SAR TEST REPORT

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

Equipment Under Test	Notebook Computer
Brand Name	acer
Model No.	N17Q10
Marketing Name.	SF714-51T
Company Name	Acer Incorporated
Company Address	8F., No. 88, Sec. 1, Xintai 5th Rd., Xizhi, New Taipei City 22181, Taiwan (R.O.C)
Standards	IEEE/ANSI C95.1-1992, IEEE 1528-2013, KDB616217D04v01r02,KDB865664D01v01r04, KDB865664D02v01r02,KDB941225D01v03r01, KDB941225D05v02r05,KDB941225D05Av01r02, KDB447498D01v06, KDB248227D01v02r02
FCC ID of WLAN module	HLZ7265D2
FCC ID of Host	HLZL850GL
Date of Receipt	Jan. 02, 2018
Date of Test(s)	Jan. 05, 2018 ~ Jan. 19, 2018
Date of Issue	Mar. 20, 2018

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

Remarks:

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

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

Signed on behalf of SGS

Clerk / Ruby Ou	Engineer / Bond Tsai	Asst. Manager / John Yeh
Ruby Ou	Bond Tsai	John Yeh

Date: Mar. 20, 2018

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Revision History

Report Number	Revision	Description	Issue Date
E5/2018/10002	Rev.00	Initial creation of document	Feb. 09, 2018
E5/2018/10002	Rev.01	1st modification	Mar. 08, 2018
E5/2018/10002	Rev.02	2nd modification	Mar. 20, 2018

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Contents

1. General Information 4
1.1 Testing Laboratory 4
1.2 Details of Applicant 4
1.3 Description of EUT 5
1.4 Test Environment 139
1.5 Operation Description 139
1.6 Proximity sensor operation description 150
1.7 The SAR Measurement System 160
1.8 System Components 162
1.9 SAR System Verification 164
1.10 Tissue Simulant Fluid for the Frequency Band 166
1.11 Evaluation Procedures 169
1.12 Probe Calibration Procedures 170
1.13 Test Standards and Limits 173
2. Summary of Results 175
3. Simultaneous Transmission Analysis 191
3.1 Estimated SAR calculation 192
4. Instruments List 204
5. Measurements 206
6. SAR System Performance Verification 232
7. DAE & Probe Calibration Certificate 243
8. Uncertainty Budget 259
9. System Validation from Original Equipment Supplier 261

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1. General Information

1.1 Testing Laboratory

SGS Taiwan Ltd. Electronics & Communication Laboratory	
No. 2, Keji 1st Rd., Guishan Township, Taoyuan County, 33383, Taiwan	
Tel	+886-2-2299-3279
Fax	+886-2-2298-0488
Internet	http://www.tw.sgs.com/

1.2 Details of Applicant

Company Name	Acer Incorporated
Company Address	8F., No. 88, Sec. 1, Xintai 5th Rd., Xizhi, New Taipei City 22181, Taiwan (R.O.C)

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1.3 Description of EUT

Equipment Under Test	Notebook Computer		
Brand Name	acer		
Model No.	N17Q10		
Marketing Name	SF714-51T		
FCC ID of WLAN module	HLZ7265D2		
FCC ID of Host	HLZL850GL		
Integrated Module	Wireless LAN+BT	Brand Name : Intel Model Name : 7265D2W	
	GNSS (LTE+GPS)	Brand Name : Fibocom Model Name : L850-GL	
Mode of Operation	☒WCDMA ☒HSDPA ☒HSUPA ☒LTE FDD ☒LTE TDD ☒Bluetooth ☒WLAN802.11 a/b/g/n(20M/40M)/ac(20M/40M/80M)		
Duty Cycle	WCDMA	1	
	LTE FDD	1	
	LTE TDD	0.633	
	WLAN802.11 a/b/g/n(20M/40M)/ ac(20M/40M/80M)	1	
	Bluetooth	1	
TX Frequency Range (MHz)	WCDMA Band II	1850 –	1910
	WCDMA Band IV	1710 –	1755
	WCDMA Band V	824 –	849
	LTE FDD Band 2	1850 –	1910
	LTE FDD Band 4	1710 –	1755
	LTE FDD Band 5	824 –	849
	LTE FDD Band 7	2500 –	2570
	LTE FDD Band 12	699 –	716

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TX Frequency Range (MHz)	LTE FDD Band 13	777	–	787
	LTE FDD Band 17	704	–	716
	LTE FDD Band 26	814	–	849
	LTE FDD Band 30	2305	–	2315
	LTE FDD Band 38	2570	–	2620
	LTE TDD Band 41	2496	–	2690
	LTE FDD Band 66	1710	–	1780
	WLAN802.11 b/g/n(20M)	2412	–	2472
	WLAN802.11 n(40M)	2422	–	2462
	WLAN802.11 a/n(20M)/ac(20M) 5.2G	5180	–	5240
	WLAN802.11 n(40M)/ac(40M) 5.2G	5190	–	5230
	WLAN802.11 ac(80M) 5.2G	5210		
	WLAN802.11 a/n(20M)/ac(20M) 5.3G	5260	–	5320
	WLAN802.11 n(40M)/ac(40M) 5.3G	5270	–	5310
	WLAN802.11 ac(80M) 5.3G	5290		
	WLAN802.11 a/n/ac(20M) 5.6G	5500	–	5720
	WLAN802.11 n/ac(40M) 5.6G	5510	–	5710
	WLAN802.11 ac(80M) 5.6G	5530	–	5690
	WLAN802.11 a/n(20M)/ac(20M) 5.8G	5745	–	5825
	WLAN802.11 n(40M)/ac(40M) 5.8G	5710	–	5795
	WLAN802.11 ac(80M) 5.8G	5775		
	Bluetooth	2402	–	2480
Channel Number (ARFCN)	WCDMA Band II	9262	–	9538
	WCDMA Band IV	1312	–	1513
	WCDMA Band V	4132	–	4233
	LTE FDD Band 2	18607	–	19193
	LTE FDD Band 4	19957	–	20393
	LTE FDD Band 5	20407	–	20643

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Channel Number (ARFCN)	LTE FDD Band 7	20775	–	21425
	LTE FDD Band 12	23017	–	23173
	LTE FDD Band 13	23205	–	23255
	LTE FDD Band 17	23755	–	23825
	LTE FDD Band 26	26697	–	27033
	LTE FDD Band 30	27685	–	27735
	LTE FDD Band 38	37775	–	38225
	LTE TDD Band 41	39675	–	41565
	LTE FDD Band 66	131979	–	132665
	WLAN802.11 b/g/n(20M)	1	–	13
	WLAN802.11 n(40M)	3	–	11
	WLAN802.11 a/n(20M)/ac(20M) 5.2G	36	–	48
	WLAN802.11 n(40M)/ac(40M) 5.2G	38	–	46
	WLAN802.11 ac(80M) 5.2G		42	
	WLAN802.11 a/n(20M)/ac(20M) 5.3G	52	–	64
	WLAN802.11 n(40M)/ac(40M) 5.3G	54	–	62
	WLAN802.11 ac(80M) 5.3G		58	
	WLAN802.11 a/n/ac(20M) 5.6G	100	–	144
	WLAN802.11 n/ac(40M) 5.6G	102	–	142
	WLAN802.11 ac(80M) 5.6G	106	–	138
	WLAN802.11 a/n(20M)/ac(20M) 5.8G	149	–	165
	WLAN802.11 n(40M)/ac(40M) 5.8G	142	–	159
	WLAN802.11 ac(80M) 5.8G		155	
	Bluetooth	0	–	78

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Max. SAR (1 g) (Unit: W/Kg)				
Band	Measured	Reported	Channel	Position
WCDMA Band II	1.19	1.19	9262	Bottom side
WCDMA Band IV	1.04	1.04	1513	Bottom side
WCDMA Band V	1.05	1.05	4132	Bottom side
LTE FDD Band 2	1.01	1.15	19100	Bottom side
LTE FDD Band 4	0.96	1.01	20050	Bottom side
LTE FDD Band 5	1.01	1.02	20450	Bottom side
LTE FDD Band 7	1.16	1.16	21100	Bottom side
LTE FDD Band 12	0.86	0.91	23130	Bottom side
LTE FDD Band 13	0.81	0.92	23230	Bottom side
LTE FDD Band 17	0.83	0.86	23780	Bottom side
LTE FDD Band 26	0.98	1.02	26865	Bottom side
LTE FDD Band 30	1.16	1.17	27710	Bottom side
LTE FDD Band 38	1.19	1.24	37850	Bottom side
LTE TDD Band 41	1.12	1.13	41055	Bottom side
LTE TDD Band 66	1.16	1.17	132572	Bottom side

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Max. SAR (1 g) (Unit: W/Kg)					
Antenna	Band	Measured	Reported	Channel	Position
Main	WLAN802.11 b	0.02	0.02	6	Bottom side
	WLAN802.11 n(40M) 5.2G	0.03	0.03	46	Bottom side
	WLAN802.11 n(40M) 5.3G	0.03	0.03	54	Bottom side
	WLAN802.11 ac(80M) 5.6G	0.07	0.07	138	Bottom side
	WLAN802.11 ac(80M) 5.8G	0.05	0.05	155	Bottom side
Aux	WLAN802.11 b	0.01	0.01	6	Bottom side
	Bluetooth (GFSK)	0.00	0.00	0	Bottom side
	WLAN802.11 n(40M) 5.2G	0.02	0.02	46	Bottom side
	WLAN802.11 n(40M) 5.3G	0.02	0.02	54	Bottom side
	WLAN802.11 ac(80M) 5.6G	0.04	0.04	138	Bottom side
	WLAN802.11 ac(80M) 5.8G	0.02	0.02	155	Bottom side

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WWAN antenna information:

Vendor	WNC							
Antenna	Main (PIFA)							
Part Number	81EAAL15.GJT							
Frequency	1907.6	1752.6	846.6	1900	1745	844	2560	711
Gain (dBi)	-1.86	-1.19	-1.97	-2.27	-1.19	-1.97	-3.11	-2.36

Vendor	WNC						
Antenna	Main (PIFA)						
Part Number	81EAAL15.GJT						
Frequency	782	711	841.5	2310	2610	2680	1770
Gain (dBi)	-1.52	-2.36	-1.70	-3.40	-3.29	-2.92	-1.19

WLAN / Bluetooth antenna information:

Vendor	WNC				WNC			
Antenna	Main (PIFA)				Aux (PIFA)			
Part Number	81EAAL15.GJ5				81EAAL15.GJ5			
Frequency	2.4G	5.2G	5.5G	5.8G	2.4G	5.2G	5.5G	5.8G
Gain (dBi)	2.13	0.20	1.92	1.35	2.16	1.15	1.07	1.02

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

Unit: dBm

Band		WCDMA II		
TX Channel		9262	9400	9538
Frequency (MHz)		1852.4	1880	1907.6
Max. Rated Avg. Power+Max. Tolerance (dBm)		**24.50**		
3GPP Rel 99	RMC 12.2Kbps	23.93	23.88	23.61
3GPP Rel 5	HSDPA Subtest-1	23.80	23.78	23.54
	HSDPA Subtest-2	23.78	23.75	23.47
	HSDPA Subtest-3	23.80	23.75	23.40
	HSDPA Subtest-4	23.76	23.72	23.41
3GPP Rel 6	HSUPA Subtest-1	22.69	22.64	22.29
	HSUPA Subtest-2	20.51	20.47	20.15
	HSUPA Subtest-3	21.15	21.21	20.89
	HSUPA Subtest-4	20.78	20.72	20.45
	HSUPA Subtest-5	22.70	22.70	22.40

Band		WCDMA IV		
TX Channel		1312	1412	1513
Frequency (MHz)		1712.4	1732.4	1752.6
Max. Rated Avg. Power+Max. Tolerance (dBm)		**24.50**		
3GPP Rel 99	RMC 12.2Kbps	23.77	23.97	23.99
3GPP Rel 5	HSDPA Subtest-1	23.60	23.77	23.84
	HSDPA Subtest-2	23.59	23.78	23.85
	HSDPA Subtest-3	23.60	23.78	23.82
	HSDPA Subtest-4	23.59	23.78	23.83
3GPP Rel 6	HSUPA Subtest-1	22.52	22.73	22.80
	HSUPA Subtest-2	20.30	20.51	20.60
	HSUPA Subtest-3	21.10	21.25	21.28
	HSUPA Subtest-4	20.61	20.78	20.94
	HSUPA Subtest-5	22.60	22.80	22.84

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Band		WCDMA V		
TX Channel		4132	4183	4233
Frequency (MHz)		826.4	836.6	846.6
Max. Rated Avg. Power+Max. Tolerance (dBm)		**24.50**		
3GPP Rel 99	RMC 12.2Kbps	23.55	23.39	23.33
3GPP Rel 5	HSDPA Subtest-1	23.39	23.15	23.23
	HSDPA Subtest-2	23.39	23.17	23.14
	HSDPA Subtest-3	23.38	23.20	23.17
	HSDPA Subtest-4	23.41	23.22	23.20
3GPP Rel 6	HSUPA Subtest-1	22.54	22.74	22.27
	HSUPA Subtest-2	20.31	20.56	20.11
	HSUPA Subtest-3	21.04	21.35	20.75
	HSUPA Subtest-4	20.55	20.84	20.42
	HSUPA Subtest-5	22.50	22.80	22.40

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

Band		WCDMA II		
TX Channel		9262	9400	9538
Frequency (MHz)		1852.4	1880	1907.6
Max. Rated Avg. Power+Max. Tolerance (dBm)		**16.50**		
3GPP Rel 99	RMC 12.2Kbps	16.49	16.32	16.26
3GPP Rel 5	HSDPA Subtest-1	16.46	16.30	16.15
	HSDPA Subtest-2	16.48	16.31	16.11
	HSDPA Subtest-3	16.47	16.30	16.10
	HSDPA Subtest-4	16.44	16.29	16.07
3GPP Rel 6	HSUPA Subtest-1	16.43	16.18	16.00
	HSUPA Subtest-2	16.36	16.19	15.98
	HSUPA Subtest-3	16.39	16.21	16.01
	HSUPA Subtest-4	16.42	16.22	15.97
	HSUPA Subtest-5	16.41	16.20	15.99

Band		WCDMA IV		
TX Channel		1312	1412	1513
Frequency (MHz)		1712.4	1732.4	1752.6
Max. Rated Avg. Power+Max. Tolerance (dBm)		**16.50**		
3GPP Rel 99	RMC 12.2Kbps	16.30	16.38	16.49
3GPP Rel 5	HSDPA Subtest-1	16.23	16.36	16.47
	HSDPA Subtest-2	16.24	16.35	16.42
	HSDPA Subtest-3	16.22	16.35	16.43
	HSDPA Subtest-4	16.23	16.36	16.41
3GPP Rel 6	HSUPA Subtest-1	16.22	16.35	16.48
	HSUPA Subtest-2	16.21	16.35	16.44
	HSUPA Subtest-3	16.20	16.34	16.47
	HSUPA Subtest-4	16.24	16.36	16.46
	HSUPA Subtest-5	16.21	16.36	16.44

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Band		WCDMA V		
TX Channel		4132	4183	4233
Frequency (MHz)		826.4	836.6	846.6
Max. Rated Avg. Power+Max. Tolerance (dBm)		**21.50**		
3GPP Rel 99	RMC 12.2Kbps	21.49	21.25	21.43
3GPP Rel 5	HSDPA Subtest-1	21.44	21.13	21.39
	HSDPA Subtest-2	21.45	21.16	21.38
	HSDPA Subtest-3	21.47	21.19	21.36
	HSDPA Subtest-4	21.48	21.18	21.35
3GPP Rel 6	HSUPA Subtest-1	21.47	21.17	21.41
	HSUPA Subtest-2	21.46	21.15	21.39
	HSUPA Subtest-3	21.46	21.19	21.38
	HSUPA Subtest-4	21.45	21.18	21.36
	HSUPA Subtest-5	21.48	21.20	21.37

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LTE FDD Band 2 / Band 4 / Band 5 / Band7 / Band 12 / Band 13 / Band 17 / Band 26 /Band 30 / Band 38 / Band 41 / Band 66 power table(Full power):

FDD Band 2								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
20	QPSK	1 RB	0	1860	18700	23.66	24	0
				1880	18900	23.37	24	0
				1900	19100	23.37	24	0
			50	1860	18700	23.27	24	0
				1880	18900	23.50	24	0
				1900	19100	23.26	24	0
			99	1860	18700	23.31	24	0
				1880	18900	23.26	24	0
				1900	19100	23.16	24	0
		50 RB	0	1860	18700	22.39	23	0-1
				1880	18900	22.35	23	0-1
				1900	19100	21.95	23	0-1
			25	1860	18700	22.42	23	0-1
				1880	18900	22.29	23	0-1
				1900	19100	22.00	23	0-1
			50	1860	18700	22.37	23	0-1
				1880	18900	22.22	23	0-1
				1900	19100	22.09	23	0-1
		100RB		1860	18700	22.50	23	0-1
				1880	18900	22.47	23	0-1
				1900	19100	22.18	23	0-1
	16-QAM	1 RB	0	1860	18700	22.94	23	0-1
				1880	18900	22.92	23	0-1
				1900	19100	22.46	23	0-1
			50	1860	18700	22.96	23	0-1
				1880	18900	22.71	23	0-1
				1900	19100	22.38	23	0-1
			99	1860	18700	22.72	23	0-1
				1880	18900	22.44	23	0-1
				1900	19100	22.52	23	0-1
		50 RB	0	1860	18700	21.43	22	0-2
				1880	18900	21.37	22	0-2
				1900	19100	21.05	22	0-2
			25	1860	18700	21.32	22	0-2
				1880	18900	21.47	22	0-2
				1900	19100	20.97	22	0-2
			50	1860	18700	21.43	22	0-2
				1880	18900	21.39	22	0-2
				1900	19100	21.12	22	0-2
		100RB		1860	18700	21.49	22	0-2
				1880	18900	21.60	22	0-2
				1900	19100	21.13	22	0-2

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FDD Band 2								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
15	QPSK	1 RB	0	1857.5	18675	23.31	24	0
				1880	18900	23.22	24	0
				1902.5	19125	22.88	24	0
			36	1857.5	18675	23.05	24	0
				1880	18900	23.20	24	0
				1902.5	19125	22.95	24	0
			74	1857.5	18675	23.08	24	0
				1880	18900	23.07	24	0
				1902.5	19125	22.88	24	0
		36 RB	0	1857.5	18675	22.21	23	0-1
				1880	18900	22.23	23	0-1
				1902.5	19125	21.89	23	0-1
			18	1857.5	18675	22.16	23	0-1
				1880	18900	22.25	23	0-1
				1902.5	19125	21.91	23	0-1
			37	1857.5	18675	22.15	23	0-1
				1880	18900	22.12	23	0-1
				1902.5	19125	21.99	23	0-1
		75RB		1857.5	18675	22.20	23	0-1
				1880	18900	22.23	23	0-1
				1902.5	19125	22.00	23	0-1
	16-QAM	1 RB	0	1857.5	18675	22.64	23	0-1
				1880	18900	22.07	23	0-1
				1902.5	19125	22.27	23	0-1
			36	1857.5	18675	22.75	23	0-1
				1880	18900	22.73	23	0-1
				1902.5	19125	22.62	23	0-1
			74	1857.5	18675	22.41	23	0-1
				1880	18900	22.67	23	0-1
				1902.5	19125	22.36	23	0-1
		36 RB	0	1857.5	18675	21.26	22	0-2
				1880	18900	21.34	22	0-2
				1902.5	19125	20.78	22	0-2
			18	1857.5	18675	21.17	22	0-2
				1880	18900	21.26	22	0-2
				1902.5	19125	20.87	22	0-2
			37	1857.5	18675	21.22	22	0-2
				1880	18900	21.27	22	0-2
				1902.5	19125	20.88	22	0-2
		75RB		1857.5	18675	21.18	22	0-2
				1880	18900	21.34	22	0-2
				1902.5	19125	20.95	22	0-2

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FDD Band 2								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	1855	18650	23.42	24	0
				1880	18900	23.38	24	0
				1905	19150	22.96	24	0
			25	1855	18650	22.94	24	0
				1880	18900	23.06	24	0
				1905	19150	22.93	24	0
			49	1855	18650	23.18	24	0
				1880	18900	23.23	24	0
				1905	19150	23.09	24	0
		25 RB	0	1855	18650	22.24	23	0-1
				1880	18900	22.32	23	0-1
				1905	19150	21.86	23	0-1
			12	1855	18650	22.21	23	0-1
				1880	18900	22.28	23	0-1
				1905	19150	21.95	23	0-1
			25	1855	18650	22.17	23	0-1
				1880	18900	22.19	23	0-1
				1905	19150	22.06	23	0-1
		50RB		1855	18650	22.19	23	0-1
				1880	18900	22.19	23	0-1
				1905	19150	21.91	23	0-1
	16-QAM	1 RB	0	1855	18650	22.81	23	0-1
				1880	18900	22.36	23	0-1
				1905	19150	22.31	23	0-1
			25	1855	18650	22.94	23	0-1
				1880	18900	22.22	23	0-1
				1905	19150	22.16	23	0-1
			49	1855	18650	22.44	23	0-1
				1880	18900	22.76	23	0-1
				1905	19150	22.07	23	0-1
		25 RB	0	1855	18650	21.28	22	0-2
				1880	18900	21.41	22	0-2
				1905	19150	20.92	22	0-2
			12	1855	18650	21.38	22	0-2
				1880	18900	21.28	22	0-2
				1905	19150	21.01	22	0-2
			25	1855	18650	21.19	22	0-2
				1880	18900	21.31	22	0-2
				1905	19150	21.10	22	0-2
		50RB		1855	18650	21.25	22	0-2
				1880	18900	21.25	22	0-2
				1905	19150	20.97	22	0-2

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FDD Band 2								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	1852.5	18625	23.17	24	0
				1880	18900	23.22	24	0
				1907.5	19175	22.94	24	0
			12	1852.5	18625	23.10	24	0
				1880	18900	23.28	24	0
				1907.5	19175	22.94	24	0
			24	1852.5	18625	23.26	24	0
				1880	18900	23.00	24	0
				1907.5	19175	22.97	24	0
		12 RB	0	1852.5	18625	22.91	23	0-1
				1880	18900	22.92	23	0-1
				1907.5	19175	22.56	23	0-1
			6	1852.5	18625	22.89	23	0-1
				1880	18900	22.90	23	0-1
				1907.5	19175	22.54	23	0-1
			13	1852.5	18625	22.89	23	0-1
				1880	18900	22.93	23	0-1
				1907.5	19175	22.96	23	0-1
		25RB		1852.5	18625	22.19	23	0-1
				1880	18900	22.19	23	0-1
				1907.5	19175	21.94	23	0-1
	16-QAM	1 RB	0	1852.5	18625	22.68	23	0-1
				1880	18900	22.15	23	0-1
				1907.5	19175	22.24	23	0-1
			12	1852.5	18625	22.60	23	0-1
				1880	18900	22.53	23	0-1
				1907.5	19175	22.31	23	0-1
			24	1852.5	18625	22.72	23	0-1
				1880	18900	22.57	23	0-1
				1907.5	19175	22.11	23	0-1
		12 RB	0	1852.5	18625	21.99	22	0-2
				1880	18900	21.96	22	0-2
				1907.5	19175	21.57	22	0-2
			6	1852.5	18625	21.97	22	0-2
				1880	18900	21.97	22	0-2
				1907.5	19175	21.65	22	0-2
			13	1852.5	18625	21.97	22	0-2
				1880	18900	21.97	22	0-2
				1907.5	19175	21.95	22	0-2
		25RB		1852.5	18625	21.26	22	0-2
				1880	18900	21.21	22	0-2
				1907.5	19175	20.97	22	0-2

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FDD Band 2								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
3	QPSK	1 RB	0	1851.5	18615	23.18	24	0
				1880	18900	23.10	24	0
				1908.5	19185	22.94	24	0
			7	1851.5	18615	23.13	24	0
				1880	18900	23.23	24	0
				1908.5	19185	22.89	24	0
			14	1851.5	18615	22.93	24	0
				1880	18900	23.10	24	0
				1908.5	19185	22.83	24	0
		8 RB	0	1851.5	18615	22.18	23	0-1
				1880	18900	22.17	23	0-1
				1908.5	19185	21.89	23	0-1
			4	1851.5	18615	22.17	23	0-1
				1880	18900	22.16	23	0-1
				1908.5	19185	21.81	23	0-1
			7	1851.5	18615	22.17	23	0-1
				1880	18900	22.19	23	0-1
				1908.5	19185	21.85	23	0-1
		15RB		1851.5	18615	22.19	23	0-1
				1880	18900	22.15	23	0-1
				1908.5	19185	21.87	23	0-1
	16-QAM	1 RB	0	1851.5	18615	22.34	23	0-1
				1880	18900	22.79	23	0-1
				1908.5	19185	22.13	23	0-1
			7	1851.5	18615	22.99	23	0-1
				1880	18900	22.56	23	0-1
				1908.5	19185	22.09	23	0-1
			14	1851.5	18615	22.47	23	0-1
				1880	18900	22.33	23	0-1
				1908.5	19185	22.71	23	0-1
		8 RB	0	1851.5	18615	21.25	22	0-2
				1880	18900	21.18	22	0-2
				1908.5	19185	20.88	22	0-2
			4	1851.5	18615	21.19	22	0-2
				1880	18900	21.30	22	0-2
				1908.5	19185	20.81	22	0-2
			7	1851.5	18615	21.12	22	0-2
				1880	18900	21.11	22	0-2
				1908.5	19185	20.86	22	0-2
		15RB		1851.5	18615	21.20	22	0-2
				1880	18900	21.19	22	0-2
				1908.5	19185	20.91	22	0-2

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FDD Band 2								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
1.4	QPSK	1 RB	0	1850.7	18607	23.19	24	0
				1880	18900	23.24	24	0
				1909.3	19193	22.94	24	0
			2	1850.7	18607	23.12	24	0
				1880	18900	23.33	24	0
				1909.3	19193	22.89	24	0
			5	1850.7	18607	23.24	24	0
				1880	18900	23.20	24	0
				1909.3	19193	22.88	24	0
		3 RB	0	1850.7	18607	22.91	23	0
				1880	18900	22.97	23	0
				1909.3	19193	22.66	23	0
			2	1850.7	18607	22.92	23	0
				1880	18900	22.94	23	0
				1909.3	19193	22.55	23	0
			3	1850.7	18607	22.91	23	0
				1880	18900	22.97	23	0
				1909.3	19193	22.85	23	0
		6RB		1850.7	18607	22.20	23	0-1
				1880	18900	22.23	23	0-1
				1909.3	19193	21.91	23	0-1
	16-QAM	1 RB	0	1850.7	18607	22.39	23	0-1
				1880	18900	22.53	23	0-1
				1909.3	19193	22.08	23	0-1
			2	1850.7	18607	22.31	23	0-1
				1880	18900	22.16	23	0-1
				1909.3	19193	21.88	23	0-1
			5	1850.7	18607	22.66	23	0-1
				1880	18900	22.72	23	0-1
				1909.3	19193	22.24	23	0-1
		3 RB	0	1850.7	18607	22.26	23	0-1
				1880	18900	22.32	23	0-1
				1909.3	19193	21.85	23	0-1
			2	1850.7	18607	22.33	23	0-1
				1880	18900	22.38	23	0-1
				1909.3	19193	21.94	23	0-1
			3	1850.7	18607	21.99	23	0-1
				1880	18900	22.39	23	0-1
				1909.3	19193	22.04	23	0-1
		6RB		1850.7	18607	21.23	22	0-2
				1880	18900	21.21	22	0-2
				1909.3	19193	20.85	22	0-2

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FDD Band 4								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
20	QPSK	1 RB	0	1720	20050	23.19	24	0
				1732.5	20175	23.40	24	0
				1745	20300	23.18	24	0
			50	1720	20050	23.25	24	0
				1732.5	20175	23.13	24	0
				1745	20300	23.26	24	0
			99	1720	20050	23.15	24	0
				1732.5	20175	23.14	24	0
				1745	20300	23.61	24	0
		50 RB	0	1720	20050	22.39	23	0-1
				1732.5	20175	22.29	23	0-1
				1745	20300	22.20	23	0-1
			25	1720	20050	22.25	23	0-1
				1732.5	20175	22.16	23	0-1
				1745	20300	22.32	23	0-1
			50	1720	20050	22.25	23	0-1
				1732.5	20175	22.09	23	0-1
				1745	20300	22.46	23	0-1
		100RB		1720	20050	22.41	23	0-1
				1732.5	20175	22.29	23	0-1
				1745	20300	22.53	23	0-1
	16-QAM	1 RB	0	1720	20050	22.51	23	0-1
				1732.5	20175	22.50	23	0-1
				1745	20300	22.40	23	0-1
			50	1720	20050	22.64	23	0-1
				1732.5	20175	22.44	23	0-1
				1745	20300	22.92	23	0-1
			99	1720	20050	22.63	23	0-1
				1732.5	20175	22.81	23	0-1
				1745	20300	22.42	23	0-1
		50 RB	0	1720	20050	21.48	22	0-2
				1732.5	20175	21.28	22	0-2
				1745	20300	21.20	22	0-2
			25	1720	20050	21.36	22	0-2
				1732.5	20175	21.24	22	0-2
				1745	20300	21.37	22	0-2
			50	1720	20050	21.27	22	0-2
				1732.5	20175	21.17	22	0-2
				1745	20300	21.63	22	0-2
		100RB		1720	20050	21.47	22	0-2
				1732.5	20175	21.38	22	0-2
				1745	20300	21.53	22	0-2

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FDD Band 4								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
15	QPSK	1 RB	0	1717.5	20025	23.12	24	0
				1732.5	20175	23.14	24	0
				1747.5	20325	23.21	24	0
			36	1717.5	20025	23.29	24	0
				1732.5	20175	23.26	24	0
				1747.5	20325	23.54	24	0
			74	1717.5	20025	23.17	24	0
				1732.5	20175	23.07	24	0
				1747.5	20325	23.31	24	0
		36 RB	0	1717.5	20025	22.35	23	0-1
				1732.5	20175	22.24	23	0-1
				1747.5	20325	22.22	23	0-1
			18	1717.5	20025	22.35	23	0-1
				1732.5	20175	22.24	23	0-1
				1747.5	20325	22.55	23	0-1
			37	1717.5	20025	22.29	23	0-1
				1732.5	20175	22.14	23	0-1
				1747.5	20325	22.60	23	0-1
		75RB		1717.5	20025	22.39	23	0-1
				1732.5	20175	22.27	23	0-1
				1747.5	20325	22.63	23	0-1
	16-QAM	1 RB	0	1717.5	20025	22.81	23	0-1
				1732.5	20175	22.63	23	0-1
				1747.5	20325	22.90	23	0-1
			36	1717.5	20025	22.62	23	0-1
				1732.5	20175	22.30	23	0-1
				1747.5	20325	22.33	23	0-1
			74	1717.5	20025	22.78	23	0-1
				1732.5	20175	22.53	23	0-1
				1747.5	20325	22.90	23	0-1
		36 RB	0	1717.5	20025	21.43	22	0-2
				1732.5	20175	21.32	22	0-2
				1747.5	20325	21.25	22	0-2
			18	1717.5	20025	21.37	22	0-2
				1732.5	20175	21.29	22	0-2
				1747.5	20325	21.51	22	0-2
			37	1717.5	20025	21.32	22	0-2
				1732.5	20175	21.18	22	0-2
				1747.5	20325	21.58	22	0-2
		75RB		1717.5	20025	21.38	22	0-2
				1732.5	20175	21.32	22	0-2
				1747.5	20325	21.61	22	0-2

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FDD Band 4								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	1715	20000	23.23	24	0
				1732.5	20175	23.36	24	0
				1750	20350	23.48	24	0
			25	1715	20000	23.30	24	0
				1732.5	20175	23.10	24	0
				1750	20350	23.62	24	0
			49	1715	20000	23.29	24	0
				1732.5	20175	23.24	24	0
				1750	20350	23.53	24	0
		25 RB	0	1715	20000	22.30	23	0-1
				1732.5	20175	22.33	23	0-1
				1750	20350	22.51	23	0-1
			12	1715	20000	22.33	23	0-1
				1732.5	20175	22.23	23	0-1
				1750	20350	22.61	23	0-1
			25	1715	20000	22.36	23	0-1
				1732.5	20175	22.20	23	0-1
				1750	20350	22.64	23	0-1
		50RB		1715	20000	22.32	23	0-1
				1732.5	20175	22.23	23	0-1
				1750	20350	22.60	23	0-1
	16-QAM	1 RB	0	1715	20000	22.27	23	0-1
				1732.5	20175	22.82	23	0-1
				1750	20350	22.45	23	0-1
			25	1715	20000	22.82	23	0-1
				1732.5	20175	22.57	23	0-1
				1750	20350	22.97	23	0-1
			49	1715	20000	22.64	23	0-1
				1732.5	20175	22.50	23	0-1
				1750	20350	22.77	23	0-1
		25 RB	0	1715	20000	21.40	22	0-2
				1732.5	20175	21.29	22	0-2
				1750	20350	21.50	22	0-2
			12	1715	20000	21.40	22	0-2
				1732.5	20175	21.30	22	0-2
				1750	20350	21.59	22	0-2
			25	1715	20000	21.46	22	0-2
				1732.5	20175	21.21	22	0-2
				1750	20350	21.60	22	0-2
		50RB		1715	20000	21.42	22	0-2
				1732.5	20175	21.29	22	0-2
				1750	20350	21.57	22	0-2

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FDD Band 4								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	1712.5	19975	23.20	24	0
				1732.5	20175	23.24	24	0
				1752.5	20375	23.61	24	0
			12	1712.5	19975	23.30	24	0
				1732.5	20175	23.21	24	0
				1752.5	20375	23.59	24	0
			24	1712.5	19975	23.37	24	0
				1732.5	20175	23.22	24	0
				1752.5	20375	23.51	24	0
		12 RB	0	1712.5	19975	22.50	23	0-1
				1732.5	20175	22.55	23	0-1
				1752.5	20375	22.85	23	0-1
			6	1712.5	19975	22.58	23	0-1
				1732.5	20175	22.53	23	0-1
				1752.5	20375	22.90	23	0-1
			13	1712.5	19975	22.61	23	0-1
				1732.5	20175	22.46	23	0-1
				1752.5	20375	22.84	23	0-1
		25RB		1712.5	19975	22.29	23	0-1
				1732.5	20175	22.23	23	0-1
				1752.5	20375	22.61	23	0-1
	16-QAM	1 RB	0	1712.5	19975	22.69	23	0-1
				1732.5	20175	22.55	23	0-1
				1752.5	20375	22.93	23	0-1
			12	1712.5	19975	22.14	23	0-1
				1732.5	20175	22.58	23	0-1
				1752.5	20375	22.47	23	0-1
			24	1712.5	19975	22.47	23	0-1
				1732.5	20175	22.59	23	0-1
				1752.5	20375	22.74	23	0-1
		12 RB	0	1712.5	19975	21.54	22	0-2
				1732.5	20175	21.59	22	0-2
				1752.5	20375	21.88	22	0-2
			6	1712.5	19975	21.63	22	0-2
				1732.5	20175	21.59	22	0-2
				1752.5	20375	21.82	22	0-2
			13	1712.5	19975	21.60	22	0-2
				1732.5	20175	21.50	22	0-2
				1752.5	20375	21.71	22	0-2
		25RB		1712.5	19975	21.29	22	0-2
				1732.5	20175	21.20	22	0-2
				1752.5	20375	21.57	22	0-2

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FDD Band 4								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
3	QPSK	1 RB	0	1711.5	19965	23.02	24	0
				1732.5	20175	23.22	24	0
				1753.5	20385	23.46	24	0
			7	1711.5	19965	23.16	24	0
				1732.5	20175	23.33	24	0
				1753.5	20385	23.62	24	0
			14	1711.5	19965	23.13	24	0
				1732.5	20175	23.20	24	0
				1753.5	20385	23.52	24	0
		8 RB	0	1711.5	19965	22.17	23	0-1
				1732.5	20175	22.25	23	0-1
				1753.5	20385	22.57	23	0-1
			4	1711.5	19965	22.15	23	0-1
				1732.5	20175	22.23	23	0-1
				1753.5	20385	22.52	23	0-1
			7	1711.5	19965	22.26	23	0-1
				1732.5	20175	22.21	23	0-1
				1753.5	20385	22.57	23	0-1
		15RB		1711.5	19965	22.16	23	0-1
				1732.5	20175	22.24	23	0-1
				1753.5	20385	22.54	23	0-1
	16-QAM	1 RB	0	1711.5	19965	22.31	23	0-1
				1732.5	20175	22.64	23	0-1
				1753.5	20385	22.38	23	0-1
			7	1711.5	19965	22.47	23	0-1
				1732.5	20175	22.70	23	0-1
				1753.5	20385	22.97	23	0-1
			14	1711.5	19965	22.07	23	0-1
				1732.5	20175	22.43	23	0-1
				1753.5	20385	22.92	23	0-1
		8 RB	0	1711.5	19965	21.27	22	0-2
				1732.5	20175	21.33	22	0-2
				1753.5	20385	21.56	22	0-2
			4	1711.5	19965	21.20	22	0-2
				1732.5	20175	21.05	22	0-2
				1753.5	20385	21.55	22	0-2
			7	1711.5	19965	21.25	22	0-2
				1732.5	20175	21.31	22	0-2
				1753.5	20385	21.48	22	0-2
		15RB		1711.5	19965	21.18	22	0-2
				1732.5	20175	21.34	22	0-2
				1753.5	20385	21.54	22	0-2

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FDD Band 4								
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1.4	QPSK	1 RB	0	1710.7	19957	23.23	24	0
				1732.5	20175	23.25	24	0
				1754.3	20393	23.51	24	0
			2	1710.7	19957	23.19	24	0
				1732.5	20175	23.19	24	0
				1754.3	20393	23.55	24	0
			5	1710.7	19957	23.16	24	0
				1732.5	20175	23.15	24	0
				1754.3	20393	23.59	24	0
		3 RB	0	1710.7	19957	22.47	23	0
				1732.5	20175	22.52	23	0
				1754.3	20393	22.83	23	0
			2	1710.7	19957	22.48	23	0
				1732.5	20175	22.53	23	0
				1754.3	20393	22.83	23	0
			3	1710.7	19957	22.48	23	0
				1732.5	20175	22.49	23	0
				1754.3	20393	22.83	23	0
		6RB		1710.7	19957	22.17	23	0-1
				1732.5	20175	22.19	23	0-1
				1754.3	20393	22.54	23	0-1
	16-QAM	1 RB	0	1710.7	19957	21.98	23	0-1
				1732.5	20175	22.64	23	0-1
				1754.3	20393	22.43	23	0-1
			2	1710.7	19957	22.16	23	0-1
				1732.5	20175	22.17	23	0-1
				1754.3	20393	22.91	23	0-1
			5	1710.7	19957	22.22	23	0-1
				1732.5	20175	22.52	23	0-1
				1754.3	20393	22.96	23	0-1
		3 RB	0	1710.7	19957	22.23	23	0-1
				1732.5	20175	22.26	23	0-1
				1754.3	20393	22.46	23	0-1
			2	1710.7	19957	22.14	23	0-1
				1732.5	20175	22.32	23	0-1
				1754.3	20393	22.61	23	0-1
			3	1710.7	19957	22.11	23	0-1
				1732.5	20175	22.28	23	0-1
				1754.3	20393	22.75	23	0-1
		6RB		1710.7	19957	21.14	22	0-2
				1732.5	20175	21.26	22	0-2
				1754.3	20393	21.50	22	0-2

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FDD Band 5								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	829	20450	23.01	24	0
				836.5	20525	23.07	24	0
				844	20600	22.89	24	0
			25	829	20450	23.08	24	0
				836.5	20525	22.77	24	0
				844	20600	22.84	24	0
			49	829	20450	22.96	24	0
				836.5	20525	22.93	24	0
				844	20600	23.10	24	0
		25 RB	0	829	20450	22.09	23	0-1
				836.5	20525	21.87	23	0-1
				844	20600	21.69	23	0-1
			12	829	20450	21.98	23	0-1
				836.5	20525	21.86	23	0-1
				844	20600	21.79	23	0-1
			25	829	20450	22.03	23	0-1
				836.5	20525	21.81	23	0-1
				844	20600	22.11	23	0-1
		50RB		829	20450	22.14	23	0-1
				836.5	20525	21.88	23	0-1
				844	20600	21.99	23	0-1
	16-QAM	1 RB	0	829	20450	22.57	23	0-1
				836.5	20525	22.32	23	0-1
				844	20600	22.13	23	0-1
			25	829	20450	22.44	23	0-1
				836.5	20525	22.61	23	0-1
				844	20600	22.49	23	0-1
			49	829	20450	22.14	23	0-1
				836.5	20525	22.33	23	0-1
				844	20600	22.54	23	0-1
		25 RB	0	829	20450	21.25	22	0-2
				836.5	20525	20.94	22	0-2
				844	20600	20.90	22	0-2
			12	829	20450	21.21	22	0-2
				836.5	20525	21.04	22	0-2
				844	20600	20.95	22	0-2
			25	829	20450	21.22	22	0-2
				836.5	20525	20.94	22	0-2
				844	20600	21.13	22	0-2
		50RB		829	20450	21.17	22	0-2
				836.5	20525	20.97	22	0-2
				844	20600	21.11	22	0-2

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FDD Band 5								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	826.5	20425	23.00	24	0
				836.5	20525	22.82	24	0
				846.5	20625	22.73	24	0
			12	826.5	20425	22.96	24	0
				836.5	20525	22.76	24	0
				846.5	20625	22.92	24	0
			24	826.5	20425	22.98	24	0
				836.5	20525	22.81	24	0
				846.5	20625	23.05	24	0
		12 RB	0	826.5	20425	22.03	23	0-1
				836.5	20525	21.80	23	0-1
				846.5	20625	21.72	23	0-1
			6	826.5	20425	22.03	23	0-1
				836.5	20525	21.79	23	0-1
				846.5	20625	21.84	23	0-1
			13	826.5	20425	21.98	23	0-1
				836.5	20525	21.81	23	0-1
				846.5	20625	21.89	23	0-1
		25RB		826.5	20425	22.01	23	0-1
				836.5	20525	21.81	23	0-1
				846.5	20625	22.00	23	0-1
	16-QAM	1 RB	0	826.5	20425	22.16	23	0-1
				836.5	20525	22.23	23	0-1
				846.5	20625	22.36	23	0-1
			12	826.5	20425	22.04	23	0-1
				836.5	20525	22.43	23	0-1
				846.5	20625	22.02	23	0-1
			24	826.5	20425	22.19	23	0-1
				836.5	20525	22.47	23	0-1
				846.5	20625	21.77	23	0-1
		12 RB	0	826.5	20425	21.08	22	0-2
				836.5	20525	20.84	22	0-2
				846.5	20625	20.92	22	0-2
			6	826.5	20425	21.11	22	0-2
				836.5	20525	20.93	22	0-2
				846.5	20625	20.85	22	0-2
			13	826.5	20425	21.06	22	0-2
				836.5	20525	20.93	22	0-2
				846.5	20625	20.94	22	0-2
		25RB		826.5	20425	20.95	22	0-2
				836.5	20525	20.86	22	0-2
				846.5	20625	20.75	22	0-2

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FDD Band 5								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
3	QPSK	1 RB	0	825.5	20415	23.03	24	0
				836.5	20525	22.71	24	0
				847.5	20635	22.77	24	0
			7	825.5	20415	23.00	24	0
				836.5	20525	22.79	24	0
				847.5	20635	22.91	24	0
			14	825.5	20415	22.99	24	0
				836.5	20525	22.68	24	0
				847.5	20635	22.94	24	0
		8 RB	0	825.5	20415	22.01	23	0-1
				836.5	20525	21.79	23	0-1
				847.5	20635	21.92	23	0-1
			4	825.5	20415	22.02	23	0-1
				836.5	20525	21.80	23	0-1
				847.5	20635	21.97	23	0-1
			7	825.5	20415	22.05	23	0-1
				836.5	20525	21.82	23	0-1
				847.5	20635	21.97	23	0-1
		15RB		825.5	20415	21.99	23	0-1
				836.5	20525	21.79	23	0-1
				847.5	20635	22.03	23	0-1
	16-QAM	1 RB	0	825.5	20415	22.32	23	0-1
				836.5	20525	21.83	23	0-1
				847.5	20635	22.38	23	0-1
			7	825.5	20415	22.04	23	0-1
				836.5	20525	22.61	23	0-1
				847.5	20635	22.50	23	0-1
			14	825.5	20415	22.72	23	0-1
				836.5	20525	21.93	23	0-1
				847.5	20635	22.30	23	0-1
		8 RB	0	825.5	20415	20.96	22	0-2
				836.5	20525	20.83	22	0-2
				847.5	20635	20.89	22	0-2
			4	825.5	20415	20.99	22	0-2
				836.5	20525	20.82	22	0-2
				847.5	20635	21.00	22	0-2
			7	825.5	20415	21.07	22	0-2
				836.5	20525	20.86	22	0-2
				847.5	20635	21.11	22	0-2
		15RB		825.5	20415	21.09	22	0-2
				836.5	20525	20.77	22	0-2
				847.5	20635	21.02	22	0-2

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FDD Band 5								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
1.4	QPSK	1 RB	0	824.7	20407	23.04	24	0
				836.5	20525	22.81	24	0
				848.3	20643	22.99	24	0
			2	824.7	20407	23.08	24	0
				836.5	20525	22.86	24	0
				848.3	20643	22.92	24	0
			5	824.7	20407	23.07	24	0
				836.5	20525	22.81	24	0
				848.3	20643	23.01	24	0
		3 RB	0	824.7	20407	22.94	23	0
				836.5	20525	22.82	23	0
				848.3	20643	23.00	23	0
			2	824.7	20407	22.97	23	0
				836.5	20525	22.79	23	0
				848.3	20643	22.98	23	0
			3	824.7	20407	22.96	23	0
				836.5	20525	22.82	23	0
				848.3	20643	23.00	23	0
		6RB		824.7	20407	22.06	23	0-1
				836.5	20525	21.83	23	0-1
				848.3	20643	22.03	23	0-1
	16-QAM	1 RB	0	824.7	20407	22.57	23	0-1
				836.5	20525	22.41	23	0-1
				848.3	20643	22.27	23	0-1
			2	824.7	20407	22.49	23	0-1
				836.5	20525	22.25	23	0-1
				848.3	20643	22.33	23	0-1
			5	824.7	20407	22.44	23	0-1
				836.5	20525	21.88	23	0-1
				848.3	20643	22.49	23	0-1
		3 RB	0	824.7	20407	22.21	23	0-1
				836.5	20525	21.90	23	0-1
				848.3	20643	21.77	23	0-1
			2	824.7	20407	22.08	23	0-1
				836.5	20525	22.05	23	0-1
				848.3	20643	22.08	23	0-1
			3	824.7	20407	22.22	23	0-1
				836.5	20525	21.83	23	0-1
				848.3	20643	22.14	23	0-1
		6RB		824.7	20407	21.17	22	0-2
				836.5	20525	20.75	22	0-2
				848.3	20643	20.98	22	0-2

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FDD Band 7								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
20	QPSK	1 RB	0	2510	20850	22.51	24	0
				2535	21100	22.52	24	0
				2560	21350	22.88	24	0
			50	2510	20850	22.81	24	0
				2535	21100	22.62	24	0
				2560	21350	22.72	24	0
			99	2510	20850	22.70	24	0
				2535	21100	23.07	24	0
				2560	21350	22.91	24	0
		50 RB	0	2510	20850	21.74	23	0-1
				2535	21100	21.51	23	0-1
				2560	21350	21.86	23	0-1
			25	2510	20850	21.69	23	0-1
				2535	21100	21.58	23	0-1
				2560	21350	21.83	23	0-1
			50	2510	20850	21.65	23	0-1
				2535	21100	21.78	23	0-1
				2560	21350	21.81	23	0-1
		100RB		2510	20850	21.71	23	0-1
				2535	21100	21.75	23	0-1
				2560	21350	21.89	23	0-1
	16-QAM	1 RB	0	2510	20850	22.09	23	0-1
				2535	21100	21.51	23	0-1
				2560	21350	22.40	23	0-1
			50	2510	20850	22.05	23	0-1
				2535	21100	22.18	23	0-1
				2560	21350	22.34	23	0-1
			99	2510	20850	22.12	23	0-1
				2535	21100	22.34	23	0-1
				2560	21350	22.12	23	0-1
		50 RB	0	2510	20850	20.85	22	0-2
				2535	21100	20.58	22	0-2
				2560	21350	20.91	22	0-2
			25	2510	20850	20.80	22	0-2
				2535	21100	20.72	22	0-2
				2560	21350	20.87	22	0-2
			50	2510	20850	20.64	22	0-2
				2535	21100	20.83	22	0-2
				2560	21350	20.85	22	0-2
		100RB		2510	20850	20.83	22	0-2
				2535	21100	20.90	22	0-2
				2560	21350	20.93	22	0-2

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FDD Band 7								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
15	QPSK	1 RB	0	2507.5	20825	22.53	24	0
				2535	21100	22.59	24	0
				2562.5	21375	22.76	24	0
			36	2507.5	20825	22.76	24	0
				2535	21100	22.57	24	0
				2562.5	21375	22.74	24	0
			74	2507.5	20825	22.64	24	0
				2535	21100	22.89	24	0
				2562.5	21375	22.88	24	0
		36 RB	0	2507.5	20825	21.70	23	0-1
				2535	21100	21.58	23	0-1
				2562.5	21375	21.83	23	0-1
			18	2507.5	20825	21.72	23	0-1
				2535	21100	21.71	23	0-1
				2562.5	21375	21.80	23	0-1
			37	2507.5	20825	21.75	23	0-1
				2535	21100	21.75	23	0-1
				2562.5	21375	21.75	23	0-1
		75RB		2507.5	20825	21.74	23	0-1
				2535	21100	21.68	23	0-1
				2562.5	21375	21.83	23	0-1
	16-QAM	1 RB	0	2507.5	20825	21.84	23	0-1
				2535	21100	21.57	23	0-1
				2562.5	21375	22.50	23	0-1
			36	2507.5	20825	22.41	23	0-1
				2535	21100	22.11	23	0-1
				2562.5	21375	21.90	23	0-1
			74	2507.5	20825	21.92	23	0-1
				2535	21100	22.33	23	0-1
				2562.5	21375	22.06	23	0-1
		36 RB	0	2507.5	20825	20.85	22	0-2
				2535	21100	20.69	22	0-2
				2562.5	21375	20.84	22	0-2
			18	2507.5	20825	20.91	22	0-2
				2535	21100	20.77	22	0-2
				2562.5	21375	20.87	22	0-2
			37	2507.5	20825	20.83	22	0-2
				2535	21100	20.82	22	0-2
				2562.5	21375	20.83	22	0-2
		75RB		2507.5	20825	20.87	22	0-2
				2535	21100	20.78	22	0-2
				2562.5	21375	20.89	22	0-2

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FDD Band 7								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	2505	20800	22.72	24	0
				2535	21100	22.39	24	0
				2565	21400	22.84	24	0
			25	2505	20800	22.77	24	0
				2535	21100	22.63	24	0
				2565	21400	22.82	24	0
			49	2505	20800	22.81	24	0
				2535	21100	22.77	24	0
				2565	21400	22.98	24	0
		25 RB	0	2505	20800	21.77	23	0-1
				2535	21100	21.67	23	0-1
				2565	21400	21.86	23	0-1
			12	2505	20800	21.83	23	0-1
				2535	21100	21.71	23	0-1
				2565	21400	21.81	23	0-1
			25	2505	20800	21.84	23	0-1
				2535	21100	21.72	23	0-1
				2565	21400	21.91	23	0-1
		50RB		2505	20800	21.82	23	0-1
				2535	21100	21.69	23	0-1
				2565	21400	21.79	23	0-1
	16-QAM	1 RB	0	2505	20800	22.20	23	0-1
				2535	21100	21.76	23	0-1
				2565	21400	22.32	23	0-1
			25	2505	20800	22.21	23	0-1
				2535	21100	22.02	23	0-1
				2565	21400	21.80	23	0-1
			49	2505	20800	22.34	23	0-1
				2535	21100	22.19	23	0-1
				2565	21400	22.44	23	0-1
		25 RB	0	2505	20800	20.83	22	0-2
				2535	21100	20.76	22	0-2
				2565	21400	21.02	22	0-2
			12	2505	20800	20.94	22	0-2
				2535	21100	20.88	22	0-2
				2565	21400	20.77	22	0-2
			25	2505	20800	20.84	22	0-2
				2535	21100	20.84	22	0-2
				2565	21400	20.90	22	0-2
		50RB		2505	20800	20.87	22	0-2
				2535	21100	20.87	22	0-2
				2565	21400	20.90	22	0-2

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FDD Band 7								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	2502.5	20775	22.69	24	0
				2535	21100	22.61	24	0
				2567.5	21425	22.76	24	0
			12	2502.5	20775	22.74	24	0
				2535	21100	22.68	24	0
				2567.5	21425	22.75	24	0
			24	2502.5	20775	22.78	24	0
				2535	21100	22.66	24	0
				2567.5	21425	22.86	24	0
		12 RB	0	2502.5	20775	21.76	23	0-1
				2535	21100	21.62	23	0-1
				2567.5	21425	21.81	23	0-1
			6	2502.5	20775	21.78	23	0-1
				2535	21100	21.62	23	0-1
				2567.5	21425	21.80	23	0-1
			13	2502.5	20775	21.84	23	0-1
				2535	21100	21.65	23	0-1
				2567.5	21425	21.86	23	0-1
		25RB		2502.5	20775	21.82	23	0-1
				2535	21100	21.63	23	0-1
				2567.5	21425	21.79	23	0-1
	16-QAM	1 RB	0	2502.5	20775	22.40	23	0-1
				2535	21100	21.92	23	0-1
				2567.5	21425	21.97	23	0-1
			12	2502.5	20775	22.18	23	0-1
				2535	21100	21.69	23	0-1
				2567.5	21425	21.91	23	0-1
			24	2502.5	20775	22.11	23	0-1
				2535	21100	22.43	23	0-1
				2567.5	21425	22.33	23	0-1
		12 RB	0	2502.5	20775	20.87	22	0-2
				2535	21100	20.73	22	0-2
				2567.5	21425	20.92	22	0-2
			6	2502.5	20775	20.77	22	0-2
				2535	21100	20.68	22	0-2
				2567.5	21425	20.86	22	0-2
			13	2502.5	20775	20.80	22	0-2
				2535	21100	20.68	22	0-2
				2567.5	21425	20.95	22	0-2
		25RB		2502.5	20775	20.79	22	0-2
				2535	21100	20.63	22	0-2
				2567.5	21425	20.84	22	0-2

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FDD Band 12								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	704	23060	23.01	24	0
				707.5	23095	23.13	24	0
				711	23130	22.91	24	0
			25	704	23060	22.97	24	0
				707.5	23095	22.84	24	0
				711	23130	23.02	24	0
			49	704	23060	22.95	24	0
				707.5	23095	23.18	24	0
				711	23130	22.99	24	0
		25 RB	0	704	23060	22.10	23	0-1
				707.5	23095	22.07	23	0-1
				711	23130	21.85	23	0-1
			12	704	23060	21.98	23	0-1
				707.5	23095	21.95	23	0-1
				711	23130	22.00	23	0-1
			25	704	23060	22.01	23	0-1
				707.5	23095	21.92	23	0-1
				711	23130	22.01	23	0-1
		50RB		704	23060	22.11	23	0-1
				707.5	23095	22.07	23	0-1
				711	23130	22.17	23	0-1
	16-QAM	1 RB	0	704	23060	22.08	23	0-1
				707.5	23095	22.54	23	0-1
				711	23130	21.71	23	0-1
			25	704	23060	22.01	23	0-1
				707.5	23095	22.39	23	0-1
				711	23130	22.50	23	0-1
			49	704	23060	22.57	23	0-1
				707.5	23095	22.66	23	0-1
				711	23130	22.36	23	0-1
		25 RB	0	704	23060	21.18	22	0-2
				707.5	23095	21.28	22	0-2
				711	23130	20.96	22	0-2
			12	704	23060	21.20	22	0-2
				707.5	23095	21.20	22	0-2
				711	23130	20.91	22	0-2
			25	704	23060	21.10	22	0-2
				707.5	23095	21.11	22	0-2
				711	23130	21.20	22	0-2
		50RB		704	23060	21.14	22	0-2
				707.5	23095	21.19	22	0-2
				711	23130	21.21	22	0-2

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FDD Band 12								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	701.5	23035	22.97	24	0
				707.5	23095	23.01	24	0
				713.5	23155	22.90	24	0
			12	701.5	23035	23.09	24	0
				707.5	23095	22.85	24	0
				713.5	23155	22.98	24	0
			24	701.5	23035	23.19	24	0
				707.5	23095	22.91	24	0
				713.5	23155	23.03	24	0
		12 RB	0	701.5	23035	22.16	23	0-1
				707.5	23095	21.95	23	0-1
				713.5	23155	22.05	23	0-1
			6	701.5	23035	22.07	23	0-1
				707.5	23095	21.91	23	0-1
				713.5	23155	22.00	23	0-1
			13	701.5	23035	22.12	23	0-1
				707.5	23095	21.96	23	0-1
				713.5	23155	22.18	23	0-1
		25RB		701.5	23035	22.12	23	0-1
				707.5	23095	21.97	23	0-1
				713.5	23155	21.94	23	0-1
	16-QAM	1 RB	0	701.5	23035	22.53	23	0-1
				707.5	23095	22.35	23	0-1
				713.5	23155	22.20	23	0-1
			12	701.5	23035	22.34	23	0-1
				707.5	23095	22.46	23	0-1
				713.5	23155	22.58	23	0-1
			24	701.5	23035	22.16	23	0-1
				707.5	23095	22.32	23	0-1
				713.5	23155	22.44	23	0-1
		12 RB	0	701.5	23035	21.05	22	0-2
				707.5	23095	20.96	22	0-2
				713.5	23155	20.98	22	0-2
			6	701.5	23035	21.15	22	0-2
				707.5	23095	20.97	22	0-2
				713.5	23155	21.14	22	0-2
			13	701.5	23035	21.14	22	0-2
				707.5	23095	21.04	22	0-2
				713.5	23155	20.88	22	0-2
		25RB		701.5	23035	20.98	22	0-2
				707.5	23095	21.02	22	0-2
				713.5	23155	20.95	22	0-2

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FDD Band 12								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
3	QPSK	1 RB	0	700.5	23025	23.02	24	0
				707.5	23095	23.00	24	0
				714.5	23165	22.94	24	0
			7	700.5	23025	23.08	24	0
				707.5	23095	22.96	24	0
				714.5	23165	22.92	24	0
			14	700.5	23025	23.16	24	0
				707.5	23095	22.87	24	0
				714.5	23165	22.86	24	0
		8 RB	0	700.5	23025	21.96	23	0-1
				707.5	23095	21.95	23	0-1
				714.5	23165	22.00	23	0-1
			4	700.5	23025	22.02	23	0-1
				707.5	23095	21.93	23	0-1
				714.5	23165	21.75	23	0-1
			7	700.5	23025	22.14	23	0-1
				707.5	23095	21.97	23	0-1
				714.5	23165	22.02	23	0-1
		15RB		700.5	23025	22.16	23	0-1
				707.5	23095	21.93	23	0-1
				714.5	23165	21.96	23	0-1
	16-QAM	1 RB	0	700.5	23025	22.51	23	0-1
				707.5	23095	22.30	23	0-1
				714.5	23165	21.79	23	0-1
			7	700.5	23025	22.33	23	0-1
				707.5	23095	22.16	23	0-1
				714.5	23165	22.40	23	0-1
			14	700.5	23025	21.98	23	0-1
				707.5	23095	21.97	23	0-1
				714.5	23165	22.54	23	0-1
		8 RB	0	700.5	23025	21.00	22	0-2
				707.5	23095	21.08	22	0-2
				714.5	23165	21.07	22	0-2
			4	700.5	23025	21.11	22	0-2
				707.5	23095	21.06	22	0-2
				714.5	23165	21.05	22	0-2
			7	700.5	23025	21.14	22	0-2
				707.5	23095	20.92	22	0-2
				714.5	23165	21.05	22	0-2
		15RB		700.5	23025	21.13	22	0-2
				707.5	23095	20.97	22	0-2
				714.5	23165	21.15	22	0-2

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FDD Band 12								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
1.4	QPSK	1 RB	0	699.7	23017	22.91	24	0
				707.5	23095	22.90	24	0
				715.3	23173	22.97	24	0
			2	699.7	23017	22.86	24	0
				707.5	23095	22.91	24	0
				715.3	23173	22.77	24	0
			5	699.7	23017	23.00	24	0
				707.5	23095	22.94	24	0
				715.3	23173	22.87	24	0
		3 RB	0	699.7	23017	22.92	23	0
				707.5	23095	22.95	23	0
				715.3	23173	22.96	23	0
			2	699.7	23017	22.97	23	0
				707.5	23095	22.90	23	0
				715.3	23173	22.79	23	0
			3	699.7	23017	22.96	23	0
				707.5	23095	22.94	23	0
				715.3	23173	22.92	23	0
		6RB		699.7	23017	22.03	23	0-1
				707.5	23095	21.88	23	0-1
				715.3	23173	21.86	23	0-1
	16-QAM	1 RB	0	699.7	23017	22.54	23	0-1
				707.5	23095	22.14	23	0-1
				715.3	23173	21.89	23	0-1
			2	699.7	23017	22.46	23	0-1
				707.5	23095	22.26	23	0-1
				715.3	23173	22.32	23	0-1
			5	699.7	23017	22.16	23	0-1
				707.5	23095	21.83	23	0-1
				715.3	23173	22.16	23	0-1
		3 RB	0	699.7	23017	22.16	23	0-1
				707.5	23095	21.92	23	0-1
				715.3	23173	22.12	23	0-1
			2	699.7	23017	22.12	23	0-1
				707.5	23095	22.03	23	0-1
				715.3	23173	21.99	23	0-1
			3	699.7	23017	22.29	23	0-1
				707.5	23095	21.93	23	0-1
				715.3	23173	22.02	23	0-1
		6RB		699.7	23017	21.02	22	0-2
				707.5	23095	20.99	22	0-2
				715.3	23173	21.02	22	0-2

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FDD Band 13								
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	23.01	24	0
			25	782	23230	22.96	24	0
			49	782	23230	23.08	24	0
		25 RB	0	782	23230	22.07	23	0-1
			12	782	23230	21.91	23	0-1
			25	782	23230	21.98	23	0-1
		50RB		782	23230	22.13	23	0-1
	16-QAM	1 RB	0	782	23230	22.20	23	0-1
			25	782	23230	22.03	23	0-1
			49	782	23230	22.44	23	0-1
		25 RB	0	782	23230	20.93	22	0-2
			12	782	23230	21.03	22	0-2
			25	782	23230	21.06	22	0-2
		50RB		782	23230	21.14	22	0-2

