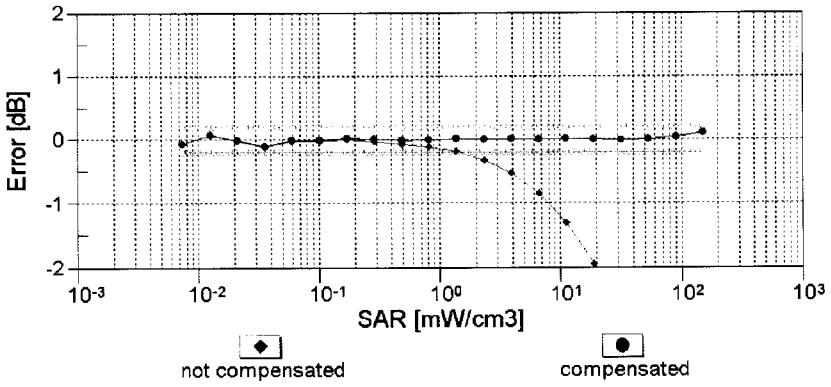


Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

Dynamic Range f(SAR_{head})

(TEM cell , f_{eval}= 1900 MHz)

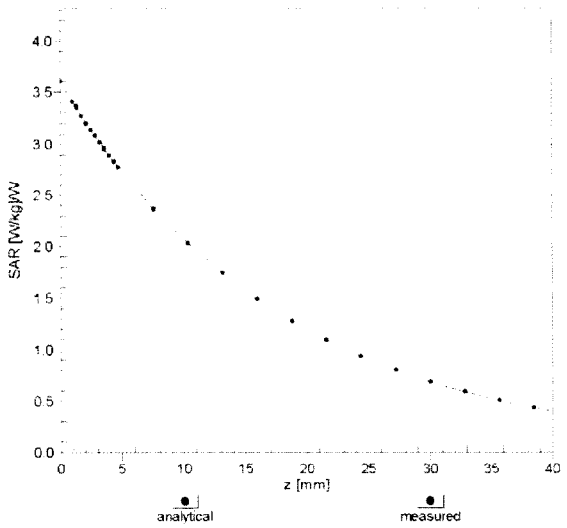




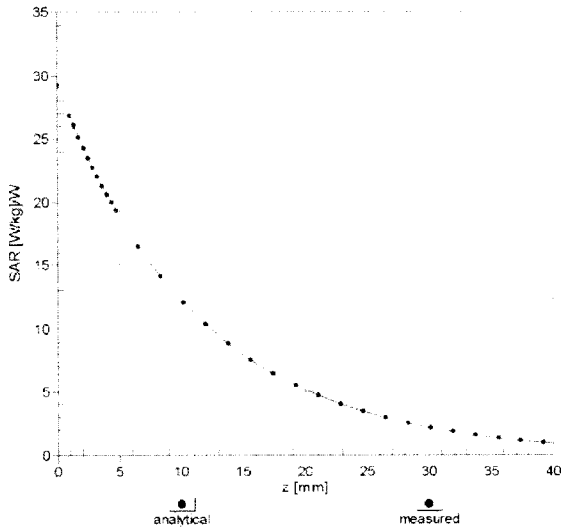
Uncertainty of Linearity Assessment: ± 0.6% (k=2)

Conversion Factor Assessment

f = 900 MHz,WGLS R9 (H_convF)

