

SAR TEST REPORT



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

Equipment Under Test Notebook PC
Brand Name HP
Model No. HSN-Q09C
Company Name HP Inc.
Company Address 3390 East Harmony Road, Fort Collins Colorado, USA 80528
Standards IEEE/ANSI C95.1-1992, IEEE 1528-2013, KDB616217D04v01r02, KDB865664D01v01r04, KDB865664D02v01r02, KDB941225D01v03r01, KDB941225D05v02r05, KDB941225D05Av01r02, KDB447498D01v06, KDB248227D01v02r02
FCC ID B94HNQ09CWPZV
Date of Receipt Jan. 05, 2018
Date of Test(s) Jan. 22, 2018 ~ Jan. 25, 2018
 Jan. 08, 2018 ~ Jan. 12, 2018
Date of Issue Mar. 30, 2018

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

Remarks:

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

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

Signed on behalf of SGS

Clerk / Annie Chang	Asst. Supervisor / Afu Chen	Asst. Manager / John Yeh

Date: Mar. 22, 2018

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Revision History

Report Number	Revision	Description	Issue Date
EN/2018/10005	Rev.00	Initial creation of document	Mar. 13, 2018
EN/2018/10005	Rev.01	1 st modification	Mar. 22, 2018
EN/2018/10005	Rev.02	2 nd modification	Mar. 30, 2018

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1. General Information

1.1 Testing Laboratory

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

1.2 Details of Applicant

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

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1.3 Description of EUT

Equipment Under Test	Notebook PC			
Brand Name	HP			
Model No.	HSN-Q09C			
FCC ID	B94HNQ09CWPZV			
Integrated Module	Wireless LAN+BT	Brand Name : Intel Model Name : 8265D2W		
	GNSS (LTE+GPS)	Brand Name : FOXCONN Model Name : T77W676		
Mode of Operation	☒ WCDMA ☒ HSDPA ☒ HSUPA ☒ LTE FDD ☒ LTE TDD ☒ WLAN802.11 a/b/g/n(20M/40M)/ac(20M/40M/80M) ☒ Bluetooth			
Duty Cycle	WCDMA	1		
	LTE FDD	1		
	LTE TDD	0.633		
	WLAN802.11 a/b/g/n(20M/40M)/ac(20M/40M/80M)	1		
	Bluetooth	1		
TX Frequency Range (MHz)	WCDMA Band II	1850	—	1910
	WCDMA Band IV	1710	—	1755
	WCDMA Band V	824	—	849
	LTE FDD Band 2	1850	—	1910
	LTE FDD Band 4	1710	—	1755
	LTE FDD Band 5	824	—	849
	LTE FDD Band 7	2500	—	2570
	LTE FDD Band 12	699	—	716
	LTE FDD Band 13	777	—	787
	LTE FDD Band 17	704	—	716

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TX Frequency Range (MHz)	LTE FDD Band 25	1850	—	1915
	LTE FDD Band 26	814	—	849
	LTE FDD Band 30	2305	—	2315
	LTE TDD Band 38	2570	—	2620
	LTE TDD Band 41	2496	—	2690
	LTE FDD Band 66	1710	—	1780
	WLAN802.11 b/g/n(20M)	2412	—	2472
	WLAN802.11 n(40M)	2422	—	2462
	WLAN802.11 a/n(20M)/ac(20M) 5.2G	5180	—	5240
	WLAN802.11 n(40M)/ac(40M) 5.2G	5190	—	5230
	WLAN802.11 ac(80M) 5.2G	5210		
	WLAN802.11 a/n(20M)/ac(20M) 5.3G	5260	—	5320
	WLAN802.11 n(40M)/ac(40M) 5.3G	5270	—	5310
	WLAN802.11 ac(80M) 5.3G	5290		
	WLAN802.11 a/n/ac(20M) 5.6G	5500	—	5720
	WLAN802.11 n/ac(40M) 5.6G	5510	—	5710
	WLAN802.11 ac(80M) 5.6G	5530	—	5690
	WLAN802.11 a/n(20M)/ac(20M) 5.8G	5745	—	5825
	WLAN802.11 n(40M)/ac(40M) 5.8G	5710	—	5795
	WLAN802.11 ac(80M) 5.8G	5775		
Channel Number (ARFCN)	Bluetooth	2402	—	2480
	WCDMA Band II	9262	—	9538
	WCDMA Band IV	1312	—	1513
	WCDMA Band V	4132	—	4233
	LTE FDD Band 2	18607	—	19193
	LTE FDD Band 4	19957	—	20393
	LTE FDD Band 5	20407	—	20643
	LTE FDD Band 7	20775	—	21425

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Channel Number (ARFCN)	LTE FDD Band 12	23017	—	23173
	LTE FDD Band 13	23205	—	23255
	LTE FDD Band 17	23755	—	23825
	LTE FDD Band 25	26047	—	26683
	LTE FDD Band 26	26697	—	27033
	LTE FDD Band 30	27685	—	27735
	LTE TDD Band 38	37775	—	38225
	LTE TDD Band 41	39675	—	41565
	LTE FDD Band 66	131979	—	132665
	WLAN802.11 b/g/n(20M)	1	—	13
	WLAN802.11 n(40M)	3	—	11
	WLAN802.11 a/n(20M)/ac(20M) 5.2G	36	—	48
	WLAN802.11 n(40M)/ac(40M) 5.2G	38	—	46
	WLAN802.11 ac(80M) 5.2G	42		
	WLAN802.11 a/n(20M)/ac(20M) 5.3G	52	—	64
	WLAN802.11 n(40M)/ac(40M) 5.3G	54	—	62
	WLAN802.11 ac(80M) 5.3G	58		
	WLAN802.11 a/n/ac(20M) 5.6G	100	—	144
	WLAN802.11 n/ac(40M) 5.6G	102	—	142
	WLAN802.11 ac(80M) 5.6G	106	—	138
	WLAN802.11 a/n(20M)/ac(20M) 5.8G	149	—	165
	WLAN802.11 n(40M)/ac(40M) 5.8G	142	—	159
	WLAN802.11 ac(80M) 5.8G	155		
	Bluetooth	0	—	78

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Max. SAR (1 g) (Unit: W/Kg)				
Band	Measured	Reported	Channel	Position
WCDMA Band II	0.95	1.32	9262	Top side
WCDMA Band IV	1.15	1.41	1513	Back side
WCDMA Band V	1.06	1.25	4183	Back side
LTE FDD Band 2	1.09	1.40	18700	Top side
LTE FDD Band 4	1.13	1.29	20300	Back side
LTE FDD Band 5	1.12	1.18	20450	Back side
LTE FDD Band 7	1.08	1.11	20850	Back side
LTE FDD Band 12	1.11	1.22	23060	Back side
LTE FDD Band 13	1.17	1.27	23230	Back side
LTE FDD Band 17	1.09	1.23	23790	Back side
LTE FDD Band 25	1.10	1.13	26140	Back side
LTE FDD Band 26	1.14	1.26	26825	Back side
LTE FDD Band 30	1.23	1.25	27710	Top side
LTE FDD Band 38	0.73	0.81	38150	Back side
LTE TDD Band 41	1.08	1.29	41055	Back side
LTE TDD Band 66	1.19	1.26	132572	Back side

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Max. SAR (1g) (Unit: W/Kg)					
Antenna	Band	Measured	Reported	Channel	Position
Main	WLAN802.11 b	0.97	0.99	6	Back side
	WLAN 802.11n(40M) 5.2G	0.62	0.62	38	Back side
	WLAN802.11 n(40M) 5.3G	0.89	0.90	62	Back side
	WLAN802.11 n(40M) 5.6G	1.18	1.19	102	Back side
	WLAN802.11 ac(80M) 5.8G	0.86	0.86	155	Back side
Aux	WLAN802.11 b	0.82	0.82	6	Top side
	Bluetooth (GFSK)	0.16	0.22	78	Top side
	WLAN802.11 n(40M) 5.2G	0.52	0.52	38	Top side
	WLAN802.11 n(40M) 5.3G	0.61	0.61	62	Top side
	WLAN802.11 n(40M) 5.6G	0.82	0.82	134	Top side
	WLAN802.11 ac(80M) 5.8G	0.86	0.86	155	Top side

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WWAN antenna information:

Vendor	INPAQ				
Antenna	Main (Couple)				
Part Number	DQ680200100(MDA-LTE8-02-001)				
Frequency	750	835	1750	1900	2600
Gain (dBi)	-2.96	-6.01	-0.28	-1.77	2.65

WLAN / Bluetooth antenna information:

Vendor	INPAQ				INPAQ			
Antenna	Main (PIFA)				Aux (PIFA)			
Part Number	DQ6LB020016(MDA-LTE8LBLB-02-001)				DQ6LB020016(MDA-LTE8LBLB-02-001)			
Frequency	2.4G	5.2G	5.5G	5.8G	2.4G	5.2G	5.5G	5.8G
Gain (dBi)	-2.26	-1.27	0.48	0.44	-2.73	-0.41	0.81	-1.97

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

Unit: dBm

Band		WCDMA II		
TX Channel		9262	9400	9538
Frequency (MHz)		1852.4	1880	1907.6
Max. Rated Avg. Power+Max. Tolerance (dBm)		25.00		
3GPP Rel 99	RMC 12.2Kbps	23.54	23.80	23.28
3GPP Rel 5	HSDPA Subtest-1	20.90	21.26	20.95
	HSDPA Subtest-2	21.41	21.74	21.09
	HSDPA Subtest-3	20.70	21.22	20.44
	HSDPA Subtest-4	20.68	21.19	20.41
3GPP Rel 6	HSUPA Subtest-1	21.05	21.55	20.91
	HSUPA Subtest-2	20.11	20.35	20.26
	HSUPA Subtest-3	21.02	21.54	20.90
	HSUPA Subtest-4	20.56	20.87	20.68
	HSUPA Subtest-5	21.04	21.60	20.80

Band		WCDMA IV		
TX Channel		1312	1412	1513
Frequency (MHz)		1712.4	1732.4	1752.6
Max. Rated Avg. Power+Max. Tolerance (dBm)		25.00		
3GPP Rel 99	RMC 12.2Kbps	23.98	23.69	23.75
3GPP Rel 5	HSDPA Subtest-1	20.66	20.53	20.67
	HSDPA Subtest-2	21.17	21.01	20.72
	HSDPA Subtest-3	20.30	20.31	20.13
	HSDPA Subtest-4	20.27	20.29	20.11
3GPP Rel 6	HSUPA Subtest-1	20.71	20.83	20.98
	HSUPA Subtest-2	19.93	19.81	20.03
	HSUPA Subtest-3	20.58	20.73	20.72
	HSUPA Subtest-4	20.47	20.27	20.48
	HSUPA Subtest-5	20.97	20.68	20.75

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Band		WCDMA V		
TX Channel		4132	4183	4233
Frequency (MHz)		826.4	836.6	846.6
Max. Rated Avg. Power+Max. Tolerance (dBm)		24.00		
3GPP Rel 99	RMC 12.2Kbps	23.72	23.82	23.28
3GPP Rel 5	HSDPA Subtest-1	22.98	22.73	22.42
	HSDPA Subtest-2	22.85	22.91	22.35
	HSDPA Subtest-3	22.40	22.29	21.90
	HSDPA Subtest-4	22.45	22.26	21.92
3GPP Rel 6	HSUPA Subtest-1	22.67	22.84	22.32
	HSUPA Subtest-2	22.30	22.16	21.96
	HSUPA Subtest-3	22.69	22.77	22.27
	HSUPA Subtest-4	22.89	22.74	22.44
	HSUPA Subtest-5	22.78	22.89	22.34

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WCDMA Band II / Band IV / Band V - HSDPA / HSUPA

conducted power table(Reduced power):

Unit: dBm

Band		WCDMA II		
TX Channel		9262	9400	9538
Frequency (MHz)		1852.4	1880	1907.6
Max. Rated Avg. Power+Max. Tolerance (dBm)		15.50		
3GPP Rel 99	RMC 12.2Kbps	15.13	15.10	15.09
3GPP Rel 5	HSDPA Subtest-1	14.05	14.14	14.16
	HSDPA Subtest-2	14.03	14.12	14.10
	HSDPA Subtest-3	13.52	13.59	13.45
	HSDPA Subtest-4	13.48	13.54	13.43
3GPP Rel 6	HSUPA Subtest-1	14.05	14.26	14.14
	HSUPA Subtest-2	13.56	13.81	13.71
	HSUPA Subtest-3	13.97	14.25	14.12
	HSUPA Subtest-4	13.94	14.15	14.09
	HSUPA Subtest-5	14.04	14.19	14.10

Band		WCDMA IV		
TX Channel		1312	1412	1513
Frequency (MHz)		1712.4	1732.4	1752.6
Max. Rated Avg. Power+Max. Tolerance (dBm)		16.50		
3GPP Rel 99	RMC 12.2Kbps	15.54	15.43	15.63
3GPP Rel 5	HSDPA Subtest-1	14.87	14.72	14.95
	HSDPA Subtest-2	14.99	14.76	14.91
	HSDPA Subtest-3	14.41	14.15	14.34
	HSDPA Subtest-4	14.37	14.13	14.32
3GPP Rel 6	HSUPA Subtest-1	14.88	14.72	15.02
	HSUPA Subtest-2	14.38	14.24	14.43
	HSUPA Subtest-3	14.82	14.64	14.82
	HSUPA Subtest-4	14.77	14.71	14.85
	HSUPA Subtest-5	14.92	14.76	14.87

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f (886 2) 2298 0488

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Band		WCDMA V		
TX Channel		4132	4183	4233
Frequency (MHz)		826.4	836.6	846.6
Max. Rated Avg. Power+Max. Tolerance (dBm)		23.00		
3GPP Rel 99	RMC 12.2Kbps	22.13	22.30	22.10
3GPP Rel 5	HSDPA Subtest-1	21.54	21.39	21.33
	HSDPA Subtest-2	21.52	21.36	21.36
	HSDPA Subtest-3	21.08	20.91	20.92
	HSDPA Subtest-4	21.06	20.88	20.89
3GPP Rel 6	HSUPA Subtest-1	21.44	21.34	21.32
	HSUPA Subtest-2	21.00	20.85	20.84
	HSUPA Subtest-3	21.45	21.29	21.33
	HSUPA Subtest-4	21.47	21.32	21.25
	HSUPA Subtest-5	21.48	21.31	21.32

Sub-Test for HSDPA

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

Sub-Test for HSUPA

SUB-TEST	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS} (Note 1)	β_{ec}	β_{ed} (Note 5) (Note 6)	β_{ed} (SF)	β_{ed} (Codes)	CM (dB) (Note 2)	MPR (dB) (Note 2)	AG Index (Note 6)	E-TFCI
1	11/15	15/15	64	11/15	22/15	209/225	1309/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	β_{ed1} : 47/15 β_{ed2} : 47/15	4 4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15	15/15	64	15/15	30/15	24/15	134/15	4	1	1.0	0.0	21	81

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t (886 2) 2299 3279

f (886 2) 2298 0488

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LTE FDD Band 2 / Band 4 / Band 5 / Band 7 / Band 12 / Band 13 / Band 17 / Band 25 / Band 26 / Band 30 / Band 66 power table(Full power):

FDD Band 2									
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)	
20	QPSK	1 RB	0	1860	18700	23.90	25	0	
				1880	18900	23.94	25	0	
				1900	19100	24.20	25	0	
			50	1860	18700	23.66	25	0	
				1880	18900	24.21	25	0	
				1900	19100	23.91	25	0	
			99	1860	18700	23.78	25	0	
				1880	18900	24.11	25	0	
				1900	19100	23.18	25	0	
		50 RB	0	1860	18700	22.98	24	0-1	
				1880	18900	23.22	24	0-1	
				1900	19100	23.11	24	0-1	
			25	1860	18700	23.12	24	0-1	
				1880	18900	23.32	24	0-1	
				1900	19100	22.95	24	0-1	
			50	1860	18700	23.06	24	0-1	
				1880	18900	23.26	24	0-1	
				1900	19100	22.67	24	0-1	
		100RB			1860	18700	22.44	24	0-1
					1880	18900	22.68	24	0-1
					1900	19100	22.35	24	0-1
	16-QAM	1 RB	0	1860	18700	23.17	24	0-1	
				1880	18900	23.09	24	0-1	
				1900	19100	23.11	24	0-1	
			50	1860	18700	22.90	24	0-1	
				1880	18900	23.56	24	0-1	
				1900	19100	23.25	24	0-1	
			99	1860	18700	23.13	24	0-1	
				1880	18900	23.38	24	0-1	
				1900	19100	22.56	24	0-1	
		50 RB	0	1860	18700	22.04	23	0-2	
				1880	18900	22.26	23	0-2	
				1900	19100	22.17	23	0-2	
			25	1860	18700	22.15	23	0-2	
				1880	18900	22.38	23	0-2	
				1900	19100	21.99	23	0-2	
			50	1860	18700	22.17	23	0-2	
				1880	18900	22.32	23	0-2	
				1900	19100	21.75	23	0-2	
		100RB			1860	18700	21.89	23	0-2
					1880	18900	22.08	23	0-2
					1900	19100	21.69	23	0-2

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台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 2								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
15	QPSK	1 RB	0	1857.5	18675	23.77	25	0
				1880	18900	24.05	25	0
				1902.5	19125	23.89	25	0
			36	1857.5	18675	23.63	25	0
				1880	18900	24.20	25	0
				1902.5	19125	23.77	25	0
			74	1857.5	18675	23.65	25	0
				1880	18900	24.22	25	0
				1902.5	19125	23.07	25	0
		36 RB	0	1857.5	18675	22.82	24	0-1
				1880	18900	23.21	24	0-1
				1902.5	19125	22.92	24	0-1
			18	1857.5	18675	22.95	24	0-1
				1880	18900	23.28	24	0-1
				1902.5	19125	22.81	24	0-1
			37	1857.5	18675	23.00	24	0-1
				1880	18900	23.25	24	0-1
				1902.5	19125	22.66	24	0-1
			75RB	1857.5	18675	22.81	24	0-1
				1880	18900	23.15	24	0-1
				1902.5	19125	22.68	24	0-1
	16-QAM	1 RB	0	1857.5	18675	23.12	24	0-1
				1880	18900	23.35	24	0-1
				1902.5	19125	23.16	24	0-1
			36	1857.5	18675	22.86	24	0-1
				1880	18900	23.56	24	0-1
				1902.5	19125	23.08	24	0-1
			74	1857.5	18675	23.01	24	0-1
				1880	18900	23.35	24	0-1
				1902.5	19125	22.33	24	0-1
		36 RB	0	1857.5	18675	21.89	23	0-2
				1880	18900	22.23	23	0-2
				1902.5	19125	21.98	23	0-2
			18	1857.5	18675	22.03	23	0-2
				1880	18900	22.30	23	0-2
				1902.5	19125	21.94	23	0-2
			37	1857.5	18675	22.05	23	0-2
				1880	18900	22.25	23	0-2
				1902.5	19125	21.71	23	0-2
			75RB	1857.5	18675	21.99	23	0-2
				1880	18900	22.29	23	0-2
				1902.5	19125	21.81	23	0-2

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f (886 2) 2298 0488

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FDD Band 2									
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)	
10	QPSK	1 RB	0	1855	18650	23.69	25	0	
				1880	18900	24.15	25	0	
				1905	19150	23.83	25	0	
			25	1855	18650	23.60	25	0	
				1880	18900	24.09	25	0	
				1905	19150	23.64	25	0	
			49	1855	18650	23.43	25	0	
				1880	18900	24.09	25	0	
				1905	19150	23.03	25	0	
		25 RB	0	1855	18650	22.76	24	0-1	
				1880	18900	23.24	24	0-1	
				1905	19150	22.81	24	0-1	
			12	1855	18650	22.86	24	0-1	
				1880	18900	23.18	24	0-1	
				1905	19150	22.75	24	0-1	
			25	1855	18650	22.86	24	0-1	
				1880	18900	23.14	24	0-1	
				1905	19150	22.55	24	0-1	
		50RB			1855	18650	22.79	24	0-1
					1880	18900	23.15	24	0-1
					1905	19150	22.58	24	0-1
	16-QAM	1 RB	0	1855	18650	23.04	24	0-1	
				1880	18900	23.45	24	0-1	
				1905	19150	23.11	24	0-1	
			25	1855	18650	22.96	24	0-1	
				1880	18900	23.32	24	0-1	
				1905	19150	22.90	24	0-1	
			49	1855	18650	22.78	24	0-1	
				1880	18900	23.37	24	0-1	
				1905	19150	22.06	24	0-1	
		25 RB	0	1855	18650	21.85	23	0-2	
				1880	18900	22.29	23	0-2	
				1905	19150	21.85	23	0-2	
			12	1855	18650	21.87	23	0-2	
				1880	18900	22.19	23	0-2	
				1905	19150	21.76	23	0-2	
			25	1855	18650	21.95	23	0-2	
				1880	18900	22.12	23	0-2	
				1905	19150	21.64	23	0-2	
		50RB			1855	18650	21.87	23	0-2
					1880	18900	22.23	23	0-2
					1905	19150	21.70	23	0-2

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FDD Band 2									
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)	
5	QPSK	1 RB	0	1852.5	18625	23.72	25	0	
				1880	18900	24.17	25	0	
				1907.5	19175	23.67	25	0	
			12	1852.5	18625	23.71	25	0	
				1880	18900	24.10	25	0	
				1907.5	19175	23.38	25	0	
				24	1852.5	18625	23.73	25	0
					1880	18900	24.10	25	0
					1907.5	19175	23.01	25	0
		12 RB	0	1852.5	18625	22.84	24	0-1	
				1880	18900	23.21	24	0-1	
				1907.5	19175	22.68	24	0-1	
			6	1852.5	18625	22.89	24	0-1	
				1880	18900	23.18	24	0-1	
				1907.5	19175	22.70	24	0-1	
			13	1852.5	18625	22.85	24	0-1	
				1880	18900	23.14	24	0-1	
				1907.5	19175	22.55	24	0-1	
		25RB			1852.5	18625	22.82	24	0-1
					1880	18900	23.14	24	0-1
					1907.5	19175	22.63	24	0-1
	16-QAM	1 RB	0	1852.5	18625	22.99	24	0-1	
				1880	18900	23.52	24	0-1	
				1907.5	19175	23.03	24	0-1	
			12	1852.5	18625	23.07	24	0-1	
				1880	18900	23.25	24	0-1	
				1907.5	19175	22.73	24	0-1	
				24	1852.5	18625	23.00	24	0-1
					1880	18900	23.27	24	0-1
					1907.5	19175	22.31	24	0-1
			12 RB	0	1852.5	18625	21.91	23	0-2
					1880	18900	22.25	23	0-2
					1907.5	19175	21.74	23	0-2
				6	1852.5	18625	21.99	23	0-2
					1880	18900	22.24	23	0-2
					1907.5	19175	21.75	23	0-2
		13		1852.5	18625	21.91	23	0-2	
				1880	18900	22.21	23	0-2	
				1907.5	19175	21.64	23	0-2	
		25RB			1852.5	18625	21.90	23	0-2
					1880	18900	22.15	23	0-2
					1907.5	19175	21.70	23	0-2

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t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 2								
BW(MHz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
3	QPSK	1 RB	0	1851.5	18615	23.66	25	0
				1880	18900	24.07	25	0
				1908.5	19185	23.42	25	0
			7	1851.5	18615	23.77	25	0
				1880	18900	24.17	25	0
				1908.5	19185	23.24	25	0
			14	1851.5	18615	23.63	25	0
				1880	18900	24.00	25	0
				1908.5	19185	23.02	25	0
		8 RB	0	1851.5	18615	22.94	24	0-1
				1880	18900	23.03	24	0-1
				1908.5	19185	22.57	24	0-1
			4	1851.5	18615	23.00	24	0-1
				1880	18900	23.07	24	0-1
				1908.5	19185	22.62	24	0-1
			7	1851.5	18615	22.97	24	0-1
				1880	18900	23.02	24	0-1
				1908.5	19185	22.58	24	0-1
		15RB		1851.5	18615	22.98	24	0-1
				1880	18900	23.07	24	0-1
				1908.5	19185	22.66	24	0-1
	16-QAM	1 RB	0	1851.5	18615	23.11	24	0-1
				1880	18900	23.34	24	0-1
				1908.5	19185	23.09	24	0-1
			7	1851.5	18615	23.24	24	0-1
				1880	18900	23.37	24	0-1
				1908.5	19185	22.85	24	0-1
			14	1851.5	18615	23.16	24	0-1
				1880	18900	23.26	24	0-1
				1908.5	19185	22.65	24	0-1
		8 RB	0	1851.5	18615	22.00	23	0-2
				1880	18900	22.05	23	0-2
				1908.5	19185	21.79	23	0-2
			4	1851.5	18615	22.15	23	0-2
				1880	18900	22.13	23	0-2
				1908.5	19185	21.79	23	0-2
			7	1851.5	18615	22.09	23	0-2
				1880	18900	22.07	23	0-2
				1908.5	19185	21.74	23	0-2
		15RB		1851.5	18615	22.04	23	0-2
				1880	18900	22.02	23	0-2
				1908.5	19185	21.79	23	0-2

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台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 2									
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)	
1.4	QPSK	1 RB	0	1850.7	18607	23.69	25	0	
				1880	18900	23.95	25	0	
				1909.3	19193	23.21	25	0	
			2	1850.7	18607	23.70	25	0	
				1880	18900	24.04	25	0	
				1909.3	19193	23.16	25	0	
			5	1850.7	18607	23.66	25	0	
				1880	18900	23.97	25	0	
				1909.3	19193	23.06	25	0	
		3 RB	0	1850.7	18607	23.61	25	0	
				1880	18900	23.95	25	0	
				1909.3	19193	23.15	25	0	
			2	1850.7	18607	23.66	25	0	
				1880	18900	23.91	25	0	
				1909.3	19193	23.09	25	0	
			3	1850.7	18607	23.63	25	0	
				1880	18900	23.93	25	0	
				1909.3	19193	23.00	25	0	
		6RB			1850.7	18607	22.87	24	0-1
					1880	18900	22.97	24	0-1
					1909.3	19193	22.36	24	0-1
	16-QAM	1 RB	0	1850.7	18607	23.04	24	0-1	
				1880	18900	23.21	24	0-1	
				1909.3	19193	22.83	24	0-1	
			2	1850.7	18607	23.23	24	0-1	
				1880	18900	23.23	24	0-1	
				1909.3	19193	22.79	24	0-1	
			5	1850.7	18607	23.14	24	0-1	
				1880	18900	23.23	24	0-1	
				1909.3	19193	22.45	24	0-1	
		3 RB	0	1850.7	18607	22.91	24	0-1	
				1880	18900	22.98	24	0-1	
				1909.3	19193	22.55	24	0-1	
			2	1850.7	18607	22.92	24	0-1	
				1880	18900	23.12	24	0-1	
				1909.3	19193	22.45	24	0-1	
			3	1850.7	18607	22.89	24	0-1	
				1880	18900	22.98	24	0-1	
				1909.3	19193	22.45	24	0-1	
		6RB			1850.7	18607	22.05	23	0-2
					1880	18900	22.12	23	0-2
					1909.3	19193	21.62	23	0-2

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t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 4								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
20	QPSK	1 RB	0	1720	20050	23.56	25	0
				1732.5	20175	23.54	25	0
				1745	20300	23.44	25	0
			50	1720	20050	23.91	25	0
				1732.5	20175	23.56	25	0
				1745	20300	23.58	25	0
			99	1720	20050	23.54	25	0
				1732.5	20175	23.44	25	0
				1745	20300	23.60	25	0
		50 RB	0	1720	20050	22.90	24	0-1
				1732.5	20175	22.82	24	0-1
				1745	20300	22.74	24	0-1
			25	1720	20050	22.92	24	0-1
				1732.5	20175	22.89	24	0-1
				1745	20300	22.92	24	0-1
			50	1720	20050	22.71	24	0-1
				1732.5	20175	22.68	24	0-1
				1745	20300	22.75	24	0-1
		100RB		1720	20050	22.37	24	0-1
				1732.5	20175	22.71	24	0-1
				1745	20300	22.86	24	0-1
	16-QAM	1 RB	0	1720	20050	23.04	24	0-1
				1732.5	20175	22.84	24	0-1
				1745	20300	23.00	24	0-1
			50	1720	20050	23.05	24	0-1
				1732.5	20175	22.91	24	0-1
				1745	20300	23.02	24	0-1
			99	1720	20050	22.97	24	0-1
				1732.5	20175	22.78	24	0-1
				1745	20300	22.84	24	0-1
		50 RB	0	1720	20050	21.92	23	0-2
				1732.5	20175	21.81	23	0-2
				1745	20300	21.75	23	0-2
			25	1720	20050	21.92	23	0-2
				1732.5	20175	21.92	23	0-2
				1745	20300	21.88	23	0-2
			50	1720	20050	21.70	23	0-2
				1732.5	20175	21.66	23	0-2
				1745	20300	21.77	23	0-2
		100RB		1720	20050	21.65	23	0-2
				1732.5	20175	21.71	23	0-2
				1745	20300	21.82	23	0-2

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FDD Band 4								
BW(MHz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
15	QPSK	1 RB	0	1717.5	20025	23.41	25	0
				1732.5	20175	23.39	25	0
				1747.5	20325	23.40	25	0
			36	1717.5	20025	23.67	25	0
				1732.5	20175	23.44	25	0
				1747.5	20325	23.42	25	0
			74	1717.5	20025	23.27	25	0
				1732.5	20175	23.34	25	0
				1747.5	20325	23.49	25	0
		36 RB	0	1717.5	20025	22.90	24	0-1
				1732.5	20175	22.81	24	0-1
				1747.5	20325	22.46	24	0-1
			18	1717.5	20025	22.65	24	0-1
				1732.5	20175	22.76	24	0-1
				1747.5	20325	22.75	24	0-1
			37	1717.5	20025	22.49	24	0-1
				1732.5	20175	22.49	24	0-1
				1747.5	20325	22.56	24	0-1
		75RB		1717.5	20025	22.19	24	0-1
				1732.5	20175	22.53	24	0-1
				1747.5	20325	22.81	24	0-1
	16-QAM	1 RB	0	1717.5	20025	22.94	24	0-1
				1732.5	20175	22.61	24	0-1
				1747.5	20325	22.99	24	0-1
			36	1717.5	20025	22.80	24	0-1
				1732.5	20175	22.68	24	0-1
				1747.5	20325	22.88	24	0-1
			74	1717.5	20025	22.76	24	0-1
				1732.5	20175	22.71	24	0-1
				1747.5	20325	22.79	24	0-1
		36 RB	0	1717.5	20025	21.75	23	0-2
				1732.5	20175	21.68	23	0-2
				1747.5	20325	21.50	23	0-2
			18	1717.5	20025	21.76	23	0-2
				1732.5	20175	21.81	23	0-2
				1747.5	20325	21.68	23	0-2
			37	1717.5	20025	21.48	23	0-2
				1732.5	20175	21.44	23	0-2
				1747.5	20325	21.76	23	0-2
		75RB		1717.5	20025	21.40	23	0-2
				1732.5	20175	21.60	23	0-2
				1747.5	20325	21.71	23	0-2

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FDD Band 4								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	1715	20000	23.43	25	0
				1732.5	20175	23.33	25	0
				1750	20350	23.38	25	0
			25	1715	20000	23.84	25	0
				1732.5	20175	23.47	25	0
				1750	20350	23.31	25	0
			49	1715	20000	23.28	25	0
				1732.5	20175	23.32	25	0
				1750	20350	23.56	25	0
		25 RB	0	1715	20000	22.64	24	0-1
				1732.5	20175	22.75	24	0-1
				1750	20350	22.48	24	0-1
			12	1715	20000	22.70	24	0-1
				1732.5	20175	22.70	24	0-1
				1750	20350	22.72	24	0-1
			25	1715	20000	22.67	24	0-1
				1732.5	20175	22.41	24	0-1
				1750	20350	22.52	24	0-1
		50RB		1715	20000	22.11	24	0-1
				1732.5	20175	22.43	24	0-1
				1750	20350	22.83	24	0-1
	16-QAM	1 RB	0	1715	20000	22.89	24	0-1
				1732.5	20175	22.66	24	0-1
				1750	20350	22.89	24	0-1
			25	1715	20000	22.83	24	0-1
				1732.5	20175	22.65	24	0-1
				1750	20350	22.75	24	0-1
			49	1715	20000	22.83	24	0-1
				1732.5	20175	22.54	24	0-1
				1750	20350	22.73	24	0-1
		25 RB	0	1715	20000	21.80	23	0-2
				1732.5	20175	21.67	23	0-2
				1750	20350	21.75	23	0-2
			12	1715	20000	21.77	23	0-2
				1732.5	20175	21.88	23	0-2
				1750	20350	21.60	23	0-2
			25	1715	20000	21.47	23	0-2
				1732.5	20175	21.56	23	0-2
				1750	20350	21.57	23	0-2
		50RB		1715	20000	21.46	23	0-2
				1732.5	20175	21.70	23	0-2
				1750	20350	21.64	23	0-2

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台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 4									
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)	
5	QPSK	1 RB	0	1712.5	19975	23.40	25	0	
				1732.5	20175	23.29	25	0	
				1752.5	20375	23.37	25	0	
			12	1712.5	19975	23.85	25	0	
				1732.5	20175	23.40	25	0	
				1752.5	20375	23.41	25	0	
			24	1712.5	19975	23.28	25	0	
				1732.5	20175	23.23	25	0	
				1752.5	20375	23.47	25	0	
		12 RB	0	1712.5	19975	22.82	24	0-1	
				1732.5	20175	22.73	24	0-1	
				1752.5	20375	22.56	24	0-1	
			6	1712.5	19975	22.72	24	0-1	
				1732.5	20175	22.65	24	0-1	
				1752.5	20375	22.81	24	0-1	
			13	1712.5	19975	22.61	24	0-1	
				1732.5	20175	22.68	24	0-1	
				1752.5	20375	22.63	24	0-1	
		25RB			1712.5	19975	22.09	24	0-1
					1732.5	20175	22.59	24	0-1
					1752.5	20375	22.79	24	0-1
		16-QAM	1 RB	0	1712.5	19975	22.87	24	0-1
					1732.5	20175	22.73	24	0-1
					1752.5	20375	22.97	24	0-1
				12	1712.5	19975	22.82	24	0-1
					1732.5	20175	22.80	24	0-1
					1752.5	20375	22.78	24	0-1
	24			1712.5	19975	22.89	24	0-1	
				1732.5	20175	22.53	24	0-1	
				1752.5	20375	22.58	24	0-1	
	12 RB			0	1712.5	19975	21.87	23	0-2
					1732.5	20175	21.55	23	0-2
					1752.5	20375	21.68	23	0-2
			6	1712.5	19975	21.75	23	0-2	
				1732.5	20175	21.74	23	0-2	
				1752.5	20375	21.74	23	0-2	
			13	1712.5	19975	21.46	23	0-2	
				1732.5	20175	21.48	23	0-2	
				1752.5	20375	21.68	23	0-2	
	25RB			1712.5	19975	21.39	23	0-2	
				1732.5	20175	21.47	23	0-2	
				1752.5	20375	21.73	23	0-2	

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台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

www.tw.sgs.com

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FDD Band 4								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
3	QPSK	1 RB	0	1711.5	19965	23.34	25	0
				1732.5	20175	23.36	25	0
				1753.5	20385	23.23	25	0
			7	1711.5	19965	23.87	25	0
				1732.5	20175	23.30	25	0
				1753.5	20385	23.50	25	0
			14	1711.5	19965	23.47	25	0
				1732.5	20175	23.28	25	0
				1753.5	20385	23.57	25	0
		8 RB	0	1711.5	19965	22.70	24	0-1
				1732.5	20175	22.70	24	0-1
				1753.5	20385	22.56	24	0-1
			4	1711.5	19965	22.77	24	0-1
				1732.5	20175	22.74	24	0-1
				1753.5	20385	22.76	24	0-1
			7	1711.5	19965	22.45	24	0-1
				1732.5	20175	22.51	24	0-1
				1753.5	20385	22.46	24	0-1
		15RB	1711.5	19965	22.25	24	0-1	
			1732.5	20175	22.49	24	0-1	
			1753.5	20385	22.83	24	0-1	
	16-QAM	1 RB	0	1711.5	19965	23.00	24	0-1
				1732.5	20175	22.79	24	0-1
				1753.5	20385	22.85	24	0-1
			7	1711.5	19965	23.01	24	0-1
				1732.5	20175	22.73	24	0-1
				1753.5	20385	22.85	24	0-1
			14	1711.5	19965	22.73	24	0-1
				1732.5	20175	22.49	24	0-1
				1753.5	20385	22.63	24	0-1
		8 RB	0	1711.5	19965	21.78	23	0-2
				1732.5	20175	21.81	23	0-2
				1753.5	20385	21.74	23	0-2
			4	1711.5	19965	21.63	23	0-2
				1732.5	20175	21.90	23	0-2
				1753.5	20385	21.84	23	0-2
			7	1711.5	19965	21.61	23	0-2
				1732.5	20175	21.47	23	0-2
				1753.5	20385	21.70	23	0-2
		15RB	1711.5	19965	21.51	23	0-2	
			1732.5	20175	21.66	23	0-2	
			1753.5	20385	21.76	23	0-2	

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台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

www.tw.sgs.com

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FDD Band 4								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
1.4	QPSK	1 RB	0	1710.7	19957	23.45	25	0
				1732.5	20175	23.28	25	0
				1754.3	20393	23.39	25	0
			2	1710.7	19957	23.82	25	0
				1732.5	20175	23.41	25	0
				1754.3	20393	23.34	25	0
			5	1710.7	19957	23.26	25	0
				1732.5	20175	23.27	25	0
				1754.3	20393	23.41	25	0
		3 RB	0	1710.7	19957	23.30	25	0
				1732.5	20175	23.53	25	0
				1754.3	20393	23.26	25	0
			2	1710.7	19957	23.80	25	0
				1732.5	20175	23.36	25	0
				1754.3	20393	23.50	25	0
			3	1710.7	19957	23.52	25	0
				1732.5	20175	23.43	25	0
				1754.3	20393	23.47	25	0
		6RB	1710.7	19957	22.34	24	0-1	
			1732.5	20175	22.69	24	0-1	
			1754.3	20393	22.79	24	0-1	
	16-QAM	1 RB	0	1710.7	19957	23.00	24	0-1
				1732.5	20175	22.61	24	0-1
				1754.3	20393	22.96	24	0-1
			2	1710.7	19957	22.86	24	0-1
				1732.5	20175	22.87	24	0-1
				1754.3	20393	22.93	24	0-1
			5	1710.7	19957	22.73	24	0-1
				1732.5	20175	22.75	24	0-1
				1754.3	20393	22.70	24	0-1
		3 RB	0	1710.7	19957	23.02	24	0-1
				1732.5	20175	22.84	24	0-1
				1754.3	20393	22.99	24	0-1
			2	1710.7	19957	22.82	24	0-1
				1732.5	20175	22.90	24	0-1
				1754.3	20393	22.96	24	0-1
			3	1710.7	19957	22.92	24	0-1
				1732.5	20175	22.78	24	0-1
				1754.3	20393	22.73	24	0-1
		6RB	1710.7	19957	21.51	23	0-2	
			1732.5	20175	21.54	23	0-2	
			1754.3	20393	21.56	23	0-2	

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台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

www.tw.sgs.com

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FDD Band 5								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	829	20450	23.05	24	0
				836.5	20525	22.94	24	0
				844	20600	23.35	24	0
			25	829	20450	23.06	24	0
				836.5	20525	22.81	24	0
				844	20600	22.92	24	0
			49	829	20450	22.59	24	0
				836.5	20525	22.74	24	0
				844	20600	22.78	24	0
		25 RB	0	829	20450	22.26	23	0-1
				836.5	20525	21.90	23	0-1
				844	20600	22.28	23	0-1
			12	829	20450	22.12	23	0-1
				836.5	20525	22.05	23	0-1
				844	20600	22.29	23	0-1
			25	829	20450	22.14	23	0-1
				836.5	20525	22.13	23	0-1
				844	20600	22.55	23	0-1
		50RB		829	20450	22.13	23	0-1
				836.5	20525	22.26	23	0-1
				844	20600	22.10	23	0-1
	16-QAM	1 RB	0	829	20450	22.36	23	0-1
				836.5	20525	22.54	23	0-1
				844	20600	22.88	23	0-1
			25	829	20450	22.43	23	0-1
				836.5	20525	22.22	23	0-1
				844	20600	22.53	23	0-1
			49	829	20450	22.23	23	0-1
				836.5	20525	22.33	23	0-1
				844	20600	22.49	23	0-1
		25 RB	0	829	20450	21.15	22	0-2
				836.5	20525	20.95	22	0-2
				844	20600	21.24	22	0-2
			12	829	20450	21.06	22	0-2
				836.5	20525	21.06	22	0-2
				844	20600	21.26	22	0-2
			25	829	20450	20.86	22	0-2
				836.5	20525	21.12	22	0-2
				844	20600	21.40	22	0-2
		500RB		829	20450	20.99	22	0-2
				836.5	20525	20.81	22	0-2
				844	20600	21.13	22	0-2

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台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 5									
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)	
5	QPSK	1 RB	0	826.5	20425	23.15	24	0	
				836.5	20525	23.03	24	0	
				846.5	20625	23.22	24	0	
			12	826.5	20425	22.95	24	0	
				836.5	20525	23.09	24	0	
				846.5	20625	23.00	24	0	
			24	826.5	20425	23.02	24	0	
				836.5	20525	23.08	24	0	
				846.5	20625	22.89	24	0	
		12 RB	0	826.5	20425	22.27	23	0-1	
				836.5	20525	22.33	23	0-1	
				846.5	20625	22.00	23	0-1	
			6	826.5	20425	22.06	23	0-1	
				836.5	20525	22.15	23	0-1	
				846.5	20625	22.28	23	0-1	
			13	826.5	20425	22.08	23	0-1	
				836.5	20525	21.64	23	0-1	
				846.5	20625	22.03	23	0-1	
		25RB			826.5	20425	22.13	23	0-1
					836.5	20525	21.74	23	0-1
					846.5	20625	22.02	23	0-1
	16-QAM	1 RB	0	826.5	20425	22.36	23	0-1	
				836.5	20525	22.42	23	0-1	
				846.5	20625	22.92	23	0-1	
			12	826.5	20425	22.64	23	0-1	
				836.5	20525	22.09	23	0-1	
				846.5	20625	22.21	23	0-1	
			24	826.5	20425	22.07	23	0-1	
				836.5	20525	22.39	23	0-1	
				846.5	20625	22.26	23	0-1	
		12 RB	0	826.5	20425	21.14	22	0-2	
				836.5	20525	20.97	22	0-2	
				846.5	20625	21.07	22	0-2	
			6	826.5	20425	21.03	22	0-2	
				836.5	20525	21.15	22	0-2	
				846.5	20625	20.98	22	0-2	
			13	826.5	20425	21.02	22	0-2	
				836.5	20525	21.23	22	0-2	
				846.5	20625	21.18	22	0-2	
		25RB			826.5	20425	21.01	22	0-2
					836.5	20525	21.09	22	0-2
					846.5	20625	21.60	22	0-2

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f (886 2) 2298 0488

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FDD Band 5								
BW(MHz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
3	QPSK	1 RB	0	825.5	20415	22.79	24	0
				836.5	20525	22.98	24	0
				847.5	20635	22.90	24	0
			7	825.5	20415	22.88	24	0
				836.5	20525	22.81	24	0
				847.5	20635	22.85	24	0
			14	825.5	20415	23.13	24	0
				836.5	20525	23.04	24	0
				847.5	20635	23.00	24	0
		8 RB	0	825.5	20415	22.13	23	0-1
				836.5	20525	22.21	23	0-1
				847.5	20635	21.96	23	0-1
			4	825.5	20415	22.18	23	0-1
				836.5	20525	21.98	23	0-1
				847.5	20635	22.00	23	0-1
			7	825.5	20415	22.14	23	0-1
				836.5	20525	22.19	23	0-1
				847.5	20635	21.98	23	0-1
		15RB		825.5	20415	22.07	23	0-1
				836.5	20525	22.13	23	0-1
				847.5	20635	22.20	23	0-1
	16-QAM	1 RB	0	825.5	20415	22.27	23	0-1
				836.5	20525	22.58	23	0-1
				847.5	20635	22.12	23	0-1
			7	825.5	20415	22.41	23	0-1
				836.5	20525	22.41	23	0-1
				847.5	20635	22.67	23	0-1
			14	825.5	20415	22.40	23	0-1
				836.5	20525	21.71	23	0-1
				847.5	20635	22.42	23	0-1
		8 RB	0	825.5	20415	21.08	22	0-2
				836.5	20525	21.24	22	0-2
				847.5	20635	21.11	22	0-2
			4	825.5	20415	21.07	22	0-2
				836.5	20525	21.41	22	0-2
				847.5	20635	21.12	22	0-2
			7	825.5	20415	21.25	22	0-2
				836.5	20525	21.22	22	0-2
				847.5	20635	21.27	22	0-2
		15RB		825.5	20415	21.12	22	0-2
				836.5	20525	21.05	22	0-2
				847.5	20635	20.91	22	0-2

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FDD Band 5									
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)	
1.4	QPSK	1 RB	0	824.7	20407	22.92	24	0	
				836.5	20525	23.20	24	0	
				848.3	20643	23.04	24	0	
			2	824.7	20407	22.95	24	0	
				836.5	20525	23.07	24	0	
				848.3	20643	23.23	24	0	
			5	824.7	20407	22.78	24	0	
				836.5	20525	22.79	24	0	
				848.3	20643	22.79	24	0	
		3 RB	0	824.7	20407	23.00	24	0	
				836.5	20525	23.02	24	0	
				848.3	20643	22.75	24	0	
			2	824.7	20407	23.17	24	0	
				836.5	20525	23.15	24	0	
				848.3	20643	23.13	24	0	
			3	824.7	20407	23.12	24	0	
				836.5	20525	23.05	24	0	
				848.3	20643	23.10	24	0	
		6RB			824.7	20407	22.01	23	0-1
					836.5	20525	22.11	23	0-1
					848.3	20643	22.12	23	0-1
	16-QAM	1 RB	0	824.7	20407	21.96	23	0-1	
				836.5	20525	22.09	23	0-1	
				848.3	20643	22.16	23	0-1	
			2	824.7	20407	22.48	23	0-1	
				836.5	20525	21.71	23	0-1	
				848.3	20643	22.05	23	0-1	
			5	824.7	20407	21.97	23	0-1	
				836.5	20525	22.33	23	0-1	
				848.3	20643	22.06	23	0-1	
		3 RB	0	824.7	20407	22.08	23	0-1	
				836.5	20525	21.87	23	0-1	
				848.3	20643	21.82	23	0-1	
			2	824.7	20407	22.04	23	0-1	
				836.5	20525	21.79	23	0-1	
				848.3	20643	22.14	23	0-1	
			3	824.7	20407	22.07	23	0-1	
				836.5	20525	22.12	23	0-1	
				848.3	20643	22.06	23	0-1	
		6RB			824.7	20407	21.18	22	0-2
					836.5	20525	20.99	22	0-2
					848.3	20643	21.31	22	0-2

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台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 7								
BW(MHz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
20	QPSK	1 RB	0	2510	20850	24.18	25	0
				2535	21100	23.61	25	0
				2560	21350	23.78	25	0
			50	2510	20850	23.84	25	0
				2535	21100	23.65	25	0
				2560	21350	23.43	25	0
			99	2510	20850	23.91	25	0
				2535	21100	23.77	25	0
				2560	21350	23.41	25	0
		50 RB	0	2510	20850	22.99	24	0-1
				2535	21100	22.75	24	0-1
				2560	21350	22.56	24	0-1
			25	2510	20850	22.93	24	0-1
				2535	21100	22.73	24	0-1
				2560	21350	22.58	24	0-1
			50	2510	20850	22.94	24	0-1
				2535	21100	22.72	24	0-1
				2560	21350	22.47	24	0-1
		100RB		2510	20850	22.99	24	0-1
				2535	21100	22.74	24	0-1
				2560	21350	22.60	24	0-1
	16-QAM	1 RB	0	2510	20850	23.50	24	0-1
				2535	21100	22.90	24	0-1
				2560	21350	22.94	24	0-1
			50	2510	20850	23.01	24	0-1
				2535	21100	23.03	24	0-1
				2560	21350	22.85	24	0-1
			99	2510	20850	23.24	24	0-1
				2535	21100	23.08	24	0-1
				2560	21350	22.69	24	0-1
		50 RB	0	2510	20850	22.02	23	0-2
				2535	21100	21.76	23	0-2
				2560	21350	21.70	23	0-2
			25	2510	20850	21.99	23	0-2
				2535	21100	21.74	23	0-2
				2560	21350	21.57	23	0-2
			50	2510	20850	21.94	23	0-2
				2535	21100	21.76	23	0-2
				2560	21350	21.44	23	0-2
		100RB		2510	20850	21.99	23	0-2
				2535	21100	21.73	23	0-2
				2560	21350	21.63	23	0-2

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t (886 2) 2299 3279

f (886 2) 2298 0488

www.tw.sgs.com

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FDD Band 7								
BW(MHz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
15	QPSK	1 RB	0	2507.5	20825	23.98	25	0
				2535	21100	23.76	25	0
				2562.5	21375	23.60	25	0
			36	2507.5	20825	23.88	25	0
				2535	21100	23.73	25	0
				2562.5	21375	23.42	25	0
			74	2507.5	20825	23.85	25	0
				2535	21100	23.73	25	0
				2562.5	21375	23.39	25	0
		36 RB	0	2507.5	20825	23.01	24	0-1
				2535	21100	22.85	24	0-1
				2562.5	21375	22.64	24	0-1
			18	2507.5	20825	22.99	24	0-1
				2535	21100	22.79	24	0-1
				2562.5	21375	22.57	24	0-1
			37	2507.5	20825	22.94	24	0-1
				2535	21100	22.78	24	0-1
				2562.5	21375	22.51	24	0-1
			75RB	2507.5	20825	23.02	24	0-1
				2535	21100	22.81	24	0-1
				2562.5	21375	22.58	24	0-1
	16-QAM	1 RB	0	2507.5	20825	23.31	24	0-1
				2535	21100	23.02	24	0-1
				2562.5	21375	22.78	24	0-1
			36	2507.5	20825	23.18	24	0-1
				2535	21100	23.04	24	0-1
				2562.5	21375	22.61	24	0-1
			74	2507.5	20825	23.16	24	0-1
				2535	21100	23.05	24	0-1
				2562.5	21375	22.74	24	0-1
		36 RB	0	2507.5	20825	21.99	23	0-2
				2535	21100	21.79	23	0-2
				2562.5	21375	21.62	23	0-2
			18	2507.5	20825	22.00	23	0-2
				2535	21100	21.80	23	0-2
				2562.5	21375	21.53	23	0-2
			37	2507.5	20825	21.96	23	0-2
				2535	21100	21.76	23	0-2
				2562.5	21375	21.53	23	0-2
			75RB	2507.5	20825	21.98	23	0-2
				2535	21100	21.80	23	0-2
				2562.5	21375	21.54	23	0-2

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t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 7								
BW(MHz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	2505	20800	24.11	25	0
				2535	21100	24.06	25	0
				2565	21400	23.84	25	0
			25	2505	20800	23.90	25	0
				2535	21100	23.66	25	0
				2565	21400	23.34	25	0
			49	2505	20800	24.17	25	0
				2535	21100	23.88	25	0
				2565	21400	23.59	25	0
		25 RB	0	2505	20800	23.15	24	0-1
				2535	21100	22.89	24	0-1
				2565	21400	22.64	24	0-1
			12	2505	20800	23.04	24	0-1
				2535	21100	22.77	24	0-1
				2565	21400	22.46	24	0-1
			25	2505	20800	23.07	24	0-1
				2535	21100	22.69	24	0-1
				2565	21400	22.55	24	0-1
		50RB		2505	20800	23.10	24	0-1
				2535	21100	22.84	24	0-1
				2565	21400	22.57	24	0-1
	16-QAM	1 RB	0	2505	20800	23.67	24	0-1
				2535	21100	23.27	24	0-1
				2565	21400	23.21	24	0-1
			25	2505	20800	23.20	24	0-1
				2535	21100	22.95	24	0-1
				2565	21400	22.61	24	0-1
			49	2505	20800	23.49	24	0-1
				2535	21100	23.19	24	0-1
				2565	21400	22.89	24	0-1
		25 RB	0	2505	20800	22.14	23	0-2
				2535	21100	21.91	23	0-2
				2565	21400	21.66	23	0-2
			12	2505	20800	22.03	23	0-2
				2535	21100	21.78	23	0-2
				2565	21400	21.53	23	0-2
			25	2505	20800	22.08	23	0-2
				2535	21100	21.85	23	0-2
				2565	21400	21.56	23	0-2
		50RB		2505	20800	22.13	23	0-2
				2535	21100	21.90	23	0-2
				2565	21400	21.55	23	0-2

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台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 7									
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)	
5	QPSK	1 RB	0	2502.5	20775	24.07	25	0	
				2535	21100	23.79	25	0	
				2567.5	21425	23.49	25	0	
			12	2502.5	20775	23.99	25	0	
				2535	21100	23.67	25	0	
				2567.5	21425	23.39	25	0	
			24	2502.5	20775	23.93	25	0	
				2535	21100	23.74	25	0	
				2567.5	21425	23.26	25	0	
		12 RB	0	2502.5	20775	23.06	24	0-1	
				2535	21100	22.76	24	0-1	
				2567.5	21425	22.45	24	0-1	
			6	2502.5	20775	23.02	24	0-1	
				2535	21100	22.70	24	0-1	
				2567.5	21425	22.47	24	0-1	
			13	2502.5	20775	22.96	24	0-1	
				2535	21100	22.74	24	0-1	
				2567.5	21425	22.45	24	0-1	
		25RB			2502.5	20775	22.99	24	0-1
					2535	21100	22.71	24	0-1
					2567.5	21425	22.42	24	0-1
	16-QAM	1 RB	0	2502.5	20775	23.32	24	0-1	
				2535	21100	23.07	24	0-1	
				2567.5	21425	22.64	24	0-1	
			12	2502.5	20775	23.31	24	0-1	
				2535	21100	23.02	24	0-1	
				2567.5	21425	22.64	24	0-1	
			24	2502.5	20775	23.17	24	0-1	
				2535	21100	23.09	24	0-1	
				2567.5	21425	22.70	24	0-1	
		12 RB	0	2502.5	20775	22.11	23	0-2	
				2535	21100	21.80	23	0-2	
				2567.5	21425	21.49	23	0-2	
			6	2502.5	20775	22.06	23	0-2	
				2535	21100	21.80	23	0-2	
				2567.5	21425	21.39	23	0-2	
			13	2502.5	20775	22.03	23	0-2	
				2535	21100	21.88	23	0-2	
				2567.5	21425	21.39	23	0-2	
		25RB			2502.5	20775	22.02	23	0-2
					2535	21100	21.77	23	0-2
					2567.5	21425	21.39	23	0-2

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台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 12									
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)	
10	QPSK	1 RB	0	704	23060	23.28	24	0	
				707.5	23095	23.08	24	0	
				711	23130	23.22	24	0	
			25	704	23060	22.98	24	0	
				707.5	23095	22.81	24	0	
				711	23130	22.89	24	0	
			49	704	23060	23.17	24	0	
				707.5	23095	23.21	24	0	
				711	23130	23.09	24	0	
		25 RB	0	704	23060	22.09	23	0-1	
				707.5	23095	21.99	23	0-1	
				711	23130	21.98	23	0-1	
			12	704	23060	22.01	23	0-1	
				707.5	23095	22.08	23	0-1	
				711	23130	22.16	23	0-1	
			25	704	23060	22.18	23	0-1	
				707.5	23095	22.04	23	0-1	
				711	23130	22.20	23	0-1	
		50RB			704	23060	22.10	23	0-1
					707.5	23095	22.07	23	0-1
					711	23130	21.99	23	0-1
	16-QAM	1 RB	0	704	23060	22.10	23	0-1	
				707.5	23095	22.23	23	0-1	
				711	23130	22.27	23	0-1	
			25	704	23060	22.58	23	0-1	
				707.5	23095	22.41	23	0-1	
				711	23130	22.61	23	0-1	
			49	704	23060	22.24	23	0-1	
				707.5	23095	22.63	23	0-1	
				711	23130	22.32	23	0-1	
		25 RB	0	704	23060	21.02	22	0-2	
				707.5	23095	21.13	22	0-2	
				711	23130	20.92	22	0-2	
			12	704	23060	20.99	22	0-2	
				707.5	23095	21.05	22	0-2	
				711	23130	21.08	22	0-2	
			25	704	23060	21.00	22	0-2	
				707.5	23095	20.80	22	0-2	
				711	23130	21.14	22	0-2	
		50RB			704	23060	20.96	22	0-2
					707.5	23095	21.10	22	0-2
					711	23130	21.14	22	0-2

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台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

www.tw.sgs.com

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FDD Band 12								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	701.5	23035	23.16	24	0
				707.5	23095	23.18	24	0
				713.5	23155	23.03	24	0
			12	701.5	23035	23.11	24	0
				707.5	23095	23.11	24	0
				713.5	23155	22.94	24	0
			24	701.5	23035	23.18	24	0
				707.5	23095	23.02	24	0
				713.5	23155	23.17	24	0
		12 RB	0	701.5	23035	22.09	23	0-1
				707.5	23095	22.02	23	0-1
				713.5	23155	21.99	23	0-1
			6	701.5	23035	22.09	23	0-1
				707.5	23095	22.05	23	0-1
				713.5	23155	21.96	23	0-1
			13	701.5	23035	22.15	23	0-1
				707.5	23095	21.96	23	0-1
				713.5	23155	22.03	23	0-1
		25RB		701.5	23035	22.04	23	0-1
				707.5	23095	22.05	23	0-1
				713.5	23155	22.00	23	0-1
	16-QAM	1 RB	0	701.5	23035	22.51	23	0-1
				707.5	23095	22.35	23	0-1
				713.5	23155	22.41	23	0-1
			12	701.5	23035	22.50	23	0-1
				707.5	23095	22.10	23	0-1
				713.5	23155	22.33	23	0-1
			24	701.5	23035	22.16	23	0-1
				707.5	23095	22.08	23	0-1
				713.5	23155	22.09	23	0-1
		12 RB	0	701.5	23035	20.97	22	0-2
				707.5	23095	21.03	22	0-2
				713.5	23155	21.06	22	0-2
			6	701.5	23035	21.12	22	0-2
				707.5	23095	21.12	22	0-2
				713.5	23155	21.02	22	0-2
			13	701.5	23035	20.96	22	0-2
				707.5	23095	20.93	22	0-2
				713.5	23155	20.91	22	0-2
		25RB		701.5	23035	20.85	22	0-2
				707.5	23095	20.89	22	0-2
				713.5	23155	21.11	22	0-2

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t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 12								
BW(MHz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
3	QPSK	1 RB	0	700.5	23025	23.15	24	0
				707.5	23095	23.05	24	0
				714.5	23165	23.16	24	0
			7	700.5	23025	22.99	24	0
				707.5	23095	23.19	24	0
				714.5	23165	23.01	24	0
			14	700.5	23025	23.05	24	0
				707.5	23095	22.84	24	0
				714.5	23165	22.98	24	0
		8 RB	0	700.5	23025	22.03	23	0-1
				707.5	23095	21.94	23	0-1
				714.5	23165	21.93	23	0-1
			4	700.5	23025	22.05	23	0-1
				707.5	23095	22.00	23	0-1
				714.5	23165	22.13	23	0-1
			7	700.5	23025	22.00	23	0-1
				707.5	23095	21.90	23	0-1
				714.5	23165	21.99	23	0-1
		15RB		700.5	23025	22.14	23	0-1
				707.5	23095	21.96	23	0-1
				714.5	23165	22.00	23	0-1
	16-QAM	1 RB	0	700.5	23025	22.40	23	0-1
				707.5	23095	22.08	23	0-1
				714.5	23165	22.32	23	0-1
			7	700.5	23025	22.57	23	0-1
				707.5	23095	22.22	23	0-1
				714.5	23165	22.38	23	0-1
			14	700.5	23025	22.13	23	0-1
				707.5	23095	22.42	23	0-1
				714.5	23165	22.03	23	0-1
		8 RB	0	700.5	23025	21.04	22	0-2
				707.5	23095	20.91	22	0-2
				714.5	23165	21.04	22	0-2
			4	700.5	23025	21.10	22	0-2
				707.5	23095	20.87	22	0-2
				714.5	23165	21.20	22	0-2
			7	700.5	23025	20.91	22	0-2
				707.5	23095	20.94	22	0-2
				714.5	23165	21.00	22	0-2
		15RB		700.5	23025	21.12	22	0-2
				707.5	23095	21.06	22	0-2
				714.5	23165	20.91	22	0-2

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台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 12									
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)	
1.4	QPSK	1 RB	0	699.7	23017	22.89	24	0	
				707.5	23095	23.05	24	0	
				715.3	23173	22.94	24	0	
			2	699.7	23017	23.10	24	0	
				707.5	23095	23.01	24	0	
				715.3	23173	22.87	24	0	
			5	699.7	23017	23.05	24	0	
				707.5	23095	22.87	24	0	
				715.3	23173	22.89	24	0	
		3 RB	0	699.7	23017	22.91	23	0	
				707.5	23095	22.87	23	0	
				715.3	23173	22.93	23	0	
			2	699.7	23017	22.97	23	0	
				707.5	23095	22.96	23	0	
				715.3	23173	22.95	23	0	
			3	699.7	23017	22.92	23	0	
				707.5	23095	22.96	23	0	
				715.3	23173	22.95	23	0	
		6RB			699.7	23017	22.02	23	0-1
					707.5	23095	22.02	23	0-1
					715.3	23173	21.77	23	0-1
	16-QAM	1 RB	0	699.7	23017	22.20	23	0-1	
				707.5	23095	22.06	23	0-1	
				715.3	23173	22.00	23	0-1	
			2	699.7	23017	22.06	23	0-1	
				707.5	23095	22.48	23	0-1	
				715.3	23173	22.24	23	0-1	
			5	699.7	23017	22.17	23	0-1	
				707.5	23095	21.91	23	0-1	
				715.3	23173	22.25	23	0-1	
		3 RB	0	699.7	23017	21.92	22	0-1	
				707.5	23095	21.98	22	0-1	
				715.3	23173	21.95	22	0-1	
			2	699.7	23017	21.91	22	0-1	
				707.5	23095	21.97	22	0-1	
				715.3	23173	21.89	22	0-1	
			3	699.7	23017	21.91	22	0-1	
				707.5	23095	21.87	22	0-1	
				715.3	23173	21.84	22	0-1	
		6RB			699.7	23017	21.06	22	0-2
					707.5	23095	21.12	22	0-2
					715.3	23173	20.89	22	0-2

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t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 13								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	782	23230	23.27	24	0
			25	782	23230	23.14	24	0
			49	782	23230	23.12	24	0
		25 RB	0	782	23230	22.27	23	0-1
			12	782	23230	22.19	23	0-1
			25	782	23230	22.25	23	0-1
		50RB		782	23230	22.38	23	0-1
	16-QAM	1 RB	0	782	23230	22.26	23	0-1
			25	782	23230	22.61	23	0-1
			49	782	23230	22.64	23	0-1
		25 RB	0	782	23230	21.31	22	0-2
			12	782	23230	21.26	22	0-2
			25	782	23230	21.36	22	0-2
		50RB		782	23230	21.27	22	0-2

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f (886 2) 2298 0488

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FDD Band 13								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	779.5	23205	23.36	24	0
				782	23230	23.41	24	0
				784.5	23255	23.27	24	0
			12	779.5	23205	23.29	24	0
				782	23230	23.26	24	0
				784.5	23255	23.16	24	0
			24	779.5	23205	23.22	24	0
				782	23230	23.11	24	0
				784.5	23255	23.15	24	0
		12 RB	0	779.5	23205	22.06	23	0-1
				782	23230	22.18	23	0-1
				784.5	23255	22.25	23	0-1
			6	779.5	23205	22.13	23	0-1
				782	23230	22.11	23	0-1
				784.5	23255	22.29	23	0-1
			13	779.5	23205	22.08	23	0-1
				782	23230	22.14	23	0-1
				784.5	23255	22.24	23	0-1
		25RB		779.5	23205	22.10	23	0-1
				782	23230	22.06	23	0-1
				784.5	23255	22.29	23	0-1
	16-QAM	1 RB	0	779.5	23205	22.27	23	0-1
				782	23230	22.29	23	0-1
				784.5	23255	22.46	23	0-1
			12	779.5	23205	22.56	23	0-1
				782	23230	22.34	23	0-1
				784.5	23255	22.72	23	0-1
			24	779.5	23205	22.25	23	0-1
				782	23230	22.03	23	0-1
				784.5	23255	22.36	23	0-1
		12 RB	0	779.5	23205	21.13	22	0-2
				782	23230	21.23	22	0-2
				784.5	23255	21.21	22	0-2
			6	779.5	23205	21.12	22	0-2
				782	23230	21.17	22	0-2
				784.5	23255	21.38	22	0-2
			13	779.5	23205	21.28	22	0-2
				782	23230	21.21	22	0-2
				784.5	23255	21.22	22	0-2
		25RB		779.5	23205	21.16	22	0-2
				782	23230	21.14	22	0-2
				784.5	23255	21.21	22	0-2

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t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 17									
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)	
10	QPSK	1 RB	0	709	23780	23.05	24	0	
				710	23790	23.02	24	0	
				711	23800	22.94	24	0	
			25	709	23780	23.20	24	0	
				710	23790	22.87	24	0	
				711	23800	23.23	24	0	
			49	709	23780	22.88	24	0	
				710	23790	22.88	24	0	
				711	23800	22.77	24	0	
		25 RB	0	709	23780	22.09	23	0-1	
				710	23790	21.80	23	0-1	
				711	23800	21.97	23	0-1	
			12	709	23780	22.01	23	0-1	
				710	23790	21.97	23	0-1	
				711	23800	22.13	23	0-1	
			25	709	23780	22.07	23	0-1	
				710	23790	22.01	23	0-1	
				711	23800	22.07	23	0-1	
		50RB			709	23780	22.00	23	0-1
					710	23790	22.03	23	0-1
					711	23800	22.08	23	0-1
		16-QAM	1 RB	0	709	23780	22.19	23	0-1
					710	23790	21.92	23	0-1
					711	23800	22.36	23	0-1
				25	709	23780	22.31	23	0-1
					710	23790	22.04	23	0-1
					711	23800	22.31	23	0-1
	49			709	23780	22.35	23	0-1	
				710	23790	22.10	23	0-1	
				711	23800	22.06	23	0-1	
	25 RB			0	709	23780	20.92	22	0-2
					710	23790	20.90	22	0-2
					711	23800	20.88	22	0-2
				12	709	23780	21.08	22	0-2
					710	23790	20.80	22	0-2
					711	23800	20.88	22	0-2
			25	709	23780	20.84	22	0-2	
				710	23790	20.96	22	0-2	
				711	23800	21.08	22	0-2	
	50RB			709	23780	20.92	22	0-2	
				710	23790	21.03	22	0-2	
				711	23800	21.06	22	0-2	

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t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 17								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	706.5	23755	23.14	24	0
				710	23790	23.35	24	0
				713.5	23825	23.14	24	0
			12	706.5	23755	23.15	24	0
				710	23790	23.13	24	0
				713.5	23825	23.06	24	0
			24	706.5	23755	23.21	24	0
				710	23790	22.99	24	0
				713.5	23825	22.96	24	0
		12 RB	0	706.5	23755	21.94	23	0-1
				710	23790	21.95	23	0-1
				713.5	23825	21.99	23	0-1
			6	706.5	23755	21.97	23	0-1
				710	23790	21.93	23	0-1
				713.5	23825	22.01	23	0-1
			13	706.5	23755	22.05	23	0-1
				710	23790	21.87	23	0-1
				713.5	23825	22.03	23	0-1
		25RB	706.5	23755	22.00	23	0-1	
			710	23790	21.84	23	0-1	
			713.5	23825	21.86	23	0-1	
	16-QAM	1 RB	0	706.5	23755	22.09	23	0-1
				710	23790	22.06	23	0-1
				713.5	23825	21.97	23	0-1
			12	706.5	23755	21.95	23	0-1
				710	23790	22.45	23	0-1
				713.5	23825	22.14	23	0-1
			24	706.5	23755	22.34	23	0-1
				710	23790	22.40	23	0-1
				713.5	23825	22.12	23	0-1
		12 RB	0	706.5	23755	20.98	22	0-2
				710	23790	20.93	22	0-2
				713.5	23825	20.97	22	0-2
			6	706.5	23755	20.97	22	0-2
				710	23790	20.92	22	0-2
				713.5	23825	21.01	22	0-2
			13	706.5	23755	21.12	22	0-2
				710	23790	20.87	22	0-2
				713.5	23825	20.87	22	0-2
		25RB	706.5	23755	20.94	22	0-2	
			710	23790	21.00	22	0-2	
			713.5	23825	20.98	22	0-2	

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t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 25								
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	24.36	25	0
				1882.5	26365	24.34	25	0
				1905	26590	24.30	25	0
			50	1860	26140	24.32	25	0
				1882.5	26365	24.18	25	0
				1905	26590	23.17	25	0
			99	1860	26140	24.49	25	0
				1882.5	26365	24.34	25	0
				1905	26590	23.01	25	0
		50 RB	0	1860	26140	23.39	24	0-1
				1882.5	26365	23.43	24	0-1
				1905	26590	22.81	24	0-1
			25	1860	26140	23.42	24	0-1
				1882.5	26365	23.40	24	0-1
				1905	26590	22.42	24	0-1
			50	1860	26140	23.50	24	0-1
				1882.5	26365	23.49	24	0-1
				1905	26590	22.11	24	0-1
		100RB		1860	26140	23.42	24	0-1
				1882.5	26365	23.45	24	0-1
				1905	26590	22.02	24	0-1
	16-QAM	1 RB	0	1860	26140	23.64	24	0-1
				1882.5	26365	23.66	24	0-1
				1905	26590	23.62	24	0-1
			50	1860	26140	23.62	24	0-1
				1882.5	26365	23.41	24	0-1
				1905	26590	22.28	24	0-1
			99	1860	26140	23.79	24	0-1
				1882.5	26365	23.61	24	0-1
				1905	26590	22.08	24	0-1
		50 RB	0	1860	26140	22.36	23	0-2
				1882.5	26365	22.43	23	0-2
				1905	26590	21.84	23	0-2
			25	1860	26140	22.42	23	0-2
				1882.5	26365	22.38	23	0-2
				1905	26590	21.37	23	0-2
			50	1860	26140	22.46	23	0-2
				1882.5	26365	22.48	23	0-2
				1905	26590	21.13	23	0-2
		100RB		1860	26140	22.41	23	0-2
				1882.5	26365	22.39	23	0-2
				1905	26590	21.23	23	0-2

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t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 25								
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	24.16	25	0
				1882.5	26365	24.18	25	0
				1907.5	26615	23.64	25	0
			36	1857.5	26115	24.18	25	0
				1882.5	26365	24.16	25	0
				1907.5	26615	23.15	25	0
			74	1857.5	26115	24.35	25	0
				1882.5	26365	24.29	25	0
				1907.5	26615	23.07	25	0
		36 RB	0	1857.5	26115	23.31	24	0-1
				1882.5	26365	23.34	24	0-1
				1907.5	26615	22.25	24	0-1
			18	1857.5	26115	23.27	24	0-1
				1882.5	26365	23.36	24	0-1
				1907.5	26615	22.15	24	0-1
			37	1857.5	26115	23.37	24	0-1
				1882.5	26365	23.38	24	0-1
				1907.5	26615	22.04	24	0-1
		75RB	1857.5	26115	23.31	24	0-1	
			1882.5	26365	23.36	24	0-1	
			1907.5	26615	22.12	24	0-1	
	16-QAM	1 RB	0	1857.5	26115	23.57	24	0-1
				1882.5	26365	23.54	24	0-1
				1907.5	26615	22.95	24	0-1
			36	1857.5	26115	23.45	24	0-1
				1882.5	26365	23.37	24	0-1
				1907.5	26615	22.17	24	0-1
			74	1857.5	26115	23.61	24	0-1
				1882.5	26365	23.60	24	0-1
				1907.5	26615	22.04	24	0-1
		36 RB	0	1857.5	26115	22.28	23	0-2
				1882.5	26365	22.35	23	0-2
				1907.5	26615	21.26	23	0-2
			18	1857.5	26115	22.28	23	0-2
				1882.5	26365	22.36	23	0-2
				1907.5	26615	21.20	23	0-2
			37	1857.5	26115	22.36	23	0-2
				1882.5	26365	22.39	23	0-2
				1907.5	26615	21.12	23	0-2
		75RB	1857.5	26115	22.30	23	0-2	
			1882.5	26365	22.29	23	0-2	
			1907.5	26615	21.17	23	0-2	

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t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 25								
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	24.12	25	0
				1882.5	26365	24.19	25	0
				1910	26640	23.12	25	0
			25	1855	26090	24.15	25	0
				1882.5	26365	24.27	25	0
				1910	26640	23.19	25	0
			49	1855	26090	24.40	25	0
				1882.5	26365	24.24	25	0
				1910	26640	23.09	25	0
		25 RB	0	1855	26090	23.33	24	0-1
				1882.5	26365	23.34	24	0-1
				1910	26640	22.07	24	0-1
			12	1855	26090	23.35	24	0-1
				1882.5	26365	23.37	24	0-1
				1910	26640	22.20	24	0-1
			25	1855	26090	23.37	24	0-1
				1882.5	26365	23.50	24	0-1
				1910	26640	22.18	24	0-1
		50RB	1855	26090	23.39	24	0-1	
			1882.5	26365	23.39	24	0-1	
			1910	26640	22.03	24	0-1	
	16-QAM	1 RB	0	1855	26090	23.62	24	0-1
				1882.5	26365	23.55	24	0-1
				1910	26640	22.27	24	0-1
			25	1855	26090	23.52	24	0-1
				1882.5	26365	23.54	24	0-1
				1910	26640	22.06	24	0-1
			49	1855	26090	23.76	24	0-1
				1882.5	26365	23.54	24	0-1
				1910	26640	22.04	24	0-1
		25 RB	0	1855	26090	22.30	23	0-2
				1882.5	26365	22.34	23	0-2
				1910	26640	21.12	23	0-2
			12	1855	26090	22.35	23	0-2
				1882.5	26365	22.36	23	0-2
				1910	26640	21.26	23	0-2
			25	1855	26090	22.34	23	0-2
				1882.5	26365	22.38	23	0-2
				1910	26640	21.11	23	0-2
		50RB	1855	26090	22.42	23	0-2	
			1882.5	26365	22.28	23	0-2	
			1910	26640	21.02	23	0-2	

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t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 25									
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	24.21	25	0	
				1882.5	26365	24.29	25	0	
				1912.5	26665	23.14	25	0	
			12	1852.5	26065	24.14	25	0	
				1882.5	26365	24.16	25	0	
				1912.5	26665	23.13	25	0	
			24	1852.5	26065	24.20	25	0	
				1882.5	26365	24.25	25	0	
				1912.5	26665	23.07	25	0	
		12 RB	0	1852.5	26065	23.29	24	0-1	
				1882.5	26365	23.33	24	0-1	
				1912.5	26665	22.27	24	0-1	
			6	1852.5	26065	23.32	24	0-1	
				1882.5	26365	23.29	24	0-1	
				1912.5	26665	22.26	24	0-1	
			13	1852.5	26065	23.24	24	0-1	
				1882.5	26365	23.25	24	0-1	
				1912.5	26665	22.04	24	0-1	
		25RB			1852.5	26065	23.29	24	0-1
					1882.5	26365	23.24	24	0-1
					1912.5	26665	22.01	24	0-1
	16-QAM	1 RB	0	1852.5	26065	23.59	24	0-1	
				1882.5	26365	23.58	24	0-1	
				1912.5	26665	22.40	24	0-1	
			12	1852.5	26065	23.49	24	0-1	
				1882.5	26365	23.49	24	0-1	
				1912.5	26665	22.43	24	0-1	
			24	1852.5	26065	23.56	24	0-1	
				1882.5	26365	23.48	24	0-1	
				1912.5	26665	22.08	24	0-1	
		12 RB	0	1852.5	26065	22.29	23	0-2	
				1882.5	26365	22.39	23	0-2	
				1912.5	26665	21.32	23	0-2	
			6	1852.5	26065	22.34	23	0-2	
				1882.5	26365	22.30	23	0-2	
				1912.5	26665	21.27	23	0-2	
			13	1852.5	26065	22.27	23	0-2	
				1882.5	26365	22.29	23	0-2	
				1912.5	26665	21.14	23	0-2	
		25RB			1852.5	26065	22.31	23	0-2
					1882.5	26365	22.27	23	0-2
					1912.5	26665	21.04	23	0-2

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f (886 2) 2298 0488

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FDD Band 25									
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	24.14	25	0	
				1882.5	26365	24.20	25	0	
				1913.5	26675	23.14	25	0	
			7	1851.5	26055	24.23	25	0	
				1882.5	26365	24.25	25	0	
				1913.5	26675	23.15	25	0	
			14	1851.5	26055	24.19	25	0	
				1882.5	26365	24.07	25	0	
				1913.5	26675	23.09	25	0	
		8 RB	0	1851.5	26055	23.38	24	0-1	
				1882.5	26365	23.30	24	0-1	
				1913.5	26675	22.17	24	0-1	
			4	1851.5	26055	23.31	24	0-1	
				1882.5	26365	23.27	24	0-1	
				1913.5	26675	22.03	24	0-1	
			7	1851.5	26055	23.32	24	0-1	
				1882.5	26365	23.32	24	0-1	
				1913.5	26675	22.08	24	0-1	
		15RB			1851.5	26055	23.28	24	0-1
					1882.5	26365	23.26	24	0-1
					1913.5	26675	22.02	24	0-1
	16-QAM	1 RB	0	1851.5	26055	23.58	24	0-1	
				1882.5	26365	23.53	24	0-1	
				1913.5	26675	22.29	24	0-1	
			7	1851.5	26055	23.60	24	0-1	
				1882.5	26365	23.48	24	0-1	
				1913.5	26675	22.15	24	0-1	
			14	1851.5	26055	23.46	24	0-1	
				1882.5	26365	23.52	24	0-1	
				1913.5	26675	22.04	24	0-1	
			8 RB	0	1851.5	26055	22.44	23	0-2
					1882.5	26365	22.39	23	0-2
					1913.5	26675	21.26	23	0-2
				4	1851.5	26055	22.38	23	0-2
					1882.5	26365	22.32	23	0-2
					1913.5	26675	21.15	23	0-2
		7	1851.5	26055	22.34	23	0-2		
			1882.5	26365	22.34	23	0-2		
			1913.5	26675	21.06	23	0-2		
		15RB			1851.5	26055	22.29	23	0-2
					1882.5	26365	22.30	23	0-2
					1913.5	26675	21.06	23	0-2

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台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

www.tw.sgs.com

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FDD Band 25								
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	24.12	25	0
				1882.5	26365	24.20	25	0
				1914.3	26683	23.15	25	0
			2	1850.7	26047	24.21	25	0
				1882.5	26365	24.23	25	0
				1914.3	26683	23.06	25	0
			5	1850.7	26047	24.05	25	0
				1882.5	26365	24.22	25	0
				1914.3	26683	23.10	25	0
		3 RB	0	1850.7	26047	24.14	25	0
				1882.5	26365	24.30	25	0
				1914.3	26683	23.16	25	0
			2	1850.7	26047	24.19	25	0
				1882.5	26365	24.27	25	0
				1914.3	26683	23.05	25	0
			3	1850.7	26047	24.15	25	0
				1882.5	26365	24.24	25	0
				1914.3	26683	23.25	25	0
		6RB		1850.7	26047	23.21	24	0-1
				1882.5	26365	23.22	24	0-1
				1914.3	26683	22.13	24	0-1
	16-QAM	1 RB	0	1850.7	26047	23.48	24	0-1
				1882.5	26365	23.47	24	0-1
				1914.3	26683	22.06	24	0-1
			2	1850.7	26047	23.40	24	0-1
				1882.5	26365	23.59	24	0-1
				1914.3	26683	22.18	24	0-1
			5	1850.7	26047	23.33	24	0-1
				1882.5	26365	23.62	24	0-1
				1914.3	26683	22.07	24	0-1
		3 RB	0	1850.7	26047	23.36	24	0-1
				1882.5	26365	23.25	24	0-1
				1914.3	26683	22.09	24	0-1
			2	1850.7	26047	23.39	24	0-1
				1882.5	26365	23.28	24	0-1
				1914.3	26683	22.05	24	0-1
			3	1850.7	26047	23.28	24	0-1
				1882.5	26365	23.25	24	0-1
				1914.3	26683	22.17	24	0-1
		6RB		1850.7	26047	22.39	23	0-2
				1882.5	26365	22.27	23	0-2
				1914.3	26683	21.03	23	0-2

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台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

www.tw.sgs.com

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FDD Band 26									
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)	
15	QPSK	1 RB	0	822.5	26825	23.05	24	0	
				831.5	26865	23.52	24	0	
				841.5	26965	23.39	24	0	
			36	822.5	26825	22.91	24	0	
				831.5	26865	23.47	24	0	
				841.5	26965	23.46	24	0	
				74	822.5	26825	23.33	24	0
					831.5	26865	23.62	24	0
					841.5	26965	23.18	24	0
		36 RB	0	822.5	26825	22.30	23	0-1	
				831.5	26865	22.57	23	0-1	
				841.5	26965	22.67	23	0-1	
			18	822.5	26825	22.54	23	0-1	
				831.5	26865	22.64	23	0-1	
				841.5	26965	22.88	23	0-1	
			37	822.5	26825	22.64	23	0-1	
				831.5	26865	22.66	23	0-1	
				841.5	26965	22.76	23	0-1	
		75RB			822.5	26825	22.48	23	0-1
					831.5	26865	22.58	23	0-1
					841.5	26965	22.67	23	0-1
	16-QAM	1 RB	0	822.5	26825	22.35	23	0-1	
				831.5	26865	22.85	23	0-1	
				841.5	26965	22.78	23	0-1	
			36	822.5	26825	22.13	23	0-1	
				831.5	26865	22.81	23	0-1	
				841.5	26965	22.63	23	0-1	
			74	822.5	26825	22.63	23	0-1	
				831.5	26865	22.90	23	0-1	
				841.5	26965	22.59	23	0-1	
			36 RB	0	822.5	26825	21.30	22	0-2
					831.5	26865	21.53	22	0-2
					841.5	26965	21.62	22	0-2
				18	822.5	26825	21.56	22	0-2
					831.5	26865	21.75	22	0-2
					841.5	26965	21.95	22	0-2
		37		822.5	26825	21.65	22	0-2	
				831.5	26865	21.69	22	0-2	
				841.5	26965	21.89	22	0-2	
		75RB			822.5	26825	21.52	22	0-2
					831.5	26865	21.64	22	0-2
					841.5	26965	21.75	22	0-2

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台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

www.tw.sgs.com

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FDD Band 26								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	820	26800	22.90	24	0
				831.5	26865	23.38	24	0
				844	26990	23.68	24	0
			25	820	26800	23.06	24	0
				831.5	26865	23.66	24	0
				844	26990	23.60	24	0
			49	820	26800	23.00	24	0
				831.5	26865	23.57	24	0
				844	26990	23.24	24	0
		25 RB	0	820	26800	22.11	23	0-1
				831.5	26865	22.52	23	0-1
				844	26990	22.84	23	0-1
			12	820	26800	22.37	23	0-1
				831.5	26865	22.68	23	0-1
				844	26990	22.92	23	0-1
			25	820	26800	22.48	23	0-1
				831.5	26865	22.64	23	0-1
				844	26990	22.56	23	0-1
		50RB		820	26800	22.25	23	0-1
				831.5	26865	22.52	23	0-1
				844	26990	22.60	23	0-1
	16-QAM	1 RB	0	820	26800	22.23	23	0-1
				831.5	26865	22.65	23	0-1
				844	26990	22.99	23	0-1
			25	820	26800	22.32	23	0-1
				831.5	26865	22.98	23	0-1
				844	26990	23.00	23	0-1
			49	820	26800	22.27	23	0-1
				831.5	26865	22.89	23	0-1
				844	26990	22.49	23	0-1
		25 RB	0	820	26800	21.17	22	0-2
				831.5	26865	21.57	22	0-2
				844	26990	21.91	22	0-2
			12	820	26800	21.34	22	0-2
				831.5	26865	21.66	22	0-2
				844	26990	21.92	22	0-2
			25	820	26800	21.50	22	0-2
				831.5	26865	21.62	22	0-2
				844	26990	21.68	22	0-2
		50RB		820	26800	21.29	22	0-2
				831.5	26865	21.55	22	0-2
				844	26990	21.75	22	0-2

