SAR TEST REPORT

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

Equipment Under Test	LTE Tablet PC
Brand Name	Sprint
Model No.	AQT82
Company Name	Quanta Microsystems, Inc.
Company Address	188 Wenhwa 2nd Rd., Guishan Dist., Tao Yuan City, Taiwan, 33377
Standards	IEEE/ANSI C95.1-1992, IEEE 1528-2013, KDB248227D01v02r02,KDB865664D01v01r04, KDB865664D02v01r02,KDB447498D01v06, KDB616217D04v01r02, KDB941225D05v02r05
FCC ID	T5UAQT82
Date of Receipt	Feb. 20, 2017
Date of Test(s)	Mar. 08, 2017 ~ Mar. 30, 2017
Date of Issue	Apr. 11, 2017

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

Engineer	**Supervisor**
Jimmy Chang	John Yeh
Jimmy Chang	**John Yeh**
Date: Apr. 11, 2017	**Date: Apr. 11, 2017**

Revision History

Report Number	Revision	Description	Issue Date
E5/2017/20018	Rev.00	Initial creation of document	Apr. 11, 2017

Contents

1. General Information

1.1 Testing Laboratory

SGS Taiwan Ltd. Electronics & Communication Laboratory	
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Tel	+886-2-2299-3279
Fax	+886-2-2298-0488
Internet	http://www.tw.sgs.com/

1.2 Details of Applicant

Company Name	Quanta Microsystems, Inc.
Company Address	188 Wenhwa 2nd Rd., Guishan Dist., Tao Yuan City, Taiwan, 33377

1.3 Description of EUT

Equipment Under Test	LTE Tablet PC		
Brand Name	Sprint		
Model No.	AQT82		
FCC ID	T5UAQT82		
Mode of Operation	☒LTE ☒WLAN802.11 a/b/g/n(20M/40M) ☒Bluetooth		
Duty Cycle	LTE FDD	1	
	LTE TDD	0.633	
	WLAN802.11 a/b/g/n(20M/40M)	1	
	Bluetooth	1	
TX Frequency Range (MHz)	LTE FDD Band 2	1850	— 1910
	LTE FDD Band 4	1710	— 1755
	LTE FDD Band 5	824	— 849
	LTE FDD Band 12	699	— 716
	LTE FDD Band 25	1850	— 1915
	LTE FDD Band 26	815	— 849
	LTE TDD Band 41	2496	— 2690
	WiFi 2.4GHz	2400	— 2483.5
	WiFi 5GHz	5150-5250/5250-5350 5470-5725/5725-5850	
	Bluetooth	2400	— 2483.5

Channel Number (ARFCN)	LTE FDD Band 2	18607	—	19193
	LTE FDD Band 4	19957	—	20393
	LTE FDD Band 5	20407	—	20643
	LTE FDD Band 12	23017	—	23173
	LTE FDD Band 25	26047	—	26683
	LTE FDD Band 26	26697	—	27033
	LTE TDD Band 41	39675	—	41565
	WiFi 2.4GHz	1	—	11
	WiFi 5GHz	36	—	165
	Bluetooth	0	—	78

Max. SAR (1 g) (Unit: W/Kg)				
Band	Measured	Reported	Channel	Position
LTE FDD Band 2	1.33	1.38	18900	Back side
LTE FDD Band 4	1.21	1.32	20050	Back side
LTE FDD Band 5	1.07	1.15	20525	Back side
LTE FDD Band 12	1.25	1.32	23060	Back side
LTE FDD Band 25	1.10	1.19	26365	Back side
LTE FDD Band 26	1.04	1.16	26965	Back side
LTE TDD Band 41	1.20	1.25	41490	Back side
WLAN802.11b	1.08	1.10	6	Back side
WLAN802.11 n(40M) 5.2G	1.04	1.11	38	Back side
WLAN802.11 n(40M) 5.3G	0.84	0.91	62	Back side
WLAN802.11 n(40M) 5.6G	1.15	1.16	134	Top side
WLAN802.11 n(40M) 5.8G	0.92	0.94	151	Back side

LTE FDD Band 2 / Band 4 / Band 5 / Band 12 / Band 25 / Band 26 power table:

FDD Band 2 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
20	QPSK	1 RB	0	1860	18700	23.72	24	0
				1880	18900	23.44	24	0
				1900	19100	23.38	24	0
			50	1860	18700	23.83	24	0
				1880	18900	23.41	24	0
				1900	19100	23.56	24	0
			99	1860	18700	23.55	24	0
				1880	18900	23.52	24	0
				1900	19100	23.07	24	0
		50 RB	0	1860	18700	22.59	23	0-1
				1880	18900	22.52	23	0-1
				1900	19100	22.52	23	0-1
			25	1860	18700	22.58	23	0-1
				1880	18900	22.39	23	0-1
				1900	19100	22.54	23	0-1
			50	1860	18700	22.52	23	0-1
				1880	18900	22.47	23	0-1
				1900	19100	22.43	23	0-1
		100RB		1860	18700	22.58	23	0-1
				1880	18900	22.48	23	0-1
				1900	19100	22.50	23	0-1
	16-QAM	1 RB	0	1860	18700	22.73	23	0-1
				1880	18900	23.00	23	0-1
				1900	19100	22.47	23	0-1
			50	1860	18700	22.85	23	0-1
				1880	18900	22.50	23	0-1
				1900	19100	22.88	23	0-1
			99	1860	18700	22.27	23	0-1
				1880	18900	22.70	23	0-1
				1900	19100	22.18	23	0-1
		50 RB	0	1860	18700	21.64	22	0-2
				1880	18900	21.62	22	0-2
				1900	19100	21.45	22	0-2
			25	1860	18700	21.54	22	0-2
				1880	18900	21.45	22	0-2
				1900	19100	21.51	22	0-2
			50	1860	18700	21.52	22	0-2
				1880	18900	21.32	22	0-2
				1900	19100	21.31	22	0-2
		100RB		1860	18700	21.49	22	0-2
				1880	18900	21.45	22	0-2
				1900	19100	21.36	22	0-2

FDD Band 2 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
15	QPSK	1 RB	0	1857.5	18675	23.33	24	0
				1880	18900	23.56	24	0
				1902.5	19125	23.49	24	0
			36	1857.5	18675	23.27	24	0
				1880	18900	23.35	24	0
				1902.5	19125	23.36	24	0
			74	1857.5	18675	23.49	24	0
				1880	18900	23.55	24	0
				1902.5	19125	23.21	24	0
		36 RB	0	1857.5	18675	22.55	23	0-1
				1880	18900	22.41	23	0-1
				1902.5	19125	22.55	23	0-1
			18	1857.5	18675	22.46	23	0-1
				1880	18900	22.44	23	0-1
				1902.5	19125	22.47	23	0-1
			37	1857.5	18675	22.47	23	0-1
				1880	18900	22.46	23	0-1
				1902.5	19125	22.42	23	0-1
		75RB		1857.5	18675	22.50	23	0-1
				1880	18900	22.49	23	0-1
				1902.5	19125	22.47	23	0-1
	16-QAM	1 RB	0	1857.5	18675	22.35	23	0-1
				1880	18900	22.48	23	0-1
				1902.5	19125	22.97	23	0-1
			36	1857.5	18675	22.47	23	0-1
				1880	18900	22.13	23	0-1
				1902.5	19125	22.35	23	0-1
			74	1857.5	18675	22.69	23	0-1
				1880	18900	23.00	23	0-1
				1902.5	19125	22.01	23	0-1
		36 RB	0	1857.5	18675	21.56	22	0-2
				1880	18900	21.34	22	0-2
				1902.5	19125	21.40	22	0-2
			18	1857.5	18675	21.52	22	0-2
				1880	18900	21.42	22	0-2
				1902.5	19125	21.42	22	0-2
			37	1857.5	18675	21.43	22	0-2
				1880	18900	21.46	22	0-2
				1902.5	19125	21.34	22	0-2
		75RB		1857.5	18675	21.43	22	0-2
				1880	18900	21.35	22	0-2
				1902.5	19125	21.41	22	0-2

FDD Band 2 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	1855	18650	23.53	24	0
				1880	18900	23.36	24	0
				1905	19150	23.28	24	0
			25	1855	18650	23.53	24	0
				1880	18900	23.52	24	0
				1905	19150	23.57	24	0
			49	1855	18650	23.45	24	0
				1880	18900	23.48	24	0
				1905	19150	23.15	24	0
		25 RB	0	1855	18650	22.66	23	0-1
				1880	18900	22.40	23	0-1
				1905	19150	22.54	23	0-1
			12	1855	18650	22.41	23	0-1
				1880	18900	22.36	23	0-1
				1905	19150	22.47	23	0-1
			25	1855	18650	22.42	23	0-1
				1880	18900	22.40	23	0-1
				1905	19150	22.23	23	0-1
		50RB		1855	18650	22.48	23	0-1
				1880	18900	22.38	23	0-1
				1905	19150	22.39	23	0-1
	16-QAM	1 RB	0	1855	18650	22.94	23	0-1
				1880	18900	22.73	23	0-1
				1905	19150	22.79	23	0-1
			25	1855	18650	22.93	23	0-1
				1880	18900	22.99	23	0-1
				1905	19150	22.82	23	0-1
			49	1855	18650	22.64	23	0-1
				1880	18900	22.19	23	0-1
				1905	19150	22.30	23	0-1
		25 RB	0	1855	18650	21.33	22	0-2
				1880	18900	21.68	22	0-2
				1905	19150	21.41	22	0-2
			12	1855	18650	21.33	22	0-2
				1880	18900	21.79	22	0-2
				1905	19150	21.28	22	0-2
			25	1855	18650	21.19	22	0-2
				1880	18900	21.72	22	0-2
				1905	19150	21.23	22	0-2
		50RB		1855	18650	21.49	22	0-2
				1880	18900	21.49	22	0-2
				1905	19150	21.36	22	0-2

FDD Band 2 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	1852.5	18625	23.31	24	0
				1880	18900	23.34	24	0
				1907.5	19175	23.33	24	0
			12	1852.5	18625	23.54	24	0
				1880	18900	23.23	24	0
				1907.5	19175	23.45	24	0
			24	1852.5	18625	23.29	24	0
				1880	18900	23.30	24	0
				1907.5	19175	23.33	24	0
		12 RB	0	1852.5	18625	22.49	23	0-1
				1880	18900	22.22	23	0-1
				1907.5	19175	22.23	23	0-1
			6	1852.5	18625	22.52	23	0-1
				1880	18900	22.32	23	0-1
				1907.5	19175	22.25	23	0-1
			13	1852.5	18625	22.41	23	0-1
				1880	18900	22.39	23	0-1
				1907.5	19175	22.14	23	0-1
		25RB		1852.5	18625	22.55	23	0-1
				1880	18900	22.40	23	0-1
				1907.5	19175	22.25	23	0-1
	16-QAM	1 RB	0	1852.5	18625	22.47	23	0-1
				1880	18900	22.73	23	0-1
				1907.5	19175	22.41	23	0-1
			12	1852.5	18625	22.94	23	0-1
				1880	18900	22.90	23	0-1
				1907.5	19175	22.07	23	0-1
			24	1852.5	18625	23.00	23	0-1
				1880	18900	21.90	23	0-1
				1907.5	19175	22.27	23	0-1
		12 RB	0	1852.5	18625	21.45	22	0-2
				1880	18900	21.29	22	0-2
				1907.5	19175	21.19	22	0-2
			6	1852.5	18625	21.52	22	0-2
				1880	18900	21.33	22	0-2
				1907.5	19175	21.21	22	0-2
			13	1852.5	18625	21.32	22	0-2
				1880	18900	21.17	22	0-2
				1907.5	19175	21.18	22	0-2
		25RB		1852.5	18625	21.32	22	0-2
				1880	18900	21.43	22	0-2
				1907.5	19175	21.20	22	0-2

FDD Band 2 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
3	QPSK	1 RB	0	1851.5	18615	23.43	24	0
				1880	18900	23.40	24	0
				1908.5	19185	23.16	24	0
			7	1851.5	18615	23.80	24	0
				1880	18900	23.45	24	0
				1908.5	19185	23.37	24	0
			14	1851.5	18615	23.71	24	0
				1880	18900	23.42	24	0
				1908.5	19185	23.26	24	0
		8 RB	0	1851.5	18615	22.43	23	0-1
				1880	18900	22.34	23	0-1
				1908.5	19185	22.15	23	0-1
			4	1851.5	18615	22.63	23	0-1
				1880	18900	22.37	23	0-1
				1908.5	19185	22.11	23	0-1
			7	1851.5	18615	22.58	23	0-1
				1880	18900	22.33	23	0-1
				1908.5	19185	22.06	23	0-1
		15RB		1851.5	18615	22.44	23	0-1
				1880	18900	22.29	23	0-1
				1908.5	19185	22.09	23	0-1
	16-QAM	1 RB	0	1851.5	18615	22.51	23	0-1
				1880	18900	22.15	23	0-1
				1908.5	19185	22.14	23	0-1
			7	1851.5	18615	22.13	23	0-1
				1880	18900	22.60	23	0-1
				1908.5	19185	22.12	23	0-1
			14	1851.5	18615	22.42	23	0-1
				1880	18900	22.61	23	0-1
				1908.5	19185	21.96	23	0-1
		8 RB	0	1851.5	18615	21.48	22	0-2
				1880	18900	21.19	22	0-2
				1908.5	19185	21.20	22	0-2
			4	1851.5	18615	21.82	22	0-2
				1880	18900	21.21	22	0-2
				1908.5	19185	21.21	22	0-2
			7	1851.5	18615	21.68	22	0-2
				1880	18900	21.34	22	0-2
				1908.5	19185	21.20	22	0-2
		15RB		1851.5	18615	21.54	22	0-2
				1880	18900	21.26	22	0-2
				1908.5	19185	20.95	22	0-2

FDD Band 2 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
1.4	QPSK	1 RB	0	1850.7	18607	23.43	24	0
				1880	18900	23.27	24	0
				1909.3	19193	23.08	24	0
			2	1850.7	18607	23.68	24	0
				1880	18900	23.43	24	0
				1909.3	19193	23.23	24	0
			5	1850.7	18607	23.52	24	0
				1880	18900	23.31	24	0
				1909.3	19193	23.19	24	0
		3 RB	0	1850.7	18607	23.57	24	0
				1880	18900	23.33	24	0
				1909.3	19193	23.07	24	0
			2	1850.7	18607	23.71	24	0
				1880	18900	23.41	24	0
				1909.3	19193	23.12	24	0
			3	1850.7	18607	23.61	24	0
				1880	18900	23.42	24	0
				1909.3	19193	23.23	24	0
		6RB		1850.7	18607	22.49	23	0-1
				1880	18900	22.39	23	0-1
				1909.3	19193	22.14	23	0-1
	16-QAM	1 RB	0	1850.7	18607	22.09	23	0-1
				1880	18900	22.59	23	0-1
				1909.3	19193	22.50	23	0-1
			2	1850.7	18607	22.30	23	0-1
				1880	18900	22.67	23	0-1
				1909.3	19193	22.50	23	0-1
			5	1850.7	18607	22.66	23	0-1
				1880	18900	22.68	23	0-1
				1909.3	19193	22.32	23	0-1
		3 RB	0	1850.7	18607	22.51	23	0-1
				1880	18900	22.43	23	0-1
				1909.3	19193	22.07	23	0-1
			2	1850.7	18607	22.69	23	0-1
				1880	18900	22.51	23	0-1
				1909.3	19193	22.16	23	0-1
			3	1850.7	18607	22.83	23	0-1
				1880	18900	22.58	23	0-1
				1909.3	19193	22.44	23	0-1
		6RB		1850.7	18607	21.32	22	0-2
				1880	18900	21.17	22	0-2
				1909.3	19193	21.03	22	0-2

FDD Band 2 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
20	QPSK	1 RB	0	1860	18700	16.34	16.5	0
				1880	18900	16.32	16.5	0
				1900	19100	16.32	16.5	0
			50	1860	18700	16.49	16.5	0
				1880	18900	16.35	16.5	0
				1900	19100	16.50	16.5	0
			99	1860	18700	16.48	16.5	0
				1880	18900	16.28	16.5	0
				1900	19100	16.21	16.5	0
		50 RB	0	1860	18700	15.50	15.5	0-1
				1880	18900	15.41	15.5	0-1
				1900	19100	15.40	15.5	0-1
			25	1860	18700	15.47	15.5	0-1
				1880	18900	15.41	15.5	0-1
				1900	19100	15.36	15.5	0-1
			50	1860	18700	15.44	15.5	0-1
				1880	18900	15.43	15.5	0-1
				1900	19100	15.33	15.5	0-1
		100RB		1860	18700	15.50	15.5	0-1
				1880	18900	15.37	15.5	0-1
				1900	19100	15.32	15.5	0-1
	16-QAM	1 RB	0	1860	18700	15.45	15.5	0-1
				1880	18900	15.17	15.5	0-1
				1900	19100	14.72	15.5	0-1
			50	1860	18700	15.44	15.5	0-1
				1880	18900	15.40	15.5	0-1
				1900	19100	15.44	15.5	0-1
			99	1860	18700	15.47	15.5	0-1
				1880	18900	15.32	15.5	0-1
				1900	19100	15.11	15.5	0-1
		50 RB	0	1860	18700	14.43	14.5	0-2
				1880	18900	14.37	14.5	0-2
				1900	19100	14.09	14.5	0-2
			25	1860	18700	14.30	14.5	0-2
				1880	18900	14.37	14.5	0-2
				1900	19100	14.15	14.5	0-2
			50	1860	18700	14.42	14.5	0-2
				1880	18900	14.25	14.5	0-2
				1900	19100	14.12	14.5	0-2
		100RB		1860	18700	14.36	14.5	0-2
				1880	18900	14.27	14.5	0-2
				1900	19100	14.10	14.5	0-2

FDD Band 2 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
15	QPSK	1 RB	0	1857.5	18675	16.10	16.5	0
				1880	18900	16.25	16.5	0
				1902.5	19125	16.41	16.5	0
			36	1857.5	18675	16.04	16.5	0
				1880	18900	16.30	16.5	0
				1902.5	19125	16.33	16.5	0
			74	1857.5	18675	16.25	16.5	0
				1880	18900	16.13	16.5	0
				1902.5	19125	16.33	16.5	0
		36 RB	0	1857.5	18675	15.39	15.5	0-1
				1880	18900	15.28	15.5	0-1
				1902.5	19125	15.46	15.5	0-1
			18	1857.5	18675	15.36	15.5	0-1
				1880	18900	15.32	15.5	0-1
				1902.5	19125	15.40	15.5	0-1
			37	1857.5	18675	15.37	15.5	0-1
				1880	18900	15.34	15.5	0-1
				1902.5	19125	15.36	15.5	0-1
		75RB		1857.5	18675	15.47	15.5	0-1
				1880	18900	15.36	15.5	0-1
				1902.5	19125	15.29	15.5	0-1
	16-QAM	1 RB	0	1857.5	18675	15.46	15.5	0-1
				1880	18900	15.47	15.5	0-1
				1902.5	19125	15.47	15.5	0-1
			36	1857.5	18675	15.47	15.5	0-1
				1880	18900	15.15	15.5	0-1
				1902.5	19125	15.40	15.5	0-1
			74	1857.5	18675	15.37	15.5	0-1
				1880	18900	15.03	15.5	0-1
				1902.5	19125	15.46	15.5	0-1
		36 RB	0	1857.5	18675	14.18	14.5	0-2
				1880	18900	14.37	14.5	0-2
				1902.5	19125	14.36	14.5	0-2
			18	1857.5	18675	14.16	14.5	0-2
				1880	18900	14.31	14.5	0-2
				1902.5	19125	14.31	14.5	0-2
			37	1857.5	18675	14.43	14.5	0-2
				1880	18900	14.32	14.5	0-2
				1902.5	19125	14.40	14.5	0-2
		75RB		1857.5	18675	14.37	14.5	0-2
				1880	18900	14.33	14.5	0-2
				1902.5	19125	14.37	14.5	0-2

FDD Band 2 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	1855	18650	16.18	16.5	0
				1880	18900	16.22	16.5	0
				1905	19150	16.20	16.5	0
			25	1855	18650	16.10	16.5	0
				1880	18900	16.32	16.5	0
				1905	19150	16.33	16.5	0
			49	1855	18650	16.23	16.5	0
				1880	18900	16.24	16.5	0
				1905	19150	16.11	16.5	0
		25 RB	0	1855	18650	15.44	15.5	0-1
				1880	18900	15.25	15.5	0-1
				1905	19150	15.40	15.5	0-1
			12	1855	18650	15.29	15.5	0-1
				1880	18900	15.36	15.5	0-1
				1905	19150	15.40	15.5	0-1
			25	1855	18650	15.21	15.5	0-1
				1880	18900	15.27	15.5	0-1
				1905	19150	15.17	15.5	0-1
		50RB		1855	18650	15.32	15.5	0-1
				1880	18900	15.26	15.5	0-1
				1905	19150	15.30	15.5	0-1
	16-QAM	1 RB	0	1855	18650	15.42	15.5	0-1
				1880	18900	15.29	15.5	0-1
				1905	19150	15.33	15.5	0-1
			25	1855	18650	15.20	15.5	0-1
				1880	18900	15.50	15.5	0-1
				1905	19150	15.45	15.5	0-1
			49	1855	18650	15.41	15.5	0-1
				1880	18900	15.48	15.5	0-1
				1905	19150	15.46	15.5	0-1
		25 RB	0	1855	18650	14.42	14.5	0-2
				1880	18900	14.35	14.5	0-2
				1905	19150	14.34	14.5	0-2
			12	1855	18650	14.37	14.5	0-2
				1880	18900	14.32	14.5	0-2
				1905	19150	14.48	14.5	0-2
			25	1855	18650	14.18	14.5	0-2
				1880	18900	14.26	14.5	0-2
				1905	19150	14.02	14.5	0-2
		50RB		1855	18650	14.38	14.5	0-2
				1880	18900	14.34	14.5	0-2
				1905	19150	14.36	14.5	0-2

FDD Band 2 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	1852.5	18625	16.07	16.5	0
				1880	18900	16.08	16.5	0
				1907.5	19175	16.05	16.5	0
			12	1852.5	18625	16.20	16.5	0
				1880	18900	16.16	16.5	0
				1907.5	19175	16.38	16.5	0
			24	1852.5	18625	16.15	16.5	0
				1880	18900	16.04	16.5	0
				1907.5	19175	16.13	16.5	0
		12 RB	0	1852.5	18625	15.30	15.5	0-1
				1880	18900	15.18	15.5	0-1
				1907.5	19175	15.09	15.5	0-1
			6	1852.5	18625	15.35	15.5	0-1
				1880	18900	15.18	15.5	0-1
				1907.5	19175	15.14	15.5	0-1
			13	1852.5	18625	15.34	15.5	0-1
				1880	18900	15.23	15.5	0-1
				1907.5	19175	15.10	15.5	0-1
		25RB		1852.5	18625	15.33	15.5	0-1
				1880	18900	15.17	15.5	0-1
				1907.5	19175	15.12	15.5	0-1
	16-QAM	1 RB	0	1852.5	18625	15.42	15.5	0-1
				1880	18900	15.50	15.5	0-1
				1907.5	19175	14.99	15.5	0-1
			12	1852.5	18625	15.47	15.5	0-1
				1880	18900	15.02	15.5	0-1
				1907.5	19175	15.25	15.5	0-1
			24	1852.5	18625	15.48	15.5	0-1
				1880	18900	15.45	15.5	0-1
				1907.5	19175	15.43	15.5	0-1
		12 RB	0	1852.5	18625	14.20	14.5	0-2
				1880	18900	14.16	14.5	0-2
				1907.5	19175	14.00	14.5	0-2
			6	1852.5	18625	14.23	14.5	0-2
				1880	18900	14.16	14.5	0-2
				1907.5	19175	14.01	14.5	0-2
			13	1852.5	18625	14.24	14.5	0-2
				1880	18900	14.26	14.5	0-2
				1907.5	19175	13.94	14.5	0-2
		25RB		1852.5	18625	14.34	14.5	0-2
				1880	18900	14.25	14.5	0-2
				1907.5	19175	14.16	14.5	0-2

FDD Band 2 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
3	QPSK	1 RB	0	1851.5	18615	16.30	16.5	0
				1880	18900	16.24	16.5	0
				1908.5	19185	16.05	16.5	0
			7	1851.5	18615	16.44	16.5	0
				1880	18900	16.29	16.5	0
				1908.5	19185	16.28	16.5	0
			14	1851.5	18615	16.26	16.5	0
				1880	18900	16.25	16.5	0
				1908.5	19185	16.08	16.5	0
		8 RB	0	1851.5	18615	15.33	15.5	0-1
				1880	18900	15.21	15.5	0-1
				1908.5	19185	15.12	15.5	0-1
			4	1851.5	18615	15.40	15.5	0-1
				1880	18900	15.26	15.5	0-1
				1908.5	19185	15.10	15.5	0-1
			7	1851.5	18615	15.37	15.5	0-1
				1880	18900	15.17	15.5	0-1
				1908.5	19185	15.06	15.5	0-1
		15RB		1851.5	18615	15.37	15.5	0-1
				1880	18900	15.17	15.5	0-1
				1908.5	19185	15.00	15.5	0-1
	16-QAM	1 RB	0	1851.5	18615	15.21	15.5	0-1
				1880	18900	14.96	15.5	0-1
				1908.5	19185	14.98	15.5	0-1
			7	1851.5	18615	15.24	15.5	0-1
				1880	18900	15.31	15.5	0-1
				1908.5	19185	15.44	15.5	0-1
			14	1851.5	18615	15.48	15.5	0-1
				1880	18900	14.90	15.5	0-1
				1908.5	19185	14.95	15.5	0-1
		8 RB	0	1851.5	18615	14.31	14.5	0-2
				1880	18900	14.22	14.5	0-2
				1908.5	19185	14.19	14.5	0-2
			4	1851.5	18615	14.28	14.5	0-2
				1880	18900	14.30	14.5	0-2
				1908.5	19185	13.97	14.5	0-2
			7	1851.5	18615	14.44	14.5	0-2
				1880	18900	14.31	14.5	0-2
				1908.5	19185	14.08	14.5	0-2
		15RB		1851.5	18615	14.32	14.5	0-2
				1880	18900	14.03	14.5	0-2
				1908.5	19185	13.96	14.5	0-2

FDD Band 2 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
1.4	QPSK	1 RB	0	1850.7	18607	16.16	16.5	0
				1880	18900	16.16	16.5	0
				1909.3	19193	15.90	16.5	0
			2	1850.7	18607	16.42	16.5	0
				1880	18900	16.09	16.5	0
				1909.3	19193	16.04	16.5	0
			5	1850.7	18607	16.03	16.5	0
				1880	18900	16.17	16.5	0
				1909.3	19193	15.94	16.5	0
		3 RB	0	1850.7	18607	16.12	16.5	0
				1880	18900	16.04	16.5	0
				1909.3	19193	16.14	16.5	0
			2	1850.7	18607	16.23	16.5	0
				1880	18900	16.07	16.5	0
				1909.3	19193	16.15	16.5	0
			3	1850.7	18607	16.24	16.5	0
				1880	18900	16.15	16.5	0
				1909.3	19193	16.07	16.5	0
		6RB		1850.7	18607	15.17	15.5	0-1
				1880	18900	15.20	15.5	0-1
				1909.3	19193	15.01	15.5	0-1
	16-QAM	1 RB	0	1850.7	18607	15.50	15.5	0-1
				1880	18900	15.40	15.5	0-1
				1909.3	19193	14.99	15.5	0-1
			2	1850.7	18607	15.43	15.5	0-1
				1880	18900	15.15	15.5	0-1
				1909.3	19193	15.03	15.5	0-1
			5	1850.7	18607	15.47	15.5	0-1
				1880	18900	15.19	15.5	0-1
				1909.3	19193	14.92	15.5	0-1
		3 RB	0	1850.7	18607	15.18	15.5	0-1
				1880	18900	15.35	15.5	0-1
				1909.3	19193	15.14	15.5	0-1
			2	1850.7	18607	15.49	15.5	0-1
				1880	18900	15.49	15.5	0-1
				1909.3	19193	15.25	15.5	0-1
			3	1850.7	18607	15.25	15.5	0-1
				1880	18900	15.48	15.5	0-1
				1909.3	19193	15.02	15.5	0-1
		6RB		1850.7	18607	14.09	14.5	0-2
				1880	18900	14.15	14.5	0-2
				1909.3	19193	14.22	14.5	0-2

FDD Band 4 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
20	QPSK	1 RB	0	1720	20050	23.17	24	0
				1732.5	20175	23.31	24	0
				1745	20300	23.46	24	0
			50	1720	20050	23.00	24	0
				1732.5	20175	23.29	24	0
				1745	20300	23.32	24	0
			99	1720	20050	23.05	24	0
				1732.5	20175	23.08	24	0
				1745	20300	22.93	24	0
		50 RB	0	1720	20050	22.18	23	0-1
				1732.5	20175	22.32	23	0-1
				1745	20300	22.29	23	0-1
			25	1720	20050	22.18	23	0-1
				1732.5	20175	22.27	23	0-1
				1745	20300	22.22	23	0-1
			50	1720	20050	22.24	23	0-1
				1732.5	20175	22.22	23	0-1
				1745	20300	22.10	23	0-1
		100RB		1720	20050	22.22	23	0-1
				1732.5	20175	22.21	23	0-1
				1745	20300	22.21	23	0-1
	16-QAM	1 RB	0	1720	20050	22.35	23	0-1
				1732.5	20175	22.74	23	0-1
				1745	20300	22.61	23	0-1
			50	1720	20050	22.50	23	0-1
				1732.5	20175	22.64	23	0-1
				1745	20300	22.91	23	0-1
			99	1720	20050	22.23	23	0-1
				1732.5	20175	22.09	23	0-1
				1745	20300	22.71	23	0-1
		50 RB	0	1720	20050	21.19	22	0-2
				1732.5	20175	21.17	22	0-2
				1745	20300	21.17	22	0-2
			25	1720	20050	21.20	22	0-2
				1732.5	20175	21.23	22	0-2
				1745	20300	21.08	22	0-2
			50	1720	20050	21.14	22	0-2
				1732.5	20175	21.17	22	0-2
				1745	20300	21.10	22	0-2
		100RB		1720	20050	21.25	22	0-2
				1732.5	20175	21.20	22	0-2
				1745	20300	21.19	22	0-2

FDD Band 4 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
15	QPSK	1 RB	0	1717.5	20025	23.29	24	0
				1732.5	20175	23.33	24	0
				1747.5	20325	23.27	24	0
			36	1717.5	20025	22.84	24	0
				1732.5	20175	23.14	24	0
				1747.5	20325	22.84	24	0
			74	1717.5	20025	23.07	24	0
				1732.5	20175	23.13	24	0
				1747.5	20325	22.92	24	0
		36 RB	0	1717.5	20025	22.21	23	0-1
				1732.5	20175	22.29	23	0-1
				1747.5	20325	22.24	23	0-1
			18	1717.5	20025	22.23	23	0-1
				1732.5	20175	22.24	23	0-1
				1747.5	20325	22.14	23	0-1
			37	1717.5	20025	22.21	23	0-1
				1732.5	20175	22.13	23	0-1
				1747.5	20325	22.17	23	0-1
		75RB		1717.5	20025	22.15	23	0-1
				1732.5	20175	22.30	23	0-1
				1747.5	20325	22.14	23	0-1
	16-QAM	1 RB	0	1717.5	20025	22.26	23	0-1
				1732.5	20175	22.74	23	0-1
				1747.5	20325	22.28	23	0-1
			36	1717.5	20025	22.59	23	0-1
				1732.5	20175	22.29	23	0-1
				1747.5	20325	21.69	23	0-1
			74	1717.5	20025	22.28	23	0-1
				1732.5	20175	22.39	23	0-1
				1747.5	20325	22.00	23	0-1
		36 RB	0	1717.5	20025	21.11	22	0-2
				1732.5	20175	21.20	22	0-2
				1747.5	20325	21.23	22	0-2
			18	1717.5	20025	21.03	22	0-2
				1732.5	20175	21.15	22	0-2
				1747.5	20325	21.16	22	0-2
			37	1717.5	20025	21.09	22	0-2
				1732.5	20175	21.05	22	0-2
				1747.5	20325	20.98	22	0-2
		75RB		1717.5	20025	21.11	22	0-2
				1732.5	20175	21.21	22	0-2
				1747.5	20325	21.14	22	0-2

FDD Band 4 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	1715	20000	23.08	24	0
				1732.5	20175	23.33	24	0
				1750	20350	23.31	24	0
			25	1715	20000	23.00	24	0
				1732.5	20175	23.48	24	0
				1750	20350	23.26	24	0
			49	1715	20000	22.88	24	0
				1732.5	20175	23.12	24	0
				1750	20350	23.16	24	0
		25 RB	0	1715	20000	22.27	23	0-1
				1732.5	20175	22.31	23	0-1
				1750	20350	22.28	23	0-1
			12	1715	20000	22.25	23	0-1
				1732.5	20175	22.33	23	0-1
				1750	20350	22.19	23	0-1
			25	1715	20000	22.15	23	0-1
				1732.5	20175	22.11	23	0-1
				1750	20350	22.14	23	0-1
		50RB		1715	20000	22.20	23	0-1
				1732.5	20175	22.28	23	0-1
				1750	20350	22.22	23	0-1
	16-QAM	1 RB	0	1715	20000	21.94	23	0-1
				1732.5	20175	22.87	23	0-1
				1750	20350	22.52	23	0-1
			25	1715	20000	22.03	23	0-1
				1732.5	20175	22.26	23	0-1
				1750	20350	22.03	23	0-1
			49	1715	20000	21.97	23	0-1
				1732.5	20175	22.58	23	0-1
				1750	20350	22.32	23	0-1
		25 RB	0	1715	20000	21.37	22	0-2
				1732.5	20175	21.28	22	0-2
				1750	20350	21.38	22	0-2
			12	1715	20000	21.03	22	0-2
				1732.5	20175	21.21	22	0-2
				1750	20350	20.99	22	0-2
			25	1715	20000	21.01	22	0-2
				1732.5	20175	21.05	22	0-2
				1750	20350	21.06	22	0-2
		50RB		1715	20000	21.10	22	0-2
				1732.5	20175	21.26	22	0-2
				1750	20350	21.10	22	0-2

FDD Band 4 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	1712.5	19975	23.36	24	0
				1732.5	20175	23.18	24	0
				1752.5	20375	23.10	24	0
			12	1712.5	19975	22.85	24	0
				1732.5	20175	23.20	24	0
				1752.5	20375	23.03	24	0
			24	1712.5	19975	23.01	24	0
				1732.5	20175	23.20	24	0
				1752.5	20375	22.97	24	0
		12 RB	0	1712.5	19975	22.14	23	0-1
				1732.5	20175	22.25	23	0-1
				1752.5	20375	22.11	23	0-1
			6	1712.5	19975	22.15	23	0-1
				1732.5	20175	22.24	23	0-1
				1752.5	20375	22.12	23	0-1
			13	1712.5	19975	22.04	23	0-1
				1732.5	20175	22.25	23	0-1
				1752.5	20375	22.07	23	0-1
		25RB		1712.5	19975	22.09	23	0-1
				1732.5	20175	22.24	23	0-1
				1752.5	20375	21.99	23	0-1
	16-QAM	1 RB	0	1712.5	19975	22.34	23	0-1
				1732.5	20175	22.06	23	0-1
				1752.5	20375	22.54	23	0-1
			12	1712.5	19975	22.38	23	0-1
				1732.5	20175	22.17	23	0-1
				1752.5	20375	22.34	23	0-1
			24	1712.5	19975	22.04	23	0-1
				1732.5	20175	22.14	23	0-1
				1752.5	20375	22.39	23	0-1
		12 RB	0	1712.5	19975	21.14	22	0-2
				1732.5	20175	21.24	22	0-2
				1752.5	20375	21.04	22	0-2
			6	1712.5	19975	21.12	22	0-2
				1732.5	20175	21.20	22	0-2
				1752.5	20375	21.03	22	0-2
			13	1712.5	19975	21.16	22	0-2
				1732.5	20175	21.21	22	0-2
				1752.5	20375	21.11	22	0-2
		25RB		1712.5	19975	21.12	22	0-2
				1732.5	20175	21.30	22	0-2
				1752.5	20375	21.02	22	0-2

FDD Band 4 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
3	QPSK	1 RB	0	1711.5	19965	23.17	24	0
				1732.5	20175	23.25	24	0
				1753.5	20385	23.11	24	0
			7	1711.5	19965	23.17	24	0
				1732.5	20175	23.21	24	0
				1753.5	20385	23.44	24	0
			14	1711.5	19965	23.21	24	0
				1732.5	20175	23.08	24	0
				1753.5	20385	23.16	24	0
		8 RB	0	1711.5	19965	22.19	23	0-1
				1732.5	20175	22.23	23	0-1
				1753.5	20385	22.09	23	0-1
			4	1711.5	19965	22.05	23	0-1
				1732.5	20175	22.24	23	0-1
				1753.5	20385	22.06	23	0-1
			7	1711.5	19965	22.09	23	0-1
				1732.5	20175	22.33	23	0-1
				1753.5	20385	22.16	23	0-1
		15RB		1711.5	19965	22.13	23	0-1
				1732.5	20175	22.22	23	0-1
				1753.5	20385	22.08	23	0-1
	16-QAM	1 RB	0	1711.5	19965	22.74	23	0-1
				1732.5	20175	22.74	23	0-1
				1753.5	20385	22.41	23	0-1
			7	1711.5	19965	22.57	23	0-1
				1732.5	20175	22.29	23	0-1
				1753.5	20385	22.40	23	0-1
			14	1711.5	19965	22.03	23	0-1
				1732.5	20175	21.96	23	0-1
				1753.5	20385	22.63	23	0-1
		8 RB	0	1711.5	19965	21.07	22	0-2
				1732.5	20175	21.09	22	0-2
				1753.5	20385	21.09	22	0-2
			4	1711.5	19965	20.96	22	0-2
				1732.5	20175	21.36	22	0-2
				1753.5	20385	21.27	22	0-2
			7	1711.5	19965	21.14	22	0-2
				1732.5	20175	21.12	22	0-2
				1753.5	20385	21.27	22	0-2
		15RB		1711.5	19965	21.01	22	0-2
				1732.5	20175	21.21	22	0-2
				1753.5	20385	21.22	22	0-2

FDD Band 4 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
1.4	QPSK	1 RB	0	1710.7	19957	23.09	24	0
				1732.5	20175	23.22	24	0
				1754.3	20393	22.96	24	0
			2	1710.7	19957	22.95	24	0
				1732.5	20175	23.11	24	0
				1754.3	20393	23.05	24	0
			5	1710.7	19957	22.98	24	0
				1732.5	20175	23.02	24	0
				1754.3	20393	22.96	24	0
		3 RB	0	1710.7	19957	22.99	24	0
				1732.5	20175	23.20	24	0
				1754.3	20393	22.99	24	0
			2	1710.7	19957	23.06	24	0
				1732.5	20175	23.22	24	0
				1754.3	20393	22.99	24	0
			3	1710.7	19957	23.07	24	0
				1732.5	20175	23.19	24	0
				1754.3	20393	23.02	24	0
		6RB		1710.7	19957	22.18	23	0-1
				1732.5	20175	22.14	23	0-1
				1754.3	20393	22.00	23	0-1
	16-QAM	1 RB	0	1710.7	19957	22.29	23	0-1
				1732.5	20175	22.07	23	0-1
				1754.3	20393	22.40	23	0-1
			2	1710.7	19957	22.37	23	0-1
				1732.5	20175	22.18	23	0-1
				1754.3	20393	22.75	23	0-1
			5	1710.7	19957	22.33	23	0-1
				1732.5	20175	22.32	23	0-1
				1754.3	20393	22.66	23	0-1
		3 RB	0	1710.7	19957	21.99	23	0-1
				1732.5	20175	22.40	23	0-1
				1754.3	20393	22.33	23	0-1
			2	1710.7	19957	22.06	23	0-1
				1732.5	20175	22.30	23	0-1
				1754.3	20393	22.36	23	0-1
			3	1710.7	19957	21.94	23	0-1
				1732.5	20175	22.23	23	0-1
				1754.3	20393	22.53	23	0-1
		6RB		1710.7	19957	21.94	22	0-2
				1732.5	20175	21.19	22	0-2
				1754.3	20393	21.17	22	0-2

FDD Band 4 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
20	QPSK	1 RB	0	1720	20050	15.61	16	0
				1732.5	20175	15.65	16	0
				1745	20300	15.85	16	0
			50	1720	20050	15.62	16	0
				1732.5	20175	15.75	16	0
				1745	20300	15.53	16	0
			99	1720	20050	15.44	16	0
				1732.5	20175	15.18	16	0
				1745	20300	15.30	16	0
		50 RB	0	1720	20050	14.58	15	0-1
				1732.5	20175	14.68	15	0-1
				1745	20300	14.54	15	0-1
			25	1720	20050	14.49	15	0-1
				1732.5	20175	14.60	15	0-1
				1745	20300	14.39	15	0-1
			50	1720	20050	14.51	15	0-1
				1732.5	20175	14.49	15	0-1
				1745	20300	14.46	15	0-1
		100RB		1720	20050	14.55	15	0-1
				1732.5	20175	14.62	15	0-1
				1745	20300	14.50	15	0-1
	16-QAM	1 RB	0	1720	20050	14.18	15	0-1
				1732.5	20175	14.98	15	0-1
				1745	20300	14.40	15	0-1
			50	1720	20050	14.62	15	0-1
				1732.5	20175	14.68	15	0-1
				1745	20300	15.00	15	0-1
			99	1720	20050	14.36	15	0-1
				1732.5	20175	14.11	15	0-1
				1745	20300	14.17	15	0-1
		50 RB	0	1720	20050	13.47	14	0-2
				1732.5	20175	13.96	14	0-2
				1745	20300	13.49	14	0-2
			25	1720	20050	13.45	14	0-2
				1732.5	20175	13.79	14	0-2
				1745	20300	13.28	14	0-2
			50	1720	20050	13.48	14	0-2
				1732.5	20175	13.42	14	0-2
				1745	20300	13.19	14	0-2
		100RB		1720	20050	13.51	14	0-2
				1732.5	20175	13.61	14	0-2
				1745	20300	13.33	14	0-2

FDD Band 4 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
15	QPSK	1 RB	0	1717.5	20025	15.46	16	0
				1732.5	20175	15.72	16	0
				1747.5	20325	15.68	16	0
			36	1717.5	20025	15.32	16	0
				1732.5	20175	15.68	16	0
				1747.5	20325	15.30	16	0
			74	1717.5	20025	15.55	16	0
				1732.5	20175	15.42	16	0
				1747.5	20325	15.44	16	0
		36 RB	0	1717.5	20025	14.58	15	0-1
				1732.5	20175	14.74	15	0-1
				1747.5	20325	14.47	15	0-1
			18	1717.5	20025	14.55	15	0-1
				1732.5	20175	14.68	15	0-1
				1747.5	20325	14.36	15	0-1
			37	1717.5	20025	14.56	15	0-1
				1732.5	20175	14.49	15	0-1
				1747.5	20325	14.34	15	0-1
		75RB		1717.5	20025	14.58	15	0-1
				1732.5	20175	14.61	15	0-1
				1747.5	20325	14.47	15	0-1
	16-QAM	1 RB	0	1717.5	20025	14.69	15	0-1
				1732.5	20175	14.58	15	0-1
				1747.5	20325	14.72	15	0-1
			36	1717.5	20025	14.44	15	0-1
				1732.5	20175	14.40	15	0-1
				1747.5	20325	14.84	15	0-1
			74	1717.5	20025	14.92	15	0-1
				1732.5	20175	14.15	15	0-1
				1747.5	20325	14.57	15	0-1
		36 RB	0	1717.5	20025	13.60	14	0-2
				1732.5	20175	14.00	14	0-2
				1747.5	20325	13.34	14	0-2
			18	1717.5	20025	13.67	14	0-2
				1732.5	20175	13.81	14	0-2
				1747.5	20325	13.32	14	0-2
			37	1717.5	20025	13.71	14	0-2
				1732.5	20175	13.45	14	0-2
				1747.5	20325	13.17	14	0-2
		75RB		1717.5	20025	13.69	14	0-2
				1732.5	20175	13.76	14	0-2
				1747.5	20325	13.17	14	0-2

FDD Band 4 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	1715	20000	15.31	16	0
				1732.5	20175	15.61	16	0
				1750	20350	15.51	16	0
			25	1715	20000	15.48	16	0
				1732.5	20175	15.81	16	0
				1750	20350	15.38	16	0
			49	1715	20000	15.32	16	0
				1732.5	20175	15.38	16	0
				1750	20350	15.17	16	0
		25 RB	0	1715	20000	14.50	15	0-1
				1732.5	20175	14.68	15	0-1
				1750	20350	14.42	15	0-1
			12	1715	20000	14.52	15	0-1
				1732.5	20175	14.67	15	0-1
				1750	20350	14.42	15	0-1
			25	1715	20000	14.45	15	0-1
				1732.5	20175	14.46	15	0-1
				1750	20350	14.33	15	0-1
		50RB		1715	20000	14.48	15	0-1
				1732.5	20175	14.51	15	0-1
				1750	20350	14.44	15	0-1
	16-QAM	1 RB	0	1715	20000	14.65	15	0-1
				1732.5	20175	14.78	15	0-1
				1750	20350	15.00	15	0-1
			25	1715	20000	14.89	15	0-1
				1732.5	20175	14.94	15	0-1
				1750	20350	14.68	15	0-1
			49	1715	20000	14.29	15	0-1
				1732.5	20175	14.53	15	0-1
				1750	20350	14.11	15	0-1
		25 RB	0	1715	20000	13.48	14	0-2
				1732.5	20175	13.72	14	0-2
				1750	20350	13.05	14	0-2
			12	1715	20000	13.57	14	0-2
				1732.5	20175	13.72	14	0-2
				1750	20350	13.13	14	0-2
			25	1715	20000	13.50	14	0-2
				1732.5	20175	13.37	14	0-2
				1750	20350	12.99	14	0-2
		50RB		1715	20000	13.54	14	0-2
				1732.5	20175	13.60	14	0-2
				1750	20350	13.18	14	0-2

FDD Band 4 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	1712.5	19975	15.49	16	0
				1732.5	20175	15.68	16	0
				1752.5	20375	15.33	16	0
			12	1712.5	19975	15.51	16	0
				1732.5	20175	15.56	16	0
				1752.5	20375	15.60	16	0
			24	1712.5	19975	15.54	16	0
				1732.5	20175	15.42	16	0
				1752.5	20375	15.57	16	0
		12 RB	0	1712.5	19975	14.45	15	0-1
				1732.5	20175	14.61	15	0-1
				1752.5	20375	14.40	15	0-1
			6	1712.5	19975	14.37	15	0-1
				1732.5	20175	14.48	15	0-1
				1752.5	20375	14.39	15	0-1
			13	1712.5	19975	14.31	15	0-1
				1732.5	20175	14.54	15	0-1
				1752.5	20375	14.34	15	0-1
		25RB		1712.5	19975	14.45	15	0-1
				1732.5	20175	14.55	15	0-1
				1752.5	20375	14.36	15	0-1
	16-QAM	1 RB	0	1712.5	19975	14.34	15	0-1
				1732.5	20175	15.00	15	0-1
				1752.5	20375	14.73	15	0-1
			12	1712.5	19975	14.64	15	0-1
				1732.5	20175	14.64	15	0-1
				1752.5	20375	14.88	15	0-1
			24	1712.5	19975	14.84	15	0-1
				1732.5	20175	14.89	15	0-1
				1752.5	20375	14.49	15	0-1
		12 RB	0	1712.5	19975	13.53	14	0-2
				1732.5	20175	13.86	14	0-2
				1752.5	20375	13.25	14	0-2
			6	1712.5	19975	13.49	14	0-2
				1732.5	20175	13.71	14	0-2
				1752.5	20375	13.11	14	0-2
			13	1712.5	19975	13.65	14	0-2
				1732.5	20175	13.67	14	0-2
				1752.5	20375	13.38	14	0-2
		25RB		1712.5	19975	13.63	14	0-2
				1732.5	20175	13.87	14	0-2
				1752.5	20375	13.22	14	0-2

FDD Band 4 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
3	QPSK	1 RB	0	1711.5	19965	15.63	16	0
				1732.5	20175	15.49	16	0
				1753.5	20385	15.46	16	0
			7	1711.5	19965	15.38	16	0
				1732.5	20175	15.45	16	0
				1753.5	20385	15.31	16	0
			14	1711.5	19965	15.52	16	0
				1732.5	20175	15.52	16	0
				1753.5	20385	15.31	16	0
		8 RB	0	1711.5	19965	14.42	15	0-1
				1732.5	20175	14.48	15	0-1
				1753.5	20385	14.49	15	0-1
			4	1711.5	19965	14.44	15	0-1
				1732.5	20175	14.59	15	0-1
				1753.5	20385	14.48	15	0-1
			7	1711.5	19965	14.38	15	0-1
				1732.5	20175	14.57	15	0-1
				1753.5	20385	14.46	15	0-1
		15RB		1711.5	19965	14.46	15	0-1
				1732.5	20175	14.58	15	0-1
				1753.5	20385	14.35	15	0-1
	16-QAM	1 RB	0	1711.5	19965	14.73	15	0-1
				1732.5	20175	14.99	15	0-1
				1753.5	20385	14.11	15	0-1
			7	1711.5	19965	14.06	15	0-1
				1732.5	20175	14.60	15	0-1
				1753.5	20385	14.68	15	0-1
			14	1711.5	19965	14.62	15	0-1
				1732.5	20175	14.63	15	0-1
				1753.5	20385	14.95	15	0-1
		8 RB	0	1711.5	19965	13.47	14	0-2
				1732.5	20175	13.82	14	0-2
				1753.5	20385	13.27	14	0-2
			4	1711.5	19965	13.54	14	0-2
				1732.5	20175	13.76	14	0-2
				1753.5	20385	13.30	14	0-2
			7	1711.5	19965	13.49	14	0-2
				1732.5	20175	13.73	14	0-2
				1753.5	20385	13.28	14	0-2
		15RB		1711.5	19965	13.53	14	0-2
				1732.5	20175	13.83	14	0-2
				1753.5	20385	13.35	14	0-2