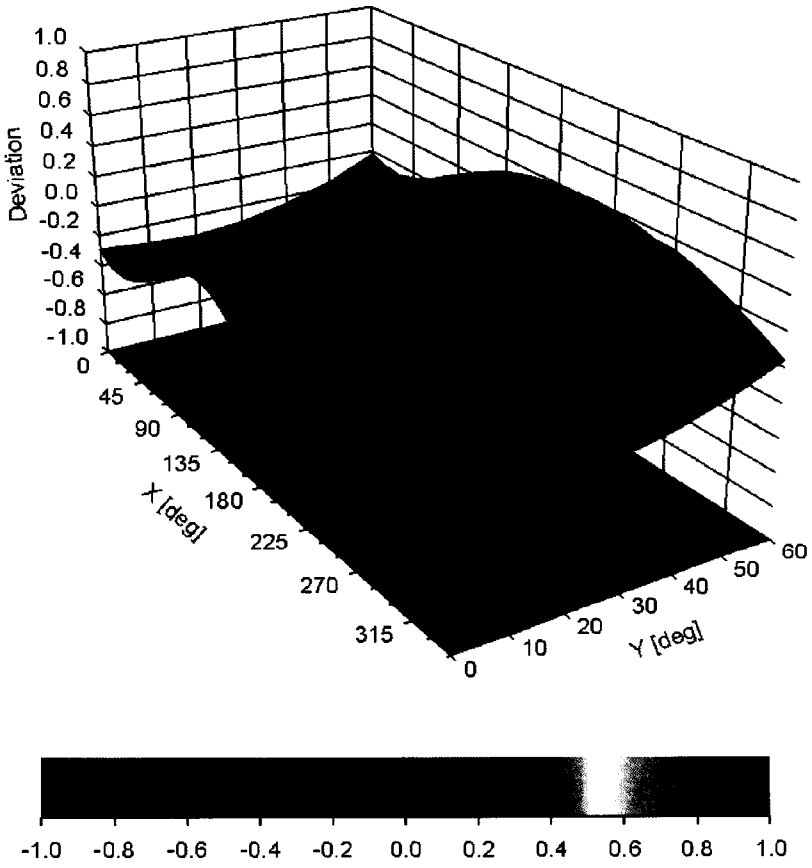


f = 1900 MHz,WGLS R22 (H_convF)



Deviation from Isotropy in Liquid

Error (ϕ, ϑ), f = 900 MHz



Uncertainty of Spherical Isotropy Assessment: ± 2.6% (k=2)

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3662

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	-22.9
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	9 mm
Tip Diameter	2.5 mm
Probe Tip to Sensor X Calibration Point	1 mm
Probe Tip to Sensor Y Calibration Point	1 mm
Probe Tip to Sensor Z Calibration Point	1 mm
Recommended Measurement Distance from Surface	1.4 mm

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
Accreditation No.: SCS 0108

The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Client RF Exposure Lab **Certificate No: EX3-3833_Jan16**

CALIBRATION CERTIFICATE

Object EX3DV4 - SN:3833

Calibration procedure(s) QA CAL-01.v9, QA CAL-12.v9, QA CAL-14.v4, QA CAL-23.v5, QA CAL-25.v6
Calibration procedure for dosimetric E-field probes

Calibration date: January 27, 2016

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	01-Apr-15 (No. 217-02128)	Mar-16
Power sensor E4412A	MY41498087	01-Apr-15 (No. 217-02128)	Mar-16
Reference 3 dB Attenuator	SN: S5054 (3c)	01-Apr-15 (No. 217-02129)	Mar-16
Reference 20 dB Attenuator	SN: S5277 (20x)	01-Apr-15 (No. 217-02132)	Mar-16
Reference 30 dB Attenuator	SN: S5129 (30b)	01-Apr-15 (No. 217-02133)	Mar-16
Reference Probe ES3DV2	SN: 3013	31-Dec-15 (No. ES3-3013_Dec15)	Dec-16
DAE4	SN: 660	23-Dec-15 (No. DAE4-660_Dec15)	Dec-16
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Apr-13)	In house check: Apr-16
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-15)	In house check: Oct-16

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: January 28, 2016

Glossary:

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConvF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C, D	modulation dependent linearization parameters
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., ϑ = 0 is normal to probe axis
Connector Angle	information used in DASY system to align probe sensor X to the robot coordinate system

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Methods Applied and Interpretation of Parameters:

- *NORMx,y,z:* Assessed for E-field polarization ϑ = 0 (f ≤ 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not affect the E^2-field uncertainty inside TSL (see below *ConvF*).
- *NORM(f)x,y,z = NORMx,y,z * frequency_response* (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of *ConvF*.
- *DCPx,y,z:* DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- *PAR:* PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- *Ax,y,z; Bx,y,z; Cx,y,z; Dx,y,z; VRx,y,z*: *A, B, C, D* are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. *VR* is the maximum calibration range expressed in RMS voltage across the diode.
- *ConvF and Boundary Effect Parameters:* Assessed in flat phantom using E-field (or Temperature Transfer Standard for f ≤ 800 MHz) and inside waveguide using analytical field distributions based on power measurements for f > 800 MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to *NORMx,y,z * ConvF* whereby the uncertainty corresponds to that given for *ConvF*. A frequency dependent *ConvF* is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- *Spherical isotropy (3D deviation from isotropy)*: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- *Sensor Offset*: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- *Connector Angle*: The angle is assessed using the information gained by determining the *NORMx* (no uncertainty required).

Probe EX3DV4

SN:3833

Manufactured: November 7, 2011
Calibrated: January 27, 2016

Calibrated for DASY/EASY Systems
(Note: non-compatible with DASY2 system!)

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3833

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)[A]	0.47	0.49	0.35	± 10.1 %
DCP (mV)[B]	100.8	100.2	102.7	

Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB√μV	C	D dB	VR mV	Unc[E] (k=2)
0	CW	X	0.0	0.0	1.0	0.00	131.4	±2.5 %
		Y	0.0	0.0	1.0		134.5	
		Z	0.0	0.0	1.0		128.6	

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

[A] The uncertainties of Norm X,Y,Z do not affect the E^2-field uncertainty inside TSL (see Pages 5 and 6).
[B] Numerical linearization parameter: uncertainty not required.
[E] Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3833

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unc (k=2)
150	52.3	0.76	11.38	11.38	11.38	0.00	1.00	± 13.3 %
220	49.0	0.81	10.71	10.71	10.71	0.00	1.00	± 13.3 %
300	45.3	0.87	10.68	10.68	10.68	0.08	1.15	± 13.3 %
450	43.5	0.87	9.47	9.47	9.47	0.15	1.15	± 13.3 %
600	42.7	0.88	9.41	9.41	9.41	0.09	1.15	± 13.3 %
750	41.9	0.89	9.23	9.23	9.23	0.37	1.00	± 12.0 %
900	41.5	0.97	8.72	8.72	8.72	0.29	1.17	± 12.0 %
1640	40.3	1.29	7.85	7.85	7.85	0.41	0.88	± 12.0 %
1750	40.1	1.37	7.62	7.62	7.62	0.46	0.80	± 12.0 %
1900	40.0	1.40	7.27	7.27	7.27	0.45	0.80	± 12.0 %
2450	39.2	1.80	6.86	6.86	6.86	0.39	0.91	± 12.0 %
5200	36.0	4.66	4.64	4.64	4.64	0.35	1.80	± 13.1 %
5300	35.9	4.76	4.47	4.47	4.47	0.35	1.80	± 13.1 %
5500	35.6	4.96	4.23	4.23	4.23	0.40	1.80	± 13.1 %
5600	35.5	5.07	3.94	3.94	3.94	0.45	1.80	± 13.1 %
5800	35.3	5.27	4.11	4.11	4.11	0.45	1.80	± 13.1 %

[C] Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Above 5 GHz frequency validity can be extended to ± 110 MHz.

