SAR TEST REPORT

Testing Laboratory 0513

The following samples were submitted and identified on behalf of the client as:

Equipment Under Test	Phablet
Brand Name	HP
Model No.	HSTNH-F606
Company Name	HP Inc.
Company Address	3390 East Harmony Road Fort Collins, Colorado 80528 United States
Standards	IEEE /ANSI C95.1 , C95.3, IEEE 1528, KDB248227D01v02r02,KDB865664D01v01r04, KDB865664D02v01r02,KDB941225D01v03r01, KDB941225D05v02r05,KDB941225D05A v02r05, KDB941225D06v02r01,KDB447498D01v06, KDB648474D01v01r03
Date of Receipt	Apr. 21, 2016
Date of Test(s)	Apr. 27, 2016 ~ May. 13, 2016
Date of Issue	Jun. 17, 2016

In the configuration tested, the EUT complied with the standards specified above.

Remarks:

This report details the results of the testing carried out on one sample, the results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS Taiwan Electronic & Communication Laboratory or testing done by SGS Taiwan Electronic & Communication Laboratory in connection with distribution or use of the product described in this report must be approved by SGS Taiwan Electronic & Communication Laboratory in writing.

Signed on behalf of SGS

Sr. Engineer	**Asst. Supervisor**
afu Chen	John Yeh
Afu Chen	**John Yeh**
Date: Jun. 17, 2016	**Date: Jun. 17, 2016**

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Revision History

Report Number	Revision	Description	Issue Date
EN/2016/40002	Rev.00	Initial creation of document	May. 25, 2016
EN/2016/40002	Rev.01	1st modification	Jun. 17, 2016

Contents

1. General Information

1.1 Testing Laboratory

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1.2 Details of Applicant

Company Name	HP Inc.
Company Address	3390 East Harmony Road Fort Collins, Colorado 80528 United States

1.3 Description of EUT

EUT Name	Phablet	
Brand Name	HP	
Model No.	HSTNH-F606	
FCC ID	B94HHF606	
Mode of Operation	☒GSM ☒GPRS ☒EDGE ☒WCDMA ☒HSDPA ☒HSUPA ☒HSPA+ ☒LTE FDD ☒WLAN802.11 a/b/g/n(20M/40M)/ac(20M/40M/80M) ☒Bluetooth	
Duty Cycle	GSM	1/8.3
	GPRS	1/2 (1Dn4UP) 1/2.76 (1Dn3UP) 1/4.1 (1Dn2UP) 1/8.3 (1Dn1UP)
	EDGE	1/2 (1Dn4UP) 1/2.76 (1Dn3UP) 1/4.1 (1Dn2UP) 1/8.3 (1Dn1UP)
	LTE FDD (data only, not suppot VoLTE)	1
	WCDMA	1
	WLAN802.11 a/b/g/n(20M/40M)/ ac(20M/40M/80M)	1
	Bluetooth	1
TX Frequency Range (MHz)	GSM850	824.2 – 848.8
	GSM1900	1850.2 – 1909.8
	WCDMA Band II	1852.4 – 1907.6
	WCDMA Band IV	1712.4 – 1752.6
	WCDMA Band V	826.4 – 846.6

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TX Frequency Range (MHz)	LTE FDD Band II	1850	–	1910
	LTE FDD Band IV	1710	–	1755
	LTE FDD Band V	824	–	849
	LTE FDD Band VII	2500	–	2570
	LTE FDD Band XII	699	–	716
	LTE FDD Band XVII	704	–	716
	LTE FDD Band XXX	2305	–	2315
	WLAN802.11 b/g/n(20M)	2412	–	2462
	WLAN802.11 n(40M)	2422	–	2452
	WLAN802.11 a/n(20M)/ac(20M) 5.2G	5180	–	5240
	WLAN802.11 n(40M)/ac(40M) 5.2G	5190	–	5230
	WLAN802.11 ac(80M) 5.2G	5210		
	WLAN802.11 a/n(20M)/ac(20M) 5.3G	5260	–	5320
	WLAN802.11 n(40M)/ac(40M) 5.3G	5270	–	5310
	WLAN802.11 ac(80M) 5.3G	5290		
	WLAN802.11 a/n/ac(20M) 5.6G	5500	–	5720
	WLAN802.11 n/ac(40M) 5.6G	5510	–	5710
	WLAN802.11 ac(80M) 5.6G	5530	–	5690
	WLAN802.11 a/n(20M)/ac(20M) 5.8G	5745	–	5825
	WLAN802.11 n(40M)/ac(40M) 5.8G	5710	–	5795
	WLAN802.11 ac(80M) 5.8G	5775		
	Bluetooth	2402	–	2480
Channel Number (ARFCN)	GSM850	128	–	251
	GSM1900	512	–	810
	WCDMA Band II	9262	–	9538
	WCDMA Band IV	1312	–	1513

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Channel Number (ARFCN)	WCDMA Band V	4132	—	4233
	LTE FDD Band II	18607	—	19193
	LTE FDD Band IV	19957	—	20393
	LTE FDD Band V	20407	—	20643
	LTE FDD Band VII	20775	—	21425
	LTE FDD Band XII	23007	—	23173
	LTE FDD Band XVII	23755	—	23825
	LTE FDD Band XXX	27685	—	27735
	WLAN802.11 b/g/n(20M)	1	—	11
	WLAN802.11 n(40M)	3	—	9
	WLAN802.11 a/n(20M)/ac(20M) 5.2G	36	—	48
	WLAN802.11 n(40M)/ac(40M) 5.2G	38	—	46
	WLAN802.11 ac(80M) 5.2G		42	
	WLAN802.11 a/n(20M)/ac(20M) 5.3G	52	—	64
	WLAN802.11 n(40M)/ac(40M) 5.3G	54	—	62
	WLAN802.11 ac(80M) 5.3G	58		
	WLAN802.11 a/n/ac(20M) 5.6G	100	—	144
	WLAN802.11 n/ac(40M) 5.6G	102	—	142
	WLAN802.11 ac(80M) 5.6G	106	—	138
	WLAN802.11 a/n(20M)/ac(20M) 5.8G	149	—	165
	WLAN802.11 n(40M)/ac(40M) 5.8G	142	—	159
	WLAN802.11 ac(80M) 5.8G		155	
	Bluetooth	0	—	78

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Max. SAR (1 g) (Unit: W/Kg)				
Mode	Band	Measured	Reported	Position / Channel
Head	GSM 850	0.237	0.360	☐Left ☒Right ☒Cheek ☐Tilt 190 Channel
	GSM 1900	0.336	0.397	☐Left ☒Right ☒Cheek ☐Tilt 810 Channel
	WCDMA Band II	0.626	0.701	☐Left ☒Right ☒Cheek ☐Tilt 9538 Channel
	WCDMA Band IV	0.613	0.724	☐Left ☒Right ☒Cheek ☐Tilt 1513 Channel
	WCDMA Band V	0.311	0.360	☐Left ☒Right ☒Cheek ☐Tilt 4183 Channel
	WLAN802.11 b	0.802	0.975	☐Left ☒Right ☒Cheek ☐Tilt 6 Channel
	WLAN802.11 a 5.2G	1.290	1.332	☐Left ☒Right ☒Cheek ☐Tilt 36 Channel
	WLAN802.11 n(20M) 5.2G	0.970	0.997	☐Left ☒Right ☒Cheek ☐Tilt 44 Channel
	WLAN802.11 n(40M) 5.2G	1.200	1.271	☐Left ☒Right ☒Cheek ☐Tilt 46 Channel
	WLAN802.11 ac(40M) 5.2G	0.924	1.091	☐Left ☒Right ☒Cheek ☐Tilt 46 Channel
	WLAN802.11 a 5.3G	1.300	1.340	☐Left ☒Right ☒Cheek ☐Tilt 56 Channel

Max. SAR (1 g) (Unit: W/Kg)				
Mode	Band	Measured	Reported	Position / Channel
Head	WLAN802.11 n(20M) 5.3G	0.993	1.062	☐Left ☒Right ☒Cheek ☐Tilt 52 Channel
	WLAN802.11 n(40M) 5.3G	1.030	1.261	☐Left ☒Right ☒Cheek ☐Tilt 62 Channel
	WLAN802.11 ac(40M) 5.3G	1.020	1.238	☐Left ☒Right ☒Cheek ☐Tilt 62 Channel
	WLAN802.11 a 5.6G	1.180	1.241	☐Left ☒Right ☒Cheek ☐Tilt 120 Channel
Head	WLAN802.11 n(20M) 5.6G	0.819	0.862	☐Left ☒Right ☒Cheek ☐Tilt 100 Channel
	WLAN802.11 ac(80M) 5.6G	0.872	0.930	☐Left ☒Right ☒Cheek ☐Tilt 122 Channel
	WLAN802.11 a 5.8G	0.916	0.975	☐Left ☒Right ☒Cheek ☐Tilt 165 Channel

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Max. SAR (1 g) (Unit: W/Kg)				
Mode	Band	Measured	Reported	Position / Channel
Body-worn	GSM 850	0.369	0.560	☐Front ☒Back 190 Channel
	GSM 1900	0.457	0.602	☐Front ☒Back 512 Channel
	WLAN802.11 n(40M) 5.2G	0.279	0.290	☐Front ☒Back 38 Channel
	WLAN802.11 n(40M) 5.3G	0.539	0.541	☐Front ☒Back 62 Channel
	WLAN802.11 a 5.6G	0.740	0.782	☐Front ☒Back 140 Channel
	WLAN802.11 ac(80M) 5.6G	0.769	0.783	☐Front ☒Back 122 Channel
	WLAN802.11 a 5.8G	0.543	0.578	☐Front ☒Back 149 Channel

Max. SAR (1 g) (Unit: W/Kg)				
Mode	Band	Measured	Reported	Position / Channel
Hotspot mode	GPRS 850 (1Dn4UP)	0.505	0.614	☒Front ☐Back ☐Bottom ☐Right ☐Left 251 Channel
	GPRS 1900 (1Dn3UP)	0.582	0.693	☐Front ☒Back ☐Bottom ☐Right ☐Left 810 Channel
	WCDMA Band II	0.913	1.041	☐Front ☒Back ☐Bottom ☐Right ☐Left 9400 Channel
	WCDMA Band IV	0.770	0.917	☐Front ☒Back ☐Bottom ☐Right ☐Left 1412 Channel
	WCDMA Band V	0.583	0.638	☒Front ☐Back ☐Bottom ☐Right ☐Left 4233 Channel
	LTE FDD Band II	0.848	0.928	☒Front ☐Back ☐Bottom ☐Right ☐Left 19100 Channel
	LTE FDD Band IV	0.924	1.025	☐Front ☒Back ☐Bottom ☐Right ☐Left 20050 Channel

Max. SAR (1 g) (Unit: W/Kg)				
Mode	Band	Measured	Reported	Position / Channel
Hotspot mode	LTE FDD Band V	0.500	0.650	☒Front ☐Back ☐Bottom ☐Right ☐Left 20525 Channel
	LTE FDD Band VII	0.969	1.045	☒Front ☐Back ☐Bottom ☐Right ☐Left 20850 Channel
	LTE FDD Band XII	0.242	0.272	☐Front ☐Back ☒Bottom ☐Right ☐Left 23130 Channel
	LTE FDD Band VXII	0.235	0.264	☐Front ☐Back ☒Bottom ☐Right ☐Left 23790 Channel
	LTE FDD Band XXX	0.637	0.789	☒Front ☐Back ☐Bottom ☐Right ☐Left 27710 Channel
	WLAN802.11 b	0.315	0.383	☐Front ☒Back ☐Bottom ☐Right ☐Left 6 Channel
	Bluetooth	0.049	0.077	☐Front ☐Back ☐Bottom ☐Right ☒Left 39 Channel

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Max. SAR (10 g) (Unit: W/Kg)				
Mode	Band	Measured	Reported	Position / Channel
Hand	WLAN802.11 n(40M) 5.2G	1.100	1.214	☒Front ☐Back ☐Top ☐Right ☐Left 38 Channel
	WLAN802.11 n(40M) 5.3G	1.080	1.310	☒Front ☐Back ☐Top ☐Right ☐Left 54 Channel
	WLAN802.11 a 5.6G	2.260	2.388	☐Front ☐Back ☐Top ☒Right ☐Left 140 Channel
	WLAN802.11 ac(80M) 5.6G	2.090	2.173	☐Front ☐Back ☐Top ☒Right ☐Left 138 Channel
	WLAN802.11 a 5.8G	1.590	1.692	☐Front ☐Back ☐Top ☒Right ☐Left 149 Channel

GSM/GPRS/EDGE conducted power table:

EUT mode	Frequency (MHz)	CH	Max. Rated Avg. Power + Max. Tolerance (dBm)	Burst average power	Source-based time average power
				Avg. (dBm)	Avg. (dBm)
GSM850 (GMSK)	824.2	128	33.5	31.62	22.59
	836.6	190	33.5	31.69	22.66
	848.8	251	33.5	31.72	22.69
The division factor compared to the number of TX time slot					
Division factor				1 TX time slot	
				-9.03	

Burst average power						
Max. Rated Avg. Power + Max. Tolerance (dBm)			33.5	30.5	28.5	27.5
			1Dn1UP	1Dn2UP	1Dn3UP	1Dn4UP
EUT mode	Frequency (MHz)	CH	Avg. (dBm)	Avg. (dBm)	Avg. (dBm)	Avg. (dBm)
GPRS 850	824.2	128	31.62	29.01	27.38	26.59
	836.6	190	31.69	29.04	27.40	26.66
	848.8	251	31.72	29.12	27.41	26.65
Source-based time average power						
GPRS 850	824.2	128	22.59	22.99	23.12	23.58
	836.6	190	22.66	23.02	23.14	23.65
	848.8	251	22.69	23.10	23.15	23.64
The division factor compared to the number of TX time slot						
Division factor			1 TX time slot	2 TX time slot	3 TX time slot	4 TX time slot
			-9.03	-6.02	-4.26	-3.01

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Burst average power						
Max. Rated Avg. Power + Max. Tolerance (dBm)			27	27	27	27
			1Dn1UP	1Dn2UP	1Dn3UP	1Dn4UP
EUT mode	Frequency (MHz)	CH	Avg. (dBm)	Avg. (dBm)	Avg. (dBm)	Avg. (dBm)
EDGE 850 (MCS5)	824.2	128	25.69	25.35	25.34	25.31
	836.6	190	25.76	25.27	25.32	25.21
	848.8	251	25.66	25.43	25.40	25.28
Source-based time average power						
EDGE 850 (MCS5)	824.2	128	16.66	19.33	21.08	22.30
	836.6	190	16.73	19.25	21.06	22.20
	848.8	251	16.63	19.41	21.14	22.27
The division factor compared to the number of TX time slot						
Division factor			1 TX time slot	2 TX time slot	3 TX time slot	4 TX time slot
			-9.03	-6.02	-4.26	-3.01

EUT mode	Frequency (MHz)	CH	Max. Rated Avg. Power + Max. Tolerance (dBm)	Burst average power	Source -based time average power
				Avg. (dBm)	Avg. (dBm)
GSM1900 (GMSK)	1850.2	512	30.5	29.30	20.27
	1800	661	30.5	29.53	20.50
	1909.8	810	30.5	29.78	20.75
The division factor compared to the number of TX time slot					
Division factor				1 TX time slot	
				-9.03	

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Burst average power						
Max. Rated Avg. Power + Max. Tolerance (dBm)			30.5	27.5	26.5	25
			1Dn1UP	1Dn2UP	1Dn3UP	1Dn4UP
EUT mode	Frequency (MHz)	CH	Avg. (dBm)	Avg. (dBm)	Avg. (dBm)	Avg. (dBm)
GPRS 1900	1850.2	512	29.30	26.26	25.73	24.03
	1880	661	29.53	26.35	25.22	23.96
	1909.8	810	29.78	26.52	25.74	24.07
Source-based time average power						
GPRS 1900	1850.2	512	20.27	20.24	21.47	21.02
	1880	661	20.50	20.33	20.96	20.95
	1909.8	810	20.75	20.50	21.48	21.06
The division factor compared to the number of TX time slot						
Division factor			1 TX time slot	2 TX time slot	3 TX time slot	4 TX time slot
			-9.03	-6.02	-4.26	-3.01

Burst average power						
Max. Rated Avg. Power + Max. Tolerance (dBm)			25	25	25	25
			1Dn1UP	1Dn2UP	1Dn3UP	1Dn4UP
EUT mode	Frequency (MHz)	CH	Avg. (dBm)	Avg. (dBm)	Avg. (dBm)	Avg. (dBm)
EDGE 1900 (MCS5)	1850.2	512	24.72	24.86	24.38	24.31
	1880	661	24.75	24.77	24.32	24.09
	1909.8	810	24.82	24.81	24.45	24.41
Source-based time average power						
EDGE 1900 (MCS5)	1850.2	512	15.69	18.84	20.12	21.30
	1880	661	15.72	18.75	20.06	21.08
	1909.8	810	15.79	18.79	20.19	21.40
The division factor compared to the number of TX time slot						
Division factor			1 TX time slot	2 TX time slot	3 TX time slot	4 TX time slot
			-9.03	-6.02	-4.26	-3.01

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WCDMA Band II / Band IV / Band V - HSDPA / HSUPA conducted power table:

Band	CH	Max. Rated Avg. Power + Max. Tolerance (dBm)	Rel99 AV(dBm)	HSDPA mode AV(dBm)				HSUPA mode AV(dBm)					HSPA+ mode AV(dBm)				
				SUB-1	SUB-2	SUB-3	SUB-4	SUB-1	SUB-2	SUB-3	SUB-4	SUB-5	SUB-1	SUB-2	SUB-3	SUB-4	SUB-5
WCDMA Band II	9262	24	23.45	22.35	22.33	21.87	21.94	21.41	21.47	21.95	21.52	22.31	21.72	21.28	21.26	21.33	21.33
	9400	24	23.43	22.34	22.29	21.89	21.9	21.36	21.44	21.92	21.50	22.30	21.76	21.34	21.32	21.40	21.34
	9538	24	23.51	22.39	22.36	21.86	21.98	21.43	21.47	22.01	21.55	22.38	22.09	21.63	21.67	21.71	21.73
WCDMA Band IV	1312	24	23.49	22.32	22.29	21.84	21.91	21.45	21.51	21.99	21.56	22.29	21.76	21.32	21.30	21.37	21.37
	1412	24	23.24	22.21	22.10	21.76	21.77	21.98	21.25	21.73	21.31	22.21	21.57	21.15	21.13	21.21	21.15
	1513	24	23.28	22.22	22.13	21.69	21.81	21.50	21.24	21.78	21.32	22.17	21.86	21.40	21.44	21.48	21.50
WCDMA Band V	4132	24.5	24.05	22.98	22.84	22.52	22.57	22.70	22.07	22.55	22.12	22.86	22.32	21.88	21.86	21.93	21.93
	4183	24.5	23.87	22.82	22.76	22.34	22.38	22.64	21.88	22.36	21.94	22.81	22.20	21.78	21.76	21.84	21.78
	4233	24.5	24.11	23.06	22.98	22.57	22.63	22.86	22.07	22.61	22.15	23.01	22.69	22.23	22.27	22.31	22.33

HSDPA

SUB-TEST	β_c	β_d	β_d *(SF)*	β_c/β_d	β_{HS} *(Note1, Note 2)*	CM (dB) *(Note 3)*	MPR (dB) *(Note 3)*
1	2/15	15/15	64	2/15	4/15	0.0	0.0
2	12/15	15/15	64	12/15	24/15	1.0	0.0
3	15/15	8/15	64	15/8	30/15	1.5	0.5
4	15/15	4/15	64	15/4	30/15	1.5	0.5

HSUPA

SUB-TEST	β_c	β_d	β_d *(SF)*	β_c/β_d	β_{HS} *(Note1)*	β_{ec}	β_{ed} *(Note 5) (Note 6)*	β_{ed} *(SF)*	β_{ed} *(Codes)*	CM *(dB) (Note 2)*	MPR *(dB) (Note 2)*	*AG Index (Note 6)*	*E-TFCI*
1	11/15	15/15	64	11/15	22/15	209/225	1309/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	β_{ed}1: 47/15 β_{ed}2: 47/15	4 4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15	15/15	64	15/15	30/15	24/15	134/15	4	1	1.0	0.0	21	81

LTE FDD Band II / Band IV / Band V / Band VII / Band XII / Band XVII / Band XXX power table:

FDD Band 2								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
20	QPSK	1 RB	0	1860	18700	23.89	24	0
				1880	18900	23.69	24	0
				1900	19100	23.61	24	0
			50	1860	18700	22.82	24	0
				1880	18900	22.77	24	0
				1900	19100	22.83	24	0
			99	1860	18700	23.30	24	0
				1880	18900	23.14	24	0
				1900	19100	23.26	24	0
		50 RB	0	1860	18700	22.20	23	0-1
				1880	18900	22.29	23	0-1
				1900	19100	22.28	23	0-1
			25	1860	18700	22.07	23	0-1
				1880	18900	21.88	23	0-1
				1900	19100	21.99	23	0-1
			50	1860	18700	21.95	23	0-1
				1880	18900	22.13	23	0-1
				1900	19100	22.08	23	0-1
		100RB		1860	18700	22.24	23	0-1
				1880	18900	22.21	23	0-1
				1900	19100	22.20	23	0-1
	16-QAM	1 RB	0	1860	18700	22.91	23	0-1
				1880	18900	22.90	23	0-1
				1900	19100	22.93	23	0-1
			50	1860	18700	22.16	23	0-1
				1880	18900	21.99	23	0-1
				1900	19100	21.98	23	0-1
			99	1860	18700	22.56	23	0-1
				1880	18900	22.31	23	0-1
				1900	19100	22.03	23	0-1
		50 RB	0	1860	18700	21.28	22	0-2
				1880	18900	21.34	22	0-2
				1900	19100	21.23	22	0-2
			25	1860	18700	21.01	22	0-2
				1880	18900	20.98	22	0-2
				1900	19100	21.06	22	0-2
			50	1860	18700	21.00	22	0-2
				1880	18900	21.11	22	0-2
				1900	19100	21.00	22	0-2
		100RB		1860	18700	21.17	22	0-2
				1880	18900	21.24	22	0-2
				1900	19100	21.22	22	0-2

FDD Band 2								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
15	QPSK	1 RB	0	1857.5	18675	23.48	24	0
				1880	18900	23.57	24	0
				1902.5	19125	23.54	24	0
			36	1857.5	18675	22.77	24	0
				1880	18900	22.67	24	0
				1902.5	19125	22.43	24	0
			74	1857.5	18675	22.92	24	0
				1880	18900	23.03	24	0
				1902.5	19125	22.97	24	0
		36 RB	0	1857.5	18675	21.99	23	0-1
				1880	18900	22.15	23	0-1
				1902.5	19125	21.91	23	0-1
			18	1857.5	18675	21.86	23	0-1
				1880	18900	22.07	23	0-1
				1902.5	19125	21.86	23	0-1
			37	1857.5	18675	21.79	23	0-1
				1880	18900	21.94	23	0-1
				1902.5	19125	21.86	23	0-1
		75RB		1857.5	18675	22.04	23	0-1
				1880	18900	21.99	23	0-1
				1902.5	19125	21.95	23	0-1
	16-QAM	1 RB	0	1857.5	18675	22.58	23	0-1
				1880	18900	22.69	23	0-1
				1902.5	19125	22.96	23	0-1
			36	1857.5	18675	21.76	23	0-1
				1880	18900	21.85	23	0-1
				1902.5	19125	22.00	23	0-1
			74	1857.5	18675	22.56	23	0-1
				1880	18900	21.88	23	0-1
				1902.5	19125	22.37	23	0-1
		36 RB	0	1857.5	18675	20.90	22	0-2
				1880	18900	21.00	22	0-2
				1902.5	19125	20.81	22	0-2
			18	1857.5	18675	20.97	22	0-2
				1880	18900	21.09	22	0-2
				1902.5	19125	20.76	22	0-2
			37	1857.5	18675	20.87	22	0-2
				1880	18900	21.01	22	0-2
				1902.5	19125	20.78	22	0-2
		75RB		1857.5	18675	20.91	22	0-2
				1880	18900	20.98	22	0-2
				1902.5	19125	21.01	22	0-2

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FDD Band 2								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	1855	18650	22.69	24	0
				1880	18900	23.09	24	0
				1905	19150	23.03	24	0
			25	1855	18650	22.68	24	0
				1880	18900	22.68	24	0
				1905	19150	22.74	24	0
			49	1855	18650	22.58	24	0
				1880	18900	22.74	24	0
				1905	19150	22.70	24	0
		25 RB	0	1855	18650	21.93	23	0-1
				1880	18900	21.89	23	0-1
				1905	19150	21.94	23	0-1
			12	1855	18650	21.76	23	0-1
				1880	18900	21.86	23	0-1
				1905	19150	21.72	23	0-1
			25	1855	18650	21.75	23	0-1
				1880	18900	21.85	23	0-1
				1905	19150	21.79	23	0-1
		50RB		1855	18650	21.84	23	0-1
				1880	18900	21.79	23	0-1
				1905	19150	21.82	23	0-1
	16-QAM	1 RB	0	1855	18650	22.60	23	0-1
				1880	18900	22.37	23	0-1
				1905	19150	22.52	23	0-1
			25	1855	18650	21.95	23	0-1
				1880	18900	21.86	23	0-1
				1905	19150	22.01	23	0-1
			49	1855	18650	21.93	23	0-1
				1880	18900	21.92	23	0-1
				1905	19150	21.83	23	0-1
		25 RB	0	1855	18650	20.97	22	0-2
				1880	18900	20.96	22	0-2
				1905	19150	21.14	22	0-2
			12	1855	18650	20.84	22	0-2
				1880	18900	20.97	22	0-2
				1905	19150	20.82	22	0-2
			25	1855	18650	20.67	22	0-2
				1880	18900	20.96	22	0-2
				1905	19150	20.87	22	0-2
		50RB		1855	18650	20.80	22	0-2
				1880	18900	20.83	22	0-2
				1905	19150	20.83	22	0-2

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FDD Band 2								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	1852.5	18625	22.59	24	0
				1880	18900	22.83	24	0
				1907.5	19175	22.62	24	0
			12	1852.5	18625	22.47	24	0
				1880	18900	22.72	24	0
				1907.5	19175	22.51	24	0
			24	1852.5	18625	22.76	24	0
				1880	18900	22.66	24	0
				1907.5	19175	22.64	24	0
		12 RB	0	1852.5	18625	21.65	23	0-1
				1880	18900	21.86	23	0-1
				1907.5	19175	21.72	23	0-1
			6	1852.5	18625	21.72	23	0-1
				1880	18900	21.67	23	0-1
				1907.5	19175	21.68	23	0-1
			13	1852.5	18625	21.82	23	0-1
				1880	18900	21.67	23	0-1
				1907.5	19175	21.69	23	0-1
		25RB		1852.5	18625	21.67	23	0-1
				1880	18900	21.63	23	0-1
				1907.5	19175	21.61	23	0-1
	16-QAM	1 RB	0	1852.5	18625	21.61	23	0-1
				1880	18900	22.01	23	0-1
				1907.5	19175	22.03	23	0-1
			12	1852.5	18625	22.06	23	0-1
				1880	18900	22.13	23	0-1
				1907.5	19175	22.22	23	0-1
			24	1852.5	18625	22.06	23	0-1
				1880	18900	21.92	23	0-1
				1907.5	19175	21.45	23	0-1
		12 RB	0	1852.5	18625	20.85	22	0-2
				1880	18900	20.86	22	0-2
				1907.5	19175	20.76	22	0-2
			6	1852.5	18625	20.78	22	0-2
				1880	18900	20.87	22	0-2
				1907.5	19175	20.75	22	0-2
			13	1852.5	18625	20.85	22	0-2
				1880	18900	20.83	22	0-2
				1907.5	19175	20.73	22	0-2
		25RB		1852.5	18625	20.58	22	0-2
				1880	18900	20.75	22	0-2
				1907.5	19175	20.75	22	0-2

FDD Band 2								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
3	QPSK	1 RB	0	1851.5	18615	22.45	24	0
				1880	18900	22.54	24	0
				1908.5	19185	22.63	24	0
			7	1851.5	18615	22.53	24	0
				1880	18900	22.64	24	0
				1908.5	19185	22.76	24	0
			14	1851.5	18615	22.39	24	0
				1880	18900	22.49	24	0
				1908.5	19185	22.65	24	0
		8 RB	0	1851.5	18615	21.62	23	0-1
				1880	18900	21.71	23	0-1
				1908.5	19185	21.74	23	0-1
			4	1851.5	18615	21.72	23	0-1
				1880	18900	21.85	23	0-1
				1908.5	19185	21.71	23	0-1
			7	1851.5	18615	21.67	23	0-1
				1880	18900	21.72	23	0-1
				1908.5	19185	21.72	23	0-1
		15RB		1851.5	18615	21.63	23	0-1
				1880	18900	21.77	23	0-1
				1908.5	19185	21.66	23	0-1
	16-QAM	1 RB	0	1851.5	18615	22.04	23	0-1
				1880	18900	22.05	23	0-1
				1908.5	19185	22.07	23	0-1
			7	1851.5	18615	21.53	23	0-1
				1880	18900	22.10	23	0-1
				1908.5	19185	21.82	23	0-1
			14	1851.5	18615	21.64	23	0-1
				1880	18900	21.83	23	0-1
				1908.5	19185	21.88	23	0-1
		8 RB	0	1851.5	18615	20.82	22	0-2
				1880	18900	20.82	22	0-2
				1908.5	19185	20.82	22	0-2
			4	1851.5	18615	20.93	22	0-2
				1880	18900	20.72	22	0-2
				1908.5	19185	20.94	22	0-2
			7	1851.5	18615	20.80	22	0-2
				1880	18900	20.91	22	0-2
				1908.5	19185	20.77	22	0-2
		15RB		1851.5	18615	20.71	22	0-2
				1880	18900	20.74	22	0-2
				1908.5	19185	20.77	22	0-2

FDD Band 2								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
1.4	QPSK	1 RB	0	1850.7	18607	22.47	24	0
				1880	18900	22.54	24	0
				1909.3	19193	22.61	24	0
			2	1850.7	18607	22.57	24	0
				1880	18900	22.62	24	0
				1909.3	19193	22.66	24	0
			5	1850.7	18607	22.45	24	0
				1880	18900	22.52	24	0
				1909.3	19193	22.57	24	0
		3 RB	0	1850.7	18607	22.53	24	0
				1880	18900	22.60	24	0
				1909.3	19193	22.67	24	0
			2	1850.7	18607	22.63	24	0
				1880	18900	22.64	24	0
				1909.3	19193	22.68	24	0
			3	1850.7	18607	22.62	24	0
				1880	18900	22.64	24	0
				1909.3	19193	22.58	24	0
		6RB		1850.7	18607	21.61	23	0-1
				1880	18900	21.74	23	0-1
				1909.3	19193	21.71	23	0-1
	16-QAM	1 RB	0	1850.7	18607	22.06	23	0-1
				1880	18900	22.20	23	0-1
				1909.3	19193	21.90	23	0-1
			2	1850.7	18607	22.05	23	0-1
				1880	18900	21.65	23	0-1
				1909.3	19193	22.15	23	0-1
			5	1850.7	18607	22.07	23	0-1
				1880	18900	21.72	23	0-1
				1909.3	19193	21.51	23	0-1
		3 RB	0	1850.7	18607	21.68	23	0-1
				1880	18900	21.75	23	0-1
				1909.3	19193	21.71	23	0-1
			2	1850.7	18607	21.74	23	0-1
				1880	18900	21.67	23	0-1
				1909.3	19193	21.73	23	0-1
			3	1850.7	18607	21.48	23	0-1
				1880	18900	21.64	23	0-1
				1909.3	19193	21.70	23	0-1
		6RB		1850.7	18607	20.76	22	0-2
				1880	18900	20.72	22	0-2
				1909.3	19193	20.78	22	0-2

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FDD Band 4								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
20	QPSK	1 RB	0	1720	20050	23.55	24	0
				1732.5	20175	23.33	24	0
				1745	20300	23.21	24	0
			50	1720	20050	22.34	24	0
				1732.5	20175	22.14	24	0
				1745	20300	22.00	24	0
			99	1720	20050	22.75	24	0
				1732.5	20175	22.41	24	0
				1745	20300	22.28	24	0
		50 RB	0	1720	20050	21.90	23	0-1
				1732.5	20175	21.88	23	0-1
				1745	20300	21.74	23	0-1
			25	1720	20050	21.51	23	0-1
				1732.5	20175	21.37	23	0-1
				1745	20300	21.32	23	0-1
			50	1720	20050	21.65	23	0-1
				1732.5	20175	21.52	23	0-1
				1745	20300	21.26	23	0-1
		100RB		1720	20050	21.76	23	0-1
				1732.5	20175	21.61	23	0-1
				1745	20300	21.63	23	0-1
	16-QAM	1 RB	0	1720	20050	22.39	23	0-1
				1732.5	20175	22.42	23	0-1
				1745	20300	22.33	23	0-1
			50	1720	20050	21.28	23	0-1
				1732.5	20175	21.45	23	0-1
				1745	20300	21.66	23	0-1
			99	1720	20050	21.84	23	0-1
				1732.5	20175	22.09	23	0-1
				1745	20300	21.73	23	0-1
		50 RB	0	1720	20050	20.92	22	0-2
				1732.5	20175	20.78	22	0-2
				1745	20300	20.76	22	0-2
			25	1720	20050	20.60	22	0-2
				1732.5	20175	20.43	22	0-2
				1745	20300	20.36	22	0-2
			50	1720	20050	20.58	22	0-2
				1732.5	20175	20.63	22	0-2
				1745	20300	20.26	22	0-2
		100RB		1720	20050	20.74	22	0-2
				1732.5	20175	20.64	22	0-2
				1745	20300	20.73	22	0-2

FDD Band 4								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
15	QPSK	1 RB	0	1717.5	20025	22.82	24	0
				1732.5	20175	22.99	24	0
				1747.5	20325	22.83	24	0
			36	1717.5	20025	22.31	24	0
				1732.5	20175	22.20	24	0
				1747.5	20325	22.31	24	0
			74	1717.5	20025	22.68	24	0
				1732.5	20175	22.35	24	0
				1747.5	20325	22.29	24	0
		36 RB	0	1717.5	20025	21.71	23	0-1
				1732.5	20175	21.76	23	0-1
				1747.5	20325	21.55	23	0-1
			18	1717.5	20025	21.44	23	0-1
				1732.5	20175	21.36	23	0-1
				1747.5	20325	21.20	23	0-1
			37	1717.5	20025	21.51	23	0-1
				1732.5	20175	21.29	23	0-1
				1747.5	20325	21.27	23	0-1
		75RB		1717.5	20025	21.50	23	0-1
				1732.5	20175	21.56	23	0-1
				1747.5	20325	21.37	23	0-1
	16-QAM	1 RB	0	1717.5	20025	22.08	23	0-1
				1732.5	20175	22.18	23	0-1
				1747.5	20325	22.01	23	0-1
			36	1717.5	20025	21.70	23	0-1
				1732.5	20175	21.39	23	0-1
				1747.5	20325	21.24	23	0-1
			74	1717.5	20025	22.13	23	0-1
				1732.5	20175	22.07	23	0-1
				1747.5	20325	21.20	23	0-1
		36 RB	0	1717.5	20025	20.72	22	0-2
				1732.5	20175	20.82	22	0-2
				1747.5	20325	20.54	22	0-2
			18	1717.5	20025	20.51	22	0-2
				1732.5	20175	20.39	22	0-2
				1747.5	20325	20.24	22	0-2
			37	1717.5	20025	20.45	22	0-2
				1732.5	20175	20.45	22	0-2
				1747.5	20325	20.20	22	0-2
		75RB		1717.5	20025	20.56	22	0-2
				1732.5	20175	20.40	22	0-2
				1747.5	20325	20.34	22	0-2

FDD Band 4								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	1715	20000	22.43	24	0
				1732.5	20175	22.50	24	0
				1750	20350	22.58	24	0
			25	1715	20000	22.30	24	0
				1732.5	20175	22.12	24	0
				1750	20350	22.13	24	0
			49	1715	20000	22.02	24	0
				1732.5	20175	22.19	24	0
				1750	20350	22.13	24	0
		25 RB	0	1715	20000	21.61	23	0-1
				1732.5	20175	21.38	23	0-1
				1750	20350	21.28	23	0-1
			12	1715	20000	21.55	23	0-1
				1732.5	20175	21.35	23	0-1
				1750	20350	21.17	23	0-1
			25	1715	20000	21.36	23	0-1
				1732.5	20175	21.25	23	0-1
				1750	20350	21.15	23	0-1
		50RB		1715	20000	21.50	23	0-1
				1732.5	20175	21.30	23	0-1
				1750	20350	21.28	23	0-1
	16-QAM	1 RB	0	1715	20000	22.17	23	0-1
				1732.5	20175	21.83	23	0-1
				1750	20350	21.79	23	0-1
			25	1715	20000	21.51	23	0-1
				1732.5	20175	21.10	23	0-1
				1750	20350	21.02	23	0-1
			49	1715	20000	21.51	23	0-1
				1732.5	20175	21.64	23	0-1
				1750	20350	21.62	23	0-1
		25 RB	0	1715	20000	20.59	22	0-2
				1732.5	20175	20.39	22	0-2
				1750	20350	20.33	22	0-2
			12	1715	20000	20.63	22	0-2
				1732.5	20175	20.28	22	0-2
				1750	20350	20.10	22	0-2
			25	1715	20000	20.53	22	0-2
				1732.5	20175	20.45	22	0-2
				1750	20350	20.17	22	0-2
		50RB		1715	20000	20.47	22	0-2
				1732.5	20175	20.26	22	0-2
				1750	20350	20.17	22	0-2

FDD Band 4								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	1712.5	19975	22.19	24	0
				1732.5	20175	22.29	24	0
				1752.5	20375	22.15	24	0
			12	1712.5	19975	22.22	24	0
				1732.5	20175	22.12	24	0
				1752.5	20375	22.17	24	0
			24	1712.5	19975	22.32	24	0
				1732.5	20175	22.04	24	0
				1752.5	20375	22.15	24	0
		12 RB	0	1712.5	19975	21.53	23	0-1
				1732.5	20175	21.28	23	0-1
				1752.5	20375	21.19	23	0-1
			6	1712.5	19975	21.46	23	0-1
				1732.5	20175	21.27	23	0-1
				1752.5	20375	21.21	23	0-1
			13	1712.5	19975	21.41	23	0-1
				1732.5	20175	21.26	23	0-1
				1752.5	20375	21.13	23	0-1
		25RB		1712.5	19975	21.42	23	0-1
				1732.5	20175	21.33	23	0-1
				1752.5	20375	21.12	23	0-1
	16-QAM	1 RB	0	1712.5	19975	21.74	23	0-1
				1732.5	20175	21.18	23	0-1
				1752.5	20375	21.28	23	0-1
			12	1712.5	19975	21.69	23	0-1
				1732.5	20175	21.66	23	0-1
				1752.5	20375	21.78	23	0-1
			24	1712.5	19975	21.17	23	0-1
				1732.5	20175	21.34	23	0-1
				1752.5	20375	21.23	23	0-1
		12 RB	0	1712.5	19975	20.56	22	0-2
				1732.5	20175	20.40	22	0-2
				1752.5	20375	20.31	22	0-2
			6	1712.5	19975	20.50	22	0-2
				1732.5	20175	20.21	22	0-2
				1752.5	20375	20.27	22	0-2
			13	1712.5	19975	20.49	22	0-2
				1732.5	20175	20.22	22	0-2
				1752.5	20375	20.10	22	0-2
		25RB		1712.5	19975	20.42	22	0-2
				1732.5	20175	20.21	22	0-2
				1752.5	20375	20.31	22	0-2

FDD Band 4								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
3	QPSK	1 RB	0	1711.5	19965	22.33	24	0
				1732.5	20175	22.15	24	0
				1753.5	20385	22.28	24	0
			7	1711.5	19965	22.41	24	0
				1732.5	20175	22.29	24	0
				1753.5	20385	22.21	24	0
			14	1711.5	19965	22.23	24	0
				1732.5	20175	22.02	24	0
				1753.5	20385	22.01	24	0
		8 RB	0	1711.5	19965	21.43	23	0-1
				1732.5	20175	21.25	23	0-1
				1753.5	20385	21.09	23	0-1
			4	1711.5	19965	21.58	23	0-1
				1732.5	20175	21.24	23	0-1
				1753.5	20385	21.12	23	0-1
			7	1711.5	19965	21.43	23	0-1
				1732.5	20175	21.29	23	0-1
				1753.5	20385	21.07	23	0-1
		15RB		1711.5	19965	21.47	23	0-1
				1732.5	20175	21.34	23	0-1
				1753.5	20385	21.10	23	0-1
	16-QAM	1 RB	0	1711.5	19965	21.95	23	0-1
				1732.5	20175	21.18	23	0-1
				1753.5	20385	21.35	23	0-1
			7	1711.5	19965	21.33	23	0-1
				1732.5	20175	21.49	23	0-1
				1753.5	20385	21.58	23	0-1
			14	1711.5	19965	21.70	23	0-1
				1732.5	20175	21.50	23	0-1
				1753.5	20385	21.00	23	0-1
		8 RB	0	1711.5	19965	20.58	22	0-2
				1732.5	20175	20.38	22	0-2
				1753.5	20385	20.32	22	0-2
			4	1711.5	19965	20.77	22	0-2
				1732.5	20175	20.41	22	0-2
				1753.5	20385	20.07	22	0-2
			7	1711.5	19965	20.52	22	0-2
				1732.5	20175	20.30	22	0-2
				1753.5	20385	20.23	22	0-2
		15RB		1711.5	19965	20.53	22	0-2
				1732.5	20175	20.31	22	0-2
				1753.5	20385	20.12	22	0-2

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FDD Band 4								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
1.4	QPSK	1 RB	0	1710.7	19957	22.08	24	0
				1732.5	20175	22.12	24	0
				1754.3	20393	22.03	24	0
			2	1710.7	19957	22.23	24	0
				1732.5	20175	22.26	24	0
				1754.3	20393	22.02	24	0
			5	1710.7	19957	22.15	24	0
				1732.5	20175	22.04	24	0
				1754.3	20393	22.00	24	0
		3 RB	0	1710.7	19957	22.22	24	0
				1732.5	20175	22.25	24	0
				1754.3	20393	22.05	24	0
			2	1710.7	19957	22.25	24	0
				1732.5	20175	22.32	24	0
				1754.3	20393	22.16	24	0
			3	1710.7	19957	22.30	24	0
				1732.5	20175	22.06	24	0
				1754.3	20393	22.10	24	0
		6RB		1710.7	19957	21.47	23	0-1
				1732.5	20175	21.24	23	0-1
				1754.3	20393	21.12	23	0-1
	16-QAM	1 RB	0	1710.7	19957	21.71	23	0-1
				1732.5	20175	21.06	23	0-1
				1754.3	20393	21.13	23	0-1
			2	1710.7	19957	21.45	23	0-1
				1732.5	20175	21.54	23	0-1
				1754.3	20393	21.55	23	0-1
			5	1710.7	19957	21.82	23	0-1
				1732.5	20175	21.61	23	0-1
				1754.3	20393	21.14	23	0-1
		3 RB	0	1710.7	19957	21.40	23	0-1
				1732.5	20175	21.25	23	0-1
				1754.3	20393	21.20	23	0-1
			2	1710.7	19957	21.34	23	0-1
				1732.5	20175	21.30	23	0-1
				1754.3	20393	21.16	23	0-1
			3	1710.7	19957	21.26	23	0-1
				1732.5	20175	21.15	23	0-1
				1754.3	20393	21.02	23	0-1
		6RB		1710.7	19957	20.50	22	0-2
				1732.5	20175	20.36	22	0-2
				1754.3	20393	20.02	22	0-2

FDD Band 5								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	829	20450	23.07	24.5	0
				836.5	20525	23.18	24.5	0
				844	20600	23.45	24.5	0
			25	829	20450	23.26	24.5	0
				836.5	20525	23.36	24.5	0
				844	20600	23.30	24.5	0
			49	829	20450	23.19	24.5	0
				836.5	20525	23.13	24.5	0
				844	20600	23.28	24.5	0
		25 RB	0	829	20450	22.08	23.5	0-1
				836.5	20525	22.22	23.5	0-1
				844	20600	22.31	23.5	0-1
			12	829	20450	22.09	23.5	0-1
				836.5	20525	22.23	23.5	0-1
				844	20600	22.38	23.5	0-1
			25	829	20450	22.17	23.5	0-1
				836.5	20525	22.20	23.5	0-1
				844	20600	22.51	23.5	0-1
		50RB		829	20450	22.06	23.5	0-1
				836.5	20525	22.25	23.5	0-1
				844	20600	22.31	23.5	0-1
	16-QAM	1 RB	0	829	20450	22.37	23.5	0-1
				836.5	20525	22.21	23.5	0-1
				844	20600	22.49	23.5	0-1
			25	829	20450	22.13	23.5	0-1
				836.5	20525	22.49	23.5	0-1
				844	20600	23.06	23.5	0-1
			49	829	20450	22.20	23.5	0-1
				836.5	20525	22.36	23.5	0-1
				844	20600	22.79	23.5	0-1
		25 RB	0	829	20450	21.19	22.5	0-2
				836.5	20525	21.15	22.5	0-2
				844	20600	21.24	22.5	0-2
			12	829	20450	21.21	22.5	0-2
				836.5	20525	21.22	22.5	0-2
				844	20600	21.41	22.5	0-2
			25	829	20450	21.05	22.5	0-2
				836.5	20525	21.17	22.5	0-2
				844	20600	21.40	22.5	0-2
		50RB		829	20450	21.12	22.5	0-2
				836.5	20525	21.25	22.5	0-2
				844	20600	21.25	22.5	0-2

FDD Band 5								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	826.5	20425	23.22	24.5	0
				836.5	20525	23.22	24.5	0
				846.5	20625	23.30	24.5	0
			12	826.5	20425	23.35	24.5	0
				836.5	20525	23.15	24.5	0
				846.5	20625	23.27	24.5	0
			24	826.5	20425	23.22	24.5	0
				836.5	20525	23.41	24.5	0
				846.5	20625	23.26	24.5	0
		12 RB	0	826.5	20425	22.19	23.5	0-1
				836.5	20525	22.17	23.5	0-1
				846.5	20625	22.36	23.5	0-1
			6	826.5	20425	22.24	23.5	0-1
				836.5	20525	22.25	23.5	0-1
				846.5	20625	22.42	23.5	0-1
			13	826.5	20425	22.17	23.5	0-1
				836.5	20525	22.32	23.5	0-1
				846.5	20625	22.38	23.5	0-1
		25RB		826.5	20425	22.11	23.5	0-1
				836.5	20525	22.33	23.5	0-1
				846.5	20625	22.49	23.5	0-1
	16-QAM	1 RB	0	826.5	20425	22.42	23.5	0-1
				836.5	20525	21.77	23.5	0-1
				846.5	20625	22.80	23.5	0-1
			12	826.5	20425	22.37	23.5	0-1
				836.5	20525	22.52	23.5	0-1
				846.5	20625	22.92	23.5	0-1
			24	826.5	20425	22.54	23.5	0-1
				836.5	20525	22.74	23.5	0-1
				846.5	20625	22.92	23.5	0-1
		12 RB	0	826.5	20425	21.14	22.5	0-2
				836.5	20525	21.21	22.5	0-2
				846.5	20625	21.41	22.5	0-2
			6	826.5	20425	21.20	22.5	0-2
				836.5	20525	21.34	22.5	0-2
				846.5	20625	21.31	22.5	0-2
			13	826.5	20425	21.10	22.5	0-2
				836.5	20525	21.21	22.5	0-2
				846.5	20625	21.37	22.5	0-2
		25RB		826.5	20425	21.18	22.5	0-2
				836.5	20525	21.36	22.5	0-2
				846.5	20625	21.44	22.5	0-2

FDD Band 5								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
3	QPSK	1 RB	0	825.5	20415	23.17	24.5	0
				836.5	20525	23.18	24.5	0
				847.5	20635	23.61	24.5	0
			7	825.5	20415	23.38	24.5	0
				836.5	20525	23.36	24.5	0
				847.5	20635	23.40	24.5	0
			14	825.5	20415	23.20	24.5	0
				836.5	20525	23.39	24.5	0
				847.5	20635	23.39	24.5	0
		8 RB	0	825.5	20415	22.14	23.5	0-1
				836.5	20525	22.20	23.5	0-1
				847.5	20635	22.37	23.5	0-1
			4	825.5	20415	22.03	23.5	0-1
				836.5	20525	22.29	23.5	0-1
				847.5	20635	22.36	23.5	0-1
			7	825.5	20415	22.11	23.5	0-1
				836.5	20525	22.37	23.5	0-1
				847.5	20635	22.39	23.5	0-1
		15RB		825.5	20415	22.17	23.5	0-1
				836.5	20525	22.19	23.5	0-1
				847.5	20635	22.39	23.5	0-1
	16-QAM	1 RB	0	825.5	20415	22.29	23.5	0-1
				836.5	20525	22.25	23.5	0-1
				847.5	20635	22.75	23.5	0-1
			7	825.5	20415	22.95	23.5	0-1
				836.5	20525	22.92	23.5	0-1
				847.5	20635	22.53	23.5	0-1
			14	825.5	20415	22.55	23.5	0-1
				836.5	20525	22.07	23.5	0-1
				847.5	20635	22.50	23.5	0-1
		8 RB	0	825.5	20415	21.20	22.5	0-2
				836.5	20525	21.28	22.5	0-2
				847.5	20635	21.25	22.5	0-2
			4	825.5	20415	21.09	22.5	0-2
				836.5	20525	21.32	22.5	0-2
				847.5	20635	21.50	22.5	0-2
			7	825.5	20415	21.10	22.5	0-2
				836.5	20525	21.33	22.5	0-2
				847.5	20635	21.37	22.5	0-2
		15RB		825.5	20415	21.35	22.5	0-2
				836.5	20525	21.36	22.5	0-2
				847.5	20635	21.47	22.5	0-2

FDD Band 5								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
1.4	QPSK	1 RB	0	824.7	20407	23.23	24.5	0
				836.5	20525	23.43	24.5	0
				848.3	20643	23.46	24.5	0
			2	824.7	20407	23.12	24.5	0
				836.5	20525	23.15	24.5	0
				848.3	20643	23.39	24.5	0
			5	824.7	20407	23.30	24.5	0
				836.5	20525	23.27	24.5	0
				848.3	20643	23.19	24.5	0
		3 RB	0	824.7	20407	23.12	24.5	0
				836.5	20525	23.37	24.5	0
				848.3	20643	23.50	24.5	0
			2	824.7	20407	23.28	24.5	0
				836.5	20525	23.42	24.5	0
				848.3	20643	23.28	24.5	0
			3	824.7	20407	23.20	24.5	0
				836.5	20525	23.36	24.5	0
				848.3	20643	23.45	24.5	0
		6RB		824.7	20407	22.03	23.5	0-1
				836.5	20525	22.29	23.5	0-1
				848.3	20643	22.32	23.5	0-1
	16-QAM	1 RB	0	824.7	20407	22.52	23.5	0-1
				836.5	20525	22.78	23.5	0-1
				848.3	20643	22.90	23.5	0-1
			2	824.7	20407	22.75	23.5	0-1
				836.5	20525	22.54	23.5	0-1
				848.3	20643	22.98	23.5	0-1
			5	824.7	20407	21.98	23.5	0-1
				836.5	20525	22.38	23.5	0-1
				848.3	20643	22.20	23.5	0-1
		3 RB	0	824.7	20407	22.25	23.5	0-1
				836.5	20525	22.34	23.5	0-1
				848.3	20643	22.42	23.5	0-1
			2	824.7	20407	22.31	23.5	0-1
				836.5	20525	22.41	23.5	0-1
				848.3	20643	22.40	23.5	0-1
			3	824.7	20407	22.20	23.5	0-1
				836.5	20525	22.28	23.5	0-1
				848.3	20643	22.41	23.5	0-1
		6RB		824.7	20407	20.96	22.5	0-2
				836.5	20525	21.22	22.5	0-2
				848.3	20643	21.27	22.5	0-2

FDD Band 7								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
20	QPSK	1 RB	0	2510	20850	22.67	23	0
				2535	21100	22.62	23	0
				2560	21350	22.52	23	0
			50	2510	20850	22.12	23	0
				2535	21100	21.77	23	0
				2560	21350	21.77	23	0
			99	2510	20850	22.61	23	0
				2535	21100	22.42	23	0
				2560	21350	22.24	23	0
		50 RB	0	2510	20850	21.56	22	0-1
				2535	21100	21.37	22	0-1
				2560	21350	21.16	22	0-1
			25	2510	20850	21.37	22	0-1
				2535	21100	21.16	22	0-1
				2560	21350	20.83	22	0-1
			50	2510	20850	21.43	22	0-1
				2535	21100	21.24	22	0-1
				2560	21350	20.84	22	0-1
		100RB		2510	20850	21.52	22	0-1
				2535	21100	21.39	22	0-1
				2560	21350	21.07	22	0-1
	16-QAM	1 RB	0	2510	20850	21.92	22	0-1
				2535	21100	21.75	22	0-1
				2560	21350	21.66	22	0-1
			50	2510	20850	21.24	22	0-1
				2535	21100	21.08	22	0-1
				2560	21350	20.53	22	0-1
			99	2510	20850	22.00	22	0-1
				2535	21100	21.57	22	0-1
				2560	21350	21.56	22	0-1
		50 RB	0	2510	20850	20.63	21	0-2
				2535	21100	20.30	21	0-2
				2560	21350	19.90	21	0-2
			25	2510	20850	20.43	21	0-2
				2535	21100	20.25	21	0-2
				2560	21350	19.87	21	0-2
			50	2510	20850	20.39	21	0-2
				2535	21100	20.14	21	0-2
				2560	21350	19.85	21	0-2
		100RB		2510	20850	20.33	21	0-2
				2535	21100	20.30	21	0-2
				2560	21350	20.00	21	0-2

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FDD Band 7								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
15	QPSK	1 RB	0	2507.5	20825	22.64	23	0
				2535	21100	22.51	23	0
				2562.5	21375	22.39	23	0
			36	2507.5	20825	22.05	23	0
				2535	21100	21.96	23	0
				2562.5	21375	21.76	23	0
			74	2507.5	20825	22.56	23	0
				2535	21100	22.37	23	0
				2562.5	21375	21.88	23	0
		36 RB	0	2507.5	20825	21.56	22	0-1
				2535	21100	21.48	22	0-1
				2562.5	21375	20.94	22	0-1
			18	2507.5	20825	21.33	22	0-1
				2535	21100	21.19	22	0-1
				2562.5	21375	20.84	22	0-1
			37	2507.5	20825	21.25	22	0-1
				2535	21100	21.24	22	0-1
				2562.5	21375	20.91	22	0-1
		75RB		2507.5	20825	21.48	22	0-1
				2535	21100	21.22	22	0-1
				2562.5	21375	20.88	22	0-1
	16-QAM	1 RB	0	2507.5	20825	21.96	22	0-1
				2535	21100	21.81	22	0-1
				2562.5	21375	21.28	22	0-1
			36	2507.5	20825	21.80	22	0-1
				2535	21100	21.21	22	0-1
				2562.5	21375	21.10	22	0-1
			74	2507.5	20825	21.84	22	0-1
				2535	21100	21.60	22	0-1
				2562.5	21375	21.13	22	0-1
		36 RB	0	2507.5	20825	20.52	21	0-2
				2535	21100	20.24	21	0-2
				2562.5	21375	19.97	21	0-2
			18	2507.5	20825	20.34	21	0-2
				2535	21100	20.15	21	0-2
				2562.5	21375	19.85	21	0-2
			37	2507.5	20825	20.18	21	0-2
				2535	21100	20.16	21	0-2
				2562.5	21375	19.87	21	0-2
		75RB		2507.5	20825	20.43	21	0-2
				2535	21100	20.30	21	0-2
				2562.5	21375	19.88	21	0-2

FDD Band 7								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	2505	20800	22.32	23	0
				2535	21100	22.26	23	0
				2565	21400	21.88	23	0
			25	2505	20800	22.06	23	0
				2535	21100	21.86	23	0
				2565	21400	21.86	23	0
			49	2505	20800	22.19	23	0
				2535	21100	22.00	23	0
				2565	21400	21.83	23	0
		25 RB	0	2505	20800	21.29	22	0-1
				2535	21100	21.13	22	0-1
				2565	21400	20.85	22	0-1
			12	2505	20800	21.26	22	0-1
				2535	21100	20.99	22	0-1
				2565	21400	20.79	22	0-1
			25	2505	20800	21.32	22	0-1
				2535	21100	21.02	22	0-1
				2565	21400	20.82	22	0-1
		50RB		2505	20800	21.34	22	0-1
				2535	21100	21.12	22	0-1
				2565	21400	20.87	22	0-1
	16-QAM	1 RB	0	2505	20800	21.95	22	0-1
				2535	21100	21.46	22	0-1
				2565	21400	21.29	22	0-1
			25	2505	20800	21.38	22	0-1
				2535	21100	20.89	22	0-1
				2565	21400	20.99	22	0-1
			49	2505	20800	21.53	22	0-1
				2535	21100	20.96	22	0-1
				2565	21400	20.97	22	0-1
		25 RB	0	2505	20800	20.35	21	0-2
				2535	21100	20.22	21	0-2
				2565	21400	20.05	21	0-2
			12	2505	20800	20.19	21	0-2
				2535	21100	20.04	21	0-2
				2565	21400	19.78	21	0-2
			25	2505	20800	20.25	21	0-2
				2535	21100	20.02	21	0-2
				2565	21400	19.87	21	0-2
		50RB		2505	20800	20.33	21	0-2
				2535	21100	20.01	21	0-2
				2565	21400	19.87	21	0-2

FDD Band 7								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	2502.5	20775	22.16	23	0
				2535	21100	21.96	23	0
				2567.5	21425	21.82	23	0
			12	2502.5	20775	22.12	23	0
				2535	21100	21.99	23	0
				2567.5	21425	21.75	23	0
			24	2502.5	20775	22.17	23	0
				2535	21100	21.85	23	0
				2567.5	21425	21.70	23	0
		12 RB	0	2502.5	20775	21.28	22	0-1
				2535	21100	21.00	22	0-1
				2567.5	21425	20.83	22	0-1
			6	2502.5	20775	21.21	22	0-1
				2535	21100	20.96	22	0-1
				2567.5	21425	20.85	22	0-1
			13	2502.5	20775	21.20	22	0-1
				2535	21100	20.95	22	0-1
				2567.5	21425	20.77	22	0-1
		25RB		2502.5	20775	21.22	22	0-1
				2535	21100	20.89	22	0-1
				2567.5	21425	20.80	22	0-1
	16-QAM	1 RB	0	2502.5	20775	21.71	22	0-1
				2535	21100	20.81	22	0-1
				2567.5	21425	21.08	22	0-1
			12	2502.5	20775	21.33	22	0-1
				2535	21100	21.03	22	0-1
				2567.5	21425	21.02	22	0-1
			24	2502.5	20775	21.33	22	0-1
				2535	21100	21.32	22	0-1
				2567.5	21425	21.07	22	0-1
		12 RB	0	2502.5	20775	20.26	21	0-2
				2535	21100	20.04	21	0-2
				2567.5	21425	19.86	21	0-2
			6	2502.5	20775	20.32	21	0-2
				2535	21100	19.89	21	0-2
				2567.5	21425	19.87	21	0-2
			13	2502.5	20775	20.31	21	0-2
				2535	21100	20.03	21	0-2
				2567.5	21425	19.80	21	0-2
		25RB		2502.5	20775	20.29	21	0-2
				2535	21100	19.98	21	0-2
				2567.5	21425	19.96	21	0-2

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FDD Band 12								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	704	23060	23.61	24.5	0
				707.5	23095	23.47	24.5	0
				711	23130	23.61	24.5	0
			25	704	23060	23.70	24.5	0
				707.5	23095	23.65	24.5	0
				711	23130	23.74	24.5	0
			49	704	23060	23.87	24.5	0
				707.5	23095	23.89	24.5	0
				711	23130	24.00	24.5	0
		25 RB	0	704	23060	22.80	23.5	0-1
				707.5	23095	22.91	23.5	0-1
				711	23130	22.87	23.5	0-1
			12	704	23060	22.89	23.5	0-1
				707.5	23095	22.98	23.5	0-1
				711	23130	23.02	23.5	0-1
			25	704	23060	22.88	23.5	0-1
				707.5	23095	23.00	23.5	0-1
				711	23130	23.12	23.5	0-1
		50RB		704	23060	22.94	23.5	0-1
				707.5	23095	22.91	23.5	0-1
				711	23130	23.00	23.5	0-1
	16-QAM	1 RB	0	704	23060	23.24	23.5	0-1
				707.5	23095	23.05	23.5	0-1
				711	23130	23.08	23.5	0-1
			25	704	23060	23.52	23.5	0-1
				707.5	23095	22.96	23.5	0-1
				711	23130	22.92	23.5	0-1
			49	704	23060	23.31	23.5	0-1
				707.5	23095	23.47	23.5	0-1
				711	23130	23.31	23.5	0-1
		25 RB	0	704	23060	21.79	22.5	0-2
				707.5	23095	21.75	22.5	0-2
				711	23130	21.83	22.5	0-2
			12	704	23060	21.85	22.5	0-2
				707.5	23095	21.94	22.5	0-2
				711	23130	22.01	22.5	0-2
			25	704	23060	21.89	22.5	0-2
				707.5	23095	21.94	22.5	0-2
				711	23130	22.11	22.5	0-2
		50RB		704	23060	21.95	22.5	0-2
				707.5	23095	21.98	22.5	0-2
				711	23130	21.98	22.5	0-2

FDD Band 12								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	701.5	23035	23.59	24.5	0
				707.5	23095	23.61	24.5	0
				713.5	23155	23.70	24.5	0
			12	701.5	23035	23.65	24.5	0
				707.5	23095	23.69	24.5	0
				713.5	23155	23.94	24.5	0
			24	701.5	23035	23.78	24.5	0
				707.5	23095	23.83	24.5	0
				713.5	23155	24.00	24.5	0
		12 RB	0	701.5	23035	22.95	23.5	0-1
				707.5	23095	22.72	23.5	0-1
				713.5	23155	23.01	23.5	0-1
			6	701.5	23035	22.97	23.5	0-1
				707.5	23095	22.87	23.5	0-1
				713.5	23155	23.12	23.5	0-1
			13	701.5	23035	22.77	23.5	0-1
				707.5	23095	22.95	23.5	0-1
				713.5	23155	23.11	23.5	0-1
		25RB		701.5	23035	22.72	23.5	0-1
				707.5	23095	22.85	23.5	0-1
				713.5	23155	23.09	23.5	0-1
	16-QAM	1 RB	0	701.5	23035	23.15	23.5	0-1
				707.5	23095	22.74	23.5	0-1
				713.5	23155	22.87	23.5	0-1
			12	701.5	23035	23.32	23.5	0-1
				707.5	23095	23.32	23.5	0-1
				713.5	23155	22.97	23.5	0-1
			24	701.5	23035	22.67	23.5	0-1
				707.5	23095	23.05	23.5	0-1
				713.5	23155	23.50	23.5	0-1
		12 RB	0	701.5	23035	21.87	22.5	0-2
				707.5	23095	21.72	22.5	0-2
				713.5	23155	21.93	22.5	0-2
			6	701.5	23035	21.84	22.5	0-2
				707.5	23095	21.73	22.5	0-2
				713.5	23155	22.15	22.5	0-2
			13	701.5	23035	21.79	22.5	0-2
				707.5	23095	21.94	22.5	0-2
				713.5	23155	22.09	22.5	0-2
		25RB		701.5	23035	21.84	22.5	0-2
				707.5	23095	21.84	22.5	0-2
				713.5	23155	22.02	22.5	0-2

FDD Band 12								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
3	QPSK	1 RB	0	700.5	23025	23.75	24.5	0
				707.5	23095	23.78	24.5	0
				714.5	23165	23.84	24.5	0
			7	700.5	23025	23.93	24.5	0
				707.5	23095	23.97	24.5	0
				714.5	23165	23.88	24.5	0
			14	700.5	23025	23.80	24.5	0
				707.5	23095	23.75	24.5	0
				714.5	23165	23.81	24.5	0
		8 RB	0	700.5	23025	22.90	23.5	0-1
				707.5	23095	22.87	23.5	0-1
				714.5	23165	23.00	23.5	0-1
			4	700.5	23025	22.84	23.5	0-1
				707.5	23095	22.88	23.5	0-1
				714.5	23165	23.10	23.5	0-1
			7	700.5	23025	22.85	23.5	0-1
				707.5	23095	22.86	23.5	0-1
				714.5	23165	23.02	23.5	0-1
		15RB		700.5	23025	22.88	23.5	0-1
				707.5	23095	22.91	23.5	0-1
				714.5	23165	23.14	23.5	0-1
	16-QAM	1 RB	0	700.5	23025	23.35	23.5	0-1
				707.5	23095	22.89	23.5	0-1
				714.5	23165	23.07	23.5	0-1
			7	700.5	23025	23.47	23.5	0-1
				707.5	23095	23.11	23.5	0-1
				714.5	23165	23.17	23.5	0-1
			14	700.5	23025	22.96	23.5	0-1
				707.5	23095	23.25	23.5	0-1
				714.5	23165	23.44	23.5	0-1
		8 RB	0	700.5	23025	22.00	22.5	0-2
				707.5	23095	21.93	22.5	0-2
				714.5	23165	22.10	22.5	0-2
			4	700.5	23025	21.82	22.5	0-2
				707.5	23095	21.98	22.5	0-2
				714.5	23165	22.08	22.5	0-2
			7	700.5	23025	21.66	22.5	0-2
				707.5	23095	21.77	22.5	0-2
				714.5	23165	21.94	22.5	0-2
		15RB		700.5	23025	21.83	22.5	0-2
				707.5	23095	21.80	22.5	0-2
				714.5	23165	22.36	22.5	0-2

FDD Band 12								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
1.4	QPSK	1 RB	0	699.7	23017	23.68	24.5	0
				707.5	23095	23.66	24.5	0
				715.3	23173	23.74	24.5	0
			2	699.7	23017	23.77	24.5	0
				707.5	23095	23.80	24.5	0
				715.3	23173	23.99	24.5	0
			5	699.7	23017	23.75	24.5	0
				707.5	23095	23.74	24.5	0
				715.3	23173	23.83	24.5	0
		3 RB	0	699.7	23017	23.91	24.5	0
				707.5	23095	23.84	24.5	0
				715.3	23173	24.03	24.5	0
			2	699.7	23017	23.42	24.5	0
				707.5	23095	23.47	24.5	0
				715.3	23173	23.46	24.5	0
			3	699.7	23017	23.48	24.5	0
				707.5	23095	23.47	24.5	0
				715.3	23173	23.41	24.5	0
		6RB		699.7	23017	22.89	23.5	0-1
				707.5	23095	22.57	23.5	0-1
				715.3	23173	22.99	23.5	0-1
	16-QAM	1 RB	0	699.7	23017	23.10	23.5	0-1
				707.5	23095	22.81	23.5	0-1
				715.3	23173	22.96	23.5	0-1
			2	699.7	23017	23.31	23.5	0-1
				707.5	23095	23.19	23.5	0-1
				715.3	23173	23.35	23.5	0-1
			5	699.7	23017	22.77	23.5	0-1
				707.5	23095	23.31	23.5	0-1
				715.3	23173	23.37	23.5	0-1
		3 RB	0	699.7	23017	22.38	23.5	0-1
				707.5	23095	22.16	23.5	0-1
				715.3	23173	22.46	23.5	0-1
			2	699.7	23017	22.47	23.5	0-1
				707.5	23095	22.45	23.5	0-1
				715.3	23173	22.43	23.5	0-1
			3	699.7	23017	22.47	23.5	0-1
				707.5	23095	22.42	23.5	0-1
				715.3	23173	22.45	23.5	0-1
		6RB		699.7	23017	21.93	22.5	0-2
				707.5	23095	21.96	22.5	0-2
				715.3	23173	22.04	22.5	0-2

FDD Band 17								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	709	23780	23.70	24.5	0
				710	23790	23.58	24.5	0
				711	23800	23.68	24.5	0
			25	709	23780	23.87	24.5	0
				710	23790	23.93	24.5	0
				711	23800	23.95	24.5	0
			49	709	23780	23.81	24.5	0
				710	23790	24.00	24.5	0
				711	23800	24.04	24.5	0
		25 RB	0	709	23780	22.79	23.5	0-1
				710	23790	22.98	23.5	0-1
				711	23800	22.97	23.5	0-1
			12	709	23780	22.91	23.5	0-1
				710	23790	23.01	23.5	0-1
				711	23800	23.01	23.5	0-1
			25	709	23780	22.89	23.5	0-1
				710	23790	23.05	23.5	0-1
				711	23800	23.10	23.5	0-1
		50RB		709	23780	23.04	23.5	0-1
				710	23790	23.04	23.5	0-1
				711	23800	23.05	23.5	0-1
	16-QAM	1 RB	0	709	23780	23.17	23.5	0-1
				710	23790	23.03	23.5	0-1
				711	23800	22.67	23.5	0-1
			25	709	23780	23.28	23.5	0-1
				710	23790	23.22	23.5	0-1
				711	23800	23.43	23.5	0-1
			49	709	23780	23.04	23.5	0-1
				710	23790	23.13	23.5	0-1
				711	23800	23.50	23.5	0-1
		25 RB	0	709	23780	21.73	22.5	0-2
				710	23790	21.99	22.5	0-2
				711	23800	21.66	22.5	0-2
			12	709	23780	21.95	22.5	0-2
				710	23790	22.11	22.5	0-2
				711	23800	21.89	22.5	0-2
			25	709	23780	21.87	22.5	0-2
				710	23790	22.11	22.5	0-2
				711	23800	22.09	22.5	0-2
		50RB		709	23780	22.02	22.5	0-2
				710	23790	22.08	22.5	0-2
				711	23800	21.88	22.5	0-2

FDD Band 17								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	706.5	23755	23.61	24.5	0
				710	23790	23.74	24.5	0
				713.5	23825	23.87	24.5	0
			12	706.5	23755	23.73	24.5	0
				710	23790	23.66	24.5	0
				713.5	23825	23.79	24.5	0
			24	706.5	23755	23.85	24.5	0
				710	23790	24.11	24.5	0
				713.5	23825	24.09	24.5	0
		12 RB	0	706.5	23755	22.73	23.5	0-1
				710	23790	22.97	23.5	0-1
				713.5	23825	22.95	23.5	0-1
			6	706.5	23755	22.73	23.5	0-1
				710	23790	23.05	23.5	0-1
				713.5	23825	23.20	23.5	0-1
			13	706.5	23755	22.78	23.5	0-1
				710	23790	22.97	23.5	0-1
				713.5	23825	23.09	23.5	0-1
		25RB		706.5	23755	22.64	23.5	0-1
				710	23790	23.00	23.5	0-1
				713.5	23825	22.97	23.5	0-1
	16-QAM	1 RB	0	706.5	23755	22.88	23.5	0-1
				710	23790	23.04	23.5	0-1
				713.5	23825	22.95	23.5	0-1
			12	706.5	23755	23.34	23.5	0-1
				710	23790	23.49	23.5	0-1
				713.5	23825	23.47	23.5	0-1
			24	706.5	23755	22.84	23.5	0-1
				710	23790	23.33	23.5	0-1
				713.5	23825	23.50	23.5	0-1
		12 RB	0	706.5	23755	21.77	22.5	0-2
				710	23790	22.07	22.5	0-2
				713.5	23825	22.06	22.5	0-2
			6	706.5	23755	21.76	22.5	0-2
				710	23790	21.99	22.5	0-2
				713.5	23825	22.00	22.5	0-2
			13	706.5	23755	21.79	22.5	0-2
				710	23790	21.94	22.5	0-2
				713.5	23825	22.06	22.5	0-2
		25RB		706.5	23755	21.81	22.5	0-2
				710	23790	22.09	22.5	0-2
				713.5	23825	21.99	22.5	0-2

FDD Band 30								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	2310	27710	22.57	23.5	0
			25	2310	27710	22.41	23.5	0
			49	2310	27710	22.37	23.5	0
		25 RB	0	2310	27710	21.59	22.5	0-1
			12	2310	27710	21.60	22.5	0-1
			25	2310	27710	21.91	22.5	0-1
		50RB		2310	27710	21.53	22.5	0-1
	16-QAM	1 RB	0	2310	27710	21.76	22.5	0-1
			25	2310	27710	21.63	22.5	0-1
			49	2310	27710	21.82	22.5	0-1
		25 RB	0	2310	27710	20.36	21.5	0-2
			12	2310	27710	20.39	21.5	0-2
			25	2310	27710	20.73	21.5	0-2
		50RB		2310	27710	20.62	21.5	0-2

FDD Band 30								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	2307.5	27685	22.57	23.5	0
				2310	27710	22.45	23.5	0
				2312.5	27735	22.29	23.5	0
			12	2307.5	27685	22.48	23.5	0
				2310	27710	22.28	23.5	0
				2312.5	27735	21.94	23.5	0
			24	2307.5	27685	22.35	23.5	0
				2310	27710	21.96	23.5	0
				2312.5	27735	21.57	23.5	0
		12 RB	0	2307.5	27685	21.35	22.5	0-1
				2310	27710	21.61	22.5	0-1
				2312.5	27735	21.49	22.5	0-1
			6	2307.5	27685	21.85	22.5	0-1
				2310	27710	21.56	22.5	0-1
				2312.5	27735	21.78	22.5	0-1
			13	2307.5	27685	21.69	22.5	0-1
				2310	27710	21.50	22.5	0-1
				2312.5	27735	21.52	22.5	0-1
		25RB		2307.5	27685	21.74	22.5	0-1
				2310	27710	21.45	22.5	0-1
				2312.5	27735	21.24	22.5	0-1
	16-QAM	1 RB	0	2307.5	27685	21.86	22.5	0-1
				2310	27710	21.15	22.5	0-1
				2312.5	27735	21.86	22.5	0-1
			12	2307.5	27685	21.63	22.5	0-1
				2310	27710	22.11	22.5	0-1
				2312.5	27735	21.27	22.5	0-1
			24	2307.5	27685	21.73	22.5	0-1
				2310	27710	21.40	22.5	0-1
				2312.5	27735	21.28	22.5	0-1
		12 RB	0	2307.5	27685	20.57	21.5	0-2
				2310	27710	20.43	21.5	0-2
				2312.5	27735	20.57	21.5	0-2
			6	2307.5	27685	20.46	21.5	0-2
				2310	27710	20.79	21.5	0-2
				2312.5	27735	20.50	21.5	0-2
			13	2307.5	27685	20.41	21.5	0-2
				2310	27710	20.70	21.5	0-2
				2312.5	27735	20.46	21.5	0-2
		25RB		2307.5	27685	20.42	21.5	0-2
				2310	27710	20.26	21.5	0-2
				2312.5	27735	20.65	21.5	0-2

LTE FDD Band II / Band IV / Band VII / Band XII / Band XVII CA power table:

Two Component Carrier Maximum Conducted Power														
PCC									SCC				Power	
PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Frequency [MHz]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	Tx.Power (DL CA active)	Tx.Power (DL CA inactive)
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B12	10	5095	737.5	23.75	23.89
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B17	10	5790	740	23.85	23.89
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B29	10	9715	722.5	23.61	23.89
LTE B4	20	20050	1720	QPSK	1	0	2050	2120	LTE B7	20	3100	2655	22.51	23.55
LTE B4	20	20050	1720	QPSK	1	0	2050	2120	LTE B12	10	5095	737.5	22.42	23.55
LTE B4	20	20050	1720	QPSK	1	0	2050	2120	LTE B17	10	5790	740	22.51	23.55
LTE B4	20	20050	1720	QPSK	1	0	2050	2120	LTE B29	10	9715	722.5	22.39	23.55
LTE B7	20	20850	2510	QPSK	1	0	3100	2655	LTE B4	20	2050	2120	22.39	22.67
LTE B12	10	23130	711	QPSK	1	49	5095	737.5	LTE B2	20	700	1940	23.31	24.00
LTE B12	10	23130	711	QPSK	1	49	5095	737.5	LTE B4	20	2050	2120	23.29	24.00
LTE B17	10	23800	711	QPSK	1	49	5790	740	LTE B2	20	700	1940	23.38	24.04
LTE B17	10	23800	711	QPSK	1	49	5790	740	LTE B4	20	2050	2120	23.23	24.04

Note.

1. 2DL CA combination (inter-band): B2+B29, B4+B29, B2+B17, B4+B17, B2+B12, B4+B12, B4+B7
2. Uplink maximum output power is measured with downlink carrier aggregation active, only for the channel with highest measured maximum output power when downlink carrier aggregation is inactive, to confirm that when downlink carrier aggregation is active uplink maximum output power remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output power measured when downlink carrier aggregation inactive.

WLAN802.11 a/b/g/n(20M/40M)/ac(20M/40M/80M) conducted power table:

Band \ Antenna	SISO		MIMO
	Chain 0	Chain 1	Chain0+1
WLAN802.11b	V	V	—
WLAN802.11g	V	V	—
WLAN802.11n(20M)	V	V	V
WLAN802.11n(40M)	V	V	V
WLAN802.11a	V	V	—
WLAN802.11n(20M) 5G	V	V	V
WLAN802.11n(40M) 5G	V	V	V
WLAN802.11ac(20M) 5G	V	V	V
WLAN802.11ac(40M) 5G	V	V	V
WLAN802.11ac(80M) 5G	V	V	V

Main (CH0)

802.11 b		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average conducted output power (dBm)
CH	Frequency (MHz)		Data Rate (Mbps)
			1
1	2412	17	16.09
6	2437	17	16.15
11	2462	17	16.04

802.11 g		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average conducted output power (dBm)
CH	Frequency (MHz)		Data Rate (Mbps)
			6
1	2412	17	16.63
6	2437	17	16.60
11	2462	17	16.61

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Main (CH0)

802.11 n(20M)		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average conducted output power (dBm)
CH	Frequency (MHz)		Data Rate (Mbps)
			6.5
1	2412	14	13.31
6	2437	14	13.25
11	2462	14	13.33

802.11 n(40M)		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average conducted output power (dBm)
CH	Frequency (MHz)		Data Rate (Mbps)
			13.5
3	2422	14	13.44
6	2437	14	13.12
9	2452	14	13.08

Main (CH0)

802.11 a		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average conducted output power(dBm)
5.2/5.3/5.6/5.8G			Data Rate (Mbps)
CH	Frequency (MHz)		6
36	5180	14	13.86
40	5200	14	13.75
44	5220	14	13.35
48	5240	14	13.24
52	5260	14	13.92
56	5280	14	13.87
60	5300	14	13.83
64	5320	14	13.80
100	5500	13	12.98
120	5600	13	12.78
140	5700	13	12.56
149	5745	13	12.71
157	5785	13	12.72
165	5825	13	12.73

Main (CH0)

802.11 n(20M)		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average conducted output power(dBm)
5.2/5.3/5.6/5.8G			Data Rate (Mbps)
CH	Frequency (MHz)		6.5
36	5180	14	13.24
40	5200	14	13.04
44	5220	14	13.88
48	5240	14	13.76
52	5260	14	13.71
56	5280	14	13.68
60	5300	14	13.67
64	5320	14	13.60
100	5500	13	12.78
120	5600	13	12.52
140	5700	13	12.21
149	5745	13	12.43
157	5785	13	12.42
165	5825	13	12.41

Main (CH0)

802.11 n(40M)		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average conducted output power(dBm)
5.2/5.3/5.6/5.8G			Data Rate (Mbps)
CH	Frequency (MHz)		13.5
38	5190	14	13.87
46	5230	14	13.75
54	5270	14	13.16
62	5310	14	13.12
102	5510	12	11.72
110	5550	12	11.63
118	5590	12	11.56
126	5630	12	11.48
134	5670	12	11.43

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Main (CH0)

802.11 ac(20M)		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average conducted output power(dBm)
5.2/5.3/5.6/5.8G			Data Rate (Mbps)
CH	Frequency (MHz)		6.5
36	5180	14	13.25
40	5200	14	13.04
44	5220	14	13.83
48	5240	14	13.76
52	5260	14	13.68
56	5280	14	13.66
60	5300	14	13.67
64	5320	14	13.57
100	5500	13	12.45
120	5600	13	12.31
140	5700	13	12.34
144	5720	13	12.85
149	5745	13	12.78
157	5785	13	12.81
165	5825	13	12.87

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Main (CH0)

802.11 ac(40M) 5.2/5.3/5.6/5.8G		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average conducted output power(dBm) Data Rate (Mbps)
CH	Frequency (MHz)		13.5
38	5190	14	13.60
46	5230	14	13.28
54	5270	14	13.15
62	5310	14	13.16
102	5510	12	11.82
110	5550	12	11.77
118	5590	12	11.75
126	5630	12	11.76
134	5670	12	11.63
142	5710	12	11.52
151	5755	12	11.44
159	5795	12	11.41

802.11 ac(80M) 5.2/5.3/5.6/5.8G		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average conducted output power(dBm) Data Rate (Mbps)
CH	Frequency (MHz)		29.3
42	5210	13	12.15
58	5290	13	12.35
106	5530	11	10.88
122	5610	13	12.72
138	5690	13	12.39
155	5775	10	9.67

Aux (CH1)

802.11 b		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average conducted output power (dBm)
CH	Frequency (MHz)		Data Rate (Mbps)
			1
1	2412	17	16.47
6	2437	17	16.51
11	2462	17	16.60

802.11 g		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average conducted output power (dBm)
CH	Frequency (MHz)		Data Rate (Mbps)
			6
1	2412	17	16.88
6	2437	17	16.99
11	2462	17	16.97

802.11 n(20M)		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average conducted output power (dBm)
CH	Frequency (MHz)		Data Rate (Mbps)
			6.5
1	2412	14	13.72
6	2437	14	13.88
11	2462	14	13.93

802.11 n(40M)		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average conducted output power (dBm)
CH	Frequency (MHz)		Data Rate (Mbps)
			13.5
3	2422	14	13.58
6	2437	14	13.66
9	2452	14	13.82

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Aux (CH1)

802.11 a		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average conducted output power(dBm)
5.2/5.3/5.6/5.8G			Data Rate (Mbps)
CH	Frequency (MHz)		6
36	5180	14	13.91
40	5200	14	13.58
44	5220	14	13.26
48	5240	14	13.90
52	5260	14	13.58
56	5280	14	13.23
60	5300	14	13.97
64	5320	14	13.79
100	5500	13	12.62
120	5600	13	12.43
140	5700	13	12.76
149	5745	13	12.73
157	5785	13	12.37
165	5825	13	12.69

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Aux (CH1)

802.11 n(20M)		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average conducted output power(dBm)
5.2/5.3/5.6/5.8G			Data Rate (Mbps)
CH	Frequency (MHz)		6.5
36	5180	14	13.68
40	5200	14	13.32
44	5220	14	13.91
48	5240	14	13.55
52	5260	14	13.23
56	5280	14	13.93
60	5300	14	13.68
64	5320	14	13.41
100	5500	13	12.33
120	5600	13	12.65
140	5700	13	12.26
149	5745	13	12.54
157	5785	13	12.30
165	5825	13	12.64

Aux (CH1)

802.11 n(40M)		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average conducted output power(dBm)
5.2/5.3/5.6/5.8G			Data Rate (Mbps)
CH	Frequency (MHz)		13.5
38	5190	14	13.83
46	5230	14	13.13
54	5270	14	13.46
62	5310	14	13.98
102	5510	12	11.28
110	5550	12	11.21
118	5590	12	11.15
126	5630	12	11.52
134	5670	12	11.34
151	5755	12	11.88
159	5795	12	11.92

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Aux (CH1)

802.11 ac(20M)		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average conducted output power(dBm)
5.2/5.3/5.6/5.8G			Data Rate (Mbps)
CH	Frequency (MHz)		6.5
36	5180	14	13.55
40	5200	14	13.21
44	5220	14	13.78
48	5240	14	13.43
52	5260	14	13.12
56	5280	14	13.84
60	5300	14	13.60
64	5320	14	13.33
100	5500	13	12.42
120	5600	13	12.33
140	5700	13	12.31
144	5720	13	12.35
149	5745	13	12.89
157	5785	13	12.84
165	5825	13	12.67

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Aux (CH1)

802.11 ac(40M) 5.2/5.3/5.6/5.8G		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average conducted output power(dBm) Data Rate (Mbps)
CH	Frequency (MHz)		13.5
38	5190	14	13.80
46	5230	14	13.09
54	5270	14	13.42
62	5310	14	13.97
102	5510	12	11.35
110	5550	12	11.32
118	5590	12	11.37
126	5630	12	11.84
134	5670	12	11.87
142	5710	12	11.81
151	5755	12	11.74
159	5795	12	11.68

802.11 ac(80M) 5.2/5.3/5.6/5.8G		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average conducted output power(dBm) Data Rate (Mbps)
CH	Frequency (MHz)		29.3
42	5210	13	12.76
58	5290	13	12.67
106	5530	11	10.94
122	5610	13	12.92
138	5690	13	12.83
155	5775	10	9.82

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Bluetooth conducted power table:

Frequency (MHz)	Data Rate	Max. tune-up power	Average	
			dBm	mW
2402	1	4	0.41	1.099
2441	1	4	2.05	1.603
2480	1	4	0.88	1.225
2402	2	4	-3.12	0.488
2441	2	4	-1.63	0.687
2480	2	4	-3.08	0.492
2402	3	4	-3.15	0.484
2441	3	4	-1.82	0.658
2480	3	4	-2.83	0.521

Frequency (MHz)	BT4.0 Average	
	dBm	mW
2402	-3.22	0.476
2442	-2.57	0.553
2480	-3.31	0.467

1.4 Test Environment

Ambient Temperature: 22±2° C
Tissue Simulating Liquid: 22±2° C

1.5 Operation Description

1. The EUT is controlled by using a Radio Communication Tester (Antrisu MT8820C), and the communication between the EUT and the tester is established by air link.

2. Measurements are performed respectively on the lowest, middle and highest channels of the operating band(s). The EUT is set to maximum power level during all tests, and at the beginning of each test the battery is fully charged.

3. During the SAR testing, the DASY 5 system checks power drift by comparing the e-field strength of one specific location measured at the beginning with that measured at the end of the SAR testing.

4. Testing head SAR at lowest, middle and highest channel for all bands with Left Tilt /Left Cheek/Right Tilt/Right Cheek conditions.

5. Testing body-worn SAR for GSM850/1900 by separating the EUT and the phantom 10mm. Body-worn SAR for WCDMA/LTE/WLAN is covered by hotspot SAR since the position of body-worn overlap the hotspot position and the test separation distance of hotspot is the same with that of body-worn.

6. When the reported SAR for a body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for the body-worn accessory with a headset attached to the handset.

7. Testing hotspot mode SAR by separating the EUT and the phantom **10mm** distance.
   #. The SAR testing for portable devices with wireless router capability is refered as test guidance of **KDB 941225D06v02r01** (SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities).

#. The following procedures are applicable when the overall device length and width are ≥9 cm x 5 cm respectively. A test separation of 10 mm is required. SAR must be measured for all sides and surfaces with a transmitting antenna located within 25 mm from that surface or edge, for the data modes, wireless technologies and frequency bands supporting hotspot mode.

Test configurations of WWAN (except LTE B7/30):
(1) Front side
(2) Back side
(3) Bottom side.
(4) Right side.
Test configurations of WWAN (LTE B7/30):
(1) Front side
(2) Back side
(3) Bottom side.
(4) left side.
Test configurations of WLAN 2.4GHz Main:
(1) Front side
(2) Back side
(3) Top side.
(4) Left side
Test configurations of WLAN 2.4GHz Aux:
(1) Front side
(2) Back side
(3) Top side.
(4) Right side

8. The UMPC mini-tablet procedures must also be applied to test the SAR of all surfaces and edges with an antenna located at ≤ 25 mm from that surface or edge, in direct contact with a flat phantom, for 10-g extremity SAR according to the body-equivalent tissue dielectric parameters in KDB Publication 865664 D01 to address interactive hand use exposure conditions. When hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg. Since the highest reported hotspot SAR for WWAN/WLAN 2.4GHz is less than 1.2, 10-g extremity SAR is not required for them.

9. The SAR test of GPRS was performed on the maximum sourced-based time-averaged power.

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10. The SAR measurement is not required for HSDPA/HSPA/HSPA+ since its maximum output power is less than ¼ dB higher than RMC without HSDPA/HSPA/HSPA+.

11. LTE modes test according to **KDB 941225D05v02r05.**

a. Per Section 5.2.1, the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation.

- Using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
- When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required for 1 RB allocation; otherwise, SAR is required for the remaining required test channels and only for the RB offset configuration with the highest output power for that channel.
- When the reported SAR of a required test channel is > 1.45 W/kg, SAR is required for all three RB offset configurations for that required test channel.

b. Per Section 5.2.2, the largest channel bandwidth and measure SAR for QPSK with 50% RB allocation

- The procedures required for 1 RB allocation in 5.2.1 are applied to measure the SAR for QPSK with 50% RB allocation.

c. Per Section 5.2.3, the largest channel bandwidth and measure SAR for QPSK with 100% RB allocation

- For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation in 5.2.1 and 5.2.2 are ≤ 0.8 W/kg.
- Otherwise, SAR is measured for the highest output power channel and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.

d. Per Section 5.2.4, Higher order modulations

- For each modulation besides QPSK; e.g., 16-QAM, 64-QAM, apply the QPSK procedures in sections 5.2.1, 5.2.2 and 5.2.3 to determine the QAM configurations that may need SAR measurement. For each configuration identified as required for testing, SAR is required only when the highest maximum output power for the configuration in the higher order modulation is > ½ dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is > 1.45 W/kg.

e. Per Section 5.3, other channel bandwidth standalone SAR test requirements

- For the other channel bandwidths used by the device in a frequency band, apply all the procedures required for the largest channel bandwidth in section 5.2 to determine the channels and RB configurations that need SAR testing and only measure SAR when the highest maximum output power of a configuration requiring testing in the smaller channel bandwidth is > ½ dB higher than the equivalent channel configurations in the largest channel bandwidth configuration or the reported SAR of a configuration for the largest channel bandwidth is > 1.45 W/kg. The equivalent channel configuration for the RB allocation, RB offset and modulation etc. is determined for the smaller channel bandwidth according to the same number of RB allocated in the largest channel bandwidth.

802.11b DSSS SAR Test Requirements:

12. SAR is measured for 2.4 GHz 802.11b DSSS mode using the highest measured maximum output power channel, when the reported SAR of the highest measured maximum output power channel for the exposure configuration is ≤ 0.8 W/kg, no further SAR testing is required for 802.11b DSSS in that exposure configuration.

13. When the reported SAR is > 0.8 W/kg, SAR is required for that exposure configuration using the next highest measured output power channel. When any reported SAR is > 1.2 W/kg, SAR is required for the third channel; i.e., all channels require testing.

802.11g/n OFDM SAR Test Exclusion Requirements:

14. SAR is not required for 802.11g/n since the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.

Initial Test Configuration:

15. An initial test configuration is determined for OFDM transmission modes according to the channel bandwidth, modulation and data rate combination(s) with the highest maximum output power specified for production units in each standalone and aggregated frequency band.

16. SAR is measured using the highest measured maximum output power channel. When the reported SAR of the initial test configuration is > 0.8 W/kg, SAR measurement is required for the subsequent next highest measured output power channel(s) in the initial test configuration until the reported SAR is ≤ 1.2 W/kg or all required channels are tested.

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17. For WLAN Main/Aux antennas, 5.2n(40M)/5.3n(40M)/5.6a/ac(80)/5.8a are chosen to be the initial test configurations.

18. For the right head of WLAN Main, since the highest reported SAR for the initial test configuration is adjusted by the ratio of the subsequent test configuration to initial test configuration specified maximum output power and the adjusted SAR is > 1.2 W/kg, SAR is required for subsequent test configurations.

19. For the right head of WLAN Main, 5.2ac(40)/a/n(20) & 5.3ac(40)/a/n(20) & 5.6n(20) are chosen to be the subsequent test configurations.

20. The device supports a maximum of 2 carriers in the downlink. All uplink communications are identical to the Release 8 specifications. Uplink maximum output power is measured with downlink carrier aggregation active, only for the channel with highest measured maximum output power when downlink carrier aggregation is inactive, to confirm that when downlink carrier aggregation is active uplink maximum output power remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output power measured when downlink carrier aggregation inactive. The downlink PCC channel should be paired with the uplink channel according to normal configurations, as if there is no carrier aggregation. For inter-band CA, the SCC should be near the middle of its transmission band. SAR measurement for LTE with DL CA active is not required since LTE uplink power with DL CA active is not more than ¼ dB higher than the maximum power measured when DL CA inactive.

21. BT and WLAN Main use the same antenna path and Bluetooth may transmit simultaneously with WLAN Aux.

22. According to KDB447498D01v05r02, testing of other required channels is not required when the reported 1-g SAR for the highest output channel is ≤ 0.8 W/kg, when the transmission band is ≤ 100 MHz.

23. According to KDB865664D01v01r04, SAR measurement variability must be assessed for each frequency band. When the original highest measured SAR is ≥ 0.8 W/kg, repeated that measurement once. 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 (~ 10% from the 1-g SAR limit)

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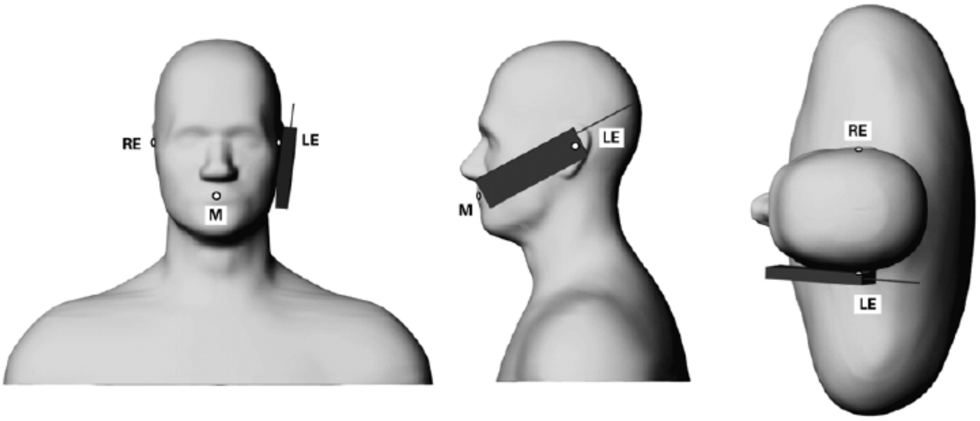
24. According to **KDB447498D01v06** – The 1-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances≤ 50 mm are determined by: [(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] · [√f(GHz)] ≤ 3.0 for 1-g SAR, SAR evaluation is not required.

Mode	Maximum power (dBm)	Maximum power(mW)	**front/back sides**		
			test separation distance (mm)	Exclusion threshold	Require SAR testing?
BT	4	2.512	10	0.396	NO

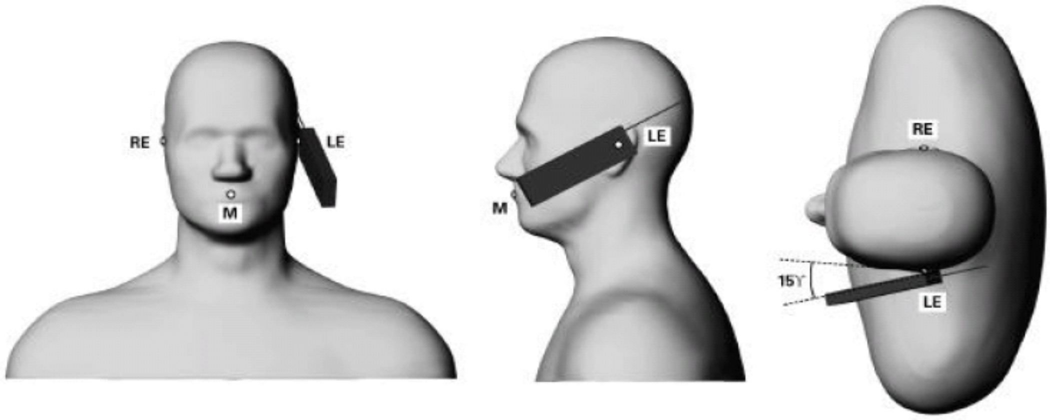
25. Based on KDB248227D01, 1-g SAR thresholds are specified in the procedures for SAR test reduction and exclusion, should be multiplied by 2.5 when 10-g extremity SAR is considered (WLAN 5GHz).

26. The device doesn't support VoLTE, so the head SAR measurement is not required.

1.6 Positioning Procedure



Phone position 1, “cheek” or “touch” position. The reference points for the right ear (RE), left ear (LE) and mouth (M), which define the reference plane for phone positioning.



Phone position 2, “tilted position.” The reference points for the right ear (RE), left ear (LE) and mouth (M), which define the reference plane for phone positioning.

Cheek/Touch Position:
The handset was brought toward the mouth of the head phantom by pivoting against the ear reference point until any point of the mouthpiece or keypad touched the phantom.
Ear/Tilt Position:
With the phone aligned in the Cheek/Touch position, the handset was tilted away from the mouth with respect to the test device reference point by 15 degrees.

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1.7 Evaluation Procedures

The entire evaluation of the spatial peak values is performed within the Post-processing engine (SEMCAD). The system always gives the maximum values for the 1 g and 10 g cubes. The algorithm to find the cube with highest averaged SAR is divided into the following stages:

1. The extraction of the measured data (grid and values) from the Zoom Scan.
2. The calculation of the SAR value at every measurement point based on all stored data (A/D values and measurement parameters).
3. The generation of a high-resolution mesh within the measured volume.
4. The interpolation of all measured values from the measurement grid to the high-resolution grid.
5. The extrapolation of the entire 3-D field distribution to the phantom surface over the distance from sensor to surface.
6. The calculation of the averaged SAR within masses of 1g and 10g.

The probe is calibrated at the center of the dipole sensors that is located 1 to 2.7mm away from the probe tip. During measurements, the probe stops shortly above the phantom surface, depending on the probe and the surface detecting system. Both distances are included as parameters in the probe configuration file. The software always knows exactly how far away the measured point is from the surface. As the probe cannot directly measure at the surface, the values between the deepest measured point and the surface must be extrapolated. The angle between the probe axis and the surface normal line is less than 30 degree.

In the Area Scan, the gradient of the interpolation function is evaluated to find all the extreme of the SAR distribution. The uncertainty on the locations of the extreme is less than 1/20 of the grid size. Only local maximum within –2 dB of the global maximum are searched and passed for the Cube Scan measurement. In the Cube Scan, the interpolation function is used to extrapolate the Peak SAR from the lowest measurement points to the inner phantom surface (the extrapolation distance). The uncertainty increases with the extrapolation distance. To keep the uncertainty within 1% for the 1 g and 10 g cubes, the extrapolation distance should not be larger than 5mm.

The maximum search is automatically performed after each area scan measurement. It is based on splines in two or three dimensions. The procedure can find the maximum for most SAR distributions even with relatively large grid spacing. After the area scanning measurement, the probe is automatically moved to a position at the interpolated maximum. The following scan can directly use this position for reference, e.g., for a finer resolution grid or the cube evaluations. The 1g and 10g peak evaluations are only available for the predefined cube 7x7x7 scans.

The routines are verified and optimized for the grid dimensions used in these cube measurements. The measured volume of 30x30x30mm contains about 30g of tissue. The first procedure is an extrapolation (incl. Boundary correction) to get the points between the lowest measured plane and the surface. The next step uses 3D interpolation to get all points within the measured volume. In the last step, a 1g cube is

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placed numerically into the volume and its averaged SAR is calculated. This cube is the moved around until the highest averaged SAR is found.
If the highest SAR is found at the edge of the measured volume, the system will issue a warning: higher SAR values might be found outside of the measured volume. In that case the cube measurement can be repeated, using the new interpolated maximum as the center.

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1.8 Probe Calibration Procedures

For the calibration of E-field probes in lossy liquids, an electric field with an accurately known field strength must be produced within the measured liquid. For standardization purposes it would be desirable if all measurements which are necessary to assess the correct field strength would be traceable to standardized measurement procedures. In the following two different calibration techniques are summarized:

1.8.1 Transfer Calibration with Temperature Probes

In lossy liquids the specific absorption rate (SAR) is related both to the electric field (E) and the temperature gradient ($\delta T / \delta t$) in the liquid.

$$SAR = \frac{\sigma}{\rho}|E|^2 = c\frac{\delta T}{\delta t}$$

Whereby σ is the conductivity, ρ the density and c the heat capacity of the liquid.

Hence, the electric field in lossy liquid can be measured indirectly by measuring the temperature gradient in the liquid. Non-disturbing temperature probes (optical probes or thermistor probes with resistive lines) with high spatial resolution (<1-2 mm) and fast reaction time (<1 s) are available and can be easily calibrated with high precision [1]. The setup and the exciting source have no influence on the calibration; only the relative positioning uncertainties of the standard temperature probe and the E-field probe to be calibrated must be considered. However, several problems limit the available accuracy of probe calibrations with temperature probes:

1. The temperature gradient is not directly measurable but must be evaluated from temperature measurements at different time steps. Special precaution is necessary to avoid measurement errors caused by temperature gradients due to energy equalizing effects or convection currents in the liquid. Such effects cannot be completely avoided, as the measured field itself destroys the

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thermal equilibrium in the liquid. With a careful setup these errors can be kept small.

2. The measured volume around the temperature probe is not well defined. It is difficult to calculate the energy transfer from a surrounding gradient temperature field into the probe. These effects must be considered, since temperature probes are calibrated in liquid with homogeneous temperatures. There is no traceable standard for temperature rise measurements.
3. The calibration depends on the assessment of the specific density, the heat capacity and the conductivity of the medium. While the specific density and heat capacity can be measured accurately with standardized procedures (~ 2% for c; much better for ρ), there is no standard for the measurement of the conductivity. Depending on the method and liquid, the error can well exceed ±5%.
4. Temperature rise measurements are not very sensitive and therefore are often performed at a higher power level than the E-field measurements. The nonlinearities in the system (e.g., power measurements, different components, etc.) must be considered.

Considering these problems, the possible accuracy of the calibration of E-field probes with temperature gradient measurements in a carefully designed setup is about ±10% (RSS) [2]. Recently, a setup which is a combination of the waveguide techniques and the thermal measurements was presented in [3]. The estimated uncertainty of the setup is ±5% (RSS) when the same liquid is used for the calibration and for actual measurements and ±7-9% (RSS) when not, which is in good agreement with the estimates given in [2].

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1.8.2 Calibration with Analytical Fields

In this method a technical setup is used in which the field can be calculated analytically from measurements of other physical magnitudes (e.g., input power). This corresponds to the standard field method for probe calibration in air; however, there is no standard defined for fields in lossy liquids.

When using calculated fields in lossy liquids for probe calibration, several points must be considered in the assessment of the uncertainty:

1. The setup must enable accurate determination of the incident power.
2. The accuracy of the calculated field strength will depend on the assessment of the dielectric parameters of the liquid.
3. Due to the small wavelength in liquids with high permittivity, even small setups might be above the resonant cutoff frequencies. The field distribution in the setup must be carefully checked for conformity with the theoretical field distribution.

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1.9 The SAR Measurement System

A block diagram of the SAR measurement system is given in Fig. a. This SAR measurement system uses a Computer-controlled 3-D stepper motor system (SPEAG DASY 5 professional system). Model EX3DV4 field probes are used to determine the internal electric fields. The SAR can be obtained from the equation SAR= σ (|Ei|2)/ ρ where σ and ρ are the conductivity and mass density of the tissue-simulant.

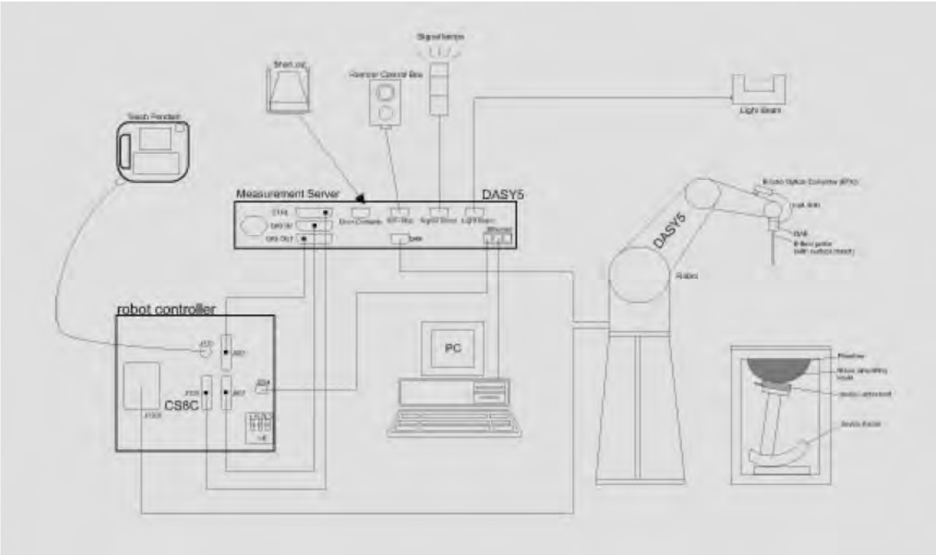

Fig. a A block diagram of the SAR measurement system

The DASY 5 system for performing compliance tests consists of the following items:

1. A standard high precision 6-axis robot (Staubli RX family) with controller, teach pendant and software. An arm extension is for accommodating the data acquisition electronics (DAE).
2. A dosimetric probe, i.e., an isotropic E-field probe optimized and calibrated for usage in tissue simulating liquid. The probe is equipped with an optical surface detector system.
3. Data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
4. The Electro-optical converter (EOC) performs the conversion between optical and electrical of the signals for the digital communication to the DAE and for the analog signal from the optical surface detection. The EOC is connected to the measurement server.
5. The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
6. A probe alignment unit which improves the (absolute) accuracy of the probe positioning.
7. A computer operating Windows7
8. DASY 5 software.
9. Remote control with teach pendant and additional circuitry for robot safety such as warning lamps, etc.
10. The SAM twin phantom enabling testing left-hand and right-hand usage.
11. The device holder for handheld mobile phones.
12. Tissue simulating liquid mixed according to the given recipes.
13. Validation dipole kits allowing to validate the proper functioning of the system.

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1.10 System Components

EX3DV4 E-Field Probe

Construction	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)	
Calibration	Basic Broad Band Calibration in air Conversion Factors (CF) for HSL750/835/1750/1900/2300/2450/2600/5200/5300/5600/5800 MHz Additional CF for other liquids and frequencies upon request	
Frequency	10 MHz to > 6 GHz, Linearity: ± 0.6 dB	
Directivity	± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)	
Dynamic Range	10 µW/g to > 100 mW/g Linearity: ± 0.2 dB (noise: typically < 1 µW/g)	
Dimensions	Tip diameter: 2.5 mm	
Application	High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields). Only probe which enables compliance testing for frequencies up to 6 GHz with precision of better 30%.	

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SAM PHANTOM V4.0C

Construction:	The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528 and IEC 62209. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents evaporation of the liquid. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by manually teaching three points with the robot.	
Shell Thickness:	2 ± 0.2 mm	
Filling Volume:	Approx. 25 liters	
Dimensions:	Height: 850 mm; Length: 1000 mm; Width: 500 mm	

DEVICE HOLDER

Construction	In combination with the Twin SAM Phantom V4.0/V4.0C or Twin SAM, the Mounting Device (made from POM) enables the rotation of the mounted transmitter in spherical coordinates, whereby the rotation point is the ear opening. The devices can be easily and accurately positioned according to IEC, IEEE, CENELEC, FCC or other specifications. The device holder can be locked at different phantom locations (left head, right head, flat phantom).	 Device Holder

1.11 SAR System Verification

The microwave circuit arrangement for system verification is sketched in Fig. b. The daily system accuracy verification occurs within the flat section of the SAM phantom. A SAR measurement was performed to see if the measured SAR was within +/- 10% (according to KDB865664D01v01r03) from the target SAR values.
These tests were done at 750/835/1750/1900/2300/2450/2600/5200/5300 /5600/5800 MHz. The tests were conducted on the same days as the measurement of the DUT. The obtained results from the system accuracy verification are displayed in the table 1. During the tests, the ambient temperature of the laboratory was 21.7°C, the relative humidity was 62% and the liquid depth above the ear reference points was above 15 cm (≤3G) or 10 cm (>3G) in all the cases. It is seen that the system is operating within its specification, as the results are within acceptable tolerance of the reference values.

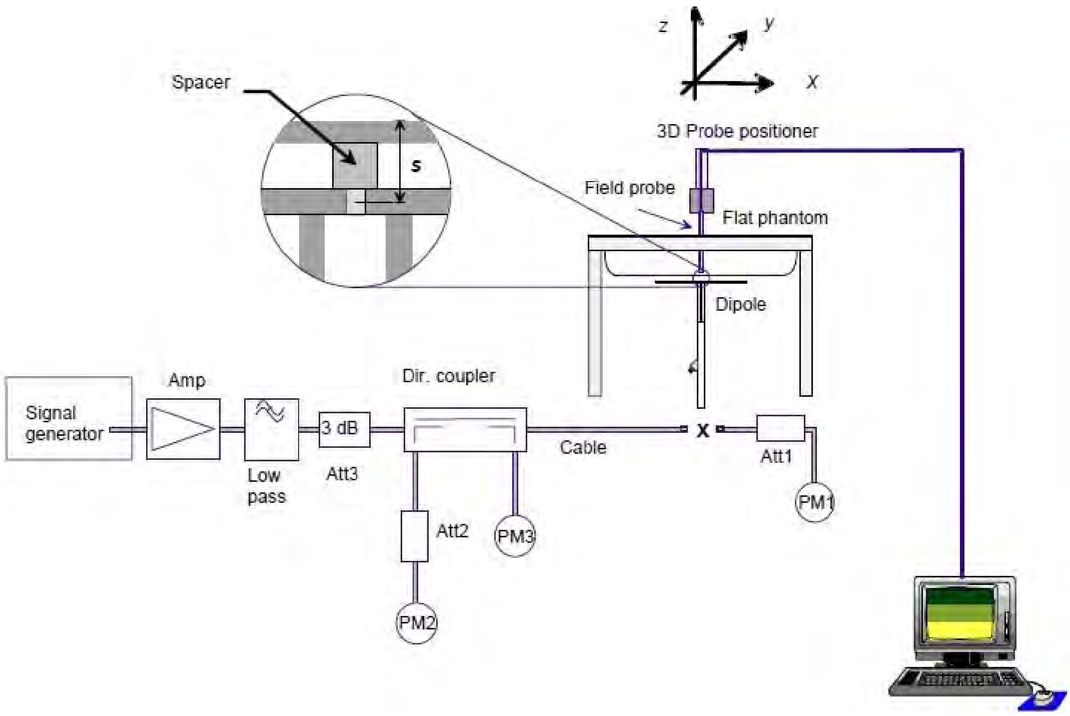

Fig. b The block diagram of system verification

Validation Kit	S/N	Frequency (MHz)		1W Target SAR-1g (mW/g)	Measured SAR-1g (mW/g)	Measured SAR-1g normalized to 1W (mW/g)	Deviation (%)	Measured Date
D750V3	1015	750	Body	8.52	2.09	8.36	-1.88%	May. 04, 2016
D835V2	4d063	835	Head	9.11	2.35	9.4	3.18%	May. 08, 2016
			Body	9.26	2.4	9.6	3.67%	May. 03, 2016
D1750V2	1008	1750	Head	36.6	9.34	37.36	2.08%	May. 07, 2016
			Body	37.4	9.30	37.2	-0.53%	Apr. 28, 2016
D1900V2	5d027	1900	Head	38.7	10	40	3.36%	May. 02, 2016
			Body	39.7	9.53	38.12	-3.98%	Apr. 27, 2016
D2300V2	1023	2300	Body	48.3	11.70	46.8	-3.11%	Apr. 30, 2016
D2450V2	727	2450	Head	51	13.2	52.8	3.53%	May. 09, 2016
			Body	49.6	13.2	52.8	6.45%	May. 09, 2016
D2600V2	1005	2600	Body	53.9	13.8	55.2	2.41%	Apr. 29, 2016
D5GHzV2	1023	5200	Head	77	7.59	75.9	-1.43%	May. 10, 2016
			Body	71.9	7.59	75.9	5.56%	May. 05, 2016
		5300	Head	79.9	7.9	79	-1.13%	May. 11, 2016
			Body	75.1	7.8	78	3.86%	May. 05, 2016
		5600	Head	82.6	8.43	84.3	2.06%	May. 12, 2016
			Body	78.3	8.25	82.5	5.36%	May. 06, 2016
		5800	Head	77.3	7.51	75.1	-2.85%	May. 13, 2016
			Body	75.3	7.87	78.7	4.52%	May. 06, 2016

Table 1. Results of system validation

1.12 Tissue Simulant Fluid for the Frequency Band

The dielectric properties for this Head-simulant fluid were measured by using the Agilent Model 85070E Dielectric Probe (rates frequency band 200 MHz to 20 GHz) in conjunction with Network Analyzer.
All dielectric parameters of tissue simulates were measured within 24 hours of SAR measurements. The depth of the tissue simulant in the flat section of the phantom was at least 15 cm (≤3G) or 10 cm (>3G) during all tests. (Appendix Fig. 2)

Tissue Type	Measured Frequency (MHz)	Target Dielectric Constant, εr	Target Conductivity, σ (S/m)	Measured Dielectric Constant, εr	Measured Conductivity, σ (S/m)	% dev εr	% dev σ	Measurement Date
Head	824.2	41.556	0.899	40.938	0.898	1.49%	0.13%	May. 08, 2016
	826.6	41.545	0.899	40.912	0.917	1.52%	-2.01%	
	835.0	41.500	0.900	40.894	0.919	1.46%	-2.11%	
	836.6	41.500	0.902	40.865	0.923	1.53%	-2.36%	
	846.6	41.500	0.912	40.859	0.930	1.54%	-1.97%	
	848.8	41.500	0.915	40.857	0.933	1.55%	-1.96%	
	1712.4	40.138	1.349	39.332	1.356	2.01%	-0.51%	May. 07, 2016
	1732.4	40.107	1.361	39.321	1.368	1.96%	-0.49%	
	1750.0	40.100	1.370	39.277	1.377	2.05%	-0.51%	
	1752.6	40.075	1.373	39.265	1.379	2.02%	-0.50%	
	1850.2	40.000	1.400	39.124	1.414	2.19%	-1.03%	May. 02, 2016
	1852.4	40.000	1.400	39.088	1.415	2.28%	-1.05%	
	1880.0	40.000	1.400	39.020	1.418	2.45%	-1.28%	
	1907.6	40.000	1.400	38.900	1.422	2.75%	-1.55%	
	1909.8	40.000	1.400	38.896	1.423	2.76%	-1.63%	
	2412.0	39.268	1.766	38.232	1.843	2.64%	-4.35%	May. 09, 2016
	2437.0	39.223	1.788	38.142	1.871	2.76%	-4.62%	
	2450.0	39.200	1.800	38.097	1.884	2.81%	-4.67%	
	2462.0	39.185	1.813	38.041	1.898	2.92%	-4.68%	
	5180.0	36.009	4.635	36.486	4.622	-1.33%	0.27%	May. 10, 2016
	5190.0	35.997	4.645	36.433	4.635	-1.21%	0.21%	
	5200.0	35.986	4.655	36.445	4.645	-1.28%	0.21%	
	5220.0	35.963	4.676	36.361	4.669	-1.11%	0.14%	
	5230.0	35.951	4.686	36.342	4.689	-1.09%	-0.07%	
	5240.0	35.940	4.696	36.325	4.702	-1.07%	-0.13%	

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Tissue Type	Measured Frequency (MHz)	Target Dielectric Constant, εr	Target Conductivity, σ (S/m)	Measured Dielectric Constant, εr	Measured Conductivity, σ (S/m)	% dev εr	% dev σ	Measurement Date
Head	5260.0	35.917	4.717	36.264	4.717	-0.97%	-0.01%	May. 11, 2016
	5270.0	35.906	4.727	36.200	4.733	-0.82%	-0.13%	
	5280.0	35.894	4.737	36.137	4.749	-0.68%	-0.25%	
	5300.0	35.871	4.758	36.145	4.768	-0.76%	-0.22%	
	5310.0	35.860	4.768	36.106	4.788	-0.69%	-0.42%	
	5500.0	35.643	4.963	35.592	5.025	0.14%	-1.26%	May. 12, 2016
	5600.0	35.529	5.065	35.276	5.154	0.71%	-1.76%	
	5610.0	35.517	5.075	35.257	5.159	0.73%	-1.65%	
	5690.0	35.426	5.157	35.018	5.262	1.15%	-2.03%	
	5700.0	35.414	5.168	34.961	5.279	1.28%	-2.16%	
	5745.0	35.363	5.214	34.855	5.333	1.44%	-2.29%	May. 13, 2016
	5785.0	35.317	5.255	34.731	5.377	1.66%	-2.33%	
	5800.0	35.300	5.270	34.700	5.398	1.70%	-2.43%	
	5825.0	35.271	5.296	34.633	5.424	1.81%	-2.42%	

Tissue Type	Measured Frequency (MHz)	Target Dielectric Constant, εr	Target Conductivity, σ (S/m)	Measured Dielectric Constant, εr	Measured Conductivity, σ (S/m)	% dev εr	% dev σ	Measurement Date
Body	704.0	55.710	0.960	56.95	0.925	-2.23%	3.62%	May. 04, 2016
	707.5	55.697	0.960	56.999	0.929	-2.34%	3.24%	
	709.0	55.691	0.960	56.94	0.934	-2.24%	2.73%	
	710.0	55.687	0.960	56.926	0.932	-2.22%	2.94%	
	711.0	55.683	0.960	56.929	0.934	-2.24%	2.74%	
	750.0	55.531	0.963	56.475	0.976	-1.70%	-1.31%	
	824.2	55.242	0.969	55.856	1.006	-1.11%	-3.80%	May. 03, 2016
	826.6	55.233	0.969	55.817	1.008	-1.06%	-3.99%	
	829.0	55.223	0.970	55.779	1.013	-1.01%	-4.48%	
	835.0	55.200	0.970	55.704	1.017	-0.91%	-4.85%	
	836.5	55.195	0.972	55.735	1.018	-0.98%	-4.75%	
	836.6	55.195	0.972	55.733	1.018	-0.97%	-4.74%	
	844.0	55.172	0.981	55.712	1.027	-0.98%	-4.68%	
	846.6	55.164	0.984	55.653	1.03	-0.89%	-4.65%	
	848.8	55.158	0.987	55.633	1.032	-0.86%	-4.56%	

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Tissue Type	Measured Frequency (MHz)	Target Dielectric Constant, εr	Target Conductivity, σ (S/m)	Measured Dielectric Constant, εr	Measured Conductivity, σ (S/m)	% dev εr	% dev σ	Measurement Date
Body	1712.4	53.531	1.465	54.263	1.404	-1.37%	4.14%	Apr. 28, 2016
	1720.0	53.511	1.469	54.257	1.413	-1.40%	3.84%	
	1732.4	53.478	1.477	54.206	1.425	-1.36%	3.54%	
	1732.5	53.478	1.477	54.204	1.425	-1.36%	3.54%	
	1745.0	53.445	1.485	54.192	1.432	-1.40%	3.59%	
	1750.0	53.432	1.488	54.169	1.438	-1.38%	3.39%	
	1752.6	53.425	1.490	54.131	1.44	-1.32%	3.36%	
	1850.2	53.300	1.520	53.858	1.526	-1.05%	-0.39%	Apr. 27, 2016
	1852.4	53.300	1.520	53.862	1.528	-1.05%	-0.53%	
	1860.0	53.300	1.520	53.813	1.532	-0.96%	-0.79%	
	1880.0	53.300	1.520	53.783	1.551	-0.91%	-2.04%	
	1900.0	53.300	1.520	53.728	1.559	-0.80%	-2.57%	
	1907.6	53.300	1.520	53.633	1.572	-0.62%	-3.42%	
	1909.8	53.300	1.520	53.683	1.577	-0.72%	-3.75%	
	2300.0	52.900	1.807	52.505	1.848	0.75%	-2.29%	Apr. 30, 2016
	2310.0	52.887	1.816	52.476	1.861	0.78%	-2.47%	
	2437.0	52.717	1.938	52.859	1.984	-0.27%	-2.40%	May. 09, 2016
	2441.0	52.712	1.941	52.823	1.989	-0.21%	-2.45%	
	2450.0	52.700	1.950	52.82	2.003	-0.23%	-2.72%	
	2462.0	52.685	1.967	52.777	2.021	-0.18%	-2.74%	
	2510.0	52.624	2.035	52.002	2.123	1.18%	-4.32%	Apr. 29, 2016
	2535.0	52.592	2.071	51.92	2.156	1.28%	-4.13%	
	2560.0	52.560	2.106	51.839	2.189	1.37%	-3.94%	
	2600.0	52.509	2.163	51.705	2.24	1.53%	-3.57%	
	5190.0	49.028	5.288	47.987	5.447	2.12%	-3.01%	May. 05, 2016
	5200.0	49.014	5.299	47.922	5.459	2.23%	-3.01%	
	5270.0	48.919	5.381	47.698	5.564	2.50%	-3.40%	May. 05, 2016
	5300.0	48.879	5.416	47.578	5.609	2.66%	-3.56%	
	5310.0	48.865	5.428	47.554	5.623	2.68%	-3.60%	
	5500.0	48.607	5.650	46.91	5.864	3.49%	-3.79%	May. 06, 2016
	5600.0	48.471	5.766	46.572	6.008	3.92%	-4.19%	
	5610.0	48.458	5.778	46.519	6.029	4.00%	-4.34%	
	5690.0	48.349	5.872	46.33	6.029	4.18%	-2.68%	
	5700.0	48.336	5.883	46.301	6.058	4.21%	-2.97%	
	5745.0	48.275	5.936	46.141	6.209	4.42%	-4.60%	May. 06, 2016
	5800.0	48.200	6.000	46.155	6.145	4.24%	-2.42%	
	5825.0	48.166	6.029	45.885	6.233	4.74%	-3.38%	

Table 2. Dielectric Parameters of Tissue Simulant Fluid

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The composition of the tissue simulating liquid:

Frequency (MHz)	Mode	Ingredient						Total amount
		DGMBE	Water	Salt	Preventol D-7	Cellulose	Sugar	
750	Body	—	631.68 g	11.72 g	1.2 g	—	600 g	1.0L(Kg)
850	Head	—	532.98 g	18.3 g	2.4 g	3.2 g	766 g	1.3L(Kg)
	Body	—	631.68 g	11.72 g	1.2 g	—	600 g	1.0L(Kg)
1750	Head	444.52 g	552.42 g	3.06 g	—	—	—	1.0L(Kg)
	Body	300.67 g	716.56 g	4.0 g	—	—	—	1.0L(Kg)
1900	Head	444.52 g	552.42 g	3.06 g	—	—	—	1.0L(Kg)
	Body	300.67 g	716.56 g	4.0 g	—	—	—	1.0L(Kg)
2300	Body	301.7ml	698.3ml	—	—	—	—	1.0L(Kg)
2450	Head	550ml	450ml	—	—	—	—	1.0L(Kg)
	Body	301.7ml	698.3ml	—	—	—	—	1.0L(Kg)
2600	Body	301.7ml	698.3ml	—	—	—	—	1.0L(Kg)

Simulating Liquids for 5 GHz, Manufactured by SPEAG:

Ingredients	Water	Esters, Emulsifiers, Inhibitors	Sodium and Salt
(% by weight)	60-80	20-40	0-1.5

Table 3. Recipes for tissue simulating liquid

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1.13 Test Standards and Limits

According to FCC 47CFR §2.1093(d) The limits to be used for evaluation are based generally on criteria published by the American National Standards Institute (ANSI) for localized specific absorption rate (“SAR’’) in Section 4.2 of “IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz,’’ ANSI/IEEE C95.1, By the Institute of Electrical and Electronics Engineers, Inc., New York, New York 10017.
These criteria for SAR evaluation are similar to those recommended by the National Council on Radiation Protection and Measurements (NCRP) in ‘‘Biological Effects and Exposure Criteria for Radio frequency Electromagnetic Fields,’’ NCRP Report No. 86, Section 17.4.5. Copyright NCRP, 1986, Bethesda, Maryland 20814. SAR is a measure of the rate of energy absorption due to exposure to an RF transmitting source. SAR values have been related to threshold levels for potential biological hazards. The criteria to be used are specified in paragraphs (d)(1) and (d)(2) of this section and shall apply for portable devices transmitting in the frequency range from 100 kHz to 6 GHz. Portable devices that transmit at frequencies above 6 GHz are to be evaluated in terms of the MPE limits specified in § 1.1310 of this chapter.
Measurements and calculations to demonstrate compliance with MPE field strength or power density limits for devices operating above 6 GHz should be made at a minimum distance of 5 cm from the radiating source.

1. Limits for Occupational/Controlled exposure: 0.4 W/kg as averaged over the whole-body and spatial peak SAR not exceeding 8 W/kg as averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube). Exceptions are the hands, wrists, feet and ankles where the spatial peak SAR shall not exceed 20 W/kg, as averaged over a 10 grams of tissue (defined as a tissue volume in the shape of a cube).

Occupational/Controlled limits apply when persons are exposed as a consequence of their employment provided these persons are fully aware of and exercise control over their exposure. Awareness of exposure can be accomplished by use of warning labels or by specific training or education through appropriate means, such as an RF safety program in a work environment.

2. Limits for General Population/Uncontrolled exposure: 0.08 W/kg as averaged over the whole-body and spatial peak SAR not exceeding 1.6 W/kg as averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube).

Exceptions are the hands, wrists, feet and ankles where the spatial peak SAR shall not exceed 4 W/kg, as averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube).
General Population/Uncontrolled limits apply when the general public may be exposed, or when persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or do not exercise control over their exposure.
Warning labels placed on consumer devices such as cellular telephones will not be sufficient reason to allow these devices to be evaluated subject to limits for occupational/controlled exposure in paragraph (d)(1) of this section.(Table .6)

Human Exposure	Uncontrolled Environment General Population	Controlled Environment Occupational
Spatial Peak SAR (Brain)	1.60 m W/g	8.00 m W/g
Spatial Average SAR (Whole Body)	0.08 m W/g	0.40 m W/g
Spatial Peak SAR (Hands/Feet/Ankle/Wrist)	4.00 m W/g	20.00 m W/g

Table 4. RF exposure limits

Notes:
1. Uncontrolled environments are defined as locations where there is potential exposure of individuals who have no knowledge or control of their potential exposure.
2. Controlled environments are defined as locations where there is potential exposure of individuals who have knowledge of their potential exposure and can exercise control over their exposure.

2. Summary of Results

GSM 850 MHz

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
								Measured	Reported	
GSM850 (Head)	Re Cheek	-	128	824.2	33.50	31.62	154.17%	0.203	0.313	-
	Re Cheek	-	190	836.6	33.50	31.69	151.71%	0.237	0.360	164
	Re Cheek	-	251	848.8	33.50	31.72	150.66%	0.201	0.303	-
	Re Tilt	-	251	848.8	33.50	31.72	150.66%	0.126	0.190	-
	Le Cheek	-	251	848.8	33.50	31.72	150.66%	0.161	0.243	-
	Le Tilt	-	251	848.8	33.50	31.72	150.66%	0.099	0.149	-
GSM850 (Body-Worn)	Front side	10	128	824.2	33.50	31.62	154.17%	0.313	0.483	-
	Back side	10	190	836.6	33.50	31.69	151.71%	0.369	0.560	165
	Back side	10	251	848.8	33.50	31.72	150.66%	0.322	0.485	-
	Back side	10	251	848.8	33.50	31.72	150.66%	0.280	0.422	-
GPRS850 (Hotspot) (1Dn4UP)	Front side	10	128	824.2	27.50	26.59	123.31%	0.340	0.419	-
	Front side	10	190	836.6	27.50	26.66	121.34%	0.416	0.505	-
	Front side	10	251	848.8	27.50	26.65	121.62%	0.505	0.614	166
	Back side	10	190	836.6	27.50	26.66	121.34%	0.371	0.450	-
	Bottom side	10	190	836.6	27.50	26.66	121.34%	0.152	0.184	-
	Right side	10	190	836.6	27.50	26.66	121.34%	0.256	0.311	-

GSM 1900 MHz

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
								Measured	Reported	
GSM1900 (Head)	Re Cheek	-	512	1850.2	30.50	29.30	131.83%	0.284	0.374	-
	Re Cheek	-	661	1880	30.50	29.53	125.03%	0.297	0.371	-
	Re Cheek	-	810	1909.8	30.50	29.78	118.03%	0.336	0.397	167
	Re Tilt	-	810	1909.8	30.50	29.78	118.03%	0.074	0.087	-
	Le Cheek	-	810	1909.8	30.50	29.78	118.03%	0.169	0.199	-
	Le Tilt	-	810	1909.8	30.50	29.78	118.03%	0.088	0.104	-
GSM1900 (Body-Worn)	Front side	10	810	1909.8	30.50	29.78	118.03%	0.442	0.522	-
	Back side	10	512	1850.2	30.50	29.30	131.83%	0.457	0.602	-
	Back side	10	661	1880	30.50	29.53	125.03%	0.469	0.586	-
	Back side	10	810	1909.8	30.50	29.78	118.03%	0.482	0.569	168
GPRS1900 (Hotspot) (1Dn3UP)	Front side	10	810	1909.8	26.50	25.74	119.12%	0.482	0.574	-
	Back side	10	512	1850.2	26.50	25.73	119.40%	0.414	0.494	-
	Back side	10	661	1880	26.50	25.22	134.28%	0.419	0.563	-
	Back side	10	810	1909.8	26.50	25.74	119.12%	0.582	0.693	169
	Bottom side	10	810	1909.8	26.50	25.74	119.12%	0.257	0.306	-
	Right side	10	810	1909.8	26.50	25.74	119.12%	0.201	0.239	-

WCDMA Band II

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
								Measured	Reported	
R99 (Head)	RE Cheek	-	9262	1852.4	24	23.45	113.50%	0.600	0.681	-
	RE Cheek	-	9400	1880	24	23.43	114.02%	0.590	0.673	-
	RE Cheek	-	9538	1907.6	24	23.51	111.94%	0.626	0.701	170
	RE Tilt	-	9538	1907.6	24	23.51	111.94%	0.147	0.165	-
	LE Cheek	-	9538	1907.6	24	23.51	111.94%	0.304	0.340	-
	LE Tilt	-	9538	1907.6	24	23.51	111.94%	0.167	0.187	-
Hotspot	Front side	10	9262	1852.4	24	23.45	113.50%	0.792	0.899	-
	Front side	10	9400	1880	24	23.43	114.02%	0.779	0.888	-
	Front side	10	9538	1907.6	24	23.51	111.94%	0.799	0.894	-
	Back side	10	9262	1852.4	24	23.45	113.50%	0.836	0.949	-
	Back side	10	9400	1880	24	23.43	114.02%	0.913	1.041	-
	Back side	10	9538	1907.6	24	23.51	111.94%	0.925	1.035	171
	Back side*	10	9538	1907.6	24	23.51	111.94%	0.875	0.980	-
	Bottom side	10	9538	1907.6	24	23.51	111.94%	0.428	0.479	-
	Right side	10	9538	1907.6	24	23.51	111.94%	0.362	0.405	-

* - repeated at the highest SAR measurement according to the KDB865664D01v01r04

WCDMA Band IV

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
								Measured	Reported	
R99 (Head)	RE Cheek	-	1312	1712.4	24	23.49	112.46%	0.576	0.648	-
	RE Cheek	-	1412	1732.4	24	23.24	119.12%	0.566	0.674	-
	RE Cheek	-	1513	1752.6	24	23.28	118.03%	0.613	0.724	172
	RE Tilt	-	1312	1712.4	24	23.49	112.46%	0.140	0.157	-
	LE Cheek	-	1312	1712.4	24	23.49	112.46%	0.284	0.319	-
	LE Tilt	-	1312	1712.4	24	23.49	112.46%	0.167	0.188	-
Hotspot	Front side	10	1312	1712.4	24	23.49	112.46%	0.770	0.866	-
	Front side	10	1412	1732.4	24	23.24	119.12%	0.704	0.839	-
	Front side	10	1513	1752.6	24	23.28	118.03%	0.708	0.836	-
	Back side	10	1312	1712.4	24	23.49	112.46%	0.811	0.912	173
	Back side*	10	1312	1712.4	24	23.49	112.46%	0.810	0.911	-
	Back side	10	1412	1732.4	24	23.24	119.12%	0.770	0.917	-
	Back side	10	1513	1752.6	24	23.28	118.03%	0.771	0.910	-
	Bottom side	10	1312	1712.4	24	23.49	112.46%	0.438	0.493	-
	Right side	10	1312	1712.4	24	23.49	112.46%	0.296	0.333	-

* - repeated at the highest SAR measurement according to the KDB865664D01v01r04

WCDMA Band V

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
								Measured	Reported	
R99 (Head)	RE Cheek	-	4132	826.4	24.5	24.05	110.92%	0.313	0.347	174
	RE Cheek	-	4183	836.6	24.5	23.87	115.61%	0.311	0.360	-
	RE Cheek	-	4233	846.6	24.5	24.11	109.40%	0.243	0.266	-
	RE Tilt	-	4233	846.6	24.5	24.11	109.40%	0.165	0.181	-
	LE Cheek	-	4233	846.6	24.5	24.11	109.40%	0.211	0.231	-
	LE Tilt	-	4233	846.6	24.5	24.11	109.40%	0.121	0.132	-
Hotspot	Front side	10	4132	826.4	24.5	24.05	110.92%	0.544	0.603	-
	Front side	10	4183	836.6	24.5	23.87	115.61%	0.550	0.636	-
	Front side	10	4233	846.6	24.5	24.11	109.40%	0.583	0.638	175
	Back side	10	4233	846.6	24.5	24.11	109.40%	0.467	0.511	-
	Bottom side	10	4233	846.6	24.5	24.11	109.40%	0.276	0.302	-
	Right side	10	4233	846.6	24.5	24.11	109.40%	0.381	0.417	-

LTE FDD Band II

Mode	Bandwidth (MHz)	Modulation	RB Size	RB start	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
												Measured	Reported	
LTE Band 2 (Hotspot)	20MHz	QPSK	1 RB	0	Front side	10	18700	1860	24	23.89	102.57%	0.801	0.822	-
					Front side	10	18900	1880	24	23.69	107.40%	0.798	0.857	-
					Front side	10	19100	1900	24	23.61	109.40%	0.848	0.928	176
					Front side*	10	19100	1900	24	23.61	109.40%	0.845	0.924	-
					Back side	10	18700	1860	24	23.89	102.57%	0.784	0.804	-
					Back side	10	18900	1880	24	23.69	107.40%	0.778	0.836	-
					Back side	10	19100	1900	24	23.61	109.40%	0.812	0.888	-
					Bottom side	10	18700	1860	24	23.89	102.57%	0.424	0.435	-
					Right side	10	18700	1860	24	23.89	102.57%	0.333	0.342	-
			50 RB	0	Front side	10	18900	1880	23	22.29	117.76%	0.580	0.683	-
					Back side	10	18900	1880	23	22.29	117.76%	0.617	0.727	-
					Bottom side	10	18900	1880	23	22.29	117.76%	0.313	0.369	-
					Right side	10	18900	1880	23	22.29	117.76%	0.223	0.263	-
			100 RB		Front side	10	18700	1860	23	22.24	119.12%	0.554	0.660	-
					Back side	10	18700	1860	23	22.24	119.12%	0.513	0.611	-
					Bottom side	10	18700	1860	23	22.24	119.12%	0.302	0.360	-
					Right side	10	18700	1860	23	22.24	119.12%	0.204	0.243	-

* - repeated at the highest SAR measurement according to the FCC KDB865664D01v01r04

LTE FDD Band IV

Mode	Bandwidth (MHz)	Modulation	RB Size	RB start	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
												Measured	Reported	
LTE Band 4 (Hotspot)	20MHz	QPSK	1 RB	0	Front side	10	20050	1720	24	23.55	110.92%	0.727	0.806	-
					Front side	10	20175	1732.5	24	23.33	116.68%	0.639	0.746	-
					Front side	10	20300	1745	24	23.21	119.95%	0.644	0.772	-
					Back side	10	20050	1720	24	23.55	110.92%	0.924	1.025	177
					Back side*	10	20050	1720	24	23.55	110.92%	0.904	1.003	-
					Back side	10	20175	1732.5	24	23.33	116.68%	0.741	0.865	-
					Back side	10	20300	1745	24	23.21	119.95%	0.745	0.894	-
					Bottom side	10	20050	1720	24	23.55	110.92%	0.412	0.457	-
					Right side	10	20050	1720	24	23.55	110.92%	0.275	0.305	-
			50 RB	0	Front side	10	20050	1720	23	21.90	128.82%	0.517	0.666	-
					Back side	10	20050	1720	23	21.90	128.82%	0.676	0.871	-
					Back side	10	20175	1732.5	23	21.88	129.42%	0.621	0.804	-
					Back side	10	20300	1745	23	21.74	133.66%	0.624	0.834	-
					Bottom side	10	20050	1720	23	21.90	128.82%	0.293	0.377	-
					Right side	10	20050	1720	23	21.90	128.82%	0.196	0.252	-
			100 RB		Front side	10	20050	1720	23	21.76	133.05%	0.490	0.652	-
					Back side	10	20050	1720	23	21.76	133.05%	0.513	0.683	-
					Bottom side	10	20050	1720	23	21.76	133.05%	0.275	0.366	-
					Right side	10	20050	1720	23	21.76	133.05%	0.184	0.245	-

* - repeated at the highest SAR measurement according to the FCC KDB865664D01v01r04

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LTE FDD Band V

Mode	Bandwidth (MHz)	Modulation	RB Size	RB start	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg) Measured	Averaged SAR over 1g (W/kg) Reported	Plot page
LTE Band 5 (Hotspot)	10MHz	QPSK	1 RB	0	Front side	10	20600	844	24.5	23.45	127.35%	0.504	0.642	178
					Back side	10	20600	844	24.5	23.45	127.35%	0.406	0.517	-
					Bottom side	10	20600	844	24.5	23.45	127.35%	0.316	0.402	-
					Right side	10	20600	844	24.5	23.45	127.35%	0.302	0.385	-
				25	Front side	10	20450	829	24.5	23.26	133.05%	0.447	0.595	-
					Front side	10	20525	836.5	24.5	23.36	130.02%	0.500	0.650	-
			25 RB	25	Front side	10	20600	844	23.5	22.51	125.60%	0.408	0.512	-
					Back side	10	20600	844	23.5	22.51	125.60%	0.330	0.414	-
					Bottom side	10	20600	844	23.5	22.51	125.60%	0.280	0.352	-
					Right side	10	20600	844	23.5	22.51	125.60%	0.245	0.308	-
			50 RB		Front side	10	20600	844	23.5	22.31	131.52%	0.403	0.530	-
					Back side	10	20600	844	23.5	22.31	131.52%	0.325	0.427	-
					Bottom side	10	20600	844	23.5	22.31	131.52%	0.264	0.347	-
					Right side	10	20600	844	23.5	22.31	131.52%	0.241	0.317	-

LTE FDD Band VII

Mode	Bandwidth (MHz)	Modulation	RB Size	RB start	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg) Measured	Averaged SAR over 1g (W/kg) Reported	Plot page
LTE Band 7 (Hotspot)	20MHz	QPSK	1 RB	0	Front side	10	20850	2510	23	22.67	107.89%	0.969	1.045	179
					Front side*	10	20850	2510	23	22.67	107.89%	0.966	1.042	-
					Front side	10	21100	2535	23	22.62	109.14%	0.878	0.958	-
					Front side	10	21350	2560	23	22.52	111.69%	0.852	0.952	-
					Back side	10	20850	2510	23	22.67	107.89%	0.760	0.820	-
					Back side	10	21100	2535	23	22.62	109.14%	0.702	0.766	-
					Back side	10	21350	2560	23	22.52	111.69%	0.630	0.704	-
					Bottom side	10	20850	2510	23	22.67	107.89%	0.394	0.425	-
					Left side	10	20850	2510	23	22.67	107.89%	0.601	0.648	-
			50 RB	0	Front side	10	20850	2510	22	21.56	110.66%	0.692	0.766	-
					Back side	10	20850	2510	22	21.56	110.66%	0.630	0.697	-
					Bottom side	10	20850	2510	22	21.56	110.66%	0.297	0.329	-
					Left side	10	20850	2510	22	21.56	110.66%	0.426	0.471	-
			100 RB		Front side	10	20850	2510	22	21.52	111.69%	0.683	0.763	-
					Back side	10	20850	2510	22	21.52	111.69%	0.628	0.701	-
					Bottom side	10	20850	2510	22	21.52	111.69%	0.302	0.337	-
					Left side	10	20850	2510	22	21.52	111.69%	0.425	0.475	-

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LTE FDD Band XII

Mode	Bandwidth (MHz)	Modulation	RB Size	RB start	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg) Measured	Averaged SAR over 1g (W/kg) Reported	Plot page
LTE Band 12 (Hotspot)	10MHz	QPSK	1 RB	49	Front side	10	23130	711	24.5	24.00	112.20%	0.167	0.187	-
					Back side	10	23130	711	24.5	24.00	112.20%	0.122	0.137	-
					Bottom side	10	23060	704	24.5	23.87	115.61%	0.219	0.253	-
					Bottom side	10	23095	707.5	24.5	23.89	115.08%	0.229	0.264	-
					Bottom side	10	23130	711	24.5	24.00	112.20%	0.242	0.272	180
					Right side	10	23130	711	24.5	24.00	112.20%	0.214	0.240	-
					Left side	10	23130	711	24.5	24.00	112.20%	0.058	0.065	-
			25 RB	25	Front side	10	23130	711	23.5	23.12	109.14%	0.145	0.158	-
					Back side	10	23130	711	23.5	23.12	109.14%	0.091	0.099	-
					Bottom side	10	23130	711	23.5	23.12	109.14%	0.193	0.211	-
					Right side	10	23130	711	23.5	23.12	109.14%	0.176	0.192	-
					Left side	10	23130	711	23.5	23.12	109.14%	0.047	0.051	-
			50 RB		Front side	10	23130	711	23.5	23.00	112.20%	0.143	0.160	-
					Back side	10	23130	711	23.5	23.00	112.20%	0.088	0.099	-
					Bottom side	10	23130	711	23.5	23.00	112.20%	0.185	0.208	-
					Right side	10	23130	711	23.5	23.00	112.20%	0.172	0.193	-
					Left side	10	23130	711	23.5	23.00	112.20%	0.047	0.053	-

LTE FDD Band XVII

Mode	Bandwidth (MHz)	Modulation	RB Size	RB start	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg) Measured	Averaged SAR over 1g (W/kg) Reported	Plot page
LTE Band 17 (Hotspot)	10MHz	QPSK	1 RB	25	Bottom side	10	23780	709	24.5	23.87	115.61%	0.233	0.269	-
				49	Front side	10	23800	711	24.5	24.04	111.17%	0.170	0.189	-
					Back side	10	23800	711	24.5	24.04	111.17%	0.092	0.102	-
					Bottom side	10	23790	710	24.5	24.00	112.20%	0.235	0.264	181
					Bottom side	10	23800	711	24.5	24.04	111.17%	0.231	0.257	-
					Right side	10	23800	711	24.5	24.04	111.17%	0.207	0.230	-
			25 RB	25	Front side	10	23800	711	23.5	23.10	109.65%	0.147	0.161	-
					Back side	10	23800	711	23.5	23.10	109.65%	0.079	0.087	-
					Bottom side	10	23800	711	23.5	23.10	109.65%	0.194	0.213	-
					Right side	10	23800	711	23.5	23.10	109.65%	0.172	0.189	-
			50 RB		Front side	10	23800	711	23.5	23.05	110.92%	0.146	0.162	-
					Back side	10	23800	711	23.5	23.05	110.92%	0.077	0.085	-
					Bottom side	10	23800	711	23.5	23.05	110.92%	0.190	0.211	-
					Right side	10	23800	711	23.5	23.05	110.92%	0.169	0.187	-

LTE FDD Band XXX

Mode	Bandwidth (MHz)	Modulation	RB Size	RB start	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
												Measured	Reported	
LTE Band 30 (Hotspot)	10MHz	QPSK	1 RB	0	Front side	10	27710	2310	23.5	22.57	123.88%	0.637	0.789	182
					Back side	10	27710	2310	23.5	22.57	123.88%	0.624	0.773	-
					Bottom side	10	27710	2310	23.5	22.57	123.88%	0.575	0.712	-
					Left side	10	27710	2310	23.5	22.57	123.88%	0.451	0.559	-
				25	Front side	10	27710	2310	23.5	22.41	128.53%	0.604	0.776	-
				49	Front side	10	27710	2310	23.5	22.37	129.72%	0.597	0.774	-
			25 RB	25	Front side	10	27710	2310	22.5	21.91	114.55%	0.555	0.636	-
					Back side	10	27710	2310	22.5	21.91	114.55%	0.519	0.595	-
					Bottom side	10	27710	2310	22.5	21.91	114.55%	0.466	0.534	-
					Left side	10	27710	2310	22.5	21.91	114.55%	0.335	0.384	-
			50 RB		Front side	10	27710	2310	22.5	21.53	125.03%	0.551	0.689	-
					Back side	10	27710	2310	22.5	21.53	125.03%	0.514	0.643	-
					Bottom side	10	27710	2310	22.5	21.53	125.03%	0.468	0.585	-
					Left side	10	27710	2310	22.5	21.53	125.03%	0.339	0.424	-

WLAN802.11 b

Antenna	Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
									Measured	Reported	
Main	WLAN 802.11 b (Head)	RE Cheek	-	1	2412	17	16.09	123.31%	0.771	0.951	-
		RE Cheek	-	6	2437	17	16.15	121.62%	0.802	0.975	183
		RE Cheek*	-	6	2437	17	16.15	121.62%	0.788	0.958	-
		RE Tilt	-	6	2437	17	16.15	121.62%	0.564	0.686	-
		LE Cheek	-	6	2437	17	16.15	121.62%	0.284	0.345	-
		LE Tilt	-	6	2437	17	16.15	121.62%	0.268	0.326	-
	Hotspot	Front side	10	6	2437	17	16.15	121.62%	0.218	0.265	-
		Back side	10	6	2437	17	16.15	121.62%	0.315	0.383	184
		Top side	10	6	2437	17	16.15	121.62%	0.180	0.219	-
		Left side	10	6	2437	17	16.15	121.62%	0.188	0.229	-

* - repeated at the highest SAR measurement according to the KDB865664D01v01r04

Antenna	Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
									Measured	Reported	
Aux	WLAN 802.11 b (Head)	RE Cheek	-	11	2462	17	16.6	109.65%	0.123	0.135	-
		RE Tilt	-	11	2462	17	16.6	109.65%	0.072	0.079	-
		LE Cheek	-	11	2462	17	16.6	109.65%	0.426	0.467	185
		LE Tilt	-	11	2462	17	16.6	109.65%	0.197	0.216	-
	Hotspot	Front side	10	11	2462	17	16.6	109.65%	0.148	0.162	-
		Back side	10	11	2462	17	16.6	109.65%	0.247	0.271	186
		Top side	10	11	2462	17	16.6	109.65%	0.027	0.030	-
		Left side	10	11	2462	17	16.6	109.65%	0.219	0.240	-

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WLAN802.11 a 5.2G

Antenna	Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
									Measured	Reported	
Main	WLAN 802.11 a 5.2G (Head)	RE Cheek	-	36	5180	14	13.86	103.28%	1.290	1.332	187
		RE Cheek*	-	36	5180	14	13.86	103.28%	1.270	1.312	-
		RE Cheek	-	40	5200	14	13.75	105.93%	0.890	0.943	-
		RE Tilt	-	36	5180	14	13.86	103.28%	1.110	1.146	-
		RE Tilt	-	40	5200	14	13.75	105.93%	0.845	0.895	-
		LE Cheek	-	36	5180	14	13.86	103.28%	0.402	0.415	-
		LE Tilt	-	36	5180	14	13.86	103.28%	0.446	0.461	-

* - repeated at the highest SAR measurement according to the KDB865664D01v01r04

WLAN802.11 n(20M) 5.2G

Antenna	Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
									Measured	Reported	
Main	WLAN 802.11 n(20M) 5.2G (Head)	RE Cheek	-	44	5220	14	13.88	102.80%	0.970	0.997	188
		RE Cheek	-	48	5240	14	13.76	105.68%	0.742	0.784	-
		RE Tilt	-	44	5220	14	13.88	102.80%	0.865	0.889	-
		LE Cheek	-	44	5220	14	13.88	102.80%	0.389	0.400	-
		LE Tilt	-	44	5220	14	13.88	102.80%	0.402	0.413	-

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WLAN802.11 n(40M) 5.2G

Antenna	Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
									Measured	Reported	
Main	WLAN 802.11 n (40M) 5.2G (Head)	RE Cheek	-	38	5190	14	13.87	103.04%	0.989	1.019	-
		RE Cheek	-	46	5230	14	13.75	105.93%	1.200	1.271	189
		RE Tilt	-	38	5190	14	13.87	103.04%	0.913	0.941	-
		RE Tilt	-	46	5230	14	13.75	105.93%	1.120	1.186	-
		LE Cheek	-	38	5190	14	13.87	103.04%	0.305	0.314	-
		LE Tilt	-	38	5190	14	13.87	103.04%	0.328	0.338	-
	Body-worn	Front side	10	38	5190	14	13.87	103.04%	0.258	0.266	190
		Back side	10	38	5190	14	13.87	103.04%	0.243	0.250	-

Antenna	Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 10g (W/kg)		Plot page
									Measured	Reported	
Main	WLAN 802.11 n (40M) 5.2G (Hand)	Front side	0	38	5190	14	13.57	110.41%	1.100	1.214	191
		Back side	0	38	5190	14	13.57	110.41%	0.997	1.101	-
		Top side	0	38	5190	14	13.57	110.41%	0.390	0.431	-
		Left side	0	38	5190	14	13.57	110.41%	0.460	0.508	-

Antenna	Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
									Measured	Reported	
Aux	WLAN 802.11 n (40M) 5.2G (Head)	RE Cheek	-	38	5190	14	13.83	103.99%	0.161	0.167	-
		RE Tilt	-	38	5190	14	13.83	103.99%	0.150	0.156	-
		LE Cheek	-	38	5190	14	13.83	103.99%	0.461	0.479	192
		LE Tilt	-	38	5190	14	13.83	103.99%	0.294	0.306	-
	Body-worn	Front side	10	38	5190	14	13.83	103.99%	0.145	0.151	-
		Back side	10	38	5190	14	13.83	103.99%	0.279	0.290	193

Antenna	Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 10g (W/kg)		Plot page
									Measured	Reported	
Aux	WLAN 802.11 n (40M) 5.2G (Hand)	Front side	0	38	5190	14	13.83	103.99%	0.649	0.675	-
		Back side	0	38	5190	14	13.83	103.99%	0.664	0.691	-
		Top side	0	38	5190	14	13.83	103.99%	0.171	0.178	-
		Right side	0	38	5190	14	13.83	103.99%	0.807	0.839	194

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WLAN802.11 ac(40M) 5.2G

Antenna	Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
									Measured	Reported	
Main	WLAN 802.11 ac(40M) 5.2G (Head)	RE Cheek	-	38	5190	14	13.60	109.65%	0.954	1.046	195
		RE Cheek	-	46	5230	14	13.28	118.03%	0.924	1.091	-
		RE Tilt	-	38	5190	14	13.60	109.65%	0.922	1.011	-
		RE Tilt	-	46	5230	14	13.28	118.03%	0.854	1.008	-
		LE Cheek	-	38	5190	14	13.60	109.65%	0.300	0.329	-
		LE Tilt	-	38	5190	14	13.60	109.65%	0.315	0.345	-

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WLAN802.11 a 5.3G

Antenna	Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
									Measured	Reported	
Main	WLAN 802.11 a 5.3G (Head)	RE Cheek	-	52	5260	14	13.92	101.86%	1.310	1.334	196
		RE Cheek*	-	52	5260	14	13.92	101.86%	1.220	1.243	-
		RE Cheek	-	56	5280	14	13.87	103.04%	1.300	1.340	-
		RE Cheek	-	60	5300	14	13.83	103.99%	1.280	1.331	-
		RE Cheek	-	64	5320	14	13.80	104.71%	1.260	1.319	-
		RE Tilt	-	52	5260	14	13.92	101.86%	1.210	1.232	-
		RE Tilt	-	56	5280	14	13.87	103.04%	1.190	1.226	-
		RE Tilt	-	60	5300	14	13.83	103.99%	1.150	1.196	-
		LE Cheek	-	52	5260	14	13.92	101.86%	0.427	0.435	-
		LE Tilt	-	52	5260	14	13.92	101.86%	0.375	0.382	-

* - repeated at the highest SAR measurement according to the KDB865664D01v01r04

WLAN802.11 n(20M) 5.3G

Antenna	Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
									Measured	Reported	
Main	WLAN 802.11 n(20M) 5.3G (Head)	RE Cheek	-	52	5260	14	13.71	106.91%	0.993	1.062	197
		RE Cheek	-	56	5280	14	13.68	107.65%	0.720	0.775	-
		RE Tilt	-	52	5260	14	13.71	106.91%	0.742	0.793	-
		LE Cheek	-	52	5260	14	13.71	106.91%	0.312	0.334	-
		LE Tilt	-	52	5260	14	13.71	106.91%	0.289	0.309	-

WLAN802.11 n(40M) 5.3G

Antenna	Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
									Measured	Reported	
Main	WLAN 802.11 n (40M) 5.3G (Head)	RE Cheek	-	54	5270	14	13.16	121.34%	0.973	1.181	-
		RE Cheek	-	62	5310	14	13.12	122.46%	1.030	1.261	198
		RE Tilt	-	54	5270	14	13.16	121.34%	0.955	1.159	-
		RE Tilt	-	62	5310	14	13.12	122.46%	0.954	1.168	-
		LE Cheek	-	54	5270	14	13.16	121.34%	0.318	0.386	-
		LE Tilt	-	54	5270	14	13.16	121.34%	0.341	0.414	-
	Body-worn	Front side	10	54	5270	14	13.16	121.34%	0.282	0.342	199
		Back side	10	54	5270	14	13.16	121.34%	0.241	0.292	-

Antenna	Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 10g (W/kg)		Plot page
									Measured	Reported	
Main	WLAN 802.11 n (40M) 5.3G (Hand)	Front side	0	54	5270	14	13.16	121.34%	1.080	1.310	200
		Back side	0	54	5270	14	13.16	121.34%	1.030	1.250	-
		Top side	0	54	5270	14	13.16	121.34%	0.404	0.490	-
		Left side	0	54	5270	14	13.16	121.34%	0.393	0.477	-

Antenna	Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
									Measured	Reported	
Aux	WLAN 802.11 n (40M) 5.3G (Head)	RE Cheek	-	62	5310	14	13.98	100.46%	0.191	0.192	-
		RE Tilt	-	62	5310	14	13.98	100.46%	0.187	0.188	-
		LE Cheek	-	62	5310	14	13.98	100.46%	0.607	0.610	201
		LE Tilt	-	62	5310	14	13.98	100.46%	0.316	0.317	-
	Body-worn	Front side	10	62	5310	14	13.98	100.46%	0.195	0.196	-
		Back side	10	62	5310	14	13.98	100.46%	0.539	0.541	202

Antenna	Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 10g (W/kg)		Plot page
									Measured	Reported	
Aux	WLAN 802.11 n (40M) 5.3G (Hand)	Front side	0	62	5310	14	13.98	100.46%	0.696	0.699	-
		Back side	0	62	5310	14	13.98	100.46%	1.000	1.005	-
		Top side	0	62	5310	14	13.98	100.46%	0.181	0.182	-
		Right side	0	62	5310	14	13.98	100.46%	1.070	1.075	203

WLAN802.11 ac(40M) 5.3G

Antenna	Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
									Measured	Reported	
Main	WLAN 802.11 ac (40M) 5.3G (Head)	RE Cheek	-	54	5270	14	13.15	121.62%	0.898	1.092	-
		RE Cheek	-	62	5310	14	13.16	121.34%	1.020	1.238	204
		RE Tilt	-	54	5270	14	13.15	121.62%	0.845	1.028	-
		RE Tilt	-	62	5310	14	13.16	121.34%	0.974	1.182	-
		LE Cheek	-	62	5310	14	13.16	121.34%	0.331	0.402	-
		LE Tilt	-	62	5310	14	13.16	121.34%	0.342	0.415	-

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WLAN802.11 a 5.6G

Antenna	Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
									Measured	Reported	
Main	WLAN 802.11 a 5.6G (Head)	RE Cheek	-	100	5500	13	12.98	100.46%	0.976	0.981	-
		RE Cheek	-	120	5600	13	12.78	105.20%	1.180	1.241	205
		RE Cheek*	-	120	5600	13	12.78	105.20%	1.130	1.189	-
		RE Tilt	-	100	5500	13	12.98	100.46%	0.985	0.990	-
		RE Tilt	-	120	5600	13	12.78	105.20%	0.950	0.999	-
		LE Cheek	-	100	5500	13	12.98	100.46%	0.380	0.382	-
		LE Tilt	-	100	5500	13	12.98	100.46%	0.453	0.455	-
	Body-worn	Front side	10	100	5500	13	12.98	100.46%	0.290	0.291	206
		Back side	10	100	5500	13	12.98	100.46%	0.188	0.189	-

* - repeated at the highest SAR measurement according to the KDB865664D01v01r04

Antenna	Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 10g (W/kg)		Plot page
									Measured	Reported	
Main	WLAN 802.11 a 5.6G (Hand)	Front side	0	100	5500	13	12.98	100.46%	1.030	1.035	207
		Back side	0	100	5500	13	12.98	100.46%	0.652	0.655	-
		Top side	0	100	5500	13	12.98	100.46%	0.456	0.458	-
		Left side	0	100	5500	13	12.98	100.46%	0.331	0.333	-

Antenna	Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
									Measured	Reported	
Aux	WLAN 802.11 a 5.6G (Head)	RE Cheek	-	140	5700	13	12.76	105.68%	0.203	0.215	-
		RE Tilt	-	140	5700	13	12.76	105.68%	0.106	0.112	-
		LE Cheek	-	100	5500	13	12.62	109.14%	0.707	0.772	-
		LE Cheek	-	140	5700	13	12.76	105.68%	0.793	0.838	208
		LE Tilt	-	140	5700	13	12.76	105.68%	0.388	0.410	-
	Body-worn	Front side	10	140	5700	13	12.76	105.68%	0.283	0.299	-
		Back side	10	140	5700	13	12.76	105.68%	0.740	0.782	209

Antenna	Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 10g (W/kg)		Plot page
									Measured	Reported	
Aux	WLAN 802.11 a 5.6G (Hand)	Front side	0	140	5700	13	12.76	105.68%	0.869	0.918	-
		Back side	0	140	5700	13	12.76	105.68%	1.410	1.490	-
		Top side	0	140	5700	13	12.76	105.68%	0.077	0.081	-
		Right side	0	100	5500	13	12.62	109.14%	2.050	2.237	-
		Right side	0	140	5700	13	12.76	105.68%	2.260	2.388	210

WLAN802.11 n(20M) 5.6G

Antenna	Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
									Measured	Reported	
Main	WLAN 802.11 n(20M) 5.6G (Head)	RE Cheek	-	100	5500	13	12.78	105.20%	0.819	0.862	211
		RE Cheek	-	120	5600	13	12.52	111.69%	0.712	0.795	-
		RE Tilt	-	100	5500	13	12.78	105.20%	0.745	0.784	-
		LE Cheek	-	100	5500	13	12.78	105.20%	0.289	0.304	-
		LE Tilt	-	100	5500	13	12.78	105.20%	0.328	0.345	-

WLAN802.11 ac(80M) 5.6G

Antenna	Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
									Measured	Reported	
Main	WLAN 802.11 ac (80M) 5.6G (Head)	RE Cheek	-	122	5610	13	12.72	106.66%	0.872	0.930	212
		RE Cheek	-	138	5690	13	12.39	115.08%	0.738	0.849	-
		RE Tilt	-	122	5610	13	12.72	106.66%	0.757	0.807	-
		RE Tilt	-	138	5690	13	12.39	115.08%	0.724	0.833	-
		LE Cheek	-	122	5610	13	12.72	106.66%	0.401	0.428	-
		LE Tilt	-	122	5610	13	12.72	106.66%	0.479	0.511	-
	Body-worn	Front side	10	122	5610	13	12.72	106.66%	0.226	0.241	213
		Back side	10	122	5610	13	12.72	106.66%	0.134	0.143	-

Antenna	Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 10g (W/kg)		Plot page
									Measured	Reported	
Main	WLAN 802.11 ac (80M) 5.6G (Hand)	Front side	0	122	5610	13	12.72	106.66%	0.993	1.059	214
		Back side	0	122	5610	13	12.72	106.66%	0.427	0.455	-
		Top side	0	122	5610	13	12.72	106.66%	0.281	0.300	-
		Left side	0	122	5610	13	12.72	106.66%	0.252	0.269	-

Antenna	Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
									Measured	Reported	
Aux	WLAN 802.11ac (80M) 5.6G (Head)	RE Cheek	-	122	5610	13	12.92	101.86%	0.181	0.184	-
		RE Tilt	-	122	5610	13	12.92	101.86%	0.094	0.096	-
		LE Cheek	-	122	5610	13	12.92	101.86%	0.737	0.751	215
		LE Tilt	-	122	5610	13	12.92	101.86%	0.368	0.375	-
	Body-worn	Front side	10	122	5610	13	12.92	101.86%	0.286	0.291	-
		Back side	10	122	5610	13	12.92	101.86%	0.769	0.783	216

Antenna	Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 10g (W/kg)		Plot page
									Measured	Reported	
Aux	WLAN 802.11 ac (80M) 5.6G (Hand)	Front side	0	122	5610	13	12.92	101.86%	0.949	0.967	-
		Back side	0	122	5610	13	12.92	101.86%	1.320	1.345	-
		Top side	0	122	5610	13	12.92	101.86%	0.091	0.093	-
		Right side	0	122	5610	13	12.92	101.86%	2.050	2.088	-
		Right side	0	138	5690	13	12.83	103.99%	2.090	2.173	217

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WLAN802.11 a 5.8G

Antenna	Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
									Measured	Reported	
Main	WLAN 802.11 a 5.8G (Head)	RE Cheek	-	157	5785	13	12.72	106.66%	0.752	0.802	-
		RE Cheek	-	165	5825	13	12.73	106.41%	0.916	0.975	218
		RE Cheek*	-	165	5825	13	12.73	106.41%	0.902	0.960	-
		RE Tilt	-	157	5785	13	12.72	106.66%	0.807	0.861	-
		RE Tilt	-	165	5825	13	12.73	106.41%	0.805	0.857	-
		LE Cheek	-	165	5825	13	12.73	106.41%	0.358	0.381	-
		LE Tilt	-	165	5825	13	12.73	106.41%	0.499	0.531	-
	Body-worn	Front side	10	165	5825	13	12.73	106.41%	0.210	0.223	219
		Back side	10	165	5825	13	12.73	106.41%	0.140	0.149	-

* - repeated at the highest SAR measurement according to the KDB865664D01v01r04

Antenna	Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 10g (W/kg)		Plot page
									Measured	Reported	
Main	WLAN 802.11 a 5.8G (Hand)	Front side	0	165	5825	13	12.73	106.41%	0.906	0.964	220
		Back side	0	165	5825	13	12.73	106.41%	0.457	0.486	-
		Top side	0	165	5825	13	12.73	106.41%	0.512	0.545	-
		Left side	0	165	5825	13	12.73	106.41%	0.260	0.277	-

Antenna	Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
									Measured	Reported	
Aux	WLAN 802.11a 5.8G (Head)	RE Cheek	-	149	5745	13	12.73	106.41%	0.144	0.153	-
		RE Tilt	-	149	5745	13	12.73	106.41%	0.084	0.089	-
		LE Cheek	-	149	5745	13	12.73	106.41%	0.599	0.637	221
		LE Tilt	-	149	5745	13	12.73	106.41%	0.154	0.164	-
	Body-worn	Front side	10	149	5745	13	12.73	106.41%	0.206	0.219	-
		Back side	10	149	5745	13	12.73	106.41%	0.543	0.578	222

Antenna	Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 10g (W/kg)		Plot page
									Measured	Reported	
Aux	WLAN 802.11 a 5.8G (Hand)	Front side	0	149	5745	13	12.73	106.41%	0.782	0.832	-
		Back side	0	149	5745	13	12.73	106.41%	1.300	1.383	-
		Top side	0	149	5745	13	12.73	106.41%	0.045	0.048	-
		Right side	0	149	5745	13	12.73	106.41%	1.590	1.692	223

Bluetooth

Antenna	Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
									Measured	Reported	
Main	Bluetooth(GFSK)	Front	0	39	2441	4.00	2.05	156.68%	0.005	0.008	-
		Back	0	39	2441	4.00	2.05	156.68%	0.012	0.019	224
		Top side	0	39	2441	4.00	2.05	156.68%	0.007	0.011	-
		Left side	0	39	2441	4.00	2.05	156.68%	0.049	0.077	-

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3. Simultaneous Transmission Analysis

Simultaneous Transmission Scenarios:

Simultaneous Transmit Configurations	Head	Body-Worn	Hotspot	Hand
GSM850/1900 + 2.4GHz Wi-Fi Main	Yes	Yes	No	No
GSM850/1900 + 2.4GHz Wi-Fi Aux	Yes	Yes	No	No
GSM850/1900 + 2.4GHz Wi-Fi MIMO	Yes	Yes	No	No
GPRS850/1900 + 2.4GHz Wi-Fi Main	No	Yes	Yes	No
GPRS850/1900 + 2.4GHz Wi-Fi Aux	No	Yes	Yes	No
GPRS850/1900 + 2.4GHz Wi-Fi MIMO	No	Yes	Yes	No
UMTS B2/4/5 + 2.4GHz Wi-Fi Main	Yes	Yes	Yes	No
UMTS B2/4/5 + 2.4GHz Wi-Fi Aux	Yes	Yes	Yes	No
UMTS B2/4/5 + 2.4GHz Wi-Fi MIMO	Yes	Yes	Yes	No
LTE B2/4/5/7/12/17/30 + 2.4GHz Wi-Fi Main	No	Yes	Yes	No
LTE B2/4/5/7/12/17/30 + 2.4GHz Wi-Fi Aux	No	Yes	Yes	No
LTE B2/4/5/7/12/17/30 + 2.4GHz Wi-Fi MIMO	No	Yes	Yes	No
GSM850/1900 + 5GHz Wi-Fi Main	Yes	Yes	No	No
GSM850/1900 + 5GHz Wi-Fi Aux	Yes	Yes	No	No
GSM850/1900 + 5GHz Wi-Fi MIMO	Yes	Yes	No	No
GPRS850/1900 + 5GHz Wi-Fi Main	No	Yes	No	No
GPRS850/1900 + 5GHz Wi-Fi Aux	No	Yes	No	No
GPRS850/1900 + 5GHz Wi-Fi MIMO	No	Yes	No	No
UMTS B2/4/5 + 5GHz Wi-Fi Main	Yes	Yes	No	No
UMTS B2/4/5 + 5GHz Wi-Fi Aux	Yes	Yes	No	No
UMTS B2/4/5 + 5GHz Wi-Fi MIMO	Yes	Yes	No	No
LTE B2/4/5/7/12/17/30 + 5GHz Wi-Fi Main	No	Yes	No	No
LTE B2/4/5/7/12/17/30 + 5GHz Wi-Fi Aux	No	Yes	No	No
LTE B2/4/5/7/12/17/30 + 5GHz Wi-Fi MIMO	No	Yes	No	No

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Simultaneous Transmit Configurations	Head	Body-Worn	Hotspot	Hand
GSM850/1900 + Bluetooth + 2.4GHz Wi-Fi Aux	No	Yes	No	No
GPRS850/1900 + Bluetooth + 2.4GHz Wi-Fi Aux	No	Yes	Yes	No
UMTS B2/4/5 + Bluetooth + 2.4GHz Wi-Fi Aux	No	Yes	Yes	No
LTE B2/4/5/7/12/17/30 + Bluetooth + 2.4GHz Wi-Fi Aux	No	Yes	Yes	No
GSM850/1900 + Bluetooth + 5GHz Wi-Fi Aux	No	Yes	No	No
GPRS850/1900 + Bluetooth + 5GHz Wi-Fi Aux	No	Yes	No	No
UMTS B2/4/5 + Bluetooth + 5GHz Wi-Fi Aux	No	Yes	No	No
LTE B2/4/5/7/12/17/30 + Bluetooth + 5GHz Wi-Fi Aux	No	Yes	No	No

Notes:

1. Bluetooth and WLAN Main share the same antenna path, and BT may transmit simultaneously with WLAN Aux.
2. Based on KDB447498D01 note 36, when SAR test exclusion is allowed by other published RF exposure KDB procedures, such as the 2.5 cm hotspot mode SAR test exclusion for an edge or surface, then estimated SAR is not required to determine simultaneous SAR test exclusion. Also, based on KDB648474D04 note 6, simultaneous transmission SAR for 10-g extremity SAR requires consideration only when standalone 10-g SAR is required.
3. Since the extremity SAR is not required for WWAN/WLAN 2.4GHz based on hotspot SAR < 1.2 addressed in KDB 648474D04, and the extremity SAR is only required for WLAN 5GHz, hence the simultaneous transmission analysis for extremity is not required.
4. For 2.4/5GHz WLAN Main and Aux antennas, the maximum output power of each antenna during simultaneous transmission (for 802.11n/ac) is the same with that used in standalone transmission (for 802.11a/b/g/n/ac), and we used the sum of 1-g SAR provision in KDB447498D01 to exclude the SAR measurement for 802.11n/ac MIMO.

3.1 Estimated SAR calculation

According to KDB447498 D01v05 – When standalone SAR test exclusion applies to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to following to determine simultaneous transmission SAR test exclusion:

$$\text{Estimated SAR} = \frac{\text{Max.tune up power(mW)}}{\text{Min. test separation distance(mm)}} \times \frac{\sqrt{f(GHz)}}{7.5}$$

If the minimum test separation distance is < 5mm, a distance of 5mm is used for estimated SAR calculation. When the test separation distance is >50mm, the 0.4W/kg is used for SAR-1g.

3.2 SPLSR evaluation and analysis

Per KDB447498D01, when the sum of SAR is larger than the limit, SAR test exclusion is determined by the SAR sum to peak location separation ratio(SPLSR).

The simultaneous transmitting antennas in each operating mode and exposure condition combination must be considered one pair at a time to determine the SAR to peak location separation ratio to qualify for test exclusion.

The ratio is determined by **(SAR1 + SAR2)^1.5/Ri**, rounded to two decimal digits, and must be **≤ 0.04** for all antenna pairs in the configuration to qualify for 1-g SAR test exclusion.

SAR1 and SAR2 are the highest reported or estimated SAR for each antenna in the pair, and Ri is the separation distance between the peak SAR locations for the antenna pair in mm.

When standalone test exclusion applies, SAR is estimated; the peak location is assumed to be at the feed-point or geometric center of the antenna.

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Simultaneous Transmission Combination

reported SAR WWAN and WLAN 2.4GHz, ΣSAR evaluation						
Frequency band	Position		reported SAR / W/kg			ΣSAR
			WWAN	WLAN Main	WLAN Aux	<1.6W/kg
GSM 850	Head	Right cheek	0.360	0.975	0.135	1.470
		Right tilt	0.190	0.686	0.079	0.955
		Left cheek	0.243	0.345	0.467	1.055
		Left tilt	0.149	0.326	0.216	0.691
GPRS 850 (1Dn4UP)	Hotspot	Front	0.614	0.265	0.162	1.041
		Back	0.450	0.383	0.271	1.104
		Top	-	0.219	0.030	-
		Bottom	0.184	-	-	-
		Right	0.311	-	-	-
		Left	-	0.229	0.240	-
GSM 1900	Head	Right cheek	0.397	0.975	0.135	1.507
		Right tilt	0.087	0.686	0.079	0.852
		Left cheek	0.199	0.345	0.467	1.011
		Left tilt	0.104	0.326	0.216	0.646
GPRS 1900 (1Dn3UP)	Hotspot	Front	0.574	0.265	0.162	1.001
		Back	0.693	0.383	0.271	1.347
		Top	-	0.219	0.030	-
		Bottom	0.306	-	-	-
		Right	0.239	-	-	-
		Left	-	0.229	0.240	-

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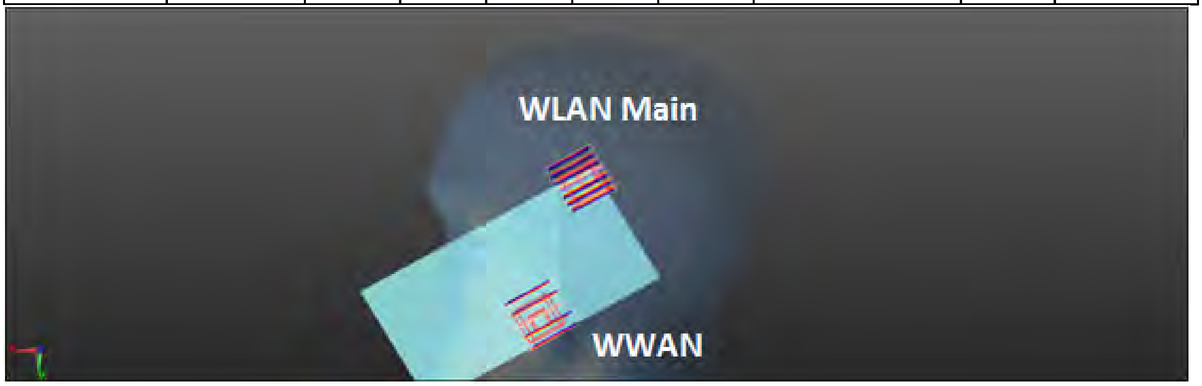
reported SAR WWAN and WLAN 2.4GHz, ΣSAR evaluation						
Frequency band	Position		reported SAR / W/kg			ΣSAR
			WWAN	WLAN Main	WLAN Aux	<1.6W/kg
WCDMA Band II	Head	Right cheek	0.701	0.975	0.135	**1.811**
		Right tilt	0.165	0.686	0.079	0.930
		Left cheek	0.340	0.345	0.467	1.152
		Left tilt	0.187	0.326	0.216	0.729
	Hotspot	Front	0.899	0.265	0.162	1.326
		Back	1.041	0.383	0.271	**1.695**
		Top	-	0.219	0.030	-
		Bottom	0.479	-	-	-
		Right	0.405	-	-	-
		Left	-	0.229	0.240	-

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA Band II	Right cheek	0.701	4.77	6.24	-0.03	1.676	101.7	0.021	SPLSR≤ 0.04, Not required
WLAN Main		0.975	1.71	-3.45	-0.11				



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Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA Band II	Right cheek	0.701	4.77	6.24	-0.03	0.836	69.6	0.011	SPLSR≤ 0.04, Not required
WLAN Aux		0.135	-1.05	2.47	0.53				

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Right cheek	0.975	1.71	-3.45	-0.11	1.11	65.7	0.018	SPLSR≤ 0.04, Not required
WLAN Aux		0.135	-1.05	2.47	0.53				

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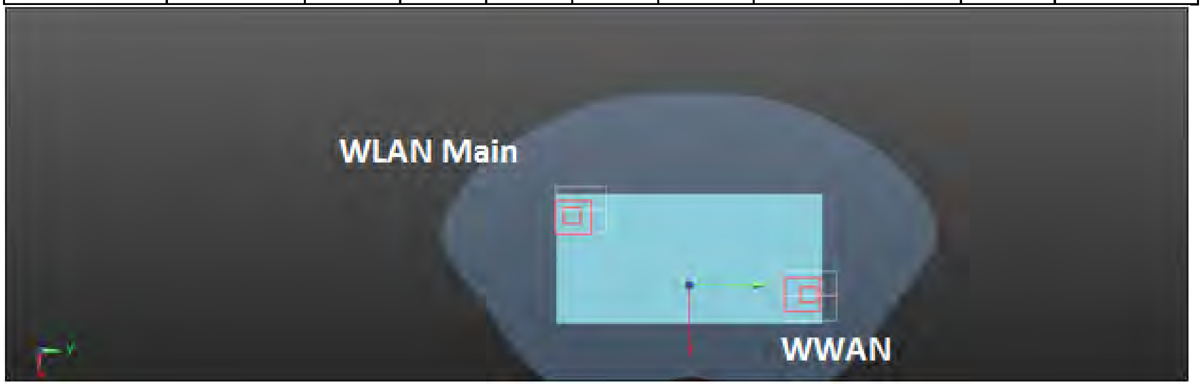
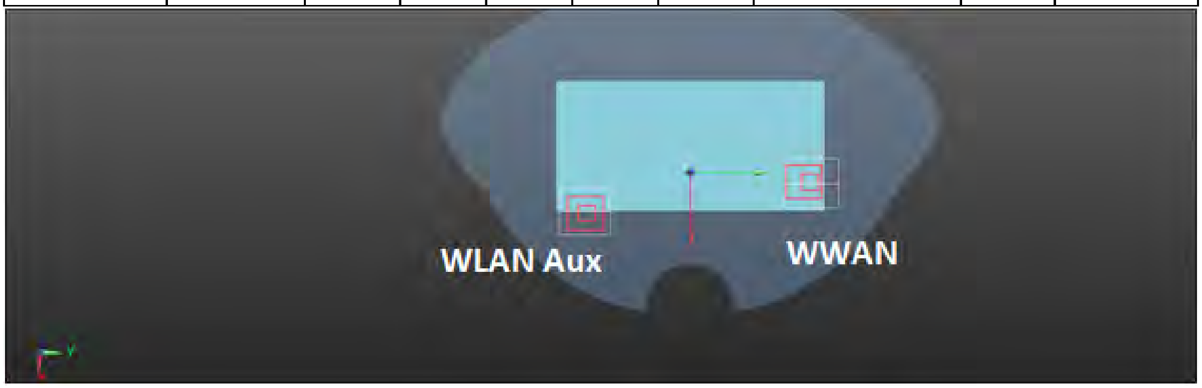
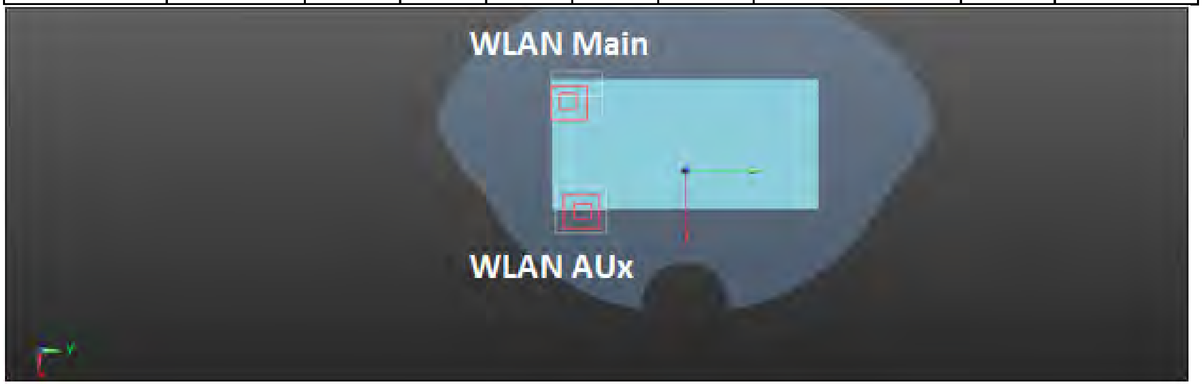
Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA Band II	Back side	1.041	2.40	7.09	-0.08	1.424	151.7	0.011	SPLSR≤ 0.04, Not required
WLAN Main		0.383	-2.92	-7.12	-0.09				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA Band II	Back side	1.041	2.40	7.09	-0.08	1.312	132.1	0.011	SPLSR≤ 0.04, Not required
WLAN Aux		0.271	4.30	-5.98	-0.10				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.383	-2.92	-7.12	-0.09	0.654	73.1	0.007	SPLSR≤ 0.04, Not required
WLAN Aux		0.271	4.30	-5.98	-0.10				



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reported SAR WWAN and WLAN 2.4GHz, ΣSAR evaluation						
Frequency band	Position		reported SAR / W/kg			ΣSAR
			WWAN	WLAN Main	WLAN Aux	<1.6W/kg
WCDMA Band IV	Head	Right cheek	0.724	0.975	0.135	**1.834**
		Right tilt	0.157	0.686	0.079	0.922
		Left cheek	0.319	0.345	0.467	1.131
		Left tilt	0.188	0.326	0.216	0.730
	Hotspot	Front	0.866	0.265	0.162	1.293
		Back	0.917	0.383	0.271	1.571
		Top	-	0.219	0.030	-
		Bottom	0.493	-	-	-
		Right	0.333	-	-	-
		Left	-	0.229	0.240	-

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA Band IV	Right cheek	0.724	4.85	6.12	-0.04	1.699	100.7	0.022	SPLSR≤ 0.04, Not required
WLAN Main		0.975	1.71	-3.45	-0.11				

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA Band IV	Right cheek	0.724	4.85	6.12	-0.04	0.859	69.6	0.011	SPLSR≤ 0.04, Not required
WLAN Aux		0.135	-1.05	2.47	0.53				

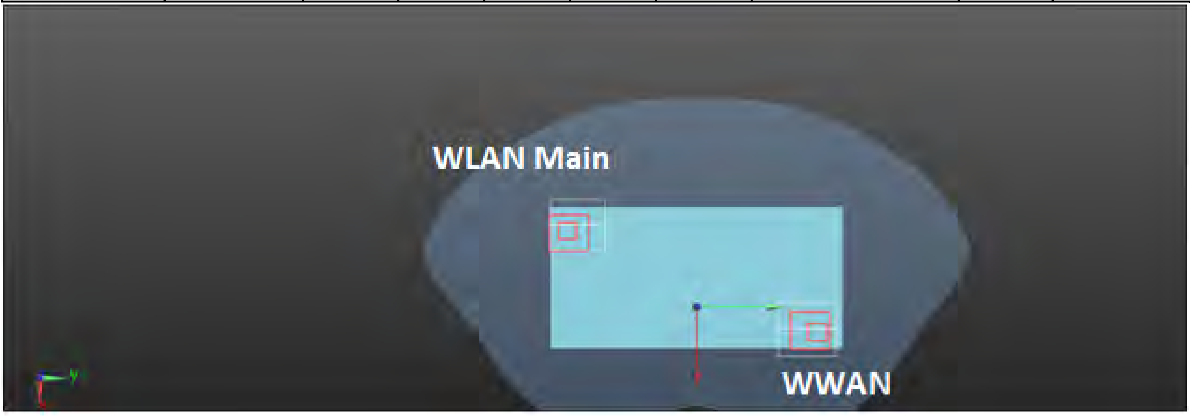
Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Right cheek	0.975	1.71	-3.45	-0.11	1.11	65.7	0.018	SPLSR≤ 0.04, Not required
WLAN Aux		0.135	-1.05	2.47	0.53				

reported SAR WWAN and WLAN 2.4GHz, ΣSAR evaluation						
Frequency band	Position		reported SAR / W/kg			ΣSAR
			WWAN	WLAN Main	WLAN Aux	<1.6W/kg
WCDMA Band V	Head	Right cheek	0.360	0.975	0.135	1.470
		Right tilt	0.181	0.686	0.079	0.946
		Left cheek	0.231	0.345	0.467	1.043
		Left tilt	0.132	0.326	0.216	0.674
	Hotspot	Front	0.638	0.265	0.162	1.065
		Back	0.511	0.383	0.271	1.165
		Top	-	0.219	0.030	-
		Bottom	0.302	-	-	-
		Right	0.417	-	-	-
		Left	-	0.229	0.240	-

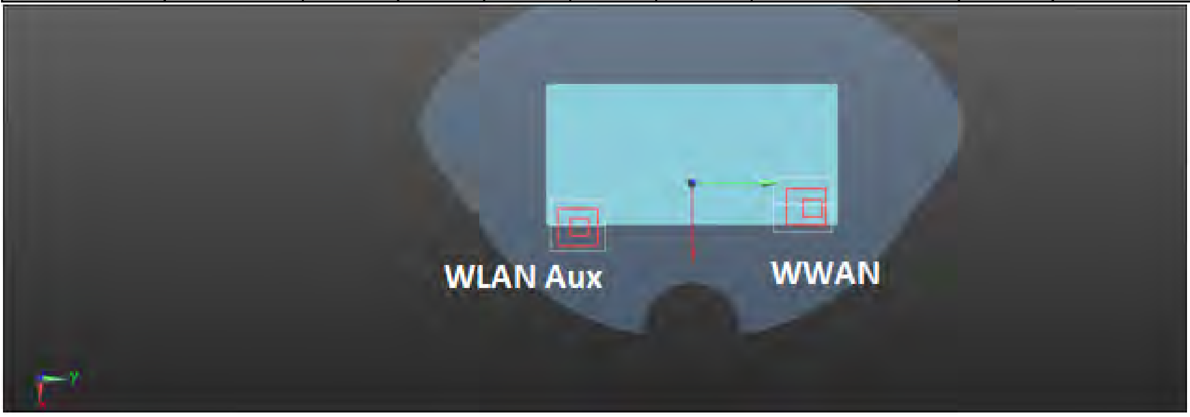
reported SAR WWAN and WLAN 2.4GHz, ΣSAR evaluation						
Frequency band	Position		reported SAR / W/kg			ΣSAR
			WWAN	WLAN Main	WLAN Aux	<1.6W/kg
LTE FDD Band II	Hotspot	Front	0.928	0.265	0.162	1.355
		Back	0.888	0.383	0.271	1.542
		Top	-	0.219	0.030	-
		Bottom	0.435	-	-	-
		Right	0.342	-	-	-
		Left	-	0.229	0.240	-

reported SAR WWAN and WLAN 2.4GHz, ΣSAR evaluation						
Frequency band	Position		reported SAR / W/kg			ΣSAR
			WWAN	WLAN Main	WLAN Aux	<1.6W/kg
LTE FDD Band IV	Hotspot	Front	0.806	0.265	0.162	1.233
		Back	1.025	0.383	0.271	**1.679**
		Top	-	0.219	0.030	-
		Bottom	0.457	-	-	-
		Right	0.305	-	-	-
		Left	-	0.229	0.240	-

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE FDD Band IV	Back side	1.025	3.16	6.69	-0.07	1.408	150.9	0.011	SPLSR≤ 0.04, Not required
WLAN Main		0.383	-2.92	-7.12	-0.09				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE FDD Band IV	Back side	1.025	3.16	6.69	-0.07	1.296	127.2	0.012	SPLSR≤ 0.04, Not required
WLAN Aux		0.271	4.30	-5.98	-0.10				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.383	-2.92	-7.12	-0.09	0.654	73.1	0.007	SPLSR≤ 0.04, Not required
WLAN Aux		0.271	4.30	-5.98	-0.10				

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reported SAR WWAN and WLAN 2.4GHz, ΣSAR evaluation						
Frequency band	Position		reported SAR / W/kg			ΣSAR
			WWAN	WLAN Main	WLAN Aux	<1.6W/kg
LTE FDD Band V	Hotspot	Front	0.650	0.265	0.162	1.077
LTE FDD Band V	Hotspot	Back	0.517	0.383	0.271	1.171
LTE FDD Band V	Hotspot	Top	-	0.219	0.030	-
LTE FDD Band V	Hotspot	Bottom	0.402	-	-	-
LTE FDD Band V	Hotspot	Right	0.385	-	-	-
LTE FDD Band V	Hotspot	Left	-	0.229	0.240	-
LTE FDD Band VII	Hotspot	Front	1.045	0.265	0.162	1.472
LTE FDD Band VII	Hotspot	Back	0.820	0.383	0.271	1.474
LTE FDD Band VII	Hotspot	Top	-	0.219	0.030	-
LTE FDD Band VII	Hotspot	Bottom	0.425	-	-	-
LTE FDD Band VII	Hotspot	Right	-	-	-	-
LTE FDD Band VII	Hotspot	Left	0.648	0.229	0.240	1.117
LTE FDD Band XII	Hotspot	Front	0.187	0.265	0.162	0.614
LTE FDD Band XII	Hotspot	Back	0.137	0.383	0.271	0.791
LTE FDD Band XII	Hotspot	Top	-	0.219	0.030	-
LTE FDD Band XII	Hotspot	Bottom	0.272	-	-	-
LTE FDD Band XII	Hotspot	Right	0.240	-	-	-
LTE FDD Band XII	Hotspot	Left	0.065	0.229	0.240	0.534
LTE FDD Band XVII	Hotspot	Front	0.189	0.265	0.162	0.616
LTE FDD Band XVII	Hotspot	Back	0.102	0.383	0.271	0.756
LTE FDD Band XVII	Hotspot	Top	-	0.219	0.030	-
LTE FDD Band XVII	Hotspot	Bottom	0.269	-	-	-
LTE FDD Band XVII	Hotspot	Right	0.230	-	-	-
LTE FDD Band XVII	Hotspot	Left	-	0.229	0.240	-
LTE FDD Band XXX	Hotspot	Front	0.789	0.265	0.162	1.216
LTE FDD Band XXX	Hotspot	Back	0.773	0.383	0.271	1.427
LTE FDD Band XXX	Hotspot	Top	-	0.219	0.030	-
LTE FDD Band XXX	Hotspot	Bottom	0.712	-	-	-
LTE FDD Band XXX	Hotspot	Right	-	-	-	-
LTE FDD Band XXX	Hotspot	Left	0.559	0.229	0.240	1.028

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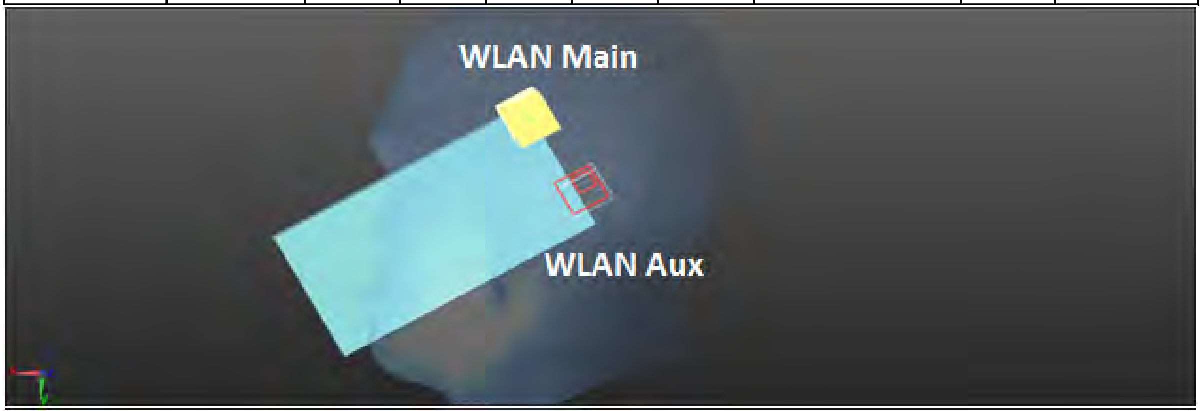
reported SAR WWAN and WLAN 5GHz, ΣSAR evaluation						
Frequency band	Position		reported SAR / W/kg			ΣSAR
			WWAN	WLAN Main	WLAN Aux	<1.6W/kg
GSM 850	Head	Right cheek	0.360	1.334	0.215	**1.909**
		Right tilt	0.190	1.232	0.188	**1.610**
		Left cheek	0.243	0.435	0.838	1.516
		Left tilt	0.149	0.531	0.410	1.090
	Body-Worn	Front	0.483	0.342	0.299	1.124
		Back	0.560	0.292	0.783	**1.635**

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
GSM 850	Right cheek	0.360	4.76	5.34	-0.16	1.694	93.7	0.024	SPLSR≤ 0.04, Not required
WLAN Main		1.334	1.84	-3.56	-0.08				

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
GSM 850	Right cheek	0.360	4.76	5.34	-0.16	0.575	77.5	0.006	SPLSR≤ 0.04, Not required
WLAN Aux		0.215	-1.28	0.56	0.63				

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Right cheek	1.334	1.84	-3.56	-0.08	1.549	52.2	0.037	SPLSR≤ 0.04, Not required
WLAN Aux		0.215	-1.28	0.56	0.63				



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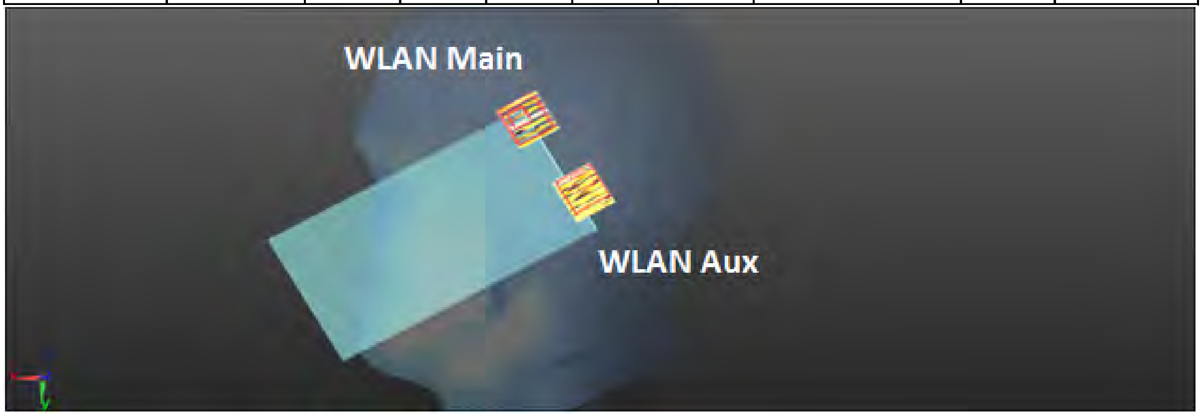
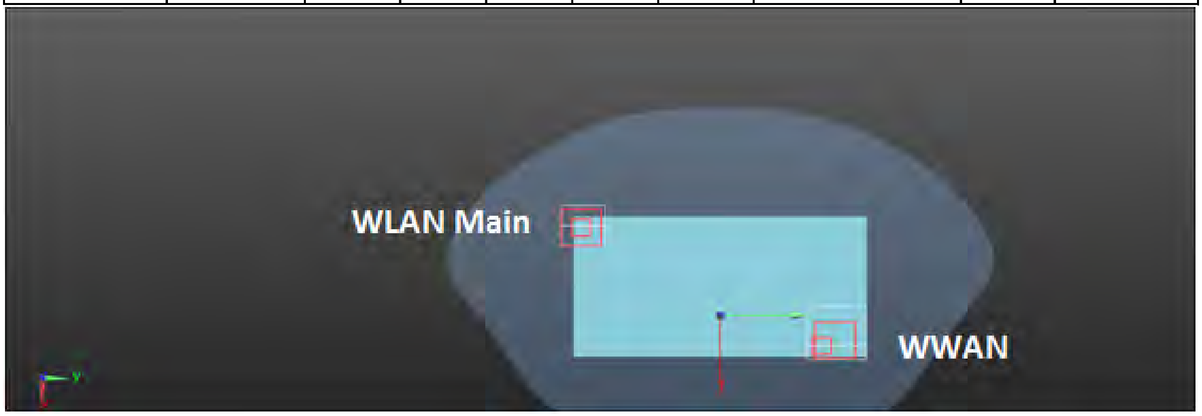
Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
GSM 850	Right tilt	0.190	2.96	1.54	-0.30	1.422	42.4	0.040	SPLSR≤ 0.04, Not required
WLAN Main		1.232	1.94	-2.58	-0.18				

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
GSM 850	Right tilt	0.190	2.96	1.54	-0.30	0.378	54.8	0.004	SPLSR≤ 0.04, Not required
WLAN Aux		0.188	-1.50	-0.43	2.21				

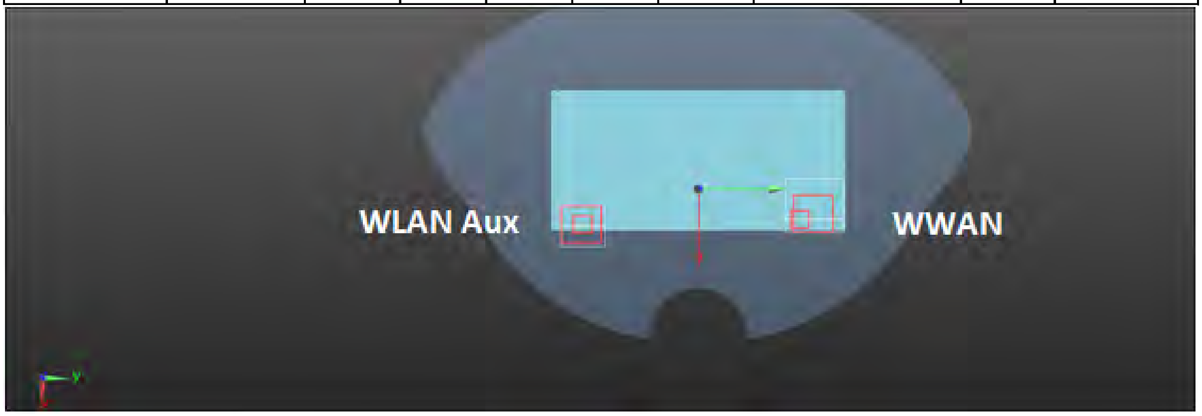
Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Right tilt	1.232	1.94	-2.58	-0.18	1.42	47	0.036	SPLSR≤ 0.04, Not required
WLAN Aux		0.188	-1.50	-0.43	2.21				



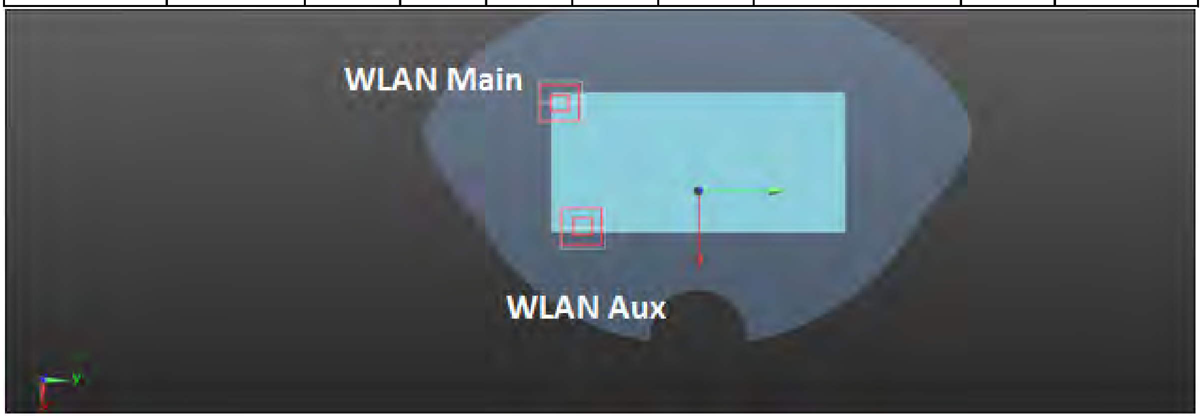
Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
GSM 850	Back side	0.560	3.50	6.35	3.11	0.852	158.9	0.005	SPLSR≤ 0.04, Not required
WLAN Main		0.292	-3.60	-7.50	-0.10				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
GSM 850	Back side	0.560	3.50	6.35	3.11	1.343	128.9	0.012	SPLSR≦ 0.04, Not required
WLAN Aux		0.783	3.74	-6.14	-0.06				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.292	-3.60	-7.50	-0.10	1.075	74.7	0.015	SPLSR≦ 0.04, Not required
WLAN Aux		0.783	3.74	-6.14	-0.06				



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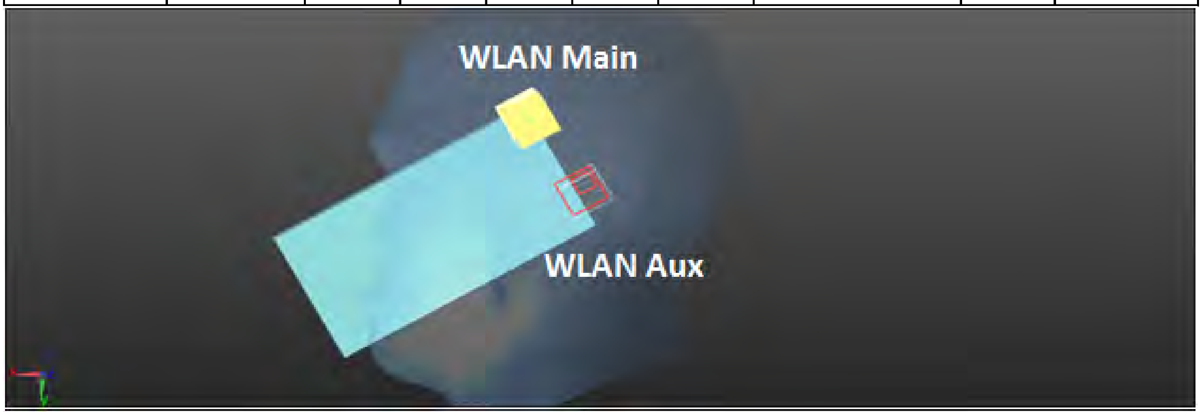
reported SAR WWAN and WLAN 5GHz, ΣSAR evaluation						
Frequency band	Position		reported SAR / W/kg			ΣSAR
			WWAN	WLAN Main	WLAN Aux	<1.6W/kg
GSM 1900	Head	Right cheek	0.397	1.334	0.215	**1.946**
		Right tilt	0.087	1.232	0.188	1.507
		Left cheek	0.199	0.435	0.838	1.472
		Left tilt	0.104	0.531	0.410	1.045
	Hotspot	Front	0.522	0.342	0.299	1.163
		Back	0.602	0.292	0.783	**1.677**

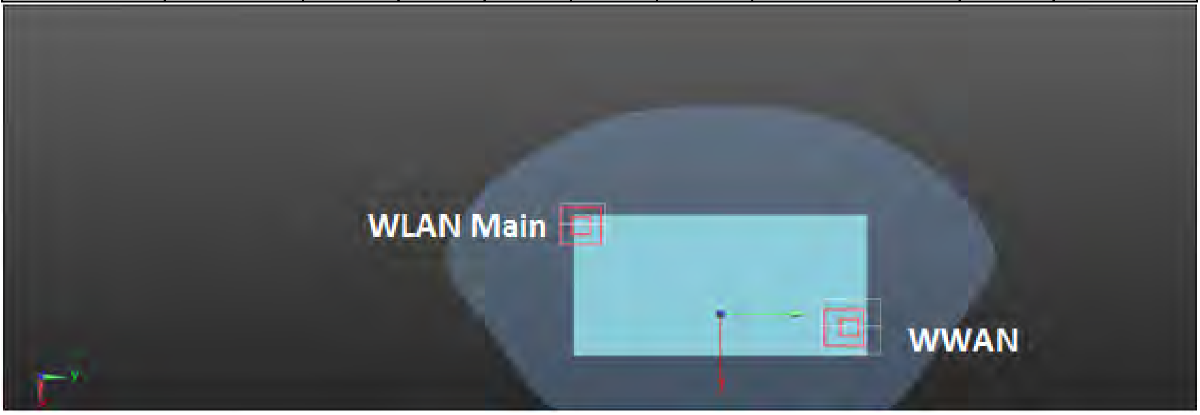
Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
GSM 1900	Right cheek	0.397	4.83	6.46	0.01	1.731	104.6	0.022	SPLSR≤ 0.04, Not required
WLAN Main		1.334	1.84	-3.56	-0.08				

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
GSM 1900	Right cheek	0.397	4.83	6.46	0.01	0.612	85.2	0.006	SPLSR≤ 0.04, Not required
WLAN Aux		0.215	-1.28	0.56	0.63				

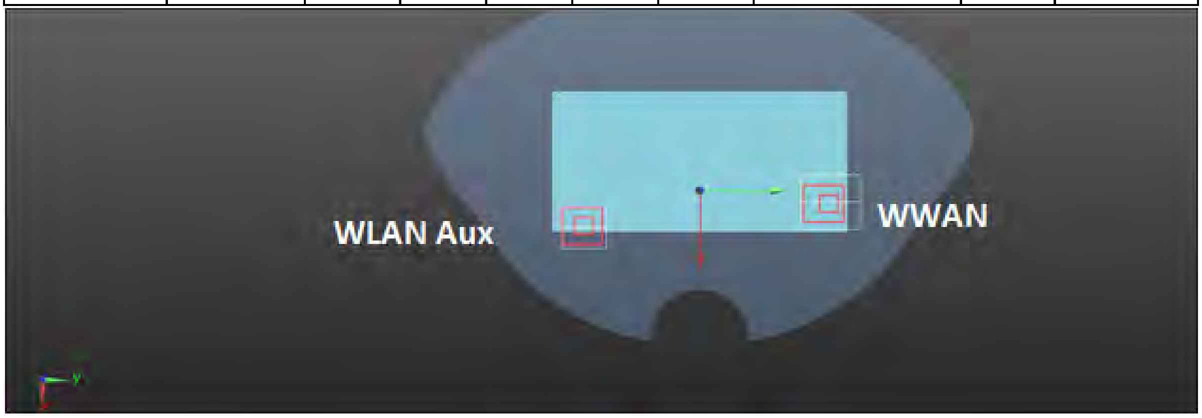
Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Right cheek	1.334	1.84	-3.56	-0.08	1.549	52.2	0.037	SPLSR≤ 0.04, Not required
WLAN Aux		0.215	-1.28	0.56	0.63				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
GSM 1900	Back side	0.602	2.56	6.94	-0.08	0.894	157	0.005	SPLSR≤ 0.04, Not required
WLAN Main		0.292	-3.60	-7.50	-0.10				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
GSM 1900	Back side	0.602	2.56	6.94	-0.08	1.385	131.3	0.012	SPLSR≤ 0.04, Not required
WLAN Aux		0.783	3.74	-6.14	-0.06				



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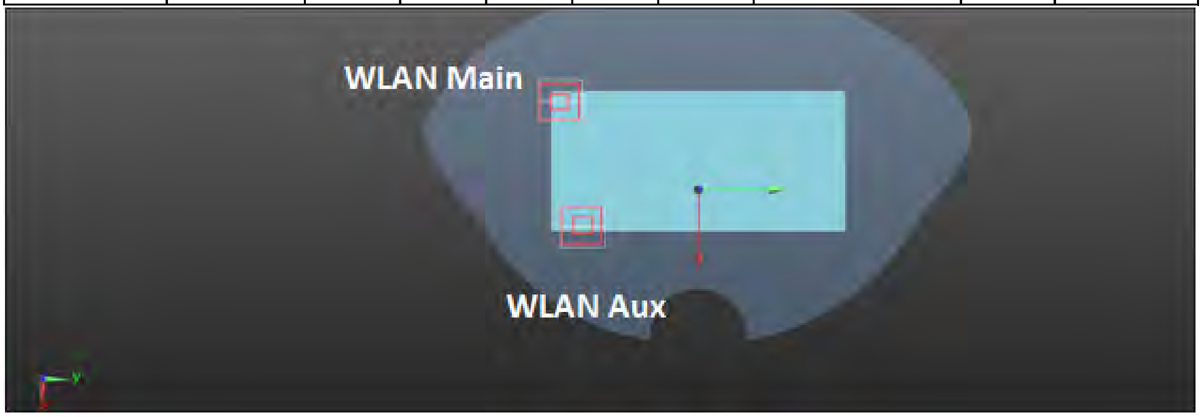
Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.292	-3.60	-7.50	-0.10	1.075	74.7	0.015	SPLSR≤ 0.04, Not required
WLAN Aux		0.783	3.74	-6.14	-0.06				



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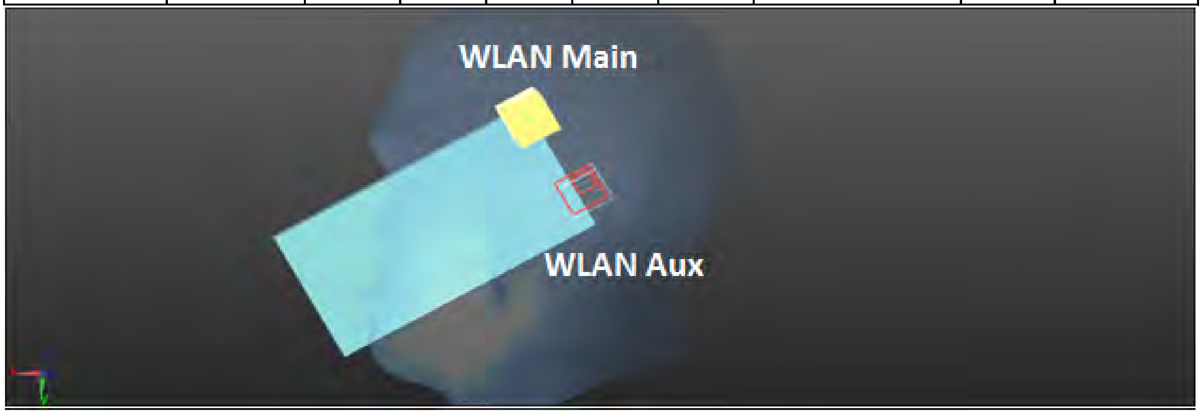
reported SAR WWAN and WLAN 5GHz, ΣSAR evaluation						
Frequency band	Position		reported SAR / W/kg			ΣSAR
			WWAN	WLAN Main	WLAN Aux	<1.6W/kg
WCDMA Band II	Head	Right cheek	0.701	1.334	0.215	**2.250**
		Right tilt	0.165	1.232	0.188	1.585
		Left cheek	0.340	0.435	0.838	**1.613**
		Left tilt	0.187	0.531	0.410	1.128
	Body-Worn	Front	0.899	0.342	0.299	1.540
		Back	1.041	0.292	0.783	**2.116**

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA Band II	Right cheek	0.701	4.77	6.24	-0.03	2.035	102.4	0.028	SPLSR≤ 0.04, Not required
WLAN Main		1.334	1.84	-3.56	-0.05				

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA Band II	Right cheek	0.701	4.77	6.24	-0.03	0.916	83.4	0.011	SPLSR≤ 0.04, Not required
WLAN Aux		0.215	-1.28	0.56	0.63				

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Right cheek	1.334	1.84	-3.56	-0.08	1.549	52.2	0.037	SPLSR≤ 0.04, Not required
WLAN Aux		0.215	-1.28	0.56	0.63				



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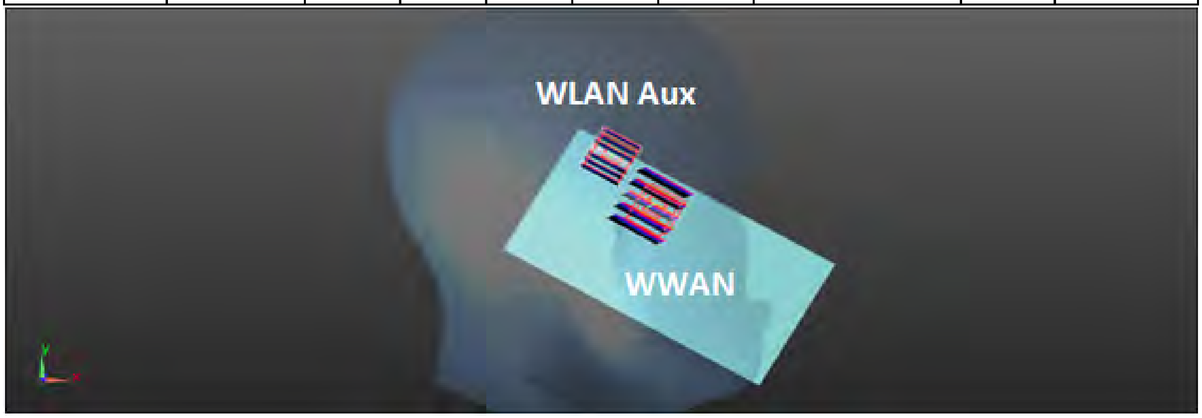
Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA Band II	Left cheek	0.340	5.94	-0.65	-0.08	0.775	75.4	0.009	SPLSR≤ 0.04, Not required
WLAN Main		0.435	-1.49	-1.90	0.41				

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA Band II	Left cheek	0.340	5.94	-0.65	-0.08	1.178	38.2	0.033	SPLSR≤ 0.04, Not required
WLAN Aux		0.838	3.61	2.38	-0.18				



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Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Left cheek	0.435	-1.49	-1.90	0.41	1.273	66.8	0.022	SPLSR≤ 0.04, Not required
WLAN Aux		0.838	3.61	2.38	-0.18				

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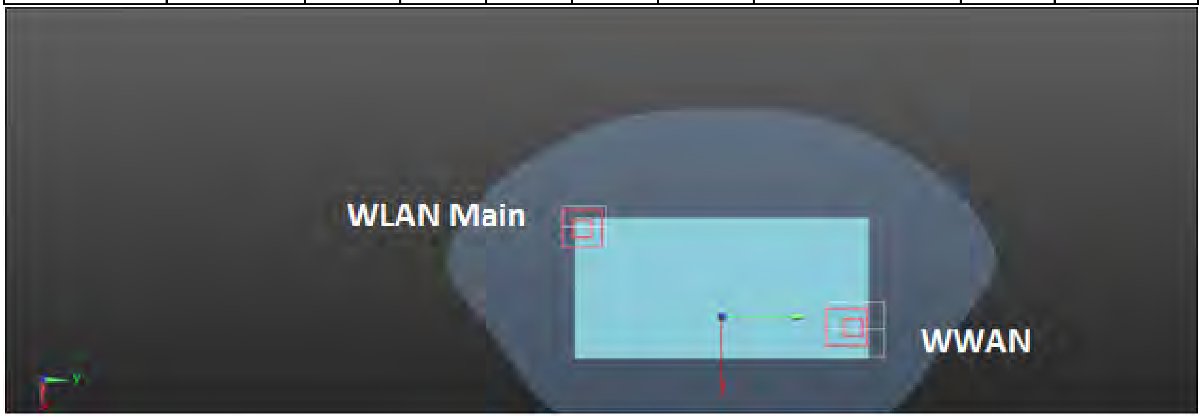
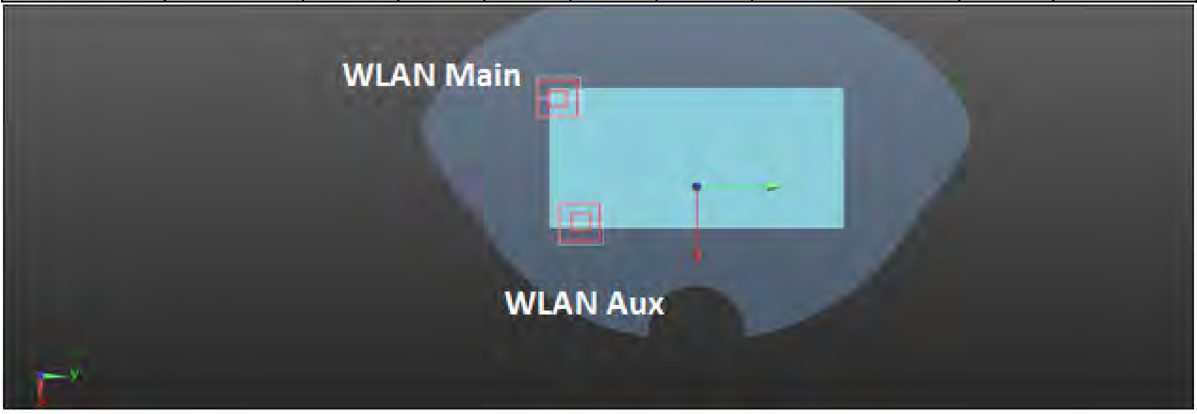
Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA Band II	Back side	1.041	2.40	7.09	-0.08	1.333	157.8	0.010	SPLSR≤ 0.04, Not required
WLAN Main		0.292	-3.60	-7.50	-0.10				



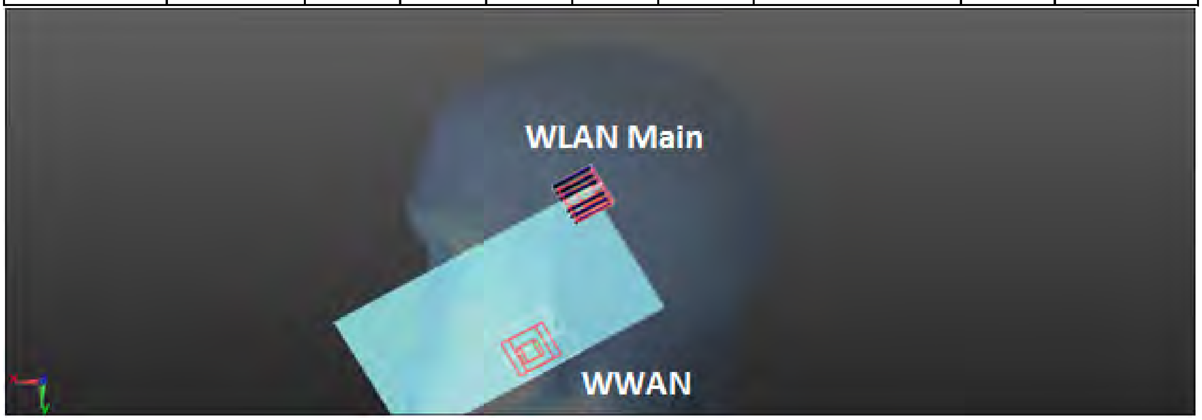
Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA Band II	Back side	1.041	2.40	7.09	-0.08	1.824	133	0.019	SPLSR≤ 0.04, Not required
WLAN Aux		0.783	3.74	-6.14	-0.06				

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.292	-3.60	-7.50	-0.10	1.075	74.7	0.015	SPLSR≦ 0.04, Not required
WLAN Aux		0.783	3.74	-6.14	-0.06				

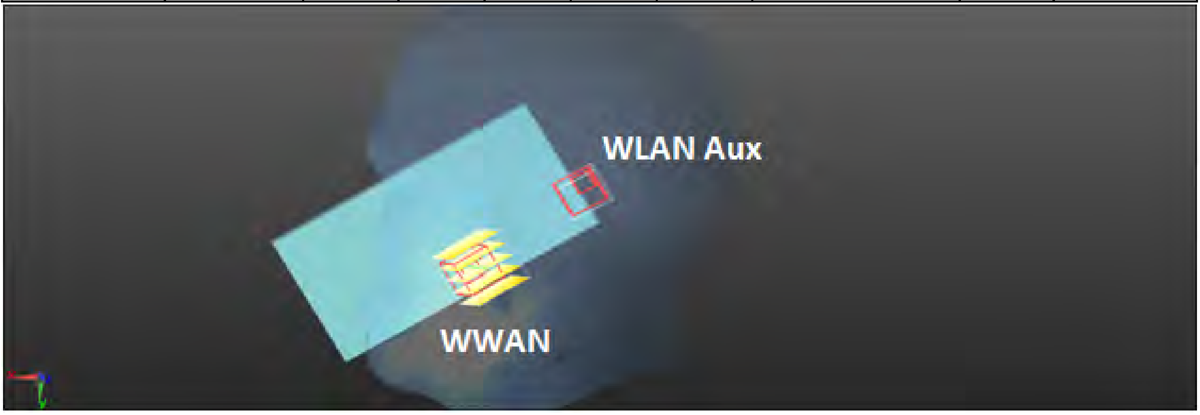


reported SAR WWAN and WLAN 5GHz, ΣSAR evaluation						
Frequency band	Position		reported SAR / W/kg			ΣSAR
			WWAN	WLAN Main	WLAN Aux	<1.6W/kg
WCDMA Band IV	Head	Right cheek	0.724	1.334	0.215	**2.273**
		Right tilt	0.157	1.232	0.188	1.577
		Left cheek	0.319	0.435	0.838	1.592
		Left tilt	0.188	0.531	0.410	1.129
	Body-Worn	Front	0.866	0.342	0.299	1.507
		Back	0.917	0.292	0.783	**1.992**

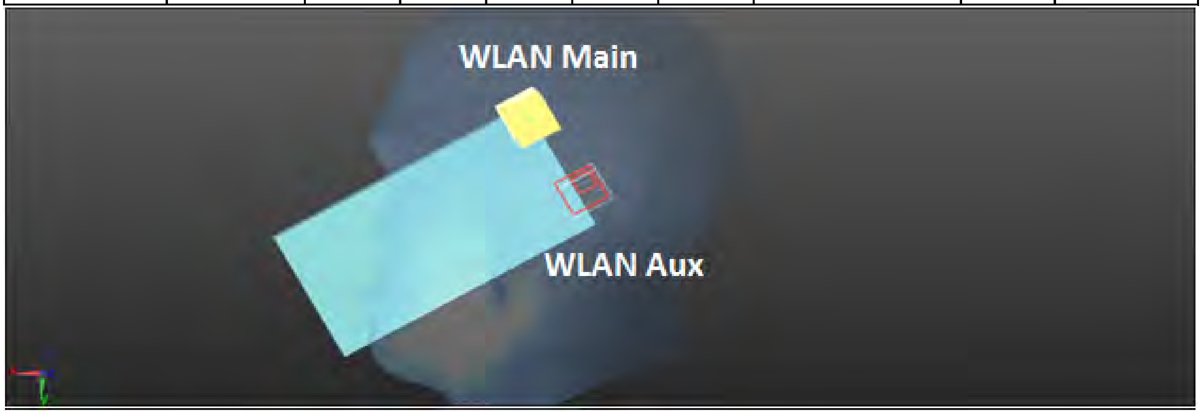
Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA Band IV	Right cheek	0.724	4.85	6.12	-0.04	2.058	101.4	0.029	SPLSR≤ 0.04, Not required
WLAN Main		1.334	1.84	-3.56	-0.08				



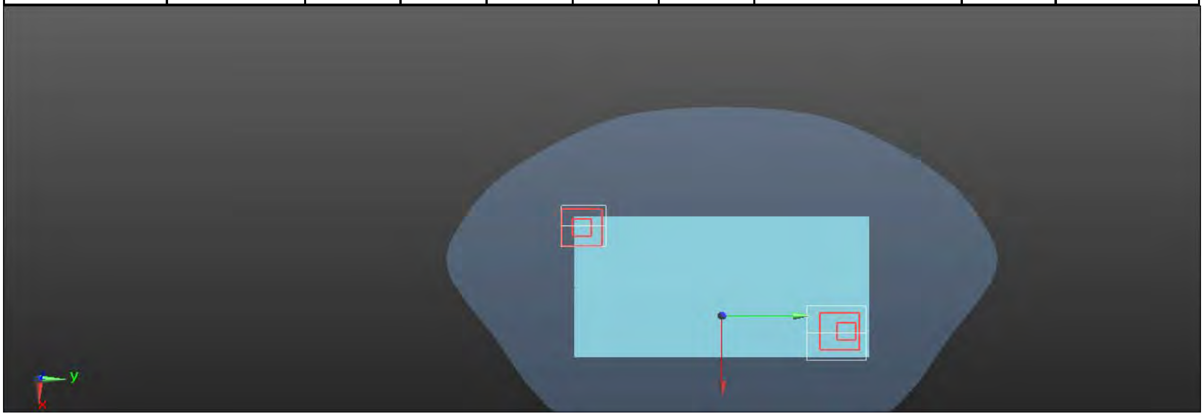
Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA Band IV	Right cheek	0.724	4.85	6.12	-0.04	0.939	83.1	0.011	SPLSR≤ 0.04, Not required
WLAN Aux		0.215	-1.28	0.56	0.63				



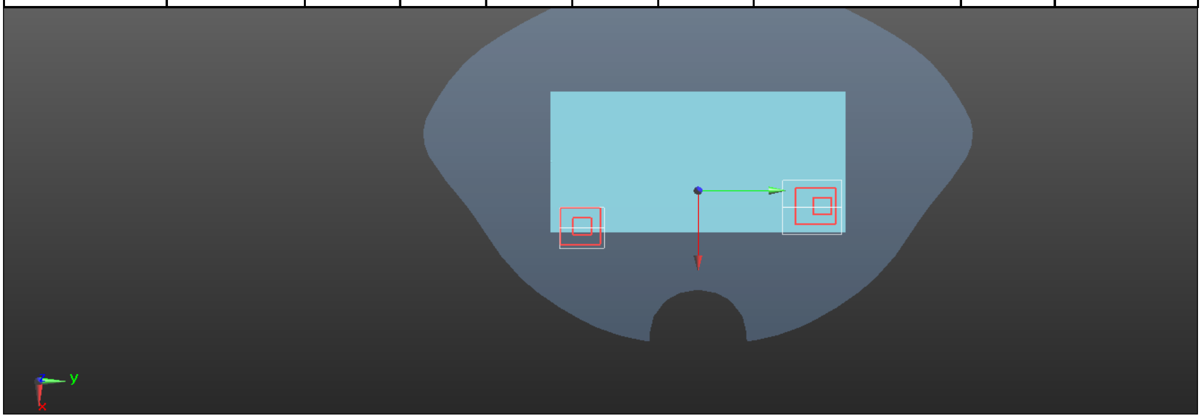
Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Right cheek	1.334	1.84	-3.56	-0.08	1.549	52.2	0.037	SPLSR≤ 0.04, Not required
WLAN Aux		0.215	-1.28	0.56	0.63				



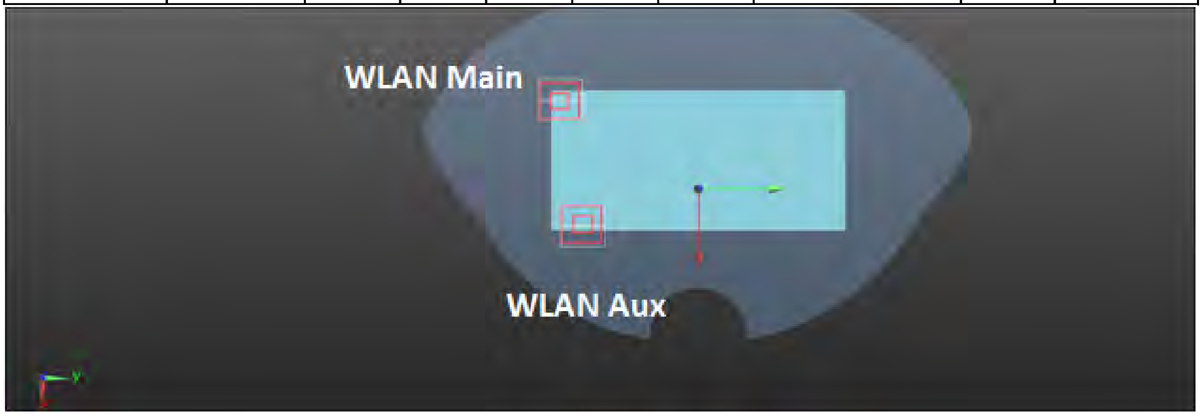
Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA Band IV	Back side	0.917	2.70	6.84	-0.09	1.209	156.6	0.008	SPLSR≦ 0.04, Not required
WLAN Main		0.292	-3.60	-7.50	-0.10				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA Band IV	Back side	0.917	2.70	6.84	-0.09	1.7	130.2	0.017	SPLSR≦ 0.04, Not required
WLAN Aux		0.783	3.74	-6.14	-0.06				

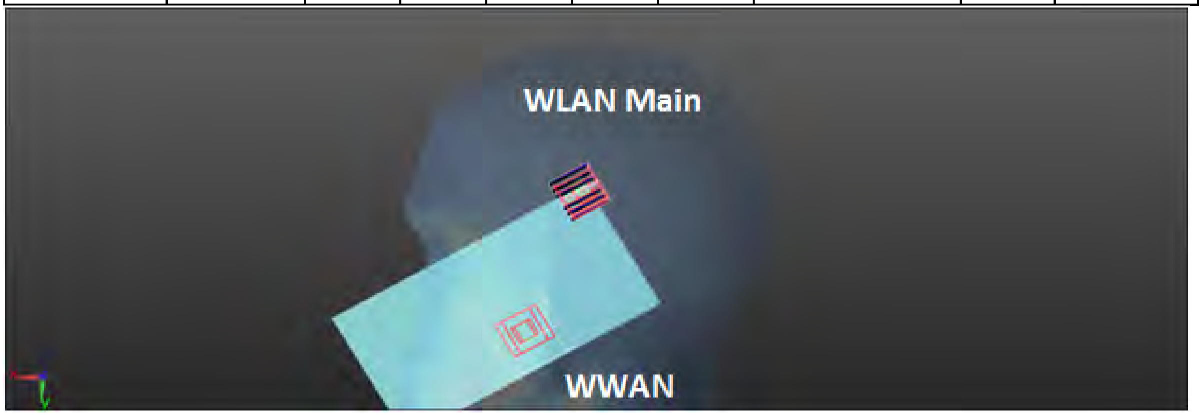


Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.292	-3.60	-7.50	-0.10	1.075	74.7	0.015	SPLSR≤ 0.04, Not required
WLAN Aux		0.783	3.74	-6.14	-0.06				



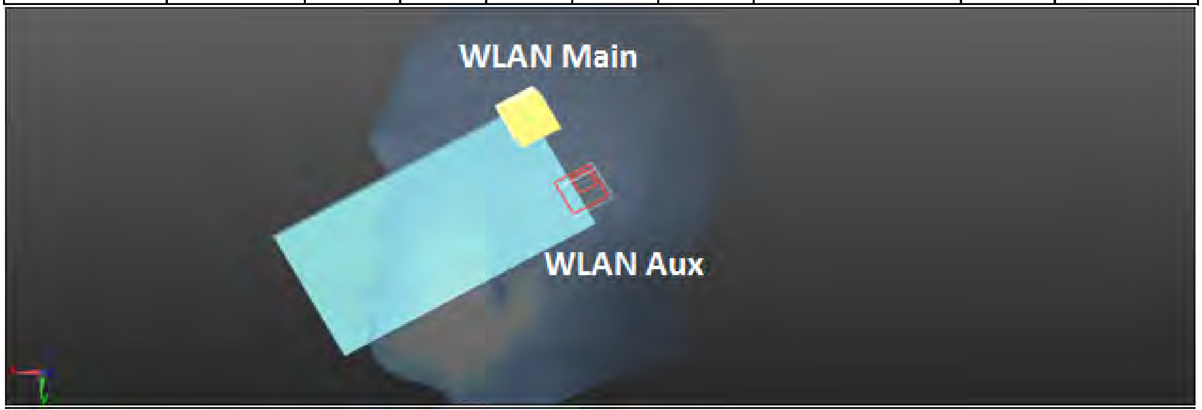
reported SAR WWAN and WLAN 5GHz, ΣSAR evaluation						
Frequency band	Position		reported SAR / W/kg			ΣSAR
			WWAN	WLAN Main	WLAN Aux	<1.6W/kg
WCDMA Band V	Head	Right cheek	0.360	1.334	0.215	**1.909**
		Right tilt	0.181	1.232	0.188	**1.601**
		Left cheek	0.231	0.435	0.838	1.504
		Left tilt	0.132	0.531	0.410	1.073
	Body-Worn	Front	0.638	0.342	0.299	1.279
		Back	0.511	0.292	0.783	1.586

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA Band V	Right cheek	0.360	4.90	5.42	-0.14	1.694	94.9	0.023	SPLSR≤ 0.04, Not required
WLAN Main		1.334	1.84	-3.56	-0.08				



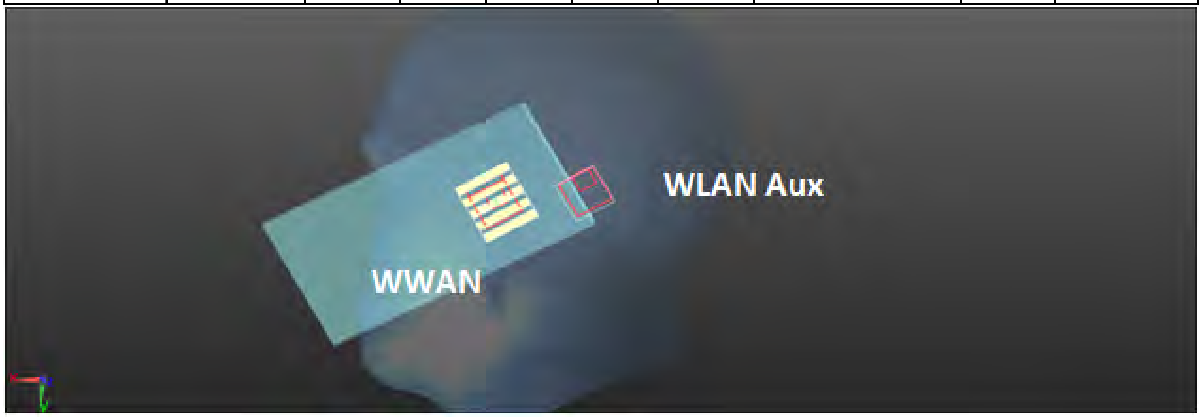
Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA Band V	Right cheek	0.360	4.90	5.42	-0.14	0.575	79	0.006	SPLSR≤ 0.04, Not required
WLAN Aux		0.215	-1.28	0.56	0.63				

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Right cheek	1.334	1.84	-3.56	-0.08	1.549	52.2	0.037	SPLSR≤ 0.04, Not required
WLAN Aux		0.215	-1.28	0.56	0.63				

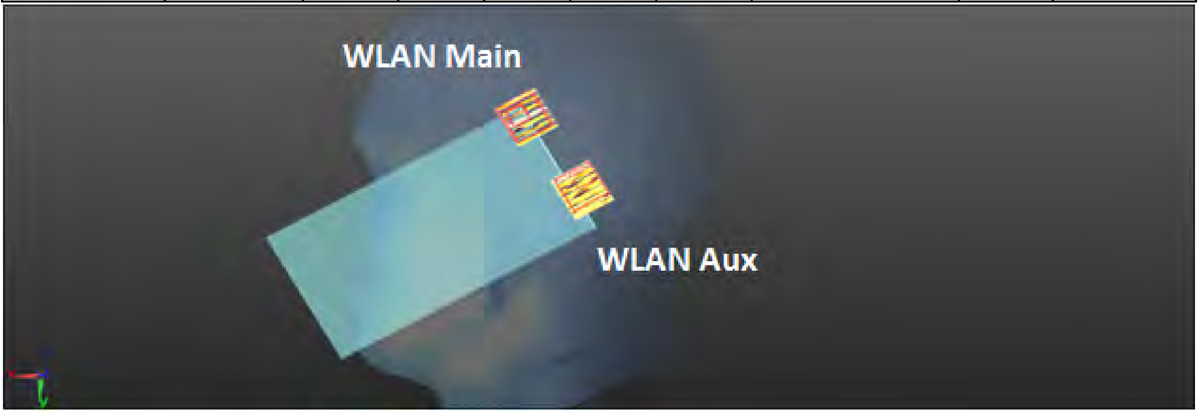


Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA Band V	Right tilt	0.181	2.96	1.54	-0.29	1.413	42.4	0.040	SPLSR≤ 0.04, Not required
WLAN Main		1.232	1.94	-2.58	-0.18				

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA Band V	Right tilt	0.181	2.96	1.54	-0.29	0.369	54.8	0.004	SPLSR≤ 0.04, Not required
WLAN Aux		0.188	-1.50	-0.43	2.21				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Right tilt	1.232	1.94	-2.58	-0.18	1.42	47	0.036	SPLSR≤ 0.04, Not required
WLAN Aux		0.188	-1.50	-0.43	2.21				



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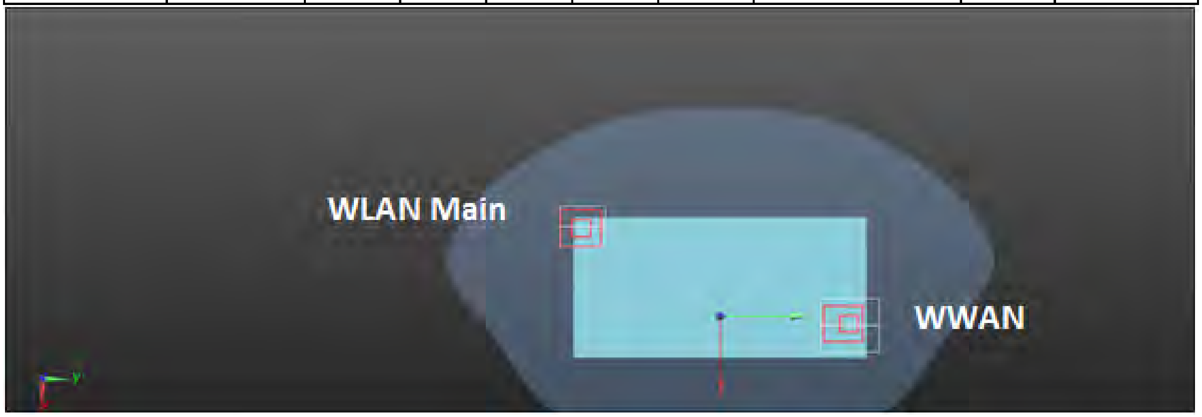
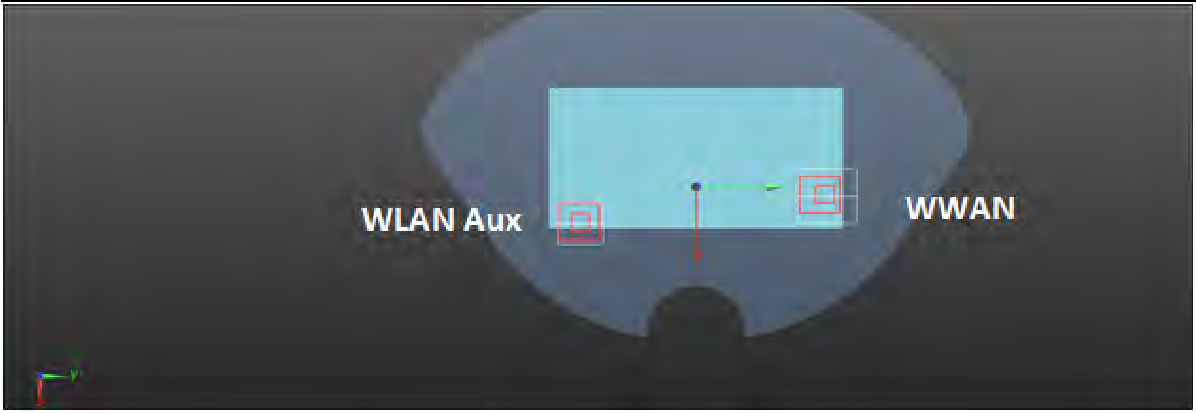
reported SAR WWAN and WLAN 5GHz, ΣSAR evaluation						
Frequency band	Position		reported SAR / W/kg			ΣSAR
			WWAN	WLAN Main	WLAN Aux	<1.6W/kg
LTE FDD Band II	Body-Worn	Front	0.928	0.342	0.299	1.569
		Back	0.888	0.292	0.783	**1.963**

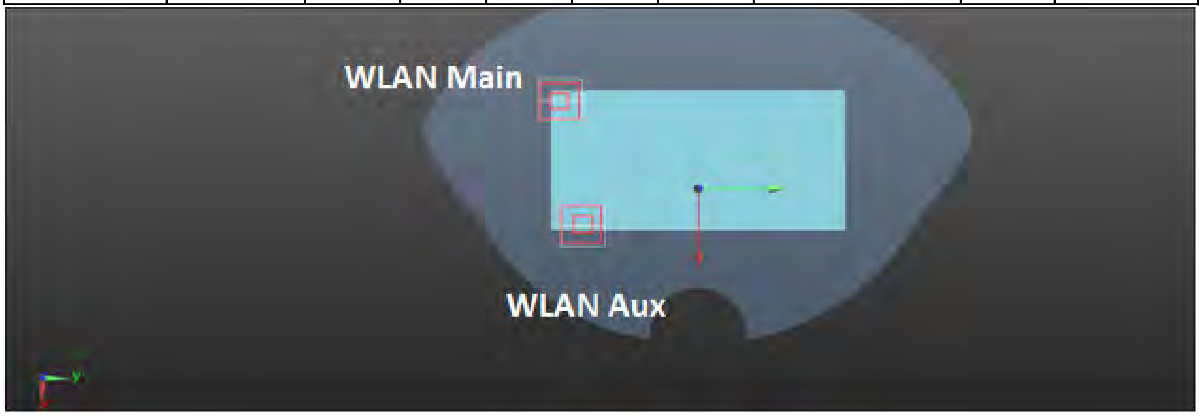
Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE FDD Band II	Back side	0.888	2.25	6.94	-0.06	1.180	155.8	0.008	SPLSR≤ 0.04, Not required
WLAN Main		0.292	-3.60	-7.50	-0.10				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE FDD Band II	Back side	0.888	2.25	6.94	-0.06	1.671	131.5	0.016	SPLSR≤ 0.04, Not required
WLAN Aux		0.783	3.74	-6.14	-0.06				

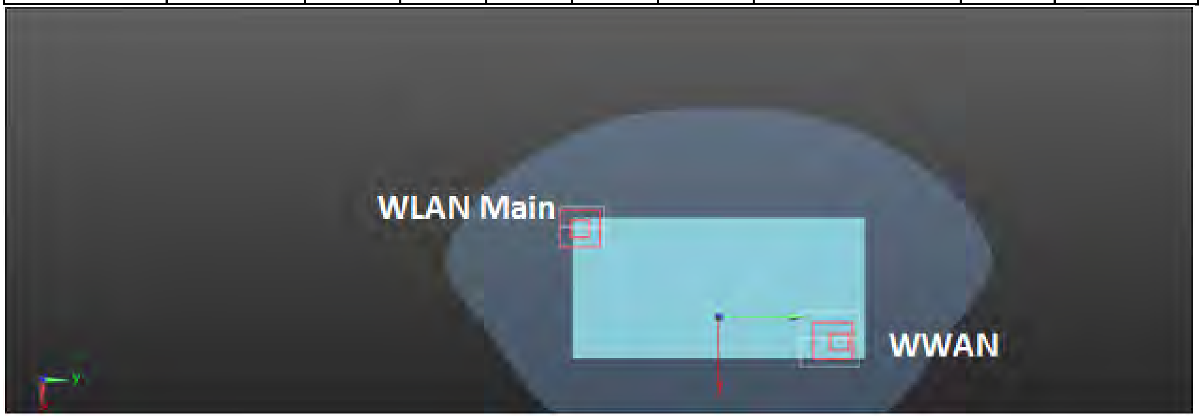


Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.292	-3.60	-7.50	-0.10	1.075	74.7	0.015	SPLSR≤ 0.04, Not required
WLAN Aux		0.783	3.74	-6.14	-0.06				



reported SAR WWAN and WLAN 5GHz, ΣSAR evaluation						
Frequency band	Position		reported SAR / W/kg			ΣSAR
			WWAN	WLAN Main	WLAN Aux	<1.6W/kg
LTE FDD Band IV	Body-Worn	Front	0.806	0.342	0.299	1.447
		Back	1.025	0.292	0.783	**2.100**

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE FDD Band IV	Back side	1.025	3.16	6.69	-0.07	1.317	157.2	0.010	SPLSR≤ 0.04, Not required
WLAN Main		0.292	-3.60	-7.50	-0.10				



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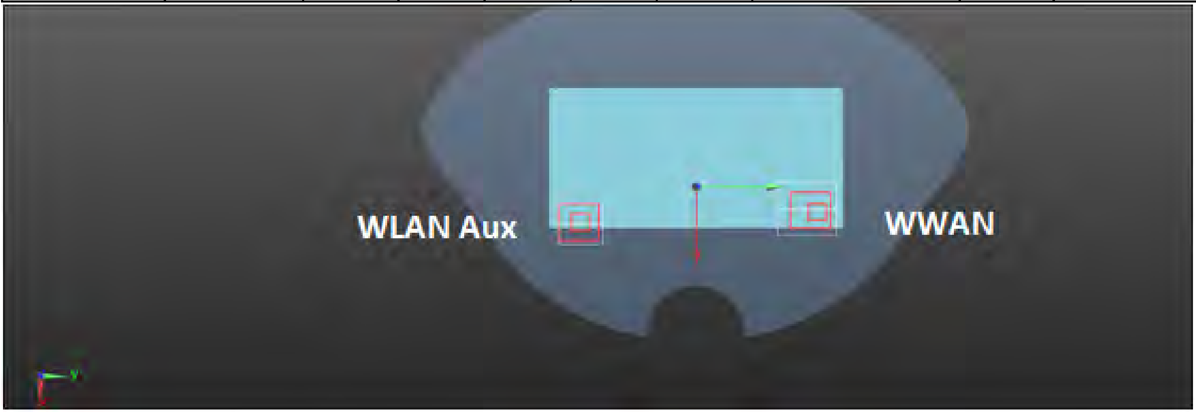
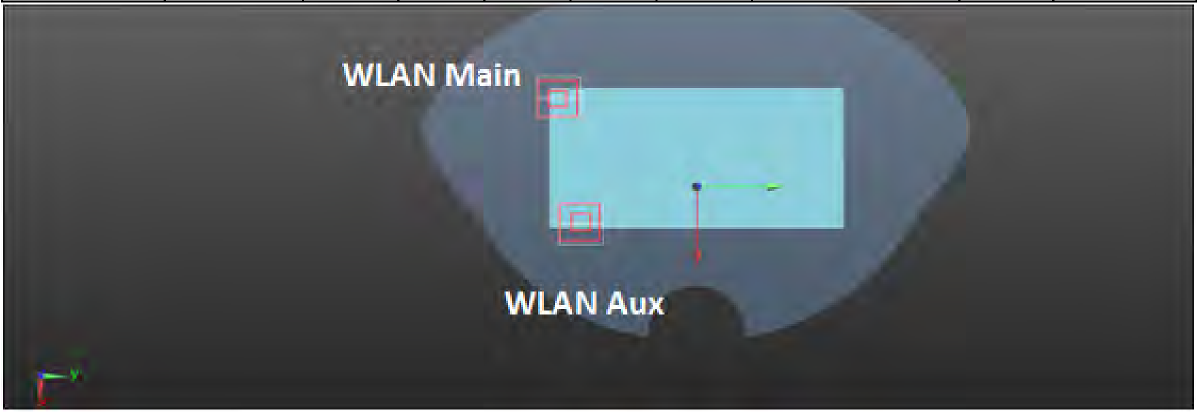
Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE FDD Band IV	Back side	1.025	3.16	6.69	-0.07	1.808	128.4	0.019	SPLSR≤ 0.04, Not required
WLAN Aux		0.783	3.74	-6.14	-0.06				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.292	-3.60	-7.50	-0.10	1.075	74.7	0.015	SPLSR≤ 0.04, Not required
WLAN Aux		0.783	3.74	-6.14	-0.06				



reported SAR WWAN and WLAN 5GHz, ΣSAR evaluation						
Frequency band	Position		reported SAR / W/kg			ΣSAR
			WWAN	WLAN Main	WLAN Aux	<1.6W/kg
LTE FDD Band V	Body-Worn	Front	0.650	0.342	0.299	1.291
		Back	0.517	0.292	0.783	1.592
LTE FDD Band VII	Body-Worn	Front	1.045	0.342	0.299	**1.686**
		Back	0.820	0.292	0.783	**1.895**

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE FDD Band VII	Front side	1.045	3.02	6.60	-0.08	1.387	139.8	0.012	SPLSR≤ 0.04, Not required
WLAN Main		0.342	4.02	-7.34	-0.06				

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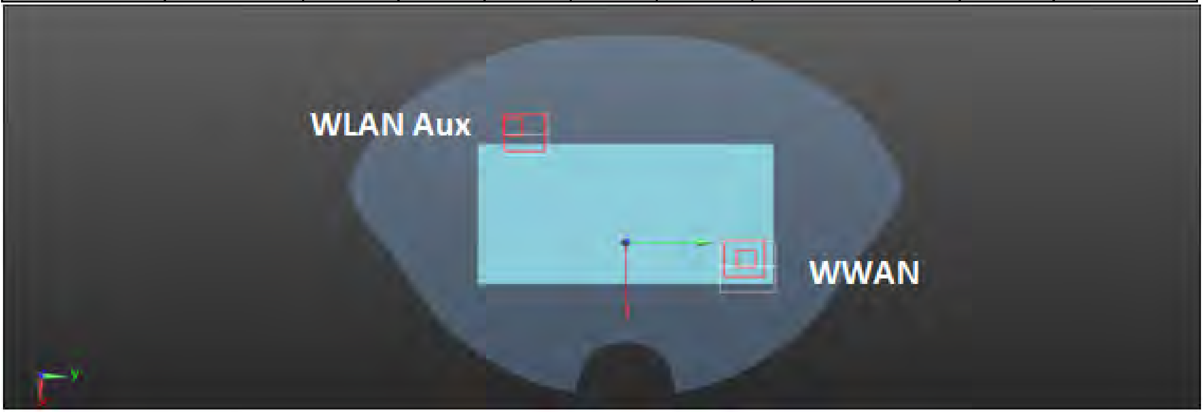
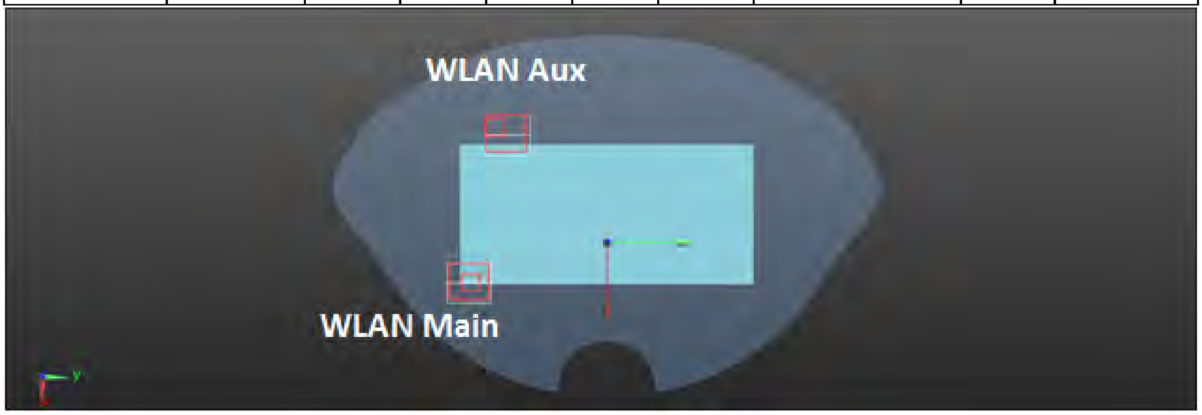
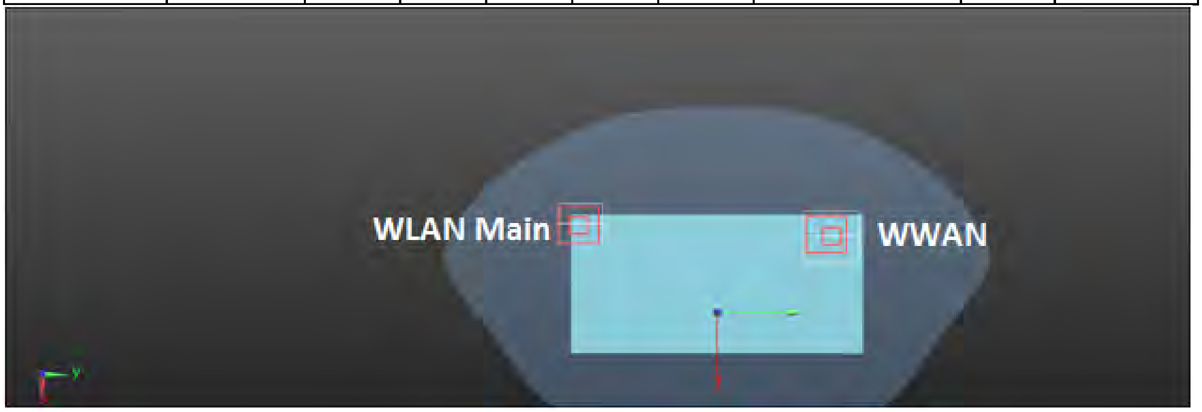
Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE FDD Band VII	Front side	1.045	3.02	6.60	-0.08	1.344	139.4	0.011	SPLSR≤ 0.04, Not required
WLAN Aux		0.299	-3.50	-5.72	-0.08				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Front side	0.342	4.02	-7.34	-0.06	0.641	76.9	0.007	SPLSR≤ 0.04, Not required
WLAN Aux		0.299	-3.50	-5.72	-0.08				

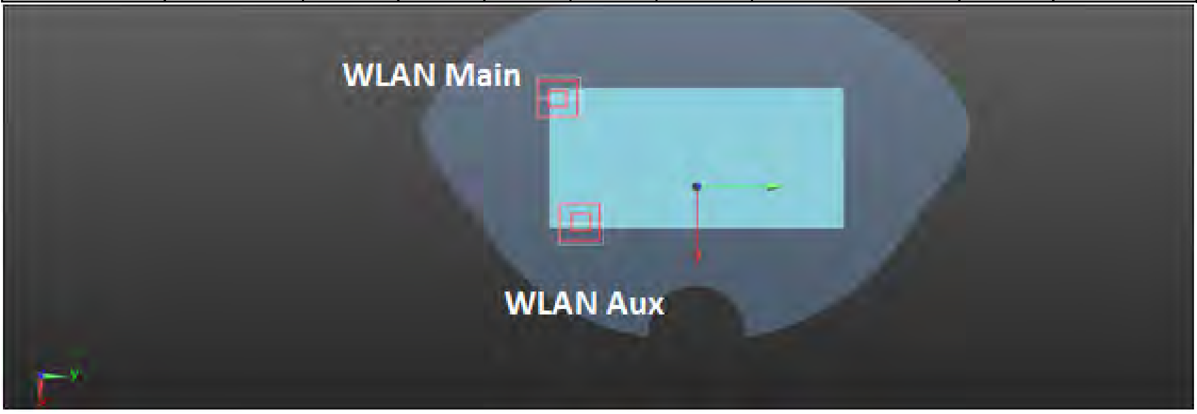


Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE FDD Band VII	Back side	0.820	-2.98	6.24	-0.07	1.112	137.5	0.009	SPLSR≤ 0.04, Not required
WLAN Main		0.292	-3.60	-7.50	-0.10				



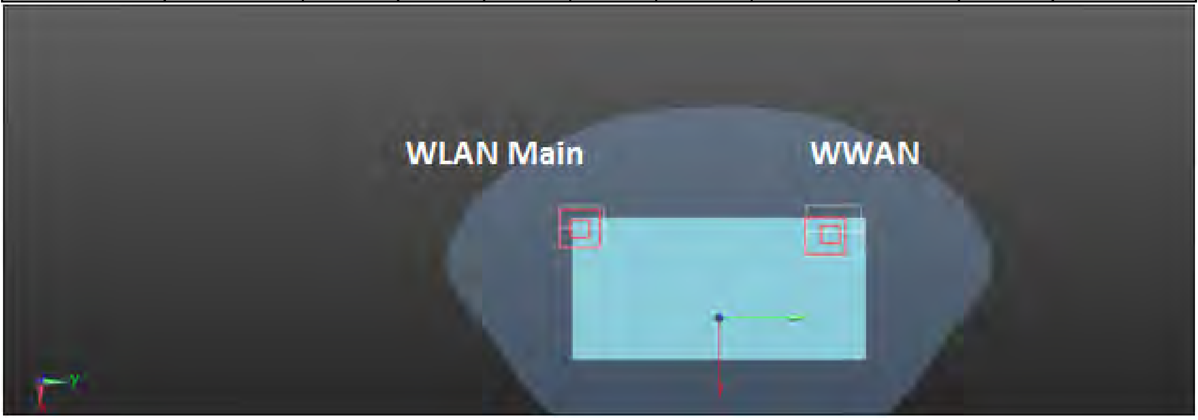
Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE FDD Band VII	Back side	0.820	-2.98	6.24	-0.07	1.603	140.9	0.014	SPLSR≤ 0.04, Not required
WLAN Aux		0.783	3.74	-6.14	-0.06				

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.292	-3.60	-7.50	-0.10	1.075	74.7	0.015	SPLSR≤ 0.04, Not required
WLAN Aux		0.783	3.74	-6.14	-0.06				



reported SAR WWAN and WLAN 5GHz, ΣSAR evaluation						
Frequency band	Position		reported SAR / W/kg			ΣSAR
			WWAN	WLAN Main	WLAN Aux	<1.6W/kg
LTE FDD Band XII	Body-Worn	Front	0.187	0.342	0.299	0.828
		Back	0.137	0.292	0.783	1.212
LTE FDD Band XVII	Body-Worn	Front	0.189	0.342	0.299	0.830
		Back	0.102	0.292	0.783	1.177
LTE FDD Band XXX	Body-Worn	Front	0.789	0.342	0.299	1.430
		Back	0.773	0.292	0.783	**1.848**

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE FDD Band XXX	Back side	0.773	-3.56	6.34	-0.11	1.065	138.4	0.008	SPLSR<0.04, Not required
WLAN Main		0.292	-3.60	-7.50	-0.10				



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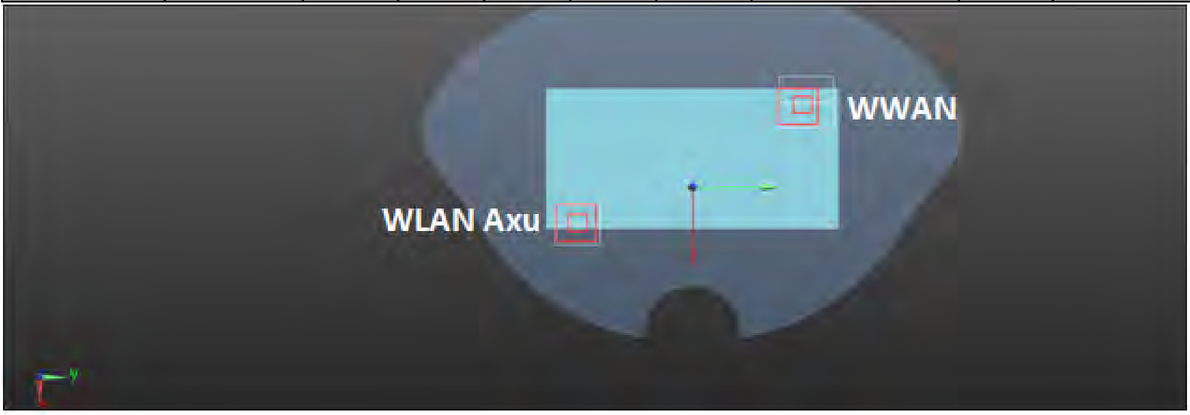
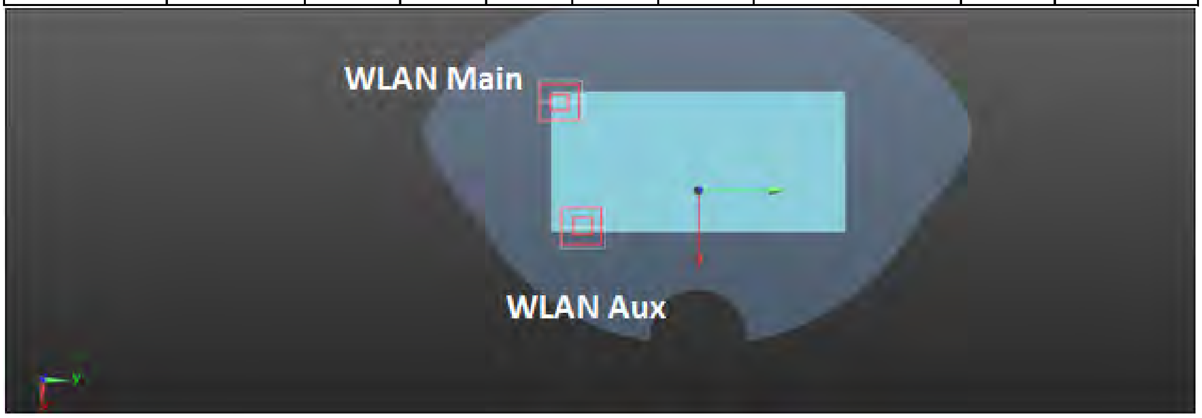
Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE FDD Band XXX	Back side	0.773	-3.56	6.34	-0.11	1.556	144.6	0.013	SPLSR<0.04, Not required
WLAN Aux		0.783	3.74	-6.14	-0.06				



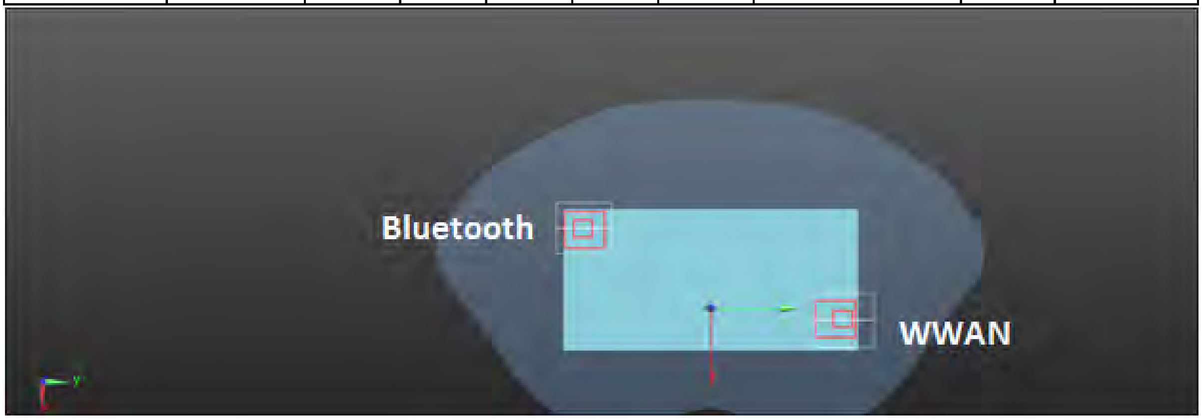
Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.292	-3.60	-7.50	-0.10	1.075	74.7	0.015	SPLSR≤ 0.04, Not required
WLAN Aux		0.783	3.74	-6.14	-0.06				



reported SAR WWAN and Bluetooth and 2.4G WLAN Aux, ΣSAR evaluation						
Frequency band	Position		reported SAR / W/kg			ΣSAR
			WWAN	Bluetooth	WLAN Aux	<1.6W/kg
GSM 850	Body-Worn	Front	0.483	0.008	0.162	0.653
		Back	0.560	0.019	0.271	0.850
GSM 1900	Body-Worn	Front	0.522	0.008	0.162	0.692
		Back	0.602	0.019	0.271	0.892
WCDMA Band II	Body-Worn	Front	0.899	0.008	0.162	1.069
		Back	1.041	0.019	0.271	1.331
WCDMA Band IV	Body-Worn	Front	0.866	0.008	0.162	1.036
		Back	0.917	0.019	0.271	1.207
WCDMA Band V	Body-Worn	Front	0.638	0.008	0.162	0.808
		Back	0.511	0.019	0.271	0.801
LTE FDD Band II	Body-Worn	Front	0.928	0.008	0.162	1.098
		Back	0.888	0.019	0.271	1.178
LTE FDD Band IV	Body-Worn	Front	0.806	0.008	0.162	0.976
		Back	1.025	0.019	0.271	1.315
LTE FDD Band V	Body-Worn	Front	0.650	0.008	0.162	0.82
		Back	0.517	0.019	0.271	0.807
LTE FDD Band VII	Body-Worn	Front	1.045	0.008	0.162	1.215
		Back	0.820	0.019	0.271	1.110
LTE FDD Band XII	Body-Worn	Front	0.187	0.008	0.162	0.357
		Back	0.137	0.019	0.271	0.427
LTE FDD Band XVII	Body-Worn	Front	0.189	0.008	0.162	0.359
		Back	0.102	0.019	0.271	0.392
LTE FDD Band XXX	Body-Worn	Front	0.789	0.008	0.162	0.959
		Back	0.773	0.019	0.271	1.063

reported SAR WWAN and Bluetooth and 5G WLAN Aux, ΣSAR evaluation						
Frequency band	Position		reported SAR / W/kg			ΣSAR
			WWAN	Bluetooth	WLAN Aux	<1.6W/kg
GSM 850	Body-Worn	Front	0.483	0.005	0.299	0.787
		Back	0.560	0.012	0.783	1.355
GSM 1900	Body-Worn	Front	0.522	0.005	0.299	0.826
		Back	0.602	0.012	0.783	1.397
WCDMA Band II	Body-Worn	Front	0.899	0.005	0.299	1.203
		Back	1.041	0.012	0.783	**1.836**

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA Band II	Back side	1.041	2.40	7.09	-0.08	1.053	150.9	0.007	SPLSR≤ 0.04, Not required
Bluetooth		0.012	-3.30	-6.88	-0.08				



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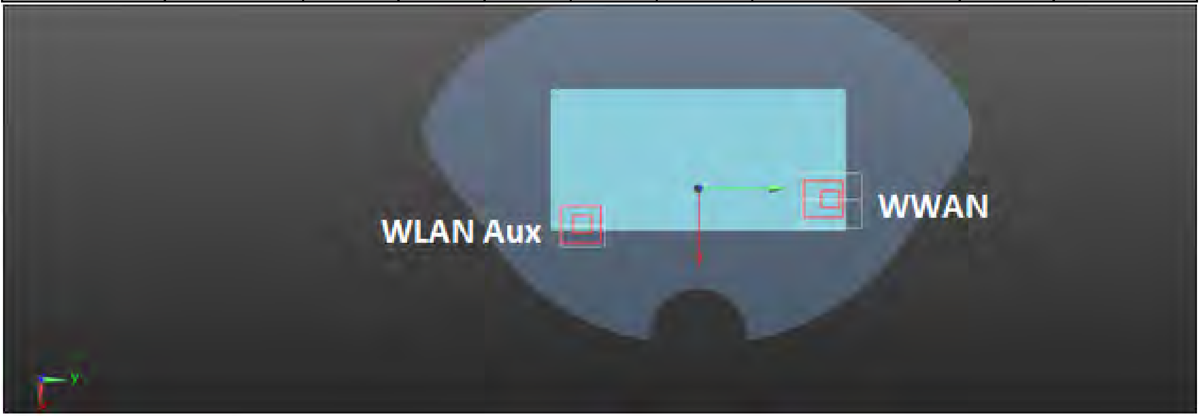
Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA Band II	Back side	1.041	2.40	7.09	-0.08	1.824	133	0.019	SPLSR≤ 0.04, Not required
WLAN Aux		0.783	3.74	-6.14	-0.06				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
Bluetooth	Back side	0.012	-3.30	-6.88	-0.08	0.795	70.8	0.010	SPLSR≤ 0.04, Not required
WLAN Aux		0.783	3.74	-6.14	-0.06				

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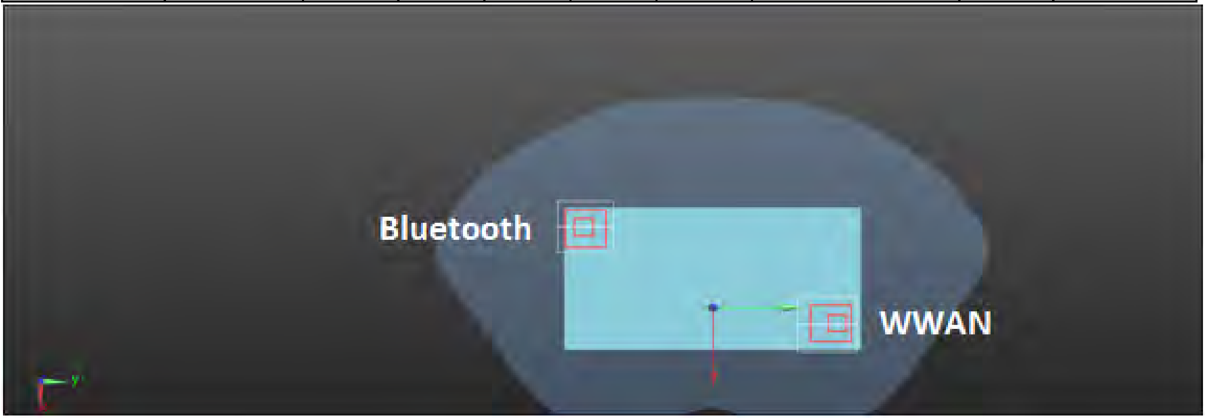
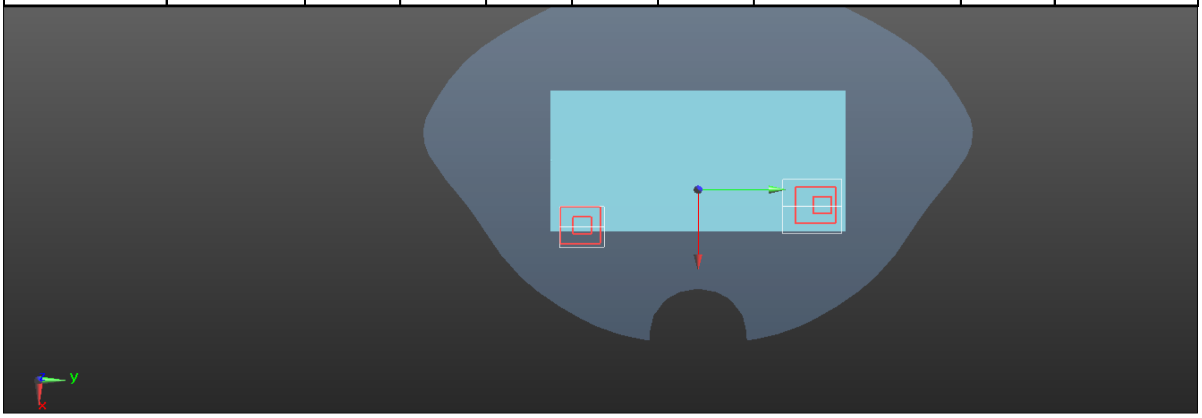
reported SAR WWAN and Bluetooth and 5G WLAN Aux, ΣSAR evaluation						
Frequency band	Position		reported SAR / W/kg			ΣSAR
			WWAN	Bluetooth	WLAN Aux	<1.6W/kg
WCDMA Band IV	Body-Worn	Front	0.866	0.005	0.299	1.17
		Back	0.917	0.012	0.783	**1.712**
WCDMA Band V	Body-Worn	Front	0.638	0.005	0.299	0.942
		Back	0.511	0.012	0.783	1.306

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA Band IV	Back side	0.917	2.70	6.84	-0.09	0.929	149.7	0.006	SPLSR≤ 0.04, Not required
Bluetooth		0.012	-3.30	-6.88	-0.08				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA Band IV	Back side	0.917	2.70	6.84	-0.09	1.7	130.2	0.017	SPLSR≤ 0.04, Not required
WLAN Aux		0.783	3.74	-6.14	-0.06				

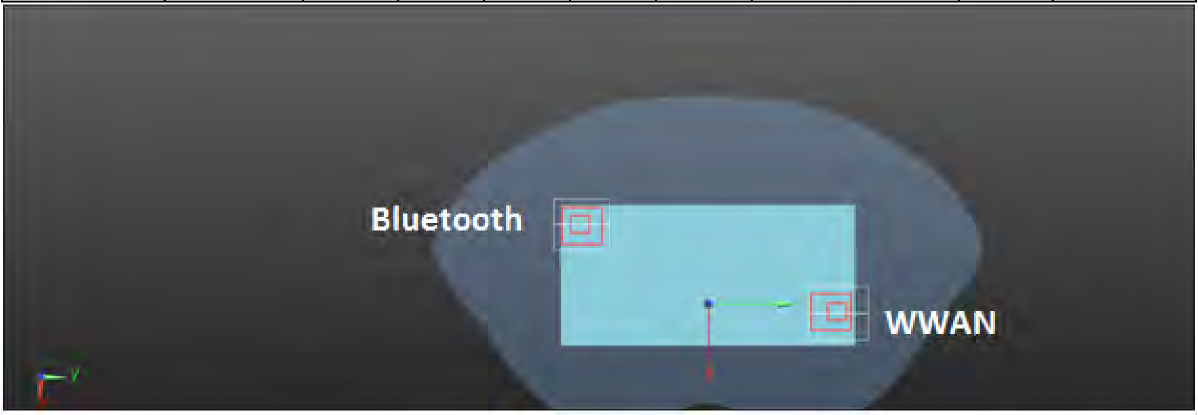


Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
Bluetooth	Back side	0.012	-3.30	-6.88	-0.08	0.795	70.8	0.010	SPLSR≤ 0.04, Not required
WLAN Aux		0.783	3.74	-6.14	-0.06				

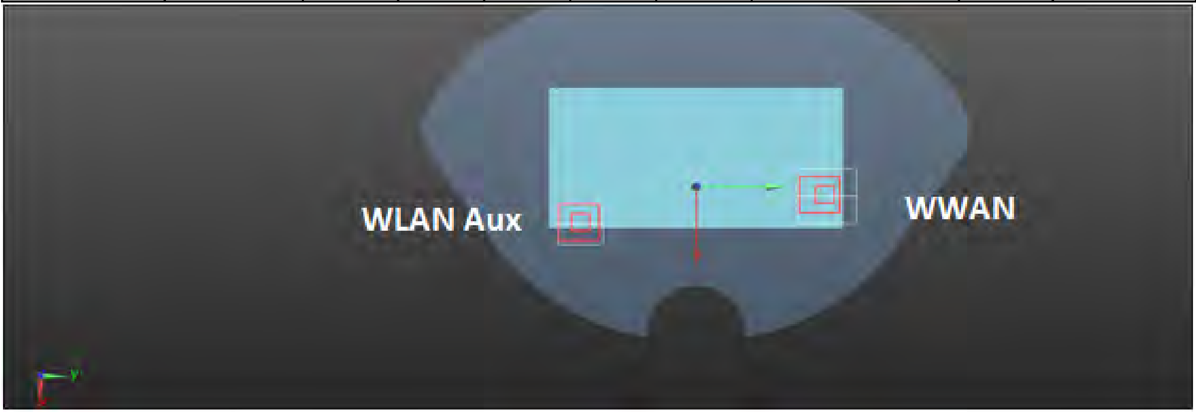
V

reported SAR WWAN and Bluetooth and 5G WLAN Aux, ΣSAR evaluation						
Frequency band	Position		reported SAR / W/kg			ΣSAR
			WWAN	Bluetooth	WLAN Aux	<1.6W/kg
LTE FDD Band II	Body-Worn	Front	0.928	0.005	0.299	1.232
		Back	0.888	0.012	0.783	**1.683**

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE FDD Band II	Back side	0.888	2.25	6.94	-0.06	0.900	148.9	0.006	SPLSR≤ 0.04, Not required
Bluetooth		0.012	-3.30	-6.88	-0.08				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE FDD Band II	Back side	0.888	2.25	6.94	-0.06	1.671	131.5	0.016	SPLSR≤ 0.04, Not required
WLAN Aux		0.783	3.74	-6.14	-0.06				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
Bluetooth	Back side	0.012	-3.30	-6.88	-0.08	0.795	70.8	0.010	SPLSR≤ 0.04, Not required
WLAN Aux		0.783	3.74	-6.14	-0.06				

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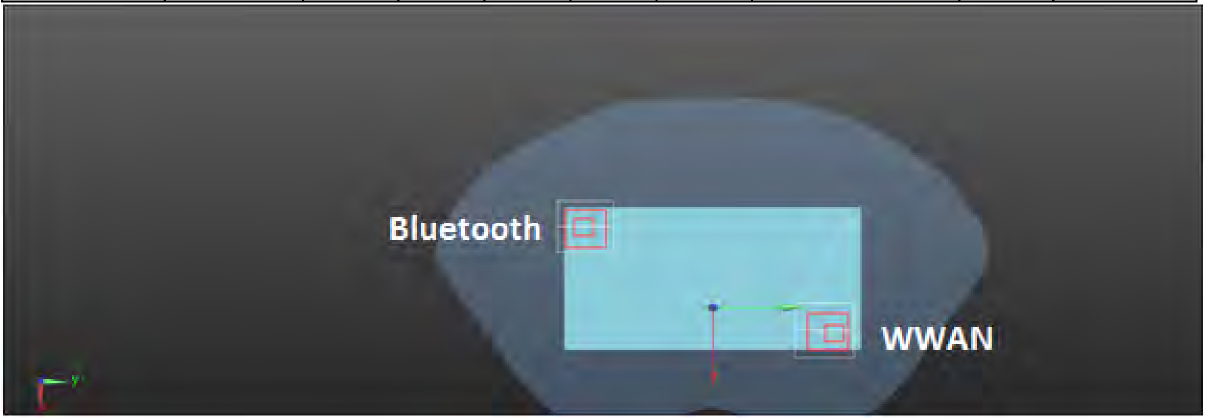
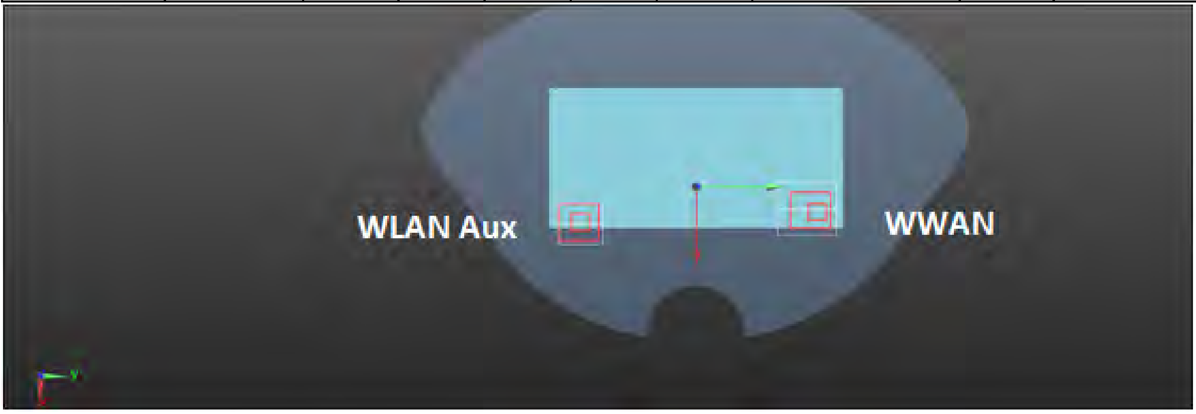
reported SAR WWAN and Bluetooth and 5G WLAN Aux, ΣSAR evaluation						
Frequency band	Position		reported SAR / W/kg			ΣSAR
			WWAN	Bluetooth	WLAN Aux	<1.6W/kg
LTE FDD Band IV	Body-Worn	Front	0.806	0.005	0.299	1.11
		Back	1.025	0.012	0.783	**1.82**

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE FDD Band IV	Back side	1.025	3.16	6.69	-0.07	1.037	150.3	0.007	SPLSR≤ 0.04, Not required
Bluetooth		0.012	-3.30	-6.88	-0.08				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE FDD Band IV	Back side	1.025	3.16	6.69	-0.07	1.808	128.4	0.019	SPLSR≤ 0.04, Not required
WLAN Aux		0.783	3.74	-6.14	-0.06				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
Bluetooth	Back side	0.012	-3.30	-6.88	-0.08	0.795	70.8	0.010	SPLSR≤ 0.04, Not required
WLAN Aux		0.783	3.74	-6.14	-0.06				

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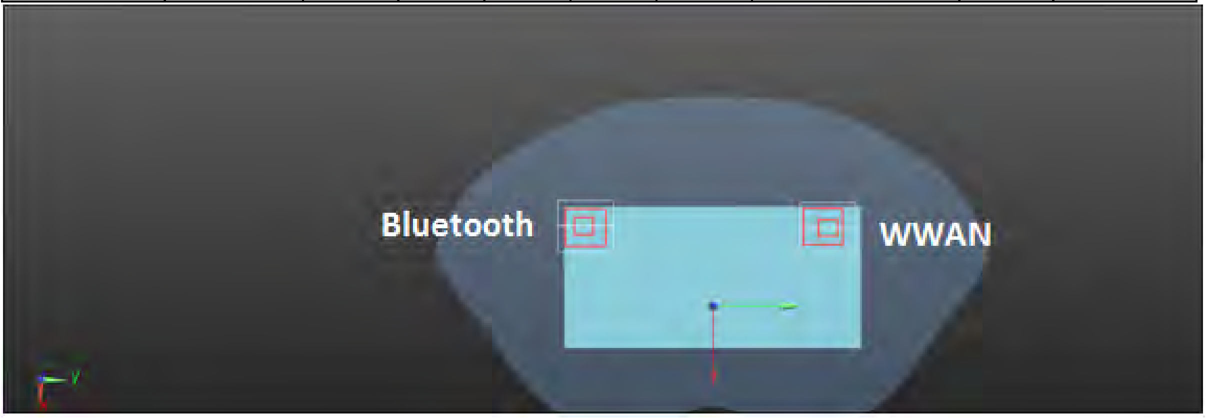
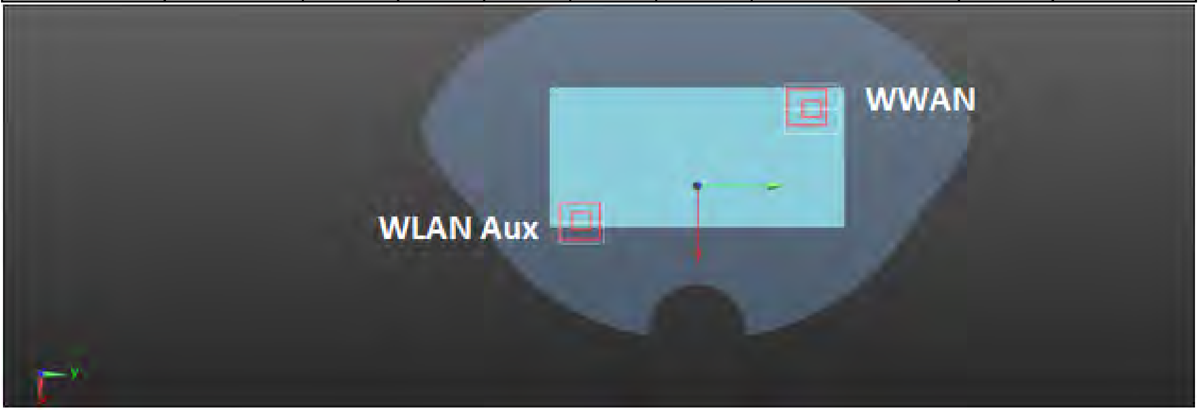
reported SAR WWAN and Bluetooth and 5G WLAN Aux, ΣSAR evaluation						
Frequency band	Position		reported SAR / W/kg			ΣSAR
			WWAN	Bluetooth	WLAN Aux	<1.6W/kg
LTE FDD Band V	Body-Worn	Front	0.650	0.005	0.299	0.954
		Back	0.517	0.012	0.783	1.312
LTE FDD Band VII	Body-Worn	Front	1.045	0.005	0.299	1.349
		Back	0.820	0.012	0.783	**1.615**
LTE FDD Band XII	Body-Worn	Front	0.187	0.005	0.299	0.491
		Back	0.137	0.012	0.783	0.932
LTE FDD Band XVII	Body-Worn	Front	0.189	0.005	0.299	0.493
		Back	0.102	0.012	0.783	0.897
LTE FDD Band XXX	Body-Worn	Front	0.789	0.005	0.299	1.093
		Back	0.773	0.012	0.783	1.568

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE FDD Band VII	Back side	0.820	-2.98	6.24	-0.07	0.832	131.2	0.006	SPLSR≤ 0.04, Not required
Bluetooth		0.012	-3.30	-6.88	-0.08				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE FDD Band VII	Back side	0.820	-2.98	6.24	-0.07	1.603	140.9	0.014	SPLSR≤ 0.04, Not required
WLAN Aux		0.783	3.74	-6.14	-0.06				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
Bluetooth	Back side	0.012	-3.30	-6.88	-0.08	0.795	70.8	0.010	SPLSR≤ 0.04, Not required
WLAN Aux		0.783	3.74	-6.14	-0.06				

4. Instruments List

Manufacturer	Device	Type	Serial number	Date of last calibration	Date of next calibration
Schmid & Partner Engineering AG	Dosimetric E-Field Probe	EX3DV4	7346	Sep.02,2015	Sep.01,2016
			3770	Apr.27,2016	Apr.26,2017
Schmid & Partner Engineering AG	System Validation Dipole	D750V3	1015	Aug.24,2015	Aug.23,2016
		D835V2	4d063	Aug.24,2015	Aug.23,2016
		D1750V2	1008	Aug.20,2015	Aug.19,2016
		D1900V2	5d027	Apr.25,2016	Apr.24,2017
		D2300V2	1023	Aug.19,2015	Aug.18,2016
		D2450V2	727	Apr.19,2016	Apr.18,2017
		D2600V2	1005	Jan.21,2016	Jan.20,2017
		D5GHzV2	1023	Jan.26,2016	Jan.25,2017
Schmid & Partner Engineering AG	Data acquisition Electronics	DAE4	916	Dec.16,2015	Dec.15,2016
			856	Apr.21,2016	Apr.20,2017
Schmid & Partner Engineering AG	Software	DASY 52 V52.8.8	N/A	Calibration not required	Calibration not required
Schmid & Partner Engineering AG	Phantom	SAM	N/A	Calibration not required	Calibration not required
Network Analyzer	Agilent	E5071C	MY46107530	Jan.07,2016	Jan.06,2017
Agilent	Dielectric Probe Kit	85070E	MY44300677	Calibration not required	Calibration not required
Agilent	Dual-directional coupler	772D	MY46151242	Jul.15,2015	Jul.14,2016
		778D	MY48220468	Jul.16,2015	Jul.15,2016

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Manufacturer	Device	Type	Serial number	Date of last calibration	Date of next calibration
Agilent	RF Signal Generator	N5181A	MY50145142	Feb.19,2016	Feb.18,2017
Agilent	Power Meter	E4417A	MY52240003	Jul.15,2015	Jul.14,2016
Agilent	Power Sensor	E9301H	MY52200004	Jul.15,2015	Jul.14,2016
TECPEL	Digital thermometer	DTM-303A	TP130073	Feb.26,2016	Feb.25,2017
Anritsu	Radio Communication Test	MT8820C	6201061014	Oct.07,2015	Oct.06,2016

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5. Measurements

Date: 2016/5/8

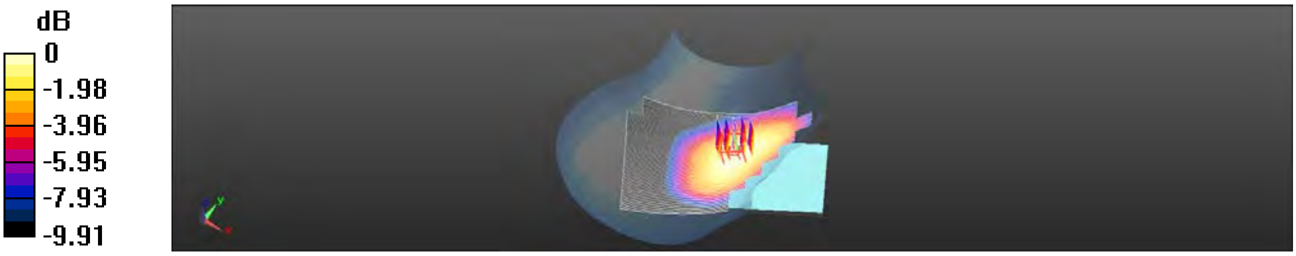
GSM 850_Head_Re Cheek_CH 190
Communication System: GSM ; Frequency: 836.6 MHz
Medium parameters used: f = 837 MHz; σ = 0.923 S/m; ε_r = 40.865; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7346; ConvF(9.8, 9.8, 9.8); Calibrated: 2015/09/02;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn916; Calibrated: 2015/12/16
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (81x141x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR = 0.288 W/kg

Configuration/Head/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.238 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 0.308 W/kg
SAR(1 g) = 0.237 W/kg; SAR(10 g) = 0.175 W/kg
Maximum value of SAR (measured) = 0.275 W/kg



0 dB = 0.275 W/kg = -5.61 dBW/kg

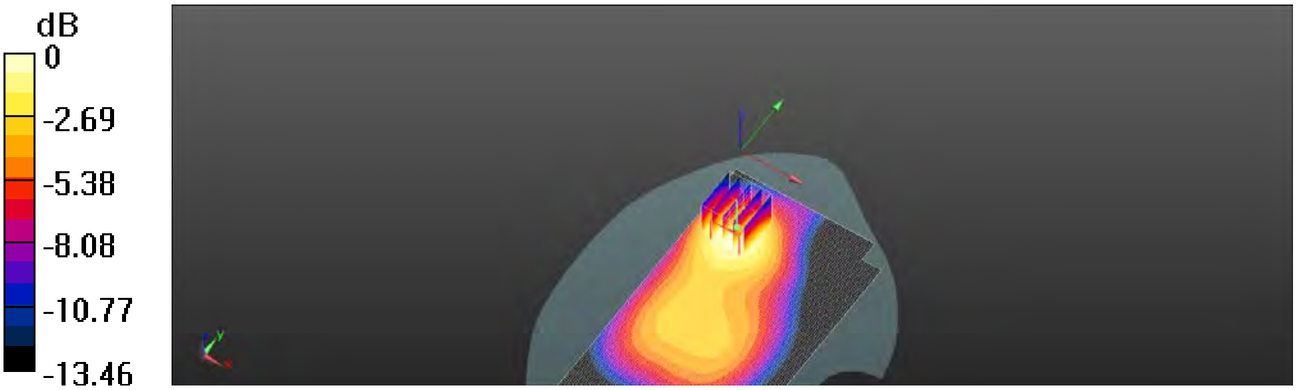
Date: 2016/5/3

GSM 850_Speech mode_Front side_CH 190_10mm
Communication System: GSM; Frequency: 836.6 MHz
Medium parameters used: f = 837 MHz; σ = 1.018 S/m; ε_r = 55.733; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:
- Probe: EX3DV4 - SN7346; ConvF(10.05, 10.05, 10.05); Calibrated: 2015/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn916; Calibrated: 2015/12/16
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (81x141x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 0.477 W/kg

Configuration/Head/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.79 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 0.523 W/kg
SAR(1 g) = 0.369 W/kg; SAR(10 g) = 0.246 W/kg
Maximum value of SAR (measured) = 0.450 W/kg



0 dB = 0.450 W/kg = -3.47 dBW/kg

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Date: 2016/5/3

GPRS 850_Hotspot_Front side_CH 251_10mm

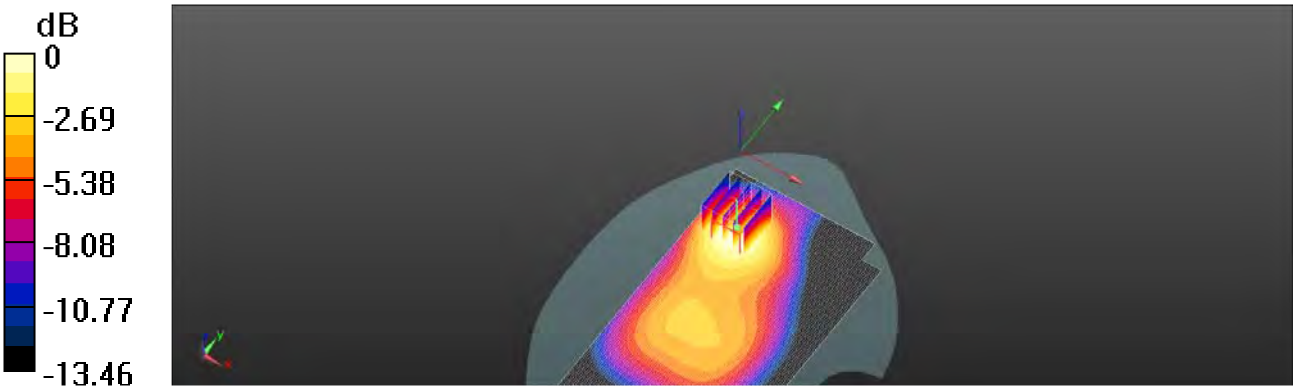
Communication System: GPRS (1Dn4Up); Frequency: 848.8 MHz
Medium parameters used: f = 849 MHz; σ = 1.032 S/m; ε_r = 55.633; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7346; ConvF(10.05, 10.05, 10.05); Calibrated: 2015/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn916; Calibrated: 2015/12/16
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (81x141x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 0.646 W/kg

Configuration/Head/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.67 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 0.720 W/kg
SAR(1 g) = 0.505 W/kg; SAR(10 g) = 0.334 W/kg
Maximum value of SAR (measured) = 0.619 W/kg



0 dB = 0.619 W/kg = -2.08 dBW/kg

Date: 2016/5/2

GSM 1900_Head_Re Cheek_CH 810

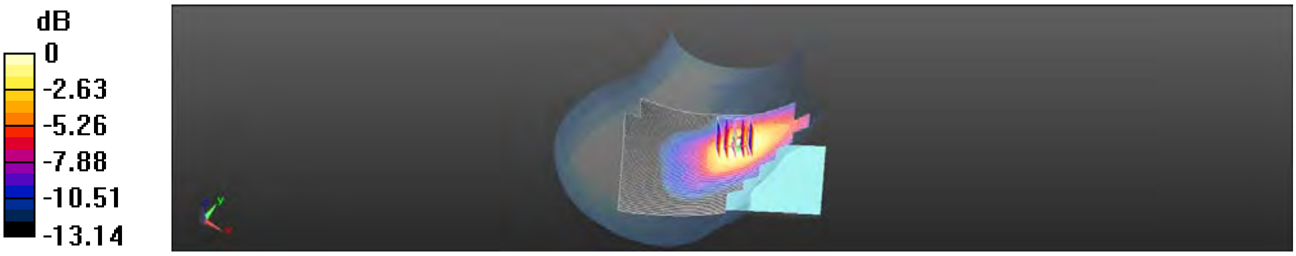
Communication System: GSM ; Frequency: 1909.8 MHz
Medium parameters used: f = 1910 MHz; σ = 1.423 S/m; ε_r = 38.896; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7346; ConvF(8.33, 8.33, 8.33); Calibrated: 2015/09/02;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn916; Calibrated: 2015/12/16
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (81x141x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR = 0.464 W/kg

Configuration/Head/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.029 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.500 W/kg
SAR(1 g) = 0.336 W/kg; SAR(10 g) = 0.213 W/kg
Maximum value of SAR (measured) = 0.412 W/kg



0 dB = 0.412 W/kg = -3.85 dBW/kg

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Date: 2016/4/27

GSM 1900_Speech mode_Back side_CH 810_10mm

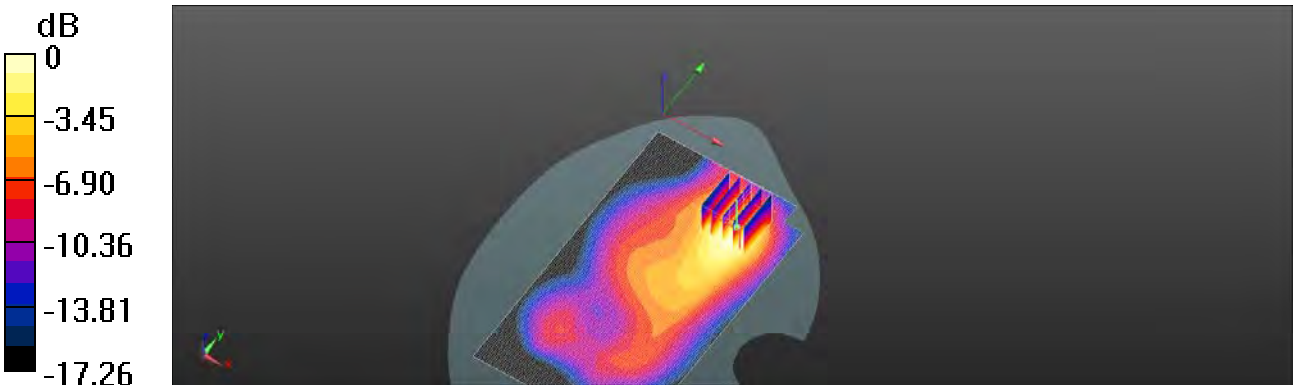
Communication System: GSM; Frequency: 1909.8 MHz
Medium parameters used: f = 1910 MHz; σ = 1.577 S/m; ε_r = 53.683; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7346; ConvF(7.77, 7.77, 7.77); Calibrated: 2015/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn916; Calibrated: 2015/12/16
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (81x141x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 0.697 W/kg

Configuration/Head/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.932 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.814 W/kg
SAR(1 g) = 0.482 W/kg; SAR(10 g) = 0.277 W/kg
Maximum value of SAR (measured) = 0.651 W/kg



0 dB = 0.651 W/kg = -1.86 dBW/kg

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Date: 2016/4/27

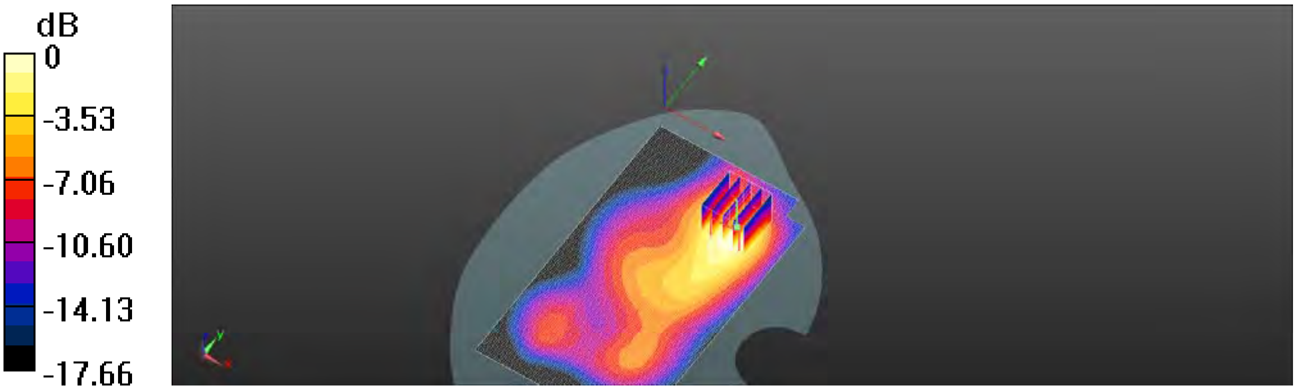
GPRS 1900_Hotspot_Back side_CH 810_10mm
Communication System: GPRS (1Dn3Up); Frequency: 1909.8 MHz
Medium parameters used: f = 1910 MHz; σ = 1.577 S/m; ε_r = 53.683; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7346; ConvF(7.77, 7.77, 7.77); Calibrated: 2015/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn916; Calibrated: 2015/12/16
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (81x141x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 0.812 W/kg

Configuration/Head/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.35 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 1.00 W/kg
SAR(1 g) = 0.582 W/kg; SAR(10 g) = 0.334 W/kg
Maximum value of SAR (measured) = 0.791 W/kg



0 dB = 0.791 W/kg = -1.02 dBW/kg

Date: 2016/5/2

WCDMA Band 2_Head_Re Cheek_CH 9538

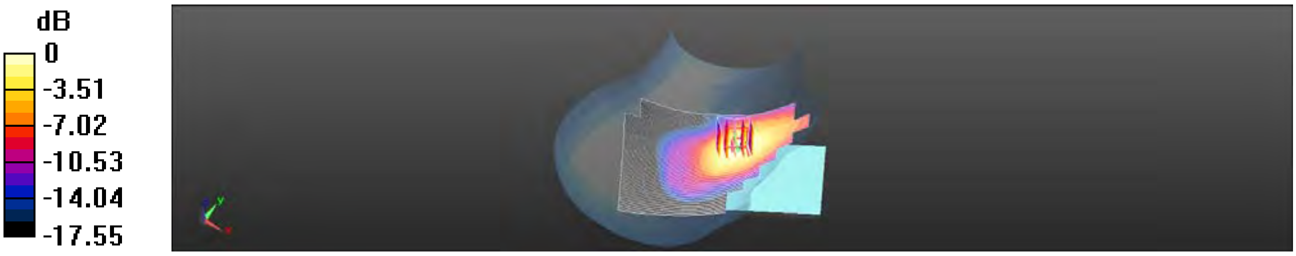
Communication System: WCDMA ; Frequency: 1907.6 MHz
Medium parameters used: f = 1908 MHz; σ = 1.422 S/m; ε_r = 38.9; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7346; ConvF(8.33, 8.33, 8.33); Calibrated: 2015/09/02;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn916; Calibrated: 2015/12/16
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (81x141x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR = 0.862 W/kg

Configuration/Head/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.358 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 0.950 W/kg
SAR(1 g) = 0.626 W/kg; SAR(10 g) = 0.389 W/kg
Maximum value of SAR (measured) = 0.786 W/kg



0 dB = 0.786 W/kg = -1.05 dBW/kg

Date: 2016/4/27

WCDMA Band 2_Hotspot_Back side_CH 9538_10mm

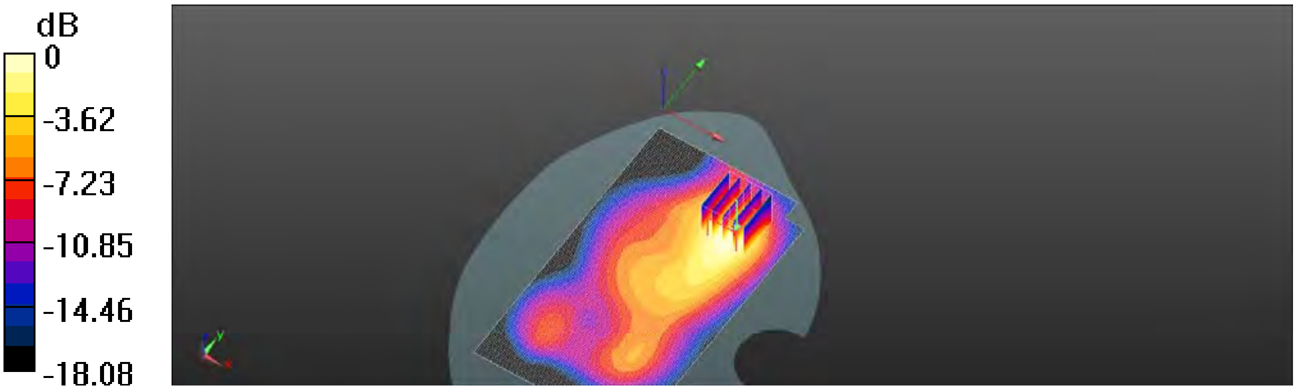
Communication System: WCDMA; Frequency: 1907.6 MHz
Medium parameters used: f = 1908 MHz; σ = 1.572 S/m; ε_r = 53.633; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7346; ConvF(7.77, 7.77, 7.77); Calibrated: 2015/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn916; Calibrated: 2015/12/16
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (81x141x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 1.33 W/kg

Configuration/Head/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.39 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 1.59 W/kg
SAR(1 g) = 0.925 W/kg; SAR(10 g) = 0.533 W/kg
Maximum value of SAR (measured) = 1.26 W/kg



0 dB = 1.26 W/kg = 1.00 dBW/kg

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Date: 2016/5/7

WCDMA Band 4_Head_Re Cheek_CH 1513

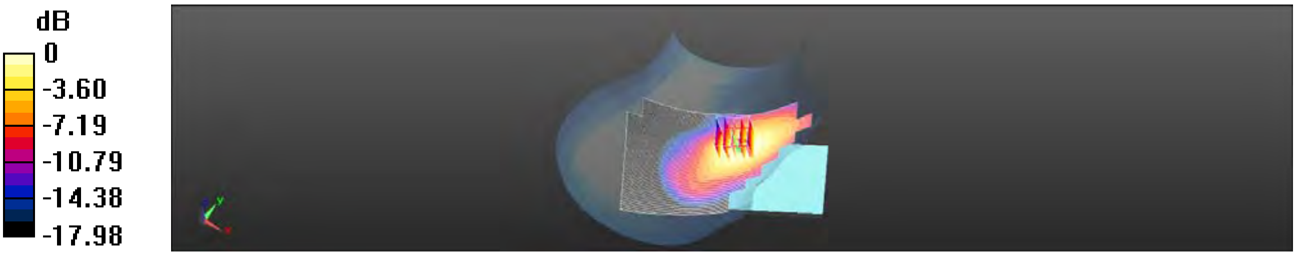
Communication System: WCDMA ; Frequency: 1752.6 MHz
Medium parameters used: f = 1753 MHz; σ = 1.379 S/m; ε_r = 39.265; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7346; ConvF(8.6, 8.6, 8.6); Calibrated: 2015/09/02;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn916; Calibrated: 2015/12/16
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (81x141x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR = 0.863 W/kg

Configuration/Head/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.719 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 0.909 W/kg
SAR(1 g) = 0.613 W/kg; SAR(10 g) = 0.391 W/kg
Maximum value of SAR (measured) = 0.759 W/kg



0 dB = 0.759 W/kg = -1.19 dBW/kg

Date: 2016/4/28

WCDMA Band 4_Hotspot_Back side_CH 1312_10mm

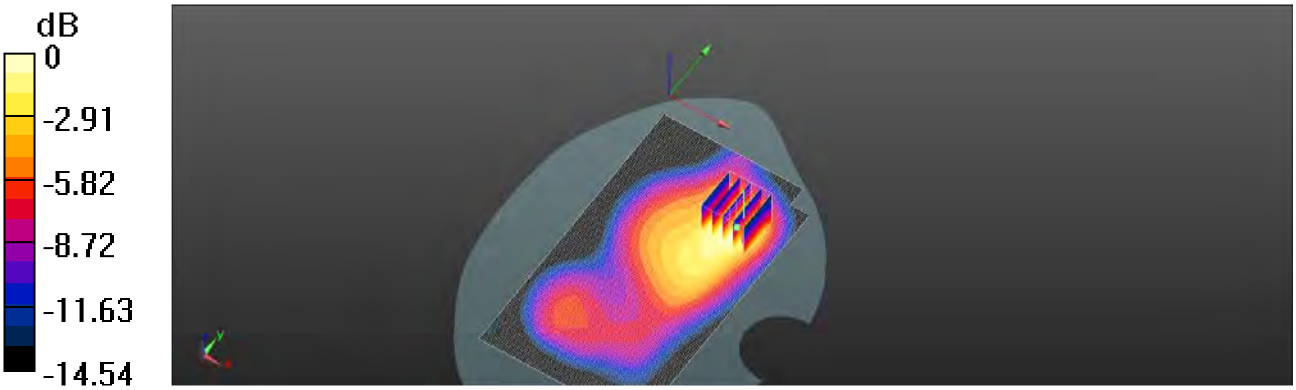
Communication System: WCDMA; Frequency: 1712.4 MHz
Medium parameters used: f = 1712.4 MHz; $\sigma = 1.404$ S/m; $\varepsilon_r = 54.263$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7346; ConvF(8.06, 8.06, 8.06); Calibrated: 2015/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn916; Calibrated: 2015/12/16
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (81x141x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 1.10 W/kg

Configuration/Head/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.27 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 1.30 W/kg
SAR(1 g) = 0.811 W/kg; SAR(10 g) = 0.488 W/kg
Maximum value of SAR (measured) = 1.06 W/kg



0 dB = 1.06 W/kg = 0.25 dBW/kg

Date: 2016/5/8

WCDMA Band 5_Head_Re Cheek_CH 4132

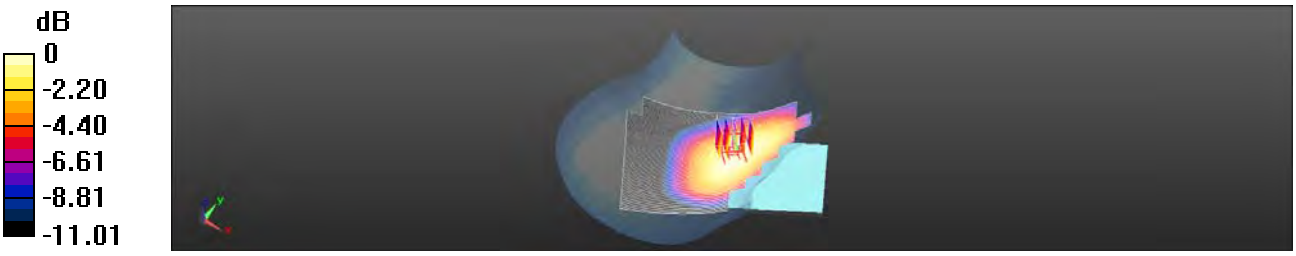
Communication System: WCDMA ; Frequency: 826.4 MHz
Medium parameters used: f = 826 MHz; σ = 0.917 S/m; ε_r = 40.912; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7346; ConvF(9.8, 9.8, 9.8); Calibrated: 2015/09/02;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn916; Calibrated: 2015/12/16
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (81x141x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR = 0.382 W/kg

Configuration/Head/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.809 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.410 W/kg
SAR(1 g) = 0.313 W/kg; SAR(10 g) = 0.228 W/kg
Maximum value of SAR (measured) = 0.364 W/kg



0 dB = 0.364 W/kg = -4.39 dBW/kg

Date: 2016/5/3

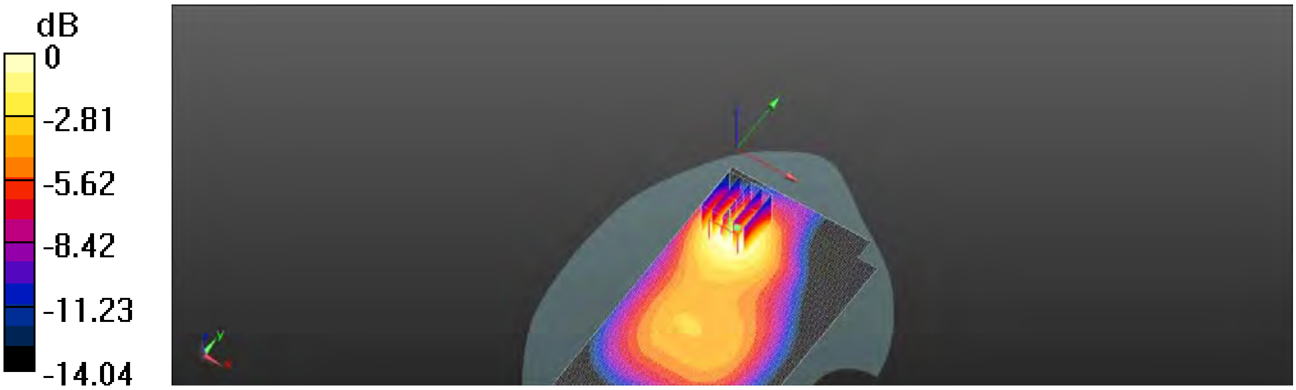
WCDMA Band 5_Hotspot_Front side_CH 4233_10mm
Communication System: WCDMA; Frequency: 846.6 MHz
Medium parameters used: f = 847 MHz; σ = 1.03 S/m; ε_r = 55.653; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7346; ConvF(10.05, 10.05, 10.05); Calibrated: 2015/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn916; Calibrated: 2015/12/16
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (81x141x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 0.739 W/kg

Configuration/Head/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.16 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.831 W/kg
SAR(1 g) = 0.583 W/kg; SAR(10 g) = 0.383 W/kg
Maximum value of SAR (measured) = 0.708 W/kg



0 dB = 0.708 W/kg = -1.50 dBW/kg

Date: 2016/4/27

LTE Band 2 (20MHz)_Hotspot_Front side_CH 19100_QPSK_1-0_10mm_10mm

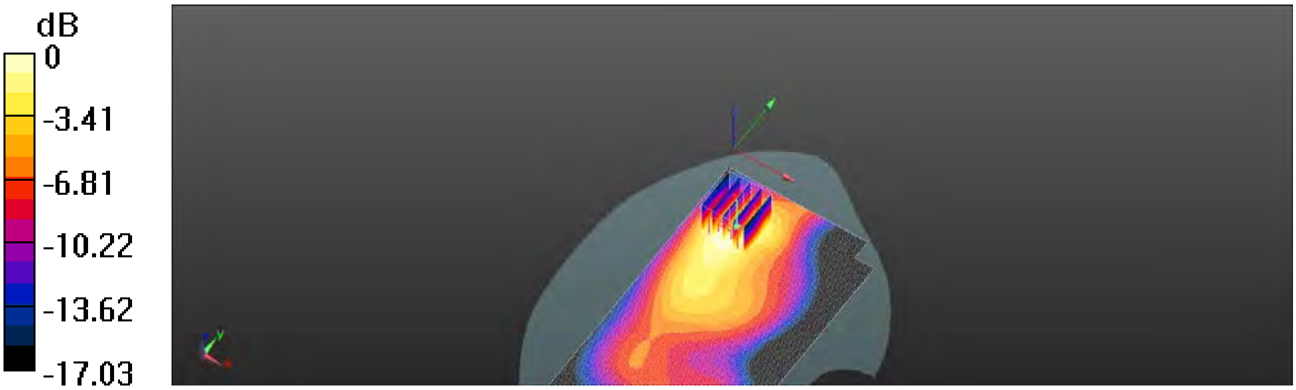
Communication System: LTE; Frequency: 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.559 S/m; ε_r = 53.728; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7346; ConvF(7.77, 7.77, 7.77); Calibrated: 2015/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn916; Calibrated: 2015/12/16
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (81x141x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 1.23 W/kg

Configuration/Head/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.41 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 1.47 W/kg
SAR(1 g) = 0.848 W/kg; SAR(10 g) = 0.488 W/kg
Maximum value of SAR (measured) = 1.12 W/kg



0 dB = 1.12 W/kg = 0.49 dBW/kg

Date: 2016/4/28

LTE Band 4 (20MHz)_Hotspot_Back side_CH 20050_QPSK_1-0_10mm

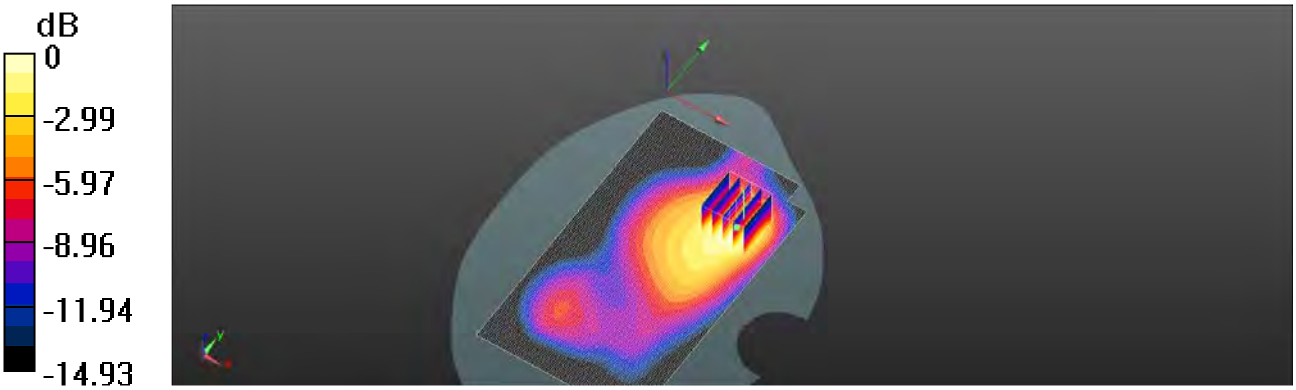
Communication System: LTE; Frequency: 1720 MHz
Medium parameters used: f = 1720 MHz; σ = 1.413 S/m; ε_r = 54.257; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7346; ConvF(8.06, 8.06, 8.06); Calibrated: 2015/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn916; Calibrated: 2015/12/16
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (81x141x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 1.27 W/kg

Configuration/Head/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.24 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 1.52 W/kg
SAR(1 g) = 0.924 W/kg; SAR(10 g) = 0.542 W/kg
Maximum value of SAR (measured) = 1.23 W/kg



0 dB = 1.23 W/kg = 0.90 dBW/kg

Date: 2016/5/3

LTE Band 5 (10MHz)_Hotspot_Front side_CH 20600_QPSK_1-0_10mm

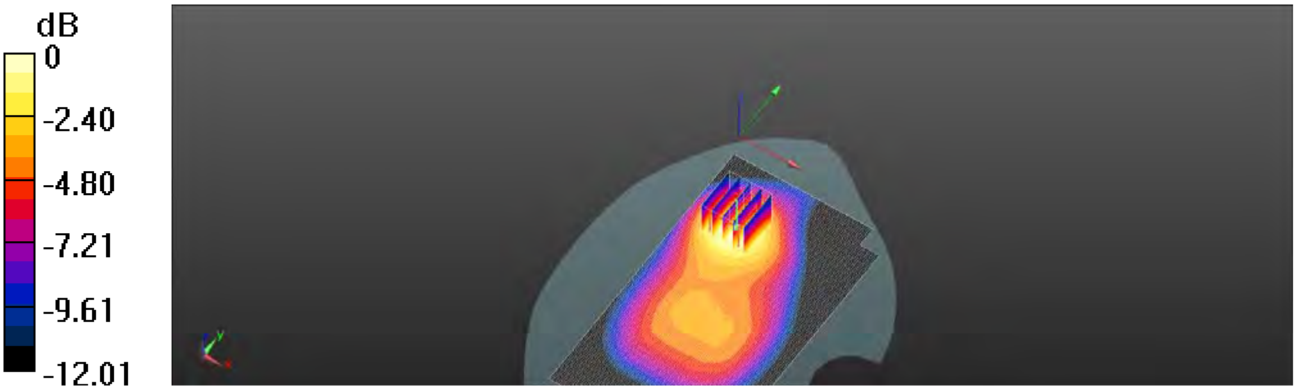
Communication System: LTE; Frequency: 844 MHz
Medium parameters used: f = 844 MHz; σ = 1.027 S/m; ε_r = 55.712; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7346; ConvF(10.05, 10.05, 10.05); Calibrated: 2015/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn916; Calibrated: 2015/12/16
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (81x141x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 0.630 W/kg

Configuration/Head/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.04 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 0.716 W/kg
SAR(1 g) = 0.504 W/kg; SAR(10 g) = 0.334 W/kg
Maximum value of SAR (measured) = 0.612 W/kg



0 dB = 0.612 W/kg = -2.13 dBW/kg

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Date: 2016/4/29

LTE Band 7 (20MHz)_Hotspot_Front side_CH 20850_QPSK_1-0_10mm

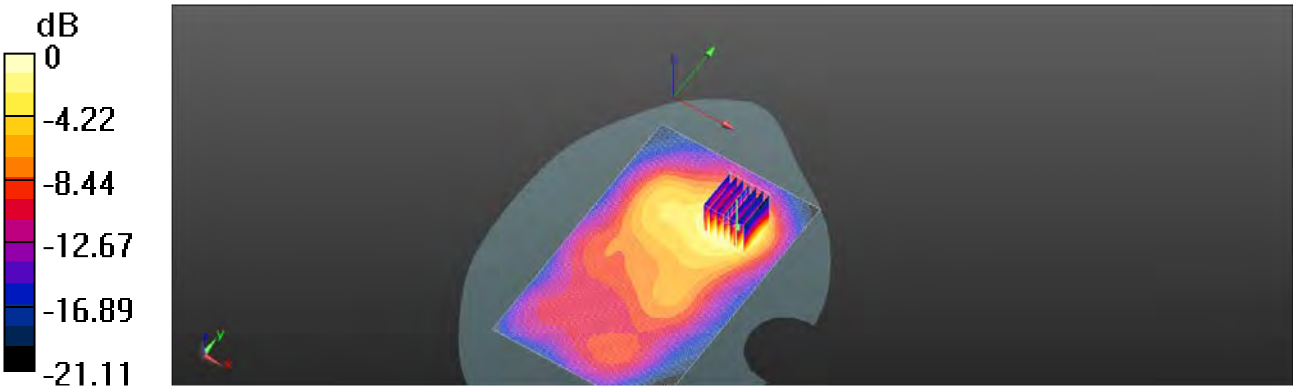
Communication System: LTE; Frequency: 2510 MHz
Medium parameters used: f = 2510 MHz; σ = 2.123 S/m; ε_r = 52.002; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7346; ConvF(7.29, 7.29, 7.29); Calibrated: 2015/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn916; Calibrated: 2015/12/16
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (101x161x1): Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 1.48 W/kg

Configuration/Head/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.43 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 1.87 W/kg
SAR(1 g) = 0.969 W/kg; SAR(10 g) = 0.521 W/kg
Maximum value of SAR (measured) = 1.37 W/kg



0 dB = 1.37 W/kg = 1.37 dBW/kg

Date: 2016/5/4

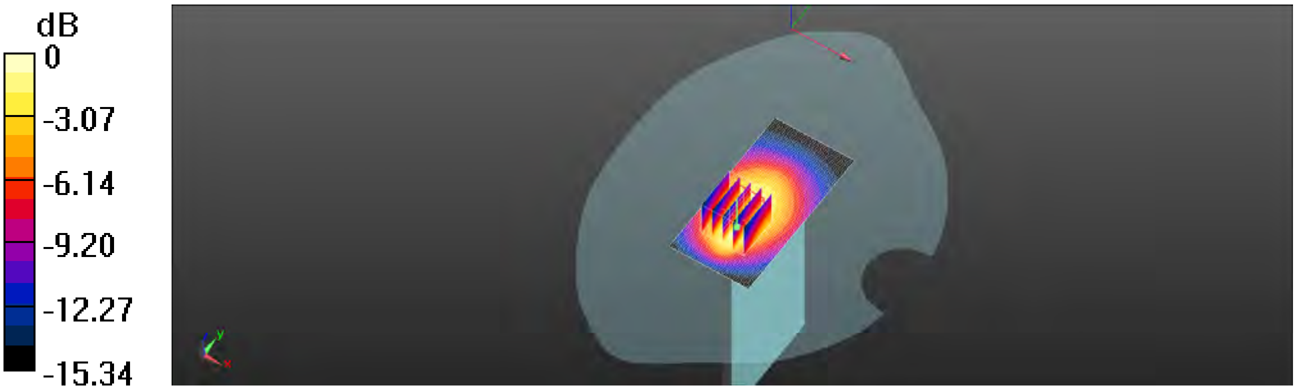
LTE Band 12 (10MHz)_Hotspot_Bottom side_CH 23130_QPSK_1-49_10mm
Communication System: LTE; Frequency: 711 MHz
Medium parameters used: f = 711 MHz; σ = 0.934 S/m; ε_r = 56.929; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7346; ConvF(10.11, 10.11, 10.11); Calibrated: 2015/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn916; Calibrated: 2015/12/16
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (41x81x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 0.318 W/kg

Configuration/Head/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.18 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.428 W/kg
SAR(1 g) = 0.242 W/kg; SAR(10 g) = 0.148 W/kg
Maximum value of SAR (measured) = 0.335 W/kg



0 dB = 0.335 W/kg = -4.75 dBW/kg

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Date: 2016/5/4

LTE Band 17 (10MHz)_Hotspot_Bottom side_CH 23790_QPSK_1-49_10mm

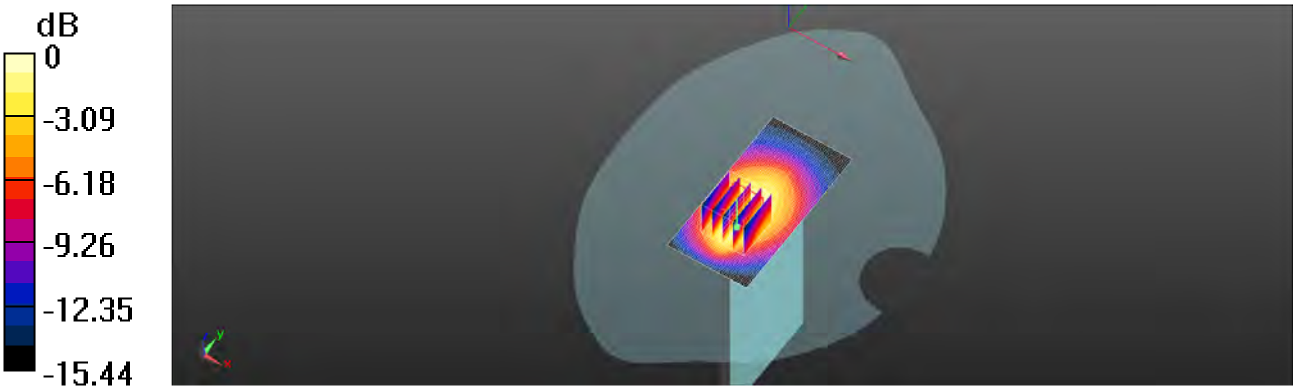
Communication System: LTE; Frequency: 710 MHz
Medium parameters used: f = 710 MHz; σ = 0.932 S/m; ε_r = 56.926; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7346; ConvF(10.11, 10.11, 10.11); Calibrated: 2015/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn916; Calibrated: 2015/12/16
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (41x81x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 0.314 W/kg

Configuration/Head/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.38 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.412 W/kg
SAR(1 g) = 0.235 W/kg; SAR(10 g) = 0.142 W/kg
Maximum value of SAR (measured) = 0.316 W/kg



0 dB = 0.316 W/kg = -5.00 dBW/kg

Date: 2016/4/30

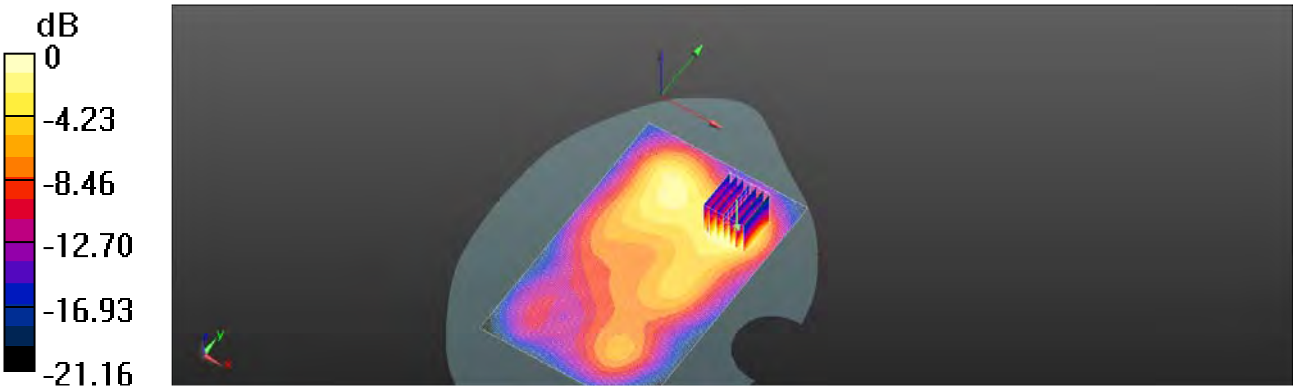
LTE Band 30 (10MHz)_Hotspot_Front side_CH 27710_QPSK_1-0_10mm
Communication System: LTE; Frequency: 2310 MHz
Medium parameters used: f = 2310 MHz; σ = 1.861 S/m; ε_r = 52.476; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7346; ConvF(7.57, 7.57, 7.57); Calibrated: 2015/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn916; Calibrated: 2015/12/16
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (101x161x1): Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 0.980 W/kg

Configuration/Head/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.677 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 1.26 W/kg
SAR(1 g) = 0.637 W/kg; SAR(10 g) = 0.333 W/kg
Maximum value of SAR (measured) = 0.939 W/kg



0 dB = 0.939 W/kg = -0.27 dBW/kg

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Date: 2016/5/9

WLAN 802.11b_Head_Re Cheek_CH 6_Main

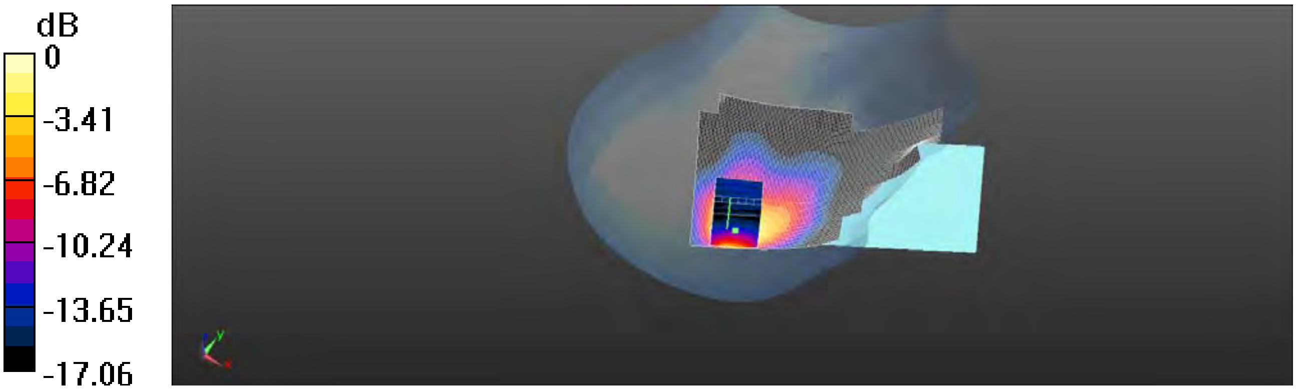
Communication System: WLAN 2.45G; Frequency: 2437 MHz
Medium parameters used: f = 2437 MHz; σ = 1.871 S/m; ε_r = 38.142; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.12, 7.12, 7.12); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (91x161x1): Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 1.34 W/kg

Configuration/Head/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.824 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 1.72 W/kg
SAR(1 g) = 0.802 W/kg; SAR(10 g) = 0.411 W/kg
Maximum value of SAR (measured) = 1.21 W/kg



0 dB = 1.21 W/kg = 0.83 dBW/kg

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Date: 2016/5/9

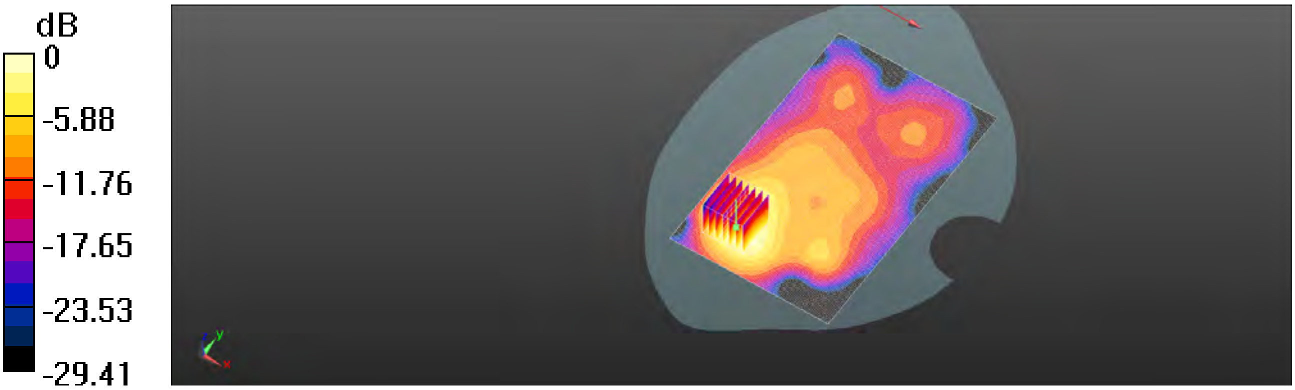
WLAN 802.11b_Hotspot_Back side_CH 6_Main_10mm
Communication System: WLAN 2.45G; Frequency: 2437 MHz
Medium parameters used: f = 2437 MHz; σ = 1.984 S/m; ε_r = 52.859; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.37, 7.37, 7.37); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (101x161x1): Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 0.497 W/kg

Configuration/Head/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.064 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.649 W/kg
SAR(1 g) = 0.315 W/kg; SAR(10 g) = 0.160 W/kg
Maximum value of SAR (measured) = 0.466 W/kg



0 dB = 0.466 W/kg = -3.32 dBW/kg

Date: 2016/5/9

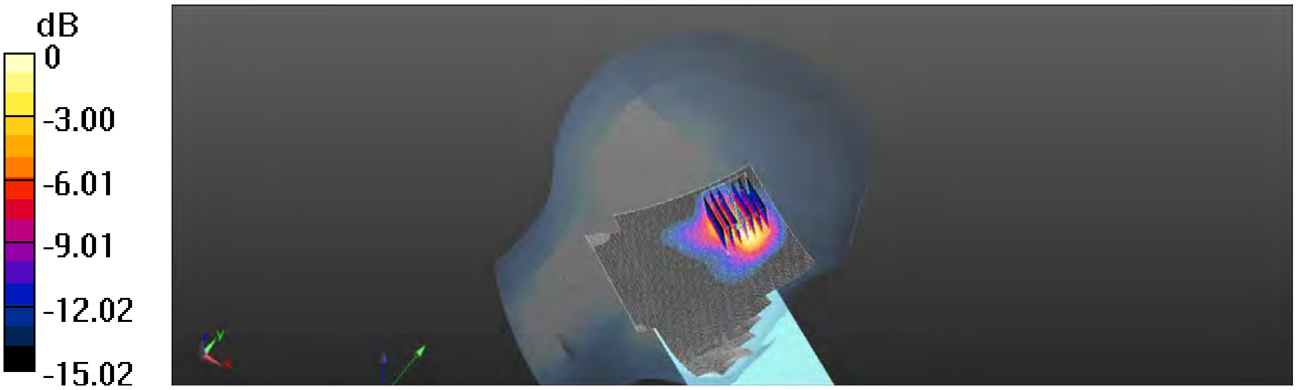
WLAN 802.11b_Head_Le Cheek_CH 11_Aux
Communication System: WLAN 2.45G; Frequency: 2462 MHz
Medium parameters used: f = 2462 MHz; σ = 1.898 S/m; ε_r = 38.041; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.12, 7.12, 7.12); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (101x161x1): Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 0.627 W/kg

Configuration/Head/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.358 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 0.925 W/kg
SAR(1 g) = 0.426 W/kg; SAR(10 g) = 0.200 W/kg
Maximum value of SAR (measured) = 0.658 W/kg



0 dB = 0.658 W/kg = -1.82 dBW/kg

Date: 2016/5/9

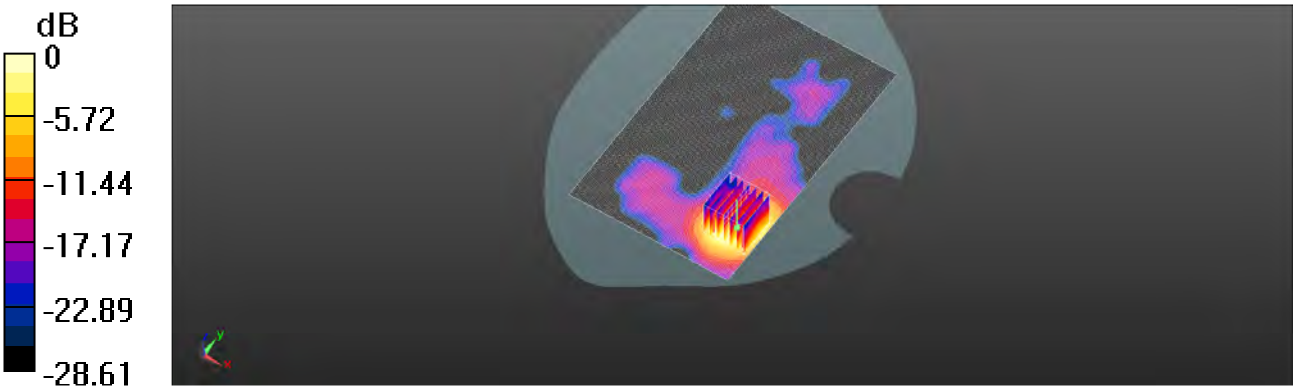
WLAN 802.11b_Hotspot_Back side_CH 11_Aux_10mm
Communication System: WLAN 2.45G; Frequency: 2462 MHz
Medium parameters used: f = 2462 MHz; σ = 2.021 S/m; ε_r = 52.777; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.37, 7.37, 7.37); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (101x161x1): Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 0.420 W/kg

Configuration/Head/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.957 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 0.532 W/kg
SAR(1 g) = 0.247 W/kg; SAR(10 g) = 0.111 W/kg
Maximum value of SAR (measured) = 0.377 W/kg



0 dB = 0.377 W/kg = -4.24 dBW/kg

Date: 2016/5/10

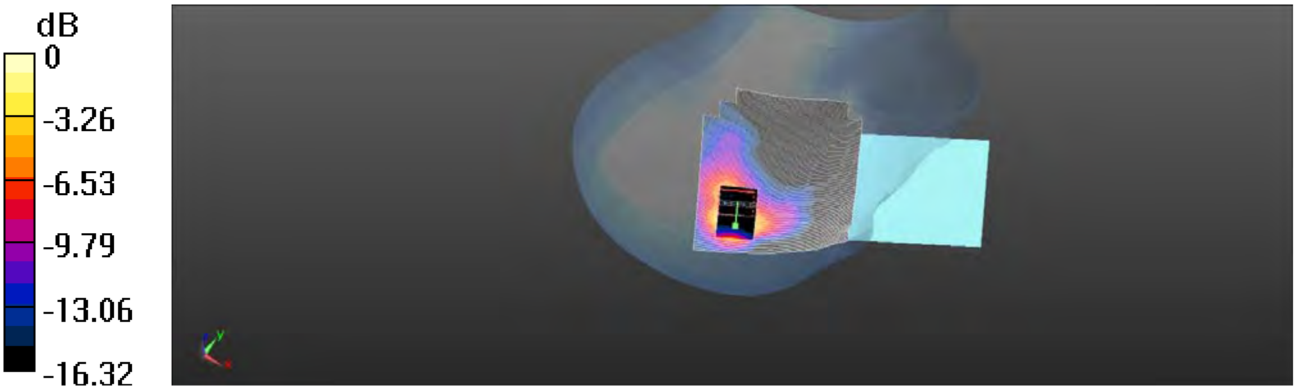
WLAN 802.11a 5.2G_Head_Re Cheek_CH 36_Main
Communication System: WLAN 5G; Frequency: 5180 MHz
Medium parameters used: f = 5180 MHz; σ = 4.622 S/m; ε_r = 36.486; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(5.03, 5.03, 5.03); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (121x101x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 2.61 W/kg

Configuration/Head/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 9.672 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 4.94 W/kg
SAR(1 g) = 1.29 W/kg; SAR(10 g) = 0.482 W/kg
Maximum value of SAR (measured) = 2.41 W/kg



0 dB = 2.41 W/kg = 3.82 dBW/kg

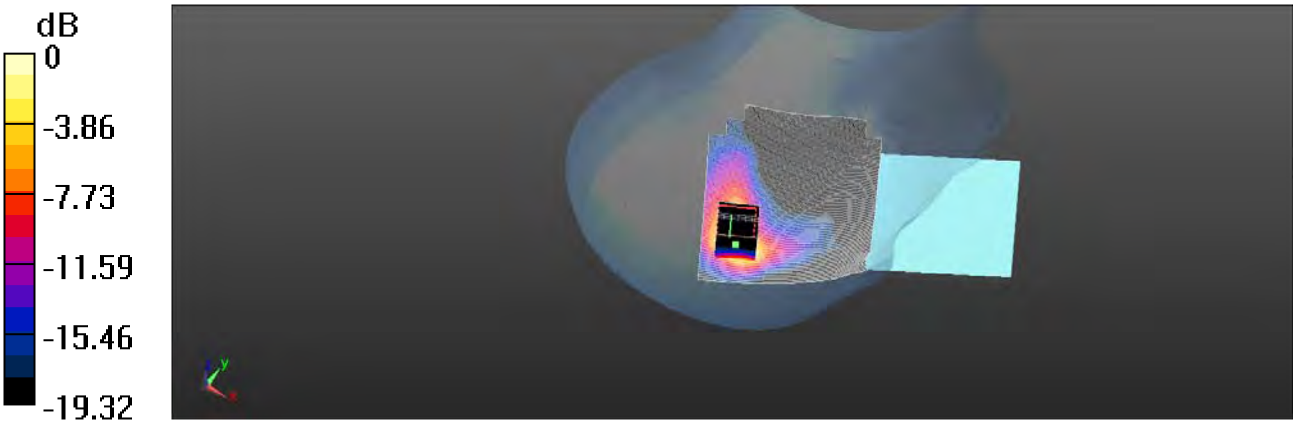
Date: 2016/5/10

WLAN802.11 n(20M) 5.2G_Head_Re Cheek_CH 44_Main
Communication System: WLAN 5G; Frequency: 5220 MHz
Medium parameters used: f = 5220 MHz; σ = 4.669 S/m; ε_r = 36.361; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3770; ConvF(5.03, 5.03, 5.03); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (121x101x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.81 W/kg

Configuration/Head/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 8.685 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 4.25 W/kg
SAR(1 g) = 0.970 W/kg; SAR(10 g) = 0.313 W/kg
Maximum value of SAR (measured) = 1.97 W/kg



0 dB = 1.97 W/kg = 2.94 dBW/kg

Date: 2016/5/10

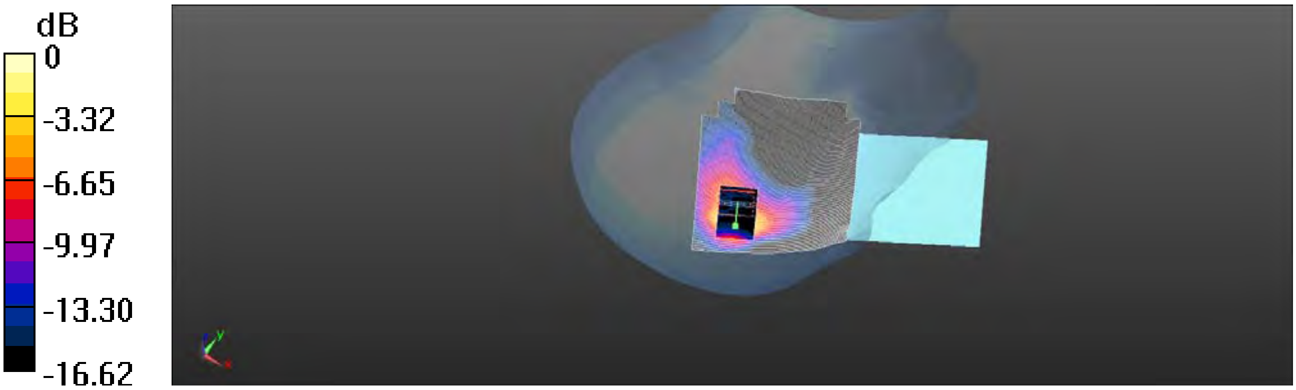
WLAN 802.11n(40M) 5.2G_Head_Re Cheek_CH 46_Main
Communication System: WLAN 5G; Frequency: 5230 MHz
Medium parameters used: f = 5230 MHz; σ = 4.689 S/m; ε_r = 36.342; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(5.03, 5.03, 5.03); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (121x101x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 2.50 W/kg

Configuration/Head/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 9.108 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 4.71 W/kg
SAR(1 g) = 1.2 W/kg; SAR(10 g) = 0.440 W/kg
Maximum value of SAR (measured) = 2.28 W/kg



0 dB = 2.28 W/kg = 3.58 dBW/kg

Date: 2016/5/5

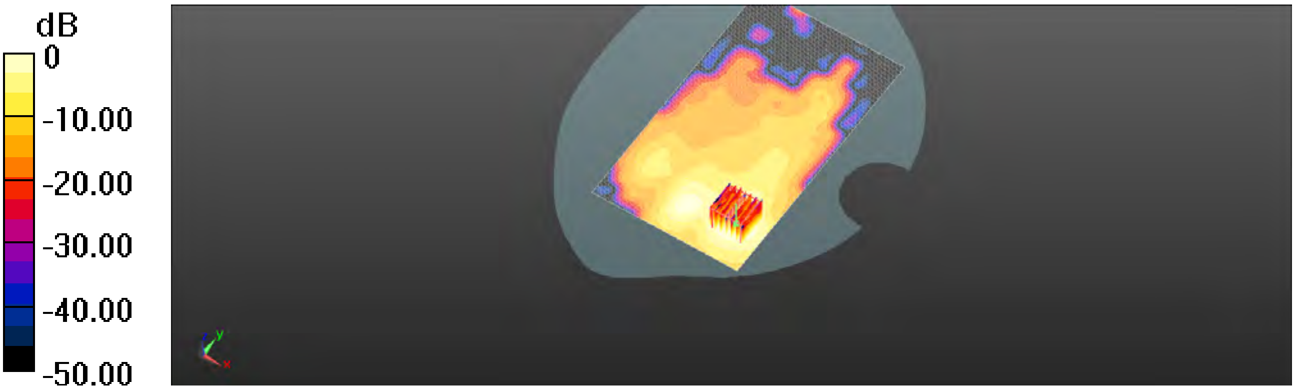
WLAN 802.11n(40M) 5.2G_Body-worn_Front side_CH 38_Main_10mm
Communication System: WLAN 5G; Frequency: 5190 MHz
Medium parameters used: f = 5190 MHz; σ = 5.447 S/m; ε_r = 47.987; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.34, 4.34, 4.34); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (111x191x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 0.466 W/kg

Configuration/Head/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 1.970 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 0.913 W/kg
SAR(1 g) = 0.258 W/kg; SAR(10 g) = 0.099 W/kg
Maximum value of SAR (measured) = 0.470 W/kg



0 dB = 0.470 W/kg = -3.28 dBW/kg

Date: 2016/5/5

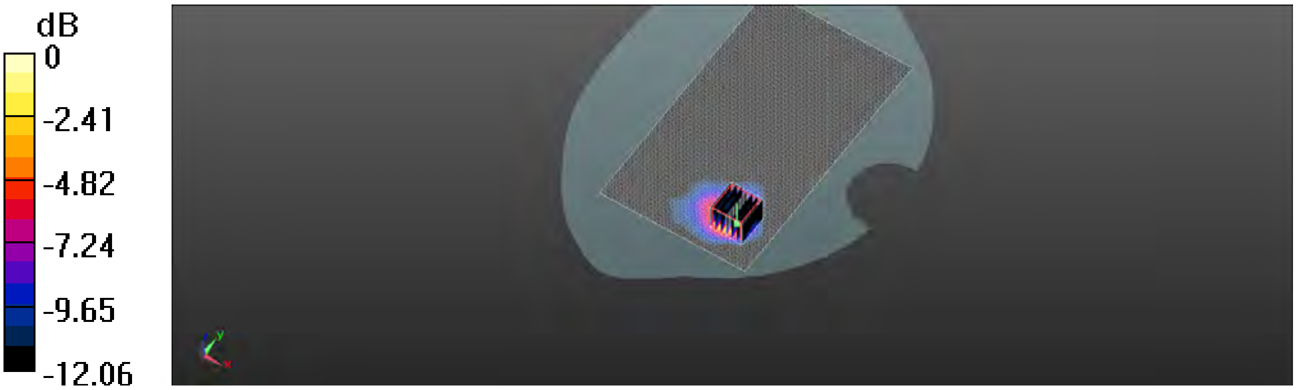
WLAN 802.11n(40M) 5.2G_Hand_Front side_CH 38_Main_0mm
Communication System: WLAN 5G; Frequency: 5190 MHz
Medium parameters used: f = 5190 MHz; σ = 5.447 S/m; ε_r = 47.987; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.34, 4.34, 4.34); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (111x191x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 6.14 W/kg

Configuration/Head/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 6.205 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 12.9 W/kg
SAR(1 g) = 2.89 W/kg; SAR(10 g) = 1.1 W/kg
Maximum value of SAR (measured) = 5.40 W/kg



0 dB = 5.40 W/kg = 7.32 dBW/kg

Date: 2016/5/10

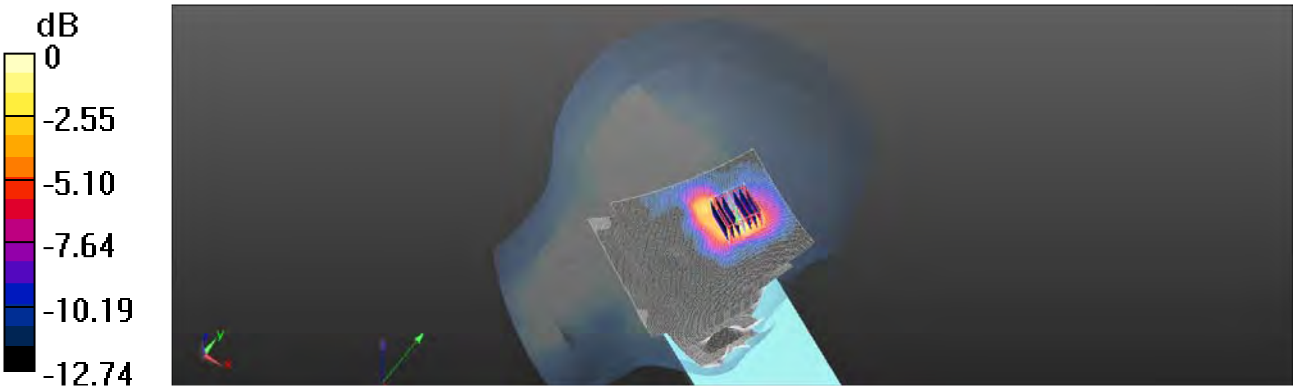
WLAN 802.11n(40M) 5.2G_Head_Le Cheek_CH 38_Aux
Communication System: WLAN 5G; Frequency: 5190 MHz
Medium parameters used: f = 5190 MHz; σ = 4.635 S/m; ε_r = 36.433; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(5.03, 5.03, 5.03); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (121x191x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 0.703 W/kg

Configuration/Head/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 3.288 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 1.75 W/kg
SAR(1 g) = 0.461 W/kg; SAR(10 g) = 0.190 W/kg
Maximum value of SAR (measured) = 0.824 W/kg



0 dB = 0.824 W/kg = -0.84 dBW/kg

Date: 2016/5/5

WLAN 802.11n(40M) 5.2G_Body-worn_Back side_CH 38_Aux_10mm

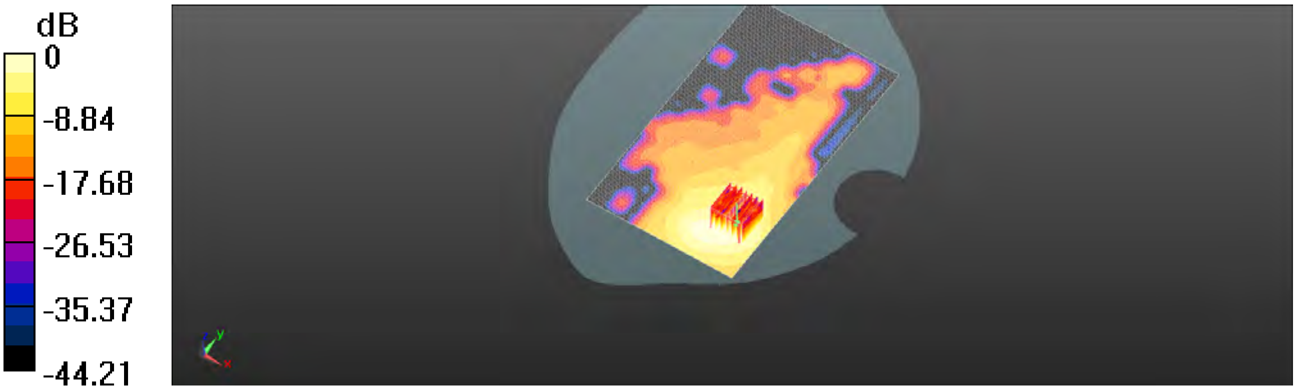
Communication System: WLAN 5G; Frequency: 5190 MHz
Medium parameters used: f = 5190 MHz; σ = 5.447 S/m; ε_r = 47.987; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.34, 4.34, 4.34); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (111x191x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 0.556 W/kg

Configuration/Head/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 1.417 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 1.06 W/kg
SAR(1 g) = 0.279 W/kg; SAR(10 g) = 0.108 W/kg
Maximum value of SAR (measured) = 0.536 W/kg



0 dB = 0.536 W/kg = -2.71 dBW/kg

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Date: 2016/5/5

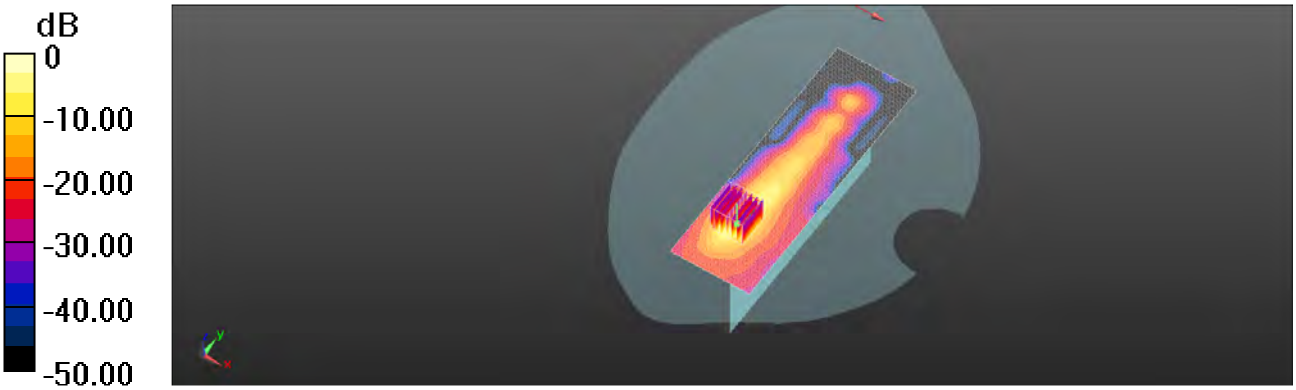
WLAN 802.11n(40M) 5.2G_Hand_Right side_CH 38_Aux_0mm
Communication System: WLAN 5G; Frequency: 5190 MHz
Medium parameters used: f = 5190 MHz; σ = 5.447 S/m; ε_r = 47.987; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.34, 4.34, 4.34); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (61x191x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 6.91 W/kg

Configuration/Head/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 9.604 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 23.8 W/kg
SAR(1 g) = 3.8 W/kg; SAR(10 g) = 0.807 W/kg
Maximum value of SAR (measured) = 8.99 W/kg



0 dB = 8.99 W/kg = 9.54 dBW/kg

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Date: 2016/5/10

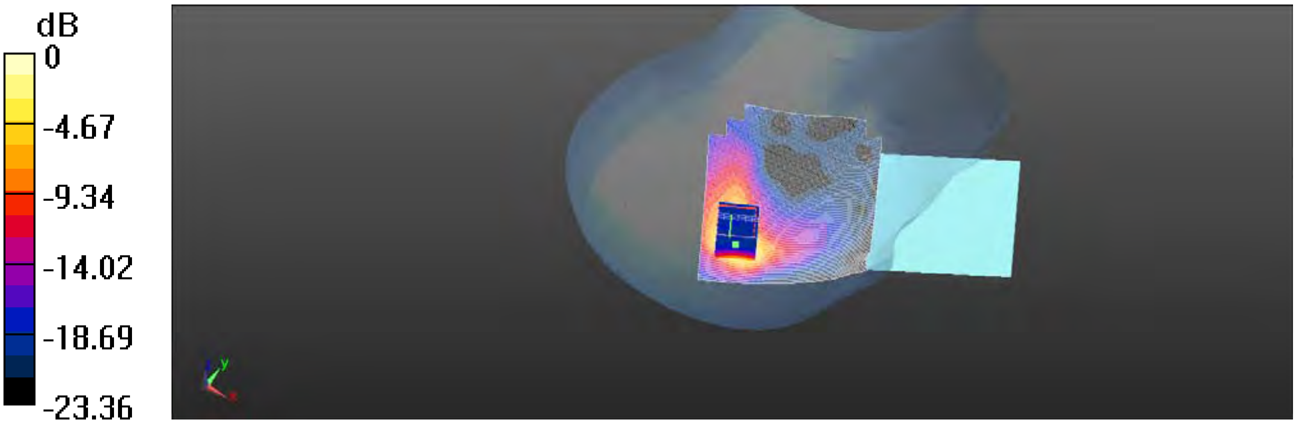
WLAN802.11 ac(40M) 5.2G_Head_Re Cheek_CH 38_Main
Communication System: WLAN 5G; Frequency: 5190 MHz
Medium parameters used: f = 5190 MHz; σ = 4.635 S/m; ε_r = 36.433; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(5.03, 5.03, 5.03); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (121x101x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.78 W/kg

Configuration/Head/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 6.642 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 4.18 W/kg
SAR(1 g) = 0.954 W/kg; SAR(10 g) = 0.308 W/kg
Maximum value of SAR (measured) = 1.94 W/kg



0 dB = 1.94 W/kg = 2.88 dBW/kg

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Date: 2016/5/11

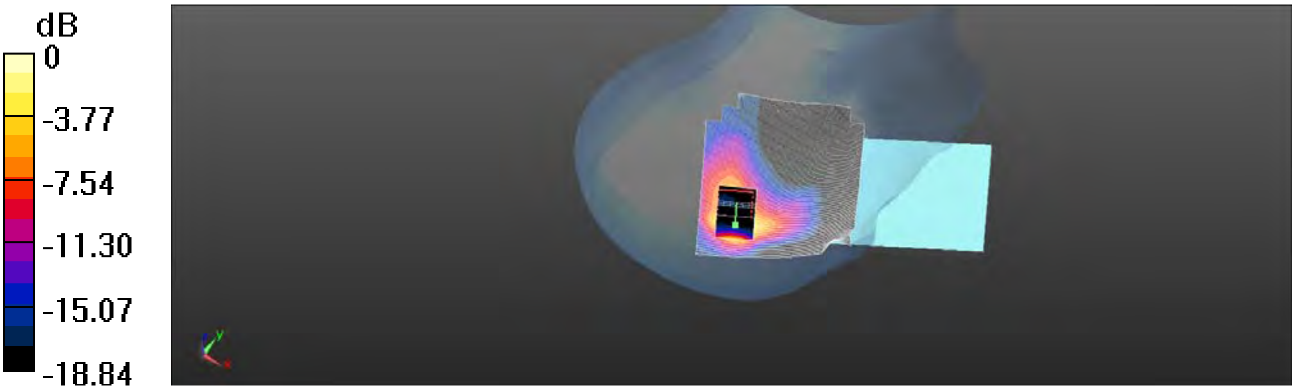
WLAN 802.11a 5.3G_Head_Re Cheek_CH 52_Main
Communication System: WLAN 5G; Frequency: 5260 MHz
Medium parameters used: f = 5260 MHz; σ = 4.717 S/m; ε_r = 36.264; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(5.03, 5.03, 5.03); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (121x101x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 2.43 W/kg

Configuration/Head/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 10.17 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 5.07 W/kg
SAR(1 g) = 1.31 W/kg; SAR(10 g) = 0.480 W/kg
Maximum value of SAR (measured) = 2.45 W/kg



0 dB = 2.45 W/kg = 3.89 dBW/kg

Date: 2016/5/11

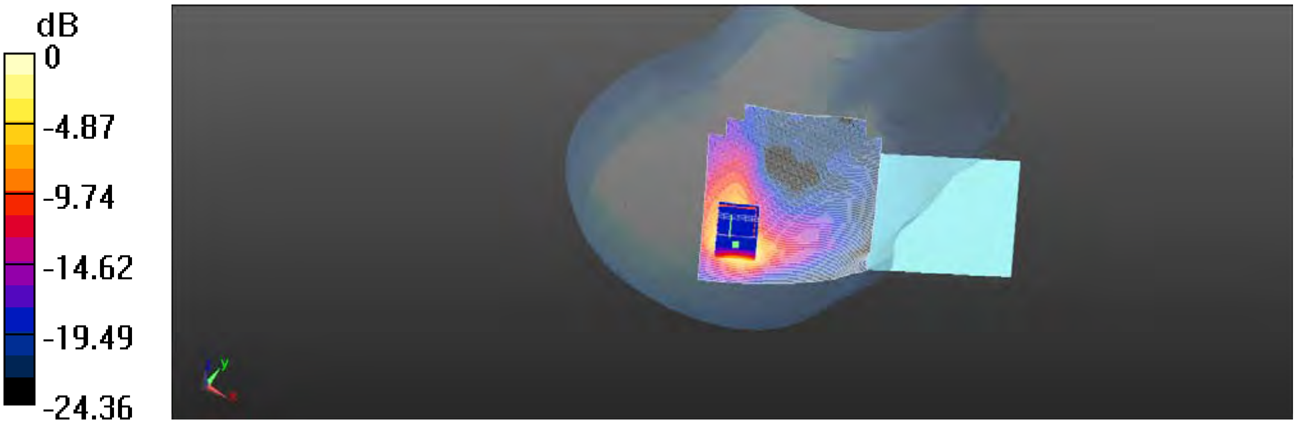
WLAN802.11 n(20M) 5.3G_Head_Re Cheek_CH 52_Main
Communication System: WLAN 5G; Frequency: 5260 MHz
Medium parameters used: f = 5260 MHz; σ = 4.717 S/m; ε_r = 36.264; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(5.03, 5.03, 5.03); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (121x101x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.85 W/kg

Configuration/Head/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 5.742 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 4.35 W/kg
SAR(1 g) = 0.993 W/kg; SAR(10 g) = 0.320 W/kg
Maximum value of SAR (measured) = 2.02 W/kg



0 dB = 2.02 W/kg = 3.05 dBW/kg

Date: 2016/5/11

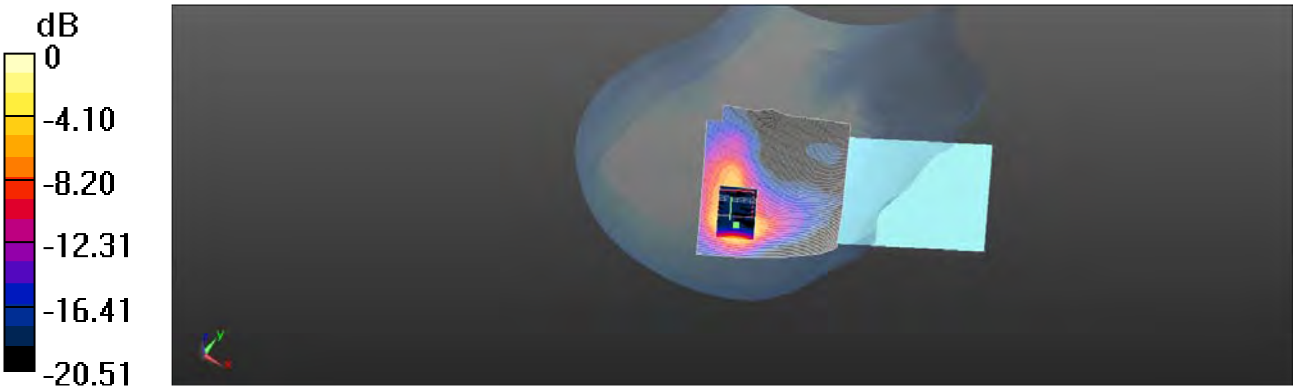
WLAN 802.11n(40M) 5.3G_Head_Re Cheek_CH 62_Main
Communication System: WLAN 5G; Frequency: 5310 MHz
Medium parameters used: f = 5310 MHz; σ = 4.788 S/m; ε_r = 36.106; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(5.03, 5.03, 5.03); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (111x91x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 2.11 W/kg

Configuration/Head/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 10.28 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 4.21 W/kg
SAR(1 g) = 1.03 W/kg; SAR(10 g) = 0.354 W/kg
Maximum value of SAR (measured) = 2.04 W/kg



0 dB = 2.04 W/kg = 3.10 dBW/kg

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Date: 2016/5/5

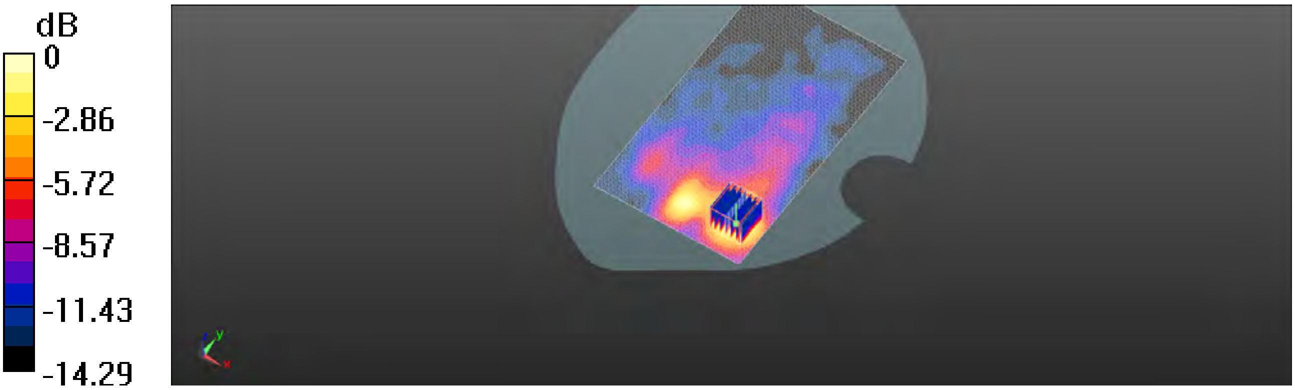
WLAN 802.11n(40M) 5.3G_Body-worn_Front side_CH 54_Main_10mm
Communication System: WLAN 5G; Frequency: 5270 MHz
Medium parameters used: f = 5270 MHz; σ = 5.564 S/m; ε_r = 47.695; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.34, 4.34, 4.34); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (111x191x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 0.501 W/kg

Configuration/Head/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 2.825 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 1.04 W/kg
SAR(1 g) = 0.282 W/kg; SAR(10 g) = 0.126 W/kg
Maximum value of SAR (measured) = 0.500 W/kg



0 dB = 0.500 W/kg = -3.01 dBW/kg

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Date: 2016/5/5

WLAN 802.11n(40M) 5.3G_Hand_Front side_CH 54_Main_0mm

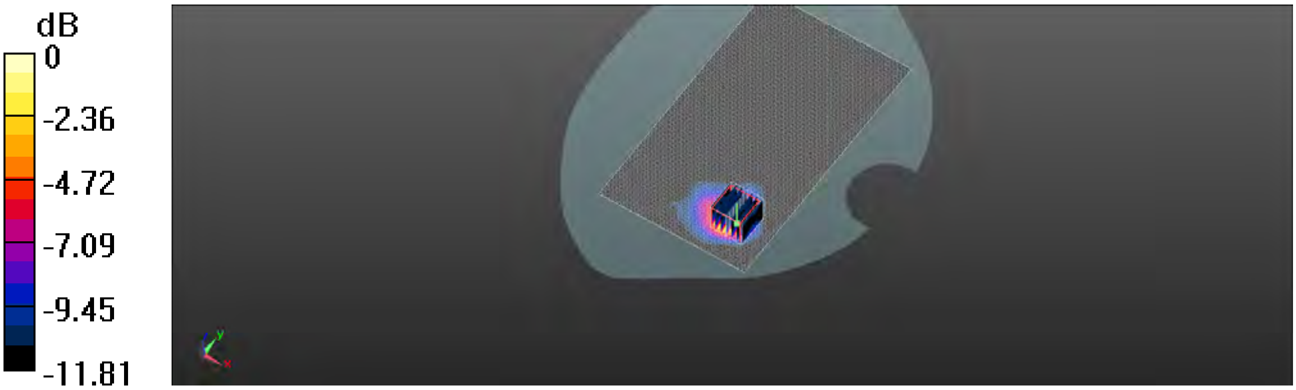
Communication System: WLAN 5G; Frequency: 5270 MHz
Medium parameters used: f = 5270 MHz; σ = 5.564 S/m; ε_r = 47.698; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.34, 4.34, 4.34); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (111x191x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 5.89 W/kg

Configuration/Head/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 6.841 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 12.7 W/kg
SAR(1 g) = 2.8 W/kg; SAR(10 g) = 1.08 W/kg
Maximum value of SAR (measured) = 5.19 W/kg



0 dB = 5.19 W/kg = 7.15 dBW/kg

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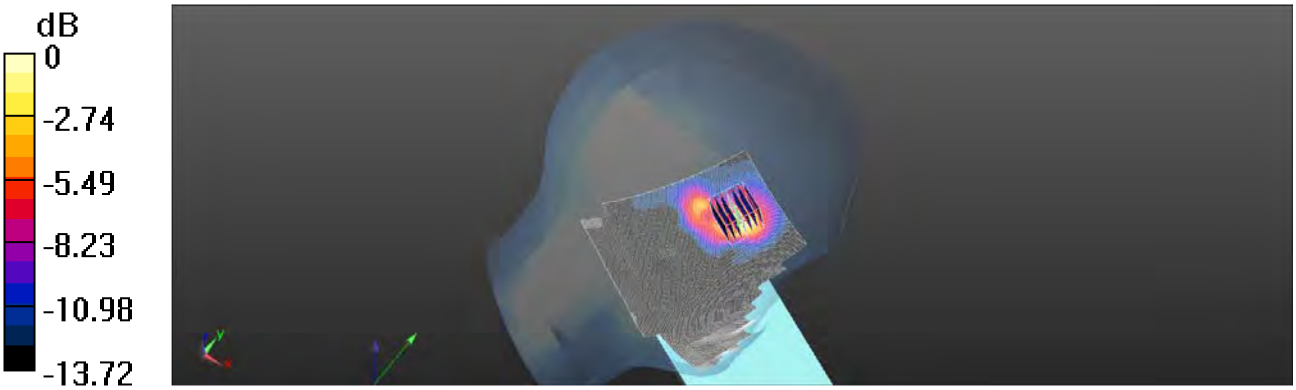
Date: 2016/5/11

WLAN 802.11n(40M) 5.3G_Head_Le Cheek_CH 62_Aux
Communication System: WLAN 5G; Frequency: 5310 MHz
Medium parameters used: f = 5310 MHz; σ = 4.788 S/m; ε_r = 36.106; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3770; ConvF(5.03, 5.03, 5.03); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (121x191x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.01 W/kg

Configuration/Head/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 2.463 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 2.57 W/kg
SAR(1 g) = 0.607 W/kg; SAR(10 g) = 0.231 W/kg
Maximum value of SAR (measured) = 1.22 W/kg



0 dB = 1.22 W/kg = 0.86 dBW/kg

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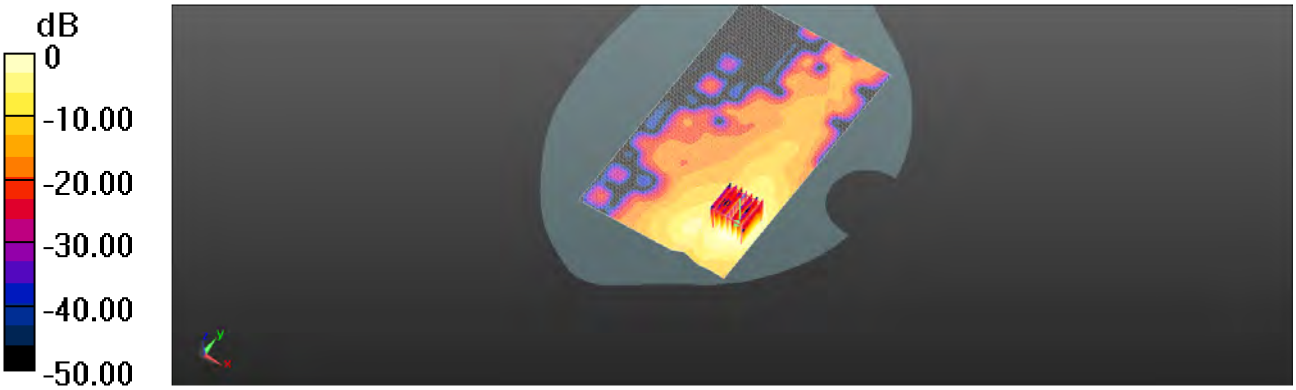
Date: 2016/5/5

WLAN 802.11n(40M) 5.3G_Body-worn_Back side_CH 62_Aux_10mm
Communication System: WLAN 5G; Frequency: 5310 MHz
Medium parameters used: f = 5310 MHz; σ = 5.623 S/m; ε_r = 47.554; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3770; ConvF(4.34, 4.34, 4.34); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (111x191x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.15 W/kg

Configuration/Head/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 1.697 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 2.13 W/kg
SAR(1 g) = 0.539 W/kg; SAR(10 g) = 0.188 W/kg
Maximum value of SAR (measured) = 1.02 W/kg



0 dB = 1.02 W/kg = 0.09 dBW/kg

Date: 2016/5/5

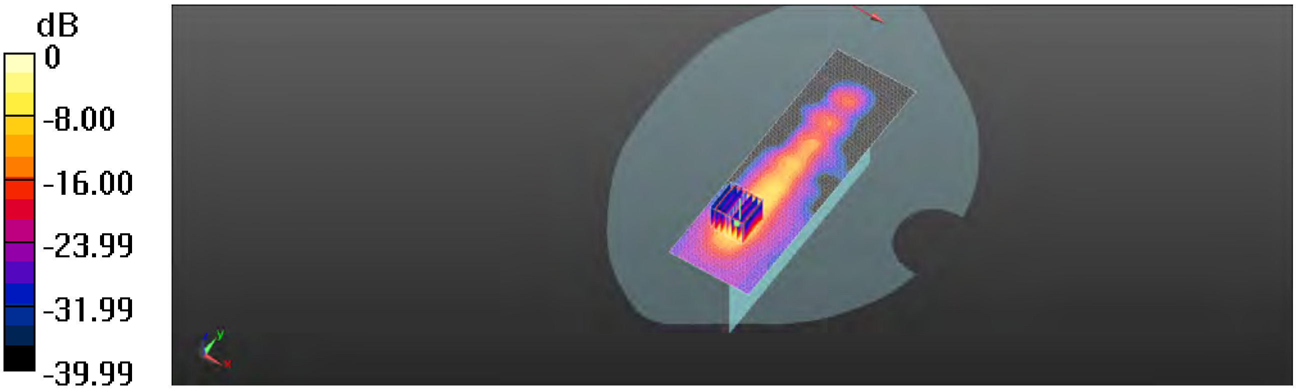
WLAN 802.11n(40M) 5.3G_Hand_Right side_CH 62_Aux_0mm
Communication System: WLAN 5G; Frequency: 5310 MHz
Medium parameters used: f = 5310 MHz; σ = 5.623 S/m; ε_r = 47.554; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.34, 4.34, 4.34); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (61x191x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 9.00 W/kg

Configuration/Head/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 10.54 V/m; Power Drift = -0.17 dB
Peak SAR (extrapolated) = 36.9 W/kg
SAR(1 g) = 5.42 W/kg; SAR(10 g) = 1.07 W/kg
Maximum value of SAR (measured) = 13.1 W/kg



0 dB = 13.1 W/kg = 11.17 dBW/kg

Date: 2016/5/11

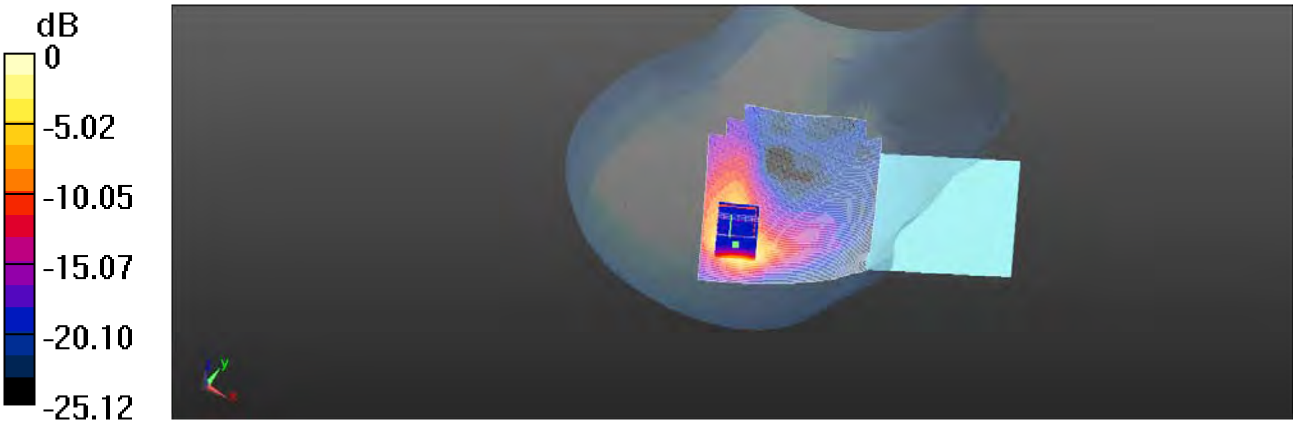
WLAN802.11 ac(40M) 5.3G_Head_Re Cheek_CH 62_Main
Communication System: WLAN 5G; Frequency: 5310 MHz
Medium parameters used: f = 5310 MHz; σ = 4.788 S/m; ε_r = 36.106; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(5.03, 5.03, 5.03); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (121x101x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.91 W/kg

Configuration/Head/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 8.815 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 4.49 W/kg
SAR(1 g) = 1.02 W/kg; SAR(10 g) = 0.331 W/kg
Maximum value of SAR (measured) = 2.08 W/kg



0 dB = 2.08 W/kg = 3.18 dBW/kg

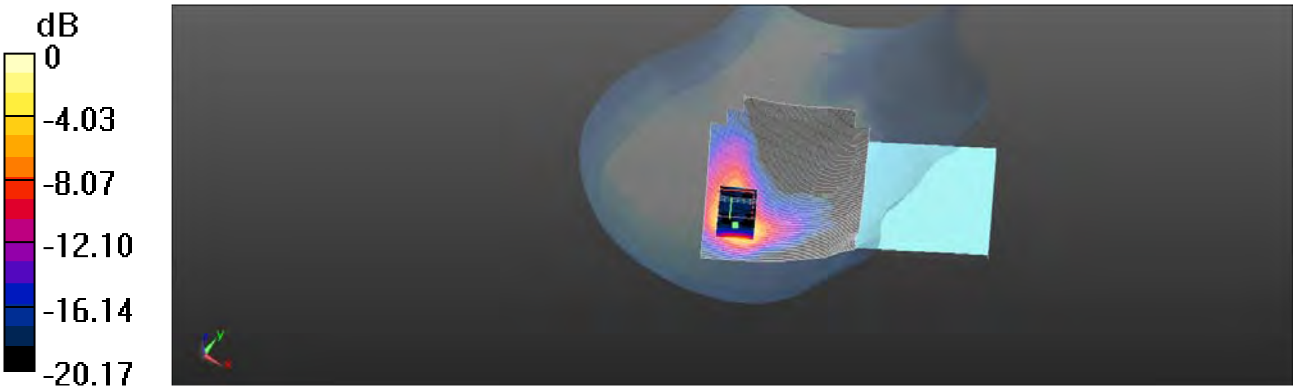
Date: 2016/5/12

WLAN 802.11a 5.6G_Head_Re Cheek_CH 120_Main
Communication System: WLAN 5G; Frequency: 5600 MHz
Medium parameters used: f = 5600 MHz; σ = 5.154 S/m; ε_r = 35.276; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3770; ConvF(4.42, 4.42, 4.42); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (121x101x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 2.21 W/kg

Configuration/Head/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 9.310 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 4.89 W/kg
SAR(1 g) = 1.18 W/kg; SAR(10 g) = 0.382 W/kg
Maximum value of SAR (measured) = 2.40 W/kg



0 dB = 2.40 W/kg = 3.80 dBW/kg

Date: 2016/5/6

WLAN 802.11a 5.6G_Body-worn_Front side_CH 100_Main_10mm

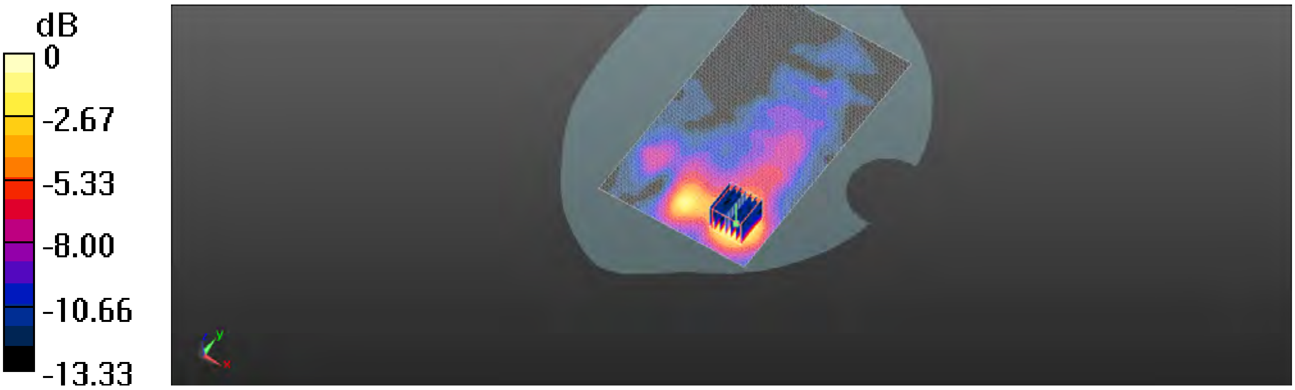
Communication System: WLAN 5G; Frequency: 5500 MHz
Medium parameters used: f = 5500 MHz; σ = 5.864 S/m; ε_r = 46.91; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(3.7, 3.7, 3.7); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (111x191x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 0.555 W/kg

Configuration/Head/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 2.993 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 0.989 W/kg
SAR(1 g) = 0.290 W/kg; SAR(10 g) = 0.131 W/kg
Maximum value of SAR (measured) = 0.515 W/kg



0 dB = 0.515 W/kg = -2.88 dBW/kg

Date: 2016/5/6

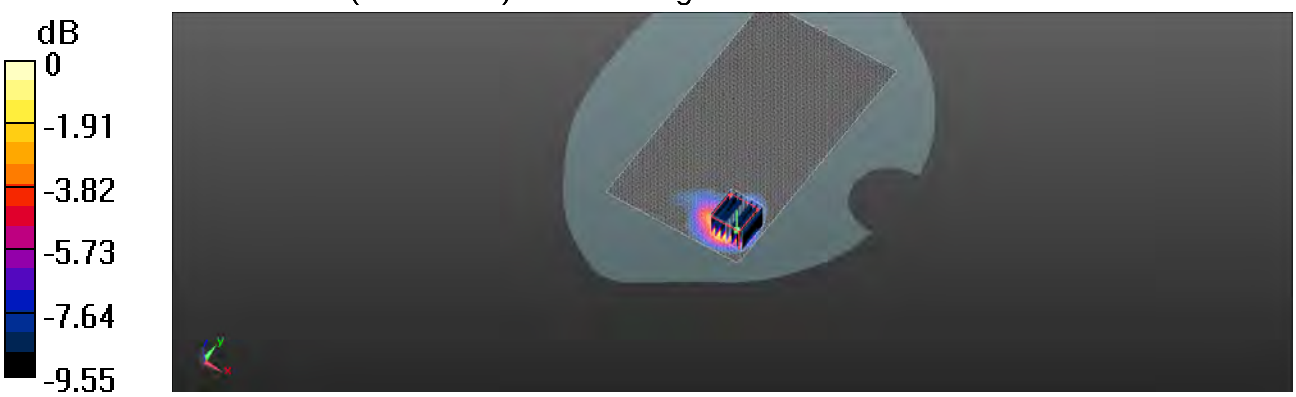
WLAN 802.11a 5.6G_Hand_Front side_CH 100_Main_0mm
Communication System: WLAN 5G; Frequency: 5500 MHz
Medium parameters used: f = 5500 MHz; σ = 5.864 S/m; ε_r = 46.91; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(3.7, 3.7, 3.7); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (101x181x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 4.29 W/kg

Configuration/Head/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 7.887 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 9.98 W/kg
SAR(1 g) = 2.25 W/kg; SAR(10 g) = 1.03 W/kg
Maximum value of SAR (measured) = 3.95 W/kg



0 dB = 3.95 W/kg = 5.97 dBW/kg

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Date: 2016/5/12

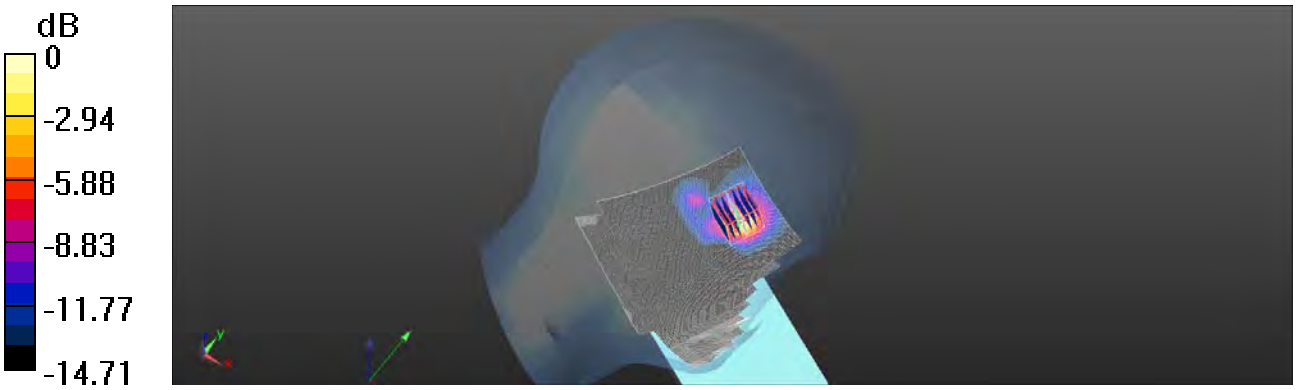
WLAN 802.11a 5.6G_Head_Le Cheek_CH 140_Aux
Communication System: WLAN 5G; Frequency: 5700 MHz
Medium parameters used: f = 5700 MHz; σ = 5.279 S/m; ε_r = 34.961; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.42, 4.42, 4.42); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (121x191x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.25 W/kg

Configuration/Head/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 2.963 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 4.13 W/kg
SAR(1 g) = 0.793 W/kg; SAR(10 g) = 0.264 W/kg
Maximum value of SAR (measured) = 1.62 W/kg



0 dB = 1.62 W/kg = 2.10 dBW/kg

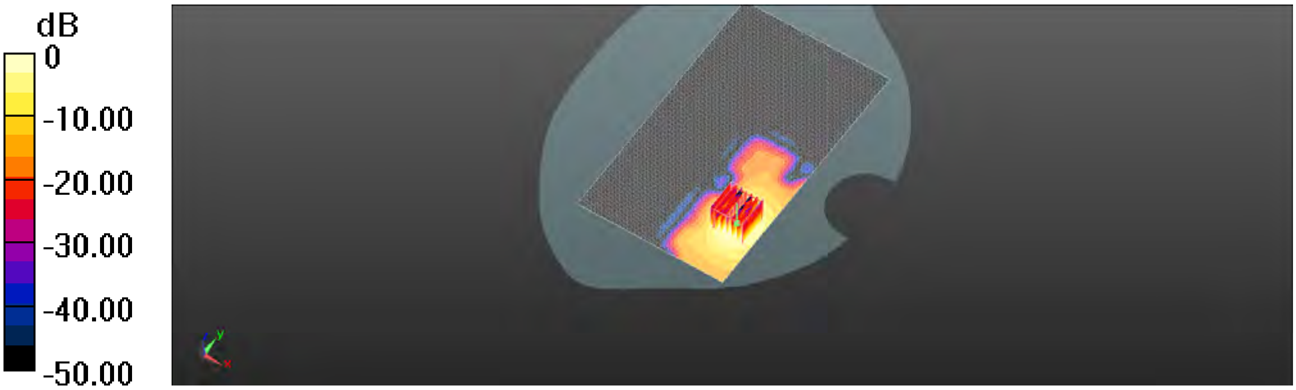
Date: 2016/5/6

WLAN 802.11a 5.6G_Body-worn_Back side_CH 140_Aux_10mm
Communication System: WLAN 5G; Frequency: 5700 MHz
Medium parameters used: f = 5700 MHz; σ = 6.058 S/m; ε_r = 46.301; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3770; ConvF(3.7, 3.7, 3.7); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (111x191x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.52 W/kg

Configuration/Head/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0.9680 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 3.18 W/kg
SAR(1 g) = 0.740 W/kg; SAR(10 g) = 0.248 W/kg
Maximum value of SAR (measured) = 1.44 W/kg



0 dB = 1.44 W/kg = 1.58 dBW/kg

Date: 2016/5/6

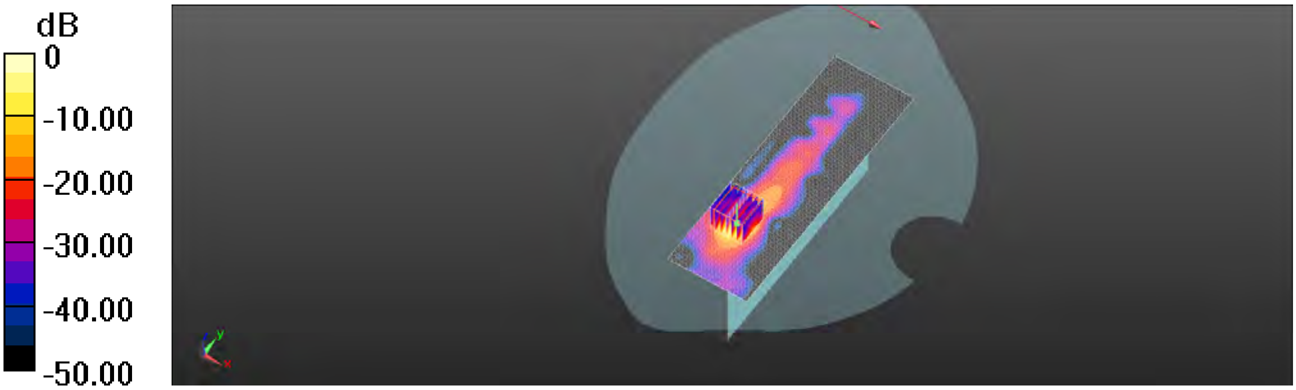
WLAN 802.11a 5.6G_Hand_Right side_CH 140_Aux_0mm
Communication System: WLAN 5G; Frequency: 5700 MHz
Medium parameters used: f = 5700 MHz; σ = 6.058 S/m; ε_r = 46.301; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(3.7, 3.7, 3.7); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (61x191x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 24.0 W/kg

Configuration/Head/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 6.196 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 101 W/kg
SAR(1 g) = 13.3 W/kg; SAR(10 g) = 2.26 W/kg
Maximum value of SAR (measured) = 33.2 W/kg



0 dB = 33.2 W/kg = 15.21 dBW/kg

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Date: 2016/5/12

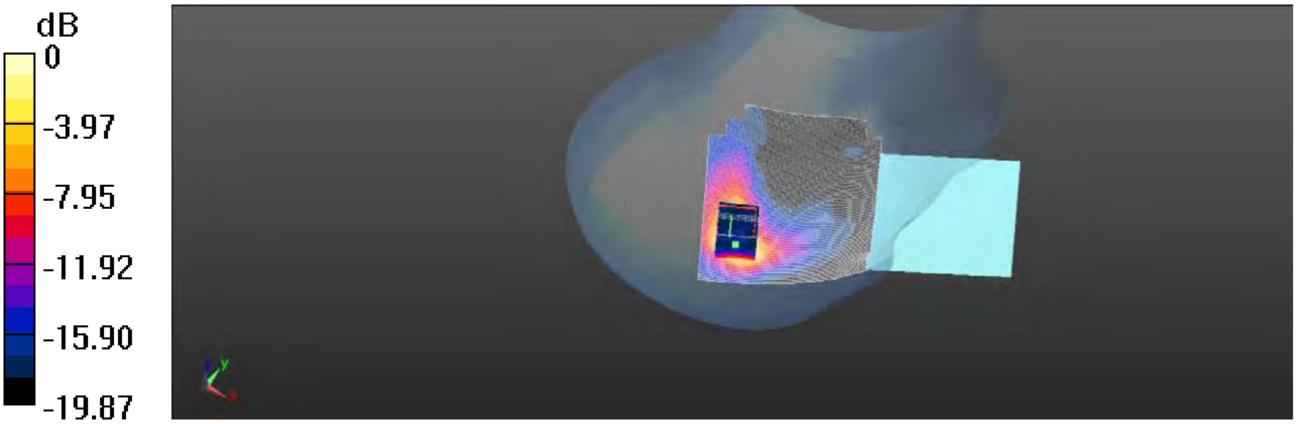
WLAN802.11 n(20M) 5.6G_Head_Re Cheek_CH 100_Main
Communication System: WLAN 5G; Frequency: 5500 MHz
Medium parameters used: f = 5500 MHz; σ = 5.025 S/m; ε_r = 35.592; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.42, 4.42, 4.42); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (121x101x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.54 W/kg

Configuration/Head/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 7.830 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 3.36 W/kg
SAR(1 g) = 0.819 W/kg; SAR(10 g) = 0.269 W/kg
Maximum value of SAR (measured) = 1.68 W/kg



0 dB = 1.68 W/kg = 2.25 dBW/kg

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Date: 2016/5/12

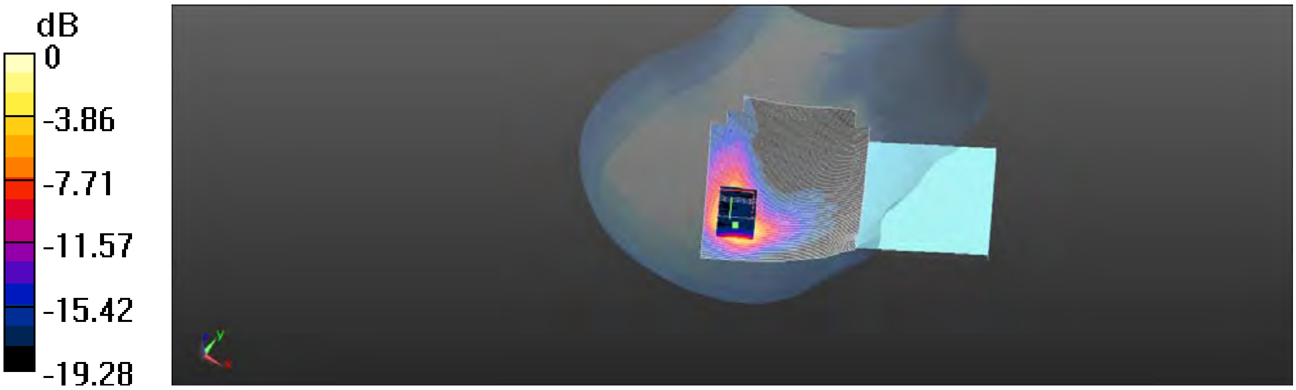
WLAN 802.11ac(80M) 5.6G_Head_Re Cheek_CH 122_Main
Communication System: WLAN 5G; Frequency: 5610 MHz
Medium parameters used: f = 5610 MHz; σ = 5.159 S/m; ε_r = 35.257; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.42, 4.42, 4.42); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (121x101x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.64 W/kg

Configuration/Head/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 7.971 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 3.57 W/kg
SAR(1 g) = 0.872 W/kg; SAR(10 g) = 0.286 W/kg
Maximum value of SAR (measured) = 1.79 W/kg



0 dB = 1.79 W/kg = 2.53 dBW/kg

Date: 2016/5/6

WLAN 802.11ac(80M) 5.6G_Body-worn_Front side_CH 122_Main_10mm

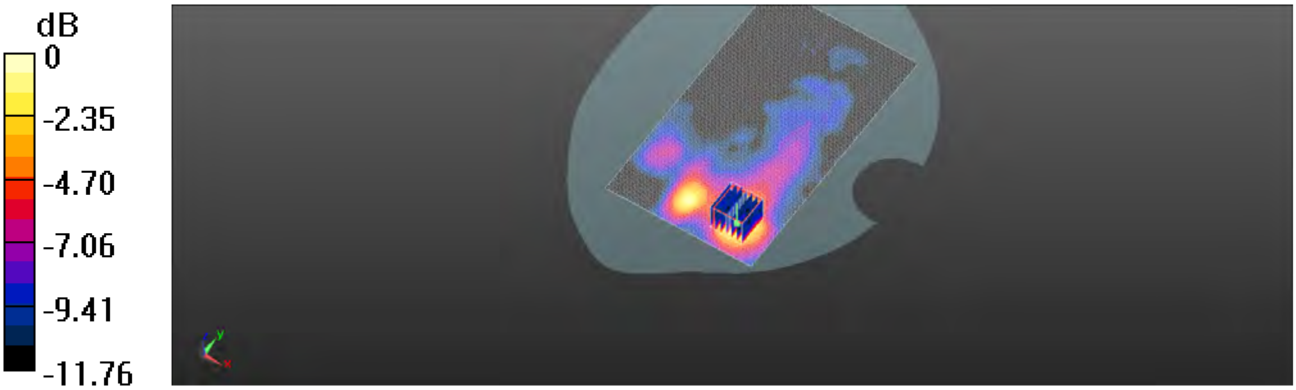
Communication System: WLAN 5G; Frequency: 5610 MHz
Medium parameters used: f = 5610 MHz; σ = 6.029 S/m; ε_r = 46.519; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(3.7, 3.7, 3.7); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (111x191x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 0.406 W/kg

Configuration/Head/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 2.927 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 0.844 W/kg
SAR(1 g) = 0.226 W/kg; SAR(10 g) = 0.109 W/kg
Maximum value of SAR (measured) = 0.393 W/kg



0 dB = 0.393 W/kg = -4.06 dBW/kg

Date: 2016/5/6

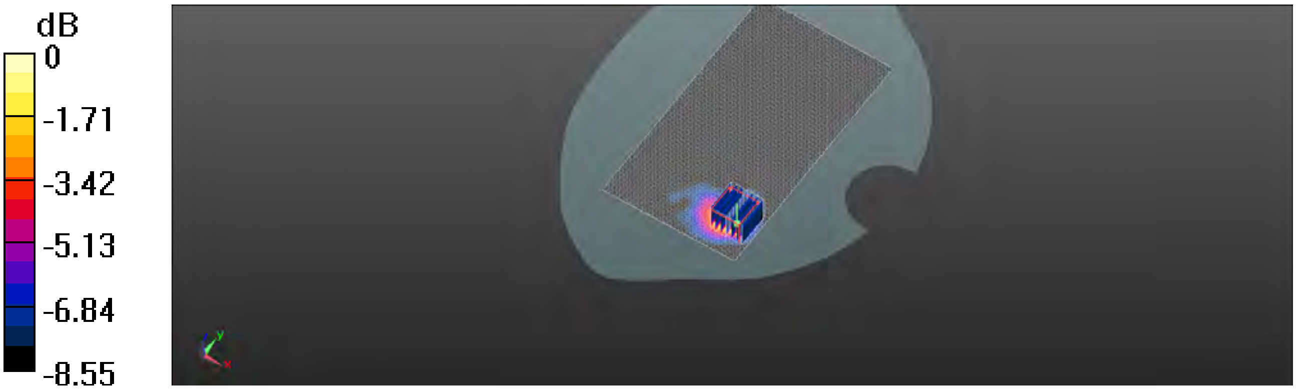
WLAN 802.11ac(80M) 5.6G_Hand_Front side_CH 122_Main_0mm
Communication System: WLAN 5G; Frequency: 5610 MHz
Medium parameters used: f = 5610 MHz; σ = 6.029 S/m; ε_r = 46.519; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(3.7, 3.7, 3.7); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (101x181x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 3.65 W/kg

Configuration/Head/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 8.659 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 10.1 W/kg
SAR(1 g) = 1.97 W/kg; SAR(10 g) = 0.993 W/kg
Maximum value of SAR (measured) = 3.33 W/kg



0 dB = 3.33 W/kg = 5.22 dBW/kg

Date: 2016/5/12

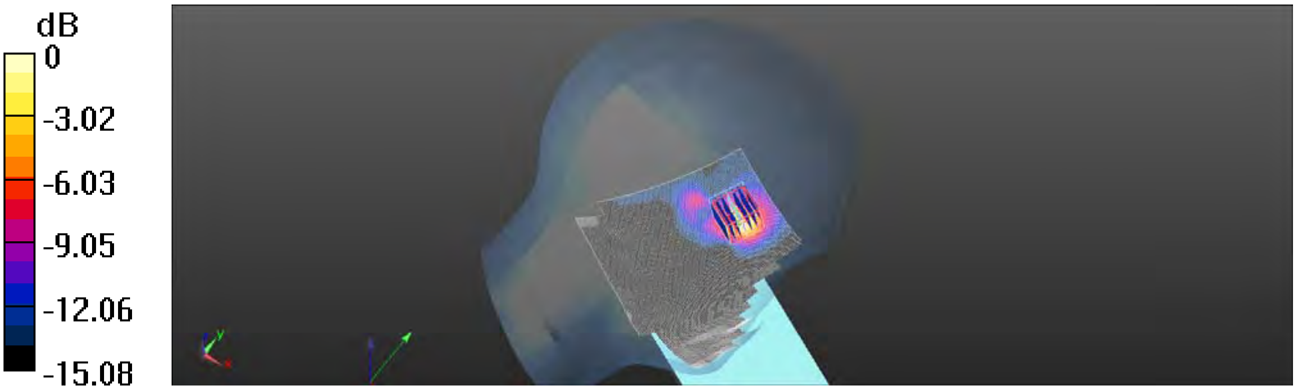
WLAN 802.11ac(80M) 5.6G_Head_Le Cheek_CH 122_Aux
Communication System: WLAN 5G; Frequency: 5610 MHz
Medium parameters used: f = 5610 MHz; σ = 5.159 S/m; ε_r = 35.257; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.42, 4.42, 4.42); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (121x191x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.15 W/kg

Configuration/Head/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 2.993 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 3.62 W/kg
SAR(1 g) = 0.737 W/kg; SAR(10 g) = 0.251 W/kg
Maximum value of SAR (measured) = 1.49 W/kg



0 dB = 1.49 W/kg = 1.73 dBW/kg

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Date: 2016/5/6

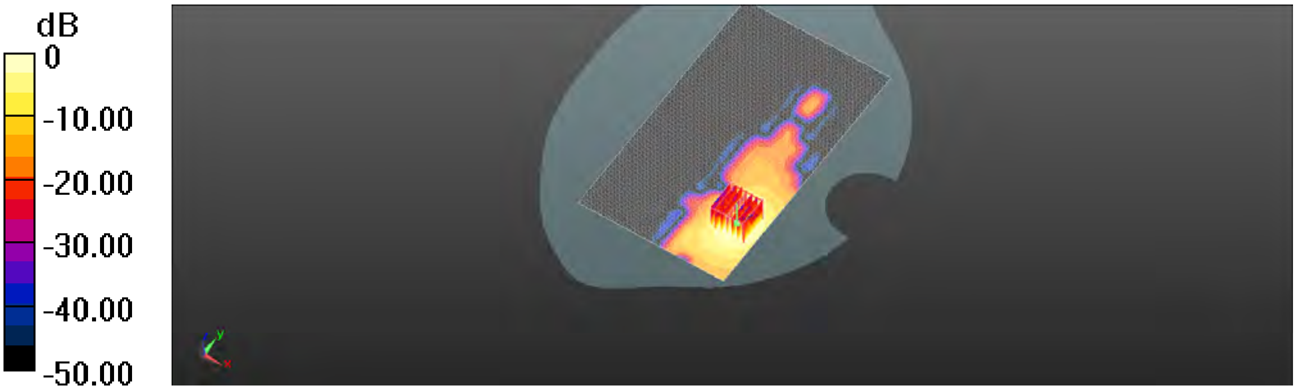
WLAN 802.11ac(80M) 5.6G_Body-worn_Back side_CH 122_Aux_10mm
Communication System: WLAN 5G; Frequency: 5610 MHz
Medium parameters used: f = 5610 MHz; σ = 6.029 S/m; ε_r = 46.519; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(3.7, 3.7, 3.7); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (111x191x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.56 W/kg

Configuration/Head/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0.5370 V/m; Power Drift = -0.19 dB
Peak SAR (extrapolated) = 3.20 W/kg
SAR(1 g) = 0.769 W/kg; SAR(10 g) = 0.256 W/kg
Maximum value of SAR (measured) = 1.49 W/kg



0 dB = 1.49 W/kg = 1.73 dBW/kg

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Date: 2016/5/6

WLAN 802.11ac(80M) 5.6G_Hand_Right side_CH 138_Aux_0mm

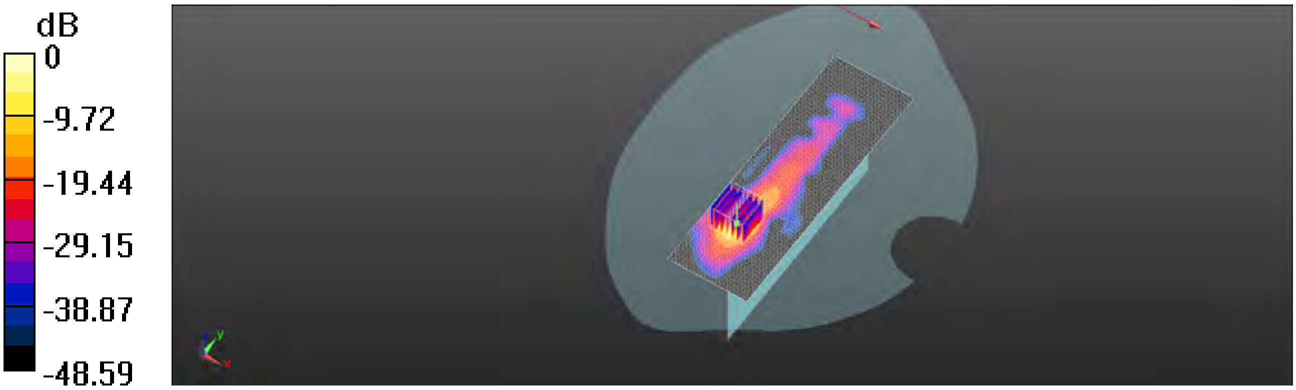
Communication System: WLAN 5G; Frequency: 5690 MHz
Medium parameters used: f = 5690 MHz; σ = 6.029 S/m; ε_r = 46.33; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(3.7, 3.7, 3.7); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (61x191x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 22.5 W/kg

Configuration/Head/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 5.891 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 96.8 W/kg
SAR(1 g) = 12.3 W/kg; SAR(10 g) = 2.09 W/kg
Maximum value of SAR (measured) = 30.7 W/kg



0 dB = 30.7 W/kg = 14.87 dBW/kg

Date: 2016/5/13

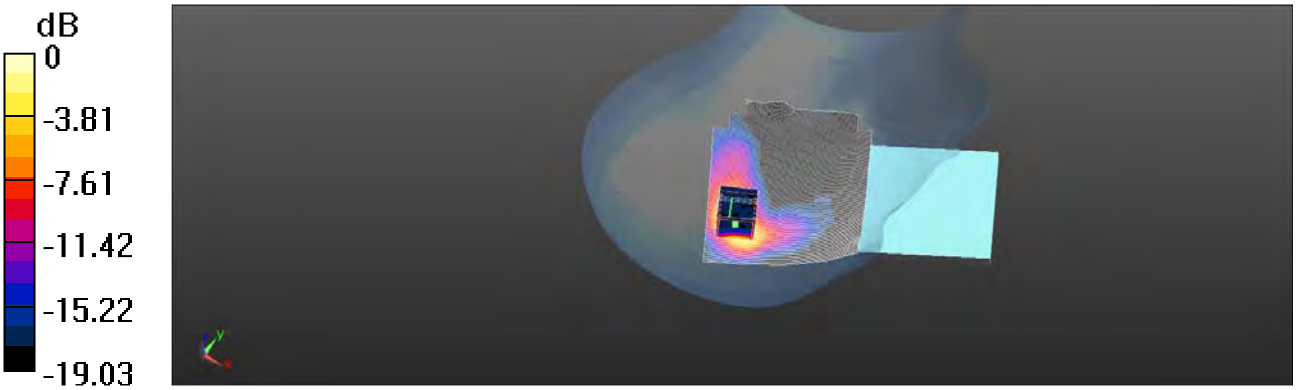
WLAN 802.11a 5.8G_Head_Re Cheek_CH 165_Main
Communication System: WLAN 5G; Frequency: 5825 MHz
Medium parameters used: f = 5825 MHz; σ = 5.424 S/m; ε_r = 34.633; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.83, 4.83, 4.83); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (121x101x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.62 W/kg

Configuration/Head/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 7.312 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 4.08 W/kg
SAR(1 g) = 0.916 W/kg; SAR(10 g) = 0.300 W/kg
Maximum value of SAR (measured) = 1.83 W/kg



0 dB = 1.83 W/kg = 2.62 dBW/kg

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Date: 2016/5/6

WLAN 802.11a 5.8G_Body-worn_Front side_CH 165_Main_10mm

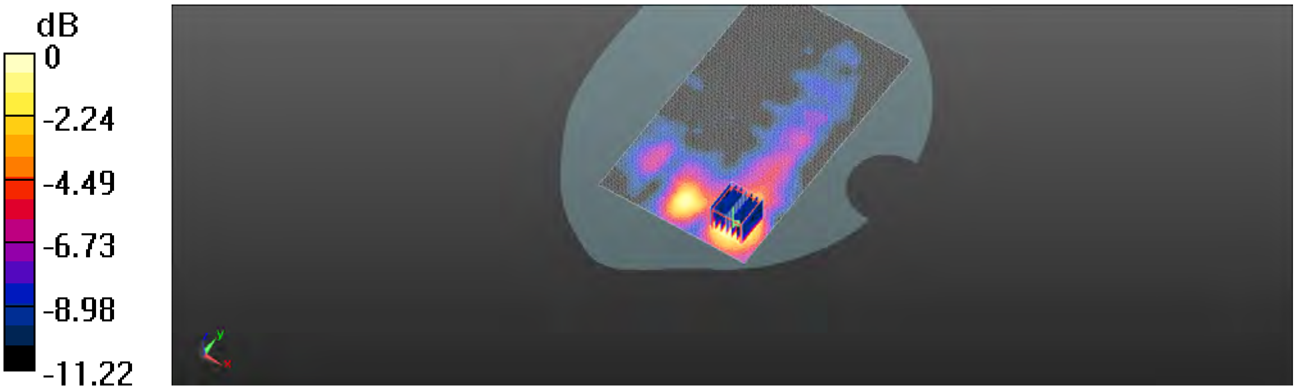
Communication System: WLAN 5G; Frequency: 5825 MHz
Medium parameters used: f = 5825 MHz; σ = 6.233 S/m; ε_r = 45.885; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.07, 4.07, 4.07); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (111x191x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 0.383 W/kg

Configuration/Head/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 2.367 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 0.821 W/kg
SAR(1 g) = 0.210 W/kg; SAR(10 g) = 0.104 W/kg
Maximum value of SAR (measured) = 0.363 W/kg



0 dB = 0.363 W/kg = -4.40 dBW/kg

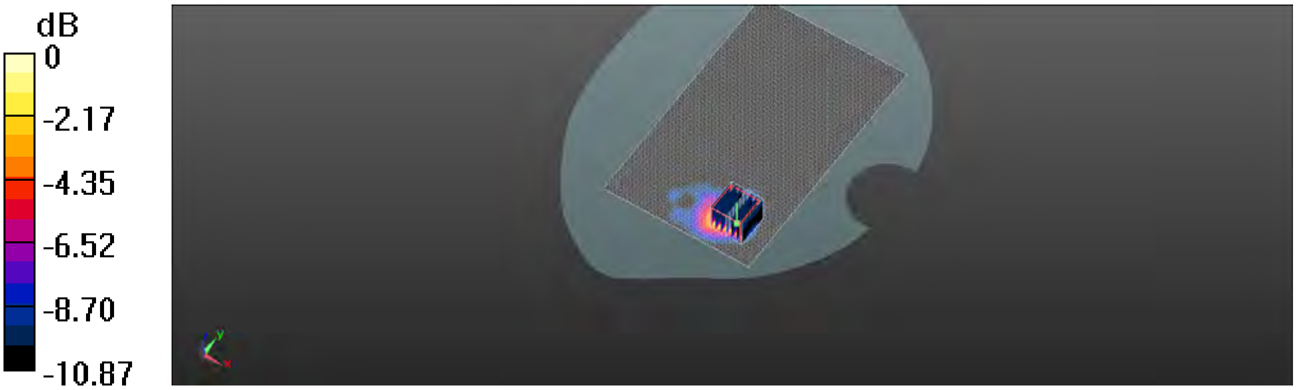
Date: 2016/5/6

WLAN 802.11a 5.8G_Hand_Front side_CH 165_Main_0mm
Communication System: WLAN 5G; Frequency: 5825 MHz
Medium parameters used: f = 5825 MHz; σ = 6.233 S/m; ε_r = 45.885; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3770; ConvF(4.07, 4.07, 4.07); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (111x181x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 4.40 W/kg

Configuration/Head/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 6.682 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 10.8 W/kg
SAR(1 g) = 2.24 W/kg; SAR(10 g) = 0.906 W/kg
Maximum value of SAR (measured) = 4.16 W/kg



0 dB = 4.16 W/kg = 6.19 dBW/kg

Date: 2016/5/13

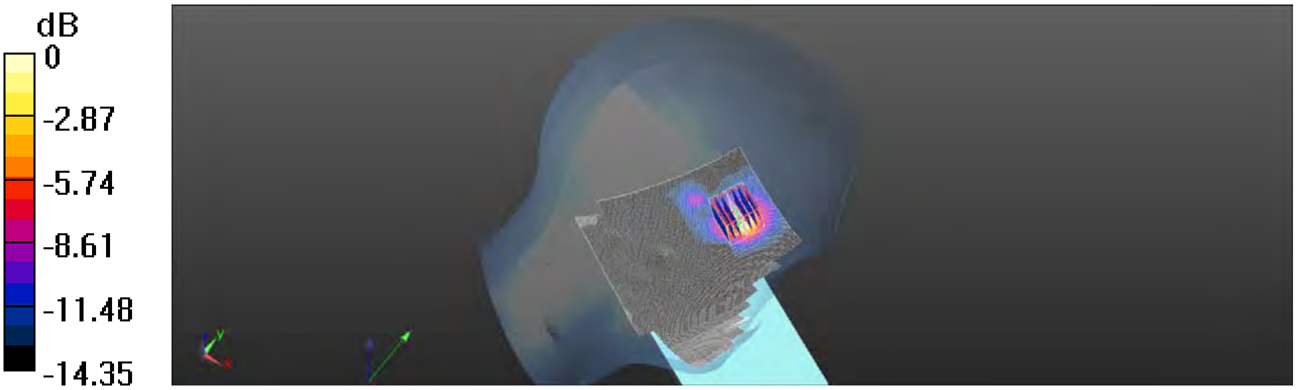
WLAN 802.11a 5.8G_Head_Le Cheek_CH 149_Aux
Communication System: WLAN 5G; Frequency: 5745 MHz
Medium parameters used: f = 5745 MHz; σ = 5.333 S/m; ε_r = 34.855; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.83, 4.83, 4.83); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (121x191x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 0.916 W/kg

Configuration/Head/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 2.769 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 3.38 W/kg
SAR(1 g) = 0.599 W/kg; SAR(10 g) = 0.205 W/kg
Maximum value of SAR (measured) = 1.20 W/kg



0 dB = 1.20 W/kg = 0.79 dBW/kg

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Date: 2016/5/6

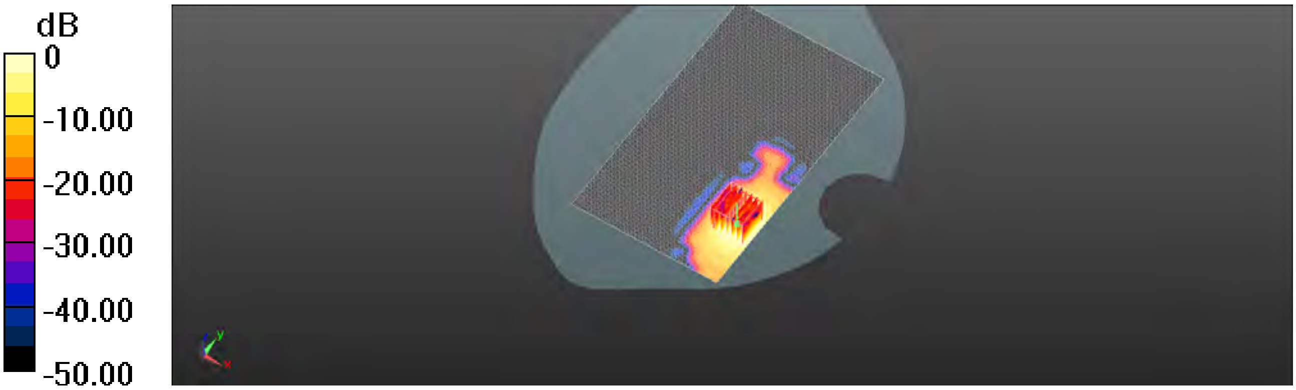
WLAN 802.11a 5.8G_Body-worn_Back side_CH 149_Aux_10mm
Communication System: WLAN 5G; Frequency: 5745 MHz
Medium parameters used: f = 5745 MHz; σ = 6.209 S/m; ε_r = 46.141; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.07, 4.07, 4.07); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (111x191x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.11 W/kg

Configuration/Head/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0.6170 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 2.33 W/kg
SAR(1 g) = 0.543 W/kg; SAR(10 g) = 0.176 W/kg
Maximum value of SAR (measured) = 1.08 W/kg



0 dB = 1.08 W/kg = 0.33 dBW/kg

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Date: 2016/5/6

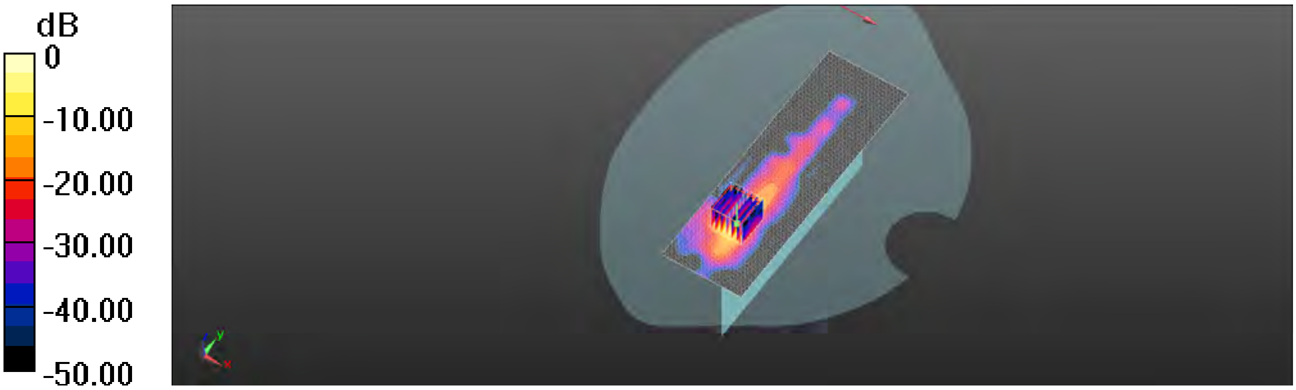
WLAN 802.11a 5.8G_Hand_Right side_CH 149_Aux_0mm
Communication System: WLAN 5G; Frequency: 5745 MHz
Medium parameters used: f = 5745 MHz; σ = 6.209 S/m; ε_r = 46.141; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.07, 4.07, 4.07); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (61x191x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 15.4 W/kg

Configuration/Head/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 5.949 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 72.9 W/kg
SAR(1 g) = 9.47 W/kg; SAR(10 g) = 1.59 W/kg
Maximum value of SAR (measured) = 27.3 W/kg



0 dB = 27.3 W/kg = 14.36 dBW/kg

Date: 2016/5/9

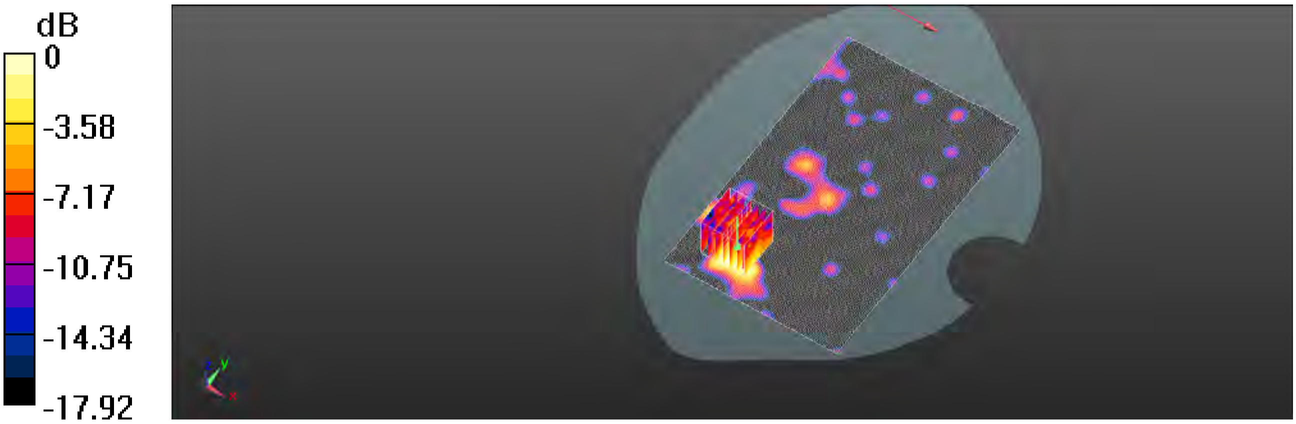
Bluetooth_Hotspot_Back_CH 39
Communication System: Bluetooth; Frequency: 2441 MHz
Medium parameters used: f = 2441 MHz; σ = 1.989 S/m; ε_r = 52.823; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.37, 7.37, 7.37); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Head/Area Scan (101x161x1): Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 0.0359 W/kg

Configuration/Head/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.688 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 0.0200 W/kg
SAR(1 g) = 0.012 W/kg; SAR(10 g) = 0.00691 W/kg
Maximum value of SAR (measured) = 0.0158 W/kg



0 dB = 0.0158 W/kg = -18.01 dBW/kg

6. SAR System Performance Verification

Date: 2016/5/4

Dipole 750 MHz_SN:1015_Body

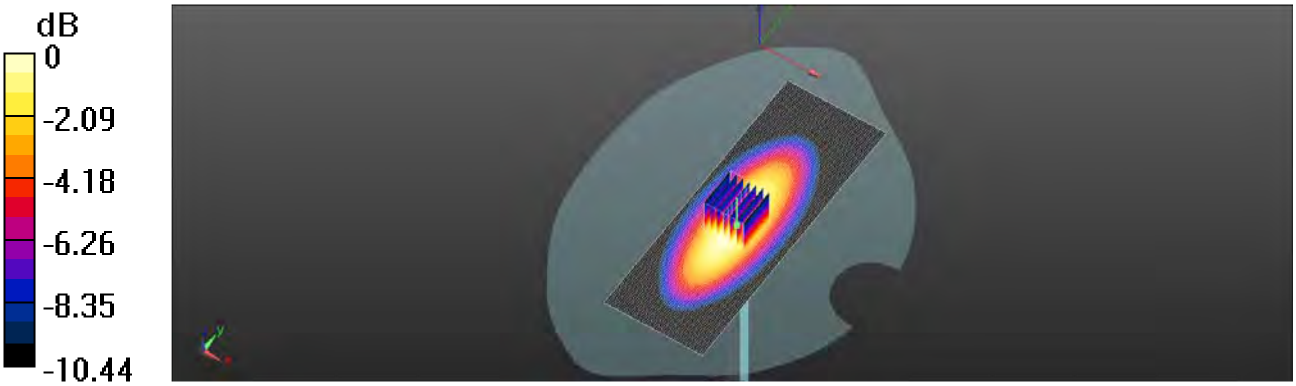
Communication System: CW; Frequency: 750 MHz
Medium parameters used: f = 750 MHz; σ = 0.976 S/m; ε_r = 56.475; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7346; ConvF(10.11, 10.11, 10.11); Calibrated: 2015/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn916; Calibrated: 2015/12/16
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Pin=250mW/Area Scan (51x141x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 2.60 W/kg

Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 53.23 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 3.16 W/kg
SAR(1 g) = 2.09 W/kg; SAR(10 g) = 1.37 W/kg
Maximum value of SAR (measured) = 2.66 W/kg



0 dB = 2.66 W/kg = 4.25 dBW/kg

Date: 2016/5/8

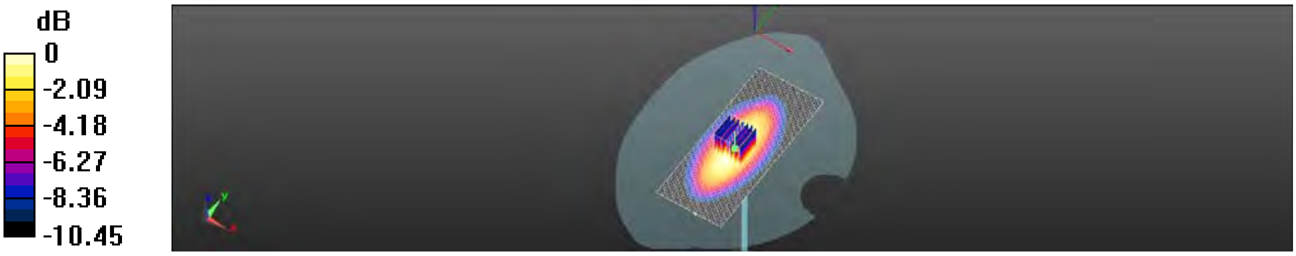
Dipole 835 MHz_SN:4d063_Head
Communication System: CW; Frequency: 835 MHz
Medium parameters used: f = 835 MHz; σ = 0.919 S/m; ε_r = 40.894; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7346; ConvF(9.8, 9.8, 9.8); Calibrated: 2015/09/02;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn916; Calibrated: 2015/12/16
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Pin=250mW/Area Scan (51x121x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 3.09 W/kg

Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 60.13 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 3.68 W/kg
SAR(1 g) = 2.35 W/kg; SAR(10 g) = 1.56 W/kg
Maximum value of SAR (measured) = 3.09 W/kg



0 dB = 3.09 W/kg = 4.89 dBW/kg

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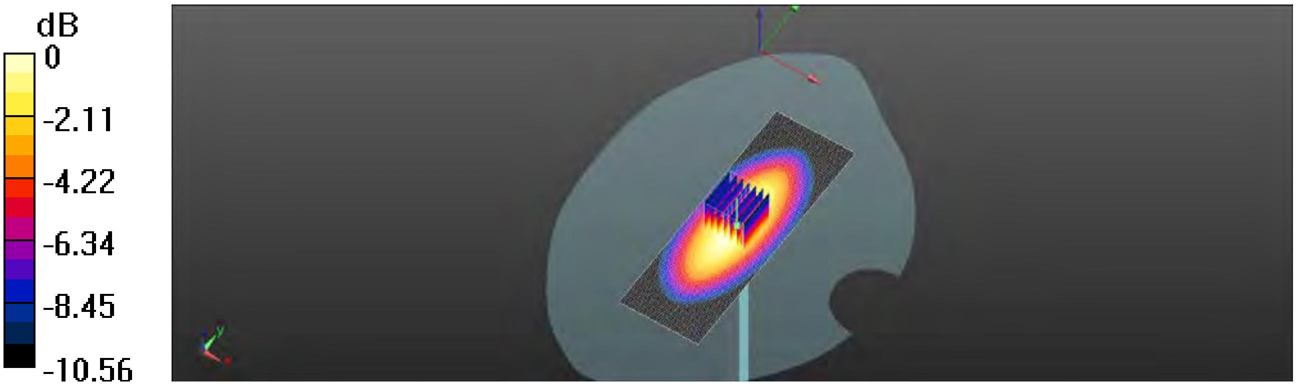
Date: 2016/5/3

Dipole 835 MHz_SN:4d063_Body
Communication System: CW; Frequency: 835 MHz
Medium parameters used: f = 835 MHz; σ = 1.018 S/m; ε_r = 55.704; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:
- Probe: EX3DV4 - SN7346; ConvF(10.05, 10.05, 10.05); Calibrated: 2015/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn916; Calibrated: 2015/12/16
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Pin=250mW/Area Scan (41x121x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 3.18 W/kg

Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 57.03 V/m; Power Drift = -0.00 dB
Peak SAR (extrapolated) = 3.72 W/kg
SAR(1 g) = 2.4 W/kg; SAR(10 g) = 1.63 W/kg
Maximum value of SAR (measured) = 3.17 W/kg



0 dB = 3.17 W/kg = 5.01 dBW/kg

Date: 2016/5/7

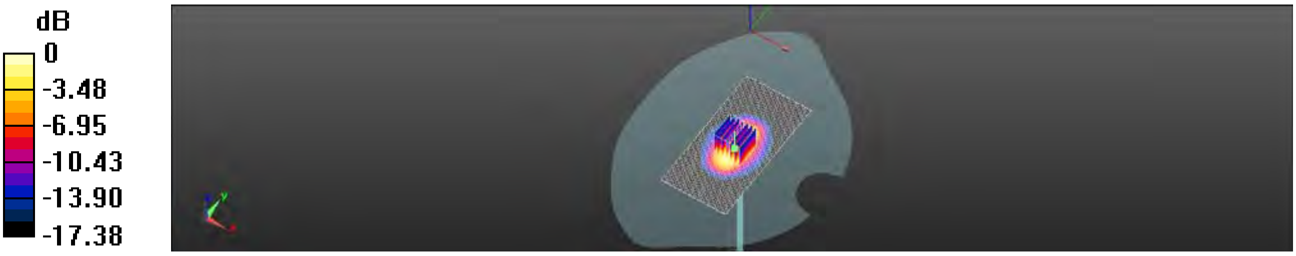
Dipole 1750 MHz_SN:1008_Head
Communication System: CW; Frequency: 1750 MHz
Medium parameters used: f = 1750 MHz; σ = 1.377 S/m; ε_r = 39.277; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7346; ConvF(8.6, 8.6, 8.6); Calibrated: 2015/09/02;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn916; Calibrated: 2015/12/16
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Pin=250mW/Area Scan (51x101x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 12.9 W/kg

Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 97.20 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 16.2 W/kg
SAR(1 g) = 9.34 W/kg; SAR(10 g) = 4.86 W/kg
Maximum value of SAR (measured) = 12.5 W/kg



0 dB = 12.5 W/kg = 10.97 dBW/kg

Date: 2016/4/28

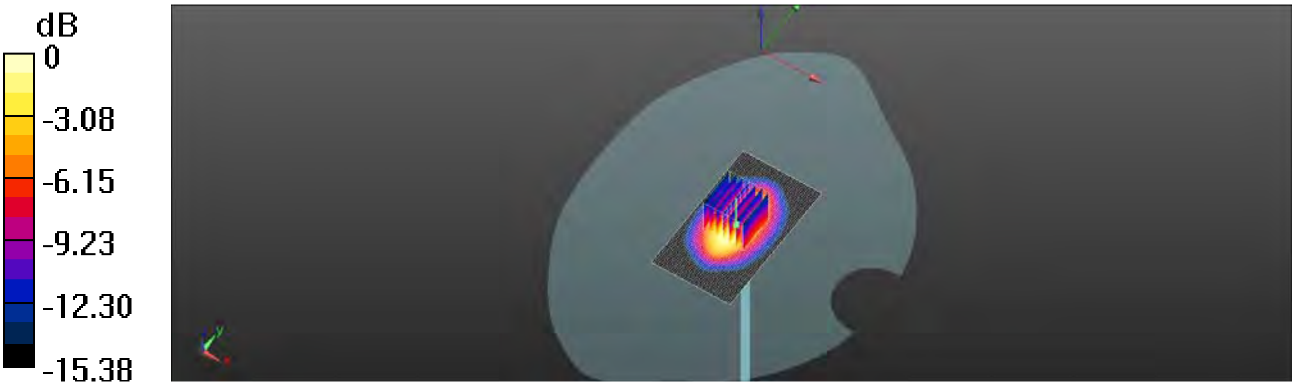
Dipole 1750 MHz_SN:1008_Body
Communication System: CW; Frequency: 1750 MHz
Medium parameters used: f = 1750 MHz; σ = 1.438 S/m; ε_r = 54.169; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7346; ConvF(8.06, 8.06, 8.06); Calibrated: 2015/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn916; Calibrated: 2015/12/16
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Pin=250mW/Area Scan (41x41x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 13.3 W/kg

Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 81.69 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 16.8 W/kg
SAR(1 g) = 9.3 W/kg; SAR(10 g) = 4.93 W/kg
Maximum value of SAR (measured) = 13.3 W/kg



0 dB = 9.66 W/kg = 9.85 dBW/kg

Date: 2016/5/2

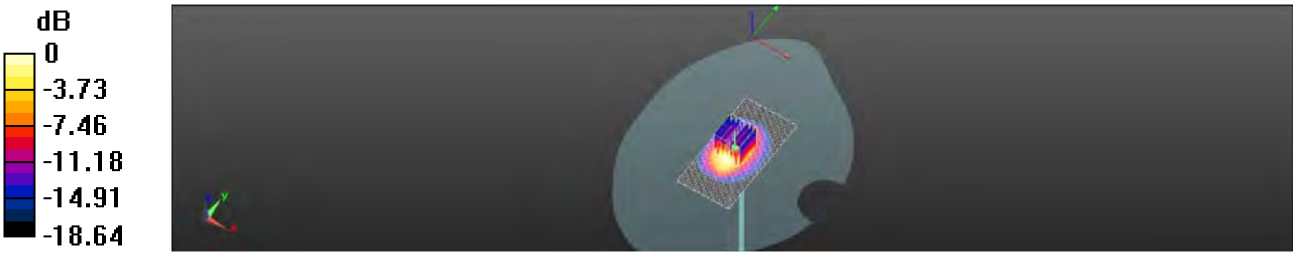
Dipole 1900 MHz_SN:5d027_Head
Communication System: CW; Frequency: 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.419 S/m; ε_r = 38.968; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7346; ConvF(8.33, 8.33, 8.33); Calibrated: 2015/09/02;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn916; Calibrated: 2015/12/16
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Pin=250mW/Area Scan (41x81x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 14.9 W/kg

Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 93.11 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 19.2 W/kg
SAR(1 g) = 10 W/kg; SAR(10 g) = 5.23 W/kg
Maximum value of SAR (measured) = 14.6 W/kg



0 dB = 14.6 W/kg = 11.65 dBW/kg

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Date: 2016/4/27

Dipole 1900 MHz_SN:5d027_Body

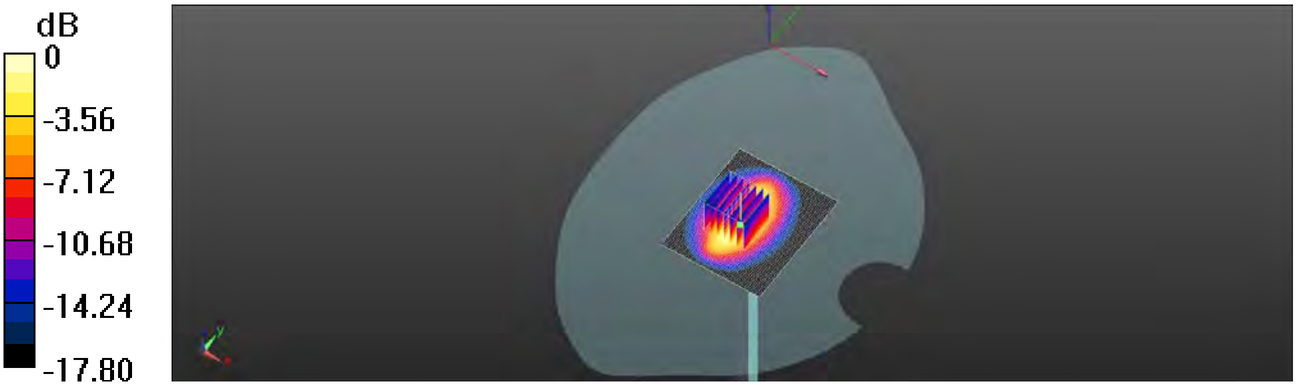
Communication System: CW; Frequency: 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.559 S/m; ε_r = 53.728; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7346; ConvF(7.77, 7.77, 7.77); Calibrated: 2015/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn916; Calibrated: 2015/12/16
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Pin=250mW/Area Scan (41x41x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 14.0 W/kg

Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 94.61 V/m; Power Drift = -0.15 dB
Peak SAR (extrapolated) = 17.7 W/kg
SAR(1 g) = 9.53 W/kg; SAR(10 g) = 4.96 W/kg
Maximum value of SAR (measured) = 13.7 W/kg



0 dB = 13.7 W/kg = 11.37 dBW/kg

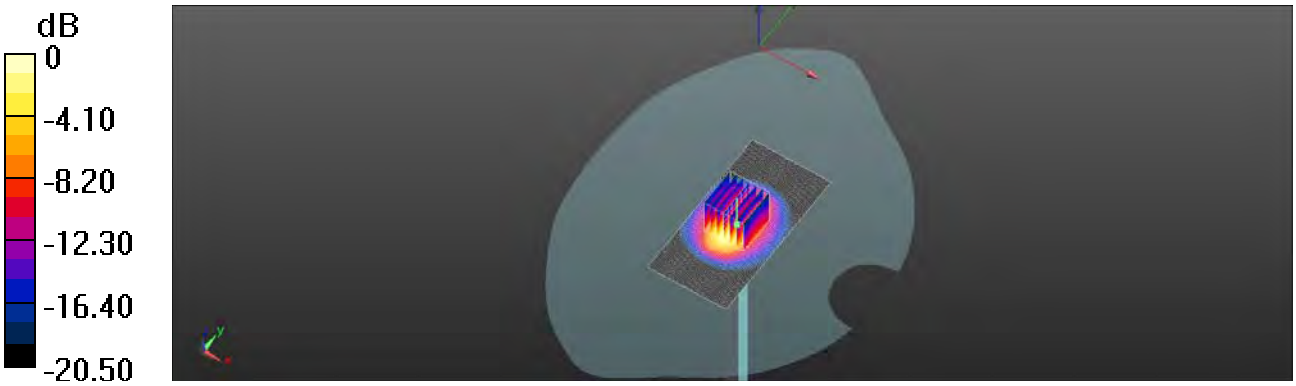
Date: 2016/4/30

Dipole 2300 MHz_SN:1023_Body
Communication System: CW; Frequency: 2300 MHz
Medium parameters used: f = 2300 MHz; σ = 1.848 S/m; ε_r = 52.505; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:
- Probe: EX3DV4 - SN7346; ConvF(7.57, 7.57, 7.57); Calibrated: 2015/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn916; Calibrated: 2015/12/16
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Pin=250mW/Area Scan (51x101x1): Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 17.8 W/kg

Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 99.11 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 23.2 W/kg
SAR(1 g) = 11.7 W/kg; SAR(10 g) = 5.59 W/kg
Maximum value of SAR (measured) = 17.4 W/kg



0 dB = 17.4 W/kg = 12.41 dBW/kg

ate: 2016/5/9

Dipole 2450 MHz_SN:727_Head

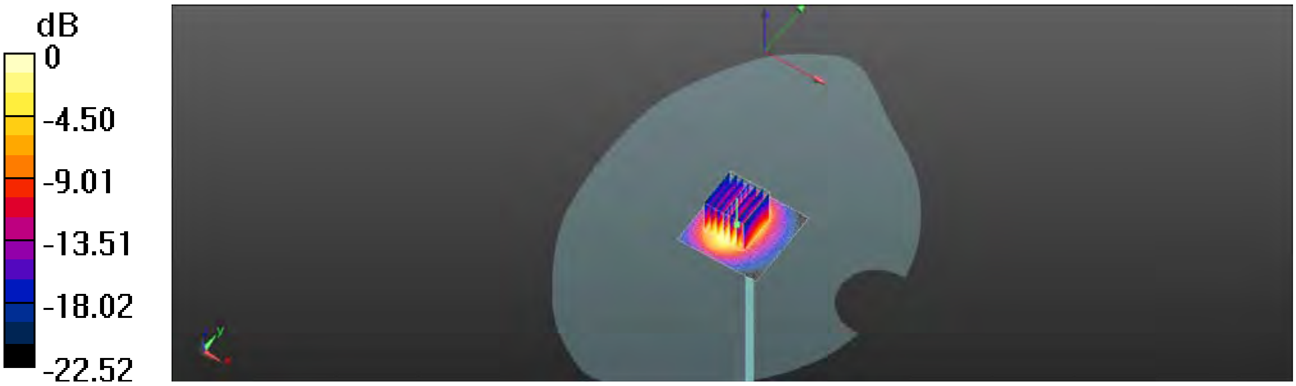
Communication System: CW; Frequency: 2450 MHz
Medium parameters used: f = 2450 MHz; σ = 1.884 S/m; ε_r = 38.097; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.12, 7.12, 7.12); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Pin=250mW/Area Scan (51x51x1): Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 21.5 W/kg

Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 95.50 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 27.5 W/kg
SAR(1 g) = 13.2 W/kg; SAR(10 g) = 6.09 W/kg
Maximum value of SAR (measured) = 20.4 W/kg



0 dB = 20.4 W/kg = 13.10 dBW/kg

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Date: 2016/5/9

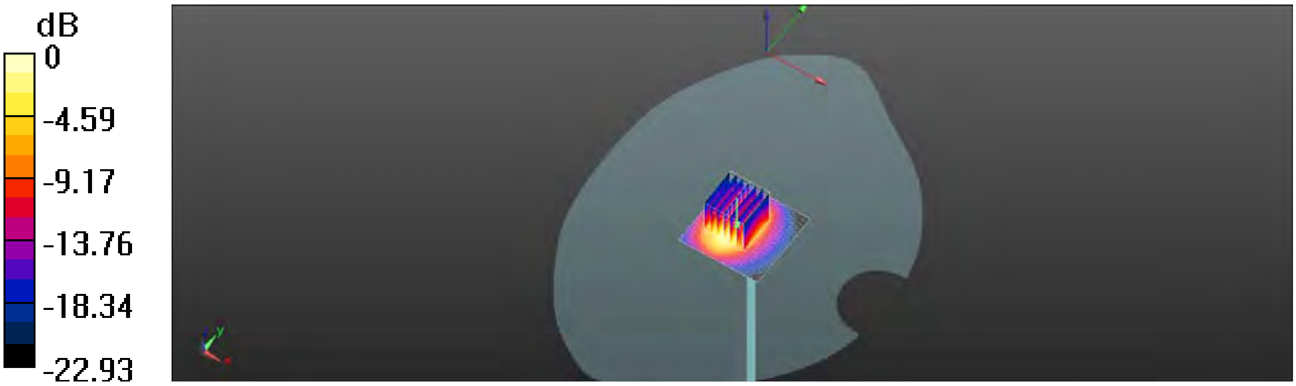
Dipole 2450 MHz_SN:727_Body
Communication System: CW; Frequency: 2450 MHz
Medium parameters used: f = 2450 MHz; σ = 2.003 S/m; ε_r = 52.82; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.37, 7.37, 7.37); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Pin=250mW/Area Scan (51x51x1): Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 21.8 W/kg

Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 87.20 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 28.2 W/kg
SAR(1 g) = 13.2 W/kg; SAR(10 g) = 5.95 W/kg
Maximum value of SAR (measured) = 20.6 W/kg



0 dB = 20.6 W/kg = 13.14 dBW/kg

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Date: 2016/4/29

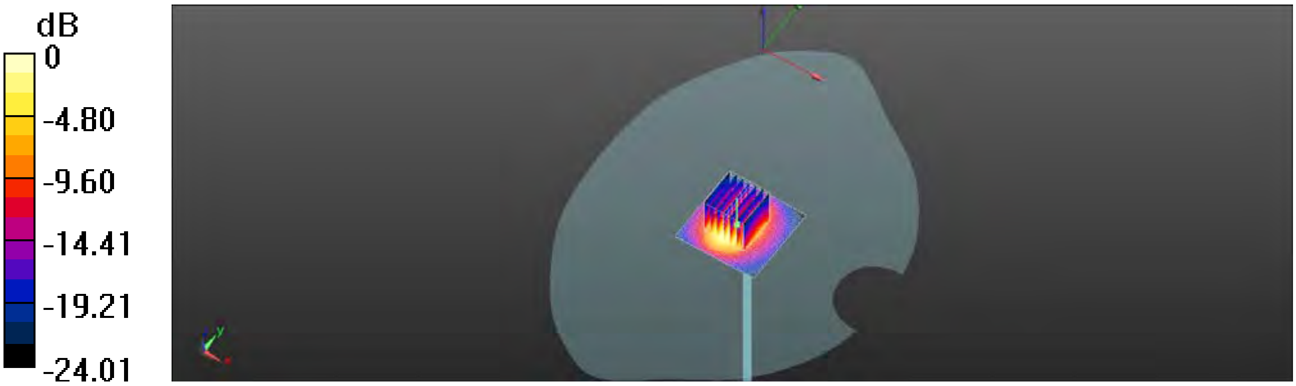
Dipole 2600 MHz_SN:1058_Body
Communication System: CW; Frequency: 2600 MHz
Medium parameters used: f = 2600 MHz; σ = 2.24 S/m; ε_r = 51.705; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7346; ConvF(7.29, 7.29, 7.29); Calibrated: 2015/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn916; Calibrated: 2015/12/16
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Pin=250mW/Area Scan (51x51x1): Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 23.3 W/kg

Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 97.52 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 30.8 W/kg
SAR(1 g) = 13.8 W/kg; SAR(10 g) = 6 W/kg
Maximum value of SAR (measured) = 22.0 W/kg



0 dB = 22.0 W/kg = 13.42 dBW/kg

Date: 2016/5/10

Dipole 5200 MHz_SN:1023_Head

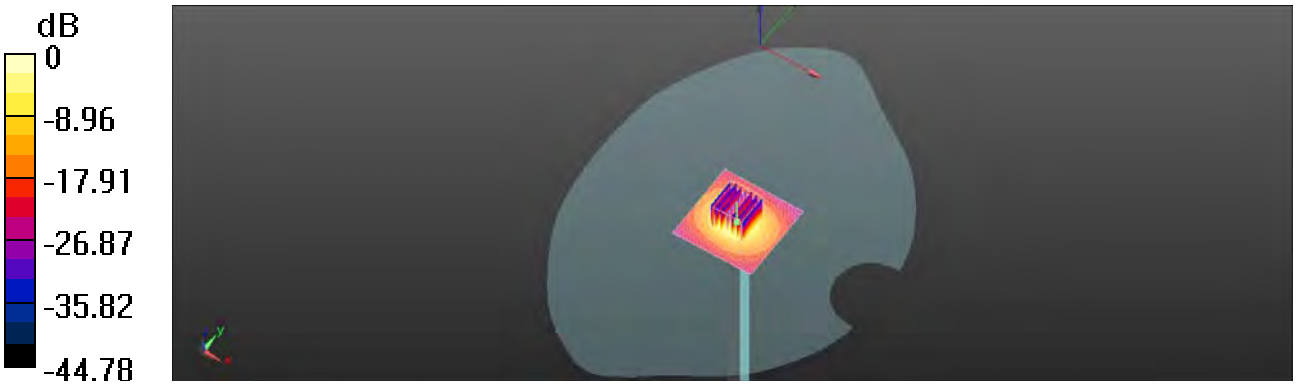
Communication System: CW; Frequency: 5200 MHz
Medium parameters used: f = 5200 MHz; σ = 4.645 S/m; ε_r = 36.445; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(5.03, 5.03, 5.03); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Pin=100mW/Area Scan (61x61x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 16.0 W/kg

Configuration/Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 62.00 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 34.9 W/kg
SAR(1 g) = 7.59 W/kg; SAR(10 g) = 2.13 W/kg
Maximum value of SAR (measured) = 16.2 W/kg



0 dB = 16.2 W/kg = 12.10 dBW/kg

Date: 2016/5/5

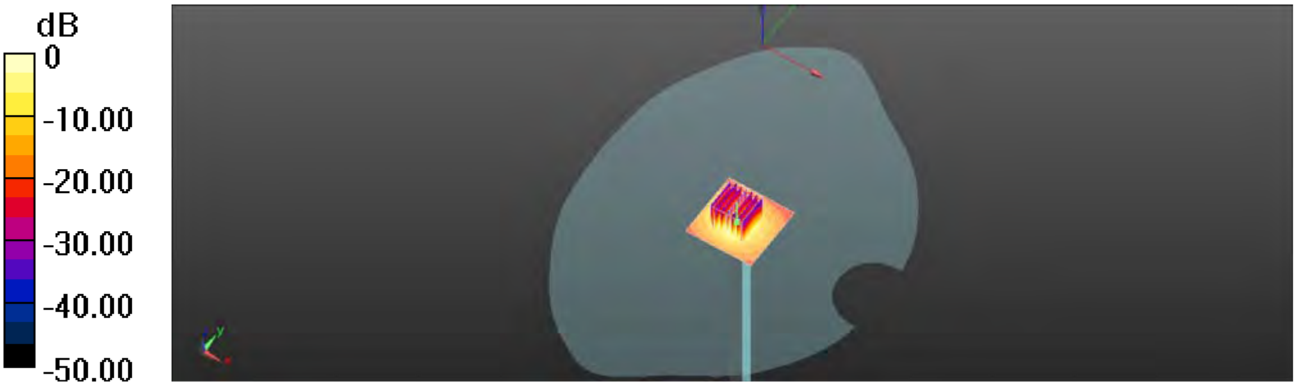
Dipole 5200 MHz_SN:1023_Body
Communication System: CW; Frequency: 5200 MHz
Medium parameters used: f = 5200 MHz; σ = 5.459 S/m; ε_r = 47.922; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.34, 4.34, 4.34); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Pin=100mW/Area Scan (51x51x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 16.3 W/kg

Configuration/Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 56.71 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 25.6 W/kg
SAR(1 g) = 7.59 W/kg; SAR(10 g) = 2.24 W/kg
Maximum value of SAR (measured) = 14.8 W/kg



0 dB = 14.8 W/kg = 11.70 dBW/kg

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Date: 2016/5/11

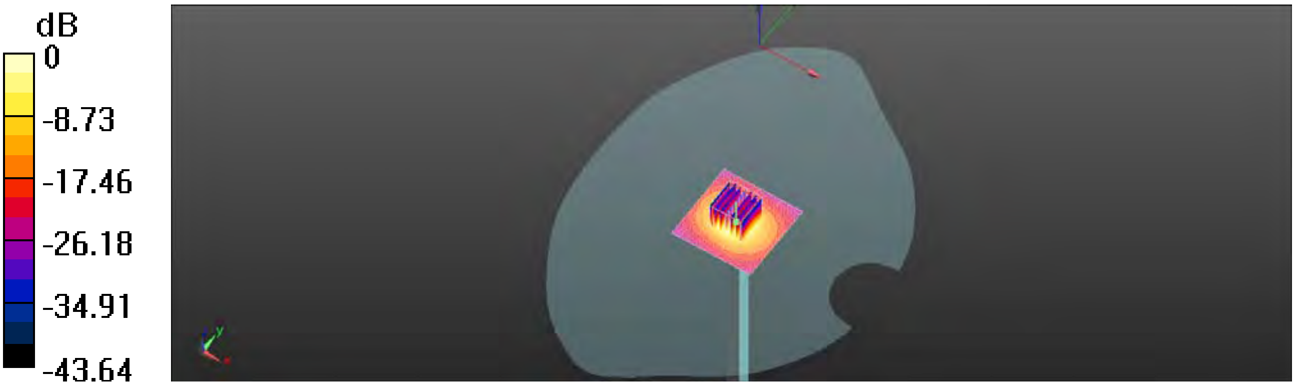
Dipole 5300 MHz_SN:1023_Head
Communication System: CW; Frequency: 5300 MHz
Medium parameters used: f = 5300 MHz; σ = 4.768 S/m; ε_r = 36.145; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(5.03, 5.03, 5.03); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Pin=100mW/Area Scan (61x61x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 16.8 W/kg

Configuration/Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 62.56 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 37.4 W/kg
SAR(1 g) = 7.9 W/kg; SAR(10 g) = 2.19 W/kg
Maximum value of SAR (measured) = 16.8 W/kg



0 dB = 16.8 W/kg = 12.25 dBW/kg

Date: 2016/5/5

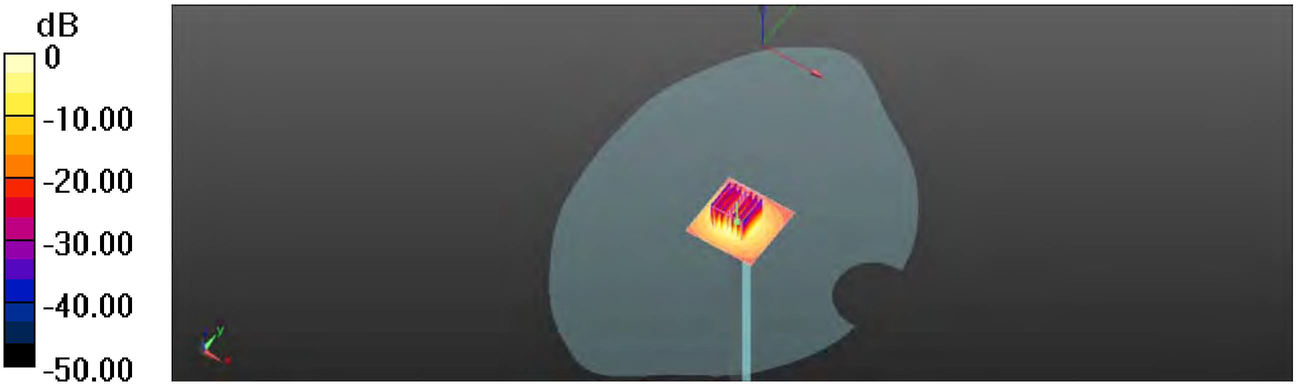
Dipole 5300 MHz_SN:1023_Body
Communication System: CW; Frequency: 5300 MHz
Medium parameters used: f = 5300 MHz; σ = 5.609 S/m; ε_r = 47.578; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.34, 4.34, 4.34); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Pin=100mW/Area Scan (51x51x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 16.4 W/kg

Configuration/Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 55.36 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 36.7 W/kg
SAR(1 g) = 7.8 W/kg; SAR(10 g) = 2.14 W/kg
Maximum value of SAR (measured) = 16.6 W/kg



0 dB = 16.6 W/kg = 12.20 dBW/kg

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Date: 2016/5/12

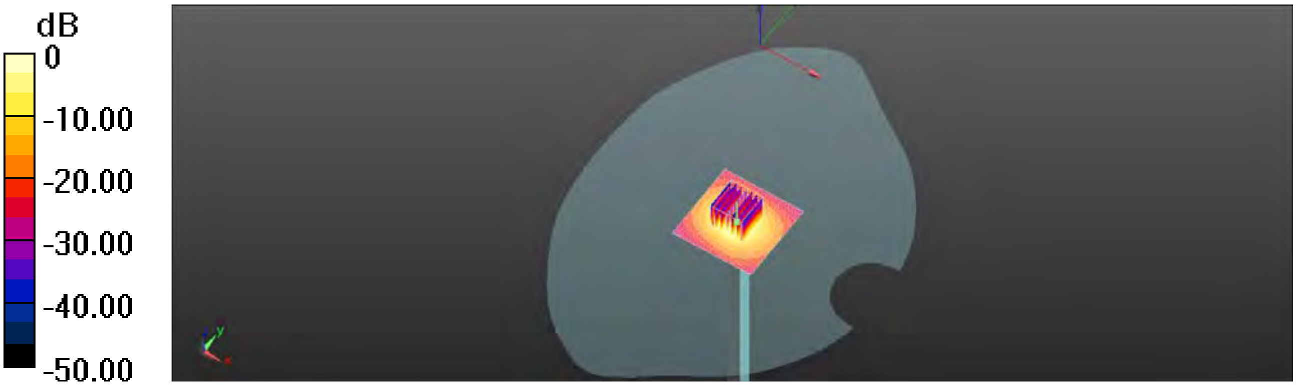
Dipole 5600 MHz_SN:1023_Head
Communication System: CW; Frequency: 5600 MHz
Medium parameters used: f = 5600 MHz; σ = 5.154 S/m; ε_r = 35.276; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.42, 4.42, 4.42); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Pin=100mW/Area Scan (61x61x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 18.6 W/kg

Configuration/Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 64.41 V/m; Power Drift = -0.16 dB
Peak SAR (extrapolated) = 42.1 W/kg
SAR(1 g) = 8.43 W/kg; SAR(10 g) = 2.34 W/kg
Maximum value of SAR (measured) = 18.2 W/kg



0 dB = 18.2 W/kg = 12.60 dBW/kg

Date: 2016/5/6

Dipole 5600 MHz_SN:1023_Body

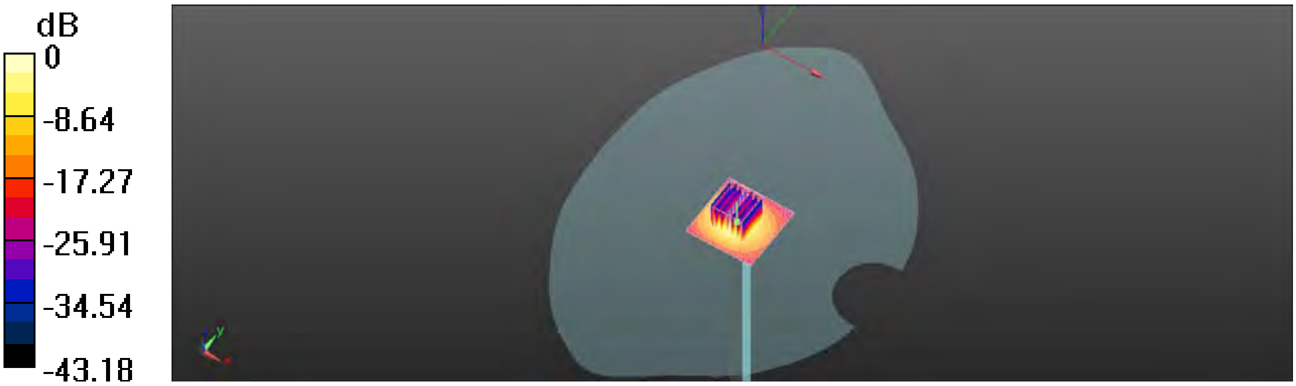
Communication System: CW; Frequency: 5600 MHz
Medium parameters used: f = 5600 MHz; σ = 6.008 S/m; ε_r = 46.572; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(3.7, 3.7, 3.7); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Pin=100mW/Area Scan (51x51x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 17.0 W/kg

Configuration/Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 55.18 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 33.3 W/kg
SAR(1 g) = 8.25 W/kg; SAR(10 g) = 2.38 W/kg
Maximum value of SAR (measured) = 16.5 W/kg



0 dB = 16.5 W/kg = 12.17 dBW/kg

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Date: 2016/5/13

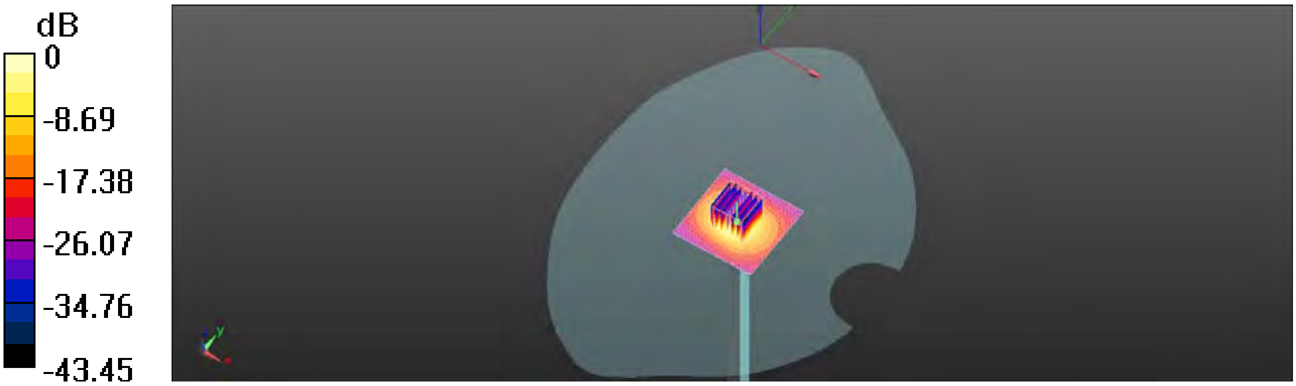
Dipole 5800 MHz_SN:1023_Head
Communication System: CW; Frequency: 5800 MHz
Medium parameters used: f = 5800 MHz; σ = 5.398 S/m; ε_r = 34.7; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.83, 4.83, 4.83); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Pin=100mW/Area Scan (61x61x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 16.1 W/kg

Configuration/Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 58.83 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 38.2 W/kg
SAR(1 g) = 7.51 W/kg; SAR(10 g) = 2.08 W/kg
Maximum value of SAR (measured) = 16.1 W/kg



0 dB = 16.1 W/kg = 12.07 dBW/kg

Date: 2016/5/6

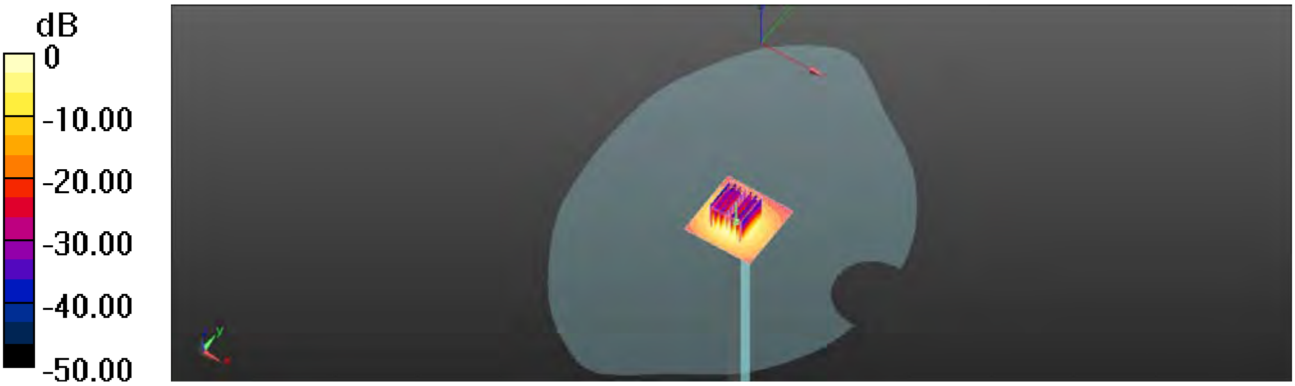
Dipole 5800 MHz_SN:1023_Body
Communication System: CW; Frequency: 5800 MHz
Medium parameters used: f = 5800 MHz; σ = 6.145 S/m; ε_r = 46.155; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.07, 4.07, 4.07); Calibrated: 2016/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2016/4/21
- Phantom: Head
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Pin=100mW/Area Scan (51x51x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 16.9 W/kg

Configuration/Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 55.43 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 36.5 W/kg
SAR(1 g) = 7.87 W/kg; SAR(10 g) = 2.15 W/kg
Maximum value of SAR (measured) = 17.1 W/kg



0 dB = 17.1 W/kg = 12.33 dBW/kg

7. DAE & Probe Calibration Certificate

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

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

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 0108

Client Auden

Certificate No: DAE4-916_Dec15

CALIBRATION CERTIFICATE

Object: DAE4 - SD 000 D04 BK - SN: 916

Calibration procedure(s): QA CAL-06.v29
Calibration procedure for the data acquisition electronics (DAE)

Calibration date: December 16, 2015

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Keithley Multimeter Type 2001	SN: 0810278	09-Sep-15 (No:17153)	Sep-16

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Auto DAE Calibration Unit	SE UWS 053 AA 1001	06-Jan-15 (in house check)	In house check: Jan-16
Calibrator Box V2.1	SE UMS 006 AA 1002	06-Jan-15 (in house check)	In house check: Jan-16

	Name	Function	Signature
Calibrated by:	Dominique Steffen	Technician	
Approved by:	Fin Bomholt	Deputy Technical Manager	

Issued: December 16, 2015

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

Certificate No: DAE4-916_Dec15 Page 1 of 5

Calibration Laboratory of
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Accreditation No.: SCS 0108

Glossary

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

Methods Applied and Interpretation of Parameters

- *DC Voltage Measurement:* Calibration Factor assessed for use in DASY system by comparison with a calibrated instrument traceable to national standards. The figure given corresponds to the full scale range of the voltmeter in the respective range.
- *Connector angle:* The angle of the connector is assessed measuring the angle mechanically by a tool inserted. Uncertainty is not required.
- The following parameters as documented in the Appendix contain technical information as a result from the performance test and require no uncertainty.
  - *DC Voltage Measurement Linearity:* Verification of the Linearity at +10% and -10% of the nominal calibration voltage. Influence of offset voltage is included in this measurement.
  - *Common mode sensitivity:* Influence of a positive or negative common mode voltage on the differential measurement.
  - *Channel separation:* Influence of a voltage on the neighbor channels not subject to an input voltage.
  - *AD Converter Values with inputs shorted:* Values on the internal AD converter corresponding to zero input voltage
  - *Input Offset Measurement:* Output voltage and statistical results over a large number of zero voltage measurements.
  - *Input Offset Current:* Typical value for information; Maximum channel input offset current, not considering the input resistance.
  - *Input resistance:* Typical value for information: DAE input resistance at the connector, during internal auto-zeroing and during measurement.
  - *Low Battery Alarm Voltage:* Typical value for information. Below this voltage, a battery alarm signal is generated.
  - *Power consumption:* Typical value for information. Supply currents in various operating modes.

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DC Voltage Measurement

A/D - Converter Resolution nominal

High Range: 1LSB = 6.1μV , full range = -100...+300 mV

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

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

Calibration Factors	X	Y	Z
High Range	403.872 ± 0.02% (k=2)	403.658 ± 0.02% (k=2)	403.787 ± 0.02% (k=2)
Low Range	3.97309 ± 1.50% (k=2)	3.98670 ± 1.50% (k=2)	3.98020 ± 1.50% (k=2)

Connector Angle

Connector Angle to be used in DASY system	237.5 ° ± 1 °

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Appendix (Additional assessments outside the scope of SCS0108)

1. DC Voltage Linearity

High Range		Reading (μV)	Difference (μV)	Error (%)
Channel X	+ Input	200030.55	-1.38	-0.00
Channel X	+ Input	20007.80	3.85	0.02
Channel X	- Input	-20002.99	2.15	-0.01
Channel Y	+ Input	200030.39	-1.74	-0.00
Channel Y	+ Input	20005.85	1.87	0.01
Channel Y	- Input	-20004.60	0.77	-0.00
Channel Z	+ Input	200030.93	-1.37	-0.00
Channel Z	+ Input	20003.67	-0.26	-0.00
Channel Z	- Input	-20007.07	-1.73	0.01

Low Range		Reading (μV)	Difference (μV)	Error (%)
Channel X	+ Input	2000.63	0.02	0.00
Channel X	+ Input	200.53	-0.21	-0.10
Channel X	- Input	-199.49	-0.20	0.10
Channel Y	+ Input	2000.95	0.45	0.02
Channel Y	+ Input	199.89	-0.68	-0.34
Channel Y	- Input	-200.17	-0.73	0.37
Channel Z	+ Input	2000.41	-0.10	-0.01
Channel Z	+ Input	199.38	-1.20	-0.60
Channel Z	- Input	-200.57	-1.09	0.55

2. Common mode sensitivity

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

	Common mode Input Voltage (mV)	High Range Average Reading (μV)	Low Range Average Reading (μV)
Channel X	200	3.88	2.49
	- 200	-1.75	-3.33
Channel Y	200	-16.49	-16.75
	- 200	15.84	15.21
Channel Z	200	-23.05	-22.82
	- 200	21.32	21.11

3. Channel separation

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

	Input Voltage (mV)	Channel X (μV)	Channel Y (μV)	Channel Z (μV)
Channel X	200	-	-1.09	-3.01
Channel Y	200	4.79	-	0.67
Channel Z	200	8.06	3.10	-

Certificate No: DAE4-916_Dec15 Page 4 of 5

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4. AD-Converter Values with inputs shorted

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

	High Range (LSB)	Low Range (LSB)
Channel X	15879	14636
Channel Y	16103	16253
Channel Z	15949	14328

5. Input Offset Measurement

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec
Input 10MΩ

	Average (μV)	min. Offset (μV)	max. Offset (μV)	Std. Deviation (μV)
Channel X	0.23	-0.60	0.95	0.33
Channel Y	0.00	-1.64	1.23	0.38
Channel Z	-0.98	-2.30	0.94	0.49

6. Input Offset Current

Nominal Input circuitry offset current on all channels: <25fA

7. Input Resistance (Typical values for information)

	Zeroing (kOhm)	Measuring (MOhm)
Channel X	200	200
Channel Y	200	200
Channel Z	200	200

8. Low Battery Alarm Voltage (Typical values for information)

Typical values	Alarm Level (VDC)
Supply (+ Vcc)	+7.9
Supply (- Vcc)	-7.6

9. Power Consumption (Typical values for information)

Typical values	Switched off (mA)	Stand by (mA)	Transmitting (mA)
Supply (+ Vcc)	+0.01	+6	+14
Supply (- Vcc)	-0.01	-8	-9

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Accreditation No.: **SCS 0108**

Client **SGS-TW (Auden)**

Certificate No: **DAE4-856_Apr16**

CALIBRATION CERTIFICATE

Object	DAE4 - SD 000 D04 BM - SN: 856
Calibration procedure(s)	QA CAL-06.v29 Calibration procedure for the data acquisition electronics (DAE)
Calibration date:	April 21, 2016

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Keithley Multimeter Type 2001	SN: 0810278	09-Sep-15 (No:17153)	Sep-16
Secondary Standards	**ID #**	**Check Date (in house)**	**Scheduled Check**
Auto DAE Calibration Unit	SE UWS 053 AA 1001	05-Jan-16 (in house check)	In house check: Jan-17
Calibrator Box V2.1	SE UMS 006 AA 1002	05-Jan-16 (in house check)	In house check: Jan-17

	Name	Function	Signature
Calibrated by:	R Mayoraz	Technician	
Approved by:	Fin Bomholt	Deputy Technical Manager	

Issued: April 21, 2016

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Accreditation No.: **SCS 0108**

Glossary

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

Methods Applied and Interpretation of Parameters

- *DC Voltage Measurement:* Calibration Factor assessed for use in DASY system by comparison with a calibrated instrument traceable to national standards. The figure given corresponds to the full scale range of the voltmeter in the respective range.
- *Connector angle:* The angle of the connector is assessed measuring the angle mechanically by a tool inserted. Uncertainty is not required.
- The following parameters as documented in the Appendix contain technical information as a result from the performance test and require no uncertainty.
  - *DC Voltage Measurement Linearity:* Verification of the Linearity at +10% and -10% of the nominal calibration voltage. Influence of offset voltage is included in this measurement.
  - *Common mode sensitivity:* Influence of a positive or negative common mode voltage on the differential measurement.
  - *Channel separation:* Influence of a voltage on the neighbor channels not subject to an input voltage.
  - *AD Converter Values with inputs shorted:* Values on the internal AD converter corresponding to zero input voltage
  - *Input Offset Measurement:* Output voltage and statistical results over a large number of zero voltage measurements.
  - *Input Offset Current:* Typical value for information; Maximum channel input offset current, not considering the input resistance.
  - *Input resistance:* Typical value for information: DAE input resistance at the connector, during internal auto-zeroing and during measurement.
  - *Low Battery Alarm Voltage:* Typical value for information. Below this voltage, a battery alarm signal is generated.
  - *Power consumption:* Typical value for information. Supply currents in various operating modes.

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DC Voltage Measurement

A/D - Converter Resolution nominal

High Range:	1LSB =	6.1µV ,	full range =	-100...+300 mV
Low Range:	1LSB =	61nV ,	full range =	-1.......+3mV

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

Calibration Factors	X	Y	Z
High Range	403.450 ± 0.02% (k=2)	404.571 ± 0.02% (k=2)	403.888 ± 0.02% (k=2)
Low Range	3.97641 ± 1.50% (k=2)	3.97912 ± 1.50% (k=2)	3.97796 ± 1.50% (k=2)

Connector Angle

Connector Angle to be used in DASY system	52.0 ° ± 1 °

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Appendix (Additional assessments outside the scope of SCS0108)

1. DC Voltage Linearity

High Range		Reading (μV)	Difference (μV)	Error (%)
Channel X	+ Input	199996.11	0.91	0.00
Channel X	+ Input	19999.18	-2.34	-0.01
Channel X	- Input	-19999.41	1.06	-0.01
Channel Y	+ Input	199997.66	2.51	0.00
Channel Y	+ Input	19998.64	-2.84	-0.01
Channel Y	- Input	-20002.21	-1.65	0.01
Channel Z	+ Input	199995.99	0.62	0.00
Channel Z	+ Input	19999.35	-2.13	-0.01
Channel Z	- Input	-20002.57	-1.88	0.01

Low Range		Reading (μV)	Difference (μV)	Error (%)
Channel X	+ Input	2001.59	0.10	0.01
Channel X	+ Input	202.26	0.40	0.20
Channel X	- Input	-197.29	0.76	-0.38
Channel Y	+ Input	2001.59	0.10	0.00
Channel Y	+ Input	200.88	-1.06	-0.52
Channel Y	- Input	-199.46	-1.39	0.70
Channel Z	+ Input	2001.75	0.28	0.01
Channel Z	+ Input	201.40	-0.39	-0.19
Channel Z	- Input	-198.94	-0.69	0.35

2. Common mode sensitivity

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

	Common mode Input Voltage (mV)	High Range Average Reading (μV)	Low Range Average Reading (μV)
Channel X	200	-14.19	-16.06
	- 200	18.03	16.49
Channel Y	200	-2.43	-2.73
	- 200	0.85	0.06
Channel Z	200	10.84	10.76
	- 200	-12.44	-12.80

3. Channel separation

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

	Input Voltage (mV)	Channel X (μV)	Channel Y (μV)	Channel Z (μV)
Channel X	200	-	1.98	-2.81
Channel Y	200	7.60	-	4.11
Channel Z	200	9.54	4.60	-

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4. AD-Converter Values with inputs shorted

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

	High Range (LSB)	Low Range (LSB)
Channel X	16223	16358
Channel Y	15947	17393
Channel Z	15877	17066

5. Input Offset Measurement

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec
Input 10MΩ

	Average (μV)	min. Offset (μV)	max. Offset (μV)	Std. Deviation (μV)
Channel X	0.86	0.04	1.50	0.29
Channel Y	-0.51	-2.36	0.33	0.41
Channel Z	-0.75	-2.04	0.01	0.30

6. Input Offset Current

Nominal Input circuitry offset current on all channels: <25fA

7. Input Resistance (Typical values for information)

	Zeroing (kOhm)	Measuring (MOhm)
Channel X	200	200
Channel Y	200	200
Channel Z	200	200

8. Low Battery Alarm Voltage (Typical values for information)

Typical values	Alarm Level (VDC)
Supply (+ Vcc)	+7.9
Supply (- Vcc)	-7.6

9. Power Consumption (Typical values for information)

Typical values	Switched off (mA)	Stand by (mA)	Transmitting (mA)
Supply (+ Vcc)	+0.01	+6	+14
Supply (- Vcc)	-0.01	-8	-9

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Accreditation No.: **SCS 0108**

Client **Auden**

Certificate No: **EX3-7346_Sep15**

CALIBRATION CERTIFICATE

Object: EX3DV4 - SN:7346

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

Calibration date: September 2, 2015

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	01-Apr-15 (No. 217-02128)	Mar-16
Power sensor E4412A	MY41498087	01-Apr-15 (No. 217-02128)	Mar-16
Reference 3 dB Attenuator	SN: S5054 (3c)	01-Apr-15 (No. 217-02129)	Mar-16
Reference 20 dB Attenuator	SN: S5277 (20x)	01-Apr-15 (No. 217-02132)	Mar-16
Reference 30 dB Attenuator	SN: S5129 (30b)	01-Apr-15 (No. 217-02133)	Mar-16
Reference Probe ES3DV2	SN: 3013	30-Dec-14 (No. ES3-3013_Dec14)	Dec-15
DAE4	SN: 660	14-Jan-15 (No. DAE4-660_Jan15)	Jan-16
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Apr-13)	In house check: Apr-16
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-14)	In house check: Oct-15

	Name	Function	Signature
Calibrated by:	Israe Elnaouq	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: September 2, 2015

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Certificate No: EX3-7346_Sep15 Page 1 of 11

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Accreditation No.: **SCS 0108**

Glossary:

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

Calibration is Performed According to the Following Standards:

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

Methods Applied and Interpretation of Parameters:

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

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Probe EX3DV4

SN:7346

Manufactured:	October 13, 2014
Repaired:	August 21, 2015
Calibrated:	September 2, 2015

Calibrated for DASY/EASY Systems

(Note: non-compatible with DASY2 system!)

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DASY/EASY - Parameters of Probe: EX3DV4 - SN:7346

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)[A]	0.53	0.52	0.49	± 10.1 %
DCP (mV)[B]	98.0	101.9	98.6	

Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB$\sqrt{\mu V}$	C	D dB	VR mV	Unc[E] (k=2)
0	CW	X	0.0	0.0	1.0	0.00	158.9	±2.7 %
		Y	0.0	0.0	1.0		166.0	
		Z	0.0	0.0	1.0		163.9	

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

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

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DASY/EASY - Parameters of Probe: EX3DV4 - SN:7346

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unc (k=2)
750	41.9	0.89	10.22	10.22	10.22	0.22	1.49	± 12.0 %
835	41.5	0.90	9.80	9.80	9.80	0.20	1.81	± 12.0 %
1750	40.1	1.37	8.60	8.60	8.60	0.42	0.80	± 12.0 %
1900	40.0	1.40	8.33	8.33	8.33	0.41	0.80	± 12.0 %
2000	40.0	1.40	8.13	8.13	8.13	0.38	0.80	± 12.0 %
2300	39.5	1.67	7.82	7.82	7.82	0.36	0.80	± 12.0 %
2450	39.2	1.80	7.27	7.27	7.27	0.42	0.80	± 12.0 %
2600	39.0	1.96	7.15	7.15	7.15	0.35	0.91	± 12.0 %
5200	36.0	4.66	5.29	5.29	5.29	0.35	1.80	± 13.1 %
5300	35.9	4.76	5.09	5.09	5.09	0.35	1.80	± 13.1 %
5500	35.6	4.96	4.66	4.66	4.66	0.40	1.80	± 13.1 %
5600	35.5	5.07	4.48	4.48	4.48	0.40	1.80	± 13.1 %
5800	35.3	5.27	4.59	4.59	4.59	0.40	1.80	± 13.1 %

[C] Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Above 5 GHz frequency validity can be extended to ± 110 MHz.
[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.
[G] Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

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EX3DV4– SN:7346 September 2, 2015

DASY/EASY - Parameters of Probe: EX3DV4 - SN:7346

Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unc (k=2)
750	55.5	0.96	10.11	10.11	10.11	0.29	1.18	± 12.0 %
835	55.2	0.97	10.05	10.05	10.05	0.45	0.88	± 12.0 %
1750	53.4	1.49	8.06	8.06	8.06	0.29	1.03	± 12.0 %
1900	53.3	1.52	7.77	7.77	7.77	0.41	0.80	± 12.0 %
2000	53.3	1.52	7.99	7.99	7.99	0.41	0.83	± 12.0 %
2300	52.9	1.81	7.57	7.57	7.57	0.32	0.80	± 12.0 %
2450	52.7	1.95	7.43	7.43	7.43	0.44	0.80	± 12.0 %
2600	52.5	2.16	7.29	7.29	7.29	0.32	0.80	± 12.0 %
5200	49.0	5.30	4.64	4.64	4.64	0.45	1.90	± 13.1 %
5300	48.9	5.42	4.42	4.42	4.42	0.45	1.90	± 13.1 %
5500	48.6	5.65	3.95	3.95	3.95	0.50	1.90	± 13.1 %
5600	48.5	5.77	3.90	3.90	3.90	0.50	1.90	± 13.1 %
5800	48.2	6.00	4.08	4.08	4.08	0.50	1.90	± 13.1 %

[C] Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Above 5 GHz frequency validity can be extended to ± 110 MHz.
[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.
[G] Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

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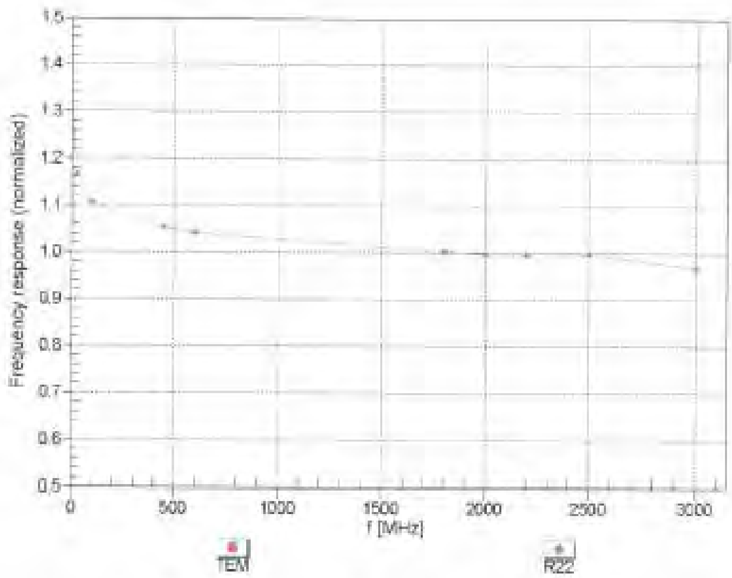
Frequency Response of E-Field

(TEM-Cell:ifi110 EXX, Waveguide: R22)



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

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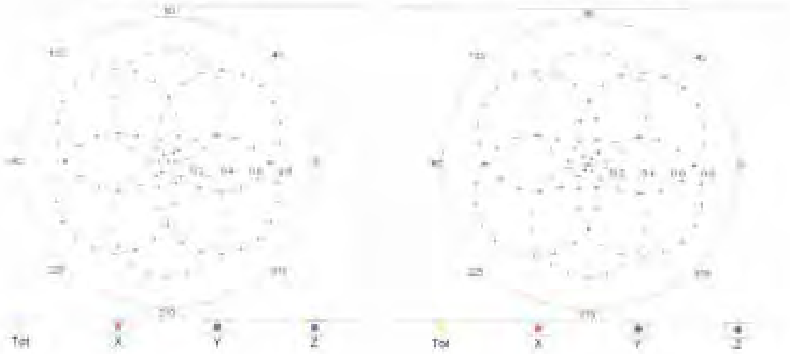
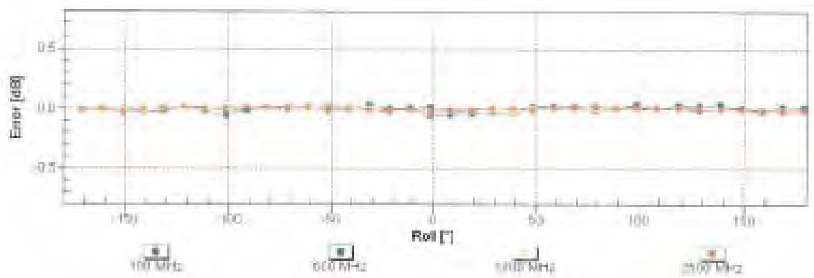
EX3DV4– SN:7346 September 2, 2015

Receiving Pattern (ϕ), ϑ = 0°

f=600 MHz,TEM f=1800 MHz,R22





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

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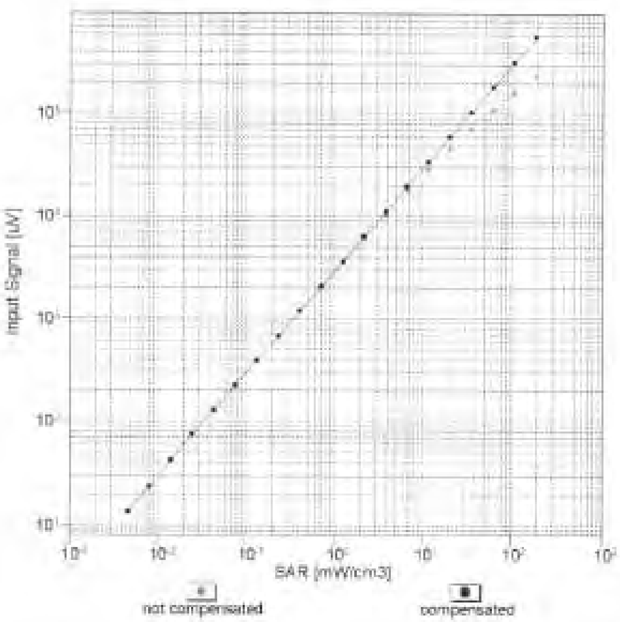
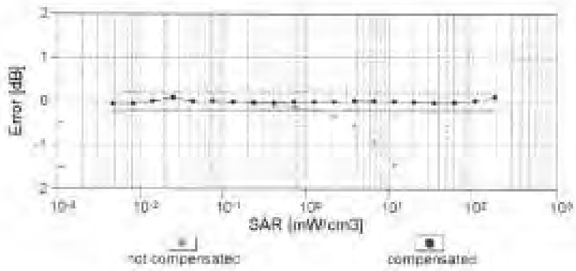
Dynamic Range f(SAR_{head})
(TEM cell , f_{eval}= 1900 MHz)





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

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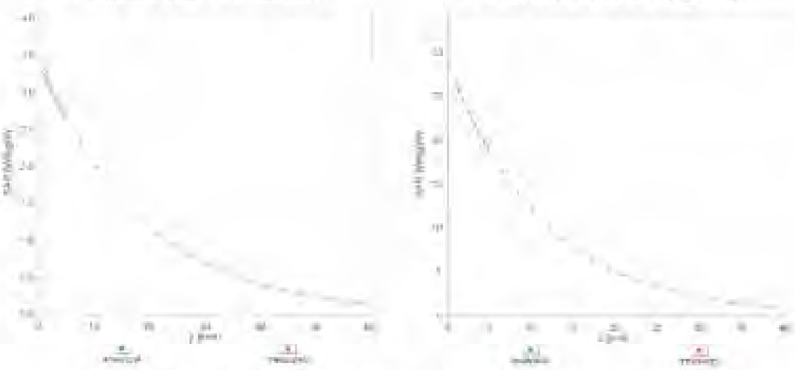
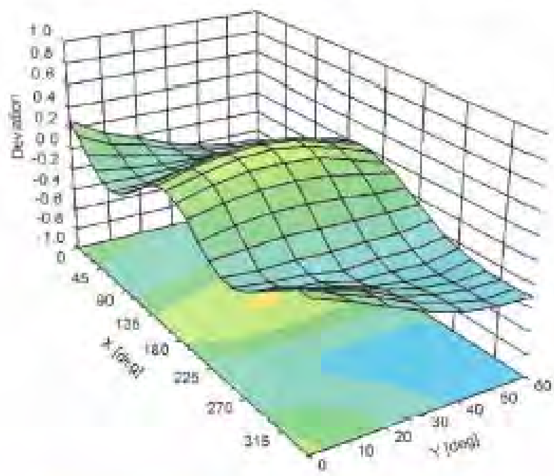
EX3DV4– SN:7346 September 2, 2015

Conversion Factor Assessment



Deviation from Isotropy in Liquid

Error (φ, ϑ), f = 900 MHz



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

Certificate No: EX3-7346_Sep15 Page 10 of 11

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DASY/EASY - Parameters of Probe: EX3DV4 - SN:7346

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	-1.3
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	9 mm
Tip Diameter	2.5 mm
Probe Tip to Sensor X Calibration Point	1 mm
Probe Tip to Sensor Y Calibration Point	1 mm
Probe Tip to Sensor Z Calibration Point	1 mm
Recommended Measurement Distance from Surface	1.4 mm

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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

Client: **SGS-TW (Auden)**

Certificate No: **EX3-3770_Apr16**

CALIBRATION CERTIFICATE

Object	EX3DV4 - SN:3770
Calibration procedure(s)	QA CAL-01.v9, QA CAL-12.v9, QA CAL-14.v4, QA CAL-23.v5, QA CAL-25.v6 Calibration procedure for dosimetric E-field probes
Calibration date:	April 27, 2016

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	06-Apr-16 (No. 217-02288/02289)	Apr-17
Power sensor NRP-Z91	SN: 103244	06-Apr-16 (No. 217-02288)	Apr-17
Power sensor NRP-Z91	SN: 103245	06-Apr-16 (No. 217-02289)	Apr-17
Reference 20 dB Attenuator	SN: S5277 (20x)	05-Apr-16 (No. 217-02293)	Apr-17
Reference Probe ES3DV2	SN: 3013	31-Dec-15 (No. ES3-3013_Dec15)	Dec-16
DAE4	SN: 660	23-Dec-15 (No. DAE4-660_Dec15)	Dec-16
Secondary Standards	ID	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB41293874	06-Apr-16 (No. 217-02285/02284)	In house check: Jun-16
Power sensor E4412A	SN: MY41498087	06-Apr-16 (No. 217-02285)	In house check: Jun-16
Power sensor E4412A	SN: 000110210	06-Apr-16 (No. 217-02284)	In house check: Jun-16
RF generator HP 8648C	SN: US3642U01700	04-Aug-99 (in house check Apr-13)	In house check: Jun-16
Network Analyzer HP 8753E	SN: US37390585	18-Oct-01 (in house check Oct-15)	In house check: Oct-16

	Name	Function	Signature
Calibrated by:	Claudio Leubler	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: April 27, 2016

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

Certificate No: EX3-3770_Apr16 Page 1 of 11

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Glossary:

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

Calibration is Performed According to the Following Standards:

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

Methods Applied and Interpretation of Parameters:

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

Certificate No: EX3-3770_Apr15 Page 2 of 11

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Probe EX3DV4

SN:3770

Manufactured: July 6, 2010
Calibrated: April 27, 2016

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

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DASY/EASY - Parameters of Probe: EX3DV4 - SN:3770

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2)^A$	0.31	0.61	0.40	± 10.1 %
DCP (mV)[B]	100.4	97.4	102.0	

Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB$\sqrt{\mu V}$	C	D dB	VR mV	Unc[E] (k=2)
0	CW	X	0.0	0.0	1.0	0.00	145.0	±2.2 %
		Y	0.0	0.0	1.0		148.7	
		Z	0.0	0.0	1.0		135.3	

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

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

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DASY/EASY - Parameters of Probe: EX3DV4 - SN:3770

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unc (k=2)
450	43.5	0.87	11.36	11.36	11.36	0.18	1.20	± 13.3 %
750	41.9	0.89	9.83	9.83	9.83	0.41	0.88	± 12.0 %
835	41.5	0.90	9.47	9.47	9.47	0.14	1.48	± 12.0 %
900	41.5	0.97	9.17	9.17	9.17	0.15	1.78	± 12.0 %
1750	40.1	1.37	8.19	8.19	8.19	0.12	1.68	± 12.0 %
1900	40.0	1.40	7.88	7.88	7.88	0.12	1.77	± 12.0 %
2000	40.0	1.40	7.91	7.91	7.91	0.14	1.61	± 12.0 %
2300	39.5	1.67	7.47	7.47	7.47	0.13	2.08	± 12.0 %
2450	39.2	1.80	7.12	7.12	7.12	0.14	2.00	± 12.0 %
2600	39.0	1.96	6.95	6.95	6.95	0.21	1.26	± 12.0 %
5250	35.9	4.71	5.03	5.03	5.03	0.40	1.80	± 13.1 %
5600	35.5	5.07	4.42	4.42	4.42	0.50	1.80	± 13.1 %
5750	35.4	5.22	4.83	4.83	4.83	0.50	1.80	± 13.1 %

[C] Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Above 5 GHz frequency validity can be extended to ± 110 MHz.
[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.
[G] Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

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DASY/EASY - Parameters of Probe: EX3DV4 - SN:3770

Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unc (k=2)
450	56.7	0.94	10.49	10.49	10.49	0.09	1.20	± 13.3 %
750	55.5	0.96	9.43	9.43	9.43	0.19	1.26	± 12.0 %
835	55.2	0.97	9.30	9.30	9.30	0.17	1.43	± 12.0 %
900	55.0	1.05	9.15	9.15	9.15	0.28	1.06	± 12.0 %
1750	53.4	1.49	7.88	7.88	7.88	0.10	2.60	± 12.0 %
1900	53.3	1.52	7.71	7.71	7.71	0.11	2.44	± 12.0 %
2000	53.3	1.52	7.82	7.82	7.82	0.18	1.42	± 12.0 %
2300	52.9	1.81	7.53	7.53	7.53	0.54	0.69	± 12.0 %
2450	52.7	1.95	7.37	7.37	7.37	0.80	0.56	± 12.0 %
2600	52.5	2.16	7.12	7.12	7.12	0.80	0.56	± 12.0 %
5250	48.9	5.36	4.34	4.34	4.34	0.50	1.90	± 13.1 %
5600	48.5	5.77	3.70	3.70	3.70	0.60	1.90	± 13.1 %
5750	48.3	5.94	4.07	4.07	4.07	0.60	1.90	± 13.1 %

[C] Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Above 5 GHz frequency validity can be extended to ± 110 MHz.
[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.
[G] Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

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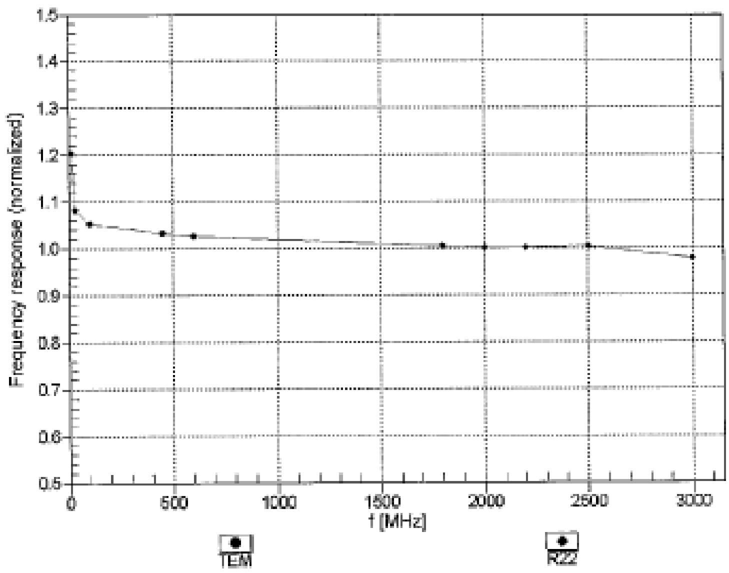
Frequency Response of E-Field

(TEM-Cell:ifi110 EXX, Waveguide: R22)



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

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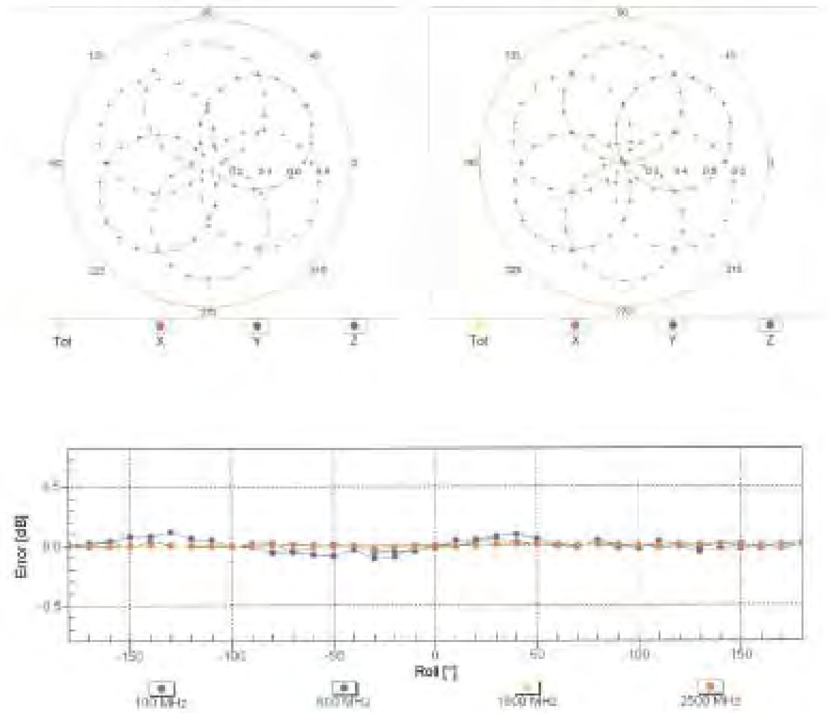
EX3DV4– SN:3770 April 27, 2016

Receiving Pattern (ϕ), ϑ = 0°

f=600 MHz,TEM f=1800 MHz,R22



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

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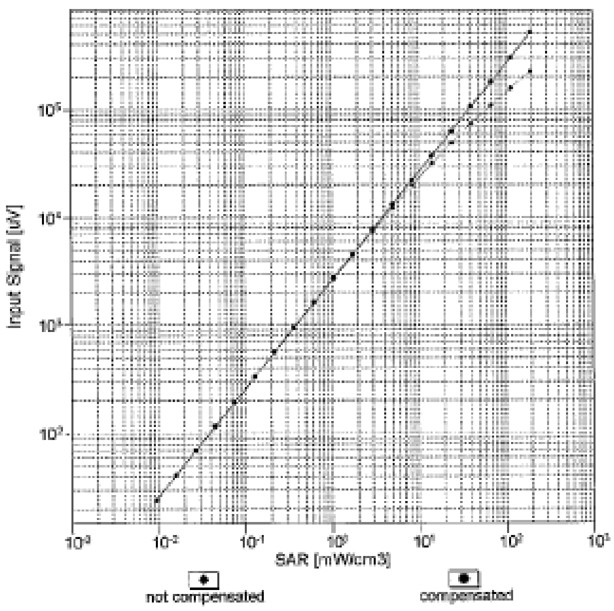
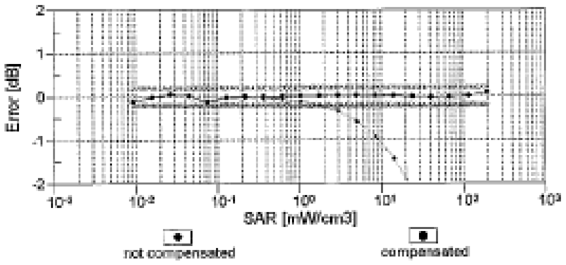
Dynamic Range f(SAR_{head})
(TEM cell , f_{eval}= 1900 MHz)





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

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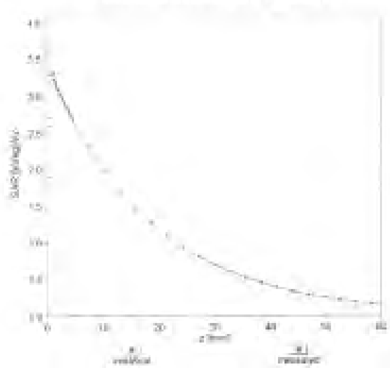
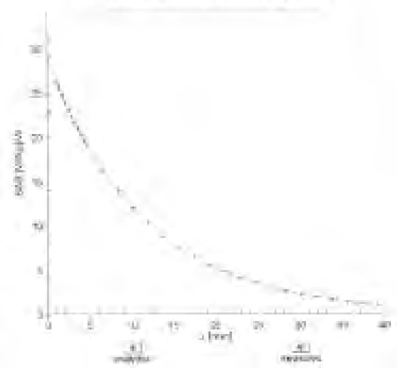
EX3DV4– SN:3770 April 27, 2016

Conversion Factor Assessment

f = 835 MHz,WGLS R9 (H_convF)

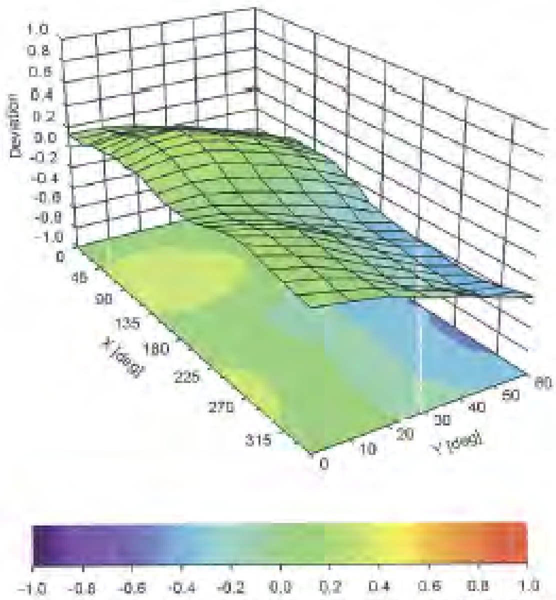


f = 1900 MHz,WGLS R22 (H_convF)



Deviation from Isotropy in Liquid

Error (φ, θ), f = 900 MHz



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

Certificate No: EX3-3770_Apr16 Page 10 of 11

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3770

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	-29.9
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	9 mm
Tip Diameter	2.5 mm
Probe Tip to Sensor X Calibration Point	1 mm
Probe Tip to Sensor Y Calibration Point	1 mm
Probe Tip to Sensor Z Calibration Point	1 mm
Recommended Measurement Distance from Surface	1.4 mm

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8. Uncertainty Budget

Measurement Uncertainty evaluation template for DUT SAR test (3-6G)

A	c	D	e		f	g	h=c * f / e	i=c * g / e	k
Source of Uncertainty	Tolerance/ Uncertainty	Probability	Div	Div Value	ci (1g)	ci (10g)	Standard uncertainty	Standard uncertainty	vi, or Veff
Measurement system									
Probe calibration	6.55%	N	1	1	1	1	6.55%	6.55%	∞
Isotropy , Axial	3.50%	R	√3	1.732	1	1	2.02%	2.02%	∞
Isotropy, Hemispherical	9.60%	R	√3	1.732	1	1	5.54%	5.54%	∞
Modulation Response	2.40%	R	√3	1.732	1	1	1.40%	1.40%	∞
Boundary Effect	1.00%	R	√3	1.732	1	1	0.58%	0.58%	∞
Linearity	4.70%	R	√3	1.732	1	1	2.71%	2.71%	∞
Detection Limits	1.00%	R	√3	1.732	1	1	0.58%	0.58%	∞
Readout Electronics	0.30%	N	1	1	1	1	0.30%	0.30%	∞
Response time	0.80%	R	√3	1.732	1	1	0.46%	0.46%	∞
Integration Time	2.60%	R	√3	1.732	1	1	1.50%	1.50%	∞
Measurement drift (class A evaluation)	1.75%	R	√3	1.732	1	1	1.01%	1.01%	∞
RF ambient condition - noise	3.00%	R	√3	1.732	1	1	1.73%	1.73%	∞
RF ambient conditions - reflections	3.00%	R	√3	1.732	1	1	1.73%	1.73%	∞
Probe positioner Mechanical restrictions	0.40%	R	√3	1.732	1	1	0.23%	0.23%	∞
Probe Positioning with respect to phantom	2.90%	R	√3	1.732	1	1	1.67%	1.67%	∞
Post-processing	1.00%	R	√3	1.732	1	1	0.58%	0.58%	∞
Max SAR Eval	1.00%	R	√3	1.732	1	1	0.58%	0.58%	∞
Test Sample related									
Test sample positioning	2.90%	N	1	1	1	1	2.90%	2.90%	M-1
Device Holder Uncertainty	3.60%	N	1	1	1	1	3.60%	3.60%	M-1
Drift of output power	5.00%	R	√3	1.732	1	1	2.89%	2.89%	∞
Phantom and Setup									
Phantom Uncertainty	4.00%	R	√3	1.732	1	1	2.31%	2.31%	∞
Liquid permittivity (mea.)	4.74%	N	1	1	0.64	0.43	3.03%	2.04%	M
Liquid Conductivity (mea.)	4.60%	N	1	1	0.6	0.49	2.76%	2.25%	M
Combined standard uncertainty		RSS					12.41%	12.09%	
Expant uncertainty (95% confidence							24.83%	24.19%	

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Measurement Uncertainty evaluation template for DUT SAR test (0.3-3G)

A	c	D	e		f	g	h=c * f / e	i=c * g / e	k
Source of Uncertainty	Tolerance/ Uncertainty	Probability	Div	Div Value	ci (1g)	ci (10g)	Standard uncertainty	Standard uncertainty	vi, or Veff
Measurement system									
Probe calibration	6.00%	N	1	1	1	1	6.00%	6.00%	∞
Isotropy , Axial	3.50%	R	√3	1.732	1	1	2.02%	2.02%	∞
Isotropy, Hemispherical	9.60%	R	√3	1.732	1	1	5.54%	5.54%	∞
Modulation Response	2.40%	R	√3	1.732	1	1	1.40%	1.40%	∞
Boundary Effect	1.00%	R	√3	1.732	1	1	0.58%	0.58%	∞
Linearity	4.70%	R	√3	1.732	1	1	2.71%	2.71%	∞
Detection Limits	1.00%	R	√3	1.732	1	1	0.58%	0.58%	∞
Readout Electronics	0.30%	N	1	1	1	1	0.30%	0.30%	∞
Response time	0.80%	R	√3	1.732	1	1	0.46%	0.46%	∞
Integration Time	2.60%	R	√3	1.732	1	1	1.50%	1.50%	∞
Measurement drift (class A evaluation)	1.75%	R	√3	1.732	1	1	1.01%	1.01%	∞
RF ambient condition - noise	3.00%	R	√3	1.732	1	1	1.73%	1.73%	∞
RF ambient conditions - reflections	3.00%	R	√3	1.732	1	1	1.73%	1.73%	∞
Probe positioner Mechanical restrictions	0.40%	R	√3	1.732	1	1	0.23%	0.23%	∞
Probe Positioning with respect to phantom	2.90%	R	√3	1.732	1	1	1.67%	1.67%	∞
Post-processing	1.00%	R	√3	1.732	1	1	0.58%	0.58%	∞
Max SAR Eval	1.00%	R	√3	1.732	1	1	0.58%	0.58%	∞
Test Sample related									
Test sample positioning	2.90%	N	1	1	1	1	2.90%	2.90%	M-1
Device Holder Uncertainty	3.60%	N	1	1	1	1	3.60%	3.60%	M-1
Drift of output power	5.00%	R	√3	1.732	1	1	2.89%	2.89%	∞
Phantom and Setup									
Phantom Uncertainty	4.00%	R	√3	1.732	1	1	2.31%	2.31%	∞
Liquid permittivity (mea.)	2.92%	N	1	1	0.64	0.43	1.87%	1.26%	M
Liquid Conductivity (mea.)	4.85%	N	1	1	0.6	0.49	2.91%	2.38%	M
Combined standard uncertainty		RSS					11.93%	11.72%	
Expant uncertainty (95% confidence							23.86%	23.44%	

9. Phantom Description

Schmid & Partner Engineering AG

s p e a g

Zeughausstrasse 43, 8004 Zurich, Switzerland
Phone +41 1 245 9700, Fax +41 1 245 9779
info@speag.com, http://www.speag.com

Certificate of Conformity / First Article Inspection

Item	SAM Twin Phantom V4.0
Type No	QD 000 P40 C
Series No	TP-1150 and higher
Manufacturer	SPEAG Zeughausstrasse 43 CH-8004 Zürich Switzerland

Tests

The series production process used allows the limitation to test of first articles.
Complete tests were made on the pre-series Type No. QD 000 P40 AA, Serial No. TP-1001 and on the series first article Type No. QD 000 P40 BA, Serial No. TP-1006. Certain parameters have been retested using further series items (called samples) or are tested at each item.

Test	Requirement	Details	Units tested
Dimensions	Compliant with the geometry according to the CAD model.	IT'IS CAD File (*)	First article, Samples
Material thickness of shell	Compliant with the requirements according to the standards	2mm +/- 0.2mm in flat and specific areas of head section	First article, Samples, TP-1314 ff.
Material thickness at ERP	Compliant with the requirements according to the standards	6mm +/- 0.2mm at ERP	First article, All items
Material parameters	Dielectric parameters for required frequencies	300 MHz – 6 GHz: Relative permittivity < 5, Loss tangent < 0.05	Material samples
Material resistivity	The material has been tested to be compatible with the liquids defined in the standards if handled and cleaned according to the instructions. Observe technical Note for material compatibility.	DEGMBE based simulating liquids	Pre-series, First article, Material samples
Sagging	Compliant with the requirements according to the standards. Sagging of the flat section when filled with tissue simulating liquid.	< 1% typical < 0.8% if filled with 155mm of HSL900 and without DUT below	Prototypes, Sample testing

Standards

[1] CENELEC EN 50361
[2] IEEE Std 1528-2003
[3] IEC 62209 Part I
[4] FCC OET Bulletin 65, Supplement C, Edition 01-01
(*) The IT'IS CAD file is derived from [2] and is also within the tolerance requirements of the shapes of the other documents.

Conformity

Based on the sample tests above, we certify that this item is in compliance with the uncertainty requirements of SAR measurements specified in standards [1] to [4].

Date 07.07.2005

Signature / Stamp

s p e a g
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Zeughausstrasse 43, 8004 Zurich, Switzerland
Phone +41 1 245 9700, Fax +41 1 245 9779
info@speag.com, http://www.speag.com

Doc No 881 – QD 000 P40 C – F Page 1 (1)

10. System Validation from Original Equipment Supplier

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

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

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 0108

Client SGS-TW (Auden)

Certificate No: D750V3-1015_Aug15

CALIBRATION CERTIFICATE

Object: D750V3 - SN: 1015

Calibration procedure(s): QA CAL-05.v9
Calibration procedure for dipole validation kits above 700 MHz

Calibration date: August 24, 2015

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	07-Oct-14 (No. 217-02020)	Oct-15
Power sensor HP 8481A	US37292783	07-Oct-14 (No. 217-02020)	Oct-15
Power sensor HP 8481A	MY41092317	07-Oct-14 (No. 217-02021)	Oct-15
Reference 20 dB Attenuator	SN: 5058 (20k)	01-Apr-15 (No. 217-02131)	Mar-16
Type-N mismatch combination	SN: 5047.2 / 06327	01-Apr-15 (No. 217-02134)	Mar-16
Reference Probe ES3DV3	SN: 3205	30-Dec-14 (No. ES3-3205_Dec14)	Dec-15
DAE4	SN: 601	17-Aug-15 (No. DAE4-601_Aug15)	Aug-16
Secondary Standards	**ID #**	**Check Date (in house)**	**Scheduled Check**
RF generator R&S SMT-06	100005	04-Aug-99 (in house check Oct-13)	In house check: Oct-16
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-14)	In house check: Oct-15

	Name	Function	Signature
Calibrated by:	Michael Weber	Laboratory Technician	M Weber
Approved by:	Katja Pokovic	Technical Manager	

Issued: August 24, 2015

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

Certificate No: D750V3-1015_Aug15 Page 1 of 8

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

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Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 0108

Glossary:

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

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Measurement Conditions

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

DASY Version	DASY5	V52.8.8
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	750 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	41.9	0.89 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	42.1 ± 6 %	0.91 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.07 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**8.15 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.35 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**5.33 W/kg ± 16.5 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Body TSL parameters	22.0 °C	55.5	0.96 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	56.3 ± 6 %	1.00 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm^3 (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	2.19 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**8.52 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.44 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**5.63 W/kg ± 16.5 % (k=2)**

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Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	52.2 Ω - 1.1 jΩ
Return Loss	- 32.5 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	48.5 Ω - 2.4 jΩ
Return Loss	- 30.9 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.036 ns

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	March 22, 2010

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DASY5 Validation Report for Head TSL

Date: 21.08.2015

Test Laboratory: SPEAG, Zurich, Switzerland

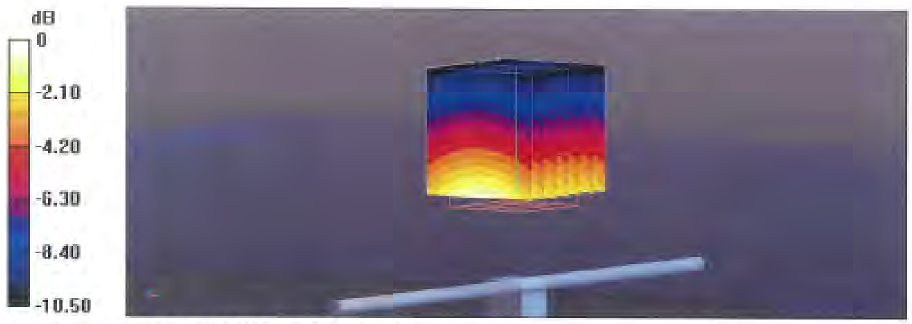
DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3 - SN: 1015

Communication System: UID 0 - CW; Frequency: 750 MHz
Medium parameters used: f = 750 MHz; σ = 0.91 S/m; ε_r = 42.1; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.44, 6.44, 6.44); Calibrated: 30.12.2014;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 17.08.2015
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 53.39 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 3.07 W/kg
SAR(1 g) = 2.07 W/kg; SAR(10 g) = 1.35 W/kg
Maximum value of SAR (measured) = 2.43 W/kg



0 dB = 2.43 W/kg = 3.86 dBW/kg

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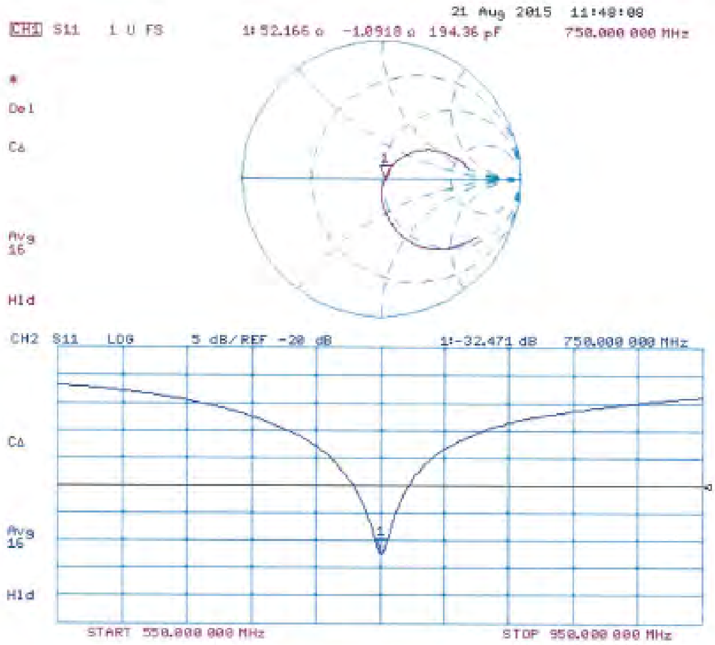
Impedance Measurement Plot for Head TSL



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DASY5 Validation Report for Body TSL

Date: 24.08.2015

Test Laboratory: SPEAG, Zurich, Switzerland

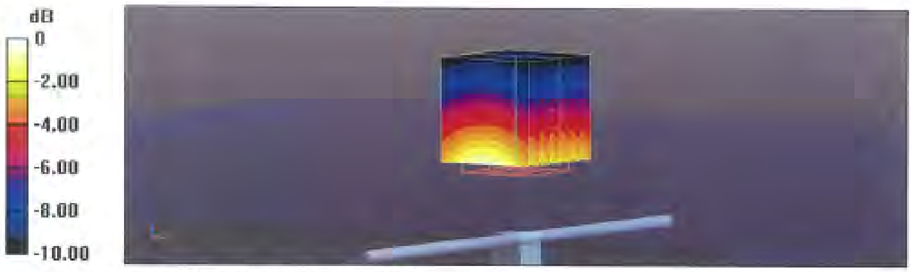
DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3 - SN: 1015

Communication System: UID 0 - CW; Frequency: 750 MHz
Medium parameters used: f = 750 MHz; σ = 1 S/m; ε_r = 56.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.21, 6.21, 6.21); Calibrated: 30.12.2014;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 17.08.2015
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

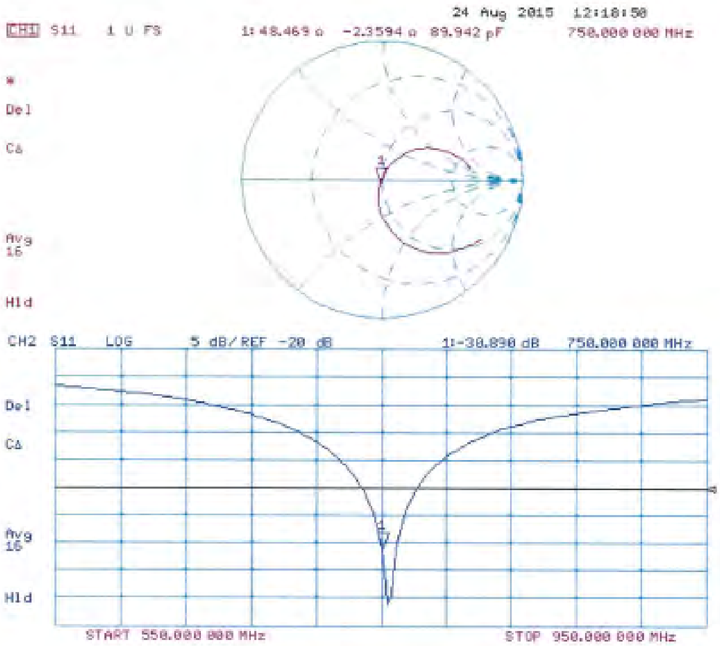
Dipole Calibration for Body Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 52.22 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 3.19 W/kg
SAR(1 g) = 2.19 W/kg; SAR(10 g) = 1.44 W/kg
Maximum value of SAR (measured) = 2.56 W/kg



0 dB = 2.56 W/kg = 4.08 dBW/kg

Certificate No: D750V3-1015_Aug15 Page 7 of 8

Impedance Measurement Plot for Body TSL



Certificate No: D750V3-1015_Aug15 Page 8 of 8

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Accreditation No.: **SCS 0108**

Client **SGS-TW (Auden)**

Certificate No: **D835V2-4d063_Aug15**

CALIBRATION CERTIFICATE

Object	D835V2 - SN: 4d063
Calibration procedure(s)	QA CAL-05.v9 Calibration procedure for dipole validation kits above 700 MHz
Calibration date:	August 24, 2015

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	07-Oct-14 (No. 217-02020)	Oct-15
Power sensor HP 8481A	US37292783	07-Oct-14 (No. 217-02020)	Oct-15
Power sensor HP 8481A	MY41092317	07-Oct-14 (No. 217-02021)	Oct-15
Reference 20 dB Attenuator	SN: 5058 (20k)	01-Apr-15 (No. 217-02131)	Mar-16
Type-N mismatch combination	SN: 5047.2 / 06327	01-Apr-15 (No. 217-02134)	Mar-16
Reference Probe ES3DV3	SN: 3205	30-Dec-14 (No. ES3-3205_Dec14)	Dec-15
DAE4	SN: 601	17-Aug-15 (No. DAE4-601_Aug15)	Aug-16

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator R&S SMT-06	100005	04-Aug-99 (in house check Oct-13)	In house check: Oct-16
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-14)	In house check: Oct-15

	Name	Function	Signature
Calibrated by:	Michael Weber	Laboratory Technician	M. Weber
Approved by:	Katja Pokovic	Technical Manager	

Issued: August 25, 2015

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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 0108

Glossary:

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

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Measurement Conditions

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

DASY Version	DASY5	V52.8.8
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	835 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	41.5	0.90 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	41.9 ± 6 %	0.93 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.33 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**9.11 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.52 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**5.97 W/kg ± 16.5 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Body TSL parameters	22.0 °C	55.2	0.97 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	56.1 ± 6 %	1.02 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm^3 (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	2.40 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**9.28 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.57 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**6.11 W/kg ± 16.5 % (k=2)**

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Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	51.3 Ω - 1.7 jΩ
Return Loss	- 33.4 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	47.9 Ω - 2.7 jΩ
Return Loss	- 29.1 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.394 ns

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	November 27, 2006

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DASY5 Validation Report for Head TSL

Date: 21.08.2015

Test Laboratory: SPEAG, Zurich, Switzerland

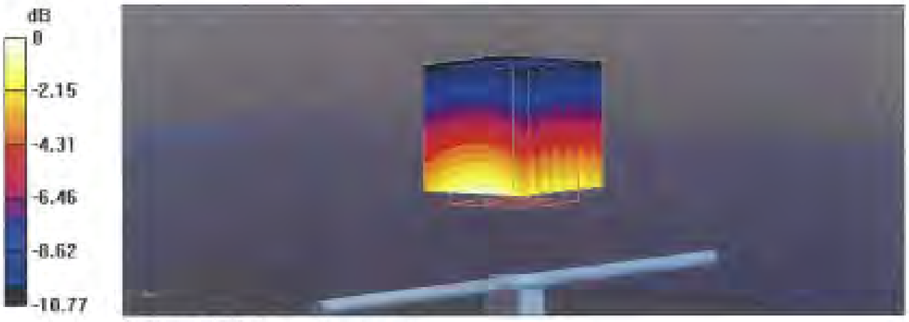
DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 4d063

Communication System: UID 0 - CW; Frequency: 835 MHz
Medium parameters used: f = 835 MHz; σ = 0.93 S/m; ε_r = 41.9; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.2, 6.2, 6.2); Calibrated: 30.12.2014;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 17.08.2015
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 55.92 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 3.44 W/kg
SAR(1 g) = 2.33 W/kg; SAR(10 g) = 1.52 W/kg
Maximum value of SAR (measured) = 2.73 W/kg



0 dB = 2.73 W/kg = 4.36 dBW/kg

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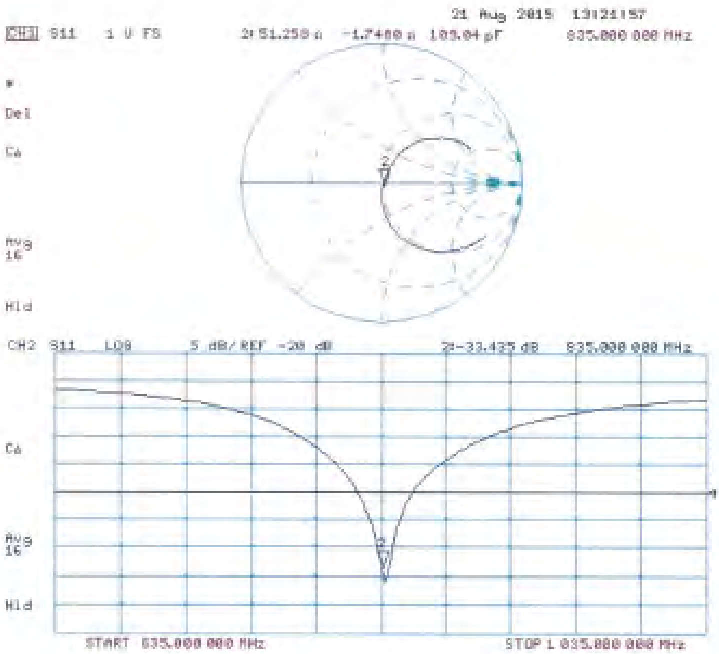
Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 24.08.2015

Test Laboratory: SPEAG, Zurich, Switzerland

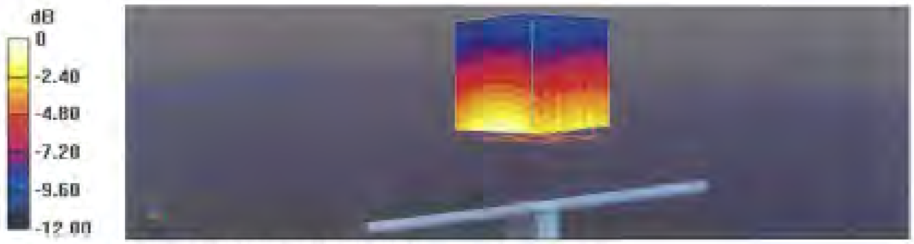
DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 4d063

Communication System: UID 0 - CW; Frequency: 835 MHz
Medium parameters used: f = 835 MHz; σ = 1.02 S/m; ε_r = 56.1; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.17, 6.17, 6.17); Calibrated: 30.12.2014;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 17.08.2015
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Dipole Calibration for Body Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 54.07 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 3.52 W/kg
SAR(1 g) = 2.4 W/kg; SAR(10 g) = 1.57 W/kg
Maximum value of SAR (measured) = 2.81 W/kg



0 dB = 2.81 W/kg = 4.49 dBW/kg

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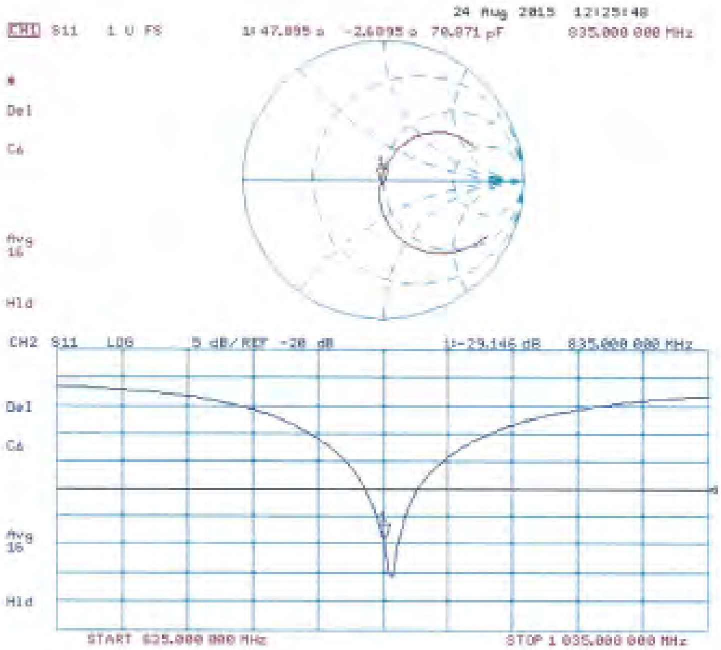
Impedance Measurement Plot for Body TSL



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Accreditation No.: **SCS 0108**

Client **SGS-TW (Auden)**

Certificate No: **D1750V2-1008_Aug15**

CALIBRATION CERTIFICATE

Object	D1750V2 - SN: 1008
Calibration procedure(s)	QA CAL-05.v9 Calibration procedure for dipole validation kits above 700 MHz
Calibration date:	August 20, 2015

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	07-Oct-14 (No. 217-02020)	Oct-15
Power sensor HP 8481A	US37292783	07-Oct-14 (No. 217-02020)	Oct-15
Power sensor HP 8481A	MY41092317	07-Oct-14 (No. 217-02021)	Oct-15
Reference 20 dB Attenuator	SN: 5058 (20k)	01-Apr-15 (No. 217-02131)	Mar-16
Type-N mismatch combination	SN: 5047.2 / 06327	01-Apr-15 (No. 217-02134)	Mar-16
Reference Probe ES3DV3	SN: 3205	30-Dec-14 (No. ES3-3205_Dec14)	Dec-15
DAE4	SN: 601	17-Aug-15 (No. DAE4-601_Aug15)	Aug-16

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator R&S SMT-06	100005	04-Aug-99 (in house check Oct-13)	In house check: Oct-16
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-14)	In house check: Oct-15

	Name	Function	Signature
Calibrated by:	Michael Weber	Laboratory Technician	M.Weber
Approved by:	Katja Pokovic	Technical Manager	

Issued: August 21, 2015

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Accreditation No.: **SCS 0108**

Glossary:

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

Measurement Conditions

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

DASY Version	DASY5	V52.8.8
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1750 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	40.1	1.37 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	39.8 ± 6 %	1.36 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	9.12 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**36.6 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	4.85 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**19.4 W/kg ± 16.5 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	53.4	1.49 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	52.1 ± 6 %	1.48 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm^3 (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	9.36 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**37.4 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	250 mW input power	5.05 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**20.2 W/kg ± 16.5 % (k=2)**

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Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	50.5 Ω + 1.1 jΩ
Return Loss	- 38.7 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	46.9 Ω + 1.0 jΩ
Return Loss	- 29.5 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.221 ns

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	February 11, 2009

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DASY5 Validation Report for Head TSL

Date: 20.08.2015

Test Laboratory: SPEAG, Zurich, Switzerland

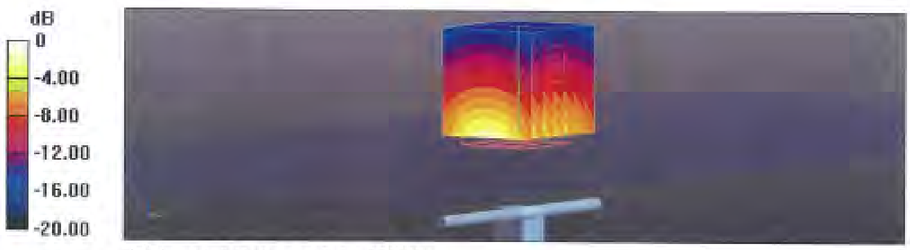
DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN: 1008

Communication System: UID 0 - CW; Frequency: 1750 MHz
Medium parameters used: f = 1750 MHz; σ = 1.36 S/m; ε_r = 39.8; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(5.2, 5.2, 5.2); Calibrated: 30.12.2014;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 17.08.2015
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

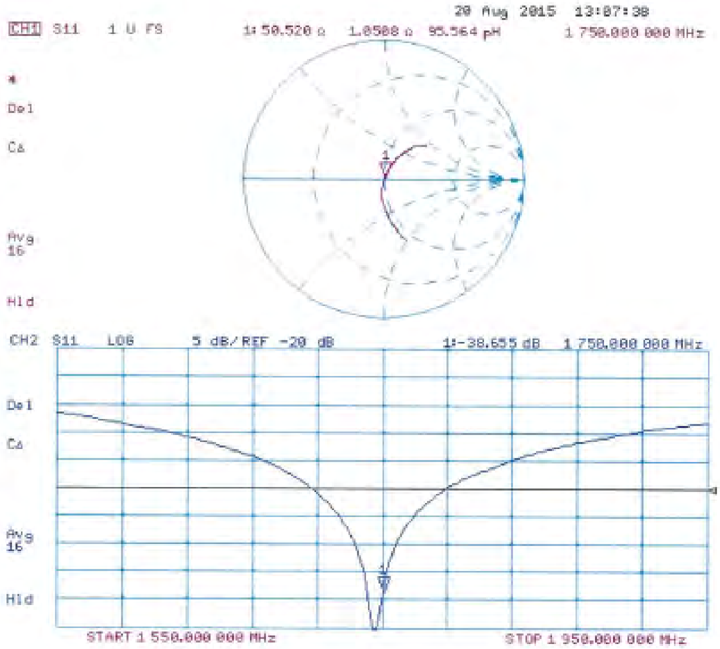
Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 95.15 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 16.3 W/kg
SAR(1 g) = 9.12 W/kg; SAR(10 g) = 4.85 W/kg
Maximum value of SAR (measured) = 11.5 W/kg



0 dB = 11.5 W/kg = 10.61 dBW/kg

Certificate No: D1750V2-1008_Aug15 Page 5 of 8

Impedance Measurement Plot for Head TSL



Certificate No: D1750V2-1008_Aug15 Page 6 of 8

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DASY5 Validation Report for Body TSL

Date: 20.08.2015

Test Laboratory: SPEAG, Zurich, Switzerland

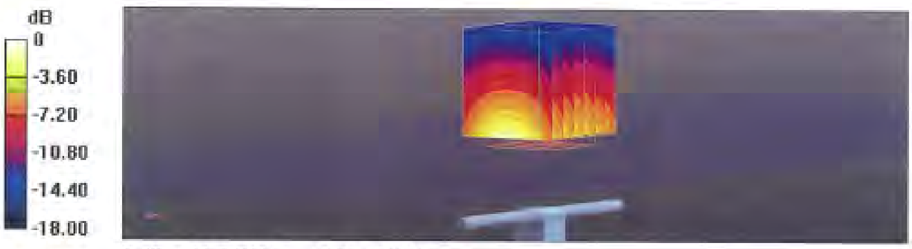
DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN: 1008

Communication System: UID 0 - CW; Frequency: 1750 MHz
Medium parameters used: f = 1750 MHz; σ = 1.48 S/m; ε_r = 52.1; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.88, 4.88, 4.88); Calibrated: 30.12.2014;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 17.08.2015
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 93.12 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 16.1 W/kg
SAR(1 g) = 9.36 W/kg; SAR(10 g) = 5.05 W/kg
Maximum value of SAR (measured) = 11.8 W/kg



0 dB = 11.8 W/kg = 10.72 dBW/kg

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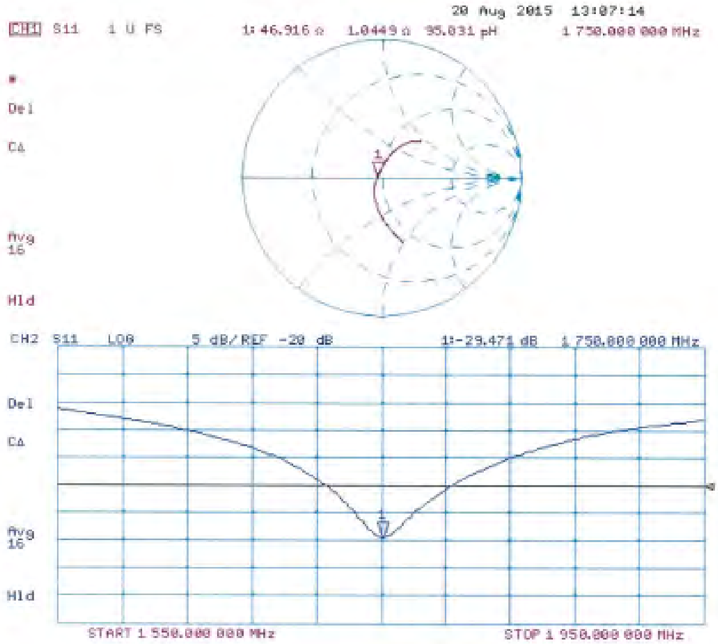
Impedance Measurement Plot for Body TSL



Certificate No: D1750V2-1008_Aug15 Page 8 of 8

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Accreditation No.: **SCS 0108**

Client **SGS-TW (Auden)**

Certificate No: **D1900V2-5d027_Apr16**

CALIBRATION CERTIFICATE

Object	D1900V2 - SN: 5d027
Calibration procedure(s)	QA CAL-05.v9 Calibration procedure for dipole validation kits above 700 MHz
Calibration date	April 25, 2016

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	06-Apr-16 (No. 217-02288/02289)	Apr-17
Power sensor NRP-Z91	SN: 103244	06-Apr-16 (No. 217-02288)	Apr-17
Power sensor NRP-Z91	SN: 103245	06-Apr-16 (No. 217-02289)	Apr-17
Reference 20 dB Attenuator	SN: 5058 (20k)	05-Apr-16 (No. 217-02292)	Apr-17
Type-N mismatch combination	SN: 5047.2 / 06327	05-Apr-16 (No. 217-02295)	Apr-17
Reference Probe EX3DV4	SN: 7349	31-Dec-15 (No. EX3-7349_Dec15)	Dec-16
DAE4	SN: 601	30-Dec-15 (No. DAE4-601_Dec15)	Dec-16

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter EPM-442A	SN: GB37480704	07-Oct-15 (No. 217-02222)	In house check: Oct-16
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (No. 217-02222)	In house check: Oct-16
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (No. 217-02223)	In house check: Oct-16
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Jun-15)	In house check: Oct-16
Network Analyzer HP 8753E	SN: US37390585	18-Oct-01 (in house check Oct-15)	In house check: Oct-16

	Name	Function	Signature
Calibrated by:	Michael Weber	Laboratory Technician	M.Weber
Approved by:	Katja Pokovic	Technical Manager	

Issued: April 26, 2016

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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

Glossary:

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

a) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

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Measurement Conditions

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

DASY Version	DASY5	V52.8.8
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1900 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	40.0	1.40 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	40.0 ± 6 %	1.37 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	9.55 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**38.7 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	5.03 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**20.3 W/kg ± 16.5 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	53.3	1.52 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	52.9 ± 6 %	1.49 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm^3 (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	9.83 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**39.7 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	250 mW input power	5.21 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**21.0 W/kg ± 16.5 % (k=2)**

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Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	50.8 Ω + 4.4 jΩ
Return Loss	- 27.0 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	46.5 Ω + 5.6 jΩ
Return Loss	- 23.3 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.196 ns

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	December 17, 2002

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DASY5 Validation Report for Head TSL

Date: 25.04.2016

Test Laboratory: SPEAG, Zurich, Switzerland

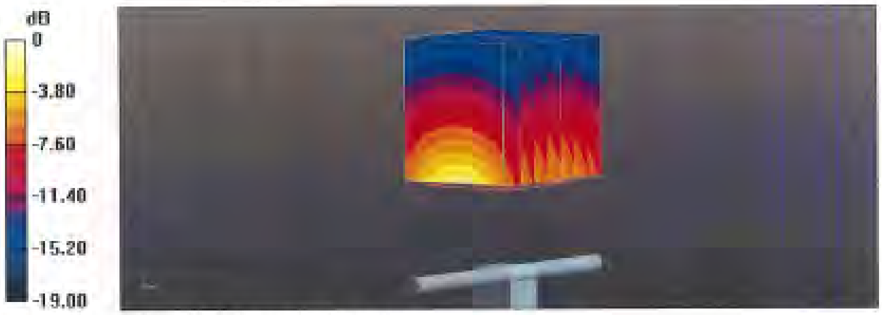
DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 5d027

Communication System: UID 0 - CW; Frequency: 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.37 S/m; ε_r = 40; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(8.2, 8.2, 8.2); Calibrated: 31.12.2015;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.12.2015
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7372)

Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 106.9 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 17.2 W/kg
SAR(1 g) = 9.55 W/kg; SAR(10 g) = 5.03 W/kg
Maximum value of SAR (measured) = 14.3 W/kg



0 dB = 14.3 W/kg = 11.55 dBW/kg

Certificate No: D1900V2-5d027_Apr16 Page 5 of 8

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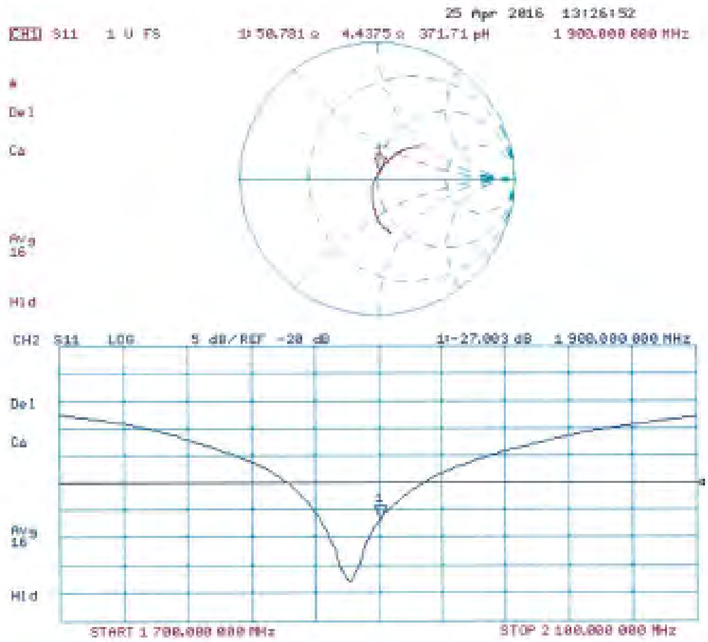
Impedance Measurement Plot for Head TSL



Certificate No: D1900V2-5d027_Apr16 Page 6 of 8

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DASY5 Validation Report for Body TSL

Date: 25.04.2016

Test Laboratory: SPEAG, Zurich, Switzerland

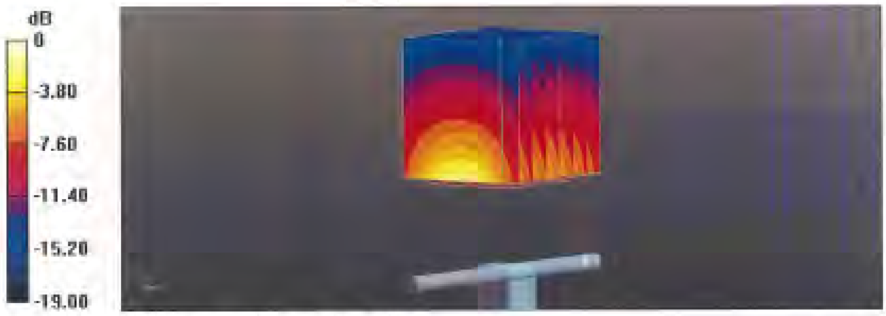
DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 5d027

Communication System: UID 0 - CW; Frequency: 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.49 S/m; ε_r = 52.9; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(8.03, 8.03, 8.03); Calibrated: 31.12.2015;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.12.2015
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7372)

Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 104.2 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 17.2 W/kg
SAR(1 g) = 9.83 W/kg; SAR(10 g) = 5.21 W/kg
Maximum value of SAR (measured) = 14.7 W/kg



0 dB = 14.7 W/kg = 11.67 dBW/kg

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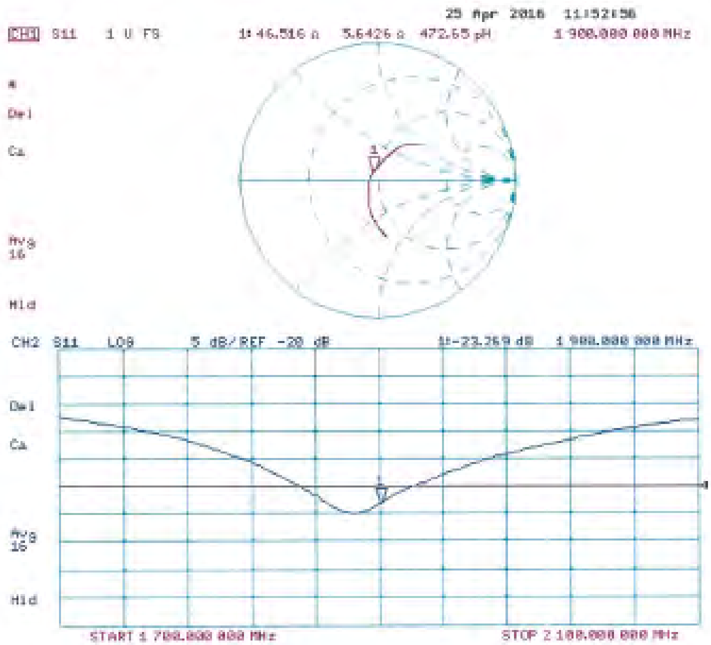
Impedance Measurement Plot for Body TSL



Certificate No: D1900V2-5d027_Apr16 Page 8 of 8

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Accreditation No.: **SCS 0108**

Client **SGS-TW (Auden)**

Certificate No: **D2300V2-1023_Aug15**

CALIBRATION CERTIFICATE

Object	D2300V2 - SN:1023
Calibration procedure(s)	QA CAL-05.v9 Calibration procedure for dipole validation kits above 700 MHz
Calibration date:	August 19, 2015

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	07-Oct-14 (No. 217-02020)	Oct-15
Power sensor HP 8481A	US37292783	07-Oct-14 (No. 217-02020)	Oct-15
Power sensor HP 8481A	MY41092317	07-Oct-14 (No. 217-02021)	Oct-15
Reference 20 dB Attenuator	SN: 5058 (20k)	01-Apr-15 (No. 217-02131)	Mar-16
Type-N mismatch combination	SN: 5047.2 / 06327	01-Apr-15 (No. 217-02134)	Mar-16
Reference Probe ES3DV3	SN: 3205	30-Dec-14 (No. ES3-3205_Dec14)	Dec-15
DAE4	SN: 601	17-Aug-15 (No. DAE4-601_Aug15)	Aug-16

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator R&S SMT 06	100005	04-Aug-99 (in house check Oct-13)	In house check: Oct-16
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-14)	In house check: Oct-15

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

Issued: August 21, 2015

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Certificate No: D2300V2-1023_Aug15 Page 1 of 8

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Accreditation No.: **SCS 0108**

Glossary:

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

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Measurement Conditions

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

DASY Version	DASY5	V52.8.8
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	2300 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	39.5	1.67 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	39.7 ± 6 %	1.71 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	12.4 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**49.1 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.03 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**24.0 W/kg ± 16.5 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	52.9	1.81 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	53.6 ± 6 %	1.83 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm^3 (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	12.1 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**48.3 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	250 mW input power	5.87 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**23.5 W/kg ± 16.5 % (k=2)**

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Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	47.9 Ω - 1.3 jΩ
Return Loss	- 31.8 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	45.0 Ω - 0.6 jΩ
Return Loss	- 25.5 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.171 ns

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	March 30, 2009

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DASY5 Validation Report for Head TSL

Date: 19.08.2015

Test Laboratory: SPEAG, Zurich, Switzerland

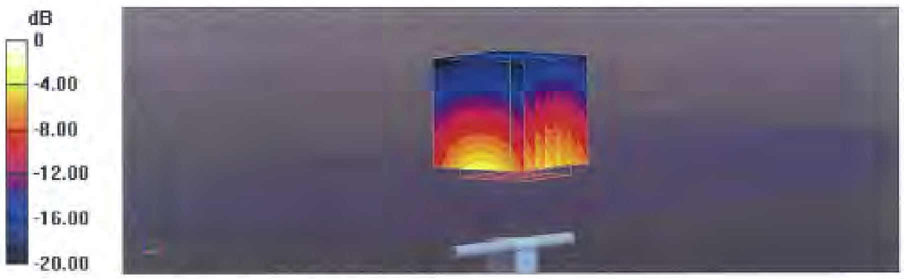
DUT: Dipole 2300 MHz; Type: D2300V2; Serial: D2300V2 - SN:1023

Communication System: UID 0 - CW; Frequency: 2300 MHz
Medium parameters used: f = 2300 MHz; $\sigma = 1.71$ S/m; $\varepsilon_r = 39.7$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.75, 4.75, 4.75); Calibrated: 30.12.2014;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 17.08.2015
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 101.5 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 23.5 W/kg
SAR(1 g) = 12.4 W/kg; SAR(10 g) = 6.03 W/kg
Maximum value of SAR (measured) = 16.1 W/kg



0 dB = 16.1 W/kg = 12.07 dBW/kg

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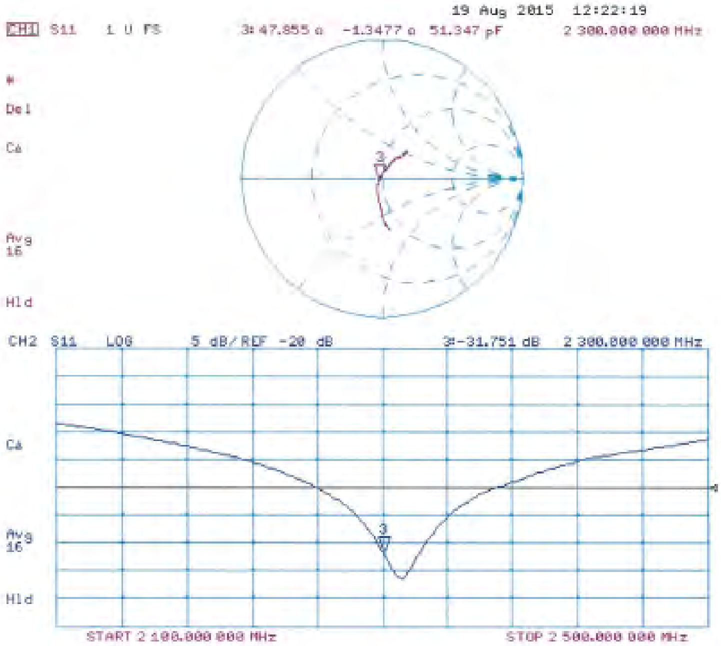
Impedance Measurement Plot for Head TSL



Certificate No: D2300V2-1023_Aug15 Page 6 of 8

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DASY5 Validation Report for Body TSL

Date: 19.08.2015

Test Laboratory: SPEAG, Zurich, Switzerland

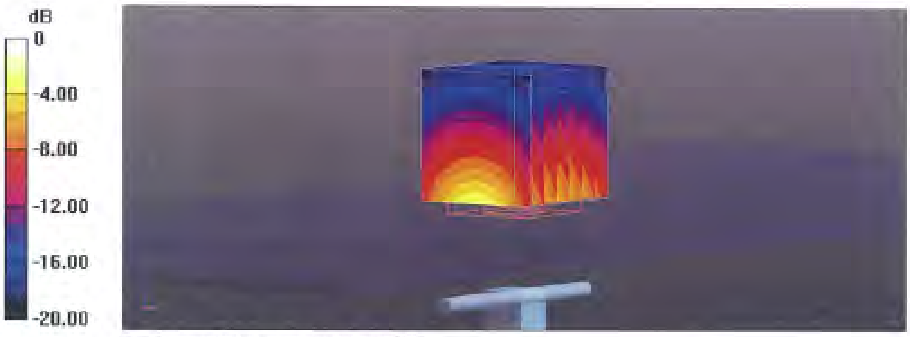
DUT: Dipole 2300 MHz; Type: D2300V2; Serial: D2300V2 - SN:1023

Communication System: UID 0 - CW; Frequency: 2300 MHz
Medium parameters used: f = 2300 MHz; $\sigma = 1.83$ S/m; $\varepsilon_r = 53.6$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.44, 4.44, 4.44); Calibrated: 30.12.2014;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 17.08.2015
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 96.46 V/m; Power Drift = -0.00 dB
Peak SAR (extrapolated) = 23.2 W/kg
SAR(1 g) = 12.1 W/kg; SAR(10 g) = 5.87 W/kg
Maximum value of SAR (measured) = 15.8 W/kg



0 dB = 15.8 W/kg = 11.99 dBW/kg

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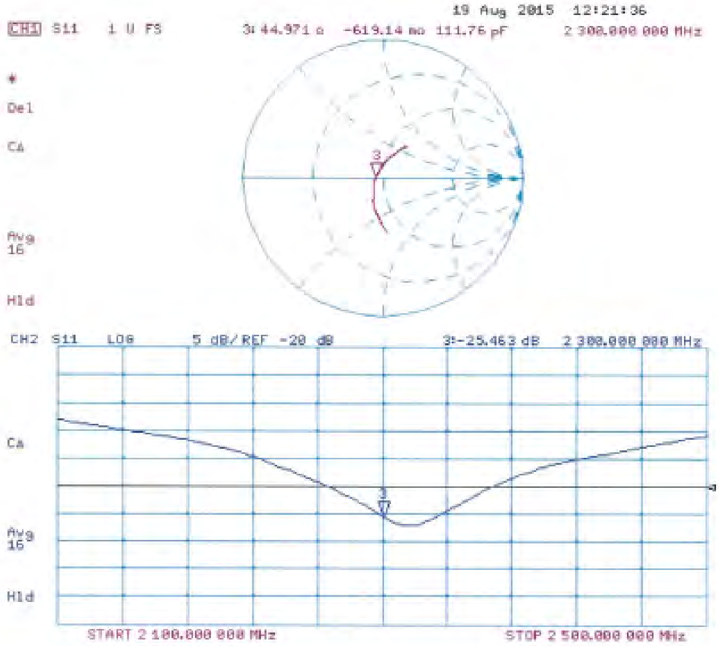
Impedance Measurement Plot for Body TSL



Certificate No: D2300V2-1023_Aug15 Page 8 of 8

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Accreditation No.: SCS 0108

Client SGS-TW (Auden)

Certificate No: D2450V2-727_Apr16

CALIBRATION CERTIFICATE

Object	D2450V2 - SN:727
Calibration procedure(s)	QA CAL-05.v9 Calibration procedure for dipole validation kits above 700 MHz
Calibration date:	April 19, 2016

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	06-Apr-16 (No. 217-02288/02289)	Apr-17
Power sensor NRP-Z91	SN: 103244	06-Apr-16 (No. 217-02288)	Apr-17
Power sensor NRP-Z91	SN: 103245	06-Apr-16 (No. 217-02289)	Apr-17
Reference 20 dB Attenuator	SN: 5058 (20k)	05-Apr-16 (No. 217-02292)	Apr-17
Type-N mismatch combination	SN: 5047.2 / 06327	05-Apr-16 (No. 217-02295)	Apr-17
Reference Probe EX3DV4	SN: 7349	31-Dec-15 (No. EX3-7349_Dec15)	Dec-16
DAE4	SN: 601	30-Dec-15 (No. DAE4-601_Dec15)	Dec-16

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter EPM-442A	SN: GB37480704	07-Oct-15 (No. 217-02222)	In house check: Oct-16
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (No. 217-02222)	In house check: Oct-16
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (No. 217-02223)	In house check: Oct-16
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Jun-15)	In house check: Oct-16
Network Analyzer HP 8753E	SN: US37390585	18-Oct-01 (in house check Oct-15)	In house check: Oct-16

	Name	Function	Signature
Calibrated by:	Michael Weber	Laboratory Technician	M.Weber
Approved by:	Katja Pokovic	Technical Manager	

Issued: April 20, 2016

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

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Accreditation No.: SCS 0108

Glossary:

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

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Measurement Conditions

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

DASY Version	DASY5	V52.8.8
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	2450 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	39.2	1.80 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	40.0 ± 6 %	1.83 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	12.8 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**51.0 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	5.93 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**23.7 W/kg ± 16.5 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	52.7	1.95 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	52.7 ± 6 %	1.98 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm^3 (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	12.5 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**49.6 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	250 mW input power	5.86 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**23.3 W/kg ± 16.5 % (k=2)**

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Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	55.3 Ω + 2.0 jΩ
Return Loss	- 25.4 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	52.1 Ω + 4.8 jΩ
Return Loss	- 25.9 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.148 ns

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	January 09, 2003

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DASY5 Validation Report for Head TSL

Date: 19.04.2016

Test Laboratory: SPEAG, Zurich, Switzerland

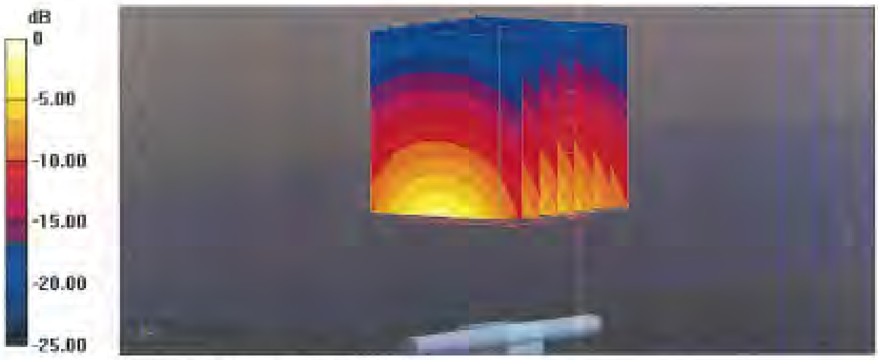
DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 727

Communication System: UID 0 - CW; Frequency: 2450 MHz
Medium parameters used: f = 2450 MHz; σ = 1.83 S/m; ε_r = 40; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(7.76, 7.76, 7.76); Calibrated: 31.12.2015;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.12.2015
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7372)

Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 112.1 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 25.7 W/kg
SAR(1 g) = 12.8 W/kg; SAR(10 g) = 5.93 W/kg
Maximum value of SAR (measured) = 20.8 W/kg



0 dB = 20.8 W/kg = 13.18 dBW/kg

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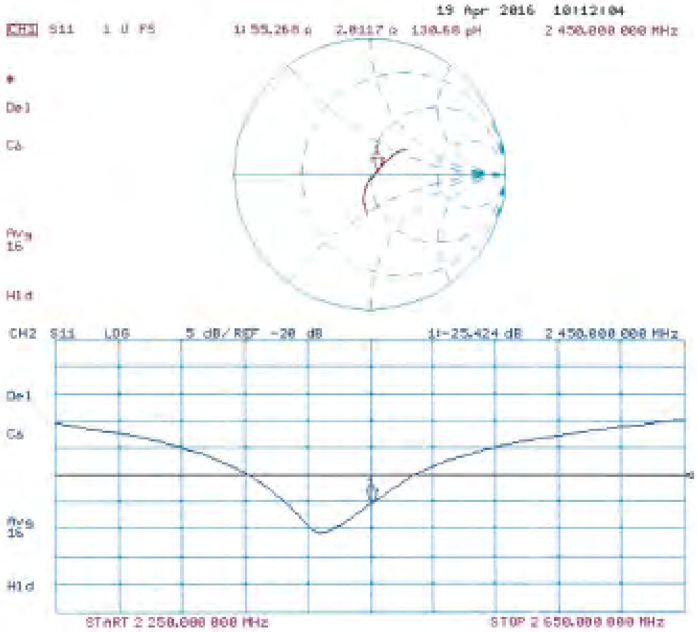
Impedance Measurement Plot for Head TSL



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Accreditation No.: **SCS 0108**

Client **SGS-TW (Auden)**

Certificate No: **D2600V2-1005_Jan16**

CALIBRATION CERTIFICATE

Object	D2600V2 - SN: 1005
Calibration procedure(s)	QA CAL-05.v9 Calibration procedure for dipole validation kits above 700 MHz
Calibration date:	January 21, 2016

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	07-Oct-15 (No. 217-02222)	Oct-16
Power sensor HP 8481A	US37292783	07-Oct-15 (No. 217-02222)	Oct-16
Power sensor HP 8481A	MY41092317	07-Oct-15 (No. 217-02223)	Oct-16
Reference 20 dB Attenuator	SN: 5058 (20k)	01-Apr-15 (No. 217-02131)	Mar-16
Type-N mismatch combination	SN: 5047.2 / 06327	01-Apr-15 (No. 217-02134)	Mar-16
Reference Probe EX3DV4	SN: 7349	31-Dec-15 (No. EX3-7349_Dec15)	Dec-16
DAE4	SN: 601	30-Dec-15 (No. DAE4-601_Dec15)	Dec-16

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator R&S SMT-06	100972	15-Jun-15 (in house check Jun-15)	In house check: Jun-18
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-15)	In house check: Oct-16

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

Issued: January 26, 2016

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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

Glossary:

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

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Measurement Conditions

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

DASY Version	DASY5	V52.8.8
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	2600 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	39.0	1.96 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	37.3 ± 6 %	2.04 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	14.2 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**55.2 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.29 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**24.7 W/kg ± 16.5 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	52.5	2.16 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	51.6 ± 6 %	2.22 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm^3 (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	13.7 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**53.9 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	250 mW input power	6.10 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**24.2 W/kg ± 16.5 % (k=2)**

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Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	51.2 Ω - 4.2 jΩ
Return Loss	- 27.2 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	45.6 Ω - 3.3 jΩ
Return Loss	- 24.8 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.154 ns

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	December 23, 2006

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DASY5 Validation Report for Head TSL

Date: 21.01.2016

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2 - SN: 1005

Communication System: UID 0 - CW; Frequency: 2600 MHz
Medium parameters used: f = 2600 MHz; σ = 2.04 S/m; ε_r = 37.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(7.49, 7.49, 7.49); Calibrated: 31.12.2015;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.12.2015
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7372)

Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 114.8 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 30.2 W/kg
SAR(1 g) = 14.2 W/kg; SAR(10 g) = 6.29 W/kg
Maximum value of SAR (measured) = 24.0 W/kg

0 dB = 24.0 W/kg = 13.80 dBW/kg

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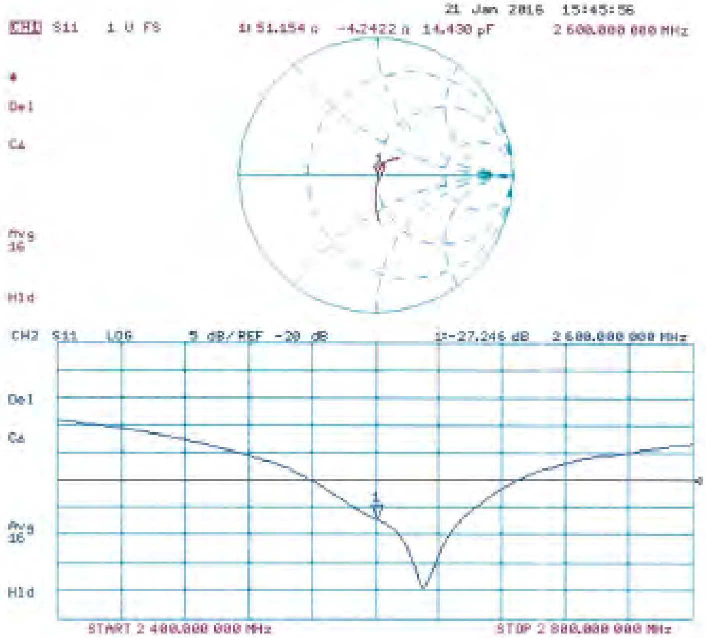
Impedance Measurement Plot for Head TSL



Certificate No: D2600V2-1005_Jan16 Page 6 of 8

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DASY5 Validation Report for Body TSL

Date: 21.01.2016

Test Laboratory: SPEAG, Zurich, Switzerland

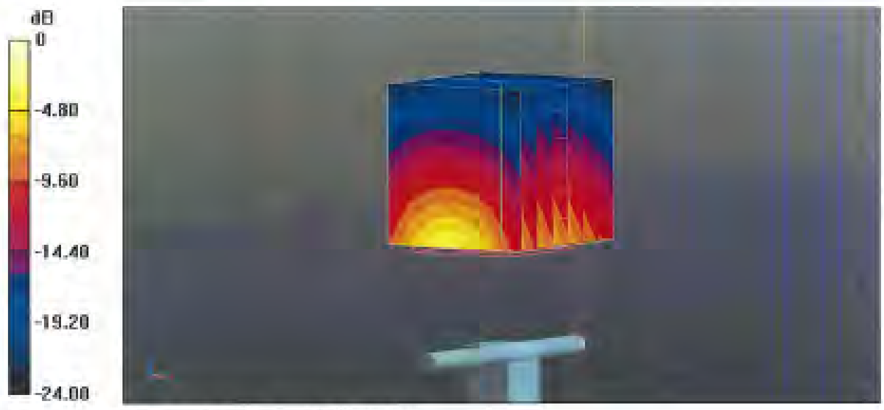
DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2 - SN: 1005

Communication System: UID 0 - CW; Frequency: 2600 MHz
Medium parameters used: f = 2600 MHz; σ = 2.22 S/m; ε_r = 51.6; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(7.6, 7.6, 7.6); Calibrated: 31.12.2015;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.12.2015
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7372)

Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 106.7 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 28.4 W/kg
SAR(1 g) = 13.7 W/kg; SAR(10 g) = 6.1 W/kg
Maximum value of SAR (measured) = 22.8 W/kg



0 dB = 22.8 W/kg = 13.58 dBW/kg

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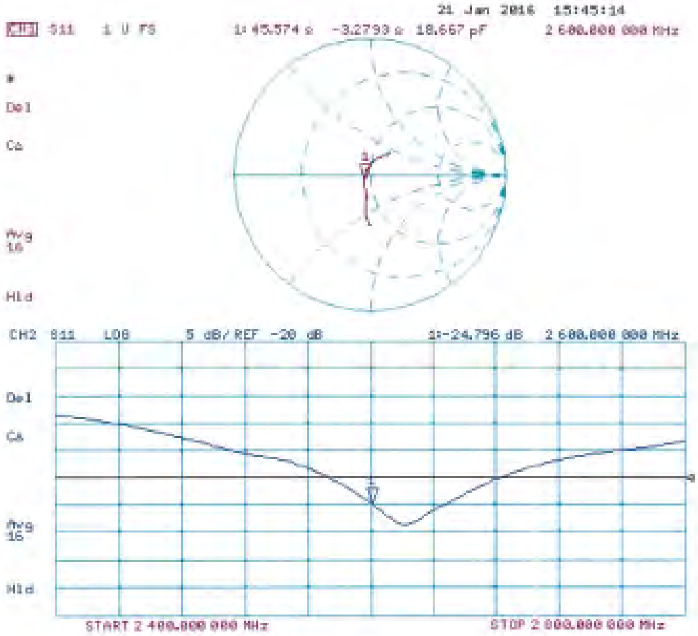
Impedance Measurement Plot for Body TSL



Certificate No: D2600V2-1005_Jan16 Page 8 of 8

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Accreditation No.: **SCS 0108**

Client **SGS-TW (Auden)**

Certificate No: **D5GHzV2-1023_Jan16**

CALIBRATION CERTIFICATE

Object	D5GHzV2 - SN: 1023
Calibration procedure(s)	QA CAL-22.v2 Calibration procedure for dipole validation kits between 3-6 GHz
Calibration date:	January 26, 2016

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	07-Oct-15 (No. 217-02222)	Oct-16
Power sensor HP 8481A	US37292783	07-Oct-15 (No. 217-02222)	Oct-16
Power sensor HP 8481A	MY41092317	07-Oct-15 (No. 217-02223)	Oct-16
Reference 20 dB Attenuator	SN: 5058 (20k)	01-Apr-15 (No. 217-02131)	Mar-16
Type-N mismatch combination	SN: 5047.2 / 06327	01-Apr-15 (No. 217-02134)	Mar-16
Reference Probe EX3DV4	SN: 3503	31-Dec-15 (No. EX3-3503_Dec15)	Dec-16
DAE4	SN: 601	30-Dec-15 (No. DAE4-601_Dec15)	Dec-16

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator R&S SMT-06	100972	15-Jun-15 (in house check Jun-15)	In house check: Jun-18
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-15)	In house check: Oct-16

	Name	Function	Signature
Calibrated by:	Michael Weber	Laboratory Technician	M.Weber
Approved by:	Katja Pokovic	Technical Manager	

Issued: January 28, 2016

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Accreditation No.: **SCS 0108**

Glossary:

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

d) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

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Measurement Conditions

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

DASY Version	DASY5	V52.8.8
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy = 4.0 mm, dz = 1.4 mm	Graded Ratio = 1.4 (Z direction)
Frequency	5200 MHz ± 1 MHz 5300 MHz ± 1 MHz 5600 MHz ± 1 MHz 5800 MHz ± 1 MHz	

Head TSL parameters at 5200 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	36.0	4.66 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	35.2 ± 6 %	4.51 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL at 5200 MHz

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	7.74 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**77.0 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.23 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**22.1 W/kg ± 19.5 % (k=2)**

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Head TSL parameters at 5300 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.9	4.76 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	35.1 ± 6 %	4.60 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL at 5300 MHz

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.03 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**79.9 W / kg ± 19.9 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.33 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**23.1 W/kg ± 19.5 % (k=2)**

Head TSL parameters at 5600 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.5	5.07 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	34.7 ± 6 %	4.90 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL at 5600 MHz

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.31 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**82.6 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.38 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**23.6 W/kg ± 19.5 % (k=2)**

Head TSL parameters at 5800 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.3	5.27 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	34.4 ± 6 %	5.10 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL at 5800 MHz

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	7.78 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**77.3 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.22 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**22.0 W/kg ± 19.5 % (k=2)**

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Body TSL parameters at 5200 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	49.0	5.30 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	47.1 ± 6 %	5.37 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL at 5200 MHz

SAR averaged over 1 cm^3 (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.25 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**71.9 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.05 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**20.3 W/kg ± 19.5 % (k=2)**

Body TSL parameters at 5300 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.9	5.42 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	46.9 ± 6 %	5.50 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL at 5300 MHz

SAR averaged over 1 cm^3 (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.57 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**75.1 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.14 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**21.2 W/kg ± 19.5 % (k=2)**

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Body TSL parameters at 5600 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.5	5.77 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	46.4 ± 6 %	5.91 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL at 5600 MHz

SAR averaged over 1 cm^3 (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.89 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**78.3 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.23 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**22.1 W/kg ± 19.5 % (k=2)**

Body TSL parameters at 5800 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.2	6.00 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	46.0 ± 6 %	6.19 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL at 5800 MHz

SAR averaged over 1 cm^3 (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.59 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**75.3 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.13 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**21.1 W/kg ± 19.5 % (k=2)**

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Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL at 5200 MHz

Impedance, transformed to feed point	49.1 Ω - 8.4 jΩ
Return Loss	- 21.4 dB

Antenna Parameters with Head TSL at 5300 MHz

Impedance, transformed to feed point	49.6 Ω - 4.2 jΩ
Return Loss	- 27.4 dB

Antenna Parameters with Head TSL at 5600 MHz

Impedance, transformed to feed point	54.9 Ω - 1.4 jΩ
Return Loss	- 26.3 dB

Antenna Parameters with Head TSL at 5800 MHz

Impedance, transformed to feed point	55.9 Ω + 2.2 jΩ
Return Loss	- 24.5 dB

Antenna Parameters with Body TSL at 5200 MHz

Impedance, transformed to feed point	49.4 Ω - 6.8 jΩ
Return Loss	- 23.3 dB

Antenna Parameters with Body TSL at 5300 MHz

Impedance, transformed to feed point	50.9 Ω - 2.4 jΩ
Return Loss	- 31.8 dB

Antenna Parameters with Body TSL at 5600 MHz

Impedance, transformed to feed point	56.0 Ω - 0.1 jΩ
Return Loss	- 25.0 dB

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Antenna Parameters with Body TSL at 5800 MHz

Impedance, transformed to feed point	56.4 Ω + 2.4 jΩ
Return Loss	- 23.8 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.199 ns

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	February 05, 2004

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DASY5 Validation Report for Head TSL

Date: 26.01.2016

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN: 1023

Communication System: UID 0 - CW; Frequency: 5200 MHz, Frequency: 5300 MHz, Frequency: 5600 MHz, Frequency: 5800 MHz
Medium parameters used: f = 5200 MHz; σ = 4.51 S/m; ε_r = 35.2; ρ = 1000 kg/m^3 , Medium parameters used: f = 5300 MHz; σ = 4.6 S/m; ε_r = 35.1; ρ = 1000 kg/m^3 , Medium parameters used: f = 5600 MHz; σ = 4.9 S/m; ε_r = 34.7; ρ = 1000 kg/m^3 , Medium parameters used: f = 5800 MHz; σ = 5.1 S/m; ε_r = 34.4; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN3503; ConvF(5.59, 5.59, 5.59); Calibrated: 31.12.2015, ConvF(5.25, 5.25, 5.25); Calibrated: 31.12.2015, ConvF(4.99, 4.99, 4.99); Calibrated: 31.12.2015, ConvF(4.95, 4.95, 4.95); Calibrated: 31.12.2015;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.12.2015
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7372)

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5200 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 72.68 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 28.1 W/kg
SAR(1 g) = 7.74 W/kg; SAR(10 g) = 2.23 W/kg
Maximum value of SAR (measured) = 17.8 W/kg

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5300 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 73.14 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 30.0 W/kg
SAR(1 g) = 8.03 W/kg; SAR(10 g) = 2.33 W/kg
Maximum value of SAR (measured) = 18.7 W/kg

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5600 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 73.32 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 32.6 W/kg
SAR(1 g) = 8.31 W/kg; SAR(10 g) = 2.38 W/kg
Maximum value of SAR (measured) = 19.8 W/kg

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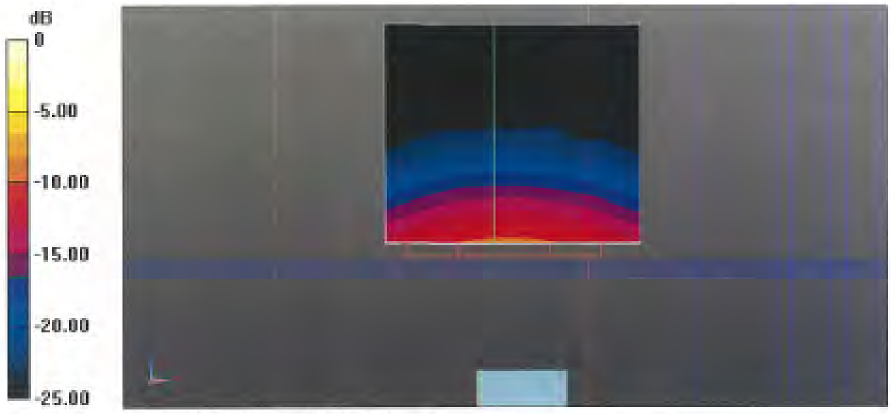
Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5800 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 70.15 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 32.0 W/kg
SAR(1 g) = 7.78 W/kg; SAR(10 g) = 2.22 W/kg
Maximum value of SAR (measured) = 18.8 W/kg



0 dB = 18.8 W/kg = 12.74 dBW/kg

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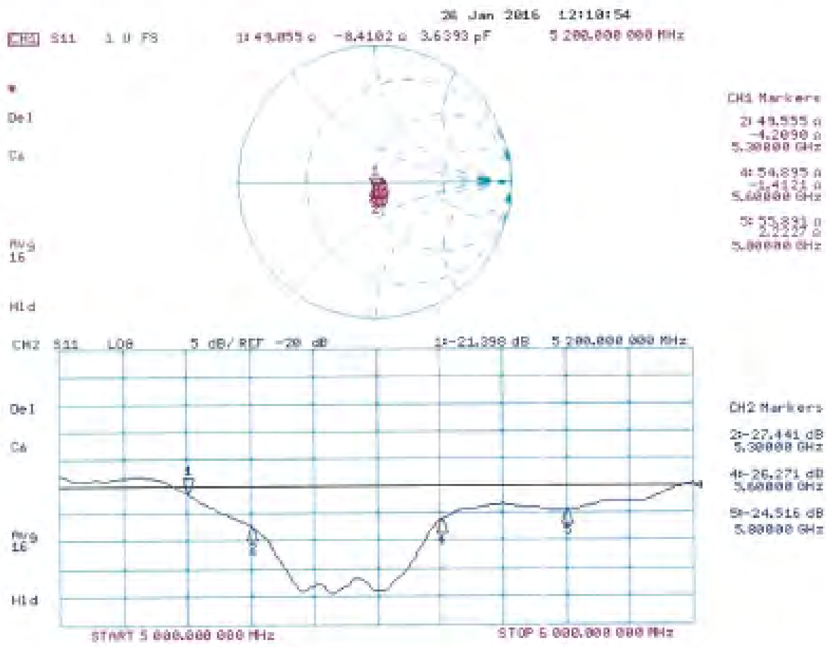
Impedance Measurement Plot for Head TSL



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DASY5 Validation Report for Body TSL

Date: 25.01.2016

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 5GHz; Type: D5GHzV2; Serial: D5GHzV2 - SN: 1023

Communication System: UID 0 - CW; Frequency: 5200 MHz, Frequency: 5300 MHz, Frequency: 5600 MHz, Frequency: 5800 MHz
Medium parameters used: f = 5200 MHz; $\sigma = 5.37$ S/m; $\varepsilon_r = 47.1$; $\rho = 1000$ kg/m^3 , Medium parameters used: f = 5300 MHz; $\sigma = 5.5$ S/m; $\varepsilon_r = 46.9$; $\rho = 1000$ kg/m^3 , Medium parameters used: f = 5600 MHz; $\sigma = 5.91$ S/m; $\varepsilon_r = 46.4$; $\rho = 1000$ kg/m^3 , Medium parameters used: f = 5800 MHz; $\sigma = 6.19$ S/m; $\varepsilon_r = 46$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN3503; ConvF(4.99, 4.99, 4.99); Calibrated: 31.12.2015, ConvF(4.75, 4.75, 4.75); Calibrated: 31.12.2015, ConvF(4.35, 4.35, 4.35); Calibrated: 31.12.2015, ConvF(4.27, 4.27, 4.27); Calibrated: 31.12.2015;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.12.2015
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7372)

Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5200 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 66.72 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 27.1 W/kg
SAR(1 g) = 7.25 W/kg; SAR(10 g) = 2.05 W/kg
Maximum value of SAR (measured) = 16.8 W/kg

Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5300 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 67.43 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 29.1 W/kg
SAR(1 g) = 7.57 W/kg; SAR(10 g) = 2.14 W/kg
Maximum value of SAR (measured) = 17.7 W/kg

Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5600 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 67.67 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 32.6 W/kg
SAR(1 g) = 7.89 W/kg; SAR(10 g) = 2.23 W/kg
Maximum value of SAR (measured) = 19.1 W/kg

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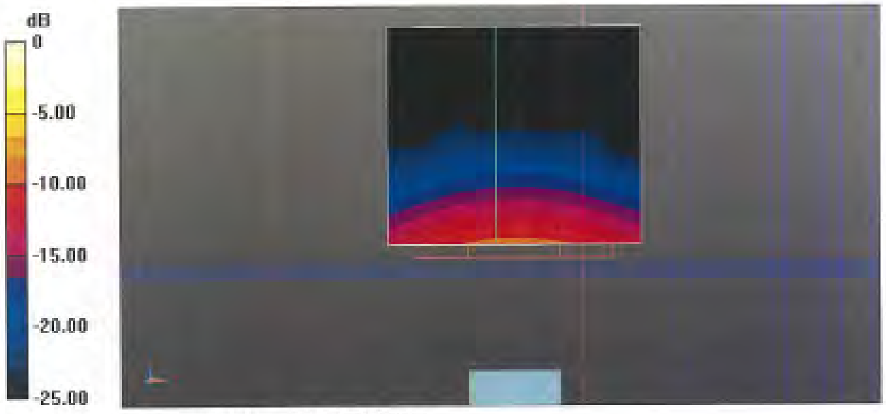
Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5800 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 65.76 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 33.0 W/kg
SAR(1 g) = 7.59 W/kg; SAR(10 g) = 2.13 W/kg
Maximum value of SAR (measured) = 18.5 W/kg



0 dB = 18.5 W/kg = 12.67 dBW/kg

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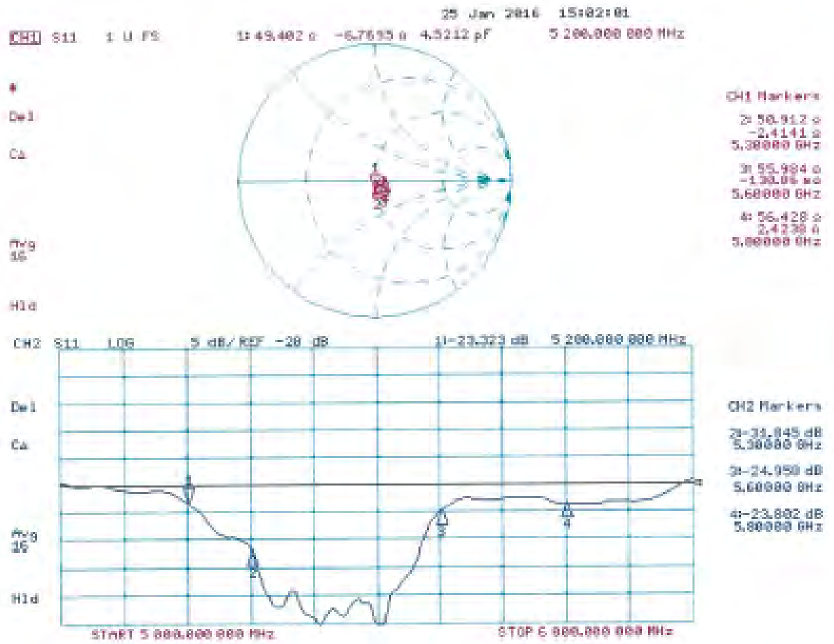
Impedance Measurement Plot for Body TSL



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- End of 1st part of report -