FDD Band 4 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
1.4	QPSK	1 RB	0	1710.7	19957	15.28	16	0
				1732.5	20175	15.33	16	0
				1754.3	20393	15.42	16	0
			2	1710.7	19957	15.36	16	0
				1732.5	20175	15.60	16	0
				1754.3	20393	15.44	16	0
			5	1710.7	19957	15.28	16	0
				1732.5	20175	15.45	16	0
				1754.3	20393	15.49	16	0
		3 RB	0	1710.7	19957	15.31	16	0
				1732.5	20175	15.59	16	0
				1754.3	20393	15.29	16	0
			2	1710.7	19957	15.27	16	0
				1732.5	20175	15.59	16	0
				1754.3	20393	15.43	16	0
			3	1710.7	19957	15.28	16	0
				1732.5	20175	15.58	16	0
				1754.3	20393	15.42	16	0
		6RB		1710.7	19957	14.39	15	0-1
				1732.5	20175	14.64	15	0-1
				1754.3	20393	14.40	15	0-1
	16-QAM	1 RB	0	1710.7	19957	14.35	15	0-1
				1732.5	20175	14.78	15	0-1
				1754.3	20393	14.09	15	0-1
			2	1710.7	19957	14.75	15	0-1
				1732.5	20175	14.80	15	0-1
				1754.3	20393	14.52	15	0-1
			5	1710.7	19957	14.74	15	0-1
				1732.5	20175	14.93	15	0-1
				1754.3	20393	14.05	15	0-1
		3 RB	0	1710.7	19957	14.39	15	0-1
				1732.5	20175	14.75	15	0-1
				1754.3	20393	14.03	15	0-1
			2	1710.7	19957	14.40	15	0-1
				1732.5	20175	14.87	15	0-1
				1754.3	20393	14.17	15	0-1
			3	1710.7	19957	14.32	15	0-1
				1732.5	20175	14.67	15	0-1
				1754.3	20393	14.05	15	0-1
		6RB		1710.7	19957	13.45	14	0-2
				1732.5	20175	13.70	14	0-2
				1754.3	20393	13.20	14	0-2

FDD Band 5 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	829	20450	22.79	24	0
				836.5	20525	23.02	24	0
				844	20600	23.07	24	0
			25	829	20450	22.88	24	0
				836.5	20525	23.17	24	0
				844	20600	23.20	24	0
			49	829	20450	22.83	24	0
				836.5	20525	22.90	24	0
				844	20600	22.99	24	0
		25 RB	0	829	20450	22.08	23	0-1
				836.5	20525	22.16	23	0-1
				844	20600	22.18	23	0-1
			12	829	20450	22.10	23	0-1
				836.5	20525	22.08	23	0-1
				844	20600	22.23	23	0-1
			25	829	20450	22.14	23	0-1
				836.5	20525	22.12	23	0-1
				844	20600	22.09	23	0-1
		50RB		829	20450	22.22	23	0-1
				836.5	20525	22.19	23	0-1
				844	20600	22.17	23	0-1
	16-QAM	1 RB	0	829	20450	21.90	23	0-1
				836.5	20525	22.68	23	0-1
				844	20600	22.64	23	0-1
			25	829	20450	22.42	23	0-1
				836.5	20525	22.61	23	0-1
				844	20600	22.25	23	0-1
			49	829	20450	22.54	23	0-1
				836.5	20525	22.02	23	0-1
				844	20600	21.85	23	0-1
		25 RB	0	829	20450	20.97	22	0-2
				836.5	20525	21.18	22	0-2
				844	20600	21.46	22	0-2
			12	829	20450	21.02	22	0-2
				836.5	20525	20.99	22	0-2
				844	20600	21.26	22	0-2
			25	829	20450	20.92	22	0-2
				836.5	20525	20.99	22	0-2
				844	20600	21.25	22	0-2
		50RB		829	20450	21.08	22	0-2
				836.5	20525	21.07	22	0-2
				844	20600	21.17	22	0-2

FDD Band 5 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	826.5	20425	22.85	24	0
				836.5	20525	23.08	24	0
				846.5	20625	22.95	24	0
			12	826.5	20425	22.84	24	0
				836.5	20525	23.33	24	0
				846.5	20625	22.92	24	0
			24	826.5	20425	22.89	24	0
				836.5	20525	23.06	24	0
				846.5	20625	22.92	24	0
		12 RB	0	826.5	20425	22.00	23	0-1
				836.5	20525	22.15	23	0-1
				846.5	20625	22.17	23	0-1
			6	826.5	20425	22.02	23	0-1
				836.5	20525	22.05	23	0-1
				846.5	20625	22.05	23	0-1
			13	826.5	20425	22.09	23	0-1
				836.5	20525	22.07	23	0-1
				846.5	20625	22.05	23	0-1
		25RB		826.5	20425	22.13	23	0-1
				836.5	20525	22.11	23	0-1
				846.5	20625	22.13	23	0-1
	16-QAM	1 RB	0	826.5	20425	22.52	23	0-1
				836.5	20525	22.24	23	0-1
				846.5	20625	23.00	23	0-1
			12	826.5	20425	22.49	23	0-1
				836.5	20525	22.14	23	0-1
				846.5	20625	22.49	23	0-1
			24	826.5	20425	22.42	23	0-1
				836.5	20525	21.63	23	0-1
				846.5	20625	22.41	23	0-1
		12 RB	0	826.5	20425	20.82	22	0-2
				836.5	20525	21.07	22	0-2
				846.5	20625	20.80	22	0-2
			6	826.5	20425	20.94	22	0-2
				836.5	20525	21.02	22	0-2
				846.5	20625	20.80	22	0-2
			13	826.5	20425	20.88	22	0-2
				836.5	20525	21.10	22	0-2
				846.5	20625	20.85	22	0-2
		25RB		826.5	20425	20.91	22	0-2
				836.5	20525	21.29	22	0-2
				846.5	20625	20.91	22	0-2

FDD Band 5 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
3	QPSK	1 RB	0	825.5	20415	23.04	24	0
				836.5	20525	23.21	24	0
				847.5	20635	23.13	24	0
			7	825.5	20415	23.23	24	0
				836.5	20525	23.14	24	0
				847.5	20635	23.32	24	0
			14	825.5	20415	22.94	24	0
				836.5	20525	23.28	24	0
				847.5	20635	23.00	24	0
		8 RB	0	825.5	20415	22.09	23	0-1
				836.5	20525	22.15	23	0-1
				847.5	20635	22.07	23	0-1
			4	825.5	20415	21.99	23	0-1
				836.5	20525	22.10	23	0-1
				847.5	20635	22.13	23	0-1
			7	825.5	20415	21.95	23	0-1
				836.5	20525	22.10	23	0-1
				847.5	20635	22.13	23	0-1
		15RB		825.5	20415	21.97	23	0-1
				836.5	20525	22.21	23	0-1
				847.5	20635	22.13	23	0-1
	16-QAM	1 RB	0	825.5	20415	22.56	23	0-1
				836.5	20525	22.09	23	0-1
				847.5	20635	22.40	23	0-1
			7	825.5	20415	22.04	23	0-1
				836.5	20525	22.06	23	0-1
				847.5	20635	21.86	23	0-1
			14	825.5	20415	22.12	23	0-1
				836.5	20525	22.03	23	0-1
				847.5	20635	21.57	23	0-1
		8 RB	0	825.5	20415	20.83	22	0-2
				836.5	20525	21.21	22	0-2
				847.5	20635	21.10	22	0-2
			4	825.5	20415	20.81	22	0-2
				836.5	20525	21.32	22	0-2
				847.5	20635	20.95	22	0-2
			7	825.5	20415	20.78	22	0-2
				836.5	20525	21.14	22	0-2
				847.5	20635	21.02	22	0-2
		15RB		825.5	20415	20.88	22	0-2
				836.5	20525	21.20	22	0-2
				847.5	20635	20.93	22	0-2

FDD Band 5 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
1.4	QPSK	1 RB	0	824.7	20407	23.05	24	0
				836.5	20525	23.04	24	0
				848.3	20643	23.17	24	0
			2	824.7	20407	23.10	24	0
				836.5	20525	23.10	24	0
				848.3	20643	23.10	24	0
			5	824.7	20407	22.89	24	0
				836.5	20525	23.05	24	0
				848.3	20643	22.89	24	0
		3 RB	0	824.7	20407	23.06	24	0
				836.5	20525	23.06	24	0
				848.3	20643	23.15	24	0
			2	824.7	20407	23.13	24	0
				836.5	20525	23.18	24	0
				848.3	20643	23.17	24	0
			3	824.7	20407	23.06	24	0
				836.5	20525	23.13	24	0
				848.3	20643	23.07	24	0
		6RB		824.7	20407	22.11	23	0-1
				836.5	20525	22.16	23	0-1
				848.3	20643	22.14	23	0-1
	16-QAM	1 RB	0	824.7	20407	22.62	23	0-1
				836.5	20525	22.51	23	0-1
				848.3	20643	22.08	23	0-1
			2	824.7	20407	22.69	23	0-1
				836.5	20525	22.63	23	0-1
				848.3	20643	21.76	23	0-1
			5	824.7	20407	22.55	23	0-1
				836.5	20525	22.33	23	0-1
				848.3	20643	21.43	23	0-1
		3 RB	0	824.7	20407	22.21	23	0-1
				836.5	20525	22.12	23	0-1
				848.3	20643	22.17	23	0-1
			2	824.7	20407	22.24	23	0-1
				836.5	20525	22.10	23	0-1
				848.3	20643	22.26	23	0-1
			3	824.7	20407	22.24	23	0-1
				836.5	20525	22.09	23	0-1
				848.3	20643	22.25	23	0-1
		6RB		824.7	20407	20.98	22	0-2
				836.5	20525	21.18	22	0-2
				848.3	20643	20.78	22	0-2

FDD Band 5 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	829	20450	19.02	19.5	0
				836.5	20525	19.11	19.5	0
				844	20600	19.24	19.5	0
			25	829	20450	18.96	19.5	0
				836.5	20525	19.18	19.5	0
				844	20600	19.31	19.5	0
			49	829	20450	18.85	19.5	0
				836.5	20525	18.95	19.5	0
				844	20600	19.20	19.5	0
		25 RB	0	829	20450	18.01	18.5	0-1
				836.5	20525	18.11	18.5	0-1
				844	20600	18.09	18.5	0-1
			12	829	20450	18.05	18.5	0-1
				836.5	20525	18.00	18.5	0-1
				844	20600	18.06	18.5	0-1
			25	829	20450	18.04	18.5	0-1
				836.5	20525	17.98	18.5	0-1
				844	20600	17.90	18.5	0-1
		50RB		829	20450	18.08	18.5	0-1
				836.5	20525	18.02	18.5	0-1
				844	20600	18.12	18.5	0-1
	16-QAM	1 RB	0	829	20450	18.06	18.5	0-1
				836.5	20525	18.49	18.5	0-1
				844	20600	17.97	18.5	0-1
			25	829	20450	18.12	18.5	0-1
				836.5	20525	18.28	18.5	0-1
				844	20600	18.21	18.5	0-1
			49	829	20450	18.02	18.5	0-1
				836.5	20525	18.26	18.5	0-1
				844	20600	18.02	18.5	0-1
		25 RB	0	829	20450	17.14	17.5	0-2
				836.5	20525	17.11	17.5	0-2
				844	20600	17.21	17.5	0-2
			12	829	20450	17.24	17.5	0-2
				836.5	20525	17.12	17.5	0-2
				844	20600	17.24	17.5	0-2
			25	829	20450	17.24	17.5	0-2
				836.5	20525	17.18	17.5	0-2
				844	20600	17.17	17.5	0-2
		50RB		829	20450	17.12	17.5	0-2
				836.5	20525	16.96	17.5	0-2
				844	20600	16.96	17.5	0-2

FDD Band 5 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	826.5	20425	18.86	19.5	0
				836.5	20525	19.22	19.5	0
				846.5	20625	18.96	19.5	0
			12	826.5	20425	18.81	19.5	0
				836.5	20525	19.32	19.5	0
				846.5	20625	18.81	19.5	0
			24	826.5	20425	18.87	19.5	0
				836.5	20525	18.87	19.5	0
				846.5	20625	18.79	19.5	0
		12 RB	0	826.5	20425	17.86	18.5	0-1
				836.5	20525	18.05	18.5	0-1
				846.5	20625	17.97	18.5	0-1
			6	826.5	20425	17.93	18.5	0-1
				836.5	20525	18.02	18.5	0-1
				846.5	20625	17.87	18.5	0-1
			13	826.5	20425	17.95	18.5	0-1
				836.5	20525	17.97	18.5	0-1
				846.5	20625	17.91	18.5	0-1
		25RB		826.5	20425	17.94	18.5	0-1
				836.5	20525	18.03	18.5	0-1
				846.5	20625	17.98	18.5	0-1
	16-QAM	1 RB	0	826.5	20425	18.01	18.5	0-1
				836.5	20525	18.24	18.5	0-1
				846.5	20625	18.18	18.5	0-1
			12	826.5	20425	17.89	18.5	0-1
				836.5	20525	18.03	18.5	0-1
				846.5	20625	18.42	18.5	0-1
			24	826.5	20425	17.94	18.5	0-1
				836.5	20525	18.09	18.5	0-1
				846.5	20625	18.34	18.5	0-1
		12 RB	0	826.5	20425	16.89	17.5	0-2
				836.5	20525	16.97	17.5	0-2
				846.5	20625	16.89	17.5	0-2
			6	826.5	20425	16.75	17.5	0-2
				836.5	20525	16.95	17.5	0-2
				846.5	20625	16.81	17.5	0-2
			13	826.5	20425	16.89	17.5	0-2
				836.5	20525	16.99	17.5	0-2
				846.5	20625	16.79	17.5	0-2
		25RB		826.5	20425	16.97	17.5	0-2
				836.5	20525	17.12	17.5	0-2
				846.5	20625	16.96	17.5	0-2

FDD Band 5 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
3	QPSK	1 RB	0	825.5	20415	19.28	19.5	0
				836.5	20525	19.09	19.5	0
				847.5	20635	19.18	19.5	0
			7	825.5	20415	19.08	19.5	0
				836.5	20525	19.08	19.5	0
				847.5	20635	19.36	19.5	0
			14	825.5	20415	18.95	19.5	0
				836.5	20525	19.15	19.5	0
				847.5	20635	19.02	19.5	0
		8 RB	0	825.5	20415	18.05	18.5	0-1
				836.5	20525	18.14	18.5	0-1
				847.5	20635	18.00	18.5	0-1
			4	825.5	20415	17.96	18.5	0-1
				836.5	20525	17.97	18.5	0-1
				847.5	20635	18.04	18.5	0-1
			7	825.5	20415	17.85	18.5	0-1
				836.5	20525	18.03	18.5	0-1
				847.5	20635	17.98	18.5	0-1
		15RB		825.5	20415	17.87	18.5	0-1
				836.5	20525	17.99	18.5	0-1
				847.5	20635	17.92	18.5	0-1
	16-QAM	1 RB	0	825.5	20415	18.44	18.5	0-1
				836.5	20525	18.10	18.5	0-1
				847.5	20635	17.86	18.5	0-1
			7	825.5	20415	18.07	18.5	0-1
				836.5	20525	18.23	18.5	0-1
				847.5	20635	17.74	18.5	0-1
			14	825.5	20415	17.99	18.5	0-1
				836.5	20525	18.04	18.5	0-1
				847.5	20635	17.72	18.5	0-1
		8 RB	0	825.5	20415	16.85	17.5	0-2
				836.5	20525	16.90	17.5	0-2
				847.5	20635	17.05	17.5	0-2
			4	825.5	20415	16.77	17.5	0-2
				836.5	20525	16.71	17.5	0-2
				847.5	20635	17.03	17.5	0-2
			7	825.5	20415	16.87	17.5	0-2
				836.5	20525	17.11	17.5	0-2
				847.5	20635	17.06	17.5	0-2
		15RB		825.5	20415	16.65	17.5	0-2
				836.5	20525	17.06	17.5	0-2
				847.5	20635	17.13	17.5	0-2

FDD Band 5 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
1.4	QPSK	1 RB	0	824.7	20407	18.91	19.5	0
				836.5	20525	19.08	19.5	0
				848.3	20643	19.01	19.5	0
			2	824.7	20407	18.88	19.5	0
				836.5	20525	19.16	19.5	0
				848.3	20643	19.03	19.5	0
			5	824.7	20407	19.00	19.5	0
				836.5	20525	19.09	19.5	0
				848.3	20643	18.89	19.5	0
		3 RB	0	824.7	20407	18.93	19.5	0
				836.5	20525	19.10	19.5	0
				848.3	20643	19.21	19.5	0
			2	824.7	20407	18.99	19.5	0
				836.5	20525	19.13	19.5	0
				848.3	20643	19.07	19.5	0
			3	824.7	20407	18.88	19.5	0
				836.5	20525	19.09	19.5	0
				848.3	20643	19.16	19.5	0
		6RB		824.7	20407	18.01	18.5	0-1
				836.5	20525	18.08	18.5	0-1
				848.3	20643	18.05	18.5	0-1
	16-QAM	1 RB	0	824.7	20407	17.89	18.5	0-1
				836.5	20525	18.10	18.5	0-1
				848.3	20643	18.41	18.5	0-1
			2	824.7	20407	18.11	18.5	0-1
				836.5	20525	18.12	18.5	0-1
				848.3	20643	18.01	18.5	0-1
			5	824.7	20407	18.23	18.5	0-1
				836.5	20525	18.13	18.5	0-1
				848.3	20643	17.81	18.5	0-1
		3 RB	0	824.7	20407	17.95	18.5	0-1
				836.5	20525	18.24	18.5	0-1
				848.3	20643	18.17	18.5	0-1
			2	824.7	20407	17.93	18.5	0-1
				836.5	20525	18.27	18.5	0-1
				848.3	20643	17.80	18.5	0-1
			3	824.7	20407	17.81	18.5	0-1
				836.5	20525	18.30	18.5	0-1
				848.3	20643	17.79	18.5	0-1
		6RB		824.7	20407	16.79	17.5	0-2
				836.5	20525	16.73	17.5	0-2
				848.3	20643	16.96	17.5	0-2

FDD Band 12 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	704	23060	22.57	24	0
				707.5	23095	23.03	24	0
				711	23130	23.15	24	0
			25	704	23060	23.08	24	0
				707.5	23095	22.90	24	0
				711	23130	22.90	24	0
			49	704	23060	22.76	24	0
				707.5	23095	22.96	24	0
				711	23130	23.01	24	0
		25 RB	0	704	23060	21.80	23	0-1
				707.5	23095	22.11	23	0-1
				711	23130	22.14	23	0-1
			12	704	23060	21.93	23	0-1
				707.5	23095	22.06	23	0-1
				711	23130	22.17	23	0-1
			25	704	23060	22.12	23	0-1
				707.5	23095	22.01	23	0-1
				711	23130	22.19	23	0-1
		50RB		704	23060	22.01	23	0-1
				707.5	23095	22.08	23	0-1
				711	23130	22.11	23	0-1
	16-QAM	1 RB	0	704	23060	22.51	23	0-1
				707.5	23095	22.44	23	0-1
				711	23130	22.42	23	0-1
			25	704	23060	22.45	23	0-1
				707.5	23095	22.44	23	0-1
				711	23130	21.92	23	0-1
			49	704	23060	21.90	23	0-1
				707.5	23095	21.57	23	0-1
				711	23130	22.26	23	0-1
		25 RB	0	704	23060	20.79	22	0-2
				707.5	23095	21.18	22	0-2
				711	23130	21.51	22	0-2
			12	704	23060	20.88	22	0-2
				707.5	23095	21.27	22	0-2
				711	23130	21.48	22	0-2
			25	704	23060	20.92	22	0-2
				707.5	23095	21.32	22	0-2
				711	23130	21.50	22	0-2
		50RB		704	23060	21.05	22	0-2
				707.5	23095	21.06	22	0-2
				711	23130	21.18	22	0-2

FDD Band 12 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	701.5	23035	22.81	24	0
				707.5	23095	23.08	24	0
				713.5	23155	23.00	24	0
			12	701.5	23035	22.81	24	0
				707.5	23095	22.91	24	0
				713.5	23155	23.37	24	0
			24	701.5	23035	22.91	24	0
				707.5	23095	23.05	24	0
				713.5	23155	23.21	24	0
		12 RB	0	701.5	23035	21.88	23	0-1
				707.5	23095	22.14	23	0-1
				713.5	23155	22.02	23	0-1
			6	701.5	23035	21.85	23	0-1
				707.5	23095	22.04	23	0-1
				713.5	23155	21.97	23	0-1
			13	701.5	23035	22.10	23	0-1
				707.5	23095	21.97	23	0-1
				713.5	23155	22.12	23	0-1
		25RB		701.5	23035	22.00	23	0-1
				707.5	23095	22.01	23	0-1
				713.5	23155	22.09	23	0-1
	16-QAM	1 RB	0	701.5	23035	21.98	23	0-1
				707.5	23095	22.42	23	0-1
				713.5	23155	22.04	23	0-1
			12	701.5	23035	21.66	23	0-1
				707.5	23095	21.91	23	0-1
				713.5	23155	22.11	23	0-1
			24	701.5	23035	21.89	23	0-1
				707.5	23095	22.41	23	0-1
				713.5	23155	22.15	23	0-1
		12 RB	0	701.5	23035	20.81	22	0-2
				707.5	23095	20.87	22	0-2
				713.5	23155	20.86	22	0-2
			6	701.5	23035	20.90	22	0-2
				707.5	23095	20.98	22	0-2
				713.5	23155	20.94	22	0-2
			13	701.5	23035	21.19	22	0-2
				707.5	23095	20.99	22	0-2
				713.5	23155	20.91	22	0-2
		25RB		701.5	23035	21.09	22	0-2
				707.5	23095	20.82	22	0-2
				713.5	23155	20.87	22	0-2

FDD Band 12 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
3	QPSK	1 RB	0	700.5	23025	22.59	24	0
				707.5	23095	23.09	24	0
				714.5	23165	23.10	24	0
			7	700.5	23025	22.74	24	0
				707.5	23095	23.22	24	0
				714.5	23165	23.29	24	0
			14	700.5	23025	22.72	24	0
				707.5	23095	23.07	24	0
				714.5	23165	22.84	24	0
		8 RB	0	700.5	23025	21.83	23	0-1
				707.5	23095	22.10	23	0-1
				714.5	23165	22.16	23	0-1
			4	700.5	23025	21.80	23	0-1
				707.5	23095	22.08	23	0-1
				714.5	23165	22.13	23	0-1
			7	700.5	23025	21.90	23	0-1
				707.5	23095	22.15	23	0-1
				714.5	23165	22.09	23	0-1
		15RB		700.5	23025	21.78	23	0-1
				707.5	23095	22.01	23	0-1
				714.5	23165	22.06	23	0-1
	16-QAM	1 RB	0	700.5	23025	22.65	23	0-1
				707.5	23095	22.71	23	0-1
				714.5	23165	22.21	23	0-1
			7	700.5	23025	22.01	23	0-1
				707.5	23095	21.84	23	0-1
				714.5	23165	21.92	23	0-1
			14	700.5	23025	22.35	23	0-1
				707.5	23095	21.82	23	0-1
				714.5	23165	22.43	23	0-1
		8 RB	0	700.5	23025	20.85	22	0-2
				707.5	23095	20.96	22	0-2
				714.5	23165	20.98	22	0-2
			4	700.5	23025	20.89	22	0-2
				707.5	23095	21.20	22	0-2
				714.5	23165	20.80	22	0-2
			7	700.5	23025	20.91	22	0-2
				707.5	23095	21.03	22	0-2
				714.5	23165	20.77	22	0-2
		15RB		700.5	23025	20.86	22	0-2
				707.5	23095	21.11	22	0-2
				714.5	23165	20.86	22	0-2

FDD Band 12 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
1.4	QPSK	1 RB	0	699.7	23017	23.01	24	0
				707.5	23095	23.03	24	0
				715.3	23173	22.89	24	0
			2	699.7	23017	22.75	24	0
				707.5	23095	23.05	24	0
				715.3	23173	22.92	24	0
			5	699.7	23017	22.88	24	0
				707.5	23095	22.99	24	0
				715.3	23173	22.86	24	0
		3 RB	0	699.7	23017	23.15	24	0
				707.5	23095	23.11	24	0
				715.3	23173	22.98	24	0
			2	699.7	23017	22.87	24	0
				707.5	23095	22.92	24	0
				715.3	23173	22.86	24	0
			3	699.7	23017	22.86	24	0
				707.5	23095	23.04	24	0
				715.3	23173	23.10	24	0
		6RB		699.7	23017	21.75	23	0-1
				707.5	23095	22.11	23	0-1
				715.3	23173	22.06	23	0-1
	16-QAM	1 RB	0	699.7	23017	21.98	23	0-1
				707.5	23095	21.55	23	0-1
				715.3	23173	22.12	23	0-1
			2	699.7	23017	21.97	23	0-1
				707.5	23095	21.49	23	0-1
				715.3	23173	22.09	23	0-1
			5	699.7	23017	22.09	23	0-1
				707.5	23095	21.99	23	0-1
				715.3	23173	22.01	23	0-1
		3 RB	0	699.7	23017	22.29	23	0-1
				707.5	23095	22.23	23	0-1
				715.3	23173	21.82	23	0-1
			2	699.7	23017	21.73	23	0-1
				707.5	23095	22.26	23	0-1
				715.3	23173	21.80	23	0-1
			3	699.7	23017	21.71	23	0-1
				707.5	23095	22.37	23	0-1
				715.3	23173	21.82	23	0-1
		6RB		699.7	23017	20.52	22	0-2
				707.5	23095	21.02	22	0-2
				715.3	23173	20.67	22	0-2

FDD Band 12 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	704	23060	20.40	21	0
				707.5	23095	20.78	21	0
				711	23130	20.92	21	0
			25	704	23060	20.72	21	0
				707.5	23095	20.94	21	0
				711	23130	21.00	21	0
			49	704	23060	20.77	21	0
				707.5	23095	20.73	21	0
				711	23130	20.91	21	0
		25 RB	0	704	23060	19.92	20	0-1
				707.5	23095	20.00	20	0-1
				711	23130	19.98	20	0-1
			12	704	23060	19.84	20	0-1
				707.5	23095	19.95	20	0-1
				711	23130	19.94	20	0-1
			25	704	23060	19.97	20	0-1
				707.5	23095	19.97	20	0-1
				711	23130	19.94	20	0-1
		50RB		704	23060	19.94	20	0-1
				707.5	23095	19.95	20	0-1
				711	23130	19.98	20	0-1
	16-QAM	1 RB	0	704	23060	19.55	20	0-1
				707.5	23095	19.89	20	0-1
				711	23130	19.84	20	0-1
			25	704	23060	20.00	20	0-1
				707.5	23095	19.99	20	0-1
				711	23130	19.88	20	0-1
			49	704	23060	19.91	20	0-1
				707.5	23095	19.93	20	0-1
				711	23130	19.79	20	0-1
		25 RB	0	704	23060	18.81	19	0-2
				707.5	23095	18.88	19	0-2
				711	23130	18.74	19	0-2
			12	704	23060	18.73	19	0-2
				707.5	23095	18.93	19	0-2
				711	23130	18.41	19	0-2
			25	704	23060	18.95	19	0-2
				707.5	23095	18.87	19	0-2
				711	23130	18.40	19	0-2
		50RB		704	23060	18.83	19	0-2
				707.5	23095	18.92	19	0-2
				711	23130	18.76	19	0-2

FDD Band 12 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	701.5	23035	20.66	21	0
				707.5	23095	20.86	21	0
				713.5	23155	20.80	21	0
			12	701.5	23035	20.93	21	0
				707.5	23095	20.81	21	0
				713.5	23155	20.96	21	0
			24	701.5	23035	20.94	21	0
				707.5	23095	20.85	21	0
				713.5	23155	20.96	21	0
		12 RB	0	701.5	23035	19.84	20	0-1
				707.5	23095	19.93	20	0-1
				713.5	23155	19.91	20	0-1
			6	701.5	23035	19.74	20	0-1
				707.5	23095	19.97	20	0-1
				713.5	23155	19.87	20	0-1
			13	701.5	23035	20.00	20	0-1
				707.5	23095	19.86	20	0-1
				713.5	23155	19.98	20	0-1
		25RB		701.5	23035	19.89	20	0-1
				707.5	23095	19.92	20	0-1
				713.5	23155	19.92	20	0-1
	16-QAM	1 RB	0	701.5	23035	20.00	20	0-1
				707.5	23095	19.98	20	0-1
				713.5	23155	19.98	20	0-1
			12	701.5	23035	19.94	20	0-1
				707.5	23095	19.94	20	0-1
				713.5	23155	19.91	20	0-1
			24	701.5	23035	19.83	20	0-1
				707.5	23095	19.82	20	0-1
				713.5	23155	19.85	20	0-1
		12 RB	0	701.5	23035	18.75	19	0-2
				707.5	23095	18.93	19	0-2
				713.5	23155	18.85	19	0-2
			6	701.5	23035	18.80	19	0-2
				707.5	23095	18.93	19	0-2
				713.5	23155	18.75	19	0-2
			13	701.5	23035	18.93	19	0-2
				707.5	23095	18.79	19	0-2
				713.5	23155	18.92	19	0-2
		25RB		701.5	23035	19.00	19	0-2
				707.5	23095	18.88	19	0-2
				713.5	23155	18.89	19	0-2

FDD Band 12 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
3	QPSK	1 RB	0	700.5	23025	20.79	21	0
				707.5	23095	20.91	21	0
				714.5	23165	20.96	21	0
			7	700.5	23025	20.86	21	0
				707.5	23095	20.83	21	0
				714.5	23165	20.81	21	0
			14	700.5	23025	20.81	21	0
				707.5	23095	20.76	21	0
				714.5	23165	20.78	21	0
		8 RB	0	700.5	23025	19.73	20	0-1
				707.5	23095	19.88	20	0-1
				714.5	23165	19.87	20	0-1
			4	700.5	23025	19.57	20	0-1
				707.5	23095	19.76	20	0-1
				714.5	23165	19.86	20	0-1
			7	700.5	23025	19.65	20	0-1
				707.5	23095	19.93	20	0-1
				714.5	23165	19.71	20	0-1
		15RB		700.5	23025	19.58	20	0-1
				707.5	23095	19.79	20	0-1
				714.5	23165	19.91	20	0-1
	16-QAM	1 RB	0	700.5	23025	19.91	20	0-1
				707.5	23095	19.89	20	0-1
				714.5	23165	19.73	20	0-1
			7	700.5	23025	19.88	20	0-1
				707.5	23095	20.00	20	0-1
				714.5	23165	19.73	20	0-1
			14	700.5	23025	19.47	20	0-1
				707.5	23095	19.87	20	0-1
				714.5	23165	19.75	20	0-1
		8 RB	0	700.5	23025	18.67	19	0-2
				707.5	23095	18.85	19	0-2
				714.5	23165	18.88	19	0-2
			4	700.5	23025	18.59	19	0-2
				707.5	23095	18.73	19	0-2
				714.5	23165	19.00	19	0-2
			7	700.5	23025	18.82	19	0-2
				707.5	23095	18.83	19	0-2
				714.5	23165	18.95	19	0-2
		15RB		700.5	23025	18.83	19	0-2
				707.5	23095	18.67	19	0-2
				714.5	23165	18.98	19	0-2

FDD Band 12 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
1.4	QPSK	1 RB	0	699.7	23017	20.83	21	0
				707.5	23095	20.83	21	0
				715.3	23173	20.89	21	0
			2	699.7	23017	20.77	21	0
				707.5	23095	20.92	21	0
				715.3	23173	21.00	21	0
			5	699.7	23017	20.82	21	0
				707.5	23095	20.93	21	0
				715.3	23173	21.00	21	0
		3 RB	0	699.7	23017	20.79	21	0
				707.5	23095	20.95	21	0
				715.3	23173	20.91	21	0
			2	699.7	23017	20.83	21	0
				707.5	23095	20.98	21	0
				715.3	23173	20.97	21	0
			3	699.7	23017	20.79	21	0
				707.5	23095	20.98	21	0
				715.3	23173	20.96	21	0
		6RB		699.7	23017	19.76	20	0-1
				707.5	23095	19.88	20	0-1
				715.3	23173	19.93	20	0-1
	16-QAM	1 RB	0	699.7	23017	19.48	20	0-1
				707.5	23095	19.74	20	0-1
				715.3	23173	19.65	20	0-1
			2	699.7	23017	19.40	20	0-1
				707.5	23095	19.66	20	0-1
				715.3	23173	19.98	20	0-1
			5	699.7	23017	19.85	20	0-1
				707.5	23095	19.54	20	0-1
				715.3	23173	19.97	20	0-1
		3 RB	0	699.7	23017	19.54	20	0-1
				707.5	23095	19.41	20	0-1
				715.3	23173	19.93	20	0-1
			2	699.7	23017	19.91	20	0-1
				707.5	23095	19.85	20	0-1
				715.3	23173	19.93	20	0-1
			3	699.7	23017	19.84	20	0-1
				707.5	23095	19.93	20	0-1
				715.3	23173	19.87	20	0-1
		6RB		699.7	23017	18.58	19	0-2
				707.5	23095	18.85	19	0-2
				715.3	23173	18.70	19	0-2

FDD Band 25 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
20	QPSK	1 RB	0	1860	26140	23.10	24	0
				1882.5	26365	23.16	24	0
				1905	26590	23.09	24	0
			50	1860	26140	23.33	24	0
				1882.5	26365	23.08	24	0
				1905	26590	23.09	24	0
			99	1860	26140	23.03	24	0
				1882.5	26365	23.24	24	0
				1905	26590	23.24	24	0
		50 RB	0	1860	26140	22.25	23	0-1
				1882.5	26365	22.11	23	0-1
				1905	26590	22.30	23	0-1
			25	1860	26140	22.18	23	0-1
				1882.5	26365	22.16	23	0-1
				1905	26590	22.12	23	0-1
			50	1860	26140	22.11	23	0-1
				1882.5	26365	22.15	23	0-1
				1905	26590	22.17	23	0-1
		100RB		1860	26140	22.13	23	0-1
				1882.5	26365	22.14	23	0-1
				1905	26590	22.20	23	0-1
	16-QAM	1 RB	0	1860	26140	22.12	23	0-1
				1882.5	26365	22.07	23	0-1
				1905	26590	22.31	23	0-1
			50	1860	26140	22.24	23	0-1
				1882.5	26365	22.35	23	0-1
				1905	26590	22.04	23	0-1
			99	1860	26140	22.03	23	0-1
				1882.5	26365	22.15	23	0-1
				1905	26590	22.61	23	0-1
		50 RB	0	1860	26140	21.05	22	0-2
				1882.5	26365	21.26	22	0-2
				1905	26590	21.21	22	0-2
			25	1860	26140	20.95	22	0-2
				1882.5	26365	21.19	22	0-2
				1905	26590	21.15	22	0-2
			50	1860	26140	20.94	22	0-2
				1882.5	26365	21.25	22	0-2
				1905	26590	21.11	22	0-2
		100RB		1860	26140	21.08	22	0-2
				1882.5	26365	21.20	22	0-2
				1905	26590	21.25	22	0-2

FDD Band 25 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
15	QPSK	1 RB	0	1857.5	26115	23.26	24	0
				1882.5	26365	23.25	24	0
				1907.5	26615	23.21	24	0
			36	1857.5	26115	23.00	24	0
				1882.5	26365	23.16	24	0
				1907.5	26615	22.98	24	0
			74	1857.5	26115	22.94	24	0
				1882.5	26365	23.02	24	0
				1907.5	26615	23.01	24	0
		36 RB	0	1857.5	26115	22.12	23	0-1
				1882.5	26365	22.10	23	0-1
				1907.5	26615	22.21	23	0-1
			18	1857.5	26115	22.17	23	0-1
				1882.5	26365	22.18	23	0-1
				1907.5	26615	22.14	23	0-1
			37	1857.5	26115	22.17	23	0-1
				1882.5	26365	22.19	23	0-1
				1907.5	26615	22.30	23	0-1
		75RB		1857.5	26115	22.19	23	0-1
				1882.5	26365	22.14	23	0-1
				1907.5	26615	22.27	23	0-1
	16-QAM	1 RB	0	1857.5	26115	22.77	23	0-1
				1882.5	26365	22.55	23	0-1
				1907.5	26615	22.18	23	0-1
			36	1857.5	26115	22.04	23	0-1
				1882.5	26365	21.98	23	0-1
				1907.5	26615	22.28	23	0-1
			74	1857.5	26115	21.83	23	0-1
				1882.5	26365	21.97	23	0-1
				1907.5	26615	21.89	23	0-1
		36 RB	0	1857.5	26115	21.11	22	0-2
				1882.5	26365	21.15	22	0-2
				1907.5	26615	21.18	22	0-2
			18	1857.5	26115	21.21	22	0-2
				1882.5	26365	21.21	22	0-2
				1907.5	26615	21.15	22	0-2
			37	1857.5	26115	21.01	22	0-2
				1882.5	26365	21.28	22	0-2
				1907.5	26615	21.36	22	0-2
		75RB		1857.5	26115	21.12	22	0-2
				1882.5	26365	21.18	22	0-2
				1907.5	26615	21.21	22	0-2

FDD Band 25 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	1855	26090	23.22	24	0
				1882.5	26365	23.17	24	0
				1910	26640	22.97	24	0
			25	1855	26090	22.97	24	0
				1882.5	26365	23.47	24	0
				1910	26640	23.41	24	0
			49	1855	26090	23.12	24	0
				1882.5	26365	23.36	24	0
				1910	26640	23.08	24	0
		25 RB	0	1855	26090	22.18	23	0-1
				1882.5	26365	22.18	23	0-1
				1910	26640	22.14	23	0-1
			12	1855	26090	22.20	23	0-1
				1882.5	26365	22.19	23	0-1
				1910	26640	22.26	23	0-1
			25	1855	26090	22.30	23	0-1
				1882.5	26365	22.22	23	0-1
				1910	26640	22.38	23	0-1
		50RB		1855	26090	22.18	23	0-1
				1882.5	26365	22.22	23	0-1
				1910	26640	22.30	23	0-1
	16-QAM	1 RB	0	1855	26090	22.59	23	0-1
				1882.5	26365	22.35	23	0-1
				1910	26640	22.35	23	0-1
			25	1855	26090	22.79	23	0-1
				1882.5	26365	22.59	23	0-1
				1910	26640	22.60	23	0-1
			49	1855	26090	22.48	23	0-1
				1882.5	26365	22.27	23	0-1
				1910	26640	22.43	23	0-1
		25 RB	0	1855	26090	21.16	22	0-2
				1882.5	26365	21.27	22	0-2
				1910	26640	21.30	22	0-2
			12	1855	26090	21.22	22	0-2
				1882.5	26365	21.61	22	0-2
				1910	26640	21.52	22	0-2
			25	1855	26090	21.36	22	0-2
				1882.5	26365	21.44	22	0-2
				1910	26640	21.48	22	0-2
		50RB		1855	26090	21.22	22	0-2
				1882.5	26365	21.28	22	0-2
				1910	26640	21.38	22	0-2

FDD Band 25 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	1852.5	26065	23.45	24	0
				1882.5	26365	22.98	24	0
				1912.5	26665	23.15	24	0
			12	1852.5	26065	23.47	24	0
				1882.5	26365	23.11	24	0
				1912.5	26665	23.43	24	0
			24	1852.5	26065	23.20	24	0
				1882.5	26365	23.12	24	0
				1912.5	26665	23.19	24	0
		12 RB	0	1852.5	26065	22.19	23	0-1
				1882.5	26365	22.12	23	0-1
				1912.5	26665	22.26	23	0-1
			6	1852.5	26065	22.23	23	0-1
				1882.5	26365	22.14	23	0-1
				1912.5	26665	22.23	23	0-1
			13	1852.5	26065	22.17	23	0-1
				1882.5	26365	22.12	23	0-1
				1912.5	26665	22.30	23	0-1
		25RB		1852.5	26065	22.17	23	0-1
				1882.5	26365	22.22	23	0-1
				1912.5	26665	22.33	23	0-1
	16-QAM	1 RB	0	1852.5	26065	22.38	23	0-1
				1882.5	26365	22.62	23	0-1
				1912.5	26665	22.79	23	0-1
			12	1852.5	26065	22.40	23	0-1
				1882.5	26365	21.82	23	0-1
				1912.5	26665	22.35	23	0-1
			24	1852.5	26065	22.42	23	0-1
				1882.5	26365	22.32	23	0-1
				1912.5	26665	22.82	23	0-1
		12 RB	0	1852.5	26065	21.09	22	0-2
				1882.5	26365	20.94	22	0-2
				1912.5	26665	21.29	22	0-2
			6	1852.5	26065	20.91	22	0-2
				1882.5	26365	21.16	22	0-2
				1912.5	26665	21.22	22	0-2
			13	1852.5	26065	20.90	22	0-2
				1882.5	26365	20.94	22	0-2
				1912.5	26665	21.26	22	0-2
		25RB		1852.5	26065	21.09	22	0-2
				1882.5	26365	20.96	22	0-2
				1912.5	26665	21.27	22	0-2

FDD Band 25 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
3	QPSK	1 RB	0	1851.5	26055	23.25	24	0
				1882.5	26365	23.16	24	0
				1913.5	26675	23.31	24	0
			7	1851.5	26055	23.44	24	0
				1882.5	26365	23.36	24	0
				1913.5	26675	23.50	24	0
			14	1851.5	26055	23.33	24	0
				1882.5	26365	23.45	24	0
				1913.5	26675	23.16	24	0
		8 RB	0	1851.5	26055	22.25	23	0-1
				1882.5	26365	22.27	23	0-1
				1913.5	26675	22.36	23	0-1
			4	1851.5	26055	22.24	23	0-1
				1882.5	26365	22.22	23	0-1
				1913.5	26675	22.31	23	0-1
			7	1851.5	26055	22.25	23	0-1
				1882.5	26365	22.26	23	0-1
				1913.5	26675	22.30	23	0-1
		15RB		1851.5	26055	22.17	23	0-1
				1882.5	26365	22.10	23	0-1
				1913.5	26675	22.18	23	0-1
	16-QAM	1 RB	0	1851.5	26055	21.94	23	0-1
				1882.5	26365	22.46	23	0-1
				1913.5	26675	22.75	23	0-1
			7	1851.5	26055	21.96	23	0-1
				1882.5	26365	22.57	23	0-1
				1913.5	26675	22.07	23	0-1
			14	1851.5	26055	22.38	23	0-1
				1882.5	26365	22.31	23	0-1
				1913.5	26675	22.18	23	0-1
		8 RB	0	1851.5	26055	21.25	22	0-2
				1882.5	26365	21.32	22	0-2
				1913.5	26675	21.24	22	0-2
			4	1851.5	26055	21.25	22	0-2
				1882.5	26365	21.33	22	0-2
				1913.5	26675	21.30	22	0-2
			7	1851.5	26055	21.16	22	0-2
				1882.5	26365	21.34	22	0-2
				1913.5	26675	21.36	22	0-2
		15RB		1851.5	26055	21.00	22	0-2
				1882.5	26365	21.12	22	0-2
				1913.5	26675	21.24	22	0-2

FDD Band 25 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
1.4	QPSK	1 RB	0	1850.7	26047	23.33	24	0
				1882.5	26365	23.20	24	0
				1914.3	26683	23.12	24	0
			2	1850.7	26047	23.41	24	0
				1882.5	26365	23.21	24	0
				1914.3	26683	23.08	24	0
			5	1850.7	26047	23.08	24	0
				1882.5	26365	23.22	24	0
				1914.3	26683	22.95	24	0
		3 RB	0	1850.7	26047	23.13	24	0
				1882.5	26365	23.28	24	0
				1914.3	26683	23.00	24	0
			2	1850.7	26047	23.20	24	0
				1882.5	26365	23.11	24	0
				1914.3	26683	22.95	24	0
			3	1850.7	26047	23.34	24	0
				1882.5	26365	23.27	24	0
				1914.3	26683	22.96	24	0
		6RB		1850.7	26047	22.24	23	0-1
				1882.5	26365	22.20	23	0-1
				1914.3	26683	22.11	23	0-1
	16-QAM	1 RB	0	1850.7	26047	22.63	23	0-1
				1882.5	26365	22.58	23	0-1
				1914.3	26683	22.48	23	0-1
			2	1850.7	26047	22.23	23	0-1
				1882.5	26365	22.46	23	0-1
				1914.3	26683	21.84	23	0-1
			5	1850.7	26047	22.21	23	0-1
				1882.5	26365	22.76	23	0-1
				1914.3	26683	22.03	23	0-1
		3 RB	0	1850.7	26047	22.06	23	0-1
				1882.5	26365	22.24	23	0-1
				1914.3	26683	21.98	23	0-1
			2	1850.7	26047	22.16	23	0-1
				1882.5	26365	22.43	23	0-1
				1914.3	26683	22.02	23	0-1
			3	1850.7	26047	22.05	23	0-1
				1882.5	26365	22.27	23	0-1
				1914.3	26683	22.23	23	0-1
		6RB		1850.7	26047	21.04	22	0-2
				1882.5	26365	20.53	22	0-2
				1914.3	26683	21.07	22	0-2

FDD Band 25 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
20	QPSK	1 RB	0	1860	26140	14.91	15.5	0
				1882.5	26365	15.15	15.5	0
				1905	26590	14.97	15.5	0
			50	1860	26140	14.95	15.5	0
				1882.5	26365	14.93	15.5	0
				1905	26590	15.01	15.5	0
			99	1860	26140	14.87	15.5	0
				1882.5	26365	14.92	15.5	0
				1905	26590	15.05	15.5	0
		50 RB	0	1860	26140	14.20	14.5	0-1
				1882.5	26365	14.06	14.5	0-1
				1905	26590	14.18	14.5	0-1
			25	1860	26140	14.16	14.5	0-1
				1882.5	26365	14.09	14.5	0-1
				1905	26590	14.07	14.5	0-1
			50	1860	26140	14.11	14.5	0-1
				1882.5	26365	14.07	14.5	0-1
				1905	26590	14.17	14.5	0-1
		100RB		1860	26140	14.15	14.5	0-1
				1882.5	26365	14.05	14.5	0-1
				1905	26590	14.02	14.5	0-1
	16-QAM	1 RB	0	1860	26140	14.20	14.5	0-1
				1882.5	26365	14.42	14.5	0-1
				1905	26590	14.11	14.5	0-1
			50	1860	26140	14.24	14.5	0-1
				1882.5	26365	14.03	14.5	0-1
				1905	26590	14.37	14.5	0-1
			99	1860	26140	13.99	14.5	0-1
				1882.5	26365	13.98	14.5	0-1
				1905	26590	14.47	14.5	0-1
		50 RB	0	1860	26140	12.99	13.5	0-2
				1882.5	26365	12.36	13.5	0-2
				1905	26590	12.63	13.5	0-2
			25	1860	26140	12.94	13.5	0-2
				1882.5	26365	12.71	13.5	0-2
				1905	26590	12.82	13.5	0-2
			50	1860	26140	12.86	13.5	0-2
				1882.5	26365	12.86	13.5	0-2
				1905	26590	12.84	13.5	0-2
		100RB		1860	26140	12.82	13.5	0-2
				1882.5	26365	12.54	13.5	0-2
				1905	26590	12.66	13.5	0-2

FDD Band 25 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
15	QPSK	1 RB	0	1857.5	26115	15.17	15.5	0
				1882.5	26365	15.10	15.5	0
				1907.5	26615	15.09	15.5	0
			36	1857.5	26115	14.96	15.5	0
				1882.5	26365	14.83	15.5	0
				1907.5	26615	14.96	15.5	0
			74	1857.5	26115	14.96	15.5	0
				1882.5	26365	15.12	15.5	0
				1907.5	26615	15.15	15.5	0
		36 RB	0	1857.5	26115	13.92	14.5	0-1
				1882.5	26365	14.03	14.5	0-1
				1907.5	26615	14.05	14.5	0-1
			18	1857.5	26115	14.02	14.5	0-1
				1882.5	26365	14.09	14.5	0-1
				1907.5	26615	13.94	14.5	0-1
			37	1857.5	26115	14.15	14.5	0-1
				1882.5	26365	14.11	14.5	0-1
				1907.5	26615	14.15	14.5	0-1
		75RB		1857.5	26115	14.13	14.5	0-1
				1882.5	26365	14.08	14.5	0-1
				1907.5	26615	14.06	14.5	0-1
	16-QAM	1 RB	0	1857.5	26115	13.86	14.5	0-1
				1882.5	26365	14.08	14.5	0-1
				1907.5	26615	14.10	14.5	0-1
			36	1857.5	26115	14.42	14.5	0-1
				1882.5	26365	14.16	14.5	0-1
				1907.5	26615	13.86	14.5	0-1
			74	1857.5	26115	14.44	14.5	0-1
				1882.5	26365	14.11	14.5	0-1
				1907.5	26615	14.28	14.5	0-1
		36 RB	0	1857.5	26115	13.00	13.5	0-2
				1882.5	26365	12.56	13.5	0-2
				1907.5	26615	12.65	13.5	0-2
			18	1857.5	26115	13.10	13.5	0-2
				1882.5	26365	12.72	13.5	0-2
				1907.5	26615	12.60	13.5	0-2
			37	1857.5	26115	12.92	13.5	0-2
				1882.5	26365	12.92	13.5	0-2
				1907.5	26615	12.83	13.5	0-2
		75RB		1857.5	26115	13.04	13.5	0-2
				1882.5	26365	12.80	13.5	0-2
				1907.5	26615	12.84	13.5	0-2