[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

[G] Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3833

Calibration Parameter Determined in Body Tissue Simulating Media

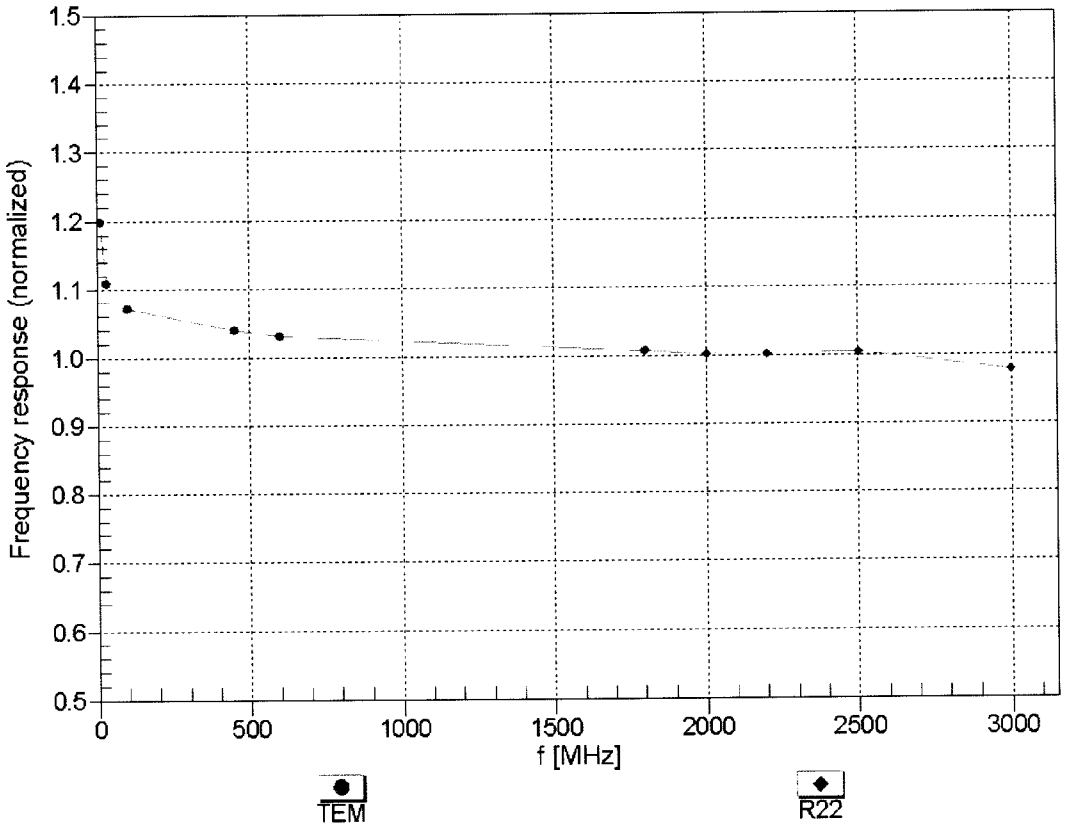
f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unc (k=2)
150	61.9	0.80	11.03	11.03	11.03	0.00	1.00	± 13.3 %
220	60.2	0.86	10.39	10.39	10.39	0.00	1.00	± 13.3 %
300	58.2	0.92	10.08	10.08	10.08	0.07	1.15	± 13.3 %
450	56.7	0.94	10.23	10.23	10.23	0.09	1.15	± 13.3 %
600	56.1	0.95	9.68	9.68	9.68	0.08	1.15	± 13.3 %
750	55.5	0.96	9.06	9.06	9.06	0.44	0.87	± 12.0 %
900	55.0	1.05	8.73	8.73	8.73	0.32	1.06	± 12.0 %
1640	53.8	1.40	7.77	7.77	7.77	0.38	0.82	± 12.0 %
1750	53.4	1.49	7.32	7.32	7.32	0.42	0.84	± 12.0 %
1900	53.3	1.52	7.13	7.13	7.13	0.38	0.80	± 12.0 %
2450	52.7	1.95	6.87	6.87	6.87	0.40	0.85	± 12.0 %
5200	49.0	5.30	4.03	4.03	4.03	0.45	1.90	± 13.1 %
5300	48.9	5.42	3.85	3.85	3.85	0.45	1.90	± 13.1 %
5500	48.6	5.65	3.56	3.56	3.56	0.50	1.90	± 13.1 %
5600	48.5	5.77	3.25	3.25	3.25	0.60	1.90	± 13.1 %
5800	48.2	6.00	3.49	3.49	3.49	0.60	1.90	± 13.1 %

[C] Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Above 5 GHz frequency validity can be extended to ± 110 MHz.

