<WLAN 5.3G>

Mode	802.11a			
Channel / Frequency (MHz)	52 (5260)	56 (5280)	60 (5300)	64 (5320)
Average Power	**14.26**	14.13	14.06	14.08
Mode	802.11n (HT20)			
Channel / Frequency (MHz)	52 (5260)	56 (5280)	60 (5300)	64 (5320)
Average Power	14.25	14.31	**14.48**	14.40
Mode	802.11n (HT40)			
Channel / Frequency (MHz)	54 (5270)		62 (5310)	
Average Power	**12.24**		12.06	
Mode	802.11ac (VHT20)			
Channel / Frequency (MHz)	52 (5260)	56 (5280)	60 (5300)	64 (5320)
Average Power	14.15	14.19	**14.23**	14.04
Mode	802.11ac (VHT40)			
Channel / Frequency (MHz)	54 (5270)		62 (5310)	
Average Power	**12.13**		11.92	
Mode	802.11ac (VHT80)			
Channel / Frequency (MHz)	58 (5290)			
Average Power	**12.98**			

<WLAN 5.6G>

Mode	802.11a					
Channel / Frequency (MHz)	100 (5500)	116 (5580)	124 (5620)	132 (5660)	140 (5700)	144 (5720)
EUT without Power Reduction (P-Sensor NOT Triggered)						
Average Power	14.09	14.01	14.08	14.1	14.06	**14.12**
EUT with Power Reduction (P-Sensor Triggered)						
Average Power	11.28	11.56	11.6	11.63	**11.67**	11.62
Mode	802.11n (HT20)					
Channel / Frequency (MHz)	100 (5500)	116 (5580)	124 (5620)	132 (5660)	140 (5700)	144 (5720)
EUT without Power Reduction (P-Sensor NOT Triggered)						
Average Power	**14.56**	14.24	14.29	14.25	14.20	14.01
EUT with Power Reduction (P-Sensor Triggered)						
Average Power	11.70	**11.85**	11.72	11.67	11.29	11.65
Mode	802.11n (HT40)					
Channel / Frequency (MHz)	102 (5510)	110 (5550)	126 (5630)	134 (5670)	142 (5710)	
EUT without Power Reduction (P-Sensor NOT Triggered)						
Average Power	12.32	**12.46**	12.26	12.29	12.18	
EUT with Power Reduction (P-Sensor Triggered)						
Average Power	**10.55**	10.46	10.23	10.03	10.15	
Mode	802.11ac (VHT20)					
Channel / Frequency (MHz)	100 (5500)	116 (5580)	124 (5620)	132 (5660)	140 (5700)	144 (5720)
EUT without Power Reduction (P-Sensor NOT Triggered)						
Average Power	**14.38**	14.20	14.26	14.18	14.14	13.96
EUT with Power Reduction (P-Sensor Triggered)						
Average Power	11.23	11.38	11.41	11.44	**11.46**	10.93
Mode	802.11ac (VHT40)					
Channel / Frequency (MHz)	102 (5510)	110 (5550)	126 (5630)	134 (5670)	142 (5710)	
EUT without Power Reduction (P-Sensor NOT Triggered)						
Average Power	12.16	**12.29**	12.15	12.13	11.97	
EUT with Power Reduction (P-Sensor Triggered)						
Average Power	**10.57**	10.42	10.46	10.02	10.13	

Mode	802.11ac (VHT80)		
Channel / Frequency (MHz)	106 (5530)	122 (5610)	138 (5690)
EUT without Power Reduction (P-Sensor NOT Triggered)			
Average Power	12.71	**12.84**	12.72
EUT with Power Reduction (P-Sensor Triggered)			
Average Power	10.75	10.81	**11.03**

<WLAN 5.8G>

Mode	802.11a			
Channel / Frequency (MHz)	149 (5745)	153 (5765)	157 (5785)	161 (5805)
EUT without Power Reduction (P-Sensor NOT Triggered)				
Average Power	14.18	14.16	14.13	**14.21**
EUT with Power Reduction (P-Sensor Triggered)				
Average Power	**11.92**	11.89	11.85	11.78
Mode	802.11n (HT20)			
Channel / Frequency (MHz)	149 (5745)	153 (5765)	157 (5785)	161 (5805)
EUT without Power Reduction (P-Sensor NOT Triggered)				
Average Power	14.23	14.21	14.15	**14.36**
EUT with Power Reduction (P-Sensor Triggered)				
Average Power	**11.97**	11.94	11.82	11.88
Mode	802.11n (HT40)			
Channel / Frequency (MHz)	151 (5755)		159 (5795)	
EUT without Power Reduction (P-Sensor NOT Triggered)				
Average Power	12.06		**12.18**	
EUT without Power Reduction (P-Sensor NOT Triggered)				
Average Power	**10.01**		9.89	
Mode	802.11ac (VHT20)			
Channel / Frequency (MHz)	149 (5745)	153 (5765)	157 (5785)	161 (5805)
EUT without Power Reduction (P-Sensor NOT Triggered)				
Average Power	14.15	14.13	14.09	**14.17**
EUT with Power Reduction (P-Sensor Triggered)				
Average Power	**11.82**	11.77	11.74	11.78
Mode	802.11ac (VHT40)			
Channel / Frequency (MHz)	151 (5755)		159 (5795)	
EUT without Power Reduction (P-Sensor NOT Triggered)				
Average Power	12.04		**12.15**	
EUT without Power Reduction (P-Sensor NOT Triggered)				
Average Power	**10.12**		9.85	
Mode	802.11ac (VHT80)			
Channel / Frequency (MHz)	155 (5775)			
EUT without Power Reduction (P-Sensor NOT Triggered)				
Average Power	**12.62**			
EUT with Power Reduction (P-Sensor Triggered)				
Average Power	**10.25**			

<Bluetooth>

Mode	Bluetooth GFSK		
Channel / Frequency (MHz)	0 (2402)	39 (2441)	78 (2480)
Average Power	10.29	**10.43**	9.62
Mode	Bluetooth π/4-DQPSK		
Channel / Frequency (MHz)	0 (2402)	39 (2441)	78 (2480)
Average Power	8.14	**8.28**	7.78
Mode	Bluetooth 8-DPSK		
Channel / Frequency (MHz)	0 (2402)	39 (2441)	78 (2480)
Average Power	8.44	**8.71**	7.75
Mode	Bluetooth LE		
Channel / Frequency (MHz)	0 (2402)	19 (2440)	39 (2480)
Average Power	**0.01**	-0.29	-0.71

4.6 SAR Testing Results

4.6.1 SAR Test Reduction Considerations

<KDB 447498 D01, General RF Exposure Guidance>

Testing of other required channels within the operating mode of a frequency band is not required when the reported SAR for the mid-band or highest output power channel is:

(1) ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz

(2) ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz

(3) ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz

<KDB 941225 D01, 3G SAR Measurement Procedures>

The mode tested for SAR is referred to as the primary mode. The equivalent modes considered for SAR test reduction are denoted as secondary modes. Both primary and secondary modes must be in the same frequency band. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ 1/4 dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.

<KDB 941225 D05, SAR Evaluation Considerations for LTE Devices>

(1) QPSK with 1 RB and 50% RB allocation

Start with the largest channel bandwidth and measure SAR, using the RB offset and required test channel combination with the highest maximum output power among RB offsets at the upper edge, middle and lower edge of each required test channel. When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required; otherwise, SAR is required for the remaining required test channels and only for the RB offset configuration with the highest output power for that channel. When the reported SAR of a required test channel is > 1.45 W/kg, SAR is required for all three RB offset configurations for that required test channel.

(2) QPSK with 100% RB allocation

SAR is not required when the highest maximum output power for 100% RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.

(3) Higher order modulations

SAR is required only when the highest maximum output power for the configuration in the higher order modulation is > 1/2 dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is > 1.45 W/kg.

(4) Other channel bandwidth

SAR is required when the highest maximum output power of the smaller channel bandwidth is > 1/2 dB higher than the equivalent channel configurations in the largest channel bandwidth configuration or the reported SAR of a configuration for the largest channel bandwidth is > 1.45 W/kg.

<KDB 248227 D01, SAR Guidance for Wi-Fi Transmitters>

(1) For handsets operating next to ear, hotspot mode or mini-tablet configurations, the initial test position procedures were applied. The test position with the highest extrapolated peak SAR will be used as the initial test position. When the reported SAR of initial test position is <= 0.4 W/kg, SAR testing for remaining test positions is not required. Otherwise, SAR is evaluated at the subsequent highest peak SAR positions until the reported SAR result is <= 0.8 W/kg or all test positions are measured.

(2) For WLAN 2.4 GHz, the highest measured maximum output power channel for DSSS was selected for SAR measurement. When the reported SAR is <= 0.8 W/kg, no further SAR testing is required. Otherwise, SAR is evaluated at the next highest measured output power channel. When any reported SAR is > 1.2 W/kg, SAR is required for the third channel. For OFDM modes (802.11g/n), SAR is not required when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and it is <= 1.2 W/kg.

(3) For WLAN 5 GHz, the initial test configuration was selected according to the transmission mode with the highest maximum output power. When the reported SAR of initial test configuration is > 0.8 W/kg, SAR is required for the subsequent highest measured output power channel until the reported SAR result is <= 1.2 W/kg or all required channels are measured. For other transmission modes, SAR is not required when the highest reported SAR for initial test configuration is adjusted by the ratio of subsequent test configuration to initial test configuration specified maximum output power and it is <= 1.2 W/kg.

(4) For WLAN MIMO mode, the power-based standalone SAR test exclusion or the sum of SAR provision in KDB 447498 to determine simultaneous transmission SAR test exclusion should be applied. Otherwise, SAR for MIMO mode will be measured with all applicable antennas transmitting simultaneously at the specified maximum output power of MIMO operation.

4.6.2 SAR Results for Body Exposure Condition

Plot No.	Band	Mode	Test Position	Separation Distance (cm)	Ch.	Sample	Sensor	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaling Factor	Scaled SAR-1g (W/kg)
	WCDMA II	RMC12.2K	Rear Face	0	9400	1	on	12.5	12.36	0.04	0.847	1.03	0.87
	WCDMA II	RMC12.2K	Top Side	0	9400	1	on	12.5	12.36	0.16	0.144	1.03	0.15
	WCDMA II	RMC12.2K	Rear Face	1.9	9400	1	off	24.5	23.04	0.05	0.355	1.40	0.50
	WCDMA II	RMC12.2K	Top Side	1.9	9400	1	off	24.5	23.04	0.09	0.339	1.40	0.47
	WCDMA II	RMC12.2K	Right Side	0	9400	1	off	24.5	23.04	0.12	0.236	1.40	0.33
1	WCDMA II	RMC12.2K	Rear Face	0	9262	1	on	12.5	12.09	0.07	0.860	1.10	**0.95**
	WCDMA II	RMC12.2K	Rear Face	0	9538	1	on	12.5	11.94	0.00	0.548	1.14	0.62
	WCDMA II	RMC12.2K	Rear Face	0	9262	2	on	12.5	12.09	0.05	0.849	1.10	0.93
	WCDMA V	RMC12.2K	Rear Face	0	4233	1	on	17.5	17.28	0.09	0.849	1.05	0.89
	WCDMA V	RMC12.2K	Top Side	0	4233	1	on	17.5	17.28	0.07	0.499	1.05	0.52
	WCDMA V	RMC12.2K	Rear Face	1.9	4233	1	off	24.5	22.95	0.06	0.302	1.43	0.43
	WCDMA V	RMC12.2K	Top Side	1.9	4233	1	off	24.5	22.95	0.13	0.134	1.43	0.19
	WCDMA V	RMC12.2K	Right Side	0	4233	1	off	24.5	22.95	-0.06	0.139	1.43	0.20
2	WCDMA V	RMC12.2K	Rear Face	0	4132	1	on	17.5	16.90	0	0.943	1.15	**1.08**
	WCDMA V	RMC12.2K	Rear Face	0	4182	1	on	17.5	16.93	0.06	0.852	1.14	0.97
	WCDMA V	RMC12.2K	Rear Face	0	4132	2	on	17.5	16.90	0.03	0.934	1.15	1.07

Plot No.	Band	Mode	Test Position	Separation Distance (cm)	Ch.	RB#	RB Offset	Sample	Sensor	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaling Factor	Scaled SAR-1g (W/kg)
	LTE 5	QPSK10M	Rear Face	0	20525	1	24	1	on	16.0	15.76	0.03	0.626	1.06	0.66
	LTE 5	QPSK10M	Top Side	0	20525	1	24	1	on	16.0	15.76	0.03	0.403	1.06	0.43
	LTE 5	QPSK10M	Rear Face	1.9	20525	1	24	1	off	24.5	22.96	0.06	0.207	1.43	0.30
	LTE 5	QPSK10M	Top Side	1.9	20525	1	24	1	off	24.5	22.96	0.01	0.106	1.43	0.15
	LTE 5	QPSK10M	Right Side	0	20525	1	24	1	off	24.5	22.96	0.03	0.114	1.43	0.16
3	LTE 5	QPSK10M	Rear Face	0	20525	25	0	1	on	16.0	15.56	0.01	0.640	1.11	**0.71**
	LTE 5	QPSK10M	Top Side	0	20525	25	0	1	on	16.0	15.56	0.14	0.379	1.11	0.42
	LTE 5	QPSK10M	Rear Face	1.9	20525	25	0	1	off	23.5	21.87	-0.02	0.154	1.46	0.22
	LTE 5	QPSK10M	Top Side	1.9	20525	25	0	1	off	23.5	21.87	0.05	0.081	1.46	0.12
	LTE 5	QPSK10M	Right Side	0	20525	25	0	1	off	23.5	21.87	0.1	0.085	1.46	0.12
	LTE 5	QPSK10M	Rear Face	0	20525	25	0	2	on	16.0	15.56	0.07	0.622	1.11	0.69
	LTE 7	QPSK20M	Rear Face	0	20850	1	50	1	on	12.5	11.98	0	0.994	1.13	1.12
	LTE 7	QPSK20M	Top Side	0	20850	1	50	1	on	12.5	11.98	0.13	0.875	1.13	0.99
	LTE 7	QPSK20M	Rear Face	1.9	20850	1	50	1	off	23.5	23.12	0.08	0.584	1.09	0.64
	LTE 7	QPSK20M	Top Side	1.9	20850	1	50	1	off	23.5	23.12	0.02	0.943	1.09	1.03
	LTE 7	QPSK20M	Right Side	0	20850	1	50	1	off	23.5	23.12	0.06	0.043	1.09	0.05
	LTE 7	QPSK20M	Rear Face	0	21100	1	50	1	on	12.5	11.85	0.01	0.666	1.16	0.77
	LTE 7	QPSK20M	Rear Face	0	21350	1	50	1	on	12.5	11.89	-0.08	0.462	1.15	0.53
	LTE 7	QPSK20M	Top Side	0	21100	1	50	1	on	12.5	11.85	0.11	0.571	1.16	0.66
	LTE 7	QPSK20M	Top Side	0	21350	1	50	1	on	12.5	11.89	0.06	0.395	1.15	0.45
	LTE 7	QPSK20M	Rear Face	1.9	21100	1	50	1	off	23.5	22.91	0.04	0.580	1.15	0.66
	LTE 7	QPSK20M	Rear Face	1.9	21350	1	50	1	off	23.5	22.95	-0.01	0.626	1.14	0.71
	LTE 7	QPSK20M	Top Side	1.9	21100	1	50	1	off	23.5	22.91	0.02	0.913	1.15	1.05
	LTE 7	QPSK20M	Top Side	1.9	21350	1	50	1	off	23.5	22.95	-0.09	0.957	1.14	1.09
4	LTE 7	QPSK20M	Rear Face	0	20850	50	25	1	on	12.5	11.92	0.01	1.050	1.14	**1.20**
	LTE 7	QPSK20M	Top Side	0	20850	50	25	1	on	12.5	11.92	0.1	0.950	1.14	1.09
	LTE 7	QPSK20M	Rear Face	1.9	20850	50	25	1	off	22.5	22.37	0.03	0.453	1.03	0.47
	LTE 7	QPSK20M	Top Side	1.9	20850	50	25	1	off	22.5	22.37	0.15	0.920	1.03	0.95
	LTE 7	QPSK20M	Right Side	0	20850	50	25	1	off	22.5	22.37	0.04	0.032	1.03	0.03
	LTE 7	QPSK20M	Rear Face	0	21100	50	25	1	on	12.5	11.79	-0.14	0.861	1.18	1.01
	LTE 7	QPSK20M	Rear Face	0	21350	50	25	1	on	12.5	11.83	0.01	0.600	1.17	0.70
	LTE 7	QPSK20M	Top Side	0	21100	50	25	1	on	12.5	11.79	0.03	0.754	1.18	0.89
	LTE 7	QPSK20M	Top Side	0	21350	50	25	1	on	12.5	11.83	0.01	0.527	1.17	0.61
	LTE 7	QPSK20M	Top Side	1.9	21100	50	25	1	off	22.5	22.16	-0.12	0.912	1.08	0.99
	LTE 7	QPSK20M	Top Side	1.9	21350	50	25	1	off	22.5	22.20	0	1.010	1.07	1.08