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台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 26									
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)	
5	QPSK	1 RB	0	816.5	26715	23.19	24	0	
				831.5	26865	23.55	24	0	
				846.5	27015	23.68	24	0	
			12	816.5	26715	22.78	24	0	
				831.5	26865	23.59	24	0	
				846.5	27015	23.40	24	0	
			24	816.5	26715	22.54	24	0	
				831.5	26865	23.65	24	0	
				846.5	27015	23.13	24	0	
		12 RB	0	816.5	26715	22.19	23	0-1	
				831.5	26865	22.63	23	0-1	
				846.5	27015	22.80	23	0-1	
			6	816.5	26715	22.16	23	0-1	
				831.5	26865	22.72	23	0-1	
				846.5	27015	22.73	23	0-1	
			13	816.5	26715	21.92	23	0-1	
				831.5	26865	22.69	23	0-1	
				846.5	27015	22.40	23	0-1	
		25RB			816.5	26715	22.09	23	0-1
					831.5	26865	22.57	23	0-1
					846.5	27015	22.49	23	0-1
	16-QAM	1 RB	0	816.5	26715	22.43	23	0-1	
				831.5	26865	22.81	23	0-1	
				846.5	27015	22.98	23	0-1	
			12	816.5	26715	22.06	23	0-1	
				831.5	26865	22.96	23	0-1	
				846.5	27015	22.81	23	0-1	
			24	816.5	26715	21.92	23	0-1	
				831.5	26865	22.91	23	0-1	
				846.5	27015	22.51	23	0-1	
		12 RB	0	816.5	26715	21.38	22	0-2	
				831.5	26865	21.67	22	0-2	
				846.5	27015	21.84	22	0-2	
			6	816.5	26715	21.26	22	0-2	
				831.5	26865	21.81	22	0-2	
				846.5	27015	21.75	22	0-2	
			13	816.5	26715	21.03	22	0-2	
				831.5	26865	21.73	22	0-2	
				846.5	27015	21.44	22	0-2	
		25RB			816.5	26715	21.17	22	0-2
					831.5	26865	21.67	22	0-2
					846.5	27015	21.63	22	0-2

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台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

www.tw.sgs.com

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FDD Band 26								
BW(MHz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
3	QPSK	1 RB	0	815.5	26705	23.46	24	0
				831.5	26865	23.55	24	0
				847.5	27025	23.56	24	0
			7	815.5	26705	23.29	24	0
				831.5	26865	23.68	24	0
				847.5	27025	23.51	24	0
			14	815.5	26705	23.07	24	0
				831.5	26865	23.62	24	0
				847.5	27025	23.24	24	0
		8 RB	0	815.5	26705	22.34	23	0-1
				831.5	26865	22.56	23	0-1
				847.5	27025	22.53	23	0-1
			4	815.5	26705	22.15	23	0-1
				831.5	26865	22.67	23	0-1
				847.5	27025	22.26	23	0-1
			7	815.5	26705	22.09	23	0-1
				831.5	26865	22.67	23	0-1
				847.5	27025	22.24	23	0-1
		15RB		815.5	26705	22.19	23	0-1
				831.5	26865	22.65	23	0-1
				847.5	27025	22.30	23	0-1
	16-QAM	1 RB	0	815.5	26705	22.55	23	0-1
				831.5	26865	22.83	23	0-1
				847.5	27025	22.75	23	0-1
			7	815.5	26705	22.46	23	0-1
				831.5	26865	22.86	23	0-1
				847.5	27025	22.61	23	0-1
			14	815.5	26705	22.28	23	0-1
				831.5	26865	22.95	23	0-1
				847.5	27025	22.34	23	0-1
		8 RB	0	815.5	26705	21.39	22	0-2
				831.5	26865	21.68	22	0-2
				847.5	27025	21.62	22	0-2
			4	815.5	26705	21.37	22	0-2
				831.5	26865	21.83	22	0-2
				847.5	27025	21.49	22	0-2
			7	815.5	26705	21.19	22	0-2
				831.5	26865	21.82	22	0-2
				847.5	27025	21.34	22	0-2
		15RB		815.5	26705	21.35	22	0-2
				831.5	26865	21.74	22	0-2
				847.5	27025	21.48	22	0-2

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No.134,Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan 24803/新北市五股區新北產業園區五工路 134 號

t (886 2) 2299 3279

f (886 2) 2298 0488

www.tw.sgs.com

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FDD Band 26									
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)	
1.4	QPSK	1 RB	0	814.7	26697	23.22	24	0	
				831.5	26865	23.44	24	0	
				848.3	27033	23.23	24	0	
			2	814.7	26697	23.25	24	0	
				831.5	26865	23.64	24	0	
				848.3	27033	23.23	24	0	
			5	814.7	26697	23.13	24	0	
				831.5	26865	23.63	24	0	
				848.3	27033	23.05	24	0	
		3 RB	0	814.7	26697	23.21	24	0	
				831.5	26865	23.57	24	0	
				848.3	27033	23.20	24	0	
			2	814.7	26697	23.22	24	0	
				831.5	26865	23.69	24	0	
				848.3	27033	23.19	24	0	
			3	814.7	26697	23.15	24	0	
				831.5	26865	23.65	24	0	
				848.3	27033	23.11	24	0	
		6RB			814.7	26697	22.18	23	0-1
					831.5	26865	22.63	23	0-1
					848.3	27033	22.13	23	0-1
	16-QAM	1 RB	0	814.7	26697	22.43	23	0-1	
				831.5	26865	22.63	23	0-1	
				848.3	27033	22.53	23	0-1	
			2	814.7	26697	22.43	23	0-1	
				831.5	26865	22.87	23	0-1	
				848.3	27033	22.33	23	0-1	
			5	814.7	26697	22.29	23	0-1	
				831.5	26865	22.80	23	0-1	
				848.3	27033	22.33	23	0-1	
		3 RB	0	814.7	26697	22.10	23	0-1	
				831.5	26865	22.52	23	0-1	
				848.3	27033	22.22	23	0-1	
			2	814.7	26697	22.15	23	0-1	
				831.5	26865	22.68	23	0-1	
				848.3	27033	22.19	23	0-1	
			3	814.7	26697	22.11	23	0-1	
				831.5	26865	22.68	23	0-1	
				848.3	27033	22.05	23	0-1	
		6RB			814.7	26697	21.42	22	0-2
					831.5	26865	21.70	22	0-2
					848.3	27033	21.35	22	0-2

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t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 30								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	2310	27710	24.37	25	0
			25	2310	27710	24.31	25	0
			49	2310	27710	23.63	25	0
		25 RB	0	2310	27710	23.38	24	0-1
			12	2310	27710	23.39	24	0-1
			25	2310	27710	23.31	24	0-1
		50RB		2310	27710	23.42	24	0-1
	16-QAM	1 RB	0	2310	27710	23.82	24	0-1
			25	2310	27710	23.60	24	0-1
			49	2310	27710	22.84	24	0-1
		25 RB	0	2310	27710	22.39	23	0-2
			12	2310	27710	22.36	23	0-2
			25	2310	27710	22.27	23	0-2
		50RB		2310	27710	22.38	23	0-2

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FDD Band 30								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	2307.5	27685	24.28	25	0
				2310	27710	24.21	25	0
				2312.5	27735	24.26	25	0
			12	2307.5	27685	24.25	25	0
				2310	27710	24.28	25	0
				2312.5	27735	24.19	25	0
			24	2307.5	27685	24.31	25	0
				2310	27710	24.25	25	0
				2312.5	27735	23.63	25	0
		12 RB	0	2307.5	27685	23.34	24	0-1
				2310	27710	23.40	24	0-1
				2312.5	27735	23.38	24	0-1
			6	2307.5	27685	23.30	24	0-1
				2310	27710	23.35	24	0-1
				2312.5	27735	23.30	24	0-1
			13	2307.5	27685	23.22	24	0-1
				2310	27710	23.30	24	0-1
				2312.5	27735	23.09	24	0-1
		25RB		2307.5	27685	23.25	24	0-1
				2310	27710	23.30	24	0-1
				2312.5	27735	23.26	24	0-1
	16-QAM	1 RB	0	2307.5	27685	23.70	24	0-1
				2310	27710	23.57	24	0-1
				2312.5	27735	23.64	24	0-1
			12	2307.5	27685	23.59	24	0-1
				2310	27710	23.59	24	0-1
				2312.5	27735	23.46	24	0-1
			24	2307.5	27685	23.54	24	0-1
				2310	27710	23.53	24	0-1
				2312.5	27735	22.81	24	0-1
		12 RB	0	2307.5	27685	22.39	23	0-2
				2310	27710	22.42	23	0-2
				2312.5	27735	22.41	23	0-2
			6	2307.5	27685	22.37	23	0-2
				2310	27710	22.40	23	0-2
				2312.5	27735	22.26	23	0-2
			13	2307.5	27685	22.29	23	0-2
				2310	27710	22.36	23	0-2
				2312.5	27735	22.14	23	0-2
		25RB		2307.5	27685	22.30	23	0-2
				2310	27710	22.39	23	0-2
				2312.5	27735	22.35	23	0-2

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台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 66									
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)	
20	QPSK	1 RB	0	1720	132072	23.60	25	0	
				1745	132322	23.48	25	0	
				1770	132572	23.55	25	0	
			50	1720	132072	23.96	25	0	
				1745	132322	23.92	25	0	
				1770	132572	23.14	25	0	
			99	1720	132072	23.58	25	0	
				1745	132322	23.73	25	0	
				1770	132572	23.21	25	0	
		50 RB	0	1720	132072	23.05	24	0-1	
				1745	132322	22.87	24	0-1	
				1770	132572	22.85	24	0-1	
			25	1720	132072	23.10	24	0-1	
				1745	132322	22.99	24	0-1	
				1770	132572	22.69	24	0-1	
			50	1720	132072	22.94	24	0-1	
				1745	132322	22.91	24	0-1	
				1770	132572	22.32	24	0-1	
		100RB			1720	132072	23.06	24	0-1
					1745	132322	23.01	24	0-1
					1770	132572	22.42	24	0-1
	16-QAM	1 RB	0	1720	132072	23.05	24	0-1	
				1745	132322	22.83	24	0-1	
				1770	132572	23.06	24	0-1	
			50	1720	132072	23.21	24	0-1	
				1745	132322	23.32	24	0-1	
				1770	132572	22.49	24	0-1	
			99	1720	132072	22.89	24	0-1	
				1745	132322	22.99	24	0-1	
				1770	132572	22.56	24	0-1	
		50 RB	0	1720	132072	22.05	23	0-2	
				1745	132322	21.97	23	0-2	
				1770	132572	21.92	23	0-2	
			25	1720	132072	22.08	23	0-2	
				1745	132322	21.99	23	0-2	
				1770	132572	21.74	23	0-2	
			50	1720	132072	21.92	23	0-2	
				1745	132322	21.89	23	0-2	
				1770	132572	21.43	23	0-2	
		100RB			1720	132072	22.05	23	0-2
					1745	132322	22.00	23	0-2
					1770	132572	21.50	23	0-2

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FDD Band 66								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
15	QPSK	1 RB	0	1717.5	132047	23.45	25	0
				1745	132322	23.42	25	0
				1772.5	132597	23.64	25	0
			36	1717.5	132047	23.79	25	0
				1745	132322	23.79	25	0
				1772.5	132597	23.22	25	0
			74	1717.5	132047	23.41	25	0
				1745	132322	23.72	25	0
				1772.5	132597	23.30	25	0
		36 RB	0	1717.5	132047	22.75	24	0-1
				1745	132322	22.79	24	0-1
				1772.5	132597	22.60	24	0-1
			18	1717.5	132047	22.73	24	0-1
				1745	132322	23.02	24	0-1
				1772.5	132597	22.53	24	0-1
			37	1717.5	132047	22.44	24	0-1
				1745	132322	22.96	24	0-1
				1772.5	132597	22.23	24	0-1
		75RB		1717.5	132047	22.57	24	0-1
				1745	132322	22.98	24	0-1
				1772.5	132597	22.47	24	0-1
	16-QAM	1 RB	0	1717.5	132047	22.68	24	0-1
				1745	132322	22.83	24	0-1
				1772.5	132597	22.87	24	0-1
			36	1717.5	132047	23.03	24	0-1
				1745	132322	23.04	24	0-1
				1772.5	132597	22.58	24	0-1
			74	1717.5	132047	22.76	24	0-1
				1745	132322	22.96	24	0-1
				1772.5	132597	22.67	24	0-1
		36 RB	0	1717.5	132047	21.81	23	0-2
				1745	132322	21.90	23	0-2
				1772.5	132597	21.68	23	0-2
			18	1717.5	132047	21.78	23	0-2
				1745	132322	22.07	23	0-2
				1772.5	132597	21.59	23	0-2
			37	1717.5	132047	21.50	23	0-2
				1745	132322	21.95	23	0-2
				1772.5	132597	21.31	23	0-2
		75RB		1717.5	132047	21.62	23	0-2
				1745	132322	22.03	23	0-2
				1772.5	132597	21.51	23	0-2

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FDD Band 66								
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10	QPSK	1 RB	0	1715	132022	23.39	25	0
				1745	132322	23.48	25	0
				1775	132622	23.35	25	0
			25	1715	132022	23.80	25	0
				1745	132322	23.77	25	0
				1775	132622	23.38	25	0
			49	1715	132022	23.70	25	0
				1745	132322	24.03	25	0
				1775	132622	23.31	25	0
		25 RB	0	1715	132022	22.69	24	0-1
				1745	132322	22.82	24	0-1
				1775	132622	22.59	24	0-1
			12	1715	132022	22.77	24	0-1
				1745	132322	23.02	24	0-1
				1775	132622	22.64	24	0-1
			25	1715	132022	22.63	24	0-1
				1745	132322	23.14	24	0-1
				1775	132622	22.62	24	0-1
		50RB		1715	132022	22.54	24	0-1
				1745	132322	22.96	24	0-1
				1775	132622	22.59	24	0-1
	16-QAM	1 RB	0	1715	132022	22.68	24	0-1
				1745	132322	22.79	24	0-1
				1775	132622	22.67	24	0-1
			25	1715	132022	23.17	24	0-1
				1745	132322	23.12	24	0-1
				1775	132622	22.73	24	0-1
			49	1715	132022	23.04	24	0-1
				1745	132322	23.37	24	0-1
				1775	132622	22.67	24	0-1
		25 RB	0	1715	132022	21.81	23	0-2
				1745	132322	21.94	23	0-2
				1775	132622	21.75	23	0-2
			12	1715	132022	21.86	23	0-2
				1745	132322	22.07	23	0-2
				1775	132622	21.82	23	0-2
			25	1715	132022	21.73	23	0-2
				1745	132322	22.07	23	0-2
				1775	132622	21.79	23	0-2
		50RB		1715	132022	21.77	23	0-2
				1745	132322	22.02	23	0-2
				1775	132622	21.77	23	0-2

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5	QPSK	1 RB	0	1712.5	131997	23.40	25	0
				1745	132322	23.64	25	0
				1777.5	132647	23.20	25	0
			12	1712.5	131997	23.60	25	0
				1745	132322	23.79	25	0
				1777.5	132647	23.31	25	0
			24	1712.5	131997	23.79	25	0
				1745	132322	23.94	25	0
				1777.5	132647	23.26	25	0
		12 RB	0	1712.5	131997	22.65	24	0-1
				1745	132322	22.91	24	0-1
				1777.5	132647	22.40	24	0-1
			6	1712.5	131997	22.81	24	0-1
				1745	132322	23.03	24	0-1
				1777.5	132647	22.42	24	0-1
			13	1712.5	131997	22.77	24	0-1
				1745	132322	23.01	24	0-1
				1777.5	132647	22.28	24	0-1
		25RB		1712.5	131997	22.71	24	0-1
				1745	132322	22.99	24	0-1
				1777.5	132647	22.33	24	0-1
	16-QAM	1 RB	0	1712.5	131997	22.64	24	0-1
				1745	132322	22.95	24	0-1
				1777.5	132647	22.39	24	0-1
			12	1712.5	131997	22.92	24	0-1
				1745	132322	23.18	24	0-1
				1777.5	132647	22.65	24	0-1
			24	1712.5	131997	23.16	24	0-1
				1745	132322	23.32	24	0-1
				1777.5	132647	22.61	24	0-1
		12 RB	0	1712.5	131997	21.76	23	0-2
				1745	132322	22.04	23	0-2
				1777.5	132647	21.46	23	0-2
			6	1712.5	131997	21.83	23	0-2
				1745	132322	22.10	23	0-2
				1777.5	132647	21.43	23	0-2
			13	1712.5	131997	21.85	23	0-2
				1745	132322	21.99	23	0-2
				1777.5	132647	21.33	23	0-2
		25RB		1712.5	131997	21.82	23	0-2
				1745	132322	22.07	23	0-2
				1777.5	132647	21.38	23	0-2

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台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 66								
BW(MHz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
3	QPSK	1 RB	0	1711.5	131987	23.47	25	0
				1745	132322	23.76	25	0
				1778.5	132657	23.26	25	0
			7	1711.5	131987	23.63	25	0
				1745	132322	23.91	25	0
				1778.5	132657	23.31	25	0
			14	1711.5	131987	23.70	25	0
				1745	132322	23.90	25	0
				1778.5	132657	23.21	25	0
		8 RB	0	1711.5	131987	22.71	24	0-1
				1745	132322	23.00	24	0-1
				1778.5	132657	22.34	24	0-1
			4	1711.5	131987	22.84	24	0-1
				1745	132322	23.08	24	0-1
				1778.5	132657	22.37	24	0-1
			7	1711.5	131987	22.73	24	0-1
				1745	132322	23.04	24	0-1
				1778.5	132657	22.24	24	0-1
		15RB		1711.5	131987	22.74	24	0-1
				1745	132322	23.04	24	0-1
				1778.5	132657	22.29	24	0-1
	16-QAM	1 RB	0	1711.5	131987	22.79	24	0-1
				1745	132322	23.15	24	0-1
				1778.5	132657	22.53	24	0-1
			7	1711.5	131987	22.92	24	0-1
				1745	132322	23.22	24	0-1
				1778.5	132657	22.49	24	0-1
			14	1711.5	131987	23.02	24	0-1
				1745	132322	23.29	24	0-1
				1778.5	132657	22.52	24	0-1
		8 RB	0	1711.5	131987	21.81	23	0-2
				1745	132322	22.13	23	0-2
				1778.5	132657	21.50	23	0-2
			4	1711.5	131987	21.92	23	0-2
				1745	132322	22.11	23	0-2
				1778.5	132657	21.47	23	0-2
			7	1711.5	131987	21.91	23	0-2
				1745	132322	22.09	23	0-2
				1778.5	132657	21.39	23	0-2
		15RB		1711.5	131987	21.89	23	0-2
				1745	132322	21.98	23	0-2
				1778.5	132657	21.45	23	0-2

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台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 66								
BW(MHz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
1.4	QPSK	1 RB	0	1710.7	131979	23.58	25	0
				1745	132322	23.75	25	0
				1779.3	132665	23.10	25	0
			2	1710.7	131979	23.67	25	0
				1745	132322	23.83	25	0
				1779.3	132665	23.16	25	0
			5	1710.7	131979	23.66	25	0
				1745	132322	23.83	25	0
				1779.3	132665	23.08	25	0
		3 RB	0	1710.7	131979	23.59	25	0
				1745	132322	23.73	25	0
				1779.3	132665	23.13	25	0
			2	1710.7	131979	23.68	25	0
				1745	132322	23.82	25	0
				1779.3	132665	23.16	25	0
			3	1710.7	131979	23.65	25	0
				1745	132322	23.80	25	0
				1779.3	132665	23.12	25	0
		6RB		1710.7	131979	22.75	24	0-1
				1745	132322	23.00	24	0-1
				1779.3	132665	22.28	24	0-1
	16-QAM	1 RB	0	1710.7	131979	22.72	24	0-1
				1745	132322	23.10	24	0-1
				1779.3	132665	22.52	24	0-1
			2	1710.7	131979	22.96	24	0-1
				1745	132322	23.13	24	0-1
				1779.3	132665	22.43	24	0-1
			5	1710.7	131979	22.99	24	0-1
				1745	132322	23.16	24	0-1
				1779.3	132665	22.40	24	0-1
		3 RB	0	1710.7	131979	22.68	24	0-1
				1745	132322	22.91	24	0-1
				1779.3	132665	22.30	24	0-1
			2	1710.7	131979	22.75	24	0-1
				1745	132322	23.05	24	0-1
				1779.3	132665	22.38	24	0-1
			3	1710.7	131979	22.77	24	0-1
				1745	132322	22.98	24	0-1
				1779.3	132665	22.28	24	0-1
		6RB		1710.7	131979	21.86	23	0-2
				1745	132322	22.08	23	0-2
				1779.3	132665	21.37	23	0-2

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台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

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LTE TDD Band 38 / Band 41 power table (Full power):

FDD Band 38								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
20	QPSK	1 RB	0	2580	37850	24.21	25	0
				2595	38000	24.30	25	0
				2610	38150	24.57	25	0
			50	2580	37850	23.32	25	0
				2595	38000	23.68	25	0
				2610	38150	24.03	25	0
			99	2580	37850	23.64	25	0
				2595	38000	24.23	25	0
				2610	38150	24.54	25	0
		50 RB	0	2580	37850	22.78	24	0-1
				2595	38000	23.07	24	0-1
				2610	38150	23.42	24	0-1
			25	2580	37850	22.54	24	0-1
				2595	38000	22.87	24	0-1
				2610	38150	23.29	24	0-1
			50	2580	37850	22.63	24	0-1
				2595	38000	23.01	24	0-1
				2610	38150	23.38	24	0-1
		100RB		2580	37850	22.61	24	0-1
				2595	38000	22.99	24	0-1
				2610	38150	23.39	24	0-1
	16-QAM	1 RB	0	2580	37850	23.35	24	0-1
				2595	38000	23.49	24	0-1
				2610	38150	23.83	24	0-1
			50	2580	37850	22.55	24	0-1
				2595	38000	22.98	24	0-1
				2610	38150	23.33	24	0-1
			99	2580	37850	22.88	24	0-1
				2595	38000	23.42	24	0-1
				2610	38150	23.76	24	0-1
		50 RB	0	2580	37850	21.83	23	0-2
				2595	38000	22.02	23	0-2
				2610	38150	22.35	23	0-2
			25	2580	37850	21.57	23	0-2
				2595	38000	21.87	23	0-2
				2610	38150	22.25	23	0-2
			50	2580	37850	21.66	23	0-2
				2595	38000	21.99	23	0-2
				2610	38150	22.36	23	0-2
		100RB		2580	37850	21.72	23	0-2
				2595	38000	21.92	23	0-2
				2610	38150	22.38	23	0-2

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台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 38								
BW(MHz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
15	QPSK	1 RB	0	2577.5	37825	24.03	25	0
				2595	38000	24.12	25	0
				2612.5	38175	24.50	25	0
			36	2577.5	37825	23.48	25	0
				2595	38000	23.72	25	0
				2612.5	38175	24.04	25	0
			74	2577.5	37825	23.65	25	0
				2595	38000	24.13	25	0
				2612.5	38175	24.11	25	0
		36 RB	0	2577.5	37825	22.76	24	0-1
				2595	38000	22.95	24	0-1
				2612.5	38175	23.28	24	0-1
			18	2577.5	37825	22.53	24	0-1
				2595	38000	22.86	24	0-1
				2612.5	38175	23.20	24	0-1
			37	2577.5	37825	22.45	24	0-1
				2595	38000	22.91	24	0-1
				2612.5	38175	23.28	24	0-1
		75RB		2577.5	37825	22.63	24	0-1
				2595	38000	22.94	24	0-1
				2612.5	38175	23.33	24	0-1
	16-QAM	1 RB	0	2577.5	37825	23.04	24	0-1
				2595	38000	23.27	24	0-1
				2612.5	38175	23.53	24	0-1
			36	2577.5	37825	22.65	24	0-1
				2595	38000	22.97	24	0-1
				2612.5	38175	23.29	24	0-1
			74	2577.5	37825	22.84	24	0-1
				2595	38000	23.32	24	0-1
				2612.5	38175	23.41	24	0-1
		36 RB	0	2577.5	37825	21.72	23	0-2
				2595	38000	21.89	23	0-2
				2612.5	38175	22.22	23	0-2
			18	2577.5	37825	21.50	23	0-2
				2595	38000	21.79	23	0-2
				2612.5	38175	22.19	23	0-2
			37	2577.5	37825	21.43	23	0-2
				2595	38000	21.85	23	0-2
				2612.5	38175	22.20	23	0-2
		75RB		2577.5	37825	21.58	23	0-2
				2595	38000	21.89	23	0-2
				2612.5	38175	22.23	23	0-2

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台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 38								
BW(MHz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	2575	37800	23.69	25	0
				2595	38000	23.81	25	0
				2615	38200	24.36	25	0
			25	2575	37800	23.38	25	0
				2595	38000	23.67	25	0
				2615	38200	24.29	25	0
			49	2575	37800	23.44	25	0
				2595	38000	23.81	25	0
				2615	38200	24.41	25	0
		25 RB	0	2575	37800	22.64	24	0-1
				2595	38000	22.83	24	0-1
				2615	38200	23.46	24	0-1
			12	2575	37800	22.51	24	0-1
				2595	38000	22.79	24	0-1
				2615	38200	23.41	24	0-1
			25	2575	37800	22.62	24	0-1
				2595	38000	22.85	24	0-1
				2615	38200	23.51	24	0-1
		50RB		2575	37800	22.56	24	0-1
				2595	38000	22.79	24	0-1
				2615	38200	23.46	24	0-1
	16-QAM	1 RB	0	2575	37800	22.95	24	0-1
				2595	38000	23.09	24	0-1
				2615	38200	23.70	24	0-1
			25	2575	37800	22.63	24	0-1
				2595	38000	22.91	24	0-1
				2615	38200	23.57	24	0-1
			49	2575	37800	22.71	24	0-1
				2595	38000	23.06	24	0-1
				2615	38200	23.69	24	0-1
		25 RB	0	2575	37800	21.64	23	0-2
				2595	38000	21.76	23	0-2
				2615	38200	22.43	23	0-2
			12	2575	37800	21.54	23	0-2
				2595	38000	21.81	23	0-2
				2615	38200	22.44	23	0-2
			25	2575	37800	21.57	23	0-2
				2595	38000	21.80	23	0-2
				2615	38200	22.43	23	0-2
		50RB		2575	37800	21.58	23	0-2
				2595	38000	21.83	23	0-2
				2615	38200	22.48	23	0-2

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FDD Band 38								
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5	QPSK	1 RB	0	2572.5	37775	23.60	25	0
				2595	38000	23.70	25	0
				2617.5	38225	24.41	25	0
			12	2572.5	37775	23.42	25	0
				2595	38000	23.64	25	0
				2617.5	38225	24.32	25	0
			24	2572.5	37775	23.40	25	0
				2595	38000	23.71	25	0
				2617.5	38225	24.41	25	0
		12 RB	0	2572.5	37775	22.58	24	0-1
				2595	38000	22.71	24	0-1
				2617.5	38225	23.47	24	0-1
			6	2572.5	37775	22.54	24	0-1
				2595	38000	22.75	24	0-1
				2617.5	38225	23.51	24	0-1
			13	2572.5	37775	22.51	24	0-1
				2595	38000	22.74	24	0-1
				2617.5	38225	23.44	24	0-1
		25RB		2572.5	37775	22.54	24	0-1
				2595	38000	22.73	24	0-1
				2617.5	38225	23.45	24	0-1
	16-QAM	1 RB	0	2572.5	37775	22.80	24	0-1
				2595	38000	22.82	24	0-1
				2617.5	38225	23.60	24	0-1
			12	2572.5	37775	22.67	24	0-1
				2595	38000	22.89	24	0-1
				2617.5	38225	23.64	24	0-1
			24	2572.5	37775	22.65	24	0-1
				2595	38000	22.94	24	0-1
				2617.5	38225	23.67	24	0-1
		12 RB	0	2572.5	37775	21.58	23	0-2
				2595	38000	21.74	23	0-2
				2617.5	38225	22.49	23	0-2
			6	2572.5	37775	21.56	23	0-2
				2595	38000	21.76	23	0-2
				2617.5	38225	22.51	23	0-2
			13	2572.5	37775	21.53	23	0-2
				2595	38000	21.76	23	0-2
				2617.5	38225	22.52	23	0-2
		25RB		2572.5	37775	21.58	23	0-2
				2595	38000	21.78	23	0-2
				2617.5	38225	22.52	23	0-2

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t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 41								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
20	QPSK	1 RB	0	2506	39750	24.00	25	0
				2549.5	40185	23.65	25	0
				2593	40620	23.72	25	0
				2636.5	41055	24.20	25	0
				2680	41490	24.21	25	0
			50	2506	39750	23.97	25	0
				2549.5	40185	23.54	25	0
				2593	40620	23.58	25	0
				2636.5	41055	24.22	25	0
				2680	41490	24.03	25	0
			99	2506	39750	24.03	25	0
				2549.5	40185	23.48	25	0
				2593	40620	23.78	25	0
				2636.5	41055	24.24	25	0
				2680	41490	23.80	25	0
		50 RB	0	2506	39750	23.02	24	0-1
				2549.5	40185	22.72	24	0-1
				2593	40620	22.82	24	0-1
				2636.5	41055	23.34	24	0-1
				2680	41490	23.17	24	0-1
			25	2506	39750	23.07	24	0-1
				2549.5	40185	22.65	24	0-1
				2593	40620	22.81	24	0-1
				2636.5	41055	23.33	24	0-1
				2680	41490	23.12	24	0-1
			50	2506	39750	23.01	24	0-1
				2549.5	40185	22.69	24	0-1
				2593	40620	22.74	24	0-1
				2636.5	41055	23.23	24	0-1
				2680	41490	22.92	24	0-1
		100RB		2506	39750	23.04	24	0-1
				2549.5	40185	22.75	24	0-1
				2593	40620	22.73	24	0-1
				2636.5	41055	23.30	24	0-1
				2680	41490	23.08	24	0-1

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f (886 2) 2298 0488

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20	16-QAM	1 RB	0	2506	39750	23.27	24	0-1
				2549.5	40185	22.96	24	0-1
				2593	40620	23.02	24	0-1
				2636.5	41055	23.47	24	0-1
				2680	41490	23.45	24	0-1
			50	2506	39750	23.11	24	0-1
				2549.5	40185	22.81	24	0-1
				2593	40620	22.87	24	0-1
				2636.5	41055	23.50	24	0-1
				2680	41490	23.23	24	0-1
			99	2506	39750	23.15	24	0-1
				2549.5	40185	22.77	24	0-1
				2593	40620	22.97	24	0-1
				2636.5	41055	23.43	24	0-1
				2680	41490	23.06	24	0-1
		50 RB	0	2506	39750	21.91	23	0-2
				2549.5	40185	21.67	23	0-2
				2593	40620	21.82	23	0-2
				2636.5	41055	22.39	23	0-2
				2680	41490	22.20	23	0-2
			25	2506	39750	22.04	23	0-2
				2549.5	40185	21.71	23	0-2
				2593	40620	21.76	23	0-2
				2636.5	41055	22.36	23	0-2
				2680	41490	22.17	23	0-2
			50	2506	39750	21.92	23	0-2
				2549.5	40185	21.67	23	0-2
				2593	40620	21.74	23	0-2
				2636.5	41055	22.25	23	0-2
				2680	41490	21.92	23	0-2
		100RB		2506	39750	21.94	23	0-2
				2549.5	40185	21.74	23	0-2
				2593	40620	21.74	23	0-2
				2636.5	41055	22.31	23	0-2
				2680	41490	22.14	23	0-2

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FDD Band 41								
BW(MHz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
15	QPSK	1 RB	0	2503.5	39725	24.04	25	0
				2548.3	40173	23.69	25	0
				2593	40620	23.74	25	0
				2637.8	41068	24.36	25	0
				2682.5	41515	24.11	25	0
			36	2503.5	39725	23.95	25	0
				2548.3	40173	23.61	25	0
				2593	40620	23.64	25	0
				2637.8	41068	24.28	25	0
				2682.5	41515	24.04	25	0
			74	2503.5	39725	23.84	25	0
				2548.3	40173	23.63	25	0
				2593	40620	23.71	25	0
				2637.8	41068	24.27	25	0
				2682.5	41515	23.91	25	0
		36 RB	0	2503.5	39725	22.99	24	0-1
				2548.3	40173	22.73	24	0-1
				2593	40620	22.83	24	0-1
				2637.8	41068	23.34	24	0-1
				2682.5	41515	23.13	24	0-1
			18	2503.5	39725	22.96	24	0-1
				2548.3	40173	22.66	24	0-1
				2593	40620	22.74	24	0-1
				2637.8	41068	23.33	24	0-1
				2682.5	41515	23.10	24	0-1
			37	2503.5	39725	22.95	24	0-1
				2548.3	40173	22.66	24	0-1
				2593	40620	22.70	24	0-1
				2637.8	41068	23.24	24	0-1
				2682.5	41515	22.95	24	0-1
		75RB		2503.5	39725	22.96	24	0-1
				2548.3	40173	22.67	24	0-1
				2593	40620	22.74	24	0-1
				2637.8	41068	23.29	24	0-1
				2682.5	41515	23.13	24	0-1

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15	16-QAM	1 RB	0	2503.5	39725	23.14	24	0-1
				2548.3	40173	22.84	24	0-1
				2593	40620	23.01	24	0-1
				2637.8	41068	23.49	24	0-1
				2682.5	41515	23.28	24	0-1
			36	2503.5	39725	23.13	24	0-1
				2548.3	40173	22.83	24	0-1
				2593	40620	22.88	24	0-1
				2637.8	41068	23.52	24	0-1
				2682.5	41515	23.19	24	0-1
			74	2503.5	39725	23.02	24	0-1
				2548.3	40173	22.80	24	0-1
				2593	40620	22.90	24	0-1
				2637.8	41068	23.39	24	0-1
				2682.5	41515	23.05	24	0-1
		36 RB	0	2503.5	39725	21.92	23	0-2
				2548.3	40173	21.61	23	0-2
				2593	40620	21.78	23	0-2
				2637.8	41068	22.28	23	0-2
				2682.5	41515	22.06	23	0-2
			18	2503.5	39725	21.98	23	0-2
				2548.3	40173	21.65	23	0-2
				2593	40620	21.74	23	0-2
				2637.8	41068	22.30	23	0-2
				2682.5	41515	22.10	23	0-2
			37	2503.5	39725	21.90	23	0-2
				2548.3	40173	21.66	23	0-2
				2593	40620	21.69	23	0-2
				2637.8	41068	22.26	23	0-2
				2682.5	41515	21.94	23	0-2
		75RB		2503.5	39725	22.00	23	0-2
				2548.3	40173	21.65	23	0-2
				2593	40620	21.70	23	0-2
				2637.8	41068	22.29	23	0-2
				2682.5	41515	22.07	23	0-2

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f (886 2) 2298 0488

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10	QPSK	1 RB	0	2501	39700	24.10	25	0
				2547	40160	23.81	25	0
				2593	40620	23.76	25	0
				2639	41080	24.37	25	0
				2685	41540	24.23	25	0
			25	2501	39700	23.95	25	0
				2547	40160	23.62	25	0
				2593	40620	23.64	25	0
				2639	41080	24.24	25	0
				2685	41540	23.99	25	0
			49	2501	39700	24.06	25	0
				2547	40160	23.69	25	0
				2593	40620	23.73	25	0
				2639	41080	24.36	25	0
				2685	41540	24.07	25	0
		25 RB	0	2501	39700	23.03	24	0-1
				2547	40160	22.83	24	0-1
				2593	40620	22.90	24	0-1
				2639	41080	23.41	24	0-1
				2685	41540	23.25	24	0-1
			12	2501	39700	23.17	24	0-1
				2547	40160	22.75	24	0-1
				2593	40620	22.77	24	0-1
				2639	41080	23.32	24	0-1
				2685	41540	23.10	24	0-1
			25	2501	39700	23.14	24	0-1
				2547	40160	22.72	24	0-1
				2593	40620	22.84	24	0-1
				2639	41080	23.48	24	0-1
				2685	41540	23.19	24	0-1
		50RB		2501	39700	23.08	24	0-1
				2547	40160	22.75	24	0-1
				2593	40620	22.80	24	0-1
				2639	41080	23.36	24	0-1
				2685	41540	23.12	24	0-1

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FDD Band 41								
BW(MHz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	16-QAM	1 RB	0	2501	39700	23.37	24	0-1
				2547	40160	23.04	24	0-1
				2593	40620	23.10	24	0-1
				2639	41080	23.63	24	0-1
				2685	41540	23.48	24	0-1
			25	2501	39700	23.18	24	0-1
				2547	40160	22.91	24	0-1
				2593	40620	22.93	24	0-1
				2639	41080	23.47	24	0-1
				2685	41540	23.22	24	0-1
			49	2501	39700	23.24	24	0-1
				2547	40160	23.00	24	0-1
				2593	40620	23.05	24	0-1
				2639	41080	23.58	24	0-1
				2685	41540	23.26	24	0-1
		25 RB	0	2501	39700	22.10	23	0-2
				2547	40160	21.82	23	0-2
				2593	40620	21.93	23	0-2
				2639	41080	22.46	23	0-2
				2685	41540	22.25	23	0-2
			12	2501	39700	22.22	23	0-2
				2547	40160	21.80	23	0-2
				2593	40620	21.81	23	0-2
				2639	41080	22.42	23	0-2
				2685	41540	22.15	23	0-2
			25	2501	39700	22.15	23	0-2
				2547	40160	21.73	23	0-2
				2593	40620	21.86	23	0-2
				2639	41080	22.51	23	0-2
				2685	41540	22.18	23	0-2
		50RB		2501	39700	22.14	23	0-2
				2547	40160	21.80	23	0-2
				2593	40620	21.85	23	0-2
				2639	41080	22.41	23	0-2
				2685	41540	22.19	23	0-2

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FDD Band 41								
BW(MHz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	2498.5	39675	24.16	25	0
				2547.8	40148	23.85	25	0
				2593	40620	23.79	25	0
				2640.3	41093	24.41	25	0
				2687.5	41565	24.15	25	0
			12	2498.5	39675	23.97	25	0
				2547.8	40148	23.69	25	0
				2593	40620	23.52	25	0
				2640.3	41093	24.26	25	0
				2687.5	41565	23.97	25	0
			24	2498.5	39675	23.98	25	0
				2547.8	40148	23.63	25	0
				2593	40620	23.64	25	0
				2640.3	41093	24.34	25	0
				2687.5	41565	23.98	25	0
		12 RB	0	2498.5	39675	23.17	24	0-1
				2547.8	40148	22.80	24	0-1
				2593	40620	22.74	24	0-1
				2640.3	41093	23.38	24	0-1
				2687.5	41565	23.10	24	0-1
			6	2498.5	39675	23.10	24	0-1
				2547.8	40148	22.81	24	0-1
				2593	40620	22.76	24	0-1
				2640.3	41093	23.36	24	0-1
				2687.5	41565	23.09	24	0-1
			13	2498.5	39675	23.07	24	0-1
				2547.8	40148	22.70	24	0-1
				2593	40620	22.77	24	0-1
				2640.3	41093	23.37	24	0-1
				2687.5	41565	23.08	24	0-1
		25RB		2498.5	39675	23.05	24	0-1
				2547.8	40148	22.73	24	0-1
				2593	40620	22.75	24	0-1
				2640.3	41093	23.36	24	0-1
				2687.5	41565	23.11	24	0-1

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t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 41								
BW(MHz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	16-QAM	1 RB	0	2498.5	39675	23.34	24	0-1
				2547.8	40148	23.06	24	0-1
				2593	40620	23.03	24	0-1
				2640.3	41093	23.56	24	0-1
				2687.5	41565	23.32	24	0-1
			12	2498.5	39675	23.33	24	0-1
				2547.8	40148	22.98	24	0-1
				2593	40620	22.94	24	0-1
				2640.3	41093	23.57	24	0-1
				2687.5	41565	23.22	24	0-1
			24	2498.5	39675	23.31	24	0-1
				2547.8	40148	22.86	24	0-1
				2593	40620	22.98	24	0-1
				2640.3	41093	23.56	24	0-1
				2687.5	41565	23.22	24	0-1
		12 RB	0	2498.5	39675	22.24	23	0-2
				2547.8	40148	21.85	23	0-2
				2593	40620	21.80	23	0-2
				2640.3	41093	22.43	23	0-2
				2687.5	41565	22.16	23	0-2
			6	2498.5	39675	22.14	23	0-2
				2547.8	40148	21.79	23	0-2
				2593	40620	21.83	23	0-2
				2640.3	41093	22.40	23	0-2
				2687.5	41565	22.18	23	0-2
			13	2498.5	39675	22.11	23	0-2
				2547.8	40148	21.74	23	0-2
				2593	40620	21.80	23	0-2
				2640.3	41093	22.45	23	0-2
				2687.5	41565	22.13	23	0-2
		25RB		2498.5	39675	22.15	23	0-2
				2547.8	40148	21.79	23	0-2
				2593	40620	21.81	23	0-2
				2640.3	41093	22.39	23	0-2
				2687.5	41565	22.19	23	0-2

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t (886 2) 2299 3279

f (886 2) 2298 0488

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LTE FDD Band 2 / Band 4 / Band 5 / Band 7/ Band 12 / Band 13 / Band 17 / Band 25 / Band 26 / Band 30 / Band 66 power table (Reduced power):

FDD Band 2									
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)	
20	QPSK	1 RB	0	1860	18700	15.34	15.5	0	
				1880	18900	14.80	15.5	0	
				1900	19100	15.21	15.5	0	
			50	1860	18700	14.84	15.5	0	
				1880	18900	15.18	15.5	0	
				1900	19100	15.11	15.5	0	
				99	1860	18700	15.24	15.5	0
					1880	18900	15.12	15.5	0
					1900	19100	15.19	15.5	0
		50 RB	0	1860	18700	15.04	15.5	0	
				1880	18900	14.78	15.5	0	
				1900	19100	15.24	15.5	0	
			25	1860	18700	15.14	15.5	0	
				1880	18900	15.03	15.5	0	
				1900	19100	15.17	15.5	0	
			50	1860	18700	15.10	15.5	0	
				1880	18900	14.99	15.5	0	
				1900	19100	15.13	15.5	0	
		100RB			1860	18700	15.22	15.5	0
					1880	18900	15.34	15.5	0
					1900	19100	15.37	15.5	0
	16-QAM	1 RB	0	1860	18700	15.05	15.5	0	
				1880	18900	15.05	15.5	0	
				1900	19100	15.42	15.5	0	
			50	1860	18700	15.37	15.5	0	
				1880	18900	15.45	15.5	0	
				1900	19100	15.37	15.5	0	
			99	1860	18700	15.40	15.5	0	
				1880	18900	15.29	15.5	0	
				1900	19100	15.28	15.5	0	
		50 RB	0	1860	18700	14.87	15.5	0	
				1880	18900	15.03	15.5	0	
				1900	19100	14.98	15.5	0	
			25	1860	18700	14.96	15.5	0	
				1880	18900	15.06	15.5	0	
				1900	19100	15.05	15.5	0	
			50	1860	18700	15.00	15.5	0	
				1880	18900	15.09	15.5	0	
				1900	19100	15.13	15.5	0	
		100RB			1860	18700	14.91	15.5	0
					1880	18900	15.04	15.5	0
					1900	19100	15.10	15.5	0

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FDD Band 2									
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)	
15	QPSK	1 RB	0	1857.5	18675	15.17	15.5	0	
				1880	18900	15.06	15.5	0	
				1902.5	19125	15.21	15.5	0	
			36	1857.5	18675	14.93	15.5	0	
				1880	18900	15.00	15.5	0	
				1902.5	19125	15.09	15.5	0	
			74	1857.5	18675	14.64	15.5	0	
				1880	18900	14.91	15.5	0	
				1902.5	19125	15.10	15.5	0	
		36 RB	0	1857.5	18675	14.92	15.5	0	
				1880	18900	14.97	15.5	0	
				1902.5	19125	15.16	15.5	0	
			18	1857.5	18675	14.83	15.5	0	
				1880	18900	14.94	15.5	0	
				1902.5	19125	15.09	15.5	0	
			37	1857.5	18675	14.82	15.5	0	
				1880	18900	14.91	15.5	0	
				1902.5	19125	15.11	15.5	0	
		75RB			1857.5	18675	14.89	15.5	0
					1880	18900	15.05	15.5	0
					1902.5	19125	15.05	15.5	0
	16-QAM	1 RB	0	1857.5	18675	15.44	15.5	0	
				1880	18900	15.41	15.5	0	
				1902.5	19125	15.08	15.5	0	
			36	1857.5	18675	15.15	15.5	0	
				1880	18900	15.03	15.5	0	
				1902.5	19125	15.23	15.5	0	
			74	1857.5	18675	15.06	15.5	0	
				1880	18900	15.09	15.5	0	
				1902.5	19125	15.36	15.5	0	
		36 RB	0	1857.5	18675	14.75	15.5	0	
				1880	18900	14.92	15.5	0	
				1902.5	19125	14.85	15.5	0	
			18	1857.5	18675	14.78	15.5	0	
				1880	18900	14.86	15.5	0	
				1902.5	19125	14.80	15.5	0	
			37	1857.5	18675	14.74	15.5	0	
				1880	18900	15.05	15.5	0	
				1902.5	19125	14.99	15.5	0	
		75RB			1857.5	18675	14.80	15.5	0
					1880	18900	15.05	15.5	0
					1902.5	19125	15.17	15.5	0

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f (886 2) 2298 0488

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FDD Band 2										
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)		
10	QPSK	1 RB	0	1855	18650	15.15	15.5	0		
				1880	18900	14.99	15.5	0		
				1905	19150	15.18	15.5	0		
			25	1855	18650	14.88	15.5	0		
				1880	18900	14.78	15.5	0		
				1905	19150	14.96	15.5	0		
				49	1855	18650	14.74	15.5	0	
					1880	18900	14.89	15.5	0	
					1905	19150	15.01	15.5	0	
		25 RB	0	1855	18650	15.03	15.5	0		
				1880	18900	15.07	15.5	0		
				1905	19150	15.23	15.5	0		
			12	1855	18650	14.87	15.5	0		
				1880	18900	14.89	15.5	0		
				1905	19150	15.13	15.5	0		
			25	1855	18650	14.83	15.5	0		
				1880	18900	14.87	15.5	0		
				1905	19150	14.96	15.5	0		
		50RB			1855	18650	14.93	15.5	0	
					1880	18900	14.86	15.5	0	
					1905	19150	15.15	15.5	0	
	16-QAM	1 RB	0	1855	18650	15.50	15.5	0		
				1880	18900	15.42	15.5	0		
				1905	19150	15.25	15.5	0		
				25	1855	18650	15.07	15.5	0	
					1880	18900	14.86	15.5	0	
					1905	19150	15.47	15.5	0	
				49	1855	18650	15.41	15.5	0	
					1880	18900	15.41	15.5	0	
					1905	19150	15.28	15.5	0	
			25 RB		0	1855	18650	14.72	15.5	0
						1880	18900	15.10	15.5	0
						1905	19150	15.03	15.5	0
				12	1855	18650	14.72	15.5	0	
					1880	18900	14.80	15.5	0	
					1905	19150	15.07	15.5	0	
				25	1855	18650	15.04	15.5	0	
					1880	18900	14.80	15.5	0	
					1905	19150	14.91	15.5	0	
		50RB			1855	18650	14.69	15.5	0	
					1880	18900	14.99	15.5	0	
					1905	19150	15.14	15.5	0	

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FDD Band 2									
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)	
5	QPSK	1 RB	0	1852.5	18625	14.97	15.5	0	
				1880	18900	15.13	15.5	0	
				1907.5	19175	15.04	15.5	0	
			12	1852.5	18625	14.93	15.5	0	
				1880	18900	14.83	15.5	0	
				1907.5	19175	14.91	15.5	0	
			24	1852.5	18625	14.82	15.5	0	
				1880	18900	14.88	15.5	0	
				1907.5	19175	15.03	15.5	0	
		12 RB	0	1852.5	18625	14.81	15.5	0	
				1880	18900	14.79	15.5	0	
				1907.5	19175	14.97	15.5	0	
			6	1852.5	18625	14.73	15.5	0	
				1880	18900	14.80	15.5	0	
				1907.5	19175	15.06	15.5	0	
			13	1852.5	18625	14.81	15.5	0	
				1880	18900	14.82	15.5	0	
				1907.5	19175	14.94	15.5	0	
		25RB			1852.5	18625	14.75	15.5	0
					1880	18900	14.75	15.5	0
					1907.5	19175	14.88	15.5	0
	16-QAM	1 RB	0	1852.5	18625	14.98	15.5	0	
				1880	18900	14.94	15.5	0	
				1907.5	19175	15.50	15.5	0	
			12	1852.5	18625	15.44	15.5	0	
				1880	18900	15.00	15.5	0	
				1907.5	19175	15.33	15.5	0	
			24	1852.5	18625	14.81	15.5	0	
				1880	18900	14.98	15.5	0	
				1907.5	19175	15.01	15.5	0	
		12 RB	0	1852.5	18625	14.77	15.5	0	
				1880	18900	14.84	15.5	0	
				1907.5	19175	15.08	15.5	0	
			6	1852.5	18625	14.80	15.5	0	
				1880	18900	14.75	15.5	0	
				1907.5	19175	15.03	15.5	0	
			13	1852.5	18625	14.85	15.5	0	
				1880	18900	14.86	15.5	0	
				1907.5	19175	14.97	15.5	0	
		25RB			1852.5	18625	14.75	15.5	0
					1880	18900	14.82	15.5	0
					1907.5	19175	15.03	15.5	0

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t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 2								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
3	QPSK	1 RB	0	1851.5	18615	14.82	15.5	0
				1880	18900	14.83	15.5	0
				1908.5	19185	14.95	15.5	0
			7	1851.5	18615	14.97	15.5	0
				1880	18900	15.05	15.5	0
				1908.5	19185	15.10	15.5	0
			14	1851.5	18615	14.93	15.5	0
				1880	18900	14.81	15.5	0
				1908.5	19185	14.93	15.5	0
		8 RB	0	1851.5	18615	14.82	15.5	0
				1880	18900	14.71	15.5	0
				1908.5	19185	14.89	15.5	0
			4	1851.5	18615	14.76	15.5	0
				1880	18900	14.76	15.5	0
				1908.5	19185	14.91	15.5	0
			7	1851.5	18615	14.78	15.5	0
				1880	18900	14.77	15.5	0
				1908.5	19185	14.94	15.5	0
		15RB	1851.5	18615	14.78	15.5	0	
			1880	18900	14.77	15.5	0	
			1908.5	19185	14.89	15.5	0	
	16-QAM	1 RB	0	1851.5	18615	15.25	15.5	0
				1880	18900	15.27	15.5	0
				1908.5	19185	14.96	15.5	0
			7	1851.5	18615	15.29	15.5	0
				1880	18900	15.00	15.5	0
				1908.5	19185	15.44	15.5	0
			14	1851.5	18615	14.65	15.5	0
				1880	18900	15.03	15.5	0
				1908.5	19185	15.26	15.5	0
		8 RB	0	1851.5	18615	14.85	15.5	0
				1880	18900	14.91	15.5	0
				1908.5	19185	14.98	15.5	0
			4	1851.5	18615	14.85	15.5	0
				1880	18900	14.76	15.5	0
				1908.5	19185	15.04	15.5	0
			7	1851.5	18615	14.68	15.5	0
				1880	18900	14.79	15.5	0
				1908.5	19185	15.06	15.5	0
		15RB	1851.5	18615	14.78	15.5	0	
			1880	18900	14.93	15.5	0	
			1908.5	19185	15.11	15.5	0	

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t (886 2) 2299 3279

f (886 2) 2298 0488

www.tw.sgs.com

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FDD Band 2									
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)	
1.4	QPSK	1 RB	0	1850.7	18607	14.79	15.5	0	
				1880	18900	14.67	15.5	0	
				1909.3	19193	14.77	15.5	0	
			2	1850.7	18607	14.66	15.5	0	
				1880	18900	14.95	15.5	0	
				1909.3	19193	14.67	15.5	0	
			5	1850.7	18607	14.71	15.5	0	
				1880	18900	14.56	15.5	0	
				1909.3	19193	15.08	15.5	0	
		3 RB	0	1850.7	18607	14.74	15.5	0	
				1880	18900	14.76	15.5	0	
				1909.3	19193	15.00	15.5	0	
			2	1850.7	18607	14.71	15.5	0	
				1880	18900	14.79	15.5	0	
				1909.3	19193	15.21	15.5	0	
			3	1850.7	18607	14.88	15.5	0	
				1880	18900	14.82	15.5	0	
				1909.3	19193	15.06	15.5	0	
		6RB			1850.7	18607	14.61	15.5	0
					1880	18900	14.80	15.5	0
					1909.3	19193	14.85	15.5	0
	16-QAM	1 RB	0	1850.7	18607	15.30	15.5	0	
				1880	18900	15.04	15.5	0	
				1909.3	19193	15.07	15.5	0	
			2	1850.7	18607	14.95	15.5	0	
				1880	18900	14.85	15.5	0	
				1909.3	19193	15.48	15.5	0	
			5	1850.7	18607	15.33	15.5	0	
				1880	18900	15.34	15.5	0	
				1909.3	19193	14.67	15.5	0	
		3 RB	0	1850.7	18607	14.98	15.5	0	
				1880	18900	14.61	15.5	0	
				1909.3	19193	15.11	15.5	0	
			2	1850.7	18607	15.01	15.5	0	
				1880	18900	14.86	15.5	0	
				1909.3	19193	15.17	15.5	0	
			3	1850.7	18607	15.08	15.5	0	
				1880	18900	14.87	15.5	0	
				1909.3	19193	14.97	15.5	0	
		6RB			1850.7	18607	14.81	15.5	0
					1880	18900	14.72	15.5	0
					1909.3	19193	15.02	15.5	0

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t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 4									
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)	
20	QPSK	1 RB	0	1720	20050	15.66	16.5	0	
				1732.5	20175	15.62	16.5	0	
				1745	20300	15.58	16.5	0	
			50	1720	20050	15.79	16.5	0	
				1732.5	20175	15.95	16.5	0	
				1745	20300	15.78	16.5	0	
			99	1720	20050	15.61	16.5	0	
				1732.5	20175	15.59	16.5	0	
				1745	20300	15.65	16.5	0	
		50 RB	0	1720	20050	15.79	16.5	0	
				1732.5	20175	15.85	16.5	0	
				1745	20300	15.60	16.5	0	
			25	1720	20050	15.83	16.5	0	
				1732.5	20175	15.91	16.5	0	
				1745	20300	15.92	16.5	0	
			50	1720	20050	15.65	16.5	0	
				1732.5	20175	15.70	16.5	0	
				1745	20300	15.64	16.5	0	
		100RB			1720	20050	15.89	16.5	0
					1732.5	20175	15.72	16.5	0
					1745	20300	15.85	16.5	0
	16-QAM	1 RB	0	1720	20050	15.91	16.5	0	
				1732.5	20175	15.93	16.5	0	
				1745	20300	15.44	16.5	0	
			50	1720	20050	15.98	16.5	0	
				1732.5	20175	15.88	16.5	0	
				1745	20300	15.77	16.5	0	
			99	1720	20050	15.68	16.5	0	
				1732.5	20175	15.65	16.5	0	
				1745	20300	15.89	16.5	0	
		50 RB	0	1720	20050	15.83	16.5	0	
				1732.5	20175	15.70	16.5	0	
				1745	20300	15.64	16.5	0	
			25	1720	20050	15.86	16.5	0	
				1732.5	20175	15.93	16.5	0	
				1745	20300	15.76	16.5	0	
			50	1720	20050	15.59	16.5	0	
				1732.5	20175	15.65	16.5	0	
				1745	20300	15.56	16.5	0	
		100RB			1720	20050	15.81	16.5	0
					1732.5	20175	15.74	16.5	0
					1745	20300	15.79	16.5	0

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台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

www.tw.sgs.com

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FDD Band 4									
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)	
15	QPSK	1 RB	0	1717.5	20025	15.42	16.5	0	
				1732.5	20175	15.50	16.5	0	
				1747.5	20325	15.62	16.5	0	
			36	1717.5	20025	15.73	16.5	0	
				1732.5	20175	15.77	16.5	0	
				1747.5	20325	15.84	16.5	0	
			74	1717.5	20025	15.54	16.5	0	
				1732.5	20175	15.50	16.5	0	
				1747.5	20325	15.43	16.5	0	
		36 RB	0	1717.5	20025	15.82	16.5	0	
				1732.5	20175	15.94	16.5	0	
				1747.5	20325	15.65	16.5	0	
			18	1717.5	20025	15.88	16.5	0	
				1732.5	20175	15.86	16.5	0	
				1747.5	20325	15.81	16.5	0	
			37	1717.5	20025	15.66	16.5	0	
				1732.5	20175	15.80	16.5	0	
				1747.5	20325	15.62	16.5	0	
		75RB			1717.5	20025	15.80	16.5	0
					1732.5	20175	15.84	16.5	0
					1747.5	20325	15.87	16.5	0
	16-QAM	1 RB	0	1717.5	20025	15.85	16.5	0	
				1732.5	20175	15.61	16.5	0	
				1747.5	20325	15.94	16.5	0	
			36	1717.5	20025	15.71	16.5	0	
				1732.5	20175	15.83	16.5	0	
				1747.5	20325	15.80	16.5	0	
			74	1717.5	20025	15.92	16.5	0	
				1732.5	20175	15.99	16.5	0	
				1747.5	20325	15.76	16.5	0	
			36 RB	0	1717.5	20025	15.83	16.5	0
					1732.5	20175	15.78	16.5	0
					1747.5	20325	15.63	16.5	0
				18	1717.5	20025	15.97	16.5	0
					1732.5	20175	15.96	16.5	0
					1747.5	20325	15.74	16.5	0
		37	1717.5	20025	15.59	16.5	0		
			1732.5	20175	15.71	16.5	0		
			1747.5	20325	15.55	16.5	0		
		75RB			1717.5	20025	15.88	16.5	0
					1732.5	20175	15.88	16.5	0
					1747.5	20325	15.63	16.5	0

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台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 4										
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)		
10	QPSK	1 RB	0	1715	20000	15.90	16.5	0		
				1732.5	20175	15.94	16.5	0		
				1750	20350	15.79	16.5	0		
			25	1715	20000	15.89	16.5	0		
				1732.5	20175	15.79	16.5	0		
				1750	20350	15.61	16.5	0		
				49	1715	20000	16.00	16.5	0	
					1732.5	20175	15.81	16.5	0	
					1750	20350	15.85	16.5	0	
		25 RB	0	1715	20000	15.91	16.5	0		
				1732.5	20175	15.80	16.5	0		
				1750	20350	15.55	16.5	0		
			12	1715	20000	15.95	16.5	0		
				1732.5	20175	15.82	16.5	0		
				1750	20350	15.61	16.5	0		
			25	1715	20000	15.73	16.5	0		
				1732.5	20175	15.91	16.5	0		
				1750	20350	15.63	16.5	0		
		50RB			1715	20000	15.93	16.5	0	
					1732.5	20175	15.87	16.5	0	
					1750	20350	15.64	16.5	0	
	16-QAM		1 RB	0	1715	20000	15.83	16.5	0	
					1732.5	20175	15.82	16.5	0	
					1750	20350	15.91	16.5	0	
				25	1715	20000	15.91	16.5	0	
					1732.5	20175	15.77	16.5	0	
					1750	20350	15.80	16.5	0	
					49	1715	20000	15.98	16.5	0
						1732.5	20175	15.91	16.5	0
						1750	20350	15.94	16.5	0
			25 RB	0	1715	20000	15.76	16.5	0	
					1732.5	20175	15.57	16.5	0	
					1750	20350	15.41	16.5	0	
				12	1715	20000	15.82	16.5	0	
					1732.5	20175	15.89	16.5	0	
					1750	20350	15.69	16.5	0	
				25	1715	20000	15.90	16.5	0	
					1732.5	20175	15.89	16.5	0	
					1750	20350	15.72	16.5	0	
			50RB			1715	20000	15.86	16.5	0
						1732.5	20175	15.85	16.5	0
						1750	20350	15.71	16.5	0

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FDD Band 4									
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)	
5	QPSK	1 RB	0	1712.5	19975	15.67	16.5	0	
				1732.5	20175	15.96	16.5	0	
				1752.5	20375	15.64	16.5	0	
			12	1712.5	19975	15.82	16.5	0	
				1732.5	20175	15.62	16.5	0	
				1752.5	20375	15.54	16.5	0	
			24	1712.5	19975	15.88	16.5	0	
				1732.5	20175	15.83	16.5	0	
				1752.5	20375	15.62	16.5	0	
		12 RB	0	1712.5	19975	15.86	16.5	0	
				1732.5	20175	15.92	16.5	0	
				1752.5	20375	15.57	16.5	0	
			6	1712.5	19975	15.83	16.5	0	
				1732.5	20175	15.97	16.5	0	
				1752.5	20375	15.74	16.5	0	
			13	1712.5	19975	15.86	16.5	0	
				1732.5	20175	15.75	16.5	0	
				1752.5	20375	15.70	16.5	0	
		25RB			1712.5	19975	15.89	16.5	0
					1732.5	20175	15.89	16.5	0
					1752.5	20375	15.58	16.5	0
	16-QAM	1 RB	0	1712.5	19975	15.98	16.5	0	
				1732.5	20175	15.86	16.5	0	
				1752.5	20375	15.71	16.5	0	
			12	1712.5	19975	15.92	16.5	0	
				1732.5	20175	15.82	16.5	0	
				1752.5	20375	15.59	16.5	0	
			24	1712.5	19975	15.80	16.5	0	
				1732.5	20175	15.87	16.5	0	
				1752.5	20375	15.60	16.5	0	
		12 RB	0	1712.5	19975	15.82	16.5	0	
				1732.5	20175	15.76	16.5	0	
				1752.5	20375	15.68	16.5	0	
			6	1712.5	19975	16.00	16.5	0	
				1732.5	20175	15.97	16.5	0	
				1752.5	20375	15.63	16.5	0	
			13	1712.5	19975	15.81	16.5	0	
				1732.5	20175	15.87	16.5	0	
				1752.5	20375	15.65	16.5	0	
		25RB			1712.5	19975	15.99	16.5	0
					1732.5	20175	15.97	16.5	0
					1752.5	20375	15.47	16.5	0

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台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 4									
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)	
3	QPSK	1 RB	0	1711.5	19965	15.56	16.5	0	
				1732.5	20175	15.72	16.5	0	
				1753.5	20385	15.71	16.5	0	
			7	1711.5	19965	15.78	16.5	0	
				1732.5	20175	15.72	16.5	0	
				1753.5	20385	15.65	16.5	0	
			14	1711.5	19965	15.78	16.5	0	
				1732.5	20175	15.73	16.5	0	
				1753.5	20385	15.47	16.5	0	
		8 RB	0	1711.5	19965	15.86	16.5	0	
				1732.5	20175	15.82	16.5	0	
				1753.5	20385	15.56	16.5	0	
			4	1711.5	19965	15.77	16.5	0	
				1732.5	20175	15.85	16.5	0	
				1753.5	20385	15.63	16.5	0	
			7	1711.5	19965	15.73	16.5	0	
				1732.5	20175	15.73	16.5	0	
				1753.5	20385	15.55	16.5	0	
		15RB			1711.5	19965	15.73	16.5	0
					1732.5	20175	15.77	16.5	0
					1753.5	20385	15.49	16.5	0
	16-QAM	1 RB	0	1711.5	19965	15.82	16.5	0	
				1732.5	20175	15.92	16.5	0	
				1753.5	20385	16.00	16.5	0	
			7	1711.5	19965	15.73	16.5	0	
				1732.5	20175	15.85	16.5	0	
				1753.5	20385	15.91	16.5	0	
			14	1711.5	19965	15.84	16.5	0	
				1732.5	20175	15.93	16.5	0	
				1753.5	20385	15.43	16.5	0	
			8 RB	0	1711.5	19965	15.69	16.5	0
					1732.5	20175	15.99	16.5	0
					1753.5	20385	15.63	16.5	0
		4		1711.5	19965	15.91	16.5	0	
				1732.5	20175	15.67	16.5	0	
				1753.5	20385	15.58	16.5	0	
		7		1711.5	19965	15.80	16.5	0	
				1732.5	20175	15.75	16.5	0	
				1753.5	20385	15.66	16.5	0	
		15RB			1711.5	19965	15.71	16.5	0
					1732.5	20175	15.93	16.5	0
					1753.5	20385	15.52	16.5	0

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t (886 2) 2299 3279

f (886 2) 2298 0488

www.tw.sgs.com

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FDD Band 4								
BW(MHz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
1.4	QPSK	1 RB	0	1710.7	19957	15.79	16.5	0
				1732.5	20175	15.63	16.5	0
				1754.3	20393	15.54	16.5	0
			2	1710.7	19957	15.77	16.5	0
				1732.5	20175	15.97	16.5	0
				1754.3	20393	15.47	16.5	0
			5	1710.7	19957	15.74	16.5	0
				1732.5	20175	15.64	16.5	0
				1754.3	20393	15.50	16.5	0
		3 RB	0	1710.7	19957	15.89	16.5	0
				1732.5	20175	15.70	16.5	0
				1754.3	20393	15.58	16.5	0
			2	1710.7	19957	15.80	16.5	0
				1732.5	20175	15.81	16.5	0
				1754.3	20393	15.54	16.5	0
			3	1710.7	19957	15.77	16.5	0
				1732.5	20175	15.65	16.5	0
				1754.3	20393	15.52	16.5	0
		6RB		1710.7	19957	15.64	16.5	0
				1732.5	20175	15.81	16.5	0
				1754.3	20393	15.46	16.5	0
	16-QAM	1 RB	0	1710.7	19957	15.87	16.5	0
				1732.5	20175	15.78	16.5	0
				1754.3	20393	15.65	16.5	0
			2	1710.7	19957	15.89	16.5	0
				1732.5	20175	15.62	16.5	0
				1754.3	20393	15.63	16.5	0
			5	1710.7	19957	15.52	16.5	0
				1732.5	20175	15.67	16.5	0
				1754.3	20393	15.40	16.5	0
		3 RB	0	1710.7	19957	15.72	16.5	0
				1732.5	20175	15.69	16.5	0
				1754.3	20393	15.62	16.5	0
			2	1710.7	19957	15.78	16.5	0
				1732.5	20175	15.83	16.5	0
				1754.3	20393	15.56	16.5	0
			3	1710.7	19957	15.82	16.5	0
				1732.5	20175	15.74	16.5	0
				1754.3	20393	15.51	16.5	0
		6RB		1710.7	19957	15.78	16.5	0
				1732.5	20175	15.81	16.5	0
				1754.3	20393	15.62	16.5	0

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台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 5									
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)	
10	QPSK	1 RB	0	829	20450	22.74	23	0	
				836.5	20525	22.75	23	0	
				844	20600	22.60	23	0	
			25	829	20450	22.79	23	0	
				836.5	20525	22.65	23	0	
				844	20600	22.58	23	0	
			49	829	20450	22.38	23	0	
				836.5	20525	22.37	23	0	
				844	20600	22.53	23	0	
		25 RB	0	829	20450	22.39	23	0	
				836.5	20525	22.23	23	0	
				844	20600	22.29	23	0	
			12	829	20450	22.35	23	0	
				836.5	20525	22.44	23	0	
				844	20600	22.28	23	0	
			25	829	20450	22.38	23	0	
				836.5	20525	22.45	23	0	
				844	20600	22.46	23	0	
		50RB			829	20450	22.34	23	0
					836.5	20525	22.39	23	0
					844	20600	22.29	23	0
	16-QAM	1 RB	0	829	20450	22.42	23	0	
				836.5	20525	22.24	23	0	
				844	20600	22.58	23	0	
			25	829	20450	22.61	23	0	
				836.5	20525	22.44	23	0	
				844	20600	22.02	23	0	
			49	829	20450	22.60	23	0	
				836.5	20525	22.22	23	0	
				844	20600	22.34	23	0	
		25 RB	0	829	20450	21.24	23	0	
				836.5	20525	21.07	23	0	
				844	20600	21.36	23	0	
			12	829	20450	21.26	23	0	
				836.5	20525	21.30	23	0	
				844	20600	21.49	23	0	
			25	829	20450	21.30	23	0	
				836.5	20525	21.22	23	0	
				844	20600	21.37	23	0	
		500RB			829	20450	21.34	23	0
					836.5	20525	21.31	23	0
					844	20600	21.27	23	0

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台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 5								
BW(MHz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	826.5	20425	22.69	23	0
				836.5	20525	22.61	23	0
				846.5	20625	22.51	23	0
			12	826.5	20425	22.67	23	0
				836.5	20525	22.56	23	0
				846.5	20625	22.64	23	0
			24	826.5	20425	22.85	23	0
				836.5	20525	22.70	23	0
				846.5	20625	22.68	23	0
		12 RB	0	826.5	20425	22.18	23	0
				836.5	20525	22.17	23	0
				846.5	20625	22.36	23	0
			6	826.5	20425	22.12	23	0
				836.5	20525	22.13	23	0
				846.5	20625	22.27	23	0
			13	826.5	20425	22.08	23	0
				836.5	20525	22.11	23	0
				846.5	20625	21.99	23	0
			25RB	826.5	20425	22.01	23	0
				836.5	20525	22.04	23	0
				846.5	20625	22.55	23	0
	16-QAM	1 RB	0	826.5	20425	22.25	23	0
				836.5	20525	21.82	23	0
				846.5	20625	22.36	23	0
			12	826.5	20425	22.56	23	0
				836.5	20525	22.53	23	0
				846.5	20625	22.57	23	0
			24	826.5	20425	22.31	23	0
				836.5	20525	22.41	23	0
				846.5	20625	21.94	23	0
		12 RB	0	826.5	20425	21.14	23	0
				836.5	20525	21.03	23	0
				846.5	20625	21.30	23	0
			6	826.5	20425	21.19	23	0
				836.5	20525	21.07	23	0
				846.5	20625	21.46	23	0
			13	826.5	20425	21.15	23	0
				836.5	20525	21.09	23	0
				846.5	20625	21.49	23	0
			25RB	826.5	20425	21.07	23	0
				836.5	20525	21.18	23	0
				846.5	20625	21.34	23	0

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台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 5								
BW(MHz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
3	QPSK	1 RB	0	825.5	20415	22.56	23	0
				836.5	20525	22.63	23	0
				847.5	20635	22.45	23	0
			7	825.5	20415	22.52	23	0
				836.5	20525	22.67	23	0
				847.5	20635	22.61	23	0
			14	825.5	20415	22.34	23	0
				836.5	20525	22.48	23	0
				847.5	20635	22.60	23	0
		8 RB	0	825.5	20415	22.02	23	0
				836.5	20525	22.13	23	0
				847.5	20635	22.01	23	0
			4	825.5	20415	21.94	23	0
				836.5	20525	22.10	23	0
				847.5	20635	22.28	23	0
			7	825.5	20415	22.33	23	0
				836.5	20525	22.15	23	0
				847.5	20635	22.18	23	0
		15RB		825.5	20415	22.09	23	0
				836.5	20525	22.10	23	0
				847.5	20635	22.21	23	0
	16-QAM	1 RB	0	825.5	20415	22.56	23	0
				836.5	20525	22.50	23	0
				847.5	20635	22.36	23	0
			7	825.5	20415	22.58	23	0
				836.5	20525	22.06	23	0
				847.5	20635	22.54	23	0
			14	825.5	20415	22.16	23	0
				836.5	20525	21.93	23	0
				847.5	20635	22.50	23	0
		8 RB	0	825.5	20415	21.21	23	0
				836.5	20525	21.29	23	0
				847.5	20635	21.38	23	0
			4	825.5	20415	21.21	23	0
				836.5	20525	21.13	23	0
				847.5	20635	21.29	23	0
			7	825.5	20415	21.19	23	0
				836.5	20525	21.15	23	0
				847.5	20635	21.30	23	0
		15RB		825.5	20415	21.12	23	0
				836.5	20525	21.13	23	0
				847.5	20635	21.24	23	0

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FDD Band 5								
BW(MHz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
1.4	QPSK	1 RB	0	824.7	20407	22.51	23	0
				836.5	20525	22.61	23	0
				848.3	20643	22.67	23	0
			2	824.7	20407	22.60	23	0
				836.5	20525	22.56	23	0
				848.3	20643	22.67	23	0
			5	824.7	20407	22.44	23	0
				836.5	20525	22.56	23	0
				848.3	20643	22.70	23	0
		3 RB	0	824.7	20407	22.47	23	0
				836.5	20525	22.47	23	0
				848.3	20643	22.59	23	0
			2	824.7	20407	22.56	23	0
				836.5	20525	22.52	23	0
				848.3	20643	22.68	23	0
			3	824.7	20407	22.44	23	0
				836.5	20525	22.61	23	0
				848.3	20643	22.37	23	0
		6RB		824.7	20407	21.99	23	0
				836.5	20525	22.10	23	0
				848.3	20643	22.15	23	0
	16-QAM	1 RB	0	824.7	20407	22.22	23	0
				836.5	20525	21.78	23	0
				848.3	20643	22.27	23	0
			2	824.7	20407	22.17	23	0
				836.5	20525	22.23	23	0
				848.3	20643	22.31	23	0
			5	824.7	20407	22.26	23	0
				836.5	20525	22.18	23	0
				848.3	20643	22.28	23	0
		3 RB	0	824.7	20407	21.85	23	0
				836.5	20525	22.02	23	0
				848.3	20643	22.16	23	0
			2	824.7	20407	21.89	23	0
				836.5	20525	22.06	23	0
				848.3	20643	22.20	23	0
			3	824.7	20407	21.82	23	0
				836.5	20525	22.06	23	0
				848.3	20643	22.28	23	0
		6RB		824.7	20407	21.03	23	0
				836.5	20525	21.09	23	0
				848.3	20643	21.31	23	0

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t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 7									
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)	
20	QPSK	1 RB	0	2510	20850	17.39	17.5	0	
				2535	21100	16.76	17.5	0	
				2560	21350	16.86	17.5	0	
			50	2510	20850	16.72	17.5	0	
				2535	21100	16.75	17.5	0	
				2560	21350	16.78	17.5	0	
			99	2510	20850	16.90	17.5	0	
				2535	21100	17.10	17.5	0	
				2560	21350	16.85	17.5	0	
		50 RB	0	2510	20850	17.03	17.5	0	
				2535	21100	16.77	17.5	0	
				2560	21350	16.83	17.5	0	
			25	2510	20850	17.01	17.5	0	
				2535	21100	16.75	17.5	0	
				2560	21350	16.86	17.5	0	
			50	2510	20850	17.00	17.5	0	
				2535	21100	16.68	17.5	0	
				2560	21350	16.83	17.5	0	
		100RB			2510	20850	17.01	17.5	0
					2535	21100	16.82	17.5	0
					2560	21350	16.88	17.5	0
	16-QAM	1 RB	0	2510	20850	17.22	17.5	0	
				2535	21100	16.85	17.5	0	
				2560	21350	16.91	17.5	0	
			50	2510	20850	17.18	17.5	0	
				2535	21100	17.33	17.5	0	
				2560	21350	17.16	17.5	0	
			99	2510	20850	17.27	17.5	0	
				2535	21100	17.13	17.5	0	
				2560	21350	17.19	17.5	0	
		50 RB	0	2510	20850	16.85	17.5	0	
				2535	21100	16.73	17.5	0	
				2560	21350	16.78	17.5	0	
			25	2510	20850	16.87	17.5	0	
				2535	21100	16.85	17.5	0	
				2560	21350	16.91	17.5	0	
			50	2510	20850	16.95	17.5	0	
				2535	21100	16.87	17.5	0	
				2560	21350	16.77	17.5	0	
		100RB			2510	20850	16.86	17.5	0
					2535	21100	16.85	17.5	0
					2560	21350	16.91	17.5	0

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台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 7								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
15	QPSK	1 RB	0	2507.5	20825	16.92	17.5	0
				2535	21100	16.66	17.5	0
				2562.5	21375	16.82	17.5	0
			36	2507.5	20825	16.92	17.5	0
				2535	21100	16.54	17.5	0
				2562.5	21375	16.76	17.5	0
			74	2507.5	20825	16.93	17.5	0
				2535	21100	16.92	17.5	0
				2562.5	21375	16.80	17.5	0
		36 RB	0	2507.5	20825	16.95	17.5	0
				2535	21100	16.75	17.5	0
				2562.5	21375	16.78	17.5	0
			18	2507.5	20825	16.91	17.5	0
				2535	21100	16.74	17.5	0
				2562.5	21375	16.83	17.5	0
			37	2507.5	20825	16.93	17.5	0
				2535	21100	16.86	17.5	0
				2562.5	21375	16.78	17.5	0
		75RB	2507.5	20825	16.82	17.5	0	
			2535	21100	16.84	17.5	0	
			2562.5	21375	16.75	17.5	0	
	16-QAM	1 RB	0	2507.5	20825	17.28	17.5	0
				2535	21100	17.17	17.5	0
				2562.5	21375	17.16	17.5	0
			36	2507.5	20825	17.24	17.5	0
				2535	21100	16.87	17.5	0
				2562.5	21375	17.16	17.5	0
			74	2507.5	20825	17.38	17.5	0
				2535	21100	16.83	17.5	0
				2562.5	21375	17.21	17.5	0
		36 RB	0	2507.5	20825	16.76	17.5	0
				2535	21100	16.70	17.5	0
				2562.5	21375	16.79	17.5	0
			18	2507.5	20825	16.86	17.5	0
				2535	21100	16.88	17.5	0
				2562.5	21375	16.77	17.5	0
			37	2507.5	20825	16.88	17.5	0
				2535	21100	16.80	17.5	0
				2562.5	21375	16.83	17.5	0
		75RB	2507.5	20825	16.92	17.5	0	
			2535	21100	16.66	17.5	0	
			2562.5	21375	16.81	17.5	0	

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台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 7								
BW(MHz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	2505	20800	17.17	17.5	0
				2535	21100	17.10	17.5	0
				2565	21400	17.13	17.5	0
			25	2505	20800	16.96	17.5	0
				2535	21100	16.61	17.5	0
				2565	21400	16.66	17.5	0
			49	2505	20800	17.09	17.5	0
				2535	21100	17.08	17.5	0
				2565	21400	17.11	17.5	0
		25 RB	0	2505	20800	16.94	17.5	0
				2535	21100	16.75	17.5	0
				2565	21400	16.93	17.5	0
			12	2505	20800	16.89	17.5	0
				2535	21100	16.73	17.5	0
				2565	21400	16.80	17.5	0
			25	2505	20800	16.98	17.5	0
				2535	21100	16.83	17.5	0
				2565	21400	16.86	17.5	0
		50RB		2505	20800	17.05	17.5	0
				2535	21100	16.87	17.5	0
				2565	21400	16.90	17.5	0
	16-QAM	1 RB	0	2505	20800	17.10	17.5	0
				2535	21100	17.23	17.5	0
				2565	21400	17.16	17.5	0
			25	2505	20800	17.01	17.5	0
				2535	21100	17.22	17.5	0
				2565	21400	16.82	17.5	0
			49	2505	20800	17.28	17.5	0
				2535	21100	17.14	17.5	0
				2565	21400	17.18	17.5	0
		25 RB	0	2505	20800	16.93	17.5	0
				2535	21100	16.74	17.5	0
				2565	21400	16.89	17.5	0
			12	2505	20800	17.03	17.5	0
				2535	21100	16.71	17.5	0
				2565	21400	16.79	17.5	0
			25	2505	20800	17.01	17.5	0
				2535	21100	16.91	17.5	0
				2565	21400	16.77	17.5	0
		50RB		2505	20800	17.08	17.5	0
				2535	21100	16.82	17.5	0
				2565	21400	16.79	17.5	0

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t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 7								
BW(MHz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	2502.5	20775	17.07	17.5	0
				2535	21100	16.77	17.5	0
				2567.5	21425	16.66	17.5	0
			12	2502.5	20775	16.57	17.5	0
				2535	21100	16.63	17.5	0
				2567.5	21425	16.74	17.5	0
			24	2502.5	20775	16.94	17.5	0
				2535	21100	16.74	17.5	0
				2567.5	21425	16.80	17.5	0
		12 RB	0	2502.5	20775	16.98	17.5	0
				2535	21100	16.73	17.5	0
				2567.5	21425	16.78	17.5	0
			6	2502.5	20775	16.98	17.5	0
				2535	21100	16.71	17.5	0
				2567.5	21425	16.76	17.5	0
			13	2502.5	20775	17.00	17.5	0
				2535	21100	16.67	17.5	0
				2567.5	21425	16.69	17.5	0
		25RB		2502.5	20775	16.97	17.5	0
				2535	21100	16.69	17.5	0
				2567.5	21425	16.70	17.5	0
	16-QAM	1 RB	0	2502.5	20775	17.21	17.5	0
				2535	21100	17.13	17.5	0
				2567.5	21425	16.84	17.5	0
			12	2502.5	20775	17.23	17.5	0
				2535	21100	16.80	17.5	0
				2567.5	21425	17.28	17.5	0
			24	2502.5	20775	17.10	17.5	0
				2535	21100	17.22	17.5	0
				2567.5	21425	17.14	17.5	0
		12 RB	0	2502.5	20775	17.05	17.5	0
				2535	21100	16.79	17.5	0
				2567.5	21425	16.77	17.5	0
			6	2502.5	20775	16.93	17.5	0
				2535	21100	16.62	17.5	0
				2567.5	21425	16.80	17.5	0
			13	2502.5	20775	16.96	17.5	0
				2535	21100	16.69	17.5	0
				2567.5	21425	16.73	17.5	0
		25RB		2502.5	20775	16.92	17.5	0
				2535	21100	16.66	17.5	0
				2567.5	21425	16.73	17.5	0

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t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 12								
BW(MHz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	704	23060	19.09	19.5	0
				707.5	23095	18.97	19.5	0
				711	23130	18.95	19.5	0
			25	704	23060	19.05	19.5	0
				707.5	23095	18.98	19.5	0
				711	23130	18.93	19.5	0
			49	704	23060	19.04	19.5	0
				707.5	23095	19.02	19.5	0
				711	23130	18.88	19.5	0
		25 RB	0	704	23060	19.00	19.5	0
				707.5	23095	18.98	19.5	0
				711	23130	18.93	19.5	0
			12	704	23060	18.91	19.5	0
				707.5	23095	19.07	19.5	0
				711	23130	18.90	19.5	0
			25	704	23060	19.01	19.5	0
				707.5	23095	19.05	19.5	0
				711	23130	19.08	19.5	0
		50RB		704	23060	18.94	19.5	0
				707.5	23095	18.90	19.5	0
				711	23130	18.80	19.5	0
	16-QAM	1 RB	0	704	23060	19.06	19.5	0
				707.5	23095	19.32	19.5	0
				711	23130	19.39	19.5	0
			25	704	23060	19.07	19.5	0
				707.5	23095	19.41	19.5	0
				711	23130	19.13	19.5	0
			49	704	23060	19.16	19.5	0
				707.5	23095	19.12	19.5	0
				711	23130	19.15	19.5	0
		25 RB	0	704	23060	18.99	19.5	0
				707.5	23095	18.87	19.5	0
				711	23130	18.84	19.5	0
			12	704	23060	18.99	19.5	0
				707.5	23095	19.06	19.5	0
				711	23130	18.78	19.5	0
			25	704	23060	18.97	19.5	0
				707.5	23095	19.09	19.5	0
				711	23130	18.96	19.5	0
		50RB		704	23060	18.93	19.5	0
				707.5	23095	18.99	19.5	0
				711	23130	18.78	19.5	0

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BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	701.5	23035	19.10	19.5	0
				707.5	23095	18.98	19.5	0
				713.5	23155	18.81	19.5	0
			12	701.5	23035	19.07	19.5	0
				707.5	23095	19.15	19.5	0
				713.5	23155	18.93	19.5	0
			24	701.5	23035	18.97	19.5	0
				707.5	23095	18.85	19.5	0
				713.5	23155	18.87	19.5	0
		12 RB	0	701.5	23035	18.94	19.5	0
				707.5	23095	18.87	19.5	0
				713.5	23155	18.76	19.5	0
			6	701.5	23035	18.94	19.5	0
				707.5	23095	18.92	19.5	0
				713.5	23155	18.86	19.5	0
			13	701.5	23035	18.93	19.5	0
				707.5	23095	18.92	19.5	0
				713.5	23155	18.76	19.5	0
		25RB		701.5	23035	19.00	19.5	0
				707.5	23095	18.97	19.5	0
				713.5	23155	18.84	19.5	0
	16-QAM	1 RB	0	701.5	23035	19.16	19.5	0
				707.5	23095	19.32	19.5	0
				713.5	23155	18.95	19.5	0
			12	701.5	23035	19.03	19.5	0
				707.5	23095	19.44	19.5	0
				713.5	23155	18.97	19.5	0
			24	701.5	23035	19.09	19.5	0
				707.5	23095	18.98	19.5	0
				713.5	23155	18.97	19.5	0
		12 RB	0	701.5	23035	18.96	19.5	0
				707.5	23095	18.99	19.5	0
				713.5	23155	18.95	19.5	0
			6	701.5	23035	18.95	19.5	0
				707.5	23095	19.00	19.5	0
				713.5	23155	18.87	19.5	0
			13	701.5	23035	19.00	19.5	0
				707.5	23095	18.92	19.5	0
				713.5	23155	18.90	19.5	0
		25RB		701.5	23035	18.95	19.5	0
				707.5	23095	18.98	19.5	0
				713.5	23155	18.81	19.5	0