[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

[G] Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

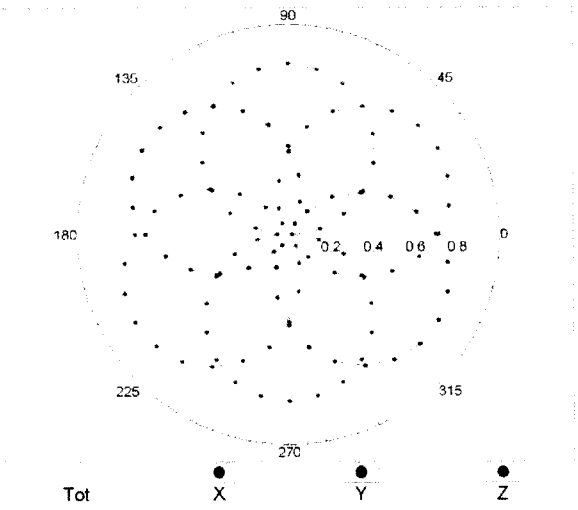
Frequency Response of E-Field
(TEM-Cell:ifi110 EXX, Waveguide: R22)



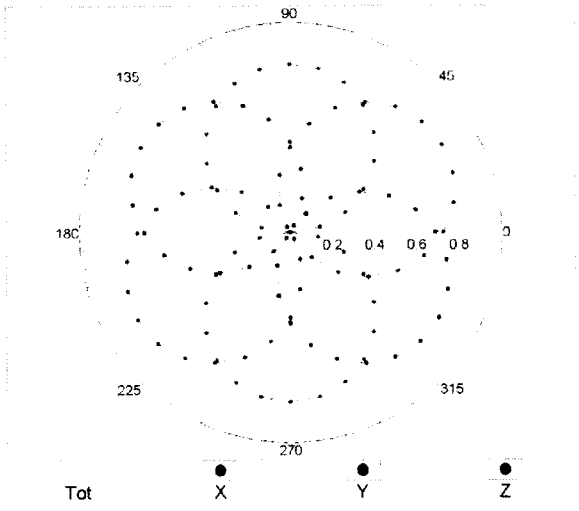
Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

