

SAR TEST REPORT



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

Equipment Under Test Tablet PC
Brand Name hp
Model No. HSTNN-I72C
Company Name HP Inc.
Company Address 1501 Page Mill Road, Palo Alto, California 94304, USA
Standards IEEE /ANSI C95.1 , C95.3, IEEE 1528 2013,
KDB616217D04v01r02,KDB865664D01v01r04,
KDB865664D02v01r02,KDB941225D01v03r01,
KDB941225D05v02r05,KDB447498D01v06
FCC ID B94HNI72CAM
Date of Receipt Sep. 04, 2015
Date of Test(s) Oct. 13, 2015 ~ Mar. 07, 2016
Date of Issue Mar. 10, 2016

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

Remarks:

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

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Signed on behalf of SGS**Sr. Engineer****Matt Kuo****Date: Mar. 10, 2016****Supervisor****John Yeh****Date: Mar. 10, 2016**



Revision History

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1. General Information

1.1 Testing Laboratory

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1.2 Details of Applicant

Company Name	HP Inc.
Company Address	1501 Page Mill Road, Palo Alto, California 94304, USA

1.3 Description of EUT

Equipment Under Test	Tablet PC	
Brand Name	hp	
Model No.	HSTNN-I72C	
Integrated Module	WWAN	Brand Name : FOXCONN Model Name: T77W595
	WLAN/WiGig	Brand Name : Intel Model Name: 18260NGW
Antenna type	PIFA	
Antenna Gain	Main	-1.86dBi (for GPRS850/EDGE850/LTE B5/LTE B26); 1.11dBi (forGPRS1900/EDGE1900/LTE B2/LTE B25); -3.7dBi (for LTE B4); 1.41dBi (for LTE B13); 1.58dBi (for LTE B12/LTE B17)
	Aux	-3.50dBi (for GPRS850/EDGE850/LTE B5/LTE B26); 1.88dBi (forGPRS1900/EDGE1900/LTE B2/LTE B25); 1.88dBi (for LTE B4); -1.67for LTE B13); -3.40dBi(for LTE B12/LTE B17)
FCC ID	B94HNI72CAM	
Mode of Operation	☒ GPRS ☒ EDGE ☒ WCDMA ☒ HSDPA ☒ HSUPA ☒ LTE ☒ CDMA 1xRTT ☒ CDMA 1x EVDO Rev.0/ Rev.A	
Duty Cycle	GPRS	1/2 (1Dn4UP) 1/2.76 (1Dn3UP) 1/4.1 (1Dn2UP) 1/8.3 (1Dn1UP)
	EDGE	1/2 (1Dn4UP) 1/2.76 (1Dn3UP) 1/4.1 (1Dn2UP) 1/8.3 (1Dn1UP)
	WCDMA	1
	LTE	1
	CDMA 1xRTT/ EVDO Rev.0/ Rev. A	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
	LTE FDD Band V	824	—	849
	LTE FDD Band VII	2500	—	2570
	LTE FDD Band XII	699	—	716
	LTE FDD Band XIII	777	—	787
	LTE FDD Band XVII	704	—	716
	CDMA (BC0)	824.7	—	848.31
	CDMA (BC1)	1851.25	—	1908.75
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 VII	20775	—	21425
	LTE FDD Band XII	23007	—	23173
	LTE FDD Band XIII	23205	—	23255
	LTE FDD Band XVII	23755	—	23825
	CDMA (BC0)	1013	—	777
	CDMA (BC1)	25	—	1175

Max. SAR (1 g) (Unit: W/Kg)					
Band	Measured	Reported	Channel	Position	Highest * Simultaneous Transmission 1g SAR(W/kg)
GPRS 850	1.060	1.085	251	Back side	1.175 (WWAN) 0.63 (WLAN Main) 1.18 (WLAN Aux)
GRPS 1900	0.743	1.026	810	Back side	
WCDMA Band II	1.090	1.093	9262	Back side	
WCDMA Band IV	0.757	1.079	1312	Back side	
WCDMA Band V	0.910	1.133	4132	Back side	
LTE FDD Band II	0.881	1.054	19100	Back side	
LTE FDD Band IV	0.908	1.057	20050	Back side	
LTE FDD Band V	0.935	1.042	20450	Back side	
LTE FDD Band VII	0.959	1.083	21350	Back side	
LTE FDD Band XII	0.988	1.124	23130	Back side	
LTE FDD Band XIII	1.030	1.069	23230	Back side	
LTE FDD Band XVII	1.040	1.059	23780	Back side	
CDMA (BC0)	0.910	1.082	1013	Back side	
CDMA (BC1)	0.944	1.175	1175	Back side	

*The highest simultaneous transmission SAR sum is 2.985, and SPLSR is ≤ 0.04 for all simultaneous configurations.

GPRS/EDGE conducted power table (Full power):

Burst average power						
Max. Rated Avg. Power + Max. Tolerance (dBm)			33.5	33	31	29
			1Dn1UP	1Dn2UP	1Dn3UP	1Dn4UP
EUT mode	Frequency (MHz)	CH	Avg. (dBm)	Avg. (dBm)	Avg. (dBm)	Avg. (dBm)
GPRS 850	824.2	128	33.10	32.90	30.70	28.90
	836.6	190	33.20	33.00	30.60	29.00
	848.8	251	33.20	33.00	31.00	28.90
Source-based time average power						
GPRS 850	824.2	128	24.07	26.88	26.44	25.89
	836.6	190	24.17	26.98	26.34	25.99
	848.8	251	24.17	26.98	26.74	25.89
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)			27.5	26.5	26.5	24.5
			1Dn1UP	1Dn2UP	1Dn3UP	1Dn4UP
EUT mode	Frequency (MHz)	CH	Avg. (dBm)	Avg. (dBm)	Avg. (dBm)	Avg. (dBm)
EDGE 850 (MCS5)	824.2	128	27.50	26.30	26.20	24.10
	836.6	190	27.40	26.20	26.10	24.10
	848.8	251	27.50	26.50	26.50	24.40
Source-based time average power						
EDGE 850 (MCS5)	824.2	128	18.47	20.28	21.94	21.09
	836.6	190	18.37	20.18	21.84	21.09
	848.8	251	18.47	20.48	22.24	21.39
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

Burst average power						
Max. Rated Avg. Power + Max. Tolerance (dBm)			31	30	28	26
			1Dn1UP	1Dn2UP	1Dn3UP	1Dn4UP
EUT mode	Frequency (MHz)	CH	Avg. (dBm)	Avg. (dBm)	Avg. (dBm)	Avg. (dBm)
GPRS 1900	1850.2	512	30.60	29.90	27.60	25.60
	1880	661	30.60	30.00	27.50	25.30
	1909.8	810	30.60	30.00	27.70	25.40
Source-based time average power						
GPRS 1900	1850.2	512	21.57	23.88	23.34	22.59
	1880	661	21.57	23.98	23.24	22.29
	1909.8	810	21.57	23.98	23.44	22.39
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

Burst average power						
Max. Rated Avg. Power + Max. Tolerance (dBm)			26.5	25.5	25.5	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	26.10	25.50	25.50	23.50
	1880	661	25.70	25.20	25.10	23.20
	1909.8	810	26.00	25.40	25.30	23.50
Source-based time average power						
EDGE 1900 (MCS5)	1850.2	512	17.07	19.48	21.24	20.49
	1880	661	16.67	19.18	20.84	20.19
	1909.8	810	16.97	19.38	21.04	20.49
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

GPRS/EDGE conducted power table (Reduced power):

Burst average power						
Max. Rated Avg. Power + Max. Tolerance (dBm)			28.5	25.5	23.5	22.5
			1Dn1UP	1Dn2UP	1Dn3UP	1Dn4UP
EUT mode	Frequency (MHz)	CH	Avg. (dBm)	Avg. (dBm)	Avg. (dBm)	Avg. (dBm)
GPRS 850	824.2	128	28.10	25.20	23.30	22.10
	836.6	190	28.50	25.30	23.20	22.10
	848.8	251	28.50	25.50	23.50	22.40
Source-based time average power						
GPRS 850	824.2	128	19.07	19.18	19.04	19.09
	836.6	190	19.47	19.28	18.94	19.09
	848.8	251	19.47	19.48	19.24	19.39
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

Burst average power						
Max. Rated Avg. Power + Max. Tolerance (dBm)			27.5	24.5	22.5	21.5
			1Dn1UP	1Dn2UP	1Dn3UP	1Dn4UP
EUT mode	Frequency (MHz)	CH	Avg. (dBm)	Avg. (dBm)	Avg. (dBm)	Avg. (dBm)
EDGE 850 (MCS5)	824.2	128	27.50	24.20	22.20	21.10
	836.6	190	27.40	24.10	22.10	21.10
	848.8	251	27.50	24.40	22.50	21.40
Source-based time average power						
EDGE 850 (MCS5)	824.2	128	18.47	18.18	17.94	18.09
	836.6	190	18.37	18.08	17.84	18.09
	848.8	251	18.47	18.38	18.24	18.39
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

Burst average power						
Max. Rated Avg. Power + Max. Tolerance (dBm)			27.5	24.5	22.5	21.5
			1Dn1UP	1Dn2UP	1Dn3UP	1Dn4UP
EUT mode	Frequency (MHz)	CH	Avg. (dBm)	Avg. (dBm)	Avg. (dBm)	Avg. (dBm)
GPRS 1900	1850.2	512	26.30	23.30	21.30	20.30
	1880	661	26.10	23.10	21.10	20.00
	1909.8	810	26.30	23.10	21.20	20.10
Source-based time average power						
GPRS 1900	1850.2	512	17.27	17.28	17.04	17.29
	1880	661	17.07	17.08	16.84	16.99
	1909.8	810	17.27	17.08	16.94	17.09
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)			25.5	22.5	20.5	19.5
			1Dn1UP	1Dn2UP	1Dn3UP	1Dn4UP
EUT mode	Frequency (MHz)	CH	Avg. (dBm)	Avg. (dBm)	Avg. (dBm)	Avg. (dBm)
EDGE 1900 (MCS5)	1850.2	512	25.10	22.50	20.50	19.50
	1880	661	25.50	22.20	20.10	19.20
	1909.8	810	25.00	22.40	20.30	19.50
Source-based time average power						
EDGE 1900 (MCS5)	1850.2	512	16.07	16.48	16.24	16.49
	1880	661	16.47	16.18	15.84	16.19
	1909.8	810	15.97	16.38	16.04	16.49
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 (Full power):

Band	CH	Max. Rated Avg. Power + Max. Tolerance (dBm)	Rel99 AV(dBm)	HSDPA mode AV(dBm)				HSUPA mode AV(dBm)				
				SUB-1	SUB-2	SUB-3	SUB-4	SUB-1	SUB-2	SUB-3	SUB-4	SUB-5
WCDMA Band II	9262	24.5	23.78	22.53	22.66	22.05	22.12	21.20	19.75	19.76	19.88	22.02
	9400	24.5	23.47	22.39	22.33	21.94	21.95	20.95	19.50	19.51	19.63	21.83
	9538	24.5	23.61	22.48	22.46	21.95	22.07	21.55	20.10	20.11	20.23	21.97
WCDMA Band IV	1312	24.5	23.52	22.55	22.40	22.07	22.14	21.44	19.99	20.00	20.12	21.95
	1412	24.5	23.21	22.13	22.07	21.68	21.69	21.45	20.00	20.01	20.13	21.64
	1513	24.5	23.04	22.24	21.89	21.71	21.83	21.30	19.85	19.86	19.98	21.67
WCDMA Band V	4132	24.5	23.11	21.96	22.04	21.5	21.55	21.00	19.06	19.04	19.11	21.37
	4183	24.5	23.32	22.19	22.21	21.71	21.75	21.25	19.33	19.31	19.39	21.72
	4233	24.5	23.36	22.31	22.23	21.82	21.88	21.28	19.32	19.36	19.4	21.73

HSDPA

SUB-TEST	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS} (Note 1, 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} (Note 1)	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_{ed1} : 47/15 β_{ed2} : 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)				
				SUB-1	SUB-2	SUB-3	SUB-4	SUB-1	SUB-2	SUB-3	SUB-4	SUB-5
WCDMA Band II	9262	18.5	17.74	16.54	15.62	16.06	16.13	15.66	14.21	14.22	14.34	16.11
	9400	18.5	17.53	16.37	15.39	15.92	15.93	15.43	13.98	13.99	14.11	15.85
	9538	18.5	17.61	16.48	15.46	15.95	16.07	15.55	14.10	14.11	14.23	16.02
WCDMA Band IV	1312	19.5	17.96	16.76	15.48	16.28	16.35	15.88	14.43	14.44	14.56	16.10
	1412	19.5	17.82	16.69	15.68	16.24	16.25	15.80	14.35	14.36	14.48	15.87
	1513	19.5	17.60	16.48	15.45	15.95	16.07	15.54	14.09	14.10	14.22	15.77
WCDMA Band V	4132	20.5	19.55	18.44	18.23	17.98	18.03	17.00	15.06	15.04	15.11	17.86
	4183	20.5	19.73	18.70	17.62	18.22	18.26	17.66	15.74	15.72	15.8	18.09
	4233	20.5	19.86	18.73	17.73	18.24	18.3	17.78	15.82	15.86	15.9	18.16

HSDPA

SUB-TEST	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS} (Note 1, 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} (Note 1)	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_{ed1} : 47/15 β_{ed2} : 47/15	4 4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15	15/15	64	15/15	30/15	24/15	134/15	4	1	1.0	0.0	21	81

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

FDD Band 2 (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	18700	23.38	24	0
				1880	18900	23.15	24	0
				1900	19100	23.36	24	0
			50	1860	18700	23.34	24	0
				1880	18900	23.20	24	0
				1900	19100	23.48	24	0
			99	1860	18700	23.13	24	0
				1880	18900	22.88	24	0
				1900	19100	23.09	24	0
		50 RB	0	1860	18700	22.37	23	0-1
				1880	18900	22.28	23	0-1
				1900	19100	22.46	23	0-1
			25	1860	18700	22.30	23	0-1
				1880	18900	22.24	23	0-1
				1900	19100	22.40	23	0-1
			50	1860	18700	22.25	23	0-1
				1880	18900	22.29	23	0-1
				1900	19100	22.25	23	0-1
		100RB		1860	18700	22.34	23	0-1
				1880	18900	22.24	23	0-1
				1900	19100	22.37	23	0-1
	16-QAM	1 RB	0	1860	18700	22.73	23	0-1
				1880	18900	22.29	23	0-1
				1900	19100	22.41	23	0-1
			50	1860	18700	22.15	23	0-1
				1880	18900	21.73	23	0-1
				1900	19100	22.26	23	0-1
			99	1860	18700	21.81	23	0-1
				1880	18900	21.64	23	0-1
				1900	19100	21.82	23	0-1
		50 RB	0	1860	18700	21.15	22	0-2
				1880	18900	21.07	22	0-2
				1900	19100	21.21	22	0-2
			25	1860	18700	21.05	22	0-2
				1880	18900	21.00	22	0-2
				1900	19100	21.10	22	0-2
			50	1860	18700	20.96	22	0-2
				1880	18900	21.02	22	0-2
				1900	19100	20.93	22	0-2
		100RB		1860	18700	21.03	22	0-2
				1880	18900	20.96	22	0-2
				1900	19100	21.22	22	0-2

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FDD Band 2 (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	18675	23.17	24	0
				1880	18900	22.94	24	0
				1902.5	19125	23.09	24	0
			36	1857.5	18675	23.06	24	0
				1880	18900	22.94	24	0
				1902.5	19125	23.19	24	0
			74	1857.5	18675	22.98	24	0
				1880	18900	23.03	24	0
				1902.5	19125	23.04	24	0
		36 RB	0	1857.5	18675	22.05	23	0-1
				1880	18900	21.90	23	0-1
				1902.5	19125	22.10	23	0-1
			18	1857.5	18675	22.02	23	0-1
				1880	18900	21.94	23	0-1
				1902.5	19125	22.12	23	0-1
			37	1857.5	18675	22.04	23	0-1
				1880	18900	22.03	23	0-1
				1902.5	19125	22.02	23	0-1
		75RB	1857.5	18675	22.06	23	0-1	
			1880	18900	22.04	23	0-1	
			1902.5	19125	22.00	23	0-1	
	16-QAM	1 RB	0	1857.5	18675	22.05	23	0-1
				1880	18900	22.28	23	0-1
				1902.5	19125	22.14	23	0-1
			36	1857.5	18675	21.92	23	0-1
				1880	18900	21.98	23	0-1
				1902.5	19125	21.81	23	0-1
			74	1857.5	18675	22.15	23	0-1
				1880	18900	22.32	23	0-1
				1902.5	19125	22.42	23	0-1
		36 RB	0	1857.5	18675	21.04	22	0-2
				1880	18900	20.88	22	0-2
				1902.5	19125	21.03	22	0-2
			18	1857.5	18675	21.04	22	0-2
				1880	18900	20.91	22	0-2
				1902.5	19125	21.02	22	0-2
			37	1857.5	18675	20.93	22	0-2
				1880	18900	20.87	22	0-2
				1902.5	19125	20.94	22	0-2
		75RB	1857.5	18675	21.09	22	0-2	
			1880	18900	20.91	22	0-2	
			1902.5	19125	21.04	22	0-2	

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FDD Band 2 (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	18650	23.05	24	0	
				1880	18900	23.01	24	0	
				1905	19150	23.01	24	0	
			25	1855	18650	23.03	24	0	
				1880	18900	22.90	24	0	
				1905	19150	23.08	24	0	
				49	1855	18650	23.05	24	0
					1880	18900	22.92	24	0
					1905	19150	22.98	24	0
		25 RB	0	1855	18650	22.07	23	0-1	
				1880	18900	21.90	23	0-1	
				1905	19150	22.09	23	0-1	
			12	1855	18650	21.99	23	0-1	
				1880	18900	21.93	23	0-1	
				1905	19150	21.99	23	0-1	
			25	1855	18650	22.00	23	0-1	
				1880	18900	22.02	23	0-1	
				1905	19150	22.02	23	0-1	
		50RB			1855	18650	22.07	23	0-1
					1880	18900	21.89	23	0-1
					1905	19150	22.04	23	0-1
	16-QAM	1 RB	0	1855	18650	22.21	23	0-1	
				1880	18900	22.07	23	0-1	
				1905	19150	21.83	23	0-1	
			25	1855	18650	21.85	23	0-1	
				1880	18900	21.81	23	0-1	
				1905	19150	21.89	23	0-1	
			49	1855	18650	22.38	23	0-1	
				1880	18900	21.79	23	0-1	
				1905	19150	21.71	23	0-1	
			25 RB	0	1855	18650	21.15	22	0-2
					1880	18900	20.86	22	0-2
					1905	19150	21.08	22	0-2
				12	1855	18650	20.95	22	0-2
					1880	18900	20.96	22	0-2
					1905	19150	20.98	22	0-2
				25	1855	18650	21.05	22	0-2
					1880	18900	21.07	22	0-2
					1905	19150	20.96	22	0-2
		50RB			1855	18650	20.93	22	0-2
					1880	18900	20.96	22	0-2
					1905	19150	20.97	22	0-2

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FDD Band 2 (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	18625	22.95	24	0	
				1880	18900	22.76	24	0	
				1907.5	19175	23.02	24	0	
			12	1852.5	18625	23.36	24	0	
				1880	18900	22.87	24	0	
				1907.5	19175	22.87	24	0	
			24	1852.5	18625	22.86	24	0	
				1880	18900	22.80	24	0	
				1907.5	19175	23.01	24	0	
		12 RB	0	1852.5	18625	22.00	23	0-1	
				1880	18900	21.90	23	0-1	
				1907.5	19175	21.95	23	0-1	
			6	1852.5	18625	21.97	23	0-1	
				1880	18900	21.90	23	0-1	
				1907.5	19175	21.95	23	0-1	
			13	1852.5	18625	22.02	23	0-1	
				1880	18900	22.00	23	0-1	
				1907.5	19175	22.02	23	0-1	
		25RB			1852.5	18625	22.03	23	0-1
					1880	18900	21.91	23	0-1
					1907.5	19175	22.02	23	0-1
	16-QAM	1 RB	0	1852.5	18625	21.91	23	0-1	
				1880	18900	21.50	23	0-1	
				1907.5	19175	21.98	23	0-1	
			12	1852.5	18625	21.84	23	0-1	
				1880	18900	21.95	23	0-1	
				1907.5	19175	22.00	23	0-1	
			24	1852.5	18625	21.80	23	0-1	
				1880	18900	22.08	23	0-1	
				1907.5	19175	21.82	23	0-1	
			12 RB	0	1852.5	18625	21.13	22	0-2
					1880	18900	20.81	22	0-2
					1907.5	19175	21.00	22	0-2
				6	1852.5	18625	21.07	22	0-2
					1880	18900	20.89	22	0-2
					1907.5	19175	20.99	22	0-2
		13	1852.5	18625	21.12	22	0-2		
			1880	18900	20.90	22	0-2		
			1907.5	19175	21.00	22	0-2		
		25RB			1852.5	18625	20.99	22	0-2
					1880	18900	20.93	22	0-2
					1907.5	19175	20.92	22	0-2

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FDD Band 2 (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	18615	22.94	24	0
				1880	18900	22.70	24	0
				1908.5	19185	22.89	24	0
			7	1851.5	18615	22.93	24	0
				1880	18900	22.79	24	0
				1908.5	19185	22.68	24	0
			14	1851.5	18615	22.97	24	0
				1880	18900	22.86	24	0
				1908.5	19185	22.81	24	0
		8 RB	0	1851.5	18615	21.92	23	0-1
				1880	18900	21.81	23	0-1
				1908.5	19185	21.84	23	0-1
			4	1851.5	18615	21.95	23	0-1
				1880	18900	21.82	23	0-1
				1908.5	19185	21.94	23	0-1
			7	1851.5	18615	21.93	23	0-1
				1880	18900	21.88	23	0-1
				1908.5	19185	21.88	23	0-1
		15RB		1851.5	18615	21.91	23	0-1
				1880	18900	21.87	23	0-1
				1908.5	19185	21.90	23	0-1
	16-QAM	1 RB	0	1851.5	18615	21.71	23	0-1
				1880	18900	21.73	23	0-1
				1908.5	19185	22.01	23	0-1
			7	1851.5	18615	21.90	23	0-1
				1880	18900	21.94	23	0-1
				1908.5	19185	21.85	23	0-1
			14	1851.5	18615	22.17	23	0-1
				1880	18900	21.48	23	0-1
				1908.5	19185	21.77	23	0-1
		8 RB	0	1851.5	18615	21.11	22	0-2
				1880	18900	20.90	22	0-2
				1908.5	19185	20.85	22	0-2
			4	1851.5	18615	21.05	22	0-2
				1880	18900	20.88	22	0-2
				1908.5	19185	21.03	22	0-2
			7	1851.5	18615	20.94	22	0-2
				1880	18900	20.91	22	0-2
				1908.5	19185	20.96	22	0-2
		15RB		1851.5	18615	20.95	22	0-2
				1880	18900	20.74	22	0-2
				1908.5	19185	20.79	22	0-2

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FDD Band 2 (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	18607	22.90	24	0
				1880	18900	22.72	24	0
				1909.3	19193	23.05	24	0
			2	1850.7	18607	22.93	24	0
				1880	18900	22.77	24	0
				1909.3	19193	22.93	24	0
			5	1850.7	18607	23.01	24	0
				1880	18900	22.89	24	0
				1909.3	19193	22.92	24	0
		3 RB	0	1850.7	18607	22.17	23	0-1
				1880	18900	22.03	23	0-1
				1909.3	19193	22.14	23	0-1
			2	1850.7	18607	22.20	23	0-1
				1880	18900	21.90	23	0-1
				1909.3	19193	22.06	23	0-1
			3	1850.7	18607	22.17	23	0-1
				1880	18900	22.00	23	0-1
				1909.3	19193	22.08	23	0-1
		6RB		1850.7	18607	21.92	23	0-1
				1880	18900	21.88	23	0-1
				1909.3	19193	21.87	23	0-1
	16-QAM	1 RB	0	1850.7	18607	22.01	23	0-1
				1880	18900	21.99	23	0-1
				1909.3	19193	21.68	23	0-1
			2	1850.7	18607	22.08	23	0-1
				1880	18900	21.58	23	0-1
				1909.3	19193	21.99	23	0-1
			5	1850.7	18607	21.48	23	0-1
				1880	18900	21.60	23	0-1
				1909.3	19193	21.38	23	0-1
		3 RB	0	1850.7	18607	20.94	22	0-2
				1880	18900	21.05	22	0-2
				1909.3	19193	20.98	22	0-2
			2	1850.7	18607	21.09	22	0-2
				1880	18900	20.89	22	0-2
				1909.3	19193	20.89	22	0-2
			3	1850.7	18607	21.17	22	0-2
				1880	18900	21.00	22	0-2
				1909.3	19193	20.97	22	0-2
		6RB		1850.7	18607	20.94	22	0-2
				1880	18900	20.82	22	0-2
				1909.3	19193	20.81	22	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 (dBm)	MPR Allowed per 3GPP(dB)	
20	QPSK	1 RB	0	1860	18700	17.53	18.5	0	
				1880	18900	17.34	18.5	0	
				1900	19100	17.72	18.5	0	
			50	1860	18700	17.35	18.5	0	
				1880	18900	17.38	18.5	0	
				1900	19100	17.57	18.5	0	
			99	1860	18700	17.22	18.5	0	
				1880	18900	17.53	18.5	0	
				1900	19100	17.41	18.5	0	
		50 RB	0	1860	18700	17.40	18.5	0-1	
				1880	18900	17.48	18.5	0-1	
				1900	19100	17.69	18.5	0-1	
			25	1860	18700	17.35	18.5	0-1	
				1880	18900	17.44	18.5	0-1	
				1900	19100	17.60	18.5	0-1	
			50	1860	18700	17.29	18.5	0-1	
				1880	18900	17.45	18.5	0-1	
				1900	19100	17.48	18.5	0-1	
		100RB			1860	18700	17.39	18.5	0-1
					1880	18900	17.40	18.5	0-1
					1900	19100	17.65	18.5	0-1
	16-QAM	1 RB	0	1860	18700	17.42	18.5	0-1	
				1880	18900	17.26	18.5	0-1	
				1900	19100	17.49	18.5	0-1	
			50	1860	18700	17.23	18.5	0-1	
				1880	18900	17.24	18.5	0-1	
				1900	19100	17.48	18.5	0-1	
			99	1860	18700	17.07	18.5	0-1	
				1880	18900	17.35	18.5	0-1	
				1900	19100	17.29	18.5	0-1	
		50 RB	0	1860	18700	17.33	18.5	0-2	
				1880	18900	17.34	18.5	0-2	
				1900	19100	17.56	18.5	0-2	
			25	1860	18700	17.25	18.5	0-2	
				1880	18900	17.31	18.5	0-2	
				1900	19100	17.53	18.5	0-2	
			50	1860	18700	17.22	18.5	0-2	
				1880	18900	17.38	18.5	0-2	
				1900	19100	17.40	18.5	0-2	
		100RB			1860	18700	17.30	18.5	0-2
					1880	18900	17.32	18.5	0-2
					1900	19100	17.52	18.5	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 (dBm)	MPR Allowed per 3GPP(dB)
15	QPSK	1 RB	0	1857.5	18675	17.45	18.5	0
				1880	18900	17.36	18.5	0
				1902.5	19125	17.57	18.5	0
			36	1857.5	18675	17.32	18.5	0
				1880	18900	17.33	18.5	0
				1902.5	19125	17.45	18.5	0
			74	1857.5	18675	17.22	18.5	0
				1880	18900	17.42	18.5	0
				1902.5	19125	17.34	18.5	0
		36 RB	0	1857.5	18675	17.31	18.5	0-1
				1880	18900	17.29	18.5	0-1
				1902.5	19125	17.53	18.5	0-1
			18	1857.5	18675	17.32	18.5	0-1
				1880	18900	17.32	18.5	0-1
				1902.5	19125	17.48	18.5	0-1
			37	1857.5	18675	17.22	18.5	0-1
				1880	18900	17.35	18.5	0-1
				1902.5	19125	17.33	18.5	0-1
		75RB	1857.5	18675	17.32	18.5	0-1	
			1880	18900	17.34	18.5	0-1	
			1902.5	19125	17.38	18.5	0-1	
	16-QAM	1 RB	0	1857.5	18675	17.38	18.5	0-1
				1880	18900	17.24	18.5	0-1
				1902.5	19125	17.52	18.5	0-1
			36	1857.5	18675	17.22	18.5	0-1
				1880	18900	17.21	18.5	0-1
				1902.5	19125	17.41	18.5	0-1
			74	1857.5	18675	17.16	18.5	0-1
				1880	18900	17.33	18.5	0-1
				1902.5	19125	17.32	18.5	0-1
		36 RB	0	1857.5	18675	17.27	18.5	0-2
				1880	18900	17.24	18.5	0-2
				1902.5	19125	17.50	18.5	0-2
			18	1857.5	18675	17.29	18.5	0-2
				1880	18900	17.27	18.5	0-2
				1902.5	19125	17.42	18.5	0-2
			37	1857.5	18675	17.21	18.5	0-2
				1880	18900	17.33	18.5	0-2
				1902.5	19125	17.33	18.5	0-2
		75RB	1857.5	18675	17.35	18.5	0-2	
			1880	18900	17.32	18.5	0-2	
			1902.5	19125	17.38	18.5	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 (dBm)	MPR Allowed per 3GPP(dB)	
10	QPSK	1 RB	0	1855	18650	17.36	18.5	0	
				1880	18900	17.36	18.5	0	
				1905	19150	17.52	18.5	0	
			25	1855	18650	17.27	18.5	0	
				1880	18900	17.28	18.5	0	
				1905	19150	17.41	18.5	0	
			49	1855	18650	17.22	18.5	0	
				1880	18900	17.38	18.5	0	
				1905	19150	17.31	18.5	0	
		25 RB	0	1855	18650	17.39	18.5	0-1	
				1880	18900	17.27	18.5	0-1	
				1905	19150	17.47	18.5	0-1	
			12	1855	18650	17.21	18.5	0-1	
				1880	18900	17.29	18.5	0-1	
				1905	19150	17.35	18.5	0-1	
			25	1855	18650	17.28	18.5	0-1	
				1880	18900	17.32	18.5	0-1	
				1905	19150	17.28	18.5	0-1	
		50RB			1855	18650	17.30	18.5	0-1
					1880	18900	17.34	18.5	0-1
					1905	19150	17.35	18.5	0-1
	16-QAM	1 RB	0	1855	18650	17.36	18.5	0-1	
				1880	18900	17.29	18.5	0-1	
				1905	19150	17.48	18.5	0-1	
			25	1855	18650	17.22	18.5	0-1	
				1880	18900	17.23	18.5	0-1	
				1905	19150	17.32	18.5	0-1	
			49	1855	18650	17.20	18.5	0-1	
				1880	18900	17.31	18.5	0-1	
				1905	19150	17.26	18.5	0-1	
			25 RB	0	1855	18650	17.43	18.5	0-2
					1880	18900	17.33	18.5	0-2
					1905	19150	17.53	18.5	0-2
				12	1855	18650	17.28	18.5	0-2
					1880	18900	17.33	18.5	0-2
					1905	19150	17.38	18.5	0-2
		25		1855	18650	17.32	18.5	0-2	
				1880	18900	17.39	18.5	0-2	
				1905	19150	17.34	18.5	0-2	
		50RB			1855	18650	17.31	18.5	0-2
					1880	18900	17.33	18.5	0-2
					1905	19150	17.34	18.5	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 (dBm)	MPR Allowed per 3GPP(dB)	
5	QPSK	1 RB	0	1852.5	18625	17.33	18.5	0	
				1880	18900	17.33	18.5	0	
				1907.5	19175	17.44	18.5	0	
			12	1852.5	18625	17.34	18.5	0	
				1880	18900	17.29	18.5	0	
				1907.5	19175	17.28	18.5	0	
			24	1852.5	18625	17.21	18.5	0	
				1880	18900	17.32	18.5	0	
				1907.5	19175	17.28	18.5	0	
		12 RB	0	1852.5	18625	17.36	18.5	0-1	
				1880	18900	17.34	18.5	0-1	
				1907.5	19175	17.36	18.5	0-1	
			6	1852.5	18625	17.34	18.5	0-1	
				1880	18900	17.30	18.5	0-1	
				1907.5	19175	17.32	18.5	0-1	
			13	1852.5	18625	17.39	18.5	0-1	
				1880	18900	17.33	18.5	0-1	
				1907.5	19175	17.28	18.5	0-1	
		25RB			1852.5	18625	17.31	18.5	0-1
					1880	18900	17.33	18.5	0-1
					1907.5	19175	17.28	18.5	0-1
	16-QAM	1 RB	0	1852.5	18625	17.32	18.5	0-1	
				1880	18900	17.32	18.5	0-1	
				1907.5	19175	17.33	18.5	0-1	
				1852.5	18625	17.22	18.5	0-1	
				1880	18900	17.21	18.5	0-1	
				1907.5	19175	17.23	18.5	0-1	
			12	1852.5	18625	17.19	18.5	0-1	
				1880	18900	17.27	18.5	0-1	
				1907.5	19175	17.16	18.5	0-1	
				1852.5	18625	17.41	18.5	0-2	
				1880	18900	17.32	18.5	0-2	
				1907.5	19175	17.37	18.5	0-2	
			24	1852.5	18625	17.41	18.5	0-2	
				1880	18900	17.33	18.5	0-2	
				1907.5	19175	17.34	18.5	0-2	
				1852.5	18625	17.42	18.5	0-2	
				1880	18900	17.35	18.5	0-2	
				1907.5	19175	17.34	18.5	0-2	
		12 RB	0	1852.5	18625	17.40	18.5	0-2	
				1880	18900	17.32	18.5	0-2	
				1907.5	19175	17.34	18.5	0-2	
6			1852.5	18625	17.40	18.5	0-2		
			1880	18900	17.32	18.5	0-2		
			1907.5	19175	17.34	18.5	0-2		
13		1852.5	18625	17.40	18.5	0-2			
		1880	18900	17.32	18.5	0-2			
		1907.5	19175	17.34	18.5	0-2			
		25RB			1852.5	18625	17.40	18.5	0-2
					1880	18900	17.32	18.5	0-2
					1907.5	19175	17.34	18.5	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 (dBm)	MPR Allowed per 3GPP(dB)
3	QPSK	1 RB	0	1851.5	18615	17.37	18.5	0
				1880	18900	17.29	18.5	0
				1908.5	19185	17.31	18.5	0
			7	1851.5	18615	17.28	18.5	0
				1880	18900	17.27	18.5	0
				1908.5	19185	17.28	18.5	0
			14	1851.5	18615	17.31	18.5	0
				1880	18900	17.34	18.5	0
				1908.5	19185	17.28	18.5	0
		8 RB	0	1851.5	18615	17.31	18.5	0-1
				1880	18900	17.32	18.5	0-1
				1908.5	19185	17.26	18.5	0-1
			4	1851.5	18615	17.33	18.5	0-1
				1880	18900	17.27	18.5	0-1
				1908.5	19185	17.24	18.5	0-1
			7	1851.5	18615	17.31	18.5	0-1
				1880	18900	17.33	18.5	0-1
				1908.5	19185	17.27	18.5	0-1
		15RB	1851.5	18615	17.30	18.5	0-1	
			1880	18900	17.34	18.5	0-1	
			1908.5	19185	17.32	18.5	0-1	
	16-QAM	1 RB	0	1851.5	18615	17.26	18.5	0-1
				1880	18900	17.21	18.5	0-1
				1908.5	19185	17.19	18.5	0-1
			7	1851.5	18615	17.28	18.5	0-1
				1880	18900	17.24	18.5	0-1
				1908.5	19185	17.14	18.5	0-1
			14	1851.5	18615	17.28	18.5	0-1
				1880	18900	17.26	18.5	0-1
				1908.5	19185	17.23	18.5	0-1
		8 RB	0	1851.5	18615	17.40	18.5	0-2
				1880	18900	17.34	18.5	0-2
				1908.5	19185	17.37	18.5	0-2
			4	1851.5	18615	17.37	18.5	0-2
				1880	18900	17.36	18.5	0-2
				1908.5	19185	17.35	18.5	0-2
			7	1851.5	18615	17.38	18.5	0-2
				1880	18900	17.34	18.5	0-2
				1908.5	19185	17.36	18.5	0-2
		15RB	1851.5	18615	17.37	18.5	0-2	
			1880	18900	17.28	18.5	0-2	
			1908.5	19185	17.28	18.5	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 (dBm)	MPR Allowed per 3GPP(dB)	
1.4	QPSK	1 RB	0	1850.7	18607	17.37	18.5	0	
				1880	18900	17.33	18.5	0	
				1909.3	19193	17.32	18.5	0	
			2	1850.7	18607	17.36	18.5	0	
				1880	18900	17.31	18.5	0	
				1909.3	19193	17.28	18.5	0	
			5	1850.7	18607	17.37	18.5	0	
				1880	18900	17.36	18.5	0	
				1909.3	19193	17.33	18.5	0	
		3 RB	0	1850.7	18607	17.40	18.5	0-1	
				1880	18900	17.33	18.5	0-1	
				1909.3	19193	17.29	18.5	0-1	
			2	1850.7	18607	17.32	18.5	0-1	
				1880	18900	17.36	18.5	0-1	
				1909.3	19193	17.30	18.5	0-1	
			3	1850.7	18607	17.37	18.5	0-1	
				1880	18900	17.33	18.5	0-1	
				1909.3	19193	17.31	18.5	0-1	
		6RB			1850.7	18607	17.35	18.5	0-1
					1880	18900	17.33	18.5	0-1
					1909.3	19193	17.31	18.5	0-1
	16-QAM	1 RB	0	1850.7	18607	17.35	18.5	0-1	
				1880	18900	17.31	18.5	0-1	
				1909.3	19193	17.26	18.5	0-1	
			2	1850.7	18607	17.28	18.5	0-1	
				1880	18900	17.23	18.5	0-1	
				1909.3	19193	17.27	18.5	0-1	
			5	1850.7	18607	17.30	18.5	0-1	
				1880	18900	17.24	18.5	0-1	
				1909.3	19193	17.29	18.5	0-1	
			3 RB	0	1850.7	18607	17.30	18.5	0-2
					1880	18900	17.30	18.5	0-2
					1909.3	19193	17.25	18.5	0-2
				2	1850.7	18607	17.31	18.5	0-2
					1880	18900	17.27	18.5	0-2
					1909.3	19193	17.23	18.5	0-2
				3	1850.7	18607	17.33	18.5	0-2
					1880	18900	17.28	18.5	0-2
					1909.3	19193	17.26	18.5	0-2
		6RB			1850.7	18607	17.27	18.5	0-2
					1880	18900	17.29	18.5	0-2
					1909.3	19193	17.24	18.5	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 (dBm)	MPR Allowed per 3GPP(dB)	
20	QPSK	1 RB	0	1720	20050	23.15	24	0	
				1732.5	20175	23.25	24	0	
				1745	20300	23.12	24	0	
			50	1720	20050	23.08	24	0	
				1732.5	20175	22.89	24	0	
				1745	20300	23.13	24	0	
			99	1720	20050	23.13	24	0	
				1732.5	20175	22.72	24	0	
				1745	20300	22.93	24	0	
		50 RB	0	1720	20050	22.36	23	0-1	
				1732.5	20175	22.17	23	0-1	
				1745	20300	22.14	23	0-1	
			25	1720	20050	22.33	23	0-1	
				1732.5	20175	22.09	23	0-1	
				1745	20300	22.01	23	0-1	
			50	1720	20050	22.21	23	0-1	
				1732.5	20175	21.95	23	0-1	
				1745	20300	22.01	23	0-1	
		100RB			1720	20050	22.29	23	0-1
					1732.5	20175	22.24	23	0-1
					1745	20300	21.89	23	0-1
	16-QAM	1 RB	0	1720	20050	22.21	23	0-1	
				1732.5	20175	22.05	23	0-1	
				1745	20300	22.24	23	0-1	
			50	1720	20050	22.36	23	0-1	
				1732.5	20175	22.11	23	0-1	
				1745	20300	21.59	23	0-1	
			99	1720	20050	22.42	23	0-1	
				1732.5	20175	22.08	23	0-1	
				1745	20300	21.78	23	0-1	
			50 RB	0	1720	20050	21.17	22	0-2
					1732.5	20175	21.09	22	0-2
					1745	20300	20.80	22	0-2
				25	1720	20050	21.26	22	0-2
					1732.5	20175	21.08	22	0-2
					1745	20300	20.98	22	0-2
			50	1720	20050	21.18	22	0-2	
				1732.5	20175	21.10	22	0-2	
				1745	20300	20.95	22	0-2	
		100RB			1720	20050	21.27	22	0-2
					1732.5	20175	21.18	22	0-2
					1745	20300	21.02	22	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 (dBm)	MPR Allowed per 3GPP(dB)
15	QPSK	1 RB	0	1717.5	20025	23.01	24	0
				1732.5	20175	22.96	24	0
				1747.5	20325	22.51	24	0
			36	1717.5	20025	22.92	24	0
				1732.5	20175	22.58	24	0
				1747.5	20325	22.48	24	0
			74	1717.5	20025	22.89	24	0
				1732.5	20175	22.11	24	0
				1747.5	20325	22.67	24	0
		36 RB	0	1717.5	20025	21.86	23	0-1
				1732.5	20175	21.85	23	0-1
				1747.5	20325	21.55	23	0-1
			18	1717.5	20025	21.91	23	0-1
				1732.5	20175	21.68	23	0-1
				1747.5	20325	21.56	23	0-1
			37	1717.5	20025	21.88	23	0-1
				1732.5	20175	21.68	23	0-1
				1747.5	20325	21.63	23	0-1
			75RB	1717.5	20025	21.88	23	0-1
				1732.5	20175	21.66	23	0-1
				1747.5	20325	21.72	23	0-1
	16-QAM	1 RB	0	1717.5	20025	22.20	23	0-1
				1732.5	20175	21.71	23	0-1
				1747.5	20325	21.77	23	0-1
			36	1717.5	20025	21.90	23	0-1
				1732.5	20175	21.51	23	0-1
				1747.5	20325	21.63	23	0-1
			74	1717.5	20025	21.55	23	0-1
				1732.5	20175	21.67	23	0-1
				1747.5	20325	21.41	23	0-1
		36 RB	0	1717.5	20025	20.81	22	0-2
				1732.5	20175	20.78	22	0-2
				1747.5	20325	20.50	22	0-2
			18	1717.5	20025	20.84	22	0-2
				1732.5	20175	20.67	22	0-2
				1747.5	20325	20.56	22	0-2
			37	1717.5	20025	20.89	22	0-2
				1732.5	20175	20.61	22	0-2
				1747.5	20325	20.59	22	0-2
			75RB	1717.5	20025	21.12	22	0-2
				1732.5	20175	20.68	22	0-2
				1747.5	20325	20.72	22	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 (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	1715	20000	22.84	24	0
				1732.5	20175	22.67	24	0
				1750	20350	22.44	24	0
			25	1715	20000	23.04	24	0
				1732.5	20175	22.69	24	0
				1750	20350	22.52	24	0
			49	1715	20000	23.08	24	0
				1732.5	20175	22.39	24	0
				1750	20350	22.72	24	0
		25 RB	0	1715	20000	21.83	23	0-1
				1732.5	20175	21.74	23	0-1
				1750	20350	21.55	23	0-1
			12	1715	20000	21.83	23	0-1
				1732.5	20175	21.72	23	0-1
				1750	20350	21.60	23	0-1
			25	1715	20000	21.65	23	0-1
				1732.5	20175	21.70	23	0-1
				1750	20350	21.56	23	0-1
		50RB	1715	20000	21.91	23	0-1	
			1732.5	20175	21.69	23	0-1	
			1750	20350	21.70	23	0-1	
	16-QAM	1 RB	0	1715	20000	21.92	23	0-1
				1732.5	20175	21.80	23	0-1
				1750	20350	21.72	23	0-1
			25	1715	20000	21.89	23	0-1
				1732.5	20175	21.95	23	0-1
				1750	20350	21.96	23	0-1
			49	1715	20000	21.75	23	0-1
				1732.5	20175	21.70	23	0-1
				1750	20350	21.00	23	0-1
		25 RB	0	1715	20000	20.86	22	0-2
				1732.5	20175	20.59	22	0-2
				1750	20350	20.55	22	0-2
			12	1715	20000	20.90	22	0-2
				1732.5	20175	20.65	22	0-2
				1750	20350	20.59	22	0-2
			25	1715	20000	20.95	22	0-2
				1732.5	20175	20.75	22	0-2
				1750	20350	20.55	22	0-2
		50RB	1715	20000	20.86	22	0-2	
			1732.5	20175	20.75	22	0-2	
			1750	20350	20.56	22	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 (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	1712.5	19975	22.79	24	0
				1732.5	20175	22.58	24	0
				1752.5	20375	22.44	24	0
			12	1712.5	19975	22.83	24	0
				1732.5	20175	22.61	24	0
				1752.5	20375	22.42	24	0
			24	1712.5	19975	22.84	24	0
				1732.5	20175	22.60	24	0
				1752.5	20375	22.50	24	0
		12 RB	0	1712.5	19975	21.81	23	0-1
				1732.5	20175	21.66	23	0-1
				1752.5	20375	21.62	23	0-1
			6	1712.5	19975	21.75	23	0-1
				1732.5	20175	21.65	23	0-1
				1752.5	20375	21.57	23	0-1
			13	1712.5	19975	21.79	23	0-1
				1732.5	20175	21.70	23	0-1
				1752.5	20375	21.63	23	0-1
		25RB		1712.5	19975	21.75	23	0-1
				1732.5	20175	21.64	23	0-1
				1752.5	20375	21.57	23	0-1
	16-QAM	1 RB	0	1712.5	19975	21.91	23	0-1
				1732.5	20175	21.85	23	0-1
				1752.5	20375	21.58	23	0-1
			12	1712.5	19975	22.19	23	0-1
				1732.5	20175	21.48	23	0-1
				1752.5	20375	21.19	23	0-1
			24	1712.5	19975	21.20	23	0-1
				1732.5	20175	21.48	23	0-1
				1752.5	20375	21.40	23	0-1
		12 RB	0	1712.5	19975	20.93	22	0-2
				1732.5	20175	20.59	22	0-2
				1752.5	20375	20.63	22	0-2
			6	1712.5	19975	20.73	22	0-2
				1732.5	20175	20.74	22	0-2
				1752.5	20375	20.71	22	0-2
			13	1712.5	19975	20.77	22	0-2
				1732.5	20175	20.63	22	0-2
				1752.5	20375	20.63	22	0-2
		25RB		1712.5	19975	20.73	22	0-2
				1732.5	20175	20.69	22	0-2
				1752.5	20375	20.56	22	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 (dBm)	MPR Allowed per 3GPP(dB)	
3	QPSK	1 RB	0	1711.5	19965	22.83	24	0	
				1732.5	20175	22.66	24	0	
				1753.5	20385	22.54	24	0	
			7	1711.5	19965	22.76	24	0	
				1732.5	20175	22.64	24	0	
				1753.5	20385	22.62	24	0	
			14	1711.5	19965	22.82	24	0	
				1732.5	20175	22.59	24	0	
				1753.5	20385	22.66	24	0	
		8 RB	0	1711.5	19965	21.83	23	0-1	
				1732.5	20175	21.64	23	0-1	
				1753.5	20385	21.61	23	0-1	
			4	1711.5	19965	21.66	23	0-1	
				1732.5	20175	21.64	23	0-1	
				1753.5	20385	21.54	23	0-1	
			7	1711.5	19965	21.77	23	0-1	
				1732.5	20175	21.72	23	0-1	
				1753.5	20385	21.66	23	0-1	
		15RB			1711.5	19965	21.79	23	0-1
					1732.5	20175	21.68	23	0-1
					1753.5	20385	21.58	23	0-1
	16-QAM	1 RB	0	1711.5	19965	21.63	23	0-1	
				1732.5	20175	21.85	23	0-1	
				1753.5	20385	21.18	23	0-1	
			7	1711.5	19965	21.05	23	0-1	
				1732.5	20175	21.23	23	0-1	
				1753.5	20385	21.19	23	0-1	
			14	1711.5	19965	21.82	23	0-1	
				1732.5	20175	21.46	23	0-1	
				1753.5	20385	21.47	23	0-1	
			8 RB	0	1711.5	19965	20.86	22	0-2
					1732.5	20175	20.59	22	0-2
					1753.5	20385	20.52	22	0-2
				4	1711.5	19965	20.60	22	0-2
					1732.5	20175	20.73	22	0-2
					1753.5	20385	20.57	22	0-2
		7	1711.5	19965	20.91	22	0-2		
			1732.5	20175	20.57	22	0-2		
			1753.5	20385	20.68	22	0-2		
		15RB			1711.5	19965	20.71	22	0-2
					1732.5	20175	20.73	22	0-2
					1753.5	20385	20.73	22	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 (dBm)	MPR Allowed per 3GPP(dB)	
1.4	QPSK	1 RB	0	1710.7	19957	22.78	24	0	
				1732.5	20175	22.60	24	0	
				1754.3	20393	22.64	24	0	
			2	1710.7	19957	22.86	24	0	
				1732.5	20175	22.60	24	0	
				1754.3	20393	22.69	24	0	
			5	1710.7	19957	22.89	24	0	
				1732.5	20175	22.72	24	0	
				1754.3	20393	22.65	24	0	
		3 RB	0	1710.7	19957	22.05	23	0-1	
				1732.5	20175	21.81	23	0-1	
				1754.3	20393	21.85	23	0-1	
			2	1710.7	19957	22.02	23	0-1	
				1732.5	20175	21.85	23	0-1	
				1754.3	20393	21.89	23	0-1	
			3	1710.7	19957	22.04	23	0-1	
				1732.5	20175	21.89	23	0-1	
				1754.3	20393	21.85	23	0-1	
		6RB			1710.7	19957	21.81	23	0-1
					1732.5	20175	21.68	23	0-1
					1754.3	20393	21.72	23	0-1
	16-QAM	1 RB	0	1710.7	19957	21.55	23	0-1	
				1732.5	20175	21.18	23	0-1	
				1754.3	20393	21.63	23	0-1	
			2	1710.7	19957	21.54	23	0-1	
				1732.5	20175	21.48	23	0-1	
				1754.3	20393	21.23	23	0-1	
			5	1710.7	19957	21.58	23	0-1	
				1732.5	20175	21.74	23	0-1	
				1754.3	20393	21.94	23	0-1	
		3 RB	0	1710.7	19957	20.92	22	0-2	
				1732.5	20175	20.80	22	0-2	
				1754.3	20393	20.66	22	0-2	
			2	1710.7	19957	21.01	22	0-2	
				1732.5	20175	20.84	22	0-2	
				1754.3	20393	20.80	22	0-2	
			3	1710.7	19957	20.95	22	0-2	
				1732.5	20175	20.84	22	0-2	
				1754.3	20393	20.90	22	0-2	
		6RB			1710.7	19957	20.65	22	0-2
					1732.5	20175	20.49	22	0-2
					1754.3	20393	20.66	22	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 (dBm)	MPR Allowed per 3GPP(dB)	
20	QPSK	1 RB	0	1720	20050	17.84	18.5	0	
				1732.5	20175	17.85	18.5	0	
				1745	20300	17.58	18.5	0	
			50	1720	20050	17.83	18.5	0	
				1732.5	20175	17.53	18.5	0	
				1745	20300	17.40	18.5	0	
			99	1720	20050	17.62	18.5	0	
				1732.5	20175	17.44	18.5	0	
				1745	20300	17.56	18.5	0	
		50 RB	0	1720	20050	17.82	18.5	0-1	
				1732.5	20175	17.66	18.5	0-1	
				1745	20300	17.48	18.5	0-1	
			25	1720	20050	17.84	18.5	0-1	
				1732.5	20175	17.52	18.5	0-1	
				1745	20300	17.42	18.5	0-1	
			50	1720	20050	17.77	18.5	0-1	
				1732.5	20175	17.55	18.5	0-1	
				1745	20300	17.44	18.5	0-1	
		100RB			1720	20050	17.80	18.5	0-1
					1732.5	20175	17.61	18.5	0-1
					1745	20300	17.42	18.5	0-1
	16-QAM	1 RB	0	1720	20050	17.83	18.5	0-1	
				1732.5	20175	17.83	18.5	0-1	
				1745	20300	17.58	18.5	0-1	
			50	1720	20050	17.79	18.5	0-1	
				1732.5	20175	17.53	18.5	0-1	
				1745	20300	17.42	18.5	0-1	
			99	1720	20050	17.59	18.5	0-1	
				1732.5	20175	17.37	18.5	0-1	
				1745	20300	17.52	18.5	0-1	
			50 RB	0	1720	20050	17.80	18.5	0-2
					1732.5	20175	17.68	18.5	0-2
					1745	20300	17.50	18.5	0-2
				25	1720	20050	17.85	18.5	0-2
					1732.5	20175	17.55	18.5	0-2
					1745	20300	17.45	18.5	0-2
			50	1720	20050	17.81	18.5	0-2	
				1732.5	20175	17.57	18.5	0-2	
				1745	20300	17.50	18.5	0-2	
		100RB			1720	20050	17.83	18.5	0-2
					1732.5	20175	17.63	18.5	0-2
					1745	20300	17.45	18.5	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 (dBm)	MPR Allowed per 3GPP(dB)	
15	QPSK	1 RB	0	1717.5	20025	17.79	18.5	0	
				1732.5	20175	17.83	18.5	0	
				1747.5	20325	17.53	18.5	0	
			36	1717.5	20025	17.72	18.5	0	
				1732.5	20175	17.51	18.5	0	
				1747.5	20325	17.35	18.5	0	
			74	1717.5	20025	17.73	18.5	0	
				1732.5	20175	17.43	18.5	0	
				1747.5	20325	17.54	18.5	0	
		36 RB	0	1717.5	20025	17.66	18.5	0-1	
				1732.5	20175	17.69	18.5	0-1	
				1747.5	20325	17.42	18.5	0-1	
			18	1717.5	20025	17.73	18.5	0-1	
				1732.5	20175	17.49	18.5	0-1	
				1747.5	20325	17.38	18.5	0-1	
			37	1717.5	20025	17.81	18.5	0-1	
				1732.5	20175	17.49	18.5	0-1	
				1747.5	20325	17.41	18.5	0-1	
		75RB			1717.5	20025	17.77	18.5	0-1
					1732.5	20175	17.54	18.5	0-1
					1747.5	20325	17.46	18.5	0-1
	16-QAM	1 RB	0	1717.5	20025	17.73	18.5	0-1	
				1732.5	20175	17.78	18.5	0-1	
				1747.5	20325	17.47	18.5	0-1	
			36	1717.5	20025	17.66	18.5	0-1	
				1732.5	20175	17.47	18.5	0-1	
				1747.5	20325	17.35	18.5	0-1	
			74	1717.5	20025	17.64	18.5	0-1	
				1732.5	20175	17.37	18.5	0-1	
				1747.5	20325	17.50	18.5	0-1	
		36 RB	0	1717.5	20025	17.68	18.5	0-2	
				1732.5	20175	17.68	18.5	0-2	
				1747.5	20325	17.42	18.5	0-2	
			18	1717.5	20025	17.73	18.5	0-2	
				1732.5	20175	17.51	18.5	0-2	
				1747.5	20325	17.39	18.5	0-2	
			37	1717.5	20025	17.80	18.5	0-2	
				1732.5	20175	17.51	18.5	0-2	
				1747.5	20325	17.44	18.5	0-2	
		75RB			1717.5	20025	17.76	18.5	0-2
					1732.5	20175	17.60	18.5	0-2
					1747.5	20325	17.50	18.5	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 (dBm)	MPR Allowed per 3GPP(dB)	
10	QPSK	1 RB	0	1715	20000	17.78	18.5	0	
				1732.5	20175	17.70	18.5	0	
				1750	20350	17.46	18.5	0	
			25	1715	20000	17.75	18.5	0	
				1732.5	20175	17.53	18.5	0	
				1750	20350	17.31	18.5	0	
			49	1715	20000	17.77	18.5	0	
				1732.5	20175	17.41	18.5	0	
				1750	20350	17.54	18.5	0	
		25 RB	0	1715	20000	17.72	18.5	0-1	
				1732.5	20175	17.59	18.5	0-1	
				1750	20350	17.39	18.5	0-1	
			12	1715	20000	17.72	18.5	0-1	
				1732.5	20175	17.56	18.5	0-1	
				1750	20350	17.48	18.5	0-1	
			25	1715	20000	17.76	18.5	0-1	
				1732.5	20175	17.53	18.5	0-1	
				1750	20350	17.46	18.5	0-1	
		50RB			1715	20000	17.71	18.5	0-1
					1732.5	20175	17.48	18.5	0-1
					1750	20350	17.49	18.5	0-1
	16-QAM	1 RB	0	1715	20000	17.70	18.5	0-1	
				1732.5	20175	17.67	18.5	0-1	
				1750	20350	17.40	18.5	0-1	
			25	1715	20000	17.62	18.5	0-1	
				1732.5	20175	17.50	18.5	0-1	
				1750	20350	17.33	18.5	0-1	
			49	1715	20000	17.69	18.5	0-1	
				1732.5	20175	17.39	18.5	0-1	
				1750	20350	17.48	18.5	0-1	
			25 RB	0	1715	20000	17.72	18.5	0-2
					1732.5	20175	17.63	18.5	0-2
					1750	20350	17.44	18.5	0-2
				12	1715	20000	17.80	18.5	0-2
					1732.5	20175	17.59	18.5	0-2
					1750	20350	17.54	18.5	0-2
		25	1715	20000	17.79	18.5	0-2		
			1732.5	20175	17.57	18.5	0-2		
			1750	20350	17.51	18.5	0-2		
		50RB			1715	20000	17.70	18.5	0-2
					1732.5	20175	17.52	18.5	0-2
					1750	20350	17.43	18.5	0-2

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BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)	
5	QPSK	1 RB	0	1712.5	19975	17.69	18.5	0	
				1732.5	20175	17.53	18.5	0	
				1752.5	20375	17.36	18.5	0	
			12	1712.5	19975	17.62	18.5	0	
				1732.5	20175	17.53	18.5	0	
				1752.5	20375	17.41	18.5	0	
			24	1712.5	19975	17.64	18.5	0	
				1732.5	20175	17.54	18.5	0	
				1752.5	20375	17.52	18.5	0	
		12 RB	0	1712.5	19975	17.78	18.5	0-1	
				1732.5	20175	17.54	18.5	0-1	
				1752.5	20375	17.48	18.5	0-1	
			6	1712.5	19975	17.66	18.5	0-1	
				1732.5	20175	17.53	18.5	0-1	
				1752.5	20375	17.44	18.5	0-1	
			13	1712.5	19975	17.73	18.5	0-1	
				1732.5	20175	17.51	18.5	0-1	
				1752.5	20375	17.43	18.5	0-1	
		25RB			1712.5	19975	17.64	18.5	0-1
					1732.5	20175	17.54	18.5	0-1
					1752.5	20375	17.45	18.5	0-1
	16-QAM	1 RB	0	1712.5	19975	17.61	18.5	0-1	
				1732.5	20175	17.49	18.5	0-1	
				1752.5	20375	17.37	18.5	0-1	
			12	1712.5	19975	17.56	18.5	0-1	
				1732.5	20175	17.48	18.5	0-1	
				1752.5	20375	17.41	18.5	0-1	
			24	1712.5	19975	17.62	18.5	0-1	
				1732.5	20175	17.49	18.5	0-1	
				1752.5	20375	17.47	18.5	0-1	
		12 RB	0	1712.5	19975	17.81	18.5	0-2	
				1732.5	20175	17.60	18.5	0-2	
				1752.5	20375	17.53	18.5	0-2	
			6	1712.5	19975	17.70	18.5	0-2	
				1732.5	20175	17.58	18.5	0-2	
				1752.5	20375	17.51	18.5	0-2	
			13	1712.5	19975	17.73	18.5	0-2	
				1732.5	20175	17.57	18.5	0-2	
				1752.5	20375	17.49	18.5	0-2	
		25RB			1712.5	19975	17.72	18.5	0-2
					1732.5	20175	17.58	18.5	0-2
					1752.5	20375	17.51	18.5	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 (dBm)	MPR Allowed per 3GPP(dB)	
3	QPSK	1 RB	0	1711.5	19965	17.71	18.5	0	
				1732.5	20175	17.60	18.5	0	
				1753.5	20385	17.47	18.5	0	
			7	1711.5	19965	17.62	18.5	0	
				1732.5	20175	17.54	18.5	0	
				1753.5	20385	17.54	18.5	0	
			14	1711.5	19965	17.66	18.5	0	
				1732.5	20175	17.58	18.5	0	
				1753.5	20385	17.58	18.5	0	
		8 RB	0	1711.5	19965	17.73	18.5	0-1	
				1732.5	20175	17.52	18.5	0-1	
				1753.5	20385	17.51	18.5	0-1	
			4	1711.5	19965	17.66	18.5	0-1	
				1732.5	20175	17.50	18.5	0-1	
				1753.5	20385	17.42	18.5	0-1	
			7	1711.5	19965	17.65	18.5	0-1	
				1732.5	20175	17.52	18.5	0-1	
				1753.5	20385	17.56	18.5	0-1	
		15RB			1711.5	19965	17.63	18.5	0-1
					1732.5	20175	17.60	18.5	0-1
					1753.5	20385	17.50	18.5	0-1
	16-QAM	1 RB	0	1711.5	19965	17.69	18.5	0-1	
				1732.5	20175	17.51	18.5	0-1	
				1753.5	20385	17.49	18.5	0-1	
			7	1711.5	19965	17.62	18.5	0-1	
				1732.5	20175	17.54	18.5	0-1	
				1753.5	20385	17.52	18.5	0-1	
			14	1711.5	19965	17.63	18.5	0-1	
				1732.5	20175	17.51	18.5	0-1	
				1753.5	20385	17.51	18.5	0-1	
			8 RB	0	1711.5	19965	17.84	18.5	0-2
					1732.5	20175	17.63	18.5	0-2
					1753.5	20385	17.51	18.5	0-2
				4	1711.5	19965	17.68	18.5	0-2
					1732.5	20175	17.61	18.5	0-2
					1753.5	20385	17.55	18.5	0-2
		7	1711.5	19965	17.68	18.5	0-2		
			1732.5	20175	17.64	18.5	0-2		
			1753.5	20385	17.60	18.5	0-2		
		15RB			1711.5	19965	17.67	18.5	0-2
					1732.5	20175	17.55	18.5	0-2
					1753.5	20385	17.47	18.5	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 (dBm)	MPR Allowed per 3GPP(dB)	
1.4	QPSK	1 RB	0	1710.7	19957	17.72	18.5	0	
				1732.5	20175	17.58	18.5	0	
				1754.3	20393	17.60	18.5	0	
			2	1710.7	19957	17.72	18.5	0	
				1732.5	20175	17.57	18.5	0	
				1754.3	20393	17.61	18.5	0	
			5	1710.7	19957	17.79	18.5	0	
				1732.5	20175	17.58	18.5	0	
				1754.3	20393	17.59	18.5	0	
		3 RB	0	1710.7	19957	17.75	18.5	0-1	
				1732.5	20175	17.55	18.5	0-1	
				1754.3	20393	17.57	18.5	0-1	
			2	1710.7	19957	17.71	18.5	0-1	
				1732.5	20175	17.55	18.5	0-1	
				1754.3	20393	17.61	18.5	0-1	
			3	1710.7	19957	17.74	18.5	0-1	
				1732.5	20175	17.57	18.5	0-1	
				1754.3	20393	17.57	18.5	0-1	
		6RB			1710.7	19957	17.73	18.5	0-1
					1732.5	20175	17.53	18.5	0-1
					1754.3	20393	17.61	18.5	0-1
	16-QAM	1 RB	0	1710.7	19957	17.70	18.5	0-1	
				1732.5	20175	17.54	18.5	0-1	
				1754.3	20393	17.56	18.5	0-1	
			2	1710.7	19957	17.62	18.5	0-1	
				1732.5	20175	17.50	18.5	0-1	
				1754.3	20393	17.54	18.5	0-1	
			5	1710.7	19957	17.70	18.5	0-1	
				1732.5	20175	17.50	18.5	0-1	
				1754.3	20393	17.54	18.5	0-1	
		3 RB	0	1710.7	19957	17.64	18.5	0-2	
				1732.5	20175	17.52	18.5	0-2	
				1754.3	20393	17.52	18.5	0-2	
			2	1710.7	19957	17.68	18.5	0-2	
				1732.5	20175	17.49	18.5	0-2	
				1754.3	20393	17.55	18.5	0-2	
			3	1710.7	19957	17.73	18.5	0-2	
				1732.5	20175	17.51	18.5	0-2	
				1754.3	20393	17.56	18.5	0-2	
		6RB			1710.7	19957	17.65	18.5	0-2
					1732.5	20175	17.48	18.5	0-2
					1754.3	20393	17.49	18.5	0-2

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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	22.75	24	0
				836.5	20525	22.92	24	0
				844	20600	23.10	24	0
			25	829	20450	22.80	24	0
				836.5	20525	23.09	24	0
				844	20600	23.12	24	0
			49	829	20450	22.97	24	0
				836.5	20525	23.18	24	0
				844	20600	22.97	24	0
		25 RB	0	829	20450	21.75	23	0-1
				836.5	20525	22.08	23	0-1
				844	20600	22.09	23	0-1
			12	829	20450	21.81	23	0-1
				836.5	20525	22.01	23	0-1
				844	20600	22.08	23	0-1
			25	829	20450	21.93	23	0-1
				836.5	20525	22.14	23	0-1
				844	20600	22.13	23	0-1
		50RB	829	20450	21.90	23	0-1	
			836.5	20525	22.06	23	0-1	
			844	20600	22.20	23	0-1	
	16-QAM	1 RB	0	829	20450	21.91	23	0-1
				836.5	20525	21.98	23	0-1
				844	20600	21.97	23	0-1
			25	829	20450	21.63	23	0-1
				836.5	20525	21.97	23	0-1
				844	20600	22.00	23	0-1
			49	829	20450	22.14	23	0-1
				836.5	20525	22.29	23	0-1
				844	20600	21.71	23	0-1
		25 RB	0	829	20450	20.70	22	0-2
				836.5	20525	21.05	22	0-2
				844	20600	21.20	22	0-2
			12	829	20450	20.88	22	0-2
				836.5	20525	21.11	22	0-2
				844	20600	21.17	22	0-2
			25	829	20450	21.00	22	0-2
				836.5	20525	21.13	22	0-2
				844	20600	21.18	22	0-2
		50RB	829	20450	20.84	22	0-2	
			836.5	20525	21.09	22	0-2	
			844	20600	21.18	22	0-2	