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t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 12									
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)	
3	QPSK	1 RB	0	700.5	23025	19.10	19.5	0	
				707.5	23095	18.97	19.5	0	
				714.5	23165	18.82	19.5	0	
			7	700.5	23025	18.99	19.5	0	
				707.5	23095	19.10	19.5	0	
				714.5	23165	19.08	19.5	0	
			14	700.5	23025	18.55	19.5	0	
				707.5	23095	18.87	19.5	0	
				714.5	23165	18.75	19.5	0	
		8 RB	0	700.5	23025	18.92	19.5	0	
				707.5	23095	18.83	19.5	0	
				714.5	23165	18.75	19.5	0	
			4	700.5	23025	18.95	19.5	0	
				707.5	23095	18.96	19.5	0	
				714.5	23165	18.85	19.5	0	
			7	700.5	23025	18.99	19.5	0	
				707.5	23095	18.93	19.5	0	
				714.5	23165	18.79	19.5	0	
		15RB			700.5	23025	18.98	19.5	0
					707.5	23095	18.93	19.5	0
					714.5	23165	18.81	19.5	0
	16-QAM	1 RB	0	700.5	23025	18.99	19.5	0	
				707.5	23095	19.38	19.5	0	
				714.5	23165	18.84	19.5	0	
			7	700.5	23025	19.44	19.5	0	
				707.5	23095	19.13	19.5	0	
				714.5	23165	19.35	19.5	0	
			14	700.5	23025	19.05	19.5	0	
				707.5	23095	19.29	19.5	0	
				714.5	23165	19.06	19.5	0	
			8 RB	0	700.5	23025	19.03	19.5	0
					707.5	23095	18.86	19.5	0
					714.5	23165	18.84	19.5	0
				4	700.5	23025	19.12	19.5	0
					707.5	23095	18.97	19.5	0
					714.5	23165	18.84	19.5	0
		7	700.5	23025	19.00	19.5	0		
			707.5	23095	18.85	19.5	0		
			714.5	23165	18.86	19.5	0		
		15RB			700.5	23025	19.02	19.5	0
					707.5	23095	19.09	19.5	0
					714.5	23165	18.97	19.5	0

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台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 12									
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)	
1.4	QPSK	1 RB	0	699.7	23017	19.00	19.5	0	
				707.5	23095	18.80	19.5	0	
				715.3	23173	18.83	19.5	0	
			2	699.7	23017	19.01	19.5	0	
				707.5	23095	19.11	19.5	0	
				715.3	23173	18.88	19.5	0	
			5	699.7	23017	18.89	19.5	0	
				707.5	23095	18.75	19.5	0	
				715.3	23173	18.69	19.5	0	
		3 RB	0	699.7	23017	18.90	19.5	0	
				707.5	23095	18.81	19.5	0	
				715.3	23173	18.77	19.5	0	
			2	699.7	23017	18.97	19.5	0	
				707.5	23095	18.93	19.5	0	
				715.3	23173	18.73	19.5	0	
			3	699.7	23017	18.97	19.5	0	
				707.5	23095	18.91	19.5	0	
				715.3	23173	18.82	19.5	0	
		6RB			699.7	23017	18.84	19.5	0
					707.5	23095	18.94	19.5	0
					715.3	23173	18.68	19.5	0
	16-QAM	1 RB	0	699.7	23017	19.19	19.5	0	
				707.5	23095	19.20	19.5	0	
				715.3	23173	18.80	19.5	0	
			2	699.7	23017	19.06	19.5	0	
				707.5	23095	19.07	19.5	0	
				715.3	23173	19.29	19.5	0	
			5	699.7	23017	19.07	19.5	0	
				707.5	23095	19.26	19.5	0	
				715.3	23173	18.75	19.5	0	
		3 RB	0	699.7	23017	18.91	19.5	0	
				707.5	23095	18.74	19.5	0	
				715.3	23173	18.85	19.5	0	
			2	699.7	23017	19.03	19.5	0	
				707.5	23095	18.77	19.5	0	
				715.3	23173	18.76	19.5	0	
			3	699.7	23017	18.84	19.5	0	
				707.5	23095	18.72	19.5	0	
				715.3	23173	18.90	19.5	0	
		6RB			699.7	23017	19.05	19.5	0
					707.5	23095	18.97	19.5	0
					715.3	23173	18.82	19.5	0

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t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 13								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	782	23230	20.97	21.5	0
			25	782	23230	20.98	21.5	0
			49	782	23230	20.97	21.5	0
		25 RB	0	782	23230	21.14	21.5	0
			12	782	23230	21.06	21.5	0
			25	782	23230	21.24	21.5	0
		50RB		782	23230	21.03	21.5	0
	16-QAM	1 RB	0	782	23230	21.26	21.5	0
			25	782	23230	21.49	21.5	0
			49	782	23230	21.44	21.5	0
		25 RB	0	782	23230	21.17	21.5	0
			12	782	23230	21.17	21.5	0
			25	782	23230	21.16	21.5	0
		50RB		782	23230	21.14	21.5	0

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BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	779.5	23205	21.30	21.5	0
				782	23230	21.23	21.5	0
				784.5	23255	21.22	21.5	0
			12	779.5	23205	21.12	21.5	0
				782	23230	21.19	21.5	0
				784.5	23255	21.30	21.5	0
			24	779.5	23205	21.09	21.5	0
				782	23230	21.00	21.5	0
				784.5	23255	21.07	21.5	0
		12 RB	0	779.5	23205	21.06	21.5	0
				782	23230	21.16	21.5	0
				784.5	23255	21.10	21.5	0
			6	779.5	23205	21.05	21.5	0
				782	23230	21.05	21.5	0
				784.5	23255	21.25	21.5	0
			13	779.5	23205	21.09	21.5	0
				782	23230	21.09	21.5	0
				784.5	23255	21.09	21.5	0
		25RB		779.5	23205	21.02	21.5	0
				782	23230	21.09	21.5	0
				784.5	23255	21.12	21.5	0
	16-QAM	1 RB	0	779.5	23205	21.34	21.5	0
				782	23230	21.35	21.5	0
				784.5	23255	21.15	21.5	0
			12	779.5	23205	21.03	21.5	0
				782	23230	21.23	21.5	0
				784.5	23255	21.21	21.5	0
			24	779.5	23205	21.42	21.5	0
				782	23230	21.13	21.5	0
				784.5	23255	21.33	21.5	0
		12 RB	0	779.5	23205	21.15	21.5	0
				782	23230	21.18	21.5	0
				784.5	23255	21.12	21.5	0
			6	779.5	23205	21.21	21.5	0
				782	23230	21.10	21.5	0
				784.5	23255	21.21	21.5	0
			13	779.5	23205	21.05	21.5	0
				782	23230	20.96	21.5	0
				784.5	23255	21.10	21.5	0
		25RB		779.5	23205	21.17	21.5	0
				782	23230	21.03	21.5	0
				784.5	23255	21.24	21.5	0

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t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 17								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	709	23780	18.97	19.5	0
				710	23790	18.98	19.5	0
				711	23800	18.90	19.5	0
			25	709	23780	19.09	19.5	0
				710	23790	18.88	19.5	0
				711	23800	19.11	19.5	0
			49	709	23780	18.98	19.5	0
				710	23790	18.95	19.5	0
				711	23800	18.92	19.5	0
		25 RB	0	709	23780	18.98	19.5	0
				710	23790	18.93	19.5	0
				711	23800	18.89	19.5	0
			12	709	23780	18.89	19.5	0
				710	23790	18.98	19.5	0
				711	23800	19.05	19.5	0
			25	709	23780	18.95	19.5	0
				710	23790	18.99	19.5	0
				711	23800	18.96	19.5	0
		50RB		709	23780	18.91	19.5	0
				710	23790	18.95	19.5	0
				711	23800	18.99	19.5	0
	16-QAM	1 RB	0	709	23780	19.26	19.5	0
				710	23790	19.15	19.5	0
				711	23800	18.96	19.5	0
			25	709	23780	19.22	19.5	0
				710	23790	19.15	19.5	0
				711	23800	18.91	19.5	0
			49	709	23780	19.31	19.5	0
				710	23790	19.17	19.5	0
				711	23800	19.11	19.5	0
		25 RB	0	709	23780	19.19	19.5	0
				710	23790	18.51	19.5	0
				711	23800	19.32	19.5	0
			12	709	23780	18.99	19.5	0
				710	23790	18.84	19.5	0
				711	23800	18.83	19.5	0
			25	709	23780	18.57	19.5	0
				710	23790	18.85	19.5	0
				711	23800	18.94	19.5	0
		50RB		709	23780	18.60	19.5	0
				710	23790	19.26	19.5	0
				711	23800	18.78	19.5	0

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f (886 2) 2298 0488

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FDD Band 17								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	706.5	23755	19.06	19.5	0
				710	23790	19.02	19.5	0
				713.5	23825	18.99	19.5	0
			12	706.5	23755	19.04	19.5	0
				710	23790	18.96	19.5	0
				713.5	23825	18.99	19.5	0
			24	706.5	23755	18.91	19.5	0
				710	23790	19.07	19.5	0
				713.5	23825	18.87	19.5	0
		12 RB	0	706.5	23755	18.98	19.5	0
				710	23790	18.89	19.5	0
				713.5	23825	18.90	19.5	0
			6	706.5	23755	18.97	19.5	0
				710	23790	18.99	19.5	0
				713.5	23825	19.02	19.5	0
			13	706.5	23755	18.97	19.5	0
				710	23790	18.83	19.5	0
				713.5	23825	18.89	19.5	0
		25RB	706.5	23755	18.89	19.5	0	
			710	23790	18.86	19.5	0	
			713.5	23825	18.87	19.5	0	
	16-QAM	1 RB	0	706.5	23755	19.17	19.5	0
				710	23790	19.05	19.5	0
				713.5	23825	19.31	19.5	0
			12	706.5	23755	19.43	19.5	0
				710	23790	18.96	19.5	0
				713.5	23825	19.20	19.5	0
			24	706.5	23755	19.02	19.5	0
				710	23790	18.95	19.5	0
				713.5	23825	19.41	19.5	0
		12 RB	0	706.5	23755	18.98	19.5	0
				710	23790	18.90	19.5	0
				713.5	23825	18.89	19.5	0
			6	706.5	23755	19.25	19.5	0
				710	23790	18.58	19.5	0
				713.5	23825	18.96	19.5	0
			13	706.5	23755	19.03	19.5	0
				710	23790	18.52	19.5	0
				713.5	23825	18.65	19.5	0
		25RB	706.5	23755	18.66	19.5	0	
			710	23790	18.60	19.5	0	
			713.5	23825	18.91	19.5	0	

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FDD Band 25									
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	14.86	15.5	0	
				1882.5	26365	14.98	15.5	0	
				1905	26590	15.34	15.5	0	
			50	1860	26140	14.86	15.5	0	
				1882.5	26365	14.95	15.5	0	
				1905	26590	14.84	15.5	0	
			99	1860	26140	15.32	15.5	0	
				1882.5	26365	14.82	15.5	0	
				1905	26590	15.30	15.5	0	
		50 RB	0	1860	26140	14.97	15.5	0	
				1882.5	26365	14.88	15.5	0	
				1905	26590	15.11	15.5	0	
			25	1860	26140	14.96	15.5	0	
				1882.5	26365	14.89	15.5	0	
				1905	26590	15.06	15.5	0	
			50	1860	26140	15.37	15.5	0	
				1882.5	26365	15.12	15.5	0	
				1905	26590	15.03	15.5	0	
		100RB			1860	26140	15.08	15.5	0
					1882.5	26365	15.10	15.5	0
					1905	26590	15.04	15.5	0
	16-QAM	1 RB	0	1860	26140	15.04	15.5	0	
				1882.5	26365	15.46	15.5	0	
				1905	26590	15.20	15.5	0	
			50	1860	26140	15.14	15.5	0	
				1882.5	26365	15.32	15.5	0	
				1905	26590	15.09	15.5	0	
			99	1860	26140	15.26	15.5	0	
				1882.5	26365	15.48	15.5	0	
				1905	26590	14.87	15.5	0	
		50 RB	0	1860	26140	14.96	15.5	0	
				1882.5	26365	14.91	15.5	0	
				1905	26590	14.97	15.5	0	
			25	1860	26140	14.98	15.5	0	
				1882.5	26365	14.90	15.5	0	
				1905	26590	15.22	15.5	0	
			50	1860	26140	15.12	15.5	0	
				1882.5	26365	15.11	15.5	0	
				1905	26590	15.25	15.5	0	
		100RB			1860	26140	15.03	15.5	0
					1882.5	26365	14.89	15.5	0
					1905	26590	15.17	15.5	0

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t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 25									
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	14.82	15.5	0	
				1882.5	26365	14.70	15.5	0	
				1907.5	26615	15.06	15.5	0	
			36	1857.5	26115	14.82	15.5	0	
				1882.5	26365	14.75	15.5	0	
				1907.5	26615	14.90	15.5	0	
			74	1857.5	26115	15.10	15.5	0	
				1882.5	26365	14.92	15.5	0	
				1907.5	26615	15.14	15.5	0	
		36 RB	0	1857.5	26115	14.91	15.5	0	
				1882.5	26365	14.93	15.5	0	
				1907.5	26615	14.99	15.5	0	
			18	1857.5	26115	14.84	15.5	0	
				1882.5	26365	14.83	15.5	0	
				1907.5	26615	15.11	15.5	0	
			37	1857.5	26115	15.05	15.5	0	
				1882.5	26365	14.99	15.5	0	
				1907.5	26615	15.09	15.5	0	
		75RB			1857.5	26115	14.97	15.5	0
					1882.5	26365	14.96	15.5	0
					1907.5	26615	15.27	15.5	0
	16-QAM	1 RB	0	1857.5	26115	14.91	15.5	0	
				1882.5	26365	15.05	15.5	0	
				1907.5	26615	15.47	15.5	0	
			36	1857.5	26115	14.95	15.5	0	
				1882.5	26365	14.71	15.5	0	
				1907.5	26615	15.42	15.5	0	
			74	1857.5	26115	15.46	15.5	0	
				1882.5	26365	15.37	15.5	0	
				1907.5	26615	15.44	15.5	0	
		36 RB	0	1857.5	26115	14.98	15.5	0	
				1882.5	26365	14.80	15.5	0	
				1907.5	26615	15.03	15.5	0	
			18	1857.5	26115	14.83	15.5	0	
				1882.5	26365	14.84	15.5	0	
				1907.5	26615	15.03	15.5	0	
			37	1857.5	26115	15.06	15.5	0	
				1882.5	26365	14.98	15.5	0	
				1907.5	26615	15.11	15.5	0	
		75RB			1857.5	26115	14.85	15.5	0
					1882.5	26365	14.96	15.5	0
					1907.5	26615	15.16	15.5	0

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t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 25								
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	14.85	15.5	0
				1882.5	26365	14.90	15.5	0
				1910	26640	15.06	15.5	0
			25	1855	26090	14.72	15.5	0
				1882.5	26365	14.76	15.5	0
				1910	26640	15.02	15.5	0
			49	1855	26090	15.20	15.5	0
				1882.5	26365	15.17	15.5	0
				1910	26640	15.36	15.5	0
		25 RB	0	1855	26090	14.96	15.5	0
				1882.5	26365	14.82	15.5	0
				1910	26640	15.11	15.5	0
			12	1855	26090	14.99	15.5	0
				1882.5	26365	14.76	15.5	0
				1910	26640	15.13	15.5	0
			25	1855	26090	15.01	15.5	0
				1882.5	26365	14.95	15.5	0
				1910	26640	15.10	15.5	0
		50RB	1855	26090	14.99	15.5	0	
			1882.5	26365	14.82	15.5	0	
			1910	26640	15.26	15.5	0	
	16-QAM	1 RB	0	1855	26090	15.42	15.5	0
				1882.5	26365	15.38	15.5	0
				1910	26640	14.90	15.5	0
			25	1855	26090	14.73	15.5	0
				1882.5	26365	14.79	15.5	0
				1910	26640	15.43	15.5	0
			49	1855	26090	15.45	15.5	0
				1882.5	26365	15.33	15.5	0
				1910	26640	15.49	15.5	0
		25 RB	0	1855	26090	14.88	15.5	0
				1882.5	26365	14.73	15.5	0
				1910	26640	14.96	15.5	0
			12	1855	26090	15.03	15.5	0
				1882.5	26365	14.69	15.5	0
				1910	26640	15.02	15.5	0
			25	1855	26090	14.98	15.5	0
				1882.5	26365	14.88	15.5	0
				1910	26640	15.20	15.5	0
		50RB	1855	26090	14.95	15.5	0	
			1882.5	26365	14.86	15.5	0	
			1910	26640	15.09	15.5	0	

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f (886 2) 2298 0488

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FDD Band 25									
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	14.84	15.5	0	
				1882.5	26365	14.95	15.5	0	
				1912.5	26665	15.11	15.5	0	
			12	1852.5	26065	14.70	15.5	0	
				1882.5	26365	14.75	15.5	0	
				1912.5	26665	15.06	15.5	0	
			24	1852.5	26065	14.80	15.5	0	
				1882.5	26365	14.98	15.5	0	
				1912.5	26665	15.08	15.5	0	
		12 RB	0	1852.5	26065	14.96	15.5	0	
				1882.5	26365	14.87	15.5	0	
				1912.5	26665	15.10	15.5	0	
			6	1852.5	26065	14.93	15.5	0	
				1882.5	26365	14.77	15.5	0	
				1912.5	26665	15.03	15.5	0	
			13	1852.5	26065	14.85	15.5	0	
				1882.5	26365	14.78	15.5	0	
				1912.5	26665	14.90	15.5	0	
		25RB			1852.5	26065	14.88	15.5	0
					1882.5	26365	14.75	15.5	0
					1912.5	26665	15.05	15.5	0
	16-QAM	1 RB	0	1852.5	26065	15.44	15.5	0	
				1882.5	26365	15.16	15.5	0	
				1912.5	26665	15.34	15.5	0	
			12	1852.5	26065	15.25	15.5	0	
				1882.5	26365	15.09	15.5	0	
				1912.5	26665	15.24	15.5	0	
			24	1852.5	26065	14.95	15.5	0	
				1882.5	26365	15.04	15.5	0	
				1912.5	26665	15.19	15.5	0	
		12 RB	0	1852.5	26065	14.82	15.5	0	
				1882.5	26365	14.97	15.5	0	
				1912.5	26665	15.18	15.5	0	
			6	1852.5	26065	15.00	15.5	0	
				1882.5	26365	14.77	15.5	0	
				1912.5	26665	15.10	15.5	0	
			13	1852.5	26065	14.84	15.5	0	
				1882.5	26365	14.81	15.5	0	
				1912.5	26665	15.01	15.5	0	
		25RB			1852.5	26065	14.92	15.5	0
					1882.5	26365	14.85	15.5	0
					1912.5	26665	15.19	15.5	0

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f (886 2) 2298 0488

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FDD Band 25									
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	14.73	15.5	0	
				1882.5	26365	14.88	15.5	0	
				1913.5	26675	14.98	15.5	0	
			7	1851.5	26055	14.80	15.5	0	
				1882.5	26365	14.76	15.5	0	
				1913.5	26675	15.03	15.5	0	
			14	1851.5	26055	14.86	15.5	0	
				1882.5	26365	14.74	15.5	0	
				1913.5	26675	15.04	15.5	0	
		8 RB	0	1851.5	26055	14.98	15.5	0	
				1882.5	26365	14.79	15.5	0	
				1913.5	26675	14.96	15.5	0	
			4	1851.5	26055	14.94	15.5	0	
				1882.5	26365	14.88	15.5	0	
				1913.5	26675	14.97	15.5	0	
			7	1851.5	26055	14.88	15.5	0	
				1882.5	26365	14.87	15.5	0	
				1913.5	26675	14.98	15.5	0	
		15RB			1851.5	26055	14.75	15.5	0
					1882.5	26365	14.71	15.5	0
					1913.5	26675	15.05	15.5	0
	16-QAM	1 RB	0	1851.5	26055	15.46	15.5	0	
				1882.5	26365	14.90	15.5	0	
				1913.5	26675	15.38	15.5	0	
			7	1851.5	26055	14.92	15.5	0	
				1882.5	26365	15.19	15.5	0	
				1913.5	26675	15.42	15.5	0	
			14	1851.5	26055	14.98	15.5	0	
				1882.5	26365	14.93	15.5	0	
				1913.5	26675	15.40	15.5	0	
		8 RB	0	1851.5	26055	14.80	15.5	0	
				1882.5	26365	14.96	15.5	0	
				1913.5	26675	15.14	15.5	0	
			4	1851.5	26055	14.88	15.5	0	
				1882.5	26365	14.89	15.5	0	
				1913.5	26675	14.95	15.5	0	
			7	1851.5	26055	14.82	15.5	0	
				1882.5	26365	14.81	15.5	0	
				1913.5	26675	15.11	15.5	0	
		15RB			1851.5	26055	14.83	15.5	0
					1882.5	26365	14.79	15.5	0
					1913.5	26675	15.04	15.5	0

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FDD Band 25									
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1.4	QPSK	1 RB	0	1850.7	26047	14.74	15.5	0	
				1882.5	26365	14.89	15.5	0	
				1914.3	26683	14.81	15.5	0	
			2	1850.7	26047	15.01	15.5	0	
				1882.5	26365	15.02	15.5	0	
				1914.3	26683	15.33	15.5	0	
			5	1850.7	26047	14.89	15.5	0	
				1882.5	26365	14.89	15.5	0	
				1914.3	26683	15.10	15.5	0	
		3 RB	0	1850.7	26047	14.97	15.5	0	
				1882.5	26365	14.97	15.5	0	
				1914.3	26683	14.85	15.5	0	
			2	1850.7	26047	14.94	15.5	0	
				1882.5	26365	14.99	15.5	0	
				1914.3	26683	15.01	15.5	0	
			3	1850.7	26047	15.02	15.5	0	
				1882.5	26365	14.79	15.5	0	
				1914.3	26683	14.90	15.5	0	
		6RB			1850.7	26047	14.76	15.5	0
					1882.5	26365	14.91	15.5	0
					1914.3	26683	14.89	15.5	0
	16-QAM	1 RB	0	1850.7	26047	14.80	15.5	0	
				1882.5	26365	14.73	15.5	0	
				1914.3	26683	15.35	15.5	0	
			2	1850.7	26047	15.40	15.5	0	
				1882.5	26365	15.13	15.5	0	
				1914.3	26683	15.14	15.5	0	
			5	1850.7	26047	14.68	15.5	0	
				1882.5	26365	14.83	15.5	0	
				1914.3	26683	15.49	15.5	0	
		3 RB	0	1850.7	26047	14.81	15.5	0	
				1882.5	26365	15.00	15.5	0	
				1914.3	26683	14.93	15.5	0	
			2	1850.7	26047	14.81	15.5	0	
				1882.5	26365	14.97	15.5	0	
				1914.3	26683	15.10	15.5	0	
			3	1850.7	26047	14.80	15.5	0	
				1882.5	26365	14.84	15.5	0	
				1914.3	26683	15.04	15.5	0	
		6RB			1850.7	26047	14.91	15.5	0
					1882.5	26365	15.00	15.5	0
					1914.3	26683	14.99	15.5	0

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t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 26									
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)	
15	QPSK	1 RB	0	822.5	26825	22.53	23	0	
				831.5	26865	22.59	23	0	
				841.5	26965	22.51	23	0	
			36	822.5	26825	22.44	23	0	
				831.5	26865	22.49	23	0	
				841.5	26965	22.75	23	0	
			74	822.5	26825	22.56	23	0	
				831.5	26865	22.46	23	0	
				841.5	26965	22.52	23	0	
		36 RB	0	822.5	26825	22.25	23	0	
				831.5	26865	22.29	23	0	
				841.5	26965	22.19	23	0	
			18	822.5	26825	22.28	23	0	
				831.5	26865	22.27	23	0	
				841.5	26965	22.32	23	0	
			37	822.5	26825	22.22	23	0	
				831.5	26865	22.18	23	0	
				841.5	26965	22.13	23	0	
		75RB			822.5	26825	22.23	23	0
					831.5	26865	22.26	23	0
					841.5	26965	22.31	23	0
	16-QAM	1 RB	0	822.5	26825	22.11	23	0	
				831.5	26865	21.98	23	0	
				841.5	26965	22.23	23	0	
			36	822.5	26825	22.33	23	0	
				831.5	26865	22.37	23	0	
				841.5	26965	22.16	23	0	
			74	822.5	26825	22.45	23	0	
				831.5	26865	22.53	23	0	
				841.5	26965	22.21	23	0	
		36 RB	0	822.5	26825	21.23	23	0	
				831.5	26865	21.29	23	0	
				841.5	26965	21.17	23	0	
			18	822.5	26825	21.4	23	0	
				831.5	26865	21.4	23	0	
				841.5	26965	21.21	23	0	
			37	822.5	26825	21.24	23	0	
				831.5	26865	21.13	23	0	
				841.5	26965	21.12	23	0	
		75RB			822.5	26825	21.23	23	0
					831.5	26865	21.18	23	0
					841.5	26965	21.21	23	0

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台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

www.tw.sgs.com

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FDD Band 26								
BW(MHz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	820	26800	22.51	23	0
				831.5	26865	22.59	23	0
				844	26990	22.49	23	0
			25	820	26800	22.38	23	0
				831.5	26865	22.46	23	0
				844	26990	22.66	23	0
			49	820	26800	22.39	23	0
				831.5	26865	22.34	23	0
				844	26990	22.50	23	0
		25 RB	0	820	26800	22.18	23	0
				831.5	26865	22.21	23	0
				844	26990	22.17	23	0
			12	820	26800	22.11	23	0
				831.5	26865	22.10	23	0
				844	26990	22.30	23	0
			25	820	26800	22.08	23	0
				831.5	26865	21.99	23	0
				844	26990	22.04	23	0
		50RB		820	26800	22.15	23	0
				831.5	26865	22.24	23	0
				844	26990	22.22	23	0
	16-QAM	1 RB	0	820	26800	22.02	23	0
				831.5	26865	21.97	23	0
				844	26990	22.13	23	0
			25	820	26800	22.21	23	0
				831.5	26865	22.23	23	0
				844	26990	22.14	23	0
			49	820	26800	22.29	23	0
				831.5	26865	22.53	23	0
				844	26990	22.05	23	0
		25 RB	0	820	26800	21.18	23	0
				831.5	26865	21.10	23	0
				844	26990	21.06	23	0
			12	820	26800	21.27	23	0
				831.5	26865	21.23	23	0
				844	26990	21.11	23	0
			25	820	26800	21.18	23	0
				831.5	26865	21.03	23	0
				844	26990	21.13	23	0
		50RB		820	26800	21.15	23	0
				831.5	26865	21.14	23	0
				844	26990	21.05	23	0

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t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 26									
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)	
5	QPSK	1 RB	0	816.5	26715	22.41	23	0	
				831.5	26865	22.45	23	0	
				846.5	27015	22.45	23	0	
			12	816.5	26715	22.41	23	0	
				831.5	26865	22.30	23	0	
				846.5	27015	22.69	23	0	
				24	816.5	26715	22.48	23	0
					831.5	26865	22.31	23	0
					846.5	27015	22.33	23	0
		12 RB	0	816.5	26715	22.11	23	0	
				831.5	26865	22.17	23	0	
				846.5	27015	22.04	23	0	
			6	816.5	26715	22.22	23	0	
				831.5	26865	22.17	23	0	
				846.5	27015	22.20	23	0	
			13	816.5	26715	22.13	23	0	
				831.5	26865	22.02	23	0	
				846.5	27015	22.02	23	0	
		25RB			816.5	26715	22.11	23	0
					831.5	26865	22.26	23	0
					846.5	27015	22.20	23	0
	16-QAM	1 RB	0	816.5	26715	22.06	23	0	
				831.5	26865	21.93	23	0	
				846.5	27015	22.12	23	0	
			12	816.5	26715	22.19	23	0	
				831.5	26865	22.19	23	0	
				846.5	27015	22.07	23	0	
			24	816.5	26715	22.33	23	0	
				831.5	26865	22.50	23	0	
				846.5	27015	22.18	23	0	
		12 RB	0	816.5	26715	21.18	23	0	
				831.5	26865	21.13	23	0	
				846.5	27015	21.01	23	0	
			6	816.5	26715	21.28	23	0	
				831.5	26865	21.34	23	0	
				846.5	27015	21.08	23	0	
			13	816.5	26715	21.13	23	0	
				831.5	26865	21.05	23	0	
				846.5	27015	21.03	23	0	
		25RB			816.5	26715	21.04	23	0
					831.5	26865	21.06	23	0
					846.5	27015	21.15	23	0

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台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 26								
BW(MHz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
3	QPSK	1 RB	0	815.5	26705	22.34	23	0
				831.5	26865	22.55	23	0
				847.5	27025	22.34	23	0
			7	815.5	26705	22.44	23	0
				831.5	26865	22.35	23	0
				847.5	27025	22.73	23	0
			14	815.5	26705	22.45	23	0
				831.5	26865	22.36	23	0
				847.5	27025	22.51	23	0
		8 RB	0	815.5	26705	22.20	23	0
				831.5	26865	22.24	23	0
				847.5	27025	22.10	23	0
			4	815.5	26705	22.23	23	0
				831.5	26865	22.17	23	0
				847.5	27025	22.18	23	0
			7	815.5	26705	22.15	23	0
				831.5	26865	22.17	23	0
				847.5	27025	21.98	23	0
		15RB		815.5	26705	22.20	23	0
				831.5	26865	22.18	23	0
				847.5	27025	22.15	23	0
	16-QAM	1 RB	0	815.5	26705	21.95	23	0
				831.5	26865	21.98	23	0
				847.5	27025	22.10	23	0
			7	815.5	26705	22.20	23	0
				831.5	26865	22.26	23	0
				847.5	27025	21.97	23	0
			14	815.5	26705	22.33	23	0
				831.5	26865	22.36	23	0
				847.5	27025	22.02	23	0
		8 RB	0	815.5	26705	21.16	23	0
				831.5	26865	21.19	23	0
				847.5	27025	21.08	23	0
			4	815.5	26705	21.23	23	0
				831.5	26865	21.23	23	0
				847.5	27025	21.17	23	0
			7	815.5	26705	21.18	23	0
				831.5	26865	21.11	23	0
				847.5	27025	21.10	23	0
		15RB		815.5	26705	21.18	23	0
				831.5	26865	21.04	23	0
				847.5	27025	21.07	23	0

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台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 26									
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)	
1.4	QPSK	1 RB	0	814.7	26697	22.35	23	0	
				831.5	26865	22.51	23	0	
				848.3	27033	22.50	23	0	
			2	814.7	26697	22.46	23	0	
				831.5	26865	22.57	23	0	
				848.3	27033	22.57	23	0	
			5	814.7	26697	22.51	23	0	
				831.5	26865	22.46	23	0	
				848.3	27033	22.36	23	0	
		3 RB	0	814.7	26697	22.49	23	0	
				831.5	26865	22.51	23	0	
				848.3	27033	22.55	23	0	
			2	814.7	26697	22.62	23	0	
				831.5	26865	22.66	23	0	
				848.3	27033	22.68	23	0	
			3	814.7	26697	22.53	23	0	
				831.5	26865	22.64	23	0	
				848.3	27033	22.51	23	0	
		6RB			814.7	26697	22.09	23	0
					831.5	26865	22.10	23	0
					848.3	27033	22.07	23	0
	16-QAM	1 RB	0	814.7	26697	22.09	23	0	
				831.5	26865	22.14	23	0	
				848.3	27033	22.10	23	0	
			2	814.7	26697	22.07	23	0	
				831.5	26865	22.20	23	0	
				848.3	27033	22.35	23	0	
			5	814.7	26697	22.17	23	0	
				831.5	26865	22.43	23	0	
				848.3	27033	22.02	23	0	
		3 RB	0	814.7	26697	22.13	23	0	
				831.5	26865	22.07	23	0	
				848.3	27033	22.18	23	0	
			2	814.7	26697	22.02	23	0	
				831.5	26865	22.15	23	0	
				848.3	27033	22.17	23	0	
			3	814.7	26697	22.08	23	0	
				831.5	26865	22.11	23	0	
				848.3	27033	22.08	23	0	
		6RB			814.7	26697	21.07	23	0
					831.5	26865	21.11	23	0
					848.3	27033	21.03	23	0

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台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 30								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
10	QPSK	1 RB	0	2310	27710	15.98	16	0
			25	2310	27710	15.82	16	0
			49	2310	27710	15.73	16	0
		25 RB	0	2310	27710	15.82	16	0
			12	2310	27710	15.89	16	0
			25	2310	27710	15.81	16	0
		50RB		2310	27710	15.92	16	0
	16-QAM	1 RB	0	2310	27710	15.93	16	0
			25	2310	27710	15.98	16	0
			49	2310	27710	15.96	16	0
		25 RB	0	2310	27710	15.87	16	0
			12	2310	27710	15.81	16	0
			25	2310	27710	15.75	16	0
		50RB		2310	27710	15.81	16	0

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台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 30								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	2307.5	27685	15.78	16	0
				2310	27710	15.83	16	0
				2312.5	27735	15.95	16	0
			12	2307.5	27685	15.76	16	0
				2310	27710	15.80	16	0
				2312.5	27735	15.81	16	0
			24	2307.5	27685	15.96	16	0
				2310	27710	15.99	16	0
				2312.5	27735	15.92	16	0
		12 RB	0	2307.5	27685	15.94	16	0
				2310	27710	15.90	16	0
				2312.5	27735	15.90	16	0
			6	2307.5	27685	15.88	16	0
				2310	27710	15.95	16	0
				2312.5	27735	15.81	16	0
			13	2307.5	27685	15.75	16	0
				2310	27710	15.86	16	0
				2312.5	27735	15.84	16	0
		25RB		2307.5	27685	15.81	16	0
				2310	27710	15.89	16	0
				2312.5	27735	15.81	16	0
	16-QAM	1 RB	0	2307.5	27685	15.93	16	0
				2310	27710	15.51	16	0
				2312.5	27735	15.86	16	0
			12	2307.5	27685	15.12	16	0
				2310	27710	15.57	16	0
				2312.5	27735	15.32	16	0
			24	2307.5	27685	15.86	16	0
				2310	27710	15.81	16	0
				2312.5	27735	15.75	16	0
		12 RB	0	2307.5	27685	15.25	16	0
				2310	27710	15.41	16	0
				2312.5	27735	15.51	16	0
			6	2307.5	27685	15.28	16	0
				2310	27710	15.44	16	0
				2312.5	27735	15.26	16	0
			13	2307.5	27685	15.30	16	0
				2310	27710	15.43	16	0
				2312.5	27735	15.29	16	0
		25RB		2307.5	27685	15.30	16	0
				2310	27710	15.36	16	0
				2312.5	27735	15.36	16	0

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t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 66									
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)	
20	QPSK	1 RB	0	1720	132072	15.94	16.5	0	
				1745	132322	15.79	16.5	0	
				1770	132572	16.16	16.5	0	
			50	1720	132072	16.33	16.5	0	
				1745	132322	16.25	16.5	0	
				1770	132572	16.04	16.5	0	
			99	1720	132072	15.89	16.5	0	
				1745	132322	15.72	16.5	0	
				1770	132572	15.98	16.5	0	
		50 RB	0	1720	132072	16.13	16.5	0	
				1745	132322	15.81	16.5	0	
				1770	132572	16.27	16.5	0	
			25	1720	132072	16.34	16.5	0	
				1745	132322	16.20	16.5	0	
				1770	132572	15.98	16.5	0	
			50	1720	132072	15.92	16.5	0	
				1745	132322	15.89	16.5	0	
				1770	132572	16.00	16.5	0	
		100RB			1720	132072	16.19	16.5	0
					1745	132322	15.95	16.5	0
					1770	132572	16.07	16.5	0
	16-QAM	1 RB	0	1720	132072	15.64	16.5	0	
				1745	132322	16.18	16.5	0	
				1770	132572	16.07	16.5	0	
			50	1720	132072	15.72	16.5	0	
				1745	132322	16.09	16.5	0	
				1770	132572	16.26	16.5	0	
			99	1720	132072	16.16	16.5	0	
				1745	132322	16.06	16.5	0	
				1770	132572	15.90	16.5	0	
		50 RB	0	1720	132072	16.19	16.5	0	
				1745	132322	15.92	16.5	0	
				1770	132572	15.95	16.5	0	
			25	1720	132072	16.00	16.5	0	
				1745	132322	15.90	16.5	0	
				1770	132572	16.15	16.5	0	
			50	1720	132072	15.98	16.5	0	
				1745	132322	15.67	16.5	0	
				1770	132572	15.74	16.5	0	
		100RB			1720	132072	16.02	16.5	0
					1745	132322	15.94	16.5	0
					1770	132572	15.93	16.5	0

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台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 66								
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
15	QPSK	1 RB	0	1717.5	132047	15.67	16.5	0
				1745	132322	15.62	16.5	0
				1772.5	132597	15.55	16.5	0
			36	1717.5	132047	15.95	16.5	0
				1745	132322	15.97	16.5	0
				1772.5	132597	15.95	16.5	0
			74	1717.5	132047	15.50	16.5	0
				1745	132322	15.53	16.5	0
				1772.5	132597	15.77	16.5	0
		36 RB	0	1717.5	132047	15.99	16.5	0
				1745	132322	16.00	16.5	0
				1772.5	132597	15.88	16.5	0
			18	1717.5	132047	16.34	16.5	0
				1745	132322	15.98	16.5	0
				1772.5	132597	16.08	16.5	0
			37	1717.5	132047	15.84	16.5	0
				1745	132322	15.95	16.5	0
				1772.5	132597	16.09	16.5	0
		75RB	1717.5	132047	16.14	16.5	0	
			1745	132322	15.89	16.5	0	
			1772.5	132597	15.95	16.5	0	
	16-QAM	1 RB	0	1717.5	132047	16.17	16.5	0
				1745	132322	15.74	16.5	0
				1772.5	132597	15.32	16.5	0
			36	1717.5	132047	16.07	16.5	0
				1745	132322	16.02	16.5	0
				1772.5	132597	16.15	16.5	0
			74	1717.5	132047	15.67	16.5	0
				1745	132322	16.01	16.5	0
				1772.5	132597	16.25	16.5	0
		36 RB	0	1717.5	132047	16.00	16.5	0
				1745	132322	15.76	16.5	0
				1772.5	132597	15.84	16.5	0
			18	1717.5	132047	15.98	16.5	0
				1745	132322	15.86	16.5	0
				1772.5	132597	16.14	16.5	0
			37	1717.5	132047	15.87	16.5	0
				1745	132322	15.87	16.5	0
				1772.5	132597	16.01	16.5	0
		75RB	1717.5	132047	16.12	16.5	0	
			1745	132322	16.05	16.5	0	
			1772.5	132597	16.05	16.5	0	

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台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 66									
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)	
10	QPSK	1 RB	0	1715	132022	16.31	16.5	0	
				1745	132322	15.97	16.5	0	
				1775	132622	16.19	16.5	0	
			25	1715	132022	16.16	16.5	0	
				1745	132322	15.96	16.5	0	
				1775	132622	15.82	16.5	0	
			49	1715	132022	16.22	16.5	0	
				1745	132322	16.40	16.5	0	
				1775	132622	16.10	16.5	0	
		25 RB	0	1715	132022	16.25	16.5	0	
				1745	132322	15.94	16.5	0	
				1775	132622	16.07	16.5	0	
			12	1715	132022	16.14	16.5	0	
				1745	132322	15.92	16.5	0	
				1775	132622	15.91	16.5	0	
			25	1715	132022	16.23	16.5	0	
				1745	132322	16.01	16.5	0	
				1775	132622	16.03	16.5	0	
		50RB			1715	132022	16.10	16.5	0
					1745	132322	15.81	16.5	0
					1775	132622	16.11	16.5	0
	16-QAM	1 RB	0	1715	132022	16.24	16.5	0	
				1745	132322	16.22	16.5	0	
				1775	132622	16.31	16.5	0	
			25	1715	132022	16.11	16.5	0	
				1745	132322	15.72	16.5	0	
				1775	132622	15.34	16.5	0	
			49	1715	132022	16.26	16.5	0	
				1745	132322	16.25	16.5	0	
				1775	132622	16.44	16.5	0	
		25 RB	0	1715	132022	16.18	16.5	0	
				1745	132322	15.85	16.5	0	
				1775	132622	15.98	16.5	0	
			12	1715	132022	16.15	16.5	0	
				1745	132322	16.06	16.5	0	
				1775	132622	15.93	16.5	0	
			25	1715	132022	16.13	16.5	0	
				1745	132322	15.89	16.5	0	
				1775	132622	15.92	16.5	0	
		50RB			1715	132022	16.12	16.5	0
					1745	132322	15.95	16.5	0
					1775	132622	15.95	16.5	0

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t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 66								
BW(MHz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
5	QPSK	1 RB	0	1712.5	131997	16.12	16.5	0
				1745	132322	16.14	16.5	0
				1777.5	132647	15.98	16.5	0
			12	1712.5	131997	15.96	16.5	0
				1745	132322	15.92	16.5	0
				1777.5	132647	15.79	16.5	0
			24	1712.5	131997	16.22	16.5	0
				1745	132322	16.08	16.5	0
				1777.5	132647	15.89	16.5	0
		12 RB	0	1712.5	131997	15.99	16.5	0
				1745	132322	15.89	16.5	0
				1777.5	132647	15.96	16.5	0
			6	1712.5	131997	16.04	16.5	0
				1745	132322	16.33	16.5	0
				1777.5	132647	15.85	16.5	0
			13	1712.5	131997	16.06	16.5	0
				1745	132322	15.42	16.5	0
				1777.5	132647	15.71	16.5	0
		25RB		1712.5	131997	16.14	16.5	0
				1745	132322	16.06	16.5	0
				1777.5	132647	16.02	16.5	0
	16-QAM	1 RB	0	1712.5	131997	16.21	16.5	0
				1745	132322	16.42	16.5	0
				1777.5	132647	16.45	16.5	0
			12	1712.5	131997	16.28	16.5	0
				1745	132322	15.69	16.5	0
				1777.5	132647	16.18	16.5	0
			24	1712.5	131997	16.44	16.5	0
				1745	132322	16.29	16.5	0
				1777.5	132647	16.35	16.5	0
		12 RB	0	1712.5	131997	16.10	16.5	0
				1745	132322	15.95	16.5	0
				1777.5	132647	15.95	16.5	0
			6	1712.5	131997	16.18	16.5	0
				1745	132322	16.00	16.5	0
				1777.5	132647	15.86	16.5	0
			13	1712.5	131997	16.20	16.5	0
				1745	132322	16.00	16.5	0
				1777.5	132647	15.95	16.5	0
		25RB		1712.5	131997	16.18	16.5	0
				1745	132322	15.90	16.5	0
				1777.5	132647	15.83	16.5	0

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f (886 2) 2298 0488

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FDD Band 66								
BW(MHz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
3	QPSK	1 RB	0	1711.5	131987	16.13	16.5	0
				1745	132322	15.96	16.5	0
				1778.5	132657	15.94	16.5	0
			7	1711.5	131987	15.97	16.5	0
				1745	132322	16.11	16.5	0
				1778.5	132657	15.86	16.5	0
			14	1711.5	131987	16.11	16.5	0
				1745	132322	15.88	16.5	0
				1778.5	132657	15.67	16.5	0
		8 RB	0	1711.5	131987	16.18	16.5	0
				1745	132322	15.87	16.5	0
				1778.5	132657	15.92	16.5	0
			4	1711.5	131987	16.05	16.5	0
				1745	132322	15.91	16.5	0
				1778.5	132657	15.77	16.5	0
			7	1711.5	131987	16.00	16.5	0
				1745	132322	16.07	16.5	0
				1778.5	132657	15.72	16.5	0
		15RB		1711.5	131987	15.95	16.5	0
				1745	132322	15.94	16.5	0
				1778.5	132657	15.83	16.5	0
	16-QAM	1 RB	0	1711.5	131987	16.38	16.5	0
				1745	132322	16.05	16.5	0
				1778.5	132657	15.93	16.5	0
			7	1711.5	131987	16.43	16.5	0
				1745	132322	16.44	16.5	0
				1778.5	132657	16.23	16.5	0
			14	1711.5	131987	16.30	16.5	0
				1745	132322	16.41	16.5	0
				1778.5	132657	15.88	16.5	0
		8 RB	0	1711.5	131987	16.12	16.5	0
				1745	132322	15.90	16.5	0
				1778.5	132657	15.87	16.5	0
			4	1711.5	131987	16.05	16.5	0
				1745	132322	16.00	16.5	0
				1778.5	132657	16.01	16.5	0
			7	1711.5	131987	15.92	16.5	0
				1745	132322	15.85	16.5	0
				1778.5	132657	15.70	16.5	0
		15RB		1711.5	131987	16.01	16.5	0
				1745	132322	15.97	16.5	0
				1778.5	132657	15.98	16.5	0

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t (886 2) 2299 3279

f (886 2) 2298 0488

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FDD Band 66								
BW(MHz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
1.4	QPSK	1 RB	0	1710.7	131979	15.95	16.5	0
				1745	132322	15.89	16.5	0
				1779.3	132665	15.69	16.5	0
			2	1710.7	131979	16.02	16.5	0
				1745	132322	16.01	16.5	0
				1779.3	132665	16.08	16.5	0
			5	1710.7	131979	15.97	16.5	0
				1745	132322	15.80	16.5	0
				1779.3	132665	15.97	16.5	0
		3 RB	0	1710.7	131979	16.21	16.5	0
				1745	132322	16.05	16.5	0
				1779.3	132665	15.99	16.5	0
			2	1710.7	131979	16.13	16.5	0
				1745	132322	16.00	16.5	0
				1779.3	132665	15.97	16.5	0
			3	1710.7	131979	15.89	16.5	0
				1745	132322	15.98	16.5	0
				1779.3	132665	15.68	16.5	0
		6RB		1710.7	131979	16.00	16.5	0
				1745	132322	16.38	16.5	0
				1779.3	132665	15.65	16.5	0
	16-QAM	1 RB	0	1710.7	131979	16.18	16.5	0
				1745	132322	15.95	16.5	0
				1779.3	132665	16.28	16.5	0
			2	1710.7	131979	16.26	16.5	0
				1745	132322	16.39	16.5	0
				1779.3	132665	16.26	16.5	0
			5	1710.7	131979	16.43	16.5	0
				1745	132322	16.21	16.5	0
				1779.3	132665	15.52	16.5	0
		3 RB	0	1710.7	131979	16.06	16.5	0
				1745	132322	15.93	16.5	0
				1779.3	132665	15.88	16.5	0
			2	1710.7	131979	16.07	16.5	0
				1745	132322	15.88	16.5	0
				1779.3	132665	15.82	16.5	0
			3	1710.7	131979	15.88	16.5	0
				1745	132322	15.90	16.5	0
				1779.3	132665	15.82	16.5	0
		6RB		1710.7	131979	15.97	16.5	0
				1745	132322	15.86	16.5	0
				1779.3	132665	15.80	16.5	0

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t (886 2) 2299 3279

f (886 2) 2298 0488

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

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

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Tablet Mode

Main Antenna						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
2450 MHz	802.11b	1	2412	1Mbps	17.00	16.91
		6	2437		17.00	16.94
		11	2462		17.00	16.90
		12	2467		16.50	16.40
		13	2472		8.50	8.41
	802.11g	1	2412	6Mbps	17.00	16.90
		6	2437		17.00	16.93
		11	2462		17.00	16.91
		12	2467		11.50	11.43
		13	2472		-2.50	-2.52
	802.11n-HT20	1	2412	MCS0	17.00	16.90
		6	2437		17.00	16.94
		11	2462		17.00	16.92
		12	2467		11.50	11.45
		13	2472		-2.50	-2.54
	802.11n-HT40	3	2422	MCS0	17.00	16.90
		6	2437		17.00	16.99
		8	2447		17.00	16.88
		9	2452		16.00	15.98
		10	2457		12.50	12.45
		11	2462		-2.50	-2.58

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Main Antenna						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
5.15-5.25 GHz	802.11a	36	5180	6Mbps	15.00	14.99
		40	5200		15.00	14.93
		44	5220		15.00	14.92
		48	5240		15.00	14.96
	802.11n-HT20	36	5180	MCS0	15.00	14.97
		40	5200		15.00	14.98
		44	5220		15.00	14.92
		48	5240		15.00	14.91
	802.11n-VHT20	36	5180	MCS0	15.00	14.91
		40	5200		15.00	14.96
		44	5220		15.00	14.95
		48	5240		15.00	14.93
	802.11n-HT40	38	5190	MCS0	15.00	14.99
		46	5230		15.00	14.94
	802.11n-VHT40	38	5190	MCS0	15.00	14.95
		46	5230		15.00	14.92
	802.11n-VHT80	42	5210	MCS0	14.00	13.95

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Main Antenna						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
5.25-5.35 GHz	802.11a	52	5260	6Mbps	15.00	14.99
		56	5280		15.00	14.96
		60	5300		15.00	14.95
		64	5320		15.00	14.94
	802.11n-HT20	52	5260	MCS0	15.00	14.91
		56	5280		15.00	14.98
		60	5300		15.00	14.92
		64	5320		15.00	14.95
	802.11n-VHT20	52	5260	MCS0	15.00	14.92
		56	5280		15.00	14.96
		60	5300		15.00	14.94
		64	5320		15.00	15.95
	802.11n-HT40	54	5270	MCS0	15.00	14.96
		62	5310		15.00	14.97
	802.11n-VHT40	54	5270	MCS0	15.00	14.98
		62	5310		15.00	14.94
	802.11n-VHT80	58	5290	MCS0	12.00	11.99

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Main Antenna						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
5600 MHz	802.11a	100	5500	6Mbps	15.00	14.91
		120	5600		15.00	14.94
		140	5700		15.00	14.92
	802.11n-HT20	100	5500	MCS0	15.00	14.91
		120	5600		15.00	14.95
		140	5700		15.00	14.92
		144	5720		15.00	14.93
	802.11n-VHT20	100	5500	MCS0	15.00	14.97
		120	5600		15.00	14.91
		140	5700		15.00	14.98
		144	5720		15.00	14.94
	802.11n-HT40	102	5510	MCS0	15.00	14.96
		118	5590		15.00	14.85
		134	5670		15.00	14.97
		142	5710		15.00	14.84
	802.11n-VHT40	102	5510	MCS0	15.00	14.99
		118	5590		15.00	14.94
		134	5670		15.00	14.95
		142	5710		15.00	14.89
	802.11n-VHT80	106	5530	MCS0	13.50	13.48
		122	5610		15.00	14.97
		138	5690		15.00	14.99

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f (886 2) 2298 0488

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Main Antenna						
Mode	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
5800 MHz	802.11a	149	5745	6Mbps	15.00	14.94
		157	5785		15.00	14.96
		165	5825		15.00	14.91
	802.11n-HT20	149	5745	MCS0	15.00	14.91
		157	5785		15.00	14.94
		165	5825		15.00	14.98
	802.11n-VHT20	149	5745	MCS0	15.00	14.97
		157	5785		15.00	14.94
		165	5825		15.00	14.96
	802.11n-HT40	151	5755	MCS0	15.00	14.97
		159	5795		15.00	14.99
	802.11n-VHT40	151	5755	MCS0	15.00	14.93
		159	5795		15.00	14.96
	802.11n-VHT80	155	5775	MCS0	15.00	14.99

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Aux Antenna						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
2450 MHz	802.11b	1	2412	1Mbps	17.00	16.96
		6	2437		17.00	16.99
		11	2462		17.00	16.98
		12	2467		16.00	15.98
		13	2472		8.50	8.46
	802.11g	1	2412	6Mbps	17.00	16.93
		6	2437		17.00	16.92
		11	2462		17.00	16.90
		12	2467		10.50	10.45
		13	2472		-2.50	-2.54
	802.11n-HT20	1	2412	MCS0	17.00	16.93
		6	2437		17.00	16.97
		11	2462		17.00	16.94
		12	2467		10.50	10.42
		13	2472		-2.50	-2.56
	802.11n-HT40	3	2422	MCS0	17.00	16.97
		6	2437		17.00	16.99
		8	2447		16.50	16.46
		9	2452		16.00	15.93
		10	2457		12.50	12.41
		11	2462		-2.50	-2.55

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Aux Antenna						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
5.15-5.25 GHz	802.11a	36	5180	6Mbps	15.50	15.41
		40	5200		15.50	15.47
		44	5220		15.50	15.42
		48	5240		15.50	15.43
	802.11n-HT20	36	5180	MCS0	15.50	15.49
		40	5200		15.50	15.41
		44	5220		15.50	15.44
		48	5240		15.50	15.46
	802.11n-VHT20	36	5180	MCS0	15.50	15.49
		40	5200		15.50	15.46
		44	5220		15.50	15.47
		48	5240		15.50	15.42
	802.11n-HT40	38	5190	MCS0	15.50	15.49
		46	5230		15.50	15.42
	802.11n-VHT40	38	5190	MCS0	15.50	15.46
		46	5230		15.50	15.43
	802.11n-VHT80	42	5210	MCS0	14.00	13.98

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Aux Antenna						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
5.25-5.35 GHz	802.11a	52	5260	6Mbps	15.50	15.40
		56	5280		15.50	15.49
		60	5300		15.50	15.48
		64	5320		15.50	15.46
	802.11n-HT20	52	5260	MCS0	15.50	15.42
		56	5280		15.50	15.41
		60	5300		15.50	15.46
		64	5320		15.50	15.44
	802.11n-VHT20	52	5260	MCS0	15.50	15.45
		56	5280		15.50	15.47
		60	5300		15.50	15.43
		64	5320		15.50	15.41
	802.11n-HT40	54	5270	MCS0	15.50	15.43
		62	5310		15.50	15.49
	802.11n-VHT40	54	5270	MCS0	15.50	15.43
		62	5310		15.50	15.47
	802.11n-VHT80	58	5290	MCS0	12.00	11.98

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Aux Antenna						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
5600 MHz	802.11a	100	5500	6Mbps	15.50	15.45
		120	5600		15.50	15.41
		140	5700		15.50	15.43
	802.11n-HT20	100	5500	MCS0	15.50	15.44
		120	5600		15.50	15.47
		140	5700		15.50	15.45
		144	5720		15.50	15.43
	802.11n-VHT20	100	5500	MCS0	15.50	15.48
		120	5600		15.50	15.41
		140	5700		15.50	15.47
		144	5720		15.50	15.42
	802.11n-HT40	102	5510	MCS0	15.50	15.48
		118	5590		15.50	15.39
		134	5670		15.50	15.49
		142	5710		15.50	15.38
	802.11n-VHT40	102	5510	MCS0	15.50	15.45
		118	5590		15.50	15.48
		134	5670		15.50	15.41
		142	5710		15.50	15.38
	802.11n-VHT80	106	5530	MCS0	14.00	13.96
		122	5610		15.50	15.37
		138	5690		15.50	15.49

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Aux Antenna						
Mode	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
5800 MHz	802.11a	149	5745	6Mbps	15.50	15.46
		157	5785		15.50	15.48
		165	5825		15.50	15.45
	802.11n-HT20	149	5745	MCS0	15.50	15.43
		157	5785		15.50	15.49
		165	5825		15.50	15.46
	802.11n-VHT20	149	5745	MCS0	15.50	15.44
		157	5785		15.50	15.49
		165	5825		15.50	15.43
	802.11n-HT40	151	5755	MCS0	15.50	15.45
		159	5795		15.50	15.49
	802.11n-VHT40	151	5755	MCS0	15.50	15.41
		159	5795		15.50	15.43
	802.11n-VHT80	155	5775	MCS0	15.50	15.49

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Notebook Mode

Main Antenna						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
2450 MHz	802.11b	1	2412	1Mbps	20.00	19.97
		6	2437		20.00	19.96
		11	2462		20.00	19.91
		12	2467		16.50	16.44
		13	2472		8.50	8.41
	802.11g	1	2412	6Mbps	18.00	17.92
		6	2437		20.00	19.97
		11	2462		17.50	17.46
		12	2467		11.50	10.48
		13	2472		-2.50	-2.53
	802.11n-HT20	1	2412	MCS0	18.00	17.89
		6	2437		20.00	19.97
		11	2462		17.50	17.42
		12	2467		11.50	11.45
		13	2472		-2.50	-2.60
	802.11n-HT40	3	2422	MCS0	18.00	17.97
		6	2437		19.00	18.97
		9	2452		16.00	15.95
		10	2457		12.50	12.45
		11	2462		-2.50	-2.56

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Main Antenna						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
5.15-5.25 GHz	802.11a	36	5180	6Mbps	18.00	17.93
		40	5200		20.00	19.96
		44	5220		20.00	19.93
		48	5240		19.50	19.46
	802.11n-HT20	36	5180	MCS0	18.00	17.98
		40	5200		20.00	19.93
		44	5220		20.00	19.95
		48	5240		19.50	19.48
	802.11n-VHT20	36	5180	MCS0	18.00	17.82
		40	5200		20.00	19.74
		44	5220		20.00	19.79
		48	5240		19.50	19.30
	802.11n-HT40	38	5190	MCS0	18.00	17.99
		46	5230		20.00	19.98
	802.11n-VHT40	38	5190	MCS0	18.00	17.83
		46	5230		20.00	19.80
	802.11n-VHT80	42	5210	MCS0	14.00	13.95

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Main Antenna						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
5.25-5.35 GHz	802.11a	52	5260	6Mbps	20.00	19.97
		56	5280		20.00	19.94
		60	5300		20.00	19.98
		64	5320		16.00	15.98
	802.11n-HT20	52	5260	MCS0	20.00	19.98
		56	5280		20.00	19.95
		60	5300		20.00	19.96
		64	5320		16.00	15.91
	802.11n-VHT20	52	5260	MCS0	20.00	19.81
		56	5280		20.00	19.75
		60	5300		20.00	19.78
		64	5320		16.00	15.81
	802.11n-HT40	54	5270	MCS0	20.00	19.97
		62	5310		14.50	14.49
	802.11n-VHT40	54	5270	MCS0	20.00	19.81
		62	5310		14.50	14.31
	802.11n-VHT80	58	5290	MCS0	12.00	11.79

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Main Antenna						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
5600 MHz	802.11a	100	5500	6Mbps	16.50	16.46
		104	5520		20.00	19.91
		120	5600		20.00	19.96
		136	5580		20.00	19.92
		140	5700		16.00	15.99
	802.11n-HT20	100	5500	MCS0	16.50	16.49
		104	5520		20.00	19.93
		120	5600		20.00	19.94
		136	5580		20.00	19.91
		140	5700		16.00	15.98
		144	5720		20.00	19.35
	802.11n-VHT20	100	5500	MCS0	16.50	16.31
		104	5520		20.00	19.93
		120	5600		20.00	19.79
		136	5580		20.00	19.92
		140	5700		16.00	15.95
		144	5720		20.00	19.32
	802.11n-HT40	102	5510	MCS0	16.50	16.48
		110	5550		20.00	19.91
		118	5590		20.00	19.90
		126	5630		20.00	19.89
		134	5670		17.00	16.98
		142	5710		20.00	19.88

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Main Antenna						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
5600 MHz	802.11n-VHT40	102	5510	MCS0	16.50	16.33
		110	5550		20.00	19.82
		118	5590		20.00	19.80
		126	5630		20.00	19.81
		134	5670		17.00	16.83
		142	5710		20.00	19.98
	802.11n-VHT80	106	5530	MCS0	13.50	13.47
		122	5610		17.50	17.41
		138	5690		20.00	19.85

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Main Antenna						
Mode	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
5800 MHz	802.11a	149	5745	6Mbps	20.00	19.97
		157	5785		20.00	19.94
		165	5825		20.00	19.99
	802.11n-HT20	149	5745	MCS0	20.00	19.98
		157	5785		20.00	19.98
		165	5825		20.00	19.95
	802.11n-VHT20	149	5745	MCS0	20.00	19.79
		157	5785		20.00	19.81
		165	5825		20.00	19.79
	802.11n-HT40	151	5755	MCS0	20.00	19.96
		159	5795		20.00	19.97
	802.11n-VHT40	151	5755	MCS0	20.00	19.81
		159	5795		20.00	19.81
	802.11n-VHT80	155	5775	MCS0	17.50	17.49

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Aux Antenna						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
2450 MHz	802.11b	1	2412	1Mbps	18.00	17.86
		6	2437		20.00	19.84
		11	2462		18.50	18.46
		12	2467		16.00	15.89
		13	2472		8.50	8.26
	802.11g	1	2412	6Mbps	18.00	17.84
		6	2437		20.00	19.86
		11	2462		17.00	16.94
		12	2467		10.50	10.40
		13	2472		-2.50	-2.64
	802.11n-HT20	1	2412	MCS0	18.00	17.83
		6	2437		20.00	19.86
		11	2462		17.00	16.79
		12	2467		10.50	10.25
		13	2472		-2.50	-2.81
	802.11n-HT40	3	2422	MCS0	17.00	16.96
		6	2437		19.00	18.90
		9	2452		16.00	15.89
		10	2457		12.50	12.32
		11	2462		-2.50	-2.60

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Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
5.15-5.25 GHz	802.11a	36	5180	6Mbps	17.50	17.48
		40	5200		19.50	19.49
		44	5220		20.00	19.82
		48	5240		19.50	19.39
	802.11n-HT20	36	5180	MCS0	17.50	17.47
		40	5200		19.50	19.45
		44	5220		20.00	19.92
		48	5240		19.50	19.43
	802.11n-VHT20	36	5180	MCS0	17.50	17.27
		40	5200		19.50	19.26
		44	5220		20.00	19.73
		48	5240		19.50	19.26
	802.11n-HT40	38	5190	MCS0	18.00	17.94
		46	5230		20.00	19.96
	802.11n-VHT40	38	5190	MCS0	18.00	17.79
		46	5230		20.00	19.79
	802.11n-VHT80	42	5210	MCS0	14.00	13.91

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Aux Antenna						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
5.25-5.35 GHz	802.11a	52	5260	6Mbps	20.00	19.91
		56	5280		20.00	19.89
		60	5300		20.00	19.93
		64	5320		16.50	16.18
	802.11n-HT20	52	5260	MCS0	20.00	19.94
		56	5280		20.00	19.93
		60	5300		20.00	19.74
		64	5320		16.50	16.42
	802.11n-VHT20	52	5260	MCS0	20.00	19.75
		56	5280		20.00	19.73
		60	5300		20.00	19.69
		64	5320		16.50	16.31
	802.11n-HT40	54	5270	MCS0	20.00	19.72
		62	5310		15.00	14.72
	802.11n-VHT40	54	5270	MCS0	20.00	19.62
		62	5310		15.00	14.68
	802.11n-VHT80	58	5290	MCS0	12.00	11.65

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Aux Antenna						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
5600 MHz	802.11a	100	5500	6Mbps	17.50	16.90
		104	5520		20.00	19.89
		120	5600		20.00	19.92
		136	5580		20.00	19.88
		140	5700		16.00	15.89
	802.11n-HT20	100	5500	MCS0	17.50	17.47
		104	5520		20.00	19.85
		120	5600		20.00	19.90
		136	5580		20.00	19.86
		140	5700		16.00	15.96
		144	5720		20.00	19.21
	802.11n-VHT20	100	5500	MCS0	17.50	17.31
		104	5520		20.00	19.83
		120	5600		20.00	19.70
		136	5580		20.00	19.86
		140	5700		16.00	15.89
		144	5720		20.00	19.27
	802.11n-HT40	102	5510	MCS0	16.50	16.44
		110	5550		20.00	19.92
		118	5590		20.00	19.90
		126	5630		20.00	19.91
		134	5670		17.00	16.95
		142	5710		20.00	19.61

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Aux Antenna						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
5600 MHz	802.11n-VHT40	102	5510	MCS0	16.50	16.28
		110	5550		20.00	19.87
		118	5590		20.00	19.76
		126	5630		20.00	19.82
		134	5670		17.00	16.79
		142	5710		20.00	19.60
	802.11n-VHT80	106	5530	MCS0	14.00	13.95
		122	5610		18.50	18.45
		138	5690		20.00	19.47

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Aux Antenna						
Mode	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
5800 MHz	802.11a	149	5745	6Mbps	20.00	19.81
		157	5785		20.00	19.87
		165	5825		20.00	19.91
	802.11n-HT20	149	5745	MCS0	20.00	19.90
		157	5785		20.00	19.91
		165	5825		20.00	19.89
	802.11n-VHT20	149	5745	MCS0	20.00	19.73
		157	5785		20.00	19.72
		165	5825		20.00	19.73
	802.11n-HT40	151	5755	MCS0	20.00	19.92
		159	5795		20.00	19.93
	802.11n-VHT40	151	5755	MCS0	20.00	19.73
		159	5795		20.00	19.74
	802.11n-VHT80	155	5775	MCS0	17.50	17.45

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Bluetooth conducted power table:

Mode	Channel	Frequency (MHz)	1Mbps		2Mbps		3Mbps	
			Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
BR/EDR	CH 00	2402	11.50	9.26	8.00	7.87	7.00	6.82
	CH 39	2441		10.86		7.91		6.91
	CH 78	2480		9.42		7.49		6.95

Mode	Channel	Frequency (MHz)	GFSK	
			Max. Rated Avg. Power + Max. Tolerance (dBm)	Average Output Power (dBm)
LE	CH 00	2402	7	6.91
	CH 20	2442		6.96
	CH 39	2480		6.96

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1.3.1 LTE Downlink CA specification

LTE Downlink 2CA conducted power table

Two Component Carrier Maximum Conducted Power																
PCC									SCC 1				Power		Configurations	Maximum power
PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC (UL) RB	PCC (UL) RB Offset	PCC (DL) Channel	PCC (DL) Frequency [MHz]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	LTE Tx Power with DL CA active (dBm)	LTE Tx Power with DL CA inactive (dBm)		
LTE B2	15	18900	1880	QPSK	1	74	900	1960	LTE B17	10	5790	740	24.05	24.22	CA_2A-17A	Full power
LTE B2	20	18900	1880	16QAM	1	50	900	1960	LTE B17	10	5790	740	15.28	15.45	CA_2A-17A	Reduced power
LTE B17	5	23790	710	QPSK	1	0	5790	740	LTE B2	20	900	1960	23.27	23.35	CA_2A-17A	Full power
LTE B17	5	23755	706.5	16QAM	1	12	5755	736.5	LTE B2	20	900	1960	19.33	19.43	CA_2A-17A	Reduced power
LTE B4	20	20050	1720	QPSK	1	50	2050	2120	LTE B17	10	5790	740	23.89	23.91	CA_4A-17A	Full power
LTE B4	5	19975	1712.5	16QAM	12	6	1975	2112.5	LTE B17	10	5790	740	15.97	16.00	CA_4A-17A	Reduced power
LTE B17	5	23790	710	QPSK	1	0	5790	740	LTE B4	20	2175	2132.5	23.24	23.35	CA_4A-17A	Full power
LTE B17	5	23755	706.5	16QAM	1	12	5755	736.5	LTE B4	20	2175	2132.5	19.33	19.43	CA_4A-17A	Reduced power
LTE B4	20	20050	1720	QPSK	1	50	2050	2120	LTE B30	10	9820	2355	23.72	23.91	CA_4A-30A	Full power
LTE B4	5	19975	1712.5	16QAM	12	6	1975	2112.5	LTE B30	10	9820	2355	15.85	16.00	CA_4A-30A	Reduced power
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B4	20	2175	2132.5	24.34	24.37	CA_4A-30A	Full power
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B4	20	2175	2132.5	15.83	15.98	CA_4A-30A	Reduced power
LTE B5	10	20600	844	QPSK	1	0	2600	889	LTE B7	20	3100	2655	23.25	23.35	CA_5A-7A	Full power
LTE B5	10	20450	829	QPSK	1	25	2450	874	LTE B7	20	3100	2655	22.78	22.79	CA_5A-7A	Reduced power
LTE B7	20	20850	2510	QPSK	1	0	2850	2630	LTE B5	10	2525	881.5	24.18	24.18	CA_5A-7A	Full power
LTE B7	20	20850	2510	QPSK	1	0	2850	2630	LTE B5	10	2525	881.5	17.33	17.39	CA_5A-7A	Reduced power
LTE B5	10	20600	844	QPSK	1	0	2600	889	LTE B30	10	9820	2355	23.19	23.35	CA_5A-30A	Full power
LTE B5	10	20450	829	QPSK	1	25	2450	874	LTE B30	10	9820	2355	22.72	22.79	CA_5A-30A	Reduced power
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B5	10	2525	881.5	24.26	24.37	CA_5A-30A	Full power
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B5	10	2525	881.5	15.92	15.98	CA_5A-30A	Reduced power
LTE B12	10	23060	704	QPSK	1	0	5060	734	LTE B30	10	9820	2355	23.26	23.28	CA_12A-30A	Full power
LTE B12	5	23095	707.5	16QAM	1	12	5095	737.5	LTE B30	10	9820	2355	19.37	19.44	CA_12A-30A	Reduced power
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B12	10	5095	737.5	24.23	24.37	CA_12A-30A	Full power
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B12	10	5095	737.5	15.94	15.98	CA_12A-30A	Reduced power
LTE B25	20	26140	1860	QPSK	1	99	8140	1940	LTE B26	15	8865	876.5	24.36	24.49	CA_25A-26A	Full power
LTE B25	10	26640	1910	16QAM	1	49	8640	1990	LTE B26	15	8865	876.5	15.37	15.49	CA_25A-26A	Reduced power
LTE B26	10	26990	844	QPSK	1	0	8990	889	LTE B25	20	8365	1962.5	23.55	23.68	CA_25A-26A	Full power
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B29	10	9715	722.5	24.19	24.37	CA_29A-30A	Full power
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B29	10	9715	722.5	15.81	15.98	CA_29A-30A	Reduced power
LTE B66	10	132322	1745	QPSK	1	49	66786	2145	LTE B29	10	9715	722.5	23.99	24.03	CA_29A-66A	Full power
LTE B66	5	132647	1777.5	16QAM	1	0	67111	2177.5	LTE B29	10	9715	722.5	16.40	16.45	CA_29A-66A	Reduced power
LTE B66	10	132322	1745	QPSK	1	49	66786	2145	LTE B30	10	9820	2355	23.93	24.03	CA_30A-66A	Full power
LTE B66	5	132647	1777.5	16QAM	1	0	67111	2177.5	LTE B30	10	9820	2355	16.38	16.45	CA_30A-66A	Reduced power
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B66	20	66886	2155	24.32	24.37	CA_30A-66A	Full power
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B66	20	66886	2155	15.92	15.98	CA_30A-66A	Reduced power
LTE B2	20	19100	1900	QPSK	1	0	1100	1980	LTE B2	20	902	1960.2	24.12	24.20	CA_2C	Full power
LTE B2	20	19100	1900	16QAM	1	0	1100	1980	LTE B2	20	902	1960.2	15.35	15.42	CA_2C	Reduced power
LTE B2	20	19100	1900	QPSK	1	0	1100	1980	LTE B2	20	1940	700	24.15	24.20	CA_2A-2A	Full power
LTE B2	20	19100	1900	16QAM	1	0	1100	1980	LTE B2	20	1940	700	15.34	15.42	CA_2A-2A	Reduced power
LTE B4	20	20050	1720	QPSK	1	50	2050	2120	LTE B4	20	2300	2145	23.82	23.91	CA_4A-4A	Full power
LTE B4	20	20300	1745	QPSK	50	25	2300	2145	LTE B4	20	2050	2120	15.87	15.92	CA_4A-4A	Reduced power
LTE B12	10	23130	711	QPSK	1	0	5130	741	LTE B12	5	5058	733.8	23.12	23.22	CA_12B	Full power
LTE B12	10	23130	711	16QAM	1	0	5130	741	LTE B12	5	5058	733.8	19.26	19.39	CA_12B	Reduced power
LTE B12	5	23155	713.5	QPSK	1	24	5155	743.5	LTE B12	5	5095	737.5	23.22	23.28	CA_12A-12A	Full power
LTE B12	5	23095	707.5	16QAM	1	12	5095	737.5	LTE B12	5	5095	737.5	19.33	19.44	CA_12A-12A	Reduced power
LTE B25	20	26140	1860	QPSK	1	99	8140	1940	LTE B25	20	8590	1985	24.35	24.49	CA_25A-25A	Full power
LTE B25	20	26590	1905	QPSK	1	0	8590	1985	LTE B25	20	8140	1940	15.25	15.34	CA_25A-25A	Reduced power

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Three Component Carrier Maximum Conducted Power																				
PCC									SCC 1				SCC 2				Power		Configurations	Maximum power
PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC (UL) RB	PCC (UL) RB Offset	PCC (DL) Channel	PCC (DL) Frequency [MHz]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	LTE Tx Power with DL CA active (dBm)	LTE Tx Power with DL CA inactive (dBm)		
LTE B12	10	23060	704	QPSK	1	0	5060	734	LTE B66	20	66536	2120	LTE B66	20	67036	2170	23.27	23.28	CA, 12A-66A-66A	Full power
LTE B12	5	23095	707.5	16QAM	1	12	5095	737.5	LTE B66	20	66536	2120	LTE B66	20	67036	2170	19.33	19.44	CA, 12A-66A-66A	Reduced power
LTE B66	20	132072	1720	QPSK	1	50	66536	2120	LTE B66	20	67036	2170	LTE B12	10	5095	737.5	23.83	23.96	CA, 12A-66A-66A	Full power
LTE B66	20	132072	1720	QPSK	1	50	66536	2120	LTE B66	20	67036	2170	LTE B12	10	5095	737.5	16.33	16.33	CA, 12A-66A-66A	Reduced power
LTE B13	5	23230	782	QPSK	1	0	5230	751	LTE B66	20	66536	2120	LTE B66	10	66680	2134.4	23.32	23.41	CA, 13A-66C	Full power
LTE B13	10	23230	782	16QAM	1	25	5230	751	LTE B66	20	66536	2120	LTE B66	10	66680	2134.4	21.31	21.49	CA, 13A-66C	Reduced power
LTE B66	20	132072	1720	QPSK	1	50	66536	2120	LTE B66	20	66734	2139.8	LTE B13	10	5230	751	23.80	23.96	CA, 13A-66C	Full power
LTE B66	20	132072	1720	QPSK	1	50	66536	2120	LTE B66	20	66734	2139.8	LTE B13	10	5230	751	16.23	16.33	CA, 13A-66C	Reduced power
LTE B25	20	26140	1960	QPSK	1	99	8140	1940	LTE B41	20	41292	2660.2	LTE B41	20	41480	2680	24.33	24.49	CA, 25A-41C	Full power
LTE B25	10	26540	1810	16QAM	1	49	8640	1990	LTE B41	20	41292	2660.2	LTE B41	20	41480	2680	15.36	15.49	CA, 25A-41C	Reduced power
LTE B41	20	41490	2680	QPSK	1	0	41490	2680	LTE B41	20	41292	2660.2	LTE B25	20	8365	1962.5	24.11	24.21	CA, 25A-41C	Full power
LTE B26	10	26590	844	QPSK	1	0	2650	889	LTE B41	20	41292	2660.2	LTE B41	20	41480	2680	23.60	23.68	CA, 26A-41C	Full power
LTE B41	20	41490	2680	QPSK	1	0	2450	874	LTE B41	20	41292	2660.2	LTE B26	15	8865	876.5	24.14	24.21	CA, 26A-41C	Full power
LTE B41	20	41490	2680	QPSK	1	0	41490	2680	LTE B41	20	41094	2640.4	LTE B41	20	41292	2660.2	24.07	24.21	CA, 41D	Full power
LTE B41	20	41490	2680	QPSK	1	0	41490	2680	LTE B41	20	41292	2660.2	LTE B41	20	39750	2506	24.19	24.21	CA, 41A-41C	Full power
LTE B66	20	132072	1720	QPSK	1	50	66536	2120	LTE B66	20	66734	2139.8	LTE B66	20	66932	2159.6	23.80	23.96	CA, 66D	Full power
LTE B66	20	132072	1720	QPSK	1	50	66536	2120	LTE B66	20	66734	2139.8	LTE B66	20	66932	2159.6	16.19	16.33	CA, 66D	Reduced power
LTE B66	20	132072	1720	QPSK	1	50	66536	2120	LTE B66	20	67036	2170.2	LTE B66	10	67236	2190	23.92	23.96	CA, 66A-66C	Full power
LTE B66	20	132072	1720	QPSK	1	50	66536	2120	LTE B66	20	67036	2170.2	LTE B66	10	67236	2190	16.33	16.33	CA, 66A-66C	Reduced power

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LTE CA information

A)

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

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

B)

i) Combinations supported for intra-band carrier aggregation.

1 band / 2CC contiguous	1 band / 3CC contiguous
CA-2C (0)	
CA-12B (0)	
CA-41C (0)(1)(2)(3)	CA-41D (0)
CA-66B (0)	CA-66D (0)
CA-66C (0)	

Intra-band contiguous CA combination

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Table 1: intra-band contiguous CA

E-UTRA CA configuration	Component carriers in order of increasing carrier frequency			Maximum aggregated bandwidth [MHz]	Bandwidth combination set
	Channel bandwidths for carrier [MHz]	Channel bandwidths for carrier [MHz]	Channel bandwidths for carrier [MHz]		
CA_2C	5	20		40	0
	10	15,20			
	15	10,15,20			
	20	5,10,15,20			
CA_12B	5	5, 10		15	0
CA_41D	10	20	15	60	0
	10	15,20	20		
	15	20	10,15		
	15	10,15,20	20		
	20	15,20	10		
	20	10,15,20	15,20		
CA_66D	5	20	20	60	0
	20	5	20		
	20	20	5		
	10	20	15		
	15	20	10		
	10,15,20	15,20	20		
	15,20	10	20		
	15	15,20	15		
	20	15,20	10,15		
	20	10	15		

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1 band / 2CC non-contiguous	1 band / 3CC non-contiguous
CA-2A-2A (0)	
CA-4A-4A (0)(1)	
CA-12A-12A (0)	
CA-25A-25A (0)(1)	
CA-41A-41A (0)(1)	CA-41A-41C (0)
CA-66A-66A (0)	CA-66A-66B (0)
	CA-66A-66C (0)

Intra-band non-contiguous CA combination

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

-UTRACA configuration	Component carriers in order of increasing carrier frequency			Maximum aggregated bandwidth [MHz]	Bandwidth combination set
	Channel bandwidths for carrier [MHz]	Channel bandwidths for carrier [MHz]	Channel bandwidths for carrier [MHz]		
CA_2A-2A	5,10,15,20	5,10,15,20		40	0
CA_4A-4A	5,10,15,20	5,10,15,20		40	0
	5,10	5,10		20	1
CA_12A-12A	5	5		10	0
CA_25A-25A	5, 10	5, 10		20	0
	5, 10, 15, 20	5, 10, 15, 20		40	1
CA_41A-41C	5,10,15,20	See CA_41C bandwidth combination set 1 in 3GPP TS 36,521-1 table 5.4.2A.		60	0
	See CA_41C bandwidth combination set 1 in 3GPP TS 36,521-1 table 5.4.2A.		5,10,15,20		

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CA_66A-66C	5,10,15,20	See CA_66C bandwidth combination set 0 in 3GPP TS 36,521-1 table 5.4.2A. 1-1	60	0
	See CA_66C bandwidth combination set 0 in 3GPP TS 36,521-1 table 5.4.2A. 1-1	5,10,15,20		

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

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2 bands / 2CC	2 bands / 3CC	3 bands / 3CC
	CA_2A-2A-12A (0)	
	CA_2A-2A-13A (0)	
CA_2A-4A (0)(1)(2)	CA_2A-4A-4A (0)	CA_2A-4A-5A (0)
		CA_2A-4A-12A (0)
		CA_2A-4A-13A (0)
		CA_2A-4A-29A (0)
CA_2A-5A (0)(1)		CA_2A-5A-30A (0)
		CA_2A-5A-66A (0)
CA_2A-12A (0)(1)(2)	CA_2A-12A-12A (0)	CA_2A-12A-30A (0)
	CA_2A-12B (0)	
CA_2A-13A (0)(1)		CA_2A-13A-66A (0)
CA_2A-17A (0)		
CA_2A-29A (0)(1)(2)		CA_2A-29A-30A (0)
CA_2A-30A (0)		
CA_2A-66A (0)(1)(2)	CA_2A-66B (0)	
	CA_2A-66C (0)	
CA_4A-5A (0)(1)	CA_4A-4A-5A (0)	CA_4A-5A-30A (0)
CA_4A-7A (0)(1)	CA_4A-4A-7A (0)(1)	
CA_4A-12A (0)(1)(2)(3)(4)(5)	CA_4A-4A-12A (0)	CA_4A-12A-30A (0)
	CA_4A-12A-12A (0)	
	CA_4A-12B (0)	
CA_4A-13A (0)(1)	CA_4A-4A-13A (0)	
CA_4A-17A (0)		
CA_4A-29A (0)(1)(2)		CA_4A-29A-30A (0)
CA_4A-30A (0)		
CA_5A-30A (0)		
CA_5A-66A (0)	CA_5A-66B (0)	
	CA_5A-66C (0)	
CA_12A-30A (0)		
CA_12A-66A (0)(1)(2)(3)(4)(5)	CA_12A-66A-66A (0)	
	CA_12A-66C (0)	

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2 bands / 2CC	2 bands / 3CC	3 bands / 3CC
CA_13A-66A (0)	CA_13A-66B (0)	
	CA_13A-66C (0)	
CA_25A-26A (0)(1)(2)		
CA_25A-41A (0)	CA_25A-41C (0)	
CA_26A-41A (0)	CA_26A-41C (0)	
CA_29A-30A (0)		
CA_29A-66A (0)		
CA_30A-66A (0)		

Inter band CA combination

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Table 3: inter-band CA (two bands)

E-UTRA CA Configuration	E-UTRA Bands	1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz	Maximum aggregated bandwidth [MHz]	Bandwidth combination set
CA_2A-2A-12A	2	See CA_2A-2A bandwidth combination set 0 in 3GPP TS 36,521-1 table 5.4.2A. 1-3						50	0
	12			Yes	Yes				
CA_2A-2A-13A	2	See CA_2A-2A bandwidth combination set 0 in 3GPP TS 36,521-1 table 5.4.2A. 1-3						50	0
	13				Yes				
CA_2A-17A	2			Yes	Yes			20	0
	17			Yes	Yes				
CA_2A-66C	2			Yes	Yes	Yes	Yes	60	0
	66	See CA_66C bandwidth combination set 0 in 3GPP TS 36,521-1 table 5.4.2A. 1-1							
CA_4A-4A-7A	4			Yes	Yes			40	0
	4			Yes	Yes				
	7			Yes	Yes	Yes	Yes		
	4			Yes	Yes	Yes	Yes	60	1
	4			Yes	Yes	Yes	Yes		
	7			Yes	Yes	Yes	Yes		
CA_4A-4A-13A	4	See CA_4A-4A bandwidth combination set 0 in 3GPP TS 36,521-1 table 5.4.2A. 1-3						50	0
	13				Yes				
CA_4A-17A	4			Yes	Yes			20	0
	17			Yes	Yes				
CA_4A-30A	4			Yes	Yes	Yes	Yes	30	0

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	30			Yes	Yes				
CA_5A-30A	5			Yes	Yes			20	0
	30			Yes	Yes				
CA_5A-66C	5			Yes	Yes			50	0
	66	See CA_66C bandwidth combination set 2 in 3GPP TS 36,521-1 table 5.4.2A. 1-1							
CA_12A-30A	12			Yes	Yes			20	0
	30			Yes	Yes				
CA_12A-66A-66A	12			Yes	Yes			50	0
	66	See CA_66A-66A bandwidth combination set 0 in 3GPP TS 36,521-1 table 5.4.2A. 1-3							
CA_13A-66C	13			Yes	Yes			50	0
	66	See CA_66C bandwidth combination set 0 in 3GPP TS 36,521-1 table 5.4.2A. 1-1							
CA_25A-26A	25		Yes	Yes	Yes	Yes	Yes	35	0
	26	Yes	Yes	Yes	Yes	Yes			
	25		Yes	Yes	Yes			20	1
	26		Yes	Yes	Yes				
	25			Yes	Yes			20	2
	26			Yes	Yes				
CA_25A-41C	25			Yes	Yes	Yes	Yes	60	0
	41	See CA_41C bandwidth combination set 1 in 3GPP TS 36,521-1 table 5.4.2A. 1-1							
CA_26A-41C	26			Yes	Yes	Yes		55	0
	41	See CA_41C bandwidth combination set 1 in 3GPP TS 36,521-1 table 5.4.2A. 1-1							
CA_29A-30A	29			Yes	Yes			20	0
	30			Yes	Yes				
CA_29A-66A	29			Yes	Yes			30	0
	66			Yes	Yes	Yes	Yes		

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CA_30A-66A	30			Yes	Yes			30	0
	66			Yes	Yes	Yes	Yes		

Table 4: inter-band CA (three bands)

E-UTRA CA Configuration	E-UTRA Bands	1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz	Maximum aggregated bandwidth [MHz]	Bandwidth combination set
CA_2A-4A-5A	2			Yes	Yes	Yes	Yes	50	0
	4			Yes	Yes	Yes	Yes		
	5			Yes	Yes				
CA_2A-4A-12A	2			Yes	Yes	Yes	Yes	50	0
	4			Yes	Yes	Yes	Yes		
	12			Yes	Yes				
CA_2A-4A-13A	2			Yes	Yes	Yes	Yes	50	0
	4			Yes	Yes	Yes	Yes		
	13				Yes				
CA_2A-4A-29A	2			Yes	Yes	Yes	Yes	50	0
	4			Yes	Yes	Yes	Yes		
	29			Yes	Yes				
CA_2A-5A-30A	2			Yes	Yes	Yes	Yes	40	0
	5			Yes	Yes				
	30			Yes	Yes				
CA_2A-5A-66A	2			Yes	Yes	Yes	Yes	50	0
	5			Yes	Yes				
	66			Yes	Yes	Yes	Yes		
CA_2A-12A-30A	2			Yes	Yes	Yes	Yes	40	0
	12			Yes	Yes				
	30			Yes	Yes				
CA_2A-13A-66A	2			Yes	Yes	Yes	Yes	50	0
	13			Yes	Yes				

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	66			Yes	Yes	Yes	Yes		
CA_2A-29A-30A	2			Yes	Yes	Yes	Yes	40	0
	29			Yes	Yes				
	30			Yes	Yes				
CA_4A-5A-30A	4			Yes	Yes	Yes	Yes	40	0
	5			Yes	Yes				
	30			Yes	Yes				
CA_4A-12A-30A	4			Yes	Yes	Yes	Yes	40	0
	12			Yes	Yes				
	30			Yes	Yes				
CA_4A-29A-30A	4			Yes	Yes	Yes	Yes	40	0
	29			Yes	Yes				
	30			Yes	Yes				

Note:

- 1) For the inter-band CA combinations, except B29 can't be PCC, all the listed bands above can be used as PCC or SCC.
- 2) The channel spacing and aggregated channel bandwidth for CA are identical to the associated specification in 3GPP TS 36.521-1 V14.3.0.
- 3) The reference test frequencies for CA refers to 3GPP TS 36.508 V14.2.0
- 4) Testing is not required in bands or modes not intended/allowed for US operation
- 5) Based on TCB workshop Nov. 2017, for inter-band downlink CA SAR test exclusion, only the subset with the largest number of combinations of frequency bands and CCs in each row need consideration; i.e., the bold words bands in CA combination table.
- 6) Based on TCB workshop Nov. 2017, for intra-band downlink CA SAR test exclusion, only the CA configuration with the largest aggregated DL CA bandwidth in each frequency band group need consideration, i.e., the bold words bands in CA combination table, and independently for contiguous and non-contiguous CA.