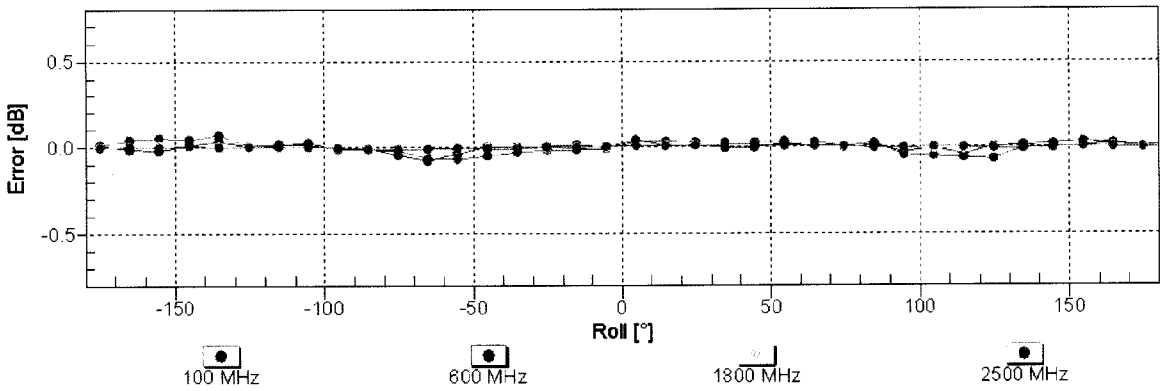
Receiving Pattern (ϕ), ϑ = 0°

f=600 MHz,TEM



f=1800 MHz,R22

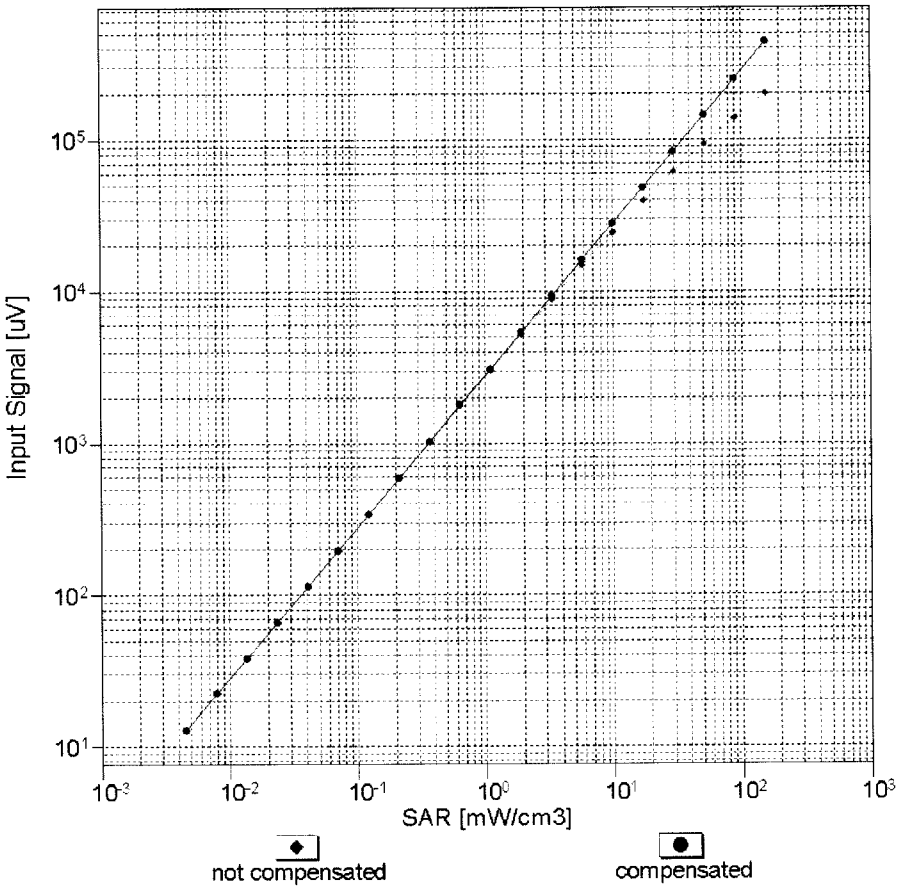


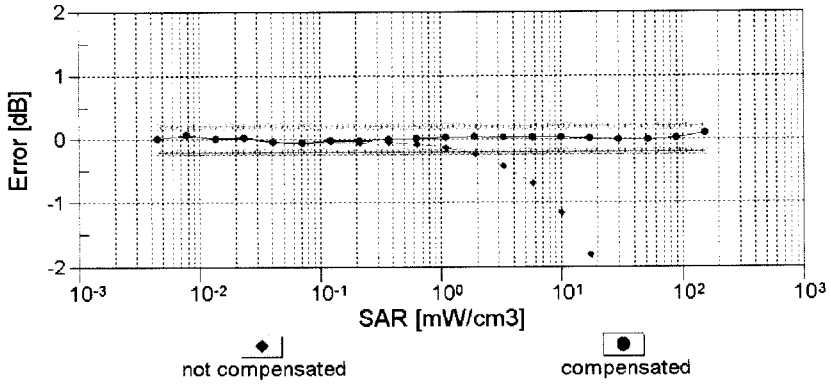


Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

Dynamic Range f(SAR_{head})

(TEM cell , f_{eval}= 1900 MHz)





Uncertainty of Linearity Assessment: ± 0.6% (k=2)