FDD Band 25 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	1855	26090	15.25	15.5	0
				1882.5	26365	15.17	15.5	0
				1910	26640	14.82	15.5	0
			25	1855	26090	15.28	15.5	0
				1882.5	26365	15.34	15.5	0
				1910	26640	15.26	15.5	0
			49	1855	26090	15.18	15.5	0
				1882.5	26365	15.26	15.5	0
				1910	26640	14.96	15.5	0
		25 RB	0	1855	26090	13.99	14.5	0-1
				1882.5	26365	14.05	14.5	0-1
				1910	26640	13.97	14.5	0-1
			12	1855	26090	14.07	14.5	0-1
				1882.5	26365	14.06	14.5	0-1
				1910	26640	14.22	14.5	0-1
			25	1855	26090	14.08	14.5	0-1
				1882.5	26365	14.06	14.5	0-1
				1910	26640	14.23	14.5	0-1
		50RB		1855	26090	14.10	14.5	0-1
				1882.5	26365	14.07	14.5	0-1
				1910	26640	14.09	14.5	0-1
	16-QAM	1 RB	0	1855	26090	13.83	14.5	0-1
				1882.5	26365	13.73	14.5	0-1
				1910	26640	14.50	14.5	0-1
			25	1855	26090	14.10	14.5	0-1
				1882.5	26365	13.86	14.5	0-1
				1910	26640	14.28	14.5	0-1
			49	1855	26090	14.18	14.5	0-1
				1882.5	26365	13.67	14.5	0-1
				1910	26640	14.13	14.5	0-1
		25 RB	0	1855	26090	13.01	13.5	0-2
				1882.5	26365	12.50	13.5	0-2
				1910	26640	12.47	13.5	0-2
			12	1855	26090	13.14	13.5	0-2
				1882.5	26365	12.71	13.5	0-2
				1910	26640	12.79	13.5	0-2
			25	1855	26090	13.18	13.5	0-2
				1882.5	26365	12.70	13.5	0-2
				1910	26640	13.01	13.5	0-2
		50RB		1855	26090	13.01	13.5	0-2
				1882.5	26365	12.65	13.5	0-2
				1910	26640	12.73	13.5	0-2

FDD Band 25 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	1852.5	26065	15.16	15.5	0
				1882.5	26365	14.90	15.5	0
				1912.5	26665	15.11	15.5	0
			12	1852.5	26065	15.33	15.5	0
				1882.5	26365	15.03	15.5	0
				1912.5	26665	15.16	15.5	0
			24	1852.5	26065	15.20	15.5	0
				1882.5	26365	15.12	15.5	0
				1912.5	26665	15.27	15.5	0
		12 RB	0	1852.5	26065	14.09	14.5	0-1
				1882.5	26365	13.89	14.5	0-1
				1912.5	26665	14.08	14.5	0-1
			6	1852.5	26065	14.12	14.5	0-1
				1882.5	26365	13.99	14.5	0-1
				1912.5	26665	14.04	14.5	0-1
			13	1852.5	26065	14.18	14.5	0-1
				1882.5	26365	13.95	14.5	0-1
				1912.5	26665	14.12	14.5	0-1
		25RB		1852.5	26065	14.07	14.5	0-1
				1882.5	26365	13.99	14.5	0-1
				1912.5	26665	14.17	14.5	0-1
	16-QAM	1 RB	0	1852.5	26065	14.10	14.5	0-1
				1882.5	26365	13.97	14.5	0-1
				1912.5	26665	14.11	14.5	0-1
			12	1852.5	26065	14.26	14.5	0-1
				1882.5	26365	13.92	14.5	0-1
				1912.5	26665	14.48	14.5	0-1
			24	1852.5	26065	14.47	14.5	0-1
				1882.5	26365	14.06	14.5	0-1
				1912.5	26665	14.40	14.5	0-1
		12 RB	0	1852.5	26065	13.24	13.5	0-2
				1882.5	26365	12.78	13.5	0-2
				1912.5	26665	13.03	13.5	0-2
			6	1852.5	26065	13.23	13.5	0-2
				1882.5	26365	12.70	13.5	0-2
				1912.5	26665	13.08	13.5	0-2
			13	1852.5	26065	13.30	13.5	0-2
				1882.5	26365	12.86	13.5	0-2
				1912.5	26665	13.27	13.5	0-2
		25RB		1852.5	26065	13.27	13.5	0-2
				1882.5	26365	12.86	13.5	0-2
				1912.5	26665	13.02	13.5	0-2

FDD Band 25 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
3	QPSK	1 RB	0	1851.5	26055	15.14	15.5	0
				1882.5	26365	14.84	15.5	0
				1913.5	26675	15.02	15.5	0
			7	1851.5	26055	15.36	15.5	0
				1882.5	26365	14.94	15.5	0
				1913.5	26675	15.17	15.5	0
			14	1851.5	26055	15.13	15.5	0
				1882.5	26365	15.01	15.5	0
				1913.5	26675	15.08	15.5	0
		8 RB	0	1851.5	26055	14.08	14.5	0-1
				1882.5	26365	13.95	14.5	0-1
				1913.5	26675	14.04	14.5	0-1
			4	1851.5	26055	14.03	14.5	0-1
				1882.5	26365	13.99	14.5	0-1
				1913.5	26675	14.14	14.5	0-1
			7	1851.5	26055	14.14	14.5	0-1
				1882.5	26365	14.02	14.5	0-1
				1913.5	26675	14.14	14.5	0-1
		15RB		1851.5	26055	14.01	14.5	0-1
				1882.5	26365	14.00	14.5	0-1
				1913.5	26675	14.03	14.5	0-1
	16-QAM	1 RB	0	1851.5	26055	14.42	14.5	0-1
				1882.5	26365	14.09	14.5	0-1
				1913.5	26675	14.23	14.5	0-1
			7	1851.5	26055	14.21	14.5	0-1
				1882.5	26365	14.09	14.5	0-1
				1913.5	26675	14.48	14.5	0-1
			14	1851.5	26055	14.49	14.5	0-1
				1882.5	26365	14.16	14.5	0-1
				1913.5	26675	14.44	14.5	0-1
		8 RB	0	1851.5	26055	13.27	13.5	0-2
				1882.5	26365	12.74	13.5	0-2
				1913.5	26675	13.05	13.5	0-2
			4	1851.5	26055	13.34	13.5	0-2
				1882.5	26365	12.77	13.5	0-2
				1913.5	26675	13.14	13.5	0-2
			7	1851.5	26055	13.37	13.5	0-2
				1882.5	26365	12.80	13.5	0-2
				1913.5	26675	13.15	13.5	0-2
		15RB		1851.5	26055	13.11	13.5	0-2
				1882.5	26365	12.75	13.5	0-2
				1913.5	26675	12.98	13.5	0-2

FDD Band 25 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
1.4	QPSK	1 RB	0	1850.7	26047	14.90	15.5	0
				1882.5	26365	14.95	15.5	0
				1914.3	26683	14.80	15.5	0
			2	1850.7	26047	15.11	15.5	0
				1882.5	26365	15.04	15.5	0
				1914.3	26683	14.85	15.5	0
			5	1850.7	26047	14.91	15.5	0
				1882.5	26365	14.86	15.5	0
				1914.3	26683	14.92	15.5	0
		3 RB	0	1850.7	26047	15.00	15.5	0
				1882.5	26365	14.89	15.5	0
				1914.3	26683	14.95	15.5	0
			2	1850.7	26047	15.15	15.5	0
				1882.5	26365	14.98	15.5	0
				1914.3	26683	15.05	15.5	0
			3	1850.7	26047	15.21	15.5	0
				1882.5	26365	14.94	15.5	0
				1914.3	26683	14.95	15.5	0
		6RB		1850.7	26047	14.07	14.5	0-1
				1882.5	26365	14.01	14.5	0-1
				1914.3	26683	14.13	14.5	0-1
	16-QAM	1 RB	0	1850.7	26047	14.39	14.5	0-1
				1882.5	26365	14.19	14.5	0-1
				1914.3	26683	14.39	14.5	0-1
			2	1850.7	26047	14.44	14.5	0-1
				1882.5	26365	14.08	14.5	0-1
				1914.3	26683	14.38	14.5	0-1
			5	1850.7	26047	14.35	14.5	0-1
				1882.5	26365	14.19	14.5	0-1
				1914.3	26683	14.41	14.5	0-1
		3 RB	0	1850.7	26047	14.12	14.5	0-1
				1882.5	26365	13.84	14.5	0-1
				1914.3	26683	14.00	14.5	0-1
			2	1850.7	26047	14.03	14.5	0-1
				1882.5	26365	13.75	14.5	0-1
				1914.3	26683	14.12	14.5	0-1
			3	1850.7	26047	14.29	14.5	0-1
				1882.5	26365	13.60	14.5	0-1
				1914.3	26683	14.03	14.5	0-1
		6RB		1850.7	26047	13.32	13.5	0-2
				1882.5	26365	12.80	13.5	0-2
				1914.3	26683	13.06	13.5	0-2

FDD Band 26 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
15	QPSK	1 RB	0	822.5	26825	23.00	24	0
				831.5	26865	23.14	24	0
				841.5	26965	23.05	24	0
			36	822.5	26825	22.86	24	0
				831.5	26865	22.86	24	0
				841.5	26965	22.99	24	0
			74	822.5	26825	23.12	24	0
				831.5	26865	23.20	24	0
				841.5	26965	23.06	24	0
		36 RB	0	822.5	26825	22.17	23	0-1
				831.5	26865	22.18	23	0-1
				841.5	26965	22.25	23	0-1
			18	822.5	26825	22.01	23	0-1
				831.5	26865	22.12	23	0-1
				841.5	26965	22.21	23	0-1
			37	822.5	26825	22.07	23	0-1
				831.5	26865	22.03	23	0-1
				841.5	26965	22.14	23	0-1
		75RB		822.5	26825	22.09	23	0-1
				831.5	26865	22.18	23	0-1
				841.5	26965	22.20	23	0-1
	16-QAM	1 RB	0	822.5	26825	22.03	23	0-1
				831.5	26865	22.01	23	0-1
				841.5	26965	22.33	23	0-1
			36	822.5	26825	21.69	23	0-1
				831.5	26865	22.35	23	0-1
				841.5	26965	22.09	23	0-1
			74	822.5	26825	21.89	23	0-1
				831.5	26865	22.19	23	0-1
				841.5	26965	22.28	23	0-1
		36 RB	0	822.5	26825	21.08	22	0-2
				831.5	26865	20.96	22	0-2
				841.5	26965	21.15	22	0-2
			18	822.5	26825	21.07	22	0-2
				831.5	26865	21.03	22	0-2
				841.5	26965	21.15	22	0-2
			37	822.5	26825	21.00	22	0-2
				831.5	26865	20.86	22	0-2
				841.5	26965	20.96	22	0-2
		75RB		822.5	26825	20.91	22	0-2
				831.5	26865	21.05	22	0-2
				841.5	26965	21.09	22	0-2

FDD Band 26 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	820	26800	23.10	24	0
				831.5	26865	22.97	24	0
				844	26990	23.50	24	0
			25	820	26800	23.18	24	0
				831.5	26865	23.05	24	0
				844	26990	23.28	24	0
			49	820	26800	23.03	24	0
				831.5	26865	23.11	24	0
				844	26990	23.23	24	0
		25 RB	0	820	26800	22.29	23	0-1
				831.5	26865	22.24	23	0-1
				844	26990	22.18	23	0-1
			12	820	26800	22.12	23	0-1
				831.5	26865	22.09	23	0-1
				844	26990	22.14	23	0-1
			25	820	26800	22.14	23	0-1
				831.5	26865	22.16	23	0-1
				844	26990	22.10	23	0-1
		50RB		820	26800	22.10	23	0-1
				831.5	26865	22.16	23	0-1
				844	26990	22.15	23	0-1
	16-QAM	1 RB	0	820	26800	22.01	23	0-1
				831.5	26865	22.40	23	0-1
				844	26990	22.98	23	0-1
			25	820	26800	22.32	23	0-1
				831.5	26865	22.42	23	0-1
				844	26990	22.30	23	0-1
			49	820	26800	22.39	23	0-1
				831.5	26865	22.46	23	0-1
				844	26990	21.93	23	0-1
		25 RB	0	820	26800	20.92	22	0-2
				831.5	26865	21.08	22	0-2
				844	26990	21.19	22	0-2
			12	820	26800	20.86	22	0-2
				831.5	26865	21.16	22	0-2
				844	26990	21.01	22	0-2
			25	820	26800	21.23	22	0-2
				831.5	26865	20.99	22	0-2
				844	26990	20.94	22	0-2
		50RB		820	26800	21.13	22	0-2
				831.5	26865	21.12	22	0-2
				844	26990	21.14	22	0-2

FDD Band 26 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	816.5	26715	23.28	24	0
				831.5	26865	22.92	24	0
				846.5	27015	23.32	24	0
			12	816.5	26715	23.03	24	0
				831.5	26865	23.11	24	0
				846.5	27015	23.23	24	0
			24	816.5	26715	22.93	24	0
				831.5	26865	23.32	24	0
				846.5	27015	22.89	24	0
		12 RB	0	816.5	26715	22.13	23	0-1
				831.5	26865	22.09	23	0-1
				846.5	27015	22.19	23	0-1
			6	816.5	26715	21.98	23	0-1
				831.5	26865	22.10	23	0-1
				846.5	27015	22.01	23	0-1
			13	816.5	26715	22.02	23	0-1
				831.5	26865	22.20	23	0-1
				846.5	27015	22.04	23	0-1
		25RB		816.5	26715	22.03	23	0-1
				831.5	26865	22.07	23	0-1
				846.5	27015	22.15	23	0-1
	16-QAM	1 RB	0	816.5	26715	22.30	23	0-1
				831.5	26865	22.45	23	0-1
				846.5	27015	22.00	23	0-1
			12	816.5	26715	22.49	23	0-1
				831.5	26865	22.38	23	0-1
				846.5	27015	21.70	23	0-1
			24	816.5	26715	22.05	23	0-1
				831.5	26865	22.34	23	0-1
				846.5	27015	21.62	23	0-1
		12 RB	0	816.5	26715	20.99	22	0-2
				831.5	26865	21.14	22	0-2
				846.5	27015	21.06	22	0-2
			6	816.5	26715	20.99	22	0-2
				831.5	26865	21.11	22	0-2
				846.5	27015	20.95	22	0-2
			13	816.5	26715	21.04	22	0-2
				831.5	26865	21.22	22	0-2
				846.5	27015	21.09	22	0-2
		25RB		816.5	26715	21.15	22	0-2
				831.5	26865	21.22	22	0-2
				846.5	27015	21.06	22	0-2

FDD Band 26 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
3	QPSK	1 RB	0	815.5	26705	23.20	24	0
				831.5	26865	23.07	24	0
				847.5	27025	23.27	24	0
			7	815.5	26705	23.32	24	0
				831.5	26865	23.13	24	0
				847.5	27025	23.29	24	0
			14	815.5	26705	22.98	24	0
				831.5	26865	23.36	24	0
				847.5	27025	23.06	24	0
		8 RB	0	815.5	26705	22.12	23	0-1
				831.5	26865	22.17	23	0-1
				847.5	27025	22.24	23	0-1
			4	815.5	26705	22.02	23	0-1
				831.5	26865	22.03	23	0-1
				847.5	27025	22.10	23	0-1
			7	815.5	26705	22.02	23	0-1
				831.5	26865	22.03	23	0-1
				847.5	27025	22.07	23	0-1
		15RB		815.5	26705	22.11	23	0-1
				831.5	26865	22.05	23	0-1
				847.5	27025	22.15	23	0-1
	16-QAM	1 RB	0	815.5	26705	22.51	23	0-1
				831.5	26865	22.33	23	0-1
				847.5	27025	22.73	23	0-1
			7	815.5	26705	22.23	23	0-1
				831.5	26865	22.43	23	0-1
				847.5	27025	22.42	23	0-1
			14	815.5	26705	21.97	23	0-1
				831.5	26865	22.45	23	0-1
				847.5	27025	22.17	23	0-1
		8 RB	0	815.5	26705	21.22	22	0-2
				831.5	26865	21.29	22	0-2
				847.5	27025	21.09	22	0-2
			4	815.5	26705	21.14	22	0-2
				831.5	26865	21.21	22	0-2
				847.5	27025	20.82	22	0-2
			7	815.5	26705	21.20	22	0-2
				831.5	26865	21.27	22	0-2
				847.5	27025	20.98	22	0-2
		15RB		815.5	26705	21.35	22	0-2
				831.5	26865	21.10	22	0-2
				847.5	27025	20.81	22	0-2

FDD Band 26 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
1.4	QPSK	1 RB	0	814.7	26697	22.86	24	0
				831.5	26865	22.95	24	0
				848.3	27033	23.13	24	0
			2	814.7	26697	23.16	24	0
				831.5	26865	22.93	24	0
				848.3	27033	23.02	24	0
			5	814.7	26697	22.99	24	0
				831.5	26865	22.79	24	0
				848.3	27033	23.00	24	0
		3 RB	0	814.7	26697	23.21	24	0
				831.5	26865	23.00	24	0
				848.3	27033	23.18	24	0
			2	814.7	26697	23.29	24	0
				831.5	26865	22.99	24	0
				848.3	27033	23.35	24	0
			3	814.7	26697	23.29	24	0
				831.5	26865	23.08	24	0
				848.3	27033	23.22	24	0
		6RB		814.7	26697	22.14	23	0-1
				831.5	26865	22.15	23	0-1
				848.3	27033	22.03	23	0-1
	16-QAM	1 RB	0	814.7	26697	21.80	23	0-1
				831.5	26865	22.34	23	0-1
				848.3	27033	21.95	23	0-1
			2	814.7	26697	21.92	23	0-1
				831.5	26865	22.21	23	0-1
				848.3	27033	22.29	23	0-1
			5	814.7	26697	22.21	23	0-1
				831.5	26865	22.12	23	0-1
				848.3	27033	22.66	23	0-1
		3 RB	0	814.7	26697	22.27	23	0-1
				831.5	26865	22.18	23	0-1
				848.3	27033	22.27	23	0-1
			2	814.7	26697	22.45	23	0-1
				831.5	26865	21.90	23	0-1
				848.3	27033	22.57	23	0-1
			3	814.7	26697	22.41	23	0-1
				831.5	26865	21.90	23	0-1
				848.3	27033	22.36	23	0-1
		6RB		814.7	26697	20.87	22	0-2
				831.5	26865	20.81	22	0-2
				848.3	27033	21.02	22	0-2

FDD Band 26 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
15	QPSK	1 RB	0	822.5	26825	19.02	19.5	0
				831.5	26865	19.08	19.5	0
				841.5	26965	19.01	19.5	0
			36	822.5	26825	18.91	19.5	0
				831.5	26865	18.90	19.5	0
				841.5	26965	18.77	19.5	0
			74	822.5	26825	19.03	19.5	0
				831.5	26865	18.98	19.5	0
				841.5	26965	18.82	19.5	0
		36 RB	0	822.5	26825	18.03	18.5	0-1
				831.5	26865	18.03	18.5	0-1
				841.5	26965	18.18	18.5	0-1
			18	822.5	26825	17.91	18.5	0-1
				831.5	26865	18.01	18.5	0-1
				841.5	26965	18.08	18.5	0-1
			37	822.5	26825	17.98	18.5	0-1
				831.5	26865	17.86	18.5	0-1
				841.5	26965	18.08	18.5	0-1
		75RB		822.5	26825	17.87	18.5	0-1
				831.5	26865	17.99	18.5	0-1
				841.5	26965	17.98	18.5	0-1
	16-QAM	1 RB	0	822.5	26825	18.04	18.5	0-1
				831.5	26865	18.22	18.5	0-1
				841.5	26965	18.41	18.5	0-1
			36	822.5	26825	17.84	18.5	0-1
				831.5	26865	18.36	18.5	0-1
				841.5	26965	17.89	18.5	0-1
			74	822.5	26825	17.71	18.5	0-1
				831.5	26865	18.15	18.5	0-1
				841.5	26965	17.95	18.5	0-1
		36 RB	0	822.5	26825	17.02	17.5	0-2
				831.5	26865	17.20	17.5	0-2
				841.5	26965	17.23	17.5	0-2
			18	822.5	26825	17.03	17.5	0-2
				831.5	26865	17.20	17.5	0-2
				841.5	26965	17.12	17.5	0-2
			37	822.5	26825	16.99	17.5	0-2
				831.5	26865	17.18	17.5	0-2
				841.5	26965	16.88	17.5	0-2
		75RB		822.5	26825	17.05	17.5	0-2
				831.5	26865	17.00	17.5	0-2
				841.5	26965	16.99	17.5	0-2

FDD Band 26 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	820	26800	18.93	19.5	0
				831.5	26865	19.09	19.5	0
				844	26990	19.25	19.5	0
			25	820	26800	18.78	19.5	0
				831.5	26865	19.02	19.5	0
				844	26990	19.13	19.5	0
			49	820	26800	18.67	19.5	0
				831.5	26865	19.06	19.5	0
				844	26990	18.87	19.5	0
		25 RB	0	820	26800	17.92	18.5	0-1
				831.5	26865	18.03	18.5	0-1
				844	26990	18.06	18.5	0-1
			12	820	26800	17.90	18.5	0-1
				831.5	26865	18.05	18.5	0-1
				844	26990	17.95	18.5	0-1
			25	820	26800	17.95	18.5	0-1
				831.5	26865	18.01	18.5	0-1
				844	26990	17.92	18.5	0-1
		50RB		820	26800	18.01	18.5	0-1
				831.5	26865	17.99	18.5	0-1
				844	26990	18.05	18.5	0-1
	16-QAM	1 RB	0	820	26800	18.05	18.5	0-1
				831.5	26865	18.39	18.5	0-1
				844	26990	18.47	18.5	0-1
			25	820	26800	18.08	18.5	0-1
				831.5	26865	18.38	18.5	0-1
				844	26990	18.44	18.5	0-1
			49	820	26800	18.02	18.5	0-1
				831.5	26865	18.18	18.5	0-1
				844	26990	18.40	18.5	0-1
		25 RB	0	820	26800	17.02	17.5	0-2
				831.5	26865	16.99	17.5	0-2
				844	26990	17.08	17.5	0-2
			12	820	26800	16.99	17.5	0-2
				831.5	26865	17.00	17.5	0-2
				844	26990	16.98	17.5	0-2
			25	820	26800	16.90	17.5	0-2
				831.5	26865	17.01	17.5	0-2
				844	26990	16.85	17.5	0-2
		50RB		820	26800	16.94	17.5	0-2
				831.5	26865	17.01	17.5	0-2
				844	26990	17.20	17.5	0-2

FDD Band 26 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	816.5	26715	19.17	19.5	0
				831.5	26865	18.97	19.5	0
				846.5	27015	19.33	19.5	0
			12	816.5	26715	19.30	19.5	0
				831.5	26865	19.25	19.5	0
				846.5	27015	19.25	19.5	0
			24	816.5	26715	18.93	19.5	0
				831.5	26865	19.13	19.5	0
				846.5	27015	18.95	19.5	0
		12 RB	0	816.5	26715	18.22	18.5	0-1
				831.5	26865	17.89	18.5	0-1
				846.5	27015	18.03	18.5	0-1
			6	816.5	26715	18.02	18.5	0-1
				831.5	26865	17.96	18.5	0-1
				846.5	27015	17.92	18.5	0-1
			13	816.5	26715	17.91	18.5	0-1
				831.5	26865	18.07	18.5	0-1
				846.5	27015	17.86	18.5	0-1
		25RB		816.5	26715	18.06	18.5	0-1
				831.5	26865	18.03	18.5	0-1
				846.5	27015	17.89	18.5	0-1
	16-QAM	1 RB	0	816.5	26715	17.95	18.5	0-1
				831.5	26865	18.48	18.5	0-1
				846.5	27015	17.91	18.5	0-1
			12	816.5	26715	17.88	18.5	0-1
				831.5	26865	18.31	18.5	0-1
				846.5	27015	17.57	18.5	0-1
			24	816.5	26715	17.57	18.5	0-1
				831.5	26865	18.40	18.5	0-1
				846.5	27015	17.42	18.5	0-1
		12 RB	0	816.5	26715	17.26	17.5	0-2
				831.5	26865	16.93	17.5	0-2
				846.5	27015	16.97	17.5	0-2
			6	816.5	26715	17.06	17.5	0-2
				831.5	26865	17.00	17.5	0-2
				846.5	27015	16.70	17.5	0-2
			13	816.5	26715	16.94	17.5	0-2
				831.5	26865	17.04	17.5	0-2
				846.5	27015	16.79	17.5	0-2
		25RB		816.5	26715	17.12	17.5	0-2
				831.5	26865	17.17	17.5	0-2
				846.5	27015	16.99	17.5	0-2

FDD Band 26 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
3	QPSK	1 RB	0	815.5	26705	19.18	19.5	0
				831.5	26865	18.84	19.5	0
				847.5	27025	18.95	19.5	0
			7	815.5	26705	19.28	19.5	0
				831.5	26865	18.83	19.5	0
				847.5	27025	19.02	19.5	0
			14	815.5	26705	19.13	19.5	0
				831.5	26865	18.92	19.5	0
				847.5	27025	18.74	19.5	0
		8 RB	0	815.5	26705	17.97	18.5	0-1
				831.5	26865	18.02	18.5	0-1
				847.5	27025	18.06	18.5	0-1
			4	815.5	26705	17.96	18.5	0-1
				831.5	26865	18.03	18.5	0-1
				847.5	27025	17.89	18.5	0-1
			7	815.5	26705	17.93	18.5	0-1
				831.5	26865	17.96	18.5	0-1
				847.5	27025	17.94	18.5	0-1
		15RB		815.5	26705	18.08	18.5	0-1
				831.5	26865	18.00	18.5	0-1
				847.5	27025	17.98	18.5	0-1
	16-QAM	1 RB	0	815.5	26705	18.33	18.5	0-1
				831.5	26865	18.37	18.5	0-1
				847.5	27025	18.32	18.5	0-1
			7	815.5	26705	18.17	18.5	0-1
				831.5	26865	17.99	18.5	0-1
				847.5	27025	17.72	18.5	0-1
			14	815.5	26705	17.94	18.5	0-1
				831.5	26865	17.81	18.5	0-1
				847.5	27025	18.02	18.5	0-1
		8 RB	0	815.5	26705	17.21	17.5	0-2
				831.5	26865	17.17	17.5	0-2
				847.5	27025	17.15	17.5	0-2
			4	815.5	26705	16.92	17.5	0-2
				831.5	26865	17.21	17.5	0-2
				847.5	27025	16.88	17.5	0-2
			7	815.5	26705	16.94	17.5	0-2
				831.5	26865	17.21	17.5	0-2
				847.5	27025	17.05	17.5	0-2
		15RB		815.5	26705	17.04	17.5	0-2
				831.5	26865	17.20	17.5	0-2
				847.5	27025	16.87	17.5	0-2

FDD Band 26 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
1.4	QPSK	1 RB	0	814.7	26697	18.91	19.5	0
				831.5	26865	18.87	19.5	0
				848.3	27033	18.98	19.5	0
			2	814.7	26697	19.16	19.5	0
				831.5	26865	18.98	19.5	0
				848.3	27033	18.98	19.5	0
			5	814.7	26697	19.00	19.5	0
				831.5	26865	18.96	19.5	0
				848.3	27033	18.76	19.5	0
		3 RB	0	814.7	26697	19.06	19.5	0
				831.5	26865	18.92	19.5	0
				848.3	27033	19.07	19.5	0
			2	814.7	26697	19.10	19.5	0
				831.5	26865	18.91	19.5	0
				848.3	27033	18.90	19.5	0
			3	814.7	26697	19.13	19.5	0
				831.5	26865	18.92	19.5	0
				848.3	27033	18.91	19.5	0
		6RB		814.7	26697	18.02	18.5	0-1
				831.5	26865	17.89	18.5	0-1
				848.3	27033	18.06	18.5	0-1
	16-QAM	1 RB	0	814.7	26697	17.68	18.5	0-1
				831.5	26865	18.09	18.5	0-1
				848.3	27033	18.36	18.5	0-1
			2	814.7	26697	17.70	18.5	0-1
				831.5	26865	18.21	18.5	0-1
				848.3	27033	17.91	18.5	0-1
			5	814.7	26697	17.65	18.5	0-1
				831.5	26865	17.94	18.5	0-1
				848.3	27033	17.39	18.5	0-1
		3 RB	0	814.7	26697	17.88	18.5	0-1
				831.5	26865	17.94	18.5	0-1
				848.3	27033	18.22	18.5	0-1
			2	814.7	26697	17.93	18.5	0-1
				831.5	26865	18.03	18.5	0-1
				848.3	27033	17.88	18.5	0-1
			3	814.7	26697	17.85	18.5	0-1
				831.5	26865	18.12	18.5	0-1
				848.3	27033	17.64	18.5	0-1
		6RB		814.7	26697	17.07	17.5	0-2
				831.5	26865	16.91	17.5	0-2
				848.3	27033	16.84	17.5	0-2

LTE TDD Band 41 power table:

TDD Band 41 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
20	QPSK	1 RB	0	2506	39750	22.81	24	0
				2549.5	40185	22.71	24	0
				2593	40620	22.74	24	0
				2636.5	41055	22.73	24	0
				2680	41490	22.61	24	0
			50	2506	39750	22.76	24	0
				2549.5	40185	22.52	24	0
				2593	40620	22.55	24	0
				2636.5	41055	22.51	24	0
				2680	41490	22.54	24	0
			99	2506	39750	22.44	24	0
				2549.5	40185	22.51	24	0
				2593	40620	22.56	24	0
				2636.5	41055	22.44	24	0
				2680	41490	22.24	24	0
		50 RB	0	2506	39750	21.72	23	0-1
				2549.5	40185	21.64	23	0-1
				2593	40620	22.00	23	0-1
				2636.5	41055	21.69	23	0-1
				2680	41490	21.67	23	0-1
			25	2506	39750	21.62	23	0-1
				2549.5	40185	21.72	23	0-1
				2593	40620	21.77	23	0-1
				2636.5	41055	21.63	23	0-1
				2680	41490	21.42	23	0-1
			50	2506	39750	21.54	23	0-1
				2549.5	40185	21.45	23	0-1
				2593	40620	21.85	23	0-1
				2636.5	41055	21.65	23	0-1
				2680	41490	21.35	23	0-1
		100RB		2506	39750	21.64	23	0-1
				2549.5	40185	21.71	23	0-1
				2593	40620	21.91	23	0-1
				2636.5	41055	21.64	23	0-1
				2680	41490	21.42	23	0-1

TDD Band 41 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
20	16-QAM	1 RB	0	2506	39750	21.97	23	0-1
				2549.5	40185	21.85	23	0-1
				2593	40620	22.00	23	0-1
				2636.5	41055	21.98	23	0-1
				2680	41490	21.82	23	0-1
			50	2506	39750	21.99	23	0-1
				2549.5	40185	21.84	23	0-1
				2593	40620	21.97	23	0-1
				2636.5	41055	21.87	23	0-1
				2680	41490	21.88	23	0-1
			99	2506	39750	21.54	23	0-1
				2549.5	40185	21.68	23	0-1
				2593	40620	21.78	23	0-1
				2636.5	41055	21.81	23	0-1
				2680	41490	21.39	23	0-1
		50 RB	0	2506	39750	20.74	22	0-2
				2549.5	40185	20.81	22	0-2
				2593	40620	20.84	22	0-2
				2636.5	41055	20.72	22	0-2
				2680	41490	20.58	22	0-2
			25	2506	39750	20.74	22	0-2
				2549.5	40185	20.66	22	0-2
				2593	40620	20.70	22	0-2
				2636.5	41055	20.61	22	0-2
				2680	41490	20.46	22	0-2
			50	2506	39750	20.56	22	0-2
				2549.5	40185	20.45	22	0-2
				2593	40620	20.75	22	0-2
				2636.5	41055	20.32	22	0-2
				2680	41490	20.38	22	0-2
		100RB		2506	39750	20.63	22	0-2
				2549.5	40185	20.82	22	0-2
				2593	40620	20.80	22	0-2
				2636.5	41055	20.71	22	0-2
				2680	41490	20.55	22	0-2

TDD Band 41 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
15	QPSK	1 RB	0	2503.5	39725	22.63	23	0
				2548.3	40173	22.71	23	0
				2593	40620	22.78	23	0
				2637.8	41068	22.64	23	0
				2682.5	41515	22.56	23	0
			36	2503.5	39725	22.63	23	0
				2548.3	40173	22.45	23	0
				2593	40620	22.66	23	0
				2637.8	41068	22.49	23	0
				2682.5	41515	22.42	23	0
			74	2503.5	39725	22.49	23	0
				2548.3	40173	22.56	23	0
				2593	40620	22.72	23	0
				2637.8	41068	22.51	23	0
				2682.5	41515	22.37	23	0
		36 RB	0	2503.5	39725	21.69	22	0-1
				2548.3	40173	21.84	22	0-1
				2593	40620	21.92	22	0-1
				2637.8	41068	21.73	22	0-1
				2682.5	41515	21.56	22	0-1
			18	2503.5	39725	21.66	22	0-1
				2548.3	40173	21.62	22	0-1
				2593	40620	21.79	22	0-1
				2637.8	41068	21.54	22	0-1
				2682.5	41515	21.44	22	0-1
			37	2503.5	39725	21.61	22	0-1
				2548.3	40173	21.54	22	0-1
				2593	40620	21.44	22	0-1
				2637.8	41068	21.67	22	0-1
				2682.5	41515	21.31	22	0-1
		75RB		2503.5	39725	21.59	22	0-1
				2548.3	40173	21.45	22	0-1
				2593	40620	21.70	22	0-1
				2637.8	41068	21.44	22	0-1
				2682.5	41515	21.44	22	0-1

TDD Band 41 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
15	16-QAM	1 RB	0	2503.5	39725	21.61	22	0-1
				2548.3	40173	21.55	22	0-1
				2593	40620	21.68	22	0-1
				2637.8	41068	21.47	22	0-1
				2682.5	41515	21.79	22	0-1
			36	2503.5	39725	21.32	22	0-1
				2548.3	40173	21.55	22	0-1
				2593	40620	21.64	22	0-1
				2637.8	41068	21.44	22	0-1
				2682.5	41515	21.22	22	0-1
			74	2503.5	39725	21.43	22	0-1
				2548.3	40173	21.72	22	0-1
				2593	40620	21.88	22	0-1
				2637.8	41068	21.49	22	0-1
				2682.5	41515	21.48	22	0-1
		36 RB	0	2503.5	39725	20.58	21	0-2
				2548.3	40173	20.66	21	0-2
				2593	40620	20.78	21	0-2
				2637.8	41068	20.52	21	0-2
				2682.5	41515	20.43	21	0-2
			18	2503.5	39725	20.47	21	0-2
				2548.3	40173	20.54	21	0-2
				2593	40620	20.75	21	0-2
				2637.8	41068	20.46	21	0-2
				2682.5	41515	20.42	21	0-2
			37	2503.5	39725	20.58	21	0-2
				2548.3	40173	20.65	21	0-2
				2593	40620	20.72	21	0-2
				2637.8	41068	20.42	21	0-2
				2682.5	41515	20.40	21	0-2
		75RB		2503.5	39725	20.69	21	0-2
				2548.3	40173	20.54	21	0-2
				2593	40620	20.79	21	0-2
				2637.8	41068	20.62	21	0-2
				2682.5	41515	20.45	21	0-2

TDD Band 41 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	2501	39700	22.72	23	0
				2547	40160	22.72	23	0
				2593	40620	22.81	23	0
				2639	41080	22.64	23	0
				2685	41540	22.69	23	0
			25	2501	39700	22.68	23	0
				2547	40160	22.66	23	0
				2593	40620	22.85	23	0
				2639	41080	22.73	23	0
				2685	41540	22.54	23	0
			49	2501	39700	22.63	23	0
				2547	40160	22.44	23	0
				2593	40620	22.52	23	0
				2639	41080	22.45	23	0
				2685	41540	22.28	23	0
		25 RB	0	2501	39700	21.76	22	0-1
				2547	40160	21.82	22	0-1
				2593	40620	21.96	22	0-1
				2639	41080	21.74	22	0-1
				2685	41540	21.53	22	0-1
			12	2501	39700	21.70	22	0-1
				2547	40160	21.84	22	0-1
				2593	40620	21.96	22	0-1
				2639	41080	21.77	22	0-1
				2685	41540	21.43	22	0-1
			25	2501	39700	21.69	22	0-1
				2547	40160	21.66	22	0-1
				2593	40620	21.83	22	0-1
				2639	41080	21.45	22	0-1
				2685	41540	21.54	22	0-1
		50RB		2501	39700	21.64	22	0-1
				2547	40160	21.66	22	0-1
				2593	40620	21.87	22	0-1
				2639	41080	21.54	22	0-1
				2685	41540	21.48	22	0-1

TDD Band 41 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	16-QAM	1 RB	0	2501	39700	21.87	22	0-1
				2547	40160	21.72	22	0-1
				2593	40620	21.93	22	0-1
				2639	41080	21.66	22	0-1
				2685	41540	21.80	22	0-1
			25	2501	39700	21.67	22	0-1
				2547	40160	21.74	22	0-1
				2593	40620	21.94	22	0-1
				2639	41080	21.73	22	0-1
				2685	41540	21.69	22	0-1
			49	2501	39700	21.68	22	0-1
				2547	40160	21.73	22	0-1
				2593	40620	21.90	22	0-1
				2639	41080	21.56	22	0-1
				2685	41540	21.62	22	0-1
		25 RB	0	2501	39700	20.69	21	0-2
				2547	40160	20.66	21	0-2
				2593	40620	20.99	21	0-2
				2639	41080	20.74	21	0-2
				2685	41540	20.58	21	0-2
			12	2501	39700	20.74	21	0-2
				2547	40160	20.71	21	0-2
				2593	40620	20.98	21	0-2
				2639	41080	20.43	21	0-2
				2685	41540	20.55	21	0-2
			25	2501	39700	20.73	21	0-2
				2547	40160	20.75	21	0-2
				2593	40620	20.96	21	0-2
				2639	41080	20.72	21	0-2
				2685	41540	20.76	21	0-2
		50RB		2501	39700	20.69	21	0-2
				2547	40160	20.62	21	0-2
				2593	40620	20.79	21	0-2
				2639	41080	20.54	21	0-2
				2685	41540	20.63	21	0-2

TDD Band 41 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	2498.5	39675	22.53	23	0
				2547.8	40148	22.42	23	0
				2593	40620	22.67	23	0
				2640.3	41093	22.39	23	0
				2687.5	41565	22.63	23	0
			12	2498.5	39675	23.00	23	0
				2547.8	40148	22.81	23	0
				2593	40620	22.95	23	0
				2640.3	41093	22.74	23	0
				2687.5	41565	22.75	23	0
			24	2498.5	39675	22.51	23	0
				2547.8	40148	22.66	23	0
				2593	40620	22.70	23	0
				2640.3	41093	22.31	23	0
				2687.5	41565	22.33	23	0
		12 RB	0	2498.5	39675	21.63	22	0-1
				2547.8	40148	21.74	22	0-1
				2593	40620	21.82	22	0-1
				2640.3	41093	21.51	22	0-1
				2687.5	41565	21.53	22	0-1
			6	2498.5	39675	21.57	22	0-1
				2547.8	40148	21.51	22	0-1
				2593	40620	21.85	22	0-1
				2640.3	41093	21.44	22	0-1
				2687.5	41565	21.48	22	0-1
			13	2498.5	39675	21.59	22	0-1
				2547.8	40148	21.44	22	0-1
				2593	40620	21.80	22	0-1
				2640.3	41093	21.51	22	0-1
				2687.5	41565	21.53	22	0-1
		25RB		2498.5	39675	21.64	22	0-1
				2547.8	40148	21.72	22	0-1
				2593	40620	21.81	22	0-1
				2640.3	41093	21.63	22	0-1
				2687.5	41565	21.62	22	0-1

TDD Band 41 (Full Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	16-QAM	1 RB	0	2498.5	39675	21.74	22	0-1
				2547.8	40148	21.54	22	0-1
				2593	40620	21.68	22	0-1
				2640.3	41093	21.55	22	0-1
				2687.5	41565	21.40	22	0-1
			12	2498.5	39675	21.51	22	0-1
				2547.8	40148	21.52	22	0-1
				2593	40620	21.68	22	0-1
				2640.3	41093	21.43	22	0-1
				2687.5	41565	21.52	22	0-1
			24	2498.5	39675	21.74	22	0-1
				2547.8	40148	21.52	22	0-1
				2593	40620	21.78	22	0-1
				2640.3	41093	21.47	22	0-1
				2687.5	41565	21.61	22	0-1
		12 RB	0	2498.5	39675	20.65	21	0-2
				2547.8	40148	20.66	21	0-2
				2593	40620	20.90	21	0-2
				2640.3	41093	20.54	21	0-2
				2687.5	41565	20.56	21	0-2
			6	2498.5	39675	20.69	21	0-2
				2547.8	40148	20.81	21	0-2
				2593	40620	20.93	21	0-2
				2640.3	41093	20.52	21	0-2
				2687.5	41565	20.60	21	0-2
			13	2498.5	39675	20.52	21	0-2
				2547.8	40148	20.71	21	0-2
				2593	40620	20.89	21	0-2
				2640.3	41093	20.63	21	0-2
				2687.5	41565	20.56	21	0-2
		25RB		2498.5	39675	20.61	21	0-2
				2547.8	40148	20.66	21	0-2
				2593	40620	21.00	21	0-2
				2640.3	41093	20.45	21	0-2
				2687.5	41565	20.47	21	0-2

TDD Band 41 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
20	QPSK	1 RB	0	2506	39750	17.99	18	0
				2549.5	40185	17.97	18	0
				2593	40620	17.96	18	0
				2636.5	41055	17.70	18	0
				2680	41490	17.81	18	0
			50	2506	39750	17.69	18	0
				2549.5	40185	17.74	18	0
				2593	40620	17.63	18	0
				2636.5	41055	17.66	18	0
				2680	41490	17.55	18	0
			99	2506	39750	17.67	18	0
				2549.5	40185	17.70	18	0
				2593	40620	17.58	18	0
				2636.5	41055	17.42	18	0
				2680	41490	17.42	18	0
		50 RB	0	2506	39750	16.97	17	0-1
				2549.5	40185	16.85	17	0-1
				2593	40620	16.95	17	0-1
				2636.5	41055	16.74	17	0-1
				2680	41490	16.80	17	0-1
			25	2506	39750	16.89	17	0-1
				2549.5	40185	17.00	17	0-1
				2593	40620	16.77	17	0-1
				2636.5	41055	16.78	17	0-1
				2680	41490	16.69	17	0-1
			50	2506	39750	16.74	17	0-1
				2549.5	40185	16.92	17	0-1
				2593	40620	16.91	17	0-1
				2636.5	41055	16.62	17	0-1
				2680	41490	16.65	17	0-1
		100RB		2506	39750	16.79	17	0-1
				2549.5	40185	16.96	17	0-1
				2593	40620	16.98	17	0-1
				2636.5	41055	16.79	17	0-1
				2680	41490	16.69	17	0-1

TDD Band 41 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
20	16-QAM	1 RB	0	2506	39750	16.81	17	0-1
				2549.5	40185	16.78	17	0-1
				2593	40620	16.84	17	0-1
				2636.5	41055	16.60	17	0-1
				2680	41490	16.66	17	0-1
			50	2506	39750	16.96	17	0-1
				2549.5	40185	16.99	17	0-1
				2593	40620	16.62	17	0-1
				2636.5	41055	16.83	17	0-1
				2680	41490	16.74	17	0-1
			99	2506	39750	16.84	17	0-1
				2549.5	40185	16.98	17	0-1
				2593	40620	16.84	17	0-1
				2636.5	41055	16.72	17	0-1
				2680	41490	16.30	17	0-1
		50 RB	0	2506	39750	15.91	16	0-2
				2549.5	40185	15.94	16	0-2
				2593	40620	16.00	16	0-2
				2636.5	41055	15.82	16	0-2
				2680	41490	15.76	16	0-2
			25	2506	39750	15.81	16	0-2
				2549.5	40185	15.95	16	0-2
				2593	40620	15.94	16	0-2
				2636.5	41055	15.67	16	0-2
				2680	41490	15.65	16	0-2
			50	2506	39750	15.77	16	0-2
				2549.5	40185	15.97	16	0-2
				2593	40620	15.89	16	0-2
				2636.5	41055	15.68	16	0-2
				2680	41490	15.60	16	0-2
		100RB		2506	39750	15.84	16	0-2
				2549.5	40185	15.88	16	0-2
				2593	40620	15.93	16	0-2
				2636.5	41055	15.76	16	0-2
				2680	41490	15.64	16	0-2

TDD Band 41 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
15	QPSK	1 RB	0	2503.5	39725	18.00	18	0
				2548.3	40173	17.99	18	0
				2593	40620	17.97	18	0
				2637.8	41068	17.75	18	0
				2682.5	41515	17.85	18	0
			36	2503.5	39725	17.78	18	0
				2548.3	40173	17.88	18	0
				2593	40620	17.63	18	0
				2637.8	41068	17.64	18	0
				2682.5	41515	17.63	18	0
			74	2503.5	39725	17.75	18	0
				2548.3	40173	17.98	18	0
				2593	40620	17.59	18	0
				2637.8	41068	17.73	18	0
				2682.5	41515	17.64	18	0
		36 RB	0	2503.5	39725	16.93	17	0-1
				2548.3	40173	16.83	17	0-1
				2593	40620	16.73	17	0-1
				2637.8	41068	16.83	17	0-1
				2682.5	41515	16.78	17	0-1
			18	2503.5	39725	17.00	17	0-1
				2548.3	40173	16.79	17	0-1
				2593	40620	16.67	17	0-1
				2637.8	41068	16.83	17	0-1
				2682.5	41515	16.69	17	0-1
			37	2503.5	39725	16.85	17	0-1
				2548.3	40173	16.76	17	0-1
				2593	40620	16.70	17	0-1
				2637.8	41068	16.70	17	0-1
				2682.5	41515	16.58	17	0-1
		75RB		2503.5	39725	16.69	17	0-1
				2548.3	40173	16.82	17	0-1
				2593	40620	16.68	17	0-1
				2637.8	41068	16.83	17	0-1
				2682.5	41515	16.69	17	0-1

TDD Band 41 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
15	16-QAM	1 RB	0	2503.5	39725	16.91	17	0-1
				2548.3	40173	17.00	17	0-1
				2593	40620	16.98	17	0-1
				2637.8	41068	16.95	17	0-1
				2682.5	41515	16.93	17	0-1
			36	2503.5	39725	16.54	17	0-1
				2548.3	40173	16.88	17	0-1
				2593	40620	16.84	17	0-1
				2637.8	41068	16.85	17	0-1
				2682.5	41515	16.45	17	0-1
			74	2503.5	39725	16.48	17	0-1
				2548.3	40173	16.99	17	0-1
				2593	40620	16.88	17	0-1
				2637.8	41068	16.85	17	0-1
				2682.5	41515	16.38	17	0-1
		36 RB	0	2503.5	39725	15.73	16	0-2
				2548.3	40173	15.95	16	0-2
				2593	40620	15.74	16	0-2
				2637.8	41068	15.64	16	0-2
				2682.5	41515	15.61	16	0-2
			18	2503.5	39725	16.00	16	0-2
				2548.3	40173	15.99	16	0-2
				2593	40620	15.67	16	0-2
				2637.8	41068	15.74	16	0-2
				2682.5	41515	15.50	16	0-2
			37	2503.5	39725	15.75	16	0-2
				2548.3	40173	15.69	16	0-2
				2593	40620	15.72	16	0-2
				2637.8	41068	15.72	16	0-2
				2682.5	41515	15.41	16	0-2
		75RB		2503.5	39725	15.74	16	0-2
				2548.3	40173	15.76	16	0-2
				2593	40620	15.73	16	0-2
				2637.8	41068	15.67	16	0-2
				2682.5	41515	15.63	16	0-2

