15.4. W-CDMA Band II

Test reduction considerations

Body SAR is not required for handsets with HSPA capabilities when the maximum average output of each RF channel with HSUPA/HSDPA active is less than ¼ dB higher than that measured without HSUPA/HSDPA using 12.2 kbps RMC and the maximum SAR for 12.2kbps RMC is ≤ 75% of the SAR limit as per KDB 941225 D01

15.4.1. Head Exposure Conditions

Test Position	Mode	Antenna	Ch #.	Freq. (MHz)	Power (dBm)	1g SAR (W/kg)	Note
Left Touch	Rel 99 RMC 12.2kbps	Primary	9262	1852.4	22.5	0.637	
			9400	1880.0	22.5	0.758	
			9538	1907.6	22.5	0.735	
Left Tilt (15°)	Rel 99 RMC 12.2kbps	Primary	9262	1852.4	22.5		1
			9400	1880.0	22.5	0.380	
			9538	1907.6	22.5		1
Right Touch	Rel 99 RMC 12.2kbps	Primary	9262	1852.4	22.5	**1.130**	
			9400	1880.0	22.5	1.090	
			9538	1907.6	22.5	1.130	
Right Tilt (15°)	Rel 99 RMC 12.2kbps	Primary	9262	1852.4	22.5		1
			9400	1880.0	22.5	0.380	
			9538	1907.6	22.5		1
Test Position	Mode	Antenna	Ch #.	Freq. (MHz)	Power (dBm)	1g SAR (W/kg)	Note
Left Touch	Rel 99 RMC 12.2kbps	Secondary	9262	1852.4	21.5		1
			9400	1880.0	21.5	0.569	
			9538	1907.6	21.5		1
Left Tilt (15°)	Rel 99 RMC 12.2kbps	Secondary	9262	1852.4	21.5		1
			9400	1880.0	21.5	0.586	
			9538	1907.6	21.5		1
Right Touch	Rel 99 RMC 12.2kbps	Secondary	9262	1852.4	21.5	0.767	
			9400	1880.0	21.5	0.908	
			9538	1907.6	21.5	0.973	
Right Tilt (15°)	Rel 99 RMC 12.2kbps	Secondary	9262	1852.4	21.5		1
			9400	1880.0	21.5	0.732	
			9538	1907.6	21.5		1

Note(s):

1. According to FCC "Public Notice DA 02-1438" by the SCC-34/SC-2, when the SAR measured for the middle channel is < 50% of the SAR limit, testing for the low and high channel is optional.

15.4.2. Body-worn Accessory & Hotspot Mode Exposure Conditions

Test Position	Mode	Antenna	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)	1g SAR (W/kg)	Note
Rear	Rel 99 RMC 12.2kbps	Primary	10	9262	1852.4	22.5	1.030	
				9400	1880.0	22.5	1.080	
				9400	1880.0	22.5	**1.180**	2
				9538	1907.6	22.5	0.988	
Front	Rel 99 RMC 12.2kbps	Primary	10	9262	1852.4	22.5	0.849	
				9400	1880.0	22.5	0.887	
				9538	1907.6	22.5	0.830	
Edge 2	Rel 99 RMC 12.2kbps	Primary	10	9262	1852.4	22.5		1
				9400	1880.0	22.5	0.720	
				9538	1907.6	22.5		1
Edge 3	Rel 99 RMC 12.2kbps	Primary	10	9262	1852.4	22.5	0.878	
				9400	1880.0	22.5	0.915	
				9538	1907.6	22.5	0.974	
Edge 4	Rel 99 RMC 12.2kbps	Primary	10	9262	1852.4	22.5		1
				9400	1880.0	22.5	0.106	
				9538	1907.6	22.5		1
Test Position	Mode	Antenna	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)	1g SAR (W/kg)	Note
Rear	Rel 99 RMC 12.2kbps	Secondary	10	9262	1852.4	21.5		1
				9400	1880.0	21.5	0.392	
				9400	1880.0	21.5	0.456	2
				9538	1907.6	21.5		1
Front	Rel 99 RMC 12.2kbps	Secondary	10	9262	1852.4	21.5		1
				9400	1880.0	21.5	0.284	
				9538	1907.6	21.5		1
Edge 1	Rel 99 RMC 12.2kbps	Secondary	10	9262	1852.4	21.5		1
				9400	1880.0	21.5	0.232	
				9538	1907.6	21.5		1
Edge 2	Rel 99 RMC 12.2kbps	Secondary	10	9262	1852.4	21.5		1
				9400	1880.0	21.5	0.088	
				9538	1907.6	21.5		1
Edge 4	Rel 99 RMC 12.2kbps	Secondary	10	9262	1852.4	21.5		1
				9400	1880.0	21.5	0.257	
				9538	1907.6	21.5		1

Note(s):

1. According to FCC “Public Notice DA 02-1438” by the SCC-34/SC-2, when the SAR measured for the middle channel is < 50% of the SAR limit, testing for the low and high channel is optional.
2. With headset attached.

15.5. CDMA BC0

15.5.1. Head Exposure Conditions

Test Position	Mode	Antenna	Ch #.	Freq. (MHz)	Power (dBm)	1g SAR (W/kg)	Note
Left Touch	1xRTT (RC3 SO55)	Primary	1013	824.7	25.0	0.835	
			384	836.5	24.8	0.847	
			777	848.3	24.8	0.953	
Left Tilt (15°)	1xRTT (RC3 SO55)	Primary	1013	824.7	25.0		1
			384	836.5	24.8	0.467	
			777	848.3	24.7		1
Right Touch	1xRTT (RC3 SO55)	Primary	1013	824.7	25.0	0.784	
			384	836.5	24.8	0.774	
			777	848.3	24.7	0.894	
Right Tilt (15°)	1xRTT (RC3 SO55)	Primary	1013	824.7	25.0		1
			384	836.5	24.8	0.487	
			777	848.3	24.7		1
Test Position	Mode	Antenna	Ch #.	Freq. (MHz)	Power (dBm)	1g SAR (W/kg)	Note
Left Touch	1xRTT (RC3 SO55)	Secondary	1013	824.7	24.5	0.935	
			384	836.5	24.4	0.917	
			777	848.3	24.5	**0.972**	
Left Tilt (15°)	1xRTT (RC3 SO55)	Secondary	1013	824.7	24.5		1
			384	836.5	24.4	0.685	
			777	848.3	24.5		1
Right Touch	1xRTT (RC3 SO55)	Secondary	1013	824.7	24.5		1
			384	836.5	24.4	0.567	
			777	848.3	24.5		1
Right Tilt (15°)	1xRTT (RC3 SO55)	Secondary	1013	824.7	24.5		1
			384	836.5	24.4	0.455	
			777	848.3	24.5		1

Note(s):

1. According to FCC “Public Notice DA 02-1438” by the SCC-34/SC-2, when the SAR measured for the middle channel is < 50% of the SAR limit, testing for the low and high channel is optional.

15.5.2. Body-worn Accessory & Hotspot Mode Exposure Conditions

Test Position	Mode	Antenna	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)	1g SAR (W/kg)	Note
Rear	1xRTT (RC3 SO32)	Primary	10	1013	824.7	25.0	0.938	
				384	836.5	25.0	0.912	
				777	848.3	24.8	**0.982**	
				777	848.3	24.8	0.346	2
Front	1xRTT (RC3 SO32)	Primary	10	1013	824.7	25.0	0.739	
				384	836.5	25.0	0.825	
				777	848.3	24.8	0.872	
Edge 2	1xRTT (RC3 SO32)	Primary	10	1013	824.7	25.0		1
				384	836.5	25.0	0.494	
				777	848.3	24.8		1
Edge 3	1xRTT (RC3 SO32)	Primary	10	1013	824.7	25.0		1
				384	836.5	25.0	0.091	
				777	848.3	24.8		1
Edge 4	1xRTT (RC3 SO32)	Primary	10	1013	824.7	25.0		1
				384	836.5	25.0	0.565	
				777	848.3	24.8		1
Test Position	Mode	Antenna	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)	1g SAR (W/kg)	Note
Rear	1xRTT (RC3 SO32)	Secondary	10	1013	824.7	24.5		1
				384	836.5	24.4	0.335	
				384	836.5	24.4	0.299	2
				777	848.3	24.4		1
Front	1xRTT (RC3 SO32)	Secondary	10	1013	824.7	24.5		1
				384	836.5	24.4	0.277	
				777	848.3	24.4		1
Edge 1	1xRTT (RC3 SO32)	Secondary	10	1013	824.7	24.5		1
				384	836.5	24.4	0.153	
				777	848.3	24.4		1
Edge 2	1xRTT (RC3 SO32)	Secondary	10	1013	824.7	24.5		1
				384	836.5	24.4	0.281	
				777	848.3	24.4		1
Edge 4	1xRTT (RC3 SO32)	Secondary	10	1013	824.7	24.5		1
				384	836.5	24.4	0.143	
				777	848.3	24.4		1

Note(s):

1. According to FCC “Public Notice DA 02-1438” by the SCC-34/SC-2, when the SAR measured for the middle channel is < 50% of the SAR limit, testing for the low and high channel is optional.
2. With headset attached. (The difference between the SAR values of the primary antenna without the headset and with the headset is dramatic, but this has been verified to be true through repeated testing)

Body-worn Accessory & Hotspot Mode Exposure Conditions (continued)

Test Position	Mode	Antenna	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)	1g SAR (W/kg)	Note
Rear	1xEVDO (Rel. 0)	Primary	10	1013	824.7	25.0	0.881	
				384	836.5	25.0	0.913	
				777	848.3	25.0	**0.942**	
				777	848.3	25.0	0.348	2
Front	1xEVDO (Rel. 0)	Primary	10	1013	824.7	25.0	0.747	
				384	836.5	25.0	0.769	
				777	848.3	25.0	0.770	
Edge 2	1xEVDO (Rel. 0)	Primary	10	1013	824.7	25.0		1
				384	836.5	25.0	0.530	
				777	848.3	25.0		1
Edge 3	1xEVDO (Rel. 0)	Primary	10	1013	824.7	25.0		1
				384	836.5	25.0	0.109	
				777	848.3	25.0		1
Edge 4	1xEVDO (Rel. 0)	Primary	10	1013	824.7	25.0		1
				384	836.5	25.0	0.638	
				777	848.3	25.0		1
Test Position	Mode	Antenna	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)	1g SAR (W/kg)	Note
Rear	1xEVDO (Rel. 0)	Secondary	10	1013	824.7	24.5		1
				384	836.5	24.5	0.300	
				384	836.5	24.5	0.259	2
				777	848.3	24.5		1
Front	1xEVDO (Rel. 0)	Secondary	10	1013	824.7	24.5		1
				384	836.5	24.5	0.262	
				777	848.3	24.5		1
Edge 1	1xEVDO (Rel. 0)	Secondary	10	1013	824.7	24.5		1
				384	836.5	24.5	0.144	
				777	848.3	24.5		1
Edge 2	1xEVDO (Rel. 0)	Secondary	10	1013	824.7	24.5		1
				384	836.5	24.5	0.330	
				777	848.3	24.5		1
Edge 4	1xEVDO (Rel. 0)	Secondary	10	1013	824.7	24.5		1
				384	836.5	24.5	0.141	
				777	848.3	24.5		1

Note(s):

1. According to FCC “Public Notice DA 02-1438” by the SCC-34/SC-2, when the SAR measured for the middle channel is < 50% of the SAR limit, testing for the low and high channel is optional.
2. With headset attached. (The difference between the SAR values of the primary antenna without the headset and with the headset is dramatic, but this has been verified to be true through repeated testing)

15.5.3. Additional Body-worn Accessory & Hotspot Mode Exposure Conditions

Test Position	Mode	Antenna	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)	1g SAR (W/kg)	Note
Rear	1xEVDO (Rev. B) Two Carrier Mini.	Primary	10	1013+31	824.70+825.93	21.3		1
				384+425	836.52+837.75	21.4	0.350	
				384+425	836.52+837.75	21.4	0.162	2
				736+777	847.08+848.31	21.3		1
Front	1xEVDO (Rev. B) Two Carrier Mini.	Primary	10	1013+31	824.70+825.93	21.3		1
				384+425	836.52+837.75	21.4	0.292	
				736+777	847.08+848.31	21.3		1
Edge 2	1xEVDO (Rev. B) Two Carrier Mini.	Primary	10	1013+31	824.70+825.93	21.3		1
				384+425	836.52+837.75	21.4	0.236	
				736+777	847.08+848.31	21.3		1
Edge 3	1xEVDO (Rev. B) Two Carrier Mini.	Primary	10	1013+31	824.70+825.93	21.3		1
				384+425	836.52+837.75	21.4	0.043	
				736+777	847.08+848.31	21.3		1
Edge 4	1xEVDO (Rev. B) Two Carrier Mini.	Primary	10	1013+31	824.70+825.93	21.3		1
				384+425	836.52+837.75	21.4	0.249	
				736+777	847.08+848.31	21.3		1
Test Position	Mode	Antenna	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)	1g SAR (W/kg)	Note
Rear	1xEVDO (Rev. B) Two Carrier Mini.	Secondary	10	1013+31	824.70+825.93	21.1		1
				384+425	836.52+837.75	21.1	0.141	
				384+425	836.52+837.75	21.1	0.126	2
				736+777	847.08+848.31	21.2		1
Front	1xEVDO (Rev. B) Two Carrier Mini.	Secondary	10	1013+31	824.70+825.93	21.1		1
				384+425	836.52+837.75	21.1	0.119	
				736+777	847.08+848.31	21.2		1
Edge 1	1xEVDO (Rev. B) Two Carrier Mini.	Secondary	10	1013+31	824.70+825.93	21.1		1
				384+425	836.52+837.75	21.1	0.067	
				736+777	847.08+848.31	21.2		1
Edge 2	1xEVDO (Rev. B) Two Carrier Mini.	Secondary	10	1013+31	824.70+825.93	21.1		1
				384+425	836.52+837.75	21.1	0.069	
				736+777	847.08+848.31	21.2		1
Edge 4	1xEVDO (Rev. B) Two Carrier Mini.	Secondary	10	1013+31	824.70+825.93	21.1		1
				384+425	836.52+837.75	21.1	0.032	
				736+777	847.08+848.31	21.2		1

Note(s):

1. According to FCC “Public Notice DA 02-1438” by the SCC-34/SC-2, when the SAR measured for the middle channel is < 50% of the SAR limit, testing for the low and high channel is optional.
2. With headset attached.

Additional Body-worn Accessory & Hotspot Mode Exposure Conditions (continued)

Test Position	Mode	Antenna	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)	1g SAR (W/kg)	Note
Rear	1xEVDO (Rev. B) Three carrier	Primary	10	1013+31+72	824.70+825.93+827.16	20.8		1
				384+425+466	836.52+837.75+838.98	20.9	0.346	
				384+425+466	836.52+837.75+838.98	20.9	0.167	2
				695+736+777	845.85+847.08+848.31	20.7		1
Front	1xEVDO (Rev. B) Three carrier	Primary	10	1013+31+72	824.70+825.93+827.16	20.8		1
				384+425+466	836.52+837.75+838.98	20.9	0.240	
				695+736+777	845.85+847.08+848.31	20.7		1
Edge 2	1xEVDO (Rev. B) Three carrier	Primary	10	1013+31+72	824.70+825.93+827.16	20.8		1
				384+425+466	836.52+837.75+838.98	20.9	0.151	
				695+736+777	845.85+847.08+848.31	20.7		1
Edge 3	1xEVDO (Rev. B) Three carrier	Primary	10	1013+31+72	824.70+825.93+827.16	20.8		1
				384+425+466	836.52+837.75+838.98	20.9	0.061	
				695+736+777	845.85+847.08+848.31	20.7		1
Edge 4	1xEVDO (Rev. B) Three carrier	Primary	10	1013+31+72	824.70+825.93+827.16	20.8		1
				384+425+466	836.52+837.75+838.98	20.9	0.225	
				695+736+777	845.85+847.08+848.31	20.7		1

Test Position	Mode	Antenna	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)	1g SAR (W/kg)	Note
Rear	1xEVDO (Rev. B) Three carrier	Secondary	10	1013+31+72	824.70+825.93+827.16	20.7		1
				384+425+466	836.52+837.75+838.98	20.8	0.145	
				384+425+466	836.52+837.75+838.98	20.8	0.144	2
				695+736+777	845.85+847.08+848.31	20.7		1
Front	1xEVDO (Rev. B) Three carrier	Secondary	10	1013+31+72	824.70+825.93+827.16	20.7		1
				384+425+466	836.52+837.75+838.98	20.8	0.141	
				695+736+777	845.85+847.08+848.31	20.7		1
Edge 1	1xEVDO (Rev. B) Three carrier	Secondary	10	1013+31+72	824.70+825.93+827.16	20.7		1
				384+425+466	836.52+837.75+838.98	20.8	0.019	
				695+736+777	845.85+847.08+848.31	20.7		1
Edge 2	1xEVDO (Rev. B) Three carrier	Secondary	10	1013+31+72	824.70+825.93+827.16	20.7		1
				384+425+466	836.52+837.75+838.98	20.8	0.040	
				695+736+777	845.85+847.08+848.31	20.7		1
Edge 4	1xEVDO (Rev. B) Three carrier	Secondary	10	1013+31+72	824.70+825.93+827.16	20.7		1
				384+425+466	836.52+837.75+838.98	20.8	0.033	
				695+736+777	845.85+847.08+848.31	20.7		1

Note(s):

1. According to FCC “Public Notice DA 02-1438” by the SCC-34/SC-2, when the SAR measured for the middle channel is < 50% of the SAR limit, testing for the low and high channel is optional.
2. With headset attached.

15.6. CDMA BC1

15.6.1. Head Exposure Conditions

Test Position	Mode	Antenna	Ch #.	Freq. (MHz)	Power (dBm)	1g SAR (W/kg)	Note
Left Touch	1xRTT (RC3 SO55)	Primary	25	1851.25	22.5		1
			600	1880.00	22.5	0.714	
			1175	1908.75	22.5		1
Left Tilt (15°)	1xRTT (RC3 SO55)	Primary	25	1851.25	22.5		1
			600	1880.00	22.5	0.448	
			1175	1908.75	22.5		1
Right Touch	1xRTT (RC3 SO55)	Primary	25	1851.25	22.5	1.080	
			600	1880.00	22.5	**1.180**	
			1175	1908.75	22.5	1.170	
Right Tilt (15°)	1xRTT (RC3 SO55)	Primary	25	1851.25	22.5		1
			600	1880.00	22.5	0.429	
			1175	1908.75	22.5		1
Test Position	Mode	Antenna	Ch #.	Freq. (MHz)	Power (dBm)	1g SAR (W/kg)	Note
Left Touch	1xRTT (RC3 SO55)	Secondary	25	1851.25	21.3		1
			600	1880.00	21.5	0.428	
			1175	1908.75	21.5		1
Left Tilt (15°)	1xRTT (RC3 SO55)	Secondary	25	1851.25	21.3		1
			600	1880.00	21.5	0.482	
			1175	1908.75	21.5		1
Right Touch	1xRTT (RC3 SO55)	Secondary	25	1851.25	21.3	0.710	
			600	1880.00	21.5	0.761	
			1175	1908.75	21.5	0.922	
Right Tilt (15°)	1xRTT (RC3 SO55)	Secondary	25	1851.25	21.3		1
			600	1880.00	21.5	0.722	
			1175	1908.75	21.5		1

Note(s):

1. According to FCC “Public Notice DA 02-1438” by the SCC-34/SC-2, when the SAR measured for the middle channel is < 50% of the SAR limit, testing for the low and high channel is optional.

15.6.2. Body-worn Accessory & Hotspot Mode Exposure Conditions

Test Position	Mode	Antenna	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)	1g SAR (W/kg)	Note
Rear	1xRTT (RC3 SO32)	Primary	10	25	1851.25	22.5	1.110	
				600	1880.00	22.5	1.130	
				600	1880.00	22.5	**1.180**	2
				1175	1908.75	22.4	1.010	
Front	1xRTT (RC3 SO32)	Primary	10	25	1851.25	22.5	0.892	
				600	1880.00	22.5	0.825	
				1175	1908.75	22.4	0.782	
Edge 2	1xRTT (RC3 SO32)	Primary	10	25	1851.25	22.5	0.700	
				600	1880.00	22.5	0.802	
				1175	1908.75	22.4	0.789	
Edge 3	1xRTT (RC3 SO32)	Primary	10	25	1851.25	22.5	0.870	
				600	1880.00	22.5	0.876	
				1175	1908.75	22.4	0.889	
Edge 4	1xRTT (RC3 SO32)	Primary	10	25	1851.25	22.5		
				600	1880.00	22.5	0.116	
				1175	1908.75	22.4		

Test Position	Mode	Antenna	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)	1g SAR (W/kg)	Note
Rear	1xRTT (RC3 SO32)	Secondary	10	25	1851.25	21.2		
				600	1880.00	21.2	0.318	
				600	1880.00	21.2	0.298	2
				1175	1908.75	21.2		
Front	1xRTT (RC3 SO32)	Secondary	10	25	1851.25	21.2		
				600	1880.00	21.2	0.227	
				1175	1908.75	21.2		
Edge 1	1xRTT (RC3 SO32)	Secondary	10	25	1851.25	21.2		
				600	1880.00	21.2	0.153	
				1175	1908.75	21.2		
Edge 2	1xRTT (RC3 SO32)	Secondary	10	25	1851.25	21.2		
				600	1880.00	21.2	0.084	
				1175	1908.75	21.2		
Edge 4	1xRTT (RC3 SO32)	Secondary	10	25	1851.25	21.2		
				600	1880.00	21.2	0.163	
				1175	1908.75	21.2		

Note(s):

1. According to FCC "Public Notice DA 02-1438" by the SCC-34/SC-2, when the SAR measured for the middle channel is < 50% of the SAR limit, testing for the low and high channel is optional.
2. With headset attached.

Body-worn Accessory & Hotspot Mode Exposure Conditions (continued)

Test Position	Mode	Antenna	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)	1g SAR (W/kg)	Note
Rear	1xEVDO (Rel. 0)	Primary	10	25	1851.25	22.5	1.010	
				600	1880.00	22.5	1.100	
				600	1880.00	22.5	**1.130**	2
				1175	1908.75	22.5	1.010	
Front	1xEVDO (Rel. 0)	Primary	10	25	1851.25	22.5	0.929	
				600	1880.00	22.5	0.895	
				1175	1908.75	22.5	0.860	
Edge 2	1xEVDO (Rel. 0)	Primary	10	25	1851.25	22.5	0.673	
				600	1880.00	22.5	0.751	
				1175	1908.75	22.5	0.730	
Edge 3	1xEVDO (Rel. 0)	Primary	10	25	1851.25	22.5	0.863	
				600	1880.00	22.5	0.799	
				1175	1908.75	22.5	0.834	
Edge 4	1xEVDO (Rel. 0)	Primary	10	25	1851.25	22.5		
				600	1880.00	22.5	0.135	
				1175	1908.75	22.5		
Test Position	Mode	Antenna	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)	1g SAR (W/kg)	Note
Rear	1xEVDO (Rel. 0)	Secondary	10	25	1851.25	21.5		
				600	1880.00	21.4	0.351	
				600	1880.00	21.4	0.310	2
				1175	1908.75	21.5		
Front	1xEVDO (Rel. 0)	Secondary	10	25	1851.25	21.5		
				600	1880.00	21.4	0.236	
				1175	1908.75	21.5		
Edge 1	1xEVDO (Rel. 0)	Secondary	10	25	1851.25	21.5		
				600	1880.00	21.4	0.145	
				1175	1908.75	21.5		
Edge 2	1xEVDO (Rel. 0)	Secondary	10	25	1851.25	21.5		
				600	1880.00	21.4	0.070	
				1175	1908.75	21.5		
Edge 4	1xEVDO (Rel. 0)	Secondary	10	25	1851.25	21.5		
				600	1880.00	21.4	0.170	
				1175	1908.75	21.5		

Note(s):

1. According to FCC “Public Notice DA 02-1438” by the SCC-34/SC-2, when the SAR measured for the middle channel is < 50% of the SAR limit, testing for the low and high channel is optional.
2. With headset attached.

15.7. CDMA BC10

15.7.1. Head Exposure Conditions

Test Position	Mode	Antenna	Ch #.	Freq. (MHz)	Power (dBm)	1g SAR (W/kg)	Note
Left Touch	1xRTT (RC3 SO55)	Primary	476	817.9	24.4		1
			580	820.5	24.5	0.654	
			684	823.1	24.5		1
Left Tilt (15°)	1xRTT (RC3 SO55)	Primary	476	817.9	24.4		1
			580	820.5	24.5	0.398	
			684	823.1	24.5		1
Right Touch	1xRTT (RC3 SO55)	Primary	476	817.9	24.4		1
			580	820.5	24.5	0.602	
			684	823.1	24.5		1
Right Tilt (15°)	1xRTT (RC3 SO55)	Primary	476	817.9	24.4		1
			580	820.5	24.5	0.399	
			684	823.1	24.5		1
Test Position	Mode	Antenna	Ch #.	Freq. (MHz)	Power (dBm)	1g SAR (W/kg)	Note
Left Touch	1xRTT (RC3 SO55)	Secondary	476	817.9	23.9	0.642	
			580	820.5	23.9	0.781	
			684	823.1	24.0	**0.925**	
Left Tilt (15°)	1xRTT (RC3 SO55)	Secondary	476	817.9	23.9		1
			580	820.5	23.9	0.657	
			684	823.1	24.0		1
Right Touch	1xRTT (RC3 SO55)	Secondary	476	817.9	23.9		1
			580	820.5	23.9	0.467	
			684	823.1	24.0		1
Right Tilt (15°)	1xRTT (RC3 SO55)	Secondary	476	817.9	23.9		1
			580	820.5	23.9	0.407	
			684	823.1	24.0		1

Note(s):

1. According to FCC “Public Notice DA 02-1438” by the SCC-34/SC-2, when the SAR measured for the middle channel is < 50% of the SAR limit, testing for the low and high channel is optional.

15.7.2. Body-worn Accessory & Hotspot Mode Exposure Conditions

Test Position	Mode	Antenna	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)	1g SAR (W/kg)	Note
Rear	1xRTT (RC3 SO32)	Primary	10	476	817.9	24.4	0.623	
				580	820.5	24.5	0.750	
				684	823.1	24.5	**0.876**	
				684	823.1	24.5	0.527	2
Front	1xRTT (RC3 SO32)	Primary	10	476	817.9	24.4		1
				580	820.5	24.5	0.702	
				684	823.1	24.5		1
Edge 2	1xRTT (RC3 SO32)	Primary	10	476	817.9	24.4		1
				580	820.5	24.5	0.465	
				684	823.1	24.5		1
Edge 3	1xRTT (RC3 SO32)	Primary	10	476	817.9	24.4		1
				580	820.5	24.5	0.069	
				684	823.1	24.5		1
Edge 4	1xRTT (RC3 SO32)	Primary	10	476	817.9	24.4		1
				580	820.5	24.5	0.540	
				684	823.1	24.5		1
Test Position	Mode	Antenna	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)	1g SAR (W/kg)	Note
Rear	1xRTT (RC3 SO32)	Secondary	10	476	817.9	23.9		1
				580	820.5	23.9	0.232	
				580	820.5	23.9	0.138	2
				684	823.1	24.0		1
Front	1xRTT (RC3 SO32)	Secondary	10	476	817.9	23.9		1
				580	820.5	23.9	0.126	
				684	823.1	24.0		1
Edge 1	1xRTT (RC3 SO32)	Secondary	10	476	817.9	23.9		1
				580	820.5	23.9	0.063	
				684	823.1	24.0		1
Edge 2	1xRTT (RC3 SO32)	Secondary	10	476	817.9	23.9		1
				580	820.5	23.9	0.120	
				684	823.1	24.0		1
Edge 4	1xRTT (RC3 SO32)	Secondary	10	476	817.9	23.9		1
				580	820.5	23.9	0.063	
				684	823.1	24.0		1

Note(s):

1. According to FCC “Public Notice DA 02-1438” by the SCC-34/SC-2, when the SAR measured for the middle channel is < 50% of the SAR limit, testing for the low and high channel is optional.
2. With headset attached. (The difference between the SAR values of the primary antenna without the headset and with the headset is dramatic, but this has been verified to be true through repeated testing)

Body-worn Accessory & Hotspot Mode Exposure Conditions (continued)

Test Position	Mode	Antenna	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)	1g SAR (W/kg)	Note
Rear	1xEVDO (Rel. 0)	Primary	10	476	817.9	24.4	0.631	
				580	820.5	24.5	0.750	
				684	823.1	24.5	**0.867**	
				684	823.1	24.5	0.523	2
Front	1xEVDO (Rel. 0)	Primary	10	476	817.9	24.4		1
				580	820.5	24.5	0.725	
				684	823.1	24.5		1
Edge 2	1xEVDO (Rel. 0)	Primary	10	476	817.9	24.4		1
				580	820.5	24.5	0.426	
				684	823.1	24.5		1
Edge 3	1xEVDO (Rel. 0)	Primary	10	476	817.9	24.4		1
				580	820.5	24.5	0.072	
				684	823.1	24.5		1
Edge 4	1xEVDO (Rel. 0)	Primary	10	476	817.9	24.4		1
				580	820.5	24.5	0.528	
				684	823.1	24.5		1
Test Position	Mode	Antenna	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)	1g SAR (W/kg)	Note
Rear	1xEVDO (Rel. 0)	Secondary	10	476	817.9	23.9		1
				580	820.5	23.9	0.286	
				580	820.5	23.9	0.254	2
				684	823.1	24.0		1
Front	1xEVDO (Rel. 0)	Secondary	10	476	817.9	23.9		1
				580	820.5	23.9	0.252	
				684	823.1	24.0		1
Edge 1	1xEVDO (Rel. 0)	Secondary	10	476	817.9	23.9		1
				580	820.5	23.9	0.131	
				684	823.1	24.0		1
Edge 2	1xEVDO (Rel. 0)	Secondary	10	476	817.9	23.9		1
				580	820.5	23.9	0.256	
				684	823.1	24.0		1
Edge 4	1xEVDO (Rel. 0)	Secondary	10	476	817.9	23.9		1
				580	820.5	23.9	0.095	
				684	823.1	24.0		1

Note(s):

1. According to FCC “Public Notice DA 02-1438” by the SCC-34/SC-2, when the SAR measured for the middle channel is < 50% of the SAR limit, testing for the low and high channel is optional.
2. With headset attached. (The difference between the SAR values of the primary antenna without the headset and with the headset is dramatic, but this has been verified to be true through repeated testing)

15.8. LTE Band 5 (10 MHz Bandwidth)

15.8.1. Body-worn Accessory & Hotspot Mode Exposure Conditions

Test Position	Antenna	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	MPR	Power (dBm)	1g SAR (W/kg)	Note
Rear	Primary	10	QPSK	20525	836.5	50	0	1	23.3	0.548	
						1	0	0	24.0	0.593	
						1	24	0	24.0	0.642	
						1	49	0	24.0	**0.703**	
						1	49	0	24.0	0.351	2
Front	Primary	10	QPSK	20525	836.5	50	0	1	23.3	0.471	
						1	0	0	24.0	0.537	
						1	24	0	24.0	0.552	
						1	49	0	24.0	0.609	
Edge 2	Primary	10	QPSK	20525	836.5	50	0	1	23.3	0.328	
						1	0	0	24.0	0.354	
						1	24	0	24.0	0.386	
						1	49	0	24.0	0.425	
Edge 3	Primary	10	QPSK	20525	836.5	50	0	1	23.3	0.077	
						1	0	0	24.0	0.082	
						1	24	0	24.0	0.091	
						1	49	0	24.0	0.108	
Edge 4	Primary	10	QPSK	20525	836.5	50	0	1	23.3	0.396	
						1	0	0	24.0	0.431	
						1	24	0	24.0	0.470	
						1	49	0	24.0	0.521	

Test Position	Antenna	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	MPR	Power (dBm)	1g SAR (W/kg)	Note
Rear	Secondary	10	QPSK	20525	836.5	50	0	1	22.5	0.215	
						1	0	0	23.5	0.215	
						1	24	0	23.4	0.263	
						1	49	0	23.4	0.303	
						1	49	0	23.4	0.285	2
Front	Secondary	10	QPSK	20525	836.5	50	0	1	22.5	0.190	
						1	0	0	23.5	0.189	
						1	24	0	23.4	0.226	
						1	49	0	23.4	0.262	
Edge 1	Secondary	10	QPSK	20525	836.5	50	0	1	22.5	0.130	
						1	0	0	23.5	0.112	
						1	24	0	23.4	0.138	
						1	49	0	23.4	0.172	
Edge 2	Secondary	10	QPSK	20525	836.5	50	0	1	22.5	0.245	
						1	0	0	23.5	0.242	
						1	24	0	23.4	0.301	
						1	49	0	23.4	0.354	
Edge 4	Secondary	10	QPSK	20525	836.5	50	0	1	22.5	0.105	
						1	0	0	23.5	0.103	
						1	24	0	23.4	0.127	
						1	49	0	23.4	0.144	

Note(s):

1. Per KDB 941225 D05 SAR for LTE Devices v02, SAR test reduction are applied using the following criteria:
   - Testing for 16-QAM modulation is not required because the measured SAR for QPSK is < 1.2 W/Kg and its output power is not more than 0.5 dB higher than that of QPSK.
   - Testing for the other channel bandwidths is not required because the measured SAR for the highest channel bandwidth is < 1.2 W/Kg and its output power is not more than 0.5 dB higher than that of the highest channel bandwidth.
2. With headset attached. (The difference between the SAR values of the primary antenna without the headset and with the headset is dramatic, but this has been verified to be true through repeated testing)

15.8.2. Additional Test for QPSK with 50%RB Allocation

Test Position	Antenna	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	MPR	Power (dBm)	1g SAR (W/kg)	Note
Rear	Primary	10	QPSK	20525	836.5	25	0	1	22.8	0.513	
						25	12	1	22.8	0.570	
						25	24	1	22.7	0.554	
Front	Primary	10	QPSK	20525	836.5	25	0	1	22.8	0.430	
						25	12	1	22.8	0.442	
						25	24	1	22.7	0.457	
Edge 2	Primary	10	QPSK	20525	836.5	25	0	1	22.8	0.299	
						25	12	1	22.8	0.322	
						25	24	1	22.7	0.334	
Edge 3	Primary	10	QPSK	20525	836.5	25	0	1	22.8	0.087	
						25	12	1	22.8	0.090	
						25	24	1	22.7	0.089	
Edge 4	Primary	10	QPSK	20525	836.5	25	0	1	22.8	0.384	
						25	12	1	22.8	0.404	
						25	24	1	22.7	0.418	
Test Position	Antenna	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	MPR	Power (dBm)	1g SAR (W/kg)	Note
Rear	Secondary	10	QPSK	20525	836.5	25	0	1	22.6	0.195	
						25	12	1	22.6	0.220	
						25	24	1	22.6	0.242	
Front	Secondary	10	QPSK	20525	836.5	25	0	1	22.6	0.176	
						25	12	1	22.6	0.189	
						25	24	1	22.6	0.219	
Edge 1	Secondary	10	QPSK	20525	836.5	25	0	1	22.6	0.099	
						25	12	1	22.6	0.114	
						25	24	1	22.6	0.127	
Edge 2	Secondary	10	QPSK	20525	836.5	25	0	1	22.6	0.198	
						25	12	1	22.6	0.223	
						25	24	1	22.6	0.246	
Edge 4	Secondary	10	QPSK	20525	836.5	25	0	1	22.6	0.087	
						25	12	1	22.6	0.098	
						25	24	1	22.6	0.107	

15.9. LTE Band 13 (10 MHz Bandwidth)

15.9.1. Body-worn Accessory & Hotspot Mode Exposure Conditions

Test Position	Antenna	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	MPR	Power (dBm)	1g SAR (W/kg)	Note
Rear	Primary	10	QPSK	23230	782.0	50	0	1	22.7	0.514	
						1	0	0	24.0	**0.645**	
						1	0	0	24.0	0.361	2
						1	24	0	24.0	0.626	
						1	49	0	23.8	0.620	
Front	Primary	10	QPSK	23230	782.0	50	0	1	22.7	0.500	
						1	0	0	24.0	0.609	
						1	24	0	24.0	0.620	
						1	49	0	23.8	0.611	
Edge 2	Primary	10	QPSK	23230	782.0	50	0	1	22.7	0.330	
						1	0	0	24.0	0.413	
						1	24	0	24.0	0.404	
						1	49	0	23.8	0.403	
Edge 3	Primary	10	QPSK	23230	782.0	50	0	1	22.7	0.114	
						1	0	0	24.0	0.140	
						1	24	0	24.0	0.147	
						1	49	0	23.8	0.146	
Edge 4	Primary	10	QPSK	23230	782.0	50	0	1	22.7	0.418	
						1	0	0	24.0	0.496	
						1	24	0	24.0	0.513	
						1	49	0	23.8	0.509	

Test Position	Antenna	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	MPR	Power (dBm)	1g SAR (W/kg)	Note
Rear	Secondary	10	QPSK	23230	782.0	50	0	1	22.3	0.233	
						1	0	0	23.5	0.282	
						1	24	0	23.4	0.302	
						1	24	0	23.4	0.278	2
						1	49	0	23.4	0.258	
Front	Secondary	10	QPSK	23230	782.0	50	0	1	22.3	0.226	
						1	0	0	23.5	0.271	
						1	24	0	23.4	0.288	
						1	49	0	23.4	0.250	
Edge 1	Secondary	10	QPSK	23230	782.0	50	0	1	22.3	0.128	
						1	0	0	23.5	0.167	
						1	24	0	23.4	0.177	
						1	49	0	23.4	0.152	
Edge 2	Secondary	10	QPSK	23230	782.0	50	0	1	22.3	0.157	
						1	0	0	23.5	0.162	
						1	24	0	23.4	0.187	
						1	49	0	23.4	0.169	
Edge 4	Secondary	10	QPSK	23230	782.0	50	0	1	22.3	0.112	
						1	0	0	23.5	0.128	
						1	24	0	23.4	0.143	
						1	49	0	23.4	0.123	

Note(s):

1. Per KDB 941225 D05 SAR for LTE Devices v02, SAR test reduction are applied using the following criteria:
   - Testing for 16-QAM modulation is not required because the measured SAR for QPSK is < 1.2 W/Kg and its output power is not more than 0.5 dB higher than that of QPSK.
   - Testing for the other channel bandwidths is not required because the measured SAR for the highest channel bandwidth is < 1.2 W/Kg and its output power is not more than 0.5 dB higher than that of the highest channel bandwidth.
2. With headset attached. (The difference between the SAR values of the primary antenna without the headset and with the headset is dramatic, but this has been verified to be true through repeated testing)

15.9.2. Additional Test for QPSK with 50%RB Allocation

Test Position	Antenna	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	MPR	Power (dBm)	1g SAR (W/kg)	Note
Rear	Primary	10	QPSK	23230	782.0	25	0	1	22.8	0.523	
						25	12	1	22.8	0.524	
						25	24	1	22.7	0.542	
Front	Primary	10	QPSK	23230	782.0	25	0	1	22.8	0.507	
						25	12	1	22.8	0.505	
						25	24	1	22.7	0.508	
Edge 2	Primary	10	QPSK	23230	782.0	25	0	1	22.8	0.344	
						25	12	1	22.8	0.326	
						25	24	1	22.7	0.334	
Edge 3	Primary	10	QPSK	23230	782.0	25	0	1	22.8	0.104	
						25	12	1	22.8	0.107	
						25	24	1	22.7	0.107	
Edge 4	Primary	10	QPSK	23230	782.0	25	0	1	22.8	0.343	
						25	12	1	22.8	0.307	
						25	24	1	22.7	0.348	
Test Position	Antenna	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	MPR	Power (dBm)	1g SAR (W/kg)	Note
Rear	Secondary	10	QPSK	23230	782.0	25	0	1	22.3	0.289	
						25	12	1	22.3	0.288	
						25	24	1	22.4	0.285	
Front	Secondary	10	QPSK	23230	782.0	25	0	1	22.3	0.255	
						25	12	1	22.3	0.256	
						25	24	1	22.4	0.243	
Edge 1	Secondary	10	QPSK	23230	782.0	25	0	1	22.3	0.120	
						25	12	1	22.3	0.118	
						25	24	1	22.4	0.115	
Edge 2	Secondary	10	QPSK	23230	782.0	25	0	1	22.3	0.152	
						25	12	1	22.3	0.151	
						25	24	1	22.4	0.129	
Edge 4	Secondary	10	QPSK	23230	782.0	25	0	1	22.3	0.098	
						25	12	1	22.3	0.098	
						25	24	1	22.4	0.093	

15.9.3. Additional Test for Head Exposure Conditions

Test Position	Antenna	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	MPR	Power (dBm)	1g SAR (W/kg)	Note
Left Touch	Primary	QPSK	23230	782.0	1	0	0	24.0	0.520	
					1	24	0	24.0	0.475	
					1	49	0	23.8	0.530	
					25	0	1	22.8	0.407	
					25	12	1	22.8	0.406	
					25	24	1	22.7	0.422	
					50	0	1	22.7	0.414	
Left Tilt (15°)	Primary	QPSK	23230	782.0	1	0	0	24.0	0.276	
					1	24	0	24.0	0.261	
					1	49	0	23.8	0.286	
					25	0	1	22.8	0.225	
					25	12	1	22.8	0.251	
					25	24	1	22.7	0.253	
					50	0	1	22.7	0.252	
Right Touch	Primary	QPSK	23230	782.0	1	0	0	24.0	0.286	
					1	24	0	24.0	0.347	
					1	49	0	23.8	0.369	
					25	0	1	22.8	0.303	
					25	12	1	22.8	0.305	
					25	24	1	22.7	0.313	
					50	0	1	22.7	0.343	
Right Tilt (15°)	Primary	QPSK	23230	782.0	1	0	0	24.0	0.216	
					1	24	0	24.0	0.262	
					1	49	0	23.8	0.273	
					25	0	1	22.8	0.217	
					25	12	1	22.8	0.216	
					25	24	1	22.7	0.223	
					50	0	1	22.7	0.212	

Additional Test for Head Exposure Conditions (continued)

Test Position	Antenna	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	MPR	Power (dBm)	1g SAR (W/kg)	Note
Left Touch	Secondary	QPSK	23230	782.0	1	0	0	23.5	0.595	
					1	24	0	23.4	**0.616**	
					1	49	0	23.4	0.556	
					25	0	1	22.3	0.496	
					25	12	1	22.3	0.518	
					25	24	1	22.4	0.505	
					50	0	1	22.3	0.516	
Left Tilt (15°)	Secondary	QPSK	23230	782.0	1	0	0	23.5	0.517	
					1	24	0	23.4	0.555	
					1	49	0	23.4	0.494	
					25	0	1	22.3	0.439	
					25	12	1	22.3	0.464	
					25	24	1	22.4	0.442	
					50	0	1	22.3	0.447	
Right Touch	Secondary	QPSK	23230	782.0	1	0	0	23.5	0.303	
					1	24	0	23.4	0.317	
					1	49	0	23.4	0.247	
					25	0	1	22.3	0.260	
					25	12	1	22.3	0.254	
					25	24	1	22.4	0.240	
					50	0	1	22.3	0.250	
Right Tilt (15°)	Secondary	QPSK	23230	782.0	1	0	0	23.5	0.419	
					1	24	0	23.4	0.423	
					1	49	0	23.4	0.365	
					25	0	1	22.3	0.353	
					25	12	1	22.3	0.346	
					25	24	1	22.4	0.338	
					50	0	1	22.3	0.341	

15.10. LTE Band 25 (20MHz Bandwidth)

15.10.1. Body-worn Accessory & Hotspot Mode Exposure Conditions

Test Position	Antenna	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	MPR	Power (dBm)	1g SAR (W/kg)	Note
Rear	Primary	10	QPSK	26140	1860.0	100	0	1	21.6	0.771	
						1	0	0	22.5	1.010	
						1	49	0	22.5	0.859	
						1	99	0	22.5	0.871	
				26365	1882.5	100	0	1	21.6	0.826	
						1	0	0	22.5	0.897	
						1	49	0	22.5	1.060	
						1	49	0	22.5	**1.180**	2
						1	99	0	22.5	0.824	
				26590	1905.0	100	0	1	21.7	0.755	
						1	0	0	22.5	0.831	
						1	49	0	22.5	0.970	
						1	99	0	22.4	0.761	
Front	Primary	10	QPSK	26140	1860.0	100	0	1	21.6	0.613	
						1	0	0	22.5	0.840	
						1	49	0	22.5	0.720	
						1	99	0	22.5	0.706	
				26365	1882.5	100	0	1	21.6	0.693	
						1	0	0	22.5	0.779	
						1	49	0	22.5	0.867	
						1	99	0	22.5	0.715	
				26590	1905.0	100	0	1	21.7	0.563	
						1	0	0	22.5	0.635	
						1	49	0	22.5	0.696	
						1	99	0	22.4	0.680	
Edge 2	Primary	10	QPSK	26365	1882.5	100	0	1	21.6	0.657	
						1	0	0	22.5	0.718	
						1	49	0	22.5	0.671	
						1	99	0	22.5	0.556	
Edge 3	Primary	10	QPSK	26140	1860.0	100	0	1	21.6	0.519	
						1	0	0	22.5	0.737	
						1	49	0	22.5	0.639	
						1	99	0	22.5	0.632	
				26365	1882.5	100	0	1	21.6	0.718	
						1	0	0	22.5	0.743	
						1	49	0	22.5	0.923	
						1	99	0	22.5	0.796	
				26590	1905.0	100	0	1	21.7	0.586	
						1	0	0	22.5	0.636	
						1	49	0	22.5	0.708	
						1	99	0	22.4	0.769	
Edge 4	Primary	10	QPSK	26365	1882.5	100	0	1	21.6	0.110	
						1	0	0	22.5	0.114	
						1	49	0	22.5	0.139	
						1	99	0	22.5	0.122	

Body-worn Accessory & Hotspot Mode Exposure Conditions (continued)

Test Position	Antenna	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	MPR	Power (dBm)	1g SAR (W/kg)	Note
Rear	Secondary	10	QPSK	26365	1882.5	100	0	1	22.0	0.332	
						1	0	0	23.0	0.451	
						1	0	0	23.0	0.431	2
						1	49	0	23.0	0.387	
						1	99	0	22.9	0.437	
Front	Secondary	10	QPSK	26365	1882.5	100	0	1	22.0	0.227	
						1	0	0	23.0	0.309	
						1	49	0	23.0	0.265	
						1	99	0	22.9	0.308	
Edge 1	Secondary	10	QPSK	26365	1882.5	100	0	1	22.0	0.269	
						1	0	0	23.0	0.319	
						1	49	0	23.0	0.313	
						1	99	0	22.9	0.353	
Edge 2	Secondary	10	QPSK	26365	1882.5	100	0	1	22.0	0.095	
						1	0	0	23.0	0.124	
						1	49	0	23.0	0.150	
						1	99	0	22.9	0.151	
Edge 4	Secondary	10	QPSK	26365	1882.5	100	0	1	22.0	0.281	
						1	0	0	23.0	0.351	
						1	49	0	23.0	0.345	
						1	99	0	22.9	0.356	

Note(s):

1. Per KDB 941225 D05 SAR for LTE Devices v02, SAR test reduction are applied using the following criteria:
   - Testing for 16-QAM modulation is not required because the measured SAR for QPSK is < 1.2 W/Kg and its output power is not more than 0.5 dB higher than that of QPSK.
   - Testing for the other channel bandwidths is not required because the measured SAR for the highest channel bandwidth is < 1.2 W/Kg and its output power is not more than 0.5 dB higher than that of the highest channel bandwidth.
2. With headset attached.

15.10.2. Additional Test for QPSK with 50%RB Allocation

Test Position	Antenna	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	MPR	Power (dBm)	1g SAR (W/kg)	Note
Rear	Primary	10	QPSK	26140	1860.0	50	24	1	21.6	0.785	
				26365	1882.5	50	0	1	21.7	0.773	
						50	24	1	21.7	0.829	
						50	49	1	21.8	0.793	
				26590	1905.0	50	24	1	21.8	0.840	
Front	Primary	10	QPSK	26140	1860.0	50	24	1	21.6	0.656	
				26365	1882.5	50	0	1	21.7	0.673	
						50	24	1	21.7	0.674	
						50	49	1	21.8	0.615	
				26590	1905.0	50	24	1	21.8	0.687	
Edge 2	Primary	10	QPSK	26365	1882.5	50	0	1	21.7	0.550	
						50	24	1	21.7	0.575	
						50	49	1	21.8	0.558	
Dege 3	Primary	10	QPSK	26140	1860.0	50	24	1	21.6	0.715	
				26365	1882.5	50	0	1	21.7	0.676	
						50	24	1	21.7	0.739	
						50	49	1	21.8	0.740	
				26590	1905.0	50	24	1	21.8	0.741	
Edge 4	Primary	10	QPSK	26365	1882.5	50	0	1	21.7	0.079	
						50	24	1	21.7	0.083	
						50	49	1	21.8	0.082	
Test Position	Antenna	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	MPR	Power (dBm)	1g SAR (W/kg)	Note
Rear	Seconadry	10	QPSK	26365	1882.5	50	0	1	22.1	0.401	
						50	24	1	22.1	0.408	
						50	49	1	22.1	0.395	
Front	Seconadry	10	QPSK	26365	1882.5	50	0	1	22.1	0.234	
						50	24	1	22.1	0.230	
						50	49	1	22.1	0.234	
Edge 1	Seconadry	10	QPSK	26365	1882.5	50	0	1	22.1	0.216	
						50	24	1	22.1	0.220	
						50	49	1	22.1	0.226	
Edge 2	Seconadry	10	QPSK	26365	1882.5	50	0	1	22.1	0.058	
						50	24	1	22.1	0.056	
						50	49	1	22.1	0.064	
Edge 4	Seconadry	10	QPSK	26365	1882.5	50	0	1	22.1	0.302	
						50	24	1	22.1	0.305	
						50	49	1	22.1	0.304	

15.11. Wi-Fi (2.4 GHz Band)

15.11.1. Head Exposure Conditions (WiFi BOM #1)

Test Position	Mode	Ch #.	Freq. (MHz)	Power (dBm)	1g SAR (W/kg)	Note
Left Touch	802.11b	1	2412	16.0		1
		6	2437	16.0	0.227	
		11	2462	16.0		1
Left Tilt (15°)	802.11b	1	2412	16.0		1
		6	2437	16.0	0.144	
		11	2462	16.0		1
Right Touch	802.11b	1	2412	16.0		1
		6	2437	16.0	**0.522**	
		11	2462	16.0		1
Right Tilt (15°)	802.11b	1	2412	16.0		1
		6	2437	16.0	0.401	
		11	2462	16.0		1

15.11.2. Body-worn Accessory & Hotspot Mode Exposure Conditions (WiFi BOM #1)

Test Position	Mode	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)	1g SAR (W/kg)	Note
Rear	802.11b	10	1	2412	16.0		1
			6	2437	16.0	0.155	
			6	2437	16.0	**0.171**	2
			11	2462	16.0		1
Front	802.11b	10	1	2412	16.0		1
			6	2437	16.0	0.078	
			11	2462	16.0		1
Edge 1	802.11b	10	1	2412	16.0		1
			6	2437	16.0	0.129	
			11	2462	16.0		1
Edge 2	802.11b	10	1	2412	16.0		1
			6	2437	16.0	0.025	
			11	2462	16.0		1
Edge 4	802.11b	10	1	2412	16.0		1
			6	2437	16.0	0.135	
			11	2462	16.0		1

Note(s):

1. When the 1-g SAR for the mid-band channel or the channel with the highest output power satisfy the following conditions, testing of the other channels in the band is not required. (Per KDB 447498 D01 General RF Exposure Guidance v05)
   ≤ 0.8 W/kg and transmission band ≤ 100 MHz
   ≤ 0.6 W/kg and, 100 MHz < transmission bandwidth ≤ 200 MHz
   ≤ 0.4 W/kg and transmission band > 200 MHz
2. With headset attached.

Worst Case Spot Check (WiFi BOM #2)

Test Position	Mode	Ch #.	Freq. (MHz)	Power (dBm)	1g SAR (W/kg)	Note
Right Touch	802.11b	1	2412	16.0		1
		6	2437	16.0	0.495	
		11	2462	16.0		1

Worst Case Spot Check (WiFi BOM #3)

Test Position	Mode	Ch #.	Freq. (MHz)	Power (dBm)	1g SAR (W/kg)	Note
Right Touch	802.11b	1	2412	16.0		1
		6	2437	16.0	0.510	
		11	2462	16.0		1

Note(s):

1. When the 1-g SAR for the mid-band channel or the channel with the highest output power satisfy the following conditions, testing of the other channels in the band is not required. (Per KDB 447498 D01 General RF Exposure Guidance v05)
   ≤ 0.8 W/kg and transmission band ≤ 100 MHz
   ≤ 0.6 W/kg and, 100 MHz < transmission bandwidth ≤ 200 MHz
   ≤ 0.4 W/kg and transmission band > 200 MHz
2. With headset attached.

15.12. Wi-Fi (5 GHz Bands)

15.12.1. Head Exposure Conditions (WiFi BOM #1)

Band (GHz)	Test Position	Mode	Ch #.	Freq. (MHz)	Power (dBm)	1g SAR (W/kg)	Note
5.2	Left Touch	802.11a	36	5180	14.0	0.506	
			48	5240	14.0	**0.587**	
	Left Tilt (15°)	802.11a	36	5180	14.0	0.548	
			48	5240	14.0	0.478	
	Right Touch	802.11a	36	5180	14.0	0.527	
			48	5240	14.0	0.489	
	Right Tilt (15°)	802.11a	36	5180	14.0	0.533	
			48	5240	14.0	0.550	
5.3	Left Touch	802.11a	52	5260	13.5	0.517	
			64	5320	13.5	0.536	
	Left Tilt (15°)	802.11a	52	5260	13.5	0.503	
			64	5320	13.5	0.465	
	Right Touch	802.11a	52	5260	13.5	**0.575**	
			64	5320	13.5	0.572	
	Right Tilt (15°)	802.11a	52	5260	13.5	0.515	
			64	5320	13.5	0.539	
5.5	Left Touch	802.11a	104	5520	12.0	0.561	
			116	5580	12.0	0.520	
			124	5620	12.0	0.566	
			136	5680	12.0	0.527	
	Left Tilt (15°)	802.11a	104	5520	12.0	0.519	
			116	5580	12.0	0.525	
			124	5620	12.0	0.563	
			136	5680	12.0	0.481	
	Right Touch	802.11a	104	5520	12.0	0.529	
			116	5580	12.0	0.525	
			124	5620	12.0	**0.580**	
			136	5680	12.0	0.540	
	Right Tilt (15°)	802.11a	104	5520	12.0	0.535	
			116	5580	12.0	0.485	
			124	5620	12.0	0.568	
			136	5680	12.0	0.457	
5.8	Left Touch	802.11a	149	5745	13.0	0.541	
			157	5785	13.0	0.549	
			165	5825	13.0	0.502	
	Left Tilt (15°)	802.11a	149	5745	13.0	0.592	
			157	5785	13.0	0.530	
			165	5825	13.0	0.462	
	Right Touch	802.11a	149	5745	13.0	0.546	
			157	5785	13.0	**0.593**	
			165	5825	13.0	0.583	
	Right Tilt (15°)	802.11a	149	5745	13.0	0.479	
			157	5785	13.0	0.550	
			165	5825	13.0	0.467	

15.12.2. Body-worn Accessory Exposure Conditions (WiFi BOM #1)

Band (GHz)	Test Position	Dist. (mm)	Mode	Ch #.	Freq. (MHz)	Power (dBm)	1g SAR (W/kg)	Note
5.2	Rear	10	802.11a	36	5180	14.0	0.033	
				48	5240	14.0	0.054	
	Front	10	802.11a	36	5180	14.0	0.094	
				48	5240	14.0	**0.130**	
				48	5240	14.0	0.129	1
5.3	Rear	10	802.11a	52	5260	13.5	0.064	
				64	5320	13.5	0.044	
	Front	10	802.11a	52	5260	13.5	0.095	
				64	5320	13.5	**0.114**	
				64	5320	13.5	0.086	1
5.5	Rear	10	802.11a	104	5520	12.0	0.043	
				116	5580	12.0	0.044	
				124	5620	12.0	0.042	
				136	5680	12.0	0.063	
	Front	10	802.11a	104	5520	12.0	0.081	
				116	5580	12.0	**0.089**	
				116	5580	12.0	0.089	1
				124	5620	12.0	0.081	
				136	5680	12.0	0.065	
5.8	Rear	10	802.11a	149	5745	13.0	0.043	
				157	5785	13.0	0.041	
				165	5825	13.0	0.044	
	Front	10	802.11a	149	5745	13.0	0.062	
				149	5745	13.0	**0.066**	1
				157	5785	13.0	0.062	
				165	5825	13.0	0.048	

Note(s):
1. With headset attached.

Worst Case Spot Check (WiFi BOM #2)

Band (GHz)	Test Position	Mode	Ch #.	Freq. (MHz)	Power (dBm)	1g SAR (W/kg)	Note
5.2	Left Touch	802.11a	48	5240	14.0	0.547	
5.3	Right Touch	802.11a	52	5260	13.5	0.562	
5.5	Right Touch	802.11a	124	5620	12.0	0.582	
5.8	Right Touch	802.11a	157	5785	13.0	0.573	

Worst Case Spot Check (WiFi BOM #3)

Band (GHz)	Test Position	Mode	Ch #.	Freq. (MHz)	Power (dBm)	1g SAR (W/kg)	Note
5.2	Left Touch	802.11a	48	5240	14.0	0.527	
5.3	Right Touch	802.11a	52	5260	13.5	0.497	
5.5	Right Touch	802.11a	124	5620	12.0	0.524	
5.8	Right Touch	802.11a	157	5785	13.0	0.553	

15.13. Bluetooth

15.13.1. Body-worn Accessory Exposure Conditions

Test Position	Mode	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)	1g SAR (W/kg)	Note
Rear	GFSK	10	0	2402	13.2		1
			39	2441	13.4	0.105	
			78	2480	13.4		1
Front	GFSK	10	0	2402	13.2		1
			39	2441	13.4	0.052	
			78	2480	13.4		1

Note(s):

1. When the 1-g SAR for the mid-band channel or the channel with the highest output power satisfy the following conditions, testing of the other channels in the band is not required. (Per KDB 447498 D01 General RF Exposure Guidance v05)
   ≤ 0.8 W/kg and transmission band ≤ 100 MHz
   ≤ 0.6 W/kg and, 100 MHz < transmission bandwidth ≤ 200 MHz
   ≤ 0.4 W/kg and transmission band > 200 MHz

16. Summary of Highest SAR Values

16.1.1. Highest SAR Values for Model A1428

Results for highest SAR values for each frequency band and mode

Technology/Band	Test configuration		Mode	Antenna	Highest 1g SAR (W/kg)
GSM850	Head	Left Touch	GSM (Voice)	Primary	0.716
	Body	Rear	GSM (Voice)	Primary	0.896
	Hotspot	Rear	GPRS 2 slots	Primary	0.831
GSM1900	Head	Right Touch	GSM (Voice)	Primary	1.030
	Body	Rear	GSM (Voice) with headset	Primary	0.821
	Hotspot	Rear	GPRS 2 slots	Primary	1.080
W-CDMA Band V	Head	Left Touch	Rel 99 RMC 12.2kbps	Secondary	0.826
	Body & Hotspot	Rear	Rel 99 RMC 12.2kbps	Primary	0.913
W-CDMA Band II	Head	Right Touch	Rel 99 RMC 12.2kbps	Primary	1.130
	Body & Hotspot	Rear	Rel 99 RMC 12.2kbps with headset	Primary	1.140
LTE Band 2	Body & Hotspot	Rear	20 MHz (QPSK) RB 1/49	Primary	1.170
LTE Band 4	Head	Right Touch	20 MHz (QPSK) RB 1/49	Secondary	1.250
	Body & Hotspot	Rear	20 MHz (QPSK) RB 1/49	Primary	1.180
LTE Band 5	Body & Hotspot	Front	10 MHz (QPSK) RB 1/24	Primary	0.724
LTE Band 17	Body & Hotspot	Front	10 MHz (QPSK) RB 1/24	Primary	0.547
WiFi 2.4 GHz	Head	Right Touch	802.11b 1Mbps		0.572
	Body & Hotspot	Rear	802.11b 1Mbps		0.198
Bluetooth	Body	Rear	GFSK		0.109
WiFi 5.2 GHz	Head	Right Touch	802.11a 6Mbps		0.594
	Body	Front	802.11a 6Mbps		0.065
WiFi 5.3 GHz	Head	Right Touch	802.11a 6Mbps		0.538
	Body	Front	802.11a 6Mbps		0.071
WiFi 5.5 GHz	Head	Right Touch	802.11a 6Mbps		0.593
	Body	Front	802.11a 6Mbps		0.085
WiFi 5.8 GHz	Head	Right Touch	802.11a 6Mbps		0.580
	Body	Front	802.11a 6Mbps		0.067

16.1.2. Highest SAR Values for Model A1429

Results for highest SAR values for each frequency band and mode

Technology/Band	Test configuration		Mode	Antenna	Highest 1g SAR (W/kg)
GSM850	Head	Left Touch	GSM (Voice)	Primary	0.737
	Body	Rear	GSM (Voice)	Primary	0.866
	Hotspot	Rear	GPRS 2 slots	Primary	1.040
GSM1900	Head	Right Touch	GSM (Voice)	Secondary	0.956
	Body	Rear	GSM (Voice)	Primary	0.864
	Hotspot	Rear	GPRS 2 slots	Primary	1.130
W-CDMA Band V	Head	Left Touch	Rel 99 RMC 12.2kbps	Secondary	0.796
	Body & Hotspot	Rear	Rel 99 RMC 12.2kbps	Primary	0.837
W-CDMA Band II	Head	Right Touch	Rel 99 RMC 12.2kbps	Primary	1.130
	Body & Hotspot	Rear	Rel 99 RMC 12.2kbps with headset	Primary	1.180
CDMA BC0	Head	Left Touch	1xRTT (RC3, SO55)	Secondary	0.972
	Body & Hotspot	Rear	1xRTT (RC3, SO32)	Primary	0.982
	Body & Hotspot	Rear	1xEVDO (Rel.0)	Primary	0.942
CDMA BC1	Head	Right Touch	1xRTT (RC3, SO55)	Primary	1.180
	Body & Hotspot	Rear	1xRTT (RC3, SO32) with headset	Primary	1.180
	Body & Hotspot	Rear	1xEVDO (Rel.0) with headset	Primary	1.13
CDMA BC10	Head	Left Touch	1xRTT (RC3, SO55)	Secondary	0.925
	Body & Hotspot	Rear	1xRTT (RC3, SO32)	Primary	0.876
	Body & Hotspot	Rear	1xEVDO (Rel.0)	Primary	0.867
LTE Band 5	Body & Hotspot	Rear	10 MHz (QPSK) RB 1/49	Primary	0.703
LTE Band 13	Head	Left Touch	10 MHz (QPSK) RB 1/24	Secondary	0.616
	Body & Hotspot	Rear	10 MHz (QPSK) RB 1/0	Primary	0.645
LTE Band 25	Body & Hotspot	Rear	20 MHz (QPSK) RB 1/49 with headset	Primary	1.180
WiFi 2.4 GHz	Head	Right Touch	802.11b 1Mbps		0.522
	Body & Hotspot	Rear	802.11b 1Mbps with headset		0.171
Bluetooth	Body	Rear	GFSK		0.105
WiFi 5.2 GHz	Head	Left Touch	802.11a 6Mbps		0.587
	Body	Front	802.11a 6Mbps		0.130
WiFi 5.3 GHz	Head	Right Touch	802.11a 6Mbps		0.575
	Body	Front	802.11a 6Mbps		0.114
WiFi 5.5 GHz	Head	Right Touch	802.11a 6Mbps		0.580
	Body	Front	802.11a 6Mbps		0.089
WiFi 5.8 GHz	Head	Right Touch	802.11a 6Mbps		0.593
	Body	Front	802.11a 6Mbps with headset		0.066

16.2. Scaled SAR Values to the Maximum Target Output Power

The highest measured SAR results were scaled, in cases where measured output power is lower than the maximum Target output power level, in each frequency band.

16.2.1. Scaled SAR Values to the Maximum Target Output Power for Model A1428

Technology/ Band	Test Configuration		Mode	Antenna	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)		SAR (W/kg)	
								Tune-up limit	Measured	Measured	Scaled
W-CDMA Band V	Body& Hotspot	Rear	Rel 99 RMC 12.2kbps	Primary	10	4233	846.60	24.5	24.5	0.913	*
LTE Band 2	Body& Hotspot	Rear	20 MHz (QPSK) RB 1/49	Primary	10	18900	1880.0	22.5	22.5	1.170	*
LTE Band 4	Body& Hotspot	Rear	20 MHz (QPSK) RB 1/49	Primary	10	20175	1732.5	23.9	23.9	1.180	*
LTE Band 17	Body& Hotspot	Front	10 MHz (QPSK) RB 1/24	Primary	10	23790	710.0	24.0	24.0	0.547	*
WiFi 2.4 GHz	Head	Right Touch	802.11b 1Mbps		0	6	2437	16.0	16.0	0.572	*
WiFi 5.2 GHz	Head	Right Touch	802.11a 6Mbps		0	48	5240	14.0	14.0	0.594	*
WiFi 5.3 GHz	Head	Right Touch	802.11a 6Mbps		0	52	5260	13.5	13.5	0.538	*
WiFi 5.5 GHz	Head	Right Touch	802.11a 6Mbps		0	136	5680	12.0	12.0	0.593	*
WiFi 5.8 GHz	Head	Right Touch	802.11a 6Mbps		0	157	5785	13.0	13.0	0.580	*
LTE Band 4	Head	Right Touch	20 MHz (QPSK) RB 1/49	Secondary	0	20300	1745.0	23.0	23.0	1.250	*

Note(s):

*: SAR Scaling was not applied when the measured output power is equal or greater than the maximum target output power.

16.2.1. Scaled SAR Values to the Maximum Target Output Power for Model A1429

Technology/ Band	Test Configuration		Mode	Antenna	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)		SAR (W/kg)	
								Tune-up limit	Measured	Measured	Scaled
GSM850	Hotspot	Rear	GPRS 2 slots	Primary	10	251	848.8	31.5	31.4	1.040	1.064
W-CDMA Band II	Body & Hotspot	Rear	Rel 99 RMC 12.2kbps	Primary	10	9400	1880.0	22.5	22.5	1.180	*
LTE Band 13	Body & Hotspot	Rear	10 MHz (QPSK) RB 1/0	Primary	10	23230	782.0	24.0	24.0	0.645	*
WiFi 2.4 GHz	Head	Right Touch	802.11b 1Mbps		0	6	2437	16.0	16.0	0.522	*
WiFi 5.2 GHz	Head	Left Touch	802.11a 6Mbps		0	48	5240	14.0	14.0	0.587	*
WiFi 5.3 GHz	Head	Right Touch	802.11a 6Mbps		0	52	5260	13.5	13.5	0.575	*
WiFi 5.5 GHz	Head	Right Touch	802.11a 6Mbps		0	124	5620	12.0	12.0	0.580	*
WiFi 5.8 GHz	Head	Right Touch	802.11a 6Mbps		0	157	5785	13.0	13.0	0.593	*
LTE Band 13	Head	Left Touch	10 MHz (QPSK) RB 1/24	Secondary	10	23230	782.0	23.5	23.4	0.616	0.630

Note(s):

*: SAR Scaling was not applied when the measured output power is equal or greater than the maximum target output power.

16.3. SAR Measurement Repeatability

In accordance with published KDB procedure “865664 SAR measurement 100 MHz to 6 GHz DR01”. SAR measurement repeatability is evaluated for the highest measured SAR among all configurations tested in a frequency band according to the following: (per 865664 SAR measurement 100 MHz to 6 GHz DR01)

- < 0.4 W/kg, additional measurement is not required
- ≧ 0.4 W/kg and < 1.2 W/kg, repeat once
- ≧ 1.2 W/kg and < 1.5 W/kg, repeat twice
- ≧ 1.5 W/kg; repeat at least three times

The following additional measurements were repeated after the completion of all other device measurements in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for each measurement.

