SAR TEST REPORT

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

Equipment Under Test	Tablet PC
Brand Name	Trimble Navigation Ltd.
Model No.	104962
Company Name	Trimble Navigation Ltd.
Company Address	345 SW Avery Ave. Corvallis, OR 97333
Standards	IEEE /ANSI C95.1 , C95.3, IEEE 1528 2003, KDB248227D01v02, KDB616217D04v01r01, KDB865664D01v01r03, KDB865664D02v01r01, KDB941225D01v03,KDB941225D05v02r03, KDB447498D01v05r02
FCC ID	S9E –EM7355, S9E-7265NGW
Date of Receipt	May. 25, 2015
Date of Test(s)	Jun. 01, 2015 ~ Jun. 18, 2015
Date of Issue	Aug. 07, 2015

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

Kevin Li

Kevin Li

Date: Aug. 07, 2015

Sr. Engineer

John Yeh

John Yeh

Date: Aug. 07, 2015

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Version

Report Number	Revision	Date	Memo
EN/2015/50005	00	2015/6/24	Initial creation of test report.
EN/2015/50005	01	2015/6/25	1st modification
EN/2015/50005	02	2015/6/30	2nd modification
EN/2015/50005	03	2015/8/7	3rd modification

This test report contains a reference to the previous version test report that it replaces.

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Contents

1. General Information

1.1 Testing Laboratory

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1.2 Details of Applicant

Company Name	Trimble Navigation Ltd.
Company Address	345 SW Avery Ave. Corvallis, OR 97333

1.3 Description of EUT

Equipment Under Test	Tablet	
Brand Name	Trimble Navigation Ltd.	
Model No.	104962	
FCC ID	S9E –EM7355, S9E-7265NGW	
Mode of Operation	☒GPRS ☒EDGE ☒WCDMA ☒HSDPA ☒HSUPA ☒LTE ☒CDMA 1xRTT ☒CDMA 1x EVDO Rev.0/ Rev.A ☒WLAN802.11 a/b/g/n(20M/40M)/ac(20M/40M/80M) ☒Bluetooth	
Duty Cycle	GPRS	1/4.1 (1Dn2UP) 1/8.3 (1Dn1UP)
	EDGE	1/2 (1Dn4UP) 1/2.76 (1Dn3UP) 1/4.1 (1Dn2UP) 1/8.3 (1Dn1UP)
	WCDMA	1
	LTE	1
	CDMA 1xRTT/ EVDO Rev.0/ Rev. A	1
	WLAN802.11 a/b/g/n(20M/40M)/ ac(20M/40M/80M)	1
	Bluetooth	1
TX Frequency Range (MHz)	GPRS850	824.2 — 848.8
	GPRS1900	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
	LTE FDD Band II	1850 — 1910
	LTE FDD Band IV	1710 — 1755

TX Frequency Range (MHz)	LTE FDD Band V	824	—	849
	LTE FDD Band XIII	777	—	787
	LTE FDD Band XXV	1850	—	1915
	CDMA (BC0)	824.7	—	848.31
	CDMA (BC1)	1851.25	—	1908.75
	CDMA (BC10)	817.9	—	823.1
	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(20M) 5.6G	5500	—	5700
	WLAN802.11 ac(20M) 5.6G	5500	—	5720
	WLAN802.11 n(40M) 5.6G	5510	—	5670
	WLAN802.11 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)	GPRS850	128	—	251
	GPRS1900	512	—	810
	WCDMA Band II	9262	—	9538
	WCDMA Band IV	1312	—	1513
	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 XIII	23205	—	23255
	LTE FDD Band XXV	26047	—	26683
	CDMA (BC0)	1013	—	777
	CDMA (BC1)	25	—	1175
	CDMA (BC10)	476	—	684

Channel Number (ARFCN)	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(20M) 5.6G	100	—	140
	WLAN802.11 ac(20M) 5.6G	100	—	144
	WLAN802.11 n(40M) 5.6G	102	—	134
	WLAN802.11 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)				
Band	Measured	Reported	Channel	Position
GPRS 850	0.327	0.518	190	Top side
GRPS 1900	0.888	0.974	661	Top side
WCDMA Band II	1.010	1.043	9538	Top side
WCDMA Band IV	1.270	1.333	1312	Top side
WCDMA Band V	0.374	0.377	4183	Back side
LTE FDD Band II	0.937	1.182	19100	Back side
LTE FDD Band IV	1.280	1.381	20050	Top side
LTE FDD Band V	0.347	0.490	20600	Back side
LTE FDD Band XIII	0.340	0.499	23230	Back side
LTE FDD Band XVII	0.312	0.438	23780	Back side
LTE FDD Band XXV	1.040	1.236	26140	Top side
CDMA (BC0)	0.307	0.369	384	Back side
CDMA (BC1)	1.020	1.103	600	Top side
CDMA (BC10)	0.289	0.364	684	Back side

Max. SAR (1 g) (Unit: W/Kg)					
Antenna	Band	Measured	Reported	Channel	Position
Main	WLAN802.11 b	0.2	0.226	11	Top side
	WLAN802.11 ac(20M) 5.2G	0.582	0.871	44	Top side
	WLAN802.11 ac(20M) 5.3G	0.776	0.92	54	Top side
	WLAN802.11 a 5.6G	1.02	1.103	104	Top side
	WLAN802.11 ac(20M) 5.6G	0.939	1.185	136	Top side
	WLAN802.11 ac(80M) 5.6G	1.03	1.099	138	Top side
	WLAN802.11 ac(80M) 5.8G	0.937	1.042	155	Top side
Aux	WLAN802.11 b	0.491	0.491	11	Bottom side
	WLAN802.11 n(20M) 5.2G	0.921	1.012	44	Bottom side
	WLAN802.11 ac(20M) 5.2G	1.03	1.145	40	Bottom side
	WLAN802.11 a 5.3G	1.36	1.474	56	Bottom side
	WLAN802.11 n(20M) 5.3G	1.45	1.46	60	Bottom side
	WLAN802.11 ac(20M) 5.3G	1.41	1.417	56	Bottom side
	WLAN802.11 n(40M) 5.3G	1.46	1.487	54	Bottom side
	WLAN802.11 ac(40M) 5.3G	1.44	1.47	54	Bottom side
	WLAN802.11 a 5.6G	1.1	1.411	120	Bottom side
	WLAN802.11 n(20M) 5.6G	0.879	0.923	136	Bottom side
	WLAN802.11 ac(20M) 5.6G	0.631	0.638	136	Bottom side
	WLAN802.11 n(40M) 5.6G	0.913	1.051	134	Bottom side
	WLAN802.11 ac(40M) 5.6G	0.784	0.81	142	Bottom side
	WLAN802.11 ac(80M) 5.8G	0.81	0.817	155	Bottom side

GPRS / EDGE conducted power table:

Burst average power				
Max. Rated Avg. Power + Max. Tolerance (dBm)			32.9	32.9
			1Dn1UP	1Dn2UP
EUT mode	Frequency (MHz)	CH	Avg. (dBm)	Avg. (dBm)
GPRS 850 (GMSK)	824.2	128	31.00	30.90
	836.6	190	31.00	30.90
	848.8	251	31.00	30.90
Source-based time average power				
GPRS 850 (GMSK)	824.2	128	21.97	24.88
	836.6	190	21.97	24.88
	848.8	251	21.97	24.88
The division factor compared to the number of TX time slot				
Division factor			1 TX time slot	2 TX time slot
			-9.03	-6.02

Burst average power						
Max. Rated Avg. Power + Max. Tolerance (dBm)			27.7	27.7	27.7	27.7
			1Dn1UP	1Dn2UP	1Dn3UP	1Dn4UP
EUT mode	Frequency (MHz)	CH	Avg. (dBm)	Avg. (dBm)	Avg. (dBm)	Avg. (dBm)
EDGE 850 (MCS5)	824.2	128	26.00	25.90	25.80	25.70
	836.6	190	26.00	25.90	25.80	25.70
	848.8	251	26.00	25.90	25.80	25.70
Source-based time average power						
EDGE 850 (MCS5)	824.2	128	16.97	19.88	21.54	22.69
	836.6	190	16.97	19.88	21.54	22.69
	848.8	251	16.97	19.88	21.54	22.69
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)			29	29
			1Dn1UP	1Dn2UP
EUT mode	Frequency (MHz)	CH	Avg. (dBm)	Avg. (dBm)
GPRS 1900 (GMSK)	1850.2	512	28.80	28.70
	1880	661	28.70	28.60
	1909.8	810	28.90	28.80
Source-based time average power				
GPRS 1900 (GMSK)	1850.2	512	19.77	22.68
	1880	661	19.67	22.58
	1909.8	810	19.87	22.78
The division factor compared to the number of TX time slot				
Division factor			1 TX time slot	2 TX time slot
			-9.03	-6.02

Burst average power						
Max. Rated Avg. Power + Max. Tolerance (dBm)			25.5	25.5	25.5	25.5
			1Dn1UP	1Dn2UP	1Dn3UP	1Dn4UP
EUT mode	Frequency (MHz)	CH	Avg. (dBm)	Avg. (dBm)	Avg. (dBm)	Avg. (dBm)
EDGE 1900 (MCS5)	1850.2	512	24.80	24.70	24.60	24.50
	1880	661	24.80	24.70	24.60	24.50
	1909.8	810	24.90	24.80	24.70	24.60
Source-based time average power						
EDGE 1900 (MCS5)	1850.2	512	15.77	18.68	20.34	21.49
	1880	661	15.77	18.68	20.34	21.49
	1909.8	810	15.87	18.78	20.44	21.59
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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GPRS/EDGE conducted power table (Reduced power):

Burst average power				
Max. Rated Avg. Power + Max. Tolerance (dBm)			28.5	28.5
			1Dn1UP	1Dn2UP
EUT mode	Frequency (MHz)	CH	Avg. (dBm)	Avg. (dBm)
GPRS 850 (GMSK)	824.2	128	28.10	27.50
	836.6	190	28.10	27.50
	848.8	251	28.10	27.50
Source-based time average power				
GPRS 850 (GMSK)	824.2	128	19.07	21.48
	836.6	190	19.07	21.48
	848.8	251	19.07	21.48
The division factor compared to the number of TX time slot				

Burst average power						
Max. Rated Avg. Power + Max. Tolerance (dBm)			22.5	22.5	22.5	22.5
			1Dn1UP	1Dn2UP	1Dn3UP	1Dn4UP
EUT mode	Frequency (MHz)	CH	Avg. (dBm)	Avg. (dBm)	Avg. (dBm)	Avg. (dBm)
EDGE 850 (MCS5)	824.2	128	22.10	22.10	22.10	22.10
	836.6	190	22.10	22.10	22.10	22.10
	848.8	251	22.10	22.10	22.10	22.10
Source-based time average power						
EDGE 850 (MCS5)	824.2	128	13.07	16.08	17.84	19.09
	836.6	190	13.07	16.08	17.84	19.09
	848.8	251	13.07	16.08	17.84	19.09
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)			27	27
			1Dn1UP	1Dn2UP
EUT mode	Frequency (MHz)	CH	Avg. (dBm)	Avg. (dBm)
GPRS 1900 (GMSK)	1850.2	512	26.80	26.70
	1880	661	26.70	26.70
	1909.8	810	26.70	26.80
Source-based time average power				
GPRS 1900 (GMSK)	1850.2	512	17.77	20.68
	1880	661	17.67	20.68
	1909.8	810	17.67	20.78
The division factor compared to the number of TX time slot				
Division factor			1 TX time slot	2 TX time slot
			-9.03	-6.02

Burst average power						
Max. Rated Avg. Power + Max. Tolerance (dBm)			23.5	23.5	23.5	23.5
			1Dn1UP	1Dn2UP	1Dn3UP	1Dn4UP
EUT mode	Frequency (MHz)	CH	Avg. (dBm)	Avg. (dBm)	Avg. (dBm)	Avg. (dBm)
EDGE 1900 (MCS5)	1850.2	512	23.50	23.50	23.50	23.40
	1880	661	23.50	23.50	23.50	23.40
	1909.8	810	23.50	23.50	23.50	23.40
Source-based time average power						
EDGE 1900 (MCS5)	1850.2	512	14.47	17.48	19.24	20.39
	1880	661	14.47	17.48	19.24	20.39
	1909.8	810	14.47	17.48	19.24	20.39
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

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 Rel 7	9262	23	22.76	22.16	21.64	21.68	21.75	22.68	20.73	20.74	20.86	20.82	22.61	20.59	21.58	20.70	22.41
	9400	23	22.79	22.21	21.65	21.76	21.77	22.77	20.84	20.79	20.89	20.88	22.74	20.78	21.73	20.82	22.59
	9538	23	22.86	22.24	21.71	21.71	21.83	22.80	20.84	20.88	20.88	20.99	22.75	20.74	21.76	20.78	22.61
WCDMA Band IV Rel 7	1312	23	22.79	22.35	21.67	21.87	21.94	22.71	20.76	20.77	20.89	21.13	22.64	20.62	21.61	20.73	22.44
	1412	23	22.88	22.38	21.74	21.93	21.94	22.86	20.93	20.88	20.98	21.27	22.83	20.87	21.82	20.91	22.68
	1513	23	22.68	22.30	21.53	21.77	21.89	22.62	20.66	20.70	20.7	21.25	22.57	20.56	21.58	20.60	22.43
WCDMA Band V Rel 7	4132	23	22.14	21.50	21.07	21.04	21.09	22.10	20.16	20.14	20.21	20.98	22.07	20.10	21.05	20.13	21.88
	4183	23	22.27	21.67	21.16	21.19	21.23	22.20	20.28	20.26	20.34	21.06	22.12	20.14	21.12	20.20	21.89
	4233	23	22.17	21.52	21.04	21.03	21.09	22.09	20.13	20.17	20.21	20.92	22.00	19.97	20.99	20.03	21.82

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

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

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 Rel 7	9262	20	19.61	18.84	18.49	18.36	18.43	19.53	17.58	17.59	17.71	18.19	19.46	17.44	18.43	17.55	19.26
	9400	20	19.63	18.93	18.49	18.48	18.49	19.61	17.68	17.63	17.73	18.31	19.58	17.62	18.57	17.66	19.43
	9538	20	19.67	19.02	18.52	18.49	18.61	19.61	17.65	17.69	17.69	18.42	19.56	17.55	18.57	17.59	19.42
WCDMA Band IV Rel 7	1312	19	17.62	17.11	16.50	16.63	16.7	17.54	15.59	15.60	15.72	16.44	17.47	15.45	16.44	15.56	17.27
	1412	19	17.67	17.08	16.53	16.63	16.64	17.65	15.72	15.67	15.77	16.25	17.62	15.66	16.61	15.70	17.47
	1513	19	17.61	17.14	16.46	16.61	16.73	17.55	15.59	15.63	15.63	16.28	17.50	15.49	16.51	15.53	17.36
WCDMA Band V Rel 7	4132	20	19.90	19.44	18.83	18.98	19.03	19.86	17.92	17.90	17.97	18.72	19.83	17.86	18.81	17.89	19.64
	4183	20	19.96	19.31	18.85	18.83	18.87	19.89	17.97	17.95	18.03	18.64	19.81	17.83	18.81	17.89	19.58
	4233	20	19.84	19.25	18.71	18.76	18.82	19.76	17.8	17.84	17.88	18.53	19.67	17.64	18.66	17.70	19.49

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

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LTE FDD Band II / Band IV / Band V / Band XIII / Band XVII / Band XXV power table:

FDD Band 2 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance	MPR Allowed per 3GPP(dB)
20	QPSK	1 RB	0	1860	18700	22.32	23	0
				1880	18900	22.30	23	0
				1900	19100	22.24	23	0
			50	1860	18700	22.25	23	0
				1880	18900	22.40	23	0
				1900	19100	22.25	23	0
			99	1860	18700	22.10	23	0
				1880	18900	22.21	23	0
				1900	19100	22.42	23	0
		50 RB	0	1860	18700	21.17	22	0-1
				1880	18900	21.14	22	0-1
				1900	19100	21.10	22	0-1
			25	1860	18700	21.15	22	0-1
				1880	18900	21.16	22	0-1
				1900	19100	21.04	22	0-1
			50	1860	18700	21.16	22	0-1
				1880	18900	21.08	22	0-1
				1900	19100	21.08	22	0-1
		100RB		1860	18700	21.18	22	0-1
				1880	18900	21.20	22	0-1
				1900	19100	21.19	22	0-1
	16-QAM	1 RB	0	1860	18700	21.49	22	0-1
				1880	18900	21.42	22	0-1
				1900	19100	21.01	22	0-1
			50	1860	18700	21.29	22	0-1
				1880	18900	21.16	22	0-1
				1900	19100	21.22	22	0-1
			99	1860	18700	21.51	22	0-1
				1880	18900	21.26	22	0-1
				1900	19100	21.30	22	0-1
		50 RB	0	1860	18700	20.15	21	0-2
				1880	18900	20.13	21	0-2
				1900	19100	20.05	21	0-2
			25	1860	18700	20.17	21	0-2
				1880	18900	20.15	21	0-2
				1900	19100	20.10	21	0-2
			50	1860	18700	20.06	21	0-2
				1880	18900	20.05	21	0-2
				1900	19100	20.08	21	0-2
		100RB		1860	18700	20.12	21	0-2
				1880	18900	20.19	21	0-2
				1900	19100	20.13	21	0-2

FDD Band 2 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance	MPR Allowed per 3GPP(dB)
15	QPSK	1 RB	0	1857.5	18675	22.11	23	0
				1880	18900	22.23	23	0
				1902.5	19125	22.19	23	0
			36	1857.5	18675	22.29	23	0
				1880	18900	22.17	23	0
				1902.5	19125	22.07	23	0
			74	1857.5	18675	22.22	23	0
				1880	18900	22.16	23	0
				1902.5	19125	22.30	23	0
		36 RB	0	1857.5	18675	21.15	22	0-1
				1880	18900	21.19	22	0-1
				1902.5	19125	21.03	22	0-1
			18	1857.5	18675	21.07	22	0-1
				1880	18900	21.17	22	0-1
				1902.5	19125	21.06	22	0-1
			37	1857.5	18675	21.06	22	0-1
				1880	18900	21.06	22	0-1
				1902.5	19125	21.13	22	0-1
		75RB		1857.5	18675	21.09	22	0-1
				1880	18900	20.98	22	0-1
				1902.5	19125	20.96	22	0-1
	16-QAM	1 RB	0	1857.5	18675	21.04	22	0-1
				1880	18900	21.25	22	0-1
				1902.5	19125	21.07	22	0-1
			36	1857.5	18675	21.22	22	0-1
				1880	18900	21.07	22	0-1
				1902.5	19125	21.42	22	0-1
			74	1857.5	18675	20.87	22	0-1
				1880	18900	21.00	22	0-1
				1902.5	19125	21.42	22	0-1
		36 RB	0	1857.5	18675	20.14	21	0-2
				1880	18900	20.16	21	0-2
				1902.5	19125	19.96	21	0-2
			18	1857.5	18675	20.09	21	0-2
				1880	18900	20.08	21	0-2
				1902.5	19125	20.07	21	0-2
			37	1857.5	18675	19.97	21	0-2
				1880	18900	20.04	21	0-2
				1902.5	19125	20.15	21	0-2
		75RB		1857.5	18675	20.04	21	0-2
				1880	18900	20.02	21	0-2
				1902.5	19125	19.93	21	0-2

FDD Band 2 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	1855	18650	22.09	23	0
				1880	18900	22.17	23	0
				1905	19150	21.96	23	0
			25	1855	18650	22.22	23	0
				1880	18900	22.08	23	0
				1905	19150	22.19	23	0
			49	1855	18650	22.10	23	0
				1880	18900	22.15	23	0
				1905	19150	22.38	23	0
		25 RB	0	1855	18650	21.13	22	0-1
				1880	18900	21.23	22	0-1
				1905	19150	21.13	22	0-1
			12	1855	18650	21.08	22	0-1
				1880	18900	21.24	22	0-1
				1905	19150	21.17	22	0-1
			25	1855	18650	21.11	22	0-1
				1880	18900	21.15	22	0-1
				1905	19150	21.26	22	0-1
		50RB		1855	18650	21.00	22	0-1
				1880	18900	21.01	22	0-1
				1905	19150	20.96	22	0-1
	16-QAM	1 RB	0	1855	18650	21.30	22	0-1
				1880	18900	20.92	22	0-1
				1905	19150	21.15	22	0-1
			25	1855	18650	21.02	22	0-1
				1880	18900	21.15	22	0-1
				1905	19150	21.15	22	0-1
			49	1855	18650	21.32	22	0-1
				1880	18900	21.02	22	0-1
				1905	19150	21.59	22	0-1
		25 RB	0	1855	18650	20.05	21	0-2
				1880	18900	20.12	21	0-2
				1905	19150	20.20	21	0-2
			12	1855	18650	20.09	21	0-2
				1880	18900	20.16	21	0-2
				1905	19150	20.14	21	0-2
			25	1855	18650	20.15	21	0-2
				1880	18900	20.09	21	0-2
				1905	19150	20.17	21	0-2
		50RB		1855	18650	19.93	21	0-2
				1880	18900	20.09	21	0-2
				1905	19150	19.97	21	0-2

FDD Band 2 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	1852.5	18625	22.04	23	0
				1880	18900	22.31	23	0
				1907.5	19175	22.21	23	0
			12	1852.5	18625	22.06	23	0
				1880	18900	22.24	23	0
				1907.5	19175	21.98	23	0
			24	1852.5	18625	22.14	23	0
				1880	18900	22.20	23	0
				1907.5	19175	22.40	23	0
		12 RB	0	1852.5	18625	21.13	22	0-1
				1880	18900	21.29	22	0-1
				1907.5	19175	21.28	22	0-1
			6	1852.5	18625	21.18	22	0-1
				1880	18900	21.31	22	0-1
				1907.5	19175	21.34	22	0-1
			13	1852.5	18625	21.21	22	0-1
				1880	18900	21.32	22	0-1
				1907.5	19175	21.42	22	0-1
		25RB		1852.5	18625	21.16	22	0-1
				1880	18900	21.17	22	0-1
				1907.5	19175	21.27	22	0-1
	16-QAM	1 RB	0	1852.5	18625	21.26	22	0-1
				1880	18900	21.21	22	0-1
				1907.5	19175	21.19	22	0-1
			12	1852.5	18625	20.95	22	0-1
				1880	18900	21.15	22	0-1
				1907.5	19175	21.42	22	0-1
			24	1852.5	18625	21.37	22	0-1
				1880	18900	21.17	22	0-1
				1907.5	19175	21.17	22	0-1
		12 RB	0	1852.5	18625	20.24	21	0-2
				1880	18900	20.28	21	0-2
				1907.5	19175	20.25	21	0-2
			6	1852.5	18625	20.28	21	0-2
				1880	18900	20.37	21	0-2
				1907.5	19175	20.34	21	0-2
			13	1852.5	18625	20.11	21	0-2
				1880	18900	20.23	21	0-2
				1907.5	19175	20.41	21	0-2
		25RB		1852.5	18625	20.16	21	0-2
				1880	18900	20.24	21	0-2
				1907.5	19175	20.22	21	0-2

FDD Band 2 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance	MPR Allowed per 3GPP(dB)
3	QPSK	1 RB	0	1851.5	18615	21.92	23	0
				1880	18900	22.25	23	0
				1908.5	19185	22.21	23	0
			7	1851.5	18615	22.17	23	0
				1880	18900	22.29	23	0
				1908.5	19185	22.30	23	0
			14	1851.5	18615	22.24	23	0
				1880	18900	22.25	23	0
				1908.5	19185	22.36	23	0
		8 RB	0	1851.5	18615	21.21	22	0-1
				1880	18900	21.26	22	0-1
				1908.5	19185	21.29	22	0-1
			4	1851.5	18615	21.21	22	0-1
				1880	18900	21.27	22	0-1
				1908.5	19185	21.36	22	0-1
			7	1851.5	18615	21.22	22	0-1
				1880	18900	21.24	22	0-1
				1908.5	19185	21.41	22	0-1
		15RB		1851.5	18615	21.10	22	0-1
				1880	18900	21.28	22	0-1
				1908.5	19185	21.28	22	0-1
	16-QAM	1 RB	0	1851.5	18615	21.00	22	0-1
				1880	18900	21.07	22	0-1
				1908.5	19185	21.12	22	0-1
			7	1851.5	18615	21.31	22	0-1
				1880	18900	21.24	22	0-1
				1908.5	19185	21.52	22	0-1
			14	1851.5	18615	20.98	22	0-1
				1880	18900	21.56	22	0-1
				1908.5	19185	21.65	22	0-1
		8 RB	0	1851.5	18615	20.02	21	0-2
				1880	18900	20.20	21	0-2
				1908.5	19185	20.07	21	0-2
			4	1851.5	18615	20.19	21	0-2
				1880	18900	20.18	21	0-2
				1908.5	19185	20.27	21	0-2
			7	1851.5	18615	20.13	21	0-2
				1880	18900	20.09	21	0-2
				1908.5	19185	20.37	21	0-2
		15RB		1851.5	18615	20.09	21	0-2
				1880	18900	20.23	21	0-2
				1908.5	19185	20.27	21	0-2

FDD Band 2 (Full Power)

BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance	MPR Allowed per 3GPP(dB)
1.4	QPSK	1 RB	0	1850.7	18607	22.07	23	0
1.4	QPSK	1 RB	0	1880	18900	22.13	23	0
1.4	QPSK	1 RB	0	1909.3	19193	22.22	23	0
1.4	QPSK	1 RB	2	1850.7	18607	22.03	23	0
1.4	QPSK	1 RB	2	1880	18900	22.25	23	0
1.4	QPSK	1 RB	2	1909.3	19193	22.33	23	0
1.4	QPSK	1 RB	5	1850.7	18607	22.20	23	0
1.4	QPSK	1 RB	5	1880	18900	22.24	23	0
1.4	QPSK	1 RB	5	1909.3	19193	22.35	23	0
1.4	QPSK	3 RB	0	1850.7	18607	22.09	22	0-1
1.4	QPSK	3 RB	0	1880	18900	22.31	22	0-1
1.4	QPSK	3 RB	0	1909.3	19193	22.38	22	0-1
1.4	QPSK	3 RB	2	1850.7	18607	22.13	22	0-1
1.4	QPSK	3 RB	2	1880	18900	22.22	22	0-1
1.4	QPSK	3 RB	2	1909.3	19193	22.41	22	0-1
1.4	QPSK	3 RB	3	1850.7	18607	22.05	22	0-1
1.4	QPSK	3 RB	3	1880	18900	22.20	22	0-1
1.4	QPSK	3 RB	3	1909.3	19193	22.38	22	0-1
1.4	QPSK	6RB	6RB	1850.7	18607	21.17	22	0-1
1.4	QPSK	6RB	6RB	1880	18900	21.30	22	0-1
1.4	QPSK	6RB	6RB	1909.3	19193	21.39	22	0-1
1.4	16-QAM	1 RB	0	1850.7	18607	21.36	22	0-1
1.4	16-QAM	1 RB	0	1880	18900	21.22	22	0-1
1.4	16-QAM	1 RB	0	1909.3	19193	21.21	22	0-1
1.4	16-QAM	1 RB	2	1850.7	18607	20.80	22	0-1
1.4	16-QAM	1 RB	2	1880	18900	21.56	22	0-1
1.4	16-QAM	1 RB	2	1909.3	19193	21.20	22	0-1
1.4	16-QAM	1 RB	5	1850.7	18607	21.34	22	0-1
1.4	16-QAM	1 RB	5	1880	18900	20.96	22	0-1
1.4	16-QAM	1 RB	5	1909.3	19193	21.34	22	0-1
1.4	16-QAM	3 RB	0	1850.7	18607	21.16	21	0-2
1.4	16-QAM	3 RB	0	1880	18900	21.27	21	0-2
1.4	16-QAM	3 RB	0	1909.3	19193	21.38	21	0-2
1.4	16-QAM	3 RB	2	1850.7	18607	21.05	21	0-2
1.4	16-QAM	3 RB	2	1880	18900	21.27	21	0-2
1.4	16-QAM	3 RB	2	1909.3	19193	21.43	21	0-2
1.4	16-QAM	3 RB	3	1850.7	18607	21.01	21	0-2
1.4	16-QAM	3 RB	3	1880	18900	21.19	21	0-2
1.4	16-QAM	3 RB	3	1909.3	19193	21.34	21	0-2
1.4	16-QAM	6RB	6RB	1850.7	18607	20.16	21	0-2
1.4	16-QAM	6RB	6RB	1880	18900	20.25	21	0-2
1.4	16-QAM	6RB	6RB	1909.3	19193	20.39	21	0-2

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FDD Band 2 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance	MPR Allowed per 3GPP(dB)
20	QPSK	1 RB	0	1860	18700	18.82	20	0
				1880	18900	18.83	20	0
				1900	19100	18.85	20	0
			50	1860	18700	18.95	20	0
				1880	18900	18.92	20	0
				1900	19100	18.83	20	0
			99	1860	18700	18.86	20	0
				1880	18900	18.82	20	0
				1900	19100	18.99	20	0
		50 RB	0	1860	18700	18.86	20	0-1
				1880	18900	18.74	20	0-1
				1900	19100	18.65	20	0-1
			25	1860	18700	18.81	20	0-1
				1880	18900	18.71	20	0-1
				1900	19100	18.63	20	0-1
			50	1860	18700	18.78	20	0-1
				1880	18900	18.71	20	0-1
				1900	19100	18.71	20	0-1
		100RB		1860	18700	18.75	20	0-1
				1880	18900	18.76	20	0-1
				1900	19100	18.75	20	0-1
	16-QAM	1 RB	0	1860	18700	18.84	20	0-1
				1880	18900	18.91	20	0-1
				1900	19100	18.81	20	0-1
			50	1860	18700	18.89	20	0-1
				1880	18900	18.97	20	0-1
				1900	19100	18.82	20	0-1
			99	1860	18700	18.87	20	0-1
				1880	18900	18.80	20	0-1
				1900	19100	18.98	20	0-1
		50 RB	0	1860	18700	18.69	20	0-2
				1880	18900	18.68	20	0-2
				1900	19100	18.61	20	0-2
			25	1860	18700	18.81	20	0-2
				1880	18900	18.70	20	0-2
				1900	19100	18.69	20	0-2
			50	1860	18700	18.81	20	0-2
				1880	18900	18.66	20	0-2
				1900	19100	18.66	20	0-2
		100RB		1860	18700	18.82	20	0-2
				1880	18900	18.71	20	0-2
				1900	19100	18.70	20	0-2

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FDD Band 2 (Reduced Power)

BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance	MPR Allowed per 3GPP(dB)
15	QPSK	1 RB	0	1857.5	18675	18.69	20	0
				1880	18900	18.81	20	0
				1902.5	19125	18.70	20	0
			36	1857.5	18675	18.79	20	0
				1880	18900	18.85	20	0
				1902.5	19125	18.80	20	0
			74	1857.5	18675	18.88	20	0
				1880	18900	18.76	20	0
				1902.5	19125	18.90	20	0
		36 RB	0	1857.5	18675	18.65	20	0-1
				1880	18900	18.66	20	0-1
				1902.5	19125	18.55	20	0-1
			18	1857.5	18675	18.70	20	0-1
				1880	18900	18.67	20	0-1
				1902.5	19125	18.62	20	0-1
			37	1857.5	18675	18.68	20	0-1
				1880	18900	18.64	20	0-1
				1902.5	19125	18.72	20	0-1
		75RB		1857.5	18675	18.63	20	0-1
				1880	18900	18.58	20	0-1
				1902.5	19125	18.56	20	0-1
	16-QAM	1 RB	0	1857.5	18675	18.63	20	0-1
				1880	18900	18.79	20	0-1
				1902.5	19125	18.60	20	0-1
			36	1857.5	18675	18.77	20	0-1
				1880	18900	18.78	20	0-1
				1902.5	19125	18.79	20	0-1
			74	1857.5	18675	18.78	20	0-1
				1880	18900	18.67	20	0-1
				1902.5	19125	18.93	20	0-1
		36 RB	0	1857.5	18675	18.64	20	0-2
				1880	18900	18.65	20	0-2
				1902.5	19125	18.56	20	0-2
			18	1857.5	18675	18.73	20	0-2
				1880	18900	18.64	20	0-2
				1902.5	19125	18.60	20	0-2
			37	1857.5	18675	18.70	20	0-2
				1880	18900	18.60	20	0-2
				1902.5	19125	18.69	20	0-2
		75RB		1857.5	18675	18.59	20	0-2
				1880	18900	18.59	20	0-2
				1902.5	19125	18.50	20	0-2

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FDD Band 2 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	1855	18650	18.67	20	0
				1880	18900	18.79	20	0
				1905	19150	18.63	20	0
			25	1855	18650	18.74	20	0
				1880	18900	18.77	20	0
				1905	19150	18.76	20	0
			49	1855	18650	18.82	20	0
				1880	18900	18.67	20	0
				1905	19150	18.87	20	0
		25 RB	0	1855	18650	18.64	20	0-1
				1880	18900	18.70	20	0-1
				1905	19150	18.63	20	0-1
			12	1855	18650	18.74	20	0-1
				1880	18900	18.71	20	0-1
				1905	19150	18.73	20	0-1
			25	1855	18650	18.76	20	0-1
				1880	18900	18.65	20	0-1
				1905	19150	18.69	20	0-1
		50RB		1855	18650	18.56	20	0-1
				1880	18900	18.57	20	0-1
				1905	19150	18.48	20	0-1
	16-QAM	1 RB	0	1855	18650	18.67	20	0-1
				1880	18900	18.73	20	0-1
				1905	19150	18.67	20	0-1
			25	1855	18650	18.76	20	0-1
				1880	18900	18.77	20	0-1
				1905	19150	18.78	20	0-1
			49	1855	18650	18.72	20	0-1
				1880	18900	18.75	20	0-1
				1905	19150	18.82	20	0-1
		25 RB	0	1855	18650	18.60	20	0-2
				1880	18900	18.71	20	0-2
				1905	19150	18.65	20	0-2
			12	1855	18650	18.67	20	0-2
				1880	18900	18.67	20	0-2
				1905	19150	18.70	20	0-2
			25	1855	18650	18.66	20	0-2
				1880	18900	18.71	20	0-2
				1905	19150	18.67	20	0-2
		50RB		1855	18650	18.49	20	0-2
				1880	18900	18.56	20	0-2
				1905	19150	18.46	20	0-2

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FDD Band 2 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	1852.5	18625	18.60	20	0
				1880	18900	18.82	20	0
				1907.5	19175	18.79	20	0
			12	1852.5	18625	18.73	20	0
				1880	18900	18.78	20	0
				1907.5	19175	18.76	20	0
			24	1852.5	18625	18.68	20	0
				1880	18900	18.77	20	0
				1907.5	19175	18.92	20	0
		12 RB	0	1852.5	18625	18.61	20	0-1
				1880	18900	18.85	20	0-1
				1907.5	19175	18.70	20	0-1
			6	1852.5	18625	18.70	20	0-1
				1880	18900	18.79	20	0-1
				1907.5	19175	18.73	20	0-1
			13	1852.5	18625	18.78	20	0-1
				1880	18900	18.81	20	0-1
				1907.5	19175	18.84	20	0-1
		25RB		1852.5	18625	18.61	20	0-1
				1880	18900	18.68	20	0-1
				1907.5	19175	18.72	20	0-1
	16-QAM	1 RB	0	1852.5	18625	18.66	20	0-1
				1880	18900	18.77	20	0-1
				1907.5	19175	18.79	20	0-1
			12	1852.5	18625	18.73	20	0-1
				1880	18900	18.82	20	0-1
				1907.5	19175	18.79	20	0-1
			24	1852.5	18625	18.72	20	0-1
				1880	18900	18.75	20	0-1
				1907.5	19175	18.86	20	0-1
		12 RB	0	1852.5	18625	18.70	20	0-2
				1880	18900	18.81	20	0-2
				1907.5	19175	18.74	20	0-2
			6	1852.5	18625	18.77	20	0-2
				1880	18900	18.77	20	0-2
				1907.5	19175	18.81	20	0-2
			13	1852.5	18625	18.76	20	0-2
				1880	18900	18.81	20	0-2
				1907.5	19175	18.83	20	0-2
		25RB		1852.5	18625	18.65	20	0-2
				1880	18900	18.65	20	0-2
				1907.5	19175	18.69	20	0-2

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FDD Band 2 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance	MPR Allowed per 3GPP(dB)
3	QPSK	1 RB	0	1851.5	18615	18.64	20	0
				1880	18900	18.76	20	0
				1908.5	19185	18.78	20	0
			7	1851.5	18615	18.68	20	0
				1880	18900	18.75	20	0
				1908.5	19185	18.81	20	0
			14	1851.5	18615	18.75	20	0
				1880	18900	18.75	20	0
				1908.5	19185	18.92	20	0
		8 RB	0	1851.5	18615	18.70	20	0-1
				1880	18900	18.80	20	0-1
				1908.5	19185	18.78	20	0-1
			4	1851.5	18615	18.71	20	0-1
				1880	18900	18.78	20	0-1
				1908.5	19185	18.80	20	0-1
			7	1851.5	18615	18.70	20	0-1
				1880	18900	18.77	20	0-1
				1908.5	19185	18.86	20	0-1
		15RB		1851.5	18615	18.71	20	0-1
				1880	18900	18.81	20	0-1
				1908.5	19185	18.83	20	0-1
	16-QAM	1 RB	0	1851.5	18615	18.65	20	0-1
				1880	18900	18.77	20	0-1
				1908.5	19185	18.80	20	0-1
			7	1851.5	18615	18.77	20	0-1
				1880	18900	18.80	20	0-1
				1908.5	19185	18.81	20	0-1
			14	1851.5	18615	18.71	20	0-1
				1880	18900	18.76	20	0-1
				1908.5	19185	18.86	20	0-1
		8 RB	0	1851.5	18615	18.60	20	0-2
				1880	18900	18.66	20	0-2
				1908.5	19185	18.71	20	0-2
			4	1851.5	18615	18.61	20	0-2
				1880	18900	18.69	20	0-2
				1908.5	19185	18.74	20	0-2
			7	1851.5	18615	18.60	20	0-2
				1880	18900	18.74	20	0-2
				1908.5	19185	18.83	20	0-2
		15RB		1851.5	18615	18.69	20	0-2
				1880	18900	18.80	20	0-2
				1908.5	19185	18.84	20	0-2

FDD Band 2 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance	MPR Allowed per 3GPP(dB)
1.4	QPSK	1 RB	0	1850.7	18607	18.72	20	0
				1880	18900	18.80	20	0
				1909.3	19193	18.87	20	0
			2	1850.7	18607	18.73	20	0
				1880	18900	18.81	20	0
				1909.3	19193	18.87	20	0
			5	1850.7	18607	18.69	20	0
				1880	18900	18.78	20	0
				1909.3	19193	18.92	20	0
		3 RB	0	1850.7	18607	18.70	20	0-1
				1880	18900	18.79	20	0-1
				1909.3	19193	18.95	20	0-1
			2	1850.7	18607	18.72	20	0-1
				1880	18900	18.84	20	0-1
				1909.3	19193	18.89	20	0-1
			3	1850.7	18607	18.65	20	0-1
				1880	18900	18.78	20	0-1
				1909.3	19193	18.89	20	0-1
		6RB		1850.7	18607	18.69	20	0-1
				1880	18900	18.82	20	0-1
				1909.3	19193	18.89	20	0-1
	16-QAM	1 RB	0	1850.7	18607	18.65	20	0-1
				1880	18900	18.73	20	0-1
				1909.3	19193	18.83	20	0-1
			2	1850.7	18607	18.69	20	0-1
				1880	18900	18.72	20	0-1
				1909.3	19193	18.90	20	0-1
			5	1850.7	18607	18.73	20	0-1
				1880	18900	18.70	20	0-1
				1909.3	19193	18.87	20	0-1
		3 RB	0	1850.7	18607	18.65	20	0-2
				1880	18900	18.79	20	0-2
				1909.3	19193	18.86	20	0-2
			2	1850.7	18607	18.66	20	0-2
				1880	18900	18.81	20	0-2
				1909.3	19193	18.88	20	0-2
			3	1850.7	18607	18.72	20	0-2
				1880	18900	18.86	20	0-2
				1909.3	19193	18.95	20	0-2
		6RB		1850.7	18607	18.74	20	0-2
				1880	18900	18.79	20	0-2
				1909.3	19193	18.90	20	0-2

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FDD Band 4 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance	MPR Allowed per 3GPP(dB)
20	QPSK	1 RB	0	1720	20050	21.83	22.5	0
				1732.5	20175	22.08	22.5	0
				1745	20300	21.90	22.5	0
			50	1720	20050	22.17	22.5	0
				1732.5	20175	22.12	22.5	0
				1745	20300	22.04	22.5	0
			99	1720	20050	21.88	22.5	0
				1732.5	20175	22.04	22.5	0
				1745	20300	22.49	22.5	0
		50 RB	0	1720	20050	20.91	22	0-1
				1732.5	20175	21.01	22	0-1
				1745	20300	21.26	22	0-1
			25	1720	20050	20.96	22	0-1
				1732.5	20175	20.88	22	0-1
				1745	20300	21.10	22	0-1
			50	1720	20050	20.85	22	0-1
				1732.5	20175	20.95	22	0-1
				1745	20300	20.97	22	0-1
		100RB		1720	20050	20.98	22	0-1
				1732.5	20175	20.96	22	0-1
				1745	20300	21.12	22	0-1
	16-QAM	1 RB	0	1720	20050	21.19	22	0-1
				1732.5	20175	21.45	22	0-1
				1745	20300	21.39	22	0-1
			50	1720	20050	21.43	22	0-1
				1732.5	20175	21.16	22	0-1
				1745	20300	21.44	22	0-1
			99	1720	20050	21.30	22	0-1
				1732.5	20175	21.14	22	0-1
				1745	20300	21.98	22	0-1
		50 RB	0	1720	20050	19.86	21	0-2
				1732.5	20175	20.01	21	0-2
				1745	20300	20.24	21	0-2
			25	1720	20050	19.82	21	0-2
				1732.5	20175	19.94	21	0-2
				1745	20300	20.06	21	0-2
			50	1720	20050	19.89	21	0-2
				1732.5	20175	19.95	21	0-2
				1745	20300	19.90	21	0-2
		100RB		1720	20050	19.87	21	0-2
				1732.5	20175	19.94	21	0-2
				1745	20300	20.04	21	0-2

FDD Band 4 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance	MPR Allowed per 3GPP(dB)
15	QPSK	1 RB	0	1717.5	20025	22.22	22.5	0
				1732.5	20175	22.18	22.5	0
				1747.5	20325	22.06	22.5	0
			36	1717.5	20025	22.11	22.5	0
				1732.5	20175	22.14	22.5	0
				1747.5	20325	22.21	22.5	0
			74	1717.5	20025	22.09	22.5	0
				1732.5	20175	22.22	22.5	0
				1747.5	20325	21.94	22.5	0
		36 RB	0	1717.5	20025	21.03	22	0-1
				1732.5	20175	21.03	22	0-1
				1747.5	20325	21.16	22	0-1
			18	1717.5	20025	20.96	22	0-1
				1732.5	20175	20.98	22	0-1
				1747.5	20325	21.04	22	0-1
			37	1717.5	20025	20.98	22	0-1
				1732.5	20175	21.09	22	0-1
				1747.5	20325	20.99	22	0-1
		75RB		1717.5	20025	20.90	22	0-1
				1732.5	20175	20.87	22	0-1
				1747.5	20325	20.84	22	0-1
	16-QAM	1 RB	0	1717.5	20025	21.48	22	0-1
				1732.5	20175	21.44	22	0-1
				1747.5	20325	21.29	22	0-1
			36	1717.5	20025	21.17	22	0-1
				1732.5	20175	21.07	22	0-1
				1747.5	20325	21.42	22	0-1
			74	1717.5	20025	20.88	22	0-1
				1732.5	20175	21.40	22	0-1
				1747.5	20325	21.85	22	0-1
		36 RB	0	1717.5	20025	19.89	21	0-2
				1732.5	20175	20.01	21	0-2
				1747.5	20325	20.11	21	0-2
			18	1717.5	20025	19.96	21	0-2
				1732.5	20175	19.96	21	0-2
				1747.5	20325	19.94	21	0-2
			37	1717.5	20025	19.98	21	0-2
				1732.5	20175	20.04	21	0-2
				1747.5	20325	20.01	21	0-2
		75RB		1717.5	20025	19.81	21	0-2
				1732.5	20175	19.84	21	0-2
				1747.5	20325	19.92	21	0-2

FDD Band 4 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	1715	20000	22.01	22.5	0
				1732.5	20175	22.17	22.5	0
				1750	20350	22.21	22.5	0
			25	1715	20000	22.09	22.5	0
				1732.5	20175	22.26	22.5	0
				1750	20350	22.15	22.5	0
			49	1715	20000	22.07	22.5	0
				1732.5	20175	22.42	22.5	0
				1750	20350	22.12	22.5	0
		25 RB	0	1715	20000	21.18	22	0-1
				1732.5	20175	21.19	22	0-1
				1750	20350	21.18	22	0-1
			12	1715	20000	21.04	22	0-1
				1732.5	20175	21.07	22	0-1
				1750	20350	21.17	22	0-1
			25	1715	20000	21.00	22	0-1
				1732.5	20175	21.14	22	0-1
				1750	20350	21.17	22	0-1
		50RB		1715	20000	20.95	22	0-1
				1732.5	20175	20.96	22	0-1
				1750	20350	21.10	22	0-1
	16-QAM	1 RB	0	1715	20000	20.93	22	0-1
				1732.5	20175	20.88	22	0-1
				1750	20350	21.02	22	0-1
			25	1715	20000	21.28	22	0-1
				1732.5	20175	20.64	22	0-1
				1750	20350	21.16	22	0-1
			49	1715	20000	21.16	22	0-1
				1732.5	20175	21.42	22	0-1
				1750	20350	21.44	22	0-1
		25 RB	0	1715	20000	20.01	21	0-2
				1732.5	20175	19.99	21	0-2
				1750	20350	20.01	21	0-2
			12	1715	20000	19.96	21	0-2
				1732.5	20175	20.07	21	0-2
				1750	20350	20.06	21	0-2
			25	1715	20000	19.98	21	0-2
				1732.5	20175	20.08	21	0-2
				1750	20350	20.08	21	0-2
		50RB		1715	20000	19.92	21	0-2
				1732.5	20175	19.88	21	0-2
				1750	20350	20.06	21	0-2

FDD Band 4 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	1712.5	19975	22.01	22.5	0
				1732.5	20175	22.15	22.5	0
				1752.5	20375	22.10	22.5	0
			12	1712.5	19975	22.03	22.5	0
				1732.5	20175	22.15	22.5	0
				1752.5	20375	21.93	22.5	0
			24	1712.5	19975	22.30	22.5	0
				1732.5	20175	22.24	22.5	0
				1752.5	20375	22.23	22.5	0
		12 RB	0	1712.5	19975	21.26	22	0-1
				1732.5	20175	21.23	22	0-1
				1752.5	20375	21.36	22	0-1
			6	1712.5	19975	20.98	22	0-1
				1732.5	20175	21.22	22	0-1
				1752.5	20375	21.04	22	0-1
			13	1712.5	19975	20.99	22	0-1
				1732.5	20175	21.07	22	0-1
				1752.5	20375	21.47	22	0-1
		25RB		1712.5	19975	21.22	22	0-1
				1732.5	20175	21.11	22	0-1
				1752.5	20375	20.86	22	0-1
	16-QAM	1 RB	0	1712.5	19975	20.98	22	0-1
				1732.5	20175	21.07	22	0-1
				1752.5	20375	20.88	22	0-1
			12	1712.5	19975	20.98	22	0-1
				1732.5	20175	21.30	22	0-1
				1752.5	20375	21.37	22	0-1
			24	1712.5	19975	21.18	22	0-1
				1732.5	20175	20.93	22	0-1
				1752.5	20375	21.03	22	0-1
		12 RB	0	1712.5	19975	20.22	21	0-2
				1732.5	20175	20.17	21	0-2
				1752.5	20375	20.27	21	0-2
			6	1712.5	19975	20.27	21	0-2
				1732.5	20175	20.18	21	0-2
				1752.5	20375	19.94	21	0-2
			13	1712.5	19975	20.22	21	0-2
				1732.5	20175	20.01	21	0-2
				1752.5	20375	19.82	21	0-2
		25RB		1712.5	19975	20.12	21	0-2
				1732.5	20175	20.16	21	0-2
				1752.5	20375	20.27	21	0-2

FDD Band 4 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance	MPR Allowed per 3GPP(dB)
3	QPSK	1 RB	0	1711.5	19965	22.03	22.5	0
				1732.5	20175	22.12	22.5	0
				1753.5	20385	21.82	22.5	0
			7	1711.5	19965	21.86	22.5	0
				1732.5	20175	22.17	22.5	0
				1753.5	20385	21.93	22.5	0
			14	1711.5	19965	22.24	22.5	0
				1732.5	20175	22.27	22.5	0
				1753.5	20385	22.34	22.5	0
		8 RB	0	1711.5	19965	21.20	22	0-1
				1732.5	20175	21.27	22	0-1
				1753.5	20385	21.08	22	0-1
			4	1711.5	19965	21.33	22	0-1
				1732.5	20175	21.23	22	0-1
				1753.5	20385	21.17	22	0-1
			7	1711.5	19965	21.29	22	0-1
				1732.5	20175	21.19	22	0-1
				1753.5	20385	21.07	22	0-1
		15RB		1711.5	19965	21.22	22	0-1
				1732.5	20175	21.20	22	0-1
				1753.5	20385	21.56	22	0-1
	16-QAM	1 RB	0	1711.5	19965	21.24	22	0-1
				1732.5	20175	21.05	22	0-1
				1753.5	20385	21.19	22	0-1
			7	1711.5	19965	20.98	22	0-1
				1732.5	20175	21.08	22	0-1
				1753.5	20385	21.06	22	0-1
			14	1711.5	19965	21.29	22	0-1
				1732.5	20175	21.04	22	0-1
				1753.5	20385	21.59	22	0-1
		8 RB	0	1711.5	19965	20.11	21	0-2
				1732.5	20175	20.17	21	0-2
				1753.5	20385	20.05	21	0-2
			4	1711.5	19965	19.84	21	0-2
				1732.5	20175	20.04	21	0-2
				1753.5	20385	20.13	21	0-2
			7	1711.5	19965	19.81	21	0-2
				1732.5	20175	20.26	21	0-2
				1753.5	20385	20.02	21	0-2
		15RB		1711.5	19965	20.16	21	0-2
				1732.5	20175	20.20	21	0-2
				1753.5	20385	20.02	21	0-2

FDD Band 4 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance	MPR Allowed per 3GPP(dB)
1.4	QPSK	1 RB	0	1710.7	19957	22.06	22.5	0
				1732.5	20175	22.04	22.5	0
				1754.3	20393	21.99	22.5	0
			2	1710.7	19957	22.03	22.5	0
				1732.5	20175	21.97	22.5	0
				1754.3	20393	22.43	22.5	0
			5	1710.7	19957	22.07	22.5	0
				1732.5	20175	22.36	22.5	0
				1754.3	20393	22.43	22.5	0
		3 RB	0	1710.7	19957	20.66	22	0-1
				1732.5	20175	20.89	22	0-1
				1754.3	20393	21.00	22	0-1
			2	1710.7	19957	20.58	22	0-1
				1732.5	20175	20.42	22	0-1
				1754.3	20393	21.00	22	0-1
			3	1710.7	19957	20.60	22	0-1
				1732.5	20175	20.83	22	0-1
				1754.3	20393	20.98	22	0-1
		6RB		1710.7	19957	19.65	22	0-1
				1732.5	20175	20.00	22	0-1
				1754.3	20393	19.49	22	0-1
	16-QAM	1 RB	0	1710.7	19957	20.40	22	0-1
				1732.5	20175	20.65	22	0-1
				1754.3	20393	20.91	22	0-1
			2	1710.7	19957	20.51	22	0-1
				1732.5	20175	20.91	22	0-1
				1754.3	20393	20.54	22	0-1
			5	1710.7	19957	20.35	22	0-1
				1732.5	20175	20.52	22	0-1
				1754.3	20393	20.74	22	0-1
		3 RB	0	1710.7	19957	20.52	21	0-2
				1732.5	20175	20.66	21	0-2
				1754.3	20393	21.00	21	0-2
			2	1710.7	19957	20.72	21	0-2
				1732.5	20175	20.90	21	0-2
				1754.3	20393	20.42	21	0-2
			3	1710.7	19957	20.72	21	0-2
				1732.5	20175	20.92	21	0-2
				1754.3	20393	21.00	21	0-2
		6RB		1710.7	19957	19.71	21	0-2
				1732.5	20175	19.68	21	0-2
				1754.3	20393	20.17	21	0-2

FDD Band 4 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance	MPR Allowed per 3GPP(dB)
20	QPSK	1 RB	0	1720	20050	19.57	20	0
				1732.5	20175	19.68	20	0
				1745	20300	19.81	20	0
			50	1720	20050	19.69	20	0
				1732.5	20175	19.88	20	0
				1745	20300	19.76	20	0
			99	1720	20050	19.78	20	0
				1732.5	20175	19.86	20	0
				1745	20300	19.89	20	0
		50 RB	0	1720	20050	19.59	20	0-1
				1732.5	20175	19.57	20	0-1
				1745	20300	19.68	20	0-1
			25	1720	20050	19.55	20	0-1
				1732.5	20175	19.58	20	0-1
				1745	20300	19.54	20	0-1
			50	1720	20050	19.56	20	0-1
				1732.5	20175	19.63	20	0-1
				1745	20300	19.62	20	0-1
		100RB		1720	20050	19.57	20	0-1
				1732.5	20175	19.66	20	0-1
				1745	20300	19.69	20	0-1
	16-QAM	1 RB	0	1720	20050	19.59	20	0-1
				1732.5	20175	19.60	20	0-1
				1745	20300	19.48	20	0-1
			50	1720	20050	19.73	20	0-1
				1732.5	20175	19.41	20	0-1
				1745	20300	19.19	20	0-1
			99	1720	20050	19.16	20	0-1
				1732.5	20175	19.37	20	0-1
				1745	20300	19.72	20	0-1
		50 RB	0	1720	20050	19.19	20	0-2
				1732.5	20175	19.20	20	0-2
				1745	20300	19.52	20	0-2
			25	1720	20050	19.19	20	0-2
				1732.5	20175	19.27	20	0-2
				1745	20300	19.24	20	0-2
			50	1720	20050	19.19	20	0-2
				1732.5	20175	19.34	20	0-2
				1745	20300	19.20	20	0-2
		100RB		1720	20050	19.30	20	0-2
				1732.5	20175	19.26	20	0-2
				1745	20300	19.30	20	0-2

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FDD Band 4 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance	MPR Allowed per 3GPP(dB)
15	QPSK	1 RB	0	1717.5	20025	19.30	20	0
				1732.5	20175	19.43	20	0
				1747.5	20325	19.42	20	0
			36	1717.5	20025	19.47	20	0
				1732.5	20175	19.46	20	0
				1747.5	20325	19.46	20	0
			74	1717.5	20025	19.35	20	0
				1732.5	20175	19.56	20	0
				1747.5	20325	19.62	20	0
		36 RB	0	1717.5	20025	19.20	20	0-1
				1732.5	20175	19.23	20	0-1
				1747.5	20325	19.33	20	0-1
			18	1717.5	20025	19.14	20	0-1
				1732.5	20175	19.25	20	0-1
				1747.5	20325	19.31	20	0-1
			37	1717.5	20025	19.27	20	0-1
				1732.5	20175	19.38	20	0-1
				1747.5	20325	19.27	20	0-1
		75RB		1717.5	20025	19.05	20	0-1
				1732.5	20175	19.22	20	0-1
				1747.5	20325	19.23	20	0-1
	16-QAM	1 RB	0	1717.5	20025	18.78	20	0-1
				1732.5	20175	19.28	20	0-1
				1747.5	20325	19.28	20	0-1
			36	1717.5	20025	19.02	20	0-1
				1732.5	20175	19.40	20	0-1
				1747.5	20325	19.54	20	0-1
			74	1717.5	20025	19.12	20	0-1
				1732.5	20175	19.55	20	0-1
				1747.5	20325	19.47	20	0-1
		36 RB	0	1717.5	20025	19.12	20	0-2
				1732.5	20175	19.09	20	0-2
				1747.5	20325	19.17	20	0-2
			18	1717.5	20025	19.04	20	0-2
				1732.5	20175	19.00	20	0-2
				1747.5	20325	19.04	20	0-2
			37	1717.5	20025	19.02	20	0-2
				1732.5	20175	19.17	20	0-2
				1747.5	20325	19.16	20	0-2
		75RB		1717.5	20025	18.98	20	0-2
				1732.5	20175	19.07	20	0-2
				1747.5	20325	18.96	20	0-2

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FDD Band 4 (Reduced Power)

BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	1715	20000	19.21	20	0
				1732.5	20175	19.45	20	0
				1750	20350	19.30	20	0
			25	1715	20000	19.29	20	0
				1732.5	20175	19.41	20	0
				1750	20350	19.46	20	0
			49	1715	20000	19.34	20	0
				1732.5	20175	19.44	20	0
				1750	20350	19.54	20	0
		25 RB	0	1715	20000	19.25	20	0-1
				1732.5	20175	19.29	20	0-1
				1750	20350	19.36	20	0-1
			12	1715	20000	19.35	20	0-1
				1732.5	20175	19.34	20	0-1
				1750	20350	19.35	20	0-1
			25	1715	20000	19.25	20	0-1
				1732.5	20175	19.46	20	0-1
				1750	20350	19.37	20	0-1
		50RB		1715	20000	19.19	20	0-1
				1732.5	20175	19.27	20	0-1
				1750	20350	19.24	20	0-1
	16-QAM	1 RB	0	1715	20000	19.27	20	0-1
				1732.5	20175	19.21	20	0-1
				1750	20350	19.00	20	0-1
			25	1715	20000	19.46	20	0-1
				1732.5	20175	19.22	20	0-1
				1750	20350	19.12	20	0-1
			49	1715	20000	19.44	20	0-1
				1732.5	20175	18.89	20	0-1
				1750	20350	18.98	20	0-1
		25 RB	0	1715	20000	19.18	20	0-2
				1732.5	20175	19.15	20	0-2
				1750	20350	19.22	20	0-2
			12	1715	20000	19.05	20	0-2
				1732.5	20175	19.21	20	0-2
				1750	20350	19.27	20	0-2
			25	1715	20000	19.03	20	0-2
				1732.5	20175	19.31	20	0-2
				1750	20350	19.25	20	0-2
		50RB		1715	20000	19.04	20	0-2
				1732.5	20175	18.99	20	0-2
				1750	20350	19.10	20	0-2

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FDD Band 4 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	1712.5	19975	19.13	20	0
				1732.5	20175	19.32	20	0
				1752.5	20375	19.43	20	0
			12	1712.5	19975	19.34	20	0
				1732.5	20175	19.37	20	0
				1752.5	20375	19.44	20	0
			24	1712.5	19975	19.24	20	0
				1732.5	20175	19.45	20	0
				1752.5	20375	19.43	20	0
		12 RB	0	1712.5	19975	19.39	20	0-1
				1732.5	20175	19.42	20	0-1
				1752.5	20375	19.35	20	0-1
			6	1712.5	19975	19.43	20	0-1
				1732.5	20175	19.41	20	0-1
				1752.5	20375	19.41	20	0-1
			13	1712.5	19975	19.38	20	0-1
				1732.5	20175	19.49	20	0-1
				1752.5	20375	19.42	20	0-1
		25RB		1712.5	19975	19.31	20	0-1
				1732.5	20175	19.30	20	0-1
				1752.5	20375	19.34	20	0-1
	16-QAM	1 RB	0	1712.5	19975	18.99	20	0-1
				1732.5	20175	19.39	20	0-1
				1752.5	20375	19.56	20	0-1
			12	1712.5	19975	18.85	20	0-1
				1732.5	20175	19.41	20	0-1
				1752.5	20375	19.46	20	0-1
			24	1712.5	19975	19.01	20	0-1
				1732.5	20175	19.23	20	0-1
				1752.5	20375	19.16	20	0-1
		12 RB	0	1712.5	19975	19.19	20	0-2
				1732.5	20175	19.38	20	0-2
				1752.5	20375	19.23	20	0-2
			6	1712.5	19975	19.16	20	0-2
				1732.5	20175	19.29	20	0-2
				1752.5	20375	19.40	20	0-2
			13	1712.5	19975	19.23	20	0-2
				1732.5	20175	19.32	20	0-2
				1752.5	20375	19.31	20	0-2
		25RB		1712.5	19975	19.20	20	0-2
				1732.5	20175	19.05	20	0-2
				1752.5	20375	19.26	20	0-2