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FDD Band 13								
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	22.97	24	0
				782	23230	22.86	24	0
				784.5	23255	22.84	24	0
			12	779.5	23205	22.94	24	0
				782	23230	22.78	24	0
				784.5	23255	23.01	24	0
			24	779.5	23205	22.83	24	0
				782	23230	22.88	24	0
				784.5	23255	22.97	24	0
		12 RB	0	779.5	23205	21.79	23	0-1
				782	23230	21.74	23	0-1
				784.5	23255	21.72	23	0-1
			6	779.5	23205	21.85	23	0-1
				782	23230	21.80	23	0-1
				784.5	23255	21.94	23	0-1
			13	779.5	23205	21.70	23	0-1
				782	23230	21.84	23	0-1
				784.5	23255	22.04	23	0-1
		25RB		779.5	23205	21.89	23	0-1
				782	23230	21.92	23	0-1
				784.5	23255	22.03	23	0-1
	16-QAM	1 RB	0	779.5	23205	22.55	23	0-1
				782	23230	22.05	23	0-1
				784.5	23255	22.15	23	0-1
			12	779.5	23205	22.14	23	0-1
				782	23230	22.12	23	0-1
				784.5	23255	22.28	23	0-1
			24	779.5	23205	22.29	23	0-1
				782	23230	22.50	23	0-1
				784.5	23255	22.65	23	0-1
		12 RB	0	779.5	23205	20.87	22	0-2
				782	23230	20.76	22	0-2
				784.5	23255	20.82	22	0-2
			6	779.5	23205	20.74	22	0-2
				782	23230	20.83	22	0-2
				784.5	23255	21.11	22	0-2
			13	779.5	23205	20.74	22	0-2
				782	23230	20.84	22	0-2
				784.5	23255	21.17	22	0-2
		25RB		779.5	23205	20.89	22	0-2
				782	23230	20.78	22	0-2
				784.5	23255	21.07	22	0-2

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FDD Band 17								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	709	23780	22.91	24	0
				710	23790	22.98	24	0
				711	23800	23.03	24	0
			25	709	23780	23.00	24	0
				710	23790	22.86	24	0
				711	23800	22.99	24	0
			49	709	23780	23.12	24	0
				710	23790	23.04	24	0
				711	23800	23.03	24	0
		25 RB	0	709	23780	21.97	23	0-1
				710	23790	21.94	23	0-1
				711	23800	21.89	23	0-1
			12	709	23780	21.88	23	0-1
				710	23790	22.00	23	0-1
				711	23800	22.01	23	0-1
			25	709	23780	22.09	23	0-1
				710	23790	22.03	23	0-1
				711	23800	22.10	23	0-1
		50RB		709	23780	21.96	23	0-1
				710	23790	22.17	23	0-1
				711	23800	22.04	23	0-1
	16-QAM	1 RB	0	709	23780	22.07	23	0-1
				710	23790	22.35	23	0-1
				711	23800	22.35	23	0-1
			25	709	23780	22.23	23	0-1
				710	23790	22.14	23	0-1
				711	23800	22.43	23	0-1
			49	709	23780	22.81	23	0-1
				710	23790	22.74	23	0-1
				711	23800	22.51	23	0-1
		25 RB	0	709	23780	21.13	22	0-2
				710	23790	21.11	22	0-2
				711	23800	21.04	22	0-2
			12	709	23780	20.99	22	0-2
				710	23790	21.04	22	0-2
				711	23800	21.04	22	0-2
			25	709	23780	21.23	22	0-2
				710	23790	21.17	22	0-2
				711	23800	21.20	22	0-2
		50RB		709	23780	21.29	22	0-2
				710	23790	21.17	22	0-2
				711	23800	21.28	22	0-2

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FDD Band 17								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	706.5	23755	22.97	24	0
				710	23790	22.86	24	0
				713.5	23825	22.84	24	0
			12	706.5	23755	22.96	24	0
				710	23790	22.80	24	0
				713.5	23825	23.10	24	0
			24	706.5	23755	22.96	24	0
				710	23790	22.97	24	0
				713.5	23825	23.02	24	0
		12 RB	0	706.5	23755	21.91	23	0-1
				710	23790	21.80	23	0-1
				713.5	23825	21.92	23	0-1
			6	706.5	23755	21.90	23	0-1
				710	23790	21.98	23	0-1
				713.5	23825	21.99	23	0-1
			13	706.5	23755	21.90	23	0-1
				710	23790	21.97	23	0-1
				713.5	23825	21.89	23	0-1
		25RB		706.5	23755	21.89	23	0-1
				710	23790	21.91	23	0-1
				713.5	23825	21.89	23	0-1
	16-QAM	1 RB	0	706.5	23755	22.54	23	0-1
				710	23790	22.18	23	0-1
				713.5	23825	22.34	23	0-1
			12	706.5	23755	22.17	23	0-1
				710	23790	22.37	23	0-1
				713.5	23825	22.73	23	0-1
			24	706.5	23755	21.74	23	0-1
				710	23790	22.42	23	0-1
				713.5	23825	22.60	23	0-1
		12 RB	0	706.5	23755	21.02	22	0-2
				710	23790	20.85	22	0-2
				713.5	23825	21.13	22	0-2
			6	706.5	23755	20.87	22	0-2
				710	23790	21.01	22	0-2
				713.5	23825	21.14	22	0-2
			13	706.5	23755	21.01	22	0-2
				710	23790	20.99	22	0-2
				713.5	23825	21.00	22	0-2
		25RB		706.5	23755	20.99	22	0-2
				710	23790	20.88	22	0-2
				713.5	23825	20.99	22	0-2

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FDD Band 26								
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	822.5	26825	23.11	24	0
				831.5	26865	22.95	24	0
				841.5	26965	22.85	24	0
			36	822.5	26825	23.06	24	0
				831.5	26865	23.01	24	0
				841.5	26965	22.90	24	0
			74	822.5	26825	22.76	24	0
				831.5	26865	22.74	24	0
				841.5	26965	22.94	24	0
		36 RB	0	822.5	26825	22.09	23	0-1
				831.5	26865	22.15	23	0-1
				841.5	26965	21.83	23	0-1
			18	822.5	26825	22.07	23	0-1
				831.5	26865	22.07	23	0-1
				841.5	26965	21.76	23	0-1
			37	822.5	26825	22.08	23	0-1
				831.5	26865	21.87	23	0-1
				841.5	26965	21.95	23	0-1
		75RB		822.5	26825	22.20	23	0-1
				831.5	26865	22.18	23	0-1
				841.5	26965	22.09	23	0-1
	16-QAM	1 RB	0	822.5	26825	22.27	23	0-1
				831.5	26865	22.09	23	0-1
				841.5	26965	22.29	23	0-1
			36	822.5	26825	22.36	23	0-1
				831.5	26865	22.56	23	0-1
				841.5	26965	22.29	23	0-1
			74	822.5	26825	22.50	23	0-1
				831.5	26865	22.63	23	0-1
				841.5	26965	22.36	23	0-1
		36 RB	0	822.5	26825	21.25	22	0-2
				831.5	26865	21.20	22	0-2
				841.5	26965	20.94	22	0-2
			18	822.5	26825	21.12	22	0-2
				831.5	26865	21.10	22	0-2
				841.5	26965	20.88	22	0-2
			37	822.5	26825	21.23	22	0-2
				831.5	26865	20.96	22	0-2
				841.5	26965	21.02	22	0-2
		75RB		822.5	26825	21.28	22	0-2
				831.5	26865	21.27	22	0-2
				841.5	26965	20.92	22	0-2

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FDD Band 26								
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	820	26750	23.16	24	0
				831.5	26865	23.02	24	0
				844	26990	22.84	24	0
			25	820	26750	23.05	24	0
				831.5	26865	22.96	24	0
				844	26990	22.80	24	0
			49	820	26750	23.03	24	0
				831.5	26865	22.88	24	0
				844	26990	23.06	24	0
		25 RB	0	820	26750	22.06	23	0-1
				831.5	26865	21.96	23	0-1
				844	26990	21.92	23	0-1
			12	820	26750	22.16	23	0-1
				831.5	26865	22.09	23	0-1
				844	26990	21.80	23	0-1
			25	820	26750	22.09	23	0-1
				831.5	26865	21.94	23	0-1
				844	26990	22.13	23	0-1
		50RB		820	26750	22.18	23	0-1
				831.5	26865	22.03	23	0-1
				844	26990	21.96	23	0-1
	16-QAM	1 RB	0	820	26750	22.40	23	0-1
				831.5	26865	22.57	23	0-1
				844	26990	22.05	23	0-1
			25	820	26750	22.63	23	0-1
				831.5	26865	22.43	23	0-1
				844	26990	22.04	23	0-1
			49	820	26750	22.45	23	0-1
				831.5	26865	22.48	23	0-1
				844	26990	22.32	23	0-1
		25 RB	0	820	26750	21.31	22	0-2
				831.5	26865	21.05	22	0-2
				844	26990	20.93	22	0-2
			12	820	26750	21.28	22	0-2
				831.5	26865	21.16	22	0-2
				844	26990	20.92	22	0-2
			25	820	26750	21.17	22	0-2
				831.5	26865	20.99	22	0-2
				844	26990	21.10	22	0-2
		50RB		820	26750	21.18	22	0-2
				831.5	26865	21.04	22	0-2
				844	26990	21.11	22	0-2

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FDD Band 26								
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	816.5	26715	23.04	24	0
				831.5	26865	22.90	24	0
				846.5	27015	22.66	24	0
			12	816.5	26715	23.05	24	0
				831.5	26865	22.96	24	0
				846.5	27015	22.83	24	0
			24	816.5	26715	23.21	24	0
				831.5	26865	22.88	24	0
				846.5	27015	22.93	24	0
		12 RB	0	816.5	26715	22.02	23	0-1
				831.5	26865	22.05	23	0-1
				846.5	27015	21.82	23	0-1
			6	816.5	26715	22.13	23	0-1
				831.5	26865	21.94	23	0-1
				846.5	27015	21.94	23	0-1
			13	816.5	26715	22.20	23	0-1
				831.5	26865	21.89	23	0-1
				846.5	27015	21.86	23	0-1
		25RB		816.5	26715	22.17	23	0-1
				831.5	26865	21.94	23	0-1
				846.5	27015	21.72	23	0-1
	16-QAM	1 RB	0	816.5	26715	22.68	23	0-1
				831.5	26865	22.21	23	0-1
				846.5	27015	21.90	23	0-1
			12	816.5	26715	22.54	23	0-1
				831.5	26865	22.34	23	0-1
				846.5	27015	22.04	23	0-1
			24	816.5	26715	22.84	23	0-1
				831.5	26865	22.08	23	0-1
				846.5	27015	22.13	23	0-1
		12 RB	0	816.5	26715	21.18	22	0-2
				831.5	26865	20.91	22	0-2
				846.5	27015	20.79	22	0-2
			6	816.5	26715	21.24	22	0-2
				831.5	26865	21.02	22	0-2
				846.5	27015	20.80	22	0-2
			13	816.5	26715	21.25	22	0-2
				831.5	26865	20.98	22	0-2
				846.5	27015	20.82	22	0-2
		25RB		816.5	26715	21.13	22	0-2
				831.5	26865	20.99	22	0-2
				846.5	27015	20.91	22	0-2

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FDD Band 26								
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	815.5	26705	23.02	24	0
				831.5	26865	22.88	24	0
				847.5	27025	22.73	24	0
			7	815.5	26705	23.08	24	0
				831.5	26865	22.94	24	0
				847.5	27025	23.02	24	0
			14	815.5	26705	23.02	24	0
				831.5	26865	22.85	24	0
				847.5	27025	22.96	24	0
		8 RB	0	815.5	26705	22.00	23	0-1
				831.5	26865	22.08	23	0-1
				847.5	27025	21.81	23	0-1
			4	815.5	26705	21.95	23	0-1
				831.5	26865	22.02	23	0-1
				847.5	27025	21.87	23	0-1
			7	815.5	26705	22.14	23	0-1
				831.5	26865	21.93	23	0-1
				847.5	27025	21.78	23	0-1
		15RB		815.5	26705	22.05	23	0-1
				831.5	26865	21.94	23	0-1
				847.5	27025	21.91	23	0-1
	16-QAM	1 RB	0	815.5	26705	22.10	23	0-1
				831.5	26865	22.52	23	0-1
				847.5	27025	22.12	23	0-1
			7	815.5	26705	21.80	23	0-1
				831.5	26865	22.56	23	0-1
				847.5	27025	21.95	23	0-1
			14	815.5	26705	22.87	23	0-1
				831.5	26865	22.06	23	0-1
				847.5	27025	22.07	23	0-1
		8 RB	0	815.5	26705	21.11	22	0-2
				831.5	26865	21.17	22	0-2
				847.5	27025	20.93	22	0-2
			4	815.5	26705	21.02	22	0-2
				831.5	26865	21.00	22	0-2
				847.5	27025	20.79	22	0-2
			7	815.5	26705	21.18	22	0-2
				831.5	26865	20.79	22	0-2
				847.5	27025	21.05	22	0-2
		15RB		815.5	26705	21.06	22	0-2
				831.5	26865	20.98	22	0-2
				847.5	27025	20.98	22	0-2

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FDD Band 26								
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	814.7	26697	22.89	24	0
				831.5	26865	22.94	24	0
				848.3	27033	22.93	24	0
			2	814.7	26697	22.91	24	0
				831.5	26865	22.90	24	0
				848.3	27033	22.93	24	0
			5	814.7	26697	23.05	24	0
				831.5	26865	22.92	24	0
				848.3	27033	22.93	24	0
		3 RB	0	814.7	26697	22.93	23	0-1
				831.5	26865	22.96	23	0-1
				848.3	27033	22.90	23	0-1
			2	814.7	26697	22.98	23	0-1
				831.5	26865	22.89	23	0-1
				848.3	27033	22.96	23	0-1
			3	814.7	26697	22.96	23	0-1
				831.5	26865	22.92	23	0-1
				848.3	27033	22.89	23	0-1
		6RB		814.7	26697	22.05	23	0-1
				831.5	26865	21.94	23	0-1
				848.3	27033	21.88	23	0-1
	16-QAM	1 RB	0	814.7	26697	22.26	23	0-1
				831.5	26865	22.16	23	0-1
				848.3	27033	22.05	23	0-1
			2	814.7	26697	22.41	23	0-1
				831.5	26865	22.20	23	0-1
				848.3	27033	22.36	23	0-1
			5	814.7	26697	22.54	23	0-1
				831.5	26865	22.50	23	0-1
				848.3	27033	22.52	23	0-1
		3 RB	0	814.7	26697	22.17	23	0-2
				831.5	26865	21.91	23	0-2
				848.3	27033	21.83	23	0-2
			2	814.7	26697	22.02	23	0-2
				831.5	26865	22.01	23	0-2
				848.3	27033	22.02	23	0-2
			3	814.7	26697	22.02	23	0-2
				831.5	26865	22.14	23	0-2
				848.3	27033	22.12	23	0-2
		6RB		814.7	26697	20.98	22	0-2
				831.5	26865	21.01	22	0-2
				848.3	27033	20.94	22	0-2

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FDD Band 30								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	2310	27710	23.44	24	0
			25	2310	27710	23.26	24	0
			49	2310	27710	23.33	24	0
		25 RB	0	2310	27710	22.51	23	0-1
			12	2310	27710	22.32	23	0-1
			25	2310	27710	22.38	23	0-1
		50RB		2310	27710	22.31	23	0-1
	16-QAM	1 RB	0	2310	27710	22.50	23	0-1
			25	2310	27710	22.58	23	0-1
			49	2310	27710	22.57	23	0-1
		25 RB	0	2310	27710	21.62	22	0-2
			12	2310	27710	21.31	22	0-2
			25	2310	27710	21.26	22	0-2
		50RB		2310	27710	21.41	22	0-2

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FDD Band 30								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	2307.5	27685	23.24	24	0
				2310	27710	23.32	24	0
				2312.5	27735	23.26	24	0
			12	2307.5	27685	23.28	24	0
				2310	27710	23.20	24	0
				2312.5	27735	23.31	24	0
			24	2307.5	27685	23.25	24	0
				2310	27710	23.18	24	0
				2312.5	27735	23.12	24	0
		12 RB	0	2307.5	27685	22.35	23	0-1
				2310	27710	22.27	23	0-1
				2312.5	27735	22.31	23	0-1
			6	2307.5	27685	22.31	23	0-1
				2310	27710	22.24	23	0-1
				2312.5	27735	22.20	23	0-1
			13	2307.5	27685	22.29	23	0-1
				2310	27710	22.30	23	0-1
				2312.5	27735	22.34	23	0-1
		25RB		2307.5	27685	22.46	23	0-1
				2310	27710	22.21	23	0-1
				2312.5	27735	22.17	23	0-1
	16-QAM	1 RB	0	2307.5	27685	22.55	23	0-1
				2310	27710	22.28	23	0-1
				2312.5	27735	22.40	23	0-1
			12	2307.5	27685	22.69	23	0-1
				2310	27710	22.37	23	0-1
				2312.5	27735	22.38	23	0-1
			24	2307.5	27685	22.37	23	0-1
				2310	27710	22.40	23	0-1
				2312.5	27735	22.21	23	0-1
		12 RB	0	2307.5	27685	21.41	22	0-2
				2310	27710	21.35	22	0-2
				2312.5	27735	21.30	22	0-2
			6	2307.5	27685	21.47	22	0-2
				2310	27710	21.21	22	0-2
				2312.5	27735	21.25	22	0-2
			13	2307.5	27685	21.32	22	0-2
				2310	27710	21.34	22	0-2
				2312.5	27735	21.15	22	0-2
		25RB		2307.5	27685	21.35	22	0-2
				2310	27710	21.26	22	0-2
				2312.5	27735	21.28	22	0-2

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FDD Band 38								
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	2580	37850	23.09	24	0
				2595	38000	23.02	24	0
				2610	38150	23.02	24	0
			50	2580	37850	22.99	24	0
				2595	38000	22.97	24	0
				2610	38150	23.02	24	0
			99	2580	37850	23.02	24	0
				2595	38000	23.04	24	0
				2610	38150	23.09	24	0
		50 RB	0	2580	37850	22.07	23	0-1
				2595	38000	21.99	23	0-1
				2610	38150	22.07	23	0-1
			25	2580	37850	22.03	23	0-1
				2595	38000	21.98	23	0-1
				2610	38150	22.08	23	0-1
			50	2580	37850	22.04	23	0-1
				2595	38000	22.01	23	0-1
				2610	38150	22.11	23	0-1
		100RB		2580	37850	22.03	23	0-1
				2595	38000	22.00	23	0-1
				2610	38150	22.14	23	0-1
	16-QAM	1 RB	0	2580	37850	22.02	23	0-1
				2595	38000	21.98	23	0-1
				2610	38150	22.06	23	0-1
			50	2580	37850	21.93	23	0-1
				2595	38000	21.93	23	0-1
				2610	38150	22.16	23	0-1
			99	2580	37850	21.94	23	0-1
				2595	38000	22.00	23	0-1
				2610	38150	22.21	23	0-1
		50 RB	0	2580	37850	21.02	22	0-2
				2595	38000	20.98	22	0-2
				2610	38150	21.14	22	0-2
			25	2580	37850	20.94	22	0-2
				2595	38000	20.96	22	0-2
				2610	38150	21.13	22	0-2
			50	2580	37850	20.95	22	0-2
				2595	38000	20.98	22	0-2
				2610	38150	21.19	22	0-2
		100RB		2580	37850	21.01	22	0-2
				2595	38000	21.01	22	0-2
				2610	38150	21.18	22	0-2

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FDD Band 38								
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	2577.5	37825	23.09	24	0
				2595	38000	23.10	24	0
				2612.5	38175	23.15	24	0
			36	2577.5	37825	23.07	24	0
				2595	38000	23.06	24	0
				2612.5	38175	23.12	24	0
			74	2577.5	37825	23.03	24	0
				2595	38000	23.07	24	0
				2612.5	38175	23.17	24	0
		36 RB	0	2577.5	37825	22.08	23	0-1
				2595	38000	22.05	23	0-1
				2612.5	38175	22.09	23	0-1
			18	2577.5	37825	22.06	23	0-1
				2595	38000	22.03	23	0-1
				2612.5	38175	22.13	23	0-1
			37	2577.5	37825	22.01	23	0-1
				2595	38000	22.02	23	0-1
				2612.5	38175	22.15	23	0-1
		75RB		2577.5	37825	22.02	23	0-1
				2595	38000	22.03	23	0-1
				2612.5	38175	22.09	23	0-1
	16-QAM	1 RB	0	2577.5	37825	22.00	23	0-1
				2595	38000	21.94	23	0-1
				2612.5	38175	22.01	23	0-1
			36	2577.5	37825	21.98	23	0-1
				2595	38000	21.94	23	0-1
				2612.5	38175	22.05	23	0-1
			74	2577.5	37825	21.93	23	0-1
				2595	38000	21.97	23	0-1
				2612.5	38175	22.11	23	0-1
		36 RB	0	2577.5	37825	21.12	22	0-2
				2595	38000	21.04	22	0-2
				2612.5	38175	21.13	22	0-2
			18	2577.5	37825	21.08	22	0-2
				2595	38000	21.07	22	0-2
				2612.5	38175	21.15	22	0-2
			37	2577.5	37825	21.06	22	0-2
				2595	38000	21.06	22	0-2
				2612.5	38175	21.18	22	0-2
		75RB		2577.5	37825	21.04	22	0-2
				2595	38000	21.01	22	0-2
				2612.5	38175	21.09	22	0-2

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FDD Band 38								
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	2575	37800	23.07	24	0
				2595	38000	23.06	24	0
				2615	38200	23.16	24	0
			25	2575	37800	23.01	24	0
				2595	38000	23.02	24	0
				2615	38200	23.14	24	0
			49	2575	37800	23.00	24	0
				2595	38000	23.08	24	0
				2615	38200	23.16	24	0
		25 RB	0	2575	37800	22.12	23	0-1
				2595	38000	22.10	23	0-1
				2615	38200	22.18	23	0-1
			12	2575	37800	22.10	23	0-1
				2595	38000	22.07	23	0-1
				2615	38200	22.20	23	0-1
			25	2575	37800	22.10	23	0-1
				2595	38000	22.09	23	0-1
				2615	38200	22.19	23	0-1
		50RB		2575	37800	22.07	23	0-1
				2595	38000	22.02	23	0-1
				2615	38200	22.12	23	0-1
	16-QAM	1 RB	0	2575	37800	22.05	23	0-1
				2595	38000	21.98	23	0-1
				2615	38200	22.09	23	0-1
			25	2575	37800	22.01	23	0-1
				2595	38000	22.00	23	0-1
				2615	38200	22.09	23	0-1
			49	2575	37800	21.96	23	0-1
				2595	38000	22.05	23	0-1
				2615	38200	22.13	23	0-1
		25 RB	0	2575	37800	21.15	22	0-2
				2595	38000	21.18	22	0-2
				2615	38200	21.24	22	0-2
			12	2575	37800	21.12	22	0-2
				2595	38000	21.16	22	0-2
				2615	38200	21.24	22	0-2
			25	2575	37800	21.11	22	0-2
				2595	38000	21.18	22	0-2
				2615	38200	21.31	22	0-2
		50RB		2575	37800	21.05	22	0-2
				2595	38000	21.06	22	0-2
				2615	38200	21.10	22	0-2

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FDD Band 38								
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	2572.5	37775	22.98	24	0
				2595	38000	22.98	24	0
				2617.5	38225	23.11	24	0
			12	2572.5	37775	22.92	24	0
				2595	38000	22.96	24	0
				2617.5	38225	23.09	24	0
			24	2572.5	37775	22.94	24	0
				2595	38000	22.99	24	0
				2617.5	38225	23.13	24	0
		12 RB	0	2572.5	37775	22.06	23	0-1
				2595	38000	22.07	23	0-1
				2617.5	38225	22.17	23	0-1
			6	2572.5	37775	22.06	23	0-1
				2595	38000	22.06	23	0-1
				2617.5	38225	22.20	23	0-1
			13	2572.5	37775	22.05	23	0-1
				2595	38000	22.08	23	0-1
				2617.5	38225	22.19	23	0-1
		25RB		2572.5	37775	22.06	23	0-1
				2595	38000	22.07	23	0-1
				2617.5	38225	22.19	23	0-1
	16-QAM	1 RB	0	2572.5	37775	22.01	23	0-1
				2595	38000	22.00	23	0-1
				2617.5	38225	22.10	23	0-1
			12	2572.5	37775	22.01	23	0-1
				2595	38000	21.96	23	0-1
				2617.5	38225	22.11	23	0-1
			24	2572.5	37775	21.97	23	0-1
				2595	38000	22.02	23	0-1
				2617.5	38225	22.12	23	0-1
		12 RB	0	2572.5	37775	21.11	22	0-2
				2595	38000	21.04	22	0-2
				2617.5	38225	21.13	22	0-2
			6	2572.5	37775	21.08	22	0-2
				2595	38000	21.03	22	0-2
				2617.5	38225	21.13	22	0-2
			13	2572.5	37775	21.07	22	0-2
				2595	38000	21.08	22	0-2
				2617.5	38225	21.22	22	0-2
		25RB		2572.5	37775	21.13	22	0-2
				2595	38000	21.09	22	0-2
				2617.5	38225	21.24	22	0-2

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TDD Band 41								
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	2506	39750	22.84	24	0
				2549.5	40185	23.25	24	0
				2593	40620	23.00	24	0
				2636.5	41055	23.39	24	0
				2680	41490	22.77	24	0
			50	2506	39750	22.78	24	0
				2549.5	40185	23.21	24	0
				2593	40620	22.94	24	0
				2636.5	41055	23.27	24	0
				2680	41490	22.66	24	0
			99	2506	39750	22.89	24	0
				2549.5	40185	23.21	24	0
				2593	40620	23.06	24	0
				2636.5	41055	23.20	24	0
				2680	41490	22.76	24	0
		50 RB	0	2506	39750	21.91	23	0-1
				2549.5	40185	22.28	23	0-1
				2593	40620	21.98	23	0-1
				2636.5	41055	22.35	23	0-1
				2680	41490	21.75	23	0-1
			25	2506	39750	21.88	23	0-1
				2549.5	40185	22.25	23	0-1
				2593	40620	21.96	23	0-1
				2636.5	41055	22.29	23	0-1
				2680	41490	21.71	23	0-1
			50	2506	39750	21.90	23	0-1
				2549.5	40185	22.26	23	0-1
				2593	40620	21.98	23	0-1
				2636.5	41055	22.23	23	0-1
				2680	41490	21.78	23	0-1
		100RB		2506	39750	21.93	23	0-1
				2549.5	40185	22.28	23	0-1
				2593	40620	21.99	23	0-1
				2636.5	41055	22.30	23	0-1
				2680	41490	21.83	23	0-1
	16-QAM	1 RB	0	2506	39750	21.85	23	0-1
				2549.5	40185	22.21	23	0-1
				2593	40620	21.93	23	0-1
				2636.5	41055	22.38	23	0-1
				2680	41490	21.74	23	0-1
			50	2506	39750	21.77	23	0-1
				2549.5	40185	22.19	23	0-1
				2593	40620	21.90	23	0-1
				2636.5	41055	22.27	23	0-1
				2680	41490	21.63	23	0-1
			99	2506	39750	21.89	23	0-1
				2549.5	40185	22.18	23	0-1
				2593	40620	22.03	23	0-1
				2636.5	41055	22.17	23	0-1
				2680	41490	21.77	23	0-1
		50 RB	0	2506	39750	20.83	22	0-2
				2549.5	40185	21.23	22	0-2
				2593	40620	20.95	22	0-2
				2636.5	41055	21.31	22	0-2
				2680	41490	20.73	22	0-2
			25	2506	39750	20.81	22	0-2
				2549.5	40185	21.23	22	0-2
				2593	40620	20.95	22	0-2
				2636.5	41055	21.24	22	0-2
				2680	41490	20.75	22	0-2
			50	2506	39750	20.83	22	0-2
				2549.5	40185	21.21	22	0-2
				2593	40620	20.97	22	0-2
				2636.5	41055	21.17	22	0-2
				2680	41490	20.81	22	0-2
		100RB		2506	39750	20.92	22	0-2
				2549.5	40185	21.26	22	0-2
				2593	40620	20.97	22	0-2
				2636.5	41055	21.27	22	0-2
				2680	41490	20.76	22	0-2

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TDD Band 41								
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	2503.5	39725	22.89	24	0
				2548.3	40173	23.26	24	0
				2593	40620	23.01	24	0
				2637.8	41068	23.33	24	0
				2682.5	41515	22.73	24	0
			36	2503.5	39725	22.84	24	0
				2548.3	40173	23.27	24	0
				2593	40620	23.00	24	0
				2637.8	41068	23.30	24	0
				2682.5	41515	22.73	24	0
			74	2503.5	39725	22.89	24	0
				2548.3	40173	23.26	24	0
				2593	40620	23.01	24	0
				2637.8	41068	23.19	24	0
				2682.5	41515	22.87	24	0
		36 RB	0	2503.5	39725	21.88	23	0-1
				2548.3	40173	22.28	23	0-1
				2593	40620	21.98	23	0-1
				2637.8	41068	22.35	23	0-1
				2682.5	41515	21.76	23	0-1
			18	2503.5	39725	21.89	23	0-1
				2548.3	40173	22.28	23	0-1
				2593	40620	22.00	23	0-1
				2637.8	41068	22.32	23	0-1
				2682.5	41515	21.74	23	0-1
			37	2503.5	39725	21.90	23	0-1
				2548.3	40173	22.26	23	0-1
				2593	40620	21.99	23	0-1
				2637.8	41068	22.24	23	0-1
				2682.5	41515	21.80	23	0-1
		75RB		2503.5	39725	21.84	23	0-1
				2548.3	40173	22.23	23	0-1
				2593	40620	21.98	23	0-1
				2637.8	41068	22.24	23	0-1
				2682.5	41515	21.77	23	0-1
	16-QAM	1 RB	0	2503.5	39725	21.82	23	0-1
				2548.3	40173	22.17	23	0-1
				2593	40620	21.87	23	0-1
				2637.8	41068	22.28	23	0-1
				2682.5	41515	21.61	23	0-1
			36	2503.5	39725	21.77	23	0-1
				2548.3	40173	22.18	23	0-1
				2593	40620	21.89	23	0-1
				2637.8	41068	22.26	23	0-1
				2682.5	41515	21.63	23	0-1
			74	2503.5	39725	21.82	23	0-1
				2548.3	40173	22.15	23	0-1
				2593	40620	21.93	23	0-1
				2637.8	41068	22.14	23	0-1
				2682.5	41515	21.81	23	0-1
		36 RB	0	2503.5	39725	20.89	22	0-2
				2548.3	40173	21.28	22	0-2
				2593	40620	21.01	22	0-2
				2637.8	41068	21.41	22	0-2
				2682.5	41515	20.79	22	0-2
			18	2503.5	39725	20.89	22	0-2
				2548.3	40173	21.31	22	0-2
				2593	40620	21.01	22	0-2
				2637.8	41068	21.36	22	0-2
				2682.5	41515	20.77	22	0-2
			37	2503.5	39725	20.93	22	0-2
				2548.3	40173	21.27	22	0-2
				2593	40620	21.02	22	0-2
				2637.8	41068	21.29	22	0-2
				2682.5	41515	20.82	22	0-2
		75RB		2503.5	39725	20.91	22	0-2
				2548.3	40173	21.26	22	0-2
				2593	40620	20.98	22	0-2
				2637.8	41068	21.31	22	0-2
				2682.5	41515	20.66	22	0-2

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TDD Band 41								
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	2501	39700	22.85	24	0
				2547	40160	23.21	24	0
				2593	40620	23.02	24	0
				2639	41080	23.38	24	0
				2685	41540	22.72	24	0
			25	2501	39700	22.78	24	0
				2547	40160	23.19	24	0
				2593	40620	22.93	24	0
				2639	41080	23.32	24	0
				2685	41540	22.72	24	0
			49	2501	39700	22.82	24	0
				2547	40160	23.20	24	0
				2593	40620	22.94	24	0
				2639	41080	23.14	24	0
				2685	41540	22.83	24	0
		25 RB	0	2501	39700	21.90	23	0-1
				2547	40160	22.29	23	0-1
				2593	40620	22.02	23	0-1
				2639	41080	22.35	23	0-1
				2685	41540	21.82	23	0-1
			12	2501	39700	21.92	23	0-1
				2547	40160	22.27	23	0-1
				2593	40620	22.01	23	0-1
				2639	41080	22.34	23	0-1
				2685	41540	21.86	23	0-1
			25	2501	39700	21.88	23	0-1
				2547	40160	22.28	23	0-1
				2593	40620	22.02	23	0-1
				2639	41080	22.26	23	0-1
				2685	41540	21.89	23	0-1
		50RB		2501	39700	21.89	23	0-1
				2547	40160	22.23	23	0-1
				2593	40620	21.96	23	0-1
				2639	41080	22.31	23	0-1
				2685	41540	21.80	23	0-1
	16-QAM	1 RB	0	2501	39700	21.85	23	0-1
				2547	40160	22.19	23	0-1
				2593	40620	21.93	23	0-1
				2639	41080	22.32	23	0-1
				2685	41540	21.69	23	0-1
			25	2501	39700	21.82	23	0-1
				2547	40160	22.17	23	0-1
				2593	40620	21.90	23	0-1
				2639	41080	22.25	23	0-1
				2685	41540	21.74	23	0-1
			49	2501	39700	21.79	23	0-1
				2547	40160	22.18	23	0-1
				2593	40620	21.93	23	0-1
				2639	41080	22.16	23	0-1
				2685	41540	21.81	23	0-1
		25 RB	0	2501	39700	20.96	22	0-2
				2547	40160	21.33	22	0-2
				2593	40620	21.07	22	0-2
				2639	41080	21.38	22	0-2
				2685	41540	20.85	22	0-2
			12	2501	39700	20.97	22	0-2
				2547	40160	21.33	22	0-2
				2593	40620	21.05	22	0-2
				2639	41080	21.38	22	0-2
				2685	41540	20.89	22	0-2
			25	2501	39700	20.95	22	0-2
				2547	40160	21.33	22	0-2
				2593	40620	21.12	22	0-2
				2639	41080	21.34	22	0-2
				2685	41540	20.92	22	0-2
		50RB		2501	39700	20.84	22	0-2
				2547	40160	21.18	22	0-2
				2593	40620	21.01	22	0-2
				2639	41080	21.26	22	0-2
				2685	41540	20.83	22	0-2

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TDD Band 41								
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	2498.5	39675	22.81	24	0
				2547.8	40148	23.15	24	0
				2593	40620	22.93	24	0
				2640.3	41093	23.29	24	0
				2687.5	41565	22.77	24	0
			12	2498.5	39675	22.66	24	0
				2547.8	40148	23.13	24	0
				2593	40620	22.90	24	0
				2640.3	41093	23.17	24	0
				2687.5	41565	22.69	24	0
			24	2498.5	39675	22.72	24	0
				2547.8	40148	23.14	24	0
				2593	40620	22.94	24	0
				2640.3	41093	23.22	24	0
				2687.5	41565	22.77	24	0
		12 RB	0	2498.5	39675	21.87	23	0-1
				2547.8	40148	22.22	23	0-1
				2593	40620	22.03	23	0-1
				2640.3	41093	22.34	23	0-1
				2687.5	41565	21.85	23	0-1
			6	2498.5	39675	21.83	23	0-1
				2547.8	40148	22.21	23	0-1
				2593	40620	22.03	23	0-1
				2640.3	41093	22.25	23	0-1
				2687.5	41565	21.84	23	0-1
			13	2498.5	39675	21.80	23	0-1
				2547.8	40148	22.21	23	0-1
				2593	40620	22.02	23	0-1
				2640.3	41093	22.30	23	0-1
				2687.5	41565	21.87	23	0-1
		25RB		2498.5	39675	21.83	23	0-1
				2547.8	40148	22.21	23	0-1
				2593	40620	22.04	23	0-1
				2640.3	41093	22.22	23	0-1
				2687.5	41565	21.85	23	0-1
	16-QAM	1 RB	0	2498.5	39675	21.80	23	0-1
				2547.8	40148	22.14	23	0-1
				2593	40620	21.95	23	0-1
				2640.3	41093	22.25	23	0-1
				2687.5	41565	21.75	23	0-1
			12	2498.5	39675	21.73	23	0-1
				2547.8	40148	22.16	23	0-1
				2593	40620	21.94	23	0-1
				2640.3	41093	22.16	23	0-1
				2687.5	41565	21.75	23	0-1
			24	2498.5	39675	21.78	23	0-1
				2547.8	40148	22.15	23	0-1
				2593	40620	21.96	23	0-1
				2640.3	41093	22.20	23	0-1
				2687.5	41565	21.84	23	0-1
		12 RB	0	2498.5	39675	20.82	22	0-2
				2547.8	40148	21.21	22	0-2
				2593	40620	21.00	22	0-2
				2640.3	41093	21.28	22	0-2
				2687.5	41565	20.80	22	0-2
			6	2498.5	39675	20.80	22	0-2
				2547.8	40148	21.25	22	0-2
				2593	40620	20.99	22	0-2
				2640.3	41093	21.20	22	0-2
				2687.5	41565	20.81	22	0-2
			13	2498.5	39675	20.76	22	0-2
				2547.8	40148	21.27	22	0-2
				2593	40620	20.97	22	0-2
				2640.3	41093	21.23	22	0-2
				2687.5	41565	20.82	22	0-2
		25RB		2498.5	39675	20.83	22	0-2
				2547.8	40148	21.29	22	0-2
				2593	40620	21.03	22	0-2
				2640.3	41093	21.27	22	0-2
				2687.5	41565	20.85	22	0-2

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FDD Band 66								
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	132072	23.25	24	0
				1745	132322	23.22	24	0
				1770	132572	23.49	24	0
			50	1720	132072	22.93	24	0
				1745	132322	23.07	24	0
				1770	132572	23.34	24	0
			99	1720	132072	23.25	24	0
				1745	132322	23.50	24	0
				1770	132572	23.29	24	0
		50 RB	0	1720	132072	22.18	23	0-1
				1745	132322	22.15	23	0-1
				1770	132572	22.35	23	0-1
			25	1720	132072	22.14	23	0-1
				1745	132322	22.15	23	0-1
				1770	132572	22.36	23	0-1
			50	1720	132072	22.19	23	0-1
				1745	132322	22.38	23	0-1
				1770	132572	22.37	23	0-1
		100RB		1720	132072	22.36	23	0-1
				1745	132322	22.37	23	0-1
				1770	132572	22.54	23	0-1
	16-QAM	1 RB	0	1720	132072	22.59	23	0-1
				1745	132322	21.75	23	0-1
				1770	132572	22.60	23	0-1
			50	1720	132072	22.47	23	0-1
				1745	132322	22.59	23	0-1
				1770	132572	22.88	23	0-1
			99	1720	132072	22.94	23	0-1
				1745	132322	22.62	23	0-1
				1770	132572	22.82	23	0-1
		50 RB	0	1720	132072	21.22	22	0-2
				1745	132322	21.06	22	0-2
				1770	132572	21.25	22	0-2
			25	1720	132072	20.93	22	0-2
				1745	132322	21.11	22	0-2
				1770	132572	21.15	22	0-2
			50	1720	132072	21.04	22	0-2
				1745	132322	21.37	22	0-2
				1770	132572	21.28	22	0-2
		100RB		1720	132072	21.27	22	0-2
				1745	132322	21.37	22	0-2
				1770	132572	21.52	22	0-2

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FDD Band 66								
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	132047	23.14	24	0
				1745	132322	23.27	24	0
				1772.5	132597	23.21	24	0
			36	1717.5	132047	23.20	24	0
				1745	132322	23.00	24	0
				1772.5	132597	23.12	24	0
			74	1717.5	132047	23.18	24	0
				1745	132322	23.36	24	0
				1772.5	132597	23.45	24	0
		36 RB	0	1717.5	132047	22.15	23	0-1
				1745	132322	22.03	23	0-1
				1772.5	132597	22.29	23	0-1
			18	1717.5	132047	22.13	23	0-1
				1745	132322	22.10	23	0-1
				1772.5	132597	22.38	23	0-1
			37	1717.5	132047	22.14	23	0-1
				1745	132322	22.27	23	0-1
				1772.5	132597	22.31	23	0-1
		75RB		1717.5	132047	22.18	23	0-1
				1745	132322	22.23	23	0-1
				1772.5	132597	22.44	23	0-1
	16-QAM	1 RB	0	1717.5	132047	22.51	23	0-1
				1745	132322	22.34	23	0-1
				1772.5	132597	22.62	23	0-1
			36	1717.5	132047	22.58	23	0-1
				1745	132322	22.11	23	0-1
				1772.5	132597	22.04	23	0-1
			74	1717.5	132047	22.26	23	0-1
				1745	132322	22.81	23	0-1
				1772.5	132597	22.86	23	0-1
		36 RB	0	1717.5	132047	21.06	22	0-2
				1745	132322	21.03	22	0-2
				1772.5	132597	21.15	22	0-2
			18	1717.5	132047	20.94	22	0-2
				1745	132322	21.01	22	0-2
				1772.5	132597	21.27	22	0-2
			37	1717.5	132047	21.01	22	0-2
				1745	132322	21.27	22	0-2
				1772.5	132597	21.25	22	0-2
		75RB		1717.5	132047	21.23	22	0-2
				1745	132322	21.23	22	0-2
				1772.5	132597	21.46	22	0-2

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FDD Band 66								
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	132022	23.23	24	0
				1745	132322	23.12	24	0
				1775	132622	23.20	24	0
			25	1715	132022	23.07	24	0
				1745	132322	23.13	24	0
				1775	132622	22.95	24	0
			49	1715	132022	22.92	24	0
				1745	132322	23.35	24	0
				1775	132622	23.15	24	0
		25 RB	0	1715	132022	21.98	23	0-1
				1745	132322	21.97	23	0-1
				1775	132622	22.13	23	0-1
			12	1715	132022	22.01	23	0-1
				1745	132322	22.01	23	0-1
				1775	132622	22.18	23	0-1
			25	1715	132022	22.07	23	0-1
				1745	132322	22.17	23	0-1
				1775	132622	22.24	23	0-1
		50RB		1715	132022	22.10	23	0-1
				1745	132322	22.16	23	0-1
				1775	132622	22.31	23	0-1
	16-QAM	1 RB	0	1715	132022	22.46	23	0-1
				1745	132322	22.14	23	0-1
				1775	132622	22.34	23	0-1
			25	1715	132022	22.70	23	0-1
				1745	132322	22.21	23	0-1
				1775	132622	22.29	23	0-1
			49	1715	132022	22.75	23	0-1
				1745	132322	22.80	23	0-1
				1775	132622	22.99	23	0-1
		25 RB	0	1715	132022	21.01	22	0-2
				1745	132322	20.97	22	0-2
				1775	132622	21.09	22	0-2
			12	1715	132022	21.03	22	0-2
				1745	132322	20.96	22	0-2
				1775	132622	21.07	22	0-2
			25	1715	132022	20.97	22	0-2
				1745	132322	21.08	22	0-2
				1775	132622	21.03	22	0-2
		50RB		1715	132022	21.10	22	0-2
				1745	132322	21.09	22	0-2
				1775	132622	21.30	22	0-2

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FDD Band 66								
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	131997	22.91	24	0
				1745	132322	22.98	24	0
				1777.5	132647	23.36	24	0
			12	1712.5	131997	23.24	24	0
				1745	132322	22.89	24	0
				1777.5	132647	23.29	24	0
			24	1712.5	131997	23.04	24	0
				1745	132322	23.14	24	0
				1777.5	132647	23.15	24	0
		12 RB	0	1712.5	131997	21.93	23	0-1
				1745	132322	21.88	23	0-1
				1777.5	132647	22.15	23	0-1
			6	1712.5	131997	21.96	23	0-1
				1745	132322	21.95	23	0-1
				1777.5	132647	22.07	23	0-1
			13	1712.5	131997	22.05	23	0-1
				1745	132322	22.04	23	0-1
				1777.5	132647	22.09	23	0-1
		25RB		1712.5	131997	22.11	23	0-1
				1745	132322	22.07	23	0-1
				1777.5	132647	22.25	23	0-1
	16-QAM	1 RB	0	1712.5	131997	22.71	23	0-1
				1745	132322	21.77	23	0-1
				1777.5	132647	22.93	23	0-1
			12	1712.5	131997	22.61	23	0-1
				1745	132322	22.28	23	0-1
				1777.5	132647	22.37	23	0-1
			24	1712.5	131997	21.93	23	0-1
				1745	132322	22.33	23	0-1
				1777.5	132647	22.61	23	0-1
		12 RB	0	1712.5	131997	20.87	22	0-2
				1745	132322	20.61	22	0-2
				1777.5	132647	20.91	22	0-2
			6	1712.5	131997	20.93	22	0-2
				1745	132322	20.89	22	0-2
				1777.5	132647	20.85	22	0-2
			13	1712.5	131997	20.94	22	0-2
				1745	132322	21.00	22	0-2
				1777.5	132647	21.08	22	0-2
		25RB		1712.5	131997	20.96	22	0-2
				1745	132322	20.89	22	0-2
				1777.5	132647	21.10	22	0-2

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FDD Band 66								
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	131987	22.81	24	0
				1745	132322	22.78	24	0
				1778.5	132657	22.85	24	0
			7	1711.5	131987	22.84	24	0
				1745	132322	23.29	24	0
				1778.5	132657	23.34	24	0
			14	1711.5	131987	22.92	24	0
				1745	132322	23.24	24	0
				1778.5	132657	23.45	24	0
		8 RB	0	1711.5	131987	21.75	23	0-1
				1745	132322	22.12	23	0-1
				1778.5	132657	22.16	23	0-1
			4	1711.5	131987	21.80	23	0-1
				1745	132322	21.80	23	0-1
				1778.5	132657	22.12	23	0-1
			7	1711.5	131987	21.86	23	0-1
				1745	132322	22.00	23	0-1
				1778.5	132657	22.07	23	0-1
		15RB		1711.5	131987	22.03	23	0-1
				1745	132322	22.01	23	0-1
				1778.5	132657	22.32	23	0-1
	16-QAM	1 RB	0	1711.5	131987	22.41	23	0-1
				1745	132322	22.38	23	0-1
				1778.5	132657	22.95	23	0-1
			12	1711.5	131987	21.47	23	0-1
				1745	132322	22.31	23	0-1
				1778.5	132657	22.59	23	0-1
			24	1711.5	131987	22.27	23	0-1
				1745	132322	22.41	23	0-1
				1778.5	132657	22.92	23	0-1
		12 RB	0	1711.5	131987	20.78	22	0-2
				1745	132322	20.79	22	0-2
				1778.5	132657	20.98	22	0-2
			6	1711.5	131987	20.42	22	0-2
				1745	132322	20.69	22	0-2
				1778.5	132657	21.14	22	0-2
			13	1711.5	131987	20.99	22	0-2
				1745	132322	20.97	22	0-2
				1778.5	132657	21.13	22	0-2
		25RB		1711.5	131987	20.86	22	0-2
				1745	132322	20.97	22	0-2
				1778.5	132657	21.17	22	0-2

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FDD Band 66								
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	131979	23.02	24	0
				1745	132322	23.30	24	0
				1779.3	132665	23.21	24	0
			2	1710.7	131979	23.04	24	0
				1745	132322	23.29	24	0
				1779.3	132665	23.60	24	0
			5	1710.7	131979	23.18	24	0
				1745	132322	23.27	24	0
				1779.3	132665	22.90	24	0
		3 RB	0	1710.7	131979	22.94	23	0
				1745	132322	22.75	23	0
				1779.3	132665	22.98	23	0
			2	1710.7	131979	22.88	23	0
				1745	132322	22.61	23	0
				1779.3	132665	22.91	23	0
			3	1710.7	131979	22.52	23	0
				1745	132322	22.94	23	0
				1779.3	132665	22.99	23	0
		6RB		1710.7	131979	22.07	23	0-1
				1745	132322	22.03	23	0-1
				1779.3	132665	22.23	23	0-1
	16-QAM	1 RB	0	1710.7	131979	22.65	23	0-1
				1745	132322	22.39	23	0-1
				1779.3	132665	22.89	23	0-1
			2	1710.7	131979	22.41	23	0-1
				1745	132322	21.83	23	0-1
				1779.3	132665	22.70	23	0-1
			5	1710.7	131979	22.82	23	0-1
				1745	132322	22.18	23	0-1
				1779.3	132665	22.66	23	0-1
		3 RB	0	1710.7	131979	21.82	23	0-1
				1745	132322	22.08	23	0-1
				1779.3	132665	22.06	23	0-1
			2	1710.7	131979	22.10	23	0-1
				1745	132322	22.33	23	0-1
				1779.3	132665	22.24	23	0-1
			3	1710.7	131979	21.97	23	0-1
				1745	132322	22.20	23	0-1
				1779.3	132665	22.37	23	0-1
		6RB		1710.7	131979	20.82	22	0-2
				1745	132322	20.91	22	0-2
				1779.3	132665	21.03	22	0-2

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LTE FDD Band 2 / Band 4 / Band 5 / Band7 / Band 12 / Band 13 / Band 17 / Band 26 / Band 30 / Band 38 / Band 41 / Band 66 power table (Reduced power):

FDD Band 2								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
20	QPSK	1 RB	0	1860	18700	16.96	17	0
				1880	18900	16.52	17	0
				1900	19100	16.33	17	0
			50	1860	18700	16.52	17	0
				1880	18900	16.45	17	0
				1900	19100	16.12	17	0
			99	1860	18700	16.55	17	0
				1880	18900	16.46	17	0
				1900	19100	16.42	17	0
		50 RB	0	1860	18700	16.68	17	0
				1880	18900	16.57	17	0
				1900	19100	16.21	17	0
			25	1860	18700	16.44	17	0
				1880	18900	16.53	17	0
				1900	19100	16.12	17	0
			50	1860	18700	16.50	17	0
				1880	18900	16.54	17	0
				1900	19100	16.35	17	0
		100RB		1860	18700	16.66	17	0
				1880	18900	16.66	17	0
				1900	19100	16.42	17	0
	16-QAM	1 RB	0	1860	18700	16.92	17	0
				1880	18900	16.64	17	0
				1900	19100	16.68	17	0
			50	1860	18700	16.65	17	0
				1880	18900	16.72	17	0
				1900	19100	16.55	17	0
			99	1860	18700	16.85	17	0
				1880	18900	16.93	17	0
				1900	19100	16.63	17	0
		50 RB	0	1860	18700	16.72	17	0
				1880	18900	16.62	17	0
				1900	19100	16.30	17	0
			25	1860	18700	16.59	17	0
				1880	18900	16.58	17	0
				1900	19100	16.27	17	0
			50	1860	18700	16.50	17	0
				1880	18900	16.59	17	0
				1900	19100	16.37	17	0
		100RB		1860	18700	16.67	17	0
				1880	18900	16.68	17	0
				1900	19100	16.35	17	0

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FDD Band 2								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
15	QPSK	1 RB	0	1857.5	18675	16.66	17	0
				1880	18900	16.49	17	0
				1902.5	19125	16.17	17	0
			36	1857.5	18675	16.55	17	0
				1880	18900	16.59	17	0
				1902.5	19125	16.14	17	0
			74	1857.5	18675	16.38	17	0
				1880	18900	16.51	17	0
				1902.5	19125	16.39	17	0
		36 RB	0	1857.5	18675	16.70	17	0
				1880	18900	16.58	17	0
				1902.5	19125	16.13	17	0
			18	1857.5	18675	16.66	17	0
				1880	18900	16.60	17	0
				1902.5	19125	16.19	17	0
			37	1857.5	18675	16.49	17	0
				1880	18900	16.52	17	0
				1902.5	19125	16.32	17	0
		75RB		1857.5	18675	16.73	17	0
				1880	18900	16.58	17	0
				1902.5	19125	16.32	17	0
	16-QAM	1 RB	0	1857.5	18675	16.94	17	0
				1880	18900	16.95	17	0
				1902.5	19125	16.50	17	0
			36	1857.5	18675	16.72	17	0
				1880	18900	16.82	17	0
				1902.5	19125	16.63	17	0
			74	1857.5	18675	16.89	17	0
				1880	18900	16.90	17	0
				1902.5	19125	16.60	17	0
		36 RB	0	1857.5	18675	16.78	17	0
				1880	18900	16.65	17	0
				1902.5	19125	16.20	17	0
			18	1857.5	18675	16.71	17	0
				1880	18900	16.74	17	0
				1902.5	19125	16.31	17	0
			37	1857.5	18675	16.55	17	0
				1880	18900	16.59	17	0
				1902.5	19125	16.43	17	0
		75RB		1857.5	18675	16.71	17	0
				1880	18900	16.61	17	0
				1902.5	19125	16.39	17	0

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FDD Band 2								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	1855	18650	16.95	17	0
				1880	18900	16.63	17	0
				1905	19150	16.55	17	0
			25	1855	18650	16.75	17	0
				1880	18900	16.45	17	0
				1905	19150	16.18	17	0
			49	1855	18650	16.56	17	0
				1880	18900	16.53	17	0
				1905	19150	16.43	17	0
		25 RB	0	1855	18650	16.77	17	0
				1880	18900	16.64	17	0
				1905	19150	16.14	17	0
			12	1855	18650	16.68	17	0
				1880	18900	16.58	17	0
				1905	19150	16.21	17	0
			25	1855	18650	16.70	17	0
				1880	18900	16.51	17	0
				1905	19150	16.42	17	0
		50RB		1855	18650	16.66	17	0
				1880	18900	16.55	17	0
				1905	19150	16.30	17	0
	16-QAM	1 RB	0	1855	18650	16.91	17	0
				1880	18900	16.95	17	0
				1905	19150	16.16	17	0
			25	1855	18650	16.87	17	0
				1880	18900	16.87	17	0
				1905	19150	16.36	17	0
			49	1855	18650	16.80	17	0
				1880	18900	16.71	17	0
				1905	19150	16.80	17	0
		25 RB	0	1855	18650	16.84	17	0
				1880	18900	16.72	17	0
				1905	19150	16.19	17	0
			12	1855	18650	16.75	17	0
				1880	18900	16.60	17	0
				1905	19150	16.27	17	0
			25	1855	18650	16.74	17	0
				1880	18900	16.59	17	0
				1905	19150	16.42	17	0
		50RB		1855	18650	16.73	17	0
				1880	18900	16.57	17	0
				1905	19150	16.35	17	0

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FDD Band 2								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	1852.5	18625	16.70	17	0
				1880	18900	16.53	17	0
				1907.5	19175	16.28	17	0
			12	1852.5	18625	16.70	17	0
				1880	18900	16.50	17	0
				1907.5	19175	16.30	17	0
			24	1852.5	18625	16.58	17	0
				1880	18900	16.42	17	0
				1907.5	19175	16.46	17	0
		12 RB	0	1852.5	18625	16.69	17	0
				1880	18900	16.52	17	0
				1907.5	19175	16.23	17	0
			6	1852.5	18625	16.66	17	0
				1880	18900	16.51	17	0
				1907.5	19175	16.41	17	0
			13	1852.5	18625	16.63	17	0
				1880	18900	16.51	17	0
				1907.5	19175	16.31	17	0
		25RB		1852.5	18625	16.67	17	0
				1880	18900	16.49	17	0
				1907.5	19175	16.28	17	0
	16-QAM	1 RB	0	1852.5	18625	16.94	17	0
				1880	18900	16.90	17	0
				1907.5	19175	16.50	17	0
			12	1852.5	18625	16.91	17	0
				1880	18900	16.72	17	0
				1907.5	19175	16.48	17	0
			24	1852.5	18625	16.64	17	0
				1880	18900	16.59	17	0
				1907.5	19175	16.52	17	0
		12 RB	0	1852.5	18625	16.74	17	0
				1880	18900	16.65	17	0
				1907.5	19175	16.27	17	0
			6	1852.5	18625	16.76	17	0
				1880	18900	16.59	17	0
				1907.5	19175	16.22	17	0
			13	1852.5	18625	16.73	17	0
				1880	18900	16.52	17	0
				1907.5	19175	16.43	17	0
		25RB		1852.5	18625	16.74	17	0
				1880	18900	16.49	17	0
				1907.5	19175	16.33	17	0

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FDD Band 2								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
3	QPSK	1 RB	0	1851.5	18615	16.79	17	0
				1880	18900	16.39	17	0
				1908.5	19185	16.16	17	0
			7	1851.5	18615	16.55	17	0
				1880	18900	16.57	17	0
				1908.5	19185	16.39	17	0
			14	1851.5	18615	16.72	17	0
				1880	18900	16.52	17	0
				1908.5	19185	16.27	17	0
		8 RB	0	1851.5	18615	16.67	17	0
				1880	18900	16.52	17	0
				1908.5	19185	16.41	17	0
			4	1851.5	18615	16.68	17	0
				1880	18900	16.50	17	0
				1908.5	19185	16.32	17	0
			7	1851.5	18615	16.67	17	0
				1880	18900	16.52	17	0
				1908.5	19185	16.37	17	0
		15RB		1851.5	18615	16.70	17	0
				1880	18900	16.49	17	0
				1908.5	19185	16.44	17	0
	16-QAM	1 RB	0	1851.5	18615	16.95	17	0
				1880	18900	16.50	17	0
				1908.5	19185	16.38	17	0
			7	1851.5	18615	16.68	17	0
				1880	18900	16.72	17	0
				1908.5	19185	16.23	17	0
			14	1851.5	18615	16.82	17	0
				1880	18900	16.93	17	0
				1908.5	19185	16.57	17	0
		8 RB	0	1851.5	18615	16.67	17	0
				1880	18900	16.57	17	0
				1908.5	19185	16.45	17	0
			4	1851.5	18615	16.80	17	0
				1880	18900	16.58	17	0
				1908.5	19185	16.46	17	0
			7	1851.5	18615	16.74	17	0
				1880	18900	16.46	17	0
				1908.5	19185	16.40	17	0
		15RB		1851.5	18615	16.66	17	0
				1880	18900	16.52	17	0
				1908.5	19185	16.41	17	0

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FDD Band 2								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
1.4	QPSK	1 RB	0	1850.7	18607	16.73	17	0
				1880	18900	16.54	17	0
				1909.3	19193	16.31	17	0
			2	1850.7	18607	16.67	17	0
				1880	18900	16.57	17	0
				1909.3	19193	16.36	17	0
			5	1850.7	18607	16.60	17	0
				1880	18900	16.51	17	0
				1909.3	19193	16.38	17	0
		3 RB	0	1850.7	18607	16.76	17	0
				1880	18900	16.56	17	0
				1909.3	19193	16.39	17	0
			2	1850.7	18607	16.68	17	0
				1880	18900	16.53	17	0
				1909.3	19193	16.39	17	0
			3	1850.7	18607	16.69	17	0
				1880	18900	16.53	17	0
				1909.3	19193	16.35	17	0
		6RB		1850.7	18607	16.67	17	0
				1880	18900	16.53	17	0
				1909.3	19193	16.37	17	0
	16-QAM	1 RB	0	1850.7	18607	16.93	17	0
				1880	18900	16.91	17	0
				1909.3	19193	16.59	17	0
			2	1850.7	18607	16.93	17	0
				1880	18900	16.92	17	0
				1909.3	19193	16.64	17	0
			5	1850.7	18607	16.92	17	0
				1880	18900	16.86	17	0
				1909.3	19193	16.88	17	0
		3 RB	0	1850.7	18607	16.92	17	0
				1880	18900	16.49	17	0
				1909.3	19193	16.49	17	0
			2	1850.7	18607	16.85	17	0
				1880	18900	16.30	17	0
				1909.3	19193	16.68	17	0
			3	1850.7	18607	16.77	17	0
				1880	18900	16.75	17	0
				1909.3	19193	16.49	17	0
		6RB		1850.7	18607	16.86	17	0
				1880	18900	16.59	17	0
				1909.3	19193	16.41	17	0

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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	1720	20050	17.29	17.5	0
				1732.5	20175	17.46	17.5	0
				1745	20300	17.27	17.5	0
			50	1720	20050	17.15	17.5	0
				1732.5	20175	16.98	17.5	0
				1745	20300	17.09	17.5	0
			99	1720	20050	17.12	17.5	0
				1732.5	20175	16.91	17.5	0
				1745	20300	17.27	17.5	0
		50RB	0	1720	20050	17.17	17.5	0
				1732.5	20175	17.11	17.5	0
				1745	20300	16.92	17.5	0
			25	1720	20050	17.16	17.5	0
				1732.5	20175	17.01	17.5	0
				1745	20300	17.12	17.5	0
			50	1720	20050	17.14	17.5	0
				1732.5	20175	16.97	17.5	0
				1745	20300	17.29	17.5	0
		100RB		1720	20050	17.35	17.5	0
				1732.5	20175	17.14	17.5	0
				1745	20300	17.32	17.5	0
	16-QAM	1 RB	0	1720	20050	17.35	17.5	0
				1732.5	20175	17.38	17.5	0
				1745	20300	17.33	17.5	0
			50	1720	20050	17.36	17.5	0
				1732.5	20175	17.38	17.5	0
				1745	20300	17.41	17.5	0
			99	1720	20050	17.41	17.5	0
				1732.5	20175	17.42	17.5	0
				1745	20300	17.42	17.5	0
		50RB	0	1720	20050	17.23	17.5	0
				1732.5	20175	17.17	17.5	0
				1745	20300	17.03	17.5	0
			25	1720	20050	17.25	17.5	0
				1732.5	20175	17.04	17.5	0
				1745	20300	17.26	17.5	0
			50	1720	20050	17.21	17.5	0
				1732.5	20175	16.93	17.5	0
				1745	20300	17.35	17.5	0
		100RB		1720	20050	17.23	17.5	0
				1732.5	20175	17.15	17.5	0
				1745	20300	17.25	17.5	0

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FDD Band 4								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
15	QPSK	1 RB	0	1717.5	20025	16.90	17.5	0
				1732.5	20175	17.21	17.5	0
				1747.5	20325	16.86	17.5	0
			36	1717.5	20025	17.03	17.5	0
				1732.5	20175	17.09	17.5	0
				1747.5	20325	17.10	17.5	0
			74	1717.5	20025	17.06	17.5	0
				1732.5	20175	16.91	17.5	0
				1747.5	20325	17.26	17.5	0
		36RB	0	1717.5	20025	17.16	17.5	0
				1732.5	20175	17.06	17.5	0
				1747.5	20325	16.98	17.5	0
			18	1717.5	20025	17.21	17.5	0
				1732.5	20175	17.06	17.5	0
				1747.5	20325	17.22	17.5	0
			37	1717.5	20025	17.13	17.5	0
				1732.5	20175	16.95	17.5	0
				1747.5	20325	17.27	17.5	0
		75RB		1717.5	20025	17.15	17.5	0
				1732.5	20175	17.09	17.5	0
				1747.5	20325	17.28	17.5	0
	16-QAM	1 RB	0	1717.5	20025	17.25	17.5	0
				1732.5	20175	17.45	17.5	0
				1747.5	20325	16.92	17.5	0
			36	1717.5	20025	17.37	17.5	0
				1732.5	20175	17.45	17.5	0
				1747.5	20325	17.08	17.5	0
			74	1717.5	20025	17.45	17.5	0
				1732.5	20175	17.41	17.5	0
				1747.5	20325	17.38	17.5	0
		36RB	0	1717.5	20025	17.25	17.5	0
				1732.5	20175	17.16	17.5	0
				1747.5	20325	17.05	17.5	0
			18	1717.5	20025	17.27	17.5	0
				1732.5	20175	17.01	17.5	0
				1747.5	20325	17.31	17.5	0
			37	1717.5	20025	17.18	17.5	0
				1732.5	20175	16.99	17.5	0
				1747.5	20325	17.35	17.5	0
		75RB		1717.5	20025	17.28	17.5	0
				1732.5	20175	17.01	17.5	0
				1747.5	20325	17.31	17.5	0