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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	22.60	24	0	
				836.5	20525	22.73	24	0	
				846.5	20625	23.05	24	0	
			12	826.5	20425	22.53	24	0	
				836.5	20525	22.95	24	0	
				846.5	20625	22.93	24	0	
			24	826.5	20425	22.63	24	0	
				836.5	20525	22.97	24	0	
				846.5	20625	22.96	24	0	
		12 RB	0	826.5	20425	21.72	23	0-1	
				836.5	20525	21.97	23	0-1	
				846.5	20625	22.09	23	0-1	
			6	826.5	20425	21.68	23	0-1	
				836.5	20525	21.92	23	0-1	
				846.5	20625	22.01	23	0-1	
			13	826.5	20425	21.69	23	0-1	
				836.5	20525	22.04	23	0-1	
				846.5	20625	22.07	23	0-1	
		25RB			826.5	20425	21.64	23	0-1
					836.5	20525	21.95	23	0-1
					846.5	20625	22.01	23	0-1
	16-QAM	1 RB	0	826.5	20425	21.51	23	0-1	
				836.5	20525	21.79	23	0-1	
				846.5	20625	21.93	23	0-1	
			12	826.5	20425	21.42	23	0-1	
				836.5	20525	21.71	23	0-1	
				846.5	20625	22.29	23	0-1	
			24	826.5	20425	21.83	23	0-1	
				836.5	20525	22.01	23	0-1	
				846.5	20625	21.69	23	0-1	
		12 RB	0	826.5	20425	20.66	22	0-2	
				836.5	20525	21.02	22	0-2	
				846.5	20625	20.97	22	0-2	
			6	826.5	20425	20.72	22	0-2	
				836.5	20525	20.88	22	0-2	
				846.5	20625	21.13	22	0-2	
			13	826.5	20425	20.73	22	0-2	
				836.5	20525	21.10	22	0-2	
				846.5	20625	21.03	22	0-2	
		25RB			826.5	20425	20.65	22	0-2
					836.5	20525	20.92	22	0-2
					846.5	20625	21.09	22	0-2

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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	22.65	24	0	
				836.5	20525	22.98	24	0	
				847.5	20635	22.98	24	0	
			7	825.5	20415	22.61	24	0	
				836.5	20525	22.93	24	0	
				847.5	20635	22.90	24	0	
			14	825.5	20415	22.69	24	0	
				836.5	20525	22.97	24	0	
				847.5	20635	23.04	24	0	
		8 RB	0	825.5	20415	21.74	23	0-1	
				836.5	20525	22.00	23	0-1	
				847.5	20635	22.06	23	0-1	
			4	825.5	20415	21.68	23	0-1	
				836.5	20525	22.05	23	0-1	
				847.5	20635	22.15	23	0-1	
			7	825.5	20415	21.68	23	0-1	
				836.5	20525	22.03	23	0-1	
				847.5	20635	22.07	23	0-1	
		15RB			825.5	20415	21.74	23	0-1
					836.5	20525	22.01	23	0-1
					847.5	20635	22.15	23	0-1
	16-QAM	1 RB	0	825.5	20415	21.45	23	0-1	
				836.5	20525	21.67	23	0-1	
				847.5	20635	22.04	23	0-1	
			7	825.5	20415	21.56	23	0-1	
				836.5	20525	21.83	23	0-1	
				847.5	20635	21.80	23	0-1	
			14	825.5	20415	21.84	23	0-1	
				836.5	20525	21.93	23	0-1	
				847.5	20635	21.89	23	0-1	
			8 RB	0	825.5	20415	20.67	22	0-2
					836.5	20525	21.01	22	0-2
					847.5	20635	21.02	22	0-2
				4	825.5	20415	20.72	22	0-2
					836.5	20525	21.00	22	0-2
					847.5	20635	21.00	22	0-2
		7	825.5	20415	20.60	22	0-2		
			836.5	20525	21.16	22	0-2		
			847.5	20635	21.06	22	0-2		
		15RB			825.5	20415	20.86	22	0-2
					836.5	20525	20.91	22	0-2
					847.5	20635	20.91	22	0-2

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1.4	QPSK	1 RB	0	824.7	20407	22.57	24	0	
				836.5	20525	23.00	24	0	
				848.3	20643	22.94	24	0	
			2	824.7	20407	22.64	24	0	
				836.5	20525	23.11	24	0	
				848.3	20643	22.93	24	0	
			5	824.7	20407	22.71	24	0	
				836.5	20525	23.08	24	0	
				848.3	20643	23.03	24	0	
		3 RB	0	824.7	20407	21.80	23	0-1	
				836.5	20525	22.23	23	0-1	
				848.3	20643	22.30	23	0-1	
			2	824.7	20407	21.82	23	0-1	
				836.5	20525	22.27	23	0-1	
				848.3	20643	22.26	23	0-1	
			3	824.7	20407	21.80	23	0-1	
				836.5	20525	22.28	23	0-1	
				848.3	20643	22.15	23	0-1	
		6RB			824.7	20407	21.68	23	0-1
					836.5	20525	22.03	23	0-1
					848.3	20643	22.02	23	0-1
	16-QAM	1 RB	0	824.7	20407	21.69	23	0-1	
				836.5	20525	21.56	23	0-1	
				848.3	20643	22.17	23	0-1	
			2	824.7	20407	21.87	23	0-1	
				836.5	20525	21.88	23	0-1	
				848.3	20643	21.90	23	0-1	
			5	824.7	20407	21.51	23	0-1	
				836.5	20525	22.21	23	0-1	
				848.3	20643	21.87	23	0-1	
		3 RB	0	824.7	20407	20.69	22	0-2	
				836.5	20525	21.20	22	0-2	
				848.3	20643	21.10	22	0-2	
			2	824.7	20407	20.89	22	0-2	
				836.5	20525	21.19	22	0-2	
				848.3	20643	21.26	22	0-2	
			3	824.7	20407	20.73	22	0-2	
				836.5	20525	21.23	22	0-2	
				848.3	20643	21.06	22	0-2	
		6RB			824.7	20407	20.61	22	0-2
					836.5	20525	20.97	22	0-2
					848.3	20643	20.84	22	0-2

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FDD Band 5 (Reduced Power)									
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10	QPSK	1 RB	0	829	20450	19.38	20	0	
				836.5	20525	19.56	20	0	
				844	20600	19.75	20	0	
			25	829	20450	19.44	20	0	
				836.5	20525	19.68	20	0	
				844	20600	19.64	20	0	
			49	829	20450	19.53	20	0	
				836.5	20525	19.71	20	0	
				844	20600	19.70	20	0	
		25 RB	0	829	20450	19.40	20	0-1	
				836.5	20525	19.63	20	0-1	
				844	20600	19.66	20	0-1	
			12	829	20450	19.41	20	0-1	
				836.5	20525	19.61	20	0-1	
				844	20600	19.64	20	0-1	
			25	829	20450	19.54	20	0-1	
				836.5	20525	19.67	20	0-1	
				844	20600	19.62	20	0-1	
		50RB			829	20450	19.49	20	0-1
					836.5	20525	19.65	20	0-1
					844	20600	19.71	20	0-1
	16-QAM	1 RB	0	829	20450	19.33	20	0-1	
				836.5	20525	19.54	20	0-1	
				844	20600	19.71	20	0-1	
				829	20450	19.42	20	0-1	
				836.5	20525	19.65	20	0-1	
				844	20600	19.64	20	0-1	
			25	829	20450	19.49	20	0-1	
				836.5	20525	19.68	20	0-1	
				844	20600	19.69	20	0-1	
				829	20450	19.40	20	0-2	
				836.5	20525	19.67	20	0-2	
				844	20600	19.65	20	0-2	
			12	829	20450	19.49	20	0-2	
				836.5	20525	19.64	20	0-2	
				844	20600	19.65	20	0-2	
				829	20450	19.57	20	0-2	
				836.5	20525	19.56	20	0-2	
				844	20600	19.66	20	0-2	
		50RB			829	20450	19.44	20	0-2
					836.5	20525	19.65	20	0-2
					844	20600	19.70	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	19.17	20	0	
				836.5	20525	19.34	20	0	
				846.5	20625	19.46	20	0	
			12	826.5	20425	19.14	20	0	
				836.5	20525	19.45	20	0	
				846.5	20625	19.44	20	0	
			24	826.5	20425	19.24	20	0	
				836.5	20525	19.50	20	0	
				846.5	20625	19.48	20	0	
		12 RB	0	826.5	20425	19.18	20	0-1	
				836.5	20525	19.46	20	0-1	
				846.5	20625	19.49	20	0-1	
			6	826.5	20425	19.16	20	0-1	
				836.5	20525	19.41	20	0-1	
				846.5	20625	19.50	20	0-1	
			13	826.5	20425	19.16	20	0-1	
				836.5	20525	19.57	20	0-1	
				846.5	20625	19.44	20	0-1	
		25RB			826.5	20425	19.15	20	0-1
					836.5	20525	19.40	20	0-1
					846.5	20625	19.52	20	0-1
	16-QAM	1 RB	0	826.5	20425	19.10	20	0-1	
				836.5	20525	19.31	20	0-1	
				846.5	20625	19.48	20	0-1	
			12	826.5	20425	19.05	20	0-1	
				836.5	20525	19.50	20	0-1	
				846.5	20625	19.41	20	0-1	
			24	826.5	20425	19.14	20	0-1	
				836.5	20525	19.46	20	0-1	
				846.5	20625	19.42	20	0-1	
			12 RB	0	826.5	20425	19.24	20	0-2
					836.5	20525	19.48	20	0-2
					846.5	20625	19.57	20	0-2
				6	826.5	20425	19.23	20	0-2
					836.5	20525	19.48	20	0-2
					846.5	20625	19.54	20	0-2
		13	826.5	20425	19.23	20	0-2		
			836.5	20525	19.59	20	0-2		
			846.5	20625	19.55	20	0-2		
		25RB			826.5	20425	19.20	20	0-2
					836.5	20525	19.44	20	0-2
					846.5	20625	19.54	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)	
3	QPSK	1 RB	0	825.5	20415	19.21	20	0	
				836.5	20525	19.48	20	0	
				847.5	20635	19.53	20	0	
			7	825.5	20415	19.16	20	0	
				836.5	20525	19.52	20	0	
				847.5	20635	19.45	20	0	
			14	825.5	20415	19.20	20	0	
				836.5	20525	19.51	20	0	
				847.5	20635	19.50	20	0	
		8 RB	0	825.5	20415	19.23	20	0-1	
				836.5	20525	19.43	20	0-1	
				847.5	20635	19.52	20	0-1	
			4	825.5	20415	19.21	20	0-1	
				836.5	20525	19.51	20	0-1	
				847.5	20635	19.48	20	0-1	
			7	825.5	20415	19.22	20	0-1	
				836.5	20525	19.51	20	0-1	
				847.5	20635	19.49	20	0-1	
		15RB			825.5	20415	19.23	20	0-1
					836.5	20525	19.43	20	0-1
					847.5	20635	19.50	20	0-1
	16-QAM	1 RB	0	825.5	20415	19.17	20	0-1	
				836.5	20525	19.45	20	0-1	
				847.5	20635	19.45	20	0-1	
			7	825.5	20415	19.07	20	0-1	
				836.5	20525	19.45	20	0-1	
				847.5	20635	19.48	20	0-1	
			14	825.5	20415	19.15	20	0-1	
				836.5	20525	19.53	20	0-1	
				847.5	20635	19.48	20	0-1	
			8 RB	0	825.5	20415	19.26	20	0-2
					836.5	20525	19.50	20	0-2
					847.5	20635	19.61	20	0-2
				4	825.5	20415	19.27	20	0-2
					836.5	20525	19.57	20	0-2
					847.5	20635	19.58	20	0-2
				7	825.5	20415	19.23	20	0-2
					836.5	20525	19.60	20	0-2
					847.5	20635	19.59	20	0-2
		15RB			825.5	20415	19.19	20	0-2
					836.5	20525	19.46	20	0-2
					847.5	20635	19.53	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)	
1.4	QPSK	1 RB	0	824.7	20407	19.24	20	0	
				836.5	20525	19.57	20	0	
				848.3	20643	19.54	20	0	
			2	824.7	20407	19.20	20	0	
				836.5	20525	19.60	20	0	
				848.3	20643	19.52	20	0	
			5	824.7	20407	19.24	20	0	
				836.5	20525	19.60	20	0	
				848.3	20643	19.55	20	0	
		3 RB	0	824.7	20407	19.26	20	0-1	
				836.5	20525	19.61	20	0-1	
				848.3	20643	19.53	20	0-1	
			2	824.7	20407	19.20	20	0-1	
				836.5	20525	19.56	20	0-1	
				848.3	20643	19.48	20	0-1	
			3	824.7	20407	19.20	20	0-1	
				836.5	20525	19.57	20	0-1	
				848.3	20643	19.53	20	0-1	
		6RB			824.7	20407	19.22	20	0-1
					836.5	20525	19.55	20	0-1
					848.3	20643	19.53	20	0-1
	16-QAM	1 RB	0	824.7	20407	19.16	20	0-1	
				836.5	20525	19.55	20	0-1	
				848.3	20643	19.49	20	0-1	
				824.7	20407	19.21	20	0-1	
				836.5	20525	19.51	20	0-1	
				848.3	20643	19.48	20	0-1	
			2	824.7	20407	19.21	20	0-1	
				836.5	20525	19.53	20	0-1	
				848.3	20643	19.48	20	0-1	
				824.7	20407	19.18	20	0-2	
				836.5	20525	19.53	20	0-2	
				848.3	20643	19.48	20	0-2	
			3	824.7	20407	19.13	20	0-2	
				836.5	20525	19.49	20	0-2	
				848.3	20643	19.45	20	0-2	
				824.7	20407	19.14	20	0-2	
				836.5	20525	19.56	20	0-2	
				848.3	20643	19.47	20	0-2	
		6RB			824.7	20407	19.11	20	0-2
					836.5	20525	19.51	20	0-2
					848.3	20643	19.47	20	0-2

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FDD Band 7 (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	2510	20850	22.59	24	0	
				2535	21100	22.72	24	0	
				2560	21350	22.91	24	0	
			50	2510	20850	22.61	24	0	
				2535	21100	22.68	24	0	
				2560	21350	23.28	24	0	
			99	2510	20850	22.53	24	0	
				2535	21100	22.90	24	0	
				2560	21350	22.93	24	0	
		50 RB	0	2510	20850	21.33	23	0-1	
				2535	21100	21.81	23	0-1	
				2560	21350	21.99	23	0-1	
			25	2510	20850	21.68	23	0-1	
				2535	21100	21.82	23	0-1	
				2560	21350	21.99	23	0-1	
			50	2510	20850	21.69	23	0-1	
				2535	21100	21.81	23	0-1	
				2560	21350	21.93	23	0-1	
		100RB			2510	20850	21.59	23	0-1
					2535	21100	22.12	23	0-1
					2560	21350	21.93	23	0-1
	16-QAM	1 RB	0	2510	20850	21.44	23	0-1	
				2535	21100	22.00	23	0-1	
				2560	21350	21.89	23	0-1	
			50	2510	20850	21.52	23	0-1	
				2535	21100	21.84	23	0-1	
				2560	21350	21.95	23	0-1	
			99	2510	20850	21.83	23	0-1	
				2535	21100	21.67	23	0-1	
				2560	21350	22.24	23	0-1	
		50 RB	0	2510	20850	20.24	22	0-2	
				2535	21100	20.83	22	0-2	
				2560	21350	21.13	22	0-2	
			25	2510	20850	20.59	22	0-2	
				2535	21100	20.79	22	0-2	
				2560	21350	21.08	22	0-2	
			50	2510	20850	20.67	22	0-2	
				2535	21100	20.87	22	0-2	
				2560	21350	21.35	22	0-2	
		100RB			2510	20850	20.54	22	0-2
					2535	21100	20.77	22	0-2
					2560	21350	21.09	22	0-2

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BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
15	QPSK	1 RB	0	2507.5	20825	22.36	24	0
				2535	21100	22.63	24	0
				2562.5	21375	23.02	24	0
			36	2507.5	20825	22.42	24	0
				2535	21100	22.72	24	0
				2562.5	21375	23.02	24	0
			74	2507.5	20825	22.42	24	0
				2535	21100	22.80	24	0
				2562.5	21375	22.97	24	0
		36 RB	0	2507.5	20825	21.07	23	0-1
				2535	21100	21.85	23	0-1
				2562.5	21375	21.84	23	0-1
			18	2507.5	20825	21.51	23	0-1
				2535	21100	21.64	23	0-1
				2562.5	21375	21.92	23	0-1
			37	2507.5	20825	21.56	23	0-1
				2535	21100	21.55	23	0-1
				2562.5	21375	22.16	23	0-1
			75RB	2507.5	20825	21.32	23	0-1
				2535	21100	21.85	23	0-1
				2562.5	21375	21.81	23	0-1
	16-QAM	1 RB	0	2507.5	20825	21.39	23	0-1
				2535	21100	21.70	23	0-1
				2562.5	21375	21.46	23	0-1
			36	2507.5	20825	21.38	23	0-1
				2535	21100	21.80	23	0-1
				2562.5	21375	21.99	23	0-1
			74	2507.5	20825	21.42	23	0-1
				2535	21100	21.68	23	0-1
				2562.5	21375	21.91	23	0-1
		36 RB	0	2507.5	20825	20.52	22	0-2
				2535	21100	20.96	22	0-2
				2562.5	21375	20.92	22	0-2
			18	2507.5	20825	20.53	22	0-2
				2535	21100	20.76	22	0-2
				2562.5	21375	20.92	22	0-2
			37	2507.5	20825	20.56	22	0-2
				2535	21100	20.63	22	0-2
				2562.5	21375	20.91	22	0-2
			75RB	2507.5	20825	20.36	22	0-2
				2535	21100	20.65	22	0-2
				2562.5	21375	20.92	22	0-2

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10	QPSK	1 RB	0	2505	20800	22.38	24	0	
				2535	21100	22.65	24	0	
				2565	21400	23.07	24	0	
			25	2505	20800	22.34	24	0	
				2535	21100	22.52	24	0	
				2565	21400	23.04	24	0	
			49	2505	20800	22.48	24	0	
				2535	21100	22.76	24	0	
				2565	21400	22.97	24	0	
		25 RB	0	2505	20800	21.45	23	0-1	
				2535	21100	21.67	23	0-1	
				2565	21400	21.92	23	0-1	
			12	2505	20800	21.28	23	0-1	
				2535	21100	21.69	23	0-1	
				2565	21400	21.91	23	0-1	
			25	2505	20800	21.41	23	0-1	
				2535	21100	21.69	23	0-1	
				2565	21400	21.88	23	0-1	
		50RB			2505	20800	21.56	23	0-1
					2535	21100	21.65	23	0-1
					2565	21400	21.90	23	0-1
	16-QAM	1 RB	0	2505	20800	21.18	23	0-1	
				2535	21100	21.23	23	0-1	
				2565	21400	22.20	23	0-1	
			25	2505	20800	21.49	23	0-1	
				2535	21100	21.76	23	0-1	
				2565	21400	21.72	23	0-1	
			49	2505	20800	21.42	23	0-1	
				2535	21100	21.47	23	0-1	
				2565	21400	22.08	23	0-1	
			25 RB	0	2505	20800	20.48	22	0-2
					2535	21100	20.73	22	0-2
					2565	21400	21.04	22	0-2
				12	2505	20800	20.32	22	0-2
					2535	21100	20.74	22	0-2
					2565	21400	20.97	22	0-2
			25	2505	20800	20.47	22	0-2	
				2535	21100	20.72	22	0-2	
				2565	21400	21.01	22	0-2	
		50RB			2505	20800	20.10	22	0-2
					2535	21100	20.62	22	0-2
					2565	21400	20.98	22	0-2

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5	QPSK	1 RB	0	2502.5	20775	22.29	24	0
				2535	21100	22.69	24	0
				2567.5	21425	22.90	24	0
			12	2502.5	20775	22.15	24	0
				2535	21100	22.43	24	0
				2567.5	21425	22.87	24	0
			24	2502.5	20775	22.39	24	0
				2535	21100	22.65	24	0
				2567.5	21425	22.83	24	0
		12 RB	0	2502.5	20775	21.40	23	0-1
				2535	21100	21.64	23	0-1
				2567.5	21425	21.87	23	0-1
			6	2502.5	20775	21.44	23	0-1
				2535	21100	21.69	23	0-1
				2567.5	21425	21.90	23	0-1
			13	2502.5	20775	21.46	23	0-1
				2535	21100	21.69	23	0-1
				2567.5	21425	21.81	23	0-1
		25RB	2502.5	20775	21.40	23	0-1	
			2535	21100	22.00	23	0-1	
			2567.5	21425	21.88	23	0-1	
	16-QAM	1 RB	0	2502.5	20775	21.38	23	0-1
				2535	21100	21.49	23	0-1
				2567.5	21425	22.20	23	0-1
			12	2502.5	20775	21.13	23	0-1
				2535	21100	21.41	23	0-1
				2567.5	21425	21.51	23	0-1
			24	2502.5	20775	21.35	23	0-1
				2535	21100	21.28	23	0-1
				2567.5	21425	21.92	23	0-1
		12 RB	0	2502.5	20775	20.47	22	0-2
				2535	21100	20.73	22	0-2
				2567.5	21425	20.89	22	0-2
			6	2502.5	20775	20.43	22	0-2
				2535	21100	20.75	22	0-2
				2567.5	21425	20.98	22	0-2
			13	2502.5	20775	20.55	22	0-2
				2535	21100	20.79	22	0-2
				2567.5	21425	20.96	22	0-2
		25RB	2502.5	20775	20.40	22	0-2	
			2535	21100	20.69	22	0-2	
			2567.5	21425	20.91	22	0-2	

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BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)	
20	QPSK	1 RB	0	2510	20850	17.92	19	0	
				2535	21100	18.00	19	0	
				2560	21350	18.22	19	0	
			50	2510	20850	17.91	19	0	
				2535	21100	17.97	19	0	
				2560	21350	18.40	19	0	
			99	2510	20850	17.94	19	0	
				2535	21100	18.09	19	0	
				2560	21350	18.47	19	0	
		50 RB	0	2510	20850	17.90	19	0-1	
				2535	21100	17.97	19	0-1	
				2560	21350	18.38	19	0-1	
			25	2510	20850	17.94	19	0-1	
				2535	21100	17.98	19	0-1	
				2560	21350	18.32	19	0-1	
			50	2510	20850	17.98	19	0-1	
				2535	21100	18.03	19	0-1	
				2560	21350	18.49	19	0-1	
		100RB			2510	20850	17.97	19	0-1
					2535	21100	17.94	19	0-1
					2560	21350	18.35	19	0-1
	16-QAM	1 RB	0	2510	20850	17.87	19	0-1	
				2535	21100	17.96	19	0-1	
				2560	21350	18.13	19	0-1	
			50	2510	20850	17.88	19	0-1	
				2535	21100	17.87	19	0-1	
				2560	21350	18.39	19	0-1	
			99	2510	20850	17.88	19	0-1	
				2535	21100	18.04	19	0-1	
				2560	21350	18.39	19	0-1	
		50 RB	0	2510	20850	17.96	19	0-2	
				2535	21100	17.94	19	0-2	
				2560	21350	18.36	19	0-2	
			25	2510	20850	17.97	19	0-2	
				2535	21100	17.93	19	0-2	
				2560	21350	18.34	19	0-2	
			50	2510	20850	17.95	19	0-2	
				2535	21100	18.06	19	0-2	
				2560	21350	18.45	19	0-2	
		100RB			2510	20850	17.93	19	0-2
					2535	21100	17.92	19	0-2
					2560	21350	18.33	19	0-2

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FDD Band 7 (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	2507.5	20825	17.95	19	0	
				2535	21100	18.02	19	0	
				2562.5	21375	18.38	19	0	
			36	2507.5	20825	17.92	19	0	
				2535	21100	17.93	19	0	
				2562.5	21375	18.43	19	0	
			74	2507.5	20825	17.96	19	0	
				2535	21100	18.06	19	0	
				2562.5	21375	18.48	19	0	
		36 RB	0	2507.5	20825	17.94	19	0-1	
				2535	21100	17.97	19	0-1	
				2562.5	21375	18.34	19	0-1	
			18	2507.5	20825	17.94	19	0-1	
				2535	21100	17.97	19	0-1	
				2562.5	21375	18.39	19	0-1	
			37	2507.5	20825	17.97	19	0-1	
				2535	21100	17.93	19	0-1	
				2562.5	21375	18.41	19	0-1	
		75RB			2507.5	20825	17.95	19	0-1
					2535	21100	17.97	19	0-1
					2562.5	21375	18.35	19	0-1
	16-QAM	1 RB	0	2507.5	20825	17.90	19	0-1	
				2535	21100	17.91	19	0-1	
				2562.5	21375	18.33	19	0-1	
			36	2507.5	20825	17.84	19	0-1	
				2535	21100	17.84	19	0-1	
				2562.5	21375	18.37	19	0-1	
			74	2507.5	20825	17.90	19	0-1	
				2535	21100	17.97	19	0-1	
				2562.5	21375	18.40	19	0-1	
		36 RB	0	2507.5	20825	17.89	19	0-2	
				2535	21100	17.97	19	0-2	
				2562.5	21375	18.33	19	0-2	
			18	2507.5	20825	17.90	19	0-2	
				2535	21100	17.89	19	0-2	
				2562.5	21375	18.39	19	0-2	
			37	2507.5	20825	17.97	19	0-2	
				2535	21100	17.92	19	0-2	
				2562.5	21375	18.41	19	0-2	
		75RB			2507.5	20825	17.98	19	0-2
					2535	21100	17.94	19	0-2
					2562.5	21375	18.35	19	0-2

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FDD Band 7 (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	2505	20800	17.93	19	0
				2535	21100	17.94	19	0
				2565	21400	18.41	19	0
			25	2505	20800	17.94	19	0
				2535	21100	17.94	19	0
				2565	21400	18.37	19	0
			49	2505	20800	17.96	19	0
				2535	21100	18.04	19	0
				2565	21400	18.44	19	0
		25 RB	0	2505	20800	17.94	19	0-1
				2535	21100	17.92	19	0-1
				2565	21400	18.42	19	0-1
			12	2505	20800	17.96	19	0-1
				2535	21100	17.99	19	0-1
				2565	21400	18.40	19	0-1
			25	2505	20800	17.95	19	0-1
				2535	21100	17.91	19	0-1
				2565	21400	18.44	19	0-1
		50RB		2505	20800	17.98	19	0-1
				2535	21100	17.98	19	0-1
				2565	21400	18.40	19	0-1
	16-QAM	1 RB	0	2505	20800	17.88	19	0-1
				2535	21100	17.86	19	0-1
				2565	21400	18.38	19	0-1
			25	2505	20800	17.86	19	0-1
				2535	21100	17.83	19	0-1
				2565	21400	18.35	19	0-1
			49	2505	20800	17.94	19	0-1
				2535	21100	17.95	19	0-1
				2565	21400	18.36	19	0-1
		25 RB	0	2505	20800	18.00	19	0-2
				2535	21100	17.95	19	0-2
				2565	21400	18.45	19	0-2
			12	2505	20800	18.02	19	0-2
				2535	21100	17.94	19	0-2
				2565	21400	18.49	19	0-2
			25	2505	20800	18.03	19	0-2
				2535	21100	17.94	19	0-2
				2565	21400	18.48	19	0-2
		50RB		2505	20800	17.94	19	0-2
				2535	21100	17.93	19	0-2
				2565	21400	18.41	19	0-2

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FDD Band 7 (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	2502.5	20775	17.82	19	0
				2535	21100	17.92	19	0
				2567.5	21425	18.22	19	0
			12	2502.5	20775	17.93	19	0
				2535	21100	17.88	19	0
				2567.5	21425	18.21	19	0
			24	2502.5	20775	17.98	19	0
				2535	21100	18.01	19	0
				2567.5	21425	18.34	19	0
		12 RB	0	2502.5	20775	18.05	19	0-1
				2535	21100	18.14	19	0-1
				2567.5	21425	18.22	19	0-1
			6	2502.5	20775	18.06	19	0-1
				2535	21100	17.73	19	0-1
				2567.5	21425	18.22	19	0-1
			13	2502.5	20775	18.14	19	0-1
				2535	21100	18.05	19	0-1
				2567.5	21425	18.05	19	0-1
		25RB		2502.5	20775	17.94	19	0-1
				2535	21100	18.13	19	0-1
				2567.5	21425	18.11	19	0-1
	16-QAM	1 RB	0	2502.5	20775	18.02	19	0-1
				2535	21100	17.99	19	0-1
				2567.5	21425	18.38	19	0-1
			12	2502.5	20775	17.86	19	0-1
				2535	21100	18.05	19	0-1
				2567.5	21425	18.02	19	0-1
			24	2502.5	20775	18.24	19	0-1
				2535	21100	18.01	19	0-1
				2567.5	21425	17.99	19	0-1
		12 RB	0	2502.5	20775	18.22	19	0-2
				2535	21100	17.85	19	0-2
				2567.5	21425	18.21	19	0-2
			6	2502.5	20775	18.04	19	0-2
				2535	21100	18.04	19	0-2
				2567.5	21425	18.04	19	0-2
			13	2502.5	20775	18.03	19	0-2
				2535	21100	17.94	19	0-2
				2567.5	21425	18.48	19	0-2
		25RB		2502.5	20775	17.94	19	0-2
				2535	21100	17.98	19	0-2
				2567.5	21425	18.32	19	0-2

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FDD Band 12 (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	704	23060	22.71	24	0	
				707.5	23095	22.91	24	0	
				711	23130	22.87	24	0	
			25	704	23060	22.89	24	0	
				707.5	23095	22.91	24	0	
				711	23130	22.84	24	0	
			49	704	23060	23.04	24	0	
				707.5	23095	22.91	24	0	
				711	23130	23.00	24	0	
		25 RB	0	704	23060	21.87	23	0-1	
				707.5	23095	21.51	23	0-1	
				711	23130	22.03	23	0-1	
			12	704	23060	21.59	23	0-1	
				707.5	23095	22.00	23	0-1	
				711	23130	22.00	23	0-1	
			25	704	23060	22.05	23	0-1	
				707.5	23095	22.07	23	0-1	
				711	23130	22.04	23	0-1	
		50RB			704	23060	21.95	23	0-1
					707.5	23095	22.07	23	0-1
					711	23130	22.05	23	0-1
	16-QAM	1 RB	0	704	23060	21.77	23	0-1	
				707.5	23095	22.06	23	0-1	
				711	23130	21.83	23	0-1	
			25	704	23060	21.81	23	0-1	
				707.5	23095	21.84	23	0-1	
				711	23130	21.67	23	0-1	
			49	704	23060	22.25	23	0-1	
				707.5	23095	21.67	23	0-1	
				711	23130	22.29	23	0-1	
			25 RB	0	704	23060	20.88	22	0-2
					707.5	23095	21.04	22	0-2
					711	23130	21.00	22	0-2
				12	704	23060	21.06	22	0-2
					707.5	23095	20.98	22	0-2
					711	23130	21.03	22	0-2
				25	704	23060	20.97	22	0-2
					707.5	23095	21.02	22	0-2
					711	23130	21.05	22	0-2
		50RB			704	23060	20.92	22	0-2
					707.5	23095	21.02	22	0-2
					711	23130	21.12	22	0-2

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FDD Band 12 (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	701.5	23035	22.41	24	0	
				707.5	23095	22.86	24	0	
				713.5	23155	22.61	24	0	
			12	701.5	23035	22.68	24	0	
				707.5	23095	22.75	24	0	
				713.5	23155	22.80	24	0	
			24	701.5	23035	22.94	24	0	
				707.5	23095	22.80	24	0	
				713.5	23155	22.80	24	0	
		12 RB	0	701.5	23035	21.69	23	0-1	
				707.5	23095	21.81	23	0-1	
				713.5	23155	21.87	23	0-1	
			6	701.5	23035	21.63	23	0-1	
				707.5	23095	21.68	23	0-1	
				713.5	23155	21.81	23	0-1	
			13	701.5	23035	21.68	23	0-1	
				707.5	23095	21.87	23	0-1	
				713.5	23155	21.72	23	0-1	
		25RB			701.5	23035	21.63	23	0-1
					707.5	23095	21.71	23	0-1
					713.5	23155	21.83	23	0-1
	16-QAM	1 RB	0	701.5	23035	21.52	23	0-1	
				707.5	23095	21.77	23	0-1	
				713.5	23155	21.54	23	0-1	
			12	701.5	23035	21.74	23	0-1	
				707.5	23095	21.62	23	0-1	
				713.5	23155	21.80	23	0-1	
			24	701.5	23035	21.97	23	0-1	
				707.5	23095	21.66	23	0-1	
				713.5	23155	21.87	23	0-1	
		12 RB	0	701.5	23035	20.71	22	0-2	
				707.5	23095	20.79	22	0-2	
				713.5	23155	20.79	22	0-2	
			6	701.5	23035	20.54	22	0-2	
				707.5	23095	20.70	22	0-2	
				713.5	23155	20.78	22	0-2	
			13	701.5	23035	20.68	22	0-2	
				707.5	23095	20.91	22	0-2	
				713.5	23155	20.81	22	0-2	
		25RB			701.5	23035	20.59	22	0-2
					707.5	23095	21.04	22	0-2
					713.5	23155	20.80	22	0-2

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BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
3	QPSK	1 RB	0	700.5	23025	22.45	24	0
				707.5	23095	22.55	24	0
				714.5	23165	22.93	24	0
			7	700.5	23025	22.65	24	0
				707.5	23095	22.69	24	0
				714.5	23165	22.52	24	0
			14	700.5	23025	22.61	24	0
				707.5	23095	22.81	24	0
				714.5	23165	22.89	24	0
		8 RB	0	700.5	23025	21.69	23	0-1
				707.5	23095	21.79	23	0-1
				714.5	23165	21.87	23	0-1
			4	700.5	23025	21.70	23	0-1
				707.5	23095	21.66	23	0-1
				714.5	23165	21.96	23	0-1
			7	700.5	23025	21.60	23	0-1
				707.5	23095	21.86	23	0-1
				714.5	23165	21.86	23	0-1
		15RB	700.5	23025	21.68	23	0-1	
			707.5	23095	21.95	23	0-1	
			714.5	23165	21.68	23	0-1	
	16-QAM	1 RB	0	700.5	23025	21.72	23	0-1
				707.5	23095	21.94	23	0-1
				714.5	23165	21.58	23	0-1
			7	700.5	23025	21.16	23	0-1
				707.5	23095	21.71	23	0-1
				714.5	23165	21.93	23	0-1
			14	700.5	23025	21.68	23	0-1
				707.5	23095	22.02	23	0-1
				714.5	23165	21.63	23	0-1
		8 RB	0	700.5	23025	20.67	22	0-2
				707.5	23095	20.91	22	0-2
				714.5	23165	20.82	22	0-2
			4	700.5	23025	20.71	22	0-2
				707.5	23095	20.71	22	0-2
				714.5	23165	21.06	22	0-2
			7	700.5	23025	20.68	22	0-2
				707.5	23095	20.78	22	0-2
				714.5	23165	20.80	22	0-2
		15RB	700.5	23025	20.72	22	0-2	
			707.5	23095	21.11	22	0-2	
			714.5	23165	21.20	22	0-2	

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FDD Band 12 (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	699.7	23017	22.55	24	0	
				707.5	23095	22.81	24	0	
				715.3	23173	22.77	24	0	
			2	699.7	23017	22.62	24	0	
				707.5	23095	22.80	24	0	
				715.3	23173	22.83	24	0	
			5	699.7	23017	22.79	24	0	
				707.5	23095	22.89	24	0	
				715.3	23173	22.76	24	0	
		3 RB	0	699.7	23017	22.65	23	0-1	
				707.5	23095	22.88	23	0-1	
				715.3	23173	22.84	23	0-1	
			2	699.7	23017	22.72	23	0-1	
				707.5	23095	22.84	23	0-1	
				715.3	23173	22.78	23	0-1	
			3	699.7	23017	22.70	23	0-1	
				707.5	23095	22.85	23	0-1	
				715.3	23173	22.88	23	0-1	
		6RB			699.7	23017	21.72	23	0-1
					707.5	23095	21.93	23	0-1
					715.3	23173	21.81	23	0-1
	16-QAM	1 RB	0	699.7	23017	21.43	23	0-1	
				707.5	23095	21.83	23	0-1	
				715.3	23173	21.88	23	0-1	
			2	699.7	23017	21.60	23	0-1	
				707.5	23095	21.54	23	0-1	
				715.3	23173	22.04	23	0-1	
			5	699.7	23017	22.19	23	0-1	
				707.5	23095	21.65	23	0-1	
				715.3	23173	21.54	23	0-1	
		3 RB	0	699.7	23017	21.65	22	0-2	
				707.5	23095	21.78	22	0-2	
				715.3	23173	21.81	22	0-2	
			2	699.7	23017	21.57	22	0-2	
				707.5	23095	21.88	22	0-2	
				715.3	23173	21.81	22	0-2	
			3	699.7	23017	21.73	22	0-2	
				707.5	23095	21.74	22	0-2	
				715.3	23173	21.82	22	0-2	
		6RB			699.7	23017	20.55	22	0-2
					707.5	23095	20.79	22	0-2
					715.3	23173	20.61	22	0-2

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FDD Band 12 (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	704	23060	18.72	19.5	0
				707.5	23095	18.71	19.5	0
				711	23130	18.78	19.5	0
			25	704	23060	18.78	19.5	0
				707.5	23095	18.90	19.5	0
				711	23130	18.79	19.5	0
			49	704	23060	18.96	19.5	0
				707.5	23095	18.80	19.5	0
				711	23130	18.94	19.5	0
		25 RB	0	704	23060	18.68	19.5	0-1
				707.5	23095	18.78	19.5	0-1
				711	23130	18.86	19.5	0-1
			12	704	23060	18.77	19.5	0-1
				707.5	23095	18.82	19.5	0-1
				711	23130	18.69	19.5	0-1
			25	704	23060	18.87	19.5	0-1
				707.5	23095	18.86	19.5	0-1
				711	23130	18.80	19.5	0-1
		50RB	704	23060	18.77	19.5	0-1	
			707.5	23095	18.85	19.5	0-1	
			711	23130	18.94	19.5	0-1	
	16-QAM	1 RB	0	704	23060	18.66	19.5	0-1
				707.5	23095	18.87	19.5	0-1
				711	23130	18.95	19.5	0-1
			25	704	23060	18.35	19.5	0-1
				707.5	23095	18.64	19.5	0-1
				711	23130	18.54	19.5	0-1
			49	704	23060	18.66	19.5	0-1
				707.5	23095	18.70	19.5	0-1
				711	23130	18.57	19.5	0-1
		25 RB	0	704	23060	18.59	19.5	0-2
				707.5	23095	18.88	19.5	0-2
				711	23130	18.91	19.5	0-2
			12	704	23060	18.78	19.5	0-2
				707.5	23095	18.79	19.5	0-2
				711	23130	18.82	19.5	0-2
			25	704	23060	18.89	19.5	0-2
				707.5	23095	18.97	19.5	0-2
				711	23130	18.88	19.5	0-2
		50RB	704	23060	18.82	19.5	0-2	
			707.5	23095	18.78	19.5	0-2	
			711	23130	18.84	19.5	0-2	

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FDD Band 12 (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	701.5	23035	18.56	19.5	0	
				707.5	23095	18.58	19.5	0	
				713.5	23155	18.76	19.5	0	
			12	701.5	23035	18.69	19.5	0	
				707.5	23095	18.80	19.5	0	
				713.5	23155	18.83	19.5	0	
			24	701.5	23035	18.93	19.5	0	
				707.5	23095	18.88	19.5	0	
				713.5	23155	18.82	19.5	0	
		12 RB	0	701.5	23035	18.82	19.5	0-1	
				707.5	23095	18.76	19.5	0-1	
				713.5	23155	18.91	19.5	0-1	
			6	701.5	23035	18.76	19.5	0-1	
				707.5	23095	18.80	19.5	0-1	
				713.5	23155	18.91	19.5	0-1	
			13	701.5	23035	18.68	19.5	0-1	
				707.5	23095	18.88	19.5	0-1	
				713.5	23155	18.89	19.5	0-1	
		25RB			701.5	23035	18.69	19.5	0-1
					707.5	23095	18.88	19.5	0-1
					713.5	23155	18.82	19.5	0-1
	16-QAM	1 RB	0	701.5	23035	18.50	19.5	0-1	
				707.5	23095	18.47	19.5	0-1	
				713.5	23155	18.55	19.5	0-1	
			12	701.5	23035	18.42	19.5	0-1	
				707.5	23095	18.67	19.5	0-1	
				713.5	23155	18.79	19.5	0-1	
			24	701.5	23035	18.47	19.5	0-1	
				707.5	23095	18.71	19.5	0-1	
				713.5	23155	18.59	19.5	0-1	
			12 RB	0	701.5	23035	18.84	19.5	0-2
					707.5	23095	18.88	19.5	0-2
					713.5	23155	18.93	19.5	0-2
				6	701.5	23035	18.86	19.5	0-2
					707.5	23095	18.85	19.5	0-2
					713.5	23155	18.88	19.5	0-2
		13	701.5	23035	18.71	19.5	0-2		
			707.5	23095	18.88	19.5	0-2		
			713.5	23155	18.94	19.5	0-2		
		25RB			701.5	23035	18.64	19.5	0-2
					707.5	23095	18.83	19.5	0-2
					713.5	23155	18.84	19.5	0-2

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FDD Band 12 (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	700.5	23025	18.62	19.5	0	
				707.5	23095	18.80	19.5	0	
				714.5	23165	18.80	19.5	0	
			7	700.5	23025	18.57	19.5	0	
				707.5	23095	18.82	19.5	0	
				714.5	23165	18.85	19.5	0	
			14	700.5	23025	18.71	19.5	0	
				707.5	23095	18.80	19.5	0	
				714.5	23165	18.89	19.5	0	
		8 RB	0	700.5	23025	18.67	19.5	0-1	
				707.5	23095	18.85	19.5	0-1	
				714.5	23165	18.90	19.5	0-1	
			4	700.5	23025	18.76	19.5	0-1	
				707.5	23095	18.85	19.5	0-1	
				714.5	23165	18.91	19.5	0-1	
			7	700.5	23025	18.71	19.5	0-1	
				707.5	23095	18.84	19.5	0-1	
				714.5	23165	18.90	19.5	0-1	
		15RB			700.5	23025	18.80	19.5	0-1
					707.5	23095	18.80	19.5	0-1
					714.5	23165	18.92	19.5	0-1
	16-QAM	1 RB	0	700.5	23025	18.78	19.5	0-1	
				707.5	23095	18.67	19.5	0-1	
				714.5	23165	18.82	19.5	0-1	
			7	700.5	23025	18.84	19.5	0-1	
				707.5	23095	18.78	19.5	0-1	
				714.5	23165	18.92	19.5	0-1	
			14	700.5	23025	18.90	19.5	0-1	
				707.5	23095	18.67	19.5	0-1	
				714.5	23165	18.66	19.5	0-1	
			8 RB	0	700.5	23025	18.75	19.5	0-2
					707.5	23095	18.92	19.5	0-2
					714.5	23165	18.95	19.5	0-2
				4	700.5	23025	18.89	19.5	0-2
					707.5	23095	18.90	19.5	0-2
					714.5	23165	18.91	19.5	0-2
				7	700.5	23025	18.69	19.5	0-2
					707.5	23095	18.90	19.5	0-2
					714.5	23165	18.91	19.5	0-2
		15RB			700.5	23025	18.63	19.5	0-2
					707.5	23095	18.80	19.5	0-2
					714.5	23165	18.90	19.5	0-2

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FDD Band 12 (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	699.7	23017	18.59	19.5	0	
				707.5	23095	18.74	19.5	0	
				715.3	23173	18.76	19.5	0	
			2	699.7	23017	18.78	19.5	0	
				707.5	23095	18.85	19.5	0	
				715.3	23173	18.82	19.5	0	
			5	699.7	23017	18.66	19.5	0	
				707.5	23095	18.88	19.5	0	
				715.3	23173	18.95	19.5	0	
		3 RB	0	699.7	23017	18.68	19.5	0-1	
				707.5	23095	18.85	19.5	0-1	
				715.3	23173	18.86	19.5	0-1	
			2	699.7	23017	18.71	19.5	0-1	
				707.5	23095	18.80	19.5	0-1	
				715.3	23173	18.79	19.5	0-1	
			3	699.7	23017	18.69	19.5	0-1	
				707.5	23095	18.83	19.5	0-1	
				715.3	23173	18.87	19.5	0-1	
		6RB			699.7	23017	18.67	19.5	0-1
					707.5	23095	18.90	19.5	0-1
					715.3	23173	18.75	19.5	0-1
	16-QAM	1 RB	0	699.7	23017	18.57	19.5	0-1	
				707.5	23095	18.62	19.5	0-1	
				715.3	23173	18.60	19.5	0-1	
			2	699.7	23017	18.83	19.5	0-1	
				707.5	23095	18.81	19.5	0-1	
				715.3	23173	18.60	19.5	0-1	
			5	699.7	23017	18.23	19.5	0-1	
				707.5	23095	18.51	19.5	0-1	
				715.3	23173	18.60	19.5	0-1	
			3 RB	0	699.7	23017	18.58	19.5	0-2
					707.5	23095	18.57	19.5	0-2
					715.3	23173	18.83	19.5	0-2
				2	699.7	23017	18.64	19.5	0-2
					707.5	23095	18.87	19.5	0-2
					715.3	23173	18.74	19.5	0-2
				3	699.7	23017	18.40	19.5	0-2
					707.5	23095	18.82	19.5	0-2
					715.3	23173	18.83	19.5	0-2
		6RB			699.7	23017	18.66	19.5	0-2
					707.5	23095	18.75	19.5	0-2
					715.3	23173	18.67	19.5	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	22.60	24	0
			25	782	23230	22.73	24	0
			49	782	23230	22.98	24	0
		25 RB	0	782	23230	21.79	23	0-1
			12	782	23230	21.88	23	0-1
			25	782	23230	21.82	23	0-1
		50RB		782	23230	21.79	23	0-1
	16-QAM	1 RB	0	782	23230	22.03	23	0-1
			25	782	23230	21.93	23	0-1
			49	782	23230	21.73	23	0-1
		25 RB	0	782	23230	20.83	22	0-2
			12	782	23230	20.87	22	0-2
			25	782	23230	20.81	22	0-2
		50RB		782	23230	20.82	22	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)
5	QPSK	1 RB	0	779.5	23205	22.66	24	0
				782	23230	22.70	24	0
				784.5	23255	22.75	24	0
			12	779.5	23205	22.75	24	0
				782	23230	22.64	24	0
				784.5	23255	22.80	24	0
			24	779.5	23205	22.58	24	0
				782	23230	22.60	24	0
				784.5	23255	22.70	24	0
		12 RB	0	779.5	23205	21.74	23	0-1
				782	23230	21.77	23	0-1
				784.5	23255	21.70	23	0-1
			6	779.5	23205	21.75	23	0-1
				782	23230	21.74	23	0-1
				784.5	23255	21.67	23	0-1
			13	779.5	23205	21.76	23	0-1
				782	23230	21.87	23	0-1
				784.5	23255	21.66	23	0-1
		25RB	779.5	23205	21.69	23	0-1	
			782	23230	21.70	23	0-1	
			784.5	23255	21.69	23	0-1	
	16-QAM	1 RB	0	779.5	23205	21.31	23	0-1
				782	23230	21.88	23	0-1
				784.5	23255	21.40	23	0-1
			12	779.5	23205	21.82	23	0-1
				782	23230	21.47	23	0-1
				784.5	23255	21.48	23	0-1
			24	779.5	23205	21.38	23	0-1
				782	23230	21.55	23	0-1
				784.5	23255	21.60	23	0-1
		12 RB	0	779.5	23205	20.64	22	0-2
				782	23230	20.80	22	0-2
				784.5	23255	20.75	22	0-2
			6	779.5	23205	20.80	22	0-2
				782	23230	20.77	22	0-2
				784.5	23255	20.71	22	0-2
			13	779.5	23205	20.83	22	0-2
				782	23230	20.63	22	0-2
				784.5	23255	20.76	22	0-2
		25RB	779.5	23205	20.64	22	0-2	
			782	23230	20.74	22	0-2	
			784.5	23255	20.76	22	0-2	

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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)
10	QPSK	1 RB	0	782	23230	18.84	19	0
			25	782	23230	18.85	19	0
			49	782	23230	18.88	19	0
		25 RB	0	782	23230	18.89	19	0-1
			12	782	23230	18.92	19	0-1
			25	782	23230	18.82	19	0-1
		50RB		782	23230	18.91	19	0-1
	16-QAM	1 RB	0	782	23230	18.63	19	0-1
			25	782	23230	18.65	19	0-1
			49	782	23230	18.66	19	0-1
		25 RB	0	782	23230	18.78	19	0-2
			12	782	23230	18.78	19	0-2
			25	782	23230	18.81	19	0-2
		50RB		782	23230	18.76	19	0-2

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	18.68	19	0
				782	23230	18.70	19	0
				784.5	23255	18.70	19	0
			12	779.5	23205	18.71	19	0
				782	23230	18.69	19	0
				784.5	23255	18.66	19	0
			24	779.5	23205	18.76	19	0
				782	23230	18.71	19	0
				784.5	23255	18.70	19	0
		12 RB	0	779.5	23205	18.76	19	0-1
				782	23230	18.77	19	0-1
				784.5	23255	18.68	19	0-1
			6	779.5	23205	18.74	19	0-1
				782	23230	18.75	19	0-1
				784.5	23255	18.71	19	0-1
			13	779.5	23205	18.76	19	0-1
				782	23230	18.76	19	0-1
				784.5	23255	18.74	19	0-1
		25RB	779.5	23205	18.70	19	0-1	
			782	23230	18.75	19	0-1	
			784.5	23255	18.66	19	0-1	
	16-QAM	1 RB	0	779.5	23205	18.65	19	0-1
				782	23230	18.67	19	0-1
				784.5	23255	18.63	19	0-1
			12	779.5	23205	18.64	19	0-1
				782	23230	18.61	19	0-1
				784.5	23255	18.61	19	0-1
			24	779.5	23205	18.65	19	0-1
				782	23230	18.62	19	0-1
				784.5	23255	18.55	19	0-1
		12 RB	0	779.5	23205	18.78	19	0-2
				782	23230	18.78	19	0-2
				784.5	23255	18.75	19	0-2
			6	779.5	23205	18.77	19	0-2
				782	23230	18.74	19	0-2
				784.5	23255	18.74	19	0-2
			13	779.5	23205	18.82	19	0-2
				782	23230	18.75	19	0-2
				784.5	23255	18.75	19	0-2
		25RB	779.5	23205	18.74	19	0-2	
			782	23230	18.73	19	0-2	
			784.5	23255	18.76	19	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	22.86	24	0		
				710	23790	22.96	24	0		
				711	23800	22.99	24	0		
			25	709	23780	22.74	24	0		
				710	23790	22.89	24	0		
				711	23800	22.88	24	0		
				49	709	23780	23.04	24	0	
					710	23790	23.08	24	0	
					711	23800	22.97	24	0	
		25 RB	0	709	23780	21.91	23	0-1		
				710	23790	21.97	23	0-1		
				711	23800	21.95	23	0-1		
			12	709	23780	22.02	23	0-1		
				710	23790	21.99	23	0-1		
				711	23800	22.02	23	0-1		
			25	709	23780	22.08	23	0-1		
				710	23790	22.07	23	0-1		
				711	23800	22.06	23	0-1		
		50RB			709	23780	22.00	23	0-1	
					710	23790	21.98	23	0-1	
					711	23800	22.07	23	0-1	
	16-QAM	1 RB	0	709	23780	21.68	23	0-1		
				710	23790	21.63	23	0-1		
				711	23800	22.13	23	0-1		
				709	23780	21.77	23	0-1		
				710	23790	21.48	23	0-1		
				711	23800	22.22	23	0-1		
			25	709	23780	21.83	23	0-1		
				710	23790	21.89	23	0-1		
				711	23800	21.92	23	0-1		
				25 RB	0	709	23780	20.89	22	0-2
						710	23790	21.00	22	0-2
						711	23800	20.95	22	0-2
			12		709	23780	20.91	22	0-2	
					710	23790	20.92	22	0-2	
					711	23800	21.02	22	0-2	
			25	709	23780	21.03	22	0-2		
				710	23790	21.03	22	0-2		
				711	23800	21.06	22	0-2		
		50RB			709	23780	20.91	22	0-2	
					710	23790	20.98	22	0-2	
					711	23800	20.96	22	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)
5	QPSK	1 RB	0	706.5	23755	23.00	24	0
				710	23790	22.82	24	0
				713.5	23825	22.94	24	0
			12	706.5	23755	22.80	24	0
				710	23790	22.77	24	0
				713.5	23825	22.77	24	0
			24	706.5	23755	22.75	24	0
				710	23790	22.79	24	0
				713.5	23825	22.92	24	0
		12 RB	0	706.5	23755	21.71	23	0-1
				710	23790	21.79	23	0-1
				713.5	23825	21.85	23	0-1
			6	706.5	23755	21.94	23	0-1
				710	23790	21.84	23	0-1
				713.5	23825	21.88	23	0-1
			13	706.5	23755	21.84	23	0-1
				710	23790	21.84	23	0-1
				713.5	23825	21.71	23	0-1
		25RB		706.5	23755	21.48	23	0-1
				710	23790	21.81	23	0-1
				713.5	23825	21.91	23	0-1
	16-QAM	1 RB	0	706.5	23755	21.58	23	0-1
				710	23790	21.85	23	0-1
				713.5	23825	21.76	23	0-1
			12	706.5	23755	21.93	23	0-1
				710	23790	21.51	23	0-1
				713.5	23825	21.70	23	0-1
			24	706.5	23755	21.43	23	0-1
				710	23790	21.90	23	0-1
				713.5	23825	21.73	23	0-1
		12 RB	0	706.5	23755	20.63	22	0-2
				710	23790	20.83	22	0-2
				713.5	23825	20.91	22	0-2
			6	706.5	23755	20.35	22	0-2
				710	23790	20.88	22	0-2
				713.5	23825	20.89	22	0-2
			13	706.5	23755	20.84	22	0-2
				710	23790	20.84	22	0-2
				713.5	23825	20.73	22	0-2
		25RB		706.5	23755	20.96	22	0-2
				710	23790	20.90	22	0-2
				713.5	23825	20.82	22	0-2

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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	18.66	19	0
				710	23790	18.71	19	0
				711	23800	18.76	19	0
			25	709	23780	18.79	19	0
				710	23790	18.78	19	0
				711	23800	18.87	19	0
			49	709	23780	18.92	19	0
				710	23790	18.87	19	0
				711	23800	18.95	19	0
		25 RB	0	709	23780	18.79	19	0-1
				710	23790	18.79	19	0-1
				711	23800	18.80	19	0-1
			12	709	23780	18.78	19	0-1
				710	23790	18.79	19	0-1
				711	23800	18.80	19	0-1
			25	709	23780	18.91	19	0-1
				710	23790	18.84	19	0-1
				711	23800	18.81	19	0-1
		50RB	709	23780	18.80	19	0-1	
			710	23790	18.79	19	0-1	
			711	23800	18.85	19	0-1	
	16-QAM	1 RB	0	709	23780	17.86	19	0-1
				710	23790	18.59	19	0-1
				711	23800	18.63	19	0-1
			25	709	23780	18.73	19	0-1
				710	23790	18.68	19	0-1
				711	23800	18.77	19	0-1
			49	709	23780	18.85	19	0-1
				710	23790	18.82	19	0-1
				711	23800	18.84	19	0-1
		25 RB	0	709	23780	18.83	19	0-2
				710	23790	18.82	19	0-2
				711	23800	18.83	19	0-2
			12	709	23780	18.87	19	0-2
				710	23790	18.82	19	0-2
				711	23800	18.83	19	0-2
			25	709	23780	18.84	19	0-2
				710	23790	18.91	19	0-2
				711	23800	18.71	19	0-2
		50RB	709	23780	18.76	19	0-2	
			710	23790	18.80	19	0-2	
			711	23800	18.86	19	0-2	

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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	18.77	19	0
				710	23790	18.77	19	0
				713.5	23825	18.81	19	0
			12	706.5	23755	18.78	19	0
				710	23790	18.76	19	0
				713.5	23825	18.85	19	0
			24	706.5	23755	18.88	19	0
				710	23790	18.85	19	0
				713.5	23825	18.87	19	0
		12 RB	0	706.5	23755	18.74	19	0-1
				710	23790	18.86	19	0-1
				713.5	23825	18.84	19	0-1
			6	706.5	23755	18.76	19	0-1
				710	23790	18.81	19	0-1
				713.5	23825	18.89	19	0-1
			13	706.5	23755	18.86	19	0-1
				710	23790	18.92	19	0-1
				713.5	23825	18.84	19	0-1
		25RB	706.5	23755	18.79	19	0-1	
			710	23790	18.83	19	0-1	
			713.5	23825	18.88	19	0-1	
	16-QAM	1 RB	0	706.5	23755	18.66	19	0-1
				710	23790	18.69	19	0-1
				713.5	23825	18.78	19	0-1
			12	706.5	23755	18.73	19	0-1
				710	23790	18.71	19	0-1
				713.5	23825	18.74	19	0-1
			24	706.5	23755	18.74	19	0-1
				710	23790	18.69	19	0-1
				713.5	23825	18.77	19	0-1
		12 RB	0	706.5	23755	18.82	19	0-2
				710	23790	18.86	19	0-2
				713.5	23825	18.87	19	0-2
			6	706.5	23755	18.83	19	0-2
				710	23790	18.86	19	0-2
				713.5	23825	18.90	19	0-2
			13	706.5	23755	18.90	19	0-2
				710	23790	18.96	19	0-2
				713.5	23825	18.89	19	0-2
		25RB	706.5	23755	18.85	19	0-2	
			710	23790	18.86	19	0-2	
			713.5	23825	18.92	19	0-2	

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CDMA conducted power table (Full power):

Band	Channel	Frequency (MHz)	Target Power + Max. Tolerance (dBm)	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	25.00	23.71	23.73	23.77	23.74	23.82	23.77
	384	836.52	25.00	24.07	24.05	24.00	24.05	24.11	24.02
	777	848.31	25.00	24.01	24.00	23.99	23.96	24.05	24.01
CDMA (BC1)	25	1851.25	25.00	24.31	24.37	24.29	24.21	24.41	24.32
	600	1880	25.00	24.19	24.21	24.17	24.15	24.22	24.16
	1175	1908.75	25.00	24.27	24.27	24.25	24.22	24.29	24.21

CDMA conducted power table (Reduced power):

Band	Channel	Frequency (MHz)	Target Power + Max. Tolerance (dBm)	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	20.50	19.66	19.63	19.66	19.71	19.75	19.71
	384	836.52	20.50	19.72	19.77	19.81	19.89	20.00	19.97
	777	848.31	20.50	19.84	19.85	19.81	19.84	19.98	19.95
CDMA (BC1)	25	1851.25	18.00	17.78	17.85	17.84	17.85	17.99	17.91
	600	1880	18.00	17.25	17.32	17.36	17.27	17.38	17.31
	1175	1908.75	18.00	16.96	17.02	17.00	16.99	17.05	16.98

1.4 Test Environment

Ambient Temperature: $22 \pm 2^\circ \text{C}$
Tissue Simulating Liquid: $22 \pm 2^\circ \text{C}$

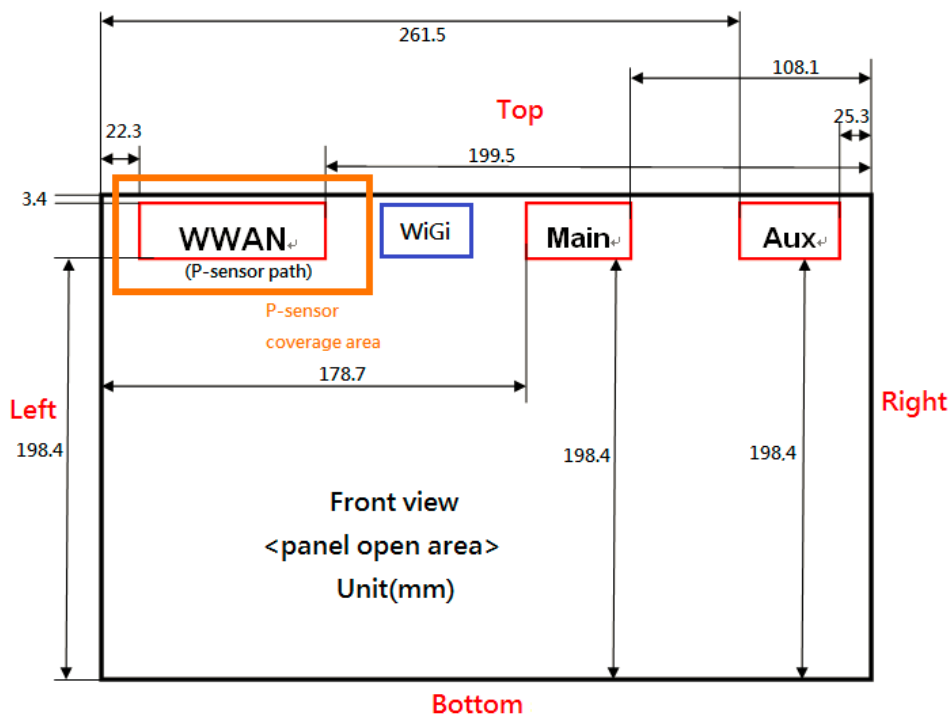
1.5 Operation Description

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.

Configuration 1: back/top side_0mm with power reduction and _10mm without power reduction

Configuration 2: right/left sides_0mm without power reduction



Antenna position plot(Front view)

2. WLAN and WiGig

For WLAN and WiGig part, since the RF hardware/software of FCC ID: B94HNI72CAM is the same with that of FCC ID: PD918260NG, so the WLAN and WiGig data is refer to the WLAN SAR report and WiGig MPE report of FCC ID: PD918260NG after verifying the worst cases of the WLAN SAR report.

Note:

1. SAR test for GPRS was performed on the maximum sourced-based time-averaged power.
2. SAR measurement is not required for HSDPA/HSPA since its maximum output power is less than ¼ dB higher than RMC without HSDPA/HSPA
3. 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.
4. 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.)
5. LTE modes test according to **FCC KDB 941225 D05v02r04**.
 - (1) 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.
 - (2) 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.

- (3) 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.
- (4) 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 $> \frac{1}{2}$ dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is > 1.45 W/kg.
- (5) 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 $> \frac{1}{2}$ dB higher than the equivalent channel configurations in the largest channel bandwidth configuration or the reported SAR of a configuration for the largest channel bandwidth is > 1.45 W/kg.
 - 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.

6. Based on KDB447498D01, WWAN SAR measurement for bottom side is not required.

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

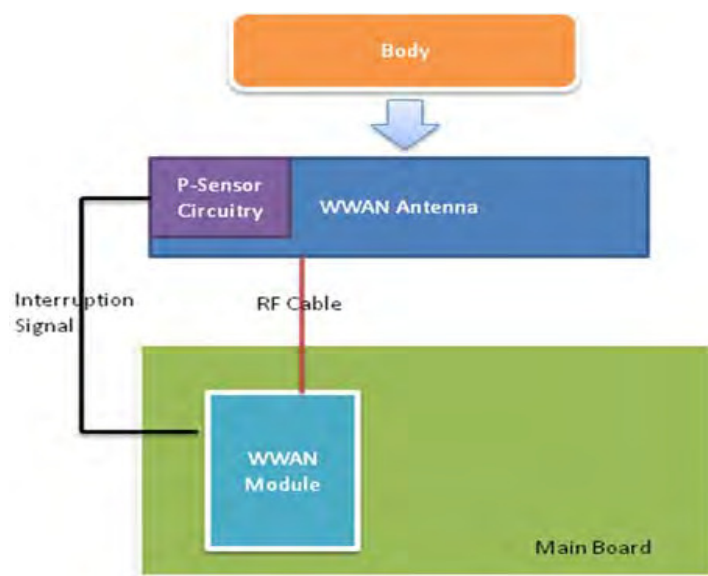
$$\frac{\text{Max. tune up power(mW)}}{\text{Min. test separation distance(mm)}} \times \sqrt{f(\text{GHz})} \leq 3$$

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.
[(Threshold at 50mm in step1) + (test separation distance-50mm) $\times$ ($\frac{f(\text{MHz})}{150}$)](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.
7. 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.
8. 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).

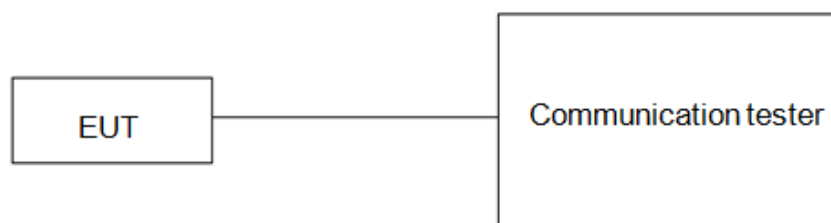
1.6 Proximity sensor operation description

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 11mm.
10. For top side, the trigger distance of proximity sensor is 12mm, and we perform the 1.6.3 tilt angle testing in next step.

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 ≤ 10 deg increments until the tablet is ± 45 deg or more from the vertical position at 0 deg.
2. If sensor triggering is released and normal maximum output power is restored within the ± 45 deg 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 ± 45 deg, so $12-1=11$ mm, is the sensor triggering distance for tablet tilt coverage. The smallest separation distance minus 1 mm ($11-1=10$ mm) should be used in the SAR measurements.

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:

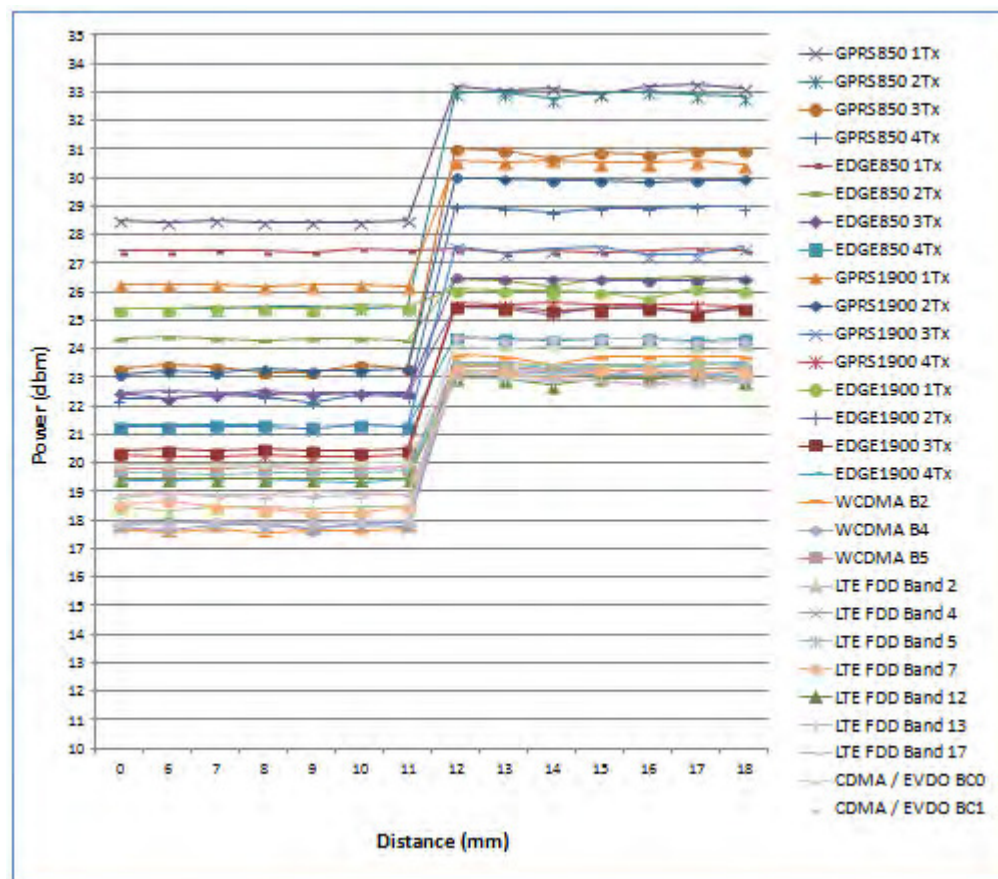
1. The back surface or edges of the tablet is positioned at a test separation distance less than or equal to the distance required for back surface or edge triggering, with both the antenna and sensor pad located at least 20 mm laterally outside the edge (boundary) of the phantom, along the direction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

1.6.5 Results

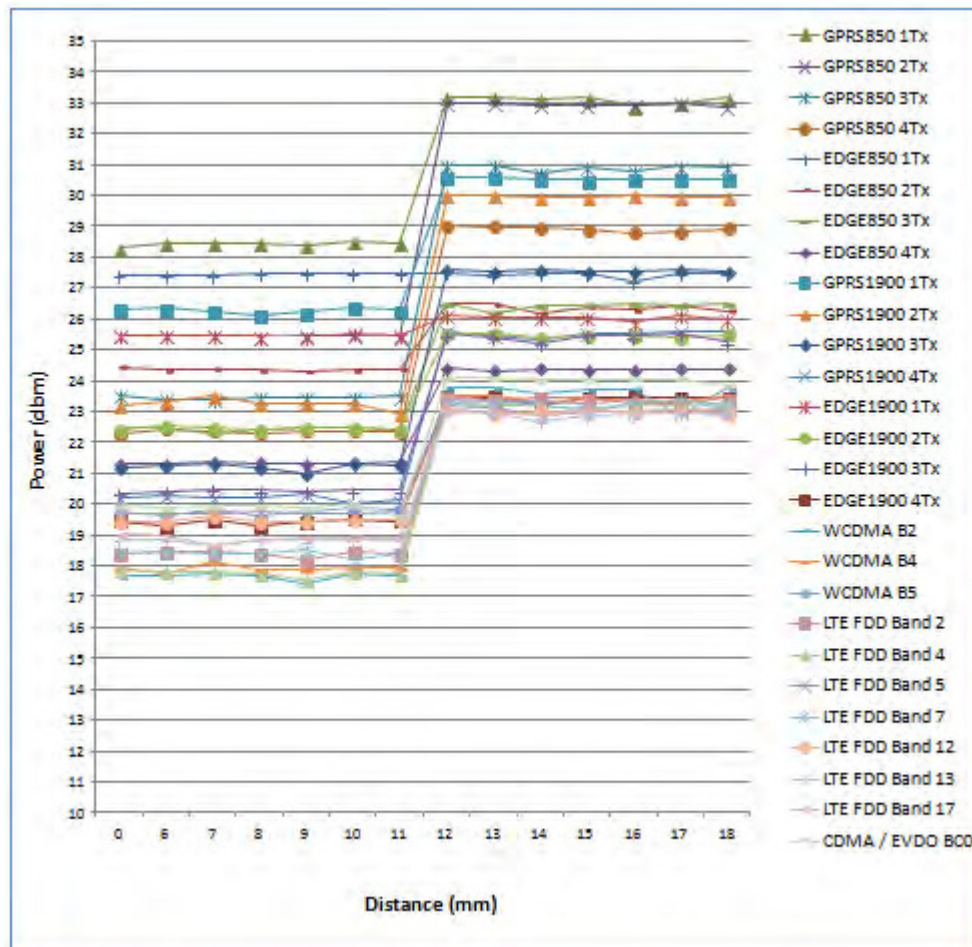
The measured output power within ± 5 mm of the triggering points, or until the tablet is touching the phantom, for movements to and from the phantom is tabulated in the following.

Back side

Moving device toward the phantom



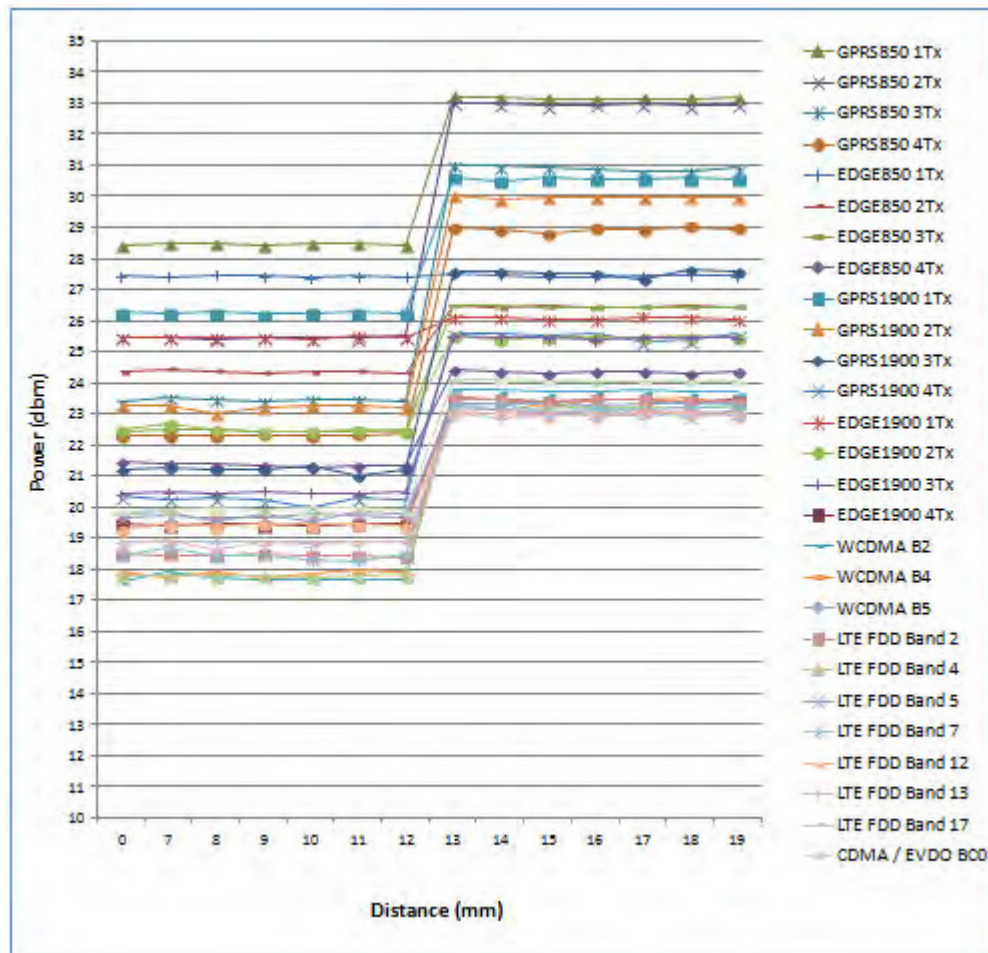
Moving device away from the phantom



For back side, the worst trigger distance of proximity sensor is 11mm, thus we test back side SAR in 10mm without power reduction and 0mm with power reduction.

Top side

Moving device toward the phantom



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Moving device away from the phantom

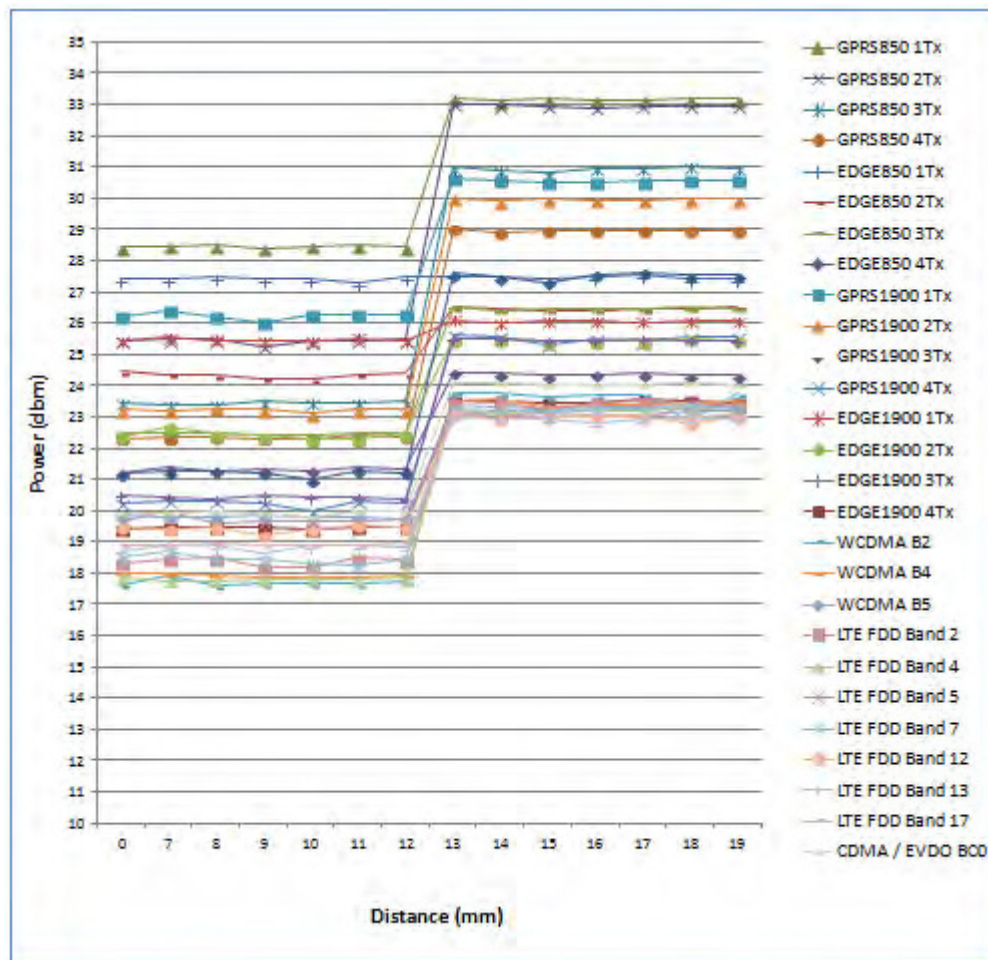


Table 1.6.5 Tilt angle test results for top side

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
12mm	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 12mm, so 12-1=11mm, is the sensor triggering distance for tablet tilt coverage. The smallest separation distance minus 1 mm(11-1= 10mm) 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.

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/CDMA/LTE 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
LTE B2/4/5/7/12/13/17	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	25.5
	Class 11	23.5
	Class 12	22.5
EDGE 850	Class 8	27.5
	Class 10	24.5
	Class 11	22.5
	Class 12	21.5
GPRS 1900	Class 8	27.5
	Class 10	24.5
	Class 11	22.5
	Class 12	21.5
EDGE 1900	Class 8	25.5
	Class 10	22.5
	Class 11	20.5
	Class 12	19.5

Technology / Band	Mode	Default Maximum Power (dBm)
UMTS B2	RMC 12.2K data	18.5
	HSDPA case 1	18.5
	HSDPA case 2	18.5
	HSDPA case 3	18.5
	HSDPA case 4	18.5
	HSUPA case 1	18.5
	HSUPA case 2	18.5
	HSUPA case 3	18.5
	HSUPA case 4	18.5
	HSUPA case 5	18.5
UMTS B4	RMC 12.2K data	19.5
	HSDPA case 1	19.5
	HSDPA case 2	19.5
	HSDPA case 3	19.5
	HSDPA case 4	19.5
	HSUPA case 1	19.5
	HSUPA case 2	19.5
	HSUPA case 3	19.5
	HSUPA case 4	19.5
	HSUPA case 5	19.5

Technology / Band	Mode	Default Maximum Power (dBm)
UMTS B5	RMC 12.2K data	20.5
	HSDPA case 1	20.5
	HSDPA case 2	20.5
	HSDPA case 3	20.5
	HSDPA case 4	20.5
	HSUPA case 1	20.5
	HSUPA case 2	20.5
	HSUPA case 3	20.5
	HSUPA case 4	20.5
	HSUPA case 5	20.5

Technology / Band	Mode	Default Maximum Power (dBm)
CDMA BC0	All	20.5
CDMA BC1	All	18
LTE B2	All	18.5
LTE B4	All	18.5
LTE B5	All	20
LTE B7	All	19
LTE B12	All	19.5
LTE B13	All	19
LTE B17	All	19

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 $SAR = \sigma (|E|)^2 / \rho$ where σ and ρ are the conductivity and mass density of the tissue-simulant.

1. A standard high precision 6-axis robot (Staubli RX family) with controller, teach pendant and software. An arm extension is for accommodating the data acquisition electronics (DAE).
2. A dosimetric probe, i.e., an isotropic E-field probe optimized and calibrated for usage intissue simulating liquid. The probe is equipped with an optical surface detector system.
3. 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.

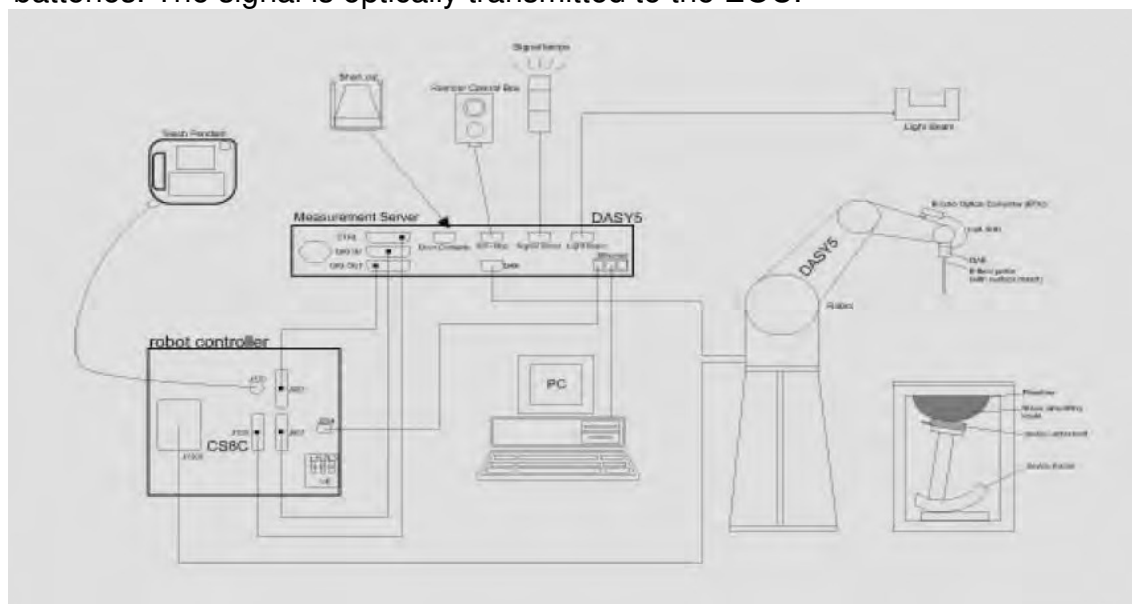


Fig. a The block diagram of SAR system

4. The Electro-optical converter (EOC) performs the conversion between optical and electrical of the signals for the digital communication to the DAE and for the analog signal from the optical surface detection. The EOC is connected to the measurement server.
5. The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
6. A probe alignment unit which improves the (absolute) accuracy of the probe positioning.
7. A computer operating Windows 7.
8. DASY 5 software.
9. Remote control with teach pendant and additional circuitry for robot safety such as warning lamps, etc.
10. The SAM twin phantom enabling testing left-hand and right-hand usage.
11. The device holder for handheld mobile phones.
12. Tissue simulating liquid mixed according to the given recipes.
13. Validation dipole kits allowing to validate the proper functioning of the system.

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 750/835/1750/1900/2450/2600/5300 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 μ W/g to > 100 mW/g Linearity: ± 0.2 dB (noise: typically < 1 μ W/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%.	

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

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 $\pm 10\%$ from the target SAR values. These tests were done at 750/835/1750/1900/2450/2600/5300MHz. 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 $\geq 15 \text{ cm} \pm 5 \text{ mm}$ (frequency $\leq 3 \text{ GHz}$) or $\geq 10 \text{ cm} \pm 5 \text{ mm}$ (frequency $> 3 \text{ GHz}$) in all the cases. It is seen that the system is operating within its specification, as the results are within acceptable tolerance of the reference values.

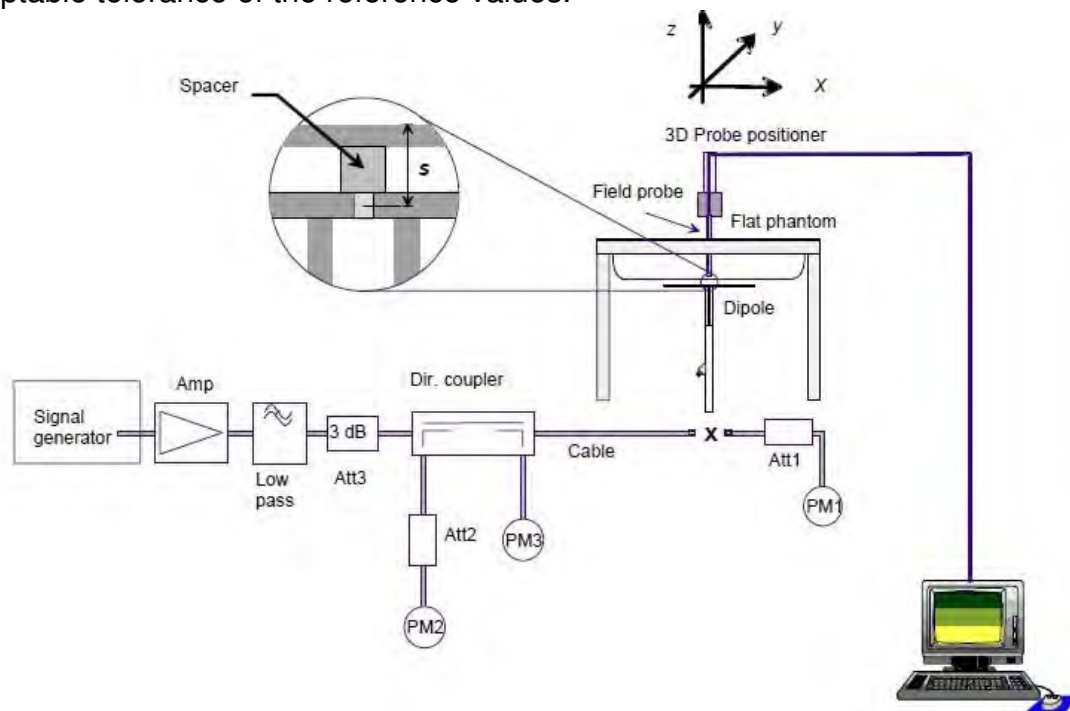


Fig. b The block diagram of system verification

Validation Kit	S/N	Frequency (MHz)		1W Target SAR-1g (mW/g)	Measured SAR-1g (mW/g)	Measured SAR-1g normalized to 1W	Deviation (%)	Measured Date
D750V2	1015	750	Body	8.52	2.12	8.48	-0.47%	Oct. 13, 2015
D750V2	1015	750	Body	8.52	2.23	8.92	4.69%	Oct. 14, 2015
D835V2	4d063	835	Body	9.28	2.44	9.76	5.17%	Oct. 15, 2015
D1750V2	1008	1750	Body	37.4	9.52	38.08	1.82%	Oct. 16, 2015
D1900V2	5d027	1900	Body	39.3	9.71	38.84	-1.17%	Oct. 19, 2015
D1900V2	5d027	1900	Body	39.9	9.73	38.92	-2.46%	Oct. 24, 2015
D2450V2	727	2450	Body	51	13.3	53.2	4.31%	Mar. 07, 2016
D2600V2	1005	2600	Body	55.1	14	56	1.63%	Oct. 20, 2015
D5GHzV2	1023	5300	Body	75.1	7.59	75.9	1.07%	Mar. 07, 2016

Table 1. Results of system validation

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 $\geq 15 \text{ cm} \pm 5 \text{ mm}$ (Frequency $\leq 3\text{G}$) or $\geq 10 \text{ cm} \pm 5 \text{ mm}$ (Frequency $> 3\text{G}$) during all tests. (Fig. 2)

Tissue Type	Measurement Date	Measured Frequency (MHz)	Target Dielectric Constant, ϵ_r	Target Conductivity, σ (S/m)	Measured Dielectric Constant, ϵ_r	Measured Conductivity, σ (S/m)	% dev ϵ_r	% dev σ
Body	2015/10/13	704	55.710	0.960	54.756	0.982	1.71%	-2.31%
		707.5	55.697	0.960	54.748	0.983	1.70%	-2.39%
		709	55.691	0.960	54.715	0.985	1.75%	-2.58%
		710	55.687	0.960	54.686	0.985	1.80%	-2.58%
		711	55.683	0.960	54.667	0.986	1.82%	-2.67%
		750	55.531	0.963	54.338	0.996	2.15%	-3.39%
	2015/10/14	750	55.531	0.963	54.321	0.997	2.18%	-3.49%
		782	55.406	0.966	54.199	0.999	2.18%	-3.43%
		824.2	55.242	0.969	53.323	1.006	3.47%	-3.80%
	2015/10/15	824.7	55.240	0.969	53.321	1.006	3.47%	-3.80%
		826.4	55.234	0.969	53.314	1.006	3.48%	-3.78%
		829	55.223	0.970	53.288	1.007	3.50%	-3.86%
		835	55.200	0.970	53.287	1.007	3.47%	-3.81%
		836.5	55.195	0.972	53.277	1.009	3.48%	-3.82%
		836.52	55.195	0.972	53.276	1.009	3.48%	-3.82%
		836.6	55.195	0.972	53.269	1.009	3.49%	-3.81%
		844	55.172	0.981	53.261	1.018	3.46%	-3.76%
		846.6	55.164	0.984	53.244	1.021	3.48%	-3.73%
		848.31	55.159	0.986	53.239	1.024	3.48%	-3.81%
		848.8	55.158	0.987	53.219	1.025	3.52%	-3.85%
	2015/10/16	1712.4	53.531	1.465	51.59	1.514	3.63%	-3.37%
		1720	53.511	1.469	51.576	1.519	3.62%	-3.37%
		1732.4	53.478	1.477	51.566	1.527	3.58%	-3.36%
		1732.5	53.478	1.477	51.533	1.527	3.64%	-3.36%
		1745	53.445	1.485	51.496	1.534	3.65%	-3.28%
		1750	53.432	1.488	51.489	1.539	3.64%	-3.40%
		1752.6	53.425	1.490	51.486	1.539	3.63%	-3.28%

Tissue Type	Measurement Date	Measured Frequency (MHz)	Target Dielectric Constant, ϵ_r	Target Conductivity, σ (S/m)	Measured Dielectric Constant, ϵ_r	Measured Conductivity, σ (S/m)	% dev ϵ_r	% dev σ
Body	2015/10/19	1850.2	53.300	1.520	52.079	1.542	2.29%	-1.45%
		1851.25	53.300	1.520	52.077	1.543	2.29%	-1.51%
		1860	53.300	1.520	52.072	1.548	2.30%	-1.84%
		1880	53.300	1.520	52.059	1.557	2.33%	-2.43%
		1900	53.300	1.520	52.041	1.564	2.36%	-2.89%
		1908.75	53.300	1.520	52.033	1.569	2.38%	-3.22%
		1909.8	53.300	1.520	52.032	1.571	2.38%	-3.36%
	2015/10/24	1852.4	53.300	1.520	52.106	1.545	2.24%	-1.64%
		1880	53.300	1.520	52.062	1.556	2.32%	-2.37%
		1900	53.300	1.520	52.044	1.563	2.36%	-2.83%
		1907.6	53.300	1.520	52.036	1.569	2.37%	-3.22%
	2015/10/20	2510	52.624	2.035	51.693	2.101	1.77%	-3.24%
		2535	52.592	2.071	51.683	2.137	1.73%	-3.21%
		2560	52.560	2.106	51.599	2.175	1.83%	-3.28%
		2600	52.509	2.163	51.559	2.232	1.81%	-3.20%
	2016/3/7	2441	52.712	1.941	52.443	1.976	0.51%	-1.78%
		2437	52.717	1.938	52.438	1.979	0.53%	-2.13%
		2450	52.697	1.953	52.416	1.991	0.53%	-1.97%
		2462	52.685	1.967	52.412	2.006	0.52%	-1.96%
		5280	48.906	5.393	48.400	5.447	1.03%	-1.00%
		5300	48.879	5.416	48.392	5.468	1.00%	-0.96%

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)
2600	Body	301.7ml	698.3ml	—	—	—	—	1.0L(Kg)

Simulating Liquids for 5 GHz, Manufactured by SPEAG:

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

Table 3. Recipes for Tissue Simulating Liquid

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.

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 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.

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

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

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

1. The temperature gradient is not directly measurable but must be evaluated from temperature measurements at different time steps. Special precaution is necessary to avoid measurement errors caused by temperature gradients due to energy equalizing effects or convection currents in the liquid. Such effects cannot be completely avoided, as the measured field itself destroys the thermal equilibrium in the liquid. With a careful setup these errors can be kept small.
2. The measured volume around the temperature probe is not well defined. It is difficult to calculate the energy transfer from a surrounding gradient temperature field into the probe. These effects must be considered, since temperature probes are calibrated in liquid with homogeneous temperatures. There is no traceable standard for temperature rise measurements.
3. The calibration depends on the assessment of the specific density, the heat capacity and the conductivity of the medium. While the specific density and heat capacity can be measured accurately with standardized procedures ($\sim 2\%$ 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 $\pm 5\%$.
4. Temperature rise measurements are not very sensitive and therefore are often performed at a higher power level than the E-field measurements. The nonlinearities in the system (e.g., power measurements, different components, etc.) must be considered.

Considering these problems, the possible accuracy of the calibration of E-field probes with temperature gradient measurements in a carefully designed setup is about $\pm 10\%$ (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 $\pm 5\%$ (RSS) when the same liquid is used for the calibration and for actual measurements and $\pm 7-9\%$ (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:

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

3. Due to the small wavelength in liquids with high permittivity, even small setups might be above the resonant cutoff frequencies. The field distribution in the setup must be carefully checked for conformity with the theoretical field distribution.

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)		Plot page
								Measured	Reported	
GPRS 850 (1Dn2UP)	Back side	10mm	190	836.6	33	33.00	0.00%	0.270	0.270	-
	Top side	10mm	190	836.6	33	33.00	0.00%	0.146	0.146	-
	Left side	0mm	190	836.6	33	33.00	0.00%	0.087	0.087	-
	Right side	0mm	190	836.6	33	33.00	0.00%	0.011	0.011	-

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)		Plot page
								Measured	Reported	
GPRS 850 (1Dn4UP)	Back side	0mm	128	824.2	22.5	22.10	9.65%	0.747	0.819	-
	Back side	0mm	190	836.6	22.5	22.10	9.65%	0.857	0.940	-
	Back side	0mm	251	848.8	22.5	22.40	2.33%	1.060	1.085	259
	Back side*	0mm	251	848.8	22.5	22.40	2.33%	1.050	1.074	-
	Top side	0mm	251	848.8	22.5	22.40	2.33%	0.475	0.486	-

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

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	10mm	661	1880	30	30.00	0.00%	0.452	0.452	-
	Top side	10mm	661	1880	30	30.00	0.00%	0.281	0.281	-
	Left side	0mm	661	1880	30	30.00	0.00%	0.127	0.127	-
	Right side	0mm	661	1880	30	30.00	0.00%	0.024	0.024	-

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 (1Dn4UP)	Back side	0mm	512	1850.2	21.5	20.30	31.83%	0.618	0.815	-
	Back side	0mm	661	1880	21.5	20.00	41.25%	0.624	0.881	-
	Back side	0mm	810	1909.8	21.5	20.10	38.04%	0.743	1.026	260
	Top side	0mm	512	1850.2	21.5	20.30	31.83%	0.353	0.465	-

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	10mm	9262	1852.4	24.5	23.78	18.03%	0.459	0.542	-
	Top side	10mm	9262	1852.4	24.5	23.78	18.03%	0.356	0.420	-
	Left side	0mm	9262	1852.4	24.5	23.78	18.03%	0.157	0.185	-
	Right side	0mm	9262	1852.4	24.5	23.78	18.03%	0.029	0.034	-

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	19	18.99	0.23%	1.090	1.093	261
	Back side*	0mm	9262	1852.4	19	18.99	0.23%	1.080	1.082	-
	Back side	0mm	9400	1880	19	18.95	1.16%	1.070	1.082	-
	Back side	0mm	9538	1907.6	19	18.92	1.86%	1.040	1.059	-
	Top side	0mm	9262	1852.4	19	18.99	0.23%	0.742	0.744	-
	Top side	0mm	9400	1880	19	18.95	1.16%	0.727	0.735	-
	Top side	0mm	9538	1907.6	19	18.92	1.86%	0.702	0.715	-

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

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	10mm	1312	1712.4	24.5	23.52	25.31%	0.449	0.563	-
	Top side	10mm	1312	1712.4	24.5	23.52	25.31%	0.426	0.534	-
	Left side	0mm	1312	1712.4	24.5	23.52	25.31%	0.145	0.182	-
	Right side	0mm	1312	1712.4	24.5	23.52	25.31%	0.017	0.021	-

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	19.5	17.96	42.56%	0.757	1.079	262
	Back side	0mm	1412	1732.4	19.5	17.82	47.23%	0.727	1.070	-
	Back side	0mm	1513	1752.6	19.5	17.6	54.88%	0.679	1.052	-
	Top side	0mm	1312	1712.4	19.5	17.96	42.56%	0.330	0.470	-

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	10mm	4233	846.6	24.5	23.36	30.02%	0.566	0.736	-
	Top side	10mm	4233	846.6	24.5	23.36	30.02%	0.433	0.563	-
	Left side	0mm	4233	846.6	24.5	23.36	30.02%	0.263	0.342	-
	Right side	0mm	4233	846.6	24.5	23.36	30.02%	0.00944	0.012	-

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	20.5	19.55	24.45%	0.910	1.133	-
	Back side	0mm	4183	836.6	20.5	19.73	19.40%	0.927	1.107	263
	Back side*	0mm	4183	836.6	20.5	19.73	19.40%	0.912	1.089	-
	Back side	0mm	4233	846.6	20.5	19.86	15.88%	0.895	1.037	-
	Top side	0mm	4233	846.6	20.5	19.86	15.88%	0.556	0.644	-

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

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)		Plot page
												Measured	Reported	
LTE Band 2	20MHz	QPSK	1 RB	50	Back side	10mm	19100	1900	24	23.48	12.72%	0.495	0.558	-
					Top side	10mm	19100	1900	24	23.48	12.72%	0.391	0.441	-
					Left side	0mm	19100	1900	24	23.48	12.72%	0.193	0.218	-
					Right side	0mm	19100	1900	24	23.48	12.72%	0.029	0.033	-
			50 RB	0	Back side	10mm	19100	1900	23	22.46	13.24%	0.384	0.435	-
					Top side	10mm	19100	1900	23	22.46	13.24%	0.301	0.341	-
					Left side	0mm	19100	1900	23	22.46	13.24%	0.142	0.161	-
					Right side	0mm	19100	1900	23	22.46	13.24%	0.017	0.019	-
			100 RB		Back side	10mm	19100	1900	23	22.37	15.61%	0.351	0.406	-
					Top side	10mm	19100	1900	23	22.37	15.61%	0.294	0.340	-
					Left side	0mm	19100	1900	23	22.37	15.61%	0.138	0.160	-
					Right side	0mm	19100	1900	23	22.37	15.61%	0.015	0.017	-

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)		Plot page
												Measured	Reported	
LTE Band 2	20MHz	QPSK	1 RB	0	Back side	0mm	18700	1860	18.5	17.53	25.03%	0.823	1.029	-
					Back side	0mm	19100	1900	18.5	17.72	19.67%	0.881	1.054	264
					Back side*	0mm	19100	1900	18.5	17.72	19.67%	0.814	0.974	-
					Top side	0mm	19100	1900	18.5	17.72	19.67%	0.564	0.675	-
			50 RB	99	Back side	0mm	18900	1880	18.5	17.53	25.03%	0.826	1.033	-
					Back side	0mm	18700	1860	18.5	17.40	28.82%	0.793	1.022	-
					Back side	0mm	18900	1880	18.5	17.48	26.47%	0.822	1.040	-
					Back side	0mm	19100	1900	18.5	17.69	20.50%	0.872	1.051	-
					Top side	0mm	19100	1900	18.5	17.69	20.50%	0.559	0.674	-
			100 RB		Back side	0mm	18700	1860	18.5	17.39	29.12%	0.791	1.021	-
					Back side	0mm	18900	1880	18.5	17.40	28.82%	0.817	1.052	-
					Back side	0mm	19100	1900	18.5	17.65	21.62%	0.863	1.050	-
					Top side	0mm	19100	1900	18.5	17.65	21.62%	0.549	0.668	-

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

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)		Plot page
												Measured	Reported	
LTE Band 4	20MHz	QPSK	1 RB	0	Back side	10mm	20175	1732.5	24	23.25	18.85%	0.418	0.497	-
					Top side	10mm	20175	1732.5	24	23.25	18.85%	0.472	0.561	-
					Left side	0mm	20175	1732.5	24	23.25	18.85%	0.170	0.202	-
					Right side	0mm	20175	1732.5	24	23.25	18.85%	0.019	0.023	-
			50 RB	0	Back side	10mm	20050	1720	23	22.36	15.88%	0.332	0.385	-
					Top side	10mm	20050	1720	23	22.36	15.88%	0.374	0.433	-
					Left side	0mm	20050	1720	23	22.36	15.88%	0.131	0.152	-
					Right side	0mm	20050	1720	23	22.36	15.88%	0.015	0.017	-
			100 RB		Back side	10mm	20050	1720	23	22.29	17.76%	0.321	0.378	-
					Top side	10mm	20050	1720	23	22.29	17.76%	0.366	0.431	-
					Left side	0mm	20050	1720	23	22.29	17.76%	0.128	0.151	-
					Right side	0mm	20050	1720	23	22.29	17.76%	0.014	0.016	-

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)		Plot page
												Measured	Reported	
LTE Band 4	20MHz	QPSK	1 RB	0	Back side	0mm	20050	1720	18.5	17.84	16.41%	0.908	1.057	265
					Back side*	0mm	20050	1720	18.5	17.84	16.41%	0.907	1.056	-
					Back side	0mm	20175	1732.5	18.5	17.85	16.14%	0.889	1.033	-
					Back side	0mm	20300	1745	18.5	17.58	23.59%	0.825	1.020	-
					Top side	0mm	20175	1732.5	18.5	17.85	16.14%	0.426	0.495	-
			50 RB	0	Back side	0mm	20175	1732.5	18.5	17.66	21.34%	0.866	1.051	-
					Back side	0mm	20300	1745	18.5	17.48	26.47%	0.805	1.018	-
					Back side	0mm	20050	1720	18.5	17.84	16.41%	0.902	1.050	-
					Top side	0mm	20050	1720	18.5	17.84	16.41%	0.431	0.502	-
			100 RB		Back side	0mm	20050	1720	18.5	17.80	17.49%	0.895	1.052	-
					Back side	0mm	20175	1732.5	18.5	17.61	22.74%	0.857	1.052	-
					Back side	0mm	20300	1745	18.5	17.42	28.23%	0.791	1.014	-
					Top side	0mm	20050	1720	18.5	17.80	17.49%	0.426	0.501	-

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

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)		Plot page
												Measured	Reported	
LTE Band 5	10MHz	QPSK	1 RB	49	Back side	10mm	20525	836.5	24	23.18	20.78%	0.589	0.711	-
					Top side	10mm	20525	836.5	24	23.18	20.78%	0.412	0.498	-
					Left side	0mm	20525	836.5	24	23.18	20.78%	0.280	0.338	-
					Right side	0mm	20525	836.5	24	23.18	20.78%	0.024	0.029	-
			25 RB	25	Back side	10mm	20525	836.5	23	22.14	21.90%	0.472	0.575	-
					Top side	10mm	20525	836.5	23	22.14	21.90%	0.324	0.395	-
					Left side	0mm	20525	836.5	23	22.14	21.90%	0.221	0.269	-
					Right side	0mm	20525	836.5	23	22.14	21.90%	0.017	0.021	-
			50 RB		Back side	10mm	20600	844	23	22.20	20.23%	0.469	0.564	-
					Top side	10mm	20600	844	23	22.20	20.23%	0.321	0.386	-
					Left side	0mm	20600	844	23	22.20	20.23%	0.221	0.266	-
					Right side	0mm	20600	844	23	22.20	20.23%	0.016	0.019	-

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)		Plot page
												Measured	Reported	
LTE Band 5	10MHz	QPSK	1 RB	0	Back side	0mm	20600	844	20	19.75	5.93%	0.953	1.009	266
					Top side	0mm	20600	844	20	19.75	5.93%	0.615	0.651	-
					Back side	0mm	20450	829	20	19.53	11.43%	0.935	1.042	-
					Back side*	0mm	20450	829	20	19.53	11.43%	0.931	1.037	-
			25 RB	0	Back side	0mm	20525	836.5	20	19.71	6.91%	0.933	0.997	-
					Back side	0mm	20600	844	20	19.66	8.14%	0.924	0.999	-
					Back side	0mm	20450	829	20	19.54	11.17%	0.926	1.029	-
					Back side	0mm	20525	836.5	20	19.67	7.89%	0.921	0.994	-
			50 RB		Top side	0mm	20525	836.5	20	19.67	7.89%	0.602	0.650	-
					Back side	0mm	20450	829	20	19.49	12.46%	0.904	1.017	-
					Back side	0mm	20525	836.5	20	19.65	8.39%	0.915	0.992	-
					Back side	0mm	20600	844	20	19.71	6.91%	0.934	0.998	-
					Top side	0mm	20600	844	20	19.71	6.91%	0.611	0.653	-

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

LTE FDD Band VII (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 7	20MHz	QPSK	1 RB	50	Back side	10mm	20850	2510	24	22.61	37.72%	0.625	0.861	-
					Back side	10mm	21350	2560	24	23.28	18.03%	0.738	0.871	-
					Top side	10mm	21350	2560	24	23.28	18.03%	0.649	0.766	-
					Left side	0mm	21350	2560	24	23.28	18.03%	0.513	0.606	-
					Right side	0mm	21350	2560	24	23.28	18.03%	0.031	0.037	-
			50 RB	99	Back side	0mm	21100	2535	24	22.90	28.82%	0.669	0.862	-
					Back side	10mm	21350	2560	23	21.99	26.18%	0.536	0.676	-
					Top side	10mm	21350	2560	23	21.99	26.18%	0.471	0.594	-
					Left side	0mm	21350	2560	23	21.99	26.18%	0.372	0.469	-
					Right side	0mm	21350	2560	23	21.99	26.18%	0.021	0.026	-
			100 RB	0	Back side	10mm	21100	2535	23	22.12	22.46%	0.544	0.666	-
					Top side	10mm	21100	2535	23	22.12	22.46%	0.475	0.582	-
					Left side	0mm	21100	2535	23	22.12	22.46%	0.379	0.464	-
					Right side	0mm	21100	2535	23	22.12	22.46%	0.022	0.027	-

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

LTE FDD Band VII (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 7	20MHz	QPSK	1 RB	99	Back side	0mm	20850	2510	19	17.94	27.64%	0.787	1.005	-
					Back side	0mm	21100	2535	19	18.09	23.31%	0.851	1.049	-
					Back side	0mm	21350	2560	19	18.47	12.98%	0.959	1.083	267
					Back side*	0mm	21350	2560	19	18.47	12.98%	0.955	1.079	-
					Top side	0mm	21350	2560	19	18.47	12.98%	0.678	0.766	-
			50 RB	50	Back side	0mm	20850	2510	19	17.98	26.47%	0.788	0.997	-
					Back side	0mm	21100	2535	19	18.03	25.03%	0.825	1.031	-
					Back side	0mm	21350	2560	19	18.49	12.46%	0.951	1.069	-
					Top side	0mm	21350	2560	19	18.49	12.46%	0.676	0.760	-
			100 RB	0	Back side	0mm	20850	2510	19	17.97	26.77%	0.789	1.000	-
					Back side	0mm	21100	2535	19	17.94	27.64%	0.821	1.048	-
					Back side	0mm	21350	2560	19	18.35	16.14%	0.931	1.081	-
					Top side	0mm	21350	2560	19	18.35	16.14%	0.651	0.756	-

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

LTE FDD Band XII (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 12	10MHz	QPSK	1 RB	49	Back side	10mm	23060	704	24	23.04	24.74%	0.528	0.659	-
					Top side	10mm	23060	704	24	23.04	24.74%	0.328	0.409	-
					Left side	0mm	23060	704	24	23.04	24.74%	0.169	0.211	-
					Right side	0mm	23060	704	24	23.04	24.74%	0.022	0.027	-
			25 RB	25	Back side	10mm	23095	707.5	23	22.07	23.88%	0.409	0.507	-
					Top side	10mm	23095	707.5	23	22.07	23.88%	0.251	0.311	-
					Left side	0mm	23095	707.5	23	22.07	23.88%	0.131	0.162	-
					Right side	0mm	23095	707.5	23	22.07	23.88%	0.018	0.022	-
			50 RB		Back side	10mm	23095	707.5	23	22.07	23.88%	0.408	0.505	-
					Top side	10mm	23095	707.5	23	22.07	23.88%	0.251	0.311	-
					Left side	0mm	23095	707.5	23	22.07	23.88%	0.131	0.162	-
					Right side	0mm	23095	707.5	23	22.07	23.88%	0.018	0.022	-

LTE FDD Band XII (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 12	10MHz	QPSK	1 RB	49	Back side	0mm	23095	707.5	19.5	18.90	14.82%	0.970	1.114	-
					Back side	0mm	23060	704	19.5	18.96	13.24%	0.983	1.113	-
					Back side	0mm	23130	711	19.5	18.94	13.76%	0.988	1.124	268
					Back side*	0mm	23130	711	19.5	18.94	13.76%	0.981	1.116	-
			25 RB	25	Top side	0mm	23060	704	19.5	18.96	13.24%	0.418	0.473	-
					Back side	0mm	23130	711	19.5	18.86	15.88%	0.968	1.122	-
					Back side	0mm	23060	704	19.5	18.87	15.61%	0.951	1.099	-
					Back side	0mm	23095	707.5	19.5	18.86	15.88%	0.957	1.109	-
			50 RB		Top side	0mm	23060	704	19.5	18.87	15.61%	0.409	0.473	-
					Back side	0mm	23060	704	19.5	18.77	18.30%	0.937	1.109	-
					Back side	0mm	23095	707.5	19.5	18.85	16.14%	0.959	1.114	-
					Back side	0mm	23130	711	19.5	18.94	13.76%	0.986	1.122	-

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

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	0	Back side	10mm	23230	782	24	22.60	38.04%	0.602	0.831	-
				25	Back side	10mm	23230	782	24	22.73	33.97%	0.619	0.829	-
				49	Back side	10mm	23230	782	24	22.98	26.47%	0.680	0.860	-
					Top side	10mm	23230	782	24	22.98	26.47%	0.243	0.307	-
					Left side	0mm	23230	782	24	22.98	26.47%	0.227	0.287	-
			25 RB	12	Right side	0mm	23230	782	24	22.98	26.47%	0.024	0.030	-
					Back side	10mm	23230	782	23	21.88	29.42%	0.517	0.669	-
					Top side	10mm	23230	782	23	21.88	29.42%	0.182	0.236	-
					Left side	0mm	23230	782	23	21.88	29.42%	0.169	0.219	-
					Right side	0mm	23230	782	23	21.88	29.42%	0.017	0.022	-
			50 RB		Back side	10mm	23230	782	23	21.79	32.13%	0.501	0.662	-
					Top side	10mm	23230	782	23	21.79	32.13%	0.172	0.227	-
					Left side	0mm	23230	782	23	21.79	32.13%	0.161	0.213	-
					Right side	0mm	23230	782	23	21.79	32.13%	0.016	0.021	-

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	19	18.84	3.75%	1.030	1.069	269
					Back side	0mm	23230	782	19	18.84	3.75%	1.000	1.038	-
				25	Back side	0mm	23230	782	19	18.85	3.51%	1.010	1.045	-
				49	Back side*	0mm	23230	782	19	18.88	2.80%	0.995	1.023	-
			25 RB		Top side	0mm	23230	782	19	18.88	2.80%	0.723	0.743	-
				0	Back side	0mm	23230	782	19	18.89	2.57%	1.000	1.026	-
				12	Back side	0mm	23230	782	19	18.92	1.86%	1.000	1.019	-
					Top side	0mm	23230	782	19	18.92	1.86%	0.725	0.738	-
				25	Back side	0mm	23230	782	19	18.82	4.23%	0.979	1.020	-
			50 RB		Back side	0mm	23230	782	19	18.91	2.09%	1.000	1.021	-
					Top side	0mm	23230	782	19	18.91	2.09%	0.721	0.736	-

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

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)		Plot page
												Measured	Reported	
LTE Band 17	10MHz	QPSK	1 RB	0	Back side	10mm	23800	711	24	22.99	26.18%	0.711	0.897	-
					Back side	10mm	23780	709	24	23.04	24.74%	0.708	0.883	-
					Back side	10mm	23790	710	24	23.08	23.59%	0.715	0.884	-
					Top side	10mm	23790	710	24	23.08	23.59%	0.352	0.435	-
					Left side	0mm	23790	710	24	23.08	23.59%	0.175	0.216	-
					Right side	0mm	23790	710	24	23.08	23.59%	0.014	0.017	-
			25 RB	25	Back side	10mm	23780	709	23	22.08	23.59%	0.555	0.686	-
					Top side	10mm	23780	709	23	22.08	23.59%	0.274	0.339	-
					Left side	0mm	23780	709	23	22.08	23.59%	0.134	0.166	-
			50 RB	25	Right side	0mm	23780	709	23	22.08	23.59%	0.011	0.014	-
					Back side	10mm	23800	711	23	22.07	23.88%	0.534	0.662	-
					Top side	10mm	23800	711	23	22.07	23.88%	0.269	0.333	-
					Left side	0mm	23800	711	23	22.07	23.88%	0.128	0.159	-
					Right side	0mm	23800	711	23	22.07	23.88%	0.010	0.012	-

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)		Plot page
												Measured	Reported	
LTE Band 17	10MHz	QPSK	1 RB	49	Back side	0mm	23780	709	19	18.92	1.86%	1.040	1.059	270
					Back side*	0mm	23780	709	19	18.92	1.86%	1.020	1.039	-
					Back side	0mm	23790	710	19	18.87	3.04%	1.020	1.051	-
					Back side	0mm	23800	711	19	18.95	1.16%	1.020	1.032	-
					Top side	0mm	23800	711	19	18.95	1.16%	0.527	0.533	-
			25 RB	25	Back side	0mm	23780	709	19	18.91	2.09%	1.020	1.041	-
					Back side	0mm	23790	710	19	18.84	3.75%	1.010	1.048	-
					Back side	0mm	23800	711	19	18.81	4.47%	0.986	1.030	-
			50 RB	25	Top side	0mm	23780	709	19	18.91	2.09%	0.515	0.526	-
					Back side	0mm	23780	709	19	18.80	4.71%	0.996	1.043	-
					Back side	0mm	23790	710	19	18.79	4.95%	0.998	1.047	-
					Back side	0mm	23800	711	19	18.85	3.51%	1.000	1.035	-
					Top side	0mm	23800	711	19	18.85	3.51%	0.512	0.530	-

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

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	10mm	1013	824.7	25	23.82	31.22%	0.631	0.828	-
			Back side	10mm	384	836.52	25	24.11	22.74%	0.683	0.838	-
			Back side	10mm	777	848.31	25	24.05	24.45%	0.664	0.826	-
			Top side	10mm	384	836.52	25	24.11	22.74%	0.53	0.651	-
			Left side	0mm	384	836.52	25	24.11	22.74%	0.281	0.345	-
			Right side	0mm	384	836.52	25	24.11	22.74%	0.021	0.026	-

CDMA / EVDO (BC0) (with power reduction)

	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	
EVDO	Rev. 0 Subtype 0/1	Back side	0mm	1013	824.7	20.5	19.75	18.85%	0.910	1.082	-
		Back side*	0mm	1013	824.7	20.5	19.75	18.85%	0.906	1.077	-
		Back side	0mm	384	836.52	20.5	20.00	12.20%	0.932	1.046	271
		Back side	0mm	777	848.31	20.5	19.98	12.72%	0.866	0.976	-
		Top side	0mm	384	836.52	20.5	20.00	12.20%	0.657	0.737	-

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

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	10mm	25	1851.25	25	24.41	14.55%	0.623	0.714	-
			Top side	10mm	25	1851.25	25	24.41	14.55%	0.364	0.417	-
			Left side	0mm	25	1851.25	25	24.41	14.55%	0.212	0.243	-
			Right side	0mm	25	1851.25	25	24.41	14.55%	0.014	0.016	-

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	18	17.99	0.23%	0.867	0.869	-
			Back side	0mm	600	1880	18	17.38	15.35%	0.842	0.971	-
			Back side	0mm	1175	1908.75	18	17.05	24.45%	0.944	1.175	272
			Back side*	0mm	1175	1908.75	18	17.05	24.45%	0.929	1.156	-
			Top side	0mm	25	1851.25	18	17.99	0.23%	0.511	0.512	-

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

In order to evaluate the simultaneous transmission SAR analysis based on the SAR data from both SAR reports(FCC ID: B94HNI72CAM & FCC ID: PD918260NG), we check the worst cases of WLAN SAR report in 2.4G and 5G respectively, such as the following shown.

WLAN SISO

Mode	Antenna	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	
WLAN802.11 b	Main	Back side	0	11	2462	15	14.95	1.16%	0.547	0.553	-
	Aux	Back side	0	6	2437	15	14.92	1.86%	0.955	0.973	-
Bluetooth (GFSK)	Aux	Back side	0	39	2441	11.5	11.32	4.23%	0.302	0.315	-
WLAN802.11 a 5.3G	Main	Back side	0	60	5300	13.5	13.45	1.16%	0.601	0.608	273
		Top side	0	60	5300	13.5	13.45	1.16%	0.501	0.507	-
	Aux	Back side	0	56	5280	13.5	13.43	1.62%	1.050	1.067	274
		Top side	0	56	5280	13.5	13.43	1.62%	0.978	0.994	-

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 B2/4/5 + 2.4/5GHz WLAN Main	Yes
WCDMA B2/4/5 + 2.4/5GHz WLAN Aux	Yes
WCDMA B2/4/5 + 2.4/5GHz WLAN MIMO	Yes
LTE B2/4/5/8/12/13/17 + 2.4/5GHz WLAN Main	Yes
LTE B2/4/5/8/12/13/17 + 2.4/5GHz WLAN Aux	Yes
LTE B2/4/5/8/12/13/17 + 2.4/5GHz WLAN MIMO	Yes
CDMA BC0/BC1 + 2.4/5GHz WLAN Main	Yes
CDMA BC0/BC1 + 2.4/5GHz WLAN Aux	Yes
CDMA BC0/BC1 + 2.4/5GHz WLAN MIMO	Yes
GPRS850/1900 + 2.4/5GHz WLAN Main + BT	Yes
WCDMA B2/4/5 + 2.4/5GHz WLAN Main + BT	Yes
LTE B2/4/5/8/12/13/17 + 2.4/5GHz WLAN Main + BT	Yes
CDMA BC0/BC1 + 2.4/5GHz WLAN Main + BT	Yes

Note:

1. WWAN, WLAN and WiGig may transmit simultaneously.
2. Bluetooth and WLAN Aux share the same antenna path, and BT may transmit with WLAN Main simultaneously.
3. In order to evaluate the simultaneous transmission SAR based on the WLAN SAR report (FCC ID: PD918260NG), we checked the worst cases of WLAN SAR report in 2.4G and 5G respectively then used the highest reported WLAN SAR in the both reports to evaluate the simultaneous transmission SAR analysis to be more conservative.
4. The SAR to peak location separation ratios of all simultaneously transmitting antenna pairs operating in portable device exposure conditions are all ≤ 0.04 , and the $[\Sigma \text{ of MPE ratios}]$ is ≤ 1.0 . Based on KDB447498D01, the simultaneous transmitted RF exposure test exclusion applied.

3.1 Estimated SAR calculation

According to KDB447498 D01 – 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.

Mode / Band	frequency (GHz)	Test position	test separation distance(mm)	Estimated SAR(W/kg)
WLAN Main 2.4 / 5G	2.462	right / left	> 50mm	0.4
WLAN Aux 2.4 / 5G	2.462	left	> 50mm	0.4
BT	2.48	left	> 50mm	0.4

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 $(\text{SAR1} + \text{SAR2})^{1.5}/R_i$, 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 R_i is the separation distance between the peak SAR locations for the antenna pair in mm.

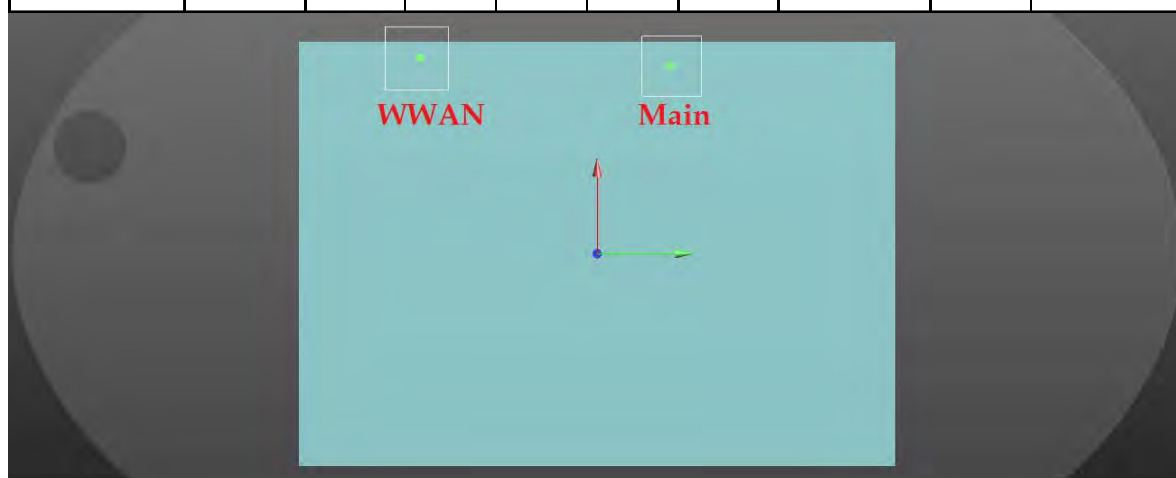
When standalone test exclusion applies, SAR is estimated; the peak location is assumed to be at the feed-point or geometric center of the antenna.

GPRS 850 + 2.4GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
1	GPRS 850	Back side	0	1.085	0.630	1.180	2.895	Analyzed as below
		Top side	0	0.486	0.150	0.360	0.996	Σ SAR<1.6, Not required
		Right side	0	0.011	0.400	0.040	0.451	Σ SAR<1.6, Not required
		Left side	0	0.087	0.400	0.400	0.887	Σ SAR<1.6, Not required

WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
GPRS 850	Back side	1.085	9.85	-8.89	-0.11	1.715	125.6	0.018	SPLSR<0.04, Not required
WLAN Main		0.63	9.46	3.66	-0.02				



WWAN & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
GPRS 850	Back side	1.085	9.85	-8.89	-0.11	2.265	199.8	0.017	SPLSR<0.04, Not required
WLAN Aux		1.18	9.24	11.08	0.00				



WLAN Main & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.63	9.46	3.66	-0.02	1.81	74.2	0.033	SPLSR<0.04, Not required
WLAN Aux		1.18	9.24	11.08	0.00				

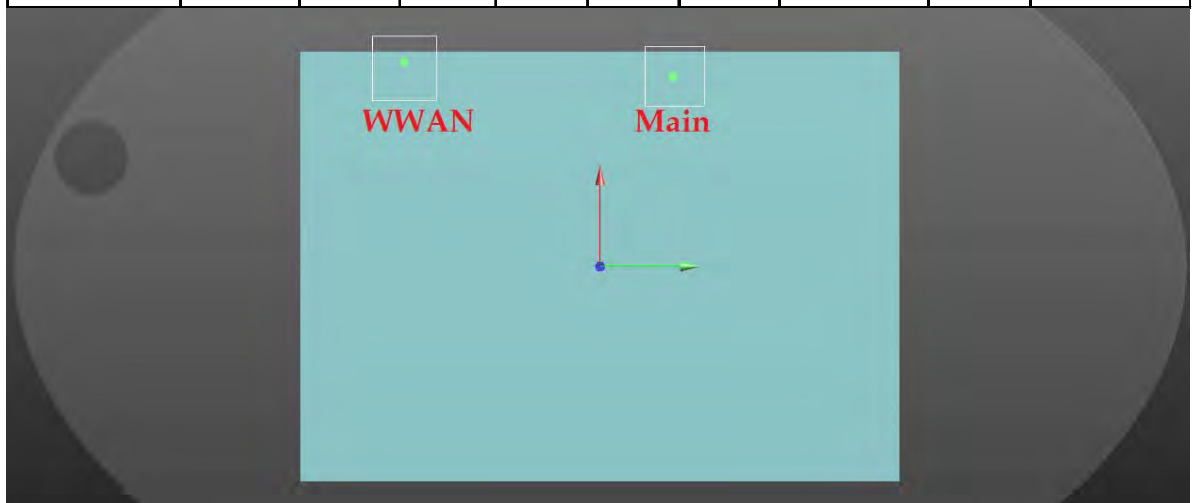


GPRS 1900 + 2.4GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
2	GPRS 1900	Back side	0	1.026	0.630	1.180	2.836	Analyzed as below
		Top side	0	0.465	0.150	0.360	0.975	Σ SAR<1.6, Not required
		Right side	0	0.024	0.400	0.040	0.464	Σ SAR<1.6, Not required
		Left side	0	0.127	0.400	0.400	0.927	Σ SAR<1.6, Not required

WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
GPRS 1900	Back side	1.026	10.17	-9.80	-0.03	1.656	134.8	0.016	SPLSR<0.04, Not required
WLAN Main		0.63	9.46	3.66	-0.02				



WWAN & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
GPRS 1900	Back side	1.026	10.17	-9.80	-0.03	2.206	209	0.016	SPLSR<0.04, Not required
WLAN Aux		1.18	9.24	11.08	0.00				



WLAN Main & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.63	9.46	3.66	-0.02	1.81	74.2	0.033	SPLSR<0.04, Not required
WLAN Aux		1.18	9.24	11.08	0.00				



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	1.093	0.630	1.180	2.903	Analyzed as below
		Top side	0	0.744	0.150	0.360	1.254	Σ SAR<1.6, Not required
		Right side	0	0.034	0.400	0.040	0.474	Σ SAR<1.6, Not required
		Left side	0	0.185	0.400	0.400	0.985	Σ SAR<1.6, Not required

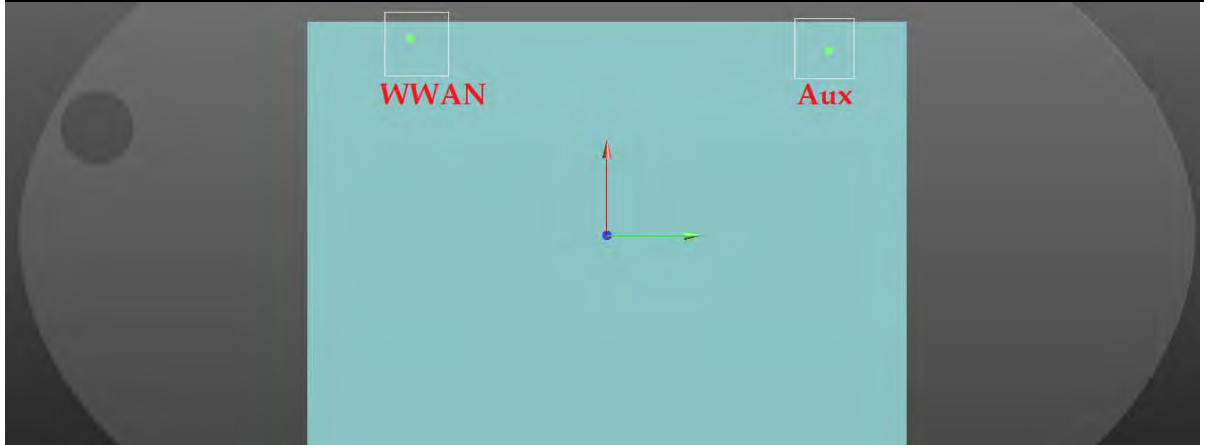
WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA B2	Back side	1.093	9.87	-9.82	-0.01	1.723	134.9	0.017	SPLSR<0.04, Not required
WLAN Main		0.63	9.46	3.66	-0.02				



WWAN & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA B2	Back side	1.093	9.87	-9.82	-0.01	2.273	209.1	0.016	SPLSR<0.04, Not required
WLAN Aux		1.18	9.24	11.08	0.00				



WLAN Main & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.63	9.46	3.66	-0.02	1.81	74.2	0.033	SPLSR<0.04, Not required
WLAN Aux		1.18	9.24	11.08	0.00				

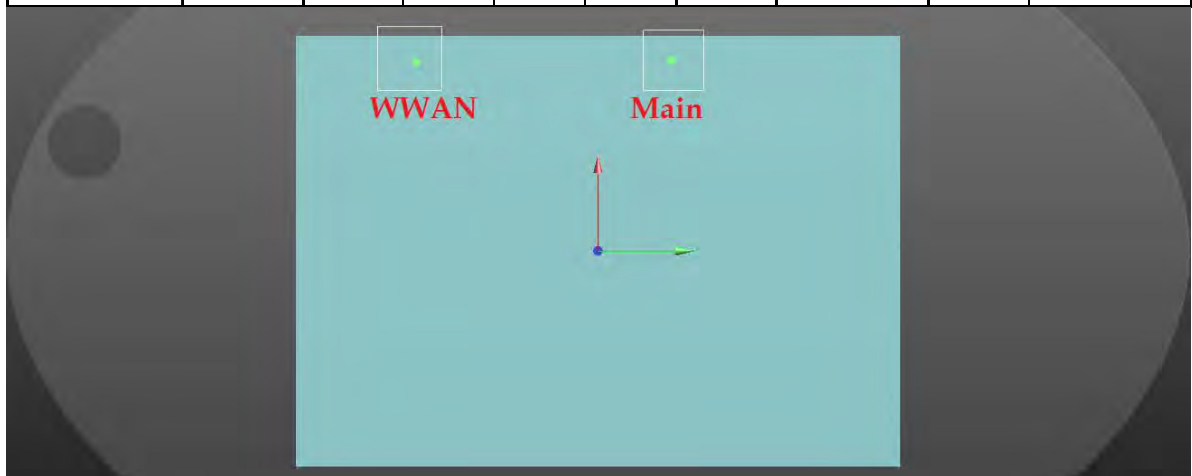


WCDMA Band IV + 2.4GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
4	WCDMA B4	Back side	0	1.079	0.630	1.180	2.889	Analyzed as below
		Top side	0	0.470	0.150	0.360	0.980	$\Sigma\text{SAR} < 1.6$, Not required
		Right side	0	0.021	0.400	0.040	0.461	$\Sigma\text{SAR} < 1.6$, Not required
		Left side	0	0.182	0.400	0.400	0.982	$\Sigma\text{SAR} < 1.6$, Not required

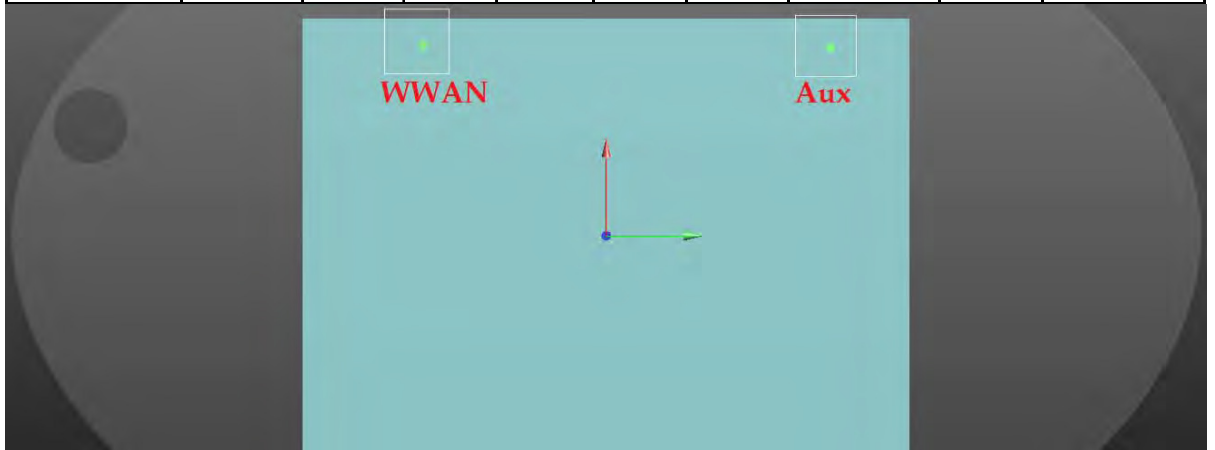
WWAN & WLAN Main

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	Back side	1.079	9.39	-9.03	-0.08	1.709	126.9	0.018	$\text{SPLSR} < 0.04$, Not required
WLAN Main		0.63	9.46	3.66	-0.02				



WWAN & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA B4	Back side	1.079	9.39	-9.03	-0.08	2.259	201.1	0.017	SPLSR<0.04, Not required
WLAN Aux		1.18	9.24	11.08	0.00				



WLAN Main & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.63	9.46	3.66	-0.02	1.81	74.2	0.033	SPLSR<0.04, Not required
WLAN Aux		1.18	9.24	11.08	0.00				

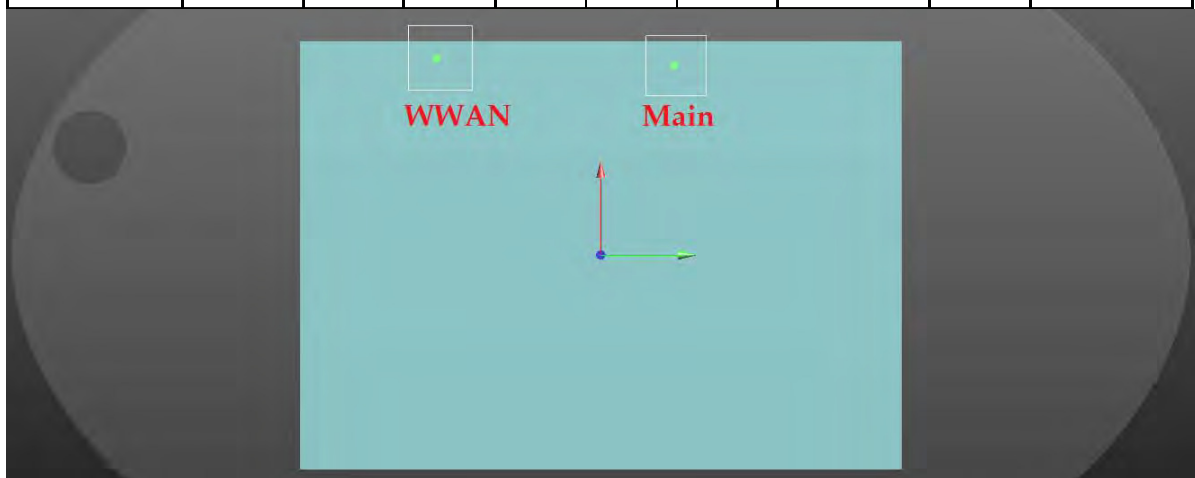


WCDMA Band V + 2.4GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
5	WCDMA B5	Back side	0	1.133	0.630	1.180	2.943	Analyzed as below
		Top side	0	0.644	0.150	0.360	1.154	Σ SAR<1.6, Not required
		Right side	0	0.012	0.400	0.040	0.452	Σ SAR<1.6, Not required
		Left side	0	0.342	0.400	0.400	1.142	Σ SAR<1.6, Not required

WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA B5	Back side	1.133	9.85	-8.16	-0.11	1.763	118.3	0.020	SPLSR<0.04, Not required
WLAN Main		0.63	9.46	3.66	-0.02				



WWAN & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA B5	Back side	1.133	9.85	-8.16	-0.11	2.313	192.5	0.018	SPLSR<0.04, Not required
WLAN Aux		1.18	9.24	11.08	0.00				



WLAN Main & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.63	9.46	3.66	-0.02	1.81	74.2	0.033	SPLSR<0.04, Not required
WLAN Aux		1.18	9.24	11.08	0.00				

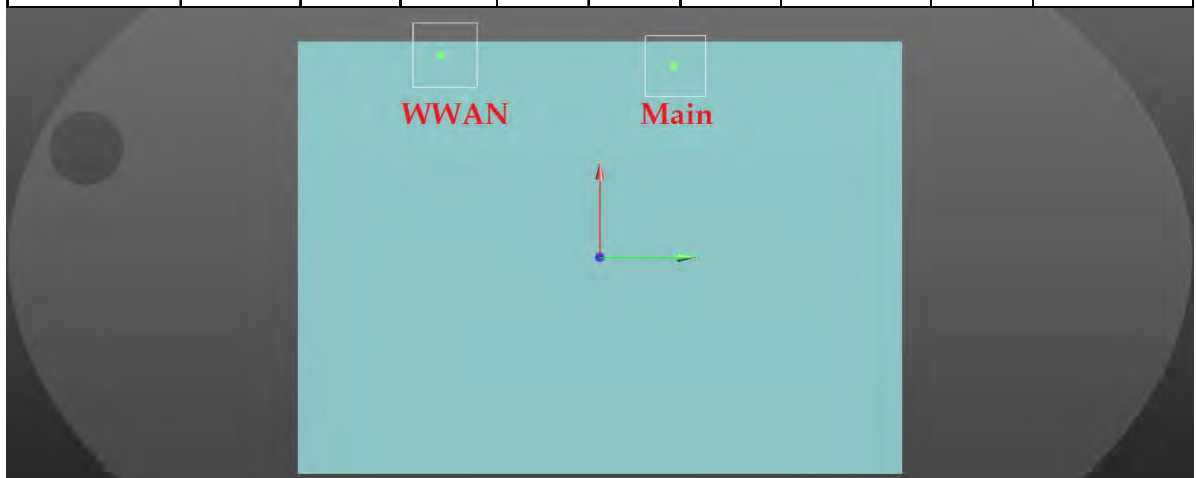


CDMA BC0 + 2.4GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
6	BC0	Back side	0	1.082	0.630	1.180	2.892	Analyzed as below
		Top side	0	0.737	0.150	0.360	1.247	$\Sigma\text{SAR} < 1.6$, Not required
		Right side	0	0.026	0.400	0.040	0.466	$\Sigma\text{SAR} < 1.6$, Not required
		Left side	0	0.345	0.400	0.400	1.145	$\Sigma\text{SAR} < 1.6$, Not required

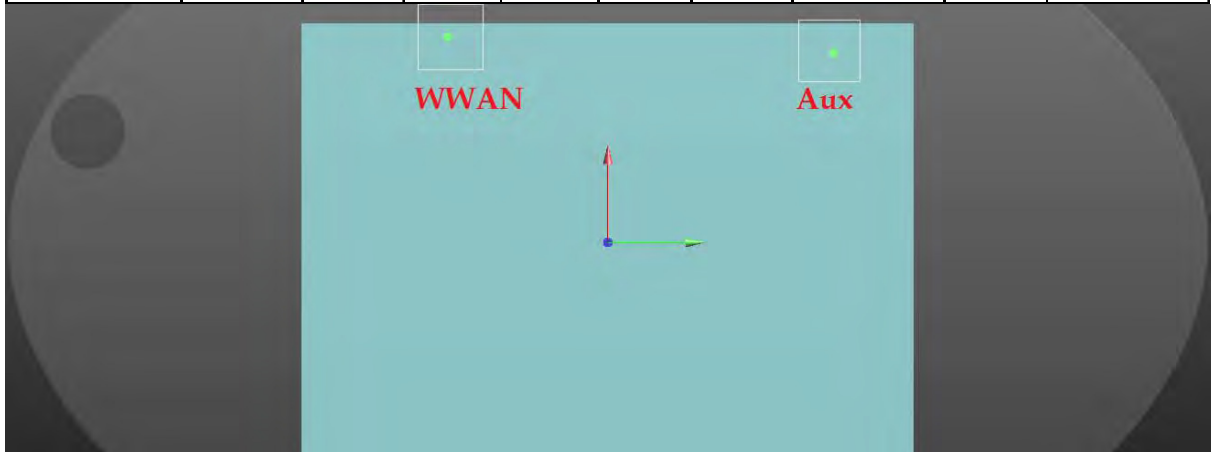
WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
BC0	Back side	1.082	10.00	-7.86	-0.04	1.712	115.3	0.019	$\text{SPLSR} < 0.04$, Not required
WLAN Main		0.63	9.46	3.66	-0.02				



WWAN & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
BC0	Back side	1.082	10.00	-7.86	-0.04	2.262	189.6	0.018	SPLSR<0.04, Not required
WLAN Aux		1.18	9.24	11.08	0.00				



WLAN Main & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.63	9.46	3.66	-0.02	1.81	74.2	0.033	SPLSR<0.04, Not required
WLAN Aux		1.18	9.24	11.08	0.00				

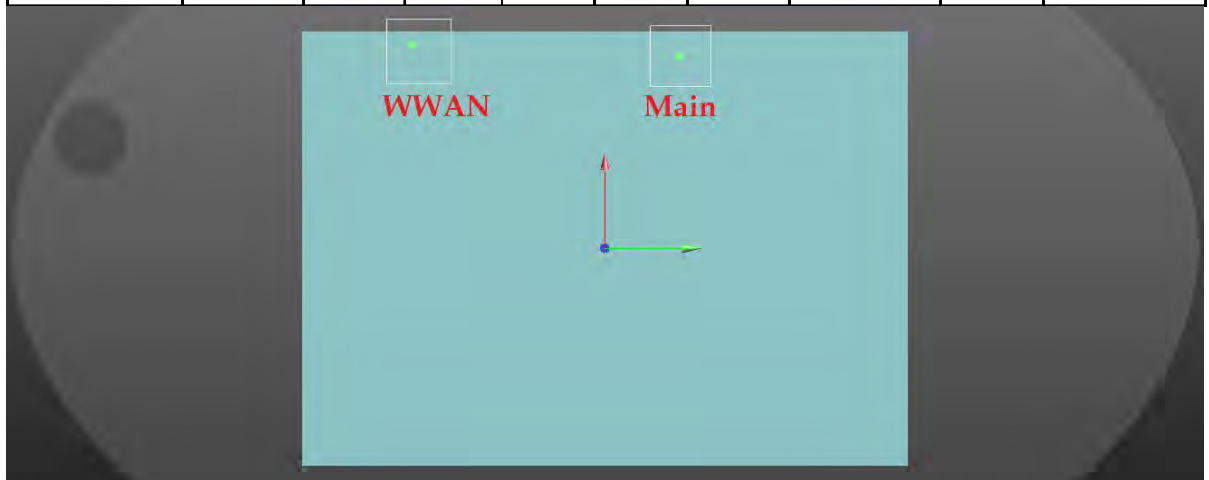


CDMA BC1 + 2.4GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
7	BC1	Back side	0	1.175	0.630	1.180	2.985	Analyzed as below
		Top side	0	0.512	0.150	0.360	1.022	Σ SAR<1.6, Not required
		Right side	0	0.016	0.400	0.040	0.456	Σ SAR<1.6, Not required
		Left side	0	0.243	0.400	0.400	1.043	Σ SAR<1.6, Not required

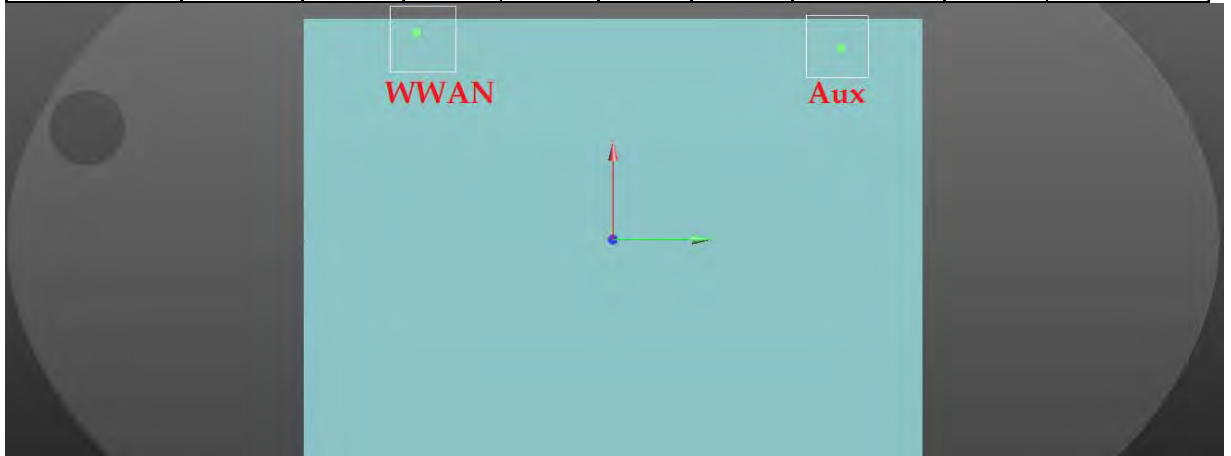
WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
BC1	Back side	1.175	10.02	-9.52	-0.04	1.805	131.9	0.018	SPLSR<0.04, Not required
WLAN Main		0.63	9.46	3.66	-0.02				



WWAN & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
BC1	Back side	1.175	10.02	-9.52	-0.04	2.355	206.1	0.018	SPLSR<0.04, Not required
WLAN Aux		1.18	9.24	11.08	0.00				



WLAN Main & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.63	9.46	3.66	-0.02	1.81	74.2	0.033	SPLSR<0.04, Not required
WLAN Aux		1.18	9.24	11.08	0.00				

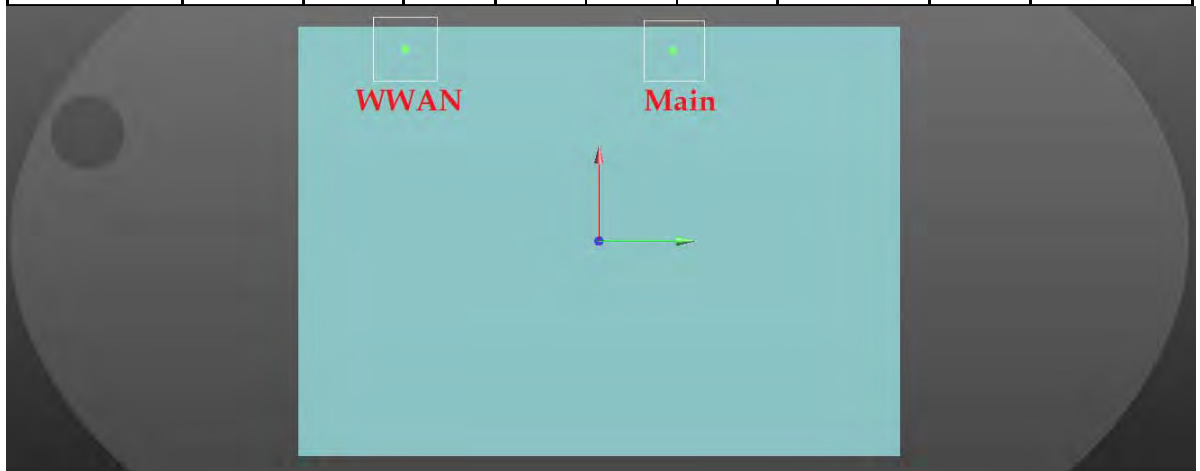


LTE FDD Band II + 2.4GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
8	LTE Band 2	Back side	0	1.054	0.630	1.180	2.864	Analyzed as below
		Top side	0	0.675	0.150	0.360	1.185	Σ SAR<1.6, Not required
		Right side	0	0.033	0.400	0.040	0.473	Σ SAR<1.6, Not required
		Left side	0	0.218	0.400	0.400	1.018	Σ SAR<1.6, Not required

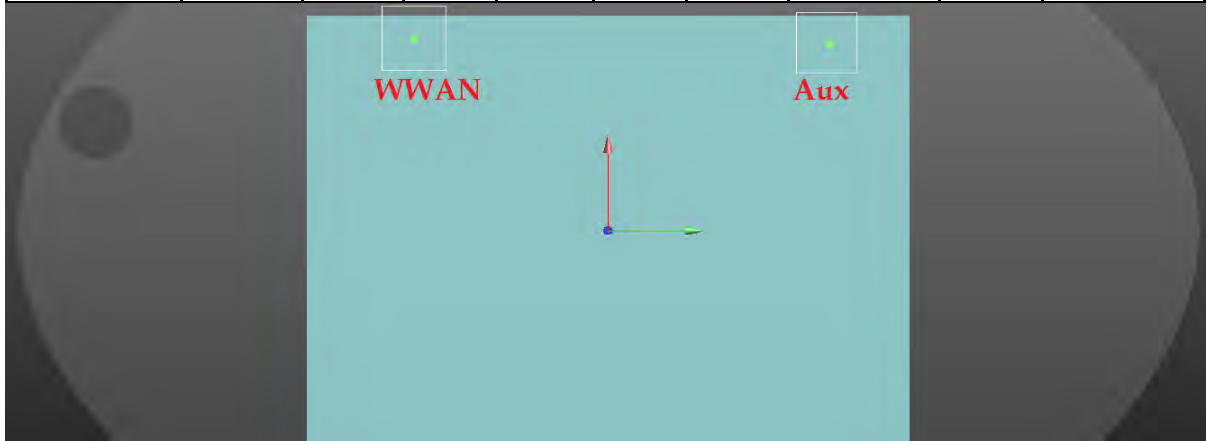
WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B2	Back side	1.054	9.55	-9.65	-0.06	1.684	133.1	0.016	SPLSR<0.04, Not required
WLAN Main		0.63	9.46	3.66	-0.02				



WWAN & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B2	Back side	1.054	9.55	-9.65	-0.06	2.234	207.3	0.016	SPLSR<0.04, Not required
WLAN Aux		1.18	9.24	11.08	0.00				



WLAN Main & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.63	9.46	3.66	-0.02	1.81	74.2	0.033	SPLSR<0.04, Not required
WLAN Aux		1.18	9.24	11.08	0.00				

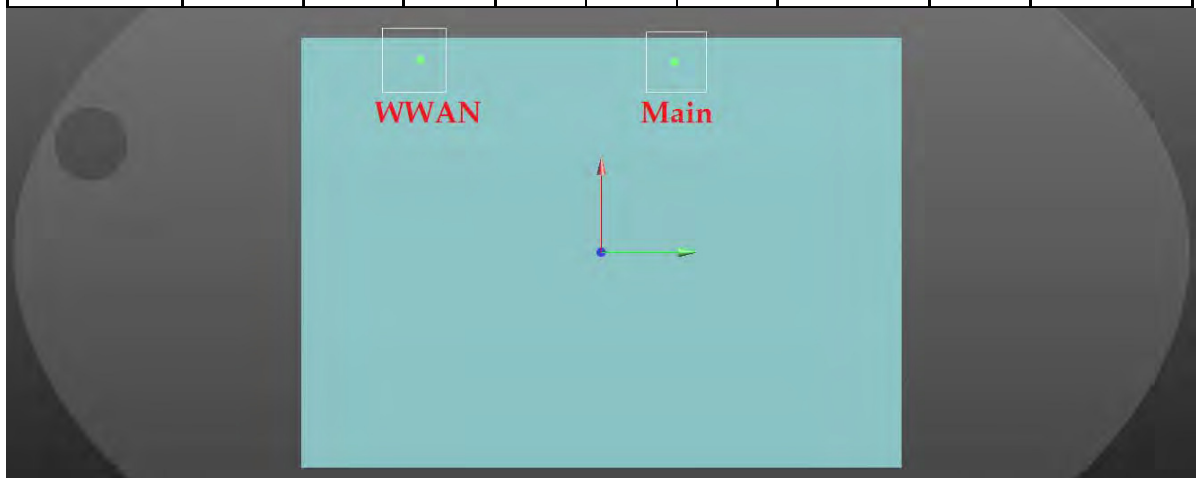


LTE FDD Band IV + 2.4GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
9	LTE Band 4	Back side	0	1.057	0.630	1.180	2.867	Analyzed as below
		Top side	0	0.502	0.150	0.360	1.012	Σ SAR<1.6, Not required
		Right side	0	0.023	0.400	0.040	0.463	Σ SAR<1.6, Not required
		Left side	0	0.202	0.400	0.400	1.002	Σ SAR<1.6, Not required

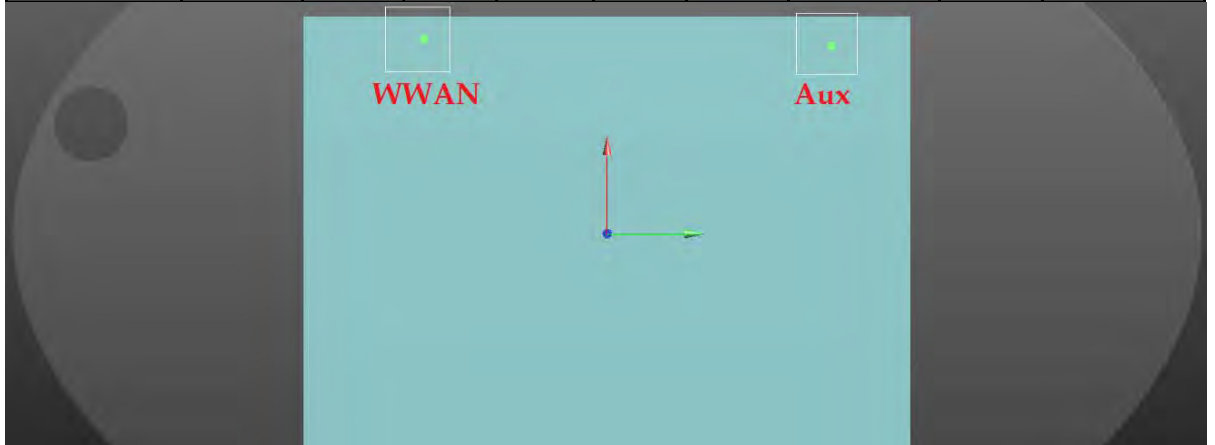
WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B4	Back side	1.057	9.55	-9.03	-0.06	1.687	126.9	0.017	SPLSR<0.04, Not required
WLAN Main		0.63	9.46	3.66	-0.02				



WWAN & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B4	Back side	1.057	9.55	-9.03	-0.06	2.237	201.1	0.017	SPLSR<0.04, Not required
WLAN Aux		1.18	9.24	11.08	0.00				



WLAN Main & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.63	9.46	3.66	-0.02	1.81	74.2	0.033	SPLSR<0.04, Not required
WLAN Aux		1.18	9.24	11.08	0.00				

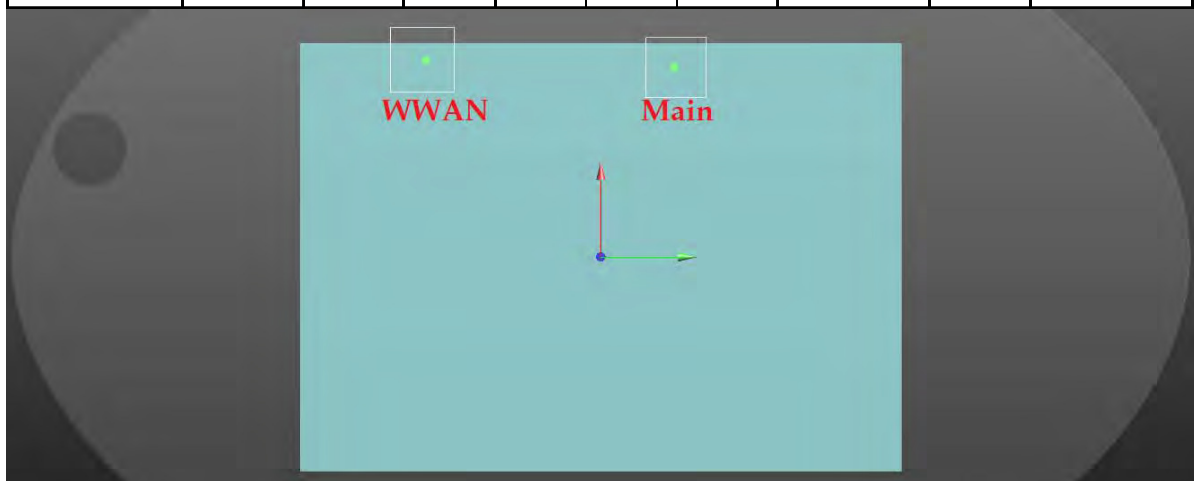


LTE FDD Band V + 2.4GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
10	LTE Band 5	Back side	0	1.042	0.630	1.180	2.852	Analyzed as below
		Top side	0	0.653	0.150	0.360	1.163	Σ SAR<1.6, Not required
		Right side	0	0.29	0.400	0.040	0.73	Σ SAR<1.6, Not required
		Left side	0	0.338	0.400	0.400	1.138	Σ SAR<1.6, Not required

WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B5	Back side	1.042	9.85	-8.74	-0.11	1.672	124.1	0.017	SPLSR<0.04, Not required
WLAN Main		0.63	9.46	3.66	-0.02				



WWAN & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B5	Back side	1.042	9.85	-8.74	-0.11	2.222	198.3	0.017	SPLSR<0.04, Not required
WLAN Aux		1.18	9.24	11.08	0.00				



WLAN Main & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.63	9.46	3.66	-0.02	1.81	74.2	0.033	SPLSR<0.04, Not required
WLAN Aux		1.18	9.24	11.08	0.00				

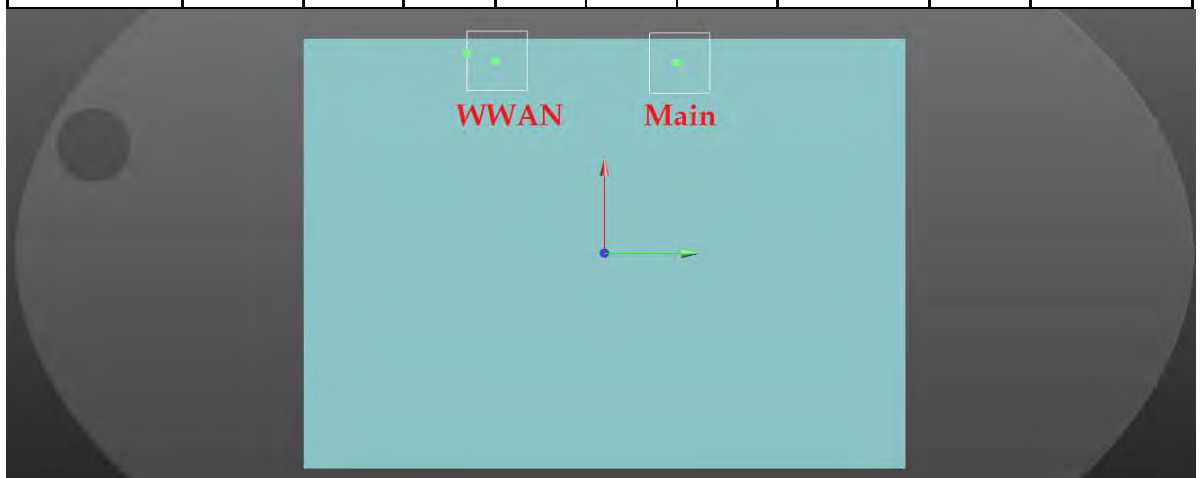


LTE FDD Band VII + 2.4GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
11	LTE Band 7	Back side	0	1.083	0.630	1.180	2.893	Analyzed as below
		Top side	0	0.766	0.150	0.360	1.276	Σ SAR<1.6, Not required
		Right side	0	0.037	0.400	0.040	0.477	Σ SAR<1.6, Not required
		Left side	0	0.606	0.400	0.400	1.406	Σ SAR<1.6, Not required

WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B7	Back side	1.083	9.58	-5.46	-0.04	1.713	91.2	0.025	SPLSR<0.04, Not required
WLAN Main		0.63	9.46	3.66	-0.02				



WWAN & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B7	Back side	1.083	9.58	-5.46	-0.04	2.263	165.4	0.021	SPLSR<0.04, Not required
WLAN Aux		1.18	9.24	11.08	0.00				



WLAN Main & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.63	9.46	3.66	-0.02	1.81	74.2	0.033	SPLSR<0.04, Not required
WLAN Aux		1.18	9.24	11.08	0.00				

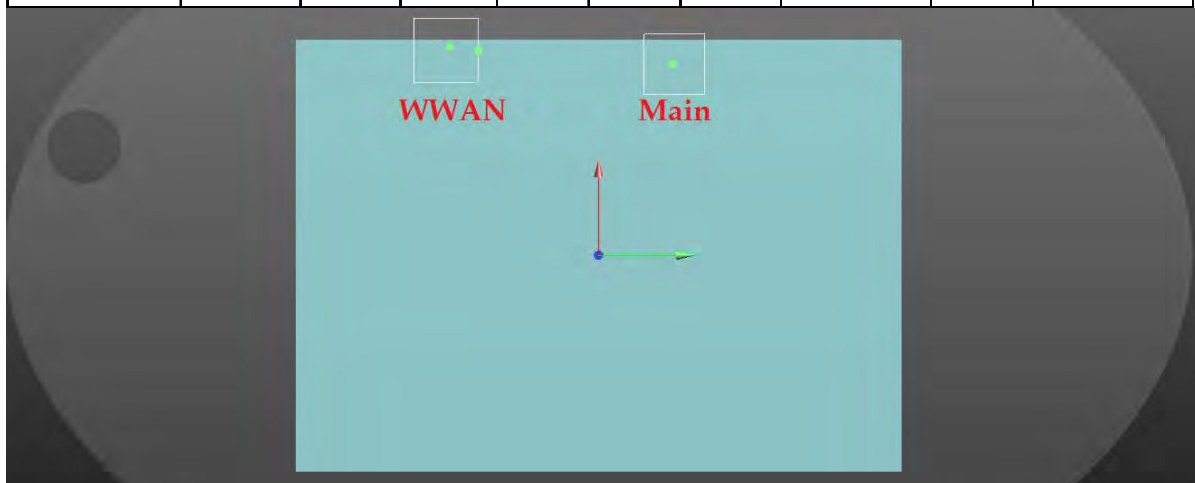


LTE FDD Band XII + 2.4GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
12	LTE Band 12	Back side	0	1.124	0.630	1.180	2.934	Analyzed as below
		Top side	0	0.473	0.150	0.360	0.983	Σ SAR<1.6, Not required
		Right side	0	0.022	0.400	0.040	0.462	Σ SAR<1.6, Not required
		Left side	0	0.211	0.400	0.400	1.011	Σ SAR<1.6, Not required

WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B12	Back side	1.124	10.31	-7.39	-0.07	1.754	110.8	0.021	SPLSR<0.04, Not required
WLAN Main		0.63	9.46	3.66	-0.02				



WWAN & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B12	Back side	1.124	10.31	-7.39	-0.07	2.304	185	0.019	SPLSR<0.04, Not required
WLAN Aux		1.18	9.24	11.08	0.00				



WLAN Main & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.63	9.46	3.66	-0.02	1.81	74.2	0.033	SPLSR<0.04, Not required
WLAN Aux		1.18	9.24	11.08	0.00				

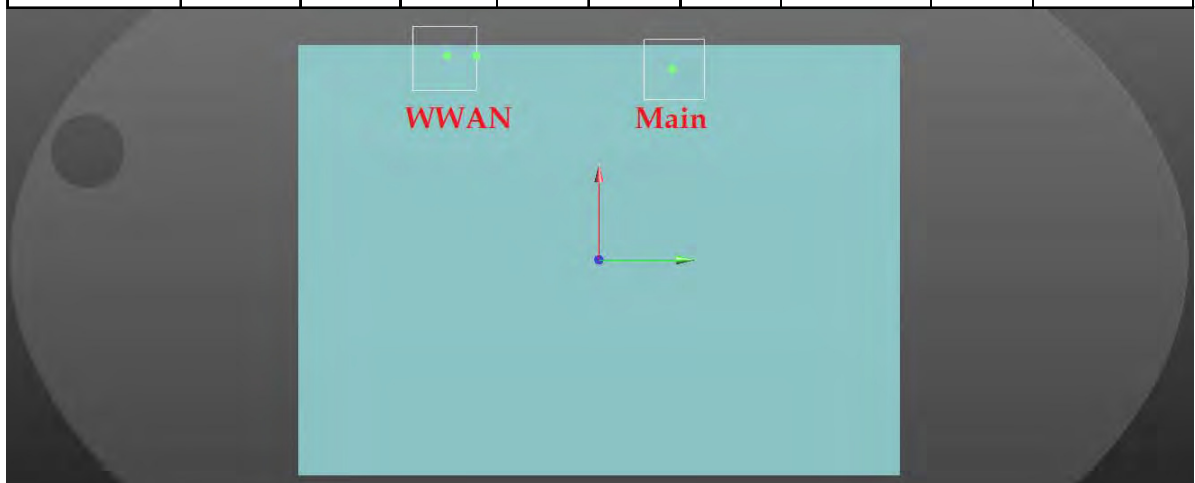


LTE FDD Band XIII + 2.4GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
13	LTE Band 13	Back side	0	1.069	0.630	1.180	2.879	Analyzed as below
		Top side	0	0.743	0.150	0.360	1.253	Σ SAR<1.6, Not required
		Right side	0	0.03	0.400	0.040	0.47	Σ SAR<1.6, Not required
		Left side	0	0.287	0.400	0.400	1.087	Σ SAR<1.6, Not required

WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B13	Back side	1.069	10.16	-7.54	-0.07	1.699	112.2	0.020	SPLSR<0.04, Not required
WLAN Main		0.63	9.46	3.66	-0.02				



WWAN & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B13	Back side	1.069	10.16	-7.54	-0.07	2.249	186.4	0.018	SPLSR<0.04, Not required
WLAN Aux		1.18	9.24	11.08	0.00				



WLAN Main & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.63	9.46	3.66	-0.02	1.81	74.2	0.033	SPLSR<0.04, Not required
WLAN Aux		1.18	9.24	11.08	0.00				



LTE FDD Band XVII + 2.4GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
14	LTE Band 17	Back side	0	1.059	0.630	1.180	2.869	Analyzed as below
		Top side	0	0.533	0.150	0.360	1.043	Σ SAR<1.6, Not required
		Right side	0	0.017	0.400	0.040	0.457	Σ SAR<1.6, Not required
		Left side	0	0.216	0.400	0.400	1.016	Σ SAR<1.6, Not required

WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B17	Back side	1.059	10.47	-6.91	-0.08	1.689	106.2	0.021	SPLSR<0.04, Not required
WLAN Main		0.63	9.46	3.66	-0.02				



WWAN & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B17	Back side	1.059	10.47	-6.91	-0.08	2.239	180.3	0.019	SPLSR<0.04, Not required
WLAN Aux		1.18	9.24	11.08	0.00				



WLAN Main & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.63	9.46	3.66	-0.02	1.81	74.2	0.033	SPLSR<0.04, Not required
WLAN Aux		1.18	9.24	11.08	0.00				

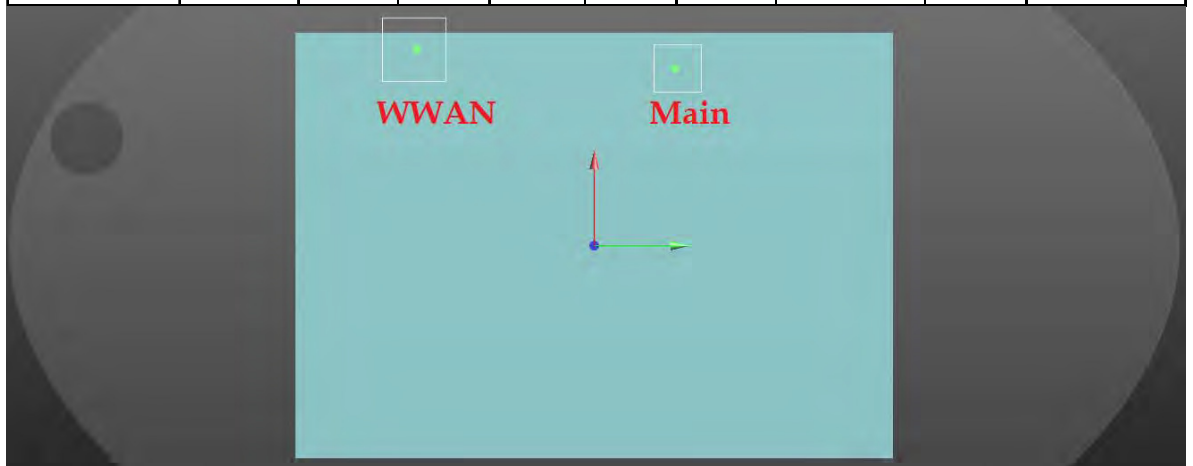


GPRS 850 + 5GHz WLAN MIMO

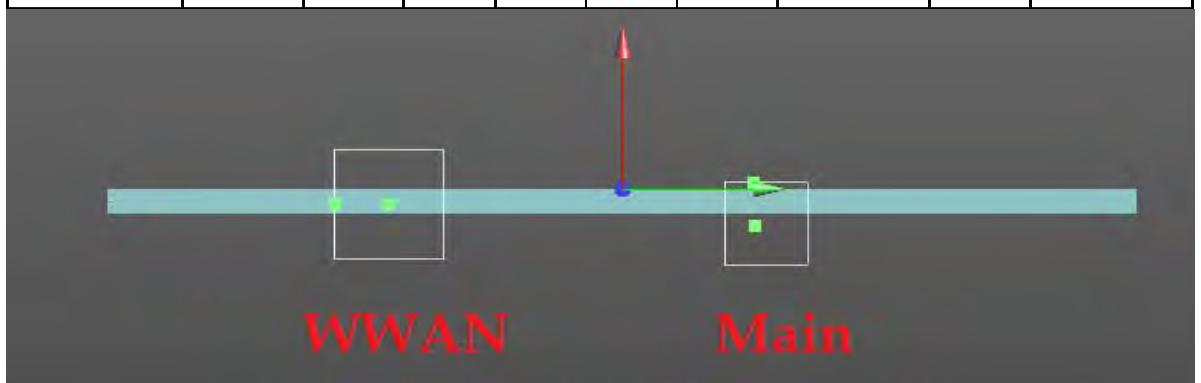
No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
15	GPRS 850	Back side	0	1.085	0.608	1.067	2.76	Analyzed as below
		Top side	0	0.486	0.610	1.140	2.236	Analyzed as below
		Right side	0	0.011	0.400	0.110	0.521	Σ SAR<1.6, Not required
		Left side	0	0.087	0.400	0.400	0.887	Σ SAR<1.6, Not required

WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
GPRS 850	Back side	1.085	9.85	-8.89	-0.11	1.693	129.7	0.017	SPLSR<0.04, Not required
WLAN Main		0.608	8.90	4.04	-0.01				

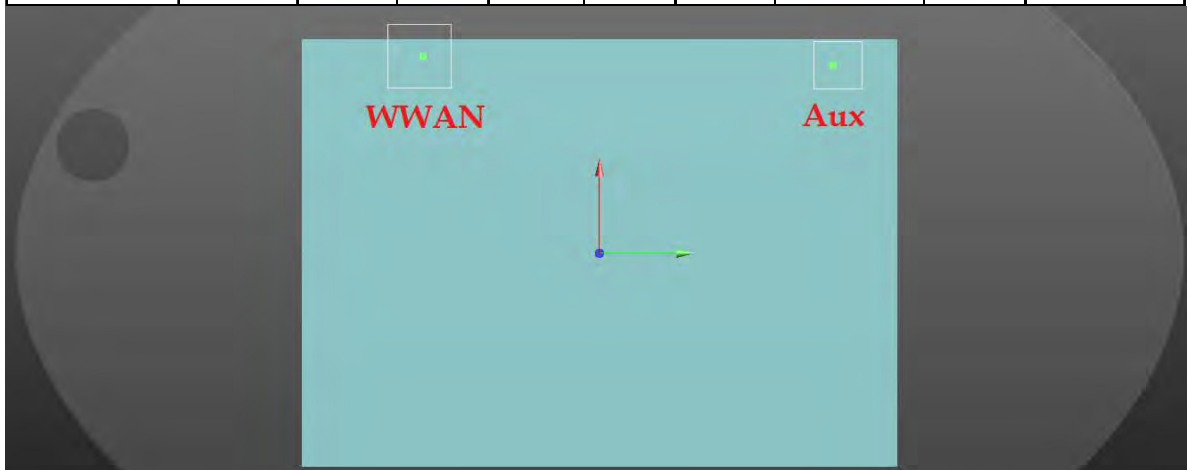


Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
GPRS 850	Top side	0.486	-0.45	-6.80	-0.27	1.096	107	0.011	SPLSR<0.04, Not required
WLAN Main		0.61	-1.08	3.88	-0.16				



WWAN & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
GPRS 850	Back side	1.085	9.85	-8.89	-0.11	2.152	206.6	0.015	SPLSR<0.04, Not required
WLAN Aux		1.067	9.40	11.76	0.04				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
GPRS 850	Top side	0.486	-0.45	-6.80	-0.27	1.626	208	0.010	SPLSR<0.04, Not required
WLAN Aux		1.14	-0.60	14.00	-0.10				



WLAN Main & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.608	8.90	4.04	-0.01	1.675	77.4	0.028	SPLSR<0.04, Not required
WLAN Aux		1.067	9.40	11.76	0.04				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Top side	0.61	-1.08	3.88	-0.16	1.75	101.3	0.023	SPLSR<0.04, Not required
WLAN Aux		1.14	-0.60	14.00	-0.10				



GPRS 1900 + 5GHz WLAN MIMO

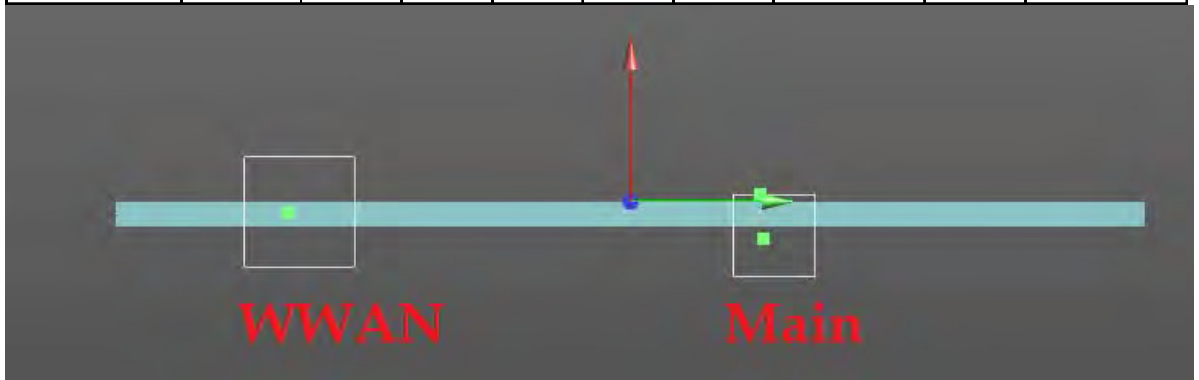
No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
16	GPRS 1900	Back side	0	1.026	0.608	1.067	2.701	Analyzed as below
		Top side	0	0.465	0.610	1.140	2.215	Analyzed as below
		Right side	0	0.024	0.400	0.110	0.534	Σ SAR<1.6, Not required
		Left side	0	0.127	0.400	0.400	0.927	Σ SAR<1.6, Not required

WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
GPRS 1900	Back side	1.026	10.17	-9.80	-0.03	1.634	139	0.015	SPLSR<0.04, Not required
WLAN Main		0.608	8.90	4.04	-0.01				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
GPRS 1900	Top side	0.465	-0.30	-9.97	-0.18	1.075	138.7	0.008	SPLSR<0.04, Not required
WLAN Main		0.61	-1.08	3.88	-0.16				

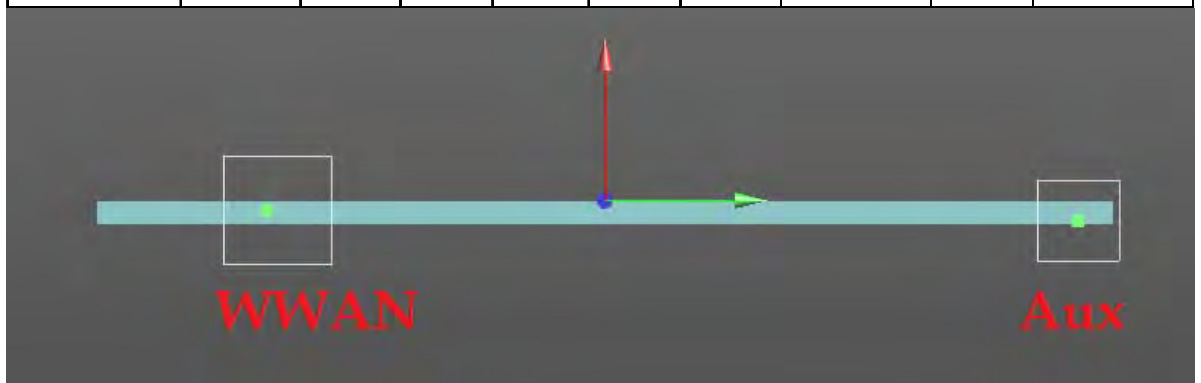


WWAN & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
GPRS 1900	Back side	1.026	10.17	-9.80	-0.03	2.093	215.7	0.014	SPLSR<0.04, Not required
WLAN Aux		1.067	9.40	11.76	0.04				

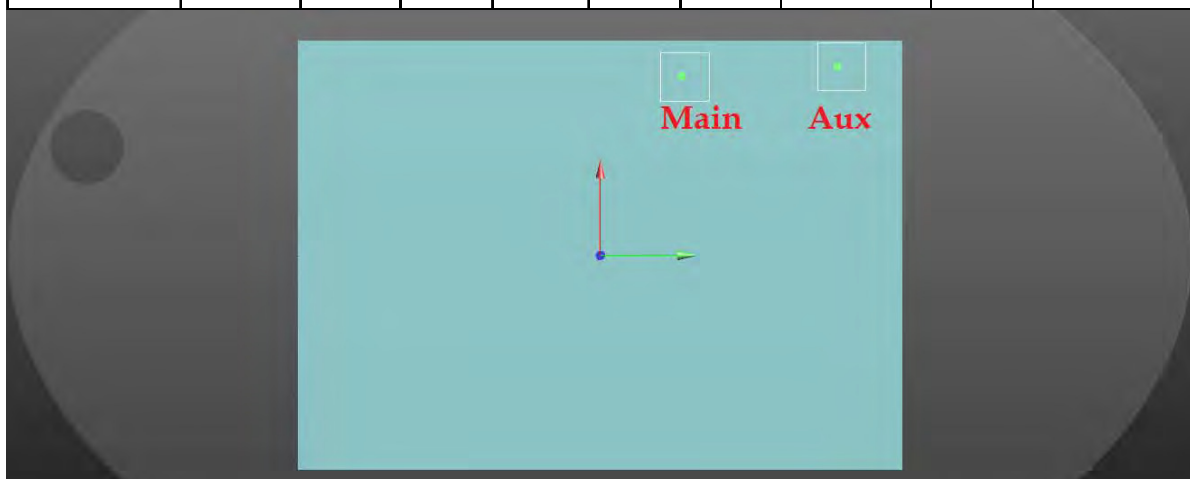


Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
GPRS 1900	Top side	0.465	-0.30	-9.97	-0.18	1.605	239.7	0.008	SPLSR<0.04, Not required
WLAN Aux		1.14	-0.60	14.00	-0.10				

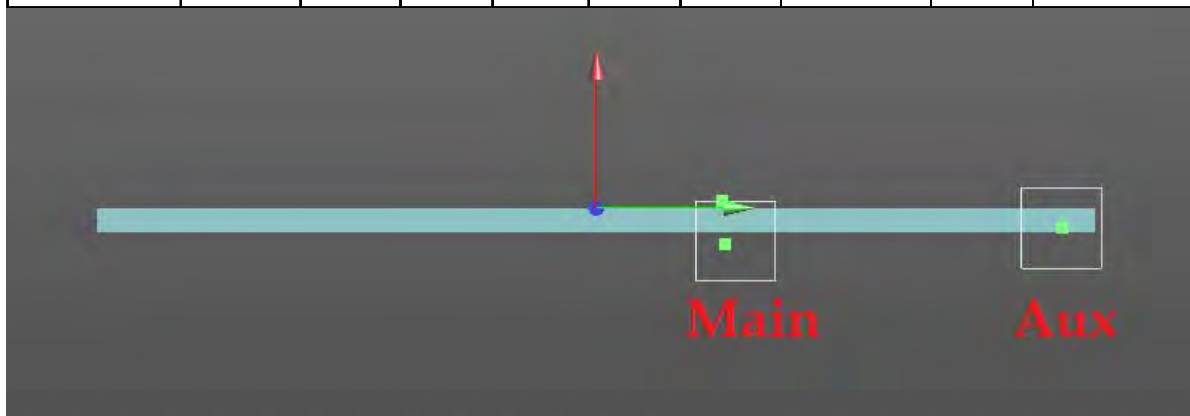


WLAN Main & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.608	8.90	4.04	-0.01	1.675	77.4	0.028	SPLSR<0.04, Not required
WLAN Aux		1.067	9.40	11.76	0.04				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Top side	0.61	-1.08	3.88	-0.16	1.75	101.3	0.023	SPLSR<0.04, Not required
WLAN Aux		1.14	-0.60	14.00	-0.10				



WCDMA Band II + 5GHz WLAN MIMO

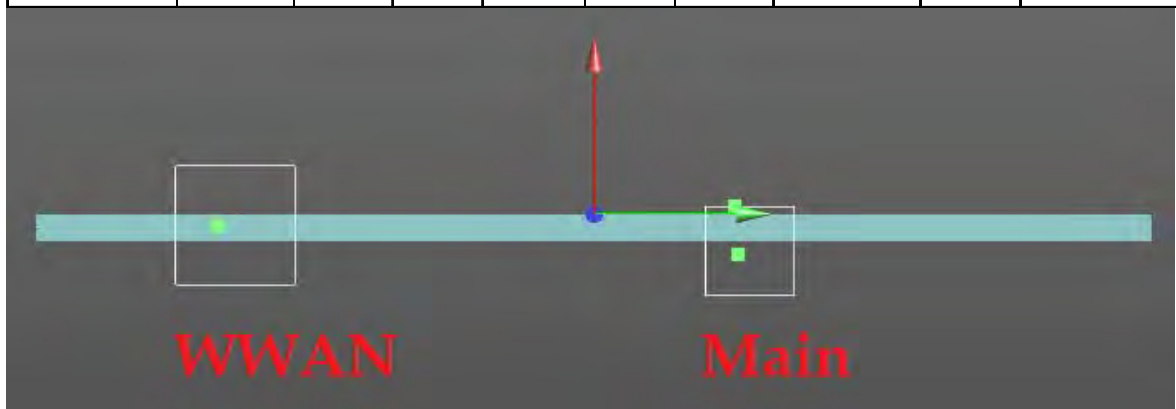
No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
17	WCDMA B2	Back side	0	1.093	0.608	1.067	2.768	Analyzed as below
		Top side	0	0.744	0.610	1.140	2.494	Analyzed as below
		Right side	0	0.034	0.400	0.110	0.544	Σ SAR<1.6, Not required
		Left side	0	0.185	0.400	0.400	0.985	Σ SAR<1.6, Not required

WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA B2	Back side	1.093	9.87	-9.82	-0.01	1.701	138.9	0.016	SPLSR<0.04, Not required
WLAN Main		0.608	8.90	4.04	-0.01				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA B2	Top side	0.744	-0.30	-10.13	-0.20	1.354	140.3	0.011	SPLSR<0.04, Not required
WLAN Main		0.61	-1.08	3.88	-0.16				

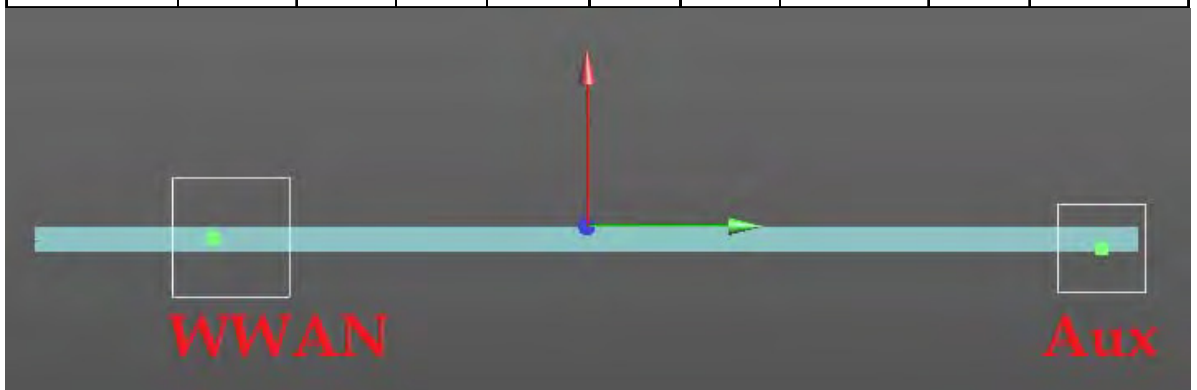


WWAN & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA B2	Back side	1.093	9.87	-9.82	-0.01	2.16	215.9	0.015	SPLSR<0.04, Not required
WLAN Aux		1.067	9.40	11.76	0.04				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA B2	Top side	0.744	-0.30	-10.13	-0.20	1.884	241.3	0.011	SPLSR<0.04, Not required
WLAN Aux		1.14	-0.60	14.00	-0.10				

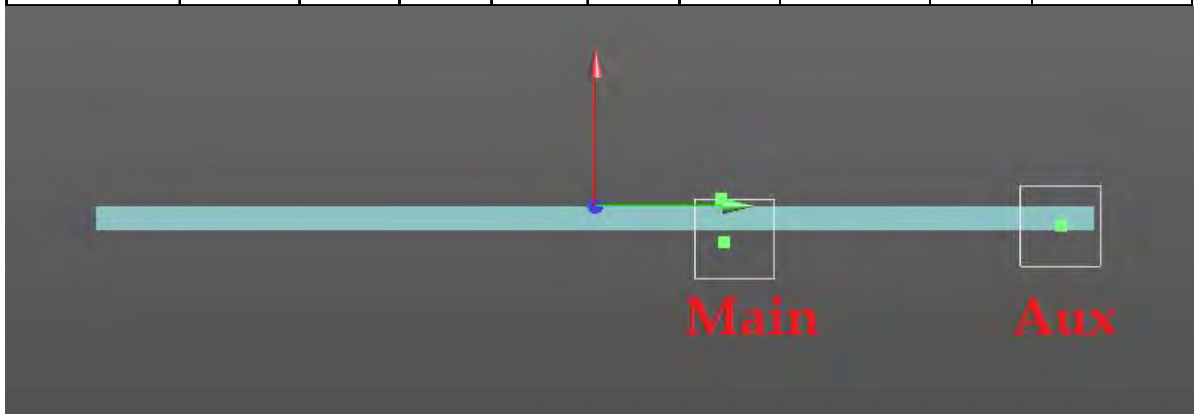


WLAN Main & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.608	8.90	4.04	-0.01	1.675	77.4	0.028	SPLSR<0.04, Not required
WLAN Aux		1.067	9.40	11.76	0.04				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Top side	0.61	-1.08	3.88	-0.16	1.75	101.3	0.023	SPLSR<0.04, Not required
WLAN Aux		1.14	-0.60	14.00	-0.10				



WCDMA Band IV + 5GHz WLAN MIMO

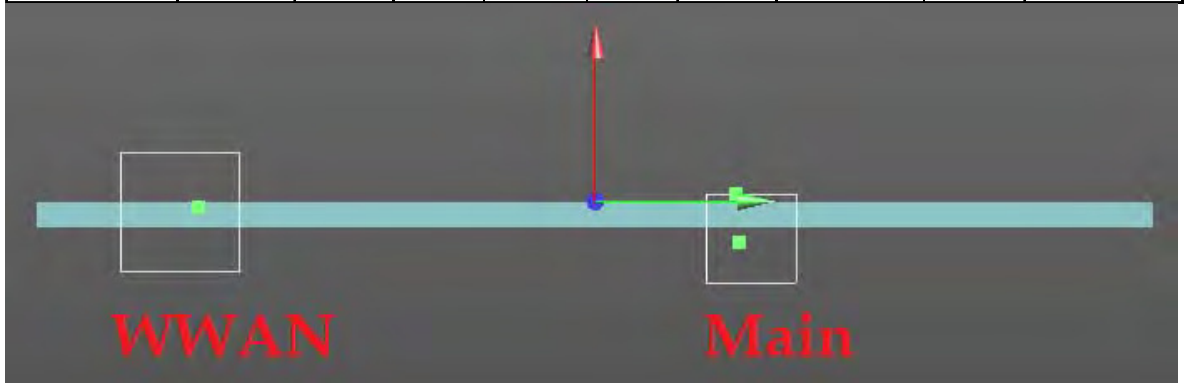
No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
18	WCDMA B4	Back side	0	1.079	0.608	1.067	2.754	Analyzed as below
		Top side	0	0.470	0.610	1.140	2.220	Analyzed as below
		Right side	0	0.021	0.400	0.110	0.531	Σ SAR<1.6, Not required
		Left side	0	0.182	0.400	0.400	0.982	Σ SAR<1.6, Not required

WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA B4	Back side	1.079	9.39	-9.03	-0.08	1.687	130.8	0.017	SPLSR<0.04, Not required
WLAN Main		0.608	8.90	4.04	-0.01				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA B4	Top side	0.47	-0.14	-10.67	-0.18	1.08	145.8	0.008	SPLSR<0.04, Not required
WLAN Main		0.61	-1.08	3.88	-0.16				

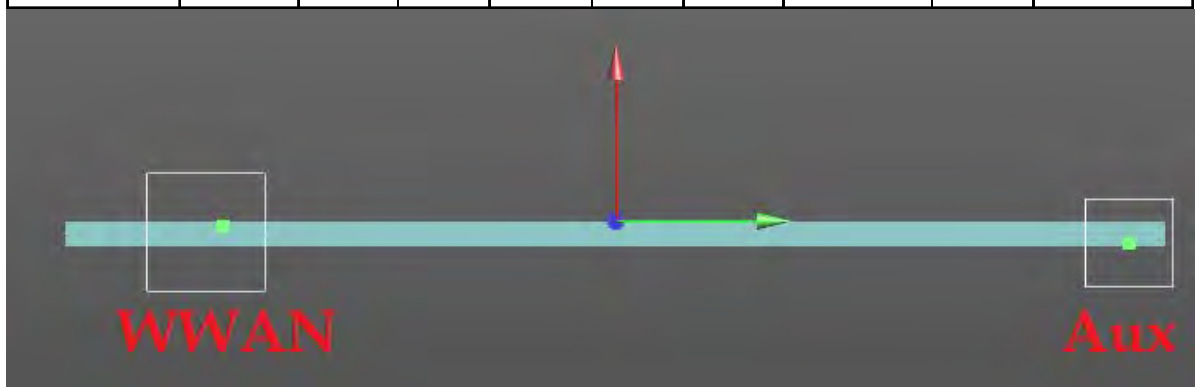


WWAN & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA B4	Back side	1.079	9.39	-9.03	-0.08	2.146	207.9	0.015	SPLSR<0.04, Not required
WLAN Aux		1.067	9.40	11.76	0.04				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA B4	Top side	0.47	-0.14	-10.67	-0.18	1.61	246.7	0.008	SPLSR<0.04, Not required
WLAN Aux		1.14	-0.60	14.00	-0.10				

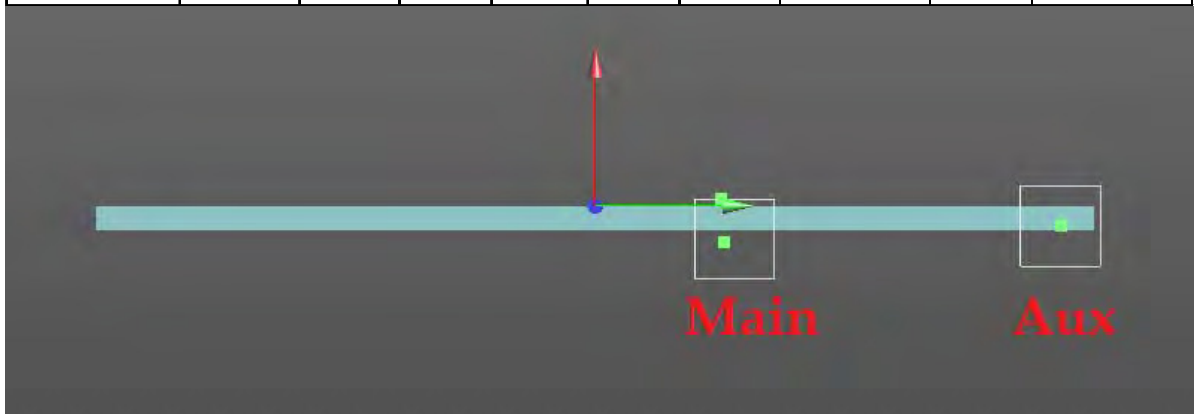


WLAN Main & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.608	8.90	4.04	-0.01	1.675	77.4	0.028	SPLSR<0.04, Not required
WLAN Aux		1.067	9.40	11.76	0.04				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Top side	0.61	-1.08	3.88	-0.16	1.75	101.3	0.023	SPLSR<0.04, Not required
WLAN Aux		1.14	-0.60	14.00	-0.10				



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	1.133	0.608	1.067	2.808	Analyzed as below
		Top side	0	0.644	0.610	1.140	2.394	Analyzed as below
		Right side	0	0.012	0.400	0.110	0.522	Σ SAR<1.6, Not required
		Left side	0	0.342	0.400	0.400	1.142	Σ SAR<1.6, Not required

WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA B5	Back side	1.133	9.85	-8.16	-0.11	1.741	122.4	0.019	SPLSR<0.04, Not required
WLAN Main		0.608	8.90	4.04	-0.01				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA B5	Top side	0.644	-0.60	-7.25	-0.27	1.254	111.4	0.013	SPLSR<0.04, Not required
WLAN Main		0.61	-1.08	3.88	-0.16				

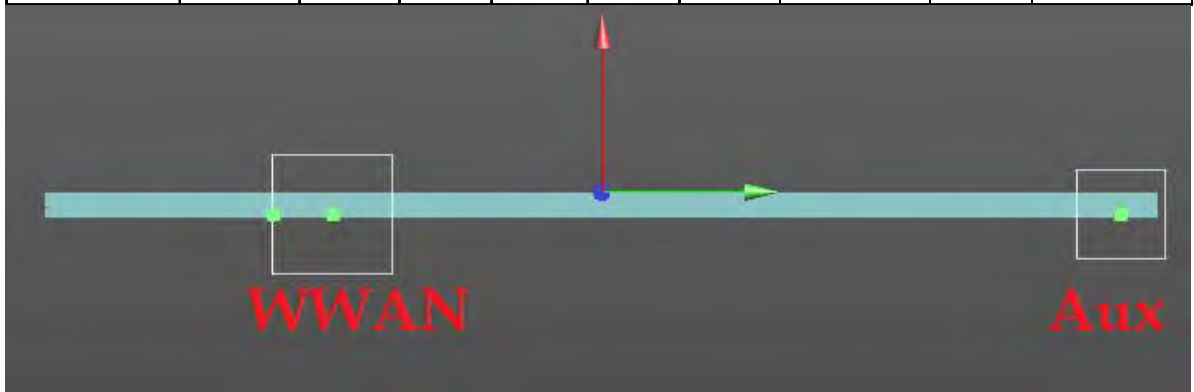


WWAN & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA B5	Back side	1.133	9.85	-8.16	-0.11	2.2	199.3	0.016	SPLSR<0.04, Not required
WLAN Aux		1.067	9.40	11.76	0.04				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA B5	Top side	0.644	-0.60	-7.25	-0.27	1.784	212.5	0.011	SPLSR<0.04, Not required
WLAN Aux		1.14	-0.60	14.00	-0.10				

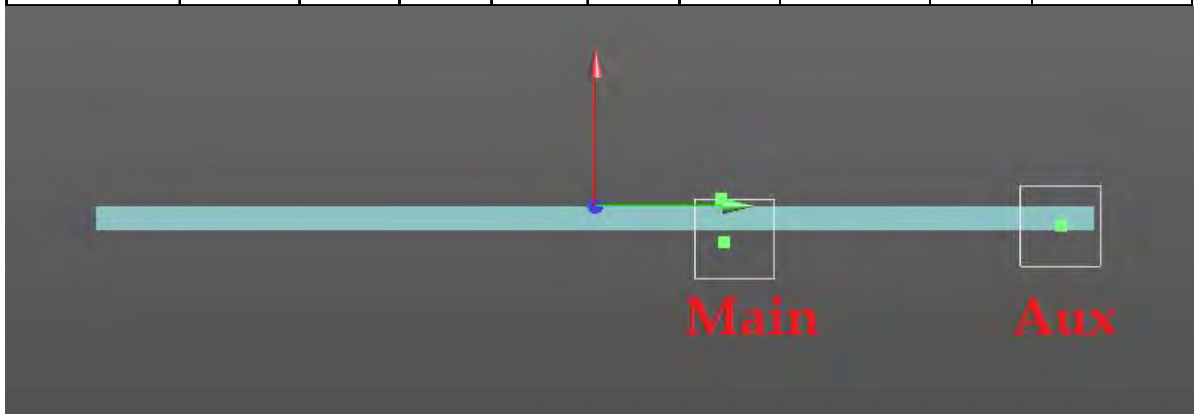


WLAN Main & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.608	8.90	4.04	-0.01	1.675	77.4	0.028	SPLSR<0.04, Not required
WLAN Aux		1.067	9.40	11.76	0.04				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Top side	0.61	-1.08	3.88	-0.16	1.75	101.3	0.023	SPLSR<0.04, Not required
WLAN Aux		1.14	-0.60	14.00	-0.10				



CDMA BC0 + 5GHz WLAN MIMO

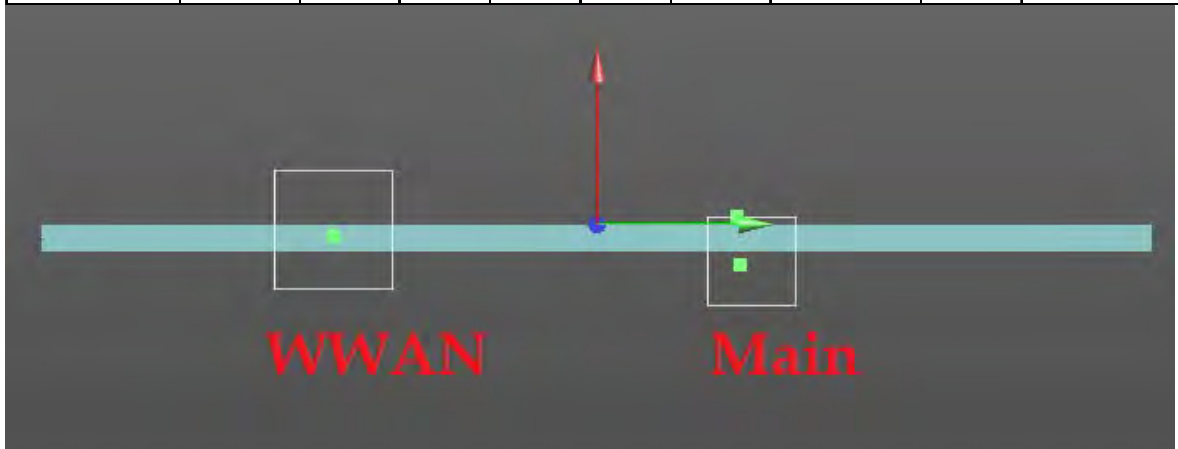
No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
20	BC0	Back side	0	1.082	0.608	1.067	2.757	Analyzed as below
		Top side	0	0.737	0.610	1.140	2.487	Analyzed as below
		Right side	0	0.026	0.400	0.110	0.536	Σ SAR<1.6, Not required
		Left side	0	0.345	0.400	0.400	1.145	Σ SAR<1.6, Not required

WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
BC0	Back side	1.082	10.00	-7.86	-0.04	1.69	119.5	0.018	SPLSR<0.04, Not required
WLAN Main		0.608	8.90	4.04	-0.01				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
BC0	Top side	0.737	-0.31	-7.10	-0.27	1.347	110.1	0.014	SPLSR<0.04, Not required
WLAN Main		0.61	-1.08	3.88	-0.16				



WWAN & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
BC0	Back side	1.082	10.00	-7.86	-0.04	2.149	196.3	0.016	SPLSR<0.04, Not required
WLAN Aux		1.067	9.40	11.76	0.04				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
BC0	Top side	0.737	-0.31	-7.10	-0.27	1.877	211	0.012	SPLSR<0.04, Not required
WLAN Aux		1.14	-0.60	14.00	-0.10				

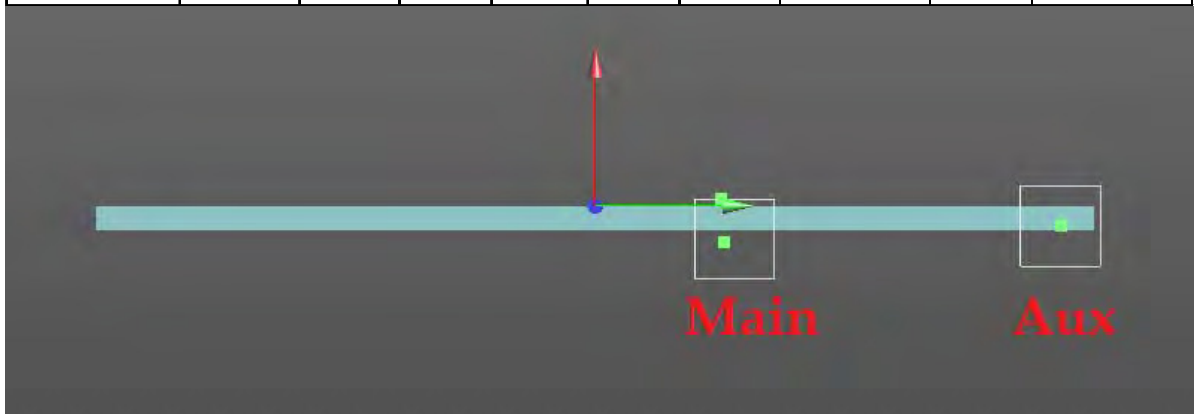


WLAN Main & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.608	8.90	4.04	-0.01	1.675	77.4	0.028	SPLSR<0.04, Not required
WLAN Aux		1.067	9.40	11.76	0.04				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Top side	0.61	-1.08	3.88	-0.16	1.75	101.3	0.023	SPLSR<0.04, Not required
WLAN Aux		1.14	-0.60	14.00	-0.10				

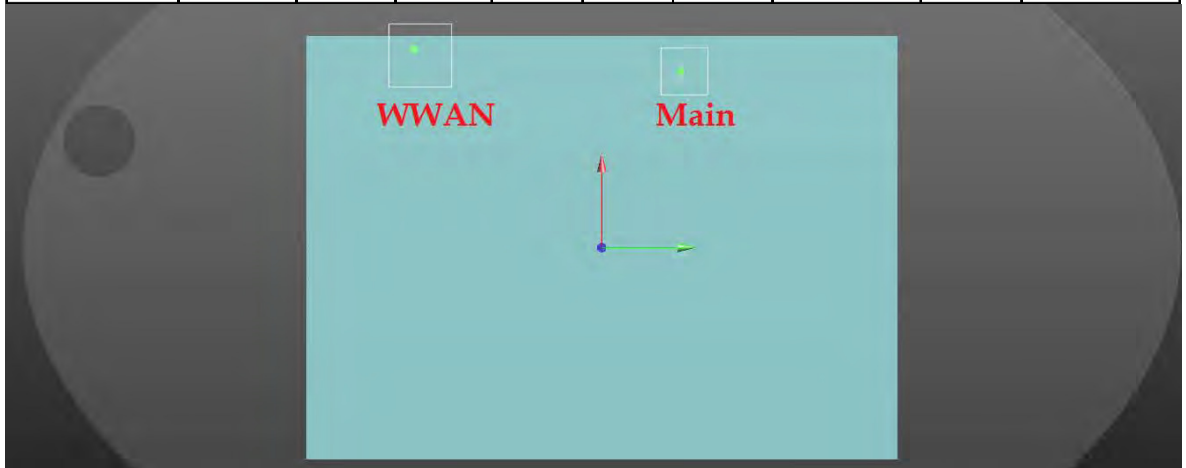


CDMA BC1 + 5GHz WLAN MIMO

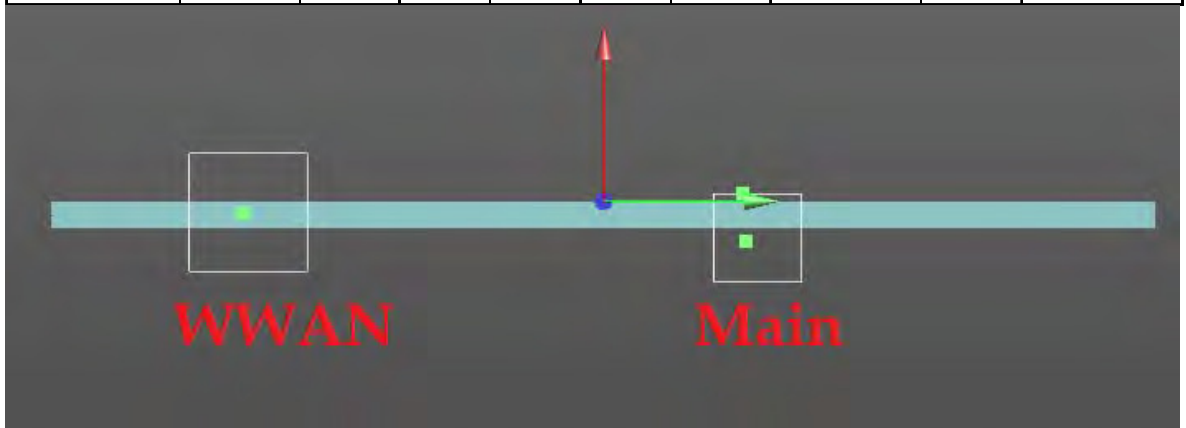
No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
21	BC1	Back side	0	1.175	0.608	1.067	2.85	Analyzed as below
		Top side	0	0.512	0.610	1.140	2.262	Analyzed as below
		Right side	0	0.016	0.400	0.110	0.526	Σ SAR<1.6, Not required
		Left side	0	0.243	0.400	0.400	1.043	Σ SAR<1.6, Not required

WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
BC1	Back side	1.175	10.02	-9.52	-0.04	1.783	136.1	0.017	SPLSR<0.04, Not required
WLAN Main		0.608	8.90	4.04	-0.01				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
BC1	Top side	0.512	-0.30	-9.81	-0.18	1.122	137.1	0.009	SPLSR<0.04, Not required
WLAN Main		0.61	-1.08	3.88	-0.16				

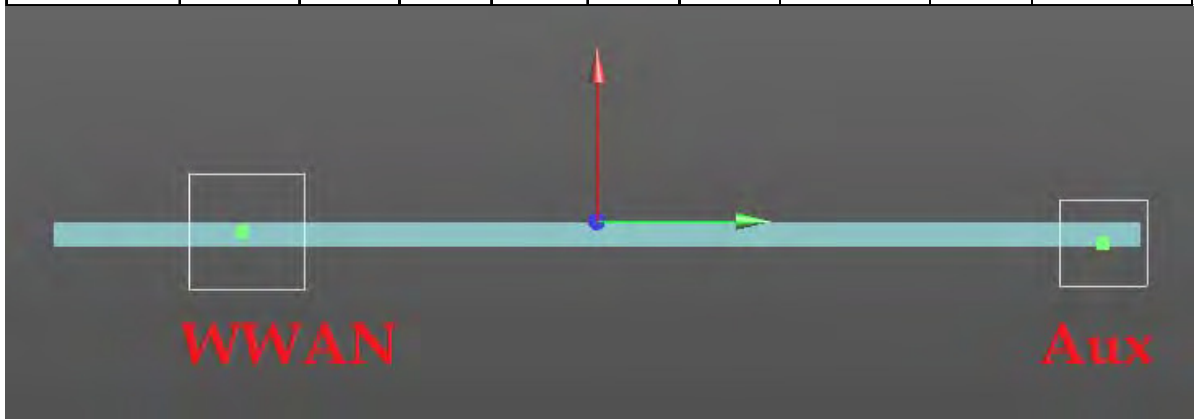


WWAN & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
BC1	Back side	1.175	10.02	-9.52	-0.04	2.242	212.9	0.016	SPLSR<0.04, Not required
WLAN Aux		1.067	9.40	11.76	0.04				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
BC1	Top side	0.512	-0.30	-9.81	-0.18	1.652	238.1	0.009	SPLSR<0.04, Not required
WLAN Aux		1.14	-0.60	14.00	-0.10				

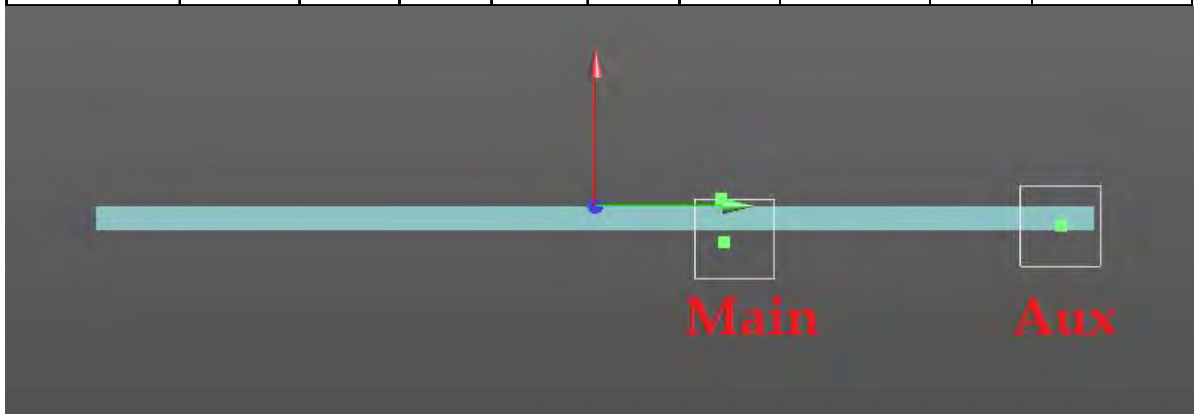


WLAN Main & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.608	8.90	4.04	-0.01	1.675	77.4	0.028	SPLSR<0.04, Not required
WLAN Aux		1.067	9.40	11.76	0.04				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Top side	0.61	-1.08	3.88	-0.16	1.75	101.3	0.023	SPLSR<0.04, Not required
WLAN Aux		1.14	-0.60	14.00	-0.10				

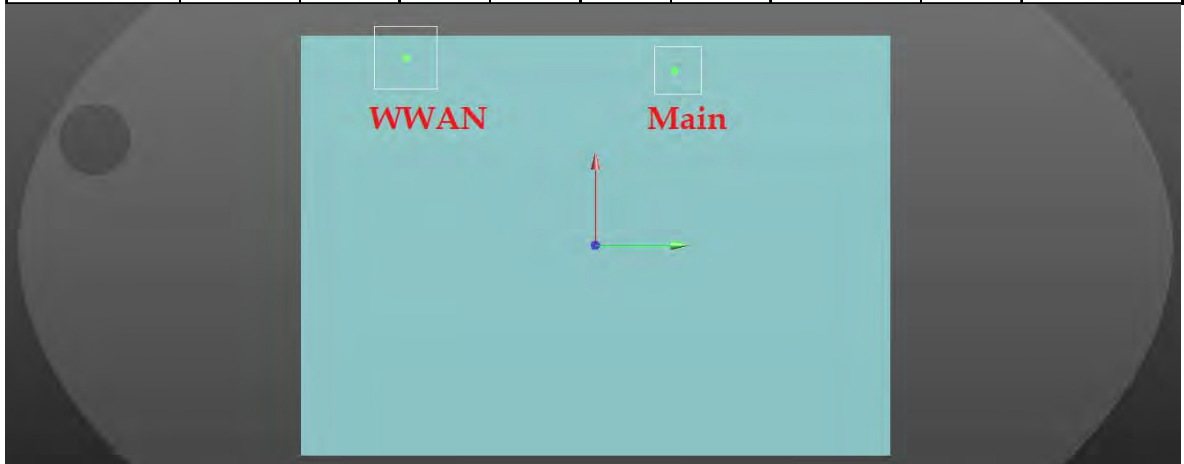


LTE FDD Band II + 5GHz WLAN MIMO

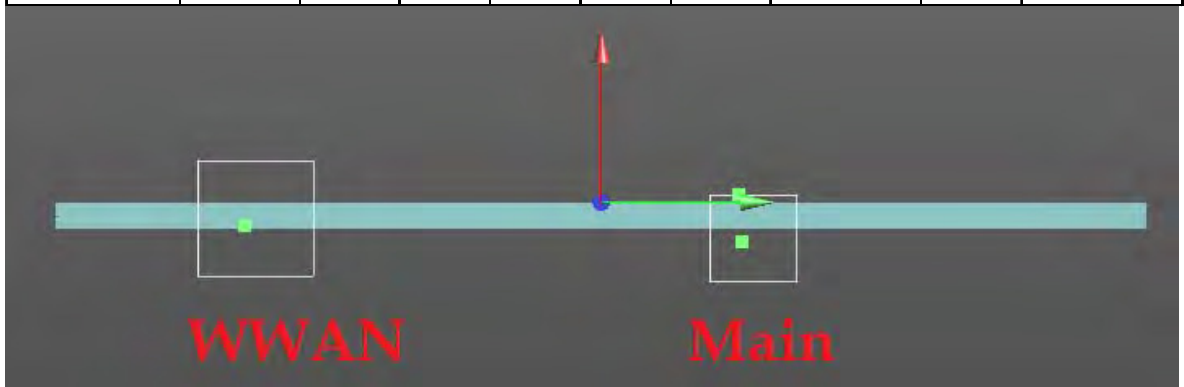
No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
22	LTE Band 2	Back side	0	1.054	0.608	1.067	2.729	Analyzed as below
		Top side	0	0.675	0.610	1.140	2.425	Analyzed as below
		Right side	0	0.033	0.400	0.110	0.543	Σ SAR<1.6, Not required
		Left side	0	0.218	0.400	0.400	1.018	Σ SAR<1.6, Not required

WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B2	Back side	1.054	9.55	-9.65	-0.06	1.662	137.1	0.016	SPLSR<0.04, Not required
WLAN Main		0.608	8.90	4.04	-0.01				

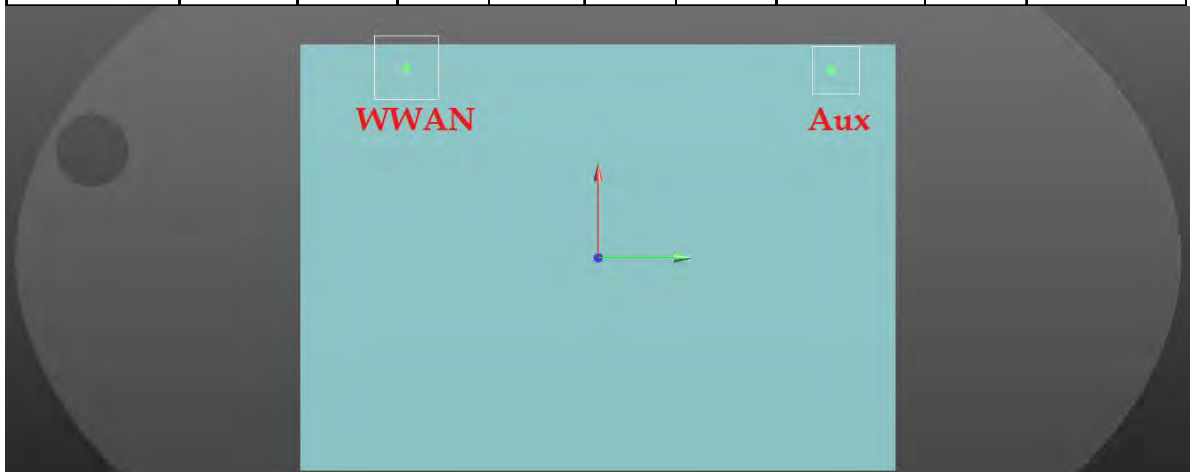


Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B2	Top side	0.675	-0.61	-9.82	-0.15	1.285	137.1	0.011	SPLSR<0.04, Not required
WLAN Main		0.61	-1.08	3.88	-0.16				



WWAN & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B2	Back side	1.054	9.55	-9.65	-0.06	2.121	214.1	0.014	SPLSR<0.04, Not required
WLAN Aux		1.067	9.40	11.76	0.04				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B2	Top side	0.675	-0.61	-9.82	-0.15	1.815	238.2	0.010	SPLSR<0.04, Not required
WLAN Aux		1.14	-0.60	14.00	-0.10				

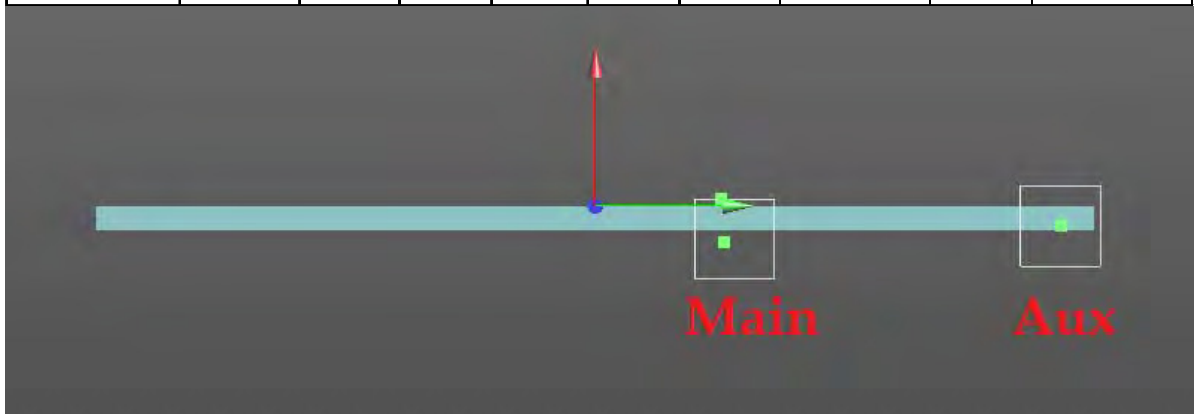


WLAN Main & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.608	8.90	4.04	-0.01	1.675	77.4	0.028	SPLSR<0.04, Not required
WLAN Aux		1.067	9.40	11.76	0.04				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Top side	0.61	-1.08	3.88	-0.16	1.75	101.3	0.023	SPLSR<0.04, Not required
WLAN Aux		1.14	-0.60	14.00	-0.10				



LTE FDD Band IV + 5GHz WLAN MIMO

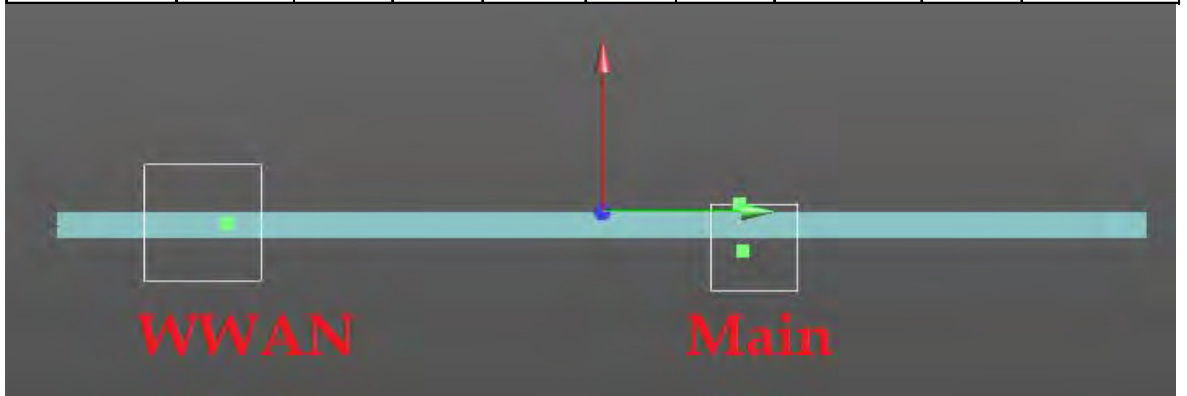
No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
23	LTE Band 4	Back side	0	1.057	0.608	1.067	2.732	Analyzed as below
		Top side	0	0.502	0.610	1.140	2.252	Analyzed as below
		Right side	0	0.023	0.400	0.110	0.533	Σ SAR<1.6, Not required
		Left side	0	0.202	0.400	0.400	1.002	Σ SAR<1.6, Not required

WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B4	Back side	1.057	9.55	-9.03	-0.06	1.665	130.9	0.016	SPLSR<0.04, Not required
WLAN Main		0.608	8.90	4.04	-0.01				

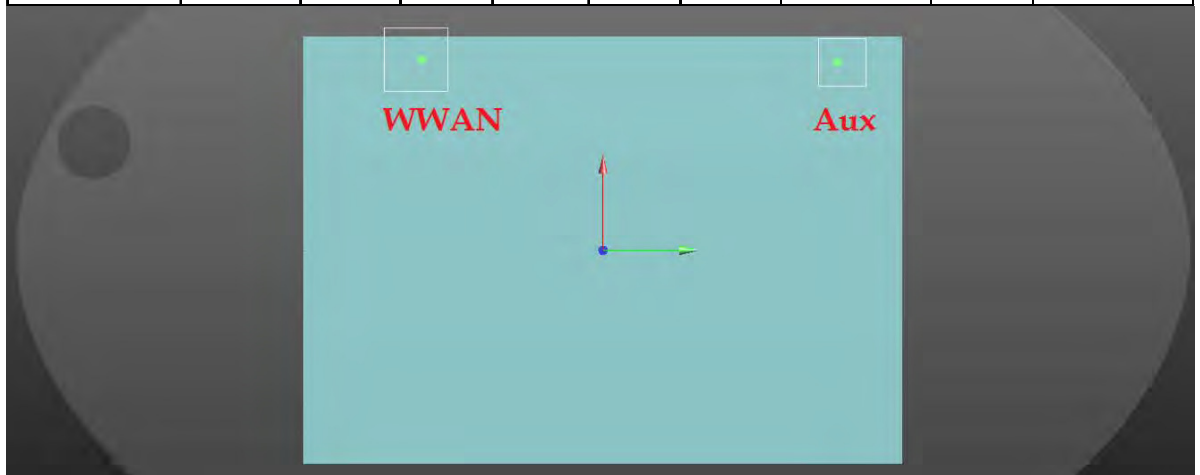


Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B4	Top side	0.502	-0.30	-10.36	-0.13	1.112	142.6	0.008	SPLSR<0.04, Not required
WLAN Main		0.61	-1.08	3.88	-0.16				

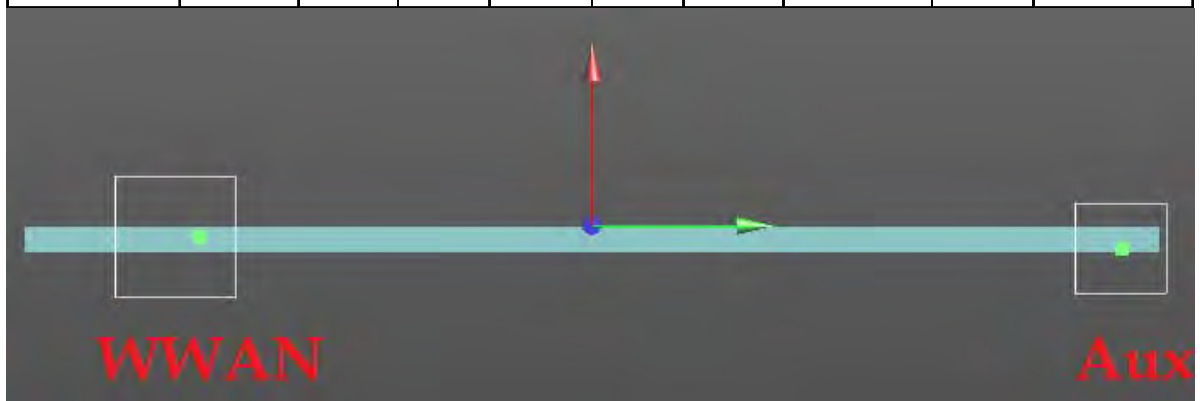


WWAN & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B4	Back side	1.057	9.55	-9.03	-0.06	2.124	207.9	0.015	SPLSR<0.04, Not required
WLAN Aux		1.067	9.40	11.76	0.04				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B4	Top side	0.502	-0.30	-10.36	-0.13	1.642	243.6	0.009	SPLSR<0.04, Not required
WLAN Aux		1.14	-0.60	14.00	-0.10				

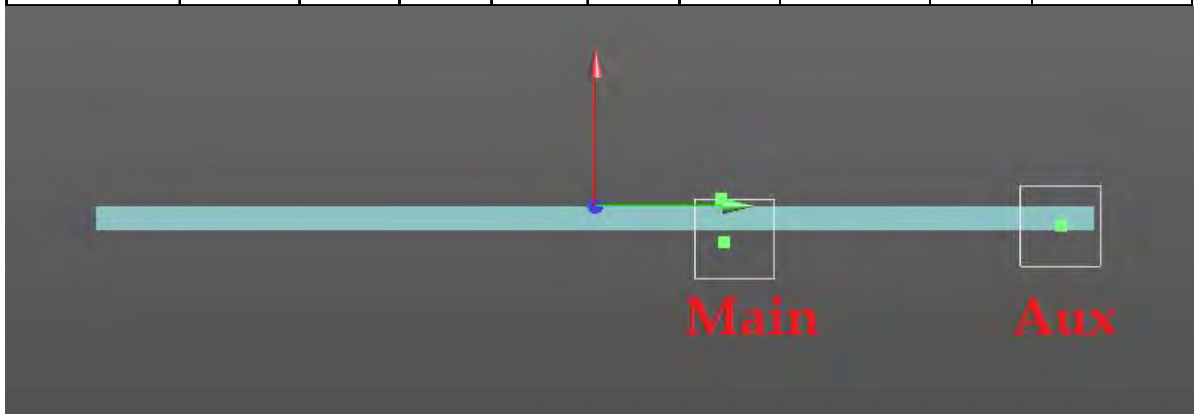


WLAN Main & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.608	8.90	4.04	-0.01	1.675	77.4	0.028	SPLSR<0.04, Not required
WLAN Aux		1.067	9.40	11.76	0.04				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Top side	0.61	-1.08	3.88	-0.16	1.75	101.3	0.023	SPLSR<0.04, Not required
WLAN Aux		1.14	-0.60	14.00	-0.10				

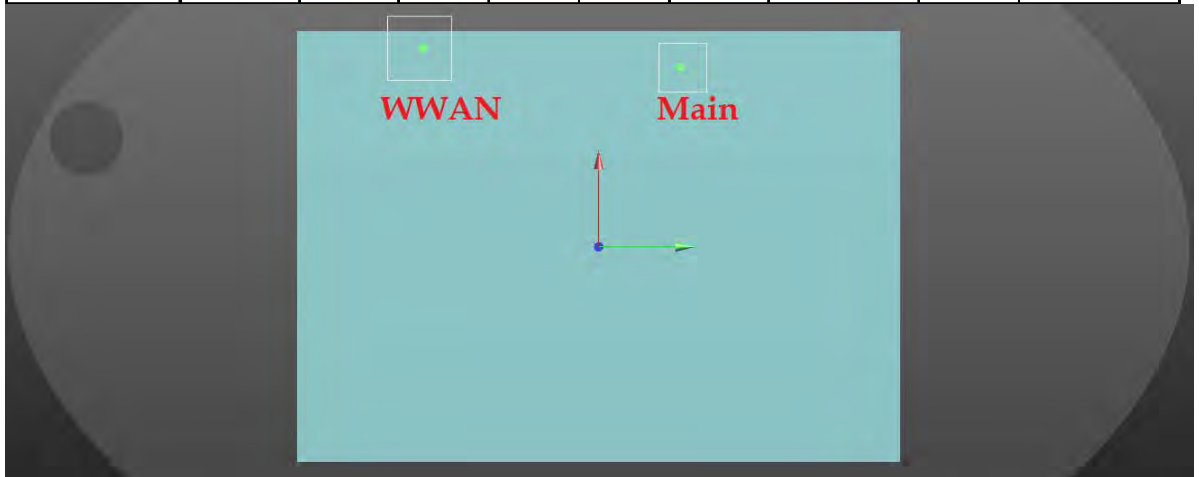


LTE FDD Band V + 5GHz WLAN MIMO

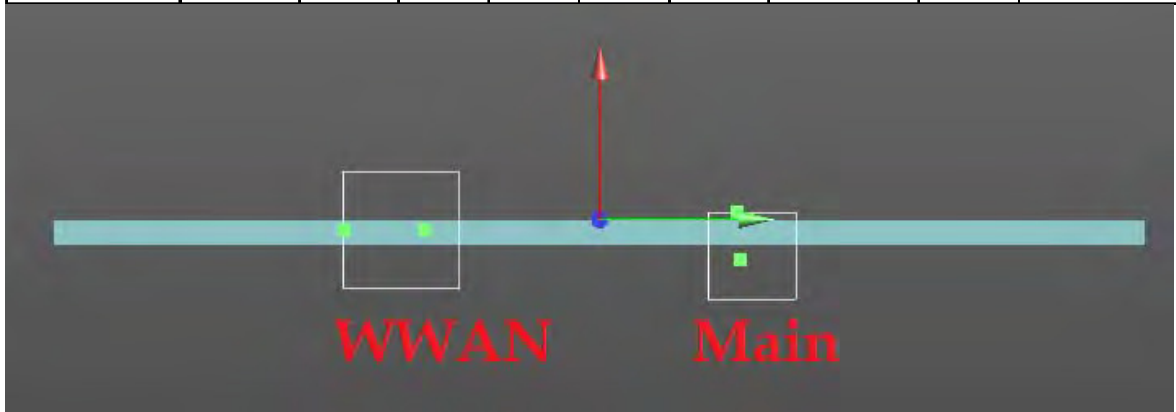
No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
24	LTE Band 5	Back side	0	1.042	0.608	1.067	2.717	Analyzed as below
		Top side	0	0.653	0.610	1.140	2.403	Analyzed as below
		Right side	0	0.29	0.400	0.110	0.8	Σ SAR<1.6, Not required
		Left side	0	0.338	0.400	0.400	1.138	Σ SAR<1.6, Not required

WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B5	Back side	1.042	9.85	-8.74	-0.11	1.65	128.2	0.017	SPLSR<0.04, Not required
WLAN Main		0.608	8.90	4.04	-0.01				

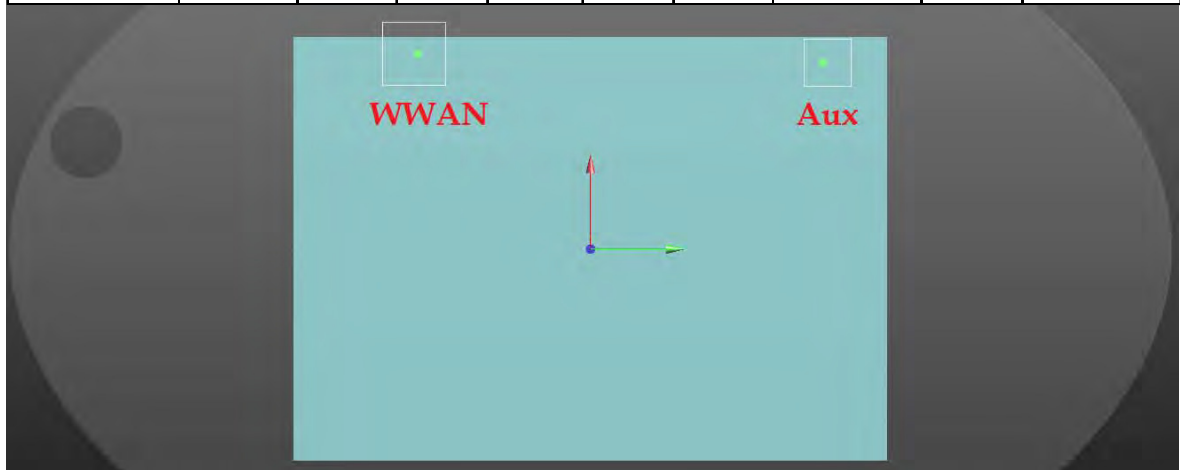


Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B5	Top side	0.653	-0.30	-7.05	-0.27	1.263	109.6	0.013	SPLSR<0.04, Not required
WLAN Main		0.61	-1.08	3.88	-0.16				

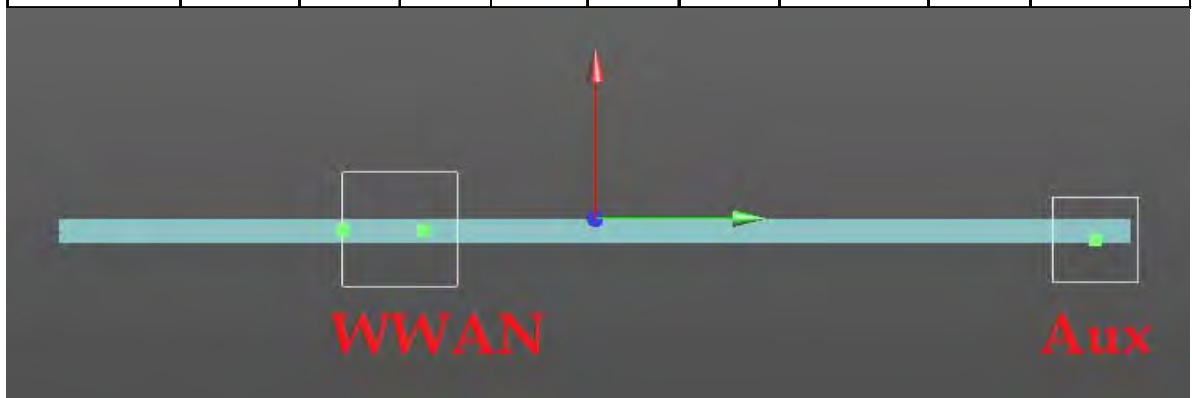


WWAN & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B5	Back side	1.042	9.85	-8.74	-0.11	2.109	205.1	0.015	SPLSR<0.04, Not required
WLAN Aux		1.067	9.40	11.76	0.04				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B5	Top side	0.653	-0.30	-7.05	-0.27	1.793	210.5	0.011	SPLSR<0.04, Not required
WLAN Aux		1.14	-0.60	14.00	-0.10				

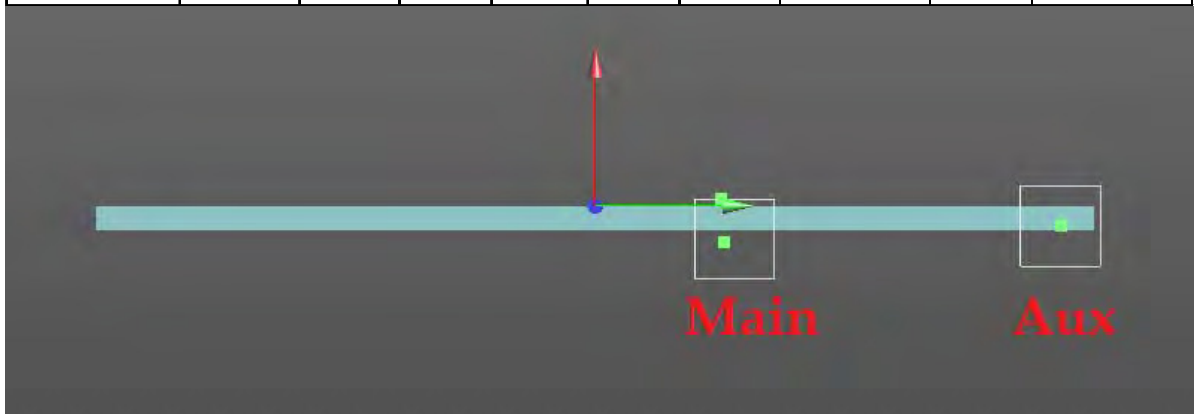


WLAN Main & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.608	8.90	4.04	-0.01	1.675	77.4	0.028	SPLSR<0.04, Not required
WLAN Aux		1.067	9.40	11.76	0.04				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Top side	0.61	-1.08	3.88	-0.16	1.75	101.3	0.023	SPLSR<0.04, Not required
WLAN Aux		1.14	-0.60	14.00	-0.10				

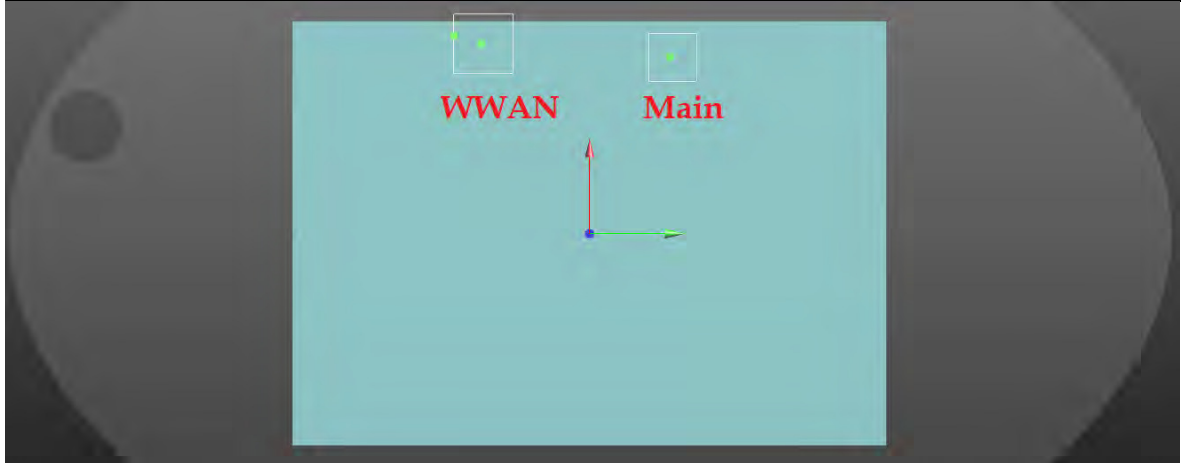


LTE FDD Band VII + 5GHz WLAN MIMO

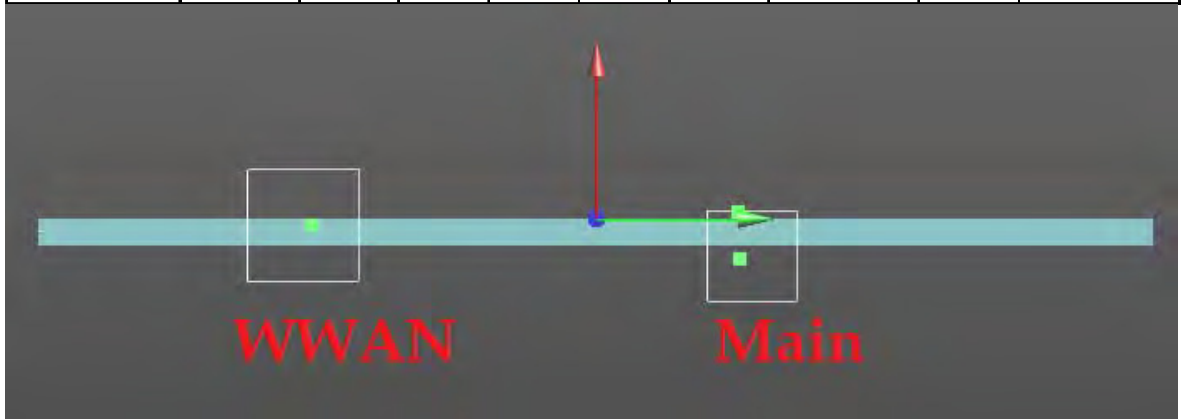
No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
25	LTE Band 7	Back side	0	1.083	0.608	1.067	2.758	Analyzed as below
		Top side	0	0.766	0.610	1.140	2.516	Analyzed as below
		Right side	0	0.037	0.400	0.110	0.547	Σ SAR<1.6, Not required
		Left side	0	0.606	0.400	0.400	1.406	Σ SAR<1.6, Not required

WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B7	Back side	1.083	9.58	-5.46	-0.04	1.691	95.2	0.023	SPLSR<0.04, Not required
WLAN Main		0.608	8.90	4.04	-0.01				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B7	Top side	0.766	-0.18	-7.68	-0.18	1.376	115.9	0.014	SPLSR<0.04, Not required
WLAN Main		0.61	-1.08	3.88	-0.16				

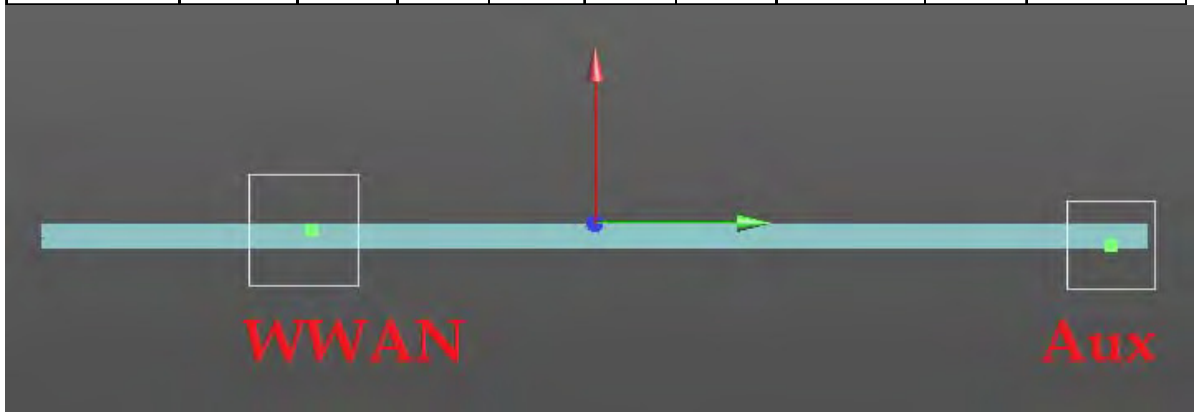


WWAN & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B7	Back side	1.083	9.58	-5.46	-0.04	2.15	172.2	0.018	SPLSR<0.04, Not required
WLAN Aux		1.067	9.40	11.76	0.04				

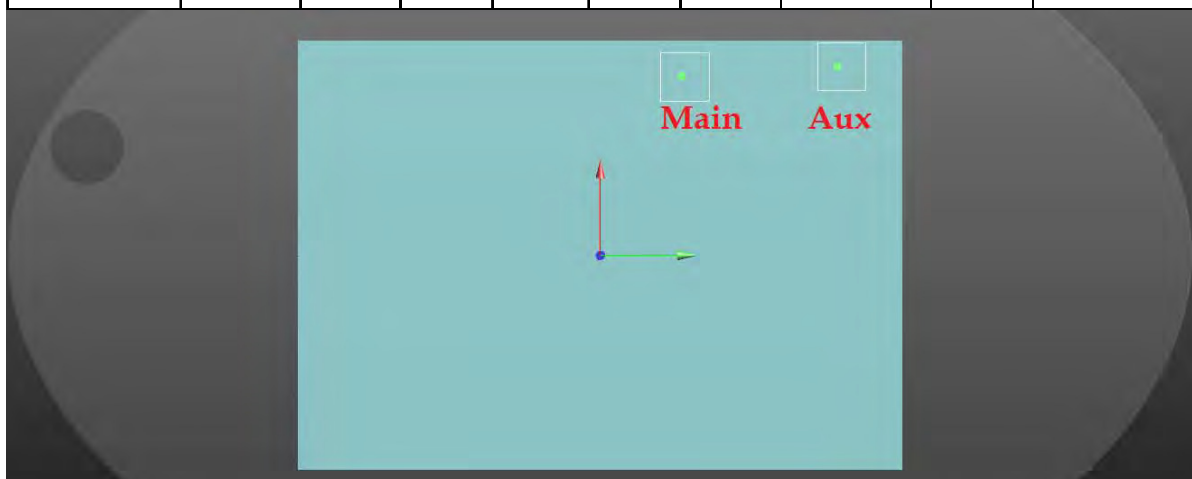


Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B7	Top side	0.766	-0.18	-7.68	-0.18	1.906	216.8	0.012	SPLSR<0.04, Not required
WLAN Aux		1.14	-0.60	14.00	-0.10				

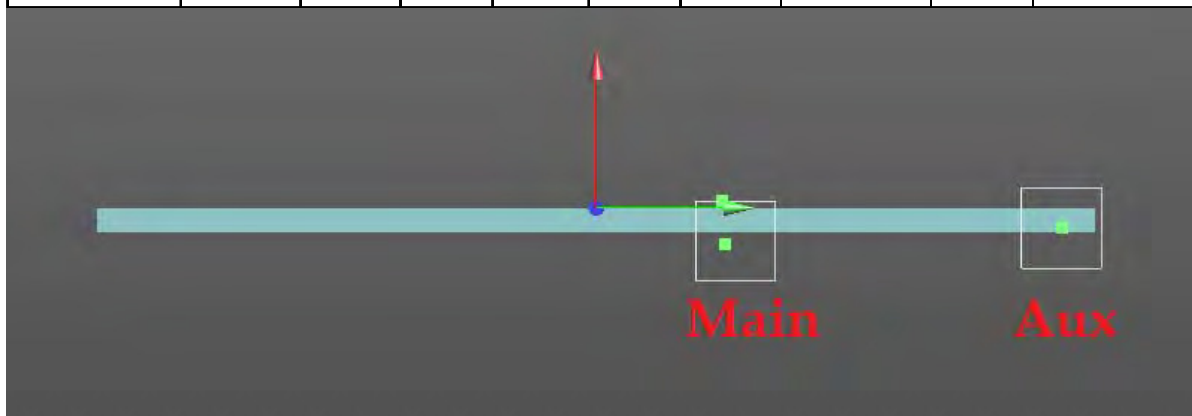


WLAN Main & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.608	8.90	4.04	-0.01	1.675	77.4	0.028	SPLSR<0.04, Not required
WLAN Aux		1.067	9.40	11.76	0.04				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Top side	0.61	-1.08	3.88	-0.16	1.75	101.3	0.023	SPLSR<0.04, Not required
WLAN Aux		1.14	-0.60	14.00	-0.10				



LTE FDD Band XII + 5GHz WLAN MIMO

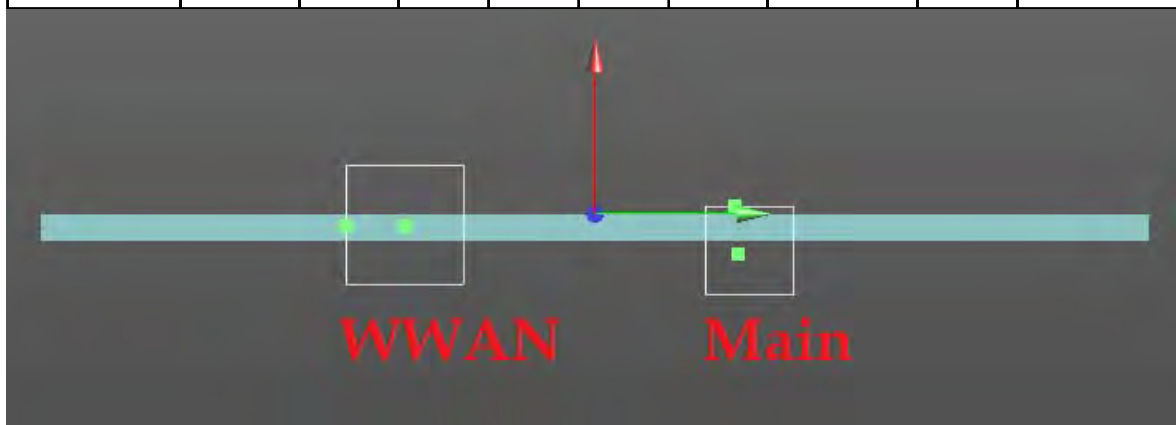
No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
26	LTE Band 12	Back side	0	1.124	0.608	1.067	2.799	Analyzed as below
		Top side	0	0.473	0.610	1.140	2.223	Analyzed as below
		Right side	0	0.022	0.400	0.110	0.532	Σ SAR<1.6, Not required
		Left side	0	0.211	0.400	0.400	1.011	Σ SAR<1.6, Not required

WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B12	Back side	1.124	10.31	-7.39	-0.07	1.732	115.2	0.020	SPLSR<0.04, Not required
WLAN Main		0.608	8.90	4.04	-0.01				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B12	Top side	0.473	-0.30	-5.15	-0.28	1.083	90.6	0.012	SPLSR<0.04, Not required
WLAN Main		0.61	-1.08	3.88	-0.16				



WWAN & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B12	Back side	1.124	10.31	-7.39	-0.07	2.191	191.7	0.017	SPLSR<0.04, Not required
WLAN Aux		1.067	9.40	11.76	0.04				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B12	Top side	0.473	-0.30	-5.15	-0.28	1.613	191.5	0.011	SPLSR<0.04, Not required
WLAN Aux		1.14	-0.60	14.00	-0.10				

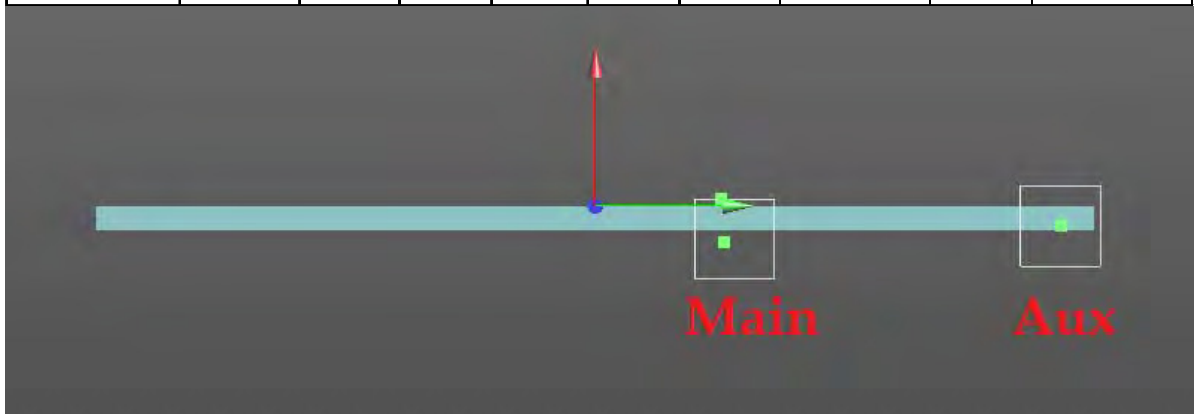


WLAN Main & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.608	8.90	4.04	-0.01	1.675	77.4	0.028	SPLSR<0.04, Not required
WLAN Aux		1.067	9.40	11.76	0.04				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Top side	0.61	-1.08	3.88	-0.16	1.75	101.3	0.023	SPLSR<0.04, Not required
WLAN Aux		1.14	-0.60	14.00	-0.10				



LTE FDD Band XIII + 5GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
27	LTE Band 13	Back side	0	1.069	0.608	1.067	2.744	Analyzed as below
		Top side	0	0.743	0.610	1.140	2.493	Analyzed as below
		Right side	0	0.03	0.400	0.110	0.54	Σ SAR<1.6, Not required
		Left side	0	0.287	0.400	0.400	1.087	Σ SAR<1.6, Not required

WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B13	Back side	1.069	10.16	-7.54	-0.07	1.677	116.5	0.019	SPLSR<0.04, Not required
WLAN Main		0.608	8.90	4.04	-0.01				

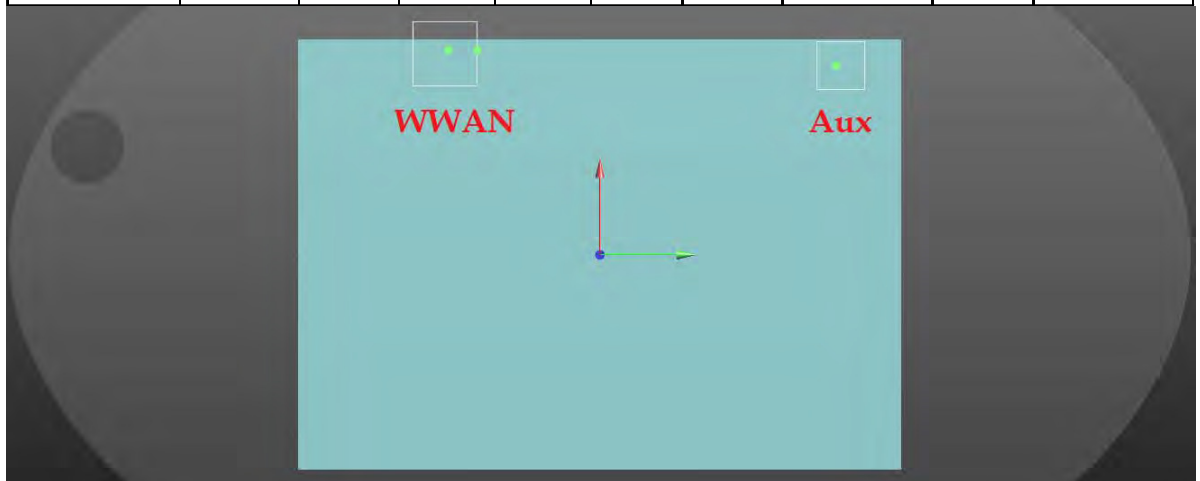


Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B13	Top side	0.743	-0.30	-7.80	-0.27	1.353	117.1	0.013	SPLSR<0.04, Not required
WLAN Main		0.61	-1.08	3.88	-0.16				

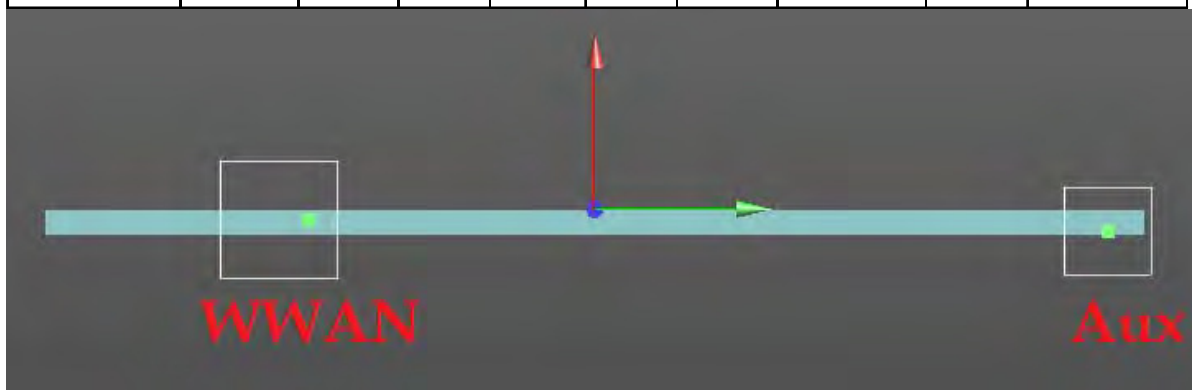


WWAN & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B13	Back side	1.069	10.16	-7.54	-0.07	2.136	193.2	0.016	SPLSR<0.04, Not required
WLAN Aux		1.067	9.40	11.76	0.04				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B13	Top side	0.743	-0.30	-7.80	-0.27	1.883	218	0.012	SPLSR<0.04, Not required
WLAN Aux		1.14	-0.60	14.00	-0.10				

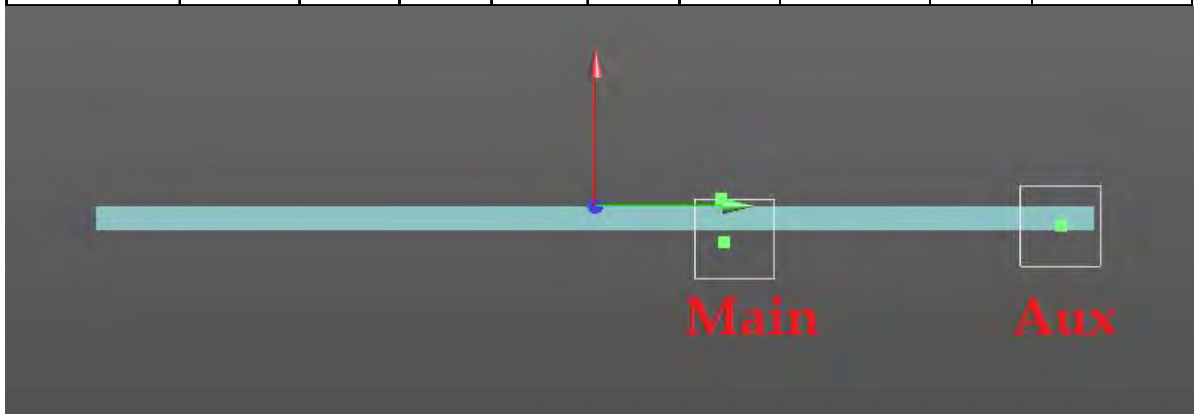


WLAN Main & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.608	8.90	4.04	-0.01	1.675	77.4	0.028	SPLSR<0.04, Not required
WLAN Aux		1.067	9.40	11.76	0.04				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Top side	0.61	-1.08	3.88	-0.16	1.75	101.3	0.023	SPLSR<0.04, Not required
WLAN Aux		1.14	-0.60	14.00	-0.10				



LTE FDD Band XVII + 5GHz WLAN MIMO

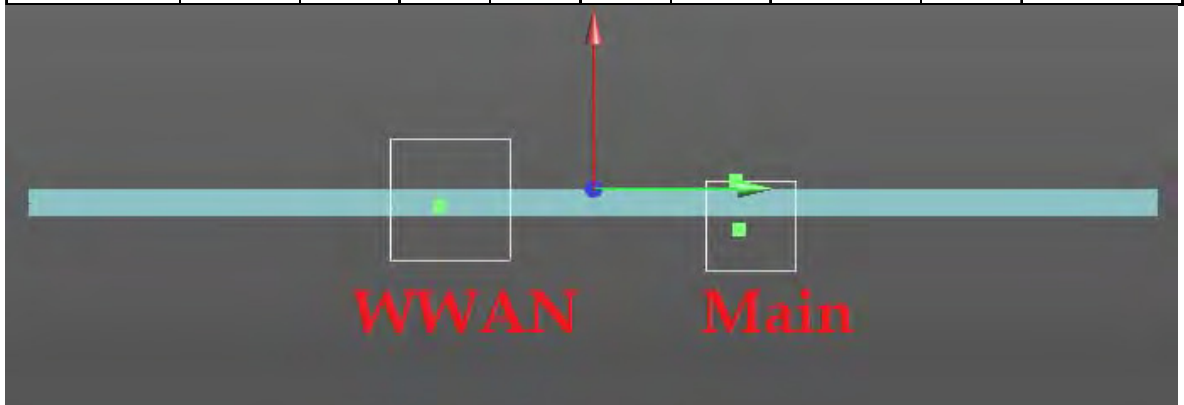
No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
28	LTE Band 17	Back side	0	1.059	0.608	1.067	2.734	Analyzed as below
		Top side	0	0.533	0.610	1.140	2.283	Analyzed as below
		Right side	0	0.017	0.400	0.110	0.527	Σ SAR<1.6, Not required
		Left side	0	0.216	0.400	0.400	1.016	Σ SAR<1.6, Not required

WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B17	Back side	1.059	10.47	-6.91	-0.08	1.667	110.6	0.019	SPLSR<0.04, Not required
WLAN Main		0.608	8.90	4.04	-0.01				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B17	Top side	0.533	-0.46	-4.12	-0.23	1.143	80.2	0.015	SPLSR<0.04, Not required
WLAN Main		0.61	-1.08	3.88	-0.16				

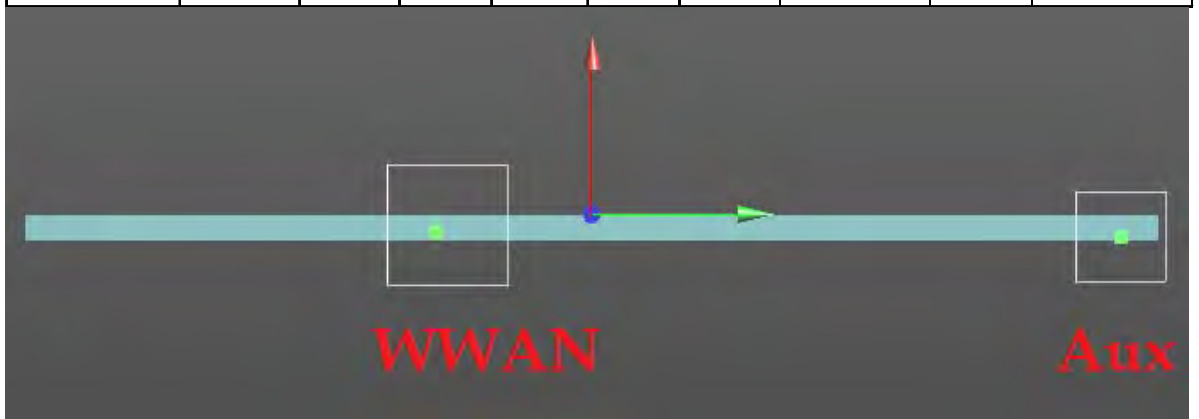


WWAN & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B17	Back side	1.059	10.47	-6.91	-0.08	2.126	187	0.017	SPLSR<0.04, Not required
WLAN Aux		1.067	9.40	11.76	0.04				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B17	Top side	0.533	-0.46	-4.12	-0.23	1.673	181.2	0.012	SPLSR<0.04, Not required
WLAN Aux		1.14	-0.60	14.00	-0.10				

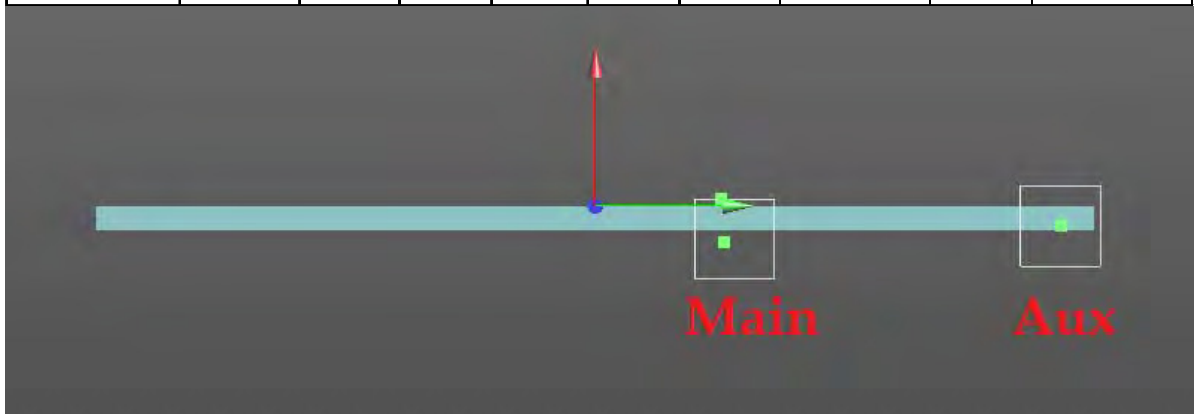


WLAN Main & WLAN Aux

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.608	8.90	4.04	-0.01	1.675	77.4	0.028	SPLSR<0.04, Not required
WLAN Aux		1.067	9.40	11.76	0.04				



Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Top side	0.61	-1.08	3.88	-0.16	1.75	101.3	0.023	SPLSR<0.04, Not required
WLAN Aux		1.14	-0.60	14.00	-0.10				



GPRS 850 + 2.4GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
29	GPRS 850	Back side	0	1.085	0.630	0.320	2.035	Analyzed as below
		Top side	0	0.486	0.150	0.130	0.766	Σ SAR<1.6, Not required
		Right side	0	0.011	0.400	0.040	0.451	Σ SAR<1.6, Not required
		Left side	0	0.087	0.400	0.400	0.887	Σ SAR<1.6, Not required

WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
GPRS 850	Back side	1.085	9.85	-8.89	-0.11	1.715	125.6	0.018	SPLSR<0.04, Not required
WLAN Main		0.63	9.46	3.66	-0.02				



WWAN & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
GPRS 850	Back side	1.085	9.85	-8.89	-0.11	1.405	198.4	0.008	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				



WLAN Main & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.63	9.46	3.66	-0.02	0.95	72.8	0.013	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				

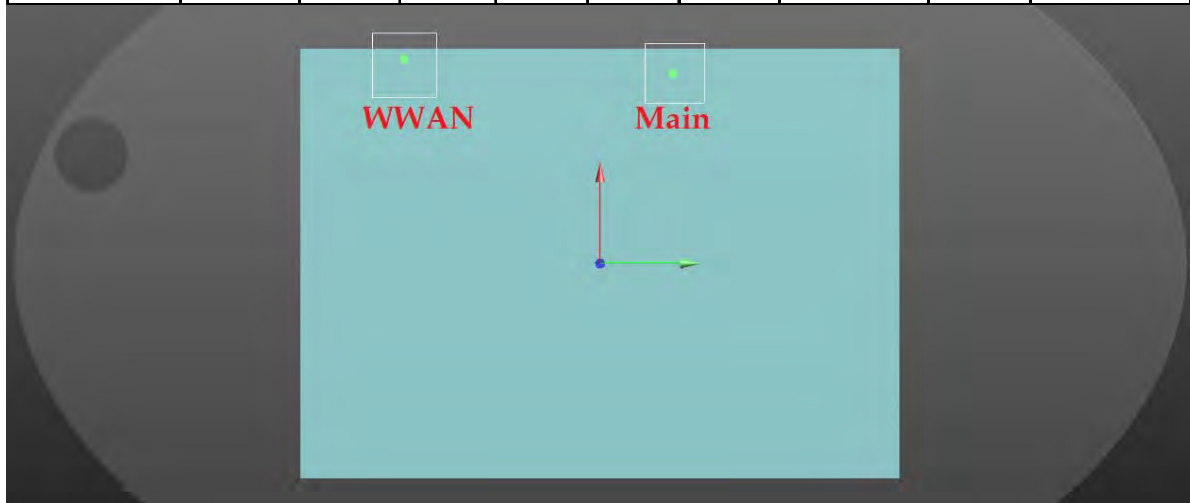


GPRS 1900 + 2.4GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
30	GPRS 1900	Back side	0	1.026	0.630	0.320	1.976	Analyzed as below
		Top side	0	0.465	0.150	0.130	0.745	Σ SAR<1.6, Not required
		Right side	0	0.024	0.400	0.040	0.464	Σ SAR<1.6, Not required
		Left side	0	0.127	0.400	0.400	0.927	Σ SAR<1.6, Not required

WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
GPRS 1900	Back side	1.026	10.17	-9.80	-0.03	1.656	134.8	0.016	SPLSR<0.04, Not required
WLAN Main		0.63	9.46	3.66	-0.02				



WWAN & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
GPRS 1900	Back side	1.026	10.17	-9.80	-0.03	1.356	207.5	0.008	SPLSR<0.04, Not required
BT		0.33	9.58	10.94	-0.01				



WLAN Main & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.63	9.46	3.66	-0.02	0.95	72.8	0.013	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				



WCDMA Band II + 2.4GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
31	WCDMA B2	Back side	0	1.093	0.630	0.320	2.043	Analyzed as below
		Top side	0	0.744	0.150	0.130	1.024	Σ SAR<1.6, Not required
		Right side	0	0.034	0.400	0.040	0.474	Σ SAR<1.6, Not required
		Left side	0	0.185	0.400	0.400	0.985	Σ SAR<1.6, Not required

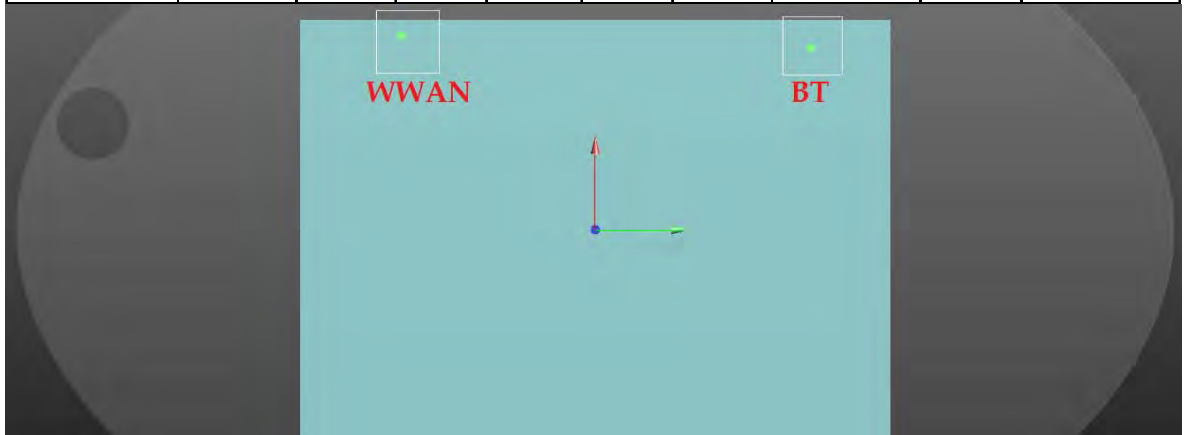
WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA B2	Back side	1.093	9.87	-9.82	-0.01	1.723	134.9	0.017	SPLSR<0.04, Not required
WLAN Main		0.63	9.46	3.66	-0.02				



WWAN & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA B2	Back side	1.093	9.87	-9.82	-0.01	1.413	207.7	0.008	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				



WLAN Main & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.63	9.46	3.66	-0.02	0.95	72.8	0.013	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				



WCDMA Band IV + 2.4GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
32	WCDMA B4	Back side	0	1.079	0.630	0.320	2.029	Analyzed as below
		Top side	0	0.470	0.150	0.130	0.750	Σ SAR<1.6, Not required
		Right side	0	0.021	0.400	0.040	0.461	Σ SAR<1.6, Not required
		Left side	0	0.182	0.400	0.400	0.982	Σ SAR<1.6, Not required

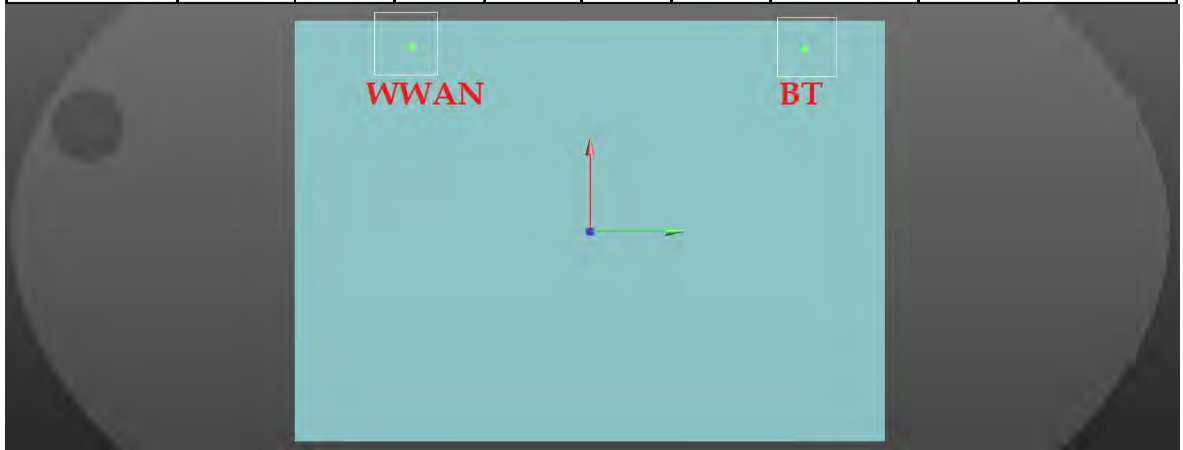
WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA B4	Back side	1.079	9.39	-9.03	-0.08	1.709	126.9	0.018	SPLSR<0.04, Not required
WLAN Main		0.63	9.46	3.66	-0.02				



WWAN & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA B4	Back side	1.079	9.39	-9.03	-0.08	1.399	199.7	0.008	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				



WLAN Main & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.63	9.46	3.66	-0.02	0.95	72.8	0.013	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				



WCDMA Band V + 2.4GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
33	WCDMA B5	Back side	0	1.133	0.630	0.320	2.083	Analyzed as below
		Top side	0	0.644	0.150	0.130	0.924	Σ SAR<1.6, Not required
		Right side	0	0.012	0.400	0.040	0.452	Σ SAR<1.6, Not required
		Left side	0	0.342	0.400	0.400	1.142	Σ SAR<1.6, Not required

WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA B5	Back side	1.133	9.85	-8.16	-0.11	1.763	118.3	0.020	SPLSR<0.04, Not required
WLAN Main		0.63	9.46	3.66	-0.02				



WWAN & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA B5	Back side	1.133	9.85	-8.16	-0.11	1.453	191.1	0.009	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				



WLAN Main & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.63	9.46	3.66	-0.02	0.95	72.8	0.013	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				



CDMA BC0 + 2.4GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
34	BC0	Back side	0	1.082	0.630	0.320	2.032	Analyzed as below
		Top side	0	0.737	0.150	0.130	1.017	$\Sigma\text{SAR} < 1.6$, Not required
		Right side	0	0.026	0.400	0.040	0.466	$\Sigma\text{SAR} < 1.6$, Not required
		Left side	0	0.345	0.400	0.400	1.145	$\Sigma\text{SAR} < 1.6$, Not required

WWAN & 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				
BC0	Back side	1.082	10.00	-7.86	-0.04	1.712	115.3	0.019	$\text{SPLSR} < 0.04$, Not required
WLAN Main		0.63	9.46	3.66	-0.02				



WWAN & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
BC0	Back side	1.082	10.00	-7.86	-0.04	1.402	188.1	0.009	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				



WLAN Main & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.63	9.46	3.66	-0.02	0.95	72.8	0.013	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				

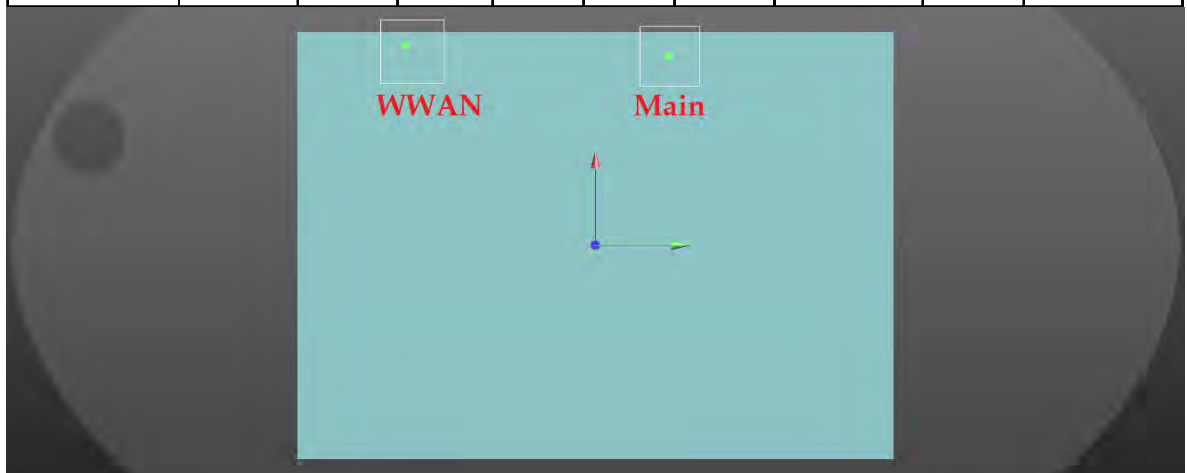


CDMA BC1 + 2.4GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
35	BC1	Back side	0	1.175	0.630	0.320	2.125	Analyzed as below
		Top side	0	0.512	0.150	0.130	0.792	$\Sigma\text{SAR} < 1.6$, Not required
		Right side	0	0.016	0.400	0.040	0.456	$\Sigma\text{SAR} < 1.6$, Not required
		Left side	0	0.243	0.400	0.400	1.043	$\Sigma\text{SAR} < 1.6$, Not required

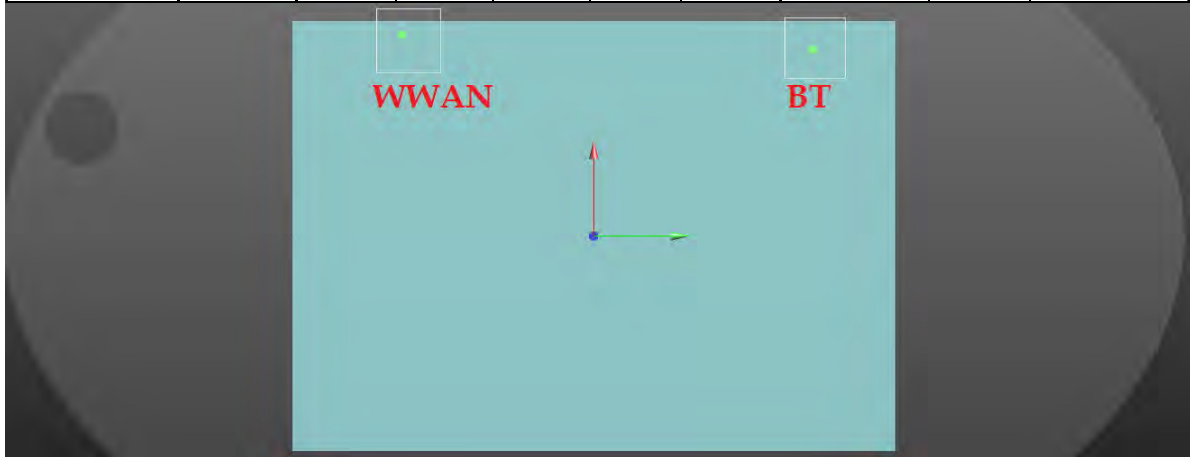
WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
BC1	Back side	1.175	10.02	-9.52	-0.04	1.805	131.9	0.018	$\text{SPLSR} < 0.04$, Not required
WLAN Main		0.63	9.46	3.66	-0.02				



WWAN & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
BC1	Back side	1.175	10.02	-9.52	-0.04	1.495	204.7	0.009	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				



WLAN Main & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.63	9.46	3.66	-0.02	0.95	72.8	0.013	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				



LTE FDD Band II + 2.4GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
36	LTE Band 2	Back side	0	1.054	0.630	0.320	2.004	Analyzed as below
		Top side	0	0.675	0.150	0.130	0.955	Σ SAR<1.6, Not required
		Right side	0	0.033	0.400	0.040	0.473	Σ SAR<1.6, Not required
		Left side	0	0.218	0.400	0.400	1.018	Σ SAR<1.6, Not required

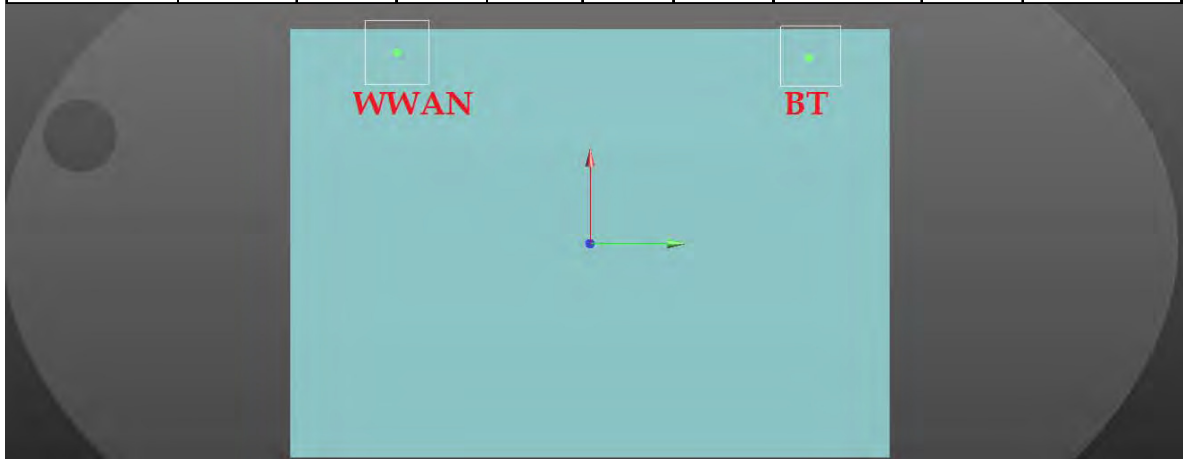
WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B2	Back side	1.054	9.55	-9.65	-0.06	1.684	133.1	0.016	SPLSR<0.04, Not required
WLAN Main		0.63	9.46	3.66	-0.02				



WWAN & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B2	Back side	1.054	9.55	-9.65	-0.06	1.374	205.9	0.008	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				



WLAN Main & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.63	9.46	3.66	-0.02	0.95	72.8	0.013	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				

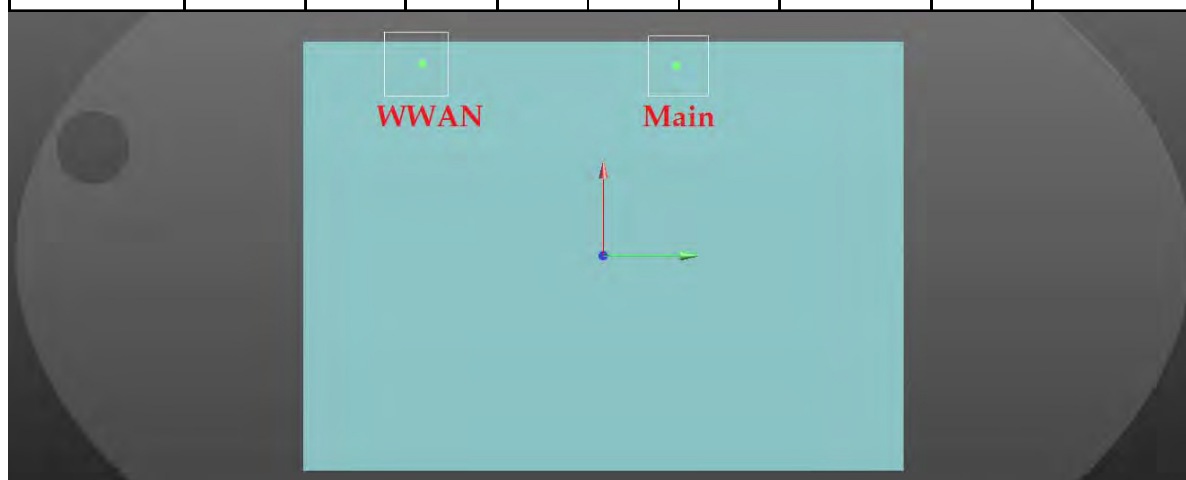


LTE FDD Band IV + 2.4GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
37	LTE Band 4	Back side	0	1.057	0.630	0.320	2.007	Analyzed as below
		Top side	0	0.502	0.150	0.130	0.782	Σ SAR<1.6, Not required
		Right side	0	0.023	0.400	0.040	0.463	Σ SAR<1.6, Not required
		Left side	0	0.202	0.400	0.400	1.002	Σ SAR<1.6, Not required

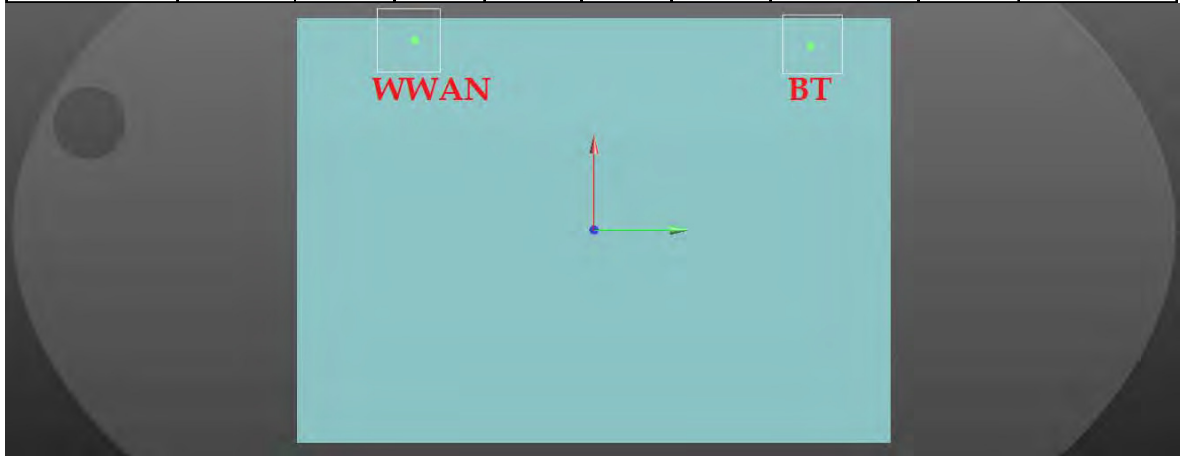
WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B4	Back side	1.057	9.55	-9.03	-0.06	1.687	126.9	0.017	SPLSR<0.04, Not required
WLAN Main		0.63	9.46	3.66	-0.02				



WWAN & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B4	Back side	1.057	9.55	-9.03	-0.06	1.377	199.7	0.008	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				



WLAN Main & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.63	9.46	3.66	-0.02	0.95	72.8	0.013	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				



LTE FDD Band V + 2.4GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
38	LTE Band 5	Back side	0	1.042	0.630	0.320	1.992	Analyzed as below
		Top side	0	0.653	0.150	0.130	0.933	$\Sigma\text{SAR} < 1.6$, Not required
		Right side	0	0.29	0.400	0.040	0.73	$\Sigma\text{SAR} < 1.6$, Not required
		Left side	0	0.338	0.400	0.400	1.138	$\Sigma\text{SAR} < 1.6$, Not required

WWAN & 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 B5	Back side	1.042	9.85	-8.74	-0.11	1.672	124.1	0.017	$\text{SPLSR} < 0.04$, Not required
WLAN Main		0.63	9.46	3.66	-0.02				



WWAN & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B5	Back side	1.042	9.85	-8.74	-0.11	1.362	196.9	0.008	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				



WLAN Main & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.63	9.46	3.66	-0.02	0.95	72.8	0.013	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				

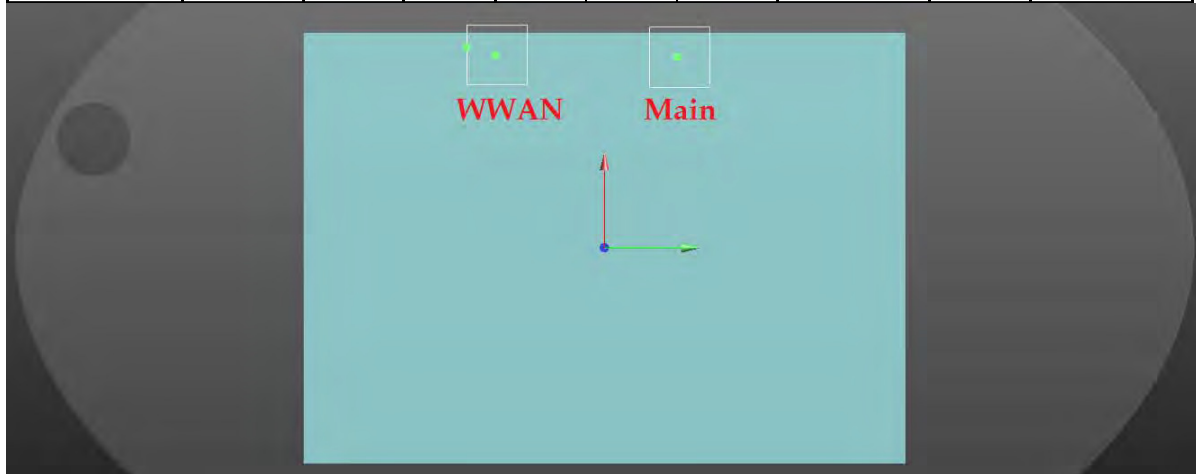


LTE FDD Band VII + 2.4GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
39	LTE Band 7	Back side	0	1.083	0.630	0.320	2.033	Analyzed as below
		Top side	0	0.766	0.150	0.130	1.046	$\Sigma\text{SAR} < 1.6$, Not required
		Right side	0	0.037	0.400	0.040	0.477	$\Sigma\text{SAR} < 1.6$, Not required
		Left side	0	0.606	0.400	0.400	1.406	$\Sigma\text{SAR} < 1.6$, Not required

WWAN & 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 B7	Back side	1.083	9.58	-5.46	-0.04	1.713	91.2	0.025	$\text{SPLSR} < 0.04$, Not required
WLAN Main		0.63	9.46	3.66	-0.02				



WWAN & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B7	Back side	1.083	9.58	-5.46	-0.04	1.403	164	0.010	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				



WLAN Main & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.63	9.46	3.66	-0.02	0.95	72.8	0.013	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				

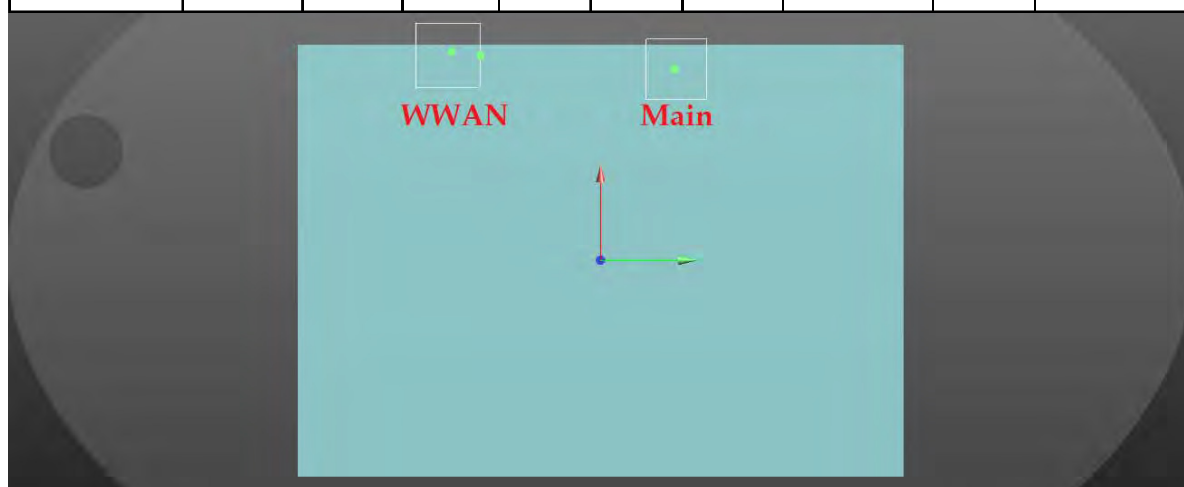


LTE FDD Band XII + 2.4GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
40	LTE Band 12	Back side	0	1.124	0.630	0.320	2.074	Analyzed as below
		Top side	0	0.473	0.150	0.130	0.753	Σ SAR<1.6, Not required
		Right side	0	0.022	0.400	0.040	0.462	Σ SAR<1.6, Not required
		Left side	0	0.211	0.400	0.400	1.011	Σ SAR<1.6, Not required

WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B12	Back side	1.124	10.31	-7.39	-0.07	1.754	110.8	0.021	SPLSR<0.04, Not required
WLAN Main		0.63	9.46	3.66	-0.02				



WWAN & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B12	Back side	1.124	10.31	-7.39	-0.07	1.444	183.6	0.009	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				



WLAN Main & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.63	9.46	3.66	-0.02	0.95	72.8	0.013	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				



LTE FDD Band XIII + 2.4GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
41	LTE Band 13	Back side	0	1.069	0.630	0.320	2.019	Analyzed as below
		Top side	0	0.743	0.150	0.130	1.023	$\Sigma\text{SAR} < 1.6$, Not required
		Right side	0	0.03	0.400	0.040	0.47	$\Sigma\text{SAR} < 1.6$, Not required
		Left side	0	0.287	0.400	0.400	1.087	$\Sigma\text{SAR} < 1.6$, Not required

WWAN & 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 B13	Back side	1.069	10.16	-7.54	-0.07	1.699	112.2	0.020	$\text{SPLSR} < 0.04$, Not required
WLAN Main		0.63	9.46	3.66	-0.02				



WWAN & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B13	Back side	1.069	10.16	-7.54	-0.07	1.389	185	0.009	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				



WLAN Main & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.63	9.46	3.66	-0.02	0.95	72.8	0.013	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				

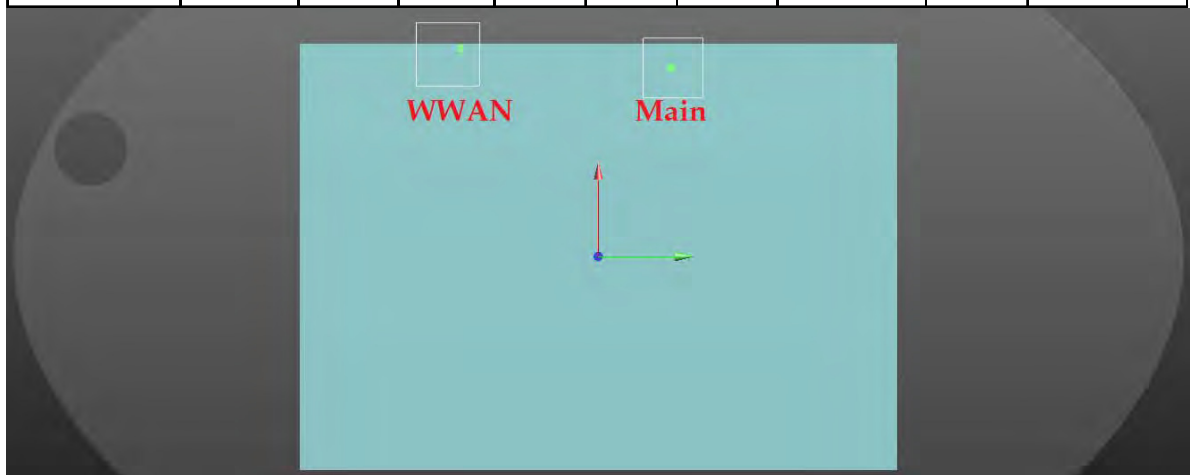


LTE FDD Band XVII + 2.4GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
42	LTE Band 17	Back side	0	1.059	0.630	0.320	2.009	Analyzed as below
		Top side	0	0.533	0.150	0.130	0.813	Σ SAR<1.6, Not required
		Right side	0	0.017	0.400	0.040	0.457	Σ SAR<1.6, Not required
		Left side	0	0.216	0.400	0.400	1.016	Σ SAR<1.6, Not required

WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B17	Back side	1.059	10.47	-6.91	-0.08	1.689	106.2	0.021	SPLSR<0.04, Not required
WLAN Main		0.63	9.46	3.66	-0.02				



WWAN & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B17	Back side	1.059	10.47	-6.91	-0.08	1.379	178.9	0.009	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				



WLAN Main & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.63	9.46	3.66	-0.02	0.95	72.8	0.013	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				

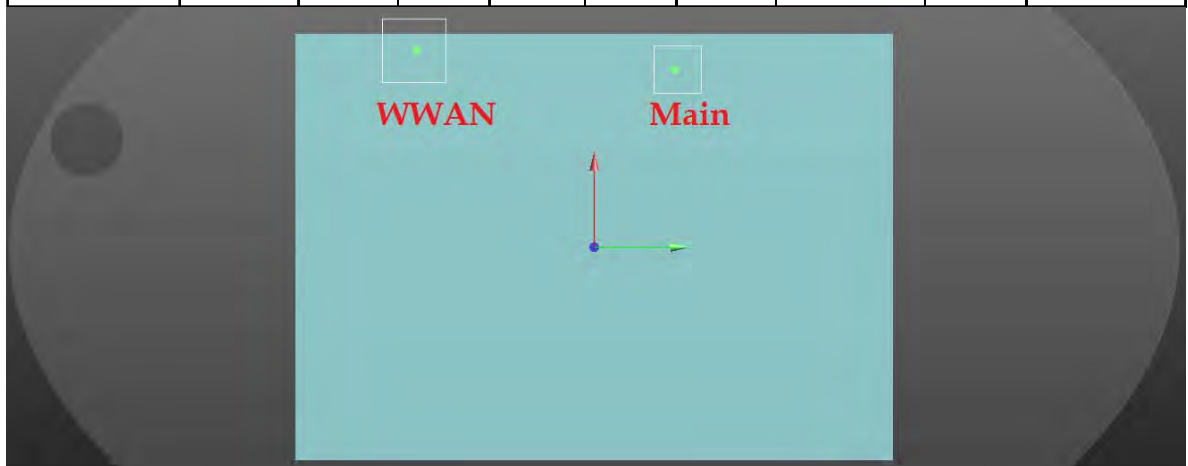


GPRS 850 + 5GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
43	GPRS 850	Back side	0	1.085	0.608	0.320	2.013	Analyzed as below
		Top side	0	0.486	0.610	0.130	1.226	$\Sigma\text{SAR} < 1.6$, Not required
		Right side	0	0.011	0.400	0.040	0.451	$\Sigma\text{SAR} < 1.6$, Not required
		Left side	0	0.087	0.400	0.400	0.887	$\Sigma\text{SAR} < 1.6$, Not required

WWAN & 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 850	Back side	1.085	9.85	-8.89	-0.11	1.693	129.7	0.017	$\text{SPLSR} < 0.04$, Not required
WLAN Main		0.608	8.90	4.04	-0.01				



WWAN & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
GPRS 850	Back side	1.085	9.85	-8.89	-0.11	1.405	198.4	0.008	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				



WLAN Main & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.608	8.90	4.04	-0.01	0.928	69.1	0.013	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				

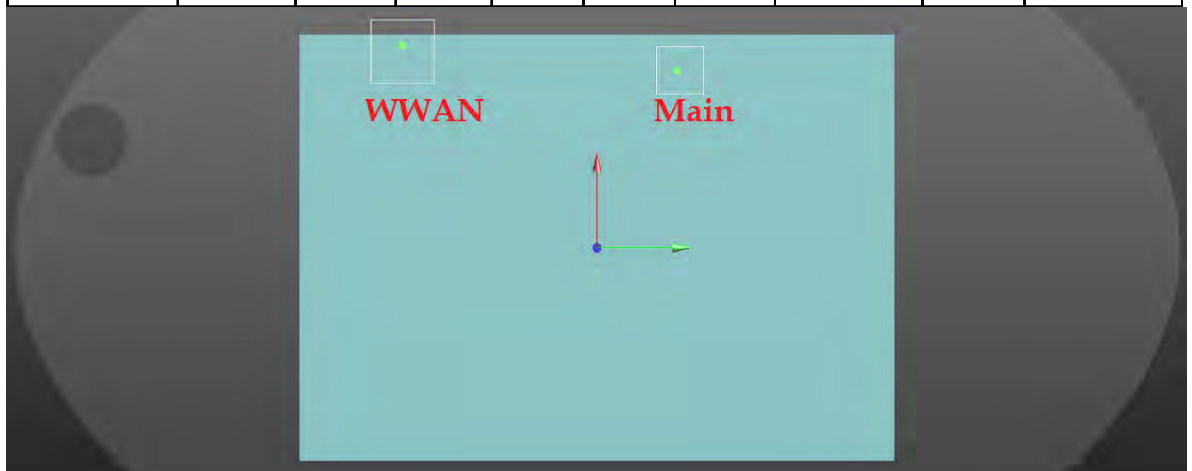


GPRS 1900 + 5GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
44	GPRS 1900	Back side	0	1.026	0.608	0.320	1.954	Analyzed as below
		Top side	0	0.465	0.610	0.130	1.205	Σ SAR<1.6, Not required
		Right side	0	0.024	0.400	0.040	0.464	Σ SAR<1.6, Not required
		Left side	0	0.127	0.400	0.400	0.927	Σ SAR<1.6, Not required

WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
GPRS 1900	Back side	1.026	10.17	-9.80	-0.03	1.634	139	0.015	SPLSR<0.04, Not required
WLAN Main		0.608	8.90	4.04	-0.01				



WWAN & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
GPRS 1900	Back side	1.026	10.17	-9.80	-0.03	1.346	207.6	0.008	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				



WLAN Main & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.608	8.90	4.04	-0.01	0.928	69.1	0.013	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				



WCDMA Band II + 5GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
45	WCDMA B2	Back side	0	1.093	0.608	0.320	2.021	Analyzed as below
		Top side	0	0.744	0.610	0.130	1.484	Σ SAR<1.6, Not required
		Right side	0	0.034	0.400	0.040	0.474	Σ SAR<1.6, Not required
		Left side	0	0.185	0.400	0.400	0.985	Σ SAR<1.6, Not required

WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA B2	Back side	1.093	9.87	-9.82	-0.01	1.701	138.9	0.016	SPLSR<0.04, Not required
WLAN Main		0.608	8.90	4.04	-0.01				



WWAN & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA B2	Back side	1.093	9.87	-9.82	-0.01	1.413	207.7	0.008	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				



WLAN Main & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.608	8.90	4.04	-0.01	0.928	69.1	0.013	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				



WCDMA Band IV + 5GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
46	WCDMA B4	Back side	0	1.079	0.608	0.320	2.007	Analyzed as below
		Top side	0	0.470	0.610	0.130	1.210	Σ SAR<1.6, Not required
		Right side	0	0.021	0.400	0.040	0.461	Σ SAR<1.6, Not required
		Left side	0	0.182	0.400	0.400	0.982	Σ SAR<1.6, Not required

WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA B4	Back side	1.079	9.39	-9.03	-0.08	1.687	130.8	0.017	SPLSR<0.04, Not required
WLAN Main		0.608	8.90	4.04	-0.01				



WWAN & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA B4	Back side	1.079	9.39	-9.03	-0.08	1.399	199.7	0.008	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				



WLAN Main & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.608	8.90	4.04	-0.01	0.928	69.1	0.013	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				

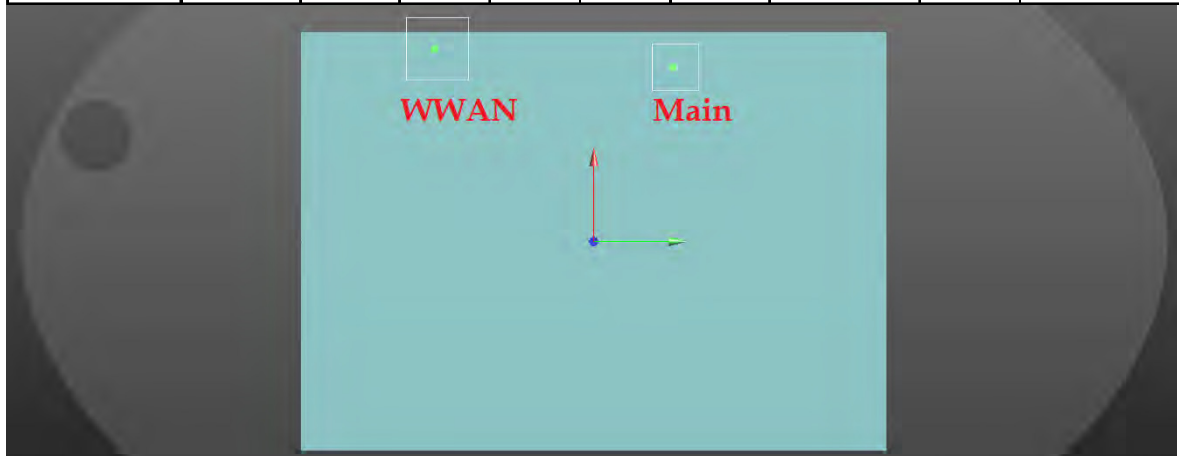


WCDMA Band V + 5GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
47	WCDMA B5	Back side	0	1.133	0.608	0.320	2.061	Analyzed as below
		Top side	0	0.644	0.610	0.130	1.384	Σ SAR<1.6, Not required
		Right side	0	0.012	0.400	0.040	0.452	Σ SAR<1.6, Not required
		Left side	0	0.342	0.400	0.400	1.142	Σ SAR<1.6, Not required

WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA B5	Back side	1.133	9.85	-8.16	-0.11	1.741	122.4	0.019	SPLSR<0.04, Not required
WLAN Main		0.608	8.90	4.04	-0.01				



WWAN & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WCDMA B5	Back side	1.133	9.85	-8.16	-0.11	1.453	191.1	0.009	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				



WLAN Main & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.608	8.90	4.04	-0.01	0.928	69.1	0.013	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				



CDMA BC0 + 5GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
48	BC0	Back side	0	1.082	0.608	0.320	2.01	Analyzed as below
		Top side	0	0.737	0.610	0.130	1.477	$\Sigma\text{SAR} < 1.6$, Not required
		Right side	0	0.026	0.400	0.040	0.466	$\Sigma\text{SAR} < 1.6$, Not required
		Left side	0	0.345	0.400	0.400	1.145	$\Sigma\text{SAR} < 1.6$, Not required

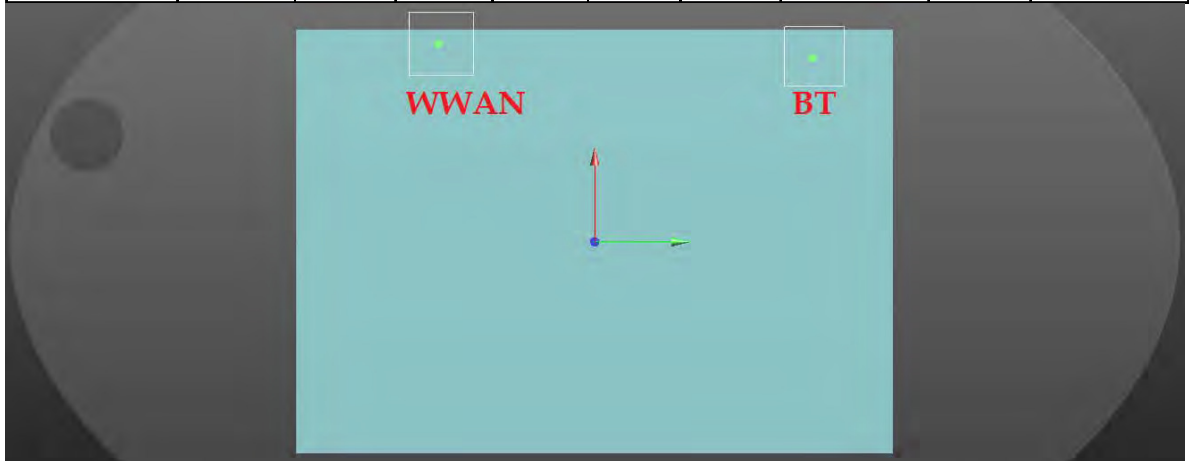
WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
BC0	Back side	1.082	10.00	-7.86	-0.04	1.69	119.5	0.018	$\text{SPLSR} < 0.04$, Not required
WLAN Main		0.608	8.90	4.04	-0.01				



WWAN & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
BC0	Back side	1.082	10.00	-7.86	-0.04	1.402	188.1	0.009	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				



WLAN Main & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.608	8.90	4.04	-0.01	0.928	69.1	0.013	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				

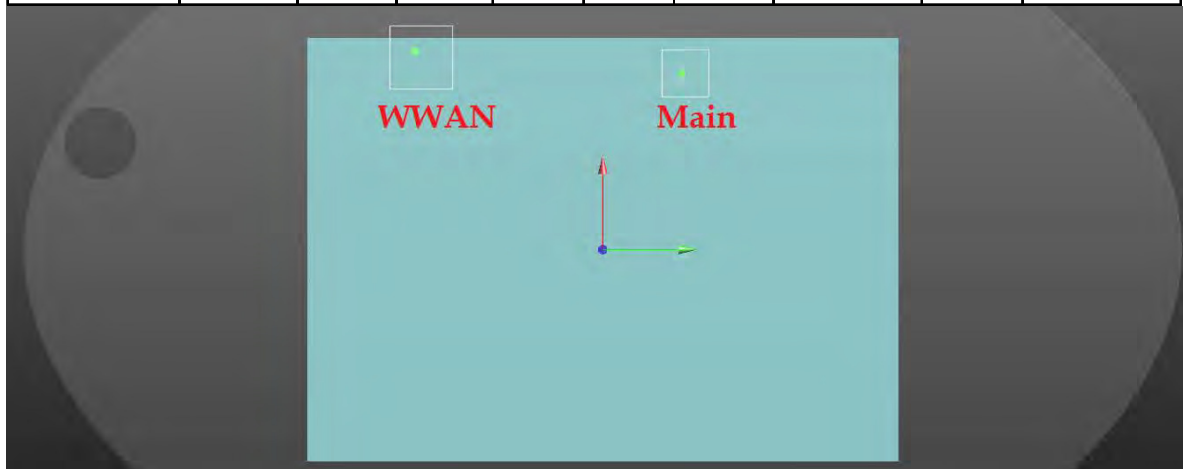


CDMA BC1 + 5GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
49	BC1	Back side	0	1.175	0.608	0.320	2.103	Analyzed as below
		Top side	0	0.512	0.610	0.130	1.252	$\Sigma\text{SAR} < 1.6$, Not required
		Right side	0	0.016	0.400	0.040	0.456	$\Sigma\text{SAR} < 1.6$, Not required
		Left side	0	0.243	0.400	0.400	1.043	$\Sigma\text{SAR} < 1.6$, Not required

WWAN & 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				
BC1	Back side	1.175	10.02	-9.52	-0.04	1.783	136.1	0.017	$\text{SPLSR} < 0.04$, Not required
WLAN Main		0.608	8.90	4.04	-0.01				



WWAN & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
BC1	Back side	1.175	10.02	-9.52	-0.04	1.495	204.7	0.009	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				



WLAN Main & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.608	8.90	4.04	-0.01	0.928	69.1	0.013	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				



LTE FDD Band II + 5GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
50	LTE Band 2	Back side	0	1.054	0.608	0.320	1.982	Analyzed as below
		Top side	0	0.675	0.610	0.130	1.415	Σ SAR<1.6, Not required
		Right side	0	0.033	0.400	0.040	0.473	Σ SAR<1.6, Not required
		Left side	0	0.218	0.400	0.400	1.018	Σ SAR<1.6, Not required

WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B2	Back side	1.054	9.55	-9.65	-0.06	1.662	137.1	0.016	SPLSR<0.04, Not required
WLAN Main		0.608	8.90	4.04	-0.01				



WWAN & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B2	Back side	1.054	9.55	-9.65	-0.06	1.374	205.9	0.008	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				



WLAN Main & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.608	8.90	4.04	-0.01	0.928	69.1	0.013	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				



LTE FDD Band IV + 5GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
51	LTE Band 4	Back side	0	1.057	0.608	0.320	1.985	Analyzed as below
		Top side	0	0.502	0.610	0.130	1.242	$\Sigma\text{SAR}<1.6$, Not required
		Right side	0	0.023	0.400	0.040	0.463	$\Sigma\text{SAR}<1.6$, Not required
		Left side	0	0.202	0.400	0.400	1.002	$\Sigma\text{SAR}<1.6$, Not required

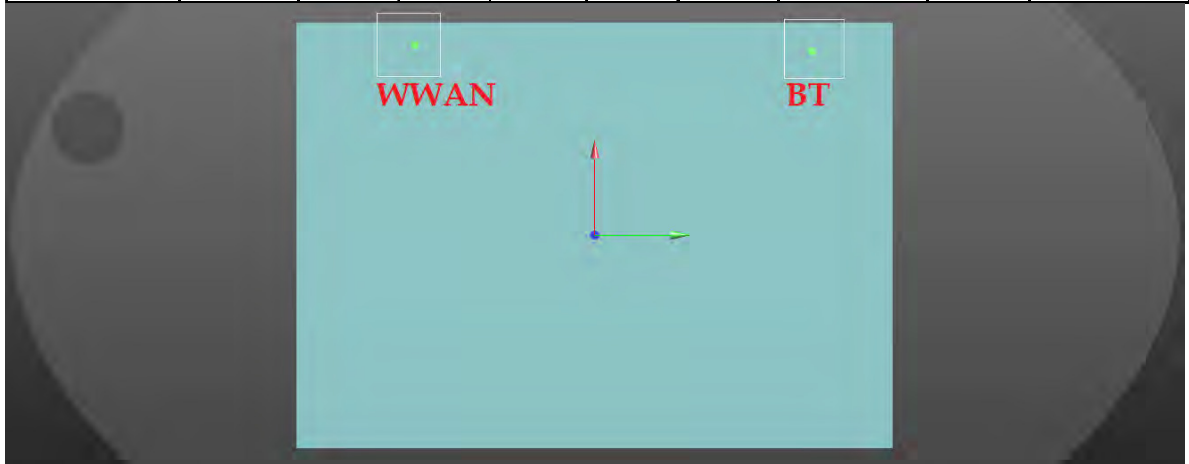
WWAN & WLAN Main

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	Back side	1.057	9.55	-9.03	-0.06	1.665	130.9	0.016	SPLSR<0.04, Not required
WLAN Main		0.608	8.90	4.04	-0.01				



WWAN & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B4	Back side	1.057	9.55	-9.03	-0.06	1.377	199.7	0.008	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				



WLAN Main & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.608	8.90	4.04	-0.01	0.928	69.1	0.013	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				

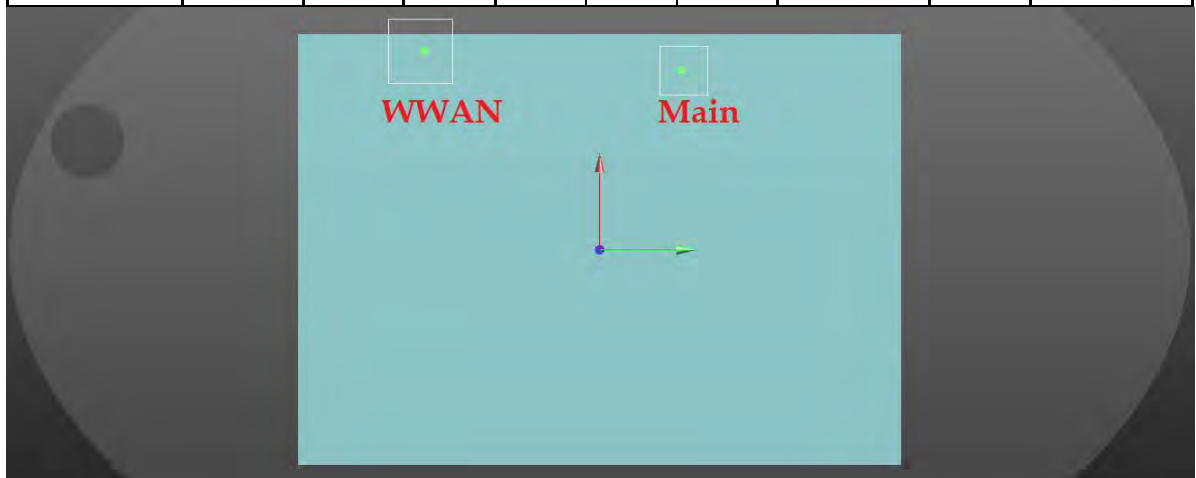


LTE FDD Band V + 5GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
52	LTE Band 5	Back side	0	1.042	0.608	0.320	1.97	Analyzed as below
		Top side	0	0.653	0.610	0.130	1.393	Σ SAR<1.6, Not required
		Right side	0	0.29	0.400	0.040	0.73	Σ SAR<1.6, Not required
		Left side	0	0.338	0.400	0.400	1.138	Σ SAR<1.6, Not required

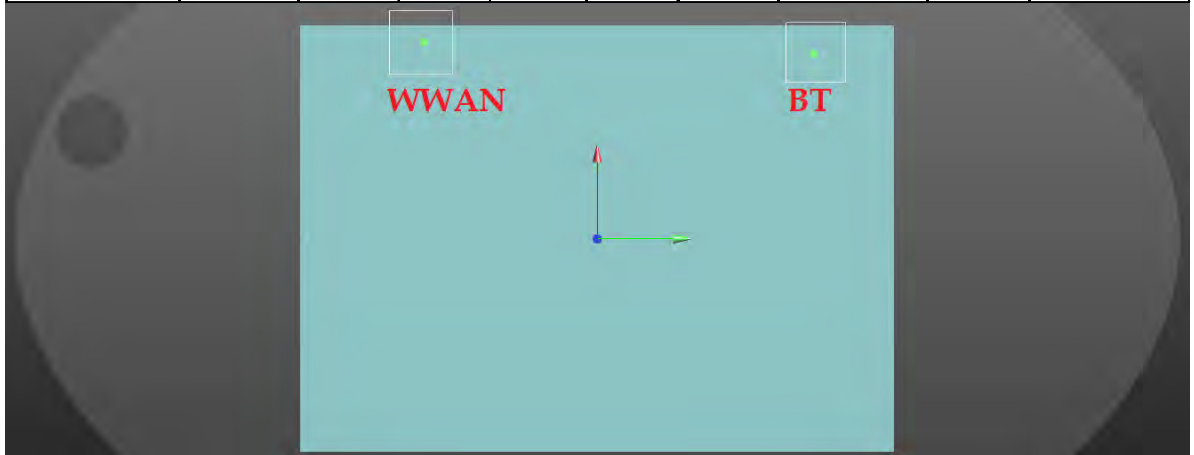
WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B5	Back side	1.042	9.85	-8.74	-0.11	1.65	128.2	0.017	SPLSR<0.04, Not required
WLAN Main		0.608	8.90	4.04	-0.01				



WWAN & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B5	Back side	1.042	9.85	-8.74	-0.11	1.362	196.9	0.008	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				



WLAN Main & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.608	8.90	4.04	-0.01	0.928	69.1	0.013	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				

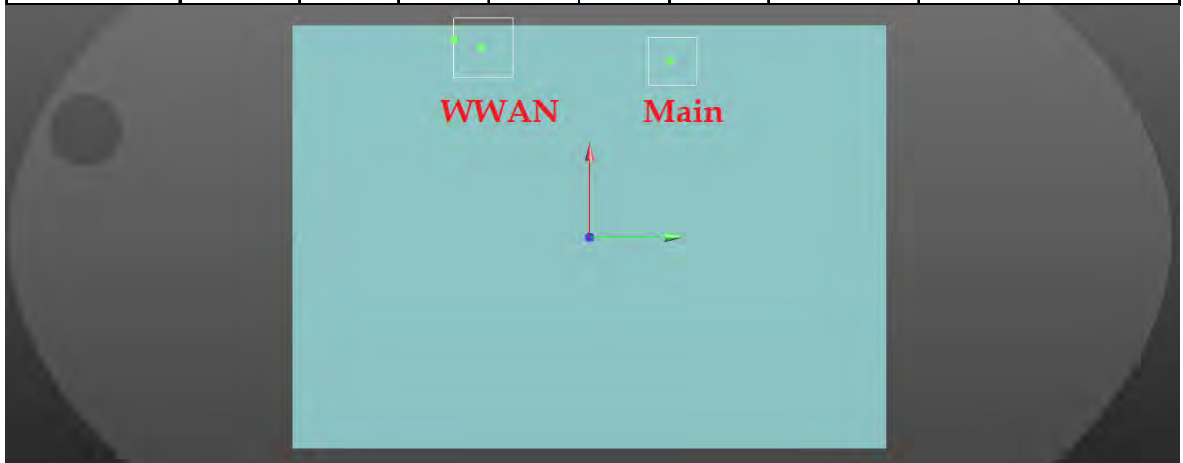


LTE FDD Band VII + 5GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
53	LTE Band 7	Back side	0	1.083	0.608	0.320	2.011	Analyzed as below
		Top side	0	0.766	0.610	0.130	1.506	Σ SAR<1.6, Not required
		Right side	0	0.037	0.400	0.040	0.477	Σ SAR<1.6, Not required
		Left side	0	0.606	0.400	0.400	1.406	Σ SAR<1.6, Not required

WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B7	Back side	1.083	9.58	-5.46	-0.04	1.691	95.2	0.023	SPLSR<0.04, Not required
WLAN Main		0.608	8.90	4.04	-0.01				



WWAN & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B7	Back side	1.083	9.58	-5.46	-0.04	1.403	164	0.010	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				



WLAN Main & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.608	8.90	4.04	-0.01	0.928	69.1	0.013	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				



LTE FDD Band XII + 5GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
54	LTE Band 12	Back side	0	1.124	0.608	0.320	2.052	Analyzed as below
		Top side	0	0.473	0.610	0.130	1.213	Σ SAR<1.6, Not required
		Right side	0	0.022	0.400	0.040	0.462	Σ SAR<1.6, Not required
		Left side	0	0.211	0.400	0.400	1.011	Σ SAR<1.6, Not required

WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B12	Back side	1.124	10.31	-7.39	-0.07	1.732	115.2	0.020	SPLSR<0.04, Not required
WLAN Main		0.608	8.90	4.04	-0.01				



WWAN & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B12	Back side	1.124	10.31	-7.39	-0.07	1.444	183.6	0.009	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				



WLAN Main & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.608	8.90	4.04	-0.01	0.928	69.1	0.013	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				



LTE FDD Band XIII + 5GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
55	LTE Band 13	Back side	0	1.069	0.608	0.320	1.997	Analyzed as below
		Top side	0	0.743	0.610	0.130	1.483	$\Sigma\text{SAR} < 1.6$, Not required
		Right side	0	0.03	0.400	0.040	0.47	$\Sigma\text{SAR} < 1.6$, Not required
		Left side	0	0.287	0.400	0.400	1.087	$\Sigma\text{SAR} < 1.6$, Not required

WWAN & 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 B13	Back side	1.069	10.16	-7.54	-0.07	1.677	116.5	0.019	$\text{SPLSR} < 0.04$, Not required
WLAN Main		0.608	8.90	4.04	-0.01				



WWAN & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B13	Back side	1.069	10.16	-7.54	-0.07	1.389	185	0.009	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				



WLAN Main & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.608	8.90	4.04	-0.01	0.928	69.1	0.013	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				



LTE FDD Band XVII + 5GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
56	LTE Band 17	Back side	0	1.059	0.608	0.320	1.987	Analyzed as below
		Top side	0	0.533	0.610	0.130	1.273	Σ SAR<1.6, Not required
		Right side	0	0.017	0.400	0.040	0.457	Σ SAR<1.6, Not required
		Left side	0	0.216	0.400	0.400	1.016	Σ SAR<1.6, Not required

WWAN & WLAN Main

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B17	Back side	1.059	10.47	-6.91	-0.08	1.667	110.6	0.019	SPLSR<0.04, Not required
WLAN Main		0.608	8.90	4.04	-0.01				



WWAN & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE B17	Back side	1.059	10.47	-6.91	-0.08	1.379	178.9	0.009	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				



WLAN Main & BT

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
WLAN Main	Back side	0.608	8.90	4.04	-0.01	0.928	69.1	0.013	SPLSR<0.04, Not required
BT		0.32	9.26	10.94	0.02				



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	3831	Jan.29,2015	Jan.28,2016
				Jan.27,2016	Jan.26,2017
Schmid & Partner Engineering AG	System Validation Dipole	D750V2	1015	Aug.24,2015	Aug.23,2016
		D835V2	4d063	Aug.24,2015	Aug.23,2016
		D1750V2	1008	Aug.20,2015	Aug.19,2016
		D1900V2	5d027	Apr.29,2015	Apr.28,2016
		D2450V2	727	Apr.22,2015	Apr.21,2016
		D2600V2	1005	Jan.27,2015	Jan.26,2016
		D5GHzV2	1023	Jan.26,2016	Jan.25,2017
Schmid & Partner Engineering AG	Data acquisition Electronics	DAE4	1336	Aug.26,2015	Aug.25,2016
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

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

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Manufacturer	Device	Type	Serial number	Date of last calibration	Date of next calibration
Agilent	Dielectric Probe Kit	85070E	MY44300677	Calibration not required	Calibration not required
Agilent	Dual-directional coupler	772D	MY46151242	Jul.15,2015	Jul.14,2016
		778D	MY48220468	Jul.16,2015	Jul.15,2016
Agilent	RF Signal Generator	N5181A	MY50145142	Feb.06.2015	Feb.05.2016
			MY50145142	Feb.19,2016	Feb.18,2017
Agilent	Power Meter	E4417A	MY52240003	Jul.15,2015	Jul.14,2016
Agilent	Power Sensor	E9301H	MY52200004	Jul.15,2015	Jul.14,2016
TECPEL	Digital thermometer	DTM-303A	TP130075	Mar.27,2015	Mar.26,2016
R&S	Radio Communication Test	CMU200	122498	Aug.26,2015	Aug.25,2016
Anritsu	Radio Communication Test	MT8820C	6201061049	Feb.02.2015	Feb.01.2016
			6201061014	Oct.07,2015	Oct.06,2016

5. Measurements

Date: 2015/10/15

GPRS 850_Body_Back side_CH 251_0mm

Communication System: GPRS(1Dn4Up); Frequency: 848.8 MHz

Medium parameters used: $f = 849$ MHz; $\sigma = 1.025$ S/m; $\epsilon_r = 53.219$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3831; ConvF(9, 9, 9); Calibrated: 2015/1/29;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1336; Calibrated: 2015/8/26
- 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) = 1.46 W/kg

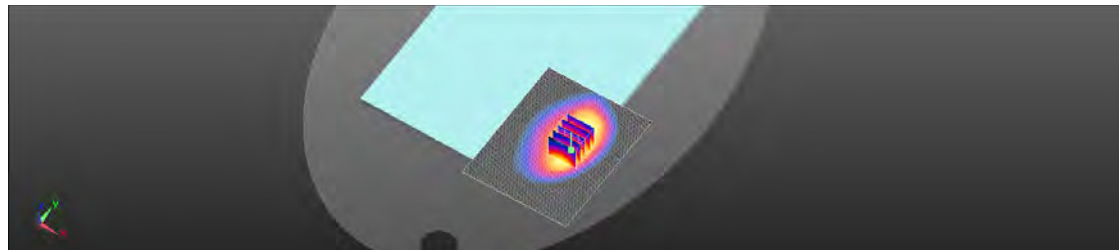
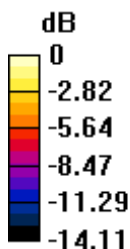
Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 0.3710 V/m; Power Drift = 0.17 dB

Peak SAR (extrapolated) = 1.69 W/kg

SAR(1 g) = 1.06 W/kg; SAR(10 g) = 0.649 W/kg

Maximum value of SAR (measured) = 1.40 W/kg



0 dB = 1.40 W/kg = 1.45 dBW/kg

Date: 2015/10/19

GPRS 1900_Body_Back side_CH 810_0mm

Communication System: GPRS(1Dn4Up); Frequency: 1909.8 MHz

Medium parameters used: $f = 1910$ MHz; $\sigma = 1.571$ S/m; $\epsilon_r = 52.032$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3831; ConvF(7.34, 7.34, 7.34); Calibrated: 2015/1/29;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1336; Calibrated: 2015/8/26
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Body/Area Scan (81x111x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 1.17 W/kg

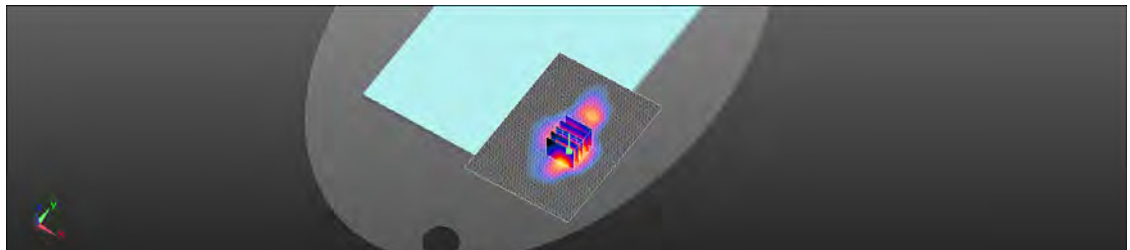
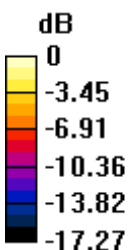
Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.939 V/m; Power Drift = -0.19 dB

Peak SAR (extrapolated) = 1.50 W/kg

SAR(1 g) = 0.743 W/kg; SAR(10 g) = 0.352 W/kg

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



0 dB = 1.01 W/kg = 0.05 dBW/kg

Date: 2015/10/24

WCDMA Band 2_Body_Back side_CH 9262_0mm

Communication System: WCDMA; Frequency: 1852.4 MHz

Medium parameters used: $f = 1852.4$ MHz; $\sigma = 1.545$ S/m; $\epsilon_r = 52.106$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3831; ConvF(7.34, 7.34, 7.34); Calibrated: 2015/1/29;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1336; Calibrated: 2015/8/26
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Body/Area Scan (81x111x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 1.70 W/kg

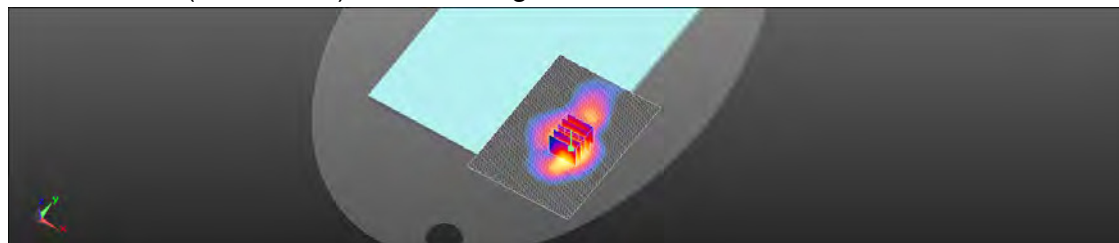
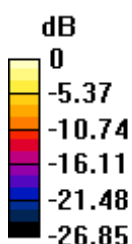
Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 0.2411 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 2.22 W/kg

SAR(1 g) = 1.09 W/kg; SAR(10 g) = 0.498 W/kg

Maximum value of SAR (measured) = 1.66 W/kg



0 dB = 1.66 W/kg = 2.21 dBW/kg

Date: 2015/10/16

WCDMA Band 4_Body_Back side_CH 1312_0mm

Communication System: WCDMA; Frequency: 1712.4 MHz

Medium parameters used: $f = 1712.4$ MHz; $\sigma = 1.514$ S/m; $\epsilon_r = 51.59$; $\rho = 1000$ kg/m³

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 Sn1336; Calibrated: 2015/8/26
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Body/Area Scan (81x111x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 1.19 W/kg

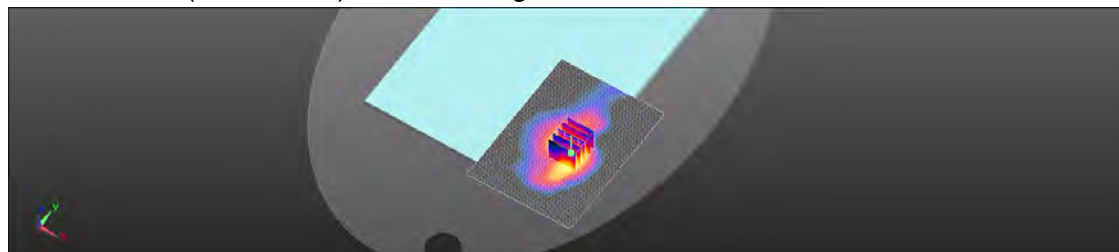
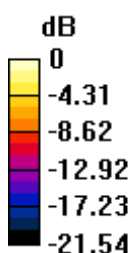
Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 0.2540 V/m; Power Drift = 0.12 dB

Peak SAR (extrapolated) = 1.52 W/kg

SAR(1 g) = 0.757 W/kg; SAR(10 g) = 0.367 W/kg

Maximum value of SAR (measured) = 1.08 W/kg



0 dB = 1.08 W/kg = 0.32 dBW/kg

Date: 2015/10/15

WCDMA Band 5_Body_Back side_CH 4183_0mm

Communication System: WCDMA; Frequency: 836.6 MHz

Medium parameters used: $f = 837$ MHz; $\sigma = 1.009$ S/m; $\epsilon_r = 53.269$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3831; ConvF(9, 9, 9); Calibrated: 2015/1/29;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1336; Calibrated: 2015/8/26
- 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) = 1.26 W/kg

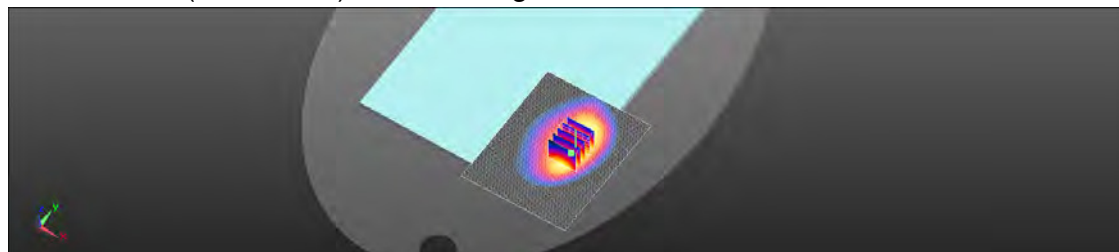
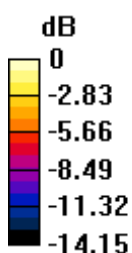
Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 0.3820 V/m; Power Drift = 0.16 dB

Peak SAR (extrapolated) = 1.46 W/kg

SAR(1 g) = 0.927 W/kg; SAR(10 g) = 0.566 W/kg

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



0 dB = 1.22 W/kg = 0.85 dBW/kg

Date: 2015/10/19

LTE Band 2 (20MHz)_Body_Back side_CH 19100_QPSK_1-0_0mm

Communication System: LTE; Frequency: 1900 MHz

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.564$ S/m; $\epsilon_r = 52.041$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3831; ConvF(7.34, 7.34, 7.34); Calibrated: 2015/1/29;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1336; Calibrated: 2015/8/26
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Body/Area Scan (81x111x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 1.37 W/kg

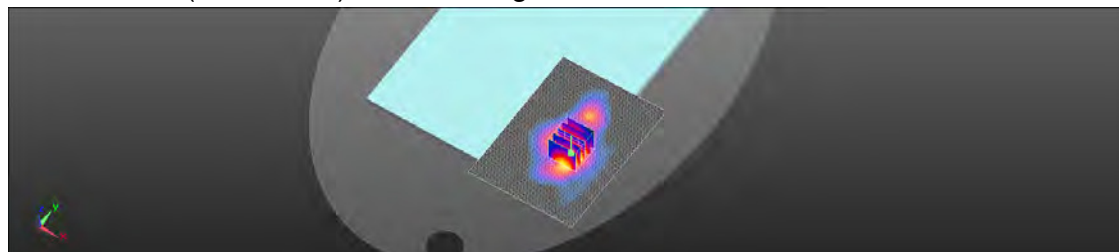
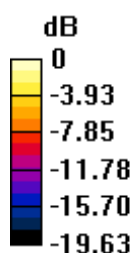
Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 0.8810 V/m; Power Drift = 0.12 dB

Peak SAR (extrapolated) = 1.74 W/kg

SAR(1 g) = 0.881 W/kg; SAR(10 g) = 0.425 W/kg

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



0 dB = 1.35 W/kg = 1.31 dBW/kg

Date: 2015/10/16

LTE Band 4 (20MHz)_Body_Back side_CH 20050_QPSK_1-0_0mm

Communication System: LTE; Frequency: 1720 MHz

Medium parameters used: $f = 1720$ MHz; $\sigma = 1.519$ S/m; $\epsilon_r = 51.576$; $\rho = 1000$ kg/m³

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 Sn1336; Calibrated: 2015/8/26
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Body/Area Scan (81x111x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 1.43 W/kg

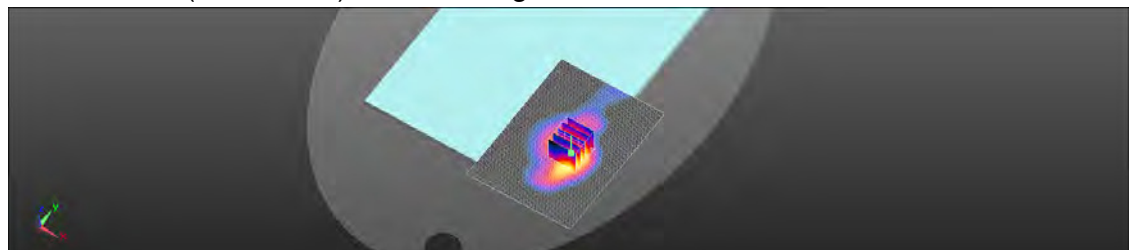
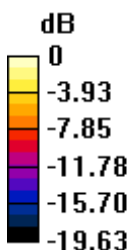
Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 1.360 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 1.84 W/kg

SAR(1 g) = 0.908 W/kg; SAR(10 g) = 0.439 W/kg

Maximum value of SAR (measured) = 1.23 W/kg



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

Date: 2015/10/15

LTE Band 5 (10MHz)_Body_Back side_CH 20600_QPSK_1-0_0mm

Communication System: LTE; Frequency: 844 MHz

Medium parameters used: $f = 844$ MHz; $\sigma = 1.018$ S/m; $\epsilon_r = 53.261$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3831; ConvF(9, 9, 9); Calibrated: 2015/1/29;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1336; Calibrated: 2015/8/26
- 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) = 1.32 W/kg

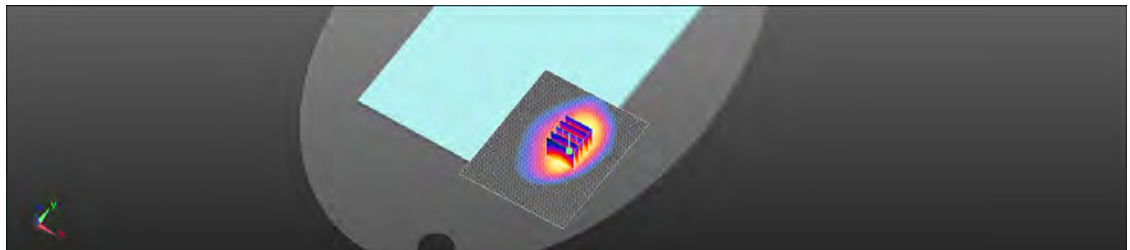
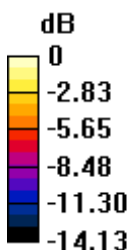
Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

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

Peak SAR (extrapolated) = 1.51 W/kg

SAR(1 g) = 0.953 W/kg; SAR(10 g) = 0.583 W/kg

Maximum value of SAR (measured) = 1.25 W/kg



0 dB = 1.25 W/kg = 0.96 dBW/kg

Date: 2015/10/20

LTE Band 7 (20MHz)_Body_Back side_CH 21350_QPSK_1-99_0mm

Communication System: LTE; Frequency: 2560 MHz

Medium parameters used: $f = 2560$ MHz; $\sigma = 2.175$ S/m; $\epsilon_r = 51.599$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3831; ConvF(6.65, 6.65, 6.65); Calibrated: 2015/1/29;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1336; Calibrated: 2015/8/26
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Body/Area Scan (101x141x1): Interpolated grid: dx=12 mm, dy=12 mm

Maximum value of SAR (interpolated) = 1.39 W/kg

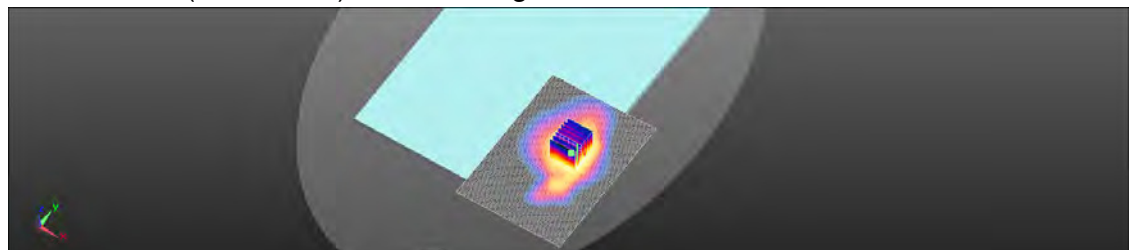
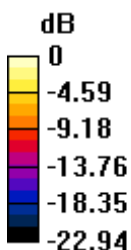
Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 1.022 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 2.23 W/kg

SAR(1 g) = 0.959 W/kg; SAR(10 g) = 0.521 W/kg

Maximum value of SAR (measured) = 1.54 W/kg



0 dB = 1.54 W/kg = 1.88 dBW/kg

Date: 2015/10/13

LTE Band 12 (10MHz)_Body_Back side_CH 23130_QPSK_1-49_0mm

Communication System: LTE; Frequency: 711 MHz

Medium parameters used: $f = 711 \text{ MHz}$; $\sigma = 0.986 \text{ S/m}$; $\epsilon_r = 54.667$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3831; ConvF(9.07, 9.07, 9.07); Calibrated: 2015/1/29;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1336; Calibrated: 2015/8/26
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Body/Area Scan (81x111x1): Interpolated grid: $dx=15 \text{ mm}$, $dy=15 \text{ mm}$

Maximum value of SAR (interpolated) = 1.36 W/kg

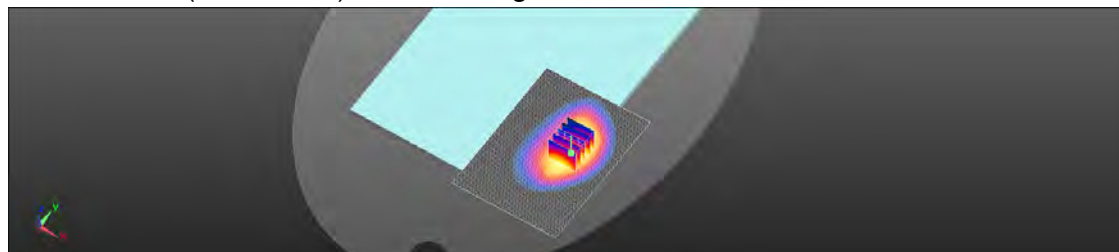
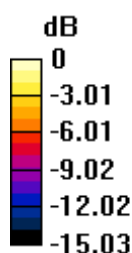
Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 1.038 V/m ; Power Drift = 0.18 dB

Peak SAR (extrapolated) = 1.77 W/kg

SAR(1 g) = 0.988 W/kg ; SAR(10 g) = 0.557 W/kg

Maximum value of SAR (measured) = 1.39 W/kg



0 dB = 1.39 W/kg = 1.42 dBW/kg

Date: 2015/10/14

LTE Band 13 (10MHz)_Body_Back side_CH 23230_QPSK_1-0_0mm

Communication System: LTE; Frequency: 782 MHz

Medium parameters used: $f = 782 \text{ MHz}$; $\sigma = 0.999 \text{ S/m}$; $\epsilon_r = 54.199$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3831; ConvF(9.07, 9.07, 9.07); Calibrated: 2015/1/29;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1336; Calibrated: 2015/8/26
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Body/Area Scan (81x111x1): Interpolated grid: $dx=15 \text{ mm}$, $dy=15 \text{ mm}$

Maximum value of SAR (interpolated) = 1.37 W/kg

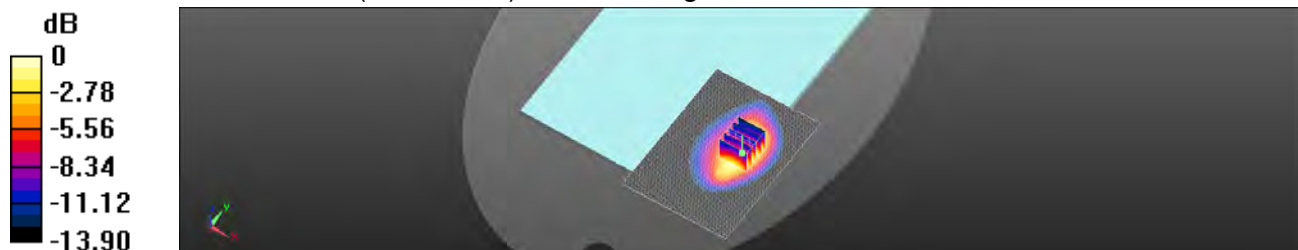
Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 0 V/m ; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 1.80 W/kg

SAR(1 g) = 1.03 W/kg ; SAR(10 g) = 0.600 W/kg

Maximum value of SAR (measured) = 1.42 W/kg



$0 \text{ dB} = 1.42 \text{ W/kg} = 1.53 \text{ dBW/kg}$

Date: 2015/10/13

LTE Band 17 (10MHz)_Body_Back side_CH 23780_QPSK_1-49_0mm

Communication System: LTE; Frequency: 709 MHz

Medium parameters used: $f = 709 \text{ MHz}$; $\sigma = 0.985 \text{ S/m}$; $\epsilon_r = 54.715$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3831; ConvF(9.07, 9.07, 9.07); Calibrated: 2015/1/29;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1336; Calibrated: 2015/8/26
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Body/Area Scan (81x111x1): Interpolated grid: $dx=15 \text{ mm}$, $dy=15 \text{ mm}$

Maximum value of SAR (interpolated) = 1.39 W/kg

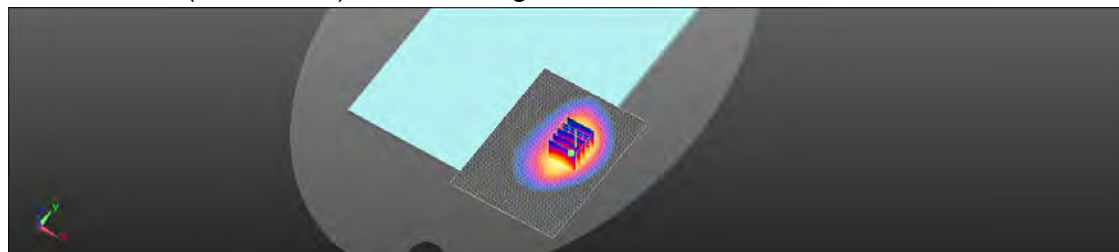
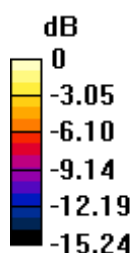
Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 0 V/m ; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 1.94 W/kg

SAR(1 g) = 1.04 W/kg ; SAR(10 g) = 0.579 W/kg

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



$0 \text{ dB} = 1.51 \text{ W/kg} = 1.79 \text{ dBW/kg}$

Date: 2015/10/15

Cellular BC0_Body_Back side_CH 384_0mm

Communication System: 1xEVDO; Frequency: 836.52 MHz

Medium parameters used: $f = 837$ MHz; $\sigma = 1.009$ S/m; $\epsilon_r = 53.276$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3831; ConvF(9, 9, 9); Calibrated: 2015/1/29;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1336; Calibrated: 2015/8/26
- 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) = 1.24 W/kg

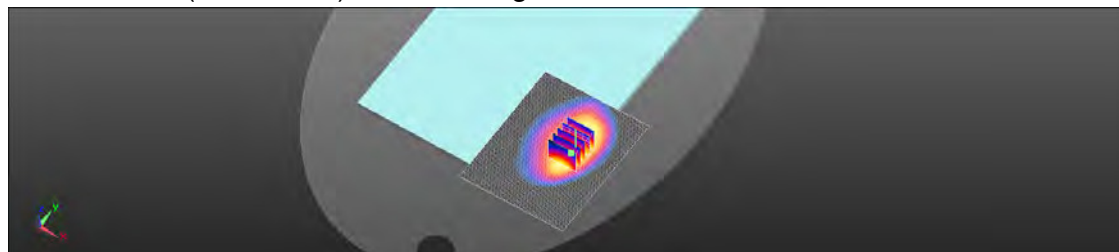
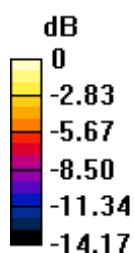
Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 0 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 1.46 W/kg

SAR(1 g) = 0.932 W/kg; SAR(10 g) = 0.567 W/kg

Maximum value of SAR (measured) = 1.23 W/kg



0 dB = 1.23 W/kg = 0.89 dBW/kg

Date: 2015/10/19

PCS BC1_Body_Back side_CH 1175_0mm

Communication System: 1xEVDO; Frequency: 1908.75 MHz

Medium parameters used: $f = 1909$ MHz; $\sigma = 1.569$ S/m; $\epsilon_r = 52.033$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3831; ConvF(7.34, 7.34, 7.34); Calibrated: 2015/1/29;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1336; Calibrated: 2015/8/26
- 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) = 1.31 W/kg

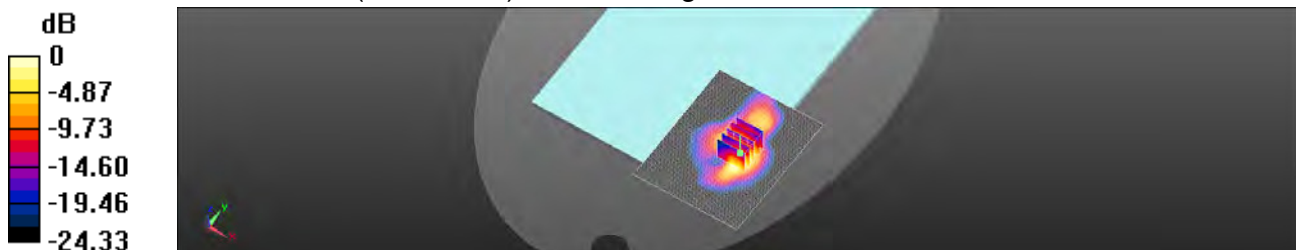
Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 0.5850 V/m; Power Drift = 0.12 dB

Peak SAR (extrapolated) = 1.94 W/kg

SAR(1 g) = 0.944 W/kg; SAR(10 g) = 0.445 W/kg

Maximum value of SAR (measured) = 1.13 W/kg



0 dB = 1.13 W/kg = 0.54 dBW/kg

Date: 2016/3/7

WLAN802.11a 5.3G_Body_Back side_CH 60_0 mm_Main

Communication System: WLAN(5G); Frequency: 5300 MHz

Medium parameters used: $f = 5300 \text{ MHz}$; $\sigma = 5.468 \text{ S/m}$; $\epsilon_r = 48.392$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3831; ConvF(3.81, 3.81, 3.81); Calibrated: 2016/1/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1336; Calibrated: 2015/8/26
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/BODY/Area Scan (91x131x1): Interpolated grid: $dx=10 \text{ mm}$, $dy=10 \text{ mm}$

Maximum value of SAR (interpolated) = 1.57 W/kg

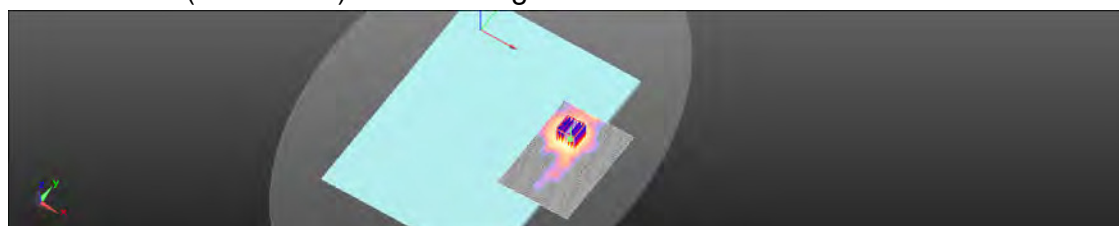
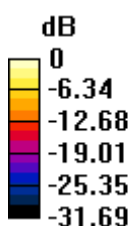
Configuration/BODY/Zoom Scan (7x7x12)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=2\text{mm}$

Reference Value = 0 V/m ; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 3.61 W/kg

SAR(1 g) = 0.601 W/kg ; SAR(10 g) = 0.202 W/kg

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



$0 \text{ dB} = 1.72 \text{ W/kg} = 1.82 \text{ dBW/kg}$

Date: 2016/3/7

WLAN802.11a 5.3G Body Back side CH 56_0 mm_Aux

Communication System: WLAN(5G); Frequency: 5280 MHz

Medium parameters used: $f = 5280 \text{ MHz}$; $\sigma = 5.447 \text{ S/m}$; $\epsilon_r = 48.4$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY5 Configuration:

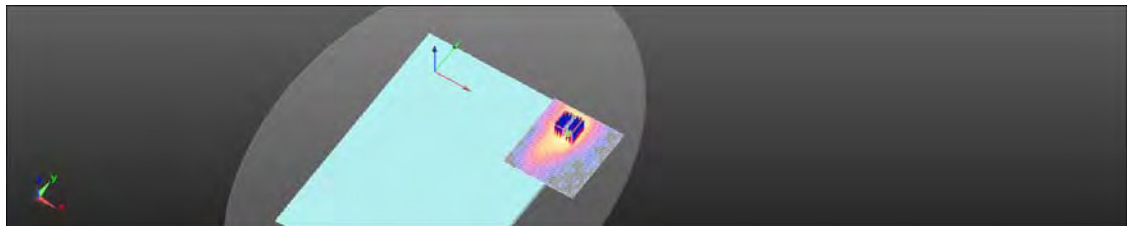
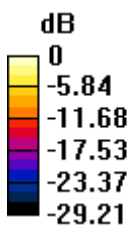
- Probe: EX3DV4 - SN3831; ConvF(3.81, 3.81, 3.81); Calibrated: 2016/1/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1336; Calibrated: 2015/8/26
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/BODY/Area Scan (91x101x1): Interpolated grid: $dx=10 \text{ mm}$, $dy=10 \text{ mm}$

Maximum value of SAR (interpolated) = 2.13 W/kg
Configuration/BODY/Zoom Scan (7x7x12)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=2\text{mm}$

Reference Value = 0 V/m ; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 4.72 W/kg
SAR(1 g) = 1.05 W/kg ; SAR(10 g) = 0.289 W/kg

Maximum value of SAR (measured) = 2.26 W/kg

 $0 \text{ dB} = 2.26 \text{ W/kg} = 3.54 \text{ dBW/kg}$

6. SAR System Performance Verification

Date: 2015/10/13

Dipole 750 MHz_SN:1015

Communication System: CW; Frequency: 750 MHz

Medium parameters used: $f = 750 \text{ MHz}$; $\sigma = 0.996 \text{ S/m}$; $\epsilon_r = 54.338$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3831; ConvF(9.07, 9.07, 9.07); Calibrated: 2015/1/29;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1336; Calibrated: 2015/8/26
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Pin=250mW/Area Scan (51x141x1): Interpolated grid: $dx=15 \text{ mm}$, $dy=15 \text{ mm}$

Maximum value of SAR (interpolated) = 2.62 W/kg

Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

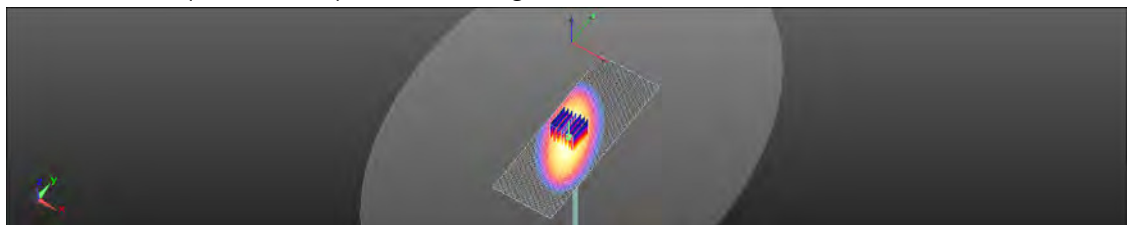
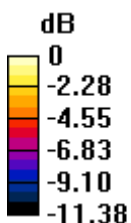
$dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 54.33 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 3.11 W/kg

SAR(1 g) = 2.12 W/kg; SAR(10 g) = 1.39 W/kg

Maximum value of SAR (measured) = 2.62 W/kg



0 dB = 2.59 W/kg = 4.13 dBW/kg

Date: 2015/10/14

Dipole 750 MHz_SN:1015

Communication System: CW; Frequency: 750 MHz

Medium parameters used: $f = 750$ MHz; $\sigma = 0.997$ S/m; $\epsilon_r = 54.321$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3831; ConvF(9.07, 9.07, 9.07); Calibrated: 2015/1/29;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1336; Calibrated: 2015/8/26
- 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) = 2.86 W/kg

Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

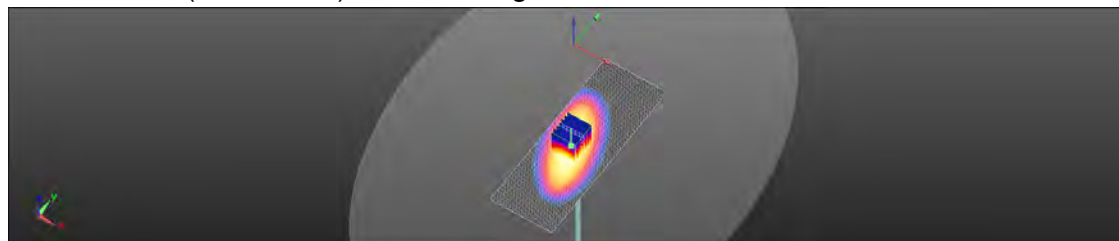
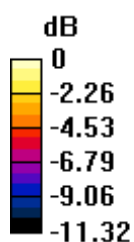
dx=5mm, dy=5mm, dz=5mm

Reference Value = 54.99 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 3.40 W/kg

SAR(1 g) = 2.23 W/kg; SAR(10 g) = 1.44 W/kg

Maximum value of SAR (measured) = 2.86 W/kg



0 dB = 2.86 W/kg = 4.56 dBW/kg

Date: 2015/10/15

Dipole 835 MHz_SN:4d063

Communication System: CW; Frequency: 835 MHz

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 1.007 \text{ S/m}$; $\epsilon_r = 53.287$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3831; ConvF(9, 9, 9); Calibrated: 2015/1/29;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1336; Calibrated: 2015/8/26
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Pin=250mW/Area Scan (61x121x1): Interpolated grid: $dx=15 \text{ mm}$, $dy=15 \text{ mm}$

Maximum value of SAR (interpolated) = 3.08 W/kg

Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

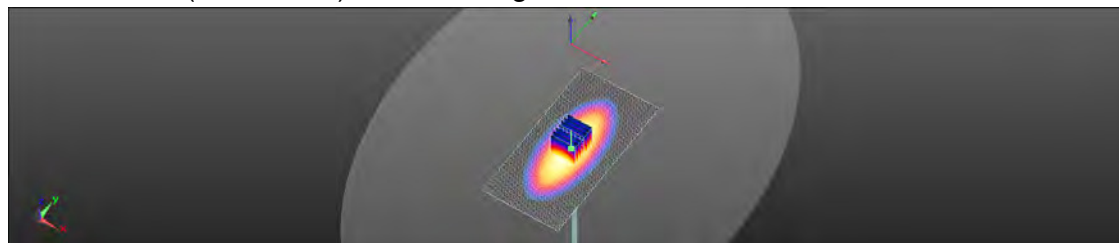
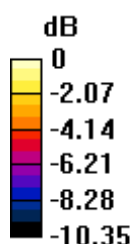
$dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 56.29 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 3.63 W/kg

SAR(1 g) = 2.44 W/kg; SAR(10 g) = 1.6 W/kg

Maximum value of SAR (measured) = 3.09 W/kg



0 dB = 3.09 W/kg = 4.90 dBW/kg

Date: 2015/10/16

Dipole 1750 MHz_SN:1008

Communication System: CW; Frequency: 1750 MHz

Medium parameters used: $f = 1750$ MHz; $\sigma = 1.539$ S/m; $\epsilon_r = 51.489$; $\rho = 1000$ kg/m³

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 Sn1336; Calibrated: 2015/8/26
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Pin=250mW/Area Scan (41x71x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 14.3 W/kg

Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

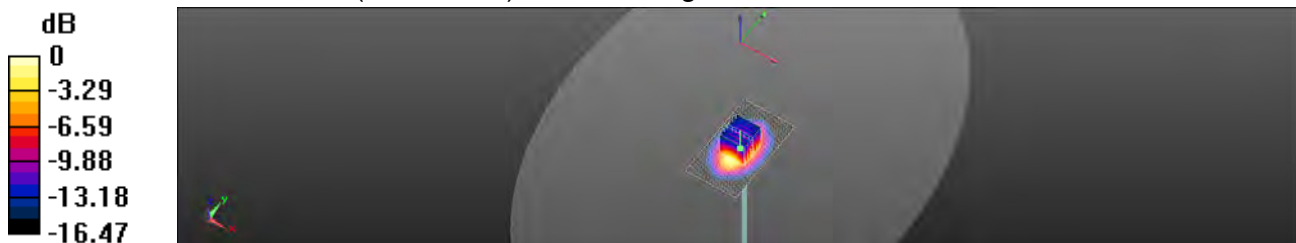
dx=5mm, dy=5mm, dz=5mm

Reference Value = 95.60 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 16.9 W/kg

SAR(1 g) = 9.52 W/kg; SAR(10 g) = 5.07 W/kg

Maximum value of SAR (measured) = 13.5 W/kg



0 dB = 13.5 W/kg = 11.30 dBW/kg

Date: 2015/10/19

Dipole 1900 MHz_SN:5d027

Communication System: CW; Frequency: 1900 MHz

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.564$ S/m; $\epsilon_r = 52.041$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3831; ConvF(7.34, 7.34, 7.34); Calibrated: 2015/1/29;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1336; Calibrated: 2015/8/26
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Pin=250mW/Area Scan (41x71x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 14.9 W/kg

Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

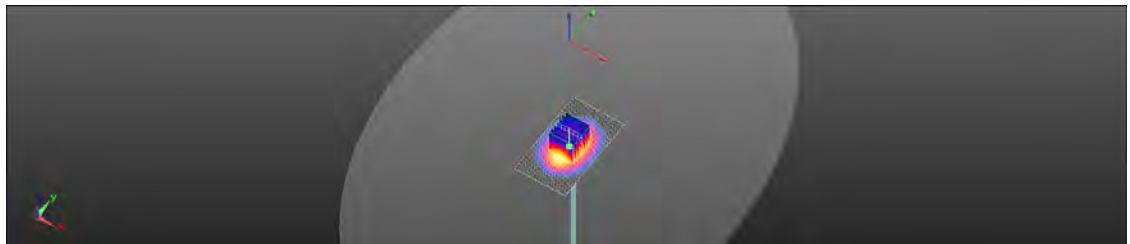
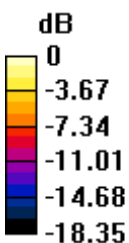
dx=5mm, dy=5mm, dz=5mm

Reference Value = 95.62 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 18.0 W/kg

SAR(1 g) = 9.71 W/kg; SAR(10 g) = 4.98 W/kg

Maximum value of SAR (measured) = 14.0 W/kg



0 dB = 14.0 W/kg = 11.47 dBW/kg

Date: 2015/10/24

Dipole 1900 MHz_SN:5d027

Communication System: CW; Frequency: 1900 MHz

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.563$ S/m; $\epsilon_r = 52.044$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3831; ConvF(7.34, 7.34, 7.34); Calibrated: 2015/1/29;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1336; Calibrated: 2015/8/26
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Pin=250mW/Area Scan (41x71x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 14.9 W/kg

Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

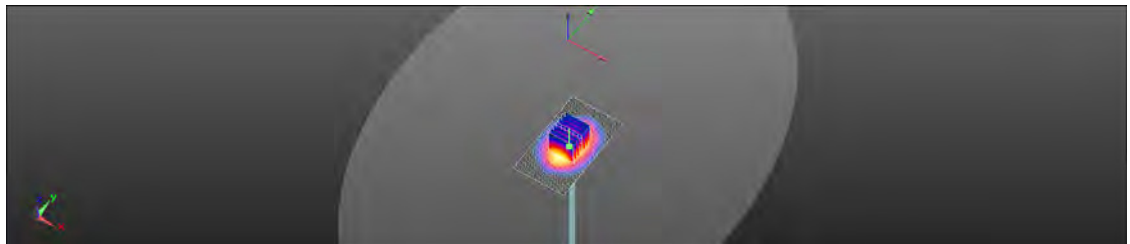
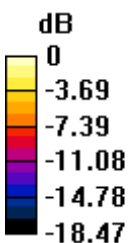
dx=5mm, dy=5mm, dz=5mm

Reference Value = 95.17 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 18.1 W/kg

SAR(1 g) = 9.73 W/kg; SAR(10 g) = 4.99 W/kg

Maximum value of SAR (measured) = 14.1 W/kg



0 dB = 14.1 W/kg = 11.49 dBW/kg

Date: 2016/3/7

Dipole 2450 MHz_SN:727

Communication System: CW; Frequency: 2450 MHz

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.991$ S/m; $\epsilon_r = 52.416$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3831; ConvF(6.81, 6.81, 6.81); Calibrated: 2016/1/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1336; Calibrated: 2015/8/26
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Pin=250mW/Area Scan (61x91x1): Interpolated grid: dx=12 mm, dy=12 mm

Maximum value of SAR (interpolated) = 19.9 W/kg

Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

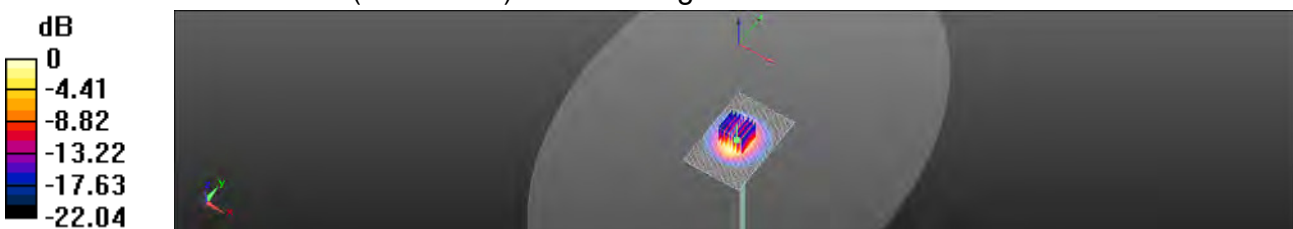
dx=5mm, dy=5mm, dz=5mm

Reference Value = 96.39 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 25.8 W/kg

SAR(1 g) = 13.3 W/kg; SAR(10 g) = 6.17 W/kg

Maximum value of SAR (measured) = 19.3 W/kg



0 dB = 19.3 W/kg = 12.85 dBW/kg

Date: 2015/10/20

Dipole 2600 MHz_SN:1005

Communication System: CW; Frequency: 2600 MHz

Medium parameters used: $f = 2600$ MHz; $\sigma = 2.232$ S/m; $\epsilon_r = 51.559$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3831; ConvF(6.65, 6.65, 6.65); Calibrated: 2015/1/29;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1336; Calibrated: 2015/8/26
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Pin=250mW/Area Scan (61x71x1): Interpolated grid: dx=12 mm, dy=12 mm

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

Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

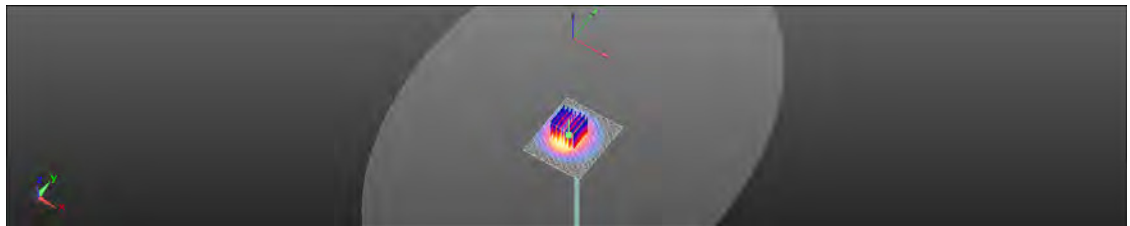
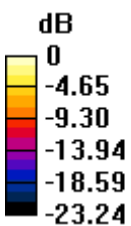
dx=5mm, dy=5mm, dz=5mm

Reference Value = 94.22 V/m; Power Drift = -0.00 dB

Peak SAR (extrapolated) = 29.2 W/kg

SAR(1 g) = 14 W/kg; SAR(10 g) = 6.28 W/kg

Maximum value of SAR (measured) = 21.6 W/kg



0 dB = 21.6 W/kg = 13.34 dBW/kg

Date: 2016/3/7

Dipole 5300 MHz_SN:1023

Communication System: CW; Frequency: 5300 MHz

Medium parameters used: $f = 5300 \text{ MHz}$; $\sigma = 5.468 \text{ S/m}$; $\epsilon_r = 48.392$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3831; ConvF(3.81, 3.81, 3.81); Calibrated: 2016/1/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1336; Calibrated: 2015/8/26
- Phantom: Body
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Configuration/Pin=100mW/Area Scan (61x91x1): Interpolated grid: $dx=10 \text{ mm}$, $dy=10 \text{ mm}$

Maximum value of SAR (interpolated) = 16.1 W/kg

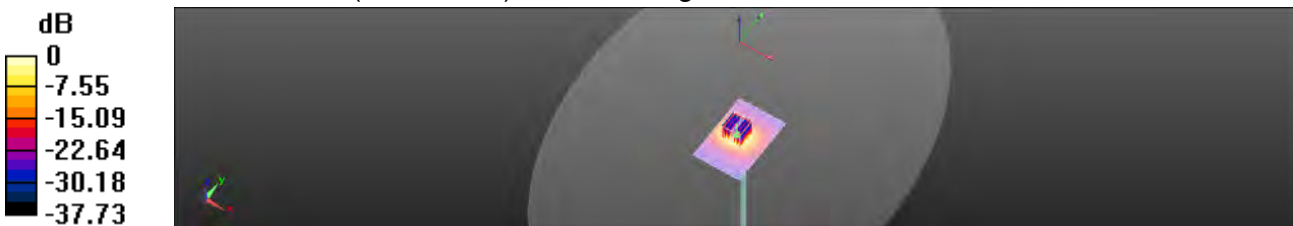
Configuration/Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=2\text{mm}$

Reference Value = 48.05 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 32.5 W/kg

SAR(1 g) = 7.59 W/kg; SAR(10 g) = 2.18 W/kg

Maximum value of SAR (measured) = 16.5 W/kg



0 dB = 16.5 W/kg = 12.18 dBW/kg

7.DAE & Probe Calibration Certificate

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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 0108

Client: SGS - TW (Auden)

Certificate No.: DAE4-1336_Aug15

CALIBRATION CERTIFICATE

Object: DAE4 - SD 000 D04 BM - SN: 1336

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

Calibration date: August 26, 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 dried laboratory facility; environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (MSTE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Kelley Multimeter Type 2001	SN: 0810278	08-Oct-14 (No:15573)	Oct-15
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Auto DAE Calibration Unit	SE LWS 053 AA 1001	08-Jan-15 (in house check)	in house check: Jan-16
Calibrator Box Y2.1	SE UMS 006 AA 1002	08-Jan-15 (in house check)	in house check: Jan-16

Calibrated by:	Name: Eric Halmold	Function: Technician	Signature: 
Approved by:	Frit Bernhold	Deputy Technical Manager	

Issued: August 26, 2015

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Certificate No.: DAE4-1336_Aug15

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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.

DC Voltage Measurement

A/D - Converter Resolution nominal

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

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

Calibration Factors	X	Y	Z
High Range	403.276 $\pm$ 0.02% (k=2)	403.573 $\pm$ 0.02% (k=2)	403.056 $\pm$ 0.02% (k=2)
Low Range	3.95163 $\pm$ 1.50% (k=2)	3.98593 $\pm$ 1.50% (k=2)	3.99669 $\pm$ 1.50% (k=2)

Connector Angle

Connector Angle to be used in DASY system	121.0 ° $\pm$ 1 °

Appendix (Additional assessments outside the scope of SCS0108)

1. DC Voltage Linearity

High Range	Reading (μV)	Difference (μV)	Error (%)
Channel X + Input	200039.73	3.06	0.00
Channel X + Input	20005.75	1.87	0.01
Channel X - Input	-20006.63	0.10	-0.00
Channel Y + Input	200040.44	3.89	0.00
Channel Y + Input	20002.50	-1.26	-0.01
Channel Y - Input	-20009.40	-2.57	0.01
Channel Z + Input	200042.26	5.60	0.00
Channel Z + Input	20002.80	-0.91	-0.00
Channel Z - Input	-20009.67	-2.80	0.01

Low Range	Reading (μV)	Difference (μV)	Error (%)
Channel X + Input	2000.27	0.19	0.01
Channel X + Input	199.51	-0.49	-0.24
Channel X - Input	-200.10	-0.12	0.06
Channel Y + Input	1999.75	-0.24	-0.01
Channel Y + Input	199.19	-0.66	-0.33
Channel Y - Input	-200.95	-0.99	0.49
Channel Z + Input	2000.22	0.38	0.02
Channel Z + Input	199.50	-1.33	-0.66
Channel Z - Input	-201.27	-1.23	0.61

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	5.53	4.41
	- 200	-3.35	-4.87
Channel Y	200	-3.56	-3.80
	- 200	3.14	2.36
Channel Z	200	20.99	21.07
	- 200	-24.35	-24.58

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	-	5.96	-1.54
Channel Y	200	8.46	-	7.20
Channel Z	200	8.25	6.18	-

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	15867	16258
Channel Y	15914	16000
Channel Z	15866	16245

5. Input Offset Measurement

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

Input 10M Ω

	Average (μ V)	min. Offset (μ V)	max. Offset (μ V)	Std. Deviation (μ V)
Channel X	0.23	-0.56	1.25	0.37
Channel Y	0.11	-0.69	1.02	0.34
Channel Z	-1.22	-2.26	0.20	0.41

6. Input Offset Current

Nominal input circuitry offset current on all channels: <251A

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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Multilateral Agreement for the recognition of calibration certificates.

Accreditation No.: SCS 0108

Client: **SGS-TW (Auden)**

Certificate No: **EX3-3831_Jan15**

CALIBRATION CERTIFICATE

Object: **EX3DV4 - SN:3831**

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: **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 ± 1)°C and humidity < 70%.

Calibration Equipment used (MSTE 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	05-Apr-14 (No. 217-01911)	Apr-15
Reference 3 dB Attenuator	SN: S5054 (3e)	03-Apr-14 (No. 217-01915)	Apr-15
Reference 20 dB Attenuator	SN: S5277 (20e)	03-Apr-14 (No. 217-01918)	Apr-15
Reference 30 dB Attenuator	SN: S5129 (30e)	03-Apr-14 (No. 217-01920)	Apr-15
Reference Probe ES3DV2	SN: 3813	30-Dec-14 (No. ES3-3013_Dec14)	Dec-15
DAE4	SN: 680	14-Jan-15 (No. DAE4-960_Jan15)	Jan-16
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8446C	US3842UK1790	4-Aug-10 (in house check Apr-13)	In house check: Apr-16
Network Analyzer HP 8753E	US37300585	18-Oct-11 (in house check Oct-14)	In house check: Oct-15

Calibrated by: **Jordan Kuhnle** (Name) **Laboratory Technician** (Function)  (Signature)

Approved by: **Karla Pokorski** (Name) **Technical Manager** (Function)  (Signature)

Issued: **January 29, 2015**

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Certificate No: EX3-3831_Jan15

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Accreditation No.: SCS 0108

Glossary:

TSL	tissue simulating liquid
NORM _{x,y,z}	sensitivity in free space
ConvF	sensitivity in TSL / NORM _{x,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 α	α rotation around probe axis
Polarization β	β rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., if $\beta = 0$ is normal to probe axis
Connector Angle	Information used in DASY system to align probe sensor X to the robot coordinate system

Calibration is Performed According to the Following Standards:

- IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- IEC 62209-1, "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:

- NORM_{x,y,z}: Assessed for E-field polarization $\beta = 0$ ($f \leq 900$ MHz in TEM-cell; $f > 1800$ MHz: R22 waveguide). NORM_{x,y,z} are only intermediate values, i.e., the uncertainties of NORM_{x,y,z} does not affect the E²-field uncertainty inside TSL (see below ConvF).
- NORM(f)_{x,y,z} = NORM_{x,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.
- DCP_{x,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.
- A_{x,y,z}, B_{x,y,z}, C_{x,y,z}, D_{x,y,z}; VR_{x,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 $f < 900$ 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 NORM_{x,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 NORM_x (no uncertainty required).



EX3DV4 – SN:3831

January 29, 2015

Probe EX3DV4

SN:3831

Manufactured: September 6, 2011
Calibrated: January 29, 2015

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

EX3DV4- SN:3831

January 29, 2015

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3831

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu\text{V}/(\text{V}/\text{m})^2$) ^A	0.45	0.42	0.43	$\pm 10.1 \%$
DCP (mV) ^B	99.7	101.1	100.8	

Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB $\sqrt{\mu\text{V}}$	C	D dB	VR mV	Unc ^C (k=2)
0	CW	X	0.0	0.0	1.0	0.00	152.6	$\pm 3.5 \%$
		Y	0.0	0.0	1.0		143.5	
		Z	0.0	0.0	1.0		145.4	

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 Norm X,Y,Z do not affect the E²-field uncertainty inside YSL (see Pages 5 and 6).

^B Numerical linearization parameter: uncertainty not required.

^C Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

EX3DV4- SN:3831

January 29, 2015

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3831

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^c	Relative Permittivity ^d	Conductivity (S/m) ^e	ConvF X	ConvF Y	ConvF Z	Alpha ^g	Depth ^h (mm)	Unct. (k=2)
750	41.9	0.89	9.28	9.28	9.28	0.31	0.99	± 12.0 %
835	41.5	0.90	8.95	8.95	8.95	0.28	1.17	± 12.0 %
900	41.5	0.97	8.76	8.76	8.76	0.25	1.23	± 12.0 %
1450	40.5	1.20	7.92	7.92	7.92	0.13	1.92	± 12.0 %
1750	40.1	1.37	7.75	7.75	7.75	0.32	0.89	± 12.0 %
1900	40.0	1.40	7.58	7.58	7.58	0.63	0.65	± 12.0 %
2000	40.0	1.40	7.48	7.48	7.48	0.80	0.57	± 12.0 %
2300	39.5	1.67	7.09	7.09	7.09	0.27	0.99	± 12.0 %
2450	39.2	1.80	6.81	6.81	6.81	0.51	0.68	± 12.0 %
2600	39.0	1.96	6.54	6.54	6.54	0.28	1.01	± 12.0 %
5250	35.9	4.71	4.60	4.60	4.60	0.40	1.80	± 13.1 %
5600	35.5	5.07	4.14	4.14	4.14	0.45	1.80	± 13.1 %
5750	35.4	5.22	4.41	4.41	4.41	0.45	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 ± 10 MHz.

^d 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.

^e 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.

EX3DV4- SN:3831

January 29, 2015

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3831

Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) ^c	Relative Permittivity ^e	Conductivity (S/m) ^f	ConvF X	ConvF Y	ConvF Z	Alpha ^g	Depth (mm) ^h	Unc. (k=2)
750	55.5	0.96	9.07	9.07	9.07	0.20	1.58	± 12.0 %
835	55.2	0.97	9.00	9.00	9.00	0.25	1.30	± 12.0 %
900	55.0	1.05	8.87	8.87	8.87	0.33	1.00	± 12.0 %
1450	54.0	1.30	7.68	7.68	7.68	0.19	1.44	± 12.0 %
1750	53.4	1.49	7.50	7.50	7.50	0.40	0.89	± 12.0 %
1900	53.3	1.52	7.34	7.34	7.34	0.31	1.06	± 12.0 %
2000	53.3	1.52	7.41	7.41	7.41	0.33	0.98	± 12.0 %
2300	52.9	1.81	7.08	7.08	7.08	0.40	0.89	± 12.0 %
2450	52.7	1.95	6.81	6.81	6.81	0.44	0.80	± 12.0 %
2600	52.5	2.16	6.65	6.65	6.65	0.80	0.68	± 12.0 %
5250	48.8	5.36	3.92	3.92	3.92	0.50	1.90	± 13.1 %
5600	48.5	5.77	3.49	3.49	3.49	0.55	1.90	± 13.1 %
5750	48.3	5.94	3.70	3.70	3.70	0.55	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.

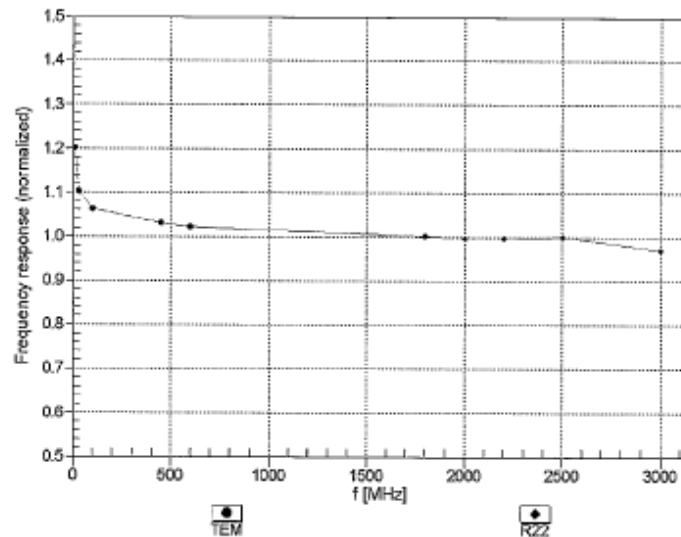
^e At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty 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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January 28, 2015

Frequency Response of E-Field (TEM-Cell:ifi110 EXX, Waveguide: R22)



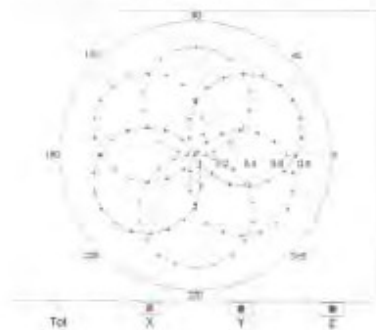
Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ ($k=2$)

EX3DV4- SN:3831

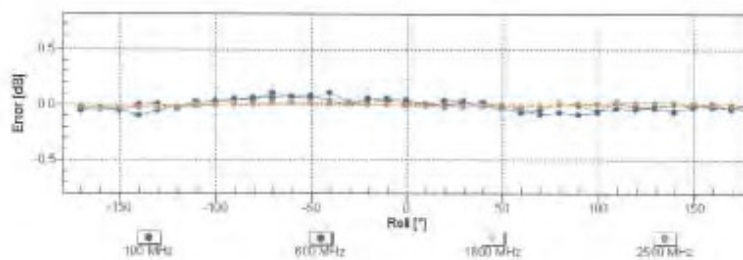
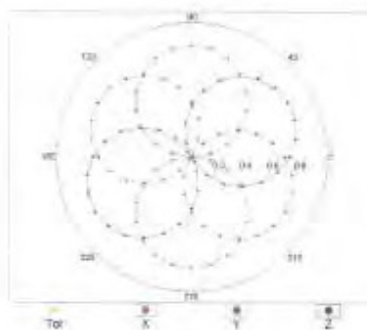
January 29, 2015

Receiving Pattern (ϕ), $\theta = 0^\circ$

f=600 MHz,TEM



f=1800 MHz,R22

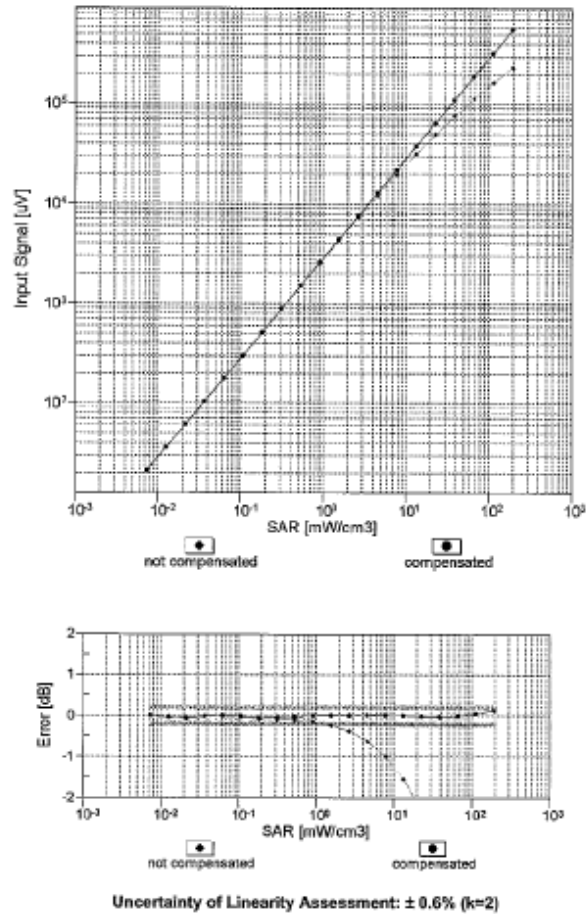


Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ (k=2)

EX3DV4- SN:3831

January 29, 2015

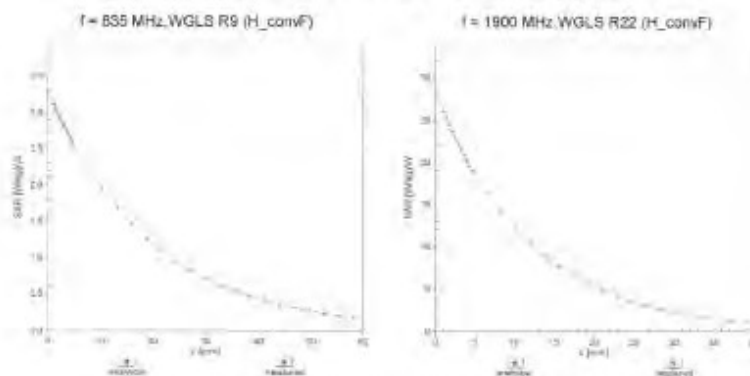
Dynamic Range $f(\text{SAR}_{\text{head}})$ (TEM cell, $f_{\text{eval}} = 1900 \text{ MHz}$)



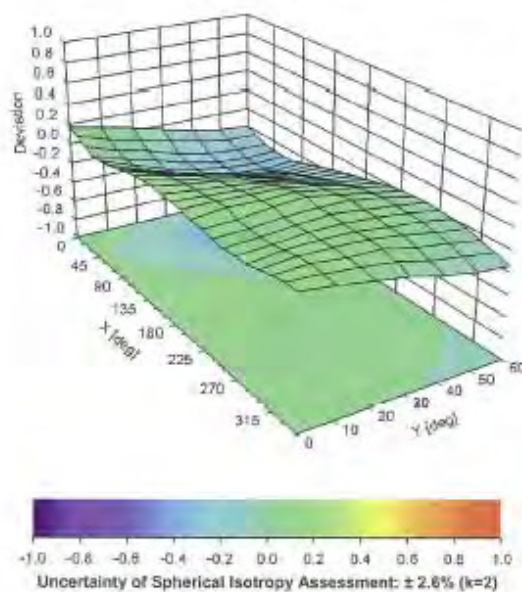
EX3DV4- SN:3831

January 29, 2015

Conversion Factor Assessment



Deviation from Isotropy in Liquid Error (ϕ , θ), $f = 900$ MHz



Certificate No: EX3-3831_Jan15

Page 10 of 11

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。

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EX3DV4- SN:3831

January 29, 2015

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3831

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	-20.5
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

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8606 Zurich, Switzerland



S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
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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 0108

Client: **SGS-TW (Auden)**

Certificate No: **EX3-3831 Jan16**

CALIBRATION CERTIFICATE

Object: **EX3DV4 - SN:3831**

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: **January 27, 2016**

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

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

Calibration Equipment used (M&T critical for calibration):

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EM419B	GB41293874	01-Apr-15 (No. 217-02128)	Mar-16
Power sensor F4412A	MY45490087	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 (20a)	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	01-Dec-15 (No. ES3-3013_Dest15)	Dec-16
DAB4	SN: 660	23-Dec-15 (No. DAB4-REC_Dec15)	Dec-16
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-16 (in house check Apr-15)	In house check: Apr-16
Network Analyzer HP 8753E	US37390595	18-Oct-01 (in house check Oct-15)	In house check: Oct-16

	Name	Function	Signature
Calibrated by:	Jean Kaciri	Laboratory Technician	
Approved by:	Krsto Polovic	Technical Manager	
Issued: January 29, 2016			

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

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8064 Zurich, Switzerland



S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Service suisse di etalunna
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Multilateral Agreement for the recognition of calibration certificates.

Accreditation No.: SCS 0108

Glossary:

TSL	tissue simulating liquid
NORM _{x,y,z}	sensitivity in free space
ConvF	sensitivity in TSL / NORM _{x,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., $\theta = 0$ is normal to probe axis
Connector Angle	information used in DASY system to align probe sensor X to the robot coordinate system

Calibration is Performed According to the Following Standards:

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

Methods Applied and Interpretation of Parameters:

- NORM_{x,y,z}: Assessed for E-field polarization $\theta = 0$ ($f < 900$ MHz in TEM-cell; $f > 1800$ MHz: R22 waveguide). NORM_{x,y,z} are only intermediate values, i.e., the uncertainties of NORM_{x,y,z} does not affect the E^2 -field uncertainty inside TSL (see below ConvF).
- NORM(f)_{x,y,z} = NORM_{x,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.
- DCP_{x,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.
- A_{x,y,z}; B_{x,y,z}; C_{x,y,z}; D_{x,y,z}; VR_{x,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 NORM_{x,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 lip (on probe axis). No tolerance required.
- Connector Angle: The angle is assessed using the information gained by determining the NORM_x (no uncertainty required).



EX3DV4 – SN:3831

January 27, 2016

Probe EX3DV4

SN:3831

Manufactured: September 6, 2011
Calibrated: January 27, 2016

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

EX3DV4- SN:3831

January 27, 2016

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3831

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu\text{V}/(\text{V}/\text{m})^{0.5}$) ^A	0.45	0.42	0.43	$\pm 10.1 \%$
DCP (mV) ^B	100.7	102.6	99.9	

Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB $\sqrt{\mu\text{V}}$	C	D dB	VR mV	Unc ^C (k=2)
0	CW	X	0.0	0.0	1.0	0.00	153.7	$\pm 3.3 \%$
		Y	0.0	0.0	1.0		139.5	
		Z	0.0	0.0	1.0		143.5	

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

^A The uncertainties of Norm X,Y,Z do not affect the E^2 -field uncertainty inside TSL (see Pages 5 and 6).

^B Numerical linearization parameter: uncertainty not required.

^C Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

EX3DV4- SN:3831

January 27, 2016

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3831

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 ^H (mm)	Unc (k=2)
750	41.9	0.89	9.38	9.38	9.38	0.23	1.35	± 12.0 %
835	41.5	0.90	8.84	8.84	8.84	0.19	1.62	± 12.0 %
900	41.5	0.97	8.77	8.77	8.77	0.20	1.51	± 12.0 %
1450	40.5	1.20	8.17	8.17	8.17	0.28	0.97	± 12.0 %
1750	40.1	1.37	7.92	7.92	7.92	0.41	0.80	± 12.0 %
1900	40.0	1.40	7.66	7.66	7.66	0.37	0.80	± 12.0 %
2000	40.0	1.40	7.61	7.61	7.61	0.32	0.80	± 12.0 %
2300	39.5	1.67	7.33	7.33	7.33	0.31	0.96	± 12.0 %
2450	39.2	1.80	6.92	6.92	6.92	0.27	1.09	± 12.0 %
2600	39.0	1.96	6.71	6.71	6.71	0.40	0.89	± 12.0 %
3500	37.9	2.91	6.41	6.41	6.41	0.42	1.03	± 13.1 %
5200	36.0	4.66	4.76	4.76	4.76	0.35	1.80	± 13.1 %
5300	35.9	4.76	4.46	4.46	4.46	0.40	1.80	± 13.1 %
5600	35.5	5.07	4.08	4.08	4.08	0.50	1.80	± 13.1 %
5800	35.3	5.27	4.10	4.10	4.10	0.50	1.80	± 13.1 %

^C Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 60 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. SP/EAG 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 distances larger than half the probe tip diameter from the boundary.

EX3DV4- SN:3831

January 27, 2016

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3831

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 (mm) ^G	Unc (%=2)
750	55.5	0.96	9.25	9.25	9.25	0.26	1.29	± 12.0 %
835	55.2	0.97	9.08	9.08	9.08	0.35	1.04	± 12.0 %
900	55.0	1.05	9.05	9.05	9.05	0.30	1.12	± 12.0 %
1750	53.4	1.49	7.74	7.74	7.74	0.27	1.01	± 12.0 %
1900	53.3	1.52	7.54	7.54	7.54	0.35	0.85	± 12.0 %
2000	53.3	1.52	7.62	7.62	7.62	0.37	0.84	± 12.0 %
2300	52.9	1.81	7.06	7.06	7.06	0.35	0.80	± 12.0 %
2450	52.7	1.95	7.05	7.05	7.05	0.34	0.80	± 12.0 %
2600	52.5	2.16	6.71	6.71	6.71	0.37	0.80	± 12.0 %
5200	49.0	5.30	4.07	4.07	4.07	0.50	1.90	± 13.1 %
5300	48.9	5.42	3.81	3.81	3.81	0.55	1.90	± 13.1 %
5600	48.5	5.77	3.47	3.47	3.47	0.55	1.90	± 13.1 %
5800	48.2	6.00	3.52	3.52	3.52	0.60	1.90	± 13.1 %

^C Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 23), 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.

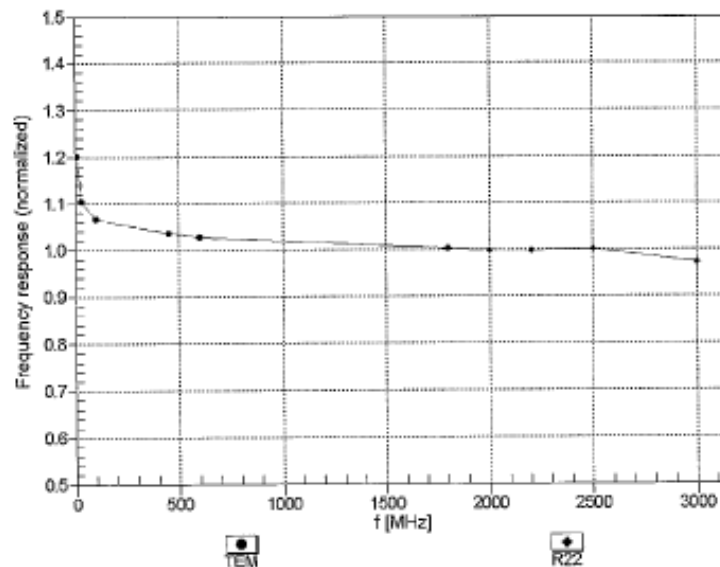
^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

^G AlphaDepth 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.

EX3DV4-SN:3831

January 27, 2016

Frequency Response of E-Field (TEM-Cell: ifl110 EXX, Waveguide: R22)

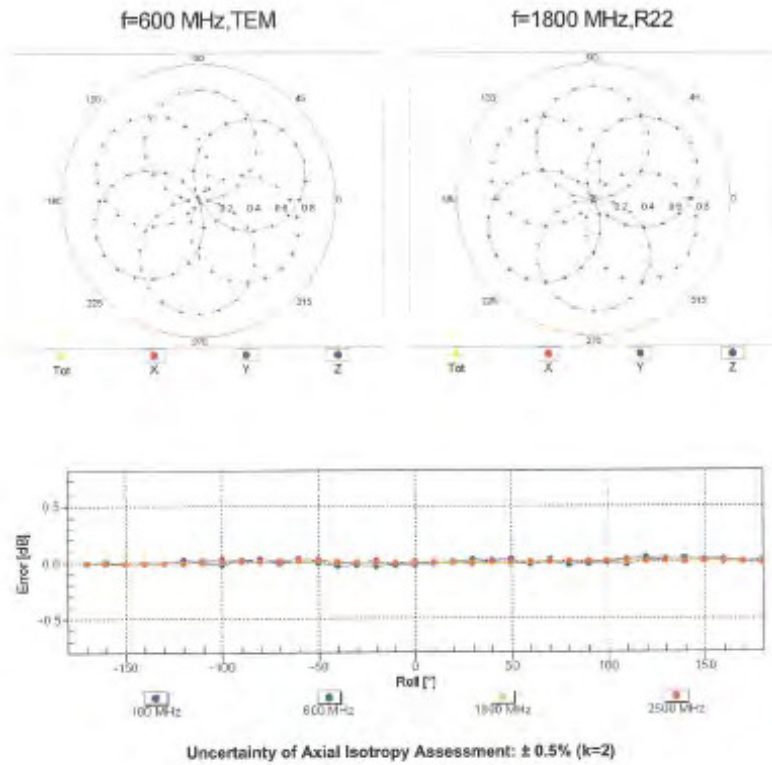


Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ (k=2)

EX3DV4- SN:3831

January 27, 2016

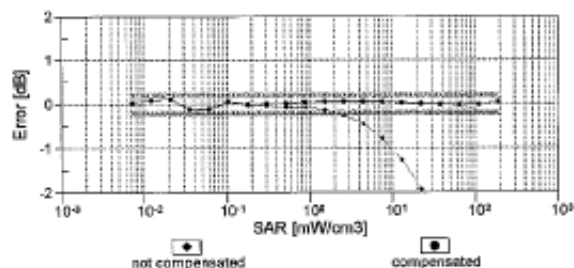
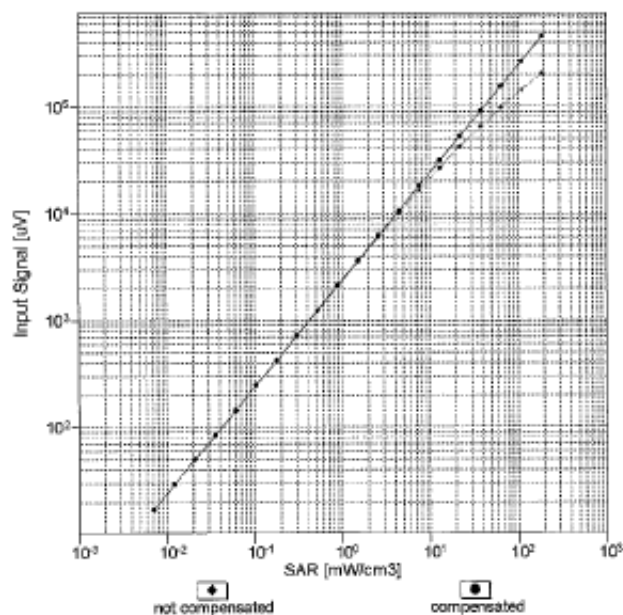
Receiving Pattern (ϕ), $\theta = 0^\circ$



EX3DV4- SN:3831

January 27, 2016

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

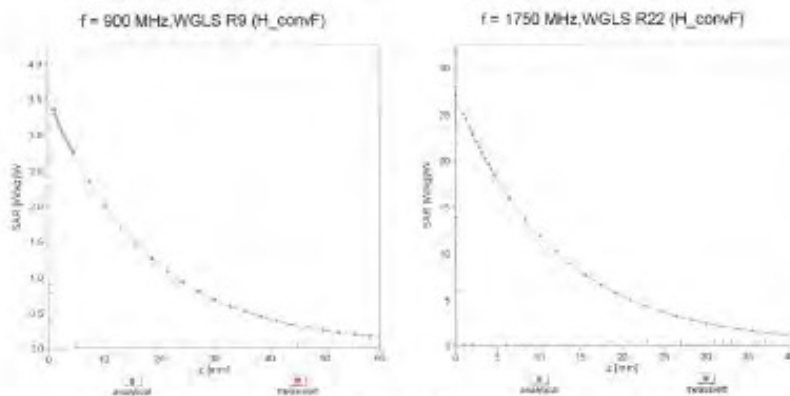


Uncertainty of Linearity Assessment: $\pm 0.6\%$ (k=2)

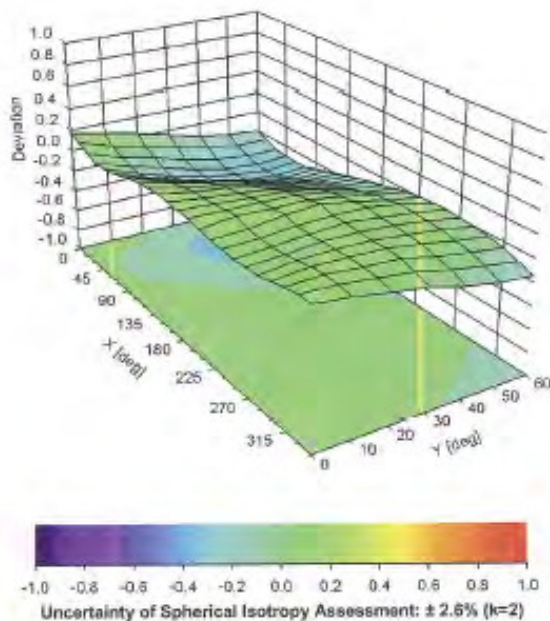
EX3DV4- SN:3831

January 27, 2016

Conversion Factor Assessment



Deviation from Isotropy in Liquid Error (ϕ , θ), $f = 900$ MHz



EX3DV4- SN:3831

January 27, 2016

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3831

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	-20.3
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	9 mm
Tip Diameter	2.5 mm
Probe Tip to Sensor X Calibration Point	1 mm
Probe Tip to Sensor Y Calibration Point	1 mm
Probe Tip to Sensor Z Calibration Point	1 mm
Recommended Measurement Distance from Surface	1.4 mm

8. Uncertainty Budget

Measurement Uncertainty evaluation template for DUT SAR test (3-6G)

A	c	D	e		f	g	$h=c * f / e$	$i=c * g / e$	k
Source of Uncertainty	Tolerance/ Uncertainty	Probability	Div	Div Value	ci (1g)	ci (10g)	Standard uncertainty	Standard uncertainty	vi, or Veff
Measurement system									
Probe calibration	6.55%	N	1	1	1	1	6.55%	6.55%	∞
Isotropy , Axial	3.50%	R	$\sqrt{3}$	1.732	1	1	2.02%	2.02%	∞
Isotropy, Hemispherical	9.60%	R	$\sqrt{3}$	1.732	1	1	5.54%	5.54%	∞
Boundary Effect	1.00%	R	$\sqrt{3}$	1.732	1	1	0.58%	0.58%	∞
Linearity	4.70%	R	$\sqrt{3}$	1.732	1	1	2.71%	2.71%	∞
Detection Limits	1.00%	R	$\sqrt{3}$	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	$\sqrt{3}$	1.732	1	1	0.46%	0.46%	∞
Integration Time	2.60%	R	$\sqrt{3}$	1.732	1	1	1.50%	1.50%	∞
Measurement drift (class A evaluation)	1.75%	R	$\sqrt{3}$	1.732	1	1	1.01%	1.01%	∞
RF ambient condition - noise	3.00%	R	$\sqrt{3}$	1.732	1	1	1.73%	1.73%	∞
RF ambient conditions - reflections	3.00%	R	$\sqrt{3}$	1.732	1	1	1.73%	1.73%	∞
Probe positioner Mechanical restrictions	0.40%	R	$\sqrt{3}$	1.732	1	1	0.23%	0.23%	∞
Probe Positioning with respect to phantom	2.90%	R	$\sqrt{3}$	1.732	1	1	1.67%	1.67%	∞
Post-processing	1.00%	R	$\sqrt{3}$	1.732	1	1	0.58%	0.58%	∞
Max SAR Eval	1.00%	R	$\sqrt{3}$	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	$\sqrt{3}$	1.732	1	1	2.89%	2.89%	∞
Phantom and Setup									
Phantom Uncertainty	4.00%	R	$\sqrt{3}$	1.732	1	1	2.31%	2.31%	∞
Deviation from reference liquid target ϵ_r (Body)	1.03%	N	1	1	0.64	0.43	0.66%	0.44%	M
Deviation from reference liquid target σ (Body)	1.00%	N	1	1	0.6	0.49	0.60%	0.49%	M
Combined standard uncertainty		RSS					11.67%	11.64%	
Expant uncertainty (95% confidence)							23.33%	23.28%	

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.
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Measurement Uncertainty evaluation template for DUT SAR test (0.3-3G)

A	c	D	e		f	g	h=c * f / e	i=c * g / e	k
Source of Uncertainty	Tolerance/ Uncertainty	Probabilit y	Div	Div Value	ci (1g)	ci (10g)	Standard uncertainty	Standard uncertainty	vi, or Veff
Measurement system									
Probe calibration	6.00%	N	1	1	1	1	6.00%	6.00%	∞
Isotropy , Axial	3.50%	R	$\sqrt{3}$	1.732	1	1	2.02%	2.02%	∞
Isotropy, Hemispherical	9.60%	R	$\sqrt{3}$	1.732	1	1	5.54%	5.54%	∞
Boundary Effect	1.00%	R	$\sqrt{3}$	1.732	1	1	0.58%	0.58%	∞
Linearity	4.70%	R	$\sqrt{3}$	1.732	1	1	2.71%	2.71%	∞
Detection Limits	1.00%	R	$\sqrt{3}$	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	$\sqrt{3}$	1.732	1	1	0.46%	0.46%	∞
Integration Time	2.60%	R	$\sqrt{3}$	1.732	1	1	1.50%	1.50%	∞
Measurement drift (class A evaluation)	1.75%	R	$\sqrt{3}$	1.732	1	1	1.01%	1.01%	∞
RF ambient condition - noise	3.00%	R	$\sqrt{3}$	1.732	1	1	1.73%	1.73%	∞
RF ambient conditions - reflections	3.00%	R	$\sqrt{3}$	1.732	1	1	1.73%	1.73%	∞
Probe positioner Mechanical restrictions	0.40%	R	$\sqrt{3}$	1.732	1	1	0.23%	0.23%	∞
Probe Positioning with respect to phantom	2.90%	R	$\sqrt{3}$	1.732	1	1	1.67%	1.67%	∞
Post-processing	1.00%	R	$\sqrt{3}$	1.732	1	1	0.58%	0.58%	∞
Max SAR Eval	1.00%	R	$\sqrt{3}$	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	$\sqrt{3}$	1.732	1	1	2.89%	2.89%	∞
Phantom and Setup									
Phantom Uncertainty	4.00%	R	$\sqrt{3}$	1.732	1	1	2.31%	2.31%	∞
Deviation from reference liquid target ϵ' (Body)	3.65%	N	1	1	0.64	0.43	2.34%	1.57%	M
Deviation from reference liquid target σ (Body)	3.85%	N	1	1	0.6	0.49	2.31%	1.89%	M
Combined standard uncertainty		RSS					11.80%	11.58%	
Expant uncertainty (95% confidence)							23.60%	23.17%	

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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 Zurich 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'S CAD File (*)	First article, Samples
Material thickness of shell	Compliant with the requirements according to the standards	2mm $\pm$ 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 $\pm$ 0.2mm at ERP	First article, All items
Material parameters	Dielectric parameters for required frequencies	300 MHz – 6 GHz: Relative permittivity $\leq$ 5. Loss tangent $\leq$ 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.	DEGMRE 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	$\leq$ 1% typical $\leq$ 0.6% if filled with 155mm of HSL900 and without OUT 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'S 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

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Doc No: S&P – QD 000 P40 C – 0

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10. System Validation from Original Equipment Supplier

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Accreditation No.: **SCS 0108**

Client **SGS-TW (Auden)**

Certificate No: **D750V3-1015_Aug15**

CALIBRATION CERTIFICATE

Object **D750V3 - SN: 1015**

Calibration procedure(s) **QA CAL-05.v9**
Calibration procedure for dipole validation kits above 700 MHz

Calibration date: **August 24, 2015**

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	07-Oct-14 (No. 217-02020)	Oct-15
Power sensor HP 8481A	US37292783	07-Oct-14 (No. 217-02020)	Oct-15
Power sensor HP 8481A	MY41092317	07-Oct-14 (No. 217-02021)	Oct-15
Reference 20 dB Attenuator	SN: 5058 (20k)	01-Apr-15 (No. 217-02131)	Mar-16
Type-N mismatch combination	SN: 5047.2 / 06327	01-Apr-15 (No. 217-02134)	Mar-16
Reference Probe ES3DV3	SN: 3205	30-Dec-14 (No. ES3-3205_Dec14)	Dec-15
DAE4	SN: 801	17-Aug-15 (No. DAE4-801_Aug15)	Aug-16
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator NSG GMT-06	100005	04-Aug-09 (in house check Oct-13)	In house check: Oct-16
Network Analyzer HP 8753E	US37590585 S4206	18-Oct-01 (in house check Oct-14)	In house check: Oct-16

Calibrated by: **Name: Michael Weber** **Function: Laboratory Technician**

Signature



Approved by: **Katja Pokucic** **Technical Manager**



Issued: August 24, 2015

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

Certificate No: D750V3-1015_Aug15

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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 0108

Glossary:

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

- DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

Measurement Conditions

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

DASY Version	DASY5	V52.8.8
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	750 MHz $\pm$ 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 $\pm$ 0.2) °C	42.1 $\pm$ 6 %	0.91 mho/m $\pm$ 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.07 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	8.15 W/kg $\pm$ 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.35 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	5.33 W/kg $\pm$ 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 $\pm$ 0.2) °C	56.3 $\pm$ 6 %	1.00 mho/m $\pm$ 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	2.19 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	8.52 W/kg $\pm$ 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.44 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	5.63 W/kg $\pm$ 16.5 % (k=2)

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	52.2 Ω - 1.1 j Ω
Return Loss	- 32.5 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	48.5 Ω - 2.4 j Ω
Return Loss	- 30.9 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.036 ns

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

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the 'Measurement Conditions' paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	March 22, 2010

DASY5 Validation Report for Head TSL

Date: 21.08.2015

Test Laboratory: SPEAG, Zurich, Switzerland

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

Communication System: UID 0 - CW; Frequency: 750 MHz

Medium parameters used: $f = 750$ MHz; $\sigma = 0.91$ S/m; $\epsilon_r = 42.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.44, 6.44, 6.44); Calibrated: 30.12.2014;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 17.08.2015
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

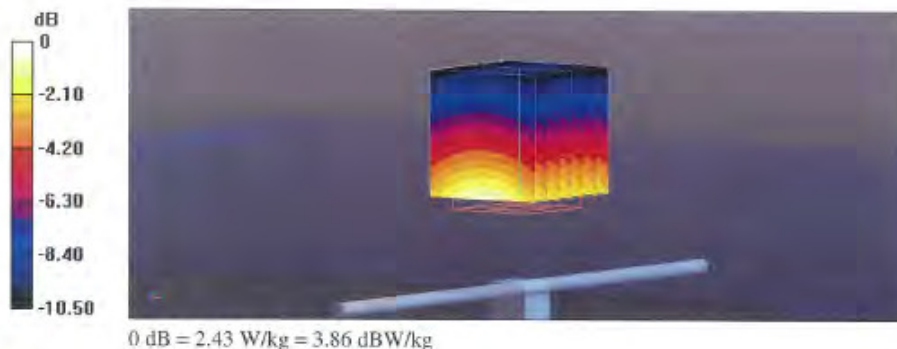
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 53.39 V/m; Power Drift = 0.01 dB

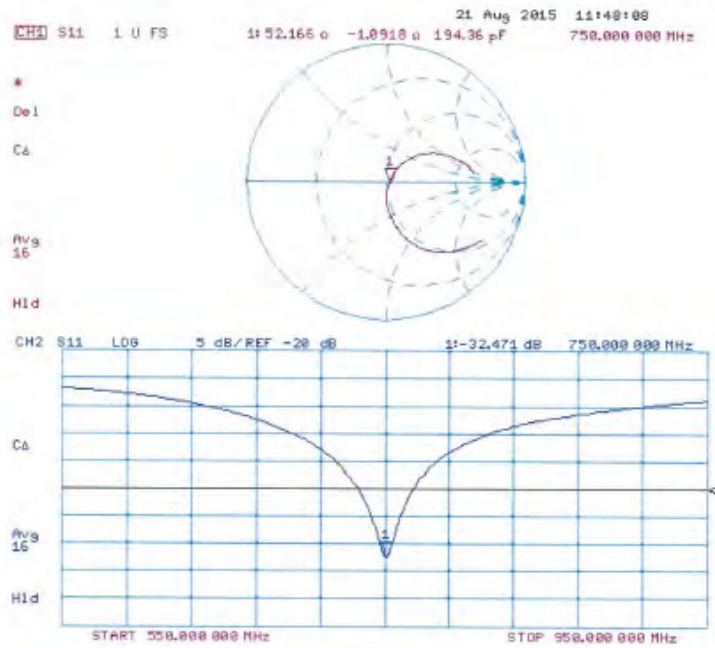
Peak SAR (extrapolated) = 3.07 W/kg

SAR(1 g) = 2.07 W/kg; SAR(10 g) = 1.35 W/kg

Maximum value of SAR (measured) = 2.43 W/kg



Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 24.08.2015

Test Laboratory: SPEAG, Zurich, Switzerland

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

Communication System: UID 0 - CW; Frequency: 750 MHz

Medium parameters used: $f = 750 \text{ MHz}$; $\sigma = 1 \text{ S/m}$; $\epsilon_r = 56.3$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.21, 6.21, 6.21); Calibrated: 30.12.2014;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 17.08.2015
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Dipole Calibration for Body Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

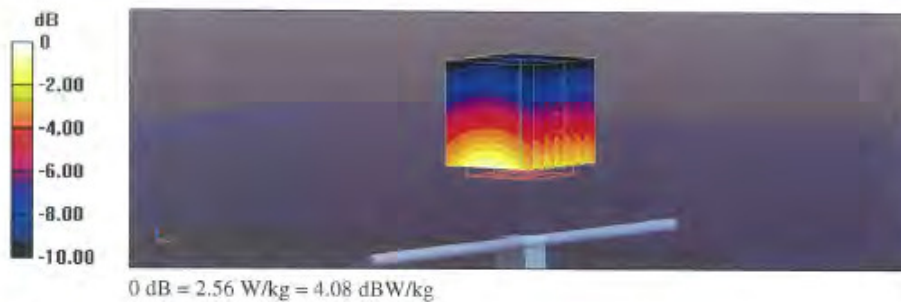
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 52.22 V/m; Power Drift = 0.02 dB

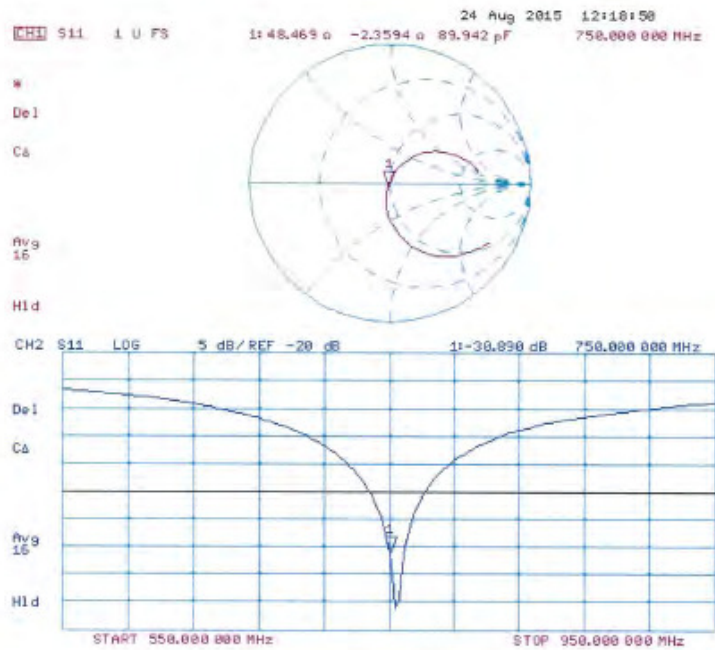
Peak SAR (extrapolated) = 3.19 W/kg

SAR(1 g) = 2.19 W/kg; SAR(10 g) = 1.44 W/kg

Maximum value of SAR (measured) = 2.56 W/kg



Impedance Measurement Plot for Body TSL



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Accreditation No.: **SCS 0108**

Client **SGS-TW (Auden)**

Certificate No: **D835V2-4d063_Aug15**

CALIBRATION CERTIFICATE

Object **D835V2 - SN: 4d063**

Calibration procedure(s) **QA CAL-05.v9
Calibration procedure for dipole validation kits above 700 MHz**

Calibration date: **August 24, 2015**

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	07-Oct-14 (No. 217-02020)	Oct-15
Power sensor HP 8481A	US37292783	07-Oct-14 (No. 217-02020)	Oct-15
Power sensor HP 8481A	MY41092317	07-Oct-14 (No. 217-02021)	Oct-15
Reference 20 dB Attenuator	SN: 5058 (20k)	01-Apr-15 (No. 217-02131)	Mar-16
Type-N mismatch combination	SN: 5047.2 / 06327	01-Apr-15 (No. 217-02134)	Mar-16
Reference Probe ES3DV3	SN: 3205	30-Dec-14 (No. ES3-3205_Dec14)	Dec-15
DAE4	SN: 601	17-Aug-15 (No. DAE4-601_Aug15)	Aug-16
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator R&S SMT-06	100005	04-Aug-99 (in house check Oct-13)	In house check: Oct-15
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-14)	In house check: Oct-15

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

Issued: August 25, 2015

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Certificate No: **D835V2-4d063_Aug15**

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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:

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

Additional Documentation:

- DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

Measurement Conditions

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

DASY Version	DASY5	V52.8.8
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	835 MHz $\pm$ 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 $\pm$ 0.2) °C	41.9 $\pm$ 6 %	0.93 mho/m $\pm$ 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.33 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	9.11 W/kg $\pm$ 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.52 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	5.97 W/kg $\pm$ 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 $\pm$ 0.2) °C	56.1 $\pm$ 6 %	1.02 mho/m $\pm$ 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	2.40 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	9.28 W/kg $\pm$ 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.57 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	6.11 W/kg $\pm$ 16.5 % (k=2)

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	51.3 Ω - 1.7 j Ω
Return Loss	- 33.4 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	47.9 Ω - 2.7 j Ω
Return Loss	- 29.1 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.394 ns

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

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	November 27, 2006

DASY5 Validation Report for Head TSL

Date: 21.08.2015

Test Laboratory: SPEAG, Zurich, Switzerland

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

Communication System: UID 0 - CW; Frequency: 835 MHz

Medium parameters used: $f = 835$ MHz; $\sigma = 0.93$ S/m; $\epsilon_r = 41.9$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.2, 6.2, 6.2); Calibrated: 30.12.2014;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 17.08.2015
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

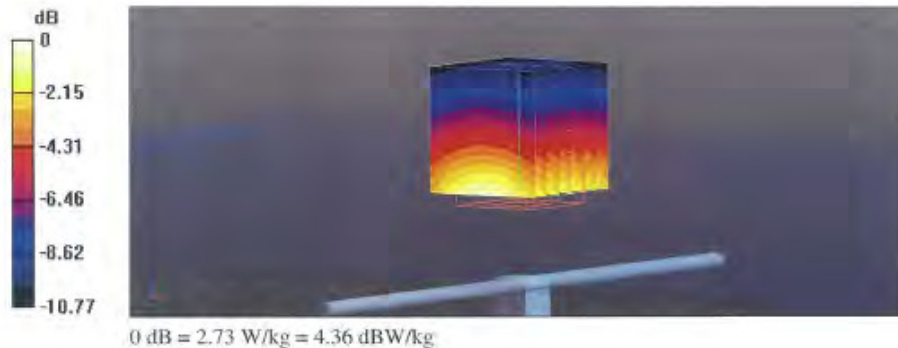
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 55.92 V/m; Power Drift = -0.02 dB

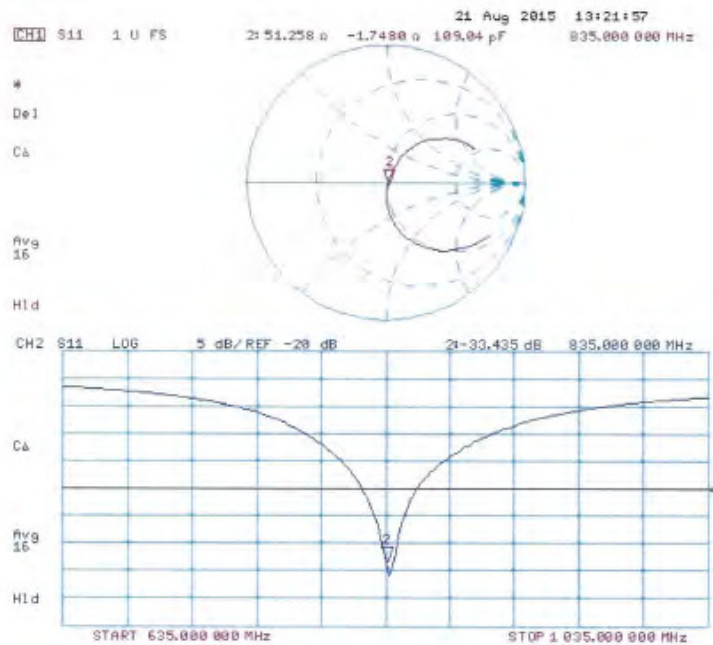
Peak SAR (extrapolated) = 3.44 W/kg

SAR(1 g) = 2.33 W/kg; SAR(10 g) = 1.52 W/kg

Maximum value of SAR (measured) = 2.73 W/kg



Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 24.08.2015

Test Laboratory: SPEAG, Zurich, Switzerland

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

Communication System: UID 0 - CW; Frequency: 835 MHz

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 1.02 \text{ S/m}$; $\epsilon_r = 56.1$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.17, 6.17, 6.17); Calibrated: 30.12.2014;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 17.08.2015
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Dipole Calibration for Body Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

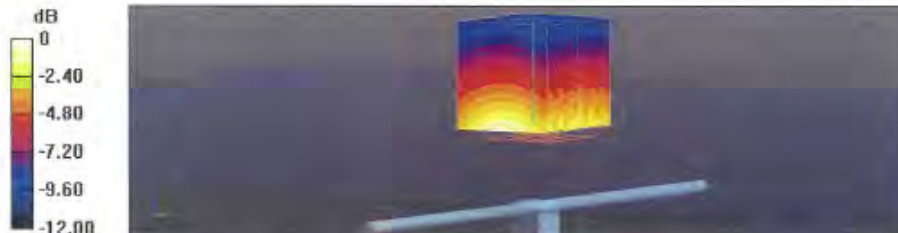
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 54.07 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 3.52 W/kg

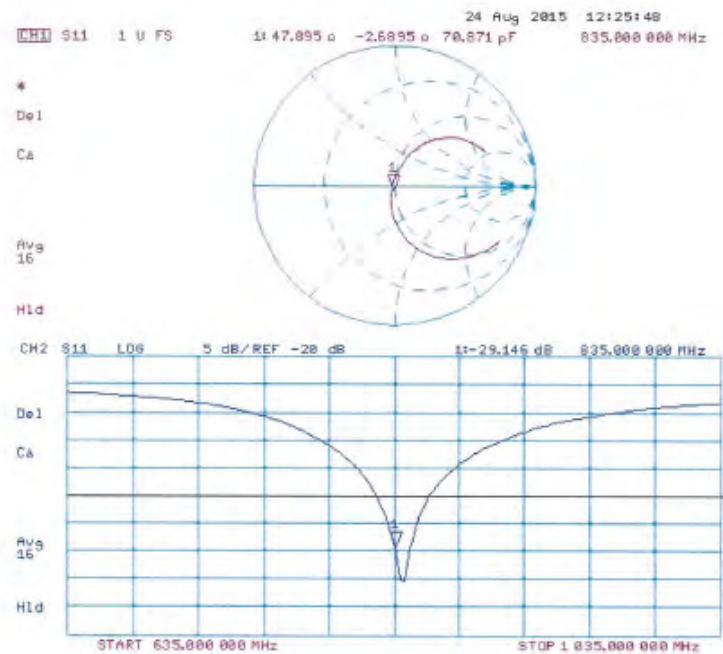
SAR(1 g) = 2.4 W/kg; SAR(10 g) = 1.57 W/kg

Maximum value of SAR (measured) = 2.81 W/kg



0 dB = 2.81 W/kg = 4.49 dBW/kg

Impedance Measurement Plot for Body TSL



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Accreditation No.: **SCS 0108**

Client: **SGS-TW (Auden)**

Certificate No: **D1750V2-1008_Aug15**

CALIBRATION CERTIFICATE

Object: **D1750V2 - SN: 1008**

Calibration procedure(s): **QA CAL-05.v9**
Calibration procedure for dipole validation kits above 700 MHz

Calibration date: **August 20, 2015**

This calibration certificate documents the traceability to national standards, which realizes 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 ($22 \pm 3^\circ\text{C}$) 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 8461A	US37292783	07-Oct-14 (No. 217-02020)	Oct-15
Power sensor HP 8461A	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. ESS-3205_Dec14)	Dec-15
DAE4	SN: 601	17-Aug-15 (No. DAE4-601_Aug15)	Aug-16
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator R&S SMT-06	100006	04-Aug-15 (in house check Oct-13)	In house check: Oct-15
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-14)	In house check: Oct-15

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

Issued: August 21, 2015

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Certificate No: **D1750V2-1008_Aug15**

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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:

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

Additional Documentation:

- DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

Measurement Conditions

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

DASY Version	DASY5	V52.8.8
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1750 MHz $\pm$ 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 $\pm$ 0.2) °C	39.8 $\pm$ 6 %	1.36 mho/m $\pm$ 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	9.12 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	36.6 W/kg $\pm$ 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	4.85 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	19.4 W/kg $\pm$ 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 $\pm$ 0.2) °C	52.1 $\pm$ 6 %	1.48 mho/m $\pm$ 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	9.36 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	37.4 W/kg $\pm$ 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	5.05 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	20.2 W/kg $\pm$ 16.5 % (k=2)

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	$50.5 \Omega + 1.1 j\Omega$
Return Loss	- 38.7 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	$46.9 \Omega + 1.0 j\Omega$
Return Loss	- 29.5 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.221 ns

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

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	February 11, 2009

DASY5 Validation Report for Head TSL

Date: 20.08.2015

Test Laboratory: SPEAG, Zurich, Switzerland

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

Communication System: UID 0 - CW; Frequency: 1750 MHz

Medium parameters used: $f = 1750$ MHz; $\sigma = 1.36$ S/m; $\epsilon_r = 39.8$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(5.2, 5.2, 5.2); Calibrated: 30.12.2014;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 17.08.2015
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

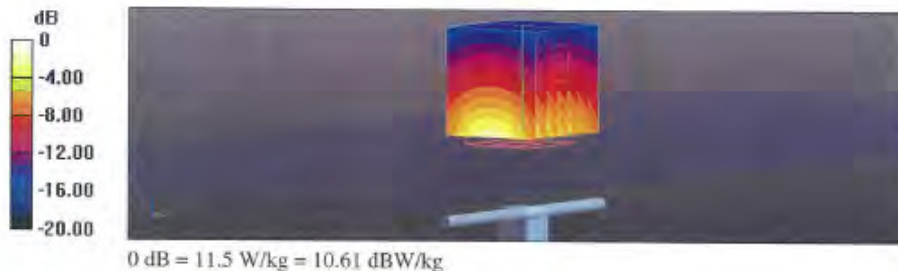
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 95.15 V/m; Power Drift = 0.04 dB

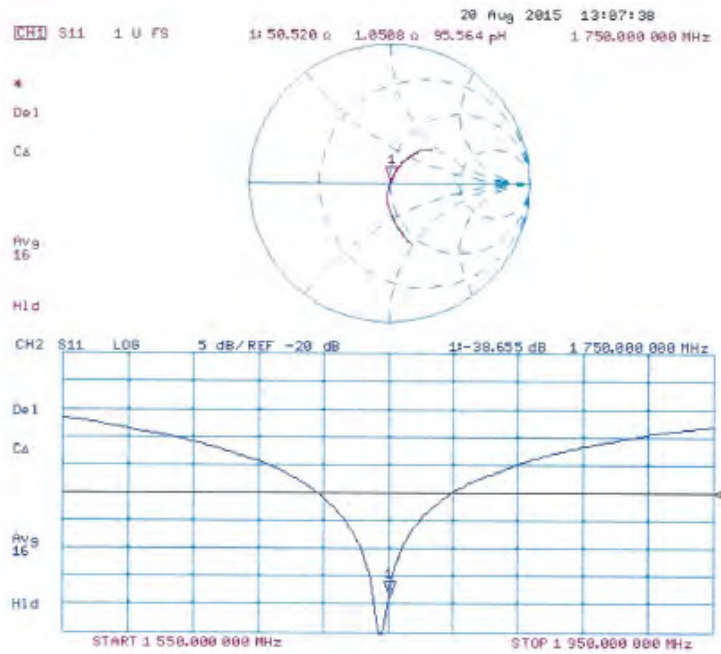
Peak SAR (extrapolated) = 16.3 W/kg

SAR(1 g) = 9.12 W/kg; SAR(10 g) = 4.85 W/kg

Maximum value of SAR (measured) = 11.5 W/kg



Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 20.08.2015

Test Laboratory: SPEAG, Zurich, Switzerland

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

Communication System: UID 0 - CW; Frequency: 1750 MHz

Medium parameters used: $f = 1750$ MHz; $\sigma = 1.48$ S/m; $\epsilon_r = 52.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.88, 4.88, 4.88); Calibrated: 30.12.2014;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 17.08.2015
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

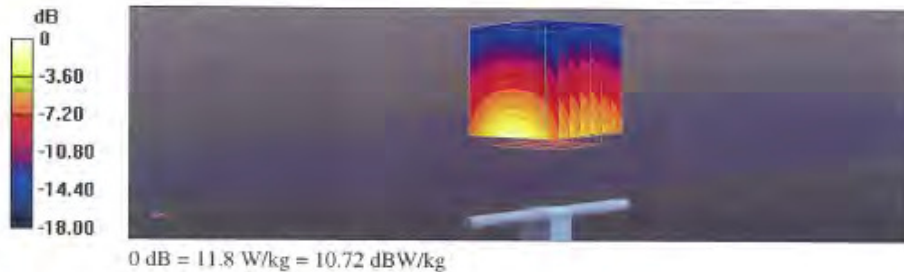
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 93.12 V/m; Power Drift = 0.01 dB

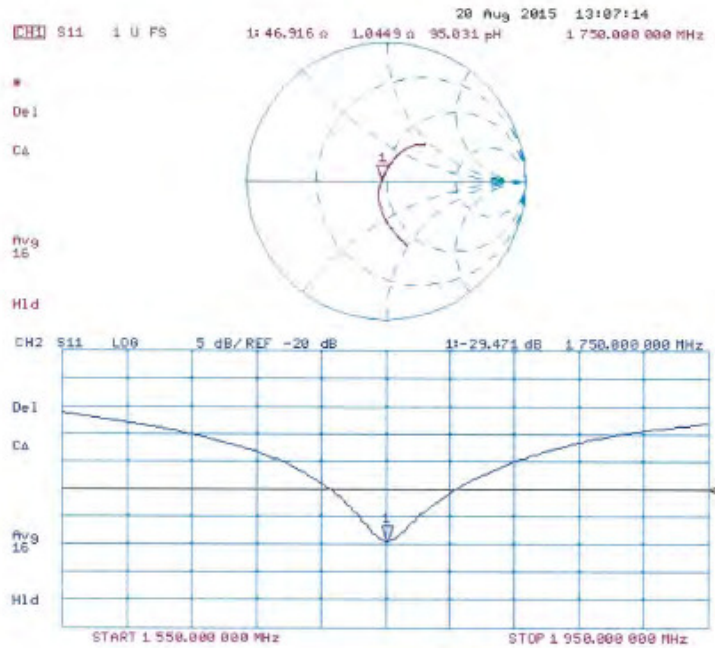
Peak SAR (extrapolated) = 16.1 W/kg

SAR(1 g) = 9.36 W/kg; SAR(10 g) = 5.05 W/kg

Maximum value of SAR (measured) = 11.8 W/kg



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 S4205	18-Oct-01 (in house check Oct-14)	In house check: Oct-15

Calibrated by: **Claudio Leubler** **Laboratory Technician**

Signature

Approved by: **Katja Pokovic** **Technical Manager**

Issued: April 29, 2015

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Certificate No: **D1900V2-5d027_Apr15**

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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:

- IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- IEC 62209-1, "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
- KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

- DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

Measurement Conditions

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

DASY Version	DASY5	V52.8.8
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1900 MHz $\pm$ 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 $\pm$ 0.2) °C	38.6 $\pm$ 6 %	1.37 mho/m $\pm$ 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 $\pm$ 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 $\pm$ 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 $\pm$ 0.2) °C	52.8 $\pm$ 6 %	1.50 mho/m $\pm$ 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 $\pm$ 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 $\pm$ 16.5 % (k=2)

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	$50.2 \Omega + 2.5 j\Omega$
Return Loss	- 32.2 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	$46.5 \Omega + 2.5 j\Omega$
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

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; $\epsilon_r = 38.6$; $\rho = 1000$ kg/m³

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:

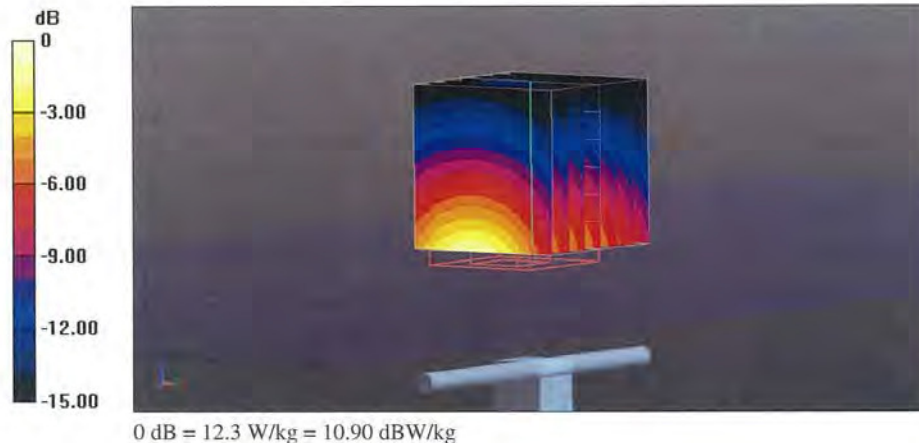
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 97.71 V/m; Power Drift = 0.03 dB

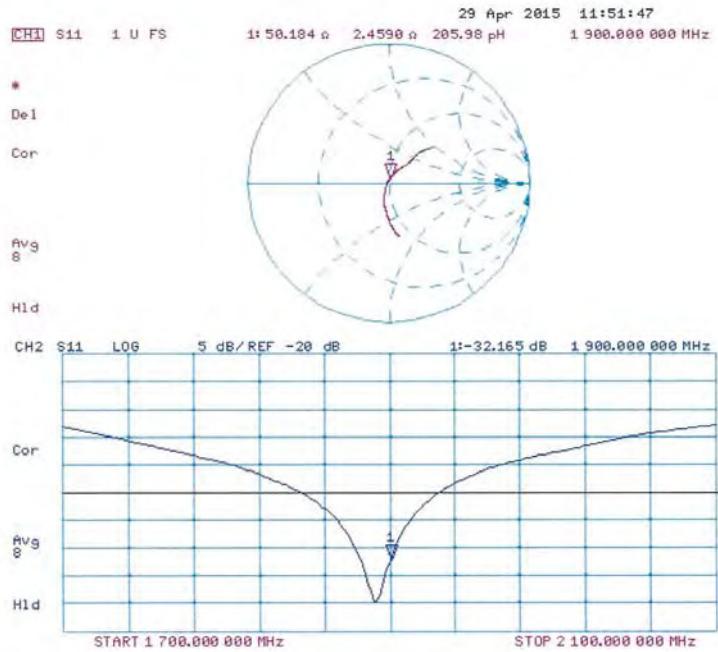
Peak SAR (extrapolated) = 18.5 W/kg

SAR(1 g) = 10.1 W/kg; SAR(10 g) = 5.3 W/kg

Maximum value of SAR (measured) = 12.3 W/kg



Impedance Measurement Plot for Head TSL



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; $\sigma = 1.5$ S/m; $\epsilon_r = 52.8$; $\rho = 1000$ kg/m³

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:

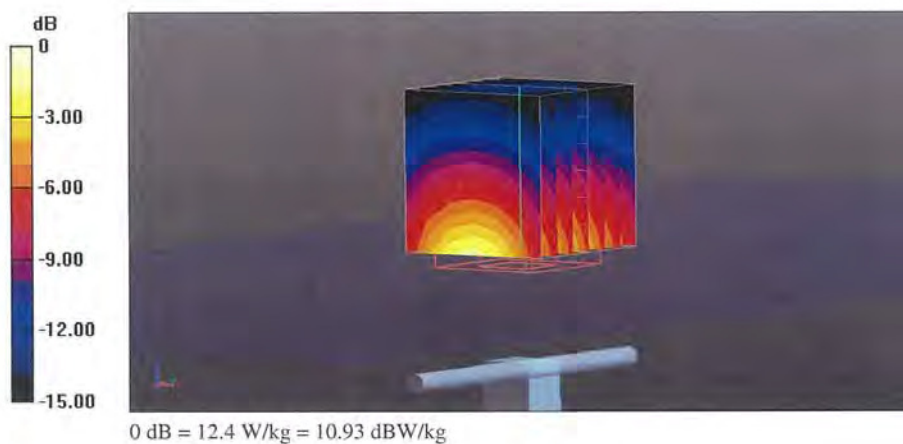
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 94.63 V/m; Power Drift = 0.06 dB

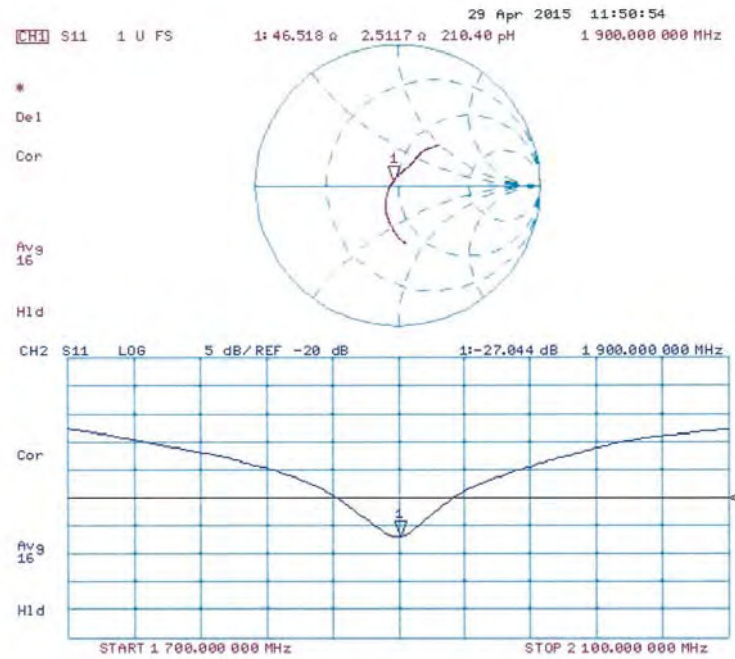
Peak SAR (extrapolated) = 16.7 W/kg

SAR(1 g) = 9.78 W/kg; SAR(10 g) = 5.2 W/kg

Maximum value of SAR (measured) = 12.4 W/kg



Impedance Measurement Plot for Body TSL



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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 $(22 \pm 3)^{\circ}\text{C}$ 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

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

Issued: April 23, 2015

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

Certificate No: D2450V2-727_Apr15

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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:

- IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- IEC 62209-1, "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
- KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

- DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

Measurement Conditions

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

DASY Version	DASY5	V52.8.8
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	2450 MHz $\pm$ 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 $\pm$ 0.2) °C	37.6 $\pm$ 6 %	1.82 mho/m $\pm$ 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 $\pm$ 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 $\pm$ 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 $\pm$ 0.2) °C	50.6 $\pm$ 6 %	2.02 mho/m $\pm$ 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 $\pm$ 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 $\pm$ 16.5 % (k=2)

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	56.2 Ω + 1.3 j Ω
Return Loss	- 24.6 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	51.8 Ω + 3.3 j Ω
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

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; $\sigma = 1.82$ S/m; $\epsilon_r = 37.6$; $\rho = 1000$ kg/m³

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(1222); SEMCAD X 14.6.10(7331)

Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

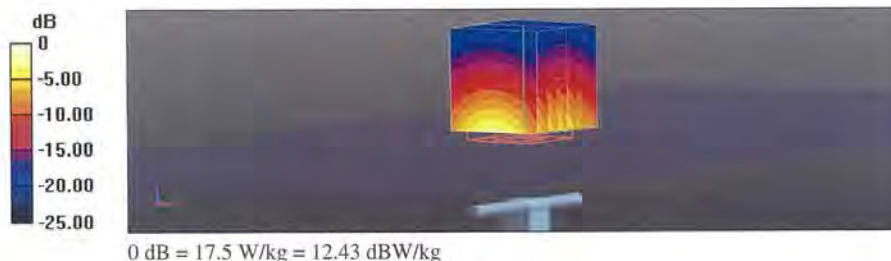
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 101.5 V/m; Power Drift = 0.01 dB

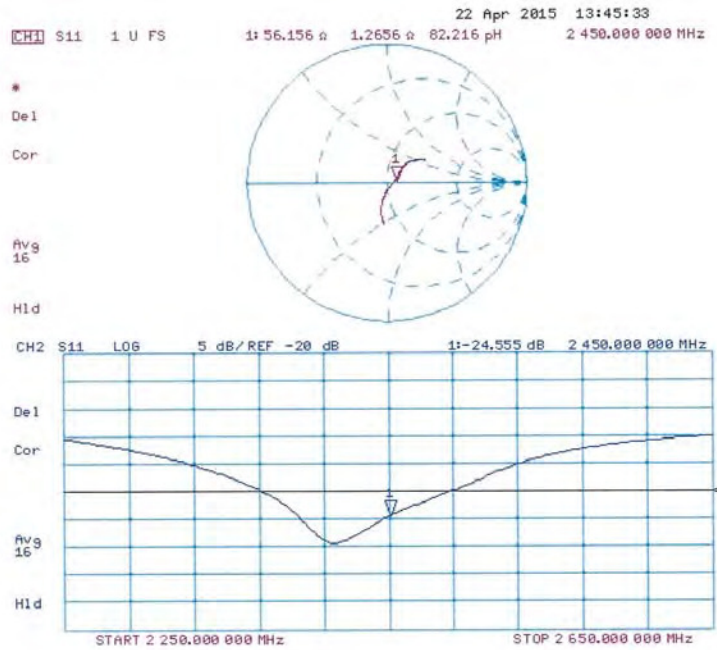
Peak SAR (extrapolated) = 27.4 W/kg

SAR(1 g) = 13.2 W/kg; SAR(10 g) = 6.1 W/kg

Maximum value of SAR (measured) = 17.5 W/kg



Impedance Measurement Plot for Head TSL



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; $\epsilon_r = 50.6$; $\rho = 1000$ kg/m³

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:

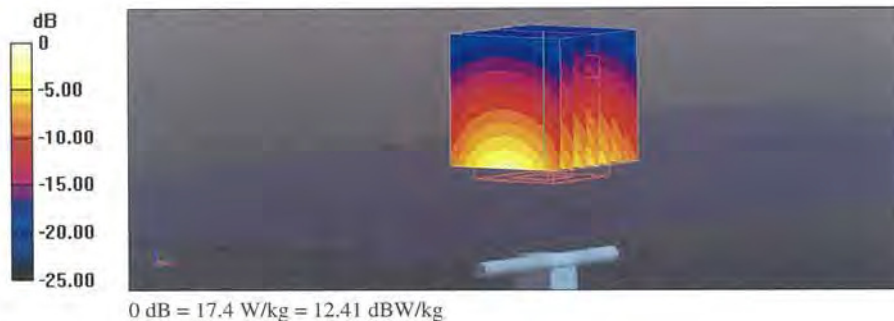
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 95.54 V/m; Power Drift = -0.01 dB

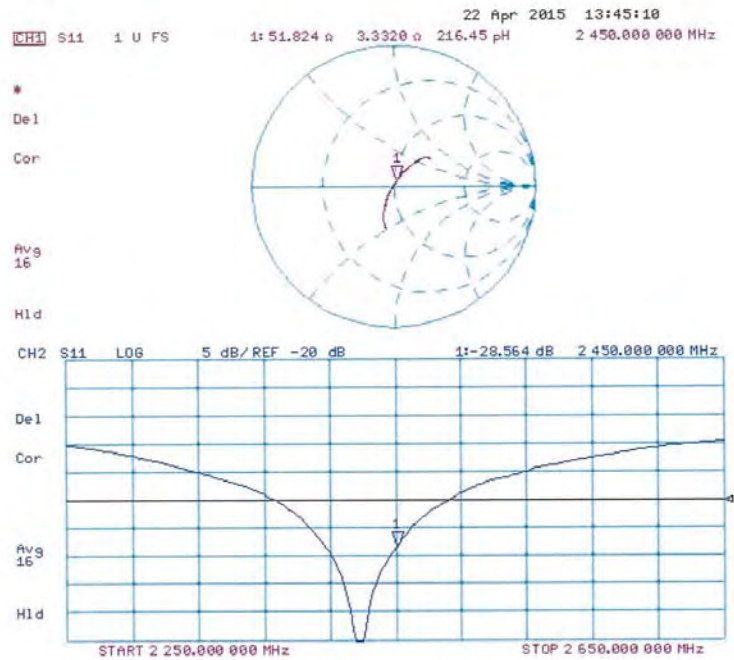
Peak SAR (extrapolated) = 27.2 W/kg

SAR(1 g) = 13.1 W/kg; SAR(10 g) = 6.1 W/kg

Maximum value of SAR (measured) = 17.4 W/kg



Impedance Measurement Plot for Body TSL



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Accreditation No.: **SCS 0108**

Client **SGS-TW (Auden)**

Certificate No: **D2600V2-1005_Jan15**

CALIBRATION CERTIFICATE

Object **D2600V2 - SN: 1005**

Calibration procedure(s) **QA CAL-05 v9
Calibration procedure for dipole validation kits above 700 MHz**

Calibration date: **January 27, 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&E critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB07460794	07-Oct-14 (No. 217-02020)	Oct-15
Power sensor HP 8481A	US37292782	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. 217-01916)	Apr-15
Type-N mismatch combination	SN: 5047.2 / 06327	03-Apr-14 (No. 217-01921)	Apr-15
Reference Probe ES30V3	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
HF generator H&S SM1-40	100005	08-Aug-14 (in house check Oct-13)	In house check Oct-14
Network Analyzer HP 8753E	US37390535 S4206	18-Oct-01 (in house check Oct-14)	In house check Oct-15

Calibrated by: **Marie** **Claudia Loulier** Function: **Laboratory Technician**

Approved by: **Katja Pokovic** Technical Manager

Issued: **January 27, 2015**

Certificate No: **D2600V2-1005_Jan15**

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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:

- IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- IEC 62209-1, "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
- KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

- DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

Measurement Conditions

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

DASY Version	DASY5	V52.8.8
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	$\Delta x, \Delta y, \Delta z = 5 \text{ mm}$	
Frequency	2600 MHz $\pm 1 \text{ MHz}$	

Head TSL parameters

The following parameters and calculations were applied:

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	39.0	1.95 mho/m
Measured Head TSL parameters	(22.0 $\pm$ 0.2) °C	38.6 $\pm$ 6 %	2.05 mho/m $\pm$ 6 %
Head TSL temperature change during test	< 0.5 °C	—	—

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	14.5 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	56.6 W/kg $\pm$ 17.0 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Head TSL	Condition	
SAR measured	250 mW input power	6.42 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	25.4 W/kg $\pm$ 16.5 % (k=2)

Body TSL parameters

The following parameters and calculations were applied:

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	52.5	2.16 mho/m
Measured Body TSL parameters	(22.0 $\pm$ 0.2) °C	51.1 $\pm$ 6 %	2.21 mho/m $\pm$ 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	14.0 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	55.1 W/kg $\pm$ 17.0 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Body TSL	Condition	
SAR measured	250 mW input power	6.20 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	24.6 W/kg $\pm$ 16.5 % (k=2)

Appendix (Additional assessments outside the scope of SCS0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	-40,4 Ω - 3,3 $\mu\Omega$
Return Loss	-26,3 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	-46,8 Ω - 2,5 $\mu\Omega$
Return Loss	-27,6 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1,154 ns

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

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	December 23, 2006

DASY5 Validation Report for Head TSL

Date: 27.01.2015

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2 - SN: 1005

Communication System: UID 0 - CW; Frequency: 2600 MHz

Medium parameters used: $f = 2600$ MHz; $\sigma = 2.05$ S/m; $\epsilon_r = 38.8$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.49, 4.49, 4.49); 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:

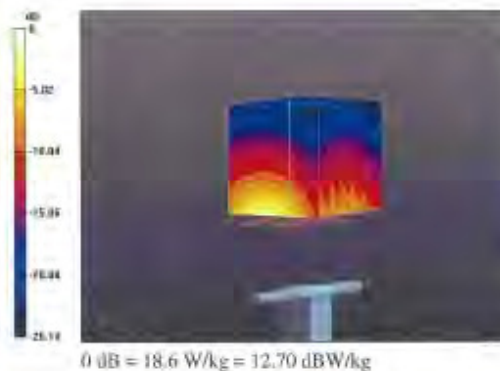
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 98.94 V/m; Power Drift = 0.09 dB

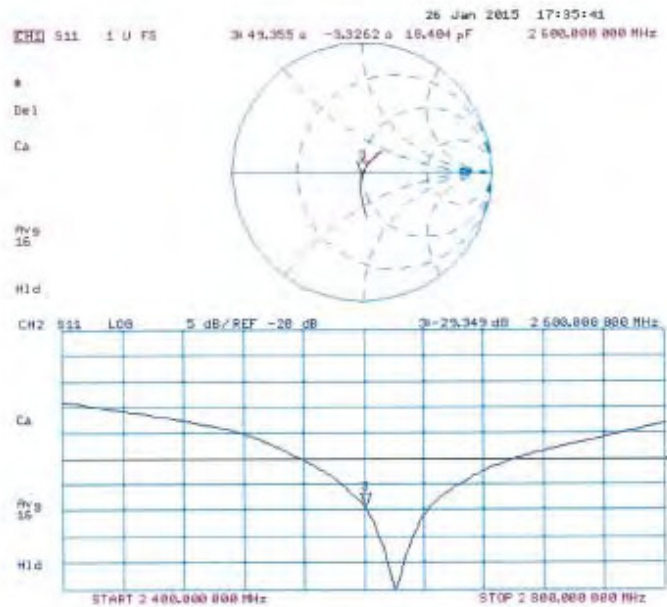
Peak SAR (extrapolated) = 30.6 W/kg

SAR(1 g) = 14.5 W/kg; SAR(10 g) = 6.42 W/kg

Maximum value of SAR (measured) = 18.6 W/kg



Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 27.01.2015

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2 - SN: 1005

Communication System: UID 0 - CW; Frequency: 2600 MHz

Medium parameters used: $f = 2600$ MHz; $\sigma = 2.21$ S/m; $\epsilon_r = 51.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.13, 4.13, 4.13); 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/ $P_{in}=250$ mW, $d=10$ mm/Zoom Scan (7x7x7)/Cube 0:

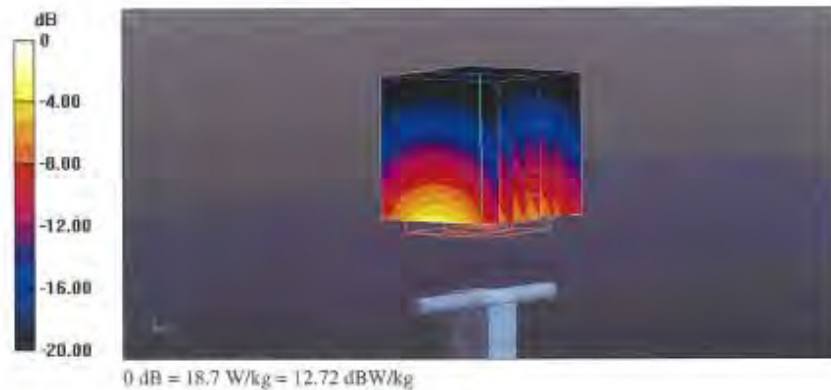
Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 96.04 V/m; Power Drift = 0.02 dB

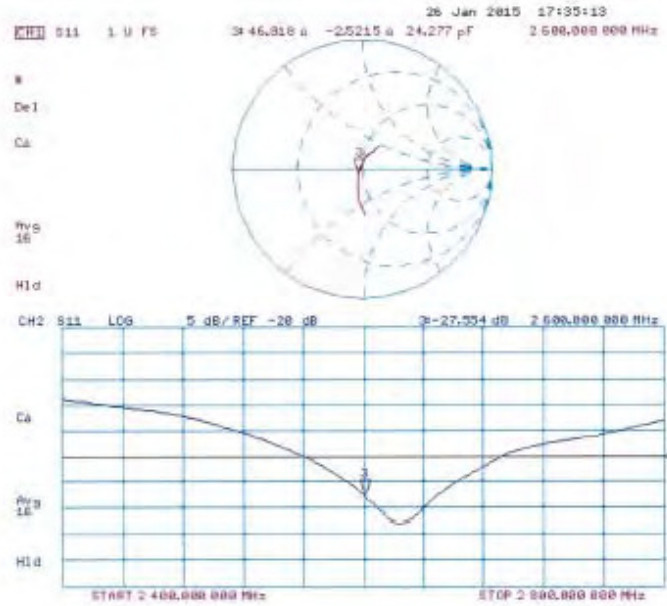
Peak SAR (extrapolated) = 29.6 W/kg

SAR(1 g) = 14 W/kg; SAR(10 g) = 6.2 W/kg

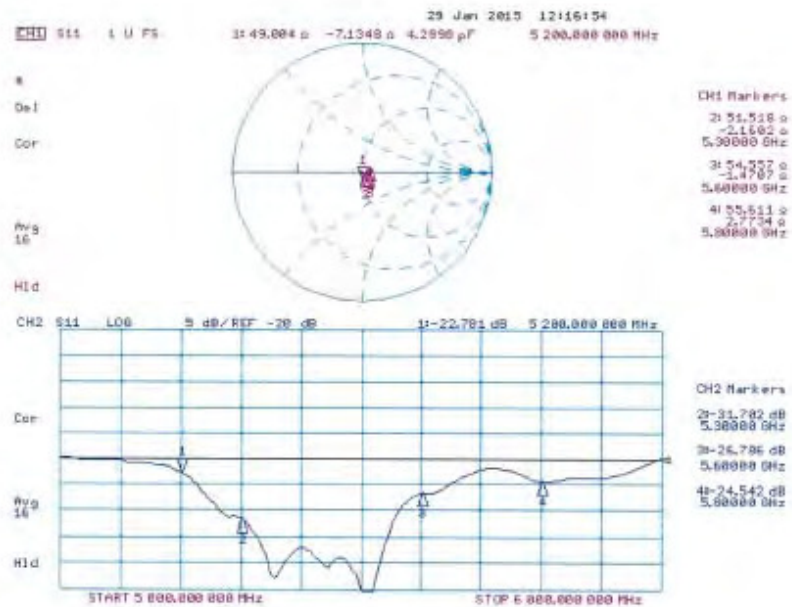
Maximum value of SAR (measured) = 18.7 W/kg



Impedance Measurement Plot for Body TSL



Impedance Measurement Plot for Body TSL



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Accreditation No.: **SCS 0108**

Client **SGS-TW (Auden)**

Certificate No: **D5GHzV2-1023_Jan16**

CALIBRATION CERTIFICATE

Object **D5GHzV2 - SN: 1023**

Calibration procedure(s) **QA CAL-22.v2
Calibration procedure for dipole validation kits between 3-6 GHz**

Calibration date: **January 26, 2016**

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	07-Oct-15 (No. 217-02222)	Oct-16
Power sensor HP 8481A	US37292785	07-Oct-15 (No. 217-02222)	Oct-16
Power sensor HP 8481A	MY41092317	07-Oct-15 (No. 217-02222)	Oct-16
Reference 20 dB Attenuator	SN: 5055 (20K)	01-Apr-15 (No. 217-02131)	Mar-16
Type-N mismatch combination	SN: 5047.2 / 05327	01-Apr-15 (No. 217-02134)	Mar-16
Reference Probe EX3DV4	SN: 3503	31-Dec-15 (No. EX3-3503_Dec15)	Dec-16
DAE4	SN: 601	30-Dec-15 (No. DAE4-601_Dec15)	Dec-16
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator R&S SMT-06	100972	15-Jun-15 (in house check Jun-15)	In house check: Jun-16
Network Analyzer HP 8753E	US37390685-54206	18-Oct-15 (in house check Oct-15)	In house check: Oct-16

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

Issued: January 28, 2016

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

Certificate No: **D5GHzV2-1023_Jan16**

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Calibration Laboratory of
Schmid & Partner
Engineering AG
 Zeughausstrasse 14, 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 0108

Glossary:

TSL: tissue simulating liquid
 CorvF: sensitivity in TSL / NORM x,y,z
 N/A: not applicable or not measured

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

- DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

Measurement Conditions

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

DASY Version	DASY5	V52.8.8
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom 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 $\pm$ 1 MHz 5300 MHz $\pm$ 1 MHz 5600 MHz $\pm$ 1 MHz 5800 MHz $\pm$ 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 $\pm$ 0.2) °C	35.2 $\pm$ 6 %	4.51 mho/m $\pm$ 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL at 5200 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	7.74 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	77.0 W/kg $\pm$ 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.23 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	22.1 W/kg $\pm$ 19.5 % (k=2)

Head TSL parameters at 5300 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.9	4.76 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	35.1 ± 6 %	4.60 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL at 5300 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.03 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	79.9 W / kg ± 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.33 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	23.1 W/kg ± 19.5 % (k=2)

Head TSL parameters at 5600 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.5	5.07 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	34.7 ± 6 %	4.90 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL at 5600 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.31 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	82.6 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.38 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	23.6 W/kg ± 19.5 % (k=2)

Head TSL parameters at 5800 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.3	5.27 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	34.4 ± 6 %	5.10 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	---	---

SAR result with Head TSL at 5800 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	7.78 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	77.3 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.22 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	22.0 W/kg ± 19.5 % (k=2)

Body TSL parameters at 5200 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	49.0	5.30 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	47.1 ± 6 %	5.37 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	-----	-----

SAR result with Body TSL at 5200 MHz

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.25 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	71.9 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.05 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	20.3 W/kg ± 19.5 % (k=2)

Body TSL parameters at 5300 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.9	5.42 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	46.9 ± 6 %	5.50 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	-----	-----

SAR result with Body TSL at 5300 MHz

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.57 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	75.1 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.14 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	21.2 W/kg ± 19.5 % (k=2)

Body TSL parameters at 5600 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.5	5.77 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	46.4 ± 6 %	5.91 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL at 5600 MHz

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.89 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	78.3 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.23 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	22.1 W/kg ± 19.5 % (k=2)

Body TSL parameters at 5800 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.2	6.00 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	46.0 ± 6 %	6.19 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL at 5800 MHz

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.59 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	75.3 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.13 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	21.1 W/kg ± 19.5 % (k=2)

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL at 5200 MHz

Impedance, transformed to feed point	49.1 Ω - 8.4 j Ω
Return Loss	- 21.4 dB

Antenna Parameters with Head TSL at 5300 MHz

Impedance, transformed to feed point	49.6 Ω - 4.2 j Ω
Return Loss	- 27.4 dB

Antenna Parameters with Head TSL at 5600 MHz

Impedance, transformed to feed point	54.9 Ω - 1.4 j Ω
Return Loss	- 26.3 dB

Antenna Parameters with Head TSL at 5800 MHz

Impedance, transformed to feed point	55.9 Ω + 2.2 j Ω
Return Loss	- 24.5 dB

Antenna Parameters with Body TSL at 5200 MHz

Impedance, transformed to feed point	49.4 Ω - 6.8 j Ω
Return Loss	- 23.3 dB

Antenna Parameters with Body TSL at 5300 MHz

Impedance, transformed to feed point	50.9 Ω - 2.4 j Ω
Return Loss	- 31.8 dB

Antenna Parameters with Body TSL at 5600 MHz

Impedance, transformed to feed point	56.0 Ω - 0.1 j Ω
Return Loss	- 25.0 dB

Antenna Parameters with Body TSL at 5800 MHz

Impedance, transformed to feed point	56.4 Ω + 2.4 j Ω
Return Loss	- 23.8 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.199 ns

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

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	February 05, 2004

DASY5 Validation Report for Head TSL

Date: 26.01.2016

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN: 1023

Communication System: UID 0 - CW; Frequency: 5200 MHz, Frequency: 5300 MHz, Frequency: 5600 MHz, Frequency: 5800 MHz

Medium parameters used: $f = 5200$ MHz; $\sigma = 4.51$ S/m; $\epsilon_r = 35.2$; $\rho = 1000$ kg/m³, Medium parameters used: $f = 5300$ MHz; $\sigma = 4.6$ S/m; $\epsilon_r = 35.1$; $\rho = 1000$ kg/m³, Medium parameters used: $f = 5600$ MHz; $\sigma = 4.9$ S/m; $\epsilon_r = 34.7$; $\rho = 1000$ kg/m³, Medium parameters used: $f = 5800$ MHz; $\sigma = 5.1$ S/m; $\epsilon_r = 34.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

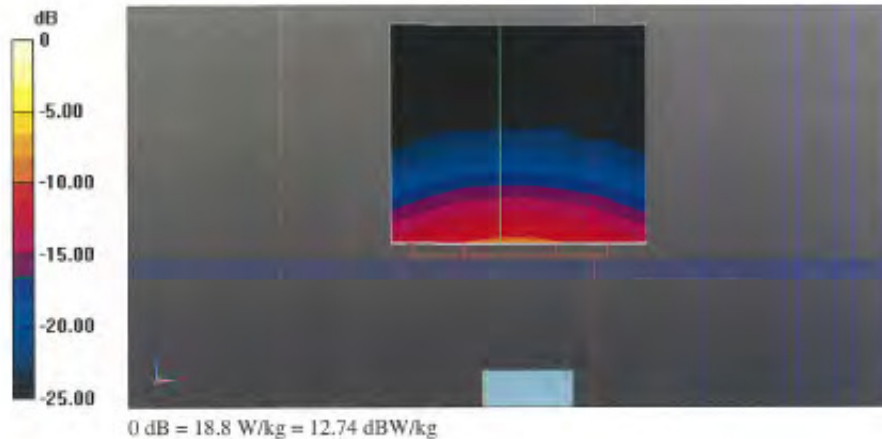
- Probe: EX3DV4 - SN3503; ConvF(5.59, 5.59, 5.59); Calibrated: 31.12.2015, ConvF(5.25, 5.25, 5.25); Calibrated: 31.12.2015, ConvF(4.99, 4.99, 4.99); Calibrated: 31.12.2015, ConvF(4.95, 4.95, 4.95); Calibrated: 31.12.2015;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.12.2015
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7372)

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5200 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 72.68 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 28.1 W/kg
SAR(1 g) = 7.74 W/kg; SAR(10 g) = 2.23 W/kg
Maximum value of SAR (measured) = 17.8 W/kg

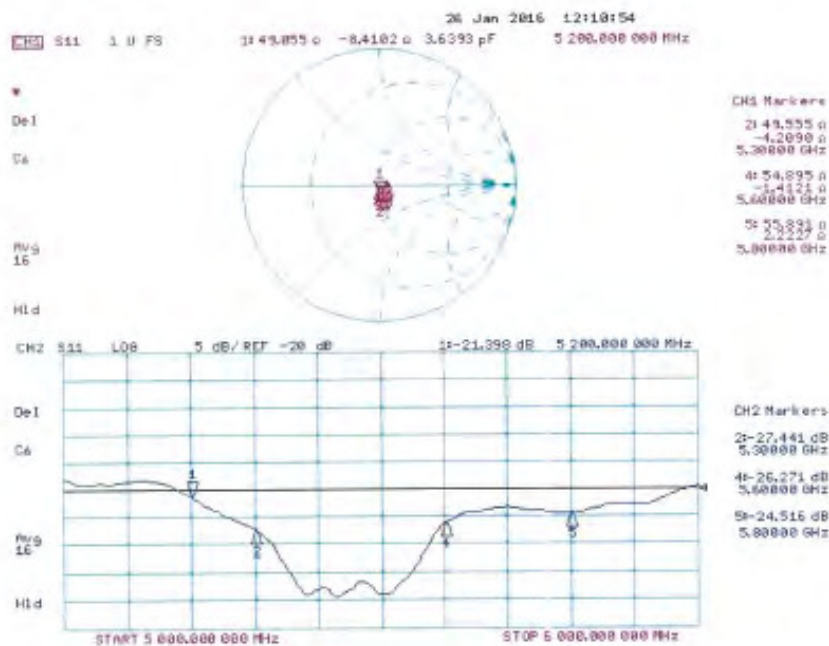
Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5300 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 73.14 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 30.0 W/kg
SAR(1 g) = 8.03 W/kg; SAR(10 g) = 2.33 W/kg
Maximum value of SAR (measured) = 18.7 W/kg

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5600 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 73.32 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 32.6 W/kg
SAR(1 g) = 8.31 W/kg; SAR(10 g) = 2.38 W/kg
Maximum value of SAR (measured) = 19.8 W/kg

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5800 MHz/Zoom Scan,
dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 70.15 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 32.0 W/kg
SAR(1 g) = 7.78 W/kg; SAR(10 g) = 2.22 W/kg
Maximum value of SAR (measured) = 18.8 W/kg



Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 25.01.2016

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 5GHz; Type: D5GHzV2; Serial: D5GHzV2 - SN: 1023

Communication System: UID 0 - CW; Frequency: 5200 MHz, Frequency: 5300 MHz, Frequency: 5600 MHz, Frequency: 5800 MHz

Medium parameters used: $f = 5200$ MHz; $\sigma = 5.37$ S/m; $\epsilon_r = 47.1$; $\rho = 1000$ kg/m³, Medium parameters used: $f = 5300$ MHz; $\sigma = 5.5$ S/m; $\epsilon_r = 46.9$; $\rho = 1000$ kg/m³, Medium parameters used: $f = 5600$ MHz; $\sigma = 5.91$ S/m; $\epsilon_r = 46.4$; $\rho = 1000$ kg/m³, Medium parameters used: $f = 5800$ MHz; $\sigma = 6.19$ S/m; $\epsilon_r = 46$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN3503; ConvF(4.99, 4.99, 4.99); Calibrated: 31.12.2015, ConvF(4.75, 4.75, 4.75); Calibrated: 31.12.2015, ConvF(4.35, 4.35, 4.35); Calibrated: 31.12.2015, ConvF(4.27, 4.27, 4.27); Calibrated: 31.12.2015;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.12.2015
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7372)

Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5200 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 66.72 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 27.1 W/kg

SAR(1 g) = 7.25 W/kg; SAR(10 g) = 2.05 W/kg

Maximum value of SAR (measured) = 16.8 W/kg

Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5300 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 67.43 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 29.1 W/kg

SAR(1 g) = 7.57 W/kg; SAR(10 g) = 2.14 W/kg

Maximum value of SAR (measured) = 17.7 W/kg

Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5600 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

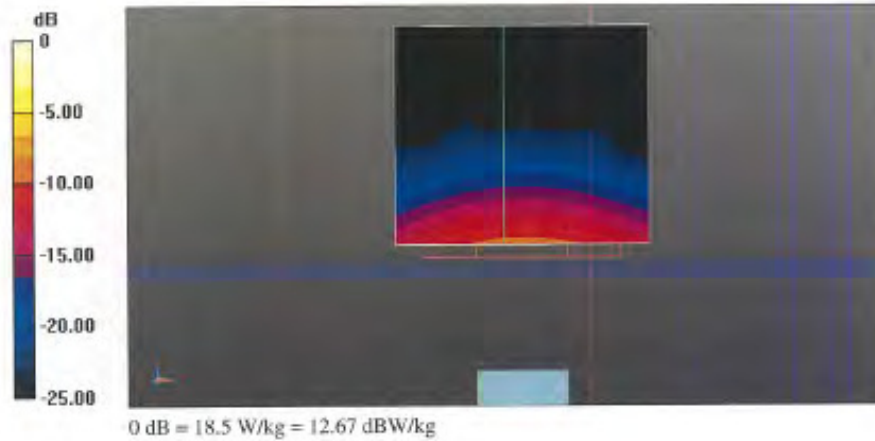
Reference Value = 67.67 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 32.6 W/kg

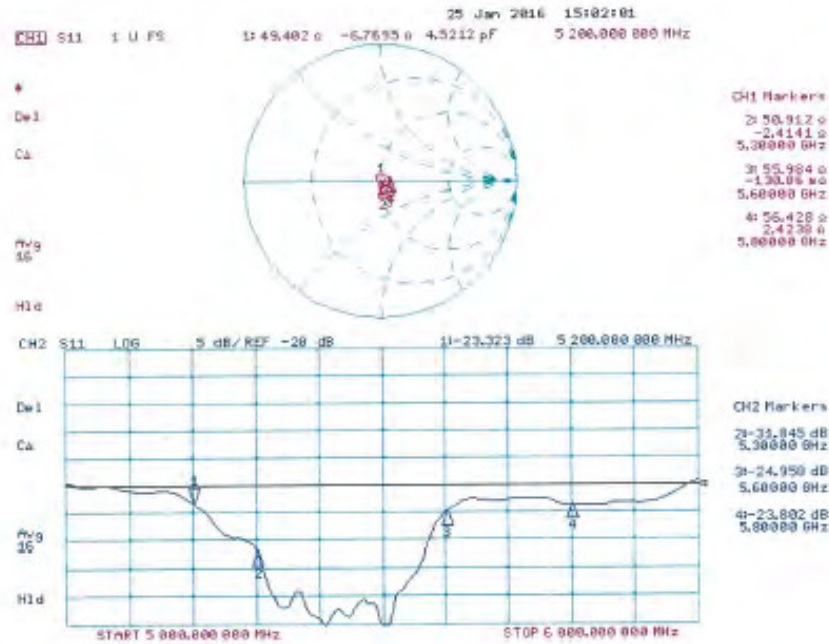
SAR(1 g) = 7.89 W/kg; SAR(10 g) = 2.23 W/kg

Maximum value of SAR (measured) = 19.1 W/kg

Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5800 MHz/Zoom Scan,
dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
 Reference Value = 65.76 V/m; Power Drift = -0.02 dB
 Peak SAR (extrapolated) = 33.0 W/kg
SAR(1 g) = 7.59 W/kg; SAR(10 g) = 2.13 W/kg
 Maximum value of SAR (measured) = 18.5 W/kg



Impedance Measurement Plot for Body TSL



- End of 1st part of report -