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FDD Band 4 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance	MPR Allowed per 3GPP(dB)
3	QPSK	1 RB	0	1711.5	19965	19.12	20	0
				1732.5	20175	19.08	20	0
				1753.5	20385	19.14	20	0
			7	1711.5	19965	19.26	20	0
				1732.5	20175	19.16	20	0
				1753.5	20385	19.09	20	0
			14	1711.5	19965	19.17	20	0
				1732.5	20175	19.22	20	0
				1753.5	20385	19.16	20	0
		8 RB	0	1711.5	19965	19.10	20	0-1
				1732.5	20175	19.19	20	0-1
				1753.5	20385	19.20	20	0-1
			4	1711.5	19965	19.17	20	0-1
				1732.5	20175	19.20	20	0-1
				1753.5	20385	19.26	20	0-1
			7	1711.5	19965	19.17	20	0-1
				1732.5	20175	19.23	20	0-1
				1753.5	20385	19.19	20	0-1
		15RB		1711.5	19965	19.09	20	0-1
				1732.5	20175	19.19	20	0-1
				1753.5	20385	19.21	20	0-1
	16-QAM	1 RB	0	1711.5	19965	18.78	20	0-1
				1732.5	20175	19.29	20	0-1
				1753.5	20385	18.69	20	0-1
			7	1711.5	19965	18.96	20	0-1
				1732.5	20175	18.96	20	0-1
				1753.5	20385	19.31	20	0-1
			14	1711.5	19965	19.17	20	0-1
				1732.5	20175	18.70	20	0-1
				1753.5	20385	19.20	20	0-1
		8 RB	0	1711.5	19965	18.66	20	0-2
				1732.5	20175	19.02	20	0-2
				1753.5	20385	18.78	20	0-2
			4	1711.5	19965	19.03	20	0-2
				1732.5	20175	18.96	20	0-2
				1753.5	20385	18.87	20	0-2
			7	1711.5	19965	18.92	20	0-2
				1732.5	20175	18.95	20	0-2
				1753.5	20385	18.95	20	0-2
		15RB		1711.5	19965	19.08	20	0-2
				1732.5	20175	19.26	20	0-2
				1753.5	20385	18.98	20	0-2

FDD Band 4 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance	MPR Allowed per 3GPP(dB)
1.4	QPSK	1 RB	0	1710.7	19957	19.02	20	0
				1732.5	20175	19.21	20	0
				1754.3	20393	19.13	20	0
			2	1710.7	19957	19.13	20	0
				1732.5	20175	19.30	20	0
				1754.3	20393	19.31	20	0
			5	1710.7	19957	19.15	20	0
				1732.5	20175	19.22	20	0
				1754.3	20393	19.31	20	0
		3 RB	0	1710.7	19957	19.03	20	0-1
				1732.5	20175	19.31	20	0-1
				1754.3	20393	19.26	20	0-1
			2	1710.7	19957	18.98	20	0-1
				1732.5	20175	19.18	20	0-1
				1754.3	20393	19.33	20	0-1
			3	1710.7	19957	19.01	20	0-1
				1732.5	20175	19.21	20	0-1
				1754.3	20393	19.15	20	0-1
		6RB		1710.7	19957	19.00	20	0-1
				1732.5	20175	19.31	20	0-1
				1754.3	20393	19.27	20	0-1
	16-QAM	1 RB	0	1710.7	19957	19.20	20	0-1
				1732.5	20175	18.94	20	0-1
				1754.3	20393	19.13	20	0-1
			2	1710.7	19957	18.48	20	0-1
				1732.5	20175	19.29	20	0-1
				1754.3	20393	18.97	20	0-1
			5	1710.7	19957	19.15	20	0-1
				1732.5	20175	18.98	20	0-1
				1754.3	20393	19.20	20	0-1
		3 RB	0	1710.7	19957	19.01	20	0-2
				1732.5	20175	19.05	20	0-2
				1754.3	20393	19.12	20	0-2
			2	1710.7	19957	18.99	20	0-2
				1732.5	20175	18.97	20	0-2
				1754.3	20393	19.14	20	0-2
			3	1710.7	19957	18.89	20	0-2
				1732.5	20175	19.18	20	0-2
				1754.3	20393	19.13	20	0-2
		6RB		1710.7	19957	18.83	20	0-2
				1732.5	20175	19.15	20	0-2
				1754.3	20393	18.97	20	0-2

FDD Band 5 (Full Power)								
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	21.76	22.5	0
				836.5	20525	21.86	22.5	0
				844	20600	22.04	22.5	0
			25	829	20450	21.87	22.5	0
				836.5	20525	21.83	22.5	0
				844	20600	21.95	22.5	0
			49	829	20450	21.84	22.5	0
				836.5	20525	21.77	22.5	0
				844	20600	22.24	22.5	0
		25 RB	0	829	20450	20.74	21	0-1
				836.5	20525	20.76	21	0-1
				844	20600	20.70	21	0-1
			12	829	20450	20.80	21	0-1
				836.5	20525	20.80	21	0-1
				844	20600	20.75	21	0-1
			25	829	20450	20.89	21	0-1
				836.5	20525	20.77	21	0-1
				844	20600	20.71	21	0-1
		50RB		829	20450	20.58	21	0-1
				836.5	20525	20.68	21	0-1
				844	20600	20.62	21	0-1
	16-QAM	1 RB	0	829	20450	20.77	21	0-1
				836.5	20525	20.75	21	0-1
				844	20600	20.79	21	0-1
			25	829	20450	20.51	21	0-1
				836.5	20525	20.82	21	0-1
				844	20600	21.08	21	0-1
			49	829	20450	21.04	21	0-1
				836.5	20525	20.72	21	0-1
				844	20600	21.78	21	0-1
		25 RB	0	829	20450	19.68	20	0-2
				836.5	20525	19.89	20	0-2
				844	20600	19.78	20	0-2
			12	829	20450	19.76	20	0-2
				836.5	20525	19.79	20	0-2
				844	20600	19.77	20	0-2
			25	829	20450	19.91	20	0-2
				836.5	20525	19.71	20	0-2
				844	20600	19.75	20	0-2
		50RB		829	20450	19.56	20	0-2
				836.5	20525	19.63	20	0-2
				844	20600	19.59	20	0-2

FDD Band 5 (Full Power)								
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	21.62	22.5	0
				836.5	20525	21.71	22.5	0
				846.5	20625	21.69	22.5	0
			12	826.5	20425	21.67	22.5	0
				836.5	20525	21.75	22.5	0
				846.5	20625	21.71	22.5	0
			24	826.5	20425	21.65	22.5	0
				836.5	20525	21.83	22.5	0
				846.5	20625	21.71	22.5	0
		12 RB	0	826.5	20425	20.80	21	0-1
				836.5	20525	20.86	21	0-1
				846.5	20625	20.77	21	0-1
			6	826.5	20425	20.79	21	0-1
				836.5	20525	20.87	21	0-1
				846.5	20625	20.81	21	0-1
			13	826.5	20425	20.77	21	0-1
				836.5	20525	20.80	21	0-1
				846.5	20625	20.82	21	0-1
		25RB		826.5	20425	20.67	21	0-1
				836.5	20525	20.69	21	0-1
				846.5	20625	20.70	21	0-1
	16-QAM	1 RB	0	826.5	20425	20.90	21	0-1
				836.5	20525	20.73	21	0-1
				846.5	20625	20.62	21	0-1
			12	826.5	20425	20.63	21	0-1
				836.5	20525	20.94	21	0-1
				846.5	20625	20.63	21	0-1
			24	826.5	20425	21.00	21	0-1
				836.5	20525	20.57	21	0-1
				846.5	20625	20.41	21	0-1
		12 RB	0	826.5	20425	19.75	20	0-2
				836.5	20525	19.83	20	0-2
				846.5	20625	19.74	20	0-2
			6	826.5	20425	19.84	20	0-2
				836.5	20525	19.88	20	0-2
				846.5	20625	19.87	20	0-2
			13	826.5	20425	19.71	20	0-2
				836.5	20525	19.78	20	0-2
				846.5	20625	19.93	20	0-2
		25RB		826.5	20425	19.61	20	0-2
				836.5	20525	19.68	20	0-2
				846.5	20625	19.68	20	0-2

FDD Band 5 (Full Power)								
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	21.69	22.5	0
				836.5	20525	21.62	22.5	0
				847.5	20635	21.52	22.5	0
			7	825.5	20415	21.66	22.5	0
				836.5	20525	21.68	22.5	0
				847.5	20635	21.55	22.5	0
			14	825.5	20415	21.67	22.5	0
				836.5	20525	21.80	22.5	0
				847.5	20635	21.74	22.5	0
		8 RB	0	825.5	20415	20.71	21	0-1
				836.5	20525	20.77	21	0-1
				847.5	20635	20.75	21	0-1
			4	825.5	20415	20.72	21	0-1
				836.5	20525	20.82	21	0-1
				847.5	20635	20.79	21	0-1
			7	825.5	20415	20.78	21	0-1
				836.5	20525	20.76	21	0-1
				847.5	20635	20.74	21	0-1
		15RB		825.5	20415	20.65	21	0-1
				836.5	20525	20.78	21	0-1
				847.5	20635	20.70	21	0-1
	16-QAM	1 RB	0	825.5	20415	20.88	21	0-1
				836.5	20525	20.54	21	0-1
				847.5	20635	20.85	21	0-1
			7	825.5	20415	20.39	21	0-1
				836.5	20525	20.99	21	0-1
				847.5	20635	20.87	21	0-1
			14	825.5	20415	20.56	21	0-1
				836.5	20525	20.75	21	0-1
				847.5	20635	20.68	21	0-1
		8 RB	0	825.5	20415	19.65	20	0-2
				836.5	20525	19.74	20	0-2
				847.5	20635	19.71	20	0-2
			4	825.5	20415	19.74	20	0-2
				836.5	20525	19.78	20	0-2
				847.5	20635	19.75	20	0-2
			7	825.5	20415	19.76	20	0-2
				836.5	20525	19.85	20	0-2
				847.5	20635	19.71	20	0-2
		15RB		825.5	20415	19.72	20	0-2
				836.5	20525	19.76	20	0-2
				847.5	20635	19.84	20	0-2

<table>
<tr><th colspan="9">FDD Band 5 (Full Power)</th></tr>
<tr><th>BW(Mhz)</th><th>Modulation</th><th>RB Size</th><th>RB Offset</th><th>Frequency (MHz)</th><th>Channel</th><th>Conducted power (dBm)</th><th>Target Power + Max. Tolerance (dBm)</th><th>MPR Allowed per 3GPP(dB)</th></tr>
<tr><td rowspan="42">1.4</td><td rowspan="21">QPSK</td><td rowspan="9">1 RB</td><td rowspan="3">0</td><td>824.7</td><td>20407</td><td>21.61</td><td>22.5</td><td>0</td></tr>
<tr><td>836.5</td><td>20525</td><td>21.72</td><td>22.5</td><td>0</td></tr>
<tr><td>848.3</td><td>20643</td><td>21.69</td><td>22.5</td><td>0</td></tr>
<tr><td rowspan="3">2</td><td>824.7</td><td>20407</td><td>21.69</td><td>22.5</td><td>0</td></tr>
<tr><td>836.5</td><td>20525</td><td>21.75</td><td>22.5</td><td>0</td></tr>
<tr><td>848.3</td><td>20643</td><td>21.78</td><td>22.5</td><td>0</td></tr>
<tr><td rowspan="3">5</td><td>824.7</td><td>20407</td><td>21.79</td><td>22.5</td><td>0</td></tr>
<tr><td>836.5</td><td>20525</td><td>21.74</td><td>22.5</td><td>0</td></tr>
<tr><td>848.3</td><td>20643</td><td>21.70</td><td>22.5</td><td>0</td></tr>
<tr><td rowspan="9">3 RB</td><td rowspan="3">0</td><td>824.7</td><td>20407</td><td>20.72</td><td>21</td><td>0-1</td></tr>
<tr><td>836.5</td><td>20525</td><td>20.68</td><td>21</td><td>0-1</td></tr>
<tr><td>848.3</td><td>20643</td><td>20.76</td><td>21</td><td>0-1</td></tr>
<tr><td rowspan="3">2</td><td>824.7</td><td>20407</td><td>20.69</td><td>21</td><td>0-1</td></tr>
<tr><td>836.5</td><td>20525</td><td>20.72</td><td>21</td><td>0-1</td></tr>
<tr><td>848.3</td><td>20643</td><td>20.74</td><td>21</td><td>0-1</td></tr>
<tr><td rowspan="3">3</td><td>824.7</td><td>20407</td><td>20.72</td><td>21</td><td>0-1</td></tr>
<tr><td>836.5</td><td>20525</td><td>20.67</td><td>21</td><td>0-1</td></tr>
<tr><td>848.3</td><td>20643</td><td>20.67</td><td>21</td><td>0-1</td></tr>
<tr><td colspan="2" rowspan="3">6RB</td><td>824.7</td><td>20407</td><td>19.75</td><td>21</td><td>0-1</td></tr>
<tr><td>836.5</td><td>20525</td><td>19.74</td><td>21</td><td>0-1</td></tr>
<tr><td>848.3</td><td>20643</td><td>19.86</td><td>21</td><td>0-1</td></tr>
<tr><td rowspan="21">16-QAM</td><td rowspan="9">1 RB</td><td rowspan="3">0</td><td>824.7</td><td>20407</td><td>20.41</td><td>21</td><td>0-1</td></tr>
<tr><td>836.5</td><td>20525</td><td>20.68</td><td>21</td><td>0-1</td></tr>
<tr><td>848.3</td><td>20643</td><td>20.90</td><td>21</td><td>0-1</td></tr>
<tr><td rowspan="3">2</td><td>824.7</td><td>20407</td><td>20.98</td><td>21</td><td>0-1</td></tr>
<tr><td>836.5</td><td>20525</td><td>20.65</td><td>21</td><td>0-1</td></tr>
<tr><td>848.3</td><td>20643</td><td>20.65</td><td>21</td><td>0-1</td></tr>
<tr><td rowspan="3">5</td><td>824.7</td><td>20407</td><td>20.94</td><td>21</td><td>0-1</td></tr>
<tr><td>836.5</td><td>20525</td><td>20.43</td><td>21</td><td>0-1</td></tr>
<tr><td>848.3</td><td>20643</td><td>20.35</td><td>21</td><td>0-1</td></tr>
<tr><td rowspan="9">3 RB</td><td rowspan="3">0</td><td>824.7</td><td>20407</td><td>19.81</td><td>20</td><td>0-2</td></tr>
<tr><td>836.5</td><td>20525</td><td>19.73</td><td>20</td><td>0-2</td></tr>
<tr><td>848.3</td><td>20643</td><td>20.09</td><td>20</td><td>0-2</td></tr>
<tr><td rowspan="3">2</td><td>824.7</td><td>20407</td><td>19.75</td><td>20</td><td>0-2</td></tr>
<tr><td>836.5</td><td>20525</td><td>19.71</td><td>20</td><td>0-2</td></tr>
<tr><td>848.3</td><td>20643</td><td>20.00</td><td>20</td><td>0-2</td></tr>
<tr><td rowspan="3">3</td><td>824.7</td><td>20407</td><td>19.62</td><td>20</td><td>0-2</td></tr>
<tr><td>836.5</td><td>20525</td><td>19.76</td><td>20</td><td>0-2</td></tr>
<tr><td>848.3</td><td>20643</td><td>19.63</td><td>20</td><td>0-2</td></tr>
<tr><td colspan="2" rowspan="3">6RB</td><td>824.7</td><td>20407</td><td>18.82</td><td>20</td><td>0-2</td></tr>
<tr><td>836.5</td><td>20525</td><td>18.94</td><td>20</td><td>0-2</td></tr>
<tr><td>848.3</td><td>20643</td><td>18.92</td><td>20</td><td>0-2</td></tr>
</table>

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FDD Band 5 (Reduced Power)								
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	18.24	20	0
				836.5	20525	18.33	20	0
				844	20600	18.18	20	0
			25	829	20450	18.39	20	0
				836.5	20525	18.29	20	0
				844	20600	18.19	20	0
			49	829	20450	18.36	20	0
				836.5	20525	18.27	20	0
				844	20600	18.50	20	0
		25 RB	0	829	20450	18.20	20	0-1
				836.5	20525	18.27	20	0-1
				844	20600	18.21	20	0-1
			12	829	20450	18.42	20	0-1
				836.5	20525	18.39	20	0-1
				844	20600	18.28	20	0-1
			25	829	20450	18.49	20	0-1
				836.5	20525	18.36	20	0-1
				844	20600	18.29	20	0-1
		50RB		829	20450	18.29	20	0-1
				836.5	20525	18.21	20	0-1
				844	20600	18.27	20	0-1
	16-QAM	1 RB	0	829	20450	18.36	20	0-1
				836.5	20525	18.47	20	0-1
				844	20600	18.44	20	0-1
			25	829	20450	18.47	20	0-1
				836.5	20525	18.20	20	0-1
				844	20600	17.93	20	0-1
			49	829	20450	18.12	20	0-1
				836.5	20525	18.21	20	0-1
				844	20600	18.09	20	0-1
		25 RB	0	829	20450	17.91	20	0-2
				836.5	20525	18.05	20	0-2
				844	20600	18.10	20	0-2
			12	829	20450	18.13	20	0-2
				836.5	20525	18.10	20	0-2
				844	20600	17.92	20	0-2
			25	829	20450	18.16	20	0-2
				836.5	20525	18.01	20	0-2
				844	20600	17.87	20	0-2
		50RB		829	20450	18.00	20	0-2
				836.5	20525	17.96	20	0-2
				844	20600	17.96	20	0-2

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FDD Band 5 (Reduced Power)								
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	18.02	20	0
				836.5	20525	18.12	20	0
				846.5	20625	18.18	20	0
			12	826.5	20425	18.15	20	0
				836.5	20525	18.23	20	0
				846.5	20625	18.15	20	0
			24	826.5	20425	18.22	20	0
				836.5	20525	18.21	20	0
				846.5	20625	18.07	20	0
		12 RB	0	826.5	20425	18.07	20	0-1
				836.5	20525	18.13	20	0-1
				846.5	20625	18.07	20	0-1
			6	826.5	20425	18.18	20	0-1
				836.5	20525	18.22	20	0-1
				846.5	20625	18.16	20	0-1
			13	826.5	20425	18.20	20	0-1
				836.5	20525	18.24	20	0-1
				846.5	20625	18.16	20	0-1
		25RB		826.5	20425	18.05	20	0-1
				836.5	20525	18.13	20	0-1
				846.5	20625	18.13	20	0-1
	16-QAM	1 RB	0	826.5	20425	17.73	20	0-1
				836.5	20525	17.93	20	0-1
				846.5	20625	18.08	20	0-1
			12	826.5	20425	18.24	20	0-1
				836.5	20525	17.87	20	0-1
				846.5	20625	17.84	20	0-1
			24	826.5	20425	18.43	20	0-1
				836.5	20525	18.35	20	0-1
				846.5	20625	17.98	20	0-1
		12 RB	0	826.5	20425	18.16	20	0-2
				836.5	20525	18.23	20	0-2
				846.5	20625	18.13	20	0-2
			6	826.5	20425	18.19	20	0-2
				836.5	20525	18.28	20	0-2
				846.5	20625	18.10	20	0-2
			13	826.5	20425	18.26	20	0-2
				836.5	20525	18.24	20	0-2
				846.5	20625	18.05	20	0-2
		25RB		826.5	20425	18.05	20	0-2
				836.5	20525	18.09	20	0-2
				846.5	20625	18.10	20	0-2

FDD Band 5 (Reduced Power)								
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	18.02	20	0
				836.5	20525	18.13	20	0
				847.5	20635	18.04	20	0
			7	825.5	20415	18.14	20	0
				836.5	20525	18.23	20	0
				847.5	20635	18.04	20	0
			14	825.5	20415	18.13	20	0
				836.5	20525	18.22	20	0
				847.5	20635	18.16	20	0
		8 RB	0	825.5	20415	18.16	20	0-1
				836.5	20525	18.17	20	0-1
				847.5	20635	18.23	20	0-1
			4	825.5	20415	18.06	20	0-1
				836.5	20525	18.22	20	0-1
				847.5	20635	18.11	20	0-1
			7	825.5	20415	18.09	20	0-1
				836.5	20525	18.17	20	0-1
				847.5	20635	18.16	20	0-1
		15RB		825.5	20415	18.09	20	0-1
				836.5	20525	18.17	20	0-1
				847.5	20635	18.20	20	0-1
	16-QAM	1 RB	0	825.5	20415	17.88	20	0-1
				836.5	20525	18.10	20	0-1
				847.5	20635	18.01	20	0-1
			7	825.5	20415	18.03	20	0-1
				836.5	20525	18.05	20	0-1
				847.5	20635	18.30	20	0-1
			14	825.5	20415	18.45	20	0-1
				836.5	20525	18.48	20	0-1
				847.5	20635	17.80	20	0-1
		8 RB	0	825.5	20415	18.05	20	0-2
				836.5	20525	18.16	20	0-2
				847.5	20635	18.03	20	0-2
			4	825.5	20415	17.93	20	0-2
				836.5	20525	18.23	20	0-2
				847.5	20635	18.06	20	0-2
			7	825.5	20415	17.97	20	0-2
				836.5	20525	18.13	20	0-2
				847.5	20635	18.14	20	0-2
		15RB		825.5	20415	18.02	20	0-2
				836.5	20525	18.17	20	0-2
				847.5	20635	18.19	20	0-2

FDD Band 5 (Reduced Power)								
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	18.01	20	0
				836.5	20525	18.12	20	0
				848.3	20643	18.10	20	0
			2	824.7	20407	18.16	20	0
				836.5	20525	18.18	20	0
				848.3	20643	18.15	20	0
			5	824.7	20407	18.17	20	0
				836.5	20525	18.28	20	0
				848.3	20643	18.11	20	0
		3 RB	0	824.7	20407	18.13	20	0-1
				836.5	20525	18.19	20	0-1
				848.3	20643	18.21	20	0-1
			2	824.7	20407	18.12	20	0-1
				836.5	20525	18.18	20	0-1
				848.3	20643	18.18	20	0-1
			3	824.7	20407	18.09	20	0-1
				836.5	20525	18.25	20	0-1
				848.3	20643	18.18	20	0-1
		6RB		824.7	20407	18.13	20	0-1
				836.5	20525	18.23	20	0-1
				848.3	20643	18.18	20	0-1
	16-QAM	1 RB	0	824.7	20407	18.39	20	0-1
				836.5	20525	17.94	20	0-1
				848.3	20643	18.42	20	0-1
			2	824.7	20407	18.24	20	0-1
				836.5	20525	18.42	20	0-1
				848.3	20643	18.30	20	0-1
			5	824.7	20407	17.96	20	0-1
				836.5	20525	18.36	20	0-1
				848.3	20643	17.90	20	0-1
		3 RB	0	824.7	20407	18.18	20	0-2
				836.5	20525	18.29	20	0-2
				848.3	20643	18.23	20	0-2
			2	824.7	20407	18.21	20	0-2
				836.5	20525	18.26	20	0-2
				848.3	20643	18.18	20	0-2
			3	824.7	20407	18.16	20	0-2
				836.5	20525	18.23	20	0-2
				848.3	20643	18.03	20	0-2
		6RB		824.7	20407	18.03	20	0-2
				836.5	20525	18.22	20	0-2
				848.3	20643	18.17	20	0-2

FDD Band 13 (Full Power)								
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	782	23230	21.65	22	0
			25	782	23230	22.00	22	0
			49	782	23230	21.85	22	0
		25 RB	0	782	23230	20.89	21	0-1
			12	782	23230	20.95	21	0-1
			25	782	23230	20.86	21	0-1
		50RB		782	23230	20.74	21	0-1
	16-QAM	1 RB	0	782	23230	20.57	21	0-1
			25	782	23230	20.93	21	0-1
			49	782	23230	20.82	21	0-1
		25 RB	0	782	23230	19.81	20	0-2
			12	782	23230	19.82	20	0-2
			25	782	23230	19.78	20	0-2
		50RB		782	23230	19.79	20	0-2

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FDD Band 13 (Full Power)								
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	779.5	23205	21.76	22	0
				782	23230	21.79	22	0
				784.5	23255	21.59	22	0
			12	779.5	23205	21.69	22	0
				782	23230	21.86	22	0
				784.5	23255	21.67	22	0
			24	779.5	23205	21.87	22	0
				782	23230	21.78	22	0
				784.5	23255	21.74	22	0
		12 RB	0	779.5	23205	20.77	21	0-1
				782	23230	20.83	21	0-1
				784.5	23255	20.85	21	0-1
			6	779.5	23205	20.70	21	0-1
				782	23230	20.95	21	0-1
				784.5	23255	20.87	21	0-1
			13	779.5	23205	20.84	21	0-1
				782	23230	20.86	21	0-1
				784.5	23255	20.78	21	0-1
		25RB		779.5	23205	20.81	21	0-1
				782	23230	20.86	21	0-1
				784.5	23255	20.90	21	0-1
	16-QAM	1 RB	0	779.5	23205	20.89	21	0-1
				782	23230	20.99	21	0-1
				784.5	23255	20.98	21	0-1
			12	779.5	23205	20.94	21	0-1
				782	23230	20.93	21	0-1
				784.5	23255	20.54	21	0-1
			24	779.5	23205	20.87	21	0-1
				782	23230	20.72	21	0-1
				784.5	23255	20.97	21	0-1
		12 RB	0	779.5	23205	19.77	20	0-2
				782	23230	19.89	20	0-2
				784.5	23255	19.93	20	0-2
			6	779.5	23205	19.72	20	0-2
				782	23230	19.96	20	0-2
				784.5	23255	19.88	20	0-2
			13	779.5	23205	19.91	20	0-2
				782	23230	19.98	20	0-2
				784.5	23255	19.76	20	0-2
		25RB		779.5	23205	19.63	20	0-2
				782	23230	19.72	20	0-2
				784.5	23255	19.75	20	0-2

<table>
<tr><th colspan="9">FDD Band 13 (Reduced Power)</th></tr>
<tr><th>BW(Mhz)</th><th>Modulation</th><th>RB Size</th><th>RB Offset</th><th>Frequency (MHz)</th><th>Channel</th><th>Conducted power (dBm)</th><th>Target Power + Max. Tolerance (dBm)</th><th>MPR Allowed per 3GPP(dB)</th></tr>
<tr><td rowspan="14">10</td><td rowspan="7">QPSK</td><td rowspan="3">1 RB</td><td>0</td><td>782</td><td>23230</td><td>18.01</td><td>20</td><td>0</td></tr>
<tr><td>25</td><td>782</td><td>23230</td><td>18.33</td><td>20</td><td>0</td></tr>
<tr><td>49</td><td>782</td><td>23230</td><td>18.09</td><td>20</td><td>0</td></tr>
<tr><td rowspan="3">25 RB</td><td>0</td><td>782</td><td>23230</td><td>18.01</td><td>20</td><td>0-1</td></tr>
<tr><td>12</td><td>782</td><td>23230</td><td>18.17</td><td>20</td><td>0-1</td></tr>
<tr><td>25</td><td>782</td><td>23230</td><td>18.15</td><td>20</td><td>0-1</td></tr>
<tr><td colspan="2">50RB</td><td>782</td><td>23230</td><td>18.02</td><td>20</td><td>0-1</td></tr>
<tr><td rowspan="7">16-QAM</td><td rowspan="3">1 RB</td><td>0</td><td>782</td><td>23230</td><td>18.14</td><td>20</td><td>0-1</td></tr>
<tr><td>25</td><td>782</td><td>23230</td><td>18.24</td><td>20</td><td>0-1</td></tr>
<tr><td>49</td><td>782</td><td>23230</td><td>18.02</td><td>20</td><td>0-1</td></tr>
<tr><td rowspan="3">25 RB</td><td>0</td><td>782</td><td>23230</td><td>18.05</td><td>20</td><td>0-2</td></tr>
<tr><td>12</td><td>782</td><td>23230</td><td>18.11</td><td>20</td><td>0-2</td></tr>
<tr><td>25</td><td>782</td><td>23230</td><td>18.08</td><td>20</td><td>0-2</td></tr>
<tr><td colspan="2">50RB</td><td>782</td><td>23230</td><td>18.09</td><td>20</td><td>0-2</td></tr>
</table>

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FDD Band 13 (Reduced Power)								
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	779.5	23205	17.85	20	0
				782	23230	17.95	20	0
				784.5	23255	18.10	20	0
			12	779.5	23205	18.12	20	0
				782	23230	18.13	20	0
				784.5	23255	17.90	20	0
			24	779.5	23205	18.21	20	0
				782	23230	18.11	20	0
				784.5	23255	18.04	20	0
		12 RB	0	779.5	23205	18.01	20	0-1
				782	23230	18.12	20	0-1
				784.5	23255	18.26	20	0-1
			6	779.5	23205	17.83	20	0-1
				782	23230	18.16	20	0-1
				784.5	23255	18.23	20	0-1
			13	779.5	23205	18.13	20	0-1
				782	23230	18.20	20	0-1
				784.5	23255	17.96	20	0-1
		25RB		779.5	23205	18.04	20	0-1
				782	23230	18.09	20	0-1
				784.5	23255	18.17	20	0-1
	16-QAM	1 RB	0	779.5	23205	17.94	20	0-1
				782	23230	17.78	20	0-1
				784.5	23255	17.74	20	0-1
			12	779.5	23205	17.87	20	0-1
				782	23230	18.27	20	0-1
				784.5	23255	18.06	20	0-1
			24	779.5	23205	18.16	20	0-1
				782	23230	17.90	20	0-1
				784.5	23255	17.83	20	0-1
		12 RB	0	779.5	23205	17.84	20	0-2
				782	23230	18.03	20	0-2
				784.5	23255	17.93	20	0-2
			6	779.5	23205	17.95	20	0-2
				782	23230	17.99	20	0-2
				784.5	23255	17.87	20	0-2
			13	779.5	23205	17.98	20	0-2
				782	23230	17.95	20	0-2
				784.5	23255	17.88	20	0-2
		25RB		779.5	23205	17.60	20	0-2
				782	23230	17.76	20	0-2
				784.5	23255	17.89	20	0-2

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FDD Band 17 (Full Power)								
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	21.70	22.5	0
				710	23790	21.89	22.5	0
				711	23800	21.71	22.5	0
			25	709	23780	22.09	22.5	0
				710	23790	21.95	22.5	0
				711	23800	21.96	22.5	0
			49	709	23780	21.94	22.5	0
				710	23790	21.81	22.5	0
				711	23800	21.62	22.5	0
		25 RB	0	709	23780	20.97	21.5	0-1
				710	23790	20.92	21.5	0-1
				711	23800	20.95	21.5	0-1
			12	709	23780	20.94	21.5	0-1
				710	23790	20.90	21.5	0-1
				711	23800	20.90	21.5	0-1
			25	709	23780	21.07	21.5	0-1
				710	23790	20.90	21.5	0-1
				711	23800	20.78	21.5	0-1
		50RB		709	23780	20.83	21.5	0-1
				710	23790	20.82	21.5	0-1
				711	23800	20.79	21.5	0-1
	16-QAM	1 RB	0	709	23780	21.02	21.5	0-1
				710	23790	20.85	21.5	0-1
				711	23800	20.52	21.5	0-1
			25	709	23780	21.34	21.5	0-1
				710	23790	20.82	21.5	0-1
				711	23800	21.17	21.5	0-1
			49	709	23780	21.08	21.5	0-1
				710	23790	20.96	21.5	0-1
				711	23800	20.74	21.5	0-1
		25 RB	0	709	23780	19.91	20.5	0-2
				710	23790	19.84	20.5	0-2
				711	23800	19.86	20.5	0-2
			12	709	23780	19.95	20.5	0-2
				710	23790	19.82	20.5	0-2
				711	23800	19.94	20.5	0-2
			25	709	23780	20.11	20.5	0-2
				710	23790	19.74	20.5	0-2
				711	23800	19.77	20.5	0-2
		50RB		709	23780	19.80	20.5	0-2
				710	23790	19.76	20.5	0-2
				711	23800	19.76	20.5	0-2

FDD Band 17 (Full Power)								
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	21.73	22.5	0
				710	23790	22.04	22.5	0
				713.5	23825	21.95	22.5	0
			12	706.5	23755	21.74	22.5	0
				710	23790	21.74	22.5	0
				713.5	23825	21.86	22.5	0
			24	706.5	23755	22.05	22.5	0
				710	23790	22.02	22.5	0
				713.5	23825	21.61	22.5	0
		12 RB	0	706.5	23755	20.84	21.5	0-1
				710	23790	21.11	21.5	0-1
				713.5	23825	21.02	21.5	0-1
			6	706.5	23755	21.06	21.5	0-1
				710	23790	21.07	21.5	0-1
				713.5	23825	20.85	21.5	0-1
			13	706.5	23755	21.10	21.5	0-1
				710	23790	20.86	21.5	0-1
				713.5	23825	20.76	21.5	0-1
		25RB		706.5	23755	20.91	21.5	0-1
				710	23790	21.05	21.5	0-1
				713.5	23825	20.63	21.5	0-1
	16-QAM	1 RB	0	706.5	23755	20.89	21.5	0-1
				710	23790	20.98	21.5	0-1
				713.5	23825	20.54	21.5	0-1
			12	706.5	23755	20.85	21.5	0-1
				710	23790	21.16	21.5	0-1
				713.5	23825	21.11	21.5	0-1
			24	706.5	23755	20.92	21.5	0-1
				710	23790	20.54	21.5	0-1
				713.5	23825	20.21	21.5	0-1
		12 RB	0	706.5	23755	19.88	20.5	0-2
				710	23790	20.07	20.5	0-2
				713.5	23825	19.87	20.5	0-2
			6	706.5	23755	19.92	20.5	0-2
				710	23790	20.07	20.5	0-2
				713.5	23825	19.80	20.5	0-2
			13	706.5	23755	20.05	20.5	0-2
				710	23790	20.11	20.5	0-2
				713.5	23825	19.75	20.5	0-2
		25RB		706.5	23755	19.95	20.5	0-2
				710	23790	19.88	20.5	0-2
				713.5	23825	19.69	20.5	0-2

FDD Band 17 (Reduced Power)								
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	18.00	20	0
				710	23790	18.16	20	0
				711	23800	18.12	20	0
			25	709	23780	18.53	20	0
				710	23790	18.45	20	0
				711	23800	18.38	20	0
			49	709	23780	18.28	20	0
				710	23790	18.26	20	0
				711	23800	18.11	20	0
		25 RB	0	709	23780	18.30	20	0-1
				710	23790	18.20	20	0-1
				711	23800	18.24	20	0-1
			12	709	23780	18.26	20	0-1
				710	23790	18.37	20	0-1
				711	23800	18.38	20	0-1
			25	709	23780	18.36	20	0-1
				710	23790	18.35	20	0-1
				711	23800	18.20	20	0-1
		50RB		709	23780	18.18	20	0-1
				710	23790	18.20	20	0-1
				711	23800	18.25	20	0-1
	16-QAM	1 RB	0	709	23780	17.93	20	0-1
				710	23790	18.36	20	0-1
				711	23800	17.94	20	0-1
			25	709	23780	18.29	20	0-1
				710	23790	18.40	20	0-1
				711	23800	18.21	20	0-1
			49	709	23780	18.06	20	0-1
				710	23790	18.25	20	0-1
				711	23800	17.80	20	0-1
		25 RB	0	709	23780	18.20	20	0-2
				710	23790	18.12	20	0-2
				711	23800	18.19	20	0-2
			12	709	23780	18.17	20	0-2
				710	23790	18.07	20	0-2
				711	23800	18.29	20	0-2
			25	709	23780	18.29	20	0-2
				710	23790	18.10	20	0-2
				711	23800	18.13	20	0-2
		50RB		709	23780	18.02	20	0-2
				710	23790	18.01	20	0-2
				711	23800	18.13	20	0-2

FDD Band 17 (Reduced Power)								
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	17.88	20	0
				710	23790	18.21	20	0
				713.5	23825	18.14	20	0
			12	706.5	23755	18.02	20	0
				710	23790	18.23	20	0
				713.5	23825	18.03	20	0
			24	706.5	23755	18.40	20	0
				710	23790	18.00	20	0
				713.5	23825	17.68	20	0
		12 RB	0	706.5	23755	18.01	20	0-1
				710	23790	18.20	20	0-1
				713.5	23825	18.21	20	0-1
			6	706.5	23755	18.04	20	0-1
				710	23790	18.23	20	0-1
				713.5	23825	17.95	20	0-1
			13	706.5	23755	18.23	20	0-1
				710	23790	18.19	20	0-1
				713.5	23825	17.93	20	0-1
		25RB		706.5	23755	18.03	20	0-1
				710	23790	18.13	20	0-1
				713.5	23825	18.02	20	0-1
	16-QAM	1 RB	0	706.5	23755	17.95	20	0-1
				710	23790	17.95	20	0-1
				713.5	23825	17.99	20	0-1
			12	706.5	23755	17.80	20	0-1
				710	23790	18.34	20	0-1
				713.5	23825	18.15	20	0-1
			24	706.5	23755	17.84	20	0-1
				710	23790	17.89	20	0-1
				713.5	23825	17.43	20	0-1
		12 RB	0	706.5	23755	17.66	20	0-2
				710	23790	18.16	20	0-2
				713.5	23825	18.15	20	0-2
			6	706.5	23755	17.97	20	0-2
				710	23790	18.21	20	0-2
				713.5	23825	17.93	20	0-2
			13	706.5	23755	18.20	20	0-2
				710	23790	18.13	20	0-2
				713.5	23825	17.85	20	0-2
		25RB		706.5	23755	17.96	20	0-2
				710	23790	17.84	20	0-2
				713.5	23825	17.96	20	0-2

FDD Band 25 (Full Power)								
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	26140	22.20	23	0
				1882.5	26365	22.12	23	0
				1905	26590	22.02	23	0
			50	1860	26140	22.19	23	0
				1882.5	26365	22.07	23	0
				1905	26590	22.14	23	0
			99	1860	26140	22.25	23	0
				1882.5	26365	22.28	23	0
				1905	26590	22.37	23	0
		50 RB	0	1860	26140	21.11	22	0-1
				1882.5	26365	21.02	22	0-1
				1905	26590	21.04	22	0-1
			25	1860	26140	21.08	22	0-1
				1882.5	26365	20.97	22	0-1
				1905	26590	21.01	22	0-1
			50	1860	26140	20.99	22	0-1
				1882.5	26365	20.97	22	0-1
				1905	26590	21.14	22	0-1
		100RB		1860	26140	21.12	22	0-1
				1882.5	26365	21.10	22	0-1
				1905	26590	21.16	22	0-1
	16-QAM	1 RB	0	1860	26140	21.06	22	0-1
				1882.5	26365	21.31	22	0-1
				1905	26590	21.45	22	0-1
			50	1860	26140	21.18	22	0-1
				1882.5	26365	21.39	22	0-1
				1905	26590	21.42	22	0-1
			99	1860	26140	21.00	22	0-1
				1882.5	26365	21.46	22	0-1
				1905	26590	21.65	22	0-1
		50 RB	0	1860	26140	20.00	21	0-2
				1882.5	26365	20.02	21	0-2
				1905	26590	19.94	21	0-2
			25	1860	26140	19.96	21	0-2
				1882.5	26365	20.10	21	0-2
				1905	26590	20.00	21	0-2
			50	1860	26140	19.95	21	0-2
				1882.5	26365	19.93	21	0-2
				1905	26590	20.19	21	0-2
		100RB		1860	26140	20.03	21	0-2
				1882.5	26365	19.98	21	0-2
				1905	26590	20.10	21	0-2

FDD Band 25 (Full Power)								
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	26115	22.33	23	0
				1882.5	26365	22.26	23	0
				1907.5	26615	22.07	23	0
			36	1857.5	26115	22.18	23	0
				1882.5	26365	22.17	23	0
				1907.5	26615	22.23	23	0
			74	1857.5	26115	22.19	23	0
				1882.5	26365	22.11	23	0
				1907.5	26615	22.33	23	0
		36 RB	0	1857.5	26115	21.06	22	0-1
				1882.5	26365	21.10	22	0-1
				1907.5	26615	20.98	22	0-1
			18	1857.5	26115	21.08	22	0-1
				1882.5	26365	21.06	22	0-1
				1907.5	26615	21.10	22	0-1
			37	1857.5	26115	21.04	22	0-1
				1882.5	26365	20.93	22	0-1
				1907.5	26615	21.26	22	0-1
		75RB		1857.5	26115	20.98	22	0-1
				1882.5	26365	20.91	22	0-1
				1907.5	26615	21.07	22	0-1
	16-QAM	1 RB	0	1857.5	26115	20.85	22	0-1
				1882.5	26365	20.92	22	0-1
				1907.5	26615	21.12	22	0-1
			36	1857.5	26115	21.44	22	0-1
				1882.5	26365	21.02	22	0-1
				1907.5	26615	20.98	22	0-1
			74	1857.5	26115	21.40	22	0-1
				1882.5	26365	20.98	22	0-1
				1907.5	26615	21.36	22	0-1
		36 RB	0	1857.5	26115	20.06	21	0-2
				1882.5	26365	20.08	21	0-2
				1907.5	26615	19.94	21	0-2
			18	1857.5	26115	20.08	21	0-2
				1882.5	26365	19.92	21	0-2
				1907.5	26615	20.03	21	0-2
			37	1857.5	26115	20.03	21	0-2
				1882.5	26365	19.94	21	0-2
				1907.5	26615	20.29	21	0-2
		75RB		1857.5	26115	19.93	21	0-2
				1882.5	26365	19.94	21	0-2
				1907.5	26615	20.12	21	0-2

FDD Band 25 (Full Power)								
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	26090	22.10	23	0
				1882.5	26365	22.06	23	0
				1910	26640	22.18	23	0
			25	1855	26090	22.17	23	0
				1882.5	26365	22.19	23	0
				1910	26640	22.31	23	0
			49	1855	26090	22.19	23	0
				1882.5	26365	22.13	23	0
				1910	26640	22.32	23	0
		25 RB	0	1855	26090	21.06	22	0-1
				1882.5	26365	21.16	22	0-1
				1910	26640	21.16	22	0-1
			12	1855	26090	21.16	22	0-1
				1882.5	26365	21.13	22	0-1
				1910	26640	21.31	22	0-1
			25	1855	26090	21.00	22	0-1
				1882.5	26365	21.03	22	0-1
				1910	26640	21.22	22	0-1
		50RB		1855	26090	21.02	22	0-1
				1882.5	26365	20.91	22	0-1
				1910	26640	21.08	22	0-1
	16-QAM	1 RB	0	1855	26090	21.03	22	0-1
				1882.5	26365	21.42	22	0-1
				1910	26640	21.32	22	0-1
			25	1855	26090	20.85	22	0-1
				1882.5	26365	21.05	22	0-1
				1910	26640	21.29	22	0-1
			49	1855	26090	21.13	22	0-1
				1882.5	26365	21.09	22	0-1
				1910	26640	21.48	22	0-1
		25 RB	0	1855	26090	19.98	21	0-2
				1882.5	26365	20.08	21	0-2
				1910	26640	20.16	21	0-2
			12	1855	26090	20.07	21	0-2
				1882.5	26365	20.08	21	0-2
				1910	26640	20.10	21	0-2
			25	1855	26090	20.04	21	0-2
				1882.5	26365	20.04	21	0-2
				1910	26640	20.19	21	0-2
		50RB		1855	26090	19.91	21	0-2
				1882.5	26365	19.84	21	0-2
				1910	26640	20.17	21	0-2

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FDD Band 25 (Full Power)								
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	26065	22.12	23	0
				1882.5	26365	22.10	23	0
				1912.5	26665	22.26	23	0
			12	1852.5	26065	22.07	23	0
				1882.5	26365	22.06	23	0
				1912.5	26665	22.29	23	0
			24	1852.5	26065	22.13	23	0
				1882.5	26365	22.04	23	0
				1912.5	26665	22.30	23	0
		12 RB	0	1852.5	26065	21.20	22	0-1
				1882.5	26365	21.22	22	0-1
				1912.5	26665	21.27	22	0-1
			6	1852.5	26065	21.16	22	0-1
				1882.5	26365	21.17	22	0-1
				1912.5	26665	21.23	22	0-1
			13	1852.5	26065	21.20	22	0-1
				1882.5	26365	21.11	22	0-1
				1912.5	26665	21.28	22	0-1
		25RB		1852.5	26065	21.04	22	0-1
				1882.5	26365	21.07	22	0-1
				1912.5	26665	21.23	22	0-1
	16-QAM	1 RB	0	1852.5	26065	21.29	22	0-1
				1882.5	26365	21.37	22	0-1
				1912.5	26665	21.30	22	0-1
			12	1852.5	26065	21.24	22	0-1
				1882.5	26365	21.04	22	0-1
				1912.5	26665	21.30	22	0-1
			24	1852.5	26065	21.39	22	0-1
				1882.5	26365	21.34	22	0-1
				1912.5	26665	21.13	22	0-1
		12 RB	0	1852.5	26065	20.08	21	0-2
				1882.5	26365	20.10	21	0-2
				1912.5	26665	20.32	21	0-2
			6	1852.5	26065	20.15	21	0-2
				1882.5	26365	20.09	21	0-2
				1912.5	26665	20.35	21	0-2
			13	1852.5	26065	20.25	21	0-2
				1882.5	26365	20.21	21	0-2
				1912.5	26665	20.35	21	0-2
		25RB		1852.5	26065	19.97	21	0-2
				1882.5	26365	20.08	21	0-2
				1912.5	26665	20.18	21	0-2

FDD Band 25 (Full Power)								
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	26055	22.08	23	0
				1882.5	26365	22.03	23	0
				1913.5	26675	22.30	23	0
			7	1851.5	26055	22.20	23	0
				1882.5	26365	22.17	23	0
				1913.5	26675	22.20	23	0
			14	1851.5	26055	22.14	23	0
				1882.5	26365	22.18	23	0
				1913.5	26675	22.24	23	0
		8 RB	0	1851.5	26055	21.16	22	0-1
				1882.5	26365	21.27	22	0-1
				1913.5	26675	21.33	22	0-1
			4	1851.5	26055	21.22	22	0-1
				1882.5	26365	21.19	22	0-1
				1913.5	26675	21.27	22	0-1
			7	1851.5	26055	21.22	22	0-1
				1882.5	26365	21.26	22	0-1
				1913.5	26675	21.28	22	0-1
		15RB		1851.5	26055	21.19	22	0-1
				1882.5	26365	21.20	22	0-1
				1913.5	26675	21.25	22	0-1
	16-QAM	1 RB	0	1851.5	26055	20.97	22	0-1
				1882.5	26365	21.53	22	0-1
				1913.5	26675	20.95	22	0-1
			7	1851.5	26055	20.82	22	0-1
				1882.5	26365	21.14	22	0-1
				1913.5	26675	21.22	22	0-1
			14	1851.5	26055	21.18	22	0-1
				1882.5	26365	21.38	22	0-1
				1913.5	26675	21.25	22	0-1
		8 RB	0	1851.5	26055	20.17	21	0-2
				1882.5	26365	20.19	21	0-2
				1913.5	26675	20.24	21	0-2
			4	1851.5	26055	20.00	21	0-2
				1882.5	26365	20.04	21	0-2
				1913.5	26675	20.24	21	0-2
			7	1851.5	26055	20.23	21	0-2
				1882.5	26365	20.12	21	0-2
				1913.5	26675	20.40	21	0-2
		15RB		1851.5	26055	20.12	21	0-2
				1882.5	26365	20.10	21	0-2
				1913.5	26675	20.39	21	0-2

FDD Band 25 (Full Power)								
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	26047	22.06	23	0
				1882.5	26365	22.10	23	0
				1914.3	26683	22.24	23	0
			2	1850.7	26047	22.12	23	0
				1882.5	26365	22.15	23	0
				1914.3	26683	22.29	23	0
			5	1850.7	26047	22.11	23	0
				1882.5	26365	22.16	23	0
				1914.3	26683	22.28	23	0
		3 RB	0	1850.7	26047	21.07	22	0-1
				1882.5	26365	21.04	22	0-1
				1914.3	26683	21.24	22	0-1
			2	1850.7	26047	21.16	22	0-1
				1882.5	26365	21.06	22	0-1
				1914.3	26683	21.18	22	0-1
			3	1850.7	26047	21.01	22	0-1
				1882.5	26365	21.09	22	0-1
				1914.3	26683	21.05	22	0-1
		6RB		1850.7	26047	20.11	22	0-1
				1882.5	26365	20.14	22	0-1
				1914.3	26683	20.23	22	0-1
	16-QAM	1 RB	0	1850.7	26047	21.04	22	0-1
				1882.5	26365	21.06	22	0-1
				1914.3	26683	21.34	22	0-1
			2	1850.7	26047	21.09	22	0-1
				1882.5	26365	21.36	22	0-1
				1914.3	26683	21.15	22	0-1
			5	1850.7	26047	21.43	22	0-1
				1882.5	26365	21.10	22	0-1
				1914.3	26683	20.89	22	0-1
		3 RB	0	1850.7	26047	20.03	21	0-2
				1882.5	26365	20.17	21	0-2
				1914.3	26683	20.28	21	0-2
			2	1850.7	26047	19.86	21	0-2
				1882.5	26365	20.10	21	0-2
				1914.3	26683	20.25	21	0-2
			3	1850.7	26047	20.14	21	0-2
				1882.5	26365	19.96	21	0-2
				1914.3	26683	20.17	21	0-2
		6RB		1850.7	26047	19.13	21	0-2
				1882.5	26365	19.14	21	0-2
				1914.3	26683	19.25	21	0-2

FDD Band 25 (Reduced Power)								
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	26140	19.75	20	0
				1882.5	26365	19.66	20	0
				1905	26590	19.60	20	0
			50	1860	26140	19.81	20	0
				1882.5	26365	19.72	20	0
				1905	26590	19.69	20	0
			99	1860	26140	19.80	20	0
				1882.5	26365	19.65	20	0
				1905	26590	19.93	20	0
		50 RB	0	1860	26140	19.53	20	0-1
				1882.5	26365	19.49	20	0-1
				1905	26590	19.46	20	0-1
			25	1860	26140	19.58	20	0-1
				1882.5	26365	19.50	20	0-1
				1905	26590	19.46	20	0-1
			50	1860	26140	19.63	20	0-1
				1882.5	26365	19.49	20	0-1
				1905	26590	19.64	20	0-1
		100RB		1860	26140	19.59	20	0-1
				1882.5	26365	19.47	20	0-1
				1905	26590	19.61	20	0-1
	16-QAM	1 RB	0	1860	26140	19.78	20	0-1
				1882.5	26365	19.66	20	0-1
				1905	26590	19.62	20	0-1
			50	1860	26140	19.83	20	0-1
				1882.5	26365	19.73	20	0-1
				1905	26590	19.67	20	0-1
			99	1860	26140	19.75	20	0-1
				1882.5	26365	19.60	20	0-1
				1905	26590	19.85	20	0-1
		50 RB	0	1860	26140	19.53	20	0-2
				1882.5	26365	19.39	20	0-2
				1905	26590	19.39	20	0-2
			25	1860	26140	19.59	20	0-2
				1882.5	26365	19.40	20	0-2
				1905	26590	19.44	20	0-2
			50	1860	26140	19.59	20	0-2
				1882.5	26365	19.39	20	0-2
				1905	26590	19.59	20	0-2
		100RB		1860	26140	19.54	20	0-2
				1882.5	26365	19.48	20	0-2
				1905	26590	19.62	20	0-2

FDD Band 25 (Reduced Power)								
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	26115	19.79	20	0
				1882.5	26365	19.75	20	0
				1907.5	26615	19.65	20	0
			36	1857.5	26115	19.75	20	0
				1882.5	26365	19.77	20	0
				1907.5	26615	19.81	20	0
			74	1857.5	26115	19.82	20	0
				1882.5	26365	19.65	20	0
				1907.5	26615	19.91	20	0
		36 RB	0	1857.5	26115	19.71	20	0-1
				1882.5	26365	19.58	20	0-1
				1907.5	26615	19.53	20	0-1
			18	1857.5	26115	19.67	20	0-1
				1882.5	26365	19.63	20	0-1
				1907.5	26615	19.65	20	0-1
			37	1857.5	26115	19.70	20	0-1
				1882.5	26365	19.47	20	0-1
				1907.5	26615	19.79	20	0-1
		75RB		1857.5	26115	19.62	20	0-1
				1882.5	26365	19.49	20	0-1
				1907.5	26615	19.64	20	0-1
	16-QAM	1 RB	0	1857.5	26115	19.71	20	0-1
				1882.5	26365	19.72	20	0-1
				1907.5	26615	19.64	20	0-1
			36	1857.5	26115	19.78	20	0-1
				1882.5	26365	19.70	20	0-1
				1907.5	26615	19.72	20	0-1
			74	1857.5	26115	19.77	20	0-1
				1882.5	26365	19.59	20	0-1
				1907.5	26615	19.90	20	0-1
		36 RB	0	1857.5	26115	19.62	20	0-2
				1882.5	26365	19.53	20	0-2
				1907.5	26615	19.49	20	0-2
			18	1857.5	26115	19.63	20	0-2
				1882.5	26365	19.55	20	0-2
				1907.5	26615	19.63	20	0-2
			37	1857.5	26115	19.66	20	0-2
				1882.5	26365	19.49	20	0-2
				1907.5	26615	19.76	20	0-2
		75RB		1857.5	26115	19.54	20	0-2
				1882.5	26365	19.43	20	0-2
				1907.5	26615	19.59	20	0-2

FDD Band 25 (Reduced Power)								
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	26090	19.75	20	0
				1882.5	26365	19.71	20	0
				1910	26640	19.68	20	0
			25	1855	26090	19.81	20	0
				1882.5	26365	19.72	20	0
				1910	26640	19.83	20	0
			49	1855	26090	19.71	20	0
				1882.5	26365	19.63	20	0
				1910	26640	19.85	20	0
		25 RB	0	1855	26090	19.69	20	0-1
				1882.5	26365	19.63	20	0-1
				1910	26640	19.70	20	0-1
			12	1855	26090	19.76	20	0-1
				1882.5	26365	19.70	20	0-1
				1910	26640	19.75	20	0-1
			25	1855	26090	19.60	20	0-1
				1882.5	26365	19.56	20	0-1
				1910	26640	19.73	20	0-1
		50RB		1855	26090	19.58	20	0-1
				1882.5	26365	19.48	20	0-1
				1910	26640	19.66	20	0-1
	16-QAM	1 RB	0	1855	26090	19.74	20	0-1
				1882.5	26365	19.77	20	0-1
				1910	26640	19.70	20	0-1
			25	1855	26090	19.80	20	0-1
				1882.5	26365	19.66	20	0-1
				1910	26640	19.79	20	0-1
			49	1855	26090	19.69	20	0-1
				1882.5	26365	19.62	20	0-1
				1910	26640	19.82	20	0-1
		25 RB	0	1855	26090	19.59	20	0-2
				1882.5	26365	19.58	20	0-2
				1910	26640	19.70	20	0-2
			12	1855	26090	19.63	20	0-2
				1882.5	26365	19.66	20	0-2
				1910	26640	19.69	20	0-2
			25	1855	26090	19.63	20	0-2
				1882.5	26365	19.53	20	0-2
				1910	26640	19.67	20	0-2
		50RB		1855	26090	19.55	20	0-2
				1882.5	26365	19.45	20	0-2
				1910	26640	19.63	20	0-2

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FDD Band 25 (Reduced Power)								
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	26065	19.75	20	0
5	QPSK	1 RB	0	1882.5	26365	19.70	20	0
5	QPSK	1 RB	0	1912.5	26665	19.78	20	0
5	QPSK	1 RB	12	1852.5	26065	19.76	20	0
5	QPSK	1 RB	12	1882.5	26365	19.73	20	0
5	QPSK	1 RB	12	1912.5	26665	19.87	20	0
5	QPSK	1 RB	24	1852.5	26065	19.80	20	0
5	QPSK	1 RB	24	1882.5	26365	19.69	20	0
5	QPSK	1 RB	24	1912.5	26665	19.81	20	0
5	QPSK	12 RB	0	1852.5	26065	19.78	20	0-1
5	QPSK	12 RB	0	1882.5	26365	19.75	20	0-1
5	QPSK	12 RB	0	1912.5	26665	19.83	20	0-1
5	QPSK	12 RB	6	1852.5	26065	19.71	20	0-1
5	QPSK	12 RB	6	1882.5	26365	19.72	20	0-1
5	QPSK	12 RB	6	1912.5	26665	19.75	20	0-1
5	QPSK	12 RB	13	1852.5	26065	19.76	20	0-1
5	QPSK	12 RB	13	1882.5	26365	19.73	20	0-1
5	QPSK	12 RB	13	1912.5	26665	19.83	20	0-1
5	QPSK	25RB	25RB	1852.5	26065	19.71	20	0-1
5	QPSK	25RB	25RB	1882.5	26365	19.63	20	0-1
5	QPSK	25RB	25RB	1912.5	26665	19.65	20	0-1
5	16-QAM	1 RB	0	1852.5	26065	19.72	20	0-1
5	16-QAM	1 RB	0	1882.5	26365	19.70	20	0-1
5	16-QAM	1 RB	0	1912.5	26665	19.80	20	0-1
5	16-QAM	1 RB	12	1852.5	26065	19.75	20	0-1
5	16-QAM	1 RB	12	1882.5	26365	19.63	20	0-1
5	16-QAM	1 RB	12	1912.5	26665	19.84	20	0-1
5	16-QAM	1 RB	24	1852.5	26065	19.75	20	0-1
5	16-QAM	1 RB	24	1882.5	26365	19.70	20	0-1
5	16-QAM	1 RB	24	1912.5	26665	19.80	20	0-1
5	16-QAM	12 RB	0	1852.5	26065	19.80	20	0-2
5	16-QAM	12 RB	0	1882.5	26365	19.73	20	0-2
5	16-QAM	12 RB	0	1912.5	26665	19.81	20	0-2
5	16-QAM	12 RB	6	1852.5	26065	19.76	20	0-2
5	16-QAM	12 RB	6	1882.5	26365	19.69	20	0-2
5	16-QAM	12 RB	6	1912.5	26665	19.73	20	0-2
5	16-QAM	12 RB	13	1852.5	26065	19.79	20	0-2
5	16-QAM	12 RB	13	1882.5	26365	19.69	20	0-2
5	16-QAM	12 RB	13	1912.5	26665	19.80	20	0-2
5	16-QAM	25RB	25RB	1852.5	26065	19.59	20	0-2
5	16-QAM	25RB	25RB	1882.5	26365	19.59	20	0-2
5	16-QAM	25RB	25RB	1912.5	26665	19.66	20	0-2

FDD Band 25 (Reduced Power)

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	26055	19.76	20	0
				1882.5	26365	19.68	20	0
				1913.5	26675	19.84	20	0
			7	1851.5	26055	19.78	20	0
				1882.5	26365	19.71	20	0
				1913.5	26675	19.83	20	0
			14	1851.5	26055	19.74	20	0
				1882.5	26365	19.72	20	0
				1913.5	26675	19.83	20	0
		8 RB	0	1851.5	26055	19.80	20	0-1
				1882.5	26365	19.76	20	0-1
				1913.5	26675	19.82	20	0-1
			4	1851.5	26055	19.80	20	0-1
				1882.5	26365	19.69	20	0-1
				1913.5	26675	19.86	20	0-1
			7	1851.5	26055	19.90	20	0-1
				1882.5	26365	19.74	20	0-1
				1913.5	26675	19.84	20	0-1
		15RB		1851.5	26055	19.82	20	0-1
				1882.5	26365	19.71	20	0-1
				1913.5	26675	19.78	20	0-1
	16-QAM	1 RB	0	1851.5	26055	19.71	20	0-1
				1882.5	26365	19.72	20	0-1
				1913.5	26675	19.81	20	0-1
			7	1851.5	26055	19.78	20	0-1
				1882.5	26365	19.73	20	0-1
				1913.5	26675	19.85	20	0-1
			14	1851.5	26055	19.71	20	0-1
				1882.5	26365	19.66	20	0-1
				1913.5	26675	19.75	20	0-1
		8 RB	0	1851.5	26055	19.73	20	0-2
				1882.5	26365	19.66	20	0-2
				1913.5	26675	19.74	20	0-2
			4	1851.5	26055	19.74	20	0-2
				1882.5	26365	19.64	20	0-2
				1913.5	26675	19.77	20	0-2
			7	1851.5	26055	19.77	20	0-2
				1882.5	26365	19.69	20	0-2
				1913.5	26675	19.83	20	0-2
		15RB		1851.5	26055	19.79	20	0-2
				1882.5	26365	19.70	20	0-2
				1913.5	26675	19.77	20	0-2