16.3.1. Repeated Test Results for Model A1428

Freq. band	Test Configuration		Mode	Ant.	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)	Test results (W/kg)	
									Original	Repeated
W-CDMA Band V	Body & Hotspot	Rear	Rel 99 RMC 12.2kbps	Primary	10	4233	846.6	24.5	0.913	0.904
LTE Band 2	Body & Hotspot	Rear	20 MHz (QPSK) RB 1/49	Primary	10	18900	1880.0	22.5	1.170	1.150
LTE Band 4	Body & Hotspot	Rear	20 MHz (QPSK) RB 1/49	Primary	10	20175	1732.5	23.9	1.180	1.160
LTE Band 17	Body & Hotspot	Front	10 MHz (QPSK) RB 1/24	Primary	10	23790	710	24.0	0.547	0.521
WiFi 2.4 GHz	Head	Right Touch	802.11b 1Mbps	Primary	0	6	2437	16.0	0.572	0.573
WiFi 5.2 GHz	Head	Right Touch	802.11a 6Mbps	Primary	0	48	5240	14.0	0.594	0.569
WiFi 5.3 GHz	Head	Right Touch	802.11a 6Mbps	Primary	0	52	5260	13.5	0.538	0.510
WiFi 5.5 GHz	Head	Right Touch	802.11a 6Mbps	Primary	0	136	5680	12.0	0.593	0.556
WiFi 5.8 GHz	Head	Right Touch	802.11a 6Mbps	Primary	0	157	5785	13.0	0.580	0.552

16.3.1. Repeated Test Results for Model A1429

Freq. band	Test Configuration		Mode	Ant.	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)	Test results (W/kg)	
									Original	Repeated
GSM850	Hotspot	Rear	GPRS 2 slots	Primary	10	251	848.8	31.4	1.040	1.020
W-CDMA Band II	Body & Hotspot	Rear	Rel 99 RMC 12.2kbps	Primary	10	9400	1880.0	22.5	1.180	1.140
LTE Band 13	Body & Hotspot	Rear	10 MHz (QPSK) RB 1/0	Primary	10	23230	782.0	24.0	0.645	0.598
WiFi 2.4 GHz	Head	Right Touch	802.11b 1Mbps	Primary	0	6	2437	16.0	0.522	0.510
WiFi 5.2 GHz	Head	Left Touch	802.11a 6Mbps	Primary	0	48	5240	14.0	0.587	0.546
WiFi 5.3 GHz	Head	Right Touch	802.11a 6Mbps	Primary	0	52	5260	13.5	0.575	0.571
WiFi 5.5 GHz	Head	Right Touch	802.11a 6Mbps	Primary	0	124	5620	12.0	0.580	0.549
WiFi 5.8 GHz	Head	Right Touch	802.11a 6Mbps	Primary	0	157	5785	13.0	0.593	0.557

16.3.2. Additional Repeated Test Results

EUT Model	Freq. band	Test Configuration		Mode	Ant.	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)	Test results (W/kg)	
										Original	Repeated
A1428	LTE Band 4	Head	Right Touch	10 MHz (QPSK) RB 1/49	Secondary	0	20300	1745.0	23.0	1.250	1.260
											1.260

16.4. SAR Plots (from Summary of Highest SAR Values)

16.4.1. SAR Plots for Model A1428

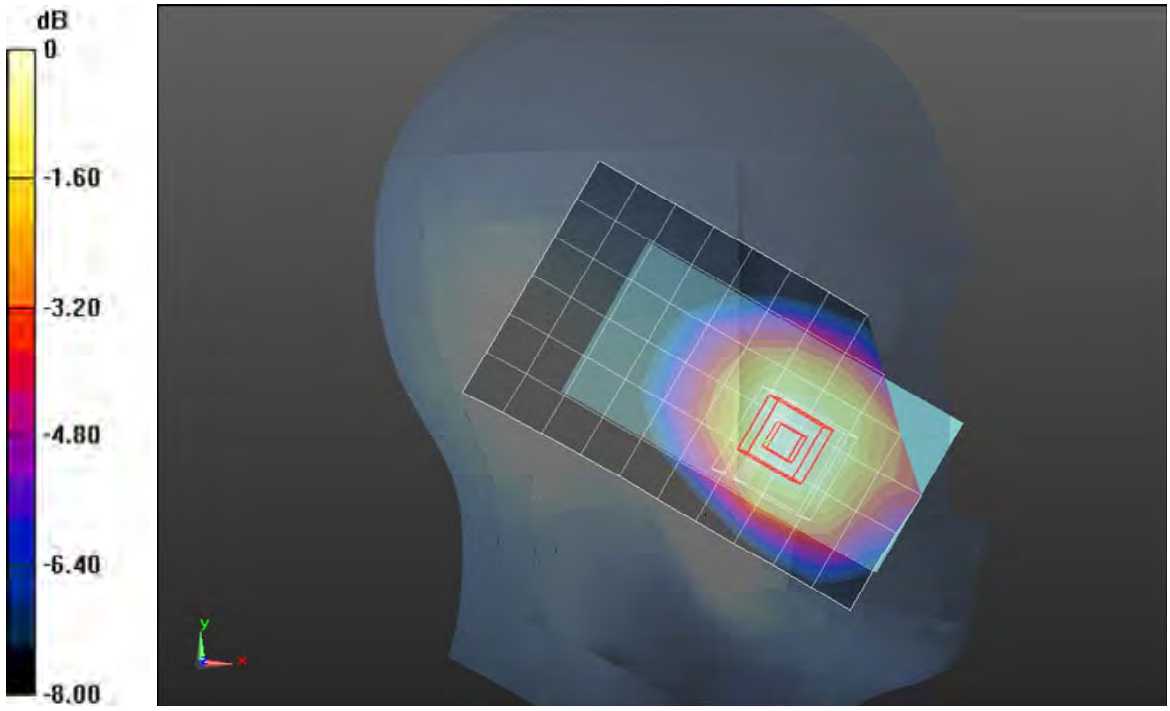
Test Laboratory: UL CCS SAR Lab C Date: 7/1/2012

GSM850 (Primary Antenna)

Frequency: 836.6 MHz; Duty Cycle: 1:8.00018; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.879 mho/m; ε_r = 41.731; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1239; Calibrated: 6/6/2012
- Probe: EX3DV4 - SN3751; ConvF(8.35, 8.35, 8.35); Calibrated: 12/19/2011
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: SAM; Type: QD000P40CD; Serial: 1632

LHS/Touch_Voice_ch 190/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.758 mW/g

LHS/Touch_Voice_ch 190/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 29.680 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.8570
SAR(1 g) = 0.716 mW/g; SAR(10 g) = 0.553 mW/g
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.776 mW/g



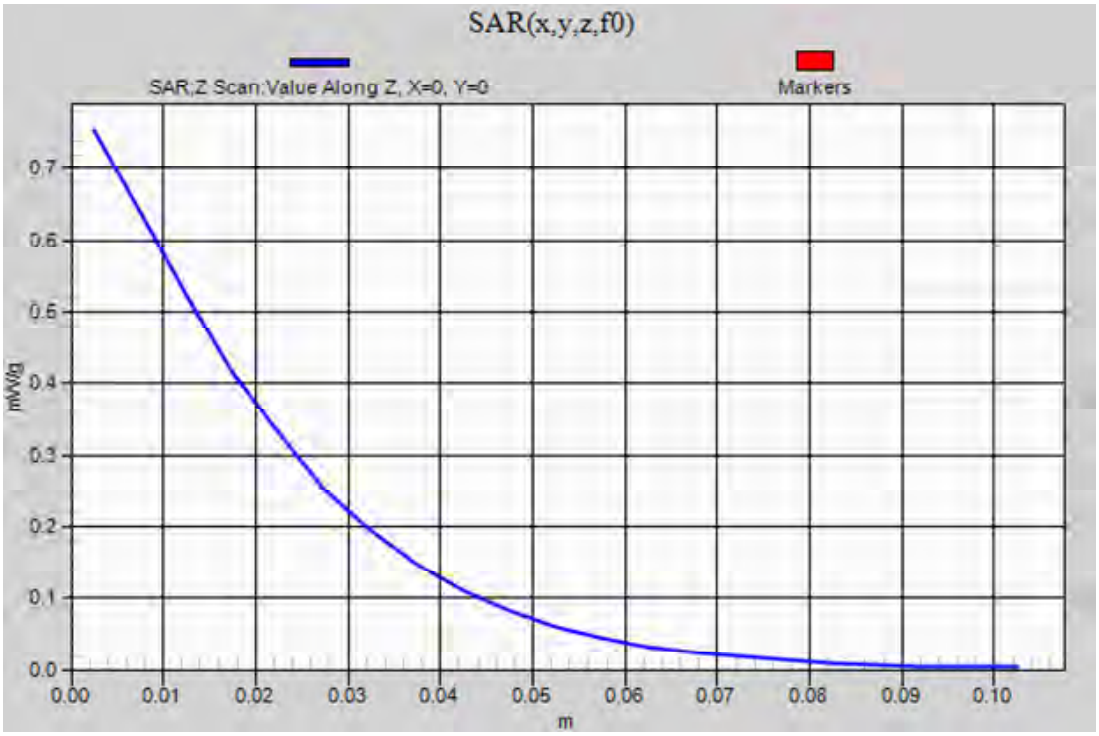
0 dB = 0.780mW/g = -2.16 dB mW/g

Test Laboratory: UL CCS SAR Lab C Date: 7/1/2012

GSM850 (Primary Antenna)

Frequency: 836.6 MHz; Duty Cycle: 1:8.00018

LHS/Touch_Voice_ch 190/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.754 mW/g



Test Laboratory: UL CCS SAR Lab C Date: 7/6/2012

GSM850 (Primary Antenna)

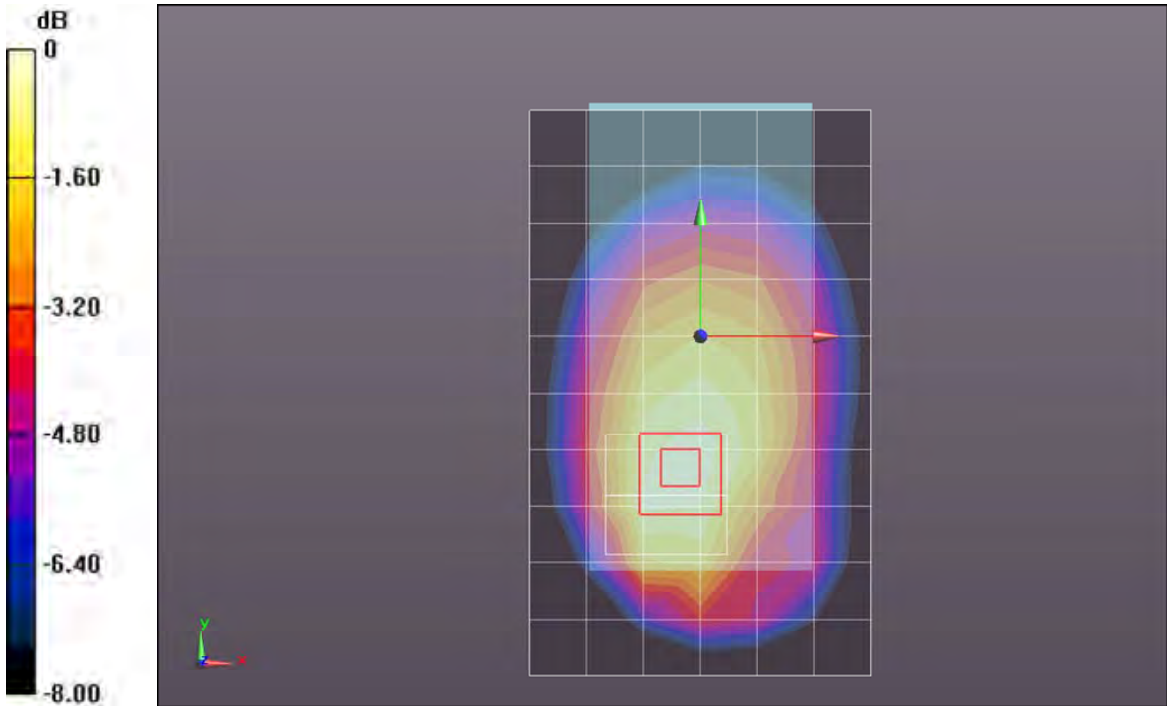
Frequency: 836.6 MHz; Duty Cycle: 1:8.00018; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.978 mho/m; ε_r = 53.606; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1239; Calibrated: 6/6/2012
- Probe: EX3DV4 - SN3751; ConvF(8.64, 8.64, 8.64); Calibrated: 12/19/2011
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (A); Type: QDOVA001BB; Serial: 1117

Rear/Voice_ch 190/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.991 mW/g

Rear/Voice_ch 190/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 32.136 V/m; Power Drift = -0.0061 dB
Peak SAR (extrapolated) = 1.2300
SAR(1 g) = 0.896 mW/g; SAR(10 g) = 0.624 mW/g
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.041 mW/g



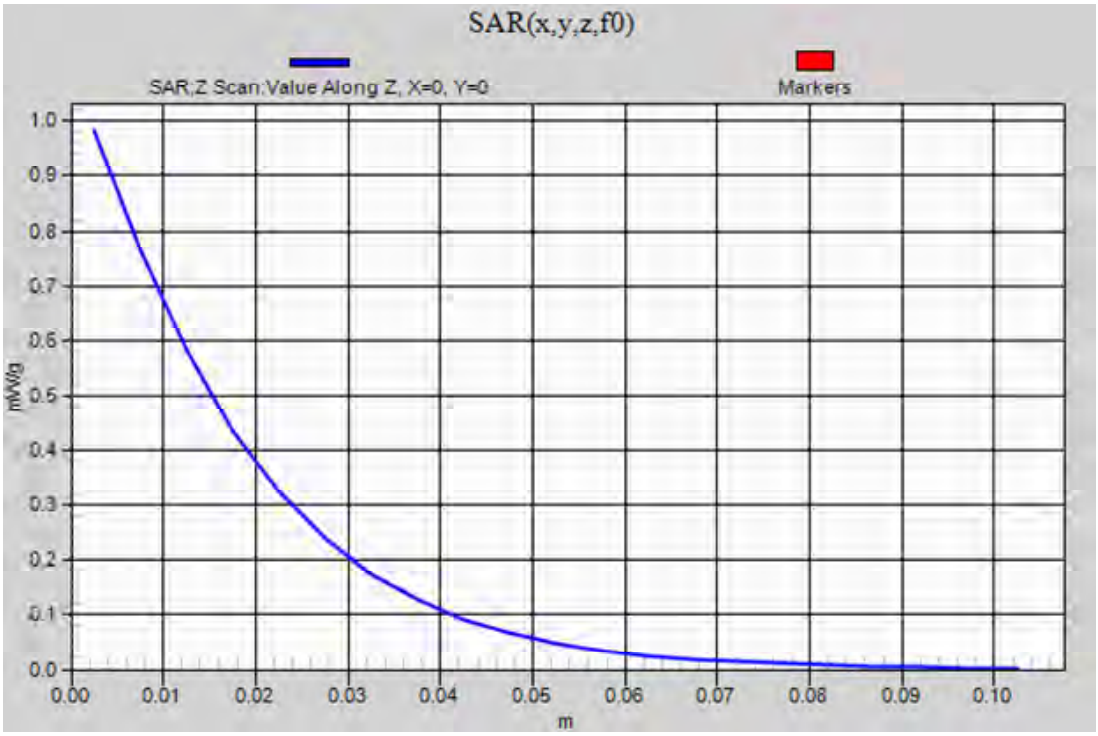
0 dB = 1.040mW/g = 0.34 dB mW/g

Test Laboratory: UL CCS SAR Lab C Date: 7/6/2012

GSM850 (Primary Antenna)

Frequency: 836.6 MHz; Duty Cycle: 1:8.00018

Rear/Voice_ch 190/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.983 mW/g



Test Laboratory: UL CCS SAR Lab C Date: 7/13/2012

GSM850 (Primary Antenna)

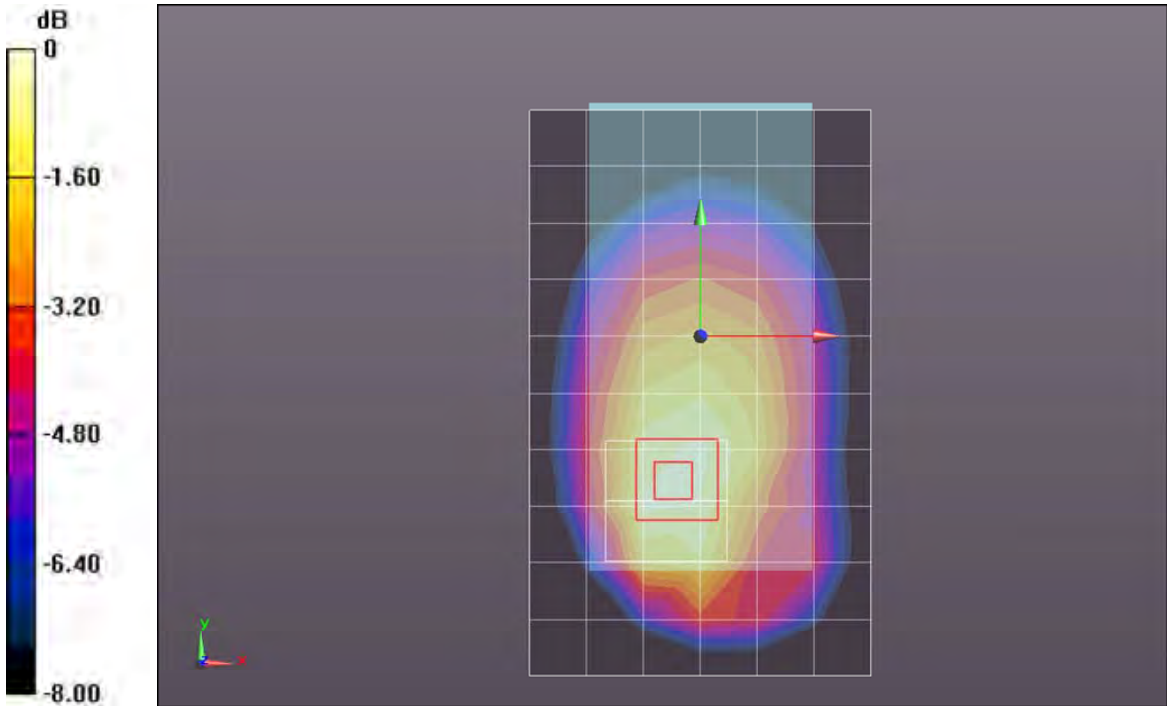
Frequency: 848.8 MHz; Duty Cycle: 1:4.00037; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.998 mho/m; ε_r = 53.346; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1239; Calibrated: 6/6/2012
- Probe: EX3DV4 - SN3751; ConvF(8.64, 8.64, 8.64); Calibrated: 12/19/2011
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (A); Type: QDOVA001BB; Serial: 1117

Rear/GPRS 2 Slots_ch 251/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.899 mW/g

Rear/GPRS 2 Slots_ch 251/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 30.380 V/m; Power Drift = -0.006 dB
Peak SAR (extrapolated) = 1.2030
SAR(1 g) = 0.831 mW/g; SAR(10 g) = 0.571 mW/g
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.984 mW/g



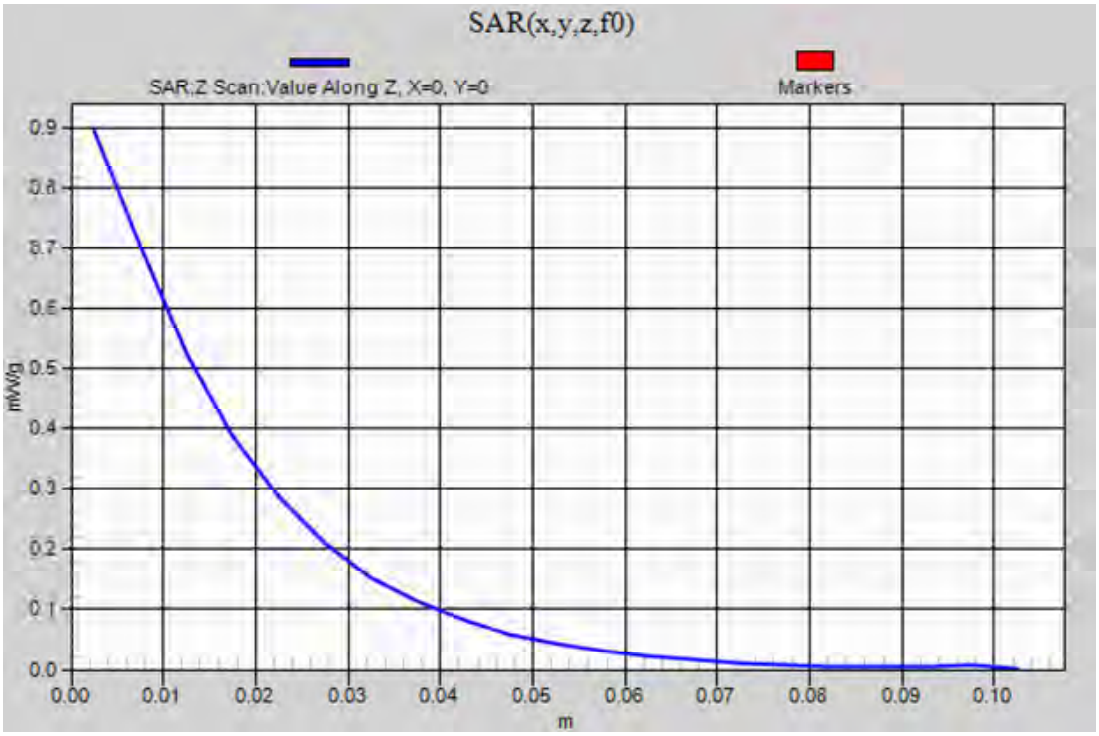
0 dB = 0.980mW/g = -0.18 dB mW/g

Test Laboratory: UL CCS SAR Lab C Date: 7/13/2012

GSM850 (Primary Antenna)

Frequency: 848.8 MHz; Duty Cycle: 1:4.00037

Rear/GPRS 2 Slots_ch 251/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.897 mW/g



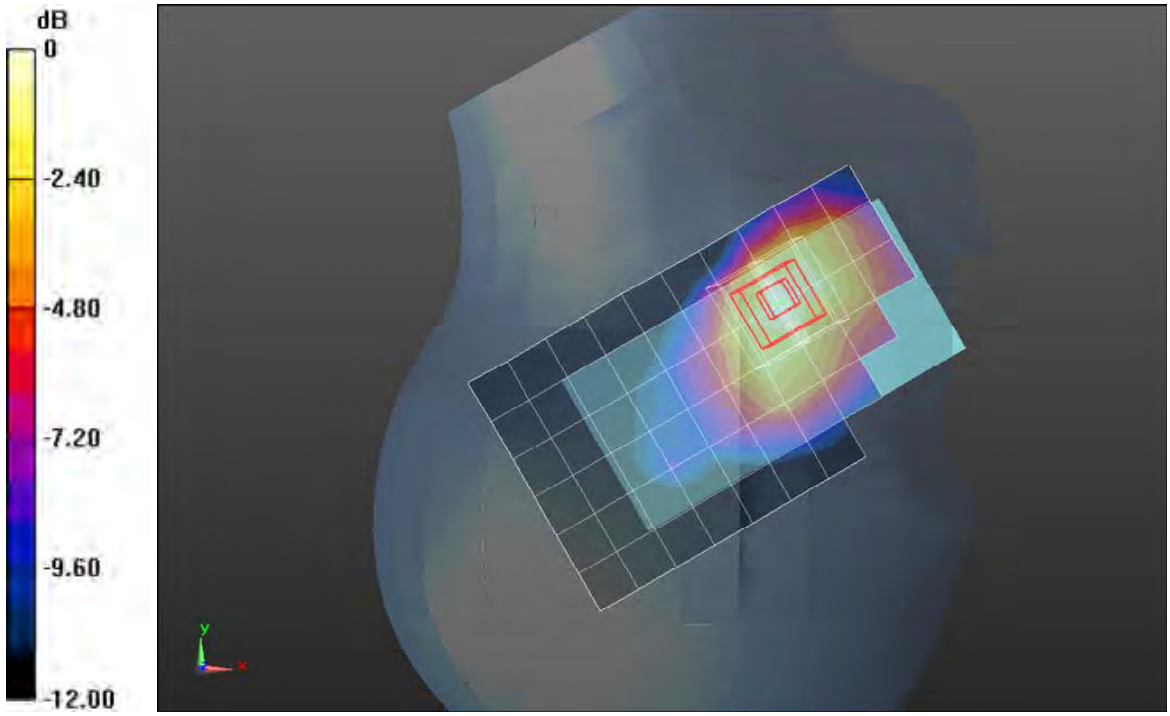
Test Laboratory: UL CCS SAR Lab C Date: 7/1/2012

GSM1900 (Primary Antenna)

Frequency: 1850.2 MHz; Duty Cycle: 1:8.00018; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.369 mho/m; ε_r = 39.364; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1239; Calibrated: 6/6/2012
- Probe: EX3DV4 - SN3751; ConvF(7.33, 7.33, 7.33); Calibrated: 12/19/2011;
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: SAM; Type: QD000P40CD; Serial: 1632

RHS/Touch_Voice_ch 512/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.21 mW/g

RHS/Touch_Voice_ch 512/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 29.838 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 1.502 mW/g
SAR(1 g) = 1.03 mW/g; SAR(10 g) = 0.643 mW/g
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.19 mW/g



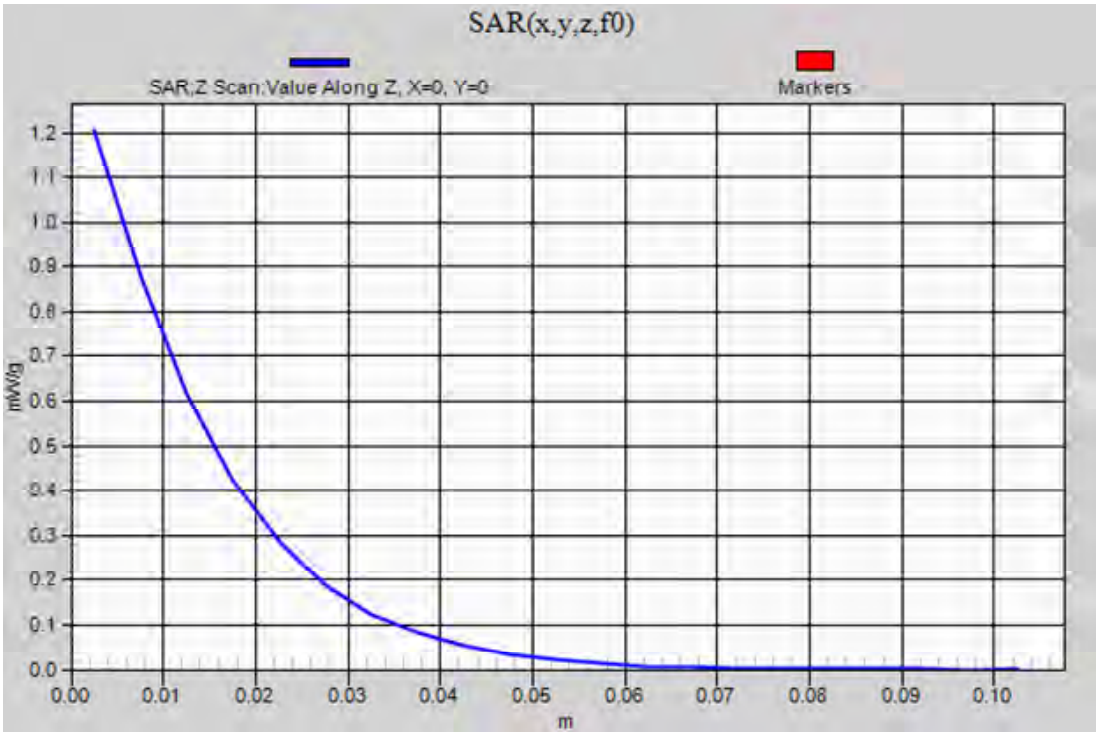
0 dB = 1.19 mW/g = 1.51 dB mW/g

Test Laboratory: UL CCS SAR Lab C Date: 7/1/2012

GSM1900 (Primary Antenna)

Frequency: 1850.2 MHz; Duty Cycle: 1:8.00018

RHS/Touch_Voice_ch 512/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.21 mW/g



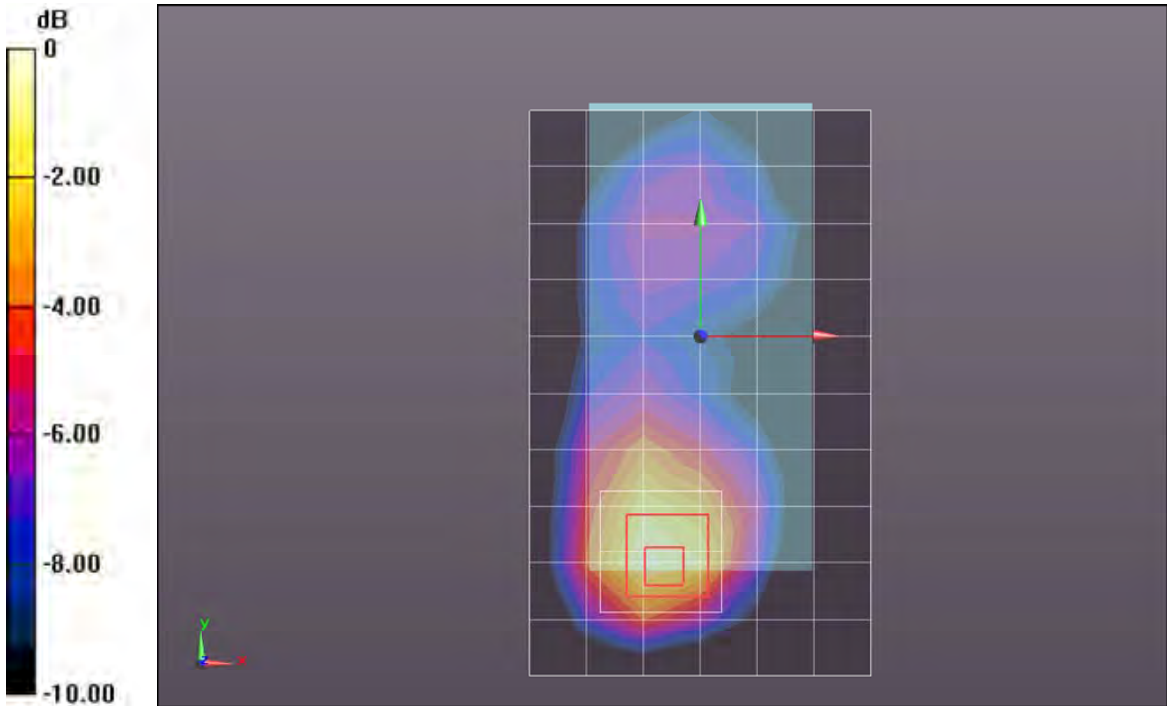
Test Laboratory: UL CCS SAR Lab C Date: 7/1/2012

GSM1900 (Primary Antenna)

Frequency: 1880 MHz; Duty Cycle: 1:8.00018; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used: f = 1880 MHz; σ = 1.494 mho/m; ε_r = 54.215; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1239; Calibrated: 6/6/2012
- Probe: EX3DV4 - SN3751; ConvF(6.83, 6.83, 6.83); Calibrated: 12/19/2011
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (A); Type: QDOVA001BB; Serial: 1117

Rear/Voice_ch 661 w/Headset/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.981 mW/g

Rear/Voice_ch 661 w/Headset/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.316 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 1.4990
SAR(1 g) = 0.821 mW/g; SAR(10 g) = 0.445 mW/g
Maximum value of SAR (measured) = 1.056 mW/g



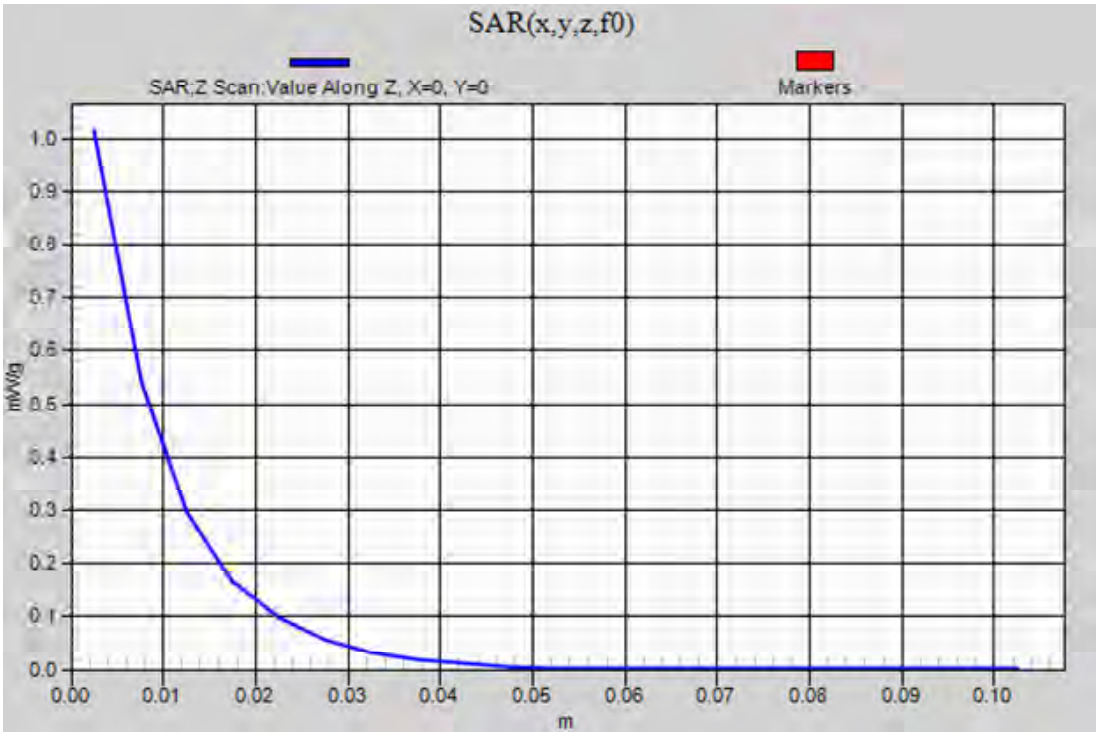
0 dB = 1.060mW/g = 0.51 dB mW/g

Test Laboratory: UL CCS SAR Lab C Date: 7/1/2012

GSM1900 (Primary Antenna)

Frequency: 1880 MHz; Duty Cycle: 1:8.00018

Rear/Voice_ch 661 w/Headset/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Maximum value of SAR (measured) = 1.02 mW/g



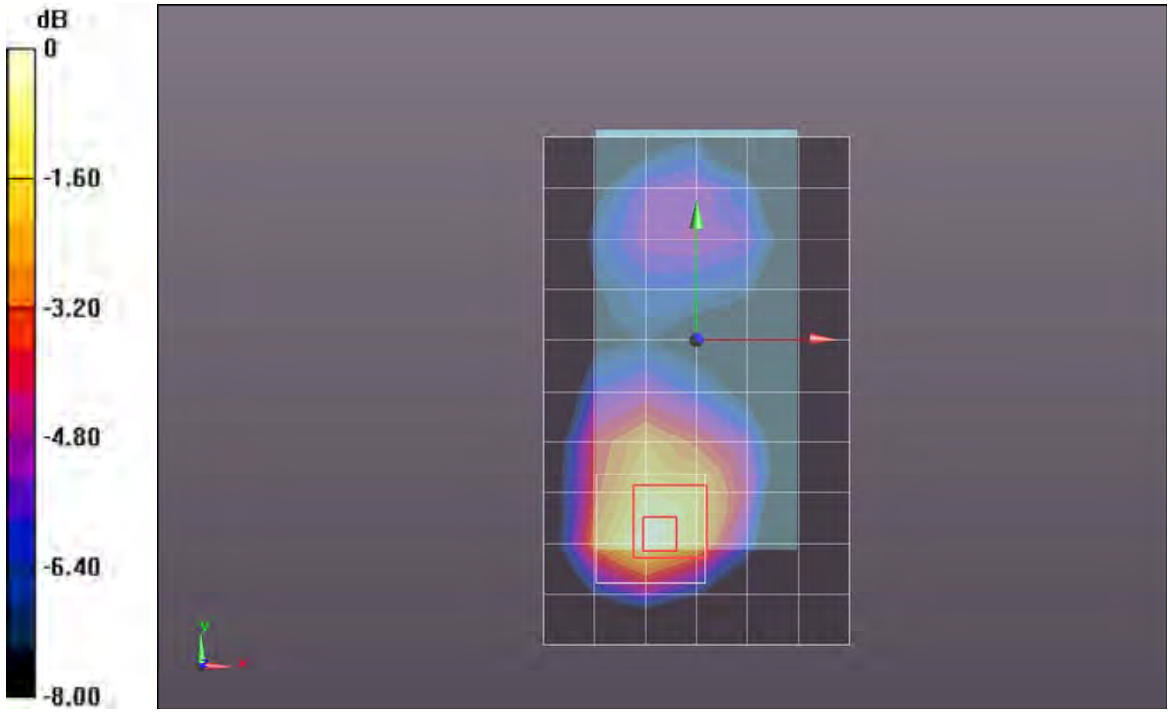
Test Laboratory: UL CCS SAR Lab B Date: 7/7/2012

GSM1900 (Primary Antenna)

Frequency: 1909.8 MHz; Duty Cycle: 1:4.00037; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used: f = 1910 MHz; σ = 1.529 mho/m; ε_r = 51.599; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1259; Calibrated: 2/13/2012
- Probe: EX3DV4 - SN3686; ConvF(7.04, 7.04, 7.04); Calibrated: 2/16/2012;
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (A); Type: QDOVA001BB; Serial: 1117

Rear/GPRS 2 slots_ch 810/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.46 mW/g

Rear/GPRS 2 slots_ch 810/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 31.314 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 1.988 mW/g
SAR(1 g) = 1.08 mW/g; SAR(10 g) = 0.609 mW/g
Maximum value of SAR (measured) = 1.42 mW/g



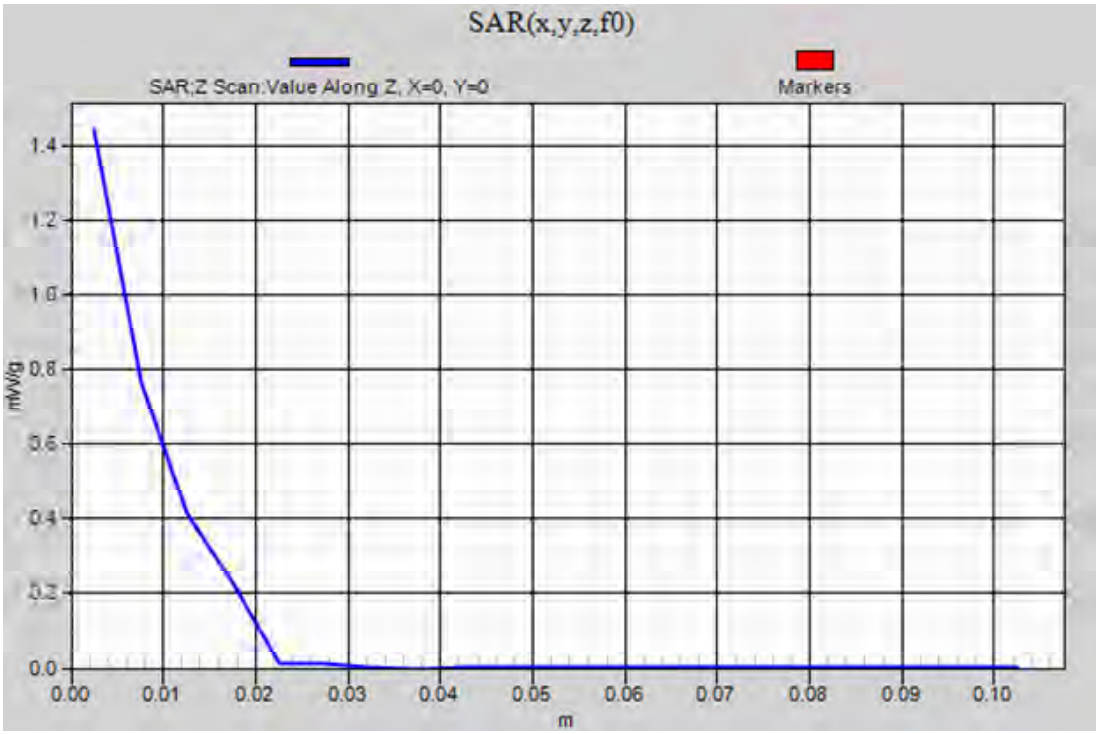
0 dB = 1.42 mW/g = 3.05 dB mW/g

Test Laboratory: UL CCS SAR Lab B Date: 7/7/2012

GSM1900 (Primary Antenna)

Frequency: 1909.8 MHz; Duty Cycle: 1:4.00037

Rear/GPRS 2 slots_ch 810/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Maximum value of SAR (measured) = 1.44 mW/g



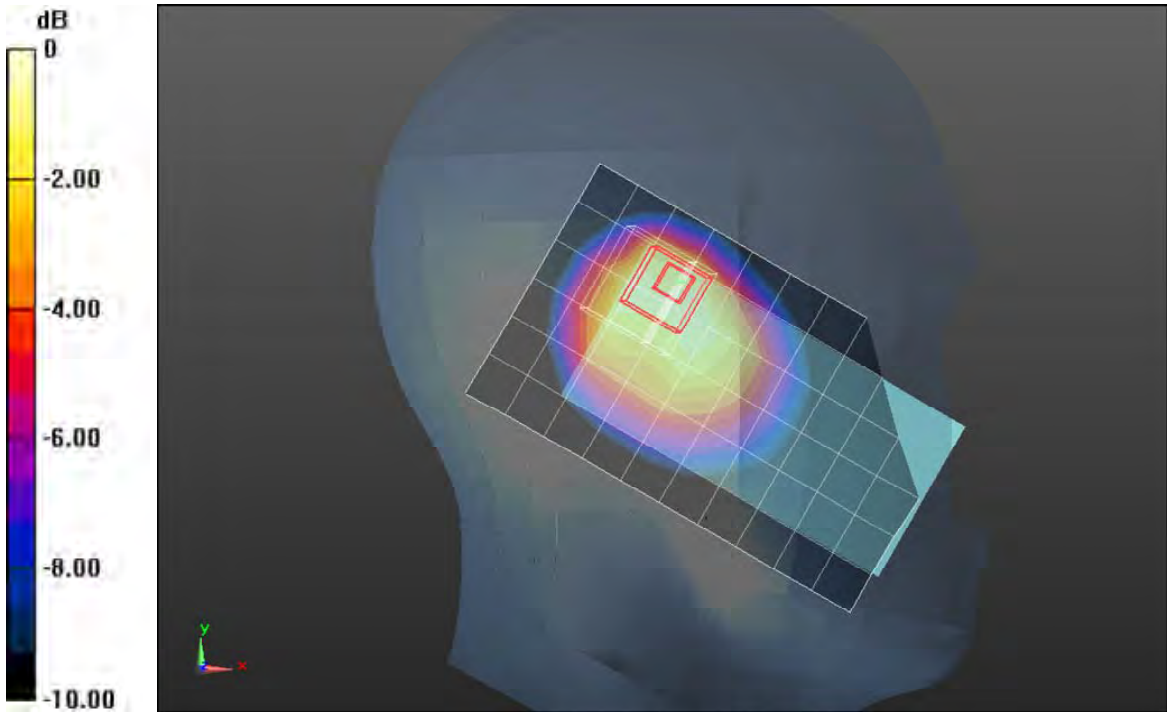
Test Laboratory: UL CCS SAR Lab C Date: 7/2/2012

W-CDMA Band V (Secondary Antenna)

Frequency: 846.6 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used (interpolated): f = 846.6 MHz; σ = 0.889 mho/m; ε_r = 41.601; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1239; Calibrated: 6/6/2012
- Probe: EX3DV4 - SN3751; ConvF(8.35, 8.35, 8.35); Calibrated: 12/19/2011;
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: SAM; Type: QD000P40CD; Serial: 1632

LHS/Touch_R99_ch 4233/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.968 mW/g

LHS/Touch_R99_ch 4233/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 33.636 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 1.509 mW/g
SAR(1 g) = 0.826 mW/g; SAR(10 g) = 0.493 mW/g
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.09 mW/g



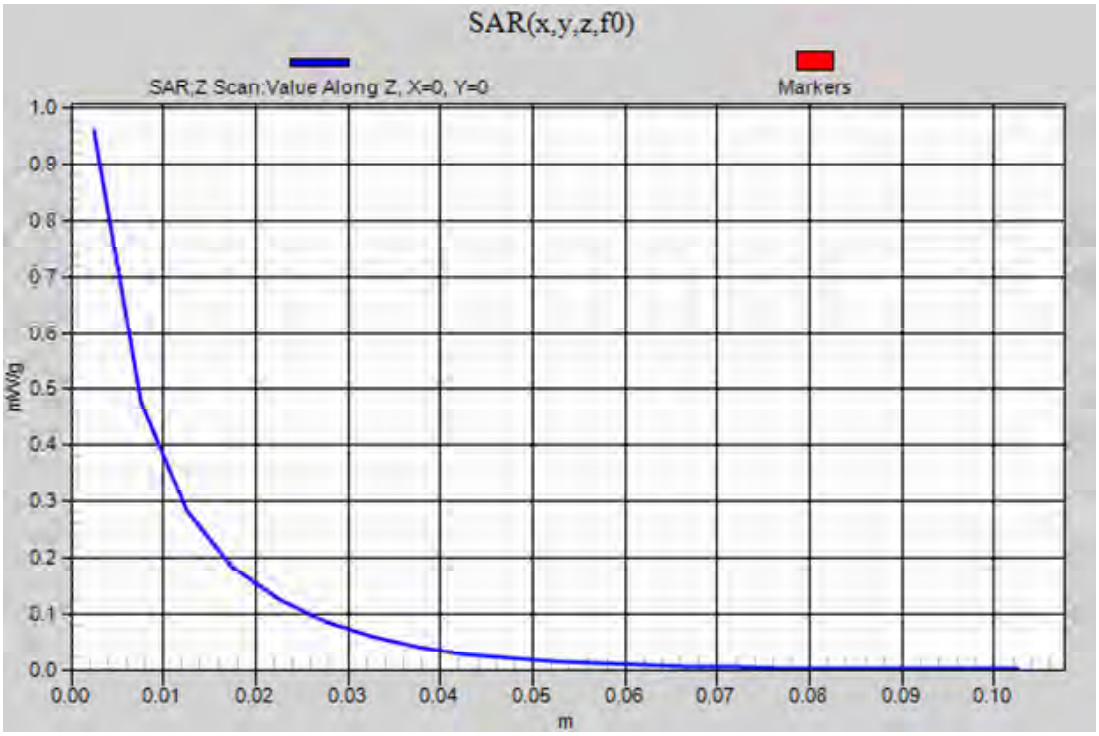
0 dB = 1.09 mW/g = 0.75 dB mW/g

Test Laboratory: UL CCS SAR Lab C Date: 7/2/2012

W-CDMA Band V (Secondary Antenna)

Frequency: 846.6 MHz; Duty Cycle: 1:1

LHS/Touch_R99_ch 4233/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.961 mW/g



Test Laboratory: UL CCS SAR Lab C Date: 7/6/2012

W-CDMA Band V (Primary Antenna)

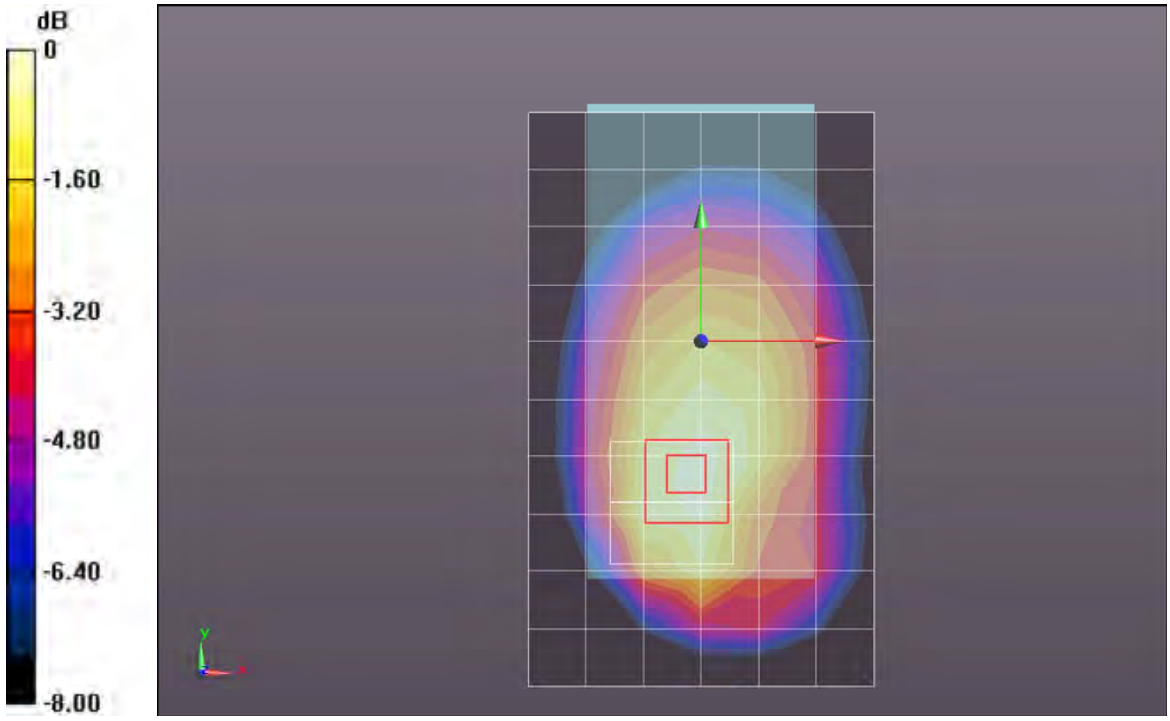
Frequency: 846.6 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used (interpolated): f = 846.6 MHz; σ = 0.989 mho/m; ε_r = 53.483; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1239; Calibrated: 6/6/2012
- Probe: EX3DV4 - SN3751; ConvF(8.64, 8.64, 8.64); Calibrated: 12/19/2011;
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (A); Type: QDOVA001BB; Serial: 1117

Rear/R99_ch 4233/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.00 mW/g

Rear/R99_ch 4233/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 32.772 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 1.278 mW/g
SAR(1 g) = 0.913 mW/g; SAR(10 g) = 0.625 mW/g
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.06 mW/g



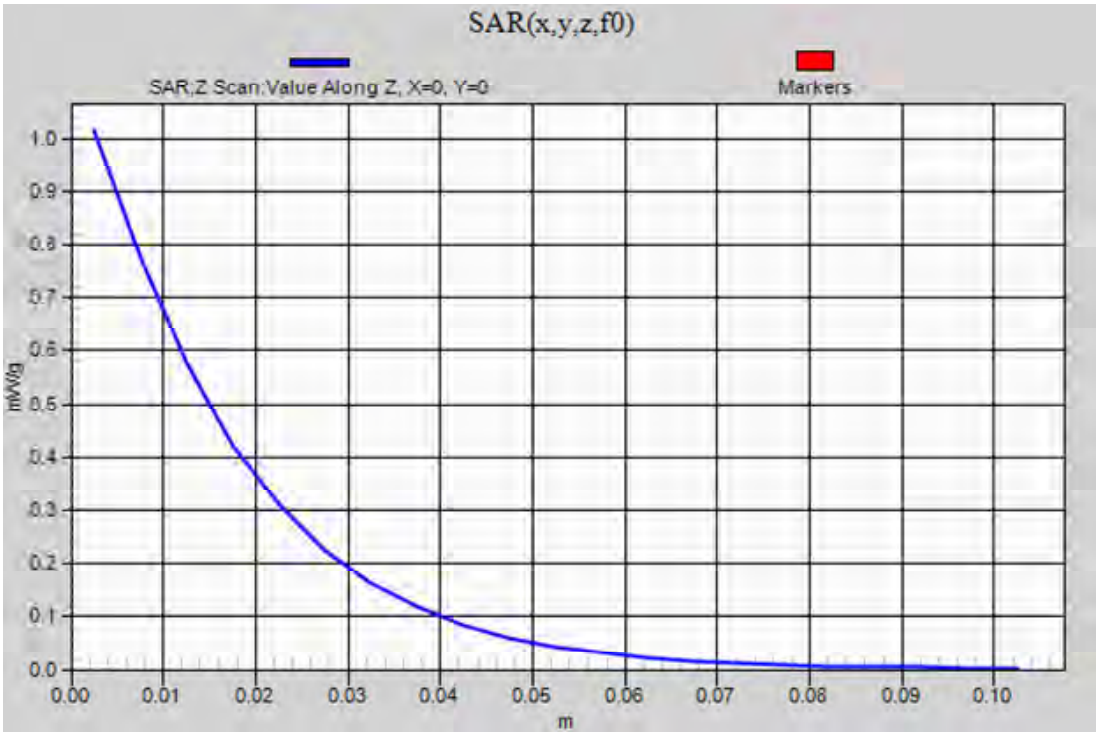
0 dB = 1.06 mW/g = 0.51 dB mW/g

Test Laboratory: UL CCS SAR Lab C Date: 7/6/2012

W-CDMA Band V (Primary Antenna)

Frequency: 846.6 MHz; Duty Cycle: 1:1

Rear/R99_ch 4233/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.02 mW/g



Test Laboratory: UL CCS SAR Lab C Date: 6/29/2012

W-CDMA Band II (Primary Antenna)

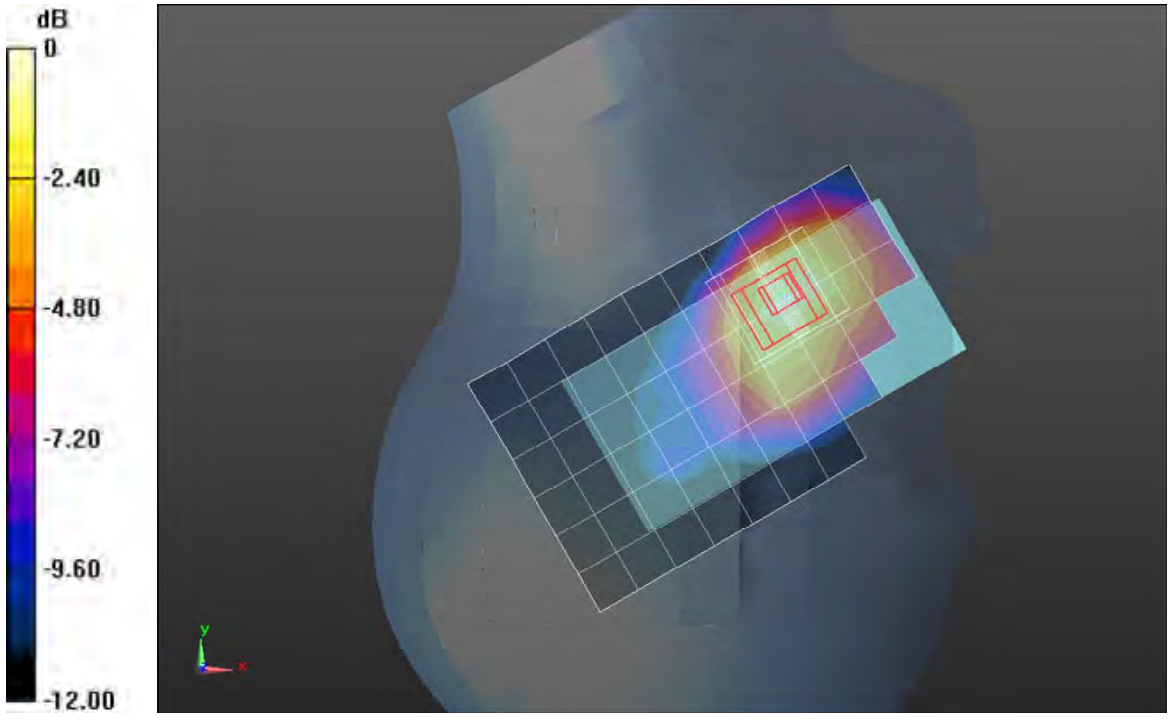
Frequency: 1852.4 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.344 mho/m; ε_r = 41.294; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1239; Calibrated: 6/6/2012
- Probe: EX3DV4 - SN3751; ConvF(7.33, 7.33, 7.33); Calibrated: 12/19/2011;
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: SAM; Type: QD000P40CD; Serial: 1632

RHS/Touch_R99_ch 9262/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.27 mW/g

RHS/Touch_R99_ch 9262/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 31.193 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 1.661 mW/g
SAR(1 g) = 1.13 mW/g; SAR(10 g) = 0.704 mW/g
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.36 mW/g



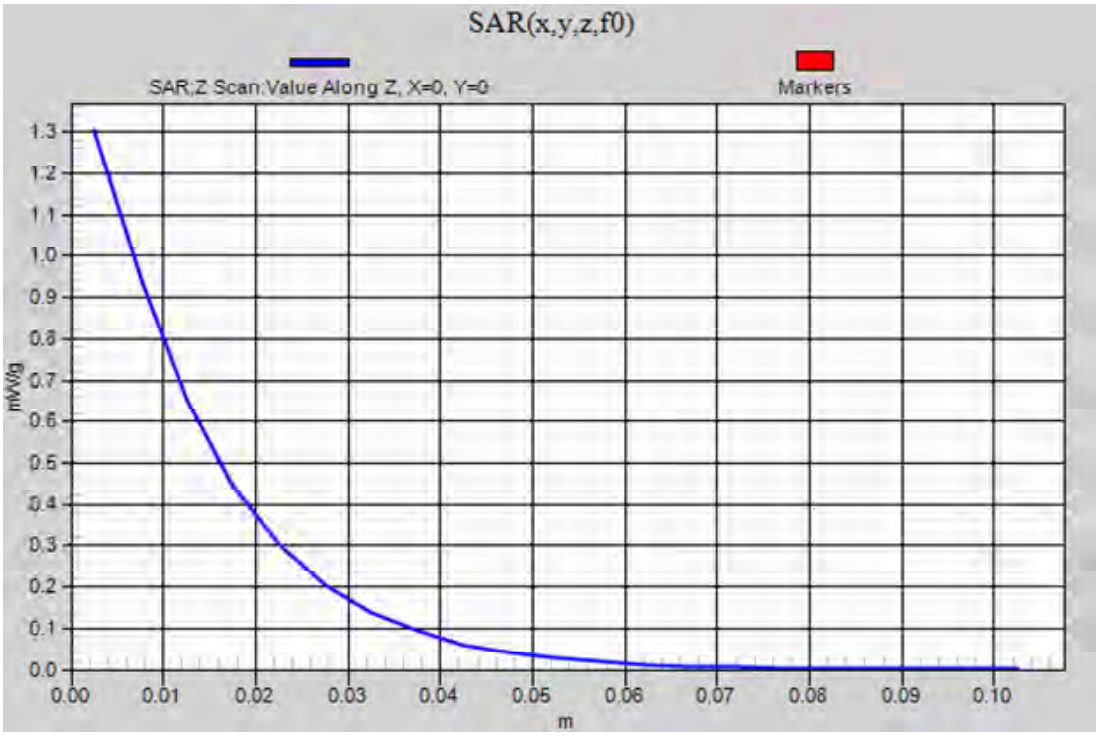
0 dB = 1.36 mW/g = 2.67 dB mW/g

Test Laboratory: UL CCS SAR Lab C Date: 6/29/2012

W-CDMA Band II (Primary Antenna)

Frequency: 1852.4 MHz; Duty Cycle: 1:1

RHS/Touch_R99_ch 9262/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.30 mW/g



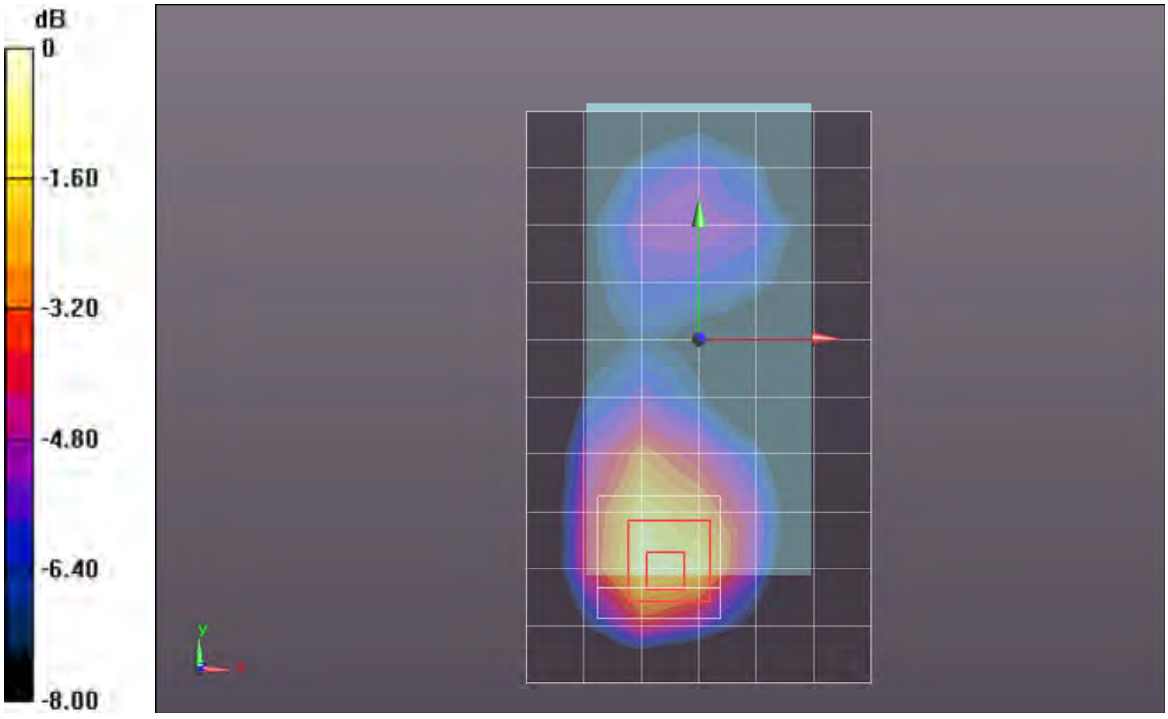
Test Laboratory: UL CCS SAR Lab C Date: 6/30/2012

W-CDMA Band II (Primary Antenna)

Frequency: 1880 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used: f = 1880 MHz; σ = 1.539 mho/m; ε_r = 55.517; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1239; Calibrated: 6/6/2012
- Probe: EX3DV4 - SN3751; ConvF(6.83, 6.83, 6.83); Calibrated: 12/19/2011;
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (A); Type: QDOVA001BB; Serial: 1117

Rear/R99_ch 9400 w/Headset/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.31 mW/g

Rear/R99_ch 9400 w/Headset/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 30.159 V/m; Power Drift = -0.16 dB
Peak SAR (extrapolated) = 2.057 mW/g
SAR(1 g) = 1.14 mW/g; SAR(10 g) = 0.635 mW/g
Maximum value of SAR (measured) = 1.46 mW/g



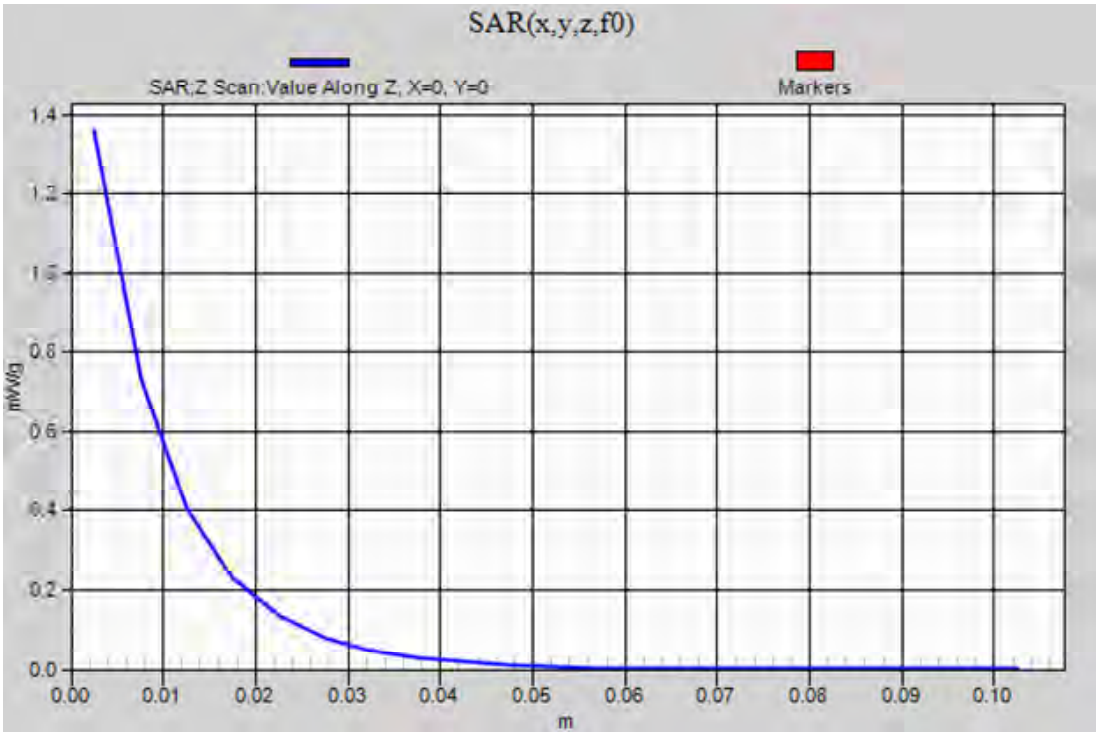
0 dB = 1.46 mW/g = 3.29 dB mW/g

Test Laboratory: UL CCS SAR Lab C Date: 6/30/2012

W-CDMA Band II (Primary Antenna)

Frequency: 1880 MHz; Duty Cycle: 1:1

Rear/R99_ch 9400 w/Headset/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Maximum value of SAR (measured) = 1.36 mW/g



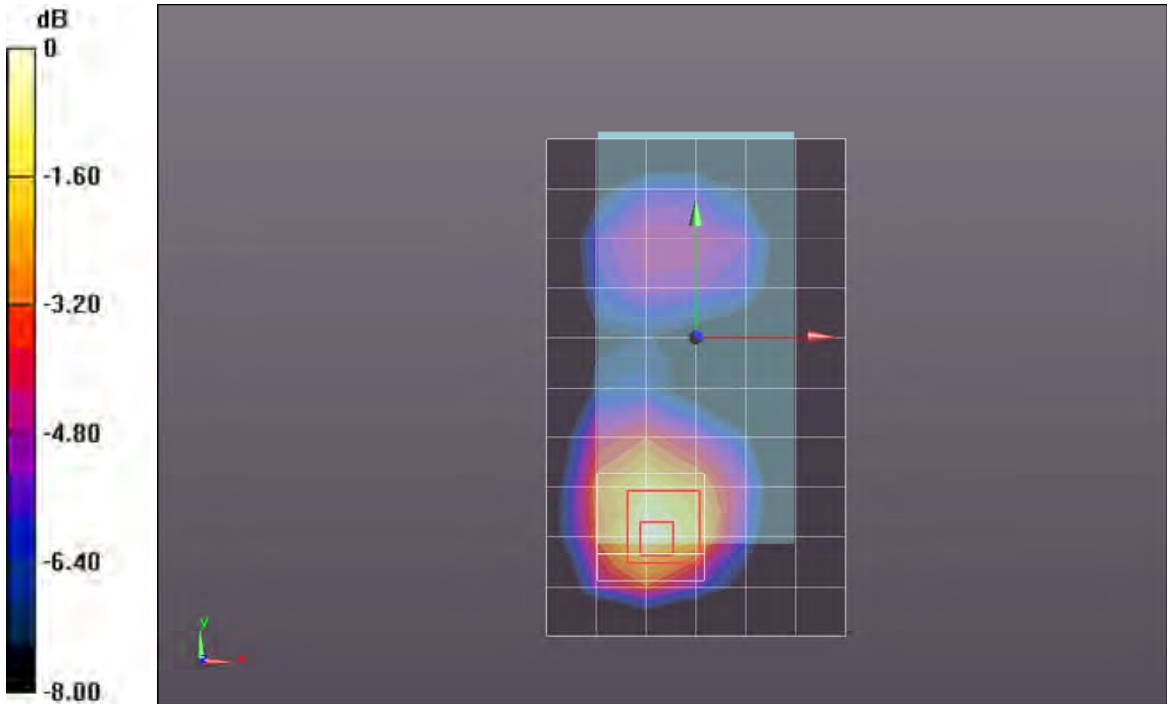
Test Laboratory: UL CCS SAR Lab B Date: 7/11/2012

LTE Band 2 (Primary Antenna)

Frequency: 1880 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used: f = 1880 MHz; σ = 1.52 mho/m; ε_r = 52.053; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1259; Calibrated: 2/13/2012
- Probe: EX3DV4 - SN3686; ConvF(7.04, 7.04, 7.04); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (A); Type: QDOVA001BB; Serial: 1120

Rear/QPSK_RB#1,49_Ch 18900/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.505 mW/g

Rear/QPSK_RB#1,49_Ch 18900/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 32.138 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 2.1470
SAR(1 g) = 1.17 mW/g; SAR(10 g) = 0.656 mW/g
Maximum value of SAR (measured) = 1.507 mW/g



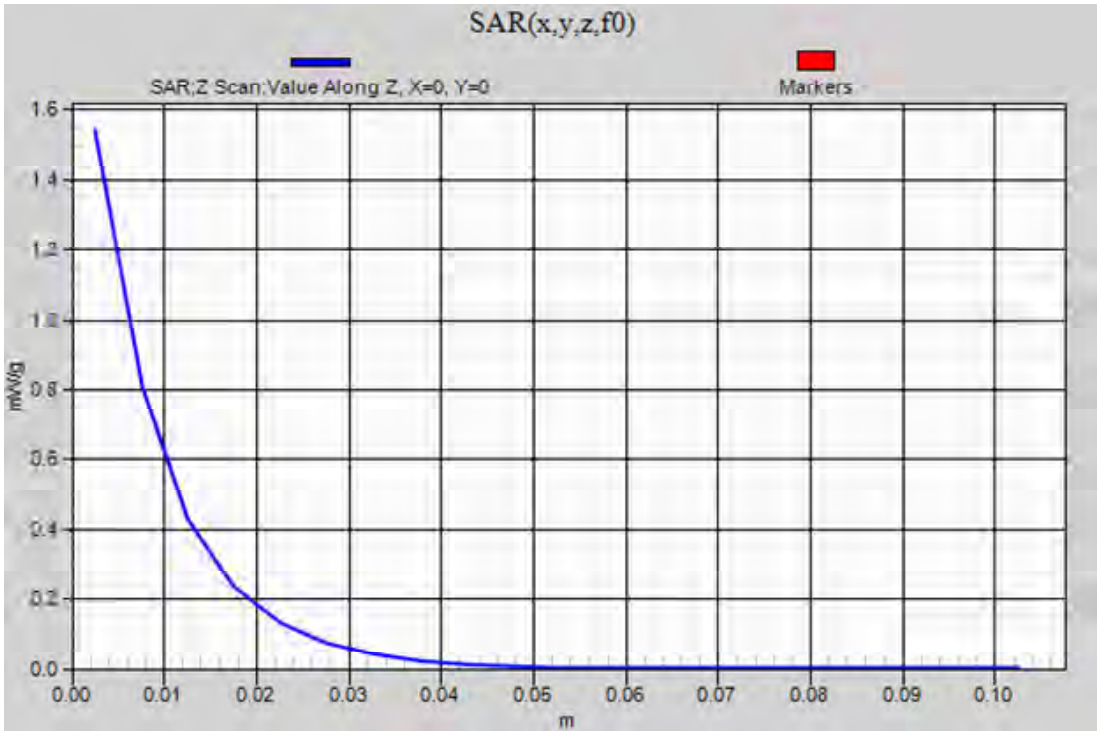
0 dB = 1.510mW/g = 3.58 dB mW/g

Test Laboratory: UL CCS SAR Lab B Date: 7/11/2012

LTE Band 2 (Primary Antenna)

Frequency: 1880 MHz; Duty Cycle: 1:1

Rear/QPSK_RB#1,49_Ch 18900/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Maximum value of SAR (measured) = 1.543 mW/g



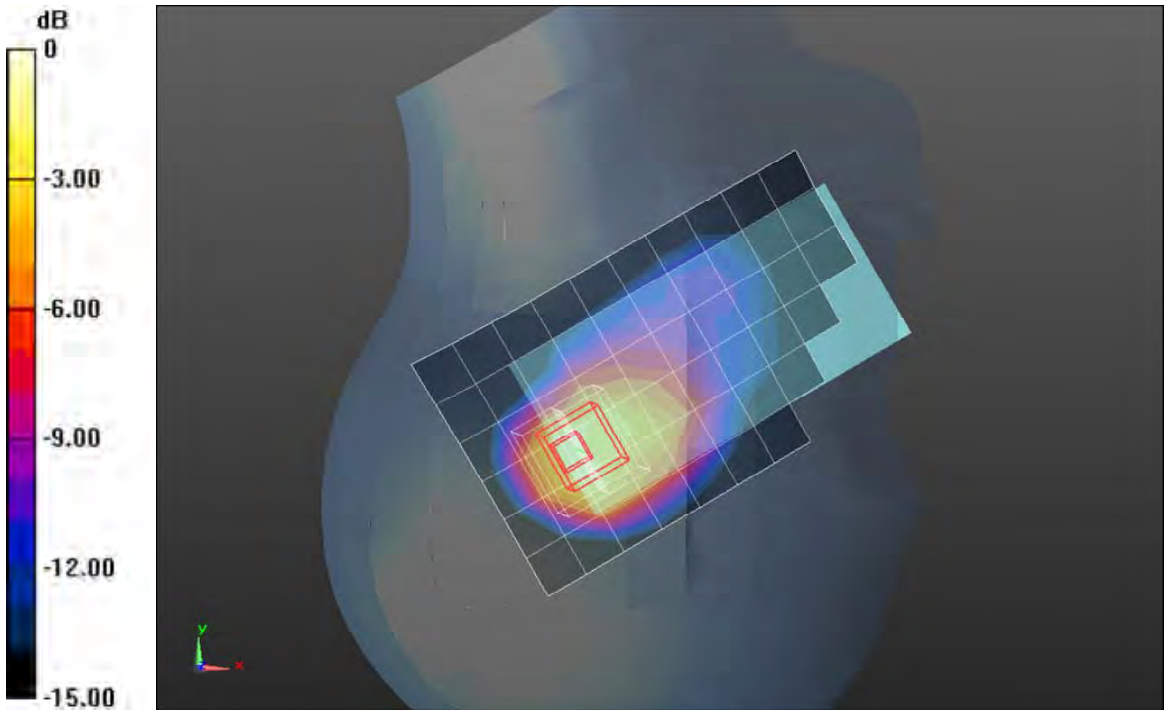
Test Laboratory: UL CCS SAR Lab A Date: 9/2/2012

LTE Band 4 (Secondary Antenna)

Frequency: 1745 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used: f = 1745 MHz; σ = 1.326 mho/m; ε_r = 39.045; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1258; Calibrated: 3/8/2012
- Probe: EX3DV4 - SN3772; ConvF(7.79, 7.79, 7.79); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: SAM v5.0 (A); Type: QD000P40CC; Serial: 1602

RHS/Touch_QPSK_RB# 1, 49_Ch 20300/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.384 mW/g

RHS/Touch_QPSK_RB# 1, 49_Ch 20300/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 31.553 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 2.2980
SAR(1 g) = 1.25 mW/g; SAR(10 g) = 0.650 mW/g
Maximum value of SAR (measured) = 1.721 mW/g



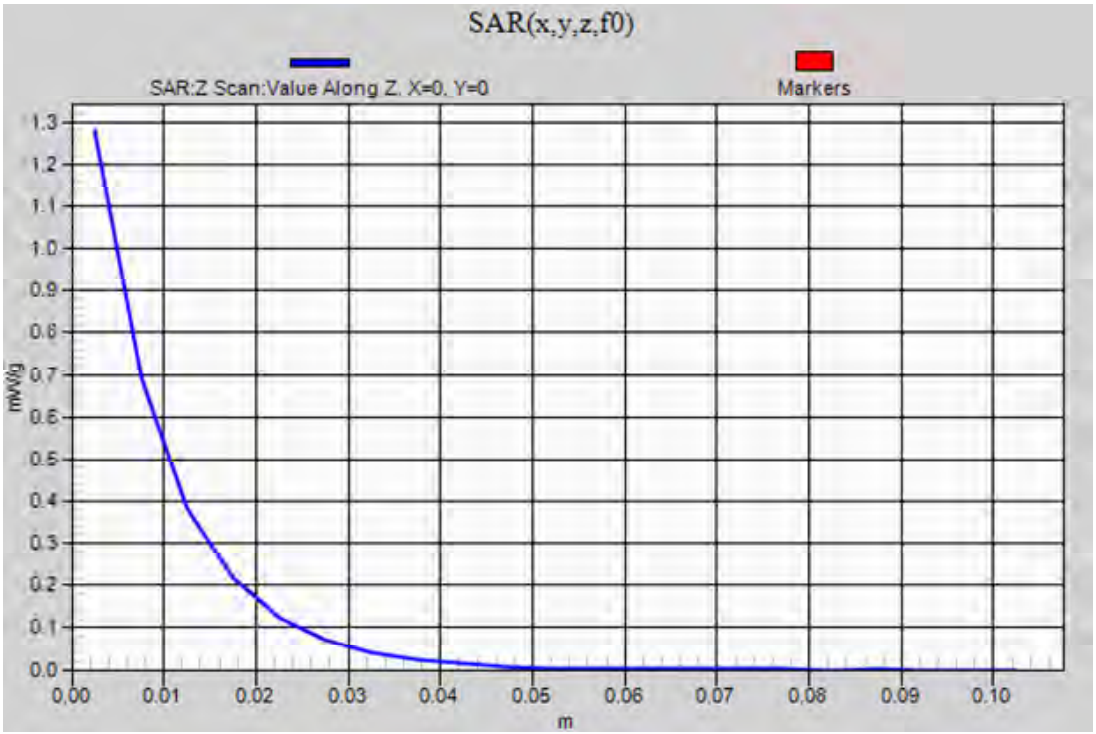
0 dB = 1.720mW/g = 4.71 dB mW/g

Test Laboratory: UL CCS SAR Lab A Date: 9/2/2012

LTE Band 4 (Secondary Antenna)

