



# FCC SAR Test Report

## 4.6.2 SAR Results for Head Exposure Condition

Plot No.	Band	Mode	Test Position	Ch.	RB#	RB Offset	Power Reduction	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Power Drift (dB)	Measured SAR-1g (W/kg)	Tune-up Scaling Factor	Scaled SAR-1g (W/kg)
P01	LTE 2	QPSK20M	Right Cheek	18700	1	50	Full	25	24.51	0.16	0.272	1.12	<b>0.30</b>
	LTE 2	QPSK20M	Right Tilted	18700	1	50	Full	25	24.51	0.07	0.209	1.12	0.23
	LTE 2	QPSK20M	Left Cheek	18700	1	50	Full	25	24.51	0.05	0.117	1.12	0.13
	LTE 2	QPSK20M	Left Tilted	18700	1	50	Full	25	24.51	0.15	0.062	1.12	0.07
	LTE 2	QPSK20M	Right Cheek	18700	50	25	Full	24	23.56	0.19	0.188	1.11	0.21
	LTE 2	QPSK20M	Right Tilted	18700	50	25	Full	24	23.56	0.04	0.154	1.11	0.17
	LTE 2	QPSK20M	Left Cheek	18700	50	25	Full	24	23.56	0.06	0.113	1.11	0.13
	LTE 2	QPSK20M	Left Tilted	18700	50	25	Full	24	23.56	0.08	0.047	1.11	0.05
P02	LTE 4	QPSK20M	Right Cheek	20300	1	50	Full	25	24.36	-0.04	0.101	1.16	0.12
	LTE 4	QPSK20M	Right Tilted	20300	1	50	Full	25	24.36	0.04	0.064	1.16	0.07
	LTE 4	QPSK20M	Left Cheek	20300	1	50	Full	25	24.36	0.05	0.423	1.16	<b>0.49</b>
	LTE 4	QPSK20M	Left Tilted	20300	1	50	Full	25	24.36	0.13	0.161	1.16	0.19
	LTE 4	QPSK20M	Right Cheek	20300	50	0	Full	24	23.46	0.11	0.096	1.13	0.11
	LTE 4	QPSK20M	Right Tilted	20300	50	0	Full	24	23.46	0.07	0.066	1.13	0.07
	LTE 4	QPSK20M	Left Cheek	20300	50	0	Full	24	23.46	0.06	0.308	1.13	0.35
	LTE 4	QPSK20M	Left Tilted	20300	50	0	Full	24	23.46	0.04	0.148	1.13	0.17
P03	LTE 5	QPSK10M	Right Cheek	20525	1	24	Full	25	24.19	0.06	0.391	1.21	<b>0.47</b>
	LTE 5	QPSK10M	Right Tilted	20525	1	24	Full	25	24.19	-0.08	0.247	1.21	0.30
	LTE 5	QPSK10M	Left Cheek	20525	1	24	Full	25	24.19	-0.04	0.293	1.21	0.35
	LTE 5	QPSK10M	Left Tilted	20525	1	24	Full	25	24.19	0.05	0.223	1.21	0.27
	LTE 5	QPSK10M	Right Cheek	20525	25	12	Full	24	23.15	0.05	0.299	1.22	0.36
	LTE 5	QPSK10M	Right Tilted	20525	25	12	Full	24	23.15	0.17	0.198	1.22	0.24
	LTE 5	QPSK10M	Left Cheek	20525	25	12	Full	24	23.15	-0.08	0.238	1.22	0.29
	LTE 5	QPSK10M	Left Tilted	20525	25	12	Full	24	23.15	-0.13	0.177	1.22	0.22
P04	LTE 12	QPSK10M	Right Cheek	23130	1	24	Full	25	24.23	0.09	0.168	1.19	0.20
	LTE 12	QPSK10M	Right Tilted	23130	1	24	Full	25	24.23	-0.17	0.119	1.19	0.14
	LTE 12	QPSK10M	Left Cheek	23130	1	24	Full	25	24.23	0.02	0.192	1.19	<b>0.23</b>
	LTE 12	QPSK10M	Left Tilted	23130	1	24	Full	25	24.23	0.13	0.135	1.19	0.16
	LTE 12	QPSK10M	Right Cheek	23130	25	25	Full	24	23.34	0.18	0.121	1.16	0.14
	LTE 12	QPSK10M	Right Tilted	23130	25	25	Full	24	23.34	0.07	0.085	1.16	0.10
	LTE 12	QPSK10M	Left Cheek	23130	25	25	Full	24	23.34	0.01	0.128	1.16	0.15
	LTE 12	QPSK10M	Left Tilted	23130	25	25	Full	24	23.34	0.06	0.101	1.16	0.12
P05	LTE 14	QPSK10M	Right Cheek	23330	1	24	Full	25	23.91	0.01	0.365	1.29	<b>0.47</b>
	LTE 14	QPSK10M	Right Tilted	23330	1	24	Full	25	23.91	0.16	0.228	1.29	0.29
	LTE 14	QPSK10M	Left Cheek	23330	1	24	Full	25	23.91	0.13	0.306	1.29	0.39
	LTE 14	QPSK10M	Left Tilted	23330	1	24	Full	25	23.91	-0.14	0.230	1.29	0.30
	LTE 14	QPSK10M	Right Cheek	23330	25	0	Full	24	22.97	0.07	0.272	1.27	0.34
	LTE 14	QPSK10M	Right Tilted	23330	25	0	Full	24	22.97	-0.06	0.189	1.27	0.24
	LTE 14	QPSK10M	Left Cheek	23330	25	0	Full	24	22.97	0.11	0.244	1.27	0.31
	LTE 14	QPSK10M	Left Tilted	23330	25	0	Full	24	22.97	0.04	0.181	1.27	0.23
P06	LTE 30	QPSK10M	Right Cheek	27710	1	24	Full	25	24.82	0.04	0.251	1.04	0.26
	LTE 30	QPSK10M	Right Tilted	27710	1	24	Full	25	24.82	-0.16	0.251	1.04	0.26
	LTE 30	QPSK10M	Left Cheek	27710	1	24	Full	25	24.82	0.02	0.431	1.04	<b>0.45</b>
	LTE 30	QPSK10M	Left Tilted	27710	1	24	Full	25	24.82	0.13	0.195	1.04	0.20
	LTE 30	QPSK10M	Right Cheek	27710	25	0	Full	24	23.92	0.07	0.189	1.02	0.19
	LTE 30	QPSK10M	Right Tilted	27710	25	0	Full	24	23.92	0.03	0.184	1.02	0.19
	LTE 30	QPSK10M	Left Cheek	27710	25	0	Full	24	23.92	0.02	0.292	1.02	0.30
	LTE 30	QPSK10M	Left Tilted	27710	25	0	Full	24	23.92	-0.13	0.130	1.02	0.13

# FCC SAR Test Report

## <WLAN / BT>

Plot No.	Band	Mode	Test Position	Ch.	Power Reduction	Duty Cycle %	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Power Drift (dB)	Measured SAR-1g (W/kg)	Duty Cycle Factor	Tune-up Scaling Factor	Scaled SAR-1g (W/kg)
P07	WLAN2.4G	802.11b	Right Cheek	6	Full	100	19.00	18.27	0	0.746	1.00	1.18	0.88
	WLAN2.4G	802.11b	Right Tilted	6	Full	100	19.00	18.27	-0.09	0.879	1.00	1.18	<b>1.04</b>
	WLAN2.4G	802.11b	Left Cheek	6	Full	100	19.00	18.27	0.03	0.674	1.00	1.18	0.80
	WLAN2.4G	802.11b	Left Tilted	6	Full	100	19.00	18.27	0.08	0.751	1.00	1.18	0.89
	WLAN2.4G	802.11b	Right Cheek	11	Full	100	19.00	18.07	-0.09	0.658	1.00	1.24	0.82
	WLAN2.4G	802.11b	Right Tilted	11	Full	100	19.00	18.07	-0.09	0.782	1.00	1.24	0.97
	WLAN2.4G	802.11b	Left Cheek	11	Full	100	19.00	18.07	0.03	0.647	1.00	1.24	0.80
	WLAN2.4G	802.11b	Left Tilted	11	Full	100	19.00	18.07	-0.11	0.712	1.00	1.24	0.88
P08	WLAN5G	802.11a	Right Cheek	60	Reduce	100	14.00	13.06	0.06	0.456	1.00	1.24	0.57
	WLAN5G	802.11a	Right Tilted	60	Reduce	100	14.00	13.06	0.09	0.543	1.00	1.24	0.67
	WLAN5G	802.11a	Left Cheek	60	Reduce	100	14.00	13.06	0.1	0.466	1.00	1.24	0.58
	WLAN5G	802.11a	Left Tilted	60	Reduce	100	14.00	13.06	-0.06	0.563	1.00	1.24	<b>0.70</b>
	WLAN5G	802.11a	Right Cheek	116	Reduce	100	12.50	12.15	0.1	0.752	1.00	1.08	0.82
	WLAN5G	802.11a	Right Tilted	116	Reduce	100	12.50	12.15	-0.07	0.855	1.00	1.08	0.93
	WLAN5G	802.11a	Left Cheek	116	Reduce	100	12.50	12.15	0.02	0.729	1.00	1.08	0.79
	WLAN5G	802.11a	Left Tilted	116	Reduce	100	12.50	12.15	0.1	0.846	1.00	1.08	0.92
P09	WLAN5G	802.11a	Right Cheek	140	Reduce	100	12.50	12.13	-0.15	0.814	1.00	1.09	0.89
	WLAN5G	802.11a	Right Tilted	140	Reduce	100	12.50	12.13	-0.09	0.866	1.00	1.09	0.94
	WLAN5G	802.11a	Left Tilted	140	Reduce	100	12.50	12.13	-0.03	0.960	1.00	1.09	<b>1.05</b>
	WLAN5G	802.11a	Right Cheek	149	Reduce	100	12.50	11.86	0.06	0.804	1.00	1.16	0.93
	WLAN5G	802.11a	Right Tilted	149	Reduce	100	12.50	11.86	0.15	0.928	1.00	1.16	1.08
	WLAN5G	802.11a	Left Cheek	149	Reduce	100	12.50	11.86	-0.01	0.778	1.00	1.16	0.90
	WLAN5G	802.11a	Left Tilted	149	Reduce	100	12.50	11.86	-0.02	0.890	1.00	1.16	1.03
	WLAN5G	802.11a	Right Cheek	157	Reduce	100	12.50	11.83	-0.04	0.825	1.00	1.17	0.96
P10	WLAN5G	802.11a	Right Tilted	157	Reduce	100	12.50	11.83	0.13	0.913	1.00	1.17	1.07
	WLAN5G	802.11a	Left Cheek	157	Reduce	100	12.50	11.83	0.03	0.728	1.00	1.17	0.85
	WLAN5G	802.11a	Left Tilted	157	Reduce	100	12.50	11.83	-0.08	0.932	1.00	1.17	<b>1.09</b>
	BT	GFSK	Right Cheek	39	Full	76.8	10.5	8.55	0.07	0.060	1.30	1.57	0.12
	BT	GFSK	Right Tilted	39	Full	76.8	10.5	8.55	-0.08	0.073	1.30	1.57	<b>0.15</b>
	BT	GFSK	Left Cheek	39	Full	76.8	10.5	8.55	0.19	0.042	1.30	1.57	0.09
	BT	GFSK	Left Tilted	39	Full	76.8	10.5	8.55	0.02	0.048	1.30	1.57	0.10

# FCC SAR Test Report

## 4.6.3 SAR Results for Body-worn Exposure Condition (Separation Distance is 1.0 cm Gap)

Plot No.	Band	Mode	Test Position	Separation Distance (cm)	Ch.	RB#	RB Offset	Power Reduction	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Power Drift (dB)	Measured SAR-1g (W/kg)	Tune-up Scaling Factor	Scaled SAR-1g (W/kg)
P12	LTE 2	QPSK20M	Front Face	1	18700	1	50	Full	25	24.51	-0.08	0.487	1.12	<b>0.55</b>
	LTE 2	QPSK20M	Rear Face	1	18900	1	50	Reduce	20	19.17	0.11	0.254	1.21	0.31
	LTE 2	QPSK20M	Rear Face	1.9	18700	1	50	Full	25	24.51	0.14	0.216	1.12	0.24
	LTE 2	QPSK20M	Front Face	1	18700	50	25	Full	24	23.56	0.07	0.397	1.11	0.44
	LTE 2	QPSK20M	Rear Face	1	18700	50	25	Reduce	20	18.97	-0.01	0.200	1.27	0.25
	LTE 2	QPSK20M	Rear Face	1.9	18700	50	25	Full	24	23.56	0.04	0.168	1.11	0.19
P13	LTE 4	QPSK20M	Front Face	1	20300	1	50	Full	25	24.36	0.12	0.509	1.16	<b>0.59</b>
	LTE 4	QPSK20M	Rear Face	1	20300	1	50	Reduce	20.5	19.67	0.02	0.309	1.21	0.37
	LTE 4	QPSK20M	Rear Face	1.9	20300	1	50	Full	25	24.36	0.18	0.236	1.16	0.27
	LTE 4	QPSK20M	Front Face	1	20300	50	0	Full	24	23.46	0.11	0.400	1.13	0.45
	LTE 4	QPSK20M	Rear Face	1	20300	50	0	Reduce	20.5	19.56	-0.05	0.250	1.24	0.31
	LTE 4	QPSK20M	Rear Face	1.9	20300	50	0	Full	24	23.46	0.07	0.188	1.13	0.21
P14	LTE 5	QPSK10M	Front Face	1	20525	1	24	Full	25	24.19	0.09	0.318	1.21	0.38
	LTE 5	QPSK10M	Rear Face	1	20525	1	24	Full	25	24.19	0.03	0.538	1.21	<b>0.65</b>
	LTE 5	QPSK10M	Front Face	1	20525	25	12	Full	24	23.15	0.04	0.250	1.22	0.30
	LTE 5	QPSK10M	Rear Face	1	20525	25	12	Full	24	23.15	0.13	0.398	1.22	0.48
P15	LTE 12	QPSK10M	Front Face	1	23130	1	24	Full	25	24.23	0.17	0.197	1.19	0.24
	LTE 12	QPSK10M	Rear Face	1	23130	1	24	Full	25	24.23	0.06	0.351	1.19	<b>0.42</b>
	LTE 12	QPSK10M	Front Face	1	23130	25	25	Full	24	23.34	0.04	0.142	1.16	0.17
	LTE 12	QPSK10M	Rear Face	1	23130	25	25	Full	24	23.34	0.01	0.265	1.16	0.31
P16	LTE 14	QPSK10M	Front Face	1	23330	1	24	Full	25	23.91	-0.16	0.330	1.29	0.42
	LTE 14	QPSK10M	Rear Face	1	23330	1	24	Full	25	23.91	0.09	0.549	1.29	<b>0.71</b>
	LTE 14	QPSK10M	Front Face	1	23330	25	0	Full	24	22.97	0.03	0.251	1.27	0.32
P17	LTE 14	QPSK10M	Rear Face	1	23330	25	0	Full	24	22.97	0.05	0.429	1.27	0.54
	LTE 30	QPSK10M	Front Face	1	27710	1	24	Full	25	24.82	0.04	0.482	1.04	<b>0.50</b>
	LTE 30	QPSK10M	Rear Face	1	27710	1	24	Reduce	20	19.33	0.18	0.334	1.17	0.39
	LTE 30	QPSK10M	Rear Face	1.9	27710	1	24	Full	25	24.82	0.16	0.208	1.04	0.22
	LTE 30	QPSK10M	Front Face	1	27710	25	0	Full	24	23.92	0.05	0.420	1.02	0.43
P18	LTE 30	QPSK10M	Rear Face	1	27710	25	0	Reduce	20	19.29	-0.07	0.259	1.18	0.30
	LTE 30	QPSK10M	Rear Face	1.9	27710	25	0	Full	24	23.92	0.12	0.157	1.02	0.16

### <WLAN / BT>

Plot No.	Band	Mode	Test Position	Separation Distance (cm)	Ch.	Power Reduction	Duty Cycle %	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Power Drift (dB)	Measured SAR-1g (W/kg)	Duty Cycle Factor	Tune-up Scaling Factor	Scaled SAR-1g (W/kg)
P18	WLAN2.4G	802.11b	Front Face	1	6	Full	100	19.00	18.27	0.08	0.251	1.00	1.18	0.30
	WLAN2.4G	802.11b	Rear Face	1	6	Full	100	19.00	18.27	-0.07	0.462	1.00	1.18	<b>0.55</b>
P19	WLAN5G	802.11a	Front Face	1	52	Full	100	17.00	16.24	0.03	0.233	1.00	1.19	0.28
	WLAN5G	802.11a	Rear Face	1	52	Full	100	17.00	16.24	0	0.404	1.00	1.19	<b>0.48</b>
P20	WLAN5G	802.11a	Front Face	1	116	Full	100	17.00	15.92	-0.15	0.378	1.00	1.28	0.48
	WLAN5G	802.11a	Rear Face	1	116	Full	100	17.00	15.92	-0.06	0.503	1.00	1.28	<b>0.65</b>
P21	WLAN5G	802.11a	Front Face	1	149	Full	100	17.00	16.25	0.09	0.569	1.00	1.19	0.68
	WLAN5G	802.11a	Rear Face	1	149	Full	100	17.00	16.25	0	0.641	1.00	1.19	<b>0.76</b>
P22	BT	GFSK	Front Face	1	39	Full	76.8	10.5	8.55	0.13	0.032	1.30	1.57	0.07
	BT	GFSK	Rear Face	1	39	Full	76.8	10.5	8.55	0.01	0.047	1.30	1.57	<b>0.10</b>

# FCC SAR Test Report

## 4.6.4 SAR Results for Hotspot Exposure Condition (Separation Distance is 1.0 cm Gap)

<FDD-LTE>

Plot No.	Band	Mode	Test Position	Separation Distance (cm)	Ch.	RB#	RB Offset	Power Reduction	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Power Drift (dB)	Measured SAR-1g (W/kg)	Tune-up Scaling Factor	Scaled SAR-1g (W/kg)
P23	LTE 2	QPSK20M	Front Face	1	18700	1	50	Full	25	24.51	-0.09	0.487	1.12	<b>0.55</b>
	LTE 2	QPSK20M	Rear Face	1	18900	1	50	Reduce	20	19.17	0.11	0.254	1.21	0.31
	LTE 2	QPSK20M	Left Side	1	18700	1	50	Full	25	24.51	0.13	0.261	1.12	0.29
	LTE 2	QPSK20M	Right Side	1	18700	1	50	Full	25	24.51	0.05	0.295	1.12	0.33
	LTE 2	QPSK20M	Right Side	1	18700	1	50	Full	25	24.51	0.01	0.000	1.12	0.00
	LTE 2	QPSK20M	Bottom Side	1	18700	1	50	Full	25	24.51	0.10	0.408	1.12	0.46
	LTE 2	QPSK20M	Rear Face	1.9	18700	1	50	Full	25	24.51	-0.02	0.216	1.12	0.24
	LTE 2	QPSK20M	Front Face	1	18700	50	25	Full	24	23.56	0.08	0.397	1.11	0.44
	LTE 2	QPSK20M	Rear Face	1	18700	50	25	Reduce	20	18.97	-0.11	0.200	1.27	0.25
	LTE 2	QPSK20M	Left Side	1	18700	50	25	Full	24	23.56	0.06	0.201	1.11	0.22
	LTE 2	QPSK20M	Right Side	1	18700	50	25	Full	24	23.56	0.04	0.191	1.11	0.21
	LTE 2	QPSK20M	Bottom Side	1	18700	50	25	Full	24	23.56	-0.01	0.304	1.11	0.34
	LTE 2	QPSK20M	Rear Face	1.9	18700	50	25	Full	24	23.56	0.09	0.168	1.11	0.19
	P24	LTE 4	QPSK20M	Front Face	1	20300	1	50	Full	25	24.36	0.12	0.509	1.16
LTE 4		QPSK20M	Rear Face	1	20300	1	50	Reduce	20.5	19.67	0.02	0.309	1.21	0.37
LTE 4		QPSK20M	Left Side	1	20300	1	50	Full	25	24.36	-0.03	0.192	1.16	0.22
LTE 4		QPSK20M	Right Side	1	20300	1	50	Full	25	24.36	-0.12	0.220	1.16	0.25
LTE 4		QPSK20M	Top Side	1	20300	1	50	Full	25	24.36	-0.03	0.078	1.16	0.09
LTE 4		QPSK20M	Bottom Side	1	20300	1	50	Full	25	24.36	0.12	0.436	1.16	0.51
LTE 4		QPSK20M	Rear Face	1.9	20300	1	50	Full	25	24.36	0.13	0.236	1.16	0.27
LTE 4		QPSK20M	Front Face	1	20300	50	0	Full	24	23.46	0.04	0.400	1.13	0.45
LTE 4		QPSK20M	Rear Face	1	20300	50	0	Reduce	20.5	19.56	0.07	0.250	1.24	0.31
LTE 4		QPSK20M	Left Side	1	20300	50	0	Full	24	23.46	0.03	0.266	1.13	0.30
LTE 4		QPSK20M	Right Side	1	20300	50	0	Full	24	23.46	0.05	0.140	1.13	0.16
LTE 4		QPSK20M	Top Side	1	20300	50	0	Full	24	23.46	0.12	0.090	1.13	0.10
LTE 4		QPSK20M	Bottom Side	1	20300	50	0	Full	24	23.46	0.03	0.430	1.13	0.49
LTE 4		QPSK20M	Rear Face	1.9	20300	50	0	Full	24	23.46	0.08	0.188	1.13	0.21
LTE 5	QPSK10M	Front Face	1	20525	1	24	Full	25	24.19	0.02	0.318	1.21	0.38	
P25	LTE 5	QPSK10M	Rear Face	1	20525	1	24	Full	25	24.19	0.03	0.538	1.21	<b>0.65</b>
	LTE 5	QPSK10M	Left Side	1	20525	1	24	Full	25	24.19	0.13	0.214	1.21	0.26
	LTE 5	QPSK10M	Right Side	1	20525	1	24	Full	25	24.19	0.15	0.310	1.21	0.37
	LTE 5	QPSK10M	Top Side	1	20525	1	24	Full	25	24.19	-0.03	0.000	1.21	0.00
	LTE 5	QPSK10M	Bottom Side	1	20525	1	24	Full	25	24.19	0.13	0.084	1.21	0.101
	LTE 5	QPSK10M	Front Face	1	20525	25	12	Full	24	23.15	-0.05	0.250	1.22	0.30
	LTE 5	QPSK10M	Rear Face	1	20525	25	12	Full	24	23.15	0.02	0.398	1.22	0.48
	LTE 5	QPSK10M	Left Side	1	20525	25	12	Full	24	23.15	0.03	0.166	1.22	0.20
	LTE 5	QPSK10M	Right Side	1	20525	25	12	Full	24	23.15	0.07	0.236	1.22	0.29
	LTE 5	QPSK10M	Top Side	1	20525	25	12	Full	24	23.15	0.19	0.000	1.22	0.00
	LTE 5	QPSK10M	Bottom Side	1	20525	25	12	Full	24	23.15	0.09	0.065	1.22	0.079