Plot No.	Band	Mode	Test Position	Separation Distance (cm)	Ch.	RB#	RB Offset	Sample	Sensor	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaling Factor	Scaled SAR-1g (W/kg)
	LTE 7	QPSK20M	Rear Face	0	20850	50	25	2	on	12.5	11.92	0.06	1.010	1.14	1.15
	LTE 7	QPSK20M	Rear Face	0	20850	100	0	1	on	12.5	11.91	-0.01	0.998	1.15	1.14
	LTE 7	QPSK20M	Top Side	0	20850	100	0	1	on	12.5	11.91	0.06	0.851	1.15	0.97
	LTE 7	QPSK20M	Top Side	1.9	20850	100	0	1	off	22.5	21.88	0.02	0.775	1.15	0.89
	LTE 26	QPSK15M	Rear Face	0	26965	1	37	1	on	16.0	15.50	0.06	0.567	1.12	0.64
	LTE 26	QPSK15M	Top Side	0	26965	1	37	1	on	16.0	15.50	0.06	0.359	1.12	0.40
	LTE 26	QPSK15M	Rear Face	1.9	26965	1	37	1	off	24.5	22.88	0.07	0.201	1.45	0.29
	LTE 26	QPSK15M	Top Side	1.9	26965	1	37	1	off	24.5	22.88	0.01	0.109	1.45	0.16
	LTE 26	QPSK15M	Right Side	0	26965	1	37	1	off	24.5	22.88	-0.04	0.107	1.45	0.16
5	LTE 26	QPSK15M	Rear Face	0	26965	36	0	1	on	16.0	15.35	0.04	0.617	1.16	**0.72**
	LTE 26	QPSK15M	Top Side	0	26965	36	0	1	on	16.0	15.35	-0.17	0.336	1.16	0.39
	LTE 26	QPSK15M	Rear Face	1.9	26965	36	0	1	off	23.5	21.98	0.02	0.158	1.42	0.22
	LTE 26	QPSK15M	Top Side	1.9	26965	36	0	1	off	23.5	21.98	0.03	0.083	1.42	0.12
	LTE 26	QPSK15M	Right Side	0	26965	36	0	1	off	23.5	21.98	0.08	0.087	1.42	0.12
	LTE 26	QPSK15M	Rear Face	0	26965	36	0	2	on	16.0	15.35	0.04	0.604	1.16	0.70
	LTE 38	QPSK20M	Rear Face	0	37850	1	50	1	on	12.5	11.95	0	0.412	1.14	0.47
	LTE 38	QPSK20M	Top Side	0	37850	1	50	1	on	12.5	11.95	0.09	0.398	1.14	0.45
	LTE 38	QPSK20M	Rear Face	1.9	37850	1	50	1	off	24.5	23.52	0.07	0.583	1.25	0.73
	LTE 38	QPSK20M	Top Side	1.9	37850	1	50	1	off	24.5	23.52	0.08	0.794	1.25	0.99
	LTE 38	QPSK20M	Right Side	0	37850	1	50	1	off	24.5	23.52	-0.03	0.026	1.25	0.03
6	LTE 38	QPSK20M	Top Side	1.9	38000	1	50	1	off	24.5	23.22	0.08	0.801	1.34	**1.08**
	LTE 38	QPSK20M	Top Side	1.9	38150	1	50	1	off	24.5	23.38	0.01	0.788	1.29	1.02
	LTE 38	QPSK20M	Top Side	1.9	38000	1	50	2	on	24.5	23.22	0.01	0.796	1.34	1.07
	LTE 38	QPSK20M	Rear Face	0	37850	50	25	1	on	12.5	11.86	0.09	0.533	1.16	0.62
	LTE 38	QPSK20M	Top Side	0	37850	50	25	1	on	12.5	11.86	0.06	0.508	1.16	0.59
	LTE 38	QPSK20M	Rear Face	1.9	37850	50	25	1	off	23.5	22.48	-0.02	0.450	1.26	0.57
	LTE 38	QPSK20M	Top Side	1.9	37850	50	25	1	off	23.5	22.48	-0.01	0.637	1.26	0.81
	LTE 38	QPSK20M	Right Side	0	37850	50	25	1	off	23.5	22.48	-0.09	0.020	1.26	0.03
	LTE 38	QPSK20M	Top Side	1.9	37850	100	0	1	off	23.5	22.39	0.05	0.644	1.29	0.83
	LTE 41	QPSK20M	Rear Face	0	40340	1	50	1	on	12.5	12.18	0	0.565	1.08	0.61
	LTE 41	QPSK20M	Top Side	0	40340	1	50	1	on	12.5	12.18	0.03	0.573	1.08	0.62
	LTE 41	QPSK20M	Rear Face	1.9	40340	1	50	1	off	24.5	23.44	0.11	0.545	1.28	0.70
	LTE 41	QPSK20M	Top Side	1.9	40340	1	50	1	off	24.5	23.44	0.05	0.759	1.28	0.97
	LTE 41	QPSK20M	Right Side	0	40340	1	50	1	off	24.5	23.44	0.08	0.027	1.28	0.03
	LTE 41	QPSK20M	Top Side	1.9	40740	1	50	1	off	24.5	23.07	0.06	0.717	1.39	1.00
7	LTE 41	QPSK20M	Top Side	1.9	41140	1	50	1	off	24.5	23.11	0.03	0.756	1.38	**1.04**
	LTE 41	QPSK20M	Top Side	1.9	41140	1	50	2	on	24.5	23.11	0.08	0.749	1.38	1.03
	LTE 41	QPSK20M	Rear Face	0	40340	50	25	1	on	12.5	11.95	0	0.538	1.14	0.61
	LTE 41	QPSK20M	Top Side	0	40340	50	25	1	on	12.5	11.95	0.19	0.561	1.14	0.64
	LTE 41	QPSK20M	Rear Face	1.9	40340	50	25	1	off	23.5	22.49	0.13	0.449	1.26	0.57
	LTE 41	QPSK20M	Top Side	1.9	40340	50	25	1	off	23.5	22.49	-0.02	0.605	1.26	0.76
	LTE 41	QPSK20M	Right Side	0	40340	50	25	1	off	23.5	22.49	0.07	0.019	1.26	0.02
	LTE 41	QPSK20M	Top Side	1.9	40340	100	0	1	off	23.5	22.51	0.07	0.611	1.26	0.77

Plot No.	Band	Mode	Test Position	Separation Distance (cm)	Ch.	Sample	Sensor	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Power Drift (dB)	Measured SAR-1g (W/kg)	Duty Cycle	Duty Cycle Factor	Scaling Factor	Scaled SAR-1g (W/kg)
	2.4G WLAN	802.11b	Rear Face	0	6	1	on	14.5	14.15	0.03	0.87	97.7	1.02	1.08	0.97
	2.4G WLAN	802.11b	Top Side	0	6	1	on	14.5	14.15	0.02	0.270	97.7	1.02	1.08	0.30
	2.4G WLAN	802.11b	Rear Face	0.9	1	1	off	17.0	16.38	0.1	0.184	97.7	1.02	1.15	0.22
	2.4G WLAN	802.11b	Top Side	0.9	1	1	off	17.0	16.38	0.02	0.110	97.7	1.02	1.15	0.13
	2.4G WLAN	802.11b	Rear Face	1.9	1	1	off	17.0	16.38	-0.13	0.053	97.7	1.02	1.15	0.06
	2.4G WLAN	802.11b	Top Side	1.9	1	1	off	17.0	16.38	0	0.043	97.7	1.02	1.15	0.05
8	2.4G WLAN	802.11b	Rear Face	0	1	1	on	14.5	14.12	0.01	1.02	97.7	1.02	1.09	**1.14**
	2.4G WLAN	802.11b	Rear Face	0	1	2	on	14.5	14.12	0.08	0.997	97.7	1.02	1.09	1.11
9	5G WLAN	802.11a	Rear Face	0	52	1	off	14.5	14.26	0.02	1.060	87.3	1.15	1.06	**1.28**
	5G WLAN	802.11a	Top Side	0	52	1	off	14.5	14.26	0.06	0.384	87.3	1.15	1.06	0.46
	5G WLAN	802.11a	Rear Face	0.9	52	1	off	14.5	14.26	-0.04	0.231	87.3	1.15	1.06	0.28
	5G WLAN	802.11a	Top Side	0.9	52	1	off	14.5	14.26	-0.01	0.122	87.3	1.15	1.06	0.15
	5G WLAN	802.11a	Rear Face	1.9	52	1	off	14.5	14.26	0	0.098	87.3	1.15	1.06	0.12
	5G WLAN	802.11a	Top Side	1.9	52	1	off	14.5	14.26	-0.05	0.020	87.3	1.15	1.06	0.02
	5G WLAN	802.11a	Rear Face	0	64	1	off	14.5	14.08	0.05	0.960	87.3	1.15	1.10	1.21
	5G WLAN	802.11a	Rear Face	0	60	1	off	14.5	14.06	-0.1	0.931	87.3	1.15	1.11	1.18
	5G WLAN	802.11a	Rear Face	0	52	2	off	14.5	14.26	-0.01	1.050	87.3	1.15	1.06	1.27
	5G WLAN	802.11a	Rear Face	0	140	1	on	12.0	11.67	0.01	0.918	87.3	1.15	1.08	1.13
	5G WLAN	802.11a	Top Side	0	140	1	on	12.0	11.67	-0.03	0.220	87.3	1.15	1.08	0.27
	5G WLAN	802.11a	Rear Face	0.9	144	1	off	15.0	14.12	-0.05	0.194	87.3	1.15	1.22	0.27
	5G WLAN	802.11a	Top Side	0.9	144	1	off	15.0	14.12	0.02	0.094	87.3	1.15	1.22	0.13
	5G WLAN	802.11a	Rear Face	1.9	144	1	off	15.0	14.12	0.06	0.078	87.3	1.15	1.22	0.11
	5G WLAN	802.11a	Top Side	1.9	144	1	off	15.0	14.12	0.08	0.025	87.3	1.15	1.22	0.04
10	5G WLAN	802.11a	Rear Face	0	144	1	on	12.0	11.62	0.07	1.030	87.3	1.15	1.09	**1.29**
	5G WLAN	802.11a	Rear Face	0	116	1	on	12.0	11.56	-0.06	0.927	87.3	1.15	1.11	1.18
	5G WLAN	802.11a	Rear Face	0	144	2	on	12.0	11.62	0.02	0.931	87.3	1.15	1.09	1.16
11	5G WLAN	802.11a	Rear Face	0	149	1	on	12.5	11.92	0.03	0.974	87.3	1.15	1.14	**1.28**
	5G WLAN	802.11a	Top Side	0	149	1	on	12.5	11.92	0.02	0.180	87.3	1.15	1.14	0.24
	5G WLAN	802.11a	Rear Face	0.9	161	1	off	15.0	14.21	-0.01	0.216	87.3	1.15	1.20	0.30
	5G WLAN	802.11a	Top Side	0.9	161	1	off	15.0	14.21	0.04	0.026	87.3	1.15	1.20	0.04
	5G WLAN	802.11a	Rear Face	1.9	161	1	off	15.0	14.21	-0.02	0.073	87.3	1.15	1.20	0.10
	5G WLAN	802.11a	Top Side	1.9	161	1	off	15.0	14.21	-0.04	0.016	87.3	1.15	1.20	0.02
	5G WLAN	802.11a	Rear Face	0	157	1	on	12.5	11.85	0.09	0.851	87.3	1.15	1.16	1.13
	5G WLAN	802.11a	Rear Face	0	149	2	on	12.5	11.92	0	0.810	87.3	1.15	1.14	1.06
12	BT	GFSK	Rear Face	0	39	1	off	11.0	10.43	0	0.540	N/A	N/A	1.14	**0.62**
	BT	GFSK	Top Side	0	39	1	off	11.0	10.43	0.07	0.156	N/A	N/A	1.14	0.18
	BT	GFSK	Rear Face	1.9	39	1	off	11.0	10.43	-0.06	0.019	N/A	N/A	1.14	0.02
	BT	GFSK	Top Side	1.9	39	1	off	11.0	10.43	0.06	0.012	N/A	N/A	1.14	0.01
	BT	GFSK	Rear Face	0	39	2	off	11.0	10.43	0.07	0.532	N/A	N/A	1.14	0.61

4.6.3 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 ≤ 1.45 W/kg and the ratio of these highest SAR values, i.e., largest divided by smallest value, is ≤ 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 >= 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 >= 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 >= 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
WCDMA II	Rear Face	9262	0.860	0.823	1.04	N/A	N/A	N/A	N/A
WCDMA V	Rear Face	4132	0.943	0.917	1.03	N/A	N/A	N/A	N/A
LTE 7	Rear Face	20850	1.050	1.010	1.04	N/A	N/A	N/A	N/A
WLAN2.4G	Rear Face	1	1.020	0.993	1.03	N/A	N/A	N/A	N/A
WLAN5G	Rear Face	52	1.060	1.030	1.03	N/A	N/A	N/A	N/A
WLAN5G	Rear Face	144	1.030	0.996	1.03	N/A	N/A	N/A	N/A
WLAN5G	Rear Face	149	0.974	0.953	1.02	N/A	N/A	N/A	N/A

4.6.4 Simultaneous Multi-band Transmission Evaluation

<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_{1g} of all simultaneously transmitting antennas in an operating mode and exposure condition combination is within the SAR limit (SAR_{1g} 1.6 W/kg), the simultaneous transmission SAR is not required. When the sum of SAR_{1g} is greater than the SAR limit (SAR_{1g} 1.6 W/kg), SAR test exclusion is determined by the SPLSR.