Frequency: 1745 MHz; Duty Cycle: 1:1

RHS/Touch_QPSK_RB# 1, 49_Ch 20300/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Maximum value of SAR (measured) = 1.280 mW/g



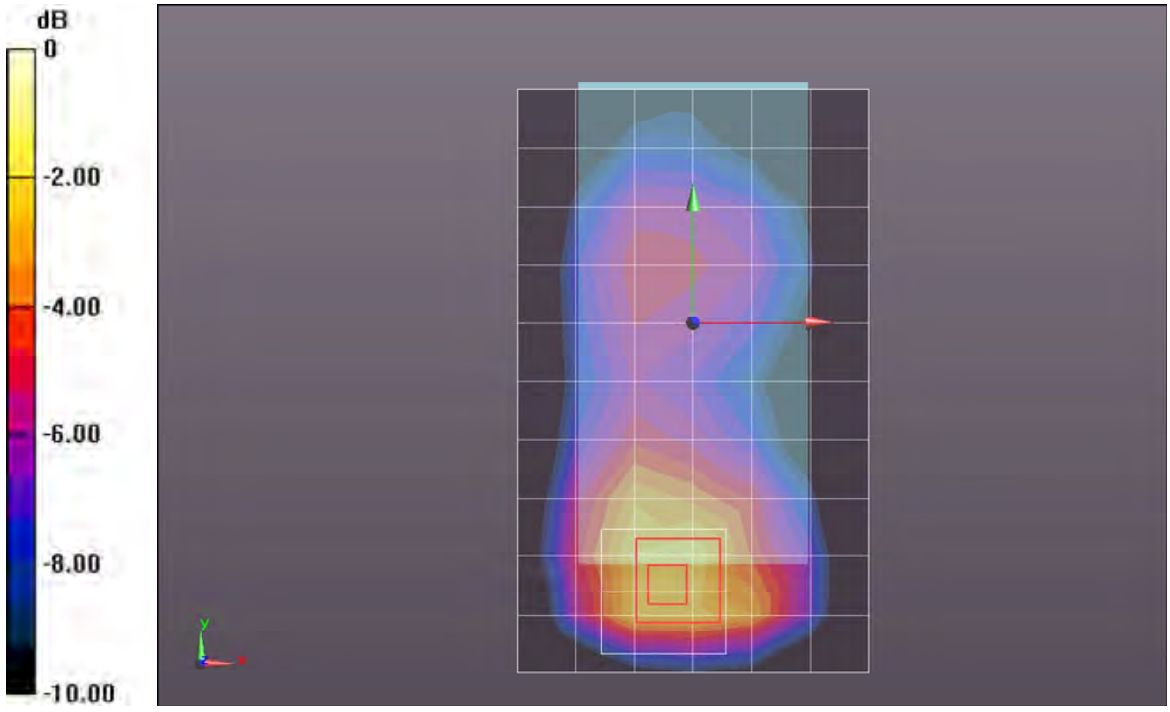
Test Laboratory: UL CCS SAR Lab C Date: 7/19/2012

LTE Band 4 (Primary Antenna)

Frequency: 1732.5 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.439 mho/m; ε_r = 52.445; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1239; Calibrated: 6/6/2012
- Probe: EX3DV4 - SN3751; ConvF(7.15, 7.15, 7.15); Calibrated: 12/19/2011
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (B); Type: QDOVA001BB; Serial: 1121

Rear/QPSK_RB# 1, 49_Ch 20175/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.115 mW/g

Rear/QPSK_RB# 1, 49_Ch 20175/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 28.221 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 2.0350
SAR(1 g) = 1.18 mW/g; SAR(10 g) = 0.674 mW/g
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.520 mW/g



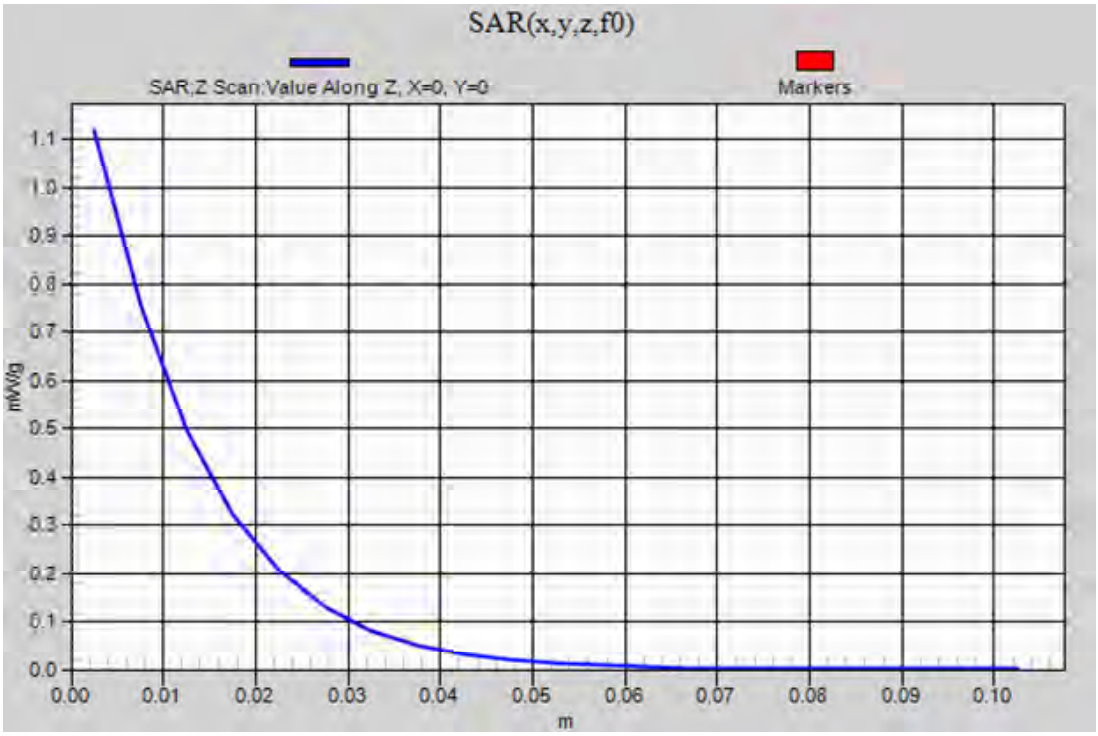
0 dB = 1.520mW/g = 3.64 dB mW/g

Test Laboratory: UL CCS SAR Lab A Date: 7/19/2012

LTE Band 4 (Primary Antenna)

Frequency: 1732.5 MHz; Duty Cycle: 1:1

Rear/QPSK_RB# 1, 49_Ch 20175/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.118 mW/g



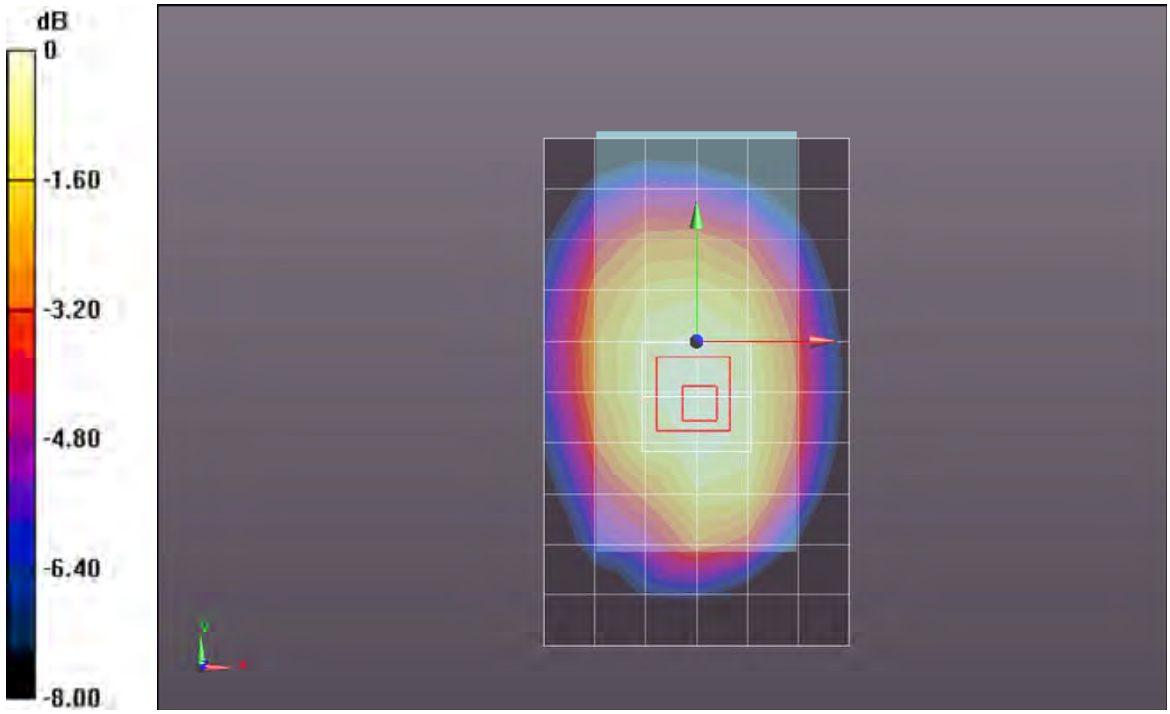
Test Laboratory: UL CCS SAR Lab B Date: 7/21/2012

LTE Band 5 (Primary Antenna)

Frequency: 836.5 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used (interpolated): f = 836.5 MHz; σ = 0.974 mho/m; ε_r = 53.646; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1259; Calibrated: 2/13/2012
- Probe: EX3DV4 - SN3686; ConvF(8.73, 8.73, 8.73); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (B); Type: QDOVA001BB; Serial: 1118

Front/QPSK_RB#1,24_Ch 20525/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.803 mW/g

Front/QPSK_RB#1,24_Ch 20525/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 29.143 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.9030
SAR(1 g) = 0.724 mW/g; SAR(10 g) = 0.553 mW/g
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.809 mW/g



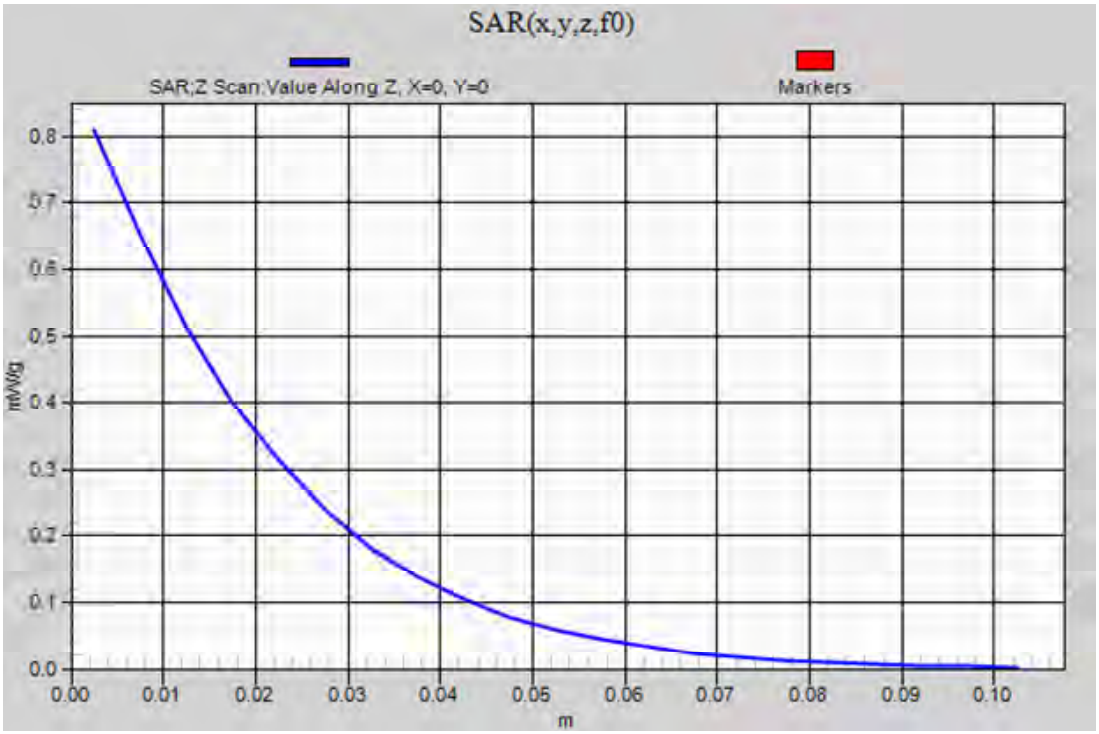
0 dB = 0.810mW/g = -1.83 dB mW/g

Test Laboratory: UL CCS SAR Lab B Date: 7/21/2012

LTE Band 5 (Primary Antenna)

Frequency: 836.5 MHz; Duty Cycle: 1:1

Front/QPSK_RB#1,24_Ch 20525/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.809 mW/g



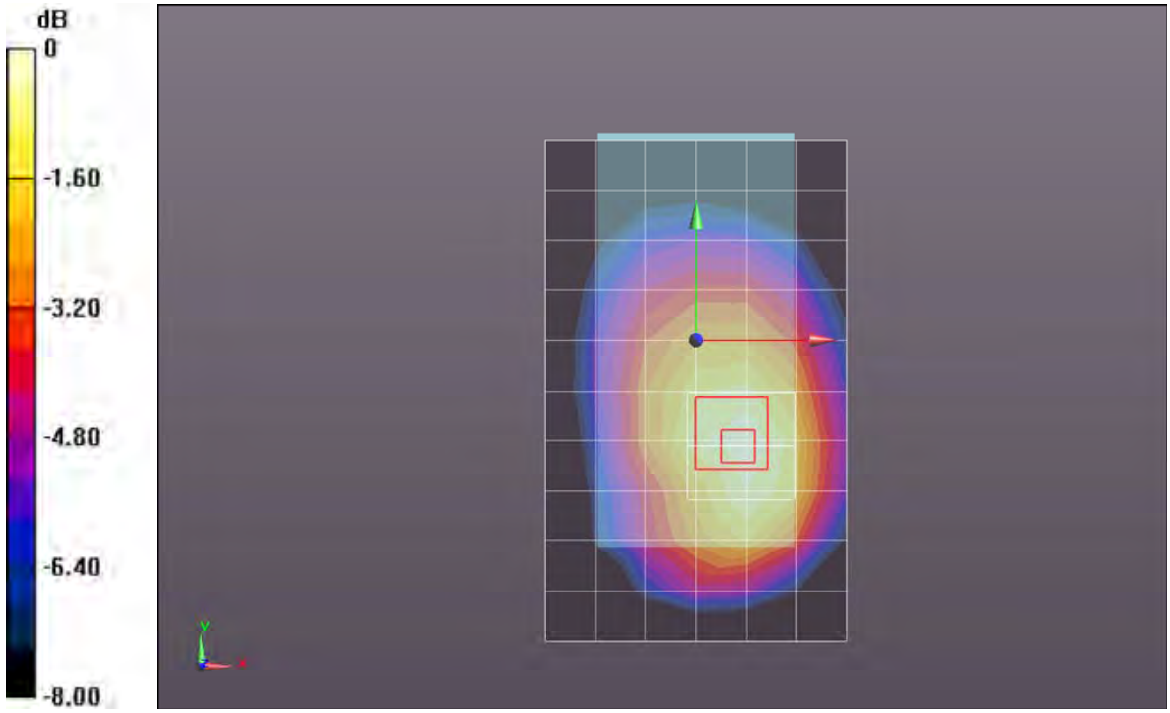
Test Laboratory: UL CCS SAR Lab B Date: 7/20/2012

LTE Band 17 (Primary Antenna)

Frequency: 710 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used: f = 710 MHz; σ = 0.936 mho/m; ε_r = 56.241; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1259; Calibrated: 2/13/2012
- Probe: EX3DV4 - SN3686; ConvF(8.87, 8.87, 8.87); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (B); Type: QDOVA001BB; Serial: 1118

Front/QPSK_RB#1,24_Ch 23790/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.625 mW/g

Front/QPSK_RB#1,24_Ch 23790/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.322 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 0.7270
SAR(1 g) = 0.547 mW/g; SAR(10 g) = 0.396 mW/g
Maximum value of SAR (measured) = 0.630 mW/g



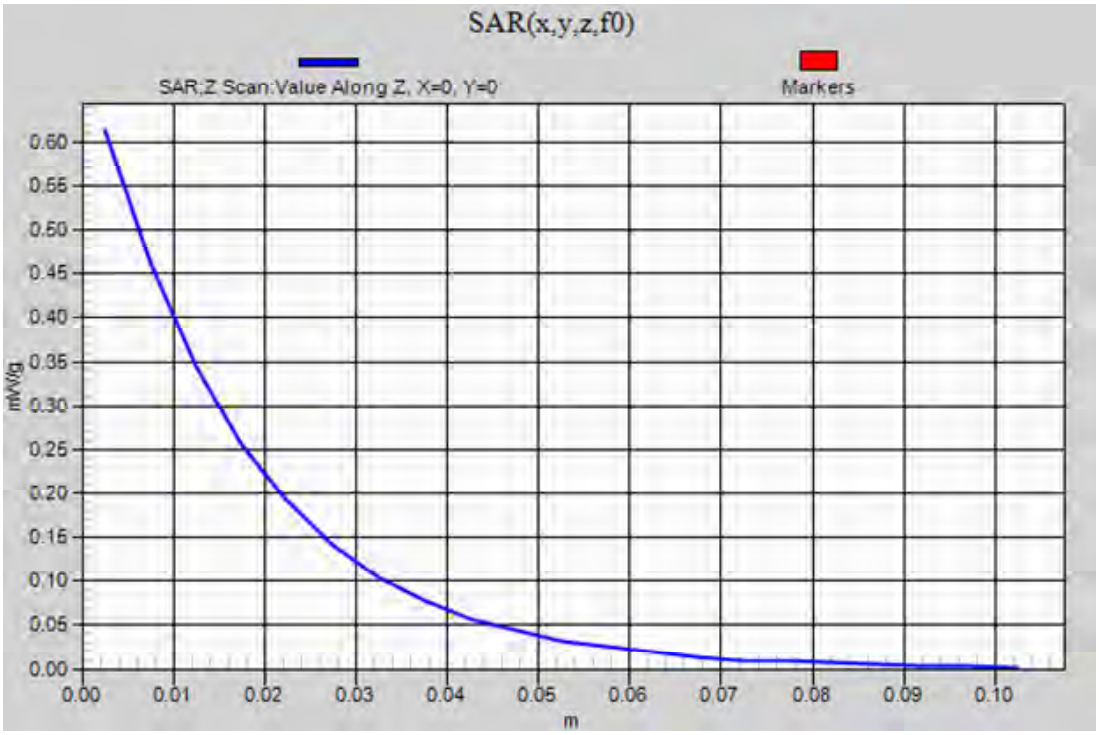
0 dB = 0.630mW/g = -4.01 dB mW/g

Test Laboratory: UL CCS SAR Lab B Date: 7/20/2012

LTE Band 17 (Primary Antenna)

Frequency: 710 MHz; Duty Cycle: 1:1

Front/QPSK_RB#1,24_Ch 23790/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Maximum value of SAR (measured) = 0.614 mW/g



Test Laboratory: UL CCS SAR Lab A Date: 6/29/2012

WiFi 2.4GHz

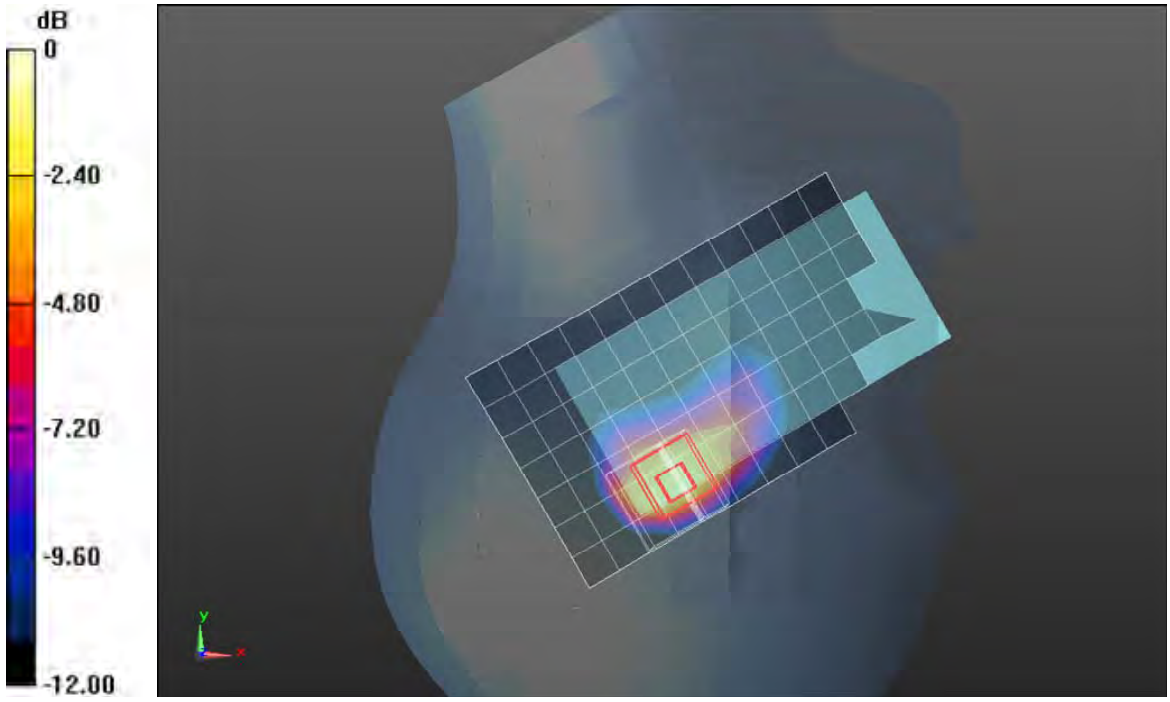
Frequency: 2437 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used (interpolated): f = 2437 MHz; σ = 1.771 mho/m; ε_r = 40.945; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1258; Calibrated: 3/8/2012
- Probe: EX3DV4 - SN3772; ConvF(6.64, 6.64, 6.64); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: SAM v5.0 (A); Type: QD000P40CC; Serial: 1602

RHS/Touch_802.11b_ch 6/Area Scan (8x13x1): Measurement grid: dx=12mm, dy=12mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.632 mW/g

RHS/Touch_802.11b_ch 6/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 18.476 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 1.2690
SAR(1 g) = 0.572 mW/g; SAR(10 g) = 0.254 mW/g
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.833 mW/g



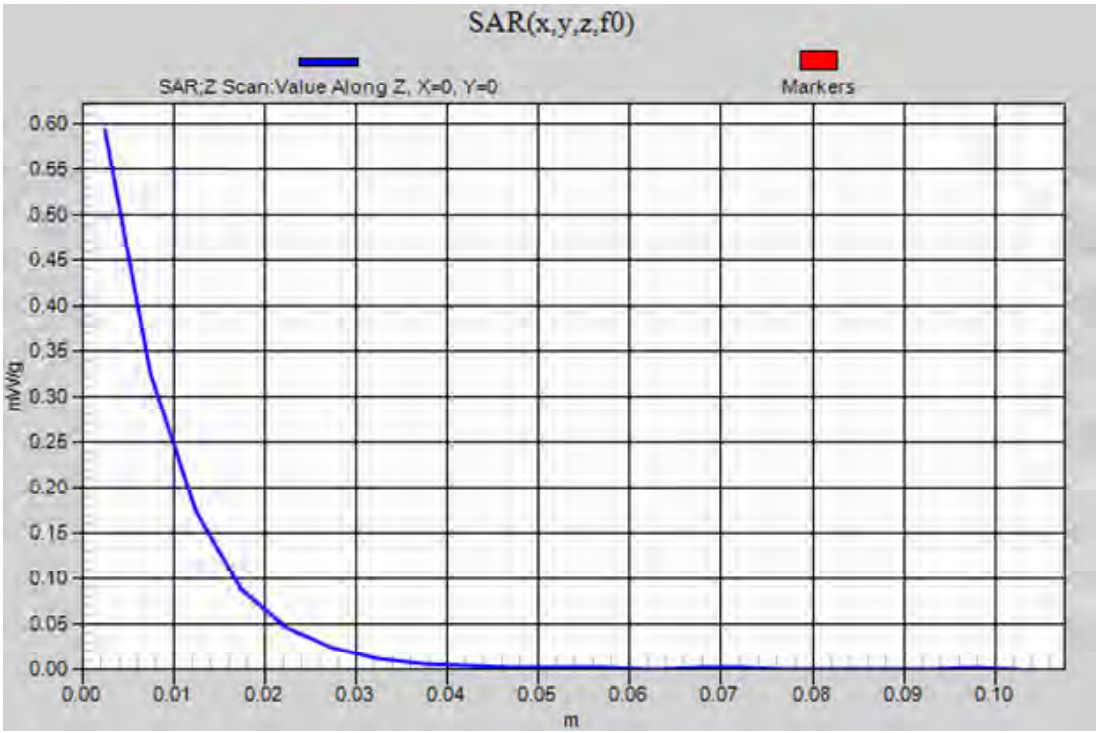
0 dB = 0.830mW/g = -1.62 dB mW/g

Test Laboratory: UL CCS SAR Lab A Date: 6/29/2012

WiFi 2.4GHz

Frequency: 2437 MHz; Duty Cycle: 1:1

RHS/Touch_802.11b_ch 6/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.593 mW/g



Test Laboratory: UL CCS SAR Lab A Date: 7/6/2012

WiFi 2.4GHz

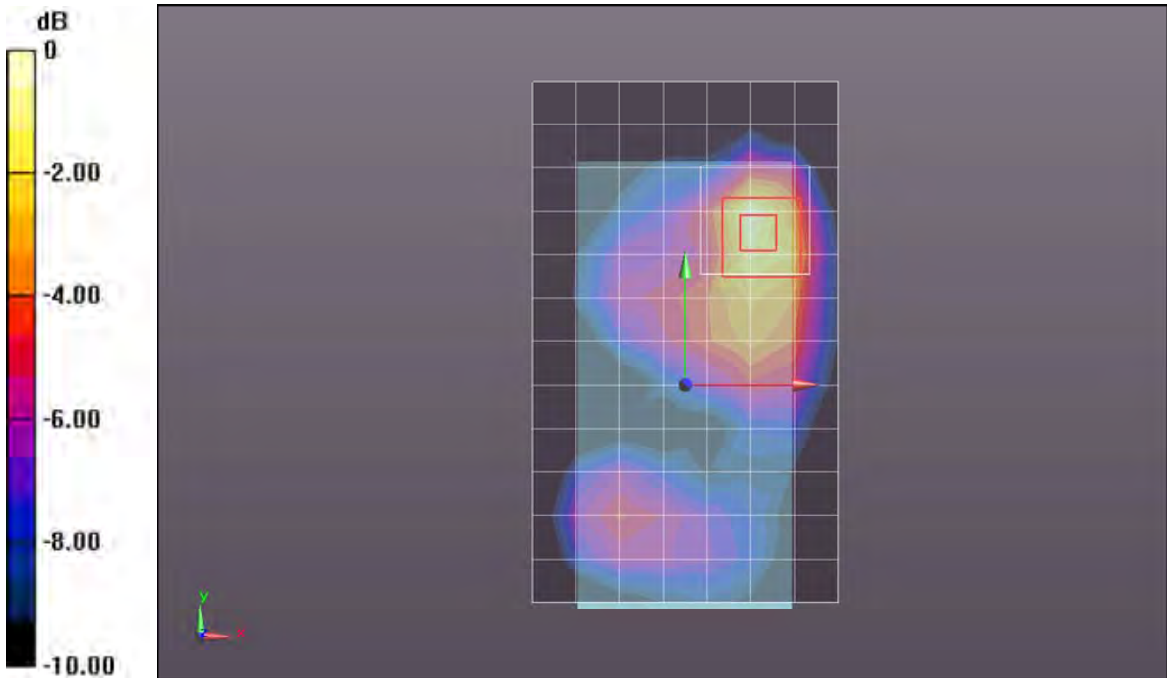
Frequency: 2437 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used (interpolated): f = 2437 MHz; σ = 1.91 mho/m; ε_r = 51.374; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1258; Calibrated: 3/8/2012
- Probe: EX3DV4 - SN3772; ConvF(6.65, 6.65, 6.65); Calibrated: 2/16/2012;
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (B); Type: QDOVA001BB; Serial: 1099

Rear/802.11b_ch 6 w/Headset/Area Scan (8x13x1): Measurement grid: dx=12mm, dy=12mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.262 mW/g

Rear/802.11b_ch 6 w/Headset/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 11.824 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 0.451 mW/g
SAR(1 g) = 0.198 mW/g; SAR(10 g) = 0.094 mW/g
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.280 mW/g



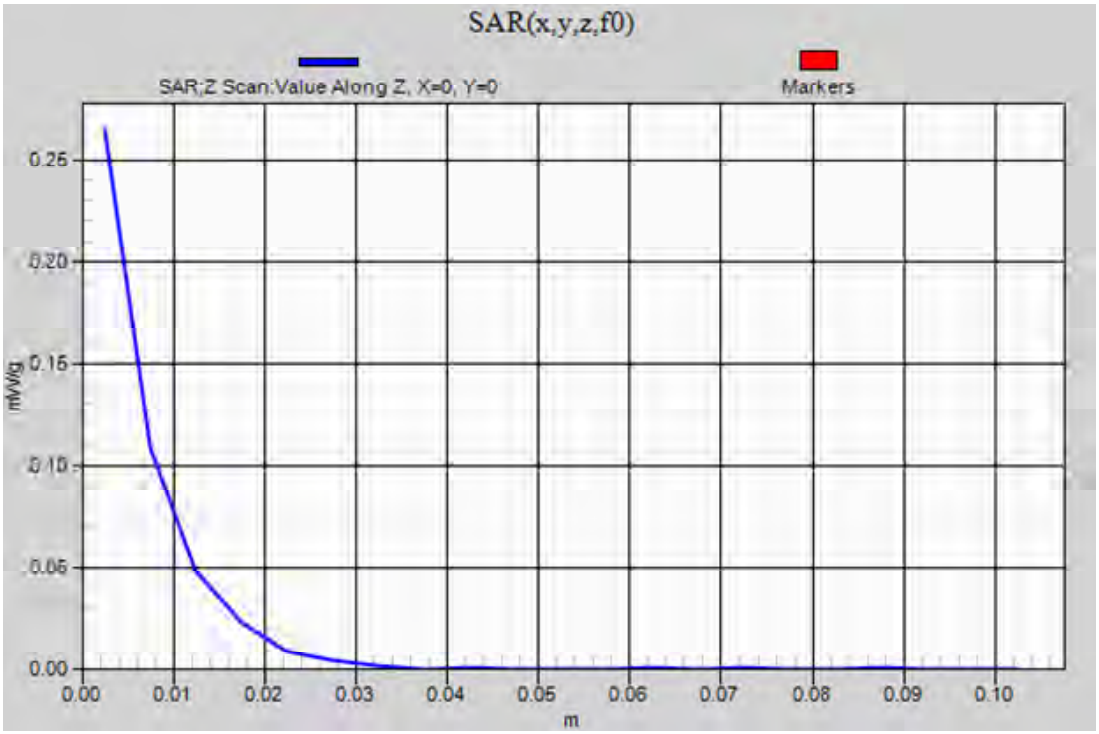
0 dB = 0.280 mW/g = -11.06 dB mW/g

Test Laboratory: UL CCS SAR Lab A Date: 7/6/2012

WiFi 2.4GHz

Frequency: 2437 MHz; Duty Cycle: 1:1

Rear/802.11b_ch 6 w/Headset/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.265 mW/g



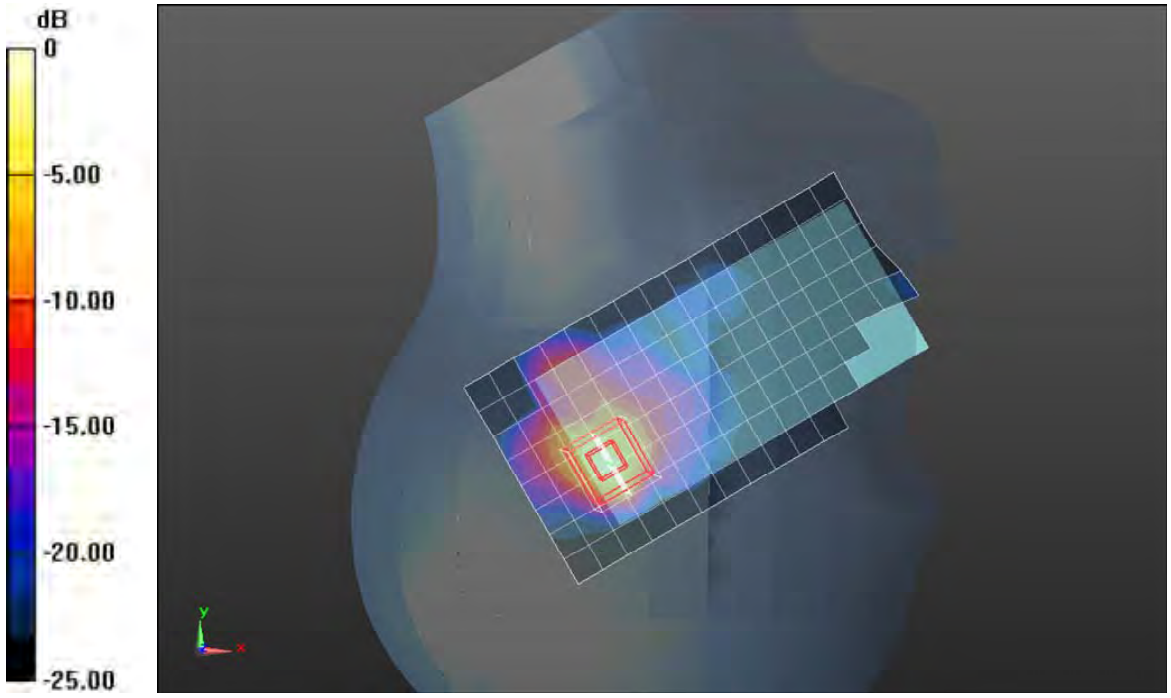
Test Laboratory: UL CCS SAR Lab A Date: 6/30/2012

WiFi 5.2GHz

Frequency: 5240 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 25.0°C; Liquid Temperature: 24.0°C
Medium parameters used: f = 5240 MHz; σ = 4.853 mho/m; ε_r = 35.279; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1258; Calibrated: 3/8/2012
- Probe: EX3DV4 - SN3772; ConvF(4.88, 4.88, 4.88); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
- Phantom: SAM v5.0 (B); Type: QD000P40CD; Serial: 1628

RHS/Touch_802.11a_ch 48/Area Scan (9x16x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 1.020 mW/g

RHS/Touch_802.11a_ch 48/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 14.919 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 2.4920
SAR(1 g) = 0.594 mW/g; SAR(10 g) = 0.164 mW/g
Maximum value of SAR (measured) = 1.238 mW/g



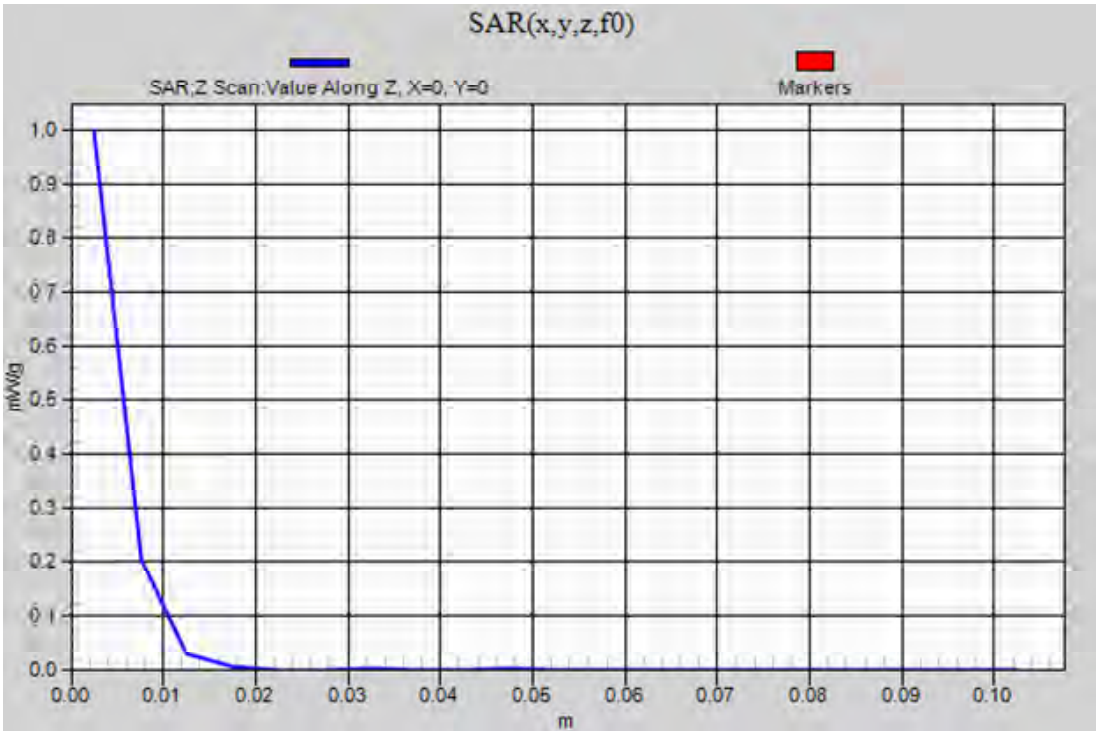
0 dB = 1.240mW/g = 1.87 dB mW/g

Test Laboratory: UL CCS SAR Lab A Date: 6/30/2012

WiFi 5.2GHz Band

Frequency: 5240 MHz; Duty Cycle: 1:1

RHS/Touch_802.11a_ch 48/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Maximum value of SAR (measured) = 0.999 mW/g



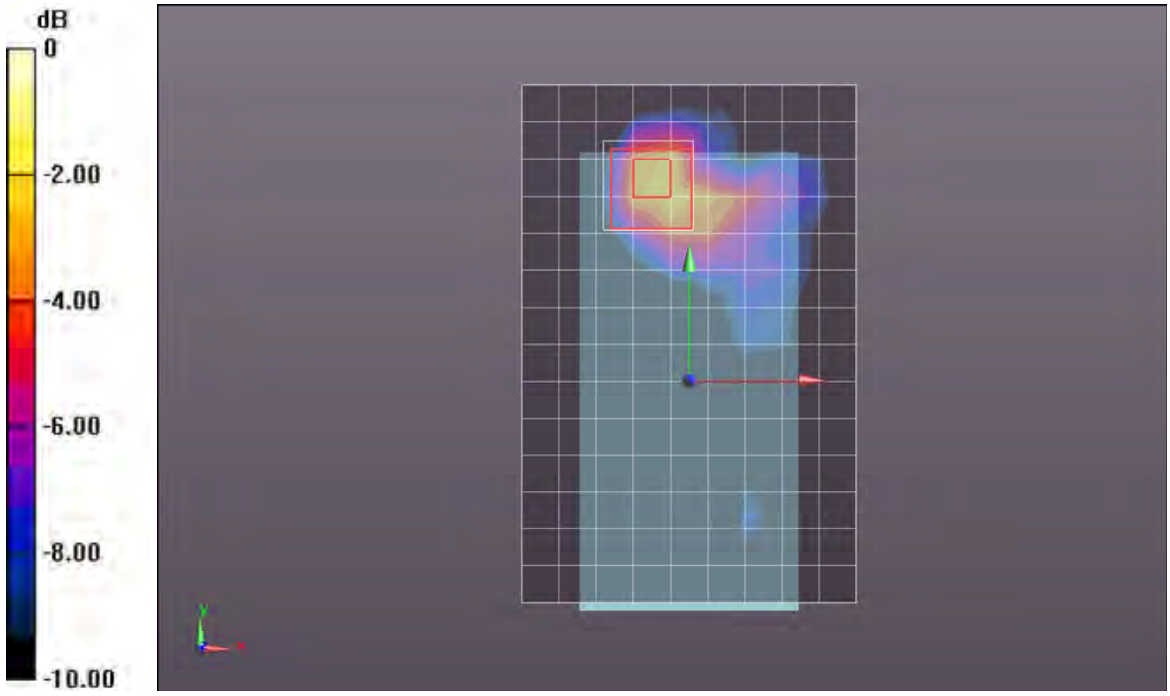
Test Laboratory: UL CCS SAR Lab A Date: 7/7/2012

WiFi 5.2GHz

Frequency: 5240 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 25.0°C; Liquid Temperature: 24.0°C
Medium parameters used: f = 5240 MHz; σ = 5.395 mho/m; ε_r = 46.807; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1258; Calibrated: 3/8/2012
- Probe: EX3DV4 - SN3772; ConvF(4.17, 4.17, 4.17); Calibrated: 2/16/2012;
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (A); Type: QDOVA001BB; Serial: 1120

Front/802.11a_Ch 48 w/Headset/Area Scan (10x15x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.0928 mW/g

Front/802.11a_Ch 48 w/Headset/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 4.731 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 0.347 mW/g
SAR(1 g) = 0.065 mW/g; SAR(10 g) = 0.021 mW/g
Maximum value of SAR (measured) = 0.142 mW/g



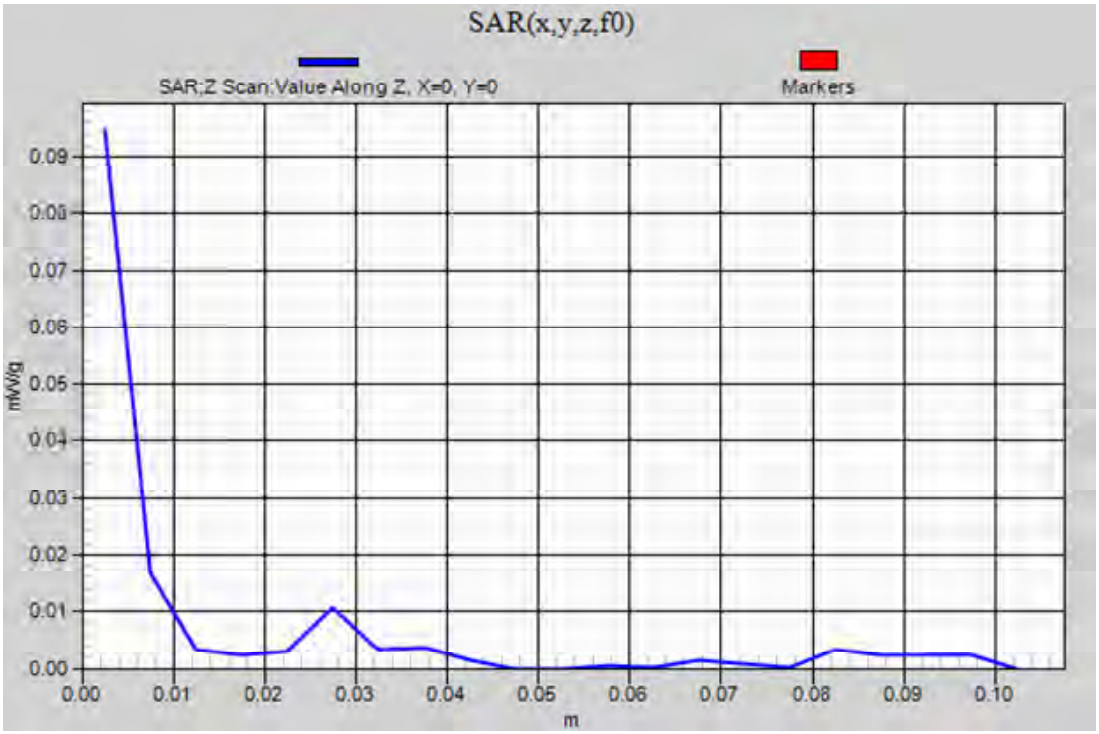
0 dB = 0.142 mW/g = -16.95 dB mW/g

Test Laboratory: UL CCS SAR Lab A Date: 7/7/2012

WiFi 5.2GHz

Frequency: 5240 MHz; Duty Cycle: 1:1

Front/802.11a_Ch 48 w/Headset/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Maximum value of SAR (measured) = 0.0947 mW/g



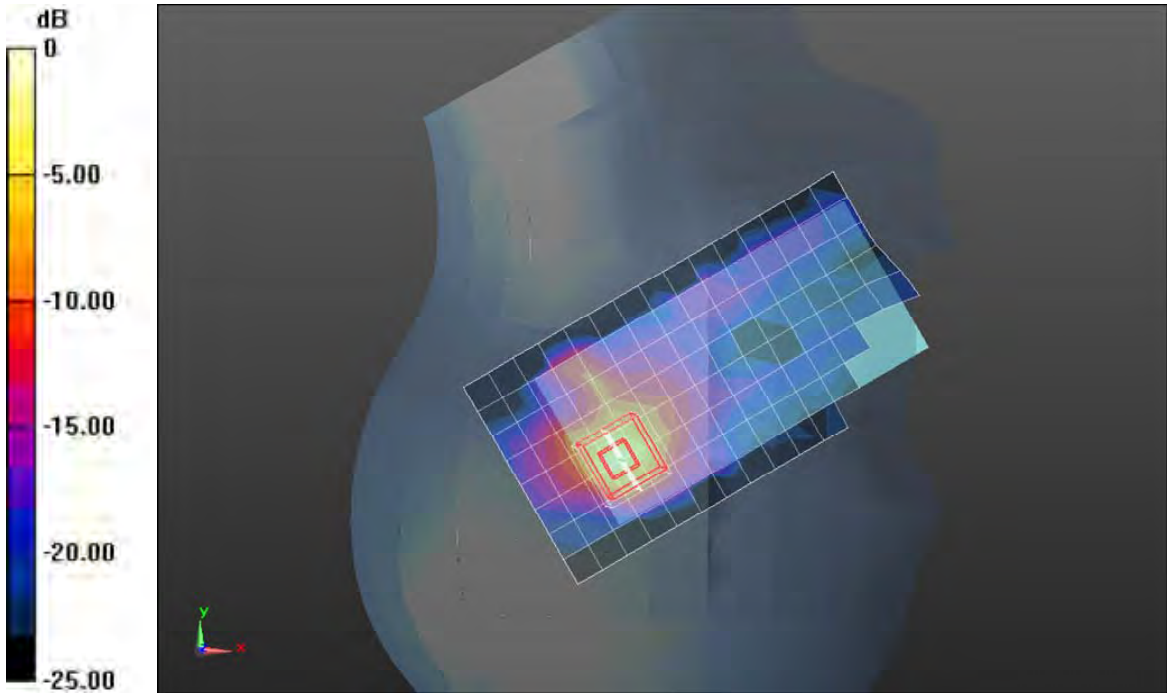
Test Laboratory: UL CCS SAR Lab A Date: 7/6/2012

WiFi 5.3GHz

Frequency: 5260 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 25.0°C; Liquid Temperature: 24.0°C
Medium parameters used: f = 5260 MHz; σ = 4.661 mho/m; ε_r = 34.543; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1258; Calibrated: 3/8/2012
- Probe: EX3DV4 - SN3772; ConvF(4.62, 4.62, 4.62); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
- Phantom: SAM v5.0 (B); Type: QD000P40CD; Serial: 1628

RHS/Touch_802.11a_ch 52/Area Scan (9x16x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.729 mW/g

RHS/Touch_802.11a_ch 52/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0 V/m; Power Drift = 0 dB
Peak SAR (extrapolated) = 2.2610
SAR(1 g) = 0.538 mW/g; SAR(10 g) = 0.143 mW/g
Maximum value of SAR (measured) = 1.157 mW/g



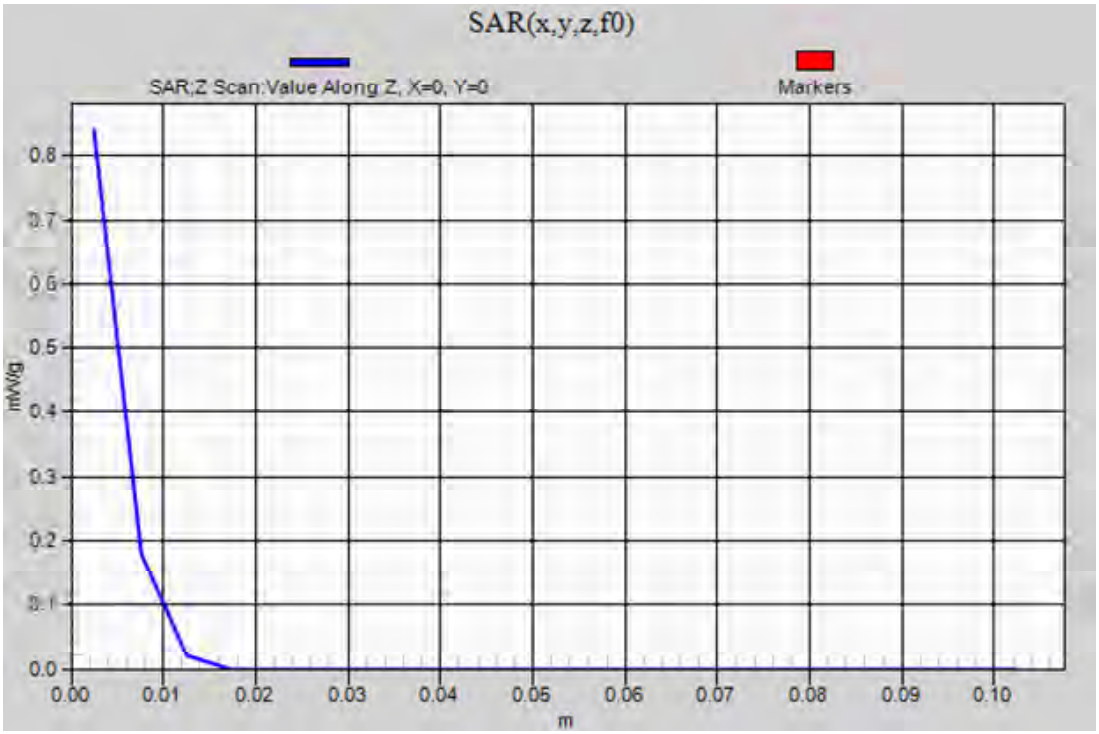
0 dB = 1.160mW/g = 1.29 dB mW/g

Test Laboratory: UL CCS SAR Lab A Date: 7/6/2012

WiFi 5.3GHz Band

Frequency: 5320 MHz; Duty Cycle: 1:1

RHS/Touch_802.11a_ch 52/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Maximum value of SAR (measured) = 0.840 mW/g



Test Laboratory: UL CCS SAR Lab A Date: 7/11/2012

WiFi 5.3GHz

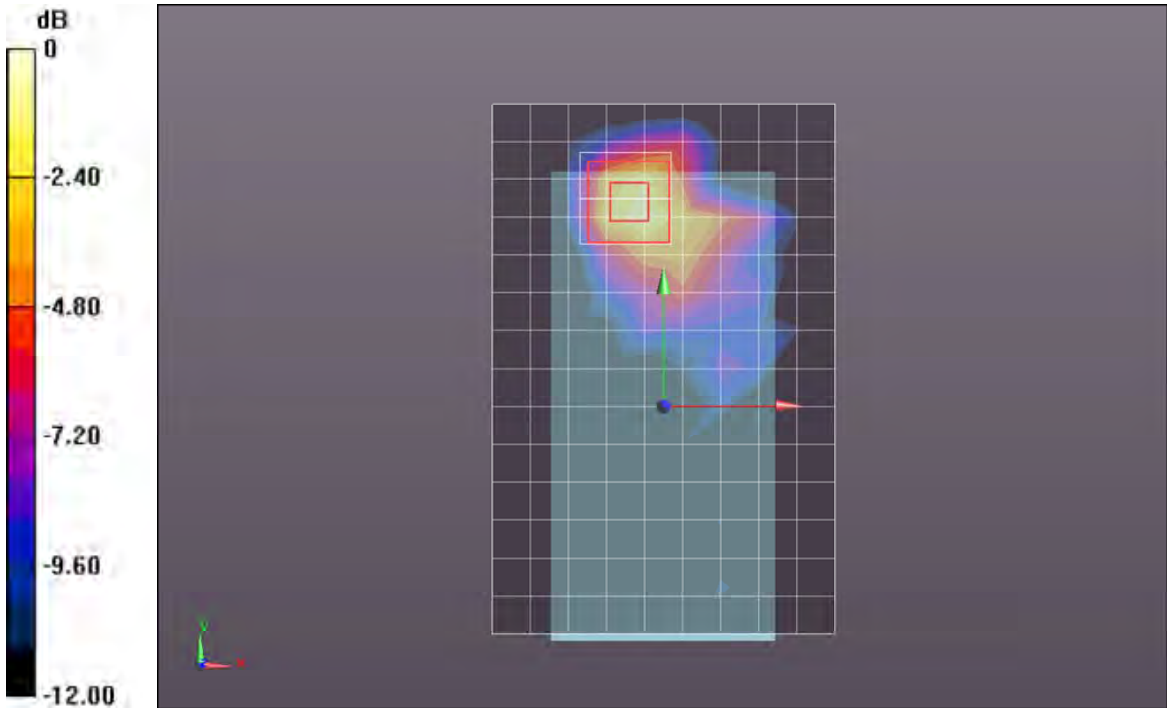
Frequency: 5320 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 25.0°C; Liquid Temperature: 24.0°C
Medium parameters used: f = 5320 MHz; σ = 5.501 mho/m; ε_r = 46.72; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1258; Calibrated: 3/8/2012
- Probe: EX3DV4 - SN3772; ConvF(3.99, 3.99, 3.99); Calibrated: 2/16/2012;
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (A); Type: QDOVA001BB; Serial: 1120

Front/802.11a_Ch 64/Area Scan (10x15x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.123 mW/g

Front/802.11a_Ch 64/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 5.086 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 0.276 mW/g
SAR(1 g) = 0.071 mW/g; SAR(10 g) = 0.023 mW/g
Maximum value of SAR (measured) = 0.152 mW/g



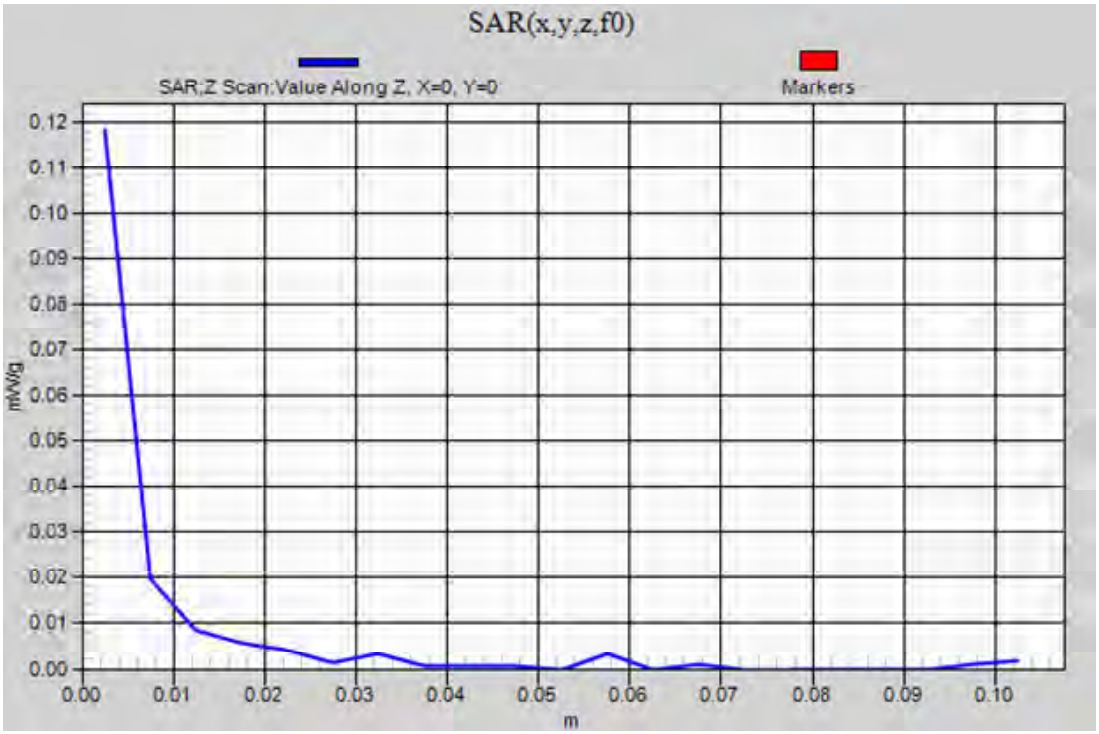
0 dB = 0.152 mW/g = -16.36 dB mW/g

Test Laboratory: UL CCS SAR Lab A Date: 7/11/2012

WiFi 5.3GHz

Frequency: 5320 MHz; Duty Cycle: 1:1

Front/802.11a_Ch 64/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Maximum value of SAR (measured) = 0.118 mW/g



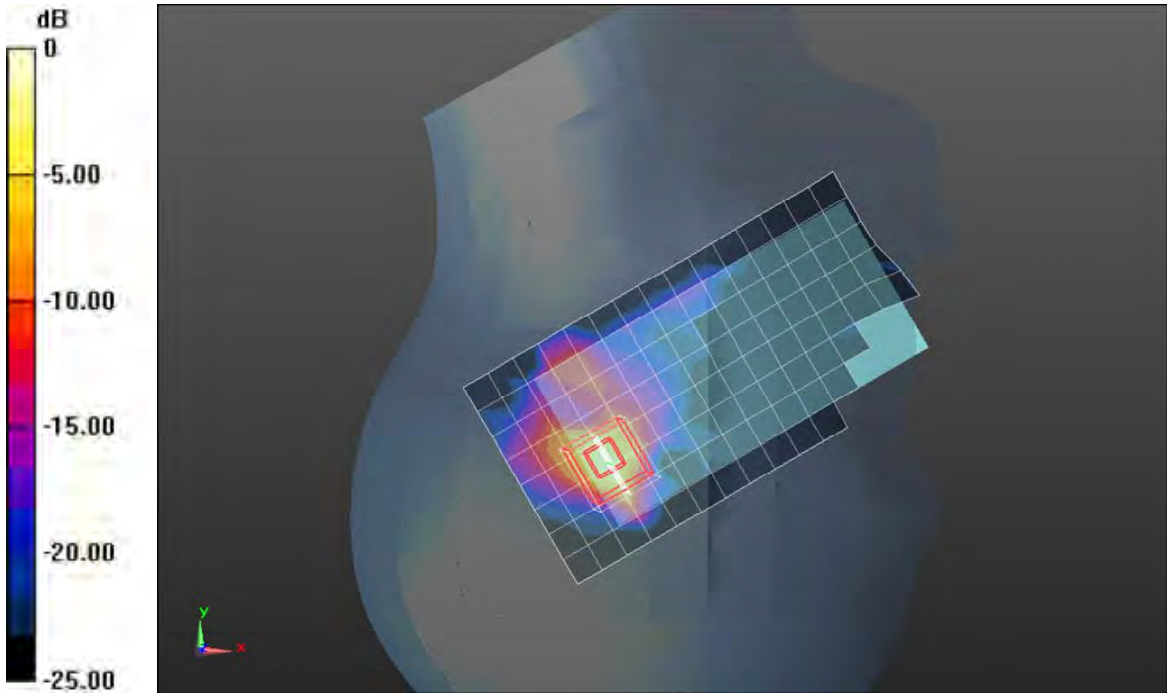
Test Laboratory: UL CCS SAR Lab A Date: 7/3/2012

WiFi 5.5GHz

Frequency: 5680 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 25.0°C; Liquid Temperature: 24.0°C
Medium parameters used: f = 5680 MHz; σ = 5.27 mho/m; ε_r = 35.565; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1258; Calibrated: 3/8/2012
- Probe: EX3DV4 - SN3772; ConvF(4.25, 4.25, 4.25); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
- Phantom: SAM v5.0 (B); Type: QD000P40CD; Serial: 1628

RHS/Touch_802.11a_ch 136/Area Scan (9x16x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 1.029 mW/g

RHS/Touch_802.11a_ch 136/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 14.370 V/m; Power Drift = -0.17 dB
Peak SAR (extrapolated) = 2.6580
SAR(1 g) = 0.593 mW/g; SAR(10 g) = 0.151 mW/g
Maximum value of SAR (measured) = 1.308 mW/g



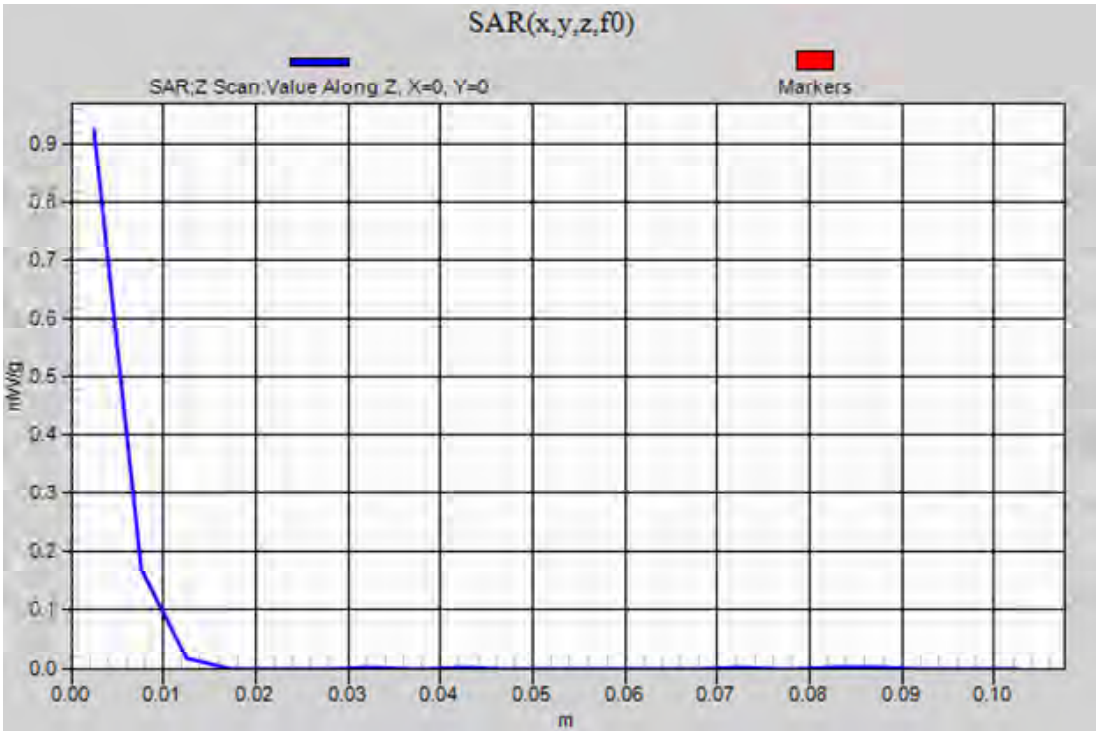
0 dB = 1.310mW/g = 2.35 dB mW/g

Test Laboratory: UL CCS SAR Lab A Date: 7/3/2012

WiFi 5.5GHz Band

Frequency: 5680 MHz; Duty Cycle: 1:1

RHS/Touch_802.11a_ch 136/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Maximum value of SAR (measured) = 0.925 mW/g



Test Laboratory: UL CCS SAR Lab A Date: 7/12/2012

WiFi 5.5GHz

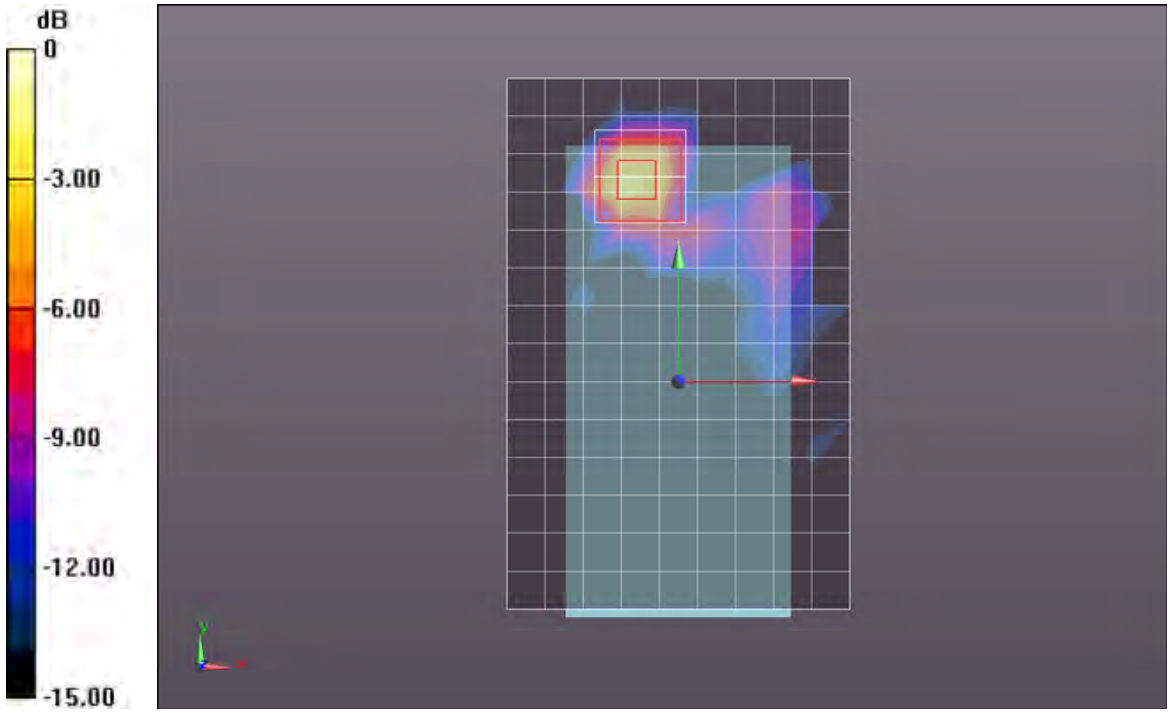
Frequency: 5620 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 25.0°C; Liquid Temperature: 24.0°C
Medium parameters used: f = 5620 MHz; σ = 5.939 mho/m; ε_r = 46.31; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1258; Calibrated: 3/8/2012
- Probe: EX3DV4 - SN3772; ConvF(3.26, 3.26, 3.26); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection), Sensor-Surface: 2mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (A); Type: QDOVA001BB; Serial: 1120

Front/802.11a_Ch 124/Area Scan (10x15x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.127 mW/g

Front/802.11a_Ch 124/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 5.238 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 0.3910
SAR(1 g) = 0.085 mW/g; SAR(10 g) = 0.026 mW/g
Maximum value of SAR (measured) = 0.199 mW/g



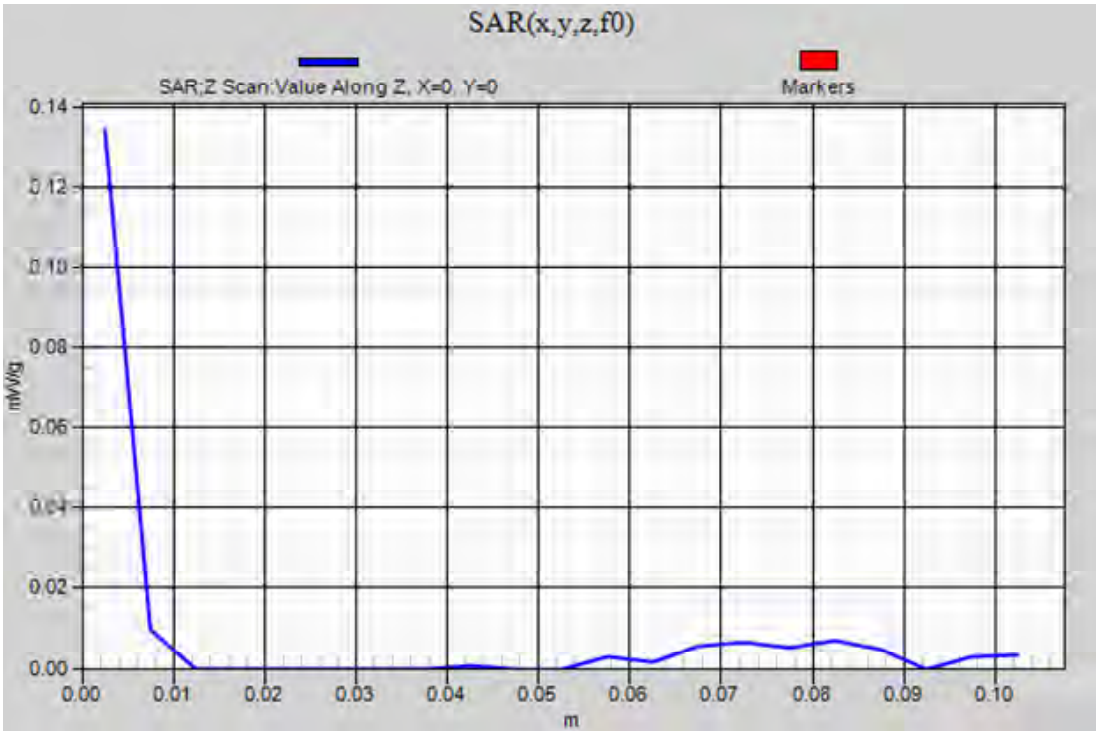
0 dB = 0.200mW/g = -13.98 dB mW/g

Test Laboratory: UL CCS SAR Lab A Date: 7/12/2012

WiFi 5.5GHz

Frequency: 5620 MHz; Duty Cycle: 1:1

Front/802.11a_Ch 124/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Maximum value of SAR (measured) = 0.135 mW/g



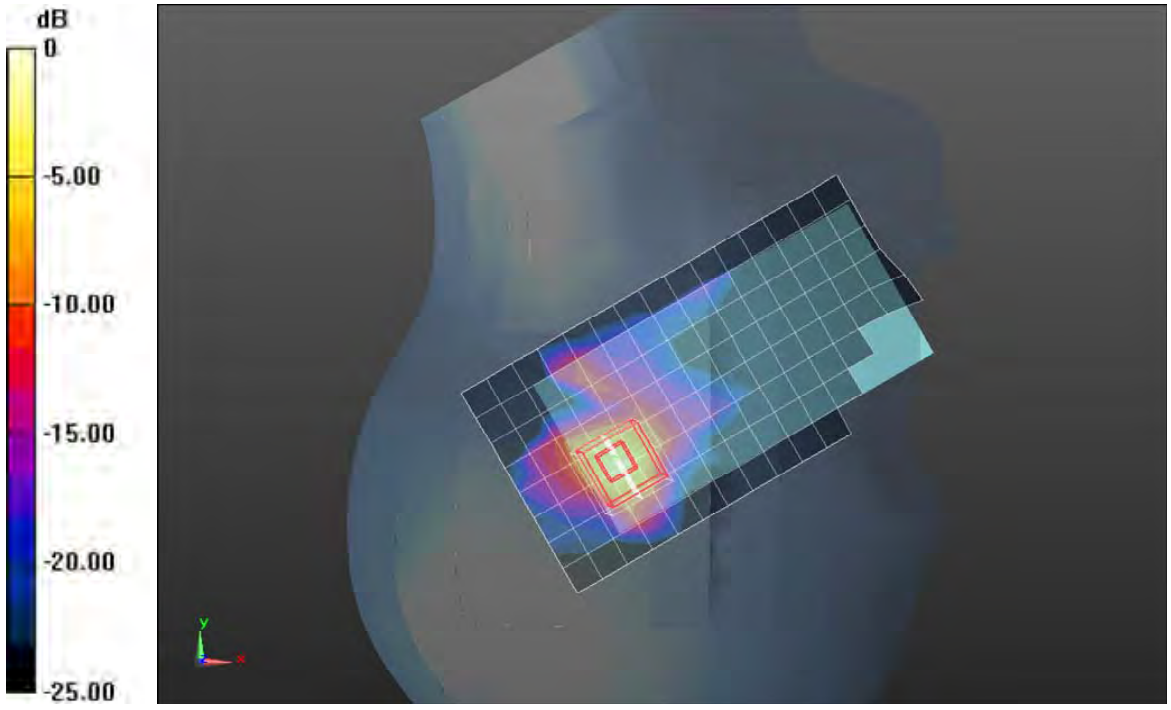
Test Laboratory: UL CCS SAR Lab A Date: 7/5/2012

WiFi 5.8GHz

Frequency: 5785 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 25.0°C; Liquid Temperature: 24.0°C
Medium parameters used: f = 5785 MHz; σ = 5.368 mho/m; ε_r = 35.388; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1258; Calibrated: 3/8/2012
- Probe: EX3DV4 - SN3772; ConvF(4.31, 4.31, 4.31); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
- Phantom: SAM v5.0 (B); Type: QD000P40CD; Serial: 1628

RHS/Touch_802.11a_ch 157/Area Scan (9x16x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.722 mW/g

RHS/Touch_802.11a_ch 157/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 11.987 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 2.6850
SAR(1 g) = 0.580 mW/g; SAR(10 g) = 0.151 mW/g
Maximum value of SAR (measured) = 1.268 mW/g



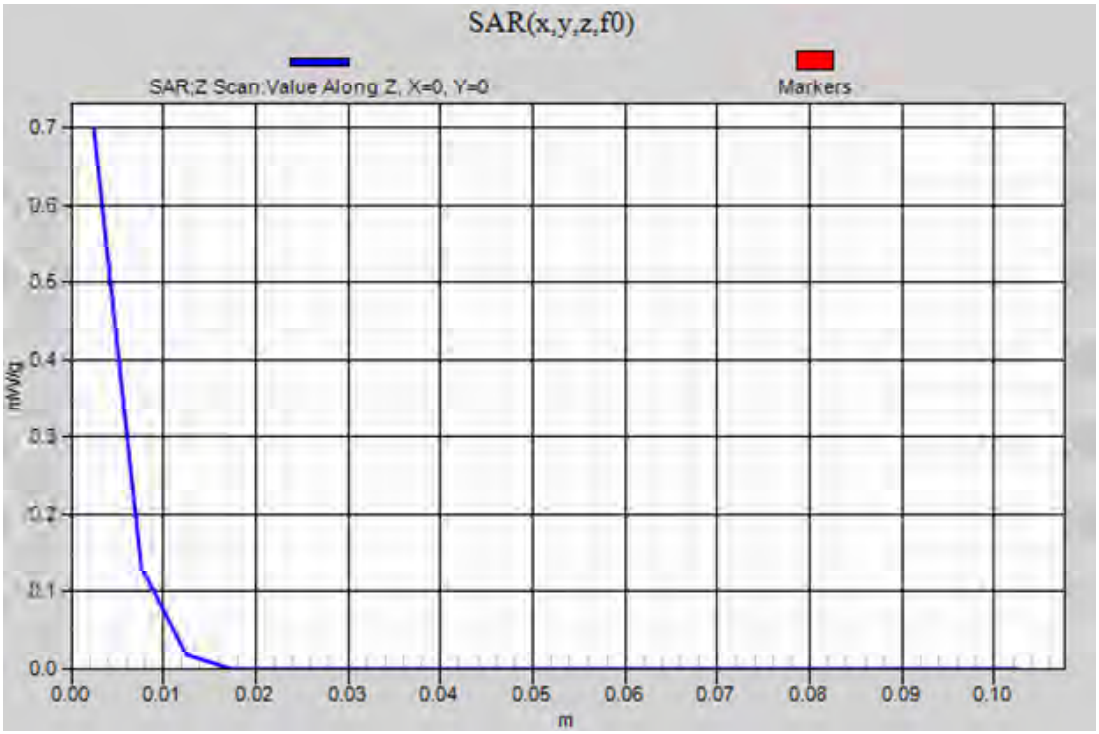
0 dB = 1.270mW/g = 2.08 dB mW/g

Test Laboratory: UL CCS SAR Lab A Date: 7/5/2012

WiFi 5.8GHz Band

Frequency: 5785 MHz; Duty Cycle: 1:1

RHS/Touch_802.11a_ch 157/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Maximum value of SAR (measured) = 0.698 mW/g



Test Laboratory: UL CCS SAR Lab A Date: 7/17/2012

WiFi 5.8GHz

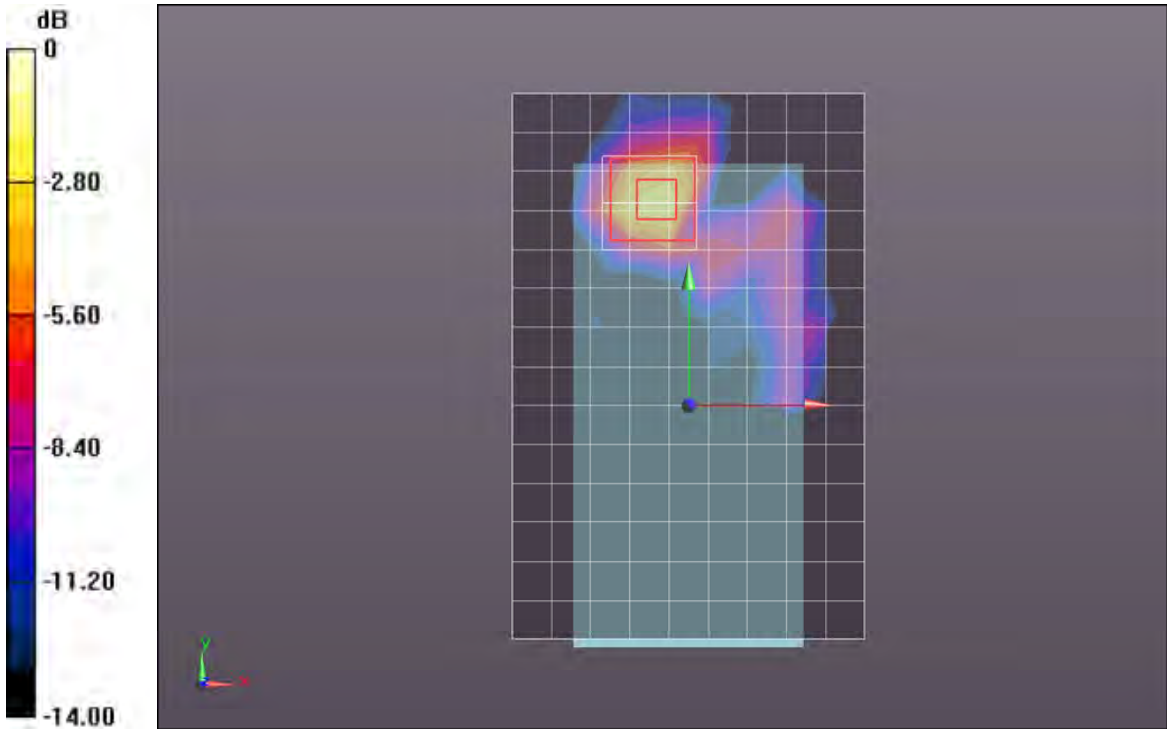
Frequency: 5745 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 25.0°C; Liquid Temperature: 24.0°C
Medium parameters used: f = 5745 MHz; σ = 6.05 mho/m; ε_r = 46.711; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1258; Calibrated: 3/8/2012
- Probe: EX3DV4 - SN3772; ConvF(3.58, 3.58, 3.58); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection), Sensor-Surface: 2mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (A); Type: QDOVA001BB; Serial: 1120

Front/802.11a_Ch 149/Area Scan (10x15x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.105 mW/g

Front/802.11a_Ch 149/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 4.737 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.3700
SAR(1 g) = 0.067 mW/g; SAR(10 g) = 0.021 mW/g
Maximum value of SAR (measured) = 0.164 mW/g



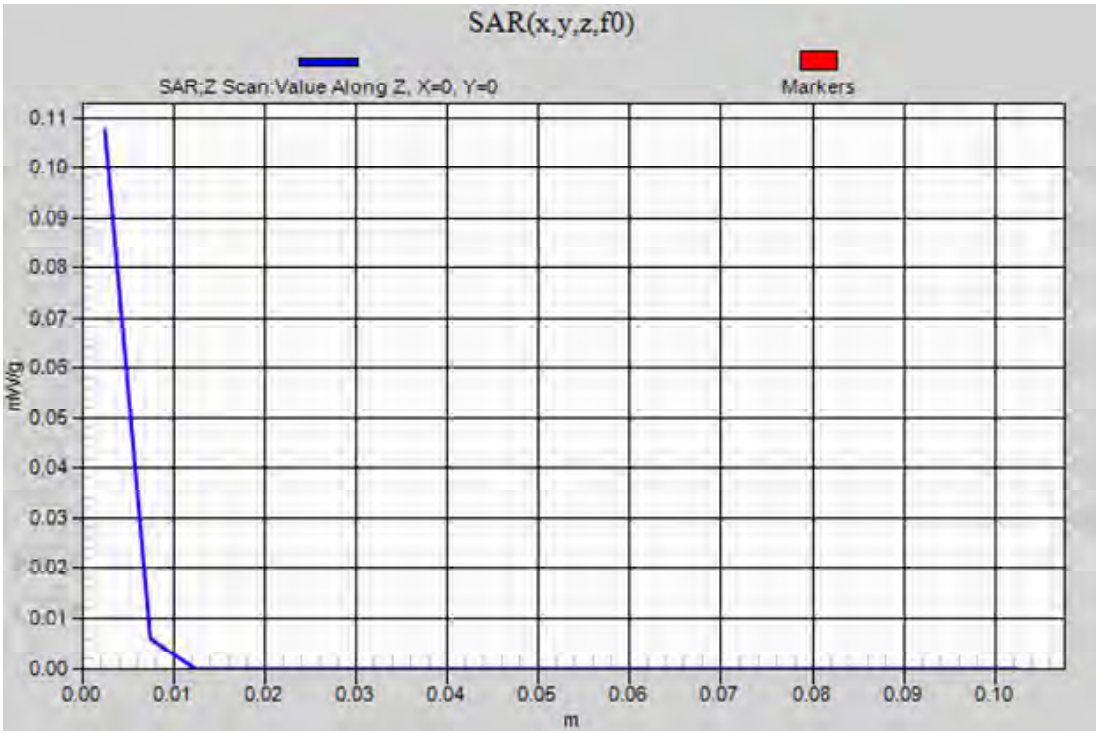
0 dB = 0.160mW/g = -15.92 dB mW/g

Test Laboratory: UL CCS SAR Lab A Date: 7/17/2012

WiFi 5.8GHz

Frequency: 5745 MHz; Duty Cycle: 1:1

Front/802.11a_Ch 149/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Maximum value of SAR (measured) = 0.108 mW/g



Test Laboratory: UL CCS SAR Lab A Date: 8/1/2012

Bluetooth

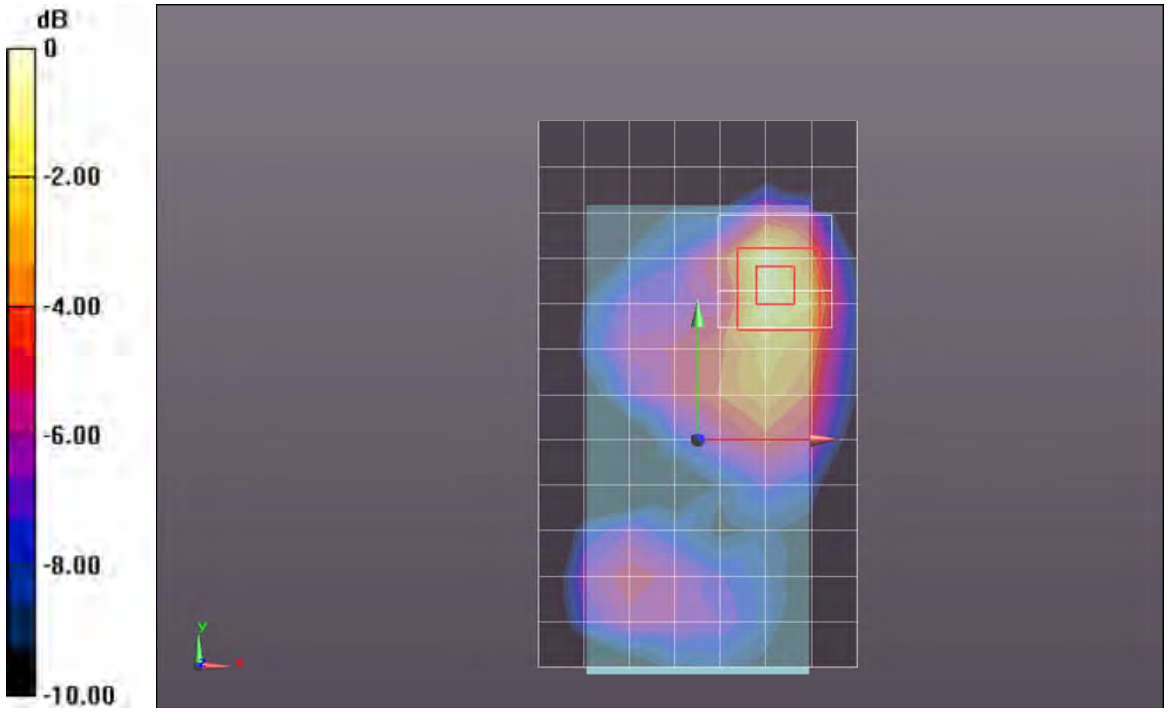
Frequency: 2441 MHz; Duty Cycle: 1:3.25; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used (interpolated): f = 2441 MHz; σ = 1.927 mho/m; ε_r = 51.429; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1258; Calibrated: 3/8/2012
- Probe: EX3DV4 - SN3772; ConvF(6.65, 6.65, 6.65); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (B); Type: QDOVA001BB; Serial: 1099

Rear/802.15_GFSK_ch 39/Area Scan (8x13x1): Measurement grid: dx=12mm, dy=12mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.134 mW/g

Rear/802.15_GFSK_ch 39/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.372 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.2370
SAR(1 g) = 0.109 mW/g; SAR(10 g) = 0.051 mW/g
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.150 mW/g



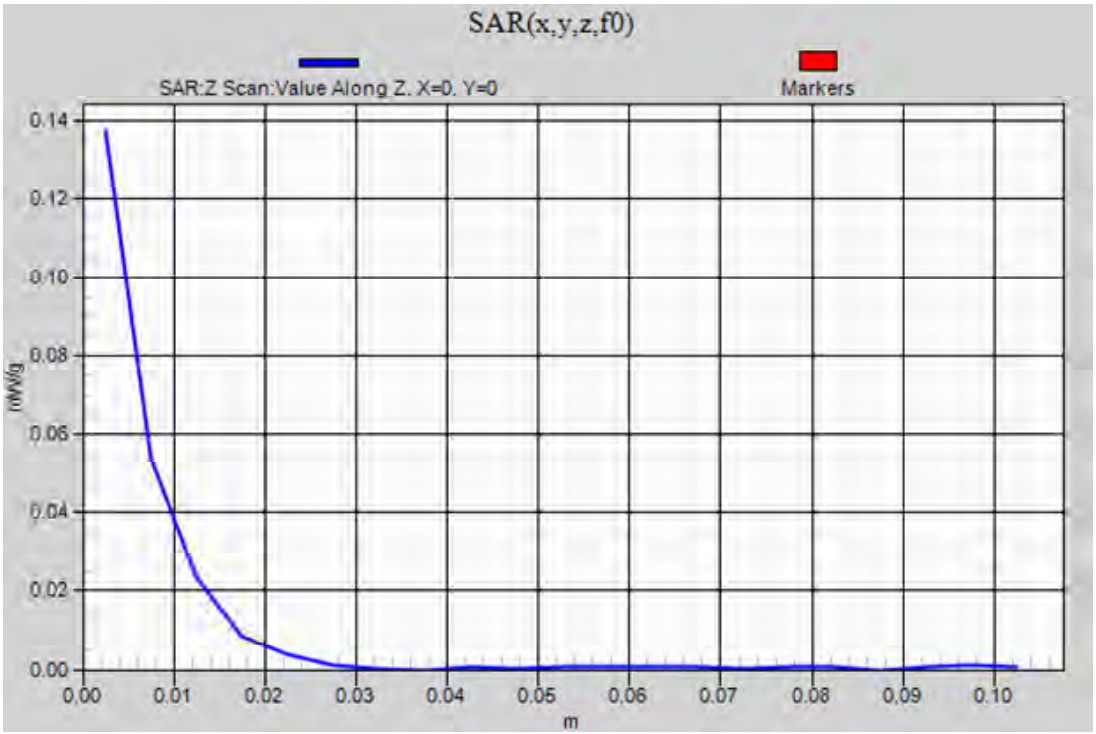
0 dB = 0.150mW/g = -16.48 dB mW/g

Test Laboratory: UL CCS SAR Lab A Date: 8/1/2012

Bluetooth

Frequency: 2441 MHz; Duty Cycle: 1:3.25

Rear/802.15_GFSK_ch 39/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.137 mW/g



16.4.2. SAR Plots for Model A1429

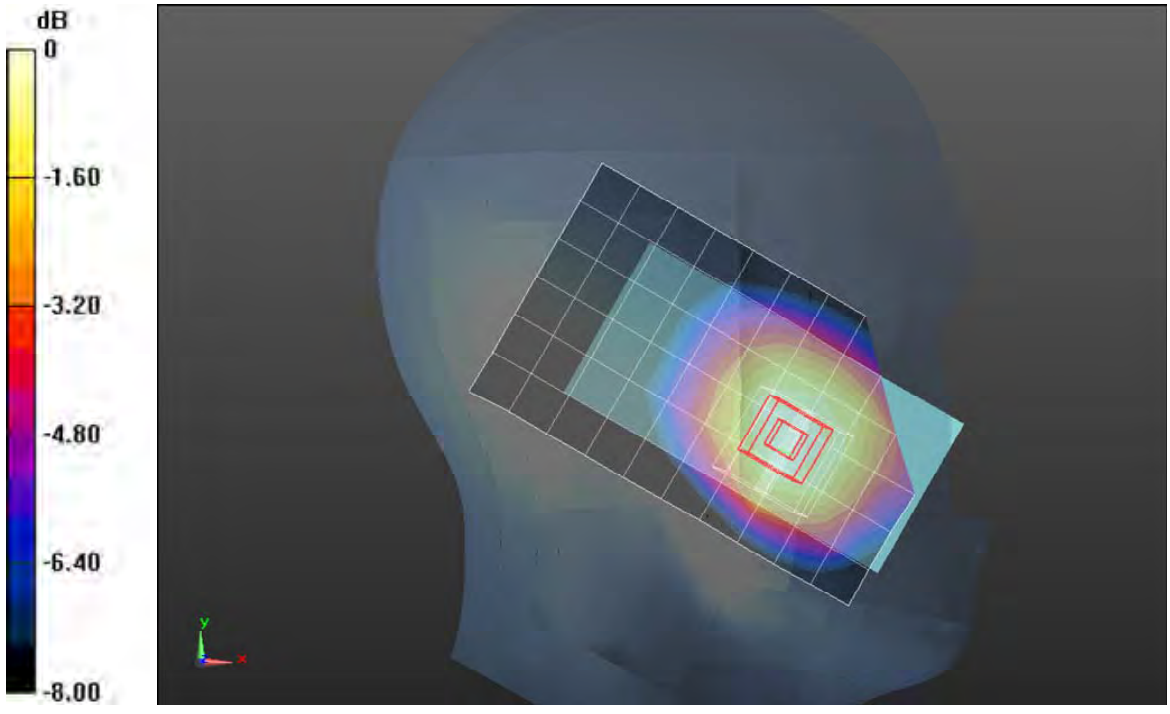
Test Laboratory: UL CCS SAR Lab B Date: 7/30/2012

GSM850 (Primary Antenna)

Frequency: 836.6 MHz; Duty Cycle: 1:8.00018; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.903 mho/m; ε_r = 43.059; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1259; Calibrated: 2/13/2012
- Probe: EX3DV4 - SN3686; ConvF(8.61, 8.61, 8.61); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: SAM; Type: QD000P40CD; Serial: 1629

LHS/Touch_Voice_ch 190/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.798 mW/g

LHS/Touch_Voice_ch 190/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 29.968 V/m; Power Drift = 0.0042 dB
Peak SAR (extrapolated) = 0.8830
SAR(1 g) = 0.737 mW/g; SAR(10 g) = 0.566 mW/g
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.799 mW/g



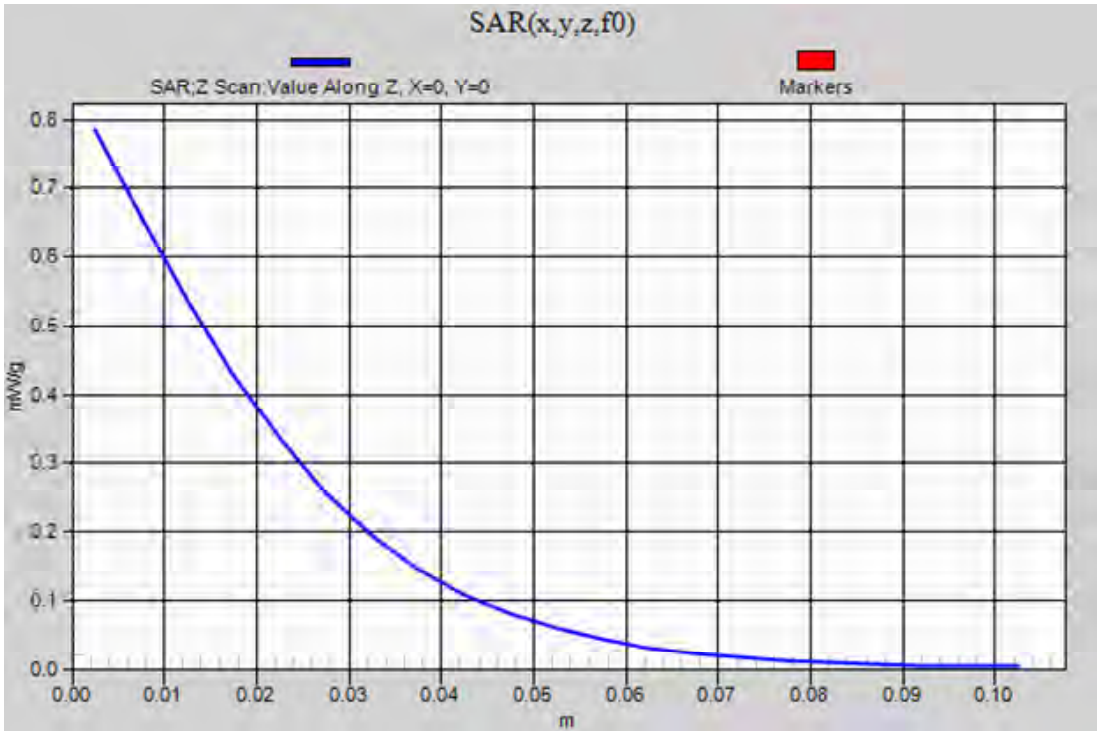
0 dB = 0.800mW/g = -1.94 dB mW/g

Test Laboratory: UL CCS SAR Lab B Date: 7/30/2012

GSM850 (Primary Antenna)

Frequency: 836.6 MHz; Duty Cycle: 1:8.00018

LHS/Touch_Voice_ch 190/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.785 mW/g



Test Laboratory: UL CCS SAR Lab B Date: 7/31/2012

GSM850 (Primary Antenna)

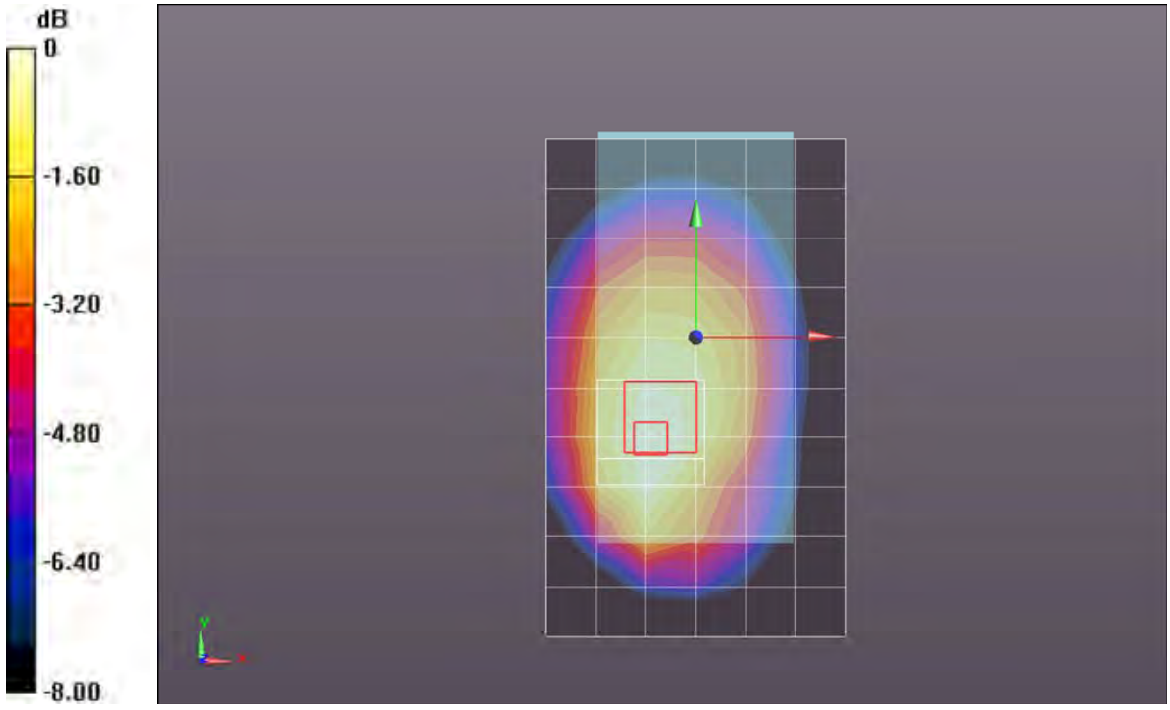
Frequency: 848.8 MHz; Duty Cycle: 1:8.00018; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.987 mho/m; ε_r = 52.573; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1259; Calibrated: 2/13/2012
- Probe: EX3DV4 - SN3686; ConvF(8.73, 8.73, 8.73); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (B); Type: QDOVA001BB; Serial: 1118

Rear/Voice_Ch 251/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.997 mW/g

Rear/Voice_Ch 251/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 32.196 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 1.1660
SAR(1 g) = 0.866 mW/g; SAR(10 g) = 0.635 mW/g
Info: Interpolated medium parameters used for SAR evaluation.



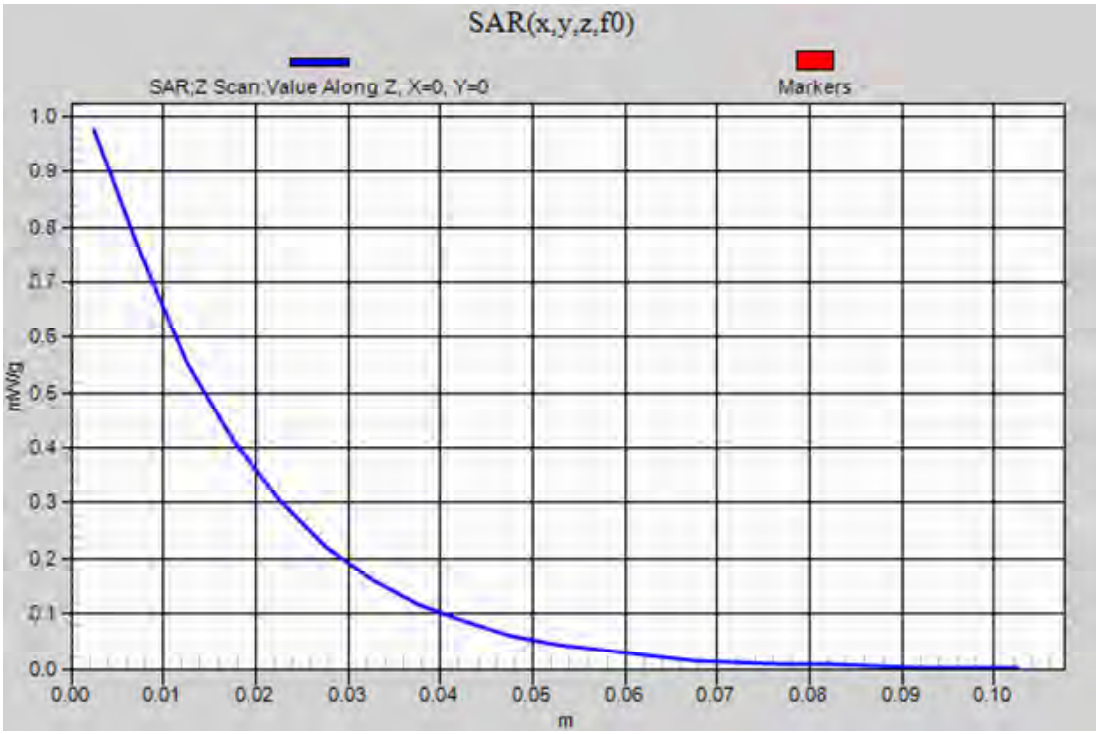
0 dB = 1.000mW/g = 0 dB mW/g

Test Laboratory: UL CCS SAR Lab B Date: 7/31/2012

GSM850 (Primary Antenna)

Frequency: 848.8 MHz; Duty Cycle: 1:8.00018

Rear/Voice_Ch 251/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.976 mW/g



Test Laboratory: UL CCS SAR Lab B Date: 7/31/2012

GSM850 (Primary Antenna)

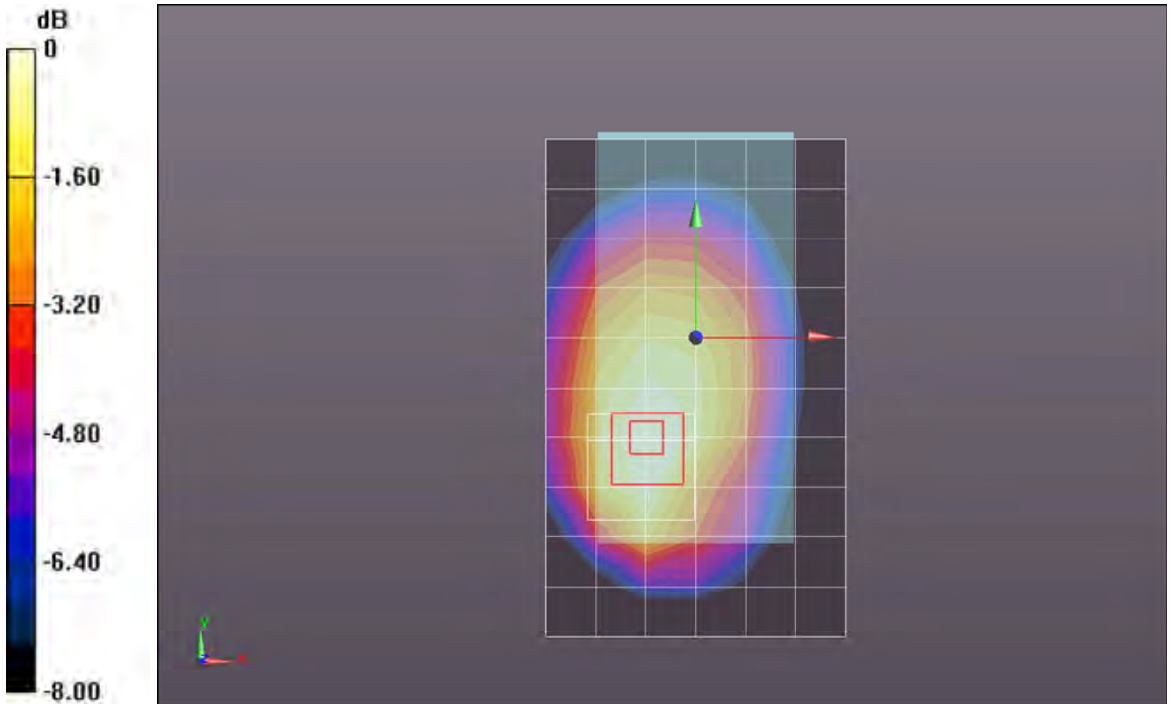
Frequency: 848.8 MHz; Duty Cycle: 1:4.00037; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.987 mho/m; ε_r = 52.573; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1259; Calibrated: 2/13/2012
- Probe: EX3DV4 - SN3686; ConvF(8.73, 8.73, 8.73); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (B); Type: QDOVA001BB; Serial: 1118

Rear/GPRS 2 Slots_ch 251/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.206 mW/g

Rear/GPRS 2 Slots_ch 251/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 35.385 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.3850
SAR(1 g) = 1.04 mW/g; SAR(10 g) = 0.738 mW/g
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.194 mW/g



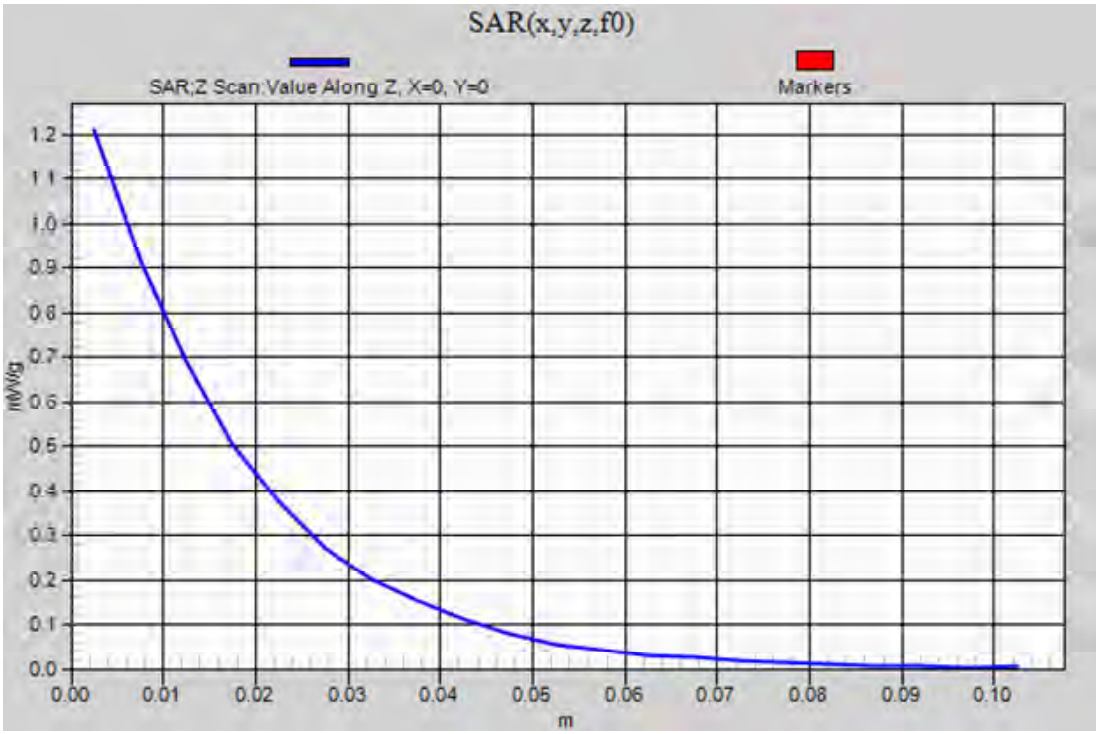
0 dB = 1.190mW/g = 1.51 dB mW/g

Test Laboratory: UL CCS SAR Lab B Date: 7/31/2012

GSM850 (Primary Antenna)

Frequency: 848.8 MHz; Duty Cycle: 1:4.00037

Rear/GPRS 2 Slots_ch 251/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.211 mW/g



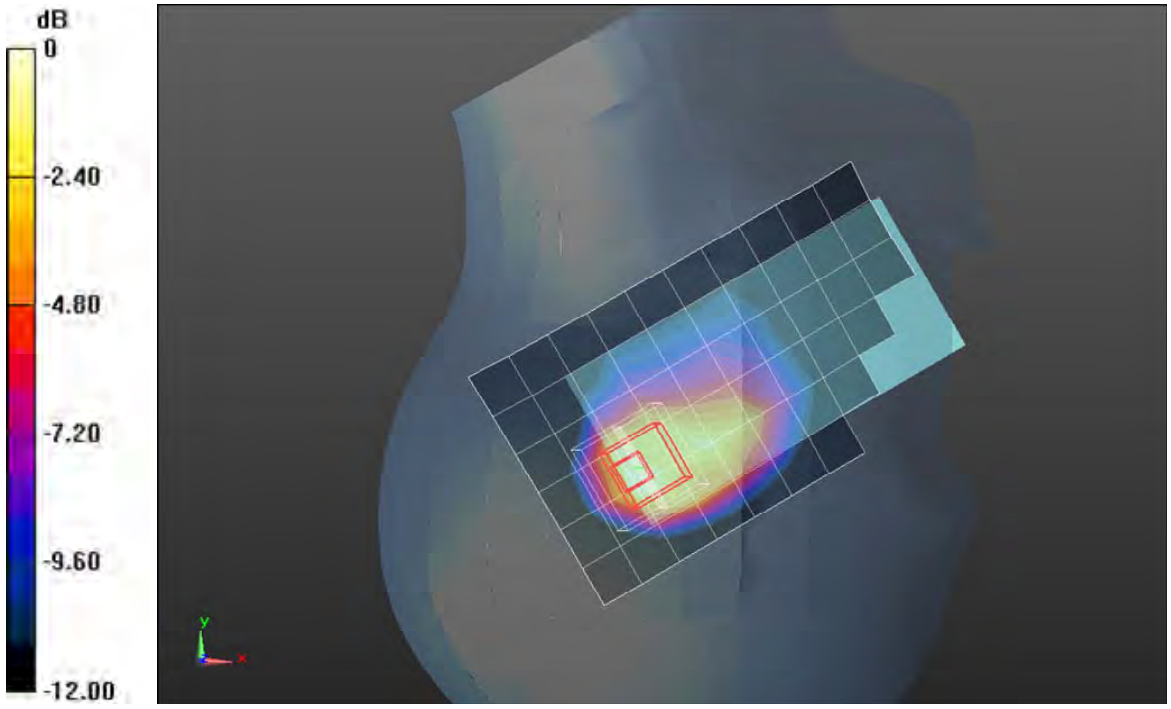
Test Laboratory: UL CCS SAR Lab B Date: 7/27/2012

GSM1900 (Secondary Antenna)

Frequency: 1909.8 MHz; Duty Cycle: 1:8.00018; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used: f = 1910 MHz; σ = 1.41 mho/m; ε_r = 38.413; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1259; Calibrated: 2/13/2012
- Probe: EX3DV4 - SN3686; ConvF(7.51, 7.51, 7.51); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: SAM; Type: QD000P40CD; Serial: 1629

RHS/Touch_Ch 810/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.257 mW/g

RHS/Touch_Ch 810/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 30.234 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 1.8610
SAR(1 g) = 0.956 mW/g; SAR(10 g) = 0.487 mW/g
Maximum value of SAR (measured) = 1.290 mW/g



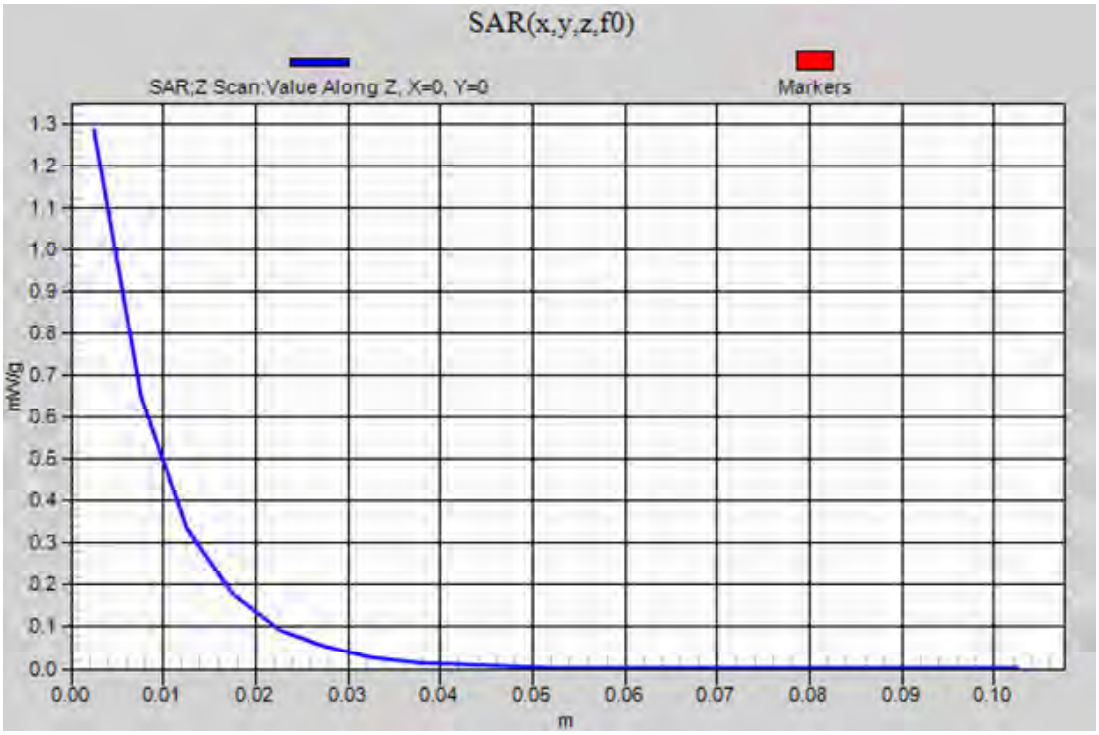
0 dB = 1.290mW/g = 2.21 dB mW/g

Test Laboratory: UL CCS SAR Lab B Date: 7/27/2012

GSM1900 (Secondary Antenna)

Frequency: 1909.8 MHz; Duty Cycle: 1:8.00018

RHS/Touch_Ch 810/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Maximum value of SAR (measured) = 1.284 mW/g



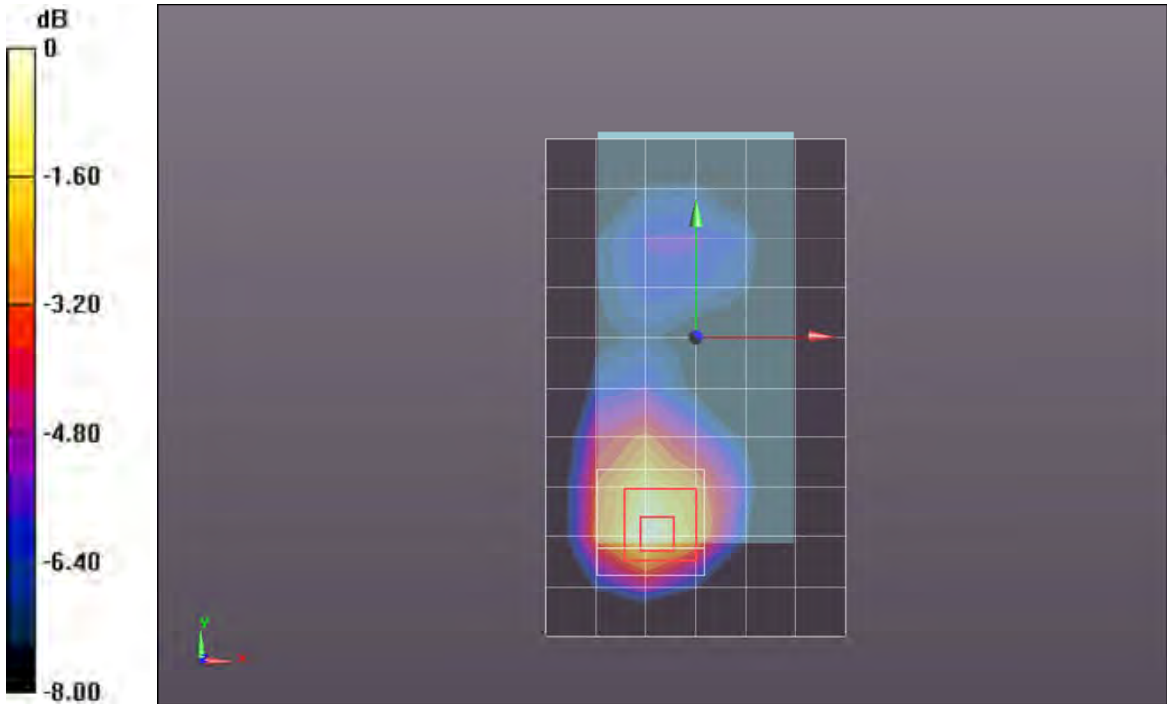
Test Laboratory: UL CCS SAR Lab B Date: 7/27/2012

GSM1900 (Primary Antenna)

Frequency: 1909.8 MHz; Duty Cycle: 1:8.00018; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used: f = 1910 MHz; σ = 1.563 mho/m; ε_r = 51.571; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1259; Calibrated: 2/13/2012
- Probe: EX3DV4 - SN3686; ConvF(7.04, 7.04, 7.04); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (A); Type: QDOVA001BB; Serial: 1120

Rear/Voice_ch 810 w/Headset/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.163 mW/g

Rear/Voice_ch 810 w/Headset/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 27.772 V/m; Power Drift = -0.009 dB
Peak SAR (extrapolated) = 1.6480
SAR(1 g) = 0.864 mW/g; SAR(10 g) = 0.461 mW/g
Maximum value of SAR (measured) = 1.127 mW/g



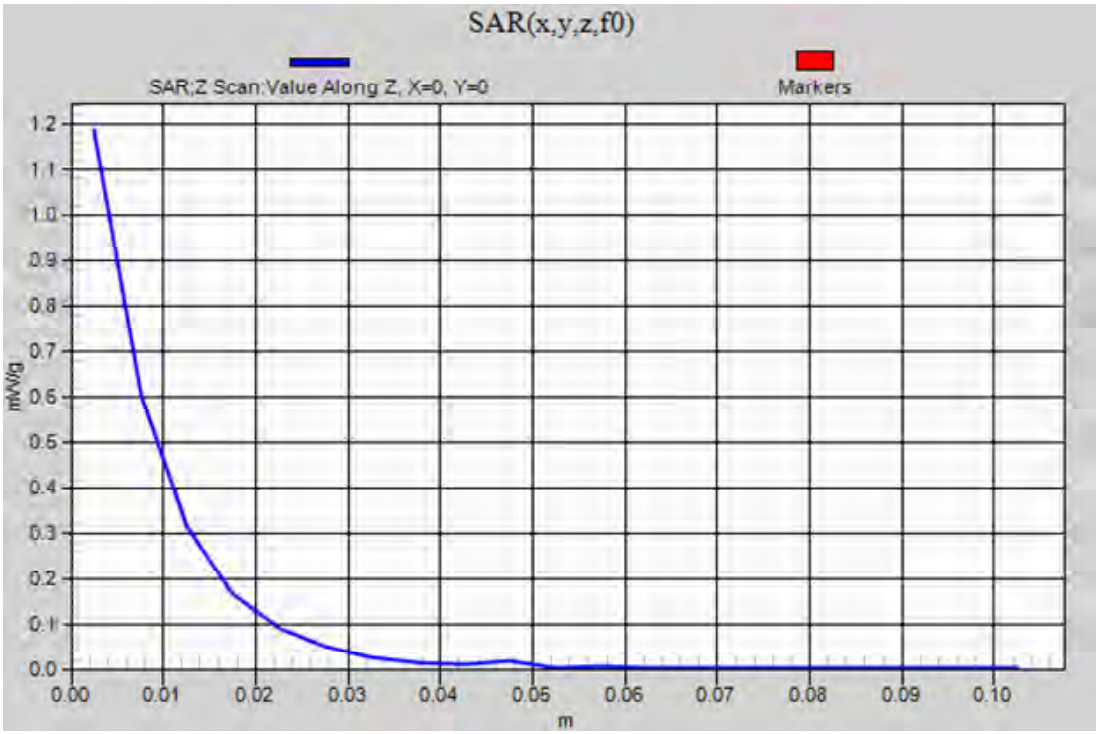
0 dB = 1.130mW/g = 1.06 dB mW/g

Test Laboratory: UL CCS SAR Lab A Date: 7/27/2012

GSM1900 (Primary Antenna)

Frequency: 1909.8 MHz; Duty Cycle: 1:8.00018

Rear/Voice_ch 810 w/Headset/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Maximum value of SAR (measured) = 1.186 mW/g



Test Laboratory: UL CCS SAR Lab B Date: 7/26/2012

GSM1900 (Primary Antenna)

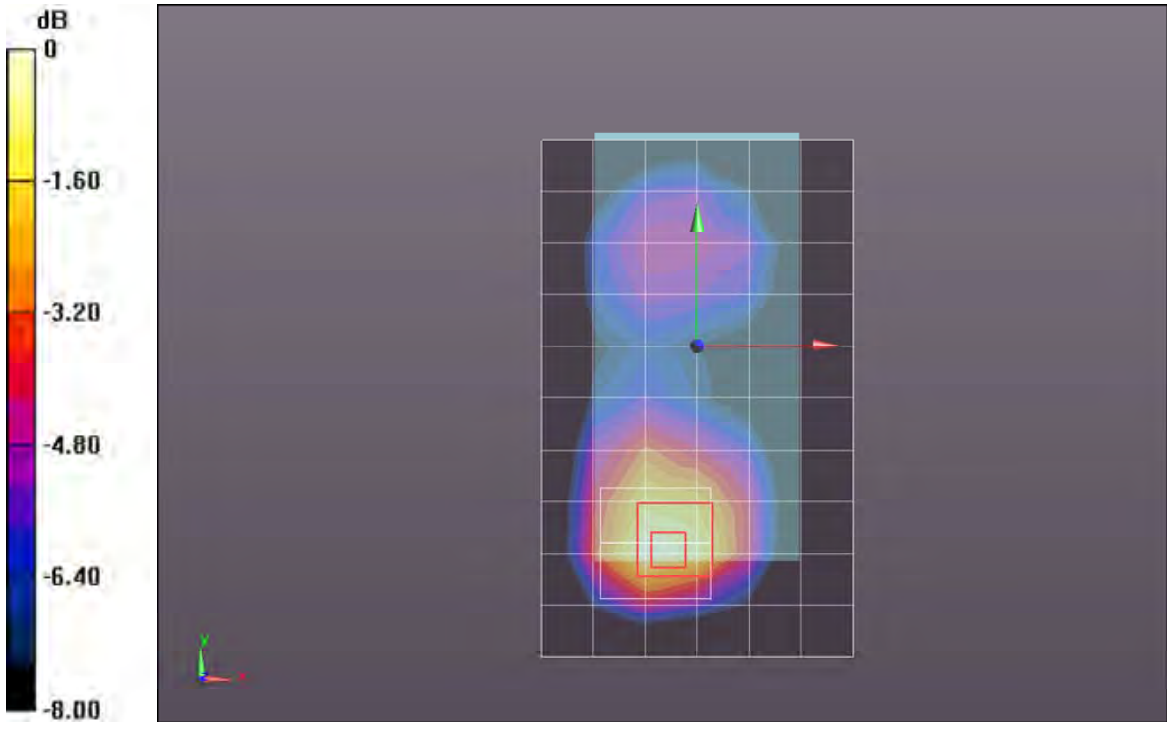
Frequency: 1850.2 MHz; Duty Cycle: 1:4.00037; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.491 mho/m; ε_r = 51.805; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1259; Calibrated: 2/13/2012
- Probe: EX3DV4 - SN3686; ConvF(7.04, 7.04, 7.04); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (A); Type: QDOVA001BB; Serial: 1120

Rear/GPRS 2 slots_ch 512/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.457 mW/g

Rear/GPRS 2 slots_ch 512/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 31.786 V/m; Power Drift = -0.19 dB
Peak SAR (extrapolated) = 1.9930
SAR(1 g) = 1.13 mW/g; SAR(10 g) = 0.645 mW/g
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.446 mW/g



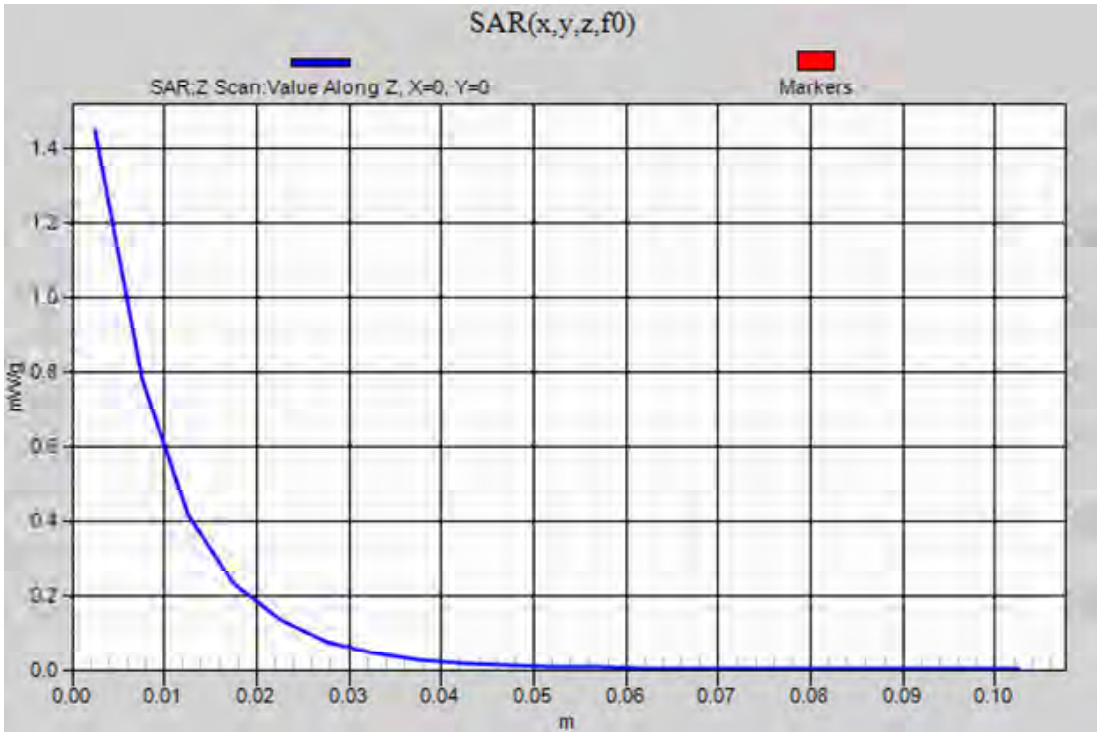
0 dB = 1.450mW/g = 3.23 dB mW/g

Test Laboratory: UL CCS SAR Lab B Date: 7/26/2012

GSM1900 (Primary Antenna)

Frequency: 1850.2 MHz; Duty Cycle: 1:4.00037

Rear/GPRS 2 slots_ch 512 /Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.446 mW/g



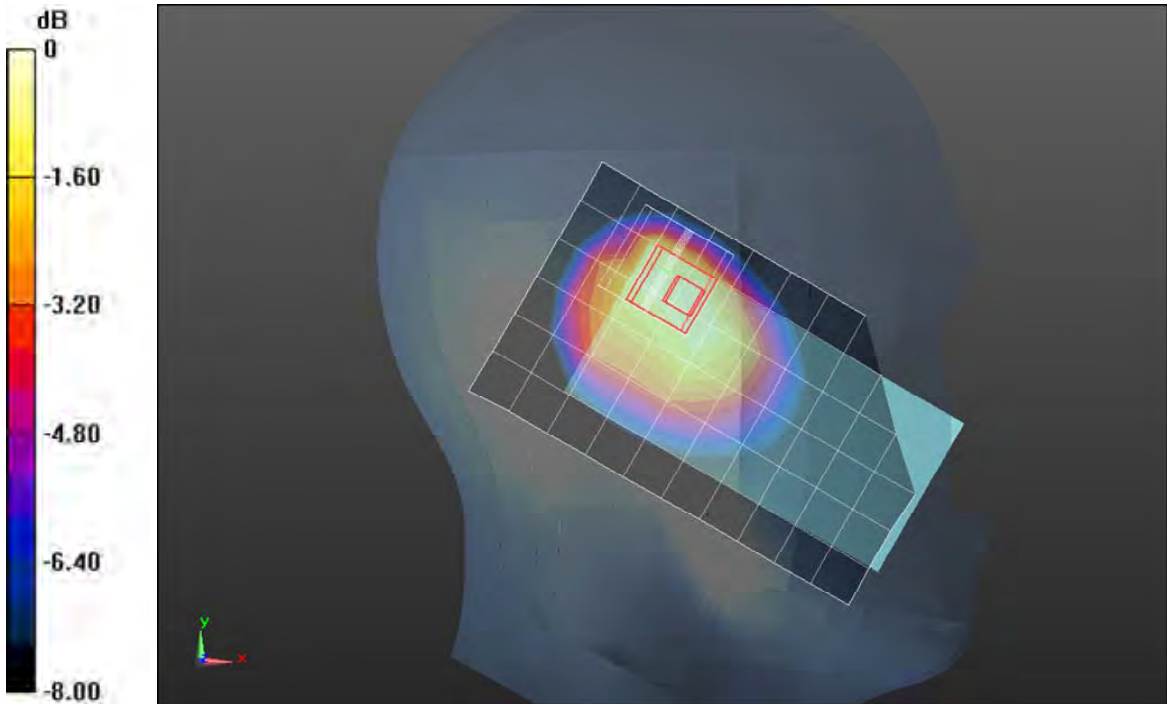
Test Laboratory: UL CCS SAR Lab B Date: 7/30/2012

W-CDMA Band V (Secondary Antenna)

Frequency: 826.4 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.89 mho/m; ε_r = 43.143; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1259; Calibrated: 2/13/2012
- Probe: EX3DV4 - SN3686; ConvF(8.61, 8.61, 8.61); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: SAM; Type: QD000P40CD; Serial: 1629

LHS/Touch_R99_ch 4132/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.895 mW/g

LHS/Touch_R99_ch 4132/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 32.197 V/m; Power Drift = -0.0061 dB
Peak SAR (extrapolated) = 1.3950
SAR(1 g) = 0.796 mW/g; SAR(10 g) = 0.510 mW/g
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.013 mW/g



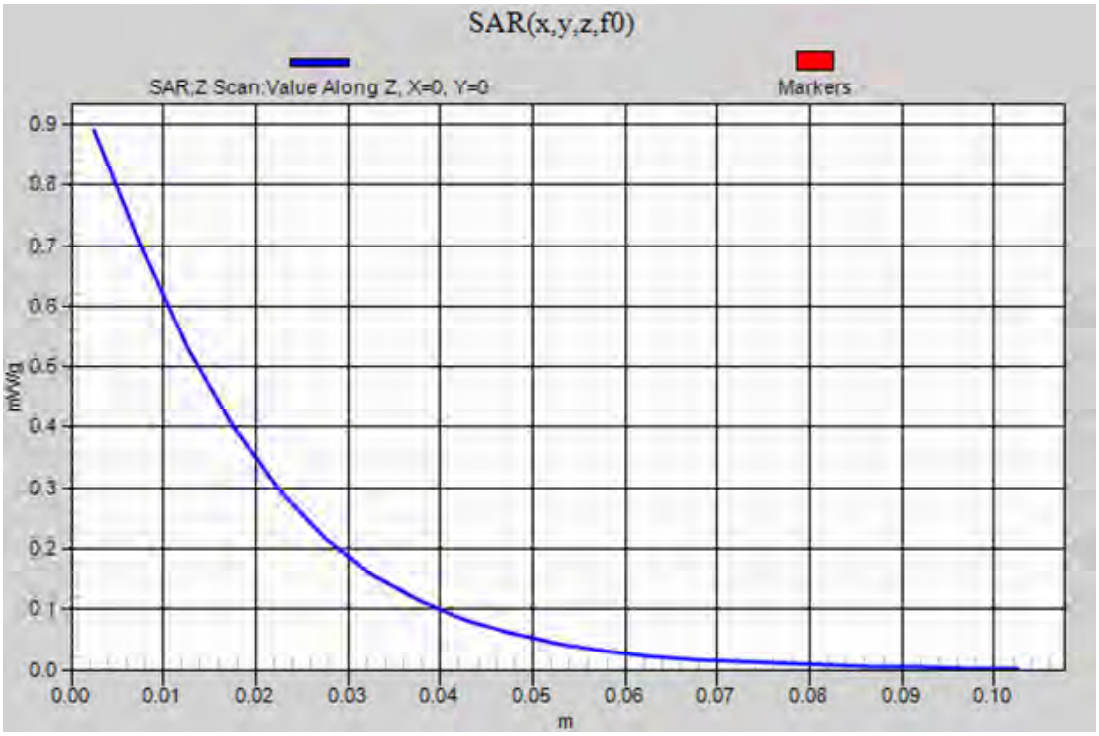
0 dB = 1.010mW/g = 0.09 dB mW/g

Test Laboratory: UL CCS SAR Lab B Date: 7/30/2012

W-CDMA Band V (Secondary Antenna)

Frequency: 826.4 MHz; Duty Cycle: 1:1

LHS/Touch_R99_ch 4132/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.890 mW/g



Test Laboratory: UL CCS SAR Lab B Date: 7/28/2012

W-CDMA Band V (Primary Antenna)

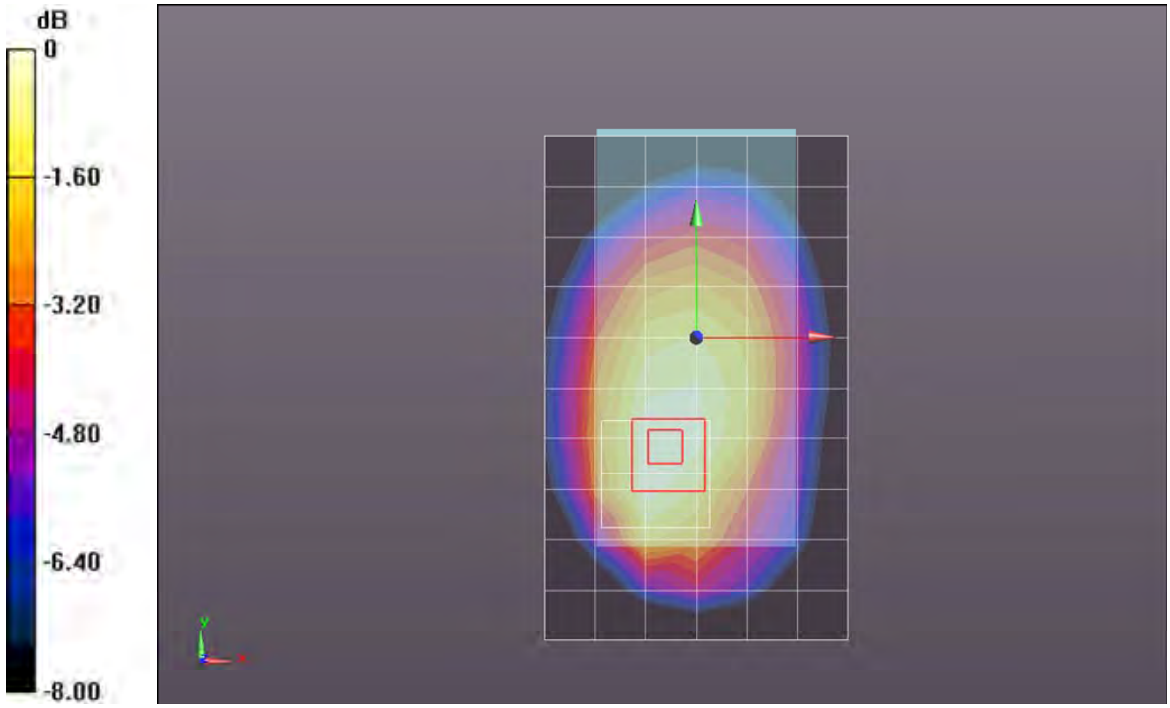
Frequency: 846.6 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used (interpolated): f = 846.6 MHz; σ = 0.974 mho/m; ε_r = 52.449; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1259; Calibrated: 2/13/2012
- Probe: EX3DV4 - SN3686; ConvF(8.73, 8.73, 8.73); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (B); Type: QDOVA001BB; Serial: 1118

Rear/R99_ch 4233/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.931 mW/g

Rear/R99_ch 4233/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 31.367 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 1.1290
SAR(1 g) = 0.837 mW/g; SAR(10 g) = 0.591 mW/g
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.962 mW/g



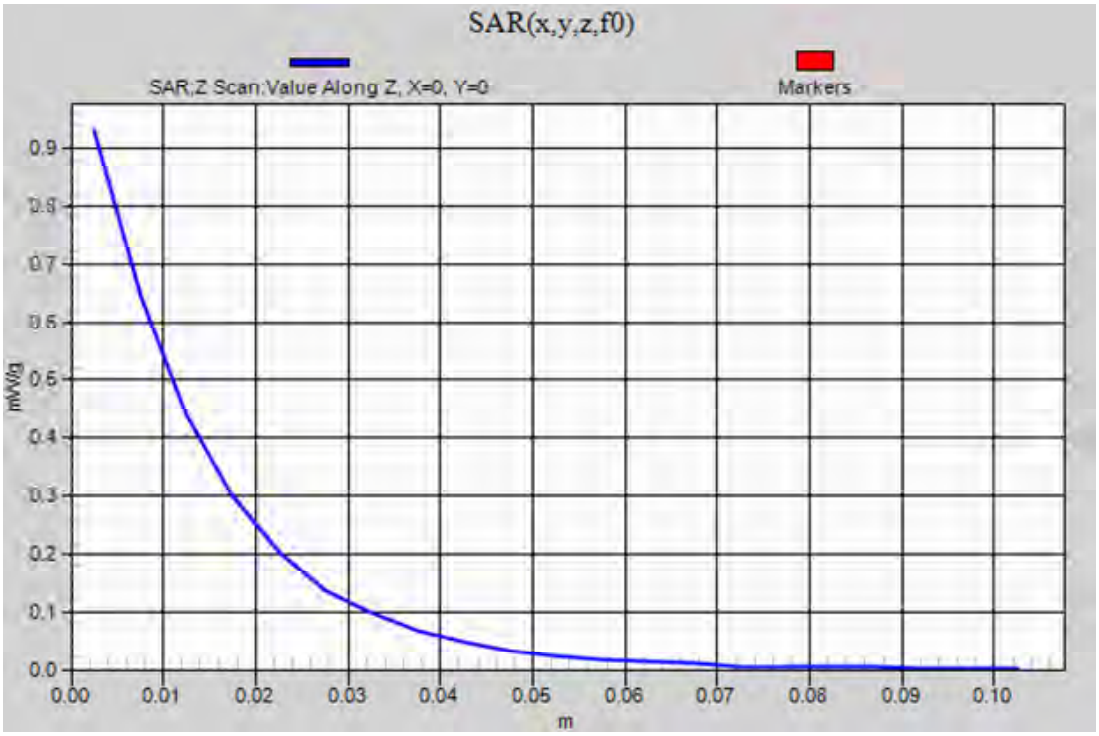
0 dB = 0.960mW/g = -0.35 dB mW/g

Test Laboratory: UL CCS SAR Lab A Date: 7/28/2012

W-CDMA Band V (Primary Antenna)

Frequency: 846.6 MHz; Duty Cycle: 1:1

Rear/R99_ch 4233/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.931 mW/g



Test Laboratory: UL CCS SAR Lab B Date: 7/27/2012

W-CDMA Band II (Primary Antenna)

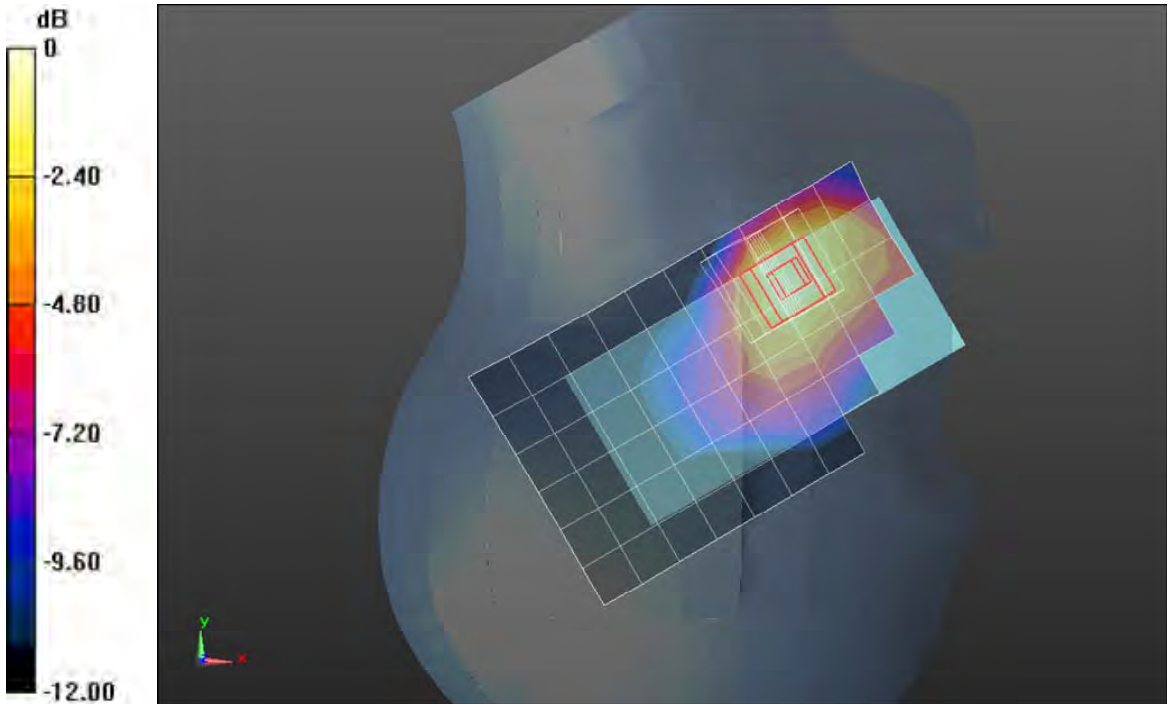
Frequency: 1852.4 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.347 mho/m; ε_r = 38.645; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1259; Calibrated: 2/13/2012
- Probe: EX3DV4 - SN3686; ConvF(7.51, 7.51, 7.51); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: SAM; Type: QD000P40CD; Serial: 1629

RHS/Touch_R99_ch 9262/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.160 mW/g

RHS/Touch_R99_ch 9262/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 29.483 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 1.7260
SAR(1 g) = 1.13 mW/g; SAR(10 g) = 0.692 mW/g
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.381 mW/g



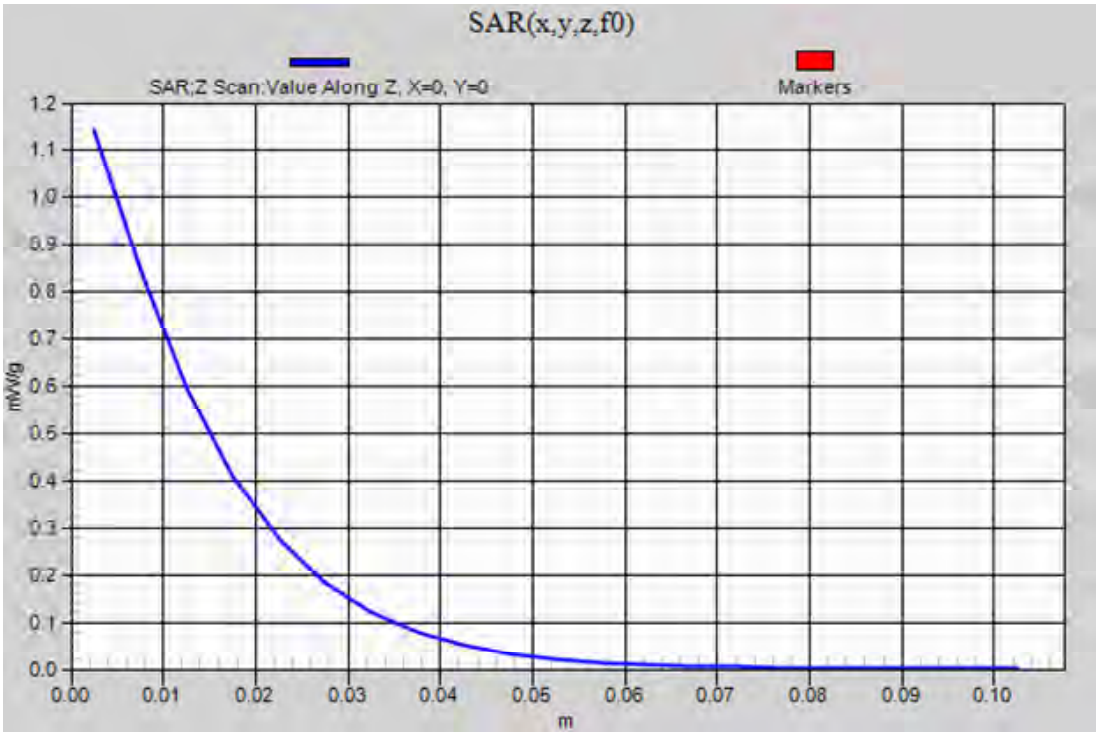
0 dB = 1.380mW/g = 2.80 dB mW/g

Test Laboratory: UL CCS SAR Lab B Date: 7/27/2012

W-CDMA Band II (Primary Antenna)

Frequency: 1852.4 MHz; Duty Cycle: 1:1

RHS/Touch_R99_ch 9262/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.140 mW/g



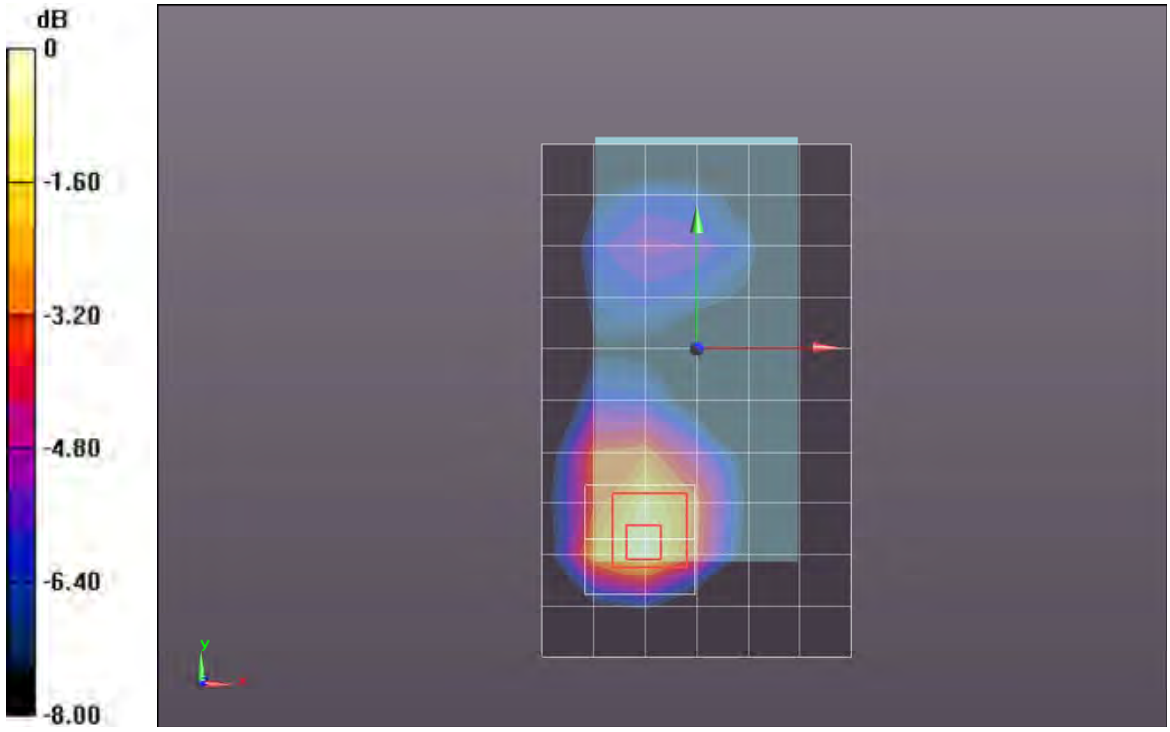
Test Laboratory: UL CCS SAR Lab B Date: 7/26/2012

W-CDMA Band II (Primary Antenna)

Frequency: 1880 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used: f = 1880 MHz; σ = 1.503 mho/m; ε_r = 51.833; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1259; Calibrated: 2/13/2012
- Probe: EX3DV4 - SN3686; ConvF(7.04, 7.04, 7.04); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (A); Type: QDOVA001BB; Serial: 1120

Rear/R99_Ch 9400 w/Headset/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.509 mW/g

Rear/R99_Ch 9400 w/Headset/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 31.917 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 2.1940
SAR(1 g) = 1.18 mW/g; SAR(10 g) = 0.644 mW/g
Maximum value of SAR (measured) = 1.610 mW/g



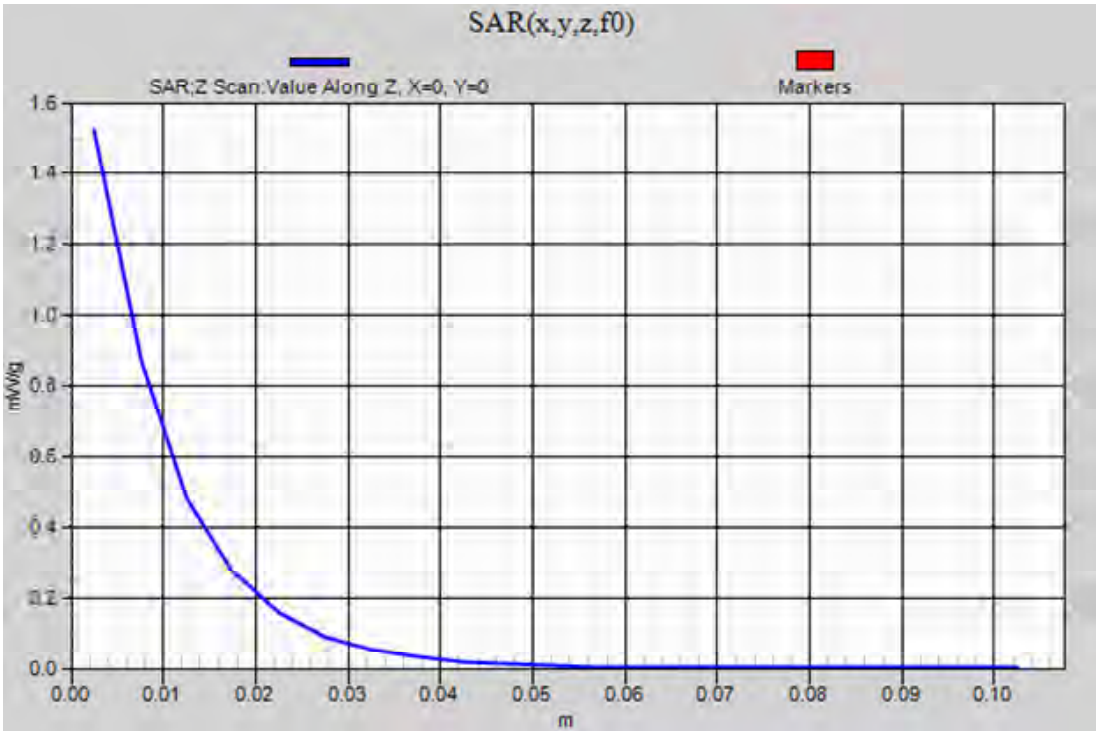
0 dB = 1.610mW/g = 4.14 dB mW/g

Test Laboratory: UL CCS SAR Lab B Date: 7/26/2012

W-CDMA Band II (Primary Antenna)

Frequency: 1880 MHz; Duty Cycle: 1:1

Rear/R99_Ch 9400 w/Headset/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Maximum value of SAR (measured) = 1.523 mW/g



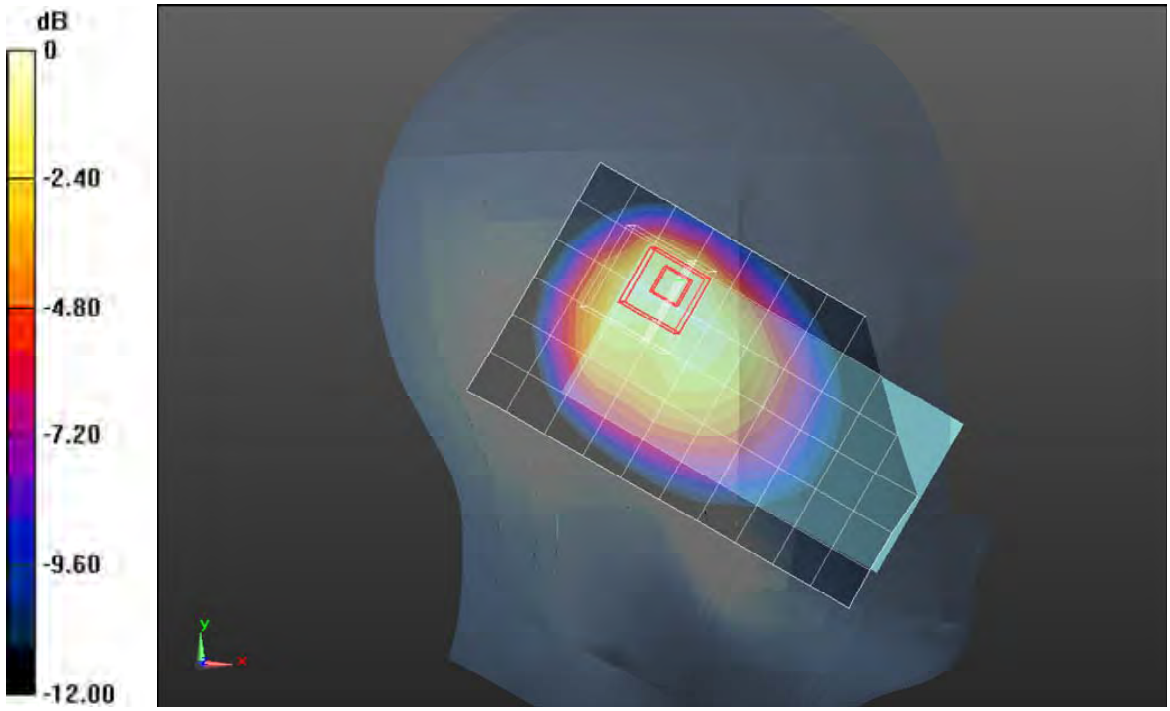
Test Laboratory: UL CCS SAR Lab C Date: 7/12/2012

CDMA BC0 (Secondary Antenna)

Frequency: 848.31 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used (interpolated): f = 848.31 MHz; σ = 0.908 mho/m; ε_r = 41.547; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1239; Calibrated: 6/6/2012
- Probe: EX3DV4 - SN3751; ConvF(8.35, 8.35, 8.35); Calibrated: 12/19/2011
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: SAM; Type: QD000P40CD; Serial: 1632

LHS/Touch_RC3 SO55_ch 777/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.158 mW/g

LHS/Touch_RC3 SO55_ch 777/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 36.303 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.7440
SAR(1 g) = 0.972 mW/g; SAR(10 g) = 0.588 mW/g
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.246 mW/g



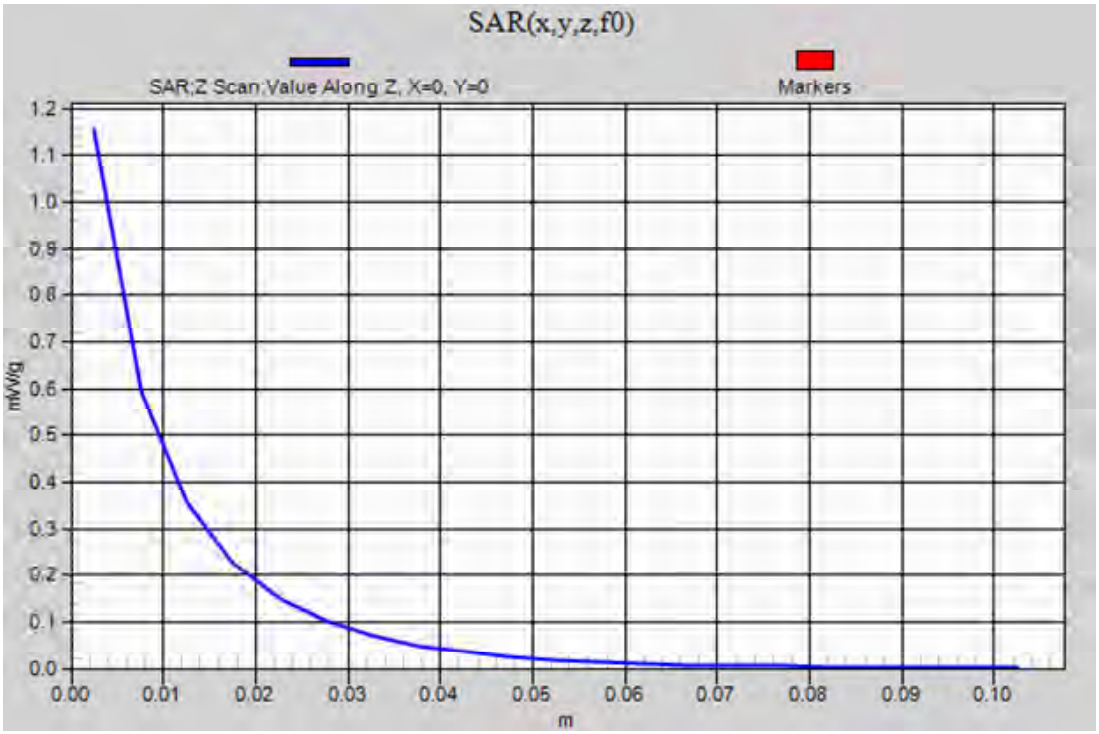
0 dB = 1.250mW/g = 1.94 dB mW/g

Test Laboratory: UL CCS SAR Lab A Date: 7/12/2012

CDMA BC0 (Secondary Antenna)

Frequency: 848.31 MHz; Duty Cycle: 1:1

LHS/Touch_RC3 SO55_ch 777/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.154 mW/g



Test Laboratory: UL CCS SAR Lab C Date: 7/7/2012

CDMA BC0 (Primary Antenna)

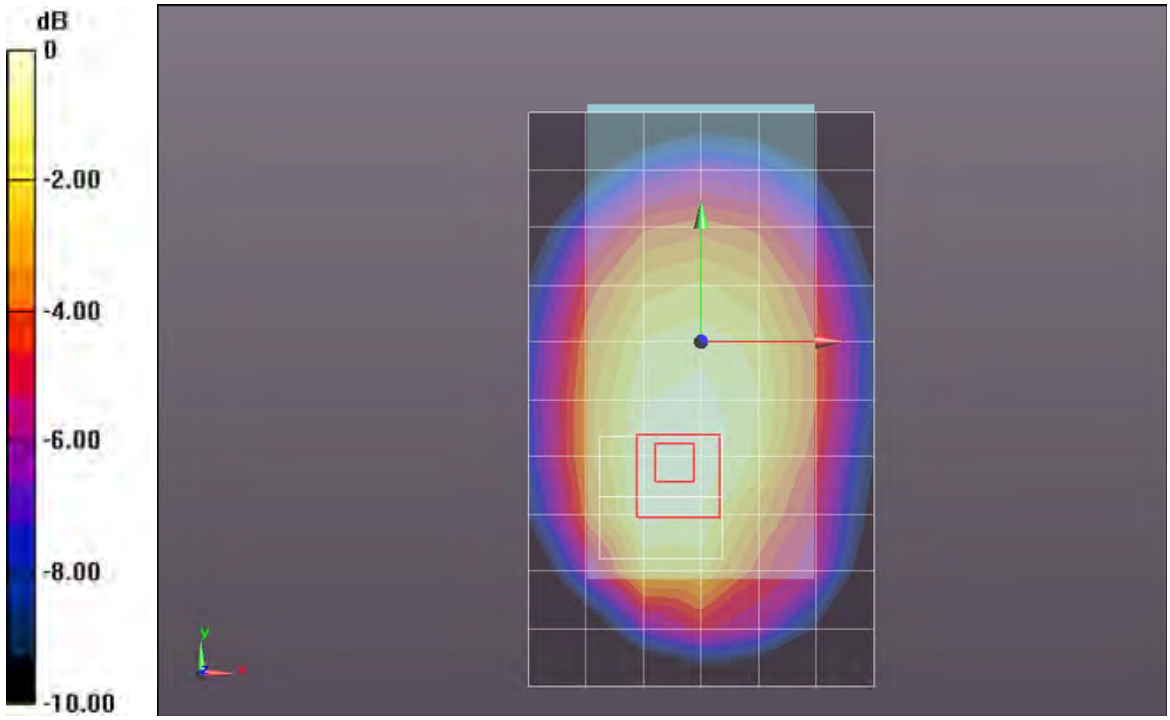
Frequency: 848.31 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used (interpolated): f = 848.31 MHz; σ = 0.987 mho/m; ε_r = 53.782; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1239; Calibrated: 6/6/2012
- Probe: EX3DV4 - SN3751; ConvF(8.64, 8.64, 8.64); Calibrated: 12/19/2011;
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (A); Type: QDOVA001BB; Serial: 1120

Rear/1xRTT_RC3_SO32_ch 777/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.08 mW/g

Rear/1xRTT_RC3_SO32_ch 777/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 33.463 V/m; Power Drift = -0.00 dB
Peak SAR (extrapolated) = 1.318 mW/g
SAR(1 g) = 0.982 mW/g; SAR(10 g) = 0.699 mW/g
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.12 mW/g



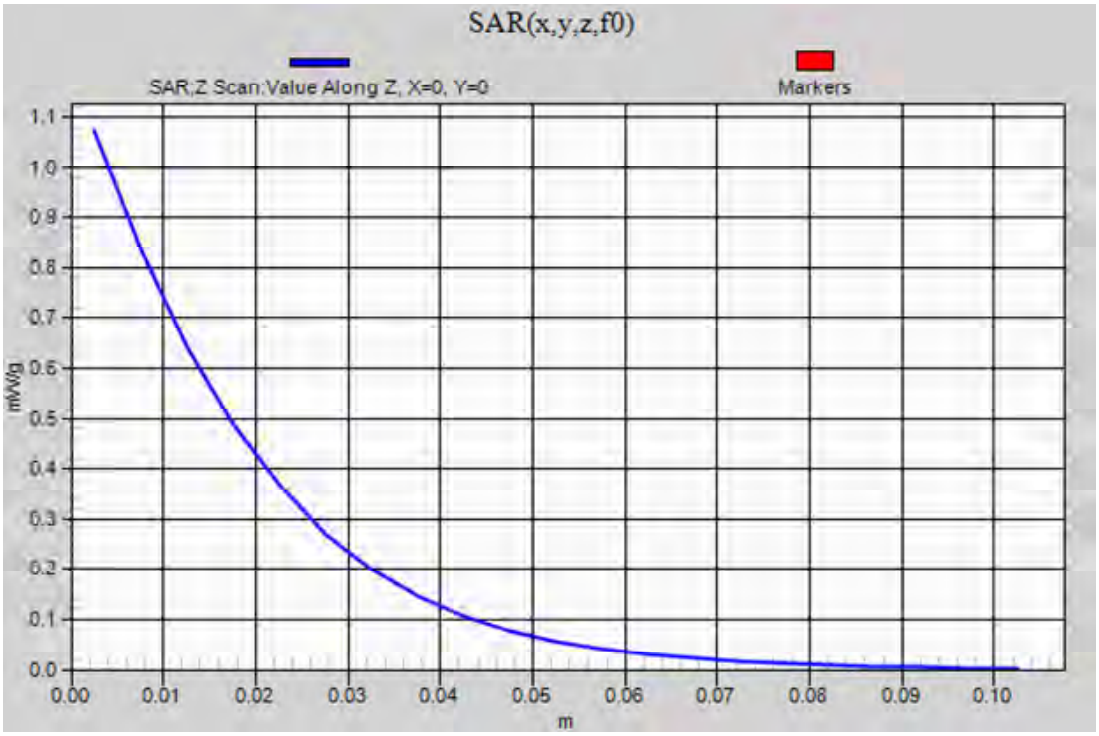
0 dB = 1.12 mW/g = 0.98 dB mW/g

Test Laboratory: UL CCS SAR Lab C Date: 7/7/2012

CDMA BC0 (Primary Antenna)

Frequency: 848.31 MHz; Duty Cycle: 1:1

Rear/1xRTT_RC3_SO32_ch 777/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.07 mW/g



Test Laboratory: UL CCS SAR Lab C Date: 7/13/2012

CDMA BC0 (Primary Antenna)

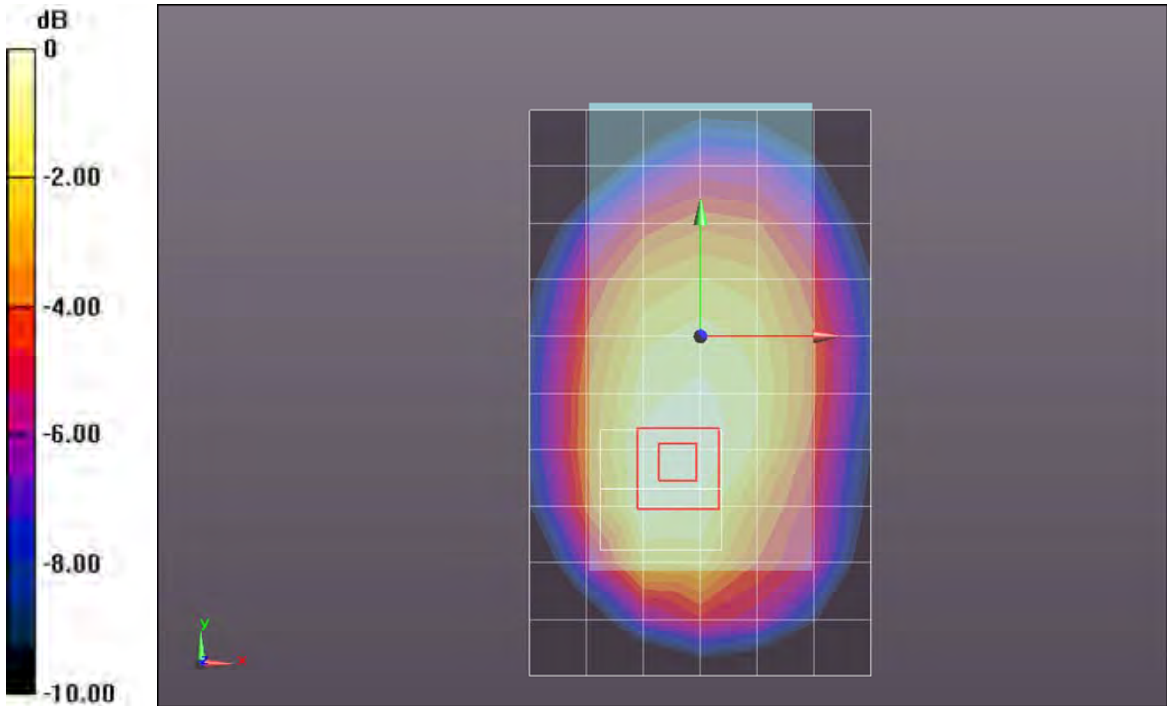
Frequency: 848.31 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used (interpolated): f = 848.31 MHz; σ = 0.997 mho/m; ε_r = 53.351; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1239; Calibrated: 6/6/2012
- Probe: EX3DV4 - SN3751; ConvF(8.64, 8.64, 8.64); Calibrated: 12/19/2011
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (A); Type: QDOVA001BB; Serial: 1120

Rear/1xEVDO Rel.0_ch 777/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.041 mW/g

Rear/1xEVDO Rel.0_ch 777/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 32.771 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 1.2830
SAR(1 g) = 0.942 mW/g; SAR(10 g) = 0.667 mW/g
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.082 mW/g



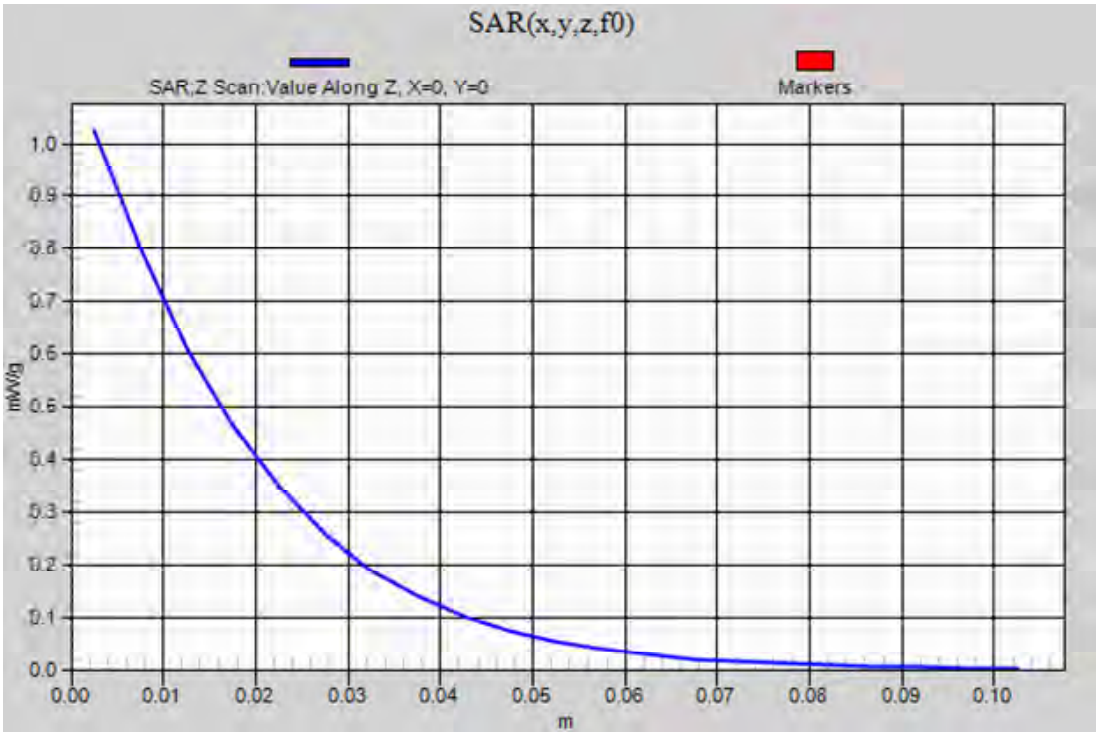
0 dB = 1.080mW/g = 0.67 dB mW/g

Test Laboratory: UL CCS SAR Lab C Date: 7/13/2012

CDMA BC0 (Primary Antenna)

Frequency: 848.31 MHz; Duty Cycle: 1:1

Rear/1xEVDO Rel.0_ch 777/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.025 mW/g



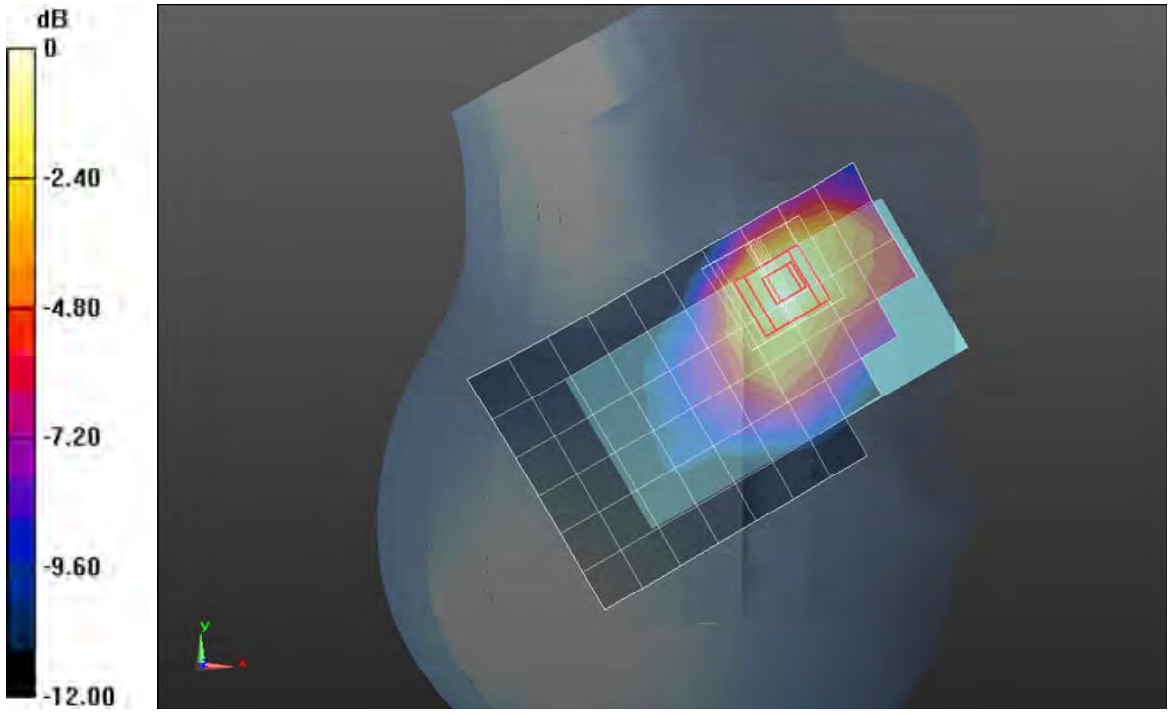
Test Laboratory: UL CCS SAR Lab B Date: 7/2/2012

CDMA BC1 (Primary Antenna)

Frequency: 1880 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used: f = 1880 MHz; σ = 1.382 mho/m; ε_r = 39.345; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1259; Calibrated: 2/13/2012
- Probe: EX3DV4 - SN3686; ConvF(7.51, 7.51, 7.51); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: SAM; Type: QD000P40CD; Serial: 1629

RHS/Touch_RC3 SO55_ch 600/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.283 mW/g

RHS/Touch_RC3 SO55_ch 600/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 30.619 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 1.8010
SAR(1 g) = 1.18 mW/g; SAR(10 g) = 0.723 mW/g
Maximum value of SAR (measured) = 1.444 mW/g



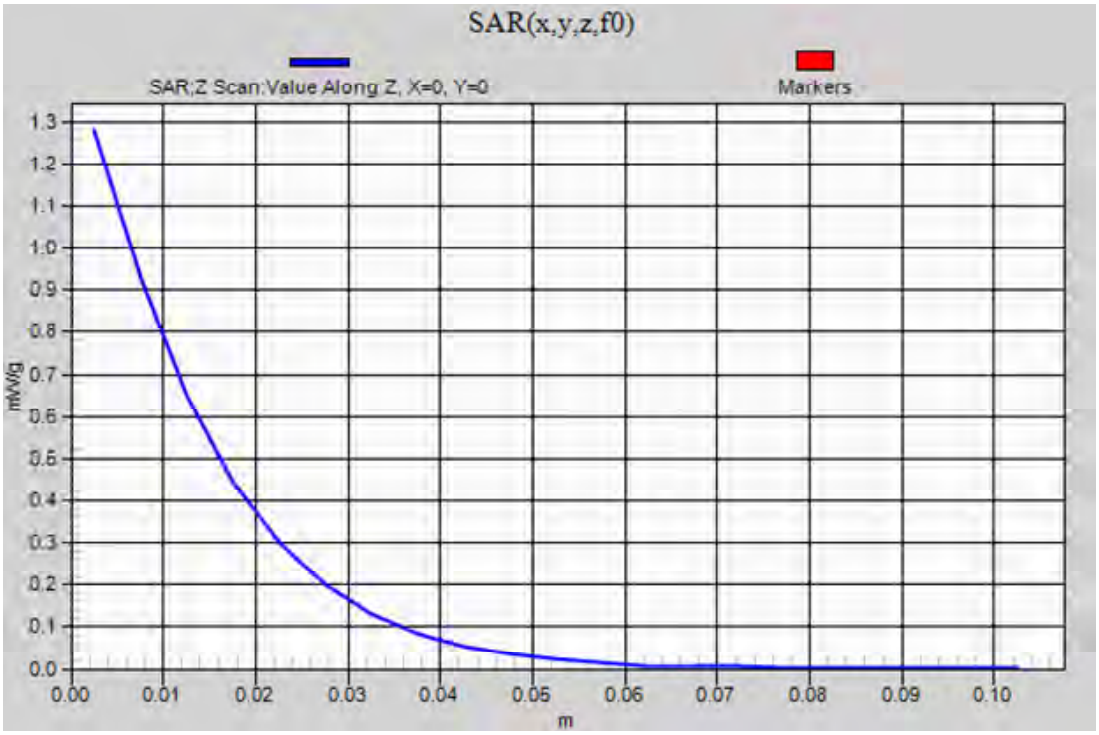
0 dB = 1.440mW/g = 3.17 dB mW/g

Test Laboratory: UL CCS SAR Lab B Date: 7/2/2012

CDMA BC1 (Primary Antenna)

Frequency: 1880 MHz; Duty Cycle: 1:1

RHS/Touch_RC3 SO55_ch 600/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Maximum value of SAR (measured) = 1.28 mW/g



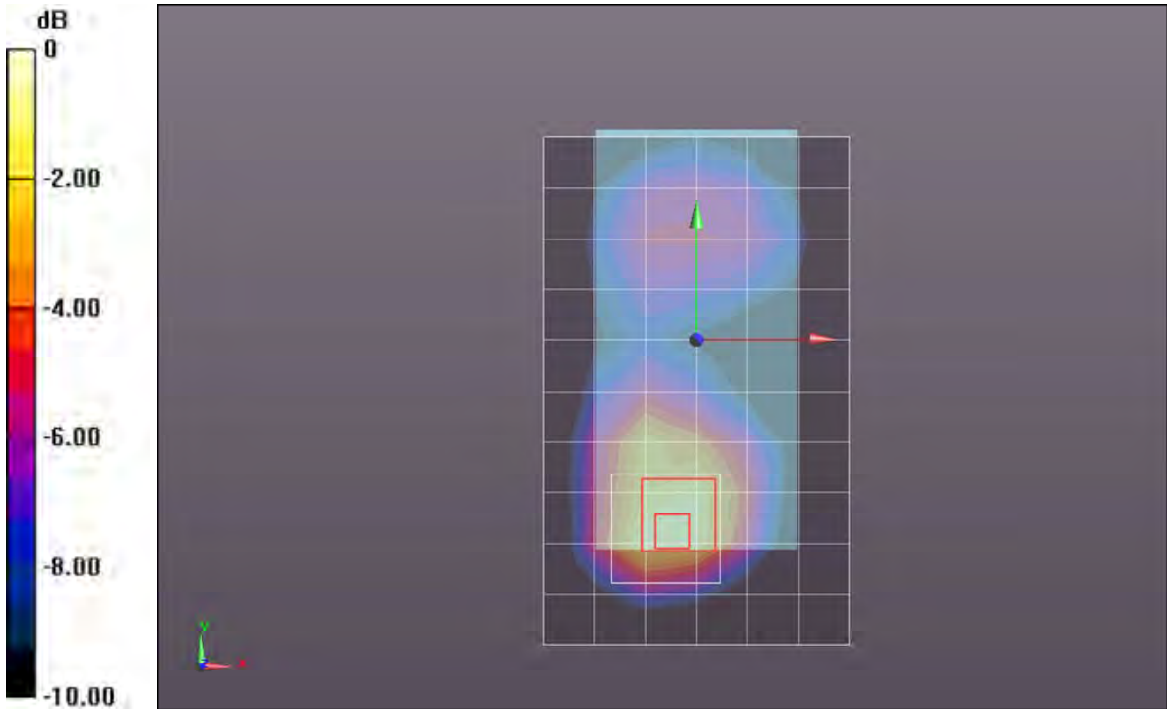
Test Laboratory: UL CCS SAR Lab B Date: 7/5/2012

CDMA BC1 (Primary Antenna)

Frequency: 1880 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used: f = 1880 MHz; σ = 1.505 mho/m; ε_r = 52.273; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1259; Calibrated: 2/13/2012
- Probe: EX3DV4 - SN3686; ConvF(7.04, 7.04, 7.04); Calibrated: 2/16/2012;
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (A); Type: QDOVA001BB; Serial: 1120

Rear/1xRTT_RC3_SO32_ch 600 w/headset/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.37 mW/g

Rear/1xRTT_RC3_SO32_ch 600 w/headset/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 30.920 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 2.187 mW/g
SAR(1 g) = 1.18 mW/g; SAR(10 g) = 0.646 mW/g
Maximum value of SAR (measured) = 1.59 mW/g



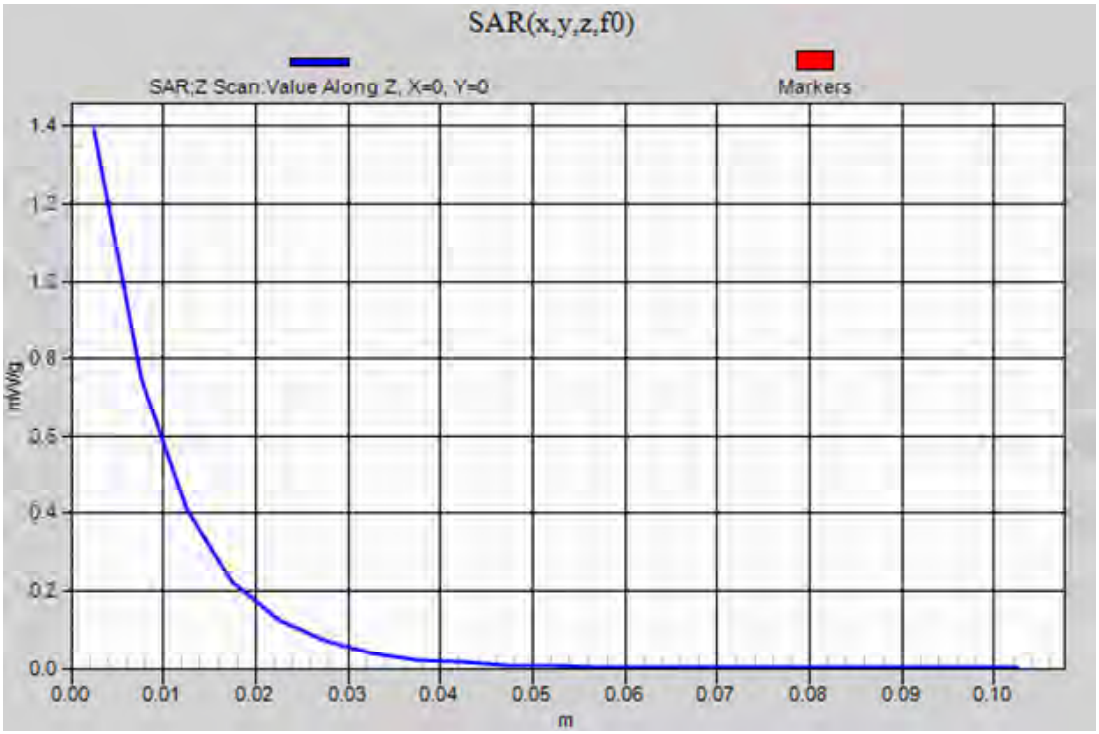
0 dB = 1.59 mW/g = 4.03 dB mW/g

Test Laboratory: UL CCS SAR Lab B Date: 7/5/2012

CDMA BC1 (Primary Antenna)

Frequency: 1880 MHz; Duty Cycle: 1:1

Rear/1xRTT_RC3_SO32_ch 600 w/headset/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Maximum value of SAR (measured) = 1.39 mW/g



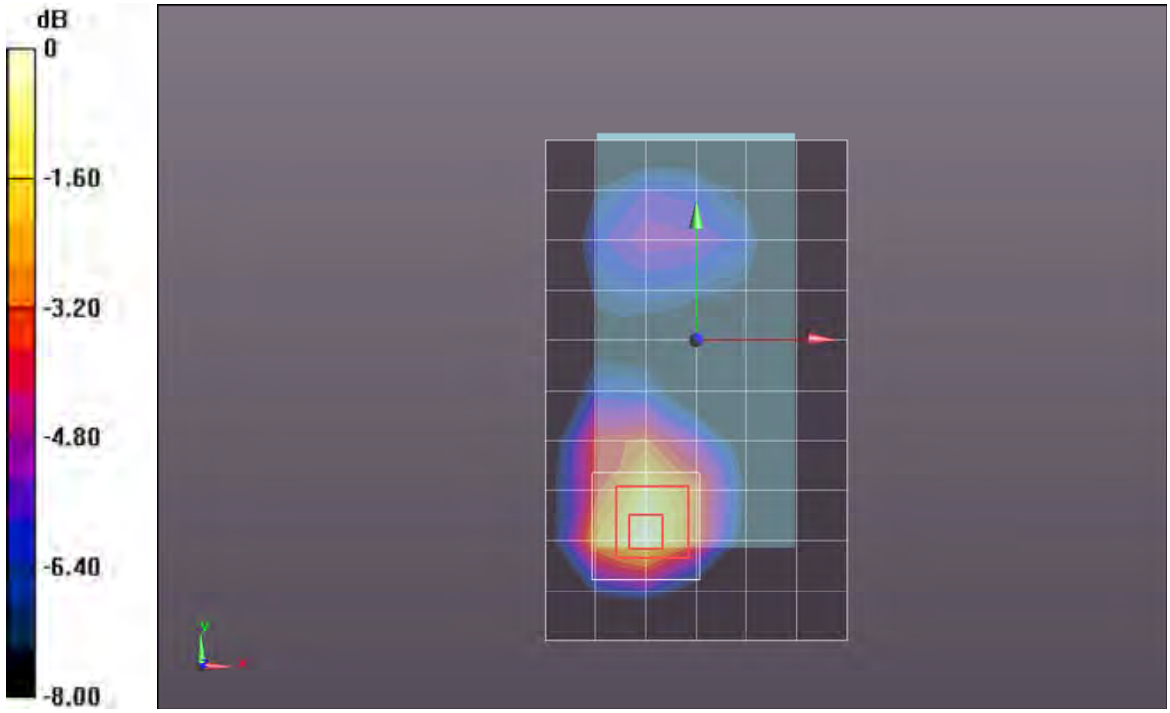
Test Laboratory: UL CCS SAR Lab B Date: 7/6/2012

CDMA BC1(Primary Antenna)

Frequency: 1880 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used: f = 1880 MHz; σ = 1.521 mho/m; ε_r = 51.862; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1259; Calibrated: 2/13/2012
- Probe: EX3DV4 - SN3686; ConvF(7.04, 7.04, 7.04); Calibrated: 2/16/2012;
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (A); Type: QDOVA001BB; Serial: 1120

Rear/1xEVDO_Rel.0_ch 600 w/headset/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.47 mW/g

Rear/1xEVDO_Rel.0_ch 600 w/headset/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 31.425 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 2.038 mW/g
SAR(1 g) = 1.13 mW/g; SAR(10 g) = 0.614 mW/g
Maximum value of SAR (measured) = 1.51 mW/g



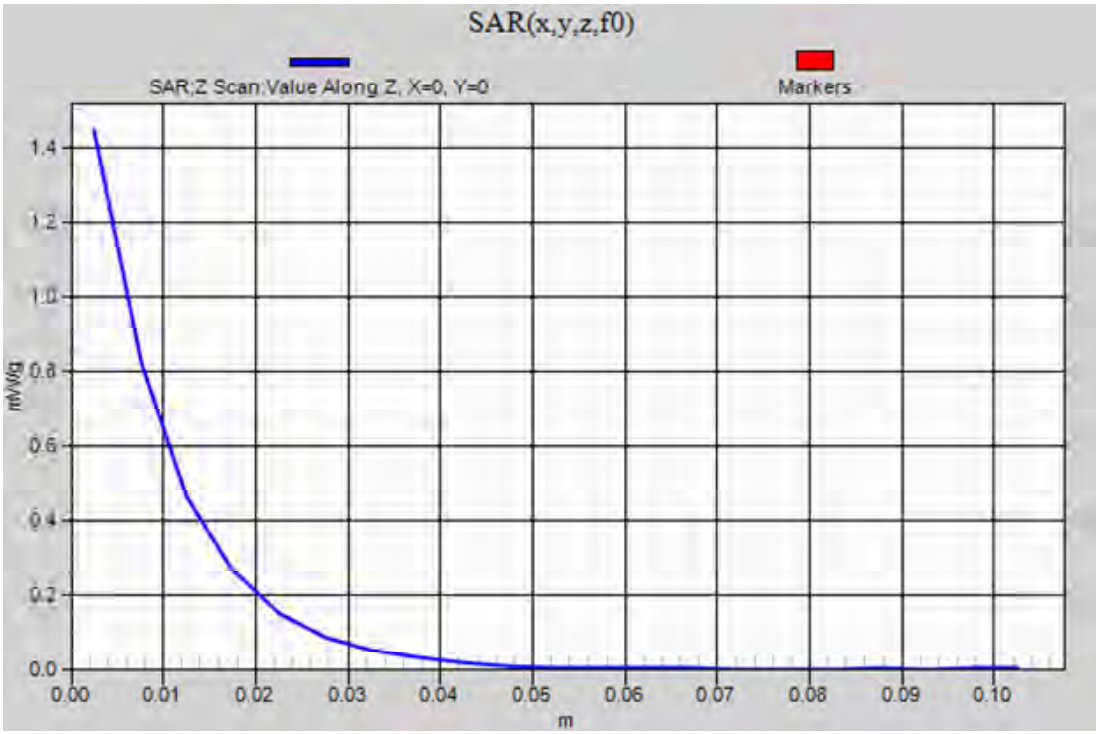
0 dB = 1.51 mW/g = 3.58 dB mW/g

Test Laboratory: UL CCS SAR Lab A Date: 7/6/2012

CDMA BC1(Primary Antenna)

Frequency: 1880 MHz; Duty Cycle: 1:1

Rear/1xEVDO_Rel.0_ch 600 w/headset/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Maximum value of SAR (measured) = 1.447 mW/g



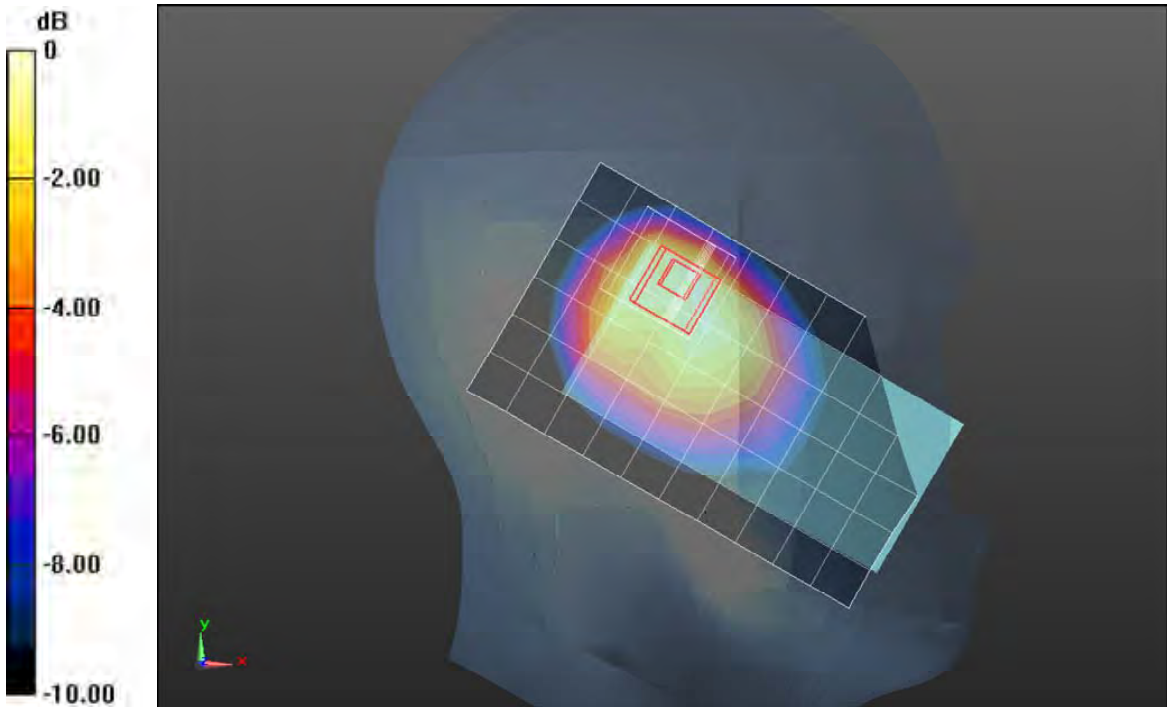
Test Laboratory: UL CCS SAR Lab C Date: 7/13/2012

CDMA BC10 (Secondary Antenna)

Frequency: 823.1 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used (interpolated): f = 823.1 MHz; σ = 0.883 mho/m; ε_r = 41.86; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1239; Calibrated: 6/6/2012
- Probe: EX3DV4 - SN3751; ConvF(8.35, 8.35, 8.35); Calibrated: 12/19/2011
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: SAM; Type: QD000P40CD; Serial: 1632

LHS/Touch_RC3 SO55_ch 684/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.046 mW/g

LHS/Touch_RC3 SO55_ch 684/Zoom Scan (7x8x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 34.649 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 1.6440
SAR(1 g) = 0.925 mW/g; SAR(10 g) = 0.646 mW/g
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.166 mW/g



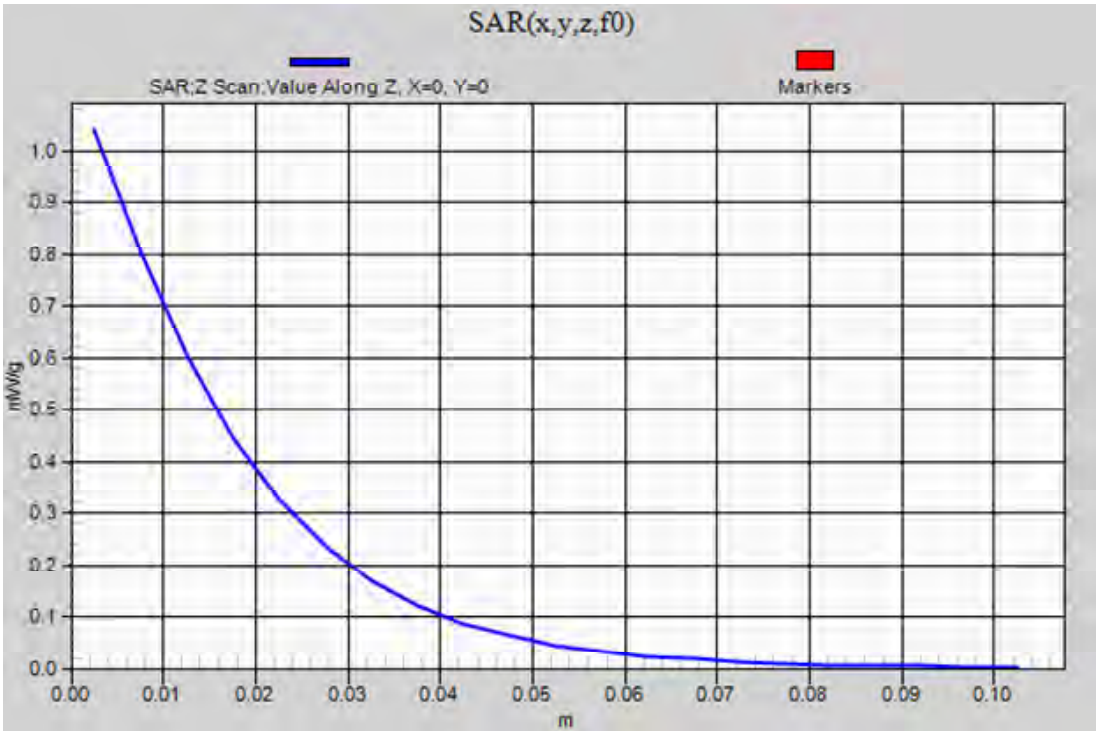
0 dB = 1.170mW/g = 1.36 dB mW/g

Test Laboratory: UL CCS SAR Lab C Date: 7/13/2012

CDMA BC10 (Secondary Antenna)

Frequency: 823.1 MHz; Duty Cycle: 1:1

LHS/Touch_RC3 SO55_ch 684/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.041 mW/g



Test Laboratory: UL CCS SAR Lab C Date: 7/9/2012

CDMA BC10 (Primary Antenna)

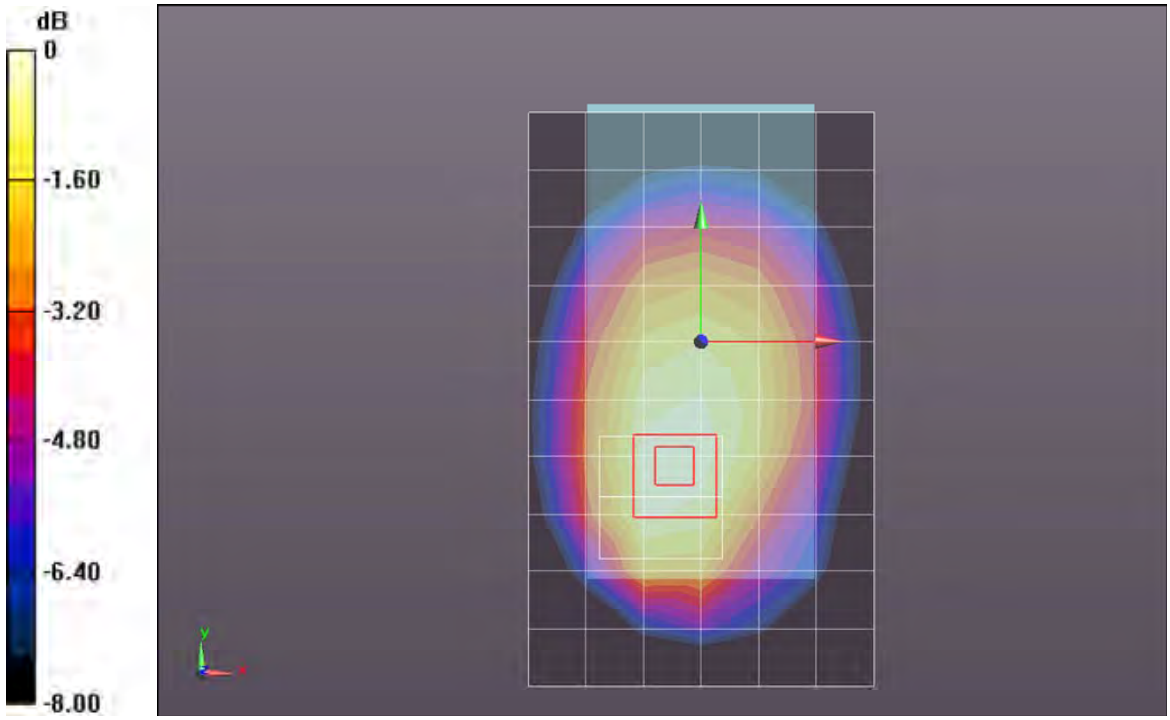
Frequency: 823.1 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used (interpolated): f = 823.1 MHz; σ = 0.978 mho/m; ε_r = 53.78; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1239; Calibrated: 6/6/2012
- Probe: EX3DV4 - SN3751; ConvF(8.64, 8.64, 8.64); Calibrated: 12/19/2011;
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (A); Type: QDOVA001BB; Serial: 1120

Rear/1xRTT_RC3_SO32_ch 684/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.949 mW/g

Rear/1xRTT_RC3_SO32_ch 684/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 31.416 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 1.160 mW/g
SAR(1 g) = 0.876 mW/g; SAR(10 g) = 0.628 mW/g
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.00 mW/g



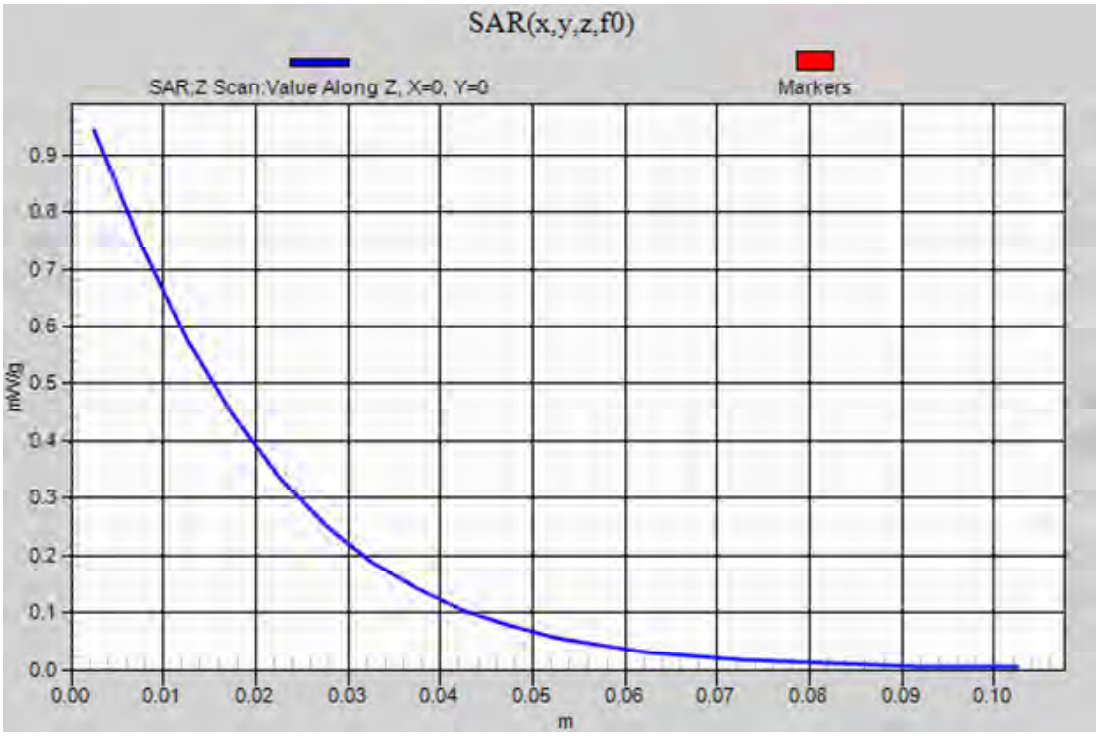
0 dB = 1.00 mW/g = 0.00 dB mW/g

Test Laboratory: UL CCS SAR Lab C Date: 7/9/2012

CDMA BC10 (Primary Antenna)

Frequency: 823.1 MHz; Duty Cycle: 1:1

Rear/1xRTT_RC3_SO32_ch 684/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.943 mW/g



Test Laboratory: UL CCS SAR Lab C Date: 7/11/2012

CDMA BC10 (Primary Antenna)

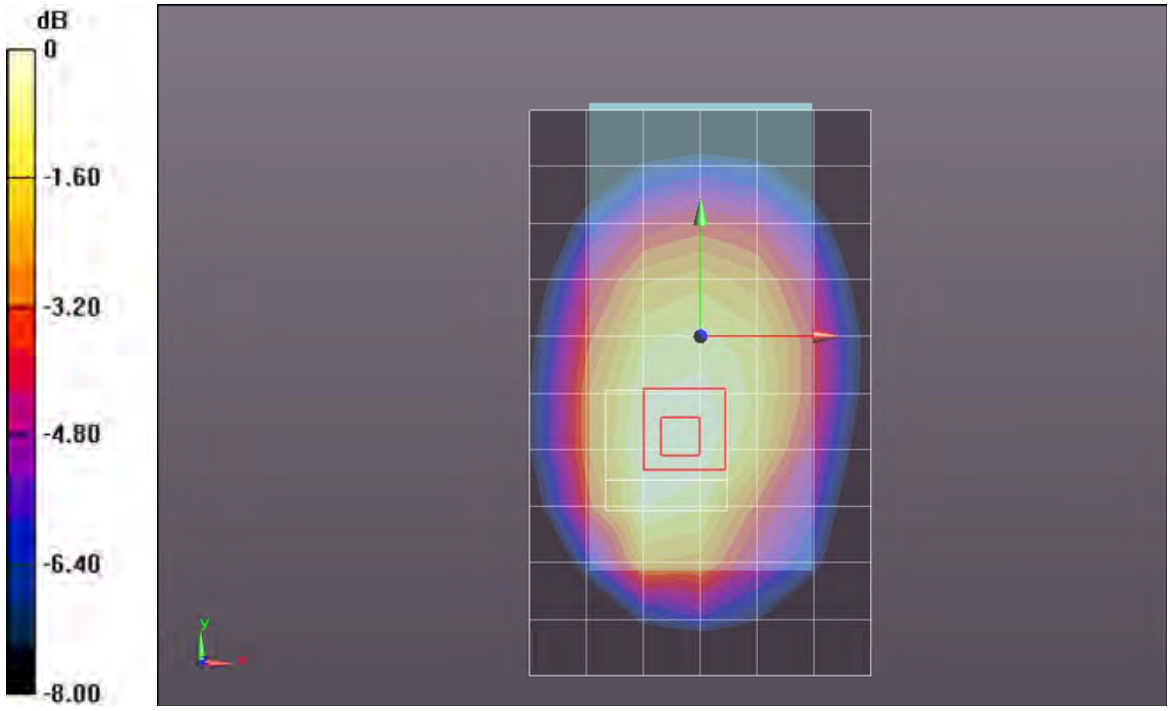
Frequency: 823.1 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used (interpolated): f = 823.1 MHz; σ = 0.98 mho/m; ε_r = 54.575; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1239; Calibrated: 6/6/2012
- Probe: EX3DV4 - SN3751; ConvF(8.64, 8.64, 8.64); Calibrated: 12/19/2011
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (A); Type: QDOVA001BB; Serial: 1120

Rear/1xEVDO Rel.0_ch 684/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.949 mW/g

Rear/1xEVDO Rel.0_ch 684/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 31.451 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.1380
SAR(1 g) = 0.867 mW/g; SAR(10 g) = 0.649 mW/g
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.991 mW/g



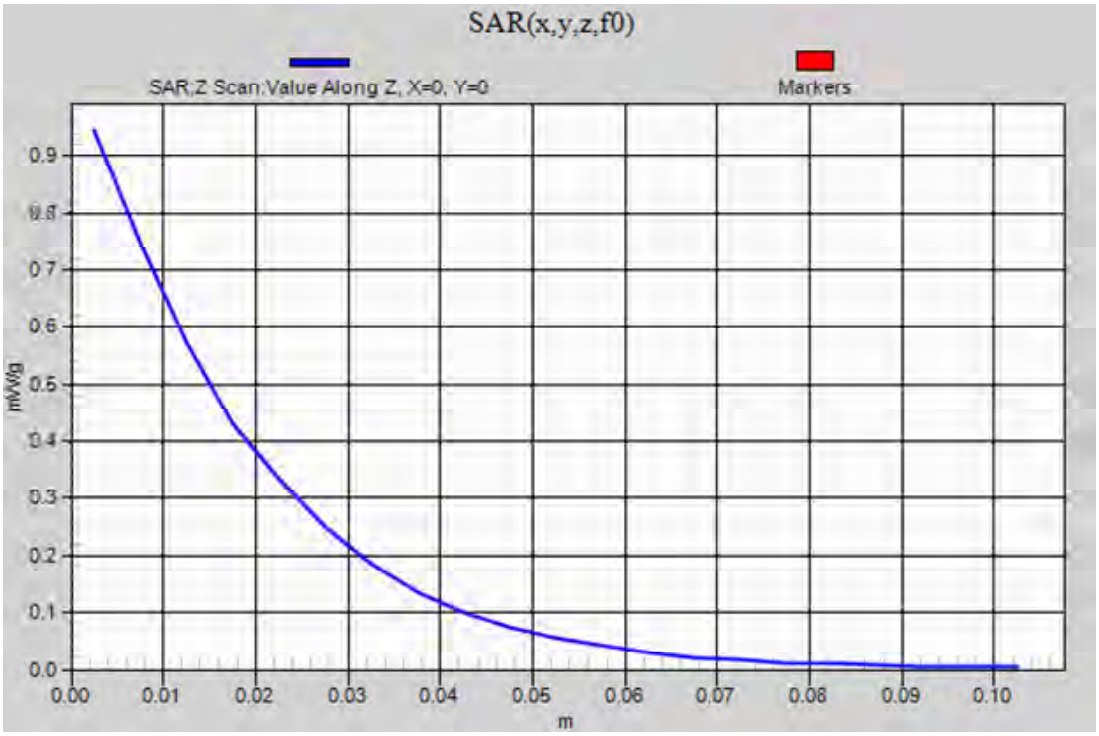
0 dB = 0.990mW/g = -0.09 dB mW/g

Test Laboratory: UL CCS SAR Lab A Date: 7/11/2012

CDMA BC10 (Primary Antenna)

Frequency: 823.1 MHz; Duty Cycle: 1:1

Rear/1xEVDO Rel.0_ch 684/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.944 mW/g



Test Laboratory: UL CCS SAR Lab B Date: 7/24/2012

LTE Band 5 (Primary Antenna)

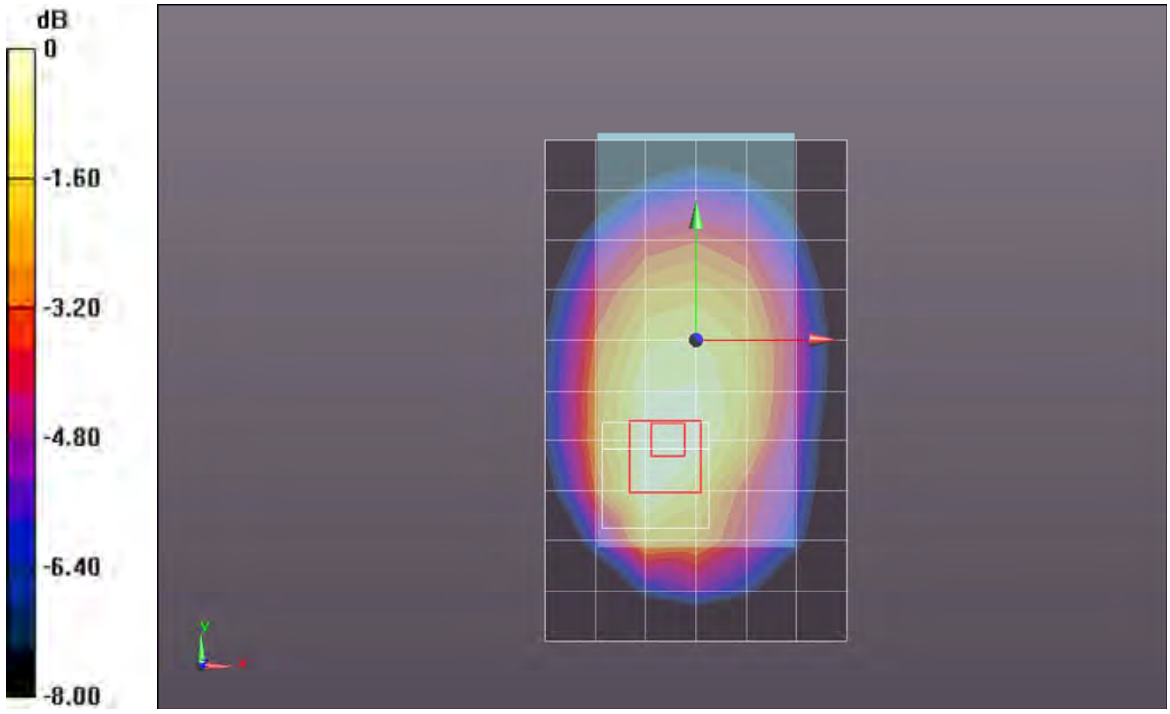
Frequency: 836.5 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used (interpolated): f = 836.5 MHz; σ = 0.981 mho/m; ε_r = 53.542; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1259; Calibrated: 2/13/2012
- Probe: EX3DV4 - SN3686; ConvF(8.73, 8.73, 8.73); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (B); Type: QDOVA001BB; Serial: 1118

Rear/QPSK_RB#1,49_Ch 20525/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.771 mW/g

Rear/QPSK_RB#1,49_Ch 20525/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 28.589 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 0.9410
SAR(1 g) = 0.703 mW/g; SAR(10 g) = 0.489 mW/g
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.803 mW/g



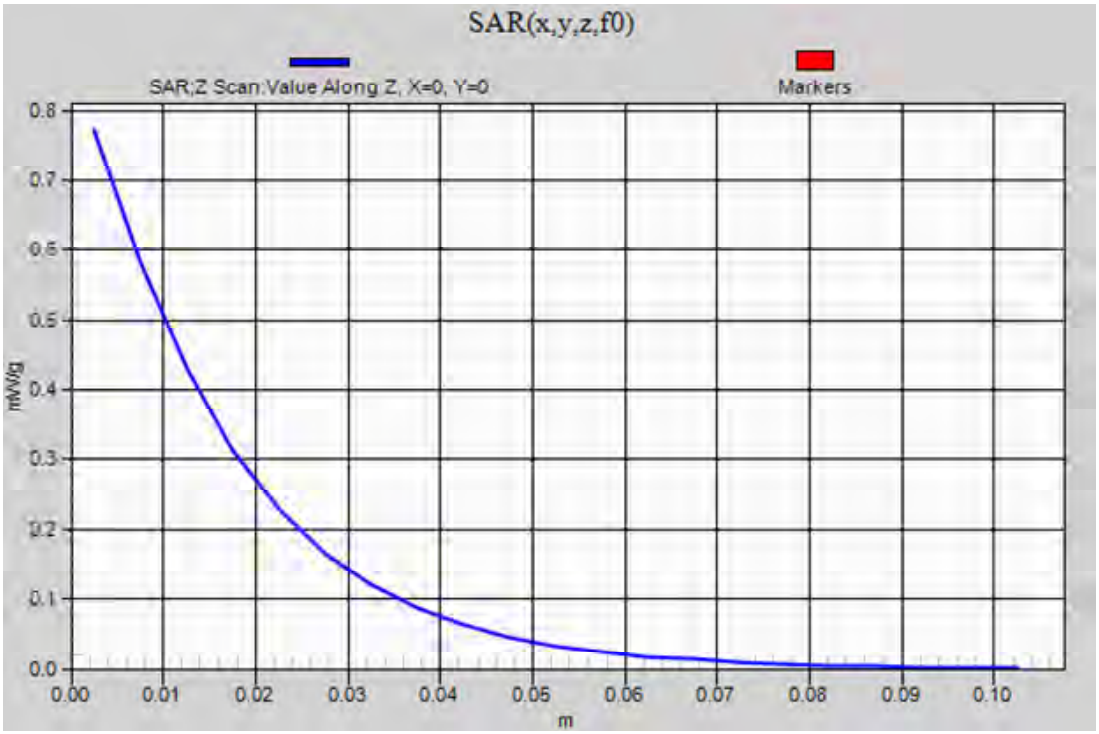
0 dB = 0.800mW/g = -1.94 dB mW/g

Test Laboratory: UL CCS SAR Lab B Date: 7/24/2012

LTE Band 5 (Primary Antenna)

Frequency: 836.5 MHz; Duty Cycle: 1:1

Rear/QPSK_RB#1,49_Ch 20525/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.772 mW/g



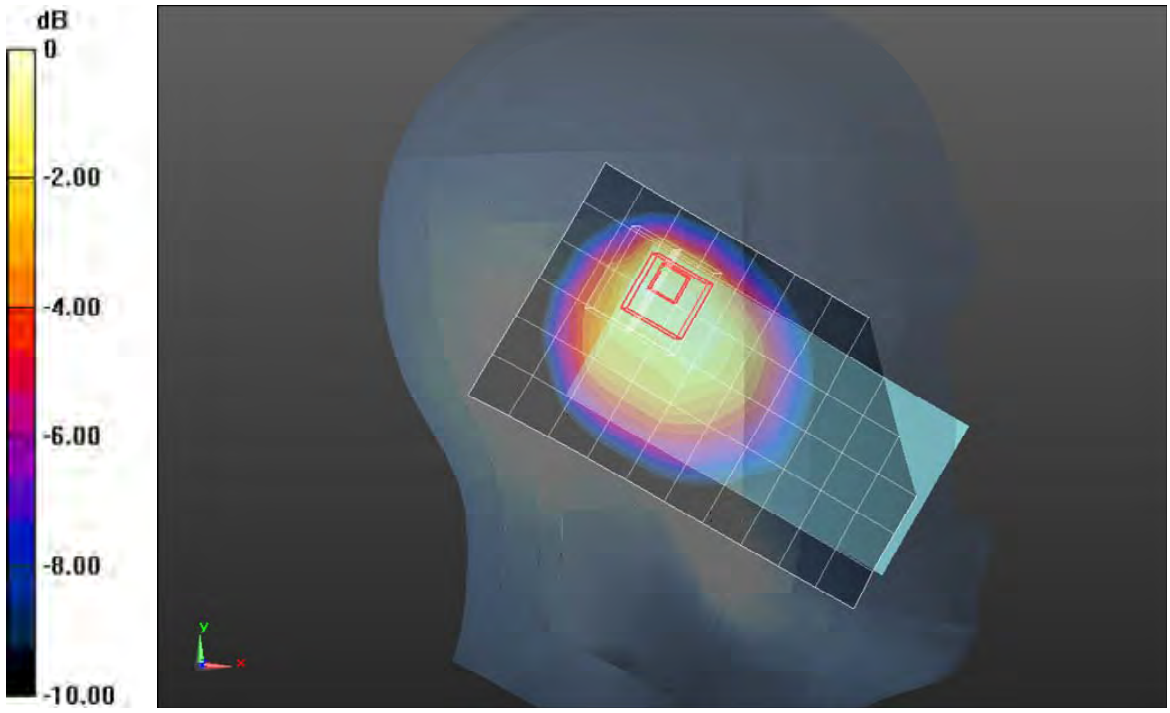
Test Laboratory: UL CCS SAR Lab A Date: 9/5/2012

LTE Band 13 (Secondary Antenna)

Frequency: 782 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used (interpolated): f = 782 MHz; σ = 0.893 mho/m; ε_r = 40.156; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1258; Calibrated: 3/8/2012
- Probe: EX3DV4 - SN3772; ConvF(9.01, 9.01, 9.01); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: SAM v5.0 (B); Type: QD000P40CD; Serial: 1628

LHS/Touch_QPSK_RB# 1, 24_Ch 23230/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.720 mW/g

LHS/Touch_QPSK_RB# 1, 24_Ch 23230/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 28.812 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.1640
SAR(1 g) = 0.616 mW/g; SAR(10 g) = 0.384 mW/g
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.802 mW/g



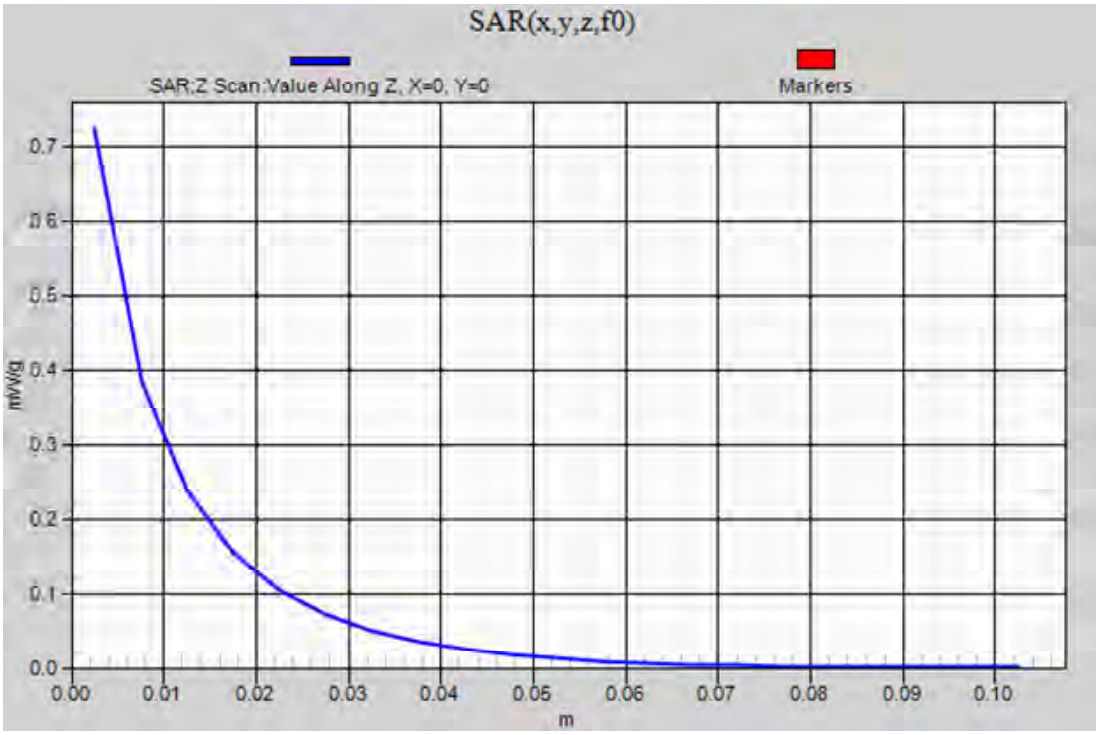
0 dB = 0.800mW/g = -1.94 dB mW/g

Test Laboratory: UL CCS SAR Lab A Date: 9/5/2012

LTE Band 13 (Secondary Antenna)

Frequency: 782 MHz; Duty Cycle: 1:1

LHS/Touch_QPSK_RB# 1, 24_Ch 23230/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.723 mW/g



Test Laboratory: UL CCS SAR Lab B Date: 7/19/2012

LTE Band 13 (Primary Antenna)

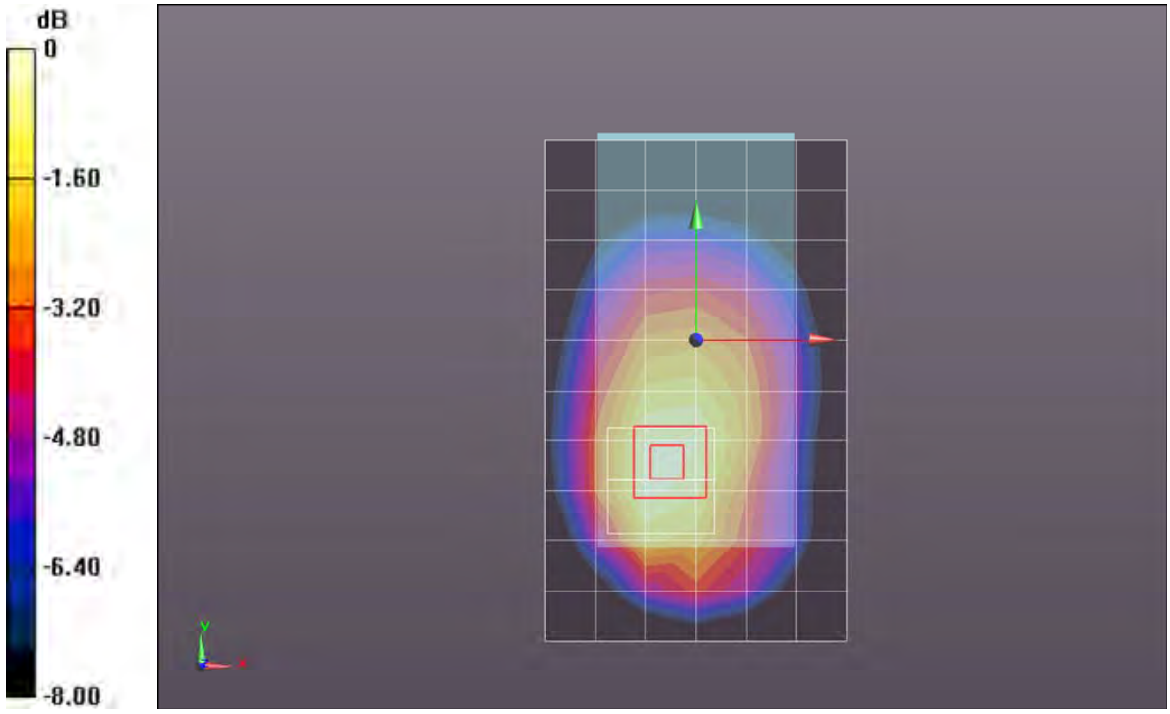
Frequency: 782 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used (interpolated): f = 782 MHz; σ = 1.001 mho/m; ε_r = 55.358; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1259; Calibrated: 2/13/2012
- Probe: EX3DV4 - SN3686; ConvF(8.87, 8.87, 8.87); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (B); Type: QDOVA001BB; Serial: 1118

Rear/QPSK_RB#1,0_Ch 23230/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.713 mW/g

Rear/QPSK_RB#1,0_Ch 23230/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 27.168 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.8970
SAR(1 g) = 0.645 mW/g; SAR(10 g) = 0.447 mW/g
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.756 mW/g



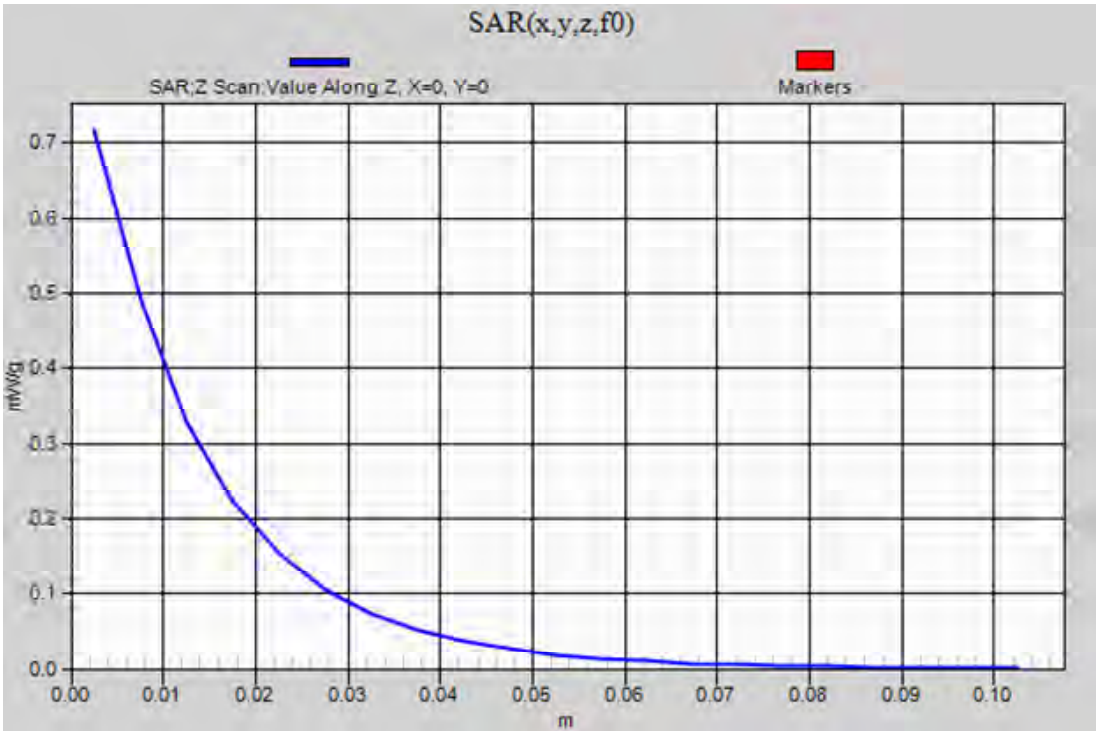
0 dB = 0.760mW/g = -2.38 dB mW/g

Test Laboratory: UL CCS SAR Lab B Date: 7/19/2012

LTE Band 13 (Primary Antenna)

Frequency: 782 MHz; Duty Cycle: 1:1

Rear/QPSK_RB#1,0_Ch 23790/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.717 mW/g



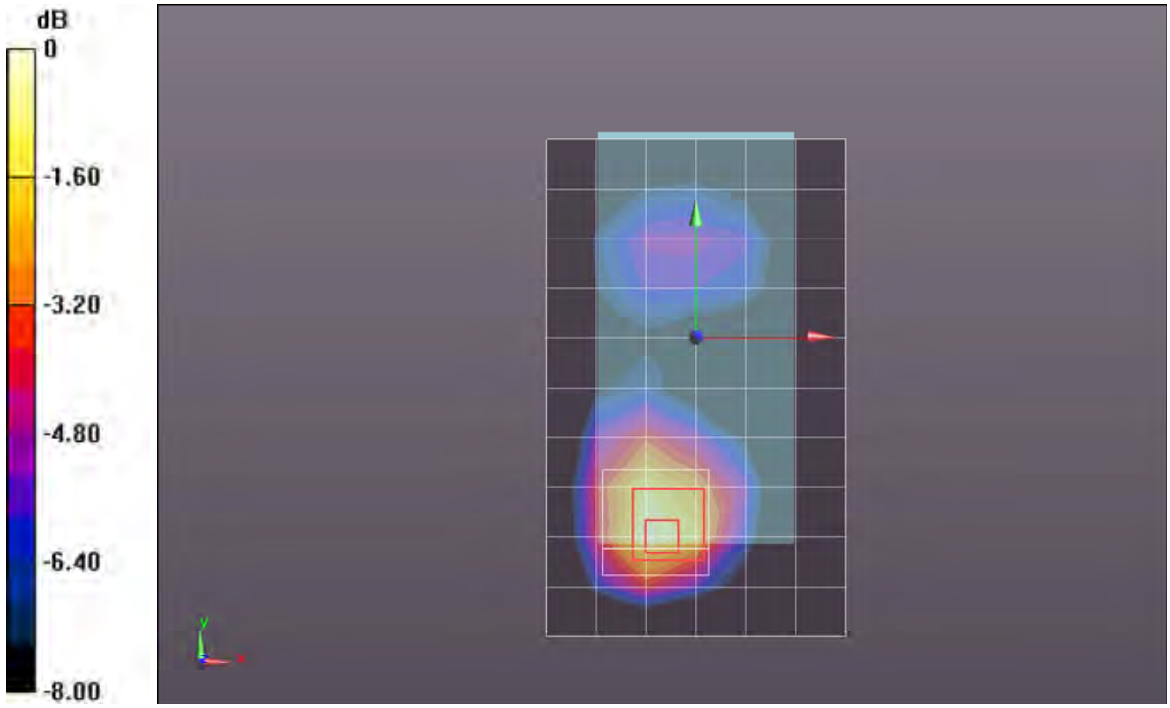
Test Laboratory: UL CCS SAR Lab B Date: 7/12/2012

LTE Band 25 (Primary Antenna)

Frequency: 1882.5 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used (interpolated): f = 1882.5 MHz; σ = 1.527 mho/m; ε_r = 51.717; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1259; Calibrated: 2/13/2012
- Probe: EX3DV4 - SN3686; ConvF(7.04, 7.04, 7.04); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (A); Type: QDOVA001BB; Serial: 1120

Rear/QPSK_RB#1,49_Ch 26365 w/Headset/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.475 mW/g

Rear/QPSK_RB#1,49_Ch 26365 w/Headset/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 31.666 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 2.1750
SAR(1 g) = 1.18 mW/g; SAR(10 g) = 0.656 mW/g
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.563 mW/g



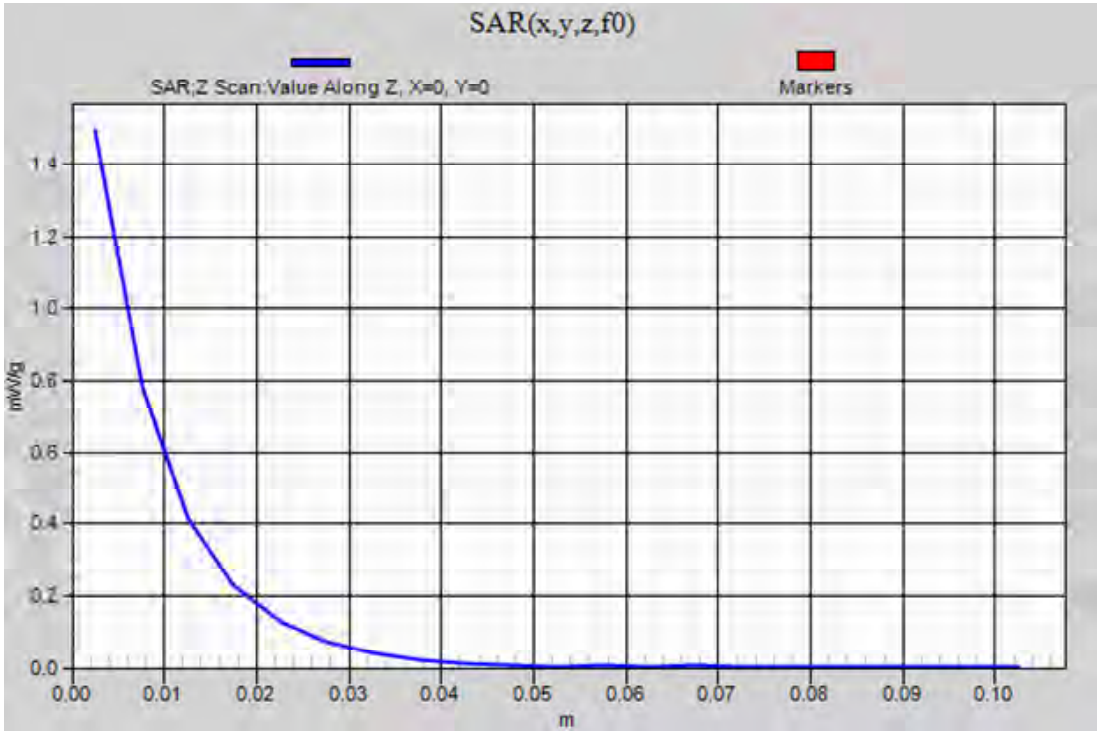
0 dB = 1.560mW/g = 3.86 dB mW/g

Test Laboratory: UL CCS SAR Lab B Date: 7/12/2012

LTE Band 25 (Primary Antenna)

Frequency: 1882.5 MHz; Duty Cycle: 1:1

Rear/QPSK_RB#1,49_Ch 26365 w/Headset/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.495 mW/g



Test Laboratory: UL CCS SAR Lab A Date: 7/26/2012

WiFi 2.4GHz

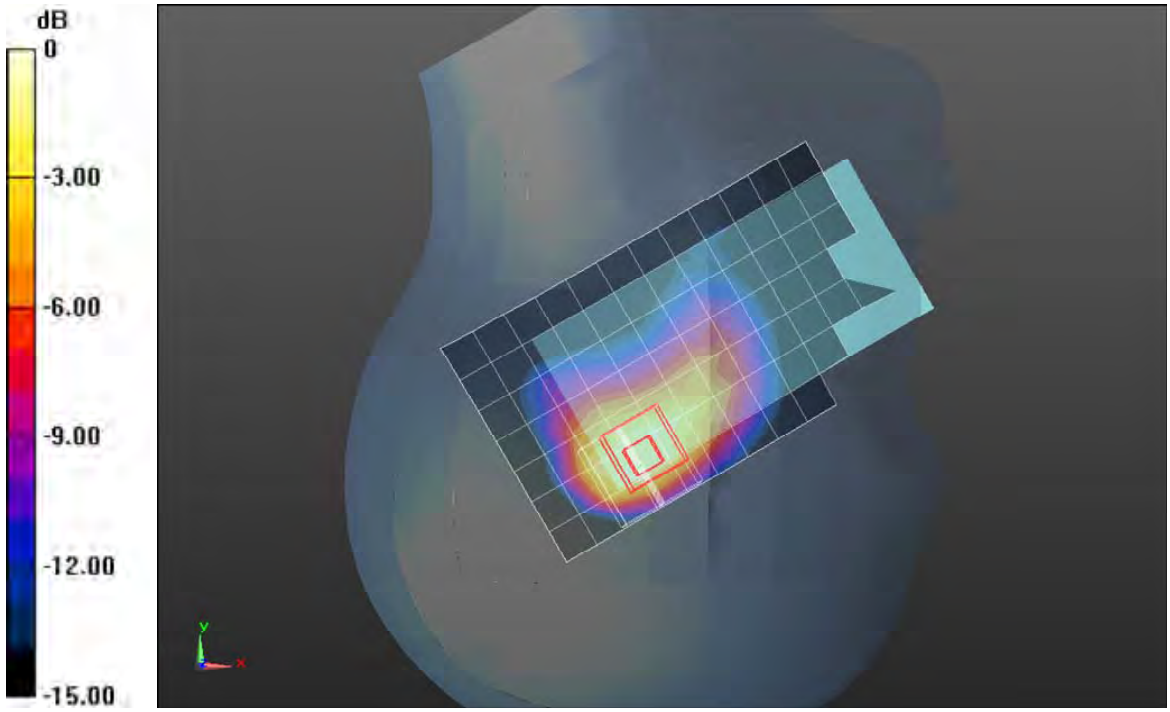
Frequency: 2437 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used (interpolated): f = 2437 MHz; σ = 1.817 mho/m; ε_r = 39.751; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1258; Calibrated: 3/8/2012
- Probe: EX3DV4 - SN3772; ConvF(6.64, 6.64, 6.64); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: SAM v5.0 (A); Type: QD000P40CC; Serial: 1602

RHS/Touch_802.11b_ch 6 2/Area Scan (8x13x1): Measurement grid: dx=12mm, dy=12mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.647 mW/g

RHS/Touch_802.11b_ch 6 2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 18.703 V/m; Power Drift = -0.149 dB
Peak SAR (extrapolated) = 1.1060
SAR(1 g) = 0.522 mW/g; SAR(10 g) = 0.239 mW/g
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.719 mW/g



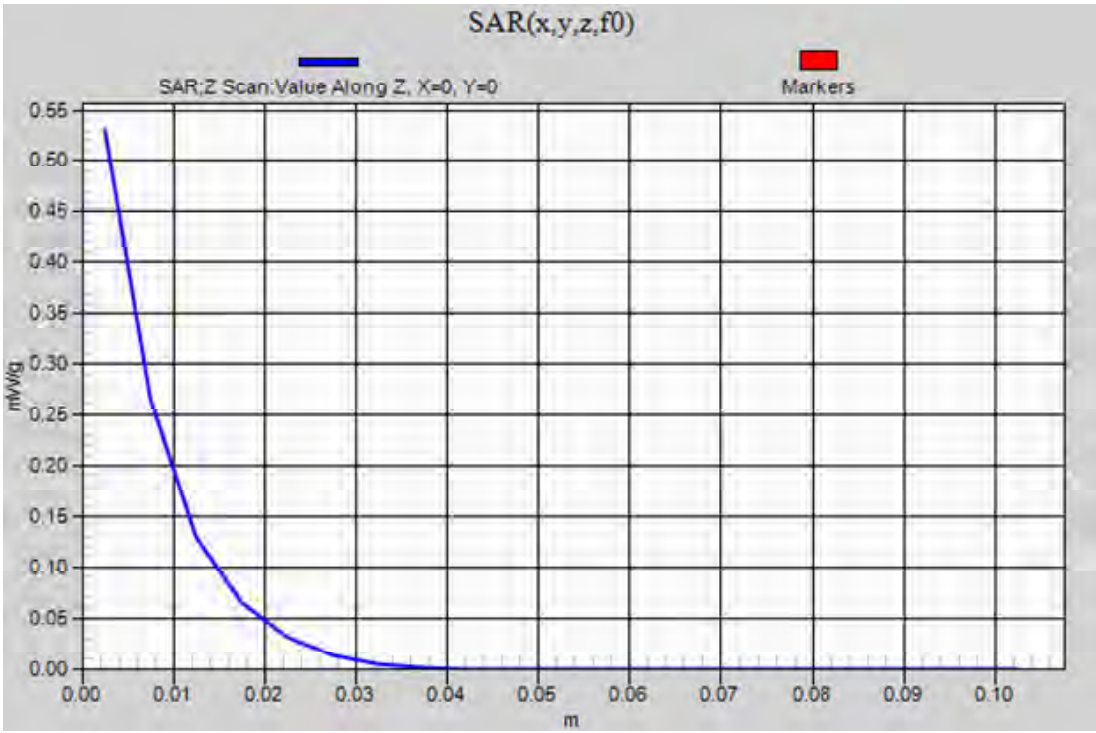
0 dB = 0.720mW/g = -2.85 dB mW/g

Test Laboratory: UL CCS SAR Lab A Date: 7/26/2012

WiFi 2.4GHz

Frequency: 2437 MHz; Duty Cycle: 1:1

RHS/Touch_802.11b_ch 6 2/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.531 mW/g



Test Laboratory: UL CCS SAR Lab A Date: 7/26/2012

WiFi 2.4GHz

Frequency: 2437 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used (interpolated): f = 2437 MHz; σ = 1.979 mho/m; ε_r = 51.609; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1258; Calibrated: 3/8/2012
- Probe: EX3DV4 - SN3772; ConvF(6.65, 6.65, 6.65); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (B); Type: QDOVA001BB; Serial: 1099

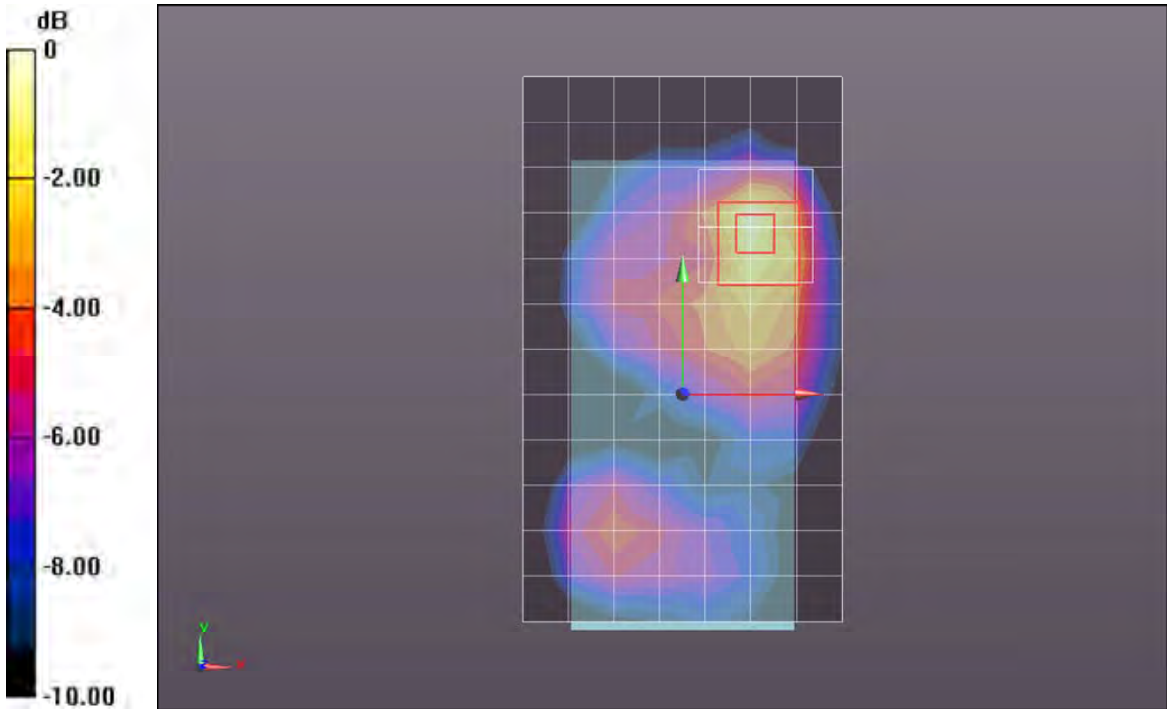
Rear/802.11b_ch 6 w/Headset/Area Scan (8x13x1): Measurement grid: dx=12mm, dy=12mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.226 mW/g

Rear/802.11b_ch 6 w/Headset/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.848 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.3910
SAR(1 g) = 0.171 mW/g; SAR(10 g) = 0.081 mW/g

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.247 mW/g



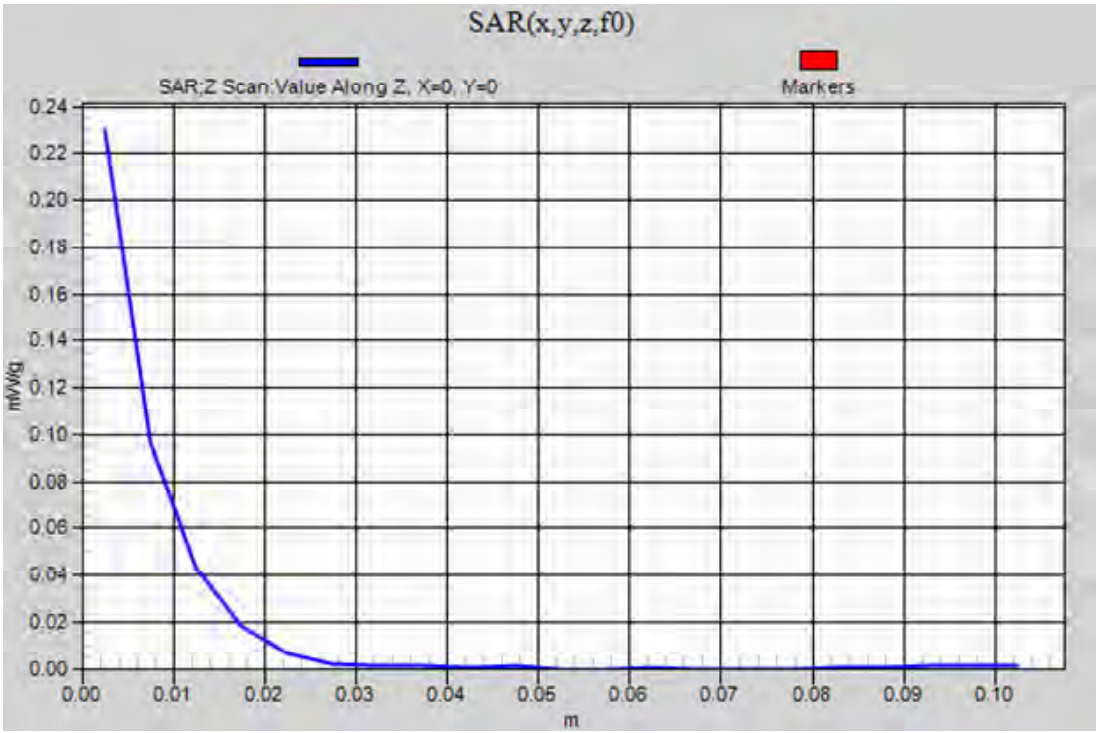
0 dB = 0.250mW/g = -12.04 dB mW/g

Test Laboratory: UL CCS SAR Lab A Date: 7/26/2012

WiFi 2.4GHz

Frequency: 2437 MHz; Duty Cycle: 1:1

Rear/802.11b_ch 6 w/Headset/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.230 mW/g



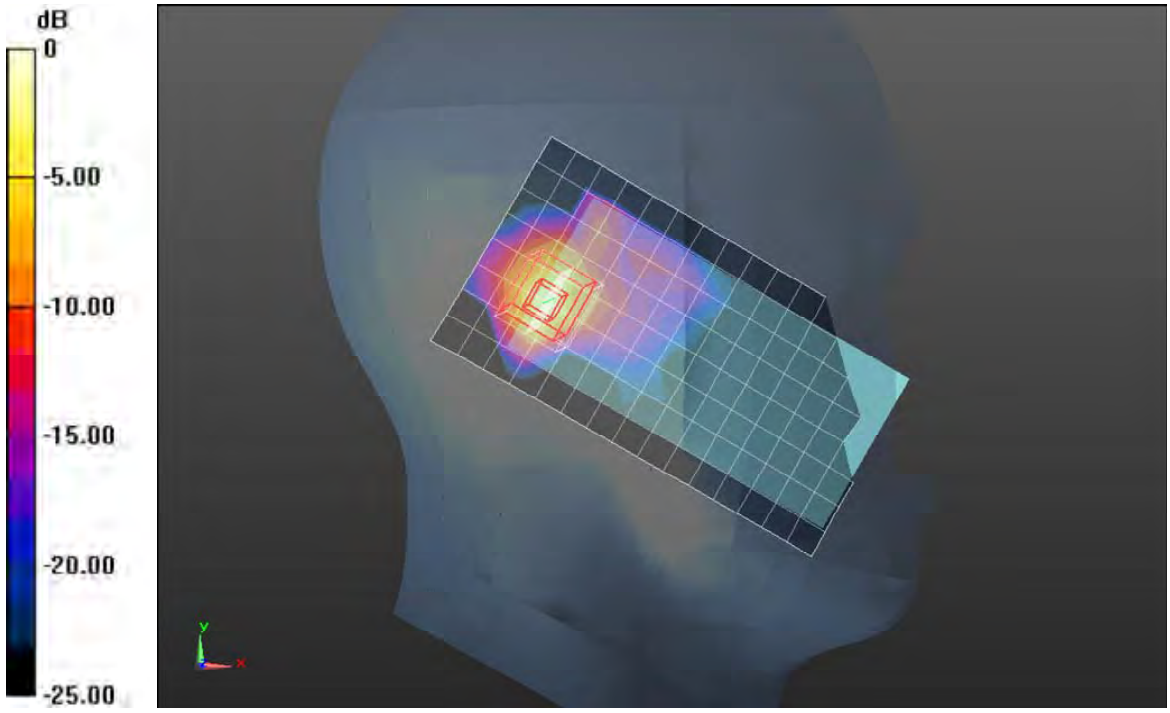
Test Laboratory: UL CCS SAR Lab A Date: 7/24/2012

WiFi 5.2GHz

Frequency: 5240 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 25.0°C; Liquid Temperature: 24.0°C
Medium parameters used: f = 5240 MHz; σ = 4.788 mho/m; ε_r = 36.021; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1258; Calibrated: 3/8/2012
- Probe: EX3DV4 - SN3772; ConvF(4.88, 4.88, 4.88); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
- Phantom: SAM v5.0 (B); Type: QD000P40CD; Serial: 1628

LHS/Touch_802.11a_ch 48/Area Scan (9x16x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.879 mW/g

LHS/Touch_802.11a_ch 48/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 13.921 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 2.4050
SAR(1 g) = 0.587 mW/g; SAR(10 g) = 0.165 mW/g
Maximum value of SAR (measured) = 1.197 mW/g



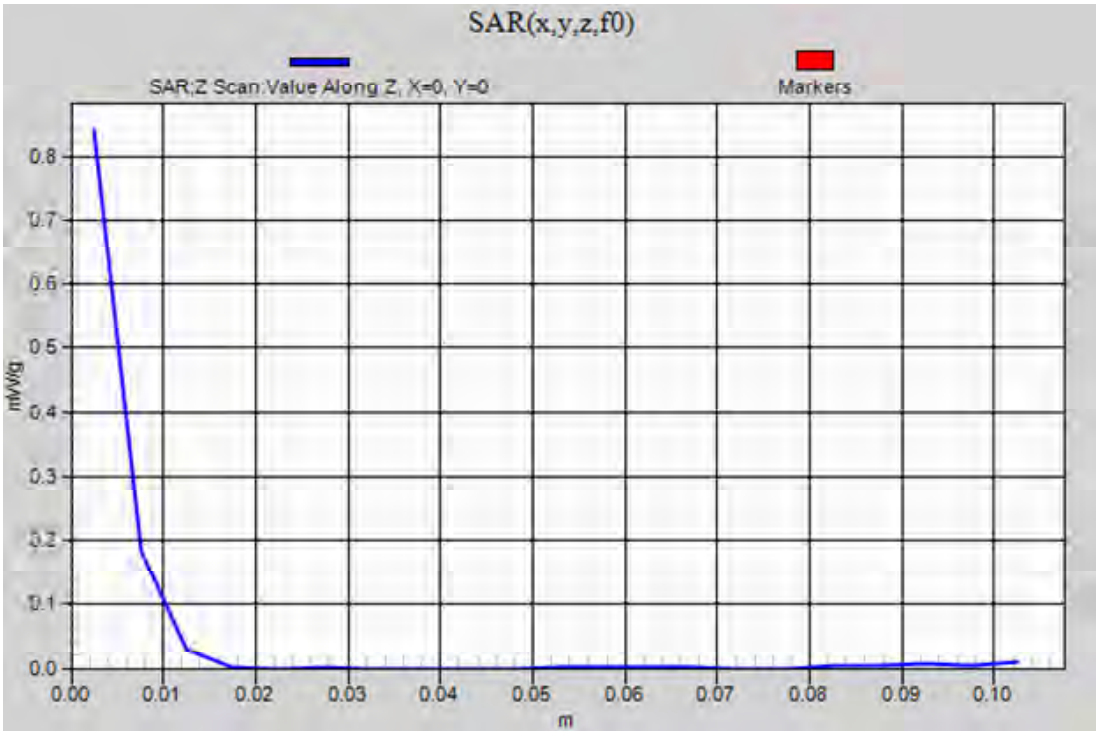
0 dB = 1.200mW/g = 1.58 dB mW/g

Test Laboratory: UL CCS SAR Lab A Date: 7/24/2012

WiFi 5.2GHz

Frequency: 5240 MHz; Duty Cycle: 1:1

LHS/Touch_802.11a_ch 48/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Maximum value of SAR (measured) = 0.840 mW/g



Test Laboratory: UL CCS SAR Lab A Date: 7/25/2012

WiFi 5.2GHz

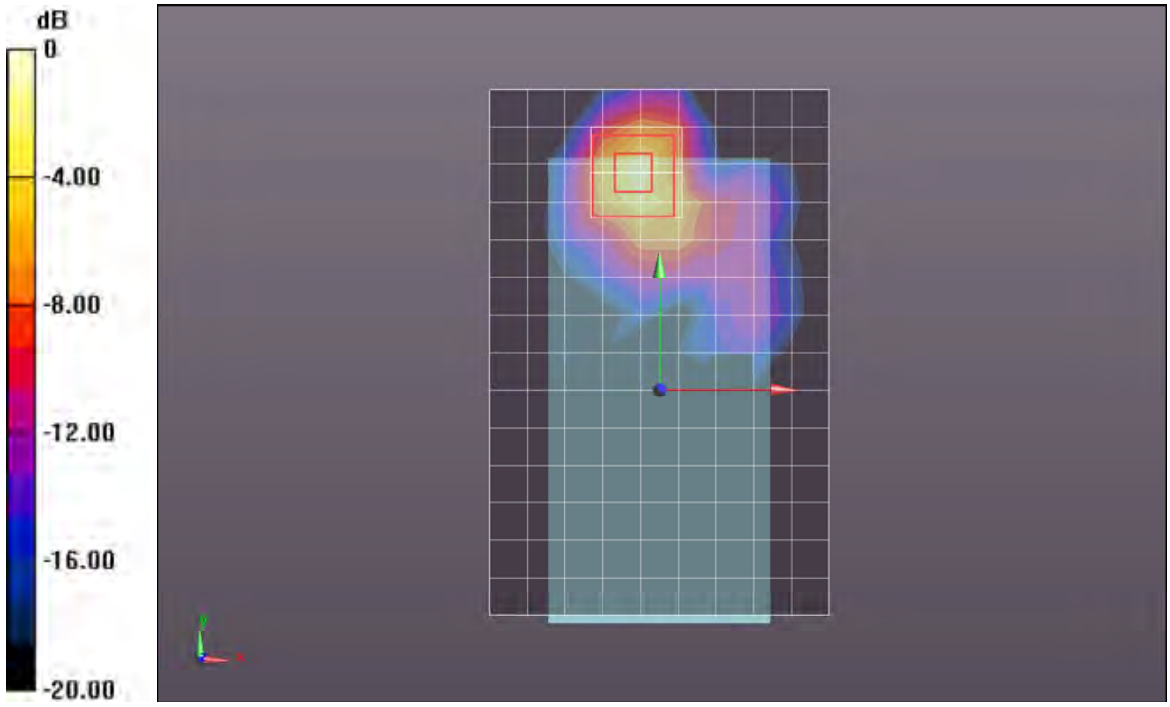
Frequency: 5240 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 25.0°C; Liquid Temperature: 24.0°C
Medium parameters used: f = 5240 MHz; σ = 5.254 mho/m; ε_r = 47.689; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1258; Calibrated: 3/8/2012
- Probe: EX3DV4 - SN3772; ConvF(4.17, 4.17, 4.17); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (A); Type: QDOVA001BB; Serial: 1120

Front/802.11a_Ch 48/Area Scan (10x15x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.215 mW/g

Front/802.11a_Ch 48/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 6.639 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 0.5570
SAR(1 g) = 0.130 mW/g; SAR(10 g) = 0.041 mW/g
Maximum value of SAR (measured) = 0.269 mW/g



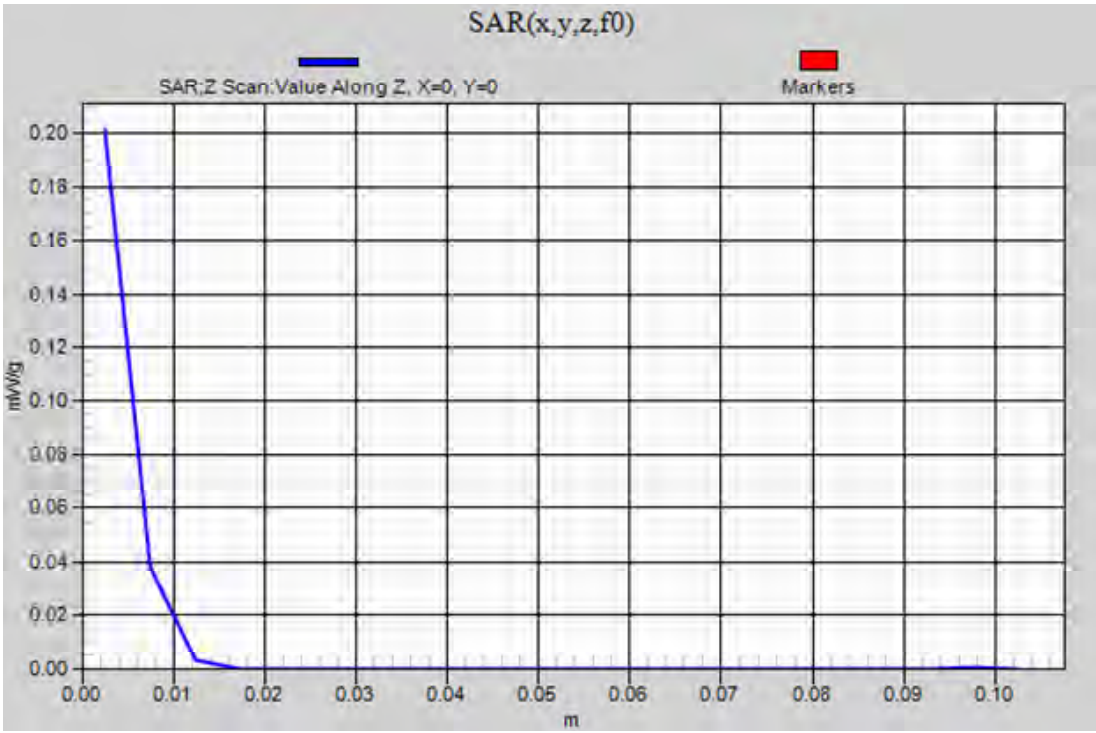
0 dB = 0.270mW/g = -11.37 dB mW/g

Test Laboratory: UL CCS SAR Lab A Date: 7/25/2012

WiFi 5.2GHz

Frequency: 5240 MHz; Duty Cycle: 1:1

Front/802.11a_Ch 48/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Maximum value of SAR (measured) = 0.201 mW/g



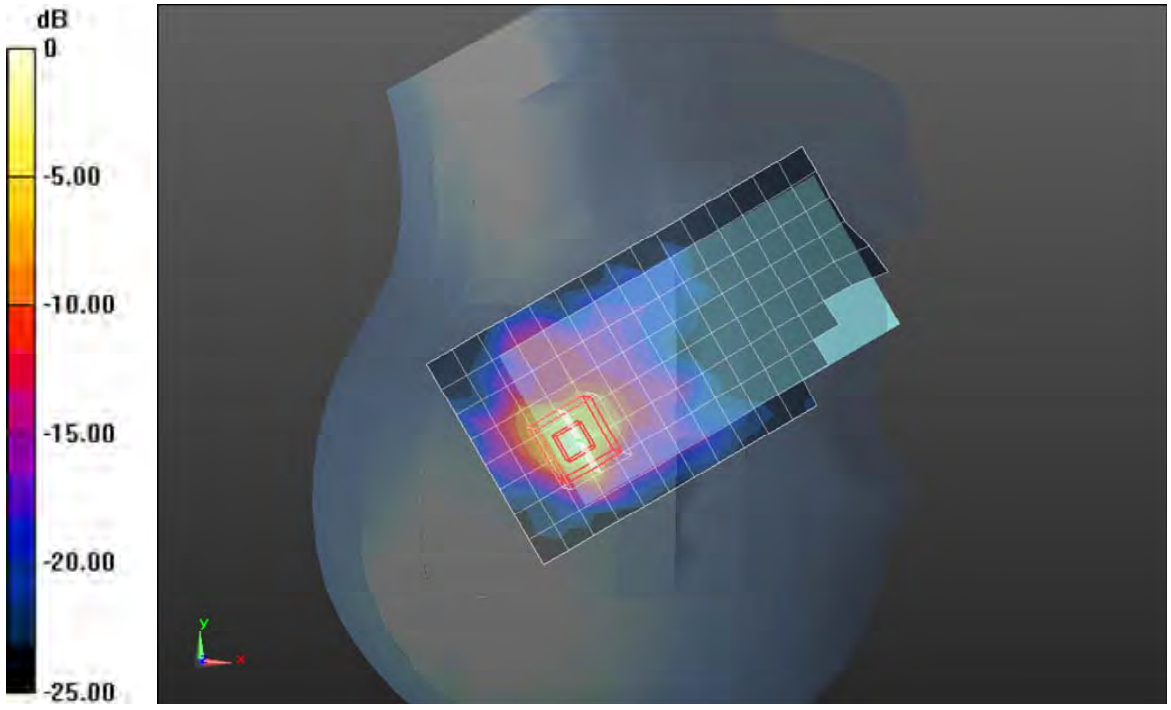
Test Laboratory: UL CCS SAR Lab A Date: 7/23/2012

WiFi 5.3GHz

Frequency: 5260 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 25.0°C; Liquid Temperature: 24.0°C
Medium parameters used: f = 5260 MHz; σ = 4.749 mho/m; ε_r = 34.553; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1258; Calibrated: 3/8/2012
- Probe: EX3DV4 - SN3772; ConvF(4.62, 4.62, 4.62); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
- Phantom: SAM v5.0 (B); Type: QD000P40CD; Serial: 1628

RHS/Touch_802.11a_ch 52/Area Scan (9x16x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 1.015 mW/g

RHS/Touch_802.11a_ch 52/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 14.780 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 2.3660
SAR(1 g) = 0.575 mW/g; SAR(10 g) = 0.156 mW/g
Maximum value of SAR (measured) = 1.214 mW/g



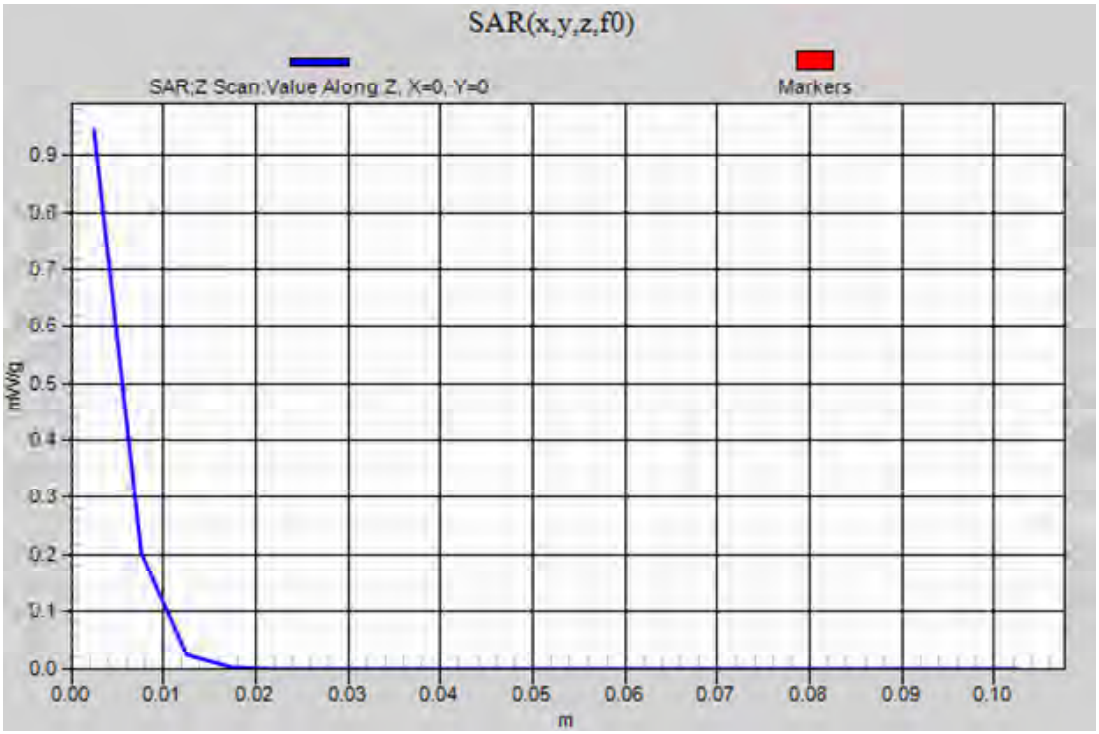
0 dB = 1.210mW/g = 1.66 dB mW/g

Test Laboratory: UL CCS SAR Lab A Date: 7/23/2012

WiFi 5.3GHz

Frequency: 5260 MHz; Duty Cycle: 1:1

RHS/Touch_802.11a_ch 52/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Maximum value of SAR (measured) = 0.945 mW/g



Test Laboratory: UL CCS SAR Lab A Date: 7/25/2012

WiFi 5.3GHz

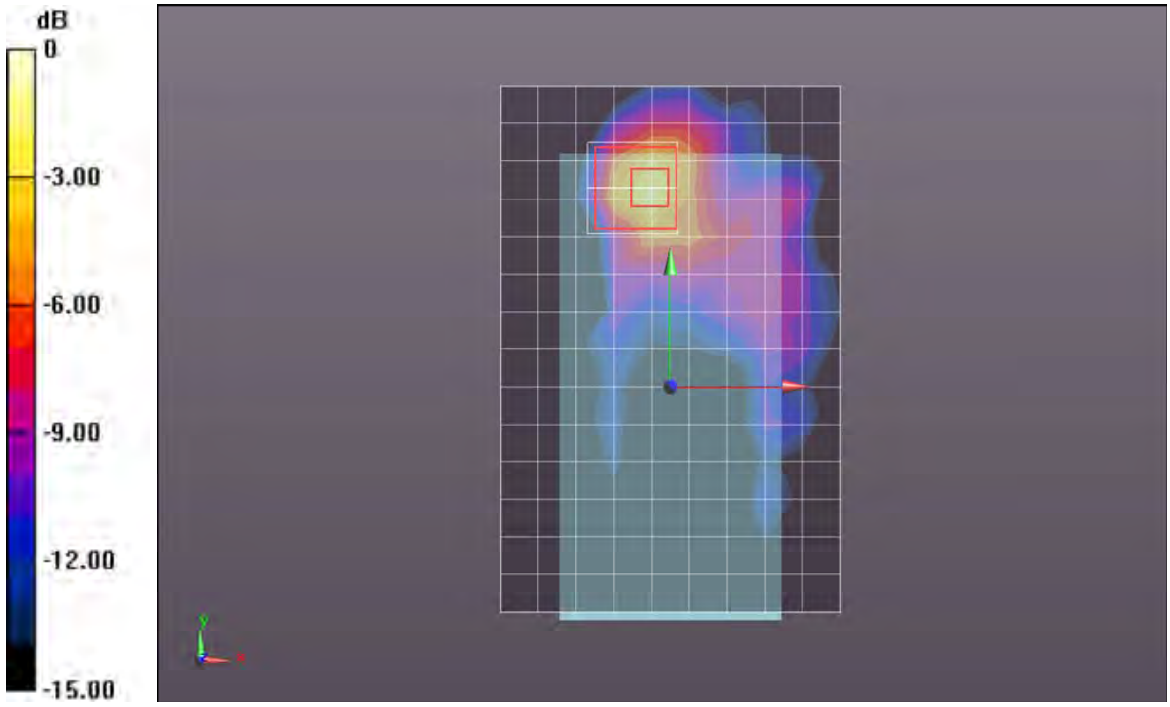
Frequency: 5320 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 25.0°C; Liquid Temperature: 24.0°C
Medium parameters used: f = 5320 MHz; σ = 5.356 mho/m; ε_r = 47.551; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1258; Calibrated: 3/8/2012
- Probe: EX3DV4 - SN3772; ConvF(3.99, 3.99, 3.99); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (A); Type: QDOVA001BB; Serial: 1120

Front/802.11a_Ch 64/Area Scan (10x15x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.169 mW/g

Front/802.11a_Ch 64/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 6.166 V/m; Power Drift = -0.0039 dB
Peak SAR (extrapolated) = 0.4110
SAR(1 g) = 0.114 mW/g; SAR(10 g) = 0.033 mW/g
Maximum value of SAR (measured) = 0.237 mW/g



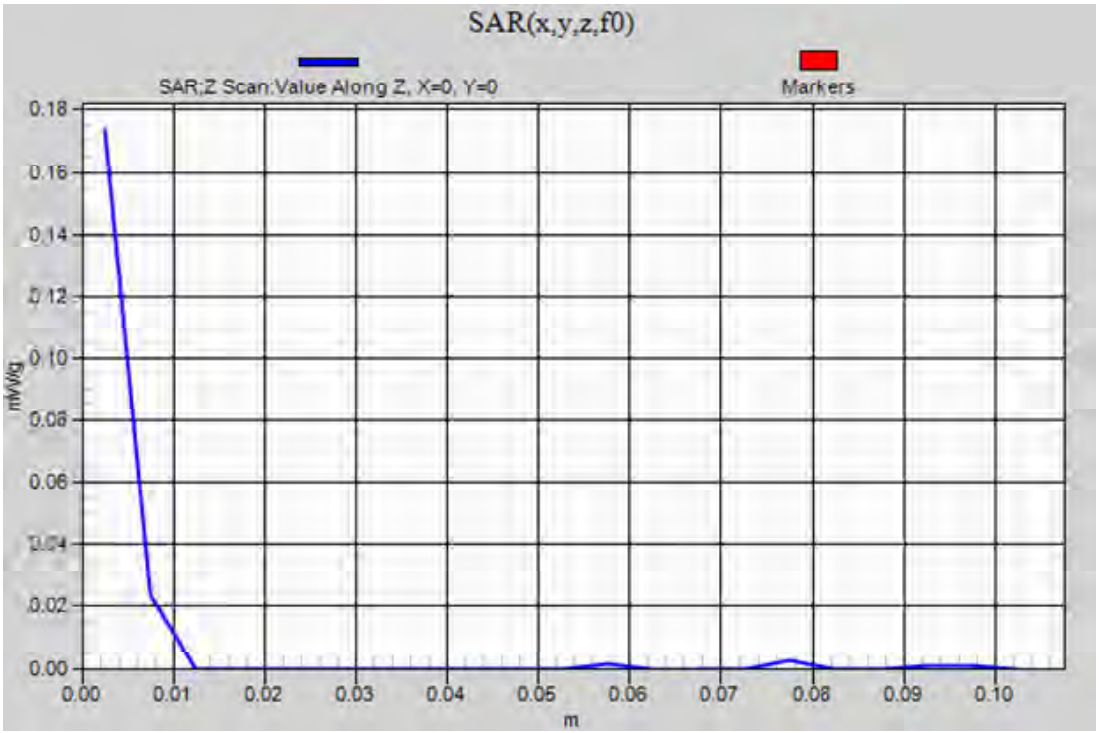
0 dB = 0.240mW/g = -12.40 dB mW/g

Test Laboratory: UL CCS SAR Lab A Date: 7/25/2012

WiFi 5.3GHz

Frequency: 5320 MHz; Duty Cycle: 1:1

Front/802.11a_Ch 64/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Maximum value of SAR (measured) = 0.174 mW/g



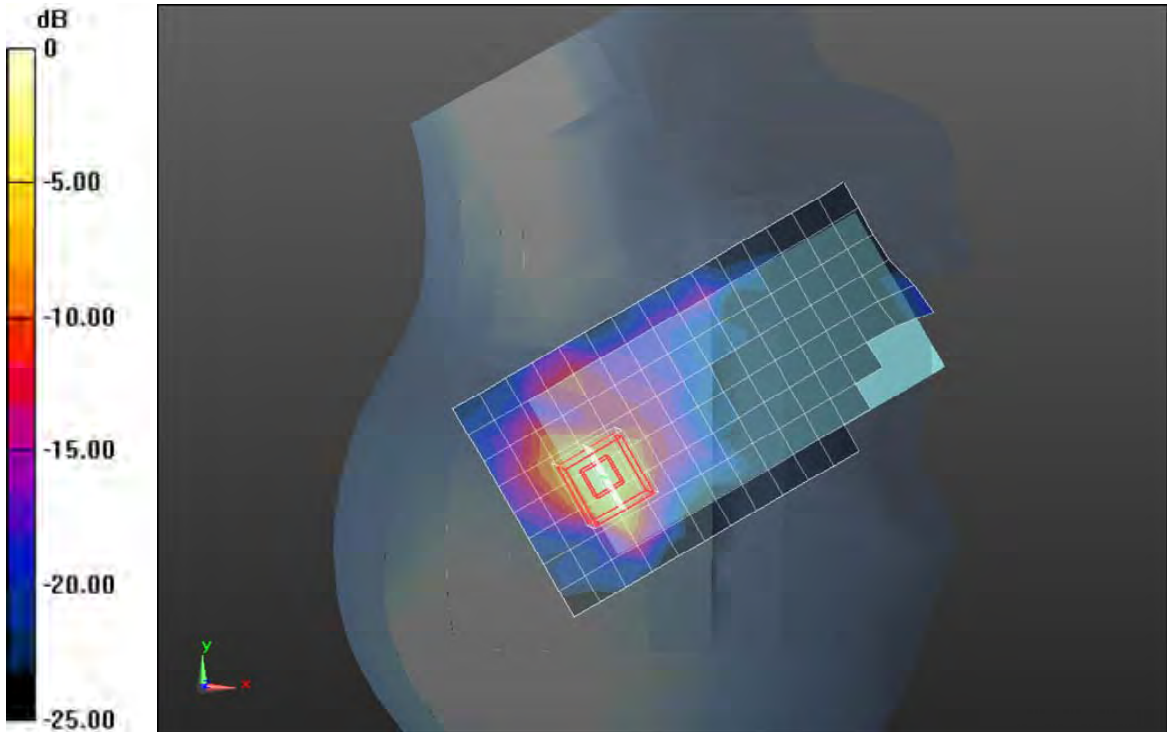
Test Laboratory: UL CCS SAR Lab A Date: 7/20/2012

WiFi 5.5GHz

Frequency: 5620 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 25.0°C; Liquid Temperature: 24.0°C
Medium parameters used: f = 5620 MHz; σ = 5.201 mho/m; ε_r = 34.364; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1258; Calibrated: 3/8/2012
- Probe: EX3DV4 - SN3772; ConvF(4.25, 4.25, 4.25); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
- Phantom: SAM v5.0 (B); Type: QD000P40CD; Serial: 1628

RHS/Touch_802.11a_ch 124/Area Scan (9x16x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.858 mW/g

RHS/Touch_802.11a_ch 124/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 14.058 V/m; Power Drift = -0.15 dB
Peak SAR (extrapolated) = 2.4960
SAR(1 g) = 0.580 mW/g; SAR(10 g) = 0.159 mW/g
Maximum value of SAR (measured) = 1.281 mW/g



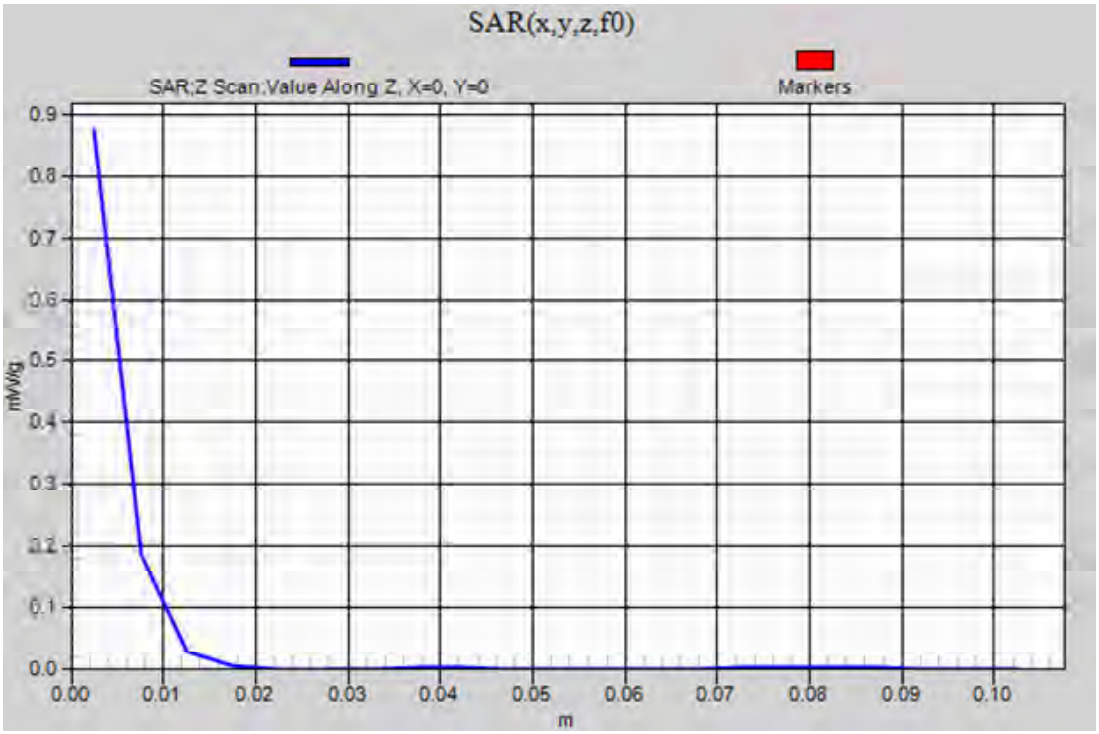
0 dB = 1.280mW/g = 2.14 dB mW/g

Test Laboratory: UL CCS SAR Lab A Date: 7/20/2012

WiFi 5.5GHz

Frequency: 5620 MHz; Duty Cycle: 1:1

RHS/Touch_802.11a_ch 124/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Maximum value of SAR (measured) = 0.876 mW/g



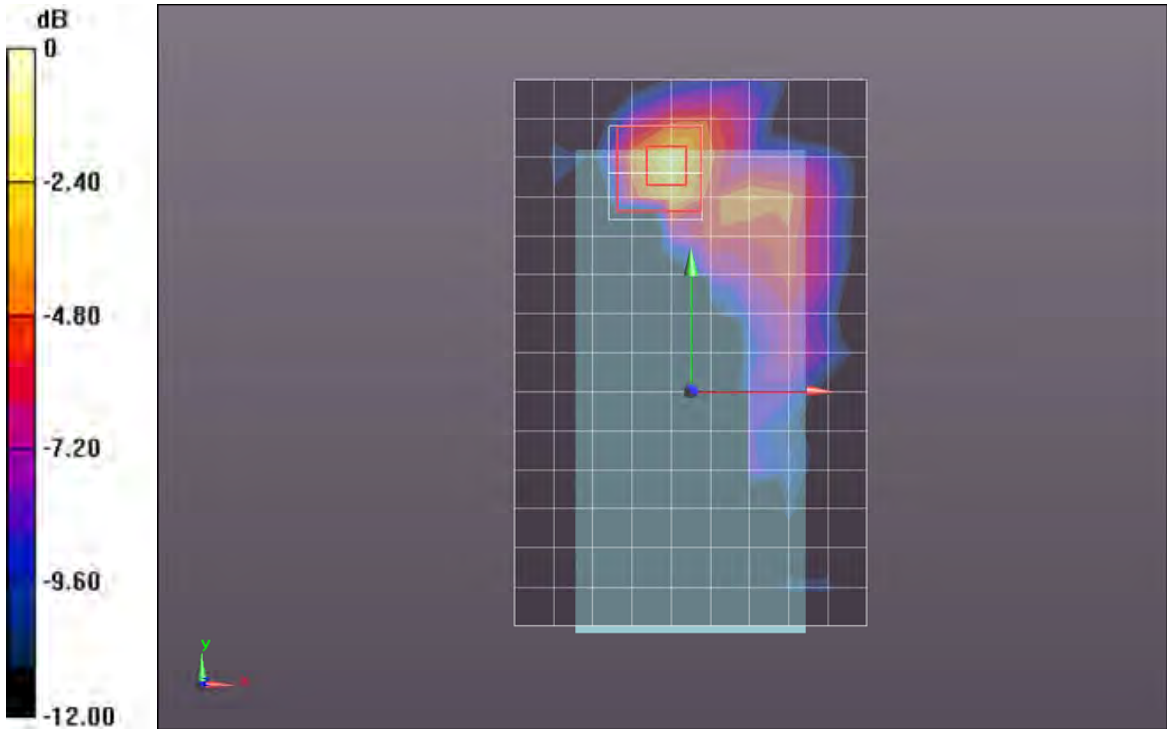
Test Laboratory: UL CCS SAR Lab A Date: 7/17/2012

WiFi 5.5GHz

Frequency: 5580 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 25.0°C; Liquid Temperature: 24.0°C
Medium parameters used: f = 5580 MHz; σ = 5.837 mho/m; ε_r = 46.8; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1258; Calibrated: 3/8/2012
- Probe: EX3DV4 - SN3772; ConvF(3.26, 3.26, 3.26); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (A); Type: QDOVA001BB; Serial: 1120

Front/802.11a_Ch 116 w/Headset/Area Scan (10x15x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.158 mW/g

Front/802.11a_Ch 116 w/Headset/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 5.685 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 0.3850
SAR(1 g) = 0.089 mW/g; SAR(10 g) = 0.027 mW/g
Maximum value of SAR (measured) = 0.205 mW/g



0 dB = 0.200mW/g = -13.98 dB mW/g

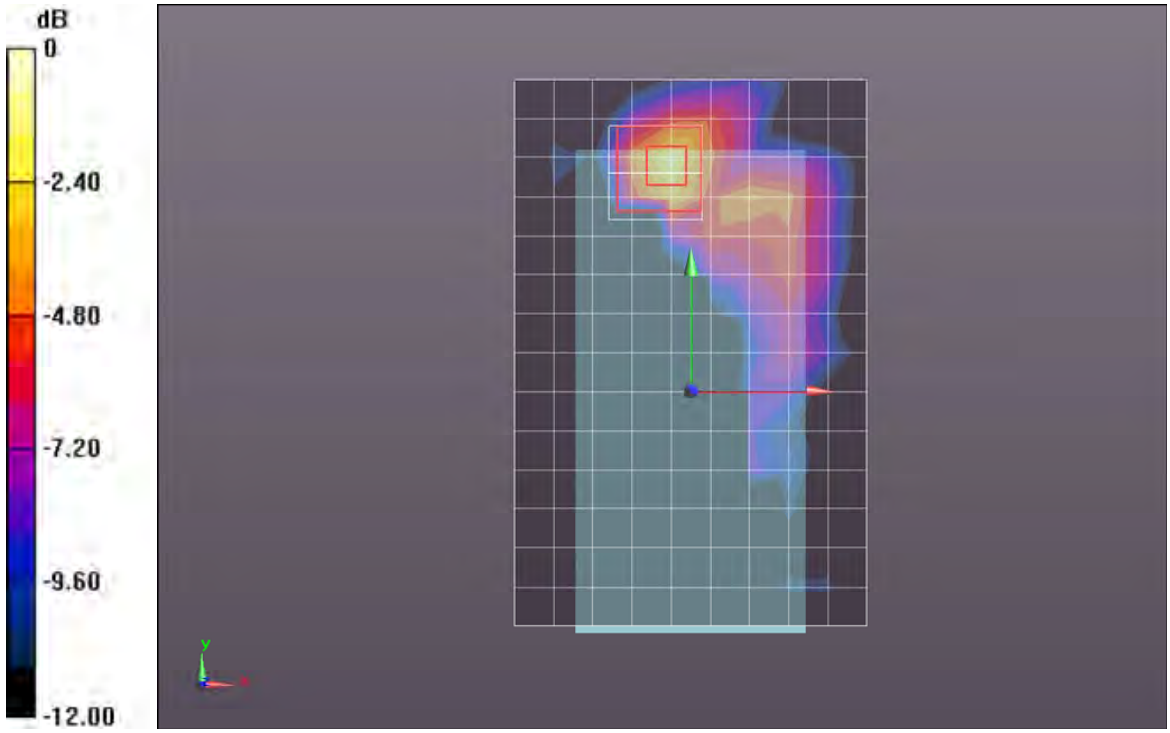
Test Laboratory: UL CCS SAR Lab A Date: 7/17/2012

WiFi 5.5GHz

Frequency: 5580 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 25.0°C; Liquid Temperature: 24.0°C
Medium parameters used: f = 5580 MHz; σ = 5.837 mho/m; ε_r = 46.8; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1258; Calibrated: 3/8/2012
- Probe: EX3DV4 - SN3772; ConvF(3.26, 3.26, 3.26); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (A); Type: QDOVA001BB; Serial: 1120

Front/802.11a_Ch 116 w/Headset/Area Scan (10x15x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.158 mW/g

Front/802.11a_Ch 116 w/Headset/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 5.685 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 0.3850
SAR(1 g) = 0.089 mW/g; SAR(10 g) = 0.027 mW/g
Maximum value of SAR (measured) = 0.205 mW/g



0 dB = 0.200mW/g = -13.98 dB mW/g

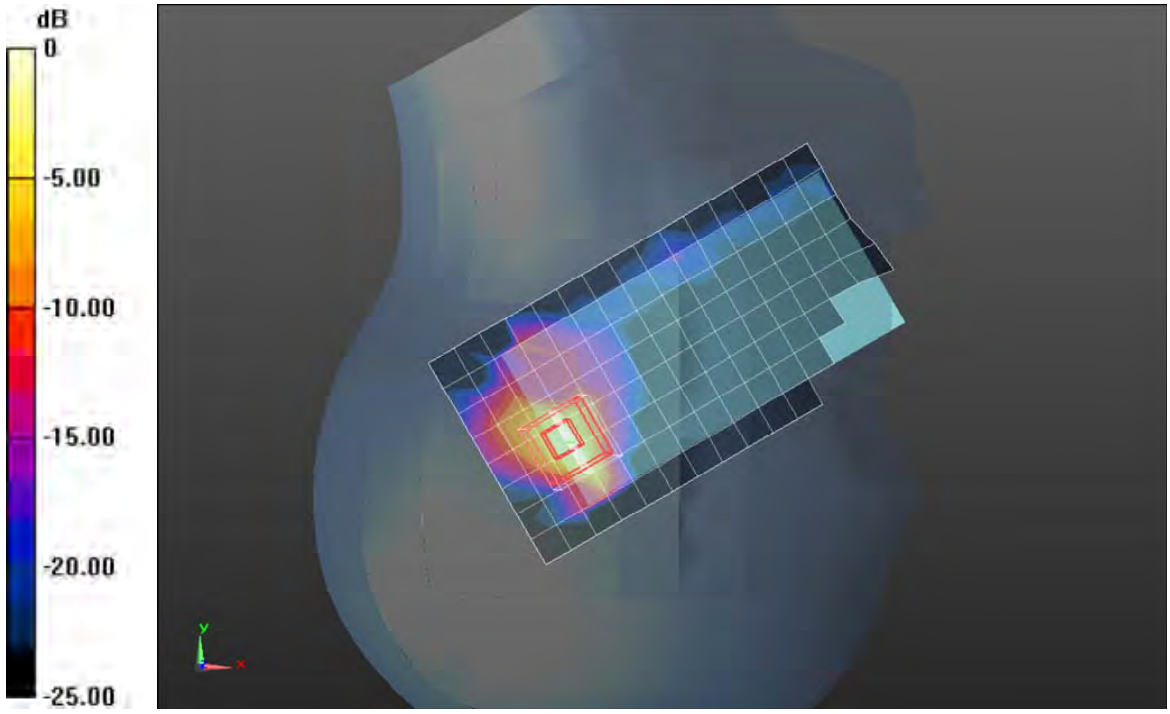
Test Laboratory: UL CCS SAR Lab A Date: 7/21/2012

WiFi 5.8GHz

Frequency: 5785 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 25.0°C; Liquid Temperature: 24.0°C
Medium parameters used: f = 5785 MHz; σ = 5.364 mho/m; ε_r = 33.907; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1258; Calibrated: 3/8/2012
- Probe: EX3DV4 - SN3772; ConvF(4.31, 4.31, 4.31); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
- Phantom: SAM v5.0 (B); Type: QD000P40CD; Serial: 1628

RHS/Touch_802.11a_ch 157/Area Scan (9x16x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.863 mW/g

RHS/Touch_802.11a_ch 157/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 12.665 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 2.6230
SAR(1 g) = 0.593 mW/g; SAR(10 g) = 0.163 mW/g
Maximum value of SAR (measured) = 1.284 mW/g



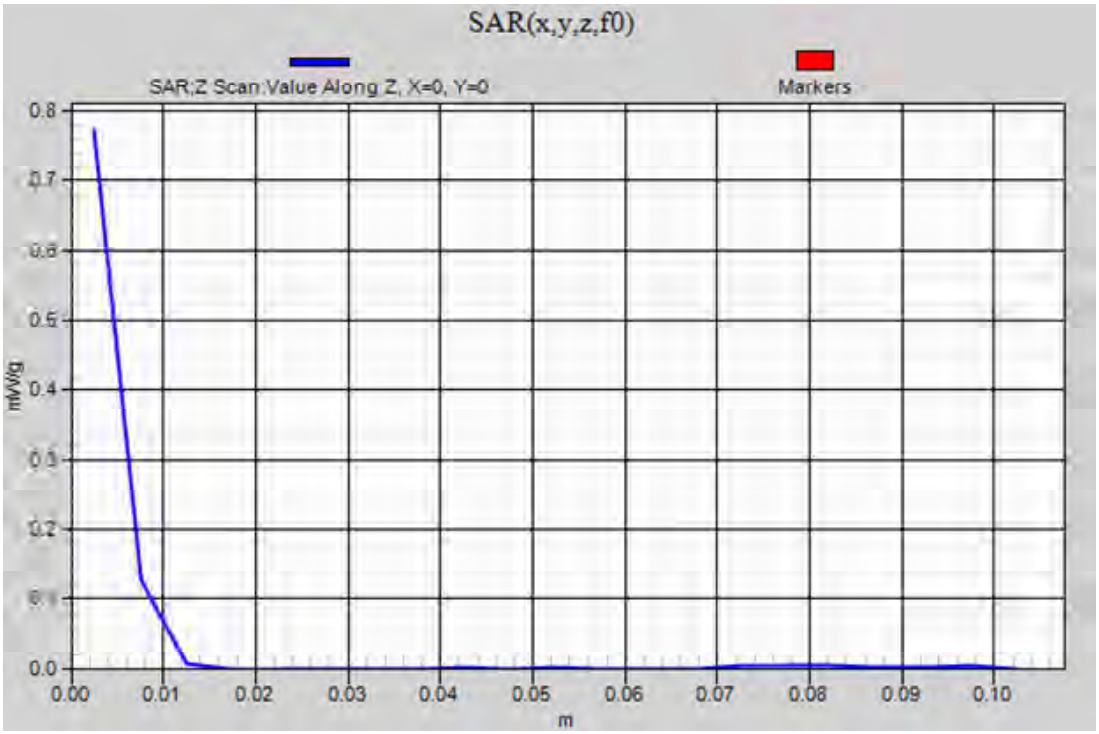
0 dB = 1.280mW/g = 2.14 dB mW/g

Test Laboratory: UL CCS SAR Lab A Date: 7/21/2012

WiFi 5.8GHz

Frequency: 5785 MHz; Duty Cycle: 1:1

RHS/Touch_802.11a_ch 157/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Maximum value of SAR (measured) = 0.773 mW/g



Test Laboratory: UL CCS SAR Lab A Date: 7/19/2012

WiFi 5.8GHz

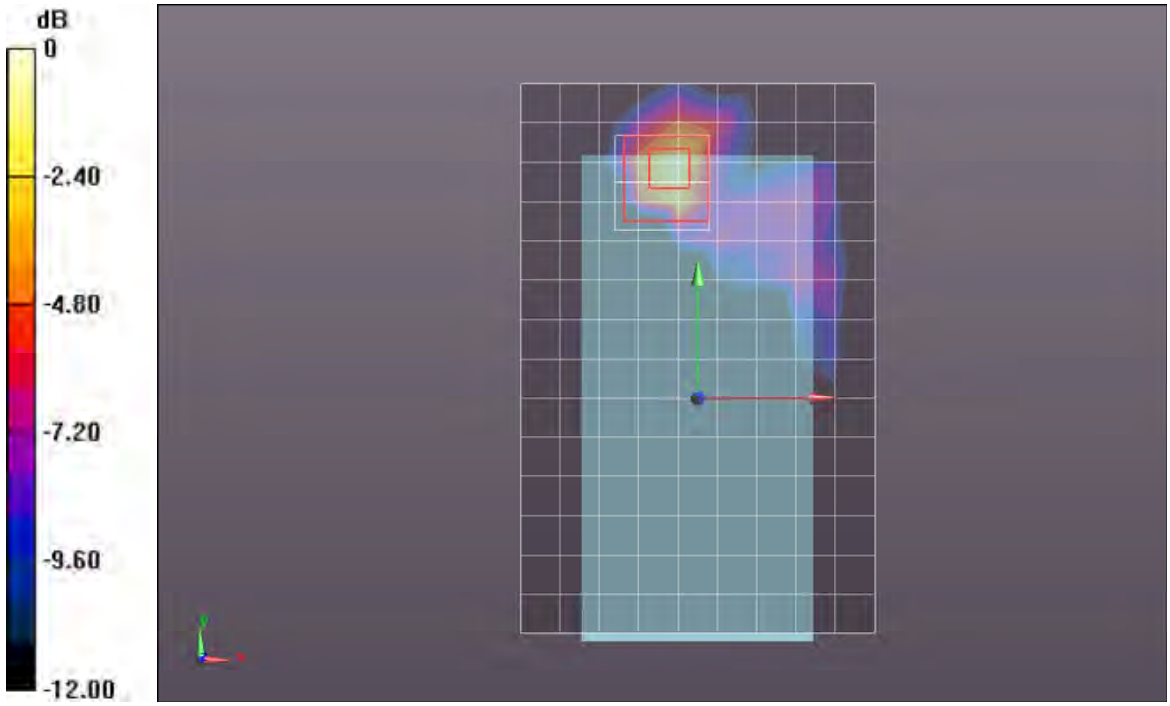
Frequency: 5745 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 25.0°C; Liquid Temperature: 24.0°C
Medium parameters used: f = 5745 MHz; σ = 5.821 mho/m; ε_r = 46.114; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1258; Calibrated: 3/8/2012
- Probe: EX3DV4 - SN3772; ConvF(3.58, 3.58, 3.58); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection), Sensor-Surface: 2mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (A); Type: QDOVA001BB; Serial: 1120

Front/802.11a_Ch 149 w/Headset/Area Scan (10x15x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.141 mW/g

Front/802.11a_Ch 149 w/Headset/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 5.332 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 0.3920
SAR(1 g) = 0.066 mW/g; SAR(10 g) = 0.022 mW/g
Maximum value of SAR (measured) = 0.164 mW/g



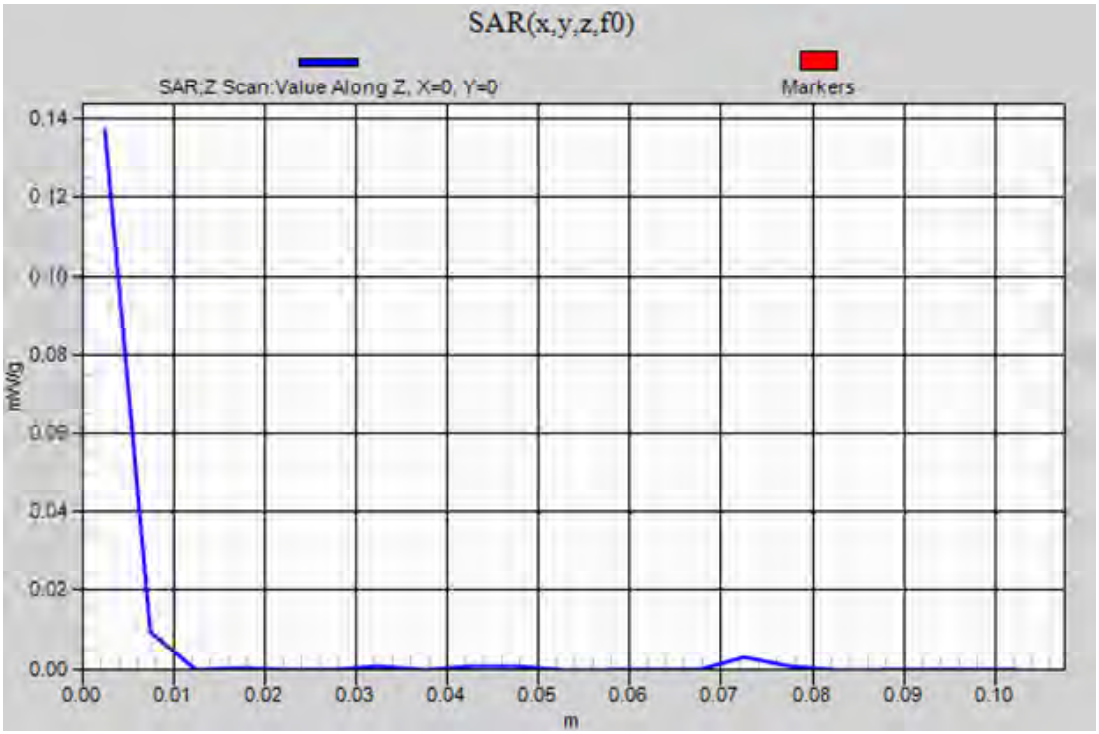
0 dB = 0.160mW/g = -15.92 dB mW/g

Test Laboratory: UL CCS SAR Lab A Date: 7/19/2012

WiFi 5.8GHz

Frequency: 5745 MHz; Duty Cycle: 1:1

Front/802.11a_Ch 149 w/Headset/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Maximum value of SAR (measured) = 0.137 mW/g



Test Laboratory: UL CCS SAR Lab C Date: 8/4/2012

Bluetooth

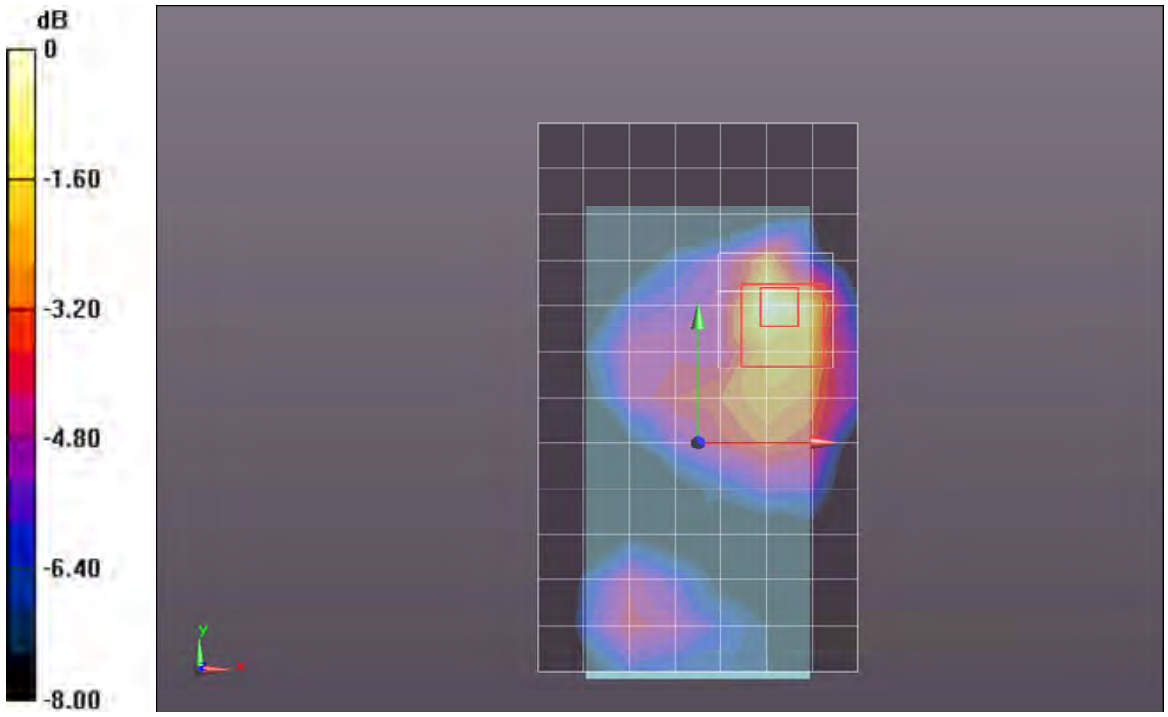
Frequency: 2441 MHz; Duty Cycle: 1:3.25; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used (interpolated): f = 2441 MHz; σ = 1.911 mho/m; ε_r = 51.785; ρ = 1000 kg/m^3
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1239; Calibrated: 6/6/2012
- Probe: EX3DV4 - SN3773; ConvF(6.67, 6.67, 6.67); Calibrated: 3/14/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (B); Type: QDOVA001BB; Serial: 1099

Rear/802.15_GFSK_ch 39/Area Scan (8x13x1): Measurement grid: dx=12mm, dy=12mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.141 mW/g

Rear/802.15_GFSK_ch 39/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.729 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 0.2370
SAR(1 g) = 0.105 mW/g; SAR(10 g) = 0.052 mW/g
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.146 mW/g



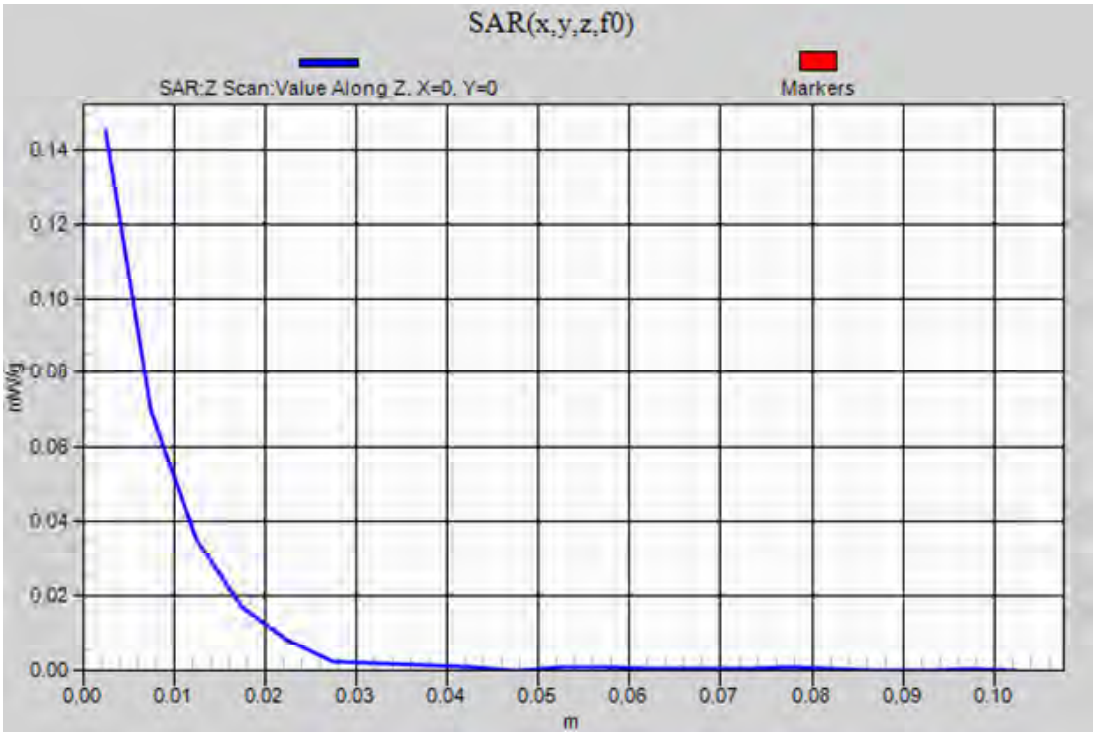
0 dB = 0.140mW/g = -17.08 dB mW/g

Test Laboratory: UL CCS SAR Lab C Date: 8/4/2012

Bluetooth

Frequency: 2441 MHz; Duty Cycle: 1:3.25

Rear/802.15_GFSK_ch 39/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.145 mW/g



17. Simultaneous Transmission SAR Analysis (Model A1428)

KDB 447498 D01 General RF Exposure Guidance v05 (Draft), introduces a new formula for calculating the SAR to Peak Location Ratio (SPLSR) between pairs of simultaneously transmitting antennas:

$$SPLSR = (SAR_1 + SAR_2)^{1.5} / Ri$$

Where:

SAR_1 is the highest measured or estimated SAR for the first of a pair of simultaneous transmitting antennas, in a specific test operating mode and exposure condition

SAR_2 is the highest measured or estimated SAR for the second of a pair of simultaneous transmitting antennas, in the same test operating mode and exposure condition as the first

Ri is the separation distance between the pair of simultaneous transmitting antennas. When the SAR is measured, for both antennas in the pair, it is determined by the actual x, y and z coordinates in the 1-g SAR for each SAR peak location, based on the extrapolated and interpolated result in the zoom scan measurement, using the formula of $[(x_1-x_2)^2 + (y_1-y_2)^2 + (z_1-z_2)^2]$

A new threshold of 0.04 is also introduced in the draft KDB. Thus, in order for a pair of simultaneous transmitting antennas with the sum of 1-g SAR > 1.6 W/kg to qualify for exemption from Simultaneous Transmission SAR measurements, it has to satisfy the condition of:

$$(SAR_1 + SAR_2)^{1.5} / Ri < 0.04$$

FCC has authorized the use of the draft SPLSR formula for this application.

17.1. Head Exposure Conditions

17.1.1. Sum of the SAR for GSM, W-CDMA, CDMA, LTE & WiFi 2.4GHz Band

Sum of the SAR with Measured Values (Primary Antenna)

Test Position	Voice					Data	∑ 1-g SAR (mW/g)
	GSM 850	GSM 1900	W-CDMA Band V	W-CDMA Band II	LTE (VOIP) Band 4	WiFi 2.4 GHz	
Left Touch	0.716					0.205	0.921
		0.631				0.205	0.836
			0.791			0.205	0.996
				0.826		0.205	1.031
					0.741	0.205	0.946
Left Tilt	0.356					0.131	0.487
		0.350				0.131	0.481
			0.435			0.131	0.566
				0.487		0.131	0.618
					0.416	0.131	0.547
Right Touch	0.666					0.572	1.238
		1.030				0.572	1.602
			0.704			0.572	1.276
				1.130		0.572	1.702
					1.240	0.572	1.812
Right Tilt	0.366					0.326	0.692
		0.324				0.326	0.650
			0.437			0.326	0.763
				0.426		0.326	0.752
					0.395	0.326	0.721

Sum of the SAR with Scaled Values for the Worst-case Configuration

As the SAR for these configurations were measured at the maximum of tune-up tolerance limit, SAR scaling does not need to be applied.

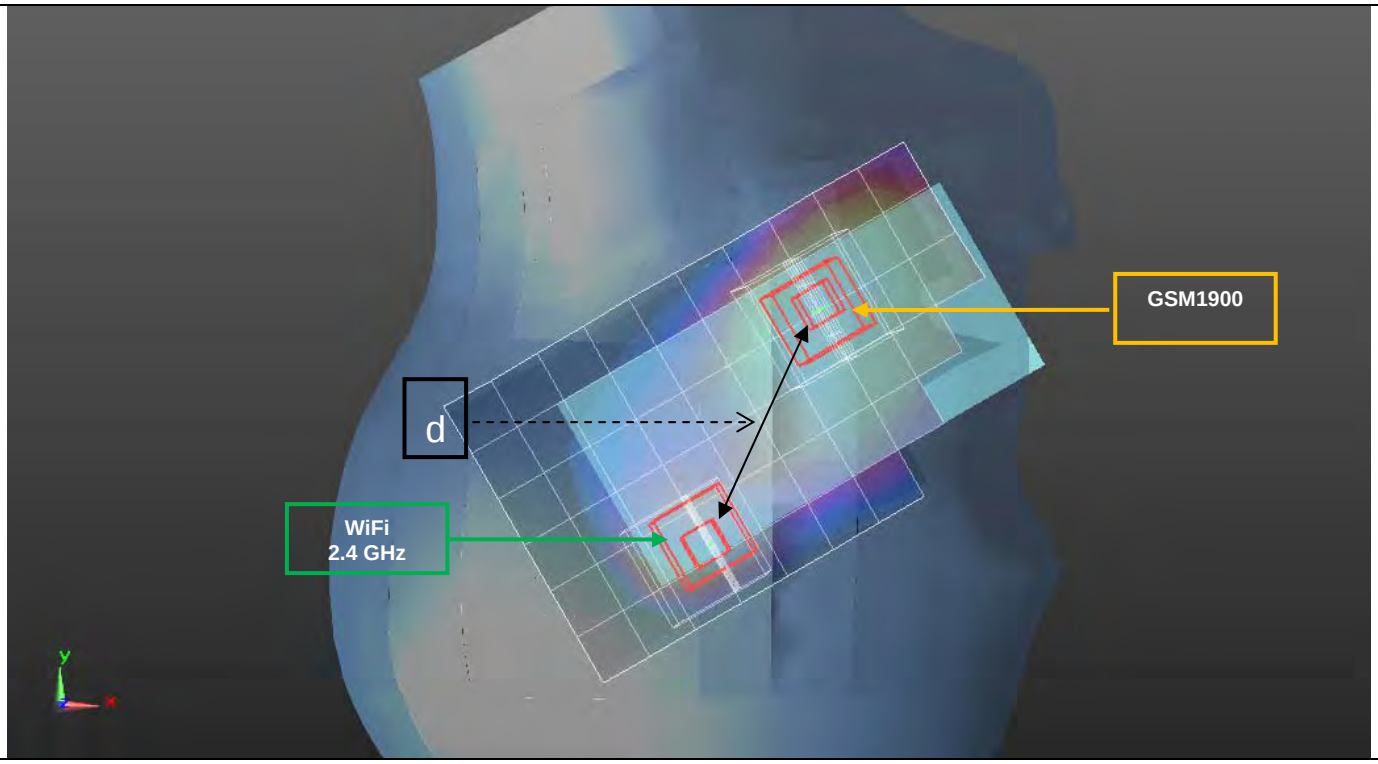
SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination						∑ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Fig.
		GSM 850	GSM 1900	W-CDMA Band V	W-CDMA Band II	LTE (VOIP) Band 4	WiFi 2.4 GHz				
1	Right Touch		1.030				0.572	1.602	75.1	0.027	1
					1.130		0.572	1.702	77.7	0.029	2
						1.240	0.572	1.812	78.5	0.031	20

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

Figure (1)

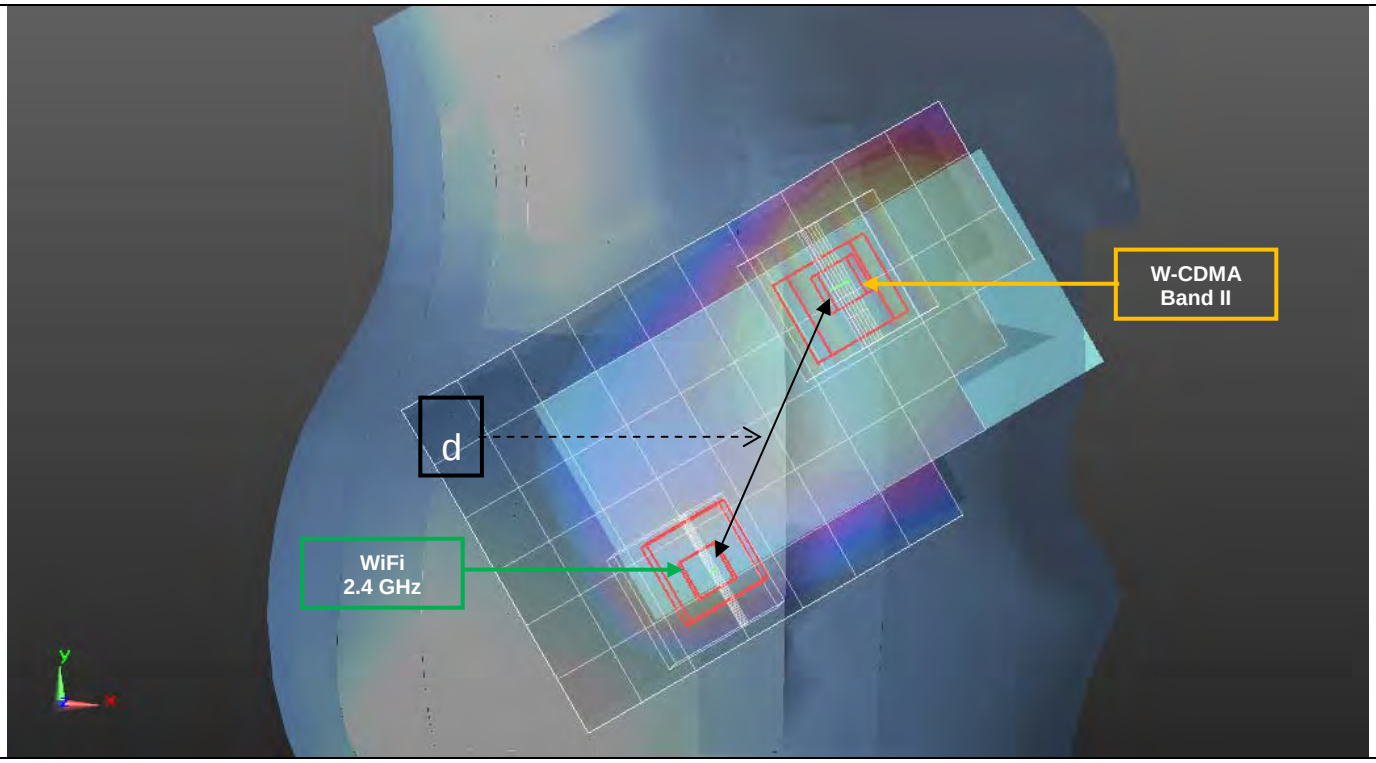


Mode	Peak SAR	X	Y	Z
	mW/g	m	m	m
GSM1900	1.19	0.0661	-0.262	-0.173
WiFi 2.4 GHz	0.833	0.0322	-0.329	-0.173

d: Calculated distance (mm)
75.1

The Peak Location Separation Distance is computed by using the formula below:
SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

Figure (2)

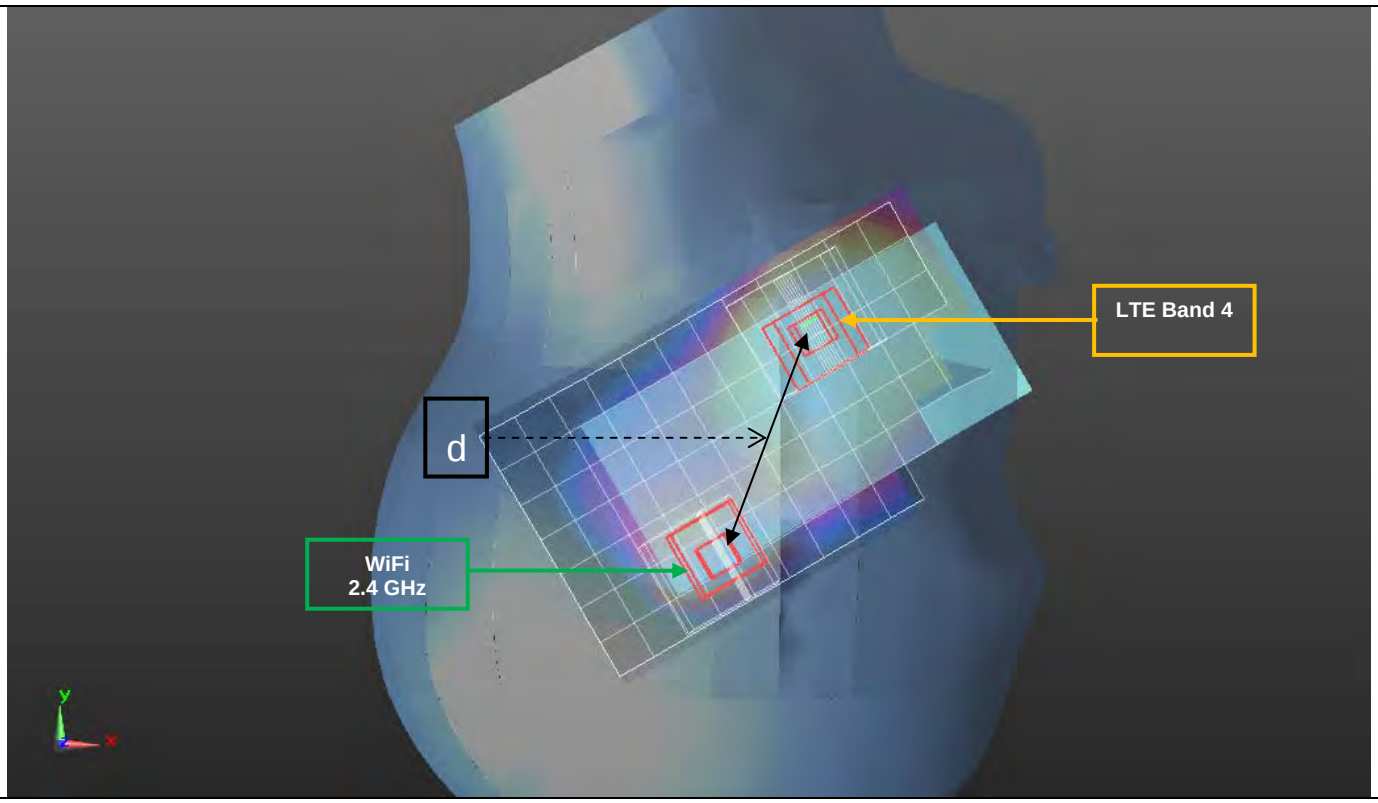


Mode	Peak SAR	X	Y	Z
	mW/g	m	m	m
W-CDMA Band II	1.36	0.0659	-0.259	-0.173
WiFi 2.4 GHz	0.833	0.0322	-0.329	-0.173

d: Calculated distance (mm)
77.7

The Peak Location Separation Distance is computed by using the formula below:
SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

Figure (20)



Mode	Peak SAR	X	Y	Z
	mW/g	m	m	m
LTE (VOIP) Band 4	1.46	0.061	-0.256	-0.173
WiFi 2.4 GHz	0.833	0.0322	-0.329	-0.173

d: Calculated distance (mm)
78.5

The Peak Location Separation Distance is computed by using the formula below:
SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

Sum of the SAR with Measured Values (Secondary Antenna)

Test Position	Voice					Data	∑ 1-g SAR (mW/g)
	GSM 850	GSM 1900	W-CDMA Band V	W-CDMA Band II	LTE (VOIP) Band 4	WiFi 2.4 GHz	
Left Touch	0.660					0.205	0.865
		0.484				0.205	0.689
			0.826			0.205	1.031
				0.463		0.205	0.668
					1.120	0.205	1.325
Left Tilt	0.551					0.131	0.682
		0.552				0.131	0.683
			0.620			0.131	0.751
				0.509		0.131	0.640
					1.100	0.131	1.231
Right Touch	0.439					0.572	1.011
		0.901				0.572	1.473
			0.501			0.572	1.073
				0.892		0.572	1.464
					1.250	0.572	1.822
Right Tilt	0.375					0.326	0.701
		0.788				0.326	1.114
			0.421			0.326	0.747
				0.700		0.326	1.026
					1.190	0.326	1.516

Sum of the SAR with Scaled Values for the Worst-case Configuration

As the SAR for these configurations were measured at the maximum of tune-up tolerance limit, SAR scaling does not need to be applied.

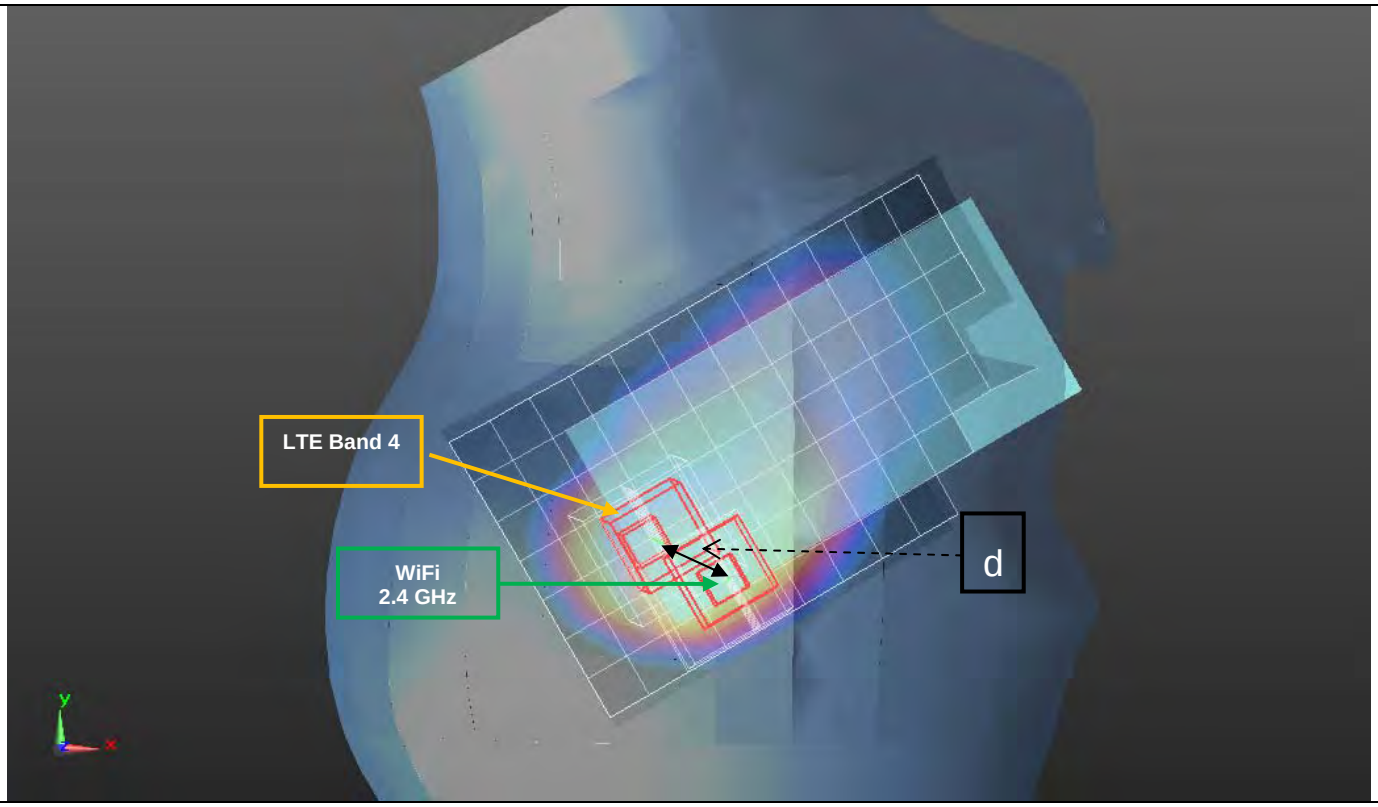
SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination						∑ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR	Fig.
		GSM 850	GSM 1900	W-CDMA Band V	W-CDMA Band II	LTE (VOIP) Band 4	WiFi 2.4 GHz				
11	Right Touch					1.250	0.572	1.822	23	0.107	21

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is required for Cases #11 because the sum of the 1-g SAR is > 1.6 W/kg and the SPLSR for at least one antenna pairing combination is > 0.04.

Figure (21)



Mode	Peak SAR	X	Y	Z
	mW/g	m	m	m
LTE (VOIP) Band 4	1.72	0.012	-0.318	-0.172
WiFi 2.4 GHz	0.833	0.0322	-0.329	-0.173

d: Calculated distance (mm)
23.0

The Peak Location Separation Distance is computed by using the formula below:
SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

17.1.2. Sum of the SAR for GSM, W-CDMA, CDMA & WiFi 5.2 GHz Band

Sum of the SAR with Measured Values (Primary Antenna)

Test Position	Voice				Data	∑ 1-g SAR (mW/g)
	GSM 850	GSM 1900	W-CDMA Band V	W-CDMA Band II	WiFi 5.2 GHz	
Left Touch	0.716				0.440	1.156
		0.631			0.440	1.071
			0.791		0.440	1.231
				0.826	0.440	1.266
Left Tilt	0.356				0.471	0.827
		0.350			0.471	0.821
			0.435		0.471	0.906
				0.487	0.471	0.958
Right Touch	0.666				0.594	1.260
		1.030			0.594	1.624
			0.704		0.594	1.298
				1.130	0.594	1.724
Right Tilt	0.366				0.566	0.932
		0.324			0.566	0.890
			0.437		0.566	1.003
				0.426	0.566	0.992

Sum of the SAR with Scaled Values for the Worst-case Configuration

As the SAR for these configurations were measured at the maximum of tune-up tolerance limit, SAR scaling does not need to be applied.

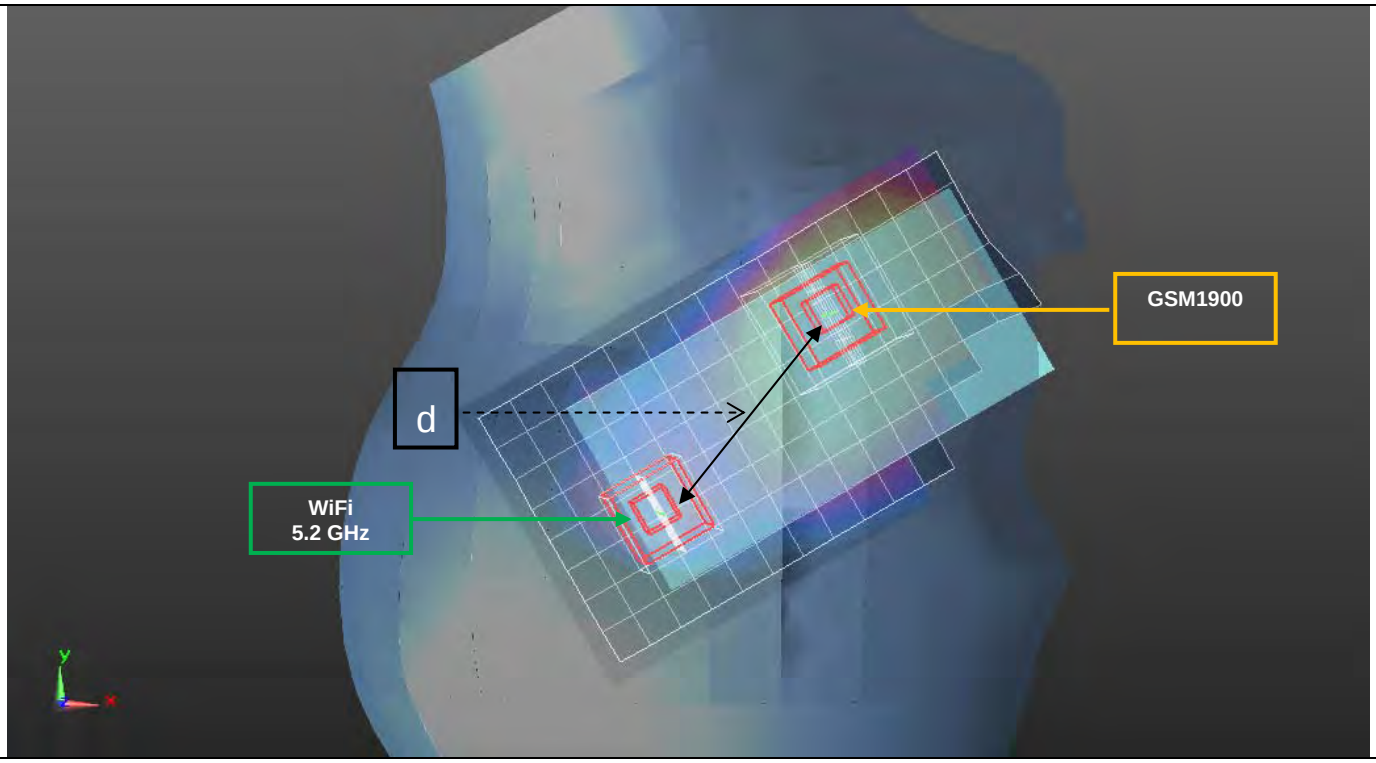
SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination					∑ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR (≤ 0.04)	Figure
		GSM 850	GSM 1900	W-CDMA Band V	W-CDMA Band II	WiFi 5.2 GHz				
2	Right Touch		1.030			0.594	1.624	75.9	0.027	3
					1.130	0.594	1.724	78.0	0.029	4

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

Figure (3)

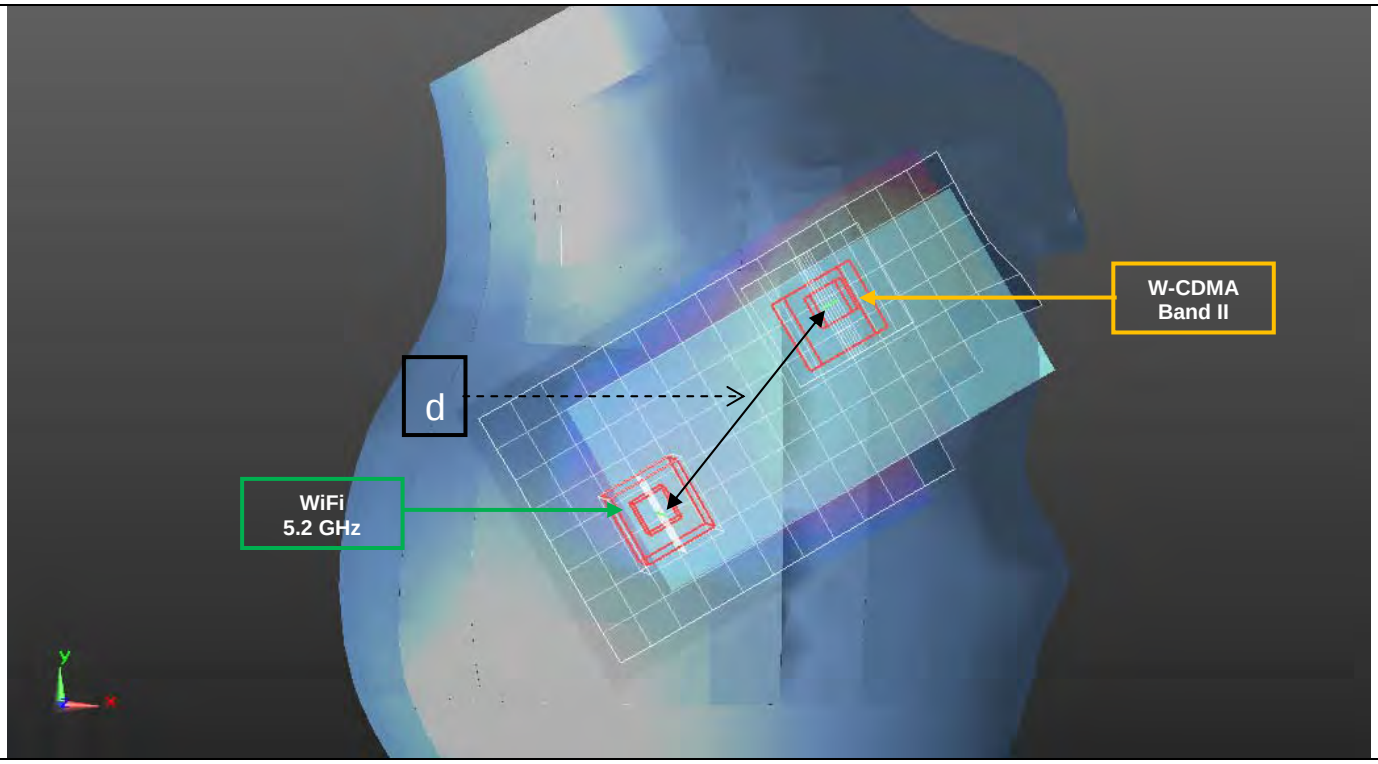


Mode	Peak SAR	X	Y	Z
	mW/g	m	m	m
GSM1900	1.19	0.0661	-0.262	-0.173
WiFi 5.2 GHz	1.24	0.0149	-0.318	-0.171

d: Calculated distance (mm)
75.9

The Peak Location Separation Distance is computed by using the formula below:
SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

Figure (4)



Mode	Peak SAR	X	Y	Z
	mW/g	m	m	m
W-CDMA Band II	1.36	0.0659	-0.259	-0.173
WiFi 5.2 GHz	1.24	0.0149	-0.318	-0.171

d: Calculated distance (mm)
78.0

The Peak Location Separation Distance is computed by using the formula below:
SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

Sum of the SAR with Measured Values (Secondary Antenna)

Test Position	Voice				Data	∑ 1-g SAR (mW/g)
	GSM 850	GSM 1900	W-CDMA Band V	W-CDMA Band II	WiFi 5.2 GHz	
Left Touch	0.660				0.440	1.100
		0.484			0.440	0.924
			0.826		0.440	1.266
				0.463	0.440	0.903
Left Tilt	0.551				0.471	1.022
		0.552			0.471	1.023
			0.620		0.471	1.091
				0.509	0.471	0.980
Right Touch	0.439				0.594	1.033
		0.901			0.594	1.495
			0.501		0.594	1.095
				0.892	0.594	1.486
Right Tilt	0.375				0.566	0.941
		0.788			0.566	1.354
			0.421		0.566	0.987
				0.700	0.566	1.266

SAR to Peak Location Separation Ratio (SPLSR)

As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

17.1.3. Sum of the SAR for GSM, W-CDMA, CDMA & WiFi 5.3 GHz Band

Sum of the SAR with Measured Values (Primary Antenna)

Test Position	Voice				Data	∑ 1-g SAR (mW/g)
	GSM 850	GSM 1900	W-CDMA Band V	W-CDMA Band II	WiFi 5.3 GHz	
Left Touch	0.716				0.384	1.100
		0.631			0.384	1.015
			0.791		0.384	1.175
				0.826	0.384	1.210
Left Tilt	0.356				0.350	0.706
		0.350			0.350	0.700
			0.435		0.350	0.785
				0.487	0.350	0.837
Right Touch	0.666				0.538	1.204
		1.030			0.538	1.568
			0.704		0.538	1.242
				1.130	0.538	1.668
Right Tilt	0.366				0.474	0.840
		0.324			0.474	0.798
			0.437		0.474	0.911
				0.426	0.474	0.900

Sum of the SAR with Scaled Values for the Worst-case Configuration

As the SAR for these configurations were measured at the maximum of tune-up tolerance limit, SAR scaling does not need to be applied.

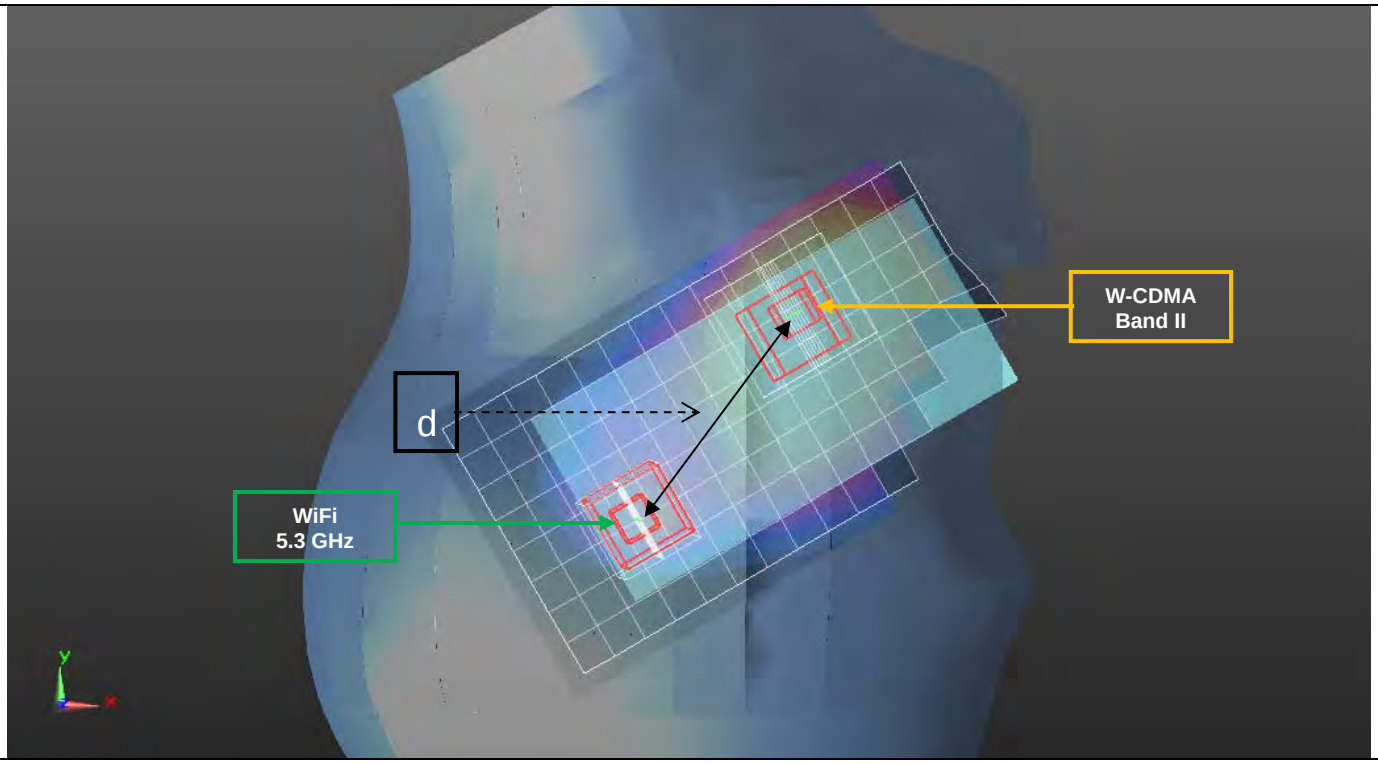
SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination					∑ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR (≤ 0.04)	Figure
		GSM 850	GSM 1900	W-CDMA Band V	W-CDMA Band II	WiFi 5.3 GHz				
3	Right Touch				1.130	0.538	1.668	74.7	0.029	5

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

Figure (5)



Mode	Peak SAR	X	Y	Z
	mW/g	m	m	m
W-CDMA Band II	1.36	0.0659	-0.259	-0.173
WiFi 5.3 GHz	1.16	0.0188	-0.317	-0.172

d: Calculated distance (mm)
74.7

The Peak Location Separation Distance is computed by using the formula below:
SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

Sum of the SAR with Measured Values (Secondary Antenna)

Test Position	Voice				Data	∑ 1-g SAR (mW/g)
	GSM 850	GSM 1900	W-CDMA Band V	W-CDMA Band II	WiFi 5.3 GHz	
Left Touch	0.660				0.384	1.044
		0.484			0.384	0.868
			0.826		0.384	1.210
				0.463	0.384	0.847
Left Tilt	0.551				0.350	0.901
		0.552			0.350	0.902
			0.620		0.350	0.970
				0.509	0.350	0.859
Right Touch	0.439				0.538	0.977
		0.901			0.538	1.439
			0.501		0.538	1.039
				0.892	0.538	1.430
Right Tilt	0.375				0.474	0.849
		0.788			0.474	1.262
			0.421		0.474	0.895
				0.700	0.474	1.174

SAR to Peak Location Separation Ratio (SPLSR)

As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

17.1.4. Sum of the SAR for GSM, W-CDMA, CDMA & WiFi 5.5 GHz Band

Sum of the SAR with Measured Values (Primary Antenna)

Test Position	Voice				Data	∑ 1-g SAR (mW/g)
	GSM 850	GSM 1900	W-CDMA Band V	W-CDMA Band II	WiFi 5.5 GHz	
Left Touch	0.716				0.492	1.208
		0.631			0.492	1.123
			0.791		0.492	1.283
				0.826	0.492	1.318
Left Tilt	0.356				0.530	0.886
		0.350			0.530	0.880
			0.435		0.530	0.965
				0.487	0.530	1.017
Right Touch	0.666				0.593	1.259
		1.030			0.593	1.623
			0.704		0.593	1.297
				1.130	0.593	1.723
Right Tilt	0.366				0.579	0.945
		0.324			0.579	0.903
			0.437		0.579	1.016
				0.426	0.579	1.005

Sum of the SAR with Scaled Values for the Worst-case Configuration

As the SAR for these configurations were measured at the maximum of tune-up tolerance limit, SAR scaling does not need to be applied.

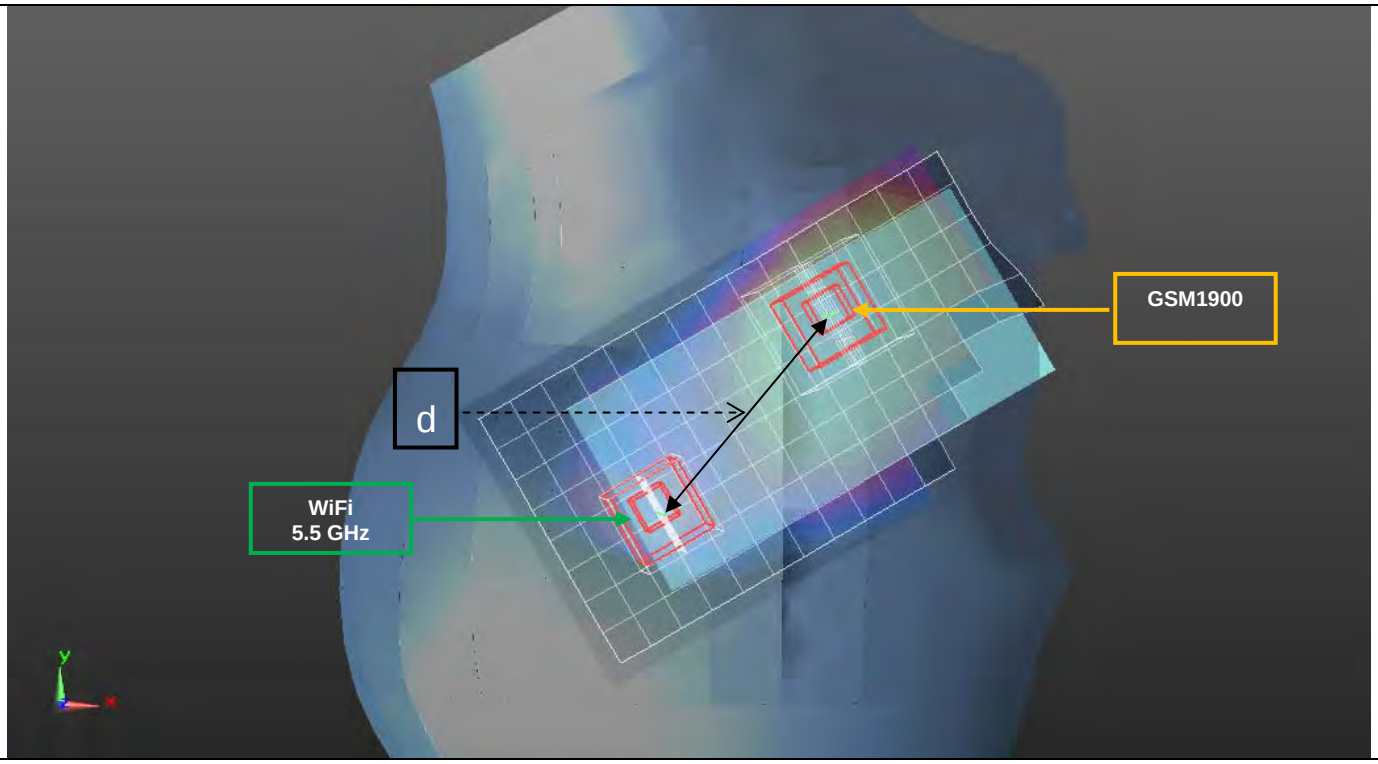
SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination					∑ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR (≤ 0.04)	Figure
		GSM 850	GSM 1900	W-CDMA Band V	W-CDMA Band II	WiFi 5.5 GHz				
4	Right Touch		1.030			0.593	1.623	75.9	0.027	6
					1.130	0.593	1.723	78.0	0.029	7

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

Figure (6)

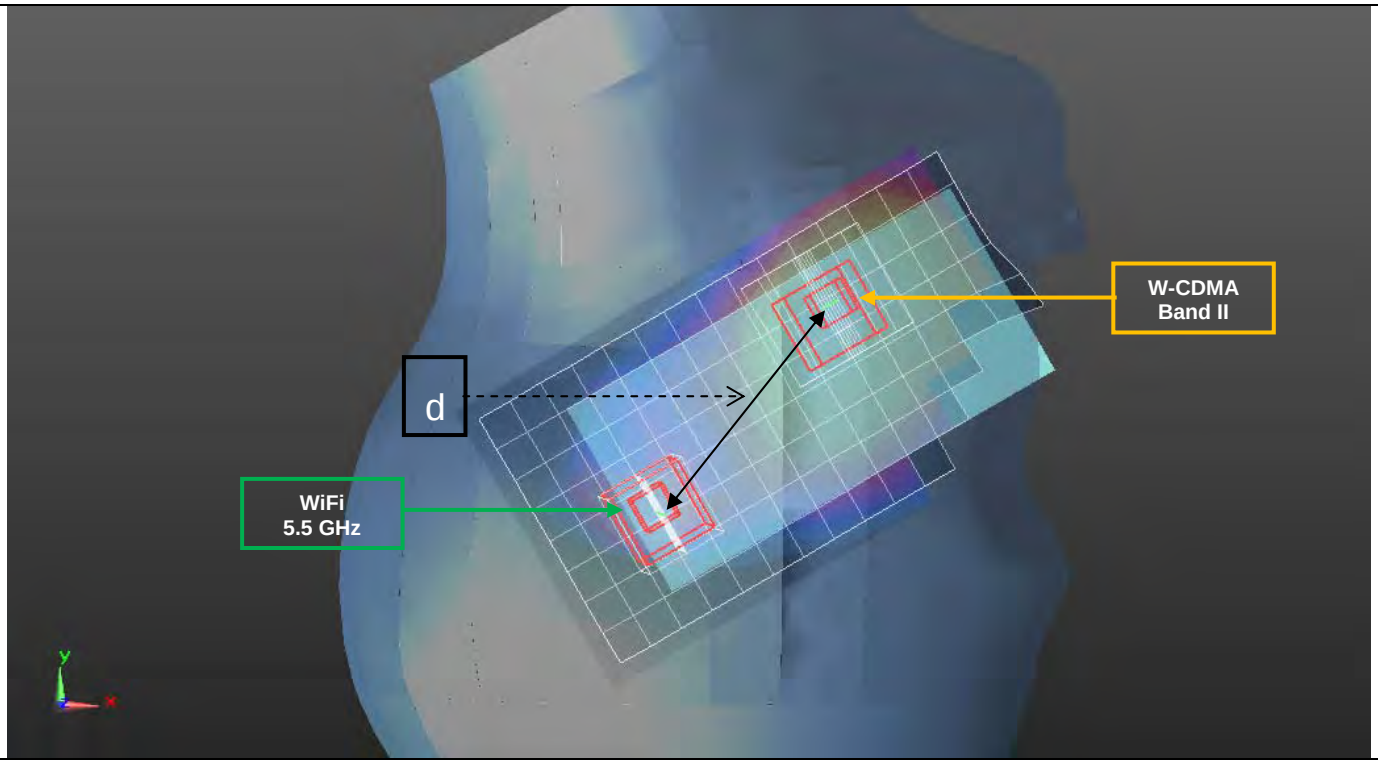


Mode	Peak SAR	X	Y	Z
	mW/g	m	m	m
GSM1900	1.19	0.0661	-0.262	-0.173
WiFi 5.5 GHz	1.31	0.0149	-0.318	-0.171

d: Calculated distance (mm)
75.9

The Peak Location Separation Distance is computed by using the formula below:
SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

Figure (7)



Mode	Peak SAR	X	Y	Z
	mW/g	m	m	m
W-CDMA Band II	1.36	0.0659	-0.259	-0.173
WiFi 5.5 GHz	1.31	0.0149	-0.318	-0.171

d: Calculated distance (mm)
78.0

The Peak Location Separation Distance is computed by using the formula below:
SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

Sum of the SAR with Measured Values (Secondary Antenna)

Test Position	Voice				Data	∑ 1-g SAR (mW/g)
	GSM 850	GSM 1900	W-CDMA Band V	W-CDMA Band II	WiFi 5.5 GHz	
Left Touch	0.660				0.492	1.152
		0.484			0.492	0.976
			0.826		0.492	1.318
				0.463	0.492	0.955
Left Tilt	0.551				0.530	1.081
		0.552			0.530	1.082
			0.620		0.530	1.150
				0.509	0.530	1.039
Right Touch	0.439				0.593	1.032
		0.901			0.593	1.494
			0.501		0.593	1.094
				0.892	0.593	1.485
Right Tilt	0.375				0.579	0.954
		0.788			0.579	1.367
			0.421		0.579	1.000
				0.700	0.579	1.279

SAR to Peak Location Separation Ratio (SPLSR)

As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

17.1.5. Sum of the SAR for GSM, W-CDMA, CDMA & WiFi 5.8 GHz Band

Sum of the SAR with Measured Values (Primary Antenna)

Test Position	Voice				Data	∑ 1-g SAR (mW/g)
	GSM 850	GSM 1900	W-CDMA Band V	W-CDMA Band II	WiFi 5.8 GHz	
Left Touch	0.716				0.559	1.275
		0.631			0.559	1.190
			0.791		0.559	1.350
				0.826	0.559	1.385
Left Tilt	0.356				0.546	0.902
		0.350			0.546	0.896
			0.435		0.546	0.981
				0.487	0.546	1.033
Right Touch	0.666				0.580	1.246
		1.030			0.580	1.610
			0.704		0.580	1.284
				1.130	0.580	1.710
Right Tilt	0.366				0.577	0.943
		0.324			0.577	0.901
			0.437		0.577	1.014
				0.426	0.577	1.003

Sum of the SAR with Scaled Values for the Worst-case Configuration

As the SAR for these configurations were measured at the maximum of tune-up tolerance limit, SAR scaling does not need to be applied.

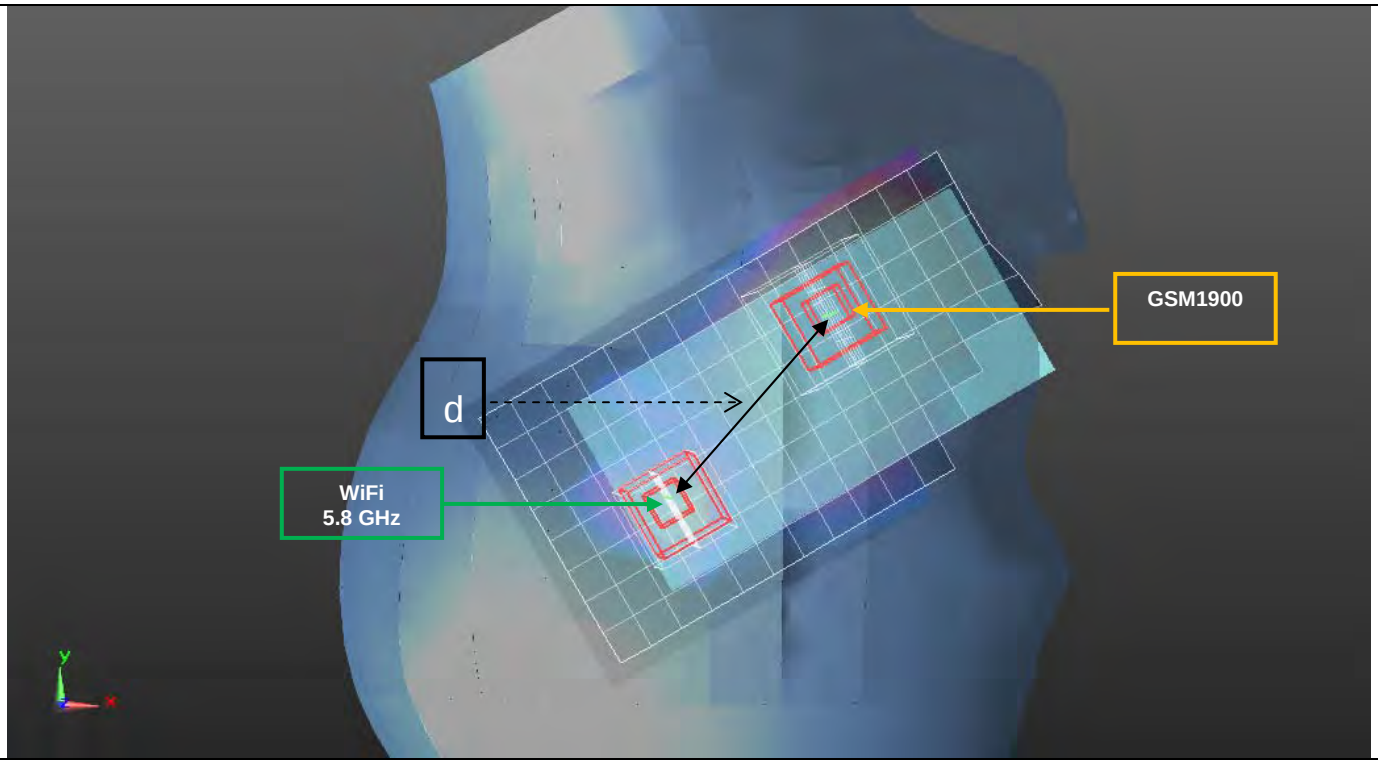
SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination					∑ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR (≤ 0.04)	Figure
		GSM 850	GSM 1900	W-CDMA Band V	W-CDMA Band II	WiFi 2.4 GHz				
5	Right Touch		1.030			0.580	1.610	71.7	0.028	8
					1.130	0.580	1.710	73.7	0.030	9

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

Figure (8)

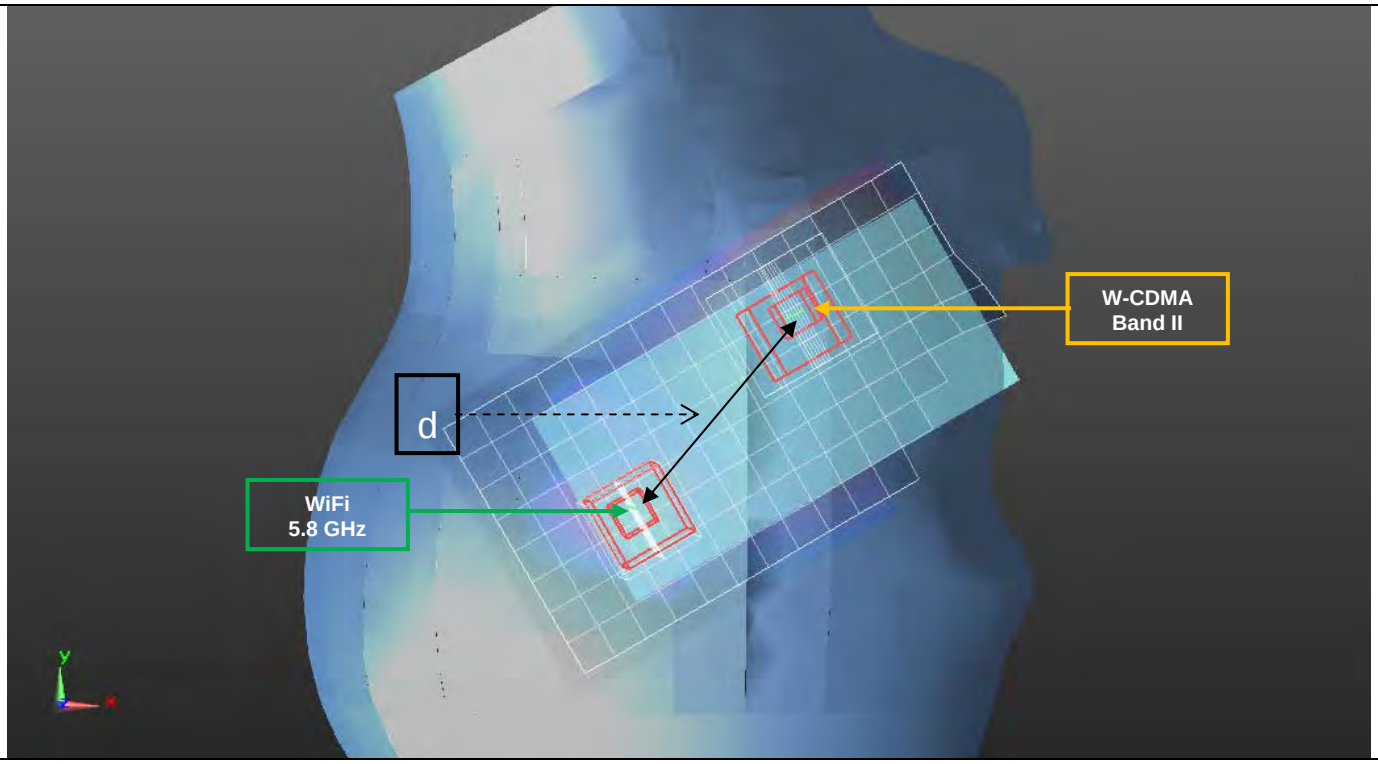


Mode	Peak SAR	X	Y	Z
	mW/g	m	m	m
GSM1900	1.19	0.0661	-0.262	-0.173
WiFi 5.8 GHz	1.27	0.0168	-0.314	-0.172

d: Calculated distance (mm)
71.7

The Peak Location Separation Distance is computed by using the formula below:
SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

Figure (9)



Mode	Peak SAR	X	Y	Z
	mW/g	m	m	m
W-CDMA Band II	1.36	0.0659	-0.259	-0.173
WiFi 5.8 GHz	1.27	0.0168	-0.314	-0.172

d: Calculated distance (mm)
73.7

The Peak Location Separation Distance is computed by using the formula below:
SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

Sum of the SAR with Measured Values (Secondary Antenna)

Test Position	Voice				Data	∑ 1-g SAR (mW/g)
	GSM 850	GSM 1900	W-CDMA Band V	W-CDMA Band II	WiFi 5.8 GHz	
Left Touch	0.660				0.559	1.219
		0.484			0.559	1.043
			0.826		0.559	1.385
				0.463	0.559	1.022
Left Tilt	0.551				0.546	1.097
		0.552			0.546	1.098
			0.620		0.546	1.166
				0.509	0.546	1.055
Right Touch	0.439				0.580	1.019
		0.901			0.580	1.481
			0.501		0.580	1.081
				0.892	0.580	1.472
Right Tilt	0.375				0.577	0.952
		0.788			0.577	1.365
			0.421		0.577	0.998
				0.700	0.577	1.277

SAR to Peak Location Separation Ratio (SPLSR)

As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

17.2. Body-worn Accessory Exposure Conditions

17.2.1. Sum of the SAR for GSM, WiFi 2.4 GHz Band

Sum of the SAR with Measured Values (Primary Antenna)

Test Position	Voice		Data	∑ 1-g SAR (mW/g)
	GSM 850	GSM 1900	WiFi 2.4 GHz	
Rear	0.896		0.198	1.094
		0.821	0.198	1.019
Front	0.712		0.083	0.795
		0.600	0.083	0.683

SAR to Peak Location Separation Ratio (SPLSR)
As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

Conclusion:

- Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

Sum of the SAR with Measured Values (Secondary Antenna)

Test Position	Voice		Data	∑ 1-g SAR (mW/g)
	GSM 850	GSM 1900	WiFi 2.4 GHz	
Rear	0.246		0.198	0.444
		0.331	0.198	0.529
Front	0.191		0.083	0.274
		0.252	0.083	0.335

SAR to Peak Location Separation Ratio (SPLSR)
As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

17.2.2. Sum of the SAR for GSM & WiFi 5.2 GHz Band

Sum of the SAR with Measured Values (Primary Antenna)

Test Position	Voice		Data	∑ 1-g SAR (mW/g)
	GSM 850	GSM 1900	WiFi 5.2 GHz	
Rear	0.896		0.050	0.946
		0.821	0.050	0.871
Front	0.712		0.065	0.777
		0.600	0.065	0.665

SAR to Peak Location Separation Ratio (SPLSR)
As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

Conclusion:

- Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

Sum of the SAR with Measured Values (Secondary Antenna)

Test Position	Voice		Data	∑ 1-g SAR (mW/g)
	GSM 850	GSM 1900	WiFi 5.2 GHz	
Rear	0.246		0.050	0.296
		0.331	0.050	0.381
Front	0.191		0.065	0.256
		0.252	0.065	0.317

SAR to Peak Location Separation Ratio (SPLSR)
As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

17.2.3. Sum of the SAR for GSM & WiFi 5.3 GHz Band

Sum of the SAR with Measured Values (Primary Antenna)

Test Position	Voice		Data	∑ 1-g SAR (mW/g)
	GSM 850	GSM 1900	WiFi 5.3 GHz	
Rear	0.896		0.068	0.964
		0.821	0.068	0.889
Front	0.712		0.071	0.783
		0.600	0.071	0.671

SAR to Peak Location Separation Ratio (SPLSR)
As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

Conclusion:
Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

Sum of the SAR with Measured Values (Secondary Antenna)

Test Position	Voice		Data	∑ 1-g SAR (mW/g)
	GSM 850	GSM 1900	WiFi 5.3 GHz	
Rear	0.246		0.068	0.314
		0.331	0.068	0.399
Front	0.191		0.071	0.262
		0.252	0.071	0.323

SAR to Peak Location Separation Ratio (SPLSR)
As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

Conclusion:
Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

17.2.4. Sum of the SAR for GSM & WiFi 5.5 GHz Band

Sum of the SAR with Measured Values (Primary Antenna)

Test Position	Voice		Data	∑ 1-g SAR (mW/g)
	GSM 850	GSM 1900	WiFi 5.5 GHz	
Rear	0.896		0.076	0.972
		0.821	0.076	0.897
Front	0.712		0.085	0.797
		0.600	0.085	0.685

SAR to Peak Location Separation Ratio (SPLSR)
As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

Conclusion:

- Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

Sum of the SAR with Measured Values (Secondary Antenna)

Test Position	Voice		Data	∑ 1-g SAR (mW/g)
	GSM 850	GSM 1900	WiFi 5.5 GHz	
Rear	0.246		0.076	0.322
		0.331	0.076	0.407
Front	0.191		0.085	0.276
		0.252	0.085	0.337

SAR to Peak Location Separation Ratio (SPLSR)
As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

17.2.5. Sum of the SAR for GSM & WiFi 5.8 GHz Band

Sum of the SAR with Measured Values (Primary Antenna)

Test Position	Voice		Data	∑ 1-g SAR (mW/g)
	GSM 850	GSM 1900	WiFi 5.8 GHz	
Rear	0.896		0.051	0.947
		0.821	0.051	0.872
Front	0.712		0.067	0.779
		0.600	0.067	0.667

SAR to Peak Location Separation Ratio (SPLSR)
As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

Conclusion:

- Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

Sum of the SAR with Measured Values (Secondary Antenna)

Test Position	Voice		Data	∑ 1-g SAR (mW/g)
	GSM 850	GSM 1900	WiFi 5.8 GHz	
Rear	0.246		0.051	0.297
		0.331	0.051	0.382
Front	0.191		0.067	0.258
		0.252	0.067	0.319

SAR to Peak Location Separation Ratio (SPLSR)
As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

17.3. Body-worn Accessory & Hotspot Mode Exposure Conditions

17.3.1.Sum of the SAR for GSM, W-CDMA & WiFi 2.4 GHz Band

Sum of the SAR with Measured Values (Primary Antenna)

Test Position	Data				Data	∑ 1-g SAR (mW/g)
	GSM 850	GSM 1900	W-CDMA Band V	W-CDMA Band II	WiFi 2.4 GHz	
Rear	0.831				0.198	1.029
		1.080			0.198	1.278
			0.913		0.198	1.111
				1.140	0.198	1.338
Front	0.646				0.083	0.729
		0.932			0.083	1.015
			0.743		0.083	0.826
				0.804	0.083	0.887
Edge 1	0				0.084	0.084
		0			0.084	0.084
			0		0.084	0.084
				0	0.084	0.084
Edge 2	0.373				0.022	0.395
		0.845			0.022	0.867
			0.619		0.022	0.641
				0.638	0.022	0.660
Edge 3	0.147				0	0.147
		0.957			0	0.957
			0.177		0	0.177
				0.758	0	0.758
Edge 4	0.493				0.170	0.663
		0.125			0.170	0.295
			0.781		0.170	0.951
				0.119	0.170	0.289

SAR to Peak Location Separation Ratio (SPLSR)
As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

Conclusion:
Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

Sum of the SAR with Measured Values (Secondary Antenna)

Test Position	Data				Data	∑ 1-g SAR (mW/g)
	GSM 850	GSM 1900	W-CDMA Band V	W-CDMA Band II	WiFi 2.4 GHz	
Rear	0.294				0.198	0.492
		0.747			0.198	0.945
			0.303		0.198	0.501
				0.214	0.198	0.412
Front	0.242				0.083	0.325
		0.47			0.083	0.553
			0.253		0.083	0.336
				0.285	0.083	0.368
Edge 1	0.156				0.084	0.240
		0.529			0.084	0.613
			0.134		0.084	0.218
				0.193	0.084	0.277
Edge 2	0.244				0.022	0.266
		0.146			0.022	0.168
			0.233		0.022	0.255
				0.056	0.022	0.078
Edge 3	0				0	0
		0			0	0
			0		0	0
				0	0	0
Edge 4	0.081				0.170	0.251
		0.406			0.170	0.576
			0.113		0.170	0.283
				0.203	0.170	0.373

SAR to Peak Location Separation Ratio (SPLSR)
As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

Conclusion:
Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

17.3.2.Sum of the SAR for LTE & WiFi 2.4 GHz Band

Sum of the SAR with Measured Values (Primary Antenna)

Test Position	Data				Data	∑ 1-g SAR (mW/g)
	LTE Band 2	LTE Band 4	LTE Band 5	LTE Band 17	WiFi 2.4 GHz	
Rear	1.170				0.198	1.368
		1.180			0.198	1.378
			0.627		0.198	0.825
				0.538	0.198	0.736
Front	0.941				0.083	1.024
		1.180			0.083	1.263
			0.724		0.083	0.807
				0.547	0.083	0.630
Edge 1	0				0.084	0.084
		0			0.084	0.084
			0		0.084	0.084
				0	0.084	0.084
Edge 2	0.906				0.022	0.928
		0.765			0.022	0.787
			0.425		0.022	0.447
				0.321	0.022	0.343
Edge 3	1.030				0	1.030
		1.100			0	1.100
			0.111		0	0.111
				0.099	0	0.099
Edge 4	0.114				0.170	0.284
		0.058			0.170	0.228
			0.426		0.170	0.596
				0.317	0.170	0.487

SAR to Peak Location Separation Ratio (SPLSR)
As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

Conclusion:
Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

Sum of the SAR with Measured Values (Secondary Antenna)

Test Position	Data				Data	∑ 1-g SAR (mW/g)
	LTE Band 2	LTE Band 4	LTE Band 5	LTE Band 17	WiFi 2.4 GHz	
Rear	0.564				0.198	0.762
		0.583			0.198	0.781
			0.186		0.198	0.384
				0.244	0.198	0.442
Front	0.345				0.083	0.428
		0.310			0.083	0.393
			0.167		0.083	0.250
				0.203	0.083	0.286
Edge 1	0.240				0.084	0.324
		0.419			0.084	0.503
			0.113		0.084	0.197
				0.110	0.084	0.194
Edge 2	0.141				0.022	0.163
		0.075			0.022	0.097
			0.168		0.022	0.190
				0.112	0.022	0.134
Edge 3	0				0	0
		0			0	0
			0		0	0
				0	0	0
Edge 4	0.245				0.170	0.415
		0.228			0.170	0.398
			0.054		0.170	0.224
				0.082	0.170	0.252

SAR to Peak Location Separation Ratio (SPLSR)
As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

Conclusion:
Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

17.4. Multi-Band Volume Scan Combined Results

Case #	Test position	Multi-band	Standalone Results		Multi-Band Combined Results
			Zoom Scan	Volume Scan	
11	Right Touch	LTE Band 4	1.250	1.180	1.34
		WiFi 2.4GHz	0.572	0.576	

Note(s):

See Appendix 19.26_SAR test plots for volume scans.

18. Simultaneous Transmission SAR Analysis (Model A1429)

KDB 447498 D01 General RF Exposure Guidance v05 (Draft), introduces a new formula for calculating the SAR to Peak Location Ratio (SPLSR) between pairs of simultaneously transmitting antennas:

$$SPLSR = (SAR_1 + SAR_2)^{1.5} / Ri$$

Where:

SAR_1 is the highest measured or estimated SAR for the first of a pair of simultaneous transmitting antennas, in a specific test operating mode and exposure condition

SAR_2 is the highest measured or estimated SAR for the second of a pair of simultaneous transmitting antennas, in the same test operating mode and exposure condition as the first

Ri is the separation distance between the pair of simultaneous transmitting antennas. When the SAR is measured, for both antennas in the pair, it is determined by the actual x, y and z coordinates in the 1-g SAR for each SAR peak location, based on the extrapolated and interpolated result in the zoom scan measurement, using the formula of $[(x_1-x_2)^2 + (y_1-y_2)^2 + (z_1-z_2)^2]$

A new threshold of 0.04 is also introduced in the draft KDB. Thus, in order for a pair of simultaneous transmitting antennas with the sum of 1-g SAR > 1.6 W/kg to qualify for exemption from Simultaneous Transmission SAR measurements, it has to satisfy the condition of:

$$(SAR_1 + SAR_2)^{1.5} / Ri < 0.04$$

FCC has authorized the use of the draft SPLSR formula for this application.

18.1. Head Exposure Conditions

18.1.1. Sum of the SAR for GSM, W-CDMA, CDMA, LTE & WiFi 2.4GHz Band

Sum of the SAR with Measured Values (Primary Antenna)

Test Position	Voice								Data	∑ 1-g SAR (mW/g)
	GSM 850	GSM 1900	W-CDMA Band V	W-CDMA Band II	CDMA BC0	CDMA BC1	CDMA BC10	LTE (VOIP) Band 13	WiFi 2.4 GHz	
Left Touch	0.737								0.227	0.964
		0.452							0.227	0.679
			0.689						0.227	0.916
				0.758					0.227	0.985
					0.953				0.227	1.180
						0.714			0.227	0.941
							0.654		0.227	0.881
								0.53	0.227	0.757
Left Tilt	0.370								0.144	0.514
		0.254							0.144	0.398
			0.352						0.144	0.496
				0.380					0.144	0.524
					0.467				0.144	0.611
						0.448			0.144	0.592
							0.398		0.144	0.542
								0.286	0.144	0.430
Right Touch	0.702								0.522	1.224
		0.895							0.522	1.417
			0.588						0.522	1.110
				1.130					0.522	1.652
					0.894				0.522	1.416
						1.180			0.522	1.702
							0.602		0.522	1.124
								0.369	0.522	0.891
Right Tilt	0.704								0.401	1.105
		0.247							0.401	0.648
			0.379						0.401	0.780
				0.380					0.401	0.781
					0.487				0.401	0.888
						0.429			0.401	0.830
							0.399		0.401	0.800
								0.273	0.401	0.674

Sum of the SAR with Scaled Values for the Worst-case Configuration

As the SAR for these configurations were measured at the maximum of tune-up tolerance limit, SAR scaling does not need to be applied.

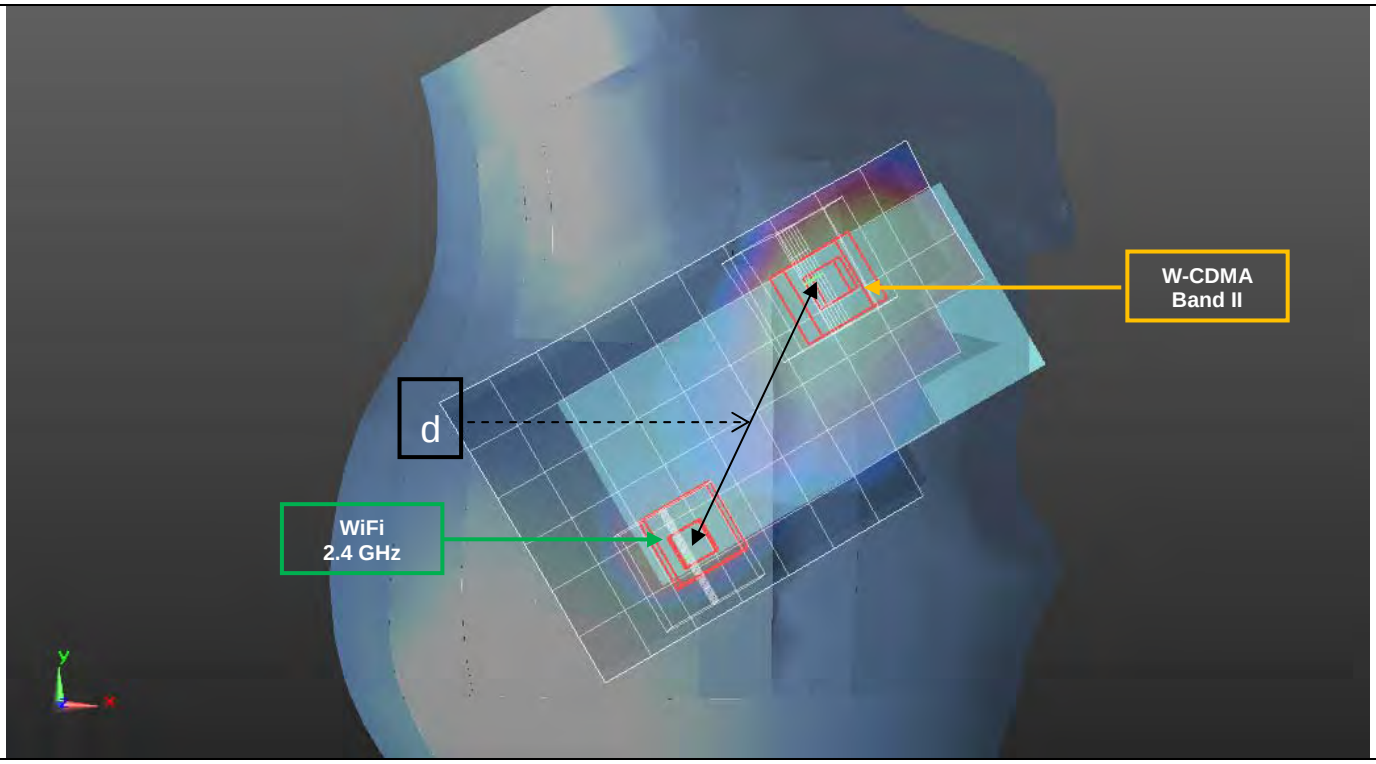
SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination			∑ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR (≤ 0.04)	Figure
		W-CDMA Band II	CDMA BC1	WiFi 2.4 GHz				
6	Right Touch	1.130		0.522	1.652	88.7	0.024	10
			1.180	0.522	1.702	86.6	0.026	11

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

Figure (10)

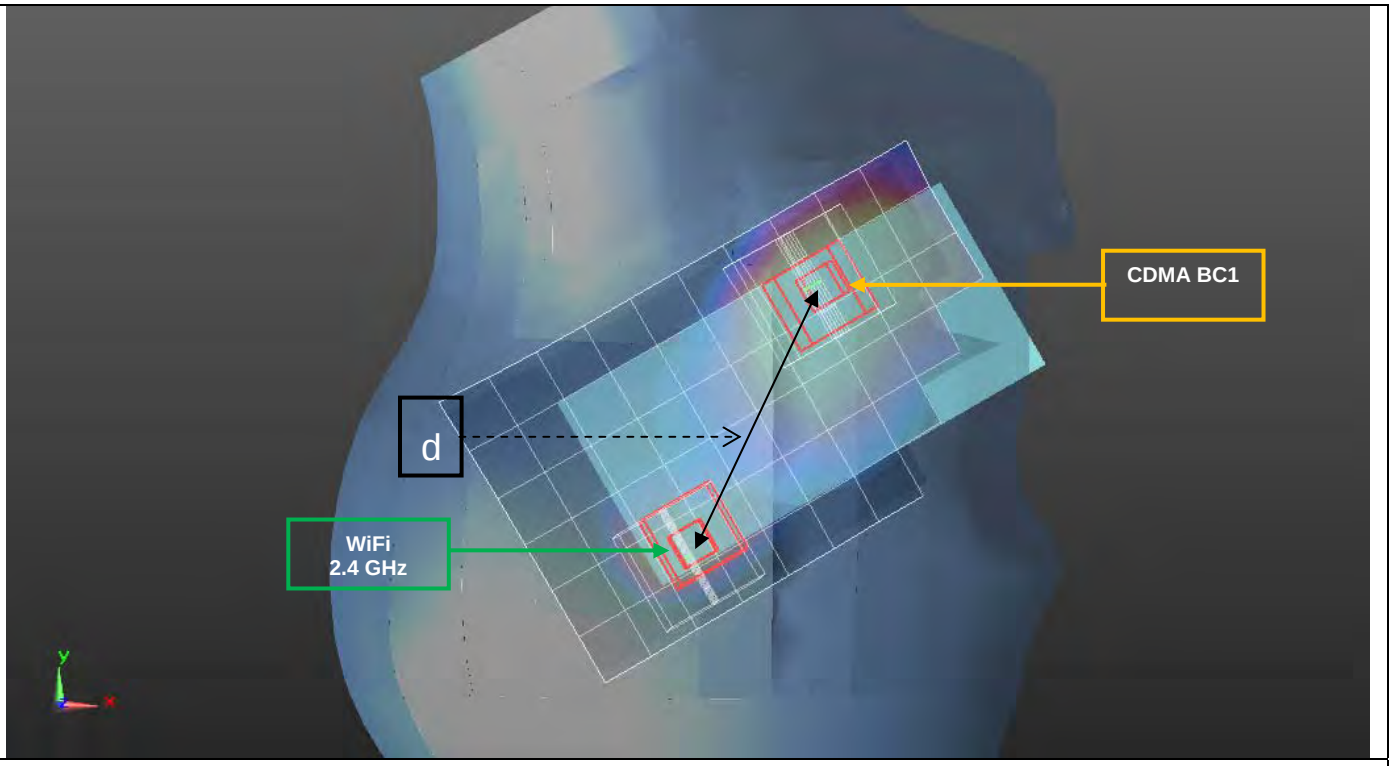


Mode	Peak SAR	X	Y	Z
	mW/g	m	m	m
W-CDMA Band II	1.38	0.064	-0.253	-0.172
WiFi 2.4 GHz	0.719	0.0258	-0.333	-0.172

d: Calculated distance (mm)
88.7

The Peak Location Separation Distance is computed by using the formula below:
SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

Figure (11)



Mode	Peak SAR	X	Y	Z
	mW/g	m	m	m
CDMA BC1	1.44	0.0635	-0.255	-0.172
WiFi 2.4 GHz	0.719	0.0258	-0.333	-0.172

d: Calculated distance (mm)
86.6

The Peak Location Separation Distance is computed by using the formula below:
SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

Sum of the SAR with Measured Values (Secondary Antenna)

Test Position	Voice								Data	∑ 1-g SAR (mW/g)
	GSM 850	GSM 1900	W-CDMA Band V	W-CDMA Band II	CDMA BC0	CDMA BC1	CDMA BC10	LTE (VOIP) Band 13	WiFi 2.4 GHz	
Left Touch	0.675								0.227	0.902
		0.551							0.227	0.778
			0.796						0.227	1.023
				0.569					0.227	0.796
					0.972				0.227	1.199
						0.428			0.227	0.655
							0.925		0.227	1.152
								0.616	0.227	0.843
Left Tilt	0.619								0.144	0.763
		0.584							0.144	0.728
			0.690						0.144	0.834
				0.586					0.144	0.730
					0.685				0.144	0.829
						0.482			0.144	0.626
							0.657		0.144	0.801
								0.555	0.144	0.699
Right Touch	0.433								0.522	0.955
		0.956							0.522	1.478
			0.469						0.522	0.991
				0.973					0.522	1.495
					0.567				0.522	1.089
						0.922			0.522	1.444
							0.467		0.522	0.989
								0.317	0.522	0.839
Right Tilt	0.397								0.401	0.798
		0.929							0.401	1.330
			0.430						0.401	0.831
				0.732					0.401	1.133
					0.455				0.401	0.856
						0.722			0.401	1.123
							0.407		0.401	0.808
								0.423	0.401	0.824

SAR to Peak Location Separation Ratio (SPLSR)
As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

Conclusion:
Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

18.1.2. Sum of the SAR for GSM, W-CDMA, CDMA & WiFi 5.2 GHz Band

Sum of the SAR with Measured Values (Primary Antenna)

Test Position	Voice							Data	∑ 1-g SAR (mW/g)
	GSM 850	GSM 1900	W-CDMA Band V	W-CDMA Band II	CDMA BC0	CDMA BC1	CDMA BC10	WiFi 5.2GHz	
Left Touch	0.737							0.587	1.324
		0.452						0.587	1.039
			0.689					0.587	1.276
				0.758				0.587	1.345
					0.953			0.587	1.540
						0.714		0.587	1.301
							0.654	0.587	1.241
Left Tilt	0.370							0.548	0.918
		0.254						0.548	0.802
			0.352					0.548	0.900
				0.380				0.548	0.928
					0.467			0.548	1.015
						0.448		0.548	0.996
							0.398	0.548	0.946
Right Touch	0.702							0.527	1.229
		0.895						0.527	1.422
			0.588					0.527	1.115
				1.130				0.527	1.657
					0.894			0.527	1.421
						1.180		0.527	1.707
							0.602	0.527	1.129
Right Tilt	0.704							0.550	1.254
		0.247						0.550	0.797
			0.379					0.550	0.929
				0.380				0.550	0.930
					0.487			0.550	1.037
						0.429		0.550	0.979
							0.399	0.550	0.949

Sum of the SAR with Scaled Values for the Worst-case Configuration

As the SAR for these configurations were measured at the maximum of tune-up tolerance limit, SAR scaling does not need to be applied.

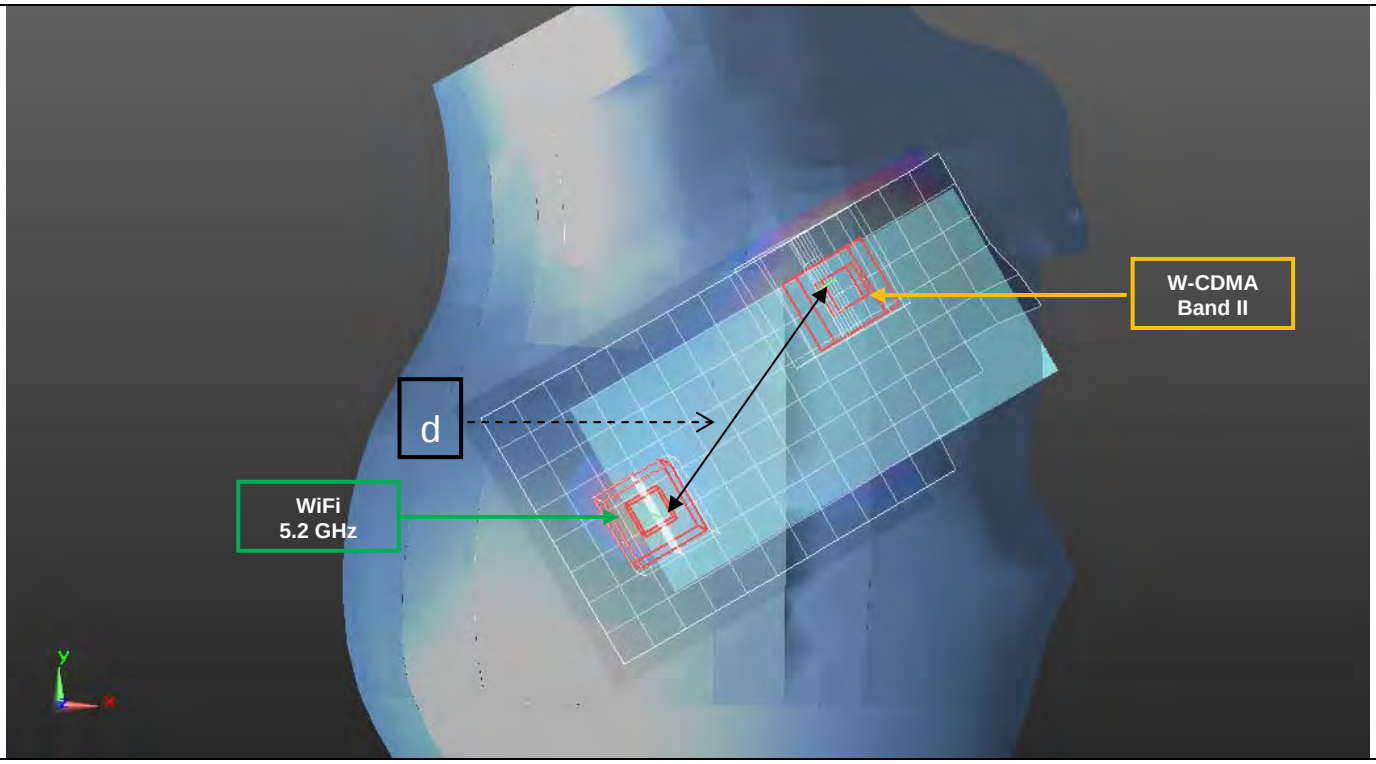
SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination			∑ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR (≤ 0.04)	Figure
		W-CDMA Band II	CDMA BC1	WiFi 2.4 GHz				
7	Right Touch	1.130		0.527	1.657	83.7	0.025	12
			1.180	0.527	1.707	81.8	0.027	13

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

Figure (12)

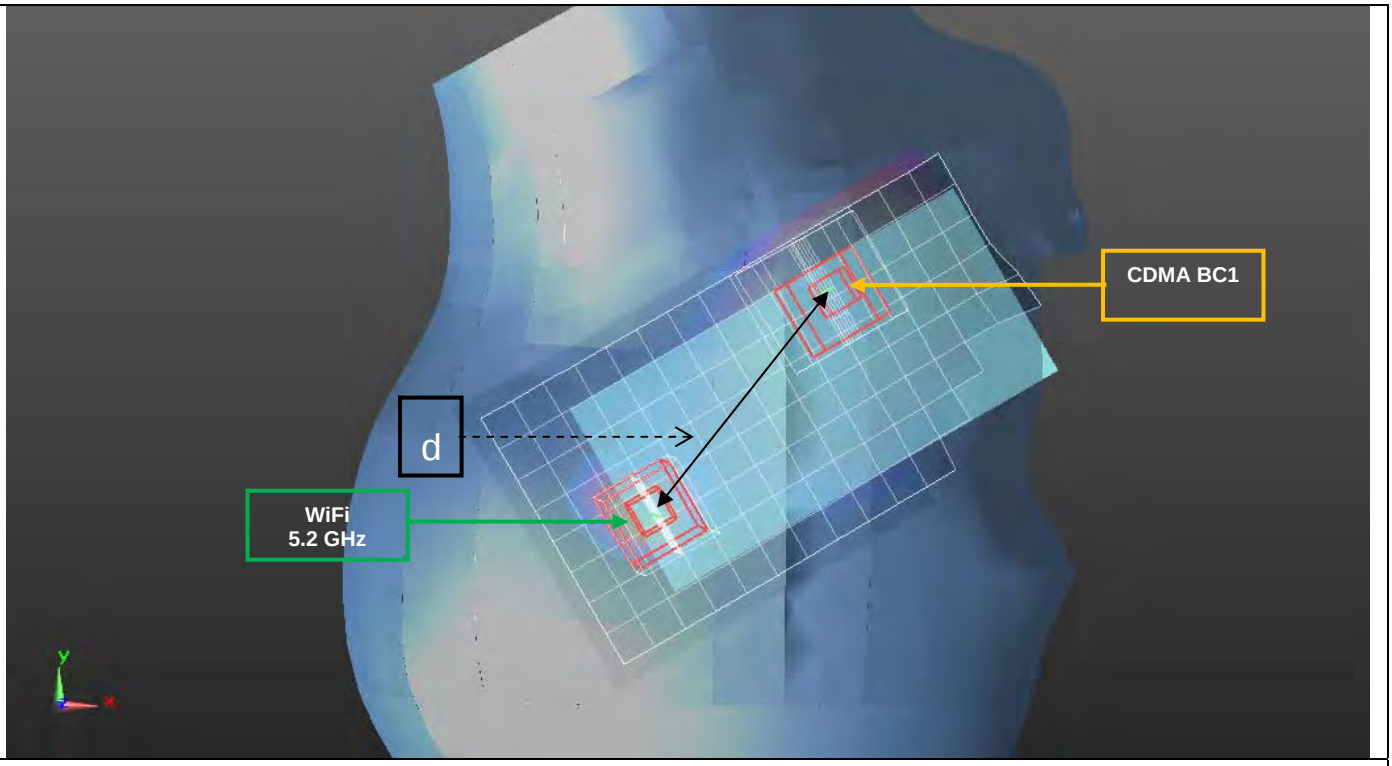


Mode	Peak SAR	X	Y	Z
	mW/g	m	m	m
W-CDMA Band II	1.38	0.064	-0.253	-0.172
WiFi 5.2 GHz	1.11	0.0126	-0.319	-0.171

d: Calculated distance (mm)
83.7

The Peak Location Separation Distance is computed by using the formula below:
SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

Figure (13)



Mode	Peak SAR	X	Y	Z
	mW/g	m	m	m
CDMA BC1	1.44	0.0635	-0.255	-0.172
WiFi 5.2 GHz	1.11	0.0126	-0.319	-0.171

d: Calculated distance (mm)
81.8

The Peak Location Separation Distance is computed by using the formula below:
SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

Sum of the SAR with Measured Values (Secondary Antenna)

Test Position	Voice							Data	∑ 1-g SAR (mW/g)
	GSM 850	GSM 1900	W-CDMA Band V	W-CDMA Band II	CDMA BC0	CDMA BC1	CDMA BC10	WiFi 5.2GHz	
Left Touch	0.675							0.587	1.262
		0.551						0.587	1.138
			0.796					0.587	1.383
				0.569				0.587	1.156
					0.972			0.587	1.559
						0.428		0.587	1.015
							0.925	0.587	1.512
Left Tilt	0.619							0.548	1.167
		0.584						0.548	1.132
			0.690					0.548	1.238
				0.586				0.548	1.134
					0.685			0.548	1.233
						0.482		0.548	1.030
							0.657	0.548	1.205
Right Touch	0.433							0.527	0.960
		0.956						0.527	1.483
			0.469					0.527	0.996
				0.973				0.527	1.500
					0.567			0.527	1.094
						0.922		0.527	1.449
							0.467	0.527	0.994
Right Tilt	0.397							0.550	0.947
		0.929						0.550	1.479
			0.430					0.550	0.980
				0.732				0.550	1.282
					0.455			0.550	1.005
						0.722		0.550	1.272
							0.407	0.550	0.957

SAR to Peak Location Separation Ratio (SPLSR)
As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

Conclusion:
Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

18.1.3. Sum of the SAR for GSM, W-CDMA, CDMA & WiFi 5.3 GHz Band

Sum of the SAR with Measured Values (Primary Antenna)

Test Position	Voice							Data	∑ 1-g SAR (mW/g)
	GSM 850	GSM 1900	W-CDMA Band V	W-CDMA Band II	CDMA BC0	CDMA BC1	CDMA BC10	WiFi 5.3 GHz	
Left Touch	0.737							0.536	1.273
		0.452						0.536	0.988
			0.689					0.536	1.225
				0.758				0.536	1.294
					0.953			0.536	1.489
						0.714		0.536	1.250
							0.654	0.536	1.190
Left Tilt	0.370							0.503	0.873
		0.254						0.503	0.757
			0.352					0.503	0.855
				0.380				0.503	0.883
					0.467			0.503	0.970
						0.448		0.503	0.951
							0.398	0.503	0.901
Right Touch	0.702							0.575	1.277
		0.895						0.575	1.470
			0.588					0.575	1.163
				1.130				0.575	1.705
					0.894			0.575	1.469
						1.180		0.575	1.755
							0.602	0.575	1.177
Right Tilt	0.704							0.539	1.243
		0.247						0.539	0.786
			0.379					0.539	0.918
				0.380				0.539	0.919
					0.487			0.539	1.026
						0.429		0.539	0.968
							0.399	0.539	0.938

Sum of the SAR with Scaled Values for the Worst-case Configuration

As the SAR for these configurations were measured at the maximum of tune-up tolerance limit, SAR scaling does not need to be applied.

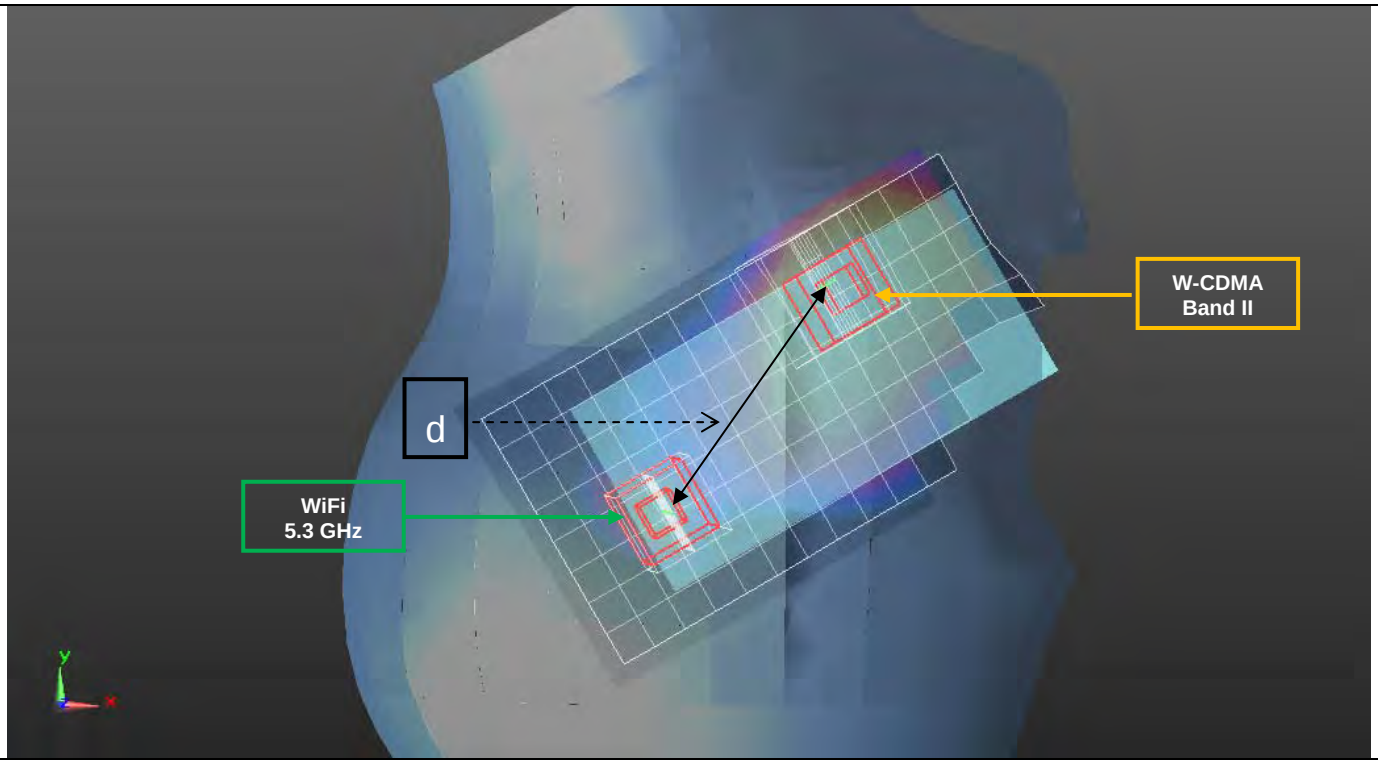
SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination			∑ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR (≤ 0.04)	Figure
		W-CDMA Band II	CDMA BC1	WiFi 5.3 GHz				
8	Right Touch	1.130		0.575	1.705	81	0.027	14
			1.180	0.575	1.755	79.1	0.029	15

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

Figure (14)

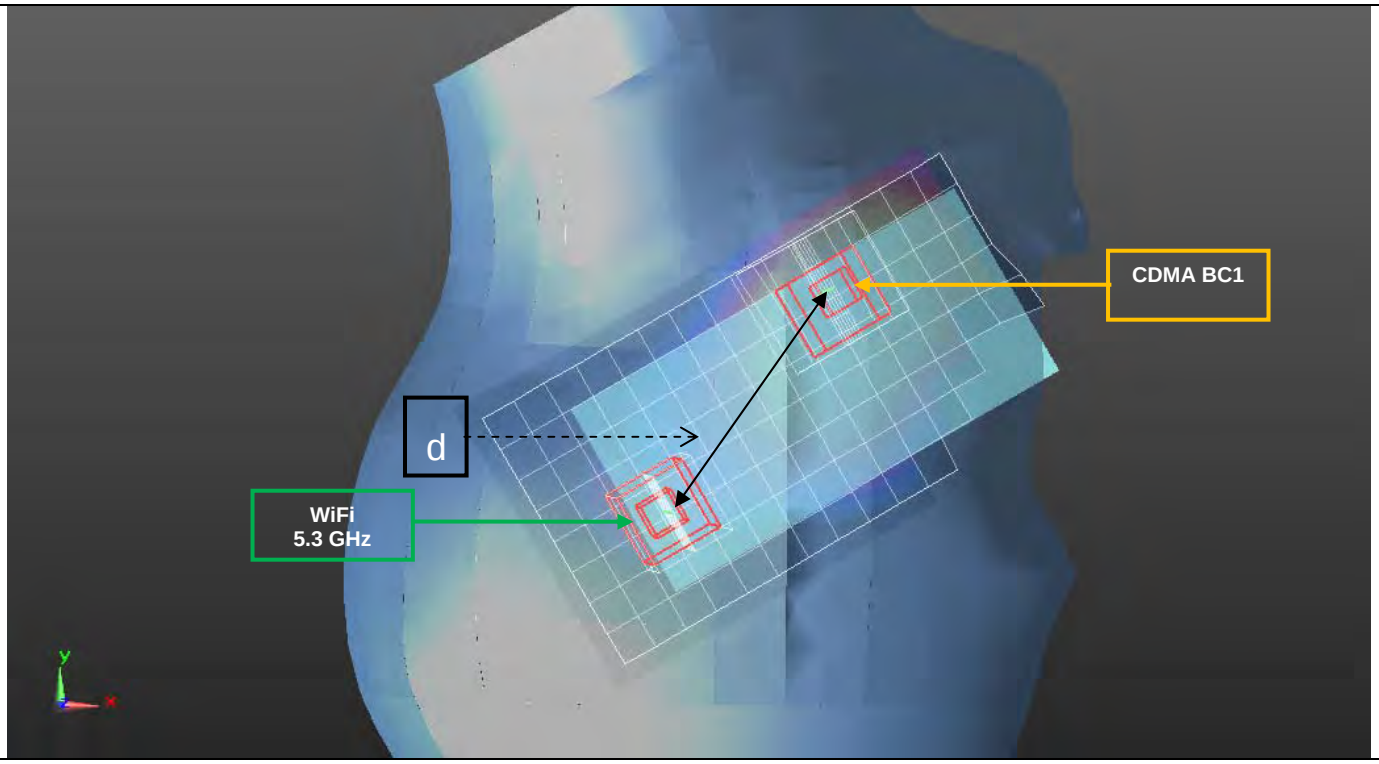


Mode	Peak SAR	X	Y	Z
	mW/g	m	m	m
W-CDMA Band II	1.38	0.064	-0.253	-0.172
WiFi 5.3 GHz	1.21	0.0157	-0.318	-0.172

d: Calculated distance (mm)
81.0

The Peak Location Separation Distance is computed by using the formula below:
SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

Figure (15)



Mode	Peak SAR	X	Y	Z
	mW/g	m	m	m
CDMA BC1	1.44	0.0635	-0.255	-0.172
WiFi 5.3 GHz	1.21	0.0157	-0.318	-0.172

d: Calculated distance (mm)
79.1

The Peak Location Separation Distance is computed by using the formula below:
SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

Sum of the SAR with Measured Values (Secondary Antenna)

Test Position	Voice							Data	∑ 1-g SAR (mW/g)
	GSM 850	GSM 1900	W-CDMA Band V	W-CDMA Band II	CDMA BC0	CDMA BC1	CDMA BC10	WiFi 5.3 GHz	
Left Touch	0.675							0.536	1.211
		0.551						0.536	1.087
			0.796					0.536	1.332
				0.569				0.536	1.105
					0.972			0.536	1.508
						0.428		0.536	0.964
							0.925	0.536	1.461
Left Tilt	0.619							0.503	1.122
		0.584						0.503	1.087
			0.690					0.503	1.193
				0.586				0.503	1.089
					0.685			0.503	1.188
						0.482		0.503	0.985
							0.657	0.503	1.160
Right Touch	0.433							0.575	1.008
		0.956						0.575	1.531
			0.469					0.575	1.044
				0.973				0.575	1.548
					0.567			0.575	1.142
						0.922		0.575	1.497
							0.467	0.575	1.042
Right Tilt	0.397							0.539	0.936
		0.929						0.539	1.468
			0.430					0.539	0.969
				0.732				0.539	1.271
					0.455			0.539	0.994
						0.722		0.539	1.261
							0.407	0.539	0.946

SAR to Peak Location Separation Ratio (SPLSR)
As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

Conclusion:
Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

18.1.4. Sum of the SAR for GSM, W-CDMA, CDMA & WiFi 5.5 GHz Band

Sum of the SAR with Measured Values (Primary Antenna)

Test Position	Voice							Data	∑ 1-g SAR (mW/g)
	GSM 850	GSM 1900	W-CDMA Band V	W-CDMA Band II	CDMA BC0	CDMA BC1	CDMA BC10	WiFi 5.5 GHz	
Left Touch	0.737							0.566	1.303
		0.452						0.566	1.018
			0.689					0.566	1.255
				0.758				0.566	1.324
					0.953			0.566	1.519
						0.714		0.566	1.280
							0.654	0.566	1.220
Left Tilt	0.370							0.563	0.933
		0.254						0.563	0.817
			0.352					0.563	0.915
				0.380				0.563	0.943
					0.467			0.563	1.030
						0.448		0.563	1.011
							0.398	0.563	0.961
Right Touch	0.702							0.580	1.282
		0.895						0.580	1.475
			0.588					0.580	1.168
				1.130				0.580	1.710
					0.894			0.580	1.474
						1.180		0.580	1.760
							0.602	0.580	1.182
Right Tilt	0.704							0.568	1.272
		0.247						0.568	0.815
			0.379					0.568	0.947
				0.380				0.568	0.948
					0.487			0.568	1.055
						0.429		0.568	0.997
							0.399	0.568	0.967

Sum of the SAR with Scaled Values for the Worst-case Configuration (Primary Antenna)

As the SAR for these configurations were measured at the maximum of tune-up tolerance limit, SAR scaling does not need to be applied.

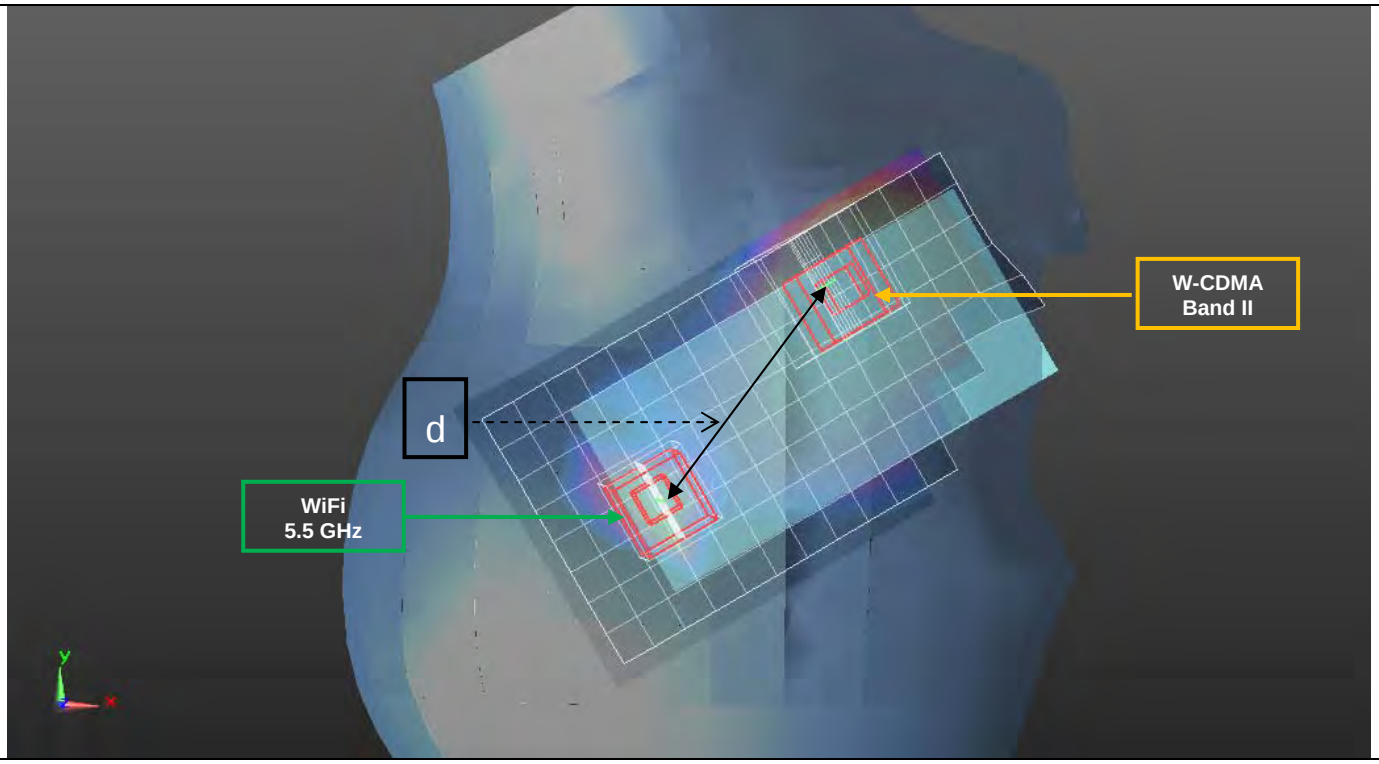
SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination			∑ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR (≤ 0.04)	Figure
		W-CDMA Band II	CDMA BC1	WiFi 5.5 GHz				
9	Right Touch	1.130		0.580	1.710	79.1	0.028	16
			1.180	0.580	1.760	77.2	0.030	17

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

Figure (16)

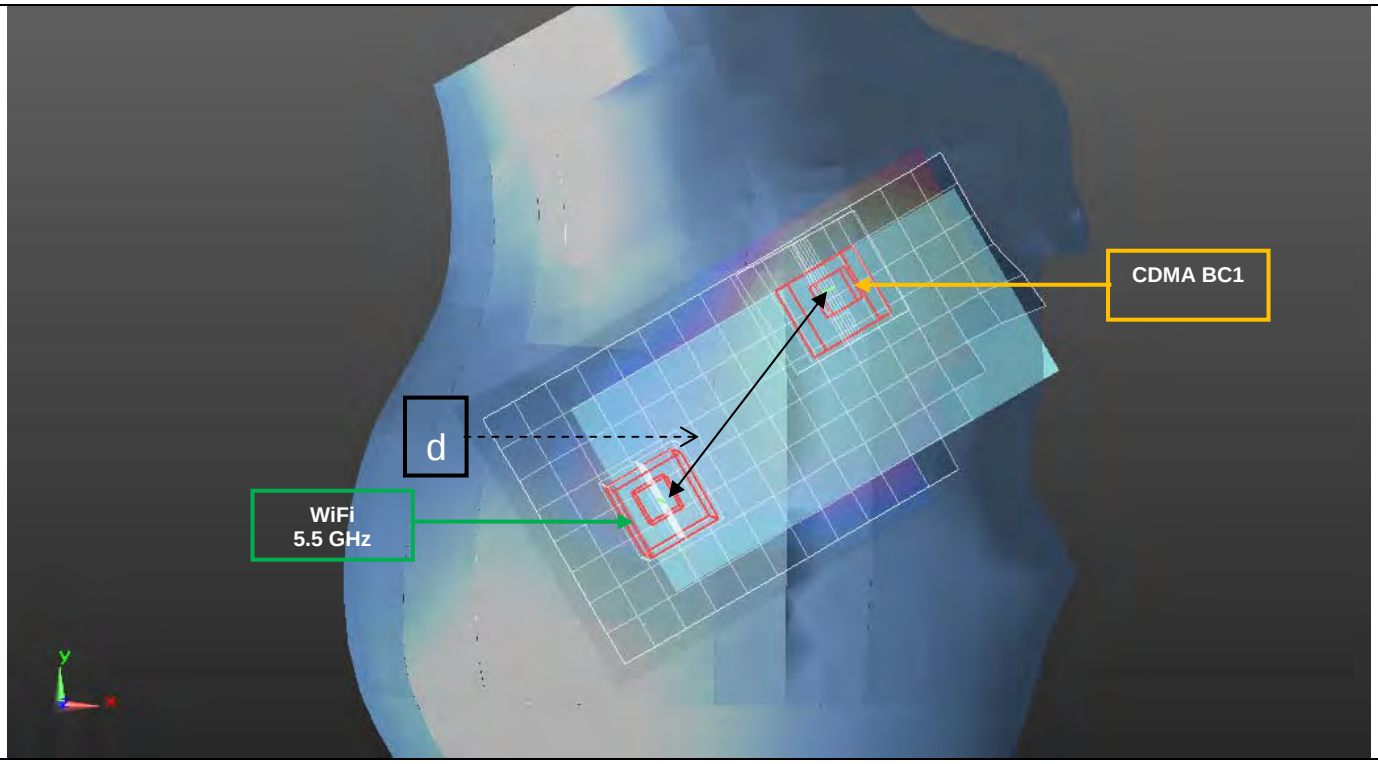


Mode	Peak SAR	X	Y	Z
	mW/g	m	m	m
W-CDMA Band II	1.38	0.064	-0.253	-0.172
WiFi 5.5 GHz	1.28	0.0137	-0.314	-0.171

d: Calculated distance (mm)
79.1

The Peak Location Separation Distance is computed by using the formula below:
SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

Figure (17)



Mode	Peak SAR	X	Y	Z
	mW/g	m	m	m
CDMA BC1	1.44	0.0635	-0.255	-0.172
WiFi 5.5 GHz	1.28	0.0137	-0.314	-0.171

d: Calculated distance (mm)
77.2

The Peak Location Separation Distance is computed by using the formula below:
SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

Sum of the SAR with Measured Values (Secondary Antenna)

Test Position	Voice							Data	∑ 1-g SAR (mW/g)
	GSM 850	GSM 1900	W-CDMA Band V	W-CDMA Band II	CDMA BC0	CDMA BC1	CDMA BC10	WiFi 5.5 GHz	
Left Touch	0.675							0.566	1.241
		0.551						0.566	1.117
			0.796					0.566	1.362
				0.569				0.566	1.135
					0.972			0.566	1.538
						0.428		0.566	0.994
							0.925	0.566	1.491
Left Tilt	0.619							0.563	1.182
		0.584						0.563	1.147
			0.690					0.563	1.253
				0.586				0.563	1.149
					0.685			0.563	1.248
						0.482		0.563	1.045
							0.657	0.563	1.220
Right Touch	0.433							0.580	1.013
		0.956						0.580	1.536
			0.469					0.580	1.049
				0.973				0.580	1.553
					0.567			0.580	1.147
						0.922		0.580	1.502
							0.467	0.580	1.047
Right Tilt	0.397							0.568	0.965
		0.929						0.568	1.497
			0.430					0.568	0.998
				0.732				0.568	1.300
					0.455			0.568	1.023
						0.722		0.568	1.290
							0.407	0.568	0.975

SAR to Peak Location Separation Ratio (SPLSR)
As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

Conclusion:
Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

18.1.5. Sum of the SAR for GSM, W-CDMA, CDMA & WiFi 5.8 GHz Band

Sum of the SAR with Measured Values (Primary Antenna)

Test Position	Voice							Data	∑ 1-g SAR (mW/g)
	GSM 850	GSM 1900	W-CDMA Band V	W-CDMA Band II	CDMA BC0	CDMA BC1	CDMA BC10	WiFi 5.8 GHz	
Left Touch	0.737							0.549	1.286
		0.452						0.549	1.001
			0.689					0.549	1.238
				0.758				0.549	1.307
					0.953			0.549	1.502
						0.714		0.549	1.263
							0.654	0.549	1.203
Left Tilt	0.370							0.598	0.968
		0.254						0.598	0.852
			0.352					0.598	0.950
				0.380				0.598	0.978
					0.467			0.598	1.065
						0.448		0.598	1.046
							0.398	0.598	0.996
Right Touch	0.702							0.593	1.295
		0.895						0.593	1.488
			0.588					0.593	1.181
				1.130				0.593	1.723
					0.894			0.593	1.487
						1.180		0.593	1.773
							0.602	0.593	1.195
Right Tilt	0.704							0.550	1.254
		0.247						0.550	0.797
			0.379					0.550	0.929
				0.380				0.550	0.930
					0.487			0.550	1.037
						0.429		0.550	0.979
							0.399	0.550	0.949

Sum of the SAR with Scaled Values for the Worst-case Configuration

As the SAR for these configurations were measured at the maximum of tune-up tolerance limit, SAR scaling does not need to be applied.

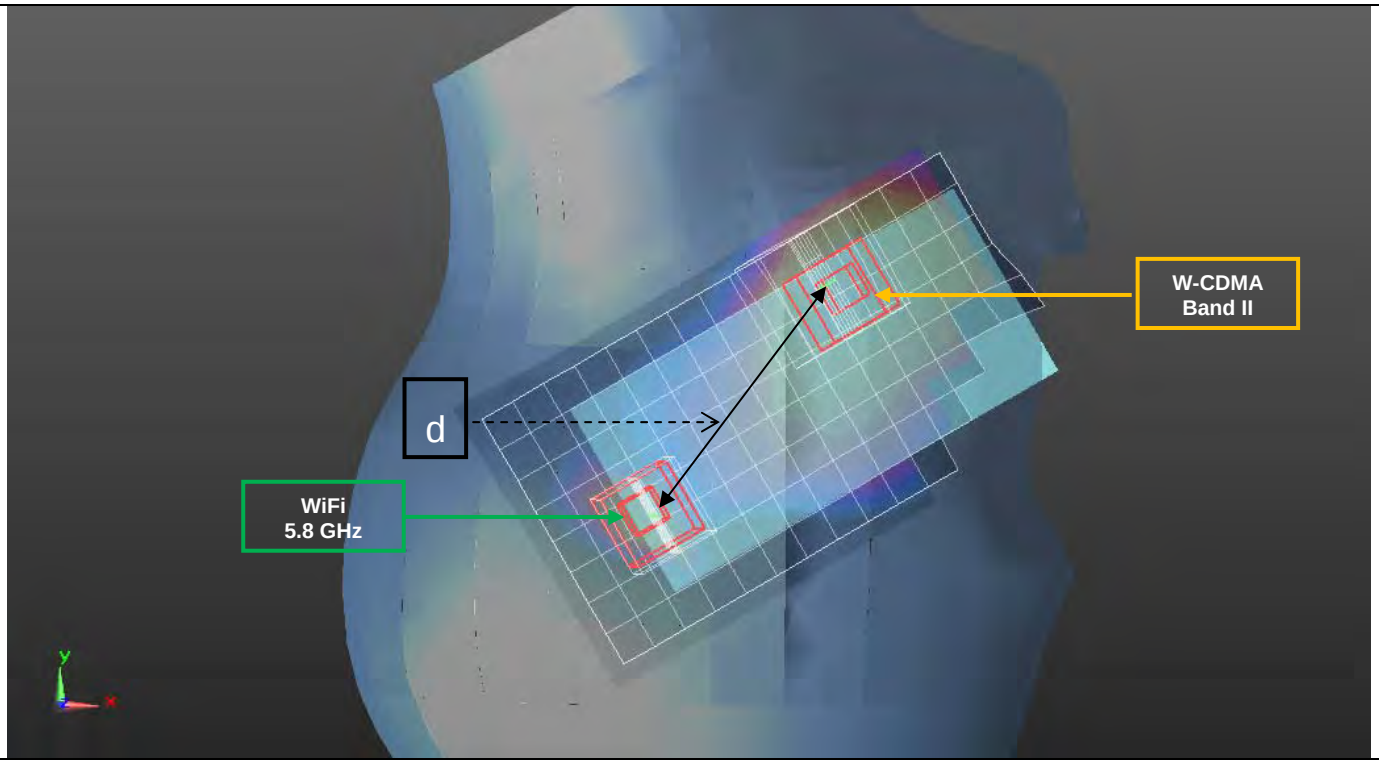
SAR to Peak Location Separation Ratio (SPLSR)

Case #	Test Position	Worst-case combination			∑ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR (≤ 0.04)	Figure
		W-CDMA Band II	CDMA BC1	WiFi 5.8 GHz				
10	Right Touch	1.130		0.593	1.723	84.2	0.027	18
			1.180	0.593	1.773	82.3	0.029	19

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

Figure (18)

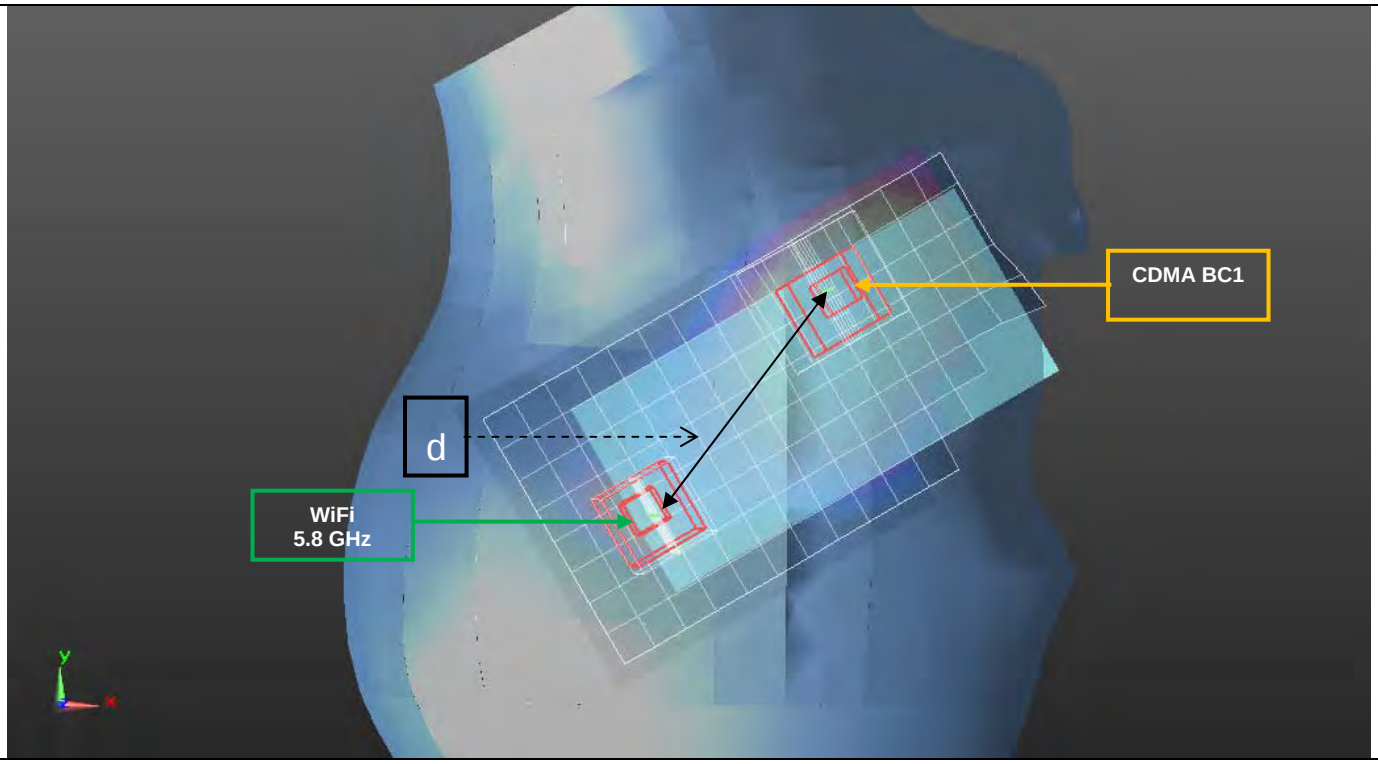


Mode	Peak SAR	X	Y	Z
	mW/g	m	m	m
W-CDMA Band II	1.38	0.064	-0.253	-0.172
WiFi 5.8 GHz	1.28	0.0117	-0.319	-0.171

d: Calculated distance (mm)
84.2

The Peak Location Separation Distance is computed by using the formula below:
SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

Figure (19)



Mode	Peak SAR	X	Y	Z
	mW/g	m	m	m
CDMA BC1	1.44	0.0635	-0.255	-0.172
WiFi 5.8 GHz	1.28	0.0117	-0.319	-0.171

d: Calculated distance (mm)
82.3

The Peak Location Separation Distance is computed by using the formula below:
SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

Sum of the SAR with Measured Values (Secondary Antenna)

Test Position	Voice							Data	∑ 1-g SAR (mW/g)
	GSM 850	GSM 1900	W-CDMA Band V	W-CDMA Band II	CDMA BC0	CDMA BC1	CDMA BC10	WiFi 5.8 GHz	
Left Touch	0.675							0.549	1.224
		0.551						0.549	1.100
			0.796					0.549	1.345
				0.569				0.549	1.118
					0.972			0.549	1.521
						0.428		0.549	0.977
							0.925	0.549	1.474
Left Tilt	0.619							0.592	1.211
		0.584						0.592	1.176
			0.690					0.592	1.282
				0.586				0.592	1.178
					0.685			0.592	1.277
						0.482		0.592	1.074
							0.657	0.592	1.249
Right Touch	0.433							0.593	1.026
		0.956						0.593	1.549
			0.469					0.593	1.062
				0.973				0.593	1.566
					0.567			0.593	1.160
						0.922		0.593	1.515
							0.467	0.593	1.060
Right Tilt	0.397							0.550	0.947
		0.929						0.550	1.479
			0.430					0.550	0.980
				0.732				0.550	1.282
					0.455			0.550	1.005
						0.722		0.550	1.272
							0.407	0.550	0.957

SAR to Peak Location Separation Ratio (SPLSR)
As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

Conclusion:
Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

18.2. Body-worn Accessory Exposure Conditions

18.2.1. Sum of the SAR for GSM, WiFi 2.4 GHz Band

Sum of the SAR with Measured Values (Primary Antenna)

Test Position	Voice		Data	∑ 1-g SAR (mW/g)
	GSM 850	GSM 1900	WiFi 2.4 GHz	
Rear	0.866		0.171	1.037
		0.864	0.171	1.035
Front	0.739		0.078	0.817
		0.648	0.078	0.726

SAR to Peak Location Separation Ratio (SPLSR)
As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

Conclusion:

- Simultaneous transmission SAR measurement (Volume Scan) is not required because the sum of the 1-g SAR is < 1.6 W/kg.

Sum of the SAR with Measured Values (Secondary Antenna)

Test Position	Voice		Data	∑ 1-g SAR (mW/g)
	GSM 850	GSM 1900	WiFi 2.4 GHz	
Rear	0.236		0.171	0.407
		0.464	0.171	0.635
Front	0.184		0.078	0.262
		0.327	0.078	0.405

SAR to Peak Location Separation Ratio (SPLSR)
As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

18.2.2. Sum of the SAR for GSM & WiFi 5.2 GHz Band

Sum of the SAR with Measured Values (Primary Antenna)

Test Position	Voice		Data	∑ 1-g SAR (mW/g)
	GSM 850	GSM 1900	WiFi 5.2 GHz	
Rear	0.866		0.054	0.920
		0.864	0.054	0.918
Front	0.739		0.130	0.869
		0.648	0.130	0.778

SAR to Peak Location Separation Ratio (SPLSR)
As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

Conclusion:
Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

Sum of the SAR with Measured Values (Secondary Antenna)

Test Position	Voice		Data	∑ 1-g SAR (mW/g)
	GSM 850	GSM 1900	WiFi 5.2 GHz	
Rear	0.236		0.054	0.290
		0.464	0.054	0.518
Front	0.184		0.130	0.314
		0.327	0.130	0.457

SAR to Peak Location Separation Ratio (SPLSR)
As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

Conclusion:
Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

18.2.3. Sum of the SAR for GSM & WiFi 5.3 GHz Band

Sum of the SAR with Measured Values (Primary Antenna)

Test Position	Voice		Data	∑ 1-g SAR (mW/g)
	GSM 850	GSM 1900	WiFi 5.3 GHz	
Rear	0.866		0.064	0.930
		0.864	0.064	0.928
Front	0.739		0.114	0.853
		0.648	0.114	0.762

SAR to Peak Location Separation Ratio (SPLSR)
As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

Conclusion:

- Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

Sum of the SAR with Measured Values (Secondary Antenna)

Test Position	Voice		Data	∑ 1-g SAR (mW/g)
	GSM 850	GSM 1900	WiFi 5.3 GHz	
Rear	0.236		0.064	0.300
		0.464	0.064	0.528
Front	0.184		0.114	0.298
		0.327	0.114	0.441

SAR to Peak Location Separation Ratio (SPLSR)
As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

18.2.4. Sum of the SAR for GSM & WiFi 5.5 GHz Band

Sum of the SAR with Measured Values (Primary Antenna)

Test Position	Voice		Data	∑ 1-g SAR (mW/g)
	GSM 850	GSM 1900	WiFi 5.5 GHz	
Rear	0.866		0.063	0.929
		0.864	0.063	0.927
Front	0.739		0.089	0.828
		0.648	0.089	0.737

SAR to Peak Location Separation Ratio (SPLSR)
As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

Conclusion:
Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

Sum of the SAR with Measured Values (Secondary Antenna)

Test Position	Voice		Data	∑ 1-g SAR (mW/g)
	GSM 850	GSM 1900	WiFi 5.5 GHz	
Rear	0.236		0.063	0.299
		0.464	0.063	0.527
Front	0.184		0.089	0.273
		0.327	0.089	0.416

SAR to Peak Location Separation Ratio (SPLSR)
As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

Conclusion:
Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

18.2.5. Sum of the SAR for GSM & WiFi 5.8 GHz Band

Sum of the SAR with Measured Values (Primary Antenna)

Test Position	Voice		Data	∑ 1-g SAR (mW/g)
	GSM 850	GSM 1900	WiFi 5.8 GHz	
Rear	0.866		0.044	0.910
		0.864	0.044	0.908
Front	0.739		0.066	0.805
		0.648	0.066	0.714

SAR to Peak Location Separation Ratio (SPLSR)
As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

Conclusion:
Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

Sum of the SAR with Measured Values (Secondary Antenna)

Test Position	Voice		Data	∑ 1-g SAR (mW/g)
	GSM 850	GSM 1900	WiFi 5.8 GHz	
Rear	0.236		0.044	0.280
		0.464	0.044	0.508
Front	0.184		0.066	0.250
		0.327	0.066	0.393

SAR to Peak Location Separation Ratio (SPLSR)
As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

Conclusion:
Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

18.3. Body-worn Accessory & Hotspot Mode Exposure Conditions

18.3.1.Sum of the SAR for GSM, W-CDMA & WiFi 2.4 GHz Band

Sum of the SAR with Measured Values (Primary Antenna)

Test Position	Data				Data	∑ 1-g SAR (mW/g)
	GSM 850	GSM 1900	W-CDMA Band V	W-CDMA Band II	WiFi 2.4 GHz	
Rear	1.040				0.171	1.211
		1.130			0.171	1.301
			0.837		0.171	1.008
				1.180	0.171	1.351
Front	0.950				0.078	1.028
		1.030			0.078	1.108
			0.676		0.078	0.754
				0.887	0.078	0.965
Edge 1	0				0.129	0.129
		0			0.129	0.129
			0		0.129	0.129
				0	0.129	0.129
Edge 2	0.533				0.025	0.558
		0.700			0.025	0.725
			0.496		0.025	0.521
				0.720	0.025	0.745
Edge 3	0.133				0	0.133
		1.020			0	1.020
			0.113		0	0.113
				0.974	0	0.974
Edge 4	0.676				0.135	0.811
		0.102			0.135	0.237
			0.587		0.135	0.722
				0.106	0.135	0.241

SAR to Peak Location Separation Ratio (SPLSR)

As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

Sum of the SAR with Measured Values (Secondary Antenna)

Test Position	Data				Data	∑ 1-g SAR (mW/g)
	GSM 850	GSM 1900	W-CDMA Band V	W-CDMA Band II	WiFi 2.4 GHz	
Rear	0.442				0.171	0.613
		0.700			0.171	0.871
			0.332		0.171	0.503
				0.456	0.171	0.627
Front	0.353				0.078	0.431
		0.501			0.078	0.579
			0.283		0.078	0.361
				0.284	0.078	0.362
Edge 1	0.227				0.129	0.356
		0.402			0.129	0.531
			0.166		0.129	0.295
				0.232	0.129	0.361
Edge 2	0.350				0.025	0.375
		0.148			0.025	0.173
			0.305		0.025	0.330
				0.088	0.025	0.113
Edge 3	0				0	0
		0			0	0
			0		0	0
				0	0	0
Edge 4	0.121				0.135	0.256
		0.423			0.135	0.558
			0.139		0.135	0.274
				0.257	0.135	0.392

SAR to Peak Location Separation Ratio (SPLSR)
As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

Conclusion:
Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

18.4. Body-worn Accessory & Hotspot Mode Exposure Conditions

18.4.1.Sum of the SAR for CDMA & WiFi 2.4 GHz Band

Sum of the SAR with Measured Values (Primary Antenna)

Test Position	Data						Data	∑ 1-g SAR (mW/g)
	CDMA BC0 1xRTT	CDMA BC0 1xEVDO	CDMA BC1 1xRTT	CDMA BC1 1xEVDO	CDMA BC10 1xRTT	CDMA BC10 1xEVDO	WiFi 2.4 GHz	
Rear	0.982						0.171	1.153
		0.942					0.171	1.113
			1.180				0.171	1.351
				1.130			0.171	1.301
					0.876		0.171	1.047
						0.867	0.171	1.038
Front	0.872						0.078	0.950
		0.770					0.078	0.848
			0.892				0.078	0.970
				0.929			0.078	1.007
					0.702		0.078	0.780
						0.725	0.078	0.803
Edge 1	0						0.129	0.129
		0					0.129	0.129
			0				0.129	0.129
				0			0.129	0.129
					0		0.129	0.129
						0	0.129	0.129
Edge 2	0.494						0.025	0.519
		0.530					0.025	0.555
			0.802				0.025	0.827
				0.751			0.025	0.776
					0.465		0.025	0.490
						0.426	0.025	0.451
Edge 3	0.091						0	0.091
		0.109					0	0.109
			0.889				0	0.889
				0.863			0	0.863
					0.069		0	0.069
						0.072	0	0.072
Edge 4	0.565						0.135	0.700
		0.638					0.135	0.773
			0.116				0.135	0.251
				0.135			0.135	0.270
					0.540		0.135	0.675
						0.528	0.135	0.663

SAR to Peak Location Separation Ratio (SPLSR)

As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

Sum of the SAR with Measured Values (Secondary Antenna)

Test Position	Data						Data	∑ 1-g SAR (mW/g)
	BC0 1xRTT	BC0 1xEVDO	BC1 1xRTT	BC1 1xEVDO	BC10 1xRTT	BC10 1xEVDO	WiFi 2.4 GHz	
Rear	0.355						0.171	0.526
		0.300					0.171	0.471
			0.318				0.171	0.489
				0.351			0.171	0.522
					0.232		0.171	0.403
						0.286	0.171	0.457
Front	0.277						0.078	0.355
		0.262					0.078	0.340
			0.227				0.078	0.305
				0.236			0.078	0.314
					0.126		0.078	0.204
						0.252	0.078	0.330
Edge 1	0.153						0.129	0.282
		0.144					0.129	0.273
			0.153				0.129	0.282
				0.145			0.129	0.274
					0.063		0.129	0.192
						0.131	0.129	0.260
Edge 2	0.281						0.025	0.306
		0.330					0.025	0.355
			0.083				0.025	0.108
				0.070			0.025	0.095
					0.120		0.025	0.145
						0.256	0.025	0.281
Edge 3	0						0	0
		0					0	0
			0				0	0
				0			0	0
					0		0	0
						0	0	0
Edge 4	0.143						0.135	0.278
		0.141					0.135	0.276
			0.163				0.135	0.298
				0.170			0.135	0.305
					0.063		0.135	0.198
						0.095	0.135	0.230

SAR to Peak Location Separation Ratio (SPLSR)
As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

Conclusion:
Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

18.4.2.Sum of the SAR for LTE & WiFi 2.4 GHz Band

Sum of the SAR with Measured Values (Primary Antenna)

Test Position	Data			Data	∑ 1-g SAR (mW/g)
	LTE Band 5	LTE Band 13	LTE Band 25	WiFi 2.4 GHz	
Rear	0.703			0.171	0.874
		0.645		0.171	0.816
			1.180	0.171	1.351
Front	0.609			0.078	0.687
		0.620		0.078	0.698
			0.867	0.078	0.945
Edge 1	0			0.129	0.129
		0		0.129	0.129
			0	0.129	0.129
Edge 2	0.425			0.025	0.450
		0.413		0.025	0.438
			0.718	0.025	0.743
Edge 3	0.108			0	0.108
		0.147		0	0.147
			0.923	0	0.923
Edge 4	0.521			0.135	0.656
		0.513		0.135	0.648
			0.139	0.135	0.274

SAR to Peak Location Separation Ratio (SPLSR)
As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

Conclusion:
Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

Sum of the SAR with Measured Values (Secondary Antenna)

Test Position	Data			Data	∑ 1-g SAR (mW/g)
	LTE Band 5	LTE Band 13	LTE Band 25	WiFi 2.4 GHz	
Rear	0.303			0.171	0.474
		0.302		0.171	0.473
			0.451	0.171	0.622
Front	0.262			0.078	0.340
		0.288		0.078	0.366
			0.309	0.078	0.387
Edge 1	0.172			0.129	0.301
		0.177		0.129	0.306
			0.353	0.129	0.482
Edge 2	0.354			0.025	0.379
		0.187		0.025	0.212
			0.151	0.025	0.176
Edge 3	0			0	0
		0		0	0
			0	0	0
Edge 4	0.144			0.135	0.279
		0.143		0.135	0.278
			0.356	0.135	0.491

SAR to Peak Location Separation Ratio (SPLSR)

As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

19. Appendixes

Refer to separated files for the following appendixes.

19.1. System Performance Check Plots

19.2. SAR Test Plots for Model A1428

19.2.1. SAR Test Plots for GSM850

19.2.2. SAR Test Plots for GSM1900

19.2.3. SAR Test Plots for W-CDMA Band V

19.2.4. SAR Test Plots for W-CDMA Band II

19.2.5. SAR Test Plots for LTE Band 2

19.2.6. SAR Test Plots for LTE Band 4

19.2.7. SAR Test Plots for LTE Band 5

19.2.8. SAR Test Plots for LTE Band 17

19.2.9. SAR Test Plots for WiFi 2.4 GHz Band

19.2.10. SAR Test Plots for WiFi 5 GHz Bands

19.2.11. SAR Test Plots for Bluetooth

19.2.12. SAR Test Plots for Repeatability (A1428)

19.3. SAR Test Plots for Model A1429

19.3.1. SAR Test Plots for GSM850

19.3.2. SAR Test Plots for GSM1900

19.3.3. SAR Test Plots for W-CDMA Band V

19.3.4. SAR Test Plots for W-CDMA Band II

19.3.5. SAR Test Plots for CDMA BC0

19.3.6. SAR Test Plots for CDMA BC1

19.3.7. SAR Test Plots for CDMA BC10

19.3.8. SAR Test Plots for LTE Band 5

19.3.9. SAR Test Plots for LTE Band 13

19.3.10. SAR Test Plots for LTE Band 25