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1.4 Test Environment

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

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

1.5 Operation Description

For WWAN, the EUT is controlled by using a Radio Communication Tester, and the communication between the EUT and the tester is established by air link.

For WLAN, using chipset specific software to control the EUT, and makes it transmit in maximum power. The EUT is set to maximum power level during all tests, and at the beginning of each test the battery is fully charged.

EUT was tested based on KDB inquiry as below,

Tablet mode

WWAN

WCDMA BII/IV/V / LTE B2/4/5/7/12/13/17/25/26/30/66

Back/top_0mm with power reduction

Back_14mm / top_12mm / bottom/right/Left sides_0mm without power reduction

LTE B38/41

Back/top/bottom/right/Left sides_0mm without power reduction

(SAR measurement for laptop mode is not required since the distance between

WWAN antenna and keyboard bottom is > 20cm)

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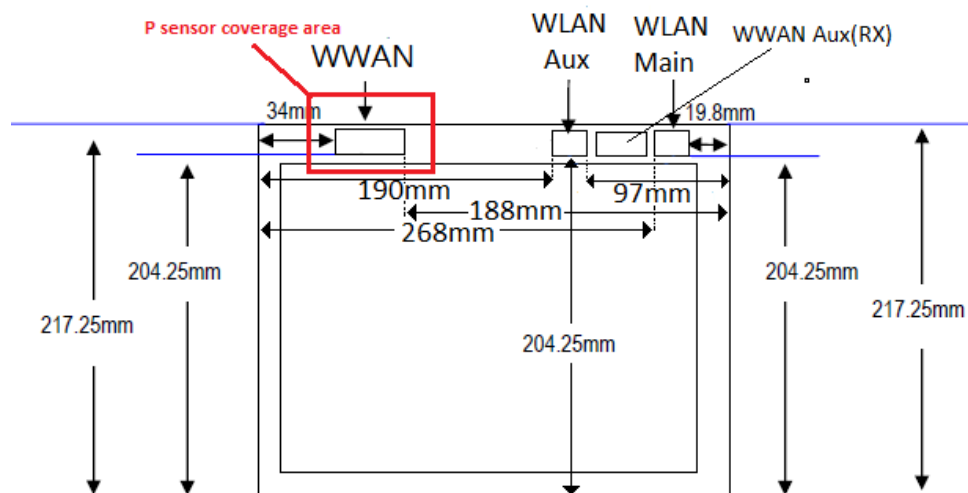
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WLAN

Back/top/bottom/right/left sides_0mm with power reduction

(SAR measurement for laptop mode is not required since the distance between

WLAN antenna and keyboard bottom is > 20cm)



Antenna location (front view)

(The p-sensor is colocated with WWAN antenna)

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Note:

1. During the SAR testing, the DASY 5 system checks power drift by comparing the e-field strength of one specific location measured at the beginning with that measured at the end of the SAR testing.
2. The 3G SAR test reduction procedure is applied to HSDPA with 12.2 kbps RMC as the primary mode. Since the maximum output power in a secondary mode (HSDPA) is $\leq \frac{1}{4}$ dB higher than the primary mode (WCDMA), SAR measurement is not required for the secondary mode (HSDPA).
3. The 3G SAR test reduction procedure is applied to HSPA (HSUPA/HSDPA with RMC) with 12.2 kbps RMC as the primary mode. Since the maximum output power in a secondary mode (HSPA) is $\leq \frac{1}{4}$ dB higher than the primary mode (WCDMA), SAR measurement is not required for the secondary mode (HSPA).
4. LTE modes test according to **KDB 941225D05v02r05**.
 - a. Per Section 5.2.1, the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation.
 - Using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
 - When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required for 1 RB allocation; otherwise, SAR is required for the remaining required test channels and only for the RB offset configuration with the highest output power for that channel.
 - When the reported SAR of a required test channel is > 1.45 W/kg, SAR is required for all three RB offset configurations for that required test channel.
 - b. Per Section 5.2.2, the largest channel bandwidth and measure SAR for QPSK with 50% RB allocation

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

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

- For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation in 5.2.1 and 5.2.2 are ≤ 0.8 W/kg.

- Otherwise, SAR is measured for the highest output power channel and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.

d. Per Section 5.2.4, Higher order modulations

- For each modulation besides QPSK; e.g., 16-QAM, 64-QAM, apply the QPSK procedures in sections 5.2.1, 5.2.2 and 5.2.3 to determine the QAM configurations that may need SAR measurement. For each configuration identified as required for testing, SAR is required only when the highest maximum output power for the configuration in the higher order modulation is $> \frac{1}{2}$ dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is > 1.45 W/kg.

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 $> \frac{1}{2}$ dB higher than the equivalent channel configurations in the largest channel bandwidth configuration or the reported SAR of a configuration for the largest channel bandwidth is > 1.45 W/kg. The equivalent channel configuration for the RB allocation, RB offset and modulation etc. is determined for the smaller channel bandwidth according to the same number of RB allocated in the largest channel bandwidth.

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- TDD LTE was tested at highest duty factor using UL-DL configuration 0 with 6 UL subframes and 2 S subframes using extended cyclic prefix only and special subframe configuration 6. SAR tests were performed at maximum output power and worst-case transmission duty factor in extended cyclic prefix. Per 3GPP 36.211 Section 4, the duty factor for special subframe configuration 6 using extended cyclic prefix is 0.633. LTE downlink CA (KDB942225 D05A)
5. The device supports a maximum of 3 carriers in the downlink. All uplink communications are identical to the Release 8 specifications. Uplink maximum output power is measured with downlink carrier aggregation active, only for the channel with highest measured maximum output power when downlink carrier aggregation is inactive, to confirm that when downlink carrier aggregation is active uplink maximum output power remains within the specified tune-up tolerance limits and not more than 1/4 dB higher than the maximum output power measured when downlink carrier aggregation inactive.
 6. The downlink channels selected to perform the uplink power measurement must satisfy 3GPP channel spacing (5.4.1A of 3GPP TS 36.521 or equivalent) and channel bandwidth (5.4.2A) requirements. The nominal channel spacing is determined by $[BW1 + BW2 - 0.1 \cdot |BW1 - BW2|]/2$ MHz, where BW1 and BW2 are the channel bandwidths of the CC in a 2-CC aggregation configuration.
 7. The downlink PCC channel should be paired with the uplink channel according to normal configurations, as if there is no carrier aggregation. The downlink SCC should be adjacent to the PCC and remain within the downlink transmission band for contiguous intra-band CA. For non-contiguous intra-band CA, the SCC should be selected to provide maximum separation from the PCC and must remain fully within the downlink transmission band. For inter-band CA, the SCC should be near the middle of its transmission band.

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8. When downlink carrier aggregation is active uplink maximum output power remains within the specified tune-up tolerance limits and not more than 1/4 dB higher than the maximum output power measured when downlink carrier aggregation inactive, so SAR evaluation is not required for downlink carrier aggregation.

802.11b DSSS SAR Test Requirements:

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

802.11g/n OFDM SAR Test Exclusion Requirements:

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

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Initial Test Configuration:

12. An initial test configuration is determined for OFDM transmission modes according to the channel bandwidth, modulation and data rate combination(s) with the highest maximum output power specified for production units in each standalone and aggregated frequency band.
13. SAR is measured using the highest measured maximum output power channel. When the reported SAR of the initial test configuration is $> 0.8 \text{ W/kg}$, SAR measurement is required for the subsequent next highest measured output power channel(s) in the initial test configuration until the reported SAR is $\leq 1.2 \text{ W/kg}$ or all required channels are tested.
14. For WLAN Main/Aux, 5.2n(40)/5.3n(40)/5.6n/ac(80)/5.8ac(80) is chosen to be the initial test configuration.
15. Since the highest reported SAR for the initial test configuration is adjusted by the ratio of the subsequent test configuration to initial test configuration specified maximum output power and the adjusted SAR is $\leq 1.2 \text{ W/kg}$, SAR is not required for subsequent test configuration.
16. According to KDB447498D01v06, SAR test exclusion evaluation for surfaces/edges of tablet mode is not required since SAR measurements for all the surfaces/edges were performed. Also, SAR measurement for NB mode is not required since the distance between antenna and keyboard bottom is larger than 20cm.
17. According to KDB447498D01v06, testing of other required channels is not required when the reported 1-g SAR for the highest output channel is $\leq 0.8 \text{ W/kg}$, when the transmission band is $\leq 100 \text{ MHz}$.
18. According to KDB865664D01v01r04, SAR measurement variability must be assessed for each frequency band. When the original highest measured SAR is $\geq 0.8 \text{ W/kg}$, 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 $\geq 1.45 \text{ W/kg}$ ($\sim 10\%$ from the 1-g SAR limit)

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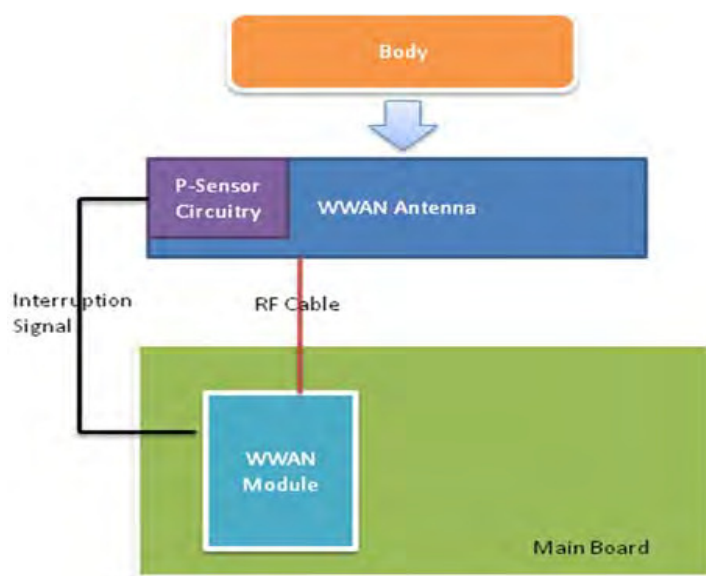
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1.6 Proximity sensor operation description

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



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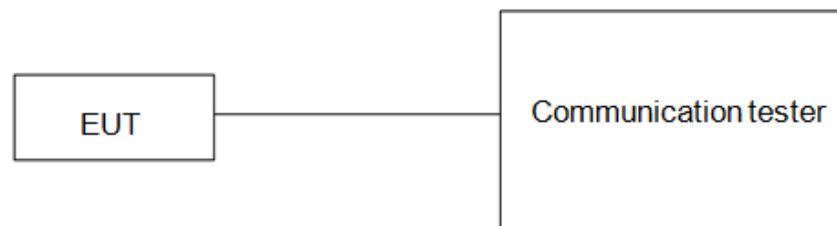
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1.6.1 Proximity sensor measurement procedure

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



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1.6.2 Trigger distances for back/top side

Test procedure:

1. The entire back surface or edge of the tablet is positioned below a flat phantom filled with the required tissue equivalent medium and positioned at least 20 mm further than the distance that triggers power reduction.
2. The back surface or edge is moved toward the phantom in 3 mm steps until the sensor triggers.
3. The back surface or edge is again moved toward the phantom, but in 1 mm steps, until it is at least 5 mm past the triggering point or touching the phantom
4. If the tablet is not touching the phantom, it is moved in 3 mm steps until it touches the phantom to confirm that the sensor remains triggered and the maximum power stays reduced.
5. The back surface or edge is then moved back (further away) from the phantom until maximum output power is returned to the normal maximum level.
6. The process is then reversed by moving the tablet away from the phantom to determine triggering release, until it is at least 10 mm beyond the point that triggers the return of normal maximum power.
7. The measured output power within ± 5 mm of the triggering points, or until the tablet is touching the phantom, for movements to and from the phantom should be tabulated.

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8. To ensure all production units are compliant, it is generally necessary to reduce the triggering distance determined from the triggering tests by 1 mm, or more if it is necessary, and use the smallest distance for movements to and from the phantom, minus 1 mm, as the sensor triggering distance for determining the SAR measurement distance.
9. For back side, the trigger distance of proximity sensor is 15mm.
10. For top side, the trigger distance of proximity sensor is 14mm, and we perform the 1.6.3 tilt angle testing in next step.

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1.6.3 Tilt angle testing

Test procedure:

1. The influence of table tilt angles to proximity sensor triggering is determined by positioning each tablet edge that contains a transmitting antenna, perpendicular to the flat phantom, at the smallest sensor triggering test distance determined in sections 1.6.2 by rotating the tablet around the edge next to the phantom in ≤ 10 deg increments until the tablet is ± 45 deg or more from the vertical position at 0 deg.
2. If sensor triggering is released and normal maximum output power is restored within the ± 45 deg range, the procedures in step 1) should be repeated by reducing the tablet to phantom separation distance by 1 mm until the proximity sensor no longer releases triggering, and maximum output power remains in the reduced mode.
3. The smallest separation distance determined in steps 1) and 2), minus 1 mm, is the sensor triggering distance for tablet tilt coverage. The smallest separation distance determined in sections 1.6.2, 1.6.3 minus 1 mm should be used in the SAR measurements.
4. The influence of tablet tilt angles to proximity sensor triggering is determined by positioning top and right sides, please refer to table 1.6.5 and 1.6.6.
5. After the tilt angle testing for top side, the sensor is not released during ± 45 deg, so $14-1=13$ mm, is the sensor triggering distance for tablet tilt coverage. The smallest separation distance minus 1 mm ($13-1=12$ mm) should be used in the SAR measurements.

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1.6.4 Proximity sensor coverage

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

Test procedure:

1. The back surface or edges of the tablet is positioned at a test separation distance less than or equal to the distance required for back surface or edge triggering, with both the antenna and sensor pad located at least 20 mm laterally outside the edge (boundary) of the phantom, along the direction of maximum antenna and sensor offset.
2. The similar sequence of steps applied to determine sensor triggering distance in section 1.6.2 are used to verify back surface and edge sensor coverage by moving the tablet (sensor and antenna) horizontally toward the phantom while maintaining the same vertical separation between the back surface or edge and the phantom.
3. After the exact location where triggering of power reduction is determined, with respect to the sensor and antenna, the tablet movement should be continued, in 3 mm increments, until both the sensor and antenna(s) are fully under the phantom and at least 20 mm inside the phantom edge.
4. The process is then repeated from the other direction, at the opposite end of maximum antenna and sensor offset, by rotating the tablet 180 degrees.

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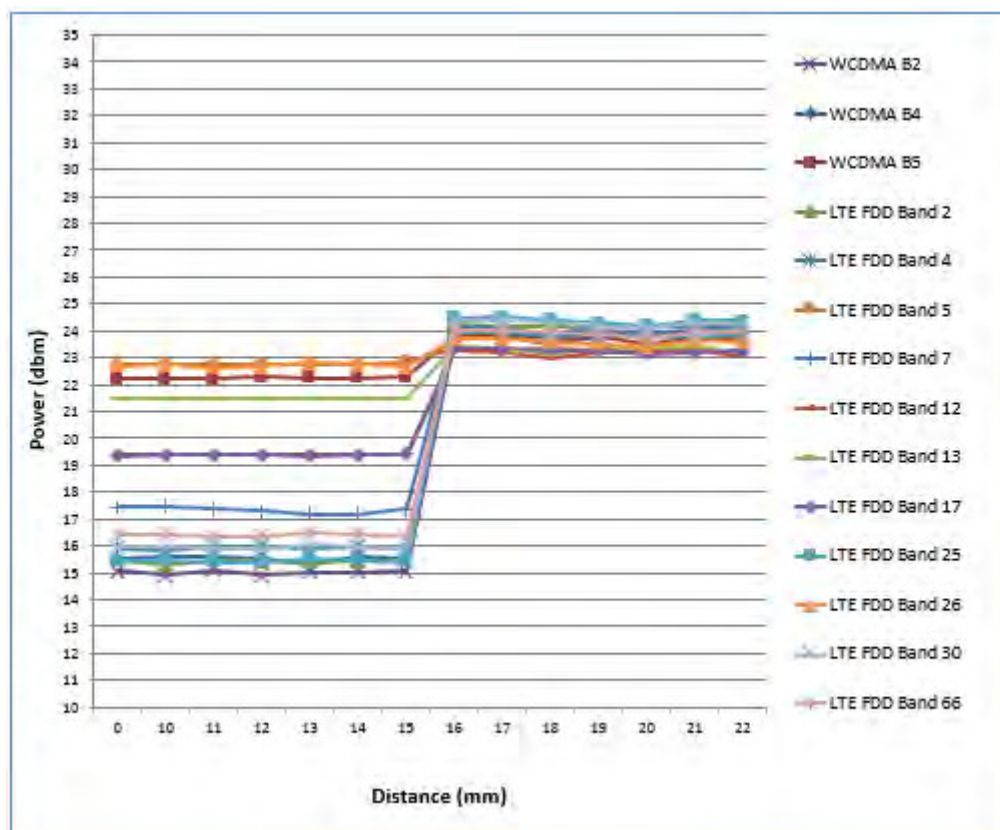
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1.6.5 Results

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

Back side

Moving device toward the phantom



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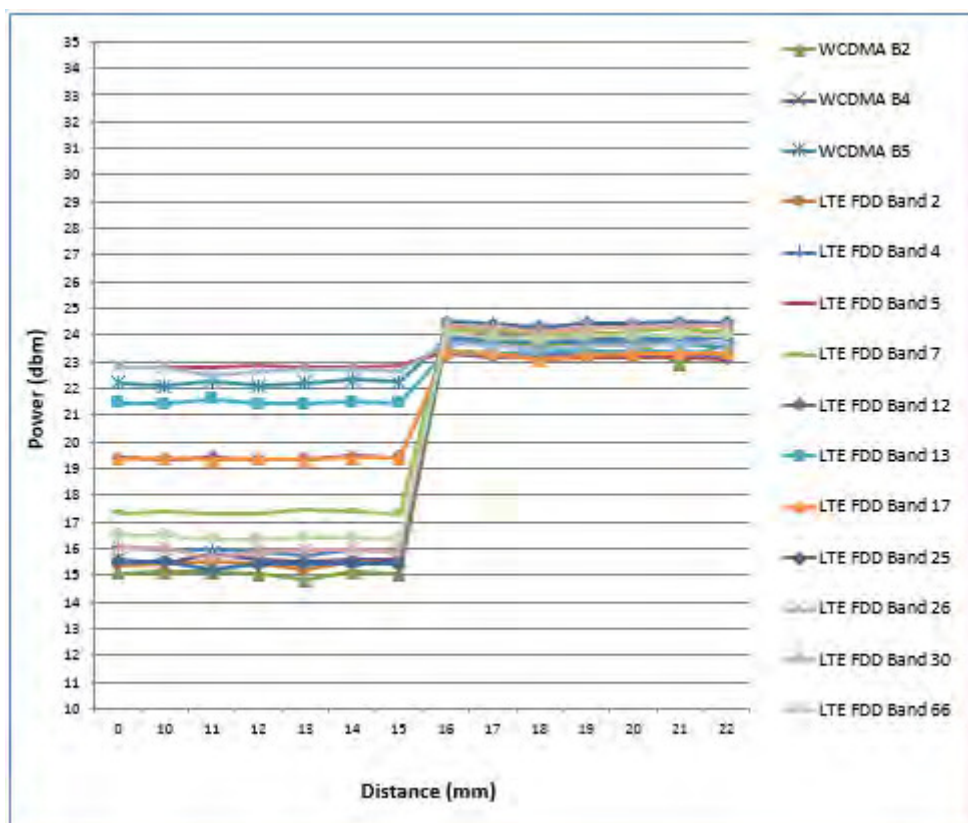
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Moving device away from the phantom



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

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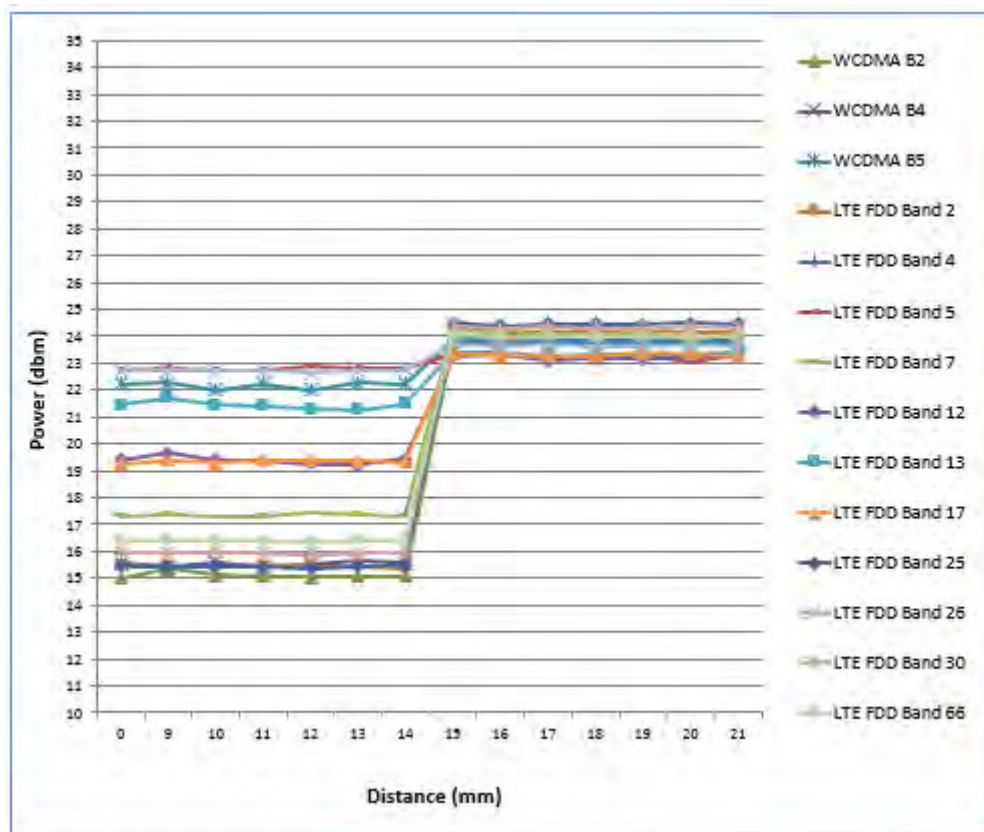
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Top side

Moving device toward the phantom



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Moving device away from the phantom

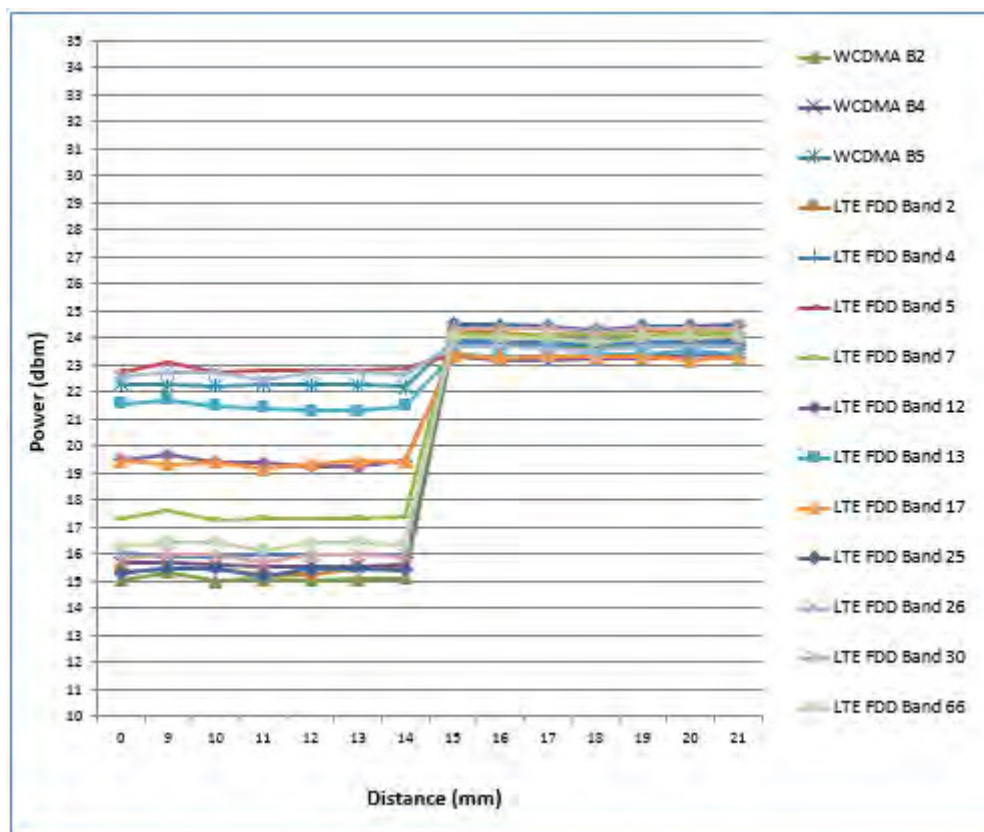


Table 1.6.5 Tilt angle test results for top side

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

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

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Note:

1. The triggering variations and hysteresis effect has been evaluated separately according to the tissue-equivalent medium required for each frequency band, and sensor triggering does not change with different tissue-equivalent media.
2. The default power level for sensor failure and malfunctioning, including all compliance concerns, has been addressed in the client's operation description (1.6.6) for the proximity sensor implementation to be acceptable.
3. Conducted power is monitored qualitatively to identify the general triggering characteristics and recorded quantitatively, versus spacing.

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1.6.6 Operation description for P-sensor

Power Reduction Design Specification (for P-sensor)

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

Table1-1 : The power reduction scenario table

Band	Power Reduction
WCDMA B2/4/5	YES
LTE B2/4/5/7/12/13/17/25/26/30/66	YES
LTE B38/41	NO
WLAN	NO
BT	NO

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

Technology / Band	Mode	Default Maximum Power (dBm)
UMTS B2	All	15.5
UMTS B4	All	16.5
UMTS B5	All	23.0
LTE B2	All	15.5
LTE B4	All	16.5
LTE B5	All	23.0
LTE B7	All	17.5
LTE B12	All	19.5
LTE B13	All	21.5
LTE B17	All	19.5
LTE B25	All	15.5
LTE B26	All	23.0
LTE B30	All	16.0
LTE B38	All	25.0
LTE B41	All	25.0
LTE B66	All	16.5

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

1. A standard high precision 6-axis robot (Staubli RX family) with controller, teach pendant and software. An arm extension is for accommodating the data acquisition electronics (DAE).
2. A dosimetric probe, i.e., an isotropic E-field probe optimized and calibrated for usage in tissue simulating liquid. The probe is equipped with an optical surface detector system.
3. A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.

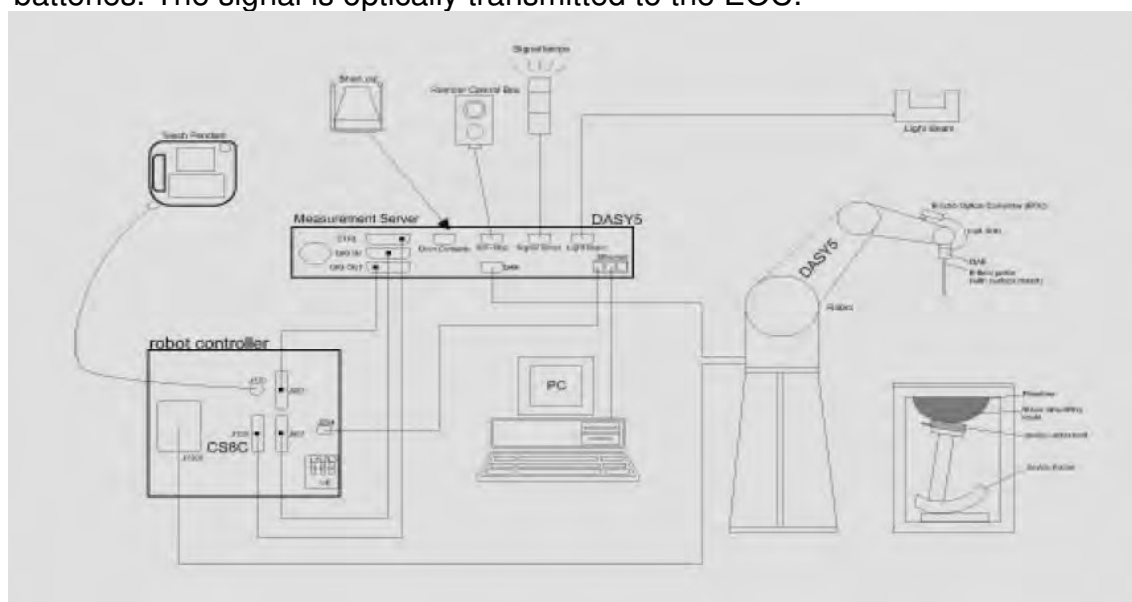


Fig. a The block diagram of SAR system

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

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1.8 System Components

EX3DV4 E-Field Probe

Construction	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)		
Calibration	Basic Broad Band Calibration in air Conversion Factors (CF) for HSL 750/835/1750/1900/2300/2450/2600/5200/ 5300/5600/5800MHz Additional CF for other liquids and frequencies upon request		
Frequency	10 MHz to > 6 GHz		
Directivity	± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)		
Dynamic Range	10 µW/g to > 100 mW/g Linearity: ± 0.2 dB (noise: typically < 1 µW/g)		
Dimensions	Tip diameter: 2.5 mm		
Application	High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields). Only probe which enables compliance testing for frequencies up to 6 GHz with precision of better 30%.		

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PHANTOM

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



DEVICE HOLDER

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

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1.9 SAR System Verification

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

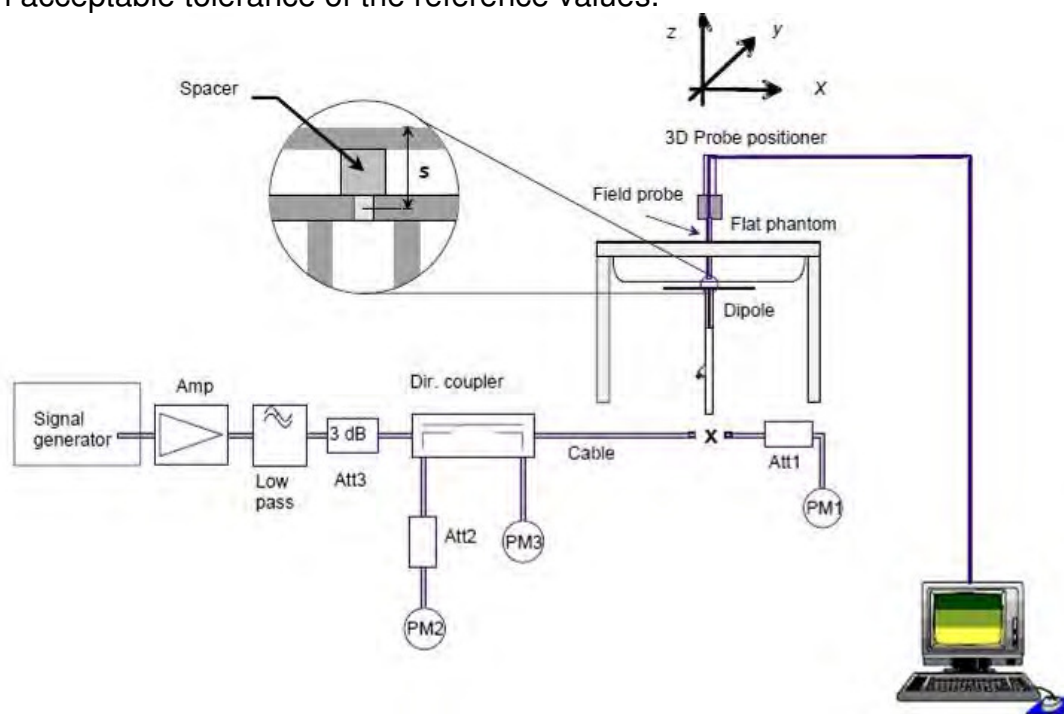


Fig. b The block diagram of system verification

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Validation Kit	S/N	Frequency (MHz)		1W Target SAR-1g (mW/g)	Measured SAR-1g (mW/g)	Measured SAR-1g normalized to 1W (mW/g)	Deviation (%)	Measured Date
D750V3	1015	750	Body	8.76	2.21	8.84	0.91%	Jan. 22, 2018
D835V2	4d063	835	Body	9.57	2.46	9.84	2.82%	Jan. 23, 2018
D1750V2	1008	1750	Body	36.7	9.02	36.08	-1.69%	Jan. 24, 2018
D1900V2	5d173	1900	Body	40.2	9.88	39.52	-1.69%	Jan. 24, 2018
D2300V2	1023	2300	Body	46.4	12.3	49.20	6.03%	Jan. 25, 2018
D2450V2	727	2450	Body	50.6	12.9	51.60	1.98%	Jan. 08, 2018
D2600V2	1005	2600	Body	55.1	14.4	57.60	4.54%	Jan. 25, 2018
D5GHzV2	1023	5200	Body	72.8	7.55	75.50	3.71%	Jan. 09, 2018
		5300	Body	76.1	7.55	75.50	-0.79%	Jan. 10, 2018
		5600	Body	79.6	7.93	79.30	-0.38%	Jan. 11, 2018
		5800	Body	75.9	7.99	79.90	5.27%	Jan. 12, 2018

Table 1. Results of system verification

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1.10 Tissue Simulant Fluid for the Frequency Band

The dielectric properties for this Head-simulant fluid were measured by using the Agilent Model 85070E Dielectric Probe (rates frequency band 200 MHz to 20 GHz) in conjunction with Network Analyzer.

All dielectric parameters of tissue simulates were measured within 24 hours of SAR measurements. The measured conductivity and permittivity are all within $\pm 5\%$ of the target values.

Tissue Type	Measurement Date	Measured Frequency (MHz)	Target Dielectric Constant, ϵ_r	Target Conductivity, σ (S/m)	Measured Dielectric Constant, ϵ_r	Measured Conductivity, σ (S/m)	% dev ϵ_r	% dev σ
Body	Jan, 22. 2018	704.00	55.710	0.960	57.251	0.930	-2.77%	3.10%
		707.50	55.697	0.960	57.272	0.930	-2.83%	3.13%
		709.00	55.691	0.960	57.231	0.934	-2.77%	2.73%
		710.00	55.687	0.960	57.260	0.938	-2.82%	2.32%
		711.00	55.683	0.960	57.591	0.936	-3.43%	2.53%
		750.00	55.531	0.963	56.943	0.976	-2.54%	-1.31%
		782.00	55.406	0.966	56.625	1.007	-2.20%	-4.26%
	Jan, 23. 2018	822.50	55.249	0.969	53.373	0.966	3.40%	0.31%
		826.40	55.226	0.959	53.305	0.970	3.48%	-1.10%
		829.00	55.218	0.963	53.310	0.976	3.46%	-1.39%
		831.50	55.214	0.970	53.271	0.975	3.52%	-0.54%
		835.00	55.200	0.970	53.232	0.979	3.57%	-0.93%
		836.50	55.195	0.972	53.225	0.984	3.57%	-1.25%
		836.60	55.194	0.970	53.251	0.984	3.52%	-1.43%
		841.50	55.180	0.978	53.142	0.988	3.69%	-1.02%
		844.00	55.172	0.981	53.132	0.988	3.70%	-0.71%
		846.60	55.164	0.984	53.102	0.991	3.74%	-0.68%
	Jan, 24. 2018	1712.40	53.531	1.465	54.521	1.417	-1.85%	3.25%
		1720.00	53.511	1.469	54.600	1.421	-2.04%	3.30%
		1732.40	53.478	1.477	54.581	1.430	-2.06%	3.20%
		1732.50	53.478	1.477	54.600	1.432	-2.10%	3.07%
		1745.00	53.445	1.485	54.587	1.439	-2.14%	3.11%
		1750.00	53.432	1.488	54.544	1.439	-2.08%	3.32%
		1752.60	53.425	1.490	54.514	1.443	-2.04%	3.16%
		1770.00	53.379	1.501	54.431	1.451	-1.97%	3.33%
	Jan, 24. 2018	1852.40	53.300	1.520	54.231	1.505	-1.75%	0.99%
		1860.00	53.300	1.520	54.216	1.508	-1.72%	0.79%
		1880.00	53.300	1.520	54.072	1.521	-1.45%	-0.07%
		1882.50	53.300	1.520	54.061	1.521	-1.43%	-0.07%
		1900.00	53.300	1.520	53.963	1.534	-1.24%	-0.92%
		1905.00	53.300	1.520	53.942	1.539	-1.20%	-1.25%
		1907.60	53.300	1.520	53.971	1.543	-1.26%	-1.51%
	Jan, 25. 2018	2300.00	52.900	1.807	53.611	1.745	-1.34%	3.41%
		2310.00	52.887	1.816	53.568	1.754	-1.29%	3.43%

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Tissue Type	Measurement Date	Measured Frequency (MHz)	Target Dielectric Constant, ϵ_r	Target Conductivity, σ (S/m)	Measured Dielectric Constant, ϵ_r	Measured Conductivity, σ (S/m)	% dev ϵ_r	% dev σ
Body	Jan, 08. 2018	2402	52.764	1.904	53.751	1.914	-1.87%	-0.52%
		2412	52.751	1.914	53.724	1.929	-1.85%	-0.80%
		2422	52.737	1.923	53.702	1.937	-1.83%	-0.72%
		2437	52.717	1.938	53.615	1.954	-1.70%	-0.85%
		2441	52.712	1.941	53.585	1.960	-1.66%	-0.96%
		2447	52.704	1.947	53.604	1.973	-1.71%	-1.33%
		2450	52.700	1.950	53.612	1.977	-1.73%	-1.38%
		2462	52.685	1.967	53.551	1.986	-1.64%	-0.97%
		2480	52.662	1.993	53.491	2.014	-1.57%	-1.08%
	Jan, 25. 2018	2506.00	52.629	2.029	52.854	2.115	-0.43%	-4.22%
		2510.00	52.624	2.035	52.865	2.124	-0.46%	-4.37%
		2535.00	52.592	2.071	52.751	2.162	-0.30%	-4.42%
		2549.50	52.573	2.091	52.731	2.181	-0.30%	-4.30%
		2560.00	52.560	2.106	52.662	2.202	-0.19%	-4.56%
		2580.00	52.535	2.134	52.623	2.226	-0.17%	-4.29%
		2593.00	52.518	2.153	52.624	2.240	-0.20%	-4.05%
		2595.00	52.515	2.156	52.572	2.249	-0.11%	-4.33%
		2600.00	52.509	2.163	52.542	2.256	-0.06%	-4.31%
		2610.00	52.496	2.177	52.539	2.267	-0.08%	-4.14%
		2636.50	52.463	2.214	52.430	2.308	0.06%	-4.22%
		2680.00	52.407	2.276	52.391	2.368	0.03%	-4.03%
	Jan, 09. 2018	5190	49.028	5.288	49.470	5.132	-0.90%	2.94%
		5200	49.014	5.299	49.507	5.150	-1.01%	2.82%
		5230	48.974	5.334	49.275	5.225	-0.62%	2.05%
	Jan, 10. 2018	5270	48.919	5.381	49.145	5.296	-0.46%	1.58%
		5300	48.879	5.416	49.221	5.331	-0.70%	1.57%
		5310	48.865	5.428	49.037	5.348	-0.35%	1.47%
	Jan, 11. 2018	5510	48.594	5.661	48.378	5.679	0.44%	-0.31%
		5530	48.566	5.685	48.328	5.701	0.49%	-0.29%
		5590	48.485	5.755	48.142	5.822	0.71%	-1.17%
		5600	48.471	5.766	48.248	5.811	0.46%	-0.77%
		5610	48.458	5.778	48.105	5.840	0.73%	-1.07%
		5670	48.376	5.848	47.894	5.945	1.00%	-1.66%
	Jan, 12. 2018	5690	48.349	5.872	47.819	5.995	1.10%	-2.10%
		5775	48.234	5.971	47.508	6.118	1.51%	-2.47%
		5800	48.200	6.000	47.583	6.146	1.28%	-2.43%

Table 2. Dielectric Parameters of Tissue Simulant Fluid

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The composition of the body tissue simulating liquid:

Frequency (MHz)	Mode	Ingredient						Total amount
		DGMBE	Water	Salt	Preventol D-7	Cellulose	Sugar	
750	Body	—	631.68 g	11.72 g	1.2 g	—	600 g	1.0L(Kg)
850	Body	—	631.68 g	11.72 g	1.2 g	—	600 g	1.0L(Kg)
1750	Body	300.67 g	716.56 g	4.0 g	—	—	—	1.0L(Kg)
1900	Body	300.67 g	716.56 g	4.0 g	—	—	—	1.0L(Kg)
2300	Body	301.7ml	698.3ml	—	—	—	—	1.0L(Kg)
2450	Body	301.7ml	698.3ml	—	—	—	—	1.0L(Kg)
2600	Body	301.7ml	698.3ml	—	—	—	—	1.0L(Kg)

Simulating Liquids for 5 GHz, Manufactured by SPEAG:

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

Table 3. Recipes for Tissue Simulating Liquid

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1.11 Evaluation Procedures

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

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

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

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

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

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these cube measurements.

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

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

1.12 Probe Calibration Procedures

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

1.12.1 Transfer Calibration with Temperature Probes

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

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

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

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

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

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

1.12.2 Calibration with Analytical Fields

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

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

1. The setup must enable accurate determination of the incident power.

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

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1.13 Test Standards and Limits

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

1. Limits for Occupational/Controlled exposure: 0.4 W/kg as averaged over the whole-body and spatial peak SAR not exceeding 8 W/kg as averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube). Exceptions are the hands, wrists, feet and ankles where the spatial peak SAR shall not exceed 20 W/kg, as averaged over an 10 grams of tissue (defined as a tissue volume in the shape of a cube).
2. Occupational/Controlled limits apply when persons are exposed as a consequence of their employment provided these persons are fully aware of and exercise control over their exposure. Awareness of exposure can be accomplished by use of warning labels or by specific training or education through appropriate means, such as an RF safety program in a work environment.
3. Limits for General Population/Uncontrolled exposure: 0.08 W/kg as averaged over the whole-body and spatial peak SAR not exceeding 1.6 W/kg as averaged over any 1 gram of tissue (defined as a tissue volume in the shape

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

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

Table 4. RF exposure limits

Notes:

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

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2. Summary of Results

WCDMA Band II (without power reduction)

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
								Measured	Reported	
WCDMA Band II	Back side	14	9262	1852.4	25.00	23.54	39.96%	0.660	0.924	-
	Back side	14	9400	1880	25.00	23.80	31.83%	0.675	0.890	-
	Back side	14	9538	1907.6	25.00	23.28	48.59%	0.590	0.877	-
	Top side	12	9262	1852.4	25.00	23.54	39.96%	0.945	1.323	-
	Top side	12	9400	1880	25.00	23.80	31.83%	0.967	1.275	-
	Top side	12	9538	1907.6	25.00	23.28	48.59%	0.890	1.322	-
	Bottom side	0	9400	1880	25.00	23.80	31.83%	0.002	0.003	-
	Right side	0	9400	1880	25.00	23.80	31.83%	0.001	0.001	-
	Left side	0	9400	1880	25.00	23.80	31.83%	0.438	0.577	-

WCDMA Band II (with power reduction)

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
								Measured	Reported	
WCDMA Band II	Back side	0	9262	1852.4	15.50	15.13	8.89%	0.996	1.085	304
	Back side*	0	9262	1852.4	15.50	15.13	8.89%	0.993	1.081	-
	Back side	0	9400	1880	15.50	15.10	9.65%	0.700	0.768	-
	Back side	0	9538	1907.6	15.50	15.09	9.90%	0.902	0.991	-
	Top side	0	9262	1852.4	15.50	15.13	8.89%	0.562	0.612	-

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

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No.134,Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan 24803/新北市五股區新北產業園區五工路 134 號

t (886 2) 2299 3279

f (886 2) 2298 0488

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WCDMA Band IV (without power reduction)

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
								Measured	Reported	
WCDMA Band IV	Back side	14	1712.4	1312	25	23.98	26.47%	0.705	0.892	-
	Back side	14	1732.4	1412	25	23.69	35.21%	0.669	0.905	-
	Back side	14	1752.6	1513	25	23.75	33.35%	0.739	0.985	-
	Top side	12	1712.4	1312	25	23.98	26.47%	0.773	0.978	-
	Top side	12	1732.4	1412	25	23.69	35.21%	0.770	1.041	-
	Top side	12	1752.6	1513	25	23.75	33.35%	0.923	1.231	-
	Bottom side	0	1712.4	1312	25	23.98	26.47%	0.002	0.003	-
	Right side	0	1712.4	1312	25	23.98	26.47%	0.001	0.001	-
	Left side	0	1712.4	1312	25	23.98	26.47%	0.389	0.492	-

WCDMA Band IV (with power reduction)

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
								Measured	Reported	
WCDMA Band IV	Back side	0	1312	1712.4	16.5	15.54	24.74%	1.060	1.322	-
	Back side	0	1412	1732.4	16.5	15.43	27.94%	1.080	1.382	-
	Back side	0	1513	1752.6	16.5	15.63	22.18%	1.150	1.405	305
	Back side*	0	1513	1752.6	16.5	15.63	22.18%	1.090	1.332	-
	Top side	0	1513	1752.6	16.5	15.63	22.18%	0.742	0.907	-

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

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t (886 2) 2299 3279

f (886 2) 2298 0488

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WCDMA Band V (without power reduction)

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
								Measured	Reported	
WCDMA Band V	Back side	14	4183	836.6	24	23.82	4.23%	0.375	0.391	-
	Top side	12	4183	836.6	24	23.82	4.23%	0.380	0.396	-
	Bottom side	0	4183	836.6	24	23.82	4.23%	0.039	0.041	-
	Right side	0	4183	836.6	24	23.82	4.23%	0.003	0.003	-
	Left side	0	4183	836.6	24	23.82	4.23%	0.257	0.268	-

WCDMA Band V (with power reduction)

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
								Measured	Reported	
WCDMA Band V	Back side	0	4132	826.4	23	22.13	22.18%	1.000	1.222	-
	Back side	0	4183	836.6	23	22.30	17.49%	1.060	1.245	306
	Back side*	0	4183	836.6	23	22.30	17.49%	1.040	1.222	-
	Back side	0	4233	846.6	23	22.10	23.03%	1.010	1.243	-
	Top side	0	4183	836.6	23	22.30	17.49%	0.536	0.630	-

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

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台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

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LTE FDD Band 2 (without power reduction)

Mode	Bandwidth (MHz)	Modulation	RB Size	RB start	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
												Measured	Reported	
LTE Band 2	20MHz	QPSK	1 RB	0	Back side	14	18700	1860	25	23.90	28.82%	0.687	0.885	-
					Back side	14	19100	1900	25	24.20	20.23%	0.728	0.875	-
					Top side	12	18700	1860	25	23.90	28.82%	1.090	1.404	-
					Top side	12	19100	1900	25	24.20	20.23%	1.000	1.202	-
				50	Back side	14	18900	1880	25	24.21	19.95%	0.730	0.876	-
					Top side	12	18900	1880	25	24.21	19.95%	1.010	1.211	-
					Bottom side	0	18900	1880	25	24.21	19.95%	0.001	0.001	-
					Right side	0	18900	1880	25	24.21	19.95%	0.000	0.001	-
					Left side	0	18900	1880	25	24.21	19.95%	0.466	0.559	-
			50 RB	0	Top side	12	19100	1900	24	23.11	22.74%	0.843	1.035	-
					Back side	14	18900	1880	24	23.32	16.95%	0.549	0.642	-
					Top side	12	18700	1860	24	23.12	22.46%	0.921	1.128	-
					Top side	12	18900	1880	24	23.32	16.95%	0.793	0.927	-
				25	Bottom side	0	18900	1880	24	23.32	16.95%	0.001	0.001	-
					Right side	0	18900	1880	24	23.32	16.95%	0.000	0.000	-
					Left side	0	18900	1880	24	23.32	16.95%	0.412	0.482	-
					Back side	14	18900	1880	24	22.68	35.52%	0.509	0.690	-
			100 RB	0	Top side	12	18700	1860	24	22.44	43.22%	0.953	1.365	-
					Top side	12	18900	1880	24	22.68	35.52%	0.787	1.067	-
					Top side	12	19100	1900	24	22.35	46.22%	0.860	1.257	-
					Bottom side	0	18900	1880	24	22.68	35.52%	0.001	0.001	-
					Right side	0	18900	1880	24	22.68	35.52%	0.000	0.000	-
					Left side	0	18900	1880	24	22.68	35.52%	0.442	0.599	-

LTE FDD Band 2 (with power reduction)

Mode	Bandwidth (MHz)	Modulation	RB Size	RB start	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
												Measured	Reported	
LTE Band 2	20MHz	QPSK	1 RB	0	Back side	0	18700	1860	15.5	15.34	3.75%	1.110	1.152	307
					Back side*	0	18700	1860	15.5	15.34	3.75%	1.060	1.100	-
					Back side	0	19100	1900	15.5	15.21	6.91%	1.010	1.080	-
					Top side	0	18700	1860	15.5	15.34	3.75%	0.485	0.503	-
				50	Back side	0	18900	1880	15.5	15.18	7.65%	0.977	1.052	-
				0	Back side	0	19100	1900	15.5	15.24	6.17%	1.000	1.062	-
					Top side	0	19100	1900	15.5	15.24	6.17%	0.493	0.523	-
					Back side	0	18700	1860	15.5	15.14	8.64%	1.050	1.141	-
			50 RB	0	Back side	0	18900	1880	15.5	15.03	11.43%	1.010	1.125	-
					Back side	0	18700	1860	15.5	15.22	6.66%	1.060	1.131	-
					Back side	0	18900	1880	15.5	15.34	3.75%	1.100	1.141	-
					Back side	0	19100	1900	15.5	15.37	3.04%	1.040	1.072	-
				25	Top side	0	19100	1900	15.5	15.37	3.04%	0.500	0.515	-

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

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LTE FDD Band 4 (without power reduction)

Mode	Bandwidth (MHz)	Modulation	RB Size	RB start	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
												Measured	Reported	
LTE Band 4	20MHz	QPSK	1 RB	50	Back side	14	20050	1720	25	23.91	28.53%	0.547	0.703	-
					Top side	12	20050	1720	25	23.91	28.53%	0.684	0.879	-
					Top side	12	20175	1732.5	25	23.56	39.32%	0.782	1.089	-
					Bottom side	0	20050	1720	25	23.91	28.53%	0.001	0.001	-
					Right side	0	20050	1720	25	23.91	28.53%	0.000	0.000	-
					Left side	0	20050	1720	25	23.91	28.53%	0.387	0.497	-
			50 RB	25	Top side	12	20300	1745	25	23.60	38.04%	0.797	1.100	-
					Back side	14	20300	1745	24	22.92	28.23%	0.441	0.566	-
					Top side	12	20050	1720	24	22.92	28.23%	0.556	0.713	-
					Top side	12	20175	1732.5	24	22.89	29.12%	0.610	0.788	-
					Top side	12	20300	1745	24	22.92	28.23%	0.631	0.809	-
					Bottom side	0	20300	1745	24	22.92	28.23%	0.001	0.001	-
					Right side	0	20300	1745	24	22.92	28.23%	0.000	0.000	-
					Left side	0	20300	1745	24	22.92	28.23%	0.298	0.382	-
			100 RB		Back side	14	20300	1745	24	22.86	30.02%	0.455	0.592	-
					Top side	12	20050	1720	24	22.37	45.55%	0.546	0.795	-
					Top side	12	20175	1732.5	24	22.71	34.59%	0.597	0.803	-
					Top side	12	20300	1745	24	22.86	30.02%	0.645	0.839	-
					Bottom side	0	20300	1745	24	22.86	30.02%	0.001	0.001	-
					Right side	0	20300	1745	24	22.86	30.02%	0.000	0.000	-
					Left side	0	20300	1745	24	22.86	30.02%	0.265	0.345	-

LTE FDD Band 4 (with power reduction)

Mode	Bandwidth (MHz)	Modulation	RB Size	RB start	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
												Measured	Reported	
LTE Band 4	20MHz	QPSK	1 RB	50	Back side	0	20050	1720	16.5	15.79	17.76%	1.080	1.272	-
					Back side	0	20175	1732.5	16.5	15.95	13.50%	1.100	1.249	-
					Back side	0	20300	1745	16.5	15.78	18.03%	1.080	1.275	-
					Top side	0	20175	1732.5	16.5	15.95	13.50%	0.761	0.864	-
			50 RB	25	Back side	0	20050	1720	16.5	15.83	16.68%	1.070	1.248	-
					Back side	0	20175	1732.5	16.5	15.91	14.55%	1.100	1.260	-
					Back side	0	20300	1745	16.5	15.92	14.29%	1.130	1.291	308
					Back side	0	20300	1745	16.5	15.92	14.29%	1.070	1.223	-
					Top side	0	20300	1745	16.5	15.92	14.29%	0.769	0.879	-
			100 RB		Back side	0	20050	1720	16.5	15.89	15.08%	1.050	1.208	-
					Back side	0	20175	1732.5	16.5	15.72	19.67%	1.070	1.281	-
					Back side	0	20300	1745	16.5	15.85	16.14%	1.110	1.289	-
					Top side	0	20050	1720	16.5	15.89	15.08%	0.748	0.861	-

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

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f (886 2) 2298 0488

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LTE FDD Band 5 (without power reduction)

Mode	Bandwidth (MHz)	Modulation	RB Size	RB start	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
												Measured	Reported	
LTE Band 5	10MHz	QPSK	1 RB	0	Back side	14	20600	844	24	23.35	16.14%	0.348	0.404	-
					Top side	12	20600	844	24	23.35	16.14%	0.387	0.449	-
					Bottom side	0	20600	844	24	23.35	16.14%	0.032	0.038	-
					Right side	0	20600	844	24	23.35	16.14%	0.003	0.004	-
					Left side	0	20600	844	24	23.35	16.14%	0.219	0.254	-
			25 RB	25	Back side	14	20600	844	23	22.55	10.92%	0.261	0.289	-
					Top side	12	20600	844	23	22.55	10.92%	0.296	0.328	-
					Bottom side	0	20600	844	23	22.55	10.92%	0.031	0.034	-
					Right side	0	20600	844	23	22.55	10.92%	0.003	0.003	-
					Left side	0	20600	844	23	22.55	10.92%	0.191	0.212	-
			50 RB		Back side	14	20525	836.5	23	22.26	18.58%	0.298	0.353	-
					Top side	12	20525	836.5	23	22.26	18.58%	0.312	0.370	-
					Bottom side	0	20525	836.5	23	22.26	18.58%	0.029	0.034	-
					Right side	0	20525	836.5	23	22.26	18.58%	0.003	0.004	-
					Left side	0	20525	836.5	23	22.26	18.58%	0.189	0.224	-

LTE FDD Band 5 (with power reduction)

Mode	Bandwidth (MHz)	Modulation	RB Size	RB start	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
												Measured	Reported	
LTE Band 5	10MHz	QPSK	1 RB	0	Back side	0	20525	836.5	23	22.75	5.93%	1.080	1.144	-
					Back side	0	20600	844	23	22.60	9.65%	1.060	1.162	-
				25	Back side	0	20450	829	23	22.79	4.95%	1.120	1.175	309
					Back side*	0	20450	829	23	22.79	4.95%	1.050	1.102	-
					Top side	0	20450	829	23	22.79	4.95%	0.531	0.557	-
			25 RB	0	Back side	0	20450	829	23	22.39	15.08%	0.981	1.129	-
					Back side	0	20525	836.5	23	22.45	13.50%	0.999	1.134	-
					Back side	0	20600	844	23	22.46	13.24%	1.010	1.144	-
				25	Top side	0	20600	844	23	22.46	13.24%	0.498	0.564	-
					Back side	0	20450	829	23	22.34	16.41%	1.000	1.164	-
			50 RB		Back side	0	20525	836.5	23	22.39	15.08%	0.988	1.137	-
					Back side	0	20600	844	23	22.29	17.76%	0.994	1.171	-
					Top side	0	20525	836.5	23	22.39	15.08%	0.477	0.549	-

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

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台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

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LTE FDD Band 7 (without power reduction)

Mode	Bandwidth (MHz)	Modulation	RB Size	RB start	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
												Measured	Reported	
LTE Band 7	20MHz	QPSK	1 RB	0	Back side	14	20850	2510	25	24.18	20.78%	0.193	0.233	-
					Top side	12	20850	2510	25	24.18	20.78%	0.219	0.265	-
					Bottom side	0	20850	2510	25	24.18	20.78%	0.007	0.008	-
					Right side	0	20850	2510	25	24.18	20.78%	0.001	0.001	-
					Left side	0	20850	2510	25	24.18	20.78%	0.065	0.079	-
			50 RB	50	Back side	14	20850	2510	24	22.99	26.18%	0.149	0.188	-
					Top side	12	20850	2510	24	22.99	26.18%	0.174	0.220	-
					Bottom side	0	20850	2510	24	22.99	26.18%	0.006	0.008	-
					Right side	0	20850	2510	24	22.99	26.18%	0.001	0.001	-
					Left side	0	20850	2510	24	22.99	26.18%	0.042	0.052	-
			100 RB		Back side	14	20850	2510	24	22.99	26.18%	0.133	0.168	-
					Top side	12	20850	2510	24	22.99	26.18%	0.166	0.209	-
					Bottom side	0	20850	2510	24	22.99	26.18%	0.001	0.001	-
					Right side	0	20850	2510	24	22.99	26.18%	0.001	0.001	-
					Left side	0	20850	2510	24	22.99	26.18%	0.034	0.043	-

LTE FDD Band 7 (with power reduction)

Mode	Bandwidth (MHz)	Modulation	RB Size	RB start	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
												Measured	Reported	
LTE Band 7	20MHz	QPSK	1 RB	0	Back side	0	20850	2510	17.5	17.39	2.57%	1.080	1.108	310
					Back side*	0	20850	2510	17.5	17.39	2.57%	1.010	1.036	-
					Back side	0	21350	2560	17.5	16.86	15.88%	0.675	0.782	-
					Top side	0	20850	2510	17.5	17.39	2.57%	0.639	0.655	-
					Back side	0	21100	2535	17.5	17.10	9.65%	0.593	0.650	-
			50 RB	0	Back side	0	20850	2510	17.5	17.03	11.43%	0.948	1.056	-
					Back side	0	21100	2535	17.5	16.77	18.30%	0.682	0.807	-
					Top side	0	20850	2510	17.5	17.03	11.43%	0.524	0.584	-
					Back side	0	20850	2510	17.5	16.86	15.88%	0.527	0.611	-
					Back side	0	20850	2510	17.5	17.01	11.94%	0.857	0.959	-
			100 RB		Back side	0	21100	2535	17.5	16.82	16.95%	0.649	0.759	-
					Back side	0	21350	2560	17.5	16.88	15.35%	0.533	0.615	-
					Top side	0	20850	2510	17.5	17.01	11.94%	0.446	0.499	-

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

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台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

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LTE FDD Band 12 (without power reduction)

Mode	Bandwidth (MHz)	Modulation	RB Size	RB start	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
												Measured	Reported	
LTE Band 12	10MHz	QPSK	1 RB	0	Back side	14	23060	704	24	23.28	18.03%	0.488	0.576	-
					Top side	12	23060	704	24	23.28	18.03%	0.441	0.521	-
					Bottom side	0	23060	704	24	23.28	18.03%	0.049	0.058	-
					Right side	0	23060	704	24	23.28	18.03%	0.004	0.005	-
					Left side	0	23060	704	24	23.28	18.03%	0.155	0.183	-
			25 RB	25	Back side	14	23130	711	23	22.20	20.23%	0.430	0.517	-
					Top side	12	23130	711	23	22.20	20.23%	0.388	0.466	-
					Bottom side	0	23130	711	23	22.20	20.23%	0.045	0.054	-
					Right side	0	23130	711	23	22.20	20.23%	0.003	0.004	-
					Left side	0	23130	711	23	22.20	20.23%	0.143	0.172	-
			50 RB		Back side	14	23060	704	23	22.10	23.03%	0.403	0.496	-
					Top side	12	23060	704	23	22.10	23.03%	0.384	0.472	-
					Bottom side	0	23060	704	23	22.10	23.03%	0.042	0.052	-
					Right side	0	23060	704	23	22.10	23.03%	0.003	0.004	-
					Left side	0	23060	704	23	22.10	23.03%	0.138	0.170	-

LTE FDD Band 12 (with power reduction)

Mode	Bandwidth (MHz)	Modulation	RB Size	RB start	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
												Measured	Reported	
LTE Band 12	10MHz	QPSK	1 RB	0	Back side	0	23060	704	19.5	19.09	9.90%	1.110	1.220	311
					Back side*	0	23060	704	19.5	19.09	9.90%	1.030	1.132	-
					Back side	0	23130	711	19.5	18.95	13.50%	1.060	1.203	-
					Top side	0	23060	704	19.5	19.09	9.90%	0.541	0.595	-
					Back side	0	23095	707.5	19.5	19.02	11.69%	1.020	1.139	-
			25 RB	12	Back side	0	23095	707.5	19.5	19.07	10.41%	0.961	1.061	-
					Back side	0	23060	704	19.5	19.01	11.94%	0.983	1.100	-
					Back side	0	23130	711	19.5	19.08	10.15%	1.030	1.135	-
					Top side	0	23130	711	19.5	19.08	10.15%	0.500	0.551	-
					Back side	0	23060	704	19.5	18.94	13.76%	1.060	1.206	-
			50 RB		Back side	0	23095	707.5	19.5	18.90	14.82%	0.953	1.094	-
					Back side	0	23130	711	19.5	18.80	17.49%	0.939	1.103	-
					Top side	0	23060	704	19.5	18.94	13.76%	0.522	0.594	-

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

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t (886 2) 2299 3279

f (886 2) 2298 0488

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LTE FDD Band 13 (without power reduction)

Mode	Bandwidth (MHz)	Modulation	RB Size	RB start	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
												Measured	Reported	
LTE Band 13	10MHz	QPSK	1 RB	0	Back side	14	23230	782	24	23.27	18.30%	0.578	0.684	-
					Top side	12	23230	782	24	23.27	18.30%	0.569	0.673	-
					Bottom side	0	23230	782	24	23.27	18.30%	0.037	0.044	-
					Right side	0	23230	782	24	23.27	18.30%	0.030	0.035	-
					Left side	0	23230	782	24	23.27	18.30%	0.264	0.312	-
			25 RB	25	Back side	14	23230	782	23	22.27	18.30%	0.503	0.595	-
					Top side	12	23230	782	23	22.27	18.30%	0.493	0.583	-
					Bottom side	0	23230	782	23	22.27	18.30%	0.034	0.040	-
					Right side	0	23230	782	23	22.27	18.30%	0.003	0.004	-
					Left side	0	23230	782	23	22.27	18.30%	0.241	0.285	-
			50 RB		Back side	14	23230	782	23	22.38	15.35%	0.494	0.570	-
					Top side	12	23230	782	23	22.38	15.35%	0.489	0.564	-
					Bottom side	0	23230	782	23	22.38	15.35%	0.032	0.037	-
					Right side	0	23230	782	23	22.38	15.35%	0.003	0.003	-
					Left side	0	23230	782	23	22.38	15.35%	0.233	0.269	-

LTE FDD Band 13 (with power reduction)

Mode	Bandwidth (MHz)	Modulation	RB Size	RB start	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
												Measured	Reported	
LTE Band 13	10MHz	QPSK	1 RB	0	Back side	0	23230	782	21.5	21.07	10.41%	1.140	1.259	-
					Top side	0	23230	782	21.5	21.07	10.41%	0.433	0.478	-
				25	Back side	0	23230	782	21.5	20.98	12.72%	1.120	1.262	-
					Back side	0	23230	782	21.5	20.97	12.98%	1.060	1.198	-
			25 RB	0	Back side	0	23230	782	21.5	21.14	8.64%	1.170	1.271	312
					Back side*	0	23230	782	21.5	21.14	8.64%	1.120	1.217	-
					Top side	0	23230	782	21.5	21.14	8.64%	0.439	0.477	-
					Back side	0	23230	782	21.5	21.06	10.66%	1.140	1.262	-
					Back side	0	23230	782	21.5	21.04	11.17%	1.130	1.256	-
			50 RB		Back side	0	23230	782	21.5	21.03	11.43%	1.140	1.270	-
					Top side	0	23230	782	21.5	21.03	11.43%	0.427	0.476	-

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

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t (886 2) 2299 3279

f (886 2) 2298 0488

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LTE FDD Band 17 (without power reduction)

Mode	Bandwidth (MHz)	Modulation	RB Size	RB start	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
												Measured	Reported	
LTE Band 17	10MHz	QPSK	1 RB	25	Back side	14	23800	711	24	23.23	19.40%	0.517	0.617	-
					Top side	12	23800	711	24	23.23	19.40%	0.488	0.583	-
					Bottom side	0	23800	711	24	23.23	19.40%	0.045	0.054	-
					Right side	0	23800	711	24	23.23	19.40%	0.004	0.005	-
					Left side	0	23800	711	24	23.23	19.40%	0.169	0.202	-
			25 RB	0	Back side	14	23800	711	23	22.13	22.18%	0.422	0.516	-
					Top side	12	23800	711	23	22.13	22.18%	0.420	0.513	-
					Bottom side	0	23800	711	23	22.13	22.18%	0.041	0.050	-
					Right side	0	23800	711	23	22.13	22.18%	0.003	0.004	-
					Left side	0	23800	711	23	22.13	22.18%	0.154	0.188	-
			50 RB		Back side	14	23800	711	23	22.08	23.59%	0.420	0.519	-
					Top side	12	23800	711	23	22.08	23.59%	0.409	0.506	-
					Bottom side	0	23800	711	23	22.08	23.59%	0.039	0.048	-
					Right side	0	23800	711	23	22.08	23.59%	0.003	0.004	-
					Left side	0	23800	711	23	22.08	23.59%	0.146	0.180	-

LTE FDD Band 17 (with power reduction)

Mode	Bandwidth (MHz)	Modulation	RB Size	RB start	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
												Measured	Reported	
LTE Band 17	10MHz	QPSK	1 RB	0	Back side	0	23790	710	19.5	18.98	12.72%	1.090	1.229	313
					Back side*	0	23790	710	19.5	18.98	12.72%	1.050	1.184	-
				25	Back side	0	23790	710	19.5	19.09	9.90%	1.040	1.143	-
					Back side	0	23800	711	19.5	19.11	9.40%	1.040	1.138	-
					Top side	0	23800	711	19.5	19.11	9.40%	0.469	0.513	-
			25 RB	0	Back side	0	23780	709	19.5	18.98	12.72%	1.080	1.217	-
					Back side	0	23800	711	19.5	19.05	10.92%	1.070	1.187	-
				12	Top side	0	23800	711	19.5	19.05	10.92%	0.492	0.546	-
					Back side	0	23790	710	19.5	18.99	12.46%	1.060	1.192	-
					Back side	0	23780	709	19.5	18.91	14.55%	1.050	1.203	-
			50 RB		Back side	0	23790	710	19.5	18.95	13.50%	1.060	1.203	-
					Back side	0	23800	711	19.5	18.99	12.46%	1.050	1.181	-
					Top side	0	23800	711	19.5	18.99	12.46%	0.406	0.457	-

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

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t (886 2) 2299 3279

f (886 2) 2298 0488

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LTE FDD Band 25 (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	0	Back side	14	26365	1882.5	25	24.34	16.41%	0.843	0.981	-
					Back side	14	26890	1905	25	24.30	17.49%	0.823	0.967	-
					Top side	12	26365	1882.5	25	24.34	16.41%	1.030	1.199	-
					Top side	12	26890	1905	25	24.30	17.49%	1.030	1.210	-
				99	Back side	14	26140	1860	25	24.49	12.46%	0.773	0.869	-
					Top side	12	26140	1860	25	24.49	12.46%	1.050	1.181	-
					Bottom side	0	26140	1860	25	24.49	12.46%	0.001	0.001	-
					Right side	0	26140	1860	25	24.49	12.46%	0.000	0.001	-
					Left side	0	26140	1860	25	24.49	12.46%	0.373	0.419	-
			50 RB	50	Top side	12	26590	1905	24	22.81	31.52%	0.888	1.168	-
					Back side	14	26140	1860	24	23.50	12.20%	0.606	0.680	-
					Top side	12	26140	1860	24	23.50	12.20%	0.953	1.069	-
					Top side	12	26365	1882.5	24	23.49	12.46%	0.926	1.041	-
					Bottom side	0	26140	1860	24	23.50	12.20%	0.001	0.001	-
					Right side	0	26140	1860	24	23.50	12.20%	0.000	0.000	-
					Left side	0	26140	1860	24	23.50	12.20%	0.350	0.393	-
					Back side	14	26365	1882.5	24	23.45	13.50%	0.576	0.654	-
			100 RB		Top side	12	26140	1860	24	23.42	14.29%	0.934	1.067	-
					Top side	12	26365	1882.5	24	23.45	13.50%	0.899	1.020	-
					Top side	12	26590	1905	24	22.02	57.76%	0.834	1.316	-
					Bottom side	0	26365	1882.5	24	23.45	13.50%	0.001	0.001	-
					Right side	0	26365	1882.5	24	23.45	13.50%	0.000	0.000	-
					Left side	0	26365	1882.5	24	23.45	13.50%	0.346	0.393	-

LTE FDD Band 25 (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	14.98	12.72%	1.000	1.127	-
					Back side	0	26590	1905	15.5	15.34	3.75%	1.030	1.069	-
				99	Top side	0	26590	1905	15.5	15.34	3.75%	0.596	0.618	-
					Back side	0	26590	1905	15.5	15.32	4.23%	1.050	1.094	-
			50 RB	0	Back side	0	26590	1905	15.5	15.11	9.40%	0.990	1.083	-
					Back side	0	26140	1860	15.5	15.37	3.04%	1.100	1.133	314
					Back side*	0	26140	1860	15.5	15.37	3.04%	1.070	1.103	-
					Back side	0	26365	1882.5	15.5	15.12	9.14%	1.020	1.113	-
				50	Top side	0	26140	1860	15.5	15.37	3.04%	0.525	0.541	-
					Back side	0	26140	1860	15.5	15.08	10.15%	1.010	1.113	-
					Back side	0	26365	1882.5	15.5	15.10	9.65%	1.030	1.129	-
					Back side	0	26590	1905	15.5	15.04	11.17%	1.000	1.112	-
			100 RB		Top side	0	26365	1882.5	15.5	15.10	9.65%	0.484	0.531	-

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

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t (886 2) 2299 3279

f (886 2) 2298 0488

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LTE FDD Band 26 (without power reduction)

Mode	Bandwidth (MHz)	Modulation	RB Size	RB start	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
												Measured	Reported	
LTE Band 26	15MHz	QPSK	1 RB	74	Back side	14	26865	831.5	24	23.62	9.14%	0.336	0.367	-
					Top side	12	26865	831.5	24	23.62	9.14%	0.367	0.401	-
					Bottom side	0	26865	831.5	24	23.62	9.14%	0.033	0.036	-
					Right side	0	26865	831.5	24	23.62	9.14%	0.003	0.003	-
					Left side	0	26865	831.5	24	23.62	9.14%	0.227	0.248	-
			36 RB	18	Back side	14	26965	841.5	23	22.88	2.80%	0.289	0.297	-
					Top side	12	26965	841.5	23	22.88	2.80%	0.320	0.329	-
					Bottom side	0	26965	841.5	23	22.88	2.80%	0.030	0.031	-
					Right side	0	26965	841.5	23	22.88	2.80%	0.002	0.002	-
					Left side	0	26965	841.5	23	22.88	2.80%	0.203	0.209	-
			75 RB		Back side	14	26965	841.5	23	22.67	7.89%	0.303	0.327	-
					Top side	12	26965	841.5	23	22.67	7.89%	0.338	0.365	-
					Bottom side	0	26965	841.5	23	22.67	7.89%	0.029	0.031	-
					Right side	0	26965	841.5	23	22.67	7.89%	0.002	0.002	-
					Left side	0	26965	841.5	23	22.67	7.89%	0.197	0.213	-

LTE FDD Band 26 (with power reduction)

Mode	Bandwidth (MHz)	Modulation	RB Size	RB start	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
												Measured	Reported	
LTE Band 26	15MHz	QPSK	1 RB	0	Back side	0	26865	831.5	23	22.59	9.90%	1.020	1.121	-
				36	Back side	0	26965	841.5	23	22.75	5.93%	1.030	1.091	-
					Top side	0	26965	841.5	23	22.75	5.93%	0.736	0.780	-
				74	Back side	0	26825	822.5	23	22.56	10.66%	1.140	1.262	315
					Back side*	0	26825	822.5	23	22.56	10.66%	1.080	1.195	-
			36 RB	0	Back side	0	26865	831.5	23	22.29	17.76%	0.998	1.175	-
					Back side	0	26825	822.5	23	22.28	18.03%	1.050	1.239	-
				18	Back side	0	26965	841.5	23	22.32	16.95%	1.070	1.251	-
					Top side	0	26965	841.5	23	22.32	16.95%	0.733	0.857	-
					Back side	0	26825	822.5	23	22.23	19.40%	1.050	1.254	-
			75 RB		Back side	0	26865	831.5	23	22.26	18.58%	1.060	1.257	-
					Back side	0	26965	841.5	23	22.31	17.22%	1.020	1.196	-
					Top side	0	26965	841.5	23	22.31	17.22%	0.728	0.853	-

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

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t (886 2) 2299 3279

f (886 2) 2298 0488

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LTE FDD Band 30 (without power reduction)

Mode	Bandwidth (MHz)	Modulation	RB Size	RB start	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
												Measured	Reported	
LTE Band 30	10MHz	QPSK	1 RB	0	Back side	14	27710	2310	25	24.37	15.61%	0.397	0.459	-
					Top side	12	27710	2310	25	24.37	15.61%	0.569	0.658	-
					Bottom side	0	27710	2310	25	24.37	15.61%	0.019	0.022	-
					Right side	0	27710	2310	25	24.37	15.61%	0.004	0.005	-
					Left side	0	27710	2310	25	24.37	15.61%	0.701	0.810	-
			25 RB	12	Back side	14	27710	2310	24	23.39	15.08%	0.322	0.371	-
					Top side	12	27710	2310	24	23.39	15.08%	0.449	0.517	-
					Bottom side	0	27710	2310	24	23.39	15.08%	0.015	0.017	-
					Right side	0	27710	2310	24	23.39	15.08%	0.003	0.003	-
					Left side	0	27710	2310	24	23.39	15.08%	0.564	0.649	-
			50 RB		Back side	14	27710	2310	24	23.42	14.29%	0.314	0.359	-
					Top side	12	27710	2310	24	23.42	14.29%	0.425	0.486	-
					Bottom side	0	27710	2310	24	23.42	14.29%	0.014	0.016	-
					Right side	0	27710	2310	24	23.42	14.29%	0.003	0.003	-
					Left side	0	27710	2310	24	23.42	14.29%	0.557	0.637	-

LTE FDD Band 30 (with power reduction)

Mode	Bandwidth (MHz)	Modulation	RB Size	RB start	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
												Measured	Reported	
LTE Band 30	10MHz	QPSK	1 RB	0	Back side	0	27710	2310	16	15.98	0.46%	0.510	0.512	-
					Top side	0	27710	2310	16	15.98	0.46%	1.210	1.216	-
					Top side	0	27710	2310	16	15.82	4.23%	1.200	1.251	-
					Top side	0	27710	2310	16	15.73	6.41%	1.170	1.245	-
			25 RB	0	Back side	0	27710	2310	16	15.82	4.23%	1.200	1.251	-
					Back side	0	27710	2310	16	15.89	2.57%	0.510	0.523	-
					Top side	0	27710	2310	16	15.89	2.57%	1.210	1.241	-
					Top side	0	27710	2310	16	15.81	4.47%	1.190	1.243	-
			50 RB		Back side	0	27710	2310	16	15.92	1.86%	0.528	0.538	-
					Top side	0	27710	2310	16	15.92	1.86%	1.230	1.253	316
					Top side*	0	27710	2310	16	15.92	1.86%	1.200	1.222	-

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

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f (886 2) 2298 0488

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LTE TDD Band 38

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 38	20MHz	QPSK	1 RB	0	Back side	0	37850	2580	25	24.21	19.95%	0.670	0.804	-
					Back side	0	38000	2595	25	24.30	17.49%	0.656	0.771	-
					Back side	0	38150	2610	25	24.57	10.41%	0.731	0.807	317
					Back side*	0	38150	2610	25	24.57	10.41%	0.711	0.785	-
					Top side	0	38000	2595	25	24.57	10.41%	0.194	0.214	-
					Bottom side	0	38000	2595	25	24.57	10.41%	0.000	0.000	-
					Right side	0	38000	2595	25	24.57	10.41%	0.000	0.000	-
					Left side	0	38000	2595	25	24.57	10.41%	0.000	0.000	-
			50 RB	0	Back side	0	38150	2610	24	23.42	14.29%	0.582	0.665	-
					Top side	0	38150	2610	24	23.42	14.29%	0.141	0.161	-
					Bottom side	0	38150	2610	24	23.42	14.29%	0.000	0.000	-
					Right side	0	38150	2610	24	23.42	14.29%	0.000	0.000	-
			100 RB	0	Left side	0	38150	2610	24	23.42	14.29%	0.000	0.000	-
					Back side	0	38150	2610	24	23.39	15.08%	0.597	0.687	-
					Top side	0	38150	2610	24	23.39	15.08%	0.145	0.167	-
					Bottom side	0	38150	2610	24	23.39	15.08%	0.000	0.000	-
					Right side	0	38150	2610	24	23.39	15.08%	0.000	0.000	-
					Left side	0	38150	2610	24	23.39	15.08%	0.000	0.000	-

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

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LTE TDD Band 41

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	40185	2549.5	25	23.65	36.46%	0.526	0.718	-
					Back side	0	41490	2680	25	24.21	19.95%	0.861	1.033	-
				99	Back side	0	39750	2506	25	24.03	25.03%	0.877	1.096	-
					Back side	0	40620	2593	25	23.78	32.43%	0.499	0.661	-
					Back side	0	41055	2636.5	25	24.24	19.12%	1.080	1.287	318
					Back side*	0	41055	2636.5	25	24.24	19.12%	1.050	1.251	-
					Top side	0	41055	2636.5	25	24.24	19.12%	0.168	0.200	-
					Bottom side	0	41055	2636.5	25	24.24	19.12%	0.004	0.005	-
					Right side	0	41055	2636.5	25	24.24	19.12%	0.001	0.001	-
					Left side	0	41055	2636.5	25	24.24	19.12%	0.016	0.019	-
			50 RB	0	Back side	0	40185	2549.5	24	22.72	34.28%	0.409	0.549	-
					Back side	0	40620	2593	24	22.82	31.22%	0.448	0.588	-
					Back side	0	41055	2636.5	24	23.34	16.41%	0.821	0.956	-
					Back side	0	41490	2680	24	23.17	21.06%	0.749	0.907	-
					Top side	0	41055	2636.5	24	23.34	16.41%	0.153	0.178	-
					Bottom side	0	41055	2636.5	24	23.34	16.41%	0.003	0.004	-
					Right side	0	41055	2636.5	24	23.34	16.41%	0.001	0.001	-
					Left side	0	41055	2636.5	24	23.34	16.41%	0.015	0.017	-
				50	Back side	0	39750	2506	24	23.07	23.88%	0.769	0.953	-
				100 RB	Back side	0	39750	2506	24	23.04	24.74%	0.736	0.918	-
					Back side	0	40185	2549.5	24	22.75	33.35%	0.410	0.547	-
					Back side	0	40620	2593	24	22.73	33.97%	0.431	0.577	-
					Back side	0	41055	2636.5	24	23.30	17.49%	0.807	0.948	-
					Back side	0	41490	2680	24	23.08	23.59%	0.755	0.933	-
					Top side	0	41055	2636.5	24	23.30	17.49%	0.151	0.177	-
					Bottom side	0	41055	2636.5	24	23.30	17.49%	0.003	0.004	-
					Right side	0	41055	2636.5	24	23.30	17.49%	0.001	0.001	-
					Left side	0	41055	2636.5	24	23.30	17.49%	0.014	0.017	-

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

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LTE FDD Band 66 (without power reduction)

Mode	Bandwidth (MHz)	Modulation	RB Size	RB start	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
												Measured	Reported	
LTE Band 66	20MHz	QPSK	1 RB	0	Top side	12	132572	1770	25	23.55	39.64%	0.797	1.113	-
				50	Back side	14	132072	1720	25	23.96	27.06%	0.505	0.642	-
					Top side	12	132072	1720	25	23.96	27.06%	0.714	0.907	-
					Top side	12	132322	1745	25	23.92	28.23%	0.829	1.063	-
					Bottom side	0	132072	1720	25	23.96	27.06%	0.001	0.001	-
					Right side	0	132072	1720	25	23.96	27.06%	0.000	0.000	-
			50 RB	25	Left side	0	132072	1720	25	23.96	27.06%	0.323	0.410	-
					Back side	14	132072	1720	24	23.10	23.03%	0.422	0.519	-
					Top side	12	132072	1720	24	23.10	23.03%	0.575	0.707	-
					Bottom side	0	132072	1720	24	23.10	23.03%	0.000	0.001	-
					Right side	0	132072	1720	24	23.10	23.03%	0.000	0.000	-
					Left side	0	132072	1720	24	23.10	23.03%	0.258	0.317	-
			100 RB		Back side	14	132072	1720	24	23.06	24.17%	0.402	0.499	-
					Top side	12	132072	1720	24	23.06	24.17%	0.550	0.683	-
					Bottom side	0	132072	1720	24	23.06	24.17%	0.000	0.000	-
					Right side	0	132072	1720	24	23.06	24.17%	0.000	0.000	-
					Left side	0	132072	1720	24	23.06	24.17%	0.227	0.282	-

LTE FDD Band 66 (with power reduction)

Mode	Bandwidth (MHz)	Modulation	RB Size	RB start	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
												Measured	Reported	
LTE Band 66	20MHz	QPSK	1 RB	0	Back side	0	132572	1770	16.5	16.16	8.14%	1.120	1.211	-
				50	Back side	0	132072	1720	16.5	16.33	3.99%	1.150	1.196	-
					Back side	0	132322	1745	16.5	16.25	5.93%	1.180	1.250	-
					Top side	0	132072	1720	16.5	16.33	3.99%	0.790	0.822	-
			50 RB	0	Back side	0	132572	1770	16.5	16.27	5.44%	1.190	1.255	319
				25	Back side*	0	132572	1770	16.5	16.27	5.44%	1.180	1.244	-
					Back side	0	132072	1720	16.5	16.34	3.75%	1.120	1.162	-
					Back side	0	132322	1745	16.5	16.20	7.15%	1.150	1.232	-
			100 RB		Top side	0	132072	1720	16.5	16.34	3.75%	0.785	0.814	-
					Back side	0	132072	1720	16.5	16.19	7.40%	1.090	1.171	-
					Back side	0	132322	1745	16.5	15.95	13.50%	1.100	1.249	-
					Back side	0	132572	1770	16.5	16.07	10.41%	1.130	1.248	-

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

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WLAN Main Antenna

Antenna	Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
									Measured	Reported	
Main	WLAN 802.11b	Back side	0	1	2412	17	16.91	102.09%	0.903	0.922	-
		Back side	0	6	2437	17	16.94	101.39%	0.972	0.986	320
		Back side*	0	6	2437	17	16.94	101.39%	0.969	0.982	-
		Top side	0	1	2412	17	16.91	102.09%	0.770	0.786	-
		Top side	0	6	2437	17	16.94	101.39%	0.792	0.803	-
		Bottom side	0	6	2437	17	16.94	101.39%	0.000	0.000	-
		Right side	0	6	2437	17	16.94	101.39%	0.070	0.071	-
		Left side	0	6	2437	17	16.94	101.39%	0.004	0.004	-
	WLAN 802.11n(40M) 5.2G	Back side	0	38	5190	15	14.99	100.23%	0.616	0.617	321
		Top side	0	38	5190	15	14.99	100.23%	0.400	0.401	-
		Bottom side	0	38	5190	15	14.99	100.23%	0.002	0.002	-
		Right side	0	38	5190	15	14.99	100.23%	0.082	0.082	-
		Left side	0	38	5190	15	14.99	100.23%	0.002	0.002	-
	WLAN 802.11n(40M) 5.3G	Back side	0	54	5270	15	14.96	100.93%	0.779	0.786	-
		Back side	0	62	5310	15	14.97	100.69%	0.887	0.893	322
		Back side*	0	62	5310	15	14.97	100.69%	0.877	0.883	-
		Top side	0	62	5310	15	14.97	100.69%	0.471	0.474	-
		Bottom side	0	62	5310	15	14.97	100.69%	0.010	0.010	-
		Right side	0	62	5310	15	14.97	100.69%	0.015	0.015	-
		Left side	0	62	5310	15	14.97	100.69%	0.005	0.005	-
	WLAN 802.11n(40M) 5.6G	Back side	0	102	5510	15	14.96	100.93%	1.180	1.191	323
		Back side*	0	102	5510	15	14.96	100.93%	1.140	1.151	-
		Back side	0	134	5670	15	14.97	100.69%	0.884	0.890	-
		Top side	0	134	5670	15	14.97	100.69%	0.602	0.606	-
		Bottom side	0	134	5670	15	14.97	100.69%	0.015	0.015	-
		Right side	0	134	5670	15	14.97	100.69%	0.014	0.014	-
		Left side	0	134	5670	15	14.97	100.69%	0.005	0.005	-
	WLAN 802.11ac(80M) 5.6G	Back side	0	138	5690	15	14.99	100.23%	0.789	0.791	324
		Top side	0	138	5690	15	14.99	100.23%	0.553	0.554	-
		Bottom side	0	138	5690	15	14.99	100.23%	0.011	0.011	-
		Right side	0	138	5690	15	14.99	100.23%	0.014	0.014	-
	WLAN 802.11ac(80M) 5.8G	Left side	0	138	5690	15	14.99	100.23%	0.005	0.005	-
		Back side	0	155	5775	15	14.99	100.23%	0.855	0.857	325
		Back side*	0	155	5775	15	14.99	100.23%	0.849	0.851	-
		Top side	0	155	5775	15	14.99	100.23%	0.618	0.619	-
		Bottom side	0	155	5775	15	14.99	100.23%	0.010	0.010	-
		Right side	0	155	5775	15	14.99	100.23%	0.017	0.017	-
		Left side	0	155	5775	15	14.99	100.23%	0.006	0.006	-

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

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WLAN Aux Antenna

Antenna	Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		Plot page
									Measured	Reported	
Aux	WLAN 802.11b	Back side	0	6	2437	17	16.99	100.23%	0.526	0.527	-
		Top side	0	6	2437	17	16.99	100.23%	0.815	0.817	26
		Top side*	0	6	2437	17	16.99	100.23%	0.808	0.810	-
		Top side	0	11	2462	17	16.98	100.46%	0.776	0.780	-
		Bottom side	0	6	2437	17	16.99	100.23%	0.001	0.001	-
		Right side	0	6	2437	17	16.99	100.23%	0.026	0.026	-
		Left side	0	6	2437	17	16.99	100.23%	0.002	0.002	-
	Bluetooth (GFSK)	Back side	0	39	2441	11.5	10.86	115.88%	0.135	0.156	-
		Top side	0	0	2402	10.41	9.26	130.32%	0.163	0.212	-
		Top side	0	39	2441	11.5	10.86	115.88%	0.170	0.197	327
		Top side	0	78	2480	10.89	9.42	140.28%	0.156	0.219	-
		Bottom side	0	39	2441	11.5	10.86	115.88%	0.000	0.001	-
		Right side	0	39	2441	11.5	10.86	115.88%	0.001	0.001	-
		Left side	0	39	2441	11.5	10.86	115.88%	0.000	0.001	-
	WLAN 802.11n(40M) 5.2G	Back side	0	38	5190	15.5	15.49	100.23%	0.453	0.454	-
		Top side	0	38	5190	15.5	15.49	100.23%	0.515	0.516	328
		Bottom side	0	38	5190	15.5	15.49	100.23%	0.010	0.010	-
		Right side	0	38	5190	15.5	15.49	100.23%	0.019	0.019	-
		Left side	0	38	5190	15.5	15.49	100.23%	0.013	0.013	-
	WLAN 802.11n(40M) 5.3G	Back side	0	62	5310	15.5	15.49	100.23%	0.562	0.563	-
		Top side	0	62	5310	15.5	15.49	100.23%	0.606	0.607	329
		Bottom side	0	62	5310	15.5	15.49	100.23%	0.010	0.010	-
		Right side	0	62	5310	15.5	15.49	100.23%	0.022	0.022	-
		Left side	0	62	5310	15.5	15.49	100.23%	0.012	0.012	-
	WLAN 802.11n(40M) 5.6G	Back side	0	134	5670	15.5	15.49	100.23%	0.767	0.769	-
		Top side	0	102	5510	15.5	15.48	100.46%	0.814	0.818	-
		Top side	0	134	5670	15.5	15.49	100.23%	0.821	0.823	-
		Top side*	0	134	5670	15.5	15.49	100.23%	0.811	0.813	330
		Bottom side	0	134	5670	15.5	15.49	100.23%	0.013	0.013	-
		Right side	0	134	5670	15.5	15.49	100.23%	0.023	0.023	-
		Left side	0	134	5670	15.5	15.49	100.23%	0.014	0.014	-
	WLAN 802.11ac(80M) 5.6G	Back side	0	138	5690	15.5	15.49	100.23%	0.685	0.687	-
		Top side	0	138	5690	15.5	15.49	100.23%	0.727	0.729	331
		Bottom side	0	138	5690	15.5	15.49	100.23%	0.002	0.002	-
		Right side	0	138	5690	15.5	15.49	100.23%	0.029	0.029	-
		Left side	0	138	5690	15.5	15.49	100.23%	0.015	0.015	-
	WLAN 802.11ac(80M) 5.8G	Back side	0	155	5775	15.5	15.49	100.23%	0.816	0.818	-
		Top side	0	155	5775	15.5	15.49	100.23%	0.860	0.862	332
		Top side*	0	155	5775	15.5	15.49	100.23%	0.857	0.859	-
		Bottom side	0	155	5775	15.5	15.49	100.23%	0.010	0.010	-
		Right side	0	155	5775	15.5	15.49	100.23%	0.057	0.057	-
		Left side	0	155	5775	15.5	15.49	100.23%	0.017	0.017	-

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

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3. Simultaneous Transmission Analysis

Simultaneous Transmission Scenarios:

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

Note :

- 1) WWAN and WLAN may transmit simultaneously.
- 2) Bluetooth and WLAN Aux share the same antenna path.
- 3) Bluetooth can transmit with WLAN Main simultaneously.
- 4) WLAN SAR measurements at 12/14mm are not required and they are not based on the standalone SAR test exclusion, also, WLAN SAR at 12/14mm will be far less than WLAN SAR at 0mm so the simultaneous transmission analysis at 12/14mm are not required.