WWAN Band	Exposure Position	1	2	3	4	1+2 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)	1+4 Summed 1g SAR (W/kg)
		WWAN	2.4GHz WLAN	5GHz WLAN	Bluetooth			
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)			
WCDMA II	Rear Face at 19 mm	0.497	0.063	0.119	0.022	0.559	0.615	0.519
	Top Side at 19 mm	0.474	0.051	0.035	0.014	0.525	0.510	0.489
	Rear Face at 0mm	0.945	1.139	1.288	0.616	**2.085**	**2.233**	1.561
	Top Side at 0 mm	0.149	0.300	0.465	0.178	0.448	0.614	0.327
	Right Side at 0mm	0.330	N/A	N/A	N/A	0.330	0.330	0.330
WCDMA V	Rear Face at 19 mm	0.432	0.063	0.119	0.022	0.494	0.550	0.453
	Top Side at 19 mm	0.191	0.051	0.035	0.014	0.242	0.227	0.206
	Rear Face at 0mm	1.083	1.139	1.288	0.616	**2.222**	**2.370**	**1.698**
	Top Side at 0 mm	0.525	0.300	0.465	0.178	0.824	0.990	0.703
	Right Side at 0mm	0.199	N/A	N/A	N/A	0.199	0.199	0.199
LTE Band 5	Rear Face at 19 mm	0.295	0.063	0.119	0.022	0.358	0.414	0.317
	Top Side at 19 mm	0.151	0.051	0.035	0.014	0.202	0.187	0.165
	Rear Face at 0mm	0.708	1.139	1.288	0.616	**1.848**	**1.996**	1.324
	Top Side at 0 mm	0.426	0.300	0.465	0.178	0.725	0.891	0.604
	Right Side at 0mm	0.163	N/A	N/A	N/A	0.163	0.163	0.163
LTE Band 7	Rear Face at 19 mm	0.711	0.063	0.119	0.022	0.773	0.829	0.732
	Top Side at 19 mm	1.086	0.051	0.035	0.014	1.137	1.122	1.100
	Rear Face at 0mm	1.200	1.139	1.288	0.616	**2.339**	**2.488**	**1.816**
	Top Side at 0 mm	1.086	0.300	0.465	0.178	1.385	1.551	1.264
	Right Side at 0mm	0.047	N/A	N/A	N/A	0.047	0.047	0.047
LTE Band 26	Rear Face at 19 mm	0.292	0.063	0.119	0.022	0.354	0.411	0.314
	Top Side at 19 mm	0.158	0.051	0.035	0.014	0.209	0.194	0.172
	Rear Face at 0mm	0.717	1.139	1.288	0.616	**1.856**	**2.004**	1.332
	Top Side at 0 mm	0.403	0.300	0.465	0.178	0.702	0.868	0.581
	Right Side at 0mm	0.155	N/A	N/A	N/A	0.155	0.155	0.155
LTE Band 38	Rear Face at 19 mm	0.731	0.063	0.119	0.022	0.793	0.849	0.752
	Top Side at 19 mm	1.076	0.051	0.035	0.014	1.126	1.111	1.090
	Rear Face at 0mm	0.618	1.139	1.288	0.616	**1.757**	**1.905**	1.233
	Top Side at 0 mm	0.589	0.300	0.465	0.178	0.888	1.054	0.767
	Right Side at 0mm	0.033	N/A	N/A	N/A	0.033	0.033	0.033
LTE Band 41	Rear Face at 19 mm	0.696	0.063	0.119	0.022	0.758	0.814	0.717
	Top Side at 19 mm	1.041	0.051	0.035	0.014	1.092	1.077	1.055
	Rear Face at 0mm	0.611	1.139	1.288	0.616	**1.750**	**1.898**	1.226
	Top Side at 0 mm	0.637	0.300	0.465	0.178	0.936	1.102	0.815
	Right Side at 0mm	0.035	N/A	N/A	N/A	0.035	0.035	0.035

<SAR to Peak Location Separation Ratio Analysis>

The simultaneous transmitting antennas in each operating mode and exposure condition combination are considered one pair at a time to determine the SPLSR. When SAR is measured for both antennas in the pair, the peak location separation distance is computed by the following formula.

$$\text{Peak Location Separation Distance} = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2 + (z_1 - z_2)^2}$$

Where (x_1, y_1, z_1) and (x_2, y_2, z_2) are the coordinates of the extrapolated peak SAR locations in the area or zoom scans.

When standalone test exclusion applies, SAR is estimated; the peak location is assumed to be at the feed-point or geometric center of the antenna. Due to curvatures on the SAM phantom, when SAR is estimated for one of the antennas in an antenna pair, the measured peak SAR location will be translated onto the test device to determine the peak location separation for the antenna pair.

The SPLSR is determined by the following formula.

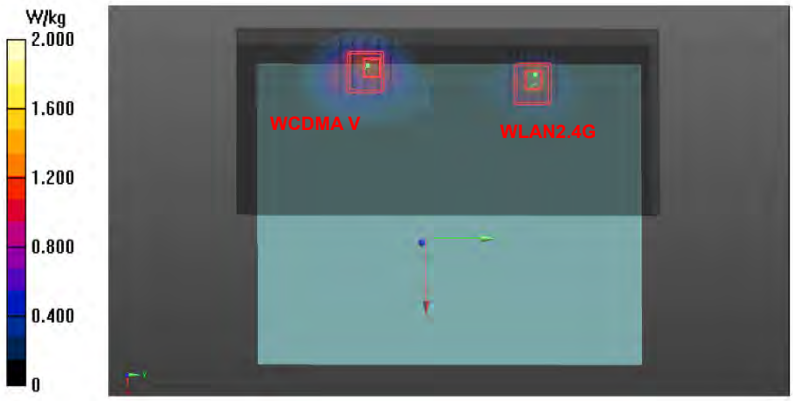
$$\text{SPLSR} = \frac{(\text{SAR}_1 + \text{SAR}_2)^{1.5}}{R_i}$$

Where SAR_1 and SAR_2 are the highest reported or estimated SAR for each antenna in the pair, and R_i is the separation distance between the peak SAR locations for the antenna pair in mm.

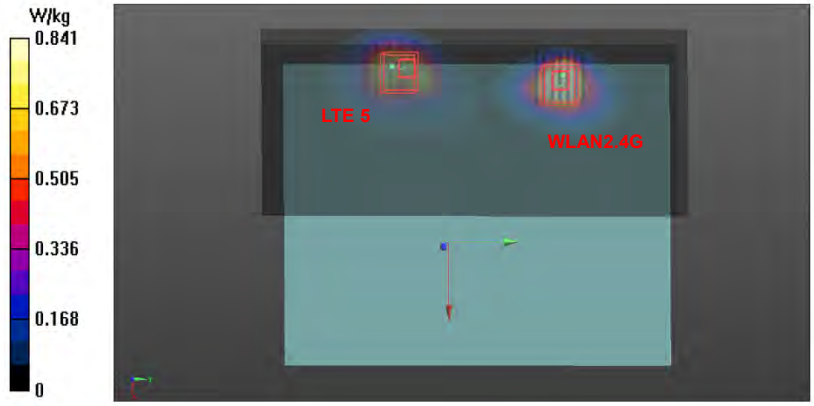
When the SPLSR is <= 0.04, the simultaneous transmission SAR is not required. Otherwise, the enlarged zoom scan and volume scan post-processing procedures will be performed.

Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
WCDMA II	Rear Face	0.95	0	-0.0735	-0.0645	-0.181	120.3	2.08	0.03	Not required
WLAN2.4G		1.14	0	-0.0742	0.0558	-0.181				

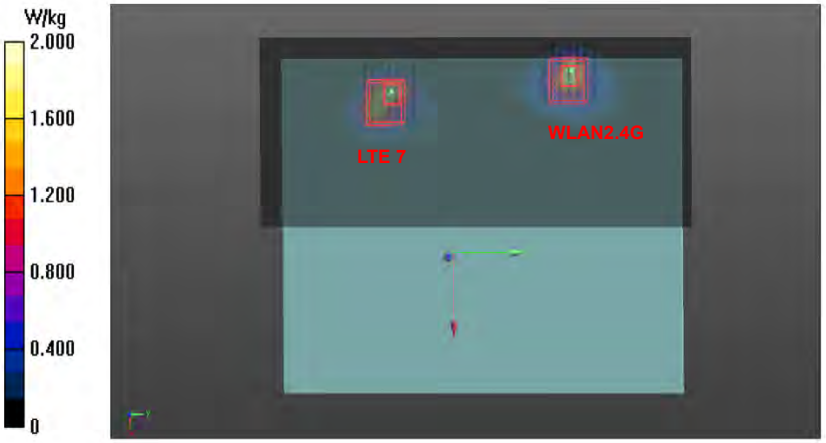
Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
WCDMA V	Rear Face	1.08	0	-0.084	-0.051	-0.181	107.2	2.22	0.03	Not required
WLAN2.4G		1.14	0	-0.0742	0.0558	-0.181				



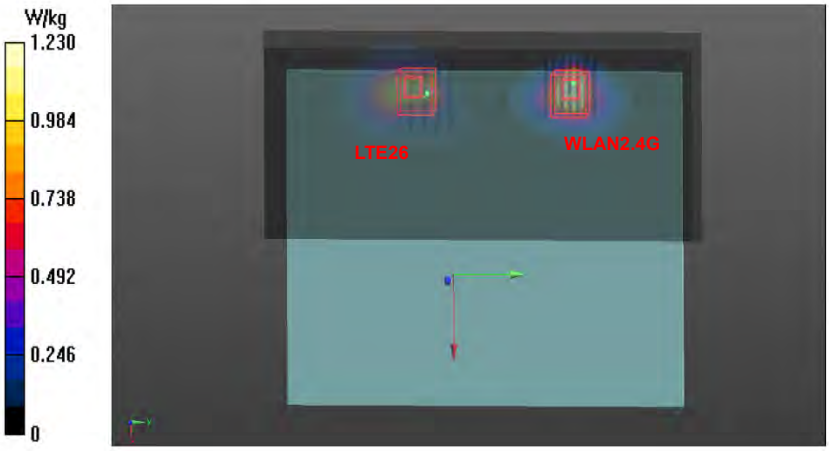
Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
LTE 5	Rear Face	0.71	0	-0.084	-0.0445	-0.182	100.8	1.85	0.02	Not required
WLAN2.4G		1.14	0	-0.0742	0.0558	-0.181				



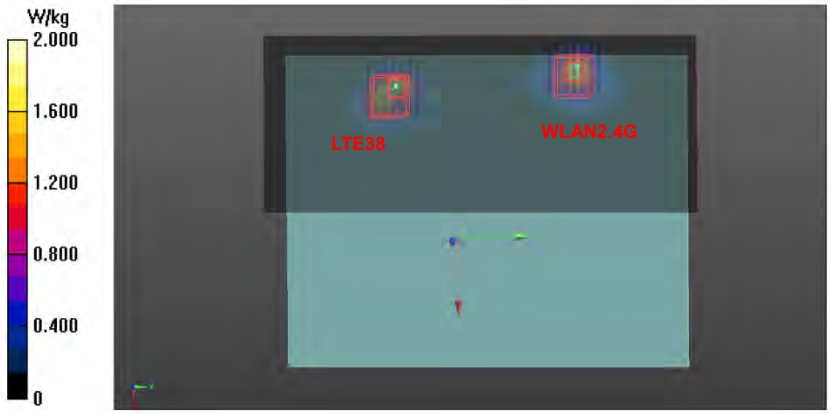
Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
LTE 7	Rear Face	1.20	0	-0.0684	-0.0546	-0.181	110.6	2.34	0.03	Not required
WLAN2.4G		1.14	0	-0.0742	0.0558	-0.181				



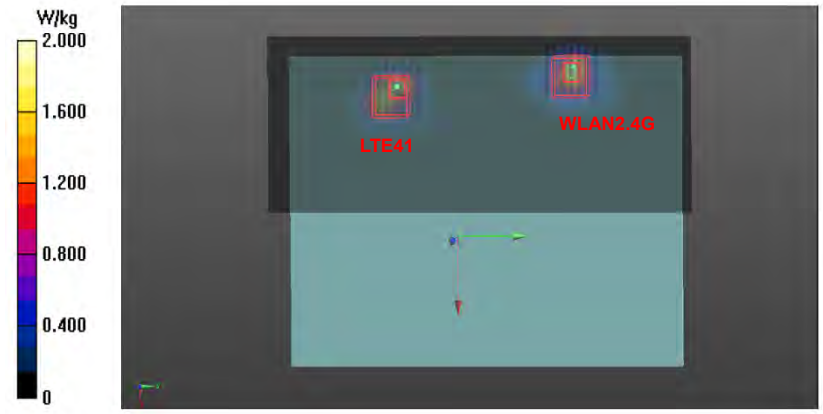
Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
LTE 26	Rear Face	0.72	0	-0.0735	-0.0345	-0.182	90.3	1.86	0.03	Not required
WLAN2.4G		1.14	0	-0.0742	0.0558	-0.181				



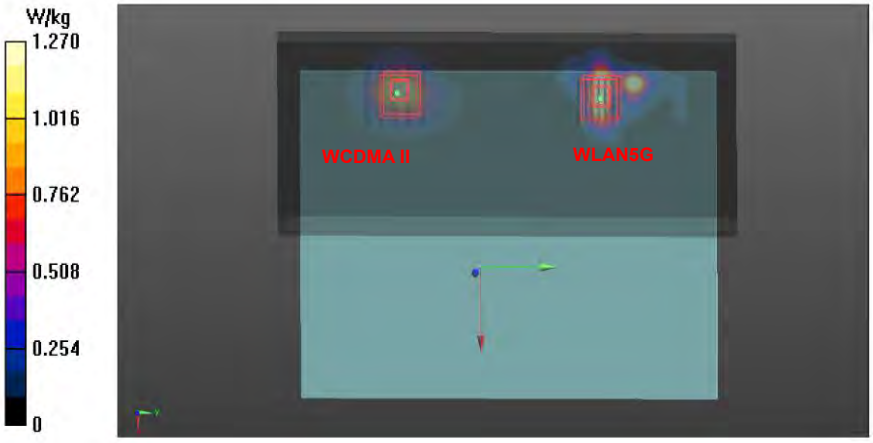
Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
LTE38	Rear Face	0.62	0	-0.0636	-0.0702	-0.181	126.4	1.76	0.02	Not required
WLAN2.4G		1.14	0	-0.0742	0.0558	-0.181				



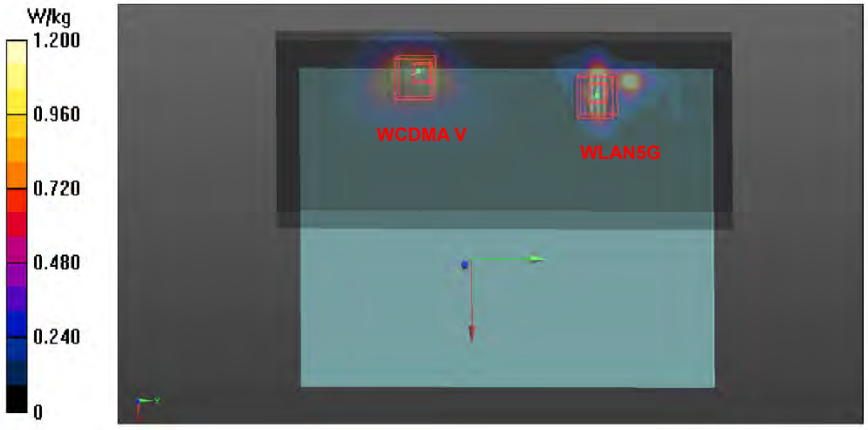
Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
LTE41	Rear Face	0.61	0	-0.0636	-0.0702	-0.181	126.4	1.75	0.02	Not required
WLAN2.4G		1.14	0	-0.0742	0.0558	-0.181				



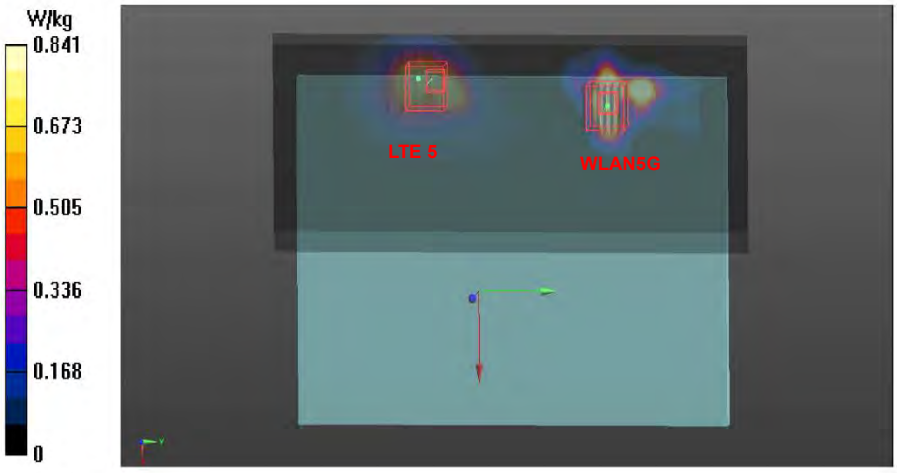
Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
WCDMA II	Rear Face	0.95	0	-0.0735	-0.0645	-0.181	123.6	2.23	0.03	Not required
WLAN5G		1.29	0	-0.07	0.059	-0.18				