TDD Band 41 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	2501	39700	17.82	18	0
				2547	40160	17.84	18	0
				2593	40620	17.95	18	0
				2639	41080	17.67	18	0
				2685	41540	17.67	18	0
			25	2501	39700	17.85	18	0
				2547	40160	17.74	18	0
				2593	40620	17.73	18	0
				2639	41080	17.69	18	0
				2685	41540	17.67	18	0
			49	2501	39700	17.82	18	0
				2547	40160	17.75	18	0
				2593	40620	17.64	18	0
				2639	41080	17.43	18	0
				2685	41540	17.52	18	0
		25 RB	0	2501	39700	16.94	17	0-1
				2547	40160	16.87	17	0-1
				2593	40620	16.89	17	0-1
				2639	41080	16.78	17	0-1
				2685	41540	16.78	17	0-1
			12	2501	39700	16.86	17	0-1
				2547	40160	16.76	17	0-1
				2593	40620	16.82	17	0-1
				2639	41080	16.76	17	0-1
				2685	41540	16.68	17	0-1
			25	2501	39700	16.87	17	0-1
				2547	40160	16.63	17	0-1
				2593	40620	16.85	17	0-1
				2639	41080	16.58	17	0-1
				2685	41540	16.64	17	0-1
		50RB		2501	39700	16.69	17	0-1
				2547	40160	16.68	17	0-1
				2593	40620	16.83	17	0-1
				2639	41080	16.78	17	0-1
				2685	41540	16.64	17	0-1

TDD Band 41 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	16-QAM	1 RB	0	2501	39700	17.00	17	0-1
				2547	40160	16.87	17	0-1
				2593	40620	16.90	17	0-1
				2639	41080	16.69	17	0-1
				2685	41540	16.73	17	0-1
			25	2501	39700	16.84	17	0-1
				2547	40160	16.83	17	0-1
				2593	40620	16.82	17	0-1
				2639	41080	16.87	17	0-1
				2685	41540	16.94	17	0-1
			49	2501	39700	16.90	17	0-1
				2547	40160	16.94	17	0-1
				2593	40620	16.62	17	0-1
				2639	41080	16.70	17	0-1
				2685	41540	16.70	17	0-1
		25 RB	0	2501	39700	15.70	16	0-2
				2547	40160	15.77	16	0-2
				2593	40620	15.86	16	0-2
				2639	41080	15.75	16	0-2
				2685	41540	15.96	16	0-2
			12	2501	39700	15.84	16	0-2
				2547	40160	15.84	16	0-2
				2593	40620	15.79	16	0-2
				2639	41080	15.75	16	0-2
				2685	41540	15.95	16	0-2
			25	2501	39700	15.93	16	0-2
				2547	40160	15.70	16	0-2
				2593	40620	15.72	16	0-2
				2639	41080	15.59	16	0-2
				2685	41540	15.89	16	0-2
		50RB		2501	39700	15.75	16	0-2
				2547	40160	15.74	16	0-2
				2593	40620	15.79	16	0-2
				2639	41080	15.72	16	0-2
				2685	41540	15.63	16	0-2

TDD Band 41 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	2498.5	39675	17.67	18	0
				2547.8	40148	17.81	18	0
				2593	40620	17.80	18	0
				2640.3	41093	17.54	18	0
				2687.5	41565	17.50	18	0
			12	2498.5	39675	18.00	18	0
				2547.8	40148	17.83	18	0
				2593	40620	17.81	18	0
				2640.3	41093	17.70	18	0
				2687.5	41565	17.75	18	0
			24	2498.5	39675	17.69	18	0
				2547.8	40148	17.69	18	0
				2593	40620	17.65	18	0
				2640.3	41093	17.54	18	0
				2687.5	41565	17.43	18	0
		12 RB	0	2498.5	39675	16.72	17	0-1
				2547.8	40148	16.85	17	0-1
				2593	40620	16.77	17	0-1
				2640.3	41093	16.74	17	0-1
				2687.5	41565	16.61	17	0-1
			6	2498.5	39675	16.76	17	0-1
				2547.8	40148	16.77	17	0-1
				2593	40620	16.82	17	0-1
				2640.3	41093	16.70	17	0-1
				2687.5	41565	16.65	17	0-1
			13	2498.5	39675	16.75	17	0-1
				2547.8	40148	16.72	17	0-1
				2593	40620	16.81	17	0-1
				2640.3	41093	16.69	17	0-1
				2687.5	41565	16.62	17	0-1
		25RB		2498.5	39675	16.82	17	0-1
				2547.8	40148	16.82	17	0-1
				2593	40620	16.79	17	0-1
				2640.3	41093	16.75	17	0-1
				2687.5	41565	16.60	17	0-1

TDD Band 41 (Reduced Power)								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	16-QAM	1 RB	0	2498.5	39675	16.60	17	0-1
				2547.8	40148	16.96	17	0-1
				2593	40620	16.94	17	0-1
				2640.3	41093	16.79	17	0-1
				2687.5	41565	16.73	17	0-1
			12	2498.5	39675	16.84	17	0-1
				2547.8	40148	16.85	17	0-1
				2593	40620	16.88	17	0-1
				2640.3	41093	16.77	17	0-1
				2687.5	41565	16.50	17	0-1
			24	2498.5	39675	16.63	17	0-1
				2547.8	40148	16.80	17	0-1
				2593	40620	16.74	17	0-1
				2640.3	41093	16.65	17	0-1
				2687.5	41565	16.60	17	0-1
		12 RB	0	2498.5	39675	15.66	16	0-2
				2547.8	40148	15.72	16	0-2
				2593	40620	15.83	16	0-2
				2640.3	41093	15.78	16	0-2
				2687.5	41565	15.75	16	0-2
			6	2498.5	39675	15.70	16	0-2
				2547.8	40148	15.64	16	0-2
				2593	40620	15.76	16	0-2
				2640.3	41093	15.64	16	0-2
				2687.5	41565	15.79	16	0-2
			13	2498.5	39675	15.71	16	0-2
				2547.8	40148	15.67	16	0-2
				2593	40620	15.65	16	0-2
				2640.3	41093	15.64	16	0-2
				2687.5	41565	15.76	16	0-2
		25RB		2498.5	39675	15.80	16	0-2
				2547.8	40148	15.81	16	0-2
				2593	40620	15.64	16	0-2
				2640.3	41093	15.61	16	0-2
				2687.5	41565	15.99	16	0-2

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

Full Power (Sensor OFF)						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max.	Average power (dBm)
2450 MHz	802.11b	1	2412	1Mbps	19.00	18.87
		6	2437		19.00	18.75
		11	2462		19.00	18.89
	802.11g	1	2412	6Mbps	19.00	18.92
		6	2437		19.00	18.81
		11	2462		19.00	18.74
	802.11n-HT20	1	2412	MCS0	19.00	18.71
		6	2437		19.00	18.52
		11	2462		19.00	18.66
	802.11n-HT40	3	2422	MCS0	19.00	18.57
		6	2437		19.00	18.84
		9	2452		19.00	18.92

Full Power (Sensor OFF)						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max.	Average power (dBm)
5.15-5.25 GHz	802.11a	36	5180	6Mbps	19.00	18.61
		40	5200		19.00	18.54
		44	5220		19.00	18.87
		48	5240		19.00	18.81
	802.11n-HT20	36	5180	MCS0	19.00	18.92
		40	5200		19.00	18.66
		44	5220		19.00	18.59
		48	5240		19.00	18.76
	802.11n-HT40	38	5190	MCS0	19.00	18.70
		46	5230		19.00	18.68

Full Power (Sensor OFF)						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max.	Average power (dBm)
5.25-5.35 GHz	802.11a	52	5260	6Mbps	19.00	18.92
		56	5280		19.00	18.88
		60	5300		19.00	18.72
		64	5320		19.00	18.63
	802.11n-HT20	52	5260	MCS0	19.00	18.74
		56	5280		19.00	18.59
		60	5300		19.00	18.85
		64	5320		19.00	18.63
	802.11n-HT40	54	5270	MCS0	19.00	18.87
		62	5310		19.00	18.65

Full Power (Sensor OFF)						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max.	Average power (dBm)
5600 MHz	802.11a	100	5500	6Mbps	19.00	18.82
		120	5600		19.00	18.93
		124	5620		19.00	18.45
		128	5640		19.00	18.66
		140	5700		19.00	18.41
	802.11n-HT20	100	5500	MCS0	19.00	18.65
		120	5600		19.00	18.74
		124	5620		19.00	18.54
		128	5640		19.00	18.49
		140	5700		19.00	18.93
	802.11n-HT40	102	5510	MCS0	19.00	18.63
		118	5590		19.00	18.52
		126	5630		19.00	18.64
		134	5670		19.00	18.95

Full Power (Sensor OFF)						
Mode	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max.	Average power (dBm)
5800 MHz	802.11a	149	5745	6Mbps	19.00	18.99
		157	5785		19.00	18.81
		165	5825		19.00	18.92
	802.11n-HT20	149	5745	MCS0	19.00	18.74
		157	5785		19.00	18.79
		165	5825		19.00	18.61
	802.11n-HT40	151	5755	MCS0	19.00	18.96
		159	5795		19.00	18.67

Reduction Power (Sensor ON)						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max.	Average power (dBm)
2450 MHz	802.11b	1	2412	1Mbps	14.50	14.31
		6	2437		14.50	14.43
		11	2462		14.50	14.39
	802.11g	1	2412	6Mbps	14.50	14.41
		6	2437		14.50	14.50
		11	2462		14.50	14.46
	802.11n-HT20	1	2412	MCS0	14.50	14.19
		6	2437		14.50	14.28
		11	2462		14.50	14.44
	802.11n-HT40	3	2422	MCS0	14.50	14.44
		6	2437		14.50	14.47
		9	2452		14.50	14.24

Reduction Power (Sensor ON)						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max.	Average power (dBm)
5.15-5.25 GHz	802.11a	36	5180	6Mbps	7.50	7.42
		40	5200		7.50	7.41
		44	5220		7.50	7.36
		48	5240		7.50	7.35
	802.11n-HT20	36	5180	MCS0	7.50	7.24
		40	5200		7.50	7.48
		44	5220		7.50	7.41
		48	5240		7.50	7.44
	802.11n-HT40	38	5190	MCS0	7.50	7.21
		46	5230		7.50	7.45

Reduction Power (Sensor ON)						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max.	Average power (dBm)
5.25-5.35 GHz	802.11a	52	5260	6Mbps	7.50	7.44
		56	5280		7.50	7.43
		60	5300		7.50	7.32
		64	5320		7.50	7.44
	802.11n-HT20	52	5260	MCS0	7.50	7.25
		56	5280		7.50	7.29
		60	5300		7.50	7.44
		64	5320		7.50	7.50
	802.11n-HT40	54	5270	MCS0	7.50	7.38
		62	5310		7.50	7.19

Reduction Power (Sensor ON)						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max.	Average power (dBm)
5600 MHz	802.11a	100	5500	6Mbps	8.00	7.72
		120	5600		8.00	7.44
		124	5620		8.00	7.65
		128	5640		8.00	7.48
		140	5700		8.00	7.92
	802.11n-HT20	100	5500	MCS0	8.00	7.94
		120	5600		8.00	7.83
		124	5620		8.00	7.49
		128	5640		8.00	7.57
		140	5700		8.00	7.85
	802.11n-HT40	102	5510	MCS0	8.00	7.95
		118	5590		8.00	7.74
		126	5630		8.00	7.71
		134	5670		8.00	7.69

Reduction Power (Sensor ON)						
Mode	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max.	Average power (dBm)
5800 MHz	802.11a	149	5745	6Mbps	9.50	9.45
		157	5785		9.50	9.48
		165	5825		9.50	9.31
	802.11n-HT20	149	5745	MCS0	9.50	9.44
		157	5785		9.50	9.46
		165	5825		9.50	9.47
	802.11n-HT40	151	5755	MCS0	9.50	9.43
		159	5795		9.50	9.15

Bluetooth conducted power table:

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)			Max. Rated Avg. Power + Max. Tolerance
			1Mbps	2Mbps	3Mbps	
BR/EDR	CH 00	2402	-1.07	-0.92	0.93	4
	CH 39	2441	0.02	1.03	1.84	
	CH 78	2480	-2.10	-0.68	-0.67	

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	Max. Rated Avg. Power + Max. Tolerance
			GFSK	
LE	CH 00	2402	-1.19	4
	CH 19	2440	0.24	
	CH 39	2480	-2.77	

1.4 Test Environment

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

1.5 Operation Description

1. WWAN

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

Configuration 1: Back / top / left sides_0mm with power reduction.

Configuration 2: Back / top / left sides _15mm without power reduction.

2. WLAN

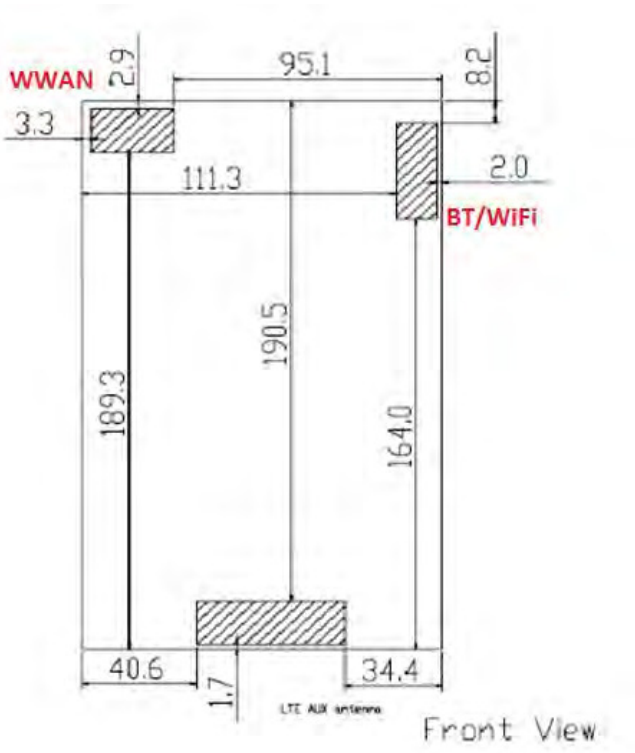
Use chipset specific software to control the EUT, and makes it transmit in maximum power. The EUT was tested in the following configurations:

Configuration 1: Back / top / right sides_0mm with power reduction.

Configuration 2: Backside_15mm without power reduction.

Configuration 3: Top side_5mm without power reduction.

Configuration 4: Right side_12mm without power reduction.



Front view of tablet
(The p-sensor is colocated with WWAN and WLAN antenna respectively)

Note:

802.11b DSSS SAR Test Requirements:

1. 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.
2. 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:

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

Initial Test Configuration:

4. 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.

5. 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.

6. For WLAN antenna, 5.2n(HT40)/5.3n(HT40)/5.6n(HT40)/5.8n(HT40) are chosen to be the initial test configurations.

7. For 5.2n(HT40)/5.3n(HT40)/5.6n(HT40)/5.8n(HT40), 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.

8. BT and WLAN use the same antenna path and Bluetooth may transmit simultaneously with WWAN.

9. LTE modes test according to KDB 941225D05v02r05.

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

   b. Per Section 5.2.2, the largest channel bandwidth and measure SAR for QPSK with 50% RB allocation
   - The procedures required for 1 RB allocation in 5.2.1 are applied to measure the SAR for QPSK with 50% RB allocation.

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

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

d. Per Section 5.2.4, Higher order modulations

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

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

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

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.

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

11. According to KDB865664 D01, SAR measurement variability must be assessed for each frequency band. When the original highest measured SAR is ≥ 0.8 W/kg, repeated that measurement once. Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg (~10% from the 1-g SAR limit)

12. Based on KDB447498D01,

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

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

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

Mode		LTE Band 2	LTE Band 4	LTE Band 5	LTE Band 12	LTE Band 25	LTE Band 26	LTE Band 41
Max. tune-up power(dBm)		24	24	24	24	24	24	24
Max. tune-up power(mW)		251.189	251.189	251.189	251.189	251.189	251.189	251.189
Top side	Test separation distance (mm)	less than 5	less than 5	less than 5	less than 5	less than 5	less than 5	less than 5
	Calculation value	69.248	66.363	46.153	42.361	69.339	46.085	82.243
	Require SAR testing?	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**
Right side	Test separation distance (mm)	95.1	95.1	95.1	95.1	95.1	95.1	95.1
	Calculation value	457.925	457.636	258.378	218.010	457.934	257.619	459.224
	Require SAR testing?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**
Left side	Test separation distance (mm)	less than 5	less than 5	less than 5	less than 5	less than 5	less than 5	less than 5
	Test separation distance (mm)	69.248	66.363	46.153	42.361	69.339	46.085	82.243
	Require SAR testing?	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**
Bottom side	Test separation distance (mm)	189.3	189.3	189.3	189.3	189.3	189.3	189.3
	Calculation value	1399.925	1399.636	788.410	664.518	1399.934	786.081	1401.224
	Require SAR testing?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**
Back side	Test separation distance (mm)	less than 5	less than 5	less than 5	less than 5	less than 5	less than 5	less than 5
	Calculation value	69.248	66.363	46.153	42.361	69.339	46.085	82.243
	Require SAR testing?	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**

Mode		WLAN 2.45GHz	WLAN 5GHz
Max. tune-up power(dBm)		19	19
Max. tune-up power(mW)		79.433	79.433
Top side	Test separation distance (mm)	8.2	8.2
	Calculation value	15.200	23.319
	Require SAR testing?	**YES**	**YES**
Right side	Test separation distance (mm)	less than 5	less than 5
	Calculation value	24.927	38.243
	Require SAR testing?	**YES**	**YES**
Left side	Test separation distance (mm)	111.3	111.3
	Calculation value	615.493	616.824
	Require SAR testing?	**NO**	**NO**
Bottom side	Test separation distance (mm)	164	164
	Calculation value	1142.493	1143.824
	Require SAR testing?	**NO**	**NO**
Back side	Test separation distance (mm)	less than 5	less than 5
	Calculation value	24.927	38.243
	Require SAR testing?	**YES**	**YES**

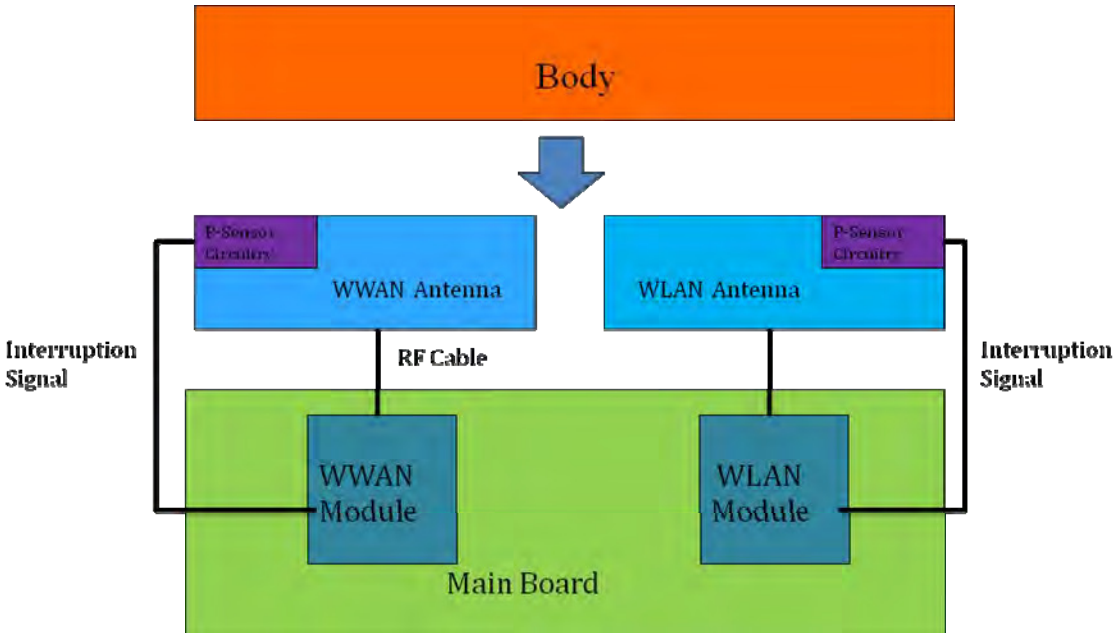
(2) For test separation distances > 50 mm, and the frequency at 100 MHz to 1500MHz, the SAR test exclusion threshold is determined according to the following, and as illustrated in Appendix B of KDB447498 D01.
[(Threshold at 50mm in step1) + (test separation distance-50mm)x($\frac{f(MHz)}{150}$)](mW),

(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.

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

1.6 Proximity sensor operation description

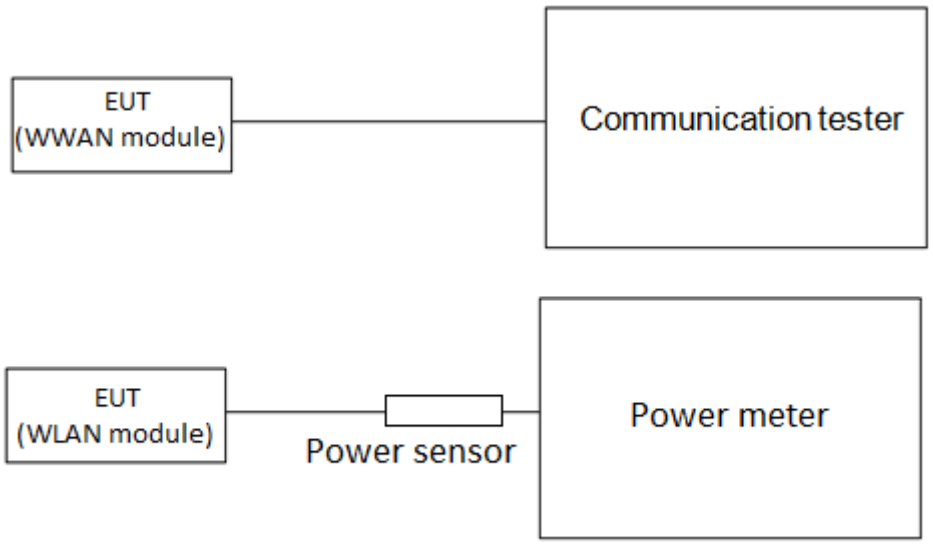
The P-sensor being used to reduce output power is capacitive in which when the object such as human body, metal or plastic is being approached, the sensing capacitance would be increased with the antenna pad. Once the capacitance is accumulated, and reached over the threshold as set in MCU of the microchip,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



1.6.1 Proximity sensor measurement procedure

1. The proximity sensor are collocated with WWAN and WLAN antenna respectively.

2. Output power is measured, and WWAN monitored by using the communication tester, WLAN monitored by using the power meter & sensor. 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 and power meter.



1.6.2 Trigger distances for back/top/left/right sides

Test procedure:

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

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

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

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

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

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

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

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

9. For back side, the trigger distance of WWAN and WLAN proximity sensors both are 16mm.

10. For top side, the trigger distance of WWAN proximity sensor is 17mm, and the trigger distance of WLAN proximity sensor is 7mm. We perform the 1.6.3 tilt angle testing in next step.

11. For left side, the trigger distance of proximity sensor is 17mm, and we perform the 1.6.3 tilt angle testing in next step.

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

1.6.3 Tilt angle testing

Test procedure:

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

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

3. The smallest separation distance determined in steps 1) and 2), minus 1 mm, is the sensor triggering distance for tablet tilt coverage.

4. The smallest separation distance determined in sections 1.6.2, 1.6.3 minus 1 mm should be used in the SAR measurements.

5. The influence of tablet tilt angles to proximity sensor triggering is determined by positioning top/left/right sides, please refer to table 1.6.6 ~ 1.6.9.

6. After the tilt angle testing for WWAN top side, the sensor is not released during +/- 45deg, so 17-1=16mm, is the sensor triggering distance for tablet tilt coverage. The smallest separation distance minus 1 mm(16-1=15mm) should be used in the SAR measurements.

7. After the tilt angle testing for WLAN top side, the sensor is not released during +/- 45deg, so 7-1=6mm, is the sensor triggering distance for tablet tilt coverage. The smallest separation distance minus 1 mm(6-1=5mm) should be used in the SAR measurements.

8. After the tilt angle testing for left side, the sensor is not released during +/- 45deg, so 17-1=16mm, is the sensor triggering distance for tablet tilt coverage. The smallest separation distance minus 1 mm(16-1=15mm) should be used in the SAR measurements.

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

1.6.4 Proximity sensor coverage

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

Test procedure:

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

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

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

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

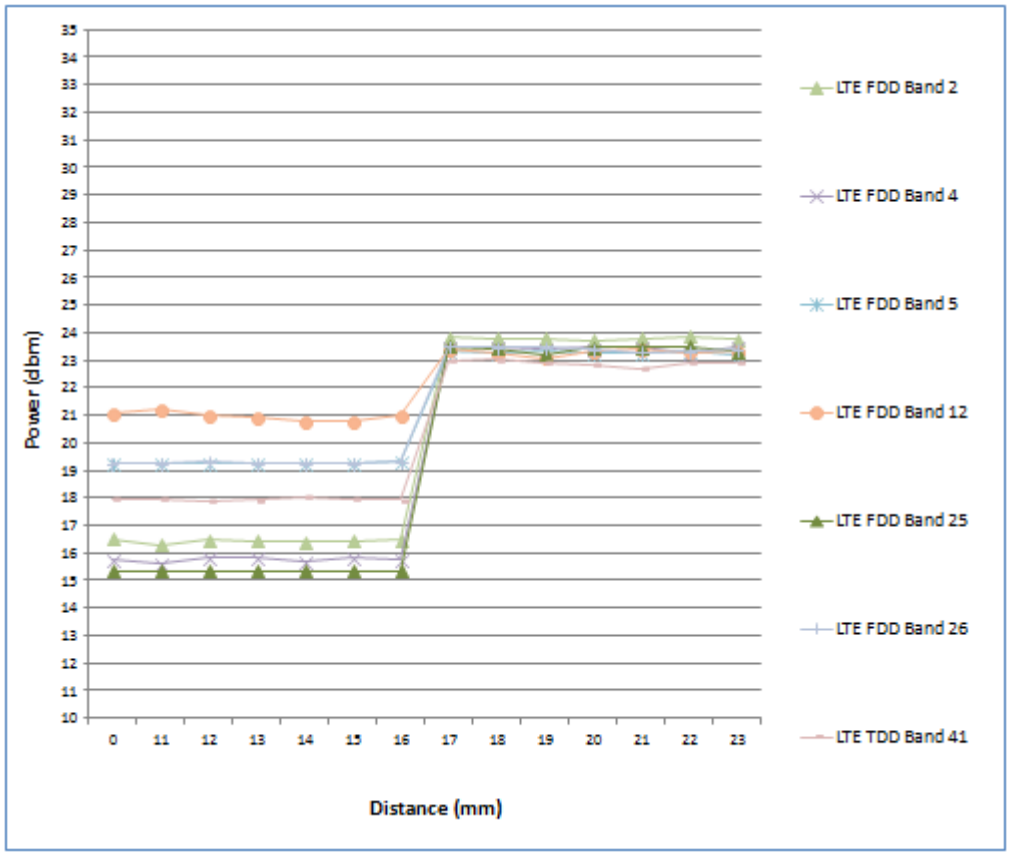
1.6.5 Results

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

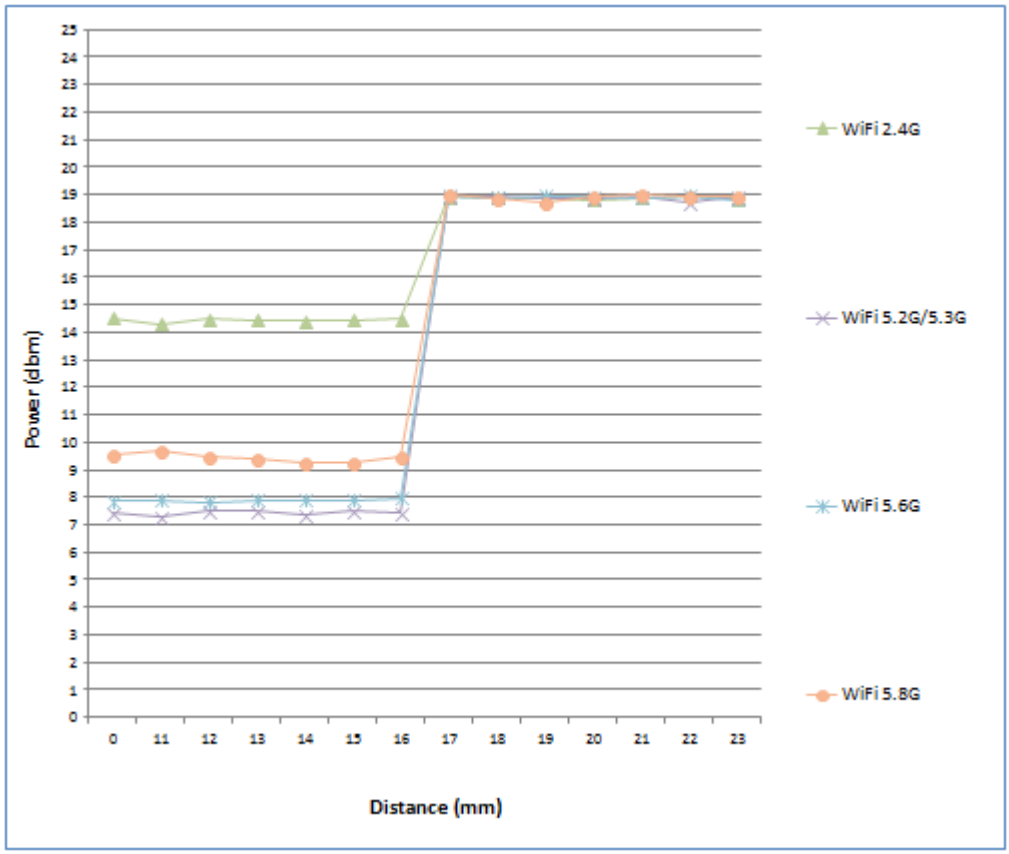
Back side

Moving device toward the phantom

WWAN (LTE B2/B4/B5/B12/B25/B26/B41)

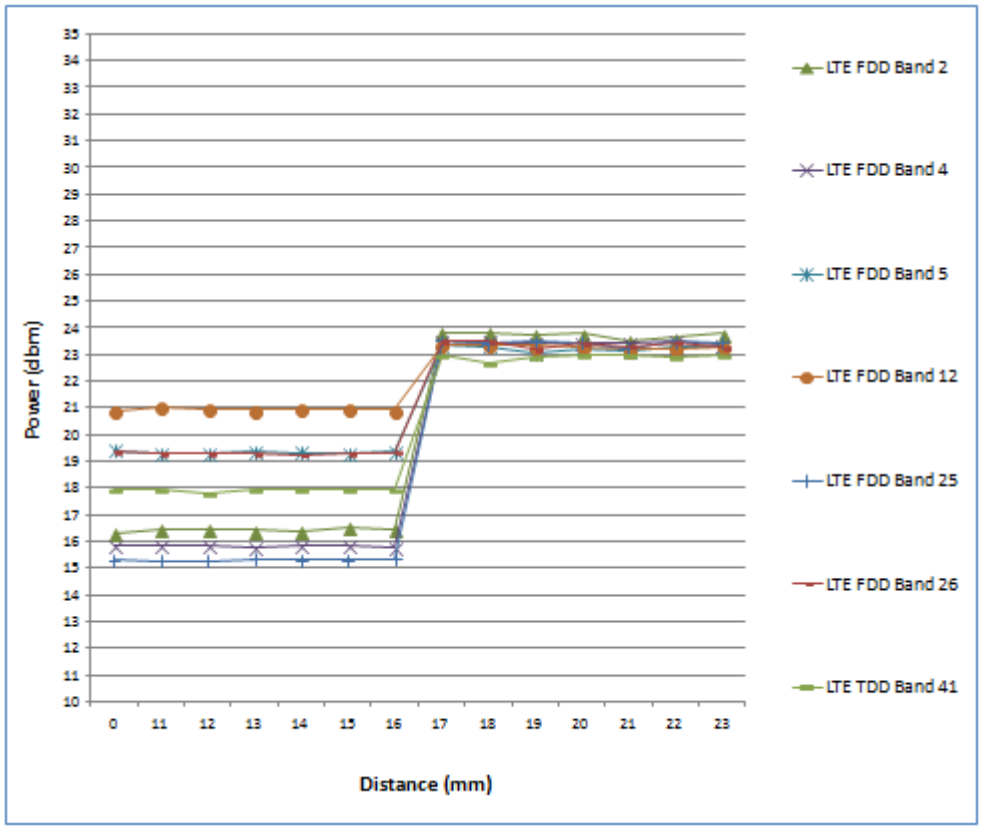


WLAN (2.4GHz/5GHz)

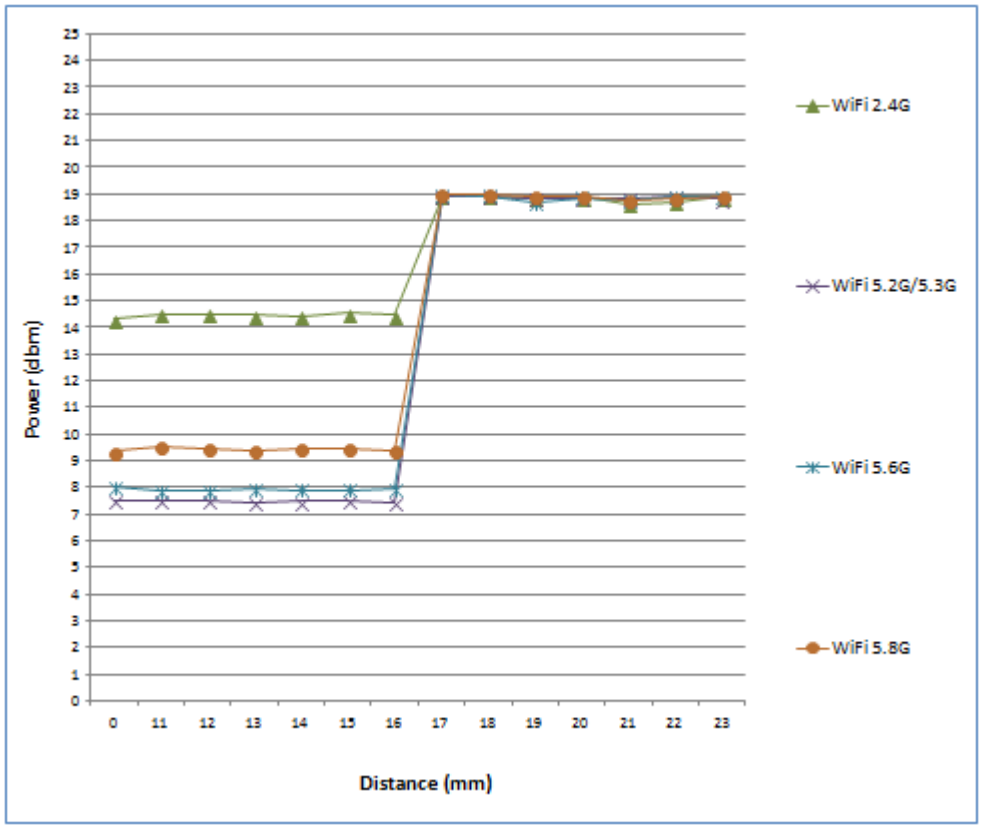


Moving device away from the phantom

WWAN (LTE B2/B4/B5/B12/B25/B26/B41)



WLAN (2.4GHz/5GHz)



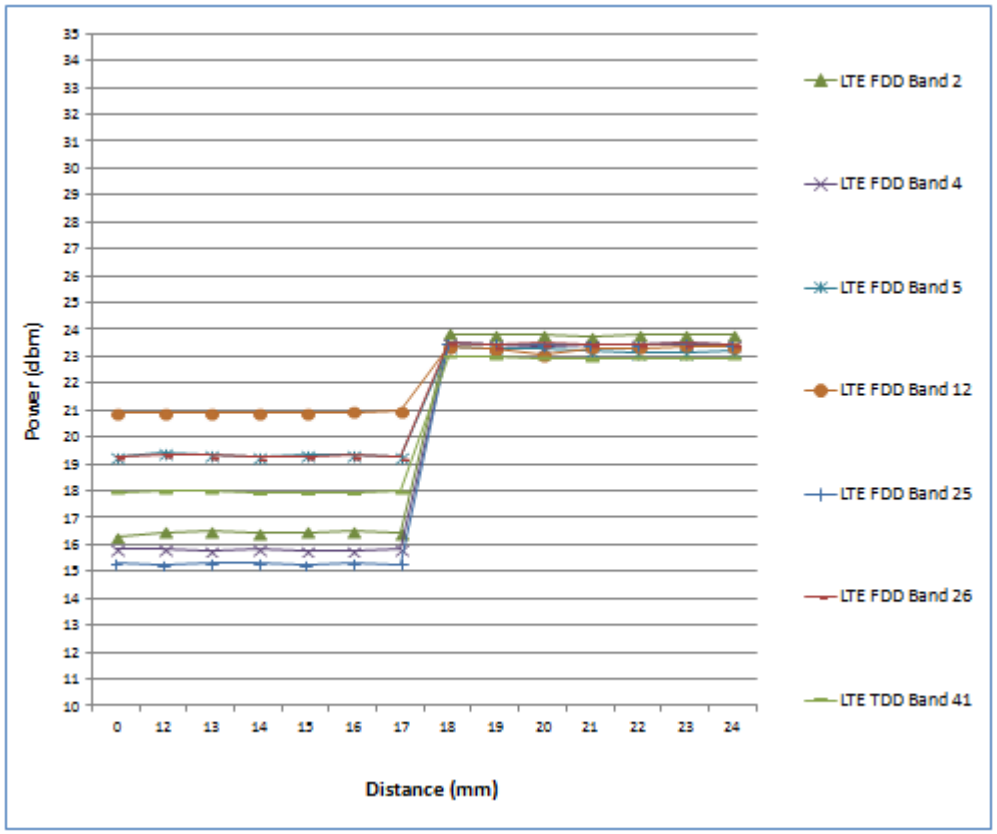
For WWAN back side, the worst trigger distance of proximity sensor is 16mm, thus we test back side SAR in 15mm without power reduction and 0mm with power reduction.

For WLAN back side, the worst trigger distance of proximity sensor is 16mm, thus we test back side SAR in 15mm without power reduction and 0mm with power reduction.

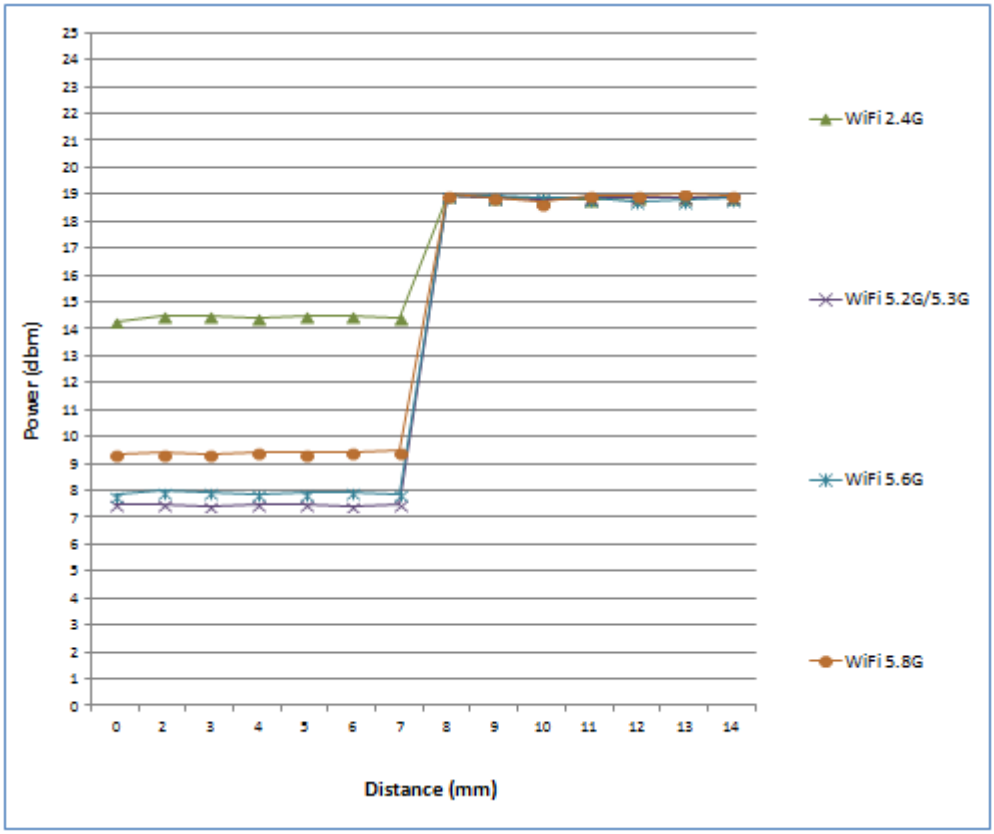
Top side

Moving device toward the phantom

WWAN (LTE B2/B4/B5/B12/B25/B26/B41)

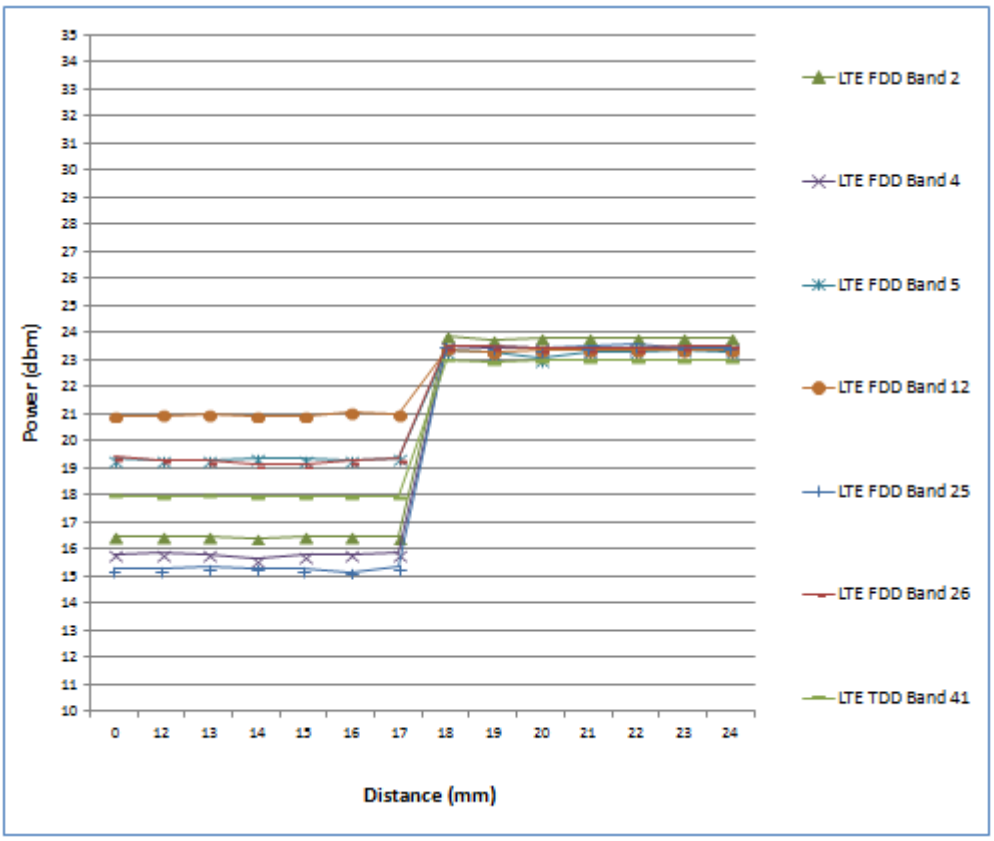


WLAN (2.4GHz/5GHz)

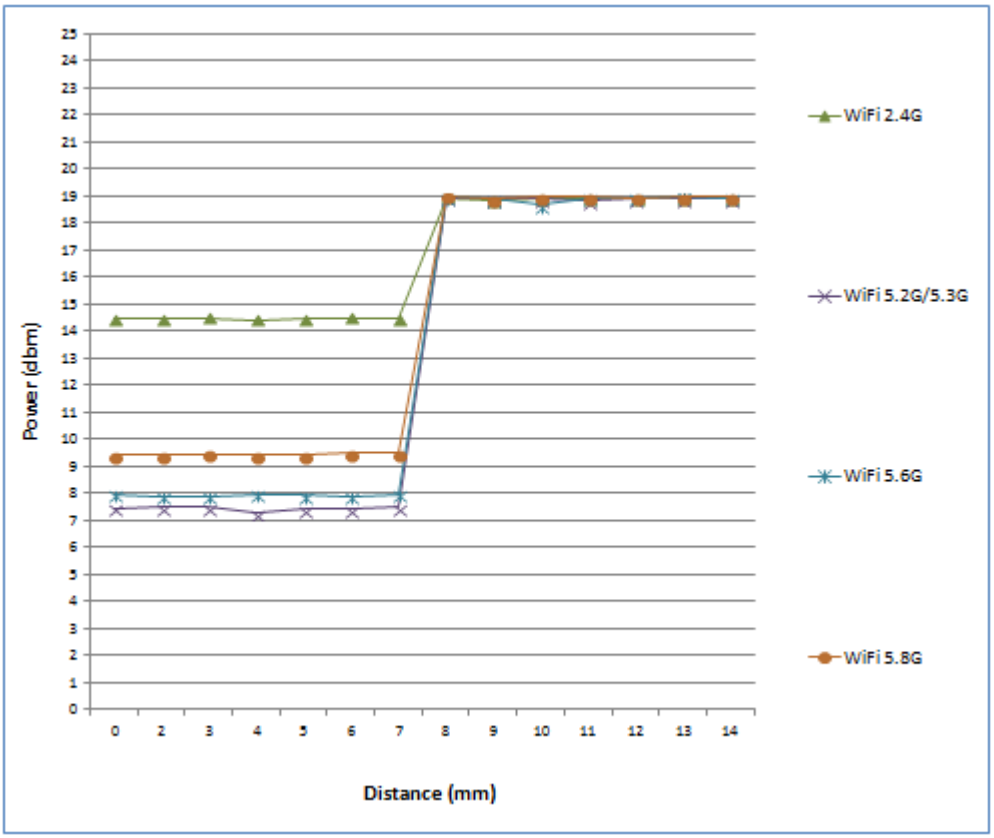


Moving device away from the phantom

WWAN (LTE B2/B4/B5/B12/B25/B26/B41)



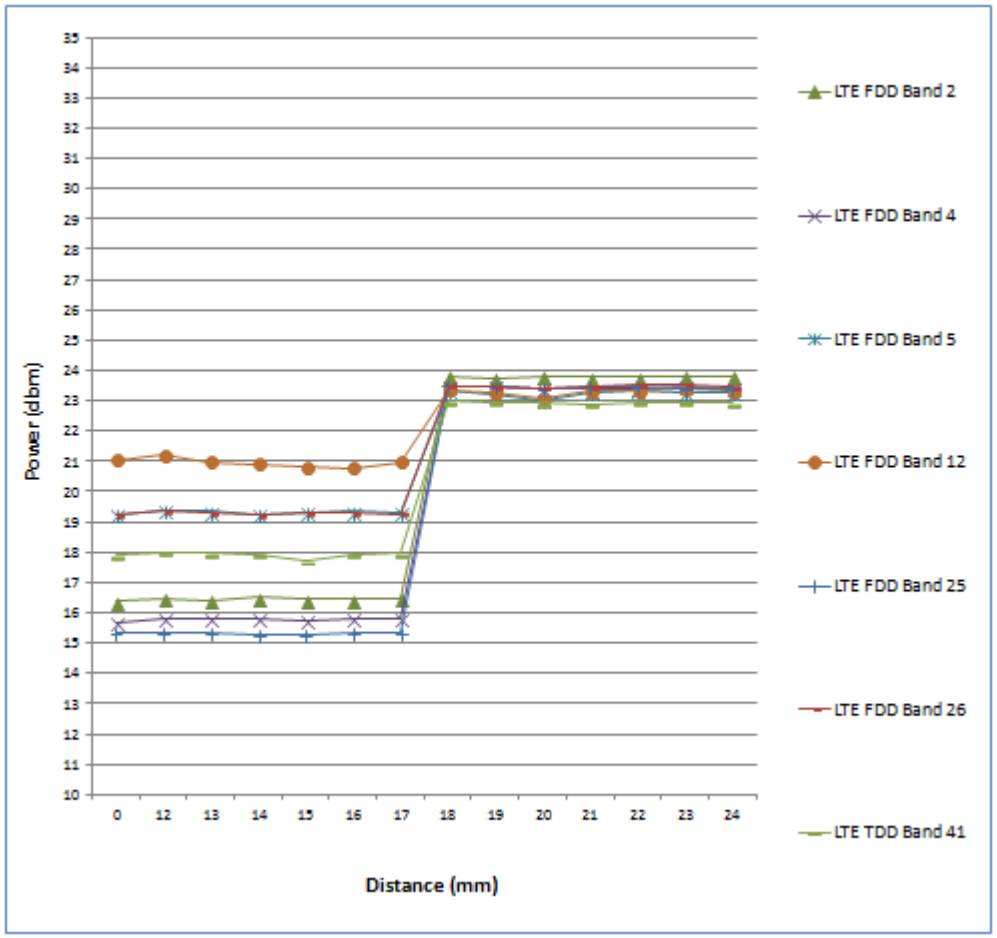
WLAN (2.4GHz/5GHz)



Left side

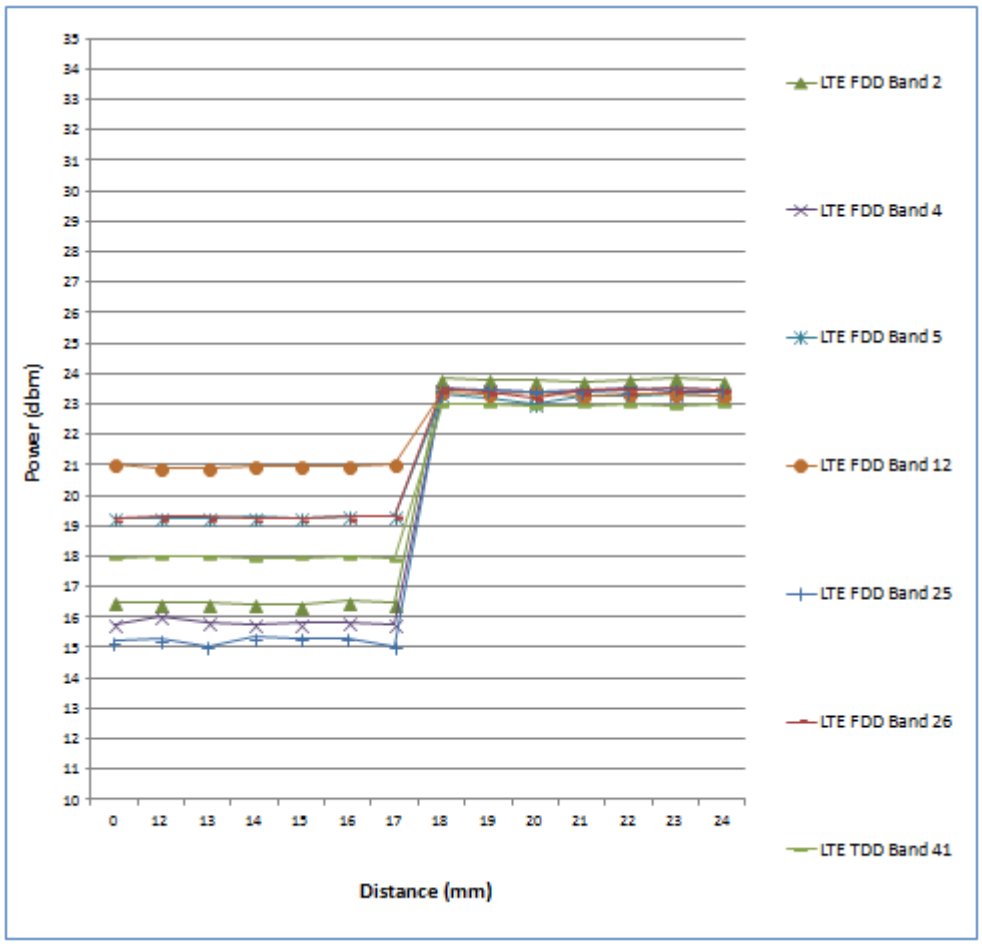
Moving device toward the phantom

WWAN (LTE B2/B4/B5/B12/B25/B26/B41)



Moving device away from the phantom

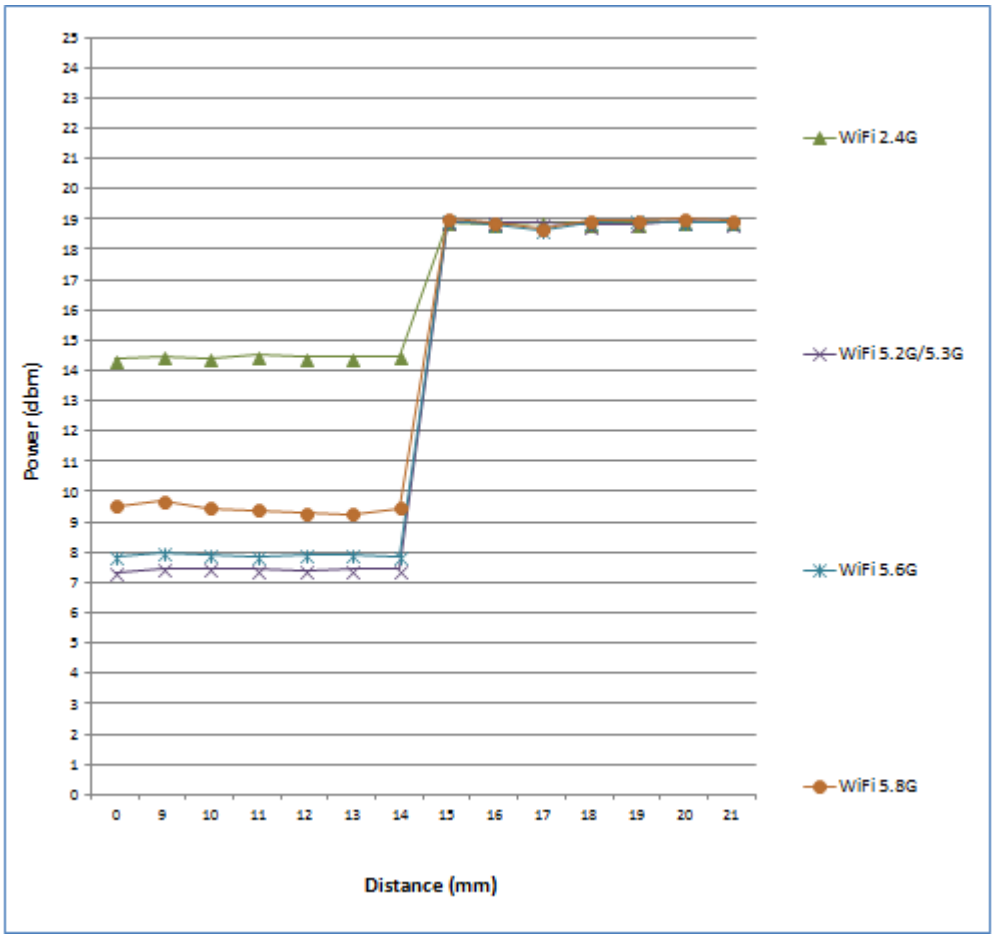
WWAN (LTE B2/B4/B5/B12/B25/B26/B41)



Right side

Moving device toward the phantom

WLAN (2.4GHz/5GHz)



Moving device away from the phantom

WLAN (2.4GHz/5GHz)

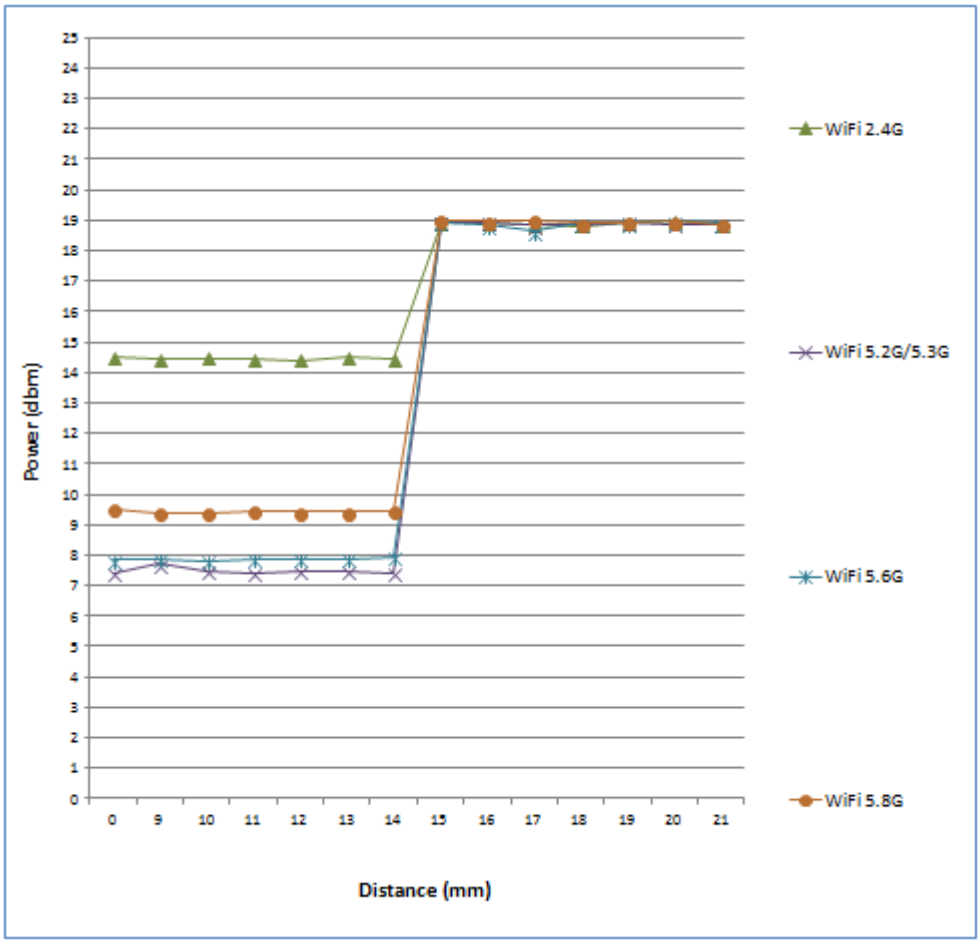


Table 1.6.6 Tilt angle test results for **WWAN top side**

P-sensor ON/OFF	-50 deg	-45 deg	-40 deg	-30 deg	-20 deg	-10 deg	0 deg	10 deg	20 deg	30 deg	40 deg	45 deg	50 deg
17mm	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON

During the tilt angle testing for top side, the sensor is not released in 17mm, so 17-1=16mm, is the sensor triggering distance for tablet tilt coverage. The smallest separation distance minus 1 mm (16-1=15mm) should be used in the SAR measurements for WWAN top side.

Table 1.6.7 Tilt angle test results for **WLAN top side**

P-sensor ON/OFF	-50 deg	-45 deg	-40 deg	-30 deg	-20 deg	-10 deg	0 deg	10 deg	20 deg	30 deg	40 deg	45 deg	50 deg
7mm	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON

During the tilt angle testing for top side, the sensor is not released in 7mm, so 7-1=6mm, is the sensor triggering distance for tablet tilt coverage. The smallest separation distance minus 1 mm (6-1=5mm) should be used in the SAR measurements for WLAN top side.

Table 1.6.8 Tilt angle test results for **WWAN left side**

P-sensor ON/OFF	-50 deg	-45 deg	-40 deg	-30 deg	-20 deg	-10 deg	0 deg	10 deg	20 deg	30 deg	40 deg	45 deg	50 deg
17mm	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON

During the tilt angle testing for left side, the sensor is not released in 17mm, so 17-1=16mm, is the sensor triggering distance for tablet tilt coverage. The smallest separation distance minus 1 mm(16-1=15mm) should be used in the SAR measurements for left side.

Table 1.6.9 Tilt angle test results for **WLAN right side**

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

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

Note:

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

2. The default power level for sensor failure and malfunctioning, including all compliance concerns, has been addressed in the client's operation description (1.6.6~1.6.9) for the proximity sensor implementation to be acceptable.

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

1.6.6 Operation description for P-sensor

Power Reduction Design Specification (for P-sensor)
The mechanism of power reduction is used only for WWAN and WLAN, not for Bluetooth. The reduced power for each technology/band is defined in Table1-1. With P-sensor mechanism, the LTE and WLAN 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
LTE B2/4/5/12/25/26/41	YES
WLAN	YES
BT	NO

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

Technology / Band	Mode	Default Maximum Power (dBm)
LTE B2	All	16.5
LTE B4	All	16.0
LTE B5	All	19.5
LTE B12	All	21.0
LTE B25	All	15.5
LTE B26	All	19.5
LTE B41	All	18.0
WiFi 2.4G	All	14.5
WiFi 5.2G/5.3G	All	7.5
WiFi 5.6G	All	8.0
WiFi 5.8G	All	9.5

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.

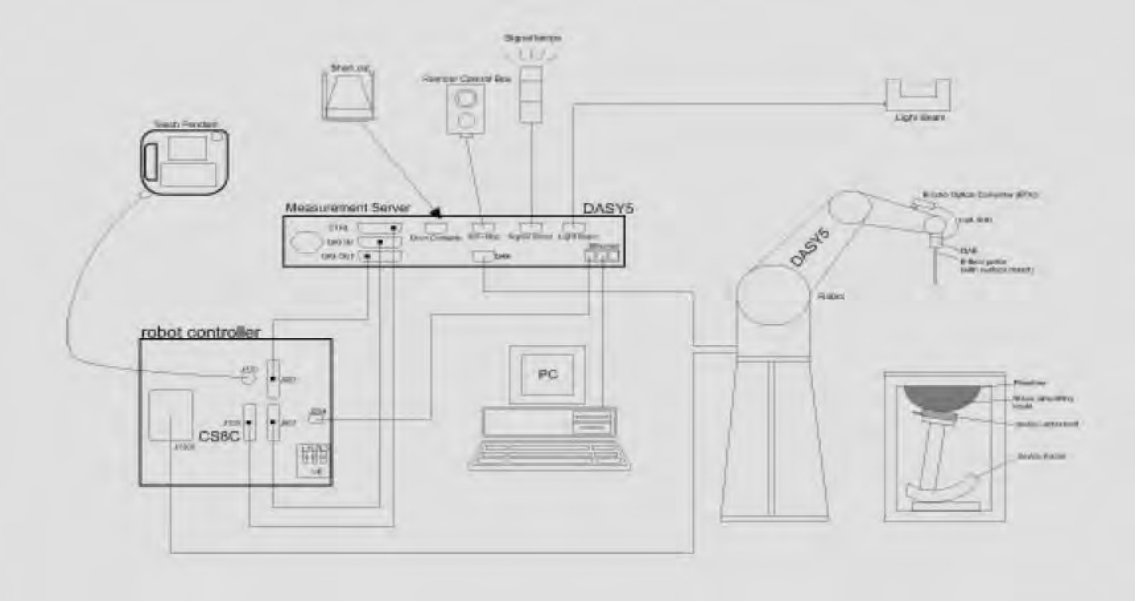


Fig. a The block diagram of SAR system

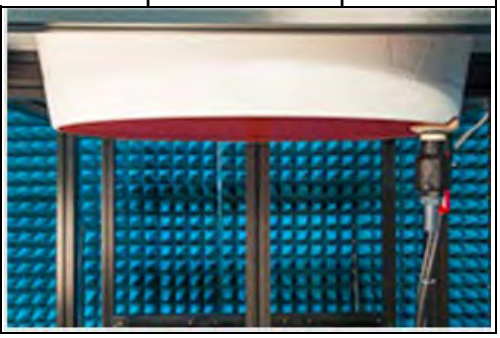
4. The Electro-optical converter (EOC) performs the conversion between optical and electrical of the signals for the digital communication to the DAE and for the analog signal from the optical surface detection. The EOC is connected to the measurement server.
5. The function of the measurement server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

1.8 System Components

EX3DV4 E-Field Probe

Construction	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)	
Calibration	Basic Broad Band Calibration in air Conversion Factors (CF) for HSL 750/835/1750/1900/2450/2600/5200/ 5300/5600/5800 MHz Additional CF for other liquids and frequencies upon request	
Frequency	10 MHz to > 6 GHz	
Directivity	± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)	
Dynamic Range	10 µW/g to > 100 mW/g Linearity: ± 0.2 dB (noise: typically < 1 µW/g)	
Dimensions	Tip diameter: 2.5 mm	
Application	High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields). Only probe which enables compliance testing for frequencies up to 6 GHz with precision of better 30%.	

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

1.9 SAR System Verification

The microwave circuit arrangement for system verification is sketched in Fig. b. The daily system accuracy verification occurs within the flat section of the SAM phantom. A SAR measurement was performed to see if the measured SAR was within +/- 10% from the target SAR values. These tests were done at 750/835/ 1750/1900/2450/2600/5200/5300/5600/5800MHz. 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 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.

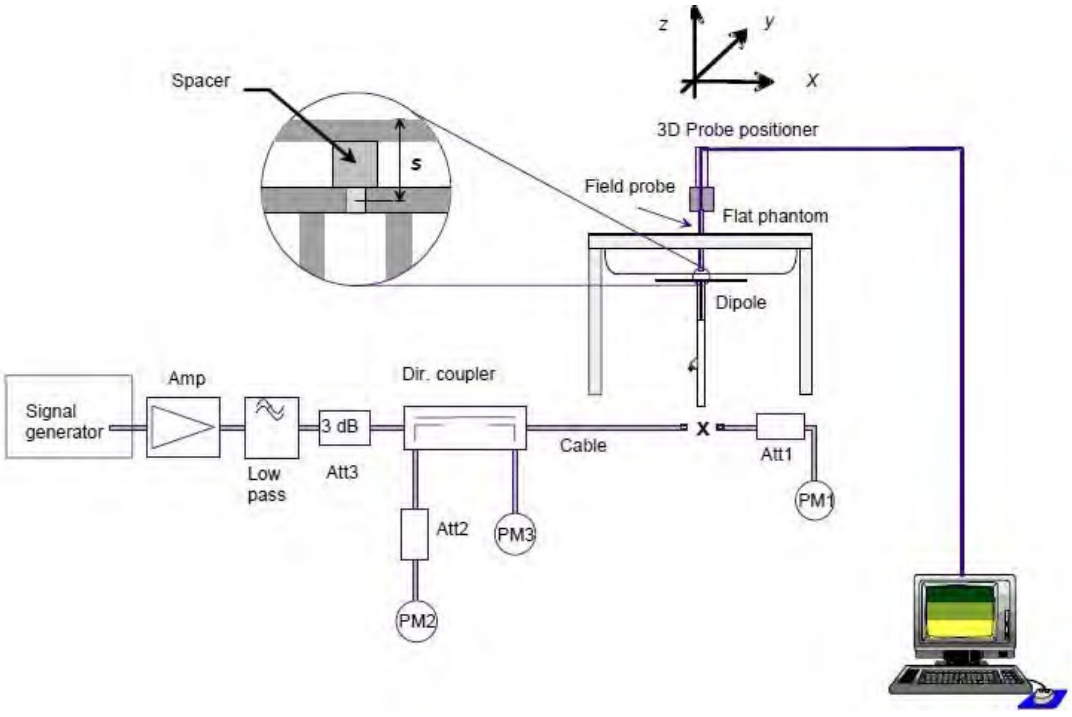


Fig. b The block diagram of system verification

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	8.77	2.24	8.96	2.17%	Mar. 30, 2017
D835V2	4d063	835	Body	9.57	2.41	9.64	0.73%	Mar. 28, 2017
D1750V2	1008	1750	Body	37.3	9.27	37.08	-0.59%	Mar. 23, 2017
D1900V2	5d027	1900	Body	39.7	9.73	38.92	-1.96%	Mar. 21, 2017
D2450V2	727	2450	Body	49.6	12.8	51.2	3.23%	Mar. 20, 2017
D2600V2	1005	2600	Body	55.1	14	56	1.63%	Mar. 17, 2017
D5GHzV2	1023	5200	Body	72.8	7.2	72	-1.10%	Mar. 15, 2017
		5300	Body	76.1	7.36	73.6	-3.29%	Mar. 13, 2017
		5600	Body	79.6	8.11	81.1	1.88%	Mar. 10, 2017
		5800	Body	75.9	7.87	78.7	3.69%	Mar. 08, 2017

Table 1. Results of system validation

1.10 Tissue Simulant Fluid for the Frequency Band

The dielectric properties for this body-simulant fluid were measured by using the Schmid & Partner Engineering AG Model DAKS Dielectric Probe Kit 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	Mar. 30, 2017	704	55.710	0.960	54.713	0.934	1.79%	2.69%
		707.5	55.697	0.960	54.727	0.937	1.74%	2.40%
		711	55.683	0.960	54.717	0.940	1.74%	2.12%
		750	55.531	0.963	54.338	0.982	2.15%	-1.93%
	Mar. 28, 2017	822.5	55.249	0.969	53.474	0.997	3.21%	-2.89%
		829	55.223	0.970	53.432	1.002	3.24%	-3.35%
		831.5	55.214	0.970	53.402	1.005	3.28%	-3.64%
		835	55.200	0.970	53.344	1.007	3.36%	-3.81%
		836.5	55.195	0.972	53.297	1.009	3.44%	-3.82%
		841.5	55.180	0.978	53.267	1.013	3.47%	-3.58%
		844	55.172	0.981	53.197	1.016	3.58%	-3.56%
	Mar. 23, 2017	1720	53.511	1.469	51.681	1.504	3.42%	-2.35%
		1732.5	53.478	1.477	51.559	1.519	3.59%	-2.82%
		1745	53.445	1.485	51.542	1.536	3.56%	-3.42%
		1750	53.432	1.488	51.536	1.537	3.55%	-3.26%
	Mar. 21, 2017	1860	53.300	1.520	52.039	1.474	2.37%	3.03%
		1880	53.300	1.520	52.011	1.499	2.42%	1.38%
		1882.5	53.300	1.520	51.995	1.500	2.45%	1.32%
		1900	53.300	1.520	51.985	1.520	2.47%	0.00%
		1905	53.300	1.520	51.951	1.524	2.53%	-0.26%
	Mar. 20, 2017	2412	52.751	1.914	52.634	1.953	0.22%	-2.05%
		2437	52.717	1.938	52.585	1.995	0.25%	-2.96%
		2450	52.700	1.950	52.528	2.018	0.33%	-3.49%
		2462	52.685	1.967	52.533	2.036	0.29%	-3.51%
	Mar. 17, 2017	2506	52.629	2.029	51.711	2.105	1.74%	-3.72%
		2549.5	52.573	2.091	51.324	2.121	2.38%	-1.43%
		2593	52.518	2.153	51.075	2.199	2.75%	-2.15%
		2600	52.509	2.163	51.119	2.216	2.65%	-2.46%
		2636.5	52.463	2.214	51.316	2.268	2.19%	-2.42%
		2680	52.407	2.276	50.777	2.287	3.11%	-0.48%

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	Mar. 15, 2017	5190	49.028	5.288	48.327	5.410	1.43%	-2.31%
		5200	49.014	5.299	48.367	5.484	1.32%	-3.49%
		5230	48.974	5.334	48.219	5.526	1.54%	-3.59%
	Mar. 13, 2017	5270	48.919	5.381	48.061	5.560	1.75%	-3.33%
		5300	48.879	5.416	48.283	5.539	1.22%	-2.27%
		5310	48.865	5.428	48.287	5.544	1.18%	-2.14%
	Mar. 10, 2017	5510	48.594	5.661	49.016	5.722	-0.87%	-1.07%
		5590	48.485	5.755	48.846	5.833	-0.74%	-1.36%
		5600	48.471	5.766	48.838	5.855	-0.76%	-1.54%
		5670	48.376	5.848	48.676	5.954	-0.62%	-1.81%
	Mar. 8, 2017	5755	48.261	5.947	48.095	6.141	0.34%	-3.25%
		5795	48.207	5.994	48.035	6.191	0.36%	-3.28%
		5800	48.200	6.000	48.048	6.197	0.32%	-3.28%

Table 2. Dielectric Parameters of Tissue Simulant Fluid

The composition of the tissue simulating liquid:

Frequency (MHz)	Mode	Ingredient						Total amount
		DGMBE	Water	Salt	Preventol D-7	Cellulose	Sugar	
750	Body	—	631.68 g	11.72 g	1.2 g	—	600 g	1.0L(Kg)
850	Body	—	631.68 g	11.72 g	1.2 g	—	600 g	1.0L(Kg)
1750	Body	300.67 g	716.56 g	4.0 g	—	—	—	1.0L(Kg)
1900	Body	300.67 g	716.56 g	4.0 g	—	—	—	1.0L(Kg)
2450	Body	301.7ml	698.3ml	—	—	—	—	1.0L(Kg)
2600	Body	301.7ml	698.3ml	—	—	—	—	1.0L(Kg)

Body Simulating Liquids for 5 GHz, Manufactured by SPEAG:

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

Table 3. Recipes for Tissue Simulating Liquid

1.11 Evaluation Procedures

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

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

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

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

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

The measured volume of 30x30x30mm contains about 30g of tissue.

The first procedure is an extrapolation (incl. Boundary correction) to get the points between the lowest measured plane and the surface. The next step uses 3D interpolation to get all points within the measured volume. In the last step, a 1g cube is placed numerically into the volume and its averaged SAR is calculated. This cube is the moved around until the highest averaged SAR is found. If the highest SAR is found at the edge of the measured volume, the system will issue a warning: higher SAR values might be found outside of the measured volume. In that case the cube measurement can be repeated, using the new interpolated maximum as the center.

1.12 Probe Calibration Procedures

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

1.12.1 Transfer Calibration with Temperature Probes

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

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

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

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

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

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

1.12.2 Calibration with Analytical Fields

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

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

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

References

1. N. Kuster, Q. Balzano, and J.C. Lin, Eds., *Mobile Communications Safety*, Chapman & Hall, London, 1997.
2. K. Meier, M. Burkhardt, T. Schmid, and N. Kuster, \Broadband calibration of E-field probes in lossy media", *IEEE Transactions on Microwave Theory and Techniques*, vol. 44, no. 10, pp. 1954{1962, Oct. 1996.
3. K. Jokela, P. Hyysalo, and L. Puranen, \Calibration of specific absorption rate (SAR) probes in waveguide at 900 MHz", *IEEE Transactions on Instrumentation and Measurements*, vol. 47, no. 2, pp. 432{438, Apr. 1998.

1.13 Test Standards and Limits

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

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

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

(3) Limits for General Population/Uncontrolled exposure: 0.08 W/kg as averaged over the whole-body and spatial peak SAR not exceeding 1.6 W/kg as averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube). Exceptions are the hands, wrists, feet and ankles where the spatial peak SAR shall not exceed 4 W/kg, as averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube). General Population/Uncontrolled limits apply when the general public may be exposed, or when persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or do not

exercise control over their exposure. Warning labels placed on consumer devices such as cellular telephones will not be sufficient reason to allow these devices to be evaluated subject to limits for occupational/controlled exposure in paragraph (d)(1) of this section. (Table 4.)

Human Exposure	Uncontrolled Environment General Population	Controlled Environment Occupational
Spatial Peak SAR (Brain)	1.60 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.

2. Summary of Results

LTE FDD Band 2

Sensor OFF (without power reduction)														
Mode	Bandwidth (MHz)	Modulation	RB Size	RB start	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
												Measured	Reported	
LTE Band 2	20MHz	QPSK	1 RB	50	Back side	15	18700	1860	24	23.83	3.99%	0.365	0.380	-
					Top side	15	18700	1860	24	23.83	3.99%	0.260	0.270	-
					Left side	15	18700	1860	24	23.83	3.99%	0.298	0.310	-
			50 RB	25	Back side	15	18700	1860	23	22.58	10.15%	0.285	0.314	-
					Top side	15	18700	1860	23	22.58	10.15%	0.199	0.219	-
					Left side	15	18700	1860	23	22.58	10.15%	0.239	0.263	-
			100 RB		Back side	15	18700	1860	23	22.58	10.15%	0.289	0.318	-
					Top side	15	18700	1860	23	22.58	10.15%	0.202	0.223	-
					Left side	15	18700	1860	23	22.58	10.15%	0.244	0.269	-
Sensor ON (with power reduction)														
Mode	Bandwidth (MHz)	Modulation	RB Size	RB start	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
												Measured	Reported	
LTE Band 2	20MHz	QPSK	1 RB	50	Back side	0	18700	1860	16.5	16.49	0.23%	1.300	1.303	-
					Back side	0	18900	1880	16.5	16.35	3.51%	1.330	1.377	165
					Back side*	0	18900	1880	16.5	16.35	3.51%	1.320	1.366	-
					Back side	0	19100	1900	16.5	16.50	0.00%	1.320	1.320	-
					Top side	0	19100	1900	16.5	16.50	0.00%	0.459	0.459	-
					Left side	0	19100	1900	16.5	16.50	0.00%	0.403	0.403	-
			50 RB	0	Back side	0	18700	1860	15.5	15.50	0.00%	1.090	1.090	-
					Back side	0	19100	1900	15.5	15.40	2.33%	1.050	1.074	-
					Top side	0	18700	1860	15.5	15.50	0.00%	0.439	0.439	-
					Left side	0	18700	1860	15.5	15.50	0.00%	0.372	0.372	-
				50	Back side	0	18900	1880	15.5	15.43	1.62%	1.070	1.087	-
			100 RB		Back side	0	18700	1860	15.5	15.50	0.00%	1.070	1.070	-
					Back side	0	18900	1880	15.5	15.37	3.04%	1.080	1.113	-
					Back side	0	19100	1900	15.5	15.32	4.23%	1.070	1.115	-
					Top side	0	18700	1860	15.5	15.50	0.00%	0.427	0.427	-
					Left side	0	18700	1860	15.5	15.50	0.00%	0.370	0.370	-

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

LTE FDD Band 4

Sensor OFF (without power reduction)														
Mode	Bandwidth (MHz)	Modulation	RB Size	RB start	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
												Measured	Reported	
LTE Band 4	20MHz	QPSK	1 RB	0	Back side	15	20300	1745	24	23.46	13.24%	0.402	0.455	-
					Top side	15	20300	1745	24	23.46	13.24%	0.327	0.370	-
					Left side	15	20300	1745	24	23.46	13.24%	0.281	0.318	-
			50 RB	0	Back side	15	20175	1732.5	23	22.32	16.95%	0.299	0.350	-
					Top side	15	20175	1732.5	23	22.32	16.95%	0.253	0.296	-
					Left side	15	20175	1732.5	23	22.32	16.95%	0.213	0.249	-
			100 RB		Back side	15	20050	1720	23	22.22	19.67%	0.294	0.352	-
					Top side	15	20050	1720	23	22.22	19.67%	0.248	0.297	-
					Left side	15	20050	1720	23	22.22	19.67%	0.208	0.249	-
Sensor ON (with power reduction)														
Mode	Bandwidth (MHz)	Modulation	RB Size	RB start	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
												Measured	Reported	
LTE Band 4	20MHz	QPSK	1 RB	0	Back side	0	20300	1745	16	15.85	3.51%	1.240	1.284	166
					Back side*	0	20300	1745	16	15.85	3.51%	1.220	1.263	-
					Top side	0	20300	1745	16	15.85	3.51%	0.693	0.717	-
					Left side	0	20300	1745	16	15.85	3.51%	0.445	0.461	-
				50	Back side	0	20050	1720	16	15.62	9.14%	1.210	1.321	-
					Back side	0	20175	1732.5	16	15.75	5.93%	1.200	1.271	-
			50 RB	0	Back side	0	20050	1720	15	14.58	10.15%	0.968	1.066	-
					Back side	0	20175	1732.5	15	14.68	7.65%	0.976	1.051	-
					Back side	0	20300	1745	15	14.54	11.17%	0.994	1.105	-
					Top side	0	20175	1732.5	15	14.68	7.65%	0.546	0.588	-
					Left side	0	20175	1732.5	15	14.68	7.65%	0.359	0.386	-
			100 RB		Back side	0	20050	1720	15	14.55	10.92%	0.988	1.096	-
					Back side	0	20175	1732.5	15	14.62	9.14%	0.986	1.076	-
					Back side	0	20300	1745	15	14.50	12.20%	0.979	1.098	-
					Top side	0	20175	1732.5	15	14.62	9.14%	0.534	0.583	-
					Left side	0	20175	1732.5	15	14.62	9.14%	0.335	0.366	-

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

LTE FDD Band 5

Sensor OFF (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	25	Back side	15	20600	844	24	23.20	20.23%	0.357	0.429	-
					Top side	15	20600	844	24	23.20	20.23%	0.177	0.213	-
					Left side	15	20600	844	24	23.20	20.23%	0.061	0.073	-
			25 RB	12	Back side	15	20600	844	23	22.23	19.40%	0.267	0.319	-
					Top side	15	20600	844	23	22.23	19.40%	0.131	0.156	-
					Left side	15	20600	844	23	22.23	19.40%	0.050	0.060	-
			50 RB		Back side	15	2050	829	23	22.22	19.67%	0.255	0.305	-
					Top side	15	2050	829	23	22.22	19.67%	0.125	0.150	-
					Left side	15	2050	829	23	22.22	19.67%	0.050	0.060	-
Sensor ON (with power reduction)														
Mode	Bandwidth (MHz)	Modulation	RB Size	RB start	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
												Measured	Reported	
LTE Band 5	10MHz	QPSK	1 RB	0	Back side	0	20450	829	19.5	19.02	11.69%	1.010	1.128	-
				25	Back side	0	20525	836.5	19.5	19.18	7.65%	1.070	1.152	167
					Back side*	0	20525	836.5	19.5	19.18	7.65%	1.060	1.141	-
					Back side	0	20600	844	19.5	19.31	4.47%	1.060	1.107	-
					Top side	0	20600	844	19.5	19.31	4.47%	0.419	0.438	-
					Left side	0	20600	844	19.5	19.31	4.47%	0.154	0.161	-
			25 RB	0	Back side	0	20525	836.5	18.5	18.11	9.40%	0.849	0.929	-
					Back side	0	20600	844	18.5	18.09	9.90%	0.881	0.968	-
					Top side	0	20525	836.5	18.5	18.11	9.40%	0.340	0.372	-
					Left side	0	20525	836.5	18.5	18.11	9.40%	0.121	0.132	-
				12	Back side	0	20450	829	18.5	18.05	10.92%	0.811	0.900	-
			50 RB		Back side	0	20450	829	18.5	18.08	10.15%	0.824	0.908	-
					Back side	0	20525	836.5	18.5	18.02	11.69%	0.845	0.944	-
					Back side	0	20600	844	18.5	18.12	9.14%	0.841	0.918	-
					Top side	0	20600	844	18.5	18.12	9.14%	0.322	0.351	-
					Left side	0	20600	844	18.5	18.12	9.14%	0.119	0.130	-

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

LTE FDD Band 12

Sensor OFF (without power reduction)														
Mode	Bandwidth (MHz)	Modulation	RB Size	RB start	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
												Measured	Reported	
LTE Band 12	10MHz	QPSK	1 RB	0	Back side	15	23130	711	24	23.15	21.62%	0.183	0.223	-
					Top side	15	23130	711	24	23.15	21.62%	0.038	0.046	-
					Left side	15	23130	711	24	23.15	21.62%	0.015	0.018	-
			25 RB	25	Back side	15	23130	711	23	22.19	20.50%	0.131	0.158	-
					Top side	15	23130	711	23	22.19	20.50%	0.025	0.030	-
					Left side	15	23130	711	23	22.19	20.50%	0.012	0.014	-
			50 RB		Back side	15	23130	711	23	22.11	22.74%	0.131	0.161	-
					Top side	15	23130	711	23	22.11	22.74%	0.026	0.031	-
					Left side	15	23130	711	23	22.11	22.74%	0.012	0.015	-
Sensor ON (with power reduction)														
Mode	Bandwidth (MHz)	Modulation	RB Size	RB start	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
												Measured	Reported	
LTE Band 12	10MHz	QPSK	1 RB	25	Back side	0	23095	707.5	21	20.94	1.39%	1.290	1.308	168
					Back side*	0	23095	707.5	21	20.94	1.39%	1.260	1.278	-
					Back side	0	23130	711	21	21.00	0.00%	1.220	1.220	-
					Top side	0	23130	711	21	21.00	0.00%	0.281	0.281	-
					Left side	0	23130	711	21	21.00	0.00%	0.101	0.101	-
				49	Back side	0	23060	704	21	20.77	5.44%	1.250	1.318	-
			25 RB	0	Back side	0	23095	707.5	20	20.00	0.00%	0.987	0.987	-
					Back side	0	23130	711	20	19.98	0.46%	0.991	0.996	-
					Top side	0	23095	707.5	20	20.00	0.00%	0.234	0.234	-
					Left side	0	23095	707.5	20	20.00	0.00%	0.085	0.085	-
				25	Back side	0	23060	704	20	19.97	0.69%	0.960	0.967	-
			50 RB		Back side	0	23060	704	20	19.94	1.39%	0.960	0.973	-
					Back side	0	23095	707.5	20	19.95	1.16%	0.959	0.970	-
					Back side	0	23130	711	20	19.98	0.46%	0.975	0.980	-
					Top side	0	23130	711	20	19.98	0.46%	0.227	0.228	-
					Left side	0	23130	711	20	19.98	0.46%	0.084	0.084	-

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

LTE FDD Band 25

Sensor OFF (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 25	20MHz	QPSK	1 RB	50	Back side	15	26140	1860	24	23.33	16.68%	0.349	0.407	-
					Top side	15	26140	1860	24	23.33	16.68%	0.261	0.305	-
					Left side	15	26140	1860	24	23.33	16.68%	0.283	0.330	-
			50 RB	0	Back side	15	26590	1905	23	22.30	17.49%	0.290	0.341	-
					Top side	15	26590	1905	23	22.30	17.49%	0.178	0.209	-
					Left side	15	26590	1905	23	22.30	17.49%	0.218	0.256	-
			100 RB		Back side	15	26590	1905	23	22.20	20.23%	0.287	0.345	-
					Top side	15	26590	1905	23	22.20	20.23%	0.170	0.204	-
					Left side	15	26590	1905	23	22.20	20.23%	0.209	0.251	-
Sensor ON (with power reduction)														
Mode	Bandwidth (MHz)	Modulation	RB Size	RB start	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
												Measured	Reported	
LTE Band 25	20MHz	QPSK	1 RB	0	Back side	0	26365	1882.5	15.5	15.15	8.39%	1.100	1.192	169
					Back side*	0	26365	1882.5	15.5	15.15	8.39%	1.060	1.149	-
					Top side	0	26365	1882.5	15.5	15.15	8.39%	0.410	0.444	-
					Left side	0	26365	1882.5	15.5	15.15	8.39%	0.356	0.386	-
				50	Back side	0	26140	1860	15.5	14.95	13.50%	1.040	1.180	-
				99	Back side	0	26590	1905	15.5	15.05	10.92%	0.993	1.101	-
			50 RB	0	Back side	0	26140	1860	14.5	14.20	7.15%	0.863	0.925	-
					Back side	0	26590	1905	14.5	14.18	7.65%	0.844	0.909	-
					Top side	0	26140	1860	14.5	14.20	7.15%	0.340	0.364	-
					Left side	0	26140	1860	14.5	14.20	7.15%	0.285	0.305	-
				25	Back side	0	26365	1882.5	14.5	14.09	9.90%	0.922	1.013	-
			100 RB		Back side	0	26140	1860	14.5	14.15	8.39%	0.848	0.919	-
					Back side	0	26365	1882.5	14.5	14.05	10.92%	0.988	1.096	-
					Back side	0	26590	1905	14.5	14.02	11.69%	0.895	1.000	-
					Top side	0	26140	1860	14.5	14.15	8.39%	0.332	0.360	-
					Left side	0	26140	1860	14.5	14.15	8.39%	0.281	0.305	-

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

LTE FDD Band 26

Sensor OFF (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 26	15MHz	QPSK	1 RB	74	Back side	15	26865	831.5	24	23.20	20.23%	0.338	0.406	-
					Top side	15	26865	831.5	24	23.20	20.23%	0.175	0.210	-
					Left side	15	26865	831.5	24	23.20	20.23%	0.060	0.072	-
			36 RB	0	Back side	15	26965	841.5	23	22.25	18.85%	0.256	0.304	-
					Top side	15	26965	841.5	23	22.25	18.85%	0.134	0.159	-
					Left side	15	26965	841.5	23	22.25	18.85%	0.049	0.058	-
			75 RB		Back side	15	26965	841.5	23	22.20	20.23%	0.256	0.308	-
					Top side	15	26965	841.5	23	22.20	20.23%	0.137	0.165	-
					Left side	15	26965	841.5	23	22.20	20.23%	0.050	0.060	-
Sensor ON (with power reduction)														
Mode	Bandwidth (MHz)	Modulation	RB Size	RB start	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
												Measured	Reported	
LTE Band 26	15MHz	QPSK	1 RB	0	Back side	0	26865	831.5	19.5	19.08	10.15%	1.050	1.157	170
					Back side*	0	26865	831.5	19.5	19.08	10.15%	1.040	1.146	-
					Back side	0	26965	841.5	19.5	19.01	11.94%	1.040	1.164	-
					Top side	0	26865	831.5	19.5	19.08	10.15%	0.423	0.466	-
					Left side	0	26865	831.5	19.5	19.08	10.15%	0.163	0.180	-
				74	Back side	0	26825	822.5	19.5	19.03	11.43%	1.040	1.159	-
			36 RB	0	Back side	0	26825	822.5	18.5	18.03	11.43%	0.838	0.934	-
					Back side	0	26865	831.5	18.5	18.03	11.43%	0.824	0.918	-
					Back side	0	26965	841.5	18.5	18.18	7.65%	0.875	0.942	-
					Top side	0	26965	841.5	18.5	18.18	7.65%	0.334	0.360	-
					Left side	0	26965	841.5	18.5	18.18	7.65%	0.121	0.130	-
			75 RB		Back side	0	26825	822.5	18.5	17.87	15.61%	0.813	0.940	-
					Back side	0	26865	831.5	18.5	17.99	12.46%	0.844	0.949	-
					Back side	0	26965	841.5	18.5	17.98	12.72%	0.868	0.978	-
					Top side	0	26865	831.5	18.5	17.99	12.46%	0.326	0.367	-
					Left side	0	26865	831.5	18.5	17.99	12.46%	0.120	0.135	-

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

LTE TDD Band 41

Sensor OFF (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 41	20MHz	QPSK	1 RB	0	Back side	15	39750	2506	24	22.81	31.52%	0.223	0.293	-
					Top side	15	39750	2506	24	22.81	31.52%	0.123	0.162	-
					Left side	15	39750	2506	24	22.81	31.52%	0.107	0.141	-
			50 RB	0	Back side	15	40620	2593	23	22.00	25.89%	0.159	0.200	-
					Top side	15	40620	2593	23	22.00	25.89%	0.050	0.063	-
					Left side	15	40620	2593	23	22.00	25.89%	0.112	0.141	-
			100 RB		Back side	15	40620	2593	23	21.91	28.53%	0.154	0.198	-
					Top side	15	40620	2593	23	21.91	28.53%	0.046	0.059	-
					Left side	15	40620	2593	23	21.91	28.53%	0.112	0.144	-
Sensor ON (with power reduction)														
Mode	Bandwidth (MHz)	Modulation	RB Size	RB start	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
												Measured	Reported	
LTE Band 41	20MHz	QPSK	1 RB	0	Back side	0	39750	2506	18	17.99	0.23%	0.975	0.977	-
					Back side	0	40185	2549.5	18	17.97	0.69%	0.968	0.975	-
					Back side	0	40620	2593	18	17.96	0.93%	1.060	1.070	-
					Back side	0	41055	2636.5	18	17.70	7.15%	1.110	1.189	-
					Back side	0	41490	2680	18	17.81	4.47%	1.200	1.254	171
					Back side*	0	41490	2680	18	17.81	4.47%	1.180	1.233	-
					Top side	0	39750	2506	18	17.99	0.23%	0.503	0.504	-
					Left side	0	39750	2506	18	17.99	0.23%	0.222	0.223	-
			50 RB	0	Back side	0	39750	2506	17	16.97	0.69%	0.740	0.745	-
					Back side	0	40620	2593	17	16.95	1.16%	0.826	0.836	-
					Back side	0	41490	2680	17	16.80	4.71%	0.962	1.007	-
				25	Back side	0	40185	2549.5	17	17.00	0.00%	0.734	0.734	-
					Back side	0	41055	2636.5	17	16.78	5.20%	0.858	0.903	-
					Top side	0	40185	2549.5	17	17.00	0.00%	0.246	0.246	-
					Left side	0	40185	2549.5	17	17.00	0.00%	0.172	0.172	-
			100 RB		Back side	0	39750	2506	17	16.79	4.95%	0.694	0.728	-
					Back side	0	40185	2549.5	17	16.96	0.93%	0.735	0.742	-
					Back side	0	40620	2593	17	16.98	0.46%	0.797	0.801	-
					Back side	0	41055	2636.5	17	16.79	4.95%	0.876	0.919	-
					Back side	0	41490	2680	17	16.69	7.40%	0.920	0.988	-
					Top side	0	40620	2593	17	16.98	0.46%	0.139	0.140	-
					Left side	0	40620	2593	17	16.98	0.46%	0.233	0.234	-

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

WiFi 2.4GHz – WLAN802.11b

Sensor OFF (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	
WLAN802.11 b	Back side	15	11	2462	19	18.89	102.57%	0.226	0.232	-
	Top side	5	11	2462	19	18.89	102.57%	0.038	0.039	-
	Right side	12	11	2462	19	18.89	102.57%	0.272	0.279	-
Sensor ON (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	
WLAN802.11 b	Back side	0	6	2437	14.5	14.43	101.62%	1.080	1.098	172
	Back side*	0	6	2437	14.5	14.43	101.62%	1.070	1.087	-
	Back side	0	11	2462	14.5	14.39	102.57%	0.752	0.771	-
	Top side	0	6	2437	14.5	14.43	101.62%	0.189	0.192	-
	Right side	0	6	2437	14.5	14.43	101.62%	0.125	0.127	-

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

WiFi 5.2GHz – WLAN802.11n(40M)

Sensor OFF (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	
WLAN802.11 n(40M) 5.2G	Back side	15	38	5190	19	18.70	107.15%	0.221	0.237	-
	Top side	5	38	5190	19	18.70	107.15%	0.135	0.145	-
	Right side	12	38	5190	19	18.70	107.15%	0.125	0.134	-
Sensor ON (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	
WLAN802.11 n(40M) 5.2G	Back side	0	38	5190	7.5	7.21	106.91%	1.040	1.112	173
	Back side*	0	38	5190	7.5	7.21	106.91%	1.020	1.090	-
	Back side	0	46	5230	7.5	7.45	101.16%	0.997	1.009	-
	Top side	0	46	5230	7.5	7.45	101.16%	0.015	0.015	-
	Right side	0	46	5230	7.5	7.45	101.16%	0.114	0.115	-

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

WiFi 5.3GHz – WLAN802.11n(40M)

Sensor OFF (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	
WLAN802.11 n(40M) 5.3G	Back side	15	54	5270	19	18.87	103.04%	0.486	0.501	-
	Top side	5	54	5270	19	18.87	103.04%	0.309	0.318	-
	Right side	12	54	5270	19	18.87	103.04%	0.355	0.366	-
Sensor ON (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	
WLAN802.11 n(40M) 5.3G	Back side	0	54	5270	7.5	7.38	102.80%	0.813	0.836	-
	Back side	0	62	5310	7.5	7.19	107.40%	0.843	0.905	174
	Back side*	0	62	5310	7.5	7.19	107.40%	0.822	0.883	-
	Top side	0	54	5270	7.5	7.38	102.80%	0.040	0.041	-
	Right side	0	54	5270	7.5	7.38	102.80%	0.126	0.130	-

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

WiFi 5.6GHz – WLAN802.11n(40M)

Sensor OFF (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	
WLAN802.11 n(40M) 5.6G	Back side	15	134	5670	19	18.95	101.16%	0.404	0.409	-
	Top side	5	102	5510	19	18.63	108.89%	0.967	1.053	-
	Top side	5	134	5670	19	18.95	101.16%	1.150	1.163	175
	Right side	12	134	5670	19	18.95	101.16%	0.623	0.630	-
Sensor ON (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	
WLAN802.11 n(40M) 5.6G	Back side	0	102	5510	8	7.95	101.16%	0.777	0.786	-
	Top side	0	102	5510	8	7.95	101.16%	0.152	0.154	-
	Right side	0	102	5510	8	7.95	101.16%	0.190	0.192	-

WiFi 5.8GHz – WLAN802.11n(40M)

Sensor OFF (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	
WLAN802.11 n(40M) 5.8G	Back side	15	151	5755	19	18.96	100.93%	0.377	0.380	-
	Top side	5	151	5755	19	18.96	100.93%	0.899	0.907	-
	Top side	5	159	5795	19	18.67	107.89%	0.728	0.785	-
	Right side	12	151	5755	19	18.96	100.93%	0.557	0.562	-
Sensor ON (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	
WLAN802.11 n(40M) 5.8G	Back side	0	151	5755	9.5	9.43	101.62%	0.924	0.939	176
	Back side*	0	151	5755	9.5	9.43	101.62%	0.912	0.927	-
	Back side	0	159	5795	9.5	9.15	108.39%	0.792	0.858	-
	Top side	0	151	5755	9.5	9.43	101.62%	0.184	0.187	-
	Right side	0	151	5755	9.5	9.43	101.62%	0.347	0.353	-

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

Note:

Scaling = $\frac{\text{reported SAR}}{\text{measured SAR}} = \frac{P_2(mW)}{P_1(mW)} = 10^{\left(\frac{P_2-P_1}{10}\right)(dBm)}$

Reported SAR = measured SAR * (scaling)

Where P2 is maximum specified power, P1 is measured conducted power

3. Simultaneous Transmission Analysis

Simultaneous Transmission Scenarios:

Simultaneous Transmit Configurations	Body
LTE + 2.4GHz WLAN	Yes
LTE + 5GHz WLAN	Yes
LTE + BT	Yes

Note:
1. WWAN and WLAN may transmit simultaneously.
2. Bluetooth and WLAN share the same antenna path, but BT can't transmit with WLAN simultaneously.

3.1 Estimated SAR calculation

According to KDB447498 D01v06 – When standalone SAR test exclusion applies to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to following to determine simultaneous transmission SAR test exclusion:

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

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

Mode	Test position	antenna to user separation distance	Estimated SAR(W/kg)
BT	Right / Back	< 5mm	0.105
BT	Top	8.2mm	0.064
WLAN/BT	Left	> 50mm	0.4
WWAN	Right	> 50mm	0.4

3.1 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.

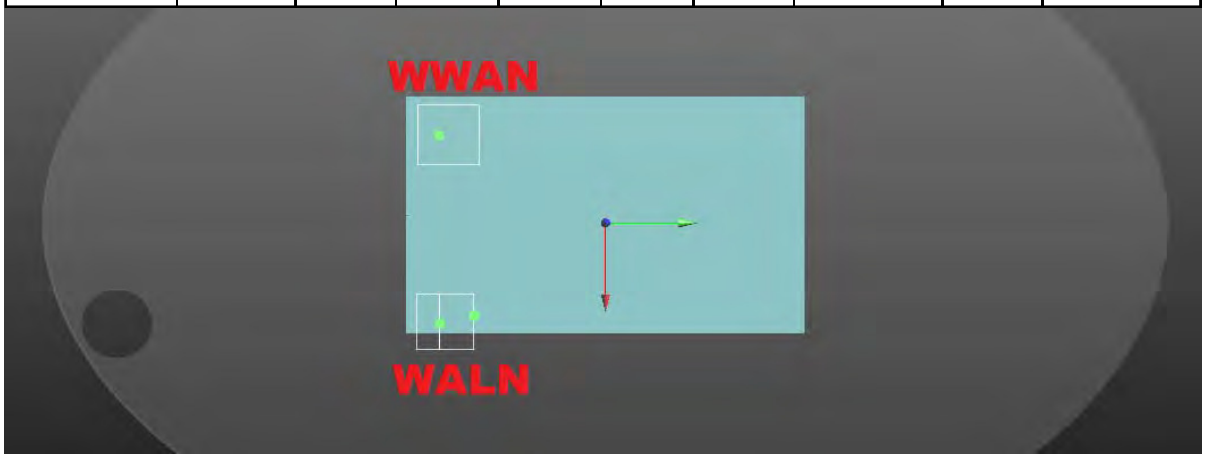
When standalone test exclusion applies, SAR is estimated; the peak location is assumed to be at the feed-point or geometric center of the antenna.

LTE FDD Band 2 + 2.4 GHz WLAN

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN	SAR Sum	SPLSR
1	LTE Band 2	Back side	0	1.377	1.098	**2.475**	Analyzed as below
		Top side	0	0.459	0.192	0.651	ΣSAR<1.6, Not required
		Right side	0	0.400	0.127	0.527	ΣSAR<1.6, Not required
		Left side	0	0.403	0.400	0.803	ΣSAR<1.6, Not required

SPLSR analysis

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE Band 2	Back side	1.377	-47.00	-86.80	-1.14	2.475	100.81	0.039	SPLSR<0.04, Not required
2.4 GHz WLAN		1.098	53.80	-86.60	-2.45				

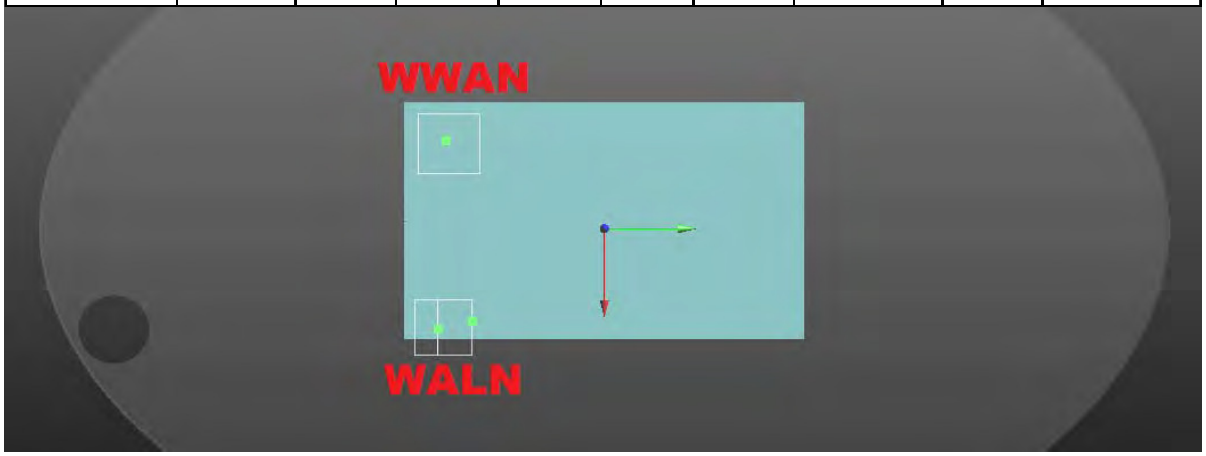


LTE FDD Band 4 + 2.4 GHz WLAN

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN	SAR Sum	SPLSR
2	LTE Band 4	Back side	0	1.321	1.098	**2.419**	Analyzed as below
		Top side	0	0.717	0.192	0.909	ΣSAR<1.6, Not required
		Right side	0	0.400	0.127	0.527	ΣSAR<1.6, Not required
		Left side	0	0.461	0.400	0.861	ΣSAR<1.6, Not required

SPLSR analysis

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE Band 4	Back side	1.321	-47.10	-82.10	-2.28	2.419	101	0.037	SPLSR<0.04, Not required
2.4 GHz WLAN		1.098	53.80	-86.60	-2.45				

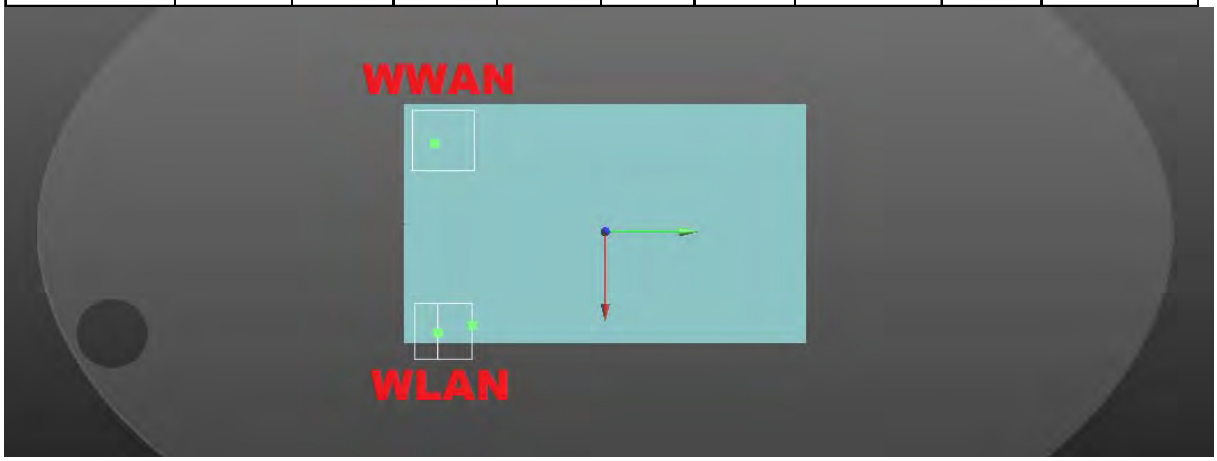


LTE FDD Band 5 + 2.4 GHz WLAN

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN	SAR Sum	SPLSR
3	LTE Band 5	Back side	0	1.152	1.098	**2.250**	Analyzed as below
		Top side	0	0.438	0.192	0.630	ΣSAR<1.6, Not required
		Right side	0	0.400	0.127	0.527	ΣSAR<1.6, Not required
		Left side	0	0.161	0.400	0.561	ΣSAR<1.6, Not required

SPLSR analysis

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE Band 5	Back side	1.152	-46.90	-88.30	-0.14	2.25	100.74	0.034	SPLSR<0.04, Not required
2.4 GHz WLAN		1.098	53.80	-86.60	-2.45				

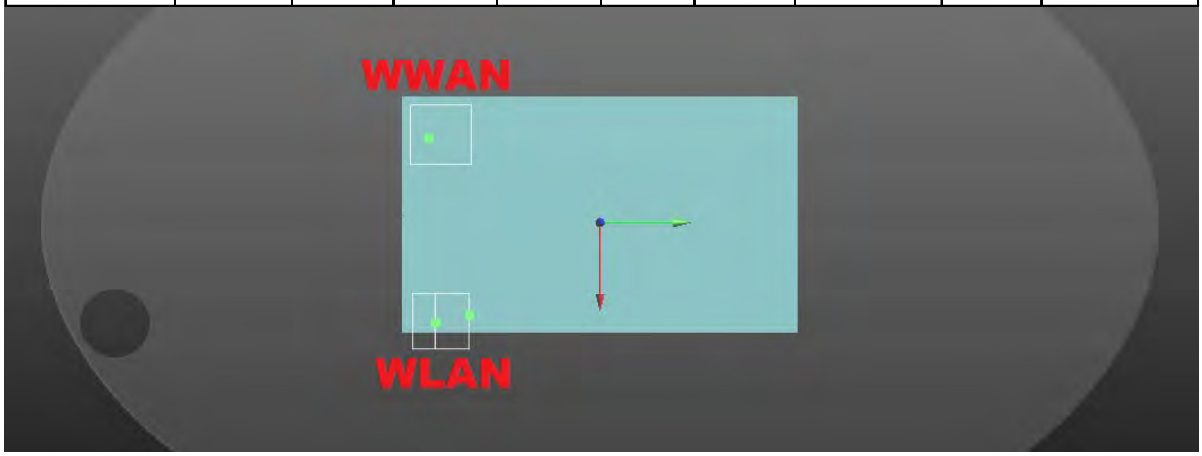


LTE FDD Band 12 + 2.4 GHz WLAN

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN	SAR Sum	SPLSR
4	LTE Band 12	Back side	0	1.318	1.098	**2.416**	Analyzed as below
		Top side	0	0.281	0.192	0.473	ΣSAR<1.6, Not required
		Right side	0	0.400	0.127	0.527	ΣSAR<1.6, Not required
		Left side	0	0.101	0.400	0.501	ΣSAR<1.6, Not required

SPLSR analysis

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE Band 12	Back side	1.318	-45.40	-89.90	-0.14	2.416	99.28	0.038	SPLSR<0.04, Not required
2.4 GHz WLAN		1.098	53.80	-86.60	-2.45				

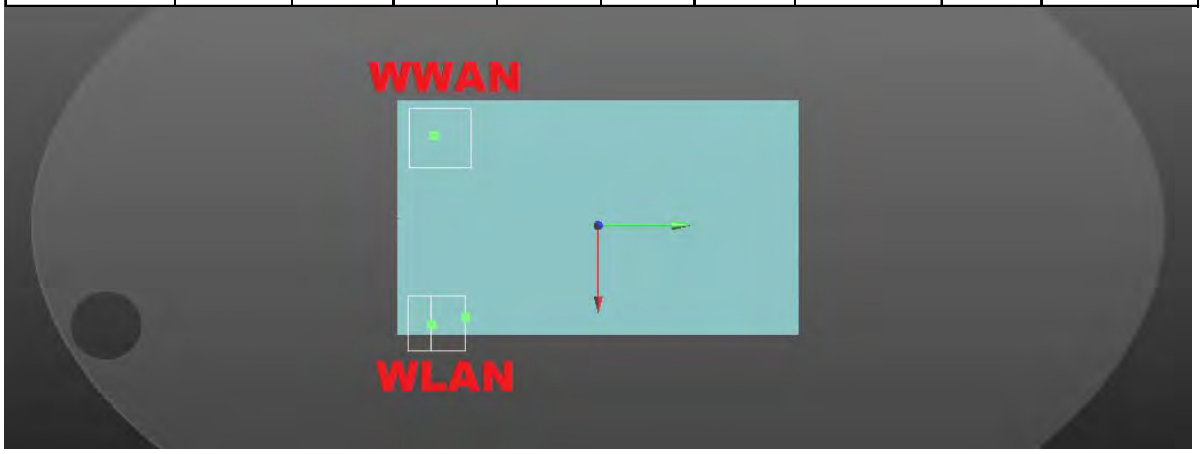


LTE FDD Band 25 + 2.4 GHz WLAN

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN	SAR Sum	SPLSR
5	LTE Band 25	Back side	0	1.192	1.098	**2.290**	Analyzed as below
		Top side	0	0.444	0.192	0.636	ΣSAR<1.6, Not required
		Right side	0	0.400	0.127	0.527	ΣSAR<1.6, Not required
		Left side	0	0.386	0.400	0.786	ΣSAR<1.6, Not required

SPLSR analysis

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE Band 25	Back side	1.192	-48.60	-85.20	-1.18	2.29	102.42	0.034	SPLSR<0.04, Not required
2.4 GHz WLAN		1.098	53.80	-86.60	-2.45				

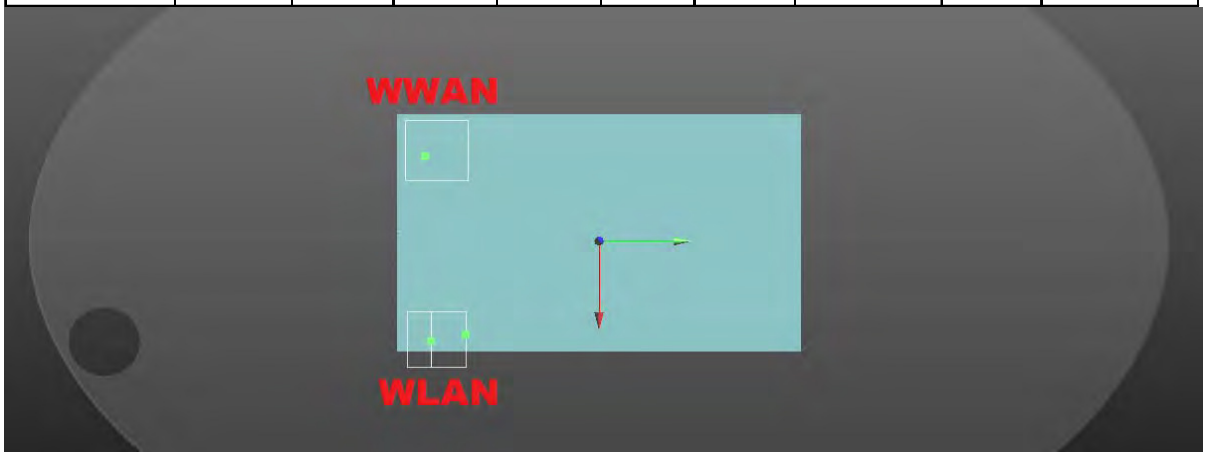


LTE FDD Band 26 + 2.4 GHz WLAN

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN	SAR Sum	SPLSR
6	LTE Band 26	Back side	0	1.164	1.098	**2.262**	Analyzed as below
		Top side	0	0.466	0.192	0.658	ΣSAR<1.6, Not required
		Right side	0	0.400	0.127	0.527	ΣSAR<1.6, Not required
		Left side	0	0.180	0.400	0.580	ΣSAR<1.6, Not required

SPLSR analysis

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE Band 26	Back side	1.164	-45.30	-89.90	-0.81	2.262	99.17	0.034	SPLSR<0.04, Not required
2.4 GHz WLAN		1.098	53.80	-86.60	-2.45				

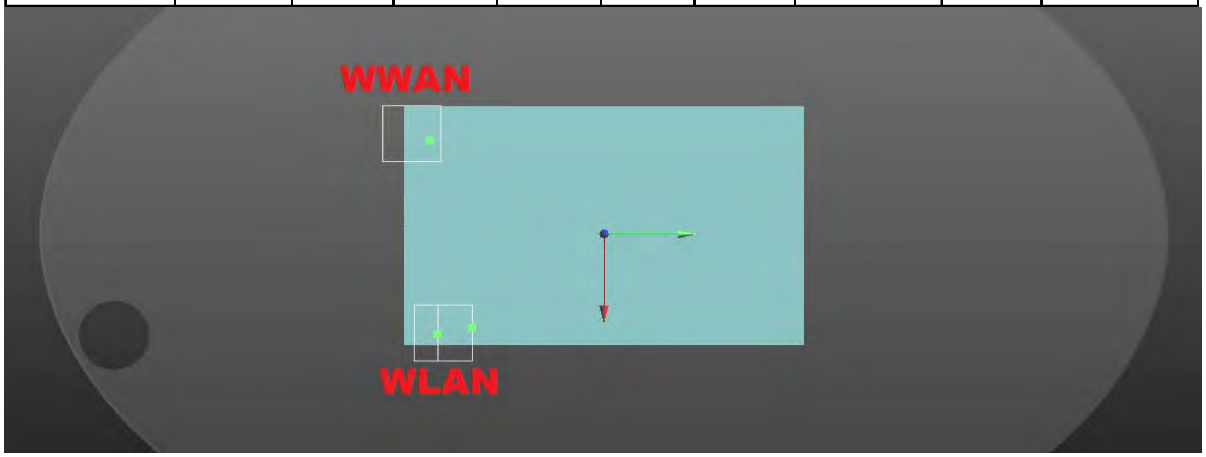


LTE TDD Band 41 + 2.4 GHz WLAN

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN	SAR Sum	SPLSR
7	LTE Band 41	Back side	0	1.254	1.098	**2.352**	Analyzed as below
		Top side	0	0.504	0.192	0.696	ΣSAR<1.6, Not required
		Right side	0	0.400	0.127	0.527	ΣSAR<1.6, Not required
		Left side	0	0.234	0.400	0.634	ΣSAR<1.6, Not required

SPLSR analysis

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE Band 41	Back side	1.254	-49.40	-91.00	-0.85	2.352	103.31	0.035	SPLSR<0.04, Not required
2.4 GHz WLAN		1.098	53.80	-86.60	-2.45				



LTE FDD Band 2 + 5 GHz WLAN

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN	SAR Sum	SPLSR
8	LTE Band 2	Back side	0	1.377	1.112	**2.489**	Analyzed as below
		Top side	0	0.459	0.187	0.646	ΣSAR<1.6, Not required
		Right side	0	0.400	0.353	0.753	ΣSAR<1.6, Not required
		Left side	0	0.403	0.400	0.803	ΣSAR<1.6, Not required

SPLSR analysis

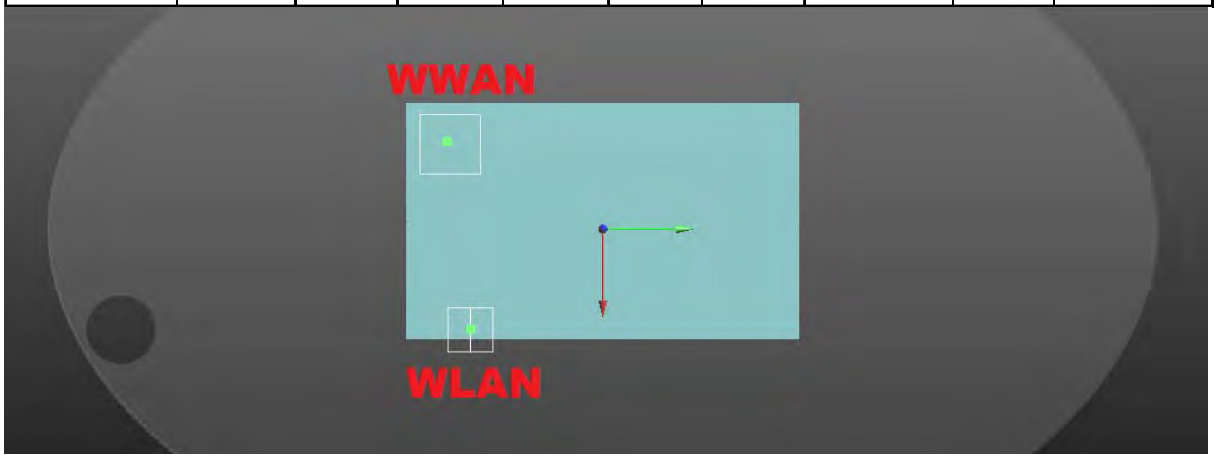
Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE Band 2	Back side	1.377	-47.00	-86.80	-1.14	2.489	102.39	0.038	SPLSR<0.04, Not required
5 GHz WLAN		1.112	54.00	-70.00	-1.72				

LTE FDD Band 4 + 5 GHz WLAN

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN	SAR Sum	SPLSR
9	LTE Band 4	Back side	0	1.321	1.112	**2.433**	Analyzed as below
		Top side	0	0.717	0.187	0.904	ΣSAR<1.6, Not required
		Right side	0	0.400	0.353	0.753	ΣSAR<1.6, Not required
		Left side	0	0.461	0.400	0.861	ΣSAR<1.6, Not required

SPLSR analysis

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE Band 4	Back side	1.321	-47.10	-82.10	-2.28	2.433	101.82	0.037	SPLSR<0.04, Not required
5 GHz WLAN		1.112	54.00	-70.00	-1.72				

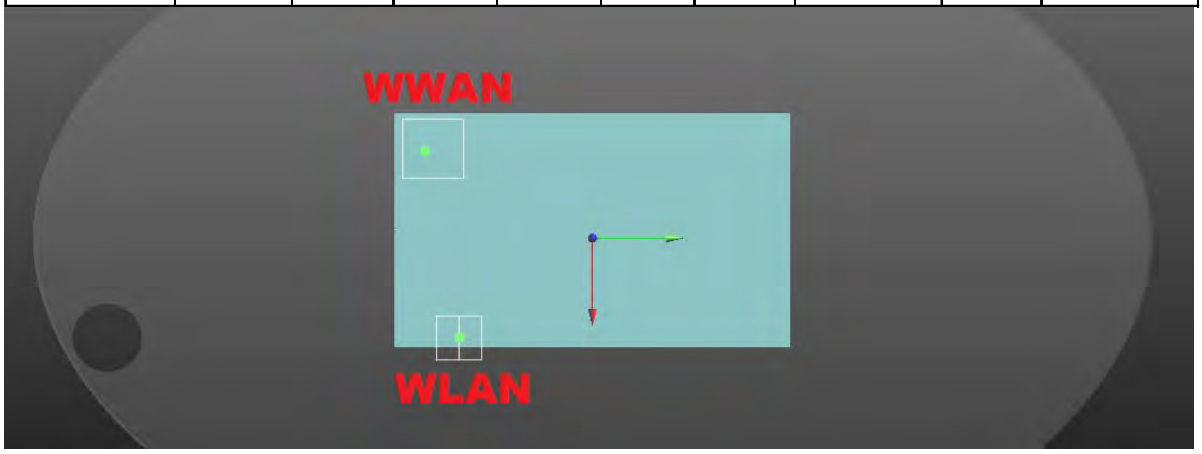


LTE FDD Band 5 + 5 GHz WLAN

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN	SAR Sum	SPLSR
10	LTE Band 5	Back side	0	1.152	1.112	**2.264**	Analyzed as below
		Top side	0	0.438	0.187	0.625	ΣSAR<1.6, Not required
		Right side	0	0.400	0.353	0.753	ΣSAR<1.6, Not required
		Left side	0	0.161	0.400	0.561	ΣSAR<1.6, Not required

SPLSR analysis

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE Band 5	Back side	1.152	-46.90	-88.30	-0.14	2.264	102.56	0.033	SPLSR<0.04, Not required
5 GHz WLAN		1.112	54.00	-70.00	-1.72				



LTE FDD Band 12 + 5 GHz WLAN

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN	SAR Sum	SPLSR
11	LTE Band 12	Back side	0	1.318	1.112	**2.430**	Analyzed as below
		Top side	0	0.281	0.187	0.468	ΣSAR<1.6, Not required
		Right side	0	0.400	0.353	0.753	ΣSAR<1.6, Not required
		Left side	0	0.101	0.400	0.501	ΣSAR<1.6, Not required

SPLSR analysis

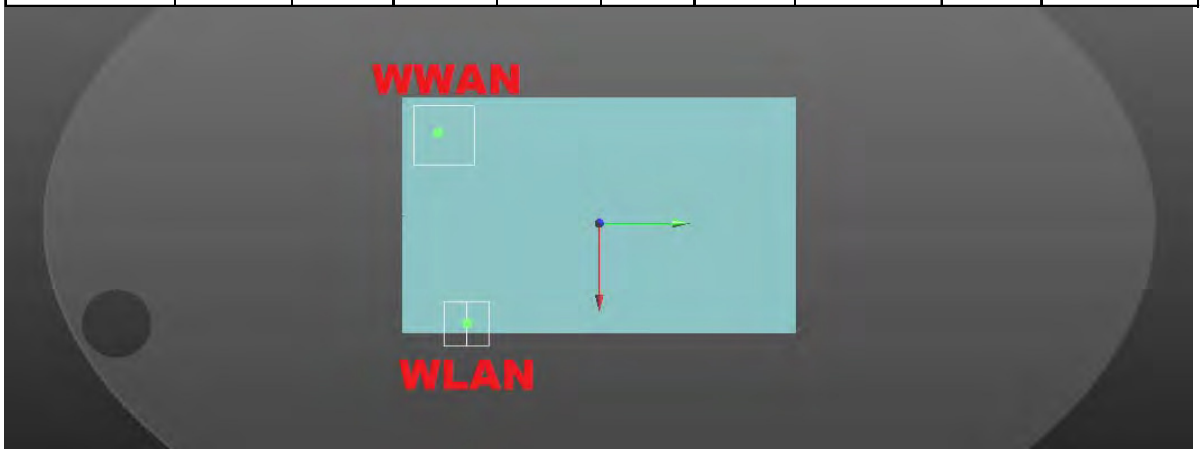
Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE Band 12	Back side	1.318	-45.40	-89.90	-0.14	2.43	101.38	0.037	SPLSR<0.04, Not required
5 GHz WLAN		1.112	54.00	-70.00	-1.72				

LTE FDD Band 25 + 5 GHz WLAN

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN	SAR Sum	SPLSR
12	LTE Band 25	Back side	0	1.192	1.112	**2.304**	Analyzed as below
		Top side	0	0.444	0.187	0.631	ΣSAR<1.6, Not required
		Right side	0	0.400	0.353	0.753	ΣSAR<1.6, Not required
		Left side	0	0.386	0.400	0.786	ΣSAR<1.6, Not required

SPLSR analysis

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE Band 25	Back side	1.192	-48.60	-85.20	-1.18	2.304	103.72	0.034	SPLSR<0.04, Not required
5 GHz WLAN		1.112	54.00	-70.00	-1.72				

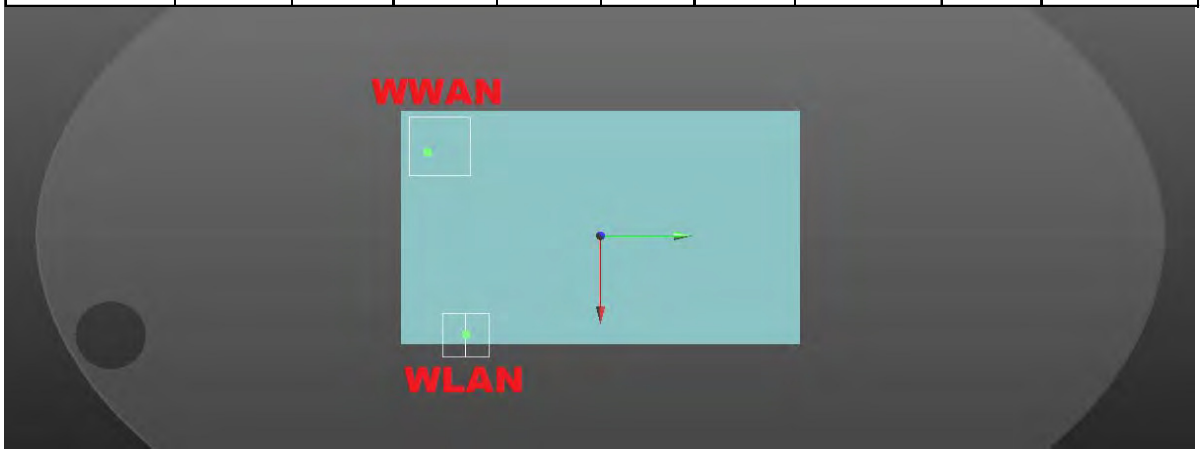


LTE FDD Band 26 + 5 GHz WLAN

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN	SAR Sum	SPLSR
13	LTE Band 26	Back side	0	1.164	1.112	**2.276**	Analyzed as below
		Top side	0	0.466	0.187	0.653	ΣSAR<1.6, Not required
		Right side	0	0.400	0.353	0.753	ΣSAR<1.6, Not required
		Left side	0	0.180	0.400	0.580	ΣSAR<1.6, Not required

SPLSR analysis

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE Band 26	Back side	1.164	-45.30	-89.90	-0.81	2.276	101.28	0.034	SPLSR<0.04, Not required
5 GHz WLAN		1.112	54.00	-70.00	-1.72				

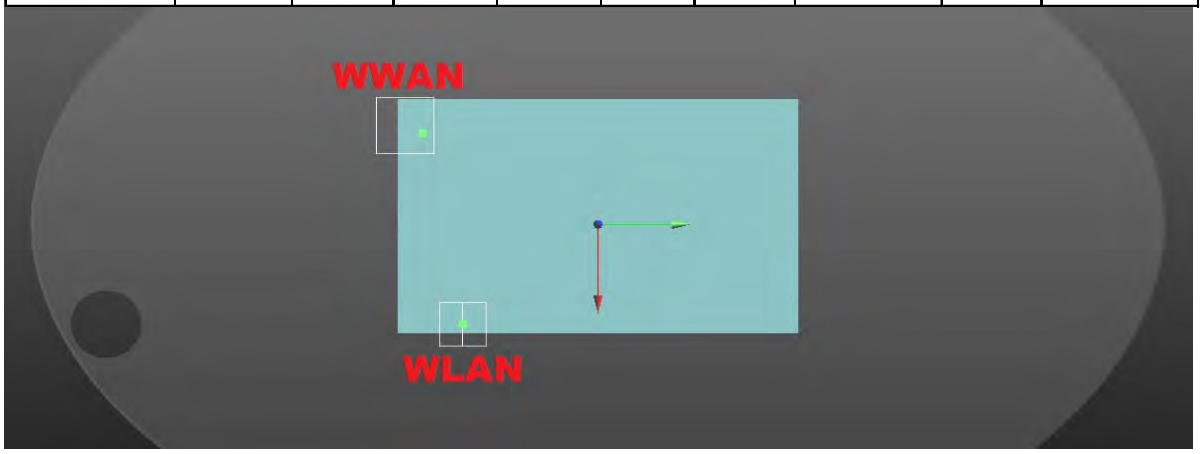


LTE TDD Band 41 + 5 GHz WLAN

No.	Conditions	Position	Distance (mm)	Max. WWAN	Max. WLAN	SAR Sum	SPLSR
14	LTE Band 41	Back side	0	1.254	1.112	**2.366**	Analyzed as below
		Top side	0	0.504	0.187	0.691	ΣSAR<1.6, Not required
		Right side	0	0.400	0.353	0.753	ΣSAR<1.6, Not required
		Left side	0	0.234	0.400	0.634	ΣSAR<1.6, Not required

SPLSR analysis

Conditions	Position	SAR Value (W/kg)	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
LTE Band 41	Back side	1.254	-49.40	-91.00	-0.85	2.366	105.51	0.034	SPLSR<0.04, Not required
5 GHz WLAN		1.112	54.00	-70.00	-1.72				



LTE FDD Band 2 + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	BT	SAR Sum	SPLSR
15	LTE Band 2	Back side	0	1.377	0.105	1.482	ΣSAR<1.6, Not required
		Top side	0	0.459	0.064	0.523	ΣSAR<1.6, Not required
		Right side	0	0.400	0.105	0.505	ΣSAR<1.6, Not required
		Left side	0	0.403	0.400	0.803	ΣSAR<1.6, Not required

LTE FDD Band 4 + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	BT	SAR Sum	SPLSR
16	LTE Band 4	Back side	0	1.321	0.105	1.426	ΣSAR<1.6, Not required
		Top side	0	0.717	0.064	0.781	ΣSAR<1.6, Not required
		Right side	0	0.400	0.105	0.505	ΣSAR<1.6, Not required
		Left side	0	0.461	0.400	0.861	ΣSAR<1.6, Not required

LTE FDD Band 5 + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	BT	SAR Sum	SPLSR
17	LTE Band 5	Back side	0	1.152	0.105	1.257	ΣSAR<1.6, Not required
		Top side	0	0.438	0.064	0.502	ΣSAR<1.6, Not required
		Right side	0	0.400	0.105	0.505	ΣSAR<1.6, Not required
		Left side	0	0.161	0.400	0.561	ΣSAR<1.6, Not required

LTE FDD Band 12 + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	BT	SAR Sum	SPLSR
18	LTE Band 12	Back side	0	1.318	0.105	1.423	ΣSAR<1.6, Not required
		Top side	0	0.281	0.064	0.345	ΣSAR<1.6, Not required
		Right side	0	0.400	0.105	0.505	ΣSAR<1.6, Not required
		Left side	0	0.101	0.400	0.501	ΣSAR<1.6, Not required

LTE FDD Band 25 + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	BT	SAR Sum	SPLSR
19	LTE Band 25	Back side	0	1.192	0.105	1.297	ΣSAR<1.6, Not required
		Top side	0	0.444	0.064	0.508	ΣSAR<1.6, Not required
		Right side	0	0.400	0.105	0.505	ΣSAR<1.6, Not required
		Left side	0	0.386	0.400	0.786	ΣSAR<1.6, Not required

LTE FDD Band 26 + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	BT	SAR Sum	SPLSR
20	LTE Band 26	Back side	0	1.164	0.105	1.269	ΣSAR<1.6, Not required
		Top side	0	0.466	0.064	0.530	ΣSAR<1.6, Not required
		Right side	0	0.400	0.105	0.505	ΣSAR<1.6, Not required
		Left side	0	0.180	0.400	0.580	ΣSAR<1.6, Not required

LTE TDD Band 41 + BT

No.	Conditions	Position	Distance (mm)	Max. WWAN	BT	SAR Sum	SPLSR
21	LTE Band 41	Back side	0	1.254	0.105	1.359	ΣSAR<1.6, Not required
		Top side	0	0.504	0.064	0.568	ΣSAR<1.6, Not required
		Right side	0	0.400	0.105	0.505	ΣSAR<1.6, Not required
		Left side	0	0.234	0.400	0.634	ΣSAR<1.6, Not required

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	3938	Nov.25,2016	Nov.24,2017
Schmid & Partner Engineering AG	System Validation Dipole	D750V2	1015	Aug.30,2016	Aug.29,2017
		D835V2	4d063	Aug.25,2016	Aug.24,2017
		D1750V2	1008	Aug.31,2016	Aug.30,2017
		D1900V2	5d027	Apr.25,2016	Apr.24,2017
		D2450V2	727	Apr.19,2016	Apr.18,2017
		D2600V2	1005	Jan.25,2017	Jan.24,2018
		D5GHzV2	1023	Jan.20,2017	Jan.19,2018
Schmid & Partner Engineering AG	Data acquisition Electronics	DAE4	1336	Nov.22,2016	Nov.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
Schmid & Partner Engineering AG	Vector Network Analyzer and Vector Reflect meter	DAKS VNA R140	0040513	Jan.24,2016	Jan.23,2018
Schmid & Partner Engineering AG	Dielectric Probe Kit	DAKS-3.5	1053	Jan.24,2017	Jan.23,2018
Agilent	Dielectric Probe Kit	85070E	MY44300677	Calibration not required	Calibration not required
Agilent	Dual-directional coupler	772D	MY46151242	Jul.11,2016	Jul.10,2017
		778D	MY48220468	Jul.06,2016	Jul.05,2017

Manufacturer	Device	Type	Serial number	Date of last calibration	Date of next calibration
Agilent	RF Signal Generator	N5181A	MY50144143	Mar.01,2017	Feb.28,2018
Agilent	Power Meter	E4417A	MY52240003	Oct.17,2016	Oct.16,2017
Agilent	Power Sensor	E9301H	MY52200003	Oct.17,2016	Oct.16,2017
			MY52200004	Oct.17,2016	Oct.16,2017
TECPEL	Digital thermometer	DTM-303A	TP130078	May.30,2016	May.29,2017
Anritsu	Radio Communication Test	MT8820C	6201061049	Apr.08,2016	Apr.07,2017

5. Measurements

Date: 2017/3/21

LTE Band 2 (20MHz)_Body_Back side_CH 18900_QPSK_1-50_0mm

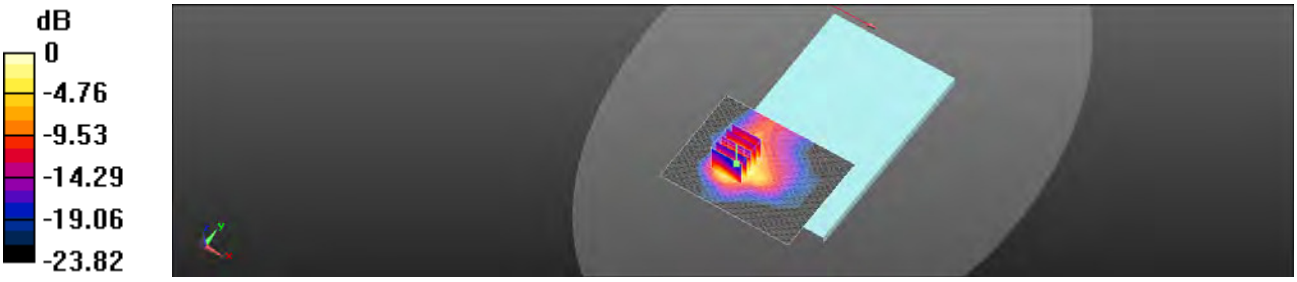
Communication System: LTE; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.499 S/m; ε_r = 52.011; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.9° C ; Liquid temperature: 22.6° C

DASY5 Configuration:

- Probe: EX3DV4 - SN3938; ConvF(7.77, 7.77, 7.77); Calibrated: 2016/11/25;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1336; Calibrated: 2016/11/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (91x71x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 2.12 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.435 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 2.81 W/kg
SAR(1 g) = 1.33 W/kg; SAR(10 g) = 0.624 W/kg
Maximum value of SAR (measured) = 1.98 W/kg



0 dB = 1.98 W/kg = 2.96 dBW/kg

Date: 2017/3/23

LTE Band 4 (20MHz)_Body_Back side_CH 20300_QPSK_1-0_0mm

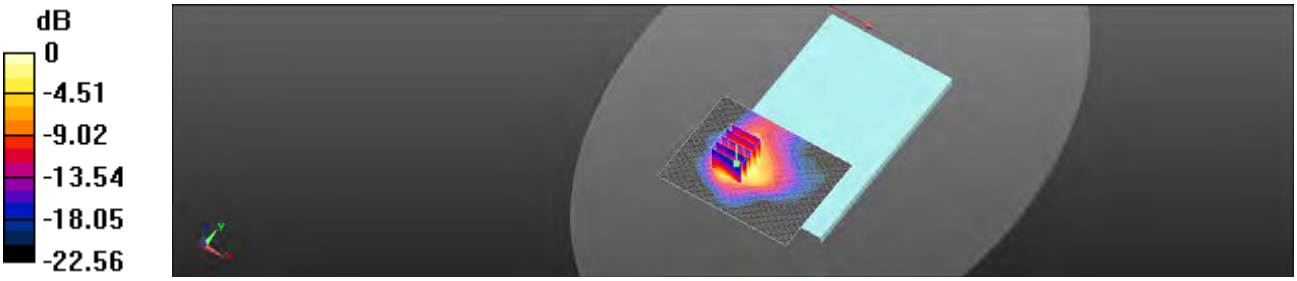
Communication System: LTE; Frequency: 1745 MHz; Duty Cycle: 1:1
Medium parameters used: f = 1745 MHz; σ = 1.536 S/m; ε_r = 51.542; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 23.1° C ; Liquid temperature: 22.3° C

DASY5 Configuration:

- Probe: EX3DV4 - SN3938; ConvF(7.98, 7.98, 7.98); Calibrated: 2016/11/25;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1336; Calibrated: 2016/11/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (91x71x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 1.94 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.995 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 2.40 W/kg
SAR(1 g) = 1.24 W/kg; SAR(10 g) = 0.598 W/kg
Maximum value of SAR (measured) = 1.78 W/kg



0 dB = 1.78 W/kg = 2.50 dBW/kg

Date: 2017/3/28

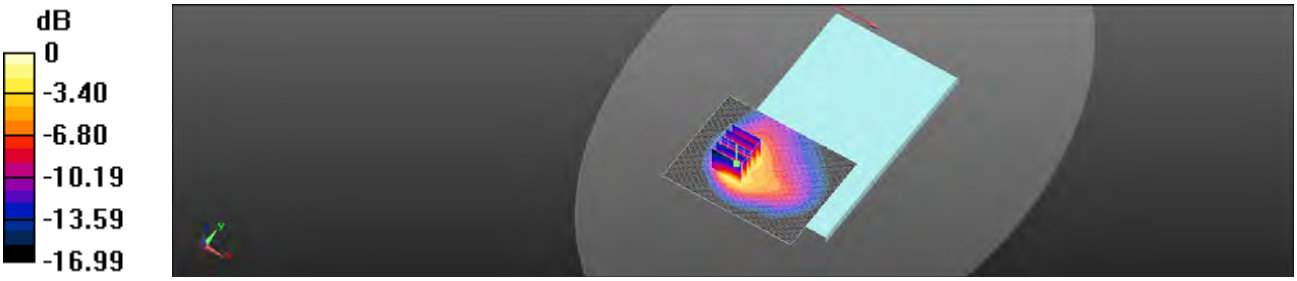
LTE Band 5 (10MHz)_Body_Back side_CH 20525_QPSK_1-25_0mm
Communication System: LTE; Frequency: 836.5 MHz; Duty Cycle: 1:1
Medium parameters used: f = 836.5 MHz; σ = 1.009 S/m; ε_r = 53.297; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 23.5° C ; Liquid temperature: 22.4° C

DASY5 Configuration:

- Probe: EX3DV4 - SN3938; ConvF(9.33, 9.33, 9.33); Calibrated: 2016/11/25;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1336; Calibrated: 2016/11/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (91x71x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 1.53 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.509 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 2.27 W/kg
SAR(1 g) = 1.07 W/kg; SAR(10 g) = 0.563 W/kg
Maximum value of SAR (measured) = 1.53 W/kg



0 dB = 1.53 W/kg = 1.85 dBW/kg

Date: 2017/3/30

LTE Band 12 (10MHz)_Body_Back side_CH 23095_QPSK_1-25_0mm

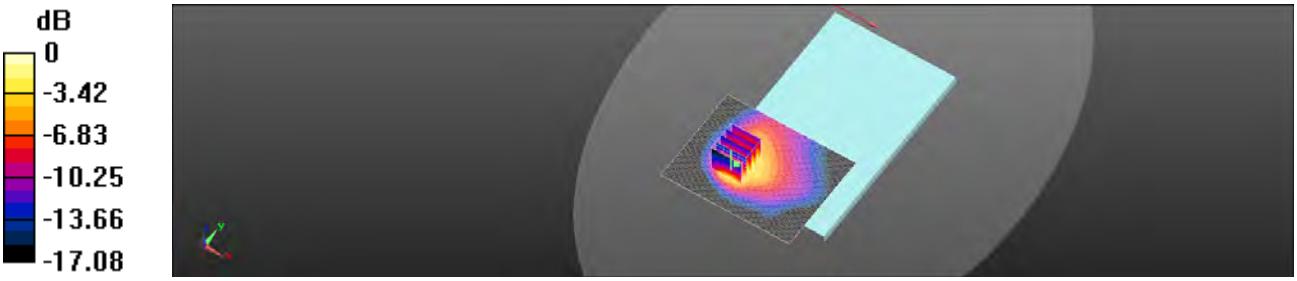
Communication System: LTE; Frequency: 707.5 MHz; Duty Cycle: 1:1
Medium parameters used: f = 707.5 MHz; σ = 0.937 S/m; ε_r = 54.727; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 23.8° C ; Liquid temperature: 22.1° C

DASY5 Configuration:

- Probe: EX3DV4 - SN3938; ConvF(9.51, 9.51, 9.51); Calibrated: 2016/11/25;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1336; Calibrated: 2016/11/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (91x71x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 1.87 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.447 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 2.83 W/kg
SAR(1 g) = 1.29 W/kg; SAR(10 g) = 0.698 W/kg
Maximum value of SAR (measured) = 1.87 W/kg



0 dB = 1.87 W/kg = 2.72 dBW/kg

Date: 2017/3/21

LTE Band 25 (20MHz)_Body_Back side_CH 26365_QPSK_1-0_0mm

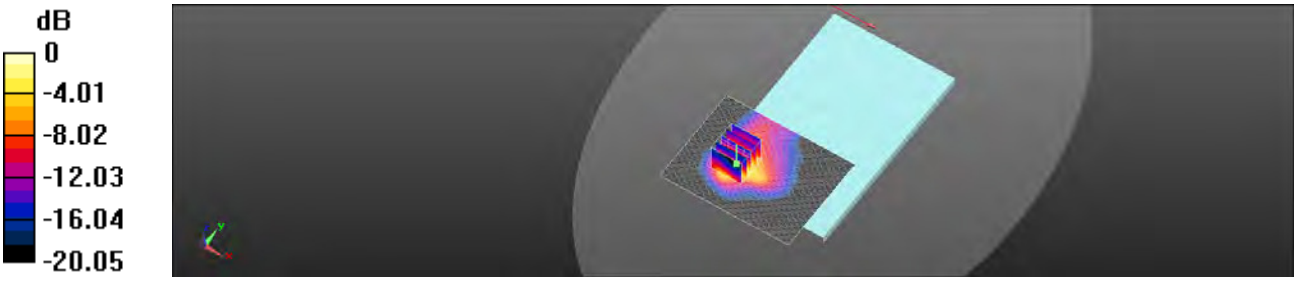
Communication System: LTE; Frequency: 1882.5 MHz; Duty Cycle: 1:1
Medium parameters used: f = 1882.5 MHz; σ = 1.5 S/m; ε_r = 51.995; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.9° C ; Liquid temperature: 22.6° C

DASY5 Configuration:

- Probe: EX3DV4 - SN3938; ConvF(7.77, 7.77, 7.77); Calibrated: 2016/11/25;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1336; Calibrated: 2016/11/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (91x71x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 1.77 W/kg

Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.678 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 2.31 W/kg
SAR(1 g) = 1.1 W/kg; SAR(10 g) = 0.516 W/kg
Maximum value of SAR (measured) = 1.63 W/kg



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

Date: 2017/3/28

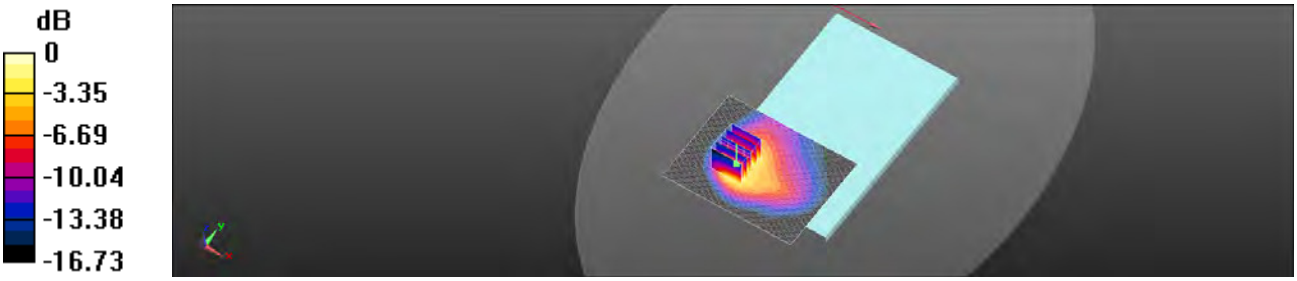
LTE Band 26 (15MHz)_Body_Back side_CH 26865_QPSK_1-0_0mm
Communication System: LTE; Frequency: 831.5 MHz; Duty Cycle: 1:1
Medium parameters used: f = 831.5 MHz; σ = 1.005 S/m; ε_r = 53.402; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 23.5° C ; Liquid temperature: 22.4° C

DASY5 Configuration:

- Probe: EX3DV4 - SN3938; ConvF(9.33, 9.33, 9.33); Calibrated: 2016/11/25;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1336; Calibrated: 2016/11/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (91x71x1): 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 = 4.419 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 2.21 W/kg
SAR(1 g) = 1.05 W/kg; SAR(10 g) = 0.550 W/kg
Maximum value of SAR (measured) = 1.45 W/kg



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

Date: 2017/3/17

LTE Band 41 (20MHz)_Body_Back side_CH 41490_QPSK_1-0_0mm

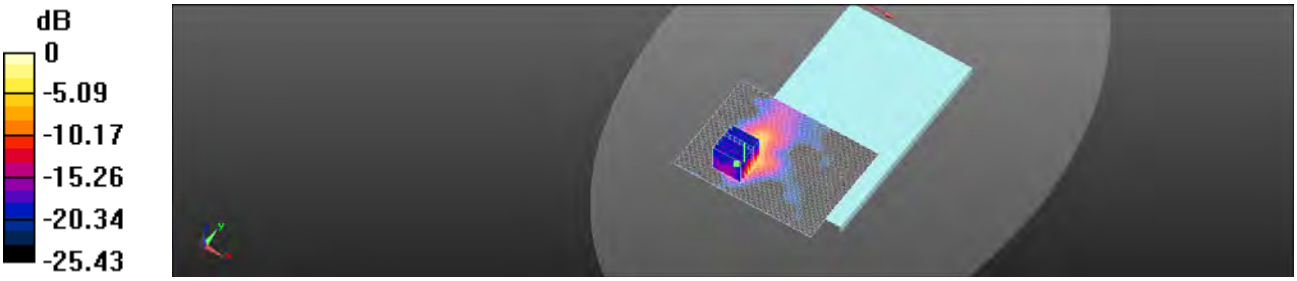
Communication System: LTE; Frequency: 2680 MHz; Duty Cycle: 1:1
Medium parameters used: f = 2680 MHz; σ = 2.287 S/m; ε_r = 50.777; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.7° C ; Liquid temperature: 22.2° C

DASY5 Configuration:

- Probe: EX3DV4 - SN3938; ConvF(7.14, 7.14, 7.14); Calibrated: 2016/11/25;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1336; Calibrated: 2016/11/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (121x91x1): 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 = 1.842 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 4.30 W/kg
SAR(1 g) = 1.2 W/kg; SAR(10 g) = 0.475 W/kg
Maximum value of SAR (measured) = 2.37 W/kg



0 dB = 2.37 W/kg = 3.75 dBW/kg

Date: 2017/3/20

WLAN 802.11b_Body_Back side_CH 6_0mm

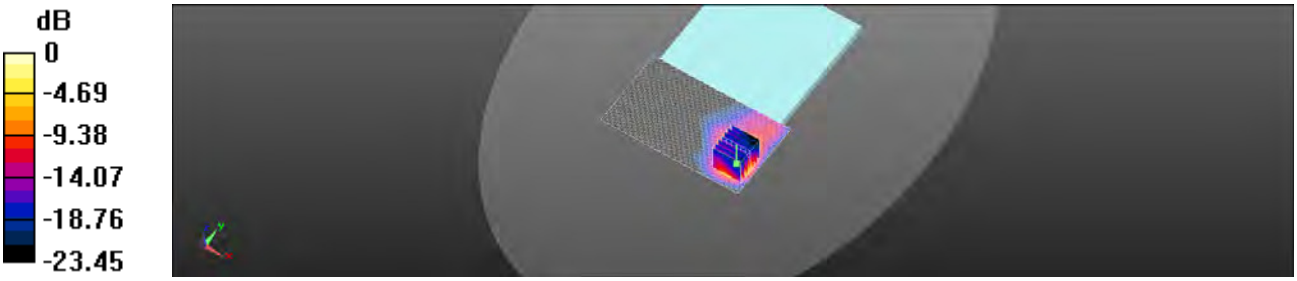
Communication System: WLAN(2.4G); Frequency: 2437 MHz; Duty Cycle: 1:1
Medium parameters used: f = 2437 MHz; σ = 1.995 S/m; ε_r = 52.585; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.5° C ; Liquid temperature: 22.5° C

DASY5 Configuration:

- Probe: EX3DV4 - SN3938; ConvF(7.4, 7.4, 7.4); Calibrated: 2016/11/25;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1336; Calibrated: 2016/11/22
- 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) = 2.08 W/kg

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.890 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 2.92 W/kg
SAR(1 g) = 1.08 W/kg; SAR(10 g) = 0.433 W/kg
Maximum value of SAR (measured) = 1.83 W/kg



0 dB = 1.83 W/kg = 2.61 dBW/kg

Date: 2017/3/15

WLAN 802.11n(40M) 5.2G_Body_Back side_CH 38_0mm

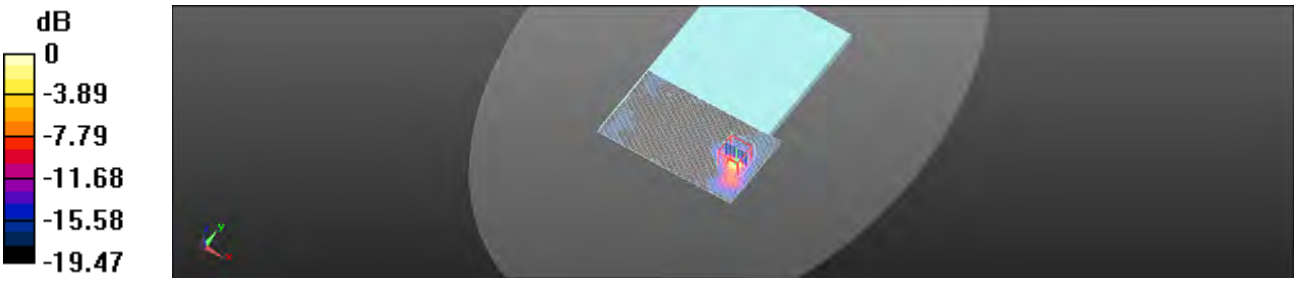
Communication System: WLAN(5G); Frequency: 5190 MHz; Duty Cycle: 1:1
Medium parameters used: f = 5190 MHz; σ = 5.41 S/m; ε_r = 48.327; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.8° C ; Liquid temperature: 22.0° C

DASY5 Configuration:

- Probe: EX3DV4 - SN3938; ConvF(4.41, 4.41, 4.41); Calibrated: 2016/11/25;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1336; Calibrated: 2016/11/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (141x81x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 2.55 W/kg

Configuration/Body/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 2.561 V/m; Power Drift = -0.15 dB
Peak SAR (extrapolated) = 8.32 W/kg
SAR(1 g) = 1.04 W/kg; SAR(10 g) = 0.228 W/kg
Maximum value of SAR (measured) = 2.65 W/kg



0 dB = 2.65 W/kg = 4.22 dBW/kg

Date: 2017/3/13

WLAN 802.11n(40M) 5.3G_Body_Back side_CH 62_0mm

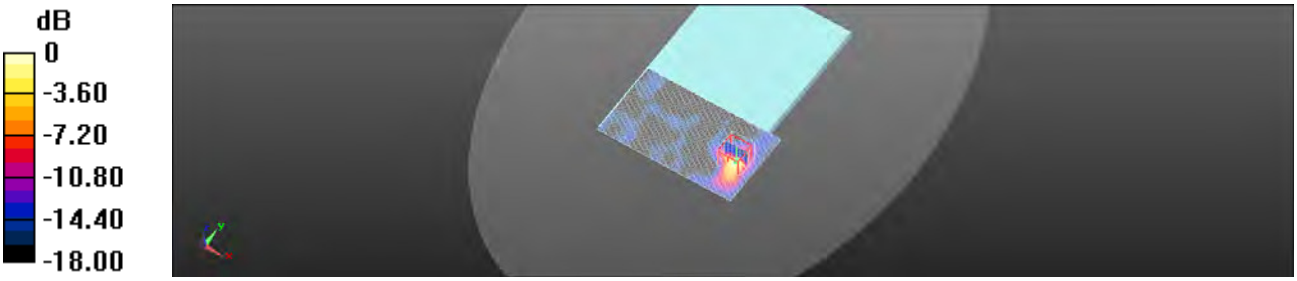
Communication System: WLAN(5G); Frequency: 5310 MHz; Duty Cycle: 1:1
Medium parameters used: f = 5310 MHz; σ = 5.544 S/m; ε_r = 48.287; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.6° C ; Liquid temperature: 21.9° C

DASY5 Configuration:

- Probe: EX3DV4 - SN3938; ConvF(4.41, 4.41, 4.41); Calibrated: 2016/11/25;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1336; Calibrated: 2016/11/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (141x81x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.79 W/kg

Configuration/Body/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 3.258 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 5.85 W/kg
SAR(1 g) = 0.843 W/kg; SAR(10 g) = 0.223 W/kg
Maximum value of SAR (measured) = 1.71 W/kg



0 dB = 1.71 W/kg = 2.33 dBW/kg

Date: 2017/3/10

WLAN 802.11n(40M) 5.6G_Body_Top side_CH 134_5mm

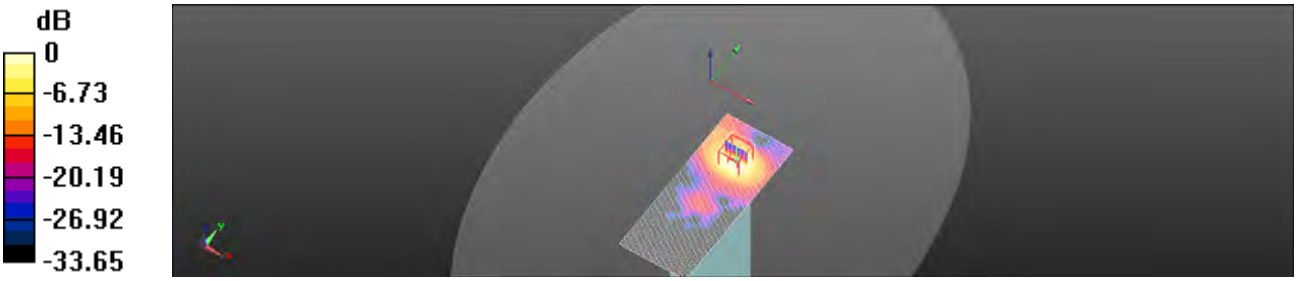
Communication System: WLAN(5G); Frequency: 5670 MHz; Duty Cycle: 1:1
Medium parameters used: f = 5670 MHz; σ = 5.954 S/m; ε_r = 48.676; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 23.1° C ; Liquid temperature: 22.8° C

DASY5 Configuration:

- Probe: EX3DV4 - SN3938; ConvF(3.83, 3.83, 3.83); Calibrated: 2016/11/25;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1336; Calibrated: 2016/11/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (71x171x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 2.39 W/kg

Configuration/Body/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 2.819 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 4.95 W/kg
SAR(1 g) = 1.15 W/kg; SAR(10 g) = 0.394 W/kg
Maximum value of SAR (measured) = 2.27 W/kg



0 dB = 2.27 W/kg = 3.56 dBW/kg

Date: 2017/3/8

WLAN 802.11n(40M) 5.8G_Body_Back side_CH 151_0mm

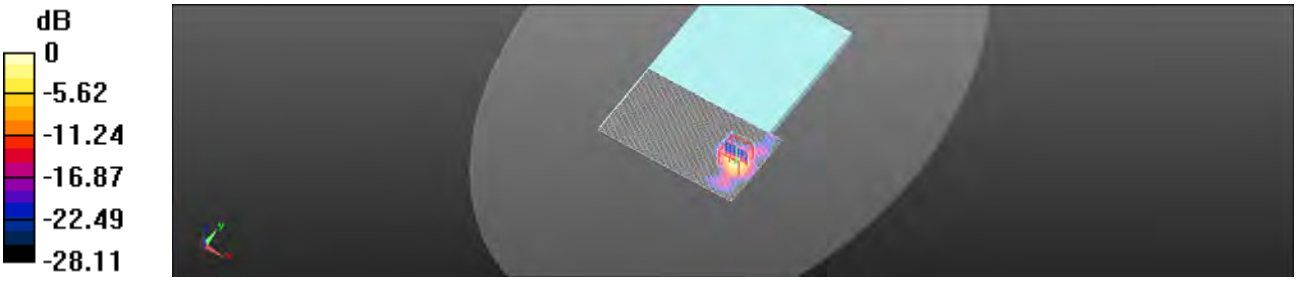
Communication System: WLAN(5G); Frequency: 5755 MHz; Duty Cycle: 1:1
Medium parameters used: f = 5755 MHz; σ = 6.141 S/m; ε_r = 48.095; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 23.0° C ; Liquid temperature: 22.7° C

DASY5 Configuration:

- Probe: EX3DV4 - SN3938; ConvF(4.02, 4.02, 4.02); Calibrated: 2016/11/25;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1336; Calibrated: 2016/11/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (141x81x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 2.48 W/kg

Configuration/Body/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 0.8830 V/m; Power Drift = -0.17 dB
Peak SAR (extrapolated) = 7.51 W/kg
SAR(1 g) = 0.924 W/kg; SAR(10 g) = 0.198 W/kg
Maximum value of SAR (measured) = 2.48 W/kg



0 dB = 2.48 W/kg = 3.94 dBW/kg

6. SAR System Performance Verification

Date: 2017/3/30

Dipole 750 MHz_SN:1015

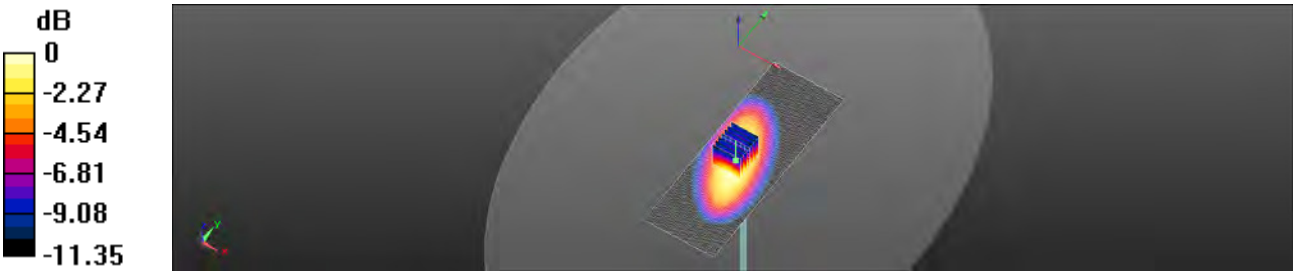
Communication System: CW; Frequency: 750 MHz; Duty Cycle:1:1
Medium parameters used: f = 750 MHz; σ = 0.982 S/m; ε_r = 54.338; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 23.8° C ; Liquid temperature: 22.1° C

DASY5 Configuration:

- Probe: EX3DV4 - SN3938; ConvF(9.51, 9.51, 9.51); Calibrated: 2016/11/25;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1336; Calibrated: 2016/11/22
- 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) = 2.58 W/kg

Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 55.43 V/m; Power Drift = -0.17 dB
Peak SAR (extrapolated) = 3.27 W/kg
SAR(1 g) = 2.24 W/kg; SAR(10 g) = 1.48 W/kg
Maximum value of SAR (measured) = 2.75 W/kg



0 dB = 2.75 W/kg = 4.40 dBW/kg

Date: 2017/3/28

Dipole 835 MHz_SN:4d063

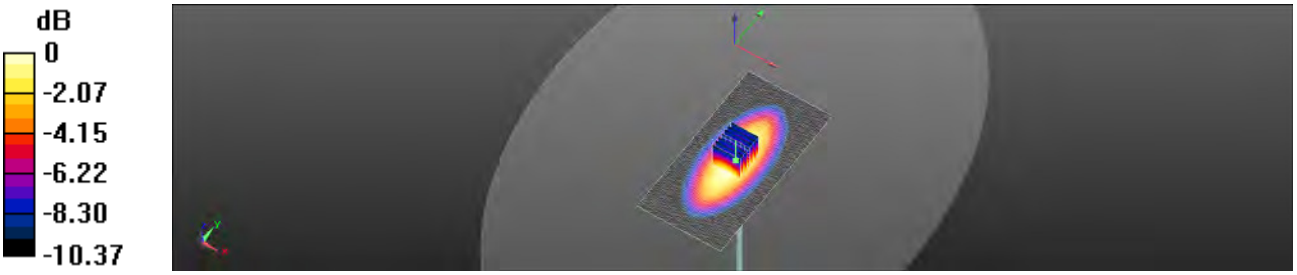
Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium parameters used: f = 835 MHz; σ = 1.007 S/m; ε_r = 53.344; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 23.5° C ; Liquid temperature: 22.4° C

DASY5 Configuration:

- Probe: EX3DV4 - SN3938; ConvF(9.33, 9.33, 9.33); Calibrated: 2016/11/25;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1336; Calibrated: 2016/11/22
- 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) = 2.93 W/kg

Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 56.11 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 3.45 W/kg
SAR(1 g) = 2.41 W/kg; SAR(10 g) = 1.62 W/kg
Maximum value of SAR (measured) = 2.93 W/kg



0 dB = 2.93 W/kg = 4.67 dBW/kg

Date: 2017/3/23

Dipole 1750 MHz_SN:1008

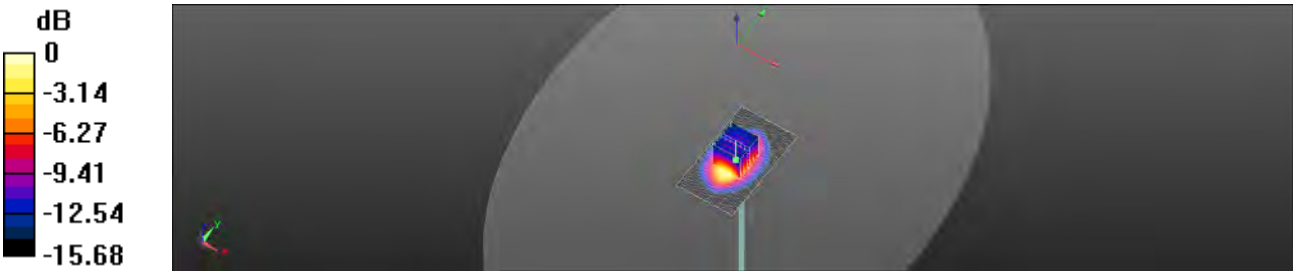
Communication System: CW; Frequency: 1750 MHz; Duty Cycle: 1:1
Medium parameters used: f = 1750 MHz; σ = 1.537 S/m; ε_r = 51.536; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 23.1° C ; Liquid temperature: 22.3° C

DASY5 Configuration:

- Probe: EX3DV4 - SN3938; ConvF(7.98, 7.98, 7.98); Calibrated: 2016/11/25;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1336; Calibrated: 2016/11/22
- 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) = 13.7 W/kg

Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 92.57 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 16.1 W/kg
SAR(1 g) = 9.27 W/kg; SAR(10 g) = 5.02 W/kg
Maximum value of SAR (measured) = 13.0 W/kg



0 dB = 13.0 W/kg = 11.14 dBW/kg

Date: 2017/3/21

Dipole 1900 MHz_SN:5d027

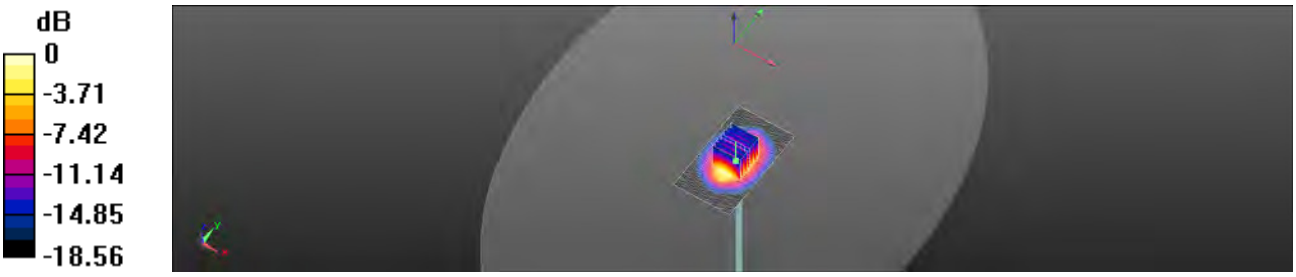
Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.52 S/m; ε_r = 51.985; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.9° C ; Liquid temperature: 22.6° C

DASY5 Configuration:

- Probe: EX3DV4 - SN3938; ConvF(7.77, 7.77, 7.77); Calibrated: 2016/11/25;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1336; Calibrated: 2016/11/22
- 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) = 14.8 W/kg

Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 95.13 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 18.2 W/kg
SAR(1 g) = 9.73 W/kg; SAR(10 g) = 5.02 W/kg
Maximum value of SAR (measured) = 14.1 W/kg



0 dB = 14.1 W/kg = 11.48 dBW/kg

Date: 2017/3/20

Dipole 2450 MHz_SN:727

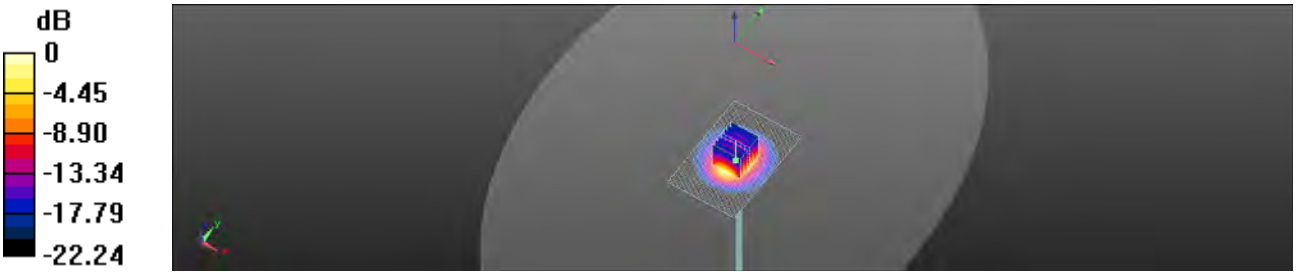
Communication System: CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; σ = 2.018 S/m; ε_r = 52.528; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.5° C ; Liquid temperature: 22.5° C

DASY5 Configuration:

- Probe: EX3DV4 - SN3938; ConvF(7.4, 7.4, 7.4); Calibrated: 2016/11/25;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1336; Calibrated: 2016/11/22
- 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) = 20.6 W/kg

Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 100.8 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 26.5 W/kg
SAR(1 g) = 12.8 W/kg; SAR(10 g) = 5.88 W/kg
Maximum value of SAR (measured) = 19.6 W/kg



0 dB = 19.6 W/kg = 12.92 dBW/kg

Date: 2017/3/17

Dipole 2600 MHz_SN:1005

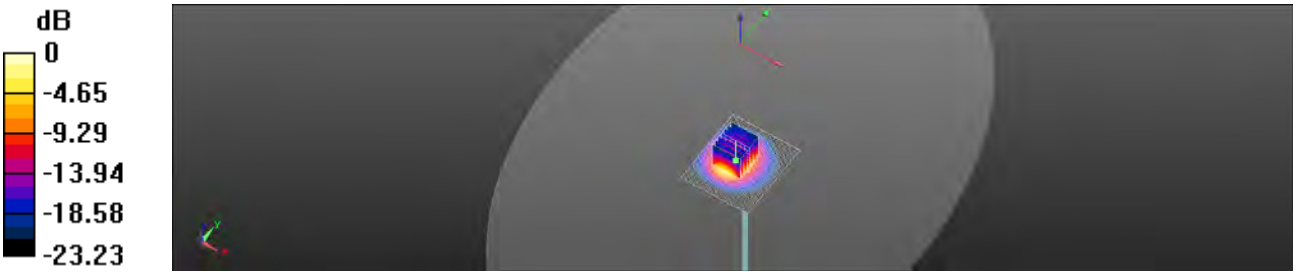
Communication System: CW; Frequency: 2600 MHz; Duty Cycle: 1:1
Medium parameters used: f = 2600 MHz; σ = 2.216 S/m; ε_r = 51.119; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.7° C ; Liquid temperature: 22.2° C

DASY5 Configuration:

- Probe: EX3DV4 - SN3938; ConvF(7.14, 7.14, 7.14); Calibrated: 2016/11/25;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1336; Calibrated: 2016/11/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Pin=250mW/Area Scan (61x71x1): Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 23.5 W/kg

Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 94.22 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 29.2 W/kg
SAR(1 g) = 14 W/kg; SAR(10 g) = 6.28 W/kg
Maximum value of SAR (measured) = 21.6 W/kg



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

Date: 2017/3/15

Dipole 5200 MHz_SN:1023

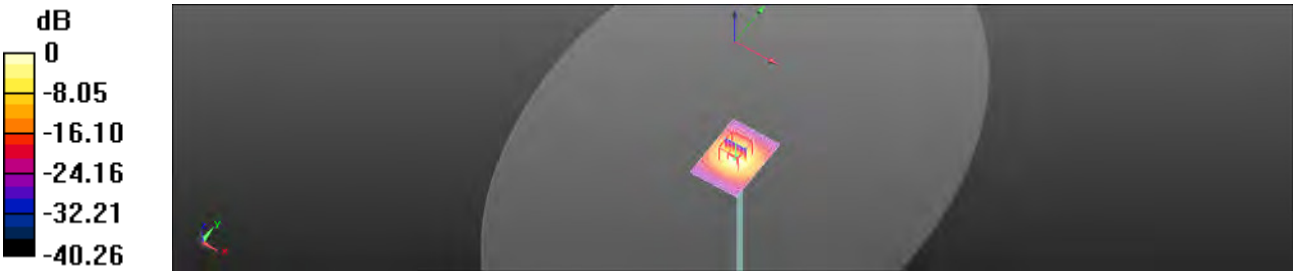
Communication System: CW; Frequency: 5200 MHz; Duty Cycle: 1:1
Medium parameters used: f = 5200 MHz; σ = 5.484 S/m; ε_r = 48.367; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.8° C ; Liquid temperature: 22.0° C

DASY5 Configuration:

- Probe: EX3DV4 - SN3938; ConvF(4.41, 4.41, 4.41); Calibrated: 2016/11/25;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1336; Calibrated: 2016/11/22
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Pin=100mW/Area Scan (51x71x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 16.4 W/kg

Configuration/Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 57.88 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 27.7 W/kg
SAR(1 g) = 7.2 W/kg; SAR(10 g) = 2.06 W/kg
Maximum value of SAR (measured) = 15.0 W/kg



0 dB = 15.0 W/kg = 11.76 dBW/kg

Date: 2017/3/13

Dipole 5300 MHz_SN:1023

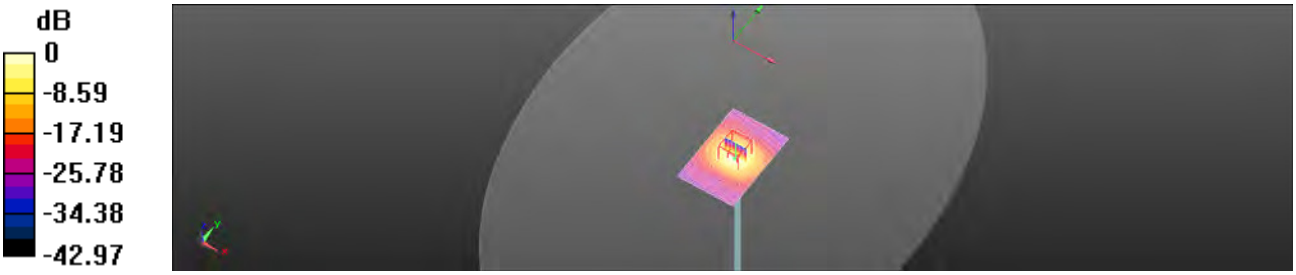
Communication System: CW; Frequency: 5300 MHz; Duty Cycle: 1:1
Medium parameters used: f = 5300 MHz; σ = 5.539 S/m; ε_r = 48.283; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.6° C ; Liquid temperature: 21.9° C

DASY5 Configuration:

- Probe: EX3DV4 - SN3938; ConvF(4.41, 4.41, 4.41); Calibrated: 2016/11/25;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1336; Calibrated: 2016/11/22
- 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) = 16.3 W/kg

Configuration/Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 56.37 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 31.7 W/kg
SAR(1 g) = 7.36 W/kg; SAR(10 g) = 2.08 W/kg
Maximum value of SAR (measured) = 15.2 W/kg



0 dB = 15.2 W/kg = 11.82 dBW/kg

Date: 2017/3/10

Dipole 5600 MHz_SN:1023

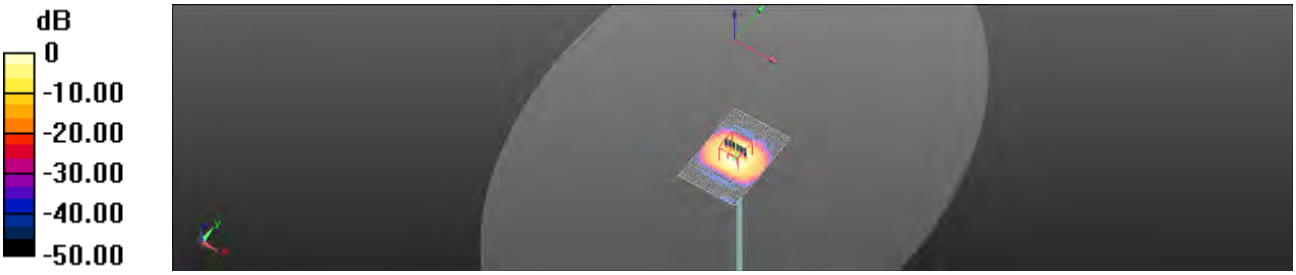
Communication System: CW; Frequency: 5600 MHz; Duty Cycle: 1:1
Medium parameters used: f = 5600 MHz; σ = 5.855 S/m; ε_r = 48.838; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 23.1° C ; Liquid temperature: 22.8° C

DASY5 Configuration:

- Probe: EX3DV4 - SN3938; ConvF(3.83, 3.83, 3.83); Calibrated: 2016/11/25;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1336; Calibrated: 2016/11/22
- 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) = 18.4 W/kg

Configuration/Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 60.31 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 36.5 W/kg
SAR(1 g) = 8.11 W/kg; SAR(10 g) = 2.21 W/kg
Maximum value of SAR (measured) = 17.6 W/kg



0 dB = 17.6 W/kg = 12.46 dBW/kg

Date: 2017/3/8

Dipole 5800 MHz_SN:1023

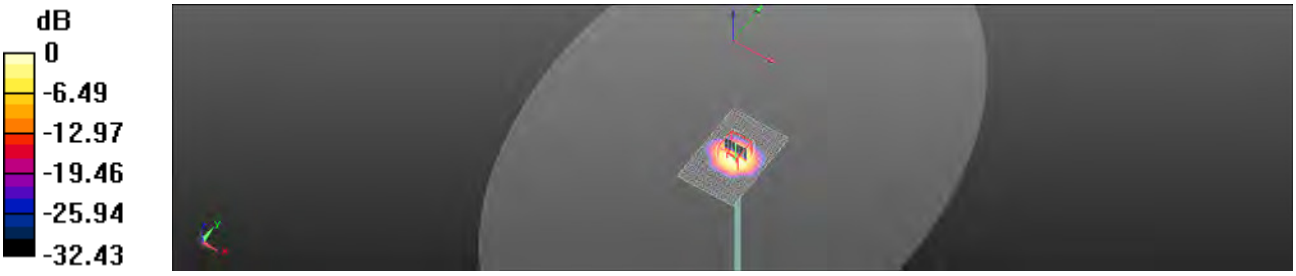
Communication System: CW; Frequency: 5800 MHz; Duty Cycle: 1:1
Medium parameters used: f = 5800 MHz; σ = 6.197 S/m; ε_r = 48.048; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 23.0° C ; Liquid temperature: 22.7° C

DASY5 Configuration:

- Probe: EX3DV4 - SN3938; ConvF(4.02, 4.02, 4.02); Calibrated: 2016/11/25;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1336; Calibrated: 2016/11/22
- 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) = 19.2 W/kg

Configuration/Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 58.91 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 37.3 W/kg
SAR(1 g) = 7.87 W/kg; SAR(10 g) = 2.07 W/kg
Maximum value of SAR (measured) = 17.6 W/kg



0 dB = 17.6 W/kg = 12.47 dBW/kg

7. DAE & Probe Calibration Certificate

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Accreditation No.: SCS 0108

Client SGS - TW (Auden)

Certificate No: DAE4-1336_Nov16

CALIBRATION CERTIFICATE

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

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

Calibration date: November 22, 2016

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Keithley Multimeter Type 2001	SN: 0810278	09-Sep-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-16 (in house check)	In house check: Jan-17
Calibrator Box V2.1	SE UMS 006 AA 1002	05-Jan-16 (in house check)	In house check: Jan-17

	Name	Function	Signature
Calibrated by:	Adrian Gehring	Technician	
Approved by:	Fin Bomholt	Deputy Technical Manager	

Issued: November 22, 2016

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Certificate No: DAE4-1336_Nov16 Page 1 of 5

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Accreditation No.: SCS 0108

Glossary

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

Methods Applied and Interpretation of Parameters

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

DC Voltage Measurement

A/D - Converter Resolution nominal

High Range:	1LSB =	6.1μV,	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	403.332 ± 0.02% (k=2)	403.635 ± 0.02% (k=2)	403.121 ± 0.02% (k=2)
Low Range	3.95216 ± 1.50% (k=2)	3.98718 ± 1.50% (k=2)	3.99680 ± 1.50% (k=2)

Connector Angle

Connector Angle to be used in DASY system	122.0 ° ± 1 °

Appendix (Additional assessments outside the scope of SCS0108)

1. DC Voltage Linearity

High Range		Reading (μV)	Difference (μV)	Error (%)
Channel X	+ Input	199996.24	0.16	0.00
Channel X	+ Input	20001.25	-0.04	-0.00
Channel X	- Input	-19999.81	1.36	-0.01
Channel Y	+ Input	199994.04	-1.88	-0.00
Channel Y	+ Input	20000.89	-0.82	-0.00
Channel Y	- Input	-20002.64	-1.77	0.01
Channel Z	+ Input	199997.44	1.49	0.00
Channel Z	+ Input	19999.78	-1.82	-0.01
Channel Z	- Input	-20003.24	-2.19	0.01

Low Range		Reading (μV)	Difference (μV)	Error (%)
Channel X	+ Input	2001.87	0.66	0.03
Channel X	+ Input	201.39	-0.11	-0.06
Channel X	- Input	-198.27	0.04	-0.02
Channel Y	+ Input	2001.34	-0.04	-0.00
Channel Y	+ Input	201.35	-0.36	-0.18
Channel Y	- Input	-198.77	-0.62	0.31
Channel Z	+ Input	2001.30	0.10	0.01
Channel Z	+ Input	200.72	-0.71	-0.35
Channel Z	- Input	-199.12	-0.78	0.39

2. Common mode sensitivity

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

	Common mode Input Voltage (mV)	High Range Average Reading (μV)	Low Range Average Reading (μV)
Channel X	200	5.23	3.90
	- 200	-3.72	-5.31
Channel Y	200	-4.23	-3.73
	- 200	2.71	2.31
Channel Z	200	20.93	21.36
	- 200	-23.91	-24.44

3. Channel separation

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

	Input Voltage (mV)	Channel X (μV)	Channel Y (μV)	Channel Z (μV)
Channel X	200	-	6.47	-1.27
Channel Y	200	7.97	-	6.72
Channel Z	200	7.84	6.96	-

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	15660	15881
Channel Y	15908	15597
Channel Z	15853	15173

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	-0.26	-1.07	0.37	0.33
Channel Y	-0.22	-0.92	0.62	0.34
Channel Z	-0.97	-1.73	0.29	0.36

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	-6	-9

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Accreditation No.: SCS 0108

Client SGS-TW (Auden) Certificate No: EX3-3938_Nov16

CALIBRATION CERTIFICATE

Object EX3DV4 - SN:3938

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: November 25, 2016

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	06-Apr-16 (No. 217-02288/02289)	Apr-17
Power sensor NRP-Z91	SN: 103244	06-Apr-16 (No. 217-02287)	Apr-17
Power sensor NRP-Z91	SN: 103245	06-Apr-16 (No. 217-02289)	Apr-17
Reference 20 dB Attenuator	SN: 55277 (20x)	05-Apr-16 (No. 217-02290)	Apr-17
Reference Probe ES3DV2	SN: 3013	31-Dec-15 (No. ES3-3013_Dec15)	Dec-16
DAE4	SN: 660	23-Dec-15 (No. DAE4-660_Dec15)	Dec-16
Secondary Standards	ID	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB41293874	06-Apr-16 (in house check Jun-16)	In house check: Jun-18
Power sensor E4412A	SN: MY41498087	06-Apr-16 (in house check Jun-16)	In house check: Jun-18
Power sensor E4412A	SN: 000110210	06-Apr-16 (in house check Jun-16)	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-16)	In house check: Oct-17

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

Issued: November 28, 2016

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Accreditation No.: SCS 0108

Glossary:

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

Calibration is Performed According to the Following Standards:

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

Methods Applied and Interpretation of Parameters:

- *NORMx,y,z*: Assessed for E-field polarization ϑ = 0 (f ≤ 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not affect the E^2-field uncertainty inside TSL (see below *ConvF*).
- *NORM(f)x,y,z = NORMx,y,z * frequency_response* (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of *ConvF*.
- *DCPx,y,z*: DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- *PAR*: PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- *Ax,y,z; Bx,y,z; Cx,y,z; Dx,y,z; VRx,y,z*: A, B, C, D are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. *VR* is the maximum calibration range expressed in RMS voltage across the diode.
- *ConvF and Boundary Effect Parameters*: Assessed in flat phantom using E-field (or Temperature Transfer Standard for f ≤ 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).

Probe EX3DV4

SN:3938

Manufactured: May 2, 2013
Calibrated: November 25, 2016

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

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3938

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)[A]	0.51	0.57	0.33	± 10.1 %
DCP (mV)[B]	100.5	101.3	104.0	

Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB√μV	C	D dB	VR mV	Unc[E] (k=2)
0	CW	X	0.0	0.0	1.0	0.00	140.2	±2.2 %
		Y	0.0	0.0	1.0		129.7	
		Z	0.0	0.0	1.0		146.0	

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

[A] The uncertainties of Norm X,Y,Z do not affect the E^2-field uncertainty inside TSL (see Pages 5 and 8).
[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.

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3938

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	10.14	10.14	10.14	0.61	0.80	± 12.0 %
835	41.5	0.90	9.74	9.74	9.74	0.45	0.91	± 12.0 %
900	41.5	0.97	9.64	9.64	9.64	0.51	0.80	± 12.0 %
1450	40.5	1.20	8.45	8.45	8.45	0.43	0.80	± 12.0 %
1750	40.1	1.37	8.20	8.20	8.20	0.31	0.80	± 12.0 %
1900	40.0	1.40	8.15	8.15	8.15	0.38	0.80	± 12.0 %
2000	40.0	1.40	8.06	8.06	8.06	0.35	0.80	± 12.0 %
2300	39.5	1.67	7.74	7.74	7.74	0.35	0.80	± 12.0 %
2450	39.2	1.80	7.36	7.36	7.36	0.33	0.92	± 12.0 %
2600	39.0	1.96	7.09	7.09	7.09	0.44	0.80	± 12.0 %
5250	35.9	4.71	5.21	5.21	5.21	0.30	1.80	± 13.1 %
5600	35.5	5.07	4.53	4.53	4.53	0.40	1.80	± 13.1 %
5750	35.4	5.22	4.79	4.79	4.79	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 restored 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.

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3938

Calibration Parameter Determined in Body Tissue Simulating Media

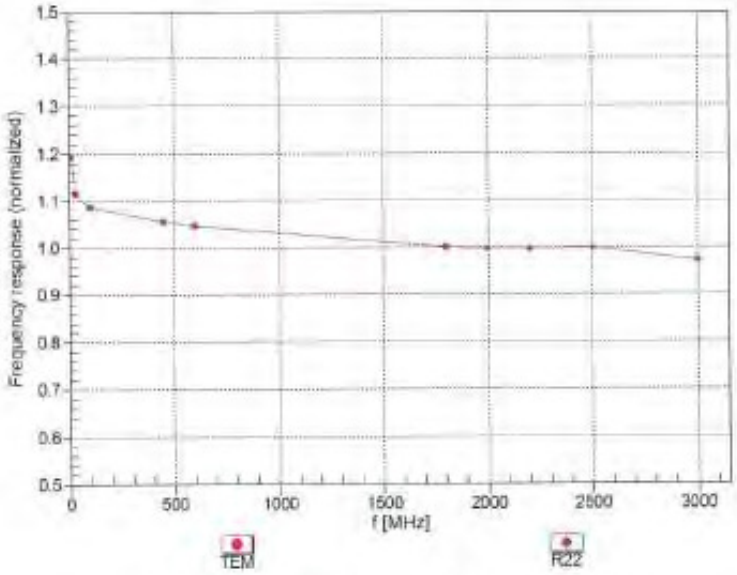
f (MHz)[C]	Relative Permittivity[F]	Conductivity (S/m)[F]	ConvF X	ConvF Y	ConvF Z	Alpha[G]	Depth[G] (mm)	Unc (k=2)
750	55.5	0.96	9.51	9.51	9.51	0.38	0.93	± 12.0 %
835	55.2	0.97	9.33	9.33	9.33	0.47	0.80	± 12.0 %
900	55.0	1.05	9.23	9.23	9.23	0.35	0.98	± 12.0 %
1450	54.0	1.30	8.18	8.18	8.18	0.39	0.80	± 12.0 %
1750	53.4	1.49	7.98	7.98	7.98	0.43	0.81	± 12.0 %
1900	53.3	1.52	7.77	7.77	7.77	0.27	1.06	± 12.0 %
2000	53.3	1.52	7.63	7.63	7.63	0.40	0.80	± 12.0 %
2300	52.9	1.81	7.56	7.56	7.56	0.42	0.80	± 12.0 %
2450	52.7	1.95	7.40	7.40	7.40	0.38	0.80	± 12.0 %
2600	52.5	2.16	7.14	7.14	7.14	0.34	0.80	± 12.0 %
5250	48.9	5.36	4.41	4.41	4.41	0.40	1.90	± 13.1 %
5600	48.5	5.77	3.83	3.83	3.83	0.50	1.90	± 13.1 %
5750	48.3	5.94	4.02	4.02	4.02	0.50	1.90	± 13.1 %

[C] Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 20, 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.

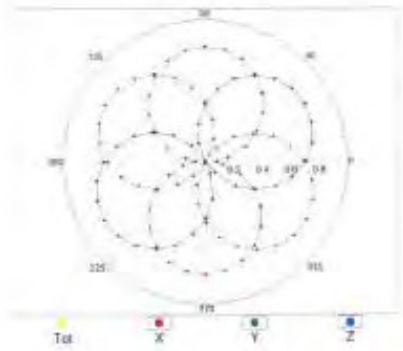
Frequency Response of E-Field
(TEM-Cell:ifi110 EXX, Waveguide: R22)



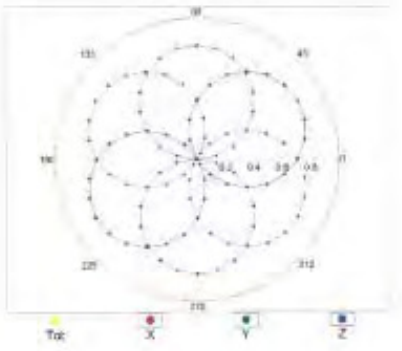
Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

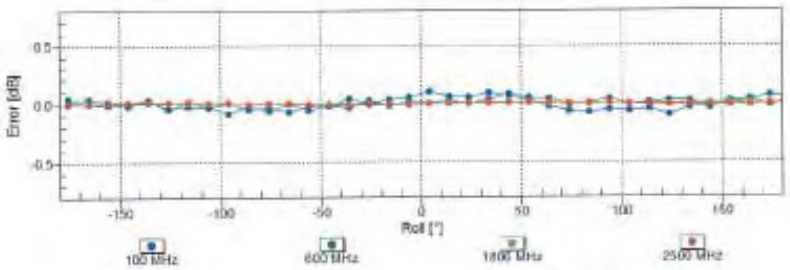
Receiving Pattern (ϕ), ϑ = 0°

f=600 MHz,TEM



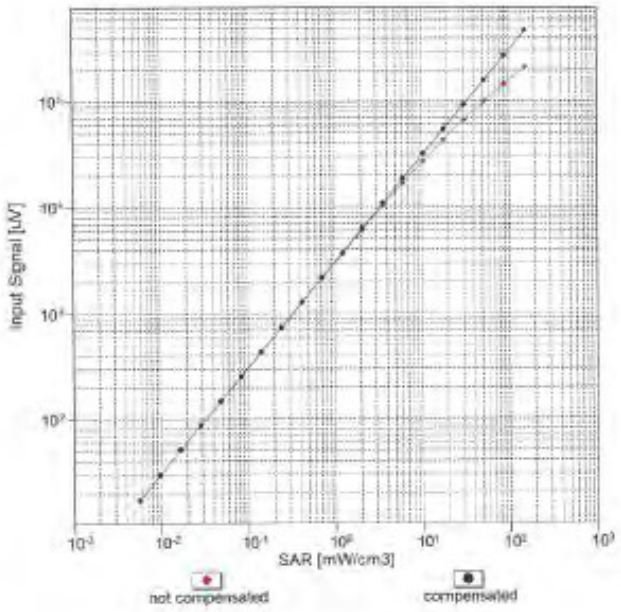
f=1800 MHz,R22

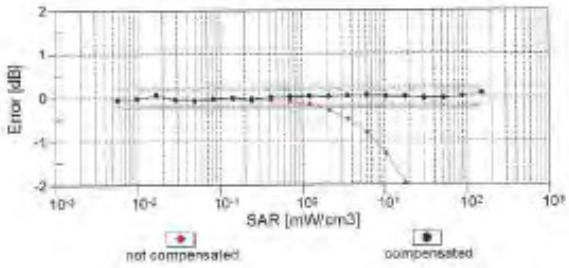




Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

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



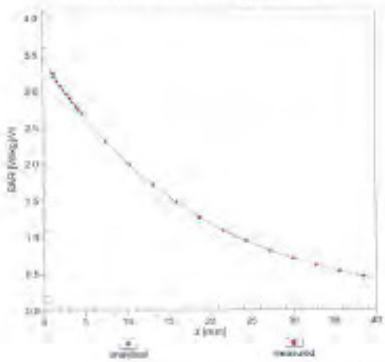


Uncertainty of Linearity Assessment: ± 0.6% (k=2)

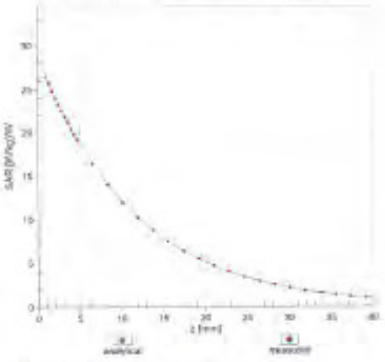
EX3DV4- SN:3938 November 25, 2016

Conversion Factor Assessment

f = 835 MHz,WGLS R9 (H_convF)

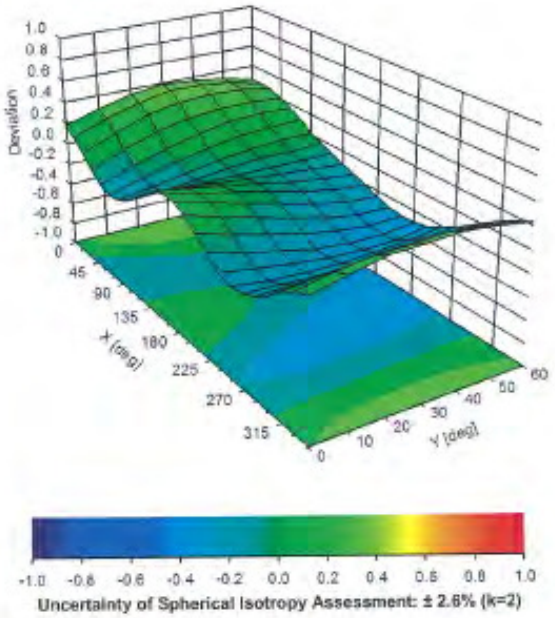


f = 1900 MHz,WGLS R22 (H_convF)



Deviation from Isotropy in Liquid

Error (ϕ, ϑ), f = 900 MHz



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

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3938

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	-25.9
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	9 mm
Tip Diameter	2.5 mm
Probe Tip to Sensor X Calibration Point	1 mm
Probe Tip to Sensor Y Calibration Point	1 mm
Probe Tip to Sensor Z Calibration Point	1 mm
Recommended Measurement Distance from Surface	1.4 mm

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.)	1.75%	N	1	1	0.64	0.43	1.12%	0.75%	M
Liquid Conductivity (mea.)	3.59%	N	1	1	0.6	0.49	2.15%	1.76%	M
Combined standard uncertainty		RSS					11.96%	11.86%	
Expant uncertainty (95% confidence							23.93%	23.72%	

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.)	3.59%	N	1	1	0.64	0.43	2.30%	1.54%	M
Liquid Conductivity (mea.)	3.82%	N	1	1	0.6	0.49	2.29%	1.87%	M
Combined standard uncertainty		RSS					11.87%	11.66%	
Expant uncertainty (95% confidence							23.74%	23.33%	

9. Phantom Description

Schmid & Partner Engineering AG
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Zeughausstrasse 43, 8004 Zurich, Switzerland
Phone +41 44 245 9700, Fax +41 44 245 9779
info@speag.com, http://www.speag.com

Certificate of Conformity / First Article Inspection

Item	Oval Flat Phantom ELI 5.0
Type No	QD OVA 002 A
Series No	1108 and higher
Manufacturer	Untersee Composites Knebelstrasse 8, CH-8268 Mannenbach, Switzerland

Tests
Complete tests were made on the prototype units QD OVA 001 A, pre-series units QD OVA 001 B as well as on some series units QD OVA 001 B. Some tests are made on all series units QD OVA 002 A.

Test	Requirement	Details	Units tested
Shape	Internal dimensions, depth and sagging are compatible with standards	Bottom elliptical 600 x 400 mm, Depth 190 mm, dimension compliant with [1] for f > 375 MHz	Prototypes
Material thickness	Bottom: 2.0mm +/- 0.2mm	dimension compliant with [3] for f > 800 MHz	all
Material parameters	rel. permittivity 2 – 5, loss tangent ≤ 0.05, at f ≤ 6 GHz	rel. permittivity 3.5 +/- 0.5 loss tangent ≤ 0.05	Material samples
Material resistivity	Compatibility with tissue simulating liquids .	Compatible with SPEAG liquids. **	Phantoms, Material sample
Sagging	Sagging of the flat section in tolerance when filled with tissue simulating liquid.	within tolerance for filling height up to 155 mm	Prototypes, samples

** Note: Compatibility restrictions apply certain liquid components mentioned in the standard, containing e.g. DGBE, DGMHE or Triton X-100. Observe technical note on material compatibility.

Standards
[1] OET Bulletin 65, Supplement C, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields", Edition 01-01
[2] IEEE 1528-2003, "Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques, December 2003
[3] IEC 62209–1 ed1.0, "Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices - Human models, instrumentation, and procedures - Part 1: Procedure to determine the specific absorption rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", 2005-02-18
[4] IEC 62209–2 ed1.0, "Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices - Human models, instrumentation, and procedures - Part 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)", 2010-03-30

Conformity
Based on the sample tests above, we certify that this item is in compliance with the uncertainty requirements of **body-worn** SAR measurements and system performance checks as specified in [1 – 4] and further standards.

Date 25.7.2011

Signature / Stamp

s p e a g
Schmid & Partner Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland
Phone +41 44 245 9700, Fax +41 44 245 9779
info@speag.com, http://www.speag.com

10. System Validation from Original Equipment Supplier

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

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

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

Accreditation No.: SCS 0108

Client SGS-TW (Auden)

Certificate No: D750V3-1015_Aug16

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 30, 2016

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	06-Apr-16 (No. 217-02288/02289)	Apr-17
Power sensor NRP-Z91	SN: 103244	06-Apr-16 (No. 217-02288)	Apr-17
Power sensor NRP-Z91	SN: 103245	06-Apr-16 (No. 217-02289)	Apr-17
Reference 20 dB Attenuator	SN: 5058 (20k)	05-Apr-16 (No. 217-02292)	Apr-17
Type-N mismatch combination	SN: 5047.2 / 06327	05-Apr-16 (No. 217-02295)	Apr-17
Reference Probe EX3DV4	SN: 7349	15-Jun-16 (No. EX3-7349_Jun16)	Jun-17
DAE4	SN: 601	30-Dec-15 (No. DAE4-601_Dec15)	Dec-16

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter EPM-442A	SN: GB37480704	07-Oct-15 (No. 217-02222)	In house check: Oct-16
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (No. 217-02222)	In house check: Oct-16
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (No. 217-02223)	In house check: Oct-16
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Jun-15)	In house check: Oct-16
Network Analyzer HP 8753E	SN: US37390585	18-Oct-01 (in house check Oct-15)	In house check: Oct-16

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

Issued: August 30, 2016

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

Certificate No: D750V3-1015_Aug16 Page 1 of 8

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

Glossary:

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

Measurement Conditions

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

DASY Version	DASY5	V52.8.8
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	750 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.9	0.89 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	42.4 ± 6 %	0.91 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	2.11 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**8.32 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.36 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**5.45 W/kg ± 16.5 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	55.5	0.96 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	54.9 ± 6 %	0.99 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	2.25 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**8.77 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.47 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**5.76 W/kg ± 16.5 % (k=2)**

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	53.1 Ω - 0.2 jΩ
Return Loss	-30.5 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	49.0 Ω - 2.8 jΩ
Return Loss	-30.8 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

DASY5 Validation Report for Head TSL

Date: 30.08.2016

Test Laboratory: SPEAG, Zurich, Switzerland

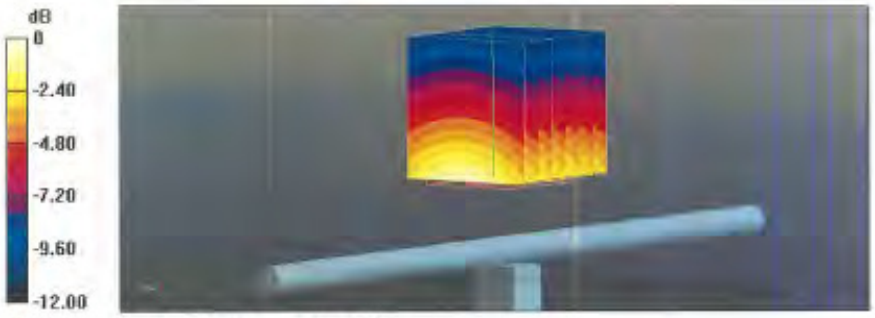
DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3 - SN: 1015

Communication System: UID 0 - CW; Frequency: 750 MHz
Medium parameters used: f = 750 MHz, σ = 0.91 S/m; ε_r = 42.4; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(10.07, 10.07, 10.07); Calibrated: 15.06.2016;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.12.2015
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7372)

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 = 58.26 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 3.16 W/kg
SAR(1 g) = 2.11 W/kg; SAR(10 g) = 1.38 W/kg
Maximum value of SAR (measured) = 2.81 W/kg



0 dB = 2.81 W/kg = 4.49 dBW/kg

DASY5 Validation Report for Body TSL

Date: 30.08.2016

Test Laboratory: SPEAG, Zurich, Switzerland

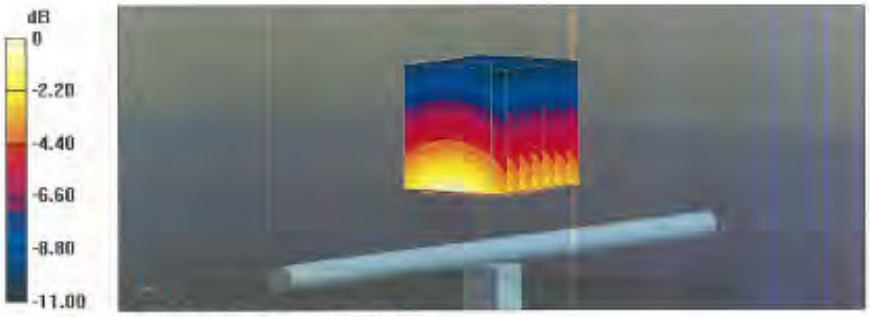
DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3 - SN: 1015

Communication System: UID 0 - CW; Frequency: 750 MHz
Medium parameters used: f = 750 MHz; σ = 0.99 S/m; ε_r = 54.9; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

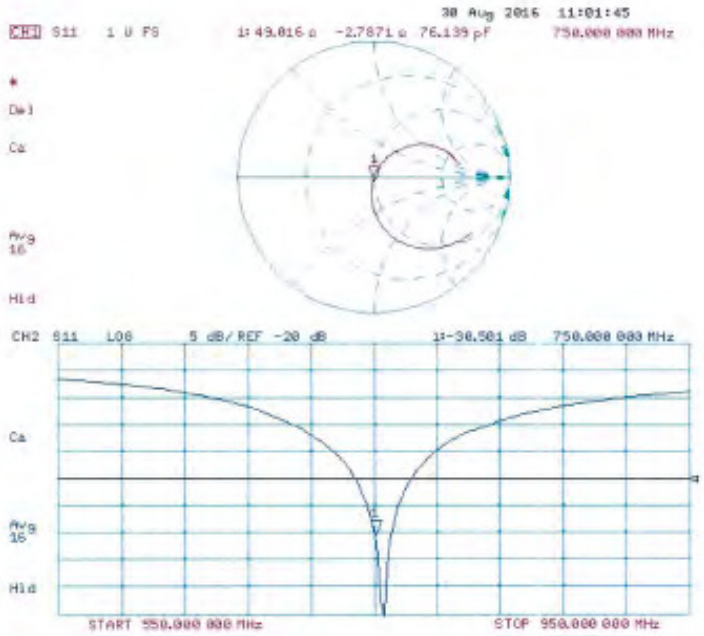
- Probe: EX3DV4 - SN7349; ConvF(9.99, 9.99, 9.99); Calibrated: 15.06.2016;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.12.2015
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7372)

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 = 57.47 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 3.39 W/kg
SAR(1 g) = 2.25 W/kg; SAR(10 g) = 1.47 W/kg
Maximum value of SAR (measured) = 2.97 W/kg



0 dB = 2.97 W/kg = 4.73 dBW/kg

Impedance Measurement Plot for Body TSL



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Accreditation No.: SCS 0108

Client SGS-TW (Auden)

Certificate No: D835V2-4d063_Aug16

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 25, 2016

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	06-Apr-16 (No. 217-02288/02289)	Apr-17
Power sensor NRP-Z91	SN: 103244	06-Apr-16 (No. 217-02288)	Apr-17
Power sensor NRP-Z91	SN: 103245	06-Apr-16 (No. 217-02289)	Apr-17
Reference 20 dB Attenuator	SN: 5058 (20k)	05-Apr-16 (No. 217-02292)	Apr-17
Type-N mismatch combination	SN: 5047.2 / 06327	05-Apr-16 (No. 217-02295)	Apr-17
Reference Probe EX3DV4	SN: 7349	15-Jun-16 (No. EX3-7349_Jun16)	Jun-17
DAE4	SN: 601	30-Dec-15 (No. DAE4-601_Dec15)	Dec-16

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter EPM-442A	SN: GB37480704	07-Oct-15 (No. 217-02222)	In house check: Oct-16
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (No. 217-02222)	In house check: Oct-16
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (No. 217-02223)	In house check: Oct-16
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Jun-15)	In house check: Oct-16
Network Analyzer HP 8753E	SN: US37390585	18-Oct-01 (in house check Oct-15)	In house check: Oct-16

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

Issued: August 29, 2016

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Accreditation No.: SCS 0108

Glossary:

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

Measurement Conditions

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

DASY Version	DASY5	V52.8.8
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	835 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.5	0.90 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	42.1 ± 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	**9.40 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.54 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**6.05 W/kg ± 16.5 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	55.2	0.97 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	54.7 ± 6 %	1.01 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	2.47 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	1.61 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**6.28 W/kg ± 16.5 % (k=2)**

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	51.2 Ω - 2.8 jΩ
Return Loss	- 30.3 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	47.3 Ω - 5.5 jΩ
Return Loss	- 24.0 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.392 ns

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	November 27, 2006

DASY5 Validation Report for Head TSL

Date: 25.08.2016

Test Laboratory: SPEAG, Zurich, Switzerland

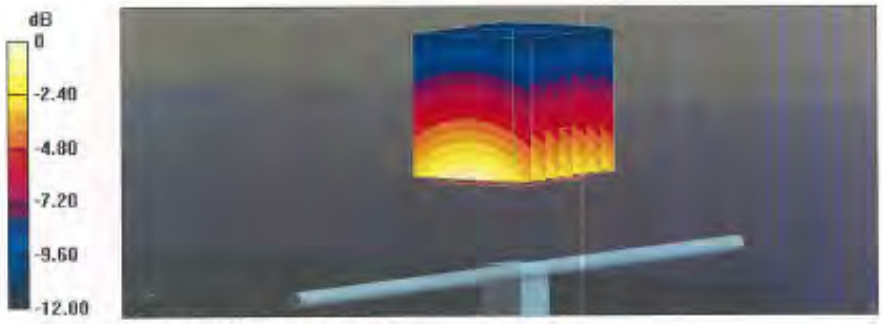
DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d063

Communication System: UID 0 - CW; Frequency: 835 MHz
Medium parameters used: f = 835 MHz; σ = 0.93 S/m; ε_r = 42.1; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

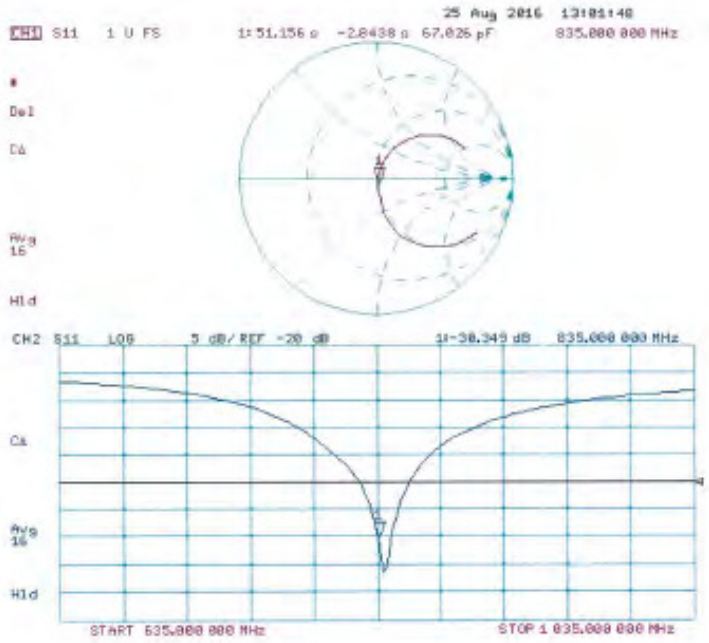
- Probe: EX3DV4 - SN7349; ConvF(9.72, 9.72, 9.72); Calibrated: 15.06.2016;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.12.2015
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7372)

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 = 61.75 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 3.65 W/kg
SAR(1 g) = 2.4 W/kg; SAR(10 g) = 1.54 W/kg
Maximum value of SAR (measured) = 3.24 W/kg



0 dB = 3.24 W/kg = 5.11 dBW/kg

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 25.08.2016

Test Laboratory: SPEAG, Zurich, Switzerland

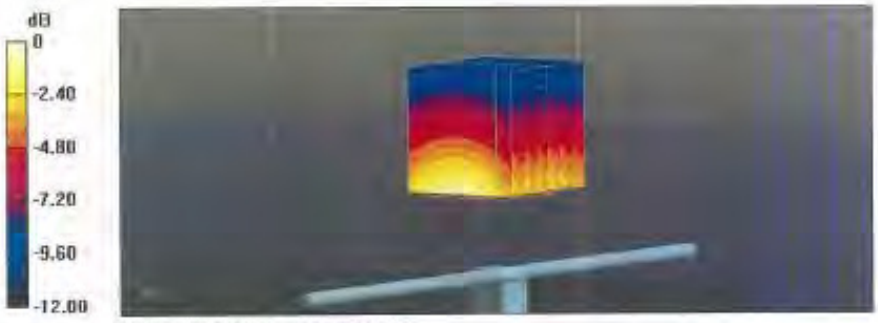
DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d063

Communication System: UID 0 - CW; Frequency: 835 MHz
Medium parameters used: f = 835 MHz; σ = 1.01 S/m; ε_r = 54.7; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

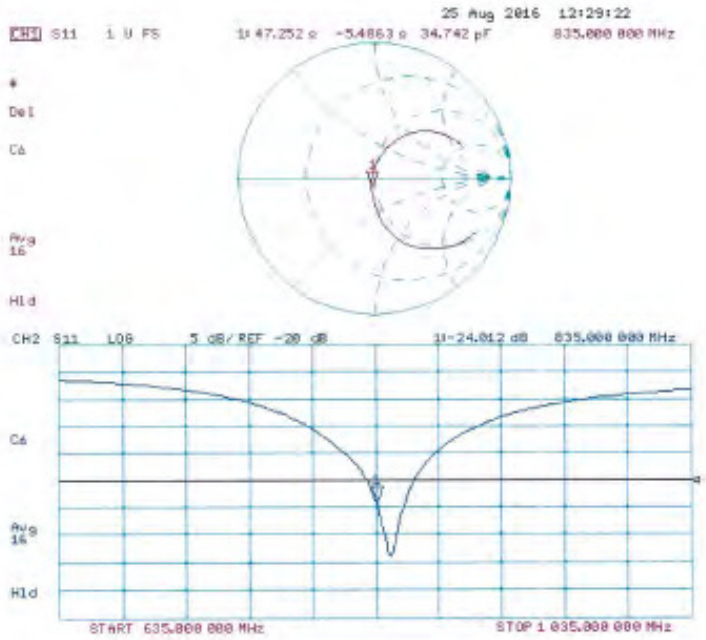
- Probe: EX3DV4 - SN7349; ConvF(9.73, 9.73, 9.73); Calibrated: 15.06.2016;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.12.2015
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7372)

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 = 59.83 V/m; Power Drift = -0.00 dB
Peak SAR (extrapolated) = 3.63 W/kg
SAR(1 g) = 2.47 W/kg; SAR(10 g) = 1.61 W/kg
Maximum value of SAR (measured) = 3.25 W/kg



0 dB = 3.25 W/kg = 5.12 dBW/kg

Impedance Measurement Plot for Body TSL



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Accreditation No.: SCS 0108

Client SGS-TW (Auden)

Certificate No: D1750V2-1008_Aug16

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 31, 2016

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	06-Apr-16 (No. 217-02288/02289)	Apr-17
Power sensor NRP-Z91	SN: 103244	06-Apr-16 (No. 217-02288)	Apr-17
Power sensor NRP-Z91	SN: 103245	06-Apr-16 (No. 217-02289)	Apr-17
Reference 20 dB Attenuator	SN: 5058 (20k)	05-Apr-16 (No. 217-02292)	Apr-17
Type-N mismatch combination	SN: 5047.2 / 06327	05-Apr-16 (No. 217-02295)	Apr-17
Reference Probe EX3DV4	SN: 7349	15-Jun-16 (No. EX3-7349_Jun16)	Jun-17
DAE4	SN: 601	30-Dec-15 (No. DAE4-601_Dec15)	Dec-16

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter EPM-442A	SN: GB37480704	07-Oct-15 (No. 217-02222)	In house check: Oct-16
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (No. 217-02222)	In house check: Oct-16
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (No. 217-02223)	In house check: Oct-16
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Jun-15)	In house check: Oct-16
Network Analyzer HP 8753E	SN: US37390585	18-Oct-01 (in house check Oct-15)	In house check: Oct-16

	Name	Function	Signature
Calibrated by:	Johannes Kumka	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: August 31, 2016

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Accreditation No.: SCS 0108

Glossary:

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

Measurement Conditions

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

DASY Version	DASY5	V52.8.8
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1750 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	40.1	1.37 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	40.3 ± 6 %	1.37 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	9.28 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**37.2 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	4.90 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**19.6 W/kg ± 16.5 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	53.4	1.49 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	53.1 ± 6 %	1.49 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	9.34 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**37.3 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	4.96 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**19.9 W/kg ± 16.5 % (k=2)**

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	51.0 Ω - 0.2 jΩ
Return Loss	- 40.1 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	46.7 Ω - 0.5 jΩ
Return Loss	- 29.3 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	May 27, 2003

DASY5 Validation Report for Head TSL

Date: 24.08.2016

Test Laboratory: SPEAG, Zurich, Switzerland

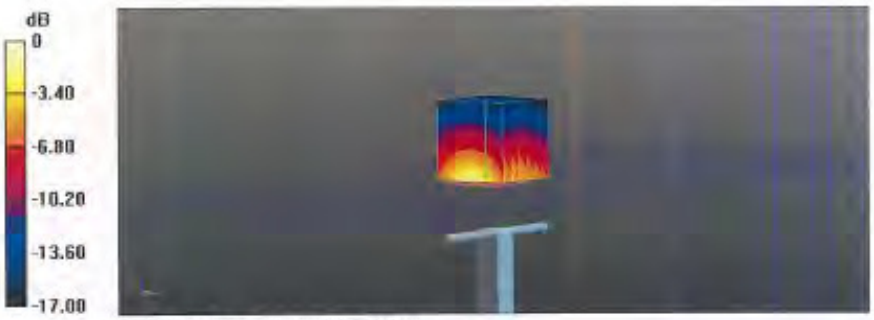
DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN:1008

Communication System: UID 0 - CW; Frequency: 1750 MHz
Medium parameters used: f = 1750 MHz; σ = 1.37 S/m; ε_r = 40.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

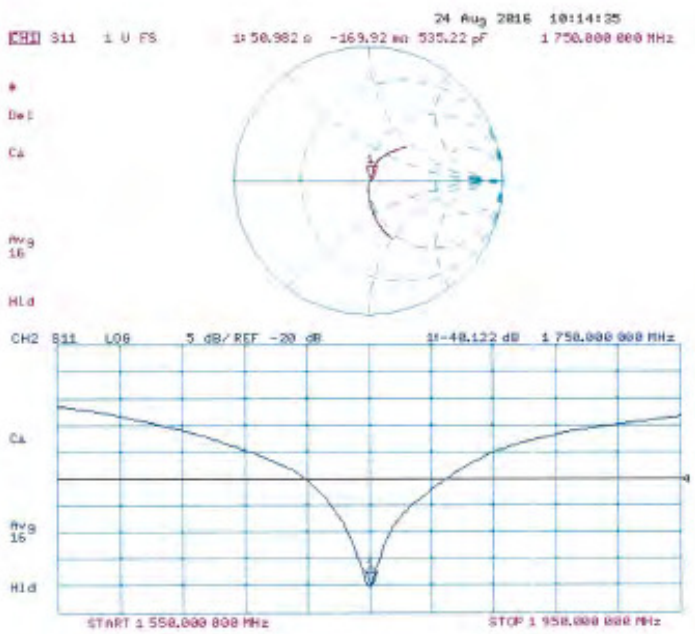
- Probe: EX3DV4 - SN7349; ConvF(8.46, 8.46, 8.46); Calibrated: 15.06.2016;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.12.2015
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7372)

Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 105.8 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 17.2 W/kg
SAR(1 g) = 9.28 W/kg; SAR(10 g) = 4.9 W/kg
Maximum value of SAR (measured) = 14.3 W/kg



0 dB = 14.3 W/kg = 11.55 dBW/kg

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 31.08.2016

Test Laboratory: SPEAG, Zurich, Switzerland

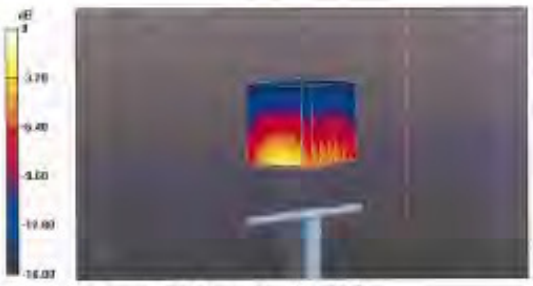
DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN:1008

Communication System: UID 0 - CW; Frequency: 1750 MHz
Medium parameters used: f = 1750 MHz; σ = 1.49 S/m; ε_r = 53.1; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

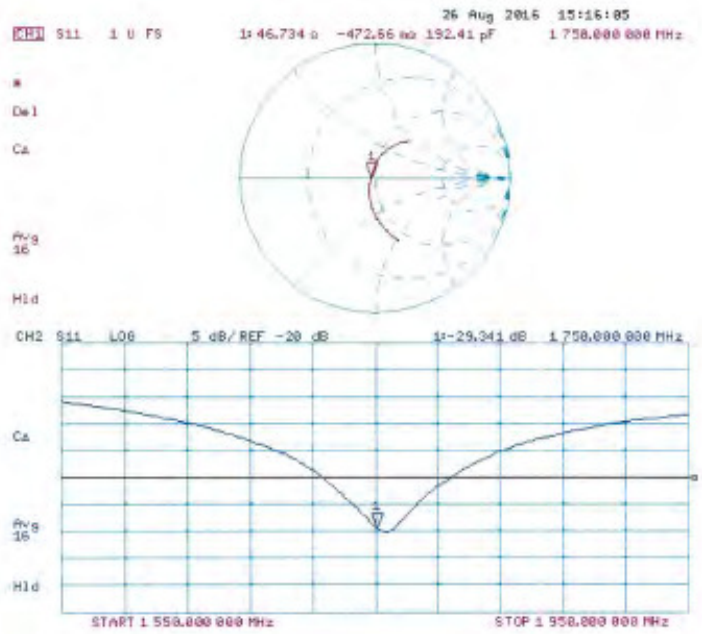
- Probe: EX3DV4 - SN7349; ConvF(8.25, 8.25, 8.25); Calibrated: 15.06.2016;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.12.2015
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7372)

Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 100.8 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 16.4 W/kg
SAR(1 g) = 9.34 W/kg; SAR(10 g) = 4.98 W/kg
Maximum value of SAR (measured) = 13.9 W/kg



0 dB = 13.9 W/kg = 11.43 dBW/kg

Impedance Measurement Plot for Body TSL



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Accreditation No.: SCS 0108

Client SGS-TW (Auden)

Certificate No: D1900V2-5d027_Apr16

CALIBRATION CERTIFICATE

Object D1900V2 - SN: 5d027

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

Calibration date April 25, 2016

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	06-Apr-16 (No. 217-02288/02289)	Apr-17
Power sensor NRP-Z91	SN: 103244	06-Apr-16 (No. 217-02288)	Apr-17
Power sensor NRP-Z91	SN: 103245	06-Apr-16 (No. 217-02289)	Apr-17
Reference 20 dB Attenuator	SN: 5058 (20k)	05-Apr-16 (No. 217-02292)	Apr-17
Type-N mismatch combination	SN: 5047.2 / 06327	05-Apr-16 (No. 217-02295)	Apr-17
Reference Probe EX3DV4	SN: 7349	31-Dec-15 (No. EX3-7349_Dec15)	Dec-16
DAE4	SN: 601	30-Dec-15 (No. DAE4-601_Dec15)	Dec-16

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter EPM-442A	SN: GB37480704	07-Oct-15 (No. 217-02222)	In house check: Oct-16
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (No. 217-02222)	In house check: Oct-16
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (No. 217-02223)	In house check: Oct-16
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Jun-15)	In house check: Oct-16
Network Analyzer HP 8753E	SN: US37390585	18-Oct-01 (in house check Oct-15)	In house check: Oct-16

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

Issued: April 26, 2016

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

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Accreditation No.: SCS 0108

Glossary:

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

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%.

Measurement Conditions

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

DASY Version	DASY5	V52.8.8
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1900 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	40.0	1.40 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	40.0 ± 6 %	1.37 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	---	---

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	9.55 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**38.7 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	5.03 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**20.3 W/kg ± 16.5 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	53.3	1.52 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	52.9 ± 6 %	1.49 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	---	---

SAR result with Body TSL

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	9.83 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**39.7 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	5.21 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**21.0 W/kg ± 16.5 % (k=2)**

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	50.8 Ω + 4.4 jΩ
Return Loss	- 27.0 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	46.5 Ω + 5.6 jΩ
Return Loss	- 23.3 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.196 ns

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	December 17, 2002

DASY5 Validation Report for Head TSL

Date: 25.04.2016

Test Laboratory: SPEAG, Zurich, Switzerland

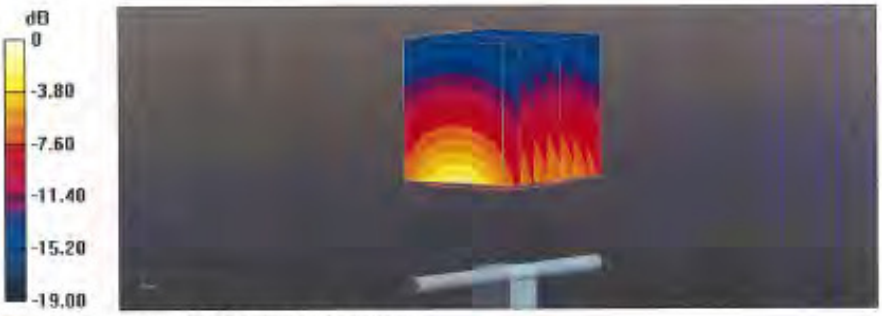
DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 5d027

Communication System: UID 0 - CW; Frequency: 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.37 S/m; ε_r = 40; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

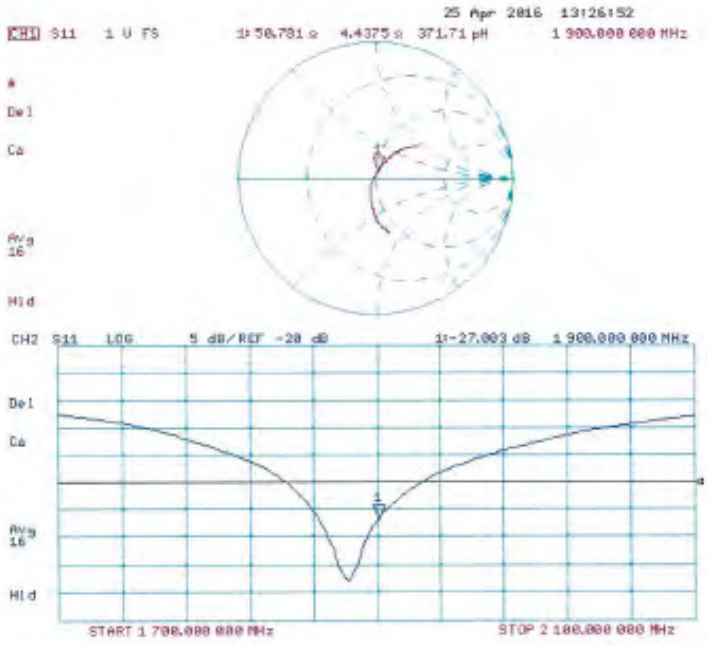
- Probe: EX3DV4 - SN7349; ConvF(8.2, 8.2, 8.2); Calibrated: 31.12.2015;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.12.2015
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7372)

Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 106.9 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 17.2 W/kg
SAR(1 g) = 9.55 W/kg; SAR(10 g) = 5.03 W/kg
Maximum value of SAR (measured) = 14.3 W/kg



0 dB = 14.3 W/kg = 11.55 dBW/kg

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 25.04.2016

Test Laboratory: SPEAG, Zurich, Switzerland

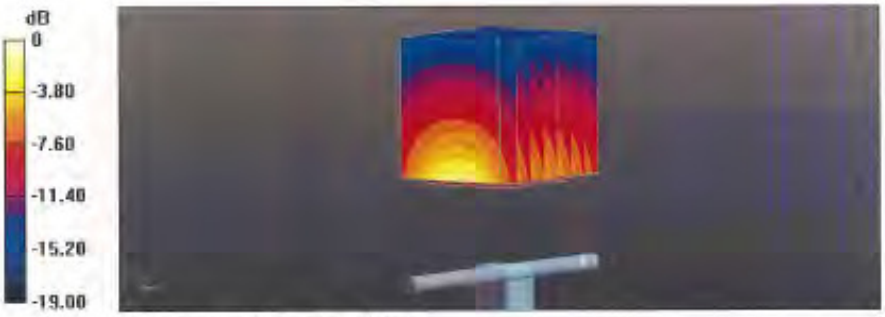
DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 5d027

Communication System: UID 0 - CW; Frequency: 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.49 S/m; ε_r = 52.9; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

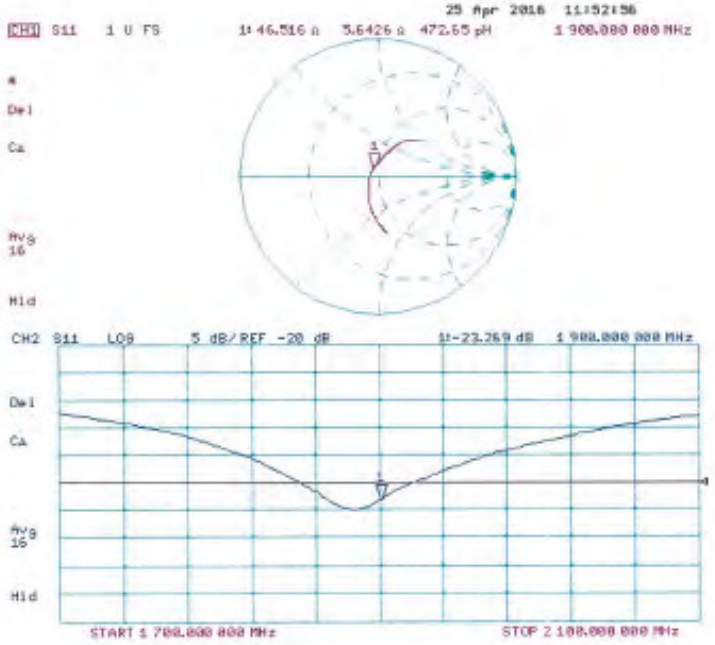
- Probe: EX3DV4 - SN7349; ConvF(8.03, 8.03, 8.03); Calibrated: 31.12.2015;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.12.2015
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7372)

Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 104.2 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 17.2 W/kg
SAR(1 g) = 9.83 W/kg; SAR(10 g) = 5.21 W/kg
Maximum value of SAR (measured) = 14.7 W/kg



0 dB = 14.7 W/kg = 11.67 dBW/kg

Impedance Measurement Plot for Body TSL



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Accreditation No.: **SCS 0108**

Client **SGS-TW (Auden)** Certificate No: **D2450V2-727_Apr16**

CALIBRATION CERTIFICATE

Object	D2450V2 - SN:727
Calibration procedure(s)	QA CAL-05.v9 Calibration procedure for dipole validation kits above 700 MHz
Calibration date:	April 19, 2016

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	06-Apr-16 (No. 217-02288/02289)	Apr-17
Power sensor NRP-Z91	SN: 103244	06-Apr-16 (No. 217-02288)	Apr-17
Power sensor NRP-Z91	SN: 103245	06-Apr-16 (No. 217-02289)	Apr-17
Reference 20 dB Attenuator	SN: 5058 (20k)	05-Apr-16 (No. 217-02292)	Apr-17
Type-N mismatch combination	SN: 5047.2 / 06327	05-Apr-16 (No. 217-02295)	Apr-17
Reference Probe EX3DV4	SN: 7349	31-Dec-15 (No. EX3-7349_Dec15)	Dec-16
DAE4	SN: 601	30-Dec-15 (No. DAE4-601_Dec15)	Dec-16

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter EPM-442A	SN: GB37480704	07-Oct-15 (No. 217-02222)	In house check: Oct-16
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (No. 217-02222)	In house check: Oct-16
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (No. 217-02223)	In house check: Oct-16
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Jun-15)	In house check: Oct-16
Network Analyzer HP 8753E	SN: US37390585	18-Oct-01 (in house check Oct-15)	In house check: Oct-16

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

Issued: April 20, 2016

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Accreditation No.: SCS 0108

Glossary:

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

Measurement Conditions

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

DASY Version	DASY5	V52.8.8
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	2450 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	39.2	1.80 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	40.0 ± 6 %	1.83 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	12.8 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**51.0 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	5.93 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**23.7 W/kg ± 16.5 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	52.7	1.95 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	52.7 ± 6 %	1.98 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	12.5 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**49.6 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	5.86 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**23.3 W/kg ± 16.5 % (k=2)**

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	55.3 Ω + 2.0 jΩ
Return Loss	- 25.4 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	52.1 Ω + 4.8 jΩ
Return Loss	- 25.9 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.148 ns

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	January 09, 2003

DASY5 Validation Report for Head TSL

Date: 19.04.2016

Test Laboratory: SPEAG, Zurich, Switzerland

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

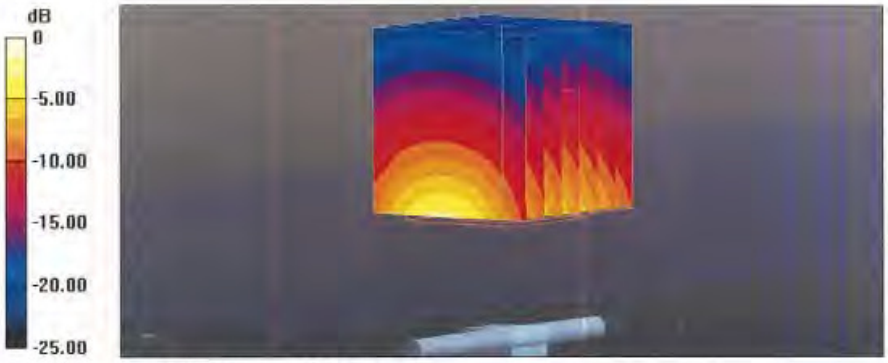
Communication System: UID 0 - CW; Frequency: 2450 MHz
Medium parameters used: f = 2450 MHz; σ = 1.83 S/m; ε_r = 40; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(7.76, 7.76, 7.76); Calibrated: 31.12.2015;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.12.2015
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7372)

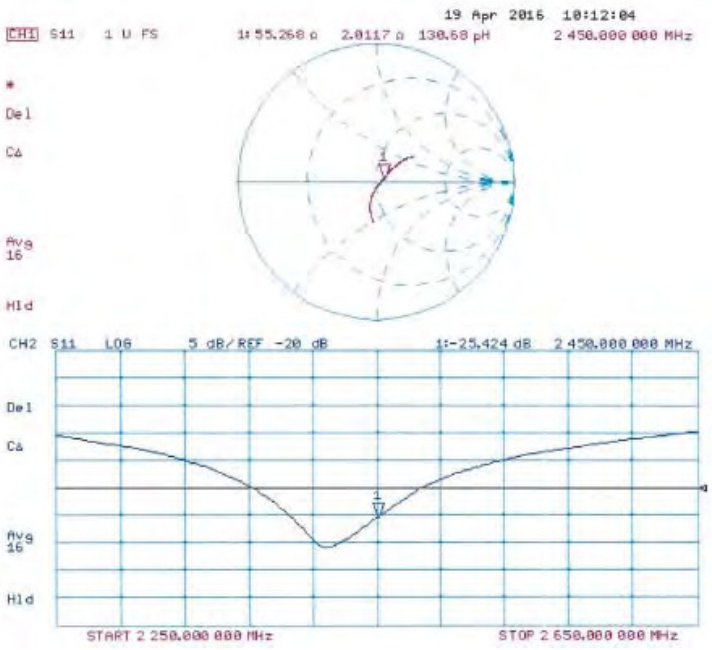
Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 112.1 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 25.7 W/kg
SAR(1 g) = 12.8 W/kg; SAR(10 g) = 5.93 W/kg
Maximum value of SAR (measured) = 20.8 W/kg



0 dB = 20.8 W/kg = 13.18 dBW/kg

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 19.04.2016

Test Laboratory: SPEAG, Zurich, Switzerland

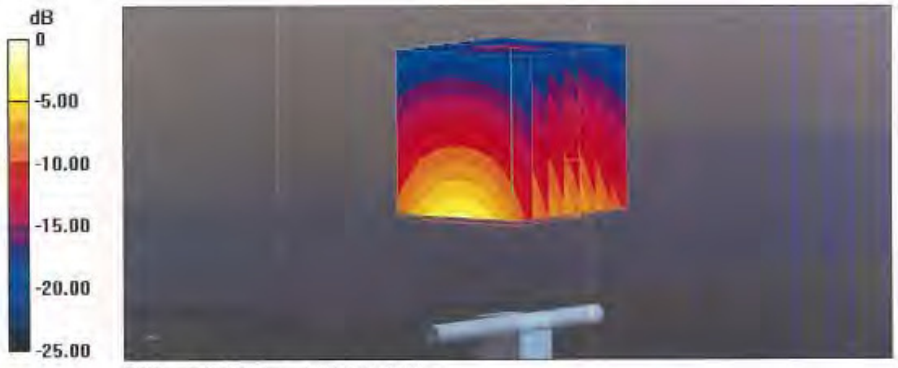
DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 727

Communication System: UID 0 - CW; Frequency: 2450 MHz
Medium parameters used: f = 2450 MHz; σ = 1.98 S/m; ε_r = 52.7; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

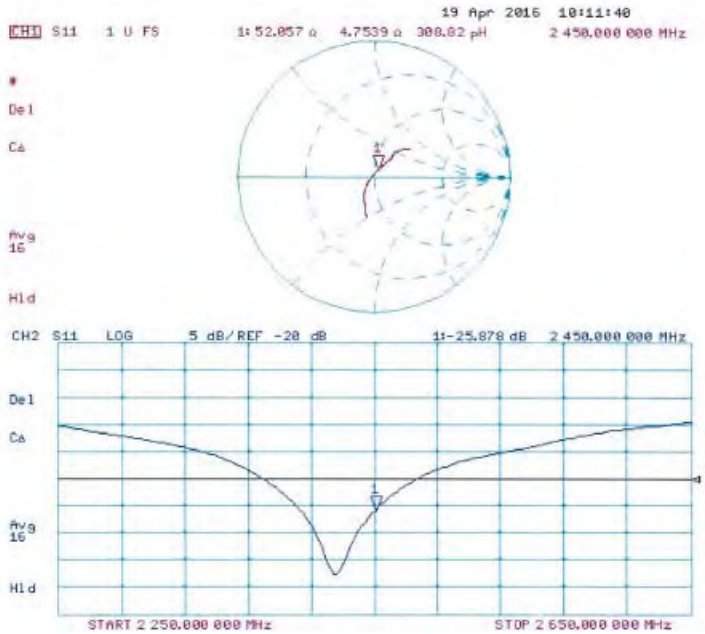
- Probe: EX3DV4 - SN7349; ConvF(7.79, 7.79, 7.79); Calibrated: 31.12.2015;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.12.2015
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7372)

Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 105.0 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 24.9 W/kg
SAR(1 g) = 12.5 W/kg; SAR(10 g) = 5.86 W/kg
Maximum value of SAR (measured) = 20.2 W/kg



0 dB = 20.2 W/kg = 13.05 dBW/kg

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)	06-Apr-16 (No. 217-02292)	Apr-17
Type-N mismatch combination	SN: 5047.2 / 06327	06-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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Accreditation No.: SCS 0108

Glossary:

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

a) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

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)**

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, 2008

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)

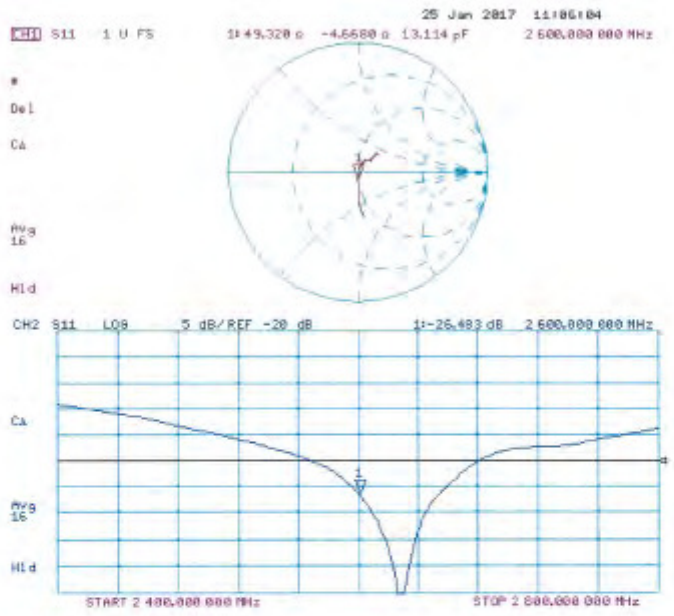
DASY52 Configuration:

- 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

Impedance Measurement Plot for Head TSL



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)

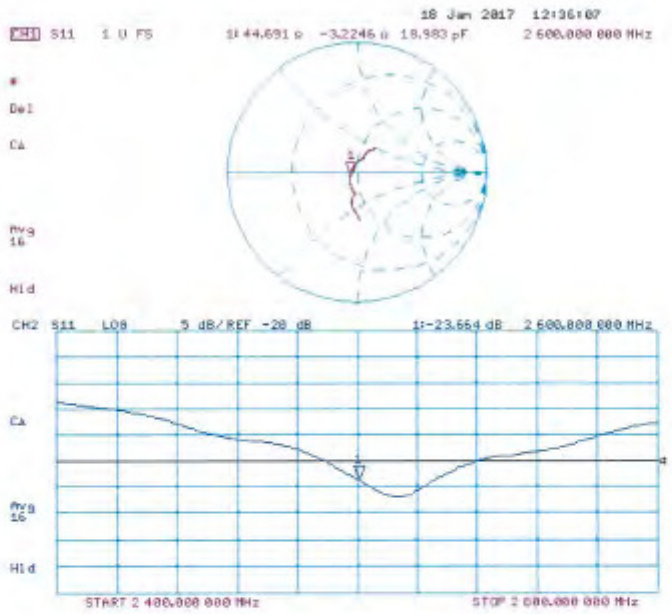
DASY52 Configuration:

- 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

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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Certificate No: D5GHzV2-1023_Jan17 Page 1 of 15

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c) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

d) DASY4/5 System Handbook

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- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

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

Measurement Conditions

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

DASY Version	DASY5	V52.8.8
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy = 4.0 mm, dz = 1.4 mm	Graded Ratio = 1.4 (Z direction)
Frequency	5200 MHz ± 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 cm^3 (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	7.56 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**75.2 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.16 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**21.5 W/kg ± 19.5 % (k=2)**

Head TSL parameters at 5300 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.9	4.76 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	35.2 ± 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	**81.0 W / kg ± 19.9 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.35 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)**

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 cm³ (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 ± 19.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.22 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**22.0 W/kg ± 19.5 % (k=2)**

Body TSL parameters at 5200 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	49.0	5.30 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	47.5 ± 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	7.66 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)**

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)**

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

General Antenna Parameters and Design

Electrical Delay (one direction)	1.199 ns

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	February 05, 2004

DASY5 Validation Report for Head TSL

Date: 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

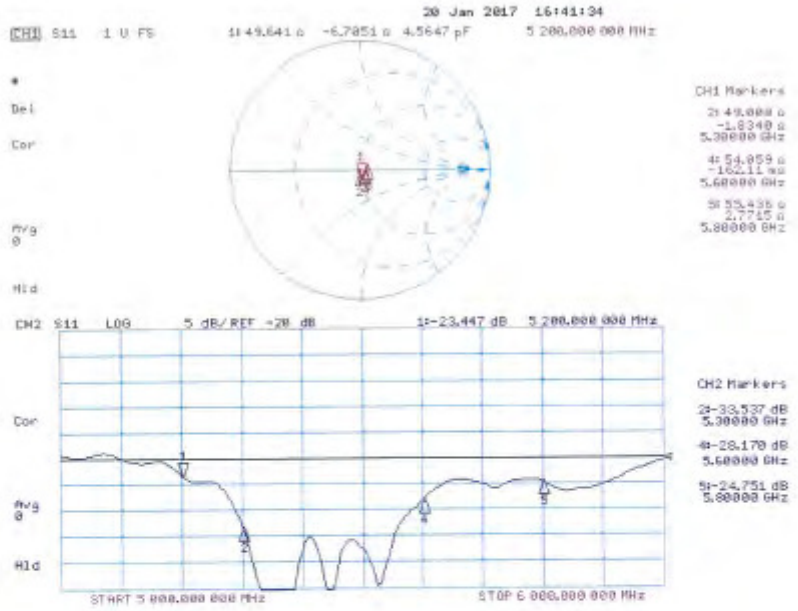
Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5300 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 73.01 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 31.6 W/kg
SAR(1 g) = 8.22 W/kg; SAR(10 g) = 2.35 W/kg
Maximum value of SAR (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

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

Impedance Measurement Plot for Head TSL



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:

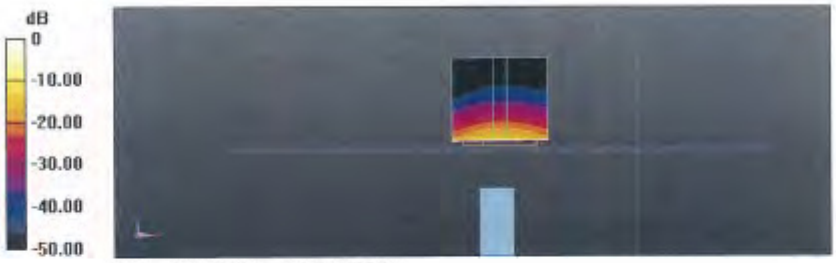
- Probe: EX3DV4 - SN3503; ConvF(5.29, 5.29, 5.29); Calibrated: 31.12.2016, ConvF(5.04, 5.04, 5.04); Calibrated: 31.12.2016, ConvF(4.57, 4.57, 4.57); Calibrated: 31.12.2016, ConvF(4.48, 4.48, 4.48); Calibrated: 31.12.2016;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; 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

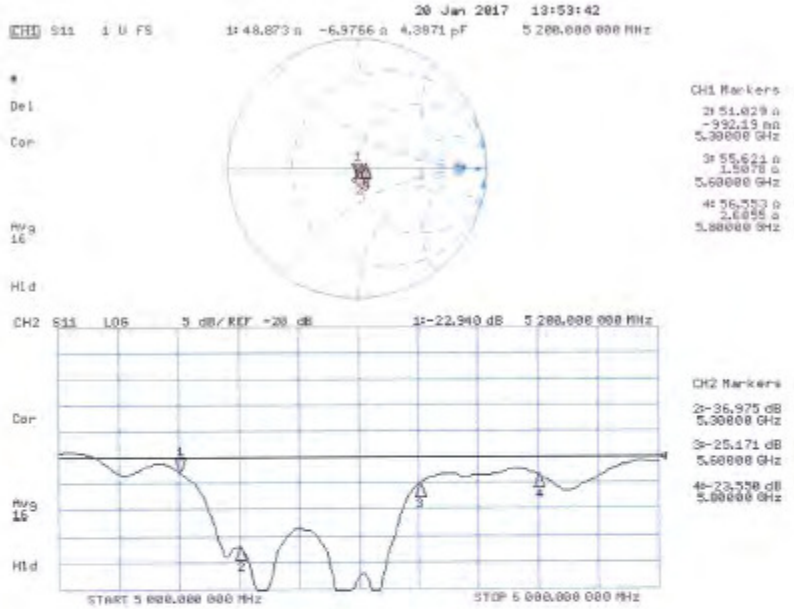
Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5600 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 67.09 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 33.7 W/kg
SAR(1 g) = 8.02 W/kg; SAR(10 g) = 2.26 W/kg
Maximum value of SAR (measured) = 18.9 W/kg

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

Impedance Measurement Plot for Body TSL



- End of 1st part of report -