

LTE Down Link 3CA 4x4 MIMO Call Setup

PCC Setting: Channel /RB/BW/Modulation

DL Channel 66786 ch TPC Pattern All +3dB Input Level 30.0 dBm
 Operation Band 66 Channel Bandwidth 20 MHz Output Level -54.2 dBm

This tab is used to configure parameters of each Component Carrier on LTE-A. A Blue Dot in this tab indicates that the component carrier is configured.

Measurement Signaling IP Data UE Power : 23.5 dBm

Throughput

MAC DL total : 71150 kbps (100.00 %)
 MAC UL total : 16 kbps (100.00 %)

Throughput	PCC	SCC1	SCC2	SCC3
Throughput (Total)	71150 kbps (= 100.00 %)			
Throughput	31622 kbps	31622 kbps	7906 kbps	----- kbps
(Code Word 0)	15811 kbps	15811 kbps	3953 kbps	----- kbps
	(= 100.00 %)	(= 100.00 %)	(= 100.00 %)	(= ----- %)

Signal settings:
 Channel Coding RMC(DL CA)
 Antenna Combination Individual
 Antenna Configuration 4x4 MIMO(TM3)
 Beamforming On
 DCI Format for Single Antenna 1A
 Propagation Matrix TS36.521-1 B.1
 User Define Channel Model (Channel 1to1/2/3/4 Gain/Phase): 0.25 0.0 degree, 0.25 0.0 degree, 0.25 0.0 degree, 0.25 0.0 degree

SCC1 Setting : Channel /RB/BW/Modulation

DL Channel 67236 ch Activation On Output On
 Operation Band 66 Channel Bandwidth 20 MHz Output Level -54.2 dBm

This tab is used to configure parameters of each Component Carrier on LTE-A. A Blue Dot in this tab indicates that the component carrier is configured.

Measurement Signaling IP Data UE Power : 23.4 dBm

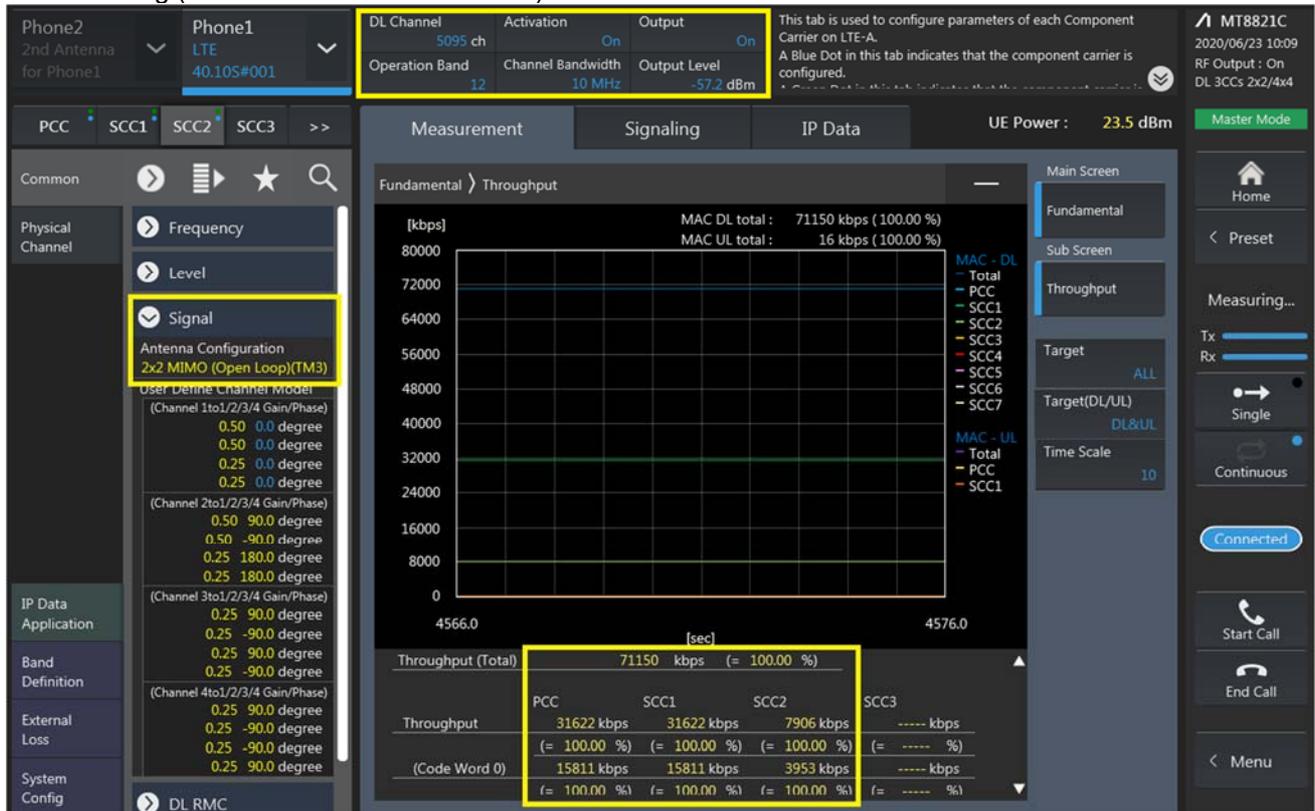
Throughput

MAC DL total : 71150 kbps (100.00 %)
 MAC UL total : 16 kbps (100.00 %)

Throughput	PCC	SCC1	SCC2	SCC3
Throughput (Total)	71150 kbps (= 100.00 %)			
Throughput	31622 kbps	31622 kbps	7906 kbps	----- kbps
(Code Word 0)	15811 kbps	15811 kbps	3953 kbps	----- kbps
	(= 100.00 %)	(= 100.00 %)	(= 100.00 %)	(= ----- %)

Signal settings:
 Antenna Configuration 4x4 MIMO(TM3)
 User Define Channel Model (Channel 1to1/2/3/4 Gain/Phase): 0.25 0.0 degree, 0.25 0.0 degree, 0.25 0.0 degree, 0.25 0.0 degree
 (Channel 2to1/2/3/4 Gain/Phase): 0.25 0.0 degree, 0.25 180.0 degree, 0.25 180.0 degree
 (Channel 3to1/2/3/4 Gain/Phase): 0.25 90.0 degree, 0.25 -90.0 degree, 0.25 90.0 degree, 0.25 -90.0 degree
 (Channel 4to1/2/3/4 Gain/Phase): 0.25 90.0 degree, 0.25 -90.0 degree, 0.25 -90.0 degree, 0.25 90.0 degree

SCC2 Setting (Channel /RB/BW/Modulation)and call Connection



LTE Downlink 3CA 4X4 MIMO Maximum Conducted Power

Combination	PCC									SCC				SCC				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	Band	BW	SCC DL Channel	SCC DL Frequency	Band	BW	SCC DL Channel	SCC DL Frequency	LTE Single Carrier Tx Power (dBm) (1)	LTE Tx Power with DL CA Enabled (dBm) (2)	Deviation (2)-(1)
2A-[4A]-5A	2	20	18900	1880	900	1960	QPSK	1	0	4	20	2175	2132.5	5	10	2525	881.5	22.53	22.46	-0.07
2A-[4A]-5A	4	10	20350	1750	2350	2150	QPSK	1	0	2	20	900	1960	5	10	2525	881.5	22.77	22.79	0.02
2A-[4A]-5A	5	10	20525	836.5	2525	881.5	QPSK	1	0	2	20	900	1960	4	20	2175	2132.5	24.26	24.27	0.01
2A-[4A]-13A	2	20	18900	1880	900	1960	QPSK	1	0	4	20	2175	2132.5	13	10	5230	751	22.53	22.44	-0.09
2A-[4A]-13A	4	10	20350	1750	2350	2150	QPSK	1	0	2	20	900	1960	13	10	5230	751	22.77	22.81	0.04
2A-[4A]-13A	13	10	23230	782	5230	751	QPSK	1	49	2	20	900	1960	4	20	2175	2132.5	23.8	23.9	0.1
5A-[66A]-66A	5	10	20525	836.5	2525	881.5	QPSK	1	0	66	20	66786	2145	66	20	67236	2190	24.26	24.21	-0.05
5A-[66A]-[66A]	5	10	20525	836.5	2525	881.5	QPSK	1	0	66	20	66786	2145	66	20	67236	2190	24.26	24.2	-0.06
5A-[66A]-66A	66	20	132322	1745	66786	2145	QPSK	1	0	66	20	67236	2190	5	10	2525	881.5	22.93	22.88	-0.05
5A-[66A]-[66A]	66	20	132322	1745	66786	2145	QPSK	1	0	66	20	67236	2190	5	10	2525	881.5	22.93	22.87	-0.06
12A-[66A]-[66A]	12	10	23095	707.5	5095	737.5	QPSK	1	0	66	20	66786	2145	66	20	67236	2190	23.3	23.43	0.13
12A-[66A]-[66A]	66	20	132322	1745	66786	2145	QPSK	1	0	66	20	67236	2190	12	10	5095	737.5	22.93	23.09	0.16
12A-[66A]-66A	12	10	23095	707.5	5095	737.5	QPSK	1	0	66	20	66786	2145	66	20	67236	2190	23.3	23.44	0.14
12A-[66A]-66A	66	20	132322	1745	66786	2145	QPSK	1	0	66	20	67236	2190	12	10	5095	737.5	22.93	22.98	0.05
12A-[66A]-[66A]	12	10	23095	707.5	5095	737.5	QPSK	1	0	66	20	66786	2145	66	20	67236	2190	23.3	23.44	0.14
12A-[66A]-[66A]	66	20	132322	1745	66786	2145	QPSK	1	0	66	20	67236	2190	12	10	5095	737.5	22.93	23.02	0.09

11.4 WIFI Conducted Power measurement method

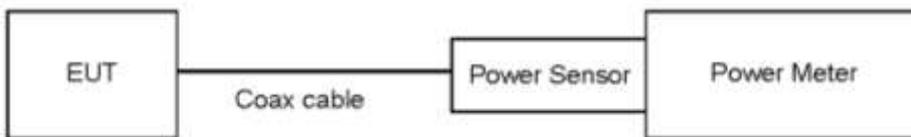
Un-Licensed bands (DTS Band)

Test Description	Test Procedure Used
Conducted Output Power	- KDB 558074 v05 - Section 8.3.2.3 - ANSI 63.10-2013 - Section 11.9.2.3

Test Procedure

1. Measure the duty cycle.
2. Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter.
3. Add $10 \log(1/x)$, where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times.

Test setup



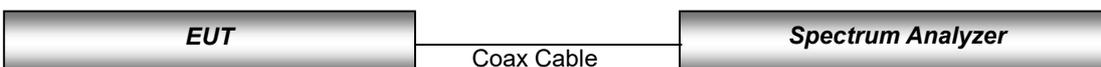
Un-Licensed bands (NII Band)

Test Description	Test Procedure Used
Conducted Output Power	- KDB 789033 D02 v02r01 - Section E.3.a

Test Procedure

1. Measure the duty cycle.
2. Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter.
3. Add $10 \log(1/x)$, where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times.

Test setup



11.4.1 IEEE 802.11 (2.4 GHz) Maximum Conducted Power

Mode	Frequency [MHz]	Channel	IEEE 802.11 (2.4 GHz) Average RF Conducted Power [dBm]		
			Ant.1	Ant.2	MIMO
802.11b	2 412	1	18.46	19.00	
	2 437	6	18.20	18.80	
	2 462	11	18.31	18.79	
	2 467	12	9.34	10.30	
	2 472	13	6.11	6.33	
802.11g	2 412	1	14.27	14.75	17.53
	2 437	6	15.95	16.68	19.34
	2 462	11	13.93	15.06	17.54
	2 467	12	9.86	10.93	13.44
	2 472	13	5.86	7.23	9.61
802.11n (HT20)	2 412	1	13.28	13.79	16.55
	2 437	6	15.90	16.73	19.35
	2 462	11	13.09	13.99	19.14
	2 467	12	9.45	10.93	13.26
	2 472	13	5.90	6.98	9.48
802.11ax(SU)	2 412	1	14.20	13.88	17.05
	2 437	6	15.50	15.80	18.66
	2 462	11	13.69	14.26	16.99
	2 467	12	9.46	9.93	12.71
	2 472	13	6.02	6.72	9.39

11.4.2 IEEE 802.11 (2.4 GHz) Reduced Conducted Power (RCV on, RSDB)

Mode	Frequency [MHz]	Channel	IEEE 802.11 (2.4 GHz) Average RF Conducted Power [dBm]		
			Ant.1	Ant.2	MIMO
802.11b	2 412	1	16.07	15.67	
	2 437	6	16.46	16.39	
	2 462	11	16.37	16.49	
	2 467	12	9.34	10.30	
	2 472	13	6.11	6.33	
802.11g	2 412	1	14.27	14.75	17.53
	2 437	6	15.95	16.68	19.34
	2 462	11	13.93	15.06	17.54
	2 467	12	9.86	10.93	13.44
	2 472	13	5.86	7.23	9.61
802.11n (HT20)	2 412	1	13.28	13.79	16.55
	2 437	6	15.90	16.73	19.35
	2 462	11	13.09	13.99	16.57
	2 467	12	9.45	10.93	13.26
	2 472	13	5.90	6.98	9.48
802.11ax(SU)	2 412	1	14.20	13.88	17.05
	2 437	6	15.50	15.80	18.66
	2 462	11	13.69	14.26	16.99
	2 467	12	9.46	9.93	12.71
	2 472	13	6.02	6.72	9.39

11.4.3 IEEE 802.11 (5 GHz) Maximum Conducted Power

Frequency [MHz]	Channel	IEEE 802.11 a(20 MHz BW) Conducted Power [dBm]			IEEE 802.11n (20 MHz BW) Conducted Power [dBm]			IEEE 802.11ac(20 MHz BW) Conducted Power [dBm]		
		Ant.1	Ant.2	MIMO	Ant.1	Ant.2	MIMO	Ant.1	Ant.2	MIMO
5 180	36	16.26	16.46	19.37	16.43	16.42	19.44	16.47	16.40	19.45
5 200	40	16.23	16.40	19.33	16.32	16.42	19.38	16.45	16.35	19.41
5 220	44	16.22	16.39	19.32	16.41	16.46	19.45	16.43	16.33	19.39
5 240	48	16.44	16.46	19.46	16.46	16.51	19.50	16.50	16.52	19.52
5 260	52	16.55	16.61	19.59	16.56	16.69	19.64	16.69	16.66	19.69
5 280	56	16.45	16.58	19.53	16.62	16.66	19.65	16.71	16.61	19.67
5 300	60	16.61	16.60	19.62	16.72	16.70	19.72	16.73	16.69	19.72
5 320	64	15.72	15.55	18.65	15.58	15.65	18.63	15.65	15.63	18.65
5 500	100	15.62	15.45	18.55	15.54	15.46	18.51	15.55	15.52	18.55
5 600	120	16.73	16.83	19.79	16.81	16.86	19.85	16.89	16.92	19.92
5 720	144	16.76	16.88	19.83	16.76	16.82	19.80	16.76	16.94	19.86
5 745	149	16.81	16.98	19.91	16.77	16.92	19.86	16.83	17.00	19.93
5 785	157	17.00	17.15	20.09	17.10	17.07	20.10	17.08	17.16	20.13
5 825	165	17.06	17.18	20.13	17.06	17.05	20.07	17.03	17.15	20.10

Frequency [MHz]	Channel	IEEE 802.11 ax (SU 20 MHz BW) Conducted Power [dBm]		
		Ant.1	Ant.2	MIMO
5 180	36	15.60	15.31	18.47
5 200	40	16.47	16.27	19.38
5 220	44	16.56	16.32	19.45
5 240	48	16.68	16.40	19.55
5 260	52	16.60	16.72	19.67
5 280	56	16.64	16.62	19.64
5 300	60	16.47	16.47	19.48
5 320	64	16.53	15.44	19.03
5 500	100	15.54	15.50	18.53
5 600	120	16.04	17.19	19.66
5 720	144	17.05	16.73	19.90
5 745	149	17.05	16.79	19.93
5 785	157	16.91	16.78	19.86
5 825	165	16.76	16.76	19.77

11.4.4 IEEE 802.11 (5 GHz) Reduced Conducted Power (RCV ON Head SAR)

Mode	Frequency [MHz]	Channel	IEEE 802.11 (5 GHz) Reduced Average Conducted Power [dBm]	
			Ant. 1	Ant. 2
802.11n (40 MHz BW)	5190	38	11.67	12.18
	5230	46	13.84	14.30
	5270	54	13.66	14.09
	5310	62	11.56	11.76
802.11ax(SU) (40 MHz BW)	5190	38	12.87	12.65
	5230	46	14.21	14.83
	5270	54	14.08	14.54
	5310	62	12.53	12.34
802.11ac (80 MHz BW)	5530	106	11.92	11.71
	5610	122	14.25	13.76
	5690	138	14.14	13.71
	5775	155	13.99	13.64
802.11ax(SU) (80 MHz BW)	5530	106	12.36	12.39
	5610	122	14.97	14.48
	5690	138	14.93	14.62
	5775	155	14.73	14.24

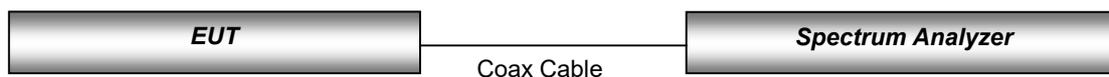
11.4.5 IEEE 802.11 (5 GHz) UNII-3 Band Reduced Conducted Power (RSDB :Hotspot SAR)

Mode	Frequency [MHz]	Channel	IEEE 802.11 (5 GHz) Reduced Average Conducted Power [dBm]	
			Ant. 1	Ant. 2
802.11ac (80 MHz BW)	5 775	155	12.94	12.63
802.11ax(SU) (80 MHz BW)	5 775	155	13.70	13.45

Justification for test configurations for WLAN per KDB Publication 248227 D01v02r02:

- Power measurements were performed for the transmission mode configuration with the highest maximum output power specified for production units.
- For transmission mode with the same maximum output power specification, powers were measured for the largest channel bandwidth, lowest order modulation and lowest data rate.
- For transmission modes with identical maximum specified output power, channel bandwidth, modulation and data rates, power measurements were required for all identical configurations.
- For each transmission mode configuration, powers were measured for the highest and lowest channels; and at the mid-band channel(s) when there were at least 3 channels supported. For configurations with multiple mid-band channels, due to an even number of channels, both channels were measured.

Test Configuration



11.5 Bluetooth Conducted Power

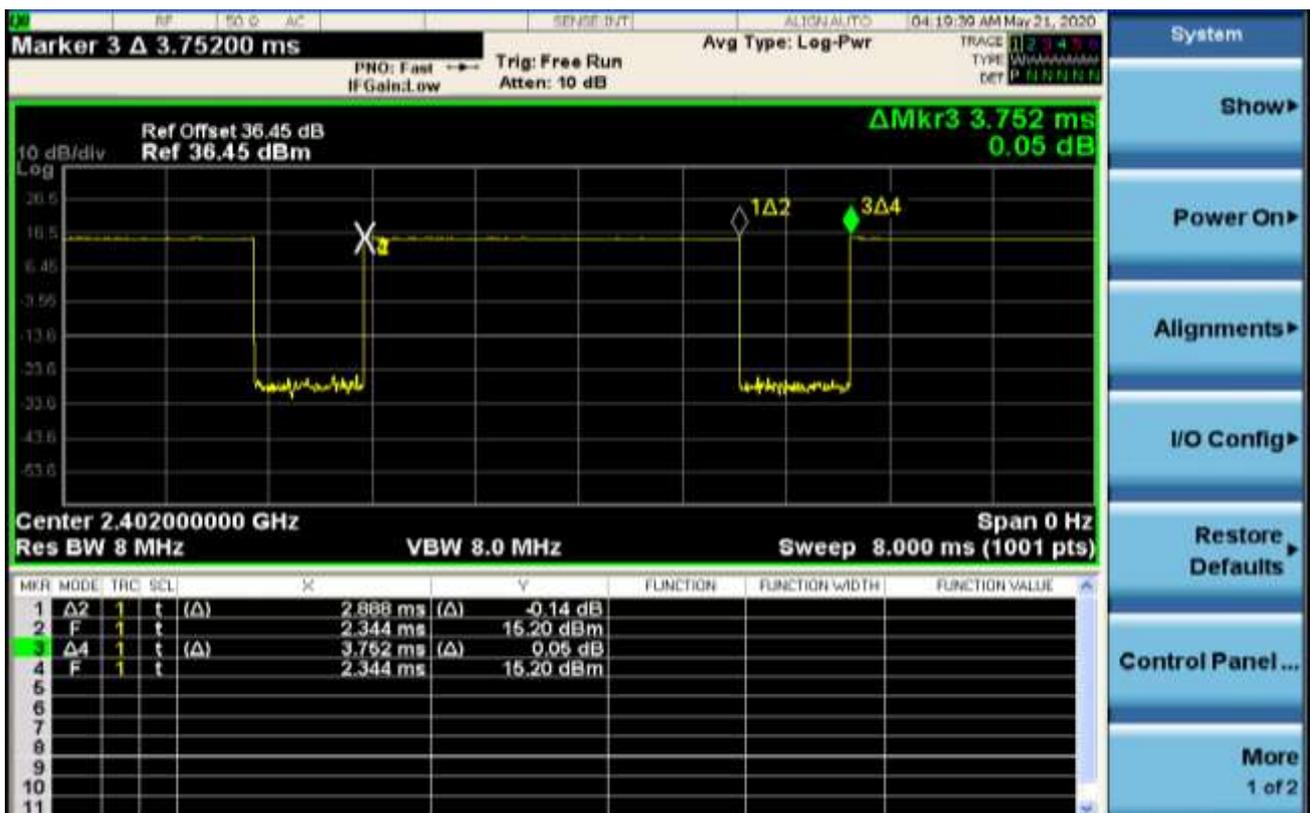
The Burst averaged-conducted power

Mode	Channel	Bluetooth Power [dBm]
DH5	0	15.53
	39	16.35
	78	16.46
2-DH5	0	9.31
	39	10.26
	78	9.84
3-DH5	0	9.32
	39	10.27
	78	9.86

Per October 2016 TCB Workshop Notes:

When call box and Bluetooth protocol are used for Bluetooth SAR measurement, time-domain plot is required to identify duty factor for supporting the test setup and result.

Bluetooth duty cycle was measured using Bluetooth tester equipment (CBT / R&S) with Bluetooth DH5 mode.



Duty Cycle

$$= (\text{BT-On time} / \text{BT-Full time}) = (2.888 / 3.752) = 0.769 \text{ (DH5)}$$

Duty factor= 1/Duty cycle : 1.300

12. System Verification

12.1 Tissue Verification

The body simulating material is calibrated by HCT using the DAKS 3.5 to determine the conductivity and permittivity.

Table for Head Tissue Verification									
Date of Tests	Tissue Temp. (°C)	Tissue Type	Freq. (MHz)	Measured Conductivity σ (S/m)	Measured Dielectric Constant, ϵ_r	Target Conductivity σ (S/m)	Target Dielectric Constant, ϵ_r	% dev σ	% dev ϵ
06/15/2020	19.8	835H	820	0.891	42.607	0.899	41.577	- 0.89	+ 2.48
			835	0.905	42.362	0.900	41.500	+ 0.56	+ 2.08
			850	0.916	42.188	0.916	41.500	+ 0.00	+ 1.66
05/15/2020	20.4	750H	705	0.855	42.614	0.889	42.174	- 3.82	+ 1.04
			710	0.861	42.503	0.890	42.148	- 3.26	+ 0.84
			750	0.901	41.998	0.893	41.940	+ 0.90	+ 0.14
05/15/2020	20.4	750H	750	0.876	42.001	0.893	41.940	- 1.90	+ 0.15
			785	0.904	41.537	0.896	41.758	- 0.88	- 0.53
05/20/2020	21.4	835H	820	0.908	43.033	0.899	41.577	+ 1.00	+ 3.50
			835	0.923	42.843	0.900	41.500	+ 2.56	+ 3.24
			850	0.935	42.660	0.916	41.500	+ 2.07	+ 2.80
5/18/2020	20.2	835H	820	0.930	42.887	0.899	41.577	+ 3.45	+ 3.15
			835	0.945	42.695	0.900	41.500	+ 5.00	+ 2.88
			850	0.957	42.514	0.916	41.500	+ 4.48	+ 2.44
05/14/2020	20.4	835H	820	0.913	42.712	0.899	41.577	+ 1.56	+ 2.73
			835	0.929	42.526	0.900	41.500	+ 3.22	+ 2.47
			850	0.941	42.352	0.916	41.500	+ 2.73	+ 2.05
05/18/2020	20.2	1800H	1710	1.302	40.404	1.348	40.144	- 3.41	+ 0.65
			1750	1.339	40.323	1.371	40.080	- 2.33	+ 0.61
			1800	1.383	40.171	1.400	40.000	- 1.21	+ 0.43
05/15/2020	21.2	1800H	1710	1.303	40.427	1.348	40.144	- 3.34	+ 0.70
			1750	1.340	40.327	1.371	40.080	- 2.26	+ 0.62
			1800	1.387	40.210	1.400	40.000	- 0.93	+ 0.52
05/26/2020	19.9	1800H	1710	1.285	39.928	1.348	40.144	- 4.67	- 0.54
			1750	1.317	39.879	1.371	40.080	- 3.94	- 0.50
			1800	1.363	39.725	1.400	40.000	- 2.64	- 0.69
05/19/2020	20.7	1800H	1710	1.294	40.241	1.348	40.144	- 4.01	+ 0.24
			1750	1.330	40.157	1.371	40.080	- 2.99	+ 0.19
			1800	1.376	39.970	1.400	40.000	- 1.71	- 0.08
06/12/2020	19.5	1900H	1850	1.356	40.105	1.400	40.000	- 3.14	+ 0.26
			1900	1.403	39.891	1.400	40.000	+ 0.21	- 0.27
			1910	1.412	39.850	1.400	40.000	+ 0.86	- 0.37
06/15/2020	20.1	1900H	1850	1.287	39.410	1.400	40.000	- 8.07	- 1.48
			1900	1.339	39.213	1.400	40.000	- 4.36	- 1.97
			1910	1.346	39.132	1.400	40.000	- 3.86	- 2.17
05/18/2020	20.2	1900H	1850	1.376	39.196	1.400	40.000	- 1.71	- 2.01
			1900	1.430	38.954	1.400	40.000	+ 2.14	- 2.61

			1910	1.441	38.895	1.400	40.000	+ 2.93	- 2.76
05/27/2020	20.3	1900H	1850	1.392	39.352	1.400	40.000	- 0.57	- 1.62
			1900	1.448	39.092	1.400	40.000	+ 3.43	- 2.27
			1910	1.458	39.045	1.400	40.000	+ 4.14	- 2.39
05/18/2020	20.2	1900H	1850	1.342	39.183	1.400	40.000	- 4.14	- 2.04
			1900	1.393	38.904	1.400	40.000	- 0.50	- 2.74
			1910	1.401	38.868	1.400	40.000	+ 0.07	- 2.83
05/15/2020	21.2	1900H	1850	1.333	38.472	1.400	40.000	- 4.79	- 3.82
			1900	1.386	38.242	1.400	40.000	- 1.00	- 4.40
			1910	1.396	38.133	1.400	40.000	- 0.29	- 4.67
05/26/2020	19.9	1900H	1850	1.342	39.241	1.400	40.000	- 4.14	- 1.90
			1900	1.385	38.985	1.400	40.000	- 1.07	- 2.54
			1910	1.397	38.934	1.400	40.000	- 0.21	- 2.67
05/18/2020	20.7	1900H	1850	1.415	38.227	1.400	40.000	+ 1.07	- 4.43
			1900	1.420	38.472	1.400	40.000	+ 1.43	- 3.82
			1910	1.420	38.536	1.400	40.000	+ 1.43	- 3.66
06/03/2020	21.2	2450H	2400	1.749	39.942	1.756	39.290	- 0.40	+ 1.66
			2450	1.807	39.785	1.800	39.200	+ 0.39	+ 1.49
			2500	1.864	39.618	1.855	39.140	+ 0.49	+ 1.22
06/11/2020	19.5	2450H	2400	1.749	40.046	1.756	39.290	- 0.40	+ 1.92
			2450	1.808	39.862	1.800	39.200	+ 0.44	+ 1.69
			2500	1.866	39.743	1.855	39.140	+ 0.59	+ 1.54
05/26/2020	21.2	2450H	2400	1.742	38.619	1.756	39.290	- 0.80	- 1.71
			2450	1.799	38.443	1.800	39.200	- 0.06	- 1.93
			2500	1.852	38.266	1.855	39.140	- 0.16	- 2.23
0/25/2020	21.4	2600H	2500	1.855	38.258	1.855	39.140	+ 0.00	- 2.25
			2600	1.947	37.791	1.964	39.010	- 0.87	- 3.12
			2690	2.049	37.522	2.062	38.894	- 0.63	- 3.53
05/29/2020	20.2	5180H-5825H	5180	4.534	37.151	4.635	36.010	- 2.18	+ 3.17
			5250	4.612	37.012	4.706	35.930	- 2.12	+ 3.01
			5280	4.634	36.979	4.737	35.894	- 2.17	+ 3.02
			5320	4.680	36.922	4.778	35.846	- 2.05	+ 3.00
			5500	4.881	36.738	4.963	35.640	- 1.65	+ 3.08
			5600	5.004	36.542	5.065	35.530	- 1.34	+ 2.85
			5750	5.172	36.297	5.219	35.360	- 1.03	+ 2.65
			5800	5.213	36.223	5.270	35.300	- 1.08	+ 2.61
			5825	5.238	36.185	5.296	35.270	- 1.10	+ 2.59
06/09/2020	19.6	5180H-5825H	5180	4.544	37.153	4.635	36.010	- 1.96	+ 3.17
			5250	4.619	37.012	4.706	35.930	- 1.98	+ 3.01
			5280	4.639	36.986	4.737	35.894	- 2.07	+ 3.04
			5320	4.678	36.939	4.778	35.846	- 2.09	+ 3.05
			5500	4.881	36.678	4.963	35.640	- 1.65	+ 2.91
			5600	5.003	36.537	5.065	35.530	- 1.36	+ 2.83
			5750	5.166	36.294	5.219	35.360	- 1.15	+ 2.64
			5800	5.213	36.230	5.270	35.300	- 1.08	+ 2.63
			5825	5.239	36.194	5.296	35.270	- 1.08	+ 2.62
06/10/2020	20.8	5750H-5825H	5750	5.178	36.383	5.219	35.360	- 0.92	+ 2.89
			5800	5.221	36.305	5.270	35.300	- 0.93	+ 2.85
			5825	5.245	36.269	5.296	35.270	- 0.96	+ 2.83

07/03/2020	21.3	5180H	5180	4.522	37.166	4.635	36.010	-2.44	3.21
			5250	4.599	37.014	4.706	35.930	-2.27	3.02
			5280	4.629	36.970	4.737	35.894	-2.28	3.00

12.2 System Verification

Input Power: 50 mW

Freq.	Date	Probe (S/N)	Dipole (S/N)	Liquid	Amb. Temp.	Liquid Temp.	1 W Target SAR _{1g} (SPEAG)	50mW Measured SAR _{1g}	1 W Normalized SAR _{1g}	Deviation	Limit
[MHz]					[°C]	[°C]	[W/kg]	[W/kg]	[W/kg]	[%]	[%]
750	05/15/2020	3076	1014	Head	20.6	20.4	8.39	0.412	8.24	- 1.79	± 10
750	05/15/2020	3076		Head	20.6	20.4	8.39	0.400	8.00	- 4.65	± 10
835	06/15/2020	1630	441	Head	20.0	19.8	9.69	0.502	10.04	+ 3.61	± 10
835	05/20/2020	3968		Head	21.6	21.4	9.69	0.463	9.26	- 4.44	± 10
835	05/18/2020	3797		Head	20.4	20.2	9.69	0.508	10.16	+ 4.85	± 10
835	05/14/2020	3076		Head	20.5	20.4	9.69	0.485	9.70	+ 0.10	± 10
1 800	05/18/2020	3903	2d015	Head	20.4	20.2	38.5	1.91	38.2	- 0.78	± 10
1 800	05/15/2020	3797		Head	21.4	21.2	38.5	1.91	38.2	- 0.78	± 10
1 800	05/19/2020	3076		Head	20.8	20.7	38.5	1.97	39.4	+ 2.34	± 10
1 900	06/12/2020	3797	5d061	Head	19.7	19.5	39.9	2.05	41.0	+ 2.76	± 10
1 900	05/18/2020	3797		Head	20.4	20.2	39.9	1.92	38.4	- 3.76	± 10
1 900	05/18/2020	3903		Head	20.4	20.2	39.9	2.11	42.2	+ 5.76	± 10
1 900	05/15/2020	3797		Head	21.4	21.2	39.9	1.91	38.2	- 4.26	± 10
1 900	05/18/2020	3076		Head	20.9	20.7	39.9	2.1	42.0	+ 5.26	± 10
2 450	06/03/2020	3903	743	Head	21.4	21.2	53.4	2.51	50.2	- 5.99	± 10
2 450	06/11/2020	3968		Head	19.7	19.5	53.4	2.49	49.8	- 6.74	± 10
2 450	05/26/2020	3968		Head	21.4	21.2	53.4	2.59	51.8	- 3.00	± 10
2 600	05/25/2020	3903	1106	Head	21.5	21.4	56.5	2.73	54.6	- 3.36	± 10
5 250	06/09/2020	3968	1107	Head	20.4	20.2	81.6	4.31	86.2	+ 5.64	± 10
5 250	07/03/2020	3968		Head	21.5	21.3	81.6	4.01	80.2	- 1.72	± 10
5 600	05/29/2020	3903		Head	19.7	19.6	84.0	4.06	81.2	- 3.33	± 10
5 600	06/09/2020	3968		Head	20.4	20.2	84.0	4.00	80.0	- 4.76	± 10
5 750	05/29/2020	3903		Head	19.7	19.6	80.9	4.04	80.8	- 0.12	± 10
5 750	06/09/2020	3968		Head	20.4	20.2	80.9	4.23	84.6	+ 4.57	± 10
5 750	06/10/2020	3968		Head	21.0	20.8	80.9	4.15	83.0	+ 2.60	± 10

System Verification Results – Extremity SAR

Input Power: 50 mW

Freq.	Date	Probe (S/N)	Dipole (S/N)	Liquid	Amb. Temp.	Liquid Temp.	1 W Target SAR _{10g} (SPEAG)	50mW Measured SAR _{10g}	1 W Normalized SAR _{10g}	Deviation	Limit
[MHz]					[°C]	[°C]	[W/kg]	[W/kg]	[W/kg]	[%]	[%]
1 800	05/19/2020	3076	2d015	Head	20.8	20.7	20.0	1.05	21.00	+ 5.00	± 10
1 900	06/15/2020	3797	5d061	Head	20.3	20.1	20.7	1.01	20.2	- 2.42	± 10
1 900	05/26/2020	3968	5d061	Head	20.0	19.9	20.7	0.981	19.62	- 5.22	± 10
1 900	05/27/2020	3797	5d061	Head	20.5	20.3	20.7	1.06	21.20	+ 2.42	± 10
1 900	05/26/2020	3968	5d061	Head	20.0	19.9	20.7	1	20.00	- 3.38	± 10
1 900	05/18/2020	3076	5d061	Head	20.9	20.7	20.7	1.09	21.80	+ 5.31	± 10
5 250	06/09/2020	3968	1107	Head	19.7	19.6	23.4	1.2	24.00	+ 2.56	± 10
5 600	06/09/2020	3968	1107	Head	19.7	19.6	23.0	1.12	22.40	- 2.61	± 10

12.3 System Verification Procedure

SAR measurement was prior to assessment, the system is verified to the $\pm 10\%$ of the specifications at each frequency band by using the system verification kit. (Graphic Plots Attached)

- Cabling the system, using the verification kit equipment.
- Generate about 50 mW Input level from the signal generator to the Dipole Antenna.
- Dipole antenna was placed below the flat phantom.
- The measured one-gram SAR at the surface of the phantom above the dipole feed-point should be within 10 % of the target reference value.
- The results are normalized to 1 W input power.

Note;

SAR Verification was performed according to the FCC KDB 865664 D01v01r04.

13. SAR Test Data Summary

13.1 SAR Measurement Results

GSM 850 Head SAR											
Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
Mhz	Ch.										
836.6	190	GSM	34.00	33.94	-0.11	Left Cheek	1:8.3	0.141	1.014	0.143	-
836.6	190	GSM	34.00	33.94	0.01	Left Tilt	1:8.3	0.085	1.014	0.086	-
836.6	190	GSM	34.00	33.94	-0.11	Right Cheek	1:8.3	0.118	1.014	0.120	-
836.6	190	GSM	34.00	33.94	0.17	Right Tilt	1:8.3	0.094	1.014	0.095	-
836.6	190	GPRS 3Tx	30.50	29.60	-0.01	Left Cheek	1:2.77	0.230	1.230	0.283	1
836.6	190	GPRS 3Tx	30.50	29.60	-0.09	Left Tilt	1:2.77	0.108	1.230	0.133	-
836.6	190	GPRS 3Tx	30.50	29.60	0.08	Right Cheek	1:2.77	0.152	1.230	0.187	-
836.6	190	GPRS 3Tx	30.50	29.60	-0.02	Right Tilt	1:2.77	0.127	1.230	0.156	-
GSM 850 Head SAR (10g)											
Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
Mhz	Ch.										
836.6	190	GSM	34.00	33.94	-0.11	Left Cheek	1:8.3	0.109	1.014	0.111	-
836.6	190	GSM	34.00	33.94	0.01	Left Tilt	1:8.3	0.060	1.014	0.061	-
836.6	190	GSM	34.00	33.94	-0.11	Right Cheek	1:8.3	0.091	1.014	0.092	-
836.6	190	GSM	34.00	33.94	0.17	Right Tilt	1:8.3	0.067	1.014	0.068	-
836.6	190	GPRS 3Tx	30.50	29.60	-0.01	Left Cheek	1:2.77	0.174	1.230	0.214	1
836.6	190	GPRS 3Tx	30.50	29.60	-0.09	Left Tilt	1:2.77	0.075	1.230	0.092	-
836.6	190	GPRS 3Tx	30.50	29.60	0.08	Right Cheek	1:2.77	0.116	1.230	0.143	-
836.6	190	GPRS 3Tx	30.50	29.60	-0.02	Right Tilt	1:2.77	0.090	1.230	0.111	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population						Head 1.6 W/kg Averaged over 1 gram					

GSM 1900 Head SAR

Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
Mhz	Ch.		(dB)	(dB)	(dB)			(W/kg)		(W/kg)	
1 880	661	GSM	31.00	30.50	-0.19	Left Cheek	1:8.3	0.053	1.122	0.059	-
1 880	661	GSM	31.00	30.50	0.19	Left Tilt	1:8.3	0.040	1.122	0.045	-
1 880	661	GSM	31.00	30.50	0.16	Right Cheek	1:8.3	0.055	1.122	0.062	-
1 880	661	GSM	31.00	30.50	-0.03	Right Tilt	1:8.3	0.038	1.122	0.043	-
1 880	661	GPRS 3Tx	26.50	26.01	0.06	Left Cheek	1:2.77	0.062	1.119	0.069	-
1 880	661	GPRS 3Tx	26.50	26.01	-0.10	Left Tilt	1:2.77	0.049	1.119	0.055	-
1 880	661	GPRS 3Tx	26.50	26.01	0.10	Right Cheek	1:2.77	0.075	1.119	0.084	2
1 880	661	GPRS 3Tx	26.50	26.01	-0.12	Right Tilt	1:2.77	0.052	1.119	0.058	-

GSM 1900 Head SAR (10g)

Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
Mhz	Ch.		(dB)	(dB)	(dB)			(W/kg)		(W/kg)	
1 880	661	GSM	31.00	30.50	-0.19	Left Cheek	1:8.3	0.033	1.122	0.037	-
1 880	661	GSM	31.00	30.50	0.19	Left Tilt	1:8.3	0.022	1.122	0.025	-
1 880	661	GSM	31.00	30.50	0.16	Right Cheek	1:8.3	0.033	1.122	0.037	-
1 880	661	GSM	31.00	30.50	-0.03	Right Tilt	1:8.3	0.021	1.122	0.024	-
1 880	661	GPRS 3Tx	26.50	26.01	0.06	Left Cheek	1:2.77	0.039	1.119	0.044	-
1 880	661	GPRS 3Tx	26.50	26.01	-0.10	Left Tilt	1:2.77	0.028	1.119	0.031	-
1 880	661	GPRS 3Tx	26.50	26.01	0.10	Right Cheek	1:2.77	0.046	1.119	0.051	2
1 880	661	GPRS 3Tx	26.50	26.01	-0.12	Right Tilt	1:2.77	0.029	1.119	0.032	-

ANSI/ IEEE C95.1 - 2005 – Safety Limit
Spatial Peak
Uncontrolled Exposure/ General Population

Head
1.6 W/kg
Averaged over 1 gram

WCDMA 850 Head SAR											
Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(dB)	(dB)	(dB)			(W/kg)		(W/kg)	
836.6	4183	RMC	25.00	23.76	-0.11	Left Cheek	1:1	0.142	1.330	0.189	3
836.6	4183	RMC	25.00	23.76	-0.03	Left Tilt	1:1	0.066	1.330	0.088	-
836.6	4183	RMC	25.00	23.76	-0.13	Right Cheek	1:1	0.113	1.330	0.150	-
836.6	4183	RMC	25.00	23.76	-0.17	Right Tilt	1:1	0.080	1.330	0.106	-
WCDMA 850 Head SAR (10g)											
Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(dB)	(dB)	(dB)			(W/kg)		(W/kg)	
836.6	4183	RMC	25.00	23.76	-0.11	Left Cheek	1:1	0.110	1.330	0.146	3
836.6	4183	RMC	25.00	23.76	-0.03	Left Tilt	1:1	0.048	1.330	0.064	-
836.6	4183	RMC	25.00	23.76	-0.13	Right Cheek	1:1	0.089	1.330	0.118	-
836.6	4183	RMC	25.00	23.76	-0.17	Right Tilt	1:1	0.062	1.330	0.082	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population						Head 1.6 W/kg (mW/g) Averaged over 1 gram					

WCDMA 1700 Head SAR											
Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
Mhz	Ch.		(dB)	(dB)	(dB)			(W/kg)		(W/kg)	
1 732.4	1412	RMC	23.50	22.63	0.19	Left Cheek	1:1	0.091	1.222	0.111	-
1 732.4	1412	RMC	23.50	22.63	0.14	Left Tilt	1:1	0.061	1.222	0.075	-
1 732.4	1412	RMC	23.50	22.63	0.13	Right Cheek	1:1	0.104	1.222	0.127	4
1 732.4	1412	RMC	23.50	22.63	0.14	Right Tilt	1:1	0.057	1.222	0.070	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population						Head 1.6 W/kg (mW/g) Averaged over 1 gram					

WCDMA 1900 Head SAR											
Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
Mhz	Ch.		(dB)	(dB)	(dB)			(W/kg)		(W/kg)	
1 880	9400	RMC	23.50	21.72	0.10	Left Cheek	1:1	0.054	1.507	0.081	-
1 880	9400	RMC	23.50	21.72	0.19	Left Tilt	1:1	0.063	1.507	0.095	5
1 880	9400	RMC	23.50	21.72	0.17	Right Cheek	1:1	0.053	1.507	0.080	-
1 880	9400	RMC	23.50	21.72	0.16	Right Tilt	1:1	0.051	1.507	0.077	-

WCDMA 1900 Head SAR (10g)											
Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
Mhz	Ch.		(dB)	(dB)	(dB)			(W/kg)		(W/kg)	
1 880	9400	RMC	23.50	21.72	0.10	Left Cheek	1:1	0.035	1.507	0.053	-
1 880	9400	RMC	23.50	21.72	0.19	Left Tilt	1:1	0.038	1.507	0.057	5
1 880	9400	RMC	23.50	21.72	0.17	Right Cheek	1:1	0.034	1.507	0.051	-
1 880	9400	RMC	23.50	21.72	0.16	Right Tilt	1:1	0.030	1.507	0.045	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population						Head 1.6 W/kg (mW/g) Averaged over 1 gram					

LTE Band 2 Head SAR															
Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
Mhz	Ch.														
1880	18900	QPSK	20	23.00	22.53	-0.19	Left Cheek	0	1	0	1:1	0.100	1.114	0.111	-
1880	18900	QPSK	20	22.00	21.43	0.11	Left Cheek	1	50	0	1:1	0.073	1.140	0.083	-
1880	18900	QPSK	20	23.00	22.53	0.15	Left Tilt	0	1	0	1:1	0.070	1.114	0.078	-
1880	18900	QPSK	20	22.00	21.43	0.10	Left Tilt	1	50	0	1:1	0.053	1.140	0.060	-
1880	18900	QPSK	20	23.00	22.53	-0.12	Right Cheek	0	1	0	1:1	0.102	1.114	0.114	6
1880	18900	QPSK	20	22.00	21.43	0.17	Right Cheek	1	50	0	1:1	0.078	1.140	0.089	-
1880	18900	QPSK	20	23.00	22.53	0.03	Right Tilt	0	1	0	1:1	0.068	1.114	0.076	-
1880	18900	QPSK	20	22.00	21.43	-0.07	Right Tilt	1	50	0	1:1	0.048	1.140	0.055	-
LTE Band 2 Head SAR (10g)															
Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
Mhz	Ch.														
1880	18900	QPSK	20	23.00	22.53	-0.19	Left Cheek	0	1	0	1:1	0.059	1.114	0.066	-
1880	18900	QPSK	20	22.00	21.43	0.11	Left Cheek	1	50	0	1:1	0.043	1.140	0.049	-
1880	18900	QPSK	20	23.00	22.53	0.15	Left Tilt	0	1	0	1:1	0.042	1.114	0.047	-
1880	18900	QPSK	20	22.00	21.43	0.10	Left Tilt	1	50	0	1:1	0.032	1.140	0.036	-
1880	18900	QPSK	20	23.00	22.53	-0.12	Right Cheek	0	1	0	1:1	0.060	1.114	0.067	6
1880	18900	QPSK	20	22.00	21.43	0.17	Right Cheek	1	50	0	1:1	0.047	1.140	0.054	-
1880	18900	QPSK	20	23.00	22.53	0.03	Right Tilt	0	1	0	1:1	0.038	1.114	0.042	-
1880	18900	QPSK	20	22.00	21.43	-0.07	Right Tilt	1	50	0	1:1	0.027	1.140	0.031	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Head 1.6 W/kg Averaged over 1 gram								

LTE Band 5 Head SAR															
Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
Mhz	Ch.														
836.5	20525	QPSK	10	25.00	24.26	0.91	Left Cheek	0	1	0	1:1	0.170	1.186	0.202	7
836.5	20525	QPSK	10	24.00	23.23	0.03	Left Cheek	1	25	0	1:1	0.129	1.194	0.154	-
836.5	20525	QPSK	10	25.00	24.26	-0.12	Left Tilt	0	1	0	1:1	0.059	1.186	0.070	-
836.5	20525	QPSK	10	24.00	23.23	0.13	Left Tilt	1	25	0	1:1	0.044	1.194	0.053	-
836.5	20525	QPSK	10	25.00	24.26	0.10	Right Cheek	0	1	0	1:1	0.108	1.186	0.128	-
836.5	20525	QPSK	10	24.00	23.23	-0.03	Right Cheek	1	25	0	1:1	0.085	1.194	0.101	-
836.5	20525	QPSK	10	25.00	24.26	-0.01	Right Tilt	0	1	0	1:1	0.071	1.186	0.084	-
836.5	20525	QPSK	10	24.00	23.23	-0.02	Right Tilt	1	25	0	1:1	0.055	1.194	0.066	-
LTE Band 5 Head SAR (10g)															
Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
Mhz	Ch.														
836.5	20525	QPSK	10	25.00	24.26	0.91	Left Cheek	0	1	0	1:1	0.117	1.186	0.139	7
836.5	20525	QPSK	10	24.00	23.23	0.03	Left Cheek	1	25	0	1:1	0.096	1.194	0.115	-
836.5	20525	QPSK	10	25.00	24.26	-0.12	Left Tilt	0	1	0	1:1	0.042	1.186	0.050	-
836.5	20525	QPSK	10	24.00	23.23	0.13	Left Tilt	1	25	0	1:1	0.032	1.194	0.038	-
836.5	20525	QPSK	10	25.00	24.26	0.10	Right Cheek	0	1	0	1:1	0.083	1.186	0.098	-
836.5	20525	QPSK	10	24.00	23.23	-0.03	Right Cheek	1	25	0	1:1	0.065	1.194	0.078	-
836.5	20525	QPSK	10	25.00	24.26	-0.01	Right Tilt	0	1	0	1:1	0.051	1.186	0.060	-
836.5	20525	QPSK	10	24.00	23.23	-0.02	Right Tilt	1	25	0	1:1	0.039	1.194	0.047	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Head 1.6 W/kg Averaged over 1 gram							

LTE Band 12 Head SAR															
Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
Mhz	Ch.														
707.5	23095	QPSK	10	24.50	23.30	0.19	Left Cheek	0	1	0	1:1	0.066	1.318	0.087	8
707.5	23095	QPSK	10	23.50	22.28	0.12	Left Cheek	1	25	0	1:1	0.053	1.324	0.070	-
707.5	23095	QPSK	10	24.50	23.30	0.07	Left Tilt	0	1	0	1:1	0.032	1.318	0.042	-
707.5	23095	QPSK	10	23.50	22.28	0.19	Left Tilt	1	25	0	1:1	0.025	1.324	0.033	-
707.5	23095	QPSK	10	24.50	23.30	0.14	Right Cheek	0	1	0	1:1	0.059	1.318	0.078	-
707.5	23095	QPSK	10	23.50	22.28	0.11	Right Cheek	1	25	0	1:1	0.047	1.324	0.062	-
707.5	23095	QPSK	10	24.50	23.30	0.10	Right Tilt	0	1	0	1:1	0.043	1.318	0.057	-
707.5	23095	QPSK	10	23.50	22.28	0.16	Right Tilt	1	25	0	1:1	0.035	1.324	0.046	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Head 1.6 W/kg Averaged over 1 gram							

LTE Band 13 Head SAR

Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.														
782	23230	QPSK	10	25.00	23.80	0.11	Left Cheek	0	1	49	1:1	0.063	1.318	0.083	9
782	23230	QPSK	10	24.00	22.88	0.13	Left Cheek	1	25	24	1:1	0.050	1.294	0.065	-
782	23230	QPSK	10	25.00	23.80	0.14	Left Tilt	0	1	49	1:1	0.029	1.318	0.038	-
782	23230	QPSK	10	24.00	22.88	0.19	Left Tilt	1	25	24	1:1	0.022	1.294	0.028	-
782	23230	QPSK	10	25.00	23.80	0.17	Right Cheek	0	1	49	1:1	0.040	1.318	0.053	-
782	23230	QPSK	10	24.00	22.88	0.10	Right Cheek	1	25	24	1:1	0.032	1.294	0.041	-
782	23230	QPSK	10	25.00	23.80	0.13	Right Tilt	0	1	49	1:1	0.026	1.318	0.034	-
782	23230	QPSK	10	24.00	22.88	0.15	Right Tilt	1	25	24	1:1	0.021	1.294	0.027	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Head 1.6 W/kg Averaged over 1 gram								

LTE Band 25 Head SAR

Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.														
1 882.5	26365	QPSK	20	23.00	22.45	0.19	Left Cheek	0	1	0	1:1	0.108	1.135	0.123	10
1 882.5	26365	QPSK	20	22.00	21.42	0.19	Left Cheek	1	50	49	1:1	0.076	1.143	0.087	-
1 882.5	26365	QPSK	20	23.00	22.45	-0.03	Left Tilt	0	1	0	1:1	0.082	1.135	0.093	-
1 882.5	26365	QPSK	20	22.00	21.42	0.18	Left Tilt	1	50	49	1:1	0.057	1.143	0.065	-
1 882.5	26365	QPSK	20	23.00	22.45	0.14	Right Cheek	0	1	0	1:1	0.093	1.135	0.106	-
1 882.5	26365	QPSK	20	22.00	21.42	0.19	Right Cheek	1	50	49	1:1	0.066	1.143	0.075	-
1 882.5	26365	QPSK	20	23.00	22.45	0.03	Right Tilt	0	1	0	1:1	0.079	1.135	0.090	-
1 882.5	26365	QPSK	20	22.00	21.42	-0.14	Right Tilt	1	50	49	1:1	0.064	1.143	0.073	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Head 1.6 W/kg Averaged over 1 gram								

LTE Band 26 Head SAR															
Frequency		Mode	Band width (MHz)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	MPR (dB)	RB Size	RB offset	Duty Cycle	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
MHz	Ch.														
831.5	26865	QPSK	15	25.00	23.79	0.15	Left Cheek	0	1	0	1:1	0.157	1.321	0.207	11
831.5	26865	QPSK	15	24.00	22.81	0.12	Left Cheek	1	36	0	1:1	0.131	1.315	0.172	-
831.5	26865	QPSK	15	25.00	23.79	0.03	Left Tilt	0	1	0	1:1	0.071	1.321	0.094	-
831.5	26865	QPSK	15	24.00	22.81	0.02	Left Tilt	1	36	0	1:1	0.057	1.315	0.075	-
831.5	26865	QPSK	15	25.00	23.79	0.19	Right Cheek	0	1	0	1:1	0.117	1.321	0.155	-
831.5	26865	QPSK	15	24.00	22.81	0.14	Right Cheek	1	36	0	1:1	0.090	1.315	0.118	-
831.5	26865	QPSK	15	25.00	23.79	0.13	Right Tilt	0	1	0	1:1	0.082	1.321	0.108	-
831.5	26865	QPSK	15	24.00	22.81	0.19	Right Tilt	1	36	0	1:1	0.061	1.315	0.080	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Head 1.6 W/kg Averaged over 1 gram								

LTE TDD Band 41 Head SAR															
Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
Mhz	Ch.														
2593	40620	QPSK	20	23.50	22.67	0.01	Left Cheek	0	1	0	1:1.58	0.030	1.211	0.036	
2593	40620	QPSK	20	22.50	21.72	0.01	Left Cheek	1	50	0	1:1.58	0.020	1.197	0.024	-
2593	40620	QPSK	20	23.50	22.67	0.13	Left Tilt	0	1	0	1:1.58	0.044	1.211	0.053	-
2593	40620	QPSK	20	22.50	21.72	0.01	Left Tilt	1	50	0	1:1.58	0.035	1.197	0.042	-
2593	40620	QPSK	20	23.50	22.67	-0.15	Right Cheek	0	1	0	1:1.58	0.031	1.211	0.038	-
2593	40620	QPSK	20	22.50	21.72	0.01	Right Cheek	1	50	0	1:1.58	0.022	1.197	0.026	-
2593	40620	QPSK	20	23.50	22.67	0.04	Right Tilt	0	1	0	1:1.58	0.018	1.211	0.022	-
2593	40620	QPSK	20	22.50	21.72	0.16	Right Tilt	1	50	0	1:1.58	0.015	1.197	0.018	-

Power class 2 (HPUE)

2593	40620	QPSK	20	25.00	24.46	0.10	Left Tilt	0	1	0	1:1.58	0.049	1.132	0.055	12*
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LTE TDD Band 41 Head SAR (10g)

Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
Mhz	Ch.														
2593	40620	QPSK	20	23.50	22.67	0.01	Left Cheek	0	1	0	1:1.58	0.014	1.211	0.017	
2593	40620	QPSK	20	22.50	21.72	0.01	Left Cheek	1	50	0	1:1.58	0.00771	1.197	0.009	-
2593	40620	QPSK	20	23.50	22.67	0.13	Left Tilt	0	1	0	1:1.58	0.021	1.211	0.025	-
2593	40620	QPSK	20	22.50	21.72	0.01	Left Tilt	1	50	0	1:1.58	0.017	1.197	0.020	-
2593	40620	QPSK	20	23.50	22.67	-0.15	Right Cheek	0	1	0	1:1.58	0.015	1.211	0.018	-
2593	40620	QPSK	20	22.50	21.72	0.01	Right Cheek	1	50	0	1:1.58	0.010	1.197	0.012	-
2593	40620	QPSK	20	23.50	22.67	0.04	Right Tilt	0	1	0	1:1.58	0.00809	1.211	0.010	-
2593	40620	QPSK	20	22.50	21.72	0.16	Right Tilt	1	50	0	1:1.58	0.00664	1.197	0.008	-

Power class 2 (HPUE)

2593	40620	QPSK	20	25.00	24.46	0.10	Left Tilt	0	1	0	1:1.58	0.024	1.132	0.027	12*
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ANSI/ IEEE C95.1 - 2005 – Safety Limit
Spatial Peak
Uncontrolled Exposure/ General Population

Head
1.6 W/kg
Averaged over 1 gram

Note: * Data entry indicate LTE 41 Power Class 2(HPUE)

LTE Band 66 Head SAR															
Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
Mhz	Ch.														
1 745	132322	QPSK	20	23.70	22.93	0.08	Left Cheek	0	1	0	1:1	0.112	1.194	0.134	-
1 745	132322	QPSK	20	22.70	21.89	0.17	Left Cheek	1	50	0	1:1	0.090	1.205	0.108	-
1 745	132322	QPSK	20	23.70	22.93	0.04	Left Tilt	0	1	0	1:1	0.075	1.194	0.090	-
1 745	132322	QPSK	20	22.70	21.89	-0.03	Left Tilt	1	50	0	1:1	0.060	1.205	0.072	-
1 745	132322	QPSK	20	23.70	22.93	-0.14	Right Cheek	0	1	0	1:1	0.120	1.194	0.143	13
1 745	132322	QPSK	20	22.70	21.89	0.11	Right Cheek	1	50	0	1:1	0.098	1.205	0.118	-
1 745	132322	QPSK	20	23.70	22.93	-0.16	Right Tilt	0	1	0	1:1	0.102	1.194	0.122	-
1 745	132322	QPSK	20	22.70	21.89	0.10	Right Tilt	1	50	0	1:1	0.082	1.205	0.099	-

ANSI/ IEEE C95.1 - 2005 – Safety Limit
Spatial Peak
Uncontrolled Exposure/ General Population

Head
1.6 W/kg
Averaged over 1 gram

DTS Head SAR																
Frequency		Mode	Band width (MHz)	Data Rate (Mbps)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	Ant. Config.	Duty Cycle	Area Scan Peak SAR (W/kg)	Meas. SAR (W/kg)	Scaling Factor	Scaling Factor (Duty)	Scaled SAR (W/kg)	Plot No.
Mhz	Ch.															
2 437	6	802.11b	20	1	17.00	16.46		Left Cheek	Ant1	98.8	0.4480		1.132	1.012		-
2 437	6	802.11b	20	1	17.00	16.46		Left Tilt	Ant1	98.8	0.5330		1.132	1.012		-
2 437	6	802.11b	20	1	17.00	16.46	0.01	Right Cheek	Ant1	98.8	0.5410	0.262	1.132	1.012	0.300	-
2 437	6	802.11b	20	1	17.00	16.46	-0.04	Right Tilt	Ant1	98.8	0.7930	0.385	1.132	1.012	0.441	14
2 462	11	802.11b	20	1	17.00	16.49		Left Cheek	Ant2	98.8	0.0373		1.125	1.012		-
2 462	11	802.11b	20	1	17.00	16.49		Left Tilt	Ant2	98.8	0.0487		1.125	1.012		-
2 462	11	802.11b	20	1	17.00	16.49	0.17	Right Cheek	Ant2	98.8	0.0508	0.027	1.125	1.012	0.031	-
2 462	11	802.11b	20	1	17.00	16.49		Right Tilt	Ant2	98.8	0.0478		1.125	1.012		-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population										Head 1.6 W/kg Averaged over 1 gram						

NII Head SAR																
Frequency		Mode	Band width (MHz)	Data Rate (Mbps)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	Ant. Config.	Duty Cycle	Area Scan Peak SAR (W/kg)	Meas. SAR (W/kg)	Scaling Factor	Scaling Factor (Duty)	Scaled SAR (W/kg)	Plot No.
Mhz	Ch.															
5 270	54	802.11n	40	MCS0	15.00	13.66		Left Cheek	Ant1	86.9	0.121		1.361	1.151		-
5 270	54	802.11n	40	MCS0	15.00	13.66		Left Tilt	Ant1	86.9	0.0668		1.361	1.151		-
5 270	54	802.11n	40	MCS0	15.00	13.66	-0.04	Right Cheek	Ant1	86.9	0.237	0.123	1.361	1.151	0.193	15
5 270	54	802.11n	40	MCS0	15.00	13.66		Right Tilt	Ant1	86.9	0.174		1.361	1.151		-
5 270	54	802.11n	40	MCS0	15.00	14.09		Left Cheek	Ant2	86.9	0.103		1.233	1.151		-
5 270	54	802.11n	40	MCS0	15.00	14.09	0.01	Left Tilt	Ant2	86.9	0.116	0.027	1.233	1.151	0.038	-
5 270	54	802.11n	40	MCS0	15.00	14.09		Right Cheek	Ant2	86.9	0.0953		1.233	1.151		-
5 270	54	802.11n	40	MCS0	15.00	14.09		Right Tilt	Ant2	86.9	0.0787		1.233	1.151		-
5 610	122	802.11ac	80	MCS0	15.00	14.25		Left Cheek	Ant1	85.8	0.1490		1.189	1.166		-
5 610	122	802.11ac	80	MCS0	15.00	14.25		Left Tilt	Ant1	85.8	0.0958		1.189	1.166		-
5 610	122	802.11ac	80	MCS0	15.00	14.25	-0.15	Right Cheek	Ant1	85.8	0.3080	0.062	1.189	1.166	0.086	-
5 610	122	802.11ac	80	MCS0	15.00	14.25		Right Tilt	Ant1	85.8	0.2260		1.189	1.166		-
5 610	122	802.11ac	80	MCS0	15.00	13.76		Left Cheek	Ant2	85.8	0.0499		1.330	1.166		-
5 610	122	802.11ac	80	MCS0	15.00	13.76	0.11	Left Tilt	Ant2	85.8	0.0933	0.019	1.330	1.166	0.029	-
5 610	122	802.11ac	80	MCS0	15.00	13.76		Right Cheek	Ant2	85.8	0.0274		1.330	1.166		-
5 610	122	802.11ac	80	MCS0	15.00	13.76		Right Tilt	Ant2	85.8	0.0360		1.330	1.166		-
5 775	155	802.11ac	80	MCS0	15.00	13.99		Left Cheek	Ant1	85.8	0.143		1.262	1.166		-
5 775	155	802.11ac	80	MCS0	15.00	13.99		Left Tilt	Ant1	85.8	0.148		1.262	1.166		-
5 775	155	802.11ac	80	MCS0	15.00	13.99	-0.11	Right Cheek	Ant1	85.8	0.216	0.056	1.262	1.166	0.082	-
5 775	155	802.11ac	80	MCS0	15.00	13.99	-0.12	Right Tilt	Ant1	85.8	0.215	0.074	1.262	1.166	0.109	-
5 775	155	802.11ac	80	MCS0	15.00	13.64		Left Cheek	Ant2	85.8	0.0255		1.368	1.166		-
5 775	155	802.11ac	80	MCS0	15.00	13.64	0.01	Left Tilt	Ant2	85.8	0.0424	0.00647	1.368	1.166	0.010	-
5 775	155	802.11ac	80	MCS0	15.00	13.64	0.01	Right Cheek	Ant2	85.8	0.0218	0.00719	1.368	1.166	0.011	-
5 775	155	802.11ac	80	MCS0	15.00	13.64	-0.01	Right Tilt	Ant2	85.8	0.0400	0.00681	1.368	1.166	0.011	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population										Head 1.6 W/kg Averaged over 1 gram						

DSS Head SAR											
Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Meas. SAR	Scaling Factor	Scaling Factor	Scaled SAR	Plot No.
Mhz	Ch.		(dBm)	(dBm)	(dB)		(W/kg)		(Duty)	(W/kg)	
2 480	78	Bluetooth DH5	17.50	16.46	-0.06	Left Cheek	0.287	1.271	1.300	0.474	-
2 480	78	Bluetooth DH5	17.50	16.46	-0.08	Left Tilt	0.377	1.271	1.300	0.623	-
2 480	78	Bluetooth DH5	17.50	16.46	-0.04	Right Cheek	0.420	1.271	1.300	0.694	
2 402	0	Bluetooth DH5	17.50	15.53	0.02	Right Tilt	0.389	1.574	1.300	0.796	-
2 441	39	Bluetooth DH5	17.50	16.35	-0.06	Right Tilt	0.428	1.303	1.300	0.725	-
2 480	78	Bluetooth DH5	17.50	16.46	-0.05	Right Tilt	0.572	1.271	1.300	0.945	16
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population						Head 1.6 W/kg (mW/g) Averaged over 1 gram					

13.2 Body-worn SAR Measurement Results

GSM/ WCDMA Body-Worn SAR

Frequency		Mode	Tune-Up Limit (dB)	Meas. Power (dB)	Power Drift (dB)	Test Position	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.	
Mhz	Ch.												
836.6	190	GSM 850 Voice	34.00	33.94	-0.13	Rear	1:8.3	15	0.265	1.014	0.269	-	
836.6	190	GSM 850 Voice	34.00	33.94	0.01	Front	1:8.3	15	0.190	1.014	0.193	-	
836.6	190	GSM850 GPRS 3Tx	30.50	29.60	-0.07	Rear	1:2.77	15	0.419	1.230	0.515	17	
836.6	190	GSM850 GPRS 3Tx	30.50	29.60	0.02	Front	1:2.77	15	0.316	1.230	0.389	-	
1 880	661	GSM 1900 Voice	31.00	30.50	0.06	Rear	1:8.3	15	0.406	1.122	0.456	-	
1 880	661	GSM 1900 Voice	31.00	30.50	0.10	Front	1:8.3	15	0.287	1.122	0.322	-	
1 880	661	GSM1900 GPRS 3Tx	26.50	26.01	-0.04	Rear	1:2.77	15	0.515	1.119	0.577	18	
1 880	661	GSM1900 GPRS 3Tx	26.50	26.01	0.03	Front	1:2.77	15	0.372	1.119	0.416	-	
836.6	4183	WCDMA 850	RMC	25.00	23.76	-0.06	Rear	1:1	15	0.304	1.330	0.404	19
836.6	4183	WCDMA 850	RMC	25.00	23.76	-0.05	Front	1:1	15	0.250	1.330	0.333	-
1 732.4	1412	WCDMA 1700	RMC	23.50	22.63	0.07	Rear	1:1	15	0.470	1.222	0.574	20
1 732.4	1412	WCDMA 1700	RMC	23.50	22.63	0.04	Front	1:1	15	0.384	1.222	0.469	-
1 880	9400	WCDMA 1900	RMC	23.50	21.72	0.01	Rear	1:1	15	0.458	1.507	0.690	21
1 880	9400	WCDMA 1900	RMC	23.50	21.72	0.19	Front	1:1	15	0.389	1.507	0.586	-

ANSI/ IEEE C95.1 - 2005 – Safety Limit
Spatial Peak
Uncontrolled Exposure/ General Population

Body
1.6 W/kg
Averaged over 1 gram

GSM/ WCDMA Body-Worn SAR (10g)

Frequency		Mode	Tune-Up Limit (dB)	Meas. Power (dB)	Power Drift (dB)	Test Position	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.	
Mhz	Ch.												
836.6	190	GSM 850 Voice	34.00	33.94	-0.13	Rear	1:8.3	15	0.161	1.014	0.163	-	
836.6	190	GSM 850 Voice	34.00	33.94	0.01	Front	1:8.3	15	0.131	1.014	0.133	-	
836.6	190	GSM850 GPRS 3Tx	30.50	29.60	-0.07	Rear	1:2.77	15	0.256	1.247	0.319	17	
836.6	190	GSM850 GPRS 3Tx	30.50	29.60	0.02	Front	1:2.77	15	0.220	1.247	0.274	-	
1 880	661	GSM 1900 Voice	31.00	30.50	0.06	Rear	1:8.3	15	0.231	1.213	0.280	-	
1 880	661	GSM 1900 Voice	31.00	30.50	0.10	Front	1:8.3	15	0.161	1.213	0.195	-	
1 880	661	GSM1900 GPRS 3Tx	26.50	26.01	-0.04	Rear	1:2.77	15	0.291	1.247	0.363	18	
1 880	661	GSM1900 GPRS 3Tx	26.50	26.01	0.03	Front	1:2.77	15	0.208	1.247	0.259	-	
836.6	4183	WCDMA 850	RMC	25.00	23.76	-0.06	Rear	1:1	15	0.304	1.330	0.404	19
836.6	4183	WCDMA 850	RMC	25.00	23.76	-0.05	Front	1:1	15	0.250	1.330	0.333	-
1 880	9400	WCDMA 1900	RMC	23.50	21.72	0.01	Rear	1:1	15	0.264	1.507	0.398	21
1 880	9400	WCDMA 1900	RMC	23.50	21.72	0.19	Front	1:1	15	0.224	1.507	0.337	-

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Body
1.6 W/kg
Averaged over 1 gram

LTE Body-Worn SAR																
Frequency		Mode	Band width (MHz)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	MPR (dB)	RB Size	RB offset	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
Mhz	Ch.															
1880	18900	LTE 2 QPSK	20	23.00	22.53	0.02	Rear	0	1	0	1:1	15	0.539	1.114	0.601	22
1880	18900		20	22.00	21.43	0.01	Rear	1	50	0	1:1	15	0.412	1.140	0.470	-
1880	18900		20	23.00	22.53	-0.02	Front	0	1	0	1:1	15	0.349	1.114	0.389	-
1880	18900		20	22.00	21.43	0.04	Front	1	50	0	1:1	15	0.272	1.140	0.310	-
836.5	20525	LTE 5 QPSK	10	25.00	24.26	-0.02	Rear	0	1	0	1:1	15	0.311	1.186	0.369	23
836.5	20525		10	24.00	23.23	-0.03	Rear	1	25	0	1:1	15	0.246	1.194	0.294	-
836.5	20525		10	25.00	24.26	-0.01	Front	0	1	0	1:1	15	0.258	1.186	0.306	-
836.5	20525		10	24.00	23.23	-0.02	Front	1	25	0	1:1	15	0.206	1.194	0.246	-
LTE Body-Worn SAR (10g)																
Frequency		Mode	Band width (MHz)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	MPR (dB)	RB Size	RB offset	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
Mhz	Ch.															
1880	18900	LTE 2 QPSK	20	23.00	22.53	0.02	Rear	0	1	0	1:1	15	0.308	1.114	0.343	22
1880	18900		20	22.00	21.43	0.01	Rear	1	50		1:1	15	0.235	1.140	0.268	-
1880	18900		20	23.00	22.53	-0.02	Front	0	1		1:1	15	0.201	1.114	0.224	-
1880	18900		20	22.00	21.43	0.04	Front	1	50		1:1	15	0.155	1.140	0.177	-
836.5	20525	LTE 5 QPSK	10	25.00	24.26	-0.02	Rear	0	1	0	1:1	15	0.216	1.186	0.256	23
836.5	20525		10	24.00	23.23	-0.03	Rear	1	25	0	1:1	15	0.171	1.194	0.204	-
836.5	20525		10	25.00	24.26	-0.01	Front	0	1	0	1:1	15	0.180	1.186	0.213	-
836.5	20525		10	24.00	23.23	-0.02	Front	1	25	0	1:1	15	0.144	1.194	0.172	-
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LTE Body-Worn SAR																
Frequency		Mode	Band width (MHz)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	MPR (dB)	RB Size	RB offset	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
MHz	Ch.															
707.5	23095	LTE 12 QPSK	10	24.50	23.30	0.02	Rear	0	1	0	1:1	15	0.119	1.318	0.157	24
707.5	23095		10	23.50	22.28	-0.01	Rear	1	25	0	1:1	15	0.097	1.324	0.128	-
707.5	23095		10	24.50	23.30	0.03	Front	0	1	0	1:1	15	0.089	1.318	0.117	-
707.5	23095		10	23.50	22.28	0.03	Front	1	25	0	1:1	15	0.070	1.324	0.093	-
782	23230	LTE 13 QPSK	10	25.00	23.80	0.03	Rear	0	1	49	1:1	15	0.099	1.318	0.131	25
782	23230		10	24.00	22.88	0.04	Rear	1	25	24	1:1	15	0.078	1.294	0.101	-
782	23230		10	25.00	23.80	0.03	Front	0	1	49	1:1	15	0.090	1.318	0.119	-
782	23230		10	24.00	22.88	-0.04	Front	1	25	24	1:1	15	0.072	1.294	0.093	-
1 882.5	26365	LTE 25 QPSK	20	23.00	22.45	-0.12	Rear	0	1	0	1:1	15	0.595	1.135	0.675	26
1 882.5	26365		20	22.00	21.42	-0.04	Rear	1	50	49	1:1	15	0.451	1.143	0.515	-
1 882.5	26365		20	23.00	22.45	0.07	Front	0	1	0	1:1	15	0.431	1.135	0.489	-
1 882.5	26365		20	22.00	21.42	0.17	Front	1	50	49	1:1	15	0.338	1.143	0.386	-
831.5	26865	LTE 26 QPSK	15	25.00	23.79	-0.01	Rear	0	1	0	1:1	15	0.290	1.321	0.383	27
831.5	26865		15	24.00	22.81	-0.14	Rear	1	36	0	1:1	15	0.233	1.315	0.306	-
831.5	26865		15	25.00	23.79	-0.01	Front	0	1	0	1:1	15	0.255	1.321	0.337	-
831.5	26865		15	24.00	22.81	0.09	Front	1	36	0	1:1	15	0.211	1.315	0.278	-
2 593	40620	LTE 41 QPSK	20	23.50	22.67	0.12	Rear	0	1	0	1:1.58	15	0.204	1.211	0.247	-
2 593	40620		20	22.50	21.72	0.08	Rear	1	50	0	1:1.58	15	0.163	1.197	0.195	-
2 593	40620		20	23.50	22.67	-0.12	Front	0	1	0	1:1.58	15	0.163	1.211	0.197	-
2 593	40620		20	22.50	21.72	0.13	Front	1	50	0	1:1.58	15	0.127	1.197	0.152	-
LTE 41 Power class 2 (HPUE)																
2 593	40620	LTE 41 QPSK	20	25.00	24.46	0.18	Rear	0	1	0	1:1.58	15	0.208	1.132	0.236	28
1 745	132322	LTE 66 QPSK	20	23.70	22.93	0.04	Rear	0	1	0	1:1	15	0.604	1.194	0.721	29
1 745	132322		20	22.70	21.89	0.14	Rear	1	50	0	1:1	15	0.505	1.205	0.609	-
1 745	132322		20	23.70	22.93	0.15	Front	0	1	0	1:1	15	0.518	1.194	0.618	-
1 745	132322		20	22.70	21.89	0.15	Front	1	50	0	1:1	15	0.420	1.205	0.506	-
LTE Body-Worn SAR (10g)																
Frequency		Mode	Band width (MHz)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	MPR (dB)	RB Size	RB offset	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
MHz	Ch.															
2 593	40620	LTE 41 QPSK	20	23.50	22.67	0.12	Rear	0	1	0	1:1.58	15	0.106	1.211	0.128	-
2 593	40620		20	22.50	21.72	0.08	Rear	1	50	0	1:1.58	15	0.084	1.197	0.101	-
2 593	40620		20	23.50	22.67	-0.12	Front	0	1	0	1:1.58	15	0.084	1.211	0.102	-
2 593	40620		20	22.50	21.72	0.13	Front	1	50	0	1:1.58	15	0.065	1.197	0.078	-
LTE 41 Power class 2 (HPUE)																
2 593	40620	LTE 41 QPSK	20	25.00	24.46	0.18	Rear	0	1	0	1:1.58	15	0.108	1.132	0.122	28
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Body 1.6 W/kg Averaged over 1 gram									

DTS Body-Worn SAR																	
Frequency		Mode	Band width (MHz)	Data Rate (Mbps)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	Ant. Config.	Duty Cycle	Distance (mm)	Area Scan Peak SAR (W/kg)	Meas. SAR (W/kg)	Scaling Factor	Scaling Factor (Duty)	Scaled SAR (W/kg)	Plot No.
Mhz	Ch.																
2 412	1	802.11b	20	1	20.00	18.46	-0.01	Rear	Ant1	98.8	15	0.1230	0.078	1.426	1.012	0.112	30
2 412	1	802.11b	20	1	20.00	18.46	0.01	Front	Ant1	98.8	15	0.1060	0.068	1.426	1.012	0.098	-
2 412	1	802.11b	20	1	20.00	19.00	-0.11	Rear	Ant2	98.8	15	0.0976	0.060	1.259	1.012	0.076	-
2 412	1	802.11b	20	1	20.00	19.00	0.01	Front	Ant2	98.8	15	0.1060	0.00259	1.259	1.012	0.003	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population												Body 1.6 W/kg Averaged over 1 gram					

NII Body-Worn SAR																	
Frequency		Mode	Band width (MHz)	Data Rate (Mbps)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	Ant. Config.	Duty Cycle	Distance (mm)	Area Scan Peak SAR (W/kg)	Meas. SAR (W/kg)	Scaling Factor	Scaling Factor (Duty)	Scaled SAR (W/kg)	Plot No.
Mhz	Ch.																
5 300	60	802.11a	20	6	18.00	16.61	-0.07	Rear	Ant1	93.6	15	0.3030	0.137	1.377	1.068	0.202	-
5 300	60	802.11a	20	6	18.00	16.61	0.07	Front	Ant1	93.6	15	0.0975	0.044	1.377	1.068	0.065	-
5 720	144	802.11a	20	6	18.00	16.76	0.18	Rear	Ant1	93.6	15	0.2760	0.119	1.330	1.068	0.169	-
5 720	144	802.11a	20	6	18.00	16.76	-0.12	Front	Ant1	93.6	15	0.0612	0.026	1.330	1.068	0.037	-
5 825	165	802.11a	20	6	18.00	17.06	-0.11	Rear	Ant1	93.6	15	0.1580	0.068	1.242	1.068	0.090	-
5 825	165	802.11a	20	6	18.00	17.06	0.01	Front	Ant1	93.6	15	0.0426	0.017	1.242	1.068	0.023	-
5 260	52	802.11a	20	6	18.00	16.61	-0.17	Rear	Ant2	93.6	15	0.7200	0.330	1.377	1.068	0.486	32
5 260	52	802.11a	20	6	18.00	16.61	-0.05	Front	Ant2	93.6	15	0.0497	0.019	1.377	1.068	0.028	-
5 720	144	802.11a	20	6	18.00	16.88	0.16	Rear	Ant2	93.6	15	0.5130	0.223	1.294	1.068	0.309	-
5 720	144	802.11a	20	6	18.00	16.88	0.01	Front	Ant2	93.6	15	0.0213	0.00573	1.294	1.068	0.008	-
5 825	165	802.11a	20	6	18.00	17.18	0.13	Rear	Ant2	93.6	15	0.4450	0.189	1.208	1.068	0.244	-
5 825	165	802.11a	20	6	18.00	17.18	-0.01	Front	Ant2	93.6	15	0.0243	0.00967	1.208	1.068	0.012	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population												Body 1.6 W/kg Averaged over 1 gram					

DSS Body-Worn SAR

Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Distance	Meas. SAR	Scaling Factor	Scaling Factor	Scaled SAR	Plot No.
Mhz	Ch.		(dBm)	(dBm)	(dB)		(mm)	(W/kg)		(Duty)	(W/kg)	
2 480	78	Bluetooth DH5	17.50	16.46	0.05	Rear	15	0.076	1.271	1.300	0.126	34
2 480	78	Bluetooth DH5	17.50	16.46	0.04	Front	15	0.041	1.271	1.300	0.068	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Body 1.6 W/kg (mW/g) Averaged over 1 gram					

13.3 Hotspot SAR Measurement Results

GSM 850 Hotspot SAR												
Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
Mhz	Ch.		(dB)	(dB)	(dB)			(mm)	(W/kg)		(W/kg)	
824.2	128	GPRS 3Tx	30.50	29.39	-0.18	Rear	1:2.77	10	0.742	1.291	0.958	-
836.6	190	GPRS 3Tx	30.50	29.60	-0.01	Rear	1:2.77	10	0.860	1.230	1.058	-
849.8	251	GPRS 3Tx	30.50	29.68	-0.12	Rear	1:2.77	10	0.863	1.208	1.042	-
836.6	190	GPRS 3Tx	30.50	29.60	-0.13	Front	1:2.77	10	0.542	1.230	0.667	-
836.6	190	GPRS 3Tx	30.50	29.60	-0.13	Left	1:2.77	10	0.319	1.230	0.392	-
836.6	190	GPRS 3Tx	30.50	29.60	-0.04	Right	1:2.77	10	0.101	1.230	0.124	-
836.6	190	GPRS 3Tx	30.50	29.60	0.02	Bottom	1:2.77	10	0.541	1.230	0.666	-
849.8	251	GPRS 3Tx	30.50	29.68	-0.03	Rear	1:2.77	10	0.898	1.208	1.085	35*
GSM 850 Hotspot SAR (10g)												
Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
Mhz	Ch.		(dB)	(dB)	(dB)			(mm)	(W/kg)		(W/kg)	
824.2	128	GPRS 3Tx	30.50	29.39	-0.18	Rear	1:2.77	10	0.427	1.291	0.551	-
836.6	190	GPRS 3Tx	30.50	29.60	-0.01	Rear	1:2.77	10	0.483	1.230	0.594	-
849.8	251	GPRS 3Tx	30.50	29.56	-0.12	Rear	1:2.77	10	0.495	1.208	0.598	-
836.6	190	GPRS 3Tx	30.50	29.60	-0.13	Front	1:2.77	10	0.331	1.230	0.407	-
836.6	190	GPRS 3Tx	30.50	29.60	-0.13	Left	1:2.77	10	0.215	1.230	0.265	-
836.6	190	GPRS 3Tx	30.50	29.60	-0.04	Right	1:2.77	10	0.060	1.230	0.074	-
836.6	190	GPRS 3Tx	30.50	29.60	0.02	Bottom	1:2.77	10	0.277	1.230	0.341	-
836.6	190	GPRS 3Tx	30.50	29.56	-0.03	Rear	1:2.77	10	0.519	1.208	0.627	35*
						Body 1.6 W/kg Averaged over 1 gram						

Note: * Data entry indicate Variability measurement.

GSM 1900 Hotspot SAR

Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
Mhz	Ch.		(dB)	(dB)	(dB)			(mm)	(W/kg)		(W/kg)	
1 880	661	GPRS 4Tx	22.50	21.29	0.11	Rear	1:2.075	10	0.317	1.321	0.419	-
1 880	661	GPRS 4Tx	22.50	21.29	0.06	Front	1:2.075	10	0.231	1.321	0.305	-
1 880	661	GPRS 4Tx	22.50	21.29	0.17	Left	1:2.075	10	0.036	1.321	0.048	-
1 880	661	GPRS 4Tx	22.50	21.29	0.19	Right	1:2.075	10	0.060	1.321	0.079	-
1850.2	512	GPRS 4Tx	22.50	20.88	0.14	Bottom	1:2.075	10	0.793	1.452	1.152	36
1 880	661	GPRS 4Tx	22.50	21.29	0.16	Bottom	1:2.075	10	0.752	1.321	0.994	-
1909.8	810	GPRS 4Tx	22.50	21.27	0.11	Bottom	1:2.075	10	0.719	1.327	0.954	-

GSM 1900 Hotspot SAR (10g)

Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
Mhz	Ch.		(dB)	(dB)	(dB)			(mm)	(W/kg)		(W/kg)	
1 880	661	GPRS 4Tx	22.50	21.29	0.11	Rear	1:2.075	10	0.172	1.321	0.227	-
1 880	661	GPRS 4Tx	22.50	21.29	0.06	Front	1:2.075	10	0.123	1.321	0.163	-
1 880	661	GPRS 4Tx	22.50	21.29	0.17	Left	1:2.075	10	0.020	1.321	0.026	-
1 880	661	GPRS 4Tx	22.50	21.29	0.19	Right	1:2.075	10	0.031	1.321	0.041	-
1850.2	512	GPRS 4Tx	22.50	20.88	0.14	Bottom	1:2.075	10	0.418	1.452	0.607	36
1 880	661	GPRS 4Tx	22.50	21.29	0.16	Bottom	1:2.075	10	0.393	1.321	0.519	-
1909.8	810	GPRS 4Tx	22.50	21.27	0.11	Bottom	1:2.075	10	0.374	1.327	0.496	-

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 Uncontrolled Exposure/ General Population

Body
 1.6 W/kg
 Averaged over 1 gram

WCDMA 850 Hotspot SAR												
Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
Mhz	Ch.		(dB)	(dB)	(dB)						(mm)	
826.4	4132	RMC	25.00	23.87	-0.10	Rear	1:1	10	0.656	1.297	0.851	-
836.6	4183	RMC	25.00	23.76	-0.05	Rear	1:1	10	0.718	1.330	0.955	37
846.6	4233	RMC	25.00	23.67	-0.07	Rear	1:1	10	0.652	1.358	0.886	-
836.6	4183	RMC	25.00	23.76	-0.06	Front	1:1	10	0.427	1.330	0.568	-
836.6	4183	RMC	25.00	23.76	-0.06	Left	1:1	10	0.271	1.330	0.361	-
836.6	4183	RMC	25.00	23.76	-0.13	Right	1:1	10	0.062	1.330	0.082	-
836.6	4183	RMC	25.00	23.76	-0.08	Bottom	1:1	10	0.330	1.330	0.439	-
WCDMA 850 Hotspot SAR (10g)												
Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
Mhz	Ch.		(dB)	(dB)	(dB)						(mm)	
826.4	4132	RMC	25.00	23.87	-0.10	Rear	1:1	10	0.376	1.297	0.488	-
836.6	4183	RMC	25.00	23.76	-0.05	Rear	1:1	10	0.412	1.330	0.548	37
846.6	4233	RMC	25.00	23.67	-0.07	Rear	1:1	10	0.372	1.358	0.505	-
836.6	4183	RMC	25.00	23.76	-0.06	Front	1:1	10	0.255	1.330	0.339	-
836.6	4183	RMC	25.00	23.76	-0.06	Left	1:1	10	0.184	1.330	0.245	-
836.6	4183	RMC	25.00	23.76	-0.13	Right	1:1	10	0.037	1.330	0.049	-
836.6	4183	RMC	25.00	23.76	-0.08	Bottom	1:1	10	0.174	1.330	0.231	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population						Body 1.6 W/kg Averaged over 1 gram						

WCDMA 1700 Hotspot SAR												
Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR	Plot No.
Mhz	Ch.		(dB)	(dB)	(dB)						(W/kg)	
1 732.4	1412	RMC	20.00	19.08	0.15	Rear	1:1	10	0.425	1.236	0.525	-
1 732.4	1412	RMC	20.00	19.08	0.06	Front	1:1	10	0.358	1.236	0.442	-
1 732.4	1412	RMC	20.00	19.08	0.16	Left	1:1	10	0.065	1.236	0.080	-
1 732.4	1412	RMC	20.00	19.08	0.11	Right	1:1	10	0.103	1.236	0.127	-
1 732.4	1412	RMC	20.00	19.08	0.03	Bottom	1:1	10	0.604	1.236	0.747	38
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population						Body 1.6 W/kg Averaged over 1 gram						

WCDMA 1900 Hotspot SAR												
Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR	Plot No.
Mhz	Ch.		(dB)	(dB)	(dB)						(W/kg)	
1 880	9400	RMC	20.00	18.25	0.15	Rear	1:1	10	0.497	1.496	0.744	-
1 880	9400	RMC	20.00	18.25	0.12	Front	1:1	10	0.379	1.496	0.567	-
1 880	9400	RMC	20.00	18.25	0.12	Left	1:1	10	0.038	1.496	0.057	-
1 880	9400	RMC	20.00	18.25	0.11	Right	1:1	10	0.063	1.496	0.094	-
1852.4	9262	RMC	20.00	18.12	-0.03	Bottom	1:1	10	0.775	1.542	1.195	-
1 880	9400	RMC	20.00	18.25	0.04	Bottom	1:1	10	0.828	1.496	1.239	39
1907.6	9538	RMC	20.00	18.04	0.06	Bottom	1:1	10	0.724	1.570	1.137	-
1 880	9400	RMC	20.00	18.25	0.04	Bottom	1:1	10	0.823	1.496	1.231	**

WCDMA 1900 Hotspot SAR (10g)												
Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR	Plot No.
Mhz	Ch.		(dB)	(dB)	(dB)						(W/kg)	
1 880	9400	RMC	20.00	18.25	0.15	Rear	1:1	10	0.269	1.496	0.402	-
1 880	9400	RMC	20.00	18.25	0.12	Front	1:1	10	0.206	1.496	0.308	-
1 880	9400	RMC	20.00	18.25	0.12	Left	1:1	10	0.022	1.496	0.033	-
1 880	9400	RMC	20.00	18.25	0.11	Right	1:1	10	0.033	1.496	0.049	-
1852.4	9262	RMC	20.00	18.12	-0.03	Bottom	1:1	10	0.418	1.542	0.644	-
1 880	9400	RMC	20.00	18.25	0.04	Bottom	1:1	10	0.439	1.496	0.657	39
1907.6	9538	RMC	20.00	18.04	0.06	Bottom	1:1	10	0.380	1.570	0.597	-
1 880	9400	RMC	20.00	18.25	0.04	Bottom	1:1	10	0.435	1.496	0.651	**
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population						Body 1.6 W/kg Averaged over 1 gram						

Note: * * Data entry indicate Device holder perturbation measurement.

LTE Band 2 Hotspot SAR																
Frequency		Mode	Band width (MHz)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	MPR (dB)	RB Size	RB offset	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
MHz	Ch.															
1880	18900	QPSK	20	19.00	18.92	0.10	Rear	0	1	0	1:1	10	0.530	1.019	0.540	-
1880	18900	QPSK	20	19.00	18.86	-0.19	Rear	1	50	0	1:1	10	0.531	1.033	0.548	-
1880	18900	QPSK	20	19.00	18.92	0.07	Front	0	1	0	1:1	10	0.426	1.019	0.434	-
1880	18900	QPSK	20	19.00	18.86	-0.03	Front	1	50	0	1:1	10	0.424	1.033	0.438	-
1880	18900	QPSK	20	19.00	18.92	0.05	Left	0	1	0	1:1	10	0.048	1.019	0.049	-
1880	18900	QPSK	20	19.00	18.86	0.11	Left	1	50	0	1:1	10	0.046	1.033	0.048	-
1880	18900	QPSK	20	19.00	18.92	0.06	Right	0	1	0	1:1	10	0.108	1.019	0.110	-
1880	18900	QPSK	20	19.00	18.86	0.11	Right	1	50	0	1:1	10	0.105	1.033	0.108	-
1860	18700	QPSK	20	19.00	18.75	0.12	Bottom	0	1	0	1:1	10	1.06	1.059	1.123	-
1880	18900	QPSK	20	19.00	18.92	0.10	Bottom	0	1	0	1:1	10	1.11	1.019	1.131	-
1900	19100	QPSK	20	19.00	18.70	0.07	Bottom	0	1	0	1:1	10	1.07	1.072	1.147	-
1860	18700	QPSK	20	19.00	18.79	0.07	Bottom	0	50	0	1:1	10	1.08	1.050	1.134	-
1880	18900	QPSK	20	19.00	18.86	0.07	Bottom	0	50	0	1:1	10	1.12	1.033	1.157	40
1900	19100	QPSK	20	19.00	18.65	0.08	Bottom	0	50	0	1:1	10	1.08	1.084	1.171	-
1900	19100	QPSK	20	19.00	18.88	0.01	Bottom	0	100	0	1:1	10	1.06	1.028	1.090	-
1880	18900	QPSK	20	19.00	18.86	0.05	Bottom	0	50	0	1:1	10	1.05	1.033	1.084	*

LTE Band 2 Hotspot SAR (10g)																
Frequency		Mode	Band width (MHz)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	MPR (dB)	RB Size	RB offset	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
MHz	Ch.															
1880	18900	QPSK	20	19.00	18.92	0.10	Rear	0	1	0	1:1	10	0.288	1.019	0.293	-
1880	18900	QPSK	20	19.00	18.86	-0.19	Rear	1	50	0	1:1	10	0.288	1.033	0.297	-
1880	18900	QPSK	20	19.00	18.92	0.07	Front	0	1	0	1:1	10	0.277	1.019	0.282	-
1880	18900	QPSK	20	19.00	18.86	-0.03	Front	1	50	0	1:1	10	0.277	1.033	0.286	-
1880	18900	QPSK	20	19.00	18.92	0.05	Left	0	1	0	1:1	10	0.028	1.019	0.029	-
1880	18900	QPSK	20	19.00	18.86	0.11	Left	1	50	0	1:1	10	0.027	1.033	0.028	-
1880	18900	QPSK	20	19.00	18.92	0.06	Right	0	1	0	1:1	10	0.056	1.019	0.057	-
1880	18900	QPSK	20	19.00	18.86	0.11	Right	1	50	0	1:1	10	0.054	1.033	0.056	-
1860	18700	QPSK	20	19.00	18.75	0.12	Bottom	0	1	0	1:1	10	0.559	1.059	0.592	-
1880	18900	QPSK	20	19.00	18.92	0.10	Bottom	0	1	0	1:1	10	0.585	1.019	0.596	-
1900	19100	QPSK	20	19.00	18.7	0.07	Bottom	0	1	0	1:1	10	0.555	1.072	0.595	-
1860	18700	QPSK	20	19.00	18.79	0.07	Bottom	0	50	0	1:1	10	0.566	1.050	0.594	-
1880	18900	QPSK	20	19.00	18.86	0.07	Bottom	0	50	0	1:1	10	0.585	1.033	0.604	40
1900	19100	QPSK	20	19.00	18.65	0.08	Bottom	0	50	0	1:1	10	0.556	1.084	0.603	-
1900	19100	QPSK	20	19.00	18.86	0.01	Bottom	0	100	0	1:1	10	0.550	1.033	0.568	-
1880	18900	QPSK	20	19.00	18.86	0.05	Bottom	0	50	0	1:1	10	0.544	1.033	0.562	*

ANSI/ IEEE C95.1 - 2005 – Safety Limit
 Spatial Peak
 Uncontrolled Exposure/ General Population

Body
 1.6 W/kg
 Averaged over 10 gram

Note: * Data entry indicate Variability measurement.

LTE Band 5 Hotspot SAR

Frequency		Mode	Band width (MHz)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	MPR (dB)	RB Size	RB offset	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
MHz	Ch.															
836.5	20525	QPSK	10	25.00	24.26	-0.10	Rear	0	1	0	1:1	10	0.617	1.186	0.732	41
836.5	20525	QPSK	10	24.00	23.23	-0.02	Rear	1	25	0	1:1	10	0.495	1.194	0.591	-
836.5	20525	QPSK	10	25.00	24.26	-0.01	Front	0	1	0	1:1	10	0.464	1.186	0.550	-
836.5	20525	QPSK	10	24.00	23.23	0.01	Front	1	25	0	1:1	10	0.370	1.194	0.442	-
836.5	20525	QPSK	10	25.00	24.26	0.03	Left	0	1	0	1:1	10	0.264	1.186	0.313	-
836.5	20525	QPSK	10	24.00	23.23	-0.02	Left	1	25	0	1:1	10	0.208	1.194	0.248	-
836.5	20525	QPSK	10	25.00	24.26	0.02	Right	0	1	0	1:1	10	0.067	1.186	0.079	-
836.5	20525	QPSK	10	24.00	23.23	-0.05	Right	1	25	0	1:1	10	0.051	1.194	0.061	-
836.5	20525	QPSK	10	25.00	24.26	0.02	Bottom	0	1	0	1:1	10	0.449	1.186	0.532	-
836.5	20525	QPSK	10	24.00	23.23	0.02	Bottom	1	25	0	1:1	10	0.352	1.194	0.420	-

LTE Band 5 Hotspot SAR (10g)

Frequency		Mode	Band width (MHz)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	MPR (dB)	RB Size	RB offset	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
MHz	Ch.															
836.5	20525	QPSK	10	25.00	24.26	-0.10	Rear	0	1	0	1:1	10	0.355	1.186	0.421	41
836.5	20525	QPSK	10	24.00	23.23	-0.02	Rear	1	25	0	1:1	10	0.283	1.194	0.338	-
836.5	20525	QPSK	10	25.00	24.26	-0.01	Front	0	1	0	1:1	10	0.272	1.186	0.323	-
836.5	20525	QPSK	10	24.00	23.23	0.01	Front	1	25	0	1:1	10	0.216	1.194	0.258	-
836.5	20525	QPSK	10	25.00	24.26	0.03	Left	0	1	0	1:1	10	0.181	1.186	0.215	-
836.5	20525	QPSK	10	24.00	23.23	-0.02	Left	1	25	0	1:1	10	0.143	1.194	0.171	-
836.5	20525	QPSK	10	25.00	24.26	0.02	Right	0	1	0	1:1	10	0.039	1.186	0.046	-
836.5	20525	QPSK	10	24.00	23.23	-0.05	Right	1	25	0	1:1	10	0.030	1.194	0.036	-
836.5	20525	QPSK	10	25.00	24.26	0.02	Bottom	0	1	0	1:1	10	0.216	1.186	0.256	-
836.5	20525	QPSK	10	24.00	23.23	0.02	Bottom	1	25	0	1:1	10	0.169	1.194	0.202	-

ANSI/ IEEE C95.1 - 2005 – Safety Limit
Spatial Peak
Uncontrolled Exposure/ General Population

Body
1.6 W/kg
Averaged over 10 gram

LTE Band 12 Hotspot SAR

Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
Mhz	Ch.															
707.5	23095	QPSK	10	24.50	23.30	0.02	Rear	0	1	0	1:1	10	0.212	1.318	0.279	42
707.5	23095	QPSK	10	23.50	22.28	0.01	Rear	1	25	0	1:1	10	0.173	1.324	0.229	-
707.5	23095	QPSK	10	24.50	23.30	0.05	Front	0	1	0	1:1	10	0.112	1.318	0.148	-
707.5	23095	QPSK	10	23.50	22.28	0.03	Front	1	25	0	1:1	10	0.091	1.324	0.121	-
707.5	23095	QPSK	10	24.50	23.30	-0.01	Left	0	1	0	1:1	10	0.141	1.318	0.186	-
707.5	23095	QPSK	10	23.00	22.28	-0.03	Left	1	25	0	1:1	10	0.112	1.324	0.148	-
707.5	23095	QPSK	10	24.50	23.30	0.01	Right	0	1	0	1:1	10	0.066	1.318	0.087	-
707.5	23095	QPSK	10	23.50	22.28	-0.04	Right	1	25	0	1:1	10	0.051	1.324	0.068	-
707.5	23095	QPSK	10	24.50	23.30	-0.10	Bottom	0	1	0	1:1	10	0.165	1.318	0.218	-
707.5	23095	QPSK	10	23.00	22.28	-0.19	Bottom	1	25	0	1:1	10	0.134	1.324	0.177	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Body 1.6 W/kg Averaged over 1 gram								

LTE Band 13 Hotspot SAR

Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
Mhz	Ch.															
782	23230	QPSK	10	25.00	23.80	0.03	Rear	0	1	49	1:1	10	0.198	1.318	0.261	43
782	23230	QPSK	10	24.00	22.88	0.03	Rear	1	25	24	1:1	10	0.158	1.294	0.204	-
782	23230	QPSK	10	25.00	23.80	0.12	Front	0	1	49	1:1	10	0.126	1.318	0.166	-
782	23230	QPSK	10	24.00	22.88	0.10	Front	1	25	24	1:1	10	0.101	1.294	0.131	-
782	23230	QPSK	10	25.00	23.80	0.04	Left	0	1	49	1:1	10	0.107	1.318	0.141	-
782	23230	QPSK	10	24.00	22.88	-0.02	Left	1	25	24	1:1	10	0.087	1.294	0.113	-
782	23230	QPSK	10	25.00	23.80	0.05	Right	0	1	49	1:1	10	0.072	1.318	0.095	-
782	23230	QPSK	10	24.00	22.88	0.08	Right	1	25	24	1:1	10	0.059	1.294	0.076	-
782	23230	QPSK	10	25.00	23.80	-0.19	Bottom	0	1	49	1:1	10	0.160	1.318	0.211	-
782	23230	QPSK	10	24.00	22.88	-0.18	Bottom	1	25	24	1:1	10	0.127	1.294	0.164	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Body 1.6 W/kg Averaged over 1 gram								

LTE Band 25 Hotspot SAR																
Frequency		Mode	Band width (MHz)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	MPR (dB)	RB Size	RB offset	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
Mhz	Ch.															
1 882.5	26365	QPSK	20	19.00	18.83	-0.01	Rear	0	1	0	1:1	10	0.464	1.040	0.483	-
1 882.5	26365	QPSK	20	19.00	18.78	0.04	Rear	0	50	49	1:1	10	0.446	1.052	0.469	-
1 882.5	26365	QPSK	20	19.00	18.83	0.03	Front	0	1	0	1:1	10	0.329	1.040	0.342	-
1 882.5	26365	QPSK	20	19.00	18.78	0.16	Front	0	50	49	1:1	10	0.331	1.052	0.348	-
1 882.5	26365	QPSK	20	19.00	18.83	0.12	Left	0	1	0	1:1	10	0.042	1.040	0.044	-
1 882.5	26365	QPSK	20	19.00	18.78	0.16	Left	0	50	49	1:1	10	0.042	1.052	0.044	-
1 882.5	26365	QPSK	20	19.00	18.83	0.08	Right	0	1	0	1:1	10	0.077	1.040	0.080	-
1 882.5	26365	QPSK	20	19.00	18.78	0.10	Right	0	50	49	1:1	10	0.077	1.052	0.081	-
1860	26140	QPSK	20	19.00	18.66	0.17	Bottom	0	1	0	1:1	10	0.843	1.081	0.912	-
1 882.5	26365	QPSK	20	19.00	18.83	0.08	Bottom	0	1	0	1:1	10	0.884	1.040	0.919	44
1905	26590	QPSK	20	19.00	18.61	0.13	Bottom	0	1	0	1:1	10	0.868	1.094	0.950	-
1860	26140	QPSK	20	19.00	18.65	0.15	Bottom	0	50	0	1:1	10	0.850	1.084	0.921	-
1 882.5	26365	QPSK	20	19.00	18.78	0.12	Bottom	0	50	49	1:1	10	0.882	1.052	0.928	-
1905	26590	QPSK	20	19.00	18.60	0.14	Bottom	0	50	0	1:1	10	0.866	1.096	0.950	-
1882.5	26365	QPSK	20	19.00	18.73	0.13	Bottom	0	100	0	1:1	10	0.877	1.064	0.933	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Body 1.6 W/kg Averaged over 1 gram								

LTE Band 26 Hotspot SAR																
Frequency		Mode	Band width (MHz)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	MPR (dB)	RB Size	RB offset	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
Mhz	Ch.															
831.5	26865	QPSK	15	25.00	23.79	0.07	Rear	0	1	0	1:1	10	0.549	1.321	0.725	45
831.5	26865	QPSK	15	24.00	22.81	-0.01	Rear	1	36	0	1:1	10	0.447	1.315	0.588	-
831.5	26865	QPSK	15	25.00	23.79	0.08	Front	0	1	0	1:1	10	0.382	1.321	0.505	-
831.5	26865	QPSK	15	24.00	22.81	0.10	Front	1	36	0	1:1	10	0.307	1.315	0.404	-
831.5	26865	QPSK	15	25.00	23.79	-0.19	Left	0	1	0	1:1	10	0.208	1.321	0.275	-
831.5	26865	QPSK	15	24.00	22.81	-0.13	Left	1	36	0	1:1	10	0.167	1.315	0.220	-
831.5	26865	QPSK	15	25.00	23.79	0.04	Right	0	1	0	1:1	10	0.072	1.321	0.095	-
831.5	26865	QPSK	15	24.00	22.81	0.11	Right	1	36	0	1:1	10	0.056	1.315	0.074	-
831.5	26865	QPSK	15	25.00	23.79	-0.18	Bottom	0	1	0	1:1	10	0.415	1.321	0.548	-
831.5	26865	QPSK	15	24.00	22.81	-0.10	Bottom	1	36	0	1:1	10	0.329	1.315	0.433	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Body 1.6 W/kg Averaged over 1 gram								

LTE TDD Band 41 Hotspot SAR

Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
Mhz	Ch.															
2 593	40620	QPSK	20	22.50	21.56	-0.11	Rear	0	1	0	1:1.58	10	0.267	1.242	0.332	-
2 593	40620	QPSK	20	22.50	21.55	0.18	Rear	0	50	0	1:1.58	10	0.268	1.245	0.334	-
2 593	40620	QPSK	20	22.50	21.56	0.01	Front	0	1	0	1:1.58	10	0.218	1.242	0.271	-
2 593	40620	QPSK	20	22.50	21.55	0.16	Front	0	50	0	1:1.58	10	0.218	1.245	0.271	-
2 593	40620	QPSK	20	22.50	21.56	0.16	Right	0	1	0	1:1.58	10	0.085	1.242	0.106	-
2 593	40620	QPSK	20	22.50	21.55	0.05	Right	0	50	0	1:1.58	10	0.083	1.245	0.103	-
2506	39750	QPSK	20	22.50	21.23	-0.11	Bottom	0	1	0	1:1.58	10	0.444	1.340	0.595	-
2549.5	40185	QPSK	20	22.50	21.42	-0.08	Bottom	0	1	0	1:1.58	10	0.494	1.282	0.633	-
2593	40620	QPSK	20	22.50	21.56	-0.04	Bottom	0	1	0	1:1.58	10	0.532	1.242	0.661	-
2636.5	41055	QPSK	20	22.50	21.35	-0.08	Bottom	0	1	0	1:1.58	10	0.494	1.303	0.644	-
2680	41490	QPSK	20	22.50	21.02	-0.11	Bottom	0	1	0	1:1.58	10	0.452	1.406	0.636	-
2506	39750	QPSK	20	22.50	21.23	-0.09	Bottom	0	50	0	1:1.58	10	0.460	1.340	0.616	-
2549.5	40185	QPSK	20	22.50	21.35	-0.07	Bottom	0	50	0	1:1.58	10	0.498	1.303	0.649	-
2593	40620	QPSK	20	22.50	21.55	-0.09	Bottom	0	50	0	1:1.58	10	0.538	1.245	0.670	-
2636.5	41055	QPSK	20	22.50	21.26	0.01	Bottom	0	50	0	1:1.58	10	0.488	1.330	0.649	-
2680	41490	QPSK	20	22.50	21.07	-0.12	Bottom	0	50	0	1:1.58	10	0.460	1.390	0.639	-
2593	40620	QPSK	20	22.50	21.50	-0.07	Bottom	0	100	0	1:1.58	10	0.533	1.259	0.671	-

LTE 41 Power class 2 (HPUE)

2593	40620	QPSK	20	22.50	21.55	-0.05	Bottom	0	50	0	1:1.58	10	0.540	1.245	0.672	46
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LTE TDD Band 41 Hotspot SAR (10g)

Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	MPR	RB Size	RB offset	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
Mhz	Ch.															
2 593	40620	QPSK	20	22.50	21.56	-0.11	Rear	0	1	0	1:1.58	10	0.134	1.242	0.166	-
2 593	40620	QPSK	20	22.50	21.55	0.18	Rear	0	50	0	1:1.58	10	0.134	1.245	0.167	-
2 593	40620	QPSK	20	22.50	21.56	0.01	Front	0	1	0	1:1.58	10	0.109	1.242	0.135	-
2 593	40620	QPSK	20	22.50	21.55	0.16	Front	0	50	0	1:1.58	10	0.108	1.245	0.134	-
2 593	40620	QPSK	20	22.50	21.56	0.16	Right	0	1	0	1:1.58	10	0.039	1.242	0.048	-
2 593	40620	QPSK	20	22.50	21.55	0.05	Right	0	50	0	1:1.58	10	0.037	1.245	0.046	-
2506	39750	QPSK	20	22.50	21.23	-0.11	Bottom	0	1	0	1:1.58	10	0.219	1.340	0.293	-
2549.5	40185	QPSK	20	22.50	21.42	-0.08	Bottom	0	1	0	1:1.58	10	0.240	1.282	0.308	-
2593	40620	QPSK	20	22.50	21.56	-0.04	Bottom	0	1	0	1:1.58	10	0.254	1.242	0.315	-
2636.5	41055	QPSK	20	22.50	21.35	-0.08	Bottom	0	1	0	1:1.58	10	0.229	1.303	0.298	-
2680	41490	QPSK	20	22.50	21.02	-0.11	Bottom	0	1	0	1:1.58	10	0.204	1.406	0.287	-
2506	39750	QPSK	20	22.50	21.23	-0.09	Bottom	0	50	0	1:1.58	10	0.226	1.340	0.303	-
2549.5	40185	QPSK	20	22.50	21.35	-0.07	Bottom	0	50	0	1:1.58	10	0.241	1.303	0.314	-
2593	40620	QPSK	20	22.50	21.55	-0.09	Bottom	0	50	0	1:1.58	10	0.255	1.245	0.317	-
2636.5	41055	QPSK	20	22.50	21.26	0.01	Bottom	0	50	0	1:1.58	10	0.224	1.330	0.298	-
2680	41490	QPSK	20	22.50	21.07	-0.12	Bottom	0	50	0	1:1.58	10	0.207	1.390	0.288	-
2593	40620	QPSK	20	22.50	21.50	-0.07	Bottom	0	100	0	1:1.58	10	0.251	1.259	0.316	-

LTE 41 Power class 2 (HPUE)

2593	40620	QPSK	20	22.50	21.55	-0.05	Bottom	0	50	0	1:1.58	10	0.256	1.245	0.319	46
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ANSI/ IEEE C95.1 - 2005 – Safety Limit
Spatial Peak
Uncontrolled Exposure/ General Population

Body
1.6 W/kg
Averaged over 1 gram

LTE Band 66 Hotspot SAR																
Frequency		Mode	Band width (MHz)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	MPR (dB)	RB Size	RB offset	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
Mhz	Ch.															
1 745	132322	QPSK	20	20.00	19.24	0.02	Rear	0	1	99	1:1	10	0.467	1.191	0.556	-
1 745	132322	QPSK	20	20.00	19.22	-0.01	Rear	0	50	49	1:1	10	0.464	1.197	0.555	-
1 745	132322	QPSK	20	20.00	19.24	0.05	Front	0	1	99	1:1	10	0.387	1.191	0.461	-
1 745	132322	QPSK	20	20.00	19.22	0.06	Front	0	50	49	1:1	10	0.385	1.197	0.461	-
1 745	132322	QPSK	20	20.00	19.24	0.02	Left	0	1	99	1:1	10	0.072	1.191	0.086	-
1 745	132322	QPSK	20	20.00	19.22	0.05	Left	0	50	49	1:1	10	0.072	1.197	0.086	-
1 745	132322	QPSK	20	20.00	19.24	0.04	Right	0	1	99	1:1	10	0.119	1.191	0.142	-
1 745	132322	QPSK	20	20.00	19.22	0.13	Right	0	50	49	1:1	10	0.118	1.197	0.141	-
1720	132072	QPSK	20	20.00	19.00	-0.05	Bottom	0	1	0	1:1	10	0.625	1.259	0.787	-
1 745	132322	QPSK	20	20.00	19.24	0.16	Bottom	0	1	99	1:1	10	0.735	1.191	0.876	-
1770	132572	QPSK	20	20.00	19.23	-0.02	Bottom	0	1	0	1:1	10	0.868	1.194	1.036	-
1720	132072	QPSK	20	20.00	19.06	-0.07	Bottom	0	50	49	1:1	10	0.682	1.242	0.847	-
1 745	132322	QPSK	20	20.00	19.22	0.13	Bottom	0	50	49	1:1	10	0.735	1.197	0.880	-
1770	132572	QPSK	20	20.00	19.19	-0.03	Bottom	0	50	0	1:1	10	0.884	1.205	1.065	47
1 745	132322	QPSK	20	20.00	19.20	-0.05	Bottom	0	100	0	1:1	10	0.883	1.202	1.062	-
1770	132572	QPSK	20	20.00	19.19	-0.04	Bottom	0	50	0	1:1	10	0.882	1.205	1.063	*
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Body 1.6 W/kg Averaged over 1 gram								

Note: * Data entry indicate Variability measurement.

DTS Hotspot SAR																	
*Frequency		Mode	Band width (MHz)	Data Rate (Mbps)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	Ant. Config.	Duty Cycle	Distance (mm)	Area Scan Peak SAR (W/kg)	Meas. SAR (W/kg)	Scaling Factor	Scaling Factor (Duty)	Scaled SAR (W/kg)	Plot No.
Mhz	Ch.																
2412	1	802.11b	20	1	20.00	18.46	-0.15	Rear	Ant1	98.8	10	0.225	0.135	1.426	1.012	0.195	-
2412	1	802.11b	20	1	20.00	18.46	0.03	Front	Ant1	98.8	10	0.217	0.132	1.426	1.012	0.190	-
2412	1	802.11b	20	1	20.00	18.46		Left	Ant1	98.8	10	0.0414		1.426	1.012		-
2412	1	802.11b	20	1	20.00	18.46	-0.04	Top	Ant1	98.8	10	0.295	0.185	1.426	1.012	0.267	-
2412	1	802.11b	20	1	20.00	19.00	-0.18	Rear	Ant2	98.8	10	0.351	0.218	1.259	1.012	0.278	48
2412	1	802.11b	20	1	20.00	19.00	0.01	Front	Ant2	98.8	10	0.0125	0.0053	1.259	1.012	0.007	-
2412	1	802.11b	20	1	20.00	19.00		Left	Ant2	98.8	10	0.0306		1.259	1.012		-
2412	1	802.11b	20	1	20.00	19.00		Top	Ant2	98.8	10	0.0321		1.259	1.012		-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Body 1.6 W/kg Averaged over 1 gram									

DTS Hotspot SAR - RSDB																	
*Frequency		Mode	Band width (MHz)	Data Rate (Mbps)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	Ant. Config.	Duty Cycle	Distance (mm)	Area Scan Peak SAR (W/kg)	Meas. SAR (W/kg)	Scaling Factor	Scaling Factor (Duty)	Scaled SAR (W/kg)	Plot No.
Mhz	Ch.																
2437	6	802.11b	20	1	17.00	16.46	0.15	Rear	Ant1	98.8	10	0.1270	0.078	1.132	1.012	0.089	-
2437	6	802.11b	20	1	17.00	16.46		Front	Ant1	98.8	10	0.0838		1.132	1.012		-
2437	6	802.11b	20	1	17.00	16.46		Left	Ant1	98.8	10	0.0272		1.132	1.012		-
2437	6	802.11b	20	1	17.00	16.46	0.06	Top	Ant1	98.8	10	0.3480	0.204	1.132	1.012	0.234	49
2462	11	802.11b	20	1	17.00	16.49	0.01	Rear	Ant2	98.8	10	0.2260	0.13	1.125	1.012	0.148	-
2462	11	802.11b	20	1	17.00	16.49		Front	Ant2	98.8	10	0.0176		1.125	1.012		-
2462	11	802.11b	20	1	17.00	16.49		Left	Ant2	98.8	10	0.0862		1.125	1.012		-
2462	11	802.11b	20	1	17.00	16.49		Top	Ant2	98.8	10	0.0376		1.125	1.012		-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population										Body 1.6 W/kg Averaged over 1 gram							

5 GHz WLAN Hotspot SAR																	
Frequency		Mode	Band width (MHz)	Data Rate (Mbps)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	Ant. Config.	Duty Cycle	Distance (mm)	Area Scan Peak SAR (W/kg)	Meas. SAR (W/kg)	Scaling Factor	Scaling Factor (Duty)	Scaled SAR (W/kg)	Plot No.
Mhz	Ch.																
5825	165	802.11a	20	6	18.00	17.06	0.18	Rear	Ant1	93.6	10	0.2930	0.118	1.242	1.068	0.157	-
5825	165	802.11a	20	6	18.00	17.06		Front	Ant1	93.6	10	0.0534		1.242	1.068		-
5825	165	802.11a	20	6	18.00	17.06	0.01	Left	Ant1	93.6	10	0.0868	0.039	1.242	1.068	0.052	-
5825	165	802.11a	20	6	18.00	17.06		Top	Ant1	93.6	10	0.1300		1.242	1.068		-
5825	165	802.11a	20	6	18.00	17.18	0.19	Rear	Ant2	93.6	10	0.7150	0.289	1.208	1.068	0.373	-
5825	165	802.11a	20	6	18.00	17.18		Front	Ant2	93.6	10	0.0283		1.208	1.068	0.000	-
5825	165	802.11a	20	6	18.00	17.18		Left	Ant2	93.6	10	0.2090		1.208	1.068	0.000	-
5825	165	802.11a	20	6	18.00	17.18		Top	Ant2	93.6	10	0.0827		1.208	1.068		-
5 825	165	802.11a	20	6	21.00	20.13	0.10	Rear	MIMO	93.6	10	0.9020	0.358	1.242	1.068	0.475	50
5 825	165	802.11a	20	6	21.00	20.13		Front	MIMO	93.6	10	0.0693		1.242	1.068		-
5 825	165	802.11a	20	6	21.00	20.13	0.17	Left	MIMO	93.6	10	0.2350	0.102	1.242	1.068	0.135	-
5 825	165	802.11a	20	6	21.00	20.13		Top	MIMO	93.6	10	0.2150		1.242	1.068		-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population										Body 1.6 W/kg Averaged over 1 gram							

Note:

1. Only Ch 149 supports Hotspot Mode. But Performed SAR test at the Maximum power condition, The power of Ch165 was more higher than Ch 149's. And MIMO Power Scale up is based on Ant 1 on Higher scaled factor.
2. In order to satisfy the simultaneous transmission analysis of the main band and WLAN in hotspot mode, SAR measurement in 5GHz WLAN U-NII-3 MIMO were performed.

5 GHz WLAN Hotspot SAR - RSDB

Frequency		Mode	Band width	Data Rate	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Ant Config.	Duty Cycle	Distance (mm)	Area Scan Peak SAR (W/kg)	Meas. SAR (W/kg)	Scaling Factor (Duty)	Scaling Factor (W/kg)	Scaled SAR (W/kg)	Plot No.
Mhz	Ch.		(MHz)	(Mbps)	(dBm)	(dBm)	(dB)										
5775	155	802.11ac	80	6	14.00	12.94	0.11	Rear	Ant1	85.8	10	0.1360	0.056	1.276	1.166	0.083	-
5775	155	802.11ac	80	6	14.00	12.94		Front	Ant1	85.8	10	0.0350		1.276	1.166		-
5775	155	802.11ac	80	6	14.00	12.94		Left	Ant1	85.8	10	0.0484		1.276	1.166		-
5775	155	802.11ac	80	6	14.00	12.94		Top	Ant1	85.8	10	0.0703		1.276	1.166		-
5775	155	802.11ac	80	6	14.00	12.63	0.10	Rear	Ant2	85.8	10	0.2920	0.119	1.371	1.166	0.189	51
5775	155	802.11ac	80	6	14.00	12.63		Front	Ant2	85.8	10	0.0148		1.371	1.166		-
5775	155	802.11ac	80	6	14.00	12.63		Left	Ant2	85.8	10	0.0699		1.371	1.166		-
5775	155	802.11ac	80	6	14.00	12.63		Top	Ant2	85.8	10	0.0357		1.371	1.166		-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population								Body 1.6 W/kg Averaged over 1 gram									

DSS Tethering SAR

Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaling Factor (Duty)	Scaled SAR (W/kg)	Plot No.
Mhz	Ch.		(dBm)	(dBm)	(dB)							
2 480	78	Bluetooth DH5	17.50	16.46	0.08	Rear	10	0.188	1.271	1.300	0.311	-
2 480	78	Bluetooth DH5	17.50	16.46	0.01	Front	10	0.089	1.271	1.300	0.147	-
2 480	78	Bluetooth DH5	17.50	16.46	0.03	Left	10	0.044	1.271	1.300	0.073	-
2 480	78	Bluetooth DH5	17.50	16.46	-0.08	Right	10	0.04	1.271	1.300	0.066	-
2 480	78	Bluetooth DH5	17.50	16.46	0.14	Top	10	0.213	1.271	1.300	0.352	52
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Body 1.6 W/kg (mW/g) Averaged over 1 gram					

13.4 Phablet SAR Measurement Considerations

Per FCC KDB 648474 D04v01r03, this device is considered a “Phablet” since the diagonal dimension is greater than 160 mm and less than 200 mm. Therefore, extremity SAR tests are required when wireless router mode does not apply or if wireless router 1g SAR >1.2 W/kg. When hotspot mode applies, 10g SAR required only for the surfaces and edges with hotspot mode scaled to the maximum output power (including tolerance) is 1g SAR > 1.2 W/kg.

13.5 Phablet SAR Measurement Results

GSM 1900 Phablet SAR 10g													
Frequency		Mode	Tune-Up Limit (dB)	Meas. Power (dB)	Power Drift (dB)	Test Position	Sensor	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
Mhz	Ch.												
1 880	661	GPRS 3Tx	26.50	26.01	-0.16	Rear	OFF	1:2.77	8	0.766	1.119	0.857	-
1 880	661	GPRS 3Tx	26.50	26.01	0.17	Front	OFF	1:2.77	6	0.711	1.119	0.796	-
1 880	661	GPRS 3Tx	26.50	26.01	0.14	Bottom	OFF	1:2.77	12	0.863	1.119	0.966	53
1 880	661	GPRS 3Tx	26.50	26.01	-0.05	Left	N/A	1:2.77	0	0.168	1.119	0.188	-
1 880	661	GPRS 3Tx	26.50	26.01	0.16	Right	N/A	1:2.77	0	0.395	1.119	0.442	-
1 880	661	GPRS 4Tx	22.50	21.34	-0.16	Rear	ON	1:2.07	0	0.553	1.306	0.722	-
1 880	661	GPRS 4Tx	22.50	21.34	0.00	Front	ON	1:2.07	0	0.553	1.306	0.722	-
1 880	661	GPRS 4Tx	22.50	21.34	0.19	Bottom	ON	1:2.07	0	0.644	1.306	0.841	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Hand 4.0 W/kg Averaged over 10 gram						

WCDMA 1700 Phablet SAR 10g													
Frequency		Mode	Tune-Up Limit (dB)	Meas. Power (dB)	Power Drift (dB)	Test Position	Sensor	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
Mhz	Ch.												
1732.4	1412	RMC	23.50	22.63	0.01	Rear	OFF	1:1	8	0.685	1.222	0.837	-
1732.4	1412	RMC	23.50	22.63	0.03	Front	OFF	1:1	6	0.759	1.222	0.927	-
1732.4	1412	RMC	23.50	22.63	0.07	Bottom	OFF	1:1	12	0.654	1.222	0.799	-
1732.4	1412	RMC	23.50	22.63	0.05	Left	N/A	1:1	0	0.251	1.222	0.307	-
1732.4	1412	RMC	23.50	22.63	0.19	Right	N/A	1:1	0	0.440	1.222	0.538	-
1732.4	1412	RMC	20.00	19.14	0.12	Rear	ON	1:1	0	1.06	1.219	1.292	-
1732.4	1412	RMC	20.00	19.14	0.19	Front	ON	1:1	0	1.03	1.219	1.256	-
1732.4	1412	RMC	20.00	19.14	0.16	Bottom	ON	1:1	0	1.24	1.219	1.512	54
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Hand 4.0 W/kg Averaged over 10 gram						

WCDMA 1900 Phablet SAR 10g													
Frequency		Mode	Tune-Up Limit (dB)	Meas. Power (dB)	Power Drift (dB)	Test Position	Sensor	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
Mhz	Ch.												
1 880.0	9400	RMC	23.50	21.72	-0.02	Rear	OFF	1:1	8	0.904	1.507	1.362	-
1 880.0	9400	RMC	23.50	21.72	0.16	Front	OFF	1:1	6	0.440	1.507	0.663	-
1 880.0	9400	RMC	23.50	21.72	0.01	Bottom	OFF	1:1	12	0.540	1.507	0.814	-
1 880.0	9400	RMC	23.50	21.72	0.19	Left	N/A	1:1	0	0.195	1.507	0.294	-
1 880.0	9400	RMC	23.50	21.72	0.17	Right	N/A	1:1	0	0.291	1.507	0.438	-
1 880.0	9400	RMC	20.00	18.29	0.13	Rear	ON	1:1	0	0.955	1.483	1.416	55
1 880.0	9400	RMC	20.00	18.29	0.10	Front	ON	1:1	0	0.843	1.483	1.250	-
1 880.0	9400	RMC	20.00	18.29	0.02	Bottom	ON	1:1	0	0.846	1.483	1.254	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Hand 4.0 W/kg Averaged over 10 gram						

LTE Band 2 Phablet SAR 10g																	
Frequency		Mode	Band Width	Tune-Up Limit (dB)	Meas. Power (dB)	Power Drift (dB)	Test Position	Sensor	MPR (dB)	RB Size	RB Offset	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
Mhz	Ch.																
1880	18900	QPSK	20	23.00	22.53	-0.02	Rear	OFF	0	1	0	1:1	8	0.803	1.114	0.895	-
1880	18900	QPSK	20	22.00	21.43	-0.06	Rear	OFF	1	50	0	1:1	8	0.620	1.140	0.707	-
1880	18900	QPSK	20	23.00	22.53	0.02	Front	OFF	0	1	0	1:1	6	0.805	1.114	0.897	-
1880	18900	QPSK	20	22.00	21.43	0.04	Front	OFF	1	50	0	1:1	6	0.658	1.140	0.750	-
1880	18900	QPSK	20	23.00	22.53	0.14	Bottom	OFF	0	1	0	1:1	12	1.24	1.114	1.382	56
1880	18900	QPSK	20	22.00	21.43	0.12	Bottom	OFF	1	50	0	1:1	12	0.977	1.140	1.114	-
1880	18900	QPSK	20	23.00	22.53	0.11	Left	N/A	0	1	0	1:1	0	0.258	1.114	0.287	-
1880	18900	QPSK	20	22.00	21.43	0.03	Left	N/A	1	50	0	1:1	0	0.199	1.140	0.227	-
1880	18900	QPSK	20	23.00	22.53	0.160	Right	N/A	0	1	0	1:1	0	0.587	1.114	0.654	-
1880	18900	QPSK	20	22.00	21.43	0.08	Right	N/A	1	50	0	1:1	0	0.461	1.140	0.526	-
1880	18900	QPSK	20	19.00	18.91	-0.04	Rear	ON	0	1	49	1:1	0	1.01	1.021	1.031	-
1880	18900	QPSK	20	19.00	18.96	0.06	Rear	ON	0	50	0	1:1	0	1.06	1.009	1.070	-
1880	18900	QPSK	20	19.00	18.91	0.01	Front	ON	0	1	49	1:1	0	0.842	1.021	0.860	-
1880	18900	QPSK	20	19.00	18.96	0.01	Front	ON	0	50	0	1:1	0	0.889	1.009	0.897	-
1880	18900	QPSK	20	19.00	18.91	0.02	Bottom	ON	0	1	49	1:1	0	0.997	1.021	1.018	-
1880	18900	QPSK	20	19.00	18.96	0.07	Bottom	ON	0	50	0	1:1	0	1.05	1.009	1.060	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population									Hand 4.0 W/kg Averaged over 10 gram								

LTE Band 25 Phablet SAR 10g																	
Frequency		Mode	Band Width	Tune-Up Limit (dB)	Meas. Power (dB)	Power Drift (dB)	Test Position	Sensor	MPR (dB)	RB Size	RB Offset	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
Mhz	Ch.																
1882.5	26365	QPSK	20	23.00	22.45	0.04	Rear	OFF	0	1	0	1:1	8	0.831	1.135	0.943	-
1882.5	26365	QPSK	20	22.00	21.42	0.03	Rear	OFF	1	50	49	1:1	8	0.635	1.143	0.726	-
1882.5	26365	QPSK	20	23.00	22.45	-0.05	Front	OFF	0	1	0	1:1	6	0.747	1.135	0.848	-
1882.5	26365	QPSK	20	22.00	21.42	0.10	Front	OFF	1	50	49	1:1	6	0.589	1.143	0.673	-
1882.5	26365	QPSK	20	23.00	22.45	0.08	Bottom	OFF	0	1	0	1:1	12	0.965	1.135	1.095	-
1882.5	26365	QPSK	20	22.00	21.42	0.07	Bottom	OFF	1	50	49	1:1	12	0.761	1.143	0.870	-
1882.5	26365	QPSK	20	23.00	22.45	0.18	Left	N/A	0	1	0	1:1	0	0.219	1.135	0.249	-
1882.5	26365	QPSK	20	22.00	21.42	0.16	Left	N/A	1	50	49	1:1	0	0.165	1.143	0.189	-
1882.5	26365	QPSK	20	23.00	22.45	-0.10	Right	N/A	0	1	0	1:1	0	0.390	1.135	0.443	-
1882.5	26365	QPSK	20	22.00	21.42	-0.08	Right	N/A	1	50	49	1:1	0	0.304	1.143	0.347	-
1882.5	26365	QPSK	20	19.00	18.87	0.10	Rear	ON	0	1	0	1:1	0	0.901	1.030	0.928	-
1882.5	26365	QPSK	20	19.00	18.86	0.00	Rear	ON	0	50	0	1:1	0	0.889	1.033	0.918	-
1882.5	26365	QPSK	20	19.00	18.87	0.00	Front	ON	0	1	0	1:1	0	0.866	1.030	0.892	-
1882.5	26365	QPSK	20	19.00	18.86	0.00	Front	ON	0	50	0	1:1	0	0.858	1.033	0.886	-
1882.5	26365	QPSK	20	19.00	18.87	-0.17	Bottom	ON	0	1	0	1:1	0	0.981	1.030	1.011	57
1882.5	26365	QPSK	20	19.00	18.86	-0.14	Bottom	ON	0	50	0	1:1	0	0.965	1.033	0.997	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population									Hand 4.0 W/kg Averaged over 10 gram								

LTE Band 66 Phablet SAR 10g																	
Frequency		Mode	Band Width	Tune-Up Limit (dB)	Meas. Power (dB)	Power Drift (dB)	Test Position	Sensor	MPR (dB)	RB Size	RB Offset	Duty Cycle	Distance (mm)	Meas. SAR (W/kg)	Scaling Factor	Scaled SAR (W/kg)	Plot No.
Mhz	Ch.																
1745	132322	QPSK	20	23.70	22.93	0.06	Rear	OFF	0	1	0	1:1	8	0.795	1.194	0.949	-
1745	132322	QPSK	20	22.70	21.89	-0.02	Rear	OFF	1	50	0	1:1	8	0.640	1.205	0.771	-
1745	132322	QPSK	20	23.70	22.93	0.09	Front	OFF	0	1	0	1:1	6	0.748	1.194	0.893	-
1745	132322	QPSK	20	22.70	21.89	0.11	Front	OFF	1	50	0	1:1	6	0.607	1.205	0.731	-
1745	132322	QPSK	20	23.70	22.93	0.06	Bottom	OFF	0	1	0	1:1	12	0.759	1.194	0.906	-
1745	132322	QPSK	20	22.70	21.89	0.04	Bottom	OFF	1	50	0	1:1	12	0.654	1.205	0.788	-
1745	132322	QPSK	20	23.70	22.93	-0.14	Left	N/A	0	1	0	1:1	0	0.270	1.194	0.322	-
1745	132322	QPSK	20	22.70	21.89	0.11	Left	N/A	1	50	0	1:1	0	0.219	1.205	0.264	-
1745	132322	QPSK	20	23.70	22.93	-0.03	Right	N/A	0	1	0	1:1	0	0.448	1.194	0.535	-
1745	132322	QPSK	20	22.70	21.89	-0.13	Right	N/A	1	50	0	1:1	0	0.359	1.205	0.433	-
1745	132322	QPSK	20	20.00	19.31	-0.10	Rear	ON	0	1	0	1:1	0	1.17	1.172	1.371	-
1745	132322	QPSK	20	20.00	19.30	0.13	Rear	ON	0	50	25	1:1	0	1.2	1.175	1.410	-
1745	132322	QPSK	20	20.00	19.31	0.00	Front	ON	0	1	0	1:1	0	1.13	1.172	1.325	-
1745	132322	QPSK	20	20.00	19.30	0.00	Front	ON	0	50	25	1:1	0	1.17	1.175	1.375	-
1745	132322	QPSK	20	20.00	19.31	-0.10	Bottom	ON	0	1	0	1:1	0	1.65	1.172	1.934	58
1745	132322	QPSK	20	20.00	19.30	0.03	Bottom	ON	0	50	25	1:1	0	1.64	1.175	1.927	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population									Hand 4.0 W/kg Averaged over 10 gram								

5 GHz WLAN Phablet SAR 10g																	
Frequency		Mode	Band width (MHz)	Data Rate (Mbps)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	Ant. Config.	Duty Cycle	Distance (mm)	Area Scan Peak SAR (W/kg)	Meas. SAR (W/kg)	Scaling Factor	Scaling Factor (Duty)	Scaled SAR (W/kg)	Plot No.
Mhz	Ch.																
5300	60	802.11a	20	6	18.00	16.61	-0.18	Rear	Ant1	93.6	0	4.14	0.330	1.377	1.068	0.486	-
5300	60	802.11a	20	6	18.00	16.61		Front	Ant1	93.6	0	4.97		1.377	1.068		-
5300	60	802.11a	20	6	18.00	16.61	-0.15	Left	Ant1	93.6	0	6.05	0.452	1.377	1.068	0.665	-
5300	60	802.11a	20	6	18.00	16.61		Top	Ant1	93.6	0	2.05		1.377	1.068		-
5720	144	802.11a	20	6	18.00	16.76		Rear	Ant1	93.6	0	2.63		1.330	1.068		-
5720	144	802.11a	20	6	18.00	16.76		Front	Ant1	93.6	0	1.36		1.330	1.068		-
5720	144	802.11a	20	6	18.00	16.76	0.14	Left	Ant1	93.6	0	4.15	0.29	1.330	1.068	0.412	-
5720	144	802.11a	20	6	18.00	16.76		Top	Ant1	93.6	0	1.54		1.330	1.068		-
5260	52	802.11a	20	6	18.00	16.61	-0.15	Rear	Ant2	93.6	0	12.90	1.09	1.377	1.068	1.605	59
5260	52	802.11a	20	6	18.00	16.61		Front	Ant2	93.6	0	0.312		1.377	1.068		-
5260	52	802.11a	20	6	18.00	16.61	0.14	Left	Ant2	93.6	0	3.090	0.279	1.377	1.068	0.411	-
5260	52	802.11a	20	6	18.00	16.61		Top	Ant2	93.6	0	0.989		1.377	1.068		-
5720	144	802.11a	20	6	18.00	16.88	0.10	Rear	Ant2	93.6	0	9.020	0.662	1.294	1.068	0.915	-
5720	144	802.11a	20	6	18.00	16.88		Front	Ant2	93.6	0	0.290		1.294	1.068		-
5720	144	802.11a	20	6	18.00	16.88		Left	Ant2	93.6	0	1.590		1.294	1.068		-
5720	144	802.11a	20	6	18.00	16.88		Top	Ant2	93.6	0	0.319		1.294	1.068		-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population												Hand 4.0 W/kg Averaged over 10 gram					

13.6 SAR Test Notes

General Notes:

1. The test data reported are the worst-case SAR values according to test procedures specified in IEEE 1528-2013, FCC KDB Procedure.
2. Batteries are fully charged at the beginning of the SAR measurements. A standard battery was used for all SAR measurements.
3. Liquid tissue depth was at least 15.0 cm for all frequencies.
4. The manufacturer has confirmed that the device(s) tested have the same physical, mechanical and thermal characteristics and are within operational tolerances expected for production units.
5. SAR results were scaled to the maximum allowed power to demonstrate compliance per FCC KDB 447498 D01v06.
6. Device was tested using a fixed spacing for body-worn accessory testing. A separation distance of 15 mm was considered because the manufacturer has determined that there will be body-worn accessories available in the marketplace for users to support this separation distance.
7. Per FCC KDB 648474 D04v01r03, SAR was evaluated without a headset connected to the device. Since the standalone reported SAR was ≤ 1.2 W/kg, no additional SAR evaluation using a headset cable were required.
8. Per KDB 648474 D04v01r03, this device is considered a "Phablet" since the diagonal dimension is > 160 mm and < 200 mm. When hotspot mode applies, extremity SAR is required only for the surfaces and edges with hotspot mode scaled to the maximum output power (with tolerance) is 1 g SAR > 1.2 W/kg..
9. Per FCC KDB 865664 D01v01r04, variability SAR measurement were performed when the measured SAR results for a frequency band were greater than or equal to 0.8 W/kg for 1g SAR and >2 for 10g SAR Please see Section 15 for variability analysis.
10. This device utilizes power reduction for some wireless mode and technologies, as outlined in sec. 4 The maximum output power allowed for each transmitter and exposure condition was evaluated for SAR compliance based on expected use conditions and simultaneous scenarios.
11. During SAR testing for the Hotspot conditions per KDB 941225 D06v02r01, the actual portable hotspot operation (with actual simultaneous transmission of a transmitter with WiFi) was not activated.

GSM/GPRS Test Notes:

1. This EUT'S GSM and GPRS device class is B..
2. Justification for reduced test configurations per KDB 941225 D01v03r01: The source-based time-averaged output power was evaluated for all multi-slot operations. The multi-slot configuration with the highest frame averaged output power including tolerance was evaluated for SAR.
3. Per FCC KDB 447498 D01v06, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s). When the maximum output power variation across the required test channels is 1/2 dB, instead of the middle channel, the highest output power channel must be used.
4. Justification for reduced test configurations per KDB Publication 941225 D01v03r01 and October 2013 TCB Workshop Notes: The source-based frame-averaged output power was evaluated for all GPRS/EDGE slot configurations. The configuration with the highest target frame averaged output power was evaluated for hotspot SAR. When the maximum frame-averaged powers are equivalent across two or more slots (within 0.25 dB), the configuration with the most number of time slots was tested.

WCDMA Notes:

1. The 12.2 kbps RMC mode is the primary mode per KDB 941225 D01v03r01.
2. WCDMA SAR was tested under RMC 12.2 kbps with HSPA inactive per KDB publication 941225 D01v03r01. AMR and HSPA SAR was not required per the 3G Test Reduction Procedure in KDB

Publication 941225 D01v03r01.

3. Per FCC KDB 447498 D01v06, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s). When the maximum output power variation across the channel highest output power channel was used.

LTE Notes:

1. LTE Considerations: LTE test configurations are determined according to SAR Evaluation Consideration for LTE Devices in FCC KDB 941225 D05v02r05.
2. According to FCC KDB 941225 D05v02r05:
When the reported SAR is ≤ 0.8 W/kg, testing of the 100% RB allocation and required test channels is not required. Otherwise, SAR is required for the remaining required test channels using the 1RB, 50%RB and 100%RB allocation with highest output power for that channel.
Only one channel, and as reported SAR values for 1RB allocation and 50%RB allocation were less than 1.45W/Kg only the highest power RB offset for each allocation was required.
3. MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to target MPR is indicated alongside the SAR results.
4. When Power reduction is applied , MPR is 0
5. A-MPR was disabled for all SAR tests by setting NS=01 on the base station simulator.
6. Per FCC KDB Publication 447498 D01v06, if the reported (scaled) LTE TDD Band 41 SAR measured at the highest output power channel for each test configuration is ≤ 0.6 W/kg then testing at the other channels is not required for such test configurations.
7. TDD LTE (Power Class 3) was tested using UL-DL configuration 0 with 6 UL sub frames and 2S sub frames using extended cyclic prefix only and special sub frame configuration 6. SAR tests were performed at maximum output power and worst-case transmission duty factor in extended cyclic prefix. Per 3GPP 36.211 Sec. 4, the duty factor using extended cyclic prefix is 0.633(cf=1.58).
8. Per KDB 941225 D05Av01r02, SAR for LTE Carrier Aggregation operations was not needed because the maximum average output power in LTE CA mode was not > 0.25 dB higher than the maximum output power when downlink CA was not activated.
9. This device supports Power Class 2 and Power Class 3 operations for LTE Band 41. The Highest available duty cycle for Power Class 2 operations is 43.3% using UL-DL configuration 1. Per May TCB Workshop notes, all SAR tests were performed using Power Class 3. SAR with power class 2 at the available duty factor was additionally performed for the power class 3 configuration with the highest SAR configuration for each exposure conditions.
10. SAR test reduction is applied using the following criteria:
Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB, and 50% RB allocation, 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 for other Channels is performed at the highest output power level for 1RB, and 50% RB configuration for that channel. Testing for 100% RB configuration is performed at the highest output power level for 100% RB configuration across the Low, Mid and High Channel when the highest reported SAR for 1 RB and 50% RB are >0.8 W/kg, testing for the remaining required channels is not needed because the reported SAR for 100% RB Allocation <1.45 W/kg. Testing for 16-QAM modulation is not required because the reported SAR for QPSK is <1.45 W/kg and its output power is not more than 0.5 dB higher than that a QPSK. Testing for the other channel bandwidths is not required because the reported SAR for the highest channel bandwidth is <1.45 W/kg and its output power is not more than 0.5 dB higher than that of the highest channel bandwidth.

WLAN Notes:

1. For held-to-ear and hotspot operations, the initial test position procedures were applied. For initial test position, the highest extrapolated peak SAR will be used. When reported SAR for the initial test position is ≤ 0.4 W/kg for 1g SAR and ≤ 1.0 W/kg for 10g SAR, no additional testing for the remaining test positions was required. Otherwise, SAR is evaluated at the subsequent highest peak SAR positions until the reported SAR results is ≤ 0.8 W/kg for 1g SAR and ≤ 2.0 W/kg for 10g SAR or all test position are measured.
2. Per KDB 2482227 D01v02r02 justification for test configurations of 2.4 GHz WiFi Single transmission chain operations, the highest measured maximum output power channel for DSSS was selected for SAR measurement. SAR for OFDM modes (2.4 GHz 802.11 g/n) was not required due to the maximum allowed powers and the highest reported DSSS SAR.
3. Per KDB 2482227 D01v02r02 justification for test configurations of 5 GHz WiFi Single transmission chain operations, the initial test configuration was selected according to the transmission mode with the highest maximum allowed powers. Other transmission mode were not investigated since the highest reported SAR for initial test configuration adjusted by the ration of maximum output powers is less than 1.2 W/kg for 1g SAR and less than 3.0 W/kg for 10 g SAR.
4. When the maximum reported 1g averaged SAR is ≤ 0.8 W/kg, SAR testing on additional channels was not required. Otherwise, SAR for the next highest output power channel was required until the reported SAR result was ≤ 1.20 W/kg or all test channels were measured.
5. The device was configured to transmit continuously at the required data rated, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools. The reported SAR was scaled to the 100% transmission duty factor to determine compliance. Procedures used to measure the duty factor are identical to that in the associated WLAN test reports.
6. Per KDB Publication 248227 D01v02r02, the simultaneous SAR provisions in KDB publication 447498D01v06 should be applied to determine simultaneous transmission SAR test exclusion for WIFI MIMO. If the sum of 1g single transmission chain SAR measurements is <1.6 W/kg, no additional SAR Measurements for MIMO are required. Alternatively, SAR for MIMO can be measured with all antennas transmitting simultaneously at the specified maximum output power of MIMO operation.

Bluetooth Notes:

1. Bluetooth SAR was measured with the device connected to a call box with hopping disabled with DH5 operation and Tx Tests mode type. Per October 2016 TCBC Workshop Notes, the reported SAR was scaled to 100% transmission duty factor to determine compliance. Please see sec.11 for the time-domain plot and calculation for duty factor of the device.
2. Head and Bluetooth tethering SAR were evaluated for BT BR tethering applications.

14. Simultaneous SAR Analysis

This device contains transmitters that may operate simultaneously. Therefore, simultaneous transmission analysis is required. Per KDB Publication 447498 D01v06 4.3.2, simultaneous transmission SAR test exclusion may be applied when the sum of 1g SAR and 10g SAR for all the simultaneous transmitting antennas in a specific physical test configuration is $\leq 1.6\text{W/kg}$ for 1g SAR and $\leq 4\text{ W/kg}$ for 10g SAR. The different test positions in an exposure condition may be considered collectively to determine SAR exclusion according to the sum of 1g or 10g SAR.

14.1 Head SAR Simultaneous Transmission Analysis.

Simultaneous Transmission Summation Scenario with 2.4 GHz WLAN & BT

Band	Configuration	Main	2.4 GHz SISO Ant1 SAR (W/kg)	2.4 GHz SISO Ant2 SAR (W/kg)	BT	\sum 1-g SAR	\sum 1-g SAR	\sum 1-g SAR	\sum 1-g SAR	SPLSR
		1	2	3	4	1+2	1+3	1+4	1+2+3	Yes/No
GSM850	Left Touch	0.283	0.441	0.031	0.474	0.724	0.314	0.757	0.755	NO
	Left Tilt	0.133	0.441	0.031	0.623	0.574	0.164	0.756	0.605	NO
	Right Touch	0.187	0.300	0.031	0.694	0.487	0.218	0.881	0.518	NO
	Right Tilt	0.156	0.441	0.031	0.945	0.597	0.187	1.101	0.628	NO
GSM1900	Left Touch	0.069	0.441	0.031	0.474	0.510	0.100	0.543	0.541	NO
	Left Tilt	0.055	0.441	0.031	0.623	0.496	0.086	0.678	0.527	NO
	Right Touch	0.084	0.300	0.031	0.694	0.384	0.115	0.778	0.415	NO
	Right Tilt	0.058	0.441	0.031	0.945	0.499	0.089	1.003	0.530	NO
WCDMA2	Left Touch	0.081	0.441	0.031	0.474	0.522	0.112	0.555	0.553	NO
	Left Tilt	0.095	0.441	0.031	0.623	0.536	0.126	0.718	0.567	NO
	Right Touch	0.080	0.300	0.031	0.694	0.380	0.111	0.774	0.411	NO
	Right Tilt	0.077	0.441	0.031	0.945	0.518	0.108	1.022	0.549	NO
WCDMA4	Left Touch	0.111	0.441	0.031	0.474	0.552	0.142	0.585	0.583	NO
	Left Tilt	0.075	0.441	0.031	0.623	0.516	0.106	0.698	0.547	NO
	Right Touch	0.127	0.300	0.031	0.694	0.427	0.158	0.821	0.458	NO
	Right Tilt	0.07	0.441	0.031	0.945	0.511	0.101	1.015	0.542	NO
WCDMA5	Left Touch	0.189	0.441	0.031	0.474	0.630	0.220	0.663	0.661	NO
	Left Tilt	0.088	0.441	0.031	0.623	0.529	0.119	0.711	0.560	NO
	Right Touch	0.150	0.300	0.031	0.694	0.450	0.181	0.844	0.481	NO
	Right Tilt	0.106	0.441	0.031	0.945	0.547	0.137	1.051	0.578	NO
LTE 2	Left Touch	0.111	0.441	0.031	0.474	0.552	0.142	0.585	0.583	NO
	Left Tilt	0.078	0.441	0.031	0.623	0.519	0.109	0.701	0.55	NO
	Right Touch	0.114	0.3	0.031	0.694	0.414	0.145	0.808	0.445	NO
	Right Tilt	0.076	0.441	0.031	0.945	0.517	0.107	1.021	0.548	NO
LTE 5	Left Touch	0.202	0.441	0.031	0.474	0.643	0.233	0.676	0.674	NO
	Left Tilt	0.07	0.441	0.031	0.623	0.511	0.101	0.693	0.542	NO
	Right Touch	0.128	0.3	0.031	0.694	0.428	0.159	0.822	0.459	NO
	Right Tilt	0.084	0.441	0.031	0.945	0.525	0.115	1.029	0.556	NO
LTE 12	Left Touch	0.087	0.441	0.031	0.474	0.528	0.118	0.561	0.559	NO
	Left Tilt	0.042	0.441	0.031	0.623	0.483	0.073	0.665	0.514	NO

	Right Touch	0.078	0.300	0.031	0.694	0.378	0.109	0.772	0.409	NO
	Right Tilt	0.057	0.441	0.031	0.945	0.498	0.088	1.002	0.529	NO
LTE13	Left Touch	0.083	0.441	0.031	0.474	0.524	0.114	0.557	0.555	NO
	Left Tilt	0.038	0.441	0.031	0.623	0.479	0.069	0.661	0.510	NO
	Right Touch	0.053	0.300	0.031	0.694	0.353	0.084	0.747	0.384	NO
	Right Tilt	0.034	0.441	0.031	0.945	0.475	0.065	0.979	0.506	NO
LTE 25	Left Touch	0.123	0.441	0.031	0.474	0.564	0.154	0.597	0.595	NO
	Left Tilt	0.093	0.441	0.031	0.623	0.534	0.124	0.716	0.565	NO
	Right Touch	0.106	0.300	0.031	0.694	0.406	0.137	0.800	0.437	NO
	Right Tilt	0.090	0.441	0.031	0.945	0.531	0.121	1.035	0.562	NO
LTE 26	Left Touch	0.207	0.441	0.031	0.474	0.648	0.238	0.681	0.679	NO
	Left Tilt	0.094	0.441	0.031	0.623	0.535	0.125	0.717	0.566	NO
	Right Touch	0.155	0.300	0.031	0.694	0.455	0.186	0.849	0.486	NO
	Right Tilt	0.108	0.441	0.031	0.945	0.549	0.139	1.053	0.58	NO
LTE 41(PC3)	Left Touch	0.036	0.441	0.031	0.474	0.477	0.067	0.510	0.508	NO
	Left Tilt	0.053	0.441	0.031	0.623	0.494	0.084	0.676	0.525	NO
	Right Touch	0.038	0.300	0.031	0.694	0.338	0.069	0.732	0.369	NO
	Right Tilt	0.022	0.441	0.031	0.945	0.463	0.053	0.967	0.494	NO
LTE 41(PC2)	Left Touch		0.441	0.031	0.474	0.441	0.031	0.474	0.472	NO
	Left Tilt	0.055	0.441	0.031	0.623	0.496	0.086	0.678	0.527	NO
	Right Touch		0.300	0.031	0.694	0.300	0.031	0.694	0.331	NO
	Right Tilt		0.441	0.031	0.945	0.441	0.031	0.945	0.472	NO
LTE 66	Left Touch	0.134	0.441	0.031	0.474	0.575	0.165	0.608	0.606	NO
	Left Tilt	0.090	0.441	0.031	0.623	0.531	0.121	0.713	0.562	NO
	Right Touch	0.143	0.300	0.031	0.694	0.443	0.174	0.837	0.474	NO
	Right Tilt	0.122	0.441	0.031	0.945	0.563	0.153	1.067	0.594	NO

Simultaneous Transmission Summation Scenario with 5 GHz WLAN & BT

Band	Configuration	Main	5GHz SISO Ant1 SAR (W/kg)	5 GHz SISO Ant2 SAR (W/kg)	BT	Σ 1-g SAR	SPLSR				
		1	2	3	4	1+2	1+3	1+4	1+2+3	1+2+3+4	Yes/No
GSM850	Left Touch	0.283	0.193	0.038	0.474	0.476	0.321	0.757	0.514	0.988	NO
	Left Tilt	0.133	0.193	0.038	0.623	0.326	0.171	0.756	0.364	0.987	NO
	Right Touch	0.187	0.193	0.038	0.694	0.38	0.225	0.881	0.418	1.112	NO
	Right Tilt	0.156	0.193	0.038	0.945	0.349	0.194	1.101	0.387	1.332	NO
GSM1900	Left Touch	0.069	0.193	0.038	0.474	0.262	0.107	0.543	0.3	0.774	NO
	Left Tilt	0.055	0.193	0.038	0.623	0.248	0.093	0.678	0.286	0.909	NO
	Right Touch	0.084	0.193	0.038	0.694	0.277	0.122	0.778	0.315	1.009	NO
	Right Tilt	0.058	0.193	0.038	0.945	0.251	0.096	1.003	0.289	1.234	NO
WCDMA2	Left Touch	0.081	0.193	0.038	0.474	0.274	0.119	0.555	0.312	0.786	NO
	Left Tilt	0.095	0.193	0.038	0.623	0.288	0.133	0.718	0.326	0.949	NO
	Right Touch	0.080	0.193	0.038	0.694	0.273	0.118	0.774	0.311	1.005	NO
	Right Tilt	0.077	0.193	0.038	0.945	0.27	0.115	1.022	0.308	1.253	NO
WCDMA4	Left Touch	0.111	0.193	0.038	0.474	0.304	0.149	0.585	0.342	0.816	NO
	Left Tilt	0.075	0.193	0.038	0.623	0.268	0.113	0.698	0.306	0.929	NO
	Right Touch	0.127	0.193	0.038	0.694	0.32	0.165	0.821	0.358	1.052	NO
	Right Tilt	0.070	0.193	0.038	0.945	0.263	0.108	1.015	0.301	1.246	NO
WCDMA5	Left Touch	0.189	0.193	0.038	0.474	0.382	0.227	0.663	0.42	0.894	NO
	Left Tilt	0.088	0.193	0.038	0.623	0.281	0.126	0.711	0.319	0.942	NO
	Right Touch	0.150	0.193	0.038	0.694	0.343	0.188	0.844	0.381	1.075	NO
	Right Tilt	0.106	0.193	0.038	0.945	0.299	0.144	1.051	0.337	1.282	NO
LTE 2	Left Touch	0.111	0.193	0.038	0.474	0.304	0.149	0.585	0.342	0.816	NO
	Left Tilt	0.078	0.193	0.038	0.623	0.271	0.116	0.701	0.309	0.932	NO
	Right Touch	0.114	0.193	0.038	0.694	0.307	0.152	0.808	0.345	1.039	NO
	Right Tilt	0.076	0.193	0.038	0.945	0.269	0.114	1.021	0.307	1.252	NO
LTE 5	Left Touch	0.202	0.193	0.038	0.474	0.395	0.24	0.676	0.433	0.907	NO
	Left Tilt	0.07	0.193	0.038	0.623	0.263	0.108	0.693	0.301	0.924	NO
	Right Touch	0.128	0.193	0.038	0.694	0.321	0.166	0.822	0.359	1.053	NO
	Right Tilt	0.084	0.193	0.038	0.945	0.277	0.122	1.029	0.315	1.26	NO
LTE 12	Left Touch	0.087	0.193	0.038	0.474	0.28	0.125	0.561	0.318	0.792	NO
	Left Tilt	0.042	0.193	0.038	0.623	0.235	0.08	0.665	0.273	0.896	NO
	Right Touch	0.078	0.193	0.038	0.694	0.271	0.116	0.772	0.309	1.003	NO

	Right Tilt	0.057	0.193	0.038	0.945	0.25	0.095	1.002	0.288	1.233	NO
LTE13	Left Touch	0.083	0.193	0.038	0.474	0.276	0.121	0.557	0.314	0.788	NO
	Left Tilt	0.038	0.193	0.038	0.623	0.231	0.076	0.661	0.269	0.892	NO
	Right Touch	0.053	0.193	0.038	0.694	0.246	0.091	0.747	0.284	0.978	NO
	Right Tilt	0.034	0.193	0.038	0.945	0.227	0.072	0.979	0.265	1.21	NO
LTE 25	Left Touch	0.123	0.193	0.038	0.474	0.316	0.161	0.597	0.354	0.828	NO
	Left Tilt	0.093	0.193	0.038	0.623	0.286	0.131	0.716	0.324	0.947	NO
	Right Touch	0.106	0.193	0.038	0.694	0.299	0.144	0.8	0.337	1.031	NO
	Right Tilt	0.09	0.193	0.038	0.945	0.283	0.128	1.035	0.321	1.266	NO
LTE 26	Left Touch	0.207	0.193	0.038	0.474	0.4	0.245	0.681	0.438	0.912	NO
	Left Tilt	0.094	0.193	0.038	0.623	0.287	0.132	0.717	0.325	0.948	NO
	Right Touch	0.155	0.193	0.038	0.694	0.348	0.193	0.849	0.386	1.08	NO
	Right Tilt	0.108	0.193	0.038	0.945	0.301	0.146	1.053	0.339	1.284	NO
LTE 41(PC3)	Left Touch	0.036	0.193	0.038	0.474	0.229	0.074	0.51	0.267	0.741	NO
	Left Tilt	0.053	0.193	0.038	0.623	0.246	0.091	0.676	0.284	0.907	NO
	Right Touch	0.038	0.193	0.038	0.694	0.231	0.076	0.732	0.269	0.963	NO
	Right Tilt	0.022	0.193	0.038	0.945	0.215	0.06	0.967	0.253	1.198	NO
LTE 41(PC2)	Left Touch		0.193	0.038	0.474	0.193	0.038	0.474	0.231	0.705	NO
	Left Tilt	0.055	0.193	0.038	0.623	0.248	0.093	0.678	0.286	0.909	NO
	Right Touch		0.193	0.038	0.694	0.193	0.038	0.694	0.231	0.925	NO
	Right Tilt		0.193	0.038	0.945	0.193	0.038	0.945	0.231	1.176	NO
LTE 66	Left Touch	0.134	0.193	0.038	0.474	0.327	0.172	0.608	0.365	0.839	NO
	Left Tilt	0.09	0.193	0.038	0.623	0.283	0.128	0.713	0.321	0.944	NO
	Right Touch	0.143	0.193	0.038	0.694	0.336	0.181	0.837	0.374	1.068	NO
	Right Tilt	0.122	0.193	0.038	0.945	0.315	0.16	1.067	0.353	1.298	NO

Simultaneous Transmission Summation Scenario with 2.4 GHz WLAN & 5GHz WLAN

Band	Configuration	Main	2.4GHz SISO Ant1 SAR (W/kg)	2.4 GHz SISO Ant2 SAR (W/kg)	5GHz SISO Ant1 SAR (W/kg)	5 GHz SISO Ant2 SAR (W/kg)	\sum 1-g SAR	SPLSR
		1	2	3	4	5	1+2+3+4+5	Yes/No
GSM850	Left Touch	0.283	0.441	0.031	0.193	0.038	0.986	NO
	Left Tilt	0.133	0.441	0.031	0.193	0.038	0.836	NO
	Right Touch	0.187	0.300	0.031	0.193	0.038	0.749	NO
	Right Tilt	0.156	0.441	0.031	0.193	0.038	0.859	NO
GSM1900	Left Touch	0.069	0.441	0.031	0.193	0.038	0.772	NO
	Left Tilt	0.055	0.441	0.031	0.193	0.038	0.758	NO
	Right Touch	0.084	0.300	0.031	0.193	0.038	0.646	NO
	Right Tilt	0.058	0.441	0.031	0.193	0.038	0.761	NO
WCDMA2	Left Touch	0.081	0.441	0.031	0.193	0.038	0.784	NO
	Left Tilt	0.095	0.441	0.031	0.193	0.038	0.798	NO
	Right Touch	0.080	0.300	0.031	0.193	0.038	0.642	NO
	Right Tilt	0.077	0.441	0.031	0.193	0.038	0.78	NO
WCDMA4	Left Touch	0.111	0.441	0.031	0.193	0.038	0.814	NO
	Left Tilt	0.075	0.441	0.031	0.193	0.038	0.778	NO
	Right Touch	0.127	0.300	0.031	0.193	0.038	0.689	NO
	Right Tilt	0.07	0.441	0.031	0.193	0.038	0.773	NO
WCDMA5	Left Touch	0.189	0.441	0.031	0.193	0.038	0.892	NO
	Left Tilt	0.088	0.441	0.031	0.193	0.038	0.791	NO
	Right Touch	0.150	0.300	0.031	0.193	0.038	0.712	NO
	Right Tilt	0.106	0.441	0.031	0.193	0.038	0.809	NO
LTE 2	Left Touch	0.111	0.441	0.031	0.193	0.038	0.814	NO
	Left Tilt	0.078	0.441	0.031	0.193	0.038	0.781	NO
	Right Touch	0.114	0.3	0.031	0.193	0.038	0.676	NO
	Right Tilt	0.076	0.441	0.031	0.193	0.038	0.779	NO
LTE 5	Left Touch	0.202	0.441	0.031	0.193	0.038	0.905	NO
	Left Tilt	0.07	0.441	0.031	0.193	0.038	0.773	NO
	Right Touch	0.128	0.3	0.031	0.193	0.038	0.69	NO
	Right Tilt	0.084	0.441	0.031	0.193	0.038	0.787	NO
LTE 12	Left Touch	0.087	0.441	0.031	0.193	0.038	0.79	NO
	Left Tilt	0.042	0.441	0.031	0.193	0.038	0.745	NO
	Right Touch	0.078	0.300	0.031	0.193	0.038	0.64	NO
	Right Tilt	0.057	0.441	0.031	0.193	0.038	0.76	NO

LTE13	Left Touch	0.083	0.441	0.031	0.193	0.038	0.786	NO
	Left Tilt	0.038	0.441	0.031	0.193	0.038	0.741	NO
	Right Touch	0.053	0.300	0.031	0.193	0.038	0.615	NO
	Right Tilt	0.034	0.441	0.031	0.193	0.038	0.737	NO
LTE 25	Left Touch	0.123	0.441	0.031	0.193	0.038	0.826	NO
	Left Tilt	0.093	0.441	0.031	0.193	0.038	0.796	NO
	Right Touch	0.106	0.300	0.031	0.193	0.038	0.668	NO
	Right Tilt	0.090	0.441	0.031	0.193	0.038	0.793	NO
LTE 26	Left Touch	0.207	0.441	0.031	0.193	0.038	0.91	NO
	Left Tilt	0.094	0.441	0.031	0.193	0.038	0.797	NO
	Right Touch	0.155	0.300	0.031	0.193	0.038	0.717	NO
	Right Tilt	0.108	0.441	0.031	0.193	0.038	0.811	NO
LTE 41(PC3)	Left Touch	0.036	0.441	0.031	0.193	0.038	0.739	NO
	Left Tilt	0.053	0.441	0.031	0.193	0.038	0.756	NO
	Right Touch	0.038	0.300	0.031	0.193	0.038	0.6	NO
	Right Tilt	0.022	0.441	0.031	0.193	0.038	0.725	NO
LTE 41(PC2)	Left Touch		0.441	0.031	0.193	0.038	0.703	NO
	Left Tilt	0.055	0.441	0.031	0.193	0.038	0.758	NO
	Right Touch		0.300	0.031	0.193	0.038	0.562	NO
	Right Tilt		0.441	0.031	0.193	0.038	0.703	NO
LTE 66	Left Touch	0.134	0.441	0.031	0.193	0.038	0.837	NO
	Left Tilt	0.090	0.441	0.031	0.193	0.038	0.793	NO
	Right Touch	0.143	0.300	0.031	0.193	0.038	0.705	NO
	Right Tilt	0.122	0.441	0.031	0.193	0.038	0.825	NO

14.2 Body-Worn SAR Simultaneous Transmission Analysis.

Simultaneous Transmission Summation Scenario with 2.4 GHz WLAN & BT

Band	Configuration	Main	2.4 GHz SISO Ant1 SAR (W/kg)	2.4 GHz SISO Ant2 SAR (W/kg)	BT	Σ 1-g SAR	Σ 1-g SAR	Σ 1-g SAR	Σ 1-g SAR	SPLSR
		1	2	3	4	1+2	1+3	1+4	1+2+3	Yes/No
GSM850	Rear	0.515	0.112	0.076	0.126	0.627	0.591	0.641	0.703	NO
	Front	0.389	0.098	0.003	0.068	0.487	0.392	0.457	0.490	NO
GSM1900	Rear	0.577	0.112	0.076	0.126	0.689	0.653	0.703	0.765	NO
	Front	0.416	0.098	0.003	0.068	0.514	0.419	0.484	0.517	NO
WCDMA2	Rear	0.690	0.112	0.076	0.126	0.802	0.766	0.816	0.878	NO
	Front	0.586	0.098	0.003	0.068	0.684	0.589	0.654	0.687	NO
WCDMA4	Rear	0.574	0.112	0.076	0.126	0.686	0.650	0.700	0.762	NO
	Front	0.469	0.098	0.003	0.068	0.567	0.472	0.537	0.570	NO
WCDMA5	Rear	0.404	0.112	0.076	0.126	0.516	0.480	0.530	0.592	NO
	Front	0.333	0.098	0.003	0.068	0.431	0.336	0.401	0.434	NO
LTE 2	Rear	0.601	0.112	0.076	0.126	0.713	0.677	0.727	0.789	NO
	Front	0.389	0.098	0.003	0.068	0.487	0.392	0.457	0.490	NO
LTE 5	Rear	0.369	0.112	0.076	0.126	0.481	0.445	0.495	0.557	NO
	Front	0.306	0.098	0.003	0.068	0.404	0.309	0.374	0.407	NO
LTE 12	Rear	0.157	0.112	0.076	0.126	0.269	0.233	0.283	0.345	NO
	Front	0.117	0.098	0.003	0.068	0.215	0.120	0.185	0.218	NO
LTE 13	Rear	0.131	0.112	0.076	0.126	0.243	0.207	0.257	0.319	NO
	Front	0.119	0.098	0.003	0.068	0.217	0.122	0.187	0.220	NO
LTE 25	Rear	0.675	0.112	0.076	0.126	0.787	0.751	0.801	0.863	NO
	Front	0.489	0.098	0.003	0.068	0.587	0.492	0.557	0.590	NO
LTE 26	Rear	0.383	0.112	0.076	0.126	0.495	0.459	0.509	0.571	NO
	Front	0.337	0.098	0.003	0.068	0.435	0.340	0.405	0.438	NO
LTE 41(PC3)	Rear	0.247	0.112	0.076	0.126	0.359	0.323	0.373	0.435	NO
	Front	0.197	0.098	0.003	0.068	0.295	0.200	0.265	0.298	NO
LTE 41(PC2)	Rear	0.236	0.112	0.076	0.126	0.348	0.312	0.362	0.424	NO
	Front		0.098	0.003	0.068	0.098	0.003	0.068	0.101	NO
LTE 66	Rear	0.721	0.112	0.076	0.126	0.833	0.797	0.847	0.909	NO
	Front	0.618	0.098	0.003	0.068	0.716	0.621	0.686	0.719	NO

Simultaneous Transmission Summation Scenario with 5 GHz WLAN & BT							
Band	Configuration	Main	5GHz SISO Ant1 SAR (W/kg)	5GHz SISO Ant2 SAR (W/kg)	BT	\sum 1-g SAR	SPLSR
		1	2	3	4	1+2+3+4	Yes/No
GSM850	Rear	0.515	0.202	0.486	0.126	1.329	NO
	Front	0.389	0.065	0.028	0.068	0.550	NO
GSM1900	Rear	0.577	0.202	0.486	0.126	1.391	NO
	Front	0.416	0.065	0.028	0.068	0.577	NO
WCDMA2	Rear	0.690	0.202	0.486	0.126	1.504	NO
	Front	0.586	0.065	0.028	0.068	0.747	NO
WCDMA4	Rear	0.574	0.202	0.486	0.126	1.388	NO
	Front	0.469	0.065	0.028	0.068	0.630	NO
WCDMA5	Rear	0.404	0.202	0.486	0.126	1.218	NO
	Front	0.333	0.065	0.028	0.068	0.494	NO
LTE 2	Rear	0.601	0.202	0.486	0.126	1.415	NO
	Front	0.389	0.065	0.028	0.068	0.550	NO
LTE 5	Rear	0.369	0.202	0.486	0.126	1.183	NO
	Front	0.306	0.065	0.028	0.068	0.467	NO
LTE 12	Rear	0.157	0.202	0.486	0.126	0.971	NO
	Front	0.117	0.065	0.028	0.068	0.278	NO
LTE 13	Rear	0.131	0.202	0.486	0.126	0.945	NO
	Front	0.119	0.065	0.028	0.068	0.280	NO
LTE 25	Rear	0.675	0.202	0.486	0.126	1.489	NO
	Front	0.489	0.065	0.028	0.068	0.650	NO
LTE 26	Rear	0.383	0.202	0.486	0.126	1.197	NO
	Front	0.337	0.065	0.028	0.068	0.498	NO
LTE 41(PC3)	Rear	0.247	0.202	0.486	0.126	1.061	NO
	Front	0.197	0.065	0.028	0.068	0.358	NO
LTE 41(PC2)	Rear	0.236	0.202	0.486	0.126	1.050	NO
	Front		0.065	0.028	0.068	0.161	NO
LTE 66	Rear	0.721	0.202	0.486	0.126	1.535	NO
	Front	0.618	0.065	0.028	0.068	0.779	NO

Simultaneous Transmission Summation Scenario with 2.4 GHz WLAN & 5GHz WLAN

Band	Configuration	Main	2.4GHz SISO Ant1 SAR (W/kg)	2.4 GHz SISO Ant2 SAR (W/kg)	5GHz SISO Ant1 SAR (W/kg)	5 GHz SISO Ant2 SAR (W/kg)	∑ 1-g SAR	SPLSR
		1	2	3	4	5	1+2+3+4+5	Yes/No
GSM850	Rear	0.515	0.112	0.076	0.202	0.486	1.391	NO
	Front	0.389	0.098	0.003	0.065	0.028	0.583	NO
GSM1900	Rear	0.577	0.112	0.076	0.202	0.486	1.453	NO
	Front	0.416	0.098	0.003	0.065	0.028	0.610	NO
WCDMA2	Rear	0.690	0.112	0.076	0.202	0.486	1.566	NO
	Front	0.586	0.098	0.003	0.065	0.028	0.780	NO
WCDMA4	Rear	0.574	0.112	0.076	0.202	0.486	1.450	NO
	Front	0.469	0.098	0.003	0.065	0.028	0.663	NO
WCDMA5	Rear	0.404	0.112	0.076	0.202	0.486	1.280	NO
	Front	0.333	0.098	0.003	0.065	0.028	0.527	NO
LTE 2	Rear	0.601	0.112	0.076	0.202	0.486	1.477	NO
	Front	0.389	0.098	0.003	0.065	0.028	0.583	NO
LTE 5	Rear	0.369	0.112	0.076	0.202	0.486	1.245	NO
	Front	0.306	0.098	0.003	0.065	0.028	0.500	NO
LTE 12	Rear	0.157	0.112	0.076	0.202	0.486	1.033	NO
	Front	0.117	0.098	0.003	0.065	0.028	0.311	NO
LTE 13	Rear	0.131	0.112	0.076	0.202	0.486	1.007	NO
	Front	0.119	0.098	0.003	0.065	0.028	0.313	NO
LTE 25	Rear	0.675	0.112	0.076	0.202	0.486	1.551	NO
	Front	0.489	0.098	0.003	0.065	0.028	0.683	NO
LTE 26	Rear	0.383	0.112	0.076	0.202	0.486	1.259	NO
	Front	0.337	0.098	0.003	0.065	0.028	0.531	NO
LTE 41(PC3)	Rear	0.247	0.112	0.076	0.202	0.486	1.123	NO
	Front	0.197	0.098	0.003	0.065	0.028	0.391	NO
LTE 41(PC2)	Rear	0.236	0.112	0.076	0.202	0.486	1.112	NO
	Front		0.098	0.003	0.065	0.028	0.194	NO
LTE 66	Rear	0.721	0.112	0.076	0.202	0.486	1.597	NO
	Front	0.618	0.098	0.003	0.065	0.028	0.812	NO

14.3 Hotspot SAR Simultaneous Transmission Analysis.

Simultaneous Transmission Summation Scenario with 2.4 GHz WLAN & BT

Band	Configuration	Main	2.4 GHz SISO Ant1 SAR (W/kg)	2.4 GHz SISO Ant2 SAR (W/kg)	BT	\sum 1-g SAR	\sum 1-g SAR	\sum 1-g SAR	\sum 1-g SAR	SPLSR
		1	2	3	4	1+2	1+3	1+4	1+2+3	Yes/No
GSM850	Rear	1.085	0.195	0.278	0.311	1.280	1.363	1.396	1.558	NO
	Front	0.667	0.190	0.007	0.147	0.857	0.674	0.814	0.864	NO
	Left	0.392	0.267	0.278	0.073	0.659	0.670	0.465	0.937	NO
	Right	0.124			0.066	0.124	0.124	0.190	0.124	NO
	Top		0.267	0.278	0.352	0.267	0.278	0.352	0.545	NO
	Bottom	0.666				0.666	0.666	0.666	0.666	NO
GSM1900	Rear	0.419	0.195	0.278	0.311	0.614	0.697	0.730	0.892	NO
	Front	0.305	0.190	0.007	0.147	0.495	0.312	0.452	0.502	NO
	Left	0.048	0.267	0.278	0.073	0.315	0.326	0.121	0.593	NO
	Right	0.079			0.066	0.079	0.079	0.145	0.079	NO
	Top		0.267	0.278	0.352	0.267	0.278	0.352	0.545	NO
	Bottom	1.152				1.152	1.152	1.152	1.152	NO
WCDMA2	Rear	0.744	0.195	0.278	0.311	0.939	1.022	1.055	1.217	NO
	Front	0.567	0.190	0.007	0.147	0.757	0.574	0.714	0.764	NO
	Left	0.057	0.267	0.278	0.073	0.324	0.335	0.130	0.602	NO
	Right	0.094			0.066	0.094	0.094	0.160	0.094	NO
	Top		0.267	0.278	0.352	0.267	0.278	0.352	0.545	NO
	Bottom	1.239				1.239	1.239	1.239	1.239	NO
WCDMA4	Rear	0.525	0.195	0.278	0.311	0.720	0.803	0.836	0.998	NO
	Front	0.442	0.190	0.007	0.147	0.632	0.449	0.589	0.639	NO
	Left	0.080	0.267	0.278	0.073	0.347	0.358	0.153	0.625	NO
	Right	0.127			0.066	0.127	0.127	0.193	0.127	NO
	Top		0.267	0.278	0.352	0.267	0.278	0.352	0.545	NO
	Bottom	0.747				0.747	0.747	0.747	0.747	NO
WCDMA5	Rear	0.955	0.195	0.278	0.311	1.150	1.233	1.266	1.428	NO
	Front	0.568	0.190	0.007	0.147	0.758	0.575	0.715	0.765	NO
	Left	0.361	0.267	0.278	0.073	0.628	0.639	0.434	0.906	NO
	Right	0.082			0.066	0.082	0.082	0.148	0.082	NO
	Top		0.267	0.278	0.352	0.267	0.278	0.352	0.545	NO
	Bottom	0.439				0.439	0.439	0.439	0.439	NO

Simultaneous Transmission Summation Scenario with 2.4 GHz WLAN & BT

Band	Configuration	Main	2.4 GHz SISO Ant1 SAR (W/kg)	2.4 GHz SISO Ant2 SAR (W/kg)	BT	∑ 1-g SAR	∑ 1-g SAR	∑ 1-g SAR	∑ 1-g SAR	SPLSR
		1	2	3	4	1+2	1+3	1+4	1+2+3	Yes/No
LTE 2	Rear	0.548	0.195	0.278	0.311	0.743	0.826	0.859	1.021	NO
	Front	0.438	0.190	0.007	0.147	0.628	0.445	0.585	0.635	NO
	Left	0.049	0.267	0.278	0.073	0.316	0.327	0.122	0.594	NO
	Right	0.110			0.066	0.110	0.110	0.176	0.110	NO
	Top		0.267	0.278	0.352	0.267	0.278	0.352	0.545	NO
	Bottom	1.171				1.171	1.171	1.171	1.171	NO
LTE 5	Rear	0.732	0.195	0.278	0.311	0.927	1.010	1.043	1.205	NO
	Front	0.550	0.190	0.007	0.147	0.740	0.557	0.697	0.747	NO
	Left	0.313	0.267	0.278	0.073	0.580	0.591	0.386	0.858	NO
	Right	0.079			0.066	0.079	0.079	0.145	0.079	NO
	Top		0.267	0.278	0.352	0.267	0.278	0.352	0.545	NO
	Bottom	0.532				0.532	0.532	0.532	0.532	NO
LTE 12	Rear	0.279	0.195	0.278	0.311	0.474	0.557	0.590	0.752	NO
	Front	0.148	0.190	0.007	0.147	0.338	0.155	0.295	0.345	NO
	Left	0.186	0.267	0.278	0.073	0.453	0.464	0.259	0.731	NO
	Right	0.087			0.066	0.087	0.087	0.153	0.087	NO
	Top		0.267	0.278	0.352	0.267	0.278	0.352	0.545	NO
	Bottom	0.218				0.218	0.218	0.218	0.218	NO
LTE 13	Rear	0.261	0.195	0.278	0.311	0.456	0.539	0.572	0.734	NO
	Front	0.166	0.190	0.007	0.147	0.356	0.173	0.313	0.363	NO
	Left	0.141	0.267	0.278	0.073	0.408	0.419	0.214	0.686	NO
	Right	0.095			0.066	0.095	0.095	0.161	0.095	NO
	Top		0.267	0.278	0.352	0.267	0.278	0.352	0.545	NO
	Bottom	0.211				0.211	0.211	0.211	0.211	NO
LTE 25	Rear	0.483	0.195	0.278	0.311	0.678	0.761	0.794	0.956	NO
	Front	0.348	0.190	0.007	0.147	0.538	0.355	0.495	0.545	NO
	Left	0.044	0.267	0.278	0.073	0.311	0.322	0.117	0.589	NO
	Right	0.081			0.066	0.081	0.081	0.147	0.081	NO
	Top		0.267	0.278	0.352	0.267	0.278	0.352	0.545	NO
	Bottom	0.950				0.950	0.950	0.950	0.950	NO
LTE 26	Rear	0.725	0.195	0.278	0.311	0.920	1.003	1.036	1.198	NO
	Front	0.505	0.190	0.007	0.147	0.695	0.512	0.652	0.702	NO

	Left	0.275	0.267	0.278	0.073	0.542	0.553	0.348	0.820	NO
	Right	0.095			0.066	0.095	0.095	0.161	0.095	NO
	Top		0.267	0.278	0.352	0.267	0.278	0.352	0.545	NO
	Bottom	0.548				0.548	0.548	0.548	0.548	NO
LTE 41(PC3)	Rear	0.334	0.195	0.278	0.311	0.529	0.612	0.645	0.807	NO
	Front	0.271	0.190	0.007	0.147	0.461	0.278	0.418	0.468	NO
	Left	0.106	0.267	0.278	0.073	0.373	0.384	0.179	0.651	NO
	Right				0.066	0.000	0.000	0.066	0.000	NO
	Top		0.267	0.278	0.352	0.267	0.278	0.352	0.545	NO
	Bottom	0.671				0.671	0.671	0.671	0.671	NO
LTE 41(PC2)	Rear		0.195	0.278	0.311	0.195	0.278	0.311	0.473	NO
	Front		0.190	0.007	0.147	0.190	0.007	0.147	0.197	NO
	Left		0.267	0.278	0.073	0.267	0.278	0.073	0.545	NO
	Right				0.066	0.000	0.000	0.066	0.000	NO
	Top		0.267	0.278	0.352	0.267	0.278	0.352	0.545	NO
	Bottom	0.672				0.672	0.672	0.672	0.672	NO
LTE 66	Rear	0.556	0.195	0.278	0.311	0.751	0.834	0.867	1.029	NO
	Front	0.461	0.190	0.007	0.147	0.651	0.468	0.608	0.658	NO
	Left	0.086	0.267	0.278	0.073	0.353	0.364	0.159	0.631	NO
	Right	0.142			0.066	0.142	0.142	0.208	0.142	NO
	Top		0.267	0.278	0.352	0.267	0.278	0.352	0.545	NO
	Bottom	1.065				1.065	1.065	1.065	1.065	NO

Simultaneous Transmission Summation Scenario with 5 GHz MIMO WLAN & BT							
Band	Configuration	Main	5GHz MIMO Ant1 SAR (W/kg)	BT	\sum 1-g SAR	\sum 1-g SAR	SPLSR
		1	2	3	1+2	1+2+3	Yes/No
GSM850	Rear	1.085	0.475	0.311	1.560	1.871	Yes
	Front	0.667	0.475	0.147	1.142	1.289	NO
	Left	0.392	0.135	0.073	0.527	0.600	NO
	Right	0.124		0.066	0.124	0.190	NO
	Top		0.475	0.352	0.475	0.827	NO
	Bottom	0.666			0.666	0.666	NO
GSM1900	Rear	0.419	0.475	0.311	0.894	1.205	NO
	Front	0.305	0.475	0.147	0.780	0.927	NO
	Left	0.048	0.135	0.073	0.183	0.256	NO
	Right	0.079		0.066	0.079	0.145	NO
	Top		0.475	0.352	0.475	0.827	NO
	Bottom	1.152			1.152	1.152	NO
WCDMA2	Rear	0.744	0.475	0.311	1.219	1.530	NO
	Front	0.567	0.475	0.147	1.042	1.189	NO
	Left	0.057	0.135	0.073	0.192	0.265	NO
	Right	0.094		0.066	0.094	0.160	NO
	Top		0.475	0.352	0.475	0.827	NO
	Bottom	1.239			1.239	1.239	NO
WCDMA4	Rear	0.525	0.475	0.311	1.000	1.311	NO
	Front	0.442	0.475	0.147	0.917	1.064	NO
	Left	0.080	0.135	0.073	0.215	0.288	NO
	Right	0.127		0.066	0.127	0.193	NO
	Top		0.475	0.352	0.475	0.827	NO
	Bottom	0.747			0.747	0.747	NO
WCDMA5	Rear	0.955	0.475	0.311	1.430	1.741	Yes
	Front	0.568	0.475	0.147	1.043	1.190	NO
	Left	0.361	0.135	0.073	0.496	0.569	NO
	Right	0.082		0.066	0.082	0.148	NO
	Top		0.475	0.352	0.475	0.827	NO
	Bottom	0.439			0.439	0.439	NO

Simultaneous Transmission Summation Scenario with 5 GHz MIMO WLAN & BT							
Band	Configuration	Main	5GHz MIMO Ant1 SAR (W/kg)	BT	\sum 1-g SAR	\sum 1-g SAR	SPLSR
		1	2	3	1+2	1+2+3	Yes/No
LTE 2	Rear	0.548	0.475	0.311	1.023	1.334	NO
	Front	0.438	0.475	0.147	0.913	1.060	NO
	Left	0.049	0.135	0.073	0.184	0.257	NO
	Right	0.110		0.066	0.110	0.176	NO
	Top		0.475	0.352	0.475	0.827	NO
	Bottom	1.171			1.171	1.171	NO
LTE 5	Rear	0.732	0.475	0.311	1.207	1.518	NO
	Front	0.550	0.475	0.147	1.025	1.172	NO
	Left	0.313	0.135	0.073	0.448	0.521	NO
	Right	0.079		0.066	0.079	0.145	NO
	Top		0.475	0.352	0.475	0.827	NO
	Bottom	0.532			0.532	0.532	NO
LTE 12	Rear	0.279	0.475	0.311	0.754	1.065	NO
	Front	0.148	0.475	0.147	0.623	0.770	NO
	Left	0.186	0.135	0.073	0.321	0.394	NO
	Right	0.087		0.066	0.087	0.153	NO
	Top		0.475	0.352	0.475	0.827	NO
	Bottom	0.218			0.218	0.218	NO
LTE 13	Rear	0.261	0.475	0.311	0.736	1.047	NO
	Front	0.166	0.475	0.147	0.641	0.788	NO
	Left	0.141	0.135	0.073	0.276	0.349	NO
	Right	0.095		0.066	0.095	0.161	NO
	Top		0.475	0.352	0.475	0.827	NO
	Bottom	0.211			0.211	0.211	NO
LTE 25	Rear	0.483	0.475	0.311	0.958	1.269	NO
	Front	0.348	0.475	0.147	0.823	0.970	NO
	Left	0.044	0.135	0.073	0.179	0.252	NO
	Right	0.081		0.066	0.081	0.147	NO
	Top		0.475	0.352	0.475	0.827	NO
	Bottom	0.950			0.950	0.950	NO
LTE 26	Rear	0.725	0.475	0.311	1.200	1.511	NO
	Front	0.505	0.475	0.147	0.980	1.127	NO

	Left	0.275	0.135	0.073	0.410	0.483	NO
	Right	0.095		0.066	0.095	0.161	NO
	Top		0.475	0.352	0.475	0.827	NO
	Bottom	0.548			0.548	0.548	NO
LTE 41(PC3)	Rear	0.334	0.475	0.311	0.809	1.120	NO
	Front	0.271	0.475	0.147	0.746	0.893	NO
	Left	0.106	0.135	0.073	0.241	0.314	NO
	Right			0.066	0.000	0.066	NO
	Top		0.475	0.352	0.475	0.827	NO
	Bottom	0.671			0.671	0.671	NO
LTE 41(PC2)	Rear		0.475	0.311	0.475	0.786	NO
	Front		0.475	0.147	0.475	0.622	NO
	Left		0.135	0.073	0.135	0.208	NO
	Right			0.066	0.000	0.066	NO
	Top		0.475	0.352	0.475	0.827	NO
	Bottom	0.672			0.672	0.672	NO
LTE 66	Rear	0.556	0.475	0.311	1.031	1.342	NO
	Front	0.461	0.475	0.147	0.936	1.083	NO
	Left	0.086	0.135	0.073	0.221	0.294	NO
	Right	0.142		0.066	0.142	0.208	NO
	Top		0.475	0.352	0.475	0.827	NO
	Bottom	1.065			1.065	1.065	NO

Simultaneous Transmission Summation Scenario with 2.4 GHz WLAN & 5GHz WLAN - RSDB

Band	Configuration	Main	2.4GHz RSDB SISO Ant1 SAR (W/kg)	2.4 GHz RSDB SISO Ant2 SAR (W/kg)	5GHz RSDB SISO Ant1 SAR (W/kg)	5 GHz RSDB SISO Ant2 SAR (W/kg)	∑ 1-g SAR	SPLSR
		1	2	3	4	5	1+2+3+4+5	Yes/No
GSM850	Rear	1.085	0.089	0.148	0.083	0.189	1.594	NO
	Front	0.667	0.234	0.148	0.083	0.189	1.321	NO
	Left	0.392	0.234	0.148	0.083	0.189	1.046	NO
	Right	0.124					0.124	NO
	Top		0.234	0.148	0.083	0.189	0.654	NO
	Bottom	0.666					0.666	NO
GSM1900	Rear	0.419	0.089	0.148	0.083	0.189	0.928	NO
	Front	0.305	0.234	0.148	0.083	0.189	0.959	NO
	Left	0.048	0.234	0.148	0.083	0.189	0.702	NO
	Right	0.079					0.079	NO
	Top		0.234	0.148	0.083	0.189	0.654	NO
	Bottom	1.152					1.152	NO
WCDMA2	Rear	0.744	0.089	0.148	0.083	0.189	1.253	NO
	Front	0.567	0.234	0.148	0.083	0.189	1.221	NO
	Left	0.057	0.234	0.148	0.083	0.189	0.711	NO
	Right	0.094					0.094	NO
	Top		0.234	0.148	0.083	0.189	0.654	NO
	Bottom	1.239					1.239	NO
WCDMA4	Rear	0.525	0.089	0.148	0.083	0.189	1.034	NO
	Front	0.442	0.234	0.148	0.083	0.189	1.096	NO
	Left	0.080	0.234	0.148	0.083	0.189	0.734	NO
	Right	0.127					0.127	NO
	Top		0.234	0.148	0.083	0.189	0.654	NO
	Bottom	0.747					0.747	NO
WCDMA5	Rear	0.955	0.089	0.148	0.083	0.189	1.464	NO
	Front	0.568	0.234	0.148	0.083	0.189	1.222	NO
	Left	0.361	0.234	0.148	0.083	0.189	1.015	NO
	Right	0.082					0.082	NO
	Top		0.234	0.148	0.083	0.189	0.654	NO
	Bottom	0.439					0.439	NO

Simultaneous Transmission Summation Scenario with 2.4 GHz WLAN & 5GHz WLAN - RSDB

Band	Configuration	Main	2.4GHz RSDB SISO Ant1 SAR (W/kg)	2.4 GHz RSDB SISO Ant2 SAR (W/kg)	5GHz RSDB SISO Ant1 SAR (W/kg)	5 GHz RSDB SISO Ant2 SAR (W/kg)	∑ 1-g SAR	SPLSR
		1	2	3	4	5	1+2+3+4+5	Yes/No
LTE 2	Rear	0.548	0.089	0.148	0.083	0.189	1.057	NO
	Front	0.438	0.234	0.148	0.083	0.189	1.092	NO
	Left	0.049	0.234	0.148	0.083	0.189	0.703	NO
	Right	0.110					0.110	NO
	Top		0.234	0.148	0.083	0.189	0.654	NO
	Bottom	1.171					1.171	NO
LTE 5	Rear	0.732	0.089	0.148	0.083	0.189	1.241	NO
	Front	0.550	0.234	0.148	0.083	0.189	1.204	NO
	Left	0.313	0.234	0.148	0.083	0.189	0.967	NO
	Right	0.079					0.079	NO
	Top		0.234	0.148	0.083	0.189	0.654	NO
	Bottom	0.532					0.532	NO
LTE 12	Rear	0.279	0.089	0.148	0.083	0.189	0.788	NO
	Front	0.148	0.234	0.148	0.083	0.189	0.802	NO
	Left	0.186	0.234	0.148	0.083	0.189	0.840	NO
	Right	0.087					0.087	NO
	Top		0.234	0.148	0.083	0.189	0.654	NO
	Bottom	0.218					0.218	NO
LTE 13	Rear	0.261	0.089	0.148	0.083	0.189	0.770	NO
	Front	0.166	0.234	0.148	0.083	0.189	0.820	NO
	Left	0.141	0.234	0.148	0.083	0.189	0.795	NO
	Right	0.095					0.095	NO
	Top		0.234	0.148	0.083	0.189	0.654	NO
	Bottom	0.211					0.211	NO
LTE 25	Rear	0.483	0.089	0.148	0.083	0.189	0.992	NO
	Front	0.348	0.234	0.148	0.083	0.189	1.002	NO
	Left	0.044	0.234	0.148	0.083	0.189	0.698	NO
	Right	0.081					0.081	NO
	Top		0.234	0.148	0.083	0.189	0.654	NO
	Bottom	0.950					0.950	NO
LTE 26	Rear	0.725	0.089	0.148	0.083	0.189	1.234	NO

	Front	0.505	0.234	0.148	0.083	0.189	1.159	NO
	Left	0.275	0.234	0.148	0.083	0.189	0.929	NO
	Right	0.095					0.095	NO
	Top		0.234	0.148	0.083	0.189	0.654	NO
	Bottom	0.548					0.548	NO
LTE 41(PC3)	Rear	0.334	0.089	0.148	0.083	0.189	0.843	NO
	Front	0.271	0.234	0.148	0.083	0.189	0.925	NO
	Left	0.106	0.234	0.148	0.083	0.189	0.760	NO
	Right						0.000	NO
	Top		0.234	0.148	0.083	0.189	0.654	NO
	Bottom	0.671					0.671	NO
LTE 41(PC2)	Rear		0.089	0.148	0.083	0.189	0.509	NO
	Front		0.234	0.148	0.083	0.189	0.654	NO
	Left		0.234	0.148	0.083	0.189	0.654	NO
	Top		0.234	0.148	0.083	0.189	0.654	NO
	Bottom	0.672					0.672	NO
LTE 66	Rear	0.556	0.089	0.148	0.083	0.189	1.065	NO
	Front	0.461	0.234	0.148	0.083	0.189	1.115	NO
	Left	0.086	0.234	0.148	0.083	0.189	0.740	NO
	Right	0.142					0.142	NO
	Top		0.234	0.148	0.083	0.189	0.654	NO
	Bottom	1.065					1.065	NO

14.4 Phablet SAR Simultaneous Transmission Analysis

Phablet 10g SAR Simultaneous Transmission Scenario with 5 GHz WLAN

Band	Configuration	Main	5GHz SISO Ant1 SAR (W/kg)	5GHz SISO Ant2 SAR (W/kg)	\sum 1-g SAR	\sum 1-g SAR	\sum 1-g SAR	SPLSR
		1	2	3	1+2	1+3	1+2+3	Yes/No
GSM1900	Rear	0.857	0.486	1.605	1.343	2.462	2.948	NO
	Front	0.796	0.665	1.605	1.461	2.401	3.066	NO
	Left	0.188	0.665	0.411	0.853	0.599	1.264	NO
	Right	0.442			0.442	0.442	0.442	NO
	Top		0.665	1.605	0.665	1.605	2.27	NO
	Bottom	0.966			0.966	0.966	0.966	NO
WCDMA2	Rear	1.416	0.486	1.605	1.902	3.021	3.507	NO
	Front	1.25	0.665	1.605	1.915	2.855	3.52	NO
	Left	0.294	0.665	0.411	0.959	0.705	1.370	NO
	Right	0.438			0.438	0.438	0.438	NO
	Top		0.665	1.605	0.665	1.605	2.27	NO
	Bottom	1.254			1.254	1.254	1.254	NO
WCDMA4	Rear	1.292	0.486	1.605	1.778	2.897	3.383	NO
	Front	1.256	0.665	1.605	1.921	2.861	3.526	NO
	Left	0.307	0.665	0.411	0.972	0.718	1.383	NO
	Right	0.538			0.538	0.538	0.538	NO
	Top		0.665	1.605	0.665	1.605	2.27	NO
	Bottom	1.512			1.512	1.512	1.512	NO
LTE 2	Rear	1.070	0.486	1.605	1.556	2.675	3.161	NO
	Front	0.897	0.665	1.605	1.562	2.502	3.167	NO
	Left	0.287	0.665	0.411	0.952	0.698	1.363	NO
	Right	0.654			0.654	0.654	0.654	NO
	Top		0.665	1.605	0.665	1.605	2.270	NO
	Bottom	1.382			1.382	1.382	1.382	NO
LTE 25	Rear	0.943	0.486	1.605	1.429	2.548	3.034	NO
	Front	0.892	0.665	1.605	1.557	2.497	3.162	NO
	Left	0.249	0.665	0.411	0.914	0.660	1.325	NO
	Right	0.443			0.443	0.443	0.443	NO
	Top		0.665	1.605	0.665	1.605	2.270	NO
	Bottom	1.095			1.095	1.095	1.095	NO
LTE 4/66	Rear	1.410	0.486	1.605	1.896	3.015	3.501	NO

Front	1.375	0.665	1.605	2.04	2.98	3.645	NO
Left	0.322	0.665	0.411	0.987	0.733	1.398	NO
Right	0.535			0.535	0.535	0.535	NO
Top		0.665	1.605	0.665	1.605	2.27	NO
Bottom	1.934			1.934	1.934	1.934	NO

14.5 SAR to Peak Location Separation Ratio(SPLSR)

FCC KDB 447498 D01v06 General RF Exposure Guidance introduces a new formula for calculating the SAR a Peak Location Separation Ratio(SPLSR) between pairs of simultaneously transmitting antennas:

$$SPLSR_i = (SAR_1 + SAR_2)^{1.5} / R_i$$

Where:

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

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

R_i is the separation distance between the pair of simultaneous transmitting antennas, When the SAR is measured, for both antennas in the pair, it is determined by the actual x, y and z coordinates in the 1-g SAR for each SAR peak location, based on the extrapolated and interpolated result in the zoom scan measurement, using the formula of $[(X_1 - X_2)^2 + (Y_1 - Y_2)^2 + (Z_1 - Z_2)^2]$

In order for a pair of simultaneous transmitting antennas with the sum 1-g of SAR > 1.6 W/kg and with the sum 10-g of SAR > 4W/Kg to qualify for exemption from Simultaneous Transmission SAR measurements, it has to satisfy the condition of:

$$(SAR_1 + SAR_2)^{1.5} / R_i \leq 0.04 \text{ for 1g SAR and } (SAR_1 + SAR_2)^{1.5} / R_i \leq 0.1 \text{ for 10g SAR.}$$

Per Sec. 14, below simultaneous transmission summations need to be calculated SPLSR

14.5.1 SPLSR Evaluation

Peak Location for SAR Rear Side(Hotspot Active)

Mode/Band	X(mm)	Y(mm)	Z(mm)	Reported SAR [W/Kg]
GSM850	-0.034	-0.082	-0.203	1.085
UMTS 850	-0.046	-0.075	-0.207	0.955
Bluetooth	-0.0058	0.0788	-0.205	0.311
WLAN 5GHz MIMO	-0.004	0.058	-0.207	0.475

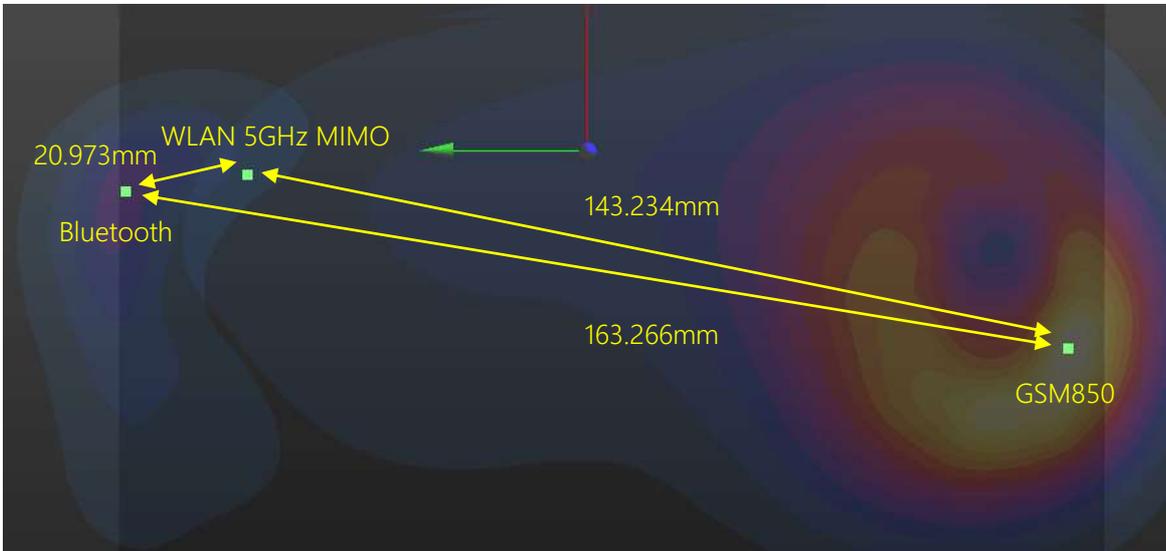
14.5.2 SAR to Peak Location Ratio (SPLSR) Figures

Max Mode			Sum 1g SAR [W/kg]				Peak SAR Separation Distance [mm]		
1	2	3	1+2	1+3	2+3	1+2+3	1+2	1+3	2+3
GSM850	BT	WLAN 5GHz MIMO	1.396	1.560	0.786	1.871	163.266	143.234	20.973
UMTS 850			1.266	1.430	0.786	1.741	158.979	139.474	20.973

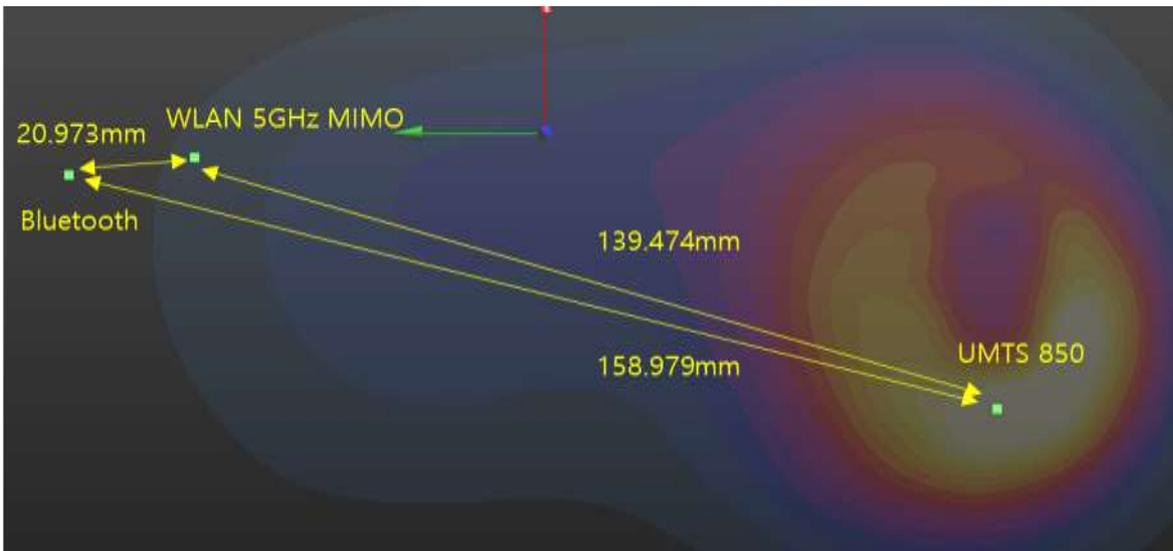
1+2 SPLSR	1+3 SPLSR	2+3 SPLSR	Plot No.
0.010	0.014	0.033	#1
0.009	0.012	0.033	#2

14.5.3 SPLSR Plot

Plot #1 GSM850 + WLAN 5GHz MIMO + Bluetooth



Plot #2 UMTS 850 + WLAN 5GHz MIMO + Bluetooth



14.6 Simultaneous Transmission Conclusion

The above numerical summed SAR Results are sufficient to determine that simultaneous transmission cases will not exceed the SAR Limit and therefore no measured volumetric simultaneous SAR summation is required per FCC KDB Publication 447498 D01v06 and IEEE1528-2013.

15. SAR Measurement Variability and Uncertainty

In accordance with KDB procedure 865664 D01v01r04 SAR measurement 100 MHz to 6 GHz, SAR 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 Measurement variability was assessed using the following procedures for each frequency band:

- 1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg for 1g SAR or < 2.0 W/kg for 10g SAR; steps 2) through 4) do not apply.
- 2) When the original highest measured 1g SAR is ≥ 0.80 W/kg or 10g SAR ≥ 2.0 W/kg, repeat that measurement once.
- 3) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg for 1g SAR or ≥ 3.625 W/kg for 10g SAR (~ 10% from the 1-g SAR limit).
- 4) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥ 1.5 W/kg for 1g SAR or ≥ 3.75 W/kg for 10g SAR and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

Hotspot SAR measurement variability Results

Frequency		Mode/Band	Configuration	Measured SAR (W/kg)	Repeated SAR (W/kg)	SAR Ratio
Mhz	Channel					
849.8	251	GSM850 GPRS 3Tx	Rear	0.863	0.882	2.15
1770	132572	LTE Band 66	Bottom	0.884	0.871	1.02
1880	18900	LTE Band 2	Bottom	1.12	1.05	1.07

16. Device Holder Perturbation Verification.

In accordance with published DUT Holder Perturbations in Oct.2016 TCB Workshop.

When Highest reported SAR is over 1.2 W/kg, Holder Perturbation Verification is required for each antenna, using the highest configuration among all applicable frequency bands.

Frequency		Mode/Band	Configuration	Highest Reported SAR		Deviation (%)
MHz	Channel			(without Device Holder)	(with Device Holder)	
				(W/kg)	(W/kg)	
1880	9400	WCDMA 1900	Bottom	1.239	1.231	0.65

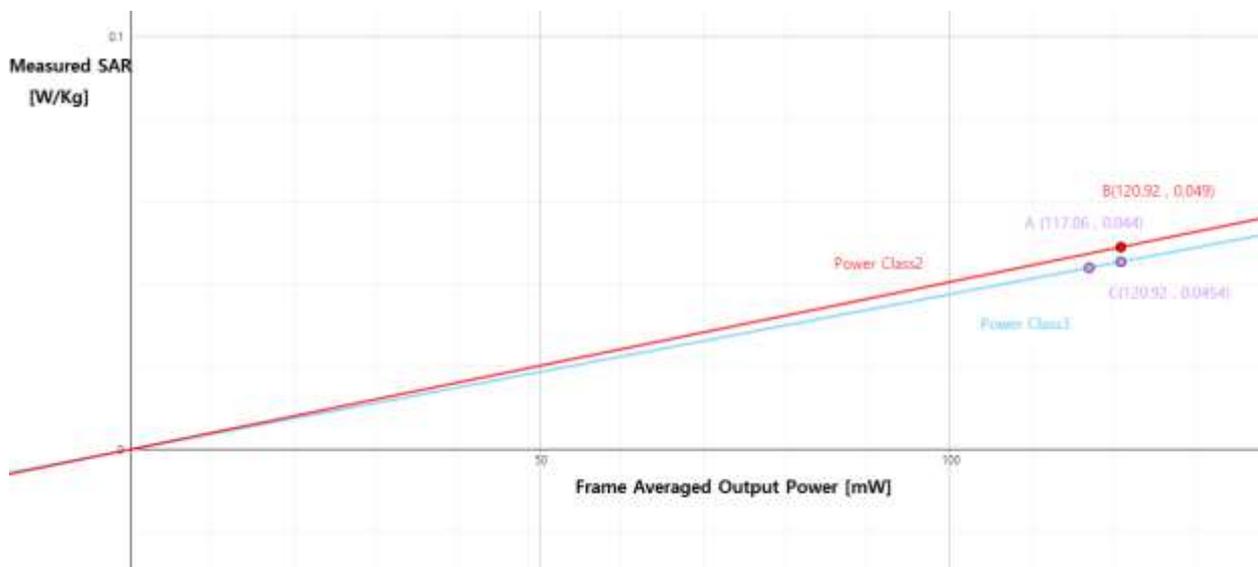
17. LTE Band 41 Power Class 2 and Power class 3 Linearity

This Device Supports Power Class 2 and Power Class 3 operations for LTE band 41. The Highest available duty cycle for Power Class 2 operations is 43.3 % using UL-DL Configuration 1. Per May 2017 TCB Workshop Notes based on the device behavior, all SAR tests were performed using Power class 3. SAR with power class 2 at the highest power and available duty factor was additionally performed for the power class 2 configuration with the Highest SAR for each exposure condition.

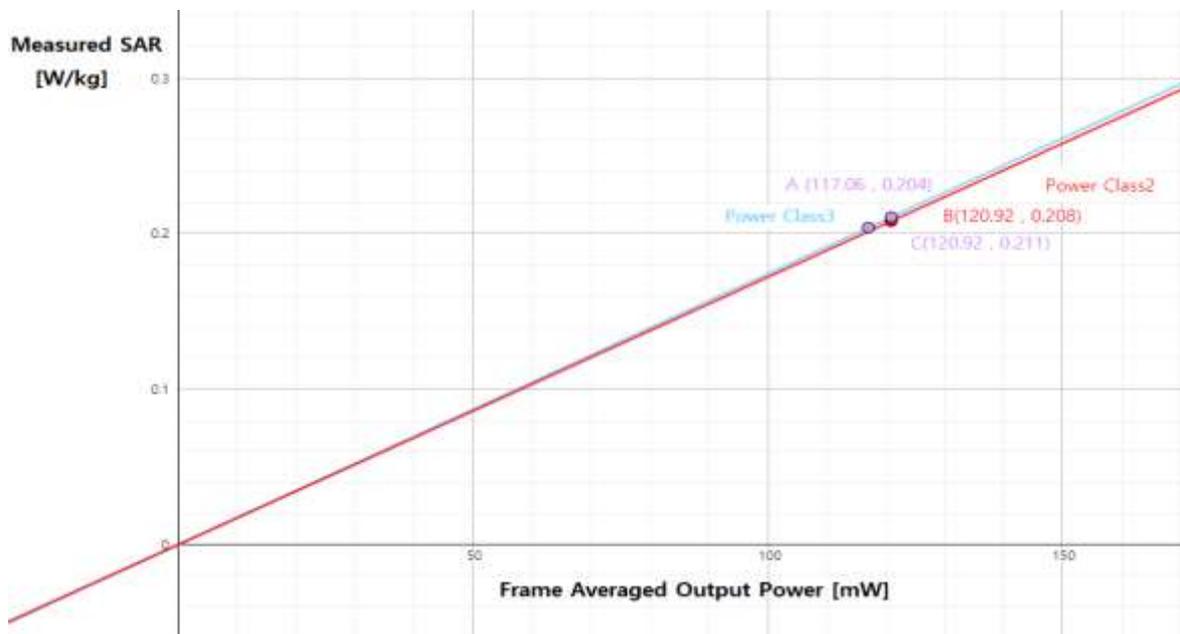
The linearity between the power class 3 and Power class 2 SAR Results and the respective frame averaged powers was calculated to determine the results were linear.

Per May 2017 TCB Workshop, no additional SAR measurements were required since the linearity between power classes as less than 10 % and all reported SAR values were < 1.4 W/kg

LTE Band 41 Head Linearity Data Table		
Configurations	LTE Band41 PC3	LTE Band41 PC2
Maximum Allowed Output Power[dBm]	23.5	25
Measured Output Power[dBm]	22.67	24.46
Measured SAR[W/kg]	0.044	0.049
Measured Power[mW]	184.927	279.254
Duty Cycle	63.30%	43.30%
Frame Averaged Output Power[mW]	117.059	120.917
deviation from expected linearity(%)	-7.24%	



LTE Band Body Worn Linearity Data Table		
Configurations	LTE Band41 PC3	LTE Band41 PC2
Maximum Allowed Output Power[dBm]	23.5	25
Measured Output Power[dBm]	22.67	24.46
Measured SAR[W/kg]	0.204	0.208
Measured Power[mW]	184.927	279.254
Duty Cycle	63.30%	43.30%
Frame Averaged Output Power[mW]	117.059	120.917
deviation from expected linearity(%)	1.31%	



When Power reduction is applied to LTE B41 PC 2(HPUE), The power level of LTE B41 PC2 became same as the reduction power of LTE B41 PC3, therefore Hotspot SAR linearity were not required.

18. Measurement Uncertainty

The measured SAR was <1.5 W/Kg for 1g SAR and <3.75 W/Kg For 10g SAR for all frequency bands. Therefore, per KDB Publication 865664 D01v01r04, the extended measurement uncertainty analysis per IEEE1528-2013 was not required.

19. SAR Test Equipment

Manufacturer	Type / Model	S/N	Calib. Date	Calib.Interval	Calib.Due
SPEAG	Triple Modular Phantom	-	N/A	N/A	N/A
SPEAG	SAM Phantom	-	N/A	N/A	N/A
HP	SAR System Control PC	-	N/A	N/A	N/A
Staubli	CS8Cspeag-TX90	F01/ 5K08A1/ C/ 01	N/A	N/A	N/A
Staubli	CS8Cspeag-TX90	F12/ 5K9GA1/ C/ 01	N/A	N/A	N/A
Staubli	CS8Cspeag-TX90	F17/ 59CHA1/ C/ 01	N/A	N/A	N/A
Staubli	CS8Cspeag-TX90	F13/ 5R4XF1/ C/ 01	N/A	N/A	N/A
Staubli	TX90 XLspeag	F01/ 5K08A1/ A/ 01	N/A	N/A	N/A
Staubli	TX90 XLspeag	F12/ 5K9GA1/ A/ 01	N/A	N/A	N/A
Staubli	TX90 XLspeag	F17/ 59CHA1/ A/ 01	N/A	N/A	N/A
Staubli	TX90 XLspeag	F13/ 5R4XF1/ A/ 01	N/A	N/A	N/A
Staubli	Teach Pendant (Joystick)	01.13P 00679	N/A	N/A	N/A
Staubli	Teach Pendant (Joystick)	S-1206 0513	N/A	N/A	N/A
Staubli	Teach Pendant (Joystick)	010963	N/A	N/A	N/A
Staubli	Teach Pendant (Joystick)	S-1338 1332	N/A	N/A	N/A
SPEAG	DAE4	466	04/22/2020	Annual	04/22/2021
SPEAG	DAE4	869	09/19/2019	Annual	09/19/2020
SPEAG	DAE3	446	07/18/2019	Annual	07/18/2020
SPEAG	DAE4	1417	02/26/2020	Annual	02/26/2021
SPEAG	DAE4	868	09/04/2019	Annual	09/04/2020
SPEAG	E-Field Probe EX3DV4	3797	11/28/2019	Annual	11/28/2020
SPEAG	E-Field Probe EX3DV4	3903	03/25/2020	Annual	03/25/2021
SPEAG	E-Field Probe EX3DV4	3968	09/27/2019	Annual	09/27/2020
SPEAG	E-Field Probe ES3DV3	3076	07/23/2019	Annual	07/23/2020
SPEAG	E-Field Probe ET3DV6	1630	02/26/2020	Annual	02/26/2021
SPEAG	Dipole D750V3	1014	05/27/2019	Annual	05/27/2020
SPEAG	Dipole D750V3	1014	05/19/2020	Annual	05/19/2021
SPEAG	Dipole D835V2	441	08/23/2019	Annual	08/23/2020
SPEAG	Dipole D1800V2	2d015	09/19/2019	Annual	09/19/2020
SPEAG	Dipole D1900V2	5d061	01/21/2020	Annual	01/21/2021
SPEAG	Dipole D2450V2	743	02/20/2020	Annual	02/20/2021
SPEAG	Dipole D2600V2	1106	09/19/2019	Annual	09/19/2020
SPEAG	Dipole D5GHzV2	1107	09/26/2019	Annual	09/26/2020
Agilent	Power Meter E4419B	MY41291386	10/07/2019	Annual	10/07/2020
Agilent	Power Meter N1911A	MY45101406	09/10/2019	Annual	09/10/2020
Agilent	Power Sensor 8481A	SG1091286	10/07/2019	Annual	10/07/2020
Agilent	Power Sensor 8481A	MY41090873	10/07/2019	Annual	10/07/2020
Agilent	Power Sensor N1921A	MY55220026	09/06/2019	Annual	09/06/2020
SPEAG	DAKS 3.5	1038	03/24/2020	Annual	03/24/2021
H.P	Network Analyzer /8753ES	JP39240221	01/28/2020	Annual	01/28/2021
Agilent	WIRELESS COMMUNICATION E5515C	MY48361100	10/07/2019	Annual	10/07/2020

Manufacturer	Type / Model	S/N	Calib. Date	Calib.Interval	Calib.Due
Agilent	Signal Generator N5182A	MY47070230	05/08/2019	Annual	05/08/2020
Agilent	Signal Generator N5182A	MY47070230	05/06/2020	Annual	05/06/2021
Agilent	11636B/Power Divider	58698	02/28/2020	Annual	02/28/2021
Narda	4 Way Power Divider	15298	02/19/2020	Annual	02/19/2021
Narda	4 Way Power Divider	11927	01/29/2020	Annual	01/29/2021
Cernex	4 Way Power Divider	C6748	04/21/2020	Annual	04/21/2021
Cernex	4 Way Power Divider	14695	03/21/2020	Annual	03/21/2021
TESTO	175-H1/Thermometer	40331936309	01/29/2020	Annual	01/29/2021
TESTO	175-H1/Thermometer	40331939309	01/29/2020	Annual	01/29/2021
TESTO	175-H1/Thermometer	40331915309	01/29/2020	Annual	01/29/2021
TESTO	175-H1/Thermometer	40332651310	01/29/2020	Annual	01/29/2021
TESTO	175-H1/Thermometer	40331949309	01/29/2020	Annual	01/29/2021
EMPOWER	RF Power Amplifier	1084	07/23/2019	Annual	07/23/2020
EMPOWER	RF Power Amplifier	1011	10/08/2019	Annual	10/08/2020
MICRO LAB	LP Filter / LA-15N	10453	10/07/2019	Annual	10/07/2020
MICRO LAB	LP Filter / LA-30N	-	10/07/2019	Annual	10/07/2020
MICRO LAB	LP Filter / LA-60N	32011	10/07/2019	Annual	10/07/2020
Agilent	Attenuator (3dB) 8693B	MY39260298	09/18/2019	Annual	09/18/2020
HP	Attenuator (20dB) 8493C	09271	09/18/2019	Annual	09/18/2020
Agilent	Directional Bridge	3140A03878	06/12/2019	Annual	06/12/2020
Agilent	Directional Bridge	3140A03878	06/08/2020	Annual	06/08/2021
Agilent	MXA Signal Analyzer N9020A	MY50510407	10/29/2019	Annual	10/29/2020
HP	Dual Directional Coupler	16072	10/07/2019	Annual	10/07/2020
Anritsu	Radio Communication Tester MT8820C	6201074225	03/02/2020	Annual	03/02/2021
Anritsu	Radio Communication Tester MT8821C	6201502997	08/09/2019	Annual	08/09/2020
Anritsu	Radio Communication Tester MT8821C	6201588559	02/11/2020	Annual	02/11/2021
R&S	Bluetooth CBT	100272	03/02/2020	Annual	03/02/2021

* The E-field probe was calibrated by SPEAG, by the waveguide technique procedure. Dipole Verification measurement is performed by HCT Lab. before each test. The brain/body simulating material is calibrated by HCT using the DAKS 3.5 to determine the conductivity and permittivity (dielectric constant) of the brain/body-equivalent material.

20. Conclusion

The SAR measurement indicates that the EUT complies with the RF radiation exposure limits of the ANSI/ IEEE C95.1 - 2005.

These measurements were taken to simulate the RF effects exposure under worst-case conditions. Precise laboratory measures were taken to assure repeatability of the tests. The results and statements relate only to the item(s) tested.

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

21. References

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[29] FCC General RF Exposure Guidance and SAR procedures for Dongles, KDB 447498 D01,D02.

Appendix

Please refer to test setup photo file no. as follows.

Appendix A. DUT Ant. Information & Test SETUP PHOTO

Appendix B. SAR Test Plots

Appendix C. Dipole Verification Plots

Appendix D. SAR Tissue Characterization

Appendix E. SAR System Validation

Appendix F. Probe Calibration Data

Appendix G. Dipole Calibration Data

Appendix H. Power reduction verification

End of Report

Appendix B. – SAR Test Plots

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 20.2°C
Ambient Temperature: 20.4°C
Test Date: 05/18/2020
Plot No.: 1

DUT: SM-N981BDS; Type: Bar

Communication System: UID 0, GSM850 GPRS 3TX (0); Frequency: 836.6 MHz; Duty Cycle: 1:2.77013
Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.946$ S/m; $\epsilon_r = 42.676$; $\rho = 1000$ kg/m³
Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3797; ConvF(9.03, 9.03, 9.03); Calibrated: 2019-11-28;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn446; Calibrated: 2019-07-18
- Phantom: SAM_Right_20170913
- Measurement SW: DASY52, Version 52.10 (4);

GSM850 Head Left Touch 3Tx 190ch/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.264 W/kg

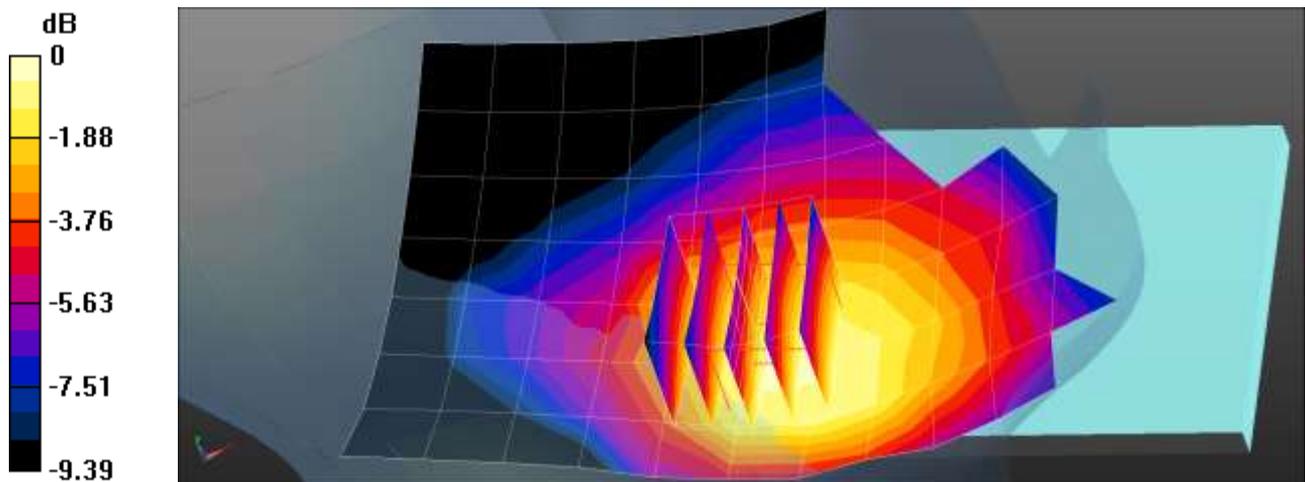
GSM850 Head Left Touch 3Tx 190ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.766 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.323 W/kg

SAR(1 g) = 0.230 W/kg; SAR(10 g) = 0.174 W/kg

Maximum value of SAR (measured) = 0.282 W/kg



0 dB = 0.282 W/kg = -5.50 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 20.2 °C
Ambient Temperature: 20.4 °C
Test Date: 05/18/2020
Plot No.: 2

DUT: SM-N981BDS; Type: Bar

Communication System: UID 0, GSM 1900 3TX (0); Frequency: 1880 MHz; Duty Cycle: 1:2.77013
Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.409 \text{ S/m}$; $\epsilon_r = 39.102$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Right Section

DASY Configuration:

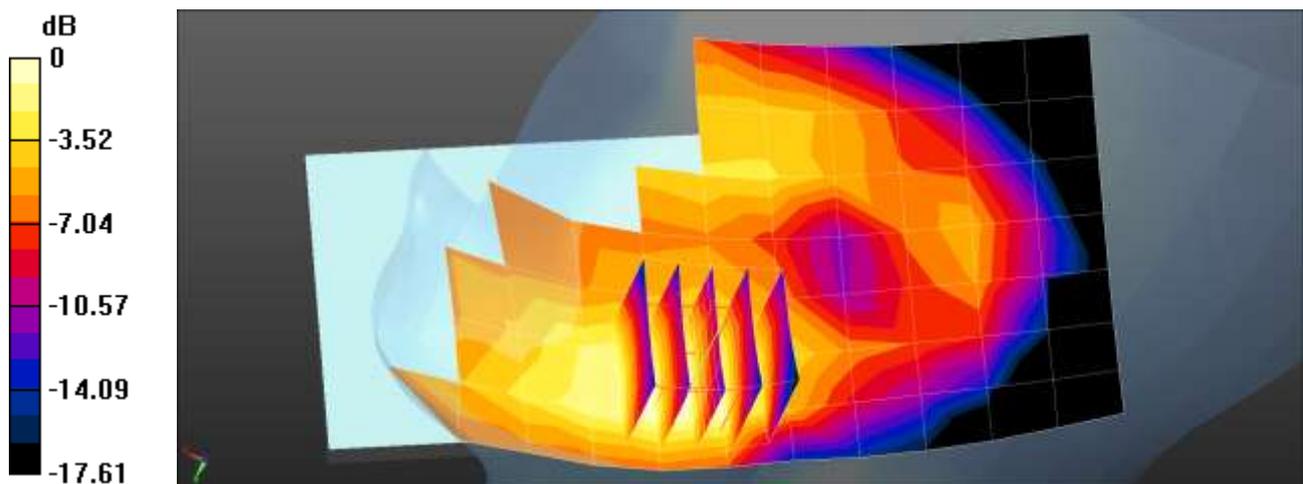
- Probe: EX3DV4 - SN3797; ConvF(7.75, 7.75, 7.75); Calibrated: 2019-11-28;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn446; Calibrated: 2019-07-18
- Phantom: SAM_Left_20170913
- Measurement SW: DASY52, Version 52.10 (4);

GSM 1900 Head Right Touch 3Tx 661ch/Area Scan (8x13x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
Maximum value of SAR (measured) = 0.0905 W/kg

GSM 1900 Head Right Touch 3Tx 661ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 3.805 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 0.119 W/kg

SAR(1 g) = 0.075 W/kg; SAR(10 g) = 0.046 W/kg
Maximum value of SAR (measured) = 0.102 W/kg



0 dB = 0.102 W/kg = -9.91 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 21.4°C
Ambient Temperature: 21.6°C
Test Date: 05/20/2020
Plot No.: 3

DUT: SM-N981BDS; Type: Bar

Communication System: UID 0, WCDMA850 (0); Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.925$ S/m; $\epsilon_r = 42.823$; $\rho = 1000$ kg/m³
Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3968; ConvF(9.85, 9.85, 9.85) @ 836.6 MHz; Calibrated: 2019-09-27;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2020-04-22
- Phantom: Twin-SAM V5.0 (20deg probe tilt)
- Measurement SW: DASY52, Version 52.10 (4);

WCDMA Band 5 Head Left Touch 4183ch/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.167 W/kg

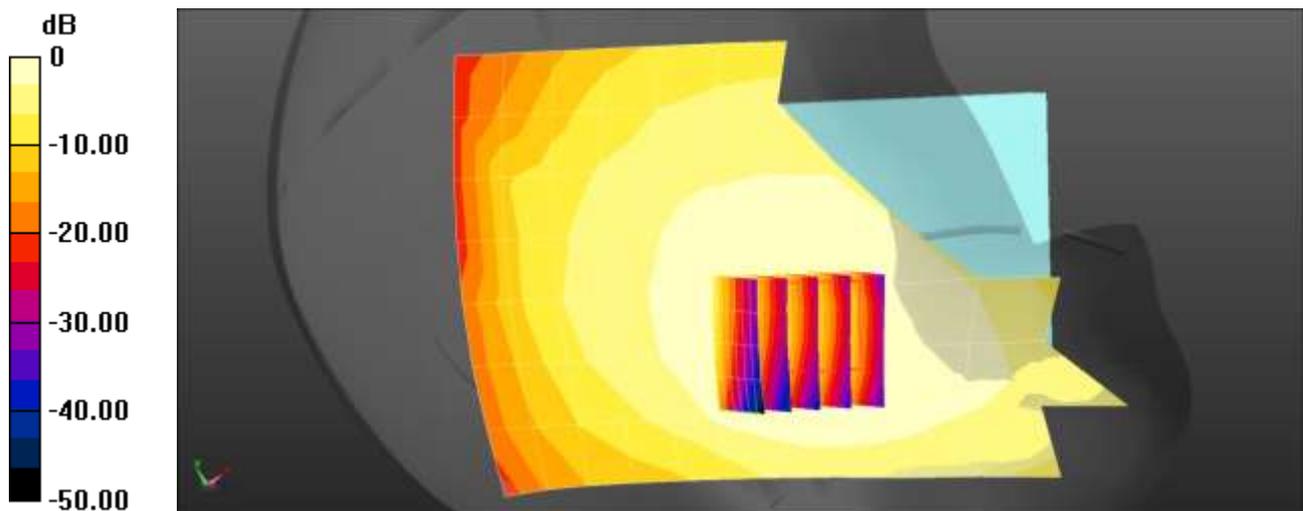
WCDMA Band 5 Head Left Touch 4183ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.389 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 0.179 W/kg

SAR(1 g) = 0.142 W/kg; SAR(10 g) = 0.110 W/kg

Maximum value of SAR (measured) = 0.168 W/kg



0 dB = 0.167 W/kg = -7.78 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 207 °C
Ambient Temperature: 20.8°C
Test Date: 05/19/2020
Plot No.: 4

DUT: SM-N981BDS; Type: Bar

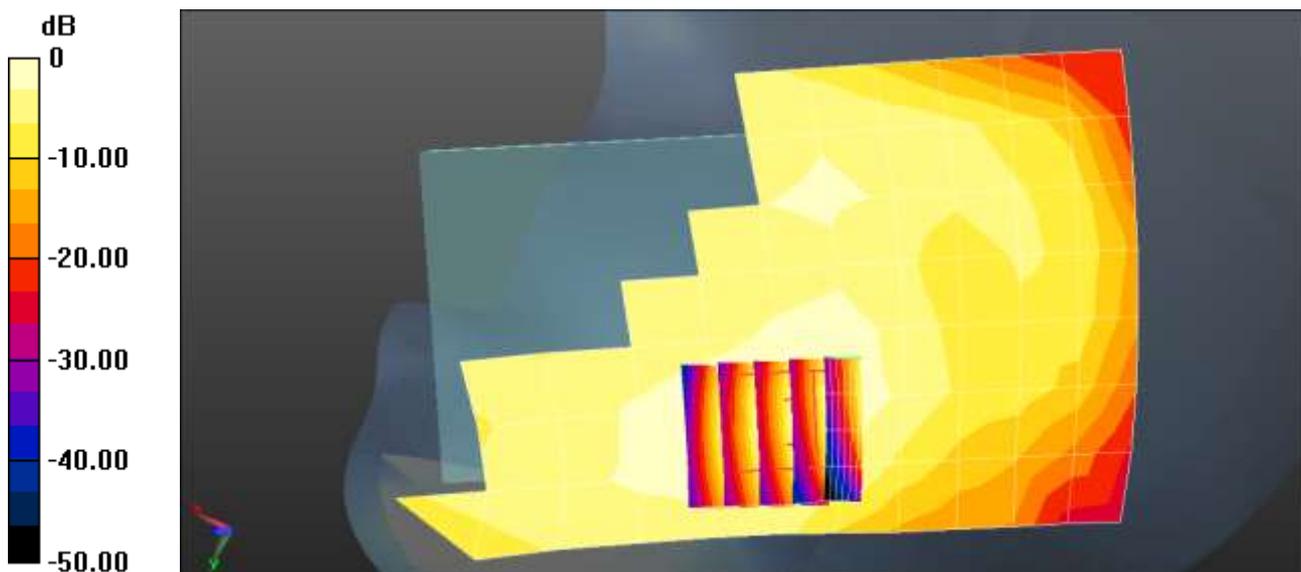
Communication System: UID 0, WCDMA IV (0); Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 1732.4$ MHz; $\sigma = 1.315$ S/m; $\epsilon_r = 40.208$; $\rho = 1000$ kg/m³
Phantom section: Right Section

DASY Configuration:

- Probe: ES3DV3 - SN3076; ConvF(5.34, 5.34, 5.34); Calibrated: 2019-07-23;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1417; Calibrated: 2020-02-26
- Phantom: SAM with CRP v5.0_Front
- Measurement SW: DASY52, Version 52.10 (4);

WCDMA band 4 Head Right Touch 1412ch/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.111 W/kg

WCDMA band 4 Head Right Touch 1412ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.713 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 0.145 W/kg
SAR(1 g) = 0.104 W/kg; SAR(10 g) = 0.069 W/kg
Maximum value of SAR (measured) = 0.119 W/kg



0 dB = 0.111 W/kg = -9.57 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 20.7°C
Ambient Temperature: 20.9°C
Test Date: 05/18/2020
Plot No.: 5

DUT: SM-N981BDS; Type: Bar

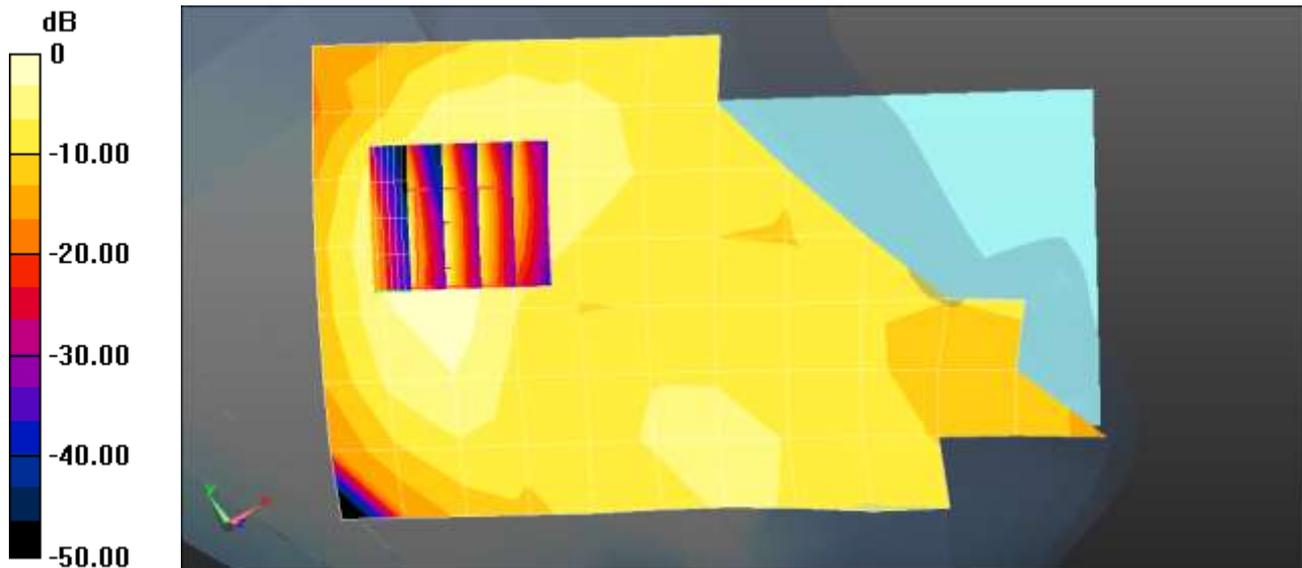
Communication System: UID 0, WCDMA1900 (0); Frequency: 1880 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 1880$ MHz; $\sigma = 1.427$ S/m; $\epsilon_r = 38.306$; $\rho = 1000$ kg/m³
Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3076; ConvF(5.1, 5.1, 5.1); Calibrated: 2019-07-23;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1417; Calibrated: 2020-02-26
- Phantom: SAM with CRP v5.0_Front
- Measurement SW: DASY52, Version 52.10 (4);

WCDMA band 2 Head Left Tilt 9400ch/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.0717 W/kg

WCDMA band 2 Head Left Tilt 9400ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.486 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 0.101 W/kg
SAR(1 g) = 0.063 W/kg; SAR(10 g) = 0.038 W/kg
Maximum value of SAR (measured) = 0.0744 W/kg



0 dB = 0.0717 W/kg = -11.45 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 19.5°C
Ambient Temperature: 19.7°C
Test Date: 06/12/2020
Plot No.: 6

DUT: SM-N981BDS; Type: Bar

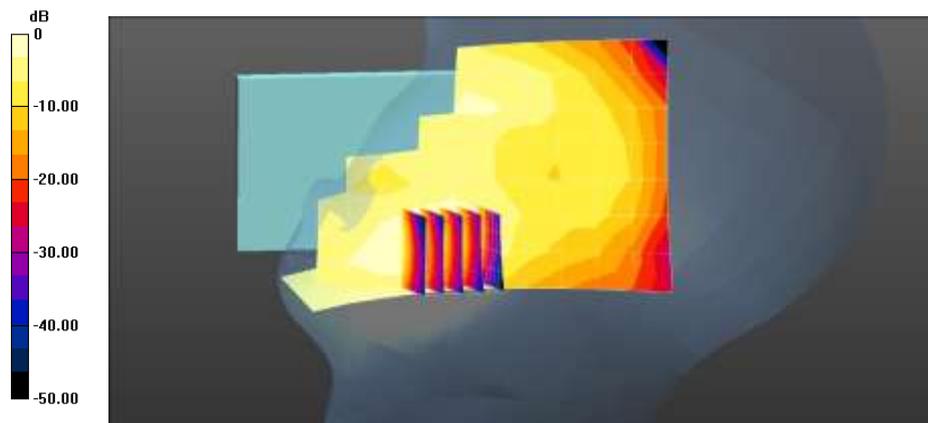
Communication System: UID 0, LTE2 (20MHz) (0); Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.386 \text{ S/m}$; $\epsilon_r = 39.975$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3797; ; Calibrated: 2019-11-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn446; Calibrated: 2019-07-18
- Phantom: SAM_Left_20170913
- Measurement SW: DASY52, Version 52.10 (4);

LTE Band 2 Head Right Touch QPSK 20MHz 1RB 0offset 18900ch/Area Scan (8x13x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
Maximum value of SAR (measured) = 0.141 W/kg

LTE Band 2 Head Right Touch QPSK 20MHz 1RB 0offset 18900ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$
Reference Value = 4.488 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 0.172 W/kg
SAR(1 g) = 0.102 W/kg; SAR(10 g) = 0.060 W/kg
Maximum value of SAR (measured) = 0.145 W/kg



0 dB = 0.141 W/kg = -8.52 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 19.8°C
Ambient Temperature: 20.0°C
Test Date: 06/152020
Plot No.: 7

DUT: SM-N981BDS; Type: Bar

Communication System: UID 0, LTE Band 5 (0); Frequency: 836.5 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 836.5 \text{ MHz}$; $\sigma = 0.908 \text{ S/m}$; $\epsilon_r = 42.35$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Left Section

DASY5 Configuration:

- Probe: ET3DV6 - SN1630; ConvF(6.96, 6.96, 6.96) @ 836.5 MHz; Calibrated: 2020-02-26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2019-09-04
- Phantom: SAM with CRP v5.0_2020_06_09
- Measurement SW: DASY52, Version 52.10 (4);

LTE band 5 Head Left Touch QPSK 10MHz 1RB 0offset 20525ch/Area Scan (8x14x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$

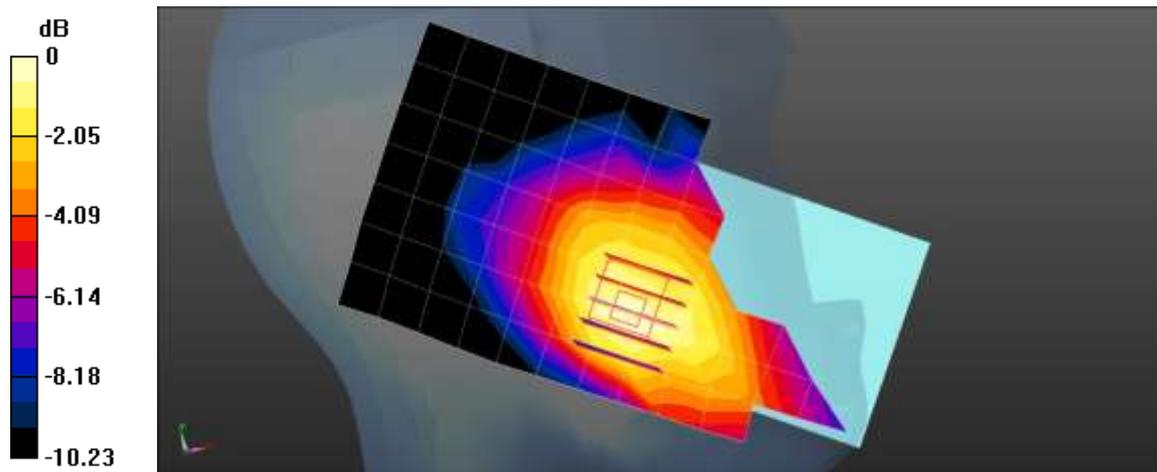
Maximum value of SAR (measured) = 0.170 W/kg

LTE band 5 Head Left Touch QPSK 10MHz 1RB 0offset 20525ch/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$
Reference Value = 4.803 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 0.317 W/kg

SAR(1 g) = 0.170 W/kg; SAR(10 g) = 0.117 W/kg

Maximum value of SAR (measured) = 0.174 W/kg



0 dB = 0.174 W/kg = -7.59 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 20.4°C
Ambient Temperature: 20.6°C
Test Date: 05/15/2020
Plot No.: 8

DUT: SM-N981BDS; Type: Bar

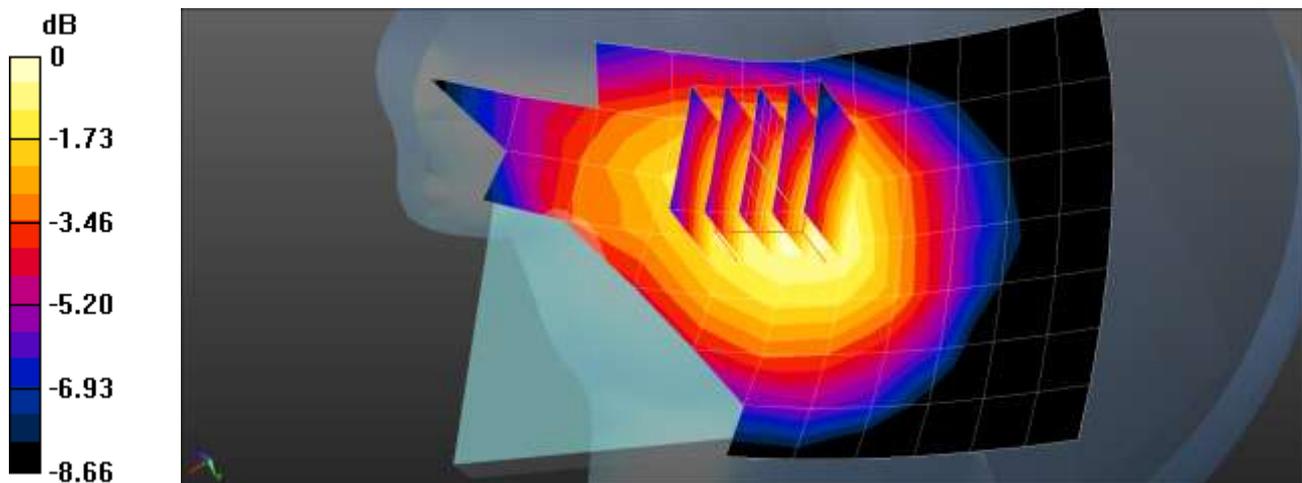
Communication System: UID 0, LTE Band 12 (0); Frequency: 707.5 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 707.5$ MHz; $\sigma = 0.86$ S/m; $\epsilon_r = 42.559$; $\rho = 1000$ kg/m³
Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3076; ConvF(6.52, 6.52, 6.52); Calibrated: 2019-07-23;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1417; Calibrated: 2020-02-26
- Phantom: SAM with CRP v5.0_Right
- Measurement SW: DASY52, Version 52.10 (4);

LTE Band12 Head Left Touch QPSK 10MHz 1RB 0offset 23095ch/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.0702 W/kg

LTE Band12 Head Left Touch QPSK 10MHz 1RB 0offset 23095ch/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.650 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 0.0810 W/kg
SAR(1 g) = 0.066 W/kg; SAR(10 g) = 0.052 W/kg
Maximum value of SAR (measured) = 0.0723 W/kg



0 dB = 0.0723 W/kg = -11.41 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 20.4°C
Ambient Temperature: 20.6°C
Test Date: 05/15/2020
Plot No.: 9

DUT: SM-N981BDS; Type: Bar

Communication System: UID 0, LTE Band 13 (0); Frequency: 782 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 782 \text{ MHz}$; $\sigma = 0.901 \text{ S/m}$; $\epsilon_r = 41.57$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Left Section

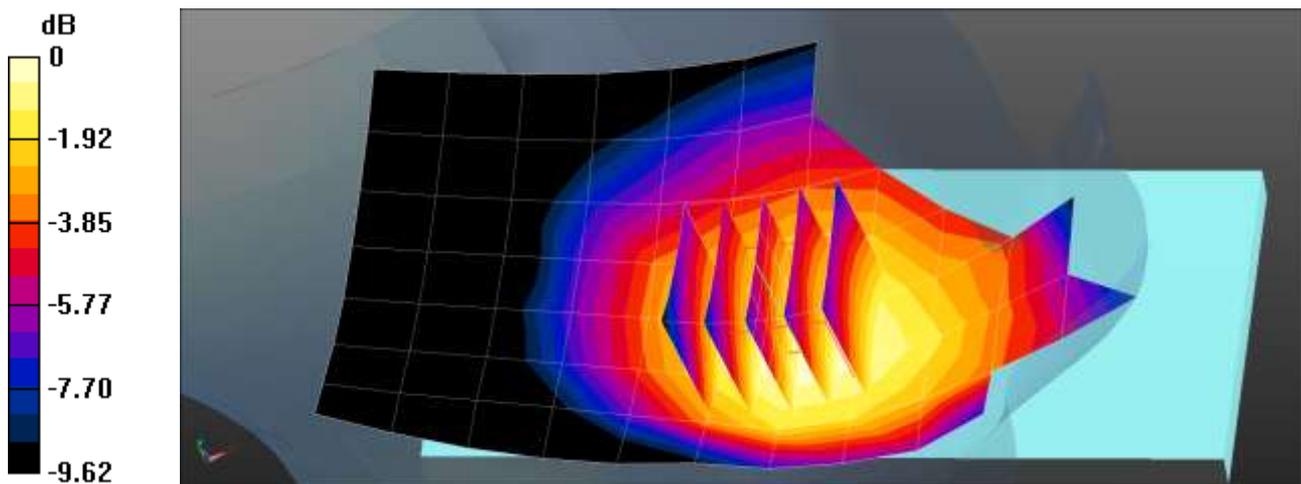
DASY Configuration:

- Probe: ES3DV3 - SN3076; ConvF(6.52, 6.52, 6.52); Calibrated: 2019-07-23;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1417; Calibrated: 2020-02-26
- Phantom: SAM with CRP v5.0_Right
- Measurement SW: DASY52, Version 52.10 (4);

LTE Band13 Head Left Touch QPSK 10MHz 1RB 49offset 23230ch/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm

LTE Band13 Head Left Touch QPSK 10MHz 1RB 49offset 23230ch/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.474 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 0.0790 W/kg
SAR(1 g) = 0.063 W/kg; SAR(10 g) = 0.049 W/kg
Maximum value of SAR (measured) = 0.0691 W/kg



0 dB = 0.0691 W/kg = -11.61 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 21.2°C
Ambient Temperature: 21.4°C
Test Date: 05/15/2020
Plot No.: 10

DUT: SM-N981BDS; Type: Bar

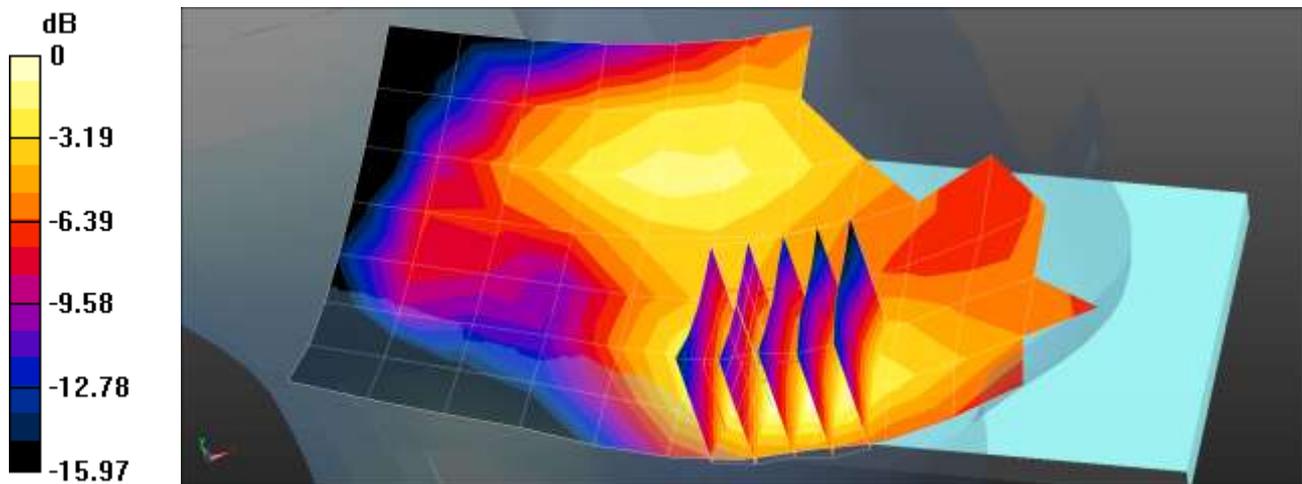
Communication System: UID 0, LTE Band 25 (0); Frequency: 1882.5 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 1882.5$ MHz; $\sigma = 1.366$ S/m; $\epsilon_r = 38.346$; $\rho = 1000$ kg/m³
Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3797; ConvF(7.75, 7.75, 7.75); Calibrated: 2019-11-28;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn446; Calibrated: 2019-07-18
- Phantom: SAM_Left_20170913
- Measurement SW: DASY52, Version 52.10 (4);

LTE 25 Head Left Touch QPSK 20MHz 1RB 0offset 26365ch/Area Scan (8x13x1): Measurement grid:
dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.133 W/kg

LTE 25 Head Left Touch QPSK 20MHz 1RB 0offset 26365ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.014 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 0.176 W/kg
SAR(1 g) = 0.108 W/kg; SAR(10 g) = 0.063 W/kg
Maximum value of SAR (measured) = 0.146 W/kg



0 dB = 0.146 W/kg = -8.36 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 20.4°C
Ambient Temperature: 20.5°C
Test Date: 05/14/2020
Plot No.: 11

DUT: SM-N981BDS; Type: Bar

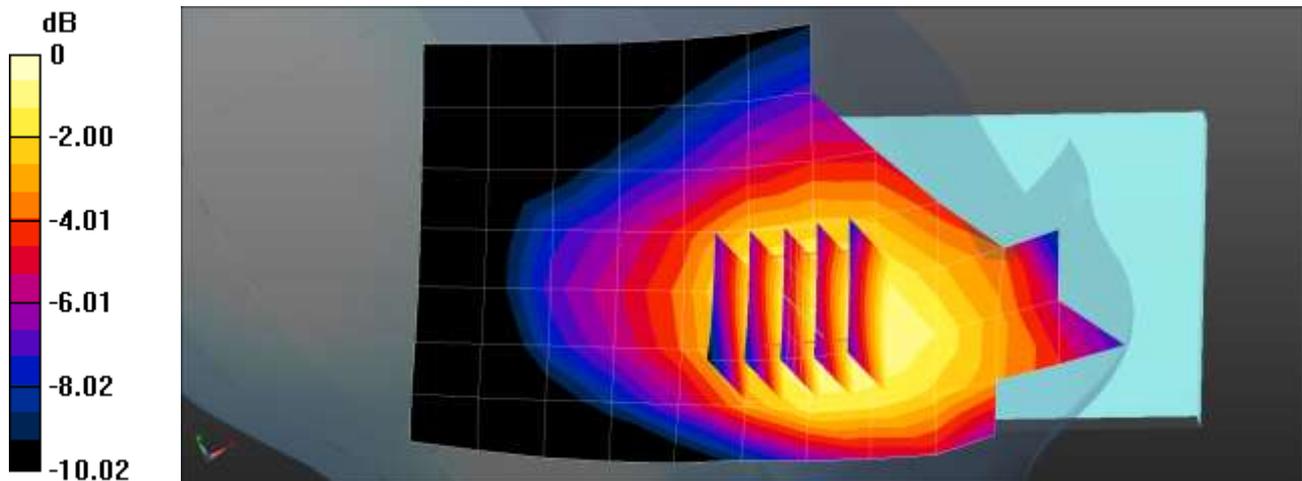
Communication System: UID 0, LTE Band 26 (0); Frequency: 831.5 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 831.5$ MHz; $\sigma = 0.926$ S/m; $\epsilon_r = 42.568$; $\rho = 1000$ kg/m³
Phantom section: Left Section

DASY Configuration:

- Probe: ES3DV3 - SN3076; ConvF(6.22, 6.22, 6.22); Calibrated: 2019-07-23;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1417; Calibrated: 2020-02-26
- Phantom: SAM with CRP v5.0_Right
- Measurement SW: DASY52, Version 52.10 (4);

LTE Band26 Head Left Touch QPSK 15MHz 1RB 0offset 26865ch/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.170 W/kg

LTE Band26 Head Left Touch QPSK 15MHz 1RB 0offset 26865ch/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.095 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 0.203 W/kg
SAR(1 g) = 0.157 W/kg; SAR(10 g) = 0.118 W/kg
Maximum value of SAR (measured) = 0.174 W/kg



0 dB = 0.174 W/kg = -7.59 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 21.4°C
Ambient Temperature: 21.5°C
Test Date: 05/25/2020
Plot No.: 12

DUT: SM-N981BDS; Type: Bar

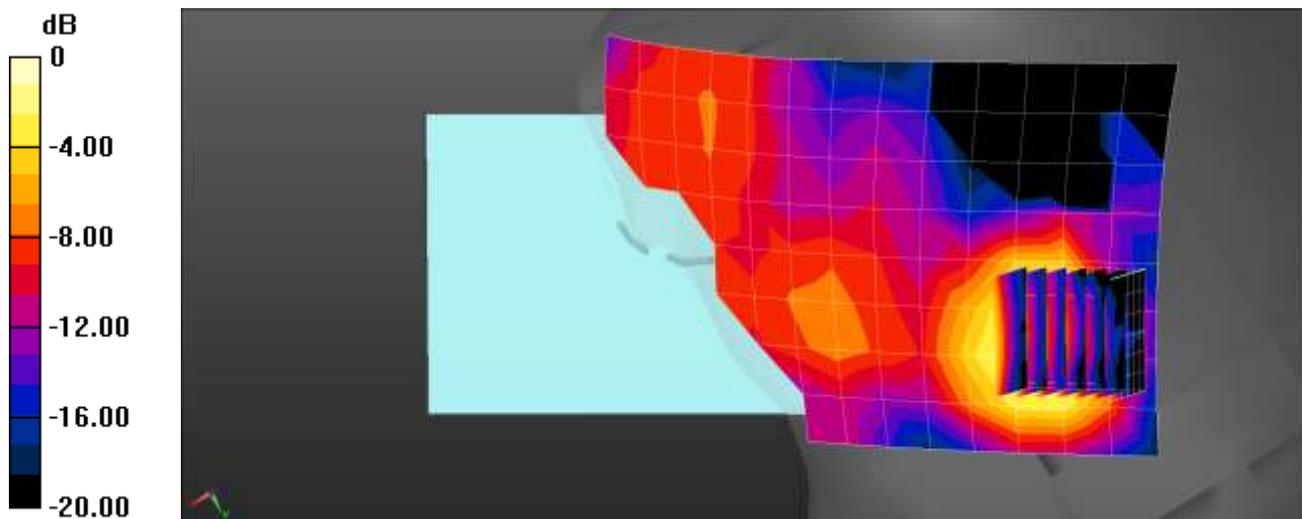
Communication System: UID 0, LTE Band41 (0); Frequency: 2593 MHz; Duty Cycle: 1:1.58016
Medium parameters used (interpolated): $f = 2593$ MHz; $\sigma = 1.948$ S/m; $\epsilon_r = 37.873$; $\rho = 1000$ kg/m³
Phantom section: Left Section

DASY Configuration:

- Probe: EX3DV4 - SN3903; ConvF(7.49, 7.49, 7.49) @ 2593 MHz; Calibrated: 2020-03-25
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2019-09-19
- Phantom: Twin-SAM V4.0 (20deg probe tilt)_1588_20200429
- Measurement SW: DASY52, Version 52.10 (4);

LTE Band41 Head Left Tilt QPSK 20MHz 1RB 0offset 40620ch PC2/Area Scan (9x16x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.0773 W/kg

LTE Band41 Head Left Tilt QPSK 20MHz 1RB 0offset 40620ch PC2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.743 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 0.0950 W/kg
SAR(1 g) = 0.049 W/kg; SAR(10 g) = 0.024 W/kg
Maximum value of SAR (measured) = 0.0762 W/kg



0 dB = 0.0762 W/kg = -11.18 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 21.2°C
Ambient Temperature: 21.4°C
Test Date: 05/15/2020
Plot No.: 13

DUT: SM-N981BDS; Type: Bar

Communication System: UID 0, LTE 66 (0); Frequency: 1745 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 1745 \text{ MHz}$; $\sigma = 1.339 \text{ S/m}$; $\epsilon_r = 40.344$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Right Section

DASY Configuration:

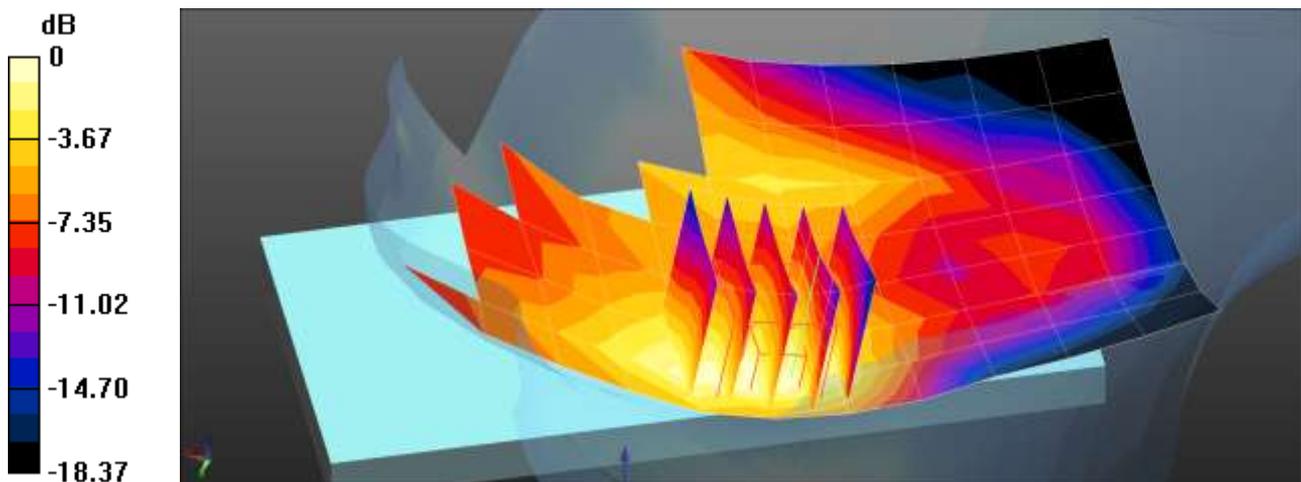
- Probe: EX3DV4 - SN3797; ConvF(8.14, 8.14, 8.14); Calibrated: 2019-11-28;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn446; Calibrated: 2019-07-18
- Phantom: SAM_Left_20170913
- Measurement SW: DASY52, Version 52.10 (4);

SM-B527B/LTE 66 Head Right Touch QPSK 20MHz 1RB 0offset 132322ch/Area Scan (8x13x1):

Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
Maximum value of SAR (measured) = 0.169 W/kg

SM-B527B/LTE 66 Head Right Touch QPSK 20MHz 1RB 0offset 132322ch/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$
Reference Value = 4.790 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 0.196 W/kg
SAR(1 g) = 0.120 W/kg; SAR(10 g) = 0.076 W/kg
Maximum value of SAR (measured) = 0.166 W/kg



0 dB = 0.166 W/kg = -7.80 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 21.2°C
Ambient Temperature: 21.4°C
Test Date: 06/03/2020
Plot No.: 14

DUT: SM-N981BDS; Type: Bar

Communication System: UID 0, 2450MHz FCC (0); Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 1.791$ S/m; $\epsilon_r = 39.848$; $\rho = 1000$ kg/m³
Phantom section: Right Section

DASY Configuration:

- Probe: EX3DV4 - SN3903; ConvF(7.65, 7.65, 7.65) @ 2437 MHz; Calibrated: 2020-03-25
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2019-09-19
- Phantom: Twin-SAM V4.0 (20deg probe tilt)_1588_20200429
- Measurement SW: DASY52, Version 52.10 (4);

802.11b Head Right Tilt 1Mbps 6ch PLS 17/Area Scan (10x17x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.793 W/kg

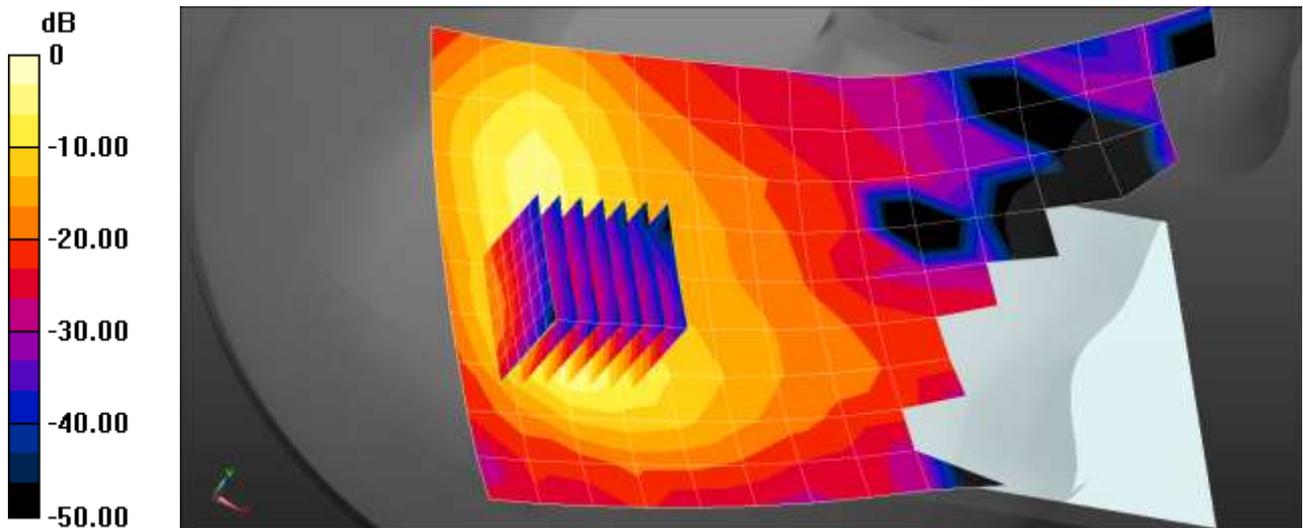
802.11b Head Right Tilt 1Mbps 6ch PLS 17/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 11.22 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 1.05 W/kg

SAR(1 g) = 0.385 W/kg; SAR(10 g) = 0.146 W/kg

Maximum value of SAR (measured) = 0.776 W/kg



0 dB = 0.793 W/kg = -1.01 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 21.3 °C
Ambient Temperature: 21.5 °C
Test Date: 07/03/2020
Plot No.: 15

DUT: SM-N981BDS; Type: Bar

Communication System: UID 0, WIFI 5GHz (0); Frequency: 5270 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 5270$ MHz; $\sigma = 4626$ S/m; $\epsilon_r = 36.985$; $\rho = 1000$ kg/m³
Phantom section: Right Section

DASY Configuration:

- Probe: EX3DV4 - SN3968; ConvF(5.57, 5.57, 5.57) Calibrated: 2019-09-27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2020-04-22
- Phantom: Twin-SAM V4.0 (Left-Right)
- Measurement SW: DASY52, Version 52.10 (4);

802.11n40 Head Right Touch MCS0 54ch/Area Scan (11x19x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.235 W/kg

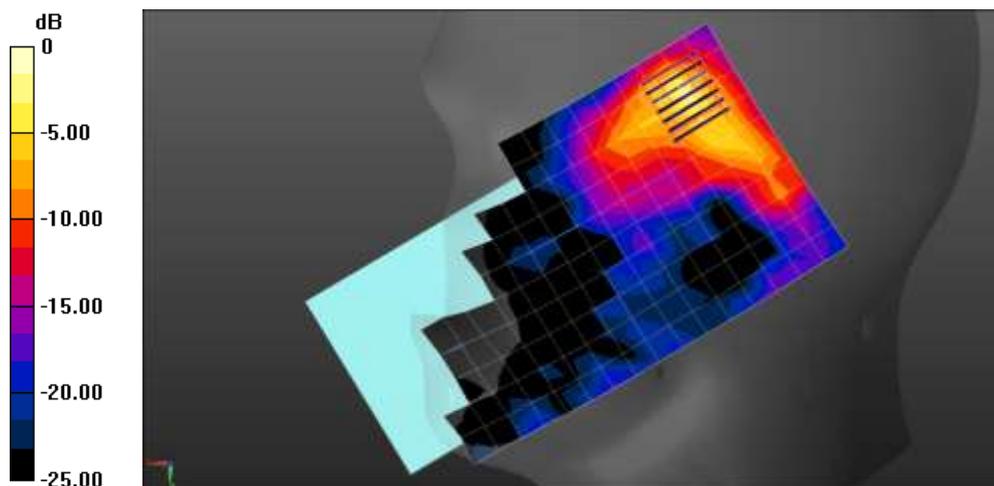
802.11n40 Head Right Touch MCS0 54ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 4.082 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.649 W/kg

SAR(1 g) = 0.123 W/kg; SAR(10 g) = 0.034 W/kg

Maximum value of SAR (measured) = 0.347 W/kg



0 dB = 0.347 W/kg = -4.60 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 21.2°C
Ambient Temperature: 21.4°C
Test Date: 05/26/2020
Plot No.: 16

Type: Bar

Communication System: UID 0, Bluetooth (0); Frequency: 2480 MHz; Duty Cycle: 1:1.3
Medium parameters used: $f = 2480$ MHz; $\sigma = 1.828$ S/m; $\epsilon_r = 38.281$; $\rho = 1000$ kg/m³
Phantom section: Right Section

DASY Configuration:

- Probe: EX3DV4 - SN3968; ConvF(7.6, 7.6, 7.6); Calibrated: 2019-09-27;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2020-04-22
- Phantom: Twin-SAM V4.0 (20deg probe tilt)_1588_20200429
- Measurement SW: DASY52, Version 52.10 (4);

Bluetooth Head Right Tilt DH5 78ch/Area Scan (9x17x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.979 W/kg

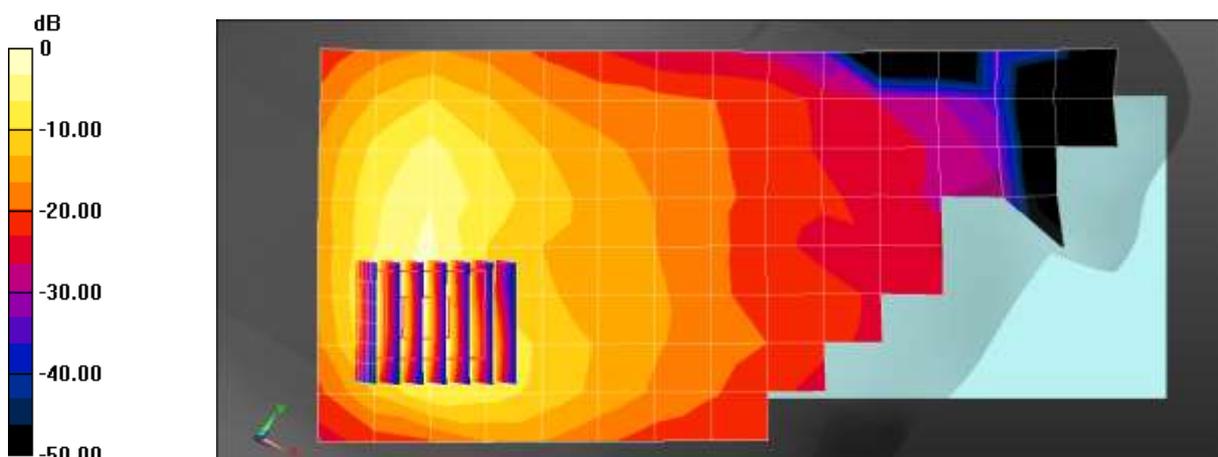
Bluetooth Head Right Tilt DH5 78ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 12.02 V/m; Power Drift = -0.15 dB

Peak SAR (extrapolated) = 1.49 W/kg

SAR(1 g) = 0.572 W/kg; SAR(10 g) = 0.222 W/kg

Maximum value of SAR (measured) = 1.10 W/kg



$$0 \text{ dB} = 0.979 \text{ W/kg} = -0.09 \text{ dBW/kg}$$

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 21.4°C
Ambient Temperature: 21.6°C
Test Date: 05/20/2020
Plot No.: 17

DUT: SM-N981BDS; Type: Bar

Communication System: UID 0, GSM 850 3Tx (0); Frequency: 836.6 MHz; Duty Cycle: 1:2.77013
Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.925$ S/m; $\epsilon_r = 42.823$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3968; ConvF(9.85, 9.85, 9.85); Calibrated: 2019-09-27;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2020-04-22
- Phantom: Twin-SAM V5.0 (20deg probe tilt)
- Measurement SW: DASY52, Version 52.10 (4);

GSM 850 Body-Worn Rear 3Tx 190ch/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.563 W/kg

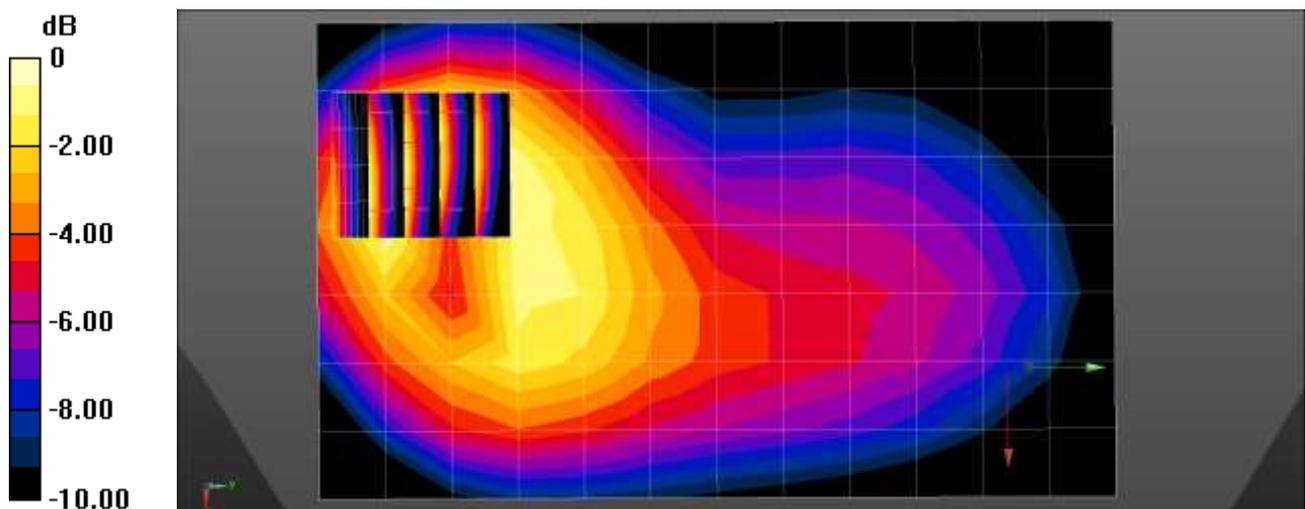
GSM 850 Body-Worn Rear 3Tx 190ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.75 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 0.697 W/kg

SAR(1 g) = 0.419 W/kg; SAR(10 g) = 0.256 W/kg

Maximum value of SAR (measured) = 0.591 W/kg



0 dB = 0.591 W/kg = -2.28 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 20.2 °C
Ambient Temperature: 20.4 °C
Test Date: 05/18/2020
Plot No.: 18

DUT: SM-N981BDS; Type: Bar

Communication System: UID 0, GSM 1900 3TX (0); Frequency: 1880 MHz;Duty Cycle: 1:2.77013
Medium parameters used: $f = 1880$ MHz; $\sigma = 1.409$ S/m; $\epsilon_r = 39.102$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3797; ConvF(7.75, 7.75, 7.75) @ 1880 MHz; Calibrated: 2019-11-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn446; Calibrated: 2019-07-18
- Phantom: SAM_Left_20170913
- Measurement SW: DASY52, Version 52.10 (4);

GSM 1900 Bodyworn Rear 3Tx 661ch/Area Scan (8x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.694 W/kg

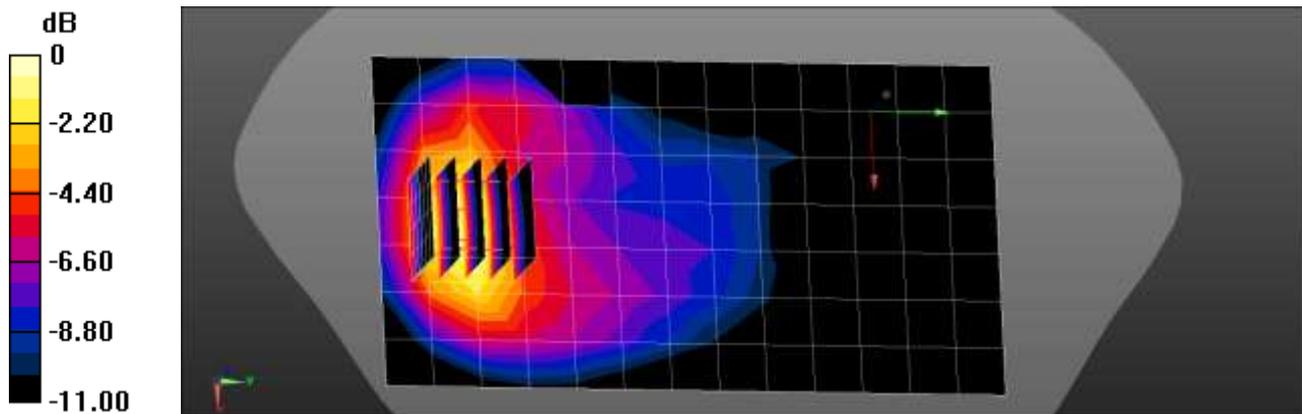
GSM 1900 Bodyworn Rear 3Tx 661ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.361 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.891 W/kg

SAR(1 g) = 0.515 W/kg; SAR(10 g) = 0.291 W/kg

Maximum value of SAR (measured) = 0.757 W/kg



0 dB = 0.757 W/kg = -1.21 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 21.4 °C
Ambient Temperature: 21.6 °C
Test Date: 05/20/2020
Plot No.: 19

DUT: SM-N981BDS; Type: Bar

Communication System: UID 0, WCDMA850 (0); Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.925$ S/m; $\epsilon_r = 42.823$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3968; ConvF(9.85, 9.85, 9.85); Calibrated: 2019-09-27;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2020-04-22
- Phantom: Twin-SAM V5.0 (20deg probe tilt)
- Measurement SW: DASY52, Version 52.10 (4);

WCDMA Band 5 Body-Worn Rear 4183ch/Area Scan (8x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.412 W/kg

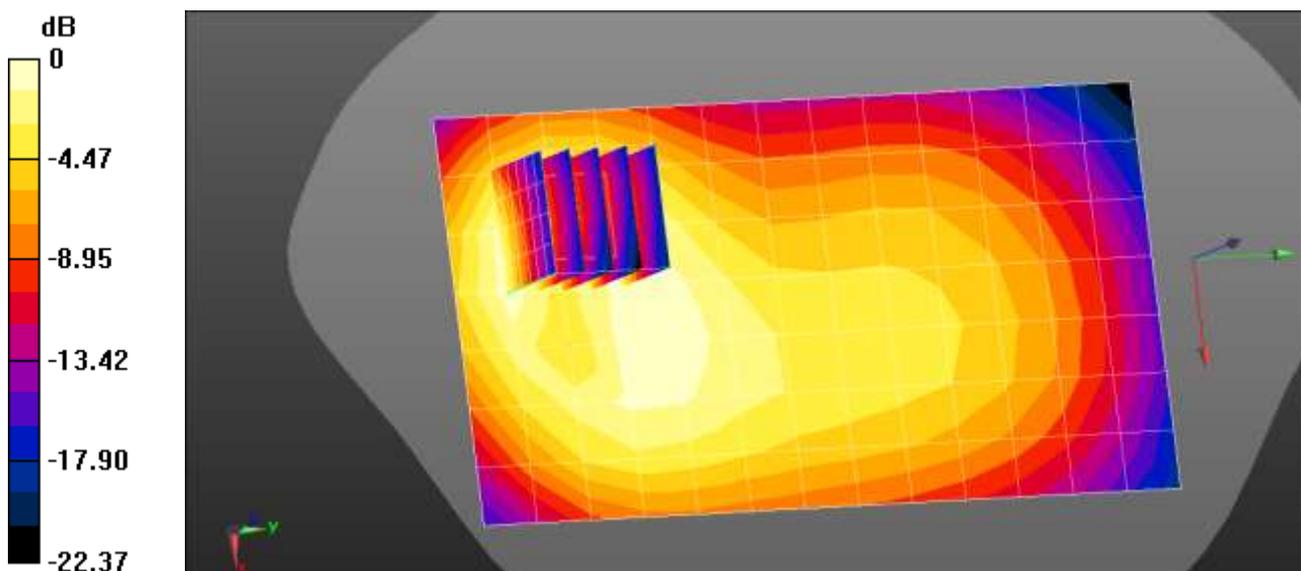
WCDMA Band 5 Body-Worn Rear 4183ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.16 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.507 W/kg

SAR(1 g) = 0.304 W/kg; SAR(10 g) = 0.186 W/kg

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



0 dB = 0.412 W/kg = -3.86 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 20.7 °C
Ambient Temperature: 20.8 °C
Test Date: 05/19/2020
Plot No.: 20

DUT: SM-N981BDS; Type: Bar

Communication System: UID 0, WCDMA IV (0); Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 1732.4$ MHz; $\sigma = 1.315$ S/m; $\epsilon_r = 40.208$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3076; ConvF(5.34, 5.34, 5.34); Calibrated: 2019-07-23;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1417; Calibrated: 2020-02-26
- Phantom: SAM with CRP v5.0_Front
- Measurement SW: DASY52, Version 52.10 (4);

WCDMA1700 Body Rear 1412ch body worn/Area Scan (8x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.465 W/kg

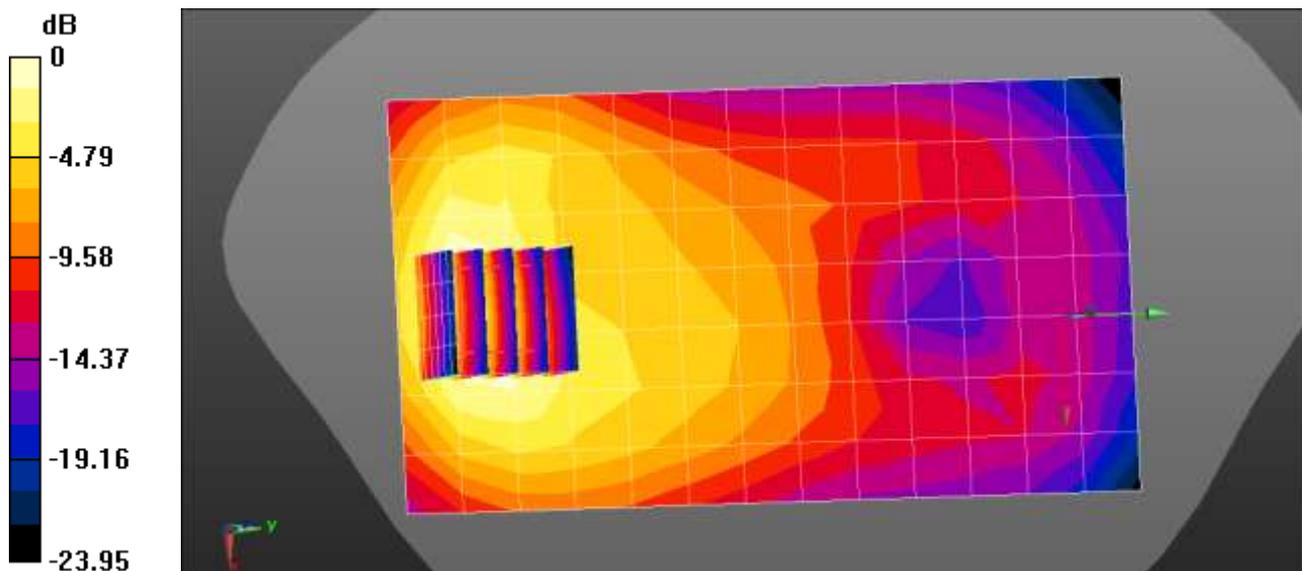
WCDMA1700 Body Rear 1412ch body worn/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.592 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.719 W/kg

SAR(1 g) = 0.470 W/kg; SAR(10 g) = 0.285 W/kg

Maximum value of SAR (measured) = 0.563 W/kg



$$0 \text{ dB} = 0.465 \text{ W/kg} = -3.32 \text{ dBW/kg}$$

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 20.7 °C
Ambient Temperature: 20.9 °C
Test Date: 05/18/2020
Plot No.: 21

DUT: SM-N981BDS; Type: Bar

Communication System: UID 0, WCDMA1900 (0); Frequency: 1880 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.427 \text{ S/m}$; $\epsilon_r = 38.306$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3076; ConvF(5.1, 5.1, 5.1) @ 1880 MHz;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1417; Calibrated: 2020-02-26
- Phantom: SAM with CRP v5.0_Front
- Measurement SW: DASY52, Version 52.10 (4);

WCDMA1900 Body Rear 9400ch/Area Scan (8x14x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
Maximum value of SAR (measured) = 0.453 W/kg

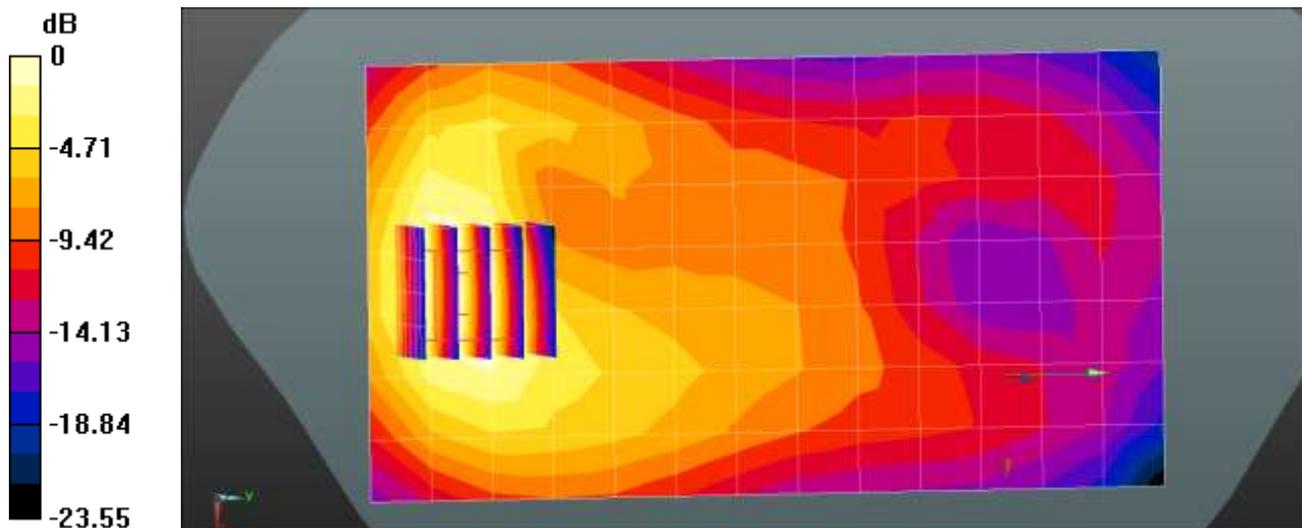
WCDMA1900 Body Rear 9400ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 7.312 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.743 W/kg

SAR(1 g) = 0.458 W/kg; SAR(10 g) = 0.264 W/kg

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



$$0 \text{ dB} = 0.453 \text{ W/kg} = -3.44 \text{ dBW/kg}$$

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 19.5°C
Ambient Temperature: 19.7°C
Test Date: 06/12/2020
Plot No.: 22

DUT: SM-N981BDS; Type: Bar

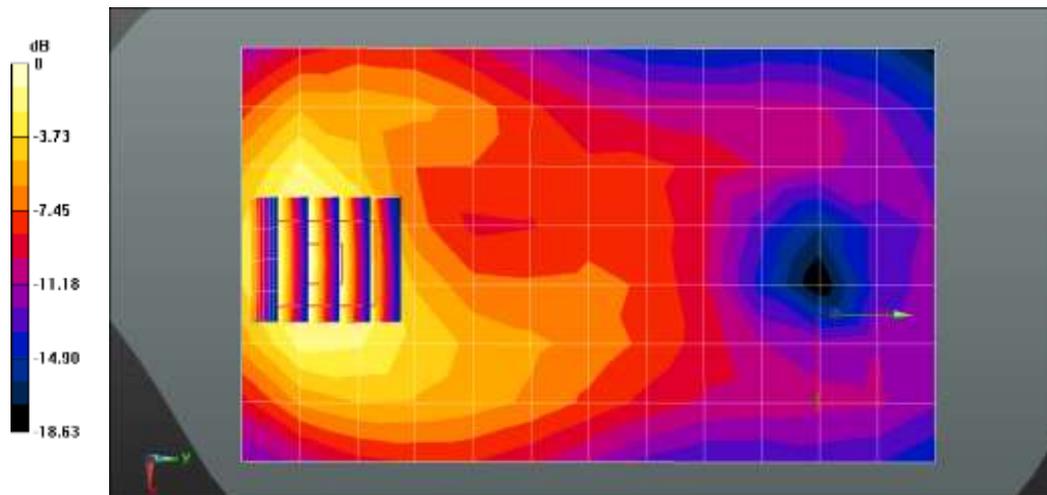
Communication System: UID 0, LTE2 (20MHz) (0); Frequency: 1880 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.386 \text{ S/m}$; $\epsilon_r = 39.975$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3797; ; Calibrated: 2019-11-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn446; Calibrated: 2019-07-18
- Phantom: SAM_Left_20170913
- Measurement SW: DASY52, Version 52.10 (4);

LTE Band 2 Body Rear QPSK 20MHz 1RB 0offset 18900ch/Area Scan (8x13x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$
Maximum value of SAR (measured) = 0.725 W/kg

LTE Band 2 Body Rear QPSK 20MHz 1RB 0offset 18900ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$
Reference Value = 9.960 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.940 W/kg
SAR(1 g) = 0.539 W/kg; SAR(10 g) = 0.308 W/kg
Maximum value of SAR (measured) = 0.793 W/kg



0 dB = 0.725 W/kg = -1.40 dBW/kg

Test Laboratory: HCT CO., LTD
 EUT Type: Mobile Phone
 Liquid Temperature: 19.8 °C
 Ambient Temperature: 20.0 °C
 Test Date: 06/15/2020
 Plot No.: 23

DUT: SM-N981BDS; Type: Bar

Communication System: UID 0, LTE Band 5 (0); Frequency: 836.5 MHz; Duty Cycle: 1:1
 Medium parameters used (interpolated): $f = 836.5 \text{ MHz}$; $\sigma = 0.908 \text{ S/m}$; $\epsilon_r = 42.35$; $\rho = 1000 \text{ kg/m}^3$
 Phantom section: Flat Section

DASY5 Configuration:

- Probe: ET3DV6 - SN1630; ConvF(6.96, 6.96, 6.96) @ 836.5 MHz; Calibrated: 2020-02-26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2019-09-04
- Phantom: SAM with CRP v5.0_2020_06_09
- Measurement SW: DASY52, Version 52.10 (4);

LTE band 5 BodyWorn Rear QPSK 10MHz 1RB 0offset 20525ch/Area Scan (8x14x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (measured) = 0.307 W/kg

LTE band 5 BodyWorn Rear QPSK 10MHz 1RB 0offset 20525ch/Zoom Scan (5x5x7)/Cube 0:

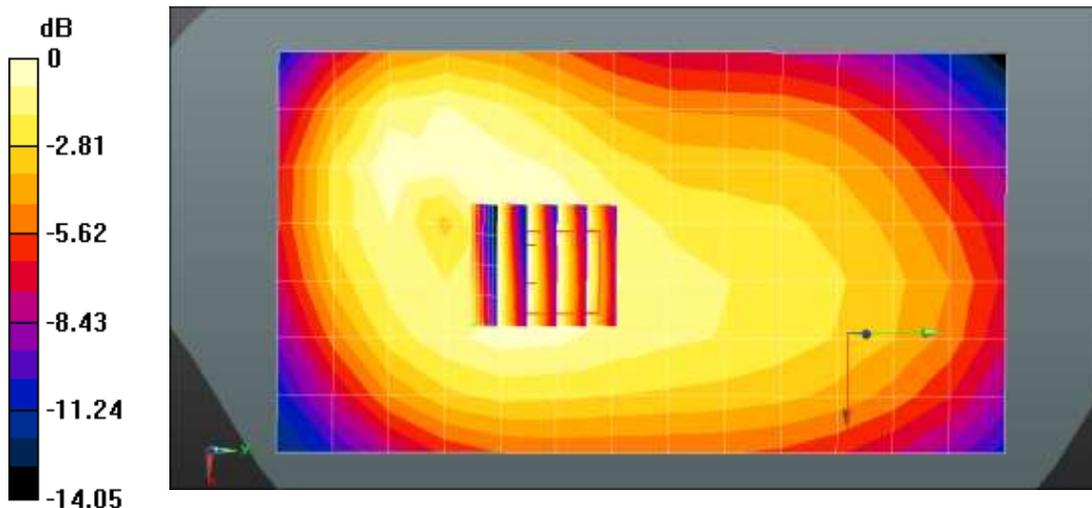
Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 14.50 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.435 W/kg

SAR(1 g) = 0.311 W/kg; SAR(10 g) = 0.216 W/kg

Maximum value of SAR (measured) = 0.333 W/kg



0 dB = 0.333 W/kg = -4.78 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 20.4 °C
Ambient Temperature: 20.6 °C
Test Date: 05/15/2020
Plot No.: 24

DUT: SM-N981BDS; Type: Bar

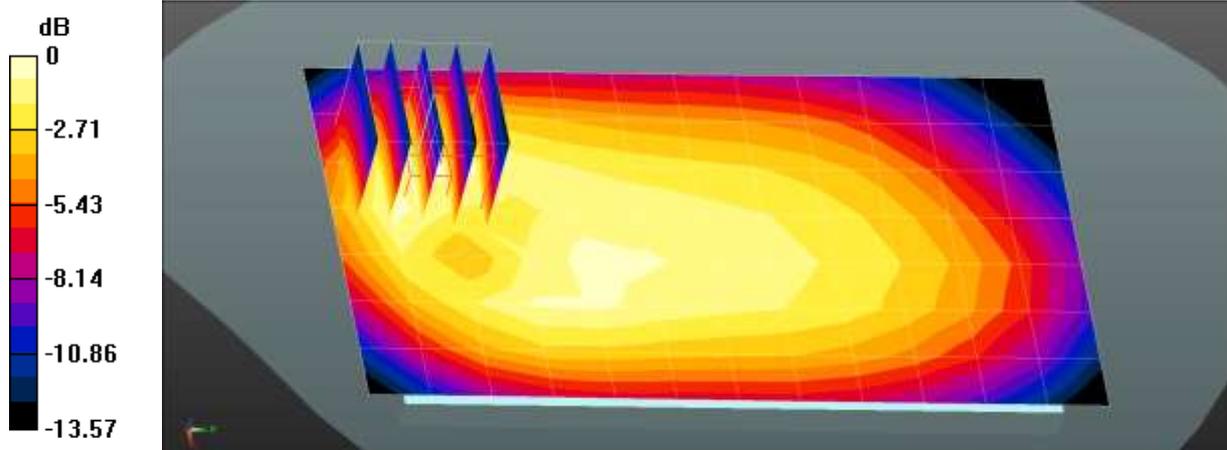
Communication System: UID 0, LTE Band 12 (0); Frequency: 707.5 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 707.5$ MHz; $\sigma = 0.86$ S/m; $\epsilon_r = 42.559$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3076; ConvF(6.52, 6.52, 6.52); Calibrated: 2019-07-23;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1417; Calibrated: 2020-02-26
- Phantom: SAM with CRP v5.0_Right
- Measurement SW: DASY52, Version 52.10 (4);

LTE Band12 Body Rear QPSK 10MHz 1RB 0offset 23095ch/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.133 W/kg

LTE Band12 Body Rear QPSK 10MHz 1RB 0offset 23095ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.34 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.201 W/kg
SAR(1 g) = 0.119 W/kg; SAR(10 g) = 0.072 W/kg
Maximum value of SAR (measured) = 0.141 W/kg



0 dB = 0.141 W/kg = -8.51 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 20.4 °C
Ambient Temperature: 20.6 °C
Test Date: 05/15/2020
Plot No.: 25

DUT: SM-N981BDS; Type: Bar

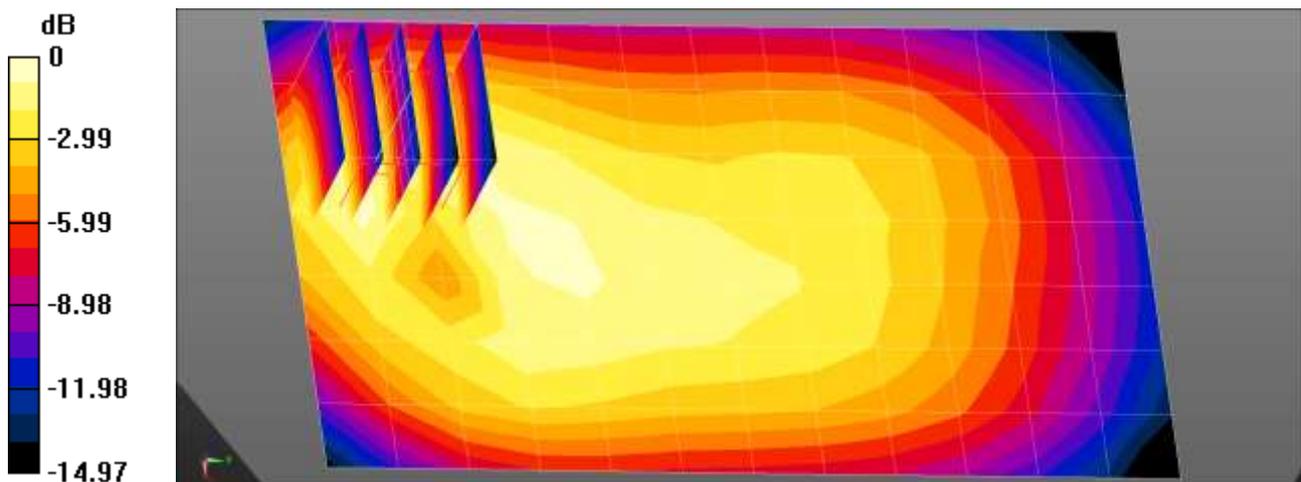
Communication System: UID 0, LTE Band 13 (0); Frequency: 782 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 782 \text{ MHz}$; $\sigma = 0.901 \text{ S/m}$; $\epsilon_r = 41.57$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3076; ConvF(6.52, 6.52, 6.52); Calibrated: 2019-07-23;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1417; Calibrated: 2020-02-26
- Phantom: SAM with CRP v5.0_Right
- Measurement SW: DASY52, Version 52.10 (4);

LTE Band13 Body Rear QPSK 10MHz 1RB 49offset 23230ch/Area Scan (8x13x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$
Maximum value of SAR (measured) = 0.108 W/kg

LTE Band13 Body Rear QPSK 10MHz 1RB 49offset 23230ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$
Reference Value = 9.594 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.168 W/kg
SAR(1 g) = 0.099 W/kg; SAR(10 g) = 0.058 W/kg
Maximum value of SAR (measured) = 0.119 W/kg



0 dB = 0.119 W/kg = -9.24 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 20.2 °C
Ambient Temperature: 20.4 °C
Test Date: 05/18/2020
Plot No.: 26

DUT: SM-N981BDS; Type: Bar

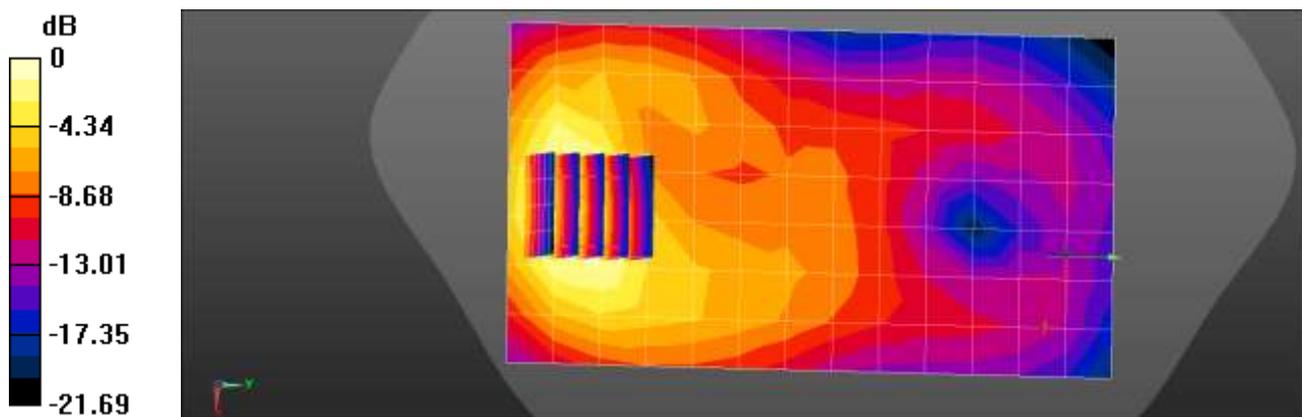
Communication System: UID 0, LTE Band25 (0); Frequency: 1882.5 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 1882.5 \text{ MHz}$; $\sigma = 1.373 \text{ S/m}$; $\epsilon_r = 39.075$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3903; ConvF(8.31, 8.31, 8.31) @ 1882.5 MHz; Calibrated: 2020-03-25
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2019-09-19
- Phantom: Twin-SAM V8.0_20171017 (Right1)
- Measurement SW: DASY52, Version 52.10 (4);

LTE Band 25 Body-worn Rear 20MHz QPSK 1RB 0offset 26365ch/Area Scan (8x14x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
Maximum value of SAR (measured) = 0.736 W/kg

LTE Band 25 Body-worn Rear 20MHz QPSK 1RB 0offset 26365ch/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$
Reference Value = 9.527 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 1.02 W/kg
SAR(1 g) = 0.595 W/kg; SAR(10 g) = 0.339 W/kg
Maximum value of SAR (measured) = 0.870 W/kg



Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 20.4 °C
Ambient Temperature: 20.5 °C
Test Date: 05/14/2020
Plot No.: 27

DUT: SM-N981BDS; Type: Bar

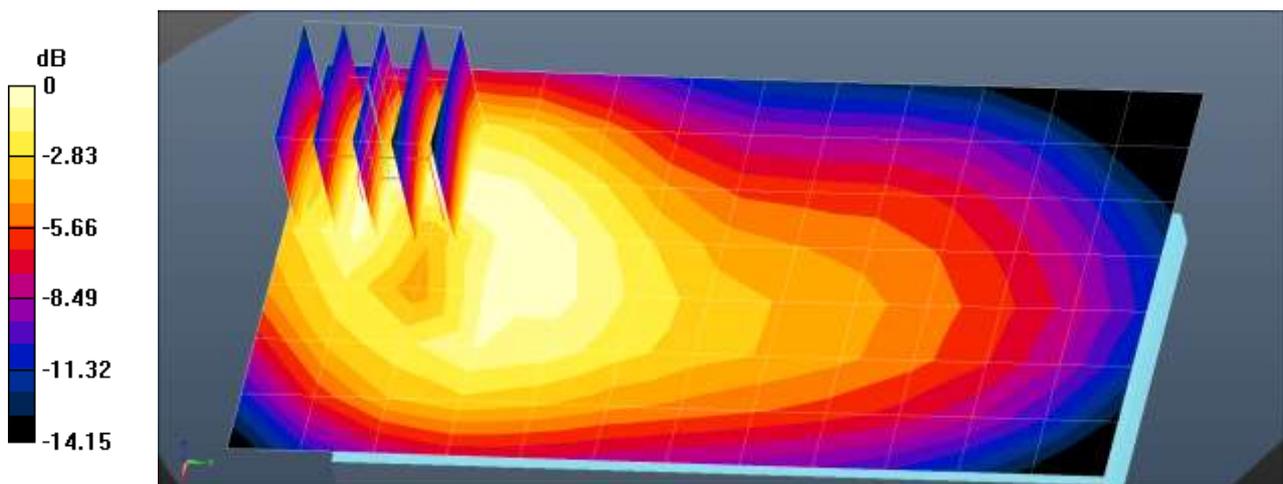
Communication System: UID 0, LTE Band 26 (0); Frequency: 831.5 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 831.5$ MHz; $\sigma = 0.926$ S/m; $\epsilon_r = 42.568$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3076; ConvF(6.22, 6.22, 6.22); Calibrated: 2019-07-23;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1417; Calibrated: 2020-02-26
- Phantom: SAM with CRP v5.0_Right
- Measurement SW: DASY52, Version 52.10 (4);

LTE Band26 Body Rear QPSK 15MHz 1RB 0offset 26865ch/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.322 W/kg

LTE Band26 Body Rear QPSK 15MHz 1RB 0offset 26865ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.79 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.470 W/kg
SAR(1 g) = 0.290 W/kg; SAR(10 g) = 0.177 W/kg
Maximum value of SAR (measured) = 0.348 W/kg



0 dB = 0.348 W/kg = -4.58 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 21.4 °C
Ambient Temperature: 21.5 °C
Test Date: 05/25/2020
Plot No.: 28

DUT: SM-N981BDS; Type: Bar

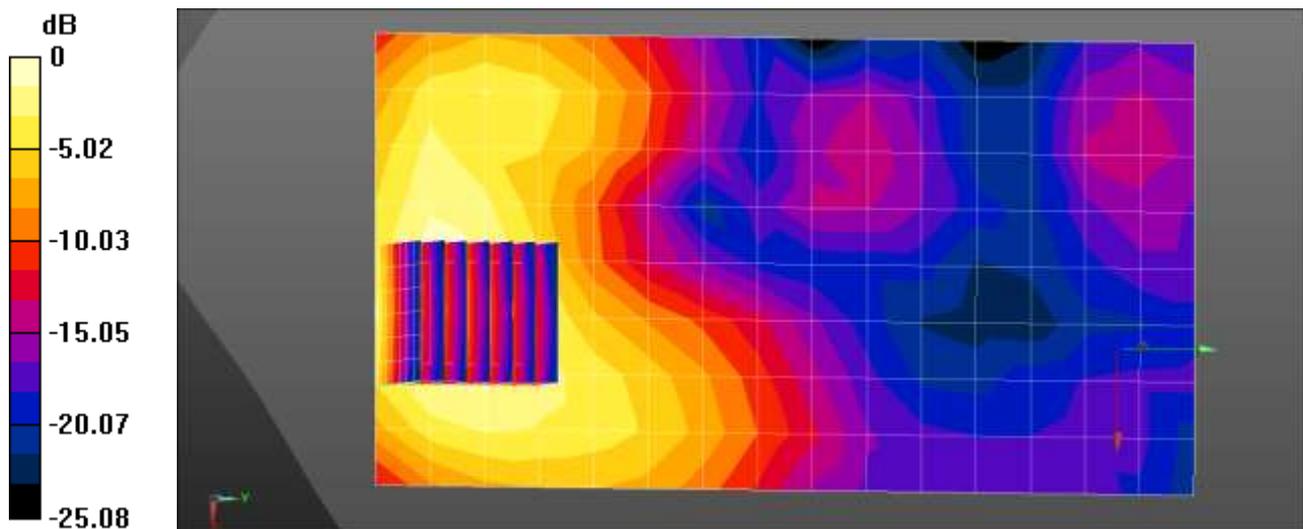
Communication System: UID 0, LTE Band41 (0); Frequency: 2593 MHz; Duty Cycle: 1:1.58016
Medium parameters used (interpolated): $f = 2593$ MHz; $\sigma = 1.948$ S/m; $\epsilon_r = 37.873$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3903; ConvF(7.49, 7.49, 7.49) @ 2593 MHz; Calibrated: 2020-03-25
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2019-09-19
- Phantom: Twin-SAM V4.0 (20deg probe tilt)_1588_20200429
- Measurement SW: DASY52, Version 52.10 (4);

LTE Band41 Body-Worn Rear QPSK 20MHz 1RB 0offset 40620ch/Area Scan (9x16x1): Measurement
grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.321 W/kg

LTE Band41 Body-Worn Rear QPSK 20MHz 1RB 0offset 40620ch/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.053 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 0.409 W/kg
SAR(1 g) = 0.208 W/kg; SAR(10 g) = 0.108 W/kg
Maximum value of SAR (measured) = 0.330 W/kg



0 dB = 0.321 W/kg = -4.94 dBW/kg

Test Laboratory: HCT CO., LTD
 EUT Type: Mobile Phone
 Liquid Temperature: 20.2 °C
 Ambient Temperature: 20.4 °C
 Test Date: 05/18/2020
 Plot No.: 29

DUT: SM-N981BDS; Type: Bar

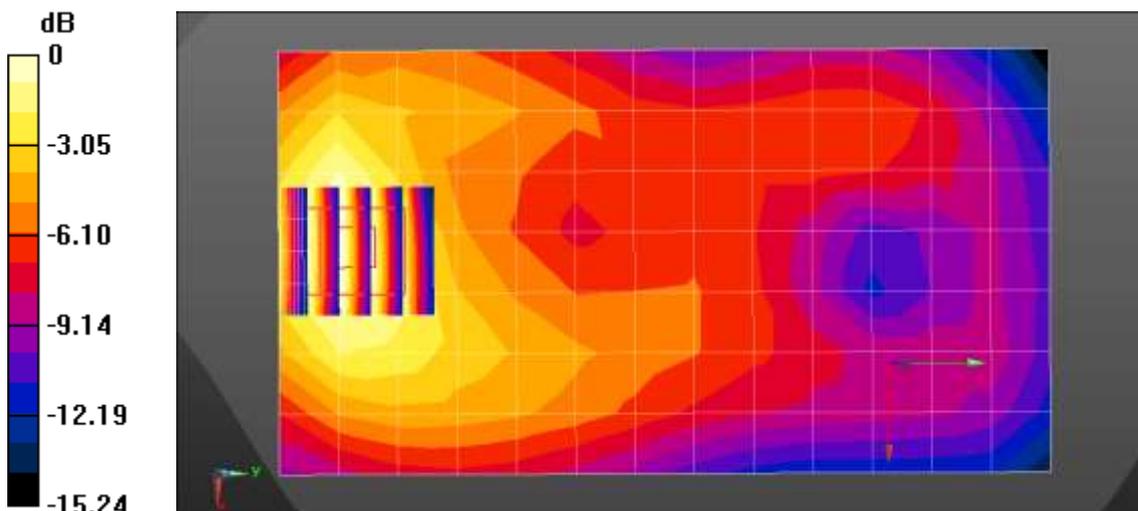
Communication System: UID 0, LTE Band66 (0); Frequency: 1745 MHz;Duty Cycle: 1:1
 Medium parameters used (interpolated): $f = 1745$ MHz; $\sigma = 1.335$ S/m; $\epsilon_r = 40.321$; $\rho = 1000$ kg/m³
 Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3903; ConvF(8.62, 8.62, 8.62) @ 1745 MHz; Calibrated: 2020-03-25
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2019-09-19
- Phantom: Twin-SAM V8.0_20171017 (Right1)
- Measurement SW: DASY52, Version 52.10 (4);

LTE Band 66 Body Rear 20MHz QPSK 1RB 0offset 132322ch/Area Scan (8x14x1): Measurement grid:
 dx=15mm, dy=15mm
 Maximum value of SAR (measured) = 0.863 W/kg

LTE Band 66 Body Rear 20MHz QPSK 1RB 0offset 132322ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
 Reference Value = 8.433 V/m; Power Drift = 0.14 dB
 Peak SAR (extrapolated) = 1.05 W/kg
SAR(1 g) = 0.604 W/kg; SAR(10 g) = 0.341 W/kg
 Maximum value of SAR (measured) = 0.887 W/kg



0 dB = 0.885 W/kg = -0.53 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 21.2 °C
Ambient Temperature: 21.4 °C
Test Date: 06/03/2020
Plot No.: 30

DUT: SM-N981BDS; Type: Bar

Communication System: UID 0, 2450MHz FCC (0); Frequency: 2412 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 2412$ MHz; $\sigma = 1.759$ S/m; $\epsilon_r = 39.933$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

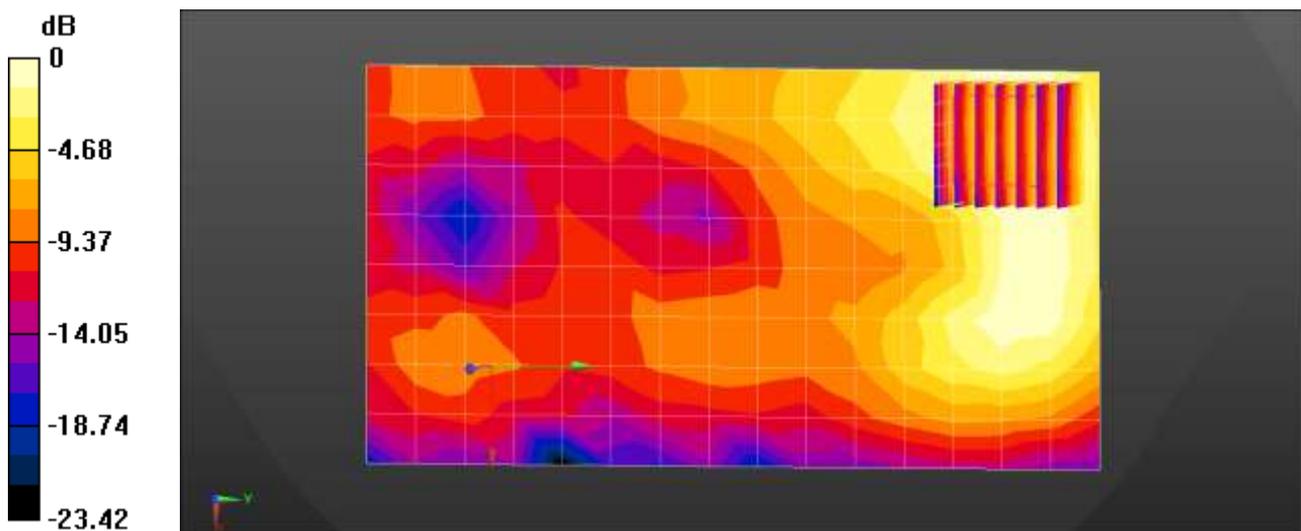
- Probe: EX3DV4 - SN3903; ConvF(7.65, 7.65, 7.65) @ 2412 MHz; Calibrated: 2020-03-25
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2019-09-19
- Phantom: Twin-SAM V4.0 (20deg probe tilt)_1588_20200429
- Measurement SW: DASY52, Version 52.10 (4);

802.11b Body Worn Rear 1Mbps 1ch /Area Scan (9x16x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.114 W/kg

802.11b Body Worn Rear 1Mbps 1ch /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 0.8650 V/m; Power Drift = -0.00 dB
Peak SAR (extrapolated) = 0.146 W/kg

SAR(1 g) = 0.078 W/kg; SAR(10 g) = 0.043 W/kg
Maximum value of SAR (measured) = 0.120 W/kg



0 dB = 0.114 W/kg = -9.45 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 19.5
Ambient Temperature: 19.7
Test Date: 06/11/2020
Plot No.: 31

DUT: SM-N981BDS; Type: Bar

Communication System: UID 0, 2450MHz FCC (0); Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 2462$ MHz; $\sigma = 1.82$ S/m; $\epsilon_r = 39.882$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3968; ConvF(7.6, 7.6, 7.6); Calibrated: 2019-09-27;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2020-04-22
- Phantom: Twin-SAM V4.0(Left-Left)
- Measurement SW: DASY52, Version 52.10 (4);

802.11b BodyWorn Rear 1Mbps 11ch/Area Scan (9x16x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.159 W/kg

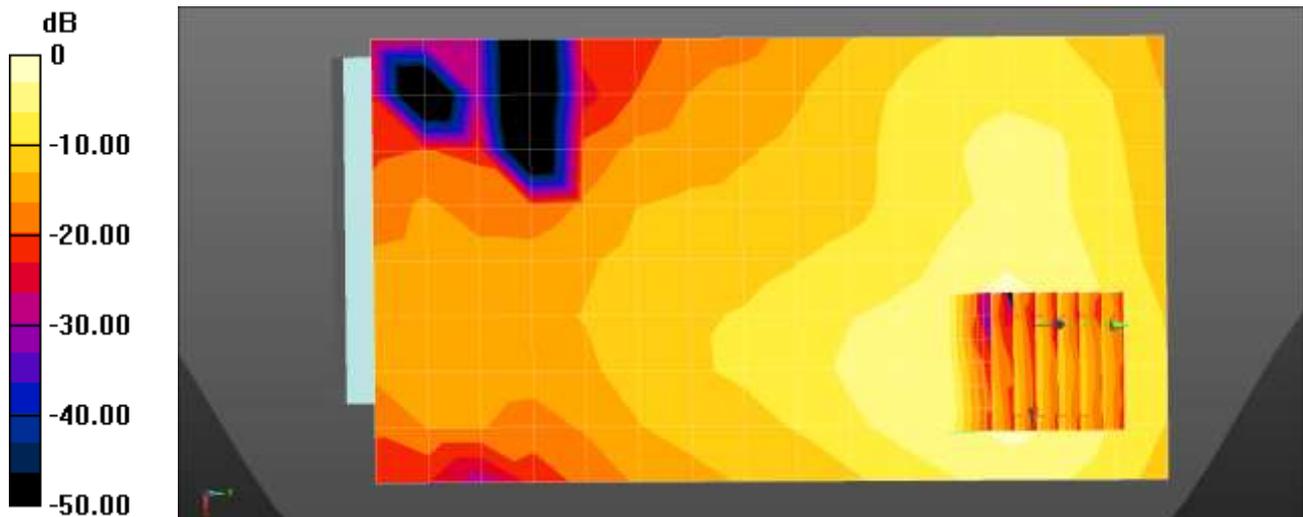
802.11b BodyWorn Rear 1Mbps 11ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.491 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.201 W/kg

SAR(1 g) = 0.093 W/kg; SAR(10 g) = 0.044 W/kg

Maximum value of SAR (measured) = 0.157 W/kg



0 dB = 0.159 W/kg = -8.00 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 19.6 °C
Ambient Temperature: 19.7 °C
Test Date: 06/09/2020
Plot No.: 32

DUT: SM-N981BDS; Type: Bar

Communication System: UID 0, WIFI 5GHz (0); Frequency: 5260 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 5260 \text{ MHz}$; $\sigma = 4.628 \text{ S/m}$; $\epsilon_r = 37.006$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ; Calibrated: 2019-09-27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2020-04-22
- Phantom: Twin-SAM V4.0 (Left-Right)
- Measurement SW: DASY52, Version 52.10 (4);

802.11a Body Rear 6Mbps 52ch/Area Scan (11x19x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$
Maximum value of SAR (measured) = 0.663 W/kg

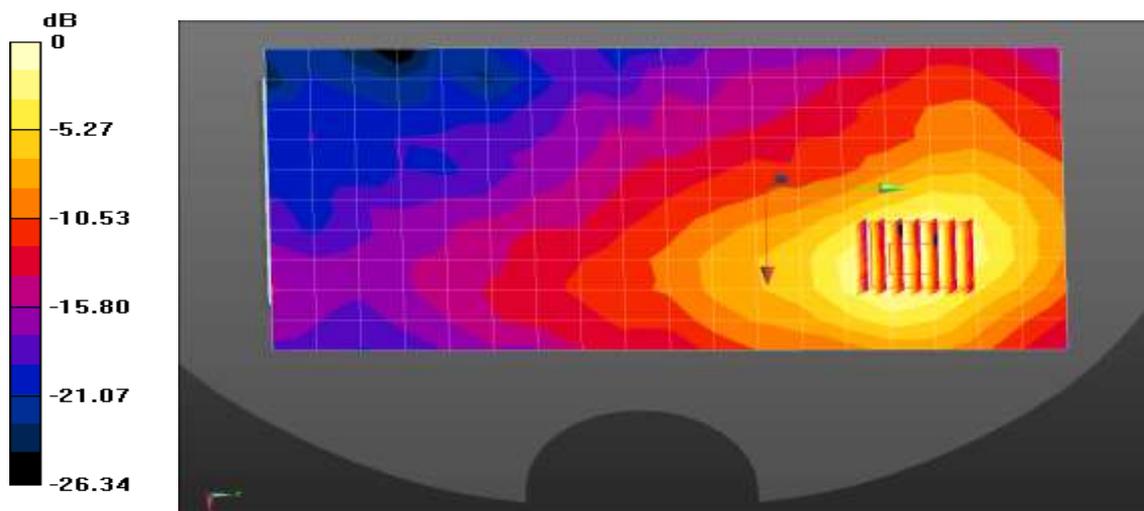
802.11a Body Rear 6Mbps 52ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$

Reference Value = 2.739 V/m; Power Drift = -0.17 dB

Peak SAR (extrapolated) = 1.27 W/kg

SAR(1 g) = 0.330 W/kg; SAR(10 g) = 0.127 W/kg

Maximum value of SAR (measured) = 0.741 W/kg



0 dB = 0.663 W/kg = -1.78 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 21.2 °C
Ambient Temperature: 21.4 °C
Test Date: 05/26/2020
Plot No.: 34

DUT: SM-N981BDS; Type: Bar

Communication System: UID 0, Bluetooth (0); Frequency: 2480 MHz; Duty Cycle: 1:1.3
Medium parameters used: $f = 2480$ MHz; $\sigma = 1.828$ S/m; $\epsilon_r = 38.281$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3968; ConvF(7.6, 7.6, 7.6) @ 2480 MHz; Calibrated: 2019-09-27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2020-04-22
- Phantom: Twin-SAM V4.0 (20deg probe tilt)_1588_20200429
- Measurement SW: DASY52, Version 52.10 (4);

Bluetooth Body Worn Rear DH5 78ch/Area Scan (9x17x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.125 W/kg

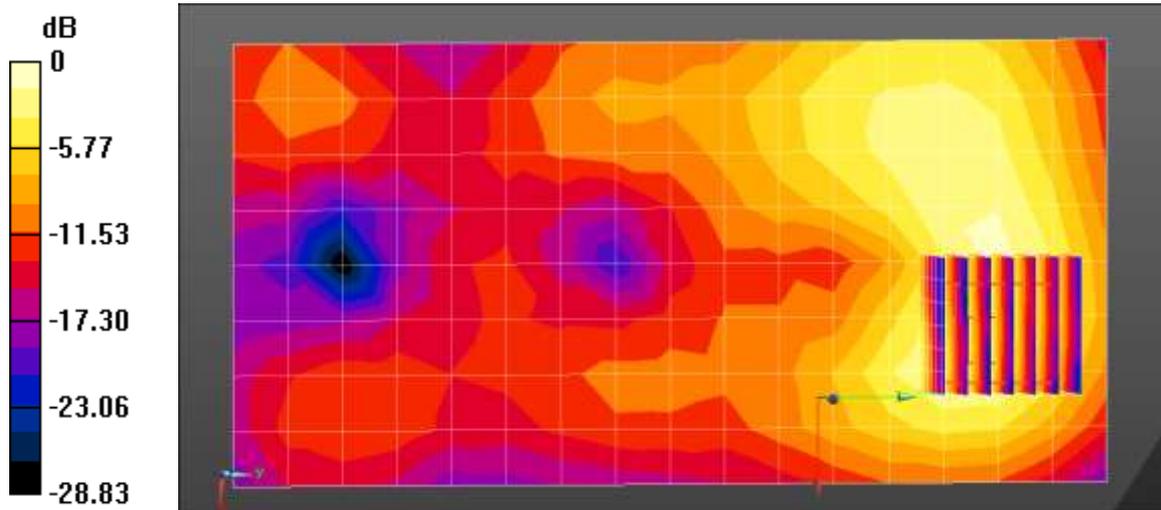
Bluetooth Body Worn Rear DH5 78ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 0.6770 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.157 W/kg

SAR(1 g) = 0.076 W/kg; SAR(10 g) = 0.037 W/kg

Maximum value of SAR (measured) = 0.123 W/kg



0 dB = 0.123 W/kg = -9.10 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 21.4 °C
Ambient Temperature: 21.6 °C
Test Date: 05/20/2020
Plot No.: 35

DUT: SM-N981BDS; Type: Bar

Communication System: UID 0, GSM 850 3Tx (0); Frequency: 849.8 MHz; Duty Cycle: 1:2.77013
Medium parameters used (interpolated): $f = 850$ MHz; $\sigma = 0.937$ S/m; $\epsilon_r = 42.66$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(9.85, 9.85, 9.85) @ 849.8 MHz; Calibrated: 2019-09-27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2020-04-22
- Phantom: Twin-SAM V5.0 (20deg probe tilt)
- Measurement SW: DASY52, Version 52.10 (4);

GSM 850 Body Rear 3Tx 251ch/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.21 W/kg

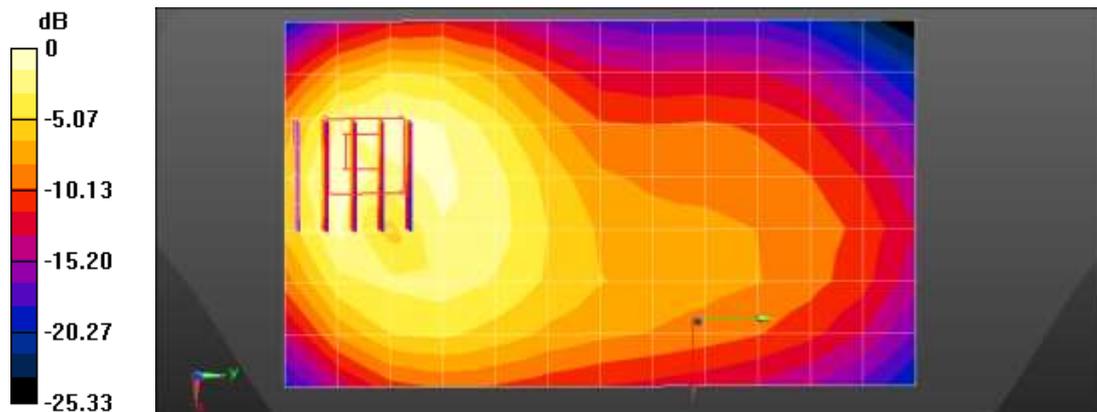
GSM 850 Body Rear 3Tx 251ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.66 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 1.64 W/kg

SAR(1 g) = 0.898 W/kg; SAR(10 g) = 0.519 W/kg

Maximum value of SAR (measured) = 1.31 W/kg



Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 20.2 °C
Ambient Temperature: 20.4 °C
Test Date: 05/18/2020
Plot No.: 36

DUT: SM-N981BDS; Type: Bar

Communication System: UID 0, GSM 1900 4TX (0); Frequency: 1850.2 MHz; Duty Cycle: 1:2.07491
Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.378$ S/m; $\epsilon_r = 39.195$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3797; ConvF(7.75, 7.75, 7.75) @ 1850.2 MHz; Calibrated: 2019-11-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn446; Calibrated: 2019-07-18
- Phantom: SAM_Left_20170913
- Measurement SW: DASY52, Version 52.10 (4);

GSM 1900 Body Bottom 4Tx 512ch/Area Scan (6x9x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.15 W/kg

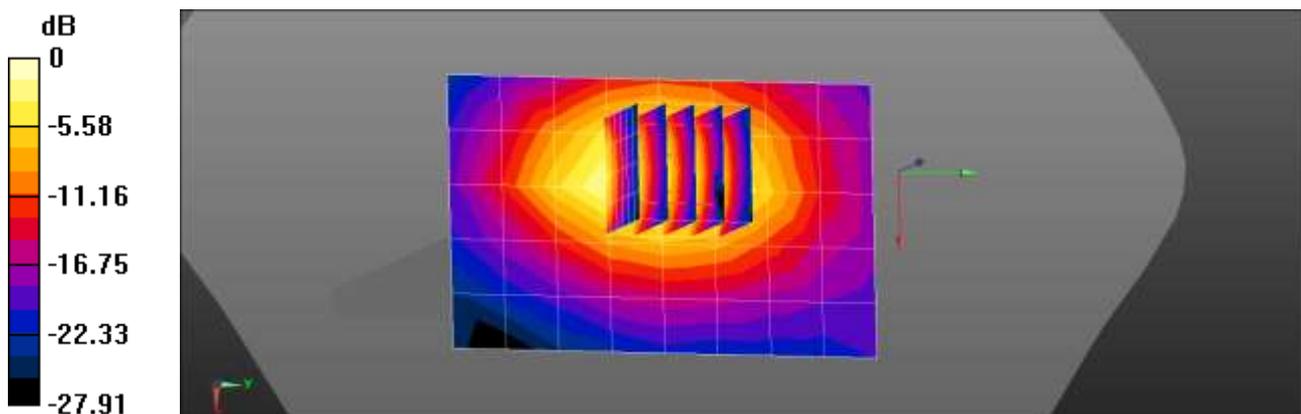
GSM 1900 Body Bottom 4Tx 512ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 21.50 V/m; Power Drift = 0.14 dB

Peak SAR (extrapolated) = 1.45 W/kg

SAR(1 g) = 0.793 W/kg; SAR(10 g) = 0.418 W/kg

Maximum value of SAR (measured) = 1.22 W/kg



0 dB = 1.15 W/kg = 0.61 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 21.4 °C
Ambient Temperature: 21.6 °C
Test Date: 05/20/2020
Plot No.: 37

DUT: SM-N981BDS; Type: Bar

Communication System: UID 0, WCDMA850 (0); Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 836.6$ MHz; $\sigma = 0.925$ S/m; $\epsilon_r = 42.823$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

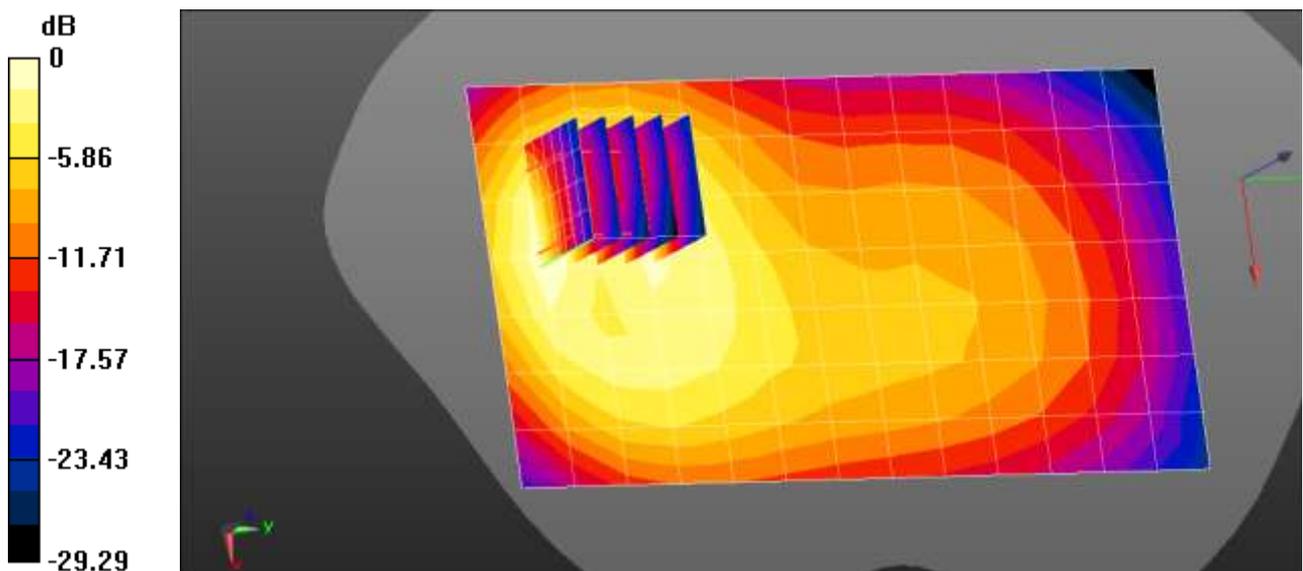
- Probe: EX3DV4 - SN3968; ConvF(9.85, 9.85, 9.85); Calibrated: 2019-09-27;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2020-04-22
- Phantom: Twin-SAM V5.0 (20deg probe tilt)
- Measurement SW: DASY52, Version 52.10 (4);

WCDMA Band 5 Body Rear 4183ch/Area Scan (8x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.975 W/kg

WCDMA Band 5 Body Rear 4183ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.22 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 1.31 W/kg

SAR(1 g) = 0.718 W/kg; SAR(10 g) = 0.412 W/kg
Maximum value of SAR (measured) = 1.05 W/kg



0 dB = 0.975 W/kg = -0.11 dBW/kg

Test Laboratory: HCT CO., LTD
 EUT Type: Mobile Phone
 Liquid Temperature: 20.7 °C
 Ambient Temperature: 20.8 °C
 Test Date: 05/19/2020
 Plot No.: 38

DUT: SM-N981BDS; Type: Bar

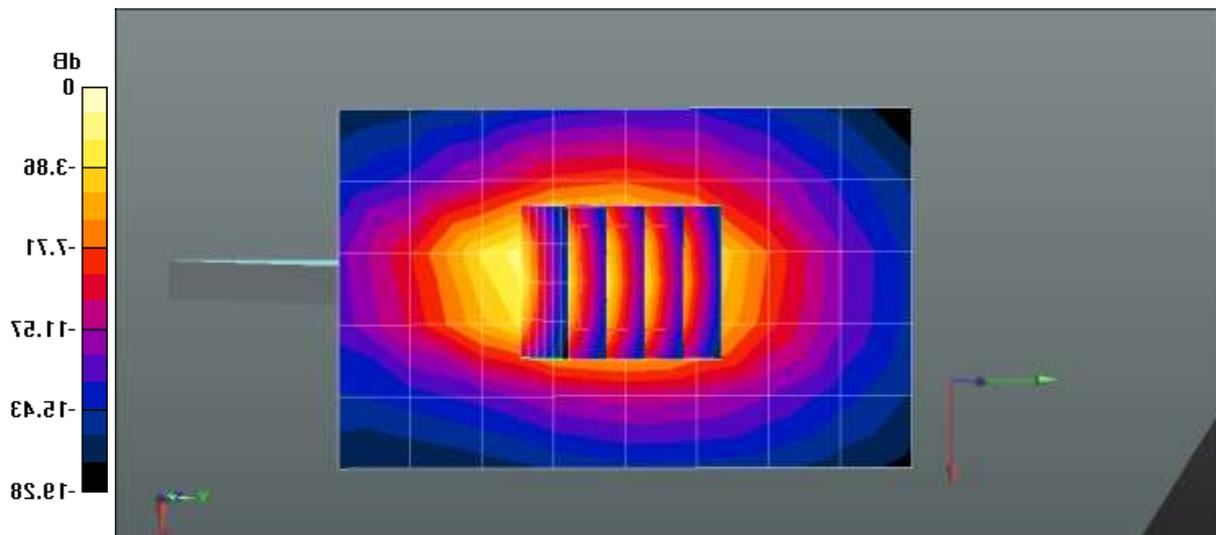
Communication System: UID 0, WCDMA IV (0); Frequency: 1732.4 MHz; Duty Cycle: 1:1
 Medium parameters used (interpolated): $f = 1732.4$ MHz; $\sigma = 1.315$ S/m; $\epsilon_r = 40.208$; $\rho = 1000$ kg/m³
 Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3076; ConvF(5.34, 5.34, 5.34); Calibrated: 2019-07-23;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1417; Calibrated: 2020-02-26
- Phantom: SAM with CRP v5.0_Front
- Measurement SW: DASY52, Version 52.10 (4);

WCDMA1700 Body Bottom 1412ch/Area Scan (6x9x1): Measurement grid: dx=15mm, dy=15mm
 Maximum value of SAR (measured) = 0.572 W/kg

WCDMA1700 Body Bottom 1412ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
 Reference Value = 23.75 V/m; Power Drift = 0.03 dB
 Peak SAR (extrapolated) = 0.997 W/kg
SAR(1 g) = 0.604 W/kg; SAR(10 g) = 0.331 W/kg
 Maximum value of SAR (measured) = 0.751 W/kg



0 dB = 0.572 W/kg = -2.43 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 20.7 °C
Ambient Temperature: 20.9 °C
Test Date: 05/18/2020
Plot No.: 39

DUT: SM-N981BDS; Type: Bar

Communication System: UID 0, WCDMA1900 (0); Frequency: 1880 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 1880$ MHz; $\sigma = 1.427$ S/m; $\epsilon_r = 38.306$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

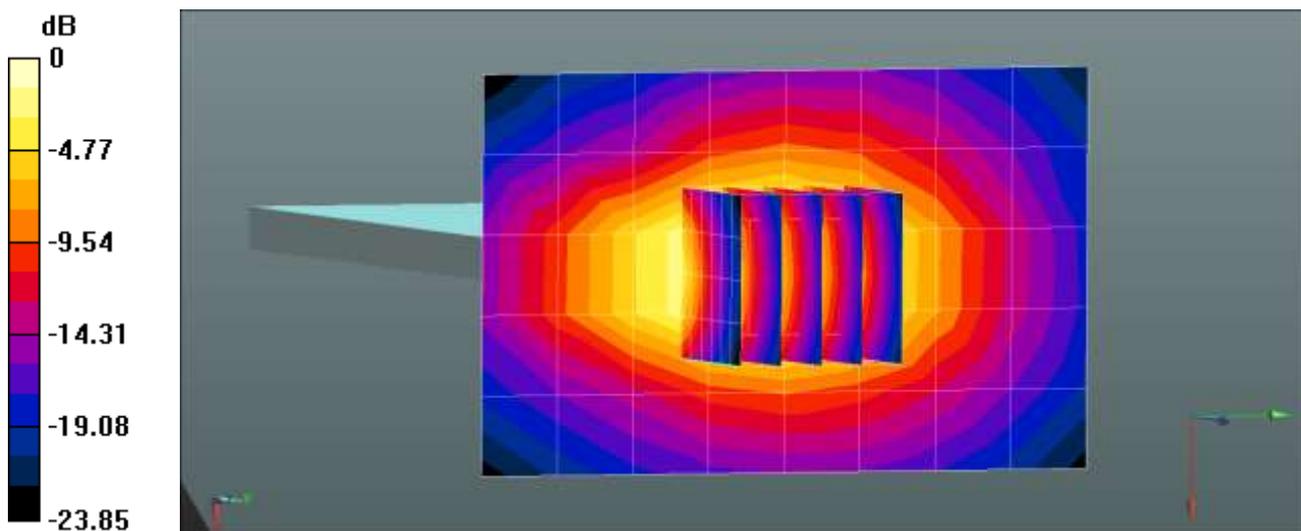
- Probe: ES3DV3 - SN3076; ConvF(5.1, 5.1, 5.1) @ 1880 MHz; Calibrated: 2019-07-23;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1417; Calibrated: 2020-02-26
- Phantom: SAM with CRP v5.0_Front
- Measurement SW: DASY52, Version 52.10 (4);

WCDMA1900 Body Bottom 9400ch/Area Scan (6x9x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.721 W/kg

WCDMA1900 Body Bottom 9400ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 27.60 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 1.42 W/kg

SAR(1 g) = 0.828 W/kg; SAR(10 g) = 0.439 W/kg
Maximum value of SAR (measured) = 1.04 W/kg



0 dB = 0.721 W/kg = -1.42 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 19.5°C
Ambient Temperature: 19.7 °C
Test Date: 06/12/2020
Plot No.: 40

DUT: SM-N981BDS; Type: Bar

Communication System: UID 0, LTE2 (20MHz) (0); Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.386 \text{ S/m}$; $\epsilon_r = 39.975$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3797; ; Calibrated: 2019-11-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn446; Calibrated: 2019-07-18
- Phantom: SAM_Left_20170913
- Measurement SW: DASY52, Version 52.10 (4);

LTE Band 2 Body Bottom QPSK 20MHz 50RB 0offset 18900ch/Area Scan (6x8x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (measured) = 1.51 W/kg

LTE Band 2 Body Bottom QPSK 20MHz 50RB 0offset 18900ch/Zoom Scan (5x5x7)/Cube 0:

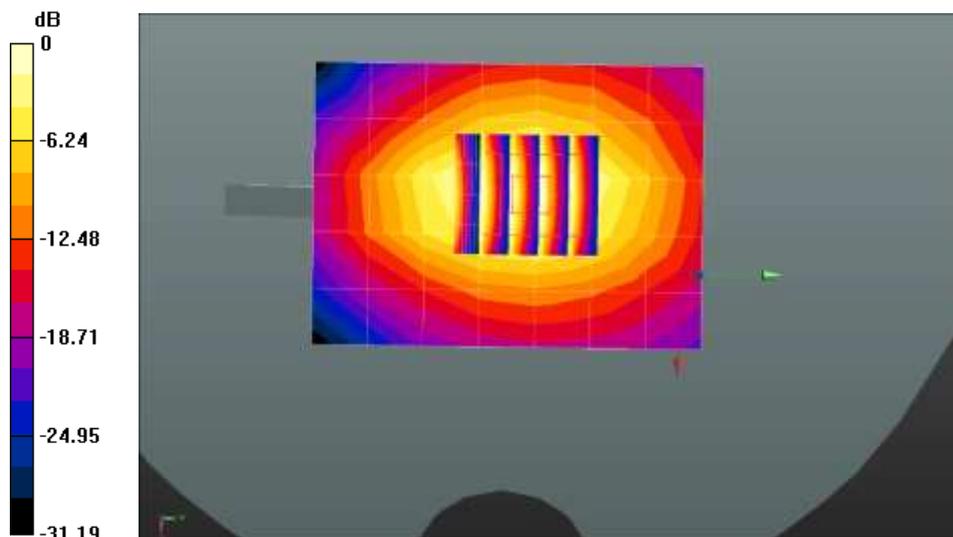
Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 35.48 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 2.13 W/kg

SAR(1 g) = 1.12 W/kg; SAR(10 g) = 0.585 W/kg

Maximum value of SAR (measured) = 1.74 W/kg



0 dB = 1.51 W/kg = 1.79 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 19.8 °C
Ambient Temperature: 20.0 °C
Test Date: 06/15/2020
Plot No.: 41

DUT: SM-N981BDS; Type: Bar

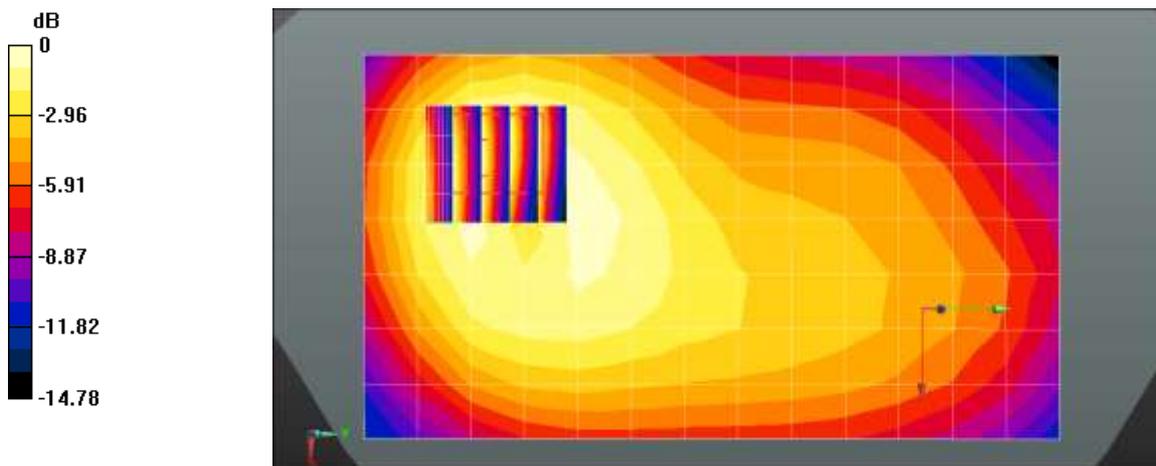
Communication System: UID 0, LTE Band 5 (0); Frequency: 836.5 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 836.5$ MHz; $\sigma = 0.908$ S/m; $\epsilon_r = 42.35$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: ET3DV6 - SN1630; ConvF(6.96, 6.96, 6.96) @ 836.5 MHz; Calibrated: 2020-02-26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2019-09-04
- Phantom: SAM with CRP v5.0_2020_06_09
- Measurement SW: DASY52, Version 52.10 (4);

LTE band 5 Body Rear QPSK 10MHz 1RB 0offset 20525ch/Area Scan (8x14x1): Measurement grid:
dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.667 W/kg

LTE band 5 Body Rear QPSK 10MHz 1RB 0offset 20525ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.05 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 1.08 W/kg
SAR(1 g) = 0.617 W/kg; SAR(10 g) = 0.355 W/kg
Maximum value of SAR (measured) = 0.683 W/kg



$$0 \text{ dB} = 0.683 \text{ W/kg} = -1.66 \text{ dBW/kg}$$

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 20.4 °C
Ambient Temperature: 20.6 °C
Test Date: 05/15/2020
Plot No.: 42

DUT: SM-N981BDS; Type: Bar

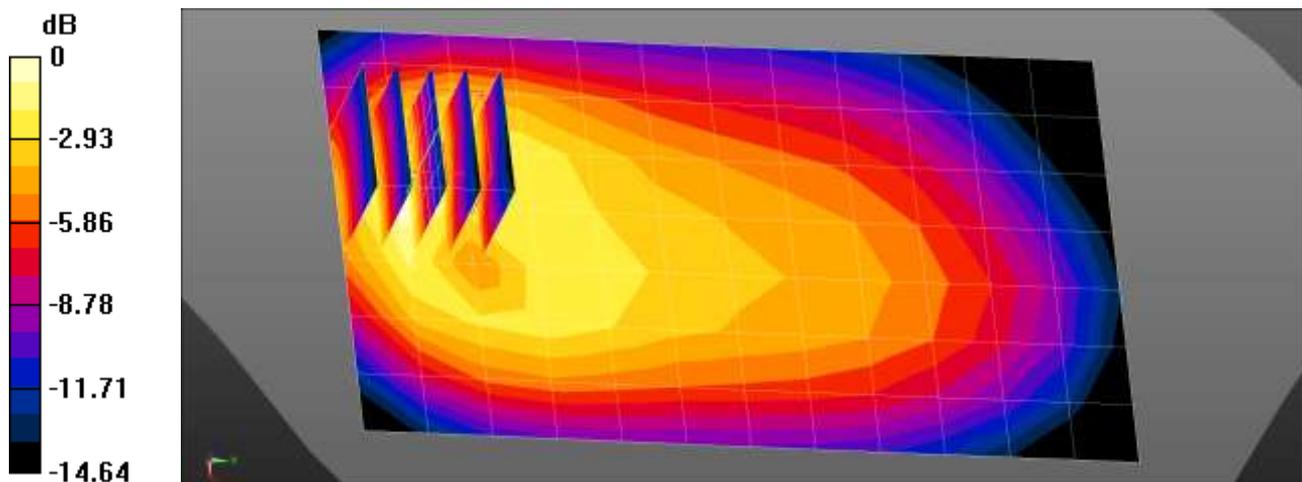
Communication System: UID 0, LTE Band 12 (0); Frequency: 707.5 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 707.5$ MHz; $\sigma = 0.86$ S/m; $\epsilon_r = 42.559$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3076; ConvF(6.52, 6.52, 6.52); Calibrated: 2019-07-23;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1417; Calibrated: 2020-02-26
- Phantom: SAM with CRP v5.0_Right
- Measurement SW: DASY52, Version 52.10 (4);

LTE Band12 Body Rear QPSK 10MHz 1RB 0offset 23095ch/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.242 W/kg

LTE Band12 Body Rear QPSK 10MHz 1RB 0offset 23095ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.45 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.382 W/kg
SAR(1 g) = 0.212 W/kg; SAR(10 g) = 0.121 W/kg
Maximum value of SAR (measured) = 0.255 W/kg



0 dB = 0.255 W/kg = -5.93 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 20.4 °C
Ambient Temperature: 20.6 °C
Test Date: 05/15/2020
Plot No.: 43

DUT: SM-N981BDS; Type: Bar

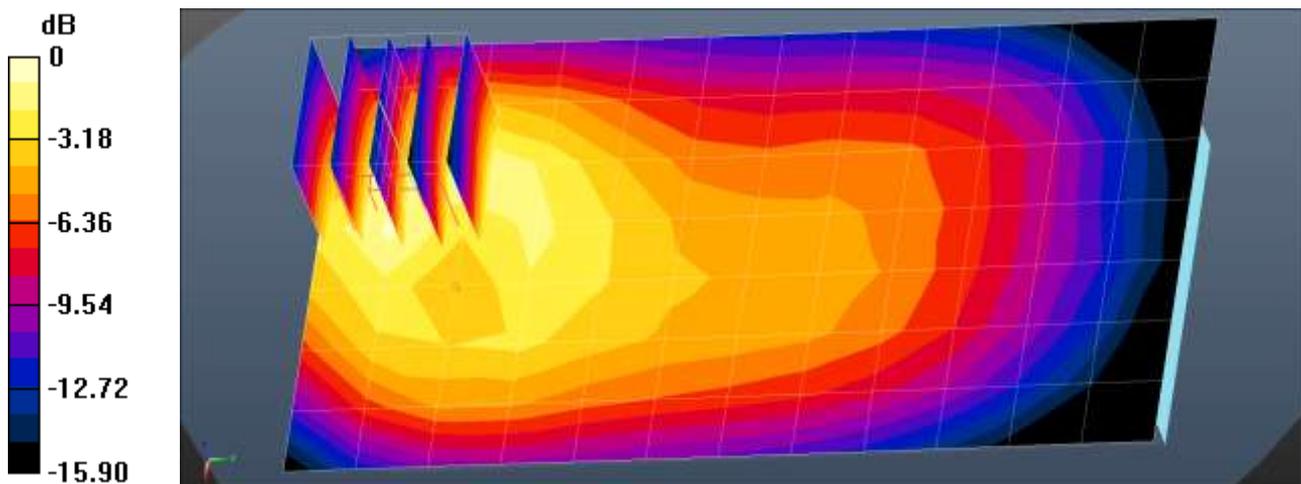
Communication System: UID 0, LTE Band 13 (0); Frequency: 782 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 782 \text{ MHz}$; $\sigma = 0.901 \text{ S/m}$; $\epsilon_r = 41.57$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3076; ConvF(6.52, 6.52, 6.52); Calibrated: 2019-07-23;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1417; Calibrated: 2020-02-26
- Phantom: SAM with CRP v5.0_Right
- Measurement SW: DASY52, Version 52.10 (4);

LTE Band13 Body Rear QPSK 10MHz 1RB 49offset 23230ch/Area Scan (8x13x1): Measurement grid:
 $dx=15\text{mm}$, $dy=15\text{mm}$
Maximum value of SAR (measured) = 0.217 W/kg

LTE Band13 Body Rear QPSK 10MHz 1RB 49offset 23230ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$
Reference Value = 9.989 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.362 W/kg
SAR(1 g) = 0.198 W/kg; SAR(10 g) = 0.111 W/kg
Maximum value of SAR (measured) = 0.246 W/kg



Test Laboratory: HCT CO., LTD
 EUT Type: Mobile Phone
 Liquid Temperature: 20.2 °C
 Ambient Temperature: 20.4 °C
 Test Date: 05/18/2020
 Plot No.: 44

DUT: SM-N981BDS; Type: Bar

Communication System: UID 0, LTE Band25 (0); Frequency: 1882.5 MHz; Duty Cycle: 1:1
 Medium parameters used (interpolated): $f = 1882.5 \text{ MHz}$; $\sigma = 1.373 \text{ S/m}$; $\epsilon_r = 39.075$; $\rho = 1000 \text{ kg/m}^3$
 Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3903; ConvF(8.31, 8.31, 8.31) @ 1882.5 MHz; Calibrated: 2020-03-25
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2019-09-19
- Phantom: Twin-SAM V8.0_20171017 (Right1)
- Measurement SW: DASY52, Version 52.10 (4);

LTE Band 25 Body Bottom 20MHz QPSK 1RB 0offset 26365ch/Area Scan (6x9x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (measured) = 1.21 W/kg

LTE Band 25 Body Bottom 20MHz QPSK 1RB 0offset 26365ch/Zoom Scan (5x5x7)/Cube 0:

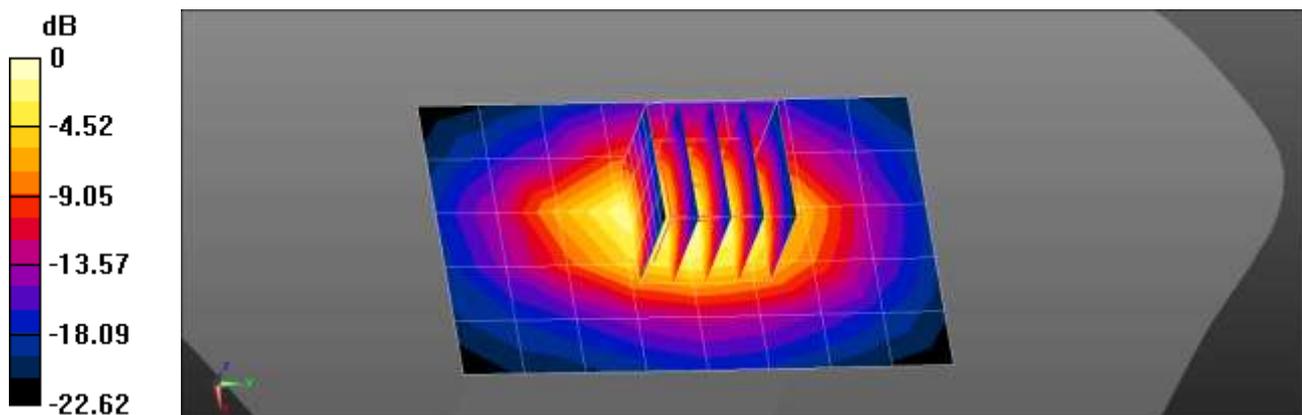
Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 31.08 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 1.61 W/kg

SAR(1 g) = 0.884 W/kg; SAR(10 g) = 0.462 W/kg

Maximum value of SAR (measured) = 1.35 W/kg



0 dB = 1.21 W/kg = 0.82 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 20.4 °C
Ambient Temperature: 20.5 °C
Test Date: 05/14/2020
Plot No.: 45

DUT: SM-N981BDS; Type: Bar

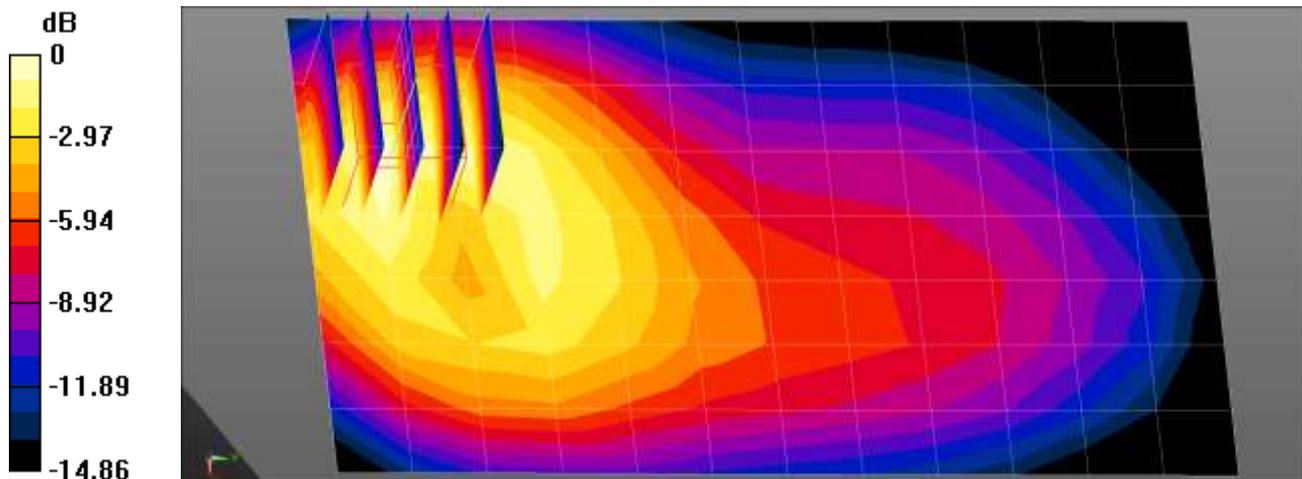
Communication System: UID 0, LTE Band 26 (0); Frequency: 831.5 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 831.5$ MHz; $\sigma = 0.926$ S/m; $\epsilon_r = 42.568$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3076; ConvF(6.22, 6.22, 6.22); Calibrated: 2019-07-23;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1417; Calibrated: 2020-02-26
- Phantom: SAM with CRP v5.0_Right
- Measurement SW: DASY52, Version 52.10 (4);

LTE Band26 Body Rear QPSK 15MHz 1RB 0offset 26865ch/Area Scan (8x13x1): Measurement grid:
dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.635 W/kg

LTE Band26 Body Rear QPSK 15MHz 1RB 0offset 26865ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.63 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.943 W/kg
SAR(1 g) = 0.549 W/kg; SAR(10 g) = 0.320 W/kg
Maximum value of SAR (measured) = 0.662 W/kg



0 dB = 0.662 W/kg = -1.79 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 21.4 °C
Ambient Temperature: 21.5 °C
Test Date: 05/25/2020
Plot No.: 46

DUT: SM-N981BDS; Type: Bar

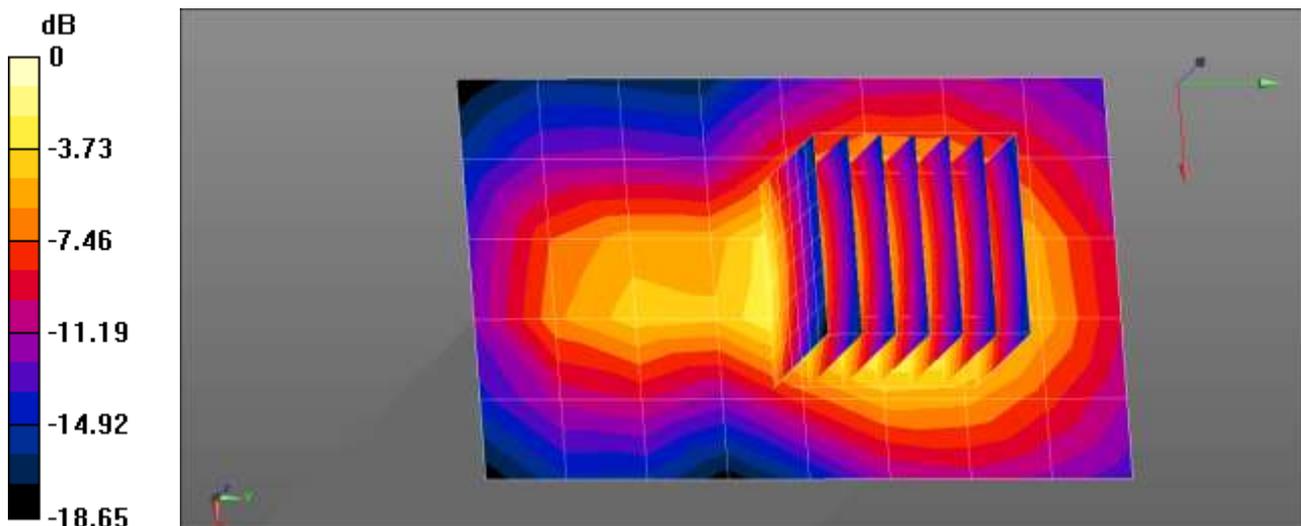
Communication System: UID 0, LTE Band41 (0); Frequency: 2593 MHz; Duty Cycle: 1:1.58016
Medium parameters used (interpolated): $f = 2593$ MHz; $\sigma = 1.948$ S/m; $\epsilon_r = 37.873$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3903; ConvF(7.49, 7.49, 7.49) @ 2593 MHz; Calibrated: 2020-03-25
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2019-09-19
- Phantom: Twin-SAM V4.0 (20deg probe tilt)_1588_20200429
- Measurement SW: DASY52, Version 52.10 (4);

LTE Band41 Body Bottom QPSK 20MHz 50RB 0offset 40620ch PC2/Area Scan (6x9x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.777 W/kg

LTE Band41 Body Bottom QPSK 20MHz 50RB 0offset 40620ch PC2/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 18.98 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 1.12 W/kg
SAR(1 g) = 0.540 W/kg; SAR(10 g) = 0.256 W/kg
Maximum value of SAR (measured) = 0.897 W/kg



0 dB = 0.777 W/kg = -1.09 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 20.2 °C
Ambient Temperature: 20.4 °C
Test Date: 05/18/2020
Plot No.: 47

DUT: SM-N981BDS; Type: Bar

Communication System: UID 0, LTE Band66 (0); Frequency: 1770 MHz;Duty Cycle: 1:1
Medium parameters used: $f = 1770$ MHz; $\sigma = 1.357$ S/m; $\epsilon_r = 40.224$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3903; ConvF(8.62, 8.62, 8.62) @ 1770 MHz; Calibrated: 2020-03-25
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2019-09-19
- Phantom: Twin-SAM V8.0_20171017 (Right1)
- Measurement SW: DASY52, Version 52.10 (4);

LTE Band 66 Body Bottom 20MHz QPSK 50RB 0offset 132572ch/Area Scan (6x9x1): Measurement grid:
dx=15mm, dy=15mm

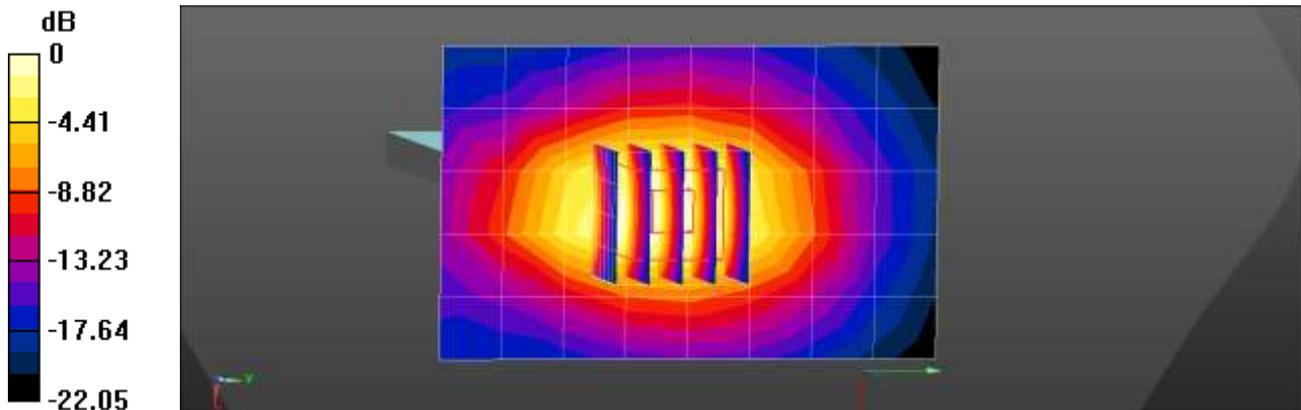
Maximum value of SAR (measured) = 1.01 W/kg

LTE Band 66 Body Bottom 20MHz QPSK 50RB 0offset 132572ch/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 30.94 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 1.55 W/kg

SAR(1 g) = 0.884 W/kg; SAR(10 g) = 0.479 W/kg

Maximum value of SAR (measured) = 1.31 W/kg



Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 21.2 °C
Ambient Temperature: 21.4 °C
Test Date: 06/03/2020
Plot No.: 48

DUT: SM-N981BDS; Type: Bar

Communication System: UID 0, 2450MHz FCC (0); Frequency: 2412 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 2412$ MHz; $\sigma = 1.759$ S/m; $\epsilon_r = 39.933$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3903; ConvF(7.65, 7.65, 7.65) @ 2412 MHz; Calibrated: 2020-03-25
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2019-09-19
- Phantom: Twin-SAM V4.0 (20deg probe tilt)_1588_20200429
- Measurement SW: DASY52, Version 52.10 (4);

802.11b Body Rear 1Mbps 1ch PLS 19/Area Scan (9x16x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.327 W/kg

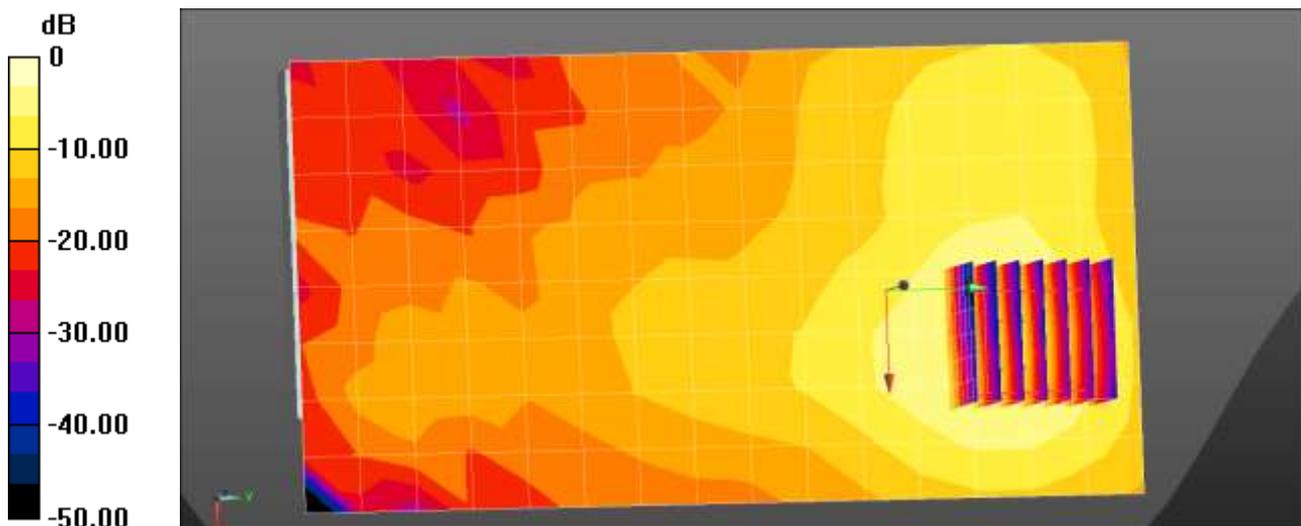
802.11b Body Rear 1Mbps 1ch PLS 19/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.481 V/m; Power Drift = -0.18 dB

Peak SAR (extrapolated) = 0.563 W/kg

SAR(1 g) = 0.218 W/kg; SAR(10 g) = 0.091 W/kg

Maximum value of SAR (measured) = 0.392 W/kg



0 dB = 0.327 W/kg = -4.85 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 19.5 °C
Ambient Temperature: 19.7 °C
Test Date: 06/11/2020
Plot No.: 49

DUT: SM-N981BDS; Type: Bar

Communication System: UID 0, 2450MHz FCC (0); Frequency: 2437 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 1.793$ S/m; $\epsilon_r = 39.935$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(7.6, 7.6, 7.6) @ 2437 MHz; Calibrated: 2019-09-27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2020-04-22
- Phantom: Twin-SAM V4.0(Left-Left)
- Measurement SW: DASY52, Version 52.10 (4);

802.11b Body Top 1Mbps 6ch/Area Scan (7x10x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.21 W/kg

802.11b Body Top 1Mbps 6ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 12.39 V/m; Power Drift = 0.06 dB

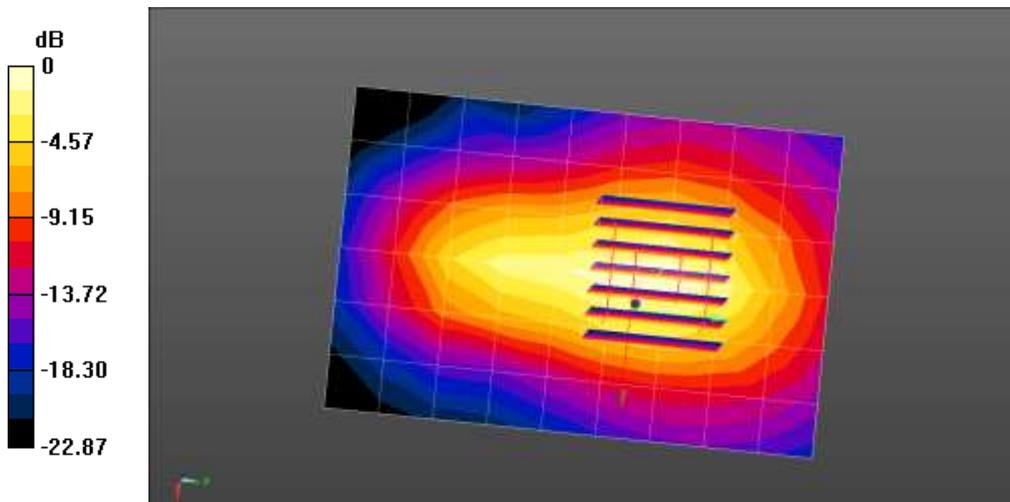
Peak SAR (extrapolated) = 0.425 W/kg

SAR(1 g) = 0.204 W/kg; SAR(10 g) = 0.098 W/kg

Smallest distance from peaks to all points 3 dB below = 10.4 mm

Ratio of SAR at M2 to SAR at M1 = 47.7%

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



0 dB = 0.339 W/kg = -4.70 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 20.8 °C
Ambient Temperature: 21.0 °C
Test Date: 06/10/2020
Plot No.: 50

DUT: SM-N981BDS; Type: Bar

Communication System: UID 0, WIFI 5GHz (0); Frequency: 5825 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 5825$ MHz; $\sigma = 5.246$ S/m; $\epsilon_r = 36.194$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3968; ConvF(5.1, 5.1, 5.1) Calibrated: 2019-09-27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2020-04-22
- Phantom: Twin-SAM V4.0 (Left-Right)
- Measurement SW: DASY52, Version 52.10 (4);

802.11a Body Rear 6Mbps 165ch/Area Scan (11x19x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.898 W/kg

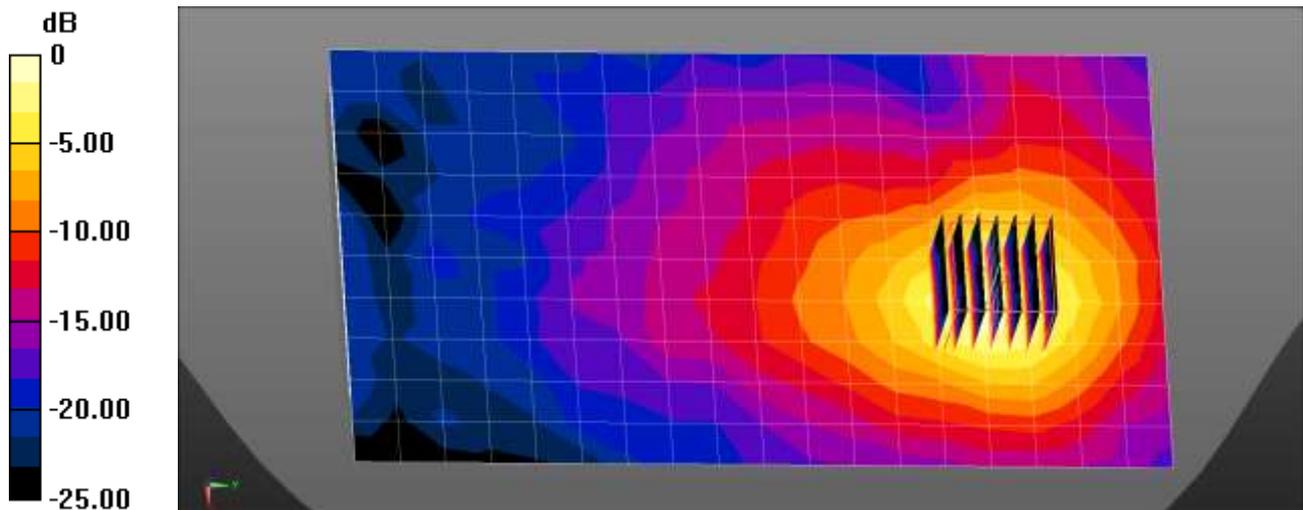
802.11a Body Rear 6Mbps 165ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 2.781 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 1.66 W/kg

SAR(1 g) = 0.358 W/kg; SAR(10 g) = 0.127 W/kg

Maximum value of SAR (measured) = 0.872 W/kg



0 dB = 0.872 W/kg = -0.59 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 20.8 °C
Ambient Temperature: 21.0 °C
Test Date: 06/10/2020
Plot No.: 51

DUT: SM-N981BDS; Type: Bar

Communication System: UID 0, WIFI 5GHz (0); Frequency: 5775 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 5775$ MHz; $\sigma = 5.202$ S/m; $\epsilon_r = 36.344$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; Calibrated: 2019-09-27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2020-04-22
- Phantom: Twin-SAM V4.0 (Left-Right)
- Measurement SW: DASY52, Version 52.10 (4)

802.11ac80 Body Rear MCS 0 155ch/Area Scan (10x20x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.288 W/kg

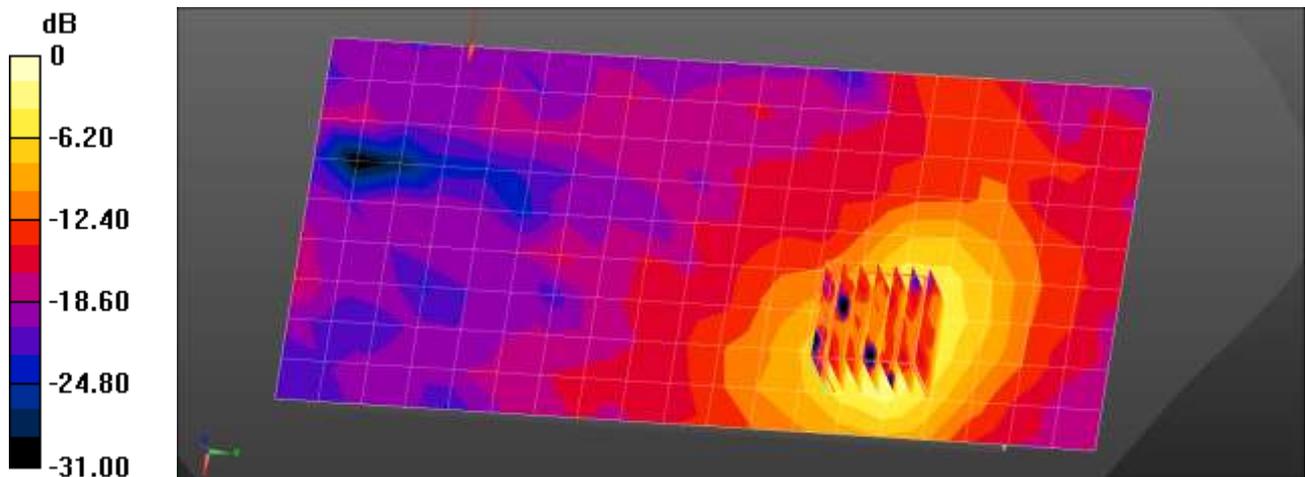
802.11ac80 Body Rear MCS 0 155ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 0.9590 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 0.584 W/kg

SAR(1 g) = 0.119 W/kg; SAR(10 g) = 0.038 W/kg

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



0 dB = 0.288 W/kg = -5.41 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 21.2 °C
Ambient Temperature: 21.4 °C
Test Date: 05/26/2020
Plot No.: 52

DUT: SM-N981BDS; Type: Bar

Communication System: UID 0, Bluetooth (0); Frequency: 2480 MHz; Duty Cycle: 1:1.3
Medium parameters used: $f = 2480$ MHz; $\sigma = 1.828$ S/m; $\epsilon_r = 38.281$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3968; ConvF(7.6, 7.6, 7.6) @ 2480 MHz; Calibrated: 2019-09-27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2020-04-22
- Phantom: Twin-SAM V4.0 (20deg probe tilt)_1588_20200429
- Measurement SW: DASY52, Version 52.10 (4);

Bluetooth Body Top DH5 78ch/Area Scan (7x10x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.350 W/kg

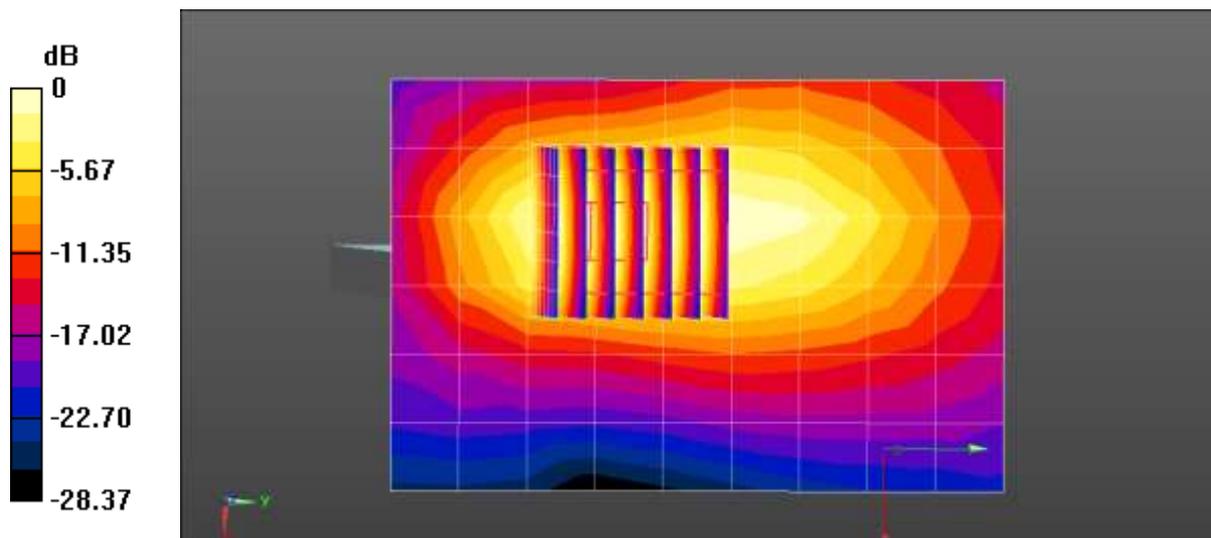
Bluetooth Body Top DH5 78ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.55 V/m; Power Drift = 0.14 dB

Peak SAR (extrapolated) = 0.516 W/kg

SAR(1 g) = 0.213 W/kg; SAR(10 g) = 0.102 W/kg

Maximum value of SAR (measured) = 0.373 W/kg



0 dB = 0.373 W/kg = -4.28 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 20.3 °C
Ambient Temperature: 20.5 °C
Test Date: 05/27/2020
Plot No.: 53

DUT: SM-N981BDS; Type: Bar

Communication System: UID 0, GSM 1900 3TX (0); Frequency: 1880 MHz; Duty Cycle: 1:2.77013
Medium parameters used: $f = 1880$ MHz; $\sigma = 1.426$ S/m; $\epsilon_r = 39.257$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3797; ConvF(7.75, 7.75, 7.75) @ 1880 MHz; Calibrated: 2019-11-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn446; Calibrated: 2019-07-18
- Phantom: SAM_Left_20170913
- Measurement SW: DASY52, Version 52.10 (4);

GSM 1900 Body Bottom 3Tx 661ch/Area Scan (6x9x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 2.49 W/kg

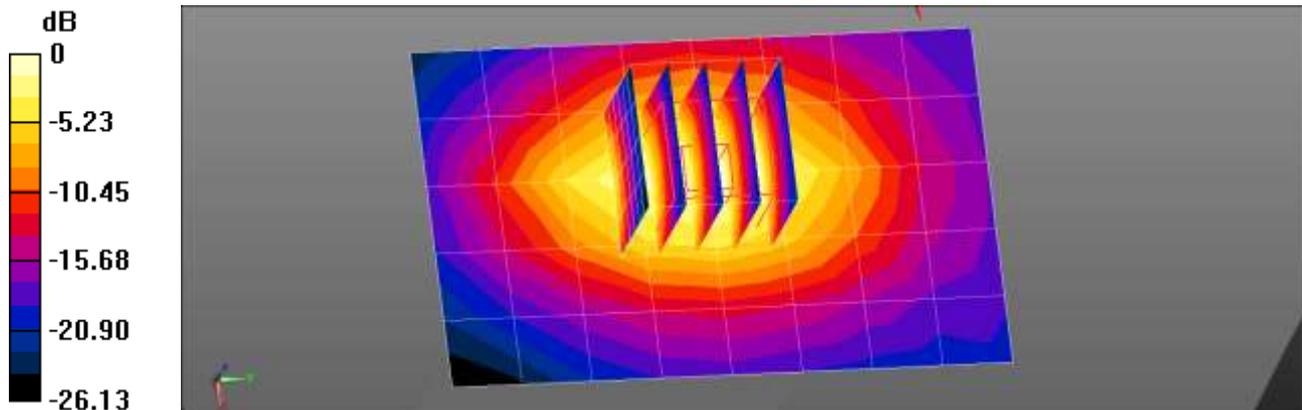
GSM 1900 Body Bottom 3Tx 661ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 38.81 V/m; Power Drift = 0.14 dB

Peak SAR (extrapolated) = 2.97 W/kg

SAR(1 g) = 1.63 W/kg; SAR(10 g) = 0.863 W/kg

Maximum value of SAR (measured) = 2.46 W/kg



0 dB = 2.49 W/kg = 3.97 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 20.7 °C
Ambient Temperature: 20.8 °C
Test Date: 05/19/2020
Plot No.: 54

DUT: SM-N981BDS; Type: Bar

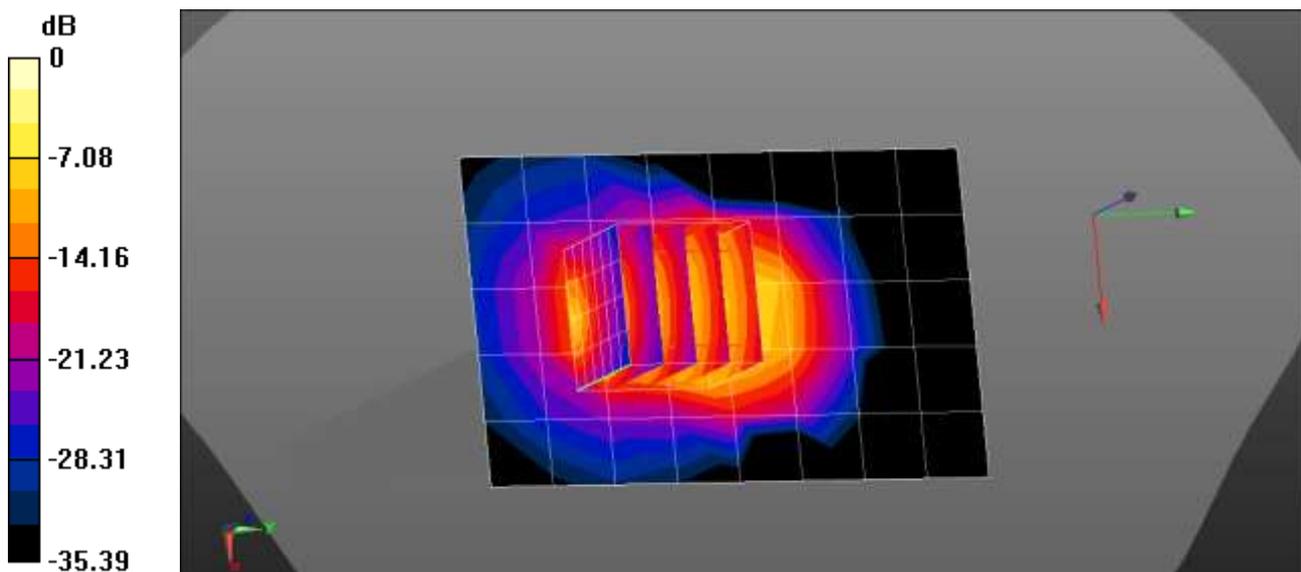
Communication System: UID 0, WCDMA IV (0); Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 1732.4$ MHz; $\sigma = 1.315$ S/m; $\epsilon_r = 40.208$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3076; ConvF(5.34, 5.34, 5.34); Calibrated: 2019-07-23;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1417; Calibrated: 2020-02-26
- Phantom: SAM with CRP v5.0_Front
- Measurement SW: DASY52, Version 52.10 (4);

WCDMA1700 Body Bottom 1412ch back off 0mm/Area Scan (6x9x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.60 W/kg

WCDMA1700 Body Bottom 1412ch back off 0mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 47.30 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 9.37 W/kg
SAR(1 g) = 3.09 W/kg; SAR(10 g) = 1.24 W/kg
Maximum value of SAR (measured) = 5.10 W/kg



0 dB = 5.10 W/kg = 7.08 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 20.7 °C
Ambient Temperature: 20.9 °C
Test Date: 05/18/2020
Plot No.: 55

DUT: SM-N981BDS; Type: Bar

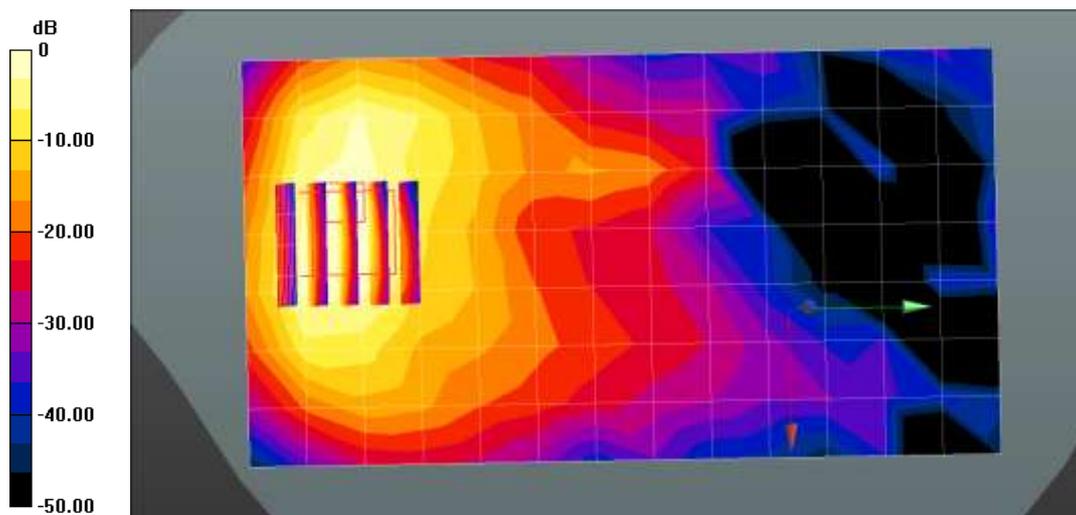
Communication System: UID 0, WCDMA1900 (0); Frequency: 1880 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.427 \text{ S/m}$; $\epsilon_r = 38.306$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3076; ; Calibrated: 2019-07-23
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1417; Calibrated: 2020-02-26
- Phantom: SAM with CRP v5.0_Front
- Measurement SW: DASY52, Version 52.10 (4);

WCDMA1900 Body Rear 9400ch Back off 0mm/Area Scan (8x14x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
Maximum value of SAR (measured) = 1.85 W/kg

WCDMA1900 Body Rear 9400ch Back off 0mm/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$
Reference Value = 2.203 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 5.35 W/kg
SAR(1 g) = 1.96 W/kg; SAR(10 g) = 0.955 W/kg
Maximum value of SAR (measured) = 3.09 W/kg



0 dB = 1.85 W/kg = 2.67 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 20.1 °C
Ambient Temperature: 20.3 °C
Test Date: 06/15/2020
Plot No.: 56

DUT: SM-N981B; Type: Bar

Communication System: UID 0, LTE2 (20MHz) (0); Frequency: 1880 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.318 \text{ S/m}$; $\epsilon_r = 39.354$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3797; ; Calibrated: 2019-11-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn446; Calibrated: 2019-07-18
- Phantom: SAM_Left_20170913
- Measurement SW: DASY52, Version 52.10 (4);

LTE Band 2 Body Bottom QPSK 20MHz 1RB 0offset 18900ch/Area Scan (7x8x1): Measurement grid:

$dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (measured) = 3.12 W/kg

LTE Band 2 Body Bottom QPSK 20MHz 1RB 0offset 18900ch/Zoom Scan (5x5x7)/Cube 0: Measurement

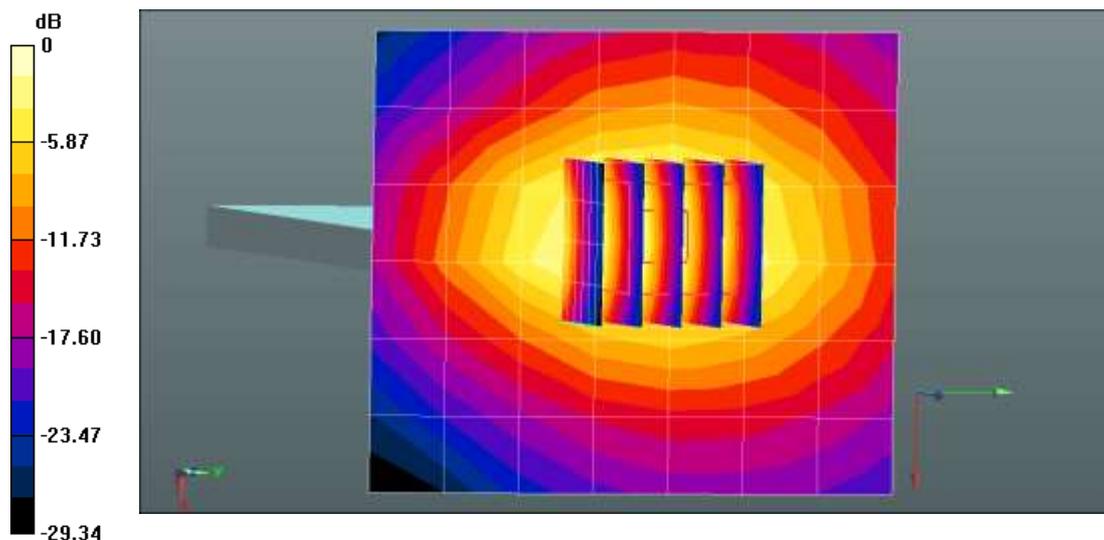
grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 49.67 V/m; Power Drift = 0.14 dB

Peak SAR (extrapolated) = 4.33 W/kg

SAR(1 g) = 2.33 W/kg; SAR(10 g) = 1.24 W/kg

Maximum value of SAR (measured) = 3.58 W/kg



0 dB = 3.12 W/kg = 4.94 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 19.9 °C
Ambient Temperature: 20.0 °C
Test Date: 05/26/2020
Plot No.: 57

DUT: SM-N981BDS; Type: Bar

Communication System: UID 0, LTE Band25 (0); Frequency: 1882.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 1882.5$ MHz; $\sigma = 1.369$ S/m; $\epsilon_r = 39.127$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

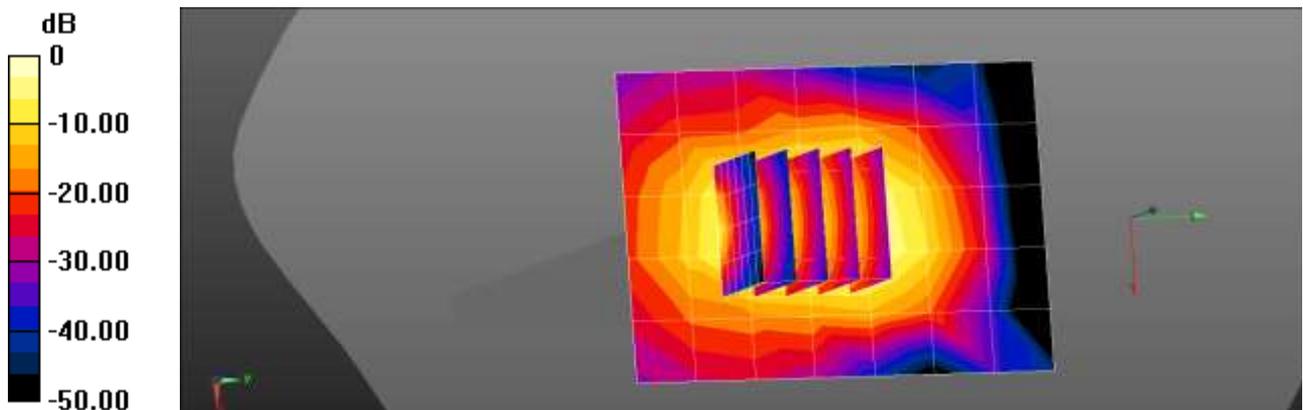
- Probe: EX3DV4 - SN3968; ConvF(8.33, 8.33, 8.33) @ 1882.5 MHz; Calibrated: 2019-09-27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2020-04-22
- Phantom: Twin-SAM V8.0_20171017 (Right1)
- Measurement SW: DASY52, Version 52.8 (8);

LTE Band 25 Body Bottom 20MHz QPSK 1RB 0offset 26365ch Grip 0mm/Area Scan (6x8x1):

Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.95 W/kg

LTE Band 25 Body Bottom 20MHz QPSK 1RB 0offset 26365ch Grip 0mm/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 55.19 V/m; Power Drift = -0.17 dB
Peak SAR (extrapolated) = 7.06 W/kg
SAR(1 g) = 2.22 W/kg; SAR(10 g) = 0.981 W/kg
Maximum value of SAR (measured) = 5.25 W/kg



0 dB = 1.95 W/kg = 2.90 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 19.9 °C
Ambient Temperature: 20.0 °C
Test Date: 05/26/2020
Plot No.: 58

DUT: SM-N981BDS; Type: Bar

Communication System: UID 0, LTE Band66 (0); Frequency: 1745 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 1745$ MHz; $\sigma = 1.315$ S/m; $\epsilon_r = 39.89$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

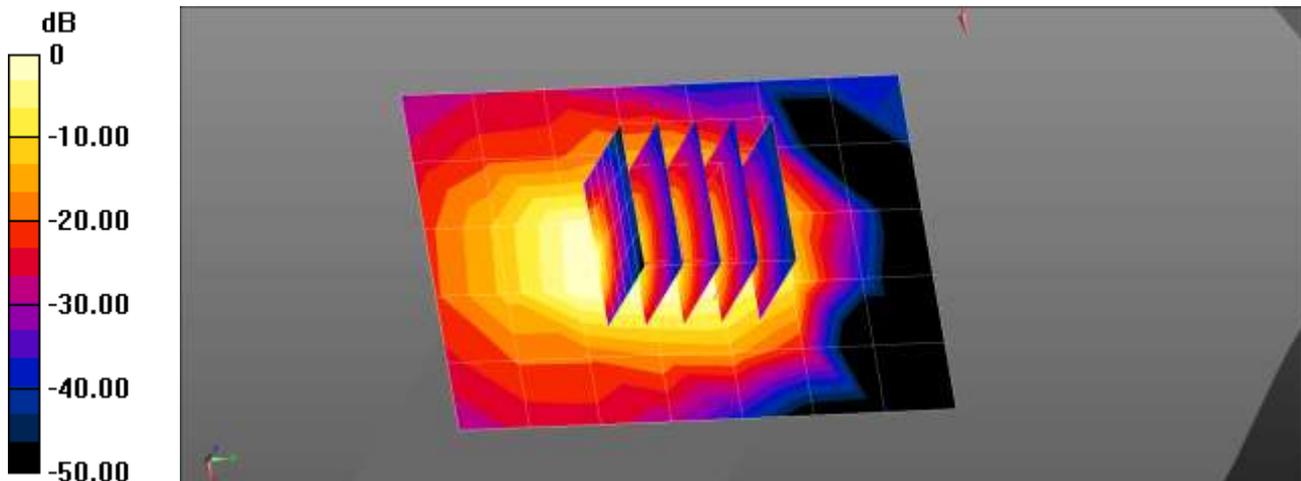
- Probe: EX3DV4 - SN3968; ConvF(8.75, 8.75, 8.75); Calibrated: 2019-09-27;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2020-04-22
- Phantom: Twin-SAM V8.0_20171017 (Right1)
- Measurement SW: DASY52, Version 52.8 (8);

LTE Band 66 Body Bottom QPSK 20MHz 1RB 0offset 132322ch Grip 0mm/Area Scan (6x8x1):

Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 2.96 W/kg

LTE Band 66 Body Bottom QPSK 20MHz 1RB 0offset 132322ch Grip 0mm/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 71.54 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 9.50 W/kg
SAR(1 g) = 3.63 W/kg; SAR(10 g) = 1.65 W/kg
Maximum value of SAR (measured) = 7.28 W/kg



0 dB = 2.96 W/kg = 4.71 dBW/kg

Test Laboratory: HCT CO., LTD
EUT Type: Mobile Phone
Liquid Temperature: 19.6 °C
Ambient Temperature: 19.7 °C
Test Date: 06/09/2020
Plot No.: 59

DUT: SM-N981BDS; Type: Bar

Communication System: UID 0, WIFI 5GHz (0); Frequency: 5260 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 5260 \text{ MHz}$; $\sigma = 4.628 \text{ S/m}$; $\epsilon_r = 37.006$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; Calibrated: 2019-09-27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2020-04-22
- Phantom: Twin-SAM V4.0 (Left-Right)
- Measurement SW: DASY52, Version 52.10 (4);

802.11a Body Rear 6Mbps 52ch/Area Scan (11x19x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$
Maximum value of SAR (measured) = 11.6 W/kg

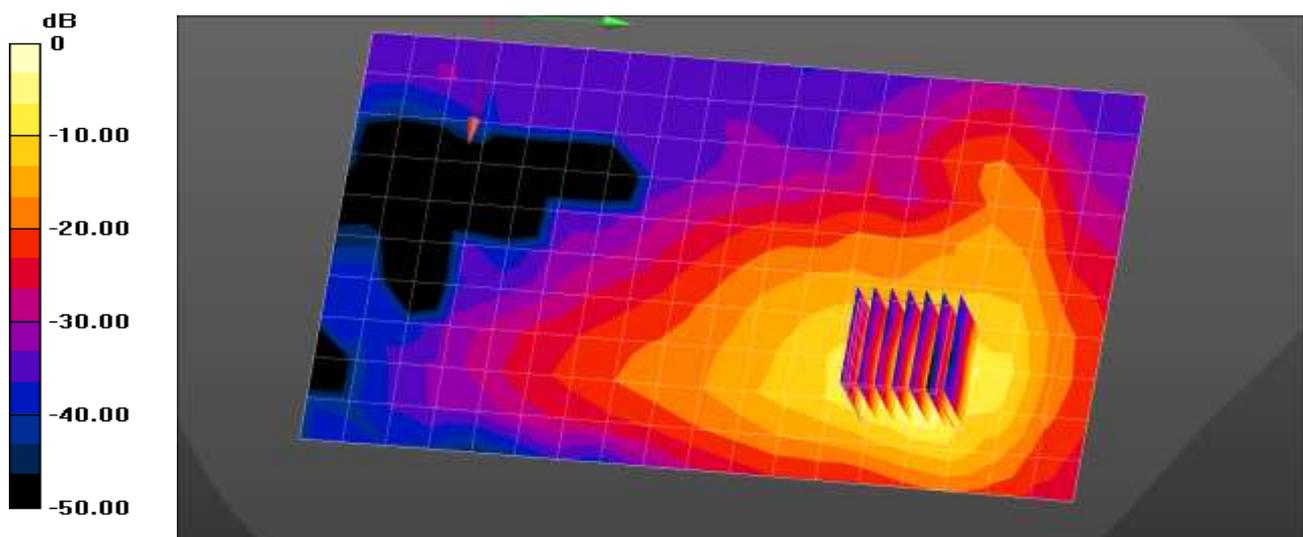
802.11a Body Rear 6Mbps 52ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$

Reference Value = 3.971 V/m; Power Drift = -0.15 dB

Peak SAR (extrapolated) = 35.2 W/kg

SAR(1 g) = 4.7 W/kg; SAR(10 g) = 1.09 W/kg

Maximum value of SAR (measured) = 17.9 W/kg



0 dB = 11.6 W/kg = 10.64 dBW/kg

Appendix C. – Dipole Verification Plots

■ **Verification Data (750 Mhz Head)**

Test Laboratory: HCT CO., LTD
 Input Power: 0.05 W
 Liquid Temp: 20.4 °C
 Test Date: 05/15/2020

DUT: Dipole 750 MHz D750V3; Type: D750V3

Communication System: UID 0, CW (0); Frequency: 750 MHz;Duty Cycle: 1:1
 Medium parameters used: $f = 750 \text{ MHz}$; $\sigma = 0.901 \text{ S/m}$; $\epsilon_r = 41.998$; $\rho = 1000 \text{ kg/m}^3$
 Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3076; ConvF(6.52, 6.52, 6.52) @ 750 MHz; Calibrated: 2019-07-23
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1417; Calibrated: 2020-02-26
- Phantom: SAM with CRP v5.0_Right
- Measurement SW: DASY52, Version 52.10 (4);

Dipole/750MHz Head Verification/Area Scan (7x14x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
 Maximum value of SAR (measured) = 0.480 W/kg

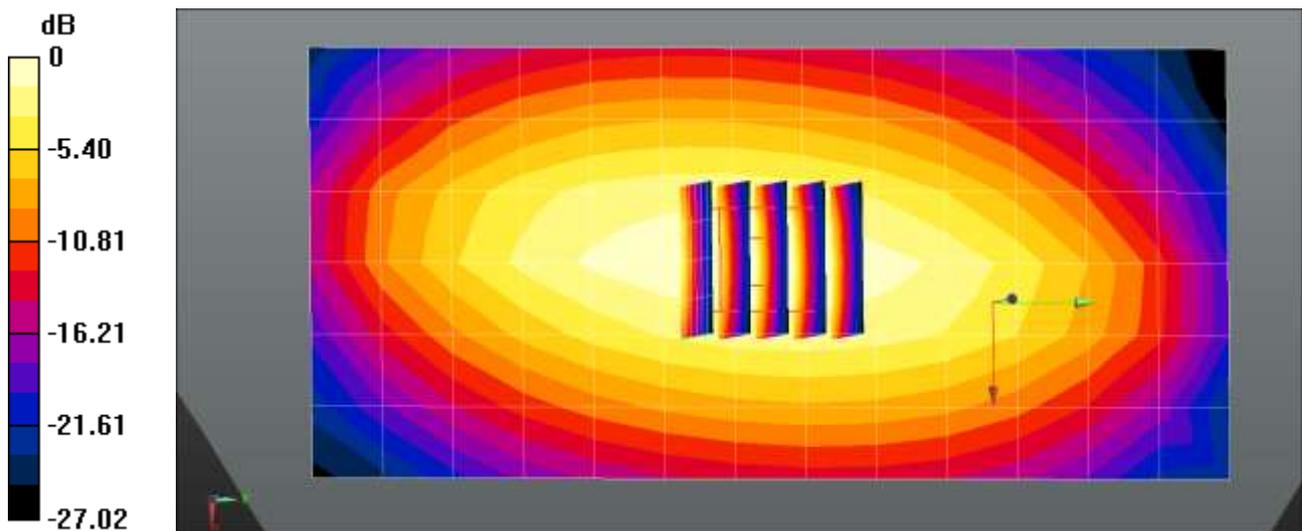
Dipole/750MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 23.86 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.621 W/kg

SAR(1 g) = 0.412 W/kg; SAR(10 g) = 0.268 W/kg

Maximum value of SAR (measured) = 0.485 W/kg



0 dB = 0.480 W/kg = -3.19 dBW/kg

■ **Verification Data (750 MHz Head)**

Test Laboratory: HCT CO., LTD
 Input Power: 0.05 W
 Liquid Temp: 20.4 °C
 Test Date: 05/15/2020

DUT: Dipole 750 MHz D750V3; Type: D750V3

Communication System: UID 0, CW (0); Frequency: 750 MHz; Duty Cycle: 1:1
 Medium parameters used: $f = 750 \text{ MHz}$; $\sigma = 0.876 \text{ S/m}$; $\epsilon_r = 42.001$; $\rho = 1000 \text{ kg/m}^3$
 Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3076; ConvF(6.52, 6.52, 6.52) @ 750 MHz; Calibrated: 2019-07-23
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1417; Calibrated: 2020-02-26
- Phantom: SAM with CRP v5.0_Right
- Measurement SW: DASY52, Version 52.10 (4);

Dipole/750MHz Head Verification/Area Scan (7x14x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
 Maximum value of SAR (measured) = 0.468 W/kg

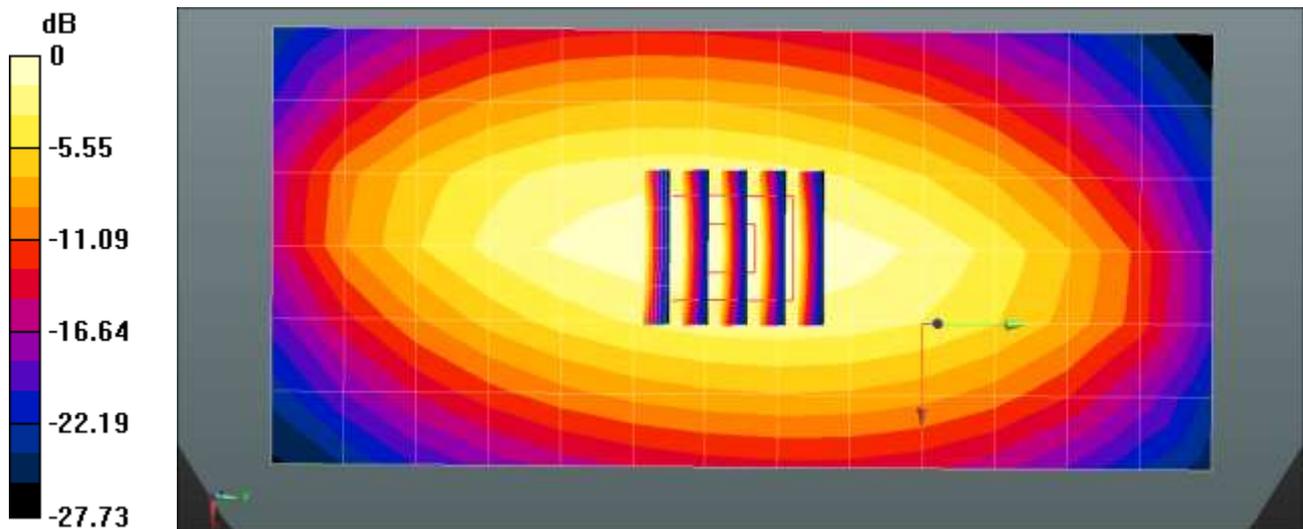
Dipole/750MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 23.88 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.603 W/kg

SAR(1 g) = 0.400 W/kg; SAR(10 g) = 0.260 W/kg

Maximum value of SAR (measured) = 0.470 W/kg



0 dB = 0.468 W/kg = -3.30 dBW/kg

■ **Verification Data (835 Mhz Head)**

Test Laboratory: HCT CO., LTD
 Input Power: 0.05 W
 Liquid Temp: 19.8 °C
 Test Date: 06/15/2020

DUT: Dipole 835 MHz D835V2; Type: D835V2

Communication System: UID 0, CW (0); Frequency: 835 MHz; Duty Cycle: 1:1
 Medium parameters used (interpolated): $f = 835 \text{ MHz}$; $\sigma = 0.906 \text{ S/m}$; $\epsilon_r = 42.362$; $\rho = 1000 \text{ kg/m}^3$
 Phantom section: Flat Section

DASY5 Configuration:

- Probe: ET3DV6 - SN1630; ConvF(6.96, 6.96, 6.96) @ 835 MHz; Calibrated: 2020-02-26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn868; Calibrated: 2019-09-04
- Phantom: SAM with CRP v5.0_2020_06_09
- Measurement SW: DASY52, Version 52.10 (4);

Dipole/835MHz Head Verification/Area Scan (6x13x1): Measurement grid: dx=15mm, dy=15mm
 Maximum value of SAR (measured) = 0.491 W/kg

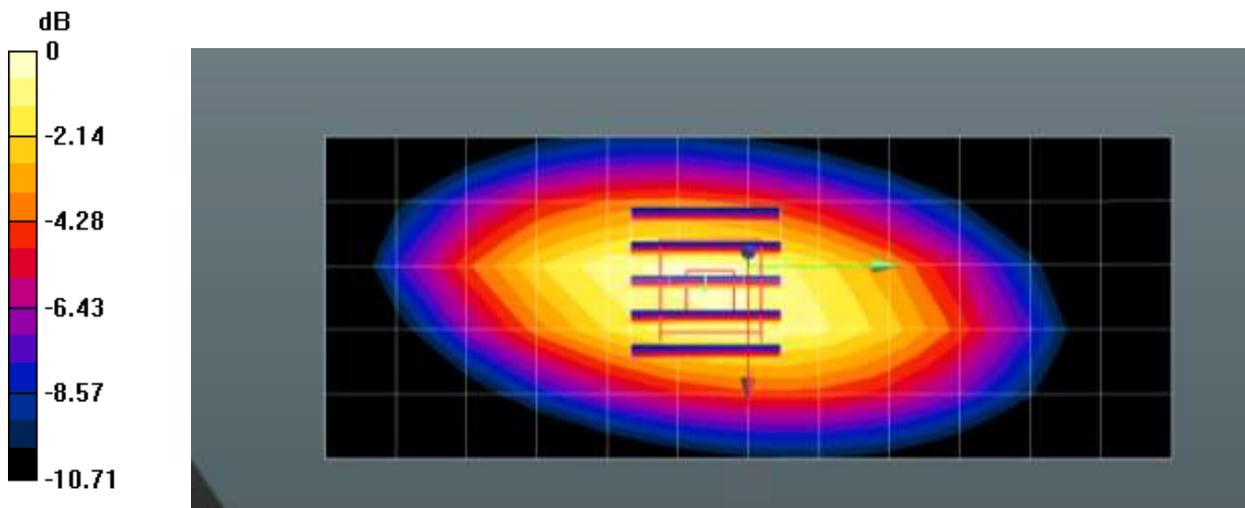
Dipole/835MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 24.93 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.733 W/kg

SAR(1 g) = 0.502 W/kg; SAR(10 g) = 0.328 W/kg

Maximum value of SAR (measured) = 0.544 W/kg



0 dB = 0.544 W/kg = -2.64 dBW/kg

■ **Verification Data (835 Mhz Head)**

Test Laboratory: HCT CO., LTD
Input Power: 0.05 W
Liquid Temp: 21.4 °C
Test Date: 05/20/2020

DUT: Dipole 835 MHz D835V2; Type: D835V2

Communication System: UID 0, CW (0); Frequency: 835 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 835 \text{ MHz}$; $\sigma = 0.923 \text{ S/m}$; $\epsilon_r = 42.843$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3968; ConvF(9.85, 9.85, 9.85) @ 835 MHz; Calibrated: 2020-03-25
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2020-04-22
- Phantom: Twin-SAM V5.0 (20deg probe tilt)
- Measurement SW: DASY52, Version 52.10 (4);

Dipole/835MHz Head Verification/Area Scan (6x14x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
Maximum value of SAR (measured) = 0.546 W/kg

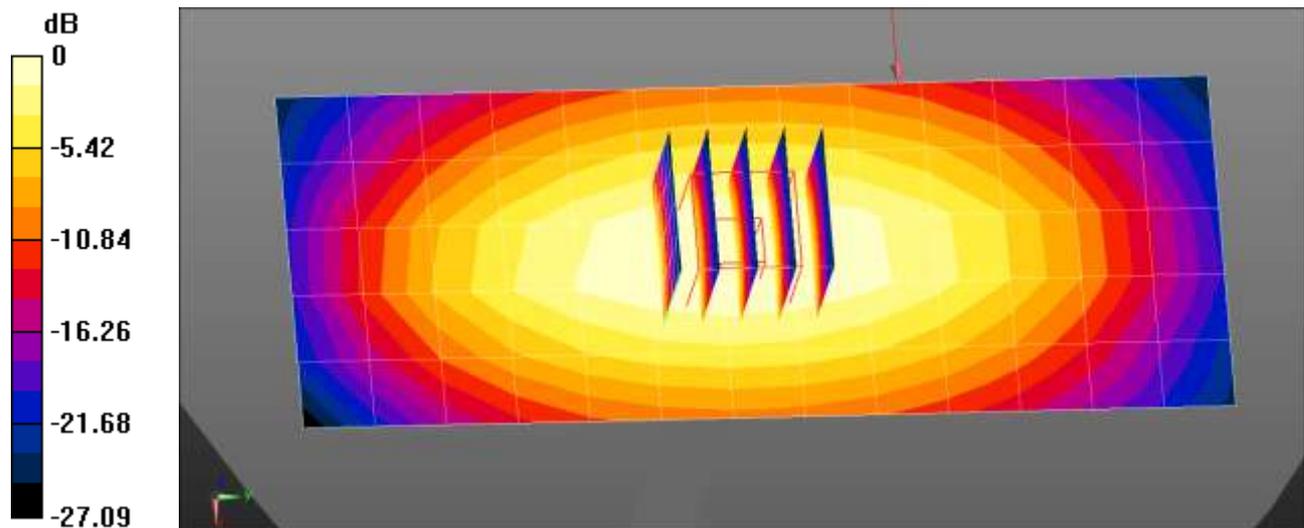
Dipole/835MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 27.11 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.718 W/kg

SAR(1 g) = 0.463 W/kg; SAR(10 g) = 0.304 W/kg

Maximum value of SAR (measured) = 0.628 W/kg



■ **Verification Data (835 Mhz Head)**

Test Laboratory: HCT CO., LTD
Input Power: 0.05 W
Liquid Temp: 20.2°C
Test Date: 05/18/2020

DUT: Dipole 835 MHz D835V2; Type: D835V2

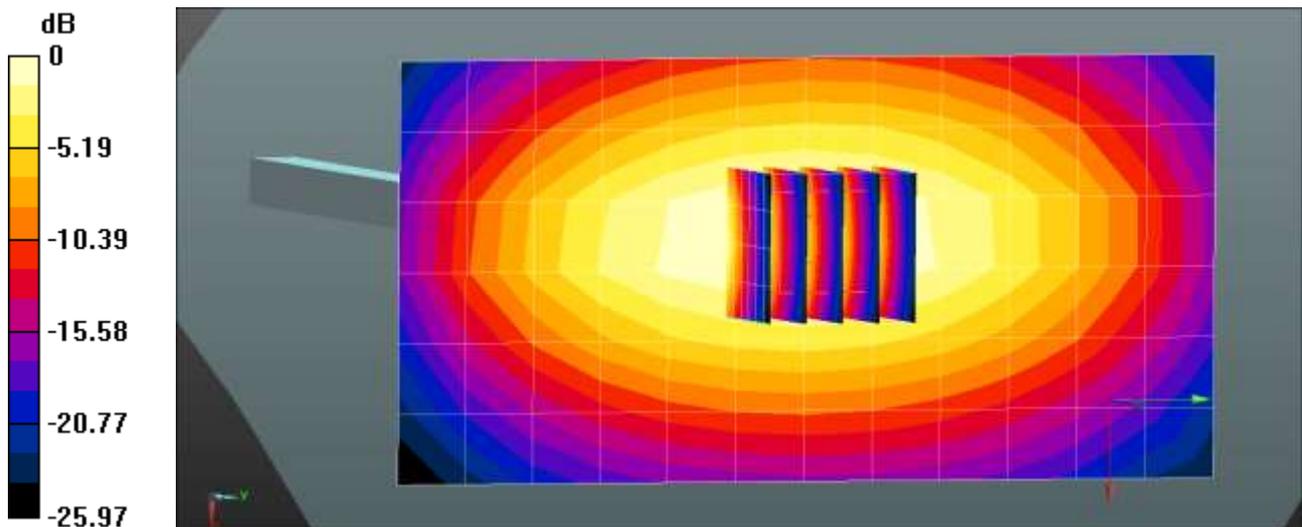
Communication System: UID 0, CW (0); Frequency: 835 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 835 \text{ MHz}$; $\sigma = 0.945 \text{ S/m}$; $\epsilon_r = 42.695$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3797; ConvF(9.03, 9.03, 9.03) @ 835 MHz; Calibrated: 2019-11-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn446; Calibrated: 2019-07-18
- Phantom: SAM_Right_20170913
- Measurement SW: DASY52, Version 52.10 (4);

Dipole/835MHz Verification(GSM 850)/Area Scan (7x13x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
Maximum value of SAR (measured) = 0.606 W/kg

Dipole/835MHz Verification(GSM 850)/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$
Reference Value = 26.41 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 0.787 W/kg
SAR(1 g) = 0.508 W/kg; SAR(10 g) = 0.333 W/kg
Maximum value of SAR (measured) = 0.686 W/kg



■ **Verification Data (835 Mhz Head)**

Test Laboratory: HCT CO., LTD
Input Power: 0.05 W
Liquid Temp: 20.4 °C
Test Date: 05/14/2020

DUT: Dipole 835 MHz D835V2; Type: D835V2

Communication System: UID 0, CW (0); Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 835 \text{ MHz}$; $\sigma = 0.929 \text{ S/m}$; $\epsilon_r = 42.526$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3076; ConvF(6.22, 6.22, 6.22) @ 835 MHz; Calibrated: 2019-07-23
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1417; Calibrated: 2020-02-26
- Phantom: SAM with CRP v5.0_Right
- Measurement SW: DASY52, Version 52.10 (4);

Dipole/835MHz Head Verification/Area Scan (5x13x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
Maximum value of SAR (measured) = 0.540 W/kg

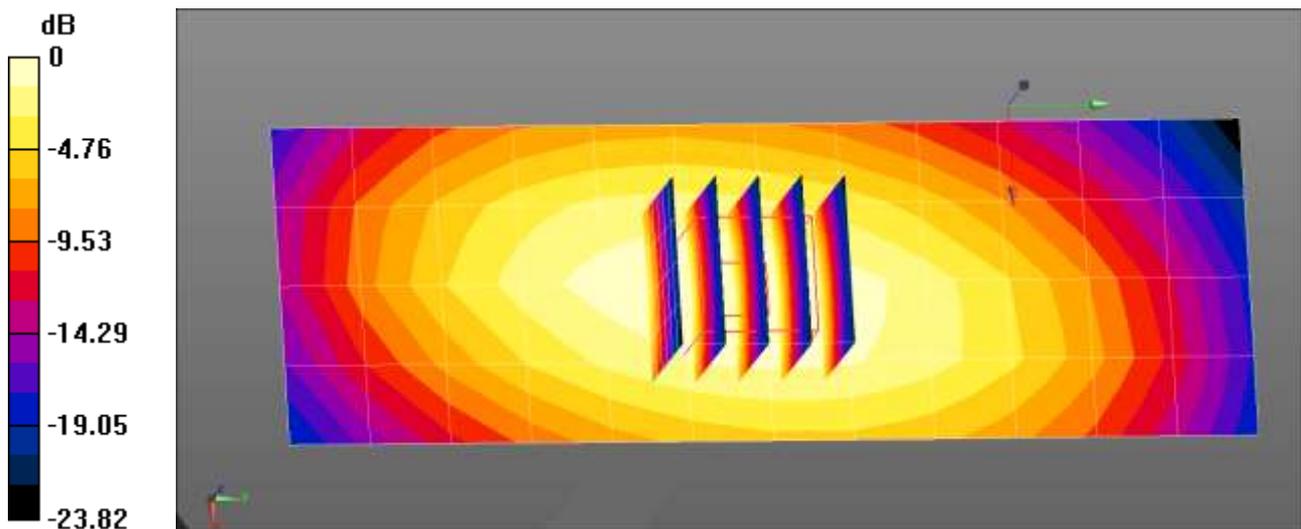
Dipole/835MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 24.39 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 0.717 W/kg

SAR(1 g) = 0.485 W/kg; SAR(10 g) = 0.321 W/kg

Maximum value of SAR (measured) = 0.566 W/kg



0 dB = 0.540 W/kg = -2.67 dBW/kg

■ **Verification Data (1 800 Mhz Head)**

Test Laboratory: HCT CO., LTD
Input Power: 0.05 W
Liquid Temp: 20.2 °C
Test Date: 05/18/2020

DUT: Dipole 1800 MHz D1800V2; Type: D1800V2

Communication System: UID 0, CW (0); Frequency: 1800 MHz;Duty Cycle: 1:1
Medium parameters used: $f = 1800$ MHz; $\sigma = 1.383$ S/m; $\epsilon_r = 40.171$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3903; ConvF(8.62, 8.62, 8.62) @ 1800 MHz; Calibrated: 2020-03-25
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2019-09-19
- Phantom: Twin-SAM V8.0_20171017 (Right1)
- Measurement SW: DASY52, Version 52.10 (4);

Dipole/1800MHz Head Verification/Area Scan (7x7x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 3.01 W/kg

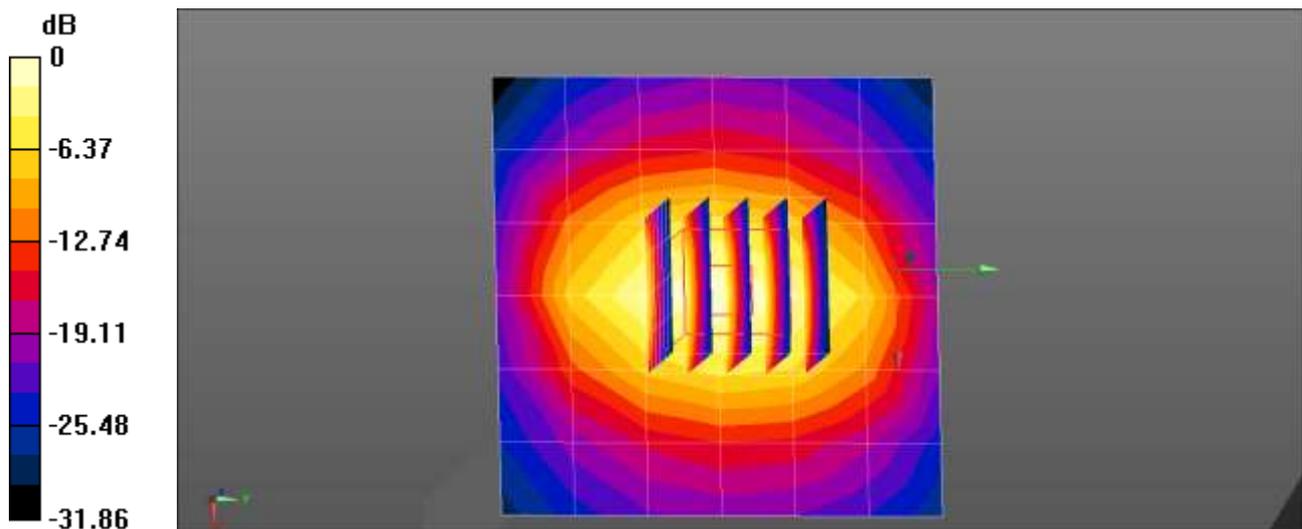
Dipole/1800MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 48.41 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 3.59 W/kg

SAR(1 g) = 1.91 W/kg; SAR(10 g) = 0.996 W/kg

Maximum value of SAR (measured) = 3.00 W/kg



0 dB = 3.01 W/kg = 4.79 dBW/kg

■ Verification Data (1 800 MHz Head)

Test Laboratory: HCT CO., LTD
Input Power: 0.05 W
Liquid Temp: 21.2 °C
Test Date: 05/15/2020

DUT: Dipole 1800 MHz D1800V2; Type: D1800V2

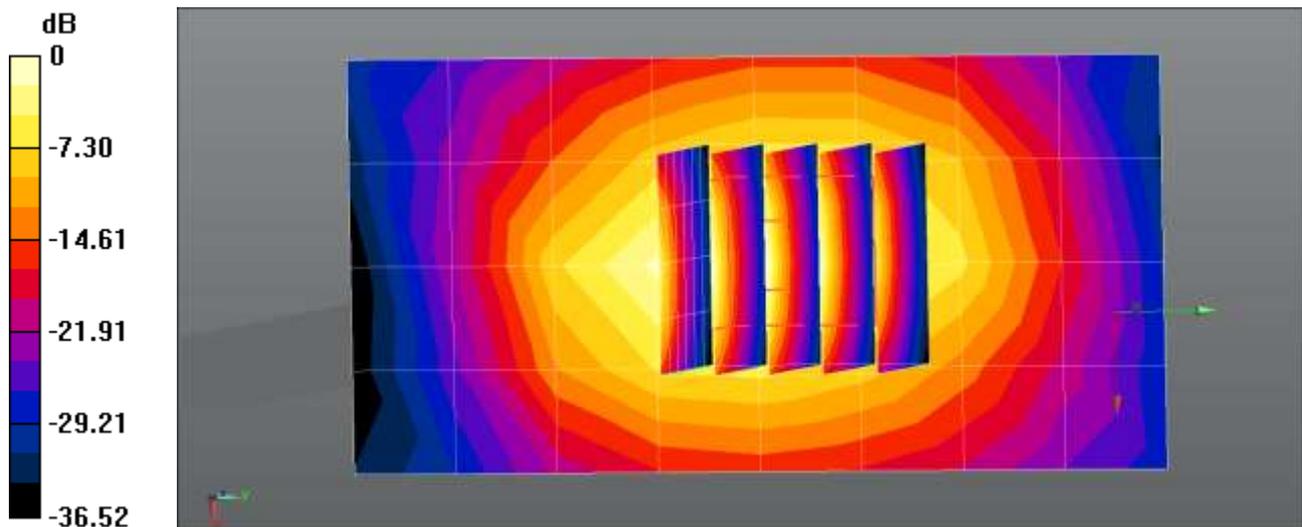
Communication System: UID 0, CW (0); Frequency: 1800 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 1800$ MHz; $\sigma = 1.387$ S/m; $\epsilon_r = 40.21$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3797; ConvF(8.14, 8.14, 8.14) @ 1800 MHz; Calibrated: 2019-11-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn446; Calibrated: 2019-07-18
- Phantom: SAM_Left_20170913
- Measurement SW: DASY52, Version 52.10 (4);

Dipole/1800MHz Verification(LTE 66)/Area Scan (5x9x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 3.05 W/kg

Dipole/1800MHz Verification(LTE 66)/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 48.47 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 3.78 W/kg
SAR(1 g) = 1.91 W/kg; SAR(10 g) = 0.990 W/kg
Maximum value of SAR (measured) = 3.08 W/kg



0 dB = 3.05 W/kg = 4.84 dBW/kg

■ Verification Data (1 800 Mhz Head)

Test Laboratory: HCT CO., LTD
Input Power: 0.05 W
Liquid Temp: 19.9 °C
Test Date: 05/26/2020

DUT: Dipole 1800 MHz D1800V2; Type: D1800V2

Communication System: UID 0, CW (0); Frequency: 1800 MHz;Duty Cycle: 1:1
Medium parameters used: $f = 1800$ MHz; $\sigma = 1.363$ S/m; $\epsilon_r = 39.725$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3968; ConvF(8.75, 8.75, 8.75) @ 1800 MHz; Calibrated: 2019-09-27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2020-04-22
- Phantom: Twin-SAM V8.0_20171017 (Right1)
- Measurement SW: DASY52, Version 52.8 (8);

Dipole/1800MHz Head Verification/Area Scan (7x7x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 2.96 W/kg

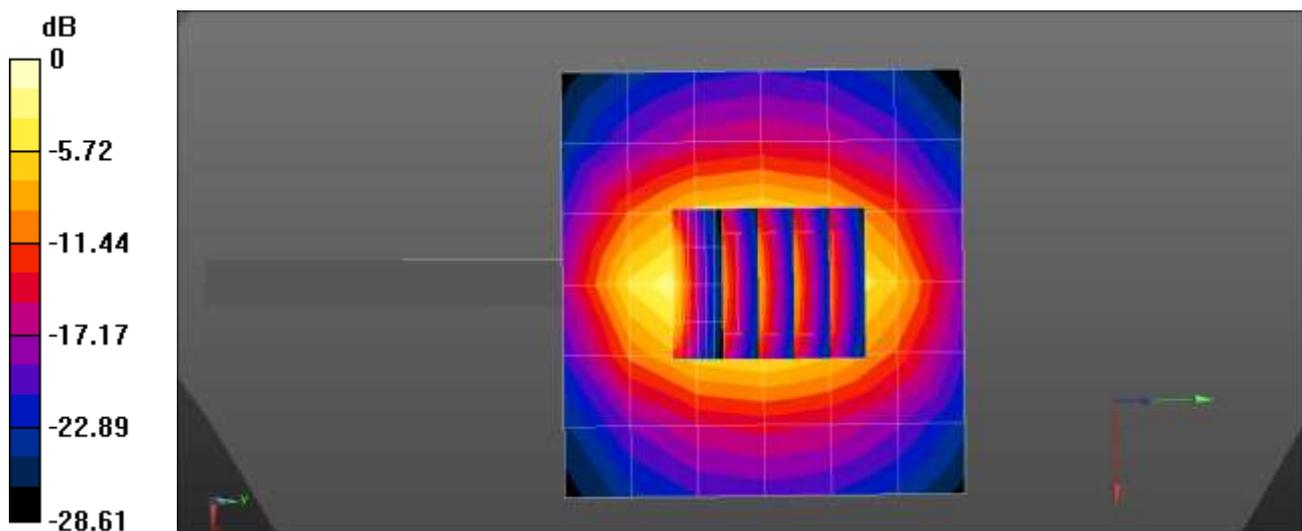
Dipole/1800MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 48.11 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 3.65 W/kg

SAR(1 g) = 1.89 W/kg; SAR(10 g) = 0.981 W/kg

Maximum value of SAR (measured) = 2.99 W/kg



■ Verification Data (1 800 MHz Head)

Test Laboratory: HCT CO., LTD
Input Power: 0.05 W
Liquid Temp: 20.7 °C
Test Date: 05/19/2020

DUT: Dipole 1800 MHz D1800V2; Type: D1800V2

Communication System: UID 0, CW (0); Frequency: 1800 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 1800$ MHz; $\sigma = 1.376$ S/m; $\epsilon_r = 39.97$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3076; ConvF(5.34, 5.34, 5.34) @ 1800 MHz; Calibrated: 2019-07-23
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1417; Calibrated: 2020-02-26
- Phantom: SAM with CRP v5.0_Front
- Measurement SW: DASY52, Version 52.10 (4);

Dipole/1 800 MHz Head Verification/Area Scan (7x7x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 2.41 W/kg

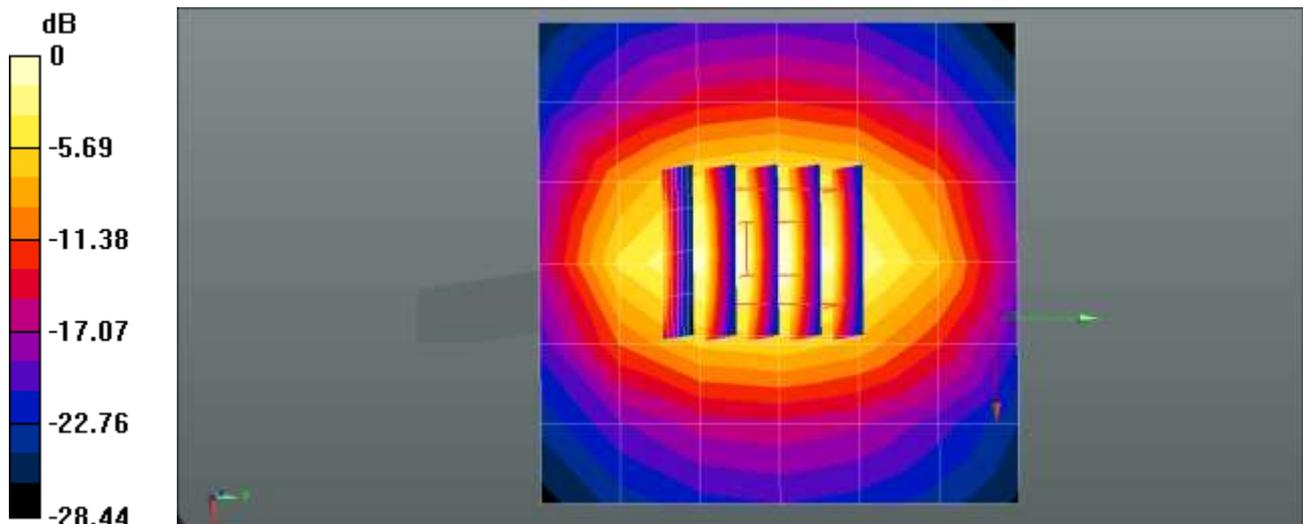
Dipole/1 800 MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 43.47 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 3.49 W/kg

SAR(1 g) = 1.97 W/kg; SAR(10 g) = 1.05 W/kg

Maximum value of SAR (measured) = 2.44 W/kg



0 dB = 2.41 W/kg = 3.83 dBW/kg

■ **Verification Data (1 900 MHz Head)**

Test Laboratory: HCT CO., LTD
Input Power: 0.05 W
Liquid Temp: 19.5 °C
Test Date: 06/12/2020

DUT: Dipole 1900 MHz D1900V2; Type: D1900V2

Communication System: UID 0, CW (0); Frequency: 1900 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 1900$ MHz; $\sigma = 1.405$ S/m; $\epsilon_r = 39.891$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3797; ConvF(7.75, 7.75, 7.75); Calibrated: 2019-11-28;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn446; Calibrated: 2019-07-18
- Phantom: SAM_Left_20170913
- Measurement SW: DASY52, Version 52.10 (4);

Dipole/1900MHz Head Verification(LTE 2)/Area Scan (6x8x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 3.19 W/kg

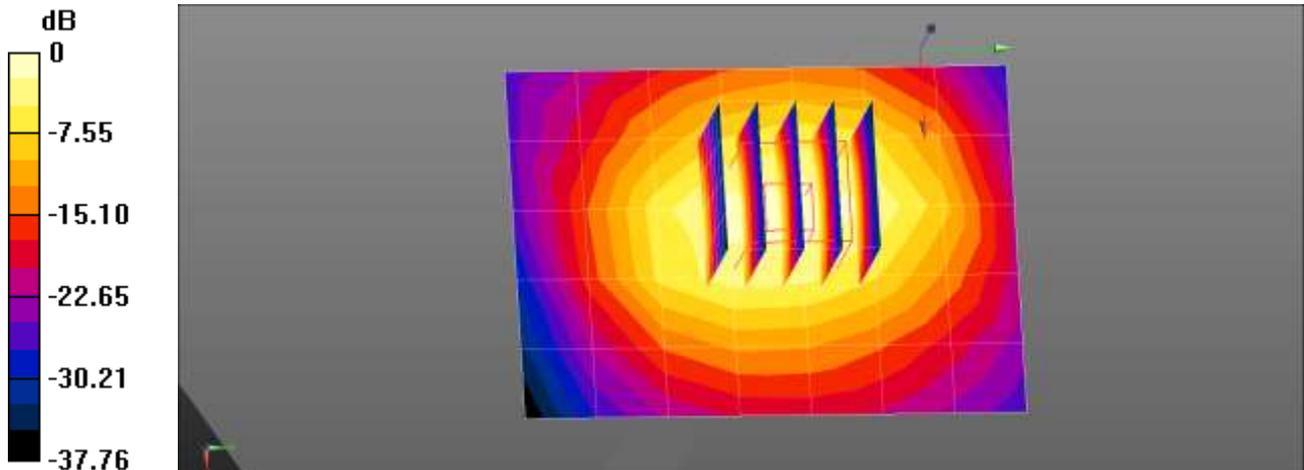
Dipole/1900MHz Head Verification(LTE 2)/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 45.75 V/m; Power Drift = 0.19 dB

Peak SAR (extrapolated) = 4.04 W/kg

SAR(1 g) = 2.05 W/kg; SAR(10 g) = 1.05 W/kg

Maximum value of SAR (measured) = 3.30 W/kg



0 dB = 3.19 W/kg = 5.04 dBW/kg

Verification Data (1 900 Mhz Head)

Test Laboratory: HCT CO., LTD
Input Power 0.05 W
Liquid Temp: 20.1 °C
Test Date: 06/15/2020

DUT: Dipole 1900 MHz D1900V2; Type: D1900V2

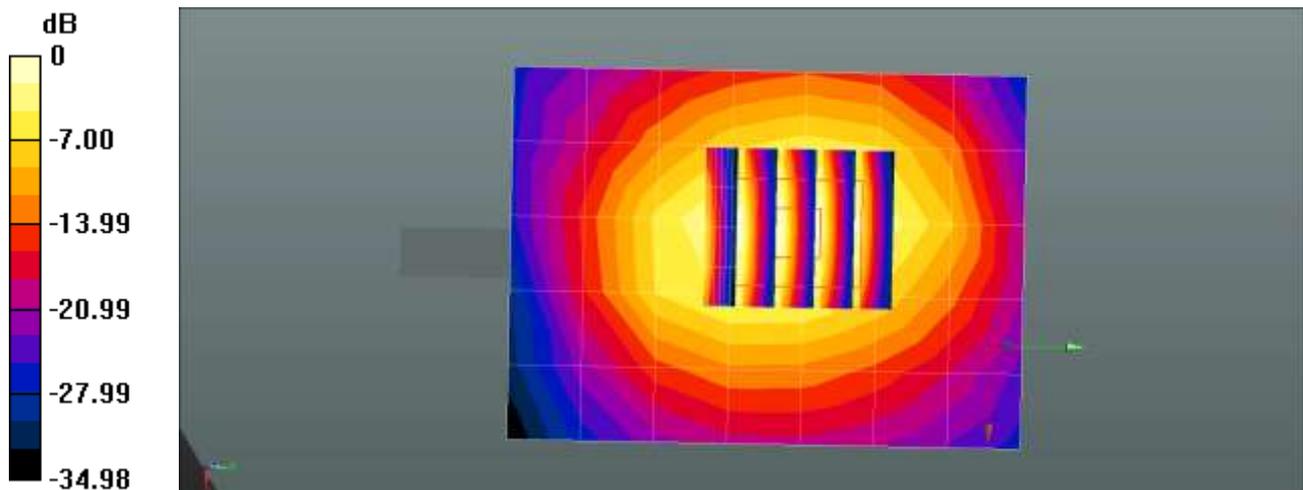
Communication System: UID 0, CW (0); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: $f = 1900$ MHz; $\sigma = 1.341$ S/m; $\epsilon_r = 39.213$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3797; ConvF(7.75, 7.75, 7.75); Calibrated: 2019-11-28;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn446; Calibrated: 2019-07-18
- Phantom: SAM_Left_20170913
- Measurement SW: DASY52, Version 52.10 (4);

Dipole/1900MHz Head Verification(LTE 2 Phablet)/Area Scan (6x8x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 3.10 W/kg

Dipole/1900MHz Head Verification(LTE 2 Phablet)/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 46.10 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 3.90 W/kg
SAR(1 g) = 1.98 W/kg; SAR(10 g) = 1.01 W/kg
Maximum value of SAR (measured) = 3.19 W/kg



0 dB = 3.10 W/kg = 4.91 dBW/kg

■ **Verification Data (1 900 Mhz Head)**

Test Laboratory: HCT CO., LTD
 Input Power: 0.05 W
 Liquid Temp: 20.2 °C
 Test Date: 05/18/2020

DUT: Dipole 1900 MHz D1900V2; Type: D1900V2

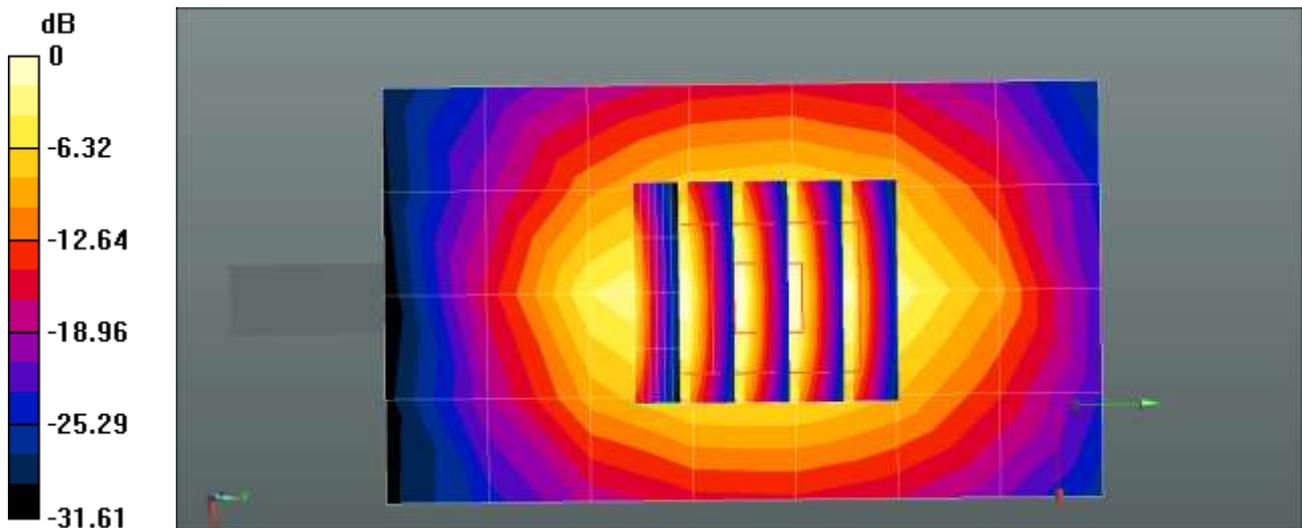
Communication System: UID 0, CW (0); Frequency: 1900 MHz; Duty Cycle: 1:1
 Medium parameters used: $f = 1900 \text{ MHz}$; $\sigma = 1.43 \text{ S/m}$; $\epsilon_r = 38.954$; $\rho = 1000 \text{ kg/m}^3$
 Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3797; ConvF(7.75, 7.75, 7.75) @ 1900 MHz; Calibrated: 2019-11-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn446; Calibrated: 2019-07-18
- Phantom: SAM_Left_20170913
- Measurement SW: DASY52, Version 52.10 (4);

Dipole/1900MHz Head Verification(GSM 1900)/Area Scan (5x8x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
 Maximum value of SAR (measured) = 2.92 W/kg

Dipole/1900MHz Head Verification(GSM 1900)/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$
 Reference Value = 47.86 V/m; Power Drift = -0.10 dB
 Peak SAR (extrapolated) = 3.72 W/kg
SAR(1 g) = 1.92 W/kg; SAR(10 g) = 0.983 W/kg
 Maximum value of SAR (measured) = 3.05 W/kg



0 dB = 2.92 W/kg = 4.66 dBW/kg

■ **Verification Data (1 900 Mhz Head)**

Test Laboratory: HCT CO., LTD
Input Power: 0.05 W
Liquid Temp: 20.3 °C
Test Date: 05/27/2020

DUT: Dipole 1900 MHz D1900V2; Type: D1900V2

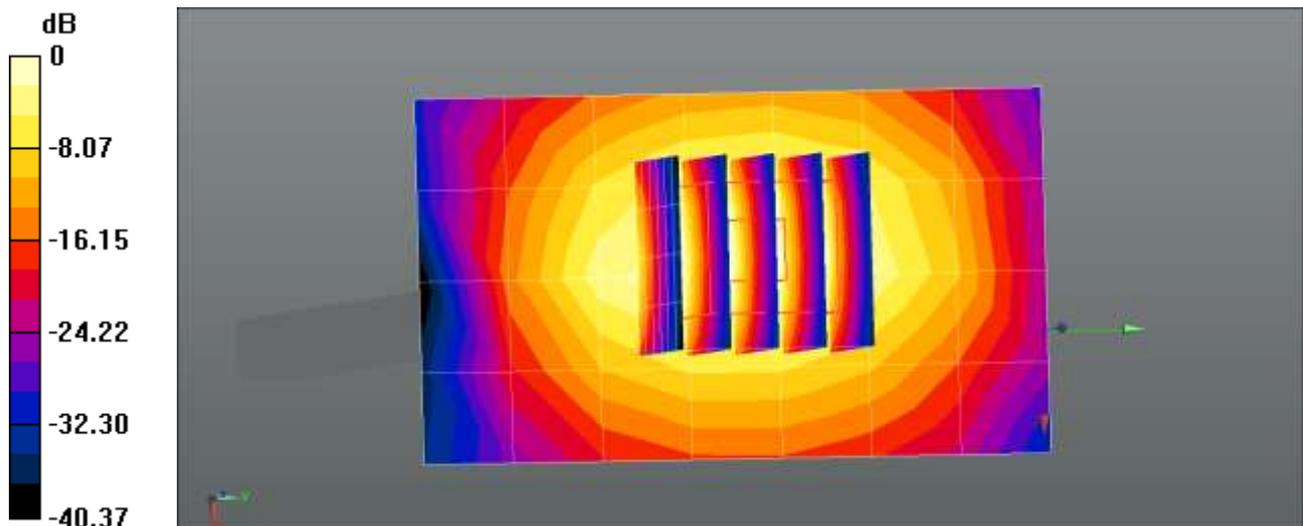
Communication System: UID 0, CW (0); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: $f = 1900$ MHz; $\sigma = 1.448$ S/m; $\epsilon_r = 39.092$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3797; ConvF(7.75, 7.75, 7.75) @ 1900 MHz; Calibrated: 2019-11-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn446; Calibrated: 2019-07-18
- Phantom: SAM_Left_20170913
- Measurement SW: DASY52, Version 52.10 (4);

Dipole/1900MHz Head Verification(GSM 1900)/Area Scan (5x8x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 2.84 W/kg

Dipole/1900MHz Head Verification(GSM 1900)/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 46.92 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 4.04 W/kg
SAR(1 g) = 2.07 W/kg; SAR(10 g) = 1.06 W/kg
Maximum value of SAR (measured) = 3.31 W/kg



0 dB = 2.84 W/kg = 4.53 dBW/kg

■ **Verification Data (1 900 Mhz Head)**

Test Laboratory: HCT CO., LTD
Input Power: 0.05 W
Liquid Temp: 20.2 °C
Test Date: 05/18/2020

DUT: Dipole 1900 MHz D1900V2; Type: D1900V2

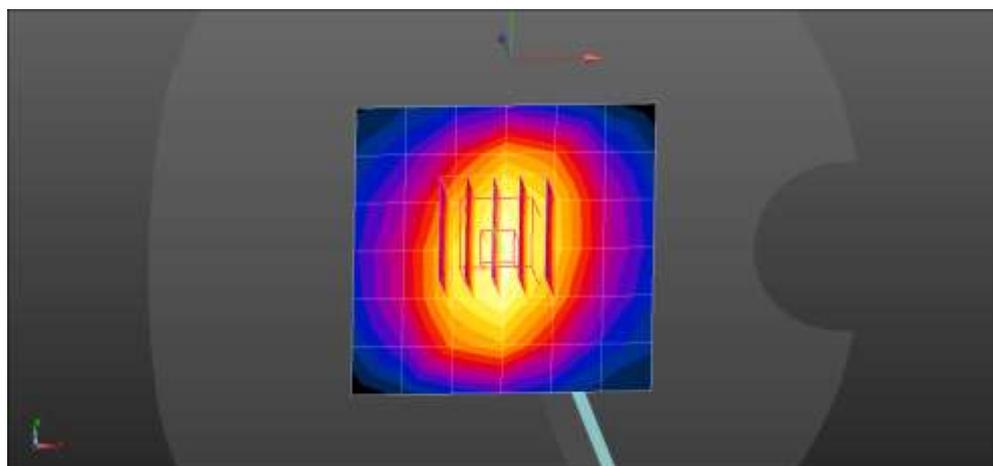
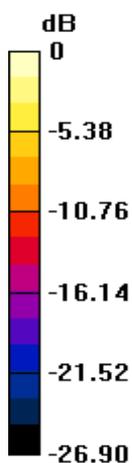
Communication System: UID 0, CW (0); Frequency: 1900 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 1900$ MHz; $\sigma = 1.393$ S/m; $\epsilon_r = 38.904$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3903; ConvF(8.31, 8.31, 8.31) @ 1900 MHz; Calibrated: 2020-03-25
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2019-09-19
- Phantom: Twin-SAM V8.0_20171017 (Right1)
- Measurement SW: DASY52, Version 52.10 (4);

Dipole/1900MHz Head Verification (LTE 25 Body)/Area Scan (7x7x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 3.40 W/kg

Dipole/1900MHz Head Verification (LTE 25 Body)/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 51.06 V/m; Power Drift = -0.33 dB
Peak SAR (extrapolated) = 4.11 W/kg
SAR(1 g) = 2.11 W/kg; SAR(10 g) = 1.09 W/kg
Smallest distance from peaks to all points 3 dB below = 10.1 mm
Ratio of SAR at M2 to SAR at M1 = 50.9%
Maximum value of SAR (measured) = 3.39 W/kg



0 dB = 3.39 W/kg = 5.30 dBW/kg

■ **Verification Data (1 900 Mhz Head)**

Test Laboratory: HCT CO., LTD
Input Power: 0.05 W
Liquid Temp: 21.2 °C
Test Date: 05/15/2020

DUT: Dipole 1900 MHz D1900V2; Type: D1900V2

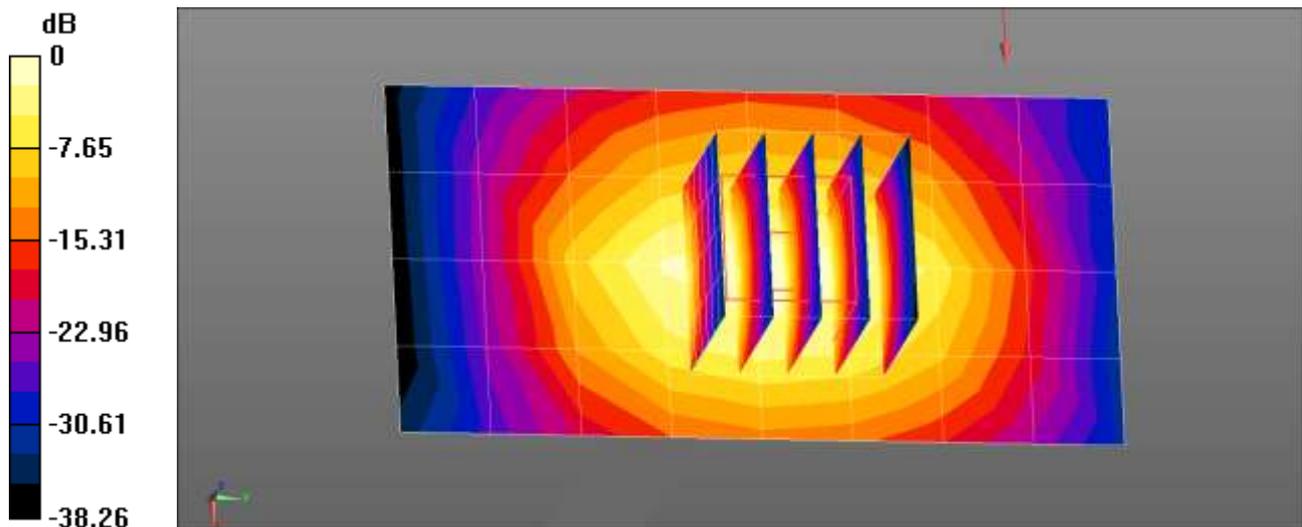
Communication System: UID 0, CW (0); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: $f = 1900$ MHz; $\sigma = 1.386$ S/m; $\epsilon_r = 38.242$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3797; ConvF(7.75, 7.75, 7.75) @ 1900 MHz; Calibrated: 2019-11-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn446; Calibrated: 2019-07-18
- Phantom: SAM_Left_20170913
- Measurement SW: DASY52, Version 52.10 (4);

Dipole/1900MHz Verification(LTE 25)/Area Scan (5x9x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 2.87 W/kg

Dipole/1900MHz Verification(LTE 25)/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 46.95 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 3.69 W/kg
SAR(1 g) = 1.91 W/kg; SAR(10 g) = 0.987 W/kg
Maximum value of SAR (measured) = 3.00 W/kg



0 dB = 2.87 W/kg = 4.58 dBW/kg

■ **Verification Data (1 900 Mhz Head)**

Test Laboratory: HCT CO., LTD
 Input Power: 0.05 W
 Liquid Temp: 19.9 °C
 Test Date: 05/26/2020

DUT: Dipole 1900 MHz D1900V2; Type: D1900V2

Communication System: UID 0, CW (0); Frequency: 1900 MHz; Duty Cycle: 1:1
 Medium parameters used: $f = 1900 \text{ MHz}$; $\sigma = 1.389 \text{ S/m}$; $\epsilon_r = 38.985$; $\rho = 1000 \text{ kg/m}^3$
 Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3968; ConvF(8.33, 8.33, 8.33) @ 1900 MHz; Calibrated: 2019-09-27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2020-04-22
- Phantom: Twin-SAM V8.0_20171017 (Right1)
- Measurement SW: DASY52, Version 52.8 (8);

Dipole/1900MHz Head Verification/Area Scan (7x7x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
 Maximum value of SAR (measured) = 3.00 W/kg

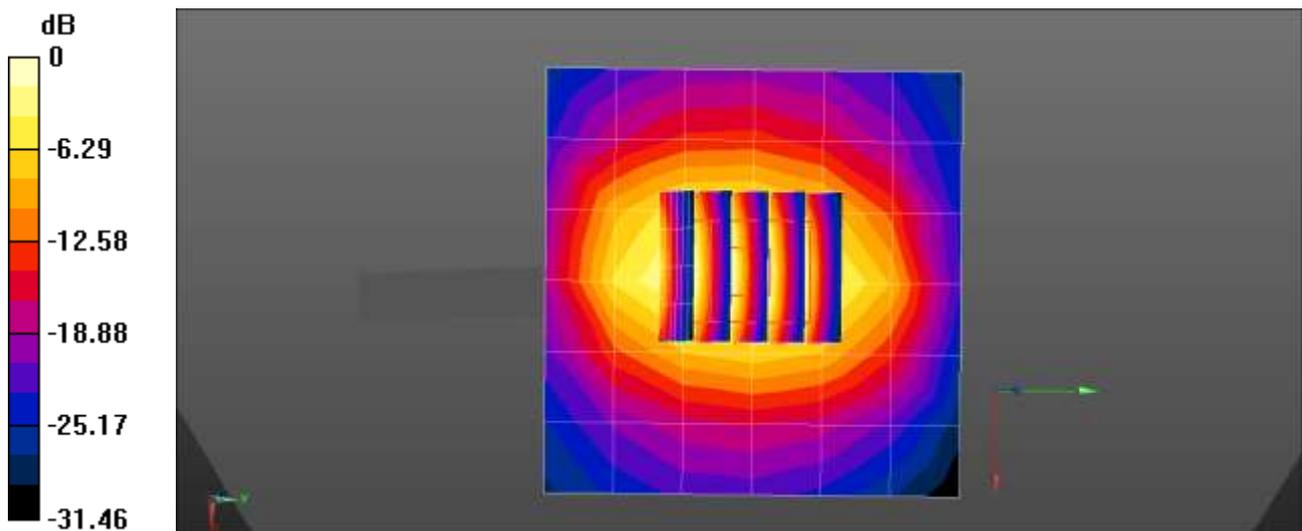
Dipole/1900MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 48.32 V/m; Power Drift = 0.12 dB

Peak SAR (extrapolated) = 3.86 W/kg

SAR(1 g) = 1.98 W/kg; SAR(10 g) = 1 W/kg

Maximum value of SAR (measured) = 3.19 W/kg



0 dB = 3.00 W/kg = 4.77 dBW/kg

■ **Verification Data (1 900 Mhz Head)**

Test Laboratory: HCT CO., LTD
Input Power: 0.05 W
Liquid Temp: 20.7 °C
Test Date: 05/18/2020

DUT: Dipole 1900 MHz D1900V2; Type: D1900V2

Communication System: UID 0, CW (0); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: $f = 1900$ MHz; $\sigma = 1.422$ S/m; $\epsilon_r = 38.472$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: ES3DV3 - SN3076; ConvF(5.1, 5.1, 5.1) @ 1900 MHz; Calibrated: 2019-07-23
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1417; Calibrated: 2020-02-26
- Phantom: SAM with CRP v5.0_Front
- Measurement SW: DASY52, Version 52.10 (4);

Dipole/1 900 MHz Head Verification/Area Scan (7x7x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 2.61 W/kg

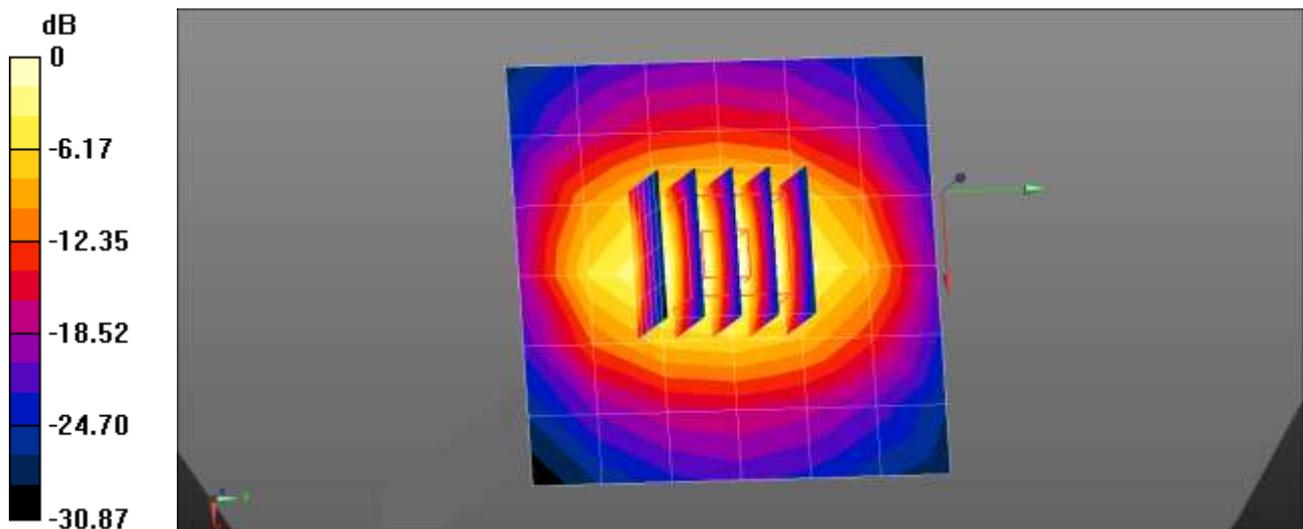
Dipole/1 900 MHz Head Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 44.48 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 3.80 W/kg

SAR(1 g) = 2.1 W/kg; SAR(10 g) = 1.09 W/kg

Maximum value of SAR (measured) = 2.65 W/kg



0 dB = 2.61 W/kg = 4.17 dBW/kg

■ Verification Data (2 450 Mhz Head)

Test Laboratory: HCT CO., LTD
Input Power: 0.05 W
Liquid Temp: 21.2 °C
Test Date: 06/03/2020

DUT: Dipole 2450 MHz D2450V2; Type: D2450V2

Communication System: UID 0, CW (0); Frequency: 2450 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 2450$ MHz; $\sigma = 1.807$ S/m; $\epsilon_r = 39.785$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3903; ConvF(7.65, 7.65, 7.65) @ 2450 MHz; Calibrated: 2020-03-25
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2019-09-19
- Phantom: Twin-SAM V4.0 (20deg probe tilt)_1588_20200429
- Measurement SW: DASY52, Version 52.10 (4);

Dipole/2450MHz Head Verification/Area Scan (7x7x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 4.38 W/kg

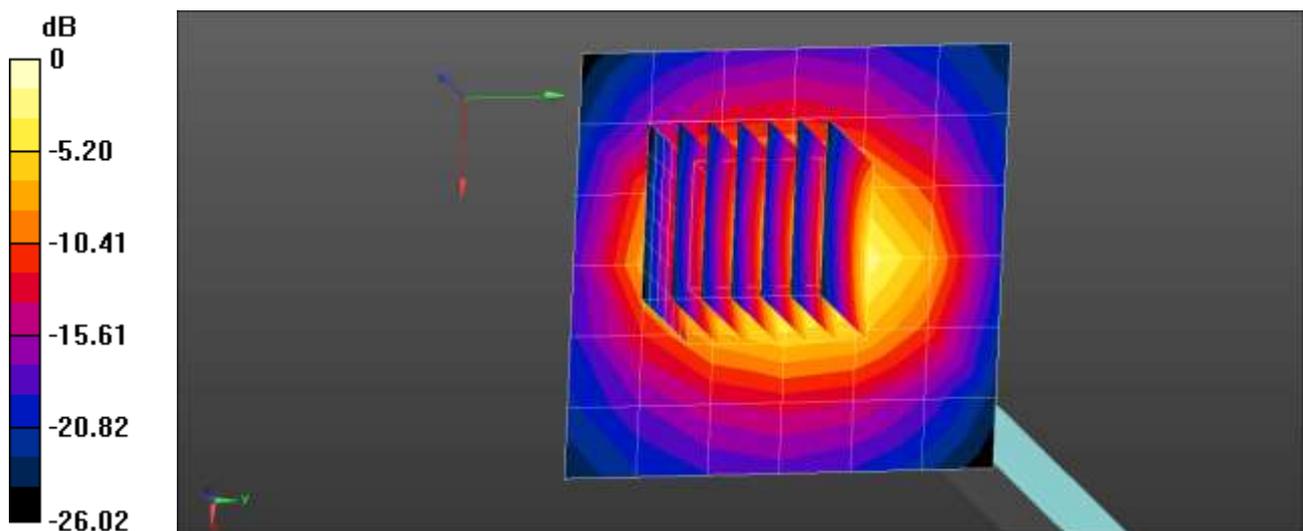
Dipole/2450MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 50.98 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 5.64 W/kg

SAR(1 g) = 2.51 W/kg; SAR(10 g) = 1.14 W/kg

Maximum value of SAR (measured) = 4.40 W/kg



0 dB = 4.38 W/kg = 6.42 dBW/kg

■ Verification Data (2 450 Mhz Head)

Test Laboratory: HCT CO., LTD
Input Power: 0.05 W
Liquid Temp: 19.5 °C
Test Date: 06/11/2020

DUT: Dipole 2450 MHz D2450V2; Type: D2450V2

Communication System: UID 0, CW (0); Frequency: 2450 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 2450$ MHz; $\sigma = 1.808$ S/m; $\epsilon_r = 39.862$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(7.6, 7.6, 7.6) @ 2450 MHz; Calibrated: 2019-09-27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2020-04-22
- Phantom: Twin-SAM V4.0(Left-Left)
- Measurement SW: DASY52, Version 52.10 (4);

Dipole/2450MHz Head Verification/Area Scan (8x8x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 3.30 W/kg

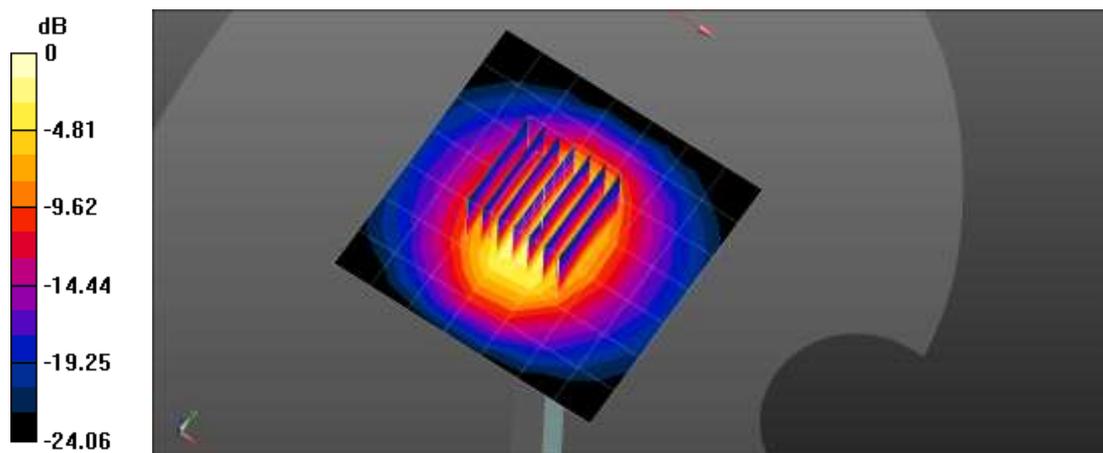
Dipole/2450MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 51.10 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 5.60 W/kg

SAR(1 g) = 2.49 W/kg; SAR(10 g) = 1.13 W/kg

Maximum value of SAR (measured) = 4.37 W/kg



■ Verification Data (2 450 Mhz Head)

Test Laboratory: HCT CO., LTD
Input Power: 0.05 W
Liquid Temp: 21.2 °C
Test Date: 05/26/2020

DUT: Dipole 2450 MHz D2450V2; Type: D2450V2

Communication System: UID 0, CW (0); Frequency: 2450 MHz;Duty Cycle: 1:1
Medium parameters used: $f = 2450$ MHz; $\sigma = 1.799$ S/m; $\epsilon_r = 38.443$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3968; ConvF(7.6, 7.6, 7.6) @ 2450 MHz; Calibrated: 2019-09-27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 4/22/2020
- Phantom: Twin-SAM V4.0 (20deg probe tilt)_1588_20200429
- Measurement SW: DASY52, Version 52.10 (4);

Dipole/2450MHz Head Verification/Area Scan (7x7x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 4.41 W/kg

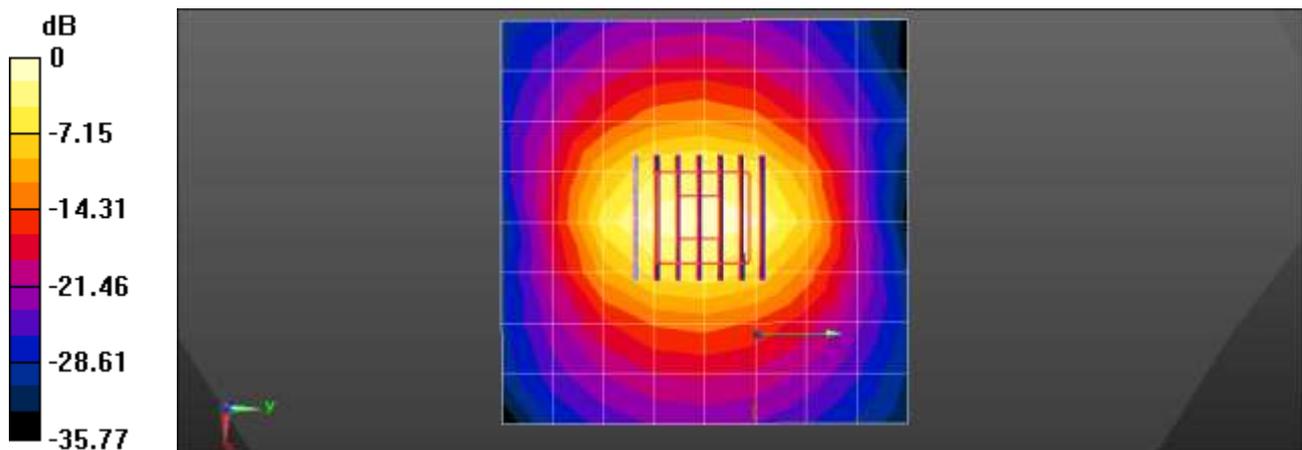
Dipole/2450MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 51.73 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 5.65 W/kg

SAR(1 g) = 2.59 W/kg; SAR(10 g) = 1.18 W/kg

Maximum value of SAR (measured) = 4.47 W/kg



0 dB = 4.41 W/kg = 6.44 dBW/kg

■ **Verification Data (2 600 Mhz Head)**

Test Laboratory: HCT CO., LTD
Input Power: 0.05 W
Liquid Temp: 21.4 °C
Test Date: 05/25/2020

DUT: Dipole 2600 MHz D2600V2; Type: D2600V2

Communication System: UID 0, CW (0); Frequency: 2600 MHz;Duty Cycle: 1:1
Medium parameters used: $f = 2600$ MHz; $\sigma = 1.947$ S/m; $\epsilon_r = 37.791$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3903; ConvF(7.49, 7.49, 7.49) @ 2600 MHz; Calibrated: 2020-03-25
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2019-09-19
- Phantom: Twin-SAM V4.0 (20deg probe tilt)_1588_20200429
- Measurement SW: DASY52, Version 52.10 (4);

Dipole/2600MHz Head Verification/Area Scan (7x7x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 4.83 W/kg

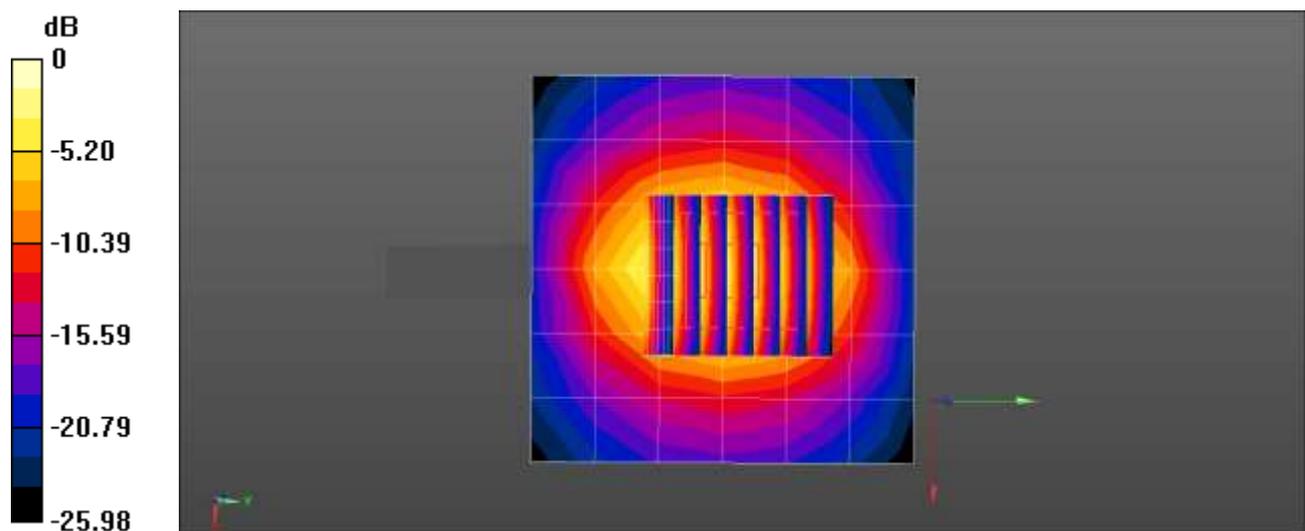
Dipole/2600MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 52.06 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 6.17 W/kg

SAR(1 g) = 2.73 W/kg; SAR(10 g) = 1.2 W/kg

Maximum value of SAR (measured) = 4.83 W/kg



0 dB = 4.83 W/kg = 6.84 dBW/kg

■ **Verification Data (5 250 Mhz Head)**

Test Laboratory: HCT CO., LTD
Input Power: 0.05 W
Liquid Temp: 19.6 °C
Test Date: 06/09/2020

DUT: Dipole D5GHzV2; Type: D5GHzV2

Communication System: UID 0, CW (0); Frequency: 5250 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 5250$ MHz; $\sigma = 4.619$ S/m; $\epsilon_r = 37.012$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(5.57, 5.57, 5.57) @ 5250 MHz; Calibrated: 2019-09-27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2020-04-22
- Phantom: Twin-SAM V4.0 (Left-Right)
- Measurement SW: DASY52, Version 52.10 (4)

Dipole/5250MHz Head Verification/Area Scan (8x8x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 9.60 W/kg

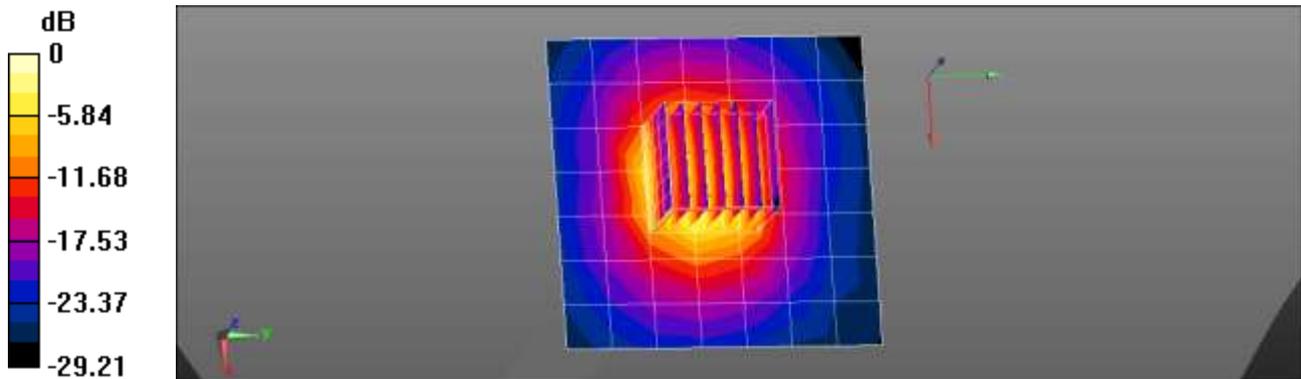
Dipole/5250MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 49.97 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 20.1 W/kg

SAR(1 g) = 4.31 W/kg; SAR(10 g) = 1.2 W/kg

Maximum value of SAR (measured) = 10.9 W/kg



0 dB = 9.60 W/kg = 9.82 dBW/kg

■ Verification Data (5 250 MHz Head)

Test Laboratory: HCT CO., LTD
Input Power: 0.05 W
Liquid Temp: 21.3 °C
Test Date: 07/03/2020

DUT: Dipole D5GHzV2; Type: D5GHzV2

Communication System: UID 0, CW (0); Frequency: 5250 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 5250$ MHz; $\sigma = 4.605$ S/m; $\epsilon_r = 37.014$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(5.57, 5.57, 5.57) @ 5250 MHz; Calibrated: 2019-09-27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2020-04-22
- Phantom: Twin-SAM V4.0 (Left-Right)
- Measurement SW: DASY52, Version 52.10 (4)

Dipole/5250MHz Head Verification/Area Scan (8x8x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 9.09 W/kg

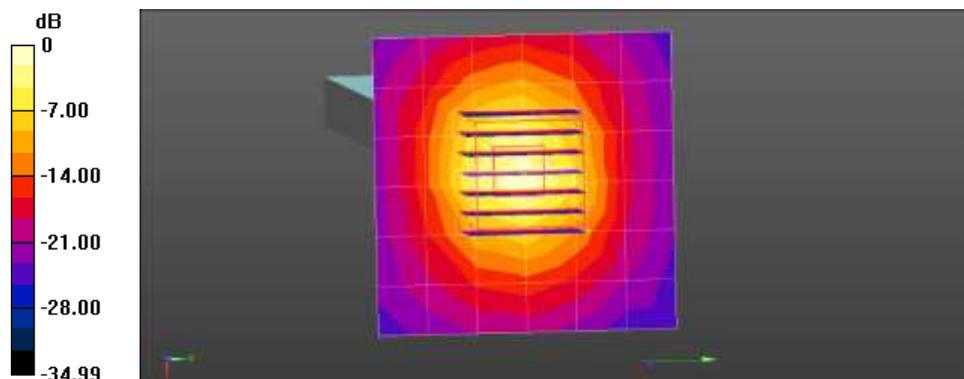
Dipole/5250MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 47.36 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 18.6 W/kg

SAR(1 g) = 4.01 W/kg; SAR(10 g) = 1.14 W/kg

Maximum value of SAR (measured) = 10.3 W/kg



0 dB = 10.3 W/kg = 10.13 dBW/kg

Verification Data (5 600 MHz Head)

Test Laboratory: HCT CO., LTD
Input Power: 0.05 W
Liquid Temp: 20.2 °C
Test Date: 05/29/2020

DUT: Dipole D5GHzV2; Type: D5GHzV2

Communication System: UID 0, CW (0); Frequency: 5600 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 5600$ MHz; $\sigma = 5.004$ S/m; $\epsilon_r = 36.542$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3903; ConvF(4.85, 4.85, 4.85) @ 5600 MHz; Calibrated: 2020-03-25
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2019-09-19
- Phantom: Twin-SAM V4.0 (Left-Right)
- Measurement SW: DASY52, Version 52.10 (4)

Dipole/5600MHz Head Verification/Area Scan (8x8x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 9.46 W/kg

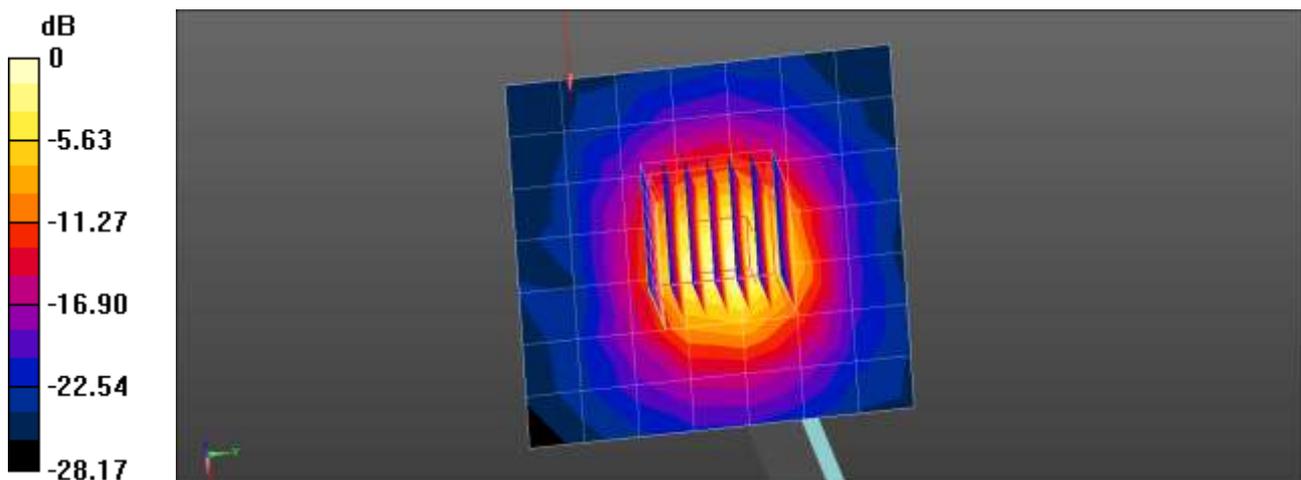
Dipole/5600MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 45.71 V/m; Power Drift = -0.14 dB

Peak SAR (extrapolated) = 18.4 W/kg

SAR(1 g) = 4.06 W/kg; SAR(10 g) = 1.11 W/kg

Maximum value of SAR (measured) = 10.6 W/kg



0 dB = 9.46 W/kg = 9.76 dBW/kg

■ **Verification Data (5 600 Mhz Head)**

Test Laboratory: HCT CO., LTD
Input Power: 0.05 W
Liquid Temp: 19.6 °C
Test Date: 06/09/2020

DUT: Dipole D5GHzV2; Type: D5GHzV2

Communication System: UID 0, CW (0); Frequency: 5600 MHz;Duty Cycle: 1:1
Medium parameters used: $f = 5600$ MHz; $\sigma = 5.003$ S/m; $\epsilon_r = 36.537$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(4.84, 4.84, 4.84) @ 5600 MHz; Calibrated: 2019-09-27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2020-04-22
- Phantom: Twin-SAM V4.0 (Left-Right)
- Measurement SW: DASY52, Version 52.10 (4)

Dipole/5600MHz Head Verification/Area Scan (8x8x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 9.26 W/kg

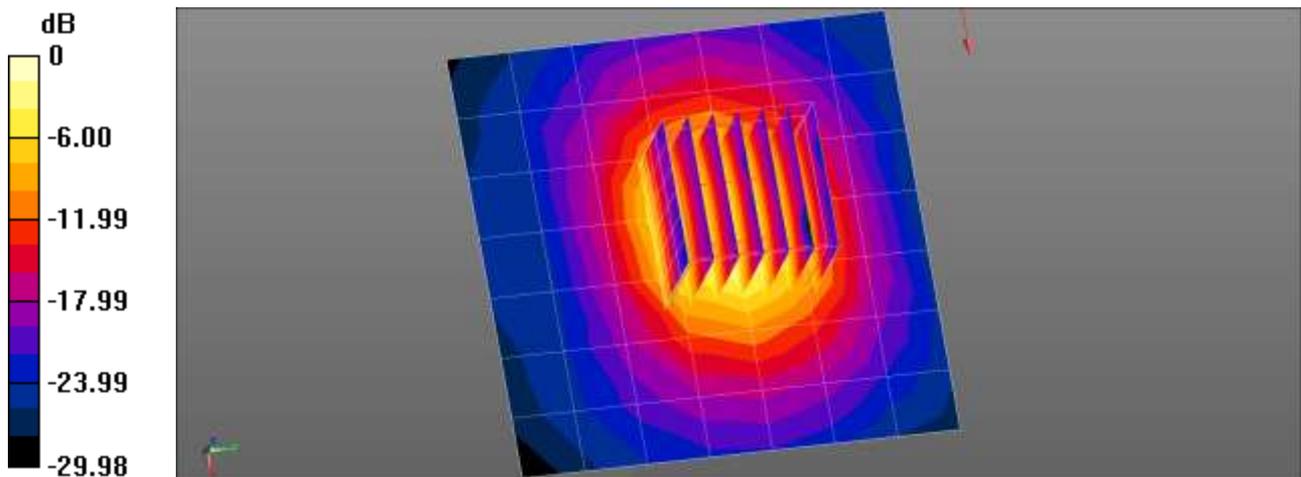
Dipole/5600MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 43.98 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 19.5 W/kg

SAR(1 g) = 4 W/kg; SAR(10 g) = 1.12 W/kg

Maximum value of SAR (measured) = 10.8 W/kg



0 dB = 9.26 W/kg = 9.66 dBW/kg

■ **Verification Data (5 750 Mhz Head)**

Test Laboratory: HCT CO., LTD
 Input Power: 0.05 W
 Liquid Temp: 20.2 °C
 Test Date: 05/29/2020

DUT: Dipole D5GHzV2; Type: D5GHzV2

Communication System: UID 0, CW (0); Frequency: 5750 MHz; Duty Cycle: 1:1
 Medium parameters used: $f = 5750$ MHz; $\sigma = 5.172$ S/m; $\epsilon_r = 36.297$; $\rho = 1000$ kg/m³
 Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3903; ConvF(4.95, 4.95, 4.95) @ 5750 MHz; Calibrated: 2020-03-25
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2019-09-19
- Phantom: Twin-SAM V4.0 (Left-Right)
- Measurement SW: DASY52, Version 52.10 (4)

Dipole/5750MHz Head Verification/Area Scan (8x8x1): Measurement grid: dx=10mm, dy=10mm
 Maximum value of SAR (measured) = 8.30 W/kg

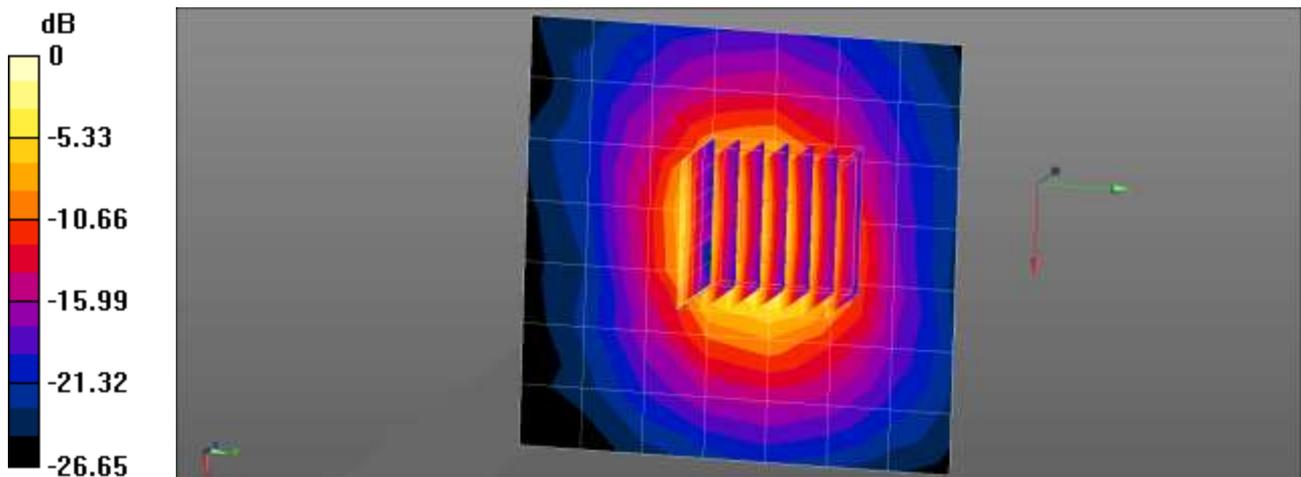
Dipole/5750MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 47.68 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 19.1 W/kg

SAR(1 g) = 4.04 W/kg; SAR(10 g) = 1.14 W/kg

Maximum value of SAR (measured) = 10.5 W/kg



0 dB = 8.30 W/kg = 9.19 dBW/kg

■ **Verification Data (5 750 Mhz Head)**

Test Laboratory: HCT CO., LTD
Input Power: 0.05 W
Liquid Temp: 19.6 °C
Test Date: 06/09/2020

DUT: Dipole D5GHzV2; Type: D5GHzV2

Communication System: UID 0, CW (0); Frequency: 5750 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5750 MHz; $\sigma = 5.166$ S/m; $\epsilon_r = 36.294$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(5.1, 5.1, 5.1) @ 5750 MHz; Calibrated: 2019-09-27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2020-04-22
- Phantom: Twin-SAM V4.0 (Left-Right)
- Measurement SW: DASY52, Version 52.10 (4)

Dipole/5750MHz Head Verification/Area Scan (8x8x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 10.8 W/kg

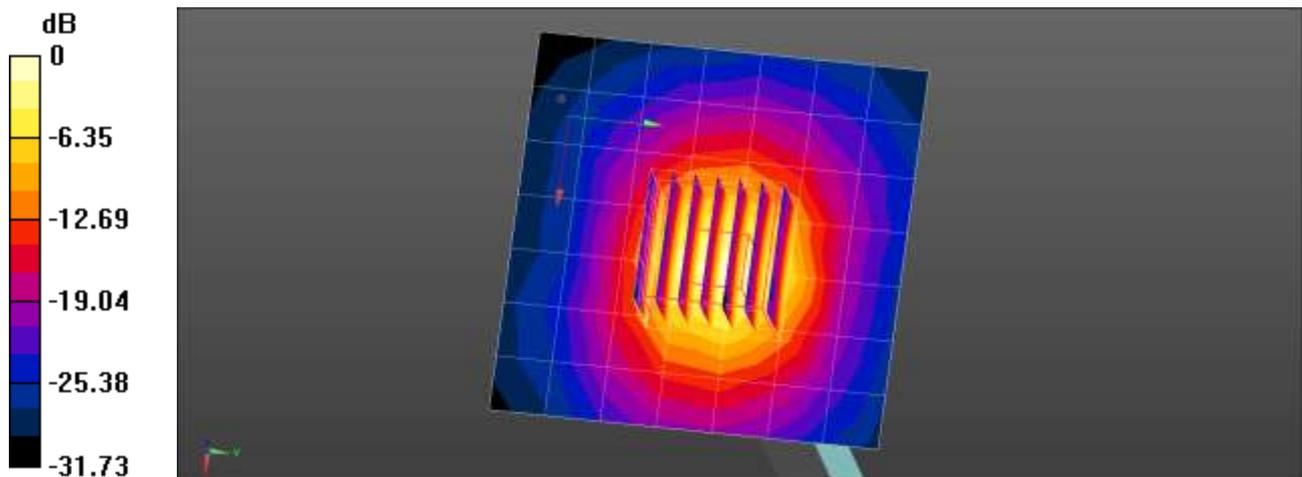
Dipole/5750MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 41.24 V/m; Power Drift = -0.13 dB

Peak SAR (extrapolated) = 23.2 W/kg

SAR(1 g) = 4.23 W/kg; SAR(10 g) = 1.16 W/kg

Maximum value of SAR (measured) = 11.7 W/kg



0 dB = 10.8 W/kg = 10.35 dBW/kg

■ **Verification Data (5 750 MHz Head)**

Test Laboratory: HCT CO., LTD
Input Power: 0.05 W
Liquid Temp: 20.8 °C
Test Date: 06/10/2020

DUT: Dipole D5GHzV2; Type: D5GHzV2

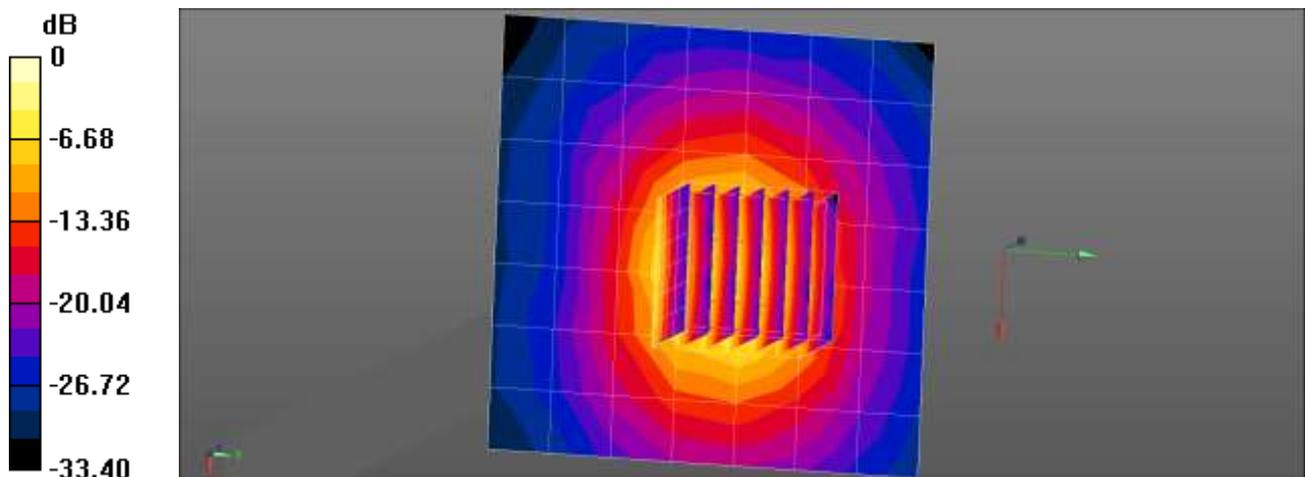
Communication System: UID 0, CW (0); Frequency: 5750 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 5750$ MHz; $\sigma = 5.178$ S/m; $\epsilon_r = 36.383$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3968; ConvF(5.1, 5.1, 5.1) @ 5750 MHz; Calibrated: 2019-09-27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn466; Calibrated: 2020-04-22
- Phantom: Twin-SAM V4.0 (Left-Right)
- Measurement SW: DASY52, Version 52.10 (4)

Dipole/5750MHz Head Verification/Area Scan (8x8x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 11.1 W/kg

Dipole/5750MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 41.48 V/m; Power Drift = -0.17 dB
Peak SAR (extrapolated) = 22.4 W/kg
SAR(1 g) = 4.15 W/kg; SAR(10 g) = 1.15 W/kg
Maximum value of SAR (measured) = 11.3 W/kg



0 dB = 11.1 W/kg = 10.44 dBW/kg

Appendix D. – SAR Tissue Characterization

The brain and muscle mixtures consist of a viscous gel using hydrox-ethyl cellulose (HEC) gelling agent and saline solution (see Table 3.1). Preservation with a bactericide is added and visual inspection is made to make sure air bubbles are not trapped during the mixing process. The mixture is calibrated to obtain proper dielectric constant (permittivity) and conductivity of the desired tissue. The mixture characterizations used for the brain and muscle tissue simulating liquids are according to the data by C. Gabriel and G. Harts grove.

Ingredients (% by weight)	Frequency (MHz)											
	750		835		1 750		1 900		2 450 – 2 700		3500 - 5 800	
Tissue Type	Head	Body	Head	Body	Head	Body	Head	Body	Head	Body	Head	Body
Water	41.1	51.7	40.45	53.06	52.6	68.8	54.9	70.17	71.88	73.2	65.52	78.66
Salt (NaCl)	1.4	0.9	1.45	0.94	0.4	0.2	0.18	0.39	0.16	0.1	0.0	0.0
Sugar	57.0	47.2	57.0	44.9	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0
HEC	0.2	0	1.0	1.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0
Bactericide	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0
Triton X-100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.97	0.0	17.24	10.67
DGBE	0.0	0.0	0.0	0.0	47	31	44.92	29.44	7.99	26.7	0.0	0.0
Diethylene glycol hexyl ether	-	-	-	-	-	-	-	-	-	-	-	-

Salt:	99 % Pure Sodium Chloride	Sugar:	98 % Pure Sucrose
Water:	De-ionized, 16M resistivity	HEC:	Hydroxyethyl Cellulose
DGBE:	99 % Di(ethylene glycol) butyl ether,[2-(2-butoxyethoxy) ethanol]		
Triton X-100(ultra-pure):	Polyethylene glycol mono[4-(1,1,3,3-tetramethylbutyl)phenyl] ether		

Composition of the Tissue Equivalent Matter

Appendix E. – SAR Tissue Characterization

Per FCC KCB 865664 D02v01r02, SAR system validation status should be document to confirm measurement accuracy. The SAR systems (including SAR probes, system components and software versions) used for this device were validated against its performance specifications prior to the SAR measurements. Reference dipoles were used with the required tissue- equivalent media for system validation, according to the procedures outlined in IEEE 1528-2013 and FCC KDB 865664 D01v01r04. Since SAR probe calibrations are frequency dependent, each probe calibration point was validated at a frequency within the valid frequency range of the probe calibration point, using the system that normally operates with the probe for routine SAR measurements and according to the required tissue-equivalent media.

A tabulated summary of the system validation status including the validation date(s), measurement frequencies, SAR probes and tissue dielectric parameters has been included.

SAR System No.	Probe	Probe Type	Probe Calibration Point		Dipole	Date	Dielectric Parameters		CW Validation			Modulation Validation		
							Measured Permittivity	Measured Conductivity	Sensitivity	Probe Linearity	Probe Isotropy	MOD. Type	Duty Factor	PAR
12	7370	EX3DV4	Head	750	1014	2019-09-11	41.7	0.87	PASS	PASS	PASS	N/A	N/A	N/A
1	3863	EX3DV4	Body	750	1014	2019-06-07	55.6	0.98	PASS	PASS	PASS	N/A	N/A	N/A
12	7370	EX3DV4	Head	835	441	2019-09-11	41.6	0.91	PASS	PASS	PASS	N/A	N/A	N/A
12	7370	EX3DV4	Head	835	441	2019-09-11	41.6	0.91	PASS	PASS	PASS	GMSK	PASS	N/A
3	3797	EX3DV4	Body	835	441	2019-12-10	55.3	0.98	PASS	PASS	PASS	GMSK	PASS	N/A
11	3076	ES3DV3	Body	835	441	2019-09-03	55.5	0.97	PASS	PASS	PASS	GMSK	PASS	N/A
1	3863	EX3DV4	Body	835	441	2019-09-03	55.4	0.97	PASS	PASS	PASS	N/A	N/A	N/A
11	3076	ES3DV3	Head	1750	2d015	2019-10-01	40.1	1.39	PASS	PASS	PASS	N/A	N/A	N/A
1	3863	EX3DV4	Body	1750	2d015	2019-10-01	53.5	1.52	PASS	PASS	PASS	N/A	N/A	N/A
9	3968	EX3DV4	Body	1750	2d015	2019-10-11	53.5	1.52	PASS	PASS	PASS	N/A	N/A	N/A
3	3797	EX3DV4	Head	1900	5d061	2020-01-31	40.1	1.42	PASS	PASS	PASS	GMSK	PASS	N/A
3	3797	EX3DV4	Body	1900	5d061	2020-01-31	53.3	1.53	PASS	PASS	PASS	GMSK	PASS	N/A
9	3968	EX3DV4	Head	2450	743	2020-03-02	39.4	1.81	PASS	PASS	PASS	OFDM	N/A	PASS
1	3863	EX3DV4	Head	2450	743	2020-03-02	39.4	1.81	PASS	PASS	PASS	OFDM	N/A	PASS
9	3968	EX3DV4	Body	2450	743	2020-03-02	52.8	1.94	PASS	PASS	PASS	OFDM	N/A	PASS
1	3863	EX3DV4	Body	2450	743	2020-03-02	52.8	1.94	PASS	PASS	PASS	OFDM	N/A	PASS
1	3863	EX3DV4	Head	2600	1106	2019-09-28	39.2	1.96	PASS	PASS	PASS	TDD	PASS	N/A
1	3863	EX3DV4	Body	2600	1106	2019-09-28	52.4	2.16	PASS	PASS	PASS	TDD	PASS	N/A
12	7370	EX3DV4	Head	5250	1107	2019-10-11	35.6	4.71	PASS	PASS	PASS	OFDM	N/A	PASS
12	7370	EX3DV4	Head	5600	1107	2019-10-11	35.3	5.04	PASS	PASS	PASS	OFDM	N/A	PASS
12	7370	EX3DV4	Head	5750	1107	2019-10-11	35.8	5.25	PASS	PASS	PASS	OFDM	N/A	PASS
9	3968	EX3DV4	Head	5250	1107	2019-10-11	35.6	4.71	PASS	PASS	PASS	OFDM	N/A	PASS
9	3968	EX3DV4	Head	5600	1107	2019-10-11	35.3	5.04	PASS	PASS	PASS	OFDM	N/A	PASS
9	3968	EX3DV4	Head	5750	1107	2019-10-11	35.8	5.25	PASS	PASS	PASS	OFDM	N/A	PASS
8	3967	EX3DV4	Body	5250	1107	2020-03-11	48.8	5.36	PASS	PASS	PASS	OFDM	N/A	PASS
8	3967	EX3DV4	Body	5600	1107	2020-03-11	48.3	5.78	PASS	PASS	PASS	OFDM	N/A	PASS
8	3967	EX3DV4	Body	5750	1107	2020-03-11	48.4	5.95	PASS	PASS	PASS	OFDM	N/A	PASS

SAR System Validation Summary 1g

SAR System No.	Probe	Probe Type	Probe Calibration Point	Dipole	Date	Dielectric Parameters		CW Validation			Modulation Validation			
						Measured Permittivity	Measured Conductivity	Sensitivity	Probe Linearity	Probe Isotropy	MOD. Type	Duty Factor	PAR	
9	3968	EX3DV4	Body	1750	2d015	2019-10-11	53.5	1.52	PASS	PASS	PASS	N/A	N/A	N/A
3	3797	EX3DV4	Body	1900	5d061	2020-01-31	53.3	1.53	PASS	PASS	PASS	GMSK	PASS	N/A
8	3967	EX3DV4	Body	5250	1107	2020-03-11	48.8	5.36	PASS	PASS	PASS	OFDM	N/A	PASS
8	3967	EX3DV4	Body	5600	1107	2020-03-11	48.3	5.78	PASS	PASS	PASS	OFDM	N/A	PASS

SAR System Validation Summary – Extremity SAR Considerations

Note;

All measurement were performed using probes calibrated for CW signal only. Modulations in the table above represent test configurations for which the measurement system has been validated per FCC KDB Publication 865664 D01v01r04. SAR system were validated for modulated signals with a periodic duty cycle, such as GMSK, or with a high peak to average ratio (>5 dB), such as OFDM according to KDB 865664 D01v01r04.