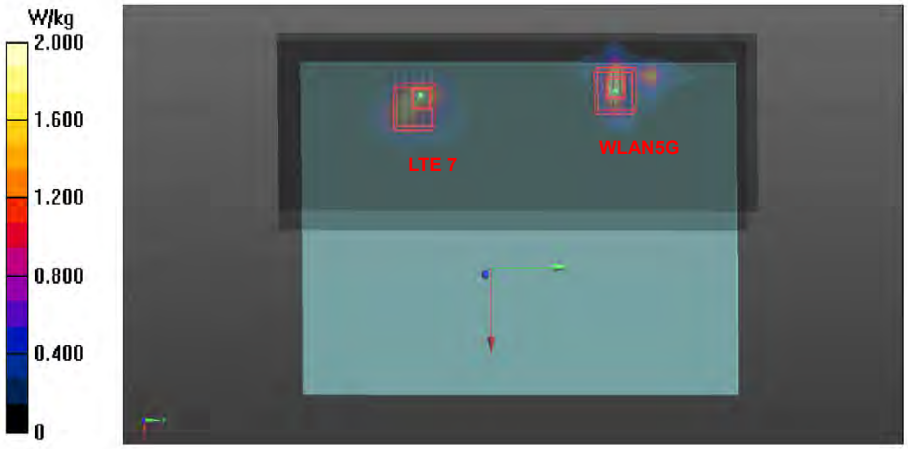
Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
WCDMA V	Rear Face	1.08	0	-0.084	-0.051	-0.181	110.9	2.37	0.03	Not required
WLAN5G		1.29	0	-0.07	0.059	-0.18				



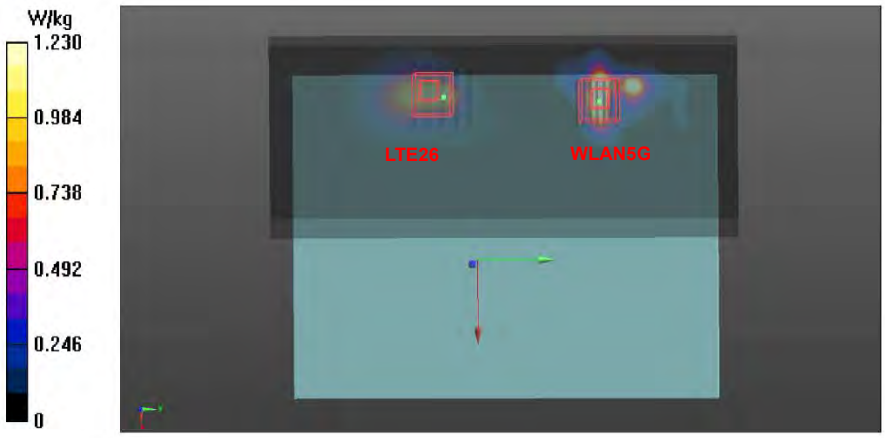
Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
LTE 5	Rear Face	0.71	0	-0.084	-0.0445	-0.182	104.5	2.00	0.03	Not required
WLAN5G		1.29	0	-0.07	0.059	-0.18				



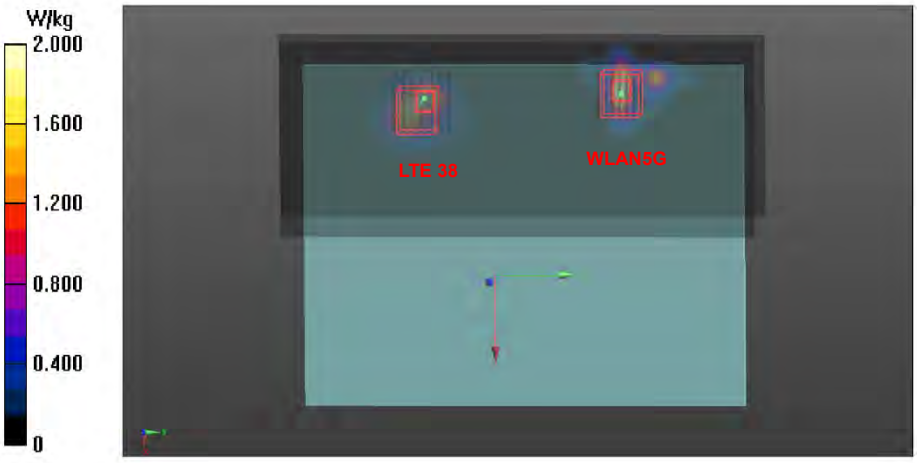
Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
LTE 7	Rear Face	1.20	0	-0.0684	-0.0546	-0.181	113.6	2.49	0.03	Not required
WLAN5G		1.29	0	-0.07	0.059	-0.18				



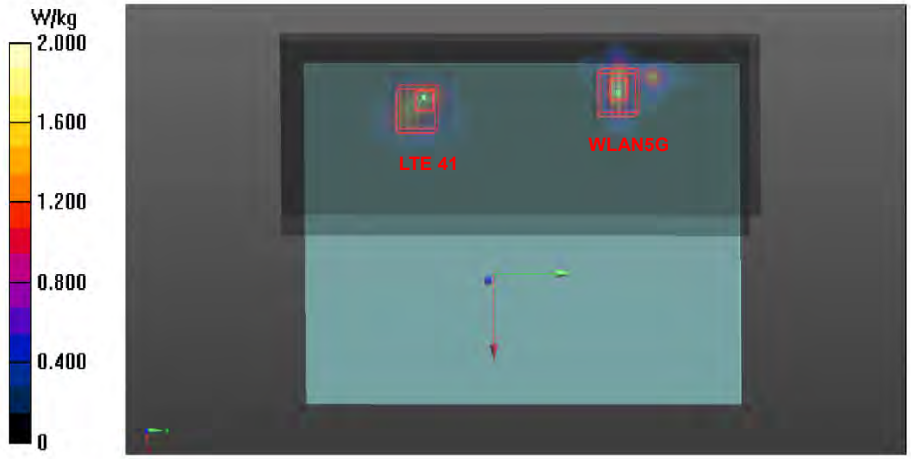
Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
LTE 26	Rear Face	0.72	0	-0.0735	-0.0345	-0.182	93.6	2.00	0.03	Not required
WLAN5G		1.29	0	-0.07	0.059	-0.18				



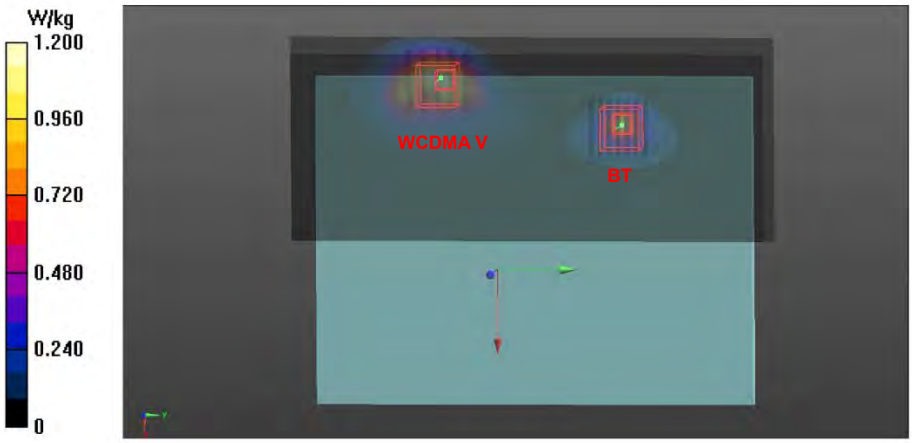
Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
LTE 38	Rear Face	0.62	0	-0.0636	-0.0702	-0.181	129.4	1.91	0.02	Not required
WLAN5G		1.29	0	-0.07	0.059	-0.18				



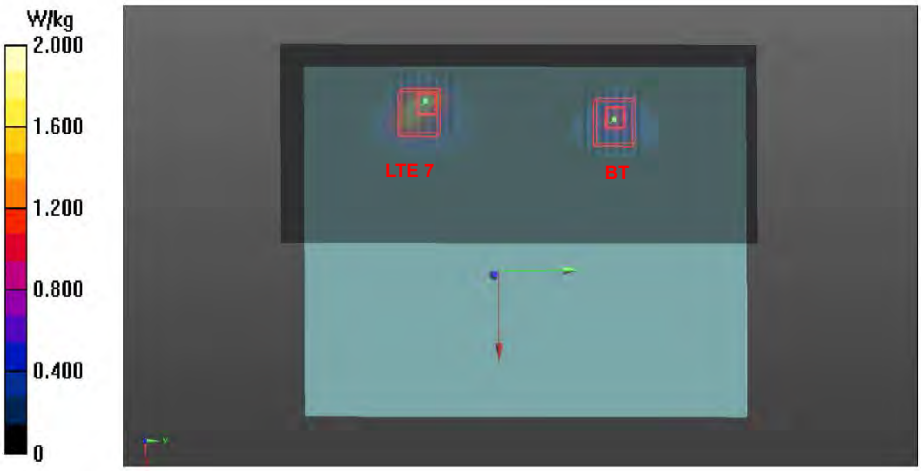
Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
LTE 41	Rear Face	0.61	0	-0.0636	-0.0702	-0.181	129.4	1.90	0.02	Not required
WLAN5G		1.29	0	-0.07	0.059	-0.18				



Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
WCDMA V	Rear Face	1.08	0	-0.084	-0.051	-0.181	103.6	1.70	0.02	Not required
BT		0.62	0	-0.06	0.0498	-0.181				



Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
LTE 7	Rear Face	1.20	0	-0.0684	-0.0546	-0.181	104.7	1.82	0.02	Not required
BT		0.62	0	-0.06	0.0498	-0.181				



Test Engineer : Lily Zhao, and Dennis Ye

5. Calibration of Test Equipment

Equipment	Manufacturer	Model	SN	Cal. Date	Cal. Interval
System Validation Dipole	SPEAG	D835V2	4d139	Aug. 28, 2020	1 Year
System Validation Dipole	SPEAG	D1900V2	5d159	Aug. 27, 2020	1 Year
System Validation Dipole	SPEAG	D2450V2	893	Aug. 27, 2020	1 Year
System Validation Dipole	SPEAG	D2600V2	1110	Aug. 29, 2020	1 Year
System Validation Dipole	SPEAG	D5GHzV2	1133	Aug. 20, 2020	1 Year
Dosimetric E-Field Probe	SPEAG	EX3DV4	3898	Jun. 26, 2020	1 Year
Data Acquisition Electronics	SPEAG	DAE4	1341	Aug. 26, 2020	1 Year
Radio Communication Analyzer	ANRITSU	MT8820C	6201300717	Jun. 03, 2020	1 Year
Wireless Communication Test Set	Agilent	E5515C	MY50260600	Jun. 03, 2020	1 Year
ENA Series Network Analyzer	Agilent	E5071C	MY46214638	Jun. 03, 2020	1 Year
Spectrum Analyzer	KEYSIGHT	N9010A	MY54510355	Jul. 08, 2020	1Year
MXG Analog Signal Generator	KEYSIGHT	N5183A	MY50143024	Mar. 26, 2020	1 Year
Power Meter	Agilent	N1914A	MY52180044	Oct. 09, 2020	2 Years
Power Sensor	Agilent	E9304A H18	MY52050011	Jan. 20, 2020	1 Year
Power Meter	ANRITSU	ML2495A	1506002	Feb. 25, 2020	1 Year
Power Sensor	ANRITSU	MA2411B	1339353	Feb. 25, 2020	1 Year
Temp. & Humi. Recorder	CLOCK	HTC-1	157248	Jun. 07, 2020	1 Year
Electronic Thermometer	YONGFA	YF-160A	120100323	Jun. 07, 2020	1 Year
Coupler	Woken	0110A056020-10	COM27RW1A3	Jul. 01, 2020	1 Year

6. Measurement Uncertainty

Source of Uncertainty	Tolerance (± %)	Probability Distribution	Divisor	Ci (1g)	Ci (10g)	Standard Uncertainty (± %, 1g)	Standard Uncertainty (± %, 10g)	Vi
Measurement System								
Probe Calibration	6.0	Normal	1	1	1	6.0	6.0	∞
Axial Isotropy	4.7	Rectangular	√3	0.707	0.707	1.9	1.9	∞
Hemispherical Isotropy	9.6	Rectangular	√3	0.707	0.707	3.9	3.9	∞
Boundary Effect	1.0	Rectangular	√3	1	1	0.6	0.6	∞
Linearity	4.7	Rectangular	√3	1	1	2.7	2.7	∞
System Detection Limits	0.25	Rectangular	√3	1	1	0.14	0.14	∞
Readout Electronics	0.3	Normal	1	1	1	0.3	0.3	∞
Response Time	0.0	Rectangular	√3	1	1	0.0	0.0	∞
Integration Time	1.7	Rectangular	√3	1	1	1.0	1.0	∞
RF Ambient Conditions - Noise	3.0	Rectangular	√3	1	1	1.7	1.7	∞
RF Ambient Conditions - Reflections	3.0	Rectangular	√3	1	1	1.7	1.7	∞
Probe Positioner Mechanical Tolerance	0.4	Rectangular	√3	1	1	0.2	0.2	∞
Probe Positioning with Respect to Phantom Shell	2.9	Rectangular	√3	1	1	1.7	1.7	∞
Extrapolation, interpolation, and integration algorithms for max. SAR evaluation	2.0	Rectangular	√3	1	1	1.2	1.2	∞
Test Sample Related								
Test Sample Positioning	1.5 / 0.7	Normal	1	1	1	1.5	0.7	32
Device Holder Uncertainty	4.2 / 1.8	Normal	1	1	1	4.2	1.8	32
Output Power Variation - SAR Drift Measurement	5.0	Rectangular	√3	1	1	2.9	2.9	∞
Phantom and Tissue Parameters								
Phantom Uncertainty (Shape and Thickness Tolerances)	7.2	Rectangular	√3	1	1	4.2	4.2	∞
Liquid Conductivity - Deviation from Target Values	5.0	Rectangular	√3	0.64	0.43	1.8	1.2	∞
Liquid Conductivity - Measurement Uncertainty	1.0	Normal	1	0.64	0.43	0.6	0.4	25
Liquid Permittivity - Deviation from Target Values	5.0	Rectangular	√3	0.60	0.49	1.7	1.4	∞
Liquid Permittivity - Measurement Uncertainty	0.5	Normal	1	0.60	0.49	0.3	0.2	25
Combined Standard Uncertainty						± 11.2 %	± 10.4 %	
Expanded Uncertainty (K=2)						**± 22.4 %**	**± 20.8 %**	

Uncertainty budget for frequency range 300 MHz to 3 GHz

Source of Uncertainty	Tolerance (± %)	Probability Distribution	Divisor	Ci (1g)	Ci (10g)	Standard Uncertainty (± %, 1g)	Standard Uncertainty (± %, 10g)	Vi
Measurement System								
Probe Calibration	6.55	Normal	1	1	1	6.55	6.55	∞
Axial Isotropy	4.7	Rectangular	√3	0.707	0.707	1.9	1.9	∞
Hemispherical Isotropy	9.6	Rectangular	√3	0.707	0.707	3.9	3.9	∞
Boundary Effect	2.0	Rectangular	√3	1	1	1.2	1.2	∞
Linearity	4.7	Rectangular	√3	1	1	2.7	2.7	∞
System Detection Limits	0.25	Rectangular	√3	1	1	0.14	0.14	∞
Readout Electronics	0.3	Normal	1	1	1	0.3	0.3	∞
Response Time	0.0	Rectangular	√3	1	1	0.0	0.0	∞
Integration Time	1.7	Rectangular	√3	1	1	1.0	1.0	∞
RF Ambient Conditions - Noise	3.0	Rectangular	√3	1	1	1.7	1.7	∞
RF Ambient Conditions - Reflections	3.0	Rectangular	√3	1	1	1.7	1.7	∞
Probe Positioner Mechanical Tolerance	0.4	Rectangular	√3	1	1	0.2	0.2	∞
Probe Positioning with Respect to Phantom Shell	6.7	Rectangular	√3	1	1	3.9	3.9	∞
Extrapolation, interpolation, and integration algorithms for max. SAR evaluation	4.0	Rectangular	√3	1	1	2.3	2.3	∞
Test Sample Related								
Test Sample Positioning	1.5 / 0.7	Normal	1	1	1	1.5	0.7	32
Device Holder Uncertainty	4.2 / 1.8	Normal	1	1	1	4.2	1.8	32
Output Power Variation - SAR Drift Measurement	5.0	Rectangular	√3	1	1	2.9	2.9	∞
Phantom and Tissue Parameters								
Phantom Uncertainty (Shape and Thickness Tolerances)	7.6	Rectangular	√3	1	1	4.4	4.4	∞
Liquid Conductivity - Deviation from Target Values	5.0	Rectangular	√3	0.64	0.43	1.8	1.2	∞
Liquid Conductivity - Measurement Uncertainty	1.0	Normal	1	0.64	0.43	0.6	0.4	25
Liquid Permittivity - Deviation from Target Values	5.0	Rectangular	√3	0.60	0.49	1.7	1.4	∞
Liquid Permittivity - Measurement Uncertainty	0.5	Normal	1	0.60	0.49	0.3	0.2	25
Combined Standard Uncertainty						± 12.3 %	± 11.5 %	
Expanded Uncertainty (K=2)						**± 24.6 %**	**± 23.0 %**	