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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:

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

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

3.2 SPLSR evaluation and analysis

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

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

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

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

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

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Back side WWAN + 2.4GHz WLAN MIMO

No.	Position	Conditions	Distance (mm)	Max. WWAN	Max. WLAN	Max. WLAN Aux	SAR Sum	SPLSR
1	Back side	WCDMA Band II	0	1.085	0.986	0.527	2.598	Analyzed as below
		WCDMA Band IV	0	1.405	0.986	0.527	2.918	Analyzed as below
		WCDMA Band V	0	1.245	0.986	0.527	2.758	Analyzed as below
		LTE Band 2	0	1.152	0.986	0.527	2.665	Analyzed as below
		LTE Band 4	0	1.291	0.986	0.527	2.804	Analyzed as below
		LTE Band 5	0	1.175	0.986	0.527	2.688	Analyzed as below
		LTE Band 7	0	1.108	0.986	0.527	2.621	Analyzed as below
		LTE Band 12	0	1.220	0.986	0.527	2.733	Analyzed as below
		LTE Band 13	0	1.271	0.986	0.527	2.784	Analyzed as below
		LTE Band 17	0	1.229	0.986	0.527	2.742	Analyzed as below
		LTE Band 25	0	1.133	0.986	0.527	2.646	Analyzed as below
		LTE Band 26	0	1.262	0.986	0.527	2.775	Analyzed as below
		LTE Band 30	0	0.538	0.986	0.527	2.051	Analyzed as below
		LTE Band 38	0	0.807	0.986	0.527	2.320	Analyzed as below
		LTE Band 41	0	1.287	0.986	0.527	2.800	Analyzed as below
		LTE Band 66	0	1.255	0.986	0.527	2.768	Analyzed as below

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Back side WWAN + 2.4G WLAN Main + BT

No.	Position	Conditions	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
2	Back side	WCDMA Band II	0	1.085	0.986	0.156	2.227	Analyzed as below
		WCDMA Band IV	0	1.405	0.986	0.156	2.547	Analyzed as below
		WCDMA Band V	0	1.245	0.986	0.156	2.387	Analyzed as below
		LTE Band 2	0	1.152	0.986	0.156	2.294	Analyzed as below
		LTE Band 4	0	1.291	0.986	0.156	2.433	Analyzed as below
		LTE Band 5	0	1.175	0.986	0.156	2.317	Analyzed as below
		LTE Band 7	0	1.108	0.986	0.156	2.250	Analyzed as below
		LTE Band 12	0	1.220	0.986	0.156	2.362	Analyzed as below
		LTE Band 13	0	1.271	0.986	0.156	2.413	Analyzed as below
		LTE Band 17	0	1.229	0.986	0.156	2.371	Analyzed as below
		LTE Band 25	0	1.133	0.986	0.156	2.275	Analyzed as below
		LTE Band 26	0	1.262	0.986	0.156	2.404	Analyzed as below
		LTE Band 30	0	0.538	0.986	0.156	1.680	Analyzed as below
		LTE Band 38	0	0.807	0.986	0.156	1.949	Analyzed as below
		LTE Band 41	0	1.287	0.986	0.156	2.429	Analyzed as below
		LTE Band 66	0	1.255	0.986	0.156	2.397	Analyzed as below

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f (886 2) 2298 0488

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SPLSR calculation between 2.4G WLAN Main and 2.4G WLAN Aux, BT, WWAN

Position	Conditions	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
Back side	WLAN Main	0.986	9.36	12.30	-0.24	-	-	-	-
	WLAN Aux	0.527	10.12	6.98	-0.18	1.513	53.74	0.035	$SPLSR \leq 0.04$
	BT	0.156	10.12	6.98	-0.19	1.142	53.74	0.023	$SPLSR \leq 0.04$
	WCDMA Band II	1.085	10.54	-8.70	-0.15	2.071	210.33	0.014	$SPLSR \leq 0.04$
	WCDMA Band IV	1.405	10.52	-8.85	-0.14	2.391	211.82	0.017	$SPLSR \leq 0.04$
	WCDMA Band V	1.245	10.05	-8.23	-0.14	2.231	205.42	0.016	$SPLSR \leq 0.04$
	LTE Band 2	1.152	10.55	-8.55	-0.16	2.138	208.84	0.015	$SPLSR \leq 0.04$
	LTE Band 4	1.291	10.49	-8.89	-0.15	2.277	212.20	0.016	$SPLSR \leq 0.04$
	LTE Band 5	1.175	9.89	-7.60	-0.14	2.161	199.07	0.016	$SPLSR \leq 0.04$
	LTE Band 7	1.108	9.84	-7.60	-0.14	2.094	199.06	0.015	$SPLSR \leq 0.04$
	LTE Band 12	1.220	10.51	-6.45	-0.10	2.206	187.86	0.017	$SPLSR \leq 0.04$
	LTE Band 13	1.271	10.20	-8.39	-0.09	2.257	207.08	0.016	$SPLSR \leq 0.04$
	LTE Band 17	1.229	10.50	-7.05	-0.09	2.215	193.84	0.017	$SPLSR \leq 0.04$
	LTE Band 25	1.133	10.02	-8.86	-0.21	2.119	211.70	0.015	$SPLSR \leq 0.04$
	LTE Band 26	1.262	10.04	-8.23	-0.13	2.248	205.42	0.016	$SPLSR \leq 0.04$
	LTE Band 30	0.538	10.14	-4.74	-0.13	1.524	170.58	0.011	$SPLSR \leq 0.04$
	LTE Band 38	0.807	10.16	-7.26	-0.08	1.793	195.77	0.012	$SPLSR \leq 0.04$
	LTE Band 41	1.287	10.04	-7.22	-0.14	2.273	195.32	0.018	$SPLSR \leq 0.04$
	LTE Band 66	1.255	10.33	-8.79	-0.14	2.241	211.13	0.016	$SPLSR \leq 0.04$

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t (886 2) 2299 3279

f (886 2) 2298 0488

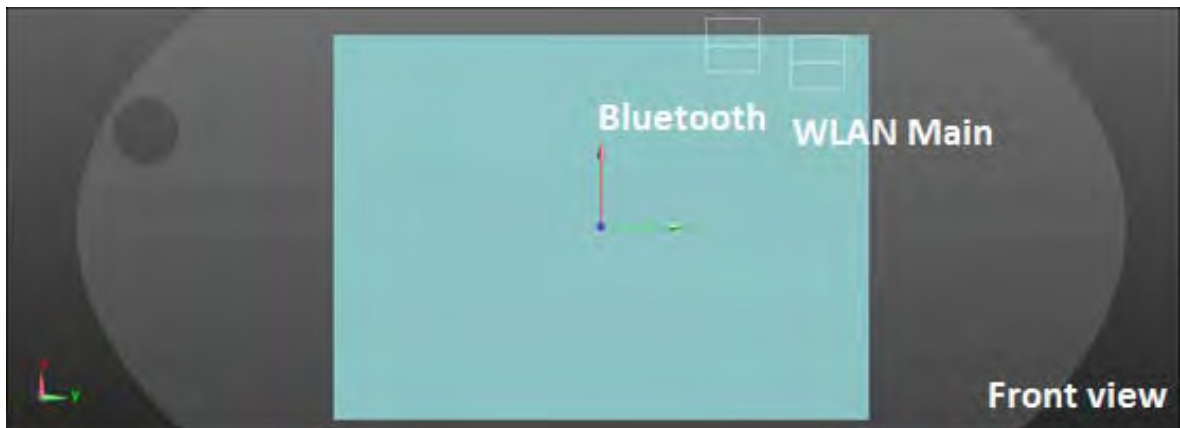
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2.4GHz WLAN MIMO



2.4GHz WLAN Main + BT



2.4GHz WLAN Main + WCDMA Band II



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2.4GHz WLAN Main + WCDMA Band IV



2.4GHz WLAN Main + WCDMA Band V



2.4GHz WLAN Main + LTE Band 2



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2.4GHz WLAN Main + LTE Band 4



2.4GHz WLAN Main + LTE Band 5



2.4GHz WLAN Main + LTE Band 7



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2.4GHz WLAN Main + LTE Band 12



2.4GHz WLAN Main + LTE Band 13



2.4GHz WLAN Main + LTE Band 17



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2.4GHz WLAN Main + LTE Band 25



2.4GHz WLAN Main + LTE Band 26



2.4GHz WLAN Main + LTE Band 30



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2.4GHz WLAN Main + LTE Band 38



2.4GHz WLAN Main + LTE Band 41



2.4GHz WLAN Main + LTE Band 66



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SPLSR calculation between 2.4G WLAN Aux and WWAN

Position	Conditions	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
Back side	WLAN Aux	0.527	10.12	6.98	-0.18	-	-	-	-
	WCDMA Band II	1.085	10.54	-8.70	-0.15	1.612	156.86	0.013	$SPLSR \leq 0.04$
	WCDMA Band IV	1.405	10.52	-8.85	-0.14	1.932	158.35	0.017	$SPLSR \leq 0.04$
	WCDMA Band V	1.245	10.05	-8.23	-0.14	1.772	152.10	0.016	$SPLSR \leq 0.04$
	LTE Band 2	1.152	10.55	-8.55	-0.16	1.679	155.36	0.014	$SPLSR \leq 0.04$
	LTE Band 4	1.291	10.49	-8.89	-0.15	1.818	158.74	0.015	$SPLSR \leq 0.04$
	LTE Band 5	1.175	9.89	-7.60	-0.14	1.702	145.82	0.015	$SPLSR \leq 0.04$
	LTE Band 7	1.108	9.84	-7.60	-0.14	1.635	145.83	0.014	$SPLSR \leq 0.04$
	LTE Band 12	1.220	10.51	-6.45	-0.10	1.747	134.36	0.017	$SPLSR \leq 0.04$
	LTE Band 13	1.271	10.20	-8.39	-0.09	1.798	153.70	0.016	$SPLSR \leq 0.04$
	LTE Band 17	1.229	10.50	-7.05	-0.09	1.756	140.35	0.017	$SPLSR \leq 0.04$
	LTE Band 25	1.133	10.02	-8.86	-0.21	1.660	158.40	0.014	$SPLSR \leq 0.04$
	LTE Band 26	1.262	10.04	-8.23	-0.13	1.789	152.10	0.016	$SPLSR \leq 0.04$
	LTE Band 30	0.538	10.14	-4.74	-0.13	1.065	117.20	0.009	$SPLSR \leq 0.04$
	LTE Band 38	0.807	10.16	-7.26	-0.08	1.334	142.40	0.011	$SPLSR \leq 0.04$
	LTE Band 41	1.287	10.04	-7.22	-0.14	1.814	142.00	0.017	$SPLSR \leq 0.04$
	LTE Band 66	1.255	10.33	-8.79	-0.14	1.782	157.71	0.015	$SPLSR \leq 0.04$

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2.4GHz WLAN Aux + WCDMA Band II



2.4GHz WLAN Aux + WCDMA Band IV



2.4GHz WLAN Aux + WCDMA Band V



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2.4GHz WLAN Aux + LTE Band 2



2.4GHz WLAN Aux + LTE Band 4



2.4GHz WLAN Aux + LTE Band 5



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2.4GHz WLAN Aux + LTE Band 7



2.4GHz WLAN Aux + LTE Band 12



2.4GHz WLAN Aux + LTE Band 13



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2.4GHz WLAN Aux + LTE Band 17



2.4GHz WLAN Aux + LTE Band 25



2.4GHz WLAN Aux + LTE Band 26



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t (886 2) 2299 3279

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2.4GHz WLAN Aux + LTE Band 30



2.4GHz WLAN Aux + LTE Band 38



2.4GHz WLAN Aux + LTE Band 41



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f (886 2) 2298 0488

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2.4GHz WLAN Aux + LTE Band 66



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f (886 2) 2298 0488

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SPLSR calculation between BT and WWAN

Position	Conditions	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
Back side	BT	0.156	10.12	6.98	-0.19	-	-	-	-
	WCDMA Band II	1.085	10.54	-8.70	-0.15	1.241	156.86	0.009	$SPLSR \leq 0.04$
	WCDMA Band IV	1.405	10.52	-8.85	-0.14	1.561	158.35	0.012	$SPLSR \leq 0.04$
	WCDMA Band V	1.245	10.05	-8.23	-0.14	1.401	152.10	0.011	$SPLSR \leq 0.04$
	LTE Band 2	1.152	10.55	-8.55	-0.16	1.308	155.36	0.010	$SPLSR \leq 0.04$
	LTE Band 4	1.291	10.49	-8.89	-0.15	1.447	158.74	0.011	$SPLSR \leq 0.04$
	LTE Band 5	1.175	9.89	-7.60	-0.14	1.331	145.82	0.011	$SPLSR \leq 0.04$
	LTE Band 7	1.108	9.84	-7.60	-0.14	1.264	145.83	0.010	$SPLSR \leq 0.04$
	LTE Band 12	1.220	10.51	-6.45	-0.10	1.376	134.36	0.012	$SPLSR \leq 0.04$
	LTE Band 13	1.271	10.20	-8.39	-0.09	1.427	153.71	0.011	$SPLSR \leq 0.04$
	LTE Band 17	1.229	10.50	-7.05	-0.09	1.385	140.36	0.012	$SPLSR \leq 0.04$
	LTE Band 25	1.133	10.02	-8.86	-0.21	1.289	158.40	0.009	$SPLSR \leq 0.04$
	LTE Band 26	1.262	10.04	-8.23	-0.13	1.418	152.10	0.011	$SPLSR \leq 0.04$
	LTE Band 30	0.538	10.14	-4.74	-0.13	0.694	117.20	0.005	$SPLSR \leq 0.04$
	LTE Band 38	0.807	10.16	-7.26	-0.08	0.963	142.41	0.007	$SPLSR \leq 0.04$
	LTE Band 41	1.287	10.04	-7.22	-0.14	1.443	142.00	0.012	$SPLSR \leq 0.04$
	LTE Band 66	1.255	10.33	-8.79	-0.14	1.411	157.71	0.011	$SPLSR \leq 0.04$

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f (886 2) 2298 0488

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BT + WCDMA Band II



BT + WCDMA Band IV



BT + WCDMA Band V



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f (886 2) 2298 0488

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BT + LTE Band 2



BT + LTE Band 4



BT + LTE Band 5



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BT + LTE Band 7



BT + LTE Band 12



BT + LTE Band 13



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f (886 2) 2298 0488

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BT + LTE Band 17



BT + LTE Band 25



BT + LTE Band 26



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f (886 2) 2298 0488

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BT + LTE Band 30



BT + LTE Band 38



BT + LTE Band 41



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t (886 2) 2299 3279

f (886 2) 2298 0488

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BT + LTE Band 66



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f (886 2) 2298 0488

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Back side WWAN + 5GHz WLAN MIMO

No.	Position	Conditions	Distance (mm)	Max. WWAN	Max. WLAN	Max. WLAN Aux	SAR Sum	SPLSR
3	Back side	WCDMA Band II	0	1.085	1.191	0.818	3.094	Analyzed as below
		WCDMA Band IV	0	1.405	1.191	0.818	3.414	Analyzed as below
		WCDMA Band V	0	1.245	1.191	0.818	3.254	Analyzed as below
		LTE Band 2	0	1.152	1.191	0.818	3.161	Analyzed as below
		LTE Band 4	0	1.291	1.191	0.818	3.300	Analyzed as below
		LTE Band 5	0	1.175	1.191	0.818	3.184	Analyzed as below
		LTE Band 7	0	1.108	1.191	0.818	3.117	Analyzed as below
		LTE Band 12	0	1.220	1.191	0.818	3.229	Analyzed as below
		LTE Band 13	0	1.271	1.191	0.818	3.280	Analyzed as below
		LTE Band 17	0	1.229	1.191	0.818	3.238	Analyzed as below
		LTE Band 25	0	1.133	1.191	0.818	3.142	Analyzed as below
		LTE Band 26	0	1.262	1.191	0.818	3.271	Analyzed as below
		LTE Band 30	0	0.538	1.191	0.818	2.547	Analyzed as below
		LTE Band 38	0	0.807	1.191	0.818	2.816	Analyzed as below
		LTE Band 41	0	1.287	1.191	0.818	3.296	Analyzed as below
		LTE Band 66	0	1.255	1.191	0.818	3.264	Analyzed as below

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t (886 2) 2299 3279

f (886 2) 2298 0488

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Back side WWAN + 5GHz WLAN Main + BT

No.	Position	Conditions	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
4	Back side	WCDMA Band II	0	1.085	1.191	0.156	2.432	Analyzed as below
		WCDMA Band IV	0	1.405	1.191	0.156	2.752	Analyzed as below
		WCDMA Band V	0	1.245	1.191	0.156	2.592	Analyzed as below
		LTE Band 2	0	1.152	1.191	0.156	2.499	Analyzed as below
		LTE Band 4	0	1.291	1.191	0.156	2.638	Analyzed as below
		LTE Band 5	0	1.175	1.191	0.156	2.522	Analyzed as below
		LTE Band 7	0	1.108	1.191	0.156	2.455	Analyzed as below
		LTE Band 12	0	1.220	1.191	0.156	2.567	Analyzed as below
		LTE Band 13	0	1.271	1.191	0.156	2.618	Analyzed as below
		LTE Band 17	0	1.229	1.191	0.156	2.576	Analyzed as below
		LTE Band 25	0	1.133	1.191	0.156	2.480	Analyzed as below
		LTE Band 26	0	1.262	1.191	0.156	2.609	Analyzed as below
		LTE Band 30	0	0.538	1.191	0.156	1.885	Analyzed as below
		LTE Band 38	0	0.807	1.191	0.156	2.154	Analyzed as below
		LTE Band 41	0	1.287	1.191	0.156	2.634	Analyzed as below
		LTE Band 66	0	1.255	1.191	0.156	2.602	Analyzed as below

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t (886 2) 2299 3279

f (886 2) 2298 0488

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SPLSR calculation between 5G WLAN Main and WLAN 5G Aux, BT, WWAN

Position	Conditions	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
Back side	WLAN Main	1.191	9.82	12.70	-0.23	-	-	-	-
	WLAN Aux	0.818	10.14	4.82	-0.22	2.009	78.87	0.036	$SPLSR \leq 0.04$
	BT	0.156	10.12	6.98	-0.19	1.347	57.28	0.027	$SPLSR \leq 0.04$
	WCDMA Band II	1.085	10.54	-8.70	-0.15	2.276	214.12	0.016	$SPLSR \leq 0.04$
	WCDMA Band IV	1.405	10.52	-8.85	-0.14	2.596	215.62	0.019	$SPLSR \leq 0.04$
	WCDMA Band V	1.245	10.05	-8.23	-0.14	2.436	209.31	0.018	$SPLSR \leq 0.04$
	LTE Band 2	1.152	10.55	-8.55	-0.16	2.343	212.63	0.017	$SPLSR \leq 0.04$
	LTE Band 4	1.291	10.49	-8.89	-0.15	2.482	216.01	0.018	$SPLSR \leq 0.04$
	LTE Band 5	1.175	9.89	-7.60	-0.14	2.366	203.00	0.018	$SPLSR \leq 0.04$
	LTE Band 7	1.108	9.84	-7.60	-0.14	2.299	203.00	0.017	$SPLSR \leq 0.04$
	LTE Band 12	1.220	10.51	-6.45	-0.10	2.411	191.63	0.020	$SPLSR \leq 0.04$
	LTE Band 13	1.271	10.20	-8.39	-0.09	2.462	210.94	0.018	$SPLSR \leq 0.04$
	LTE Band 17	1.229	10.50	-7.05	-0.09	2.420	197.62	0.019	$SPLSR \leq 0.04$
	LTE Band 25	1.133	10.02	-8.86	-0.21	2.324	215.61	0.016	$SPLSR \leq 0.04$
	LTE Band 26	1.262	10.04	-8.23	-0.13	2.453	209.31	0.018	$SPLSR \leq 0.04$
	LTE Band 30	0.538	10.14	-4.74	-0.13	1.729	174.43	0.013	$SPLSR \leq 0.04$
	LTE Band 38	0.807	10.16	-7.26	-0.08	1.998	199.63	0.014	$SPLSR \leq 0.04$
	LTE Band 41	1.287	10.04	-7.22	-0.14	2.478	199.21	0.020	$SPLSR \leq 0.04$
	LTE Band 66	1.255	10.33	-8.79	-0.14	2.446	214.96	0.018	$SPLSR \leq 0.04$

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t (886 2) 2299 3279

f (886 2) 2298 0488

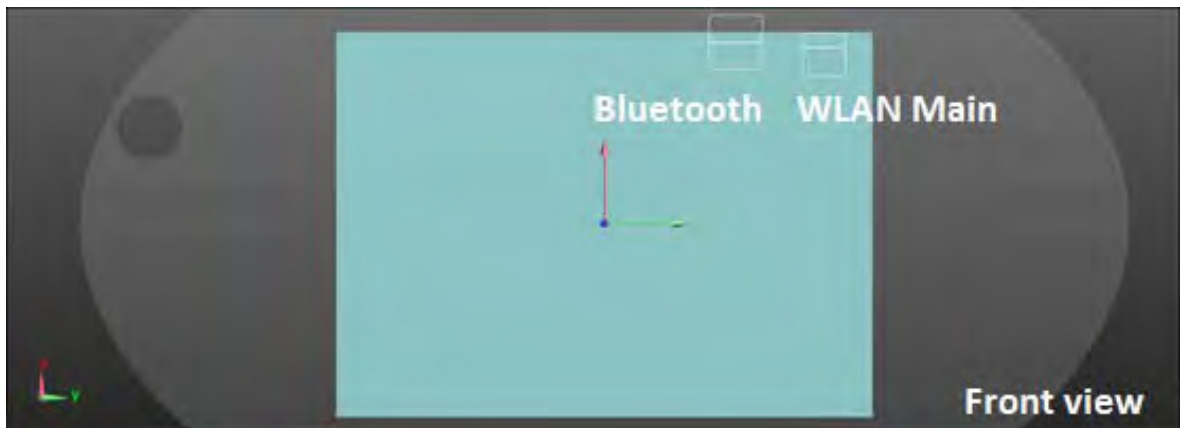
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5GHz WLAN MIMO



5GHz WLAN Main + BT



5GHz WLAN Main + WCDMA Band II



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f (886 2) 2298 0488

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5GHz WLAN Main + WCDMA Band IV



5GHz WLAN Main + WCDMA Band V



5GHz WLAN Main + LTE Band 2



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5GHz WLAN Main + LTE Band 4



5GHz WLAN Main + LTE Band 5



5GHz WLAN Main + LTE Band 7



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5GHz WLAN Main + LTE Band 7



5GHz WLAN Main + LTE Band 12



5GHz WLAN Main + LTE Band 13



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5GHz WLAN Main + LTE Band 17



5GHz WLAN Main + LTE Band 25



5GHz WLAN Main + LTE Band 26



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5GHz WLAN Main + LTE Band 30



5GHz WLAN Main + LTE Band 38



5GHz WLAN Main + LTE Band 41



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5GHz WLAN Main + LTE Band 66



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f (886 2) 2298 0488

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SPLSR calculation between 5G WLAN Aux and WWAN

Position	Conditions	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
Back side	WLAN Aux	0.818	10.14	4.82	-0.22	-	-	-	-
	WCDMA Band II	1.085	10.54	-8.70	-0.15	1.903	135.26	0.019	$SPLSR \leq 0.04$
	WCDMA Band IV	1.405	10.52	-8.85	-0.14	2.223	136.76	0.024	$SPLSR \leq 0.04$
	WCDMA Band V	1.245	10.05	-8.23	-0.14	2.063	130.51	0.023	$SPLSR \leq 0.04$
	LTE Band 2	1.152	10.55	-8.55	-0.16	1.970	133.76	0.021	$SPLSR \leq 0.04$
	LTE Band 4	1.291	10.49	-8.89	-0.15	2.109	137.15	0.022	$SPLSR \leq 0.04$
	LTE Band 5	1.175	9.89	-7.60	-0.14	1.993	124.23	0.023	$SPLSR \leq 0.04$
	LTE Band 7	1.108	9.84	-7.60	-0.14	1.926	124.24	0.022	$SPLSR \leq 0.04$
	LTE Band 12	1.220	10.51	-6.45	-0.10	2.038	112.77	0.026	$SPLSR \leq 0.04$
	LTE Band 13	1.271	10.20	-8.39	-0.09	2.089	132.11	0.023	$SPLSR \leq 0.04$
	LTE Band 17	1.229	10.50	-7.05	-0.09	2.047	118.76	0.025	$SPLSR \leq 0.04$
	LTE Band 25	1.133	10.02	-8.86	-0.21	1.951	136.81	0.020	$SPLSR \leq 0.04$
	LTE Band 26	1.262	10.04	-8.23	-0.13	2.080	130.51	0.023	$SPLSR \leq 0.04$
	LTE Band 30	0.538	10.14	-4.74	-0.13	1.356	95.60	0.017	$SPLSR \leq 0.04$
	LTE Band 38	0.807	10.16	-7.26	-0.08	1.625	120.81	0.017	$SPLSR \leq 0.04$
	LTE Band 41	1.287	10.04	-7.22	-0.14	2.105	120.41	0.025	$SPLSR \leq 0.04$
	LTE Band 66	1.255	10.33	-8.79	-0.14	2.073	136.12	0.022	$SPLSR \leq 0.04$

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t (886 2) 2299 3279

f (886 2) 2298 0488

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5GHz WLAN Aux + WCDMA Band II



5GHz WLAN Aux + WCDMA Band VI



5GHz WLAN Aux + WCDMA Band V



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5GHz WLAN Aux + LTE Band 2



5GHz WLAN Aux + LTE Band 4



5GHz WLAN Aux + LTE Band 5



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5GHz WLAN Aux + LTE Band 17



5GHz WLAN Aux + LTE Band 25



5GHz WLAN Aux + LTE Band 26



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5GHz WLAN Aux + LTE Band 30



5GHz WLAN Aux + LTE Band 38



5GHz WLAN Aux + LTE Band 41



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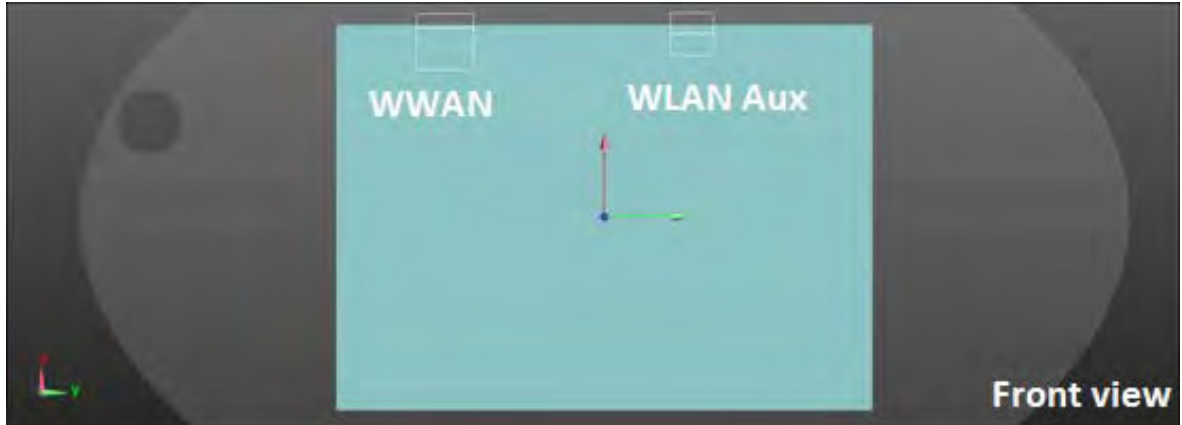
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5GHz WLAN Aux+LTE Band 66



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Top side WWAN + 2.4GHz WLAN MIMO

No.	Position	Conditions	Distance (mm)	Max. WWAN	Max. WLAN	Max. WLAN Aux	SAR Sum	SPLSR
5	Top side	WCDMA Band II	0	0.612	0.849	0.817	2.278	Analyzed as below
		WCDMA Band IV	0	0.907	0.849	0.817	2.573	Analyzed as below
		WCDMA Band V	0	0.630	0.849	0.817	2.296	Analyzed as below
		LTE Band 2	0	0.523	0.849	0.817	2.189	Analyzed as below
		LTE Band 4	0	0.879	0.849	0.817	2.545	Analyzed as below
		LTE Band 5	0	0.564	0.849	0.817	2.230	Analyzed as below
		LTE Band 7	0	0.655	0.849	0.817	2.321	Analyzed as below
		LTE Band 12	0	0.595	0.849	0.817	2.261	Analyzed as below
		LTE Band 13	0	0.478	0.849	0.817	2.144	Analyzed as below
		LTE Band 17	0	0.546	0.849	0.817	2.212	Analyzed as below
		LTE Band 25	0	0.350	0.849	0.817	2.016	Analyzed as below
		LTE Band 26	0	0.857	0.849	0.817	2.523	Analyzed as below
		LTE Band 30	0	1.253	0.849	0.817	2.919	Analyzed as below
		LTE Band 38	0	0.214	0.849	0.817	1.880	Analyzed as below
		LTE Band 41	0	0.200	0.849	0.817	1.866	Analyzed as below
		LTE Band 66	0	0.855	0.849	0.817	2.521	Analyzed as below

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Top side WWAN + 2.4GHz WLAN Main + BT

No.	Position	Conditions	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
6	Top side	WCDMA Band II	0	0.612	0.849	0.219	1.680	Analyzed as below
		WCDMA Band IV	0	0.907	0.849	0.219	1.975	Analyzed as below
		WCDMA Band V	0	0.630	0.849	0.219	1.698	Analyzed as below
		LTE Band 2	0	0.523	0.849	0.219	1.591	Σ SAR<1.6,
		LTE Band 4	0	0.879	0.849	0.219	1.947	Analyzed as below
		LTE Band 5	0	0.564	0.849	0.219	1.632	Analyzed as below
		LTE Band 7	0	0.655	0.849	0.219	1.723	Analyzed as below
		LTE Band 12	0	0.595	0.849	0.219	1.663	Analyzed as below
		LTE Band 13	0	0.478	0.849	0.219	1.546	Σ SAR<1.6,
		LTE Band 17	0	0.546	0.849	0.219	1.614	Analyzed as below
		LTE Band 25	0	0.350	0.849	0.219	1.418	Σ SAR<1.6,
		LTE Band 26	0	0.857	0.849	0.219	1.925	Analyzed as below
		LTE Band 30	0	1.253	0.849	0.219	2.321	Analyzed as below
		LTE Band 38	0	0.214	0.849	0.219	1.282	Σ SAR<1.6,
		LTE Band 41	0	0.200	0.849	0.219	1.268	Σ SAR<1.6,
		LTE Band 66	0	0.855	0.849	0.219	1.923	Analyzed as below

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SPLSR calculation between 2.4G WLAN Main and 2.4G WLAN Aux, BT, WWAN

Position	Conditions	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
Top side	WLAN Main	0.849	-0.64	13.60	-0.27	-	-	-	-
	WLAN Aux	0.817	-0.52	7.34	-0.29	1.666	62.61	0.034	$SPLSR \leq 0.04$
	BT	0.862	-0.52	7.38	-0.33	1.711	62.21	0.036	$SPLSR \leq 0.04$
	WCDMA Band II	0.612	-0.50	-8.68	-0.28	1.461	222.80	0.008	$SPLSR \leq 0.04$
	WCDMA Band IV	0.907	-0.34	-8.83	-0.28	1.756	224.32	0.010	$SPLSR \leq 0.04$
	WCDMA Band V	0.630	-0.66	-14.04	-0.32	1.479	276.40	0.007	$SPLSR \leq 0.04$
	LTE Band 2	0.523	-0.65	-8.20	-0.36	1.372	218.00	0.007	$SPLSR \leq 0.04$
	LTE Band 4	0.879	-0.50	-8.83	-0.36	1.728	224.31	0.010	$SPLSR \leq 0.04$
	LTE Band 5	0.564	-0.66	-14.18	-0.23	1.413	277.80	0.006	$SPLSR \leq 0.04$
	LTE Band 7	0.655	-0.04	-8.26	-0.33	1.504	218.68	0.008	$SPLSR \leq 0.04$
	LTE Band 12	0.595	-0.65	-6.49	-0.27	1.444	200.90	0.009	$SPLSR \leq 0.04$
	LTE Band 13	0.478	-0.66	-14.18	-2.28	1.327	278.53	0.005	$SPLSR \leq 0.04$
	LTE Band 17	0.546	-0.65	-6.64	-2.69	1.395	203.84	0.008	$SPLSR \leq 0.04$
	LTE Band 25	0.350	-0.65	-13.18	-0.34	1.199	267.80	0.005	$SPLSR \leq 0.04$
	LTE Band 26	0.857	-0.50	-14.20	-0.24	1.706	278.00	0.008	$SPLSR \leq 0.04$
	LTE Band 30	1.253	-0.74	-13.58	-0.30	2.102	271.80	0.011	$SPLSR \leq 0.04$
	LTE Band 38	0.214	-0.24	-7.72	-0.28	1.063	213.24	0.005	$SPLSR \leq 0.04$
	LTE Band 41	0.200	-0.24	-7.48	-0.17	1.049	210.84	0.005	$SPLSR \leq 0.04$
	LTE Band 66	0.855	-0.50	-8.83	-0.36	1.704	224.31	0.010	$SPLSR \leq 0.04$

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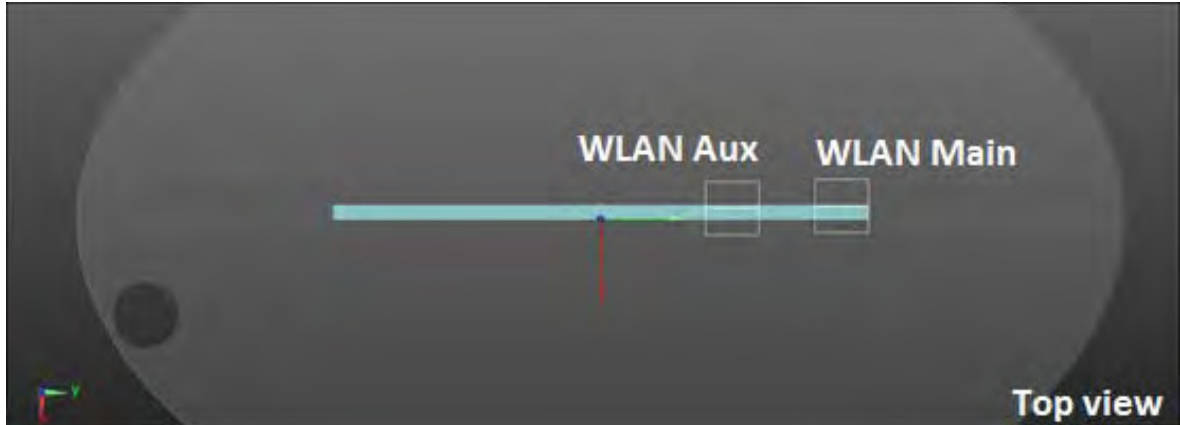
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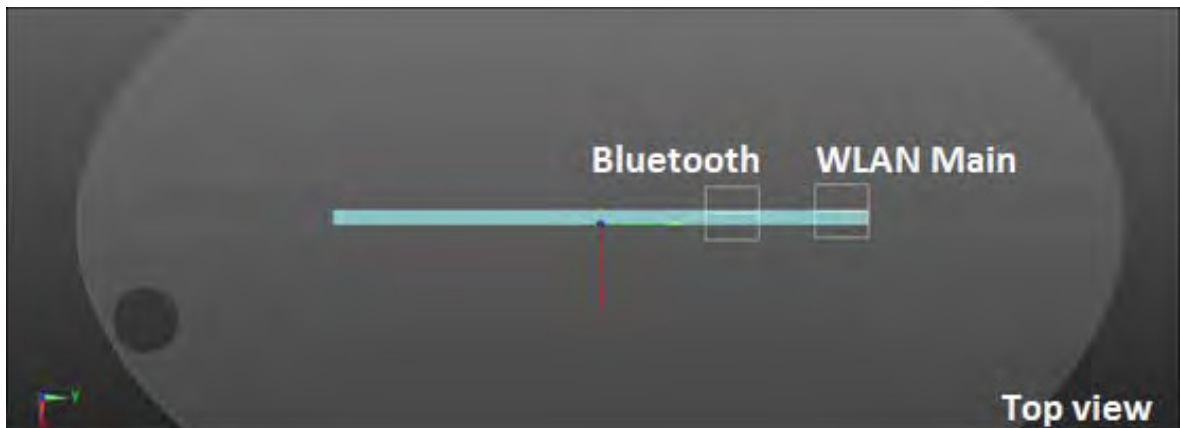
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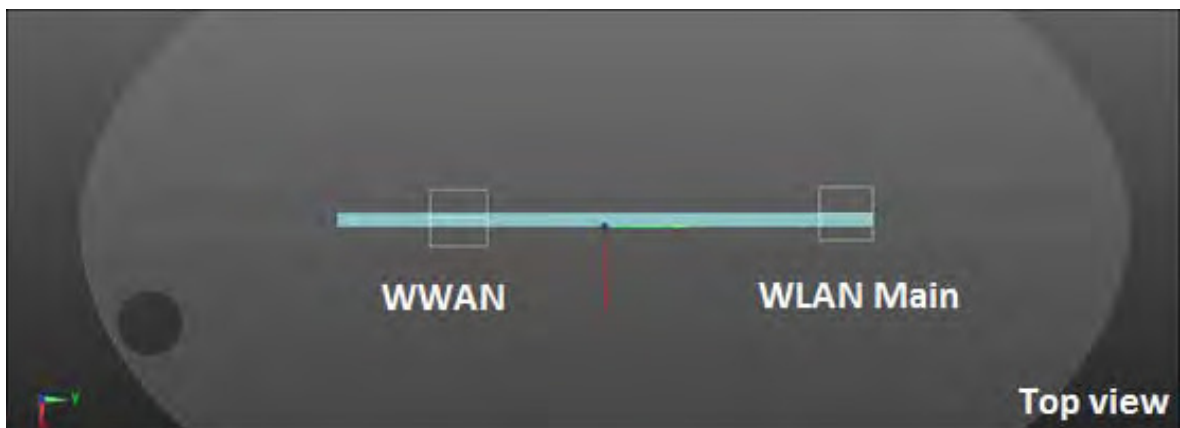
2.4GHz WLAN MIMO



2.4GHz WLAN Main + BT



2.4GHz WLAN Main + WCDMA Band II



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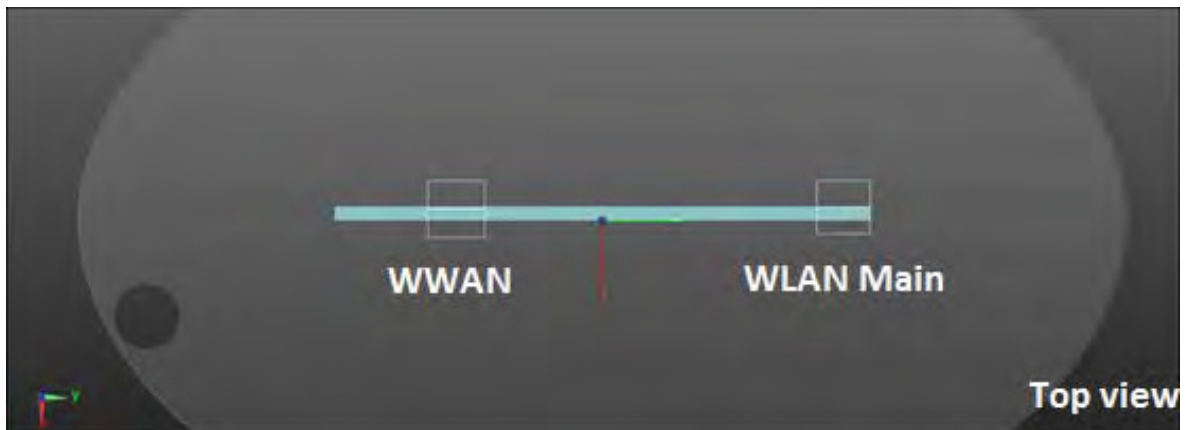
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2.4GHz WLAN Main + WCDMA Band IV



2.4GHz WLAN Main + WCDMA Band V



2.4GHz WLAN Main + LTE Band 2



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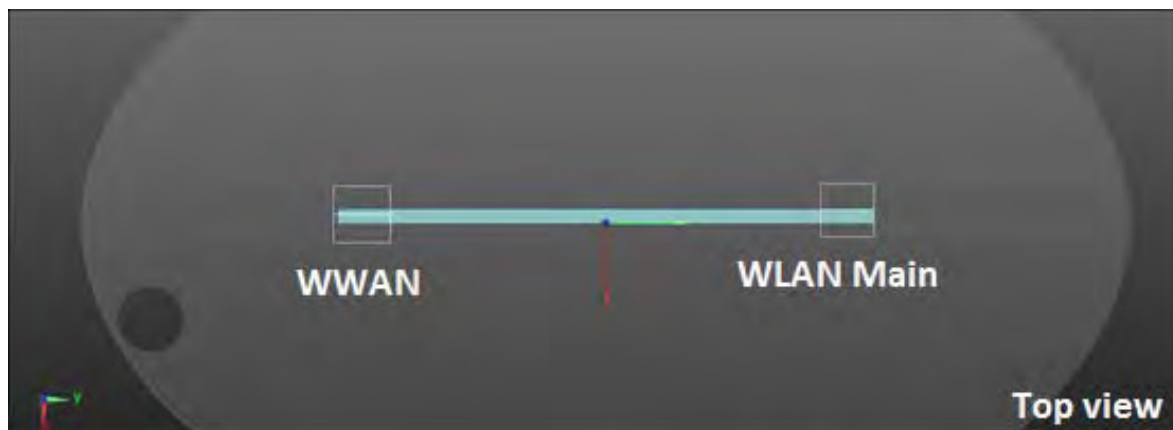
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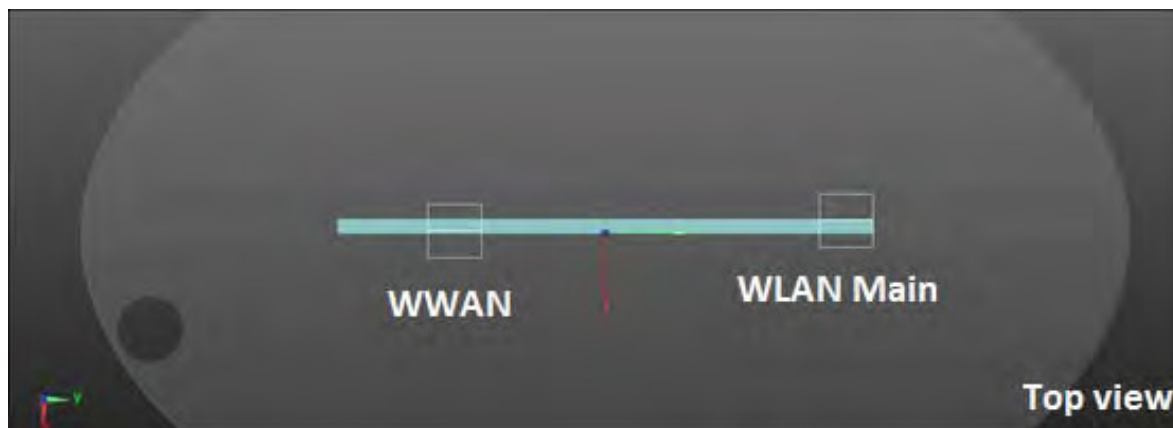
2.4GHz WLAN Main + LTE Band 4



2.4GHz WLAN Main + LTE Band 5



2.4GHz WLAN Main + LTE Band 7



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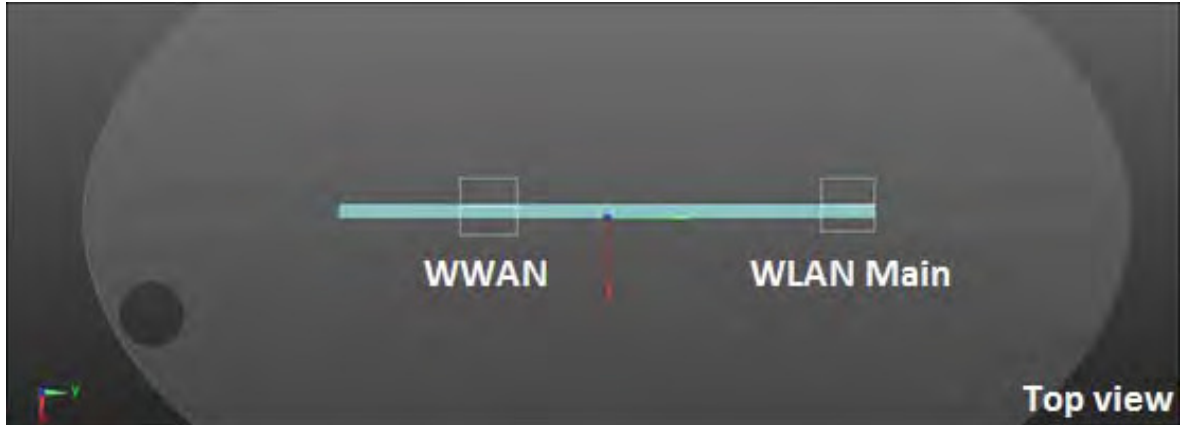
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2.4GHz WLAN Main + LTE Band 12



2.4GHz WLAN Main + LTE Band 13



2.4GHz WLAN Main + LTE Band 17



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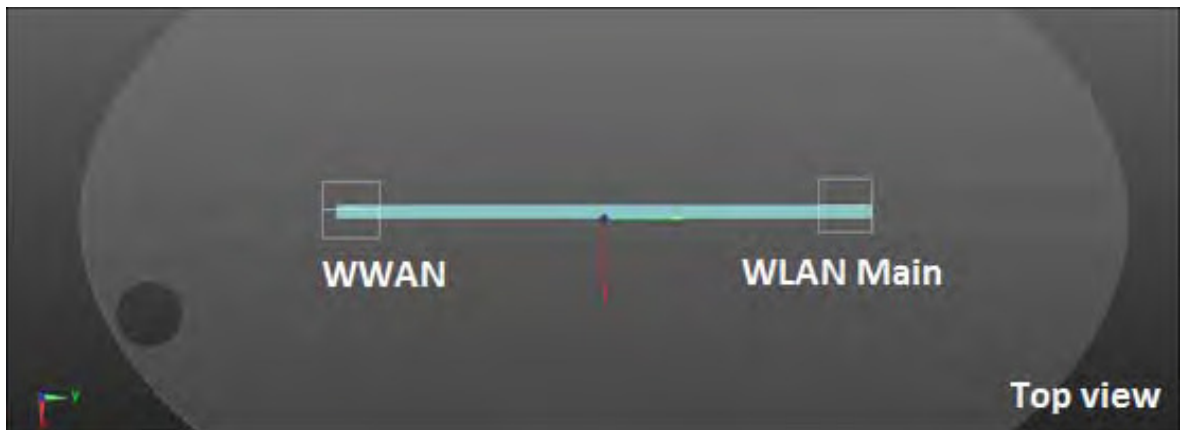
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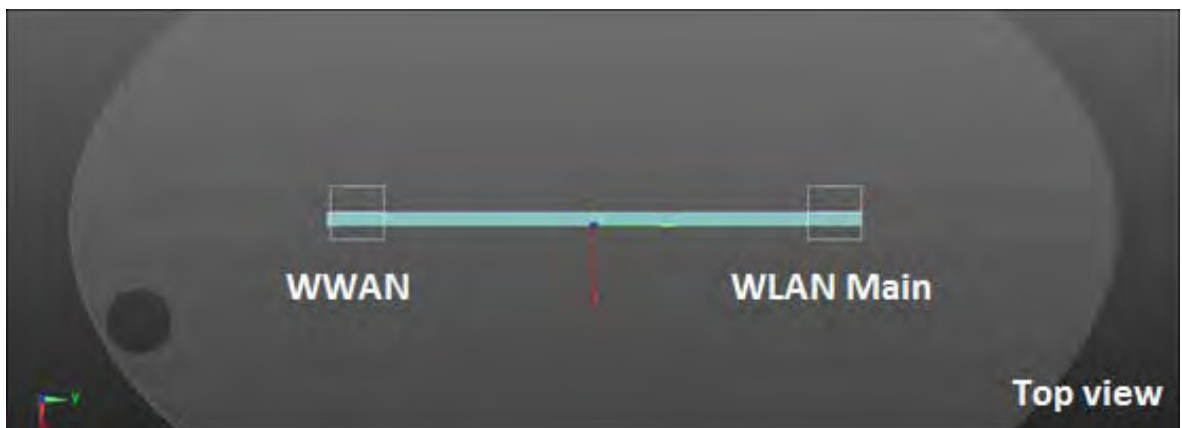
2.4GHz WLAN Main + LTE Band 25



2.4GHz WLAN Main + LTE Band 26



2.4GHz WLAN Main + LTE Band 30



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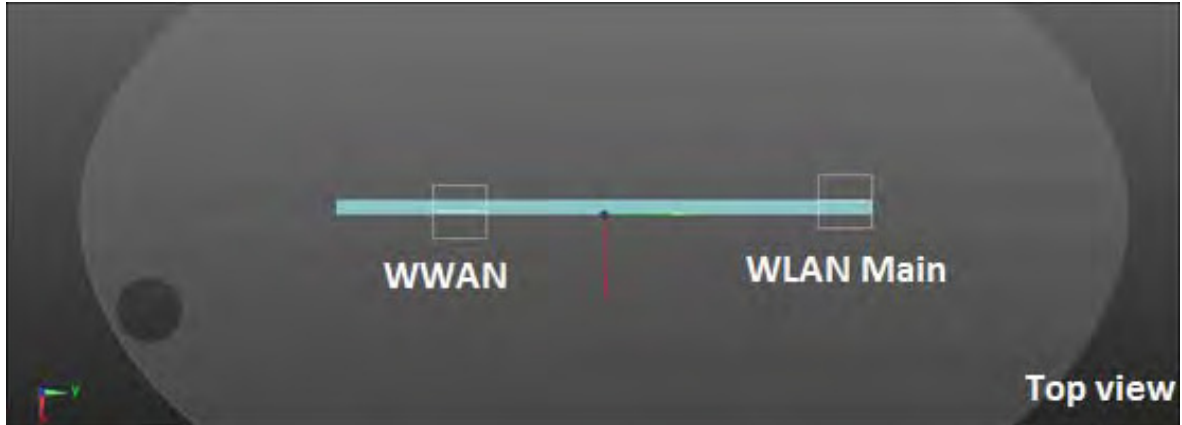
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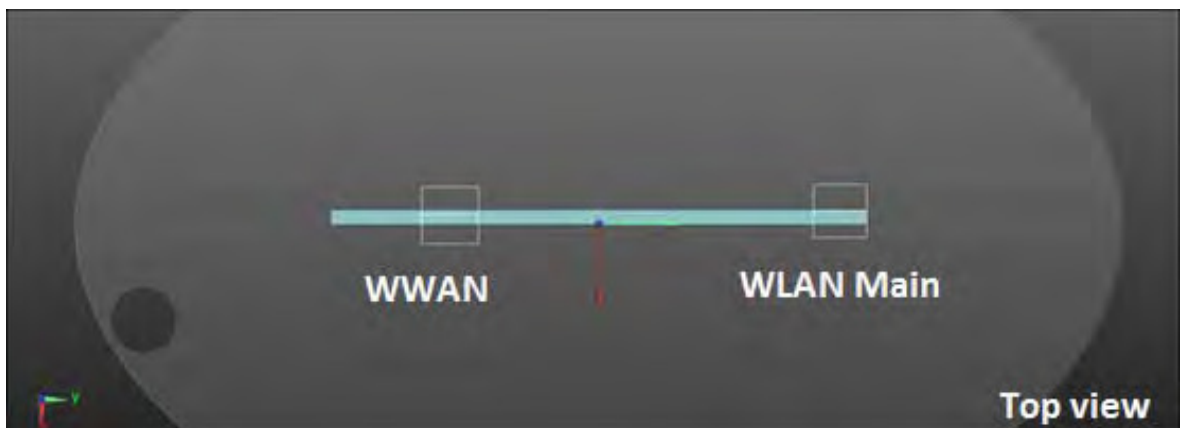
2.4GHz WLAN Main + LTE Band 38



2.4GHz WLAN Main + LTE Band 41



2.4GHz WLAN Main + LTE Band 66



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SPLSR calculation between 2.4G WLAN Aux and WWAN

Position	Conditions	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
Top side	WLAN Aux	0.817	-0.52	7.34	-0.29	-	-	-	-
	WCDMA Band II	0.612	-0.50	-8.68	-0.28	1.429	160.20	0.011	$SPLSR \leq 0.04$
	WCDMA Band IV	0.907	-0.34	-8.83	-0.28	1.724	161.71	0.014	$SPLSR \leq 0.04$
	WCDMA Band V	0.630	-0.66	-14.04	-0.32	1.447	213.80	0.008	$SPLSR \leq 0.04$
	LTE Band 2	0.523	-0.65	-8.20	-0.36	1.340	155.41	0.010	$SPLSR \leq 0.04$
	LTE Band 4	0.879	-0.50	-8.83	-0.36	1.696	161.70	0.014	$SPLSR \leq 0.04$
	LTE Band 5	0.564	-0.66	-14.18	-0.23	1.381	215.21	0.008	$SPLSR \leq 0.04$
	LTE Band 7	0.655	-0.04	-8.26	-0.33	1.472	156.07	0.011	$SPLSR \leq 0.04$
	LTE Band 12	0.595	-0.65	-6.49	-0.27	1.412	138.31	0.012	$SPLSR \leq 0.04$
	LTE Band 13	0.478	-0.66	-14.18	-2.28	1.295	216.12	0.007	$SPLSR \leq 0.04$
	LTE Band 17	0.546	-0.65	-6.64	-2.69	1.363	141.85	0.011	$SPLSR \leq 0.04$
	LTE Band 25	0.350	-0.65	-13.18	-0.34	1.167	205.20	0.006	$SPLSR \leq 0.04$
	LTE Band 26	0.857	-0.50	-14.20	-0.24	1.674	215.40	0.010	$SPLSR \leq 0.04$
	LTE Band 30	1.253	-0.74	-13.58	-0.30	2.070	209.21	0.014	$SPLSR \leq 0.04$
	LTE Band 38	0.214	-0.24	-7.72	-0.28	1.031	150.63	0.007	$SPLSR \leq 0.04$
	LTE Band 41	0.200	-0.24	-7.48	-0.17	1.017	148.23	0.007	$SPLSR \leq 0.04$
	LTE Band 66	0.855	-0.50	-8.83	-0.36	1.672	161.70	0.013	$SPLSR \leq 0.04$

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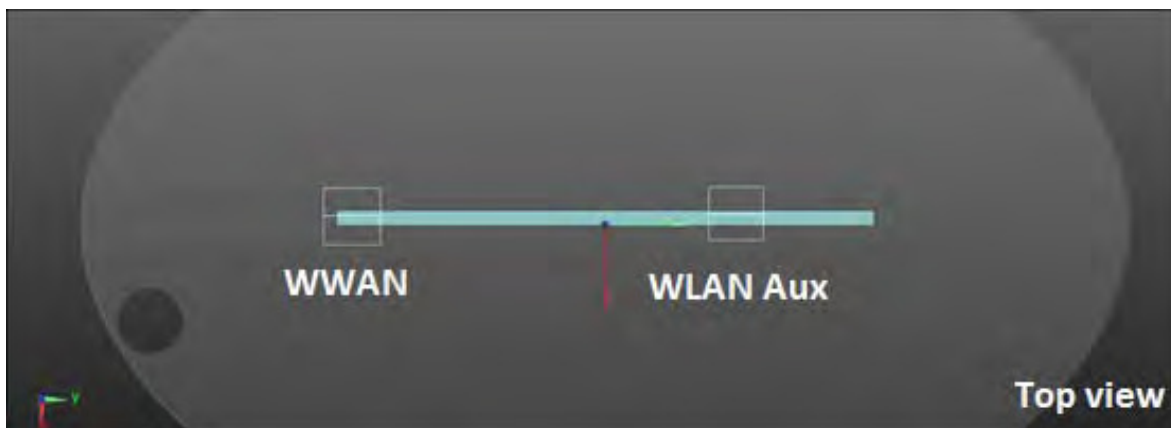
2.4GHz WLAN Aux + WCDMA Band II



2.4GHz WLAN Aux + WCDMA Band IV



2.4GHz WLAN Aux + WCDMA Band V



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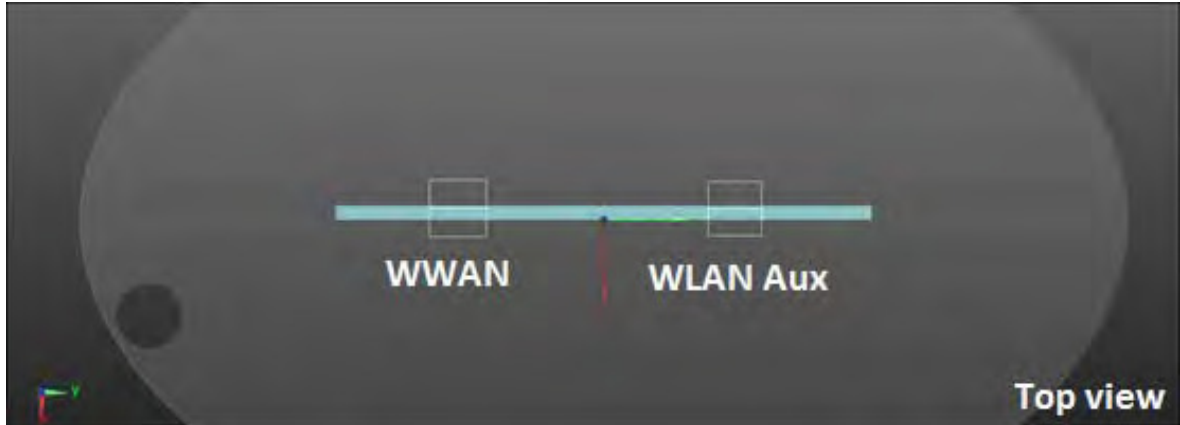
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2.4GHz WLAN Aux + LTE Band 2



2.4GHz WLAN Aux + LTE Band 4



2.4GHz WLAN Aux + LTE Band 5



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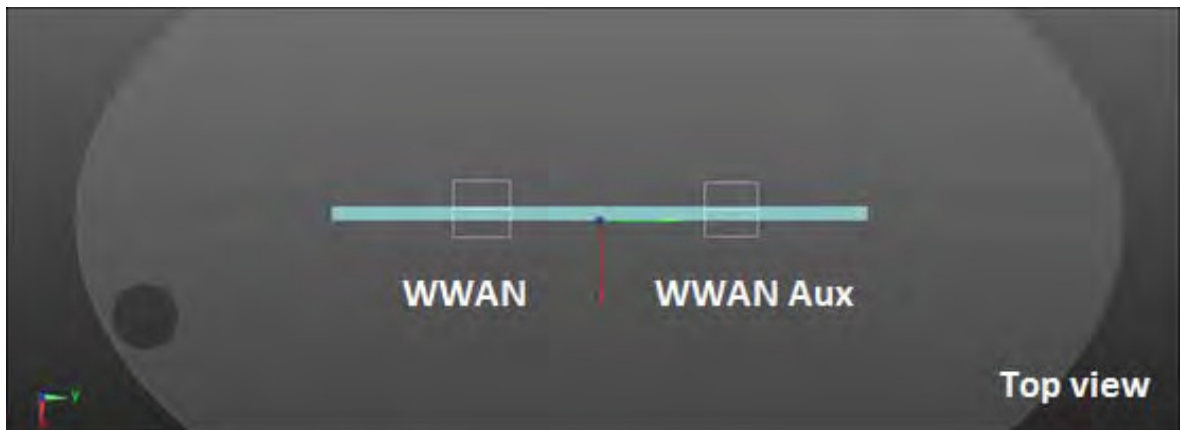
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2.4GHz WLAN Aux + LTE Band 7



2.4GHz WLAN Aux + LTE Band 12



2.4GHz WLAN Aux + LTE Band 13



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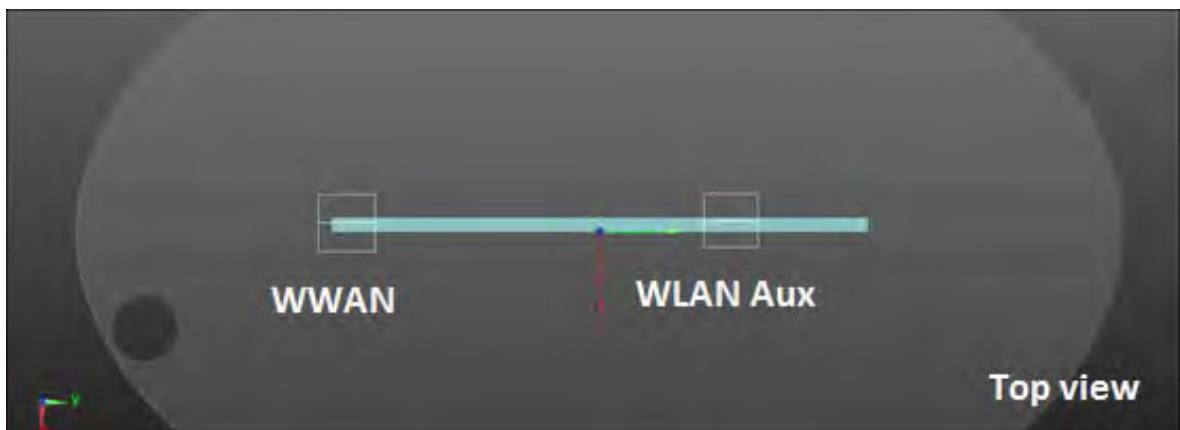
2.4GHz WLAN Aux + LTE Band 17



2.4GHz WLAN Aux + LTE Band 25



2.4GHz WLAN Aux + LTE Band 26



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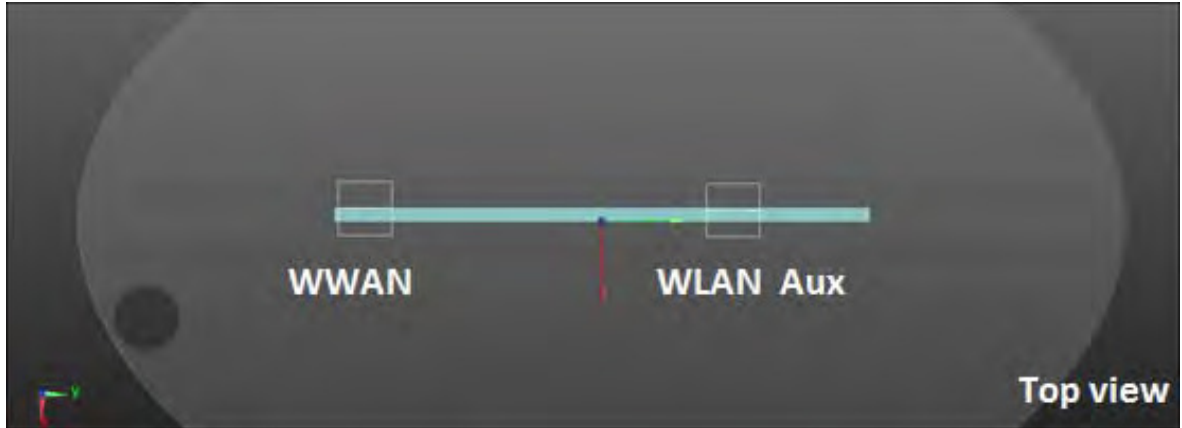
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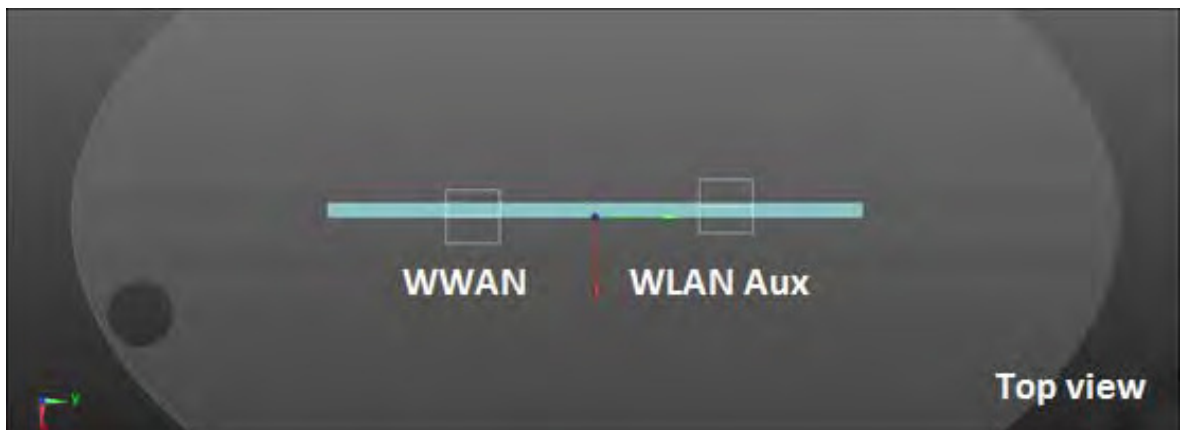
2.4GHz WLAN Aux + LTE Band 30



2.4GHz WLAN Aux + LTE Band 38



2.4GHz WLAN Aux + LTE Band 41



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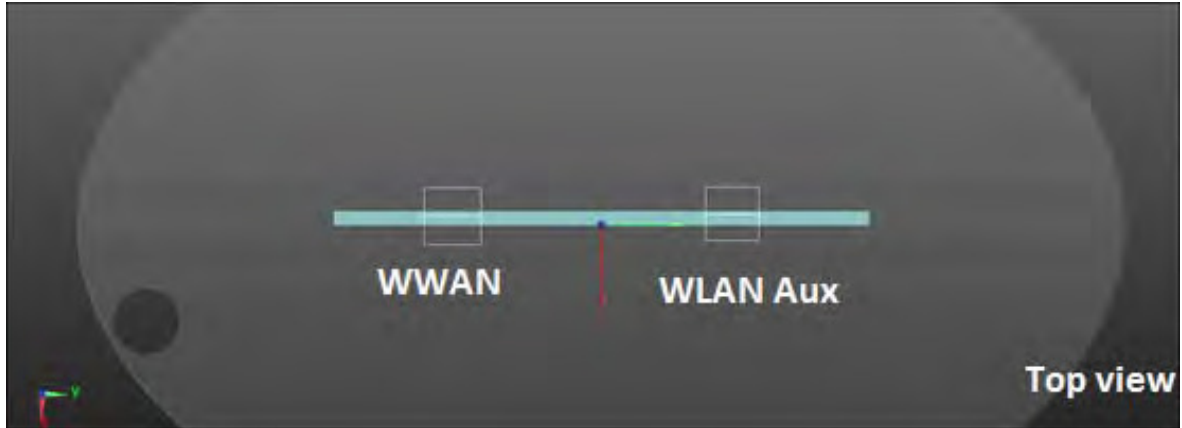
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2.4GHz WLAN Aux + LTE Band 66



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SPLSR calculation between BT and WWAN

Position	Conditions	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
Top side	BT	0.862	-0.52	7.38	-0.33	-	-	-	-
	WCDMA Band II	0.612	-0.50	-8.68	-0.28	1.474	160.60	0.011	$SPLSR \leq 0.04$
	WCDMA Band IV	0.907	-0.34	-8.83	-0.28	1.769	162.11	0.015	$SPLSR \leq 0.04$
	WCDMA Band V	0.630	-0.66	-14.04	-0.32	1.492	214.20	0.009	$SPLSR \leq 0.04$
	LTE Band 4	0.523	-0.50	-8.83	-0.36	1.385	162.10	0.010	$SPLSR \leq 0.04$
	LTE Band 5	0.879	-0.66	-14.18	-0.23	1.741	215.61	0.011	$SPLSR \leq 0.04$
	LTE Band 7	0.655	-0.04	-8.26	-0.33	1.517	156.47	0.012	$SPLSR \leq 0.04$
	LTE Band 12	0.595	-0.65	-6.49	-0.27	1.457	138.71	0.013	$SPLSR \leq 0.04$
	LTE Band 17	0.546	-0.65	-6.64	-2.69	1.408	142.19	0.012	$SPLSR \leq 0.04$
	LTE Band 26	0.857	-0.50	-14.20	-0.24	1.719	215.80	0.010	$SPLSR \leq 0.04$
	LTE Band 30	1.253	-0.74	-13.58	-0.30	2.115	209.61	0.015	$SPLSR \leq 0.04$
	LTE Band 66	0.855	-0.50	-8.83	-0.36	1.717	162.10	0.014	$SPLSR \leq 0.04$

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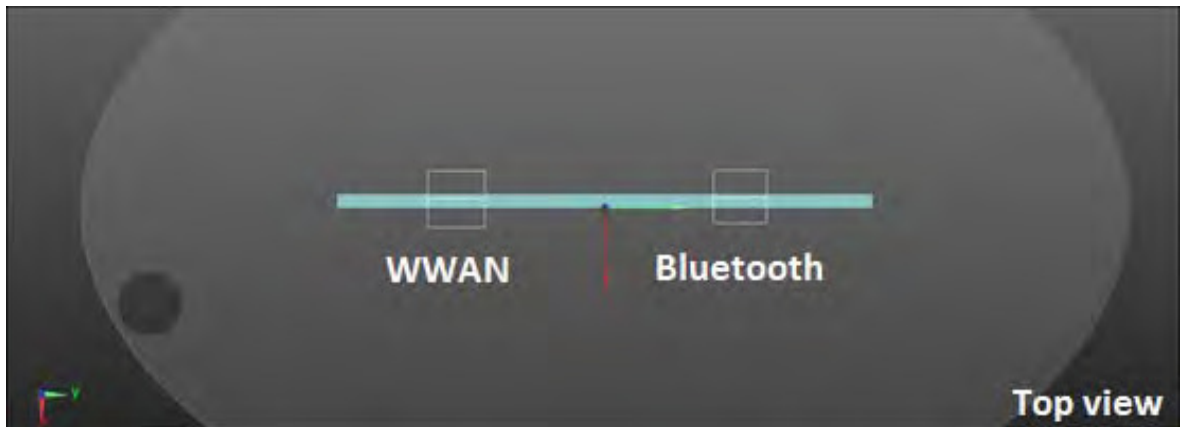
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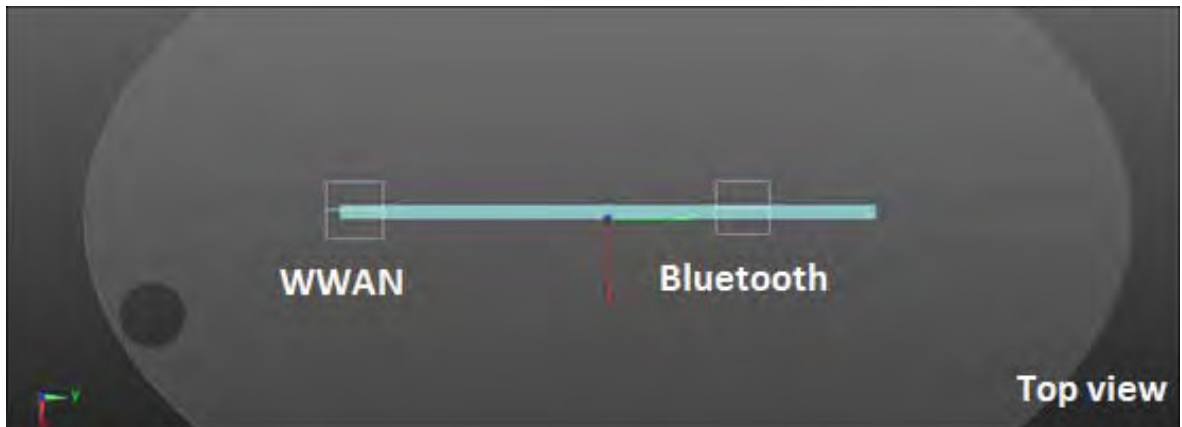
BT + WCDMA Band II



BT + WCDMA Band IV



BT + WCDMA Band V



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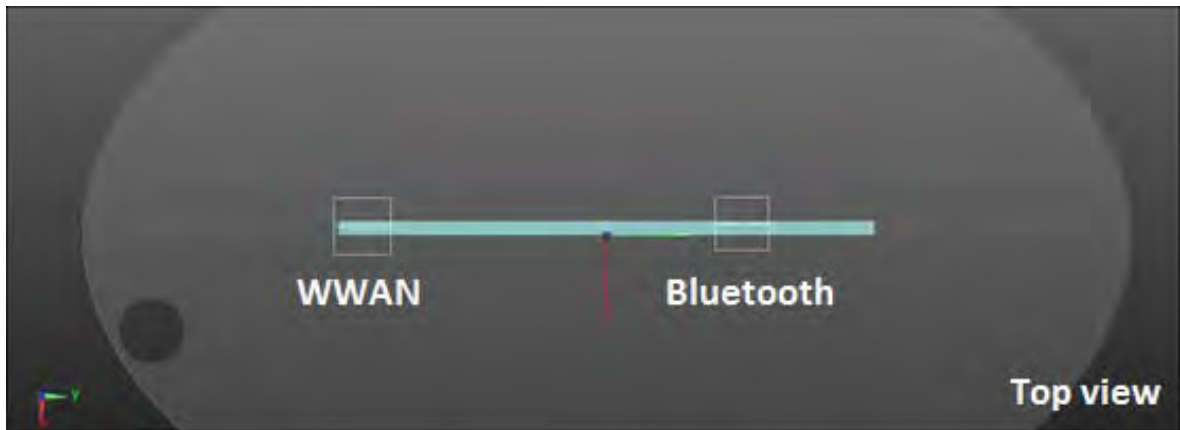
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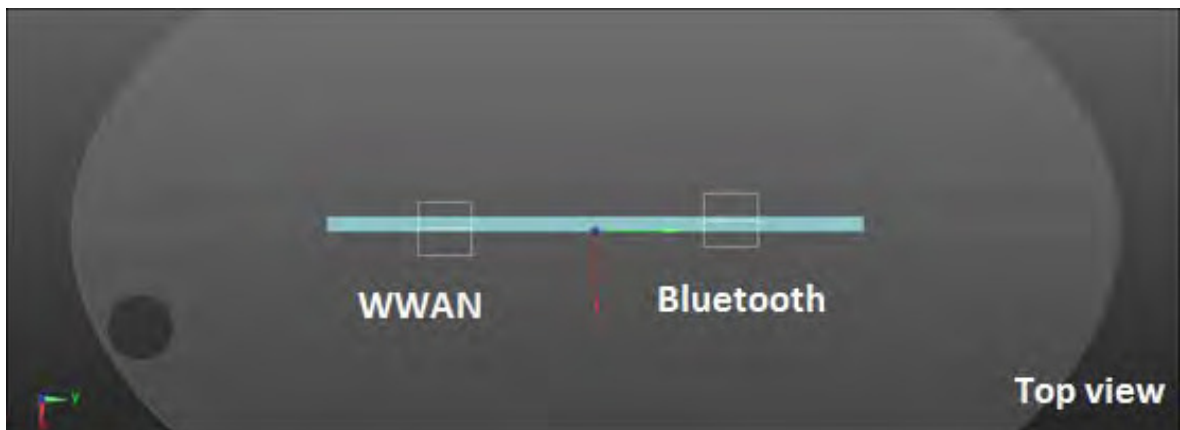
BT + LTE Band 4



BT + LTE Band 5



BT + LTE Band 7



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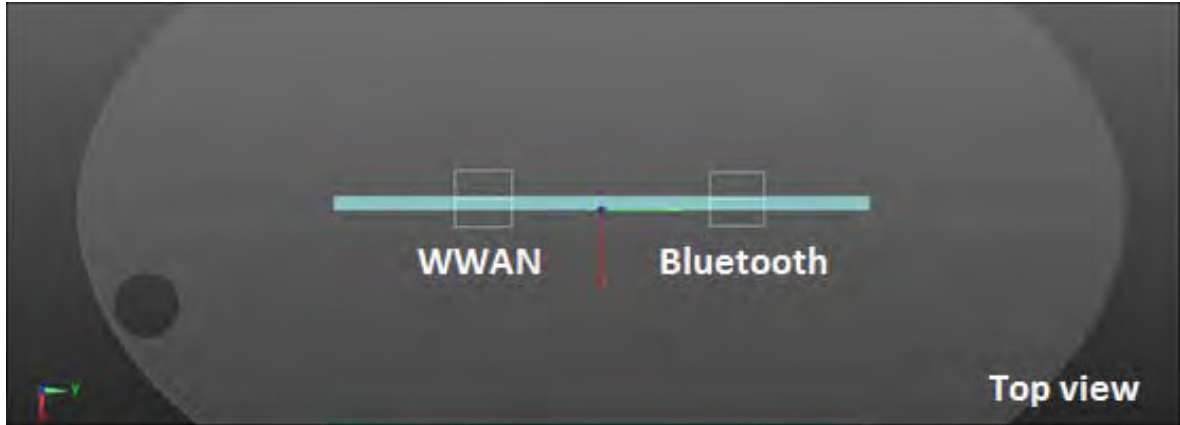
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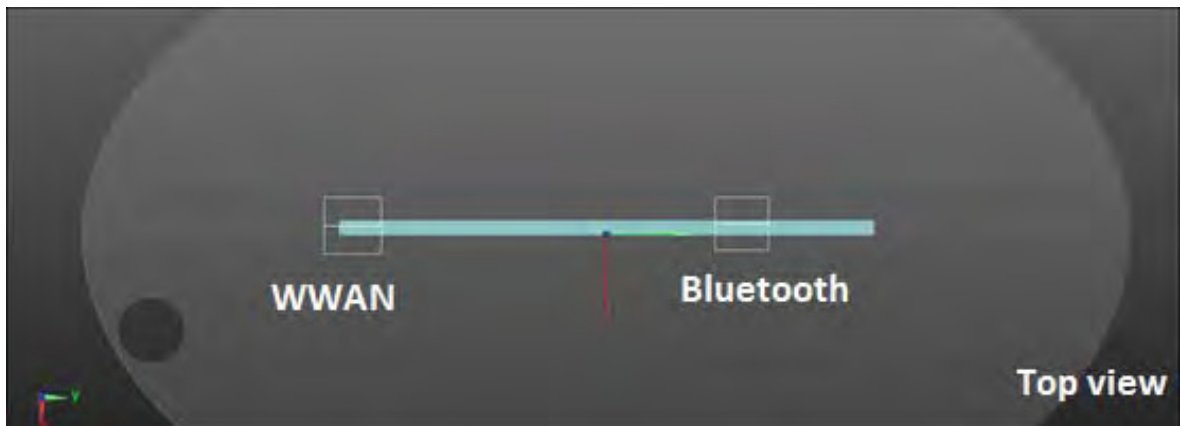
BT + LTE Band 12



BT + LTE Band 17



BT + LTE Band 26



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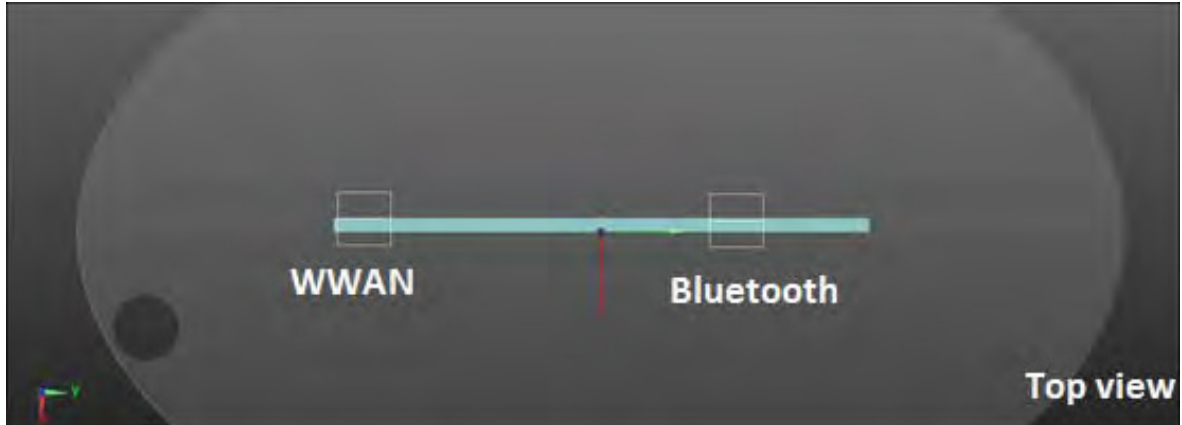
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BT + LTE Band 30



BT + LTE Band 66



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Top side WWAN + 5GHz WLAN MIMO

No.	Position	Conditions	Distance (mm)	Max. WWAN	Max. WLAN	Max. WLAN Aux	SAR Sum	SPLSR
7	Top side	WCDMA Band II	0	0.612	0.619	0.862	2.093	Analyzed as below
		WCDMA Band IV	0	0.907	0.619	0.862	2.388	Analyzed as below
		WCDMA Band V	0	0.630	0.619	0.862	2.111	Analyzed as below
		LTE Band 2	0	0.523	0.619	0.862	2.004	Analyzed as below
		LTE Band 4	0	0.879	0.619	0.862	2.360	Analyzed as below
		LTE Band 5	0	0.564	0.619	0.862	2.045	Analyzed as below
		LTE Band 7	0	0.655	0.619	0.862	2.136	Analyzed as below
		LTE Band 12	0	0.595	0.619	0.862	2.076	Analyzed as below
		LTE Band 13	0	0.478	0.619	0.862	1.959	Analyzed as below
		LTE Band 17	0	0.546	0.619	0.862	2.027	Analyzed as below
		LTE Band 25	0	0.350	0.619	0.862	1.831	Analyzed as below
		LTE Band 26	0	0.857	0.619	0.862	2.338	Analyzed as below
		LTE Band 30	0	1.253	0.619	0.862	2.734	Analyzed as below
		LTE Band 38	0	0.214	0.619	0.862	1.695	Analyzed as below
		LTE Band 41	0	0.200	0.619	0.862	1.681	Analyzed as below
		LTE Band 66	0	0.855	0.619	0.862	2.336	Analyzed as below

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Top side WWAN + 5GHz WLAN Main + BT

No.	Position	Conditions	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
8	Top side	WCDMA Band II	0	0.612	0.619	0.219	1.450	Σ SAR<1.6,
		WCDMA Band IV	0	0.907	0.619	0.219	1.745	Analyzed as below
		WCDMA Band V	0	0.630	0.619	0.219	1.468	Σ SAR<1.6,
		LTE Band 2	0	0.523	0.619	0.219	1.361	Σ SAR<1.6,
		LTE Band 4	0	0.879	0.619	0.219	1.717	Analyzed as below
		LTE Band 5	0	0.564	0.619	0.219	1.402	Σ SAR<1.6,
		LTE Band 7	0	0.655	0.619	0.219	1.493	Σ SAR<1.6,
		LTE Band 12	0	0.595	0.619	0.219	1.433	Σ SAR<1.6,
		LTE Band 13	0	0.478	0.619	0.219	1.316	Σ SAR<1.6,
		LTE Band 17	0	0.546	0.619	0.219	1.384	Σ SAR<1.6,
		LTE Band 25	0	0.350	0.619	0.219	1.188	Σ SAR<1.6,
		LTE Band 26	0	0.857	0.619	0.219	1.695	Analyzed as below
		LTE Band 30	0	1.253	0.619	0.219	2.091	Analyzed as below
		LTE Band 38	0	0.214	0.619	0.219	1.052	Σ SAR<1.6,
		LTE Band 41	0	0.200	0.619	0.219	1.038	Σ SAR<1.6,
		LTE Band 66	0	0.855	0.619	0.219	1.693	Analyzed as below

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SPLSR calculation between 5G WLAN Main and 5G WLAN Aux, BT, WWAN

Position	Conditions	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
Top side	WLAN Main	0.619	-0.68	14.12	-0.26	-	-	-	-
	WLAN Aux	0.862	-0.50	4.90	-0.27	1.481	92.22	0.020	$SPLSR \leq 0.04$
	BT	0.862	-0.52	7.38	-0.33	1.481	67.42	0.027	$SPLSR \leq 0.04$
	WCDMA Band II	0.612	-0.50	-8.68	-0.28	1.231	228.01	0.006	$SPLSR \leq 0.04$
	WCDMA Band IV	0.907	-0.34	-8.83	-0.28	1.526	229.53	0.008	$SPLSR \leq 0.04$
	WCDMA Band V	0.630	-0.66	-14.04	-0.32	1.249	281.60	0.005	$SPLSR \leq 0.04$
	LTE Band 2	0.523	-0.65	-8.20	-0.36	1.142	223.20	0.005	$SPLSR \leq 0.04$
	LTE Band 4	0.879	-0.50	-8.83	-0.36	1.498	229.51	0.008	$SPLSR \leq 0.04$
	LTE Band 5	0.564	-0.66	-14.18	-0.23	1.183	283.00	0.005	$SPLSR \leq 0.04$
	LTE Band 7	0.655	-0.04	-8.26	-0.33	1.274	223.89	0.006	$SPLSR \leq 0.04$
	LTE Band 12	0.595	-0.65	-6.49	-0.27	1.214	206.10	0.006	$SPLSR \leq 0.04$
	LTE Band 13	0.478	-0.66	-14.18	-2.28	1.097	283.72	0.004	$SPLSR \leq 0.04$
	LTE Band 17	0.546	-0.65	-6.64	-2.69	1.165	209.01	0.006	$SPLSR \leq 0.04$
	LTE Band 25	0.350	-0.65	-13.18	-0.34	0.969	273.00	0.003	$SPLSR \leq 0.04$
	LTE Band 26	0.857	-0.50	-14.20	-0.24	1.476	283.21	0.006	$SPLSR \leq 0.04$
	LTE Band 30	1.253	-0.74	-13.58	-0.30	1.872	277.00	0.009	$SPLSR \leq 0.04$
	LTE Band 38	0.214	-0.24	-7.72	-0.28	0.833	218.44	0.003	$SPLSR \leq 0.04$
	LTE Band 41	0.200	-0.24	-7.48	-0.17	0.819	216.05	0.003	$SPLSR \leq 0.04$
	LTE Band 66	0.855	-0.50	-8.83	-0.36	1.474	229.51	0.008	$SPLSR \leq 0.04$

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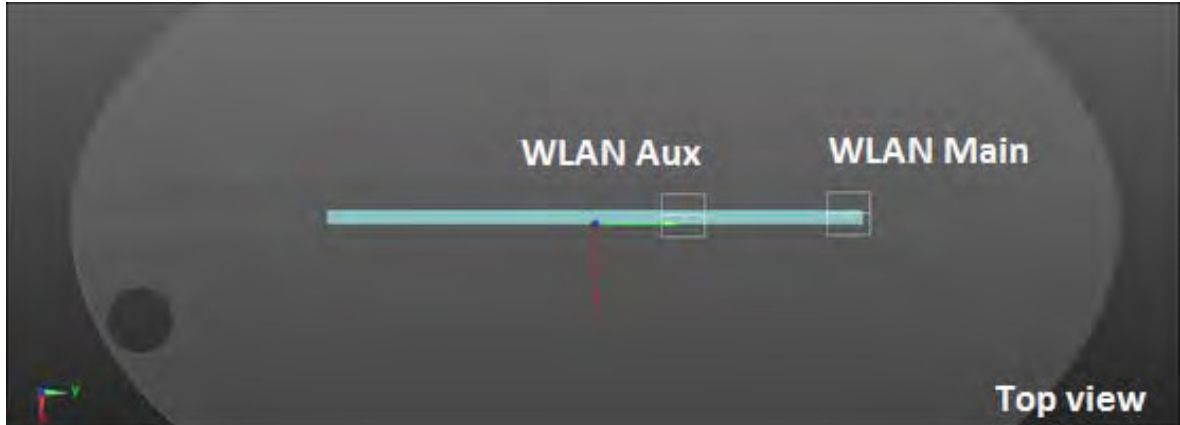
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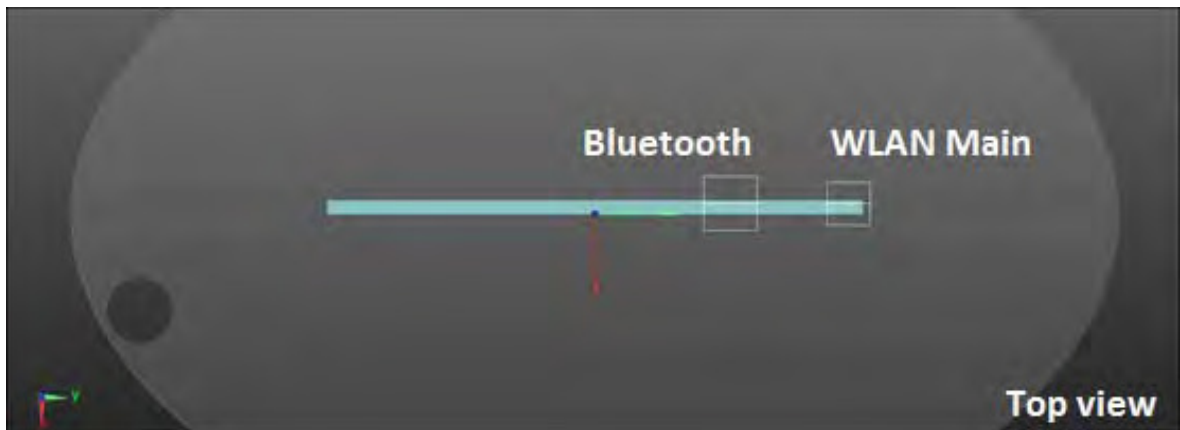
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5GHz WLAN MIMO



5GHz WLAN Main +BT



5GHz WLAN Main + WCDMA Band II



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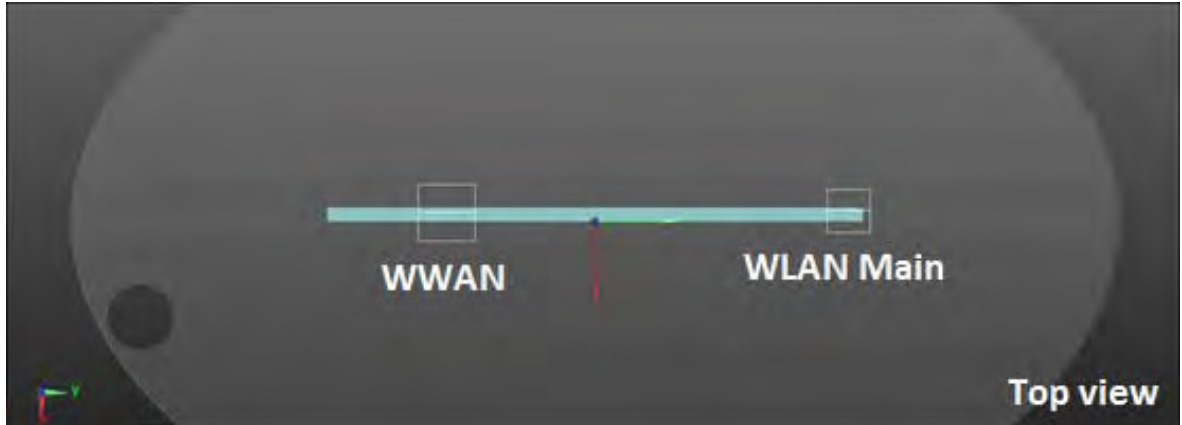
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5GHz WLAN Main + WCDMA Band IV



5GHz WLAN Main + WCDMA Band V



5GHz WLAN Main + LTE Band 2



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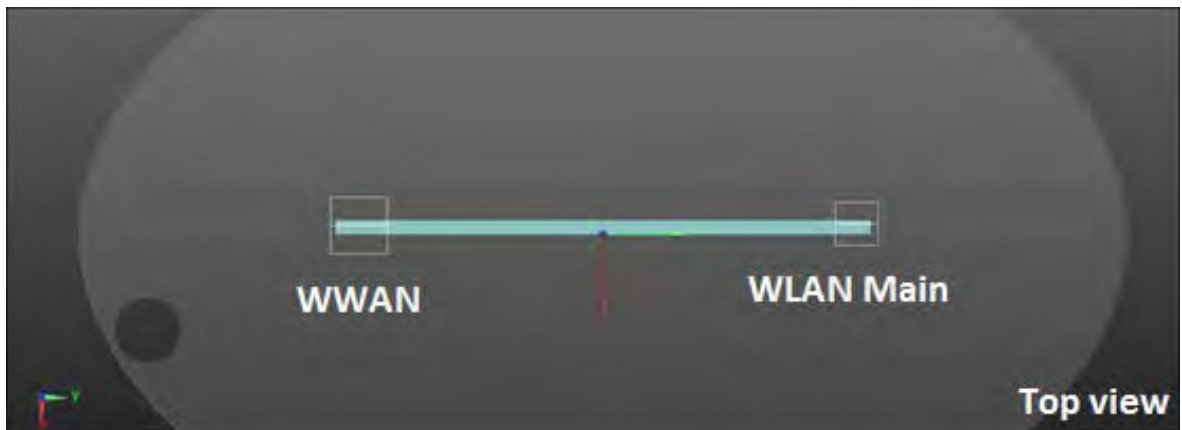
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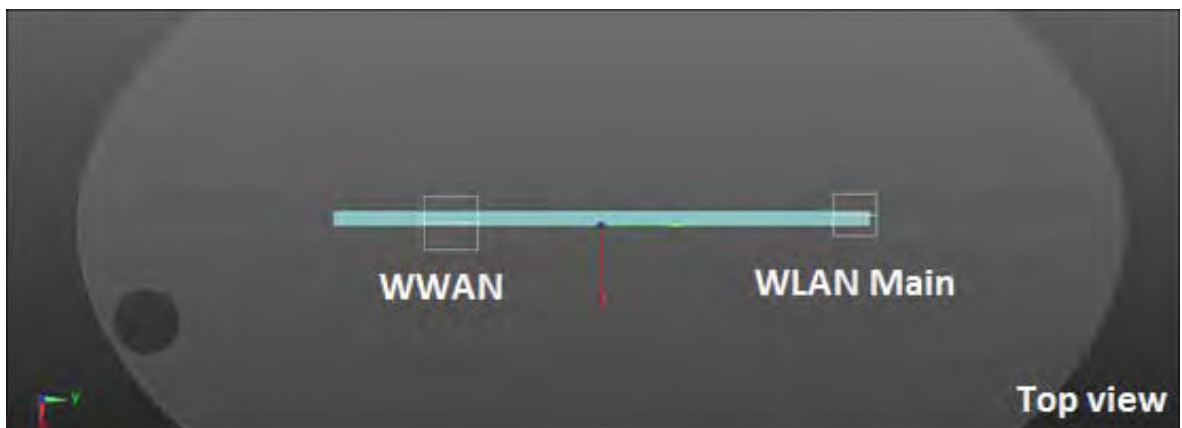
5GHz WLAN Main + LTE Band 4



5GHz WLAN Main + LTE Band 5



5GHz WLAN Main + LTE Band 7



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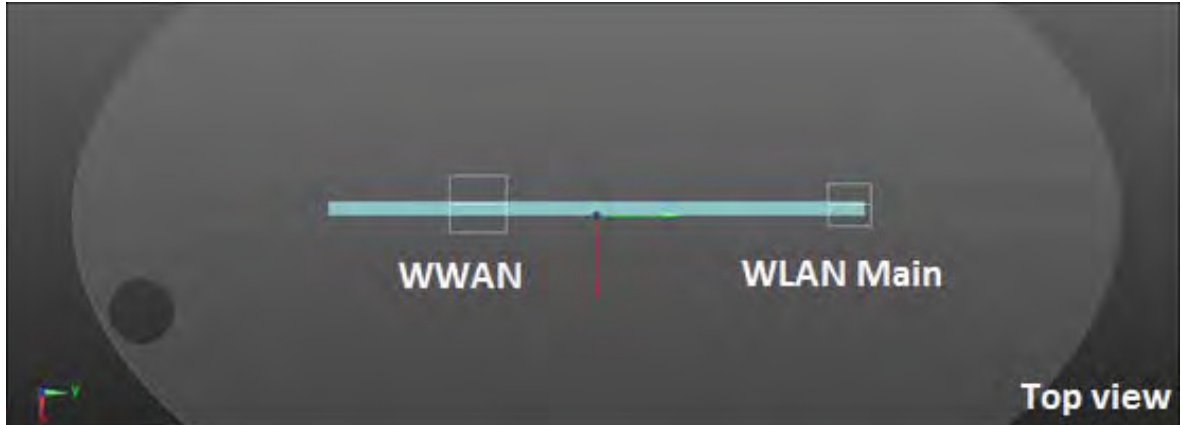
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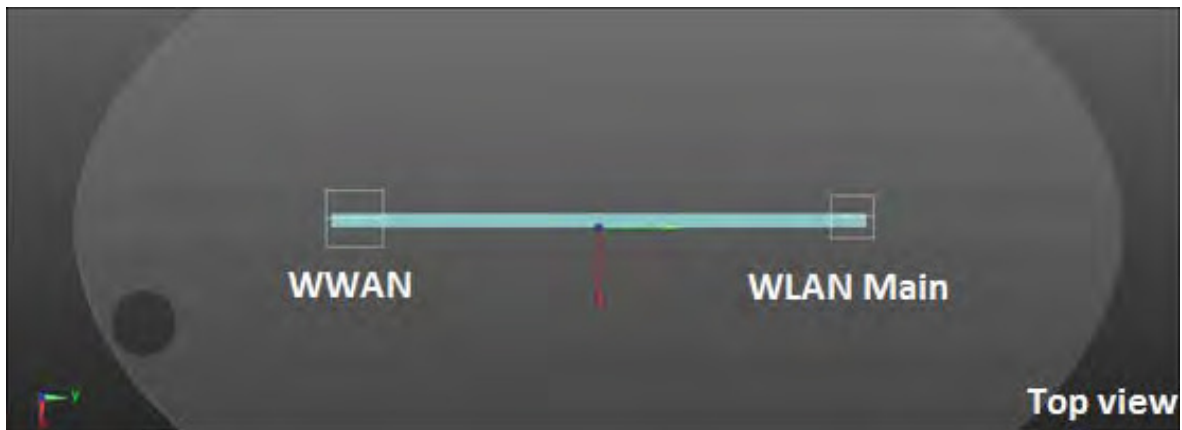
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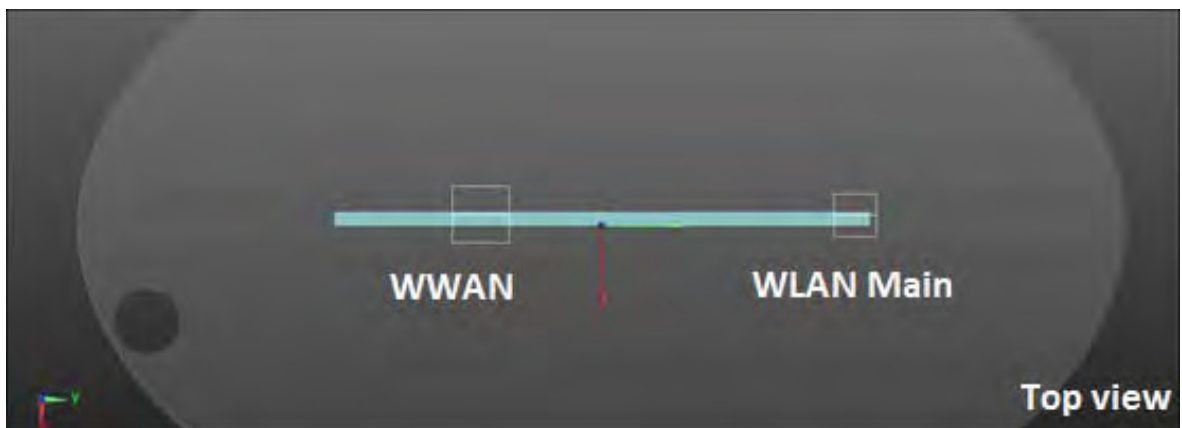
5GHz WLAN Main + LTE Band 12



5GHz WLAN Main + LTE Band 13



5GHz WLAN Main + LTE Band 17



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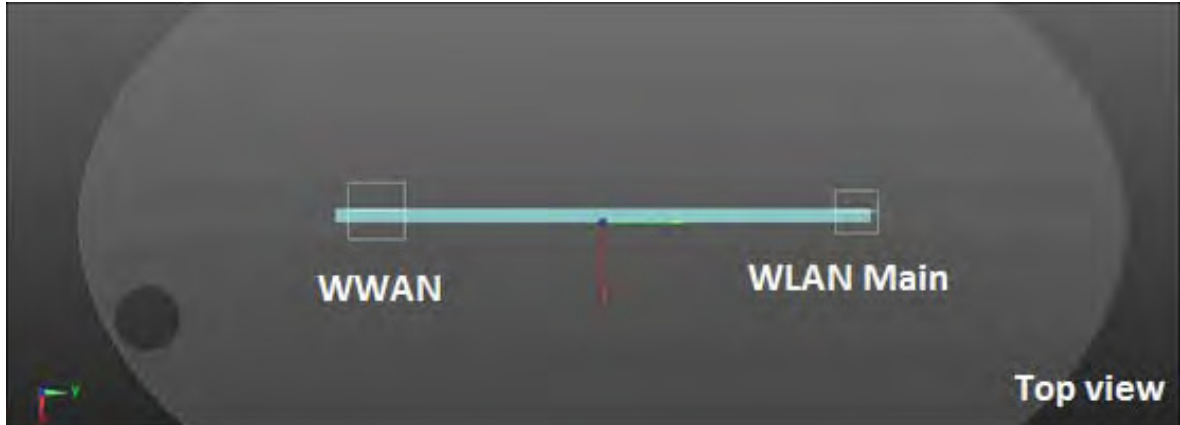
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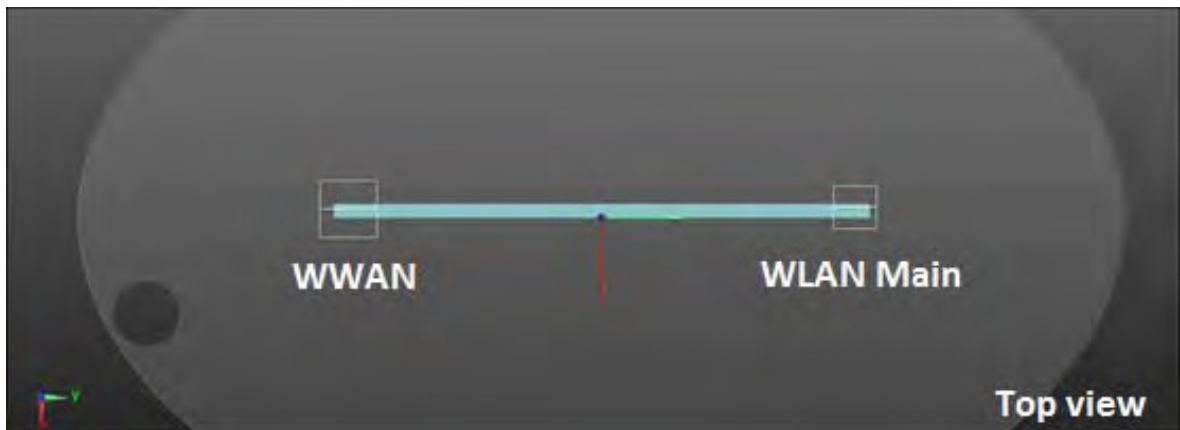
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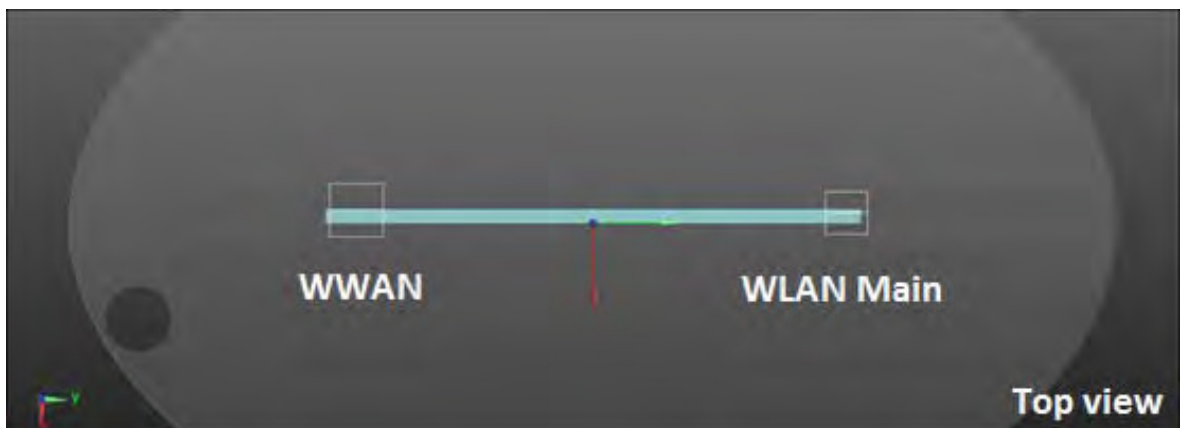
5GHz WLAN Main + LTE Band 25



5GHz WLAN Main + LTE Band 26



5GHz WLAN Main + LTE Band 30



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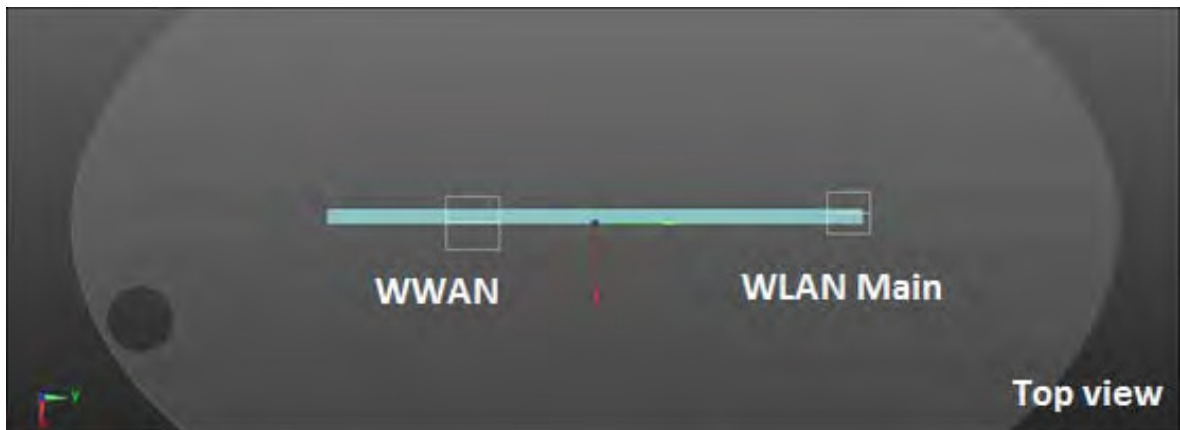
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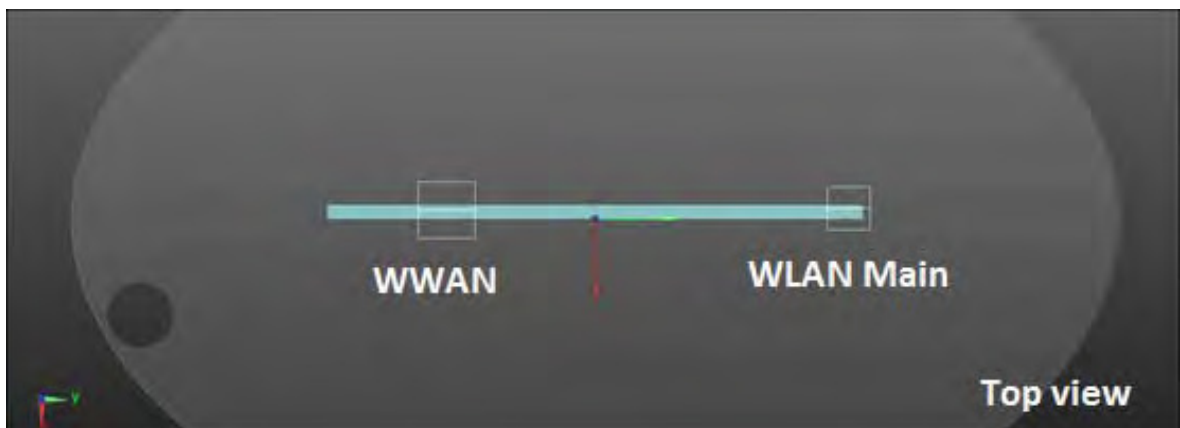
5GHz WLAN Main + LTE Band 38



5GHz WLAN Main + LTE Band 41



5GHz WLAN Main + LTE Band 66



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SPLSR calculation between 5G WLAN Aux and WWAN

Position	Conditions	SAR Value (W/kg)	Coordinates (cm)			Σ SAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
Top side	WLAN Aux	0.862	-0.50	4.90	-0.27	-	-	-	-
	WCDMA Band II	0.612	-0.50	-8.68	-0.28	1.474	135.80	0.013	$SPLSR \leq 0.04$
	WCDMA Band IV	0.907	-0.34	-8.83	-0.28	1.769	137.31	0.017	$SPLSR \leq 0.04$
	WCDMA Band V	0.630	-0.66	-14.04	-0.32	1.492	189.41	0.010	$SPLSR \leq 0.04$
	LTE Band 2	0.523	-0.65	-8.20	-0.36	1.385	131.01	0.012	$SPLSR \leq 0.04$
	LTE Band 4	0.879	-0.50	-8.83	-0.36	1.741	137.30	0.017	$SPLSR \leq 0.04$
	LTE Band 5	0.564	-0.66	-14.18	-0.23	1.426	190.81	0.009	$SPLSR \leq 0.04$
	LTE Band 7	0.655	-0.04	-8.26	-0.33	1.517	131.68	0.014	$SPLSR \leq 0.04$
	LTE Band 12	0.595	-0.65	-6.49	-0.27	1.457	113.91	0.015	$SPLSR \leq 0.04$
	LTE Band 13	0.478	-0.66	-14.18	-2.28	1.340	191.87	0.008	$SPLSR \leq 0.04$
	LTE Band 17	0.546	-0.65	-6.64	-2.69	1.408	117.93	0.014	$SPLSR \leq 0.04$
	LTE Band 25	0.350	-0.65	-13.18	-0.34	1.212	180.81	0.007	$SPLSR \leq 0.04$
	LTE Band 26	0.857	-0.50	-14.20	-0.24	1.719	191.00	0.012	$SPLSR \leq 0.04$
	LTE Band 30	1.253	-0.74	-13.58	-0.30	2.115	184.82	0.017	$SPLSR \leq 0.04$
	LTE Band 38	0.214	-0.24	-7.72	-0.28	1.076	126.23	0.009	$SPLSR \leq 0.04$
	LTE Band 41	0.200	-0.24	-7.48	-0.17	1.062	123.83	0.009	$SPLSR \leq 0.04$
	LTE Band 66	0.855	-0.50	-8.83	-0.36	1.717	137.30	0.016	$SPLSR \leq 0.04$

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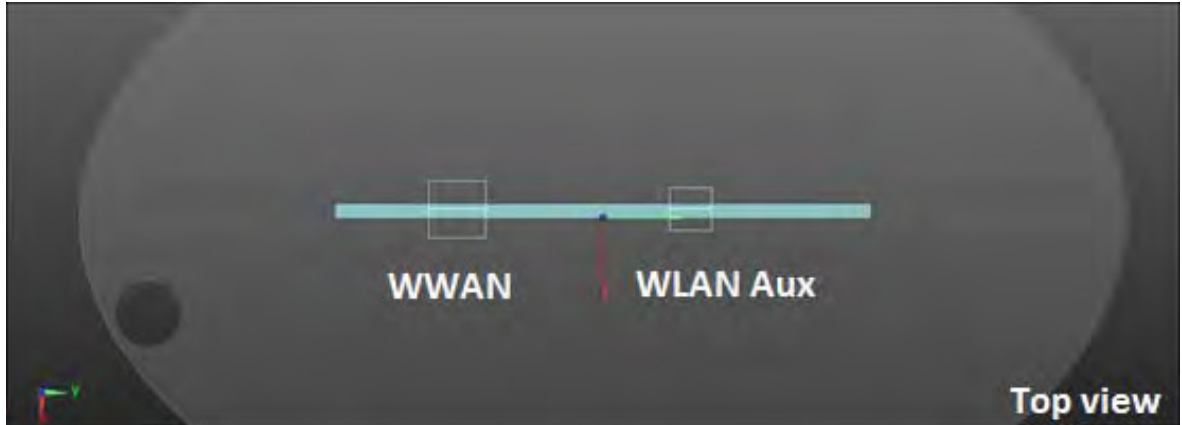
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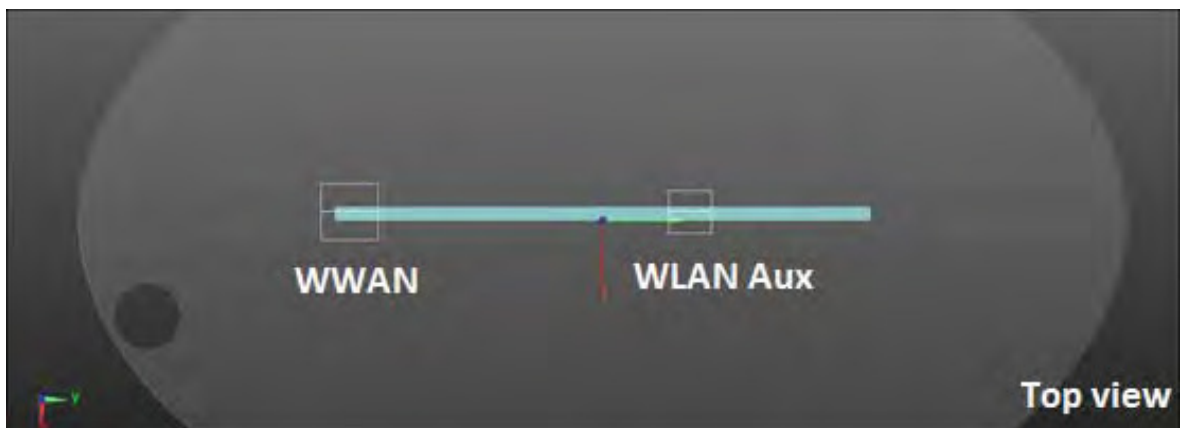
5GHz WLAN Aux + WCDMA Band II



5GHz WLAN Aux + WCDMA Band IV



5GHz WLAN Aux + WCDMA Band V



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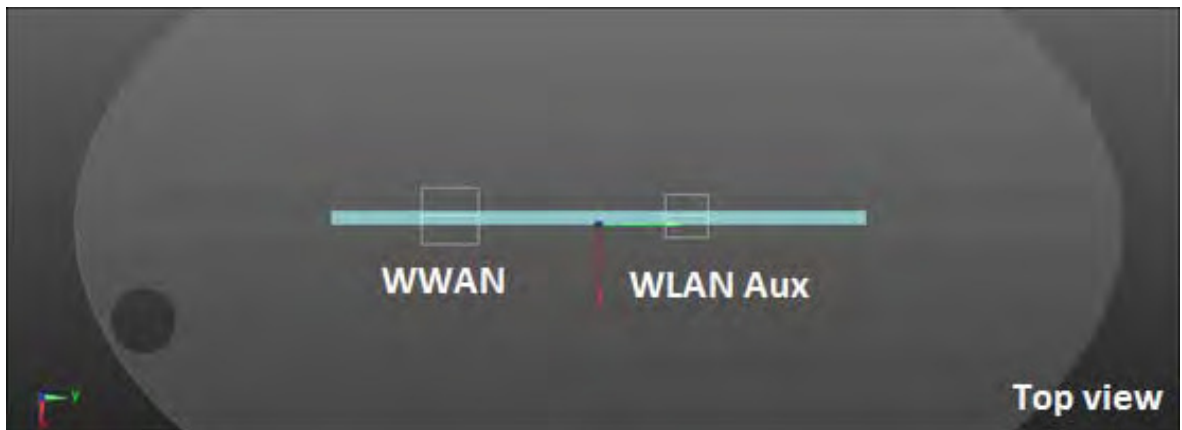
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5GHz WLAN Aux + LTE Band 2



5GHz WLAN Aux + LTE Band 4



5GHz WLAN Aux + LTE Band 5



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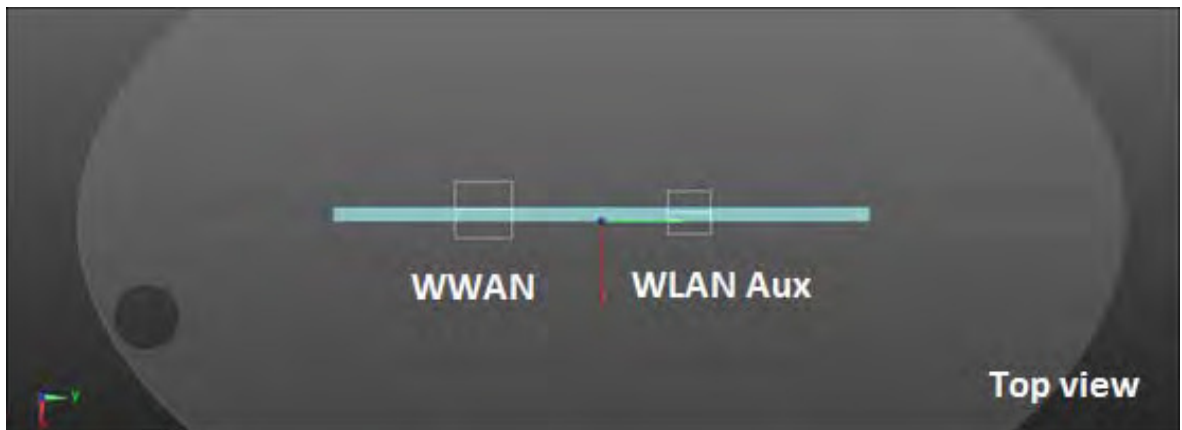
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5GHz WLAN Aux + LTE Band 7



5GHz WLAN Aux + LTE Band 12



5GHz WLAN Aux + LTE Band 13



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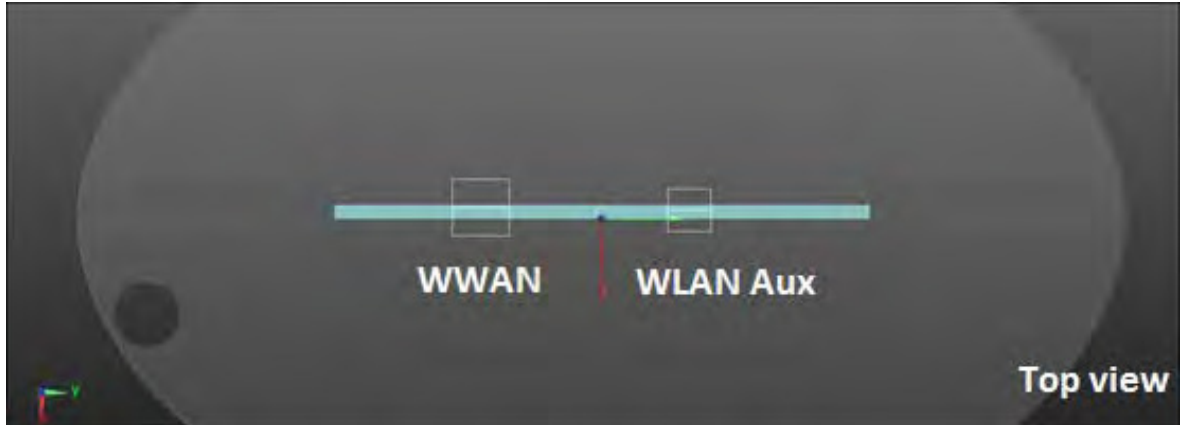
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5GHz WLAN Aux + LTE Band 17



5GHz WLAN Aux + LTE Band 25



5GHz WLAN Aux + LTE Band 26



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5GHz WLAN Aux + LTE Band 30



5GHz WLAN Aux + LTE Band 38



5GHz WLAN Aux + LTE Band 41



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5GHz WLAN Aux + LTE Band 66



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Bottom side WWAN + 2.4GHz WLAN MIMO

No.	Position	Conditions	Distance (mm)	Max. WWAN	Max. WLAN	Max. WLAN Aux	SAR Sum	SPLSR
9	Bottom side	WCDMA Band II	0	0.003	0.000	0.001	0.004	Σ SAR<1.6,
		WCDMA Band IV	0	0.003	0.000	0.001	0.004	Σ SAR<1.6,
		WCDMA Band V	0	0.041	0.000	0.001	0.042	Σ SAR<1.6,
		LTE Band 2	0	0.001	0.000	0.001	0.002	Σ SAR<1.6,
		LTE Band 4	0	0.001	0.000	0.001	0.002	Σ SAR<1.6,
		LTE Band 5	0	0.038	0.000	0.001	0.039	Σ SAR<1.6,
		LTE Band 7	0	0.008	0.000	0.001	0.009	Σ SAR<1.6,
		LTE Band 12	0	0.058	0.000	0.001	0.059	Σ SAR<1.6,
		LTE Band 13	0	0.044	0.000	0.001	0.045	Σ SAR<1.6,
		LTE Band 17	0	0.045	0.000	0.001	0.046	Σ SAR<1.6,
		LTE Band 25	0	0.001	0.000	0.001	0.002	Σ SAR<1.6,
		LTE Band 26	0	0.036	0.000	0.001	0.037	Σ SAR<1.6,
		LTE Band 30	0	0.022	0.000	0.001	0.023	Σ SAR<1.6,
		LTE Band 38	0	0.000	0.000	0.001	0.001	Σ SAR<1.6,
		LTE Band 41	0	0.005	0.000	0.001	0.006	Σ SAR<1.6,
		LTE Band 66	0	0.001	0.000	0.001	0.002	Σ SAR<1.6,

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Bottom side WWAN + 2.4GHz WLAN Main + BT

No.	Position	Conditions	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
10	Bottom side	WCDMA Band II	0	0.003	0.000	0.001	0.004	Σ SAR<1.6,
		WCDMA Band IV	0	0.003	0.000	0.001	0.004	Σ SAR<1.6,
		WCDMA Band V	0	0.041	0.000	0.001	0.042	Σ SAR<1.6,
		LTE Band 2	0	0.001	0.000	0.001	0.002	Σ SAR<1.6,
		LTE Band 4	0	0.001	0.000	0.001	0.002	Σ SAR<1.6,
		LTE Band 5	0	0.038	0.000	0.001	0.039	Σ SAR<1.6,
		LTE Band 7	0	0.008	0.000	0.001	0.009	Σ SAR<1.6,
		LTE Band 12	0	0.058	0.000	0.001	0.059	Σ SAR<1.6,
		LTE Band 13	0	0.044	0.000	0.001	0.045	Σ SAR<1.6,
		LTE Band 17	0	0.045	0.000	0.001	0.046	Σ SAR<1.6,
		LTE Band 25	0	0.001	0.000	0.001	0.002	Σ SAR<1.6,
		LTE Band 26	0	0.036	0.000	0.001	0.037	Σ SAR<1.6,
		LTE Band 30	0	0.022	0.000	0.001	0.023	Σ SAR<1.6,
		LTE Band 38	0	0.000	0.000	0.001	0.001	Σ SAR<1.6,
		LTE Band 41	0	0.005	0.000	0.001	0.006	Σ SAR<1.6,
		LTE Band 66	0	0.001	0.000	0.001	0.002	Σ SAR<1.6,

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Bottom side WWAN + 5GHz WLAN MIMO

No.	Position	Conditions	Distance (mm)	Max. WWAN	Max. WLAN	Max. WLAN Aux	SAR Sum	SPLSR
11	Bottom side	WCDMA Band II	0	0.003	0.015	0.013	0.031	Σ SAR<1.6,
		WCDMA Band IV	0	0.003	0.015	0.013	0.031	Σ SAR<1.6,
		WCDMA Band V	0	0.041	0.015	0.013	0.069	Σ SAR<1.6,
		LTE Band 2	0	0.001	0.015	0.013	0.029	Σ SAR<1.6,
		LTE Band 4	0	0.001	0.015	0.013	0.029	Σ SAR<1.6,
		LTE Band 5	0	0.038	0.015	0.013	0.066	Σ SAR<1.6,
		LTE Band 7	0	0.008	0.015	0.013	0.036	Σ SAR<1.6,
		LTE Band 12	0	0.058	0.015	0.013	0.086	Σ SAR<1.6,
		LTE Band 13	0	0.044	0.015	0.013	0.072	Σ SAR<1.6,
		LTE Band 17	0	0.045	0.015	0.013	0.073	Σ SAR<1.6,
		LTE Band 25	0	0.001	0.015	0.013	0.029	Σ SAR<1.6,
		LTE Band 26	0	0.036	0.015	0.013	0.064	Σ SAR<1.6,
		LTE Band 30	0	0.022	0.015	0.013	0.050	Σ SAR<1.6,
		LTE Band 38	0	0.000	0.015	0.013	0.028	Σ SAR<1.6,
		LTE Band 41	0	0.005	0.015	0.013	0.033	Σ SAR<1.6,
		LTE Band 66	0	0.001	0.015	0.013	0.029	Σ SAR<1.6,

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Bottom side WWAN + 5GHz WLAN Main + BT

No.	Position	Conditions	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
12	Bottom side	WCDMA Band II	0	0.003	0.015	0.001	0.019	Σ SAR<1.6,
		WCDMA Band IV	0	0.003	0.015	0.001	0.019	Σ SAR<1.6,
		WCDMA Band V	0	0.041	0.015	0.001	0.057	Σ SAR<1.6,
		LTE Band 2	0	0.001	0.015	0.001	0.017	Σ SAR<1.6,
		LTE Band 4	0	0.001	0.015	0.001	0.017	Σ SAR<1.6,
		LTE Band 5	0	0.038	0.015	0.001	0.054	Σ SAR<1.6,
		LTE Band 7	0	0.008	0.015	0.001	0.024	Σ SAR<1.6,
		LTE Band 12	0	0.058	0.015	0.001	0.074	Σ SAR<1.6,
		LTE Band 13	0	0.044	0.015	0.001	0.060	Σ SAR<1.6,
		LTE Band 17	0	0.045	0.015	0.001	0.061	Σ SAR<1.6,
		LTE Band 25	0	0.001	0.015	0.001	0.017	Σ SAR<1.6,
		LTE Band 26	0	0.036	0.015	0.001	0.052	Σ SAR<1.6,
		LTE Band 30	0	0.022	0.015	0.001	0.038	Σ SAR<1.6,
		LTE Band 38	0	0.000	0.015	0.001	0.016	Σ SAR<1.6,
		LTE Band 41	0	0.005	0.015	0.001	0.021	Σ SAR<1.6,
		LTE Band 66	0	0.001	0.015	0.001	0.017	Σ SAR<1.6,

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Right side WWAN + 2.4GHz WLAN MIMO

No.	Position	Conditions	Distance (mm)	Max. WWAN	Max. WLAN	Max. WLAN Aux	SAR Sum	SPLSR
13	Right side	WCDMA Band II	0	0.001	0.126	0.026	0.153	Σ SAR<1.6,
		WCDMA Band IV	0	0.001	0.126	0.026	0.153	Σ SAR<1.6,
		WCDMA Band V	0	0.003	0.126	0.026	0.155	Σ SAR<1.6,
		LTE Band 2	0	0.001	0.126	0.026	0.153	Σ SAR<1.6,
		LTE Band 4	0	0.000	0.126	0.026	0.152	Σ SAR<1.6,
		LTE Band 5	0	0.004	0.126	0.026	0.156	Σ SAR<1.6,
		LTE Band 7	0	0.001	0.126	0.026	0.153	Σ SAR<1.6,
		LTE Band 12	0	0.005	0.126	0.026	0.157	Σ SAR<1.6,
		LTE Band 13	0	0.040	0.126	0.026	0.192	Σ SAR<1.6,
		LTE Band 17	0	0.005	0.126	0.026	0.157	Σ SAR<1.6,
		LTE Band 25	0	0.001	0.126	0.026	0.153	Σ SAR<1.6,
		LTE Band 26	0	0.003	0.126	0.026	0.155	Σ SAR<1.6,
		LTE Band 30	0	0.005	0.126	0.026	0.157	Σ SAR<1.6,
		LTE Band 38	0	0.000	0.126	0.026	0.152	Σ SAR<1.6,
		LTE Band 41	0	0.001	0.126	0.026	0.153	Σ SAR<1.6,
		LTE Band 66	0	0.000	0.126	0.026	0.152	Σ SAR<1.6,

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台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

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Right side WWAN + 2.4GHz WLAN Main + BT

No.	Position	Conditions	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
14	Right side	WCDMA Band II	0	0.001	0.126	0.001	0.128	Σ SAR<1.6,
		WCDMA Band IV	0	0.001	0.126	0.001	0.128	Σ SAR<1.6,
		WCDMA Band V	0	0.003	0.126	0.001	0.130	Σ SAR<1.6,
		LTE Band 2	0	0.001	0.126	0.001	0.128	Σ SAR<1.6,
		LTE Band 4	0	0.000	0.126	0.001	0.127	Σ SAR<1.6,
		LTE Band 5	0	0.004	0.126	0.001	0.131	Σ SAR<1.6,
		LTE Band 7	0	0.001	0.126	0.001	0.128	Σ SAR<1.6,
		LTE Band 12	0	0.005	0.126	0.001	0.132	Σ SAR<1.6,
		LTE Band 13	0	0.040	0.126	0.001	0.167	Σ SAR<1.6,
		LTE Band 17	0	0.005	0.126	0.001	0.132	Σ SAR<1.6,
		LTE Band 25	0	0.001	0.126	0.001	0.128	Σ SAR<1.6,
		LTE Band 26	0	0.003	0.126	0.001	0.130	Σ SAR<1.6,
		LTE Band 30	0	0.005	0.126	0.001	0.132	Σ SAR<1.6,
		LTE Band 38	0	0.000	0.126	0.001	0.127	Σ SAR<1.6,
		LTE Band 41	0	0.001	0.126	0.001	0.128	Σ SAR<1.6,
		LTE Band 66	0	0.000	0.126	0.001	0.127	Σ SAR<1.6,

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台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

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Right side WWAN + 5GHz WLAN MIMO

No.	Position	Conditions	Distance (mm)	Max. WWAN	Max. WLAN	Max. WLAN Aux	SAR Sum	SPLSR
15	Right side	WCDMA Band II	0	0.001	0.082	0.057	0.140	Σ SAR<1.6,
		WCDMA Band IV	0	0.001	0.082	0.057	0.140	Σ SAR<1.6,
		WCDMA Band V	0	0.003	0.082	0.057	0.142	Σ SAR<1.6,
		LTE Band 2	0	0.001	0.082	0.057	0.140	Σ SAR<1.6,
		LTE Band 4	0	0.000	0.082	0.057	0.139	Σ SAR<1.6,
		LTE Band 5	0	0.004	0.082	0.057	0.143	Σ SAR<1.6,
		LTE Band 7	0	0.001	0.082	0.057	0.140	Σ SAR<1.6,
		LTE Band 12	0	0.005	0.082	0.057	0.144	Σ SAR<1.6,
		LTE Band 13	0	0.040	0.082	0.057	0.179	Σ SAR<1.6,
		LTE Band 17	0	0.005	0.082	0.057	0.144	Σ SAR<1.6,
		LTE Band 25	0	0.001	0.082	0.057	0.140	Σ SAR<1.6,
		LTE Band 26	0	0.003	0.082	0.057	0.142	Σ SAR<1.6,
		LTE Band 30	0	0.005	0.082	0.057	0.144	Σ SAR<1.6,
		LTE Band 38	0	0.000	0.082	0.057	0.139	Σ SAR<1.6,
		LTE Band 41	0	0.001	0.082	0.057	0.140	Σ SAR<1.6,
		LTE Band 66	0	0.000	0.082	0.057	0.139	Σ SAR<1.6,

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台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

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Right side WWAN + 5GHz WLAN Main + BT

No.	Position	Conditions	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
16	Right side	WCDMA Band II	0	0.001	0.082	0.001	0.084	Σ SAR<1.6,
		WCDMA Band IV	0	0.001	0.082	0.001	0.084	Σ SAR<1.6,
		WCDMA Band V	0	0.003	0.082	0.001	0.086	Σ SAR<1.6,
		LTE Band 2	0	0.001	0.082	0.001	0.084	Σ SAR<1.6,
		LTE Band 4	0	0.000	0.082	0.001	0.083	Σ SAR<1.6,
		LTE Band 5	0	0.004	0.082	0.001	0.087	Σ SAR<1.6,
		LTE Band 7	0	0.001	0.082	0.001	0.084	Σ SAR<1.6,
		LTE Band 12	0	0.005	0.082	0.001	0.088	Σ SAR<1.6,
		LTE Band 13	0	0.040	0.082	0.001	0.123	Σ SAR<1.6,
		LTE Band 17	0	0.005	0.082	0.001	0.088	Σ SAR<1.6,
		LTE Band 25	0	0.001	0.082	0.001	0.084	Σ SAR<1.6,
		LTE Band 26	0	0.003	0.082	0.001	0.086	Σ SAR<1.6,
		LTE Band 30	0	0.005	0.082	0.001	0.088	Σ SAR<1.6,
		LTE Band 38	0	0.000	0.082	0.001	0.083	Σ SAR<1.6,
		LTE Band 41	0	0.001	0.082	0.001	0.084	Σ SAR<1.6,
		LTE Band 66	0	0.000	0.082	0.001	0.083	Σ SAR<1.6,

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f (886 2) 2298 0488

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Left side WWAN + 2.4GHz WLAN MIMO

No.	Position	Conditions	Distance (mm)	Max. WWAN	Max. WLAN	Max. WLAN Aux	SAR Sum	SPLSR
17	Left side	WCDMA Band II	0	0.577	0.007	0.002	0.586	Σ SAR<1.6,
		WCDMA Band IV	0	0.492	0.007	0.002	0.501	Σ SAR<1.6,
		WCDMA Band V	0	0.268	0.007	0.002	0.277	Σ SAR<1.6,
		LTE Band 2	0	0.599	0.007	0.002	0.608	Σ SAR<1.6,
		LTE Band 4	0	0.497	0.007	0.002	0.506	Σ SAR<1.6,
		LTE Band 5	0	0.254	0.007	0.002	0.263	Σ SAR<1.6,
		LTE Band 7	0	0.079	0.007	0.002	0.088	Σ SAR<1.6,
		LTE Band 12	0	0.183	0.007	0.002	0.192	Σ SAR<1.6,
		LTE Band 13	0	0.312	0.007	0.002	0.321	Σ SAR<1.6,
		LTE Band 17	0	0.202	0.007	0.002	0.211	Σ SAR<1.6,
		LTE Band 25	0	0.419	0.007	0.002	0.428	Σ SAR<1.6,
		LTE Band 26	0	0.248	0.007	0.002	0.257	Σ SAR<1.6,
		LTE Band 30	0	0.810	0.007	0.002	0.819	Σ SAR<1.6,
		LTE Band 38	0	0.000	0.007	0.002	0.009	Σ SAR<1.6,
		LTE Band 41	0	0.019	0.007	0.002	0.028	Σ SAR<1.6,
		LTE Band 66	0	0.410	0.007	0.002	0.419	Σ SAR<1.6,

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Left side WWAN + 2.4GHz WLAN Main + BT

No.	Position	Conditions	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
18	Left side	WCDMA Band II	0	0.577	0.007	0.001	0.585	Σ SAR<1.6,
		WCDMA Band IV	0	0.492	0.007	0.001	0.500	Σ SAR<1.6,
		WCDMA Band V	0	0.268	0.007	0.001	0.276	Σ SAR<1.6,
		LTE Band 2	0	0.599	0.007	0.001	0.607	Σ SAR<1.6,
		LTE Band 4	0	0.497	0.007	0.001	0.505	Σ SAR<1.6,
		LTE Band 5	0	0.254	0.007	0.001	0.262	Σ SAR<1.6,
		LTE Band 7	0	0.079	0.007	0.001	0.087	Σ SAR<1.6,
		LTE Band 12	0	0.183	0.007	0.001	0.191	Σ SAR<1.6,
		LTE Band 13	0	0.312	0.007	0.001	0.320	Σ SAR<1.6,
		LTE Band 17	0	0.202	0.007	0.001	0.210	Σ SAR<1.6,
		LTE Band 25	0	0.419	0.007	0.001	0.427	Σ SAR<1.6,
		LTE Band 26	0	0.248	0.007	0.001	0.256	Σ SAR<1.6,
		LTE Band 30	0	0.810	0.007	0.001	0.818	Σ SAR<1.6,
		LTE Band 38	0	0.000	0.007	0.001	0.008	Σ SAR<1.6,
		LTE Band 41	0	0.019	0.007	0.001	0.027	Σ SAR<1.6,
		LTE Band 66	0	0.410	0.007	0.001	0.418	Σ SAR<1.6,

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f (886 2) 2298 0488

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Left side WWAN + 5GHz WLAN MIMO

No.	Position	Conditions	Distance (mm)	Max. WWAN	Max. WLAN	Max. WLAN Aux	SAR Sum	SPLSR
19	Left side	WCDMA Band II	0	0.577	0.006	0.017	0.600	Σ SAR<1.6,
		WCDMA Band IV	0	0.492	0.006	0.017	0.515	Σ SAR<1.6,
		WCDMA Band V	0	0.268	0.006	0.017	0.291	Σ SAR<1.6,
		LTE Band 2	0	0.599	0.006	0.017	0.622	Σ SAR<1.6,
		LTE Band 4	0	0.497	0.006	0.017	0.520	Σ SAR<1.6,
		LTE Band 5	0	0.254	0.006	0.017	0.277	Σ SAR<1.6,
		LTE Band 7	0	0.079	0.006	0.017	0.102	Σ SAR<1.6,
		LTE Band 12	0	0.183	0.006	0.017	0.206	Σ SAR<1.6,
		LTE Band 13	0	0.312	0.006	0.017	0.335	Σ SAR<1.6,
		LTE Band 17	0	0.202	0.006	0.017	0.225	Σ SAR<1.6,
		LTE Band 25	0	0.419	0.006	0.017	0.442	Σ SAR<1.6,
		LTE Band 26	0	0.248	0.006	0.017	0.271	Σ SAR<1.6,
		LTE Band 30	0	0.810	0.006	0.017	0.833	Σ SAR<1.6,
		LTE Band 38	0	0.000	0.006	0.017	0.023	Σ SAR<1.6,
		LTE Band 41	0	0.019	0.006	0.017	0.042	Σ SAR<1.6,
		LTE Band 66	0	0.410	0.006	0.017	0.433	Σ SAR<1.6,

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Left side WWAN + 5GHz WLAN Main + BT

No.	Position	Conditions	Distance (mm)	Max. WWAN	Max. WLAN Main	BT	SAR Sum	SPLSR
20	Left side	WCDMA Band II	0	0.577	0.006	0.001	0.584	Σ SAR<1.6,
		WCDMA Band IV	0	0.492	0.006	0.001	0.499	Σ SAR<1.6,
		WCDMA Band V	0	0.268	0.006	0.001	0.275	Σ SAR<1.6,
		LTE Band 2	0	0.599	0.006	0.001	0.606	Σ SAR<1.6,
		LTE Band 4	0	0.497	0.006	0.001	0.504	Σ SAR<1.6,
		LTE Band 5	0	0.254	0.006	0.001	0.261	Σ SAR<1.6,
		LTE Band 7	0	0.079	0.006	0.001	0.086	Σ SAR<1.6,
		LTE Band 12	0	0.183	0.006	0.001	0.190	Σ SAR<1.6,
		LTE Band 13	0	0.312	0.006	0.001	0.319	Σ SAR<1.6,
		LTE Band 17	0	0.202	0.006	0.001	0.209	Σ SAR<1.6,
		LTE Band 25	0	0.419	0.006	0.001	0.426	Σ SAR<1.6,
		LTE Band 26	0	0.248	0.006	0.001	0.255	Σ SAR<1.6,
		LTE Band 30	0	0.810	0.006	0.001	0.817	Σ SAR<1.6,
		LTE Band 38	0	0.000	0.006	0.001	0.007	Σ SAR<1.6,
		LTE Band 41	0	0.019	0.006	0.001	0.026	Σ SAR<1.6,
		LTE Band 66	0	0.410	0.006	0.001	0.417	Σ SAR<1.6,

Conclusion:

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

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4. Instruments List

Manufacturer	Device	Type	Serial number	Date of last calibration	Date of next calibration
SPEAG	Dosimetric E-Field Probe	EX3DV4	3770	Apr.27,2017	Apr.26,2018
SPEAG	System Validation Dipole	D750V3	1015	Aug.21,2017	Aug.20,2018
		D835V2	4d063	Aug.21,2017	Aug.20,2018
		D1750V2	1008	Aug.21,2017	Aug.20,2018
		D1900V2	5d173	May.31,2017	May.30,2018
		D2300V2	1023	Aug.17,2017	Aug.16,2018
		D2450V2	727	Apr.21,2017	Apr.20,2018
		D2600V2	1058	Jun.17,2017	Jun.16,2018
		D5GHzV2	1023	Jan.20,2017	Jan.19,2018
SPEAG	Data acquisition Electronics	DAE4	856	Apr.28,2017	Apr.02,2018
SPEAG	Software	DASY 52 V52.8.8	N/A	Calibration not required	Calibration not required
SPEAG	Phantom	ELI	N/A	Calibration not required	Calibration not required
Agilent	Network Analyzer	E5071C	MY46315263	Sep.08,2017	Sep.07,2018
Agilent	Dielectric Probe Kit	85070E	MY44300677	Calibration not required	Calibration not required
Agilent	Dual-directional coupler	772D	MY52180142	Apr.13,2017	Apr.12,2018
		778D	MY52180302	Apr.13,2017	Apr.12,2018
Agilent	RF Signal Generator	N5181A	MY50144143	Mar.01,2017	Feb.28,2018
Agilent	Power Meter	E4417A	MY52240003	Dec.21,2017	Dec.20,2018

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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	Dec.21,2017	Dec.20,2018
Agilent	Power Sensor	E9301H	MY52200003	Dec.21,2017	Dec.20,2018
			MY52200004	Dec.21,2017	Dec.20,2018
TECPEL	Digital thermometer	DTM-303A	TP130075	Mar.09,2017	Mar.08,2018
Anritsu	Radio Communication Test	MT8820C	6201061049	Apr.08,2017	Apr.07,2018
R&S	Radio Communication Test	CMW 500	125470	Aug.22,2017	Aug.21,2018

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5. Measurements

Date: 2018/1/24

WCDMA Band II_Body_Back side_CH 9262_0mm

Communication System: WCDMA; Frequency: 1852.4 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1852.4$ MHz; $\sigma = 1.505$ S/m; $\epsilon_r = 54.231$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient temperature: 21.7°C; Liquid temperature: 21.4°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(8.12, 8.12, 8.12); Calibrated: 2017/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2017/4/28
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (41x121x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 1.64 W/kg

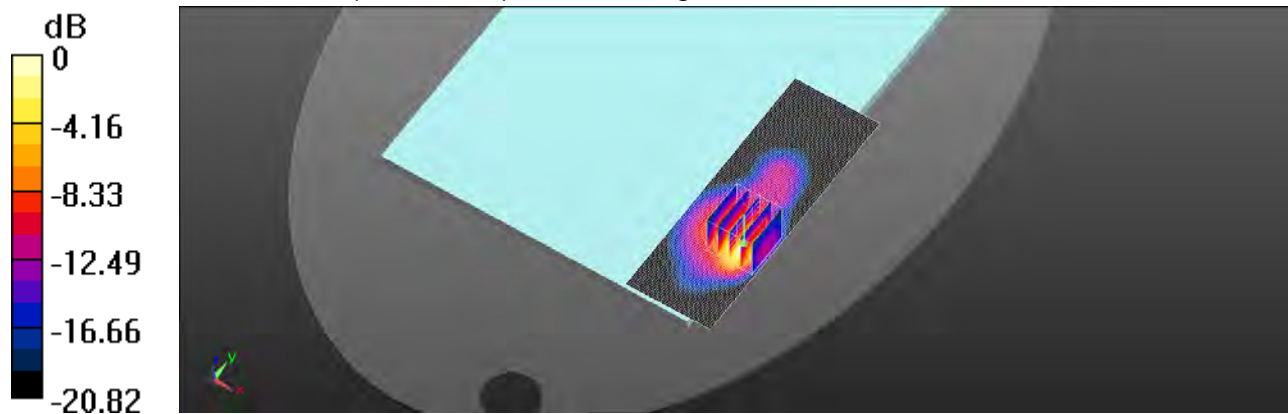
Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.542 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 2.05 W/kg

SAR(1 g) = 0.996 W/kg; SAR(10 g) = 0.464 W/kg

Maximum value of SAR (measured) = 1.63 W/kg



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

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Date: 2018/1/24

WCDMA Band IV_Body_Back side_CH 1513_0mm

Communication System: WCDMA; Frequency: 1752.6 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1753$ MHz; $\sigma = 1.443$ S/m; $\epsilon_r = 54.514$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient temperature: 21.9°C; Liquid temperature: 21.5°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(8.43, 8.43, 8.43); Calibrated: 2017/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2017/4/28
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (41x101x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 2.09 W/kg

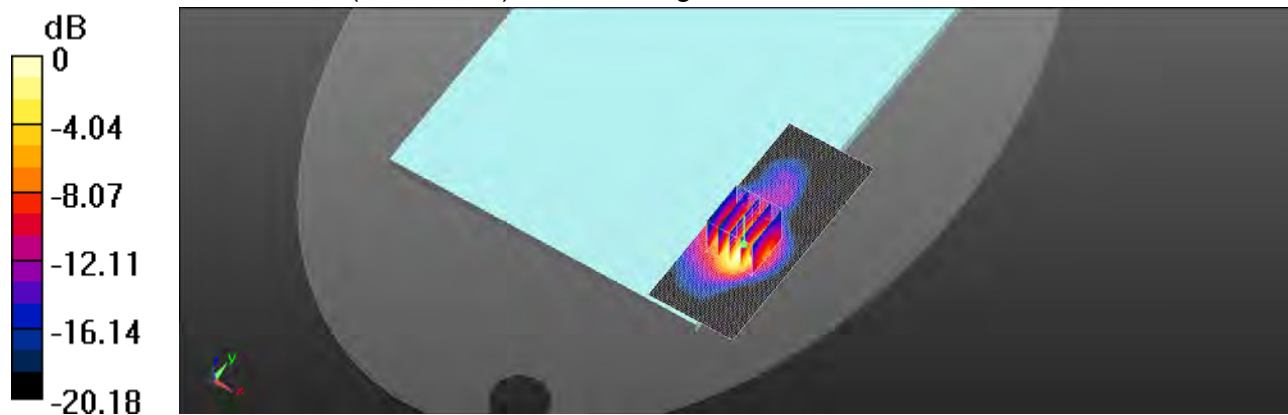
Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.895 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 2.31 W/kg

SAR(1 g) = 1.15 W/kg; SAR(10 g) = 0.538 W/kg

Maximum value of SAR (measured) = 1.64 W/kg



0 dB = 1.64 W/kg = 2.15 dBW/kg

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Date: 2018/1/23

WCDMA Band V_Body_Back side_CH 4183_0mm

Communication System: WCDMA; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 837$ MHz; $\sigma = 0.984$ S/m; $\epsilon_r = 53.251$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient temperature: 22.3°C; Liquid temperature: 22.0°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(9.65, 9.65, 9.65); Calibrated: 2017/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2017/4/28
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (41x111x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 1.67 W/kg

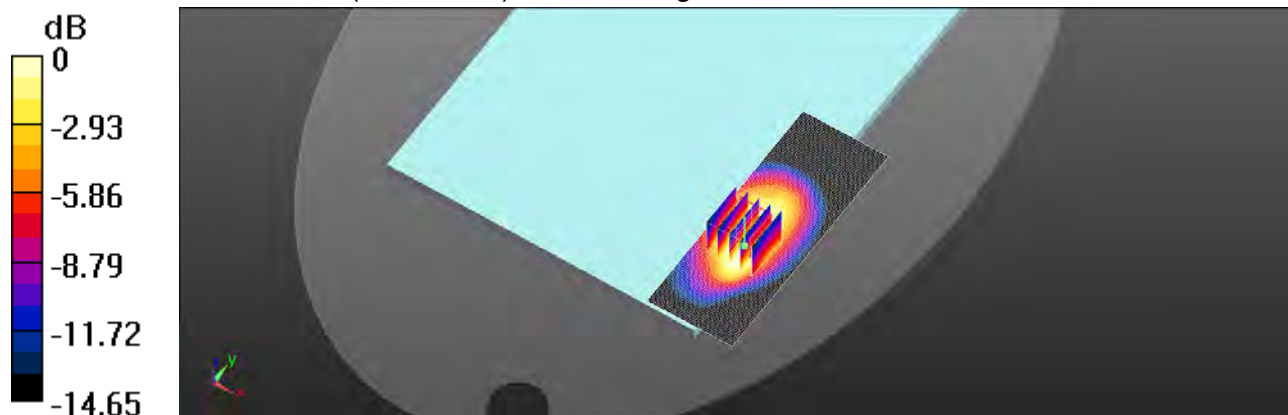
Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.815 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 1.86 W/kg

SAR(1 g) = 1.06 W/kg; SAR(10 g) = 0.644 W/kg

Maximum value of SAR (measured) = 1.41 W/kg



0 dB = 1.41 W/kg = 1.49 dBW/kg

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Date: 2018/1/24

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

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

Medium parameters used: $f = 1860$ MHz; $\sigma = 1.508$ S/m; $\epsilon_r = 54.216$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient temperature: 21.7°C; Liquid temperature: 21.4°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(8.12, 8.12, 8.12); Calibrated: 2017/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2017/4/28
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (41x101x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 1.74 W/kg

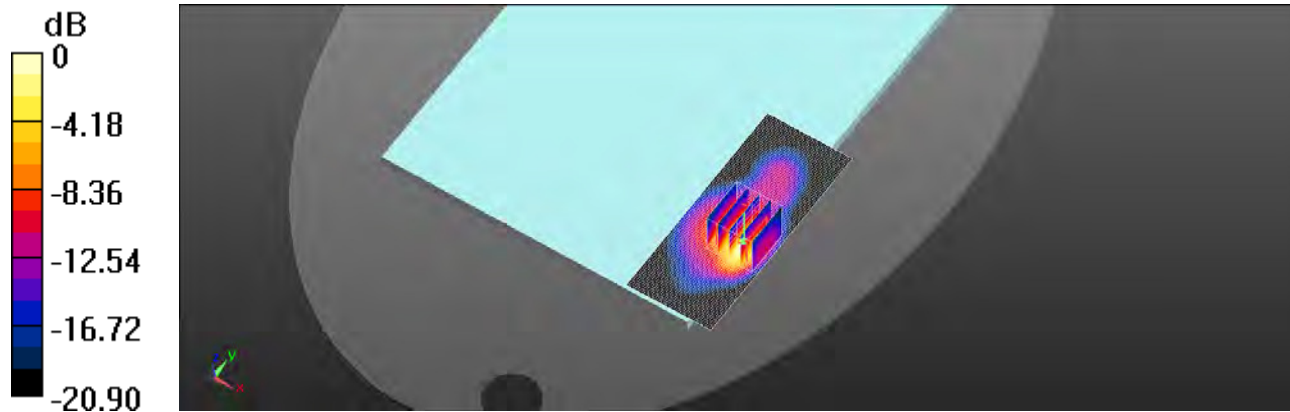
Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.118 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 2.30 W/kg

SAR(1 g) = 1.11 W/kg; SAR(10 g) = 0.508 W/kg

Maximum value of SAR (measured) = 1.80 W/kg



0 dB = 1.80 W/kg = 2.55 dBW/kg

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Date: 2018/1/24

LTE Band 4 (20MHz)_Body_Back side_CH 20300_QPSK_50-25_0mm

Communication System: LTE; Frequency: 1745 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1745$ MHz; $\sigma = 1.439$ S/m; $\epsilon_r = 54.587$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient temperature: 21.9°C; Liquid temperature: 21.5°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(8.43, 8.43, 8.43); Calibrated: 2017/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2017/4/28
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (41x101x1): Interpolated grid: dx=15 mm, dy=15 mm

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

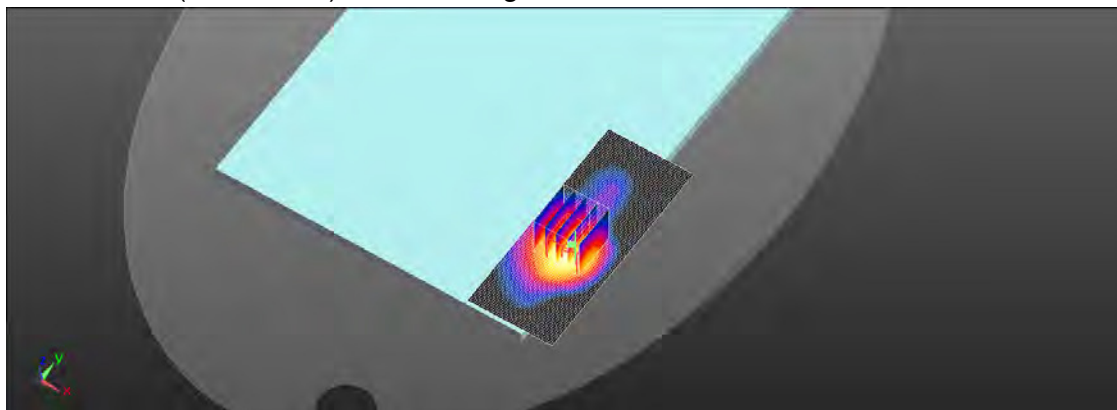
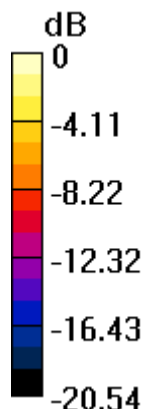
Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.521 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 2.32 W/kg

SAR(1 g) = 1.13 W/kg; SAR(10 g) = 0.542 W/kg

Maximum value of SAR (measured) = 1.71 W/kg



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

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Date: 2018/1/23

LTE Band 5 (10MHz)_Body_Back side_CH 20450_QPSK_1-25_0mm

Communication System: LTE; Frequency: 829 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 829$ MHz; $\sigma = 0.976$ S/m; $\epsilon_r = 53.31$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient temperature: 22.3°C; Liquid temperature: 22.0°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(9.65, 9.65, 9.65); Calibrated: 2017/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2017/4/28
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (41x121x1): Interpolated grid: dx=15 mm, dy=15 mm

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

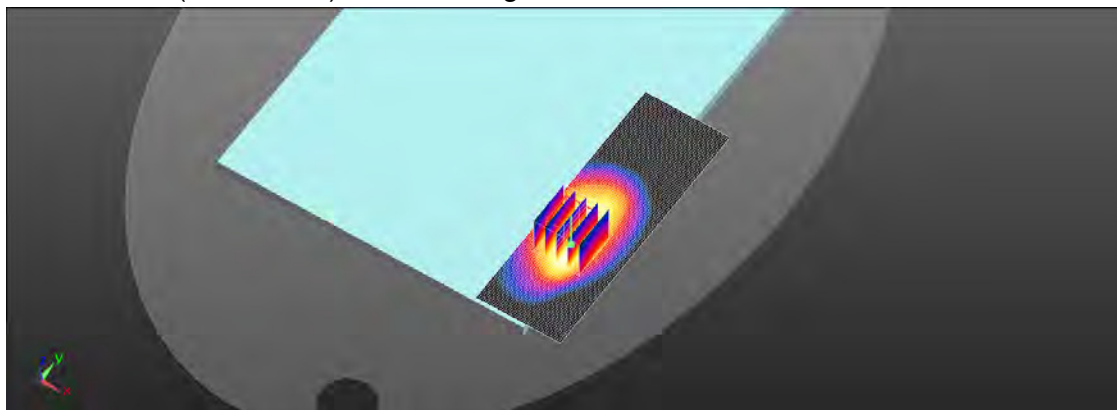
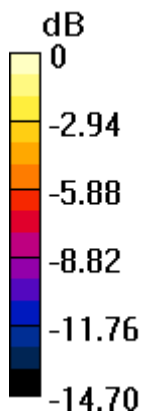
Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.612 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 1.97 W/kg

SAR(1 g) = 1.12 W/kg; SAR(10 g) = 0.672 W/kg

Maximum value of SAR (measured) = 1.49 W/kg



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

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Date: 2018/1/25

LTE Band 7 (20MHz)_Body_Back side_CH 20850_QPSK_1-0_0mm

Communication System: LTE; Frequency: 2510 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2510$ MHz; $\sigma = 2.124$ S/m; $\epsilon_r = 52.865$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient temperature: 21.5°C; Liquid temperature: 21.8°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.47, 7.47, 7.47); Calibrated: 2017/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2017/4/28
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (51x131x1): Interpolated grid: dx=12 mm, dy=12 mm

Maximum value of SAR (interpolated) = 1.95 W/kg

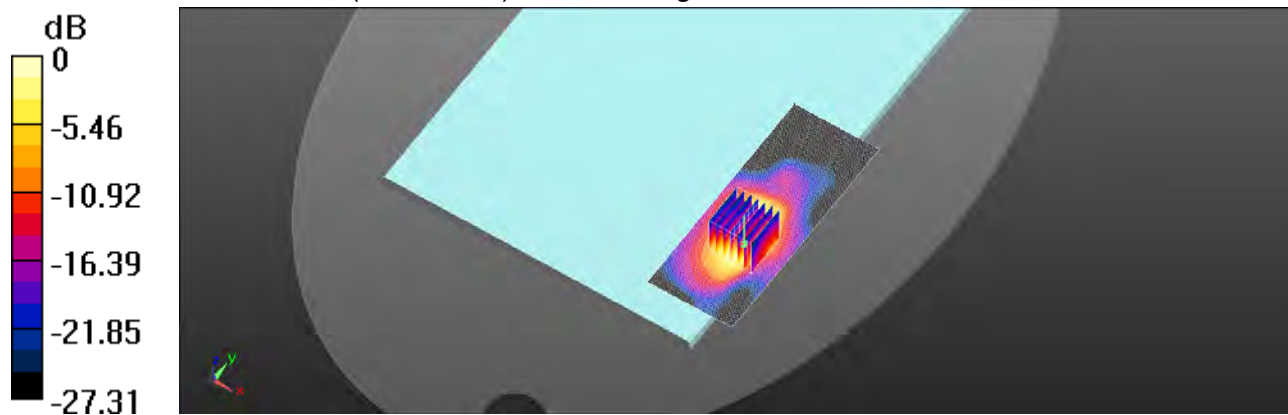
Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.197 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 3.00 W/kg

SAR(1 g) = 1.08 W/kg; SAR(10 g) = 0.438 W/kg

Maximum value of SAR (measured) = 1.93 W/kg



0 dB = 1.93 W/kg = 2.86 dBW/kg

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Date: 2018/1/22

LTE Band 12 (10MHz)_Body_Back side_CH 23060_QPSK_1-0_0mm

Communication System: LTE; Frequency: 704 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 704 \text{ MHz}$; $\sigma = 0.93 \text{ S/m}$; $\epsilon_r = 57.251$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Ambient temperature: 21.4°C; Liquid temperature: 21.6°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(9.96, 9.96, 9.96); Calibrated: 2017/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2017/4/28
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (41x121x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 1.65 W/kg

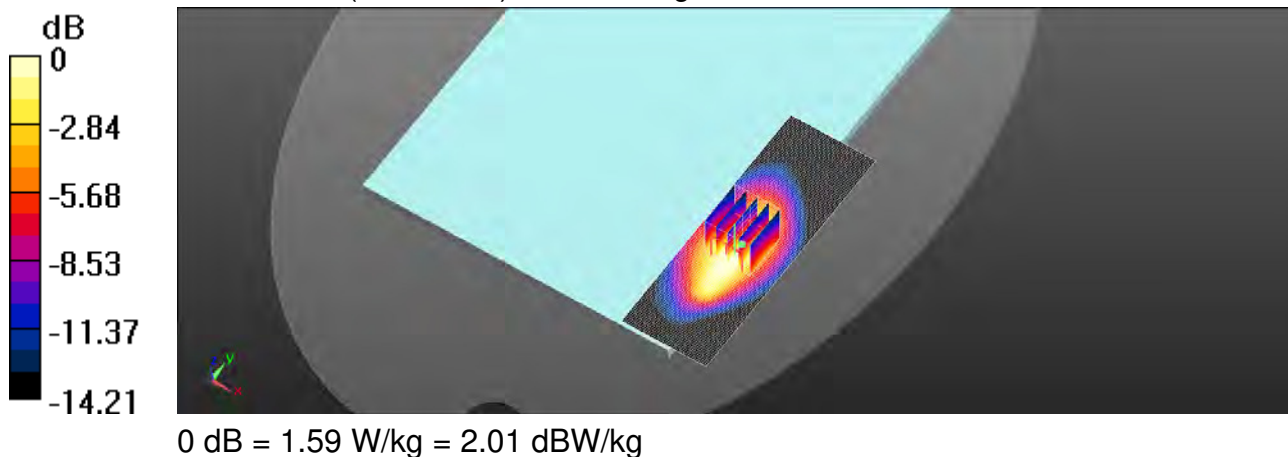
Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.251 V/m; Power Drift = 0.16 dB

Peak SAR (extrapolated) = 2.07 W/kg

SAR(1 g) = 1.11 W/kg; SAR(10 g) = 0.645 W/kg

Maximum value of SAR (measured) = 1.59 W/kg



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Date: 2018/1/22

LTE Band 13 (10MHz)_Body_Back side_CH 23230_QPSK_25-0_0mm

Communication System: LTE; Frequency: 782 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 782 \text{ MHz}$; $\sigma = 1.007 \text{ S/m}$; $\epsilon_r = 56.625$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Ambient temperature: 21.4°C; Liquid temperature: 21.6°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(9.96, 9.96, 9.96); Calibrated: 2017/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2017/4/28
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (41x121x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 1.82 W/kg

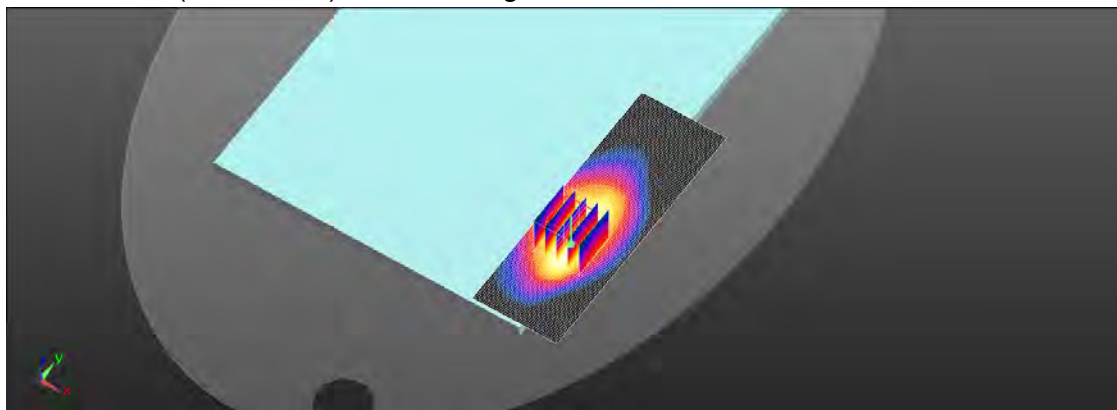
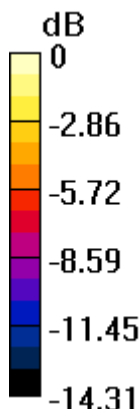
Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.881 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 2.12 W/kg

SAR(1 g) = 1.17 W/kg; SAR(10 g) = 0.712 W/kg

Maximum value of SAR (measured) = 1.64 W/kg



0 dB = 1.64 W/kg = 2.15 dBW/kg

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Date: 2018/1/22

LTE Band 17 (10MHz)_Body_Back side_CH 23790_QPSK_1-0_0mm

Communication System: LTE; Frequency: 710 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 710 \text{ MHz}$; $\sigma = 0.938 \text{ S/m}$; $\epsilon_r = 57.26$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Ambient temperature: 21.4°C; Liquid temperature: 21.6°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(9.96, 9.96, 9.96); Calibrated: 2017/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2017/4/28
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (41x121x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 1.55 W/kg

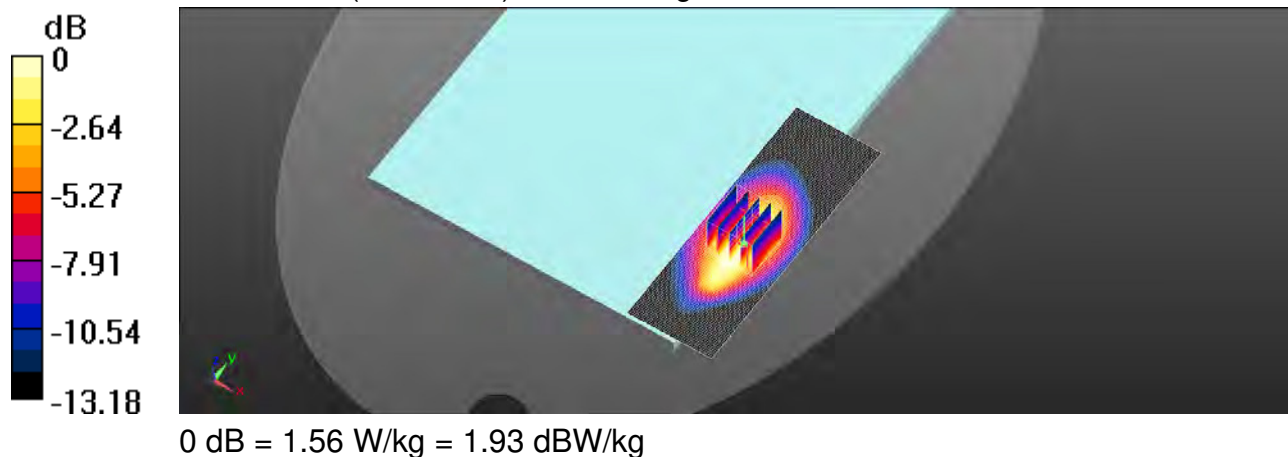
Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.152 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 2.00 W/kg

SAR(1 g) = 1.09 W/kg; SAR(10 g) = 0.637 W/kg

Maximum value of SAR (measured) = 1.56 W/kg



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Date: 2018/1/24

LTE Band 25 (20MHz)_Body_Back side_CH 26140_QPSK_50-50_0mm

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

Medium parameters used: $f = 1860$ MHz; $\sigma = 1.508$ S/m; $\epsilon_r = 54.216$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient temperature: 21.7°C; Liquid temperature: 21.4°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(8.12, 8.12, 8.12); Calibrated: 2017/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2017/4/28
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (41x101x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 2.07 W/kg

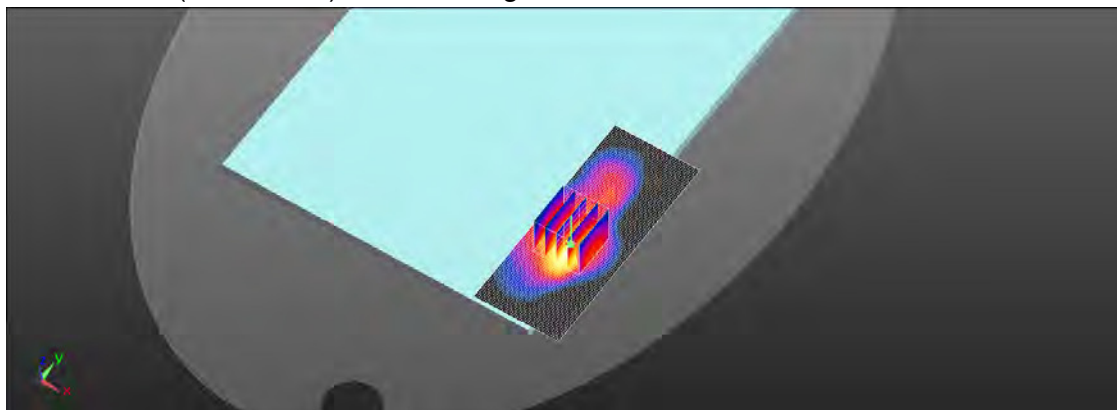
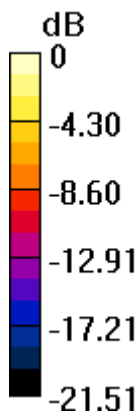
Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.674 V/m; Power Drift = 0.14 dB

Peak SAR (extrapolated) = 2.25 W/kg

SAR(1 g) = 1.1 W/kg; SAR(10 g) = 0.494 W/kg

Maximum value of SAR (measured) = 1.62 W/kg



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

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Date: 2018/1/23

LTE Band 26 (15MHz)_Body_Back side_CH 26825_QPSK_1-74_0mm

Communication System: LTE; Frequency: 822.5 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 822.5$ MHz; $\sigma = 0.966$ S/m; $\epsilon_r = 53.373$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient temperature: 22.3°C; Liquid temperature: 22.0°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(9.65, 9.65, 9.65); Calibrated: 2017/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2017/4/28
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (41x121x1): Interpolated grid: dx=15 mm, dy=15 mm

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

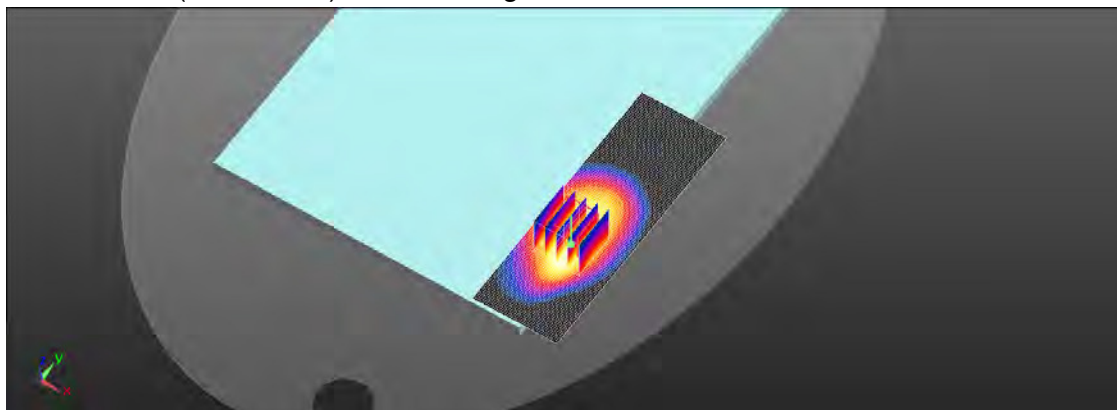
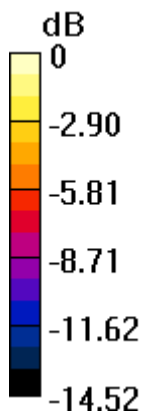
Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.455 V/m; Power Drift = 0.15 dB

Peak SAR (extrapolated) = 1.97 W/kg

SAR(1 g) = 1.14 W/kg; SAR(10 g) = 0.701 W/kg

Maximum value of SAR (measured) = 1.50 W/kg



0 dB = 1.50 W/kg = 1.76 dBW/kg

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Date: 2018/1/25

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

Communication System: LTE; Frequency: 2310 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2310 \text{ MHz}$; $\sigma = 1.754 \text{ S/m}$; $\epsilon_r = 53.568$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Ambient temperature: 22.6°C; Liquid temperature: 22.8°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.68, 7.68, 7.68); Calibrated: 2017/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2017/4/28
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (51x121x1): Interpolated grid: dx=12 mm, dy=12 mm

Maximum value of SAR (interpolated) = 2.02 W/kg

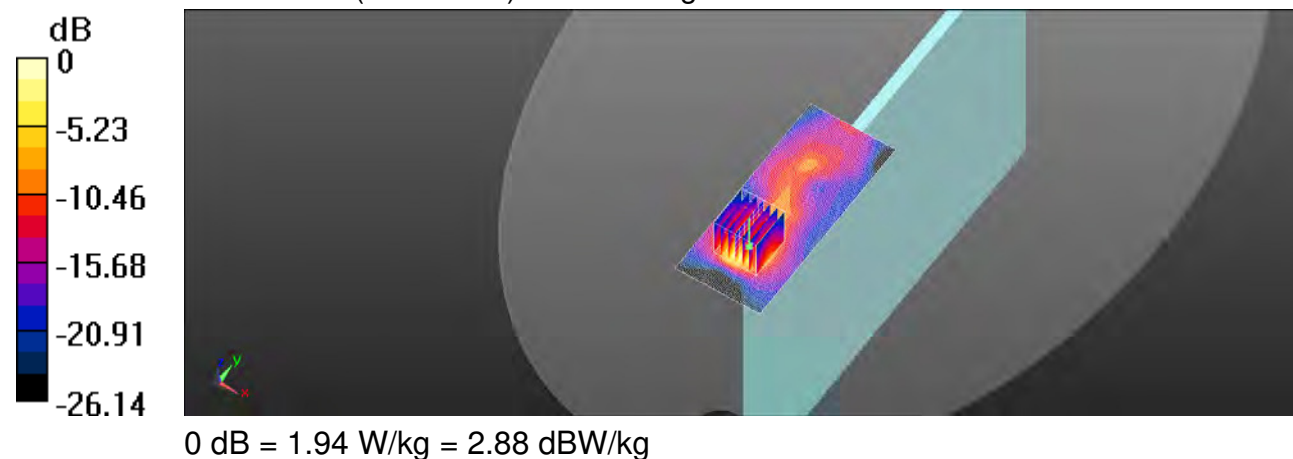
Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.236 V/m; Power Drift = 0.19 dB

Peak SAR (extrapolated) = 2.73 W/kg

SAR(1 g) = 1.23 W/kg; SAR(10 g) = 0.495 W/kg

Maximum value of SAR (measured) = 1.94 W/kg



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Date: 2018/1/25

LTE Band 38 (20MHz)_Body_Back side_CH 38150_QPSK_1-0_0mm

Communication System: LTE; Frequency: 2610 MHz; Duty Cycle: 1:0.633

Medium parameters used: $f = 2610$ MHz; $\sigma = 2.267$ S/m; $\epsilon_r = 52.539$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient temperature: 21.5°C; Liquid temperature: 21.8°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.17, 7.17, 7.17); Calibrated: 2017/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2017/4/28
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (51x131x1): Interpolated grid: dx=12 mm, dy=12 mm

Maximum value of SAR (interpolated) = 1.07 W/kg

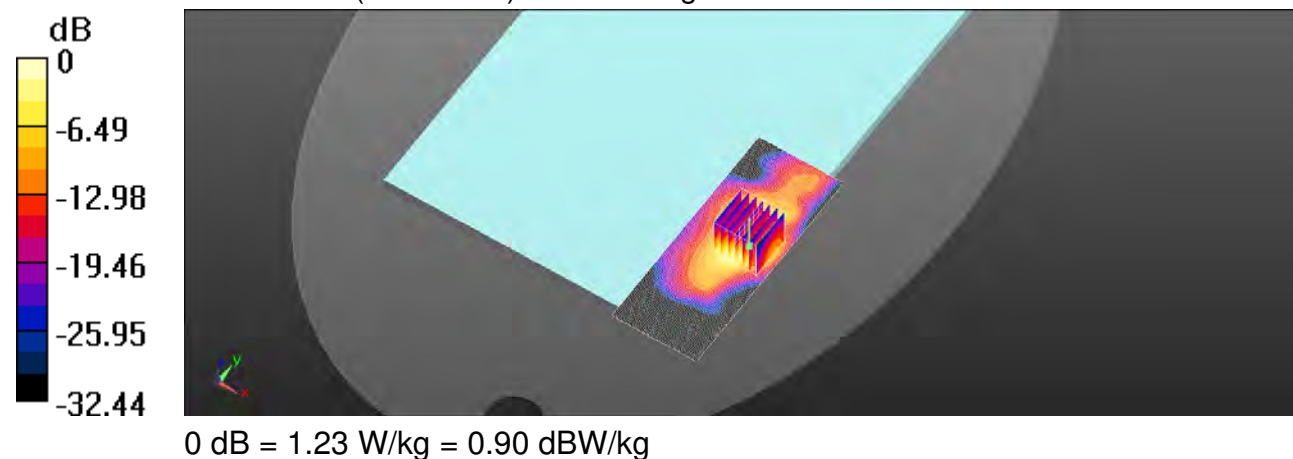
Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.106 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 1.92 W/kg

SAR(1 g) = 0.731 W/kg; SAR(10 g) = 0.297 W/kg

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



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Date: 2018/1/25

LTE Band 41 (20MHz)_Body_Back side_CH 41055_QPSK_1-99_0mm

Communication System: LTE; Frequency: 2636.5 MHz; Duty Cycle: 1:0.633

Medium parameters used: $f = 2636.5$ MHz; $\sigma = 2.3085$ S/m; $\epsilon_r = 52.43$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient temperature: 21.5°C; Liquid temperature: 21.8°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.17, 7.17, 7.17); Calibrated: 2017/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2017/4/28
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (51x131x1): Interpolated grid: dx=12 mm, dy=12 mm

Maximum value of SAR (interpolated) = 2.13 W/kg

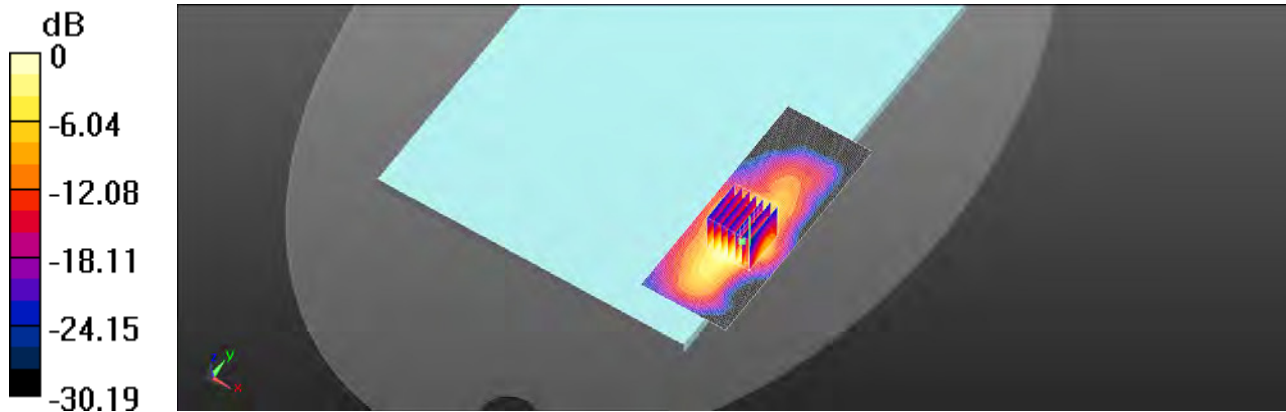
Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.928 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 2.79 W/kg

SAR(1 g) = 1.08 W/kg; SAR(10 g) = 0.476 W/kg

Maximum value of SAR (measured) = 1.80 W/kg



0 dB = 1.80 W/kg = 2.55 dBW/kg

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t (886 2) 2299 3279

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Date: 2018/1/24

LTE Band 66 (20MHz)_Body_Back side_CH 132572_QPSK_50-0_0mm

Communication System: LTE; Frequency: 1770 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1770$ MHz; $\sigma = 1.451$ S/m; $\epsilon_r = 54.431$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient temperature: 21.9°C; Liquid temperature: 21.5°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(8.43, 8.43, 8.43); Calibrated: 2017/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2017/4/28
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (41x101x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 1.76 W/kg

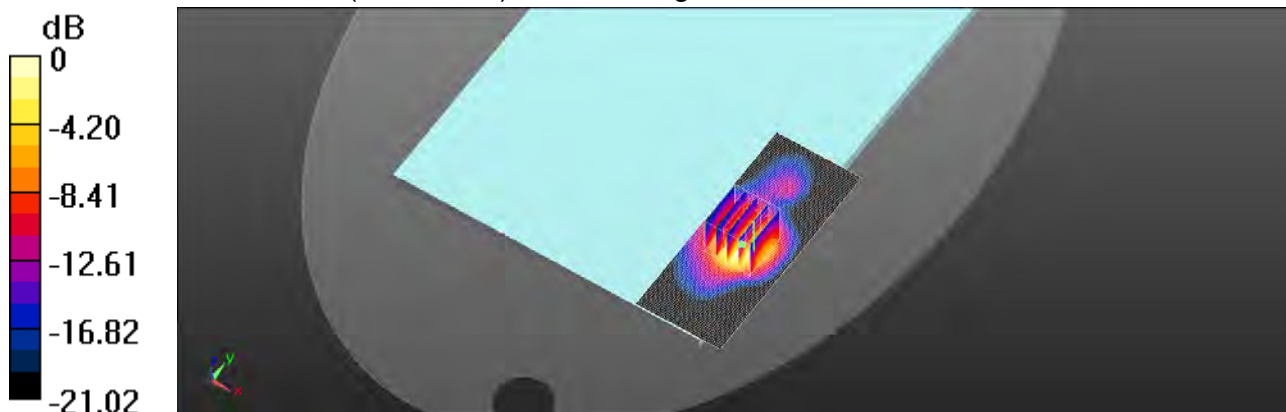
Configuration/Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.596 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 2.44 W/kg

SAR(1 g) = 1.19 W/kg; SAR(10 g) = 0.569 W/kg

Maximum value of SAR (measured) = 1.71 W/kg



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

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f (886 2) 2298 0488

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Date: 2018/1/8

WLAN 802.11b_Body_Back side_CH 6_Main_0mm

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

Medium parameters used: $f = 2437$ MHz; $\sigma = 1.954$ S/m; $\epsilon_r = 53.615$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient temperature: 22.6°C; Liquid temperature: 22.9°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.47, 7.47, 7.47); Calibrated: 2017/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2017/4/28
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (51x121x1): Interpolated grid: dx=12 mm, dy=12 mm

Maximum value of SAR (interpolated) = 1.44 W/kg

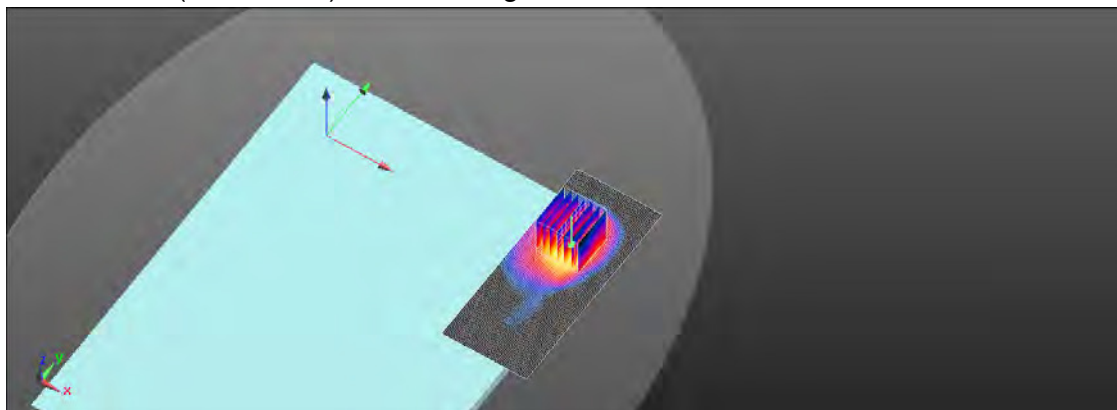
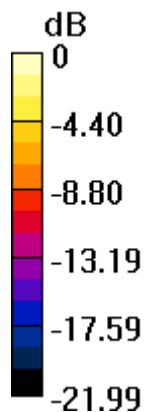
Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.668 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 2.08 W/kg

SAR(1 g) = 0.972 W/kg; SAR(10 g) = 0.412 W/kg

Maximum value of SAR (measured) = 1.50 W/kg



0 dB = 1.50 W/kg = 1.76 dBW/kg

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f (886 2) 2298 0488

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Date: 2018/1/9

WLAN 802.11n(40M) 5.2G_Body_Back side_CH 38_Main_0mm

Communication System: WLAN 5G; Frequency: 5190 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5190 \text{ MHz}$; $\sigma = 5.132 \text{ S/m}$; $\epsilon_r = 49.47$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Ambient temperature: 21.4°C; Liquid temperature: 21.5°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.61, 4.61, 4.61); Calibrated: 2017/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2017/4/28
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (61x141x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 1.46 W/kg

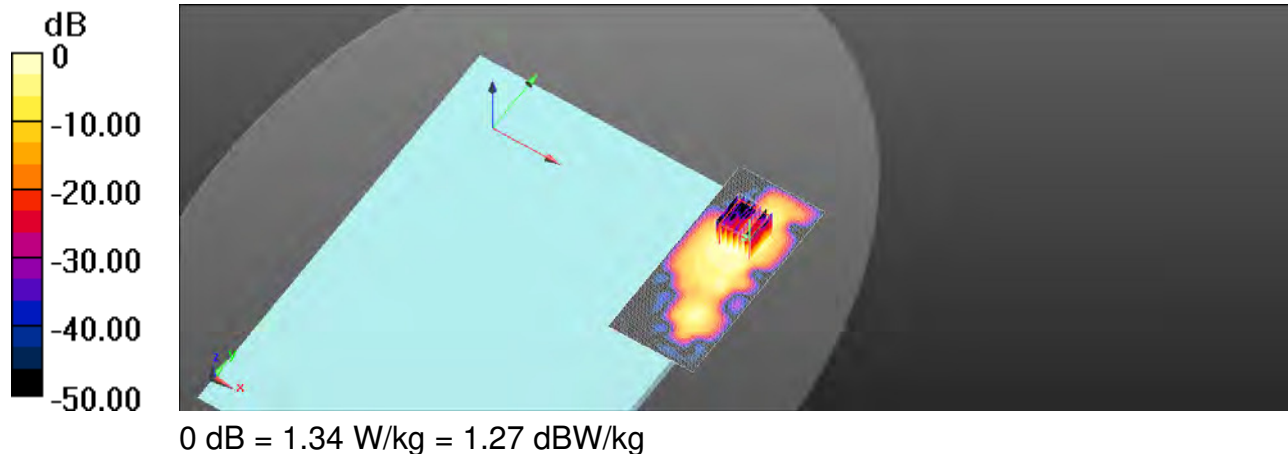
Configuration/Body/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 3.209 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 2.80 W/kg

SAR(1 g) = 0.616 W/kg; SAR(10 g) = 0.162 W/kg

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



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Date: 2018/1/10

WLAN 802.11n(40M) 5.3G_Body_Back side_CH 62_Main_0mm

Communication System: WLAN 5G; Frequency: 5310 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5310 \text{ MHz}$; $\sigma = 5.348 \text{ S/m}$; $\epsilon_r = 49.037$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Ambient temperature: 21.7°C ; Liquid temperature: 21.3°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.61, 4.61, 4.61); Calibrated: 2017/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2017/4/28
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

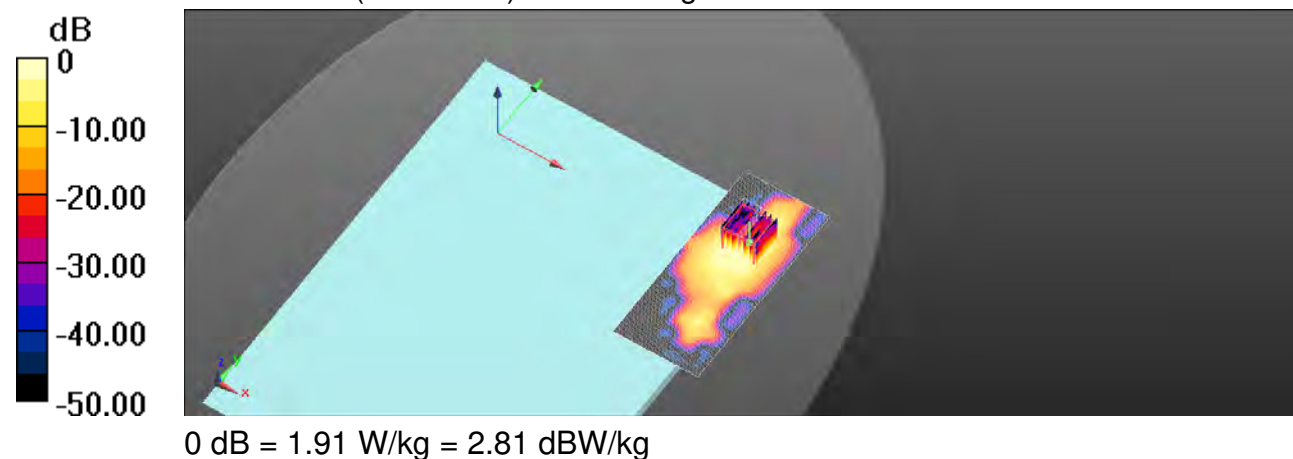
Configuration/Body/Area Scan (61x141x1): Interpolated grid: $dx=10 \text{ mm}$, $dy=10 \text{ mm}$

Maximum value of SAR (interpolated) = 2.10 W/kg

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

Reference Value = 2.957 V/m ; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 4.32 W/kg
SAR(1 g) = 0.887 W/kg ; SAR(10 g) = 0.218 W/kg

Maximum value of SAR (measured) = 1.91 W/kg


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Date: 2018/1/11

WLAN 802.11n(40M) 5.6G_Body_Back side_CH 102_Main_0mm

Communication System: WLAN 5G; Frequency: 5510 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5510 \text{ MHz}$; $\sigma = 5.679 \text{ S/m}$; $\epsilon_r = 48.378$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Ambient temperature: 22.0°C; Liquid temperature: 21.7°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(3.98, 3.98, 3.98); Calibrated: 2017/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2017/4/28
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (61x141x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 3.10 W/kg

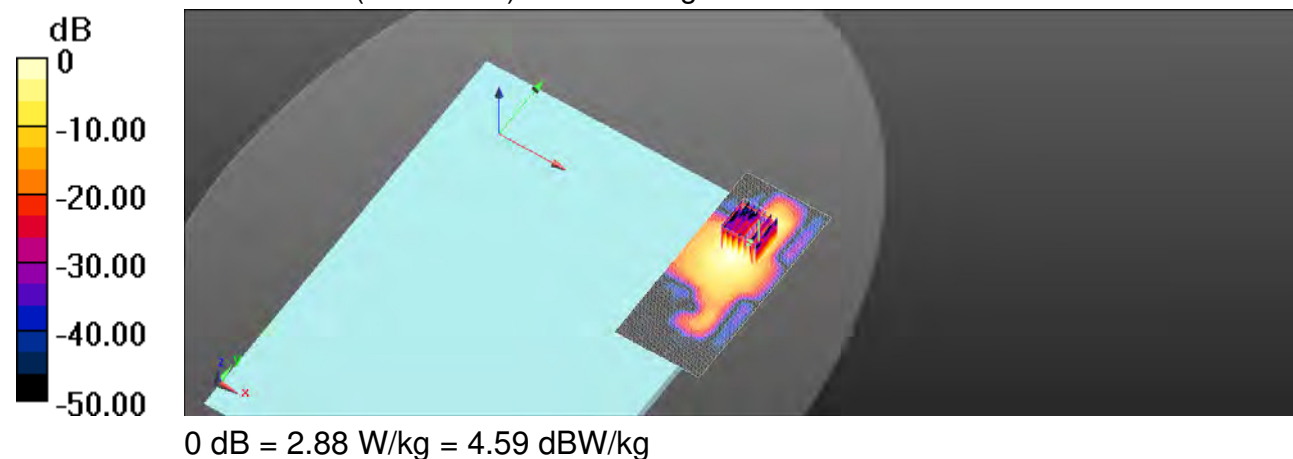
Configuration/Body/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 3.153 V/m; Power Drift = 0.17 dB

Peak SAR (extrapolated) = 6.37 W/kg

SAR(1 g) = 1.18 W/kg; SAR(10 g) = 0.349 W/kg

Maximum value of SAR (measured) = 2.88 W/kg



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f (886 2) 2298 0488

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Date: 2018/1/11

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

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

Medium parameters used: $f = 5690$ MHz; $\sigma = 5.995$ S/m; $\epsilon_r = 47.819$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient temperature: 22.0°C; Liquid temperature: 21.7°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.38, 4.38, 4.38); Calibrated: 2017/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2017/4/28
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (61x141x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 1.61 W/kg

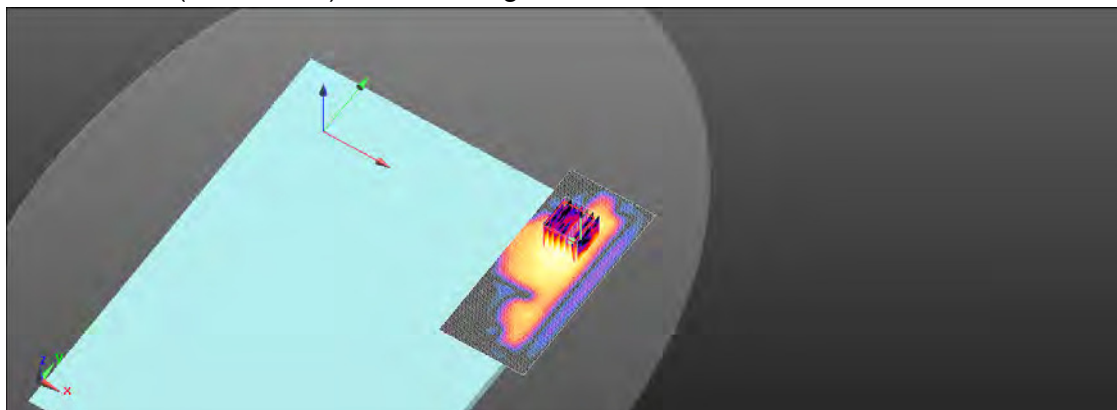
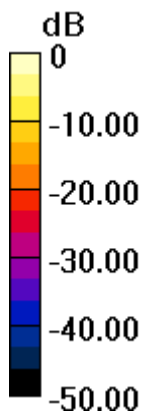
Configuration/Body/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 4.591 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 4.80 W/kg

SAR(1 g) = 0.789 W/kg; SAR(10 g) = 0.221 W/kg

Maximum value of SAR (measured) = 2.07 W/kg



0 dB = 2.07 W/kg = 3.16 dBW/kg

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f (886 2) 2298 0488

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Date: 2018/1/12

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

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

Medium parameters used: $f = 5775 \text{ MHz}$; $\sigma = 6.118 \text{ S/m}$; $\epsilon_r = 47.508$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Ambient temperature: 22.3°C; Liquid temperature: 22.0°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.38, 4.38, 4.38); Calibrated: 2017/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2017/4/28
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (61x141x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 2.16 W/kg

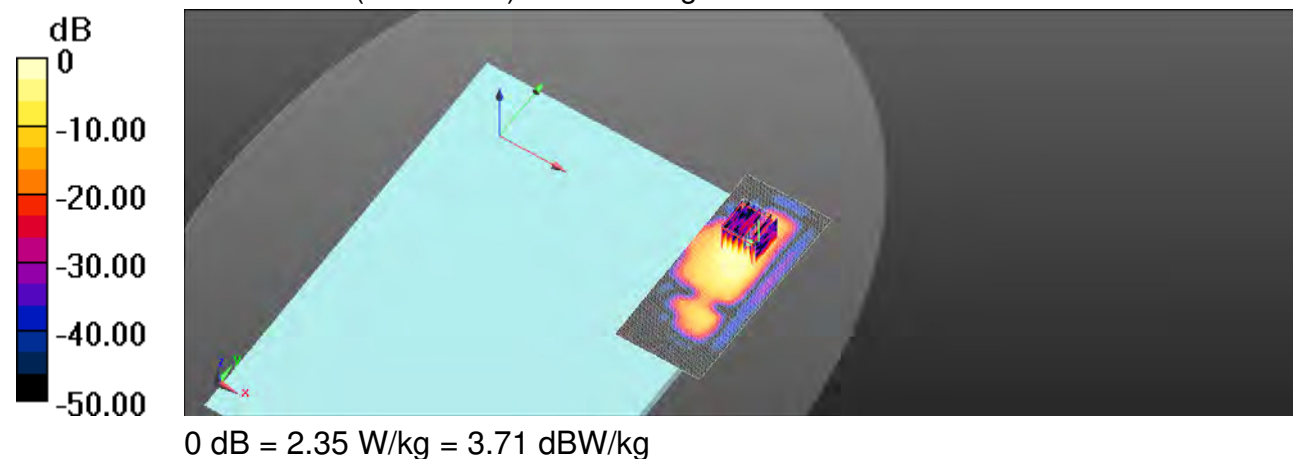
Configuration/Body/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 3.609 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 5.50 W/kg

SAR(1 g) = 0.855 W/kg; SAR(10 g) = 0.194 W/kg

Maximum value of SAR (measured) = 2.35 W/kg



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f (886 2) 2298 0488

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Date: 2018/1/8

WLAN 802.11b_Body_Top side_CH 6_Aux_0mm

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

Medium parameters used: $f = 2437$ MHz; $\sigma = 1.954$ S/m; $\epsilon_r = 53.615$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient temperature: 22.6°C; Liquid temperature: 22.9°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.47, 7.47, 7.47); Calibrated: 2017/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2017/4/28
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (51x151x1): Interpolated grid: dx=12 mm, dy=12 mm

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

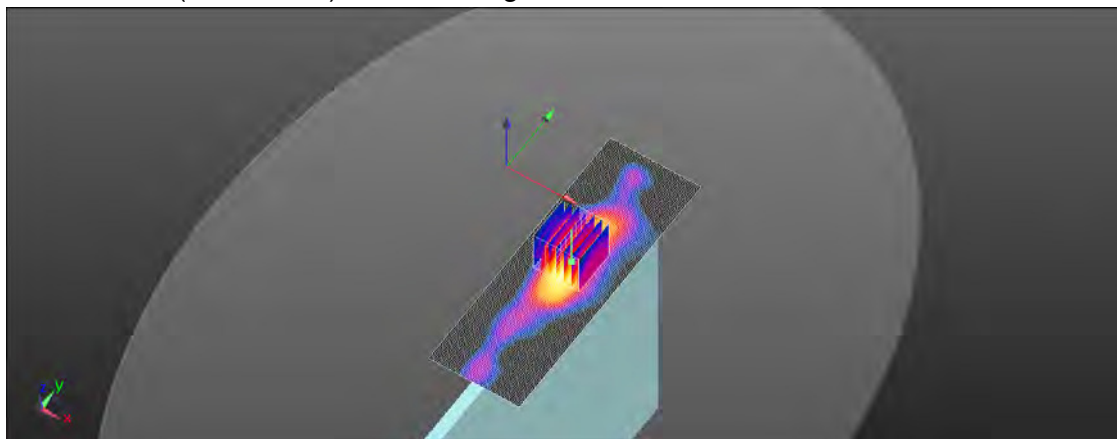
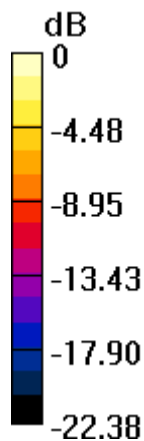
Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.514 V/m; Power Drift = 0.15 dB

Peak SAR (extrapolated) = 1.67 W/kg

SAR(1 g) = 0.815 W/kg; SAR(10 g) = 0.349 W/kg

Maximum value of SAR (measured) = 1.27 W/kg



0 dB = 1.27 W/kg = 1.04 dBW/kg

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Date: 2018/1/8

Bluetooth(GFSK)_Body_Back side_CH 39_Aux_0mm

Communication System: Bluetooth; Frequency: 2441 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2441 \text{ MHz}$; $\sigma = 1.96 \text{ S/m}$; $\epsilon_r = 53.585$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Ambient temperature: 22.6°C; Liquid temperature: 22.9°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.47, 7.47, 7.47); Calibrated: 2017/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2017/4/28
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (51x151x1): Interpolated grid: dx=12 mm, dy=12 mm

Maximum value of SAR (interpolated) = 0.411 W/kg

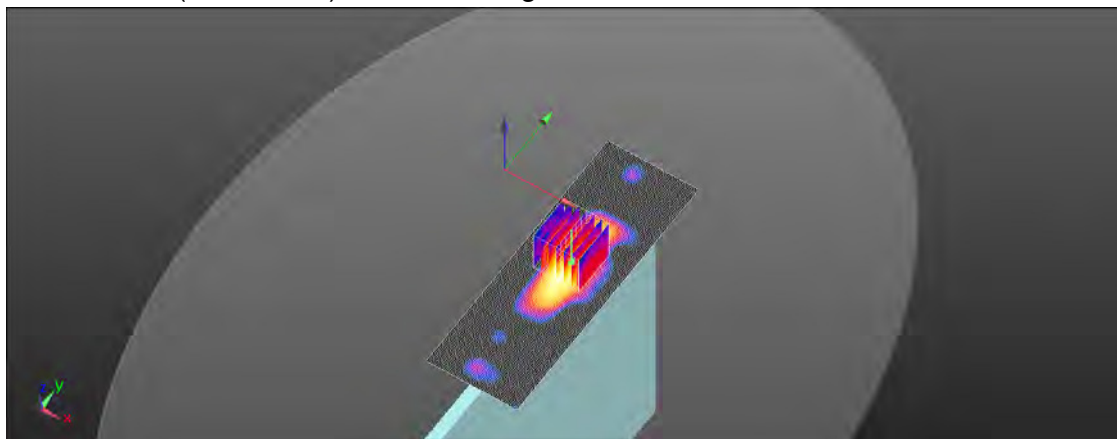
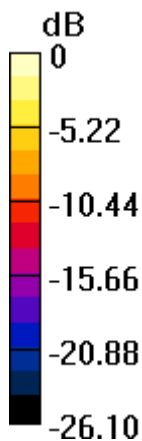
Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.641 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.354 W/kg

SAR(1 g) = 0.170 W/kg; SAR(10 g) = 0.071 W/kg

Maximum value of SAR (measured) = 0.268 W/kg



0 dB = 0.268 W/kg = -5.72 dBW/kg

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Date: 2018/1/9

WLAN 802.11n(40M) 5.2G_Body_Top side_CH 38_Aux_0mm

Communication System: WLAN 5G; Frequency: 5190 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5190$ MHz; $\sigma = 5.132$ S/m; $\epsilon_r = 49.47$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient temperature: 21.4°C; Liquid temperature: 21.5°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.61, 4.61, 4.61); Calibrated: 2017/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2017/4/28
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (61x201x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 1.15 W/kg

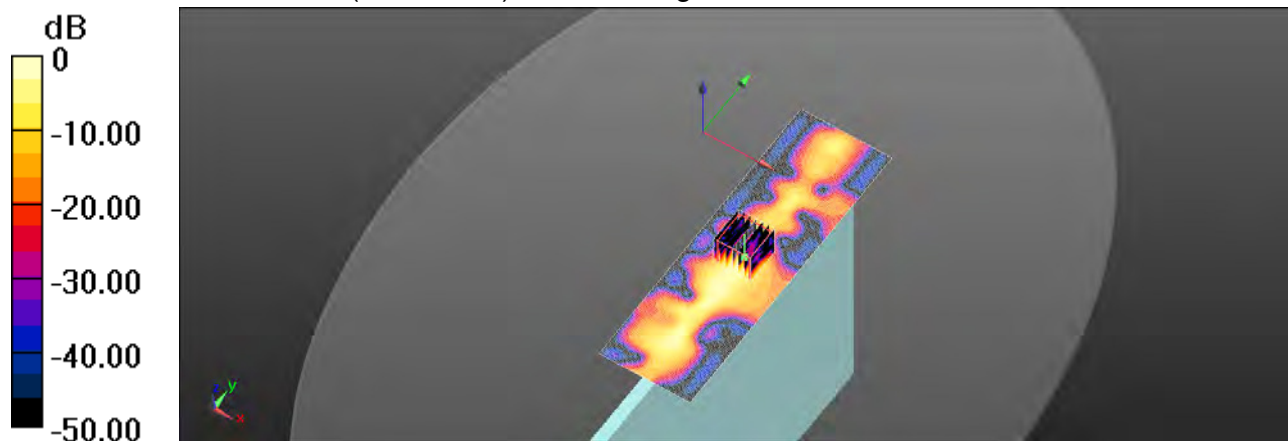
Configuration/Body/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 2.766 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 3.02 W/kg

SAR(1 g) = 0.515 W/kg; SAR(10 g) = 0.122 W/kg

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



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

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Date: 2018/1/10

WLAN 802.11n(40M) 5.3G_Body_Top side_CH 62_Aux_0mm

Communication System: WLAN 5G; Frequency: 5310 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5310$ MHz; $\sigma = 5.348$ S/m; $\epsilon_r = 49.037$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient temperature: 21.7°C; Liquid temperature: 21.3°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.61, 4.61, 4.61); Calibrated: 2017/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2017/4/28
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (61x181x1): Interpolated grid: dx=10 mm, dy=10 mm

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

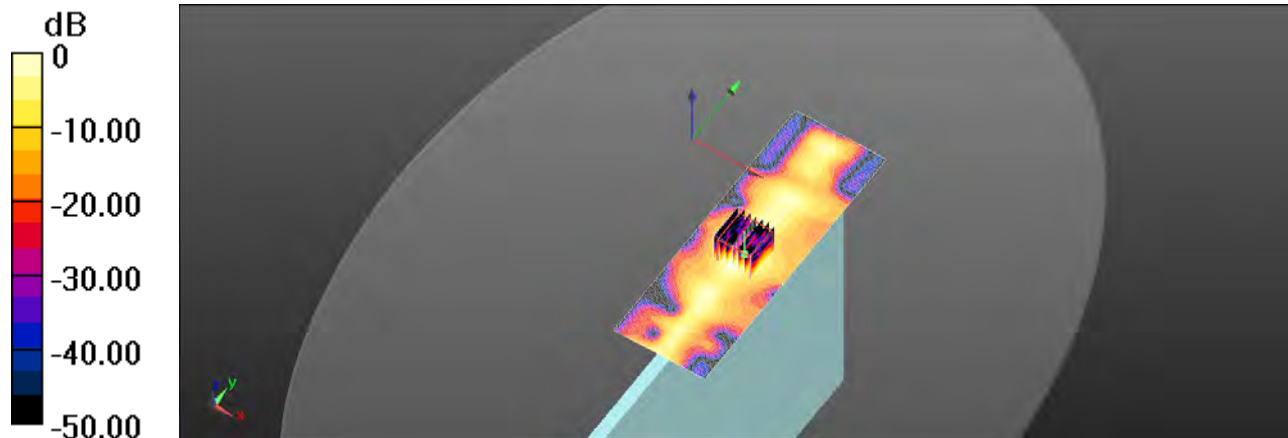
Configuration/Body/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 3.109 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 2.58 W/kg

SAR(1 g) = 0.606 W/kg; SAR(10 g) = 0.172 W/kg

Maximum value of SAR (measured) = 1.31 W/kg



0 dB = 1.31 W/kg = 1.17 dBW/kg

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Date: 2018/1/11

WLAN 802.11n(40M) 5.6G_Body_Top side_CH 134_Aux_0mm

Communication System: WLAN 5G; Frequency: 5670 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5670$ MHz; $\sigma = 5.945$ S/m; $\epsilon_r = 47.894$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient temperature: 22.0°C; Liquid temperature: 21.7°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(3.98, 3.98, 3.98); Calibrated: 2017/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2017/4/28
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (61x181x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 2.07 W/kg

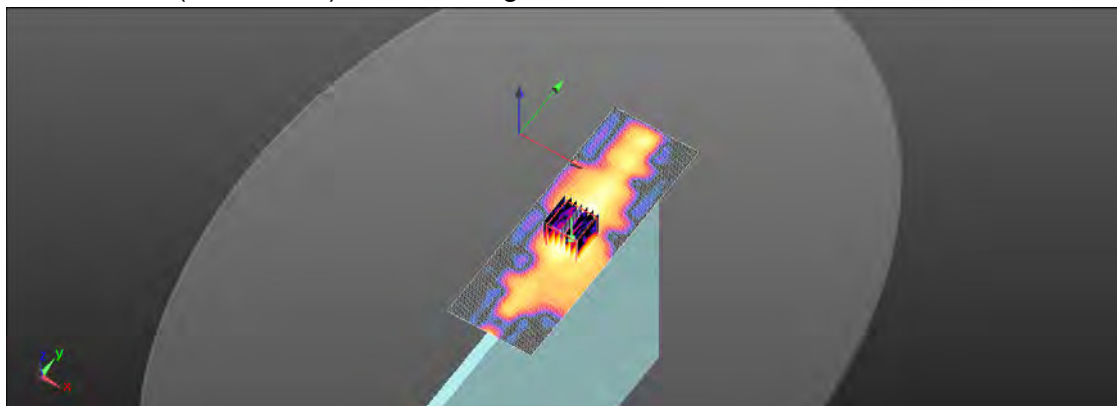
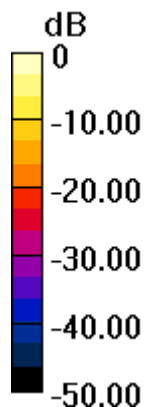
Configuration/Body/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 3.273 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 4.55 W/kg

SAR(1 g) = 0.821 W/kg; SAR(10 g) = 0.220 W/kg

Maximum value of SAR (measured) = 1.74 W/kg



0 dB = 1.74 W/kg = 2.41 dBW/kg

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Date: 2018/1/11

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

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

Medium parameters used: $f = 5690$ MHz; $\sigma = 5.995$ S/m; $\epsilon_r = 47.819$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient temperature: 22.0°C; Liquid temperature: 21.7°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.38, 4.38, 4.38); Calibrated: 2017/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2017/4/28
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (61x181x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 1.92 W/kg

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

Reference Value = 2.716 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 4.03 W/kg

SAR(1 g) = 0.727 W/kg; SAR(10 g) = 0.198 W/kg

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

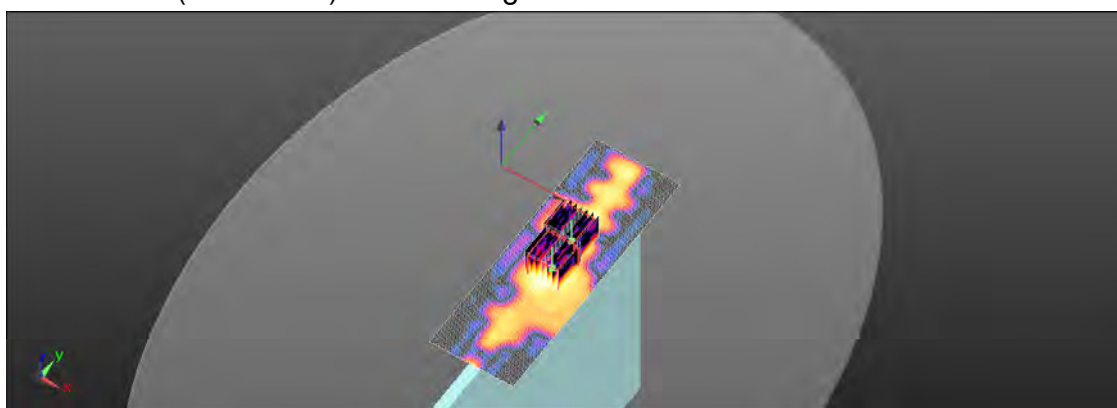
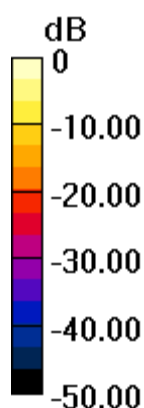
Configuration/Body/Zoom Scan (7x7x12)/Cube 1: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 2.716 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 2.80 W/kg

SAR(1 g) = 0.497 W/kg; SAR(10 g) = 0.115 W/kg

Maximum value of SAR (measured) = 1.20 W/kg



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

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Date: 2018/1/12

WLAN 802.11ac(80M) 5.8G_Body_Top side_CH 155_Aux_0mm

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

Medium parameters used: $f = 5775$ MHz; $\sigma = 6.118$ S/m; $\epsilon_r = 47.508$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient temperature: 22.3°C; Liquid temperature: 22.0°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.38, 4.38, 4.38); Calibrated: 2017/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2017/4/28
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Body/Area Scan (61x181x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 2.53 W/kg

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

Reference Value = 3.347 V/m; Power Drift = 0.16 dB

Peak SAR (extrapolated) = 5.67 W/kg

SAR(1 g) = 0.860 W/kg; SAR(10 g) = 0.223 W/kg

Maximum value of SAR (measured) = 1.98 W/kg

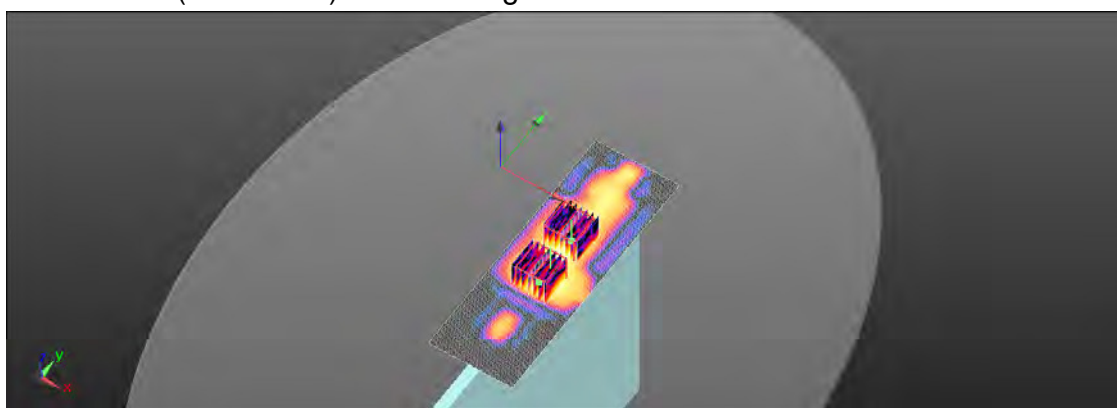
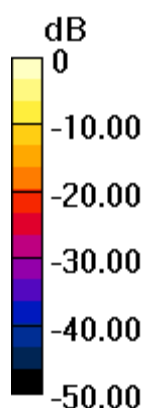
Configuration/Body/Zoom Scan (7x7x12)/Cube 1: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 3.347 V/m; Power Drift = 0.16 dB

Peak SAR (extrapolated) = 4.65 W/kg

SAR(1 g) = 0.643 W/kg; SAR(10 g) = 0.142 W/kg

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



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

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6. SAR System Performance Verification

Date: 2018/1/22

Dipole 750 MHz_SN:1015

Communication System: CW; Frequency: 750 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 750 \text{ MHz}$; $\sigma = 0.976 \text{ S/m}$; $\epsilon_r = 56.943$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Ambient temperature: 21.4°C ; Liquid temperature: 21.6°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(9.65, 9.65, 9.65); Calibrated: 2017/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2017/4/28
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

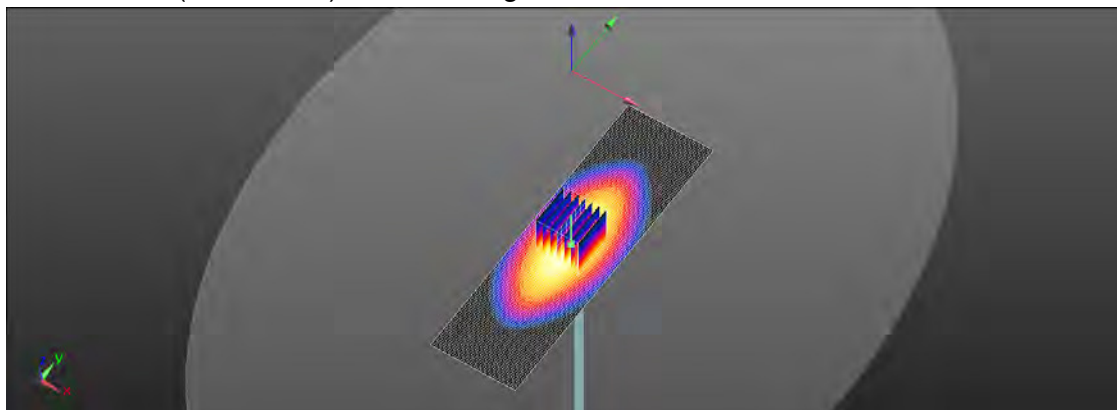
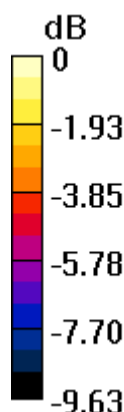
Configuration/Pin=250mW/Area Scan (41x141x1): Interpolated grid: $dx=15 \text{ mm}$, $dy=15 \text{ mm}$

Maximum value of SAR (interpolated) = 2.77 W/kg
Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

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

Reference Value = 54.05 V/m ; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 3.23 W/kg
SAR(1 g) = 2.21 W/kg ; SAR(10 g) = 1.47 W/kg

Maximum value of SAR (measured) = 2.77 W/kg

 $0 \text{ dB} = 2.77 \text{ W/kg} = 4.42 \text{ dBW/kg}$

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Date: 2018/1/23

Dipole 835 MHz_SN:4d063

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.979 \text{ S/m}$; $\epsilon_r = 53.232$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Ambient temperature: 22.3°C; Liquid temperature: 22.0°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(9.65, 9.65, 9.65); Calibrated: 2017/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2017/4/28
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Pin=250mW/Area Scan (41x121x1): Interpolated grid: $dx=15 \text{ mm}$, $dy=15 \text{ mm}$

Maximum value of SAR (interpolated) = 3.11 W/kg

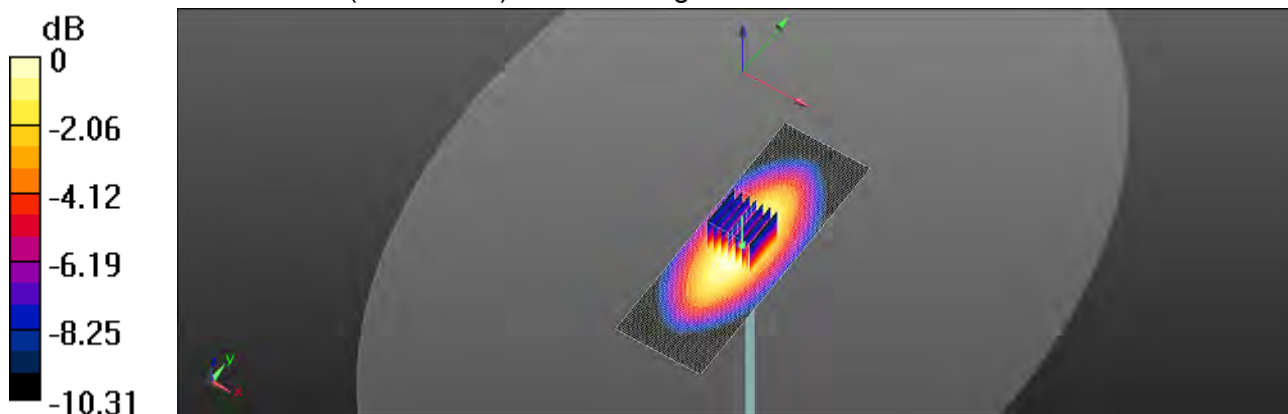
Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 57.43 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 3.65 W/kg

SAR(1 g) = 2.46 W/kg; SAR(10 g) = 1.62 W/kg

Maximum value of SAR (measured) = 3.10 W/kg



0 dB = 3.10 W/kg = 4.91 dBW/kg

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Date: 2018/1/24

Dipole 1750 MHz_SN:1008

Communication System: CW; Frequency: 1750 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1750$ MHz; $\sigma = 1.439$ S/m; $\epsilon_r = 54.544$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient temperature: 21.9°C; Liquid temperature: 21.5°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(8.43, 8.43, 8.43); Calibrated: 2017/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2017/4/28
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 12.8 W/kg

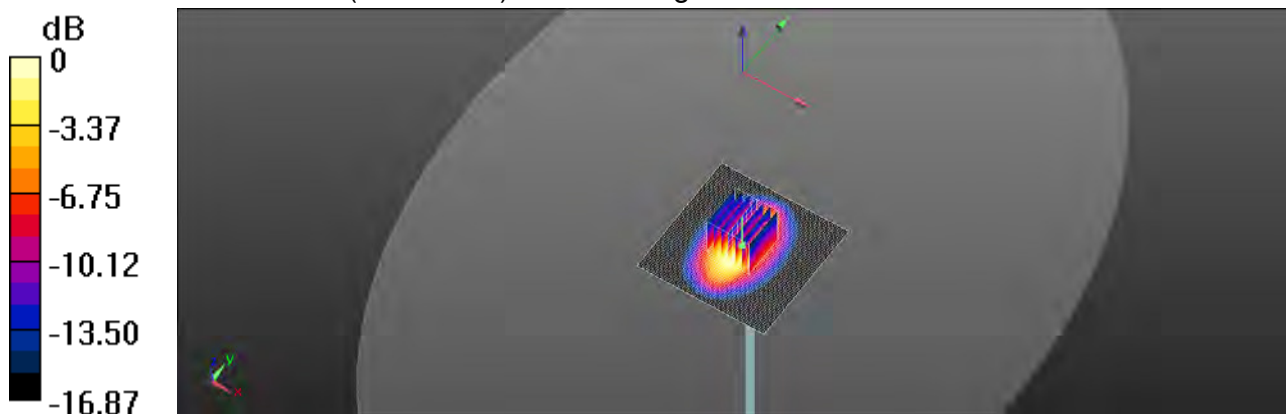
Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 96.75 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 16.2 W/kg

SAR(1 g) = 9.02 W/kg; SAR(10 g) = 4.74 W/kg

Maximum value of SAR (measured) = 12.9 W/kg



0 dB = 12.9 W/kg = 11.11 dBW/kg

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Date: 2018/1/24

Dipole 1900 MHz_SN:5d173

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.534$ S/m; $\epsilon_r = 53.963$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient temperature: 21.7°C; Liquid temperature: 21.4°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(8.12, 8.12, 8.12); Calibrated: 2017/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2017/4/28
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=15 mm, dy=15 mm

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

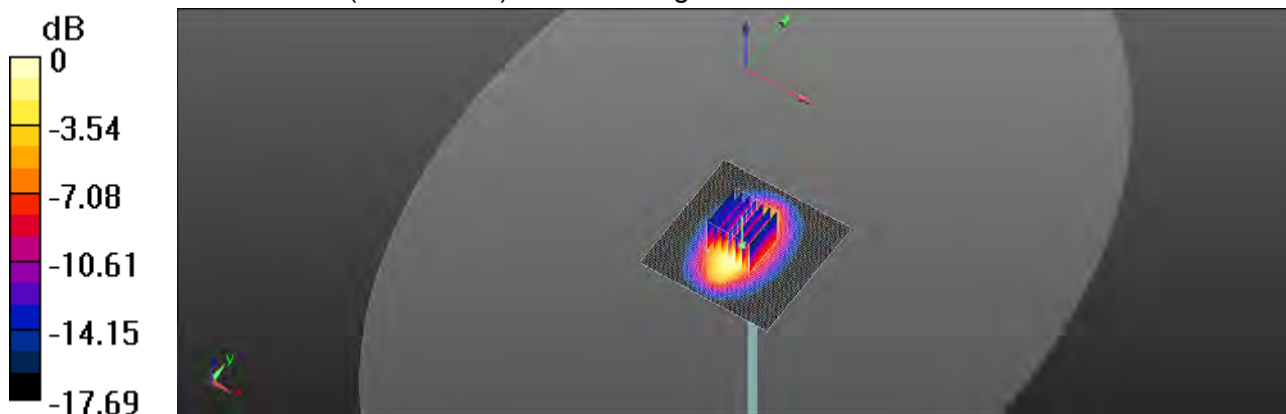
Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 97.61 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 18.1 W/kg

SAR(1 g) = 9.88 W/kg; SAR(10 g) = 5.1 W/kg

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



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

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Date: 2018/1/25

Dipole 2300 MHz_SN:1023

Communication System: CW; Frequency: 2300 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2300$ MHz; $\sigma = 1.745$ S/m; $\epsilon_r = 53.611$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient temperature: 22.6°C; Liquid temperature: 22.8°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.68, 7.68, 7.68); Calibrated: 2017/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2017/4/28
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Pin=250mW/Area Scan (51x51x1): Interpolated grid: dx=12 mm, dy=12 mm

Maximum value of SAR (interpolated) = 20.1 W/kg

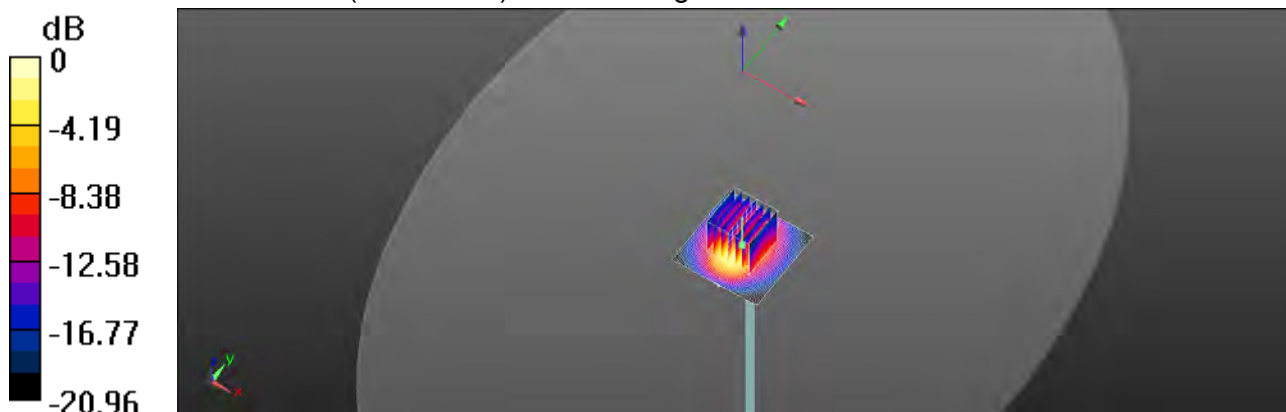
Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 103.1 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 25.3 W/kg

SAR(1 g) = 12.3 W/kg; SAR(10 g) = 5.86 W/kg

Maximum value of SAR (measured) = 19.0 W/kg



0 dB = 19.0 W/kg = 12.79 dBW/kg

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Date: 2018/1/8

Dipole 2450 MHz_SN:727

Communication System: CW; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2450 \text{ MHz}$; $\sigma = 1.977 \text{ S/m}$; $\epsilon_r = 53.612$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Ambient temperature: 22.6°C ; Liquid temperature: 22.9°C

DASY5 Configuration:

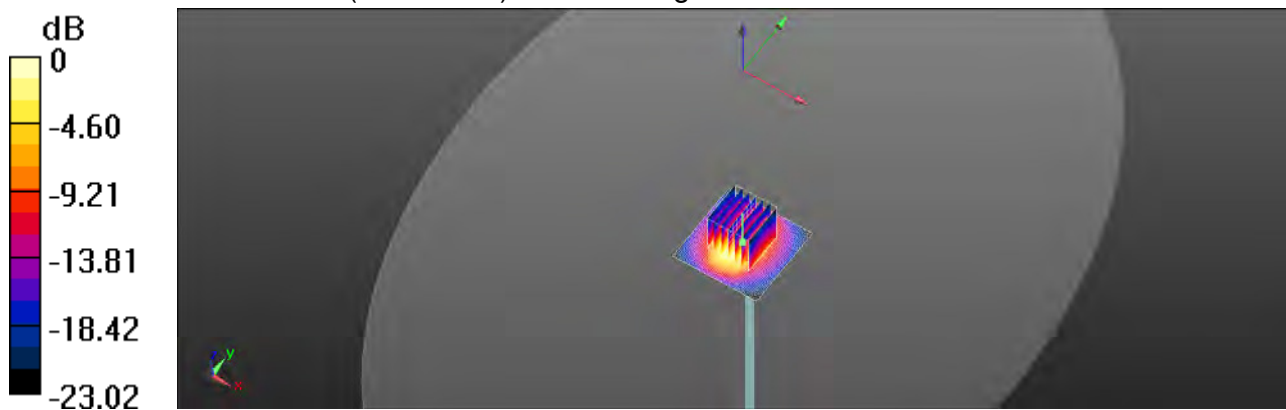
- Probe: EX3DV4 - SN3770; ConvF(7.47, 7.47, 7.47); Calibrated: 2017/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2017/4/28
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Pin=250mW/Area Scan (51x51x1): Interpolated grid: $dx=12 \text{ mm}$, $dy=12 \text{ mm}$

Maximum value of SAR (interpolated) = 21.3 W/kg
Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 100.8 V/m ; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 27.7 W/kg
SAR(1 g) = 12.9 W/kg ; SAR(10 g) = 5.8 W/kg

Maximum value of SAR (measured) = 20.1 W/kg

 $0 \text{ dB} = 20.1 \text{ W/kg} = 13.03 \text{ dBW/kg}$

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Date: 2018/1/25

Dipole 2600 MHz_SN:1005

Communication System: CW; Frequency: 2600 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2600$ MHz; $\sigma = 2.256$ S/m; $\epsilon_r = 52.542$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient temperature: 21.5°C; Liquid temperature: 21.8°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(7.17, 7.17, 7.17); Calibrated: 2017/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2017/4/28
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Pin=250mW/Area Scan (61x61x1): Interpolated grid: dx=12 mm, dy=12 mm

Maximum value of SAR (interpolated) = 22.9 W/kg

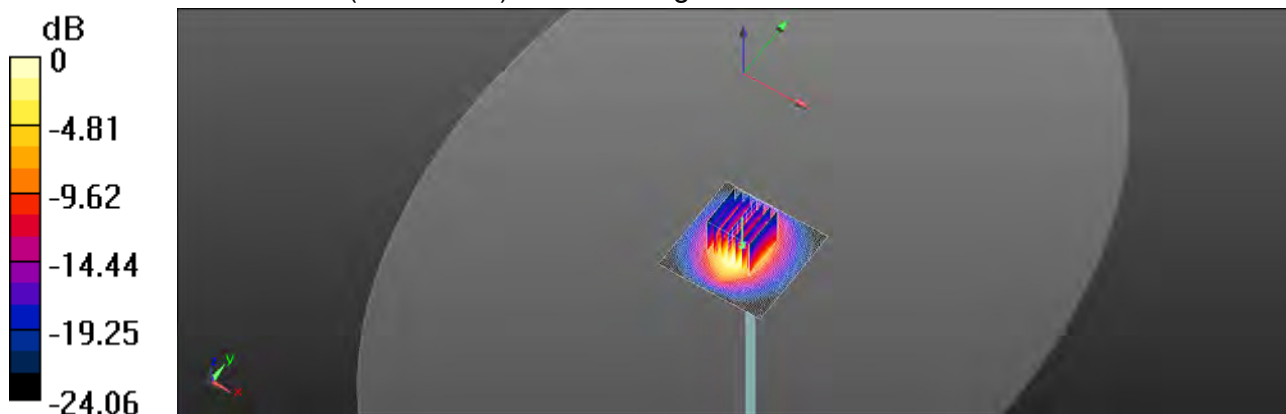
Configuration/Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 97.77 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 31.8 W/kg

SAR(1 g) = 14.4 W/kg; SAR(10 g) = 6.34 W/kg

Maximum value of SAR (measured) = 22.7 W/kg



0 dB = 22.7 W/kg = 13.56 dBW/kg

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Date: 2018/1/9

Dipole 5200 MHz_SN:1023

Communication System: CW; Frequency: 5200 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5200$ MHz; $\sigma = 5.15$ S/m; $\epsilon_r = 49.507$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient temperature: 21.4°C; Liquid temperature: 21.5°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.61, 4.61, 4.61); Calibrated: 2017/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2017/4/28
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Pin=100mW/Area Scan (51x51x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 15.7 W/kg

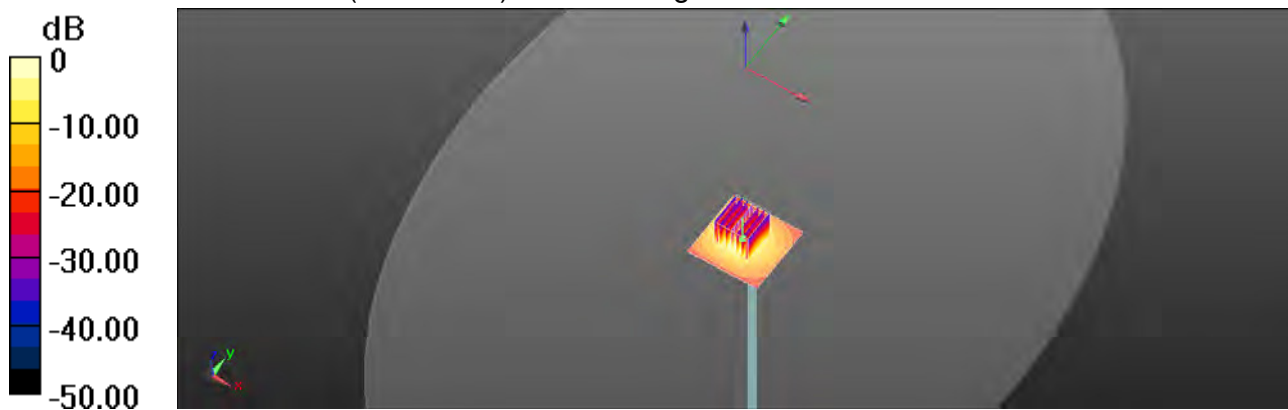
Configuration/Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 56.06 V/m; Power Drift = 0.12 dB

Peak SAR (extrapolated) = 34.0 W/kg

SAR(1 g) = 7.55 W/kg; SAR(10 g) = 2.09 W/kg

Maximum value of SAR (measured) = 16.2 W/kg



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

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Date: 2018/1/10

Dipole 5300 MHz_SN:1023

Communication System: CW; Frequency: 5300 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5300 \text{ MHz}$; $\sigma = 5.331 \text{ S/m}$; $\epsilon_r = 49.221$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Ambient temperature: 21.7°C ; Liquid temperature: 21.3°C

DASY5 Configuration:

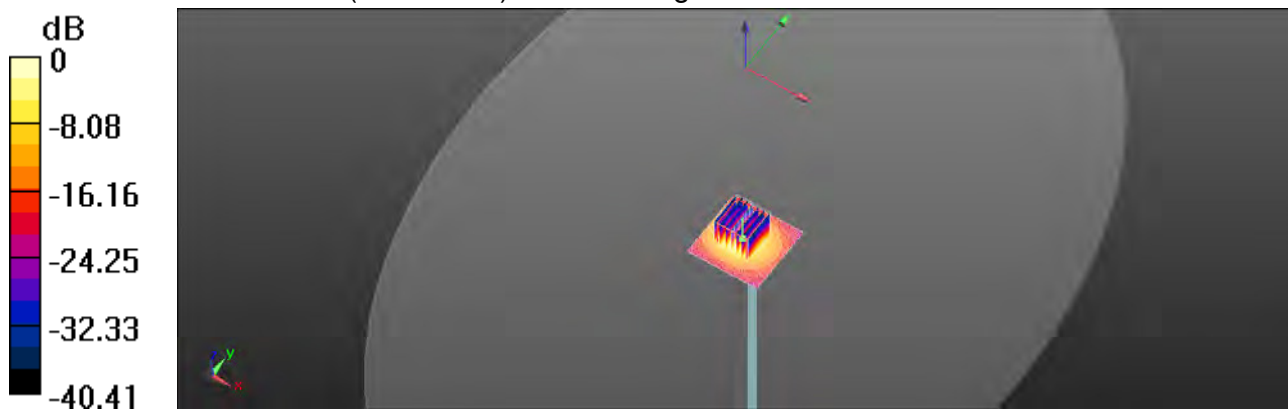
- Probe: EX3DV4 - SN3770; ConvF(4.61, 4.61, 4.61); Calibrated: 2017/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2017/4/28
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Pin=100mW/Area Scan (51x51x1): Interpolated grid: $dx=10 \text{ mm}$, $dy=10 \text{ mm}$

Maximum value of SAR (interpolated) = 15.8 W/kg
Configuration/Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=2\text{mm}$

Reference Value = 54.71 V/m ; Power Drift = 0.18 dB

Peak SAR (extrapolated) = 36.0 W/kg
SAR(1 g) = 7.55 W/kg ; SAR(10 g) = 2.06 W/kg

Maximum value of SAR (measured) = 16.3 W/kg


0 dB = 16.3 W/kg = 12.12 dBW/kg

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Date: 2018/1/11

Dipole 5600 MHz_SN:1023

Communication System: CW; Frequency: 5600 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5600$ MHz; $\sigma = 5.811$ S/m; $\epsilon_r = 48.248$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient temperature: 22.0°C; Liquid temperature: 21.7°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(3.98, 3.98, 3.98); Calibrated: 2017/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2017/4/28
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Pin=100mW/Area Scan (51x51x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 17.3 W/kg

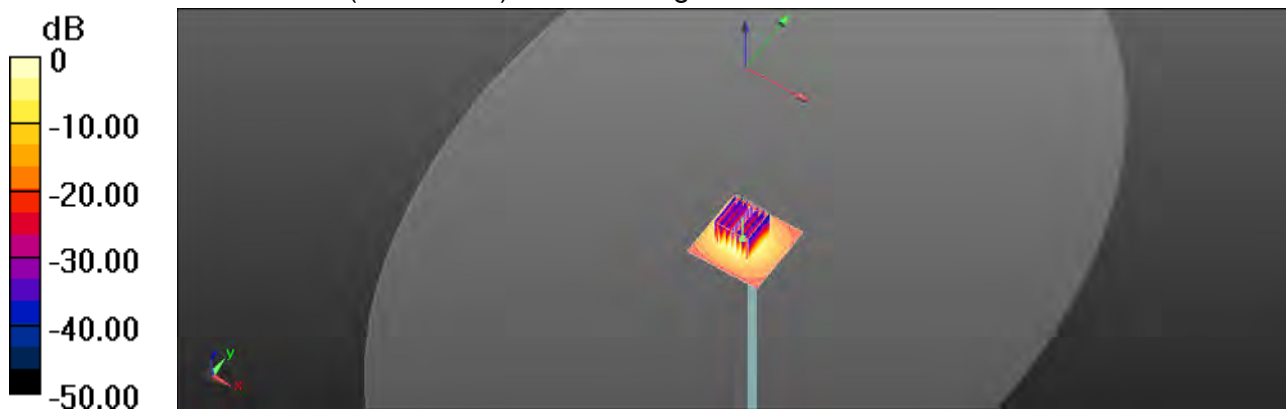
Configuration/Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 55.01 V/m; Power Drift = 0.14 dB

Peak SAR (extrapolated) = 39.8 W/kg

SAR(1 g) = 7.93 W/kg; SAR(10 g) = 2.15 W/kg

Maximum value of SAR (measured) = 17.5 W/kg



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

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Date: 2018/1/12

Dipole 5800 MHz_SN:1023

Communication System: CW; Frequency: 5800 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5800 \text{ MHz}$; $\sigma = 6.146 \text{ S/m}$; $\epsilon_r = 47.583$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Ambient temperature: 22.3°C; Liquid temperature: 22.0°C

DASY5 Configuration:

- Probe: EX3DV4 - SN3770; ConvF(4.38, 4.38, 4.38); Calibrated: 2017/4/27;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 2017/4/28
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Pin=100mW/Area Scan (51x51x1): Interpolated grid: $dx=10 \text{ mm}$, $dy=10 \text{ mm}$

Maximum value of SAR (interpolated) = 17.4 W/kg

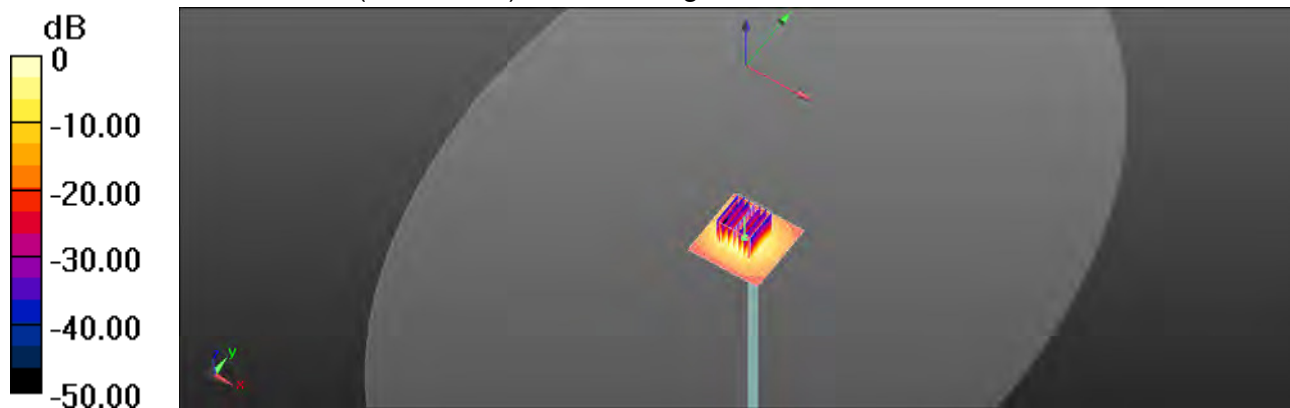
Configuration/Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=2\text{mm}$

Reference Value = 55.20 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 39.9 W/kg

SAR(1 g) = 7.99 W/kg; SAR(10 g) = 2.16 W/kg

Maximum value of SAR (measured) = 17.4 W/kg



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

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7.DAE & Probe Calibration Certificate

Calibration Laboratory of
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Engineering AG
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Accreditation No.: SCS 0108

Client SGS - TW (Auden)

Certificate No: DAE4-856_Apr17

CALIBRATION CERTIFICATE

Object DAE4 - SD 000 D04 BM - SN: 856

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

Calibration date: April 28, 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&PE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Kathley Multimeter Type 2001	SN: 0010278	09-Sep-16 (No.13065)	Sep-17
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Auto DAE Calibration Unit	SE UWS 053 AA 1001	05-Jan-17 (in house check)	in house check: Jan-18
Calibrator Box V2.1	SE UMS 008 AA 1002	05-Jan-17 (in house check)	in house check: Jan-18

Calibrated by:	Name Adrian Gehring	Function Technician	Signature
Approved by:	Fritz Bortolotti	Deputy Technical Manager	
			Issued: April 28, 2017

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Certificate No: DAE4-856_Apr17

Page 1 of 5

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f (886 2) 2298 0488

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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.

Certificate No: DAE4-B56, Apr17

Page 2 of 4

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DC Voltage Measurement

A/D Converter Resolution nominal

High Range: 1LSB = 6 μ V full range = -100...+300 mV

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

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

Calibration Factors	X	Y	Z
High Range	403.433 $\pm$ 0.02% (k=2)	404.548 $\pm$ 0.02% (k=2)	403.875 $\pm$ 0.02% (k=2)
Low Range	3.97691 $\pm$ 1.50% (k=2)	3.97761 $\pm$ 1.50% (k=2)	3.97820 $\pm$ 1.50% (k=2)

Connector Angle

Connector Angle to be used in QASY system	265.0 $^{\circ}$ $\pm$ 1 $^{\circ}$
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Appendix (Additional assessments outside the scope of SCS0108)

1. DC Voltage Linearity

High Range	Reading (μV)	Difference (μV)	Error (%)
Channel X + Input	19990.20	-3.22	-0.00
Channel X + Input	19998.56	-2.48	-0.01
Channel X - Input	-20000.93	0.14	-0.00
Channel Y + Input	199991.93	-1.72	-0.00
Channel Y + Input	19997.38	-3.74	-0.02
Channel Y - Input	-20002.46	-1.42	0.01
Channel Z + Input	199994.32	0.88	0.00
Channel Z + Input	19998.13	-2.80	-0.01
Channel Z - Input	-20002.06	-0.83	0.00

Low Range	Reading (μV)	Difference (μV)	Error (%)
Channel X + Input	2000.92	0.26	0.01
Channel X + Input	201.31	0.06	0.03
Channel X - Input	-198.68	0.02	-0.01
Channel Y + Input	2000.75	-0.06	-0.00
Channel Y + Input	200.81	-0.45	-0.22
Channel Y - Input	-199.12	-0.55	0.28
Channel Z + Input	2001.03	0.18	0.01
Channel Z + Input	200.28	-0.96	-0.47
Channel Z - Input	-199.73	-1.15	0.58

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	-15.65	-15.66
	-200	17.25	15.98
Channel Y	200	-1.72	-2.19
	-200	0.71	0.50
Channel Z	200	10.75	10.48
	-200	-13.09	-13.42

3. Channel separation

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

	Input Voltage (mV)	Channel X (μV)	Channel Y (μV)	Channel Z (μV)
Channel X	200	-	2.87	-2.63
Channel Y	200	7.31	-	2.81
Channel Z	200	8.33	5.08	-

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4. AD-Converter Values with inputs shorted

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

	High Range (LSB)	Low Range (LSB)
Channel X	16226	16854
Channel Y	15953	17971
Channel Z	15877	17010

5. Input Offset Measurement

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

Input 10MQ

	Average (μ V)	min. Offset (μ V)	max. Offset (μ V)	Std. Deviation (μ V)
Channel X	-0.26	-0.37	1.30	0.27
Channel Y	0.02	-1.04	0.89	0.39
Channel Z	-1.00	-1.74	0.18	0.38

6. Input Offset Current

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

7. Input Resistance (Typical values for information)

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

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

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

9. Power Consumption (Typical values for information)

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

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Accreditation No.: **SCS 0108**

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

Certificate No.: **EX3-3770 Apr17**

CALIBRATION CERTIFICATE

Object: **EX3DV4 - SN:3770**

Calibration procedure(s): **QA CAL-01.v9, QA CAL-12.v9, QA CAL-14.v4, QA CAL-23.v5,
QA CAL-25.v6
Calibration procedure for dosimetric E-field probes**

Calibration date: **April 27, 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 $(22 \pm 3)^\circ\text{C}$ and humidity $< 70\%$.

Calibration Equipment used (MATE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-17 (No. 217-02521/02522)	Apr-18
Power sensor NRP-Z91	SN: 103244	04-Apr-17 (No. 217-02521)	Apr-18
Power sensor NRP-Z91	SN: 103245	04-Apr-17 (No. 217-02525)	Apr-18
Reference 20 dB Attenuator	SN: S0277 (20x)	07-Apr-17 (No. 217-02528)	Apr-18
Reference Probe ES3DV2	SN: 3013	31-Dec-16 (No. ES3-3013_Dec16)	Dec-17
DAE4	SN: 660	7-Dec-16 (No. DAE4-660_Dec16)	Dec-17
Secondary Standards	ID	Check Date (in house)	Scheduled Check
Power meter E4418B	SN: GB41283574	05-Apr-16 (in house check Jun-16)	In house check: Jun-18
Power sensor E4412A	SN: MY41468087	05-Apr-16 (in house check Jun-16)	In house check: Jun-18
Power sensor E4412A	SN: 000110210	05-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: US37390685	19-Oct-01 (in house check Oct-16)	In house check: Oct-17

Calibrated by: **Claudio Leutler** Function: **Laboratory Technician** Signature:

Approved by: **Kolja Polakov** Technical Manager Signature:

Issued: **May 1, 2017**

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Certificate No.: **EX3-3770 Apr17**

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Accreditation No.: **SCS 0108**

Glossary:

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

Calibration is Performed According to the Following Standards:

- IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices. Measurement Techniques", June 2013
- IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
- IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
- KDB 885664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Methods Applied and Interpretation of Parameters:

- NORM_{x,y,z}: Assessed for E-field polarization $\theta = 0$ ($f \leq 900$ MHz in TEM-cell; $f > 1800$ MHz: R22 waveguide). NORM_{x,y,z} are only intermediate values, i.e., the uncertainties of NORM_{x,y,z} does not affect the E²-field uncertainty inside TSL (see below ConvF).
- NORM(f)_{x,y,z} = NORM_{x,y,z} * frequency_response (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of ConvF.
- 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.
- A_{x,y,z}, B_{x,y,z}, C_{x,y,z}, D_{x,y,z}, VR_{x,y,z}: A, B, C, D are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. VR is the maximum calibration range expressed in RMS voltage across the diode.
- ConvF and Boundary Effect Parameters: Assessed in flat phantom using E-field (or Temperature Transfer Standard for $f \leq 800$ MHz) and inside waveguide using analytical field distributions based on power measurements for $f > 800$ MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORM_{x,y,z} * ConvF whereby the uncertainty corresponds to that given for ConvF. A frequency dependent ConvF is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- Spherical isotropy (3D deviation from isotropy): in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- Sensor Offset: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- Connector Angle: The angle is assessed using the information gained by determining the NORM_x (no uncertainty required).

Certificate No: EN3-3770_Apr17

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EX3DV4--SN:3770

April 27, 2017

Probe EX3DV4

SN:3770

Manufactured: July 6, 2010
Calibrated: April 27, 2017

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

Certificate No: EX3-3770_Apr17

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EX3DV4-SN:3770

April 27, 2017

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3770**Basic Calibration Parameters**

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$) ^a	0.30	0.59	0.39	$\pm 10.1\%$
DCP (mV) ^b	105.5	99.9	100.3	

Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB/ μV	C	D dB	VR mV	Unc ^c (k=2)
0	CW	X	0.0	0.0	1.0	0.00	194.4	$\leq 7\%$
		Y	0.0	0.0	1.0		177.5	
		Z	0.0	0.0	1.0		188.0	

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-field uncertainty value 10% (see Pages 6 and 6).

^b Numerical derivation parameter: uncertainty not required.

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

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EX3DV4- SN:3770

April 27, 2017

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3770**Calibration Parameter Determined in Head Tissue Simulating Media**

f (MHz) ^c	Relative Permittivity ^a	Conductivity (S/m) ^b	ConvF X	ConvF Y	ConvF Z	Alpha ^c	Depth ^b (mm)	Unc (k=2)
450	43.5	0.87	11.41	11.41	11.41	0.14	1.20	± 13.3 %
750	41.9	0.89	10.17	10.17	10.17	0.51	0.80	± 12.0 %
1135	41.3	0.90	9.71	9.71	9.71	0.38	0.90	± 12.0 %
1900	41.0	0.97	9.52	9.52	9.52	0.42	0.84	± 12.0 %
2300	40.1	1.37	8.49	8.49	8.49	0.36	0.84	± 12.0 %
2600	40.0	1.40	8.08	8.08	8.08	0.42	0.80	± 12.0 %
3200	40.0	1.40	8.13	8.13	8.13	0.41	0.80	± 12.0 %
3300	39.5	1.67	7.90	7.90	7.90	0.37	0.84	± 12.0 %
3450	39.2	1.80	7.46	7.46	7.46	0.43	0.80	± 12.0 %
3600	39.0	1.96	7.18	7.18	7.18	0.32	0.96	± 12.0 %
5250	35.9	4.71	5.37	5.37	5.37	0.55	1.80	± 13.1 %
5600	35.5	5.07	4.88	4.88	4.88	0.40	1.80	± 13.1 %
5750	35.4	5.22	5.25	5.25	5.25	0.40	1.80	± 13.1 %

^a Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 80 MHz. The uncertainty is the RES of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 80 and 100 MHz for ConvF assessments at 30, 60, 120, 150 and 220 MHz respectively. Above 5 GHz frequency validity can be extended to ± 110 MHz.

^b At frequencies below 3 GHz, the validity of tissue parameters (i) and (ii) 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 (i) and (ii) is restricted to ± 5%. The uncertainty is the RES of the ConvF uncertainty for indicated target tissue parameters.

^c Alpha/Depth are determined during calibration. SPEAG warrants that the measuring 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.

Certificate No: EX3-3770, April 17

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EX3DV4-SN3770

April 27, 2017

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3770**Calibration Parameter Determined in Body Tissue Simulating Media**

f (MHz) ¹	Relative Permittivity ²	Conductivity (S/m) ²	ConvF X	ConvF Y	ConvF Z	Alpha ³	Depth ⁴ (mm)	Unc (%=2)
450	56.7	0.94	10.64	10.64	10.64	0.09	1.20	± 13.3 %
750	55.6	0.96	9.96	9.96	9.96	0.52	0.80	± 12.0 %
835	55.2	0.97	9.65	9.65	9.65	0.39	0.91	± 12.0 %
900	55.0	1.05	9.59	9.59	9.59	0.39	0.90	± 12.0 %
1750	53.4	1.49	8.43	8.43	8.43	0.41	0.80	± 12.0 %
1900	53.3	1.52	8.12	8.12	8.12	0.23	1.12	± 12.0 %
2000	53.3	1.52	8.00	8.00	8.00	0.43	0.80	± 12.0 %
2300	52.9	1.81	7.68	7.68	7.68	0.37	0.80	± 12.0 %
2450	52.7	1.95	7.47	7.47	7.47	0.35	0.86	± 12.0 %
2600	52.5	2.16	7.17	7.17	7.17	0.28	0.99	± 12.0 %
5250	48.9	5.36	4.61	4.61	4.61	0.45	1.90	± 13.1 %
5600	48.5	5.77	3.98	3.98	3.98	0.50	1.90	± 13.1 %
5750	48.5	5.94	4.38	4.38	4.38	0.50	1.90	± 13.1 %

¹ Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.0 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 bands. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 60, 120, 150 and 220 MHz respectively. Above 5 GHz frequency validity can be extended to ± 110 MHz.

² 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.

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

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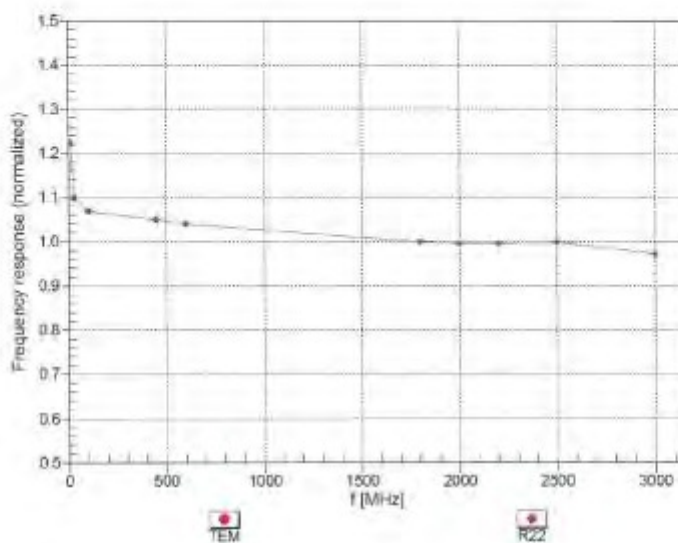
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EX30V4-SN3770

April 27, 2017

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



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

Certificate No. EX3-3770, Apr17

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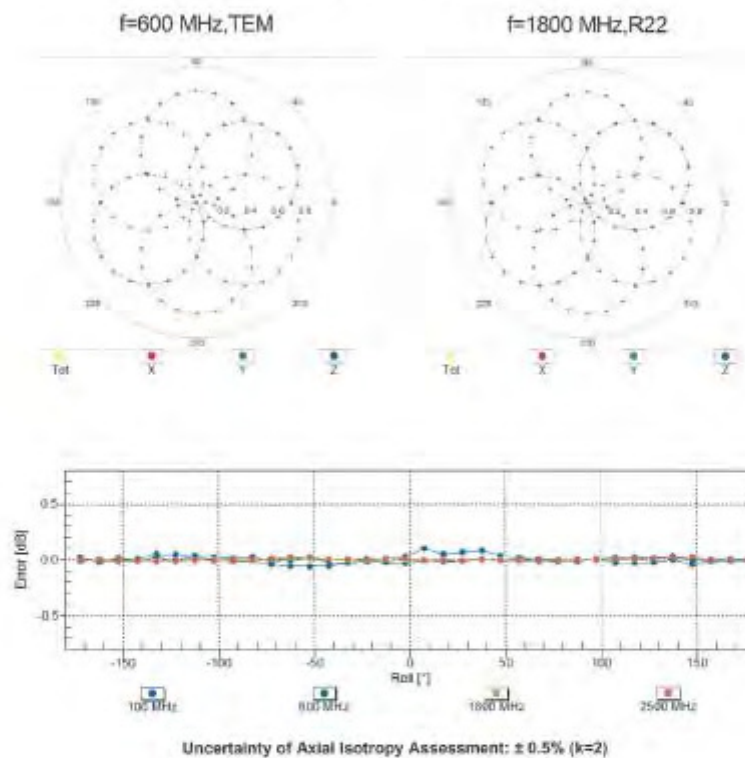
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EX3DV4- SN:3770

April 27, 2017

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



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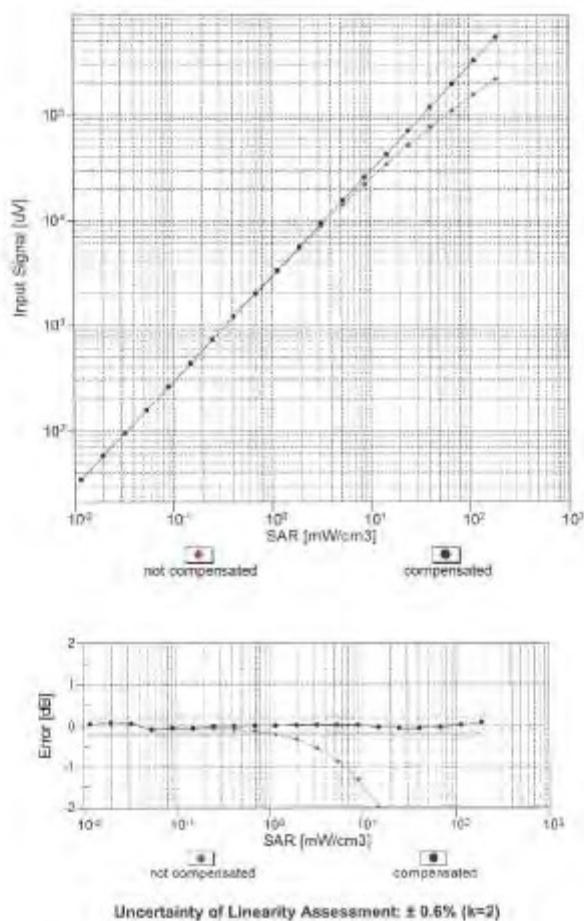
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EX30V4-SN-3770

April 27, 2017

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



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

Certificate No: EX3-3770_Apr17

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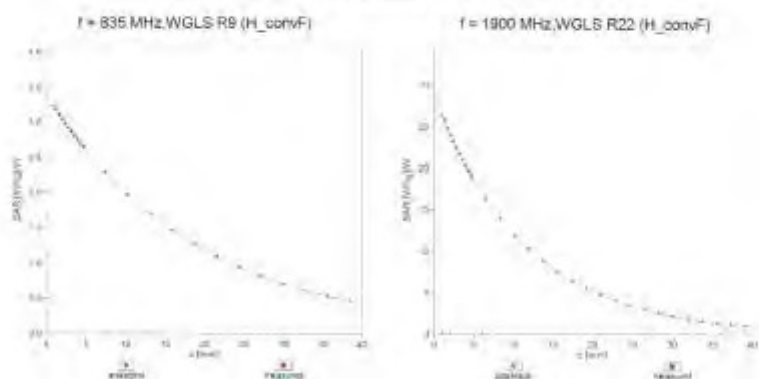
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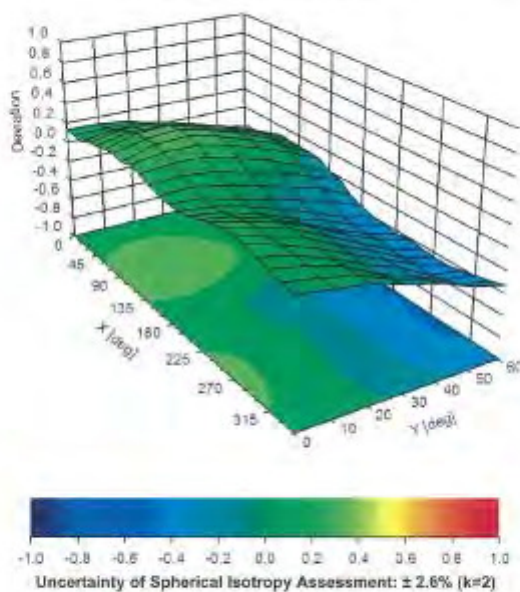
EX3DV4- SN:3770

April 27, 2017

Conversion Factor Assessment



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



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EX3DV4- SN:3770

April 27, 2017

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

Sensor Arrangement	Triangular
Connector Angle (°)	-32.4
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	8 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	1.8 mm

Certificate No: EX3-3770_Apr17

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8. Uncertainty Budget

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

A	c	D	e		f	g	h=c * f / e	i=c * g / e	k
Source of Uncertainty	Tolerance/ Uncertainty	Probabilit y	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.)	1.51%	N	1	1	0.64	0.43	0.97%	0.65%	M
Liquid Conductivity (mea.)	2.94%	N	1	1	0.6	0.49	1.76%	1.44%	M
Combined standard uncertainty		RSS					11.89%	11.81%	
Expant uncertainty (95% confidence)							23.77%	23.63%	

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f (886 2) 2298 0488

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

A	c	D	e		f	g	h=c * f / e	i=c * g / e	k
Source of Uncertainty	Tolerance/ Uncertainty	Probabilit y	Div	Div Value	ci (1g)	ci (10g)	Standard uncertainty	Standard uncertainty	vi, or Veff
Measurement system									
Probe calibration	6.00%	N	1	1	1	1	6.00%	6.00%	∞
Isotropy , Axial	3.50%	R	$\sqrt{3}$	1.732	1	1	2.02%	2.02%	∞
Isotropy, Hemispherical	9.60%	R	$\sqrt{3}$	1.732	1	1	5.54%	5.54%	∞
Modulation Response	2.40%	R	$\sqrt{3}$	1.732	1	1	1.40%	1.40%	∞
Boundary Effect	1.00%	R	$\sqrt{3}$	1.732	1	1	0.58%	0.58%	∞
Linearity	4.70%	R	$\sqrt{3}$	1.732	1	1	2.71%	2.71%	∞
Detection Limits	1.00%	R	$\sqrt{3}$	1.732	1	1	0.58%	0.58%	∞
Readout Electronics	0.30%	N	1	1	1	1	0.30%	0.30%	∞
Response time	0.80%	R	$\sqrt{3}$	1.732	1	1	0.46%	0.46%	∞
Integration Time	2.60%	R	$\sqrt{3}$	1.732	1	1	1.50%	1.50%	∞
Measurement drift (class A evaluation)	1.75%	R	$\sqrt{3}$	1.732	1	1	1.01%	1.01%	∞
RF ambient condition - noise	3.00%	R	$\sqrt{3}$	1.732	1	1	1.73%	1.73%	∞
RF ambient conditions - reflections	3.00%	R	$\sqrt{3}$	1.732	1	1	1.73%	1.73%	∞
Probe positioner Mechanical restrictions	0.40%	R	$\sqrt{3}$	1.732	1	1	0.23%	0.23%	∞
Probe Positioning with respect to phantom	2.90%	R	$\sqrt{3}$	1.732	1	1	1.67%	1.67%	∞
Post-processing	1.00%	R	$\sqrt{3}$	1.732	1	1	0.58%	0.58%	∞
Max SAR Eval	1.00%	R	$\sqrt{3}$	1.732	1	1	0.58%	0.58%	∞
Test Sample related									
Test sample positioning	2.90%	N	1	1	1	1	2.90%	2.90%	M-1
Device Holder Uncertainty	3.60%	N	1	1	1	1	3.60%	3.60%	M-1
Drift of output power	5.00%	R	$\sqrt{3}$	1.732	1	1	2.89%	2.89%	∞
Phantom and Setup									
Phantom Uncertainty	4.00%	R	$\sqrt{3}$	1.732	1	1	2.31%	2.31%	∞
Liquid permittivity (mea.)	3.74%	N	1	1	0.64	0.43	2.39%	1.61%	M
Liquid Conductivity (mea.)	4.56%	N	1	1	0.6	0.49	2.74%	2.23%	M
Combined standard uncertainty		RSS					11.98%	11.74%	

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t (886 2) 2299 3279

f (886 2) 2298 0488

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9. System Validation from Original Equipment Supplier

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

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

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Accreditation No.: SCS 0108

Client: **SGS-TW (Auden)** Certificate No.: **D750V3-1015_Aug17**

CALIBRATION CERTIFICATE

Object: **D750V3 - SN-1015**

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

Calibration date: **August 21, 2017**

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

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

Calibration Equipment used (M&E critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-17 (No. 217-02521/02522)	Apr-18
Power sensor NRP-Z91	SN: 103244	04-Apr-17 (No. 217-02521)	Apr-18
Power sensor NRP-Z91	SN: 103245	04-Apr-17 (No. 217-02522)	Apr-18
Reference 20 dB Attenuator	SN: 5055 (20k)	07-Apr-17 (No. 217-02528)	Apr-18
Type-N mismatch combination	SN: 5047.2 / D5327	07-Apr-17 (No. 217-02529)	Apr-18
Reference Probe EXDVA	SN: 7349	31-May-17 (No. EX3-7349_May17)	May-18
DAB4	SN: 601	28-Mar-17 (No. DAB4-601_Mar17)	Mar-18

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter EPM-442A	SN: GB37460704	07-Oct-15 (in house check Oct-16)	in house check: Oct-18
Power sensor HP 8461A	SN: US37292783	07-Oct-15 (in house check Oct-16)	in house check: Oct-18
Power sensor HP 8461A	SN: MY41092317	07-Oct-15 (in house check Oct-16)	in house check: Oct-18
RF generator R&S SMT-08	SN: 100072	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

Calibrated by: **Olga Loubler** (Name) **Laboratory Technician** (Function) 

Approved by: **Katja Polzenc** (Name) **Technical Manager** (Function) 

Issued: August 21, 2017

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

Certificate No.: D750V3-1015_Aug17

Page 1 of 8

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f (886 2) 2298 0488

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



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Accreditation No.: SCS 0108

Glossary:

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

- DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

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Measurement Conditions

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

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

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.9	0.89 mho/m
Measured Head TSL parameters	(22.0 $\pm$ 0.2) °C	41.1 $\pm$ 6 %	0.90 mho/m $\pm$ 5 %
Head TSL temperature change during test	< 0.5 °C	—	—

SAR result with Head TSL

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

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

Body TSL parameters

The following parameters and calculations were applied.

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

SAR result with Body TSL

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

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

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Appendix (Additional assessments outside the scope of SCS 0108)**Antenna Parameters with Head TSL**

Impedance, transformed to feed point	$53.9 \Omega \pm 0.3 j\Omega$
Return Loss	$\sim 28.6 \text{ dB}$

Antenna Parameters with Body TSL

Impedance, transformed to feed point	$48.6 \Omega - 3.4 j\Omega$
Return Loss	$\sim 28.4 \text{ dB}$

General Antenna Parameters and Design

Electrical Delay (one direction)	1.037 ns
----------------------------------	----------

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

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	March 22, 2010

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DASY5 Validation Report for Head TSL

Date: 18.08.2017

Test Laboratory: SPEAG, Zurich, Switzerland

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

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

Medium parameters used: $f = 750 \text{ MHz}$; $\sigma = 0.9 \text{ S/m}$; $\epsilon_r = 41.1$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY52 Configuration:

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

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

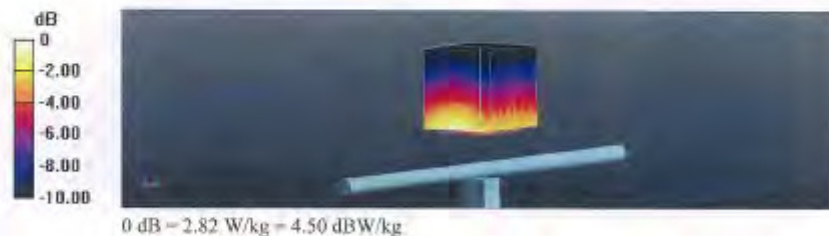
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 58.52 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 3.21 W/kg

SAR(1 g) = 2.09 W/kg; SAR(10 g) = 1.35 W/kg

Maximum value of SAR (measured) = 2.82 W/kg

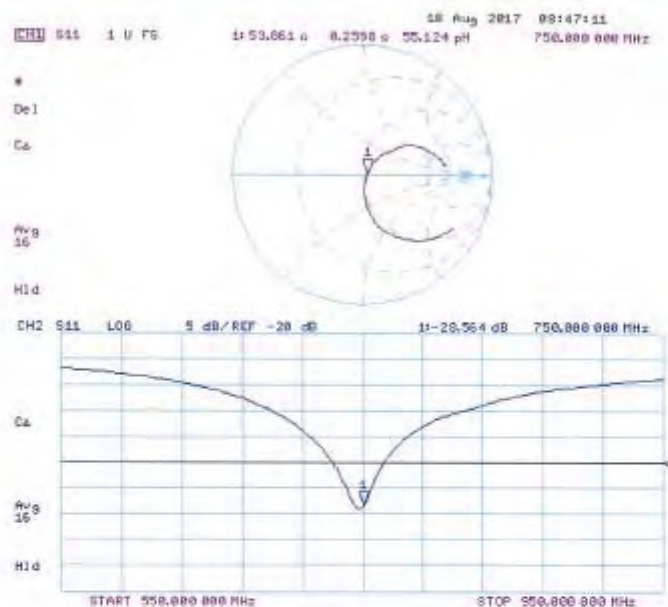


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Impedance Measurement Plot for Head TSL



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DASY5 Validation Report for Body TSL

Date: 21.08.2017

Test Laboratory: SPEAG, Zurich, Switzerland

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

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

Medium parameters used: $f = 750 \text{ MHz}$; $\sigma = 0.96 \text{ S/m}$; $\epsilon_r = 55.5$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY52 Configuration:

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

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

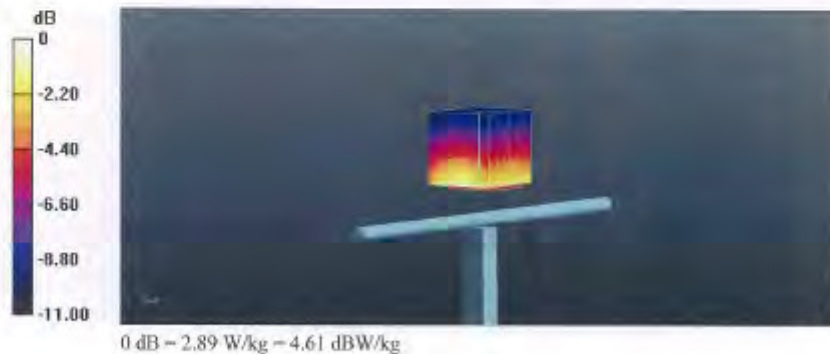
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 57.77 V/m; Power Drift = -0.00 dB

Peak SAR (extrapolated) = 3.27 W/kg

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

Maximum value of SAR (measured) = 2.89 W/kg

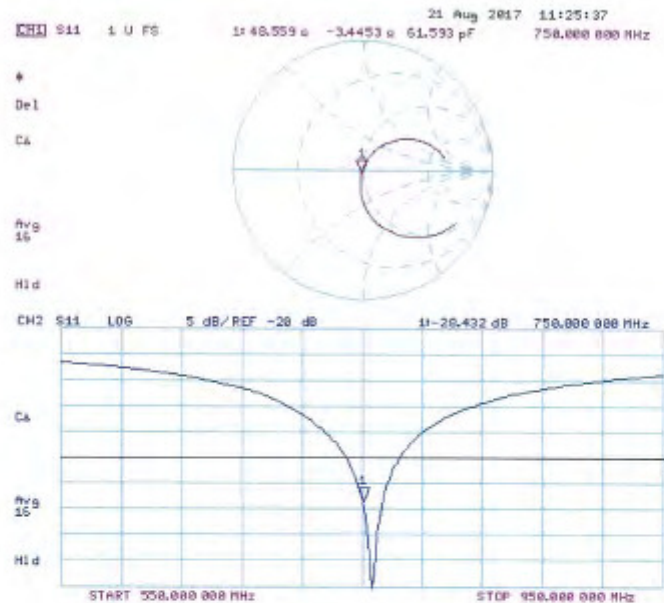


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Impedance Measurement Plot for Body TSL



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**Calibration Laboratory of
Schmid & Partner
Engineering AG**
Zeughausstrasse 43, 8664 Zurich, Switzerland



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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

Client **SGS-TW (Auden)**

Certificate No: **D835V2-4d063_Aug17**

CALIBRATION CERTIFICATE

Object **D835V2 - SN-4d063**

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

Calibration date: **August 21, 2017**

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

All calibrations have been conducted in the closed laboratory facility, environment temperature $(22 \pm 3)^\circ\text{C}$ and humidity $< 70\%$.

Calibration Equipment used (MATE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-17 (No. 217-02521/02522)	Apr-18
Power sensor NRP-Z51	SN: 103244	04-Apr-17 (No. 217-02521)	Apr-18
Power sensor NRP-Z51	SN: 103245	04-Apr-17 (No. 217-02522)	Apr-18
Reference 20 dB Attenuator	SN: 5058 (20k)	07-Apr-17 (No. 217-02525)	Apr-18
Type-N mismatch combination	SN: 5047.2 / 03327	07-Apr-17 (No. 217-02529)	Apr-18
Reference Probe EX30V4	SN: 7349	31-May-17 (No. EX3-7349_May17)	May-18
DAEA	SN: 601	28-Mar-17 (No. DAE4-601_Mar17)	Mar-18
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter EPM-442A	SN: GB37480704	07-Oct-15 (in house check Oct-16)	In house check Oct-18
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-16)	In house check Oct-18
Power sensor HP 8481A	SN: MY41002317	07-Oct-15 (in house check Oct-16)	In house check Oct-18
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-16)	In house check Oct-18
Network Analyzer HP 8753E	SN: US37390585	18-Oct-01 (in house check Oct-16)	In house check Oct-17

	Name	Function	Signature
Calibrated by	Claudio Leubner	Laboratory Technician	
Approved by	Katja Polovic	Technical Manager	

Issued: August 21, 2017

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Certificate No: **D835V2-4d063_Aug17**

Page 1 of 8

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台灣檢驗科技股份有限公司

No.134,Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan 24803/新北市五股區新北產業園區五工路 134 號

t (886 2) 2299 3279

f (886 2) 2298 0488

www.tw.sgs.com

Member of SGS Group

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



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Accreditation No.: SCS 0108

Glossary:

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

- DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

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Measurement Conditions

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

DASY Version	DASY5	v52.10.0
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	835 MHz $\pm$ 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.5	0.90 mho/m
Measured Head TSL parameters	(22.0 $\pm$ 0.2) °C	40.9 $\pm$ 6 %	0.93 mho/m $\pm$ 8 %
Head TSL temperature change during test	< 0.5 °C	—	—

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.40 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	9.34 W/kg $\pm$ 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.55 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	6.07 W/kg $\pm$ 16.5 % (k=2)

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	56.2	0.97 mho/m
Measured Body TSL parameters	(22.0 $\pm$ 0.2) °C	55.3 $\pm$ 6 %	0.98 mho/m $\pm$ 6 %
Body TSL temperature change during test	< 0.5 °C	—	—

SAR result with Body TSL

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	2.41 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	9.57 W/kg $\pm$ 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.58 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	6.28 W/kg $\pm$ 16.5 % (k=2)

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Appendix (Additional assessments outside the scope of SCS 0108)**Antenna Parameters with Head TSL**

Impedance, transformed to feed point	51.1 Ω - 2.7 $j\Omega$
Return Loss	-30.6 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	47.2 Ω - 5.2 $j\Omega$
Return Loss	-24.4 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.367 ns
----------------------------------	----------

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

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	November 27, 2006

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DASY5 Validation Report for Head TSL

Date: 18.08.2017

Test Laboratory: SPEAG, Zurich, Switzerland

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

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

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.93 \text{ S/m}$; $\epsilon_r = 40.9$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY52 Configuration:

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

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

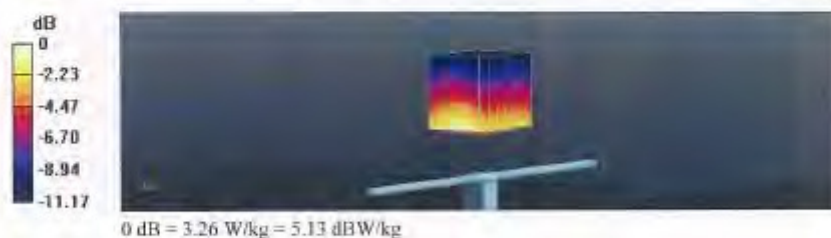
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 61.74 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 3.71 W/kg

SAR(1 g) = 2.4 W/kg; SAR(10 g) = 1.55 W/kg

Maximum value of SAR (measured) = 3.26 W/kg

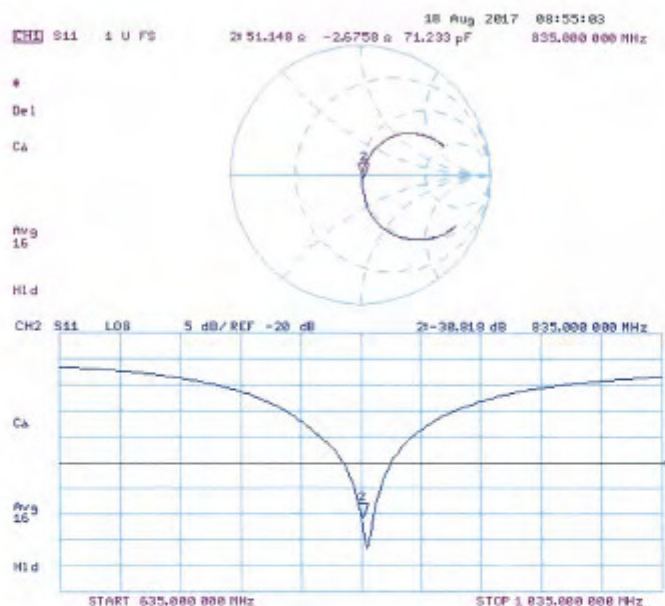


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Impedance Measurement Plot for Head TSL



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DASY5 Validation Report for Body TSL

Date: 21.08.2017

Test Laboratory: SPEAG, Zurich, Switzerland

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

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

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.98 \text{ S/m}$; $\epsilon_r = 55.3$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY52 Configuration:

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

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

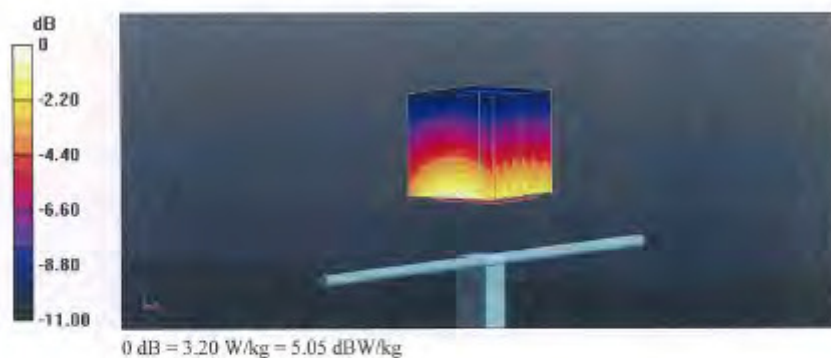
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 59.86 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 3.64 W/kg

SAR(1 g) = 2.41 W/kg; SAR(10 g) = 1.58 W/kg

Maximum value of SAR (measured) = 3.20 W/kg



Certificate No: D835V2-4d063_Aug17

Page 7 of 8

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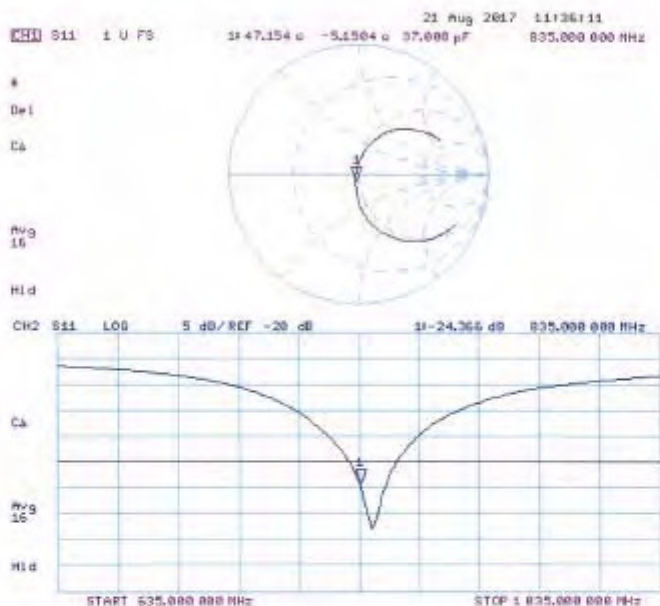
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Impedance Measurement Plot for Body TSL



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Accreditation No.: **SCS 0108**

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

Certificate No: **D1750V2-1008_Aug17**

CALIBRATION CERTIFICATE

Object: **D1750V2 - SN:1008**

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

Calibration date: **August 21, 2017**

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

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

Calibration Equipment used (MATE critical for calibration):

Primary Standards	ID #	Cal Data (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-17 (No. 217-02521/02522)	Apr-18
Power sensor NRP-Z91	SN: 103244	04-Apr-17 (No. 217-02521)	Apr-18
Power sensor NRP-Z91	SN: 103245	04-Apr-17 (No. 217-02522)	Apr-18
Reference 20 dB Attenuator	SN: 5058 (20k)	07-Apr-17 (No. 217-02528)	Apr-18
Type-N mismatch combination	SN: 5047.2 / 06327	07-Apr-17 (No. 217-02528)	Apr-18
Reference Probe EX3DV4	SN: 7349	31-May-17 (No. EX3-7349_May17)	May-18
DAE4	SN: 601	28-Mar-17 (No. DAE4-601_Mar17)	Mar-18
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter EPM-442A	SN: Q837480704	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

Calibrated by: **Gaëlle Leublier** (Name) **Laboratory Technician** (Function)

Approved by: **Kalle Pokovic** (Name) **Technical Manager** (Function)

Issued: August 21, 2017

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Certificate No: **D1750V2-1008_Aug17**

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Multilateral Agreement for the recognition of calibration certificates.

Accreditation No.: **SCS 0108**

Glossary:

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

- DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

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Measurement Conditions

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

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

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	40.1	1.37 mho/m
Measured Head TSL parameters	(22.0 $\pm$ 0.2) °C	39.1 $\pm$ 6 %	1.35 mho/m $\pm$ 8 %
Head TSL temperature change during test	< 0.5 °C	—	—

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	8.98 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	36.0 W/kg $\pm$ 17.0 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	4.75 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	19.0 W/kg $\pm$ 16.5 % (k=2)

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	53.4	1.49 mho/m
Measured Body TSL parameters	(22.0 $\pm$ 0.2) °C	53.9 $\pm$ 6 %	1.47 mho/m $\pm$ 8 %
Body TSL temperature change during test	< 0.5 °C	—	—

SAR result with Body TSL

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	9.09 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	36.7 W/kg $\pm$ 17.0 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	4.87 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	19.6 W/kg $\pm$ 16.5 % (k=2)

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Appendix (Additional assessments outside the scope of SCS 0108)**Antenna Parameters with Head TSL**

Impedance, transformed to feed point	49.9 Ω - 0.4 j Ω
Return Loss	-48.7 dB

Antenna Parameters with Body TSL

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

General Antenna Parameters and Design

Electrical Delay (one direction)	1.221 ns
----------------------------------	----------

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

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	February 11, 2009

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DASY5 Validation Report for Head TSL

Date: 21.08.2017

Test Laboratory: SPEAG, Zurich, Switzerland

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

Communication System: UID 0 - CW; Frequency: 1750 MHz

Medium parameters used: $f = 1750$ MHz; $\sigma = 1.35$ S/m; $\epsilon_r = 39.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY52 Configuration:

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

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

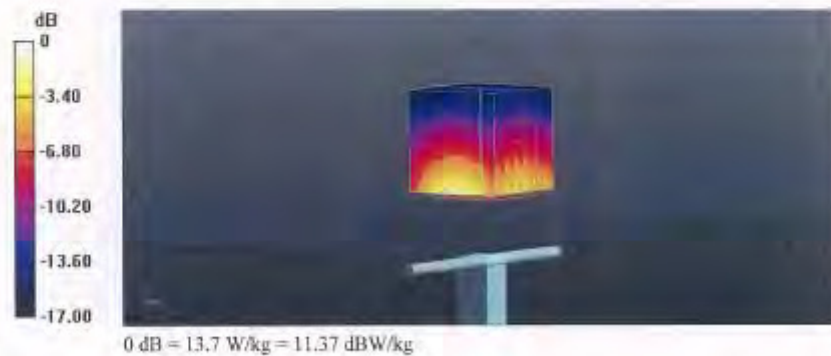
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 104.0 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 16.8 W/kg

SAR(1 g) = 8.98 W/kg; SAR(10 g) = 4.75 W/kg

Maximum value of SAR (measured) = 13.7 W/kg



Certificate No: D1750V2-1008_Aug17

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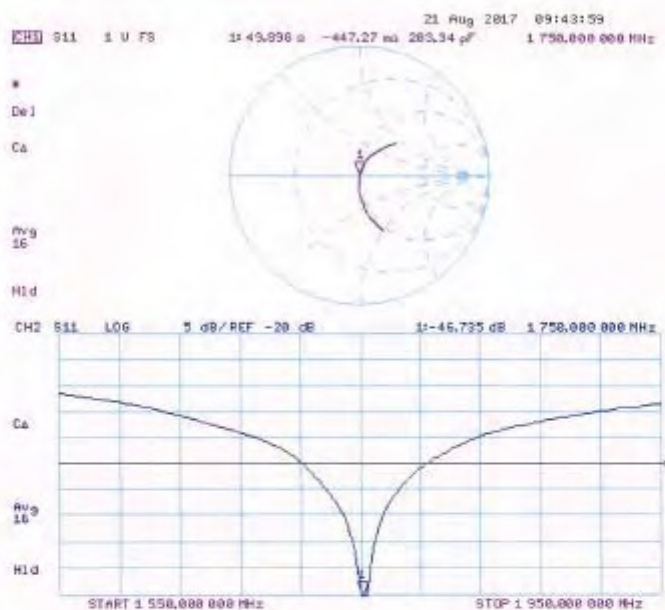
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Impedance Measurement Plot for Head TSL



Certificate No: D1750V2-1008_Aug17

Page 6 of 8

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DASY5 Validation Report for Body TSL

Date: 18.08.2017

Test Laboratory: SPEAG, Zurich, Switzerland

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

Communication System: UID 0 - CW; Frequency: 1750 MHz

Medium parameters used: $f = 1750$ MHz; $\sigma = 1.47$ S/m; $\epsilon_r = 53.9$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY52 Configuration:

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

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

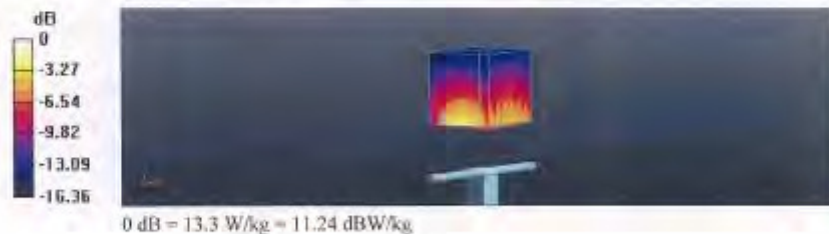
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 99.85 V/m; Power Drift = -0.00 dB

Peak SAR (extrapolated) = 15.8 W/kg

SAR(1 g) = 9.09 W/kg; SAR(10 g) = 4.87 W/kg

Maximum value of SAR (measured) = 13.3 W/kg



Certificate No: D1750V2-1008_Aug17

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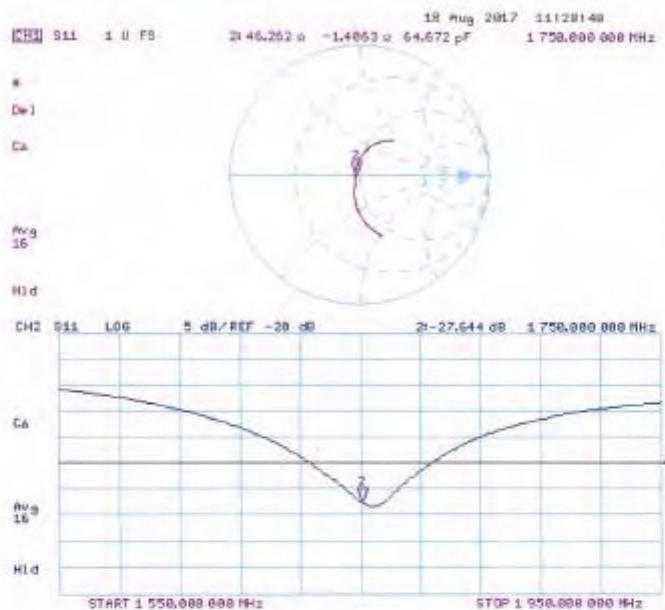
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Impedance Measurement Plot for Body TSL



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Accreditation No.: SCS 0108

Client: SGS-TW (Auden)

Certificate No.: D1900V2-5d173_May17

CALIBRATION CERTIFICATE

Object: D1900V2 - SN:5d173

Calibration procedure(s): QA CAL-05.V9
Calibration procedure for dipole validation kits above 700 MHz

Calibration date: May 31, 2017

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

All calibrations have been conducted in the closed laboratory facility: environment temperature $(22 \pm 3)^{\circ}\text{C}$ and humidity $< 70\%$.

Calibration Equipment used (M&E critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-17 (No. 217-02521, 02522)	Apr-18
Power sensor NRP-291	SN: 103244	04-Apr-17 (No. 217-02521)	Apr-18
Power sensor NRP-291	SN: 103245	04-Apr-17 (No. 217-02522)	Apr-18
Reference 20 dB Attenuator	SN: 5056 (20k)	07-Apr-17 (No. 217-02528)	Apr-18
Type-N mismatch combination	SN: 5047.2 / 05327	07-Apr-17 (No. 217-02529)	Apr-18
Reference Probe EX3DV4	SN: 7460	19-May-17 (No. EX3-7460_May17)	May-18
DAEs	SN: 601	28-Mar-17 (No. DAE4-601_Mar17)	Mar-18
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter EPM-442A	SN: GB37480704	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
Power sensor HP B481A	SN: US37292783	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
Power sensor HP B481A	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: US37396595	18-Oct-01 (in house check Oct-16)	In house check: Oct-17

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

Issued: May 31, 2017

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

Certificate No.: D1900V2-5d173_May17

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Accreditation No.: **SCS 0108**

Glossary:

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

- DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

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Measurement Conditions

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

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

Head TSL parameters

The following parameters and calculations were applied.

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

SAR result with Head TSL

SAR averaged over 1 cm ² (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	10.1 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	40.7 W/kg $\pm$ 17.0 % (k=2)
SAR averaged over 10 cm ² (10 g) of Head TSL	condition	
SAR measured	250 mW input power	5.26 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	21.1 W/kg $\pm$ 16.5 % (k=2)

Body TSL parameters

The following parameters and calculations were applied.

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

SAR result with Body TSL

SAR averaged over 1 cm ² (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	9.96 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	40.2 W/kg $\pm$ 17.0 % (k=2)
SAR averaged over 10 cm ² (10 g) of Body TSL	condition	
SAR measured	250 mW input power	5.30 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	21.3 W/kg $\pm$ 16.5 % (k=2)

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Appendix (Additional assessments outside the scope of SCS 0108)**Antenna Parameters with Head TSL**

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

Antenna Parameters with Body TSL

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

General Antenna Parameters and Design

Electrical Delay (one direction)	1.199 ns
----------------------------------	----------

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

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	June 06, 2012

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DASY5 Validation Report for Head TSL

Date: 31.05.2017

Test Laboratory: SPEAG, Zurich, Switzerland

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

Communication System: UID 0 - CW; Frequency: 1900 MHz

Medium parameters used: $f = 1900$ MHz; $\sigma = 1,4$ S/m; $\epsilon_r = 41,3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY52 Configuration:

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

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

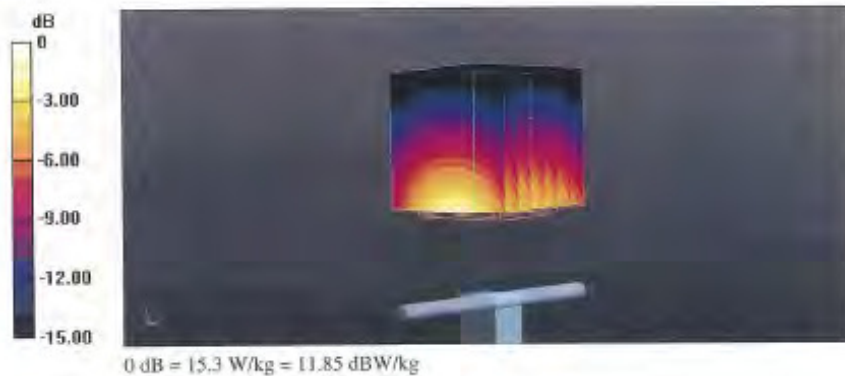
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 107.7 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 18.9 W/kg

SAR(1 g) = 10.1 W/kg; SAR(10 g) = 5.26 W/kg

Maximum value of SAR (measured) = 15.3 W/kg

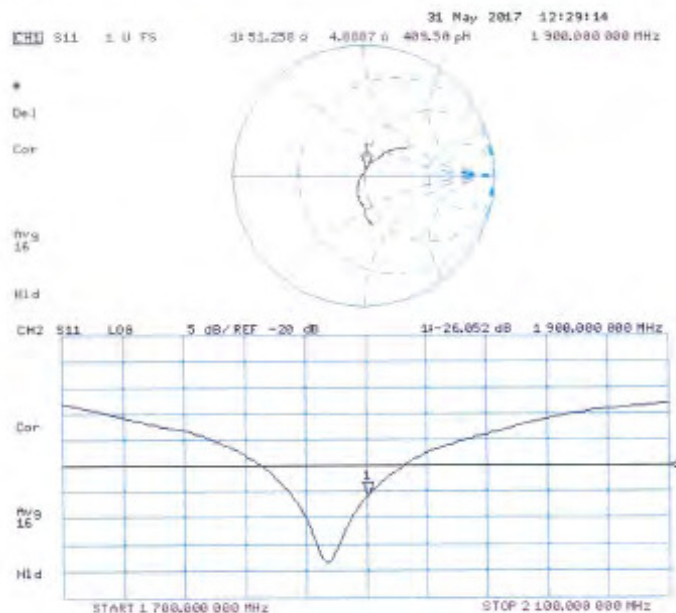


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Impedance Measurement Plot for Head TSL



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DASY5 Validation Report for Body TSL

Date: 31.05.2017

Test Laboratory: SPEAG, Zurich, Switzerland

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

Communication System: UID 0 - C'W; Frequency: 1900 MHz

Medium parameters used: $f = 1900 \text{ MHz}$; $\sigma = 1.51 \text{ S/m}$; $\epsilon_r = 54.2$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY52 Configuration:

- Probe: EX3DV4 - SN7460; ConvF(7.82, 7.82, 7.82); Calibrated: 19.05.2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 28.03.2017
- Phantom: Flat Phantom 5.0 (back); Type: QD 000 P50 AA; Serial: 1002
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

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

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

Reference Value = 102.9 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 17.5 W/kg

SAR(1 g) = 9.98 W/kg; SAR(10 g) = 5.3 W/kg

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

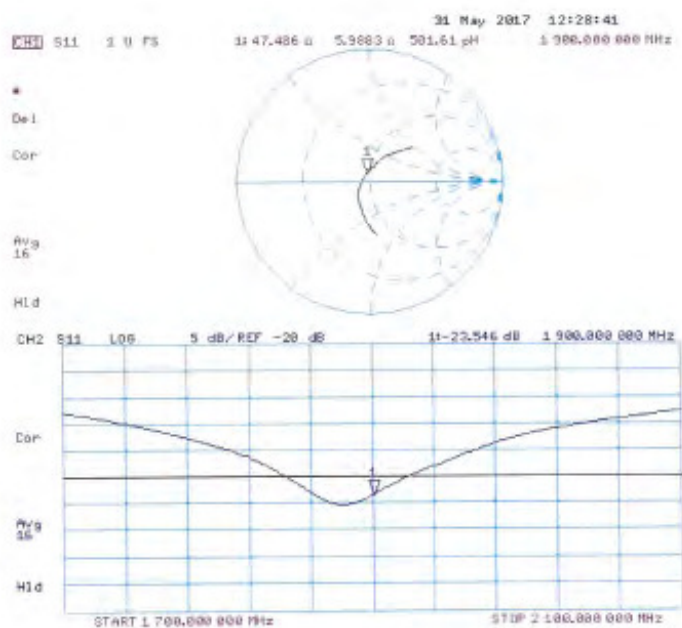


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Impedance Measurement Plot for Body TSL



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



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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

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

Certificate No: **D2300V2-1023_Aug17**

CALIBRATION CERTIFICATE

Object: **D2300V2 - SN:1023**

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

Calibration date: **August 17, 2017**

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

All calibrations have been conducted in the closed laboratory facility: environment temperature $(22 \pm 3)^\circ\text{C}$ and humidity $< 70\%$.

Calibration Equipment used (MATE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-17 (No. 217-02521/02522)	Apr-18
Power sensor NRP-Z31	SN: 103244	04-Apr-17 (No. 217-02521)	Apr-18
Power sensor NRP-Z31	SN: 103245	04-Apr-17 (No. 217-02522)	Apr-18
Reference 20 dB Attenuator	SN: S058 (20K)	07-Apr-17 (No. 217-02528)	Apr-18
Type-N mismatch combination	SN: 5047.2 / 06327	07-Apr-17 (No. 217-02529)	Apr-18
Reference Probe EX30V4	SN: 7349	31-May-17 (No. EX3-7349_May17)	May-18
DAE4	SN: 601	28-Mar-17 (No. DAE4-601_Mar17)	Mar-18
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter EPM-442A	SN: GBS7480704	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 8461A	SN: MY41082317	07-Oct-15 (in house check Oct-16)	in house check: Oct-18
RF generator RSS SMT-06	SN: 100972	15-Jun-15 (in house check Oct-16)	in house check: Oct-18
Network Analyzer HP 8753E	SN: US37390585	18-Oct-01 (in house check Oct-16)	in house check: Oct-17

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

Issued: August 17, 2017

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

Certificate No: D2300V2-1023_Aug17

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No.134,Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan 24803/新北市五股區新北產業園區五工路 134 號

t (886 2) 2299 3279

f (886 2) 2298 0488

www.tw.sgs.com

Member of SGS Group

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



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Accreditation No.: SCS 0108

Glossary:

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

- DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

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Measurement Conditions

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

DASY Version	DASY5	V52.10.0
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	2300 MHz $\pm$ 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	39.5	1.67 mho/m
Measured Head TSL parameters	(22.0 $\pm$ 0.2) °C	38.3 $\pm$ 6 %	1.70 mho/m $\pm$ 6 %
Head TSL temperature change during test	< 0.5 °C	—	—

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	12.0 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	47.2 W/kg $\pm$ 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	5.74 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	22.7 W/kg $\pm$ 16.5 % (k=2)

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	52.9	1.01 mho/m
Measured Body TSL parameters	(22.0 $\pm$ 0.2) °C	52.3 $\pm$ 6 %	1.06 mho/m $\pm$ 6 %
Body TSL temperature change during test	< 0.5 °C	—	—

SAR result with Body TSL

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	11.5 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	45.4 W/kg $\pm$ 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	5.68 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	22.5 W/kg $\pm$ 16.5 % (k=2)

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Appendix (Additional assessments outside the scope of SCS 0108)**Antenna Parameters with Head TSL**

Impedance, transformed to feed point	$48.4 \Omega - 3.1 j\Omega$
Return Loss	-29.0 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	$44.9 \Omega - 2.2 j\Omega$
Return Loss	-24.7 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.171 ns
----------------------------------	----------

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

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	March 30, 2009

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DASY5 Validation Report for Head TSL

Date: 17.08.2017

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2300 MHz; Type: D2300V2; Serial: D2300V2 - SN: 1023

Communication System: UID 0 - CW; Frequency: 2300 MHz

Medium parameters used: $f = 2300$ MHz; $\sigma = 1.7$ S/m; $\epsilon_r = 38.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(8.31, 8.31, 8.31); Calibrated: 31.05.2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 28.03.2017
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

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

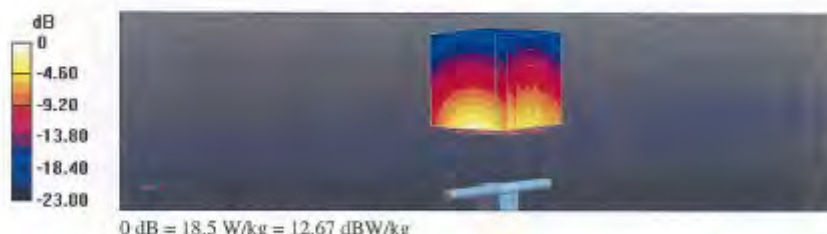
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 109.5 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 23.6 W/kg

SAR(1 g) = 12 W/kg; SAR(10 g) = 5.74 W/kg

Maximum value of SAR (measured) = 18.5 W/kg

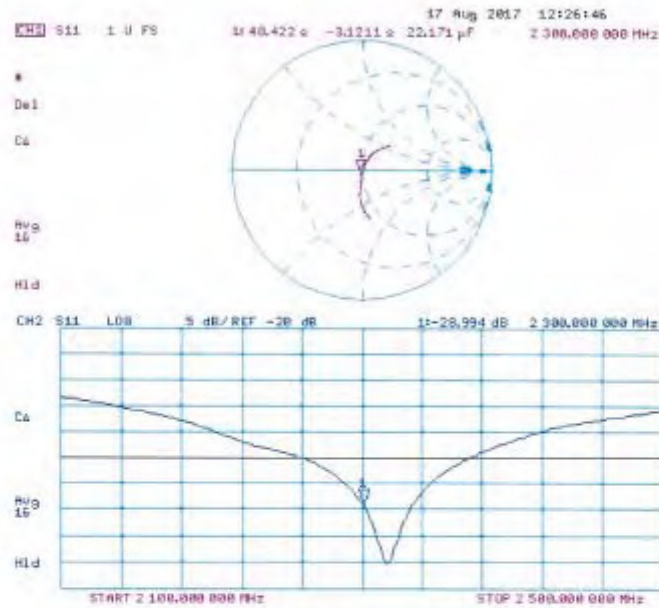


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Impedance Measurement Plot for Head TSL



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DASY5 Validation Report for Body TSL

Date: 17.08.2017

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2300 MHz; Type: D2300V2; Serial: D2300V2 - SN: 1023

Communication System: UID 0 - CW; Frequency: 2300 MHz

Medium parameters used: $f = 2300$ MHz; $\sigma = 1.86$ S/m; $\epsilon_r = 52.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(8.22, 8.22, 8.22); Calibrated: 31.05.2017;
- Sensor-Surface: J 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 28.03.2017
- Phantom: Flat Phantom 5.0 (back); Type: QD 000 P50 AA; Serial: 1002
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

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

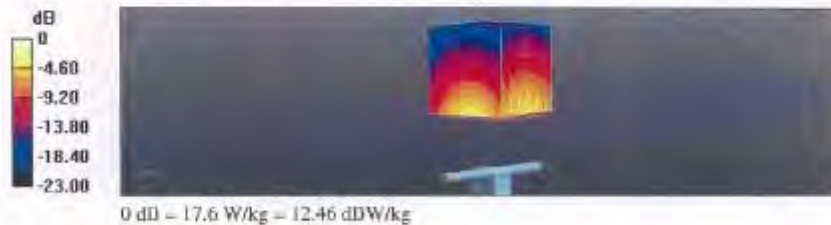
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 102.2 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 22.3 W/kg

SAR(1 g) = 11.8 W/kg; SAR(10 g) = 5.68 W/kg

Maximum value of SAR (measured) = 17.6 W/kg

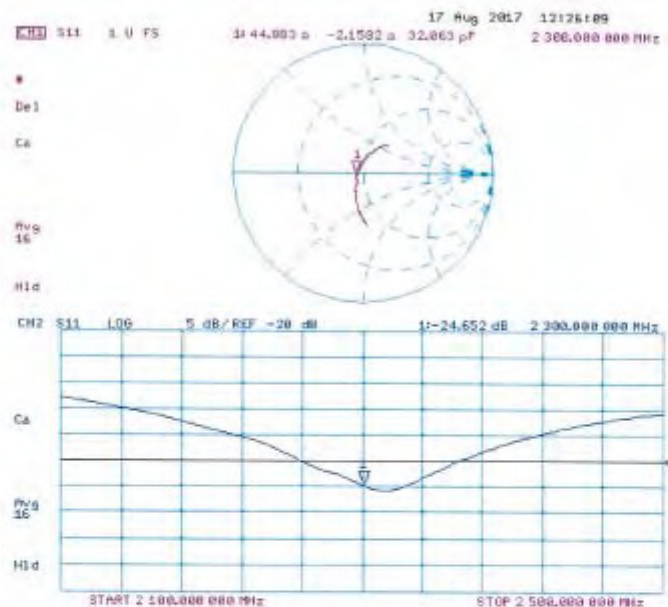


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Impedance Measurement Plot for Body TSL



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



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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

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

Certificate No.: **D2450V2-727_Apr17**

CALIBRATION CERTIFICATE

Object: **D2450V2 - SN: 727**

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

Calibration date: **April 21, 2017**

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

All calibrations have been conducted in the closed laboratory facility; environment temperature ($22 \pm 3^\circ\text{C}$) and humidity < 70%.

Calibration Equipment used (MSTE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-17 (No. 217-02521/02522)	Apr-18
Power sensor NRP-Z91	SN: 103264	04-Apr-17 (No. 217-02521)	Apr-18
Power sensor NRP-Z91	SN: 103245	04-Apr-17 (No. 217-02522)	Apr-18
Reference 20 dB Attenuator	SN: 5058 (20K)	07-Apr-17 (No. 217-02528)	Apr-18
Type-N mismatch combination	SN: 5047.2 / 06327	07-Apr-17 (No. 217-02529)	Apr-18
Reference Probe EX30V4	SN: 7348	31-Dec-16 (No. EX3-7348_Dec16)	Dec-17
DAE4	SN: 601	28-Mar-17 (No. DAE4-601_Mar17)	Mar-18
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter EPM-442A	SN: 6B37480704	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: US37380585	18-Oct-01 (in house check Oct-16)	In house check: Oct-17

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

Signature:

Approved by: **Katja Pokovic** (Name) **Technical Manager** (Function)

Signature:

Issued: April 21, 2017

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

Certificate No.: **D2450V2-727_Apr17**

Page 1 of 8

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No.134,Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan 24803/新北市五股區新北產業園區五工路 134 號

台灣檢驗科技股份有限公司

t (886 2) 2299 3279

f (886 2) 2298 0488

www.tw.sgs.com

Member of SGS Group

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



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Accreditation No.: SCS 0106

Glossary:

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

Calibration is Performed According to the Following Standards:

- IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
- IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
- KDB B65664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

- DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

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Measurement Conditions

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

DASY Version	DASY5	V52.10.0
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	2450 MHz $\pm$ 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	39.2	1.80 mho/m
Measured Head TSL parameters	(22.0 $\pm$ 0.2) °C	37.7 $\pm$ 6 %	1.87 mho/m $\pm$ 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	13.4 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	52.2 W/kg $\pm$ 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.18 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	24.3 W/kg $\pm$ 16.5 % (k=2)

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	52.7	1.95 mho/m
Measured Body TSL parameters	(22.0 $\pm$ 0.2) °C	52.5 $\pm$ 6 %	2.03 mho/m $\pm$ 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	12.9 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	50.6 W/kg $\pm$ 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	6.01 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	23.8 W/kg $\pm$ 16.5 % (k=2)

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Appendix (Additional assessments outside the scope of SCS 0108)**Antenna Parameters with Head TSL**

Impedance, transformed to feed point	$56.3 \Omega + 2.1 j\Omega$
Return Loss	- 24.0 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	$51.1 \Omega + 4.1 j\Omega$
Return Loss	- 27.5 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.149 ns
----------------------------------	----------

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

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	January 09, 2003

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DASY5 Validation Report for Head TSL

Date: 21.04.2017

Test Laboratory: SPEAG, Zurich, Switzerland

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

Communication System: UID 0 - CW; Frequency: 2450 MHz

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.87$ S/m; $\epsilon_r = 37.7$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(7.72, 7.72, 7.72); Calibrated: 31.12.2016;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 28.03.2017
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.0(1442); SEMCAD X 14.6.10(7413)

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

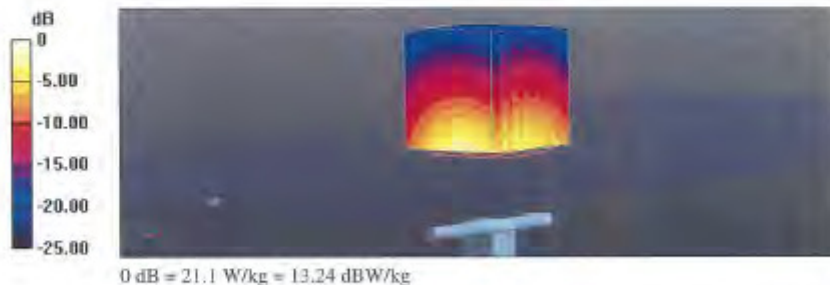
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 109.8 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 27.3 W/kg

SAR(1 g) = 13.4 W/kg; SAR(10 g) = 6.18 W/kg

Maximum value of SAR (measured) = 21.1 W/kg

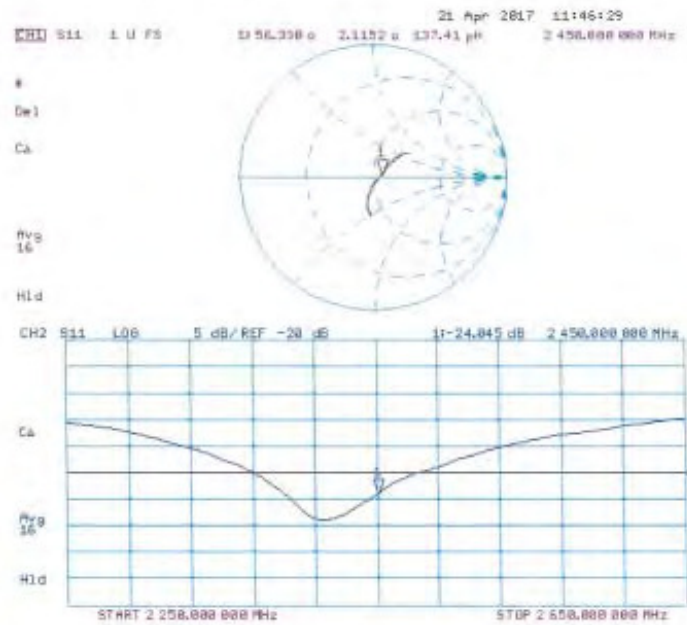


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Impedance Measurement Plot for Head TSL



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DASY5 Validation Report for Body TSL

Date: 21.04.2017

Test Laboratory: SPEAG, Zurich, Switzerland

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

Communication System: UID 0 - CW; Frequency: 2450 MHz

Medium parameters used: $f = 2450$ MHz; $\sigma = 2.03$ S/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(7.79, 7.79, 7.79); Calibrated: 31.12.2016;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 28.03.2017
- Phantom: Flat Phantom 5.0 (back); Type: QD 000 P50 AA; Serial: 1002
- DASY52 52.10.0(1442); SEMCAD X 14.6.10(7413)

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

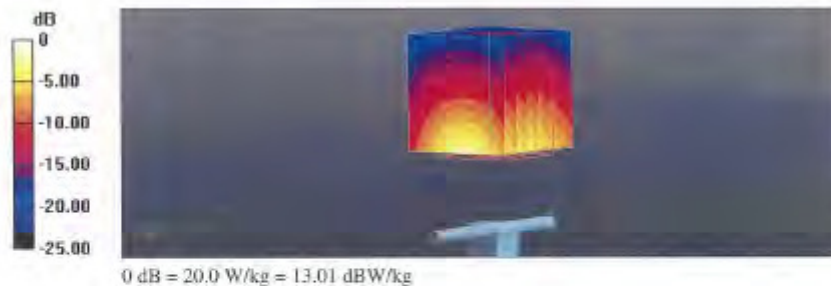
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 105.0 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 25.4 W/kg

SAR(1 g) = 12.9 W/kg; SAR(10 g) = 6.01 W/kg

Maximum value of SAR (measured) = 20.0 W/kg

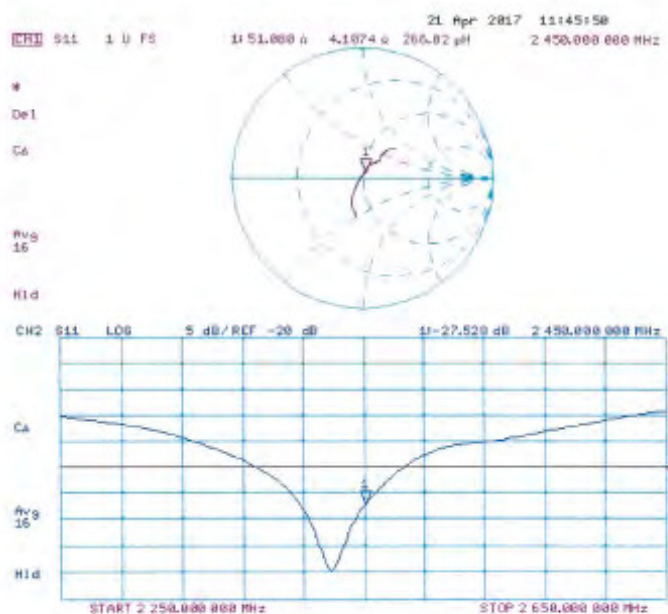


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Impedance Measurement Plot for Body TSL



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



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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

Client **Auden**

Certificate No: **D2600V2-1058_Jun17**

CALIBRATION CERTIFICATE

Object: **D2600V2 - SN:1058**

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

Calibration date: **June 27, 2017**

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-17 (No. 217-02521/02522)	Apr-18
Power sensor NRP-Z91	SN: 103244	04-Apr-17 (No. 217-02521)	Apr-18
Power sensor NRP-Z91	SN: 103245	04-Apr-17 (No. 217-02522)	Apr-18
Reference 20 dB Attenuator	SN: 5058 (20k)	07-Apr-17 (No. 217-02528)	Apr-18
Type-N mismatch combination	SN: 5047.2 / 06327	07-Apr-17 (No. 217-02529)	Apr-18
Reference Probe EX3DV4	SN: 7349	31-May-17 (No. EX3-7349_May17)	May-18
DAE4	SN: 601	28-Mar-17 (No. DAE4-601_Mar17)	Mar-18
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter EPM-442A	SN: GB37480704	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-16)	In house check: Oct-18
Network Analyzer HP 8753E	SN: US37390585	18-Oct-01 (in house check Oct-16)	In house check: Oct-17

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

Issued: June 27, 2017

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

Certificate No: D2600V2-1058_Jun17

Page 1 of 6

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台灣檢驗科技股份有限公司

No.134,Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan 24803/新北市五股區新北產業園區五工路 134 號

t (886 2) 2299 3279

f (886 2) 2298 0488

www.tw.sgs.com

Member of SGS Group

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



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Accreditation No.: **SCS 0108**

Glossary:

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

- DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

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Measurement Conditions

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

DASY Version	DASY5	V52.10.0
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	2600 MHz $\pm$ 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	39.0	1.96 mho/m
Measured Head TSL parameters	(22.0 $\pm$ 0.2) °C	37.3 $\pm$ 6 %	2.02 mho/m $\pm$ 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	14.6 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	57.0 W/kg $\pm$ 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.46 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	25.5 W/kg $\pm$ 16.5 % (k=2)

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	52.5	2.16 mho/m
Measured Body TSL parameters	(22.0 $\pm$ 0.2) °C	51.7 $\pm$ 6 %	2.22 mho/m $\pm$ 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	13.8 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	54.3 W/kg $\pm$ 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	6.14 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	24.3 W/kg $\pm$ 16.5 % (k=2)

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Appendix (Additional assessments outside the scope of SCS 0108)**Antenna Parameters with Head TSL**

Impedance, transformed to feed point	48.4 Ω - 7.5 j Ω
Return Loss	- 22.2 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	45.8 Ω - 5.7 j Ω
Return Loss	- 22.6 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.149 ns
----------------------------------	----------

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

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	August 14, 2012

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DASY5 Validation Report for Head TSL

Date: 27.06.2017

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2 - SN:1058

Communication System: UID 0 - CW; Frequency: 2600 MHz

Medium parameters used: $f = 2600$ MHz; $\sigma = 2.02$ S/m; $\epsilon_r = 37.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(7.96, 7.96, 7.96); Calibrated: 31.05.2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 28.03.2017
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

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

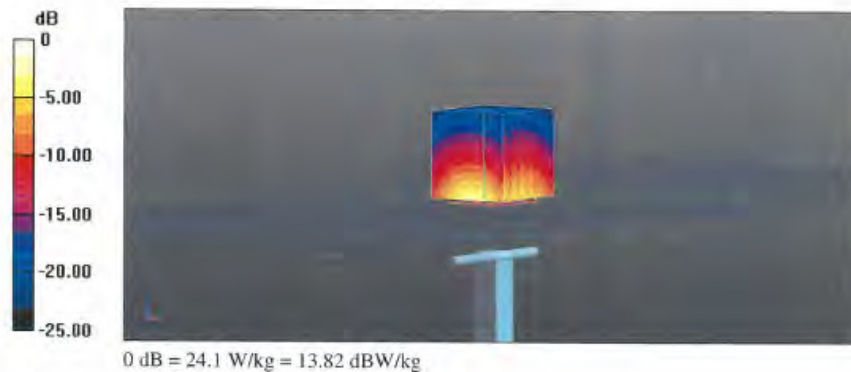
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 113.9 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 31.3 W/kg

SAR(1 g) = 14.6 W/kg; SAR(10 g) = 6.46 W/kg

Maximum value of SAR (measured) = 24.1 W/kg



Certificate No: D2600V2-1058_Jun17

Page 5 of 8

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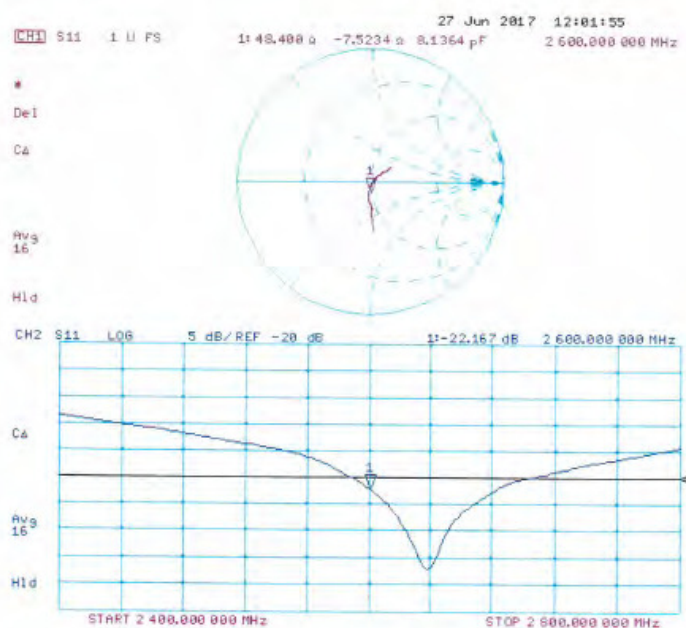
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Impedance Measurement Plot for Head TSL



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DASY5 Validation Report for Body TSL

Date: 27.06.2017

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2 - SN:1058

Communication System: UID 0 - CW; Frequency: 2600 MHz

Medium parameters used: $f = 2600$ MHz; $\sigma = 2.22$ S/m; $\epsilon_r = 51.7$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(7.94, 7.94, 7.94); Calibrated: 31.05.2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 28.03.2017
- Phantom: Flat Phantom 5.0 (back); Type: QD 000 P50 AA; Serial: 1002
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

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

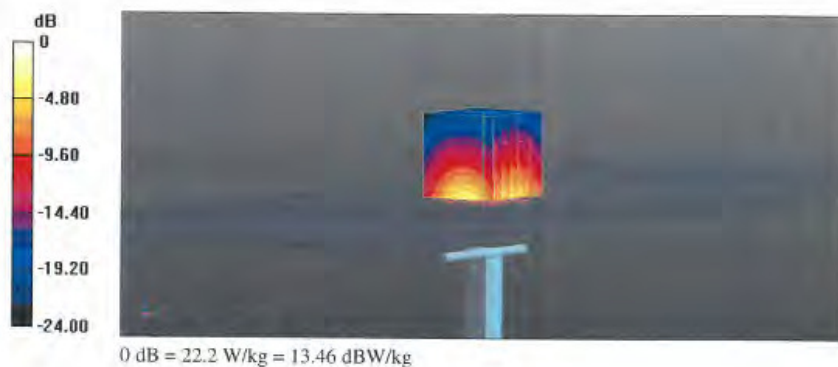
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 104.3 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 29.2 W/kg

SAR(1 g) = 13.8 W/kg; SAR(10 g) = 6.14 W/kg

Maximum value of SAR (measured) = 22.2 W/kg

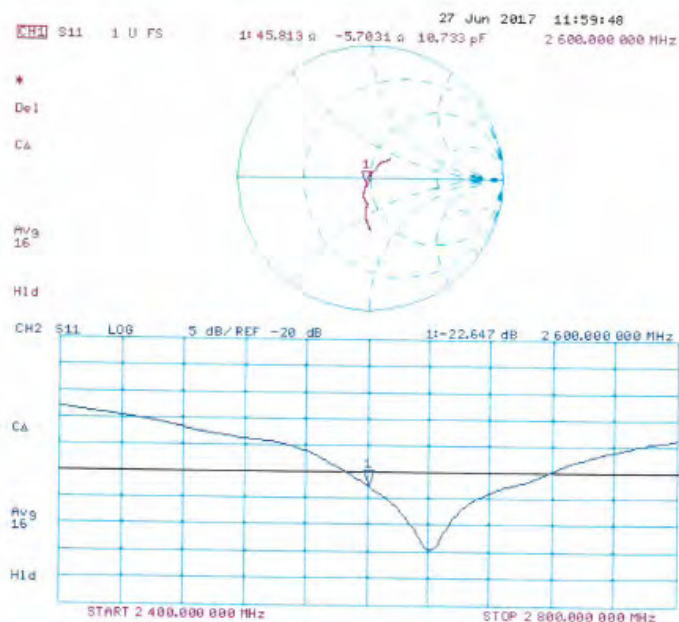


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Impedance Measurement Plot for Body TSL



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Accreditation No.: SCS 0108

Client: SGS-TW (Auden)

Certificate No: D5GHzV2-1023_Jan17

CALIBRATION CERTIFICATE

Object: D5GHzV2 - SN:1023

Calibration procedure(s): QA CAL-22.V2
Calibration procedure for dipole validation kits between 3-6 GHz

Calibration date: January 20, 2017

This calibration certificate documents the traceability to national standards, which realize the physical units of measurement (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 (MSTE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	06-Apr-16 (No. 217-02289/02288)	Apr-17
Power sensor NRP-Z31	SN: 103244	06-Apr-16 (No. 217-02288)	Apr-17
Power sensor NRP-Z31	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 EX30V4	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: 0837480704	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
Power sensor HP B481A	SN: US37292783	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
Power sensor HP B481A	SN: MY41092317	07-Oct-15 (in house check Oct-16)	In house check: Oct-18
RF generator R&S SMT-08	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:	Jelena Kastrioti	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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台灣檢驗科技股份有限公司

No.134,Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan 24803/新北市五股區新北產業園區五工路 134 號

t (886 2) 2299 3279

f (886 2) 2298 0488

www.tw.sgs.com

Member of SGS Group

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



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

Accreditation No.: **SCS 0108**

Glossary:

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

- DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

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Measurement Conditions

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

DASY Version	DASY5	V52.8.8
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy = 4.0 mm, dz = 1.4 mm	Graded Ratio = 1.4 (Z direction)
Frequency	5200 MHz $\pm$ 1 MHz 5300 MHz $\pm$ 1 MHz 5600 MHz $\pm$ 1 MHz 5800 MHz $\pm$ 1 MHz	

Head TSL parameters at 5200 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	38.0	4.66 mho/m
Measured Head TSL parameters	(22.0 $\pm$ 0.2) °C	35.4 $\pm$ 6 %	4.45 mho/m $\pm$ 6 %
Head TSL temperature change during test	< 0.5 °C	—	—

SAR result with Head TSL at 5200 MHz

SAR averaged over 1 cm ² (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	7.55 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	75.2 W/kg $\pm$ 19.9 % (k=2)
SAR averaged over 10 cm ² (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 $\pm$ 19.5 % (k=2)

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Head TSL parameters at 5300 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.8	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	81.9 W / kg ± 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.35 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	23.3 W/kg ± 19.5 % (k=2)

Head TSL parameters at 5600 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.5	5.07 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	34.7 ± 6 %	4.85 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	—	—

SAR result with Head TSL at 5600 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.22 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	81.7 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.33 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	23.1 W/kg ± 19.5 % (k=2)

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Head TSL parameters at 5800 MHz

The following parameters and calculations were applied

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.3	5.27 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	34.4 ± 6 %	5.05 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	—	—

SAR result with Head TSL at 5800 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	7.82 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	77.6 W/kg ± 19.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.22 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	22.0 W/kg ± 19.5 % (k=2)

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Body TSL parameters at 5200 MHz

The following parameters and calculations were applied:

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	49.0	5.36 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 cm ³ (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 cm ³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.05 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	20.3 W/kg ± 19.5 % (k=2)

Body TSL parameters at 5300 MHz

The following parameters and calculations were applied:

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.9	5.42 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	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 cm ³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.68 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	76.1 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.15 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	21.3 W/kg ± 19.5 % (k=2)

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Body TSL parameters at 5600 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.5	5.77 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	46.6 ± 6 %	5.90 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	—	—

SAR result with Body TSL at 5600 MHz

SAR averaged over 1 cm ³ (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 cm ³ (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 cm ³ (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 cm ³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.13 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	21.1 W/kg ± 19.5 % (k=2)

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Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL at 5200 MHz

Impedance, transformed to feed point	49.6 Ω - 6.7 $j\Omega$
Return Loss	- 23.4 dB

Antenna Parameters with Head TSL at 5300 MHz

Impedance, transformed to feed point	49.0 Ω - 1.8 $j\Omega$
Return Loss	- 33.5 dB

Antenna Parameters with Head TSL at 5600 MHz

Impedance, transformed to feed point	54.1 Ω - 0.2 $j\Omega$
Return Loss	- 28.2 dB

Antenna Parameters with Head TSL at 5800 MHz

Impedance, transformed to feed point	55.4 Ω + 2.8 $j\Omega$
Return Loss	- 24.8 dB

Antenna Parameters with Body TSL at 5200 MHz

Impedance, transformed to feed point	48.9 Ω - 7.0 $j\Omega$
Return Loss	- 22.9 dB

Antenna Parameters with Body TSL at 5300 MHz

Impedance, transformed to feed point	51.0 Ω - 1.0 $j\Omega$
Return Loss	- 37.0 dB

Antenna Parameters with Body TSL at 5600 MHz

Impedance, transformed to feed point	55.8 Ω - 1.5 $j\Omega$
Return Loss	- 25.2 dB

Antenna Parameters with Body TSL at 5800 MHz

Impedance, transformed to feed point	56.6 Ω + 2.7 $j\Omega$
Return Loss	- 23.6 dB

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General Antenna Parameters and Design

Electrical Delay (one direction)	1.199 ns
----------------------------------	----------

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

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	February 05, 2004

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DASY5 Validation Report for Head TSL

Date: 20.01.2017

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1023

Communication System: DTD 0 - CW;

Frequency: 5200 MHz; Frequency: 5300 MHz; Frequency: 5600 MHz; Frequency: 5800 MHz;

Medium parameters used: $f = 5200$ MHz; $\sigma = 4.45$ S/m; $\epsilon_r = 35.4$; $\rho = 1000$ kg/m³;

Medium parameters used: $f = 5300$ MHz; $\sigma = 4.55$ S/m; $\epsilon_r = 35.2$; $\rho = 1000$ kg/m³;

Medium parameters used: $f = 5600$ MHz; $\sigma = 4.85$ S/m; $\epsilon_r = 34.7$; $\rho = 1000$ kg/m³;

Medium parameters used: $f = 5800$ MHz; $\sigma = 5.05$ S/m; $\epsilon_r = 34.4$; $\rho = 1000$ kg/m³;

Phantom section: Flat Section

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

DASY52 Configuration:

- Probe: EX3DV4 - SN3503; ConvF(5.76, 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

Certificate No: D5GHzV2-1023_1Jan17

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台灣檢驗科技股份有限公司

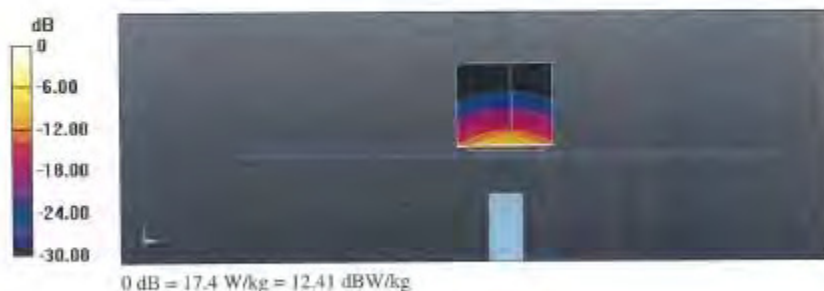
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Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5800 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
 Reference Value = 69.84 V/m; Power Drift = -0.08 dB
 Peak SAR (extrapolated) = 32.7 W/kg
 SAR(1 g) = 7.82 W/kg; SAR(10 g) = 2.22 W/kg
 Maximum value of SAR (measured) = 19.5 W/kg

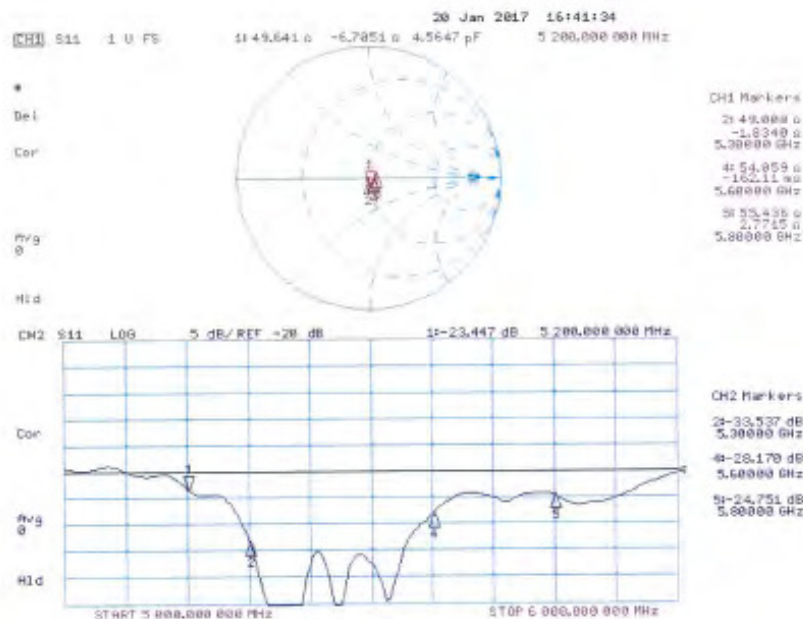


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Impedance Measurement Plot for Head TSL



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DASY5 Validation Report for Body TSL

Date: 19/01/2017

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1023

Communication System: UID 0 - CW;

Frequency: 5200 MHz, Frequency: 5300 MHz, Frequency: 5600 MHz, Frequency: 5800 MHz

Medium parameters used: $f = 5200$ MHz; $\sigma = 5.36$ S/m; $\epsilon_r = 47.5$; $\rho = 1000$ kg/m³;

Medium parameters used: $f = 5300$ MHz; $\sigma = 5.5$ S/m; $\epsilon_r = 47.3$; $\rho = 1000$ kg/m³;

Medium parameters used: $f = 5600$ MHz; $\sigma = 5.9$ S/m; $\epsilon_r = 46.6$; $\rho = 1000$ kg/m³;

Medium parameters used: $f = 5800$ MHz; $\sigma = 6.17$ S/m; $\epsilon_r = 46.3$; $\rho = 1000$ kg/m³;

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

Certificate No: D5GHzV2-1023_Jan17

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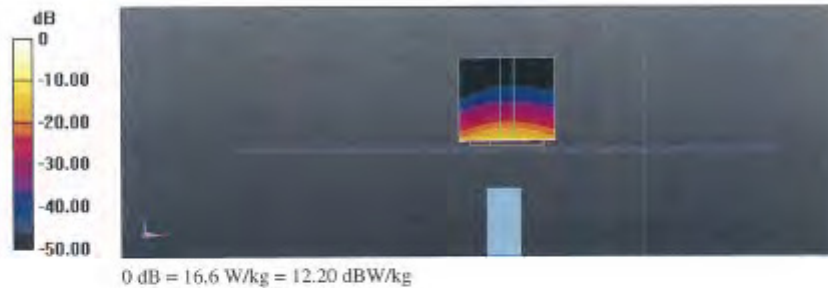
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dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 65.14 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 34.0 W/kg
SAR(1 g) = 7.64 W/kg; SAR(10 g) = 2.13 W/kg
Maximum value of SAR (measured) = 18.3 W/kg

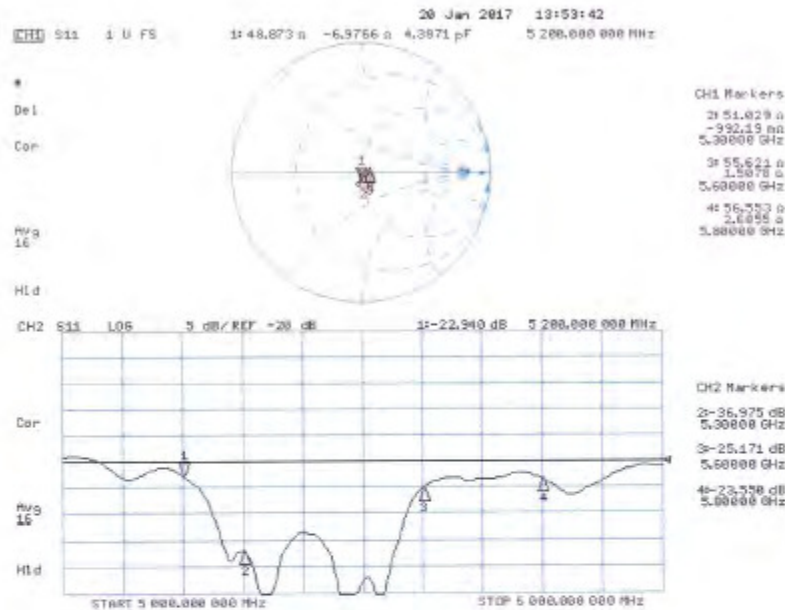


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Impedance Measurement Plot for Body TSL



- End of 1st part of report -

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