FDD Band 25 (Reduced Power)								
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	26047	19.81	20	0
				1882.5	26365	19.74	20	0
				1914.3	26683	19.90	20	0
			2	1850.7	26047	19.85	20	0
				1882.5	26365	19.70	20	0
				1914.3	26683	19.85	20	0
			5	1850.7	26047	19.83	20	0
				1882.5	26365	19.76	20	0
				1914.3	26683	19.87	20	0
		3 RB	0	1850.7	26047	19.84	20	0-1
				1882.5	26365	19.78	20	0-1
				1914.3	26683	19.90	20	0-1
			2	1850.7	26047	19.83	20	0-1
				1882.5	26365	19.72	20	0-1
				1914.3	26683	19.77	20	0-1
			3	1850.7	26047	19.77	20	0-1
				1882.5	26365	19.69	20	0-1
				1914.3	26683	19.80	20	0-1
		6RB		1850.7	26047	19.80	20	0-1
				1882.5	26365	19.72	20	0-1
				1914.3	26683	19.85	20	0-1
	16-QAM	1 RB	0	1850.7	26047	19.69	20	0-1
				1882.5	26365	19.65	20	0-1
				1914.3	26683	19.82	20	0-1
			2	1850.7	26047	19.73	20	0-1
				1882.5	26365	19.64	20	0-1
				1914.3	26683	19.74	20	0-1
			5	1850.7	26047	19.74	20	0-1
				1882.5	26365	19.71	20	0-1
				1914.3	26683	19.72	20	0-1
		3 RB	0	1850.7	26047	19.81	20	0-2
				1882.5	26365	19.76	20	0-2
				1914.3	26683	19.87	20	0-2
			2	1850.7	26047	19.82	20	0-2
				1882.5	26365	19.75	20	0-2
				1914.3	26683	19.78	20	0-2
			3	1850.7	26047	19.85	20	0-2
				1882.5	26365	19.75	20	0-2
				1914.3	26683	19.83	20	0-2
		6RB		1850.7	26047	19.83	20	0-2
				1882.5	26365	19.76	20	0-2
				1914.3	26683	19.86	20	0-2

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CDMA conducted power table:

Band	Channel	Frequency (MHz)	Tune-up tolerance	1xRTT				EVDO	
				SO55	SO55	TDSO/SO32	TDSO/SO32	1x EvDO Rev. 0, FTAP/RTAP	1x EvDO Rev. A, FETAP/RETAP
				RC1	RC3	FCH+SCH	FCH	Subtype 0/1	Subtype 2
CDMA (BC0)	1013	824.7	23.50	22.92	22.86	22.69	22.75	22.96	22.94
	384	836.52	23.50	22.93	22.88	22.67	23.01	23.11	22.98
	777	848.31	23.50	22.75	22.74	22.66	22.74	22.76	22.72
CDMA (BC1)	25	1851.25	24.00	23.61	23.62	23.65	23.61	23.72	23.64
	600	1880	24.00	23.59	23.58	23.61	23.62	23.66	23.58
	1175	1908.75	24.00	23.49	23.48	23.49	23.46	23.62	23.49
CDMA (BC10)	476	817.9	23.50	22.95	22.88	22.94	22.86	22.97	22.89
	560	820	23.50	22.98	22.95	22.98	22.97	23.04	22.92
	684	823.1	23.50	23.02	22.97	22.99	22.96	23.05	22.97

CDMA conducted power table (Reduced power):

Band	Channel	Frequency (MHz)	Tune-up tolerance	1xRTT				EVDO	
				SO55	SO55	TDSO/SO32	TDSO/SO32	1x EvDO Rev. 0, FTAP/RTAP	1x EvDO Rev. A, FETAP/RETAP
				RC1	RC3	FCH+SCH	FCH	Subtype 0/1	Subtype 2
CDMA (BC0)	1013	824.7	20.00	19.16	19.12	19.06	18.94	19.23	19.11
	384	836.52	20.00	18.98	18.93	18.97	18.91	19.20	19.04
	777	848.31	20.00	19.02	19.01	18.99	19.96	19.06	18.92
CDMA (BC1)	25	1851.25	20.00	18.65	18.64	18.65	18.63	18.76	18.63
	600	1880	20.00	18.64	18.61	18.66	18.62	18.72	18.59
	1175	1908.75	20.00	18.57	18.56	18.58	18.54	18.67	18.45
CDMA (BC10)	476	817.9	20.00	18.91	18.79	18.88	18.78	18.92	18.85
	560	820	20.00	18.95	18.84	18.94	18.85	18.96	18.88
	684	823.1	20.00	18.99	18.97	18.94	18.87	19.00	18.95

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

Antenna / Band	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 Antenna (CH0)

802.11 b		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average Power Output (dBm)
			Data Rate (Mbps)
CH	Frequency (MHz)		1
1	2412	15	13.82
6	2437	15	14.16
11	2462	15	14.47

802.11 g		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average Power Output (dBm)
			Data Rate (Mbps)
CH	Frequency (MHz)		6
1	2412	14	12.02
6	2437	14	13.78
11	2462	11.5	11.33

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Main Antenna (CH0)

802.11 n(20M)		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average Power Output (dBm)
			Data Rate (Mbps)
CH	Frequency (MHz)		6.5
1	2412	11.5	11.48
6	2437	14	13.66
11	2462	11.5	11.25

802.11 n(40M)		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average Power Output (dBm)
			Data Rate (Mbps)
CH	Frequency (MHz)		13.5
3	2422	12	11.58
6	2437	14	13.61
9	2452	12	11.05

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Main Antenna (CH0)

802.11 a		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average Power Output(dBm)
5.2/5.3/5.6/5.8G			Data Rate (Mbps)
CH	Frequency (MHz)		6
36	5180	11.5	11.52
40	5200	14	12.41
44	5220	14	12.37
48	5240	14	12.46
52	5260	14	13.38
56	5280	14	13.45
60	5300	14	13.58
64	5320	11.5	11.42
100	5500	11.5	11.91
104	5520	14.5	14.16
108	5540	14.5	13.72
112	5560	14.5	13.62
116	5580	14.5	13.58
120	5600	14.5	13.48
124	5620	14.5	13.41
128	5640	14.5	13.37
132	5660	14.5	13.31
136	5680	14.5	13.25
140	5700	11.5	11.11
149	5745	14.5	13.22
153	5765	14.5	13.25
157	5785	14.5	13.15
161	5805	14.5	13.47
165	5825	14.5	13.01

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Main Antenna (CH0)

802.11 n(20M) 5.2/5.3/5.6/5.8G		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average Power Output(dBm)
			Data Rate (Mbps)
CH	Frequency (MHz)		6.5
36	5180	11.5	11.77
40	5200	14	12.41
44	5220	14	12.57
48	5240	14	12.71
52	5260	14	13.18
56	5280	14	13.34
60	5300	14	13.42
64	5320	12.5	11.28
100	5500	12.5	12.17
104	5520	14.5	14.06
108	5540	14.5	13.61
112	5560	14.5	13.52
116	5580	14.5	13.44
120	5600	14.5	13.35
124	5620	14.5	13.31
128	5640	14.5	13.27
132	5660	14.5	13.18
136	5680	14.5	13.57
140	5700	11	10.82
149	5745	14	13.24
153	5765	14	13.53
157	5785	14	13.47
161	5805	14	13.39
165	5825	14	12.84

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Main Antenna (CH0)

802.11 n(40M) 5.2/5.3/5.6/5.8G		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average Power Output(dBm)
			Data Rate (Mbps)
CH	Frequency (MHz)		13.5
38	5190	9	8.59
46	5230	13.5	12.75
54	5270	13.5	13.24
62	5310	12	11.16
102	5510	12	11.68
110	5550	14	13.36
118	5590	14	13.37
126	5630	14	13.21
134	5670	14	13.48
142	5710	14	13.95
151	5755	14	13.85
159	5795	14	13.81

Main Antenna (CH0)

802.11 ac(20M) 5.2/5.3/5.6/5.8G		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average Power Output(dBm)
CH	Frequency (MHz)		Data Rate (Mbps) 6.5
36	5180	12	11.11
40	5200	14.5	12.59
44	5220	14.5	12.75
48	5240	14.5	12.77
52	5260	14.5	13.58
56	5280	14.5	13.76
60	5300	14.5	13.38
64	5320	12.5	11.29
100	5500	12.5	12.13
104	5520	14.5	14.02
108	5540	14.5	13.59
112	5560	14.5	13.47
116	5580	14.5	13.41
120	5600	14.5	13.39
124	5620	14.5	13.28
128	5640	14.5	13.24
132	5660	14.5	13.19
136	5680	14.5	13.49
140	5700	12.5	10.77
144	5720	12.5	12.00
149	5745	13.5	13.19
153	5765	13.5	13.16
157	5785	13.5	13.02
161	5805	13.5	12.96
165	5825	13.5	12.97

Main Antenna (CH0)

802.11 ac(40M) 5.2/5.3/5.6/5.8G		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average Power Output(dBm)
			Data Rate (Mbps)
CH	Frequency (MHz)		13.5
38	5190	9.5	9.02
46	5230	13.5	13.08
54	5270	13.5	13.27
62	5310	12	11.19
102	5510	12	11.67
110	5550	14	13.48
118	5590	14	13.31
126	5630	14	13.19
134	5670	14	13.44
142	5710	14	13.51
151	5755	14	13.42
159	5795	14	13.84

802.11 ac(80M) 5.2/5.3/5.6/5.8G		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average Power Output(dBm)
			Data Rate (Mbps)
CH	Frequency (MHz)		29.3
42	5210	12	10.64
58	5290	12	11.32
106	5530	12	11.29
122	5610	14	12.09
138	5690	14	13.72
155	5775	14	13.54

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Aux Antenna (CH1)

802.11 b		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average Power Output (dBm)
			Data Rate (Mbps)
CH	Frequency (MHz)		1
1	2412	15	14.76
6	2437	15	14.47
11	2462	15	15.00

802.11 g		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average Power Output (dBm)
			Data Rate (Mbps)
CH	Frequency (MHz)		6
1	2412	14	13.21
6	2437	14	13.92
11	2462	11.5	11.24

802.11 n(20M)		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average Power Output (dBm)
			Data Rate (Mbps)
CH	Frequency (MHz)		6.5
1	2412	14	13.34
6	2437	14	13.82
11	2462	11.5	11.13

802.11 n(40M)		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average Power Output (dBm)
			Data Rate (Mbps)
CH	Frequency (MHz)		13.5
3	2422	12	11.95
6	2437	14	13.69
9	2452	10.5	10.11

Aux Antenna (CH1)

802.11 a 5.2/5.3/5.6/5.8G		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average Power Output(dBm)
			Data Rate (Mbps)
CH	Frequency (MHz)		6
36	5180	14	12.72
40	5200	14	13.36
44	5220	14	13.59
48	5240	14	13.46
52	5260	14	13.85
56	5280	14	13.65
60	5300	14	13.41
64	5320	11.5	11.06
100	5500	11.5	11.29
104	5520	14.5	12.80
108	5540	14.5	13.31
112	5560	14.5	13.39
116	5580	14.5	13.31
120	5600	14.5	13.42
124	5620	14.5	13.46
128	5640	14.5	13.57
132	5660	14.5	13.66
136	5680	14.5	14.04
140	5700	11.5	11.31
149	5745	14	13.46
153	5765	14	13.41
157	5785	14	13.52
161	5805	14	13.92
165	5825	14	13.31

Aux Antenna (CH1)

802.11 n(20M) 5.2/5.3/5.6/5.8G		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average Power Output(dBm)
CH	Frequency (MHz)		Data Rate (Mbps)
			6.5
36	5180	14	12.86
40	5200	14	13.48
44	5220	14	13.44
48	5240	14	13.31
52	5260	14	13.56
56	5280	14	13.44
60	5300	13.3	13.27
64	5320	11.5	10.89
100	5500	11.5	11.06
104	5520	14	13.38
108	5540	14	13.02
112	5560	14	13.38
116	5580	14	12.95
120	5600	14	13.33
124	5620	14	13.43
128	5640	14	13.11
132	5660	14	13.73
136	5680	14	13.79
140	5700	11.5	11.02
149	5745	14.5	13.48
153	5765	14.5	13.37
157	5785	14.5	14.34
161	5805	14.5	13.24
165	5825	14.5	13.19

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Aux Antenna (CH1)

802.11 n(40M) 5.2/5.3/5.6/5.8G		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average Power Output(dBm)
			Data Rate (Mbps)
CH	Frequency (MHz)		13.5
38	5190	11.5	11.19
46	5230	14	13.53
54	5270	13.7	13.62
62	5310	11.5	10.92
102	5510	11.5	11.46
110	5550	14.5	12.96
118	5590	14.5	12.91
126	5630	14.5	13.31
134	5670	14.5	13.89
142	5710	14.5	14.39
151	5755	14.5	14.36
159	5795	14.5	14.28

Aux Antenna (CH1)

802.11 ac(20M) 5.2/5.3/5.6/5.8G		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average Power Output(dBm)
CH	Frequency (MHz)		Data Rate (Mbps)
			6.5
36	5180	14	12.72
40	5200	14	13.54
44	5220	14	13.35
48	5240	14	13.29
52	5260	14	13.62
56	5280	14	13.48
60	5300	14	13.24
64	5320	11.5	10.95
100	5500	11.5	11.16
104	5520	14	13.35
108	5540	14	12.92
112	5560	14	13.31
116	5580	14	12.97
120	5600	14	13.34
124	5620	14	13.42
128	5640	14	13.46
132	5660	14	13.83
136	5680	14	13.95
140	5700	11.5	11.25
144	5720	13.5	13.04
149	5745	13.5	13.46
153	5765	13.5	13.43
157	5785	13.5	13.38
161	5805	13.5	13.32
165	5825	13.5	13.14

Aux Antenna (CH1)

802.11 ac(40M) 5.2/5.3/5.6/5.8G		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average Power Output(dBm) Data Rate (Mbps)
CH	Frequency (MHz)		13.5
38	5190	11.5	11.04
46	5230	14	13.73
54	5270	13.5	13.41
62	5310	11.5	10.86
102	5510	11.5	11.42
110	5550	14.5	13.27
118	5590	14.5	13.19
126	5630	14.5	13.37
134	5670	14.5	13.86
142	5710	14.5	14.36
151	5755	14.5	14.34
159	5795	14.5	14.23

802.11 ac(80M) 5.2/5.3/5.6/5.8G		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average Power Output(dBm) Data Rate (Mbps)
CH	Frequency (MHz)		29.3
42	5210	12.5	11.41
58	5290	12.5	10.82
106	5530	12.5	10.57
122	5610	12.5	12.21
138	5690	14.5	14.19
155	5775	14.5	14.46

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MIMO (CH0 + CH1)

802.11 n(20M)		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average Power Output (dBm)		
			Data Rate (Mbps)		
CH	Frequency (MHz)		CH0	CH1	CH0 + CH1
1	2412	14	9.87	10.21	13.05
6	2437	14	10.31	10.55	13.44
11	2462	14	10.60	10.63	13.63

802.11 n(40M)		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average Power Output (dBm)		
			Data Rate (Mbps)		
CH	Frequency (MHz)		CH0	CH1	CH0 + CH1
3	2422	14	7.47	8.09	10.80
6	2437	14	10.65	10.46	13.57
9	2452	14	7.71	7.74	10.74

MIMO (CH0 + CH1)

802.11 n(20M) 5.2/5.3/5.6/5.8G		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average Power Output (dBm) Data Rate (Mbps)		
CH	Frequency (MHz)		CH0	CH1	CH0 + CH1
36	5180	14	6.78	8.82	10.93
40	5200	14	7.62	9.06	11.41
44	5220	14	7.58	9.16	11.45
48	5240	14	7.78	8.82	11.34
52	5260	14	9.38	10.48	12.98
56	5280	14	9.42	9.72	12.58
60	5300	14	9.62	10.06	12.86
64	5320	14	7.82	7.53	10.69
100	5500	14	7.96	6.95	10.49
104	5520	14	10.71	9.82	13.30
108	5540	14	10.77	9.83	13.34
112	5560	14	10.62	9.81	13.24
116	5580	14	10.16	9.78	12.98
120	5600	14	10.06	9.77	12.93
124	5620	14	9.82	10.41	13.14
128	5640	14	10.17	10.31	13.25
132	5660	14	10.08	10.78	13.45
136	5680	14	10.16	10.91	13.56
140	5700	14	7.52	8.12	10.84
149	5745	14	10.26	10.92	13.61
153	5765	14	10.01	10.82	13.44
157	5785	14	9.92	10.78	13.38
161	5805	14	9.97	10.62	13.32
165	5825	14	9.92	10.51	13.24

MIMO (CH0 + CH1)

802.11 n(40M)		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average Power Output (dBm)		
5.2/5.3/5.6/5.8G			Data Rate (Mbps)		
CH	Frequency (MHz)		CH0	CH1	CH0 + CH1
38	5190	10	6.16	7.67	9.99
46	5230	14	8.55	9.63	12.13
54	5270	14	9.21	10.44	12.88
62	5310	14	7.82	7.86	10.85
102	5510	14	8.62	7.53	11.12
110	5550	14	10.32	9.97	13.16
118	5590	14	10.18	10.02	13.11
126	5630	14	9.97	10.07	13.03
134	5670	14	10.42	10.56	13.50
142	5710	14	10.44	10.62	13.54
151	5755	14	10.55	10.71	13.64
159	5795	14	10.15	10.89	13.55

MIMO (CH0 + CH1)

802.11 ac(20M) 5.2/5.3/5.6/5.8G		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average Power Output (dBm) Data Rate (Mbps)		
CH	Frequency (MHz)		CH0	CH1	CH0 + CH1
36	5180	14	7.53	9.03	11.35
40	5200	14	7.92	9.38	11.72
44	5220	14	7.95	9.26	11.66
48	5240	14	8.02	9.11	11.61
52	5260	14	10.19	10.38	13.30
56	5280	14	10.18	10.25	13.23
60	5300	14	10.26	9.96	13.12
64	5320	14	8.36	7.92	11.16
100	5500	14	8.13	7.05	10.63
104	5520	14	10.76	9.98	13.40
108	5540	14	10.82	10.02	13.45
112	5560	14	10.62	10.36	13.50
116	5580	14	10.19	9.78	13.00
120	5600	14	10.04	9.86	12.96
124	5620	14	10.36	10.42	13.40
128	5640	14	9.78	9.88	12.84
132	5660	14	10.39	10.82	13.62
136	5680	14	10.41	10.62	13.53
140	5700	14	7.53	8.39	10.99
144	5720	14	9.28	10.00	12.67
149	5745	14	10.31	11.19	13.78
153	5765	14	10.36	11.11	13.76
157	5785	14	9.62	10.44	13.06
161	5805	14	10.25	11.01	13.66
165	5825	14	10.11	10.82	13.49

MIMO (CH0 + CH1)

802.11 ac(40M) 5.2/5.3/5.6/5.8G		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average Power Output (dBm) Data Rate (Mbps)		
CH	Frequency (MHz)		CH0	CH1	CH0 + CH1
38	5190	10	5.88	7.35	9.69
46	5230	14	9.42	9.91	12.68
54	5270	14	10.06	10.25	13.17
62	5310	14	8.31	8.08	11.21
102	5510	14	8.97	8.06	11.55
110	5550	14	10.62	9.71	13.20
118	5590	14	9.97	9.74	12.87
126	5630	14	10.04	10.21	13.14
134	5670	14	10.08	10.82	13.48
142	5710	14	10.41	10.75	13.59
151	5755	14	9.78	10.67	13.26
159	5795	14	10.18	11.02	13.63

802.11 ac(80M) 5.2/5.3/5.6/5.8G		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average Power Output (dBm) Data Rate (Mbps)		
CH	Frequency (MHz)		CH0	CH1	CH0 + CH1
42	5210	10	6.82	7.03	9.94
58	5290	13	8.05	8.03	11.05
106	5530	13	7.71	6.83	10.30
122	5610	14	10.58	10.55	13.58
138	5690	14	10.34	10.61	13.49
155	5775	14	9.76	10.86	13.36

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#. Bluetooth conducted power table:

Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Avg.	
			dBm	mW
2402	1	6	4.72	2.965
2441	1	6	5.09	3.228
2480	1	6	5.25	3.350
2402	2	3	1.43	1.390
2441	2	3	1.79	1.510
2480	2	3	2.25	1.679
2402	3	2	0.64	1.159
2441	3	2	0.93	1.239
2480	3	2	1.17	1.309

Frequency (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Avg. (dBm)
		BT4.0
2402	4	2.04
2442	4	2.87
2480	4	3.08

1.4 Test Environment

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

1.5 Operation Description

1. WWAN (GPRS/EDGE/WCDMA/HSDPA/HSPA/CDMA 1xRTT/CDMA EVDO rev.0 & rev.A/LTE):

The EUT is controlled by using Radio Communication Tester(R&S CMU200 and Anritsu MT8820C), and the communication between the EUT and the tester is established by air link. The EUT was tested in three configurations:

Configuration 1: Back side_0mm with power reduction and_25mm without power reduction.

Configuration 2: Top side_0mm with power reduction and_12mm without power reduction.

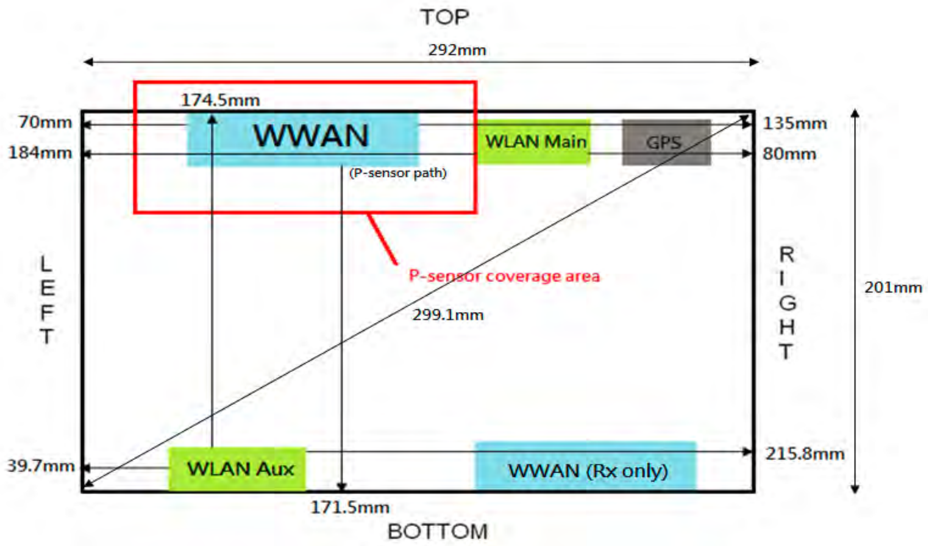
Configuration 3: Right/left/bottom sides_0mm without power reduction.(SAR measurement for right/left/bottom sides can be excluded based on KDB447498D01. Since the simultaneous transmission needs to be considered, we do the SAR test for these sides. For LTE, we choose the maximum channel bandwidth/RB configuration/modulation with highest specified power to do SAR measurement for these sides to be the worst cases.)

Band	Power Reduction
GPRS850	YES
EDGE850	YES
GPRS1900	YES
EDGE1900	YES
WCDMA B2	YES
WCDMA B4	YES
WCDMA B5	YES
CDMA BC0	YES
CDMA BC1	YES
CDMA BC10	YES
LTE B2/4/5/13/17/25	YES
WLAN	NO
BT	NO

2. WLAN (802.11 a/b/g/n/ac):

Use chipset specific software to control the EUT, and makes it transmit in maximum power. The EUT was tested in the following configurations:

Configurations: Back/top/right/bottom/Left sides_0mm.



Antenna position plot(front view)

(Note:The proximity sensor is collocated with WWAN antenna.)

Note:

The test configuration for standalone tablet

1. On the backside of tablet, the left and right rubber corners are removed to make WWAN/WLAN antennas against the phantom, besides, unloading the cover of GPS bumper and make it to be flat so as to let WLAN1 against the phantom. This configuration is accepted by FCC via **KDB inquiry.(tracking number: 928161)**

2. SAR test for GPRS was performed on the maximum sourced-based time-averaged power.

3. 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+.

4. Body SAR was measured using Subtype 0/1 Physical Layer configurations for Rev. 0. The 3G SAR test reduction procedure is applied to Rev. A, Subtype 2 Physical layer configuration, with Rev. 0 as the primary mode.

5. For this Ev-Do data device that also support 1x RTT data operations, the 3G SAR test reduction procedure is applied to 1x RTT RC3 and RC1 with Ev-Do Rev. 0, Rev. A as the respective primary modes.(Since SAR is not required for Ev-Do Rev. A, only Rev. 0 need consideration as the primary mode.)

6. LTE modes test according to **FCC KDB 941225 D05v02r03.**

   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:

7. 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.
8. 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:

9. 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.

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Initial Test Configuration:

10. 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.

11. 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.

12. For WLAN Main antenna, 5.2G ac(20), 5.3G ac(20), 5.6G a/ac(20)/ac(80), 5.8G ac(80) are chosen to be the initial test configurations.

13. For WLAN Main antenna, 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 not required for that subsequent test configuration.

14. For WLAN Aux antenna, 5.2G a, 5.3G a, 5.6G a/n(40)/ac(80), 5.8G ac(80) are chosen to be the initial test configurations.

15. For WLAN Aux antenna, 5.3G n(20)/ac(20)/n(40)/ac(40), 5.6G n(20)/ac(20) are chosen to be the subsequent test configurations 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.

16. SAR for subsequent highest measured maximum output power channels in the subsequent test configuration is required only when the reported SAR of the preceding higher maximum output power channel(s) in the subsequent test configuration is > 1.2 W/kg.

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

18. BT SAR measurement for back/top/right/left/bottom sides can be excluded based on KDB447498D01. Since the simultaneous transmission needs to be considered, we do the BT SAR test for these sides. We choose the highest specified BT power to do SAR measurement for these sides to be the worst cases.

19. For 2.4/5.2/5.3/5.6/5.8GHz WLAN Main and Aux antennas, the maximum output power of each antenna during simultaneous transmission (for 802.11n/ac) is much less than that used in standalone transmission (802.11a/b/g/n/ac), so it is more conservative to use the sum of 1-g SAR provision to exclude the SAR measurement for 802.11n/ac MIMO.

20. Based on KDB447498D01,

(1) SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances≤ 50 mm are determined by:

$$\frac{\text{Max. tune up power(mW)}}{\text{Min. test separation distance(mm)}} \times \sqrt{f(\text{GHz})} \leq 3$$

When the minimum test separation distance is < 5mm, 5mm is applied to determine SAR test exclusion.

(2) For test separation distances > 50 mm, and the frequency at 100 MHz to 1500MHz, the SAR test exclusion threshold is determined according to the following, and as illustrated in Appendix B of KDB447498 D01.

$[(\text{Threshold at 50mm in step1}) + (\text{test separation distance-50mm})\text{x}(\frac{f(\text{MHz})}{150})](\text{mW})$,

(3) For test separation distances > 50 mm, and the frequency at >1500MHz to 6GHz, the SAR test exclusion threshold is determined according to the following, and as illustrated in Appendix B of KDB447498 D01.

[(Threshold at 50mm in step1) + (test separation distance-50mm)x10](mW),

Mode	Maximum power(dBm)	Maximum power(mW)	Top side			Right side			Left side		
			Ant. to surface (mm)	Exclusion threshold	Require SAR testing?	Ant. to surface (mm)	over 200mm	Require SAR testing?	Ant. to surface (mm)	Exclusion threshold	Require SAR testing?
BT	6	3.981	174.5	1245.125	NO	216	yes	NO	39.7	0.158	NO

Mode	Maximum power(dBm)	Maximum power(mW)	Bottom side			Back side		
			Ant. to surface (mm)	Exclusion threshold	Require SAR testing?	Ant. to surface (mm)	Exclusion threshold	Require SAR testing?
BT	6	3.981	less than 5	1.254	NO	less than 5	1.254	NO

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Mode	Max. tune-up power(dBm)	Max. tune-up power(mW)	Top side			Right side			Left side		
			Ant. to surface (mm)	Exclusion threshold (mW)	Require SAR testing?	Ant. to surface (mm)	Exclusion threshold (mW)	Require SAR testing?	Ant. to surface (mm)	Exclusion threshold (mW)	Require SAR testing?
GPRS850 class10	32.9	1949.845	less than 5	359.280	YES	135	516.915	NO	70	149.101	NO
GPRS1900 class10	29	794.328	less than 5	219.545	YES	135	871.955	NO	70	221.955	NO
WCDMA B2	23	199.526	less than 5	55.115	YES	135	855.512	NO	70	205.512	NO
WCDMA B4	23	199.526	less than 5	52.829	YES	135	855.283	NO	70	205.283	NO
WCDMA B5	23	199.526	less than 5	36.717	YES	135	483.412	NO	70	116.552	NO
Cellular BC0 1xEVDO	23.5	223.872	less than 5	41.239	YES	135	484.833	NO	70	117.232	NO
Cellular BC1 1xEVDO	24	251.189	less than 5	69.407	YES	135	856.941	NO	70	206.941	NO
Cellular BC10 1xEVDO	23.5	223.872	less than 5	40.622	YES	135	470.485	NO	70	113.809	NO
LTE Band 2	23	199.526	less than 5	55.150	YES	135	855.515	NO	70	205.515	NO
LTE Band 4	22.5	223.872	less than 5	47.116	YES	135	854.712	NO	70	204.712	NO
LTE Band 5	22.5	177.828	less than 5	32.771	YES	135	484.377	NO	70	116.477	NO
LTE Band 13	22	158.489	less than 5	28.120	YES	135	448.779	NO	70	107.745	NO
LTE Band 17	22.5	177.828	less than 5	30.094	YES	135	408.743	NO	70	98.476	NO
LTE Band 25	23	199.526	less than 5	55.222	YES	135	855.522	NO	70	205.522	NO

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Mode	Max. tune-up power(dBm)	Max. tune-up power(mW)	Bottom side			Back side		
			Ant. to surface (mm)	Exclusion threshold (mW)	Require SAR testing?	Ant. to surface (mm)	Exclusion threshold (mW)	Require SAR testing?
GPRS850 class10	32.9	1949.845	171.5	723.456	NO	less than 5	359.280	YES
GPRS1900 class10	29	794.328	171.5	1236.955	NO	less than 5	219.545	YES
WCDMA B2	23	199.526	171.5	1220.512	NO	less than 5	55.115	YES
WCDMA B4	23	199.526	171.5	1220.283	NO	less than 5	52.829	YES
WCDMA B5	23	199.526	171.5	689.418	NO	less than 5	36.717	YES
Cellular BC0 1xEVDO	23.5	223.872	171.5	691.255	NO	less than 5	41.239	YES
Cellular BC1 1xEVDO	24	251.189	171.5	1221.941	NO	less than 5	69.407	YES
Cellular BC10 1xEVDO	23.5	223.872	171.5	670.773	NO	less than 5	40.622	YES
LTE Band 2	23	199.526	171.5	1220.515	NO	less than 5	55.150	YES
LTE Band 4	22.5	223.872	171.5	1219.712	NO	less than 5	47.116	YES
LTE Band 5	22.5	177.828	171.5	690.967	NO	less than 5	32.771	YES
LTE Band 13	22	158.489	171.5	640.282	NO	less than 5	28.120	YES
LTE Band 17	22.5	177.828	171.5	582.969	NO	less than 5	30.094	YES
LTE Band 25	23	199.526	171.5	1220.522	NO	less than 5	55.222	YES

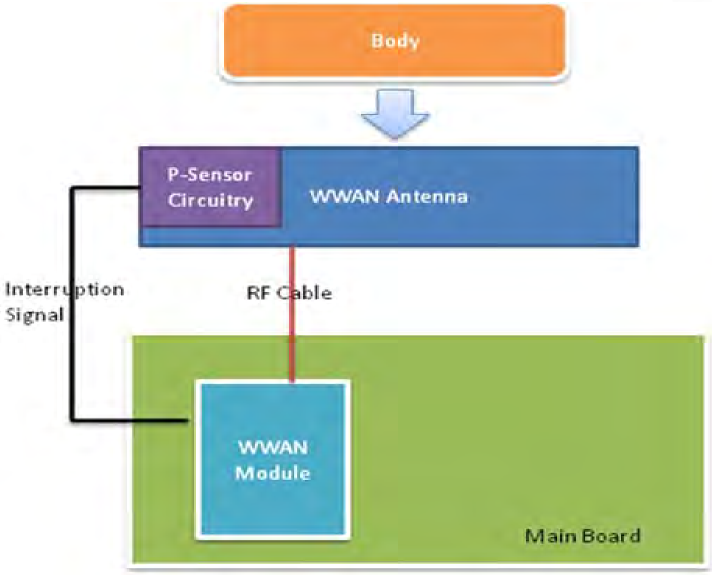
21. According to KDB447498 D01, testing of other required channels is not required when the reported 1-g SAR for the highest output channel is ≤ 0.8 W/kg, when the transmission band is ≤ 100 MHz.

22. According to KDB865664 D01, 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)

23. There is an optional battery, and we do the worst case check in each band to make sure the device installed the optional battery can comply with the SAR limit.

1.6 Proximity sensor operation description

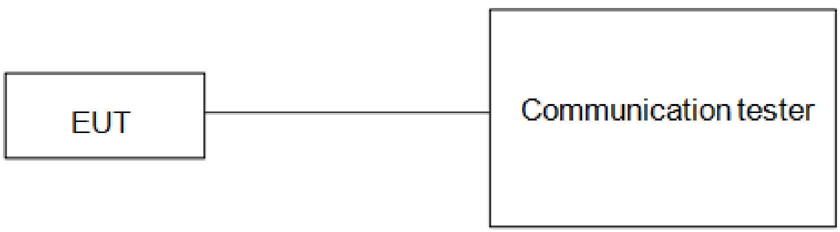
The P-sensor being used to reduce output power is capacitive in which when the object such as human body, metal or plastic is being approached, the sensing capacitance would be increased with the antenna pad. Once the capacitance is accumulated, and reached over the threshold as set in MCU of the microchip, the interruption signal is pulled low (High state without trigger) and further inform modem module of the transmitter to make power reduction.



1.6.1 Proximity sensor measurement procedure

(1) The proximity sensor is collocated with WWAN antenna.

(2) Output power is measured, and monitored by using the communication tester. A RF cables with sufficient length was being attached from the antenna port of the module, and used for the measurement. The appropriate loss attenuated from cable is compensated in the communication tester.



1.6.2 Trigger distances for back/top side

Test procedure:

1) The entire back surface or edge of the tablet is positioned below a flat phantom filled with the required tissue equivalent medium and positioned at least 20 mm further than the distance that triggers power reduction.

2) The back surface or edge is moved toward the phantom in 3 mm steps until the sensor triggers.

3) The back surface or edge is then moved back (further away) from the phantom until maximum output power is returned to the normal maximum level.

4) The back surface or edge is again moved toward the phantom, but in 1 mm steps, until it is at least 5 mm past the triggering point or touching the phantom

5) If the tablet is not touching the phantom, it is moved in 3 mm steps until it touches the phantom to confirm that the sensor remains triggered and the maximum power stays reduced.

6) The process is then reversed by moving the tablet away from the phantom to determine triggering release, until it is at least 10 mm beyond the point that triggers the return of normal maximum power.

7) The measured output power within ± 5 mm of the triggering points, or until the tablet is touching the phantom, for movements to and from the phantom should be tabulated.

8) To ensure all production units are compliant, it is generally necessary to reduce the triggering distance determined from the triggering tests by 1 mm, or more if it is necessary, and use the smallest distance for movements to and from the phantom, minus 1 mm, as the sensor triggering distance for determining the SAR measurement distance.

9) For back side, the trigger distance of proximity sensor is 26mm.

10) For top side, the trigger distance of proximity sensor is 14mm, and we perform the 1.6.3 tilt angle testing in next step.

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1.6.3 Tilt angle testing

Test procedure:

1) The influence of table tilt angles to proximity sensor triggering is determined by positioning each tablet edge that contains a transmitting antenna, perpendicular to the flat phantom, at the smallest sensor triggering test distance determined in sections 1.6.2 by rotating the tablet around the edge next to the phantom in $\leq$ 10 deg increments until the tablet is +/- 45deg or more from the vertical position at 0 deg.

2) If sensor triggering is released and normal maximum output power is restored within the +/- 45deg range, the procedures in step 1) should be repeated by reducing the tablet to phantom separation distance by 1 mm until the proximity sensor no longer releases triggering, and maximum output power remains in the reduced mode.

3) The smallest separation distance determined in steps 1) and 2), minus 1 mm, is the sensor triggering distance for tablet tilt coverage. The smallest separation distance determined in sections 1.6.2, 1.6.3 minus 1 mm should be used in the SAR measurements.

4) The influence of tablet tilt angles to proximity sensor triggering is determined by positioning top and right sides, please refer to table 1.6.5 and 1.6.6.

5) After the tilt angle testing for top side, the sensor is not released during +/- 45deg, so 14-1=13mm, is the sensor triggering distance for tablet tilt coverage. The smallest separation distance minus 1 mm(13-1=12mm) should be used in the SAR measurements.

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1.6.4 Proximity sensor coverage

The following procedures do not apply and are not required for configurations where the antenna and sensor are collocated and the peak SAR location is overlapping with the sensor.

Test procedure:

1) The back surface or edges of the tablet is positioned at a test separation distance less than or equal to the distance required for back surface or edge triggering, with both the antenna and sensor pad located at least 20 mm laterally outside the edge (boundary) of the phantom, along the direction of maximum antenna and sensor offset.

2) The similar sequence of steps applied to determine sensor triggering distance in section 1.6.2 are used to verify back surface and edge sensor coverage by moving the tablet (sensor and antenna) horizontally toward the phantom while maintaining the same vertical separation between the back surface or edge and the phantom.

3) After the exact location where triggering of power reduction is determined, with respect to the sensor and antenna, the tablet movement should be continued, in 3 mm increments, until both the sensor and antenna(s) are fully under the phantom and at least 20 mm inside the phantom edge.

4) The process is then repeated from the other direction, at the opposite end of maximum antenna and sensor offset, by rotating the tablet 180 degrees.

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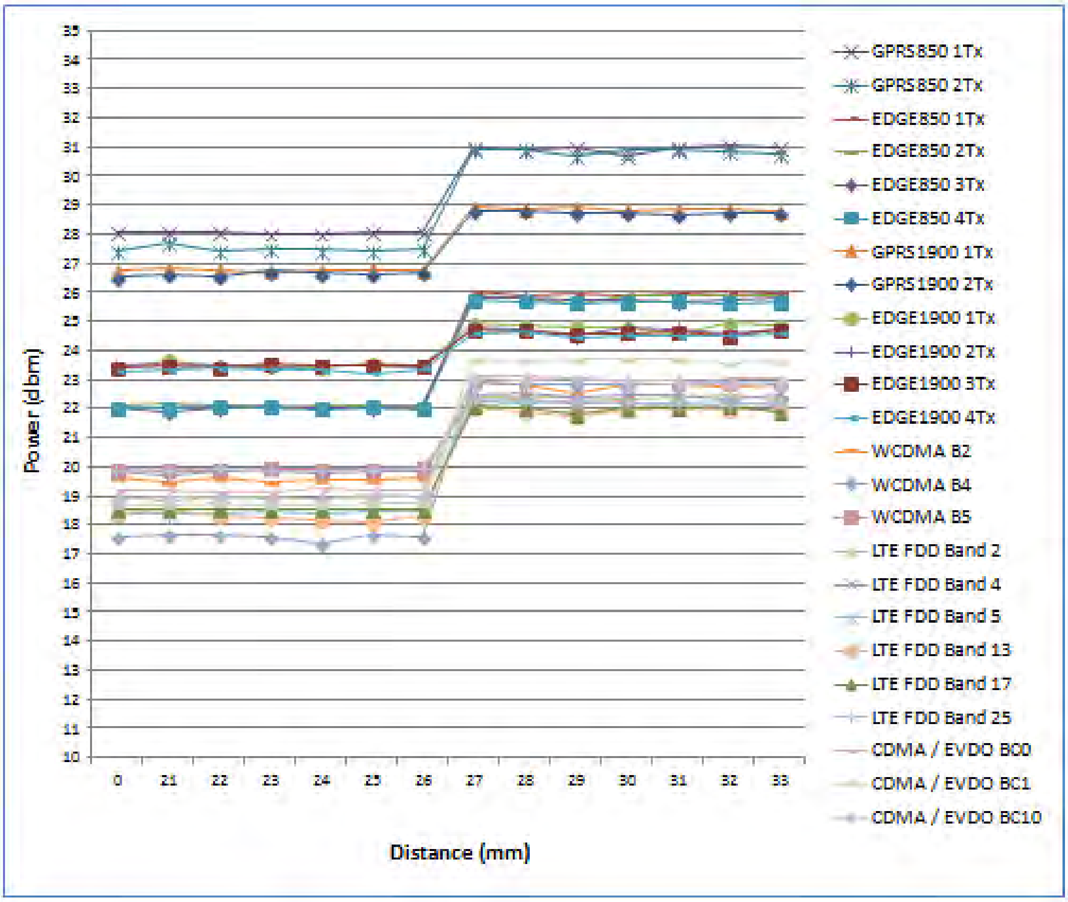
1.6.5 Results

The measured output power within ± 5 mm of the triggering points, or until the tablet is touching the phantom, for movements to and from the phantom is tabulated in the following.

Back side

Moving device toward the phantom



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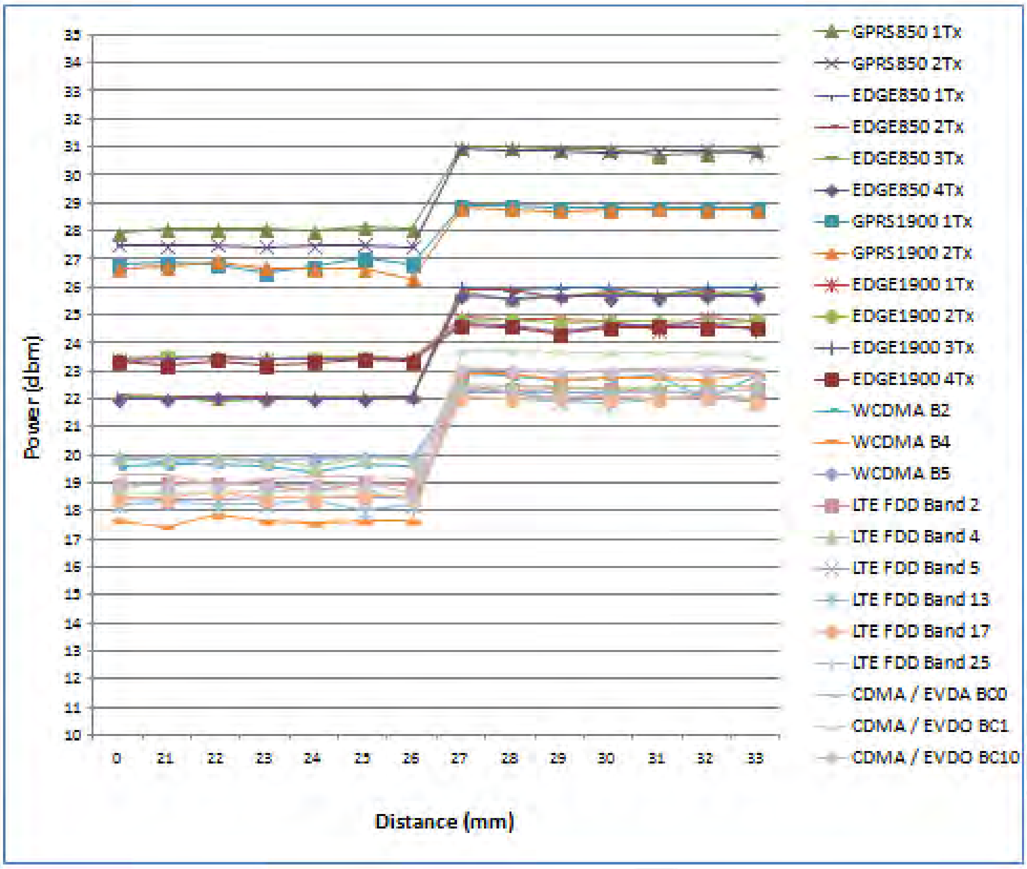
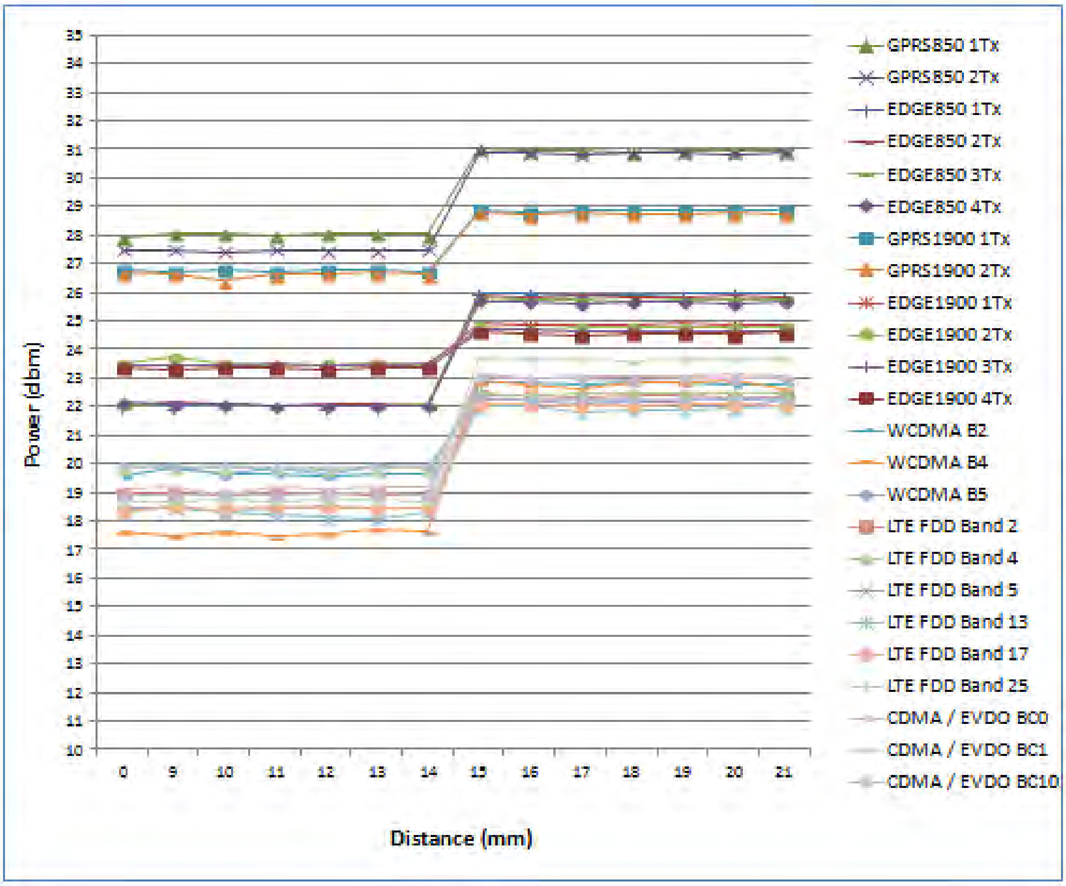
Moving device away from the phantom



For back side, the worst trigger distance of proximity sensor is 26mm, thus we test back side SAR in 25mm without power reduction and 0mm with power reduction.

Top side

Moving device toward the phantom



Moving device away from the phantom

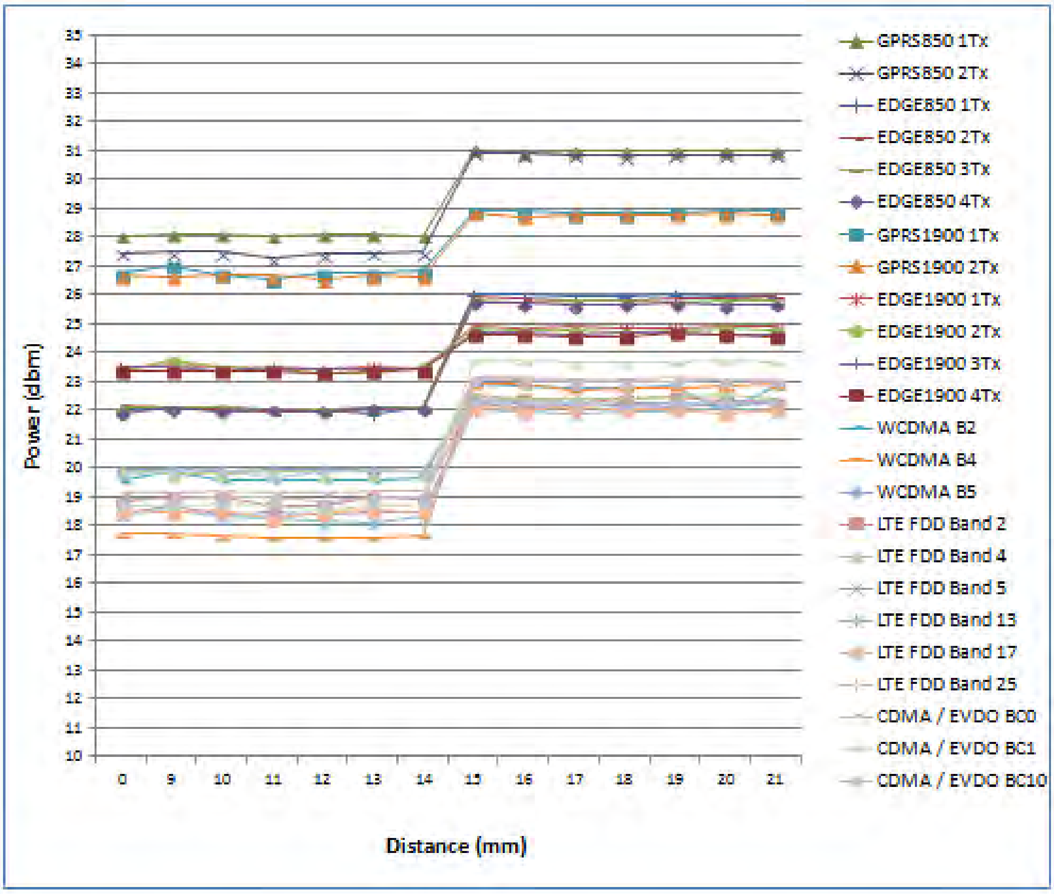


Table 1.6.5 Tilt angle test results for top side

P-sensor ON/OFF	-50 deg	-45 deg	-40 deg	-30 deg	-20 deg	-10 deg	0 deg	10 deg	20 deg	30 deg	40 deg	45 deg	50 deg
14mm	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON

During the tilt angle testing for top side, the sensor is not released in 14mm, so 14-1=13mm, is the sensor triggering distance for tablet tilt coverage. The smallest separation distance minus 1 mm(13-1=12mm) should be used in the SAR measurements for top side.

Note:

1. The triggering variations and hysteresis effect has been evaluated separately according to the tissue-equivalent medium required for each frequency band, and sensor triggering does not change with different tissue-equivalent media.

2. The default power level for sensor failure and malfunctioning, including all compliance concerns, has been addressed in the client's operation description (1.6.6) for the proximity sensor implementation to be acceptable.

3. Conducted power is monitored qualitatively to identify the general triggering characteristics and recorded quantitatively, versus spacing.

4. The optional battery doesn’t influence the p-sensor triggering distance after the verification.
5. Attaching or unloading the left/right rubber/the cover of GPS bumper doesn’t influence the p-sensor triggering distance after the verification.

1.6.6 Operation description for P-sensor

Power Reduction Design Specification (for P-sensor)
The mechanism of power reduction is used only for WWAN, not for Wi-Fi and Bluetooth. The reduced power for each technology/band is defined in Table1-1. With P-sensor mechanism, the GPRS/WCDMA default power when P-sensor failure or malfunction are show in Table1-2 as below.

Table1-1：The power reduction scenario table

Band	Power Reduction
GPRS850	YES
EDGE850	YES
GPRS1900	YES
EDGE1900	YES
WCDMA B2	YES
WCDMA B4	YES
WCDMA B5	YES
CDMA BC0	YES
CDMA BC1	YES
CDMA BC10	YES
LTE B2/4/5/13/17/25	YES
WLAN	NO
BT	NO

Table1-2：The default maximum power when p-sensor failure or malfunction

Technology / Band	Mode	Default Maximum Power (dBm)
GPRS 850	Class 8	28.5
	Class 10	28.5
EDGE 850	Class 8	22.5
	Class 10	22.5
	Class 11	22.5
	Class 12	22.5
GPRS 1900	Class 8	27
	Class 10	27
EDGE 1900	Class 8	23.5
	Class 10	23.5
	Class 11	23.5
	Class 12	23.5

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Technology / Band	Mode	Default Maximum Power (dBm)
UMTS B2	RMC 12.2K data	20
	HSDPA case 1	20
	HSDPA case 2	20
	HSDPA case 3	20
	HSDPA case 4	20
	HSUPA case 1	20
	HSUPA case 2	20
	HSUPA case 3	20
	HSUPA case 4	20
	HSUPA case 5	20
UMTS B4	RMC 12.2K data	19
	HSDPA case 1	19
	HSDPA case 2	19
	HSDPA case 3	19
	HSDPA case 4	19
	HSUPA case 1	19
	HSUPA case 2	19
	HSUPA case 3	19
	HSUPA case 4	19
	HSUPA case 5	19
UMTS B5	RMC 12.2K data	20
	HSDPA case 1	20
	HSDPA case 2	20
	HSDPA case 3	20
	HSDPA case 4	20
	HSUPA case 1	20
	HSUPA case 2	20
	HSUPA case 3	20
	HSUPA case 4	20
	HSUPA case 5	20

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Technology / Band	Mode	Default Maximum Power (dBm)
CDMA BC0	All	20
CDMA BC1	All	20
CDMA BC10	All	20
LTE B2	All	20
LTE B4	All	20
LTE B5	All	20
LTE B13	All	20
LTE B17	All	20
LTE B25	All	20

1.7 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). The model EX3DV4 field probe is 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.

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

- 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).
- A dosimetric probe, i.e., an isotropic E-field probe optimized and calibrated for usage intissue simulating liquid. The probe is equipped with an optical surface detector system.
- A 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.

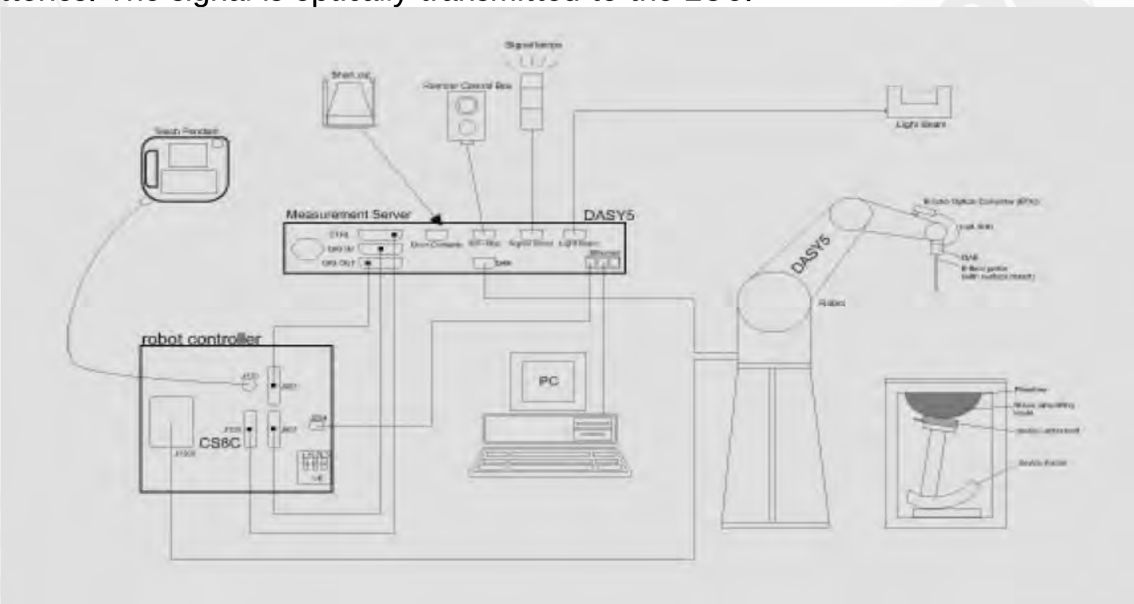

Fig. a The block diagram of SAR system

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- 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.
- 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.
- A probe alignment unit which improves the (absolute) accuracy of the probe positioning.
- A computer operating Windows 7.
- DASY 5 software.
- Remote control with teach pendant and additional circuitry for robot safety such as warning lamps, etc.
- The SAM twin phantom enabling testing left-hand and right-hand usage.
- The device holder for handheld mobile phones.
- Tissue simulating liquid mixed according to the given recipes.
  Validation dipole kits allowing to validate the proper functioning of the system.

1.8 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 HSL 750/835/ 1750/1900/2450/5200/5300/5600/5800 MHz Additional CF for other liquids and frequencies upon request	
Frequency	10 MHz to > 6 GHz	
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	The device holder (Supporter) for Notebook is made by POM (polyoxymethylene resin) , which is non-metal and non-conductive. The height can be adjusted to fit varies kind of notebooks.	 Device Holder

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1.9 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% from the target SAR values. These tests were done at 750/835/1750/1900/2450/5200/5300/5600/ 5800MHz. 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 (SAR values are normalized to 1W forward power delivered to the dipole). 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 ≥ 15 cm ± 5 mm (frequency ≤ 3 GHz) or ≥ 10 cm ± 5 mm (frequency > 3 G Hz) 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.

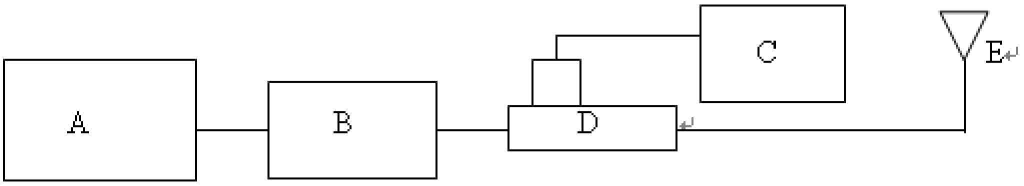
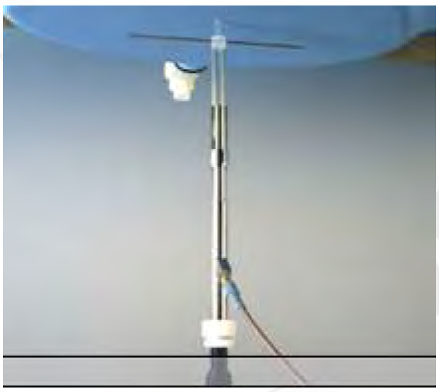


Fig. b The block diagram of system verification

A. Signal generator
B. Amplifier
C. Power meter
D. Dual directional coupling
E. Reference dipole antenna



Photograph of the dipole Antenna

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
D750V2	1015	750	Body	8.75	2.28	9.12	4.23%	Jun. 16, 2015
D835V2	4d063	835	Body	9.35	2.35	9.4	0.53%	Jun. 12, 2015
			Body	9.35	2.35	9.4	0.53%	Jun. 15, 2015
D1750V2	1008	1750	Body	37.5	9.36	37.44	-0.16%	Jun. 17, 2015
D1900V2	5d027	1900	Body	39.3	10.1	40.4	2.80%	Jun. 11, 2015
			Body	39.3	10.1	40.4	2.80%	Jun. 18, 2015
D2450V2	727	2450	Body	51	13.5	54	5.88%	Jun. 01, 2015
			Body	51	12.7	50.8	-0.39%	Jun. 05, 2015
D5GHzV2	1023	5200	Body	73.5	7.47	74.7	1.63%	Jun. 02, 2015
		5300	Body	74.6	8.13	81.3	8.98%	Jun. 03, 2015
		5600	Body	77.9	7.32	73.2	-6.03%	Jun. 04, 2015
		5800	Body	75.6	8.04	80.4	6.35%	Jun. 01, 2015

Table 1. Results of system validation

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1.10 Tissue Simulant Fluid for the Frequency Band

The dielectric properties for this body-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 (30 KHz-6000 MHz).

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 ≥ 15 cm ± 5 mm (Frequency ≤3G) or ≥ 10 cm ± 5 mm (Frequency >3G) during all tests. (Fig. 2)

Tissue Type	Measurement Date	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
Body	Jun. 11, 2015	1850.2	53.300	1.520	52.559	1.477	1.39%	2.83%
		1851.25	53.300	1.520	52.554	1.478	1.40%	2.76%
		1852.4	53.300	1.520	52.546	1.479	1.41%	2.70%
		1880	53.300	1.520	52.356	1.508	1.77%	0.79%
		1900	53.300	1.520	52.226	1.529	2.02%	-0.59%
		1907.6	53.300	1.520	52.188	1.537	2.09%	-1.12%
		1908.75	53.300	1.520	52.176	1.539	2.11%	-1.25%
		1909.8	53.300	1.520	52.167	1.540	2.13%	-1.32%
	Jun. 12, 2015	824.2	55.242	0.969	54.389	0.944	1.54%	2.58%
		824.7	55.240	0.969	54.385	0.944	1.55%	2.60%
		826.4	55.234	0.969	54.372	0.946	1.56%	2.37%
		835	55.200	0.970	54.344	0.955	1.55%	1.55%
		836.52	55.195	0.972	54.333	0.956	1.56%	1.63%
		836.6	55.195	0.972	54.333	0.956	1.56%	1.65%
		846.6	55.164	0.984	54.315	0.966	1.54%	1.83%
		848.31	55.159	0.986	54.265	0.969	1.62%	1.76%
		848.8	55.158	0.987	54.261	0.970	1.63%	1.72%
	Jun. 15, 2015	817.9	55.253	0.949	54.067	0.943	2.15%	0.63%
		820	55.246	0.952	54.051	0.947	2.16%	0.53%
		823.1	55.237	0.955	54.033	0.950	2.18%	0.52%
		829	55.223	0.970	54.064	0.957	2.10%	1.29%
		835	55.200	0.970	54.035	0.963	2.11%	0.72%
		836.5	55.194	0.970	54.017	0.965	2.13%	0.53%
		844	55.172	0.981	53.996	0.973	2.13%	0.82%
	Jun. 16, 2015	709	55.691	0.960	54.312	0.922	2.48%	3.98%
		710	55.687	0.960	54.301	0.923	2.49%	3.88%
		711	55.683	0.960	54.294	0.924	2.49%	3.78%
		750	55.531	0.963	54.188	0.964	2.42%	-0.06%
		782	55.406	0.966	53.973	0.993	2.59%	-2.81%
	Jun. 17, 2015	1712.4	53.531	1.465	52.410	1.431	2.09%	2.32%
		1720	53.511	1.469	52.394	1.440	2.09%	2.01%
		1732.4	53.478	1.477	52.305	1.452	2.19%	1.69%
		1732.5	53.478	1.477	52.304	1.452	2.19%	1.69%
		1745	53.445	1.485	52.257	1.464	2.22%	1.43%
		1750	53.432	1.488	52.225	1.470	2.26%	1.21%
		1752.6	53.425	1.490	52.215	1.473	2.26%	1.14%
	Jun. 18, 2015	1860	53.300	1.520	52.890	1.493	0.77%	1.78%
		1880	53.300	1.520	52.309	1.514	1.86%	0.39%
		1882.5	53.300	1.520	52.269	1.517	1.93%	0.20%
		1900	53.300	1.520	52.126	1.536	2.20%	-1.05%
		1905	53.300	1.520	52.080	1.541	2.29%	-1.38%

Tissue Type	Measurement Date	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
Body	June. 1, 2015	2450	52.700	1.950	51.219	2.035	2.81%	-4.36%
		2462	52.685	1.967	51.185	2.053	2.85%	-4.37%
	June. 5, 2015	2402	52.764	1.904	51.41	1.974	2.57%	-3.67%
		2441	52.712	1.941	51.234	2.024	2.80%	-4.25%
		2450	52.700	1.950	51.254	2.033	2.74%	-4.26%
		2471	52.673	1.980	51.146	2.059	2.90%	-3.99%
		2480	52.662	1.993	51.112	2.072	2.94%	-3.99%
	June. 2, 2015	5200	49.014	5.299	47.895	5.470	2.28%	-3.22%
		5220	48.987	5.323	47.860	5.496	2.30%	-3.26%
		5240	48.960	5.346	47.807	5.521	2.35%	-3.27%
	June. 3, 2015	5260	48.933	5.369	47.728	5.552	2.46%	-3.40%
		5270	48.919	5.381	47.696	5.567	2.50%	-3.46%
		5280	48.906	5.393	47.659	5.583	2.55%	-3.53%
		5300	48.879	5.416	47.584	5.610	2.65%	-3.58%
		5310	48.865	5.428	47.554	5.618	2.68%	-3.51%
		5320	48.851	5.439	47.518	5.637	2.73%	-3.63%
	June. 4, 2015	5520	48.580	5.673	46.795	5.910	3.67%	-4.18%
		5550	48.539	5.708	46.728	5.942	3.73%	-4.10%
		5600	48.471	5.766	46.587	6.005	3.89%	-4.14%
		5610	48.458	5.778	46.537	5.993	3.96%	-3.72%
		5630	48.431	5.801	46.474	6.055	4.04%	-4.37%
		5670	48.376	5.848	46.380	6.017	4.13%	-2.89%
		5680	48.363	5.860	46.359	6.021	4.14%	-2.75%
		5690	48.349	5.872	46.330	6.021	4.18%	-2.55%
		5700	48.336	5.883	46.297	6.137	4.22%	-4.31%
		5710	48.322	5.895	46.241	6.041	4.31%	-2.48%
	June. 1, 2015	5775	48.234	5.971	46.085	6.2	4.46%	-3.84%
		5800	48.200	6.000	46.008	6.210	4.55%	-3.50%

Table 2. Dielectric Parameters of Tissue Simulant Fluid

The composition of the body 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	Body	—	631.68 g	11.72 g	1.2 g	—	600 g	1.0L(Kg)
1750	Body	300.67 g	716.56 g	4.0 g	—	—	—	1.0L(Kg)
1900	Body	300.67 g	716.56 g	4.0 g	—	—	—	1.0L(Kg)
2450	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

1.11 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.

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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 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.

1.12 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:

1.12.1 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.

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

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:

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

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- 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.
- 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%.
- 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].

1.12.2 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:

- The setup must enable accurate determination of the incident power.
- The accuracy of the calculated field strength will depend on the assessment of the dielectric parameters of the liquid.
- 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.

References

[1] N. Kuster, Q. Balzano, and J.C. Lin, Eds., *Mobile Communications Safety*, Chapman & Hall, London, 1997.

[2] K. Meier, M. Burkhardt, T. Schmid, and N. Kuster, \Broadband calibration of E-field probes in lossy media", *IEEE Transactions on Microwave Theory and Techniques*, vol. 44, no. 10, pp. 1954{1962, Oct. 1996.

[3] K. Jokela, P. Hyysalo, and L. Puranen, \Calibration of specific absorption rate (SAR) probes in waveguide at 900 MHz", *IEEE Transactions on Instrumentation and Measurements*, vol. 47, no. 2, pp. 432{438, Apr. 1998.

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 an 10 grams of tissue (defined as a tissue volume in the shape of a cube).

(2) 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.

(3) 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 4.)

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

GPRS 850 MHz (without power reduction)

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) Measured	Averaged SAR over 1g (W/kg) Reported	Plot page
GPRS 850 (1Dn2UP)	Back side	25mm	190	836.6	32.9	30.90	58.49%	0.193	0.306	-
	Top side	12mm	128	824.2	32.9	30.90	58.49%	0.321	0.509	-
	Top side	12mm	190	836.6	32.9	30.90	58.49%	0.327	0.518	-
	Top side with optional	12mm	190	836.6	32.9	30.90	58.49%	0.321	0.509	-
	Top side	12mm	251	848.8	32.9	30.90	58.49%	0.323	0.512	-
	Bottom side	0mm	190	836.6	32.9	30.90	58.49%	0.024	0.038	-
	Right side	0mm	190	836.6	32.9	30.90	58.49%	0.012	0.019	-
	Left side	0mm	190	836.6	32.9	30.90	58.49%	0.014	0.022	-

GPRS 850 MHz (with power reduction)

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) Measured	Averaged SAR over 1g (W/kg) Reported	Plot page
GPRS 850 (1Dn2UP)	Back side	0mm	190	836.6	27.5	27.50	0.00%	0.493	0.493	202
	Top side	0mm	190	836.6	27.5	27.50	0.00%	0.202	0.202	-

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GPRS 1900 MHz (without power reduction)

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	
GPRS 1900 (1Dn2UP)	Back side	25mm	810	1909.8	29	28.80	4.71%	0.170	0.178	-
	Top side	12mm	512	1850.2	29	28.70	7.15%	0.769	0.824	-
	Top side	12mm	661	1880	29	28.60	9.65%	0.888	0.974	203
	Top side*	12mm	661	1880	29	28.60	9.65%	0.886	0.971	-
	Top side with optional battery	12mm	661	1880	29	28.60	9.65%	0.881	0.966	-
	Top side	12mm	810	1909.8	29	28.80	4.71%	0.808	0.846	-
	Bottom side	0mm	810	1909.8	29	28.80	4.71%	0.035	0.037	-
	Right side	0mm	810	1909.8	29	28.80	4.71%	0.028	0.029	-
	Left side	0mm	810	1909.8	29	28.80	4.71%	0.019	0.020	-

GPRS 1900 MHz (with power reduction)

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	
GPRS 1900 (1Dn2UP)	Back side	0mm	512	1850.2	27	26.70	7.15%	0.667	0.715	-
	Back side	0mm	661	1880	27	26.70	7.15%	0.781	0.837	-
	Back side	0mm	810	1909.8	27	26.80	4.71%	0.850	0.890	-
	Top side	0mm	810	1909.8	27	26.80	4.71%	0.694	0.727	-

* - repeated at the highest SAR measurement according to the KDB 865664 D01

WCDMA Band II (without power reduction)

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	
WCDMA Band 2	Back side	25mm	9538	1907.6	23	22.86	3.28%	0.203	0.210	-
	Top side	12mm	9262	1852.4	23	22.76	5.68%	0.930	0.983	-
	Top side	12mm	9400	1880	23	22.79	4.95%	0.978	1.026	-
	Top side	12mm	9538	1907.6	23	22.86	3.28%	1.000	1.033	204
	Top side*	12mm	9538	1907.6	23	22.86	3.28%	0.997	1.030	-
	Top side with optional battery	12mm	9538	1907.6	23	22.86	3.28%	0.901	0.931	-
	Bottom side	0mm	9538	1907.6	23	22.86	3.28%	0.042	0.043	-
	Right side	0mm	9538	1907.6	23	22.86	3.28%	0.019	0.020	-
	Left side	0mm	9538	1907.6	23	22.86	3.28%	0.0082	0.008	-

WCDMA Band II (with power reduction)

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	
WCDMA Band 2	Back side	0mm	9262	1852.4	20	19.61	9.40%	0.707	0.773	-
	Back side	0mm	9400	1880	20	19.63	8.89%	0.801	0.872	-
	Back side	0mm	9538	1907.6	20	19.67	7.89%	0.872	0.941	-
	Top side	0mm	9538	1907.6	20	19.67	7.89%	0.615	0.664	-

* - repeated at the highest SAR measurement according to the KDB 865664 D01

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WCDMA Band IV (without power reduction)

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	
WCDMA Band 4	Back side	25mm	1412	1732.4	23	22.88	2.80%	0.217	0.223	-
	Top side	12mm	1312	1712.4	23	22.79	4.95%	1.270	1.333	205
	Top side*	12mm	1312	1712.4	23	22.79	4.95%	1.250	1.312	-
	Top side with optional	12mm	1312	1712.4	23	22.79	4.95%	1.240	1.301	-
	Top side	12mm	1412	1732.4	23	22.88	2.80%	1.190	1.223	-
	Top side	12mm	1513	1752.6	23	22.68	7.65%	1.030	1.109	-
	Bottom side	0mm	1412	1732.4	23	22.88	2.80%	0.031	0.032	-
	Right side	0mm	1412	1732.4	23	22.88	2.80%	0.014	0.014	-
	Left side	0mm	1412	1732.4	23	22.88	2.80%	0.026	0.027	-

WCDMA Band IV (with power reduction)

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	
WCDMA Band 4	Back side	0mm	1312	1712.4	19	17.62	37.40%	0.687	0.944	-
	Back side	0mm	1412	1732.4	19	17.67	35.83%	0.675	0.917	-
	Back side	0mm	1513	1752.6	19	17.61	37.72%	0.627	0.864	-
	Top side	0mm	1312	1712.4	19	17.62	37.40%	0.634	0.871	-
	Top side	0mm	1412	1732.4	19	17.67	35.83%	0.602	0.818	-
	Top side	0mm	1513	1752.6	19	17.61	37.72%	0.568	0.782	-

* - repeated at the highest SAR measurement according to the KDB 865664 D01

WCDMA Band V (without power reduction)

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	
WCDMA Band 5	Back side	25mm	4183	836.6	23	22.27	18.30%	0.139	0.164	-
	Top side	12mm	4183	836.6	23	22.27	18.30%	0.217	0.257	-
	Bottom side	0mm	4183	836.6	23	22.27	18.30%	0.031	0.037	-
	Right side	0mm	4183	836.6	23	22.27	18.30%	0.0052	0.006	-
	Left side	0mm	4183	836.6	23	22.27	18.30%	0.0084	0.010	-

WCDMA Band V (with power reduction)

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	
WCDMA Band 5	Back side	0mm	4132	826.4	20	19.90	2.33%	0.366	0.375	-
	Back side	0mm	4183	836.6	20	19.96	0.93%	0.374	0.377	206
	Back side with optional battery	0mm	4183	836.6	20	19.96	0.93%	0.121	0.122	-
	Back side	0mm	4233	846.6	20	19.84	3.75%	0.351	0.364	-
	Top side	0mm	4183	836.6	20	19.96	0.93%	0.360	0.363	-

LTE FDD Band II (without power reduction)

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 2	20MHz	QPSK	1 RB	0	Top side	12mm	18700	1860	23	22.32	16.95%	0.911	1.065	-
				50	Top side	12mm	18900	1880	23	22.40	14.82%	0.986	1.132	-
				99	Back side	25mm	19100	1900	23	22.42	14.29%	0.303	0.346	-
					Top side	12mm	19100	1900	23	22.42	14.29%	0.989	1.130	207
					Top side*	12mm	19100	1900	23	22.42	14.29%	0.987	1.128	-
					Bottom side	0mm	19100	1900	23	22.42	14.29%	0.039	0.045	-
					Right side	0mm	19100	1900	23	22.42	14.29%	0.021	0.024	-
					Left side	0mm	19100	1900	23	22.42	14.29%	0.00937	0.011	-
			50 RB	0	Back side	25mm	18700	1860	22	21.17	21.06%	0.241	0.292	-
					Top side	12mm	18700	1860	22	21.17	21.06%	0.705	0.853	-
					Top side	12mm	19100	1900	22	21.10	23.03%	0.727	0.894	-
				25	Top side	12mm	18900	1880	22	21.16	21.34%	0.739	0.897	-
			100 RB		Back side	25mm	18900	1880	22	21.20	20.23%	0.244	0.293	-
					Top side	12mm	18700	1860	22	21.18	20.78%	0.701	0.847	-
					Top side	12mm	18900	1880	22	21.20	20.23%	0.726	0.873	-
					Top side	12mm	19100	1900	22	21.19	20.50%	0.714	0.860	-

LTE FDD Band II (with power reduction)

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 2	20MHz	QPSK	1 RB	50	Back side	0mm	18700	1860	20	18.95	27.35%	0.816	1.039	-
					Back side	0mm	18900	1880	20	18.92	28.23%	0.868	1.113	-
					Top side	0mm	18700	1860	20	18.95	27.35%	0.711	0.905	-
					Top side	0mm	18900	1880	20	18.92	28.23%	0.705	0.904	-
				99	Back side	0mm	19100	1900	20	18.99	26.18%	0.937	1.182	-
					Back side with optional	0mm	19100	1900	20	18.99	26.18%	0.547	0.690	-
					Top side	0mm	19100	1900	20	18.99	26.18%	0.724	0.914	-
			50 RB	0	Back side	0mm	18700	1860	20	18.86	30.02%	0.754	0.980	-
					Back side	0mm	18900	1880	20	18.74	33.66%	0.731	0.977	-
					Top side	0mm	18700	1860	20	18.86	30.02%	0.655	0.852	-
					Top side	0mm	18900	1880	20	18.74	33.66%	0.632	0.845	-
				50	Back side	0mm	19100	1900	20	18.71	34.59%	0.719	0.968	-
					Top side	0mm	19100	1900	20	18.71	34.59%	0.621	0.836	-
			100 RB		Back side	0mm	18700	1860	20	18.75	33.35%	0.770	1.027	-
					Back side	0mm	18900	1880	20	18.76	33.05%	0.825	1.098	-
					Back side	0mm	19100	1900	20	18.75	33.35%	0.586	0.781	-
					Top side	0mm	18700	1860	20	18.75	33.35%	0.657	0.876	-
					Top side	0mm	18900	1880	20	18.76	33.05%	0.670	0.891	-
					Top side	0mm	19100	1900	20	18.75	33.35%	0.659	0.879	-

LTE FDD Band IV (without power reduction)

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 4	20MHz	QPSK	1 RB	50	Top side	12mm	20050	1720	22.5	22.17	7.89%	1.280	1.381	208
					Top side*	12mm	20050	1720	22.5	22.17	7.89%	1.230	1.327	-
					Top side with optional battery	12mm	20050	1720	22.5	22.17	7.89%	1.260	1.359	-
					Top side	12mm	20175	1732.5	22.5	22.12	9.14%	1.220	1.332	-
					Top side with optional battery	12mm	20175	1732.5	22.5	22.12	9.14%	1.210	1.321	-
				99	Back side	25mm	20300	1745	22.5	22.49	0.23%	0.209	0.209	-
					Top side	12mm	20300	1745	22.5	22.49	0.23%	0.940	0.942	-
					Bottom side	0mm	20300	1745	22.5	22.49	0.23%	0.031	0.031	-
					Right side	0mm	20300	1745	22.5	22.49	0.23%	0.012	0.012	-
					Left side	0mm	20300	1745	22.5	22.49	0.23%	0.014	0.014	-
			50 RB	0	Back side	25mm	20300	1745	22	21.26	18.58%	0.151	0.179	-
					Top side	12mm	20175	1732.5	22	21.01	25.60%	0.843	1.059	-
					Top side	12mm	20300	1745	22	21.26	18.58%	0.902	1.070	-
				25	Top side	12mm	20050	1720	22	20.96	27.06%	0.821	1.043	-
			100 RB		Back side	25mm	20300	1745	22	21.12	22.46%	0.139	0.170	-
					Top side	12mm	20050	1720	22	20.98	26.47%	0.779	0.985	-
					Top side	12mm	20175	1732.5	22	20.96	27.06%	0.771	0.980	-
					Top side	12mm	20300	1745	22	21.12	22.46%	0.808	0.989	-

* - repeated at the highest SAR measurement according to the FCC KDB865664D01v01r03

LTE FDD Band IV (with power reduction)

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 4	20MHz	QPSK	1 RB	50	Top side	0mm	20175	1732.5	20	19.88	2.80%	0.930	0.956	-
				99	Top side	0mm	20050	1720	20	19.78	5.20%	0.934	0.983	-
					Back side	0mm	20300	1745	20	19.89	2.57%	0.777	0.797	-
					Top side	0mm	20300	1745	20	19.89	2.57%	0.849	0.871	-
			50 RB	0	Back side	0mm	20300	1745	20	19.68	7.65%	0.683	0.735	-
					Top side	0mm	20050	1720	20	19.59	9.90%	0.868	0.954	-
					Top side	0mm	20300	1745	20	19.68	7.65%	0.808	0.870	-
				50	Top side	0mm	20175	1732.5	20	19.63	8.89%	0.875	0.953	-
			100 RB		Back side	0mm	20300	1745	20	19.69	7.40%	0.681	0.731	-
					Top side	0mm	20050	1720	20	19.57	10.41%	0.811	0.895	-
					Top side	0mm	20175	1732.5	20	19.66	8.14%	0.821	0.888	-
					Top side	0mm	20300	1745	20	19.69	7.40%	0.877	0.942	-

LTE FDD Band V (without power reduction)

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	10MHz	QPSK	1 RB	49	Back side	25mm	20600	844	22.5	22.24	6.17%	0.108	0.115	-
					Top side	12mm	20600	844	22.5	22.24	6.17%	0.145	0.154	-
					Bottom side	0mm	20600	844	22.5	22.24	6.17%	0.039	0.041	-
					Right side	0mm	20600	844	22.5	22.24	6.17%	0.011	0.012	-
					Left side	0mm	20600	844	22.5	22.24	6.17%	0.019	0.020	-
			25 RB	25	Back side	25mm	20450	829	21	20.89	2.57%	0.074	0.076	-
					Top side	12mm	20450	829	21	20.89	2.57%	0.104	0.107	-
			50 RB		Back side	25mm	20525	836.5	21	20.68	7.65%	0.071	0.076	-
					Top side	12mm	20525	836.5	21	20.68	7.65%	0.092	0.099	-

LTE FDD Band V (with power reduction)

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	10MHz	QPSK	1 RB	0	Back side	0mm	20525	836.5	20	18.33	46.89%	0.327	0.480	-
				25	Back side	0mm	20450	829	20	18.39	44.88%	0.331	0.480	-
				49	Back side	0mm	20600	844	20	18.50	41.25%	0.347	0.490	209
					Back side with optional battery	0mm	20600	844	20	18.50	41.25%	0.119	0.168	-
					Top side	0mm	20600	844	20	18.50	41.25%	0.166	0.234	-
			25 RB	25	Back side	0mm	20450	829	20	18.49	41.58%	0.331	0.469	-
					Top side	0mm	20450	829	20	18.49	41.58%	0.156	0.221	-
			50 RB		Back side	0mm	20450	829	20	18.29	48.25%	0.301	0.446	-
					Top side	0mm	20450	829	20	18.29	48.25%	0.142	0.211	-

* - repeated at the highest SAR measurement according to the FCC KDB865664D01v01r03

LTE FDD Band XIII (without power reduction)

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 13	10MHz	QPSK	1 RB	25	Back side	25mm	23230	782	22	22.00	0.00%	0.190	0.190	-
					Top side	12mm	23230	782	22	22.00	0.00%	0.257	0.257	-
					Bottom side	0mm	23230	782	22	22.00	0.00%	0.016	0.016	-
					Right side	0mm	23230	782	22	22.00	0.00%	0.0058	0.006	-
					Left side	0mm	23230	782	22	22.00	0.00%	0.027	0.027	-
			25 RB	12	Back side	25mm	20450	782	21	20.95	1.16%	0.147	0.149	-
					Top side	12mm	20450	782	21	20.95	1.16%	0.207	0.209	-
			50 RB		Back side	25mm	20525	782	21	20.74	6.17%	0.141	0.150	-
					Top side	12mm	20525	782	21	20.74	6.17%	0.199	0.211	-

LTE FDD Band XIII (with power reduction)

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 13	10MHz	QPSK	1 RB	0	Back side	0mm	23230	782	20	18.01	58.12%	0.302	0.478	-
				25	Back side	0mm	23230	782	20	18.33	46.89%	0.340	0.499	210
					Back side with optional	0mm	23230	782	20	18.33	46.89%	0.117	0.172	-
					Top side	0mm	23230	782	20	18.33	46.89%	0.204	0.300	-
				49	Back side	0mm	23230	782	20	18.09	55.24%	0.305	0.473	-
			25 RB	12	Back side	0mm	23230	782	20	18.17	52.41%	0.315	0.480	-
					Top side	0mm	23230	782	20	18.17	52.41%	0.193	0.294	-
			50 RB		Back side	0mm	23230	782	20	18.02	57.76%	0.314	0.495	-
					Top side	0mm	23230	782	20	18.02	57.76%	0.192	0.303	-

* - repeated at the highest SAR measurement according to the FCC KDB865664D01v01r03

LTE FDD Band XVII (without power reduction)

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	10MHz	QPSK	1 RB	25	Back side	25mm	23780	709	22.5	22.09	9.90%	0.161	0.177	-
					Top side	12mm	23780	709	22.5	22.09	9.90%	0.310	0.341	-
					Top side with optional battery	12mm	23780	709	22.5	22.09	9.90%	0.301	0.331	-
					Bottom	0mm	23780	709	22.5	22.09	9.90%	0.044	0.048	-
					Right side	0mm	23780	709	22.5	22.09	9.90%	0.014	0.015	-
					Left side	0mm	23780	709	22.5	22.09	9.90%	0.045	0.049	-
			25 RB	25	Back side	25mm	23780	709	21.5	21.07	10.41%	0.129	0.142	-
					Top side	12mm	23780	709	21.5	21.07	10.41%	0.249	0.275	-
			50 RB		Back side	25mm	23780	709	21.5	20.83	16.68%	0.127	0.148	-
					Top side	12mm	23780	709	21.5	20.83	16.68%	0.244	0.285	-

LTE FDD Band XVII (with power reduction)

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	10MHz	QPSK	1 RB	25	Back side	0mm	23780	709	20	18.53	40.28%	0.312	0.438	211
					Back side	0mm	23790	710	20	18.45	42.89%	0.302	0.432	-
					Back side with optional battery	0mm	23780	709	20	18.53	40.28%	0.307	0.431	-
					Back side	0mm	23800	711	20	18.38	45.21%	0.289	0.420	-
					Top side	0mm	23780	709	20	18.53	40.28%	0.256	0.359	-
			25 RB	12	Back side	0mm	23800	711	20	18.38	45.21%	0.299	0.434	-
					Top side	0mm	23800	711	20	18.38	45.21%	0.231	0.335	-
			50 RB		Back side	0mm	23800	711	20	18.25	49.62%	0.284	0.425	-
					Top side	0mm	23800	711	20	18.25	49.62%	0.222	0.332	-

LTE FDD Band XXV (without power reduction)

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 25	20MHz	QPSK	1 RB	99	Back side	25mm	26590	1905	23	22.37	15.61%	0.283	0.327	-
					Top side	12mm	26140	1860	23	22.25	18.85%	1.040	1.236	212
					Top side	12mm	26365	1882.5	23	22.28	18.03%	0.962	1.135	-
					Top side	12mm	26590	1905	23	22.37	15.61%	1.000	1.156	-
					Top side*	12mm	26140	1860	23	22.25	18.85%	1.020	1.212	-
					Top side with optional	12mm	26140	1860	23	22.25	18.85%	0.984	1.169	-
					Bottom	0mm	26590	1905	23	22.37	15.61%	0.034	0.039	-
					Right side	0mm	26590	1905	23	22.37	15.61%	0.004	0.005	-
					Left side	0mm	26590	1905	23	22.37	15.61%	0.001	0.001	-
			50 RB	0	Top side	12mm	26140	1860	22	21.11	22.74%	0.769	0.944	-
					Top side	12mm	26365	1882.5	22	21.02	25.31%	0.796	0.998	-
				50	Back side	25mm	26590	1905	22	21.14	21.90%	0.219	0.267	-
					Top side	12mm	26590	1905	22	21.14	21.90%	0.799	0.974	-
			100 RB		Back side	25mm	26590	1905	22	21.12	22.46%	0.219	0.268	-
					Top side	12mm	26140	1860	22	21.12	22.46%	0.796	0.975	-
					Top side	12mm	26365	1882.5	22	21.10	23.03%	0.771	0.949	-
					Top side	12mm	26590	1905	22	21.16	21.34%	0.802	0.973	-

LTE FDD Band XXV (with power reduction)

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 25	20MHz	QPSK	1 RB	50	Back side	0mm	26140	1860	20	19.81	4.47%	0.814	0.850	-
					Back side	0mm	26365	1882.5	20	19.72	6.66%	0.838	0.894	-
				99	Back side	0mm	26590	1905	20	19.93	1.62%	0.931	0.946	-
					Top side	0mm	26590	1905	20	19.93	1.62%	0.697	0.708	-
			50 RB	25	Back side	0mm	26365	1882.5	20	19.50	12.20%	0.830	0.931	-
				50	Back side	0mm	26140	1860	20	19.63	8.89%	0.783	0.853	-
					Back side	0mm	26590	1905	20	19.64	8.64%	0.866	0.941	-
					Top side	0mm	26590	1905	20	19.64	8.64%	0.665	0.722	-
			100 RB		Back side	0mm	26140	1860	20	19.59	9.90%	0.766	0.842	-
					Back side	0mm	26365	1860	20	19.47	12.98%	0.818	0.924	-
					Back side	0mm	26590	1882.5	20	19.61	9.40%	0.864	0.945	-
					Top side	0mm	26590	1905	20	19.61	9.40%	0.667	0.730	-

* - repeated at the highest SAR measurement according to the FCC KDB865664D01v01r03

CDMA / EVDO (BC0) (without power reduction)

Mode		Service	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	
CDMA BC 0	EVDO	Rev. 0 Subtype 0/1	Back side	25mm	384	836.52	23.5	23.11	9.40%	0.173	0.189	-
			Top side	12mm	384	836.52	23.5	23.11	9.40%	0.224	0.245	-
			Bottom side	0mm	384	836.52	23.5	23.11	9.40%	0.032	0.035	-
			Right side	0mm	384	836.52	23.5	23.11	9.40%	0.0042	0.005	-
			Left side	0mm	384	836.52	23.5	23.11	9.40%	0.0031	0.003	-

CDMA / EVDO (BC0) (with power reduction)

Mode		Service	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	
CDMA BC 0	EVDO	Rev. 0 Subtype 0/1	Back side	0mm	1013	824.7	20	19.23	19.40%	0.291	0.347	-
			Back side	0mm	384	836.52	20	19.20	20.23%	0.307	0.369	213
			Back side	0mm	777	848.31	20	19.06	24.17%	0.296	0.368	-
			Top side	0mm	384	836.52	20	19.20	20.23%	0.281	0.338	-

* - repeated at the highest SAR measurement according to the FCC KDB 865664

CDMA / EVDO (BC0) - optional battery spot check (with power reduction)

Mode		Service	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	
CDMA BC 0	EVDO	Rev. 0 Subtype 0/1	Back side	0mm	384	836.52	20	19.20	20.23%	0.098	0.118	-

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CDMA / EVDO (BC1) (without power reduction)

Mode		Service	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	
CDMA BC 1	EVDO	Rev. 0 Subtype 0/1	Back side	25mm	25	1851.25	24	23.72	6.66%	0.267	0.285	-
			Top side	12mm	25	1851.25	24	23.72	6.66%	0.866	0.924	-
			Top side	12mm	600	1880	24	23.66	8.14%	1.020	1.103	214
			Top side*	12mm	25	1880	24	23.66	8.14%	1.010	1.092	-
			Top side	12mm	1175	1908.75	24	23.62	9.14%	0.998	1.089	-
			Bottom side	0mm	25	1851.25	24	23.72	6.66%	0.046	0.049	-
			Right side	0mm	25	1851.25	24	23.72	6.66%	0.027	0.029	-
			Left side	0mm	25	1851.25	24	23.72	6.66%	0.020	0.021	-

CDMA / EVDO (BC1) (with power reduction)

Mode		Service	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	
CDMA BC 1	EVDO	Rev. 0 Subtype 0/1	Back side	0mm	25	1851.25	20	18.76	33.05%	0.519	0.691	-
			Top side	0mm	25	1851.25	20	18.76	33.05%	0.437	0.581	-

* - repeated at the highest SAR measurement according to the FCC KDB 865664

CDMA / EVDO (BC1) – optional battery spot check (with power reduction)

Mode		Service	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	
CDMA BC 1	EVDO	Rev. 0 Subtype 0/1	Top side	12mm	600	1880	24	23.66	8.14%	0.992	1.073	-

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CDMA / EVDO (BC10) (without power reduction)

Mode		Service	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	
CDMA BC 10	EVDO	Rev. 0 Subtype 0/1	Back side	25mm	684	823.1	23.5	23.05	10.92%	0.170	0.189	-
			Top side	12mm	684	823.1	23.5	23.05	10.92%	0.246	0.273	-
			Bottom side	0mm	684	823.1	23.5	23.05	10.92%	0.041	0.045	-
			Right side	0mm	684	823.1	23.5	23.05	10.92%	0.0016	0.002	-
			Left side	0mm	684	823.1	23.5	23.05	10.92%	0.0034	0.004	-

CDMA / EVDO (BC10) (with power reduction)

Mode		Service	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	
CDMA BC 10	EVDO	Rev. 0 Subtype 0/1	Back side	0mm	476	817.9	20	18.92	28.23%	0.274	0.351	-
			Back side	0mm	560	820	20	18.96	27.06%	0.281	0.357	-
			Back side	0mm	684	823.1	20	19.00	25.89%	0.289	0.364	215
			Top side	0mm	684	823.1	20	19.00	25.89%	0.282	0.355	-

* - repeated at the highest SAR measurement according to the FCC KDB 865664

CDMA / EVDO (BC10) – optional battery spot check (with power reduction)

Mode		Service	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	
CDMA BC 10	EVDO	Rev. 0 Subtype 0/1	Back side	0mm	684	823.1	20	19.00	25.89%	0.087	0.110	-

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WLAN802.11 Main Antenna

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	WLAN802.11 b	Back side	0	11	2462	15	14.47	12.98%	0.0395	0.045	-
		Top side	0	11	2462	15	14.47	12.98%	0.2	0.226	216
		Top side_ with optional battery	0	11	2462	15	14.47	12.98%	0.18	0.203	-
		Left side	0	11	2462	15	14.47	12.98%	0.0212	0.024	-
		Right side	0	11	2462	15	14.47	12.98%	0.0148	0.017	-
		Bottom side	0	11	2462	15	14.47	12.98%	0.00478	0.005	-
	WLAN802.11 ac(20M) 5.2G	Back side	0	48	5240	14.5	12.77	48.94%	0.0475	0.071	-
		Top side	0	44	5220	14.5	12.75	49.62%	0.582	0.871	217
		Top side_ with optional battery	0	44	5220	14.5	12.75	49.62%	0.539	0.806	-
		Top side	0	48	5240	14.5	12.77	48.94%	0.576	0.858	-
		Left side	0	48	5240	14.5	12.77	48.94%	0.0141	0.021	-
		Right side	0	48	5240	14.5	12.77	48.94%	0.015	0.022	-
		Bottom side	0	48	5240	14.5	12.77	48.94%	0.0157	0.023	-
	WLAN802.11 ac(20M) 5.3G	Back side	0	56	5280	14.5	13.76	18.58%	0.0521	0.062	-
		Top side	0	52	5260	14.5	13.58	23.59%	0.688	0.850	-
		Top side	0	56	5280	14.5	13.76	18.58%	0.776	0.920	218
		Top side_ with optional battery	0	56	5280	14.5	13.76	18.58%	0.754	0.894	-
		Left side	0	56	5280	14.5	13.76	18.58%	0.0141	0.017	-
		Right side	0	56	5280	14.5	13.76	18.58%	0.0156	0.018	-
		Bottom side	0	56	5280	14.5	13.76	18.58%	0.0137	0.016	-

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	WLAN802.11 a 5.6G	Back side	0	104	5520	14.5	14.16	8.14%	0.088	0.095	-
		Top side	0	104	5520	14.5	14.16	8.14%	1.02	1.103	219
		Top side*	0	104	5520	14.5	14.16	8.14%	0.995	1.076	-
		Top side	0	120	5600	14.5	13.48	26.47%	0.794	1.004	-
		Left side	0	104	5520	14.5	14.16	8.14%	0.0187	0.020	-
		Right side	0	104	5520	14.5	14.16	8.14%	0.0172	0.019	-
		Bottom side	0	104	5520	14.5	14.16	8.14%	0.0149	0.016	-
	WLAN802.11 ac(20M) 5.6G	Back side	0	104	5520	14.5	14.02	11.69%	0.138	0.154	-
		Top side	0	104	5520	14.5	14.02	11.69%	0.977	1.091	220
		Top side	0	136	5680	14.5	13.49	26.18%	0.939	1.185	-
		Top side_ with optional battery	0	136	5680	14.5	13.49	26.18%	0.893	1.127	-
		Left side	0	104	5520	14.5	14.02	11.69%	0.0222	0.025	-
		Right side	0	104	5520	14.5	14.02	11.69%	0.0195	0.022	-
		Bottom side	0	104	5520	14.5	14.02	11.69%	0.0179	0.020	-
	WLAN802.11 ac(80M) 5.6G	Back side	0	138	5690	14	13.72	6.66%	0.123	0.131	-
		Top side	0	122	5610	14	12.09	55.24%	0.696	1.080	-
		Top side	0	138	5690	14	13.72	6.66%	1.06	1.131	221
		Left side	0	138	5690	14	13.72	6.66%	0.0228	0.024	-
		Right side	0	138	5690	14	13.72	6.66%	0.0317	0.034	-
		Bottom side	0	138	5690	14	13.72	6.66%	0.016	0.017	-
	WLAN802.11 ac(80M) 5.8G	Back side	0	155	5775	14	13.54	11.17%	0.153	0.170	-
		Top side	0	155	5775	14	13.54	11.17%	0.937	1.042	222
		Top side_ with optional battery	0	155	5775	14	13.54	11.17%	0.907	1.008	-
		Top side*	0	155	5775	14	13.54	11.17%	0.915	1.017	-
		Left side	0	155	5775	14	13.54	11.17%	0.0154	0.017	-
		Right side	0	155	5775	14	13.54	11.17%	0.0353	0.039	-
		Bottom side	0	155	5775	14	13.54	11.17%	0.0276	0.031	-

* - repeated at the highest SAR measurement according to the KDB 865664 D01

WLAN802.11 Aux Antenna

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	WLAN802.11 b	Back side	0	11	2462	15	15.00	0.00%	0.0878	0.088	-
		Bottom side	0	11	2462	15	15.00	0.00%	0.491	0.491	223
		Bottom side_ with optional battery	0	11	2462	15	15.00	0.00%	0.486	0.486	-
		Left side	0	11	2462	15	15.00	0.00%	0.0312	0.031	-
		Right side	0	11	2462	15	15.00	0.00%	0.0136	0.014	-
		Top side	0	11	2462	15	15.00	0.00%	0.0133	0.013	-
	WLAN802.11 a 5.2G	Back side	0	44	5220	14	13.59	9.90%	0.288	0.317	-
		Bottom side	0	44	5220	14	13.59	9.90%	0.921	1.012	224
		Bottom side_ with optional battery	0	44	5220	14	13.59	9.90%	0.906	0.996	-
		Bottom side*	0	44	5220	14	13.59	9.90%	0.913	1.003	-
		Bottom side	0	48	5240	14	13.46	13.24%	0.849	0.961	-
		Left side	0	44	5220	14	13.59	9.90%	0.039	0.043	-
		Right side	0	44	5520	14	13.59	9.90%	0.0136	0.015	-
		Top side	0	44	5220	14	13.59	9.90%	0.0133	0.015	-
	WLAN802.11 ac(20M) 5.2G	Bottom side	0	40	5200	14	13.54	11.17%	0.854	0.949	225
		Bottom side	0	48	5240	14	13.29	17.76%	0.772	0.909	-
	WLAN802.11 a 5.3G	Back side	0	52	5260	14	13.85	3.51%	0.334	0.346	-
		Bottom side	0	52	5260	14	13.85	3.51%	1.19	1.232	-
		Bottom side	0	56	5280	14	13.65	8.39%	1.36	1.474	226
		Bottom side	0	60	5300	14	13.41	14.55%	1.1	1.260	-
		Bottom side	0	64	5320	11.5	11.06	10.66%	0.854	0.945	-
		Left side	0	52	5260	14	13.85	3.51%	0.0423	0.044	-
		Right side	0	52	5260	14	13.85	3.51%	0.0169	0.017	-
		Top side	0	52	5260	14	13.85	3.51%	0.0181	0.019	-
	WLAN802.11 n(20M) 5.3G	Bottom side	0	52	5260	14	13.56	10.66%	1.21	1.339	-
		Bottom side	0	56	5280	14	13.44	13.76%	1.23	1.399	-
		Bottom side	0	60	5300	13.3	13.27	0.69%	1.45	1.460	227
		Bottom side	0	64	5320	11.5	10.89	15.08%	0.835	0.961	-

* - repeated at the highest SAR measurement according to the KDB 865664 D01

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	WLAN802.11 ac(20M) 5.3G	Bottom side	0	52	5260	14	13.62	9.14%	0.971	1.060	-
		Bottom side	0	56	5280	13.5	13.48	0.46%	1.41	1.417	228
		Bottom side	0	60	5300	13.5	13.24	6.17%	1.23	1.306	-
		Bottom side	0	64	5320	11.5	10.92	14.29%	0.513	0.586	-
	WLAN802.11 n(40M) 5.3G	Bottom side	0	54	5270	13.7	13.62	1.86%	1.46	1.487	229
		Bottom side_ with optional battery	0	54	5270	13.7	13.62	1.86%	1.38	1.406	-
		Bottom side*	0	54	5270	13.7	13.62	1.86%	1.44	1.467	-
		Bottom side*	0	54	5270	13.7	13.62	1.86%	1.42	1.446	-
		Bottom side	0	62	5310	11.5	10.92	14.29%	0.698	0.798	-
	WLAN802.11 ac(40M) 5.3G	Bottom side	0	54	5270	13.5	13.41	2.09%	1.44	1.470	230
		Bottom side	0	62	5310	11.5	10.86	15.88%	0.781	0.905	-
	WLAN802.11 a 5.6G	Back side	0	136	5680	14.5	14.04	11.17%	0.247	0.275	-
		Bottom side	0	104	5520	13.5	12.8	17.49%	1.09	1.281	-
		Bottom side	0	120	5600	14.5	13.42	28.23%	1.1	1.411	231
		Bottom side_ with optional battery	0	120	5600	14.5	13.42	28.23%	1.07	1.372	-
		Bottom side*	0	120	5600	14.5	13.42	28.23%	1.05	1.346	-
		Bottom side	0	136	5680	14.5	14.04	11.17%	0.781	0.868	-
		Bottom side	0	140	5700	11.5	11.31	4.47%	0.469	0.490	-
		Left side	0	136	5680	14.5	14.04	11.17%	0.0537	0.060	-
		Right side	0	136	5680	14.5	14.04	11.17%	0.0186	0.021	-
		Top side	0	136	5680	14.5	14.04	11.17%	0.0223	0.025	-
	WLAN802.11 n(20M) 5.6G	Bottom side	0	136	5680	14	13.79	4.95%	0.879	0.923	232
	WLAN802.11 ac(20M) 5.6G	Bottom side	0	136	5680	14	13.95	1.16%	0.631	0.638	233

* - repeated at the highest SAR measurement according to the KDB 865664 D01

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	WLAN802.11 n(40M) 5.6G	Back side	0	134	5670	14.5	13.89	15.08%	0.269	0.310	
		Bottom side	0	110	5550	14.5	12.96	42.56%	0.477	0.680	-
		Bottom side	0	134	5670	14.5	13.89	15.08%	0.913	1.051	234
		Left side	0	134	5670	14.5	13.89	15.08%	0.0512	0.059	-
		Right side	0	134	5670	14.5	13.89	15.08%	0.0179	0.021	-
		Top side	0	134	5670	14.5	13.89	15.08%	0.0163	0.019	-
	WLAN802.11 ac(40M) 5.6G	Back side	0	142	5710	14.5	14.36	3.28%	0.254	0.262	
		Bottom side	0	126	5630	14.5	13.37	29.72%	0.467	0.606	-
		Bottom side	0	142	5710	14.5	14.36	3.28%	0.784	0.810	235
		Left side	0	142	5710	14.5	14.36	3.28%	0.0463	0.048	-
		Right side	0	142	5710	14.5	14.36	3.28%	0.018	0.019	-
		Top side	0	142	5710	14.5	14.36	3.28%	0.0152	0.016	-
	WLAN802.11 ac(80M) 5.8G	Back side	0	155	5775	14.5	14.46	0.93%	0.205	0.207	
		Bottom side	0	155	5775	14.5	14.46	0.93%	0.81	0.817	236
		Bottom side_ with optional battery	0	155	5775	14.5	14.46	0.93%	0.759	0.766	-
		Bottom side*	0	155	5775	14.5	14.46	0.93%	0.788	0.795	-
		Left side	0	155	5775	14.5	14.46	0.93%	0.0377	0.038	-
		Right side	0	155	5775	14.5	14.46	0.93%	0.0173	0.017	-
		Top side	0	155	5775	14.5	14.46	0.93%	0.0128	0.013	-

* - repeated at the highest SAR measurement according to the KDB 865664 D01

Bluetooth

Antenna	Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
									Measured	Reported	
Aux	BT	Back side	0	78	2480	6	5.25	18.85%	0.0115	0.014	-
		Top side	0	78	2480	6	5.25	18.85%	0.0000288	0.00003	-
		Left side	0	78	2480	6	5.25	18.85%	0.00455	0.005	-
		Right side	0	78	2480	6	5.25	18.85%	0.00193	0.002	-
		Bottom side	0	0	2402	6	4.72	34.28%	0.0107	0.014	-
		Bottom side	0	39	2441	6	5.09	23.31%	0.0141	0.017	-
		Bottom side	0	78	2480	6	5.25	18.85%	0.0585	0.070	237
		bottom side_ with optional battery	0	78	2480	6	5.25	18.85%	0.0515	0.061	-

3. Simultaneous Transmission Analysis

Simultaneous Transmission Scenarios:

Simultaneous Transmit Configurations	Body
GPRS850/1900 + 2.4/5GHz WLAN Main	Yes
GPRS850/1900 + 2.4/5GHz WLAN Aux	Yes
GPRS850/1900 + 2.4/5GHz WLAN MIMO	Yes
WCDMA B2/5 + 2.4/5GHz WLAN Main	Yes
WCDMA B2/5 + 2.4/5GHz WLAN Aux	Yes
WCDMA B2/5 + 2.4/5GHz WLAN MIMO	Yes
LTE B2/4/5/13/17/25 + 2.4/5GHz WLAN Main	Yes
LTE B2/4/5/13/17/25 + 2.4/5GHz WLAN Aux	Yes
LTE B2/4/5/13/17/25 + 2.4/5GHz WLAN MIMO	Yes
CDMA BC0/BC1/10 + 2.4/5GHz WLAN Main	Yes
CDMA BC0/BC1/10 + 2.4/5GHz WLAN Aux	Yes
CDMA BC0/BC1/10 + 2.4/5GHz WLAN MIMO	Yes
GPRS850/1900 + 2.4/5GHz WLAN Main + BT	Yes
WCDMA B2/5 + 2.4/5GHz WLAN Main + BT	Yes
LTE B2/4/5/13/17/25 + 2.4/5GHz WLAN Main + BT	Yes
CDMA BC0/BC1/BC10 + 2.4/5GHz WLAN Main + BT	Yes

Note:
1. WWAN and WLAN may transmit simultaneously.
2. Bluetooth and WLAN Aux share the same antenna path, and BT can't transmit with WLAN Aux simultaneously.
3. For 2.4/5GHz WLAN Main and Aux antennas, the maximum output power of each antenna during simultaneous transmission (for 802.11n/ac) is much less than that used in standalone transmission (for 802.11a/b/g/n/ac), so it is more conservative to use the sum of 1-g SAR provision in KDB447498D01 to exclude the SAR measurement for 802.11n/ac MIMO.
4. There are so many combination for simultaneous transmission, we choose the worst cases(all transmitters transmit simultaneously at maximum power) to do the simultaneous transmission analysis to capture the worst cases.
5. For the simultaneous transmission analysis in BT part, the simultaneous transmission for WWAN + WLAN Main had been evaluated and shown before, so we don't show them here again.

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:

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

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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GPRS 850 + 2.4GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
1	850	Back side	0	0.493	0.045	0.088	0.626	ΣSAR<1.6, Not required
		Top side	0	0.202	0.226	0.013	0.441	ΣSAR<1.6, Not required
		Bottom side	0	0.038	0.005	0.491	0.534	ΣSAR<1.6, Not required
		Left side	0	0.022	0.024	0.031	0.077	ΣSAR<1.6, Not required
		Right side	0	0.019	0.017	0.014	0.05	ΣSAR<1.6, Not required

GPRS 1900 + 2.4GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
2	1900	Back side	0	0.89	0.045	0.088	1.023	ΣSAR<1.6, Not required
		Top side	0	0.727	0.226	0.013	0.966	ΣSAR<1.6, Not required
		Bottom side	0	0.037	0.005	0.491	0.533	ΣSAR<1.6, Not required
		Left side	0	0.02	0.024	0.031	0.075	ΣSAR<1.6, Not required
		Right side	0	0.029	0.017	0.014	0.06	ΣSAR<1.6, Not required

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WCDMA Band II + 2.4GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
3	WCDMA B2	Back side	0	0.941	0.045	0.088	1.074	ΣSAR<1.6, Not required
		Top side	0	0.664	0.226	0.013	0.903	ΣSAR<1.6, Not required
		Bottom side	0	0.043	0.005	0.491	0.539	ΣSAR<1.6, Not required
		Left side	0	0.008	0.024	0.031	0.063	ΣSAR<1.6, Not required
		Right side	0	0.02	0.017	0.014	0.051	ΣSAR<1.6, Not required

WCDMA Band IV + 2.4GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
4	WCDMA B4	Back side	0	0.944	0.045	0.088	1.077	ΣSAR<1.6, Not required
		Top side	0	0.871	0.226	0.013	1.11	ΣSAR<1.6, Not required
		Bottom side	0	0.032	0.005	0.491	0.528	ΣSAR<1.6, Not required
		Left side	0	0.027	0.024	0.031	0.082	ΣSAR<1.6, Not required
		Right side	0	0.014	0.017	0.014	0.045	ΣSAR<1.6, Not required

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WCDMA Band V + 2.4GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
5	WCDMA B5	Back side	0	0.377	0.045	0.088	0.51	ΣSAR<1.6, Not required
		Top side	0	0.363	0.226	0.013	0.602	ΣSAR<1.6, Not required
		Bottom side	0	0.037	0.005	0.491	0.533	ΣSAR<1.6, Not required
		Left side	0	0.01	0.024	0.031	0.065	ΣSAR<1.6, Not required
		Right side	0	0.006	0.017	0.014	0.037	ΣSAR<1.6, Not required

CDMA / EVDO BC0 + 2.4GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
6	EVDO BC0	Back side	0	0.369	0.045	0.088	0.502	ΣSAR<1.6, Not required
		Top side	0	0.338	0.226	0.013	0.577	ΣSAR<1.6, Not required
		Bottom side	0	0.035	0.005	0.491	0.531	ΣSAR<1.6, Not required
		Left side	0	0.003	0.024	0.031	0.058	ΣSAR<1.6, Not required
		Right side	0	0.005	0.017	0.014	0.036	ΣSAR<1.6, Not required

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CDMA / EVDO BC1 + 2.4GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
7	EVDO BC1	Back side	0	0.691	0.045	0.088	0.824	ΣSAR<1.6, Not required
		Top side	0	0.581	0.226	0.013	0.82	ΣSAR<1.6, Not required
		Bottom side	0	0.049	0.005	0.491	0.545	ΣSAR<1.6, Not required
		Left side	0	0.021	0.024	0.031	0.076	ΣSAR<1.6, Not required
		Right side	0	0.029	0.017	0.014	0.06	ΣSAR<1.6, Not required

CDMA / EVDO BC10 + 2.4GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
8	EVDO BC10	Back side	0	0.364	0.045	0.088	0.497	ΣSAR<1.6, Not required
		Top side	0	0.355	0.226	0.013	0.594	ΣSAR<1.6, Not required
		Bottom side	0	0.045	0.005	0.491	0.541	ΣSAR<1.6, Not required
		Left side	0	0.004	0.024	0.031	0.059	ΣSAR<1.6, Not required
		Right side	0	0.002	0.017	0.014	0.033	ΣSAR<1.6, Not required

LTE FDD Band II + 2.4GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
9	LTE B2	Back side	0	1.182	0.045	0.088	1.315	ΣSAR<1.6, Not required
		Top side	0	0.914	0.226	0.013	1.153	ΣSAR<1.6, Not required
		Bottom side	0	0.045	0.005	0.491	0.541	ΣSAR<1.6, Not required
		Left side	0	0.011	0.024	0.031	0.066	ΣSAR<1.6, Not required
		Right side	0	0.024	0.017	0.014	0.055	ΣSAR<1.6, Not required

LTE FDD Band IV + 2.4GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
10	LTE B4	Back side	0	0.797	0.045	0.088	0.93	ΣSAR<1.6, Not required
		Top side	0	0.983	0.226	0.013	1.222	ΣSAR<1.6, Not required
		Bottom side	0	0.031	0.005	0.491	0.527	ΣSAR<1.6, Not required
		Left side	0	0.014	0.024	0.031	0.069	ΣSAR<1.6, Not required
		Right side	0	0.012	0.017	0.014	0.043	ΣSAR<1.6, Not required

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LTE FDD Band V + 2.4GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
11	LTE B5	Back side	0	0.49	0.045	0.088	0.623	ΣSAR<1.6, Not required
		Top side	0	0.234	0.226	0.013	0.473	ΣSAR<1.6, Not required
		Bottom side	0	0.041	0.005	0.491	0.537	ΣSAR<1.6, Not required
		Left side	0	0.02	0.024	0.031	0.075	ΣSAR<1.6, Not required
		Right side	0	0.012	0.017	0.014	0.043	ΣSAR<1.6, Not required

LTE FDD Band XIII + 2.4GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
12	LTE B13	Back side	0	0.499	0.045	0.088	0.632	ΣSAR<1.6, Not required
		Top side	0	0.303	0.226	0.013	0.542	ΣSAR<1.6, Not required
		Bottom side	0	0.016	0.005	0.491	0.512	ΣSAR<1.6, Not required
		Left side	0	0.027	0.024	0.031	0.082	ΣSAR<1.6, Not required
		Right side	0	0.006	0.017	0.014	0.037	ΣSAR<1.6, Not required

LTE FDD Band XVII + 2.4GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
13	LTE B17	Back side	0	0.438	0.045	0.088	0.571	ΣSAR<1.6, Not required
		Top side	0	0.359	0.226	0.013	0.598	ΣSAR<1.6, Not required
		Bottom side	0	0.048	0.005	0.491	0.544	ΣSAR<1.6, Not required
		Left side	0	0.049	0.024	0.031	0.104	ΣSAR<1.6, Not required
		Right side	0	0.015	0.017	0.014	0.046	ΣSAR<1.6, Not required

LTE FDD Band XXV + 2.4GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
14	LTE B25	Back side	0	0.946	0.045	0.088	1.079	ΣSAR<1.6, Not required
		Top side	0	0.73	0.226	0.013	0.969	ΣSAR<1.6, Not required
		Bottom side	0	0.039	0.005	0.491	0.535	ΣSAR<1.6, Not required
		Left side	0	0.001	0.024	0.031	0.056	ΣSAR<1.6, Not required
		Right side	0	0.005	0.017	0.014	0.036	ΣSAR<1.6, Not required

GPRS 850 + 5GHz WLAN MIMO

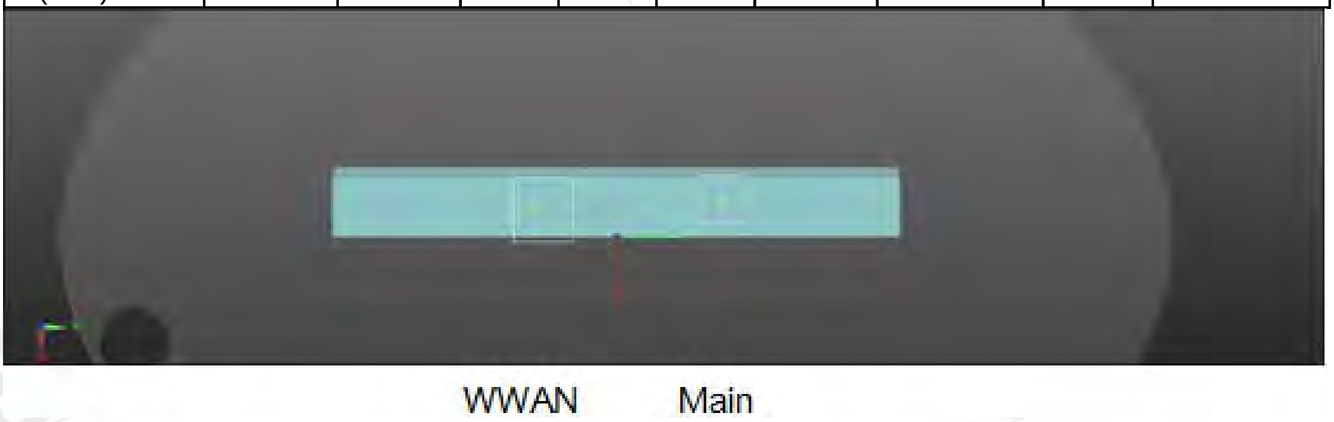
No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
15	850	Back side	0	0.493	0.17	0.346	1.009	ΣSAR<1.6, Not required
		Top side	0	0.202	1.185	0.025	1.412	ΣSAR<1.6, Not required
		Bottom side	0	0.038	0.031	1.487	1.556	ΣSAR<1.6, Not required
		Left side	0	0.022	0.025	0.06	0.107	ΣSAR<1.6, Not required
		Right side	0	0.019	0.039	0.021	0.079	ΣSAR<1.6, Not required

GPRS 1900 + 5GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
16	1900	Back side	0	0.89	0.17	0.346	1.406	ΣSAR<1.6, Not required
		Top side	0	0.727	1.185	0.025	**1.937**	Analyzed as below
		Bottom side	0	0.037	0.031	1.487	1.555	ΣSAR<1.6, Not required
		Left side	0	0.02	0.025	0.06	0.105	ΣSAR<1.6, Not required
		Right side	0	0.029	0.039	0.021	0.089	ΣSAR<1.6, Not required

SPLSR GPRS1900 & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
GPRS 1900 CH810	Top side	0.727	-1.35	-4.33	-0.27	1.912	97.8	0.027	SPLSR<0.04, Not required
WLAN Main ac(20M) CH136		1.185	-1.74	5.44	-0.44				



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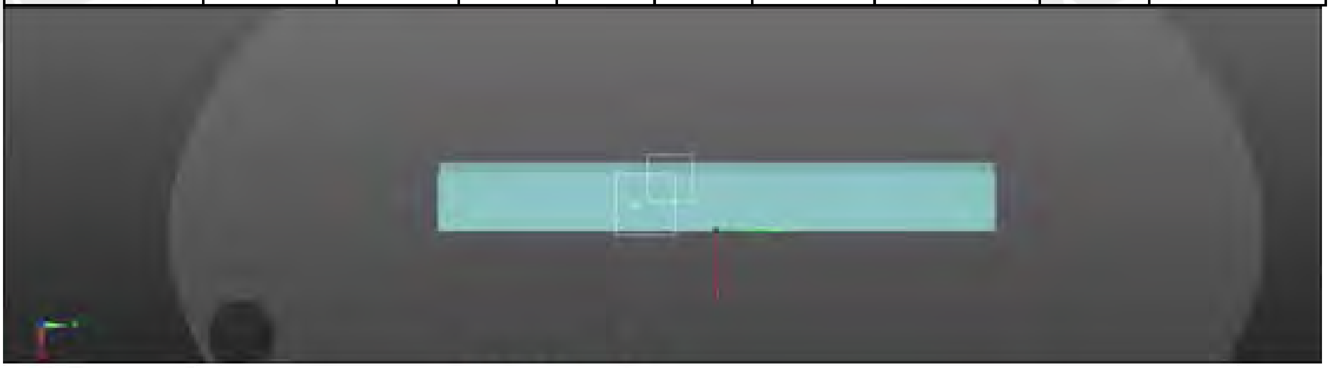
SPLSR GPRS1900 & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
GPRS 1900 CH810	Top side	0.727	-1.35	-4.33	-0.27	0.752	28.6	0.023	SPLSR<0.04, Not required
WLAN Aux a CH 136		0.025	-1.50	-2.34	1.77				



WWAN Aux

SPLSR WLAN Main & WLAN Aux

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 ac(20M) CH136	Top side	1.185	-1.74	5.44	-0.44	1.21	80.9	0.016	SPLSR<0.04, Not required
WLAN Aux a CH 136		0.025	-1.50	-2.34	1.77				

Aux Main

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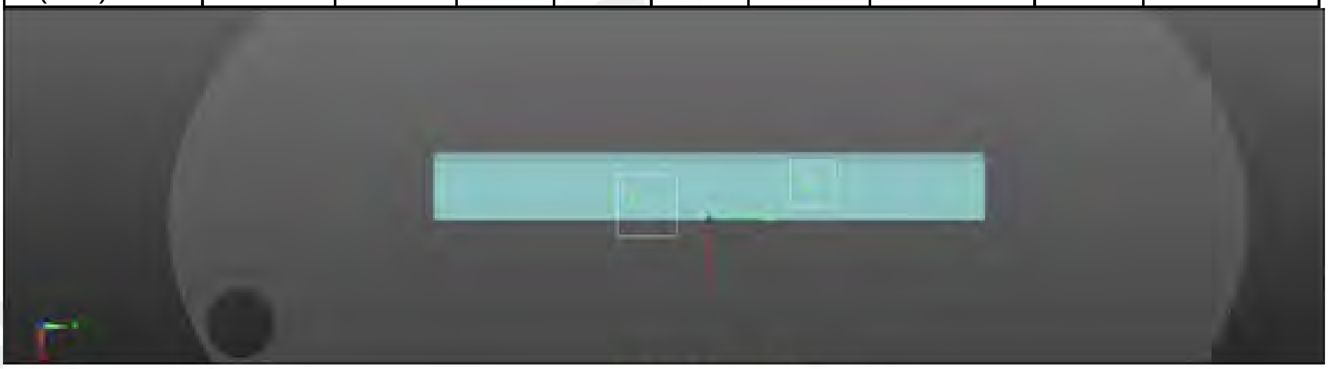
WCDMA Band II + 5GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
17	WCDMA B2	Back side	0	0.941	0.17	0.346	1.457	ΣSAR<1.6, Not required
		Top side	0	0.664	1.185	0.025	**1.874**	Analyzed as below
		Bottom side	0	0.043	0.031	1.487	1.561	ΣSAR<1.6, Not required
		Left side	0	0.008	0.025	0.06	0.093	ΣSAR<1.6, Not required
		Right side	0	0.02	0.039	0.021	0.08	ΣSAR<1.6, Not required

SPLSR WCDMA B2 & WLAN Main

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 B2 CH9538	Top side	0.664	-0.91	-4.20	-0.28	1.849	96.8	0.026	SPLSR<0.04, Not required
WLAN Main ac(20M) CH136		1.185	-1.74	5.44	-0.44				



WWAN Main

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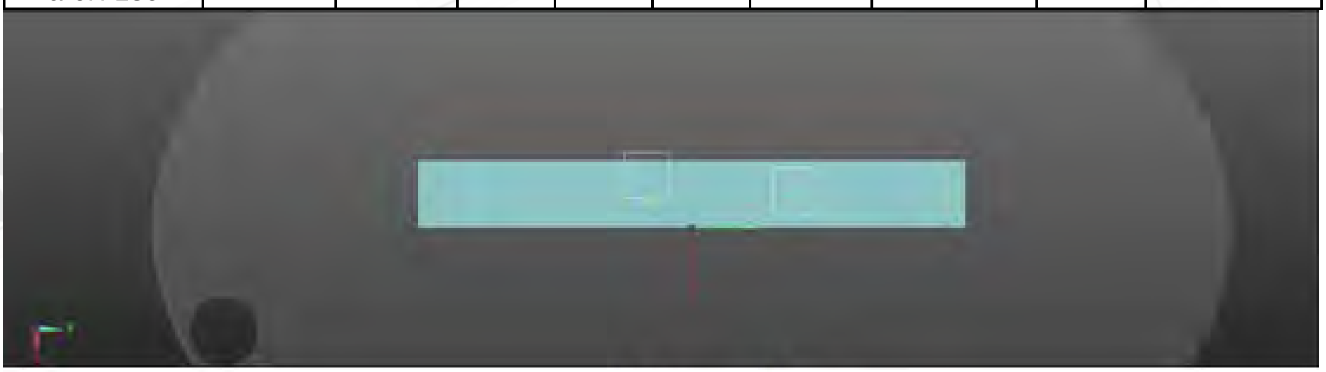
SPLSR WCDMA B2 & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA B2 CH9538	Top side	0.664	-0.91	-4.20	-0.28	0.689	28.3	0.020	SPLSR<0.04, Not required
WLAN Aux a CH 136		0.025	-1.50	-2.34	1.77				

WWAN Aux

SPLSR WLAN Main & WLAN Aux

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 ac(20M) CH136	Top side	1.185	-1.74	5.44	-0.44	1.21	80.9	0.016	SPLSR<0.04, Not required
WLAN Aux a CH 136		0.025	-1.50	-2.34	1.77				



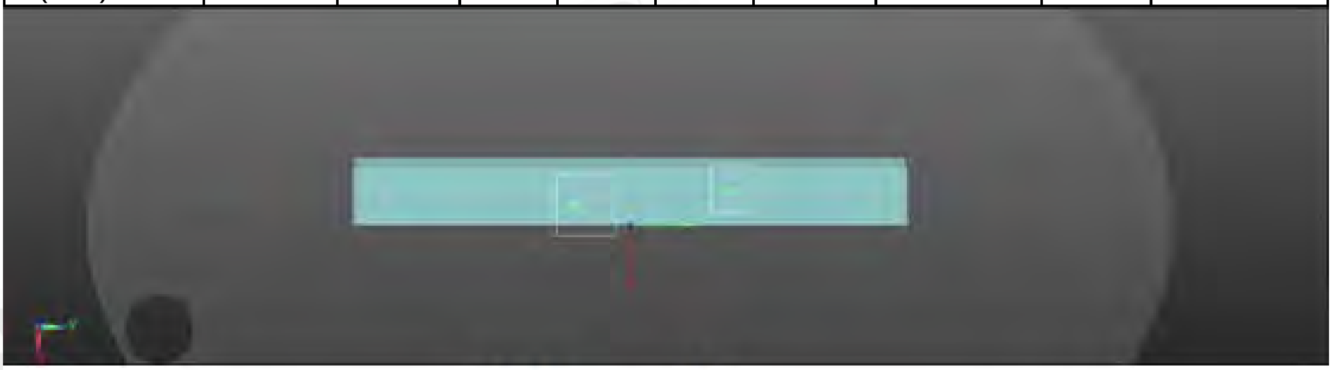
Aux Main

WCDMA Band IV + 5GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
18	WCDMA B4	Back side	0	0.944	0.17	0.346	1.46	ΣSAR<1.6, Not required
		Top side	0	0.871	1.185	0.025	**2.081**	Analyzed as below
		Bottom side	0	0.032	0.031	1.487	1.55	ΣSAR<1.6, Not required
		Left side	0	0.027	0.025	0.06	0.112	ΣSAR<1.6, Not required
		Right side	0	0.014	0.039	0.021	0.074	ΣSAR<1.6, Not required

SPLSR WCDMA B4 & WLAN Main

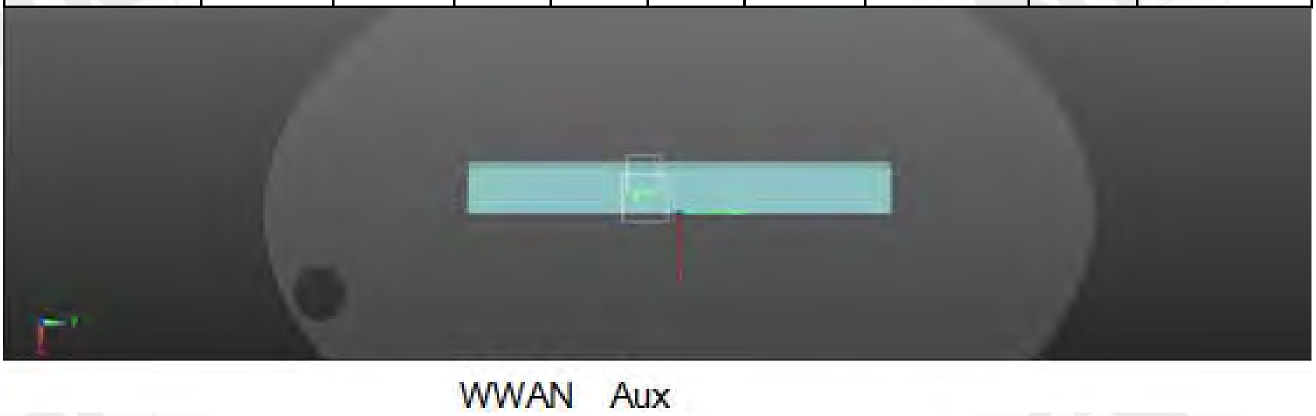
Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA B4 CH1412	Top side	0.871	-1.05	-3.04	-0.25	2.056	85.1	0.035	SPLSR<0.04, Not required
WLAN Main ac(20M) CH136		1.185	-1.74	5.44	-0.44				



WWAN Main

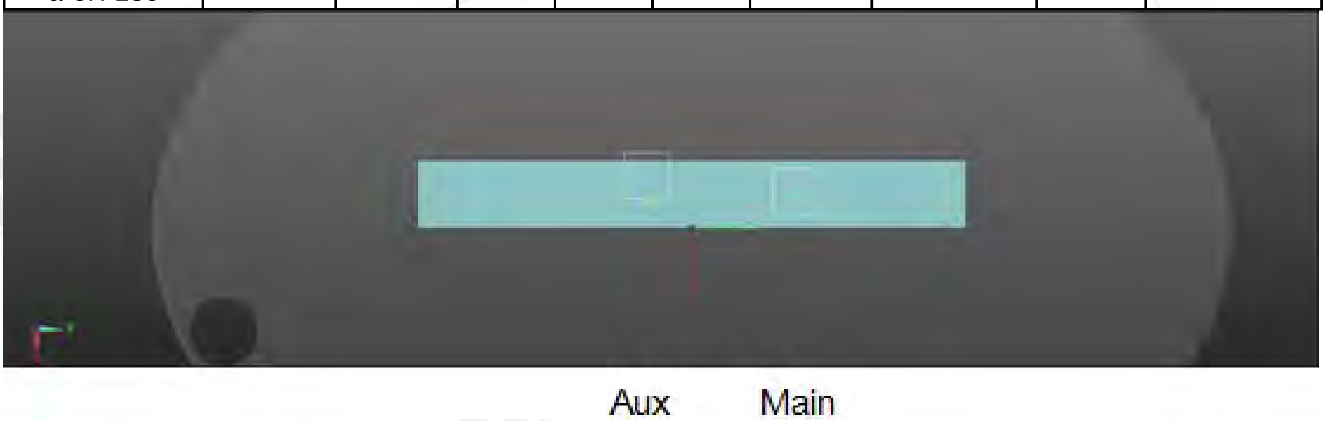
SPLSR WCDMA B4 & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA B4 CH1412	Top side	0.871	-1.05	-3.04	-0.25	0.896	21.9	0.039	SPLSR<0.04, Not required
WLAN Aux a CH 136		0.025	-1.50	-2.34	1.77				



SPLSR WLAN Main & WLAN Aux

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 ac(20M) CH136	Top side	1.185	-1.74	5.44	-0.44	1.21	80.9	0.016	SPLSR<0.04, Not required
WLAN Aux a CH 136		0.025	-1.50	-2.34	1.77				



WCDMA Band V + 5GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
19	WCDMA B5	Back side	0	0.377	0.17	0.346	0.893	ΣSAR<1.6, Not required
		Top side	0	0.363	1.185	0.025	1.573	ΣSAR<1.6, Not required
		Bottom side	0	0.037	0.031	1.487	1.555	ΣSAR<1.6, Not required
		Left side	0	0.01	0.025	0.06	0.095	ΣSAR<1.6, Not required
		Right side	0	0.006	0.039	0.021	0.066	ΣSAR<1.6, Not required

CDMA / EVDO BC0 + 5GHz WLAN MIMO

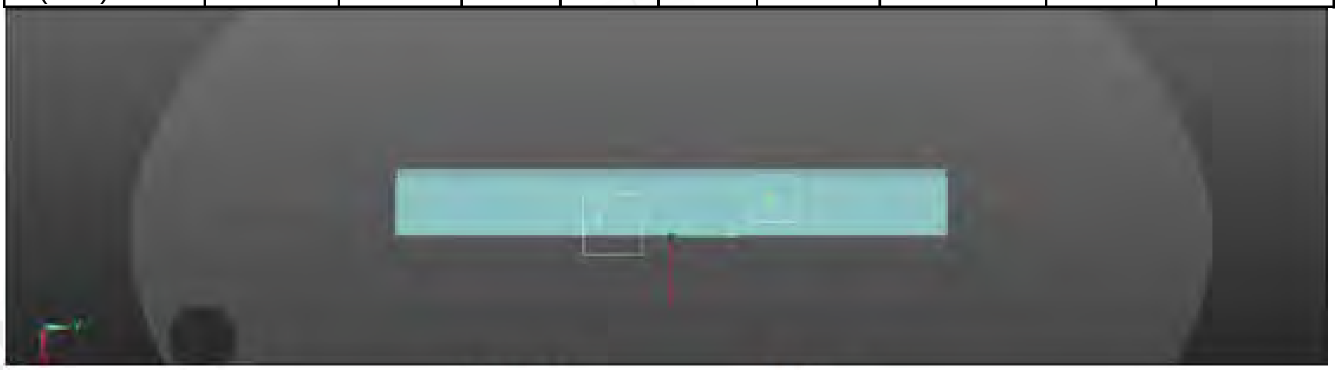
No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
20	EVDO BC0	Back side	0	0.369	0.17	0.346	0.885	ΣSAR<1.6, Not required
		Top side	0	0.338	1.185	0.025	1.548	ΣSAR<1.6, Not required
		Bottom side	0	0.035	0.031	1.487	1.553	ΣSAR<1.6, Not required
		Left side	0	0.003	0.025	0.06	0.088	ΣSAR<1.6, Not required
		Right side	0	0.005	0.039	0.021	0.065	ΣSAR<1.6, Not required

CDMA / EVDO BC1 + 5GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
21	EVDO BC1	Back side	0	0.691	0.17	0.346	1.207	ΣSAR<1.6, Not required
		Top side	0	0.581	1.185	0.025	**1.791**	Analyzed as below
		Bottom side	0	0.049	0.031	1.487	1.567	ΣSAR<1.6, Not required
		Left side	0	0.021	0.025	0.06	0.106	ΣSAR<1.6, Not required
		Right side	0	0.029	0.039	0.021	0.089	ΣSAR<1.6, Not required

SPLSR CDMA / EVDO BC1 & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
EVDO BC1 CH25	Top side	0.581	-0.76	-3.95	-0.36	1.766	94.4	0.025	SPLSR<0.04, Not required
WLAN Main ac(20M) CH136		1.185	-1.74	5.44	-0.44				



WWAN Main

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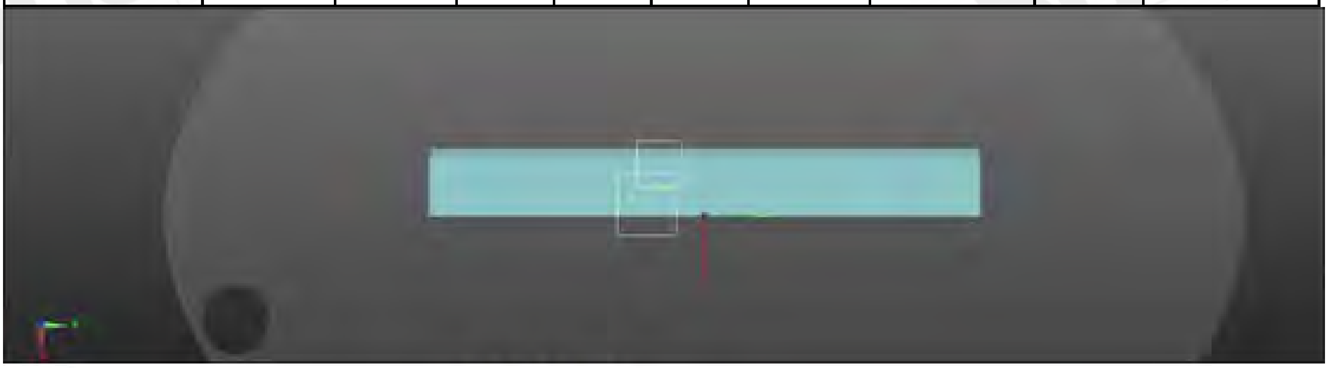
SPLSR CDMA / EVDO BC1 & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
EVDO BC1 CH25	Top side	0.581	-0.76	-3.95	-0.36	0.606	27.7	0.017	SPLSR<0.04, Not required
WLAN Aux a CH 136		0.025	-1.50	-2.34	1.77				



WWAN Aux

SPLSR WLAN Main & WLAN Aux

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 ac(20M) CH136	Top side	1.185	-1.74	5.44	-0.44	1.21	80.9	0.016	SPLSR<0.04, Not required
WLAN Aux a CH 136		0.025	-1.50	-2.34	1.77				

Aux Main

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CDMA / EVDO BC10 + 5GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
22	EVDO BC10	Back side	0	0.364	0.17	0.346	0.88	ΣSAR<1.6, Not required
		Top side	0	0.355	1.185	0.025	1.565	ΣSAR<1.6, Not required
		Bottom side	0	0.045	0.031	1.487	1.563	ΣSAR<1.6, Not required
		Left side	0	0.004	0.025	0.06	0.089	ΣSAR<1.6, Not required
		Right side	0	0.002	0.039	0.021	0.062	ΣSAR<1.6, Not required

LTE FDD Band II + 5GHz WLAN MIMO

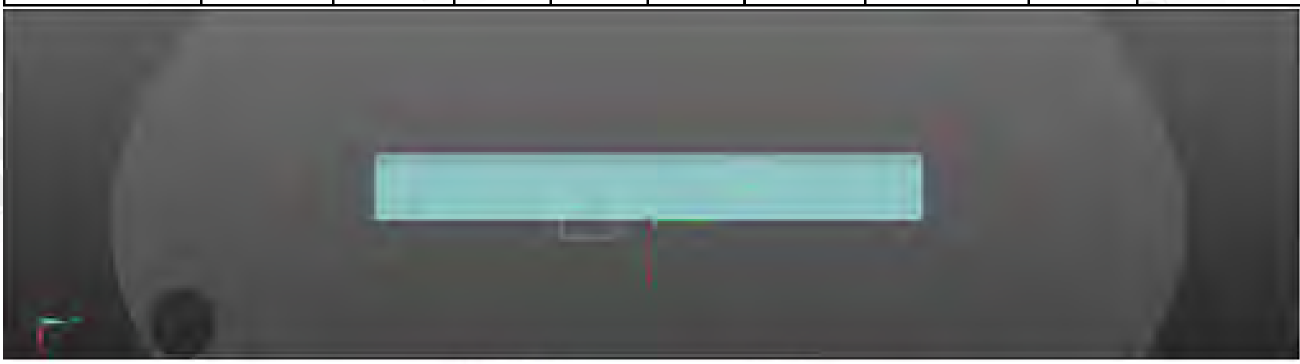
No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
23	LTE B2	Back side	0	1.182	0.17	0.346	**1.698**	Analyzed as below
		Top side	0	0.914	1.185	0.025	**2.124**	Analyzed as below
		Bottom side	0	0.045	0.031	1.487	1.563	ΣSAR<1.6, Not required
		Left side	0	0.011	0.025	0.06	0.096	ΣSAR<1.6, Not required
		Right side	0	0.024	0.039	0.021	0.084	ΣSAR<1.6, Not required

SPLSR LTE Band 2 & WLAN Main

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 B2 CH19100	Back side	1.182	9.46	-3.51	-0.19	1.352	82.7	0.019	SPLSR<0.04, Not required
WLAN Main ac(80M) CH155		0.17	9.30	4.72	0.60				

WWAN Main

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 B2 CH19100	Top side	0.914	-0.75	-3.84	-0.32	2.099	93.3	0.033	SPLSR<0.04, Not required
WLAN Main ac(20M) CH136		1.185	-1.74	5.44	-0.44				

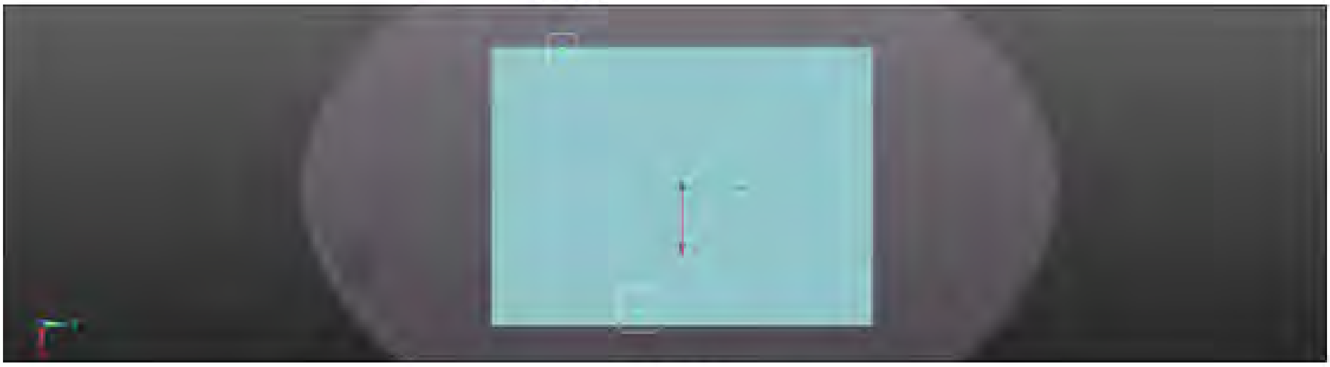


WWAN Main

SPLSR LTE Band 2 & WLAN Aux

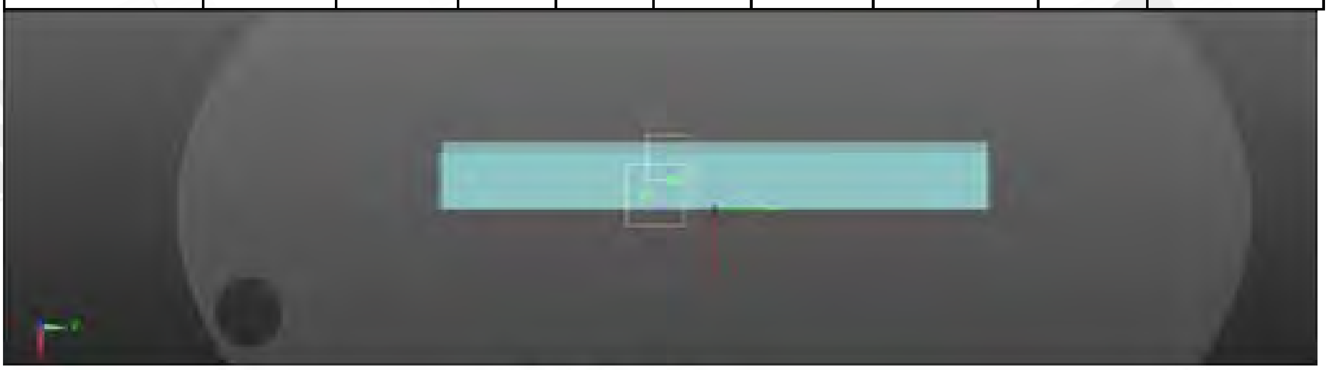
Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B2 CH19100	Back side	1.182	9.46	-3.51	-0.19	1.528	82.7	0.023	SPLSR<0.04, Not required
WLAN Aux a CH52		0.346	-10.20	-9.32	0.61				

Aux



WWAN

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 B2 CH19100	Top side	0.914	-0.75	-3.84	-0.32	0.939	26.8	0.034	SPLSR<0.04, Not required
WLAN Aux a CH 136		0.025	-1.50	-2.34	1.77				

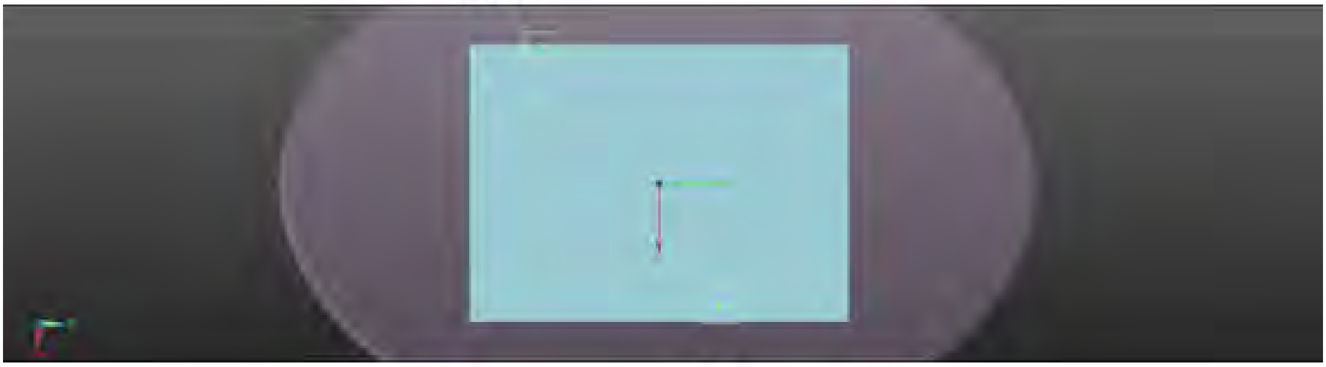


WWAN Aux

SPLSR WLAN Main & WLAN Aux

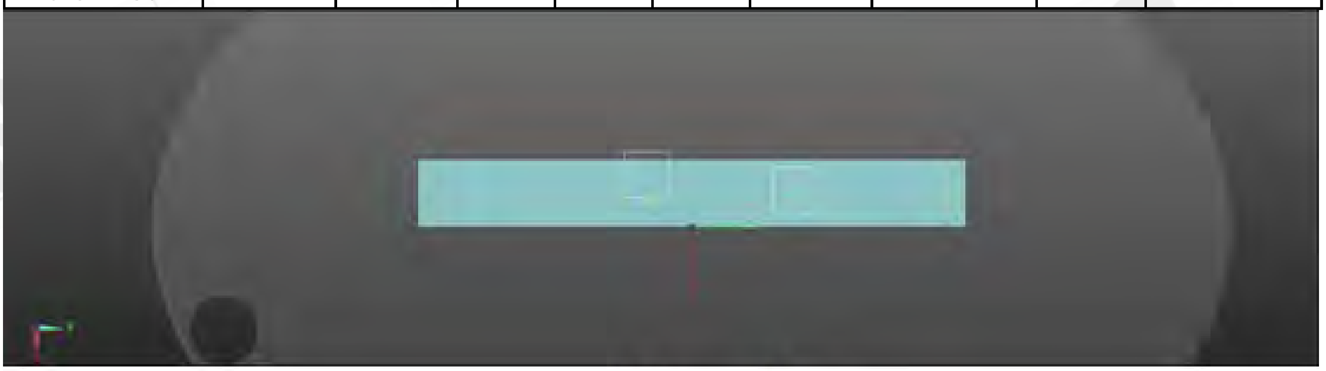
Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main ac(80M) CH155	Back side	0.17	9.30	4.72	0.60	0.516	240.3	0.002	SPLSR<0.04, Not required
WLAN Aux a CH52		0.346	-10.20	-9.32	0.61				

Aux



Main

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 ac(20M) CH136	Top side	1.185	-1.74	5.44	-0.44	1.21	80.9	0.016	SPLSR<0.04, Not required
WLAN Aux a CH 136		0.025	-1.50	-2.34	1.77				



Aux Main

LTE FDD Band IV + 5GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
24	LTE B4	Back side	0	0.797	0.17	0.346	1.313	ΣSAR<1.6, Not required
		Top side	0	0.983	1.185	0.025	**2.193**	Analyzed as below
		Bottom side	0	0.031	0.031	1.487	1.549	ΣSAR<1.6, Not required
		Left side	0	0.014	0.025	0.06	0.099	ΣSAR<1.6, Not required
		Right side	0	0.012	0.039	0.021	0.072	ΣSAR<1.6, Not required

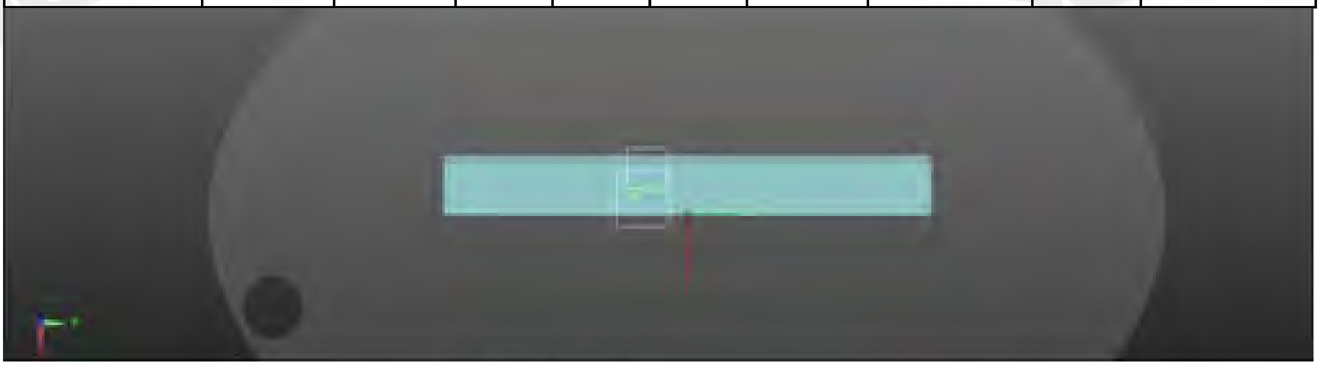
SPLSR LTE Band 4 & WLAN Main

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 B4 CH20050	Top side	0.983	-1.06	-3.34	-0.35	2.168	88.1	0.036	SPLSR<0.04, Not required
WLAN Main ac(20M) CH136		1.185	-1.74	5.44	-0.44				

WWAN Main

SPLSR LTE Band 4 & WLAN Aux

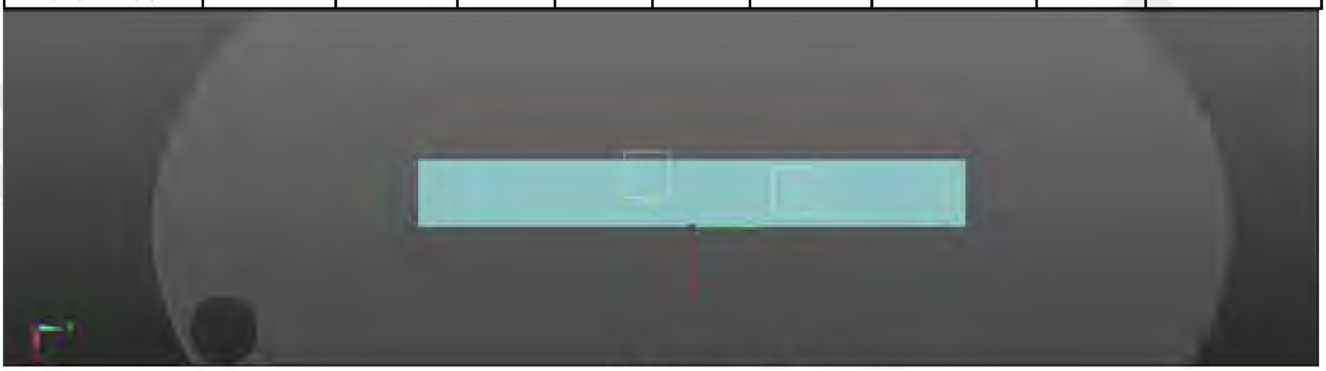
Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B4 CH20050	Top side	0.983	-1.06	-3.34	-0.35	1.008	26.9	0.038	SPLSR<0.04, Not required
WLAN Aux a CH 136		0.025	-1.50	-2.34	1.77				



WWAN Aux

SPLSR WLAN Main & WLAN Aux

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 ac(20M) CH136	Top side	1.185	-1.74	5.44	-0.44	1.21	80.9	0.016	SPLSR<0.04, Not required
WLAN Aux a CH 136		0.025	-1.50	-2.34	1.77				



Aux Main

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LTE FDD Band V + 5GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
25	LTE B5	Back side	0	0.49	0.17	0.346	1.006	ΣSAR<1.6, Not required
		Top side	0	0.234	1.185	0.025	1.444	ΣSAR<1.6, Not required
		Bottom side	0	0.041	0.031	1.487	1.559	ΣSAR<1.6, Not required
		Left side	0	0.02	0.025	0.06	0.105	ΣSAR<1.6, Not required
		Right side	0	0.012	0.039	0.021	0.072	ΣSAR<1.6, Not required

LTE FDD Band XIII + 5GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
26	LTE B13	Back side	0	0.499	0.17	0.346	1.015	ΣSAR<1.6, Not required
		Top side	0	0.303	1.185	0.025	1.513	ΣSAR<1.6, Not required
		Bottom side	0	0.016	0.031	1.487	1.534	ΣSAR<1.6, Not required
		Left side	0	0.027	0.025	0.06	0.112	ΣSAR<1.6, Not required
		Right side	0	0.006	0.039	0.021	0.066	ΣSAR<1.6, Not required

LTE FDD Band XVII + 5GHz WLAN MIMO

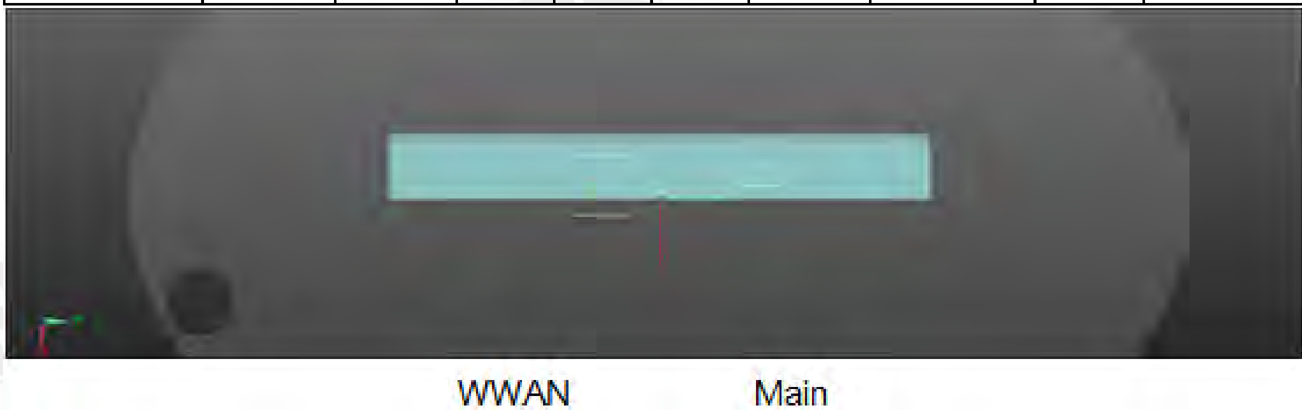
No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
27	LTE B17	Back side	0	0.438	0.17	0.346	0.954	ΣSAR<1.6, Not required
		Top side	0	0.359	1.185	0.025	1.569	ΣSAR<1.6, Not required
		Bottom side	0	0.048	0.031	1.487	1.566	ΣSAR<1.6, Not required
		Left side	0	0.049	0.025	0.06	0.134	ΣSAR<1.6, Not required
		Right side	0	0.015	0.039	0.021	0.075	ΣSAR<1.6, Not required

LTE FDD Band XXV + 5GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
28	LTE B25	Back side	0	0.946	0.17	0.346	1.462	ΣSAR<1.6, Not required
		Top side	0	0.73	1.185	0.025	**1.94**	Analyzed as below
		Bottom side	0	0.039	0.031	1.487	1.557	ΣSAR<1.6, Not required
		Left side	0	0.001	0.025	0.06	0.086	ΣSAR<1.6, Not required
		Right side	0	0.005	0.039	0.021	0.065	ΣSAR<1.6, Not required

SPLSR LTE Band 25 & WLAN Main

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 B25 CH26590	Top side	0.73	-0.75	-3.84	-0.33	1.915	93.3	0.028	SPLSR<0.04, Not required
WLAN Main ac(20M) CH136		1.185	-1.74	5.44	-0.44				



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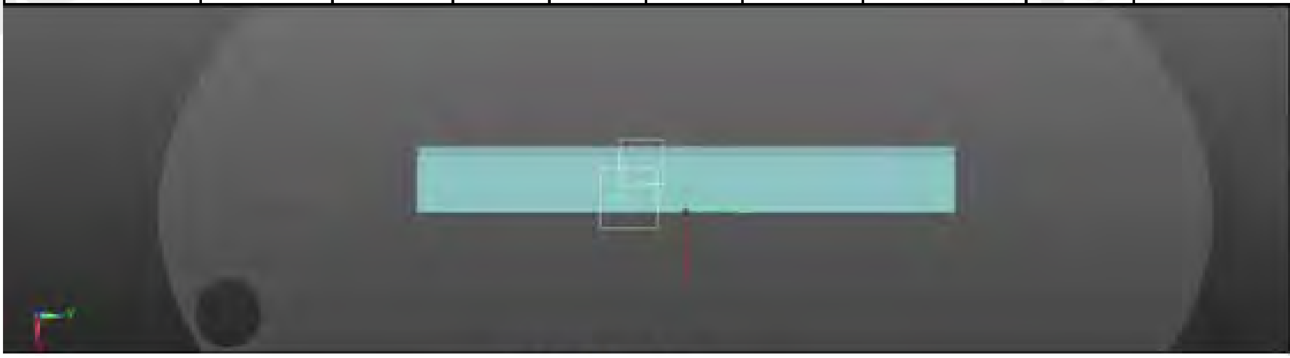
SPLSR LTE Band 25 & WLAN Aux

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 B25 CH26590	Top side	0.73	-0.75	-3.84	-0.33	0.755	26.8	0.024	SPLSR<0.04, Not required
WLAN Aux a CH 136		0.025	-1.50	-2.34	1.77				



WWAN Aux

SPLSR WLAN Main & WLAN Aux

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 ac(20M) CH136	Top side	1.185	-1.74	5.44	-0.44	1.21	80.9	0.016	SPLSR<0.04, Not required
WLAN Aux a CH 136		0.025	-1.50	-2.34	1.77				

Aux Main

GPRS 850 + BT+ 2.4GHz WLAN Main

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN BT	SAR Sum	SPLSR
29	850	Back side	0	0.493	0.045	0.014	0.552	ΣSAR<1.6, Not required
		Top side	0	0.202	0.226	0.00003	0.42803	ΣSAR<1.6, Not required
		Bottom side	0	0.038	0.005	0.07	0.113	ΣSAR<1.6, Not required
		Left side	0	0.022	0.024	0.005	0.051	ΣSAR<1.6, Not required
		Right side	0	0.019	0.017	0.002	0.038	ΣSAR<1.6, Not required

GPRS 1900 + BT+ 2.4GHz WLAN Main

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN BT	SAR Sum	SPLSR
30	1900	Back side	0	0.89	0.045	0.014	0.949	ΣSAR<1.6, Not required
		Top side	0	0.727	0.226	0.00003	0.95303	ΣSAR<1.6, Not required
		Bottom side	0	0.037	0.005	0.07	0.112	ΣSAR<1.6, Not required
		Left side	0	0.02	0.024	0.005	0.049	ΣSAR<1.6, Not required
		Right side	0	0.029	0.017	0.002	0.048	ΣSAR<1.6, Not required

WCDMA Band II + BT+ 2.4GHz WLAN Main

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN BT	SAR Sum	SPLSR
31	WCDMA B2	Back side	0	0.941	0.045	0.014	1	ΣSAR<1.6, Not required
		Top side	0	0.664	0.226	0.00003	0.89003	ΣSAR<1.6, Not required
		Bottom side	0	0.043	0.005	0.07	0.118	ΣSAR<1.6, Not required
		Left side	0	0.008	0.024	0.005	0.037	ΣSAR<1.6, Not required
		Right side	0	0.02	0.017	0.002	0.039	ΣSAR<1.6, Not required

WCDMA Band IV + BT+ 2.4GHz WLAN Main

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN BT	SAR Sum	SPLSR
32	WCDMA B4	Back side	0	0.944	0.045	0.014	1.003	ΣSAR<1.6, Not required
		Top side	0	0.871	0.226	0.00003	1.09703	ΣSAR<1.6, Not required
		Bottom side	0	0.032	0.005	0.07	0.107	ΣSAR<1.6, Not required
		Left side	0	0.027	0.024	0.005	0.056	ΣSAR<1.6, Not required
		Right side	0	0.014	0.017	0.002	0.033	ΣSAR<1.6, Not required

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WCDMA Band V + BT+ 2.4GHz WLAN Main

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN BT	SAR Sum	SPLSR
33	WCDMA B5	Back side	0	0.377	0.045	0.014	0.436	ΣSAR<1.6, Not required
		Top side	0	0.363	0.226	0.00003	0.58903	ΣSAR<1.6, Not required
		Bottom side	0	0.037	0.005	0.07	0.112	ΣSAR<1.6, Not required
		Left side	0	0.01	0.024	0.005	0.039	ΣSAR<1.6, Not required
		Right side	0	0.006	0.017	0.002	0.025	ΣSAR<1.6, Not required

CDMA / EVDO BC0 + BT+ 2.4GHz WLAN Main

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN BT	SAR Sum	SPLSR
34	EVDO BC0	Back side	0	0.369	0.045	0.014	0.428	ΣSAR<1.6, Not required
		Top side	0	0.338	0.226	0.00003	0.56403	ΣSAR<1.6, Not required
		Bottom side	0	0.035	0.005	0.07	0.11	ΣSAR<1.6, Not required
		Left side	0	0.003	0.024	0.005	0.032	ΣSAR<1.6, Not required
		Right side	0	0.005	0.017	0.002	0.024	ΣSAR<1.6, Not required

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CDMA / EVDO BC1 + BT+ 2.4GHz WLAN Main

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN BT	SAR Sum	SPLSR
35	EVDO BC1	Back side	0	0.691	0.045	0.014	0.75	ΣSAR<1.6, Not required
		Top side	0	0.581	0.226	0.00003	0.80703	ΣSAR<1.6, Not required
		Bottom side	0	0.049	0.005	0.07	0.124	ΣSAR<1.6, Not required
		Left side	0	0.021	0.024	0.005	0.05	ΣSAR<1.6, Not required
		Right side	0	0.029	0.017	0.002	0.048	ΣSAR<1.6, Not required

CDMA / EVDO BC10 + BT+ 2.4GHz WLAN Main

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN BT	SAR Sum	SPLSR
36	EVDO BC10	Back side	0	0.364	0.045	0.014	0.423	ΣSAR<1.6, Not required
		Top side	0	0.355	0.226	0.00003	0.58103	ΣSAR<1.6, Not required
		Bottom side	0	0.045	0.005	0.07	0.12	ΣSAR<1.6, Not required
		Left side	0	0.004	0.024	0.005	0.033	ΣSAR<1.6, Not required
		Right side	0	0.002	0.017	0.002	0.021	ΣSAR<1.6, Not required

LTE FDD Band II + BT+ 2.4GHz WLAN Main

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN BT	SAR Sum	SPLSR
37	LTE B2	Back side	0	1.182	0.045	0.014	1.241	ΣSAR<1.6, Not required
		Top side	0	0.914	0.226	0.00003	1.14003	ΣSAR<1.6, Not required
		Bottom side	0	0.045	0.005	0.07	0.12	ΣSAR<1.6, Not required
		Left side	0	0.011	0.024	0.005	0.04	ΣSAR<1.6, Not required
		Right side	0	0.024	0.017	0.002	0.043	ΣSAR<1.6, Not required

LTE FDD Band IV + BT+ 2.4GHz WLAN Main

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN BT	SAR Sum	SPLSR
38	LTE B4	Back side	0	0.797	0.045	0.014	0.856	ΣSAR<1.6, Not required
		Top side	0	0.983	0.226	0.00003	1.20903	ΣSAR<1.6, Not required
		Bottom side	0	0.031	0.005	0.07	0.106	ΣSAR<1.6, Not required
		Left side	0	0.014	0.024	0.005	0.043	ΣSAR<1.6, Not required
		Right side	0	0.012	0.017	0.002	0.031	ΣSAR<1.6, Not required

LTE FDD Band V + BT+ 2.4GHz WLAN Main

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN BT	SAR Sum	SPLSR
39	LTE B5	Back side	0	0.49	0.045	0.014	0.549	ΣSAR<1.6, Not required
		Top side	0	0.234	0.226	0.00003	0.46003	ΣSAR<1.6, Not required
		Bottom side	0	0.041	0.005	0.07	0.116	ΣSAR<1.6, Not required
		Left side	0	0.02	0.024	0.005	0.049	ΣSAR<1.6, Not required
		Right side	0	0.012	0.017	0.002	0.031	ΣSAR<1.6, Not required

LTE FDD Band XIII + BT+ 2.4GHz WLAN Main

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN BT	SAR Sum	SPLSR
40	LTE B13	Back side	0	0.499	0.045	0.014	0.558	ΣSAR<1.6, Not required
		Top side	0	0.303	0.226	0.00003	0.52903	ΣSAR<1.6, Not required
		Bottom side	0	0.016	0.005	0.07	0.091	ΣSAR<1.6, Not required
		Left side	0	0.027	0.024	0.005	0.056	ΣSAR<1.6, Not required
		Right side	0	0.006	0.017	0.002	0.025	ΣSAR<1.6, Not required

LTE FDD Band XVII + BT+ 2.4GHz WLAN Main

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN BT	SAR Sum	SPLSR
41	LTE B17	Back side	0	0.438	0.045	0.014	0.497	ΣSAR<1.6, Not required
		Top side	0	0.359	0.226	0.00003	0.58503	ΣSAR<1.6, Not required
		Bottom side	0	0.048	0.005	0.07	0.123	ΣSAR<1.6, Not required
		Left side	0	0.049	0.024	0.005	0.078	ΣSAR<1.6, Not required
		Right side	0	0.015	0.017	0.002	0.034	ΣSAR<1.6, Not required

LTE FDD Band XXV + BT+ 2.4GHz WLAN Main

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN BT	SAR Sum	SPLSR
42	LTE B25	Back side	0	0.946	0.045	0.014	1.005	ΣSAR<1.6, Not required
		Top side	0	0.73	0.226	0.00003	0.95603	ΣSAR<1.6, Not required
		Bottom side	0	0.039	0.005	0.07	0.114	ΣSAR<1.6, Not required
		Left side	0	0.001	0.024	0.005	0.03	ΣSAR<1.6, Not required
		Right side	0	0.005	0.017	0.002	0.024	ΣSAR<1.6, Not required

GPRS 850 + BT+ 5GHz WLAN Main

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN BT	SAR Sum	SPLSR
43	850	Back side	0	0.493	0.17	0.014	0.677	ΣSAR<1.6, Not required
		Top side	0	0.202	1.185	0.00003	1.38703	ΣSAR<1.6, Not required
		Bottom side	0	0.038	0.031	0.07	0.139	ΣSAR<1.6, Not required
		Left side	0	0.022	0.025	0.005	0.052	ΣSAR<1.6, Not required
		Right side	0	0.019	0.039	0.002	0.06	ΣSAR<1.6, Not required

GPRS 1900 + BT+ 5GHz WLAN Main

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN BT	SAR Sum	SPLSR
44	1900	Back side	0	0.89	0.17	0.014	1.074	ΣSAR<1.6, Not required
		Top side	0	0.727	1.185	0.00003	**1.91203**	Analyzed as below
		Bottom side	0	0.037	0.031	0.07	0.138	ΣSAR<1.6, Not required
		Left side	0	0.02	0.025	0.005	0.05	ΣSAR<1.6, Not required
		Right side	0	0.029	0.039	0.002	0.07	ΣSAR<1.6, Not required

SPLSR GPRS 1900 & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
GPRS 1900 CH810	Top side	0.727	-1.35	-4.33	-0.27	0.72703	63.7	0.010	SPLSR<0.04, Not required
WLAN BT		0.00003	-1.40	-10.70	-0.45				

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SPLSR WLAN Main & BT

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 ac(20M) CH136	Top side	1.185	-1.74	5.44	-0.44	1.18503	161.4	0.008	SPLSR<0.04, Not required
WLAN BT		0.00003	-1.40	-10.70	-0.45				

WCDMA Band II + BT+ 5GHz WLAN Main

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN BT	SAR Sum	SPLSR
45	WCDMA B2	Back side	0	0.941	0.17	0.014	1.125	ΣSAR<1.6, Not required
		Top side	0	0.664	1.185	0.00003	**1.84903**	Analyzed as below
		Bottom side	0	0.043	0.031	0.07	0.144	ΣSAR<1.6, Not required
		Left side	0	0.008	0.025	0.005	0.038	ΣSAR<1.6, Not required
		Right side	0	0.02	0.039	0.002	0.061	ΣSAR<1.6, Not required

SPLSR WCDMA B2 & BT

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 B2	Top side	0.664	-0.91	-4.20	-0.28	0.66403	65.2	0.008	SPLSR<0.04, Not required
WLAN BT		0.00003	-1.40	-10.70	-0.45				

WWAN

BT

SPLSR WLAN Main & BT

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 ac(20M) CH136	Top side	1.185	-1.74	5.44	-0.44	1.18503	161.4	0.008	SPLSR<0.04, Not required
WLAN BT		0.00003	-1.40	-10.70	-0.45				

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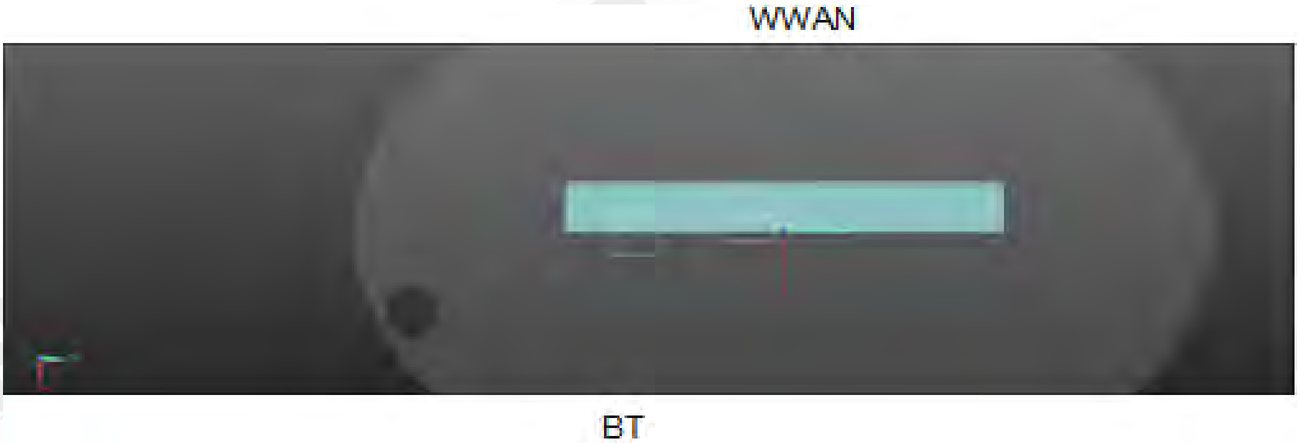
WCDMA Band IV + BT+ 5GHz WLAN Main

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN BT	SAR Sum	SPLSR
46	WCDMA B4	Back side	0	0.944	0.17	0.014	1.128	ΣSAR<1.6, Not required
		Top side	0	0.871	1.185	0.00003	**2.05603**	Analyzed as below
		Bottom side	0	0.032	0.031	0.07	0.133	ΣSAR<1.6, Not required
		Left side	0	0.027	0.025	0.005	0.057	ΣSAR<1.6, Not required
		Right side	0	0.014	0.039	0.002	0.055	ΣSAR<1.6, Not required

SPLSR WCDMA B4 & BT

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 B4	Top side	0.871	-1.05	-3.04	-0.25	0.87103	76.7	0.011	SPLSR<0.04, Not required
WLAN BT		0.00003	-1.40	-10.70	-0.45				



SPLSR WLAN Main & BT

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 ac(20M) CH136	Top side	1.185	-1.74	5.44	-0.44	1.18503	161.4	0.008	SPLSR<0.04, Not required
WLAN BT		0.00003	-1.40	-10.70	-0.45				

WCDMA Band V + BT+ 5GHz WLAN Main

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN BT	SAR Sum	SPLSR
47	WCDMA B5	Back side	0	0.377	0.17	0.014	0.561	ΣSAR<1.6, Not required
		Top side	0	0.363	1.185	0.00003	1.54803	ΣSAR<1.6, Not required
		Bottom side	0	0.037	0.031	0.07	0.138	ΣSAR<1.6, Not required
		Left side	0	0.01	0.025	0.005	0.04	ΣSAR<1.6, Not required
		Right side	0	0.006	0.039	0.002	0.047	ΣSAR<1.6, Not required

CDMA / EVDO BC0 + BT+ 5GHz WLAN Main

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN BT	SAR Sum	SPLSR
48	EVDO BC0	Back side	0	0.369	0.17	0.014	0.553	ΣSAR<1.6, Not required
		Top side	0	0.338	1.185	0.00003	1.52303	ΣSAR<1.6, Not required
		Bottom side	0	0.035	0.031	0.07	0.136	ΣSAR<1.6, Not required
		Left side	0	0.003	0.025	0.005	0.033	ΣSAR<1.6, Not required
		Right side	0	0.005	0.039	0.002	0.046	ΣSAR<1.6, Not required

CDMA / EVDO BC1 + BT+ 5GHz WLAN Main

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN BT	SAR Sum	SPLSR
		Back side	0	0.691	0.17	0.014	0.875	ΣSAR<1.6, Not required
		Top side	0	0.581	1.185	0.00003	**1.76603**	Analyzed as below
49	EVDO BC1	Bottom side	0	0.049	0.031	0.07	0.15	ΣSAR<1.6, Not required
		Left side	0	0.021	0.025	0.005	0.051	ΣSAR<1.6, Not required
		Right side	0	0.029	0.039	0.002	0.07	ΣSAR<1.6, Not required

SPLSR CDMA BC1 & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
EVDO BC1	Top side	0.581	-0.76	-3.95	-0.36	0.58103	67.8	0.007	SPLSR<0.04, Not required
WLAN BT		0.00003	-1.40	-10.70	-0.45				

BC1

BT

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SPLSR WLAN Main & BT

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 ac(20M) CH136	Top side	1.185	-1.74	5.44	-0.44	1.18503	161.4	0.008	SPLSR<0.04, Not required
WLAN BT		0.00003	-1.40	-10.70	-0.45				

WLAN

BT

CDMA / EVDO BC10 + BT+ 5GHz WLAN Main

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN BT	SAR Sum	SPLSR
50	EVDO BC10	Back side	0	0.364	0.17	0.014	0.548	ΣSAR<1.6, Not required
		Top side	0	0.355	1.185	0.00003	1.54003	ΣSAR<1.6, Not required
		Bottom side	0	0.045	0.031	0.07	0.146	ΣSAR<1.6, Not required
		Left side	0	0.004	0.025	0.005	0.034	ΣSAR<1.6, Not required
		Right side	0	0.002	0.039	0.002	0.043	ΣSAR<1.6, Not required

LTE FDD Band II + BT+ 5GHz WLAN Main

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN BT	SAR Sum	SPLSR
51	LTE B2	Back side	0	1.182	0.17	0.014	1.366	ΣSAR<1.6, Not required
		Top side	0	0.914	1.185	0.00003	**2.09903**	Analyzed as below
		Bottom side	0	0.045	0.031	0.07	0.146	ΣSAR<1.6, Not required
		Left side	0	0.011	0.025	0.005	0.041	ΣSAR<1.6, Not required
		Right side	0	0.024	0.039	0.002	0.065	ΣSAR<1.6, Not required

SPLSR LTE B2 & BT

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 B2	Top side	0.914	-0.75	-3.84	-0.32	0.91403	68.9	0.013	SPLSR<0.04, Not required
WLAN BT		0.00003	-1.40	-10.70	-0.45				

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SPLSR WLAN Main & BT

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 ac(20M) CH136	Top side	1.185	-1.74	5.44	-0.44	1.18503	161.4	0.008	SPLSR<0.04, Not required
WLAN BT		0.00003	-1.40	-10.70	-0.45				

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LTE FDD Band IV + BT+ 5GHz WLAN Main

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN BT	SAR Sum	SPLSR
52	LTE B4	Back side	0	0.797	0.17	0.014	0.981	ΣSAR<1.6, Not required
		Top side	0	0.983	1.185	0.00003	**2.16803**	Analyzed as below
		Bottom side	0	0.031	0.031	0.07	0.132	ΣSAR<1.6, Not required
		Left side	0	0.014	0.025	0.005	0.044	ΣSAR<1.6, Not required
		Right side	0	0.012	0.039	0.002	0.053	ΣSAR<1.6, Not required

SPLSR LTE B4 & BT

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 B4	Top side	0.983	-1.06	-3.34	-0.35	0.98303	73.7	0.013	SPLSR<0.04, Not required
WLAN BT		0.00003	-1.40	-10.70	-0.45				

SPLSR WLAN Main & BT

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 ac(20M) CH136	Top side	1.185	-1.74	5.44	-0.44	1.18503	161.4	0.008	SPLSR<0.04, Not required
WLAN BT		0.00003	-1.40	-10.70	-0.45				

WLAN

BT

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LTE FDD Band V + BT+ 5GHz WLAN Main

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN BT	SAR Sum	SPLSR
53	LTE B5	Back side	0	0.49	0.17	0.014	0.674	ΣSAR<1.6, Not required
		Top side	0	0.234	1.185	0.00003	1.41903	ΣSAR<1.6, Not required
		Bottom side	0	0.041	0.031	0.07	0.142	ΣSAR<1.6, Not required
		Left side	0	0.02	0.025	0.005	0.05	ΣSAR<1.6, Not required
		Right side	0	0.012	0.039	0.002	0.053	ΣSAR<1.6, Not required

LTE FDD Band XIII + BT+ 5GHz WLAN Main

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN BT	SAR Sum	SPLSR
54	LTE B13	Back side	0	0.499	0.17	0.014	0.683	ΣSAR<1.6, Not required
		Top side	0	0.303	1.185	0.00003	1.48803	ΣSAR<1.6, Not required
		Bottom side	0	0.016	0.031	0.07	0.117	ΣSAR<1.6, Not required
		Left side	0	0.027	0.025	0.005	0.057	ΣSAR<1.6, Not required
		Right side	0	0.006	0.039	0.002	0.047	ΣSAR<1.6, Not required

LTE FDD Band XVII + BT+ 5GHz WLAN Main

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN BT	SAR Sum	SPLSR
55	LTE B17	Back side	0	0.438	0.17	0.014	0.622	ΣSAR<1.6, Not required
		Top side	0	0.359	1.185	0.00003	1.54403	ΣSAR<1.6, Not required
		Bottom side	0	0.048	0.031	0.07	0.149	ΣSAR<1.6, Not required
		Left side	0	0.049	0.025	0.005	0.079	ΣSAR<1.6, Not required
		Right side	0	0.015	0.039	0.002	0.056	ΣSAR<1.6, Not required

LTE FDD Band XXV + BT+ 5GHz WLAN Main

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN BT	SAR Sum	SPLSR
56	LTE B25	Back side	0	0.946	0.17	0.014	1.13	ΣSAR<1.6, Not required
		Top side	0	0.73	1.185	0.00003	**1.91503**	Analyzed as below
		Bottom side	0	0.039	0.031	0.07	0.14	ΣSAR<1.6, Not required
		Left side	0	0.001	0.025	0.005	0.031	ΣSAR<1.6, Not required
		Right side	0	0.005	0.039	0.002	0.046	ΣSAR<1.6, Not required

SPLSR LTE B25 & BT

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 B25	Top side	0.73	-0.75	-3.84	-0.33	0.73003	68.9	0.009	SPLSR<0.04, Not required
WLAN BT		0.00003	-1.40	-10.70	-0.45				

WWAN

BT

SPLSR WLAN Main & BT

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 ac(20M) CH136	Top side	1.185	-1.74	5.44	-0.44	1.18503	161.4	0.008	SPLSR<0.04, Not required
WLAN BT		0.00003	-1.40	-10.70	-0.45				

WLAN

BT

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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	3923	Aug.28,2014	Aug.27,2015
			3770	Apr.28,2015	Apr.27,2016
Schmid & Partner Engineering AG	System Validation Dipole	D750V2	1015	Aug.28,2014	Aug.27,2015
		D835V2	4d063	Aug.28,2014	Aug.27,2015
		D1750V2	1008	Aug.28,2014	Aug.27,2015
		D1900V2	5d027	Apr.29,2015	Apr.28,2016
		D2450V2	727	Apr.22,2015	Apr.21,2016
		D5GHzV2	1023	Jan.29,2015	Jan.28,2016
Schmid & Partner Engineering AG	Data acquisition Electronics	DAE4	856	Aug.27,2015	Aug.26,2016
		DAE4	1374	May.06,2015	May.05,2016
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
HP	Network Analyzer	8753D	3410A05547	May.21,2015	May.20,2016
Agilent	Dielectric Probe Kit	85070E	MY44300677	Calibration not required	Calibration not required
Agilent	Dual-directional coupler	777D	50114	Aug.07,2014	Aug.06,2015
		778D	50313	Aug.07,2014	Aug.06,2015
Agilent	RF Signal Generator	N5181A	MY50144143	Jun.25.2014	Jun.24.2015

Manufacturer	Device	Type	Serial number	Date of last calibration	Date of next calibration
Agilent	Power Meter	E4417A	MY51410006	Oct.25,2013	Oct.24,2015
Agilent	Power Sensor	E9301H	MY51470001	Dec.11,2014	Dec.10,2015
TECPEL	Digital thermometer	DTM-303A	TP130078	Mar.30,2015	Mar.29,2016
R&S	Radio Communication Test	CMU200	122498	Aug.14,2014	Aug.13,2015
Anritsu	Radio Communication Test	MT8820C	6201061014	Aug.06,2014	Aug.05,2015

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5. Measurements

Date: 2015/6/12

GPRS 850_Body_Back side_CH 190_0mm

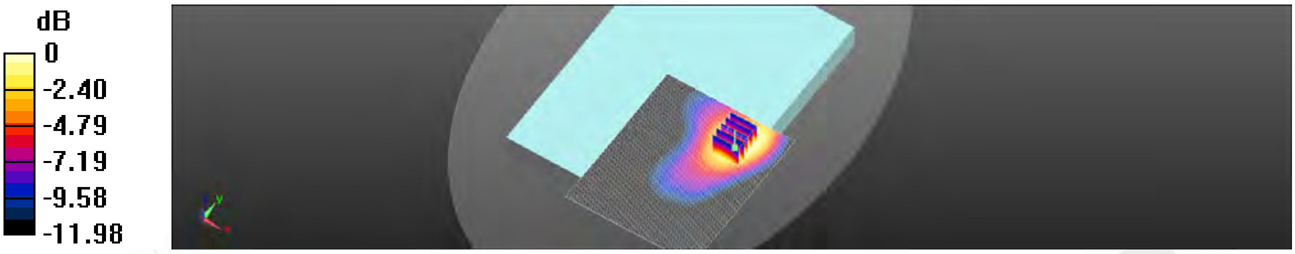
Communication System: GPRS(1Dn2Up); Frequency: 836.6 MHz
Medium parameters used: f = 837 MHz; σ = 0.956 S/m; ε_r = 54.333; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3923; ConvF(10.32, 10.32, 10.32); Calibrated: 2014/8/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2015/5/6
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/BODY/Area Scan (101x121x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 0.625 W/kg

Configuration/BODY/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.571 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 0.738 W/kg
SAR(1 g) = 0.493 W/kg; SAR(10 g) = 0.324 W/kg
Maximum value of SAR (measured) = 0.617 W/kg



0 dB = 0.617 W/kg = -2.10 dBW/kg

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GPRS 1900_Body_Top side_CH 661_12mm

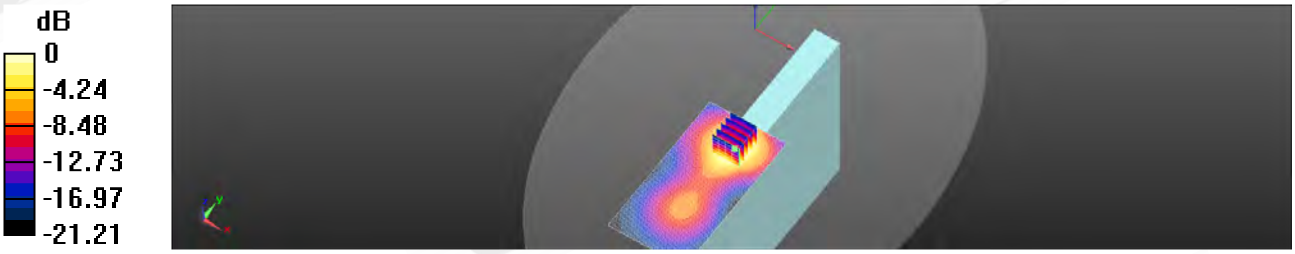
Communication System: GPRS(1Dn2Up); Frequency: 1880 MHz
Medium parameters used: f = 1880 MHz; σ = 1.508 S/m; ε_r = 52.356; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3923; ConvF(8.03, 8.03, 8.03); Calibrated: 2014/8/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2015/5/6
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/BODY/Area Scan (61x121x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 1.19 W/kg

Configuration/BODY/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.79 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 1.40 W/kg
SAR(1 g) = 0.888 W/kg; SAR(10 g) = 0.532 W/kg
Maximum value of SAR (measured) = 1.16 W/kg



0 dB = 1.19 W/kg = 0.75 dBW/kg

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Date: 2015/6/11

WCDMA Band II_Body_Top side_CH 9538_12mm_repeated with Transceiver

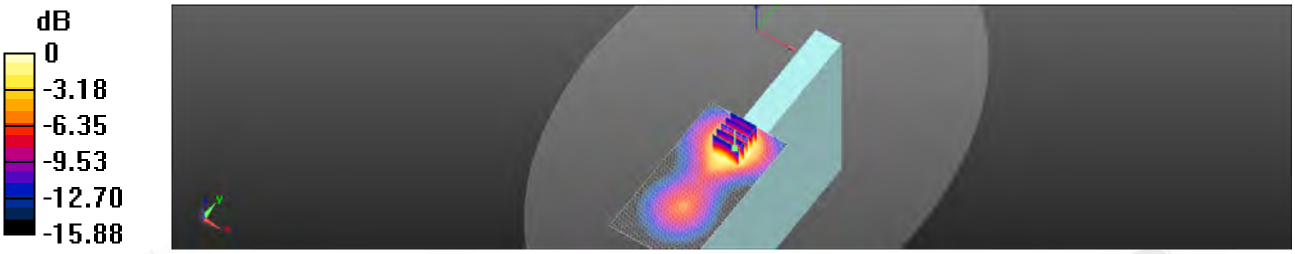
Communication System: WCDMA; Frequency: 1907.6 MHz
Medium parameters used: f = 1908 MHz; σ = 1.537 S/m; ε_r = 52.188; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3923; ConvF(8.03, 8.03, 8.03); Calibrated: 2014/8/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2015/5/6
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/BODY/Area Scan (61x121x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 1.34 W/kg

Configuration/BODY/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.73 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 1.59 W/kg
SAR(1 g) = 1.00 W/kg; SAR(10 g) = 0.600 W/kg
Maximum value of SAR (measured) = 1.32 W/kg



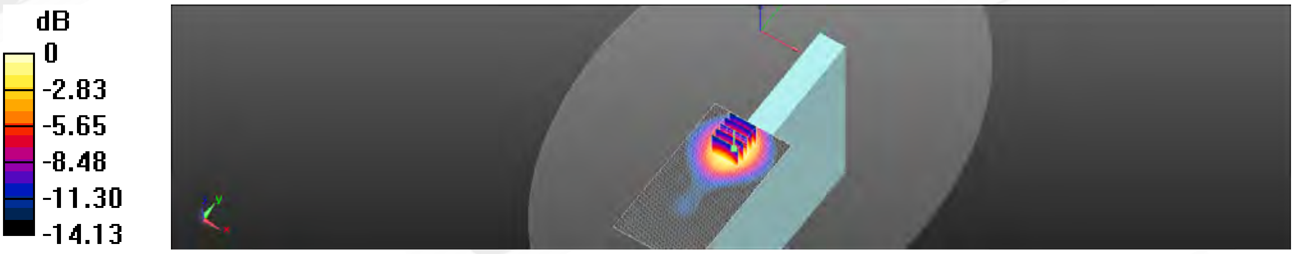
0 dB = 1.32 W/kg = 1.19 dBW/kg

WCDMA Band IV_Body_Top side_CH 1312_12mm
Communication System: WCDMA; Frequency: 1712.4 MHz
Medium parameters used: f = 1712.4 MHz; σ = 1.431 S/m; ε_r = 52.41; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3923; ConvF(8.3, 8.3, 8.3); Calibrated: 2014/8/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2015/5/6
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/BODY/Area Scan (61x121x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 1.63 W/kg

Configuration/BODY/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.58 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 1.90 W/kg
SAR(1 g) = 1.27 W/kg; SAR(10 g) = 0.780 W/kg
Maximum value of SAR (measured) = 1.61 W/kg



0 dB = 1.61 W/kg = 2.05 dBW/kg

Date: 2015/6/12

WCDMA Band V_Body_Back side_CH 4183_0mm

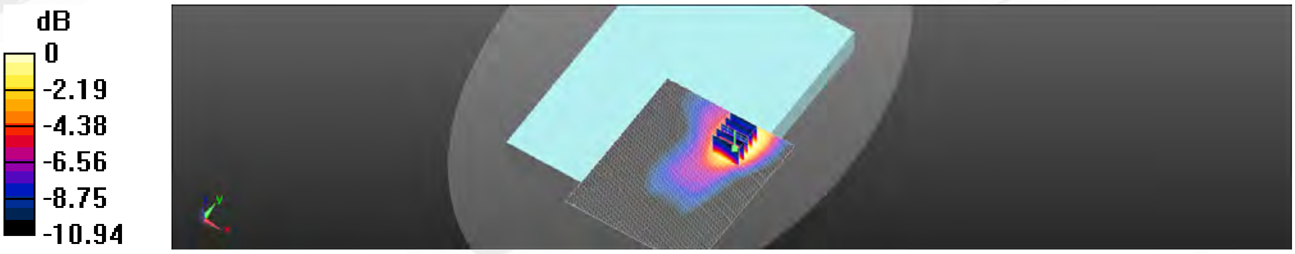
Communication System: WCDMA; Frequency: 836.6 MHz
Medium parameters used: f = 837 MHz; σ = 0.956 S/m; ε_r = 54.333; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3923; ConvF(10.32, 10.32, 10.32); Calibrated: 2014/8/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2015/5/6
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/BODY/Area Scan (101x121x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 0.538 W/kg

Configuration/BODY/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.494 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.601 W/kg
SAR(1 g) = 0.374 W/kg; SAR(10 g) = 0.223 W/kg
Maximum value of SAR (measured) = 0.491 W/kg



0 dB = 0.491 W/kg = -3.09 dBW/kg

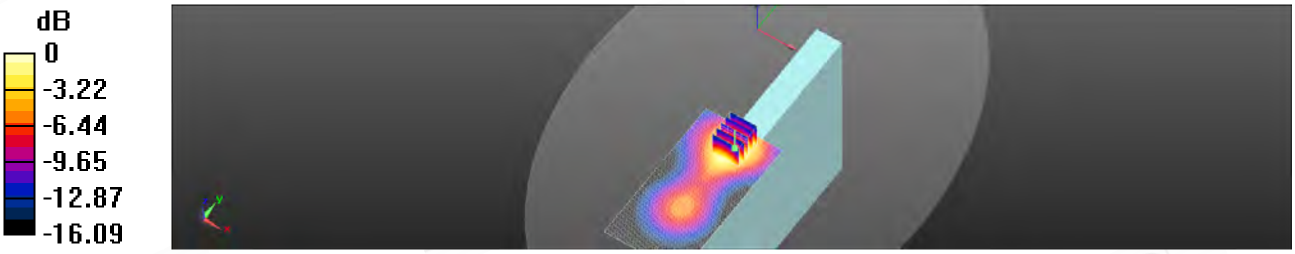
Date: 2015/6/18

LTE Band 2 (20MHz)_Body_Top side_CH 19100_QPSK_1-99_12mm
Communication System: LTE; Frequency: 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.536 S/m; ε_r = 52.126; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3923; ConvF(8.03, 8.03, 8.03); Calibrated: 2014/8/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2015/5/6
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/BODY/Area Scan (61x121x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 1.34 W/kg

Configuration/BODY/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.74 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 1.56 W/kg
SAR(1 g) = 0.989 W/kg; SAR(10 g) = 0.593 W/kg
Maximum value of SAR (measured) = 1.29 W/kg



0 dB = 1.29 W/kg = 1.12 dBW/kg

Date: 2015/6/17

LTE Band 4 (20Mhz)_Body_Top side_CH 20050_QPSK_1-50_12mm

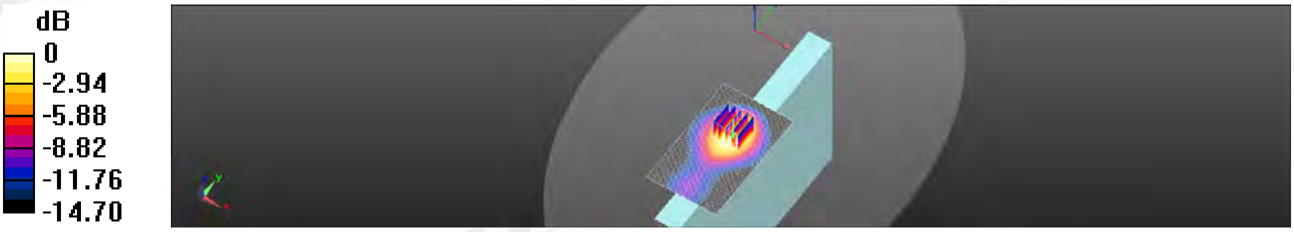
Communication System: LTE; Frequency: 1720 MHz
Medium parameters used: f = 1720 MHz; σ = 1.44 S/m; ε_r = 52.394; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3831; ConvF(7.5, 7.5, 7.5); Calibrated: 2015/1/29;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1305; Calibrated: 2014/12/11
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/BODY/Area Scan (61x101x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 1.72 W/kg

Configuration/BODY/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.79 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 1.96 W/kg
SAR(1 g) = 1.28 W/kg; SAR(10 g) = 0.780 W/kg
Maximum value of SAR (measured) = 1.65 W/kg



0 dB = 1.65 W/kg = 2.17 dBW/kg

Date: 2015/6/15

LTE Band 5 (10MHz)_Body_Back side_CH 20600_QPSK_1-49_0mm

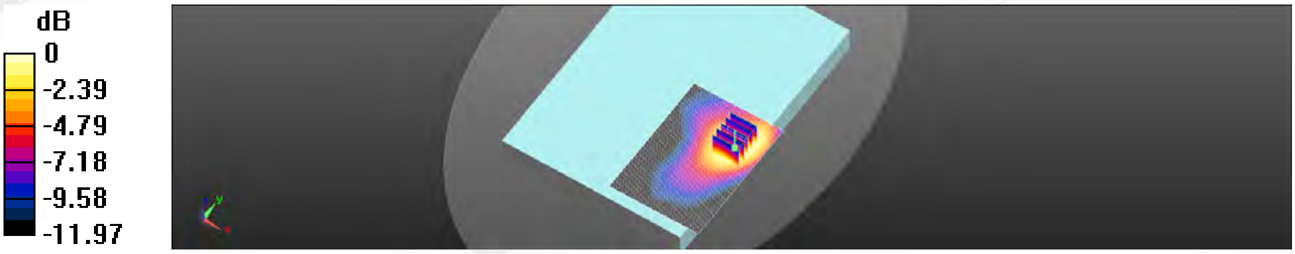
Communication System: LTE; Frequency: 844 MHz
Medium parameters used: f = 844 MHz; σ = 0.973 S/m; ε_r = 53.996; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3923; ConvF(10.32, 10.32, 10.32); Calibrated: 2014/8/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2015/5/6
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/BODY/Area Scan (71x101x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 0.429 W/kg

Configuration/BODY/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.492 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 0.528 W/kg
SAR(1 g) = 0.347 W/kg; SAR(10 g) = 0.226 W/kg
Maximum value of SAR (measured) = 0.439 W/kg



0 dB = 0.439 W/kg = -3.58 dBW/kg

Date: 2015/6/16

LTE Band 13 (10MHz)_Body_Back side_CH 23230_QPSK_1-25_0mm

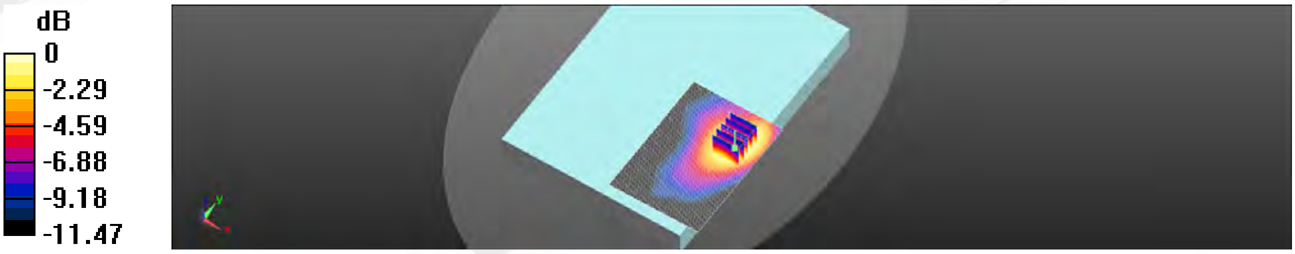
Communication System: LTE; Frequency: 782 MHz
Medium parameters used: f = 782 MHz; σ = 0.993 S/m; ε_r = 53.973; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3923; ConvF(10.29, 10.29, 10.29); Calibrated: 2014/8/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2015/5/6
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/BODY/Area Scan (71x101x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 0.420 W/kg

Configuration/BODY/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.454 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.511 W/kg
SAR(1 g) = 0.340 W/kg; SAR(10 g) = 0.224 W/kg
Maximum value of SAR (measured) = 0.432 W/kg



0 dB = 0.432 W/kg = -3.64 dBW/kg

Date: 2015/6/16

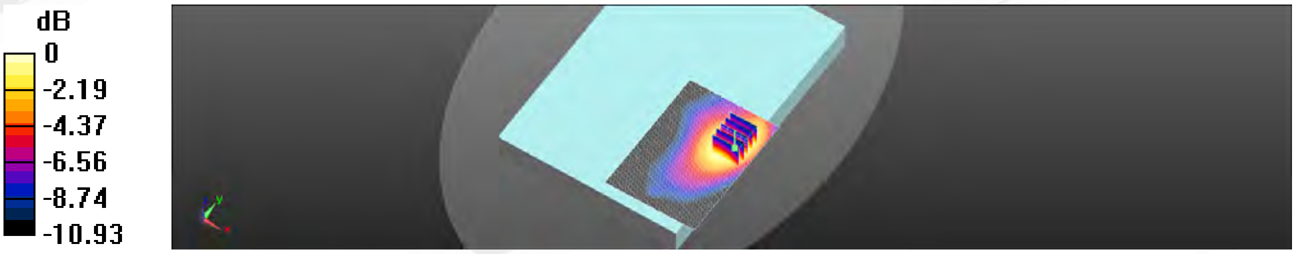
LTE Band 17 (10MHz)_Body_Back side_CH 23780_QPSK_1-25_0mm
Communication System: LTE; Frequency: 709 MHz
Medium parameters used: f = 709 MHz; σ = 0.922 S/m; ε_r = 54.312; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3923; ConvF(10.29, 10.29, 10.29); Calibrated: 2014/8/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2015/5/6
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/BODY/Area Scan (71x101x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 0.387 W/kg

Configuration/BODY/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.316 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 0.462 W/kg
SAR(1 g) = 0.312 W/kg; SAR(10 g) = 0.211 W/kg
Maximum value of SAR (measured) = 0.389 W/kg



0 dB = 0.389 W/kg = -4.10 dBW/kg

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Date: 2015/6/18

LTE Band 25 (20MHz)_Body_Top side_CH 26140_QPSK_1-99_12mm

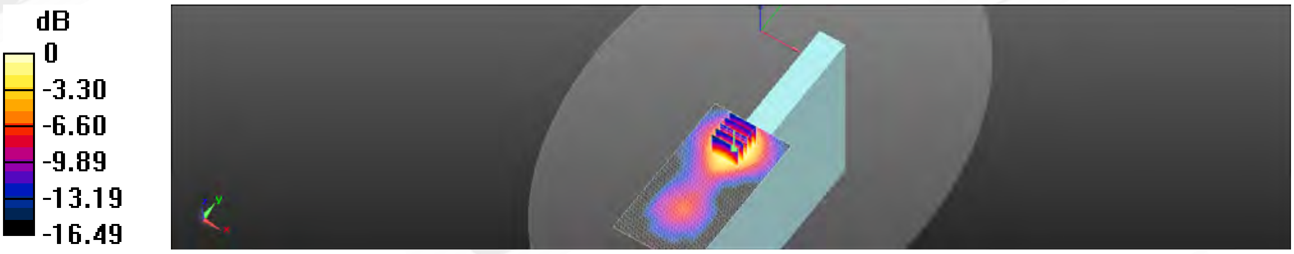
Communication System: LTE; Frequency: 1860 MHz
Medium parameters used: f = 1860 MHz; σ = 1.493 S/m; ε_r = 52.89; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3923; ConvF(8.03, 8.03, 8.03); Calibrated: 2014/8/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2015/5/6
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/BODY/Area Scan (61x121x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 1.39 W/kg

Configuration/BODY/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.64 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 1.65 W/kg
SAR(1 g) = 1.04 W/kg; SAR(10 g) = 0.616 W/kg
Maximum value of SAR (measured) = 1.36 W/kg



0 dB = 1.36 W/kg = 1.32 dBW/kg

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Date: 2015/6/12

Cellular BC0_Body_Back side_CH 384_0mm_1xEVDO Rev. 0

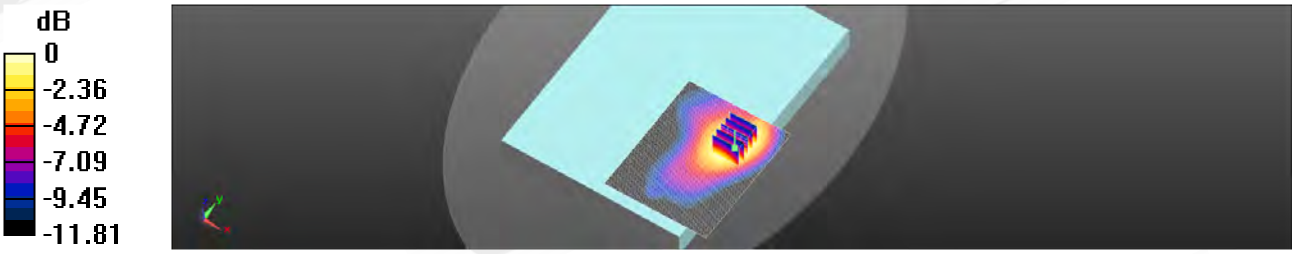
Communication System: 1xEVDO; Frequency: 836.52 MHz
Medium parameters used: f = 836.52 MHz; σ = 0.956 S/m; ε_r = 54.333; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3923; ConvF(10.32, 10.32, 10.32); Calibrated: 2014/8/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2015/5/6
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/BODY/Area Scan (81x101x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 0.390 W/kg

Configuration/BODY/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.719 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 0.462 W/kg
SAR(1 g) = 0.307 W/kg; SAR(10 g) = 0.202 W/kg
Maximum value of SAR (measured) = 0.387 W/kg



0 dB = 0.387 W/kg = -4.12 dBW/kg

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Date: 2015/6/11

PCS BC1_Body_Top side_CH 600_12mm_1xEVDO Rev. 0

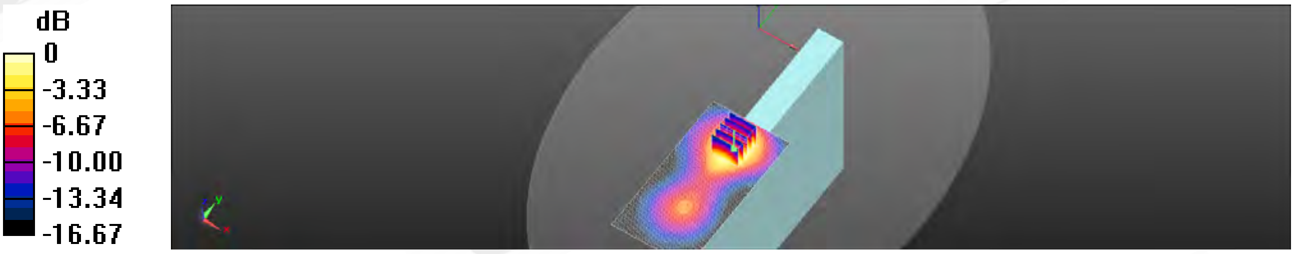
Communication System: 1xEVDO; Frequency: 1880 MHz
Medium parameters used: f = 1880 MHz; σ = 1.508 S/m; ε_r = 52.356; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3923; ConvF(8.03, 8.03, 8.03); Calibrated: 2014/8/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2015/5/6
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/BODY/Area Scan (61x121x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 1.40 W/kg

Configuration/BODY/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.07 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 1.63 W/kg
SAR(1 g) = 1.02 W/kg; SAR(10 g) = 0.603 W/kg
Maximum value of SAR (measured) = 1.34 W/kg



0 dB = 1.34 W/kg = 1.27 dBW/kg

Date: 2015/6/15

Cellular BC10_Body_Back side_CH 684_0mm_1xEVDO Rev. 0

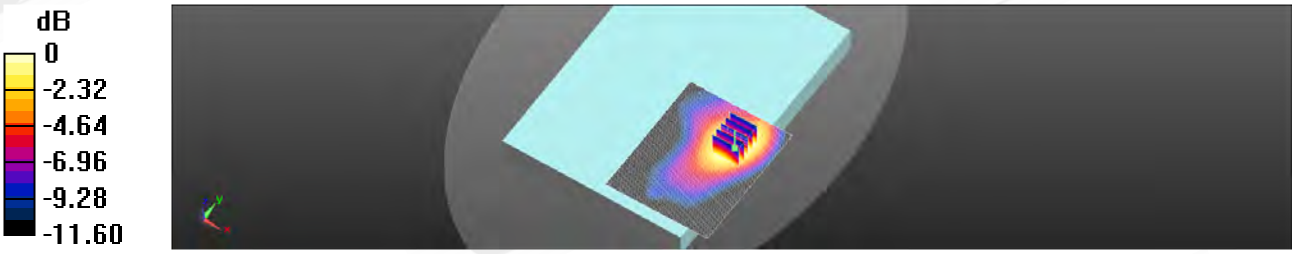
Communication System: 1xEVDO; Frequency: 823.1 MHz
Medium parameters used: f = 823.1 MHz; σ = 0.95 S/m; ε_r = 54.033; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3923; ConvF(10.32, 10.32, 10.32); Calibrated: 2014/8/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2015/5/6
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/BODY/Area Scan (81x101x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 0.371 W/kg

Configuration/BODY/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.390 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.431 W/kg
SAR(1 g) = 0.289 W/kg; SAR(10 g) = 0.191 W/kg
Maximum value of SAR (measured) = 0.363 W/kg



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

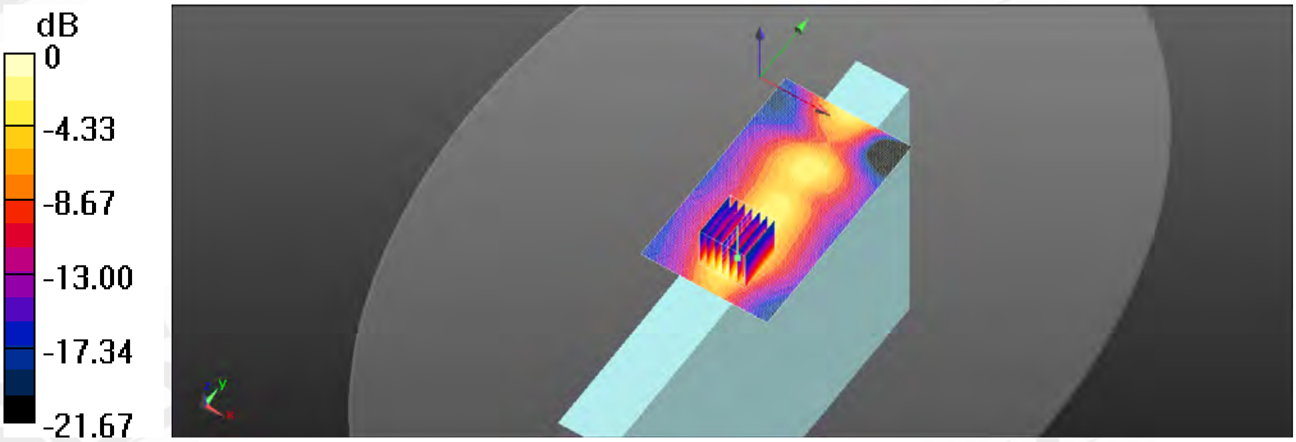
Date: 2015/6/1

WLAN802.11 b_Body_Top side_CH 11_Main
Communication System: WLAN 2.45G; Frequency: 2462 MHz
Medium parameters used: f = 2462 MHz; σ = 2.053 S/m; ε_r = 51.185; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3770; ConvF(7.21, 7.21, 7.21); Calibrated: 2015/4/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2014/8/27
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Body/Area Scan (71x121x1): Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 0.293 W/kg

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.485 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 0.401 W/kg
SAR(1 g) = 0.200 W/kg; SAR(10 g) = 0.095 W/kg
Maximum value of SAR (measured) = 0.298 W/kg



0 dB = 0.298 W/kg = -5.26 dBW/kg

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Date: 2015/6/2

WLAN802.11 ac(20M) 5.2G_Body_Top side_CH 44_Main

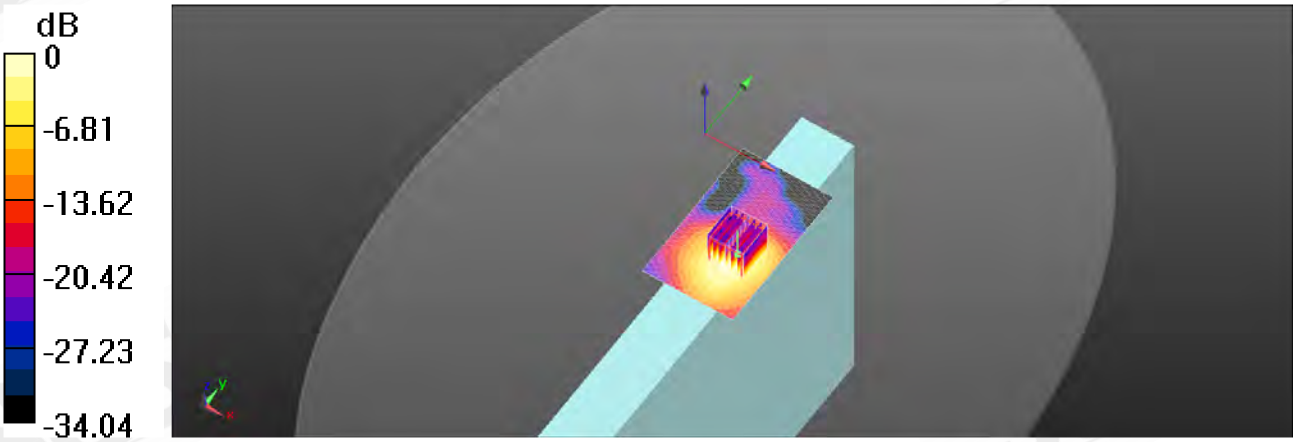
Communication System: WLAN 5G; Frequency: 5220 MHz
Medium parameters used: f = 5220 MHz; σ = 5.496 S/m; ε_r = 47.86; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.7, 4.7, 4.7); Calibrated: 2015/4/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2014/8/27
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Body/Area Scan (61x101x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.14 W/kg

Configuration/Body/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 3.184 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 2.30 W/kg
SAR(1 g) = 0.582 W/kg; SAR(10 g) = 0.212 W/kg
Maximum value of SAR (measured) = 1.08 W/kg



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

Date: 2015/6/3

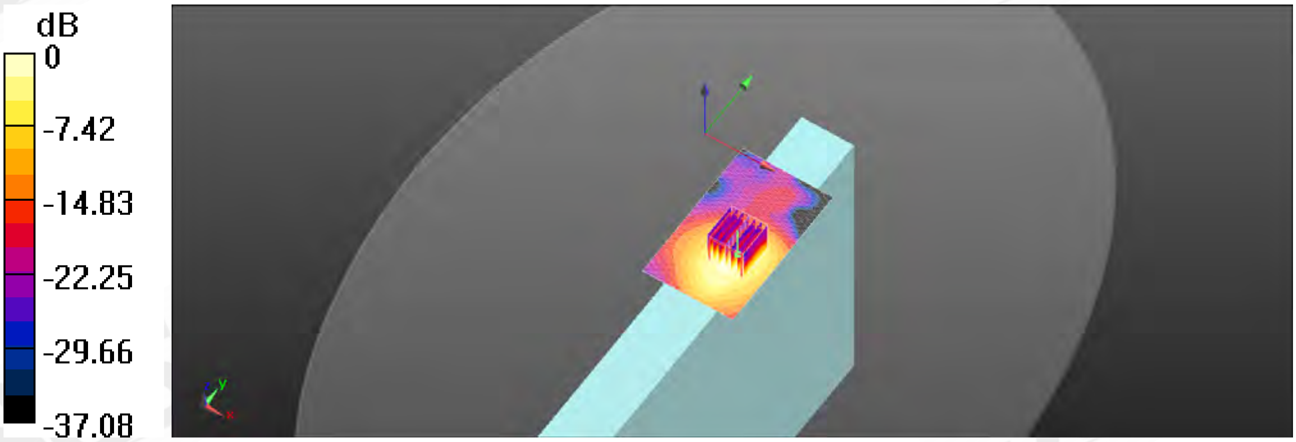
WLAN802.11 ac(20M) 5.3G_Body_Top side_CH 56_Main
Communication System: WLAN 5G; Frequency: 5280 MHz
Medium parameters used: f = 5280 MHz; σ = 5.583 S/m; ε_r = 47.659; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.7, 4.7, 4.7); Calibrated: 2015/4/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2014/8/27
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Body/Area Scan (61x101x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.55 W/kg

Configuration/Body/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 3.878 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 3.07 W/kg
SAR(1 g) = 0.776 W/kg; SAR(10 g) = 0.282 W/kg
Maximum value of SAR (measured) = 1.45 W/kg



0 dB = 1.45 W/kg = 1.61 dBW/kg

Date: 2015/6/4

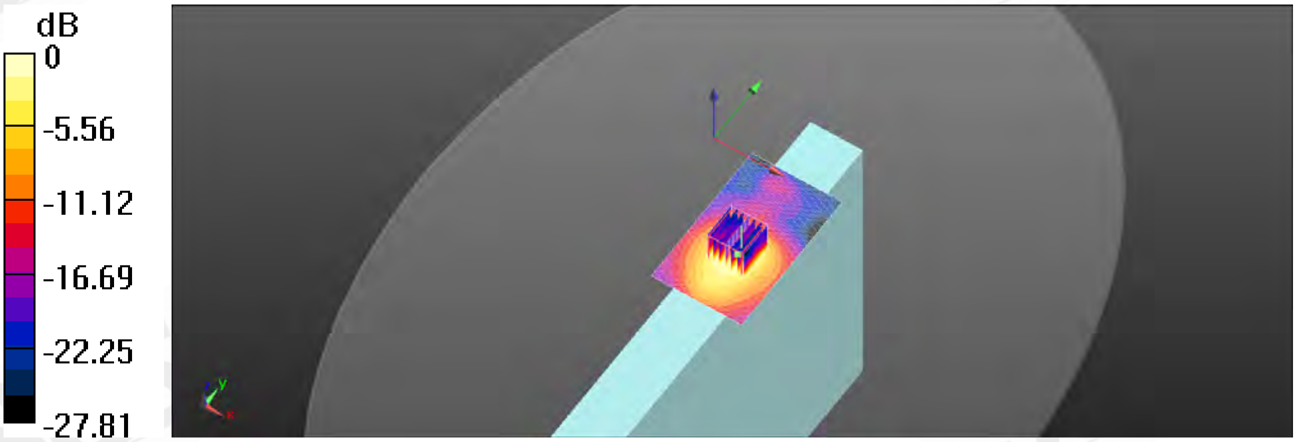
WLAN802.11 a 5.6G_Body_Top side_CH 104_Main
Communication System: WLAN 5G; Frequency: 5520 MHz
Medium parameters used: f = 5520 MHz; σ = 5.91 S/m; ε_r = 46.795; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.03, 4.03, 4.03); Calibrated: 2015/4/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2014/8/27
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Body/Area Scan (61x101x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.94 W/kg

Configuration/Body/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 2.984 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 4.07 W/kg
SAR(1 g) = 1.02 W/kg; SAR(10 g) = 0.374 W/kg
Maximum value of SAR (measured) = 1.90 W/kg



0 dB = 1.90 W/kg = 2.79 dBW/kg

Date: 2015/6/4

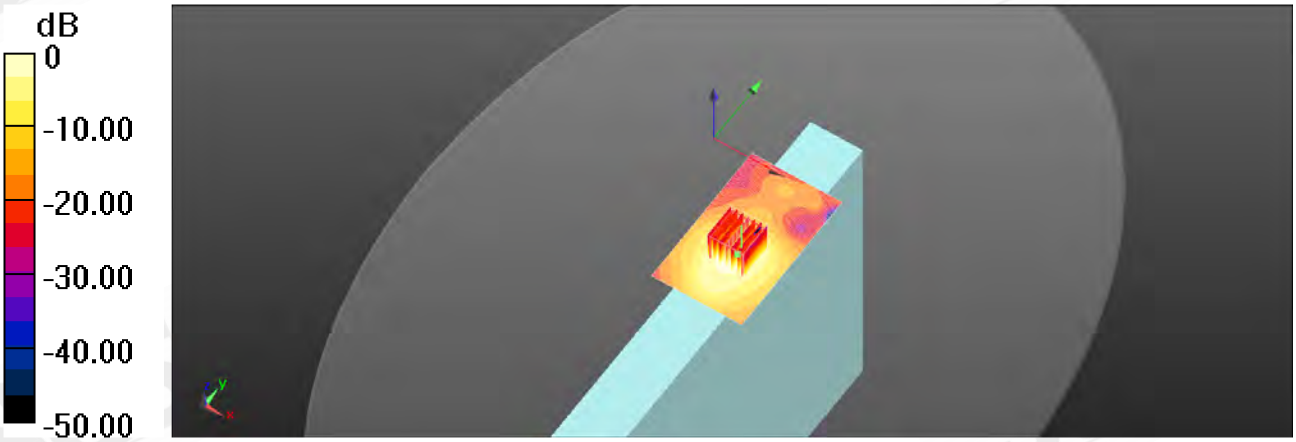
WLAN802.11 ac(20M) 5.6G_Body_Top side_CH 104_Main
Communication System: WLAN 5G; Frequency: 5520 MHz
Medium parameters used: f = 5520 MHz; σ = 5.91 S/m; ε_r = 46.795; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.03, 4.03, 4.03); Calibrated: 2015/4/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2014/8/27
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Body/Area Scan (61x101x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.84 W/kg

Configuration/Body/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 2.870 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 3.92 W/kg
SAR(1 g) = 0.977 W/kg; SAR(10 g) = 0.351 W/kg
Maximum value of SAR (measured) = 1.82 W/kg



0 dB = 1.82 W/kg = 2.60 dBW/kg

WLAN802.11 ac(80M) 5.6G_Body_Top side_CH 138_Main

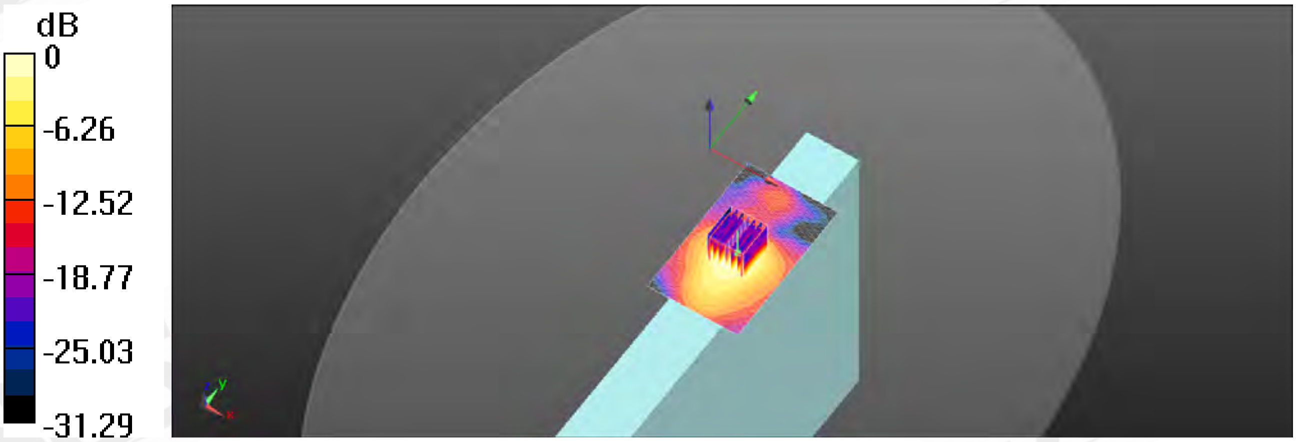
Communication System: WLAN 5G; Frequency: 5690 MHz
Medium parameters used: f = 5690 MHz; σ = 6.029 S/m; ε_r = 46.33; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.03, 4.03, 4.03); Calibrated: 2015/4/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2014/8/27
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Body/Area Scan (61x101x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 2.22 W/kg

Configuration/Body/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 2.463 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 4.23 W/kg
SAR(1 g) = 1.06 W/kg; SAR(10 g) = 0.380 W/kg
Maximum value of SAR (measured) = 1.97 W/kg



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

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Date: 2015/6/1

WLAN802.11 ac(80M) 5.8G_Body_Top side_CH 155_Main

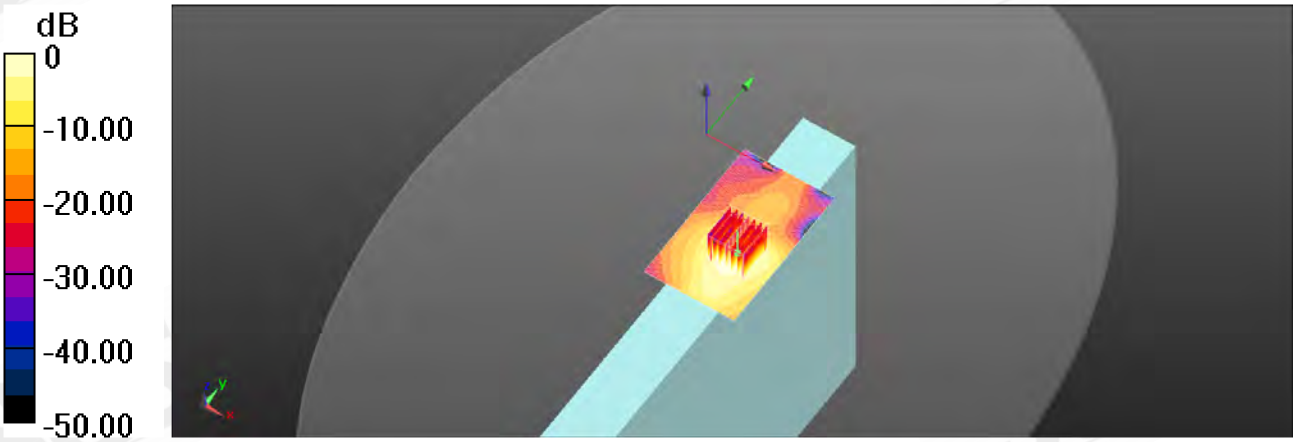
Communication System: WLAN 5G; Frequency: 5775 MHz
Medium parameters used: f = 5775 MHz; σ = 6.2 S/m; ε_r = 46.085; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.33, 4.33, 4.33); Calibrated: 2015/4/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2014/8/27
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Body/Area Scan (61x101x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.99 W/kg

Configuration/Body/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 3.634 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 3.80 W/kg
SAR(1 g) = 0.937 W/kg; SAR(10 g) = 0.338 W/kg
Maximum value of SAR (measured) = 1.77 W/kg



0 dB = 1.77 W/kg = 2.48 dBW/kg

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Date: 2015/6/1

WLAN802.11 b_Body_Bottom_CH 11_Aux

Communication System: WLAN 2.45G; Frequency: 2462 MHz
Medium parameters used: f = 2462 MHz; σ = 2.053 S/m; ε_r = 51.185; ρ = 1000 kg/m^3
Phantom section: Flat Section

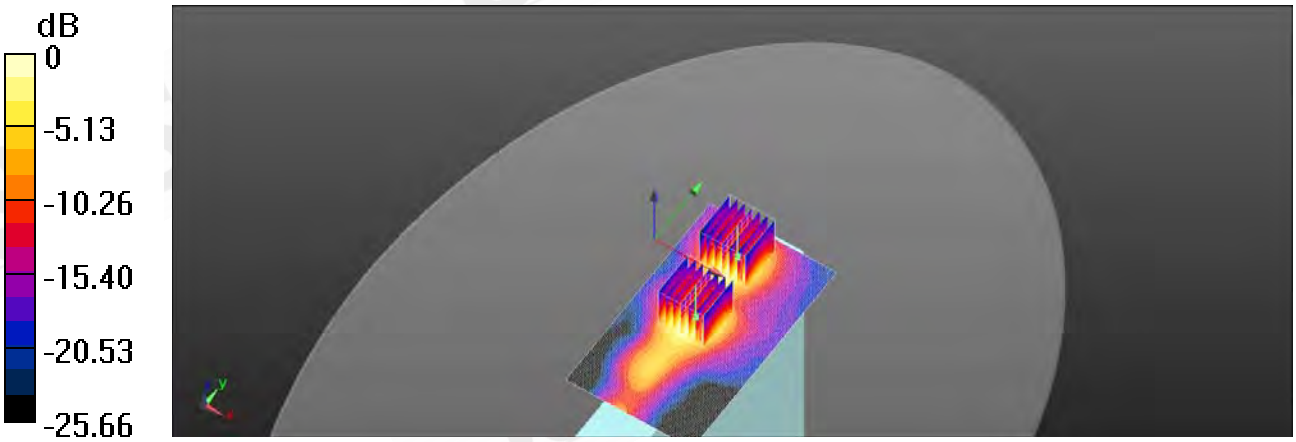
DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.21, 7.21, 7.21); Calibrated: 2015/4/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2014/8/27
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Body/Area Scan (71x121x1): Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 0.796 W/kg

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.899 V/m; Power Drift = -0.18 dB
Peak SAR (extrapolated) = 1.06 W/kg
SAR(1 g) = 0.491 W/kg; SAR(10 g) = 0.210 W/kg
Maximum value of SAR (measured) = 0.748 W/kg

Configuration/Body/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.899 V/m; Power Drift = -0.18 dB
Peak SAR (extrapolated) = 0.784 W/kg
SAR(1 g) = 0.384 W/kg; SAR(10 g) = 0.175 W/kg
Maximum value of SAR (measured) = 0.583 W/kg



0 dB = 0.583 W/kg = -2.34 dBW/kg

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Date: 2015/6/2

WLAN802.11 a 5.2G_Body_Bottom_CH 44_Aux

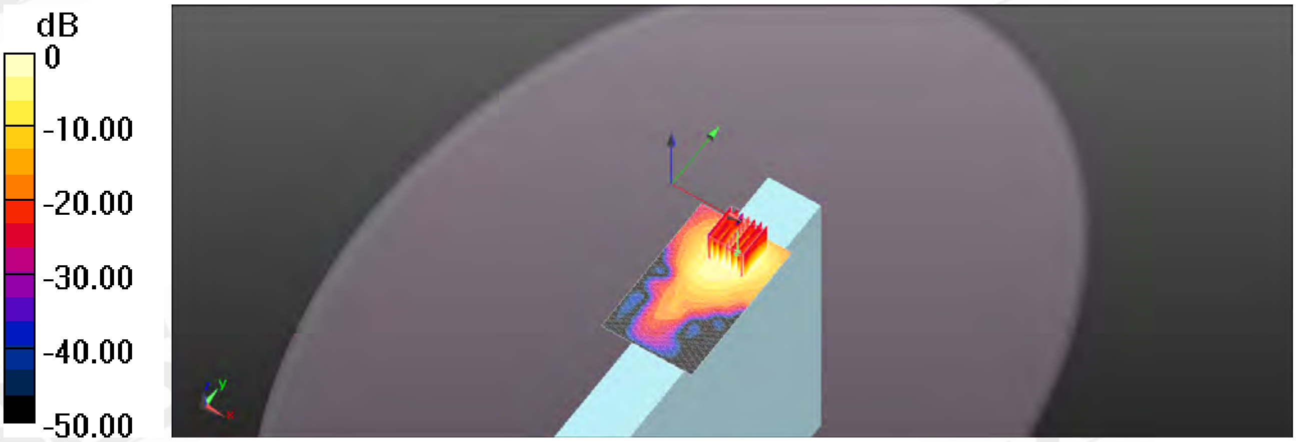
Communication System: WLAN 5G; Frequency: 5220 MHz
Medium parameters used: f = 5220 MHz; σ = 5.496 S/m; ε_r = 47.86; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.7, 4.7, 4.7); Calibrated: 2015/4/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2014/8/27
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Body/Area Scan (61x101x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 2.00 W/kg

Configuration/Body/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 1.790 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 3.78 W/kg
SAR(1 g) = 0.921 W/kg; SAR(10 g) = 0.290 W/kg
Maximum value of SAR (measured) = 1.77 W/kg



0 dB = 1.77 W/kg = 2.48 dBW/kg

Date: 2015/6/2

WLAN802.11 ac(20M) 5.2G_Body_Bottom_CH 40_Aux

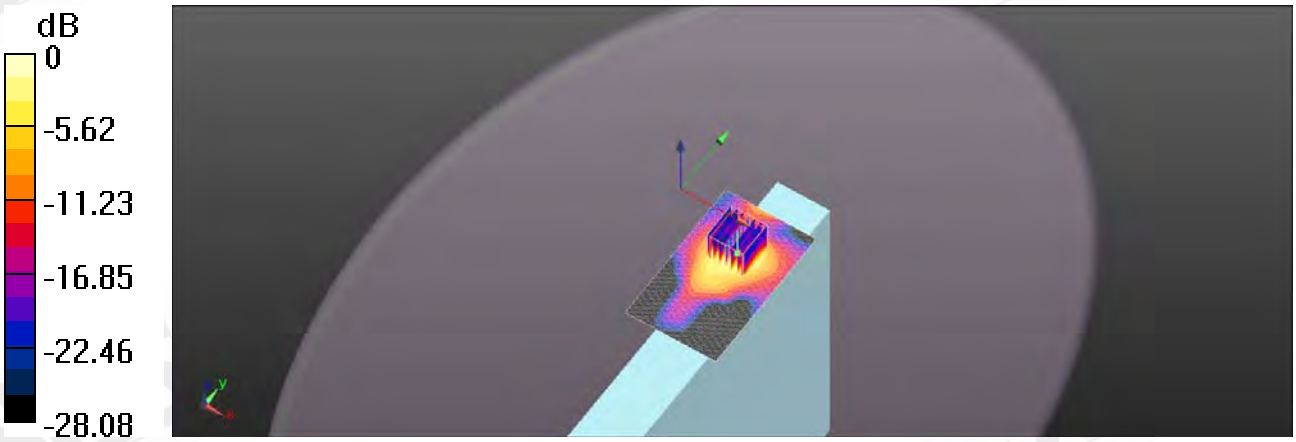
Communication System: WLAN 5G; Frequency: 5200 MHz
Medium parameters used: f = 5200 MHz; σ = 5.47 S/m; ε_r = 47.895; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.7, 4.7, 4.7); Calibrated: 2015/4/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2014/8/27
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Body/Area Scan (61x101x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.73 W/kg

Configuration/Body/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 1.662 V/m; Power Drift = -0.15 dB
Peak SAR (extrapolated) = 3.49 W/kg
SAR(1 g) = 0.854 W/kg; SAR(10 g) = 0.280 W/kg
Maximum value of SAR (measured) = 1.60 W/kg



0 dB = 1.60 W/kg = 2.04 dBW/kg

WLAN802.11 a 5.3G_Body_Bottom_CH 56_Aux

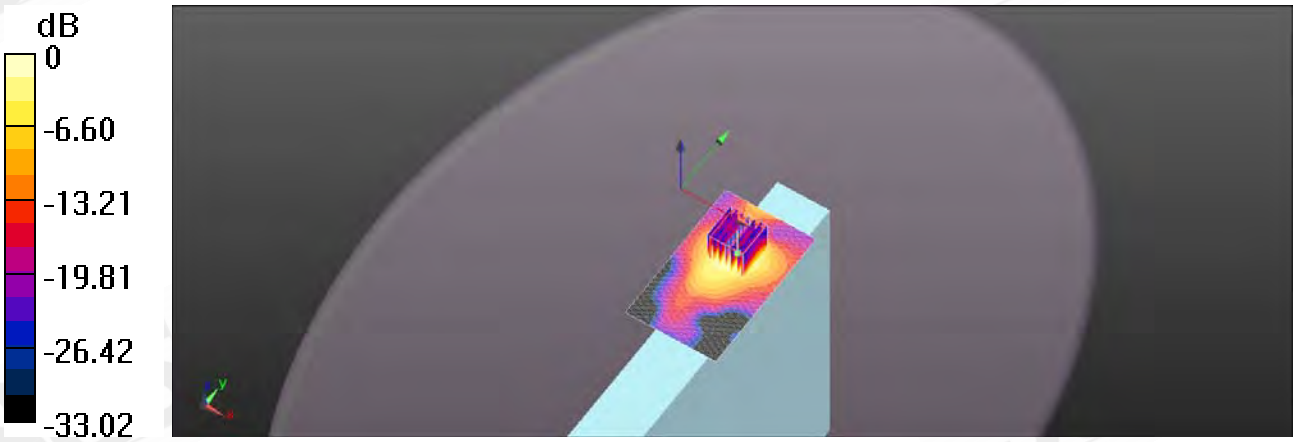
Communication System: WLAN 5G; Frequency: 5280 MHz
Medium parameters used: f = 5280 MHz; σ = 5.583 S/m; ε_r = 47.659; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.7, 4.7, 4.7); Calibrated: 2015/4/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2014/8/27
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Body/Area Scan (61x101x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 2.82 W/kg

Configuration/Body/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 1.145 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 5.45 W/kg
SAR(1 g) = 1.36 W/kg; SAR(10 g) = 0.444 W/kg
Maximum value of SAR (measured) = 2.58 W/kg



0 dB = 2.58 W/kg = 4.12 dBW/kg

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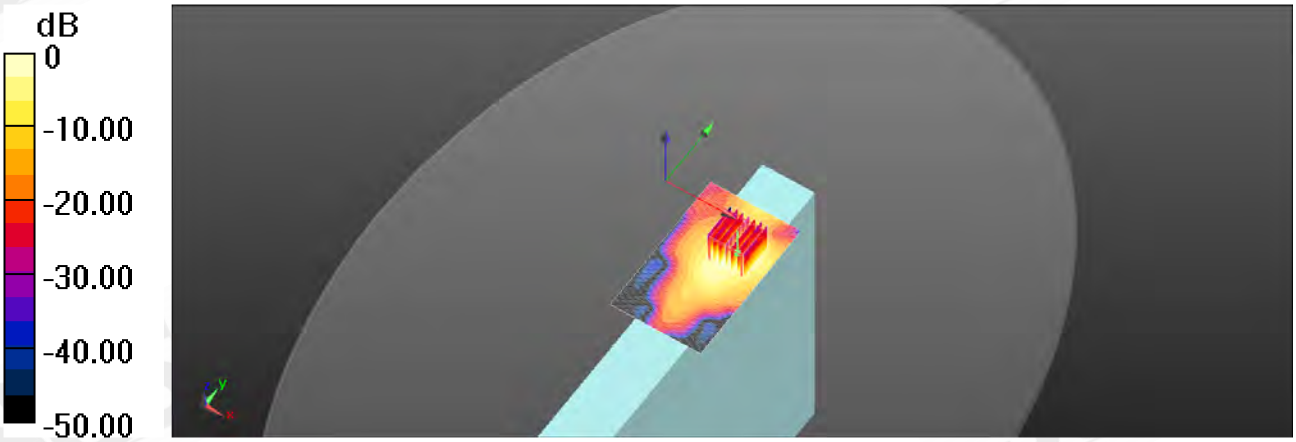
WLAN802.11 n(20M) 5.3G_Body_Bottom_CH 60_Aux
Communication System: WLAN 5G; Frequency: 5300 MHz
Medium parameters used: f = 5300 MHz; σ = 5.61 S/m; ε_r = 47.584; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3770; ConvF(4.7, 4.7, 4.7); Calibrated: 2015/4/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2014/8/27
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Body/Area Scan (61x101x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 3.03 W/kg

Configuration/Body/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 1.240 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 5.95 W/kg
SAR(1 g) = 1.45 W/kg; SAR(10 g) = 0.460 W/kg
Maximum value of SAR (measured) = 2.85 W/kg



0 dB = 2.85 W/kg = 4.55 dBW/kg

Date: 2015/6/3

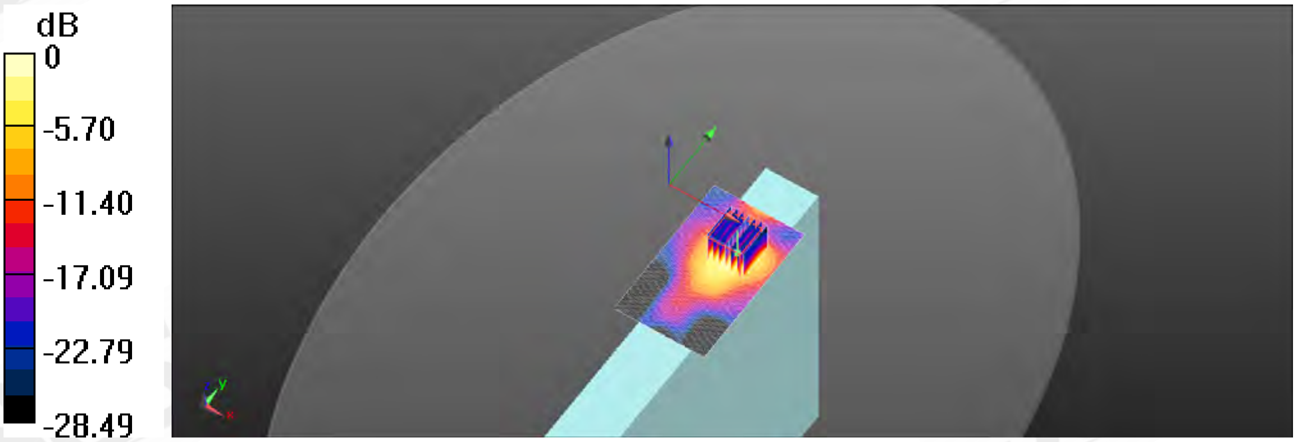
WLAN802.11 ac(20M) 5.3G_Body_Bottom_CH 56_Aux
Communication System: WLAN 5G; Frequency: 5280 MHz
Medium parameters used: f = 5280 MHz; σ = 5.583 S/m; ε_r = 47.659; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.7, 4.7, 4.7); Calibrated: 2015/4/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2014/8/27
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Body/Area Scan (61x101x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 2.94 W/kg

Configuration/Body/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 1.520 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 5.70 W/kg
SAR(1 g) = 1.41 W/kg; SAR(10 g) = 0.453 W/kg
Maximum value of SAR (measured) = 2.73 W/kg



0 dB = 2.73 W/kg = 4.36 dBW/kg

Date: 2015/6/3

WLAN802.11 n(40M) 5.3G_Body_Bottom_CH 54_Aux

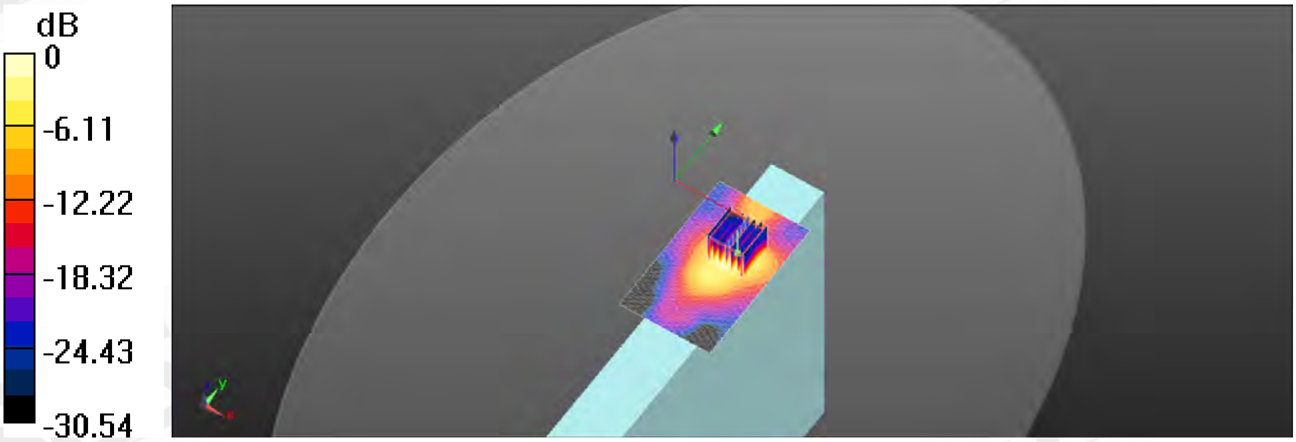
Communication System: WLAN 5G; Frequency: 5270 MHz
Medium parameters used: f = 5270 MHz; σ = 5.567 S/m; ε_r = 47.696; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.7, 4.7, 4.7); Calibrated: 2015/4/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2014/8/27
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Body/Area Scan (61x101x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 3.39 W/kg

Configuration/Body/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 1.738 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 5.91 W/kg
SAR(1 g) = 1.46 W/kg; SAR(10 g) = 0.461 W/kg
Maximum value of SAR (measured) = 2.89 W/kg



0 dB = 2.89 W/kg = 4.61 dBW/kg

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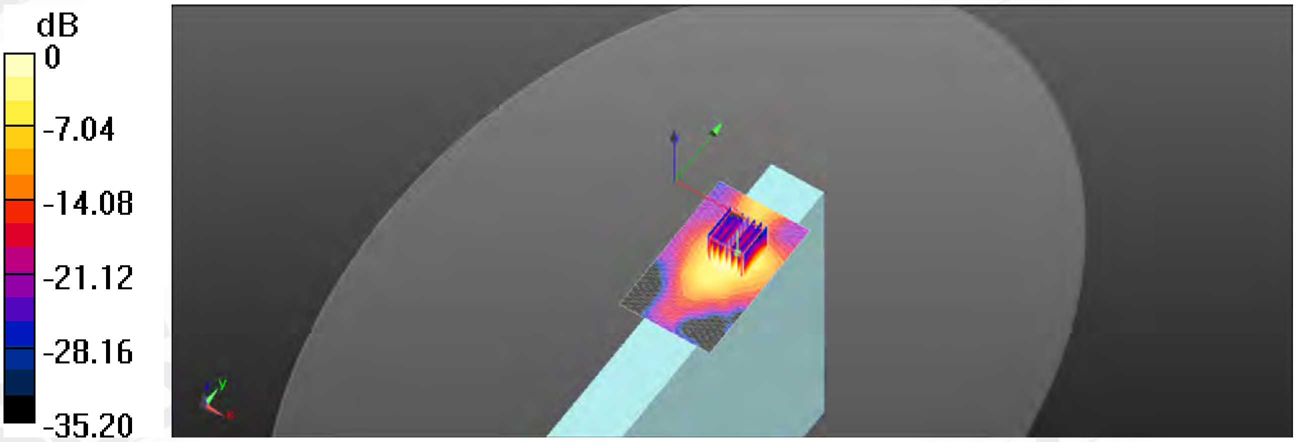
Date: 2015/6/3

WLAN802.11 ac(40M) 5.3G_Body_Bottom_CH 54_Aux
Communication System: WLAN 5G; Frequency: 5270 MHz
Medium parameters used: f = 5270 MHz; σ = 5.567 S/m; ε_r = 47.696; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3770; ConvF(4.7, 4.7, 4.7); Calibrated: 2015/4/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2014/8/27
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Body/Area Scan (61x101x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 3.29 W/kg

Configuration/Body/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 1.914 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 5.78 W/kg
SAR(1 g) = 1.44 W/kg; SAR(10 g) = 0.456 W/kg
Maximum value of SAR (measured) = 2.82 W/kg



0 dB = 2.82 W/kg = 4.50 dBW/kg

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Date: 2015/6/4

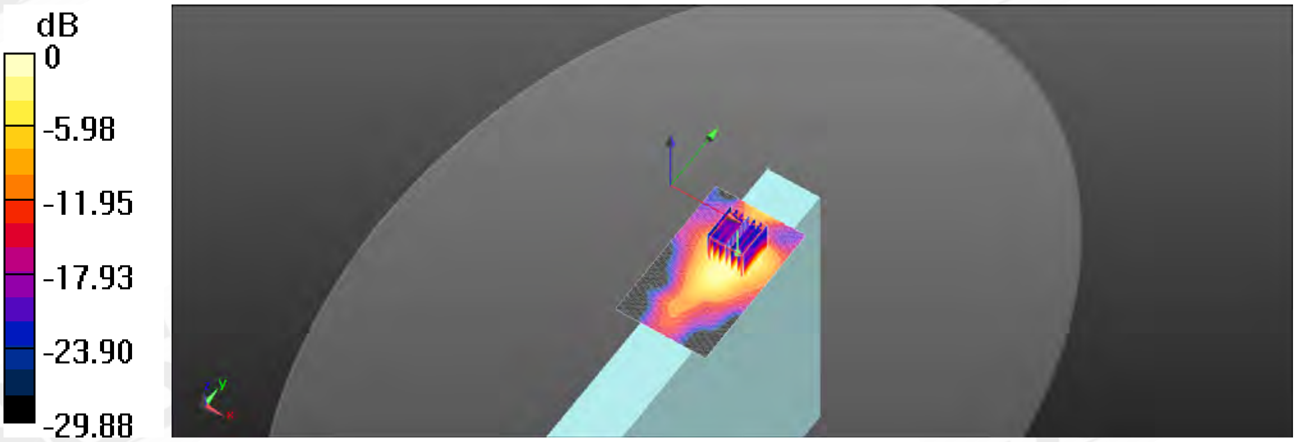
WLAN802.11 a 5.6G_Body_Bottom_CH 120_Aux
Communication System: WLAN 5G; Frequency: 5600 MHz
Medium parameters used: f = 5600 MHz; σ = 6.005 S/m; ε_r = 46.587; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.03, 4.03, 4.03); Calibrated: 2015/4/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2014/8/27
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Body/Area Scan (61x101x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 2.27 W/kg

Configuration/Body/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 1.813 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 4.59 W/kg
SAR(1 g) = 1.1 W/kg; SAR(10 g) = 0.363 W/kg
Maximum value of SAR (measured) = 2.13 W/kg



0 dB = 2.13 W/kg = 3.28 dBW/kg

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Date: 2015/6/4

WLAN802.11 n(20M) 5.6G_Body_Bottom_CH 136_Aux

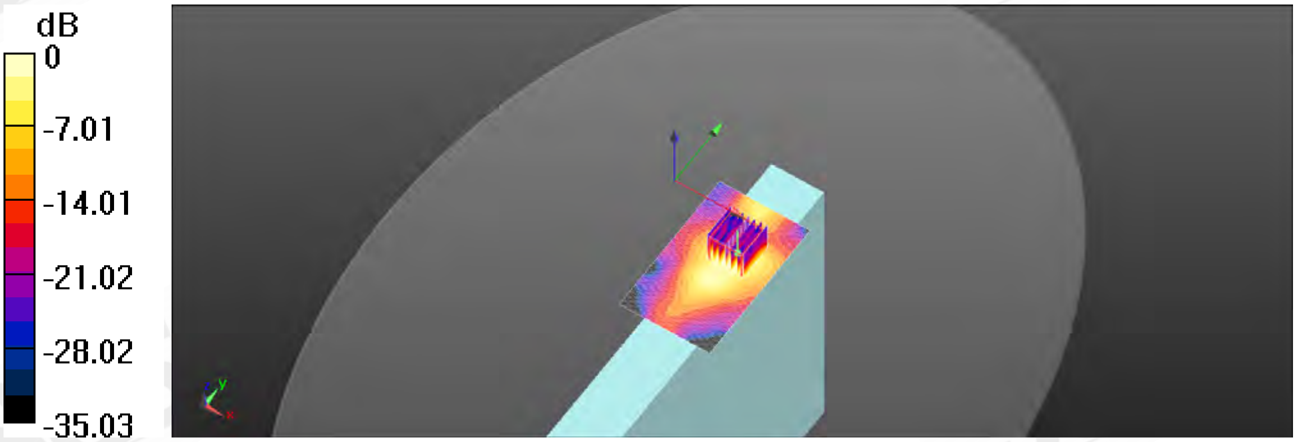
Communication System: WLAN 5G; Frequency: 5680 MHz
Medium parameters used: f = 5680 MHz; σ = 6.021 S/m; ε_r = 46.359; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.03, 4.03, 4.03); Calibrated: 2015/4/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2014/8/27
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Body/Area Scan (61x101x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.98 W/kg

Configuration/Body/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 2.117 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 3.70 W/kg
SAR(1 g) = 0.879 W/kg; SAR(10 g) = 0.279 W/kg
Maximum value of SAR (measured) = 1.76 W/kg



0 dB = 1.76 W/kg = 2.46 dBW/kg

Date: 2015/6/4

WLAN802.11 ac(20M) 5.6G_Body_Bottom_CH 136_Aux

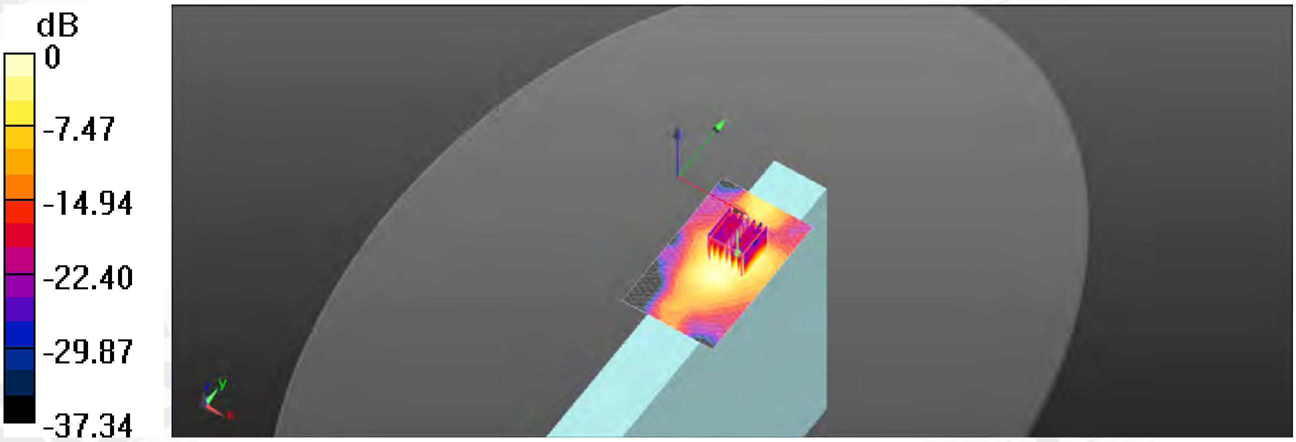
Communication System: WLAN 5G; Frequency: 5680 MHz
Medium parameters used: f = 5680 MHz; σ = 6.021 S/m; ε_r = 46.359; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.03, 4.03, 4.03); Calibrated: 2015/4/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2014/8/27
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Body/Area Scan (61x101x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.38 W/kg

Configuration/Body/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 1.916 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 2.62 W/kg
SAR(1 g) = 0.631 W/kg; SAR(10 g) = 0.206 W/kg
Maximum value of SAR (measured) = 1.26 W/kg



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

Date: 2015/6/4

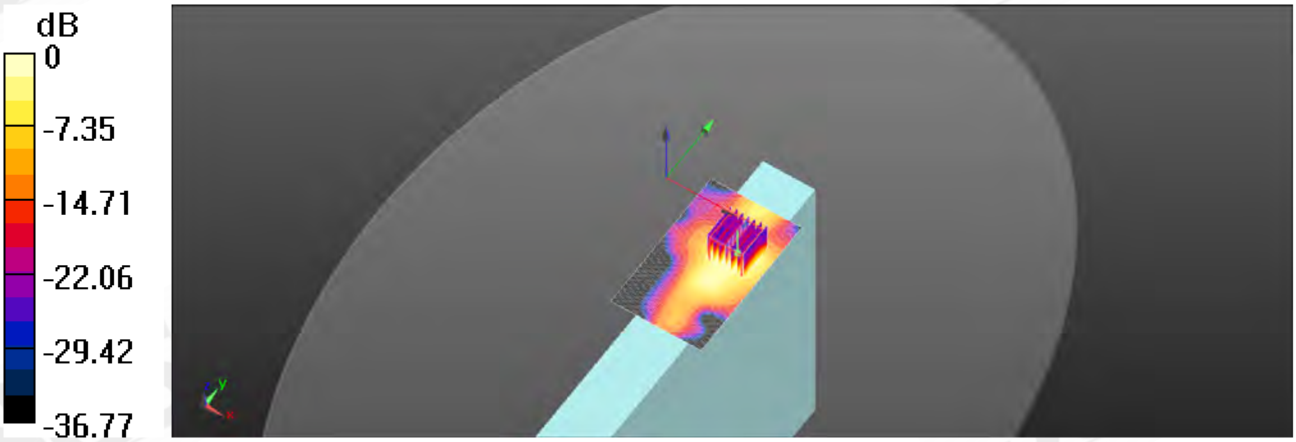
WLAN802.11 n(40M) 5.6G_Body_Bottom_CH 134_Aux

Communication System: WLAN 5G; Frequency: 5670 MHz
Medium parameters used: f = 5670 MHz; σ = 6.017 S/m; ε_r = 46.38; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3770; ConvF(4.03, 4.03, 4.03); Calibrated: 2015/4/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2014/8/27
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Body/Area Scan (61x101x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.96 W/kg

Configuration/Body/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 2.227 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 3.94 W/kg
SAR(1 g) = 0.913 W/kg; SAR(10 g) = 0.291 W/kg
Maximum value of SAR (measured) = 1.84 W/kg



0 dB = 1.84 W/kg = 2.65 dBW/kg

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Date: 2015/6/4

WLAN802.11 ac(40M) 5.6G_Body_Bottom_CH 142_Aux

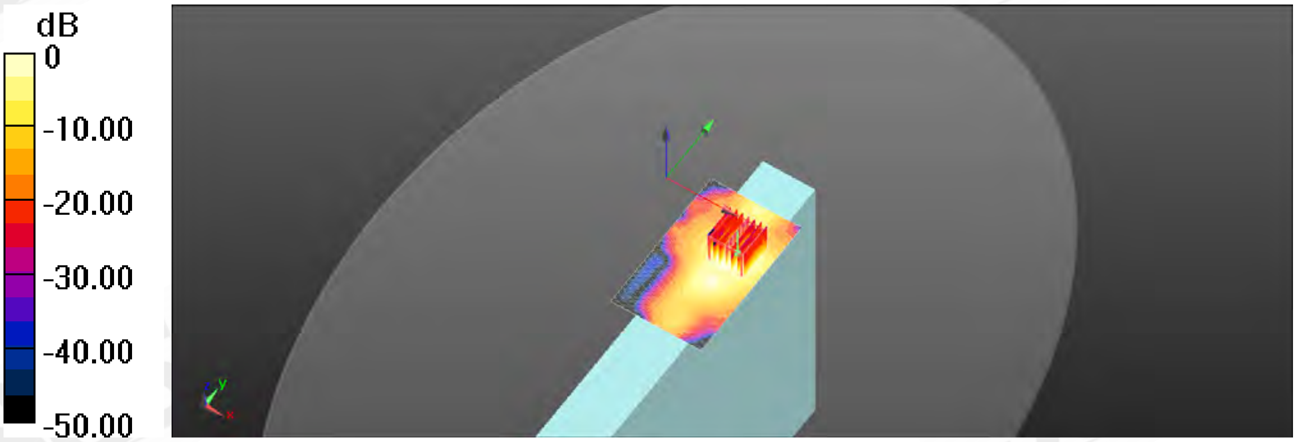
Communication System: WLAN 5G; Frequency: 5710 MHz
Medium parameters used: f = 5710 MHz; σ = 6.041 S/m; ε_r = 46.241; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.03, 4.03, 4.03); Calibrated: 2015/4/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2014/8/27
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Body/Area Scan (61x101x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.69 W/kg

Configuration/Body/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 2.347 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 3.35 W/kg
SAR(1 g) = 0.784 W/kg; SAR(10 g) = 0.250 W/kg
Maximum value of SAR (measured) = 1.58 W/kg



0 dB = 1.58 W/kg = 1.99 dBW/kg

Date: 2015/6/1

WLAN802.11 ac(80M) 5.8G_Body_Bottom_CH 155_Aux

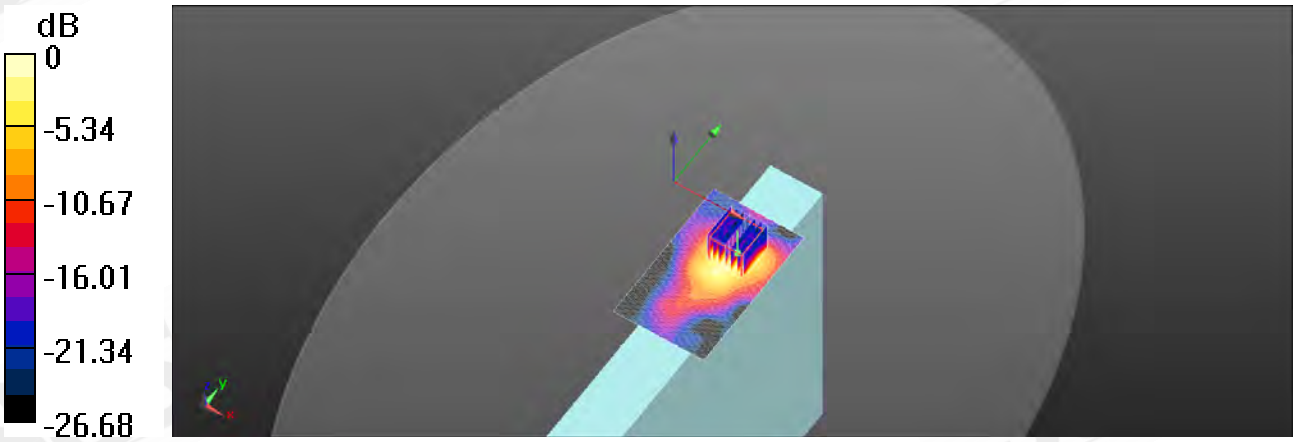
Communication System: WLAN 5G; Frequency: 5775 MHz
Medium parameters used: f = 5775 MHz; σ = 6.2 S/m; ε_r = 46.085; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.33, 4.33, 4.33); Calibrated: 2015/4/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2014/8/27
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Body/Area Scan (61x101x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.72 W/kg

Configuration/Body/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 1.9590 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 3.51 W/kg
SAR(1 g) = 0.810 W/kg; SAR(10 g) = 0.272 W/kg
Maximum value of SAR (measured) = 1.61 W/kg



0 dB = 1.61 W/kg = 2.07 dBW/kg

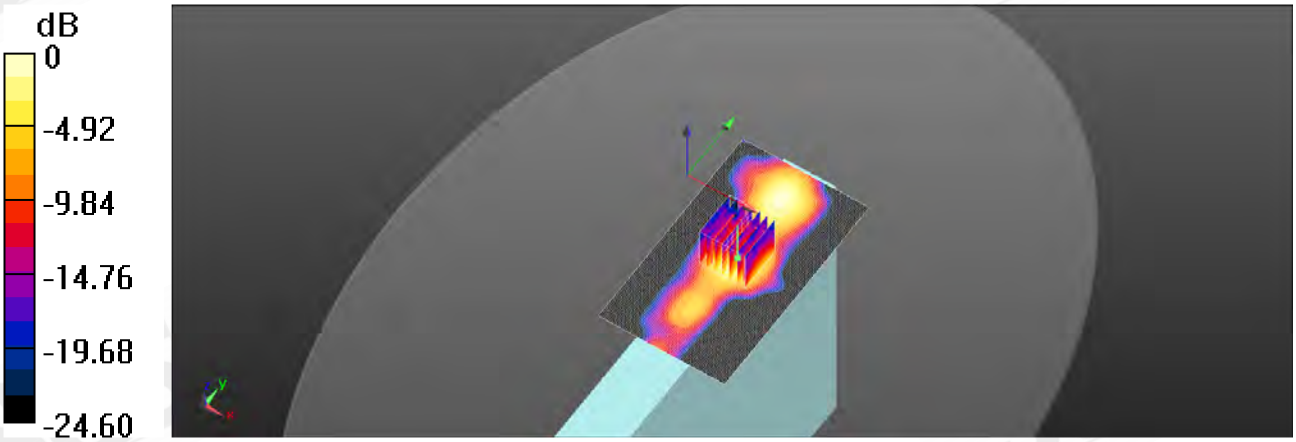
Bluetooth_Body_Bottom_CH 78
Communication System: Bluetooth; Frequency: 2480 MHz
Medium parameters used: f = 2480 MHz; σ = 2.072 S/m; ε_r = 51.112; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.21, 7.21, 7.21); Calibrated: 2015/4/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2014/8/27
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Body/Area Scan (71x121x1): Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 0.0956 W/kg

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.798 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 0.127 W/kg
SAR(1 g) = 0.058 W/kg; SAR(10 g) = 0.025 W/kg
Maximum value of SAR (measured) = 0.0886 W/kg



0 dB = 0.0886 W/kg = -10.53 dBW/kg

6. SAR System Performance Verification

Date: 2015/6/16

Dipole 750 MHz_SN:1015

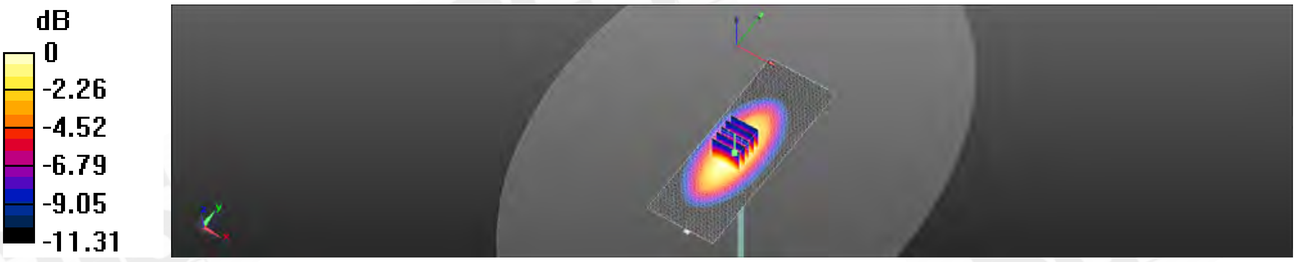
Communication System: CW; Frequency: 750 MHz
Medium parameters used: f = 750 MHz; σ = 0.964 S/m; ε_r = 54.188; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3923; ConvF(10.29, 10.29, 10.29); Calibrated: 2014/8/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2015/5/6
- Phantom: Body
- 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) = 2.78 W/kg

Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 53.14 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 3.33 W/kg
SAR(1 g) = 2.28 W/kg; SAR(10 g) = 1.5 W/kg
Maximum value of SAR (measured) = 2.80 W/kg



0 dB = 2.80 W/kg = 4.47 dBW/kg

Date: 2015/6/12

Dipole 835 MHz_SN:4d063

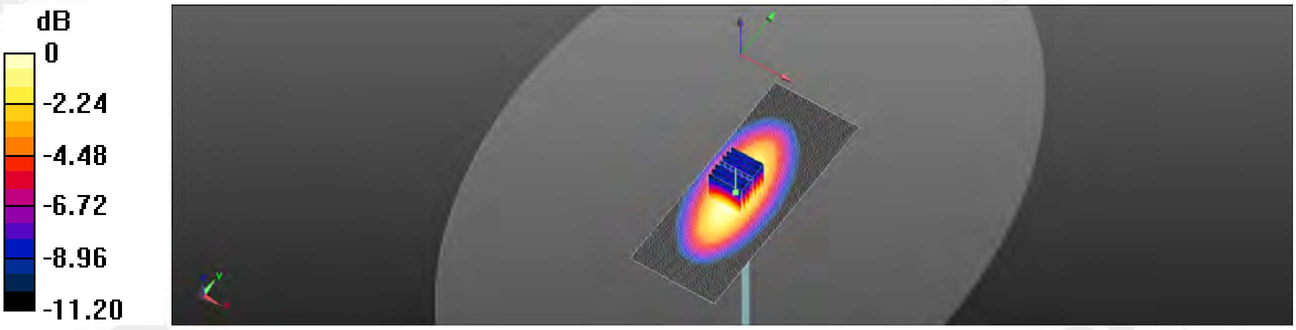
Communication System: CW; Frequency: 835 MHz
Medium parameters used: f = 835 MHz; σ = 0.955 S/m; ε_r = 54.344; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3923; ConvF(10.32, 10.32, 10.32); Calibrated: 2014/8/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2015/5/6
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Pin=250mW/Area Scan (51x131x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 3.01 W/kg

Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 55.44 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 3.61 W/kg
SAR(1 g) = 2.35 W/kg; SAR(10 g) = 1.53 W/kg
Maximum value of SAR (measured) = 3.03 W/kg



0 dB = 3.03 W/kg = 4.81 dBW/kg

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Member of SGS Group

Date: 2015/6/15

Dipole 835 MHz_SN:4d063

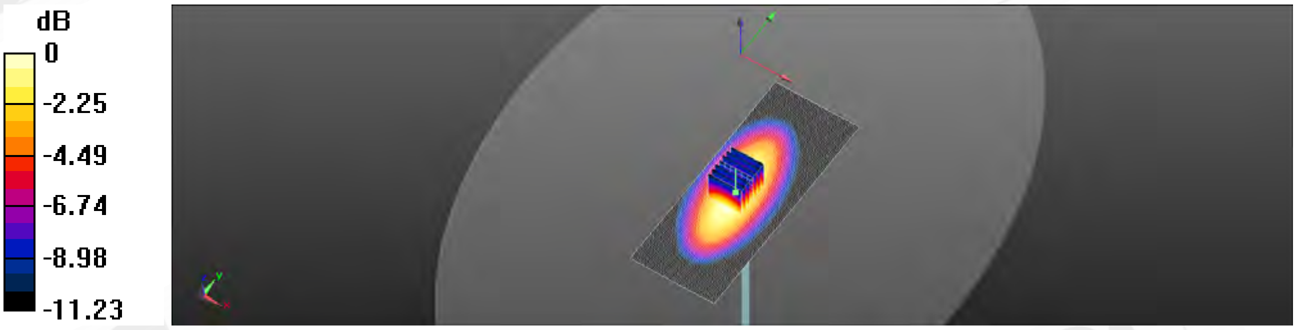
Communication System: CW; Frequency: 835 MHz
Medium parameters used: f = 835 MHz; σ = 0.963 S/m; ε_r = 54.035; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3923; ConvF(10.32, 10.32, 10.32); Calibrated: 2014/8/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2015/5/6
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Pin=250mW/Area Scan (51x131x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 3.01 W/kg

Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 55.14 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 3.63 W/kg
SAR(1 g) = 2.35 W/kg; SAR(10 g) = 1.51 W/kg
Maximum value of SAR (measured) = 3.04 W/kg



0 dB = 3.04 W/kg = 4.84 dBW/kg

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Date: 2015/6/17

Dipole 1750 MHz_SN:1008

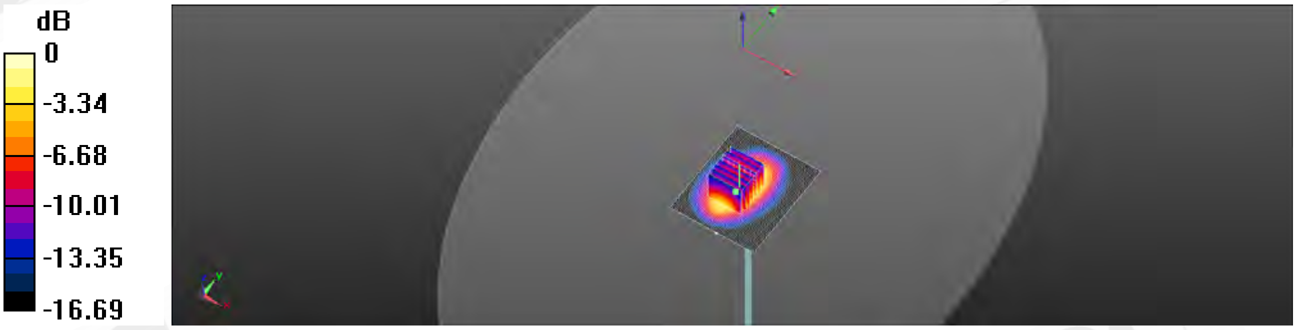
Communication System: CW; Frequency: 1750 MHz
Medium parameters used: f = 1750 MHz; σ = 1.47 S/m; ε_r = 52.225; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3923; ConvF(8.3, 8.3, 8.3); Calibrated: 2014/8/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2015/5/6
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Pin=250mW/Area Scan (51x61x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 13.0 W/kg

Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 92.51 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 16.3 W/kg
SAR(1 g) = 9.36 W/kg; SAR(10 g) = 5.08 W/kg
Maximum value of SAR (measured) = 12.6 W/kg



0 dB = 12.6 W/kg = 11.02 dBW/kg

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Date: 2015/6/11

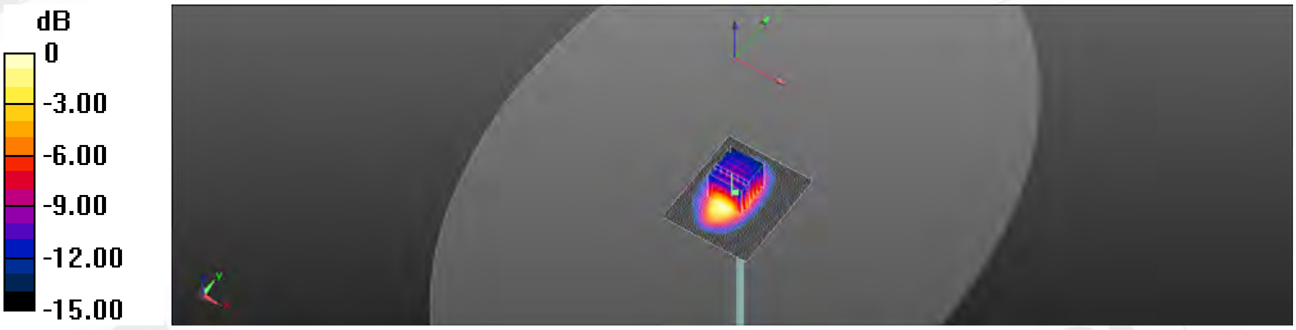
Dipole 1900 MHz_SN:5d027
Communication System: CW; Frequency: 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.529 S/m; ε_r = 52.226; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3923; ConvF(8.03, 8.03, 8.03); Calibrated: 2014/8/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2015/5/6
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Pin=250mW/Area Scan (51x61x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 14.1 W/kg

Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 95.18 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 16.5 W/kg
SAR(1 g) = 10.1 W/kg; SAR(10 g) = 5.3 W/kg
Maximum value of SAR (measured) = 13.7 W/kg



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

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Date: 2015/6/18

Dipole 1900 MHz_SN:5d027

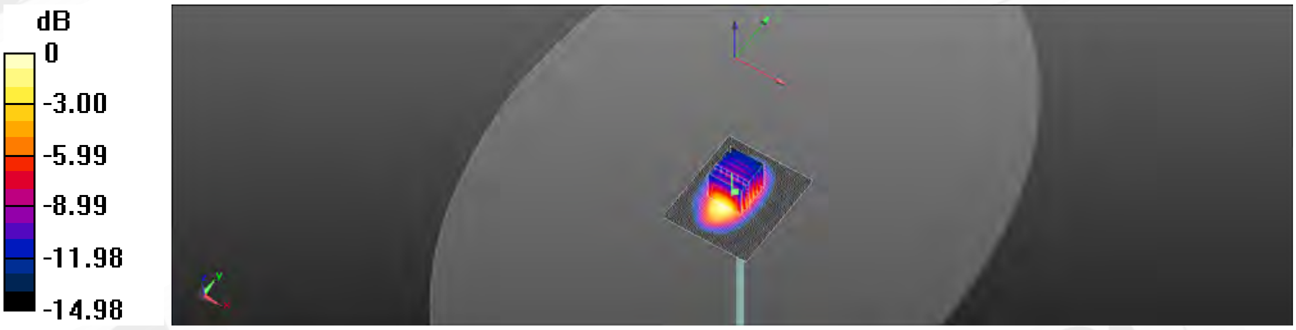
Communication System: CW; Frequency: 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.536 S/m; ε_r = 52.126; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3923; ConvF(8.03, 8.03, 8.03); Calibrated: 2014/8/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2015/5/6
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Pin=250mW/Area Scan (51x61x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 14.1 W/kg

Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 96.06 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 16.6 W/kg
SAR(1 g) = 10.1 W/kg; SAR(10 g) = 5.29 W/kg
Maximum value of SAR (measured) = 13.8 W/kg



0 dB = 13.8 W/kg = 11.39 dBW/kg

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Date: 2015/6/1

Dipole 2450 MHz_SN:727_Body

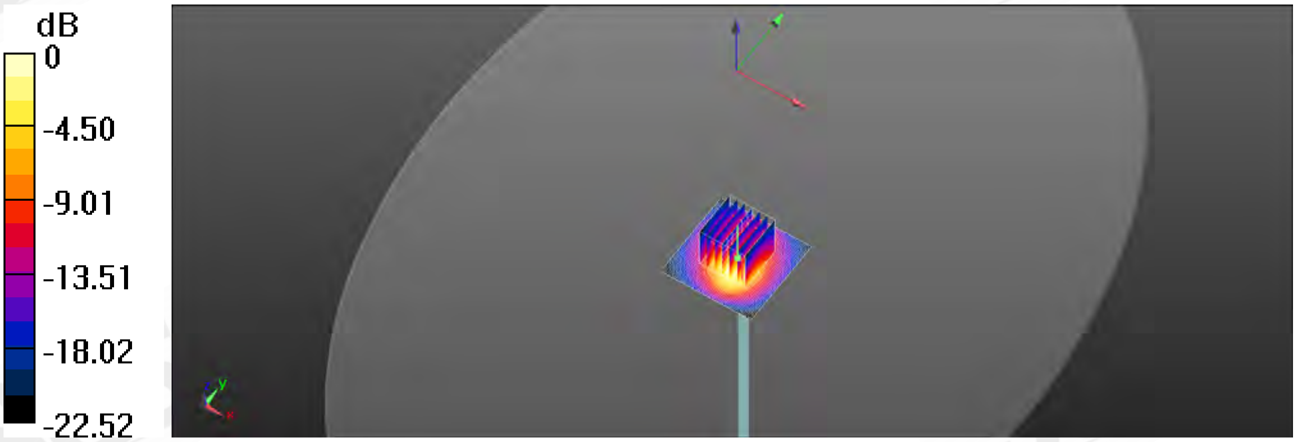
Communication System: CW; Frequency: 2450 MHz
Medium parameters used: f = 2450 MHz; σ = 2.035 S/m; ε_r = 51.219; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.21, 7.21, 7.21); Calibrated: 2015/4/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2014/8/27
- Phantom: Body
- 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) = 21.6 W/kg

Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 102.8 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 28.7 W/kg
SAR(1 g) = 13.5 W/kg; SAR(10 g) = 6.12 W/kg
Maximum value of SAR (measured) = 20.9 W/kg



0 dB = 20.9 W/kg = 13.20 dBW/kg

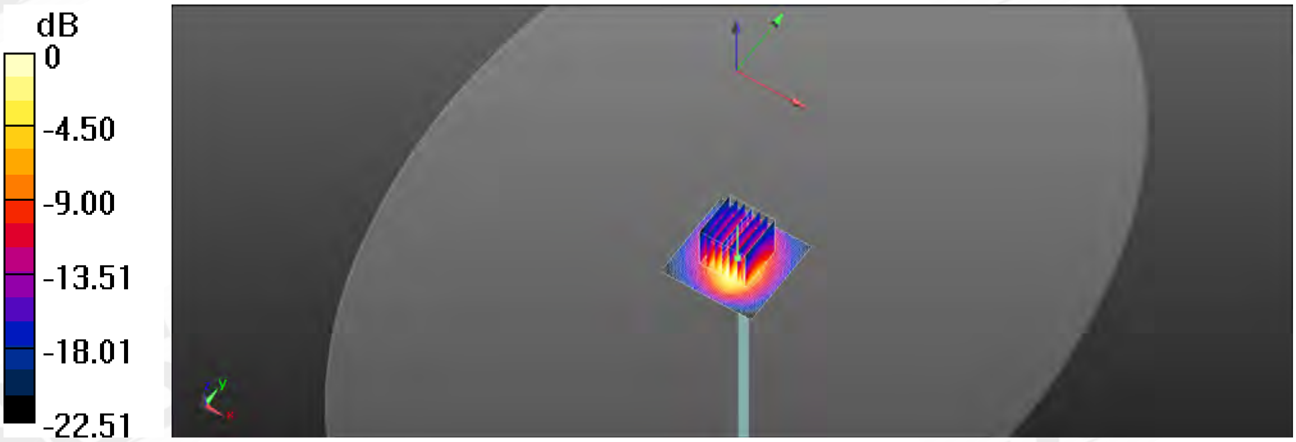
Date: 2015/6/5

Dipole 2450 MHz_SN:727_Body
Communication System: CW; Frequency: 2450 MHz
Medium parameters used: f = 2450 MHz; σ = 2.033 S/m; ε_r = 51.254; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3770; ConvF(7.21, 7.21, 7.21); Calibrated: 2015/4/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2014/8/27
- Phantom: Body
- 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) = 20.4 W/kg

Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 99.09 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 27.0 W/kg
SAR(1 g) = 12.7 W/kg; SAR(10 g) = 5.77 W/kg
Maximum value of SAR (measured) = 19.7 W/kg



0 dB = 19.7 W/kg = 12.94 dBW/kg

Date: 2015/6/5

Dipole 2450 MHz_SN:727_Body

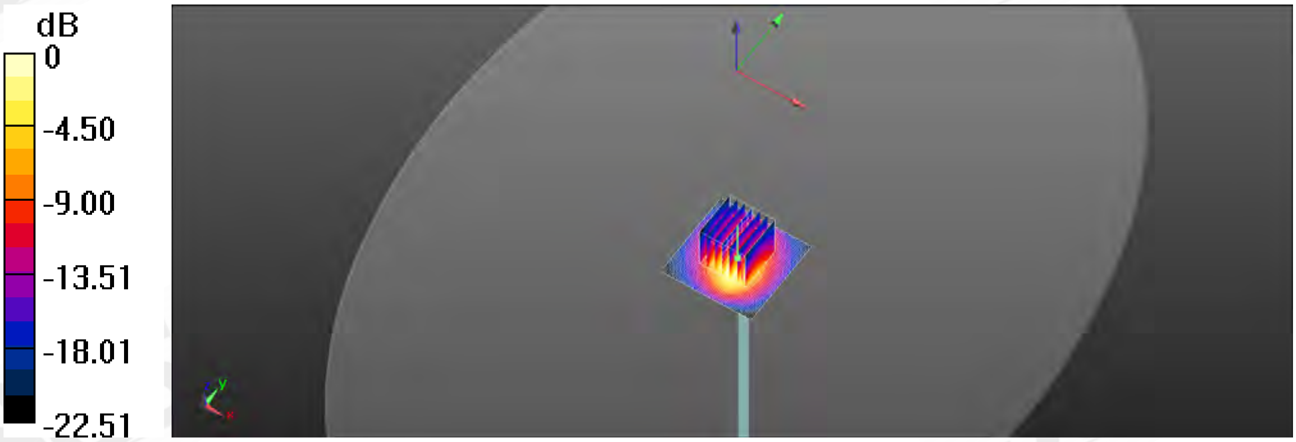
Communication System: CW; Frequency: 2450 MHz
Medium parameters used: f = 2450 MHz; σ = 2.033 S/m; ε_r = 51.254; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.21, 7.21, 7.21); Calibrated: 2015/4/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2014/8/27
- Phantom: Body
- 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) = 20.4 W/kg

Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 99.09 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 27.0 W/kg
SAR(1 g) = 12.7 W/kg; SAR(10 g) = 5.77 W/kg
Maximum value of SAR (measured) = 19.7 W/kg



0 dB = 19.7 W/kg = 12.94 dBW/kg

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Date: 2015/6/2

Dipole 5200 MHz_SN:1023_Body

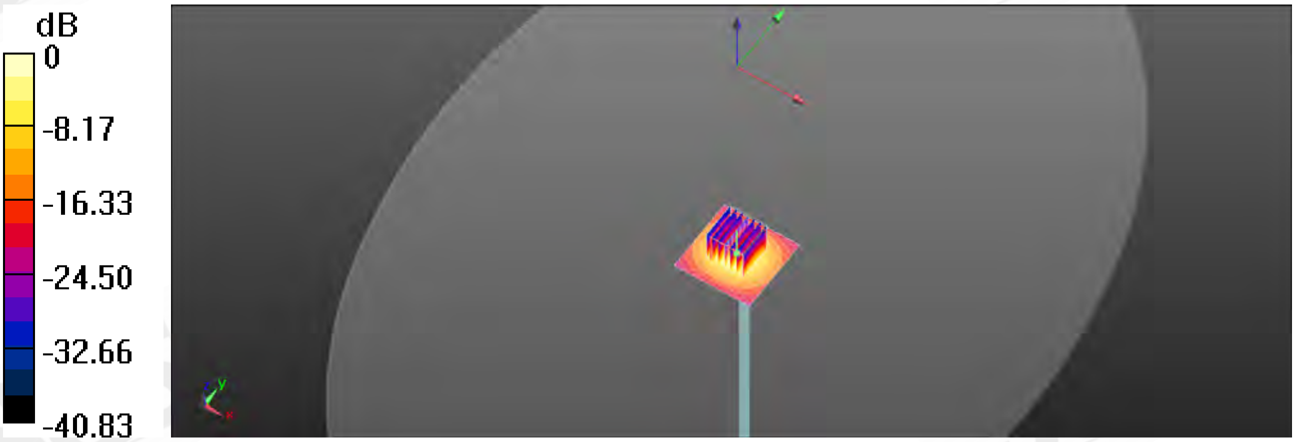
Communication System: CW; Frequency: 5200 MHz
Medium parameters used: f = 5200 MHz; σ = 5.47 S/m; ε_r = 47.895; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.7, 4.7, 4.7); Calibrated: 2015/4/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2014/8/27
- Phantom: Body
- 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 = 57.77 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 33.9 W/kg
SAR(1 g) = 7.47 W/kg; SAR(10 g) = 2.07 W/kg
Maximum value of SAR (measured) = 15.4 W/kg



0 dB = 15.4 W/kg = 11.88 dBW/kg

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Dipole 5300 MHz_SN:1023_Body

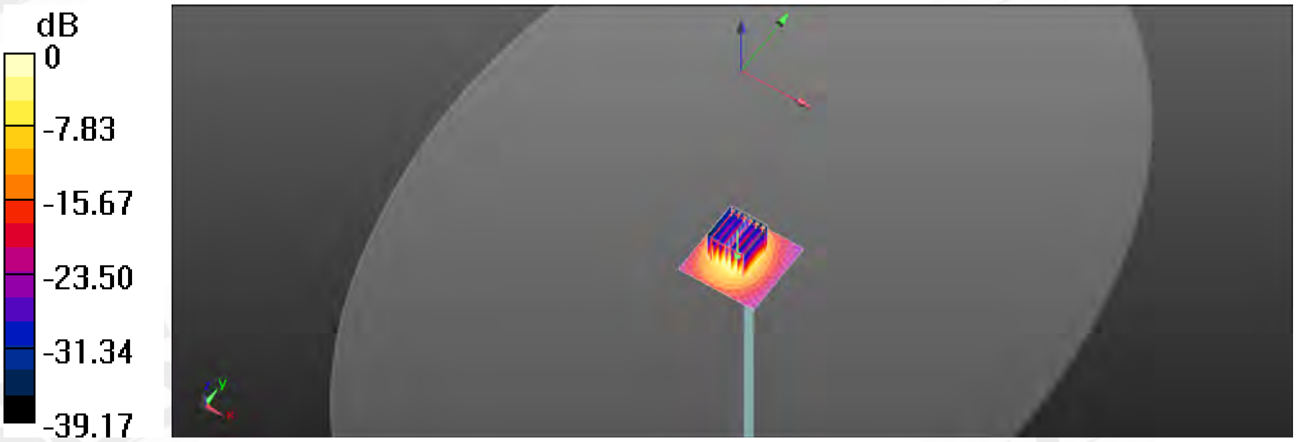
Communication System: CW; Frequency: 5300 MHz
Medium parameters used: f = 5300 MHz; σ = 5.61 S/m; ε_r = 47.584; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.7, 4.7, 4.7); Calibrated: 2015/4/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2014/8/27
- Phantom: Body
- 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 = 53.39 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 36.4 W/kg
SAR(1 g) = 8.13 W/kg; SAR(10 g) = 2.24 W/kg
Maximum value of SAR (measured) = 17.3 W/kg



0 dB = 17.3 W/kg = 12.38 dBW/kg

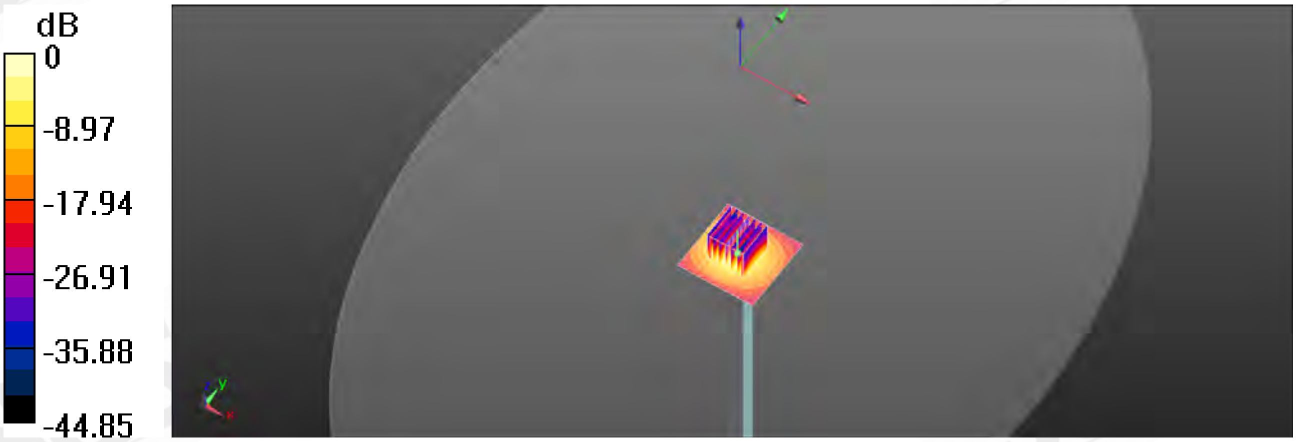
Dipole 5600 MHz_SN:1023_Body
Communication System: UID 0, CW; Frequency: 5600 MHz
Medium parameters used: f = 5600 MHz; σ = 5.99 S/m; ε_r = 46.587; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.03, 4.03, 4.03); Calibrated: 2015/4/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2014/8/27
- Phantom: Body
- 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) = 16.1 W/kg

Configuration/Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 53.98 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 33.2 W/kg
SAR(1 g) = 7.32 W/kg; SAR(10 g) = 2.01 W/kg
Maximum value of SAR (measured) = 15.9 W/kg



0 dB = 15.9 W/kg = 12.01 dBW/kg

Date: 2015/6/1

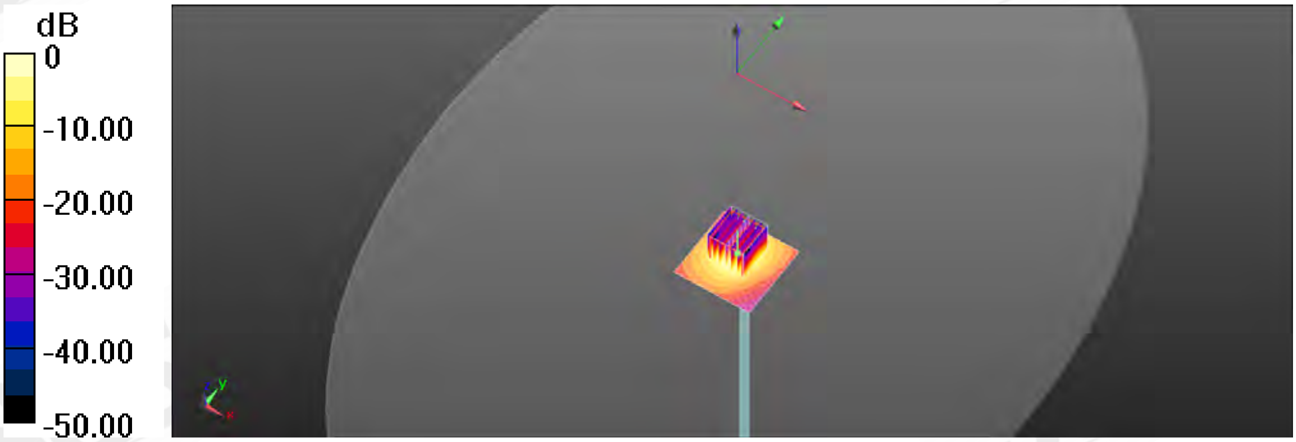
Dipole 5800 MHz_SN:1023_Body
Communication System: CW; Frequency: 5800 MHz
Medium parameters used: f = 5800 MHz; σ = 6.21 S/m; ε_r = 46.008; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.33, 4.33, 4.33); Calibrated: 2015/4/28;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2014/8/27
- Phantom: Body
- 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) = 17.4 W/kg

Configuration/Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 48.47 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 38.2 W/kg
SAR(1 g) = 8.04 W/kg; SAR(10 g) = 2.2 W/kg
Maximum value of SAR (measured) = 17.7 W/kg



0 dB = 17.7 W/kg = 12.48 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
S 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 108

Client SGS - TW (Auden)

Certificate No: DAE4-856_Aug14

CALIBRATION CERTIFICATE

Object DAE4 - SD 000 D04 BM - SN: 856

Calibration procedure(s) QA CAL-06.v26
Calibration procedure for the data acquisition electronics (DAE)

Calibration date: August 27, 2014

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	01-Oct-13 (No:13976)	Oct-14
Secondary Standards	**ID #**	**Check Date (in house)**	**Scheduled Check**
Auto DAE Calibration Unit	SE UWS 053 AA 1001	07-Jan-14 (in house check)	In house check: Jan-15
Calibrator Box V2.1	SE UMS 006 AA 1002	07-Jan-14 (in house check)	In house check: Jan-15

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

Issued: August 27, 2014

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

Certificate No: DAE4-856_Aug14 Page 1 of 5

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

ilac-MRA

S Schweizerischer Kalibrierdienst
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S Servizio svizzero di taratura
S 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 108**

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	403.468 ± 0.02% (k=2)	404.581 ± 0.02% (k=2)	403.903 ± 0.02% (k=2)
Low Range	3.97681 ± 1.50% (k=2)	3.97783 ± 1.50% (k=2)	3.97815 ± 1.50% (k=2)

Connector Angle

Connector Angle to be used in DASY system	52.5 ° ± 1 °

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Appendix (Additional assessments outside the scope of SCS108)

1. DC Voltage Linearity

High Range		Reading (µV)	Difference (µV)	Error (%)
Channel X	+ Input	199998.33	0.84	0.00
Channel X	+ Input	19998.90	-2.25	-0.01
Channel X	- Input	-20000.45	0.34	-0.00
Channel Y	+ Input	199998.95	0.96	0.00
Channel Y	+ Input	19997.51	-3.82	-0.02
Channel Y	- Input	-20000.77	0.07	-0.00
Channel Z	+ Input	199997.26	-0.19	-0.00
Channel Z	+ Input	19997.65	-3.57	-0.02
Channel Z	- Input	-20002.47	-1.55	0.01

Low Range		Reading (µV)	Difference (µV)	Error (%)
Channel X	+ Input	2001.05	-0.09	-0.00
Channel X	+ Input	202.34	0.80	0.40
Channel X	- Input	-198.31	0.26	-0.13
Channel Y	+ Input	2001.39	0.26	0.01
Channel Y	+ Input	201.08	-0.36	-0.18
Channel Y	- Input	-199.24	-0.78	0.39
Channel Z	+ Input	2000.92	-0.18	-0.01
Channel Z	+ Input	200.26	-1.22	-0.60
Channel Z	- Input	-198.91	-1.47	0.74

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	-14.76	-16.42
	-200	17.19	15.88
Channel Y	200	-2.17	-2.25
	-200	0.39	0.01
Channel Z	200	10.27	10.05
	-200	-13.06	-13.03

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	-	2.41	-1.15
Channel Y	200	7.99	-	3.07
Channel Z	200	8.65	5.24	-

Certificate No: DAE4-858_Aug14 Page 4 of 5

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	16226	16620
Channel Y	15942	16803
Channel Z	15875	16811

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	0.72	-0.77	1.89	0.38
Channel Y	-0.24	-1.57	1.49	0.42
Channel Z	-0.98	-2.01	0.07	0.40

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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Client **SGS-TW (Auden)**

Certificate No: DAE4-1374_May15

CALIBRATION CERTIFICATE

Object	DAE4 - SD 000 D04 BM - SN: 1374
Calibration procedure(s)	QA CAL-06.v29 Calibration procedure for the data acquisition electronics (DAE)
Calibration date:	May 06, 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	03-Oct-14 (No:15573)	Oct-15
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:	R.Mayoraz	Technician	i.V.
Approved by:	Fin Bomholt	Deputy Technical Manager	i.V.

Issued: May 6, 2015

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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	405.241 ± 0.02% (k=2)	405.484 ± 0.02% (k=2)	405.011 ± 0.02% (k=2)
Low Range	4.00963 ± 1.50% (k=2)	4.00018 ± 1.50% (k=2)	3.98770 ± 1.50% (k=2)

Connector Angle

Connector Angle to be used in DASY system	245.0 ° ± 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	200027.58	-3.42	-0.00
Channel X	+ Input	20005.73	2.63	0.01
Channel X	- Input	-20003.18	3.04	-0.02
Channel Y	+ Input	200027.12	-3.98	-0.00
Channel Y	+ Input	20002.62	-0.35	-0.00
Channel Y	- Input	-20006.98	-0.59	0.00
Channel Z	+ Input	200031.31	-0.10	-0.00
Channel Z	+ Input	20000.66	-2.25	-0.01
Channel Z	- Input	-20008.41	-1.94	0.01

Low Range		Reading (μV)	Difference (μV)	Error (%)
Channel X	+ Input	1999.56	-0.09	-0.00
Channel X	+ Input	199.64	0.05	0.02
Channel X	- Input	-201.87	-1.56	0.78
Channel Y	+ Input	1999.63	0.03	0.00
Channel Y	+ Input	198.55	-0.89	-0.45
Channel Y	- Input	-201.10	-0.69	0.35
Channel Z	+ Input	2000.11	0.64	0.03
Channel Z	+ Input	197.27	-2.23	-1.12
Channel Z	- Input	-202.39	-1.99	0.99

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	-6.38	-8.61
	- 200	9.68	7.55
Channel Y	200	3.79	3.72
	- 200	-5.43	-6.05
Channel Z	200	-15.24	-15.61
	- 200	12.53	12.72

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	-	6.28	-2.15
Channel Y	200	9.34	-	7.43
Channel Z	200	9.24	6.77	-

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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	16120	15044
Channel Y	15972	15769
Channel Z	16364	15426

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	-0.68	-1.85	0.72	0.51
Channel Y	-1.37	-2.25	-0.26	0.36
Channel Z	1.05	-0.13	2.45	0.53

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 108**

Client **SGS-TW (Auden)**

Certificate No: **EX3-3923_Aug14**

CALIBRATION CERTIFICATE

Object	EX3DV4 - SN:3923
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:	August 28, 2014

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	03-Apr-14 (No. 217-01911)	Apr-15
Power sensor E4412A	MY41498087	03-Apr-14 (No. 217-01911)	Apr-15
Reference 3 dB Attenuator	SN: S5054 (3c)	03-Apr-14 (No. 217-01915)	Apr-15
Reference 20 dB Attenuator	SN: S5277 (20x)	03-Apr-14 (No. 217-01919)	Apr-15
Reference 30 dB Attenuator	SN: S5129 (30b)	03-Apr-14 (No. 217-01920)	Apr-15
Reference Probe ES3DV2	SN: 3013	30-Dec-13 (No. ES3-3013_Dec13)	Dec-14
DAE4	SN: 660	13-Dec-13 (No. DAE4-660_Dec13)	Dec-14
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-13)	In house check: Oct-14

	Name	Function	Signature
Calibrated by:	Israe El-Naouq	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: August 28, 2014

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Certificate No: EX3-3923_Aug14 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

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:3923

Manufactured: March 8, 2013
Calibrated: August 28, 2014

Calibrated for DASY/EASY Systems
(Note: non-compatible with DASY2 system!)

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DASY/EASY - Parameters of Probe: EX3DV4 - SN:3923

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm (µV/(V/m)²)[A]	0.58	0.48	0.47	± 10.1 %
DCP (mV)[B]	99.2	102.2	103.3	

Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB√µV	C	D dB	VR mV	Unc[E] (k=2)
0	CW	X	0.0	0.0	1.0	0.00	132.9	±3.0 %
		Y	0.0	0.0	1.0		134.8	
		Z	0.0	0.0	1.0		135.0	

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 NormX,Y,Z do not affect the E²-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:3923

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)	Unct. (k=2)
750	41.9	0.89	10.91	10.91	10.91	0.25	1.16	± 12.0 %
835	41.5	0.90	10.48	10.48	10.48	0.27	1.07	± 12.0 %
900	41.5	0.97	10.26	10.26	10.26	0.17	1.53	± 12.0 %
1750	40.1	1.37	8.72	8.72	8.72	0.75	0.57	± 12.0 %
1900	40.0	1.40	8.42	8.42	8.42	0.45	0.77	± 12.0 %
2000	40.0	1.40	8.46	8.46	8.46	0.67	0.63	± 12.0 %
2300	39.5	1.67	8.02	8.02	8.02	0.35	0.86	± 12.0 %
2450	39.2	1.80	7.66	7.66	7.66	0.33	0.87	± 12.0 %
2600	39.0	1.96	7.41	7.41	7.41	0.35	0.86	± 12.0 %
5200	36.0	4.66	5.17	5.17	5.17	0.35	1.80	± 13.1 %
5300	35.9	4.76	4.99	4.99	4.99	0.35	1.80	± 13.1 %
5600	35.5	5.07	4.71	4.71	4.71	0.40	1.80	± 13.1 %
5800	35.3	5.27	4.67	4.67	4.67	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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DASY/EASY - Parameters of Probe: EX3DV4 - SN:3923

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)	Unct. (k=2)
750	55.5	0.96	10.29	10.29	10.29	0.30	1.04	± 12.0 %
835	55.2	0.97	10.32	10.32	10.32	0.55	0.78	± 12.0 %
900	55.0	1.05	10.04	10.04	10.04	0.44	0.88	± 12.0 %
1750	53.4	1.49	8.30	8.30	8.30	0.39	0.85	± 12.0 %
1900	53.3	1.52	8.03	8.03	8.03	0.30	0.95	± 12.0 %
2000	53.3	1.52	8.16	8.16	8.16	0.23	1.16	± 12.0 %
2300	52.9	1.81	7.76	7.76	7.76	0.44	0.77	± 12.0 %
2450	52.7	1.95	7.56	7.56	7.56	0.80	0.50	± 12.0 %
2600	52.5	2.16	7.36	7.36	7.36	0.80	0.50	± 12.0 %
5200	49.0	5.30	4.71	4.71	4.71	0.35	1.90	± 13.1 %
5300	48.9	5.42	4.58	4.58	4.58	0.35	1.90	± 13.1 %
5600	48.5	5.77	4.09	4.09	4.09	0.40	1.90	± 13.1 %
5800	48.2	6.00	4.33	4.33	4.33	0.40	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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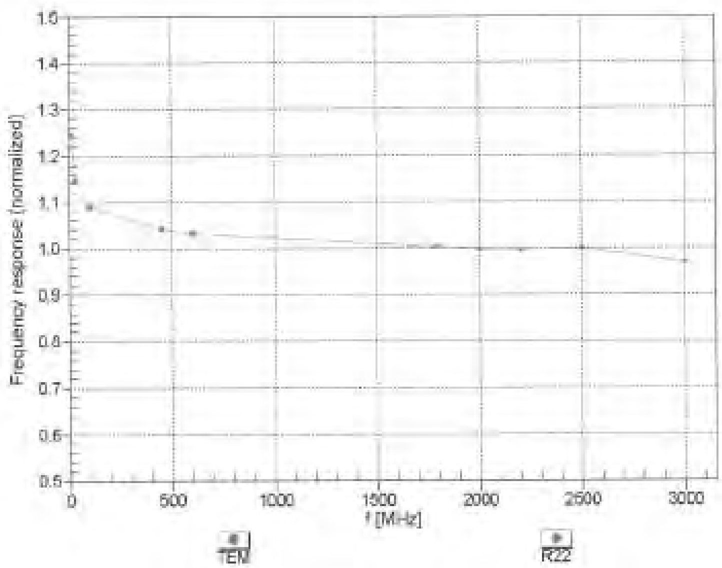
Frequency Response of E-Field

(TEM-Cell:ifi110 EXX, Waveguide: R22)



Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

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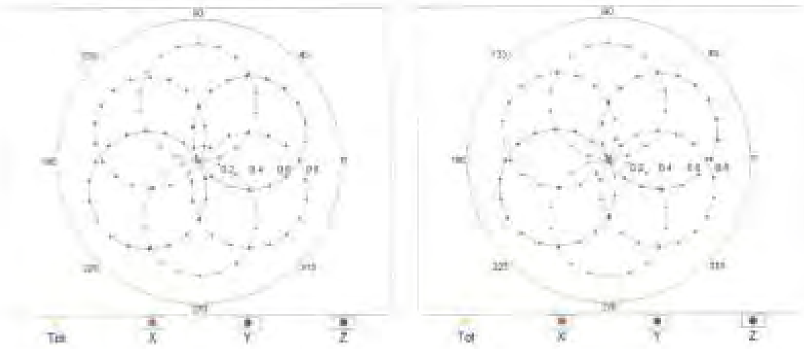
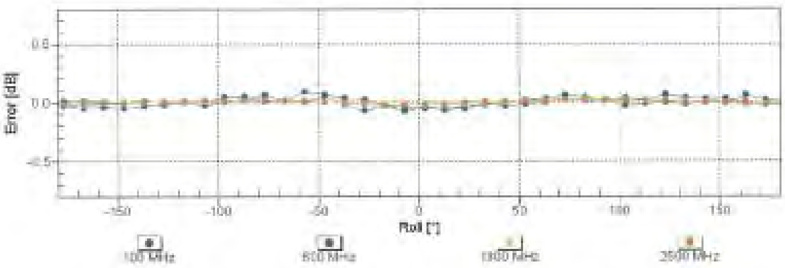
EX3DV4– SN:3923 August 28, 2014

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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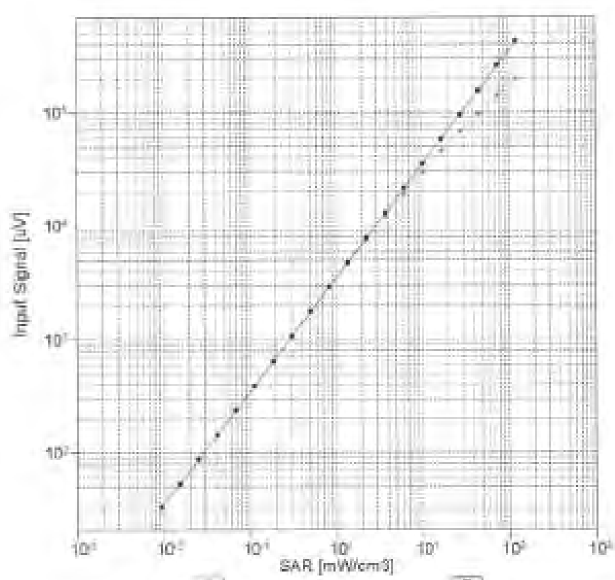
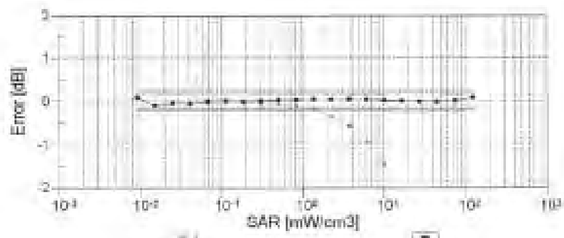
Dynamic Range f(SAR_{head})

(TEM cell , f_{eval}= 1900 MHz)





Uncertainty of Linearity Assessment: ± 0.6% (k=2)

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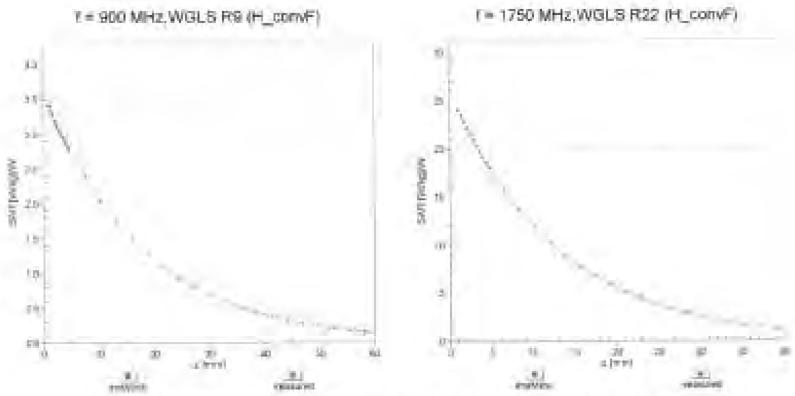
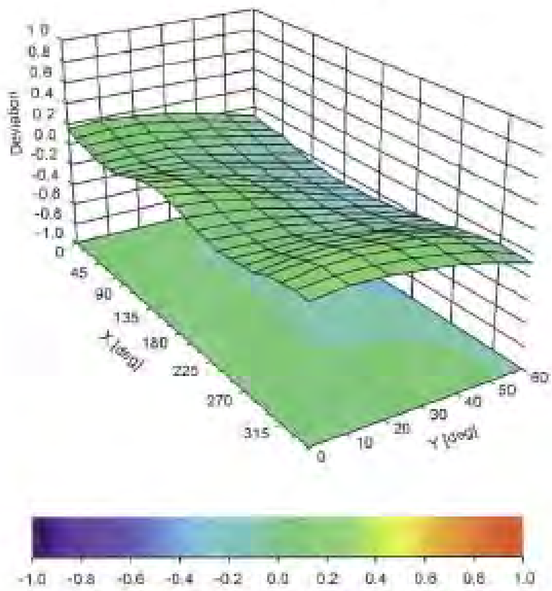
EX3DV4– SN:3923 August 28, 2014

Conversion Factor Assessment



Deviation from Isotropy in Liquid

Error (ϕ, ϑ), f = 900 MHz



Uncertainty of Spherical Isotropy Assessment: ± 2.6% (k=2)

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DASY/EASY - Parameters of Probe: EX3DV4 - SN:3923

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	-57
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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Accreditation No.: SCS 0108

Client SGS-TW (Auden)

Certificate No: EX3-3770_Apr15

CALIBRATION CERTIFICATE

Object	EX3DV4 - SN:3770
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:	April 28, 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:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: April 30, 2015

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
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

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:3770

Manufactured: July 6, 2010
Calibrated: April 28, 2015

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 (µV/(V/m)^2)[A]	0.31	0.62	0.40	± 10.1 %
DCP (mV)[B]	105.3	100.7	101.6	

Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB√µV	C	D dB	VR mV	Unc[E] (k=2)
0	CW	X	0.0	0.0	1.0	0.00	145.1	±3.8 %
		Y	0.0	0.0	1.0		129.4	
		Z	0.0	0.0	1.0		138.4	

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 NormX,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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EX3DV4– SN:3770 April 28, 2015

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)	Unct. (k=2)
750	41.9	0.89	9.53	9.53	9.53	0.26	1.28	± 12.0 %
835	41.5	0.90	9.13	9.13	9.13	0.21	1.53	± 12.0 %
900	41.5	0.97	8.89	8.89	8.89	0.23	1.38	± 12.0 %
1450	40.5	1.20	8.19	8.19	8.19	0.18	1.59	± 12.0 %
1750	40.1	1.37	8.04	8.04	8.04	0.38	0.80	± 12.0 %
1900	40.0	1.40	7.82	7.82	7.82	0.36	0.80	± 12.0 %
2000	40.0	1.40	7.81	7.81	7.81	0.36	0.80	± 12.0 %
2300	39.5	1.67	7.47	7.47	7.47	0.27	0.96	± 12.0 %
2450	39.2	1.80	7.16	7.16	7.16	0.34	0.80	± 12.0 %
2600	39.0	1.96	6.85	6.85	6.85	0.34	0.92	± 12.0 %
5250	35.9	4.71	5.27	5.27	5.27	0.30	1.80	± 13.1 %
5600	35.5	5.07	4.65	4.65	4.65	0.35	1.80	± 13.1 %
5750	35.4	5.22	4.92	4.92	4.92	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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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)	Unct. (k=2)
750	55.5	0.96	9.30	9.30	9.30	0.25	1.38	± 12.0 %
835	55.2	0.97	9.17	9.17	9.17	0.34	1.05	± 12.0 %
900	55.0	1.05	8.91	8.91	8.91	0.30	1.20	± 12.0 %
1450	54.0	1.30	8.12	8.12	8.12	0.18	1.62	± 12.0 %
1750	53.4	1.49	7.79	7.79	7.79	0.44	0.80	± 12.0 %
1900	53.3	1.52	7.59	7.59	7.59	0.44	0.80	± 12.0 %
2000	53.3	1.52	7.73	7.73	7.73	0.42	0.80	± 12.0 %
2300	52.9	1.81	7.32	7.32	7.32	0.41	0.80	± 12.0 %
2450	52.7	1.95	7.21	7.21	7.21	0.31	0.80	± 12.0 %
2600	52.5	2.16	6.96	6.96	6.96	0.27	0.80	± 12.0 %
5250	48.9	5.36	4.70	4.70	4.70	0.35	1.90	± 13.1 %
5600	48.5	5.77	4.03	4.03	4.03	0.45	1.90	± 13.1 %
5750	48.3	5.94	4.33	4.33	4.33	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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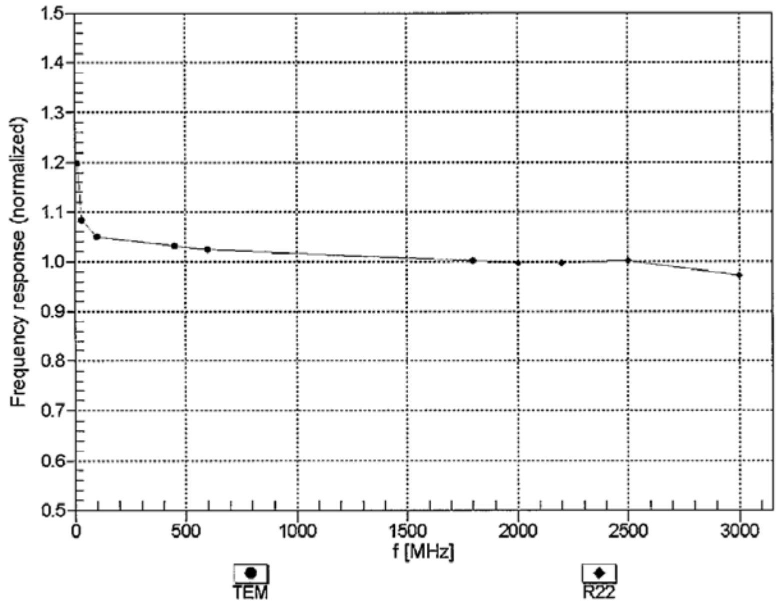
Frequency Response of E-Field

(TEM-Cell:ifi110 EXX, Waveguide: R22)



Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

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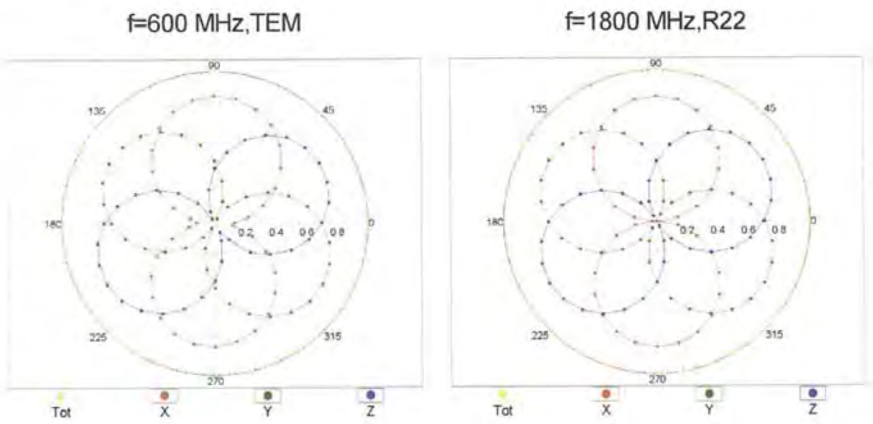
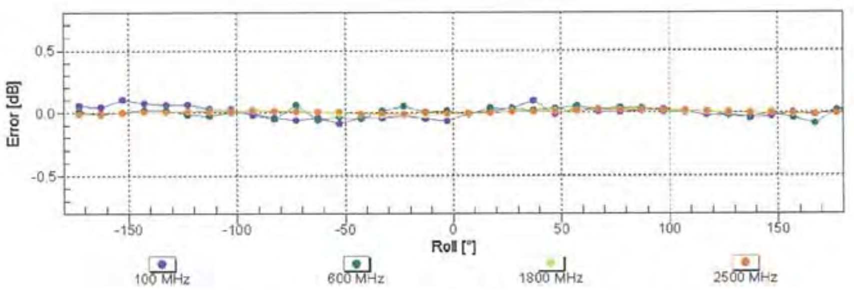
Receiving Pattern (ϕ), $\vartheta = 0°$





Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

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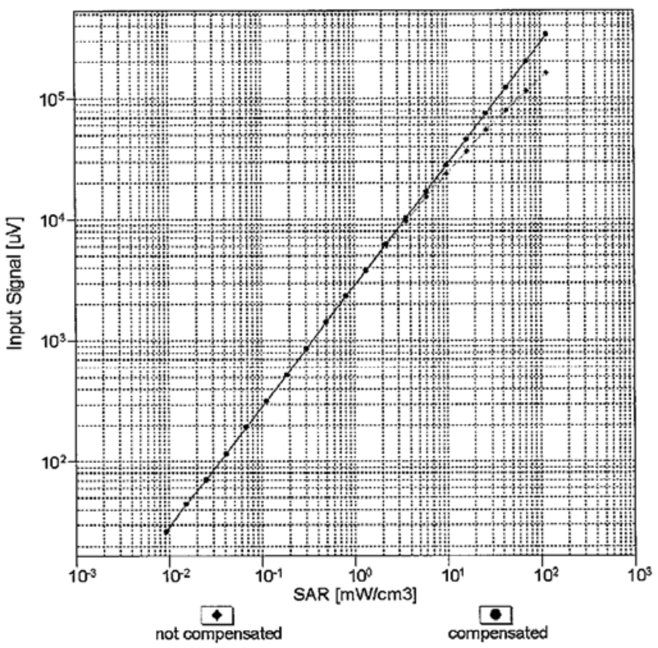
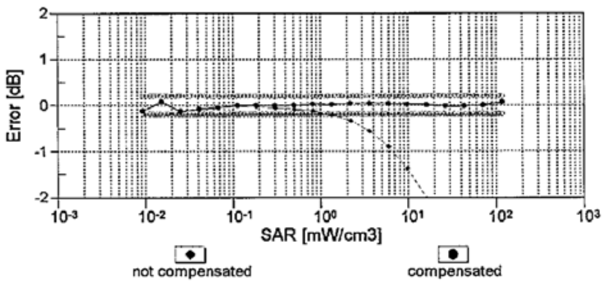
Dynamic Range f(SAR_{head})
(TEM cell , f_{eval}= 1900 MHz)





Uncertainty of Linearity Assessment: ± 0.6% (k=2)

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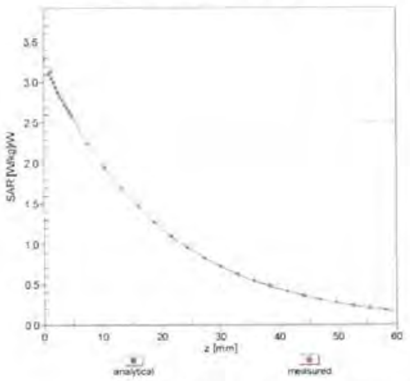
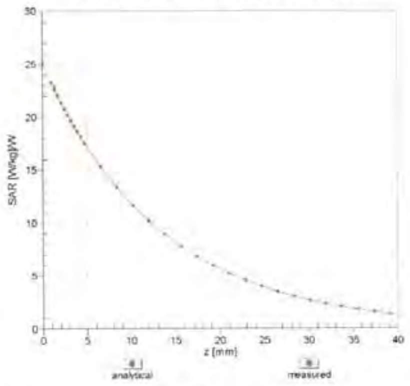
EX3DV4– SN:3770 April 28, 2015

Conversion Factor Assessment

f = 900 MHz,WGLS R9 (H_convF)

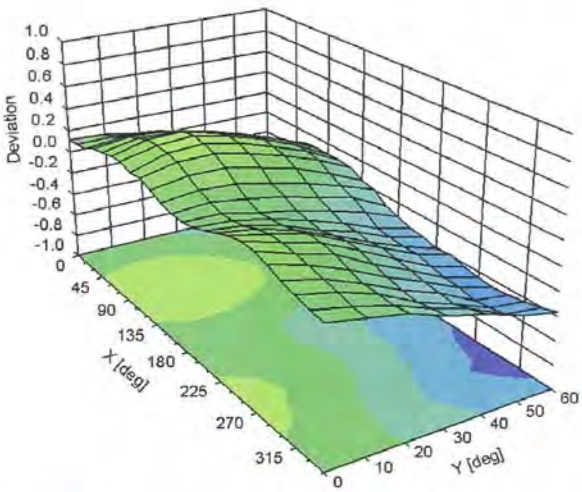


f = 1750 MHz,WGLS R22 (H_convF)



Deviation from Isotropy in Liquid

Error (ϕ, ϑ), f = 900 MHz



Uncertainty of Spherical Isotropy Assessment: ± 2.6% (k=2)

Certificate No: EX3-3770_Apr15 Page 10 of 11

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3770

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	-32.7
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

IEEE 1528

A	c	D	e		f	g	h=c * f / e	i=c * g / e	k
Source of Uncertainty	Tolerance/ Uncertainty	Probability Distributioi	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%	∞
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 shell	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%	∞
Deviation from reference liquid target ε 'r(Body)	3.04%	N	1	1	0.64	0.43	1.95%	1.31%	M
Deviation from reference liquid target σ (Body)	3.74%	N	1	1	0.6	0.49	2.24%	1.83%	M
Liquid conductivity σ – temperature uncertainty	2.20%	R	√3	1.732	0.78	0.71	0.99%	0.90%	∞
Liquid permittivity ε – temperature uncertainty	0.20%	R	√3	1.732	0.23	0.26	0.03%	0.03%	∞
Combined standard uncertainty		RSS					11.99%	11.82%	
Expant uncertainty (95% confidence interval), K=2							23.97%	23.64%	

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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
S 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 108**

Client **SGS-TW (Auden)**

Certificate No: **D750V3-1015_Aug14**

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 28, 2014

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	09-Oct-13 (No. 217-01827)	Oct-14
Power sensor HP 8481A	US37292783	09-Oct-13 (No. 217-01827)	Oct-14
Power sensor HP 8481A	MY41092317	09-Oct-13 (No. 217-01828)	Oct-14
Reference 20 dB Attenuator	SN: 5058 (20k)	03-Apr-14 (No. 217-01918)	Apr-15
Type-N mismatch combination	SN: 5047.2 / 06327	03-Apr-14 (No. 217-01921)	Apr-15
Reference Probe ES3DV3	SN: 3205	30-Dec-13 (No. ES3-3205_Dec13)	Dec-14
DAE4	SN: 601	18-Aug-14 (No. DAE4-601_Aug14)	Aug-15

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-13)	In house check: Oct-14

	Name	Function	Signature
Calibrated by:	Michael Weber	Laboratory Technician	M.Weber
Approved by:	Katja Pokovic	Technical Manager	

Issued: August 28, 2014

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

Certificate No: D750V3-1015_Aug14 Page 1 of 8

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Accreditation No.: SCS 108

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) 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	
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	42.2 ± 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	2.11 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**8.31 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.38 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**5.45 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	55.4 ± 6 %	0.99 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	2.24 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**8.75 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.49 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**5.85 W/kg ± 16.5 % (k=2)**

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Appendix (Additional assessments outside the scope of SCS108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	53.1 Ω - 0.4 jΩ
Return Loss	- 30.4 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	48.3 Ω - 2.9 jΩ
Return Loss	- 29.5 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.037 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: 28.08.2014

Test Laboratory: SPEAG, Zurich, Switzerland

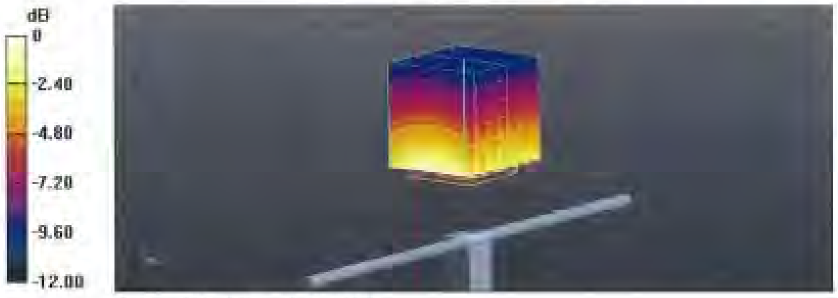
DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3 - SN: 1015

Communication System: UID 0 - CW; Frequency: 750 MHz
Medium parameters used: f = 750 MHz; σ = 0.91 S/m; ε_r = 42.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.37, 6.37, 6.37); Calibrated: 30.12.2013;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 18.08.2014
- 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 = 53.68 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 3.13 W/kg
SAR(1 g) = 2.11 W/kg; SAR(10 g) = 1.38 W/kg
Maximum value of SAR (measured) = 2.46 W/kg



0 dB = 2.46 W/kg = 3.91 dBW/kg

Certificate No: D750V3-1015_Aug14 Page 5 of 8

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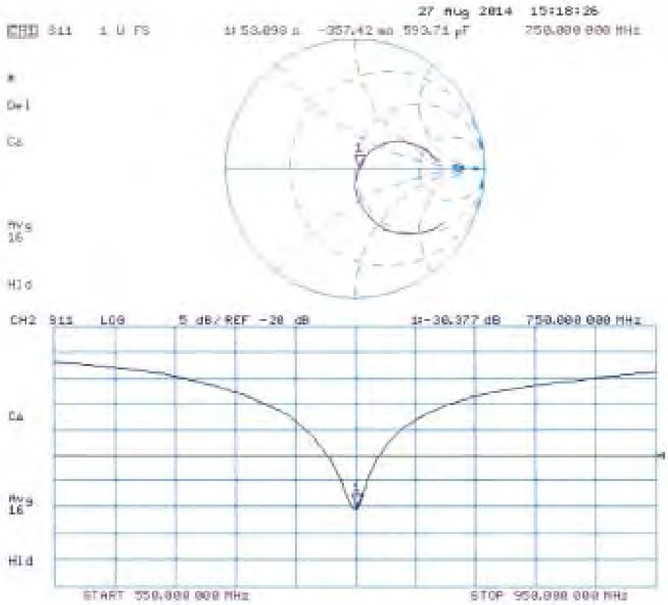
Impedance Measurement Plot for Head TSL



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DASY5 Validation Report for Body TSL

Date: 27.08.2014

Test Laboratory: SPEAG, Zurich, Switzerland

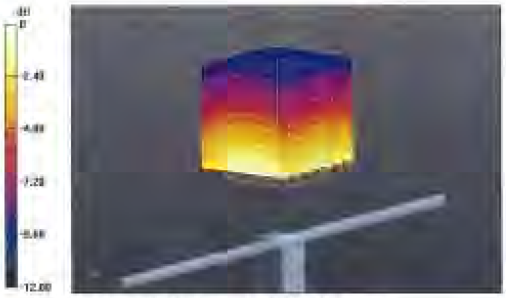
DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3 - SN: 1015

Communication System: UID 0 - CW; Frequency: 750 MHz
Medium parameters used: f = 750 MHz; σ = 0.99 S/m; ε_r = 55.4; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.13, 6.13, 6.13); Calibrated: 30.12.2013;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 18.08.2014
- 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 = 53.06 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 3.26 W/kg
SAR(1 g) = 2.24 W/kg; SAR(10 g) = 1.49 W/kg
Maximum value of SAR (measured) = 2.60 W/kg



0 dB = 2.60 W/kg = 4.15 dBW/kg

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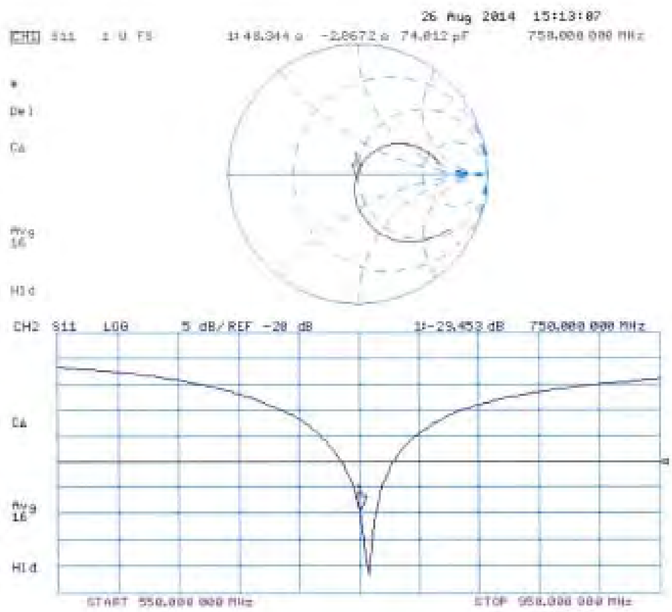
Impedance Measurement Plot for Body TSL



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The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Client SGS-TW (Auden)

Certificate No: D835V2-4d063_Aug14

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 28, 2014

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	09-Oct-13 (No. 217-01827)	Oct-14
Power sensor HP 8481A	US37292783	09-Oct-13 (No. 217-01827)	Oct-14
Power sensor HP 8481A	MY41092317	09-Oct-13 (No. 217-01828)	Oct-14
Reference 20 dB Attenuator	SN: 5058 (20k)	03-Apr-14 (No. 217-01918)	Apr-15
Type-N mismatch combination	SN: 5047.2 / 06327	03-Apr-14 (No. 217-01921)	Apr-15
Reference Probe ES3DV3	SN: 3205	30-Dec-13 (No. ES3-3205_Dec13)	Dec-14
DAE4	SN: 601	18-Aug-14 (No. DAE4-601_Aug14)	Aug-15

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-13)	In house check: Oct-14

	Name	Function	Signature
Calibrated by:	Michael Weber	Laboratory Technician	M.Weber
Approved by:	Katja Pokovic	Technical Manager	

Issued: August 28, 2014

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

Certificate No: D835V2-4d063_Aug14 Page 1 of 8

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Accreditation No.: SCS 108

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) 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	
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	42.0 ± 6 %	0.94 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	2.38 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**9.24 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.55 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**6.05 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	55.2 ± 6 %	1.01 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	2.41 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**9.35 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.59 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**6.21 W/kg ± 16.5 % (k=2)**

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Appendix (Additional assessments outside the scope of SCS108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	51.7 Ω - 3.6 jΩ
Return Loss	- 28.2 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	47.1 Ω - 5.8 jΩ
Return Loss	- 23.7 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.387 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 Standards.
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: 28.08.2014

Test Laboratory: SPEAG, Zurich, Switzerland

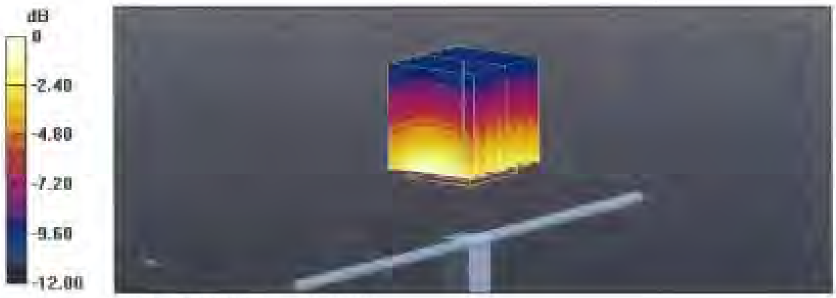
DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 4d063

Communication System: UID 0 - CW; Frequency: 835 MHz
Medium parameters used: f = 835 MHz; σ = 0.94 S/m; ε_r = 42; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

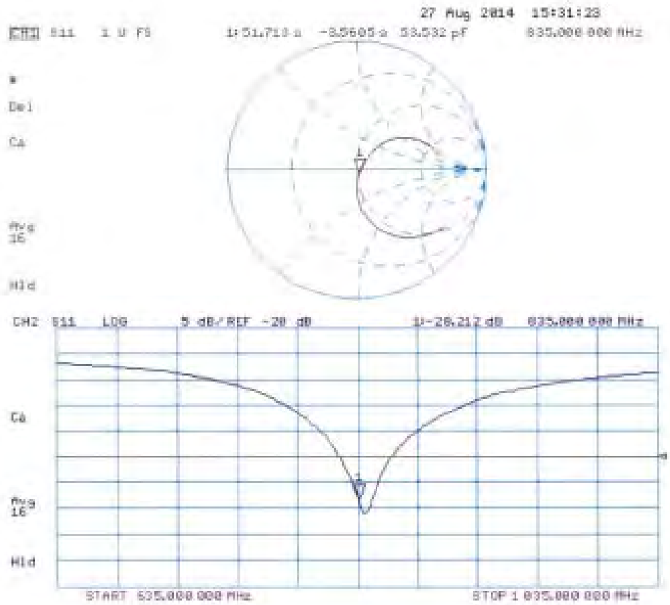
- Probe: ES3DV3 - SN3205; ConvF(6.22, 6.22, 6.22); Calibrated: 30.12.2013;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 18.08.2014
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

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 = 56.23 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 3.53 W/kg
SAR(1 g) = 2.38 W/kg; SAR(10 g) = 1.55 W/kg
Maximum value of SAR (measured) = 2.78 W/kg



0 dB = 2.78 W/kg = 4.44 dBW/kg

Impedance Measurement Plot for Head TSL



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DASY5 Validation Report for Body TSL

Date: 27.08.2014

Test Laboratory: SPEAG, Zurich, Switzerland

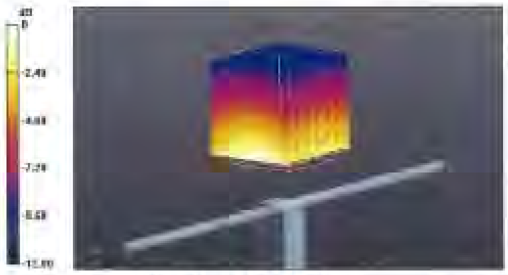
DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 4d063

Communication System: UID 0 - CW; Frequency: 835 MHz
Medium parameters used: f = 835 MHz; σ = 1.01 S/m; ε_r = 55.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.09, 6.09, 6.09); Calibrated: 30.12.2013;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 18.08.2014
- 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 = 54.65 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 3.53 W/kg
SAR(1 g) = 2.41 W/kg; SAR(10 g) = 1.59 W/kg
Maximum value of SAR (measured) = 2.80 W/kg



0 dB = 2.80 W/kg = 4.47 dBW/kg

Certificate No: D835V2-4d063_Aug14 Page 7 of 8

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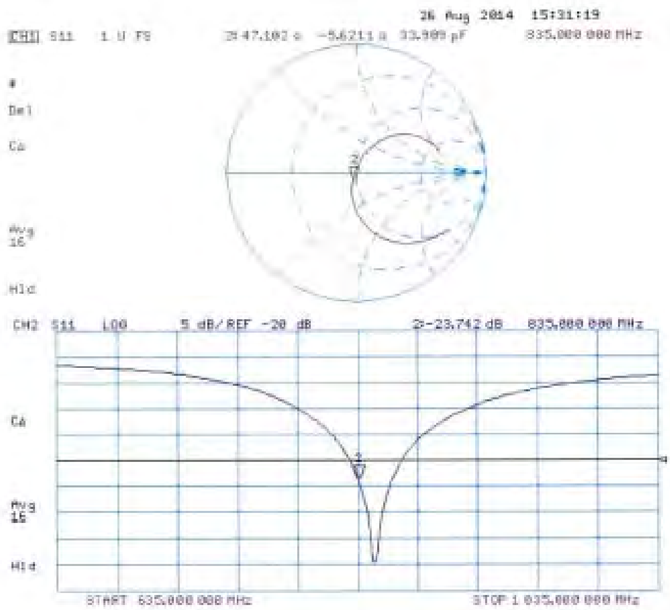
Impedance Measurement Plot for Body TSL



Certificate No: D835V2-4d063_Aug14 Page 8 of 8

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Accreditation No.: **SCS 108**

Client **SGS-TW (Auden)**

Certificate No: **D1750V2-1008_Aug14**

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 28, 2014

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	09-Oct-13 (No. 217-01827)	Oct-14
Power sensor HP 8481A	US37292783	09-Oct-13 (No. 217-01827)	Oct-14
Power sensor HP 8481A	MY41092317	09-Oct-13 (No. 217-01828)	Oct-14
Reference 20 dB Attenuator	SN: 5058 (20k)	03-Apr-14 (No. 217-01918)	Apr-15
Type-N mismatch combination	SN: 5047.2 / 06327	03-Apr-14 (No. 217-01921)	Apr-15
Reference Probe ES3DV3	SN: 3205	30-Dec-13 (No. ES3-3205_Dec13)	Dec-14
DAE4	SN: 601	18-Aug-14 (No. DAE4-601_Aug14)	Aug-15

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-13)	In house check: Oct-14

	Name	Function	Signature
Calibrated by:	Michael Weber	Laboratory Technician	M.Weber
Approved by:	Katja Pokovic	Technical Manager	

Issued: August 28, 2014

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

Certificate No: D1750V2-1008_Aug14 Page 1 of 8

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Accreditation No.: **SCS 108**

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) 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	
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	39.2 ± 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	9.26 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**36.9 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	4.91 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**19.6 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	52.0 ± 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	9.44 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**37.5 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	250 mW input power	5.07 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 SCS108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	50.4 Ω + 0.3 jΩ
Return Loss	- 46.4 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	46.4 Ω + 0.3 jΩ
Return Loss	- 28.5 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.222 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: 28.08.2014

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 = 1.37 S/m; ε_r = 39.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(5.23, 5.23, 5.23); Calibrated: 30.12.2013;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 18.08.2014
- 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 = 95.53 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 16.7 W/kg
SAR(1 g) = 9.26 W/kg; SAR(10 g) = 4.91 W/kg
Maximum value of SAR (measured) = 11.6 W/kg

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

Certificate No: D1750V2-1008_Aug14 Page 6 of 8

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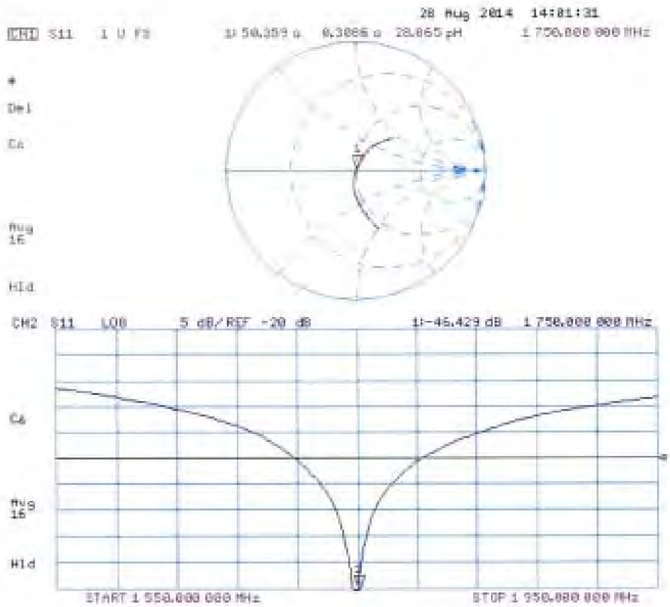
Impedance Measurement Plot for Head TSL



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DASY5 Validation Report for Body TSL

Date: 28.08.2014

Test Laboratory: SPEAG, Zurich, Switzerland

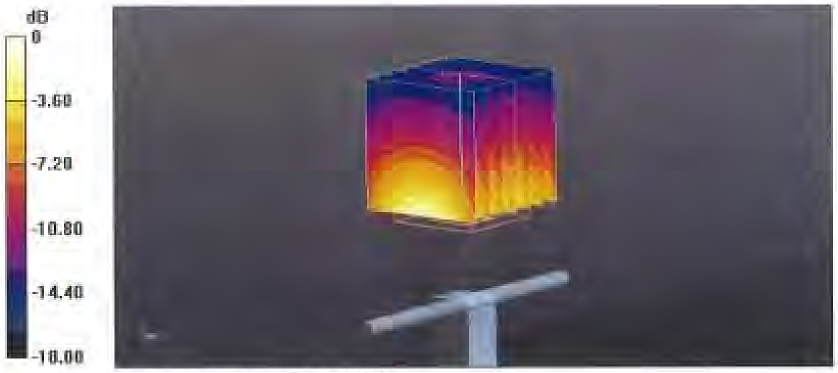
DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN: 1008

Communication System: UID 0 - CW; Frequency: 1750 MHz
Medium parameters used: f = 1750 MHz; σ = 1.49 S/m; ε_r = 52; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.89, 4.89, 4.89); Calibrated: 30.12.2013;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 18.08.2014
- 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 = 93.44 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 16.3 W/kg
SAR(1 g) = 9.44 W/kg; SAR(10 g) = 5.07 W/kg
Maximum value of SAR (measured) = 11.9 W/kg



0 dB = 11.9 W/kg = 10.76 dBW/kg

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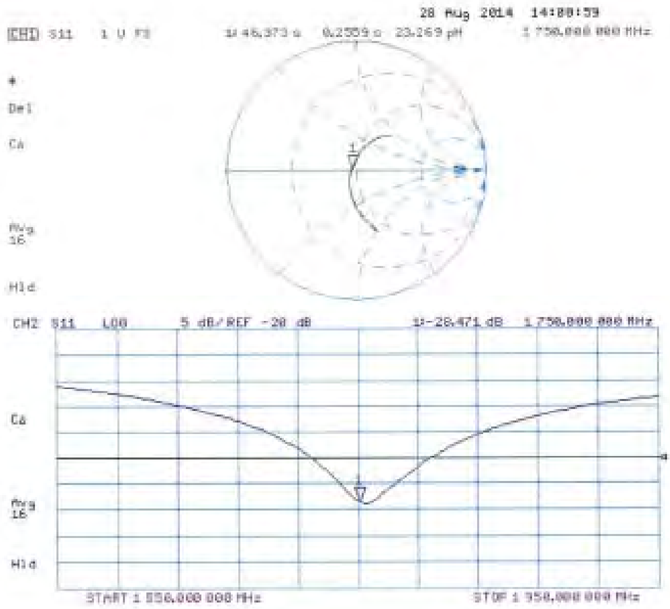
Impedance Measurement Plot for Body TSL



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Accreditation No.: **SCS 0108**

Client **SGS-TW (Auden)**

Certificate No: **D1900V2-5d027_Apr15**

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 29, 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	18-Aug-14 (No. DAE4-601_Aug14)	Aug-15

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:	Claudio Leubler	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: April 29, 2015

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Certificate No: D1900V2-5d027_Apr15 Page 1 of 8

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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) 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	
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	38.6 ± 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	10.1 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**40.6 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	5.30 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**21.3 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	52.8 ± 6 %	1.50 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	9.78 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**39.3 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	250 mW input power	5.20 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**20.9 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	50.2 Ω + 2.5 jΩ
Return Loss	- 32.2 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	46.5 Ω + 2.5 jΩ
Return Loss	- 27.0 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.197 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: 29.04.2015

Test Laboratory: SPEAG, Zurich, Switzerland

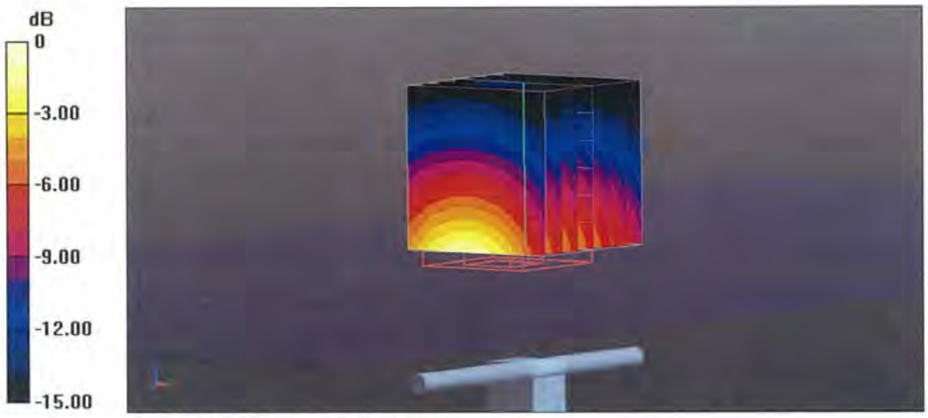
DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d027

Communication System: UID 0 - CW; Frequency: 1900 MHz
Medium parameters used: f = 1900 MHz; $\sigma = 1.37$ S/m; $\varepsilon_r = 38.6$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(5, 5, 5); Calibrated: 30.12.2014;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 18.08.2014
- 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 = 97.71 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 18.5 W/kg
SAR(1 g) = 10.1 W/kg; SAR(10 g) = 5.3 W/kg
Maximum value of SAR (measured) = 12.3 W/kg



0 dB = 12.3 W/kg = 10.90 dBW/kg

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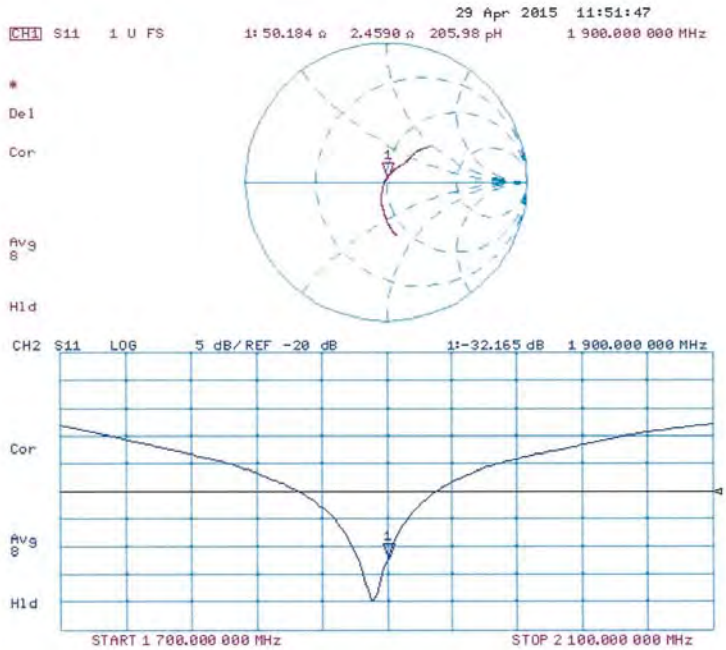
Impedance Measurement Plot for Head TSL



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DASY5 Validation Report for Body TSL

Date: 29.04.2015

Test Laboratory: SPEAG, Zurich, Switzerland

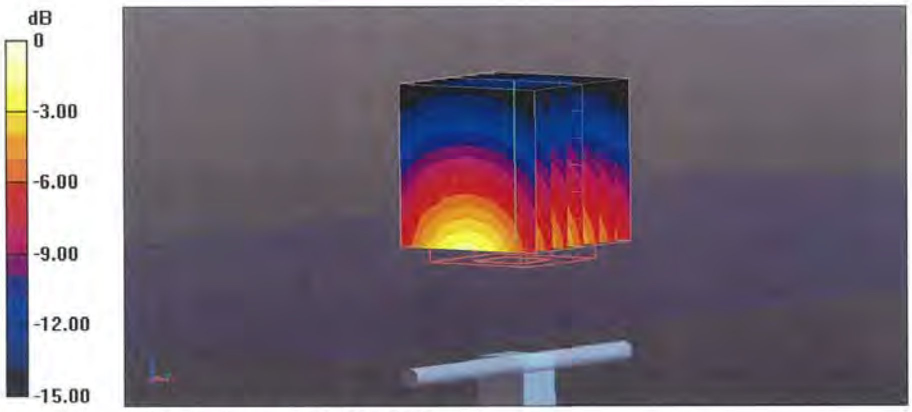
DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 5d027

Communication System: UID 0 - CW; Frequency: 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.5 S/m; ε_r = 52.8; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.65, 4.65, 4.65); Calibrated: 30.12.2014;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 18.08.2014
- 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 = 94.63 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 16.7 W/kg
SAR(1 g) = 9.78 W/kg; SAR(10 g) = 5.2 W/kg
Maximum value of SAR (measured) = 12.4 W/kg



0 dB = 12.4 W/kg = 10.93 dBW/kg

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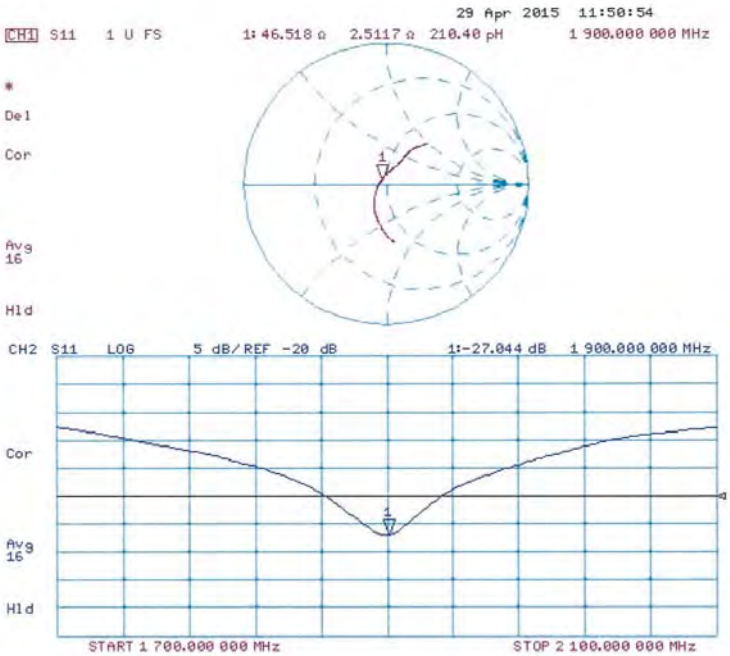
Impedance Measurement Plot for Body TSL



Certificate No: D1900V2-5d027_Apr15

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Accreditation No.: **SCS 0108**

Client **SGS-TW (Auden)**

Certificate No: **D2450V2-727_Apr15**

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 22, 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	18-Aug-14 (No. DAE4-601_Aug14)	Aug-15

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: April 23, 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) 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	
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	37.6 ± 6 %	1.82 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	13.2 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**52.0 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.10 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**24.2 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	50.6 ± 6 %	2.02 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	13.1 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**51.0 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	**24.0 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	56.2 Ω + 1.3 jΩ
Return Loss	- 24.6 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	51.8 Ω + 3.3 jΩ
Return Loss	- 28.6 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.149 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: 22.04.2015

Test Laboratory: SPEAG, Zurich, Switzerland

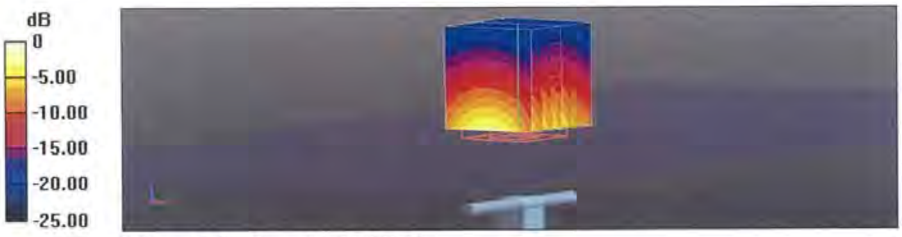
DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 727

Communication System: UID 0 - CW; Frequency: 2450 MHz
Medium parameters used: f = 2450 MHz; σ = 1.82 S/m; ε_r = 37.6; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.54, 4.54, 4.54); Calibrated: 30.12.2014;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 18.08.2014
- 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) = 27.4 W/kg
SAR(1 g) = 13.2 W/kg; SAR(10 g) = 6.1 W/kg
Maximum value of SAR (measured) = 17.5 W/kg



0 dB = 17.5 W/kg = 12.43 dBW/kg

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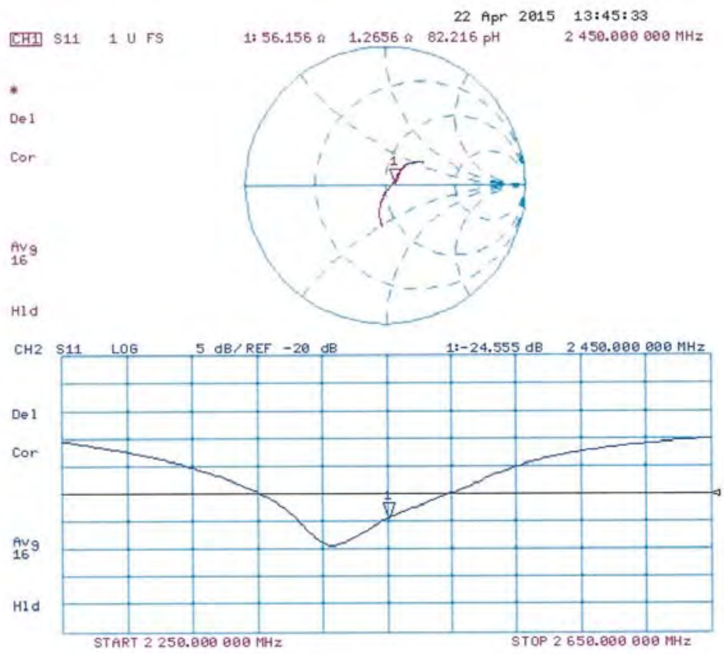
Impedance Measurement Plot for Head TSL



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DASY5 Validation Report for Body TSL

Date: 22.04.2015

Test Laboratory: SPEAG, Zurich, Switzerland

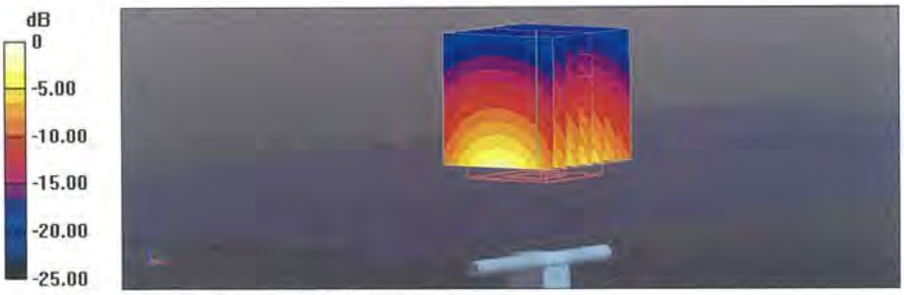
DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 727

Communication System: UID 0 - CW; Frequency: 2450 MHz
Medium parameters used: f = 2450 MHz; $\sigma = 2.02$ S/m; $\varepsilon_r = 50.6$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.32, 4.32, 4.32); Calibrated: 30.12.2014;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 18.08.2014
- 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 = 95.54 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 27.2 W/kg
SAR(1 g) = 13.1 W/kg; SAR(10 g) = 6.1 W/kg
Maximum value of SAR (measured) = 17.4 W/kg



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

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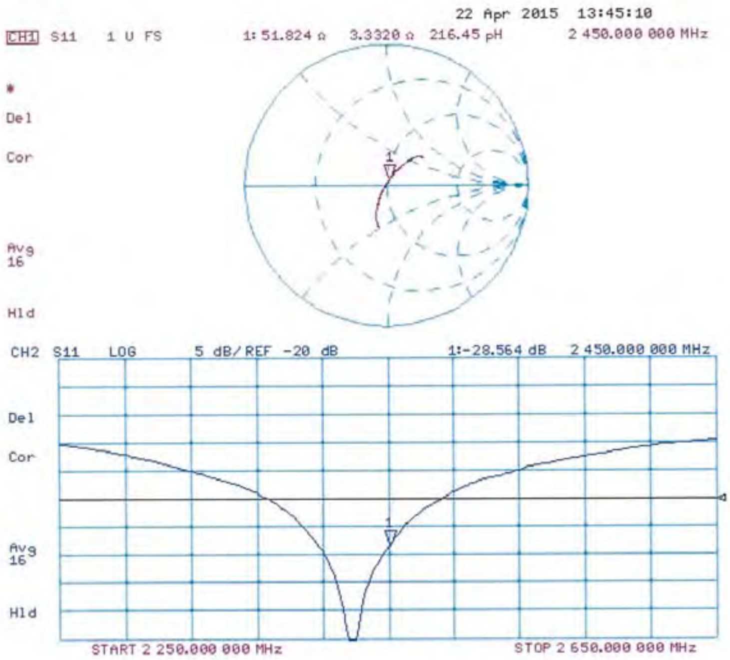
Impedance Measurement Plot for Body TSL



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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

Client **SGS-TW (Auden)**

Certificate No: **D5GHzV2-1023_Jan15**

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 29, 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)	03-Apr-14 (No. 217-01918)	Apr-15
Type-N mismatch combination	SN: 5047.2 / 06327	03-Apr-14 (No. 217-01921)	Apr-15
Reference Probe EX3DV4	SN: 3503	30-Dec-14 (No. EX3-3503_Dec14)	Dec-15
DAE4	SN: 601	18-Aug-14 (No. DAE4-601_Aug14)	Aug-15

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: January 29, 2015

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) IEC 62209-2, "Evaluation of Human Exposure to Radio Frequency Fields from Handheld and Body-Mounted Wireless Communication Devices in the Frequency Range of 30 MHz to 6 GHz: Human models, Instrumentation, and Procedures"; Part 2: "Procedure to determine the Specific Absorption Rate (SAR) for including accessories and multiple transmitters", March 2010
b) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"
c) 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

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	36.3 ± 6 %	4.56 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	7.78 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**77.9 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.22 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**22.2 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	36.1 ± 6 %	4.66 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	8.17 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**81.7 W / kg ± 19.9 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.34 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**23.4 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	35.7 ± 6 %	4.97 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	8.14 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**81.4 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.31 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**23.1 W/kg ± 19.5 % (k=2)**

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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	35.4 ± 6 %	5.18 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	7.82 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**78.2 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	**22.3 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	49.4 ± 6 %	5.42 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	7.33 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**73.5 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.04 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**20.5 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	49.2 ± 6 %	5.55 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	7.45 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**74.6 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.07 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**20.8 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	48.7 ± 6 %	5.96 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	7.77 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**77.9 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.15 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**21.6 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	48.4 ± 6 %	6.25 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	7.54 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**75.6 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.07 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**20.7 W/kg ± 19.5 % (k=2)**

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Appendix (Additional assessments outside the scope of SCS0108)

Antenna Parameters with Head TSL at 5200 MHz

Impedance, transformed to feed point	49.2 Ω - 8.5 jΩ
Return Loss	- 21.4 dB

Antenna Parameters with Head TSL at 5300 MHz

Impedance, transformed to feed point	51.0 Ω - 3.8 jΩ
Return Loss	- 28.2 dB

Antenna Parameters with Head TSL at 5600 MHz

Impedance, transformed to feed point	53.4 Ω - 2.7 jΩ
Return Loss	- 27.5 dB

Antenna Parameters with Head TSL at 5800 MHz

Impedance, transformed to feed point	55.6 Ω + 1.0 jΩ
Return Loss	- 25.4 dB

Antenna Parameters with Body TSL at 5200 MHz

Impedance, transformed to feed point	49.0 Ω - 7.1 jΩ
Return Loss	- 22.8 dB

Antenna Parameters with Body TSL at 5300 MHz

Impedance, transformed to feed point	51.5 Ω - 2.2 jΩ
Return Loss	- 31.7 dB

Antenna Parameters with Body TSL at 5600 MHz

Impedance, transformed to feed point	54.0 Ω - 1.5 jΩ
Return Loss	- 26.8 dB

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Antenna Parameters with Body TSL at 5800 MHz

Impedance, transformed to feed point	55.6 Ω + 2.8 jΩ
Return Loss	- 24.5 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: 28.01.2015

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; σ = 4.56 S/m; ε_r = 36.3; ρ = 1000 kg/m^3 , Medium parameters used: f = 5300 MHz; σ = 4.66 S/m; ε_r = 36.1; ρ = 1000 kg/m^3 , Medium parameters used: f = 5600 MHz; σ = 4.97 S/m; ε_r = 35.7; ρ = 1000 kg/m^3 , Medium parameters used: f = 5800 MHz; σ = 5.18 S/m; ε_r = 35.4; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN3503; ConvF(5.51, 5.51, 5.51); Calibrated: 30.12.2014, ConvF(5.21, 5.21, 5.21); Calibrated: 30.12.2014, ConvF(4.92, 4.92, 4.92); Calibrated: 30.12.2014, ConvF(4.9, 4.9, 4.9); Calibrated: 30.12.2014;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 18.08.2014
- 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=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 = 64.14 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 28.3 W/kg
SAR(1 g) = 7.78 W/kg; SAR(10 g) = 2.22 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 = 65.47 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 30.7 W/kg
SAR(1 g) = 8.17 W/kg; SAR(10 g) = 2.34 W/kg
Maximum value of SAR (measured) = 18.6 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 = 63.68 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 32.2 W/kg
SAR(1 g) = 8.14 W/kg; SAR(10 g) = 2.31 W/kg
Maximum value of SAR (measured) = 18.9 W/kg

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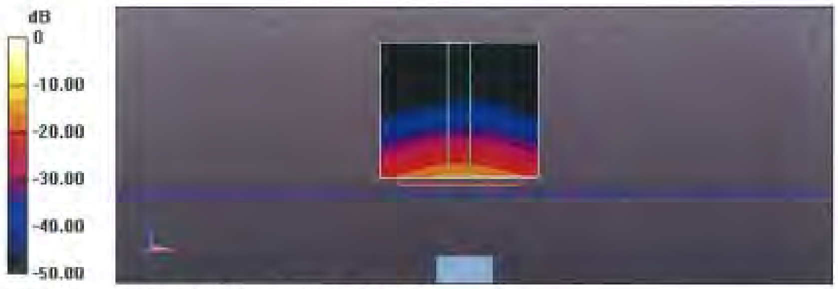
Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5800 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 61.76 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 32.0 W/kg
SAR(1 g) = 7.82 W/kg; SAR(10 g) = 2.23 W/kg
Maximum value of SAR (measured) = 18.4 W/kg



0 dB = 17.8 W/kg = 12.50 dBW/kg

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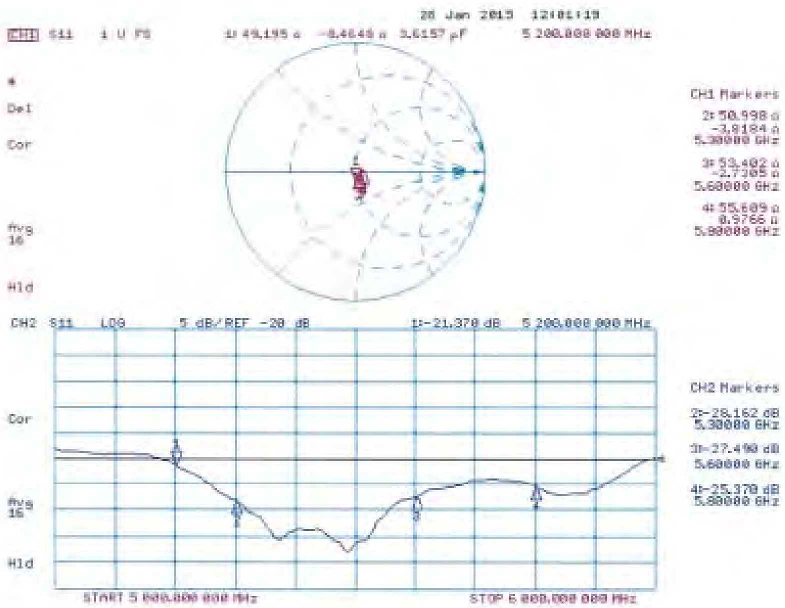
Impedance Measurement Plot for Head TSL



Certificate No: D5GHzV2-1023_Jan15 Page 12 of 15

DASY5 Validation Report for Body TSL

Date: 29.01.2015

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; σ = 5.42 S/m; ε_r = 49.4; ρ = 1000 kg/m^3 , Medium parameters used: f = 5300 MHz; σ = 5.55 S/m; ε_r = 49.2; ρ = 1000 kg/m^3 , Medium parameters used: f = 5600 MHz; σ = 5.96 S/m; ε_r = 48.7; ρ = 1000 kg/m^3 , Medium parameters used: f = 5800 MHz; σ = 6.25 S/m; ε_r = 48.4; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN3503; ConvF(4.95, 4.95, 4.95); Calibrated: 30.12.2014, ConvF(4.78, 4.78, 4.78); Calibrated: 30.12.2014, ConvF(4.35, 4.35, 4.35); Calibrated: 30.12.2014, ConvF(4.32, 4.32, 4.32); Calibrated: 30.12.2014;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 18.08.2014
- 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=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 = 57.97 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 28.6 W/kg
SAR(1 g) = 7.33 W/kg; SAR(10 g) = 2.04 W/kg
Maximum value of SAR (measured) = 17.3 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 = 57.58 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 30.0 W/kg
SAR(1 g) = 7.45 W/kg; SAR(10 g) = 2.07 W/kg
Maximum value of SAR (measured) = 17.8 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 = 56.88 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 34.4 W/kg
SAR(1 g) = 7.77 W/kg; SAR(10 g) = 2.15 W/kg
Maximum value of SAR (measured) = 19.3 W/kg

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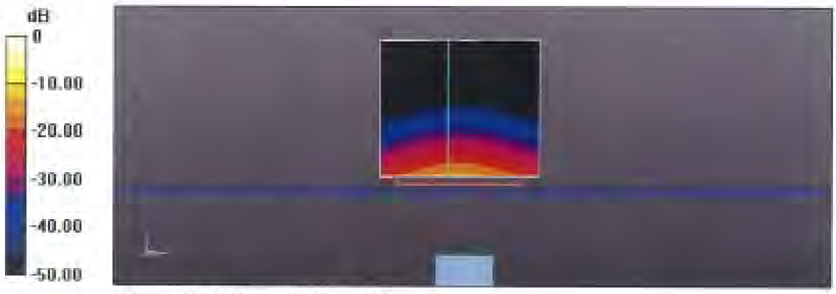
Member of SGS Group

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 = 55.10 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 35.2 W/kg
SAR(1 g) = 7.54 W/kg; SAR(10 g) = 2.07 W/kg
Maximum value of SAR (measured) = 19.1 W/kg



0 dB = 17.3 W/kg = 12.38 dBW/kg

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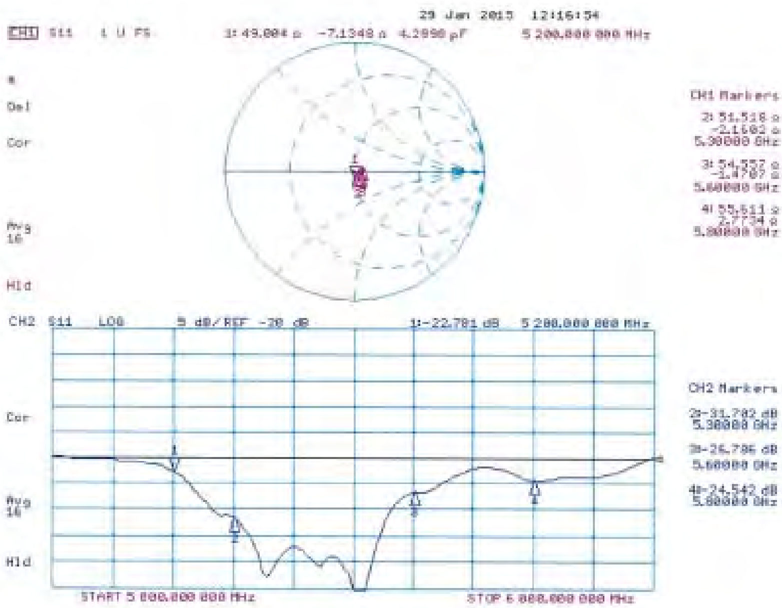
Impedance Measurement Plot for Body TSL



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- End of 1st part of report -