Uncertainty budget for frequency range 3 GHz to 6 GHz

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

Email: customerservice.SW@cn.bureauveritas.com
Web Site: 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_HSL835_1003

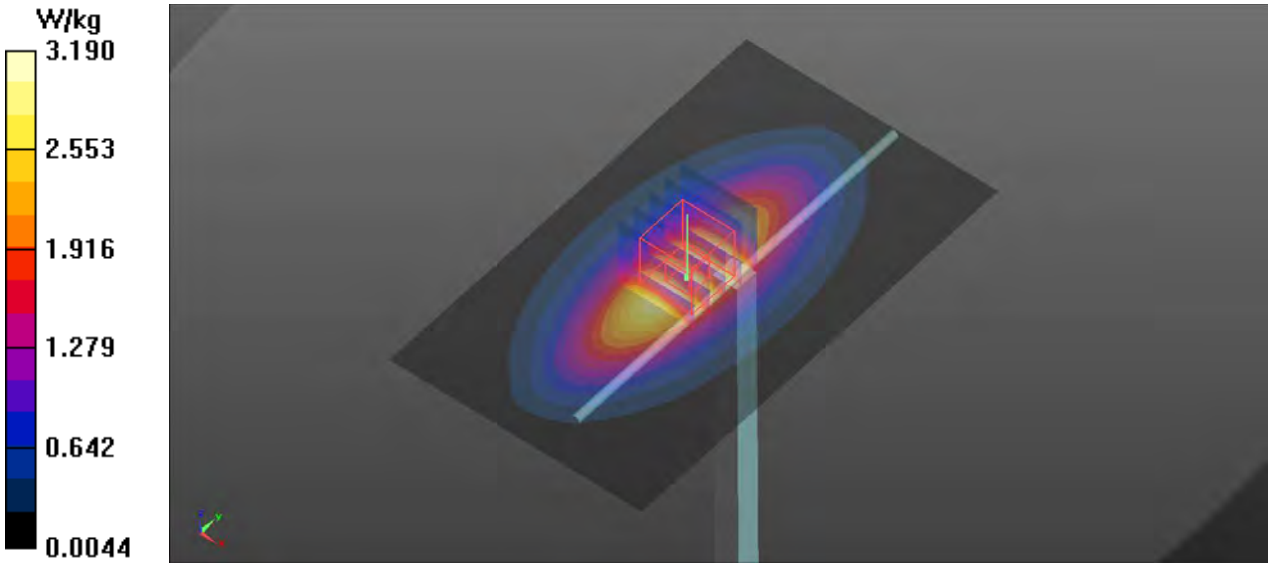
DUT: Dipole:835 MHz;Type:D835V2

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium: HSL835_1003 Medium parameters used: f = 835 MHz; σ = 0.906 S/m; ε_r = 41.863; ρ = 1000 kg/m^3
Ambient Temperature：23.2℃； Liquid Temperature：22.7℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3898; ConvF(9.88, 9.88, 9.88); Calibrated: 2020/06/26;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2020/08/26
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1205
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=250mW/Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 3.19 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 59.44 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 3.62 W/kg
SAR(1 g) = 2.46 W/kg; SAR(10 g) = 1.61 W/kg
Maximum value of SAR (measured) = 3.25 W/kg



System Check_HSL1900_1004

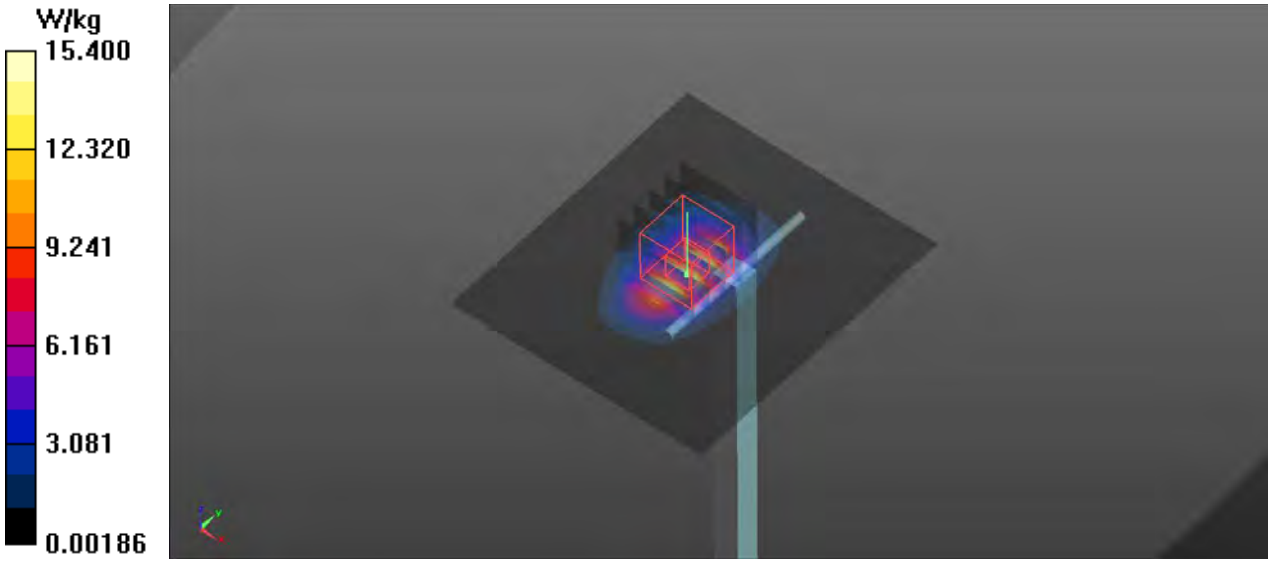
DUT: Dipole:1900MHz;Type:D1900V2

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: HSL1900_1004 Medium parameters used: f = 1900 MHz; σ = 1.443 S/m; ε_r = 40.221; ρ = 1000 kg/m^3
Ambient Temperature：23.3℃； Liquid Temperature：22.6℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3898; ConvF(8.26, 8.26, 8.26); Calibrated: 2020/06/26;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2020/08/26
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1205
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=250mW/Area Scan (71x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 15.4 W/kg

Pin=250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 98.48 V/m; Power Drift = 0.27 dB
Peak SAR (extrapolated) = 18.7 W/kg
SAR(1 g) = 10.2 W/kg; SAR(10 g) = 5.35 W/kg
Maximum value of SAR (measured) = 15.7 W/kg



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2020/10/06

System Check_HSL2450_1006

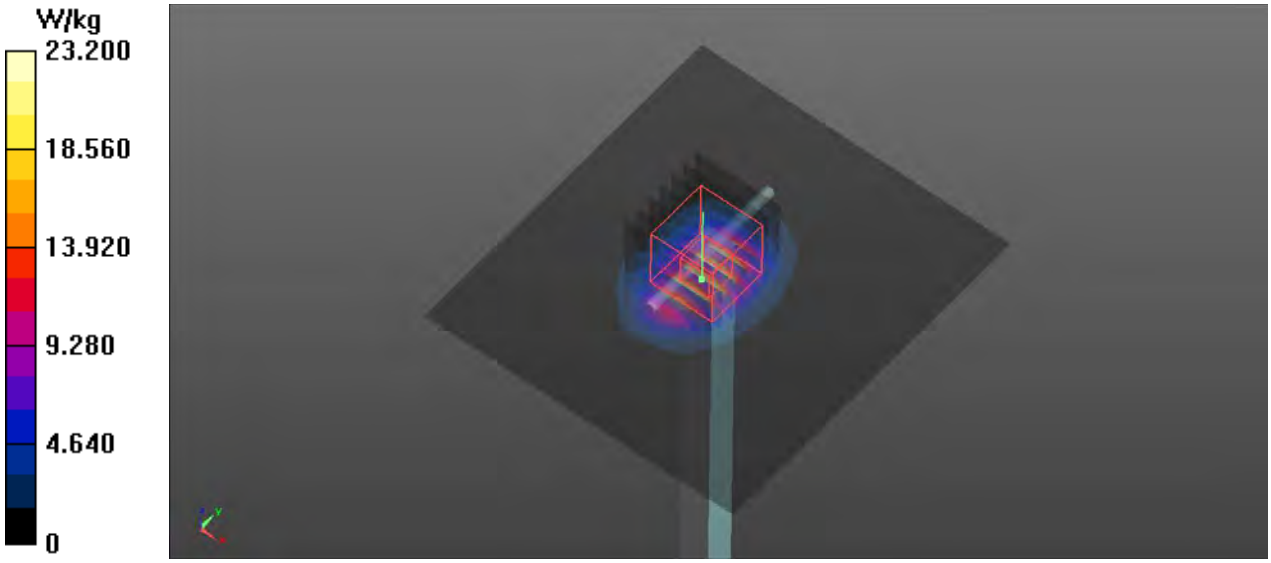
DUT: Dipole:2450 MHz;Type:D2450V2

Communication System: CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium: HSL2450_1006 Medium parameters used: f = 2450 MHz; σ = 1.845 S/m; ε_r = 39.397; ρ = 1000 kg/m^3
Ambient Temperature：23.2℃； Liquid Temperature：22.6℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3898; ConvF(7.51, 7.51, 7.51); Calibrated: 2020/06/26;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2020/08/26
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1205
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=250mW/Area Scan (91x101x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 23.2 W/kg

Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 108.0 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 29.6 W/kg
SAR(1 g) = 14 W/kg; SAR(10 g) = 6.45 W/kg
Maximum value of SAR (measured) = 23.8 W/kg



System Check_HSL2600_1007

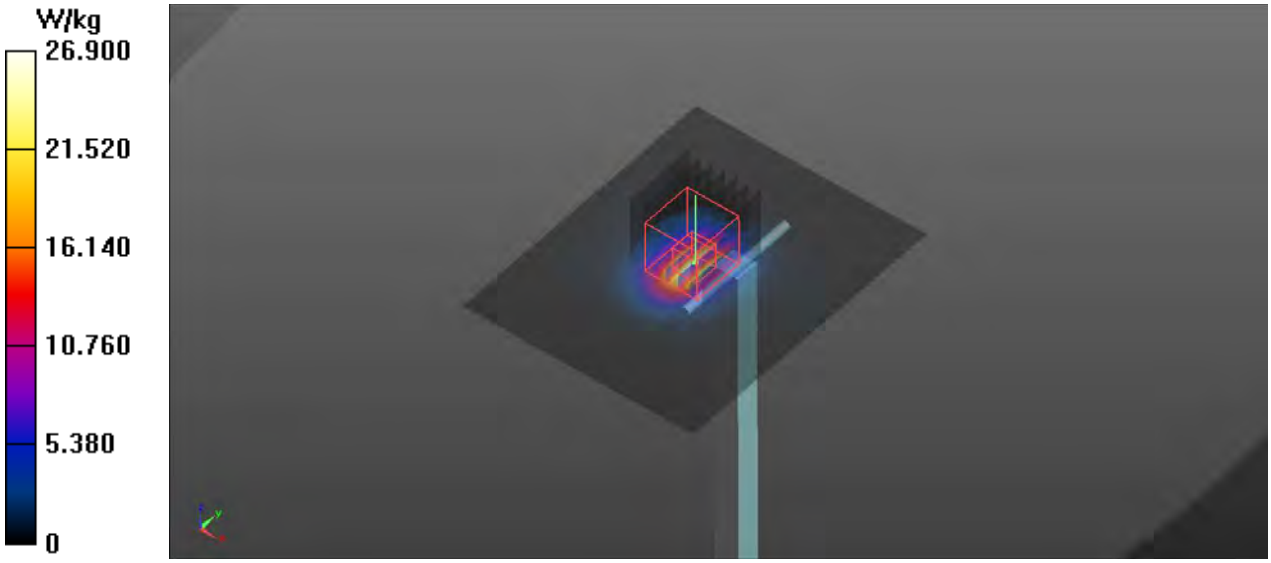
DUT: Dipole:2600 MHz;Type:D2600V2

Communication System: CW; Frequency: 2600 MHz;Duty Cycle: 1:1
Medium: HSL2600_1007 Medium parameters used: f = 2600 MHz; σ = 2.019 S/m; ε_r = 38.932; ρ = 1000 kg/m^3
Ambient Temperature：23.5℃； Liquid Temperature：22.8℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3898; ConvF(7.29, 7.29, 7.29); Calibrated: 2020/06/26;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2020/08/26
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1205
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=250mW/Area Scan (81x101x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 26.9 W/kg

Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 115.8 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 34.0 W/kg
SAR(1 g) = 15.2 W/kg; SAR(10 g) = 6.63 W/kg
Maximum value of SAR (measured) = 26.6 W/kg



System Check_HSL5250_1009

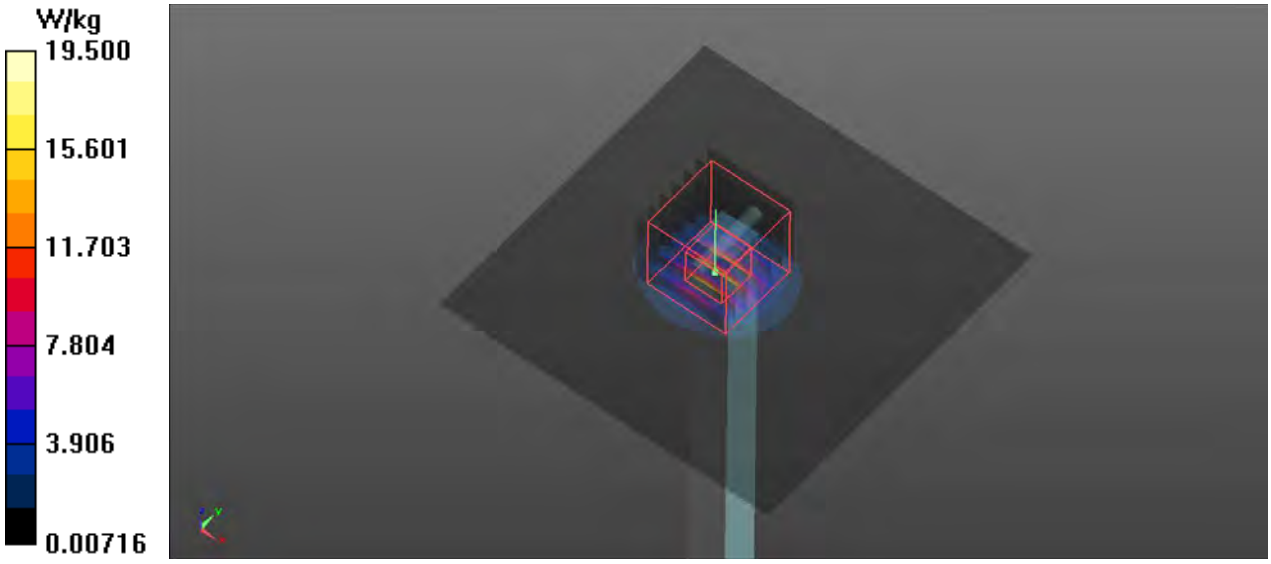
DUT: Dipole 5GHzV2;Type:D5GHzV2

Communication System: CW; Frequency: 5250 MHz;Duty Cycle: 1:1
Medium: HSL5G_1009 Medium parameters used: f = 5250 MHz; σ = 4.748 S/m; ε_r = 36.885; ρ = 1000 kg/m^3
Ambient Temperature：23.4℃； Liquid Temperature：22.5℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3898; ConvF(5.28, 5.28, 5.28); Calibrated: 2020/06/26;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2020/08/26
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1205
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=100mW/Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 19.5 W/kg

Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 55.19 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 34.0 W/kg
SAR(1 g) = 8.09 W/kg; SAR(10 g) = 2.28 W/kg
Maximum value of SAR (measured) = 20.6 W/kg



System Check_HSL5600_1010

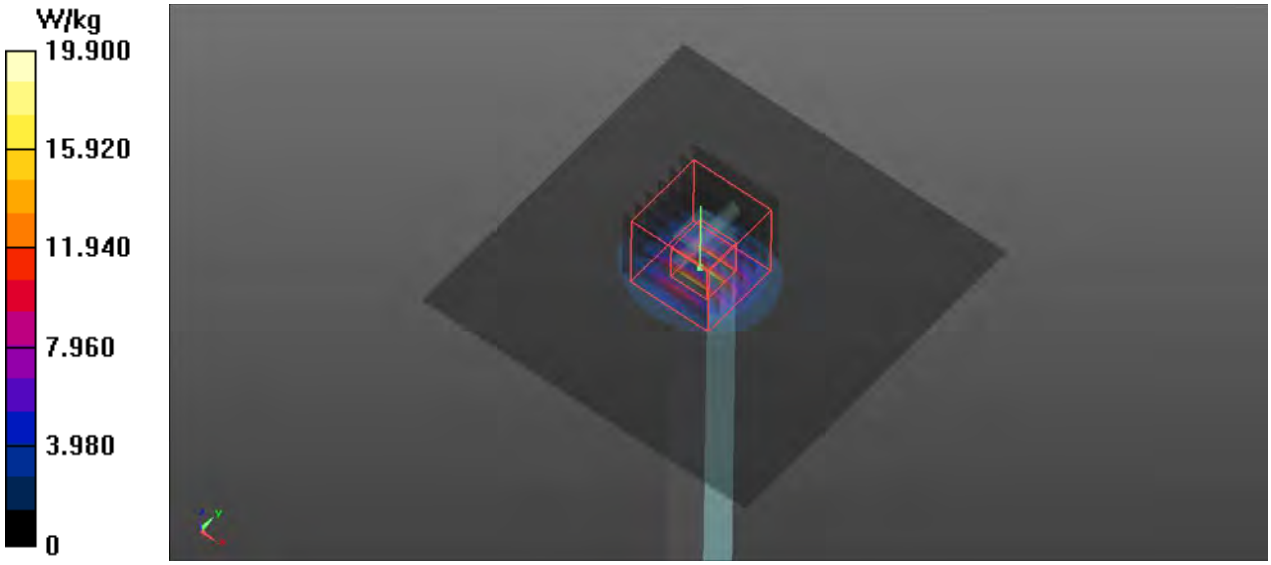
DUT: Dipole 5GHzV2;Type:D5GHzV2

Communication System: CW; Frequency: 5600 MHz;Duty Cycle: 1:1
Medium: HSL5G_1010 Medium parameters used: f = 5600 MHz; σ = 5.189 S/m; ε_r = 36.135; ρ = 1000 kg/m^3
Ambient Temperature：23.3℃； Liquid Temperature：22.3℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3898; ConvF(4.77, 4.77, 4.77); Calibrated: 2020/06/26;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2020/08/26
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1205
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=100mW/Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 19.9 W/kg

Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 56.78 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 35.7 W/kg
SAR(1 g) = 8.17 W/kg; SAR(10 g) = 2.29 W/kg
Maximum value of SAR (measured) = 21.2 W/kg



System Check_HSL5800_1011

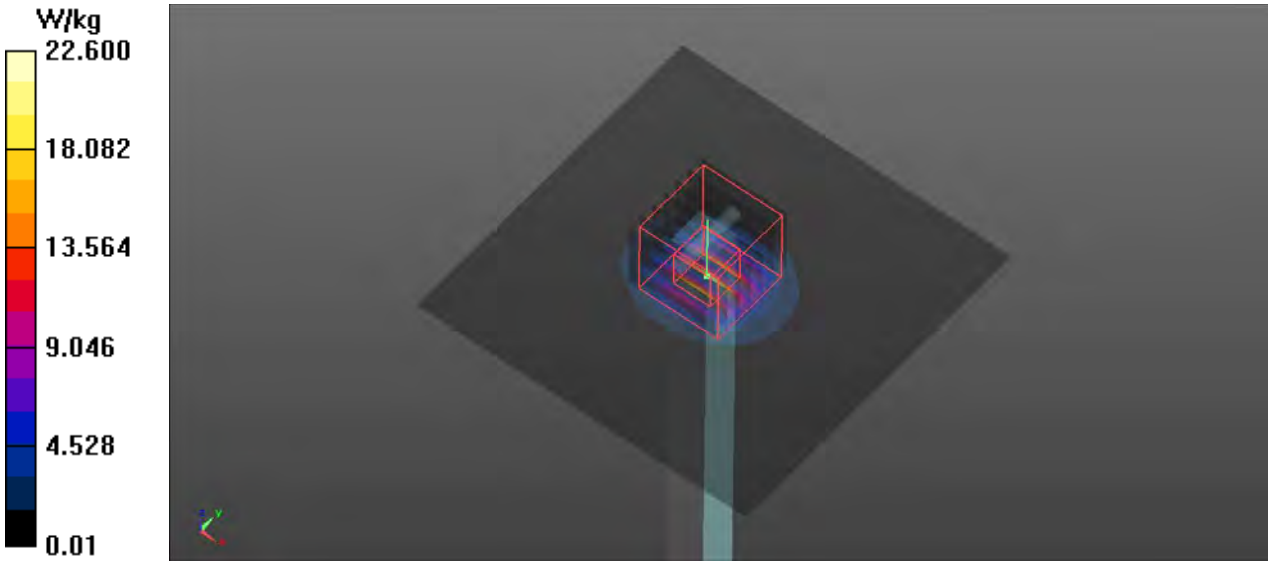
DUT: Dipole 5GHzV2;Type:D5GHzV2

Communication System: CW; Frequency: 5800 MHz;Duty Cycle: 1:1
Medium: HSL5G_1011 Medium parameters used: f = 5800 MHz; σ = 5.422 S/m; ε_r = 35.687; ρ = 1000 kg/m^3
Ambient Temperature：23.5℃； Liquid Temperature：22.6℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3898; ConvF(4.94, 4.94, 4.94); Calibrated: 2020/06/26;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2020/08/26
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1205
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Pin=100mW/Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 22.6 W/kg

Pin=100mW/Zoom Scan (7x7x5)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2.5mm
Reference Value = 62.87 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 39.8 W/kg
SAR(1 g) = 8.72 W/kg; SAR(10 g) = 2.32 W/kg
Maximum value of SAR (measured) = 24.0 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_WCDMA II_RMC12.2K_Rear Face_0cm_Ch9262_Sensor on

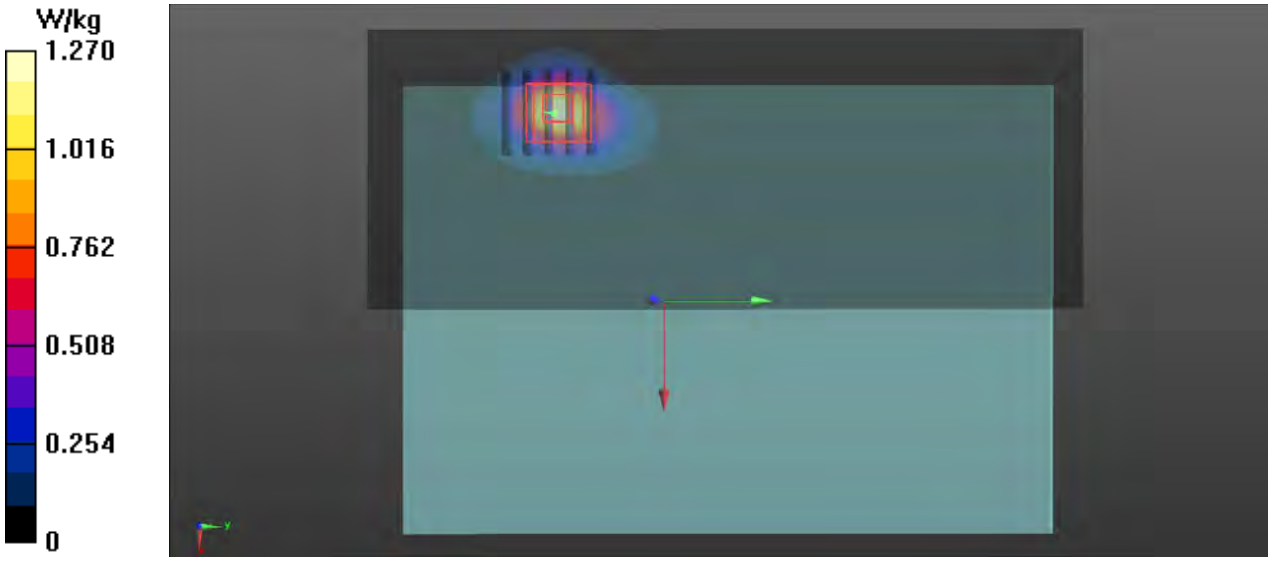
DUT: A200918W001

Communication System: WCDMA; Frequency: 1852.4 MHz;Duty Cycle: 1:1
Medium: HSL1900_1004 Medium parameters used: f = 1852.4 MHz; σ = 1.404 S/m; ε_r = 40.289; ρ = 1000 kg/m^3
Ambient Temperature：23.3℃； Liquid Temperature：22.6℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3898; ConvF(8.26, 8.26, 8.26); Calibrated: 2020/06/26;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2020/08/26
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1205
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

- Area Scan (71x181x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.27 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 0.5910 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 1.89 W/kg
SAR(1 g) = 0.860 W/kg; SAR(10 g) = 0.413 W/kg
Maximum value of SAR (measured) = 1.31 W/kg



P02_WCDMA V_RMC12.2K_Rear Face_0cm_Ch4132_Sensor on

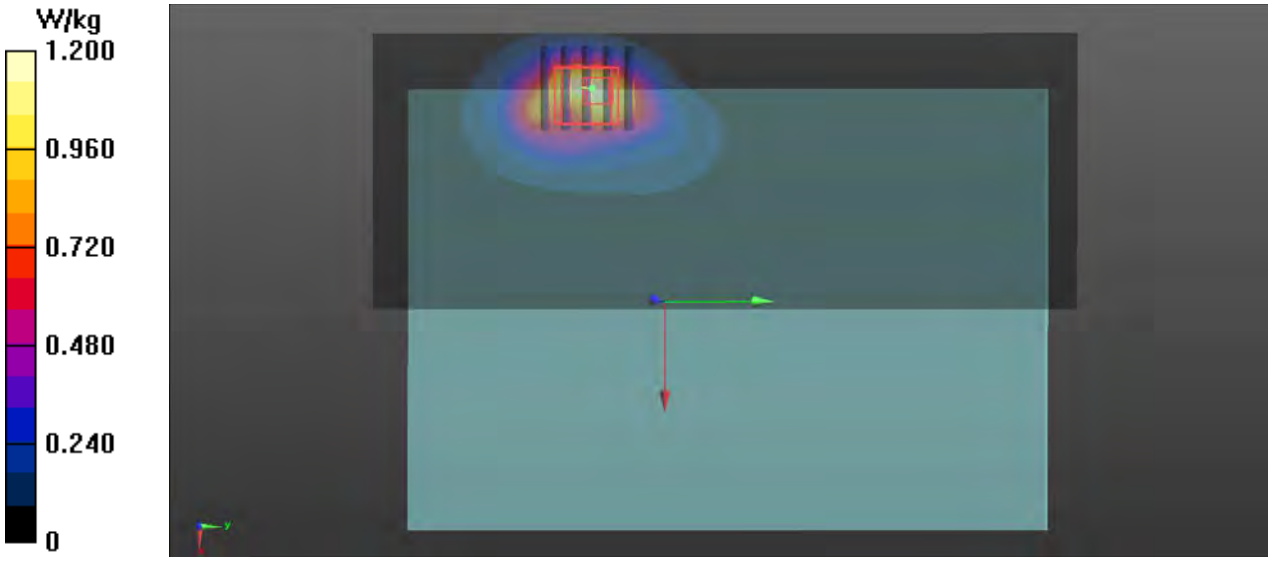
DUT: A200918W001

Communication System: WCDMA; Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium: HSL835_1003 Medium parameters used: f = 826.4 MHz; σ = 0.902 S/m; ε_r = 41.931; ρ = 1000 kg/m^3
Ambient Temperature：23.2℃； Liquid Temperature：22.7℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3898; ConvF(9.88, 9.88, 9.88); Calibrated: 2020/06/26;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2020/08/26
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1205
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

- Area Scan (71x181x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.20 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.812 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 2.78 W/kg
SAR(1 g) = 0.943 W/kg; SAR(10 g) = 0.443 W/kg
Maximum value of SAR (measured) = 1.93 W/kg



P03_LTE 5_QPSK10M_Rear Face_0cm_Ch20525_25RB_OS0_Sensor on

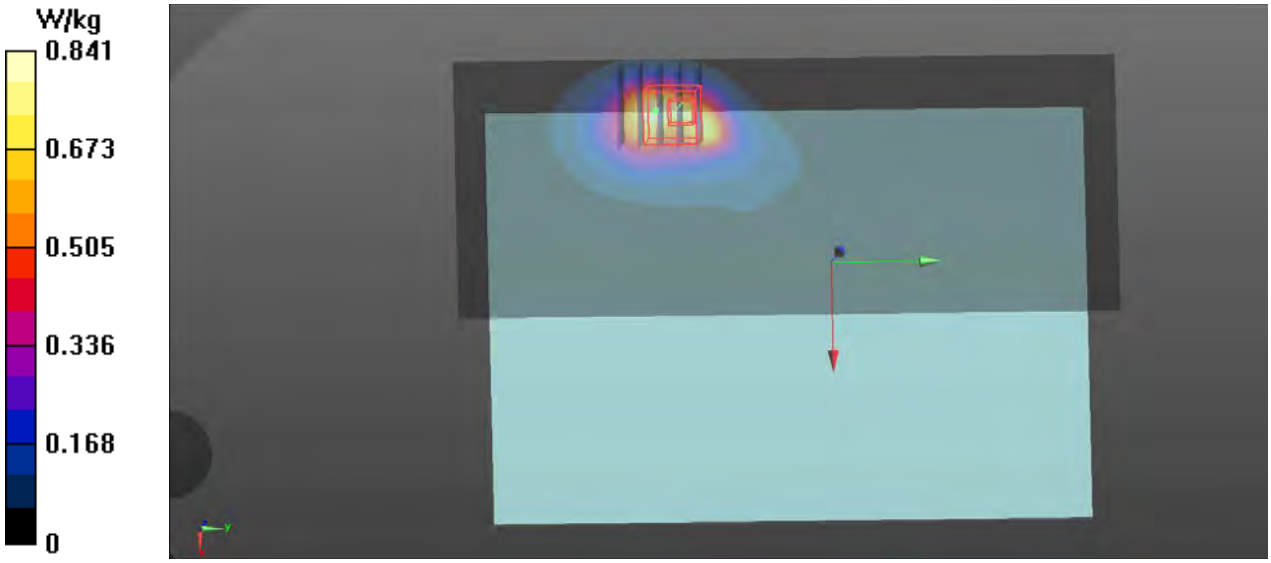
DUT: A200918W001

Communication System: LTE; Frequency: 836.5 MHz;Duty Cycle: 1:1
Medium: HSL835_1003 Medium parameters used: f = 836.5 MHz; σ = 0.907 S/m; ε_r = 41.852; ρ = 1000 kg/m^3
Ambient Temperature：23.2℃； Liquid Temperature：22.7℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3898; ConvF(9.88, 9.88, 9.88); Calibrated: 2020/06/26;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2020/08/26
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1205
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