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FDD Band 4								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	1715	20000	17.09	17.5	0
				1732.5	20175	17.07	17.5	0
				1750	20350	17.02	17.5	0
			25	1715	20000	17.11	17.5	0
				1732.5	20175	16.94	17.5	0
				1750	20350	17.32	17.5	0
			49	1715	20000	17.22	17.5	0
				1732.5	20175	16.94	17.5	0
				1750	20350	17.37	17.5	0
		25RB	0	1715	20000	17.14	17.5	0
				1732.5	20175	17.15	17.5	0
				1750	20350	17.26	17.5	0
			12	1715	20000	17.21	17.5	0
				1732.5	20175	17.09	17.5	0
				1750	20350	17.35	17.5	0
			25	1715	20000	17.14	17.5	0
				1732.5	20175	17.02	17.5	0
				1750	20350	17.34	17.5	0
		50RB		1715	20000	17.12	17.5	0
				1732.5	20175	17.04	17.5	0
				1750	20350	17.31	17.5	0
	16-QAM	1 RB	0	1715	20000	17.06	17.5	0
				1732.5	20175	17.39	17.5	0
				1750	20350	17.39	17.5	0
			25	1715	20000	17.36	17.5	0
				1732.5	20175	17.45	17.5	0
				1750	20350	17.33	17.5	0
			49	1715	20000	17.38	17.5	0
				1732.5	20175	17.38	17.5	0
				1750	20350	17.44	17.5	0
		25RB	0	1715	20000	17.19	17.5	0
				1732.5	20175	17.12	17.5	0
				1750	20350	17.33	17.5	0
			12	1715	20000	17.26	17.5	0
				1732.5	20175	17.15	17.5	0
				1750	20350	17.30	17.5	0
			25	1715	20000	17.32	17.5	0
				1732.5	20175	17.08	17.5	0
				1750	20350	17.43	17.5	0
		50RB		1715	20000	17.10	17.5	0
				1732.5	20175	17.07	17.5	0
				1750	20350	17.43	17.5	0

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FDD Band 4								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	1712.5	19975	16.94	17.5	0
				1732.5	20175	17.12	17.5	0
				1752.5	20375	17.31	17.5	0
			12	1712.5	19975	16.94	17.5	0
				1732.5	20175	17.04	17.5	0
				1752.5	20375	17.31	17.5	0
			24	1712.5	19975	17.02	17.5	0
				1732.5	20175	17.04	17.5	0
				1752.5	20375	17.36	17.5	0
		12RB	0	1712.5	19975	16.97	17.5	0
				1732.5	20175	17.09	17.5	0
				1752.5	20375	17.23	17.5	0
			6	1712.5	19975	17.03	17.5	0
				1732.5	20175	17.01	17.5	0
				1752.5	20375	17.28	17.5	0
			13	1712.5	19975	17.05	17.5	0
				1732.5	20175	16.99	17.5	0
				1752.5	20375	17.33	17.5	0
		25RB		1712.5	19975	17.04	17.5	0
				1732.5	20175	17.06	17.5	0
				1752.5	20375	17.29	17.5	0
	16-QAM	1 RB	0	1712.5	19975	17.32	17.5	0
				1732.5	20175	16.92	17.5	0
				1752.5	20375	17.45	17.5	0
			12	1712.5	19975	17.38	17.5	0
				1732.5	20175	17.34	17.5	0
				1752.5	20375	16.75	17.5	0
			24	1712.5	19975	17.32	17.5	0
				1732.5	20175	17.18	17.5	0
				1752.5	20375	17.36	17.5	0
		12RB	0	1712.5	19975	16.95	17.5	0
				1732.5	20175	17.06	17.5	0
				1752.5	20375	17.38	17.5	0
			6	1712.5	19975	17.10	17.5	0
				1732.5	20175	17.10	17.5	0
				1752.5	20375	17.31	17.5	0
			13	1712.5	19975	17.13	17.5	0
				1732.5	20175	16.97	17.5	0
				1752.5	20375	17.41	17.5	0
		25RB		1712.5	19975	17.02	17.5	0
				1732.5	20175	17.10	17.5	0
				1752.5	20375	17.28	17.5	0

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FDD Band 4								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
3	QPSK	1 RB	0	1711.5	19965	16.92	17.5	0
				1732.5	20175	16.92	17.5	0
				1753.5	20385	17.20	17.5	0
			7	1711.5	19965	16.94	17.5	0
				1732.5	20175	17.07	17.5	0
				1753.5	20385	17.23	17.5	0
			14	1711.5	19965	16.92	17.5	0
				1732.5	20175	16.93	17.5	0
				1753.5	20385	17.18	17.5	0
		8RB	0	1711.5	19965	16.93	17.5	0
				1732.5	20175	17.05	17.5	0
				1753.5	20385	17.28	17.5	0
			4	1711.5	19965	16.93	17.5	0
				1732.5	20175	17.03	17.5	0
				1753.5	20385	17.25	17.5	0
			7	1711.5	19965	17.03	17.5	0
				1732.5	20175	16.97	17.5	0
				1753.5	20385	17.32	17.5	0
		15RB		1711.5	19965	16.95	17.5	0
				1732.5	20175	17.00	17.5	0
				1753.5	20385	17.27	17.5	0
	16-QAM	1 RB	0	1711.5	19965	17.18	17.5	0
				1732.5	20175	17.37	17.5	0
				1753.5	20385	17.37	17.5	0
			7	1711.5	19965	17.14	17.5	0
				1732.5	20175	16.28	17.5	0
				1753.5	20385	17.44	17.5	0
			14	1711.5	19965	17.13	17.5	0
				1732.5	20175	17.24	17.5	0
				1753.5	20385	17.33	17.5	0
		8RB	0	1711.5	19965	17.09	17.5	0
				1732.5	20175	17.09	17.5	0
				1753.5	20385	17.33	17.5	0
			4	1711.5	19965	16.97	17.5	0
				1732.5	20175	17.15	17.5	0
				1753.5	20385	17.20	17.5	0
			7	1711.5	19965	16.99	17.5	0
				1732.5	20175	17.05	17.5	0
				1753.5	20385	17.31	17.5	0
		15RB		1711.5	19965	16.97	17.5	0
				1732.5	20175	17.14	17.5	0
				1753.5	20385	17.29	17.5	0

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FDD Band 4								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
1.4	QPSK	1 RB	0	1710.7	19957	16.87	17.5	0
				1732.5	20175	17.12	17.5	0
				1754.3	20393	17.32	17.5	0
			2	1710.7	19957	16.84	17.5	0
				1732.5	20175	17.04	17.5	0
				1754.3	20393	17.15	17.5	0
			5	1710.7	19957	16.94	17.5	0
				1732.5	20175	16.95	17.5	0
				1754.3	20393	17.28	17.5	0
		3RB	0	1710.7	19957	16.86	17.5	0
				1732.5	20175	16.99	17.5	0
				1754.3	20393	17.34	17.5	0
			2	1710.7	19957	16.88	17.5	0
				1732.5	20175	17.04	17.5	0
				1754.3	20393	17.33	17.5	0
			3	1710.7	19957	16.91	17.5	0
				1732.5	20175	17.00	17.5	0
				1754.3	20393	17.24	17.5	0
		6RB		1710.7	19957	16.93	17.5	0
				1732.5	20175	17.05	17.5	0
				1754.3	20393	17.36	17.5	0
	16-QAM	1 RB	0	1710.7	19957	17.08	17.5	0
				1732.5	20175	17.38	17.5	0
				1754.3	20393	17.39	17.5	0
			2	1710.7	19957	17.23	17.5	0
				1732.5	20175	16.95	17.5	0
				1754.3	20393	17.37	17.5	0
			5	1710.7	19957	17.41	17.5	0
				1732.5	20175	17.28	17.5	0
				1754.3	20393	17.41	17.5	0
		3RB	0	1710.7	19957	16.75	17.5	0
				1732.5	20175	17.25	17.5	0
				1754.3	20393	17.26	17.5	0
			2	1710.7	19957	17.06	17.5	0
				1732.5	20175	17.16	17.5	0
				1754.3	20393	17.30	17.5	0
			3	1710.7	19957	17.05	17.5	0
				1732.5	20175	16.94	17.5	0
				1754.3	20393	17.12	17.5	0
		6RB		1710.7	19957	17.15	17.5	0
				1732.5	20175	17.13	17.5	0
				1754.3	20393	17.36	17.5	0

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FDD Band 5								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	829	20450	21.98	22	0
				836.5	20525	21.82	22	0
				844	20600	21.66	22	0
			25	829	20450	21.97	22	0
				836.5	20525	21.89	22	0
				844	20600	21.58	22	0
			49	829	20450	21.90	22	0
				836.5	20525	21.70	22	0
				844	20600	21.96	22	0
		25RB	0	829	20450	21.88	22	0
				836.5	20525	21.70	22	0
				844	20600	21.75	22	0
			12	829	20450	21.87	22	0
				836.5	20525	21.68	22	0
				844	20600	21.65	22	0
			25	829	20450	21.87	22	0
				836.5	20525	21.66	22	0
				844	20600	21.90	22	0
		50RB		829	20450	21.85	22	0
				836.5	20525	21.72	22	0
				844	20600	21.80	22	0
	16-QAM	1 RB	0	829	20450	21.91	22	0
				836.5	20525	21.41	22	0
				844	20600	21.67	22	0
			25	829	20450	20.97	22	0
				836.5	20525	21.34	22	0
				844	20600	21.24	22	0
			49	829	20450	21.76	22	0
				836.5	20525	21.78	22	0
				844	20600	21.87	22	0
		25RB	0	829	20450	21.02	22	0
				836.5	20525	20.79	22	0
				844	20600	20.81	22	0
			12	829	20450	21.00	22	0
				836.5	20525	20.78	22	0
				844	20600	20.75	22	0
			25	829	20450	20.78	22	0
				836.5	20525	20.83	22	0
				844	20600	21.01	22	0
		50RB		829	20450	21.00	22	0
				836.5	20525	20.74	22	0
				844	20600	20.78	22	0

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FDD Band 5								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	826.5	20425	21.44	22	0
				836.5	20525	21.23	22	0
				846.5	20625	21.07	22	0
			12	826.5	20425	21.35	22	0
				836.5	20525	21.22	22	0
				846.5	20625	21.27	22	0
			24	826.5	20425	21.40	22	0
				836.5	20525	21.15	22	0
				846.5	20625	21.35	22	0
		12RB	0	826.5	20425	21.33	22	0
				836.5	20525	21.13	22	0
				846.5	20625	21.03	22	0
			6	826.5	20425	21.35	22	0
				836.5	20525	21.13	22	0
				846.5	20625	21.20	22	0
			13	826.5	20425	21.36	22	0
				836.5	20525	21.10	22	0
				846.5	20625	21.25	22	0
		25RB		826.5	20425	21.34	22	0
				836.5	20525	21.14	22	0
				846.5	20625	21.25	22	0
	16-QAM	1 RB	0	826.5	20425	20.99	22	0
				836.5	20525	21.72	22	0
				846.5	20625	21.21	22	0
			12	826.5	20425	21.81	22	0
				836.5	20525	21.68	22	0
				846.5	20625	21.56	22	0
			24	826.5	20425	21.79	22	0
				836.5	20525	21.61	22	0
				846.5	20625	21.76	22	0
		12RB	0	826.5	20425	20.81	22	0
				836.5	20525	20.59	22	0
				846.5	20625	20.68	22	0
			6	826.5	20425	20.90	22	0
				836.5	20525	20.77	22	0
				846.5	20625	20.84	22	0
			13	826.5	20425	20.93	22	0
				836.5	20525	20.69	22	0
				846.5	20625	20.71	22	0
		25RB		826.5	20425	20.91	22	0
				836.5	20525	20.69	22	0
				846.5	20625	20.82	22	0

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FDD Band 5								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
3	QPSK	1 RB	0	825.5	20415	21.37	22	0
				836.5	20525	21.06	22	0
				847.5	20635	21.04	22	0
			7	825.5	20415	21.36	22	0
				836.5	20525	21.17	22	0
				847.5	20635	21.28	22	0
			14	825.5	20415	21.34	22	0
				836.5	20525	21.09	22	0
				847.5	20635	21.23	22	0
		8RB	0	825.5	20415	21.32	22	0
				836.5	20525	21.12	22	0
				847.5	20635	21.23	22	0
			4	825.5	20415	21.32	22	0
				836.5	20525	21.08	22	0
				847.5	20635	21.24	22	0
			7	825.5	20415	21.31	22	0
				836.5	20525	21.14	22	0
				847.5	20635	21.29	22	0
		15RB		825.5	20415	21.31	22	0
				836.5	20525	21.11	22	0
				847.5	20635	21.35	22	0
	16-QAM	1 RB	0	825.5	20415	21.28	22	0
				836.5	20525	21.40	22	0
				847.5	20635	20.79	22	0
			7	825.5	20415	21.65	22	0
				836.5	20525	21.66	22	0
				847.5	20635	21.64	22	0
			14	825.5	20415	21.56	22	0
				836.5	20525	21.56	22	0
				847.5	20635	21.63	22	0
		8RB	0	825.5	20415	20.78	22	0
				836.5	20525	20.76	22	0
				847.5	20635	20.70	22	0
			4	825.5	20415	20.86	22	0
				836.5	20525	20.72	22	0
				847.5	20635	20.63	22	0
			7	825.5	20415	20.85	22	0
				836.5	20525	20.77	22	0
				847.5	20635	20.75	22	0
		15RB		825.5	20415	20.92	22	0
				836.5	20525	20.70	22	0
				847.5	20635	20.65	22	0

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FDD Band 5								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
1.4	QPSK	1 RB	0	824.7	20407	21.30	22	0
				836.5	20525	21.06	22	0
				848.3	20643	21.23	22	0
			2	824.7	20407	21.26	22	0
				836.5	20525	21.02	22	0
				848.3	20643	21.09	22	0
			5	824.7	20407	21.35	22	0
				836.5	20525	21.09	22	0
				848.3	20643	21.24	22	0
		3RB	0	824.7	20407	21.27	22	0
				836.5	20525	21.03	22	0
				848.3	20643	21.14	22	0
			2	824.7	20407	21.34	22	0
				836.5	20525	21.03	22	0
				848.3	20643	21.12	22	0
			3	824.7	20407	21.29	22	0
				836.5	20525	21.08	22	0
				848.3	20643	21.14	22	0
		6RB		824.7	20407	21.23	22	0
				836.5	20525	21.05	22	0
				848.3	20643	21.17	22	0
	16-QAM	1 RB	0	824.7	20407	21.61	22	0
				836.5	20525	21.76	22	0
				848.3	20643	21.72	22	0
			2	824.7	20407	21.76	22	0
				836.5	20525	21.29	22	0
				848.3	20643	21.47	22	0
			5	824.7	20407	21.58	22	0
				836.5	20525	21.27	22	0
				848.3	20643	21.40	22	0
		3RB	0	824.7	20407	21.46	22	0
				836.5	20525	21.20	22	0
				848.3	20643	21.28	22	0
			2	824.7	20407	21.32	22	0
				836.5	20525	21.34	22	0
				848.3	20643	21.20	22	0
			3	824.7	20407	21.57	22	0
				836.5	20525	21.35	22	0
				848.3	20643	21.42	22	0
		6RB		824.7	20407	20.83	22	0
				836.5	20525	20.72	22	0
				848.3	20643	20.69	22	0

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FDD Band 7								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
20	QPSK	1 RB	0	2510	20850	17.43	17.5	0
				2535	21100	17.49	17.5	0
				2560	21350	17.47	17.5	0
			50	2510	20850	17.42	17.5	0
				2535	21100	17.38	17.5	0
				2560	21350	17.45	17.5	0
			99	2510	20850	17.44	17.5	0
				2535	21100	17.44	17.5	0
				2560	21350	17.41	17.5	0
		5RB	0	2510	20850	17.21	17.5	0
				2535	21100	17.16	17.5	0
				2560	21350	17.39	17.5	0
			25	2510	20850	17.25	17.5	0
				2535	21100	17.21	17.5	0
				2560	21350	17.45	17.5	0
			50	2510	20850	17.31	17.5	0
				2535	21100	17.28	17.5	0
				2560	21350	17.39	17.5	0
		100RB		2510	20850	17.34	17.5	0
				2535	21100	17.32	17.5	0
				2560	21350	17.41	17.5	0
	16-QAM	1 RB	0	2510	20850	17.33	17.5	0
				2535	21100	17.48	17.5	0
				2560	21350	17.38	17.5	0
			50	2510	20850	17.47	17.5	0
				2535	21100	17.37	17.5	0
				2560	21350	17.44	17.5	0
			99	2510	20850	17.40	17.5	0
				2535	21100	17.46	17.5	0
				2560	21350	17.44	17.5	0
		5RB	0	2510	20850	17.25	17.5	0
				2535	21100	17.19	17.5	0
				2560	21350	17.45	17.5	0
			25	2510	20850	17.31	17.5	0
				2535	21100	17.32	17.5	0
				2560	21350	17.46	17.5	0
			50	2510	20850	17.28	17.5	0
				2535	21100	17.38	17.5	0
				2560	21350	17.38	17.5	0
		100RB		2510	20850	17.35	17.5	0
				2535	21100	17.46	17.5	0
				2560	21350	17.39	17.5	0

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FDD Band 7								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
15	QPSK	1 RB	0	2507.5	20825	17.13	17.5	0
				2535	21100	17.01	17.5	0
				2562.5	21375	17.39	17.5	0
			36	2507.5	20825	17.16	17.5	0
				2535	21100	17.25	17.5	0
				2562.5	21375	17.40	17.5	0
			74	2507.5	20825	17.47	17.5	0
				2535	21100	17.45	17.5	0
				2562.5	21375	17.42	17.5	0
		36RB	0	2507.5	20825	17.19	17.5	0
				2535	21100	17.16	17.5	0
				2562.5	21375	17.48	17.5	0
			18	2507.5	20825	17.25	17.5	0
				2535	21100	17.25	17.5	0
				2562.5	21375	17.42	17.5	0
			37	2507.5	20825	17.34	17.5	0
				2535	21100	17.30	17.5	0
				2562.5	21375	17.48	17.5	0
		75RB		2507.5	20825	17.27	17.5	0
				2535	21100	17.24	17.5	0
				2562.5	21375	17.44	17.5	0
	16-QAM	1 RB	0	2507.5	20825	17.45	17.5	0
				2535	21100	17.43	17.5	0
				2562.5	21375	17.39	17.5	0
			36	2507.5	20825	17.42	17.5	0
				2535	21100	17.44	17.5	0
				2562.5	21375	17.47	17.5	0
			74	2507.5	20825	17.39	17.5	0
				2535	21100	17.30	17.5	0
				2562.5	21375	17.48	17.5	0
		36RB	0	2507.5	20825	17.26	17.5	0
				2535	21100	17.20	17.5	0
				2562.5	21375	17.41	17.5	0
			18	2507.5	20825	17.30	17.5	0
				2535	21100	17.25	17.5	0
				2562.5	21375	17.46	17.5	0
			37	2507.5	20825	17.45	17.5	0
				2535	21100	17.33	17.5	0
				2562.5	21375	17.44	17.5	0
		75RB		2507.5	20825	17.33	17.5	0
				2535	21100	17.33	17.5	0
				2562.5	21375	17.46	17.5	0

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FDD Band 7								
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10	QPSK	1 RB	0	2505	20800	17.19	17.5	0
				2535	21100	17.15	17.5	0
				2565	21400	17.44	17.5	0
			25	2505	20800	17.30	17.5	0
				2535	21100	17.32	17.5	0
				2565	21400	17.47	17.5	0
			49	2505	20800	17.39	17.5	0
				2535	21100	17.39	17.5	0
				2565	21400	17.48	17.5	0
		25RB	0	2505	20800	17.21	17.5	0
				2535	21100	17.29	17.5	0
				2565	21400	17.41	17.5	0
			12	2505	20800	17.27	17.5	0
				2535	21100	17.28	17.5	0
				2565	21400	17.46	17.5	0
			25	2505	20800	17.31	17.5	0
				2535	21100	17.27	17.5	0
				2565	21400	17.46	17.5	0
		50RB		2505	20800	17.26	17.5	0
				2535	21100	17.28	17.5	0
				2565	21400	17.48	17.5	0
	16-QAM	1 RB	0	2505	20800	17.24	17.5	0
				2535	21100	16.89	17.5	0
				2565	21400	17.45	17.5	0
			25	2505	20800	17.04	17.5	0
				2535	21100	17.21	17.5	0
				2565	21400	17.48	17.5	0
			49	2505	20800	17.21	17.5	0
				2535	21100	17.10	17.5	0
				2565	21400	17.17	17.5	0
		25RB	0	2505	20800	17.34	17.5	0
				2535	21100	17.35	17.5	0
				2565	21400	16.91	17.5	0
			12	2505	20800	17.36	17.5	0
				2535	21100	17.34	17.5	0
				2565	21400	16.84	17.5	0
			25	2505	20800	17.38	17.5	0
				2535	21100	17.43	17.5	0
				2565	21400	16.91	17.5	0
		50RB		2505	20800	17.35	17.5	0
				2535	21100	17.39	17.5	0
				2565	21400	16.85	17.5	0

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FDD Band 7								
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5	QPSK	1 RB	0	2502.5	20775	17.23	17.5	0
				2535	21100	17.23	17.5	0
				2567.5	21425	17.46	17.5	0
			12	2502.5	20775	17.20	17.5	0
				2535	21100	17.11	17.5	0
				2567.5	21425	17.40	17.5	0
			24	2502.5	20775	17.26	17.5	0
				2535	21100	17.25	17.5	0
				2567.5	21425	17.03	17.5	0
		12RB	0	2502.5	20775	17.19	17.5	0
				2535	21100	17.22	17.5	0
				2567.5	21425	17.41	17.5	0
			6	2502.5	20775	17.25	17.5	0
				2535	21100	17.22	17.5	0
				2567.5	21425	17.40	17.5	0
			13	2502.5	20775	17.26	17.5	0
				2535	21100	17.21	17.5	0
				2567.5	21425	17.46	17.5	0
		25RB		2502.5	20775	17.24	17.5	0
				2535	21100	17.20	17.5	0
				2567.5	21425	17.39	17.5	0
	16-QAM	1 RB	0	2502.5	20775	17.12	17.5	0
				2535	21100	17.04	17.5	0
				2567.5	21425	17.32	17.5	0
			12	2502.5	20775	17.06	17.5	0
				2535	21100	17.14	17.5	0
				2567.5	21425	17.37	17.5	0
			24	2502.5	20775	17.38	17.5	0
				2535	21100	17.13	17.5	0
				2567.5	21425	17.48	17.5	0
		12RB	0	2502.5	20775	17.24	17.5	0
				2535	21100	17.26	17.5	0
				2567.5	21425	17.42	17.5	0
			6	2502.5	20775	17.31	17.5	0
				2535	21100	17.16	17.5	0
				2567.5	21425	17.45	17.5	0
			13	2502.5	20775	17.27	17.5	0
				2535	21100	17.21	17.5	0
				2567.5	21425	17.03	17.5	0
		25RB		2502.5	20775	17.28	17.5	0
				2535	21100	17.24	17.5	0
				2567.5	21425	17.45	17.5	0

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FDD Band 12								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	704	23060	18.99	19.5	0
				707.5	23095	19.18	19.5	0
				711	23130	19.25	19.5	0
			25	704	23060	19.32	19.5	0
				707.5	23095	19.29	19.5	0
				711	23130	19.17	19.5	0
			49	704	23060	19.24	19.5	0
				707.5	23095	19.49	19.5	0
				711	23130	19.20	19.5	0
		25RB	0	704	23060	19.18	19.5	0
				707.5	23095	19.13	19.5	0
				711	23130	19.00	19.5	0
			12	704	23060	19.15	19.5	0
				707.5	23095	19.07	19.5	0
				711	23130	19.08	19.5	0
			25	704	23060	19.13	19.5	0
				707.5	23095	19.06	19.5	0
				711	23130	19.07	19.5	0
		50RB		704	23060	19.16	19.5	0
				707.5	23095	19.10	19.5	0
				711	23130	19.17	19.5	0
	16-QAM	1 RB	0	704	23060	19.15	19.5	0
				707.5	23095	19.04	19.5	0
				711	23130	19.29	19.5	0
			25	704	23060	18.91	19.5	0
				707.5	23095	19.15	19.5	0
				711	23130	18.63	19.5	0
			49	704	23060	19.20	19.5	0
				707.5	23095	19.42	19.5	0
				711	23130	19.16	19.5	0
		25RB	0	704	23060	18.80	19.5	0
				707.5	23095	18.95	19.5	0
				711	23130	18.85	19.5	0
			12	704	23060	19.04	19.5	0
				707.5	23095	18.95	19.5	0
				711	23130	18.82	19.5	0
			25	704	23060	18.78	19.5	0
				707.5	23095	19.01	19.5	0
				711	23130	19.07	19.5	0
		50RB		704	23060	19.04	19.5	0
				707.5	23095	18.90	19.5	0
				711	23130	18.91	19.5	0

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FDD Band 12								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	701.5	23035	18.68	19.5	0
				707.5	23095	18.93	19.5	0
				713.5	23155	18.81	19.5	0
			12	701.5	23035	18.86	19.5	0
				707.5	23095	18.71	19.5	0
				713.5	23155	18.89	19.5	0
			24	701.5	23035	18.96	19.5	0
				707.5	23095	18.80	19.5	0
				713.5	23155	18.75	19.5	0
		12RB	0	701.5	23035	18.57	19.5	0
				707.5	23095	18.69	19.5	0
				713.5	23155	18.77	19.5	0
			6	701.5	23035	18.73	19.5	0
				707.5	23095	18.71	19.5	0
				713.5	23155	18.82	19.5	0
			13	701.5	23035	18.82	19.5	0
				707.5	23095	18.76	19.5	0
				713.5	23155	18.82	19.5	0
		25RB		701.5	23035	18.87	19.5	0
				707.5	23095	18.74	19.5	0
				713.5	23155	18.70	19.5	0
	16-QAM	1 RB	0	701.5	23035	19.13	19.5	0
				707.5	23095	18.88	19.5	0
				713.5	23155	19.45	19.5	0
			12	701.5	23035	19.27	19.5	0
				707.5	23095	19.34	19.5	0
				713.5	23155	19.08	19.5	0
			24	701.5	23035	19.44	19.5	0
				707.5	23095	19.07	19.5	0
				713.5	23155	19.48	19.5	0
		12RB	0	701.5	23035	18.67	19.5	0
				707.5	23095	18.74	19.5	0
				713.5	23155	18.75	19.5	0
			6	701.5	23035	18.83	19.5	0
				707.5	23095	18.75	19.5	0
				713.5	23155	18.81	19.5	0
			13	701.5	23035	18.84	19.5	0
				707.5	23095	18.80	19.5	0
				713.5	23155	18.60	19.5	0
		25RB		701.5	23035	18.83	19.5	0
				707.5	23095	18.81	19.5	0
				713.5	23155	18.70	19.5	0

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FDD Band 12								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
3	QPSK	1 RB	0	700.5	23025	18.80	19.5	0
				707.5	23095	18.82	19.5	0
				714.5	23165	18.74	19.5	0
			7	700.5	23025	18.74	19.5	0
				707.5	23095	18.89	19.5	0
				714.5	23165	18.89	19.5	0
			14	700.5	23025	18.74	19.5	0
				707.5	23095	18.70	19.5	0
				714.5	23165	18.73	19.5	0
		8RB	0	700.5	23025	18.72	19.5	0
				707.5	23095	18.70	19.5	0
				714.5	23165	18.67	19.5	0
			4	700.5	23025	18.84	19.5	0
				707.5	23095	18.73	19.5	0
				714.5	23165	18.73	19.5	0
			7	700.5	23025	18.81	19.5	0
				707.5	23095	18.78	19.5	0
				714.5	23165	18.69	19.5	0
		15RB		700.5	23025	18.58	19.5	0
				707.5	23095	18.83	19.5	0
				714.5	23165	18.74	19.5	0
	16-QAM	1 RB	0	700.5	23025	19.07	19.5	0
				707.5	23095	19.05	19.5	0
				714.5	23165	19.27	19.5	0
			7	700.5	23025	18.73	19.5	0
				707.5	23095	18.88	19.5	0
				714.5	23165	19.09	19.5	0
			14	700.5	23025	19.29	19.5	0
				707.5	23095	19.26	19.5	0
				714.5	23165	18.89	19.5	0
		8RB	0	700.5	23025	18.76	19.5	0
				707.5	23095	18.80	19.5	0
				714.5	23165	18.79	19.5	0
			4	700.5	23025	18.87	19.5	0
				707.5	23095	18.60	19.5	0
				714.5	23165	18.74	19.5	0
			7	700.5	23025	18.84	19.5	0
				707.5	23095	18.79	19.5	0
				714.5	23165	18.58	19.5	0
		15RB		700.5	23025	18.80	19.5	0
				707.5	23095	18.88	19.5	0
				714.5	23165	18.71	19.5	0

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FDD Band 12								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
1.4	QPSK	1 RB	0	699.7	23017	18.84	19.5	0
				707.5	23095	18.87	19.5	0
				715.3	23173	18.93	19.5	0
			2	699.7	23017	18.91	19.5	0
				707.5	23095	18.96	19.5	0
				715.3	23173	18.67	19.5	0
			5	699.7	23017	18.93	19.5	0
				707.5	23095	18.84	19.5	0
				715.3	23173	18.85	19.5	0
		3RB	0	699.7	23017	18.83	19.5	0
				707.5	23095	18.79	19.5	0
				715.3	23173	18.60	19.5	0
			2	699.7	23017	18.75	19.5	0
				707.5	23095	18.75	19.5	0
				715.3	23173	18.70	19.5	0
			3	699.7	23017	18.78	19.5	0
				707.5	23095	18.76	19.5	0
				715.3	23173	18.83	19.5	0
		6RB		699.7	23017	18.80	19.5	0
				707.5	23095	18.77	19.5	0
				715.3	23173	18.77	19.5	0
	16-QAM	1 RB	0	699.7	23017	19.19	19.5	0
				707.5	23095	19.22	19.5	0
				715.3	23173	19.10	19.5	0
			2	699.7	23017	19.47	19.5	0
				707.5	23095	19.08	19.5	0
				715.3	23173	19.12	19.5	0
			5	699.7	23017	19.32	19.5	0
				707.5	23095	19.37	19.5	0
				715.3	23173	19.36	19.5	0
		3RB	0	699.7	23017	18.87	19.5	0
				707.5	23095	18.87	19.5	0
				715.3	23173	18.50	19.5	0
			2	699.7	23017	18.78	19.5	0
				707.5	23095	18.98	19.5	0
				715.3	23173	19.03	19.5	0
			3	699.7	23017	19.03	19.5	0
				707.5	23095	19.03	19.5	0
				715.3	23173	18.92	19.5	0
		6RB		699.7	23017	18.82	19.5	0
				707.5	23095	18.74	19.5	0
				715.3	23173	18.78	19.5	0

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FDD Band 13								
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	20.47	20.5	0
			25	782	23230	20.48	20.5	0
			49	782	23230	20.46	20.5	0
		25 RB	0	782	23230	20.17	20.5	0
			12	782	23230	19.92	20.5	0
			25	782	23230	19.94	20.5	0
		50RB		782	23230	19.94	20.5	0
	16-QAM	1 RB	0	782	23230	20.00	20.5	0
			25	782	23230	19.89	20.5	0
			49	782	23230	20.16	20.5	0
		25 RB	0	782	23230	19.91	20.5	0
			12	782	23230	19.91	20.5	0
			25	782	23230	19.90	20.5	0
		50RB		782	23230	20.02	20.5	0

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FDD Band 13								
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	19.82	20.5	0
				782	23230	19.72	20.5	0
				784.5	23255	19.62	20.5	0
			12	779.5	23205	19.64	20.5	0
				782	23230	19.65	20.5	0
				784.5	23255	19.49	20.5	0
			24	779.5	23205	19.76	20.5	0
				782	23230	19.71	20.5	0
				784.5	23255	19.70	20.5	0
		12RB	0	779.5	23205	19.64	20.5	0
				782	23230	19.52	20.5	0
				784.5	23255	19.58	20.5	0
			6	779.5	23205	19.42	20.5	0
				782	23230	19.58	20.5	0
				784.5	23255	19.69	20.5	0
			13	779.5	23205	19.58	20.5	0
				782	23230	19.60	20.5	0
				784.5	23255	19.61	20.5	0
		25RB		779.5	23205	19.77	20.5	0
				782	23230	19.64	20.5	0
				784.5	23255	19.69	20.5	0
	16-QAM	1 RB	0	779.5	23205	20.06	20.5	0
				782	23230	19.97	20.5	0
				784.5	23255	19.82	20.5	0
			12	779.5	23205	20.11	20.5	0
				782	23230	19.95	20.5	0
				784.5	23255	20.07	20.5	0
			24	779.5	23205	20.33	20.5	0
				782	23230	19.83	20.5	0
				784.5	23255	20.18	20.5	0
		12RB	0	779.5	23205	19.65	20.5	0
				782	23230	19.78	20.5	0
				784.5	23255	19.77	20.5	0
			6	779.5	23205	19.77	20.5	0
				782	23230	19.69	20.5	0
				784.5	23255	19.82	20.5	0
			13	779.5	23205	19.67	20.5	0
				782	23230	19.72	20.5	0
				784.5	23255	19.72	20.5	0
		25RB		779.5	23205	19.66	20.5	0
				782	23230	19.66	20.5	0
				784.5	23255	19.73	20.5	0

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FDD Band 17								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	709	23780	19.14	19.5	0
				710	23790	19.27	19.5	0
				711	23800	18.91	19.5	0
			25	709	23780	19.25	19.5	0
				710	23790	19.11	19.5	0
				711	23800	19.16	19.5	0
			49	709	23780	19.34	19.5	0
				710	23790	19.29	19.5	0
				711	23800	19.48	19.5	0
		25RB	0	709	23780	19.13	19.5	0
				710	23790	19.16	19.5	0
				711	23800	19.21	19.5	0
			12	709	23780	19.22	19.5	0
				710	23790	19.19	19.5	0
				711	23800	19.08	19.5	0
			25	709	23780	19.34	19.5	0
				710	23790	19.35	19.5	0
				711	23800	19.30	19.5	0
		50RB		709	23780	19.28	19.5	0
				710	23790	19.28	19.5	0
				711	23800	19.35	19.5	0
	16-QAM	1 RB	0	709	23780	18.86	19.5	0
				710	23790	19.14	19.5	0
				711	23800	19.22	19.5	0
			25	709	23780	19.38	19.5	0
				710	23790	19.12	19.5	0
				711	23800	19.45	19.5	0
			49	709	23780	19.24	19.5	0
				710	23790	19.16	19.5	0
				711	23800	18.85	19.5	0
		25RB	0	709	23780	18.87	19.5	0
				710	23790	18.89	19.5	0
				711	23800	18.80	19.5	0
			12	709	23780	18.88	19.5	0
				710	23790	18.76	19.5	0
				711	23800	18.90	19.5	0
			25	709	23780	18.94	19.5	0
				710	23790	18.85	19.5	0
				711	23800	18.77	19.5	0
		50RB		709	23780	19.03	19.5	0
				710	23790	18.86	19.5	0
				711	23800	18.98	19.5	0

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FDD Band 17								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	706.5	23755	18.77	19.5	0
				710	23790	18.74	19.5	0
				713.5	23825	18.78	19.5	0
			12	706.5	23755	18.80	19.5	0
				710	23790	18.70	19.5	0
				713.5	23825	18.79	19.5	0
			24	706.5	23755	18.90	19.5	0
				710	23790	18.88	19.5	0
				713.5	23825	18.90	19.5	0
		12RB	0	706.5	23755	18.74	19.5	0
				710	23790	18.75	19.5	0
				713.5	23825	18.75	19.5	0
			6	706.5	23755	18.70	19.5	0
				710	23790	18.64	19.5	0
				713.5	23825	18.71	19.5	0
			13	706.5	23755	18.75	19.5	0
				710	23790	18.81	19.5	0
				713.5	23825	18.69	19.5	0
		25RB		706.5	23755	18.73	19.5	0
				710	23790	18.79	19.5	0
				713.5	23825	18.78	19.5	0
	16-QAM	1 RB	0	706.5	23755	19.11	19.5	0
				710	23790	19.08	19.5	0
				713.5	23825	19.17	19.5	0
			12	706.5	23755	19.47	19.5	0
				710	23790	19.18	19.5	0
				713.5	23825	19.08	19.5	0
			24	706.5	23755	19.43	19.5	0
				710	23790	18.59	19.5	0
				713.5	23825	19.29	19.5	0
		12RB	0	706.5	23755	18.97	19.5	0
				710	23790	18.97	19.5	0
				713.5	23825	18.76	19.5	0
			6	706.5	23755	18.80	19.5	0
				710	23790	18.82	19.5	0
				713.5	23825	18.80	19.5	0
			13	706.5	23755	18.83	19.5	0
				710	23790	18.88	19.5	0
				713.5	23825	18.61	19.5	0
		25RB		706.5	23755	18.86	19.5	0
				710	23790	18.72	19.5	0
				713.5	23825	18.82	19.5	0

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FDD Band 26								
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	822.5	26825	20.79	21	0
				831.5	26865	20.75	21	0
				841.5	26965	20.62	21	0
			36	822.5	26825	20.83	21	0
				831.5	26865	20.70	21	0
				841.5	26965	20.57	21	0
			74	822.5	26825	20.64	21	0
				831.5	26865	20.77	21	0
				841.5	26965	20.83	21	0
		36RB	0	822.5	26825	20.97	21	0
				831.5	26865	20.81	21	0
				841.5	26965	20.59	21	0
			18	822.5	26825	20.84	21	0
				831.5	26865	20.72	21	0
				841.5	26965	20.67	21	0
			37	822.5	26825	20.85	21	0
				831.5	26865	20.71	21	0
				841.5	26965	20.64	21	0
		75RB		822.5	26825	20.97	21	0
				831.5	26865	20.90	21	0
				841.5	26965	20.85	21	0
	16-QAM	1 RB	0	822.5	26825	20.88	21	0
				831.5	26865	20.81	21	0
				841.5	26965	20.82	21	0
			36	822.5	26825	20.78	21	0
				831.5	26865	20.72	21	0
				841.5	26965	20.96	21	0
			74	822.5	26825	20.71	21	0
				831.5	26865	20.91	21	0
				841.5	26965	20.81	21	0
		36RB	0	822.5	26825	20.89	21	0
				831.5	26865	20.85	21	0
				841.5	26965	20.79	21	0
			18	822.5	26825	20.89	21	0
				831.5	26865	20.81	21	0
				841.5	26965	20.80	21	0
			37	822.5	26825	20.95	21	0
				831.5	26865	20.74	21	0
				841.5	26965	20.74	21	0
		75RB		822.5	26825	20.61	21	0
				831.5	26865	20.91	21	0
				841.5	26965	20.91	21	0

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FDD Band 26								
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	820	26750	20.81	21	0
				831.5	26865	20.76	21	0
				844	26990	20.74	21	0
			25	820	26750	20.64	21	0
				831.5	26865	20.73	21	0
				844	26990	20.56	21	0
			49	820	26750	20.86	21	0
				831.5	26865	20.75	21	0
				844	26990	20.88	21	0
		25RB	0	820	26750	20.85	21	0
				831.5	26865	20.85	21	0
				844	26990	20.49	21	0
			12	820	26750	20.82	21	0
				831.5	26865	20.70	21	0
				844	26990	20.55	21	0
			25	820	26750	20.84	21	0
				831.5	26865	20.72	21	0
				844	26990	20.64	21	0
		50RB		820	26750	20.93	21	0
				831.5	26865	20.70	21	0
				844	26990	20.78	21	0
	16-QAM	1 RB	0	820	26750	20.79	21	0
				831.5	26865	20.66	21	0
				844	26990	20.37	21	0
			25	820	26750	20.66	21	0
				831.5	26865	20.68	21	0
				844	26990	20.58	21	0
			49	820	26750	20.77	21	0
				831.5	26865	20.77	21	0
				844	26990	20.94	21	0
		25RB	0	820	26750	20.89	21	0
				831.5	26865	20.84	21	0
				844	26990	20.68	21	0
			12	820	26750	20.91	21	0
				831.5	26865	20.87	21	0
				844	26990	20.59	21	0
			25	820	26750	20.91	21	0
				831.5	26865	20.80	21	0
				844	26990	20.83	21	0
		50RB		820	26750	20.95	21	0
				831.5	26865	20.80	21	0
				844	26990	20.75	21	0

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FDD Band 26								
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	816.5	26715	20.76	21	0
				831.5	26865	20.73	21	0
				846.5	27015	20.56	21	0
			12	816.5	26715	20.70	21	0
				831.5	26865	20.71	21	0
				846.5	27015	20.62	21	0
			24	816.5	26715	20.86	21	0
				831.5	26865	20.75	21	0
				846.5	27015	20.71	21	0
		12RB	0	816.5	26715	20.77	21	0
				831.5	26865	20.72	21	0
				846.5	27015	20.66	21	0
			6	816.5	26715	20.87	21	0
				831.5	26865	20.60	21	0
				846.5	27015	20.51	21	0
			13	816.5	26715	20.82	21	0
				831.5	26865	20.62	21	0
				846.5	27015	20.75	21	0
		25RB		816.5	26715	20.80	21	0
				831.5	26865	20.60	21	0
				846.5	27015	20.67	21	0
	16-QAM	1 RB	0	816.5	26715	20.59	21	0
				831.5	26865	20.84	21	0
				846.5	27015	20.20	21	0
			12	816.5	26715	20.41	21	0
				831.5	26865	20.74	21	0
				846.5	27015	20.16	21	0
			24	816.5	26715	20.73	21	0
				831.5	26865	20.81	21	0
				846.5	27015	20.90	21	0
		12RB	0	816.5	26715	20.81	21	0
				831.5	26865	20.84	21	0
				846.5	27015	20.55	21	0
			6	816.5	26715	20.94	21	0
				831.5	26865	20.61	21	0
				846.5	27015	20.58	21	0
			13	816.5	26715	20.89	21	0
				831.5	26865	20.70	21	0
				846.5	27015	20.73	21	0
		25RB		816.5	26715	20.83	21	0
				831.5	26865	20.74	21	0
				846.5	27015	20.58	21	0

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FDD Band 26								
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	815.5	26705	20.68	21	0
				831.5	26865	20.78	21	0
				847.5	27025	20.66	21	0
			7	815.5	26705	20.82	21	0
				831.5	26865	20.65	21	0
				847.5	27025	20.83	21	0
			14	815.5	26705	20.84	21	0
				831.5	26865	20.62	21	0
				847.5	27025	20.68	21	0
		8RB	0	815.5	26705	20.72	21	0
				831.5	26865	20.75	21	0
				847.5	27025	20.53	21	0
			4	815.5	26705	20.79	21	0
				831.5	26865	20.66	21	0
				847.5	27025	20.63	21	0
			7	815.5	26705	20.80	21	0
				831.5	26865	20.62	21	0
				847.5	27025	20.69	21	0
		15RB		815.5	26705	20.79	21	0
				831.5	26865	20.70	21	0
				847.5	27025	20.72	21	0
	16-QAM	1 RB	0	815.5	26705	20.89	21	0
				831.5	26865	20.69	21	0
				847.5	27025	20.59	21	0
			7	815.5	26705	20.87	21	0
				831.5	26865	20.69	21	0
				847.5	27025	20.60	21	0
			14	815.5	26705	20.84	21	0
				831.5	26865	20.45	21	0
				847.5	27025	20.70	21	0
		8RB	0	815.5	26705	20.65	21	0
				831.5	26865	20.84	21	0
				847.5	27025	20.75	21	0
			4	815.5	26705	20.84	21	0
				831.5	26865	20.55	21	0
				847.5	27025	20.62	21	0
			7	815.5	26705	20.96	21	0
				831.5	26865	20.66	21	0
				847.5	27025	20.93	21	0
		15RB		815.5	26705	20.82	21	0
				831.5	26865	20.68	21	0
				847.5	27025	20.66	21	0

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FDD Band 26								
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	814.7	26697	20.79	21	0
				831.5	26865	20.69	21	0
				848.3	27033	20.73	21	0
			2	814.7	26697	20.78	21	0
				831.5	26865	20.71	21	0
				848.3	27033	20.76	21	0
			5	814.7	26697	20.76	21	0
				831.5	26865	20.70	21	0
				848.3	27033	20.67	21	0
		3RB	0	814.7	26697	20.71	21	0
				831.5	26865	20.67	21	0
				848.3	27033	20.70	21	0
			2	814.7	26697	20.76	21	0
				831.5	26865	20.59	21	0
				848.3	27033	20.63	21	0
			3	814.7	26697	20.79	21	0
				831.5	26865	20.73	21	0
				848.3	27033	20.74	21	0
		6RB		814.7	26697	20.75	21	0
				831.5	26865	20.67	21	0
				848.3	27033	20.73	21	0
	16-QAM	1 RB	0	814.7	26697	20.48	21	0
				831.5	26865	20.19	21	0
				848.3	27033	20.43	21	0
			2	814.7	26697	20.32	21	0
				831.5	26865	20.09	21	0
				848.3	27033	20.88	21	0
			5	814.7	26697	20.23	21	0
				831.5	26865	20.41	21	0
				848.3	27033	20.74	21	0
		3RB	0	814.7	26697	20.31	21	0
				831.5	26865	20.17	21	0
				848.3	27033	20.17	21	0
			2	814.7	26697	20.32	21	0
				831.5	26865	20.76	21	0
				848.3	27033	20.80	21	0
			3	814.7	26697	20.77	21	0
				831.5	26865	20.65	21	0
				848.3	27033	20.73	21	0
		6RB		814.7	26697	20.90	21	0
				831.5	26865	20.88	21	0
				848.3	27033	20.68	21	0

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FDD Band 30								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	2310	27710	16.79	17	0
			25	2310	27710	16.64	17	0
			49	2310	27710	16.63	17	0
		25 RB	0	2310	27710	16.83	17	0
			12	2310	27710	16.79	17	0
			25	2310	27710	16.65	17	0
		50RB		2310	27710	16.96	17	0
	16-QAM	1 RB	0	2310	27710	16.81	17	0
			25	2310	27710	16.80	17	0
			49	2310	27710	16.83	17	0
		25 RB	0	2310	27710	16.66	17	0
			12	2310	27710	16.55	17	0
			25	2310	27710	16.45	17	0
		50RB		2310	27710	16.89	17	0

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FDD Band 30								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	2307.5	27685	16.45	17	0
				2310	27710	16.37	17	0
				2312.5	27735	16.39	17	0
			12	2307.5	27685	16.36	17	0
				2310	27710	16.42	17	0
				2312.5	27735	16.06	17	0
			24	2307.5	27685	16.57	17	0
				2310	27710	16.35	17	0
				2312.5	27735	16.20	17	0
		12RB	0	2307.5	27685	16.51	17	0
				2310	27710	16.37	17	0
				2312.5	27735	16.45	17	0
			6	2307.5	27685	16.32	17	0
				2310	27710	16.41	17	0
				2312.5	27735	16.35	17	0
			13	2307.5	27685	16.28	17	0
				2310	27710	16.52	17	0
				2312.5	27735	16.31	17	0
		25RB		2307.5	27685	16.49	17	0
				2310	27710	16.34	17	0
				2312.5	27735	16.32	17	0
	16-QAM	1 RB	0	2307.5	27685	16.35	17	0
				2310	27710	16.71	17	0
				2312.5	27735	16.55	17	0
			12	2307.5	27685	16.93	17	0
				2310	27710	16.39	17	0
				2312.5	27735	16.73	17	0
			24	2307.5	27685	16.70	17	0
				2310	27710	16.19	17	0
				2312.5	27735	16.35	17	0
		12RB	0	2307.5	27685	16.63	17	0
				2310	27710	16.55	17	0
				2312.5	27735	16.53	17	0
			6	2307.5	27685	16.50	17	0
				2310	27710	16.45	17	0
				2312.5	27735	16.36	17	0
			13	2307.5	27685	16.51	17	0
				2310	27710	16.52	17	0
				2312.5	27735	16.21	17	0
		25RB		2307.5	27685	16.43	17	0
				2310	27710	16.36	17	0
				2312.5	27735	16.25	17	0

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FDD Band 38								
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	2580	37850	19.96	20	0
				2595	38000	19.72	20	0
				2610	38150	19.91	20	0
			50	2580	37850	19.89	20	0
				2595	38000	19.83	20	0
				2610	38150	19.86	20	0
			99	2580	37850	19.91	20	0
				2595	38000	19.87	20	0
				2610	38150	19.90	20	0
		50RB	0	2580	37850	19.83	20	0
				2595	38000	19.77	20	0
				2610	38150	19.71	20	0
			25	2580	37850	19.82	20	0
				2595	38000	19.76	20	0
				2610	38150	19.70	20	0
			50	2580	37850	19.75	20	0
				2595	38000	19.76	20	0
				2610	38150	19.72	20	0
		100RB		2580	37850	19.78	20	0
				2595	38000	19.78	20	0
				2610	38150	19.69	20	0
	16-QAM	1 RB	0	2580	37850	19.77	20	0
				2595	38000	19.78	20	0
				2610	38150	19.72	20	0
			50	2580	37850	19.72	20	0
				2595	38000	19.71	20	0
				2610	38150	19.68	20	0
			99	2580	37850	19.73	20	0
				2595	38000	19.78	20	0
				2610	38150	19.74	20	0
		50RB	0	2580	37850	19.83	20	0
				2595	38000	19.83	20	0
				2610	38150	19.76	20	0
			25	2580	37850	19.81	20	0
				2595	38000	19.80	20	0
				2610	38150	19.74	20	0
			50	2580	37850	19.80	20	0
				2595	38000	19.81	20	0
				2610	38150	19.75	20	0
		100RB		2580	37850	19.84	20	0
				2595	38000	19.82	20	0
				2610	38150	19.76	20	0

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FDD Band 38								
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	2577.5	37825	19.93	20	0
				2595	38000	19.87	20	0
				2612.5	38175	19.88	20	0
			36	2577.5	37825	19.87	20	0
				2595	38000	19.88	20	0
				2612.5	38175	19.90	20	0
			74	2577.5	37825	19.82	20	0
				2595	38000	19.89	20	0
				2612.5	38175	19.88	20	0
		36RB	0	2577.5	37825	19.91	20	0
				2595	38000	19.84	20	0
				2612.5	38175	19.83	20	0
			18	2577.5	37825	19.85	20	0
				2595	38000	19.89	20	0
				2612.5	38175	19.83	20	0
			37	2577.5	37825	19.85	20	0
				2595	38000	19.81	20	0
				2612.5	38175	19.82	20	0
		75RB		2577.5	37825	19.79	20	0
				2595	38000	19.80	20	0
				2612.5	38175	19.81	20	0
	16-QAM	1 RB	0	2577.5	37825	19.79	20	0
				2595	38000	19.84	20	0
				2612.5	38175	19.87	20	0
			36	2577.5	37825	19.83	20	0
				2595	38000	19.88	20	0
				2612.5	38175	19.87	20	0
			74	2577.5	37825	19.75	20	0
				2595	38000	19.86	20	0
				2612.5	38175	19.87	20	0
		36RB	0	2577.5	37825	19.85	20	0
				2595	38000	19.88	20	0
				2612.5	38175	19.87	20	0
			18	2577.5	37825	19.84	20	0
				2595	38000	19.87	20	0
				2612.5	38175	19.87	20	0
			37	2577.5	37825	19.82	20	0
				2595	38000	19.86	20	0
				2612.5	38175	19.86	20	0
		75RB		2577.5	37825	19.81	20	0
				2595	38000	19.87	20	0
				2612.5	38175	19.85	20	0

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FDD Band 38								
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	2575	37800	19.93	20	0
				2595	38000	19.95	20	0
				2615	38200	19.94	20	0
			25	2575	37800	19.87	20	0
				2595	38000	19.92	20	0
				2615	38200	19.92	20	0
			49	2575	37800	19.88	20	0
				2595	38000	19.86	20	0
				2615	38200	19.85	20	0
		25RB	0	2575	37800	19.83	20	0
				2595	38000	19.86	20	0
				2615	38200	19.86	20	0
			12	2575	37800	19.80	20	0
				2595	38000	19.81	20	0
				2615	38200	19.84	20	0
			25	2575	37800	19.80	20	0
				2595	38000	19.84	20	0
				2615	38200	19.86	20	0
		50RB		2575	37800	19.79	20	0
				2595	38000	19.80	20	0
				2615	38200	19.78	20	0
	16-QAM	1 RB	0	2575	37800	19.86	20	0
				2595	38000	19.92	20	0
				2615	38200	19.90	20	0
			25	2575	37800	19.83	20	0
				2595	38000	19.87	20	0
				2615	38200	19.86	20	0
			49	2575	37800	19.84	20	0
				2595	38000	19.91	20	0
				2615	38200	19.86	20	0
		25RB	0	2575	37800	19.87	20	0
				2595	38000	19.87	20	0
				2615	38200	19.86	20	0
			12	2575	37800	19.85	20	0
				2595	38000	19.88	20	0
				2615	38200	19.85	20	0
			25	2575	37800	19.86	20	0
				2595	38000	19.91	20	0
				2615	38200	19.86	20	0
		50RB		2575	37800	19.83	20	0
				2595	38000	19.87	20	0
				2615	38200	19.81	20	0

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FDD Band 38								
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	2572.5	37775	19.91	20	0
				2595	38000	19.93	20	0
				2617.5	38225	19.95	20	0
			12	2572.5	37775	19.89	20	0
				2595	38000	19.90	20	0
				2617.5	38225	19.94	20	0
			24	2572.5	37775	19.91	20	0
				2595	38000	19.92	20	0
				2617.5	38225	19.95	20	0
		12RB	0	2572.5	37775	19.87	20	0
				2595	38000	19.87	20	0
				2617.5	38225	19.89	20	0
			6	2572.5	37775	19.83	20	0
				2595	38000	19.84	20	0
				2617.5	38225	19.88	20	0
			13	2572.5	37775	19.85	20	0
				2595	38000	19.87	20	0
				2617.5	38225	19.88	20	0
		25RB		2572.5	37775	19.85	20	0
				2595	38000	19.84	20	0
				2617.5	38225	19.88	20	0
	16-QAM	1 RB	0	2572.5	37775	19.94	20	0
				2595	38000	19.93	20	0
				2617.5	38225	19.93	20	0
			12	2572.5	37775	19.90	20	0
				2595	38000	19.89	20	0
				2617.5	38225	19.93	20	0
			24	2572.5	37775	19.94	20	0
				2595	38000	19.94	20	0
				2617.5	38225	19.94	20	0
		12RB	0	2572.5	37775	19.82	20	0
				2595	38000	19.85	20	0
				2617.5	38225	19.86	20	0
			6	2572.5	37775	19.80	20	0
				2595	38000	19.82	20	0
				2617.5	38225	19.84	20	0
			13	2572.5	37775	19.82	20	0
				2595	38000	19.85	20	0
				2617.5	38225	19.88	20	0
		25RB		2572.5	37775	19.87	20	0
				2595	38000	19.87	20	0
				2617.5	38225	19.88	20	0

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TDD Band 41								
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	2506	39750	18.63	19	0
				2549.5	40185	18.87	19	0
				2593	40620	18.65	19	0
				2636.5	41055	18.97	19	0
				2680	41490	18.62	19	0
			50	2506	39750	18.47	19	0
				2549.5	40185	18.89	19	0
				2593	40620	18.60	19	0
				2636.5	41055	18.98	19	0
				2680	41490	18.37	19	0
			99	2506	39750	18.56	19	0
				2549.5	40185	18.90	19	0
				2593	40620	18.65	19	0
				2636.5	41055	18.82	19	0
				2680	41490	18.37	19	0
		50 RB	0	2506	39750	18.46	19	0
				2549.5	40185	18.70	19	0
				2593	40620	18.50	19	0
				2636.5	41055	18.82	19	0
				2680	41490	18.24	19	0
			25	2506	39750	18.37	19	0
				2549.5	40185	18.76	19	0
				2593	40620	18.51	19	0
				2636.5	41055	18.85	19	0
				2680	41490	18.26	19	0
			50	2506	39750	18.34	19	0
				2549.5	40185	18.76	19	0
				2593	40620	18.51	19	0
				2636.5	41055	18.74	19	0
				2680	41490	18.30	19	0
		100RB		2506	39750	18.46	19	0
				2549.5	40185	18.76	19	0
				2593	40620	18.54	19	0
				2636.5	41055	18.86	19	0
				2680	41490	18.34	19	0
	16-QAM	1 RB	0	2506	39750	18.52	19	0
				2549.5	40185	18.81	19	0
				2593	40620	18.62	19	0
				2636.5	41055	18.91	19	0
				2680	41490	18.33	19	0
			50	2506	39750	18.44	19	0
				2549.5	40185	18.82	19	0
				2593	40620	18.55	19	0
				2636.5	41055	18.84	19	0
				2680	41490	18.28	19	0
			99	2506	39750	18.52	19	0
				2549.5	40185	18.85	19	0
				2593	40620	18.61	19	0
				2636.5	41055	18.69	19	0
				2680	41490	18.28	19	0
		50 RB	0	2506	39750	18.47	19	0
				2549.5	40185	18.75	19	0
				2593	40620	18.55	19	0
				2636.5	41055	18.79	19	0
				2680	41490	18.24	19	0
			25	2506	39750	18.39	19	0
				2549.5	40185	18.80	19	0
				2593	40620	18.54	19	0
				2636.5	41055	18.81	19	0
				2680	41490	18.25	19	0
			50	2506	39750	18.39	19	0
				2549.5	40185	18.82	19	0
				2593	40620	18.53	19	0
				2636.5	41055	18.79	19	0
				2680	41490	18.28	19	0
		100RB		2506	39750	18.46	19	0
				2549.5	40185	18.80	19	0
				2593	40620	18.57	19	0
				2636.5	41055	18.83	19	0
				2680	41490	18.35	19	0

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TDD Band 41								
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	2503.5	39725	18.56	19	0
				2548.3	40173	18.78	19	0
				2593	40620	18.58	19	0
				2637.8	41068	18.89	19	0
				2682.5	41515	18.32	19	0
			36	2503.5	39725	18.49	19	0
				2548.3	40173	18.79	19	0
				2593	40620	18.57	19	0
				2637.8	41068	18.94	19	0
				2682.5	41515	18.33	19	0
			74	2503.5	39725	18.44	19	0
				2548.3	40173	18.84	19	0
				2593	40620	18.56	19	0
				2637.8	41068	18.73	19	0
				2682.5	41515	18.37	19	0
		36 RB	0	2503.5	39725	18.53	19	0
				2548.3	40173	18.77	19	0
				2593	40620	18.56	19	0
				2637.8	41068	18.86	19	0
				2682.5	41515	18.29	19	0
			18	2503.5	39725	18.48	19	0
				2548.3	40173	18.77	19	0
				2593	40620	18.57	19	0
				2637.8	41068	18.91	19	0
				2682.5	41515	18.29	19	0
			37	2503.5	39725	18.44	19	0
				2548.3	40173	18.82	19	0
				2593	40620	18.57	19	0
				2637.8	41068	18.83	19	0
				2682.5	41515	18.31	19	0
		75RB		2503.5	39725	18.45	19	0
				2548.3	40173	18.73	19	0
				2593	40620	18.55	19	0
				2637.8	41068	18.86	19	0
				2682.5	41515	18.30	19	0
	16-QAM	1 RB	0	2503.5	39725	18.57	19	0
				2548.3	40173	18.80	19	0
				2593	40620	18.59	19	0
				2637.8	41068	18.87	19	0
				2682.5	41515	18.28	19	0
			36	2503.5	39725	18.52	19	0
				2548.3	40173	18.78	19	0
				2593	40620	18.59	19	0
				2637.8	41068	18.93	19	0
				2682.5	41515	18.28	19	0
			74	2503.5	39725	18.47	19	0
				2548.3	40173	18.85	19	0
				2593	40620	18.61	19	0
				2637.8	41068	18.74	19	0
				2682.5	41515	18.36	19	0
		36 RB	0	2503.5	39725	18.56	19	0
				2548.3	40173	18.80	19	0
				2593	40620	18.61	19	0
				2637.8	41068	18.87	19	0
				2682.5	41515	18.33	19	0
			18	2503.5	39725	18.56	19	0
				2548.3	40173	18.80	19	0
				2593	40620	18.61	19	0
				2637.8	41068	18.96	19	0
				2682.5	41515	18.32	19	0
			37	2503.5	39725	18.45	19	0
				2548.3	40173	18.86	19	0
				2593	40620	18.60	19	0
				2637.8	41068	18.82	19	0
				2682.5	41515	18.34	19	0
		75RB		2503.5	39725	18.52	19	0
				2548.3	40173	18.76	19	0
				2593	40620	18.60	19	0
				2637.8	41068	18.85	19	0
				2682.5	41515	18.40	19	0

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TDD Band 41								
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	2501	39700	18.51	19	0
				2547	40160	18.75	19	0
				2593	40620	18.53	19	0
				2639	41080	18.90	19	0
				2685	41540	18.34	19	0
			25	2501	39700	18.45	19	0
				2547	40160	18.71	19	0
				2593	40620	18.52	19	0
				2639	41080	18.84	19	0
				2685	41540	18.33	19	0
			49	2501	39700	18.44	19	0
				2547	40160	18.79	19	0
				2593	40620	18.54	19	0
				2639	41080	18.81	19	0
				2685	41540	18.39	19	0
		25 RB	0	2501	39700	18.43	19	0
				2547	40160	18.64	19	0
				2593	40620	18.45	19	0
				2639	41080	18.83	19	0
				2685	41540	18.22	19	0
			12	2501	39700	18.40	19	0
				2547	40160	18.63	19	0
				2593	40620	18.43	19	0
				2639	41080	18.75	19	0
				2685	41540	18.26	19	0
			25	2501	39700	18.39	19	0
				2547	40160	18.71	19	0
				2593	40620	18.44	19	0
				2639	41080	18.69	19	0
				2685	41540	18.25	19	0
		50RB		2501	39700	18.38	19	0
				2547	40160	18.59	19	0
				2593	40620	18.41	19	0
				2639	41080	18.71	19	0
				2685	41540	18.31	19	0
	16-QAM	1 RB	0	2501	39700	18.48	19	0
				2547	40160	18.67	19	0
				2593	40620	18.50	19	0
				2639	41080	18.79	19	0
				2685	41540	18.30	19	0
			36	2501	39700	18.45	19	0
				2547	40160	18.65	19	0
				2593	40620	18.46	19	0
				2639	41080	18.74	19	0
				2685	41540	18.28	19	0
			74	2501	39700	18.39	19	0
				2547	40160	18.73	19	0
				2593	40620	18.51	19	0
				2639	41080	18.71	19	0
				2685	41540	18.34	19	0
		36 RB	0	2501	39700	18.45	19	0
				2547	40160	18.67	19	0
				2593	40620	18.49	19	0
				2639	41080	18.87	19	0
				2685	41540	18.24	19	0
			18	2501	39700	18.43	19	0
				2547	40160	18.66	19	0
				2593	40620	18.49	19	0
				2639	41080	18.79	19	0
				2685	41540	18.29	19	0
			37	2501	39700	18.43	19	0
				2547	40160	18.74	19	0
				2593	40620	18.48	19	0
				2639	41080	18.73	19	0
				2685	41540	18.29	19	0
		75RB		2501	39700	18.44	19	0
				2547	40160	18.64	19	0
				2593	40620	18.45	19	0
				2639	41080	18.77	19	0
				2685	41540	18.28	19	0

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TDD Band 41								
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	2498.5	39675	18.51	19	0
				2547.8	40148	18.72	19	0
				2593	40620	18.52	19	0
				2640.3	41093	18.90	19	0
				2687.5	41565	18.36	19	0
			12	2498.5	39675	18.48	19	0
				2547.8	40148	18.71	19	0
				2593	40620	18.52	19	0
				2640.3	41093	18.82	19	0
				2687.5	41565	18.34	19	0
			24	2498.5	39675	18.48	19	0
				2547.8	40148	18.72	19	0
				2593	40620	18.54	19	0
				2640.3	41093	18.78	19	0
				2687.5	41565	18.44	19	0
		12 RB	0	2498.5	39675	18.43	19	0
				2547.8	40148	18.66	19	0
				2593	40620	18.48	19	0
				2640.3	41093	18.76	19	0
				2687.5	41565	18.28	19	0
			6	2498.5	39675	18.42	19	0
				2547.8	40148	18.64	19	0
				2593	40620	18.48	19	0
				2640.3	41093	18.74	19	0
				2687.5	41565	18.25	19	0
			13	2498.5	39675	18.41	19	0
				2547.8	40148	18.66	19	0
				2593	40620	18.49	19	0
				2640.3	41093	18.70	19	0
				2687.5	41565	18.26	19	0
		25RB		2498.5	39675	18.42	19	0
				2547.8	40148	18.64	19	0
				2593	40620	18.47	19	0
				2640.3	41093	18.77	19	0
				2687.5	41565	18.29	19	0
	16-QAM	1 RB	0	2498.5	39675	18.52	19	0
				2547.8	40148	18.72	19	0
				2593	40620	18.55	19	0
				2640.3	41093	18.90	19	0
				2687.5	41565	18.37	19	0
			12	2498.5	39675	18.48	19	0
				2547.8	40148	18.71	19	0
				2593	40620	18.51	19	0
				2640.3	41093	18.83	19	0
				2687.5	41565	18.36	19	0
			24	2498.5	39675	18.49	19	0
				2547.8	40148	18.71	19	0
				2593	40620	18.55	19	0
				2640.3	41093	18.78	19	0
				2687.5	41565	18.44	19	0
		12 RB	0	2498.5	39675	18.39	19	0
				2547.8	40148	18.63	19	0
				2593	40620	18.47	19	0
				2640.3	41093	18.72	19	0
				2687.5	41565	18.28	19	0
			6	2498.5	39675	18.37	19	0
				2547.8	40148	18.60	19	0
				2593	40620	18.45	19	0
				2640.3	41093	18.74	19	0
				2687.5	41565	18.25	19	0
			13	2498.5	39675	18.37	19	0
				2547.8	40148	18.63	19	0
				2593	40620	18.46	19	0
				2640.3	41093	18.68	19	0
				2687.5	41565	18.27	19	0
		25RB		2498.5	39675	18.44	19	0
				2547.8	40148	18.67	19	0
				2593	40620	18.48	19	0
				2640.3	41093	18.76	19	0
				2687.5	41565	18.32	19	0

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FDD Band 66								
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	132072	16.68	17.5	0
				1745	132322	17.15	17.5	0
				1770	132572	17.39	17.5	0
			50	1720	132072	17.34	17.5	0
				1745	132322	17.23	17.5	0
				1770	132572	17.22	17.5	0
			99	1720	132072	17.19	17.5	0
				1745	132322	17.02	17.5	0
				1770	132572	17.47	17.5	0
		50RB	0	1720	132072	17.16	17.5	0
				1745	132322	17.09	17.5	0
				1770	132572	17.39	17.5	0
			25	1720	132072	17.19	17.5	0
				1745	132322	17.22	17.5	0
				1770	132572	17.22	17.5	0
			50	1720	132072	17.16	17.5	0
				1745	132322	17.41	17.5	0
				1770	132572	17.31	17.5	0
		100RB		1720	132072	17.36	17.5	0
				1745	132322	17.38	17.5	0
				1770	132572	17.45	17.5	0
	16-QAM	1 RB	0	1720	132072	16.82	17.5	0
				1745	132322	16.75	17.5	0
				1770	132572	17.40	17.5	0
			50	1720	132072	16.97	17.5	0
				1745	132322	16.42	17.5	0
				1770	132572	17.26	17.5	0
			99	1720	132072	17.16	17.5	0
				1745	132322	17.30	17.5	0
				1770	132572	17.15	17.5	0
		50RB	0	1720	132072	16.49	17.5	0
				1745	132322	16.35	17.5	0
				1770	132572	16.73	17.5	0
			25	1720	132072	16.59	17.5	0
				1745	132322	16.45	17.5	0
				1770	132572	16.62	17.5	0
			50	1720	132072	16.50	17.5	0
				1745	132322	16.73	17.5	0
				1770	132572	16.63	17.5	0
		100RB		1720	132072	16.72	17.5	0
				1745	132322	16.75	17.5	0
				1770	132572	16.86	17.5	0

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FDD Band 66								
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	132047	16.17	17.5	0
				1745	132322	16.52	17.5	0
				1772.5	132597	16.92	17.5	0
			36	1717.5	132047	16.63	17.5	0
				1745	132322	16.57	17.5	0
				1772.5	132597	16.66	17.5	0
			74	1717.5	132047	16.61	17.5	0
				1745	132322	16.77	17.5	0
				1772.5	132597	16.83	17.5	0
		36RB	0	1717.5	132047	16.53	17.5	0
				1745	132322	16.52	17.5	0
				1772.5	132597	16.70	17.5	0
			18	1717.5	132047	16.63	17.5	0
				1745	132322	16.64	17.5	0
				1772.5	132597	16.86	17.5	0
			37	1717.5	132047	16.69	17.5	0
				1745	132322	16.87	17.5	0
				1772.5	132597	16.73	17.5	0
		75RB		1717.5	132047	16.70	17.5	0
				1745	132322	16.78	17.5	0
				1772.5	132597	16.88	17.5	0
	16-QAM	1 RB	0	1717.5	132047	16.79	17.5	0
				1745	132322	16.38	17.5	0
				1772.5	132597	17.38	17.5	0
			36	1717.5	132047	17.10	17.5	0
				1745	132322	16.82	17.5	0
				1772.5	132597	17.20	17.5	0
			74	1717.5	132047	17.13	17.5	0
				1745	132322	17.00	17.5	0
				1772.5	132597	17.45	17.5	0
		36RB	0	1717.5	132047	16.46	17.5	0
				1745	132322	16.41	17.5	0
				1772.5	132597	16.66	17.5	0
			18	1717.5	132047	16.54	17.5	0
				1745	132322	16.55	17.5	0
				1772.5	132597	16.58	17.5	0
			37	1717.5	132047	16.60	17.5	0
				1745	132322	16.80	17.5	0
				1772.5	132597	16.73	17.5	0
		75RB		1717.5	132047	16.71	17.5	0
				1745	132322	16.70	17.5	0
				1772.5	132597	16.76	17.5	0

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FDD Band 66								
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	132022	16.36	17.5	0
				1745	132322	16.34	17.5	0
				1775	132622	16.89	17.5	0
			25	1715	132022	16.47	17.5	0
				1745	132322	16.49	17.5	0
				1775	132622	16.54	17.5	0
			49	1715	132022	16.61	17.5	0
				1745	132322	16.66	17.5	0
				1775	132622	16.68	17.5	0
		25RB	0	1715	132022	16.40	17.5	0
				1745	132322	16.40	17.5	0
				1775	132622	16.72	17.5	0
			12	1715	132022	16.47	17.5	0
				1745	132322	16.46	17.5	0
				1775	132622	16.52	17.5	0
			25	1715	132022	16.51	17.5	0
				1745	132322	16.64	17.5	0
				1775	132622	16.63	17.5	0
		50RB		1715	132022	16.58	17.5	0
				1745	132322	16.61	17.5	0
				1775	132622	16.76	17.5	0
	16-QAM	1 RB	0	1715	132022	16.82	17.5	0
				1745	132322	16.66	17.5	0
				1775	132622	17.40	17.5	0
			25	1715	132022	16.67	17.5	0
				1745	132322	16.51	17.5	0
				1775	132622	16.95	17.5	0
			49	1715	132022	16.74	17.5	0
				1745	132322	17.14	17.5	0
				1775	132622	17.16	17.5	0
		25RB	0	1715	132022	16.34	17.5	0
				1745	132322	16.36	17.5	0
				1775	132622	16.53	17.5	0
			12	1715	132022	16.39	17.5	0
				1745	132322	16.38	17.5	0
				1775	132622	16.48	17.5	0
			25	1715	132022	16.41	17.5	0
				1745	132322	16.54	17.5	0
				1775	132622	16.44	17.5	0
		50RB		1715	132022	16.51	17.5	0
				1745	132322	16.62	17.5	0
				1775	132622	16.79	17.5	0

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FDD Band 66								
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	131997	16.49	17.5	0
				1745	132322	16.83	17.5	0
				1777.5	132647	16.71	17.5	0
			12	1712.5	131997	16.65	17.5	0
				1745	132322	16.92	17.5	0
				1777.5	132647	16.76	17.5	0
			24	1712.5	131997	16.83	17.5	0
				1745	132322	16.46	17.5	0
				1777.5	132647	17.16	17.5	0
		12RB	0	1712.5	131997	16.41	17.5	0
				1745	132322	16.65	17.5	0
				1777.5	132647	16.71	17.5	0
			6	1712.5	131997	16.65	17.5	0
				1745	132322	16.59	17.5	0
				1777.5	132647	16.80	17.5	0
			13	1712.5	131997	16.60	17.5	0
				1745	132322	16.62	17.5	0
				1777.5	132647	16.94	17.5	0
		25RB		1712.5	131997	16.70	17.5	0
				1745	132322	16.84	17.5	0
				1777.5	132647	16.96	17.5	0
	16-QAM	1 RB	0	1712.5	131997	16.91	17.5	0
				1745	132322	16.51	17.5	0
				1777.5	132647	17.17	17.5	0
			12	1712.5	131997	16.94	17.5	0
				1745	132322	16.59	17.5	0
				1777.5	132647	17.19	17.5	0
			24	1712.5	131997	17.45	17.5	0
				1745	132322	17.37	17.5	0
				1777.5	132647	16.89	17.5	0
		12RB	0	1712.5	131997	16.44	17.5	0
				1745	132322	16.46	17.5	0
				1777.5	132647	16.73	17.5	0
			6	1712.5	131997	16.57	17.5	0
				1745	132322	16.62	17.5	0
				1777.5	132647	16.71	17.5	0
			13	1712.5	131997	16.53	17.5	0
				1745	132322	16.81	17.5	0
				1777.5	132647	16.79	17.5	0
		25RB		1712.5	131997	16.64	17.5	0
				1745	132322	16.73	17.5	0
				1777.5	132647	16.77	17.5	0

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FDD Band 66								
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	131987	16.04	17.5	0
				1745	132322	16.49	17.5	0
				1778.5	132657	16.61	17.5	0
			7	1711.5	131987	16.10	17.5	0
				1745	132322	16.25	17.5	0
				1778.5	132657	16.54	17.5	0
			14	1711.5	131987	16.05	17.5	0
				1745	132322	16.56	17.5	0
				1778.5	132657	16.79	17.5	0
		8RB	0	1711.5	131987	16.25	17.5	0
				1745	132322	16.23	17.5	0
				1778.5	132657	16.40	17.5	0
			4	1711.5	131987	16.01	17.5	0
				1745	132322	16.43	17.5	0
				1778.5	132657	16.56	17.5	0
			7	1711.5	131987	16.25	17.5	0
				1745	132322	16.24	17.5	0
				1778.5	132657	16.41	17.5	0
		15RB		1711.5	131987	16.24	17.5	0
				1745	132322	16.39	17.5	0
				1778.5	132657	16.57	17.5	0
	16-QAM	1 RB	0	1711.5	131987	16.67	17.5	0
				1745	132322	16.43	17.5	0
				1778.5	132657	17.41	17.5	0
			7	1711.5	131987	16.85	17.5	0
				1745	132322	16.13	17.5	0
				1778.5	132657	17.28	17.5	0
			14	1711.5	131987	16.38	17.5	0
				1745	132322	16.70	17.5	0
				1778.5	132657	16.94	17.5	0
		8RB	0	1711.5	131987	16.10	17.5	0
				1745	132322	16.08	17.5	0
				1778.5	132657	16.67	17.5	0
			4	1711.5	131987	15.75	17.5	0
				1745	132322	16.22	17.5	0
				1778.5	132657	16.43	17.5	0
			7	1711.5	131987	16.03	17.5	0
				1745	132322	16.02	17.5	0
				1778.5	132657	16.24	17.5	0
		15RB		1711.5	131987	16.12	17.5	0
				1745	132322	16.21	17.5	0
				1778.5	132657	16.48	17.5	0

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FDD Band 66								
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	131979	16.56	17.5	0
				1745	132322	16.65	17.5	0
				1779.3	132665	17.06	17.5	0
			2	1710.7	131979	16.65	17.5	0
				1745	132322	16.68	17.5	0
				1779.3	132665	16.89	17.5	0
			5	1710.7	131979	16.46	17.5	0
				1745	132322	16.56	17.5	0
				1779.3	132665	16.74	17.5	0
		3RB	0	1710.7	131979	16.48	17.5	0
				1745	132322	16.71	17.5	0
				1779.3	132665	16.84	17.5	0
			2	1710.7	131979	16.41	17.5	0
				1745	132322	16.67	17.5	0
				1779.3	132665	16.37	17.5	0
			3	1710.7	131979	16.39	17.5	0
				1745	132322	16.55	17.5	0
				1779.3	132665	17.00	17.5	0
		6RB		1710.7	131979	16.46	17.5	0
				1745	132322	16.55	17.5	0
				1779.3	132665	16.60	17.5	0
	16-QAM	1 RB	0	1710.7	131979	16.86	17.5	0
				1745	132322	17.00	17.5	0
				1779.3	132665	17.41	17.5	0
			2	1710.7	131979	16.82	17.5	0
				1745	132322	17.20	17.5	0
				1779.3	132665	16.99	17.5	0
			5	1710.7	131979	16.95	17.5	0
				1745	132322	17.21	17.5	0
				1779.3	132665	17.40	17.5	0
		3RB	0	1710.7	131979	16.18	17.5	0
				1745	132322	16.74	17.5	0
				1779.3	132665	17.01	17.5	0
			2	1710.7	131979	16.42	17.5	0
				1745	132322	16.66	17.5	0
				1779.3	132665	16.98	17.5	0
			3	1710.7	131979	16.37	17.5	0
				1745	132322	16.80	17.5	0
				1779.3	132665	17.03	17.5	0
		6RB		1710.7	131979	16.48	17.5	0
				1745	132322	16.38	17.5	0
				1779.3	132665	16.64	17.5	0

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

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

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Main Antenna						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance	Average power (dBm)
2450 MHz	802.11b	1	2412	1Mbps	16.50	16.47
		2	2417		17.50	17.41
		6	2437		17.50	17.44
		10	2457		17.50	17.43
		11	2462		16.50	16.24
	802.11g	1	2412	6Mbps	14.00	13.88
		6	2437		17.50	17.43
		11	2462		12.50	12.31
	802.11n-HT20	1	2412	MCS0	14.00	13.86
		6	2437		17.50	17.40
		11	2462		12.50	12.50
	802.11n-HT40	3	2422	MCS0	13.50	13.32
		6	2437		16.50	16.18
		9	2452		12.50	12.48

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Main Antenna						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance	Average power (dBm)
5.15-5.25 GHz	802.11a	36	5180	6Mbps	14.00	13.95
		40	5200		16.00	15.65
		44	5220		16.00	15.82
		48	5240		16.00	15.67
	802.11n-HT20	36	5180	MCS0	14.00	13.76
		40	5200		16.00	15.97
		44	5220		16.00	15.82
		48	5240		16.00	15.80
	802.11n-VHT20	36	5180	MCS0	14.00	13.69
		40	5200		16.00	15.81
		44	5220		16.00	15.77
		48	5240		16.00	15.70
	802.11n-HT40	38	5190	MCS0	12.00	11.85
		46	5230		16.50	16.48
	802.11n-VHT40	38	5190	MCS0	12.00	11.78
		46	5230		16.50	16.47
	802.11n-VHT80	42	5210	MCS0	13.50	13.25

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Main Antenna						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance	Average power (dBm)
5.25-5.35 GHz	802.11a	52	5260	6Mbps	16.00	15.79
		56	5280		16.00	15.76
		60	5300		16.00	15.90
		64	5320		13.50	13.44
	802.11n-HT20	52	5260	MCS0	16.00	15.99
		56	5280		16.00	15.93
		60	5300		16.00	15.97
		64	5320		13.50	13.25
	802.11n-VHT20	52	5260	MCS0	16.00	15.71
		56	5280		16.00	15.66
		60	5300		16.00	15.99
		64	5320		13.50	13.43
	802.11n-HT40	54	5270	MCS0	16.50	16.47
		62	5310		13.50	13.17
	802.11n-VHT40	54	5270	MCS0	16.50	16.20
		62	5310		13.50	13.38
	802.11n-VHT80	58	5290	MCS0	13.50	13.42

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Main Antenna						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance	Average power (dBm)
5600 MHz	802.11a	100	5500	6Mbps	13.50	13.16
		104	5520		16.50	16.46
		120	5600		16.50	16.45
		124	5620		16.50	16.30
		128	5640		16.50	16.17
		136	5680		16.50	16.33
		140	5700		13.00	12.94
	802.11n-HT20	100	5500	MCS0	13.50	13.36
		120	5600		16.50	16.47
		124	5620		16.50	16.39
		128	5640		16.50	16.33
		140	5700		13.00	12.90
	802.11n-VHT20	100	5500	MCS0	13.50	13.37
		120	5600		16.50	16.19
		124	5620		16.50	16.24
		128	5640		16.50	16.35
		140	5700		13.00	12.95
		144	5720		16.50	16.32
	802.11n-HT40	102	5510	MCS0	13.50	13.22
		110	5550		16.50	16.28
		118	5590		16.50	16.30
		126	5630		16.50	16.47
		134	5670		16.50	16.28
	802.11n-VHT40	102	5510	MCS0	13.50	13.37
		118	5590		16.50	16.24
		126	5630		16.50	16.45
		134	5670		16.50	16.25
		142	5710		16.50	16.17
	802.11n-VHT80	106	5530	MCS0	13.50	13.35
		122	5610		16.50	16.23
		138	5690		16.50	16.48

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Main Antenna						
Mode	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance	Average power (dBm)
5800 MHz	802.11a	149	5745	6Mbps	16.50	16.37
		157	5785		16.50	16.35
		165	5825		16.50	16.32
	802.11n-HT20	149	5745	MCS0	16.50	16.30
		157	5785		16.50	16.41
		165	5825		16.50	16.48
	802.11n-VHT20	149	5745	MCS0	16.50	16.45
		157	5785		16.50	16.42
		165	5825		16.50	16.20
	802.11n-HT40	151	5755	MCS0	16.50	16.41
		159	5795		16.50	16.35
	802.11n-VHT40	151	5755	MCS0	16.50	16.25
		159	5795		16.50	16.17
	802.11n-VHT80	155	5775	MCS0	16.50	16.49

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Aux Antenna						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance	Average power (dBm)
2450 MHz	802.11b	1	2412	1Mbps	16.50	16.34
		2	2417		17.50	17.43
		6	2437		17.50	17.49
		10	2457		17.50	17.46
		11	2462		16.50	16.36
	802.11g	1	2412	6Mbps	14.50	14.48
		6	2437		17.50	17.43
		11	2462		12.50	12.32
	802.11n-HT20	1	2412	MCS0	14.50	14.41
		6	2437		17.50	17.47
		11	2462		12.50	12.39
	802.11n-HT40	3	2422	MCS0	13.50	13.48
		6	2437		16.50	16.39
		9	2452		11.50	11.37

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Aux Antenna						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance	Average power (dBm)
5.15-5.25 GHz	802.11a	36	5180	6Mbps	14.00	13.93
		40	5200		16.00	15.91
		44	5220		16.00	15.87
		48	5240		16.00	15.96
	802.11n-HT20	36	5180	MCS0	14.00	13.88
		40	5200		16.00	15.98
		44	5220		16.00	15.81
		48	5240		16.00	15.84
	802.11n-VHT20	36	5180	MCS0	14.00	13.90
		40	5200		16.00	15.97
		44	5220		16.00	15.92
		48	5240		16.00	15.88
	802.11n-HT40	38	5190	MCS0	13.50	13.34
		46	5230		16.50	16.49
	802.11n-VHT40	38	5190	MCS0	13.50	13.49
		46	5230		16.50	16.33
	802.11n-VHT80	42	5210	MCS0	13.50	13.38

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Aux Antenna						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance	Average power (dBm)
5.25-5.35 GHz	802.11a	52	5260	6Mbps	16.00	15.90
		56	5280		16.00	15.98
		60	5300		16.00	15.95
		64	5320		13.50	13.41
	802.11n-HT20	52	5260	MCS0	16.00	15.95
		56	5280		16.00	15.96
		60	5300		16.00	15.82
		64	5320		13.50	13.36
	802.11n-VHT20	52	5260	MCS0	16.00	15.83
		56	5280		16.00	15.98
		60	5300		16.00	15.86
		64	5320		13.50	13.31
	802.11n-HT40	54	5270	MCS0	16.50	16.47
		62	5310		13.50	13.43
	802.11n-VHT40	54	5270	MCS0	16.50	16.46
		62	5310		13.50	13.42
	802.11n-VHT80	58	5290	MCS0	13.50	13.46

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Aux Antenna						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance	Average power (dBm)
5600 MHz	802.11a	100	5500	6Mbps	13.50	13.39
		104	5520		16.50	16.40
		120	5600		16.50	16.33
		124	5620		16.50	16.34
		128	5640		16.50	16.35
		136	5680		16.50	16.47
		140	5700		13.00	12.81
	802.11n-HT20	100	5500	MCS0	13.50	13.42
		120	5600		16.50	16.47
		124	5620		16.50	16.45
		128	5640		16.50	16.33
		140	5700		13.00	12.96
	802.11n-VHT20	100	5500	MCS0	13.50	13.39
		120	5600		16.50	16.39
		124	5620		16.50	16.44
		128	5640		16.50	16.41
		140	5700		13.00	12.80
		144	5720		16.50	16.47
	802.11n-HT40	102	5510	MCS0	14.00	13.96
		110	5550		16.50	16.37
		118	5590		16.50	16.39
		126	5630		16.50	16.34
		134	5670		16.50	16.31
	802.11n-VHT40	102	5510	MCS0	14.00	13.83
		118	5590		16.50	16.45
		126	5630		16.50	16.32
		134	5670		16.50	16.45
		142	5710		16.50	16.37
	802.11n-VHT80	106	5530	MCS0	13.50	13.43
		122	5610		16.50	16.39
		138	5690		16.50	16.48

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Aux Antenna						
Mode	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance	Average power (dBm)
5800 MHz	802.11a	149	5745	6Mbps	16.50	16.37
		157	5785		16.50	16.32
		165	5825		16.50	16.43
	802.11n-HT20	149	5745	MCS0	16.50	16.42
		157	5785		16.50	16.37
		165	5825		16.50	16.40
	802.11n-VHT20	149	5745	MCS0	16.50	16.45
		157	5785		16.50	16.30
		165	5825		16.50	16.44
	802.11n-HT40	151	5755	MCS0	16.50	16.41
		159	5795		16.50	16.44
	802.11n-VHT40	151	5755	MCS0	16.50	16.38
		159	5795		16.50	16.38
	802.11n-VHT80	155	5775	MCS0	16.50	16.46

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Bluetooth conducted power table:

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)			Max. Rated Avg. Power + Max. Tolerance (dBm)
			1Mbps	2Mbps	3Mbps	
BR/EDR	CH 00	2402	4.37	-1.51	-1.42	5.1
	CH 39	2441	4.31	-1.30	-1.13	
	CH 78	2480	3.77	-1.58	-1.67	

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	Max. Rated Avg. Power + Max. Tolerance (dBm)
			GFSK	
LE	CH 00	2402	3.30	5.1
	CH 19	2440	3.62	
	CH 39	2480	3.39	

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1.3.1 LTE Downlink CA specification

LTE Downlink 2CA conducted power table

Two Component Carrier Maximum Conducted Power																
PCC									SCC 1				Power			
PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC (UL) RB	PCC (UL) RB Offset	PCC (DL) Channel	PCC (DL) Frequency [MHz]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	LTE Tx.Power with DL CA active (dBm)	LTE Tx.Power with DL CA inactive (dBm)	Configurations	Maximum power
LTE B5	10	20600	844	QPSK	1	49	2600	889	LTE B1	20	300	2140	22.97	23.10	CA_1A-5A	Full power
LTE B5	10	20450	829	QPSK	1	0	2450	874	LTE B1	20	300	2140	21.94	21.98	CA_1A-5A	Reduced power
LTE B26	5	26715	816.5	QPSK	1	24	8715	861.5	LTE B1	20	300	2140	23.11	23.21	CA_1A-26A	Full power
LTE B26	15	26825	822.5	QPSK	36	0	8825	872.5	LTE B1	20	300	2140	20.92	20.97	CA_1A-26A	Reduced power
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B17	10	5790	740	23.44	23.66	CA_2A-17A	Full power
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B17	10	5790	740	16.86	16.96	CA_2A-17A	Reduced power
LTE B17	10	23780	709	QPSK	1	49	5780	739	LTE B2	20	900	1960	23.06	23.12	CA_2A-17A	Full power
LTE B17	10	23800	711	QPSK	1	49	5800	741	LTE B2	20	900	1960	19.27	19.48	CA_2A-17A	Reduced power
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B30	10	9820	2355	23.45	23.66	CA_2A-30A	Full power
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B30	10	9820	2355	16.77	16.96	CA_2A-30A	Reduced power
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B2	20	900	1960	23.24	23.44	CA_2A-30A	Full power
LTE B30	10	27710	2310	QPSK	50	0	9820	2355	LTE B2	20	900	1960	16.92	16.96	CA_2A-30A	Reduced power
LTE B5	10	20600	844	QPSK	1	49	2600	889	LTE B3	20	1575	1842.5	22.87	23.10	CA_3A-5A	Full power
LTE B5	10	20450	829	QPSK	1	0	2450	874	LTE B3	20	1575	1842.5	21.75	21.98	CA_3A-5A	Reduced power
LTE B4	20	20300	1745	QPSK	1	99	2300	2145	LTE B13	10	5230	751	23.56	23.61	CA_4A-13A	Full power
LTE B4	20	20175	1732.5	QPSK	1	0	2175	2132.5	LTE B13	10	5230	751	17.28	17.46	CA_4A-13A	Reduced power
LTE B13	10	23230	782	QPSK	1	49	5230	751	LTE B4	20	2175	2132.5	22.86	23.08	CA_4A-13A	Full power
LTE B13	10	23230	782	QPSK	1	25	5230	751	LTE B4	20	2175	2132.5	20.25	20.48	CA_4A-13A	Reduced power
LTE B4	20	20300	1745	QPSK	1	99	2300	2145	LTE B17	10	5790	740	23.46	23.61	CA_4A-17A	Full power
LTE B4	20	20175	1732.5	QPSK	1	0	2175	2132.5	LTE B17	10	5790	740	17.37	17.46	CA_4A-17A	Reduced power
LTE B17	10	23780	709	QPSK	1	49	5780	739	LTE B4	20	2175	2132.5	23.05	23.12	CA_4A-17A	Full power
LTE B17	10	23800	711	QPSK	1	49	5800	741	LTE B4	20	2175	2132.5	19.35	19.48	CA_4A-17A	Reduced power
LTE B4	20	20300	1745	QPSK	1	99	2300	2145	LTE B30	10	9820	2355	23.40	23.61	CA_4A-30A	Full power
LTE B4	20	20175	1732.5	QPSK	1	0	2175	2132.5	LTE B30	10	9820	2355	17.36	17.46	CA_4A-30A	Reduced power
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B4	20	2175	2132.5	23.27	23.44	CA_4A-30A	Full power
LTE B30	10	27710	2310	QPSK	50	0	9820	2355	LTE B4	20	2175	2132.5	16.91	16.96	CA_4A-30A	Reduced power
LTE B5	10	20600	844	QPSK	1	49	2600	889	LTE B7	20	3100	2655	23.04	23.10	CA_5A-7A	Full power
LTE B5	10	20450	829	QPSK	1	0	2450	874	LTE B7	20	3100	2655	21.94	21.98	CA_5A-7A	Reduced power
LTE B7	20	21100	2535	QPSK	1	99	3100	2655	LTE B5	10	2525	881.5	23.04	23.07	CA_5A-7A	Full power
LTE B7	20	21100	2535	QPSK	1	0	3100	2655	LTE B5	10	2525	881.5	17.27	17.49	CA_5A-7A	Reduced power
LTE B5	10	20600	844	QPSK	1	49	2600	889	LTE B30	10	9820	2355	22.94	23.10	CA_5A-30A	Full power
LTE B5	10	20450	829	QPSK	1	0	2450	874	LTE B30	10	9820	2355	21.82	21.98	CA_5A-30A	Reduced power
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B5	10	2525	881.5	23.42	23.44	CA_5A-30A	Full power
LTE B30	10	27710	2310	QPSK	50	0	9820	2355	LTE B5	10	2525	881.5	16.92	16.96	CA_5A-30A	Reduced power
LTE B7	20	21100	2535	QPSK	1	99	3100	2655	LTE B20	20	6300	806	22.96	23.07	CA_7A-20A	Full power
LTE B7	20	21100	2535	QPSK	1	0	3100	2655	LTE B20	20	6300	806	17.31	17.49	CA_7A-20A	Reduced power
LTE B7	20	21100	2535	QPSK	1	99	3100	2655	LTE B28	20	9460	783	22.91	23.07	CA_7A-28A	Full power
LTE B7	20	21100	2535	QPSK	1	0	3100	2655	LTE B28	20	9460	783	17.24	17.49	CA_7A-28A	Reduced power
LTE B12	5	23035	701.5	QPSK	1	24	5035	731.5	LTE B30	10	9820	2355	22.96	23.19	CA_12A-30A	Full power
LTE B12	10	23095	707.5	QPSK	1	49	5095	737.5	LTE B30	10	9820	2355	19.26	19.49	CA_12A-30A	Reduced power
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B12	10	5095	737.5	23.36	23.44	CA_12A-30A	Full power
LTE B30	10	27710	2310	QPSK	50	0	9820	2355	LTE B12	10	5095	737.5	16.86	16.96	CA_12A-30A	Reduced power
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B29	10	9715	722.5	23.40	23.44	CA_29A-30A	Full power
LTE B30	10	27710	2310	QPSK	50	0	9820	2355	LTE B29	10	9715	722.5	16.71	16.96	CA_29A-30A	Reduced power
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B2	20	898	1959.8	23.42	23.66	CA_2C	Full power
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B2	20	898	1959.8	16.85	16.96	CA_2C	Reduced power
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B2	20	1100	1980	23.59	23.66	CA_2A-2A	Full power
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B2	20	1100	1980	16.78	16.96	CA_2A-2A	Reduced power
LTE B4	20	20300	1745	QPSK	1	0	2300	2145	LTE B4	20	2050	2120	23.53	23.61	CA_4A-4A	Full power
LTE B4	5	20375	1752.5	16QAM	1	0	2375	2152.5	LTE B4	20	2050	2120	17.23	17.45	CA_4A-4A	Reduced power
LTE B7	20	21350	2560	QPSK	1	99	3350	2680	LTE B7	20	3152	2660.2	22.68	22.91	CA_7C	Full power
LTE B7	20	21350	2560	QPSK	1	0	3350	2680	LTE B7	20	3152	2660.2	17.30	17.47	CA_7C	Reduced power
LTE B7	20	21350	2560	QPSK	1	99	3350	2680	LTE B7	20	2850	2630	22.89	22.91	CA_7A-7A	Full power
LTE B7	20	21350	2560	QPSK	1	0	3350	2680	LTE B7	20	2850	2630	17.32	17.47	CA_7A-7A	Reduced power
LTE B41	20	39750	2506	QPSK	1	99	39750	2506	LTE B41	20	39948	2525.8	22.82	22.89	CA_41C	Full power
LTE B41	20	39750	2506	QPSK	1	0	39750	2506	LTE B41	20	39948	2525.8	18.40	18.63	CA_41C	Reduced power
LTE B41	20	39750	2506	QPSK	1	99	39750	2506	LTE B41	20	41490	2680	22.83	22.89	CA_41A-41A	Full power
LTE B41	20	39750	2506	QPSK	1	0	39750	2506	LTE B41	20	41490	2680	18.46	18.63	CA_41A-41A	Reduced power

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LTE Downlink 3CA conducted power table

Three Component Carrier Maximum Conducted Power																				
PCC									SCC 1				SCC 2				Power			
PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC (UL) RB	PCC (UL) RB Offset	PCC (DL) Channel	PCC (DL) Frequency [MHz]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	LTE Tx.Power with DL CA active (dBm)	LTE Tx.Power with DL CA inactive (dBm)	Configurations	Maximum power
LTE B7	20	21100	2535	QPSK	1	99	3100	2655	LTE B1	20	300	2140	LTE B3	20	1575	1842.5	22.92	23.07	CA_1A-3A-7A	Full power
LTE B7	20	21100	2535	QPSK	1	0	3100	2655	LTE B1	20	300	2140	LTE B3	20	1575	1842.5	17.24	17.49	CA_1A-3A-7A	Reduced power
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B4	20	2175	2132.5	LTE B5	10	2525	881.5	23.54	23.66	CA_2A-4A-5A	Full power
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B4	20	2175	2132.5	LTE B5	10	2525	881.5	16.93	16.96	CA_2A-4A-5A	Reduced power
LTE B4	20	20300	1745	QPSK	1	99	2300	2145	LTE B2	20	900	1960	LTE B5	10	2525	881.5	23.37	23.61	CA_2A-4A-5A	Full power
LTE B4	20	20175	1732.5	QPSK	1	0	2175	2132.5	LTE B2	20	900	1960	LTE B5	10	2525	881.5	17.40	17.46	CA_2A-4A-5A	Reduced power
LTE B5	10	20600	844	QPSK	1	49	2600	889	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	22.96	23.10	CA_2A-4A-5A	Full power
LTE B5	10	20450	829	QPSK	1	0	2450	874	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	21.97	21.98	CA_2A-4A-5A	Reduced power
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B4	20	2175	2132.5	LTE B13	10	5230	751	23.60	23.66	CA_2A-4A-13A	Full power
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B4	20	2175	2132.5	LTE B13	10	5230	751	16.75	16.96	CA_2A-4A-13A	Reduced power
LTE B4	20	20300	1745	QPSK	1	99	2300	2145	LTE B2	20	900	1960	LTE B13	10	5230	751	23.52	23.61	CA_2A-4A-13A	Full power
LTE B4	20	20175	1732.5	QPSK	1	0	2175	2132.5	LTE B2	20	900	1960	LTE B13	10	5230	751	17.24	17.46	CA_2A-4A-13A	Reduced power
LTE B13	10	23230	782	QPSK	1	49	5230	751	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	22.84	23.08	CA_2A-4A-13A	Full power
LTE B13	10	23230	782	QPSK	1	25	5230	751	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	20.29	20.48	CA_2A-4A-13A	Reduced power
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B5	10	2525	881.5	LTE B30	10	9820	2355	23.53	23.66	CA_2A-5A-30A	Full power
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B5	10	2525	881.5	LTE B30	10	9820	2355	16.80	16.96	CA_2A-5A-30A	Reduced power
LTE B5	10	20600	844	QPSK	1	49	2600	889	LTE B2	20	900	1960	LTE B30	10	9820	2355	23.05	23.10	CA_2A-5A-30A	Full power
LTE B5	10	20450	829	QPSK	1	0	2450	874	LTE B2	20	900	1960	LTE B30	10	9820	2355	21.86	21.98	CA_2A-5A-30A	Reduced power
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B2	20	900	1960	LTE B5	10	2525	881.5	23.23	23.44	CA_2A-5A-30A	Full power
LTE B30	10	27710	2310	QPSK	50	0	9820	2355	LTE B2	20	900	1960	LTE B5	10	2525	881.5	16.82	16.96	CA_2A-5A-30A	Reduced power
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B5	10	2525	881.5	LTE B66	20	66786	2145	23.55	23.66	CA_2A-5A-66A	Full power
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B5	10	2525	881.5	LTE B66	20	66786	2145	16.86	16.96	CA_2A-5A-66A	Reduced power
LTE B5	10	20600	844	QPSK	1	49	2600	889	LTE B2	20	900	1960	LTE B66	20	66786	2145	22.91	23.10	CA_2A-5A-66A	Full power
LTE B5	10	20450	829	QPSK	1	0	2450	874	LTE B2	20	900	1960	LTE B66	20	66786	2145	21.77	21.98	CA_2A-5A-66A	Reduced power
LTE B66	20	132322	1745	QPSK	1	99	66786	2145	LTE B2	20	900	1960	LTE B5	10	2525	881.5	23.33	23.50	CA_2A-5A-66A	Full power
LTE B66	20	132572	1770	QPSK	1	99	67036	2170	LTE B2	20	900	1960	LTE B5	10	2525	881.5	17.36	17.47	CA_2A-5A-66A	Reduced power
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B12	10	5095	737.5	LTE B30	10	9820	2355	23.58	23.66	CA_2A-12A-30A	Full power
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B12	10	5095	737.5	LTE B30	10	9820	2355	16.95	16.96	CA_2A-12A-30A	Reduced power
LTE B12	5	23035	701.5	QPSK	1	24	5035	731.5	LTE B2	20	900	1960	LTE B30	10	9820	2355	23.03	23.19	CA_2A-12A-30A	Full power
LTE B12	10	23095	707.5	QPSK	1	49	5095	737.5	LTE B2	20	900	1960	LTE B30	10	9820	2355	19.48	19.49	CA_2A-12A-30A	Reduced power
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B12	10	5095	737.5	LTE B2	20	900	1960	23.33	23.44	CA_2A-12A-30A	Full power
LTE B30	10	27710	2310	QPSK	50	0	9820	2355	LTE B12	10	5095	737.5	LTE B2	20	900	1960	16.83	16.96	CA_2A-12A-30A	Reduced power
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B13	10	5230	751	LTE B66	20	66786	2145	23.46	23.66	CA_2A-13A-66A	Full power
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B13	10	5230	751	LTE B66	20	66786	2145	16.78	16.96	CA_2A-13A-66A	Reduced power
LTE B13	10	23230	782	QPSK	1	49	5230	751	LTE B2	20	900	1960	LTE B66	20	66786	2145	23.02	23.08	CA_2A-13A-66A	Full power
LTE B13	10	23230	782	QPSK	1	25	5230	751	LTE B2	20	900	1960	LTE B66	20	66786	2145	20.44	20.48	CA_2A-13A-66A	Reduced power
LTE B66	20	132322	1745	QPSK	1	99	66786	2145	LTE B2	20	900	1960	LTE B13	10	5230	751	23.46	23.50	CA_2A-13A-66A	Full power
LTE B66	20	132572	1770	QPSK	1	99	67036	2170	LTE B2	20	900	1960	LTE B13	10	5230	751	17.29	17.47	CA_2A-13A-66A	Reduced power
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B29	10	9715	722.5	LTE B30	10	9820	2355	23.49	23.66	CA_2A-29A-30A	Full power
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B29	10	9715	722.5	LTE B30	10	9820	2355	16.93	16.96	CA_2A-29A-30A	Reduced power
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B2	20	900	1960	LTE B29	10	9715	722.5	23.32	23.44	CA_2A-29A-30A	Full power
LTE B30	10	27710	2310	QPSK	50	0	9820	2355	LTE B2	20	900	1960	LTE B29	10	9715	722.5	16.74	16.96	CA_2A-29A-30A	Reduced power
LTE B7	20	21100	2535	QPSK	1	99	3100	2655	LTE B3	20	1575	1842.5	LTE B20	20	6300	806	23.06	23.07	CA_3A-7A-20A	Full power
LTE B7	20	21100	2535	QPSK	1	0	3100	2655	LTE B3	20	1575	1842.5	LTE B20	20	6300	806	17.31	17.49	CA_3A-7A-20A	Reduced power
LTE B7	20	21100	2535	QPSK	1	99	3100	2655	LTE B3	20	1575	1842.5	LTE B28	20	9460	783	22.99	23.07	CA_3A-7A-28A	Full power
LTE B7	20	21100	2535	QPSK	1	0	3100	2655	LTE B3	20	1575	1842.5	LTE B28	20	9460	783	17.43	17.49	CA_3A-7A-28A	Reduced power
LTE B4	20	20300	1745	QPSK	1	99	2300	2145	LTE B5	10	2525	881.5	LTE B30	10	9820	2355	23.52	23.61	CA_4A-5A-30A	Full power
LTE B4	20	20175	1732.5	QPSK	1	0	2175	2132.5	LTE B5	10	2525	881.5	LTE B30	10	9820	2355	17.29	17.46	CA_4A-5A-30A	Reduced power
LTE B5	10	20600	844	QPSK	1	49	2600	889	LTE B4	20	2175	2132.5	LTE B30	10	9820	2355	23.02	23.10	CA_4A-5A-30A	Full power
LTE B5	10	20450	829	QPSK	1	0	2450	874	LTE B4	20	2175	2132.5	LTE B30	10	9820	2355	21.87	21.98	CA_4A-5A-30A	Reduced power
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B4	20	2175	2132.5	LTE B5	10	2525	881.5	23.25	23.44	CA_4A-5A-30A	Full power
LTE B30	10	27710	2310	QPSK	50	0	9820	2355	LTE B4	20	2175	2132.5	LTE B5	10	2525	881.5	16.92	16.96	CA_4A-5A-30A	Reduced power
LTE B4	20	20300	1745	QPSK	1	99	2300	2145	LTE B12	10	5095	737.5	LTE B30	10	9820	2355	23.48	23.61	CA_4A-12A-30A	Full power
LTE B4	20	20175	1732.5	QPSK	1	0	2175	2132.5	LTE B12	10	5095	737.5	LTE B30	10	9820	2355	17.45	17.46	CA_4A-12A-30A	Reduced power
LTE B12	5	23035	701.5	QPSK	1	24	5035	731.5	LTE B4	20	2175	2132.5	LTE B30	10	9820	2355	23.16	23.19	CA_4A-12A-30A	Full power
LTE B12	10	23095	707.5	QPSK	1	49	5095	737.5	LTE B4	20	2175	2132.5	LTE B30	10	9820	2355	19.40	19.49	CA_4A-12A-30A	Reduced power
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B4	20	2175	2132.5	LTE B12	10	5095	737.5	23.39	23.44	CA_4A-12A-30A	Full power
LTE B30	10	27710	2310	QPSK	50	0	9820	2355	LTE B4	20	2175	2132.5	LTE B12	10	5095	737.5	16.88	16.96	CA_4A-12A-30A	Reduced power
LTE B4	20	20300	1745	QPSK	1	99	2300	2145	LTE B29	10	9715	722.5	LTE B30	10	9820	2355	23.48	23.61	CA_4A-29A-30A	Full power
LTE B4	20	20175	1732.5	QPSK	1	0	2175	2132.5	LTE B29	10	9715	722.5	LTE B30	10	9820	2355	17.21	17.46	CA_4A-29A-30A	Reduced power
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B4	20	2175	2132.5	LTE B29	10	9715	722.5	23.38	23.44	CA_4A-29A-30A	Full power
LTE B30	10	27710	2310	QPSK	50	0	9820	2355	LTE B4	20	2175	2132.5	LTE B29	10	9715	722.5	16.92	16.96	CA_4A-29A-30A	Reduced power
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B66	10	66837	2150.1	LTE B66	10	66936	2160	23.45	23.66	CA_2A-66B	Full power
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B66	10	66837	2150.1	LTE B66	10	66936	2160	16.83	16.96	CA_2A-66B	Reduced power
LTE B66	15	132047	1717.5	QPSK	1	36	66511	2117.5	LTE B66	5	66604	2126.8	LTE B2	20	900	1960	22.98	23.20	CA_2A-66B	Full power
LTE B66	15	132047	1717.5	QPSK	1	36	66511	2117.5	LTE B66	5	66604	2126.8	LTE B2	20	900	1960	16.52	16.83	CA_2A-66B	Reduced power
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B66	20	66536	2120	LTE B66	10	66680	2134.4	23.56	23.66	CA_2A-66C	Full power
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B66	20	66536	2120	LTE B66	10	66680	2134.4	16.94	16.96	CA_2A-66C	Reduced power
LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B66	20	66838	2150.2	LTE B2	20	900	1960	23.32	23.49	CA_2A-66C	Full power
LTE B66	20	132572	1770	QPSK	1	99	67036	2170	LTE B66	20	66838	2150.2	LTE B2	20	900	1960	17.31	17.47	CA_2A-66C	Reduced power
LTE B7	20	21350	2560	QPSK	1	0	3350	2680	LTE B7	20	3152	2660.2	LTE B3	20	1575	1842.5	22.67	22.91	CA_3A-7C	Full power
LTE B7	20	21350	2560	QPSK	1	0	3350	2680	LTE B7	20	3152	2660.2	LTE B3	20	1575	1842.5	17.24	17.47	CA_3A-7C	Reduced power
LTE B5	10	20600	844	QPSK	1	49	2600	889	LTE B66	10	66837	2150.1	LTE B66	10	66936	2160	22.92	23.10	CA_5A-66B	Full power
LTE B5	10	20450	829	QPSK	1	0	2450	874	LTE B66	10	66837	2150.1	LTE B66	10	66936	2160	21.80	21.98	CA_5A-66B	Reduced power
LTE B66	15	132047	1717.5	QPSK	1	36	66511	2117.5	LTE B66	5	66604	2126.8	LTE B5	10	2525	881.5	23.18	23.20	CA_5A-66B	Full power
LTE B66	15	132047	1717.5	QPSK	1	36	66511	2117.5	LTE B66	5	66604	2126.8	LTE B5	10	2525	881.5	16.45	16.63	CA_5A-66B	Reduced power
LTE B5	10	20600	844	QPSK	1	49	2600	889	LTE B66	20	66536	2120	LTE B66	10	66680	2134.4	22.94	23.10	CA_5A-66C	Full power
LTE B5	10	20450	829	QPSK	1	0	2450	874	LTE B66	20	66536	2120	LTE B66	10	66680	2134.4	21.94	21.98	CA_5A-66C	Reduced power
LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B66	20	66838	2150.2	LTE B5	10	2525	881.5	23.41	23.49	CA_5A-66C	Full power
LTE B66	20	132572	1770	QPSK	1	99	67036	2170	LTE B66	20	66838	2150.2	LTE B5	10	2525	881.5	17.29	17.47	CA_5A-66C	Reduced power
LTE B13	10	23230	782	QPSK	1	49	5230	751	LTE B66	10	66837	2150.1	LTE B66	10	66936	2160	23.07	23.08	CA_13A-66B	Full power
LTE B13	10	23230	782	QPSK	1	25	5230	751	LTE B66	10	66837	2150.1	LTE B66	10	66936	2160	20.45	20.48	CA_13A-66B	Reduced power
LTE B66	15	132047	1717.5	QPSK	1	36	66511	2117.5	LTE B66	5	66604	2126.8	LTE B13	10	5230	751	23.00	23.20	CA_13A-66B	Full power
LTE B66	15	132047	1717.5	QPSK	1	36	66511	2117.5	LTE B66	5	66604	2126.8	LTE B13	10	5230	751	16.52	16.63	CA_13A-66B	Reduced power
LTE B13	10	23230	782	QPSK	1	49	5230	751	LTE B66	20	66536	2120	LTE B66	10	66680	2134.4	22.89	23.08	CA_13A-66C	Full power
LTE B13	10	23230	782	QPSK	1	25	5230	751	LTE B66	20	66536	2120	LTE B66	10	66680	2134.4	20.31	20.48	CA_13A-66C	Reduced power
LTE B66	20	132572	1770	QPSK	1	0	67036	2170	LTE B66	20	66838	2150.2	LTE B13	10	5230	751	23.44	23.49	CA_13A-66C	Full power
LTE B66	20	132572	1770	QPSK	1	99	67036	2170	LTE B66	20	66838	2150.2	LTE B13	10	5230	751	17.22	17.47	CA_13A-66C	Reduced power
LTE B66	20	132072	1720	QPSK	1	0	66536	2120	LTE B66	20	66734	2139.8	LTE B66	20	66932	2159.6	23.18	23.25	CA_66D	Full power
LTE B66	20	132072	1720	QPSK	1	50	66536	2120	LTE B66	20	66734	2139.8	LTE B66	20	66932	2159.6	17.19	17.34	CA_66D	Reduced power

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LTE CA information

A)

The device supports downlink LTE Carrier Aggregation (CA) only. It supports a maximum of 3 carriers in the downlink. Other Release 10 features or higher features are not supported, including Uplink Carrier Aggregation, Enhanced SC-FDMA and Uplink MIMO or other antenna diversity configurations etc. All uplink communications are identical to the Release 8 Specifications.

The possible downlink LTE CA combinations supported by this device are as below tables per 3GPP TS 36.521-1 V14.3.0. The conducted power measurement results of downlink LTE CA are provided as above per 3GPP TS 36.521-1 V14.3.0. According to KDB 941225 D05A and RF exposure procedures in TCB workshop Nov. 2017, the downlink LTE CA SAR test is not required.

B)

i) Combinations supported for intra-band carrier aggregation.

Intra-band contiguous (2CC)	Intra-band contiguous (3CC)
CA-2C (0)	**CA-66D (0)**
CA-7B (0)	
CA-7C (0)(1)(2)	
CA-41C (0)(1)(2)	

Intra-band contiguous CA combination

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Table 1: intra-band contiguous CA

E-UTRA CA configuration	Component carriers in order of increasing carrier frequency			Maximum aggregated bandwidth [MHz]	Bandwidth combination set
	Channel bandwidths for carrier [MHz]	Channel bandwidths for carrier [MHz]	Channel bandwidths for carrier [MHz]		
CA_2C	5	20		40	0
	10	15,20			
	15	10,15,20			
	20	5,10,15,20			
CA_7B	15	5		20	0
CA_7C	15	15		40	0
	20	20			
	10	20		40	1
	15	15,20			
	20	10,15,20			
	15	10,15		40	2
	20	15,20			
CA_41C	10	20		40	0
	15	15,20			
	20	10,15,20			
	5,10	20		40	1
	15	15,20			
	20	5,10,15,20			
	10	15,20		40	2
	15	10,15,20			
	20	10,15,20			
	10	20		40	3
	20	20			
CA_66D	5	20	20	60	0

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	20	5	20		
	20	20	5		
	10	20	15		
	15	20	10		
	10,15,20	15,20	20		
	15,20	10	20		
	15	15,20	15		
	20	15,20	10,15		
	20	10	15		

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Intra-band non-contiguous (2CC
CA-2A-2A (0)
CA-4A-4A (0)(1)
CA-7A-7A (0)(1)(2)**(3)**
CA-41A-41A (0)(1)

Intra-band non-contiguous CA combination

Table 2: intra-band non-contiguous CA (with two sub-blocks)

-UTRACA configuration	Component carriers in order of increasing carrier frequency			Maximum aggregated bandwidth [MHz]	Bandwidth combination set
	Channel bandwidths for carrier [MHz]	Channel bandwidths for carrier [MHz]	Channel bandwidths for carrier [MHz]		
CA_2A-2A	5,10,15,20	5,10,15,20		40	0
CA_4A-4A	5,10,15,20	5,10,15,20		40	0
	5,10	5,10		20	1
CA_7A-7A	5	15		40	0
	10	10,15			
	15	15,20			
	20	20			
	5,10,15,20	5,10,15,20		40	1
	5,10,15,20	5,10		30	2
	10,15,20	10,15,20		40	3
CA_41A-41A	10,15,20	10,15,20		40	0
	5,10,15,20	5,10,15,20		40	1

ii) The frequency band combinations supported for inter-band carrier aggregation.

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2 bands / 2CC	2 bands / 3CC	3 bands / 3CC
		CA_1A-3A-7A (0)
CA_1A-5A (0)(1)		
CA_1A-26A (0)(1)		
CA_2A-4A (0)(1)(2)		**CA_2A-4A-5A (0)**
		CA_2A-4A-13A (0)
CA_2A-5A (0)(1)	CA_2C-5A (0)	**CA_2A-5A-30A (0)**
		CA_2A-5A-66A (0)
CA_2A-12A (0)(1)(2)		**CA_2A-12A-30A (0)**
CA_2A-13A (0)(1)		**CA_2A-13A-66A (0)**
CA_2A-17A (0)		
CA_2A-29A (0)(1)(2)		**CA_2A-29A-30A (0)**
CA_2A-30A (0)		
CA_2A-66A (0)(1)(2)	**CA_2A-66B (0)**	
	CA_2A-66C (0)	
CA_3A-5A (0)(1)(2)(3)(4)		
CA_3A-7A (0)(1)	CA_3C-7A (0)	**CA_3A-7A-20A (0)**
	CA_3A-7B (0)	**CA_3A-7A-28A (0)**
	CA_3A-7C (0)(1)	
CA_4A-5A (0)(1)		**CA_4A-5A-30A (0)**
CA_4A-12A (0)(1)(2)(3)(4)(5)		**CA_4A-12A-30A (0)**
CA_4A-13A (0)(1)		
CA_4A-17A (0)		
CA_4A-29A (0)(1)(2)		**CA_4A-29A-30A (0)**
CA_4A-30A (0)		
CA_5A-7A (0)(1)		
CA_5A-30A (0)		
CA_5A-66A (0)	**CA_5A-66B (0)**	
	CA_5A-66C (0)	
CA_7A-20A (0)(1)		
CA_7A-28A (0)(1)		
CA_12A-30A (0)		
CA_13A-66A (0)	**CA_13A-66B (0)**	
	CA_13A-66C (0)	
CA_29A-30A (0)		

Inter band CA combination

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Table 3: inter-band CA (two bands)

E-UTRA CA Configuration	E-UTRA Bands	1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz	Maximum aggregated bandwidth [MHz]	Bandwidth combination set
CA_1A-5A	1				Yes			20	0
	5				Yes				
	1			Yes	Yes	Yes	Yes	30	1
	5			Yes	Yes				
CA_1A-26A	1			Yes	Yes	Yes	Yes	35	0
	26			Yes	Yes	Yes			
	1			Yes	Yes			20	1
	26			Yes	Yes				
CA_2A-4A	2	Yes	Yes	Yes	Yes	Yes	Yes	40	0
	4			Yes	Yes	Yes	Yes		
	2			Yes	Yes			20	1
	4			Yes	Yes				
	2			Yes	Yes	Yes	Yes	40	2
	4			Yes	Yes	Yes	Yes		
CA_2A-5A	2			Yes	Yes	Yes	Yes	30	0
	5			Yes	Yes				
	2			Yes	Yes			20	1
	5			Yes	Yes				
CA_2C-5A	2	See CA_2C bandwidth combination set 0 in 3GPP TS 36,521-1 table 5.4.2A. 1-3						50	0
	5			Yes	Yes				
CA_2A-12A	2			Yes	Yes	Yes	Yes	30	0
	12			Yes	Yes				
	2			Yes	Yes	Yes	Yes	30	1
	12		Yes	Yes	Yes				
	2			Yes	Yes			20	2

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	12			Yes	Yes				
CA_2A-13A	2			Yes	Yes	Yes	Yes	30	0
	13				Yes				
	2			Yes	Yes			20	1
	13				Yes				
CA_2A-17A	2			Yes	Yes			20	0
	17			Yes	Yes				
CA_2A-29A	2			Yes	Yes			20	0
	29		Yes	Yes	Yes				
	2			Yes	Yes			20	1
	29			Yes	Yes				
	2			Yes	Yes	Yes	Yes	30	2
	29			Yes	Yes				
CA_2A-30A	2			Yes	Yes	Yes	Yes	30	0
	30			Yes	Yes				
CA_2A-66A	2	Yes	Yes	Yes	Yes	Yes	Yes	40	0
	66			Yes	Yes	Yes	Yes		
	2			Yes	Yes			20	1
	66			Yes	Yes				
	2			Yes	Yes	Yes	Yes	40	2
	66			Yes	Yes	Yes	Yes		
CA_2A-66B	2			Yes	Yes	Yes	Yes	40	0
	66	See CA_66B bandwidth combination set 0 in 3GPP TS 36,521-1 table 5.4.2A. 1-1							
CA_2A-66C	2			Yes	Yes	Yes	Yes	60	0
	66	See CA_66C bandwidth combination set 0 in 3GPP TS 36,521-1 table 5.4.2A. 1-1							
CA_3A-5A	3				Yes	Yes	Yes	30	0
	5			Yes	Yes				
	3				Yes			20	1
	5			Yes	Yes				

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	3			Yes	Yes	Yes	Yes	30	2
	5			Yes	Yes				
	3			Yes	Yes	Yes	Yes	30	3
	5		Yes	Yes	Yes				
	3		Yes	Yes	Yes			20	4
	5		Yes	Yes	Yes				
CA_3A-7A	3			Yes	Yes	Yes	Yes	40	0
	7				Yes	Yes	Yes		
	3			Yes	Yes	Yes	Yes	40	1
	7			Yes	Yes	Yes	Yes		
CA_3C-7A	3	See CA_3C bandwidth combination set 0 in 3GPP TS 36,521-1 table 5.4.2A. 1-1						60	0
	7			Yes	Yes	Yes	Yes		
CA_3A-7B	3			Yes	Yes	Yes	Yes	40	0
	7	See CA_7B bandwidth combination set 0 in 3GPP TS 36,521-1 table 5.4.2A. 1-1							
CA_3A-7C	3			Yes	Yes	Yes	Yes	60	0
	7	See CA_7C bandwidth combination set 1 in 3GPP TS 36,521-1 table 5.4.2A. 1-1							
	3			Yes	Yes	Yes	Yes	60	1
	7	See CA_7C bandwidth combination set 2 in 3GPP TS 36,521-1 table 5.4.2A. 1-1							
CA_4A-5A	4			Yes	Yes			20	0
	5			Yes	Yes				
	4			Yes	Yes	Yes	Yes	30	1
	5			Yes	Yes				
CA_4A-12A	4	Yes	Yes	Yes	Yes			20	0
	12			Yes	Yes				
	4	Yes	Yes	Yes	Yes	Yes	Yes	30	1
	12			Yes	Yes				
	4			Yes	Yes	Yes	Yes	30	2

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	12		Yes	Yes	Yes				
	4			Yes	Yes			20	3
	12			Yes	Yes				
	4			Yes	Yes	Yes	Yes	30	4
	12			Yes	Yes				
	4			Yes	Yes	Yes		20	5
	12			Yes					
CA_4A-13A	4			Yes	Yes	Yes	Yes	30	0
	13				Yes				
	4			Yes	Yes			20	1
	13				Yes				
CA_4A-29A	4			Yes	Yes			20	0
	29		Yes	Yes	Yes				
	4			Yes	Yes			20	1
	29			Yes	Yes				
	4			Yes	Yes	Yes	Yes	30	2
	29			Yes	Yes				
CA_4A-30A	4			Yes	Yes	Yes	Yes	30	0
	30			Yes	Yes				
CA_5A-7A	5	Yes	Yes	Yes	Yes			30	0
	7				Yes	Yes	Yes		
	5			Yes	Yes			30	1
	7				Yes	Yes	Yes		
CA_5A-30A	5			Yes	Yes			20	0
	30			Yes	Yes				
CA_5A-66A	5			Yes	Yes			30	0
	66			Yes	Yes	Yes	Yes		
CA_5A-66B	5			Yes	Yes			30	0
	66	See CA_66B bandwidth combination set 2 in 3GPP TS 36,521-1 table 5.4.2A. 1-1							
CA_5A-66C	5			Yes	Yes			50	0

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	66	See CA_66C bandwidth combination set 2 in 3GPP TS 36,521-1 table 5.4.2A. 1-1							
CA_7A-20A	7				Yes	Yes	Yes	30	0
	20			Yes	Yes				
	7				Yes	Yes	Yes	40	1
	20			Yes	Yes	Yes	Yes		
CA_7A-28A	7			Yes	Yes	Yes	Yes	35	0
	28			Yes	Yes	Yes			
	7			Yes	Yes	Yes	Yes	40	1
	28			Yes	Yes	Yes	Yes		
CA_12A-30A	12			Yes	Yes			20	0
	30			Yes	Yes				
CA_13A-66A	13			Yes	Yes			30	0
	66			Yes	Yes	Yes	Yes		
CA_13A-66B	13			Yes	Yes			30	0
	66	See CA_66B bandwidth combination set 0 in 3GPP TS 36,521-1 table 5.4.2A. 1-1							
CA_13A-66C	13			Yes	Yes			50	0
	66	See CA_66C bandwidth combination set 0 in 3GPP TS 36,521-1 table 5.4.2A. 1-1							
CA_29A-30A	29			Yes	Yes			20	0
	30			Yes	Yes				

Table 4: inter-band CA (three bands)

E-UTRA CA Configuration	E-UTRA Bands	1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz	Maximum aggregated bandwidth [MHz]	Bandwidth combination set
CA_1A-3A-7A	1			Yes	Yes	Yes	Yes	60	0
	3			Yes	Yes	Yes	Yes		
	7				Yes	Yes	Yes		

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CA_2A-4A-5A	2			Yes	Yes	Yes	Yes	50	0
	4			Yes	Yes	Yes	Yes		
	5			Yes	Yes				
CA_2A-4A-13A	2			Yes	Yes	Yes	Yes	50	0
	4			Yes	Yes	Yes	Yes		
	13				Yes				
CA_2A-5A-30A	2			Yes	Yes	Yes	Yes	40	0
	5			Yes	Yes				
	30			Yes	Yes				
CA_2A-5A-66A	2			Yes	Yes	Yes	Yes	50	0
	5			Yes	Yes				
	66			Yes	Yes	Yes	Yes		
CA_2A-12A-30A	2			Yes	Yes	Yes	Yes	40	0
	12			Yes	Yes				
	30			Yes	Yes				
CA_2A-13A-66A	2			Yes	Yes	Yes	Yes	50	0
	13			Yes	Yes				
	66			Yes	Yes	Yes	Yes		
CA_2A-29A-30A	2			Yes	Yes	Yes	Yes	40	0
	29			Yes	Yes				
	30			Yes	Yes				
CA_3A-7A-20A	3			Yes	Yes	Yes	Yes	60	0
	7				Yes	Yes	Yes		
	20			Yes	Yes	Yes	Yes		
CA_3A-7A-28A	3			Yes	Yes	Yes	Yes	60	0
	7			Yes	Yes	Yes	Yes		
	28			Yes	Yes	Yes	Yes		
CA_4A-5A-30A	4			Yes	Yes	Yes	Yes	40	0
	5			Yes	Yes				
	30			Yes	Yes				
CA_4A-12A-30A	4			Yes	Yes	Yes	Yes	40	0

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	12			Yes	Yes				
	30			Yes	Yes				
CA_4A-29A-30A	4			Yes	Yes	Yes	Yes	40	0
	29			Yes	Yes				
	30			Yes	Yes				

Note:

1）For the inter-band CA combinations, except B29 can't be PCC, all the listed bands above can be used as PCC or SCC.

2) The channel spacing and aggregated channel bandwidth for CA are identical to the associated specification in 3GPP TS 36.521-1 V14.3.0.

3) The reference test frequencies for CA refers to 3GPP TS 36.508 V14.2.0

4) Testing is not required in bands or modes not intended/allowed for US operation

5) Based on TCB workshop Nov. 2017, for inter-band downlink CA SAR test exclusion, only the subset with the largest number of combinations of frequency bands and CCs in each row need consideration; i.e., the bold words bands in CA combination table.

6) Based on TCB workshop Nov. 2017, for intra-band downlink CA SAR test exclusion, only the CA configuration with the largest aggregated DL CA bandwidth in each frequency band group need consideration, i.e., the bold words bands in CA combination table, and independently for contiguous and non-contiguous CA.

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1.4 Test Environment

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

1.5 Operation Description

For WWAN, the EUT is controlled by using a Radio Communication Tester, and the communication between the EUT and the tester is established by air link.
For WLAN, using chipset specific software to control the EUT, and makes it transmit in maximum power. The EUT is set to maximum power level during all tests, and at the beginning of each test the battery is fully charged.

WWAN

Keyboard bottom touch against the flat phantom_0mm with power reduction

Keyboard bottom to the flat phantom_14mm without power reduction

WLAN

Keyboard bottom touch against the flat phantom_0mm without power reduction

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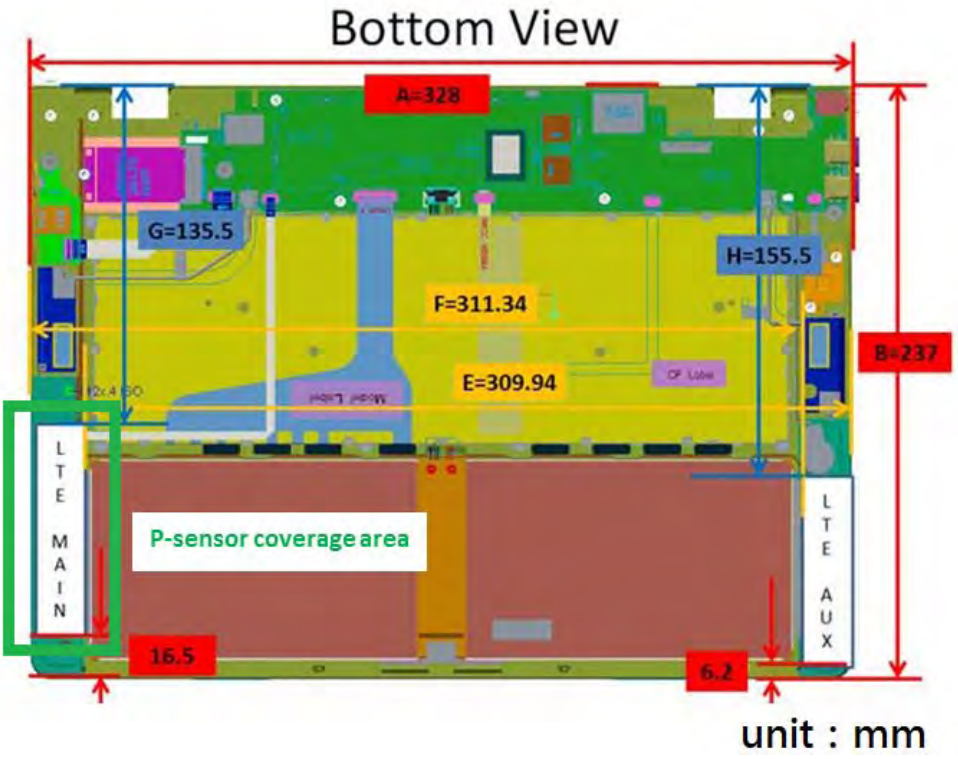

WWAN Antenna location (Bottom view)

(The p-sensor is colocated with WWAN Main antenna)

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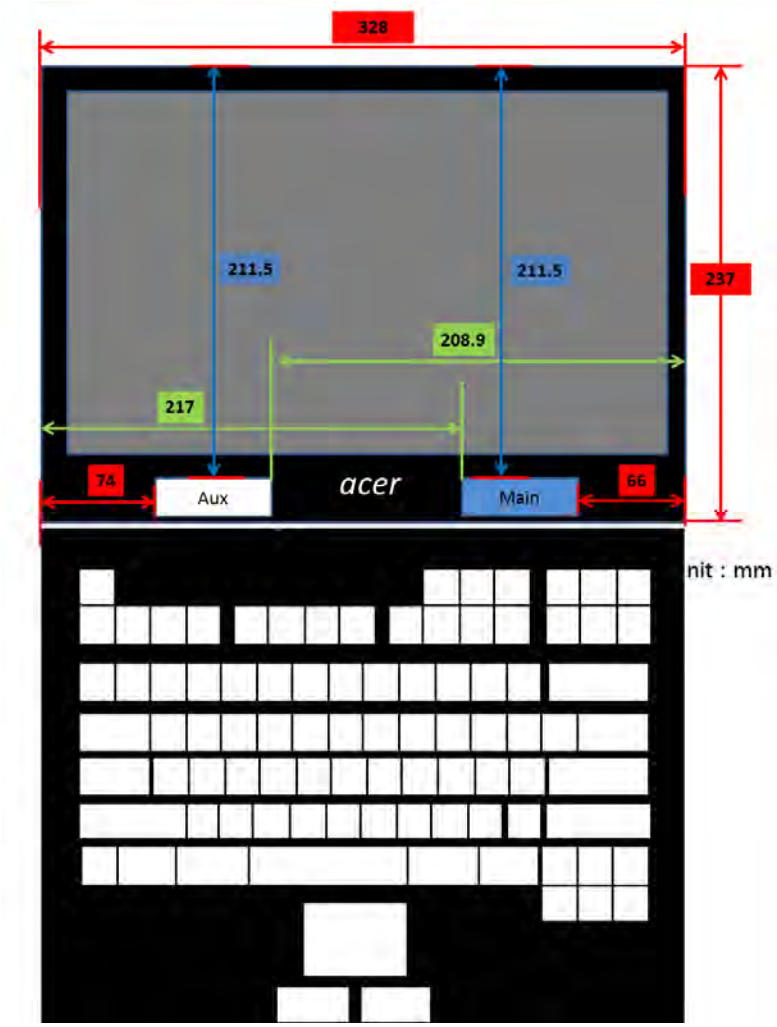

WLAN Antenna location (Front view)

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Note:

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

2. The 3G SAR test reduction procedure is applied to HSDPA with 12.2 kbps RMC as the primary mode. Since the maximum output power in a secondary mode (HSDPA) is ≤ ¼ dB higher than the primary mode (WCDMA), SAR measurement is not required for the secondary mode (HSDPA).

3. The 3G SAR test reduction procedure is applied to HSPA (HSUPA/HSDPA with RMC) with 12.2 kbps RMC as the primary mode. Since the maximum output power in a secondary mode (HSPA) is ≤ ¼ dB higher than the primary mode (WCDMA), SAR measurement is not required for the secondary mode (HSPA).

4. LTE modes test according to **KDB 941225D05v02r05.**
   a. Per Section 5.2.1, the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation.
   - Using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
   - When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required for 1 RB allocation; otherwise, SAR is required for the remaining required test channels and only for the RB offset configuration with the highest output power for that channel.
   - When the reported SAR of a required test channel is > 1.45 W/kg, SAR is required for all three RB offset configurations for that required test channel.

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

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

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

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

d. Per Section 5.2.4, Higher order modulations

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

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

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

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- TDD LTE was tested at highest duty factor using UL-DL configuration 0 with 6 UL subframes and 2 S subframes using extended cyclic prefix only and special subframe configuration 6. SAR tests were performed at maximum output power and worst-case transmission duty factor in extended cyclic prefix. Per 3GPP 36.211 Section 4, the duty factor for special subframe configuration 6 using extended cyclic prefix is 0.633.

LTE downlink CA (KDB942225 D05A)

5. The device supports a maximum of 3 carriers in the downlink. All uplink communications are identical to the Release 8 specifications. Uplink maximum output power is measured with downlink carrier aggregation active, only for the channel with highest measured maximum output power when downlink carrier aggregation is inactive, to confirm that when downlink carrier aggregation is active uplink maximum output power remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output power measured when downlink carrier aggregation inactive.

6. The downlink channels selected to perform the uplink power measurement must satisfy 3GPP channel spacing (5.4.1A of 3GPP TS 36.521 or equivalent) and channel bandwidth (5.4.2A) requirements. The nominal channel spacing is determined by [BW1 + BW2 – 0.1*|BW1 – BW2|]/2 MHz, where BW1 and BW2 are the channel bandwidths of the CC in a 2-CC aggregation configuration.

7. The downlink PCC channel should be paired with the uplink channel according to normal configurations, as if there is no carrier aggregation. The downlink SCC should be adjacent to the PCC and remain within the downlink transmission band for contiguous intra-band CA. For non-contiguous intra-band CA, the SCC should be selected to provide maximum separation from the PCC and must remain fully within the downlink transmission band. For inter-band CA, the SCC should be near the middle of its transmission band.

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8. When downlink carrier aggregation is active uplink maximum output power remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output power measured when downlink carrier aggregation inactive, so SAR evaluation is not required for downlink carrier aggregation.

802.11b DSSS SAR Test Requirements:

9. SAR is measured for 2.4 GHz 802.11b DSSS mode using the highest measured maximum output power channel, when the reported SAR of the highest measured maximum output power channel for the exposure configuration is ≤ 0.8 W/kg, no further SAR testing is required for 802.11b DSSS in that exposure configuration.
10. When the reported SAR is > 0.8 W/kg, SAR is required for that exposure configuration using the next highest measured output power channel. When any reported SAR is > 1.2 W/kg, SAR is required for the third channel; i.e., all channels require testing.

802.11g/n OFDM SAR Test Exclusion Requirements:

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

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Initial Test Configuration:

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

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

14. For WLAN Main/Aux, 5.2n(40) / 5.3n(40) / 5.6ac(80) / 5.8ac(80) is chosen to be the initial test configuration.

15. Since the highest reported SAR for the initial test configuration is adjusted by the ratio of the subsequent test configuration to initial test configuration specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for subsequent test configuration.

16. According to KDB447498D01v06, SAR test exclusion is evaluated as below.

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

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

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

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(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) x($\frac{f(MHz)}{150}$)](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.

Mode		WLAN Main 2.45GHz	WLAN Main 5GHz
Max. tune-up power(dBm)		17.5	16.5
Max. tune-up power(mW)		56.234	44.668
Bottom side	Test separation distance	less than 5	less than 5
	Calculation value	17.647	21.561
	Require SAR testing?	**YES**	**YES**

Mode		WLAN Aux 2.45GHz	WLAN Aux 5GHz	BT
Max. tune-up power(dBm)		17.5	16.5	5.1
Max. tune-up power(mW)		56.234	44.668	3.236
Bottom side	Test separation distance	less than 5	less than 5	less than 5
	Calculation value	17.647	21.561	1.019
	Require SAR testing?	**YES**	**YES**	**No**

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Mode		WCDMA B2	WCDMA B4	WCDMA B5	LTE B2	LTE B4	LTE B5	LTE B7
Max. tune-up power(dBm)		16.5	16.5	21.5	24	24	22	17.5
Max. tune-up power(mW)		44.668	44.668	141.254	251.189	251.189	158.489	56.234
Bottom side	Test separation distance	less than 5	less than 5	less than 5	less than 5	less than 5	less than 5	less than 5
	Calculation value	12.339	11.827	25.994	69.248	66.363	29.121	17.995
	Require SAR testing?	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**

Mode		LTE B12	LTE B13	LTE B17	LTE B26	LTE B30	LTE B38	LTE B41	LTE B66
Max. tune-up power(dBm)		19.5	20.5	19.5	21	17	20	19	17.5
Max. tune-up power(mW)		89.125	112.202	89.125	125.893	50.119	100.000	79.433	56.234
Bottom side	Test separation distance	less than 5	less than 5	less than 5	less than 5	less than 5	less than 5	less than 5	less than 5
	Calculation value	15.030	19.844	15.030	23.097	15.235	32.311	26.007	14.963
	Require SAR testing?	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**

17. According to **KDB447498D01v06**, 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.

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18. According to **KDB865664D01v01r04,** SAR measurement variability must be assessed for each frequency band. When the original highest measured SAR is ≥ 0.8 W/kg, repeated that measurement once. Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit)

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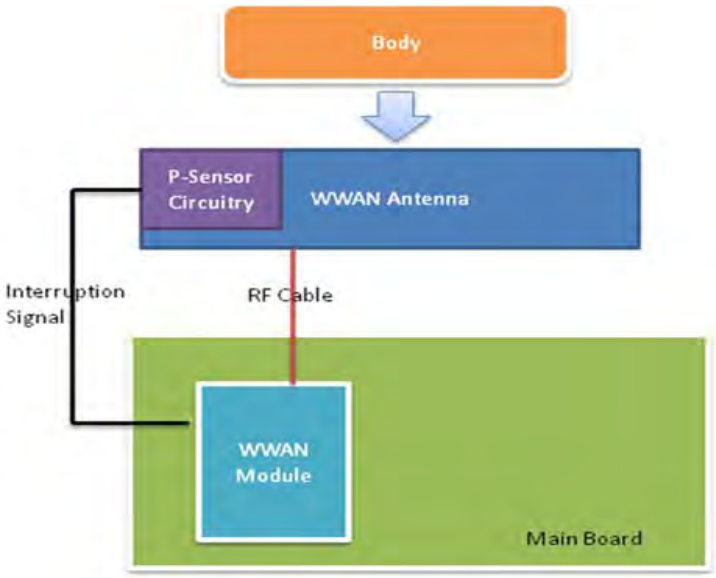
1.6 Proximity sensor operation description

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.



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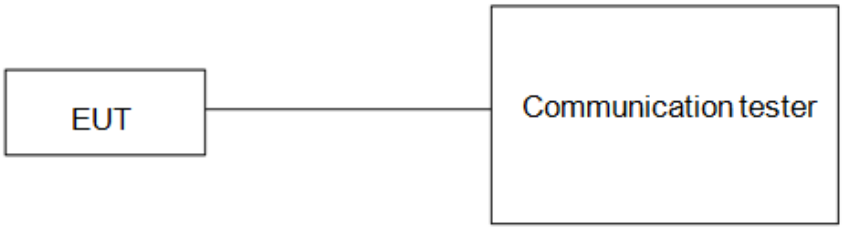
1.6.1 Proximity sensor measurement procedure

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.



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1.6.2 Trigger distances for bottom 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 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

4. 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.

5. 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.

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.

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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 15mm.

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1.6.3 Proximity sensor coverage

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

Test procedure:

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

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

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

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

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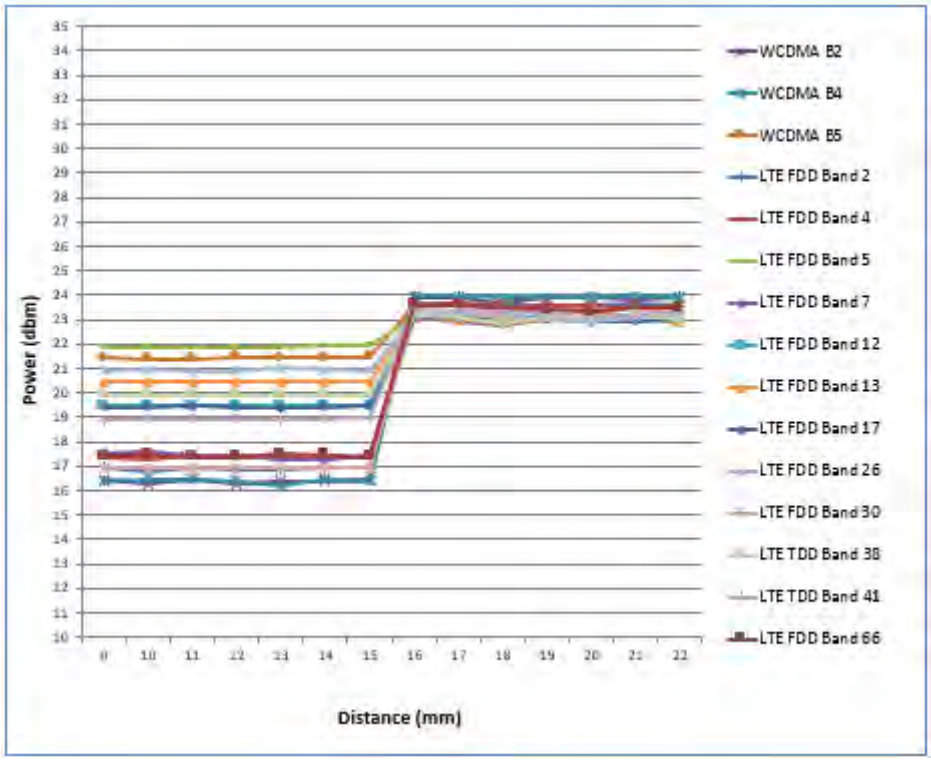
1.6.4 Results

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.

Bottom side

Moving device toward the phantom



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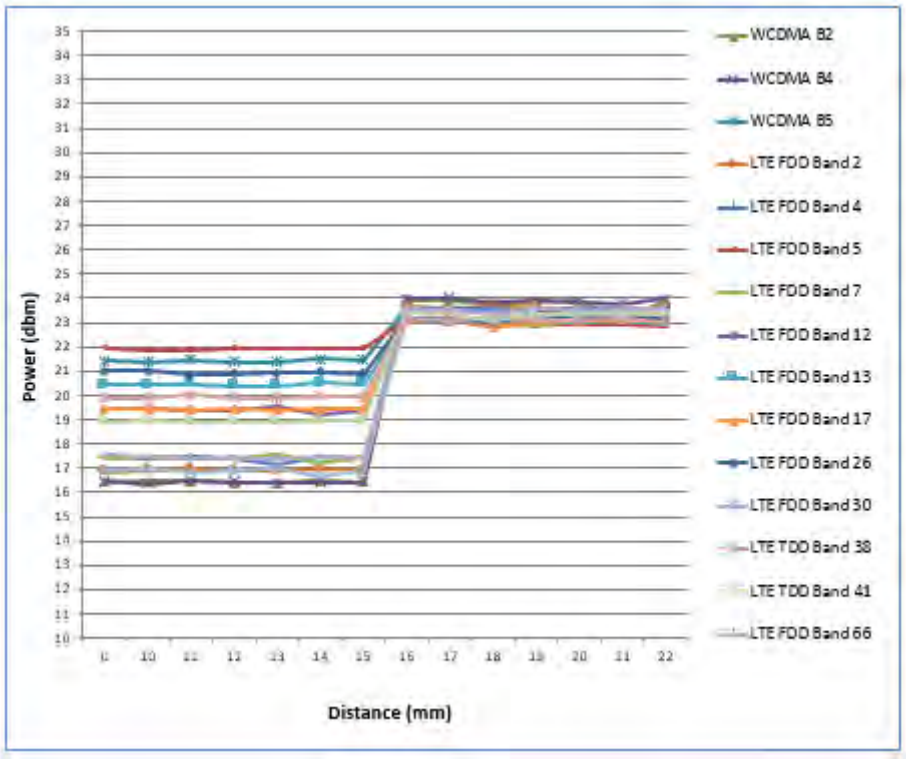
Moving device away from the phantom



For bottom side, the worst trigger distance of proximity sensor is 15mm, and we perform bottom side SAR in 14mm without power reduction and 0mm with power reduction.

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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 (1.6.5) 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.

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1.6.5 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 WCDMA/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
WCDMA B2	YES
WCDMA B4	YES
WCDMA B5	YES
LTE B2/4/5/7/12/13/17/26/30/38/41/66	YES
WLAN	NO
BT	NO

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

Technology / Band	Mode	Default Maximum Power (dBm)
UMTS B2	All	16.5
UMTS B4	All	16.5
UMTS B5	All	21.5
LTE B2	All	17
LTE B4	All	17.5
LTE B5	All	22
LTE B7	All	17.5
LTE B12	All	20.5
LTE B13	All	19.5
LTE B17	All	19.5
LTE B26	All	21
LTE B30	All	17
LTE B38	All	20
LTE B41	All	19
LTE B66	All	17.5

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1.7 The SAR Measurement System

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

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

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.

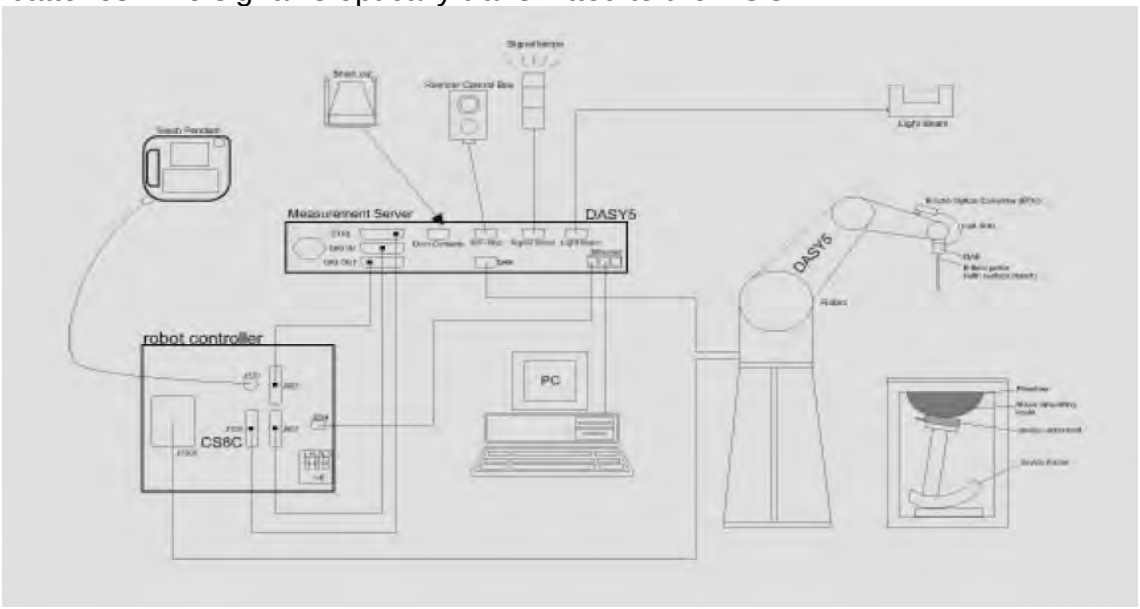

Fig. a The block diagram of SAR system

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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.

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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 750/835/1750/1900/2300/2450/2600/5200/5300/5600/5800MHz Additional CF for other liquids and frequencies upon request	
Frequency	10 MHz to > 6 GHz	
Directivity	± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)	
Dynamic Range	10 µW/g to > 100 mW/g Linearity: ± 0.2 dB (noise: typically < 1 µW/g)	
Dimensions	Tip diameter: 2.5 mm	
Application	High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields). Only probe which enables compliance testing for frequencies up to 6 GHz with precision of better 30%.	

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PHANTOM

Model	ELI
Construction	The ELI phantom is used for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI is fully compatible with the IEC 62209-2 standard and all known tissue simulating liquids. ELI has been optimized regarding its performance and can be integrated into our standard phantom tables. A cover prevents evaporation of the liquid. Reference markings on the phantom allow installation of the complete setup, including all predefined phantom positions and measurement grids, by teaching three points. The phantom is compatible with all SPEAG dosimetric probes and dipoles.
Shell Thickness	2 ± 0.2 mm
Filling Volume	Approx. 30 liters
Dimensions	Major axis: 600 mm Minor axis: 400 mm

DEVICE HOLDER

Construction	The device holder (Supporter) for Notebook is made by POM (polyoxymethylene resin) , which is non-metal and non-conductive. The height can be adjusted to fit varies kind of notebooks.

Device Holder

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1.9 SAR System Verification

The microwave circuit arrangement for system verification is sketched in Fig. b. The daily system accuracy verification occurs within the flat section of the SAM phantom. A SAR measurement was performed to see if the measured SAR was within +/- 10% from the target SAR values. These tests were done at 750/835/1750/1900/2300/2450/ 2600/5200/5300 /5600/5800MHz. The tests were conducted on the same days as the measurement of the DUT. The obtained results from the system accuracy verification are displayed in the table 1 (SAR values are normalized to 1W forward power delivered to the dipole). During the tests, the ambient temperature of the laboratory was 21.7°C, the relative humidity was 62% and the liquid depth above the ear reference points was ≥ 15 cm ± 5 mm (frequency ≤ 3 GHz) or ≥ 10 cm ± 5 mm (frequency > 3 G Hz) in all the cases. It is seen that the system is operating within its specification, as the results are within acceptable tolerance of the reference values.

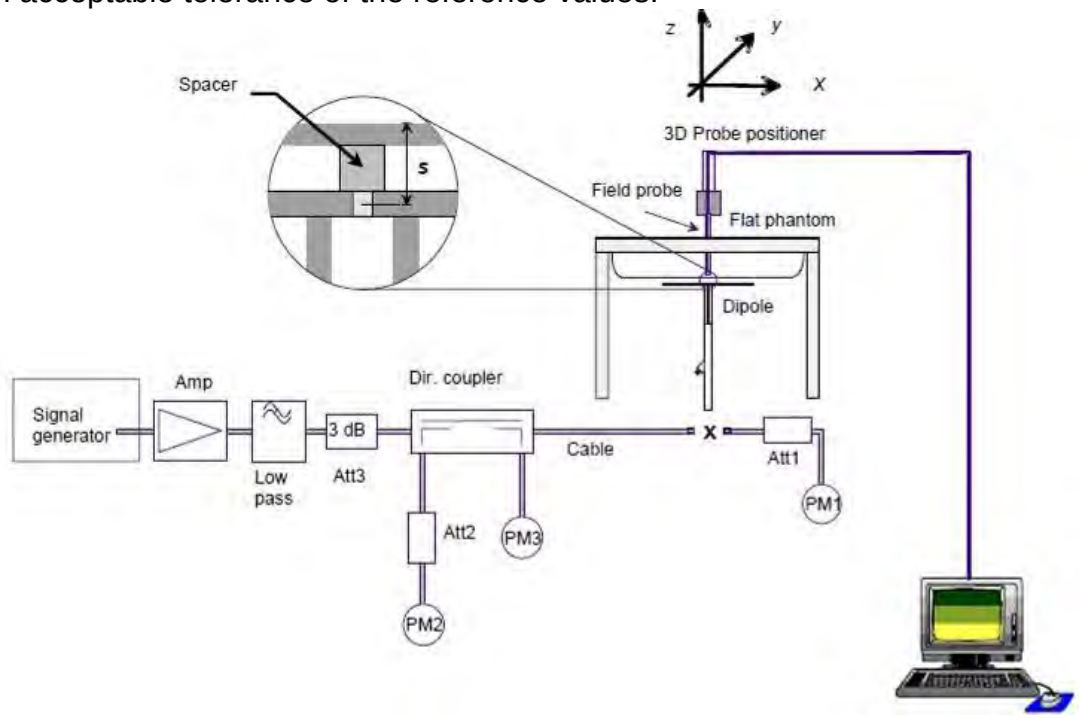

Fig. b The block diagram of system verification

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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
D750V3	1015	750	Body	8.76	2.19	8.76	0.00%	Jan. 05, 2018
D835V2	4d063	835	Body	9.57	2.46	9.84	2.82%	Jan. 08, 2018
D1750V2	1008	1750	Body	36.7	9.40	37.60	2.45%	Jan. 09, 2018
D1900V2	5d173	1900	Body	40.2	10.30	41.20	2.49%	Jan. 10, 2018
D2300V2	1023	2300	Body	46.4	12.20	48.80	5.17%	Jan. 11, 2018
D2450V2	727	2450	Body	50.6	12.90	51.60	1.98%	Jan. 12, 2018
D2600V2	1005	2600	Body	55.1	13.90	55.60	0.91%	Jan. 15, 2018
D5GHzV2	1023	5200	Body	72.8	7.35	73.50	0.96%	Jan. 16, 2018
		5300	Body	76.1	7.85	78.50	3.15%	Jan. 17, 2018
		5600	Body	79.6	8.05	80.50	1.13%	Jan. 18, 2018
		5800	Body	75.9	7.93	79.30	4.48%	Jan. 19, 2018

Table 1. Results of system verification

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1.10 Tissue Simulant Fluid for the Frequency Band

The dielectric properties for this Head-simulant fluid were measured by using the Agilent Model 85070E Dielectric Probe (rates frequency band 200 MHz to 20 GHz) in conjunction with Network Analyzer.
All dielectric parameters of tissue simulates were measured within 24 hours of SAR measurements. The measured conductivity and permittivity are all within ± 5% of the target values.

Tissue Type	Measurement Date	Measured Frequency (MHz)	Target Dielectric Constant, εr	Target Conductivity, σ (S/m)	Measured Dielectric Constant, εr	Measured Conductivity, σ (S/m)	% dev εr	% dev σ
Body	Jan. 05, 2018	704	55.710	0.960	56.252	0.934	-0.97%	2.69%
		707.5	55.697	0.960	56.286	0.936	-1.06%	2.51%
		709	55.691	0.960	56.226	0.938	-0.96%	2.31%
		710	55.687	0.960	56.265	0.938	-1.04%	2.32%
		711	55.683	0.960	56.216	0.937	-0.96%	2.43%
		750	55.531	0.963	55.827	0.961	-0.53%	0.25%
		782	55.406	0.966	55.520	0.976	-0.20%	-1.05%
	Jan. 08, 2018	822.5	55.249	0.969	55.152	1.001	0.18%	-3.30%
		826.4	55.234	0.969	55.174	1.005	0.11%	-3.68%
		829	55.223	0.970	55.093	1.006	0.24%	-3.76%
		831.5	55.214	0.970	55.084	1.010	0.23%	-4.15%
		835	55.200	0.970	55.025	1.010	0.32%	-4.12%
		836.5	55.195	0.972	55.020	1.012	0.32%	-4.13%
		836.6	55.195	0.972	55.020	1.012	0.32%	-4.12%
		841.5	55.180	0.978	55.021	1.017	0.29%	-3.99%
		844	55.172	0.981	54.944	1.018	0.41%	-3.76%
		846.6	55.164	0.984	54.951	1.021	0.39%	-3.73%
	Jan. 09, 2018	1712.4	53.531	1.465	53.721	1.437	-0.36%	1.89%
		1720	53.511	1.469	53.666	1.438	-0.29%	2.14%
		1732.4	53.478	1.477	53.590	1.448	-0.21%	1.98%
		1745	53.445	1.485	53.561	1.452	-0.22%	2.24%
		1750	53.432	1.488	53.551	1.454	-0.22%	2.31%
		1752.6	53.425	1.490	53.546	1.451	-0.23%	2.62%
		1770	53.381	1.501	53.521	1.462	-0.26%	2.60%
	Jan. 10, 2018	1852.4	53.300	1.520	53.283	1.499	0.03%	1.38%
		1860	53.300	1.520	53.198	1.502	0.19%	1.18%
		1880	53.300	1.520	53.158	1.505	0.27%	0.99%
		1900	53.300	1.520	53.022	1.516	0.52%	0.26%
		1907.6	53.300	1.520	53.007	1.517	0.55%	0.20%

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Body	Jan. 11, 2018	2300	52.900	1.807	53.461	1.747	-1.06%	3.30%
		2310	52.887	1.816	53.402	1.763	-0.97%	2.93%
	Jan. 12, 2018	2412	52.751	1.914	52.898	1.906	-0.28%	0.40%
		2437	52.717	1.938	52.874	1.915	-0.30%	1.17%
		2450	52.700	1.950	52.808	1.931	-0.20%	0.97%
	Jan. 15, 2018	2506	52.629	2.029	52.638	2.008	-0.02%	1.06%
		2510	52.624	2.035	52.604	2.011	0.04%	1.18%
		2535	52.592	2.071	52.530	2.044	0.12%	1.28%
		2549.5	52.573	2.091	52.473	2.061	0.19%	1.44%
		2560	52.560	2.106	52.430	2.074	0.25%	1.52%
		2580	52.535	2.134	52.286	2.104	0.47%	1.42%
		2593	52.518	2.153	52.278	2.119	0.46%	1.57%
		2595	52.515	2.156	52.268	2.119	0.47%	1.70%
		2600	52.509	2.163	52.227	2.124	0.54%	1.79%
		2610	52.496	2.177	52.185	2.142	0.59%	1.61%
		2636.5	52.463	2.214	52.045	2.180	0.80%	1.56%
		2680	52.407	2.276	51.861	2.233	1.04%	1.90%
	Jan. 16, 2018	5200	49.014	5.299	49.587	5.121	-1.17%	3.36%
		5230	48.974	5.334	49.559	5.190	-1.20%	2.71%
	Jan. 17, 2018	5270	48.919	5.381	49.460	5.271	-1.11%	2.04%
		5300	48.879	5.416	49.371	5.263	-1.01%	2.83%
	Jan. 18, 2018	5530	48.566	5.685	48.608	5.626	-0.09%	1.03%
		5600	48.471	5.766	48.520	5.737	-0.10%	0.51%
		5610	48.458	5.778	48.270	5.764	0.39%	0.24%
		5690	48.349	5.872	48.183	5.853	0.34%	0.32%
	Jan. 19, 2018	5775	48.234	5.971	48.041	6.024	0.40%	-0.89%
		5800	48.200	6.000	48.006	6.004	0.40%	-0.07%

Table 2. Dielectric Parameters of Tissue Simulant Fluid

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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)
2300	Body	301.7ml	698.3ml	–	–	–	–	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

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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

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

1.12 Probe Calibration Procedures

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

1.12.1 Transfer Calibration with Temperature Probes

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

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

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:

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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 (~ 2% for c; much better for ρ) , there is no standard for the measurement of the conductivity. Depending on the method and liquid, the error can well exceed ±5%.
4. Temperature rise measurements are not very sensitive and therefore are often performed at a higher power level than the E-field measurements. The nonlinearities in the system (e.g., power measurements, different components, etc.) must be considered.

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

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.

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

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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.

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1.13 Test Standards and Limits

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

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

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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 W/Kg	8.00 W/Kg
Spatial Average SAR (Whole Body)	0.08 W/Kg	0.40 W/Kg
Spatial Peak SAR (Hands/Feet/Ankle/Wrist)	4.00 W/Kg	20.00 W/Kg

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.

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2. Summary of Results

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 II	Bottom side	14	9262	1852.4	24.50	23.93	14.02%	0.752	0.857	-

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 II	Bottom side	0	9262	1852.4	16.50	16.49	0.23%	1.190	1.193	206
	Bottom side*	0	9262	1852.4	16.50	16.49	0.23%	1.170	1.173	-
	Bottom side	0	9400	1880	16.50	16.32	4.23%	1.020	1.063	-
	Bottom side	0	9538	1907.6	16.50	16.26	5.68%	1.120	1.184	-

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

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WCDMA Band IV (without power reduction)

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
								Measured	Reported	
WCDMA Band VI	Bottom side	14	1513	1752.6	24.50	23.99	12.46%	0.650	0.731	-

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 VI	Bottom side	0	1312	1712.4	16.50	16.30	4.71%	0.838	0.877	-
	Bottom side	0	1412	1732.4	16.50	16.38	2.80%	0.864	0.888	-
	Bottom side	0	1513	1752.6	16.50	16.49	0.23%	1.040	1.042	207
	Bottom side*	0	1513	1752.6	16.50	16.49	0.23%	1.000	1.002	-

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

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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 V	Bottom side	14	4132	826.4	24.50	23.55	24.45%	0.404	0.503	-

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	Bottom side	0	4132	826.4	21.50	21.49	0.23%	1.050	1.052	208
	Bottom side*	0	4132	826.4	21.50	21.49	0.23%	0.999	1.001	-
	Bottom side	0	4183	836.6	21.50	21.25	5.93%	0.951	1.007	-
	Bottom side	0	4233	846.6	21.50	21.43	1.62%	0.935	0.950	-

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

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LTE FDD Band 2 (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	0	Bottom side	14	18700	1860	24.000	23.66	8.14%	0.673	0.728	-
			50 RB	25	Bottom side	14	18700	1860	23.000	22.42	14.29%	0.577	0.659	-
			100RB		Bottom side	14	18700	1860	23.000	22.50	12.20%	0.561	0.629	-

LTE FDD Band 2 (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 Band2	20MHz	QPSK	1 RB	0	Bottom side	0	18700	1860	17.00	16.96	0.93%	1.100	1.110	209
					Bottom side*	0	18700	1860	17.00	16.96	0.93%	1.080	1.090	
					Bottom side	0	18900	1880	17.00	16.52	11.69%	1.030	1.150	-
				99	Bottom side	0	19100	1900	17.00	16.42	14.29%	1.010	1.154	-
			50 RB	0	Bottom side	0	18700	1860	17.00	16.68	7.65%	0.995	1.071	-
					Bottom side	0	18900	1880	17.00	16.57	10.41%	0.971	1.072	-
				50	Bottom side	0	19100	1900	17.00	16.35	16.14%	0.969	1.125	-
			100 RB		Bottom side	0	18700	1860	17.00	16.66	8.14%	0.943	1.020	-
					Bottom side	0	18900	1880	17.00	16.66	8.14%	0.920	0.995	-
					Bottom side	0	19100	1900	17.00	16.42	14.29%	0.897	1.025	-

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

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LTE FDD Band 4 (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	99	Bottom side	14	20300	1745	24.000	23.61	9.40%	0.557	0.609	-
			50 RB	50	Bottom side	14	20300	1745	23.000	22.46	13.24%	0.474	0.537	-
			100RB		Bottom side	14	20300	1745	23.000	22.53	11.43%	0.463	0.516	-

LTE FDD Band 4 (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 Band4	20MHz	QPSK	1 RB	0	Bottom side	0	20050	1720	17.50	17.29	4.95%	0.962	1.010	210
					Bottom side	0	20175	1732.5	17.50	17.46	0.93%	0.953	0.962	
					Bottom side	0	20300	1745	17.50	17.27	5.44%	0.944	0.995	-
			50 RB	0	Bottom side	0	20050	1720	17.50	17.17	7.89%	0.892	0.962	-
					Bottom side	0	20175	1732.5	17.50	17.11	9.40%	0.884	0.967	-
				50	Bottom side	0	20300	1745	17.50	17.29	4.95%	0.891	0.935	-
			100 RB		Bottom side	0	20050	1720	17.50	17.35	3.51%	0.903	0.935	-
					Bottom side	0	20175	1732.5	17.50	17.14	8.64%	0.911	0.990	-

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LTE FDD Band 5 (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	Bottom side	14	20600	844	24.00	23.10	23.03%	0.330	0.406	-
			25 RB	25	Bottom side	14	20600	844	23.00	22.11	22.74%	0.344	0.422	-
			50 RB		Bottom side	14	20600	844	23.00	21.99	26.18%	0.309	0.390	-

LTE FDD Band 5 (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 Band5	10MHz	QPSK	1 RB	0	Bottom side	0	20450	829	22.00	21.98	0.46%	1.010	1.015	211
					Bottom side*	0	20450	829	22.00	21.98	0.46%	0.998	1.003	-
				25	Bottom side	0	20525	836.5	22.00	21.89	2.57%	0.985	1.010	-
				49	Bottom side	0	20600	844	22.00	21.96	0.93%	0.957	0.966	-
			25 RB	0	Bottom side	0	20450	829	22.00	21.88	2.80%	0.963	0.990	-
					Bottom side	0	20525	836.5	22.00	21.70	7.15%	0.931	0.998	-
				25	Bottom side	0	20600	844	22.00	21.90	2.33%	0.912	0.933	-
			50 RB		Bottom side	0	20450	829	22.00	21.85	3.51%	0.954	0.988	-
					Bottom side	0	20525	836.5	22.00	21.72	6.66%	0.922	0.983	-
					Bottom side	0	20600	844	22.00	21.80	4.71%	0.918	0.961	-

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

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LTE FDD Band 7 (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 Band7	20MHz	QPSK	1 RB	99	Bottom side	14	21100	2535	24.00	23.07	23.88%	0.628	0.778	-
			50 RB	0	Bottom side	14	21350	2560	23.00	21.86	30.02%	0.588	0.764	-
			100RB		Bottom side	14	21350	2560	23.00	21.89	29.12%	0.572	0.739	-

LTE FDD Band 7 (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 Band7	20MHz	QPSK	1 RB	0	Bottom side	0	21100	2535	17.50	17.49	0.23%	1.160	1.163	212
					Bottom side*	0	21100	2535	17.50	17.49	0.23%	1.090	1.093	-
					Bottom side	0	21350	2560	17.50	17.47	0.69%	1.150	1.158	-
				99	Bottom side	0	20850	2510	17.50	17.44	1.39%	0.995	1.009	-
			50 RB	25	Bottom side	0	21350	2560	17.50	17.45	1.16%	0.894	0.904	-
				50	Bottom side	0	20850	2510	17.50	17.31	4.47%	0.915	0.956	-
					Bottom side	0	21100	2535	17.50	17.28	5.20%	0.993	1.045	-
			100 RB		Bottom side	0	20850	2510	17.50	17.34	3.75%	0.897	0.931	-
					Bottom side	0	21100	2535	17.50	17.32	4.23%	0.952	0.992	-
					Bottom side	0	21350	2560	17.50	17.41	2.09%	0.873	0.891	-

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

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LTE FDD Band 12 (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 Band12	10MHz	QPSK	1 RB	49	Bottom side	14	23095	707.5	24.00	23.18	20.78%	0.368	0.444	-
			25 RB	0	Bottom side	14	23060	704	23.00	22.10	23.03%	0.336	0.413	-
			50RB		Bottom side	14	23130	711	23.00	22.17	21.06%	0.332	0.402	-

LTE FDD Band 12 (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 Banf12	10MHz	QPSK	1 RB	0	Bottom side	0	23130	711	19.50	19.25	5.93%	0.858	0.909	213
					Bottom side*	0	23130	711	19.50	19.25	5.93%	0.849	0.899	-
				25	Bottom side	0	23060	704	19.50	19.32	4.23%	0.789	0.822	-
				49	Bottom side	0	23095	707.5	19.50	19.49	0.23%	0.823	0.825	-
			25 RB	0	Bottom side	0	23060	704	19.50	19.18	7.65%	0.744	0.801	-
					Bottom side	0	23.95	707.5	19.50	19.13	8.89%	0.670	0.730	-
				12	Bottom side	0	23130	711	19.50	19.08	10.15%	0.744	0.820	-
			50 RB		Bottom side	0	23060	704	19.50	19.16	8.14%	0.601	0.650	-
					Bottom side	0	23095	707.5	19.50	19.10	9.65%	0.552	0.605	-
					Bottom side	0	23130	711	19.50	19.17	7.89%	0.760	0.820	-

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

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LTE FDD Band 13 (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 Band13	10MHz	QPSK	1 RB	49	Bottom side	14	23230	782	24.00	23.08	23.59%	0.366	0.452	-
			25 RB	25	Bottom side	14	23230	782	23.00	21.98	26.47%	0.348	0.440	-
			50RB		Bottom side	14	23230	782	23.00	22.13	22.18%	0.351	0.429	-

LTE FDD Band 13 (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 Band13	10MHz	QPSK	1 RB	0	Bottom side	0	23230	782	20.50	20.47	0.69%	0.903	0.909	214
				0	Bottom side*	0	23230	782	20.50	20.47	0.69%	0.900	0.906	-
				25	Bottom side	0	23230	782	20.50	20.48	0.46%	0.865	0.869	-
				49	Bottom side	0	23230	782	20.50	20.46	0.93%	0.771	0.778	-
			25 RB	0	Bottom side	0	23230	782	20.50	20.17	7.89%	0.820	0.885	-
				12	Bottom side	0	23230	782	20.50	19.92	14.29%	0.785	0.897	-
				25	Bottom side	0	23230	782	20.50	19.94	13.76%	0.711	0.809	-
			50RB		Bottom side	0	23230	782	20.50	19.94	13.76%	0.811	0.923	-

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

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LTE FDD Band 17 (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	49	Bottom side	14	23780	709	24.00	23.12	22.46%	0.369	0.452	-
			25 RB	25	Bottom side	14	23800	711	23.00	22.10	23.03%	0.349	0.429	-
			50RB		Bottom side	14	23790	710	23.00	22.17	21.06%	0.348	0.421	-

LTE FDD Band 17 (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 Band17	10MHz	QPSK	1 RB	49	Bottom side	0	23780	709	19.50	19.34	3.75%	0.828	0.859	215
					Bottom side*	0	23780	709	19.50	19.34	3.75%	0.819	0.850	-
					Bottom side	0	23790	710	19.50	19.29	4.95%	0.679	0.713	-
					Bottom side	0	23800	711	19.50	19.48	0.46%	0.809	0.813	-
			25 RB	25	Bottom side	0	23780	709	19.50	19.34	3.75%	0.809	0.839	-
					Bottom side	0	23790	710	19.50	19.35	3.51%	0.676	0.700	-
					Bottom side	0	23800	711	19.50	19.30	4.71%	0.797	0.835	-
			50 RB		Bottom side	0	23800	711	19.50	19.35	3.51%	0.762	0.789	-

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

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LTE FDD Band 26 (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 Band26	15MHz	QPSK	1 RB	0	Bottom side	14	26825	822.5	24.00	23.11	22.74%	0.358	0.439	-
			36 RB	0	Bottom side	14	26865	831.5	23.00	22.15	21.62%	0.338	0.411	-
			75 RB		Bottom side	14	26825	822.5	23.00	22.20	20.23%	0.336	0.404	-

LTE FDD Band 26 (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 Band26	15MHz	QPSK	1 RB	36	Bottom side	0	26825	822.5	21.00	20.83	3.99%	0.956	0.994	-
				74	Bottom side	0	26865	831.5	21.00	20.77	5.44%	0.952	1.004	-
					Bottom side	0	26965	841.5	21.00	20.83	3.99%	0.784	0.815	-
			36 RB	0	Bottom side	0	26825	822.5	21.00	20.97	0.69%	0.971	0.978	-
					Bottom side	0	26865	831.5	21.00	20.81	4.47%	0.977	1.021	216
					Bottom side*	0	26865	831.5	21.00	20.81	4.47%	0.973	1.017	-
				18	Bottom side	0	26965	841.5	21.00	20.67	7.89%	0.857	0.925	-
			75 RB		Bottom side	0	26825	822.5	21.00	20.97	0.69%	0.875	0.881	-
					Bottom side	0	26865	831.5	21.00	20.90	2.33%	0.935	0.957	-
					Bottom side	0	26965	841.5	21.00	20.85	3.51%	0.753	0.779	-

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

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LTE FDD Band 30 (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 Band30	10MHz	QPSK	1 RB	0	Bottom side	14	27710	2310	24.00	23.44	13.76%	0.426	0.485	-
			25 RB	0	Bottom side	14	27710	2310	23.00	22.51	11.94%	0.401	0.449	-
			50RB		Bottom side	14	27710	2310	23.00	22.31	17.22%	0.411	0.482	-

LTE FDD Band 30 (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 Band30	15MHz	QPSK	1 RB	0	Bottom side	0	27710	2310	17.00	16.97	0.69%	0.891	0.897	-
				25	Bottom side	0	27710	2310	17.00	16.64	8.64%	1.070	1.162	-
				49	Bottom side	0	27710	2310	17.00	16.63	8.89%	0.845	0.920	-
			25 RB	0	Bottom side	0	27710	2310	17.00	16.83	3.99%	0.838	0.871	-
				12	Bottom side	0	27710	2310	17.00	16.79	4.95%	0.967	1.015	-
				25	Bottom side	0	27710	2310	17.00	16.65	8.39%	0.840	0.910	-
			50RB		Bottom side	0	27710	2310	17.00	16.96	0.93%	1.160	1.171	217
					Bottom side*	0	27710	2310	17.00	16.96	0.93%	1.110	1.120	-

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

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LTE TDD Band 38 (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 Band38	20MHz	QPSK	1 RB	0	Bottom side	14	37850	2580	24.00	23.09	23.31%	0.508	0.626	-
			50RB	50	Bottom side	14	38150	2610	23.00	22.11	22.74%	0.488	0.599	-
			100RB		Bottom side	14	38150	2610	23.00	22.14	21.90%	0.474	0.578	-

LTE TDD Band 38 (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 Band38	20MHz	QPSK	1 RB	0	Bottom side	0	37850	2580	20.00	19.96	0.93%	1.230	1.241	-
					Bottom side	0	38150	2610	20.00	19.91	2.09%	1.040	1.062	-
				99	Bottom side	0	38000	2595	20.00	19.87	3.04%	1.080	1.113	-
			50 RB	0	Bottom side	0	37850	2580	20.00	19.83	3.99%	1.191	1.239	218
					Bottom side*	0	37850	2580	20.00	19.96	0.93%	1.120	1.130	-
					Bottom side	0	38000	2595	20.00	19.77	5.44%	0.897	0.946	-
				50	Bottom side	0	38150	2610	20.00	19.72	6.66%	0.967	1.031	-

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

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LTE TDD Band 41 (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 Band41	20MHz	QPSK	1 RB	0	Bottom side	14	41055	2636.5	24.00	23.39	15.08%	0.378	0.435	-
			50 RB	0	Back side	14	41055	2636.5	23.00	22.35	16.14%	0.351	0.408	-
			100RB		Left side	14	41055	2636.5	23.00	22.30	17.49%	0.355	0.417	-

LTE TDD Band 41 (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 Band41	20MHz	QPSK	1 RB	0	Bottom side	0	39750	2506	19.00	18.83	3.99%	1.060	1.102	-
					Bottom side	0	40620	2593	19.00	18.65	8.39%	1.020	1.106	-
					Bottom side	0	41490	2680	19.00	18.62	9.14%	0.998	1.089	-
				50	Bottom side	0	41055	2636.5	19.00	18.98	0.46%	1.120	1.125	219
					Bottom side*	0	41055	2636.5	19.00	18.98	0.46%	1.090	1.095	-
				99	Bottom side	0	40185	2549.5	19.00	18.90	2.33%	0.979	1.002	-
			50 RB	0	Bottom side	0	39750	2506	19.00	18.46	13.24%	0.990	1.121	-
				25	Bottom side	0	40620	2593	19.00	18.51	11.94%	0.905	1.013	-
					Bottom side	0	41055	2636.5	19.00	18.85	3.51%	1.043	1.080	-
				50	Bottom side	0	40185	2549.5	19.00	18.76	5.68%	0.977	1.033	-
					Bottom side	0	41490	2680	19.00	18.30	17.49%	0.859	1.009	-
			100 RB		Bottom side	0	39750	2506	19.00	18.46	13.24%	0.854	0.967	-
					Bottom side	0	40185	2549.5	19.00	18.76	5.68%	0.852	0.900	-
					Bottom side	0	40620	2593	19.00	18.54	11.17%	0.857	0.953	-
					Bottom side	0	41055	2636.5	19.00	18.86	3.28%	0.899	0.928	-
					Bottom side	0	41490	2680	19.00	18.34	16.41%	0.761	0.886	-

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

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LTE FDD Band 66 (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 66	20MHz	QPSK	1 RB	99	Bottom side	14	132322	1745	24.00	23.50	12.20%	0.530	0.595	-
			50 RB	50	Bottom side	14	132322	1745	23.00	22.38	15.35%	0.482	0.556	-
			100 RB		Bottom side	14	132572	1770	23.00	22.54	11.17%	0.493	0.548	-

LTE FDD Band 66 (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 Band66	20MHz	QPSK	1 RB	50	Bottom side	0	132072	1720	17.50	17.34	3.75%	1.020	1.058	-
					Bottom side	0	132322	1745	17.50	17.23	6.41%	1.030	1.096	-
				99	Bottom side	0	132572	1770	17.50	17.47	0.69%	1.160	1.168	220
					Bottom side*	0	132572	1770	17.50	17.47	0.69%	1.110	1.118	-
			50 RB	0	Bottom side	0	132572	1770	17.50	17.39	2.57%	1.031	1.057	-
				25	Bottom side	0	132072	1720	17.50	17.19	7.40%	0.903	0.970	-
				50	Bottom side	0	132322	1745	17.50	17.41	2.09%	0.945	0.965	-
			100 RB		Bottom side	0	132072	1720	17.50	17.36	3.28%	0.848	0.876	-
					Bottom side	0	132322	1745	17.50	17.38	2.80%	0.857	0.881	-
					Bottom side	0	132572	1770	17.50	17.45	1.16%	0.907	0.918	-

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

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WLAN Main Antenna

Antenna	Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
									Measured	Reported	
Main	WLAN 802.11b	Bottom sdie	0	6	2437	17.5	17.44	101.39%	0.019	0.019	221
	WLAN 802.11n(40M) 5.2G	Bottom sdie	0	46	5230	16.5	16.48	100.46%	0.031	0.031	222
	WLAN 802.11n(40M) 5.3G	Bottom sdie	0	54	5270	16.5	16.47	100.69%	0.030	0.030	223
	WLAN 802.11ac(80M) 5.6G	Bottom sdie	0	106	5530	13.5	13.35	103.51%	0.015	0.016	-
		Bottom sdie	0	122	5610	16.5	16.23	106.41%	0.061	0.065	-
		Bottom sdie	0	138	5690	16.5	16.48	100.46%	0.070	0.070	224
	WLAN 802.1ac(80M) 5.8G	Bottom sdie	0	155	5775	16.5	16.49	100.23%	0.047	0.047	225

WLAN Aux Antenna

Antenna	Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
									Measured	Reported	
Aux	WLAN 802.11b	Bottom sdie	0	6	2437	17.5	17.49	100.23%	0.013	0.013	226
	Bluetooth(GFSK)	Bottom sdie	0	0	2412	5.1	4.37	118.30%	0.001	0.001	227
	WLAN 802.11n(40M) 5.2G	Bottom sdie	0	46	5230	16.5	16.49	100.23%	0.023	0.023	228
	WLAN 802.11n(40M) 5.3G	Bottom sdie	0	54	5270	16.5	16.47	100.69%	0.024	0.024	229
	WLAN 802.11ac(80M)	Bottom sdie	0	138	5690	16.5	16.48	100.46%	0.043	0.043	230
	WLAN 802.1ac(80M) 5.8G	Bottom sdie	0	155	5775	16.5	16.46	100.93%	0.024	0.024	231

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3. Simultaneous Transmission Analysis

Simultaneous Transmission Scenarios:

NO.	Simultaneous Transmit Configurations	Body
1	UMTS + 2.4GHz WLAN Main / 2.4GHz WLAN Aux / 2.4GHz MIMO	YES
2	UMTS + 5GHz WLAN Main / 5GHz WLAN Aux / 5GHz MIMO	YES
3	UMTS + BT	YES
4	UMTS + 2.4/5GHz WLAN Maiin + BT	YES
5	LTE + 2.4GHz WLAN Main / 2.4GHz WLAN Aux / 2.4GHz MIMO	YES
6	LTE + 5GHz WLAN Main / 5GHz WLAN Aux / 5GHz MIMO	YES
7	LTE + BT	YES
8	LTE + 2.4/5GHz WLAN Main + BT	YES

Note :
1) WWAN and WLAN may transmit simultaneously.
2) Bluetooth and WLAN Aux share the same antenna path.
3) Bluetooth can transmit with WLAN Main simultaneously.

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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.

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3.2 SPLSR evaluation and analysis

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

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

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

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

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

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WCDMA Band II + 2.4GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
1	WCDMA Band II	Bottom side	0	1.193	0.019	0.013	1.225	ΣSAR<1.6, Not required

WCDMA Band IV + 2.4GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
2	WCDMA Band IV	Bottom side	0	1.042	0.019	0.013	1.074	ΣSAR<1.6, Not required

WCDMA Band V + 2.4GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
3	WCDMA Band V	Bottom side	0	1.052	0.019	0.013	1.084	ΣSAR<1.6, Not required

LTE FDD Band 2 + 2.4GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
4	LTE FDD Band2	Bottom side	0	0.728	0.019	0.013	0.760	ΣSAR<1.6, Not required

LTE FDD Band 4 + 2.4GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
5	LTE FDD Band4	Bottom side	0	1.010	0.019	0.013	1.042	ΣSAR<1.6, Not required

LTE FDD Band 5 + 2.4GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
6	LTE FDD Band 5	Bottom side	0	1.015	0.019	0.013	1.047	ΣSAR<1.6, Not required

LTE FDD Band 7 + 2.4GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
7	LTE FDD Band 7	Bottom side	0	1.163	0.019	0.013	1.195	ΣSAR<1.6, Not required

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LTE FDD Band 12 + 2.4GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
8	LTE FDD Band 12	Bottom side	0	0.909	0.019	0.013	0.941	ΣSAR<1.6, Not required

LTE FDD Band 13 + 2.4GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
9	LTE FDD Band 13	Bottom side	0	0.923	0.019	0.013	0.955	Analyzed as below

LTE FDD Band 17 + 2.4GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
10	LTE FDD Band 17	Bottom side	0	0.859	0.019	0.013	0.891	ΣSAR<1.6, Not required

LTE FDD Band 26 + 2.4GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
11	LTE FDD Band 26	Bottom side	0	1.021	0.019	0.013	1.053	ΣSAR<1.6, Not required

LTE FDD Band 30 + 2.4GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
12	LTE FDD Band 30	Bottom side	0	1.171	0.019	0.013	1.203	ΣSAR<1.6, Not required

LTE FDD Band 38 + 2.4GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
13	LTE FDD Band 38	Bottom side	0	1.239	0.019	0.013	1.271	ΣSAR<1.6, Not required

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LTE TDD Band 41 + 2.4GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
14	LTE FDD Band 41	Bottom side	0	1.125	0.019	0.013	1.157	ΣSAR<1.6, Not required

LTE FDD Band 66 + 2.4GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
15	LTE FDD Band 66	Bottom side	0	1.168	0.019	0.013	1.200	ΣSAR<1.6, Not required

WCDMA Band II + 5GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
16	WCDMA Band II	Bottom side	0	1.193	0.070	0.043	1.306	ΣSAR<1.6, Not required

WCDMA Band IV + 5GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
17	WCDMA Band IV	Bottom side	0	1.042	0.070	0.043	1.155	ΣSAR<1.6, Not required

WCDMA Band V + 5GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
18	WCDMA Band V	Bottom side	0	1.052	0.070	0.043	1.165	ΣSAR<1.6, Not required

LTE FDD Band 2 + 5GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
19	LTE FDD Band 2	Bottom side	0	0.728	0.070	0.043	0.841	ΣSAR<1.6, Not required

LTE FDD Band 4 + 5GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
20	LTE FDD Band 4	Bottom side	0	1.010	0.070	0.043	1.123	ΣSAR<1.6, Not required

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LTE FDD Band 5 + 5GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
21	LTE FDD Band 5	Bottom side	0	1.015	0.070	0.043	1.128	ΣSAR<1.6, Not required

LTE FDD Band 7 + 5GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
22	LTE FDD Band 7	Bottom side	0	1.163	0.070	0.043	1.276	ΣSAR<1.6, Not required

LTE FDD Band 12 + 5GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
23	LTE FDD Band 12	Bottom side	0	0.909	0.070	0.043	1.022	ΣSAR<1.6, Not required

LTE FDD Band 13 + 5GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
24	LTE FDD Band 13	Bottom side	0	0.923	0.070	0.043	1.036	ΣSAR<1.6, Not required

LTE FDD Band 17 + 5GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
25	LTE FDD Band 17	Bottom side	0	0.859	0.070	0.043	0.972	ΣSAR<1.6, Not required

LTE FDD Band 26 + 5GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
26	LTE FDD Band 26	Bottom side	0	1.021	0.070	0.043	1.134	ΣSAR<1.6, Not required

LTE FDD Band 30 + 5GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
27	LTE FDD Band 30	Bottom side	0	1.171	0.070	0.043	1.284	ΣSAR<1.6, Not required

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LTE FDD Band 38 + 5GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
28	LTE FDD Band 38	Bottom side	0	1.239	0.070	0.043	1.352	ΣSAR<1.6, Not required

LTE TDD Band 41 + 5GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
29	LTE FDD Band 41	Bottom side	0	1.125	0.070	0.043	1.238	ΣSAR<1.6, Not required

LTE FDD Band 66 + 5GHz WLAN MIMO

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	Max. WLAN Aux	SAR Sum	SPLSR
30	LTE FDD Band 66	Bottom side	0	1.168	0.070	0.043	1.281	ΣSAR<1.6, Not required

WCDMA Band II + 2.4GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
31	WCDMA Band II	Bottom side	0	1.193	0.019	0.001	1.213	ΣSAR<1.6, Not required

WCDMA Band IV + 2.4GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
32	WCDMA Band IV	Bottom side	0	1.042	0.019	0.001	1.062	ΣSAR<1.6, Not required

WCDMA Band V + 2.4GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
33	WCDMA Band V	Bottom side	0	1.052	0.019	0.001	1.072	ΣSAR<1.6, Not required

LTE FDD Band 2 + 2.4GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
34	LTE FDD Band 2	Bottom side	0	0.728	0.019	0.001	0.748	ΣSAR<1.6, Not required

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LTE FDD Band 4 + 2.4GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
35	LTE FDD Band 4	Bottom side	0	1.010	0.019	0.001	1.030	ΣSAR<1.6, Not required

LTE FDD Band 5 + 2.4GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
36	LTE FDD Band 5	Bottom side	0	1.015	0.019	0.001	1.035	ΣSAR<1.6, Not required

LTE FDD Band 7 + 2.4GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
37	LTE FDD Band 7	Bottom side	0	1.163	0.019	0.001	1.183	ΣSAR<1.6, Not required

LTE FDD Band 12 + 2.4GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
38	LTE FDD Band 12	Bottom side	0	0.909	0.019	0.001	0.929	ΣSAR<1.6, Not required

LTE FDD Band 13 + BT + 2.4GHz WLAN Aux

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
39	LTE FDD Band 13	Bottom side	0	0.923	0.019	0.001	0.943	ΣSAR<1.6, Not required

LTE FDD Band 17 + 2.4GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
40	LTE FDD Band 17	Bottom side	0	0.859	0.019	0.001	0.879	ΣSAR<1.6, Not required

LTE FDD Band 26 + 2.4GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
41	LTE FDD Band 26	Bottom side	0	1.021	0.019	0.001	1.041	ΣSAR<1.6, Not required

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LTE FDD Band 30 + 2.4GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
42	LTE FDD Band 30	Bottom side	0	1.171	0.019	0.001	1.191	ΣSAR<1.6, Not required

LTE FDD Band 38 + 2.4GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
43	LTE FDD Band 38	Bottom side	0	1.239	0.019	0.001	1.259	ΣSAR<1.6, Not required

LTE FDD Band 41 + 2.4GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
44	LTE FDD Band 41	Bottom side	0	1.125	0.019	0.001	1.145	ΣSAR<1.6, Not required

LTE FDD Band 66 + 2.4GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
45	LTE FDD Band 66	Bottom side	0	1.168	0.019	0.001	1.188	ΣSAR<1.6, Not required

WCDMA Band II + 5GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
46	WCDMA Band II	Bottom side	0	1.193	0.070	0.001	1.264	ΣSAR<1.6, Not required

WCDMA Band IV + 5GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
47	WCDMA Band IV	Bottom side	0	1.042	0.070	0.001	1.113	ΣSAR<1.6, Not required

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WCDMA Band V + 5GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
48	WCDMA Band V	Bottom side	0	1.052	0.070	0.001	1.123	ΣSAR<1.6, Not required

LTE FDD Band 2 + 5GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
49	LTE FDD Band 2	Bottom side	0	0.728	0.070	0.001	0.799	ΣSAR<1.6, Not required

LTE FDD Band 4 + 5GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
50	LTE FDD Band 4	Bottom side	0	1.010	0.070	0.001	1.081	ΣSAR<1.6, Not required

LTE FDD Band 5 + 5GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
51	LTE FDD Band 5	Bottom side	0	1.015	0.070	0.001	1.086	ΣSAR<1.6, Not required

LTE FDD Band 7 + 5GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
52	LTE FDD Band 7	Bottom side	0	1.163	0.070	0.001	1.234	ΣSAR<1.6, Not required

LTE FDD Band 12 + 5GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
53	LTE FDD Band 12	Bottom side	0	0.909	0.070	0.001	0.980	ΣSAR<1.6, Not required

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LTE FDD Band 13 + 5GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
54	LTE FDD Band 13	Bottom side	0	0.923	0.070	0.001	0.994	ΣSAR<1.6, Not required

LTE FDD Band 17 + 5GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
55	LTE FDD Band 17	Bottom side	0	0.859	0.070	0.001	0.930	ΣSAR<1.6, Not required

LTE FDD Band 26 + 5GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
56	LTE FDD Band 26	Bottom side	0	1.021	0.070	0.001	1.092	ΣSAR<1.6, Not required

LTE FDD Band 30 + 5GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
57	LTE FDD Band 30	Bottom side	0	1.171	0.070	0.001	1.242	ΣSAR<1.6, Not required

LTE FDD Band 38 + 5GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
58	LTE FDD Band 38	Bottom side	0	1.239	0.070	0.001	1.310	ΣSAR<1.6, Not required

LTE FDD Band 41 + 5GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
59	LTE FDD Band 41	Bottom side	0	1.125	0.070	0.001	1.196	ΣSAR<1.6, Not required

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LTE FDD Band 66 + 5GHz WLAN Main + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
60	LTE FDD Band 66	Bottom side	0	1.168	0.070	0.001	1.239	ΣSAR<1.6, Not required

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because either the sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is ≦ 0.04 for all circumstances that require SPLSR calculation.

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4. Instruments List

Manufacturer	Device	Type	Serial number	Date of last calibration	Date of next calibration
Schmid & Partner Engineering AG	Dosimetric E-Field Probe	EX3DV4	7351	Dec.21,2017	Dec.20,2018
Schmid & Partner Engineering AG	System Validation Dipole	D750V2	1015	Aug.21,2017	Aug.20,2018
		D835V2	4d063	Aug.21,2017	Aug.20,2018
		D1750V2	1008	Aug.21,2017	Aug.20,2018
		D1900V2	5d173	May.31,2017	May.30,2018
		D2300V2	1023	Aug.17,2017	Aug.16,2018
		D2450V2	727	Apr.21,2017	Apr.20,2018
		D2600V2	1005	Jan.25,2017	Jan.24,2018
		D5GHzV2	1023	Jan.20,2017	Jan.19,2018
Schmid & Partner Engineering AG	Data acquisition Electronics	DAE4	547	Mar.22,2017	Mar.21,2017
Schmid & Partner Engineering AG	Software	DASY 52 V52.8.8	N/A	Calibration not required	Calibration not required
Schmid & Partner Engineering AG	Phantom	ELI	N/A	Calibration not required	Calibration not required
Agilent	Network Analyzer	E5071C	MY46107530	Jan.20,2017	Jan.19,2018
Agilent	Dielectric Probe Kit	85070E	MY44300677	Calibration not required	Calibration not required

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Manufacturer	Device	Type	Serial number	Date of last calibration	Date of next calibration
Agilent	Dual-directional coupler	772D	MY52180142	Apr.13,2017	Apr.12,2018
		778D	MY52180302	Apr.13,2017	Apr.12,2018
Agilent	RF Signal Generator	N5181A	MY50144143	Mar.01,2017	Feb.28,2018
Agilent	Power Meter	E4417A	MY52240003	Dec.21,2017	Dec.20,2018
Agilent	Power Sensor	E9301H	MY52200003	Dec.21,2017	Dec.20,2018
			MY52200004	Dec.21,2017	Dec.20,2018
TECPEL	Digital thermometer	DTM-303A	TP130075	Mar.09,2017	Mar.08,2018
Anritsu	Radio Communication Test	E5515C	GB44051912	Aug.23,2017	Aug.22,2018
R&S	Radio Communication Test	CMW 500	125470	Aug.22,2017	Aug.21,2018

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5. Measurements

Date: 2018/1/10

WCDMA Band II_Body_Bottom side_CH 9262_0mm

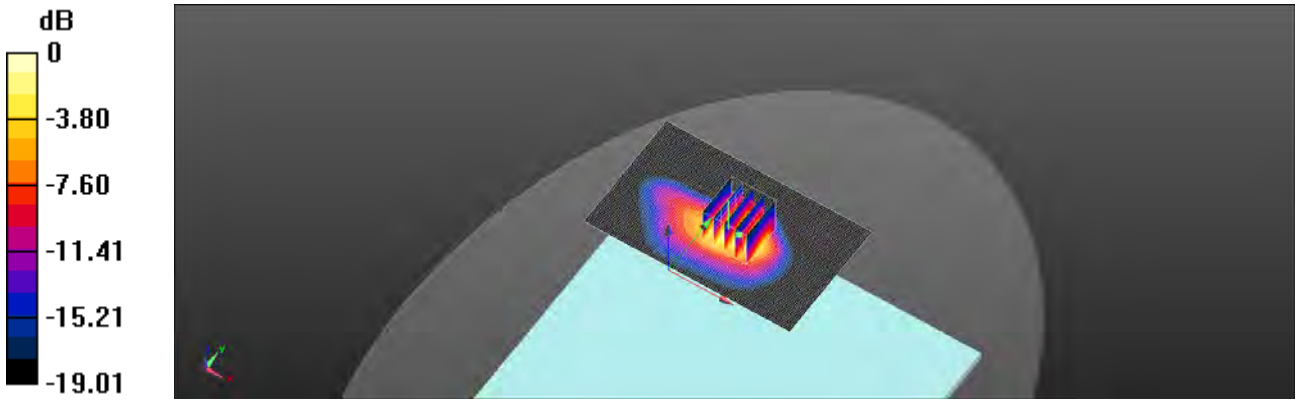
Communication System: WCDMA; Frequency: 1852.4 MHz; Duty Cycle: 1:1
Medium parameters used: f = 1852.4 MHz; σ = 1.499 S/m; ε_r = 53.283; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.8°C; Liquid temperature: 21.4°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7351; ConvF(8.22, 8.22, 8.22); Calibrated: 2017/12/21;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2017/3/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (101x61x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 2.06 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 0.3730 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 2.55 W/kg
SAR(1 g) = 1.19 W/kg; SAR(10 g) = 0.532 W/kg
Maximum value of SAR (measured) = 1.59 W/kg



0 dB = 1.59 W/kg = 2.03 dBW/kg

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Date: 2018/1/9

WCDMA Band IV_Body_Bottom side_CH 1513_0mm

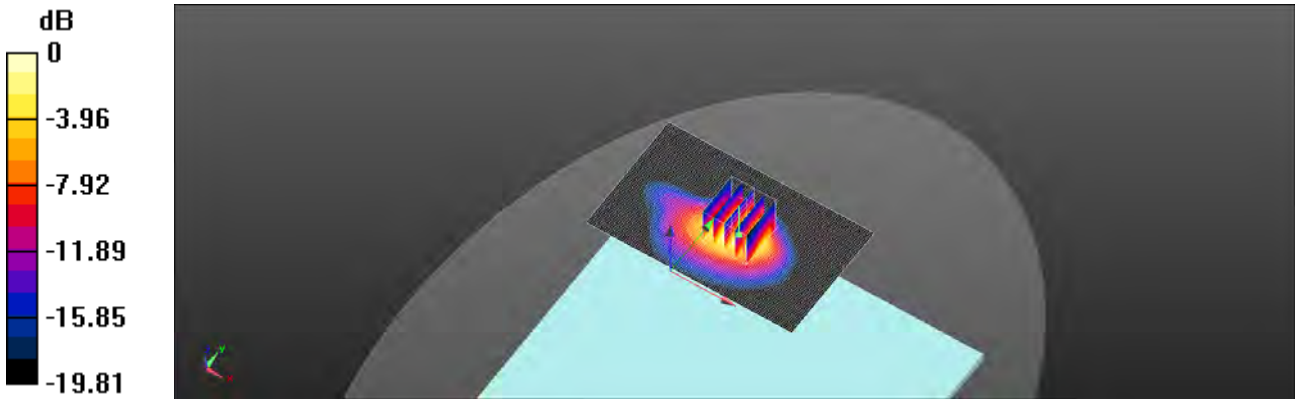
Communication System: WCDMA; Frequency: 1752.6 MHz; Duty Cycle: 1:1
Medium parameters used: f = 1753 MHz; σ = 1.451 S/m; ε_r = 53.546; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.1°C; Liquid temperature: 21.5°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7351; ConvF(8.58, 8.58, 8.58); Calibrated: 2017/12/21;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2017/3/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (101x61x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 1.80 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 0.5270 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 2.16 W/kg
SAR(1 g) = 1.04 W/kg; SAR(10 g) = 0.481 W/kg
Maximum value of SAR (measured) = 1.46 W/kg



0 dB = 1.46 W/kg = 1.64 dBW/kg

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Date: 2018/1/8

WCDMA Band V_Body_Bottom side_CH 4132_0mm

Communication System: WCDMA; Frequency: 826.4 MHz; Duty Cycle: 1:1
Medium parameters used: f = 826.4 MHz; σ = 1.005 S/m; ε_r = 55.174; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.1°C; Liquid temperature: 21.8°C

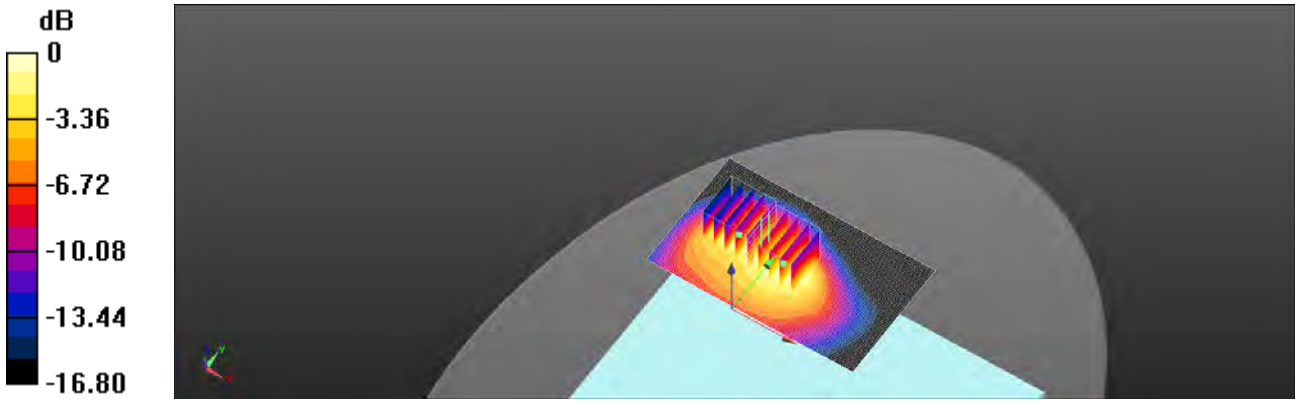
DASY5 Configuration:

- Probe: EX3DV4 - SN7351; ConvF(10.39, 10.39, 10.39); Calibrated: 2017/12/21;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2017/3/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (101x61x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 1.38 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 0.7650 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 1.85 W/kg
SAR(1 g) = 1.05 W/kg; SAR(10 g) = 0.651 W/kg
Maximum value of SAR (measured) = 1.48 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 0.7650 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 1.83 W/kg
SAR(1 g) = 1.02 W/kg; SAR(10 g) = 0.529 W/kg
Maximum value of SAR (measured) = 1.33 W/kg



0 dB = 1.33 W/kg = 1.24 dBW/kg

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Date: 2018/1/10

LTE Band 2 (20MHz)_Body_Bottom side_CH 18700_QPSK_1-0_0mm

Communication System: WCDMA; Frequency: 1860 MHz; Duty Cycle: 1:1

Medium parameters used: f = 1860 MHz; σ = 1.502 S/m; ε_r = 53.198; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7351; ConvF(8.22, 8.22, 8.22); Calibrated: 2017/12/21;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2017/3/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (101x61x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 1.58 W/kg

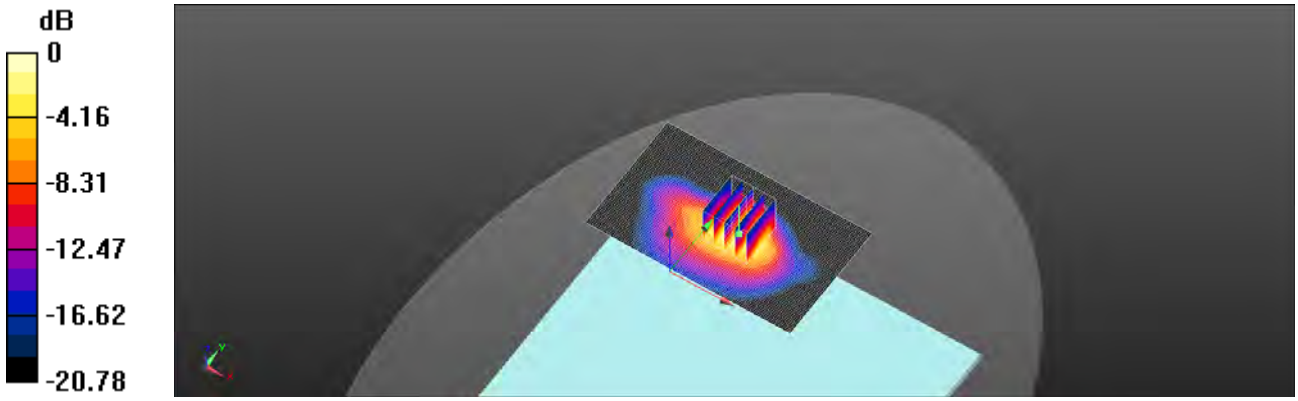
Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 0.4260 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 2.48 W/kg

SAR(1 g) = 1.1 W/kg; SAR(10 g) = 0.478 W/kg

Maximum value of SAR (measured) = 1.53 W/kg



0 dB = 1.53 W/kg = 1.84 dBW/kg

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Date: 2018/1/9

LTE Band 4 (20MHz)_Body_Bottom side_CH 20175_QPSK_1-0_0mm

Communication System: LTE; Frequency: 1732.5 MHz; Duty Cycle: 1:1

Medium parameters used: f = 1732.5 MHz; σ = 1.448 S/m; ε_r = 53.59; ρ = 1000 kg/m^3

Phantom section: Flat Section

Ambient temperature: 22.1°C; Liquid temperature: 21.5°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7351; ConvF(8.58, 8.58, 8.58); Calibrated: 2017/12/21;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2017/3/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (101x61x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 1.69 W/kg

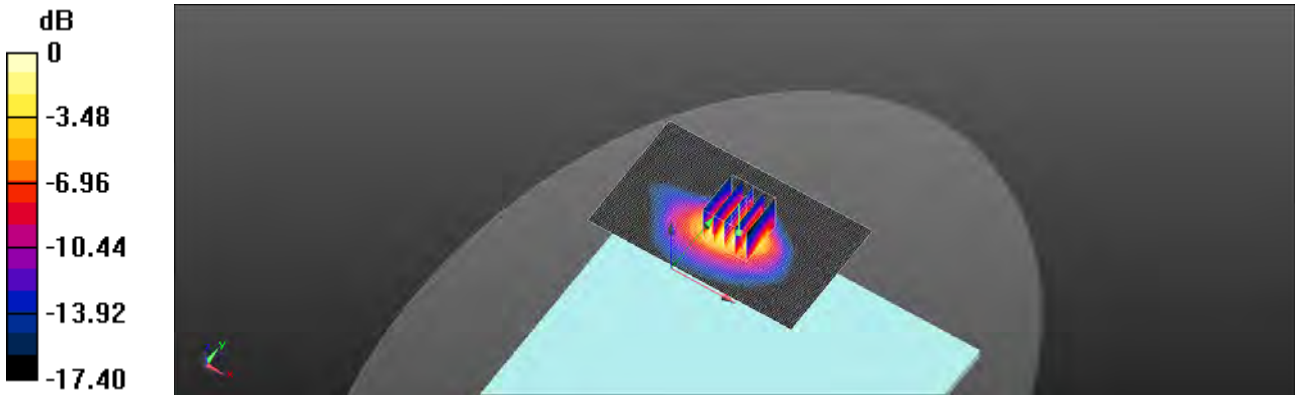
Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 1.419 V/m; Power Drift = 0.17 dB

Peak SAR (extrapolated) = 1.97 W/kg

SAR(1 g) = 0.962 W/kg; SAR(10 g) = 0.455 W/kg

Maximum value of SAR (measured) = 1.34 W/kg



0 dB = 1.34 W/kg = 1.28 dBW/kg

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Date: 2018/1/8

LTE Band 5 (10MHz)_Body_Bottom side_CH 20450_QPSK_1-0_0mm
Communication System: LTE; Frequency: 829 MHz; Duty Cycle: 1:1
Medium parameters used: f = 829 MHz; σ = 1.006 S/m; ε_r = 55.093; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.1°C; Liquid temperature: 21.8°C

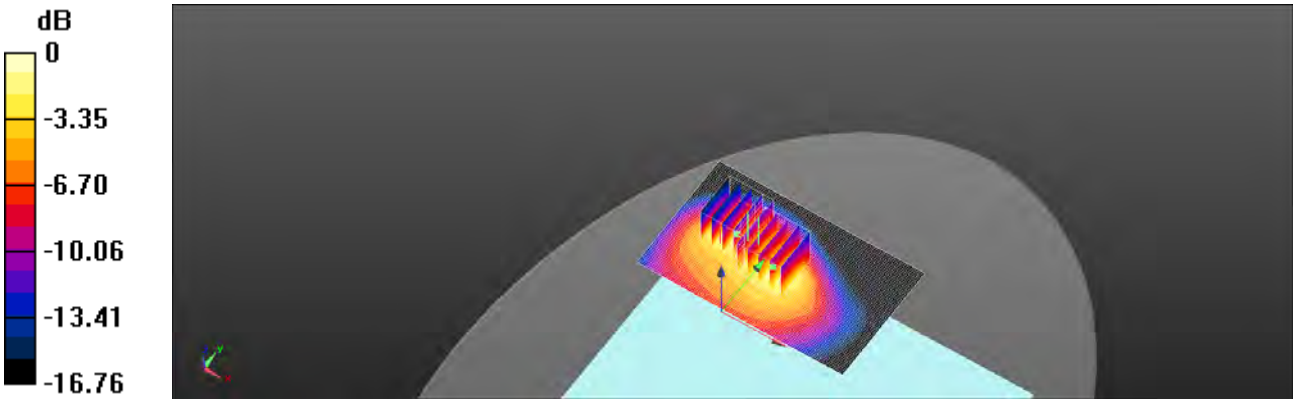
DASY5 Configuration:

- Probe: EX3DV4 - SN7351; ConvF(10.39, 10.39, 10.39); Calibrated: 2017/12/21;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2017/3/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (101x61x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 1.28 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 0.4140 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 1.77 W/kg
SAR(1 g) = 1.01 W/kg; SAR(10 g) = 0.623 W/kg
Maximum value of SAR (measured) = 1.43 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 0.4140 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 1.82 W/kg
SAR(1 g) = 1 W/kg; SAR(10 g) = 0.536 W/kg
Maximum value of SAR (measured) = 1.48 W/kg



0 dB = 1.48 W/kg = 1.71 dBW/kg

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Date: 2018/1/15

LTE Band 7 (20MHz)_Body_Bottom side_CH 21100_QPSK_1-0_0mm

Communication System: LTE; Frequency: 2535 MHz; Duty Cycle: 1:1
Medium parameters used: f = 2535 MHz; σ = 2.044 S/m; ε_r = 52.53; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.6°C; Liquid temperature: 21.7°C

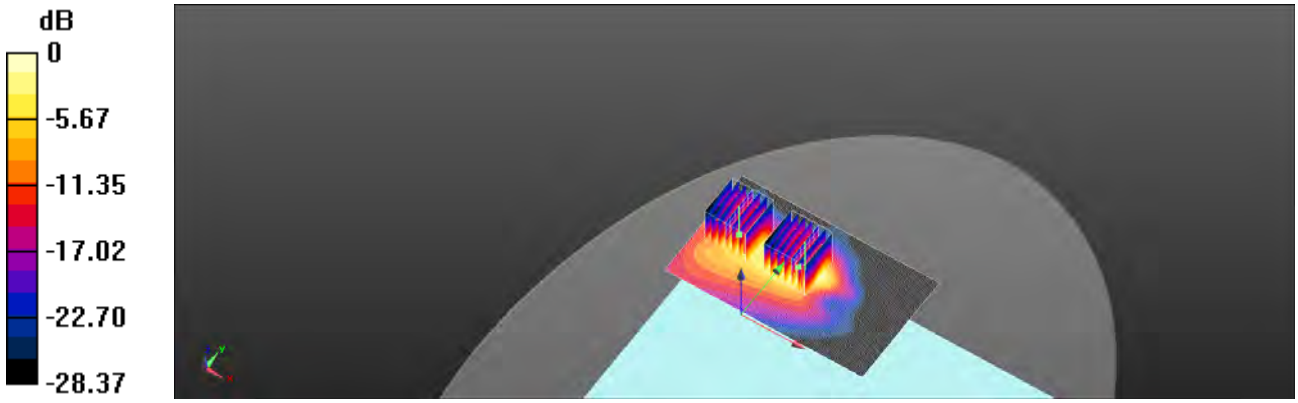
DASY5 Configuration:

- Probe: EX3DV4 - SN7351; ConvF(7.56, 7.56, 7.56); Calibrated: 2017/12/21;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2017/3/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (121x71x1): Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 2.21 W/kg

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0.4260 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 2.74 W/kg
SAR(1 g) = 1.12 W/kg; SAR(10 g) = 0.478 W/kg
Maximum value of SAR (measured) = 1.75 W/kg

Configuration/Body/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0.426 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 3.06 W/kg
SAR(1 g) = 1.16 W/kg; SAR(10 g) = 0.432 W/kg
Maximum value of SAR (measured) = 2.00 W/kg



0 dB = 2.00 W/kg = 3.00 dBW/kg

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Date: 2018/1/5

LTE Band 12 (10MHz)_Body_Bottom side_CH 23130_QPSK_1-0_0mm

Communication System: LTE; Frequency: 711 MHz; Duty Cycle: 1:1
Medium parameters used: f = 711 MHz; σ = 0.937 S/m; ε_r = 56.216; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.2°C; Liquid temperature: 21.1°C

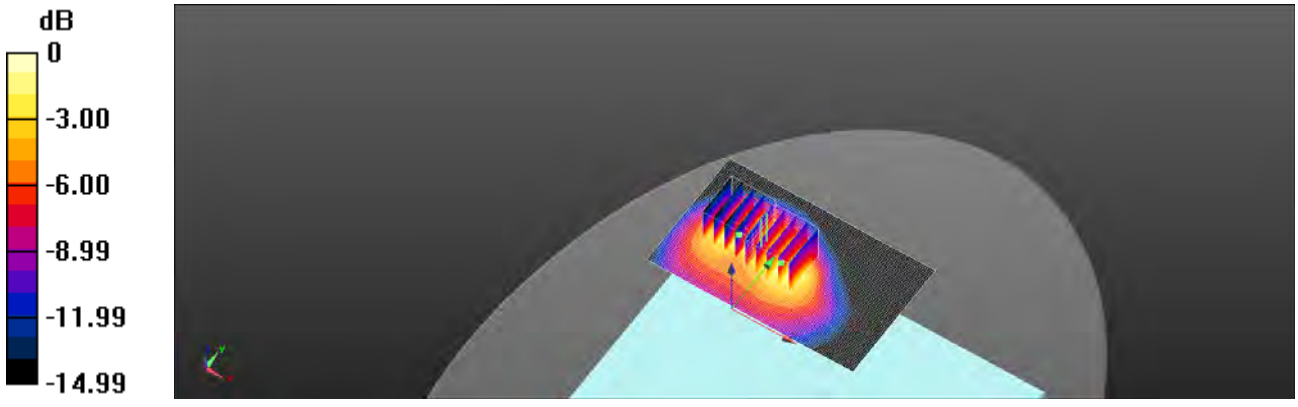
DASY5 Configuration:

- Probe: EX3DV4 - SN7351; ConvF(10.81, 10.81, 10.81); Calibrated: 2017/12/21;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2017/3/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (101x61x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 1.07 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.158 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 1.57 W/kg
SAR(1 g) = 0.858 W/kg; SAR(10 g) = 0.497 W/kg
Maximum value of SAR (measured) = 1.23 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.158 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 1.61 W/kg
SAR(1 g) = 0.837 W/kg; SAR(10 g) = 0.430 W/kg
Maximum value of SAR (measured) = 1.12 W/kg



0 dB = 1.12 W/kg = 0.51 dBW/kg

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Date: 2018/1/5

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

Communication System: LTE; Frequency: 782 MHz; Duty Cycle: 1:1
Medium parameters used: f = 782 MHz; σ = 0.976 S/m; ε_r = 55.52; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.2°C; Liquid temperature: 21.1°C

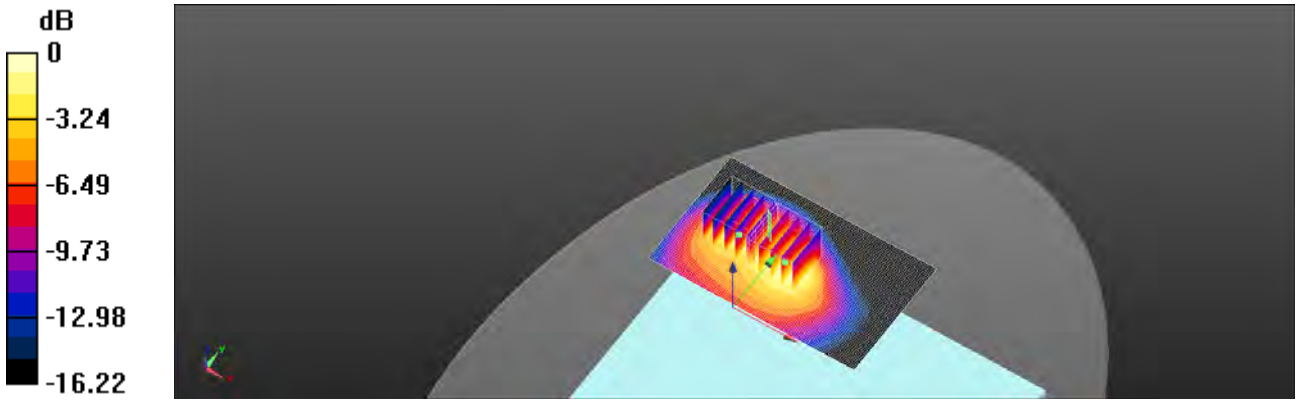
DASY5 Configuration:

- Probe: EX3DV4 - SN7351; ConvF(10.81, 10.81, 10.81); Calibrated: 2017/12/21;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2017/3/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (101x61x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 1.23 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 64.26 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 1.59 W/kg
SAR(1 g) = 0.903 W/kg; SAR(10 g) = 0.558 W/kg
Maximum value of SAR (measured) = 1.26 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 64.26 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 1.61 W/kg
SAR(1 g) = 0.883 W/kg; SAR(10 g) = 0.455 W/kg
Maximum value of SAR (measured) = 1.19 W/kg



0 dB = 1.19 W/kg = 0.76 dBW/kg

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Date: 2018/1/5

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

Communication System: LTE; Frequency: 709 MHz; Duty Cycle: 1:1
Medium parameters used: f = 709 MHz; σ = 0.938 S/m; ε_r = 56.226; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.2°C; Liquid temperature: 21.1°C

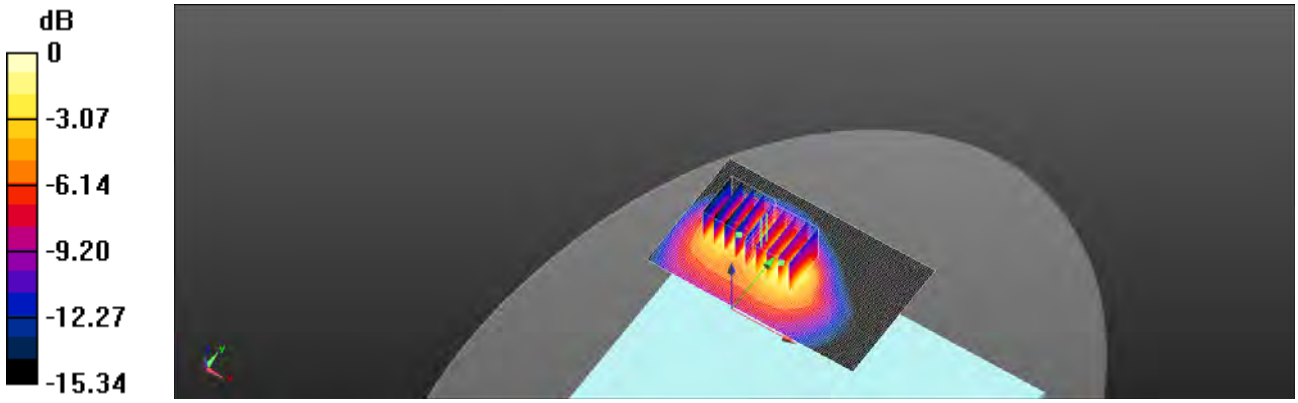
DASY5 Configuration:

- Probe: EX3DV4 - SN7351; ConvF(10.81, 10.81, 10.81); Calibrated: 2017/12/21;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2017/3/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (101x61x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 1.03 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.230 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.52 W/kg
SAR(1 g) = 0.828 W/kg; SAR(10 g) = 0.476 W/kg
Maximum value of SAR (measured) = 1.20 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.230 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.52 W/kg
SAR(1 g) = 0.809 W/kg; SAR(10 g) = 0.414 W/kg
Maximum value of SAR (measured) = 1.07 W/kg



0 dB = 1.07 W/kg = 0.30 dBW/kg

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Date: 2018/1/8

LTE Band 26 (15MHz)_Body_Bottom side_CH 26865_QPSK_36-0_0mm

Communication System: LTE; Frequency: 831.5 MHz; Duty Cycle: 1:1
Medium parameters used: f = 831.5 MHz; σ = 1.01 S/m; ε_r = 55.084; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.1°C; Liquid temperature: 21.8°C

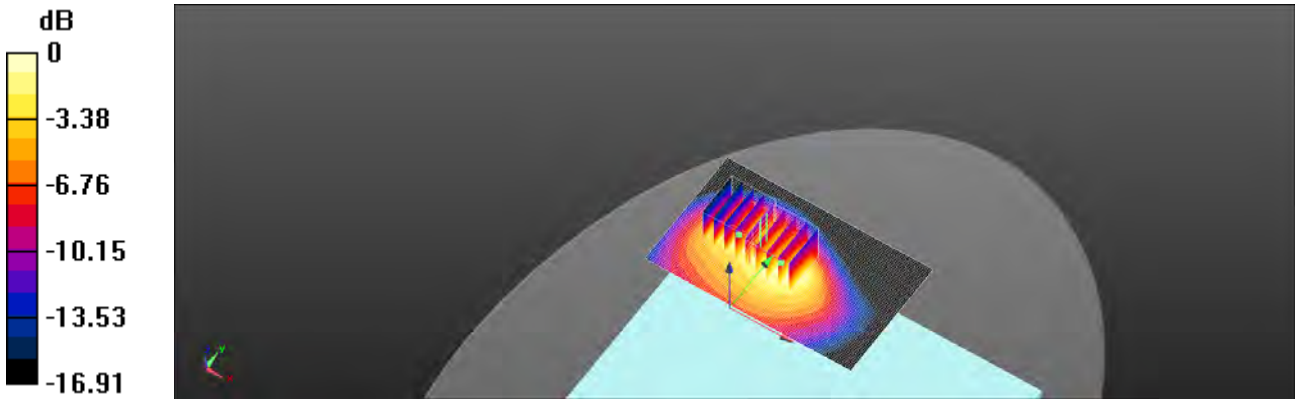
DASY5 Configuration:

- Probe: EX3DV4 - SN7351; ConvF(10.39, 10.39, 10.39); Calibrated: 2017/12/21;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2017/3/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (101x61x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 1.36 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.71 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 1.69 W/kg
SAR(1 g) = 0.977 W/kg; SAR(10 g) = 0.611 W/kg
Maximum value of SAR (measured) = 1.33 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.71 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 1.69 W/kg
SAR(1 g) = 0.932 W/kg; SAR(10 g) = 0.485 W/kg
Maximum value of SAR (measured) = 1.28 W/kg



0 dB = 1.28 W/kg = 1.07 dBW/kg

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Date: 2018/1/11

LTE Band 30 (10MHz)_Body_Bottom side_CH 27710_QPSK_50-0_0mm

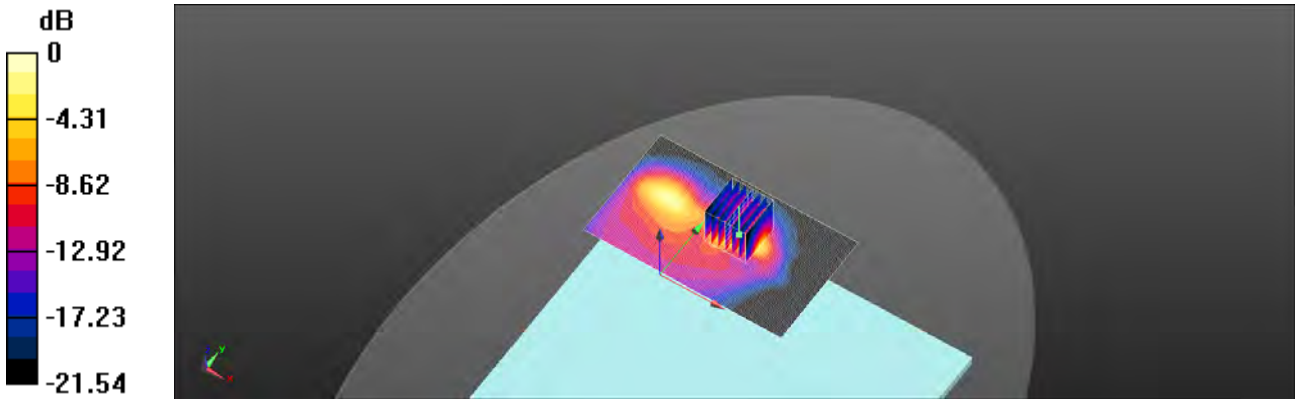
Communication System: LTE; Frequency: 2310 MHz; Duty Cycle: 1:1
Medium parameters used: f = 2310 MHz; σ = 1.763 S/m; ε_r = 53.402; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.3°C; Liquid temperature: 21.6°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7351; ConvF(7.98, 7.98, 7.98); Calibrated: 2017/12/21;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2017/3/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (121x71x1): Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 2.60 W/kg

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.470 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 2.82 W/kg
SAR(1 g) = 1.16 W/kg; SAR(10 g) = 0.443 W/kg
Maximum value of SAR (measured) = 1.95 W/kg



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

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Date: 2018/1/15

LTE Band 38 (20MHz)_Body_Bottom side_CH 37850_QPSK_1-0_0mm

Communication System: LTE; Frequency: 2580 MHz; Duty Cycle: 1:1
Medium parameters used: f = 2580 MHz; σ = 2.104 S/m; ε_r = 52.286; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.6°C; Liquid temperature: 21.7°C

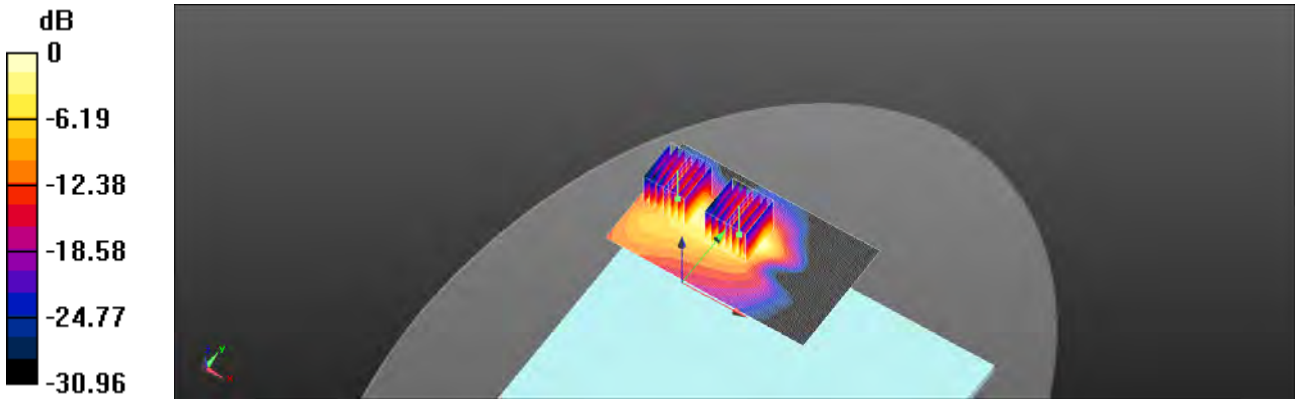
DASY5 Configuration:

- Probe: EX3DV4 - SN7351; ConvF(7.56, 7.56, 7.56); Calibrated: 2017/12/21;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2017/3/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (121x71x1): Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 2.14 W/kg

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0.4490 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 3.09 W/kg
SAR(1 g) = 1.23 W/kg; SAR(10 g) = 0.459 W/kg
Maximum value of SAR (measured) = 2.08 W/kg

Configuration/Body/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0.4490 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 2.58 W/kg
SAR(1 g) = 1.09 W/kg; SAR(10 g) = 0.454 W/kg
Maximum value of SAR (measured) = 1.69 W/kg



0 dB = 1.69 W/kg = 2.28 dBW/kg

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Date: 2018/1/15

LTE Band 41 (20MHz)_Body_Bottom side_CH 41055_QPSK_1-50_0mm

Communication System: LTE; Frequency: 2636.5 MHz; Duty Cycle: 1:0.633
Medium parameters used: f = 2636.5 MHz; σ = 2.18 S/m; ε_r = 52.045; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.6°C; Liquid temperature: 21.7°C

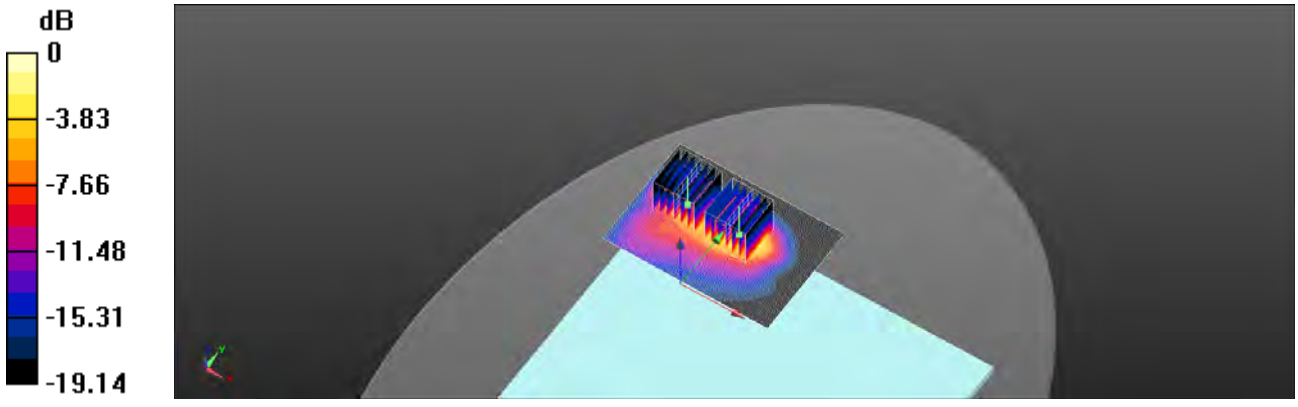
DASY5 Configuration:

- Probe: EX3DV4 - SN7351; ConvF(7.56, 7.56, 7.56); Calibrated: 2017/12/21;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2017/3/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (101x71x1): Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 1.51 W/kg

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.483 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 2.80 W/kg
SAR(1 g) = 1.05 W/kg; SAR(10 g) = 0.384 W/kg
Maximum value of SAR (measured) = 1.82 W/kg

Configuration/Body/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.483 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 2.86 W/kg
SAR(1 g) = 1.12 W/kg; SAR(10 g) = 0.454 W/kg
Maximum value of SAR (measured) = 1.77 W/kg



0 dB = 1.77 W/kg = 2.49 dBW/kg

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Date: 2018/1/9

LTE Band 66 (20MHz)_Body_Bottom side_CH 132572_QPSK_1-99_0mm

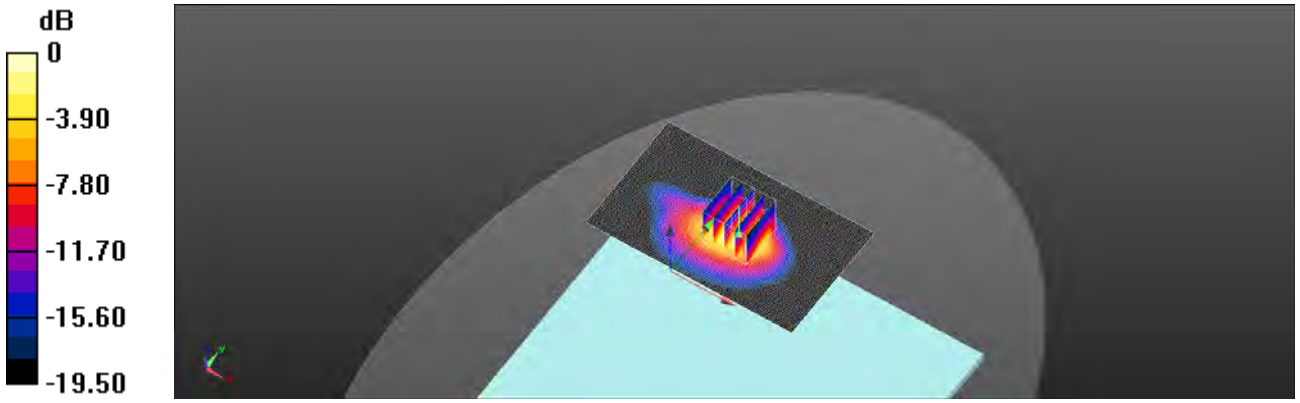
Communication System: LTE; Frequency: 1770 MHz; Duty Cycle: 1:1
Medium parameters used: f = 1770 MHz; σ = 1.462 S/m; ε_r = 53.521; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.1°C; Liquid temperature: 21.5°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7351; ConvF(8.58, 8.58, 8.58); Calibrated: 2017/12/21;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2017/3/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (101x61x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 2.02 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 0.2580 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 2.41 W/kg
SAR(1 g) = 1.16 W/kg; SAR(10 g) = 0.540 W/kg
Maximum value of SAR (measured) = 1.63 W/kg



0 dB = 1.63 W/kg = 2.12 dBW/kg

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Date: 2018/1/12

WLAN 802.11b_Body_Bottom side_CH 6_Main_0mm

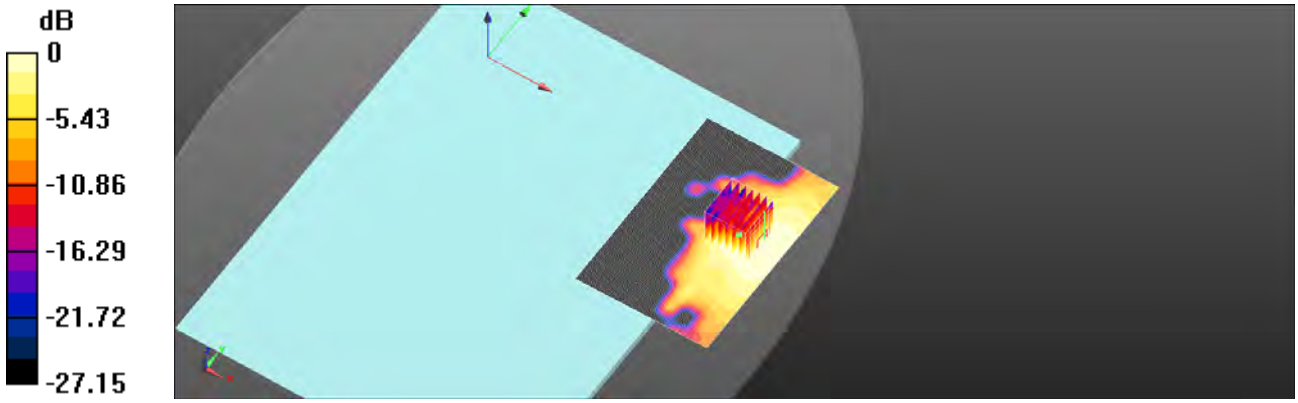
Communication System: WLAN(2.45G); Frequency: 2437 MHz; Duty Cycle: 1:1
Medium parameters used: f = 2437 MHz; σ = 1.915 S/m; ε_r = 52.874; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.5°C; Liquid temperature: 21.8°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7351; ConvF(7.82, 7.82, 7.82); Calibrated: 2017/12/21;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2017/3/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (81x121x1): Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 0.0274 W/kg

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0.3280 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.0400 W/kg
SAR(1 g) = 0.019 W/kg; SAR(10 g) = 0.00997 W/kg
Maximum value of SAR (measured) = 0.0287 W/kg



0 dB = 0.0287 W/kg = -15.42 dBW/kg

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Date: 2018/1/16

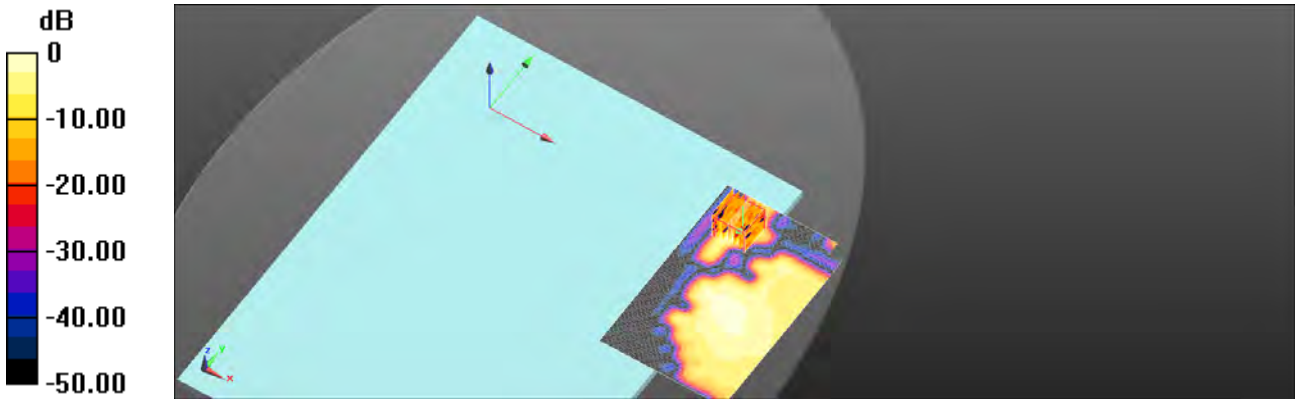
WLAN 802.11n(40M) 5.2G_Body_Bottom side_CH 46_Main_0mm
Communication System: WLAN(5G); Frequency: 5230 MHz; Duty Cycle: 1:1
Medium parameters used: f = 5230 MHz; σ = 5.19 S/m; ε_r = 49.559; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.1°C; Liquid temperature: 21.8°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7351; ConvF(4.6, 4.6, 4.6); Calibrated: 2017/12/21;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2017/3/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (91x141x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 0.194 W/kg

Configuration/Body/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0.2010 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 0.143 W/kg
SAR(1 g) = 0.031 W/kg; SAR(10 g) = 0.00703 W/kg
Maximum value of SAR (measured) = 0.102 W/kg



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

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Date: 2018/1/17

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

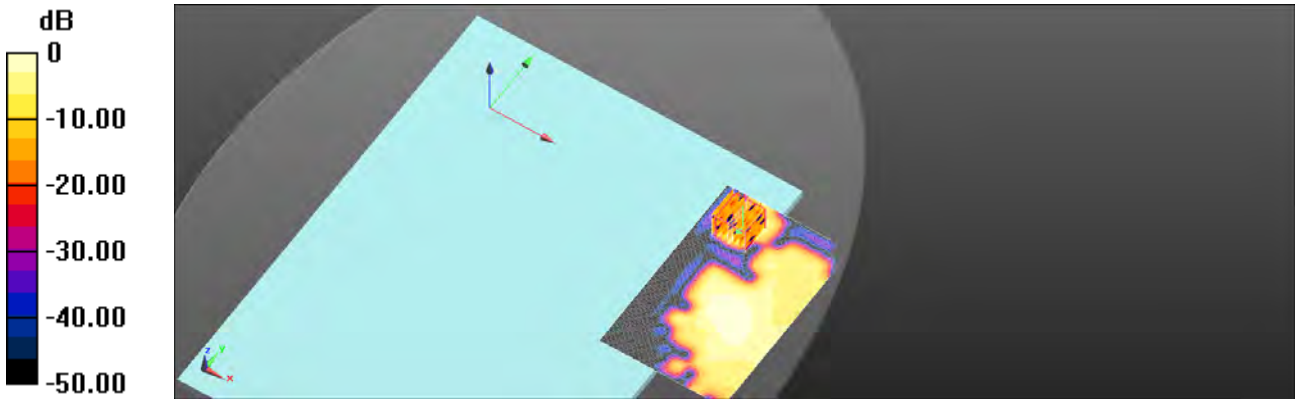
Communication System: WLAN(5G); Frequency: 5270 MHz; Duty Cycle: 1:1
Medium parameters used: f = 5270 MHz; σ = 5.271 S/m; ε_r = 49.46; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.4°C; Liquid temperature: 21.2°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7351; ConvF(4.56, 4.56, 4.56); Calibrated: 2017/12/21;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2017/3/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (91x141x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 0.181 W/kg

Configuration/Body/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0.4810 V/m; Power Drift = -0.18 dB
Peak SAR (extrapolated) = 0.182 W/kg
SAR(1 g) = 0.030 W/kg; SAR(10 g) = 0.00645 W/kg
Maximum value of SAR (measured) = 0.0962 W/kg



0 dB = 0.0962 W/kg = -10.17 dBW/kg

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Date: 2018/1/18

WLAN 802.11ac(80M) 5.6G_Body_Bottom side_CH 138_Main_0mm

Communication System: WLAN(5G); Frequency: 5690 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5690 MHz; σ = 5.853 S/m; ε_r = 48.183; ρ = 1000 kg/m^3

Phantom section: Flat Section

Ambient temperature: 22.1°C; Liquid temperature: 21.3°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7351; ConvF(3.98, 3.98, 3.98); Calibrated: 2017/12/21;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2017/3/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (91x141x1): Interpolated grid: dx=10 mm, dy=10 mm

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

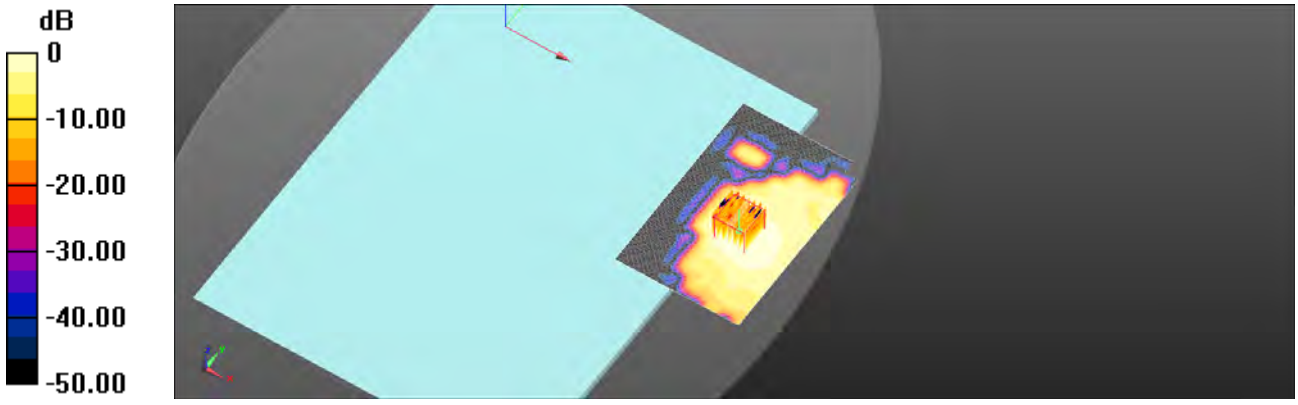
Configuration/Body/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 0.2520 V/m; Power Drift = 0.12 dB

Peak SAR (extrapolated) = 0.431 W/kg

SAR(1 g) = 0.070 W/kg; SAR(10 g) = 0.028 W/kg

Maximum value of SAR (measured) = 0.124 W/kg



0 dB = 0.124 W/kg = -9.05 dBW/kg

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Date: 2018/1/19

WLAN 802.11ac(80M) 5.8G_Body_Bottom side_CH 155_Main_0mm

Communication System: WLAN(5G); Frequency: 5775 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5775 MHz; σ = 6.024 S/m; ε_r = 48.041; ρ = 1000 kg/m^3

Phantom section: Flat Section

Ambient temperature: 22.7°C; Liquid temperature: 21.8°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7351; ConvF(4.21, 4.21, 4.21); Calibrated: 2017/12/21;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2017/3/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (91x141x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 0.0766 W/kg

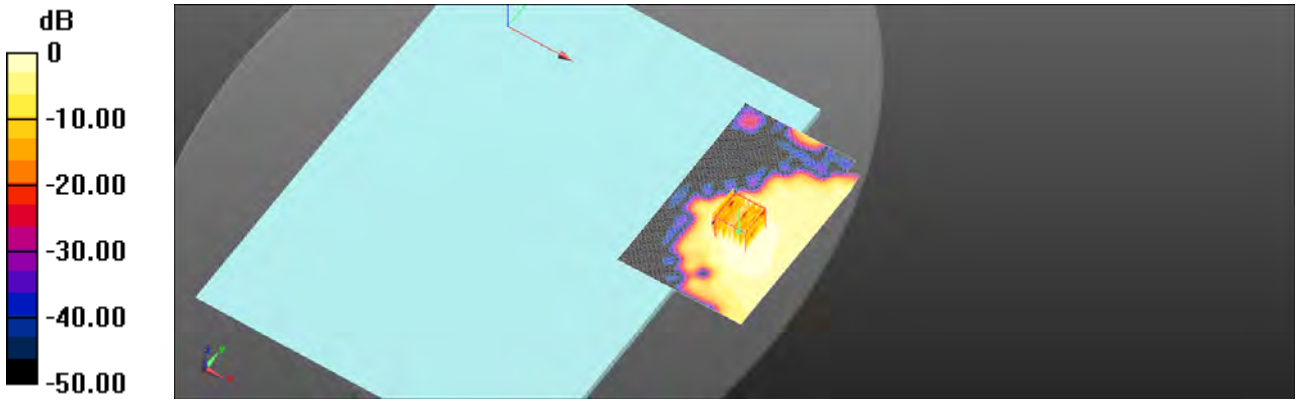
Configuration/Body/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 0.6560 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.265 W/kg

SAR(1 g) = 0.047 W/kg; SAR(10 g) = 0.020 W/kg

Maximum value of SAR (measured) = 0.0825 W/kg



0 dB = 0.0825 W/kg = -10.83 dBW/kg

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Date: 2018/1/12

WLAN 802.11b_Body_Bottom side_CH 6_Aux_0mm

Communication System: WLAN(2.45G); Frequency: 2437 MHz; Duty Cycle: 1:1

Medium parameters used: f = 2437 MHz; σ = 1.915 S/m; ε_r = 52.874; ρ = 1000 kg/m^3

Phantom section: Flat Section

Ambient temperature: 22.5°C; Liquid temperature: 21.8°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7351; ConvF(7.82, 7.82, 7.82); Calibrated: 2017/12/21;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2017/3/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (81x121x1): Interpolated grid: dx=12 mm, dy=12 mm

Maximum value of SAR (interpolated) = 0.0193 W/kg

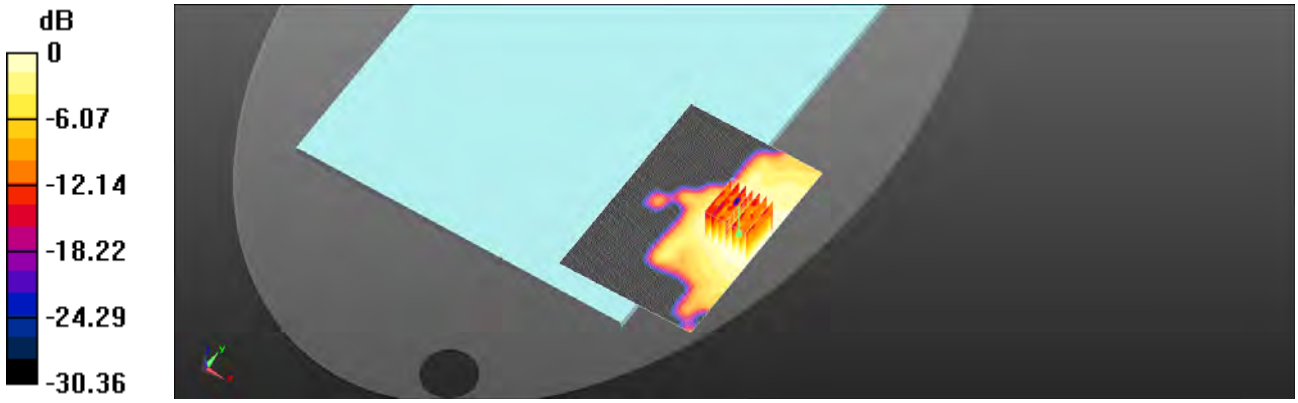
Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 0.3040 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.0270 W/kg

SAR(1 g) = 0.013 W/kg; SAR(10 g) = 0.00796 W/kg

Maximum value of SAR (measured) = 0.0189 W/kg



0 dB = 0.0189 W/kg = -17.24 dBW/kg

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Date: 2018/1/12

Bluetooth(GFSK)_Body_Bottom side_CH 0_Aux_0mm

Communication System: WLAN(2.45G); Frequency: 2412 MHz; Duty Cycle: 1:1

Medium parameters used: f = 2412 MHz; σ = 1.906 S/m; ε_r = 52.898; ρ = 1000 kg/m^3

Phantom section: Flat Section

Ambient temperature: 22.5°C; Liquid temperature: 21.8°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7351; ConvF(7.82, 7.82, 7.82); Calibrated: 2017/12/21;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2017/3/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (81x121x1): Interpolated grid: dx=12 mm, dy=12 mm

Maximum value of SAR (interpolated) = 0.0014 W/kg

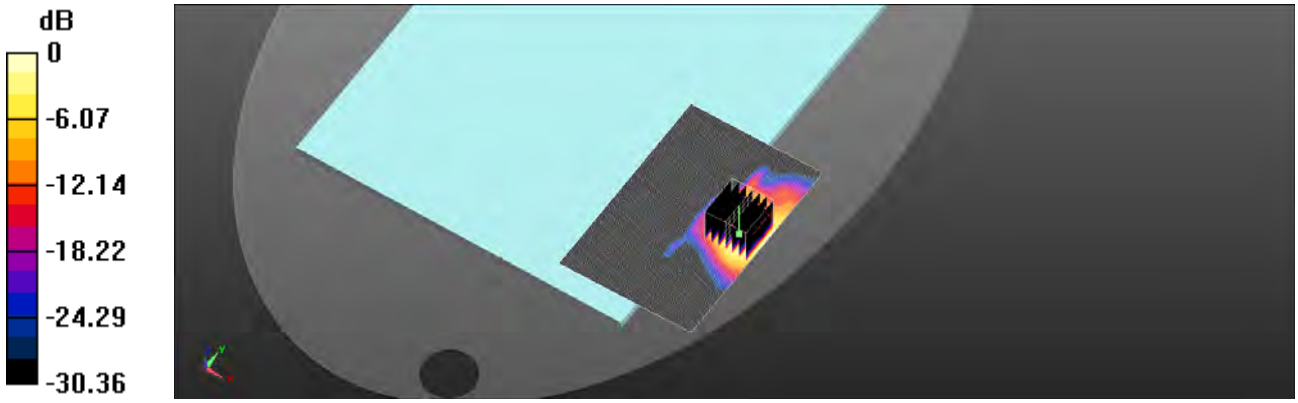
Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 0.0233 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.0021 W/kg

SAR(1 g) = 0.00104 W/kg; SAR(10 g) = 0.000781 W/kg

Maximum value of SAR (measured) = 0.0019 W/kg



0 dB = 0.0019 W/kg = -26.35 dBW/kg

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Date: 2018/1/16

WLAN 802.11n(40M) 5.2G_Body_Bottom side_CH 46_Aux_0mm

Communication System: WLAN(5G); Frequency: 5230 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5230 MHz; σ = 5.19 S/m; ε_r = 49.559; ρ = 1000 kg/m^3

Phantom section: Flat Section

Ambient temperature: 22.1°C; Liquid temperature: 21.8°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7351; ConvF(4.6, 4.6, 4.6); Calibrated: 2017/12/21;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2017/3/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (91x141x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 0.0388 W/kg

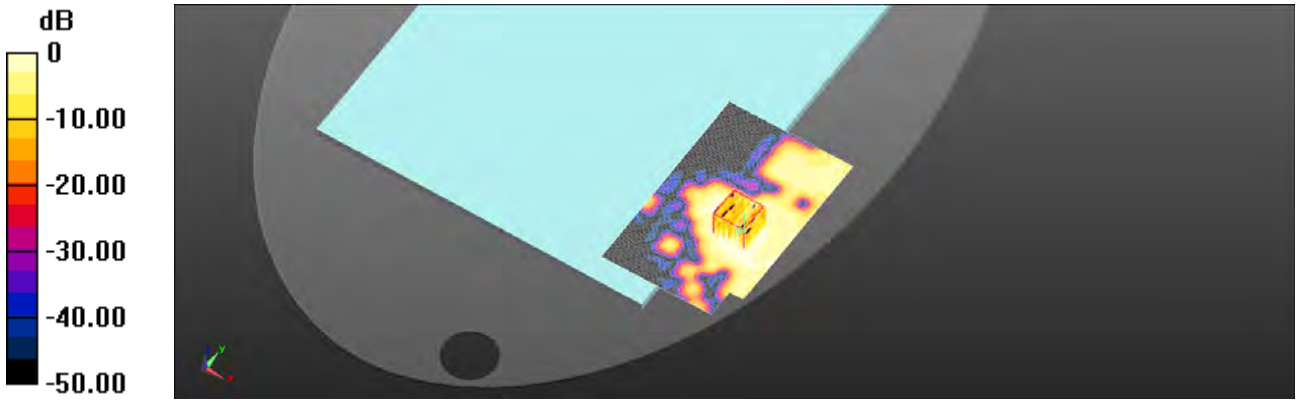
Configuration/Body/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 0.3310 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.137 W/kg

SAR(1 g) = 0.023 W/kg; SAR(10 g) = 0.00978 W/kg

Maximum value of SAR (measured) = 0.0397 W/kg



0 dB = 0.0397 W/kg = -14.01 dBW/kg

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Date: 2018/1/17

WLAN 802.11n(40M) 5.3G_Body_Bottom side_CH 54_Aux_0mm

Communication System: WLAN(5G); Frequency: 5270 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5270 MHz; σ = 5.271 S/m; ε_r = 49.46; ρ = 1000 kg/m^3

Phantom section: Flat Section

Ambient temperature: 22.4°C; Liquid temperature: 21.2°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7351; ConvF(4.56, 4.56, 4.56); Calibrated: 2017/12/21;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2017/3/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (91x141x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 0.0520 W/kg

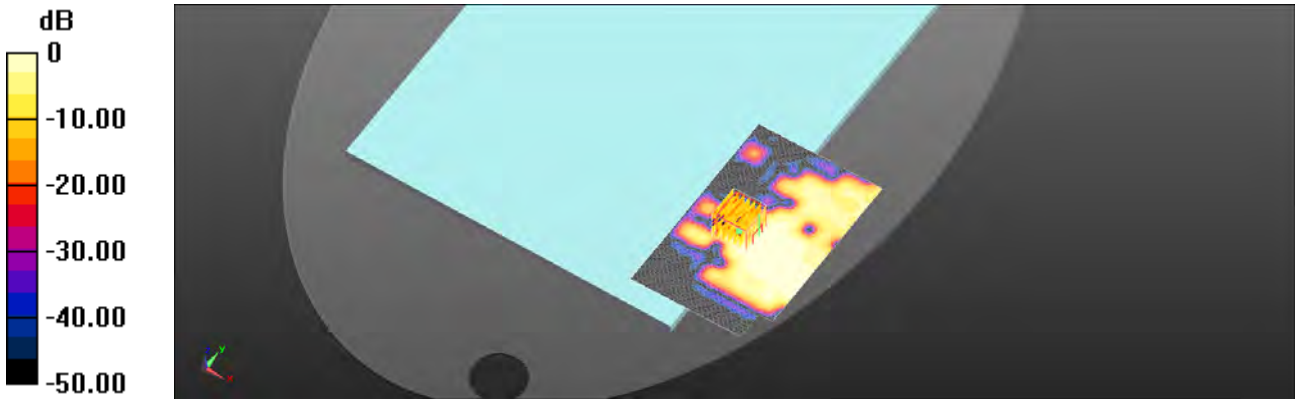
Configuration/Body/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 0.3080 V/m; Power Drift = 0.14 dB

Peak SAR (extrapolated) = 0.107 W/kg

SAR(1 g) = 0.024 W/kg; SAR(10 g) = 0.00793 W/kg

Maximum value of SAR (measured) = 0.0493 W/kg



0 dB = 0.0493 W/kg = -13.07 dBW/kg

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Date: 2018/1/18

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

Communication System: WLAN(5G); Frequency: 5690 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5690 MHz; σ = 5.853 S/m; ε_r = 48.183; ρ = 1000 kg/m^3

Phantom section: Flat Section

Ambient temperature: 22.1°C; Liquid temperature: 21.3°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7351; ConvF(3.98, 3.98, 3.98); Calibrated: 2017/12/21;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2017/3/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (91x141x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 0.0768 W/kg

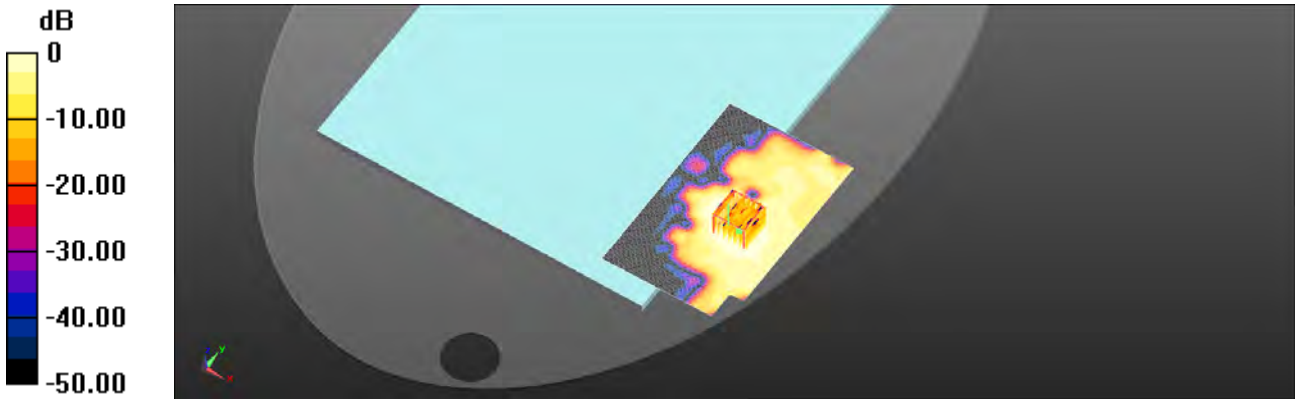
Configuration/Body/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 0.3960 V/m; Power Drift = 0.19 dB

Peak SAR (extrapolated) = 0.208 W/kg

SAR(1 g) = 0.043 W/kg; SAR(10 g) = 0.019 W/kg

Maximum value of SAR (measured) = 0.0788 W/kg



0 dB = 0.0788 W/kg = -11.04 dBW/kg

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Date: 2018/1/19

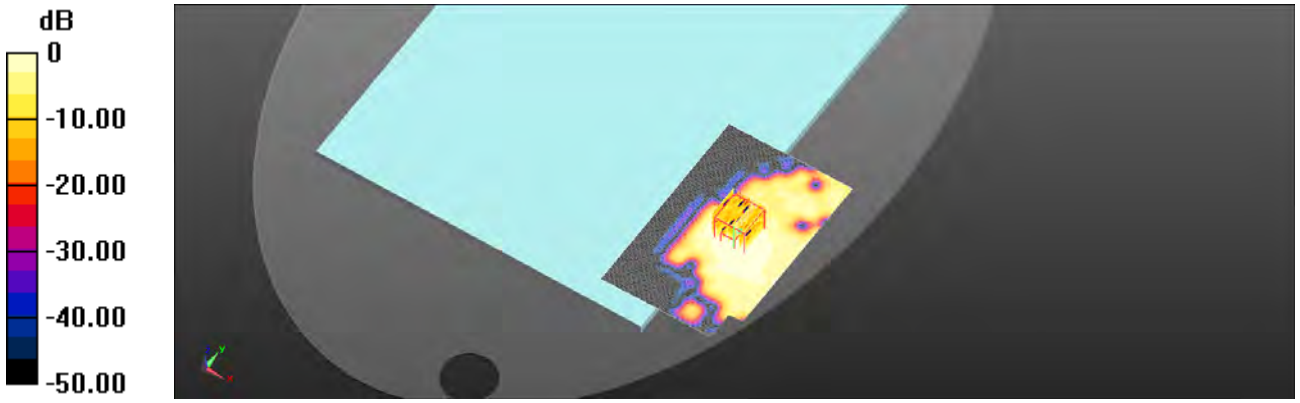
WLAN 802.11ac(80M) 5.8G_Body_Bottom side_CH 155_Aux_0mm
Communication System: WLAN(5G); Frequency: 5775 MHz; Duty Cycle: 1:1
Medium parameters used: f = 5775 MHz; σ = 6.024 S/m; ε_r = 48.041; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.7°C; Liquid temperature: 21.8°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7351; ConvF(4.21, 4.21, 4.21); Calibrated: 2017/12/21;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2017/3/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (91x141x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 0.0449 W/kg

Configuration/Body/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0.5220 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 0.0980 W/kg
SAR(1 g) = 0.024 W/kg; SAR(10 g) = 0.00872 W/kg
Maximum value of SAR (measured) = 0.0462 W/kg



0 dB = 0.0462 W/kg = -13.36 dBW/kg

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6. SAR System Performance Verification

Date: 2018/1/5

Dipole 750 MHz_SN:1015

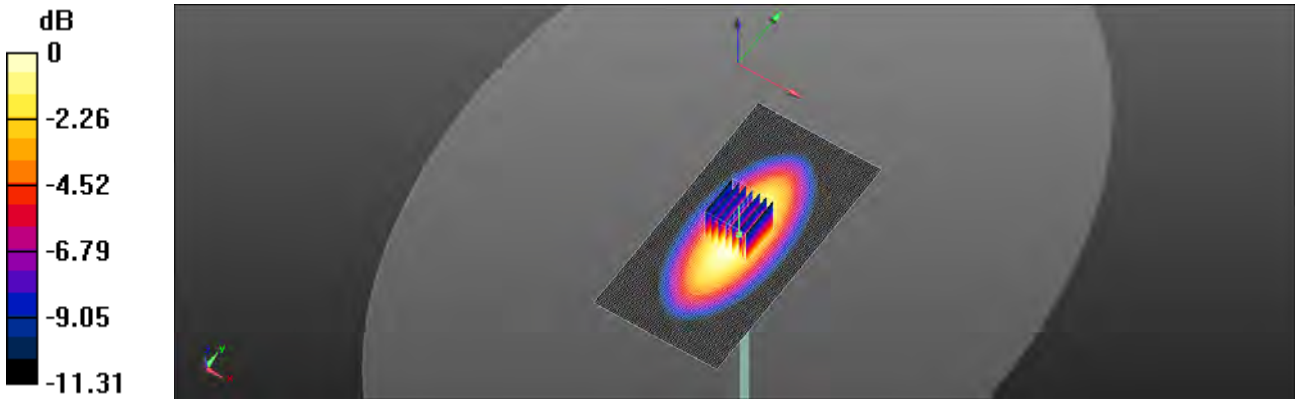
Communication System: CW; Frequency: 750 MHz; Duty Cycle: 1:1
Medium parameters used: f = 750 MHz; σ = 0.961 S/m; ε_r = 55.827; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.2°C; Liquid temperature: 21.8°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7351; ConvF(10.81, 10.81, 10.81); Calibrated: 2017/12/21;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2017/3/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Pin=250mW/Area Scan (51x141x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 2.78 W/kg

Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 52.31 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 3.33 W/kg
SAR(1 g) = 2.19 W/kg; SAR(10 g) = 1.41 W/kg
Maximum value of SAR (measured) = 2.80 W/kg



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

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Date: 2018/1/8

Dipole 835 MHz_SN:4d063

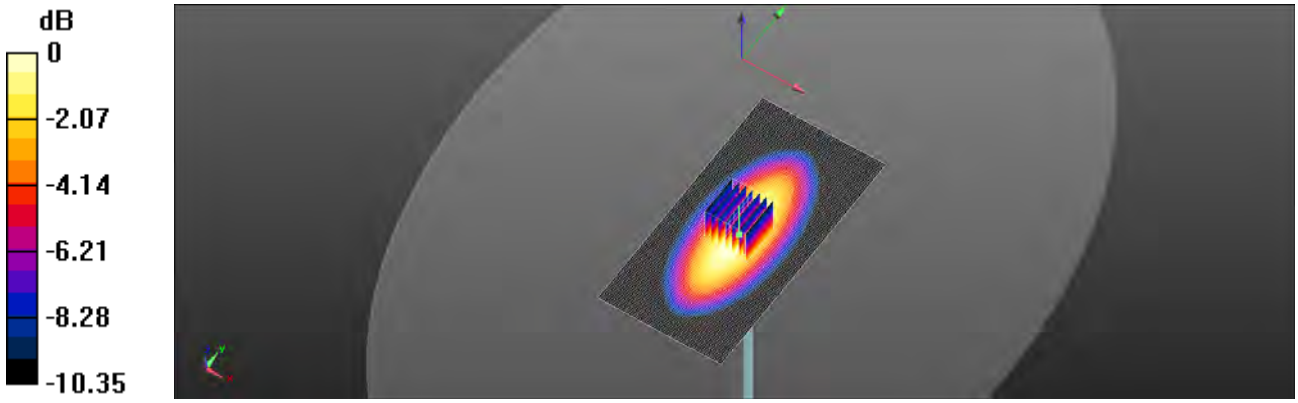
Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium parameters used: f = 835 MHz; σ = 1.01 S/m; ε_r = 55.025; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.1°C; Liquid temperature: 21.8°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7351; ConvF(10.39, 10.39, 10.39); Calibrated: 2017/12/21;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2017/3/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Pin=250mW/Area Scan (61x121x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 3.12 W/kg

Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 56.63 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 3.66 W/kg
SAR(1 g) = 2.46 W/kg; SAR(10 g) = 1.62 W/kg
Maximum value of SAR (measured) = 3.11 W/kg



0 dB = 3.11 W/kg = 4.93 dBW/kg

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Date: 2018/1/9

Dipole 1750 MHz_SN:1008

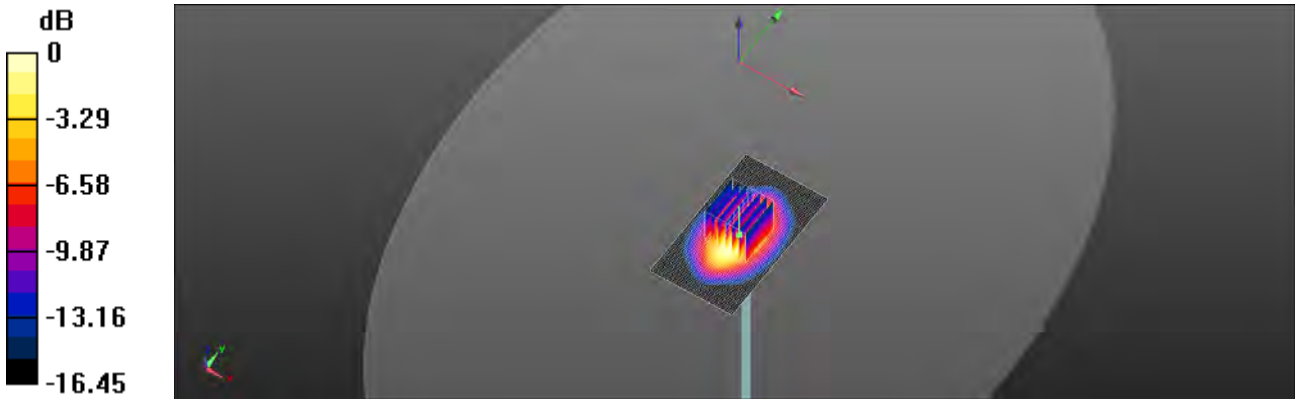
Communication System: CW; Frequency: 1750 MHz; Duty Cycle: 1:1
Medium parameters used: f = 1750 MHz; σ = 1.454 S/m; ε_r = 53.551; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.1°C; Liquid temperature: 21.5°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7351; ConvF(8.58, 8.58, 8.58); Calibrated: 2017/12/21;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2017/3/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Pin=250mW/Area Scan (41x71x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 14.2 W/kg

Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 95.40 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 16.9 W/kg
SAR(1 g) = 9.4 W/kg; SAR(10 g) = 5.06 W/kg
Maximum value of SAR (measured) = 13.5 W/kg



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

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Date: 2018/1/10

Dipole 1900 MHz_SN:5d173

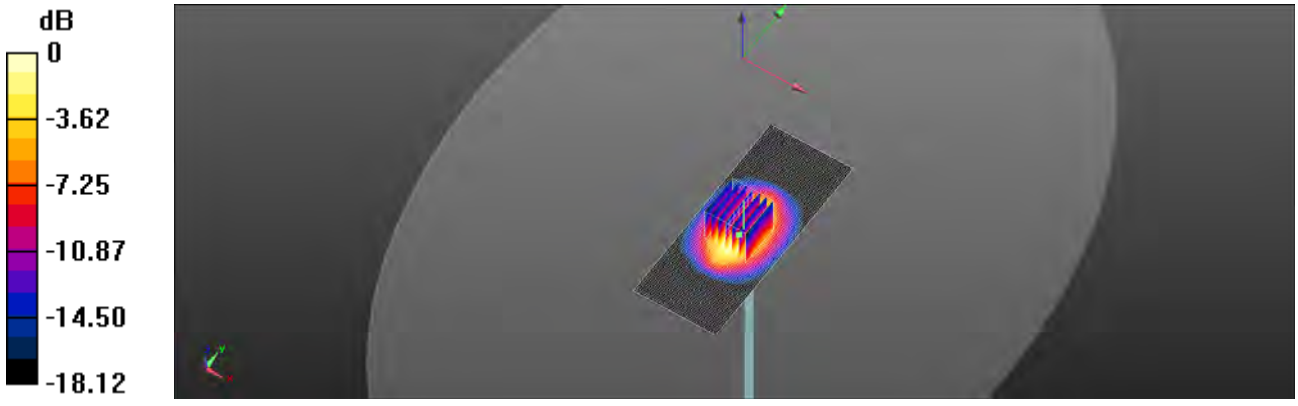
Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.516 S/m; ε_r = 53.022; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.8°C; Liquid temperature: 21.4°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7351; ConvF(8.22, 8.22, 8.22); Calibrated: 2017/12/21;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2017/3/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Pin=250mW/Area Scan (41x101x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 14.8 W/kg

Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 97.69 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 18.8 W/kg
SAR(1 g) = 10.3 W/kg; SAR(10 g) = 5.39 W/kg
Maximum value of SAR (measured) = 14.7 W/kg



0 dB = 14.7 W/kg = 11.68 dBW/kg

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Date: 2018/1/11

Dipole 2300 MHz_SN:1023

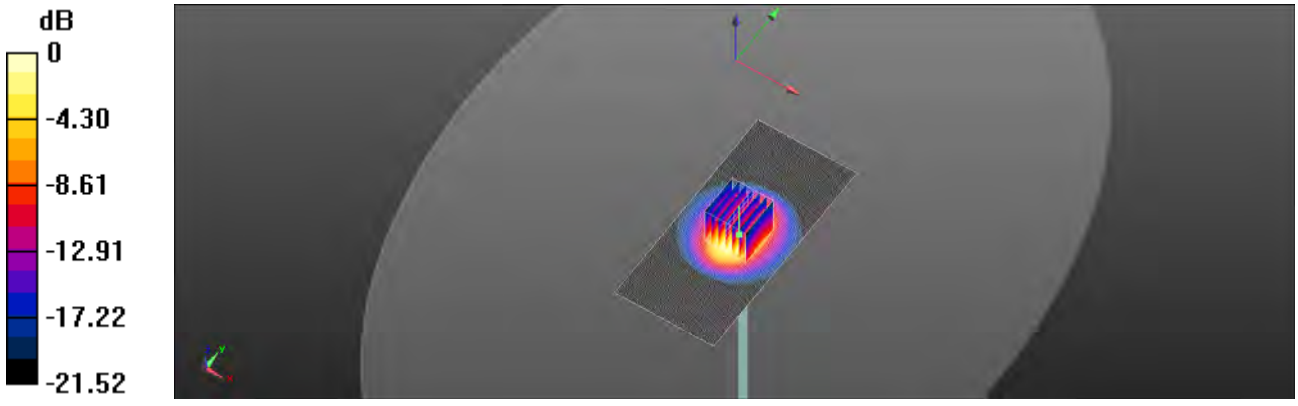
Communication System: CW; Frequency: 2300 MHz; Duty Cycle: 1:1
Medium parameters used: f = 2300 MHz; σ = 1.747 S/m; ε_r = 53.461; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.3°C; Liquid temperature: 21.6°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7351; ConvF(7.98, 7.98, 7.98); Calibrated: 2017/12/21;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2017/3/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Pin=250mW/Area Scan (61x131x1): Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 19.5 W/kg

Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 101.2 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 25.1 W/kg
SAR(1 g) = 12.2 W/kg; SAR(10 g) = 5.84 W/kg
Maximum value of SAR (measured) = 18.8 W/kg



0 dB = 18.8 W/kg = 12.74 dBW/kg

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Date: 2018/1/12

Dipole 2450 MHz_SN:727

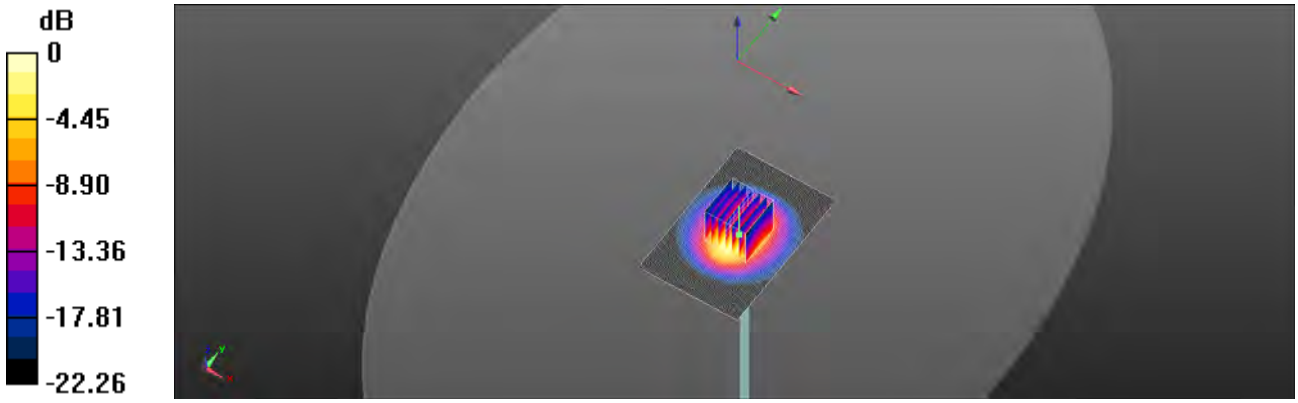
Communication System: CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; σ = 1.931 S/m; ε_r = 52.808; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.5°C; Liquid temperature: 21.8°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7351; ConvF(7.82, 7.82, 7.82); Calibrated: 2017/12/21;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2017/3/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Pin=250mW/Area Scan (61x91x1): Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 20.7 W/kg

Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 101.1 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 26.7 W/kg
SAR(1 g) = 12.9 W/kg; SAR(10 g) = 5.93 W/kg
Maximum value of SAR (measured) = 19.7 W/kg



0 dB = 19.7 W/kg = 12.95 dBW/kg

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Date: 2018/1/15

Dipole 2600 MHz_SN:1005

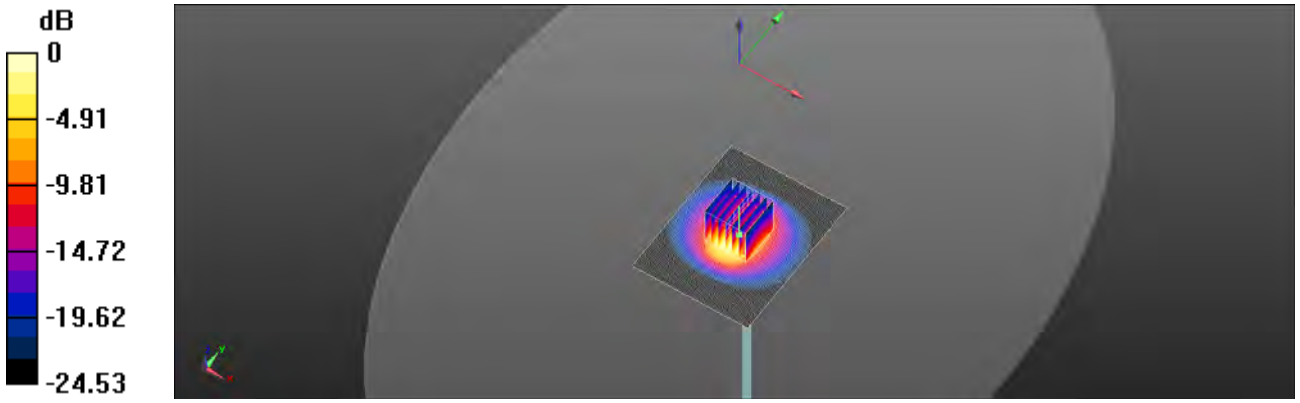
Communication System: CW; Frequency: 2600 MHz; Duty Cycle: 1:1
Medium parameters used: f = 2600 MHz; σ = 2.124 S/m; ε_r = 52.227; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.6°C; Liquid temperature: 21.7°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7351; ConvF(7.56, 7.56, 7.56); Calibrated: 2017/12/21;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2017/3/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Pin=250mW/Area Scan (71x91x1): Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 23.3 W/kg

Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 100.1 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 31.3 W/kg
SAR(1 g) = 13.9 W/kg; SAR(10 g) = 6.08 W/kg
Maximum value of SAR (measured) = 22.3 W/kg



0 dB = 22.3 W/kg = 13.47 dBW/kg

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Date: 2018/1/16

Dipole 5200 MHz_SN:1023

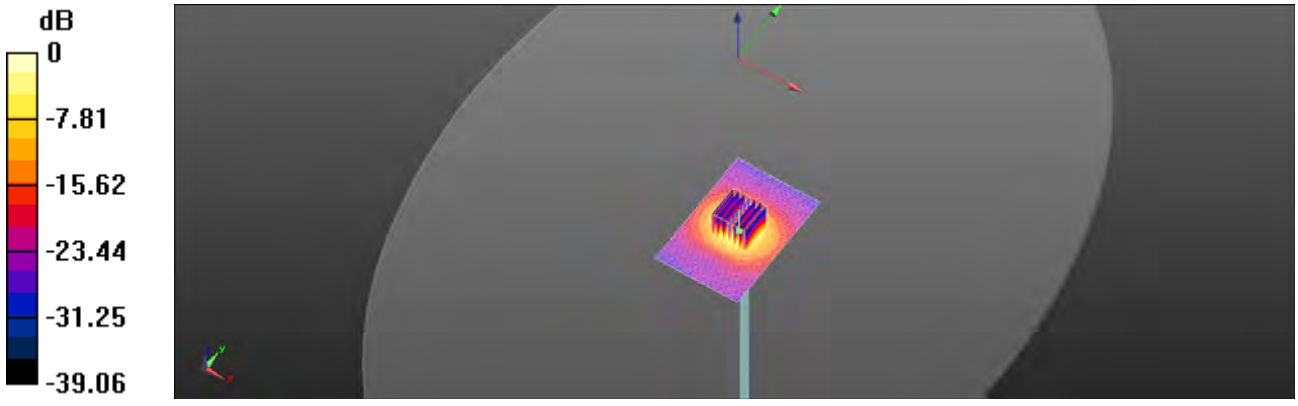
Communication System: CW; Frequency: 5200 MHz; Duty Cycle: 1:1
Medium parameters used: f = 5200 MHz; σ = 5.121 S/m; ε_r = 49.587; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.1°C; Liquid temperature: 21.8°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7351; ConvF(4.6, 4.6, 4.6); Calibrated: 2017/12/21;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2017/3/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Pin=100mW/Area Scan (61x91x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 16.0 W/kg

Configuration/Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 58.01 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 30.2 W/kg
SAR(1 g) = 7.35 W/kg; SAR(10 g) = 2.1 W/kg
Maximum value of SAR (measured) = 15.3 W/kg



0 dB = 15.3 W/kg = 11.84 dBW/kg

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Date: 2018/1/17

Dipole 5300MHz_SN:1023

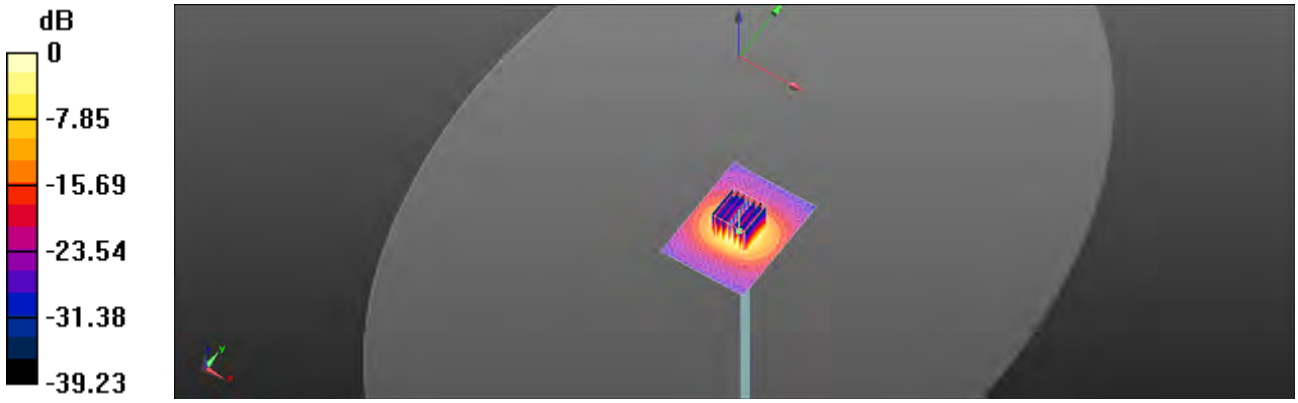
Communication System: CW; Frequency: 5300 MHz; Duty Cycle: 1:1
Medium parameters used: f = 5300 MHz; σ = 5.263 S/m; ε_r = 49.371; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.4°C; Liquid temperature: 21.2°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7351; ConvF(4.56, 4.56, 4.56); Calibrated: 2017/12/21;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2017/3/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Pin=250mW/Area Scan (61x81x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 16.5 W/kg

Configuration/Pin=250mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 59.25 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 32.6 W/kg
SAR(1 g) = 7.85 W/kg; SAR(10 g) = 2.2 W/kg
Maximum value of SAR (measured) = 16.8 W/kg



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

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Date: 2018/1/18

Dipole 5600 MHz_SN:1023

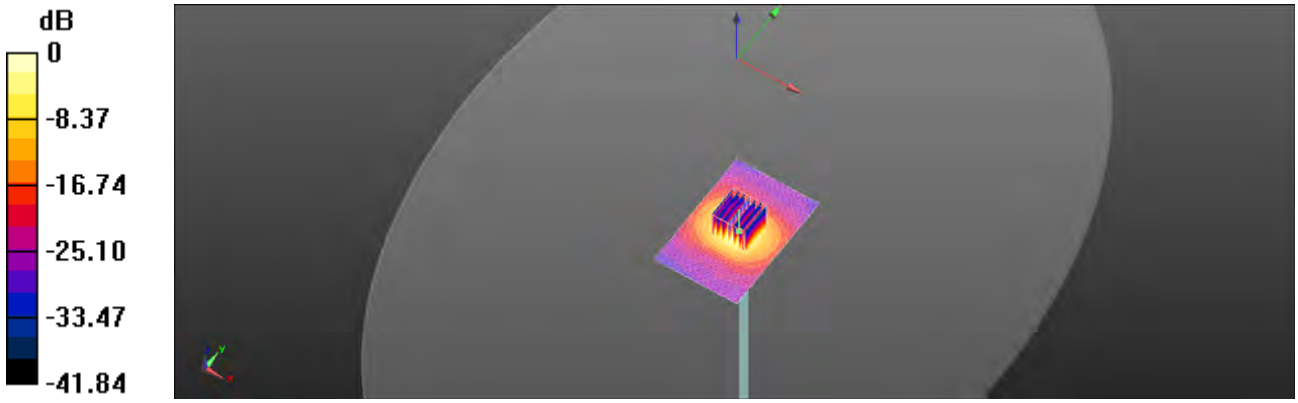
Communication System: CW; Frequency: 5600 MHz; Duty Cycle: 1:1
Medium parameters used: f = 5600 MHz; σ = 5.737 S/m; ε_r = 48.52; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.1°C; Liquid temperature: 21.3°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7351; ConvF(3.98, 3.98, 3.98); Calibrated: 2017/12/21;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2017/3/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Pin=100mW/Area Scan (61x91x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 17.9 W/kg

Configuration/Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 57.75 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 36.1 W/kg
SAR(1 g) = 8.05 W/kg; SAR(10 g) = 2.27 W/kg
Maximum value of SAR (measured) = 17.5 W/kg



0 dB = 17.5 W/kg = 12.42 dBW/kg

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Date: 2018/1/19

Dipole 5800 MHz_SN:1023

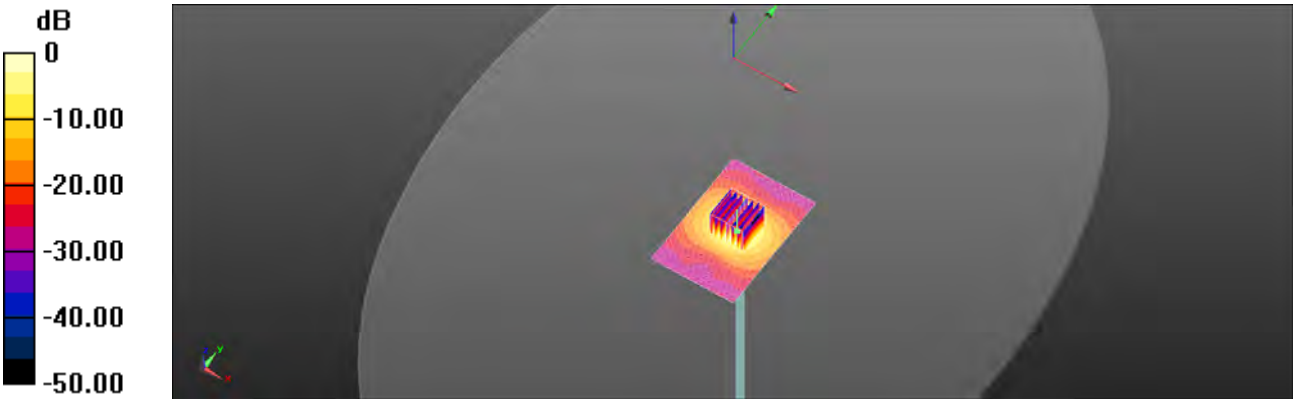
Communication System: CW; Frequency: 5800 MHz; Duty Cycle: 1:1
Medium parameters used: f = 5800 MHz; σ = 6.004 S/m; ε_r = 48.006; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.7°C; Liquid temperature: 21.8°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7351; ConvF(4.21, 4.21, 4.21); Calibrated: 2017/12/21;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2017/3/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Pin=100mW/Area Scan (61x91x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 15.7 W/kg

Configuration/Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 51.17 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 31.7 W/kg
SAR(1 g) = 7.93 W/kg; SAR(10 g) = 2.19 W/kg
Maximum value of SAR (measured) = 14.8 W/kg



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

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7. DAE & Probe Calibration Certificate

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

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

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

Accreditation No.: SCS 0108

Client SGS - TW (Auden)

Certificate No: DAE4-547_Mar17

CALIBRATION CERTIFICATE

Object	DAE4 - SD 000 D04 BM - SN: 547
Calibration procedure(s)	QA CAL-06.v29 Calibration procedure for the data acquisition electronics (DAE)
Calibration date:	March 22, 2017

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Keithley Multimeter Type 2001	SN: 0810278	09-Sep-16 (No:19065)	Sep-17
Secondary Standards	**ID #**	**Check Date (in house)**	**Scheduled Check**
Auto DAE Calibration Unit	SE UWS 053 AA 1001	05-Jan-17 (in house check)	In house check: Jan-18
Calibrator Box V2.1	SE UMS 006 AA 1002	05-Jan-17 (in house check)	In house check: Jan-18

	Name	Function	Signature
Calibrated by:	Eric Hainfeld	Technician	
Approved by:	Fin Bomholt	Deputy Technical Manager	

Issued: March 22, 2017

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

Certificate No: DAE4-547_Mar17 Page 1 of 5

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Zeughausstrasse 43, 8004 Zurich, Switzerland

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C Service suisse d'étalonnage
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S Swiss Calibration Service

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Accreditation No.: SCS 0108

Glossary

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

Methods Applied and Interpretation of Parameters

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

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DC Voltage Measurement

A/D - Converter Resolution nominal

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

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

Calibration Factors	X	Y	Z
High Range	403.189 ± 0.02% (k=2)	403.093 ± 0.02% (k=2)	402.739 ± 0.02% (k=2)
Low Range	3.95348 ± 1.50% (k=2)	3.90456 ± 1.50% (k=2)	3.96243 ± 1.50% (k=2)

Connector Angle

Connector Angle to be used in DASY system	91.0 ° ± 1 °

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Appendix (Additional assessments outside the scope of SCS0108)

1. DC Voltage Linearity

High Range		Reading (μV)	Difference (μV)	Error (%)
Channel X	+ Input	200031.23	0.59	0.00
Channel X	+ Input	20005.44	2.04	0.01
Channel X	- Input	-20000.97	4.91	-0.02
Channel Y	+ Input	200029.80	-1.03	-0.00
Channel Y	+ Input	20000.30	-3.03	-0.02
Channel Y	- Input	-20007.73	-1.72	0.01
Channel Z	+ Input	200030.21	-0.96	-0.00
Channel Z	+ Input	20003.13	-0.21	-0.00
Channel Z	- Input	-20005.14	0.81	-0.00

Low Range		Reading (μV)	Difference (μV)	Error (%)
Channel X	+ Input	2000.02	-0.08	-0.00
Channel X	+ Input	200.18	0.36	0.18
Channel X	- Input	-200.16	0.00	-0.00
Channel Y	+ Input	2000.10	0.06	0.00
Channel Y	+ Input	199.43	-0.40	-0.20
Channel Y	- Input	-200.77	-0.70	0.35
Channel Z	+ Input	2000.19	0.28	0.01
Channel Z	+ Input	198.82	-1.00	-0.50
Channel Z	- Input	-201.46	-1.37	0.68

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	-2.09	-5.00
	-200	6.80	4.50
Channel Y	200	-0.67	-1.21
	-200	0.37	-0.41
Channel Z	200	5.07	4.93
	-200	-7.67	-8.12

3. Channel separation

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

	Input Voltage (mV)	Channel X (μV)	Channel Y (μV)	Channel Z (μV)
Channel X	200	-	2.65	-2.08
Channel Y	200	10.56	-	3.60
Channel Z	200	4.55	7.85	-

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4. AD-Converter Values with inputs shorted

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

	High Range (LSB)	Low Range (LSB)
Channel X	16364	15364
Channel Y	16476	16801
Channel Z	16077	16468

5. Input Offset Measurement

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

	Average (μV)	min. Offset (μV)	max. Offset (μV)	Std. Deviation (μV)
Channel X	-0.53	-1.14	0.26	0.31
Channel Y	-1.03	-2.43	-0.21	0.32
Channel Z	-1.56	-2.31	-0.62	0.35

6. Input Offset Current

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

7. Input Resistance (Typical values for information)

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

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

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

9. Power Consumption (Typical values for information)

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

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Accreditation No.: SCS 0108

Client Auden

Certificate No: EX3-7351_Dec17

CALIBRATION CERTIFICATE

Object: EX3DV4 - SN:7351

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: December 21, 2017

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-17 (No. 217-02521/02522)	Apr-18
Power sensor NRP-Z91	SN: 103244	04-Apr-17 (No. 217-02521)	Apr-18
Power sensor NRP-Z91	SN: 103245	04-Apr-17 (No. 217-02525)	Apr-18
Reference 20 dB Attenuator	SN: S5277 (20x)	07-Apr-17 (No. 217-02526)	Apr-18
Reference Probe ES3DV2	SN: 3013	31-Dec-16 (No. ES3-3013_Dec16)	Dec-17
DAE4	SN: 654	24-Jul-17 (No. DAE4-654_Jul17)	Jul-18
Secondary Standards	ID	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB41293874	06-Apr-16 (in house check Jun-18)	In house check: Jun-18
Power sensor E4412A	SN: MY41498087	06-Apr-16 (in house check Jun-18)	In house check: Jun-18
Power sensor E4412A	SN: 000110210	06-Apr-16 (in house check Jun-18)	In house check: Jun-18
RF generator HP 8648C	SN: US3642U01700	04-Aug-99 (in house check Jun-16)	In house check: Jun-18
Network Analyzer HP 8753E	SN: US37390585	18-Oct-01 (in house check Oct-17)	In house check: Oct-18

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: December 21, 2017

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

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Accreditation No.: SCS 0108

Glossary:

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConvF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C, D	modulation dependent linearization parameters
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., ϑ = 0 is normal to probe axis
Connector Angle	information used in DASY system to align probe sensor X to the robot coordinate system

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
b) IEC 62209-1, "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Methods Applied and Interpretation of Parameters:

- *NORMx,y,z*: Assessed for E-field polarization ϑ = 0 (f ≤ 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not affect the E^2-field uncertainty inside TSL (see below *ConvF*).
- *NORM(f)x,y,z = NORMx,y,z * frequency_response* (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of *ConvF*.
- *DCPx,y,z*: DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- *PAR*: PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- *Ax,y,z; Bx,y,z; Cx,y,z; Dx,y,z; VRx,y,z*: A, B, C, D are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. *VR* is the maximum calibration range expressed in RMS voltage across the diode.
- *ConvF and Boundary Effect Parameters*: Assessed in flat phantom using E-field (or Temperature Transfer Standard for f ≤ 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 *NORMx,y,z * ConvF* whereby the uncertainty corresponds to that given for *ConvF*. A frequency dependent *ConvF* is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- *Spherical isotropy (3D deviation from isotropy)*: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- *Sensor Offset*: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- *Connector Angle*: The angle is assessed using the information gained by determining the *NORMx* (no uncertainty required).

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Probe EX3DV4

SN:7351

Manufactured: October 13, 2014
Calibrated: December 21, 2017

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

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DASY/EASY - Parameters of Probe: EX3DV4 - SN:7351

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)[A]	0.47	0.44	0.45	± 10.1 %
DCP (mV)[B]	97.9	104.3	97.1	

Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB$\sqrt{\mu V}$	C	D dB	VR mV	Unc[E] (k=2)
0	CW	X	0.0	0.0	1.0	0.00	136.5	±3.8 %
		Y	0.0	0.0	1.0		136.4	
		Z	0.0	0.0	1.0		147.3	

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

[A] The uncertainties of Norm X,Y,Z do not affect the E^2-field uncertainty inside TSL (see Pages 5 and 6).
[B] Numerical linearization parameter: uncertainty not required.
[E] Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

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DASY/EASY - Parameters of Probe: EX3DV4 - SN:7351

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unc (k=2)
750	41.9	0.89	10.92	10.92	10.92	0.55	0.80	± 12.0 %
835	41.5	0.90	10.60	10.60	10.60	0.55	0.80	± 12.0 %
900	41.5	0.97	10.31	10.31	10.31	0.40	0.95	± 12.0 %
1750	40.1	1.37	8.78	8.78	8.78	0.28	0.80	± 12.0 %
1900	40.0	1.40	8.50	8.50	8.50	0.29	0.80	± 12.0 %
2000	40.0	1.40	8.41	8.41	8.41	0.30	0.80	± 12.0 %
2300	39.5	1.67	8.03	8.03	8.03	0.31	0.84	± 12.0 %
2450	39.2	1.80	7.74	7.74	7.74	0.34	0.85	± 12.0 %
2600	39.0	1.96	7.51	7.51	7.51	0.36	0.81	± 12.0 %
5200	36.0	4.66	5.49	5.49	5.49	0.35	1.80	± 13.1 %
5300	35.9	4.76	5.15	5.15	5.15	0.40	1.80	± 13.1 %
5500	35.6	4.96	5.04	5.04	5.04	0.40	1.80	± 13.1 %
5600	35.5	5.07	4.81	4.81	4.81	0.40	1.80	± 13.1 %
5800	35.3	5.27	4.90	4.90	4.90	0.40	1.80	± 13.1 %

[C] Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Above 5 GHz frequency validity can be extended to ± 110 MHz.

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

[G] Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

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DASY/EASY - Parameters of Probe: EX3DV4 - SN:7351

Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unc (k=2)
750	55.5	0.96	10.81	10.81	10.81	0.40	0.91	± 12.0 %
835	55.2	0.97	10.39	10.39	10.39	0.47	0.87	± 12.0 %
900	55.0	1.05	10.18	10.18	10.18	0.48	0.85	± 12.0 %
1750	53.4	1.49	8.58	8.58	8.58	0.37	0.85	± 12.0 %
1900	53.3	1.52	8.22	8.22	8.22	0.43	0.80	± 12.0 %
2000	53.3	1.52	8.40	8.40	8.40	0.31	0.99	± 12.0 %
2300	52.9	1.81	7.98	7.98	7.98	0.40	0.87	± 12.0 %
2450	52.7	1.95	7.82	7.82	7.82	0.37	0.88	± 12.0 %
2600	52.5	2.16	7.56	7.56	7.56	0.32	0.93	± 12.0 %
5200	49.0	5.30	4.60	4.60	4.60	0.40	1.90	± 13.1 %
5300	48.9	5.42	4.56	4.56	4.56	0.40	1.90	± 13.1 %
5500	48.6	5.65	4.09	4.09	4.09	0.45	1.90	± 13.1 %
5600	48.5	5.77	3.98	3.98	3.98	0.45	1.90	± 13.1 %
5800	48.2	6.00	4.21	4.21	4.21	0.45	1.90	± 13.1 %

[C] Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Above 5 GHz frequency validity can be extended to ± 110 MHz.
[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.
[G] Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

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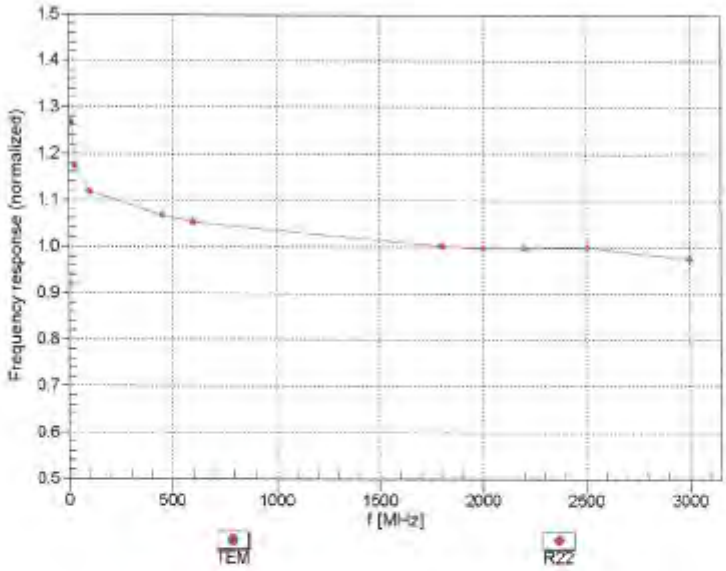
EX3DV4– SN:7351 December 21, 2017

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



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

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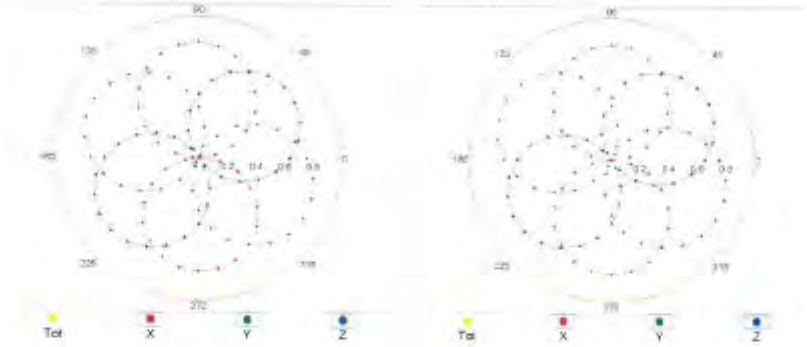
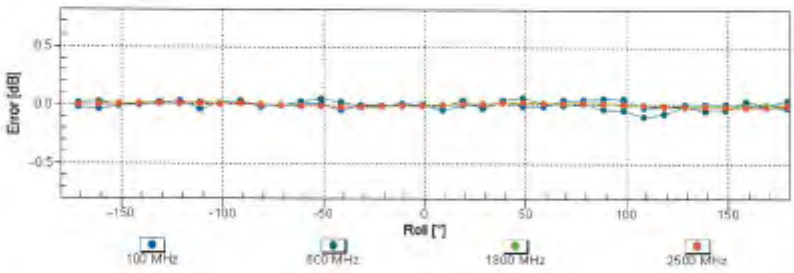
EX3DV4- SN:7351 December 21, 2017

Receiving Pattern (ϕ), ϑ = 0°

f=600 MHz,TEM f=1800 MHz,R22





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

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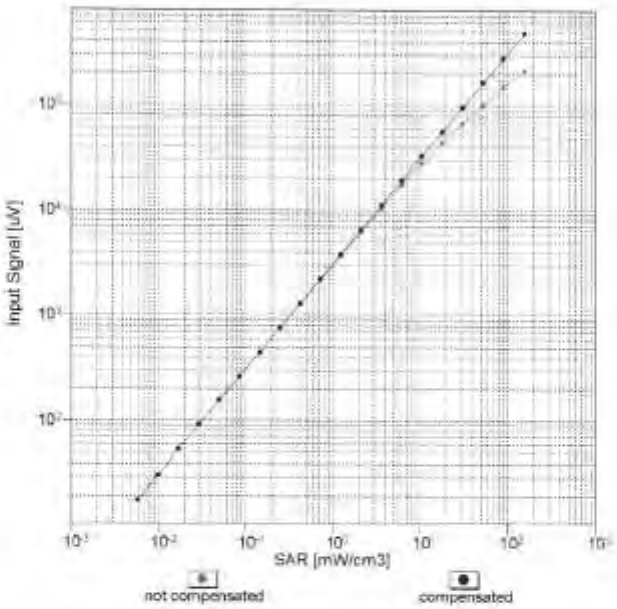
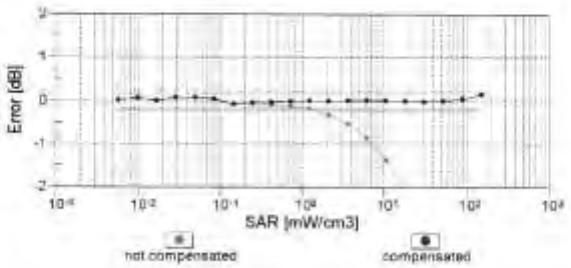
Dynamic Range f(SAR_{head})
(TEM cell , f_{eval}= 1900 MHz)





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

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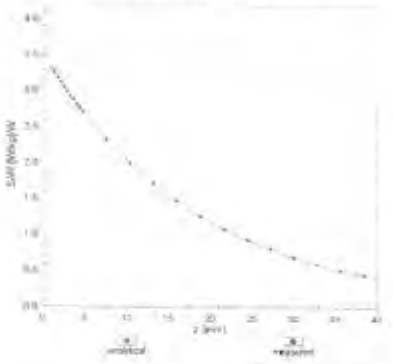
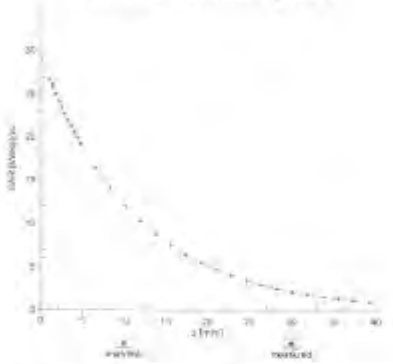
Conversion Factor Assessment

f = 835 MHz,WGLS R9 (H_convF)

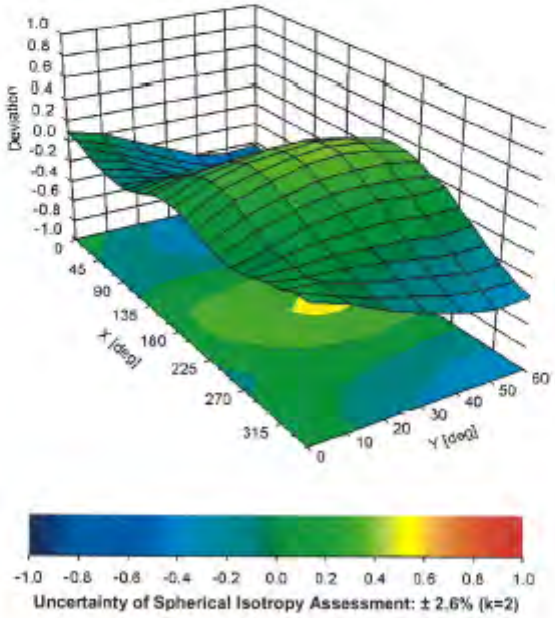


f = 1900 MHz,WGLS R22 (H_convF)



Deviation from Isotropy in Liquid

Error (ϕ, ϑ), f = 900 MHz



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

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DASY/EASY - Parameters of Probe: EX3DV4 - SN:7351

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	88.8
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	9 mm
Tip Diameter	2.5 mm
Probe Tip to Sensor X Calibration Point	1 mm
Probe Tip to Sensor Y Calibration Point	1 mm
Probe Tip to Sensor Z Calibration Point	1 mm
Recommended Measurement Distance from Surface	1.4 mm

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8. Uncertainty Budget

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

A	c	D	e		f	g	h=c * f / e	i=c * g / e	k
Source of Uncertainty	Tolerance/ Uncertainty	Probability	Div	Div Value	ci (1g)	ci (10g)	Standard uncertainty	Standard uncertainty	vi, or Veff
Measurement system									
Probe calibration	6.55%	N	1	1	1	1	6.55%	6.55%	∞
Isotropy , Axial	3.50%	R	√3	1.732	1	1	2.02%	2.02%	∞
Isotropy, Hemispherical	9.60%	R	√3	1.732	1	1	5.54%	5.54%	∞
Modulation Response	2.40%	R	√3	1.732	1	1	1.40%	1.40%	∞
Boundary Effect	1.00%	R	√3	1.732	1	1	0.58%	0.58%	∞
Linearity	4.70%	R	√3	1.732	1	1	2.71%	2.71%	∞
Detection Limits	1.00%	R	√3	1.732	1	1	0.58%	0.58%	∞
Readout Electronics	0.30%	N	1	1	1	1	0.30%	0.30%	∞
Response time	0.80%	R	√3	1.732	1	1	0.46%	0.46%	∞
Integration Time	2.60%	R	√3	1.732	1	1	1.50%	1.50%	∞
Measurement drift (class A evaluation)	1.75%	R	√3	1.732	1	1	1.01%	1.01%	∞
RF ambient condition - noise	3.00%	R	√3	1.732	1	1	1.73%	1.73%	∞
RF ambient conditions - reflections	3.00%	R	√3	1.732	1	1	1.73%	1.73%	∞
Probe positioner Mechanical restrictions	0.40%	R	√3	1.732	1	1	0.23%	0.23%	∞
Probe Positioning with respect to phantom	2.90%	R	√3	1.732	1	1	1.67%	1.67%	∞
Post-processing	1.00%	R	√3	1.732	1	1	0.58%	0.58%	∞
Max SAR Eval	1.00%	R	√3	1.732	1	1	0.58%	0.58%	∞
Test Sample related									
Test sample positioning	2.90%	N	1	1	1	1	2.90%	2.90%	M-1
Device Holder Uncertainty	3.60%	N	1	1	1	1	3.60%	3.60%	M-1
Drift of output power	5.00%	R	√3	1.732	1	1	2.89%	2.89%	∞
Phantom and Setup									
Phantom Uncertainty	4.00%	R	√3	1.732	1	1	2.31%	2.31%	∞
Liquid permittivity (mea.)	1.17%	N	1	1	0.64	0.43	0.75%	0.50%	M
Liquid Conductivity (mea.)	3.36%	N	1	1	0.6	0.49	2.02%	1.65%	M
Combined standard uncertainty		RSS					11.91%	11.83%	
Expant uncertainty (95% confidence							23.82%	23.67%	

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Measurement Uncertainty evaluation template for DUT SAR test (0.3-3G)

A	c	D	e		f	g	h=c * f / e	i=c * g / e	k
Source of Uncertainty	Tolerance/ Uncertainty	Probability	Div	Div Value	ci (1g)	ci (10g)	Standard uncertainty	Standard uncertainty	vi, or Veff
Measurement system									
Probe calibration	6.00%	N	1	1	1	1	6.00%	6.00%	∞
Isotropy , Axial	3.50%	R	√3	1.732	1	1	2.02%	2.02%	∞
Isotropy, Hemispherical	9.60%	R	√3	1.732	1	1	5.54%	5.54%	∞
Modulation Response	2.40%	R	√3	1.732	1	1	1.40%	1.40%	∞
Boundary Effect	1.00%	R	√3	1.732	1	1	0.58%	0.58%	∞
Linearity	4.70%	R	√3	1.732	1	1	2.71%	2.71%	∞
Detection Limits	1.00%	R	√3	1.732	1	1	0.58%	0.58%	∞
Readout Electronics	0.30%	N	1	1	1	1	0.30%	0.30%	∞
Response time	0.80%	R	√3	1.732	1	1	0.46%	0.46%	∞
Integration Time	2.60%	R	√3	1.732	1	1	1.50%	1.50%	∞
Measurement drift (class A evaluation)	1.75%	R	√3	1.732	1	1	1.01%	1.01%	∞
RF ambient condition - noise	3.00%	R	√3	1.732	1	1	1.73%	1.73%	∞
RF ambient conditions - reflections	3.00%	R	√3	1.732	1	1	1.73%	1.73%	∞
Probe positioner Mechanical restrictions	0.40%	R	√3	1.732	1	1	0.23%	0.23%	∞
Probe Positioning with respect to phantom	2.90%	R	√3	1.732	1	1	1.67%	1.67%	∞
Post-processing	1.00%	R	√3	1.732	1	1	0.58%	0.58%	∞
Max SAR Eval	1.00%	R	√3	1.732	1	1	0.58%	0.58%	∞
Test Sample related									
Test sample positioning	2.90%	N	1	1	1	1	2.90%	2.90%	M-1
Device Holder Uncertainty	3.60%	N	1	1	1	1	3.60%	3.60%	M-1
Drift of output power	5.00%	R	√3	1.732	1	1	2.89%	2.89%	∞
Phantom and Setup									
Phantom Uncertainty	4.00%	R	√3	1.732	1	1	2.31%	2.31%	∞
Liquid permittivity (mea.)	1.06%	N	1	1	0.64	0.43	0.68%	0.46%	M
Liquid Conductivity (mea.)	4.15%	N	1	1	0.6	0.49	2.49%	2.03%	M
Combined standard uncertainty		RSS					11.71%	11.60%	

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9. System Validation from Original Equipment Supplier

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

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

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

Accreditation No.: SCS 0108

Client: SGS-TW (Auden)

Certificate No: D750V3-1015_Aug17

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 21, 2017

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-17 (No. 217-02521/02522)	Apr-18
Power sensor NRP-Z91	SN: 103244	04-Apr-17 (No. 217-02521)	Apr-18
Power sensor NRP-Z91	SN: 103245	04-Apr-17 (No. 217-02522)	Apr-18
Reference 20 dB Attenuator	SN: 5058 (20k)	07-Apr-17 (No. 217-02528)	Apr-18
Type-N mismatch combination	SN: 5047.2 / 06327	07-Apr-17 (No. 217-02529)	Apr-18
Reference Probe EX3DV4	SN: 7349	31-May-17 (No. EX3-7349_May17)	May-18
DAE4	SN: 601	28-Mar-17 (No. DAE4-601_Mar17)	Mar-18

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter EPM-442A	SN: GB37480704	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-16)	In house check: Oct-18
Network Analyzer HP 8753E	SN: US37390585	18-Oct-01 (in house check Oct-16)	In house check: Oct-17

	Name	Function	Signature
Calibrated by:	Claudio Leubler	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: August 21, 2017

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

Certificate No: D750V3-1015_Aug17 Page 1 of 8

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S Swiss Calibration Service

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Accreditation No.: SCS 0108

Glossary:

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

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
b) IEC 62209-1, "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

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Measurement Conditions

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

DASY Version	DASY5	V52.10.0
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	750 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.9	0.89 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	41.1 ± 6 %	0.90 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	—	—

SAR result with Head TSL

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.09 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**8.25 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.35 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**5.35 W/kg ± 16.5 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	55.5	0.96 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	55.5 ± 6 %	0.96 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	—	—

SAR result with Body TSL

SAR averaged over 1 cm^3 (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	2.19 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**8.76 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.44 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**5.76 W/kg ± 16.5 % (k=2)**

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Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	53.9 Ω + 0.3 jΩ
Return Loss	- 28.6 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	48.6 Ω - 3.4 jΩ
Return Loss	- 28.4 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.037 ns

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	March 22, 2010

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DASY5 Validation Report for Head TSL

Date: 18.08.2017

Test Laboratory: SPEAG, Zurich, Switzerland

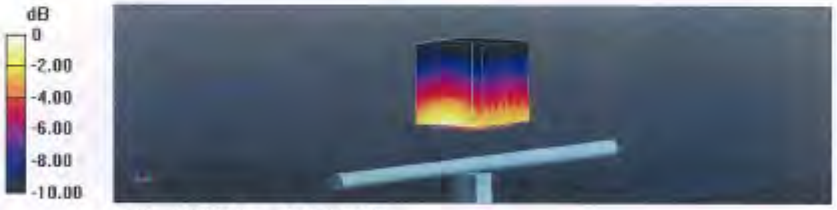
DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3 - SN:1015

Communication System: UID 0 - CW; Frequency: 750 MHz
Medium parameters used: f = 750 MHz; σ = 0.9 S/m; ε_r = 41.1; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(10.49, 10.49, 10.49); Calibrated: 31.05.2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 28.03.2017
- Phantom: Flat Phantom 4.9 (front); Type: QD 00L P49 AA; Serial: 1001
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

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 = 58.52 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 3.21 W/kg
SAR(1 g) = 2.09 W/kg; SAR(10 g) = 1.35 W/kg
Maximum value of SAR (measured) = 2.82 W/kg



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

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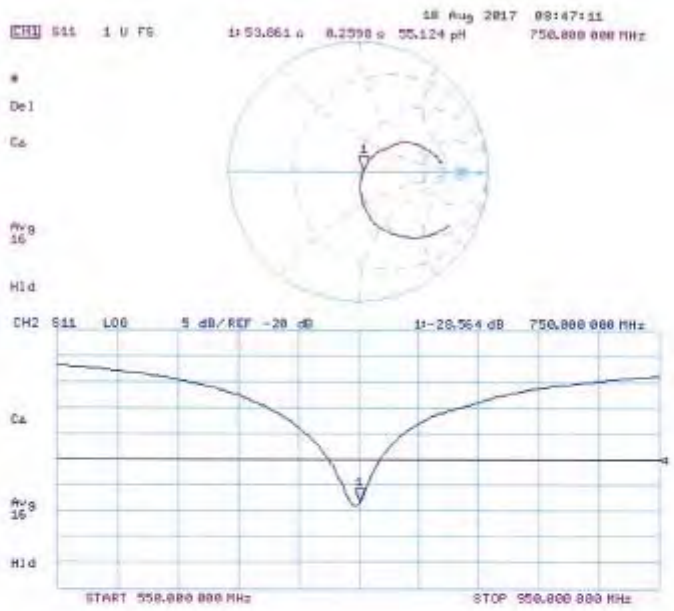
Impedance Measurement Plot for Head TSL



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DASY5 Validation Report for Body TSL

Date: 21.08.2017

Test Laboratory: SPEAG, Zurich, Switzerland

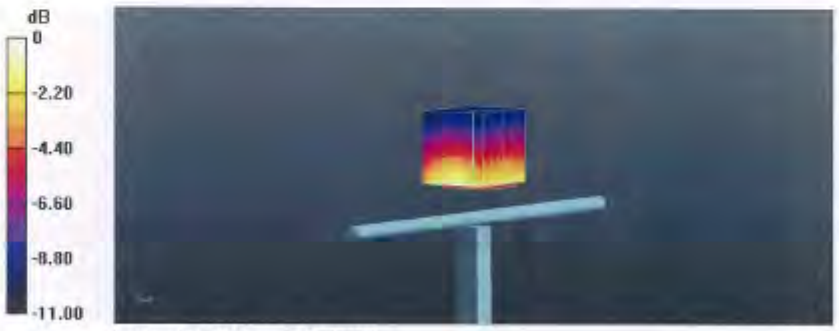
DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3 - SN:1015

Communication System: UID 0 - CW; Frequency: 750 MHz
Medium parameters used: f = 750 MHz; σ = 0.96 S/m; ε_r = 55.5; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(10.35, 10.35, 10.35); Calibrated: 31.05.2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 28.03.2017
- Phantom: Flat Phantom 4.9 (Back); Type: QD 00R P49 AA; Serial: 1005
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

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 = 57.77 V/m; Power Drift = -0.00 dB
Peak SAR (extrapolated) = 3.27 W/kg
SAR(1 g) = 2.19 W/kg; SAR(10 g) = 1.44 W/kg
Maximum value of SAR (measured) = 2.89 W/kg



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

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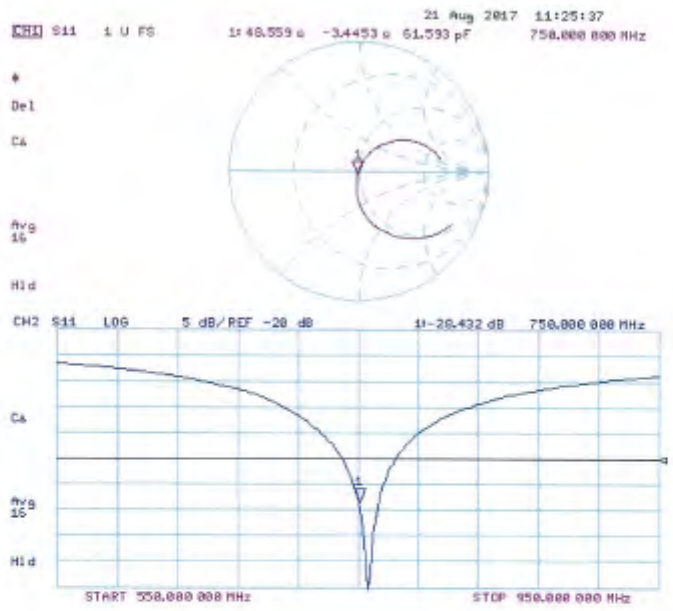
Impedance Measurement Plot for Body TSL



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Accreditation No.: SCS 0108

Client SGS-TW (Auden)

Certificate No: D835V2-4d063_Aug17

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 21, 2017

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-17 (No. 217-02521/02522)	Apr-18
Power sensor NRP-Z91	SN: 103244	04-Apr-17 (No. 217-02521)	Apr-18
Power sensor NRP-Z91	SN: 103245	04-Apr-17 (No. 217-02522)	Apr-18
Reference 20 dB Attenuator	SN: 5058 (20k)	07-Apr-17 (No. 217-02525)	Apr-18
Type-N mismatch combination	SN: 5047.2 / 08327	07-Apr-17 (No. 217-02529)	Apr-18
Reference Probe EX3DV4	SN: 7349	31-May-17 (No. EX3-7349_May17)	May-18
DAE4	SN: 601	28-Mar-17 (No. DAE4-601_Mar17)	Mar-18

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter EPM-442A	SN: GB37480704	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-16)	In house check: Oct-18
Network Analyzer HP 8753E	SN: US37390585	18-Oct-01 (in house check Oct-16)	In house check: Oct-17

	Name	Function	Signature
Calibrated by	Claudio Leubler	Laboratory Technician	
Approved by	Katja Pokovic	Technical Manager	

Issued: August 21, 2017

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Accreditation No.: SCS 0108

Glossary:

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

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
b) IEC 62209-1, "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

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Measurement Conditions

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

DASY Version	DASY5	V52.10.0
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	835 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.5	0.90 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	40.9 ± 6 %	0.93 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	—	—

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.40 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**9.34 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.55 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**6.07 W/kg ± 16.5 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	55.2	0.97 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	55.3 ± 6 %	0.98 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	—	—

SAR result with Body TSL

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	2.41 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**9.57 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.58 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**6.28 W/kg ± 16.5 % (k=2)**

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Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	51.1 Ω - 2.7 jΩ
Return Loss	- 30.8 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	47.2 Ω - 5.2 jΩ
Return Loss	- 24.4 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.387 ns

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	November 27, 2006

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DASY5 Validation Report for Head TSL

Date: 18.08.2017

Test Laboratory: SPEAG, Zurich, Switzerland

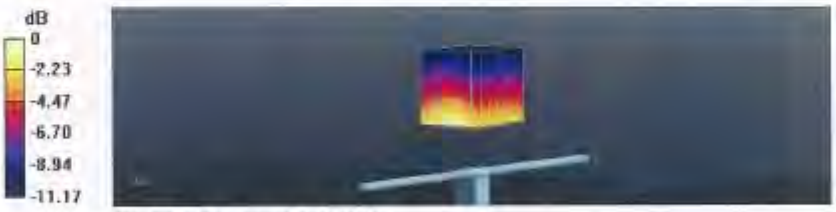
DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d063

Communication System: UID 0 - CW; Frequency: 835 MHz
Medium parameters used: f = 835 MHz; σ = 0.93 S/m; ε_r = 40.9; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(10.07, 10.07, 10.07); Calibrated: 31.05.2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 28.03.2017
- Phantom: Flat Phantom 4.9 (front); Type: QD 00L P49 AA; Serial: 1001
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

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 = 61.74 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 3.71 W/kg
SAR(1 g) = 2.4 W/kg; SAR(10 g) = 1.55 W/kg
Maximum value of SAR (measured) = 3.26 W/kg



0 dB = 3.26 W/kg = 5.13 dBW/kg

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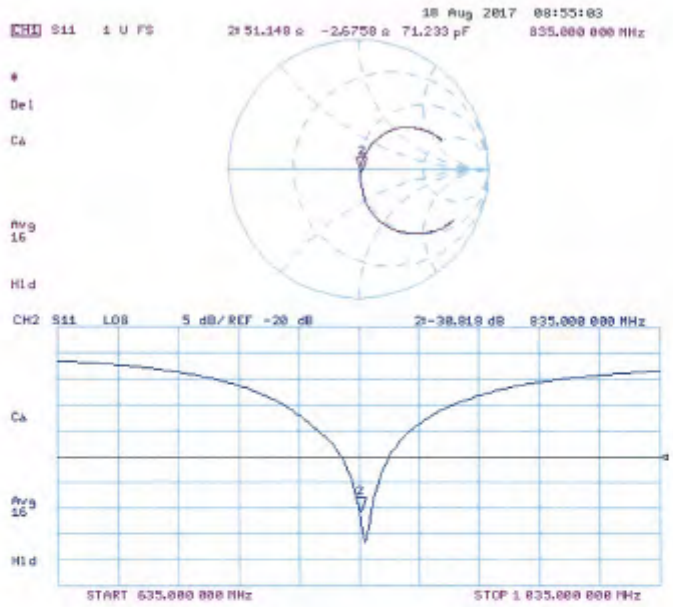
Impedance Measurement Plot for Head TSL



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DASY5 Validation Report for Body TSL

Date: 21.08.2017

Test Laboratory: SPEAG, Zurich, Switzerland

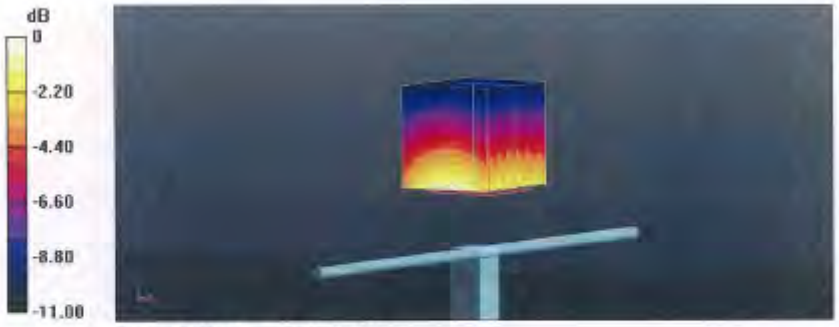
DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d063

Communication System: UID 0 - CW; Frequency: 835 MHz
Medium parameters used: f = 835 MHz; σ = 0.98 S/m; ε_r = 55.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(10.2, 10.2, 10.2); Calibrated: 31.05.2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 28.03.2017
- Phantom: Flat Phantom 4.9 (Back); Type: QD 00R P49 AA; Serial: 1005
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

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 = 59.86 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 3.64 W/kg
SAR(1 g) = 2.41 W/kg; SAR(10 g) = 1.58 W/kg
Maximum value of SAR (measured) = 3.20 W/kg



0 dB = 3.20 W/kg = 5.05 dBW/kg

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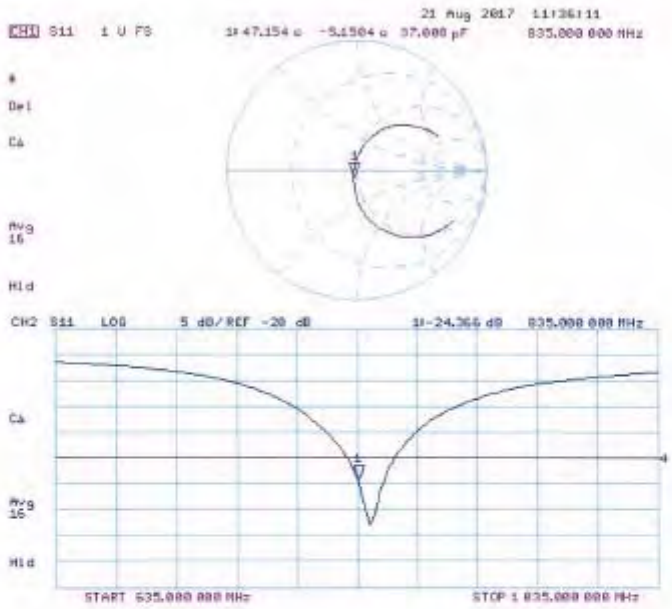
Impedance Measurement Plot for Body TSL



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

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Accreditation No.: SCS 0108

Client SGS-TW (Auden)

Certificate No: D1750V2-1008_Aug17

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 21, 2017

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-17 (No. 217-02521/02522)	Apr-18
Power sensor NRP-Z91	SN: 103244	04-Apr-17 (No. 217-02521)	Apr-18
Power sensor NRP-Z91	SN: 103245	04-Apr-17 (No. 217-02522)	Apr-18
Reference 20 dB Attenuator	SN: 5058 (20k)	07-Apr-17 (No. 217-02528)	Apr-18
Type-N mismatch combination	SN: 5047.2 / 06327	07-Apr-17 (No. 217-02529)	Apr-18
Reference Probe EX3DV4	SN: 7349	31-May-17 (No. EX3-7349_May17)	May-18
DAE4	SN: 601	28-Mar-17 (No. DAE4-601_Mar17)	Mar-18

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter EPM-442A	SN: GB37480704	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-16)	In house check: Oct-18
Network Analyzer HP 8753E	SN: US37390585	18-Oct-01 (in house check Oct-16)	In house check: Oct-17

	Name	Function	Signature
Calibrated by:	Claudio Leubler	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: August 21, 2017

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Certificate No: D1750V2-1008_Aug17 Page 1 of 8

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Accreditation No.: SCS 0108

Glossary:

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

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
b) IEC 62209-1, "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

DASY Version	DASY5	V52.10.0
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1750 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	40.1	1.37 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	39.1 ± 6 %	1.35 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	—	—

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	8.98 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**36.0 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	4.75 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**19.0 W/kg ± 16.5 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	53.4	1.49 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	53.9 ± 6 %	1.47 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	—	—

SAR result with Body TSL

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	9.09 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**36.7 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	4.87 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**19.6 W/kg ± 16.5 % (k=2)**

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Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	49.9 Ω - 0.4 jΩ
Return Loss	- 46.7 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	46.3 Ω - 1.4 jΩ
Return Loss	- 27.6 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.221 ns

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	February 11, 2009

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DASY5 Validation Report for Head TSL

Date: 21.08.2017

Test Laboratory: SPEAG, Zurich, Switzerland

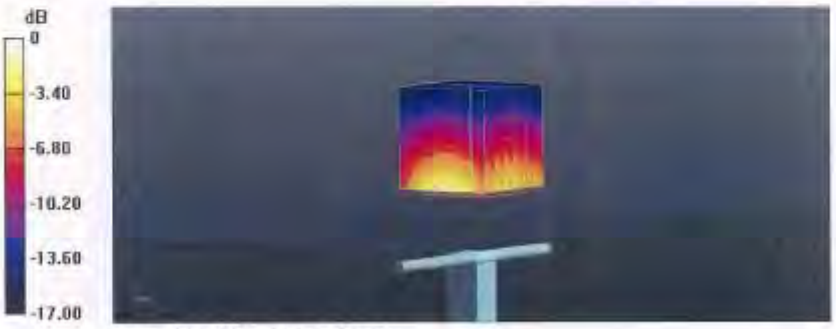
DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN:1008

Communication System: UID 0 - CW; Frequency: 1750 MHz
Medium parameters used: f = 1750 MHz; σ = 1.35 S/m; ε_r = 39.1; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(8.73, 8.73, 8.73); Calibrated: 31.05.2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 28.03.2017
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

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 = 104.0 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 16.8 W/kg
SAR(1 g) = 8.98 W/kg; SAR(10 g) = 4.75 W/kg
Maximum value of SAR (measured) = 13.7 W/kg



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

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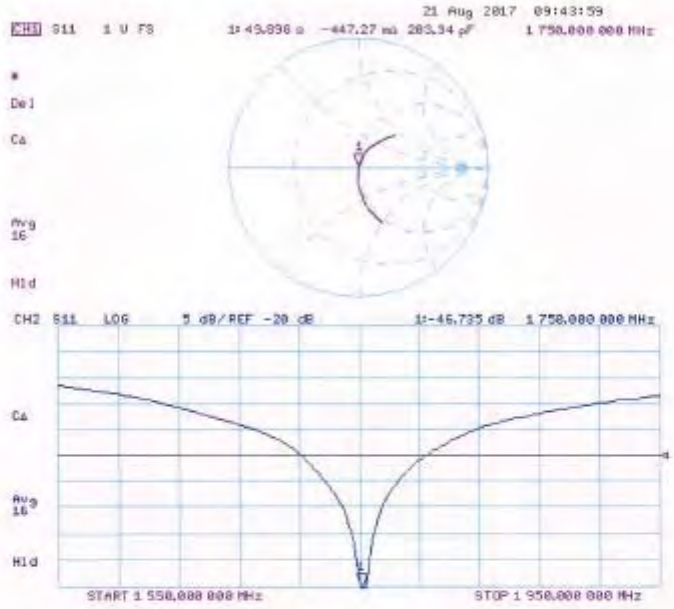
Impedance Measurement Plot for Head TSL



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DASY5 Validation Report for Body TSL

Date: 18.08.2017

Test Laboratory: SPEAG, Zurich, Switzerland

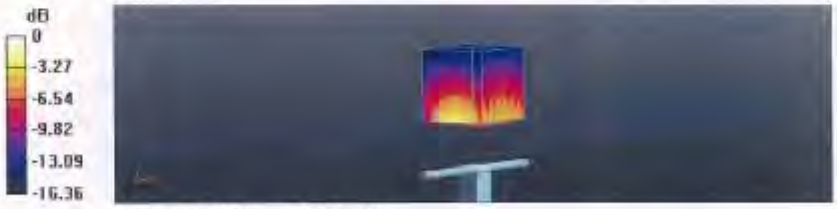
DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN:1008

Communication System: UID 0 - CW; Frequency: 1750 MHz
Medium parameters used: f = 1750 MHz; σ = 1.47 S/m; ε_r = 53.9; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(8.46, 8.46, 8.46); Calibrated: 31.05.2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 28.03.2017
- Phantom: Flat Phantom 5.0 (back); Type: QD 000 P50 AA; Serial: 1002
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

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 = 99.85 V/m; Power Drift = -0.00 dB
Peak SAR (extrapolated) = 15.8 W/kg
SAR(1 g) = 9.09 W/kg; SAR(10 g) = 4.87 W/kg
Maximum value of SAR (measured) = 13.3 W/kg



0 dB = 13.3 W/kg = 11.24 dBW/kg

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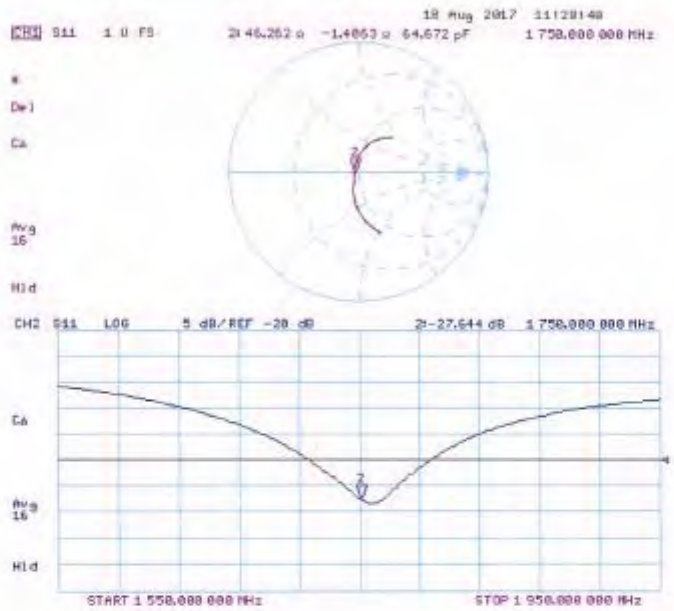
Impedance Measurement Plot for Body TSL



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Engineering AG
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Accreditation No.: SCS 0108

Client: SGS-TW (Auden)

Certificate No: D1900V2-5d173_May17

CALIBRATION CERTIFICATE

Object	D1900V2 - SN:5d173
Calibration procedure(s)	QA CAL-05.v9 Calibration procedure for dipole validation kits above 700 MHz
Calibration date:	May 31, 2017

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-17 (No. 217-02521/02522)	Apr-18
Power sensor NRP-Z91	SN: 103244	04-Apr-17 (No. 217-02521)	Apr-18
Power sensor NRP-Z91	SN: 103245	04-Apr-17 (No. 217-02522)	Apr-18
Reference 20 dB Attenuator	SN: 5058 (20k)	07-Apr-17 (No. 217-02528)	Apr-18
Type-N mismatch combination	SN: 5047.2 / 06327	07-Apr-17 (No. 217-02529)	Apr-18
Reference Probe EX3DV4	SN: 7460	19-May-17 (No. EX3-7460_May17)	May-18
DAE4	SN: 601	28-Mar-17 (No. DAE4-601_Mar17)	Mar-18

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter EPM-442A	SN: GB37480704	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-16)	In house check: Oct-18
Network Analyzer HP 8753E	SN: US37390585	18-Oct-01 (in house check Oct-16)	In house check: Oct-17

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: May 31, 2017

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Accreditation No.: SCS 0108

Glossary:

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

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

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Measurement Conditions

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

DASY Version	DASY5	V52.10.0
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1900 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	40.0	1.40 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	41.3 ± 6 %	1.40 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	---	---

SAR result with Head TSL

SAR averaged over 1 cm³ (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	**40.7 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	5.26 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**21.1 W/kg ± 16.5 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	53.3	1.52 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	54.2 ± 6 %	1.51 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	---	---

SAR result with Body TSL

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	9.98 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**40.2 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	5.30 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**21.3 W/kg ± 16.5 % (k=2)**

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Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	51.3 Ω + 4.9 jΩ
Return Loss	- 26.1 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	47.5 Ω + 6.0 jΩ
Return Loss	- 23.5 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.199 ns

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	June 06, 2012

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DASY5 Validation Report for Head TSL

Date: 31.05.2017

Test Laboratory: SPEAG, Zurich, Switzerland

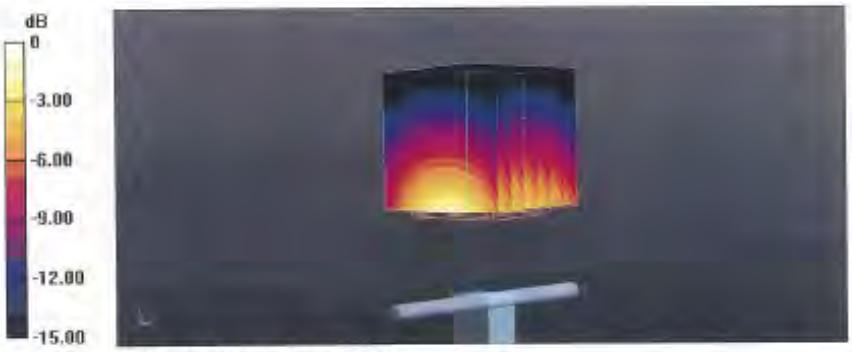
DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d173

Communication System: UID 0 - CW; Frequency: 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.4 S/m; ε_r = 41.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7460; ConvF(7.98, 7.98, 7.98); Calibrated: 19.05.2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 28.03.2017
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

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 = 107.7 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 18.9 W/kg
SAR(1 g) = 10.1 W/kg; SAR(10 g) = 5.26 W/kg
Maximum value of SAR (measured) = 15.3 W/kg



0 dB = 15.3 W/kg = 11.85 dBW/kg

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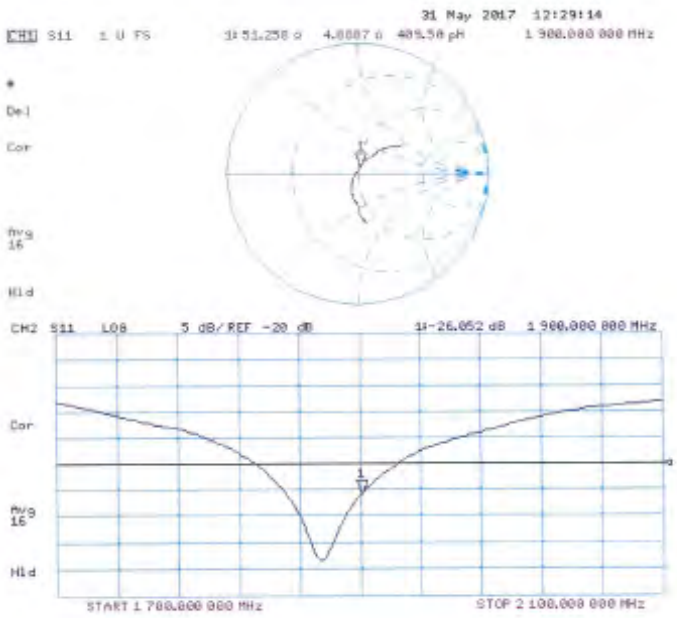
Impedance Measurement Plot for Head TSL



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DASY5 Validation Report for Body TSL

Date: 31.05.2017

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d173

Communication System: UID 0 - CW; Frequency: 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.51 S/m; ε_r = 54.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7460; ConvF(7.82, 7.82, 7.82); Calibrated: 19.05.2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 28.03.2017
- Phantom: Flat Phantom 5.0 (back); Type: QD 000 P50 AA; Serial: 1002
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

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 = 102.9 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 17.5 W/kg
SAR(1 g) = 9.98 W/kg; SAR(10 g) = 5.3 W/kg
Maximum value of SAR (measured) = 14.3 W/kg

0 dB = 14.3 W/kg = 11.55 dBW/kg

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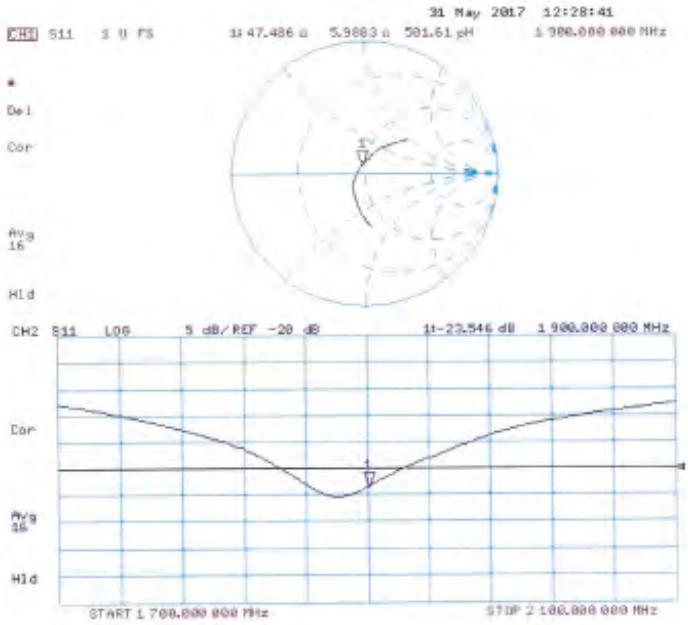
Impedance Measurement Plot for Body TSL



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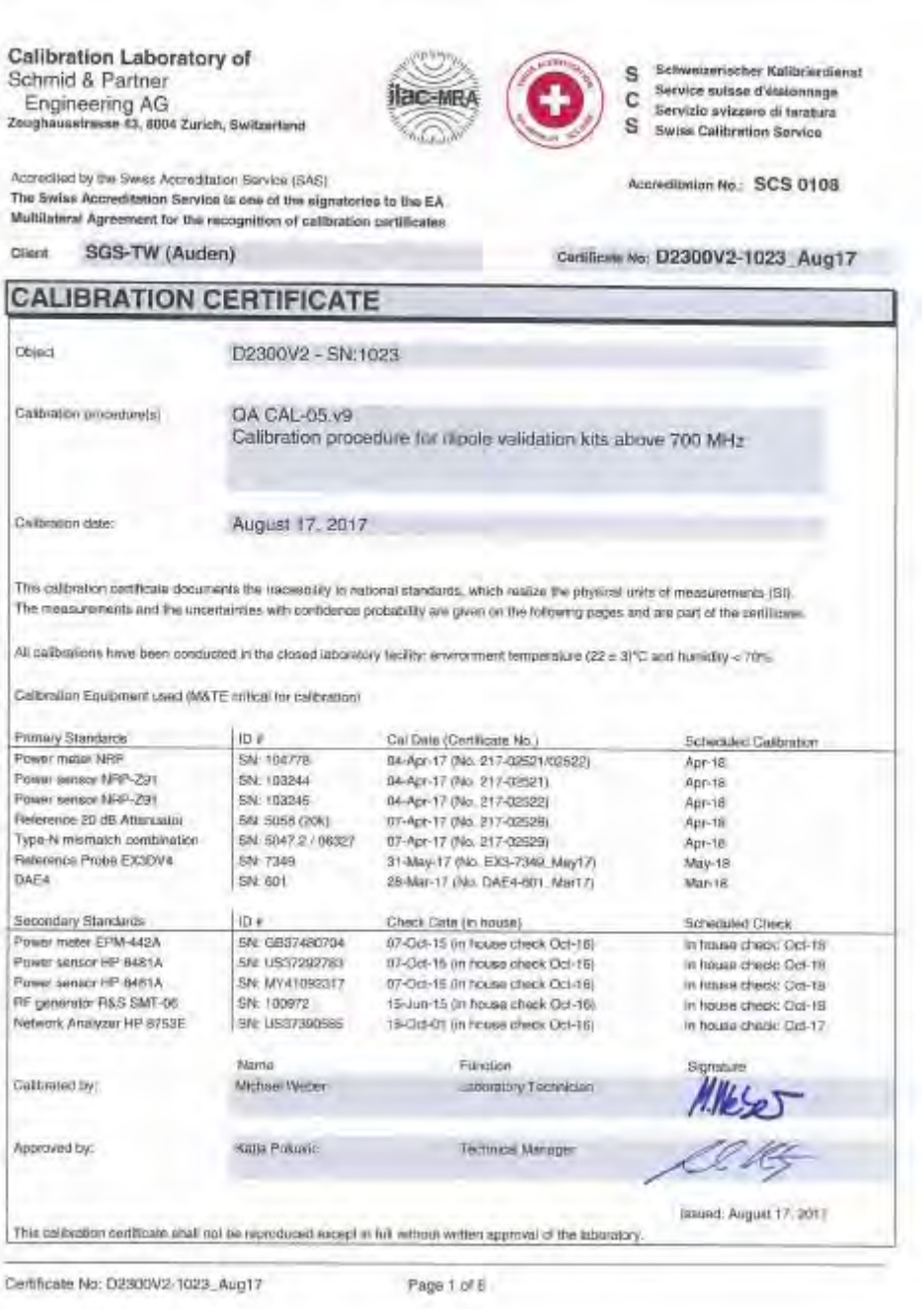

Calibration Laboratory of
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S Schweizerischer Kalibrierdienst
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S Swiss Calibration Service

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: D2300V2-1023_Aug17

CALIBRATION CERTIFICATE

Object	D2300V2 - SN:1023
Calibration procedure(s)	QA CAL-05.v9 Calibration procedure for dipole validation kits above 700 MHz
Calibration date:	August 17, 2017

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-17 (No. 217-02521/02522)	Apr-18
Power sensor NRP-Z91	SN: 103244	04-Apr-17 (No. 217-02521)	Apr-18
Power sensor NRP-Z91	SN: 103245	04-Apr-17 (No. 217-02522)	Apr-18
Reference 20 dB Attenuator	SN: 5058 (20k)	07-Apr-17 (No. 217-02528)	Apr-18
Type-N mismatch combination	SN: 5047.2 / 06327	07-Apr-17 (No. 217-02529)	Apr-18
Reference Probe EX3DV4	SN: 7349	31-May-17 (No. EX3-7349_May17)	May-18
DAE4	SN: 601	28-Mar-17 (No. DAE4-601_Mar17)	Mar-18

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter EPM-442A	SN: GB37480704	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-16)	In house check: Oct-18
Network Analyzer HP 8753E	SN: US37390585	18-Oct-01 (in house check Oct-16)	In house check: Oct-17

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

Issued: August 17, 2017

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Certificate No: D2300V2-1023_Aug17 Page 1 of 8

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Accreditation No.: SCS 0108

Glossary:

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

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
b) IEC 62209-1, "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

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Measurement Conditions

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

DASY Version	DASY5	V52.10.0
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	2300 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	39.5	1.67 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	38.3 ± 6 %	1.70 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	—	—

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	12.0 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**47.2 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	5.74 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**22.7 W/kg ± 16.5 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	52.9	1.81 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	52.3 ± 6 %	1.86 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	—	—

SAR result with Body TSL

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	11.8 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**46.4 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	5.68 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**22.5 W/kg ± 16.5 % (k=2)**

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Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	48.4 Ω - 3.1 jΩ
Return Loss	- 29.0 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	44.9 Ω - 2.2 jΩ
Return Loss	- 24.7 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.171 ns

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	March 30, 2009

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DASY5 Validation Report for Head TSL

Date: 17.08.2017

Test Laboratory: SPEAG, Zurich, Switzerland

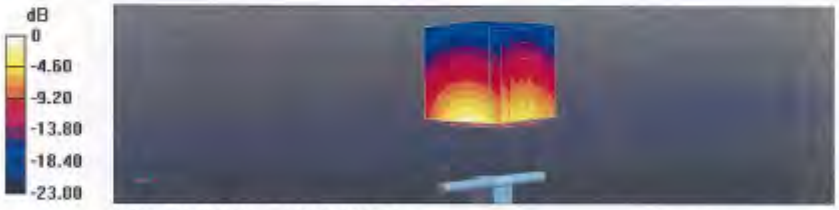
DUT: Dipole 2300 MHz; Type: D2300V2; Serial: D2300V2 - SN: 1023

Communication System: UID 0 - CW; Frequency: 2300 MHz
Medium parameters used: f = 2300 MHz; σ = 1.7 S/m; ε_r = 38.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(8.31, 8.31, 8.31); Calibrated: 31.05.2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 28.03.2017
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

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 = 109.5 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 23.6 W/kg
SAR(1 g) = 12 W/kg; SAR(10 g) = 5.74 W/kg
Maximum value of SAR (measured) = 18.5 W/kg



0 dB = 18.5 W/kg = 12.67 dBW/kg

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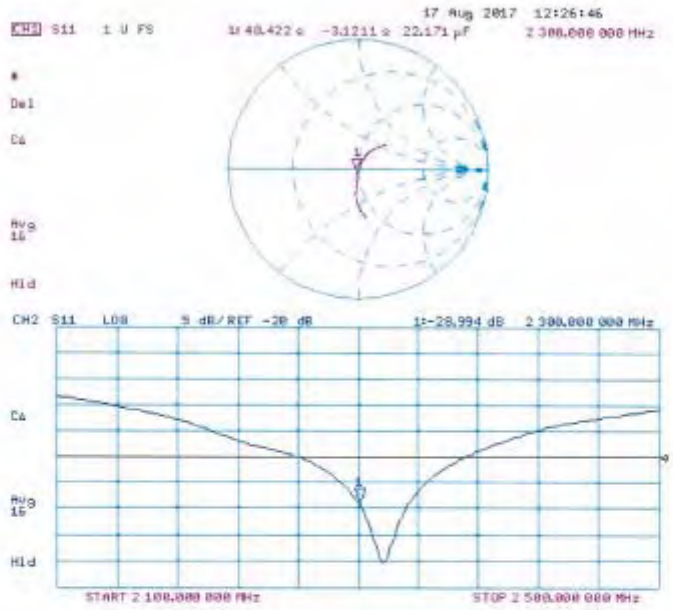
Impedance Measurement Plot for Head TSL



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DASY5 Validation Report for Body TSL

Date: 17.08.2017

Test Laboratory: SPEAG, Zurich, Switzerland

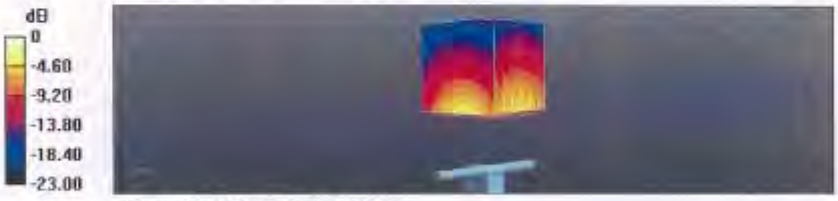
DUT: Dipole 2300 MHz; Type: D2300V2; Serial: D2300V2 - SN: 1023

Communication System: UID 0 - CW; Frequency: 2300 MHz
Medium parameters used: f = 2300 MHz; σ = 1.86 S/m; ε_r = 52.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(8.22, 8.22, 8.22); Calibrated: 31.05.2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 28.03.2017
- Phantom: Flat Phantom 5.0 (back); Type: QD 000 P50 AA; Serial: 1002
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

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 = 102.2 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 22.3 W/kg
SAR(1 g) = 11.8 W/kg; SAR(10 g) = 5.68 W/kg
Maximum value of SAR (measured) = 17.6 W/kg



0 dB = 17.6 W/kg = 12.46 dBW/kg

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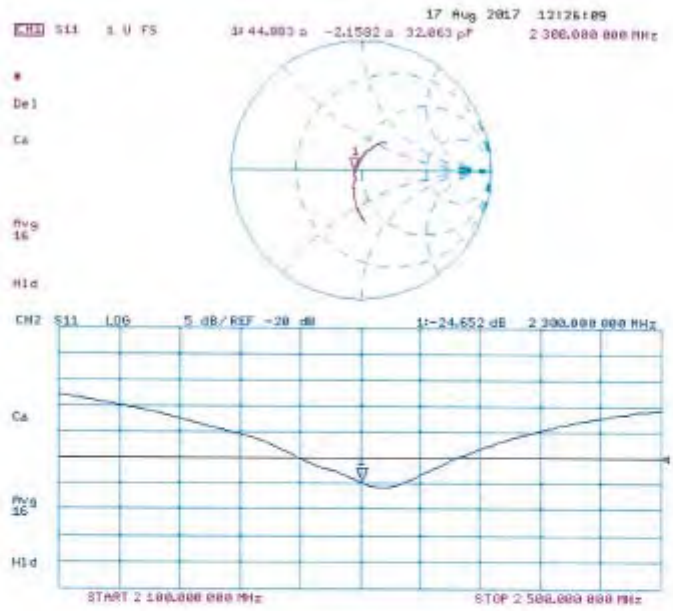

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Accreditation No.: SCS 0108

Client SGS -TW (Auden)

Certificate No: D2450V2-727_Apr17

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 21, 2017

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-17 (No. 217-02521/02522)	Apr-18
Power sensor NRP-Z91	SN: 103244	04-Apr-17 (No. 217-02521)	Apr-18
Power sensor NRP-Z91	SN: 103245	04-Apr-17 (No. 217-02522)	Apr-18
Reference 20 dB Attenuator	SN: 5058 (20k)	07-Apr-17 (No. 217-02528)	Apr-18
Type-N mismatch combination	SN: 5047.2 / 03327	07-Apr-17 (No. 217-02529)	Apr-18
Reference Probe EX3DV4	SN: 7349	31-Dec-16 (No. EX3-7349_Dec16)	Dec-17
DAE4	SN: 601	28-Mar-17 (No. DAE4-601_Mar17)	Mar-18

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter EPM-442A	SN: GB37480704	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-16)	In house check: Oct-18
Network Analyzer HP 8753E	SN: US37390585	18-Oct-01 (in house check Oct-16)	In house check: Oct-17

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

Issued: April 21, 2017

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

Certificate No: D2450V2-727_Apr17 Page 1 of 8

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Accreditation No.: SCS 0108

Glossary:

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

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

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Measurement Conditions

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

DASY Version	DASY5	V52.10.0
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	2450 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	39.2	1.80 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	37.7 ± 6 %	1.87 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	13.4 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**52.2 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.18 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**24.3 W/kg ± 16.5 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	52.7	1.95 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	52.5 ± 6 %	2.03 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	12.9 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**50.6 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	6.01 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**23.8 W/kg ± 16.5 % (k=2)**

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Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	56.3 Ω + 2.1 jΩ
Return Loss	- 24.0 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	51.1 Ω + 4.1 jΩ
Return Loss	- 27.5 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.149 ns

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	January 09, 2003

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DASY5 Validation Report for Head TSL

Date: 21.04.2017

Test Laboratory: SPEAG, Zurich, Switzerland

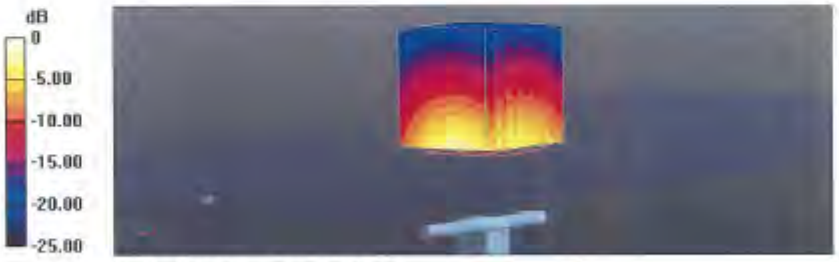
DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 727

Communication System: UID 0 - CW; Frequency: 2450 MHz
Medium parameters used: f = 2450 MHz; σ = 1.87 S/m; ε_r = 37.7; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(7.72, 7.72, 7.72); Calibrated: 31.12.2016;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 28.03.2017
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.0(1442); SEMCAD X 14.6.10(7413)

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 = 109.8 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 27.3 W/kg
SAR(1 g) = 13.4 W/kg; SAR(10 g) = 6.18 W/kg
Maximum value of SAR (measured) = 21.1 W/kg



0 dB = 21.1 W/kg = 13.24 dBW/kg

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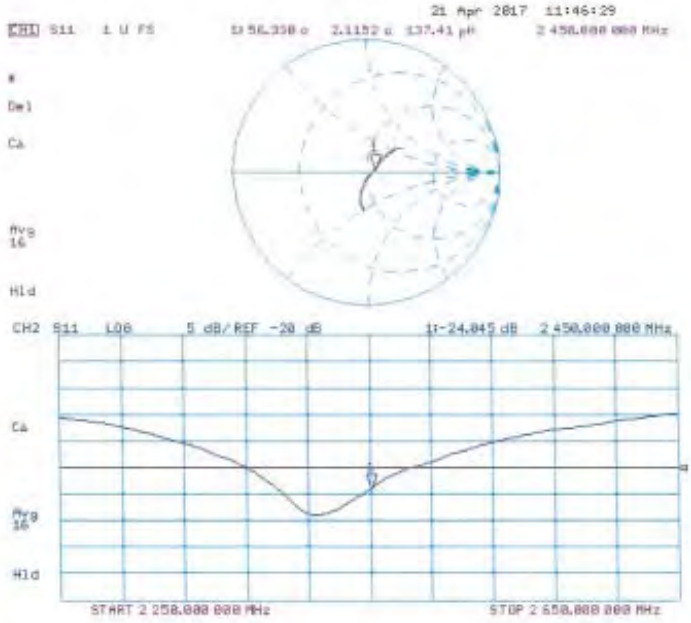

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DASY5 Validation Report for Body TSL

Date: 21.04.2017

Test Laboratory: SPEAG, Zurich, Switzerland

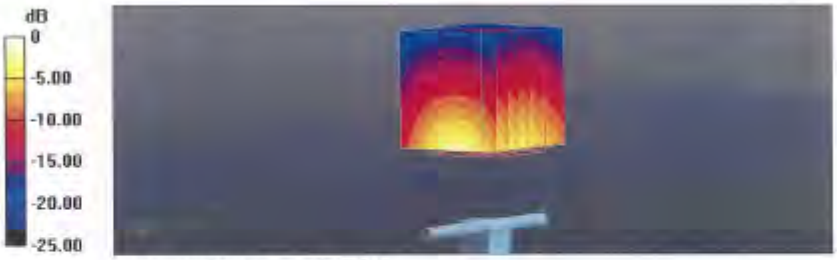
DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 727

Communication System: UID 0 - CW; Frequency: 2450 MHz
Medium parameters used: f = 2450 MHz; σ = 2.03 S/m; ε_r = 52.5; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(7.79, 7.79, 7.79); Calibrated: 31.12.2016;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 28.03.2017
- Phantom: Flat Phantom 5.0 (back); Type: QD 000 P50 AA; Serial: 1002
- DASY52 52.10.0(1442); SEMCAD X 14.6.10(7413)

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 = 105.0 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 25.4 W/kg
SAR(1 g) = 12.9 W/kg; SAR(10 g) = 6.01 W/kg
Maximum value of SAR (measured) = 20.0 W/kg



0 dB = 20.0 W/kg = 13.01 dBW/kg

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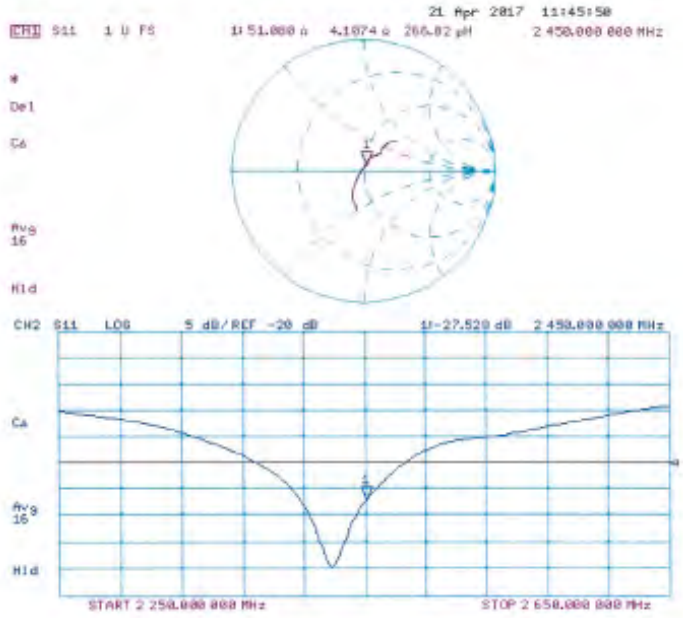
Impedance Measurement Plot for Body TSL



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Accreditation No.: SCS 0108

Client SGS-TW (Auden)

Certificate No: D2600V2-1005_Jan17

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 25, 2017

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	06-Apr-16 (No. 217-02288/02289)	Apr-17
Power sensor NRP-Z91	SN: 103244	06-Apr-16 (No. 217-02288)	Apr-17
Power sensor NRP-Z91	SN: 103245	06-Apr-16 (No. 217-02289)	Apr-17
Reference 20 dB Attenuator	SN: 5058 (20k)	05-Apr-16 (No. 217-02292)	Apr-17
Type-N mismatch combination	SN: 5047.2 / 06327	05-Apr-16 (No. 217-02295)	Apr-17
Reference Probe EX3DV4	SN: 7349	31-Dec-16 (No. EX3-7349_Dec16)	Dec-17
DAE4	SN: 601	04-Jan-17 (No. DAE4-601_Jan17)	Jan-18

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter EPM-442A	SN: GB37480704	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-16)	In house check: Oct-18
Network Analyzer HP 8753E	SN: US37390585	18-Oct-01 (in house check Oct-16)	In house check: Oct-17

	Name	Function	Signature
Calibrated by:	Johannes Kurikka	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: January 25, 2017

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Glossary:

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

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

a) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

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Measurement Conditions

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

DASY Version	DASY5	V52.8.8
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	2600 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	39.0	1.96 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	37.4 ± 6 %	2.05 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	---	---

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	14.3 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**55.5 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.32 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**24.8 W/kg ± 16.5 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	52.5	2.16 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	52.3 ± 6 %	2.20 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	---	---

SAR result with Body TSL

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	13.9 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**55.1 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (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	**24.7 W/kg ± 16.5 % (k=2)**

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Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	49.3 Ω - 4.7 jΩ
Return Loss	- 26.5 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	44.7 Ω - 3.2 jΩ
Return Loss	- 23.7 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.154 ns

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	December 23, 2006

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DASY5 Validation Report for Head TSL

Date: 25.01.2017

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2 - SN:1005

Communication System: UID 0 - CW; Frequency: 2600 MHz
Medium parameters used: f = 2600 MHz; σ = 2.05 S/m; ε_r = 37.4; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(7.56, 7.56, 7.56); Calibrated: 31.12.2016;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.01.2017
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7372)

Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 116.2 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 30.5 W/kg
SAR(1 g) = 14.3 W/kg; SAR(10 g) = 6.32 W/kg
Maximum value of SAR (measured) = 24.2 W/kg

0 dB = 25.2 W/kg = 13.84 dBW/kg

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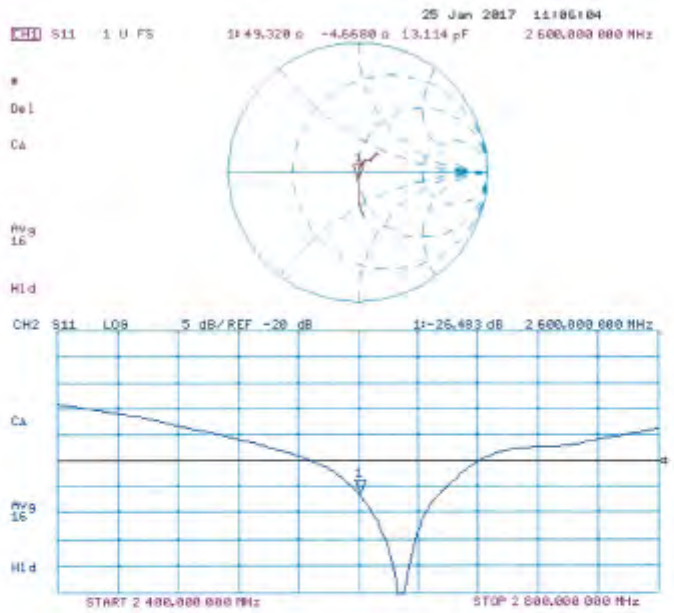
Impedance Measurement Plot for Head TSL



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DASY5 Validation Report for Body TSL

Date: 18.01.2017

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2 - SN:1005

Communication System: UID 0 - CW; Frequency: 2600 MHz
Medium parameters used: f = 2600 MHz; σ = 2.2 S/m; ε_r = 52.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(7.48, 7.48, 7.48); Calibrated: 31.12.2016;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.01.2017
- Phantom: Flat Phantom 5.0 (back); Type: QD 000 P50 AA; Serial: 1002
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7372)

Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 108.8 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 28.8 W/kg
SAR(1 g) = 13.9 W/kg; SAR(10 g) = 6.2 W/kg
Maximum value of SAR (measured) = 23.3 W/kg

0 dB = 23.3 W/kg = 13.67 dBW/kg

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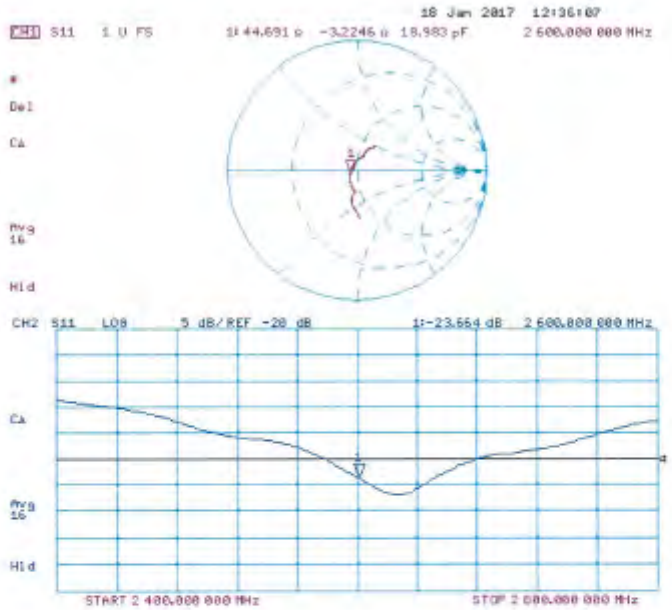
Impedance Measurement Plot for Body TSL



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Accreditation No.: SCS 0108

Client SGS-TW (Auden)

Certificate No: D5GHzV2-1023_Jan17

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 20, 2017

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	06-Apr-16 (No. 217-02288/02289)	Apr-17
Power sensor NRP-Z91	SN: 103244	06-Apr-16 (No. 217-02288)	Apr-17
Power sensor NRP-Z91	SN: 103245	06-Apr-16 (No. 217-02289)	Apr-17
Reference 20 dB Attenuator	SN: 5058 (20k)	05-Apr-16 (No. 217-02292)	Apr-17
Type-N mismatch combination	SN: 5047.2 / 06327	05-Apr-16 (No. 217-02295)	Apr-17
Reference Probe EX3DV4	SN: 3503	31-Dec-16 (No. EX3-3503_Dec16)	Dec-17
DAE4	SN: 601	04-Jan-17 (No. DAE4-601_Jan17)	Jan-18

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter EPM-442A	SN: GB37480704	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-16)	In house check: Oct-18
Network Analyzer HP 8753E	SN: US37390585	18-Oct-01 (in house check Oct-16)	In house check: Oct-17

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: January 24, 2017

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Glossary:

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

d) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

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Measurement Conditions

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

DASY Version	DASY5	V52.8.8
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy = 4.0 mm, dz = 1.4 mm	Graded Ratio = 1.4 (Z direction)
Frequency	5200 MHz ± 1 MHz 5300 MHz ± 1 MHz 5600 MHz ± 1 MHz 5800 MHz ± 1 MHz	

Head TSL parameters at 5200 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	36.0	4.66 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	35.4 ± 6 %	4.45 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	—	—

SAR result with Head TSL at 5200 MHz

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	7.55 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**75.2 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.16 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**21.5 W/kg ± 19.5 % (k=2)**

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Head TSL parameters at 5300 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.9	4.76 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	35.2 ± 6 %	4.55 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	8.22 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**81.8 W / kg ± 19.9 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.35 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**23.3 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 %	4.85 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	8.22 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**81.7 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.33 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**23.1 W/kg ± 19.5 % (k=2)**

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Head TSL parameters at 5800 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.3	5.27 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	34.4 ± 6 %	5.05 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	—	—

SAR result with Head TSL at 5800 MHz

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	7.82 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**77.6 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.22 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**22.0 W/kg ± 19.5 % (k=2)**

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Body TSL parameters at 5200 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	49.0	5.30 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	47.5 ± 6 %	5.36 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	—	—

SAR result with Body TSL at 5200 MHz

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.32 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**72.6 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (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	47.3 ± 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 cm³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.68 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**76.1 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.15 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**21.3 W/kg ± 19.5 % (k=2)**

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Body TSL parameters at 5600 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.5	5.77 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	46.6 ± 6 %	5.90 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	—	—

SAR result with Body TSL at 5600 MHz

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	8.02 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**79.6 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.26 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**22.4 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	46.3 ± 6 %	6.17 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	—	—

SAR result with Body TSL at 5800 MHz

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.64 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**75.9 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.13 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**21.1 W/kg ± 19.5 % (k=2)**

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Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL at 5200 MHz

Impedance, transformed to feed point	49.6 Ω - 6.7 jΩ
Return Loss	- 23.4 dB

Antenna Parameters with Head TSL at 5300 MHz

Impedance, transformed to feed point	49.0 Ω - 1.8 jΩ
Return Loss	- 33.5 dB

Antenna Parameters with Head TSL at 5600 MHz

Impedance, transformed to feed point	54.1 Ω - 0.2 jΩ
Return Loss	- 28.2 dB

Antenna Parameters with Head TSL at 5800 MHz

Impedance, transformed to feed point	55.4 Ω + 2.8 jΩ
Return Loss	- 24.8 dB

Antenna Parameters with Body TSL at 5200 MHz

Impedance, transformed to feed point	48.9 Ω - 7.0 jΩ
Return Loss	- 22.9 dB

Antenna Parameters with Body TSL at 5300 MHz

Impedance, transformed to feed point	51.0 Ω - 1.0 jΩ
Return Loss	- 37.0 dB

Antenna Parameters with Body TSL at 5600 MHz

Impedance, transformed to feed point	55.6 Ω + 1.5 jΩ
Return Loss	- 25.2 dB

Antenna Parameters with Body TSL at 5800 MHz

Impedance, transformed to feed point	56.6 Ω + 2.7 jΩ
Return Loss	- 23.6 dB

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General Antenna Parameters and Design

Electrical Delay (one direction)	1.199 ns

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	February 05, 2004

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DASY5 Validation Report for Head TSL

Date: 20.01.2017

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1023

Communication System: UID 0 - CW;
Frequency: 5200 MHz, Frequency: 5300 MHz, Frequency: 5600 MHz, Frequency: 5800 MHz
Medium parameters used: f = 5200 MHz; σ = 4.45 S/m; ε_r = 35.4; ρ = 1000 kg/m^3,
Medium parameters used: f = 5300 MHz; σ = 4.55 S/m; ε_r = 35.2; ρ = 1000 kg/m^3,
Medium parameters used: f = 5600 MHz; σ = 4.85 S/m; ε_r = 34.7; ρ = 1000 kg/m^3,
Medium parameters used: f = 5800 MHz; σ = 5.05 S/m; ε_r = 34.4; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN3503; ConvF(5.76, 5.76, 5.76); Calibrated: 31.12.2016, ConvF(5.35, 5.35, 5.35); Calibrated: 31.12.2016, ConvF(5.09, 5.09, 5.09); Calibrated: 31.12.2016, ConvF(5.01, 5.01, 5.01); Calibrated: 31.12.2016;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.01.2017
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; 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 = 70.58 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 27.6 W/kg
SAR(1 g) = 7.55 W/kg; SAR(10 g) = 2.16 W/kg
Maximum value of SAR (measured) = 17.4 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 = 73.01 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 31.6 W/kg
SAR(1 g) = 8.22 W/kg; SAR(10 g) = 2.35 W/kg
Maximum value of SAR (measured) = 19.3 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 = 71.94 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 33.2 W/kg
SAR(1 g) = 8.22 W/kg; SAR(10 g) = 2.33 W/kg
Maximum value of SAR (measured) = 19.8 W/kg

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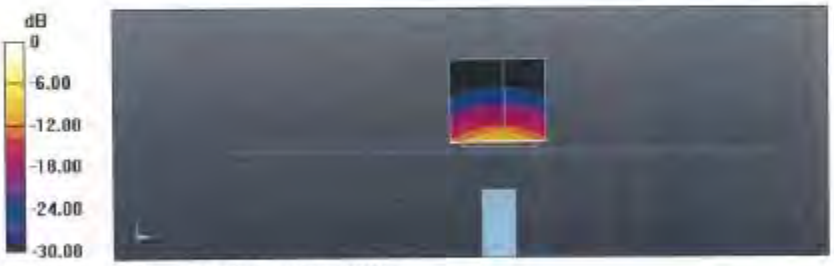
Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5800 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 69.84 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 32.7 W/kg
SAR(1 g) = 7.82 W/kg; SAR(10 g) = 2.22 W/kg
Maximum value of SAR (measured) = 19.5 W/kg



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

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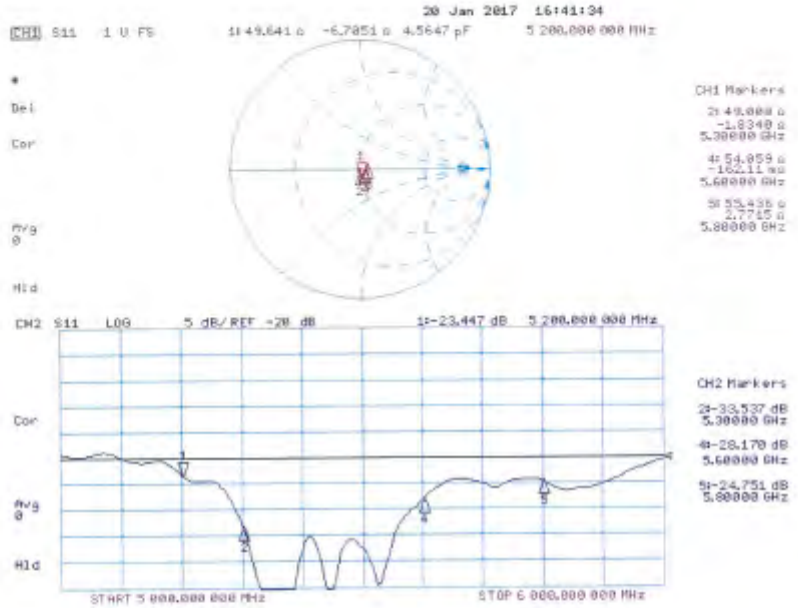
Impedance Measurement Plot for Head TSL



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DASY5 Validation Report for Body TSL

Date: 19.01.2017

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1023

Communication System: UID 0 - CW;
Frequency: 5200 MHz, Frequency: 5300 MHz, Frequency: 5600 MHz, Frequency: 5800 MHz
Medium parameters used: f = 5200 MHz; σ = 5.36 S/m; ε_r = 47.5; ρ = 1000 kg/m^3 ,
Medium parameters used: f = 5300 MHz; σ = 5.5 S/m; ε_r = 47.3; ρ = 1000 kg/m^3 ,
Medium parameters used: f = 5600 MHz; σ = 5.9 S/m; ε_r = 46.6; ρ = 1000 kg/m^3 ;
Medium parameters used: f = 5800 MHz; σ = 6.17 S/m; ε_r = 46.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN3503; ConvF(5.29, 5.29, 5.29); Calibrated: 31.12.2016, ConvF(5.04, 5.04, 5.04); Calibrated: 31.12.2016, ConvF(4.57, 4.57, 4.57); Calibrated: 31.12.2016, ConvF(4.48, 4.48, 4.48); Calibrated: 31.12.2016;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.01.2017
- Phantom: Flat Phantom 5.0 (back); Type: QD 000 P50 AA; 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 = 65.54 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 28.1 W/kg
SAR(1 g) = 7.32 W/kg; SAR(10 g) = 2.05 W/kg
Maximum value of SAR (measured) = 16.6 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 = 66.93 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 30.1 W/kg
SAR(1 g) = 7.66 W/kg; SAR(10 g) = 2.15 W/kg
Maximum value of SAR (measured) = 17.6 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 = 67.09 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 33.7 W/kg
SAR(1 g) = 8.02 W/kg; SAR(10 g) = 2.26 W/kg
Maximum value of SAR (measured) = 18.9 W/kg

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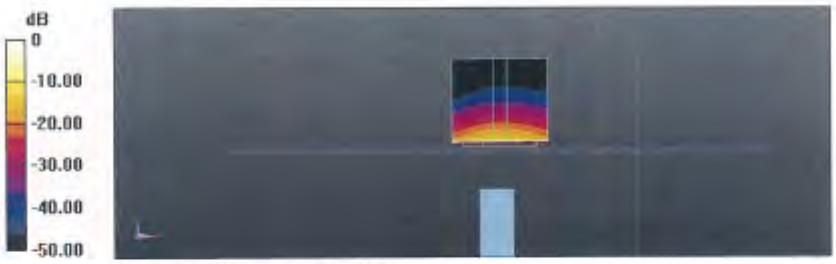
Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5800 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 65.14 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 34.0 W/kg
SAR(1 g) = 7.64 W/kg; SAR(10 g) = 2.13 W/kg
Maximum value of SAR (measured) = 18.3 W/kg



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

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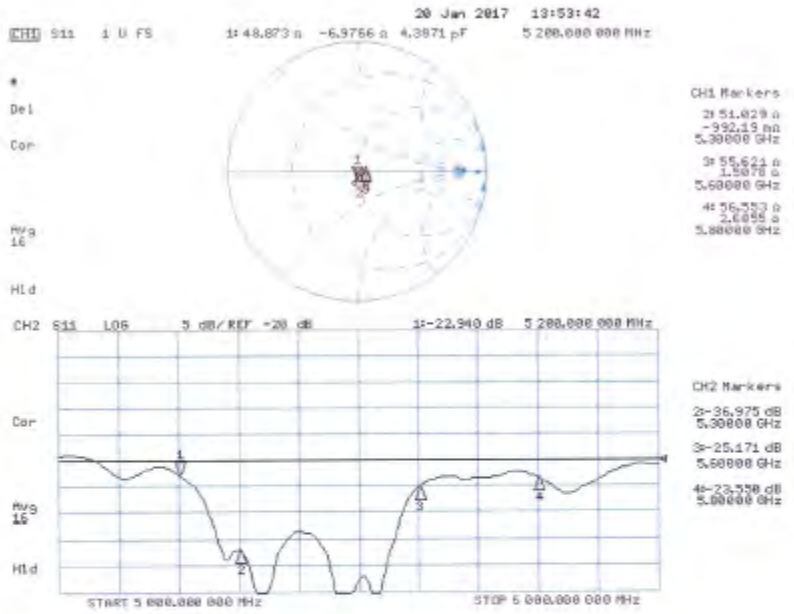
Impedance Measurement Plot for Body TSL



- End of report -

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