# FCC SAR Test Report

Plot No.	Band	Mode	Test Position	Separation Distance (cm)	Ch.	RB#	RB Offset	Power Reduction	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Power Drift (dB)	Measured SAR-1g (W/kg)	Tune-up Scaling Factor	Scaled SAR-1g (W/kg)
P26	LTE 12	QPSK10M	Front Face	1	23130	1	24	Full	25	24.23	0.03	0.197	1.19	0.24
	LTE 12	QPSK10M	Rear Face	1	23130	1	24	Reduce	25	24.23	0.06	0.351	1.19	<b>0.42</b>
	LTE 12	QPSK10M	Left Side	1	23130	1	24	Full	25	24.23	0.13	0.200	1.19	0.24
	LTE 12	QPSK10M	Right Side	1	23130	1	24	Full	25	24.23	0.06	0.238	1.19	0.28
	LTE 12	QPSK10M	Top Side	1	23130	1	24	Full	25	24.23	-0.03	0.000	1.19	0.00
	LTE 12	QPSK10M	Bottom Side	1	23130	1	24	Full	25	24.23	0.14	0.000	1.19	0.00
	LTE 12	QPSK10M	Front Face	1	23130	25	25	Full	24	23.34	0.05	0.142	1.16	0.17
	LTE 12	QPSK10M	Rear Face	1	23130	25	25	Full	24	23.34	-0.07	0.265	1.16	0.31
	LTE 12	QPSK10M	Left Side	1	23130	25	25	Reduce	24	23.34	0.06	0.148	1.16	0.17
	LTE 12	QPSK10M	Right Side	1	23130	25	25	Full	24	23.34	0.01	0.178	1.16	0.21
	LTE 12	QPSK10M	Top Side	1	23130	25	25	Full	24	23.34	0.12	0.000	1.16	0.00
	LTE 12	QPSK10M	Bottom Side	1	23130	25	25	Full	24	23.34	0.03	0.000	1.16	0.00
P27	LTE 14	QPSK10M	Front Face	1	23330	1	24	Full	25	23.91	0.16	0.330	1.29	0.42
	LTE 14	QPSK10M	Rear Face	1	23330	1	24	Full	25	23.91	0.09	0.549	1.29	<b>0.71</b>
	LTE 14	QPSK10M	Left Side	1	23330	1	24	Full	25	23.91	-0.07	0.279	1.29	0.36
	LTE 14	QPSK10M	Right Side	1	23330	1	24	Full	25	23.91	0.08	0.373	1.29	0.48
	LTE 14	QPSK10M	Top Side	1	23330	1	24	Full	25	23.91	0.09	0.000	1.29	0.00
	LTE 14	QPSK10M	Bottom Side	1	23330	1	24	Full	25	23.91	0.02	0.060	1.29	0.08
	LTE 14	QPSK10M	Front Face	1	23330	25	0	Full	24	22.97	-0.04	0.251	1.27	0.32
	LTE 14	QPSK10M	Rear Face	1	23330	25	0	Full	24	22.97	0.19	0.429	1.27	0.54
	LTE 14	QPSK10M	Left Side	1	23330	25	0	Full	24	22.97	0.18	0.214	1.27	0.27
	LTE 14	QPSK10M	Right Side	1	23330	25	0	Full	24	22.97	0.12	0.292	1.27	0.37
	LTE 14	QPSK10M	Top Side	1	23330	25	0	Full	24	22.97	-0.11	0.000	1.27	0.00
	LTE 14	QPSK10M	Bottom Side	1	23330	25	0	Full	24	22.97	0.03	0.048	1.27	0.06
P28	LTE 30	QPSK10M	Front Face	1	27710	1	24	Full	25	24.82	0.04	0.482	1.04	<b>0.50</b>
	LTE 30	QPSK10M	Rear Face	1	27710	1	24	Reduce	20	19.33	0.18	0.334	1.17	0.39
	LTE 30	QPSK10M	Left Side	1	27710	1	24	Full	25	24.82	0.04	0.343	1.04	0.36
	LTE 30	QPSK10M	Right Side	1	27710	1	24	Full	25	24.82	0.03	0.054	1.04	0.06
	LTE 30	QPSK10M	Top Side	1	27710	1	24	Full	25	24.82	0.03	0.048	1.04	0.05
	LTE 30	QPSK10M	Bottom Side	1	27710	1	24	Full	25	24.82	0.19	0.388	1.04	0.40
	LTE 30	QPSK10M	Rear Face	1.9	27710	1	24	Full	25	24.82	0.18	0.208	1.04	0.22
	LTE 30	QPSK10M	Front Face	1	27710	25	0	Full	24	23.92	0.05	0.420	1.02	0.43
	LTE 30	QPSK10M	Rear Face	1	27710	25	0	Reduce	20	19.29	0.10	0.259	1.18	0.30
	LTE 30	QPSK10M	Left Side	1	27710	25	0	Full	24	23.92	0.10	0.268	1.02	0.27
	LTE 30	QPSK10M	Right Side	1	27710	25	0	Full	24	23.92	0.06	0.052	1.02	0.05
	LTE 30	QPSK10M	Top Side	1	27710	25	0	Full	24	23.92	0.04	0.000	1.02	0.00
LTE 30	QPSK10M	Bottom Side	1	27710	25	0	Full	24	23.92	0.06	0.298	1.02	0.30	
LTE 30	QPSK10M	Rear Face	1.9	27710	25	0	Full	24	23.92	0.13	0.157	1.02	0.16	

# FCC SAR Test Report

## <WLAN / BT>

Plot No.	Band	Mode	Test Position	Separation Distance (cm)	Ch.	Power Reduction	Duty Cycle %	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Power Drift (dB)	Measured SAR-1g (W/kg)	Duty Cycle Factor	Tune-up Scaling Factor	Scaled SAR-1g (W/kg)
P29	WLAN2.4G	802.11b	Front Face	1	6	Full	100	19.00	18.27	0.08	0.251	1.00	1.18	0.30
	WLAN2.4G	802.11b	Rear Face	1	6	Full	100	19.00	18.27	-0.07	0.462	1.00	1.18	<b>0.55</b>
	WLAN2.4G	802.11b	Left Side	1	6	Full	100	19.00	18.27	-0.12	0.043	1.00	1.18	0.05
	WLAN2.4G	802.11b	Right Side	1	6	Full	100	19.00	18.27	0.08	0.016	1.00	1.18	0.02
	WLAN2.4G	802.11b	Top Side	1	6	Full	100	19.00	18.27	-0.01	0.369	1.00	1.18	0.44
P30	WLAN5G	802.11a	Front Face	1	40	Full	100	17.00	15.88	0.06	0.228	1.00	1.29	0.30
	WLAN5G	802.11a	Rear Face	1	40	Full	100	17.00	15.88	0.11	0.407	1.00	1.29	0.53
	WLAN5G	802.11a	Left Side	1	40	Full	100	17.00	15.88	0.08	0.078	1.00	1.29	0.10
	WLAN5G	802.11a	Right Side	1	40	Full	100	17.00	15.88	-0.17	0.074	1.00	1.29	0.10
	WLAN5G	802.11a	Top Side	1	40	Full	100	17.00	15.88	-0.03	0.520	1.00	1.29	<b>0.67</b>
P31	WLAN5G	802.11a	Front Face	1	149	Full	100	17.00	16.25	0.09	0.569	1.00	1.19	0.68
	WLAN5G	802.11a	Rear Face	1	149	Full	100	17.00	16.25	0	0.641	1.00	1.19	0.76
	WLAN5G	802.11a	Left Side	1	149	Full	100	17.00	16.25	0.08	0.186	1.00	1.19	0.22
	WLAN5G	802.11a	Right Side	1	149	Full	100	17.00	16.25	-0.15	0.099	1.00	1.19	0.12
	WLAN5G	802.11a	Top Side	1	149	Full	100	17.00	16.25	-0.03	0.945	1.00	1.19	<b>1.12</b>
	WLAN5G	802.11a	Top Side	1	165	Full	100	17.00	16.23	-0.04	0.770	1.00	1.19	0.92
P32	BT	GFSK	Front Face	1	39	Full	76.8	10.5	8.55	0.1	0.032	1.30	1.57	0.07
	BT	GFSK	Rear Face	1	39	Full	76.8	10.5	8.55	0.01	0.047	1.30	1.57	<b>0.10</b>
	BT	GFSK	Left Side	1	39	Full	76.8	10.5	8.55	0.02	0.000	1.30	1.57	0.00
	BT	GFSK	Right Side	1	39	Full	76.8	10.5	8.55	0.11	0.034	1.30	1.57	0.07
	BT	GFSK	Top Side	1	39	Full	76.8	10.5	8.55	-0.1	0.000	1.30	1.57	0.00

### 4.6.5 SAR Results for Extremity Exposure Condition (Separation Distance is 0 cm Gap)

## <FDD-LTE>

Plot No.	Band	Mode	Test Position	Separation Distance (cm)	Ch.	RB#	RB Offset	Power Reduction	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Power Drift (dB)	Measured SAR-10g (W/kg)	Tune-up Scaling Factor	Scaled SAR-10g (W/kg)
P33	LTE 30	QPSK10M	Rear Face	0	27710	1	24	Reduce	21	19.33	0.13	1.230	1.47	<b>1.81</b>
	LTE 30	QPSK10M	Rear Face	0	27710	25	0	Reduce	21	19.33	-0.17	1.210	1.47	1.78

## <WLAN / BT>

Plot No.	Band	Mode	Test Position	Separation Distance (cm)	Ch.	Power Reduction	Duty Cycle %	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Power Drift (dB)	Measured SAR-1g (W/kg)	Duty Cycle Factor	Tune-up Scaling Factor	Scaled SAR-1g (W/kg)
P34	WLAN5G	802.11a	Front Face	0	52	Full	100	17.00	16.24	0.03	0.344	1.00	1.19	0.41
	WLAN5G	802.11a	Rear Face	0	52	Full	100	17.00	16.24	-0.09	0.938	1.00	1.19	<b>1.12</b>
	WLAN5G	802.11a	Left Side	0	52	Full	100	17.00	16.24	-0.01	0.042	1.00	1.19	0.05
	WLAN5G	802.11a	Right Side	0	52	Full	100	17.00	16.24	-0.16	0.029	1.00	1.19	0.03
	WLAN5G	802.11a	Top Side	0	52	Full	100	17.00	16.24	0.07	0.890	1.00	1.19	1.06
P35	WLAN5G	802.11a	Front Face	0	140	Full	100	17.00	16.25	0.09	0.665	1.00	1.19	0.79
	WLAN5G	802.11a	Rear Face	0	140	Full	100	17.00	16.25	0.13	1.310	1.00	1.19	1.56
	WLAN5G	802.11a	Left Side	0	140	Full	100	17.00	16.25	0.05	0.073	1.00	1.19	0.09
	WLAN5G	802.11a	Right Side	0	140	Full	100	17.00	16.25	-0.06	0.024	1.00	1.19	0.03
	WLAN5G	802.11a	Top Side	0	140	Full	100	17.00	16.25	-0.01	1.470	1.00	1.19	<b>1.75</b>

## 4.6.6 SAR Measurement Variability

According to KDB 865664 D01, SAR measurement variability was assessed for each frequency band, which is determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media are required for SAR measurements in a frequency band, the variability measurement procedures should be applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium. Alternatively, if the highest measured SAR for both head and body tissue-equivalent media are  $\leq 1.45$  W/kg and the ratio of these highest SAR values, i.e., largest divided by smallest value, is  $\leq 1.10$ , the highest SAR configuration for either head or body tissue-equivalent medium may be used to perform the repeated measurement. These additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium 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 the repeated measurement(s) to minimize any unexpected variations in the repeated results.

SAR repeated measurement procedure:

1. When the highest measured SAR is  $< 0.80$  W/kg, repeated measurement is not required.
2. When the highest measured SAR is  $\geq 0.80$  W/kg, repeat that measurement once.
3. If the ratio of largest to smallest SAR for the original and first repeated measurements is  $> 1.20$ , or when the original or repeated measurement is  $\geq 1.45$  W/kg, perform a second repeated measurement.
4. If the ratio of largest to smallest SAR for the original, first and second repeated measurements is  $> 1.20$ , and the original, first or second repeated measurement is  $\geq 1.5$  W/kg, perform a third repeated measurement.

Band	Test Position	Ch.	Original Measured SAR-1g (W/kg)	1st Repeated SAR-1g (W/kg)	L/S Ratio	2nd Repeated SAR-1g (W/kg)	L/S Ratio	3rd Repeated SAR-1g (W/kg)	L/S Ratio
WLAN2.4G	Right Tilted	6	0.879	0.846	1.04	N/A	N/A	N/A	N/A
WLAN5G	Left Tilted	140	0.960	0.945	1.01	N/A	N/A	N/A	N/A
WLAN5G	Top Side	149	0.945	0.933	1.01	N/A	N/A	N/A	N/A

# FCC SAR Test Report

## <SAR Summation Analysis>

Simultaneous transmission SAR test exclusion is determined for each operating configuration and exposure condition according to the reported standalone SAR of each applicable simultaneous transmitting antenna. When the sum of SAR<sub>1g</sub> of all simultaneously transmitting antennas in an operating mode and exposure condition combination is within the SAR limit (SAR<sub>1g</sub> 1.6 W/kg), the simultaneous transmission SAR is not required. When the sum of SAR<sub>1g</sub> is greater than the SAR limit (SAR<sub>1g</sub> 1.6 W/kg), SAR test exclusion is determined by the SPLSR.

## <Head Exposure condition>

WWAN Band	Exposure Position	1	2	3	4	1+2 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)	1+3+4 Summed 1g SAR (W/kg)	SPLSR Analysis
		WWAN 1g SAR (W/kg)	2.4GHz WLAN 1g SAR (W/kg)	5GHz WLAN 1g SAR (W/kg)	BT 1g SAR (W/kg)				
LTE Band 2	Right Cheek	0.304	0.883	0.963	0.122	1.19	1.27	1.39	ΣSAR < 1.6, Not required
	Right Tilted	0.234	1.040	1.075	0.150	1.27	1.31	1.46	ΣSAR < 1.6, Not required
	Left Cheek	0.131	0.802	0.902	0.086	0.93	1.03	1.12	ΣSAR < 1.6, Not required
	Left Tilted	0.069	0.888	1.087	0.098	0.96	1.16	1.25	ΣSAR < 1.6, Not required
LTE Band 4	Right Cheek	0.117	0.883	0.963	0.122	1.00	1.08	1.20	ΣSAR < 1.6, Not required
	Right Tilted	0.074	1.040	1.075	0.150	1.11	1.15	1.30	ΣSAR < 1.6, Not required
	Left Cheek	0.490	0.802	0.902	0.086	1.29	1.39	1.48	ΣSAR < 1.6, Not required
	Left Tilted	0.187	0.888	1.087	0.098	1.08	1.27	1.37	ΣSAR < 1.6, Not required
LTE Band 5	Right Cheek	0.471	0.883	0.963	0.122	1.35	1.43	<b>1.56</b>	ΣSAR < 1.6, Not required
	Right Tilted	0.298	1.040	1.075	0.150	1.34	1.37	1.52	ΣSAR < 1.6, Not required
	Left Cheek	0.353	0.802	0.902	0.086	1.15	1.25	1.34	ΣSAR < 1.6, Not required
	Left Tilted	0.269	0.888	1.087	0.098	1.16	1.36	1.45	ΣSAR < 1.6, Not required
LTE Band 12	Right Cheek	0.201	0.883	0.963	0.122	1.08	1.16	1.29	ΣSAR < 1.6, Not required
	Right Tilted	0.142	1.040	1.075	0.150	1.18	1.22	1.37	ΣSAR < 1.6, Not required
	Left Cheek	0.229	0.802	0.902	0.086	1.03	1.13	1.22	ΣSAR < 1.6, Not required
	Left Tilted	0.161	0.888	1.087	0.098	1.05	1.25	1.35	ΣSAR < 1.6, Not required
LTE Band 14	Right Cheek	0.469	0.883	0.963	0.122	1.35	1.43	1.55	ΣSAR < 1.6, Not required
	Right Tilted	0.293	1.040	1.075	0.150	1.33	1.37	1.52	ΣSAR < 1.6, Not required
	Left Cheek	0.393	0.802	0.902	0.086	1.19	1.29	1.38	ΣSAR < 1.6, Not required
	Left Tilted	0.296	0.888	1.087	0.098	1.18	1.38	1.48	ΣSAR < 1.6, Not required
LTE Band 30	Right Cheek	0.262	0.883	0.963	0.122	1.14	1.22	1.35	ΣSAR < 1.6, Not required
	Right Tilted	0.262	1.040	1.075	0.150	1.30	1.34	1.49	ΣSAR < 1.6, Not required
	Left Cheek	0.449	0.802	0.902	0.086	1.25	1.35	1.44	ΣSAR < 1.6, Not required
	Left Tilted	0.203	0.888	1.087	0.098	1.09	1.29	1.39	ΣSAR < 1.6, Not required



# FCC SAR Test Report

## <Body Worn Exposure condition>

WWAN Band	Exposure Position	1	2	3	4	1+2 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)	1+3+4 Summed 1g SAR (W/kg)	SPLSR Analysis
		WWAN	2.4GHz WLAN	5GHz WLAN	BT				
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)				
LTE Band 2	Front Face at 10mm	0.545	0.297	0.676	0.065	0.84	1.22	1.29	$\Sigma$ SAR < 1.6, Not required
	Rear Face at 10mm	0.307	0.547	0.762	0.096	0.85	1.07	1.16	$\Sigma$ SAR < 1.6, Not required
	Rear Face at 19mm	0.242	0.000	0.000	0.000	0.24	0.24	0.24	$\Sigma$ SAR < 1.6, Not required
LTE Band 4	Front Face at 10mm	0.590	0.297	0.676	0.065	0.89	1.27	1.33	$\Sigma$ SAR < 1.6, Not required
	Rear Face at 10mm	0.374	0.547	0.762	0.096	0.92	1.14	1.23	$\Sigma$ SAR < 1.6, Not required
	Rear Face at 19mm	0.270	0.000	0.000	0.000	0.27	0.27	0.27	$\Sigma$ SAR < 1.6, Not required
LTE Band 5	Front Face at 10mm	0.383	0.297	0.676	0.065	0.68	1.06	1.12	$\Sigma$ SAR < 1.6, Not required
	Rear Face at 10mm	0.648	0.547	0.762	0.096	1.19	1.41	1.51	$\Sigma$ SAR < 1.6, Not required
	Rear Face at 19mm	0.000	0.000	0.000	0.000	0.00	0.00	0.00	$\Sigma$ SAR < 1.6, Not required
LTE Band 12	Front Face at 10mm	0.235	0.297	0.676	0.065	0.53	0.91	0.98	$\Sigma$ SAR < 1.6, Not required
	Rear Face at 10mm	0.419	0.547	0.762	0.096	0.97	1.18	1.28	$\Sigma$ SAR < 1.6, Not required
	Rear Face at 19mm	0.000	0.000	0.000	0.000	0.00	0.00	0.00	$\Sigma$ SAR < 1.6, Not required
LTE Band 14	Front Face at 10mm	0.424	0.297	0.676	0.065	0.72	1.10	1.17	$\Sigma$ SAR < 1.6, Not required
	Rear Face at 10mm	0.706	0.547	0.762	0.096	1.25	1.47	<b>1.56</b>	$\Sigma$ SAR < 1.6, Not required
	Rear Face at 19mm	0.000	0.000	0.000	0.000	0.00	0.00	0.00	$\Sigma$ SAR < 1.6, Not required
LTE Band 30	Front Face at 10mm	0.502	0.297	0.676	0.065	0.80	1.18	1.24	$\Sigma$ SAR < 1.6, Not required
	Rear Face at 10mm	0.390	0.547	0.762	0.096	0.94	1.15	1.25	$\Sigma$ SAR < 1.6, Not required
	Rear Face at 19mm	0.220	0.000	0.000	0.000	0.22	0.22	0.22	$\Sigma$ SAR < 1.6, Not required

# FCC SAR Test Report

## <Hotspot Exposure condition>

WWAN Band	Exposure Position	1	2	3	4	1+2 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)	1+3+4 Summed 1g SAR (W/kg)	SPLSR Analysis
		WWAN	2.4GHz WLAN	5GHz WLAN	BT				
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)				
LTE Band 2	Front Face at 10mm	0.545	0.297	0.676	0.065	0.84	1.22	1.29	ΣSAR < 1.6, Not required
	Rear Face at 10mm	0.307	0.547	0.762	0.096	0.85	1.07	1.16	ΣSAR < 1.6, Not required
	Left side at 10mm	0.292	0.051	0.221	0.000	0.34	0.51	0.51	ΣSAR < 1.6, Not required
	Right side at 10mm	0.330	0.019	0.118	0.069	0.35	0.45	0.52	ΣSAR < 1.6, Not required
	Top side at 10mm	0.000	0.437	1.123	0.000	0.44	1.12	1.12	ΣSAR < 1.6, Not required
	Bottom side at 10mm	0.457	0.000	0.000	0.000	0.46	0.46	0.46	ΣSAR < 1.6, Not required
	Rear Face at 19mm	0.240	0.297	0.676	0.065	0.89	1.27	1.33	ΣSAR < 1.6, Not required
LTE Band 4	Front Face at 10mm	0.590	0.547	0.762	0.096	0.92	1.14	1.23	ΣSAR < 1.6, Not required
	Rear Face at 10mm	0.374	0.051	0.221	0.000	0.35	0.52	0.52	ΣSAR < 1.6, Not required
	Left side at 10mm	0.301	0.019	0.118	0.069	0.27	0.37	0.44	ΣSAR < 1.6, Not required
	Right side at 10mm	0.255	0.437	1.123	0.000	0.54	1.23	1.23	ΣSAR < 1.6, Not required
	Top side at 10mm	0.102	0.000	0.000	0.000	0.51	0.51	0.51	ΣSAR < 1.6, Not required
	Bottom side at 10mm	0.505	0.297	0.676	0.065	0.68	1.06	1.12	ΣSAR < 1.6, Not required
	Rear Face at 19mm	0.270	0.547	0.762	0.096	1.19	1.41	1.51	ΣSAR < 1.6, Not required
LTE Band 5	Front at 10mm	0.383	0.051	0.221	0.000	0.31	0.48	0.48	ΣSAR < 1.6, Not required
	Back at 10mm	0.648	0.019	0.118	0.069	0.39	0.49	0.56	ΣSAR < 1.6, Not required
	Left side at 10mm	0.258	0.437	1.123	0.000	0.44	1.12	1.12	ΣSAR < 1.6, Not required
	Right side at 10mm	0.374	0.000	0.000	0.000	0.10	0.10	0.10	ΣSAR < 1.6, Not required
	Top side at 10mm	0.000	0.297	0.676	0.065	0.53	0.91	0.98	ΣSAR < 1.6, Not required
	Bottom side at 10mm	0.101	0.547	0.762	0.096	0.97	1.18	1.28	ΣSAR < 1.6, Not required
LTE Band 12	Front at 10mm	0.235	0.051	0.221	0.000	0.29	0.46	0.46	ΣSAR < 1.6, Not required
	Back at 10mm	0.419	0.019	0.118	0.069	0.30	0.40	0.47	ΣSAR < 1.6, Not required
	Left side at 10mm	0.239	0.437	1.123	0.000	0.44	1.12	1.12	ΣSAR < 1.6, Not required
	Right side at 10mm	0.284	0.000	0.000	0.000	0.00	0.00	0.00	ΣSAR < 1.6, Not required
	Top side at 10mm	0.000	0.297	0.676	0.065	0.72	1.10	1.17	ΣSAR < 1.6, Not required
	Bottom side at 10mm	0.000	0.547	0.762	0.096	1.25	1.47	<b>1.56</b>	ΣSAR < 1.6, Not required
LTE Band 14	Front at 10mm	0.424	0.051	0.221	0.000	0.41	0.58	0.58	ΣSAR < 1.6, Not required
	Back at 10mm	0.706	0.019	0.118	0.069	0.50	0.60	0.67	ΣSAR < 1.6, Not required
	Left side at 10mm	0.359	0.437	1.123	0.000	0.44	1.12	1.12	ΣSAR < 1.6, Not required
	Right side at 10mm	0.479	0.000	0.000	0.000	0.08	0.08	0.08	ΣSAR < 1.6, Not required
	Top side at 10mm	0.000	0.297	0.676	0.065	0.80	1.18	1.24	ΣSAR < 1.6, Not required

# FCC SAR Test Report

	Bottom side at 10mm	0.077	0.547	0.762	0.096	0.94	1.15	1.25	$\Sigma$ SAR < 1.6, Not required
LTE Band 30	Front Face at 10mm	0.502	0.051	0.221	0.000	0.41	0.58	0.58	$\Sigma$ SAR < 1.6, Not required
	Rear Face at 10mm	0.390	0.019	0.118	0.069	0.08	0.17	0.24	$\Sigma$ SAR < 1.6, Not required
	Left side at 10mm	0.358	0.437	1.123	0.000	0.49	1.17	1.17	$\Sigma$ SAR < 1.6, Not required
	Right side at 10mm	0.056	0.000	0.000	0.000	0.40	0.40	0.40	$\Sigma$ SAR < 1.6, Not required
	Top side at 10mm	0.050	0.297	0.676	0.065	0.84	1.22	1.29	$\Sigma$ SAR < 1.6, Not required
	Bottom side at 10mm	0.404	0.547	0.762	0.096	0.85	1.07	1.16	$\Sigma$ SAR < 1.6, Not required
	Rear Face at 19mm	0.220	0.051	0.221	0.000	0.34	0.51	0.51	$\Sigma$ SAR < 1.6, Not required

## < Extremity Exposure condition >

WWAN Band	Exposure Position	1	2	3	4	1+2 Summed 10g SAR (W/kg)	1+3 Summed 10g SAR (W/kg)	1+3+4 Summed 10g SAR (W/kg)	SPLSR Analysis
		WWAN	2.4GHz WLAN	5GHz WLAN	BT				
		10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)				
LTE Band 30	Front Face at 0mm	0.000	0.000	0.790	0.000	0.00	0.79	0.79	$\Sigma$ SAR < 4.0, Not required
	Rear Face at 0mm	1.810	0.000	1.557	0.000	1.81	<b>3.37</b>	<b>3.37</b>	$\Sigma$ SAR < 4.0, Not required
	Left side at 0mm	0.000	0.000	0.087	0.000	0.00	0.08	0.08	$\Sigma$ SAR < 4.0, Not required
	Right side at 0mm	0.000	0.000	0.035	0.000	0.00	0.04	0.04	$\Sigma$ SAR < 4.0, Not required
	Top side at 0mm	0.000	0.000	1.747	0.000	0.00	1.75	1.75	$\Sigma$ SAR < 4.0, Not required

Test Engineer : Chao Wu.

## 5. Calibration of Test Equipment

Equipment	Manufacturer	Model	SN	Cal. Date	Cal. Interval
System Validation Dipole	SPEAG	D750V3	1078	Jun. 21, 2021	1 Year
System Validation Dipole	SPEAG	D835V2	4d092	Jun. 23, 2021	1 Year
System Validation Dipole	SPEAG	D1750V2	1111	Apr. 14, 2021	1 Year
System Validation Dipole	SPEAG	D1900V2	5d142	Jun. 25, 2021	1 Year
System Validation Dipole	SPEAG	D2300V2	1091	Jan. 12, 2021	1 Year
System Validation Dipole	SPEAG	D2450V2	735	Dec. 22, 2020	1 Year
System Validation Dipole	SPEAG	D5GHzV2	1203	Dec. 22, 2020	1 Year
Dielectric Probe Kit	SPEAG	DAK-3.5	1119	Sep. 18, 2021	1 Year
Dosimetric E-Field Probe	SPEAG	EX3DV4	3985	May. 24, 2021	1 Year
Data Acquisition Electronics	SPEAG	DAE4	775	May. 07, 2021	1 Year
Universal Radio Communication Tester	R&S	CMW500	145843	July. 05, 2021	1 Year
ENA Series Network Analyzer	Agilent	E5071C	MY46214638	Jun. 03, 2021	1 Year
Spectrum Analyzer	KEYSIGHT	N5183A	MY50143024	Mar. 26, 2021	1 Year
ESG Analog Signal Generator	Agilent	E4438C	MY42081708	Sep. 22, 2021	1 Year
Power Meter	Agilent	E4419B	MY45100301	Jul. 12, 2021	1 Year
Power sensor	Agilent	8485D	MY41091004	Jul. 12, 2021	1 Year
Power Meter	ANRITSU	ML2495A	1506002	Apr. 07, 2021	1 Year
Power Sensor	ANRITSU	MA2411B	1339353	May. 07, 2021	1 Year
Electronic Thermometer	MIAO XIN	TH20R-EX	MX-TH1X	July. 23, 2021	1 Year

## **6. Measurement Uncertainty**

According to KDB 865664 D01, SAR measurement uncertainty analysis is required in SAR reports only when the highest measured SAR in a frequency band is  $\geq 1.5$  W/kg for 1-g SAR, and  $\geq 3.75$  W/kg for 10-g SAR. The procedures described in IEEE Std 1528-2013 should be applied. The expanded SAR measurement uncertainty must be  $\leq 30\%$ , for a confidence interval of  $k = 2$ . When the highest measured SAR within a frequency band is  $< 1.5$  W/kg for 1-g and  $< 3.75$  W/kg for 10-g, the extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval. Hence, the measurement uncertainty analysis is not required in this SAR report because the test result met the condition.

### 7. Information on the Testing Laboratories

We, BV 7LAYERS COMMUNICATIONS TECHNOLOGY (SHENZHEN) CO. LTD., were founded in 2015 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

Add: No. B102, Dazu Chuangxin Mansion, North of Beihuan Avenue, North Area, Hi-Tech Industry Park, Nanshan District, Shenzhen, Guangdong, China

Tel: 86-755-8869-6566

Fax: 86-755-8869-6577

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**Web Site:** [www.bureauveritas.com](http://www.bureauveritas.com)

The road map of all our labs can be found in our web site also.

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## **Appendix A. SAR Plots of System Verification**

The plots for system verification with largest deviation for each SAR system combination are shown as follows.

## System Check\_HSL750\_211203

**DUT: Dipole:750 MHz;Type:D750V3;SN:1078**

Communication System: CW; Frequency: 750 MHz;Duty Cycle: 1:1

Medium: HSL750\_1203 Medium parameters used:  $f = 750$  MHz;  $\sigma = 0.89$  S/m;  $\epsilon_r = 43.446$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.6°C; Liquid Temperature : 22.4°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3985; ConvF(10.18, 10.18, 10.18) @ 750 MHz; Calibrated: 5/24/2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 5/7/2021
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2018
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Pin=250mW/Area Scan (71x131x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm  
Maximum value of SAR (interpolated) = 2.87 W/kg

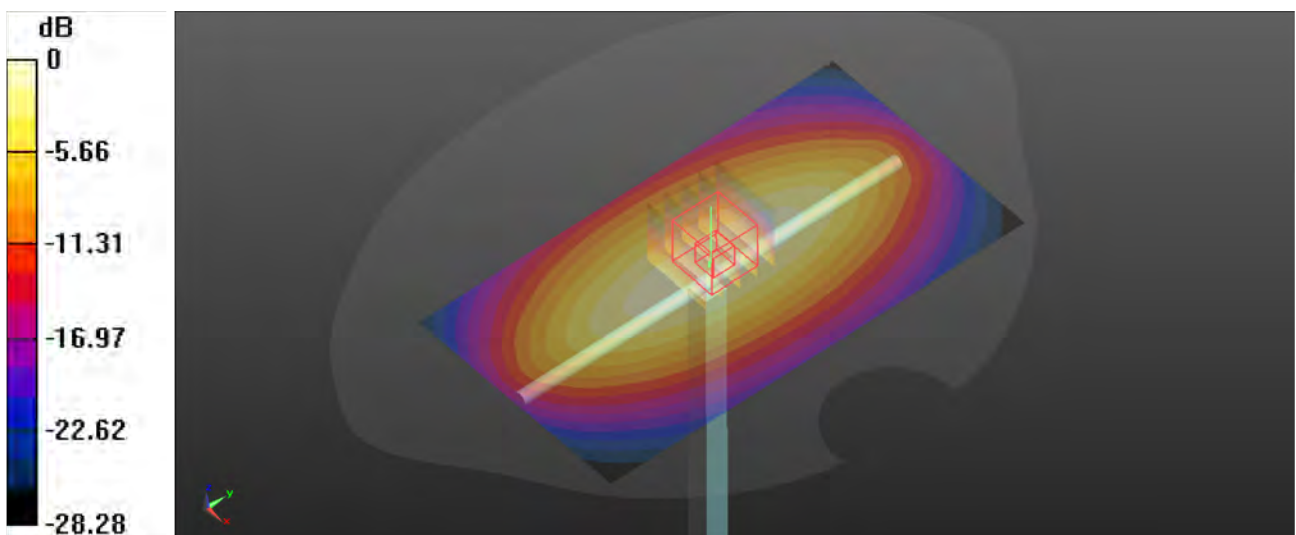
**Pin=250mW/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 53.53 V/m; Power Drift = 0.12 dB

Peak SAR (extrapolated) = 3.22 W/kg

**SAR(1 g) = 2.18 W/kg; SAR(10 g) = 1.45 W/kg**

Maximum value of SAR (measured) = 2.88 W/kg



0 dB = 2.88 W/kg



### System Check\_HSL835\_211203

**DUT: Dipole:835 MHz;Type:D835V2; SN:4d092**

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1

Medium: HSL835\_1203 Medium parameters used:  $f = 835 \text{ MHz}$ ;  $\sigma = 0.923 \text{ S/m}$ ;  $\epsilon_r = 43.179$ ;  $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature : 23.6°C; Liquid Temperature : 22.4°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3985; ConvF(9.83, 9.83, 9.83) @ 835 MHz; Calibrated: 5/24/2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 5/7/2021
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2018
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Pin=250mW/Area Scan (71x121x1):** Interpolated grid:  $dx=1.500 \text{ mm}$ ,  $dy=1.500 \text{ mm}$   
Maximum value of SAR (interpolated) = 3.31 W/kg

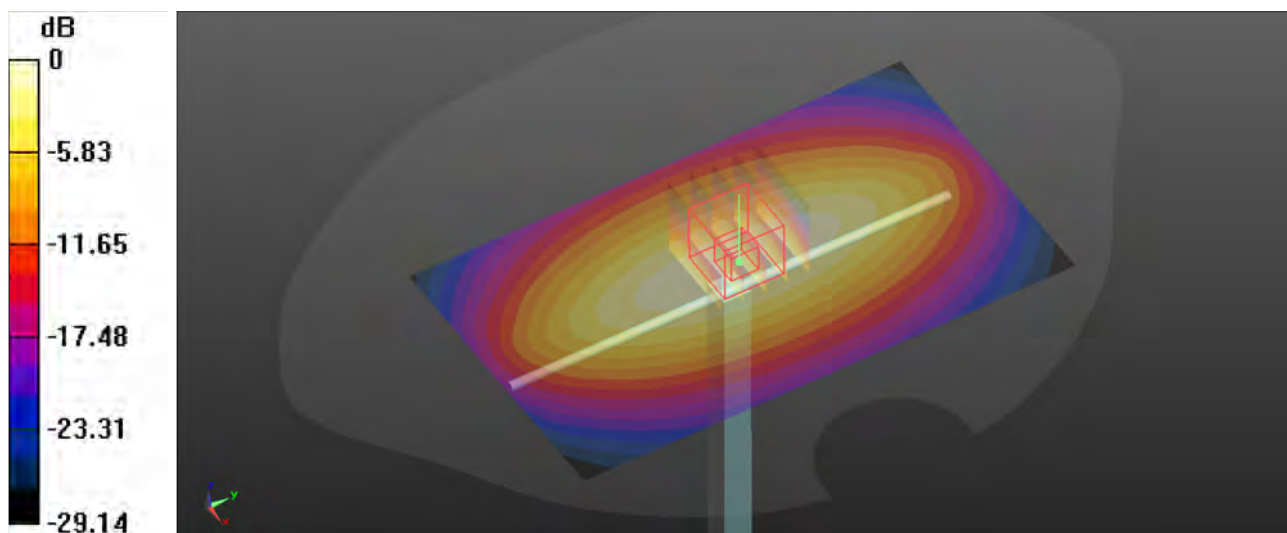
**Pin=250mW/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 58.18 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 3.75 W/kg

**SAR(1 g) = 2.51 W/kg; SAR(10 g) = 1.59 W/kg**

Maximum value of SAR (measured) = 3.35 W/kg



0 dB = 3.35 W/kg

## System Check\_HSL1750\_211202

**DUT: Dipole:1750 MHz;Type:D1750V2; SN:1111**

Communication System: CW; Frequency: 1750 MHz;Duty Cycle: 1:1

Medium: HSL1750\_1202 Medium parameters used:  $f = 1750$  MHz;  $\sigma = 1.334$  S/m;  $\epsilon_r = 40.106$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.4°C; Liquid Temperature : 22.3°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3985; ConvF(8.42, 8.42, 8.42) @ 1750 MHz; Calibrated: 5/24/2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 5/7/2021
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2018
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Pin=250mW/Area Scan (71x81x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm  
Maximum value of SAR (interpolated) = 15.0 W/kg

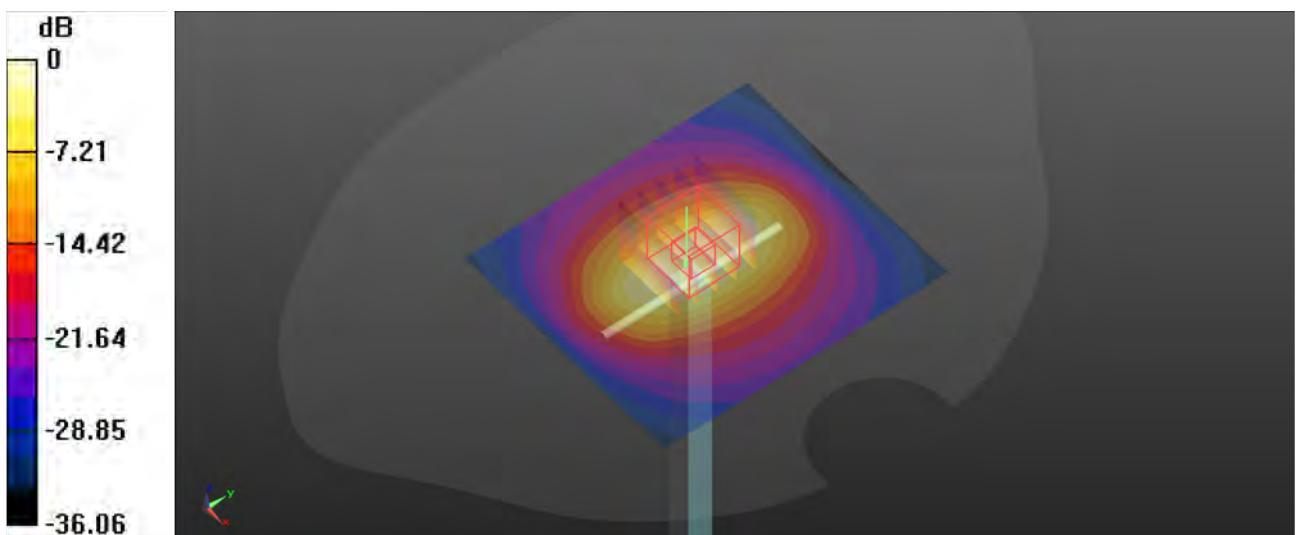
**Pin=250mW/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 103.7 V/m; Power Drift = -0.12 dB

Peak SAR (extrapolated) = 17.6 W/kg

**SAR(1 g) = 9.27 W/kg; SAR(10 g) = 4.86 W/kg**

Maximum value of SAR (measured) = 14.5 W/kg



0 dB = 14.5 W/kg

## System Check\_HSL1900\_211202

**DUT: Dipole:1900MHz;Type:D1900V2; SN:5d142**

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1

Medium: HSL1900\_1202 Medium parameters used:  $f = 1900$  MHz;  $\sigma = 1.422$  S/m;  $\epsilon_r = 40.016$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.4°C; Liquid Temperature : 22.3°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3985; ConvF(8.1, 8.1, 8.1) @ 1900 MHz; Calibrated: 5/24/2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 5/7/2021
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2018
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Pin=250mW/Area Scan (61x71x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 16.7 W/kg

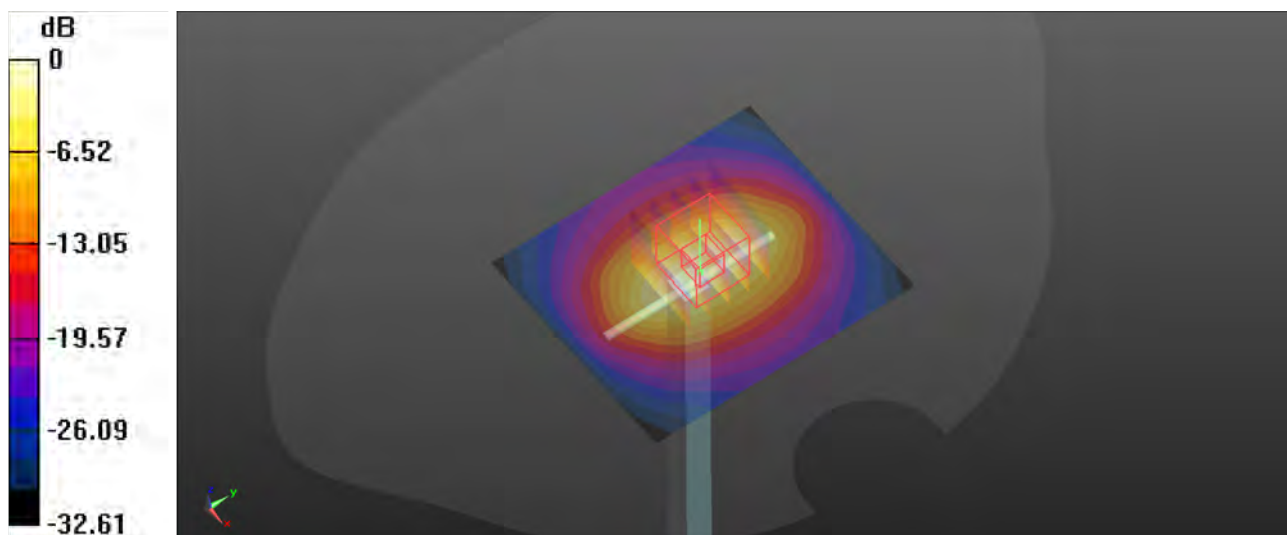
**Pin=250mW/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 100.3 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 19.1 W/kg

**SAR(1 g) = 10.1 W/kg; SAR(10 g) = 5.2 W/kg**

Maximum value of SAR (measured) = 15.8 W/kg



0 dB = 15.8 W/kg

### System Check\_HSL2300\_211204

**DUT: Dipole:2300 MHz;Type:D2300V2; SN:1091**

Communication System: CW; Frequency: 2300 MHz;Duty Cycle: 1:1

Medium: HSL2300\_1204 Medium parameters used:  $f = 2300$  MHz;  $\sigma = 1.677$  S/m;  $\epsilon_r = 39.702$ ;  $\rho = 1000$  kg/m<sup>3</sup>

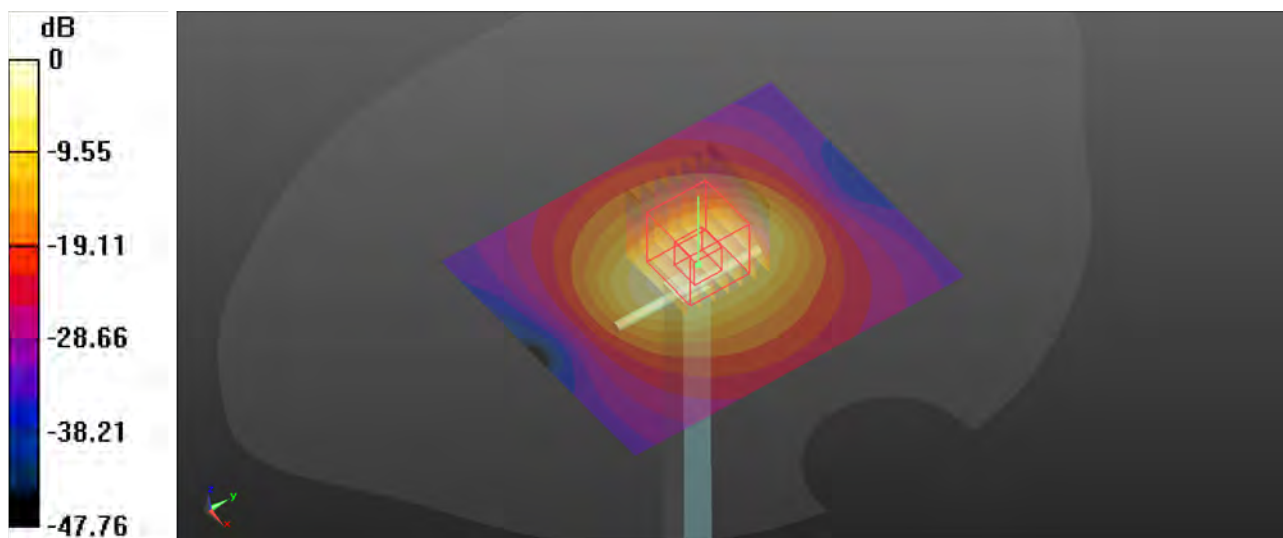
Ambient Temperature : 23.5°C; Liquid Temperature : 22.5°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3985; ConvF(7.97, 7.97, 7.97) @ 2300 MHz; Calibrated: 5/24/2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 5/7/2021
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2018
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Pin=250mW/Area Scan (81x101x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm  
Maximum value of SAR (interpolated) = 21.3 W/kg

**Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm  
Reference Value = 105.8 V/m; Power Drift = 0.12 dB  
Peak SAR (extrapolated) = 27.1 W/kg  
**SAR(1 g) = 12.5 W/kg; SAR(10 g) = 5.74 W/kg**  
Maximum value of SAR (measured) = 21.6 W/kg



0 dB = 21.6 W/kg

### System Check\_HSL2450\_211204

**DUT: Dipole:2450 MHz;Type:D2450V2; SN:735**

Communication System: CW; Frequency: 2450 MHz;Duty Cycle: 1:1

Medium: HSL2450\_1204 Medium parameters used:  $f = 2450$  MHz;  $\sigma = 1.782$  S/m;  $\epsilon_r = 39.463$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.5°C; Liquid Temperature : 22.5°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3985; ConvF(7.73, 7.73, 7.73) @ 2450 MHz; Calibrated: 5/24/2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 5/7/2021
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2018
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Pin=250mW/Area Scan (81x81x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 23.5 W/kg

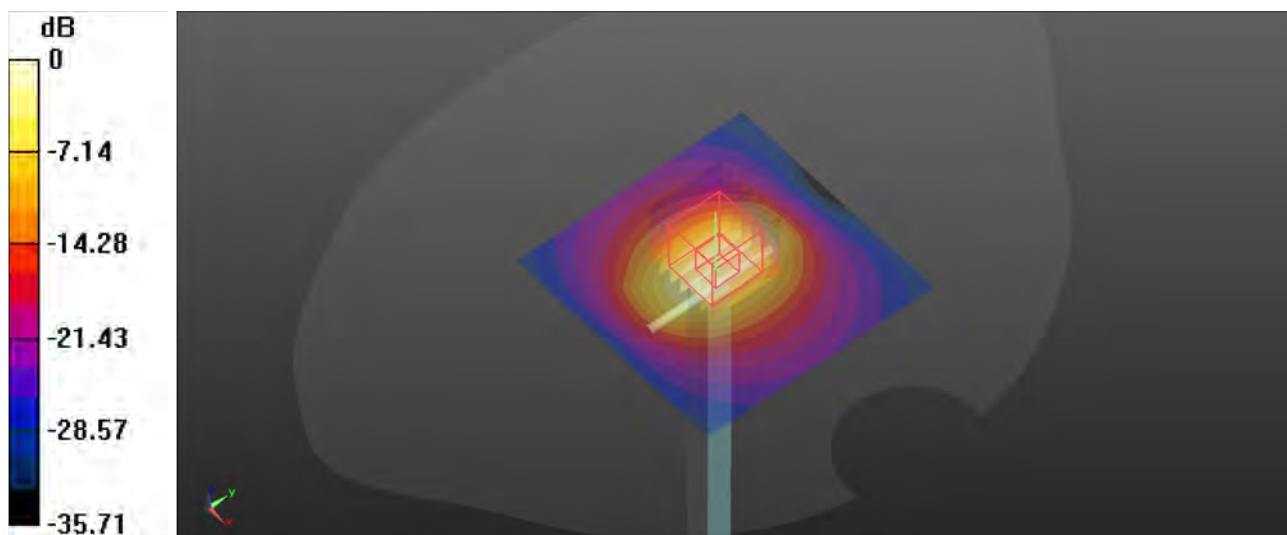
**Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 111.6 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 29.4 W/kg

**SAR(1 g) = 13.97 W/kg; SAR(10 g) = 6.35 W/kg**

Maximum value of SAR (measured) = 23.9 W/kg



0 dB = 23.9 W/kg

### System Check\_HSL5250\_211205

**DUT: Dipole 5GHzV2;Type:D5GHzV2; SN:1203**

Communication System: CW; Frequency: 5250 MHz;Duty Cycle: 1:1

Medium: HSL5G\_1205 Medium parameters used:  $f = 5250$  MHz;  $\sigma = 4.638$  S/m;  $\epsilon_r = 37.088$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.6°C; Liquid Temperature : 22.5°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3985; ConvF(5.49, 5.49, 5.49) @ 5250 MHz; Calibrated: 5/24/2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 5/7/2021
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2018
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Pin=100mW/Area Scan (91x91x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 19.0 W/kg

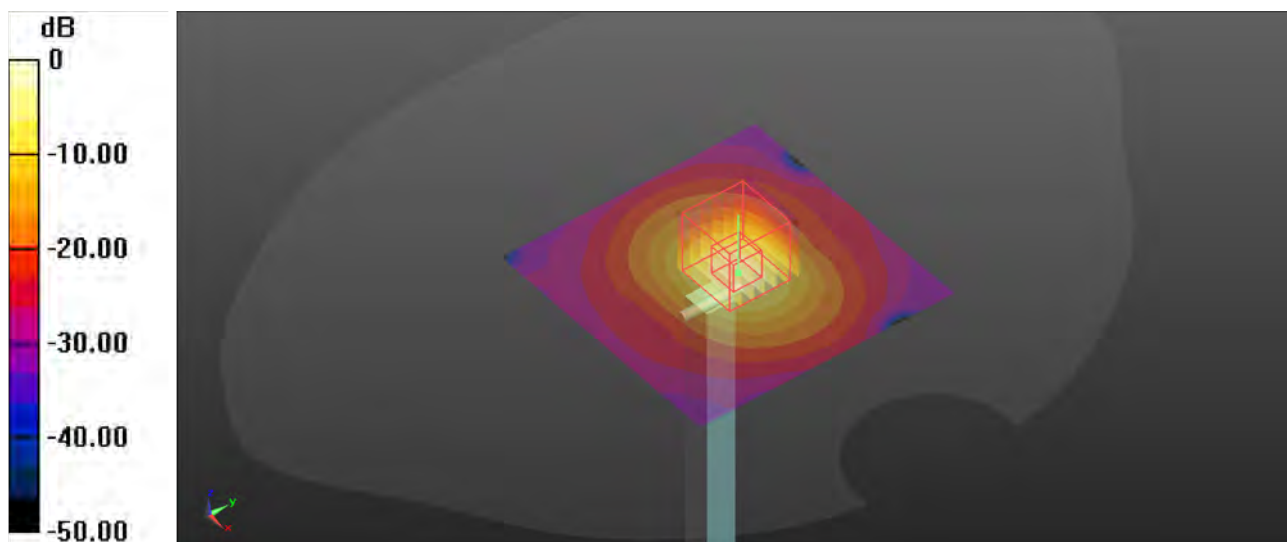
**Pin=100mW/Zoom Scan (7x7x12)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 63.18 V/m; Power Drift = -0.14 dB

Peak SAR (extrapolated) = 32.2 W/kg

**SAR(1 g) = 8.27 W/kg; SAR(10 g) = 2.37 W/kg**

Maximum value of SAR (measured) = 20.5 W/kg



0 dB = 20.5 W/kg

### System Check\_HSL5600\_211206

**DUT: Dipole 5GHzV2;Type:D5GHzV2; SN:1203**

Communication System: CW; Frequency: 5600 MHz;Duty Cycle: 1:1

Medium: HSL5G\_1206 Medium parameters used:  $f = 5600$  MHz;  $\sigma = 5.034$  S/m;  $\epsilon_r = 36.508$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.3°C; Liquid Temperature : 22.5°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3985; ConvF(4.99, 4.99, 4.99) @ 5600 MHz; Calibrated: 5/24/2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 5/7/2021
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2018
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Pin=100mW/Area Scan (91x91x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 22.2 W/kg

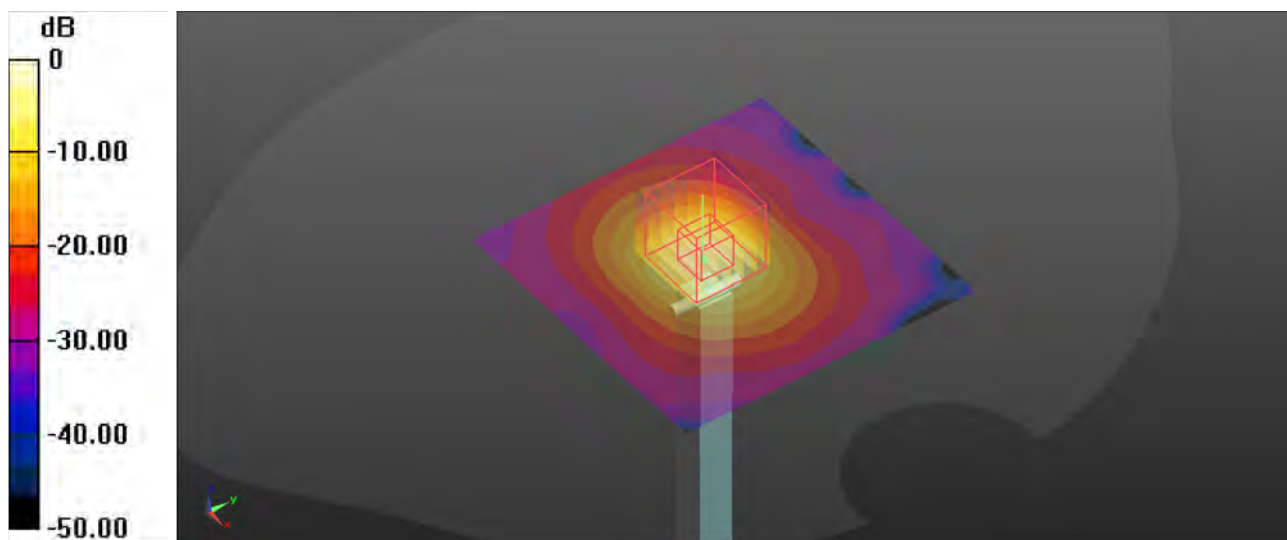
**Pin=100mW/Zoom Scan (7x7x12)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 55.30 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 37.9 W/kg

**SAR(1 g) = 8.59 W/kg; SAR(10 g) = 2.37 W/kg**

Maximum value of SAR (measured) = 22.4 W/kg



0 dB = 22.4 W/kg

## System Check\_HSL5750\_211206

**DUT: Dipole 5GHzV2;Type:D5GHzV2; SN:1203**

Communication System: CW; Frequency: 5750 MHz;Duty Cycle: 1:1

Medium: HSL5G\_1206 Medium parameters used:  $f = 5750$  MHz;  $\sigma = 5.203$  S/m;  $\epsilon_r = 36.253$ ;  $\rho = 1000$  kg/m<sup>3</sup>

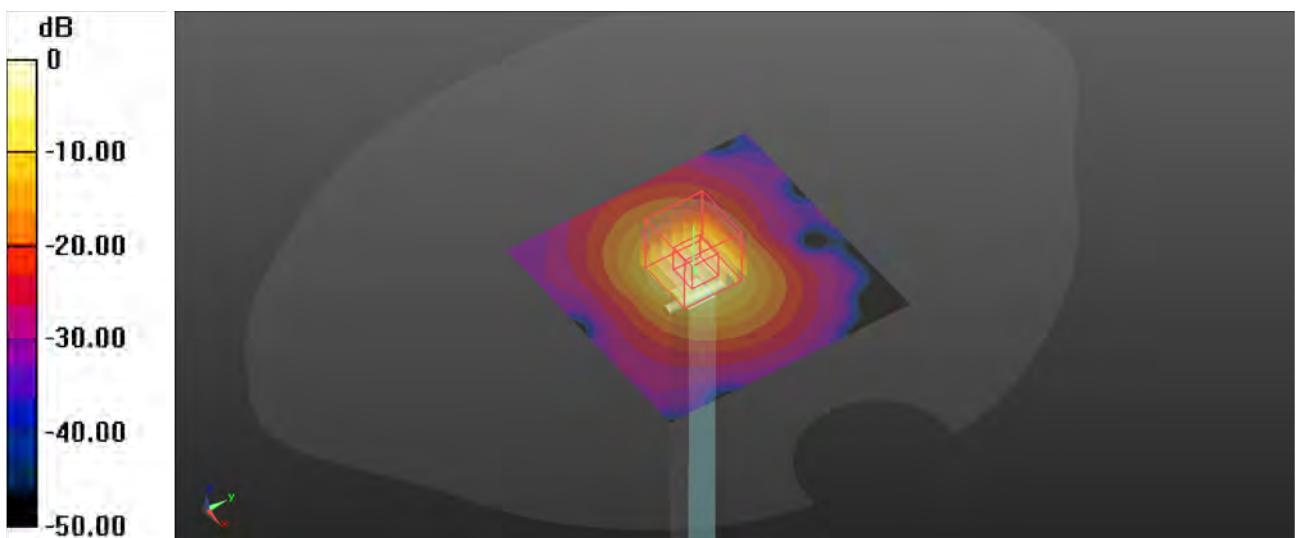
Ambient Temperature : 23.3°C; Liquid Temperature : 22.5°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3985; ConvF(4.96, 4.96, 4.96) @ 5750 MHz; Calibrated: 5/24/2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 5/7/2021
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2018
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Pin=100mW/Area Scan (91x91x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm  
Maximum value of SAR (interpolated) = 20.9 W/kg

**Pin=100mW/Zoom Scan (7x7x11)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2mm  
Reference Value = 52.18 V/m; Power Drift = 0.18 dB  
Peak SAR (extrapolated) = 37.6 W/kg  
**SAR(1 g) = 8.14 W/kg; SAR(10 g) = 2.28 W/kg**  
Maximum value of SAR (measured) = 21.7 W/kg



0 dB = 21.7 W/kg



## Appendix B. SAR Plots of SAR Measurement

The SAR plots for highest measured SAR in each exposure configuration, wireless mode and frequency band combination, and measured SAR > 1.5 W/kg are shown as follows.

### P01 LTE B2\_QPSK20M\_Right Cheek\_Ch18700\_1RB\_OS50

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

Medium: HSL1900\_1202 Medium parameters used:  $f = 1860$  MHz;  $\sigma = 1.391$  S/m;  $\epsilon_r = 40.045$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.4°C; Liquid Temperature : 22.3°C

#### DASY5 Configuration:

- Probe: EX3DV4 - SN3985; ConvF(8.1, 8.1, 8.1) @ 1860 MHz; Calibrated: 5/24/2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 5/7/2021
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2018
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**-Area Scan (81x131x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.421 W/kg

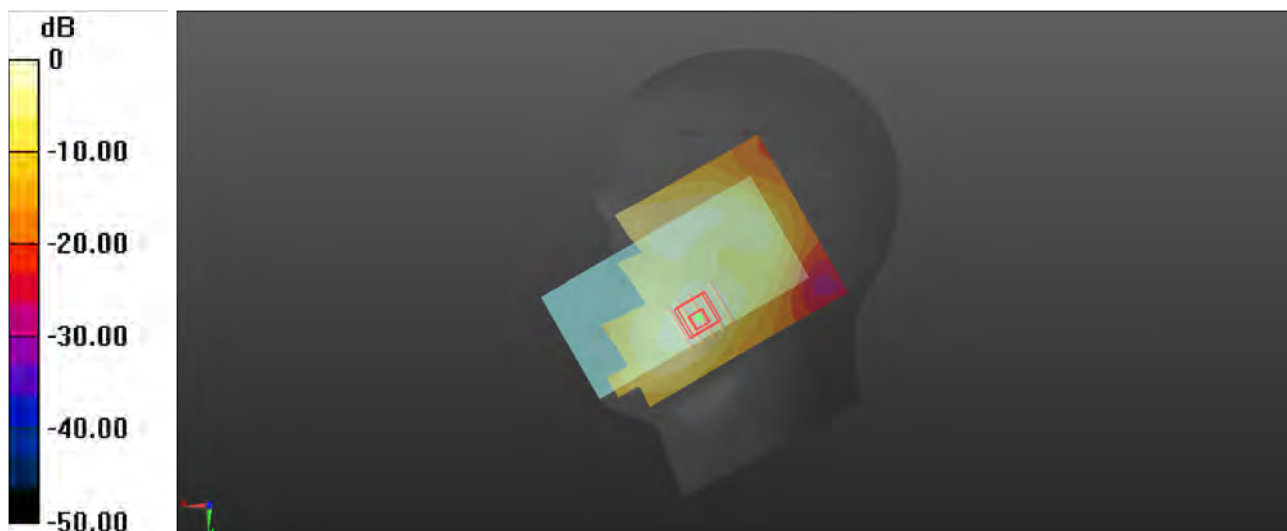
**-Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.975 V/m; Power Drift = 0.16 dB

Peak SAR (extrapolated) = 0.439 W/kg

**SAR(1 g) = 0.272 W/kg; SAR(10 g) = 0.170 W/kg**

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



0 dB = 0.372 W/kg

## P02 LTE B4\_QPSK20M\_Left Cheek\_Ch20300\_1RB\_OS50

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

Medium: HSL1750\_1202 Medium parameters used:  $f = 1745$  MHz;  $\sigma = 1.332$  S/m;  $\epsilon_r = 40.123$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.4°C; Liquid Temperature : 22.3°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3985; ConvF(8.42, 8.42, 8.42) @ 1745 MHz; Calibrated: 5/24/2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 5/7/2021
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2018
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**-Area Scan (91x161x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.579 W/kg

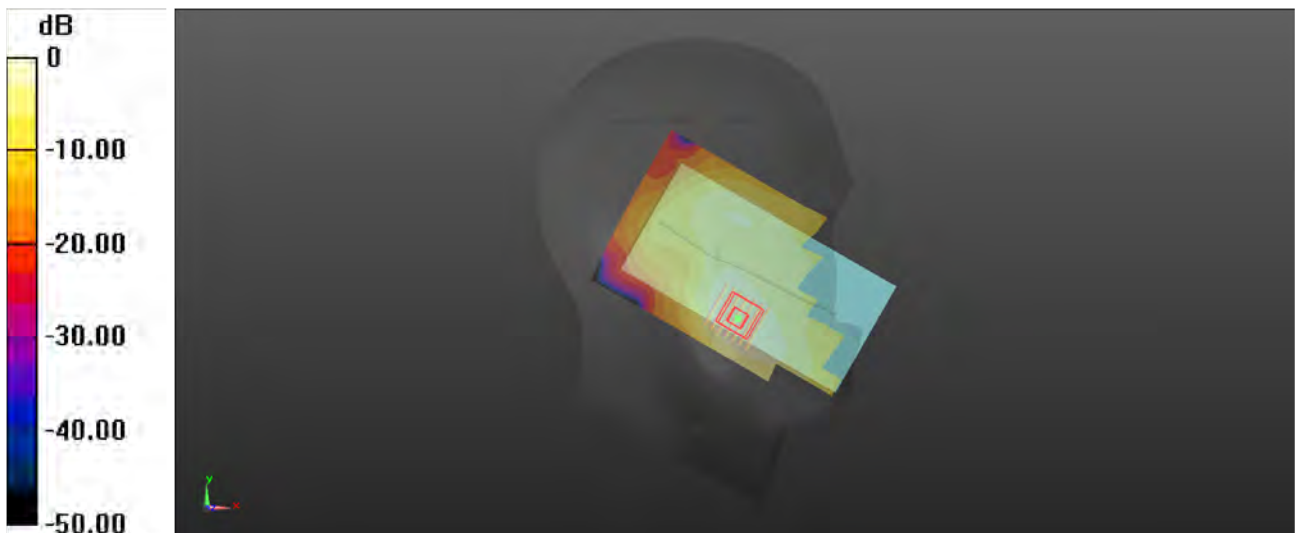
**-Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.090 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.634 W/kg

**SAR(1 g) = 0.423 W/kg; SAR(10 g) = 0.273 W/kg**

Maximum value of SAR (measured) = 0.557 W/kg



0 dB = 0.557 W/kg

### P03 LTE B5\_QPSK10M\_Right Cheek\_Ch20525\_1RB\_OS24

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

Medium: HSL835\_1203 Medium parameters used:  $f = 836.5$  MHz;  $\sigma = 0.923$  S/m;  $\epsilon_r = 43.174$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.6°C; Liquid Temperature : 22.4°C

#### DASY5 Configuration:

- Probe: EX3DV4 - SN3985; ConvF(9.83, 9.83, 9.83) @ 836.5 MHz; Calibrated: 5/24/2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 5/7/2021
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2018
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**-Area Scan (71x121x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.454 W/kg

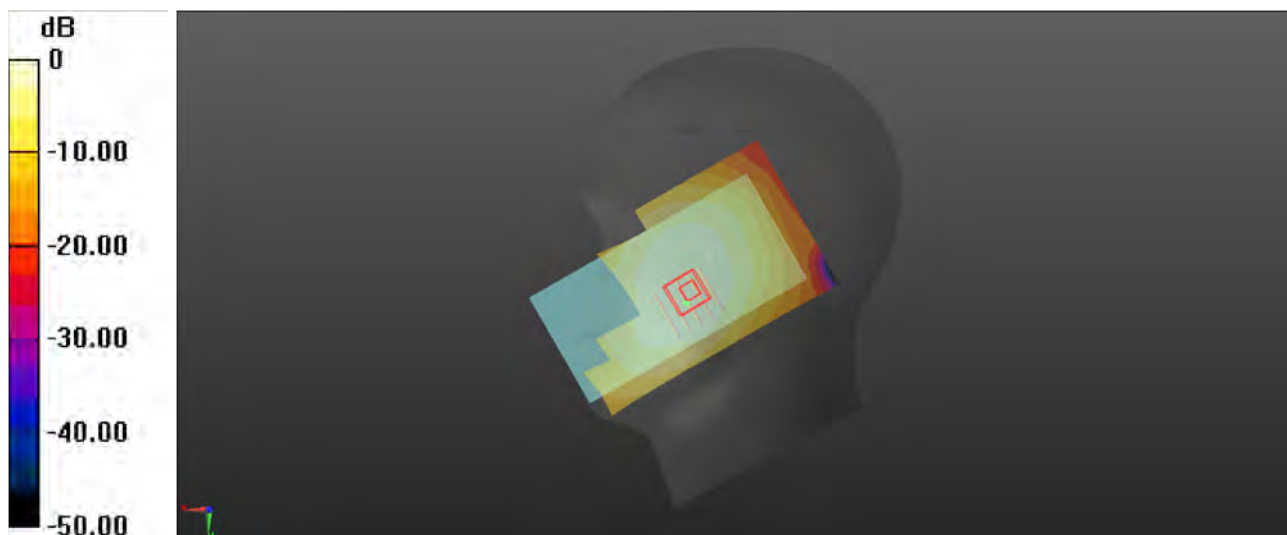
**-Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.963 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.493 W/kg

**SAR(1 g) = 0.391 W/kg; SAR(10 g) = 0.299 W/kg**

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



0 dB = 0.455 W/kg

### P04 LTE B12\_QPSK10M\_Left Cheek\_Ch23130\_1RB\_OS24

Communication System: LTE; Frequency: 711 MHz; Duty Cycle: 1:1

Medium: HSL750\_1203 Medium parameters used:  $f = 711$  MHz;  $\sigma = 0.877$  S/m;  $\epsilon_r = 43.538$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.6°C; Liquid Temperature : 22.4°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3985; ConvF(10.18, 10.18, 10.18) @ 711 MHz; Calibrated: 5/24/2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 5/7/2021
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2018
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**-Area Scan (71x121x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.225 W/kg

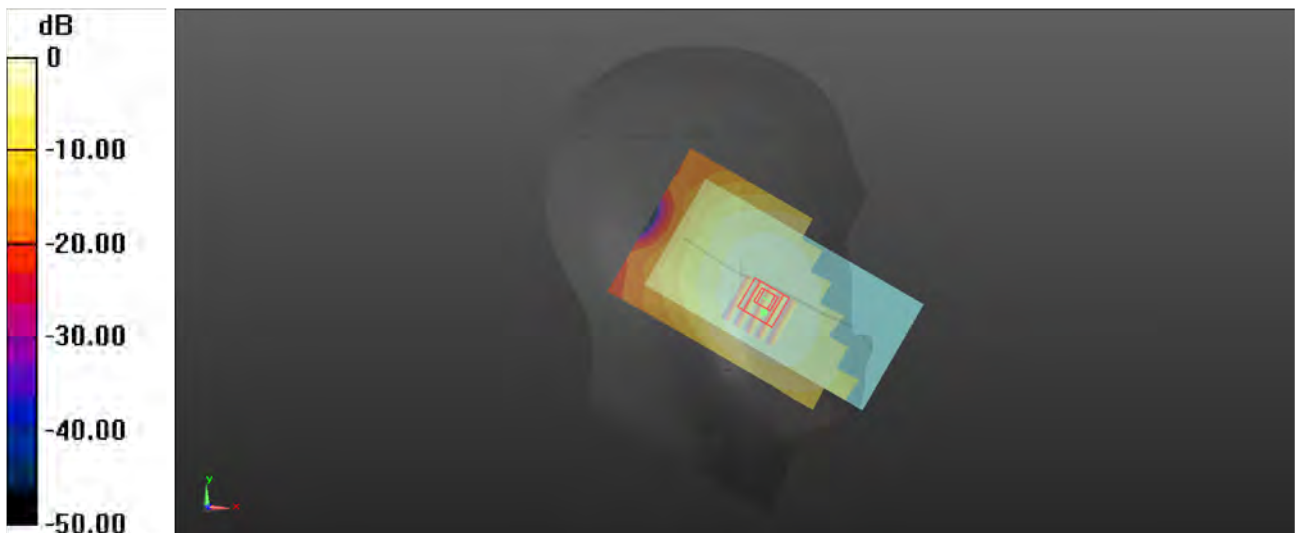
**-Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.223 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.238 W/kg

**SAR(1 g) = 0.192 W/kg; SAR(10 g) = 0.149 W/kg**

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



0 dB = 0.221 W/kg

### P05 LTE B14\_QPSK10M\_Right Cheek\_Ch23330\_1RB\_OS24

Communication System: LTE; Frequency: 793 MHz; Duty Cycle: 1:1

Medium: HSL750\_1203 Medium parameters used:  $f = 793$  MHz;  $\sigma = 0.907$  S/m;  $\epsilon_r = 43.321$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.6°C; Liquid Temperature : 22.4°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3985; ConvF(10.18, 10.18, 10.18) @ 793 MHz; Calibrated: 5/24/2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 5/7/2021
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2018
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**-Area Scan (71x121x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.432 W/kg

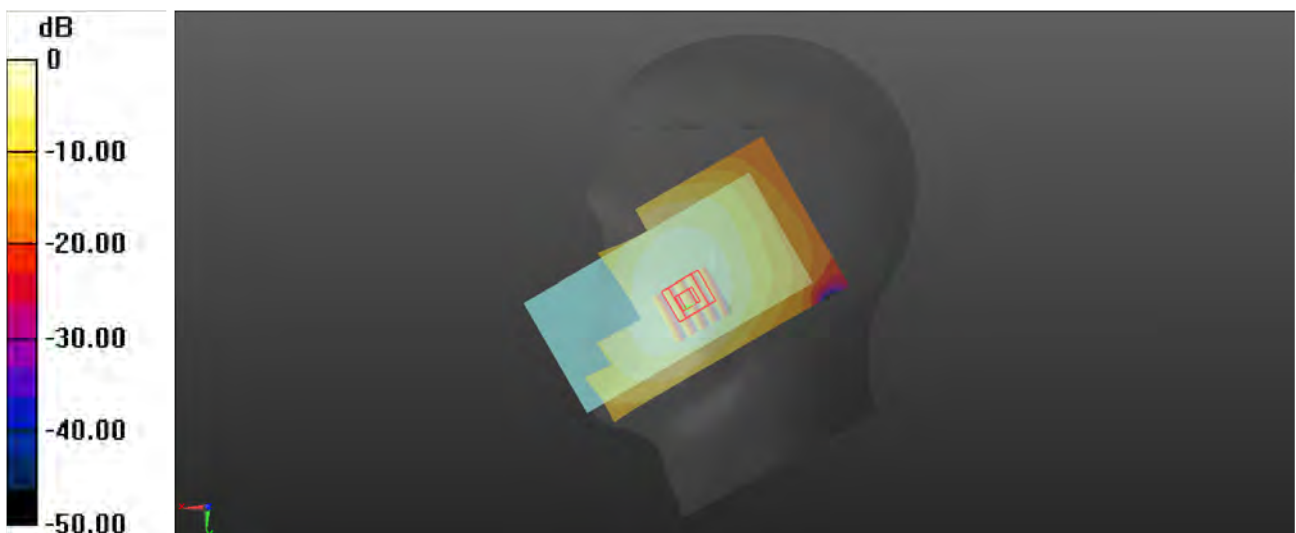
**-Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.548 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.461 W/kg

**SAR(1 g) = 0.365 W/kg; SAR(10 g) = 0.283 W/kg**

Maximum value of SAR (measured) = 0.431 W/kg



0 dB = 0.431 W/kg

## P06 LTE B30\_QPSK10M\_Left Cheek\_Ch27710\_1RB\_OS24

Communication System: LTE; Frequency: 2310 MHz; Duty Cycle: 1:1

Medium: HSL2300\_1204 Medium parameters used:  $f = 2310$  MHz;  $\sigma = 1.684$  S/m;  $\epsilon_r = 39.688$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.5°C; Liquid Temperature : 22.5°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3985; ConvF(7.97, 7.97, 7.97) @ 2310 MHz; Calibrated: 5/24/2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 5/7/2021
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2018
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

- **Area Scan (91x161x1)**: Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.604 W/kg

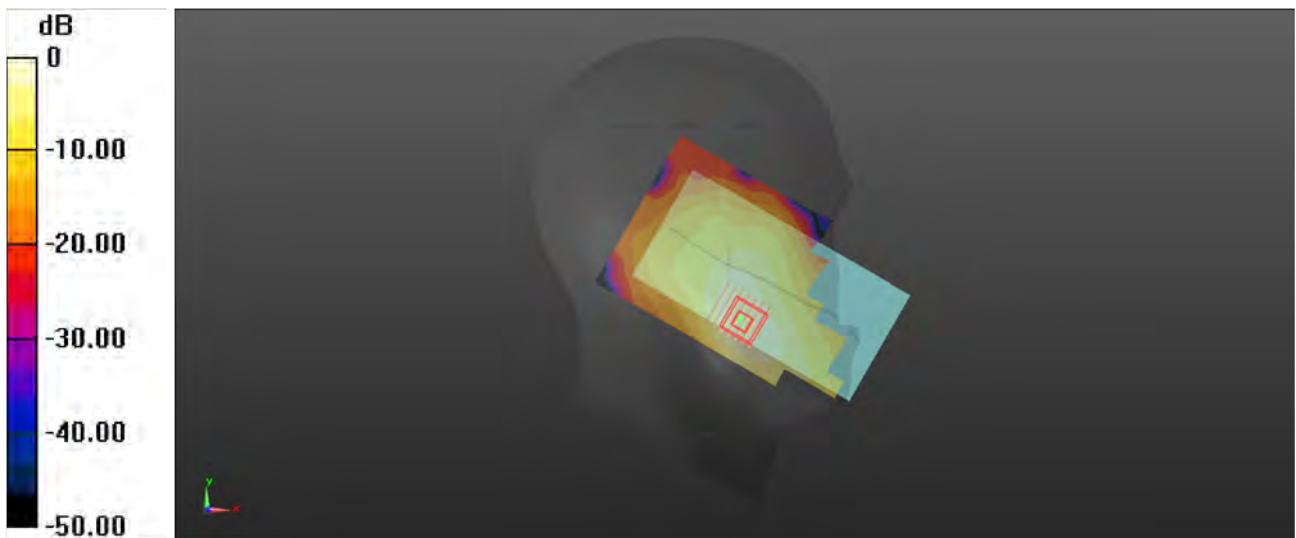
- **Zoom Scan (7x7x7)/Cube 0**: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.328 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.706 W/kg

**SAR(1 g) = 0.431 W/kg; SAR(10 g) = 0.253 W/kg**

Maximum value of SAR (measured) = 0.603 W/kg



0 dB = 0.603 W/kg

## P07 802.11b\_Right Tilted\_Ch6

Communication System: 802.11b; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: HSL2450\_1204 Medium parameters used:  $f = 2437$  MHz;  $\sigma = 1.773$  S/m;  $\epsilon_r = 39.487$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.5°C; Liquid Temperature : 22.5°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3985; ConvF(7.73, 7.73, 7.73) @ 2437 MHz; Calibrated: 5/24/2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 5/7/2021
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2018
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

- **Area Scan (91x151x1)**: Interpolated grid: dx=1.200 mm, dy=1.200 mm

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

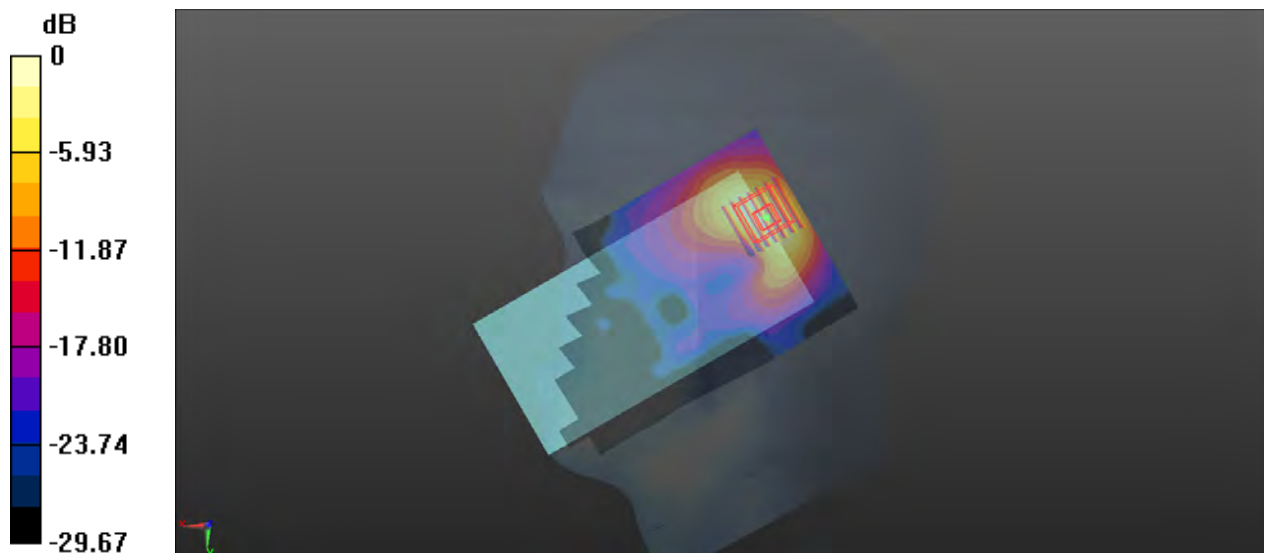
- **Zoom Scan (7x7x7)/Cube 0**: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.800 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 1.97 W/kg

**SAR(1 g) = 0.879 W/kg; SAR(10 g) = 0.393 W/kg**

Maximum value of SAR (measured) = 1.52 W/kg



0 dB = 1.52 W/kg



### P08 802.11a\_Left Tilted\_Ch60

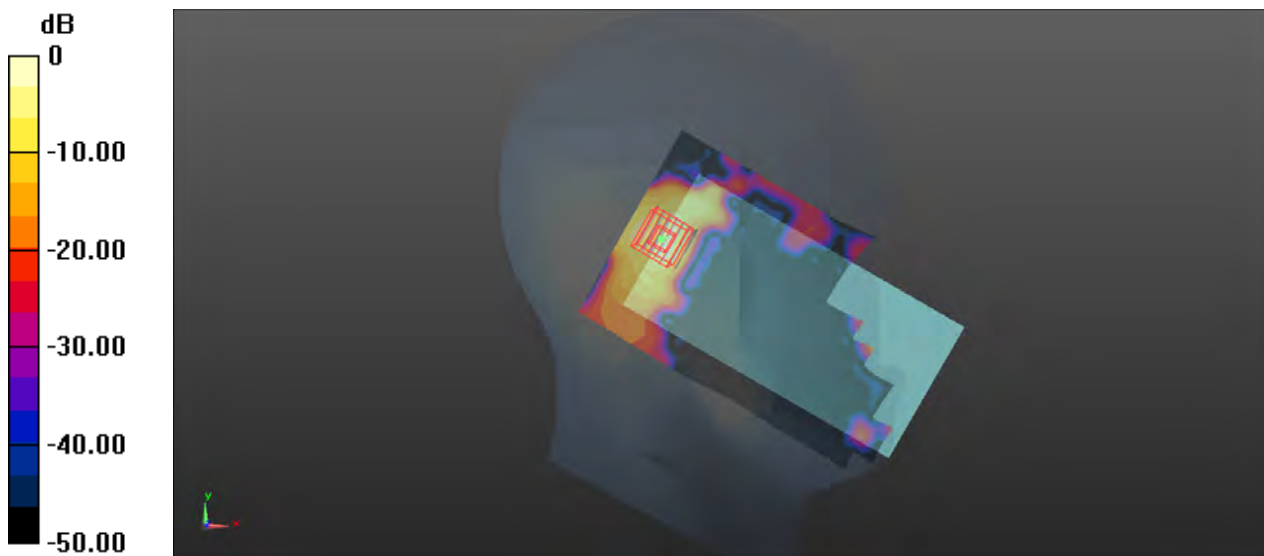
Communication System: 802.11a; Frequency: 5300 MHz; Duty Cycle: 1:1  
Medium: HSL5G\_1205 Medium parameters used:  $f = 5300$  MHz;  $\sigma = 4.695$  S/m;  $\epsilon_r = 37.03$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Ambient Temperature : 23.6°C; Liquid Temperature : 22.5°C

#### DASY5 Configuration:

- Probe: EX3DV4 - SN3985; ConvF(5.49, 5.49, 5.49) @ 5300 MHz; Calibrated: 5/24/2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 5/7/2021
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2018
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

- **Area Scan (111x181x1)**: Interpolated grid: dx=1.000 mm, dy=1.000 mm  
Maximum value of SAR (interpolated) = 1.39 W/kg

- **Zoom Scan (7x7x12)/Cube 0**: Measurement grid: dx=4mm, dy=4mm, dz=2mm  
Reference Value = 9.662 V/m; Power Drift = -0.06 dB  
Peak SAR (extrapolated) = 2.11 W/kg  
**SAR(1 g) = 0.563 W/kg; SAR(10 g) = 0.169 W/kg**  
Maximum value of SAR (measured) = 1.33 W/kg



0 dB = 1.33 W/kg

### P09 802.11a\_Left Tilted\_Ch140

Communication System: 802.11a; Frequency: 5700 MHz; Duty Cycle: 1:1

Medium: HSL5G\_1206 Medium parameters used:  $f = 5700$  MHz;  $\sigma = 5.162$  S/m;  $\epsilon_r = 36.369$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.3°C; Liquid Temperature : 22.5°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3985; ConvF(4.99, 4.99, 4.99) @ 5700 MHz; Calibrated: 5/24/2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 5/7/2021
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2018
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**-Area Scan (51x91x1):** Interpolated grid: dx=2.000 mm, dy=2.000 mm

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

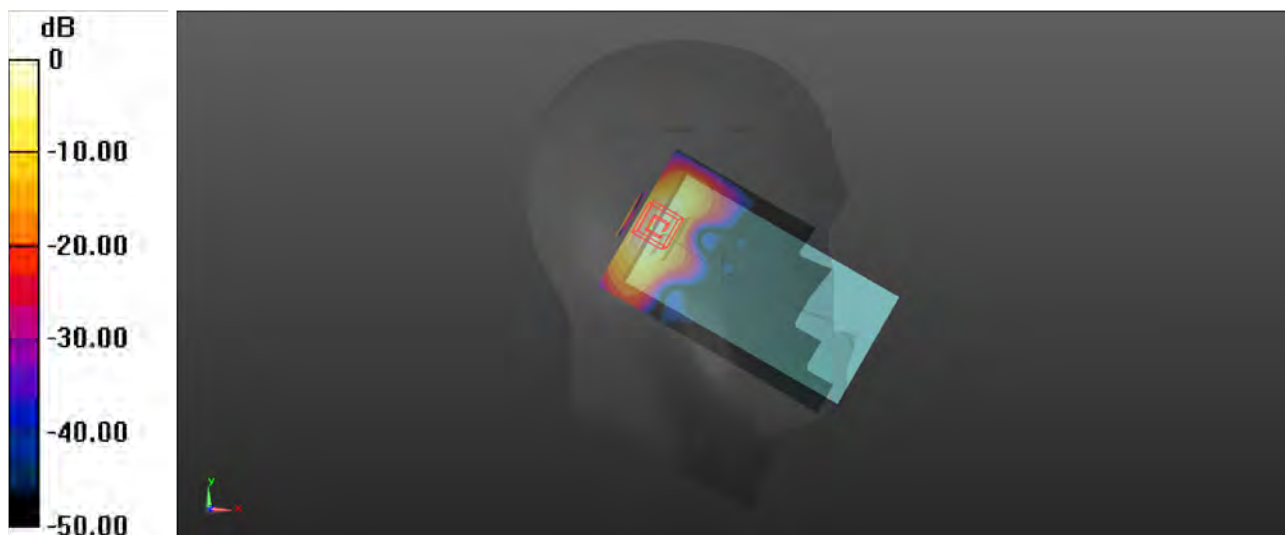
**-Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.984 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 4.55 W/kg

**SAR(1 g) = 0.960 W/kg; SAR(10 g) = 0.260 W/kg**

Maximum value of SAR (measured) = 2.01 W/kg



0 dB = 2.01 W/kg

### P10 802.11a\_Left Tilted\_Ch157

Communication System: 802.11a; Frequency: 5785 MHz; Duty Cycle: 1:1

Medium: HSL5G\_1206 Medium parameters used:  $f = 5785$  MHz;  $\sigma = 5.239$  S/m;  $\epsilon_r = 36.207$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.3°C; Liquid Temperature : 22.5°C

#### DASY5 Configuration:

- Probe: EX3DV4 - SN3985; ConvF(4.96, 4.96, 4.96) @ 5785 MHz; Calibrated: 5/24/2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 5/7/2021
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2018
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**-Area Scan (101x181x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 2.36 W/kg

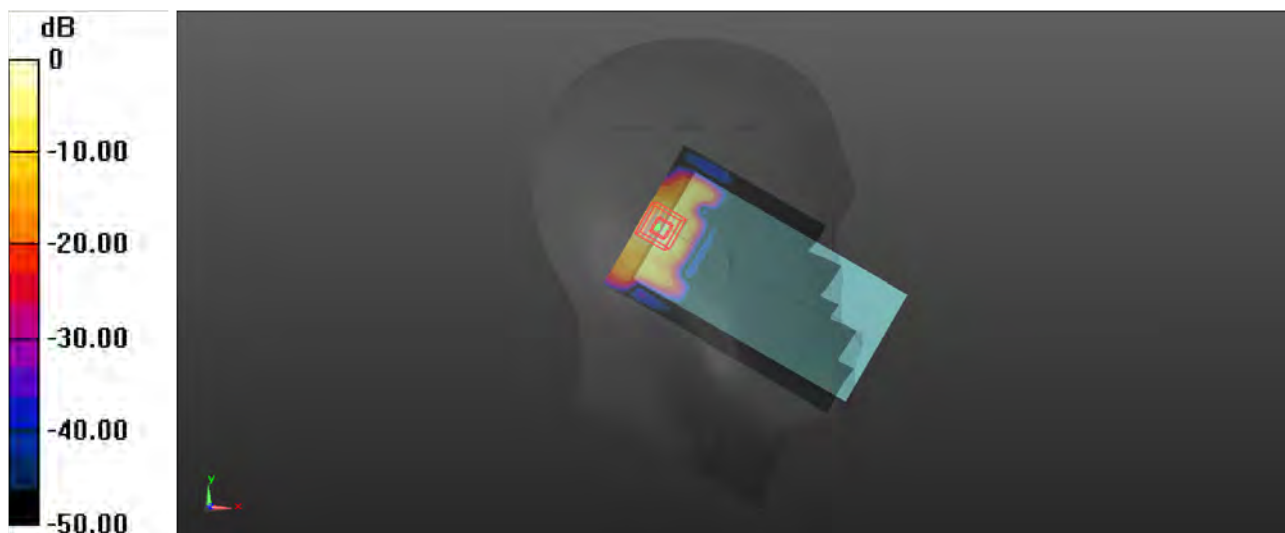
**-Zoom Scan (7x7x12)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 9.246 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 4.36 W/kg

**SAR(1 g) = 0.932 W/kg; SAR(10 g) = 0.270 W/kg**

Maximum value of SAR (measured) = 2.32 W/kg



0 dB = 2.32 W/kg

## P11 BT GFSK\_Right Tilted\_Ch39

Communication System: BT; Frequency: 2441 MHz; Duty Cycle: 1:1

Medium: HSL2450\_1204 Medium parameters used:  $f = 2441$  MHz;  $\sigma = 1.776$  S/m;  $\epsilon_r = 39.481$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.5°C; Liquid Temperature : 22.5°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3985; ConvF(7.73, 7.73, 7.73) @ 2441 MHz; Calibrated: 5/24/2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 5/7/2021
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2018
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**-Area Scan (91x171x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.137 W/kg

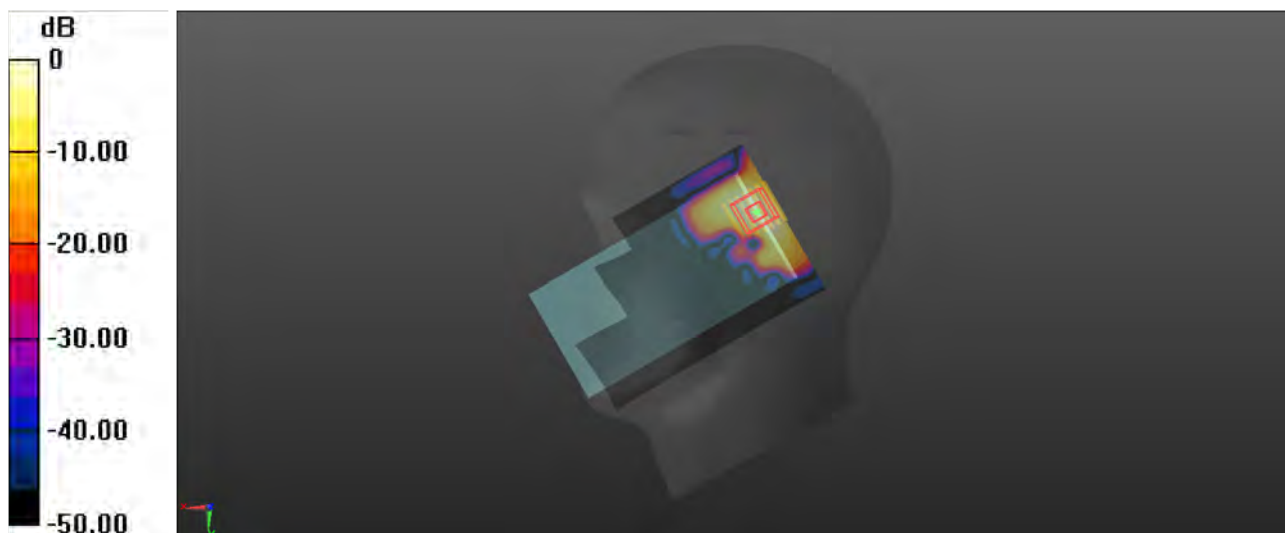
**-Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.015 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 0.164 W/kg

**SAR(1 g) = 0.073 W/kg; SAR(10 g) = 0.032 W/kg**

Maximum value of SAR (measured) = 0.128 W/kg



0 dB = 0.128 W/kg

## P12 LTE B2\_QPSK20M\_Front Face\_1cm\_Ch18700\_1RB\_OS50

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

Medium: HSL1900\_1202 Medium parameters used:  $f = 1860$  MHz;  $\sigma = 1.391$  S/m;  $\epsilon_r = 40.045$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.4°C; Liquid Temperature : 22.3°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3985; ConvF(8.1, 8.1, 8.1) @ 1860 MHz; Calibrated: 5/24/2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 5/7/2021
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2018
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

- **Area Scan (71x131x1)**: Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.718 W/kg

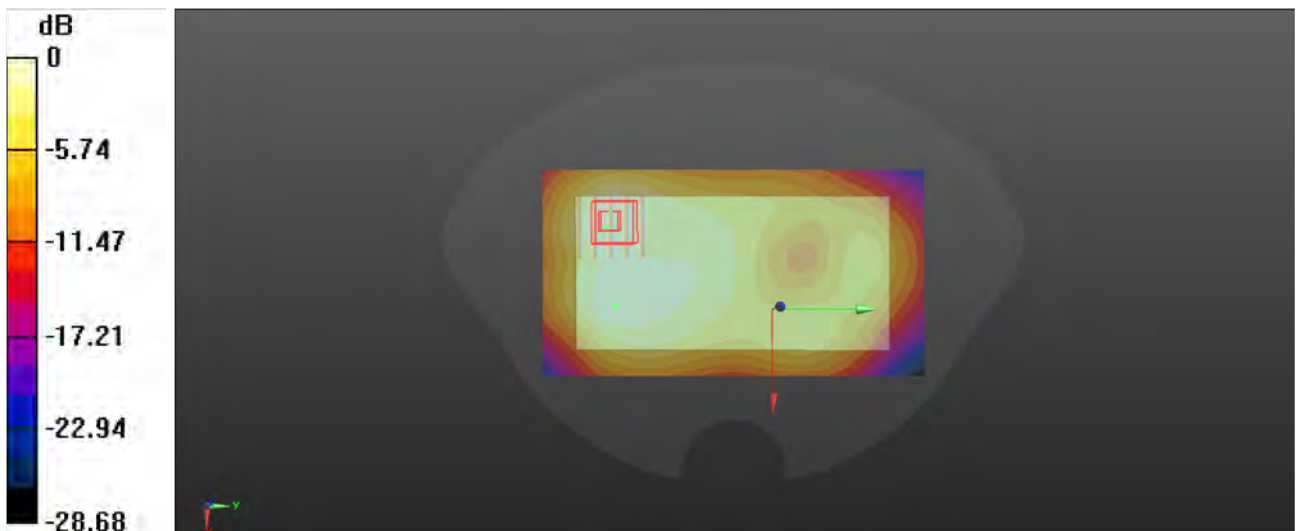
- **Zoom Scan (5x5x7)/Cube 0**: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 13.31 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 0.849 W/kg

**SAR(1 g) = 0.487 W/kg; SAR(10 g) = 0.285 W/kg**

Maximum value of SAR (measured) = 0.691 W/kg



0 dB = 0.691 W/kg

### P13 LTE B4\_QPSK20M\_Front Face\_Ch20300\_1cm\_1RB\_OS50

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

Medium: HSL1750\_1202 Medium parameters used:  $f = 1745$  MHz;  $\sigma = 1.332$  S/m;  $\epsilon_r = 40.123$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.4°C; Liquid Temperature : 22.3°C

#### DASY5 Configuration:

- Probe: EX3DV4 - SN3985; ConvF(8.42, 8.42, 8.42) @ 1745 MHz; Calibrated: 5/24/2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 5/7/2021
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2018
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**-Area Scan (71x131x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.736 W/kg

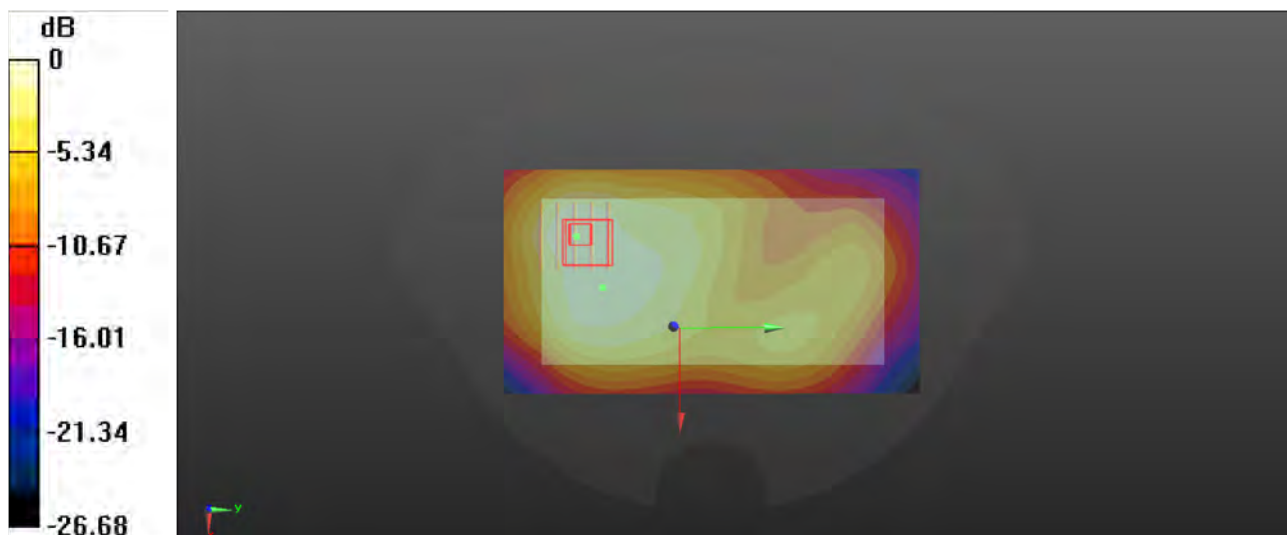
**-Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.49 V/m; Power Drift = 0.12 dB

Peak SAR (extrapolated) = 0.835 W/kg

**SAR(1 g) = 0.509 W/kg; SAR(10 g) = 0.318 W/kg**

Maximum value of SAR (measured) = 0.715 W/kg



0 dB = 0.715 W/kg

### P14 LTE B5\_QPSK10M\_Rear Face\_1cm\_Ch20525\_1RB\_OS24

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

Medium: HSL835\_1203 Medium parameters used:  $f = 836.5$  MHz;  $\sigma = 0.923$  S/m;  $\epsilon_r = 43.174$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.6°C; Liquid Temperature : 22.4°C

#### DASY5 Configuration:

- Probe: EX3DV4 - SN3985; ConvF(9.83, 9.83, 9.83) @ 836.5 MHz; Calibrated: 5/24/2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 5/7/2021
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2018
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**-Area Scan (71x131x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.655 W/kg

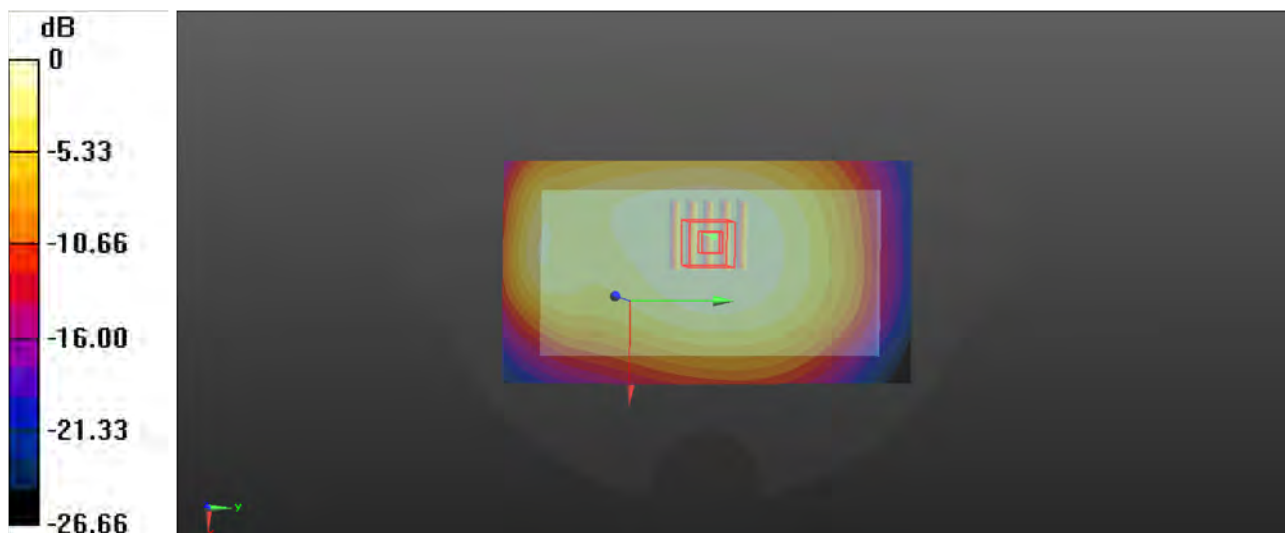
**-Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 23.85 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.712 W/kg

**SAR(1 g) = 0.538 W/kg; SAR(10 g) = 0.406 W/kg**

Maximum value of SAR (measured) = 0.654 W/kg



0 dB = 0.654 W/kg

### P15 LTE B12\_QPSK10M\_Rear Face\_1cm\_Ch23130\_1RB\_OS24

Communication System: LTE; Frequency: 711 MHz; Duty Cycle: 1:1

Medium: HSL750\_1203 Medium parameters used:  $f = 711$  MHz;  $\sigma = 0.877$  S/m;  $\epsilon_r = 43.538$ ;  $\rho = 1000$  kg/m<sup>3</sup>

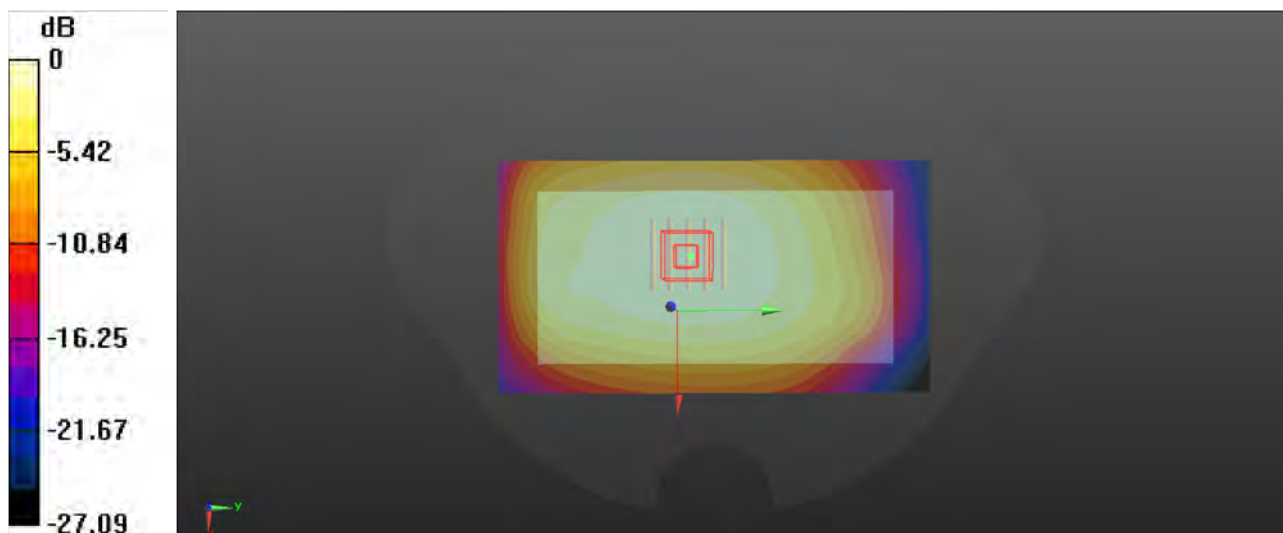
Ambient Temperature : 23.6°C; Liquid Temperature : 22.4°C

#### DASY5 Configuration:

- Probe: EX3DV4 - SN3985; ConvF(10.18, 10.18, 10.18) @ 711 MHz; Calibrated: 5/24/2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 5/7/2021
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2018
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

- **Area Scan (71x131x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm  
Maximum value of SAR (interpolated) = 0.423 W/kg

- **Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm  
Reference Value = 19.82 V/m; Power Drift = 0.06 dB  
Peak SAR (extrapolated) = 0.456 W/kg  
**SAR(1 g) = 0.351 W/kg; SAR(10 g) = 0.268 W/kg**  
Maximum value of SAR (measured) = 0.422 W/kg



0 dB = 0.422 W/kg



### P16 LTE B14\_QPSK10M\_Rear Face\_1cm\_Ch23330\_1RB\_OS24

Communication System: LTE; Frequency: 793 MHz; Duty Cycle: 1:1

Medium: HSL750\_1203 Medium parameters used:  $f = 793$  MHz;  $\sigma = 0.907$  S/m;  $\epsilon_r = 43.321$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.6°C; Liquid Temperature : 22.4°C

#### DASY5 Configuration:

- Probe: EX3DV4 - SN3985; ConvF(10.18, 10.18, 10.18) @ 793 MHz; Calibrated: 5/24/2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 5/7/2021
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2018
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**-Area Scan (71x131x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.660 W/kg

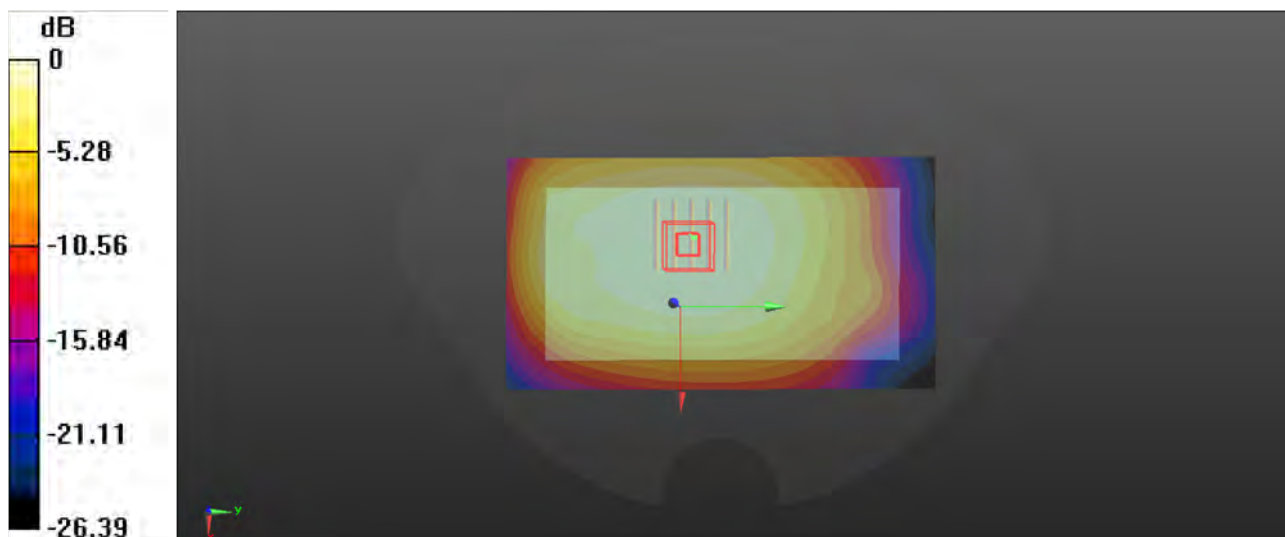
**-Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 23.73 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.714 W/kg

**SAR(1 g) = 0.549 W/kg; SAR(10 g) = 0.417 W/kg**

Maximum value of SAR (measured) = 0.656 W/kg



0 dB = 0.656 W/kg

### P17 LTE B30\_QPSK10M\_Front Face\_1cm\_Ch27710\_1RB\_OS24

Communication System: LTE; Frequency: 2310 MHz; Duty Cycle: 1:1

Medium: HSL2300\_1204 Medium parameters used:  $f = 2310$  MHz;  $\sigma = 1.684$  S/m;  $\epsilon_r = 39.688$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.5°C; Liquid Temperature : 22.5°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3985; ConvF(7.97, 7.97, 7.97) @ 2310 MHz; Calibrated: 5/24/2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 5/7/2021
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2018
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**-Area Scan (91x171x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.721 W/kg

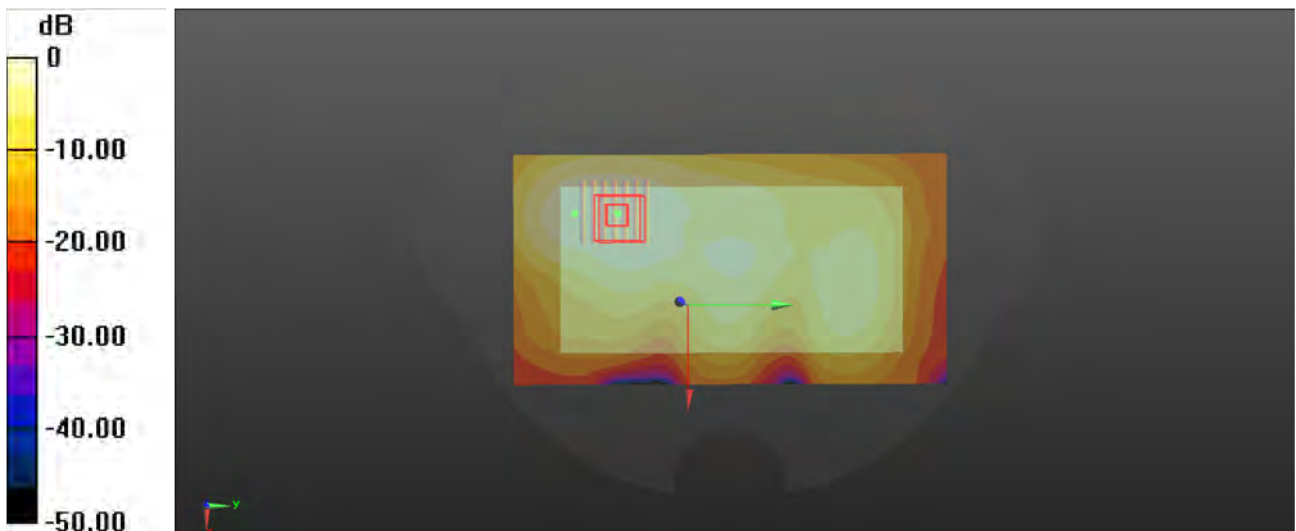
**-Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 12.85 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.832 W/kg

**SAR(1 g) = 0.482 W/kg; SAR(10 g) = 0.284 W/kg**

Maximum value of SAR (measured) = 0.700 W/kg



0 dB = 0.700 W/kg

### P18 802.11b\_Rear Face\_1cm\_Ch6

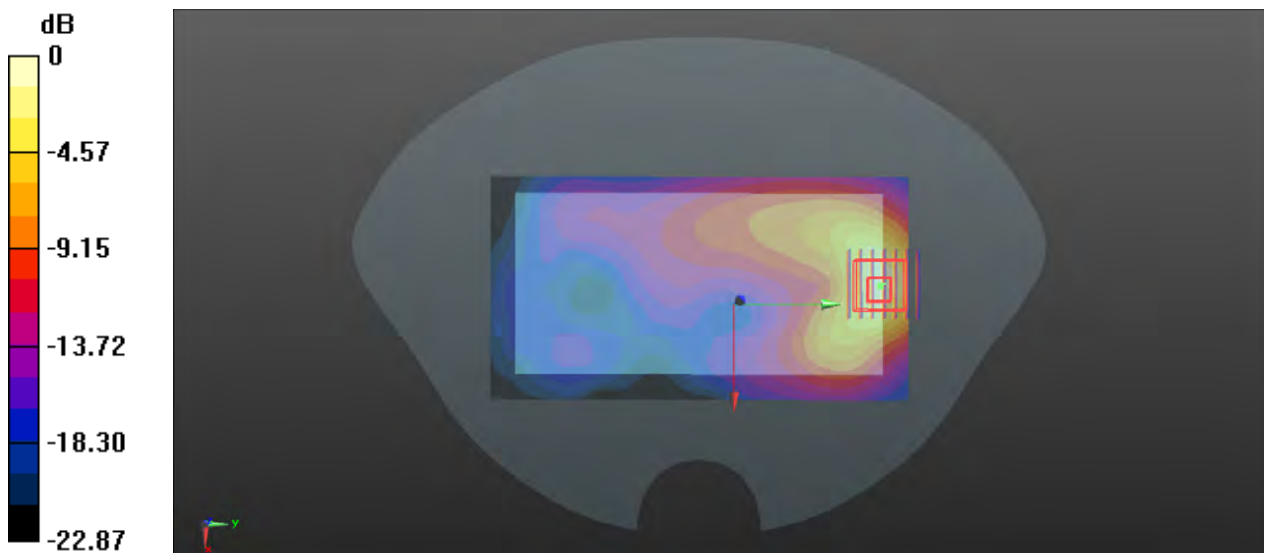
Communication System: 802.11b; Frequency: 2437 MHz; Duty Cycle: 1:1  
Medium: HSL2450\_1204 Medium parameters used:  $f = 2437$  MHz;  $\sigma = 1.773$  S/m;  $\epsilon_r = 39.487$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Ambient Temperature : 23.5°C; Liquid Temperature : 22.5°C

#### DASY5 Configuration:

- Probe: EX3DV4 - SN3985; ConvF(7.73, 7.73, 7.73) @ 2437 MHz; Calibrated: 5/24/2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 5/7/2021
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2018
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

- **Area Scan (81x151x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm  
Maximum value of SAR (interpolated) = 0.765 W/kg

- **Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm  
Reference Value = 3.627 V/m; Power Drift = -0.07 dB  
Peak SAR (extrapolated) = 0.953 W/kg  
**SAR(1 g) = 0.462 W/kg; SAR(10 g) = 0.217 W/kg**  
Maximum value of SAR (measured) = 0.762 W/kg



0 dB = 0.762 W/kg

### P19 802.11a\_Rear Face\_1cm\_Ch52

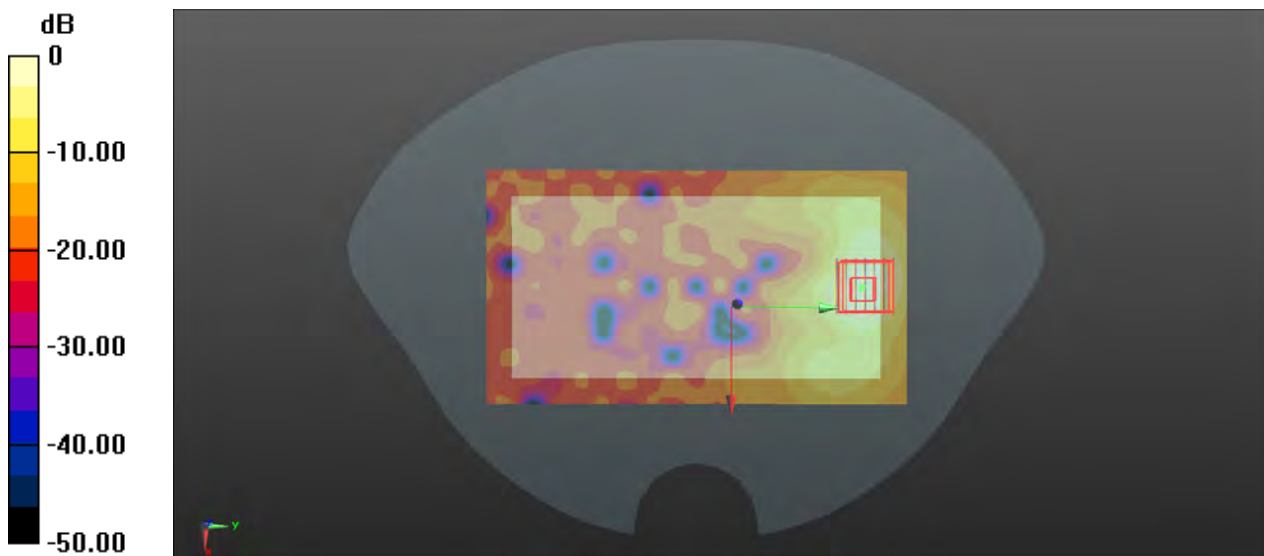
Communication System: 802.11a; Frequency: 5260 MHz; Duty Cycle: 1:1  
Medium: HSL5G\_1205 Medium parameters used:  $f = 5260$  MHz;  $\sigma = 4.74$  S/m;  $\epsilon_r = 36.508$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Ambient Temperature : 23.6°C; Liquid Temperature : 22.5°C

#### DASY5 Configuration:

- Probe: EX3DV4 - SN3985; ConvF(5.49, 5.49, 5.49) @ 5300 MHz; Calibrated: 5/24/2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 5/7/2021
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2018
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

- **Area Scan (101x181x1)**: Interpolated grid: dx=1.000 mm, dy=1.000 mm  
Maximum value of SAR (interpolated) = 0.946 W/kg

- **Zoom Scan (7x7x12)/Cube 0**: Measurement grid: dx=4mm, dy=4mm, dz=2mm  
Reference Value = 1.438 V/m; Power Drift = -0.00 dB  
Peak SAR (extrapolated) = 1.44 W/kg  
**SAR(1 g) = 0.404 W/kg; SAR(10 g) = 0.139 W/kg**  
Maximum value of SAR (measured) = 0.918 W/kg



0 dB = 0.918 W/kg

### P20 802.11a\_Rear Face\_1cm\_Ch116

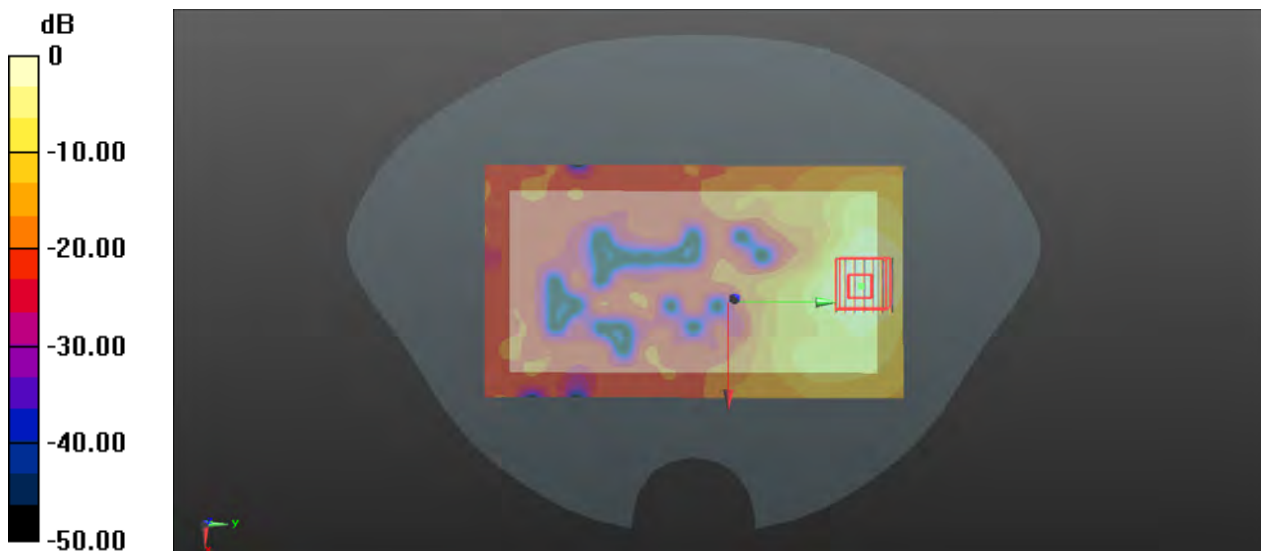
Communication System: 802.11a; Frequency: 5580 MHz; Duty Cycle: 1:1  
Medium: HSL5G\_1206 Medium parameters used:  $f = 5580$  MHz;  $\sigma = 5.008$  S/m;  $\epsilon_r = 36.542$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Ambient Temperature : 23.3°C; Liquid Temperature : 22.5°C

#### DASY5 Configuration:

- Probe: EX3DV4 - SN3985; ConvF(4.99, 4.99, 4.99) @ 5580 MHz; Calibrated: 5/24/2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 5/7/2021
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2018
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

- **Area Scan (101x181x1)**: Interpolated grid: dx=1.000 mm, dy=1.000 mm  
Maximum value of SAR (interpolated) = 1.24 W/kg

- **Zoom Scan (7x7x12)/Cube 0**: Measurement grid: dx=4mm, dy=4mm, dz=2mm  
Reference Value = 1.307 V/m; Power Drift = -0.16 dB  
Peak SAR (extrapolated) = 1.91 W/kg  
**SAR(1 g) = 0.503 W/kg; SAR(10 g) = 0.179 W/kg**  
Maximum value of SAR (measured) = 1.13 W/kg



0 dB = 1.13 W/kg

### P21 802.11a\_Rear Face\_1cm\_Ch149

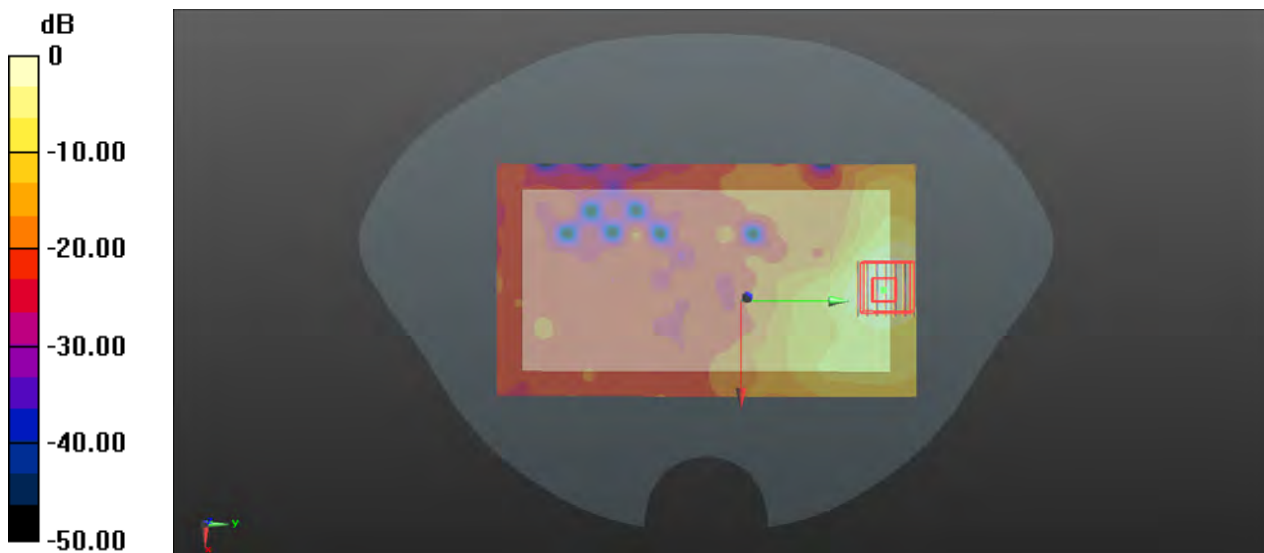
Communication System: 802.11a; Frequency: 5745 MHz; Duty Cycle: 1:1  
Medium: HSL5G\_1206 Medium parameters used:  $f = 5745$  MHz;  $\sigma = 5.195$  S/m;  $\epsilon_r = 36.264$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Ambient Temperature : 23.3°C; Liquid Temperature : 22.5°C

#### DASY5 Configuration:

- Probe: EX3DV4 - SN3985; ConvF(4.96, 4.96, 4.96) @ 5745 MHz; Calibrated: 5/24/2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 5/7/2021
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2018
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

- **Area Scan (101x181x1)**: Interpolated grid: dx=1.000 mm, dy=1.000 mm  
Maximum value of SAR (interpolated) = 1.49 W/kg

- **Zoom Scan (7x7x12)/Cube 0**: Measurement grid: dx=4mm, dy=4mm, dz=2mm  
Reference Value = 1.062 V/m; Power Drift = -0.00 dB  
Peak SAR (extrapolated) = 2.51 W/kg  
**SAR(1 g) = 0.641 W/kg; SAR(10 g) = 0.227 W/kg**  
Maximum value of SAR (measured) = 1.52 W/kg



0 dB = 1.52 W/kg

### P22 BT GFSK\_Rear Face\_1cm\_Ch39

Communication System: BT; Frequency: 2441 MHz; Duty Cycle: 1:1.2

Medium: HSL2450\_1204 Medium parameters used:  $f = 2441$  MHz;  $\sigma = 1.776$  S/m;  $\epsilon_r = 39.481$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.5°C; Liquid Temperature : 22.4°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3985; ConvF(7.73, 7.73, 7.73) @ 2441 MHz; Calibrated: 5/24/2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 5/7/2021
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2018
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**-Area Scan (91x161x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.0696 W/kg

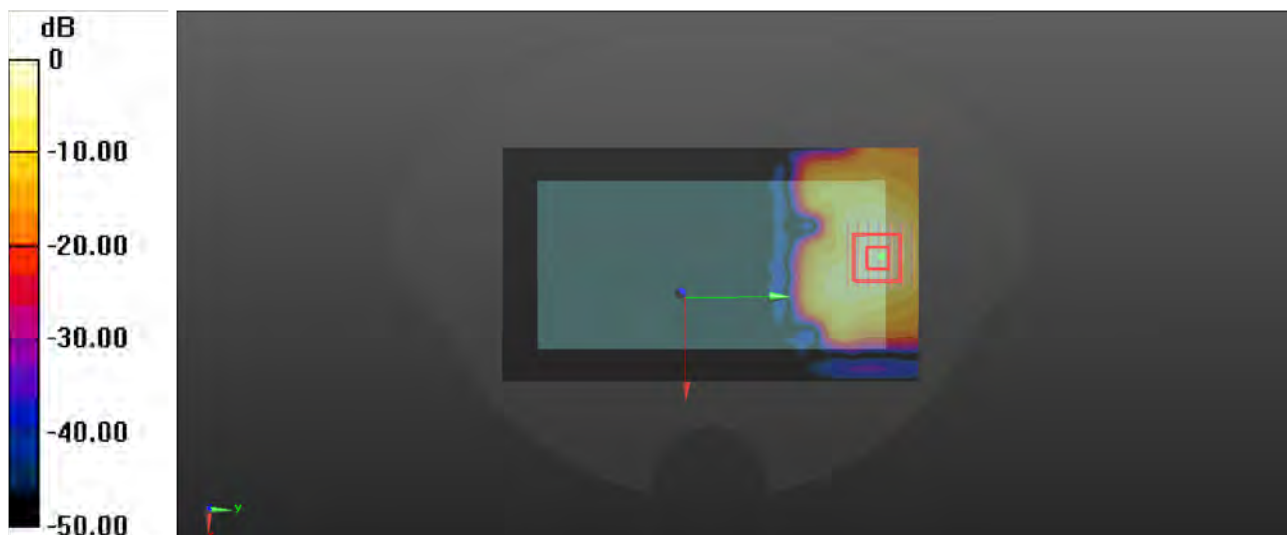
**-Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 0 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.101 W/kg

**SAR(1 g) = 0.047 W/kg; SAR(10 g) = 0.021 W/kg**

Maximum value of SAR (measured) = 0.0783 W/kg



0 dB = 0.0783 W/kg

### P23 LTE B2\_QPSK20M\_Front Face\_1cm\_Ch18700\_1RB\_OS50

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

Medium: HSL1900\_1202 Medium parameters used:  $f = 1860$  MHz;  $\sigma = 1.391$  S/m;  $\epsilon_r = 40.045$ ;  $\rho = 1000$  kg/m<sup>3</sup>

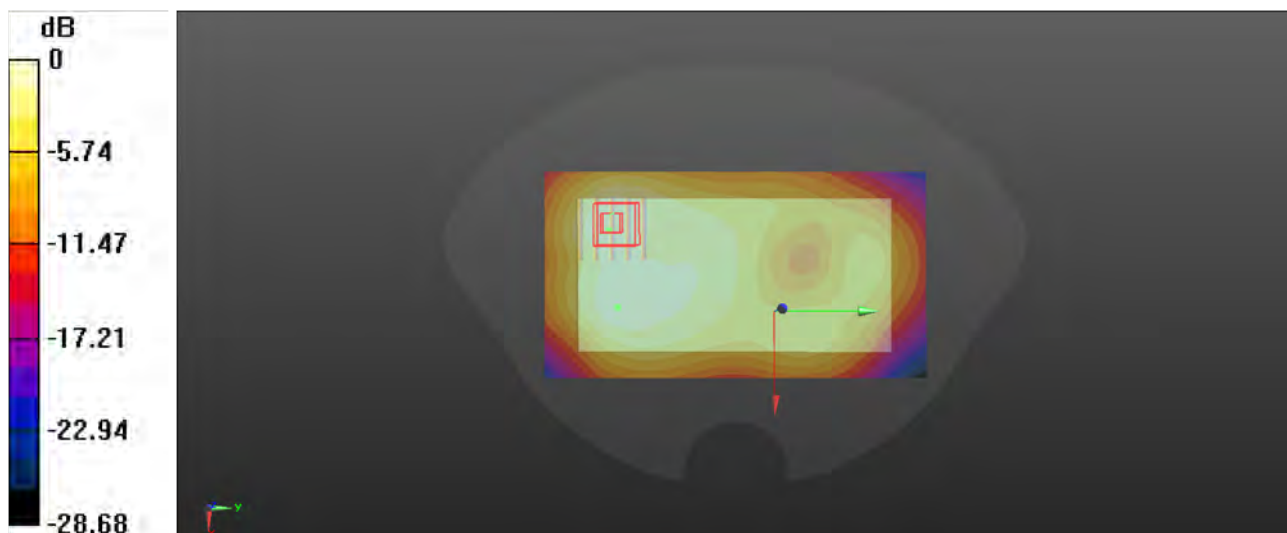
Ambient Temperature : 23.4°C; Liquid Temperature : 22.3°C

#### DASY5 Configuration:

- Probe: EX3DV4 - SN3985; ConvF(8.1, 8.1, 8.1) @ 1860 MHz; Calibrated: 5/24/2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 5/7/2021
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2018
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

- **Area Scan (71x131x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm  
Maximum value of SAR (interpolated) = 0.718 W/kg

- **Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm  
Reference Value = 13.31 V/m; Power Drift = -0.08 dB  
Peak SAR (extrapolated) = 0.849 W/kg  
**SAR(1 g) = 0.487 W/kg; SAR(10 g) = 0.285 W/kg**  
Maximum value of SAR (measured) = 0.691 W/kg



0 dB = 0.691 W/kg



### P24 LTE B4\_QPSK20M\_Front Face\_1cm\_Ch20300\_1RB\_OS50

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

Medium: HSL1750\_1202 Medium parameters used:  $f = 1745$  MHz;  $\sigma = 1.332$  S/m;  $\epsilon_r = 40.123$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.4°C; Liquid Temperature : 22.3°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3985; ConvF(8.42, 8.42, 8.42) @ 1745 MHz; Calibrated: 5/24/2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 5/7/2021
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2018
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**-Area Scan (71x131x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.736 W/kg

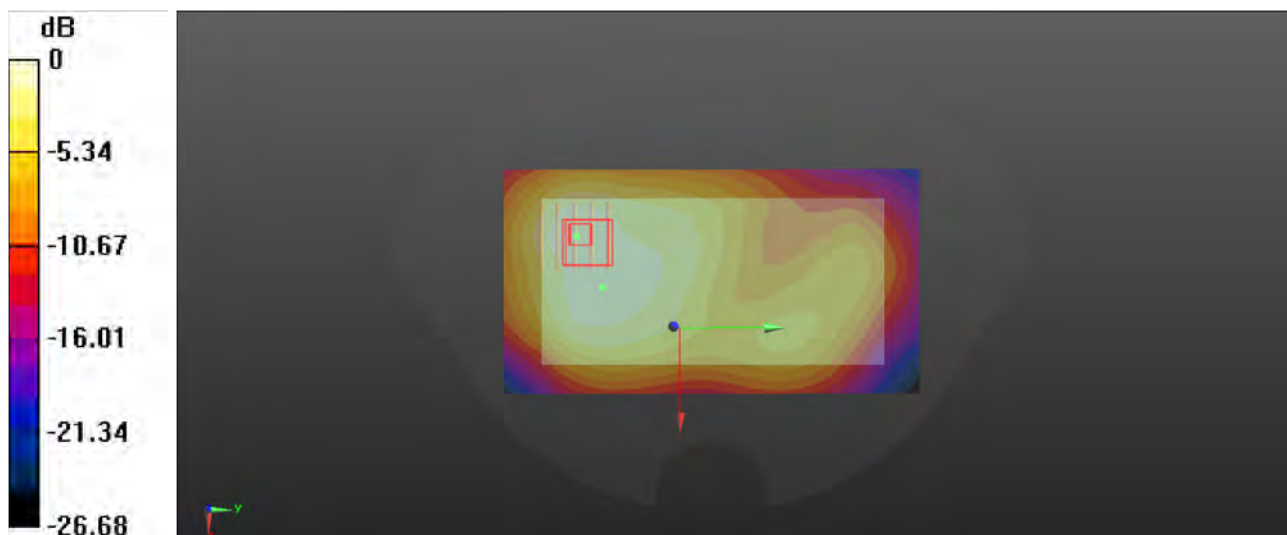
**-Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.49 V/m; Power Drift = 0.12 dB

Peak SAR (extrapolated) = 0.835 W/kg

**SAR(1 g) = 0.509 W/kg; SAR(10 g) = 0.318 W/kg**

Maximum value of SAR (measured) = 0.715 W/kg



0 dB = 0.715 W/kg

### P25 LTE B5\_QPSK10M\_Rear Face\_1cm\_Ch20525\_1RB\_OS24

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

Medium: HSL835\_1203 Medium parameters used:  $f = 836.5$  MHz;  $\sigma = 0.923$  S/m;  $\epsilon_r = 43.174$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.6°C; Liquid Temperature : 22.4°C

#### DASY5 Configuration:

- Probe: EX3DV4 - SN3985; ConvF(9.83, 9.83, 9.83) @ 836.5 MHz; Calibrated: 5/24/2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 5/7/2021
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2018
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**-Area Scan (71x131x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.655 W/kg

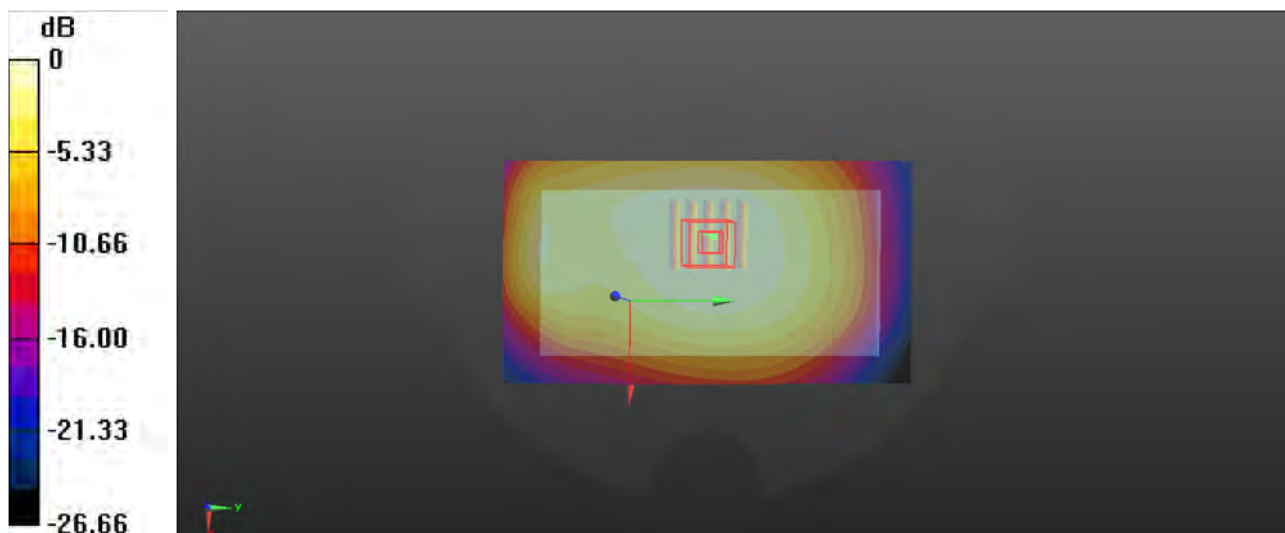
**-Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 23.85 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.712 W/kg

**SAR(1 g) = 0.538 W/kg; SAR(10 g) = 0.406 W/kg**

Maximum value of SAR (measured) = 0.654 W/kg



0 dB = 0.654 W/kg

### P26 LTE B12\_QPSK10M\_Rear Face\_1cm\_Ch23130\_1RB\_OS24

Communication System: LTE; Frequency: 711 MHz; Duty Cycle: 1:1

Medium: HSL750\_1203 Medium parameters used:  $f = 711$  MHz;  $\sigma = 0.877$  S/m;  $\epsilon_r = 43.538$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.6°C; Liquid Temperature : 22.4°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3985; ConvF(10.18, 10.18, 10.18) @ 711 MHz; Calibrated: 5/24/2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 5/7/2021
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2018
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

- **Area Scan (71x131x1)**: Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.423 W/kg

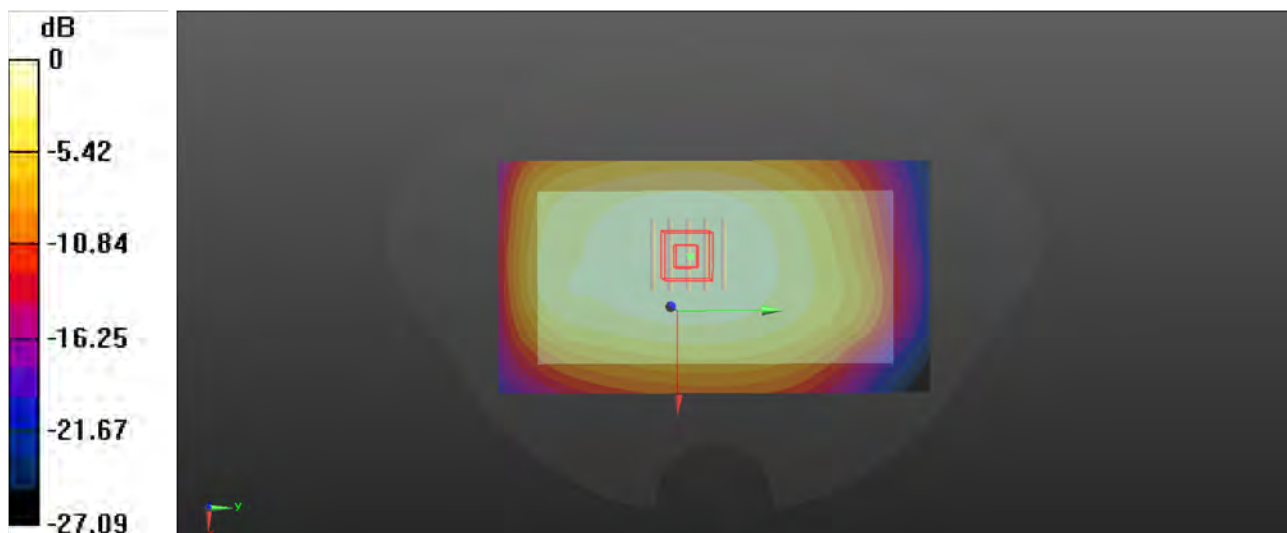
- **Zoom Scan (5x5x7)/Cube 0**: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 19.82 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.456 W/kg

**SAR(1 g) = 0.351 W/kg; SAR(10 g) = 0.268 W/kg**

Maximum value of SAR (measured) = 0.422 W/kg



0 dB = 0.422 W/kg

### P27 LTE B14\_QPSK10M\_Rear Face\_1cm\_Ch23330\_1RB\_OS24

Communication System: LTE; Frequency: 793 MHz; Duty Cycle: 1:1

Medium: HSL750\_1203 Medium parameters used:  $f = 793$  MHz;  $\sigma = 0.907$  S/m;  $\epsilon_r = 43.321$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.6°C; Liquid Temperature : 22.4°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3985; ConvF(10.18, 10.18, 10.18) @ 793 MHz; Calibrated: 5/24/2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 5/7/2021
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2018
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**-Area Scan (71x131x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.660 W/kg

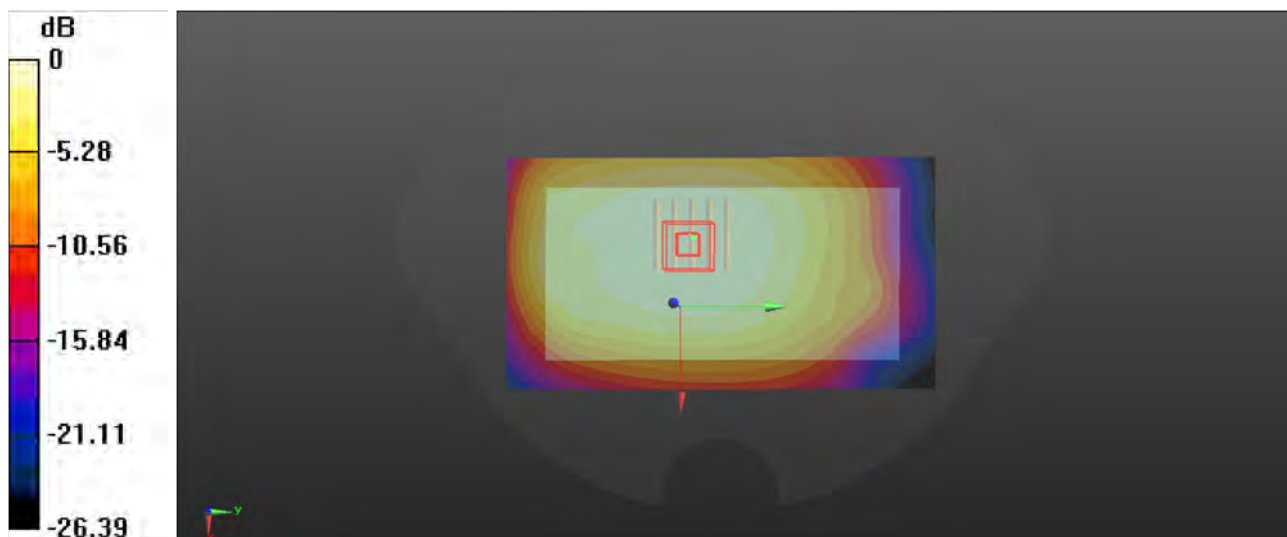
**-Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 23.73 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.714 W/kg

**SAR(1 g) = 0.549 W/kg; SAR(10 g) = 0.417 W/kg**

Maximum value of SAR (measured) = 0.656 W/kg



0 dB = 0.656 W/kg

### P28 LTE B30\_QPSK10M\_Front Face\_1cm\_Ch27710\_1RB\_OS24

Communication System: LTE; Frequency: 2310 MHz; Duty Cycle: 1:1

Medium: HSL2300\_1204 Medium parameters used:  $f = 2310$  MHz;  $\sigma = 1.684$  S/m;  $\epsilon_r = 39.688$ ;  $\rho = 1000$  kg/m<sup>3</sup>

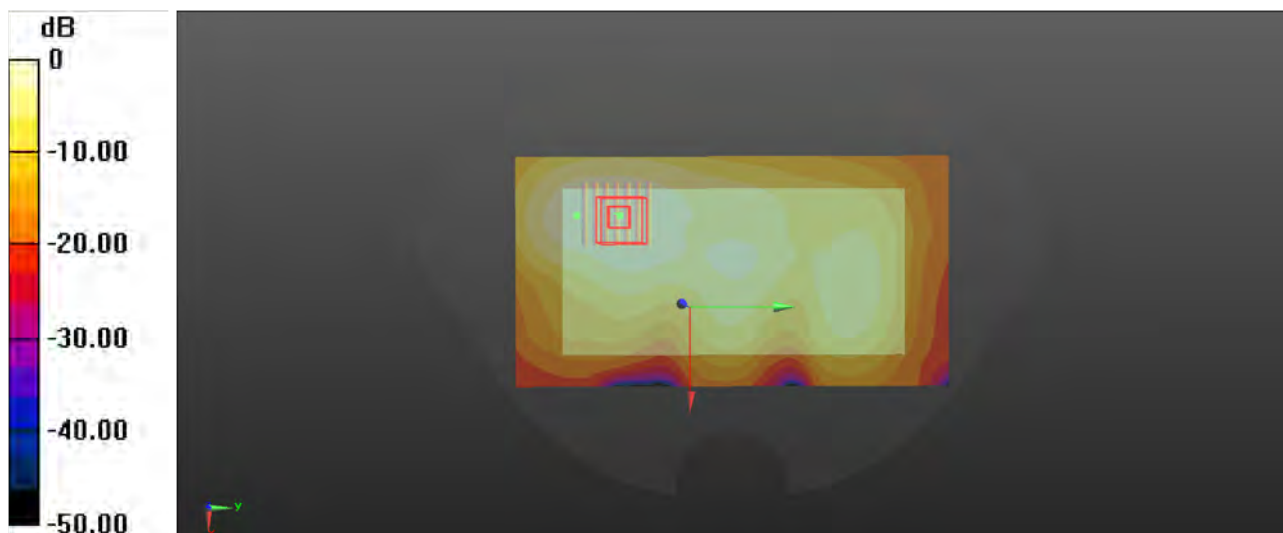
Ambient Temperature : 23.5°C; Liquid Temperature : 22.5°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3985; ConvF(7.97, 7.97, 7.97) @ 2310 MHz; Calibrated: 5/24/2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 5/7/2021
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2018
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**-Area Scan (91x171x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm  
Maximum value of SAR (interpolated) = 0.721 W/kg

**-Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm  
Reference Value = 12.85 V/m; Power Drift = 0.04 dB  
Peak SAR (extrapolated) = 0.832 W/kg  
**SAR(1 g) = 0.482 W/kg; SAR(10 g) = 0.284 W/kg**  
Maximum value of SAR (measured) = 0.700 W/kg



0 dB = 0.700 W/kg

### P29 802.11b\_Rear Face\_1cm\_Ch6

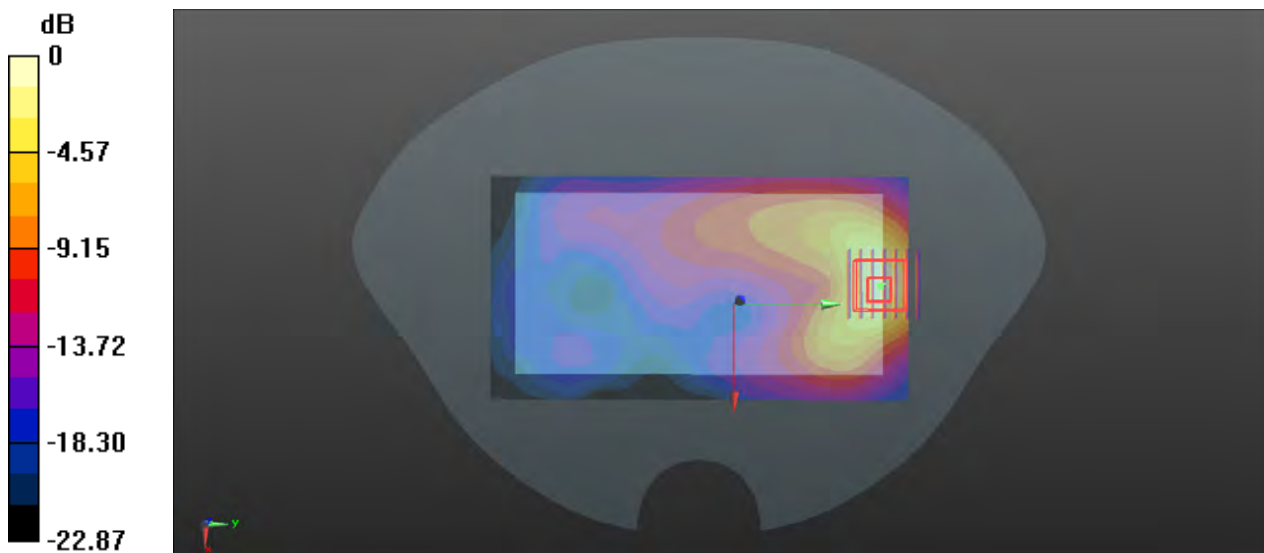
Communication System: 802.11b; Frequency: 2437 MHz; Duty Cycle: 1:1  
Medium: HSL2450\_1204 Medium parameters used:  $f = 2437$  MHz;  $\sigma = 1.773$  S/m;  $\epsilon_r = 39.487$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Ambient Temperature : 23.5°C; Liquid Temperature : 22.5°C

#### DASY5 Configuration:

- Probe: EX3DV4 - SN3985; ConvF(7.73, 7.73, 7.73) @ 2437 MHz; Calibrated: 5/24/2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 5/7/2021
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2018
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

- **Area Scan (81x151x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm  
Maximum value of SAR (interpolated) = 0.765 W/kg

- **Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm  
Reference Value = 3.627 V/m; Power Drift = -0.07 dB  
Peak SAR (extrapolated) = 0.953 W/kg  
**SAR(1 g) = 0.462 W/kg; SAR(10 g) = 0.217 W/kg**  
Maximum value of SAR (measured) = 0.762 W/kg



0 dB = 0.762 W/kg

### P30 802.11a\_Top Face\_1cm\_Ch40

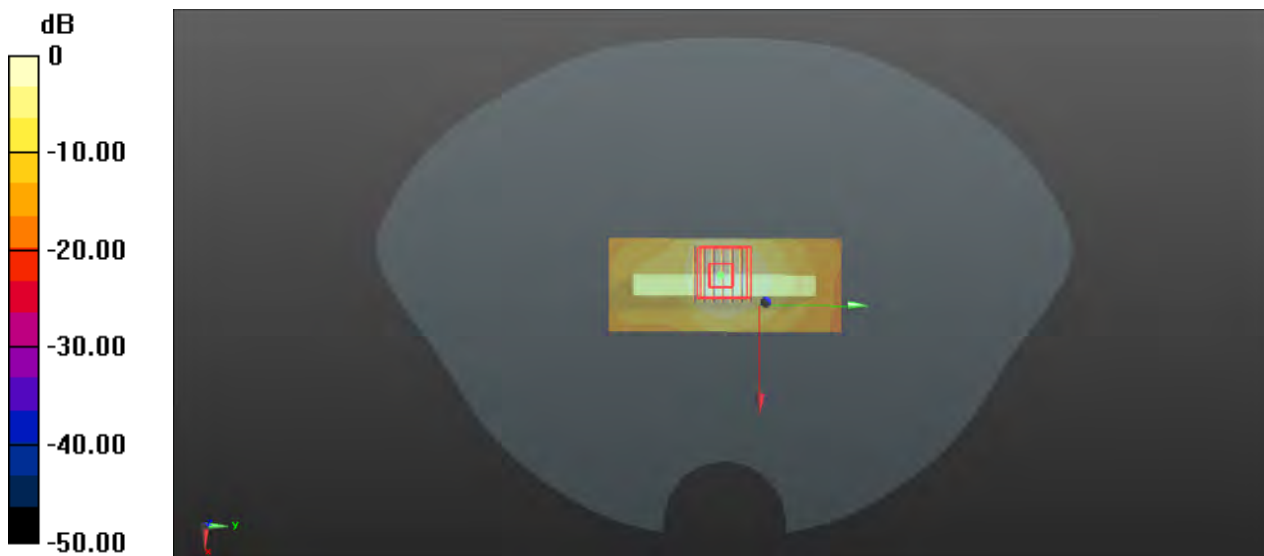
Communication System: 802.11a; Frequency: 5200 MHz; Duty Cycle: 1:1  
Medium: HSL5G\_1205 Medium parameters used:  $f = 5200$  MHz;  $\sigma = 4.582$  S/m;  $\epsilon_r = 37.163$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Ambient Temperature : 23.6°C; Liquid Temperature : 22.5°C

#### DASY5 Configuration:

- Probe: EX3DV4 - SN3985; ConvF(5.49, 5.49, 5.49) @ 5200 MHz; Calibrated: 5/24/2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1633; Calibrated: 5/7/2021
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2018
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

- **Area Scan (41x101x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm  
Maximum value of SAR (interpolated) = 1.18 W/kg

- **Zoom Scan (7x7x12)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2mm  
Reference Value = 11.421 V/m; Power Drift = -0.04 dB  
Peak SAR (extrapolated) = 1.78 W/kg  
**SAR(1 g) = 0.520 W/kg; SAR(10 g) = 0.186 W/kg**  
Maximum value of SAR (measured) = 1.16 W/kg



0 dB = 1.16 W/kg

### P31 802.11a\_Top Face\_1cm\_Ch149

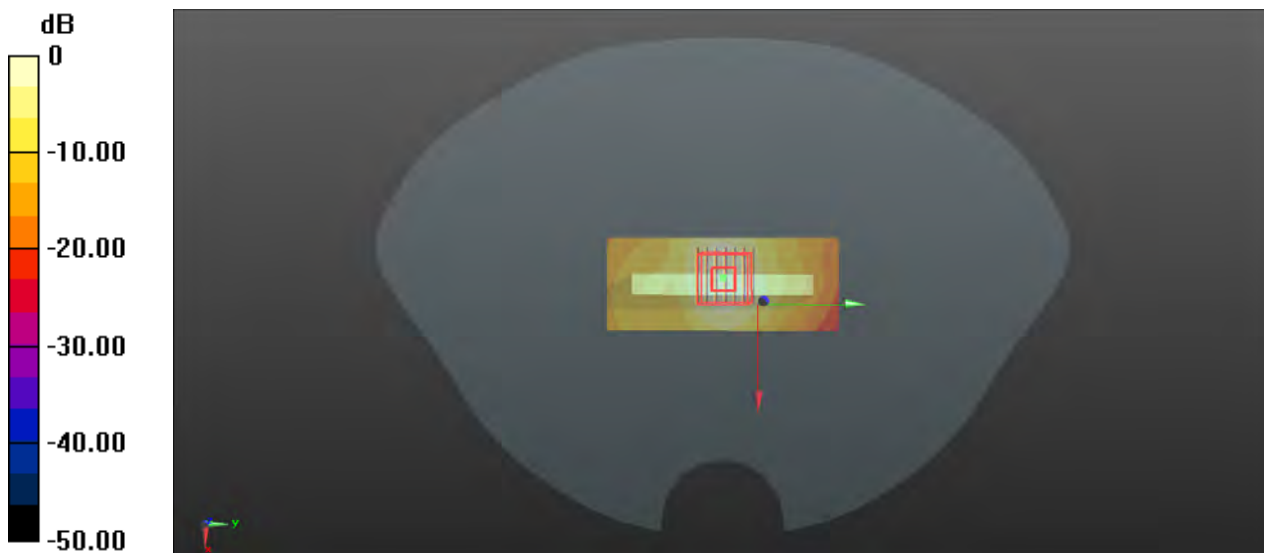
Communication System: 802.11a; Frequency: 5745 MHz; Duty Cycle: 1:1  
Medium: HSL5G\_1206 Medium parameters used:  $f = 5745$  MHz;  $\sigma = 5.195$  S/m;  $\epsilon_r = 36.264$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Ambient Temperature : 23.3°C; Liquid Temperature : 22.5°C

#### DASY5 Configuration:

- Probe: EX3DV4 - SN3985; ConvF(4.96, 4.96, 4.96) @ 5745 MHz; Calibrated: 5/24/2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 5/7/2021
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2018
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

- **Area Scan (41x101x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm  
Maximum value of SAR (interpolated) = 2.63 W/kg

- **Zoom Scan (7x7x12)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2mm  
Reference Value = 14.795 V/m; Power Drift = -0.03 dB  
Peak SAR (extrapolated) = 3.67 W/kg  
**SAR(1 g) = 0.945 W/kg; SAR(10 g) = 0.331 W/kg**  
Maximum value of SAR (measured) = 2.16 W/kg



0 dB = 2.16 W/kg



### P32 BT GFSK\_Rear Face\_1cm\_Ch39

Communication System: BT; Frequency: 2441 MHz; Duty Cycle: 1:1.2

Medium: HSL2450\_1204 Medium parameters used:  $f = 2441$  MHz;  $\sigma = 1.776$  S/m;  $\epsilon_r = 39.481$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.5°C; Liquid Temperature : 22.4°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3985; ConvF(7.73, 7.73, 7.73) @ 2441 MHz; Calibrated: 5/24/2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 5/7/2021
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2018
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**-Area Scan (91x161x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.0696 W/kg

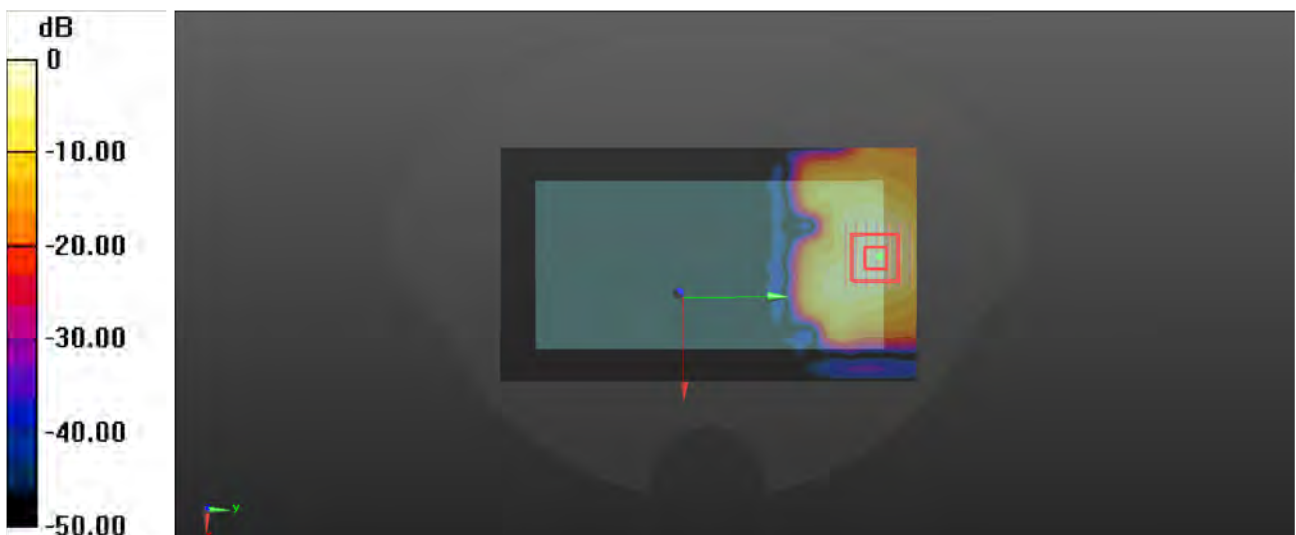
**-Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 0 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.101 W/kg

**SAR(1 g) = 0.047 W/kg; SAR(10 g) = 0.021 W/kg**

Maximum value of SAR (measured) = 0.0783 W/kg



0 dB = 0.0783 W/kg

### P33 LTE B30\_QPSK10M\_Rear Face\_0cm\_Ch27710\_1RB\_OS24

Communication System: LTE; Frequency: 2310 MHz; Duty Cycle: 1:1

Medium: HSL2300\_1204 Medium parameters used:  $f = 2310$  MHz;  $\sigma = 1.684$  S/m;  $\epsilon_r = 39.688$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.5°C; Liquid Temperature : 22.5°C

#### DASY5 Configuration:

- Probe: EX3DV4 - SN3985; ConvF(7.97, 7.97, 7.97) @ 2310 MHz; Calibrated: 5/24/2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 5/7/2021
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2018
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**-Area Scan (91x171x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 5.69 W/kg

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

Reference Value = 3.839 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 10.4 W/kg

**SAR(1 g) = 3.45 W/kg; SAR(10 g) = 1.23 W/kg**

Maximum value of SAR (measured) = 7.48 W/kg



0 dB = 7.48W/kg

### P34 802.11a\_Rear Face\_0cm\_Ch52

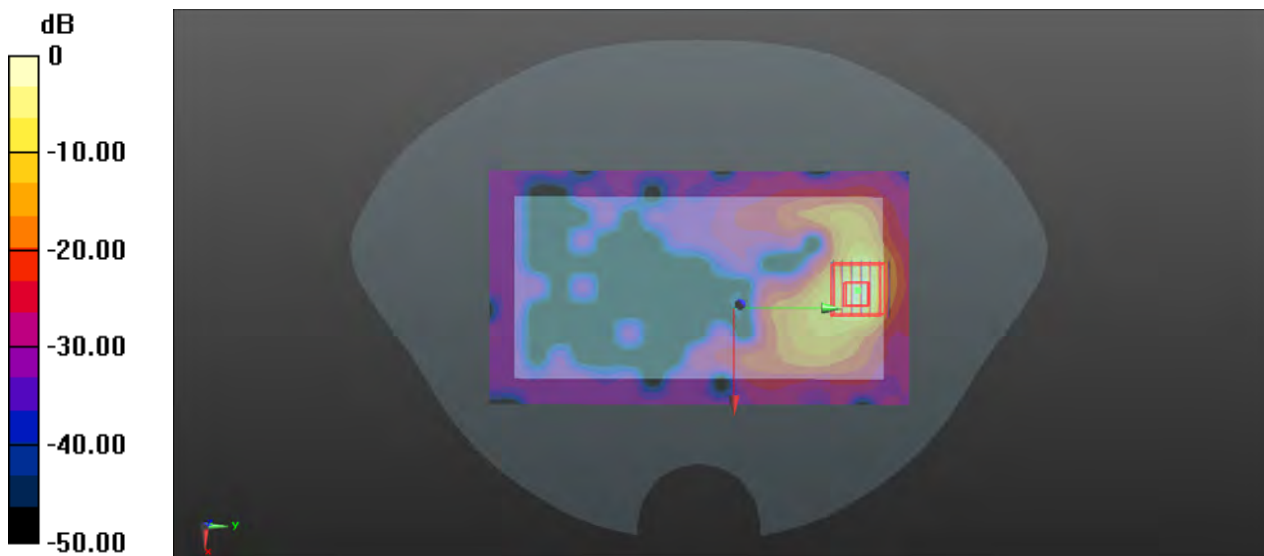
Communication System: 802.11a; Frequency: 5260 MHz; Duty Cycle: 1:1  
Medium: HSL5G\_1205 Medium parameters used:  $f = 5260$  MHz;  $\sigma = 4.74$  S/m;  $\epsilon_r = 36.508$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Ambient Temperature : 23.6°C; Liquid Temperature : 22.5°C

#### DASY5 Configuration:

- Probe: EX3DV4 - SN3985; ConvF(5.49, 5.49, 5.49) @ 5300 MHz; Calibrated: 5/24/2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 5/7/2021
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2018
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

- **Area Scan (101x181x1)**: Interpolated grid: dx=1.000 mm, dy=1.000 mm  
Maximum value of SAR (interpolated) = 11.9 W/kg

- **Zoom Scan (7x7x12)/Cube 0**: Measurement grid: dx=4mm, dy=4mm, dz=2mm  
Reference Value = 1.368 V/m; Power Drift = -0.00 dB  
Peak SAR (extrapolated) = 24.5 W/kg  
**SAR(1 g) = 4.39 W/kg; SAR(10 g) = 0.938 W/kg**  
Maximum value of SAR (measured) = 13.2 W/kg



0 dB = 13.2 W/kg

### P35 802.11a\_Top Face\_0cm\_Ch140

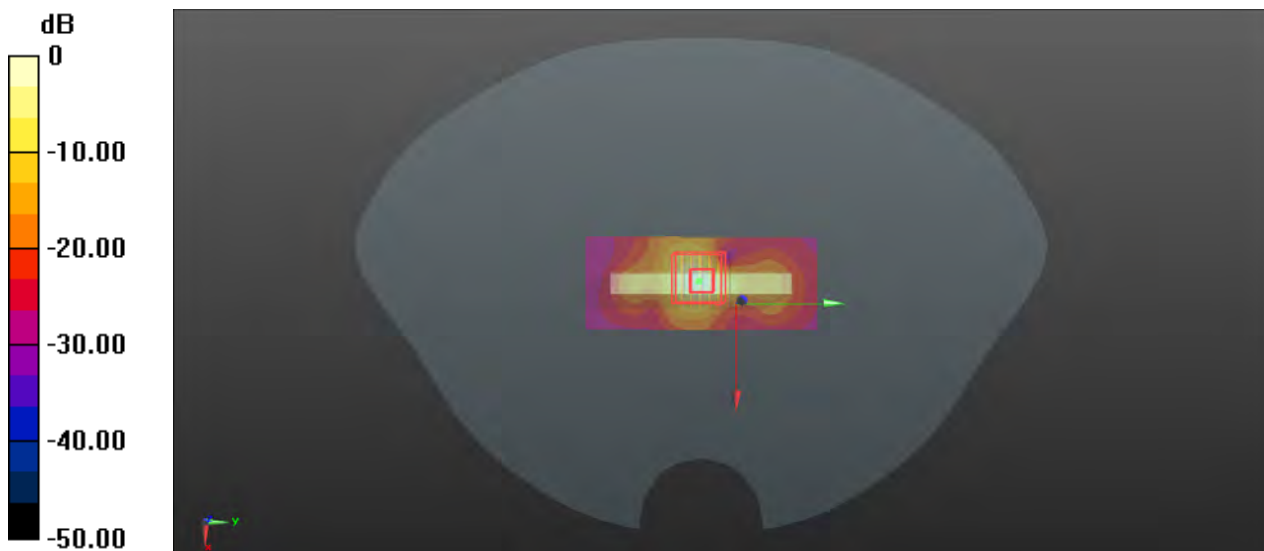
Communication System: 802.11a; Frequency: 5700 MHz; Duty Cycle: 1:1  
Medium: HSL5G\_1206 Medium parameters used:  $f = 5700$  MHz;  $\sigma = 5.272$  S/m;  $\epsilon_r = 35.732$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Ambient Temperature : 23.3°C; Liquid Temperature : 22.5°C

#### DASY5 Configuration:

- Probe: EX3DV4 - SN3985; ConvF(4.96, 4.96, 4.96) @ 5745 MHz; Calibrated: 5/24/2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 5/7/2021
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2018
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

- **Area Scan (41x101x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm  
Maximum value of SAR (interpolated) = 25.3 W/kg

- **Zoom Scan (7x7x12)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2mm  
Reference Value = 43.126 V/m; Power Drift = -0.01 dB  
Peak SAR (extrapolated) = 37.7 W/kg  
**SAR(1 g) = 6.68 W/kg; SAR(10 g) = 1.47 W/kg**  
Maximum value of SAR (measured) = 20.5 W/kg



0 dB = 20.5 W/kg

## Appendix C. Calibration Certificate for Probe and Dipole

The SPEAG calibration certificates are shown as follows.



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国际互认  
校准  
CALIBRATION  
CNAS L0570

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E-mail: cttl@chinattl.com [Http://www.chinattl.cn](http://www.chinattl.cn)

Client : **7layers**

Certificate No: **Z21-60164**

## CALIBRATION CERTIFICATE

Object: **DAE4 - SN: 755**

Calibration Procedure(s): **FF-Z11-002-01**  
**Calibration Procedure for the Data Acquisition Electronics (DAEx)**

Calibration date: **May 07, 2021**

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date(Calibrated by, Certificate No.)	Scheduled Calibration
Process Calibrator 753	1971018	16-Jun-20 (CTTL, No.J20X04342)	Jun-21

	Name	Function	Signature
Calibrated by:	Yu Zongying	SAR Test Engineer	
Reviewed by:	Lin Hao	SAR Test Engineer	
Approved by:	Qi Dianyuan	SAR Project Leader	

Issued: May 09, 2021

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Fax: +86-10-62304633-2504

E-mail: [ctl@chinattl.com](mailto:ctl@chinattl.com)

[Http://www.chinattl.cn](http://www.chinattl.cn)

## **Glossary:**

**DAE** data acquisition electronics  
**Connector angle** information used in DASY system to align probe sensor X to the robot coordinate system.

## **Methods Applied and Interpretation of Parameters:**

- *DC Voltage Measurement:* Calibration Factor assessed for use in DASY system by comparison with a calibrated instrument traceable to national standards. The figure given corresponds to the full scale range of the voltmeter in the respective range.
- *Connector angle:* The angle of the connector is assessed measuring the angle mechanically by a tool inserted. Uncertainty is not required.
- The report provide only calibration results for DAE, it does not contain other performance test results.



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E-mail: cttl@chinattl.com Http://www.chinattl.cn

## DC Voltage Measurement

A/D - Converter Resolution nominal

High Range: 1LSB = 6.1 $\mu$ V, full range = -100...+300 mV

Low Range: 1LSB = 61nV, full range = -1.....+3mV

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

Calibration Factors	X	Y	Z
High Range	405.328 $\pm$ 0.15% (k=2)	404.560 $\pm$ 0.15% (k=2)	405.102 $\pm$ 0.15% (k=2)
Low Range	3.93870 $\pm$ 0.7% (k=2)	3.98567 $\pm$ 0.7% (k=2)	3.95472 $\pm$ 0.7% (k=2)

## Connector Angle

Connector Angle to be used in DASY system	58.5 $^{\circ}$ $\pm$ 1 $^{\circ}$
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E-mail: cttl@chinattl.com [Http://www.chinattl.cn](http://www.chinattl.cn)

Client **7layers**

Certificate No: **Z21-60163**

## CALIBRATION CERTIFICATE

Object **EX3DV4 - SN : 3985**

Calibration Procedure(s) **FF-Z11-004-02**  
**Calibration Procedures for Dosimetric E-field Probes**

Calibration date: **May 24, 2021**

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date(Calibrated by, Certificate No.)	Scheduled Calibration
Power Meter NRP2	101919	16-Jun-20(CTTL, No.J20X04344)	Jun-21
Power sensor NRP-Z91	101547	16-Jun-20(CTTL, No.J20X04344)	Jun-21
Power sensor NRP-Z91	101548	16-Jun-20(CTTL, No.J20X04344)	Jun-21
Reference 10dBAttenuator	18N50W-10dB	10-Feb-20(CTTL, No.J20X00525)	Feb-22
Reference 20dBAttenuator	18N50W-20dB	10-Feb-20(CTTL, No.J20X00526)	Feb-22
Reference Probe EX3DV4	SN 3617	27-Jan-21(SPEAG, No.EX3-3617_Jan21)	Jan-22
DAE4	SN 1556	15-Jan-21(SPEAG, No.DAE4-1556_Jan21)	Jan-22
Secondary Standards	ID #	Cal Date(Calibrated by, Certificate No.)	Scheduled Calibration
SignalGenerator MG3700A	6201052605	23-Jun-20(CTTL, No.J20X04343)	Jun-21
Network Analyzer E5071C	MY46110673	21-Jan-21(CTTL, No.J20X00515)	Jan-22

	Name	Function	Signature
Calibrated by:	Yu Zongying	SAR Test Engineer	
Reviewed by:	Lin Hao	SAR Test Engineer	
Approved by:	Qi Dianyuan	SAR Project Leader	

Issued: May 26, 2021

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## Glossary:

TSL	tissue simulating liquid
NORM <sub>x,y,z</sub>	sensitivity in free space
ConvF	sensitivity in TSL / NORM <sub>x,y,z</sub>
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A,B,C,D	modulation dependent linearization parameters
Polarization $\Phi$	$\Phi$ rotation around probe axis
Polarization $\theta$	$\theta$ rotation around an axis that is in the plane normal to probe axis (at measurement center), $\theta=0$ is normal to probe axis

Connector Angle information used in DASY system to align probe sensor X to the robot coordinate system

## Calibration is Performed According to the Following Standards:

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

## Methods Applied and Interpretation of Parameters:

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



## DASY/EASY – Parameters of Probe: EX3DV4 – SN: 3985

### Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm( $\mu\text{V}/(\text{V}/\text{m})^2$ ) <sup>A</sup>	0.54	0.42	0.42	±10.0%
DCP(mV) <sup>B</sup>	102.4	104.6	103.3	

### Calibration Results for Modulation Response

UID	Communication System Name		A dB	B dB $\sqrt{\mu\text{V}}$	C	D dB	VR mV	Max Dev.	Max Unc <sup>E</sup> (k=2)
0	CW	X	0.0	0.0	1.0	0.00	191.6	±2.0%	±4.7%
		Y	0.0	0.0	1.0		165.9		
		Z	0.0	0.0	1.0		164.2		
10352-AAA	Pulse Waveform (200Hz, 10%)	X	3.22	64.69	9.84	10.00	60	±4.2%	±9.6%
		Y	4.68	69.75	12.30		60		
		Z	2.33	62.94	8.39		60		
10353-AAA	Pulse Waveform (200Hz, 20%)	X	3.37	66.22	9.89	6.99	80	±2.4%	±9.6%
		Y	4.49	70.29	11.80		80		
		Z	1.87	62.83	7.64		80		
10354-AAA	Pulse Waveform (200Hz, 40%)	X	2.22	64.86	8.47	3.98	95	±1.3%	±9.6%
		Y	3.18	69.09	10.49		95		
		Z	1.12	61.61	6.36		95		
10355-AAA	Pulse Waveform (200Hz, 60%)	X	0.91	61.16	5.81	2.22	120	±1.3%	±9.6%
		Y	1.32	64.78	7.99		120		
		Z	0.56	60.11	4.97		120		
10387-AAA	QPSK Waveform, 1 MHz	X	1.74	69.49	16.16	1.00	150	±5.1%	±9.6%
		Y	1.48	64.32	13.28		150		
		Z	1.44	65.03	13.51		150		
10388-AAA	QPSK Waveform, 10 MHz	X	2.49	71.64	17.34	0.00	150	±1.4%	±9.6%
		Y	1.99	66.29	14.19		150		
		Z	1.98	66.76	14.61		150		
10396-AAA	64-QAM Waveform, 100 kHz	X	5.40	82.74	24.53	3.01	150	±1.2%	±9.6%
		Y	2.71	70.17	19.41		150		
		Z	2.52	70.12	19.93		150		
10414-AAA	WLAN CCDF, 64-QAM, 40MHz	X	5.10	67.33	16.62	0.00	150	±3.2%	±9.6%
		Y	5.11	66.80	15.93		150		
		Z	5.00	66.75	15.98		150		

Note: For details on UID parameters see Appendix

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

<sup>A</sup> The uncertainties of Norm X, Y, Z do not affect the  $E^2$ -field uncertainty inside TSL (see Page 5).

<sup>B</sup> Numerical linearization parameter: uncertainty not required.

<sup>E</sup> Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.



## DASY/EASY – Parameters of Probe: EX3DV4 – SN: 3985

### Sensor Model Parameters

	C1 fF	C2 fF	$\alpha$ $V^{-1}$	T1 $ms.V^{-2}$	T2 $ms.V^{-1}$	T3 ms	T4 $V^{-2}$	T5 $V^{-1}$	T6
X	42.55	327.60	37.70	42.16	0.01	5.10	1.20	0.45	1.02
Y	46.21	342.25	34.77	32.04	0.00	5.07	0.00	0.33	1.02
Z	39.06	290.67	35.15	23.73	0.00	5.00	0.00	0.23	1.03

### Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	52.2
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disable
Probe Overall Length	337mm
Probe Body Diameter	10mm
Tip Length	9mm
Tip Diameter	2.5mm
Probe Tip to Sensor X Calibration Point	1mm
Probe Tip to Sensor Y Calibration Point	1mm
Probe Tip to Sensor Z Calibration Point	1mm
Recommended Measurement Distance from Surface	1.4mm