- Area Scan (71x181x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.841 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.608 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 1.83 W/kg
SAR(1 g) = 0.640 W/kg; SAR(10 g) = 0.307 W/kg
Maximum value of SAR (measured) = 1.34 W/kg



P04_LTE 7_QPSK20M_Rear Face_0cm_Ch20850_50RB_OS25_Sensor on

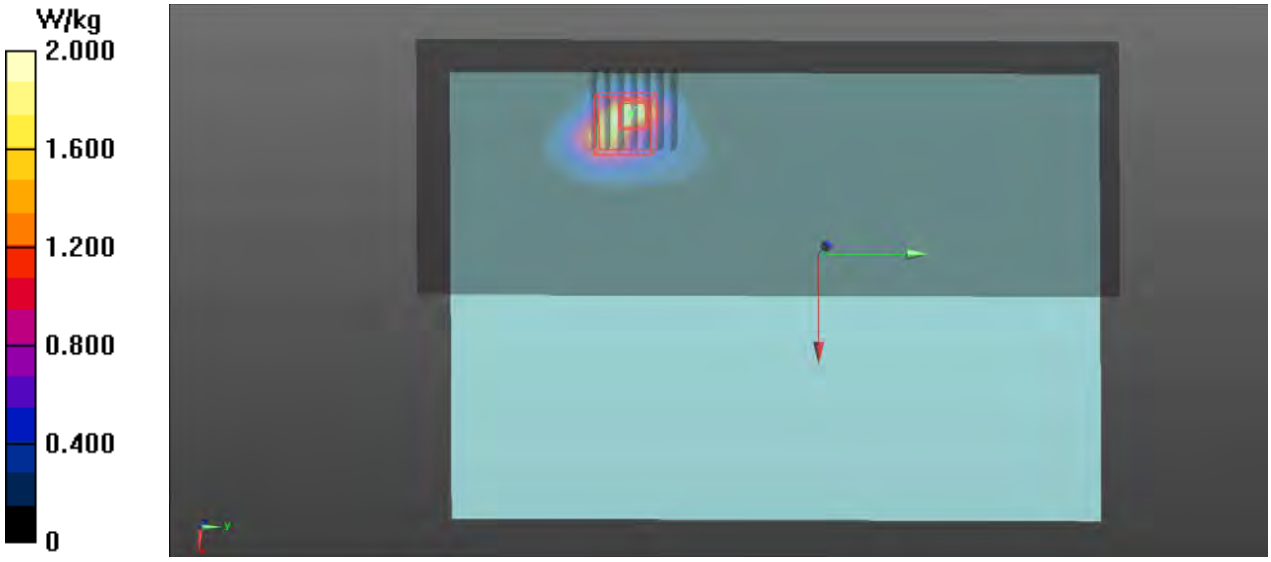
DUT: A200918W001

Communication System: LTE; Frequency: 2510 MHz;Duty Cycle: 1:1
Medium: HSL2600_1007 Medium parameters used: f = 2510 MHz; σ = 1.94 S/m; ε_r = 39.277; ρ = 1000 kg/m^3
Ambient Temperature：23.5℃； Liquid Temperature：22.8℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3898; ConvF(7.29, 7.29, 7.29); Calibrated: 2020/06/26;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2020/08/26
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1205
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

- Area Scan (81x221x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 2.00 W/kg

- Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0 V/m; Power Drift = 0.01dB
Peak SAR (extrapolated) = 3.24 W/kg
SAR(1 g) = 1.05 W/kg; SAR(10 g) = 0.437 W/kg
Maximum value of SAR (measured) = 2.38 W/kg



P05_LTE 26_QPSK15M_Rear Face_0cm_Ch26965_36RB_OS0_Sensor on

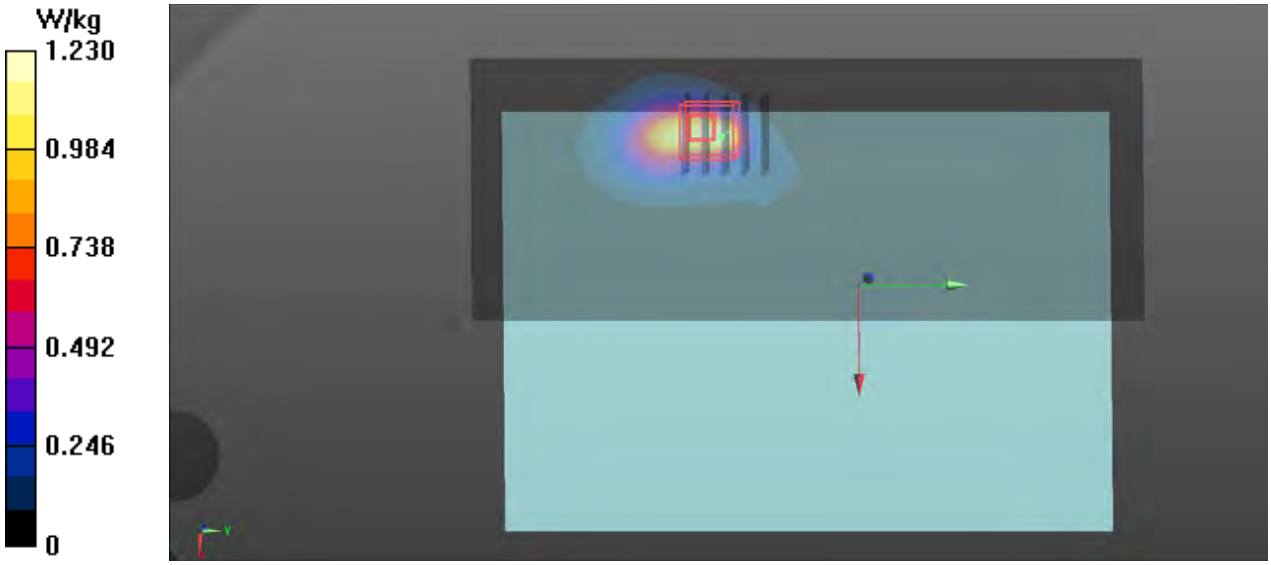
DUT: A200918W001

Communication System: LTE; Frequency: 841.5 MHz;Duty Cycle: 1:1
Medium: HSL835_1003 Medium parameters used: f = 841.5 MHz; σ = 0.909 S/m; ε_r = 41.813; ρ = 1000 kg/m^3
Ambient Temperature：23.2℃； Liquid Temperature：22.7℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3898; ConvF(9.88, 9.88, 9.88); Calibrated: 2020/06/26;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2020/08/26
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1205
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

- Area Scan (71x181x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.23 W/kg

- Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.964 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 1.62 W/kg
SAR(1 g) = 0.617 W/kg; SAR(10 g) = 0.292 W/kg
Maximum value of SAR (measured) = 1.08 W/kg



P06_LTE 38_QPSK20M_Top Side_1.9cm_Ch38000_1RB_OS50_Sensor off

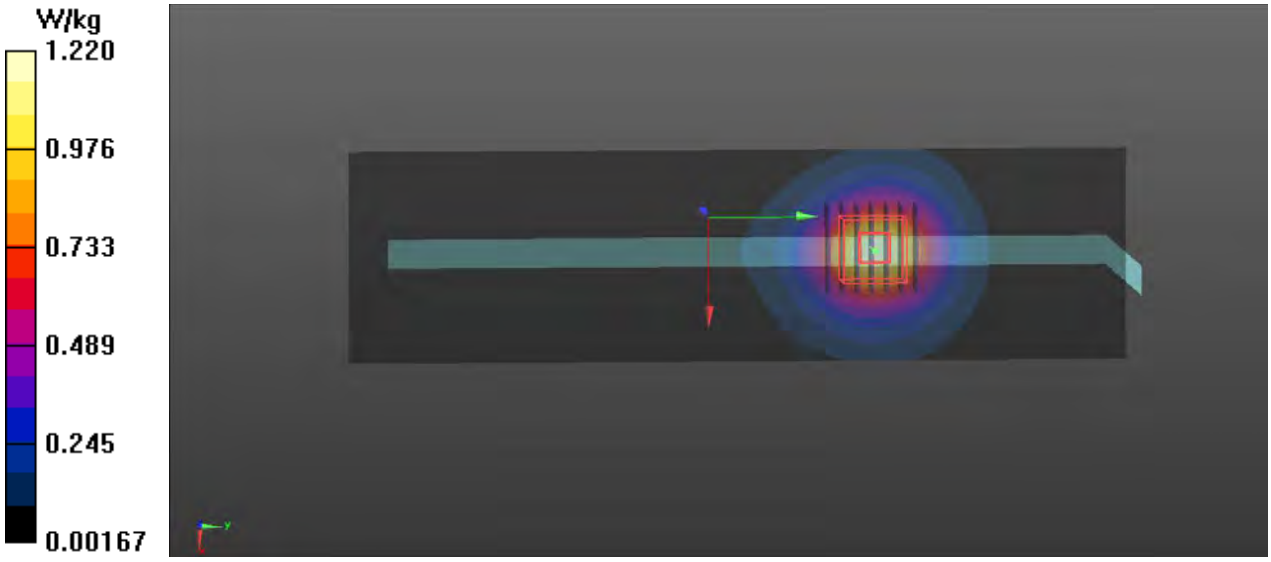
DUT: A200918W001

Communication System: LTE TDD; Frequency: 2595 MHz;Duty Cycle: 1:1.59
Medium: HSL2600_1007 Medium parameters used: f = 2595 MHz; σ = 2.033 S/m; ε_r = 38.951; ρ = 1000 kg/m^3
Ambient Temperature：23.5℃； Liquid Temperature：22.8℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3898; ConvF(7.29, 7.29, 7.29); Calibrated: 2020/06/26;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2020/08/26
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1205
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

- Area Scan (61x221x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.22 W/kg

- Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.987 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 1.48 W/kg
SAR(1 g) = 0.801 W/kg; SAR(10 g) = 0.425 W/kg
Maximum value of SAR (measured) = 1.21 W/kg



P07_LTE 41_QPSK20M_Top Side_1.9cm_Ch41140_1RB_OS50_Sensor off

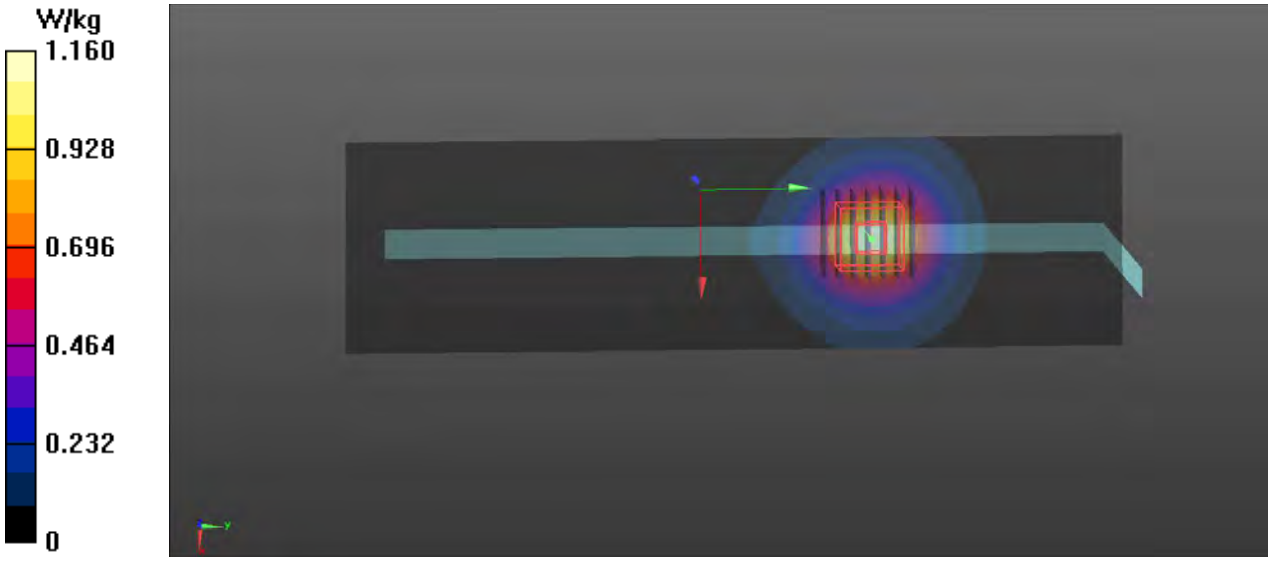
DUT: A200918W001

Communication System: LTE TDD; Frequency: 2645 MHz;Duty Cycle: 1:1.59
Medium: HSL2600_1007 Medium parameters used: f = 2645 MHz; σ = 2.088 S/m; ε_r = 38.77; ρ = 1000 kg/m^3
Ambient Temperature：23.5℃； Liquid Temperature：22.8℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3898; ConvF(7.29, 7.29, 7.29); Calibrated: 2020/06/26;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2020/08/26
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1205
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

- Area Scan (61x221x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.16 W/kg

- Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.983 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.44 W/kg
SAR(1 g) = 0.756 W/kg; SAR(10 g) = 0.399 W/kg
Maximum value of SAR (measured) = 1.18 W/kg



P08_802.11b_Rear Face_0cm_Ch1_Sensor on

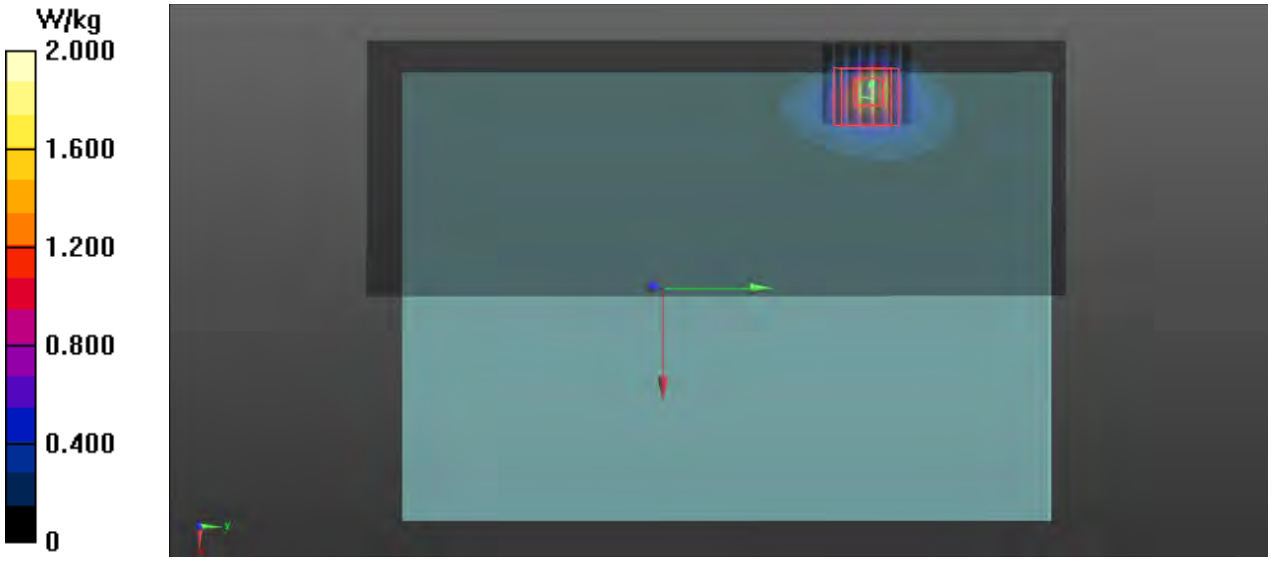
DUT: A200918W001

Communication System: 802.11b; Frequency: 2412 MHz;Duty Cycle: 1:1.02
Medium: HSL2450_1006 Medium parameters used: f = 2412 MHz; σ = 1.804 S/m; ε_r = 39.559; ρ = 1000 kg/m^3
Ambient Temperature：23.2℃； Liquid Temperature：22.6℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3898; ConvF(7.51, 7.51, 7.51); Calibrated: 2020/06/26;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2020/08/26
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1205
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

- Area Scan (81x221x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 2.00 W/kg

- Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0.9980 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 2.72 W/kg
SAR(1 g) = 1.02 W/kg; SAR(10 g) = 0.408 W/kg
Maximum value of SAR (measured) = 1.91 W/kg



P09_802.11a_Rear Face_0cm_Ch52_Sensor off

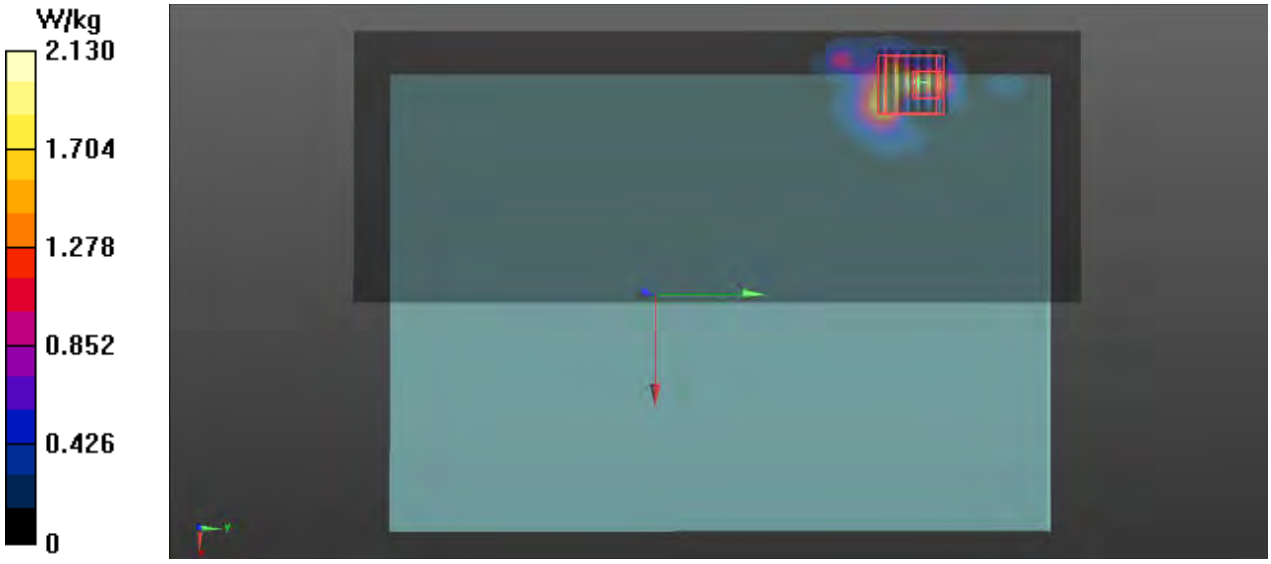
DUT: A200918W001

Communication System: 802.11a; Frequency: 5260 MHz;Duty Cycle: 1:1.15
Medium: HSL5G_1009 Medium parameters used: f = 5260 MHz; σ = 4.764 S/m; ε_r = 36.861; ρ = 1000 kg/m^3
Ambient Temperature：23.4℃； Liquid Temperature：22.5℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3898; ConvF(5.28, 5.28, 5.28); Calibrated: 2020/06/26;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2020/08/26
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1205
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

- Area Scan (101x271x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 2.13 W/kg

- Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0.8480 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 3.57 W/kg
SAR(1 g) = 1.06 W/kg; SAR(10 g) = 0.322 W/kg
Maximum value of SAR (measured) = 2.43 W/kg



P10_802.11a_Rear Face_0cm_Ch144_Sensor on

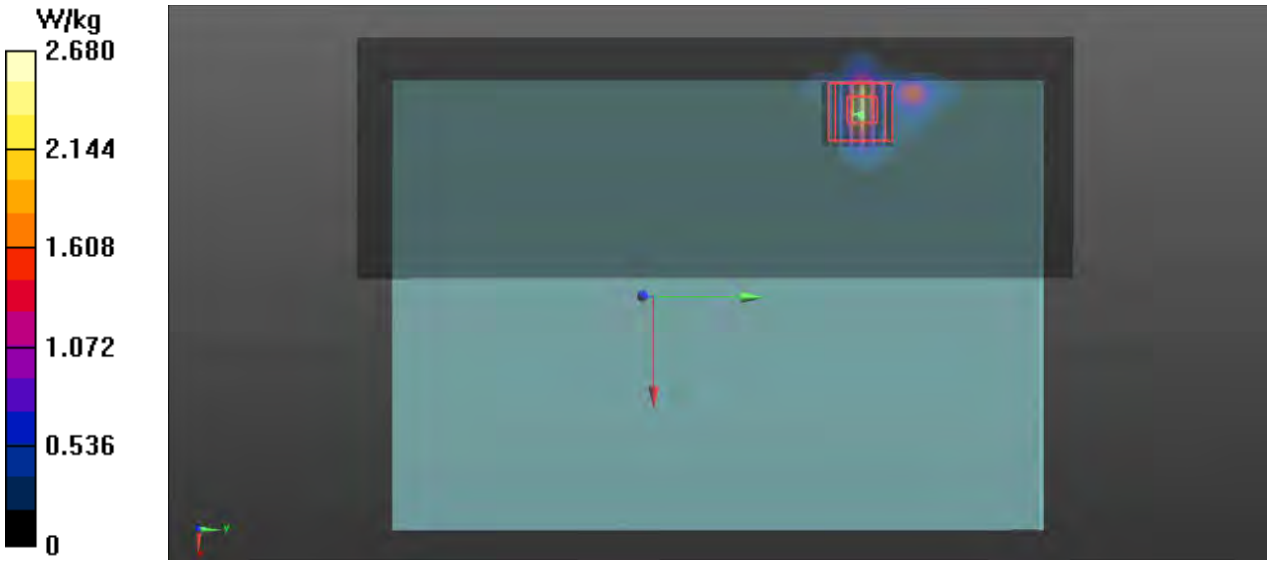
DUT: A200918W001

Communication System: 802.11a; Frequency: 5720 MHz;Duty Cycle: 1:1.15
Medium: HSL5G_1011 Medium parameters used: f = 5720 MHz; σ = 5.307 S/m; ε_r = 35.904; ρ = 1000 kg/m^3
Ambient Temperature：23.5℃； Liquid Temperature：22.6℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3898; ConvF(4.94, 4.94, 4.94); Calibrated: 2020/06/26;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2020/08/26
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1205
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

- Area Scan (71x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 2.68 W/kg

- Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 1.120 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 4.93 W/kg
SAR(1 g) = 1.03 W/kg; SAR(10 g) = 0.293 W/kg
Maximum value of SAR (measured) = 3.04 W/kg



P11_802.11a_Rear Face_0cm_Ch149_Sensor on

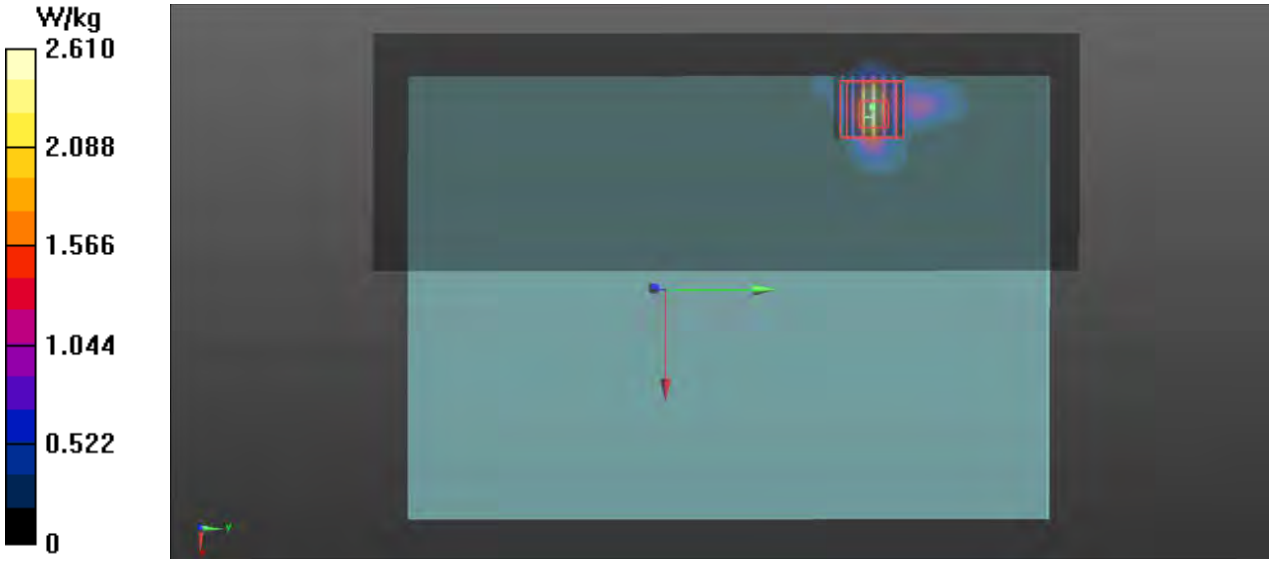
DUT: A200918W001

Communication System: 802.11a; Frequency: 5745 MHz;Duty Cycle: 1:1.15
Medium: HSL5G_1011 Medium parameters used: f = 5745 MHz; σ = 5.358 S/m; ε_r = 35.856; ρ = 1000 kg/m^3
Ambient Temperature：23.5℃； Liquid Temperature：22.6℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3898; ConvF(4.94, 4.94, 4.94); Calibrated: 2020/06/26;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2020/08/26
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1205
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

- Area Scan (71x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 2.61 W/kg

- Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 1.063 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 4.63 W/kg
SAR(1 g) = 0.974 W/kg; SAR(10 g) = 0.279 W/kg
Maximum value of SAR (measured) = 2.53 W/kg



P12_BT_GFSK_Rear Face_0cm_Ch39_Sensor off

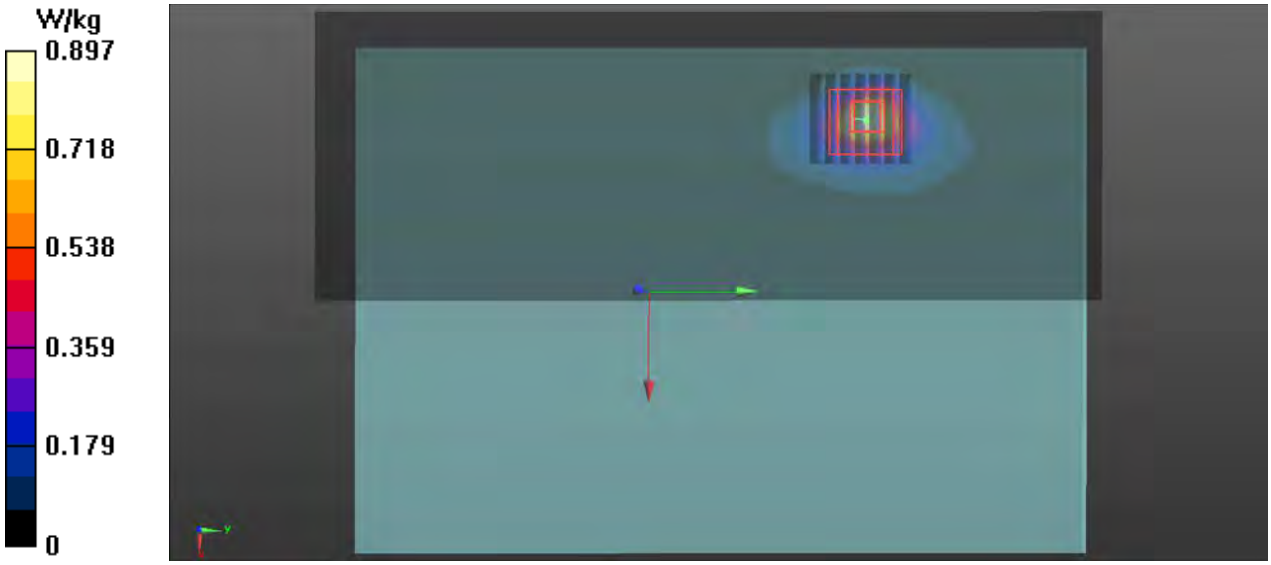
DUT: A200918W001

Communication System: BT; Frequency: 2441 MHz;Duty Cycle: 1:1.2
Medium: HSL2450_1006 Medium parameters used: f = 2441 MHz; σ = 1.835 S/m; ε_r = 39.436; ρ = 1000 kg/m^3
Ambient Temperature：23.2℃； Liquid Temperature：22.6℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3898; ConvF(7.51, 7.51, 7.51); Calibrated: 2020/06/26;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1341; Calibrated: 2020/08/26
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1205
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

- Area Scan (81x221x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.897 W/kg

- Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0.8780 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 1.46 W/kg
SAR(1 g) = 0.540 W/kg; SAR(10 g) = 0.215 W/kg
Maximum value of SAR (measured) = 1.05 W/kg



Appendix C. Calibration Certificate for Probe and Dipole

The SPEAG calibration certificates are shown as follows.

In Collaboration with
s p e a g
CALIBRATION LABORATORY

Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China
Tel: +86-10-62304633-2079 Fax: +86-10-62304633-2504
E-mail: cttl@chinattl.com http://www.chinattl.cn

中国认可
国际互认
校准
CALIBRATION
CNAS L0570

Client ADT Certificate No: Z20-60316

CALIBRATION CERTIFICATE

Object	D835V2 - SN: 4d139
Calibration Procedure(s)	FF-Z11-003-01 Calibration Procedures for dipole validation kits
Calibration date:	August 28, 2020

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	106276	12-May-20 (CTTL, No.J20X02965)	May-21
Power sensor NRP6A	101369	12-May-20 (CTTL, No.J20X02965)	May-21
ReferenceProbe EX3DV4	SN 3617	30-Jan-20(SPEAG,No.EX3-3617_Jan20)	Jan-21
DAE4	SN 771	10-Feb-20(CTTL-SPEAG,No.Z20-60017)	Feb-21
Secondary Standards	**ID #**	**Cal Date(Calibrated by, Certificate No.)**	**Scheduled Calibration**
Signal Generator E4438C	MY49071430	25-Feb-20 (CTTL, No.J20X00516)	Feb-21
NetworkAnalyzer E5071C	MY46110673	10-Feb-20 (CTTL, No.J20X00515)	Feb-21

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

Issued: September 3, 2020

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China
Tel: +86-10-62304633-2079 Fax: +86-10-62304633-2504
E-mail: cttl@chinattl.com http://www.chinattl.cn

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORMx,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
b) IEC 62209-1, "Measurement procedure for assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices- Part 1: Device used next to the ear (Frequency range of 300MHz to 6GHz)", July 2016
c) IEC 62209-2, "Procedure to measure the Specific Absorption Rate (SAR) For wireless communication devices used in close proximity to the human body (frequency range of 30MHz to 6GHz)", March 2010
d) KDB865664, SAR Measurement Requirements for 100 MHz to 6 GHz

Additional Documentation:

e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

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%.

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Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY52	V52.10.4
Extrapolation	Advanced Extrapolation	
Phantom	Triple Flat Phantom 5.1C	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	835 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	41.5	0.90 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	41.2 ± 6 %	0.88 mho/m ± 6 %
Head TSL temperature change during test	<1.0 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.38 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**9.69 W/kg ± 18.8 % (*k*=2)**
SAR averaged over 10 cm^3 (10 g) of Head TSL	Condition	
SAR measured	250 mW input power	1.57 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**6.37 W/kg ± 18.7 % (*k*=2)**

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Appendix (Additional assessments outside the scope of CNAS L0570)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	52.3Ω- 2.76jΩ
Return Loss	- 29.1dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.254 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.
No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG