SAR TEST REPORT

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

Product Name	Mobile Router
Brand Name	NEC Platforms
Model No.	KMP8S3AB1-1A, KMP8S3AA1-1A
Model Difference	N/A
Applicant	NEC Platforms,Ltd. 2-3, tsukasa-machi, kanda, chiyoda-ku, Tokyo, 101-8532, Japan
Standards	IEEE/ANSI C95.1-1992, IEEE 1528-2013
FCC ID	2AA5WKMP8S3AB
Date of Receipt	Apr. 21, 2022
Date of Test(s)	Jun. 08, 2022 ~ Jun. 10, 2022
Date of Issue	Jul. 01, 2022

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 Ltd. Central RF Lab or testing done by SGS Taiwan Ltd. Central RF Lab in connection with distribution or use of the product described in this report must be approved by SGS Taiwan Ltd. Central RF Lab in writing.

Signed on behalf of SGS

Clerk / Kimmy Chiou	PM / Kiki Lin	Asst. Manager / John Yeh
Kimmy Chiou	Kiki Lin	John Yeh

Date: Jul. 01, 2022

Revision History

Report Number	Revision	Description	Issue Date	Revised By	Remark
TESA2204000067ES	00	Initial creation of document	Jul. 01, 2022	Kimmy Chiou	

Note:

1. The mark " * " is the revised version of the report due to comments submitted by the certification.
2. Variant information of model numbers is provided by the applicant, test results of this report are applicable to the sample EUT(s) received.

0. Guidance applied

The SAR testing method and procedure for this device is in accordance with the following standards:
IEEE/ANSI C95.1-1992
IEEE 1528-2013
KDB447498D01v06
KDB865664D01v01r04
KDB865664D02v01r02
KDB941225D06v02r01
KDB941225D01v03r01
KDB941225D05v02r05
KDB941225D05Av01r02
KDB248227D01v02r01

Contents

1. General Information

1.1 Testing Laboratory

Laboratory	Test Site Address	Test Site Name	FCC Designation number	IC CAB identifier
SGS Taiwan Ltd. Central RF Lab. (TAF code 3702)	1F, No. 8, Alley 15, Lane 120, Sec. 1, NeiHu Road, Neihu District, Taipei City, 11493, Taiwan.	SAR 2	TW0029	TW3702
		SAR 6		
	No. 2, Keji 1st Rd., Guishan Township, Taoyuan County, 33383, Taiwan	SAR 1	TW0028	
		SAR 4		
	No.134, Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan	SAR 3	TW0027	
		SAR 7		
Note: Test site name is remarked on the equipment list in each section of this report as an indication where measurements occurred in specific test site and address.				

1.2 Details of Applicant

Company Name	NEC Platforms,Ltd.
Company Address	2-3, tsukasa-machi, kanda, chiyoda-ku, Tokyo, 101-8532, Japan

1.3 Description of EUT

Product Name	Mobile Router	
Brand Name	NEC Platforms	
Model No.	KMP8S3AB1-1A, KMP8S3AA1-1A	
Model Difference	N/A	
FCC ID	2AA5WKMP8S3AB	
Mode of Operation	☒WCDMA ☒HSDPA ☒HSUPA ☒HSPA+ ☒LTE FDD ☒LTE TDD ☒WLAN802.11	
Duty Cycle	WCDMA	100%
	LTE FDD	100%
	LTE TDD	63.3%
	WLAN802.11	Refer to page 44
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 12	699 ~ 716
	LTE FDD Band 17	704 ~ 716
	LTE FDD Band 26	814 ~ 849
	LTE TDD Band 41	2496 ~ 2690
	WLAN	2412 ~ 2472

Summary of Maximum SAR Value:

WWAN

Summary of Maximum SAR Value	
Mode	Highest SAR 1g Body (W/kg)
WCDMA Band IV	1.41

WLAN

Summary of Maximum SAR Value	
Mode	Highest SAR 1g Body (W/kg)
WLAN 802.11b	0.17

Conducted power table:

Ant 1

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	23.41	23.25	23.37
3GPP Rel 5	HSDPA Subtest-1	22.58	22.86	22.72
	HSDPA Subtest-2	22.67	22.54	22.84
	HSDPA Subtest-3	22.12	22.20	22.02
	HSDPA Subtest-4	22.24	22.22	22.25
3GPP Rel 6	HSUPA Subtest-1	22.64	22.65	22.75
	HSUPA Subtest-2	20.54	20.77	20.54
	HSUPA Subtest-3	21.59	21.59	21.73
	HSUPA Subtest-4	20.57	20.74	20.75
	HSUPA Subtest-5	22.66	22.47	22.63
3GPP Rel 7	HSPA+	21.09	21.25	21.11

Ant 3

Band		WCDMA II		
TX Channel		9262	9400	9538
Frequency (MHz)		1852.4	1880	1907.6
Max. Rated Avg. Power+Max. Tolerance (dBm)		**23.00**		
3GPP Rel 99	RMC 12.2Kbps	22.27	22.25	22.38
3GPP Rel 5	HSDPA Subtest-1	21.20	21.15	21.28
	HSDPA Subtest-2	21.22	21.23	21.32
	HSDPA Subtest-3	20.69	20.65	20.80
	HSDPA Subtest-4	20.74	20.73	20.79
3GPP Rel 6	HSUPA Subtest-1	21.22	21.16	21.31
	HSUPA Subtest-2	19.27	19.23	19.38
	HSUPA Subtest-3	20.20	20.23	20.31
	HSUPA Subtest-4	19.23	19.21	19.34
	HSUPA Subtest-5	21.22	21.24	21.36
3GPP Rel 7	HSPA+	18.69	18.71	18.83

Band		WCDMA IV		
TX Channel		1312	1413	1513
Frequency (MHz)		1712.4	1732.6	1752.6
Max. Rated Avg. Power+Max. Tolerance (dBm)		**22.00**		
3GPP Rel 99	RMC 12.2Kbps	21.72	21.75	21.78
3GPP Rel 5	HSDPA Subtest-1	20.88	20.91	20.92
	HSDPA Subtest-2	20.17	20.19	20.18
	HSDPA Subtest-3	20.45	20.45	20.47
	HSDPA Subtest-4	20.36	20.39	20.44
3GPP Rel 6	HSUPA Subtest-1	20.21	20.17	20.28
	HSUPA Subtest-2	18.22	18.24	18.18
	HSUPA Subtest-3	19.12	19.22	19.18
	HSUPA Subtest-4	18.20	18.19	18.21
	HSUPA Subtest-5	20.44	20.40	20.51
3GPP Rel 7	HSPA+	17.62	17.74	17.71

Ant 1

LTE Band 5								
BW(MHz)	Modulation	RB Size	RB Offset	Conducted power (dBm)			Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
Frequency (MHz)				829	836.5	844		
Channel				20450	20525	20600		
10	QPSK	1	0	22.99	22.95	22.91	23.00	0
		1	25	22.91	22.85	22.79	23.00	0
		1	49	22.89	22.85	22.71	23.00	0
		25	0	21.99	21.94	21.88	22.00	1
		25	12	21.91	21.86	21.76	22.00	1
		25	25	21.95	21.78	21.73	22.00	1
		50	0	21.99	21.91	21.74	22.00	1
10	16-QAM	1	0	21.78	21.70	21.72	22.00	1
		1	25	21.89	21.87	21.82	22.00	1
		1	49	21.64	21.65	21.85	22.00	1
		25	0	20.77	20.60	20.77	21.00	2
		25	12	20.82	20.67	20.72	21.00	2
		25	25	20.84	20.78	20.78	21.00	2
		50	0	20.89	20.85	20.79	21.00	2
10	64-QAM	1	0	20.79	20.77	20.65	21.00	2
		1	25	20.69	20.65	20.62	21.00	2
		1	49	20.62	20.72	20.67	21.00	2
		25	0	19.83	19.68	19.74	20.00	3
		25	12	19.70	19.64	19.74	20.00	3
		25	25	19.89	19.84	19.90	20.00	3
		50	0	19.72	19.72	19.66	20.00	3

LTE Band 5								
BW(MHz)	Modulation	RB Size	RB Offset	Conducted power (dBm)			Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
Frequency (MHz)				826.5	836.5	846.5		
Channel				20425	20525	20625		
5	QPSK	1	0	22.78	22.62	22.78	23.00	0
		1	12	22.62	22.88	22.60	23.00	0
		1	24	22.62	22.66	22.82	23.00	0
		12	0	21.72	21.88	21.77	22.00	1
		12	6	21.83	21.82	21.76	22.00	1
		12	13	21.83	21.85	21.70	22.00	1
		25	0	21.64	21.64	21.88	22.00	1
5	16-QAM	1	0	21.60	21.79	21.86	22.00	1
		1	12	21.66	21.89	21.69	22.00	1
		1	24	21.78	21.79	21.63	22.00	1
		12	0	20.89	20.81	20.68	21.00	2
		12	6	20.90	20.82	20.82	21.00	2
		12	13	20.76	20.73	20.63	21.00	2
		25	0	20.90	20.72	20.62	21.00	2
5	64-QAM	1	0	20.68	20.68	20.80	21.00	2
		1	12	20.68	20.87	20.62	21.00	2
		1	24	20.64	20.74	20.87	21.00	2
		12	0	19.87	19.66	19.76	20.00	3
		12	6	19.67	19.84	19.67	20.00	3
		12	13	19.89	19.70	19.68	20.00	3
		25	0	19.84	19.81	19.65	20.00	3

LTE Band 5								
BW(MHz)	Modulation	RB Size	RB Offset	Conducted power (dBm)			Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
Frequency (MHz)				825.5	836.5	847.5		
Channel				20415	20525	20635		
3	QPSK	1	0	22.61	22.66	22.70	23.00	0
		1	7	22.68	22.86	22.86	23.00	0
		1	14	22.67	22.78	22.72	23.00	0
		8	0	21.65	21.66	21.66	22.00	1
		8	4	21.63	21.78	21.64	22.00	1
		8	7	21.67	21.70	21.62	22.00	1
		15	0	21.70	21.70	21.65	22.00	1
3	16-QAM	1	0	21.79	21.83	21.63	22.00	1
		1	7	21.75	21.82	21.61	22.00	1
		1	14	21.81	21.77	21.74	22.00	1
		8	0	20.81	20.89	20.70	21.00	2
		8	4	20.63	20.71	20.71	21.00	2
		8	7	20.76	20.61	20.69	21.00	2
		15	0	20.87	20.88	20.82	21.00	2
3	64-QAM	1	0	20.66	20.67	20.72	21.00	2
		1	7	20.70	20.78	20.69	21.00	2
		1	14	20.85	20.64	20.82	21.00	2
		8	0	19.83	19.76	19.66	20.00	3
		8	4	19.86	19.74	19.68	20.00	3
		8	7	19.88	19.85	19.89	20.00	3
		15	0	19.66	19.64	19.81	20.00	3

LTE Band 5								
BW(MHz)	Modulation	RB Size	RB Offset	Conducted power (dBm)			Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
Frequency (MHz)				824.7	836.5	848.3		
Channel				20407	20525	20643		
1.4	QPSK	1	0	22.81	22.82	22.86	23.00	0
		1	2	22.61	22.62	22.82	23.00	0
		1	5	22.78	22.71	22.88	23.00	0
		3	0	22.75	22.90	22.79	23.00	0
		3	2	22.88	22.80	22.75	23.00	0
		3	3	22.88	22.73	22.72	23.00	0
		6	0	21.65	21.63	21.75	22.00	1
1.4	16-QAM	1	0	21.72	21.87	21.67	22.00	1
		1	2	21.62	21.85	21.87	22.00	1
		1	5	21.82	21.85	21.80	22.00	1
		3	0	21.82	21.64	21.76	22.00	1
		3	2	21.87	21.79	21.68	22.00	1
		3	3	21.81	21.87	21.62	22.00	1
		6	0	20.85	20.72	20.68	21.00	2
1.4	64-QAM	1	0	20.66	20.62	20.70	21.00	2
		1	2	20.88	20.76	20.88	21.00	2
		1	5	20.80	20.63	20.67	21.00	2
		3	0	20.80	20.71	20.76	21.00	2
		3	2	20.85	20.88	20.84	21.00	2
		3	3	20.80	20.74	20.85	21.00	2
		6	0	19.86	19.74	19.75	20.00	3

LTE Band 12								
BW(MHz)	Modulation	RB Size	RB Offset	Conducted power (dBm)			Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
Frequency (MHz)				704	707.5	711		
Channel				23060	23095	23130		
10	QPSK	1	0	22.63	22.72	22.65	23.00	0
		1	25	22.60	22.61	22.59	23.00	0
		1	49	22.57	22.61	22.61	23.00	0
		25	0	21.59	21.54	21.33	22.00	1
		25	12	21.48	21.50	21.54	22.00	1
		25	25	21.66	21.64	21.40	22.00	1
		50	0	21.59	21.66	21.45	22.00	1
10	16-QAM	1	0	21.83	21.82	21.87	22.00	1
		1	25	21.82	21.83	21.86	22.00	1
		1	49	21.78	21.74	21.70	22.00	1
		25	0	20.60	20.52	20.31	21.00	2
		25	12	20.64	20.54	20.50	21.00	2
		25	25	20.56	20.70	20.49	21.00	2
		50	0	20.61	20.61	20.34	21.00	2
10	64-QAM	1	0	20.42	20.53	20.54	21.00	2
		1	25	20.53	20.45	20.43	21.00	2
		1	49	20.43	20.48	20.44	21.00	2
		25	0	19.51	19.44	19.57	20.00	3
		25	12	19.53	19.58	19.47	20.00	3
		25	25	19.54	19.48	19.51	20.00	3
		50	0	19.60	19.55	19.48	20.00	3

LTE Band 12								
BW(MHz)	Modulation	RB Size	RB Offset	Conducted power (dBm)			Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
Frequency (MHz)				701.5	707.5	713.5		
Channel				23035	23095	23155		
5	QPSK	1	0	22.60	22.57	22.50	23.00	0
		1	12	22.43	22.59	22.45	23.00	0
		1	24	22.50	22.59	22.52	23.00	0
		12	0	21.51	21.59	21.54	22.00	1
		12	6	21.55	21.51	21.57	22.00	1
		12	13	21.45	21.57	21.54	22.00	1
		25	0	21.45	21.45	21.56	22.00	1
5	16-QAM	1	0	21.44	21.50	21.55	22.00	1
		1	12	21.56	21.53	21.43	22.00	1
		1	24	21.54	21.58	21.51	22.00	1
		12	0	20.55	20.42	20.51	21.00	2
		12	6	20.52	20.46	20.46	21.00	2
		12	13	20.55	20.46	20.49	21.00	2
		25	0	20.49	20.56	20.51	21.00	2
5	64-QAM	1	0	20.45	20.49	20.53	21.00	2
		1	12	20.58	20.60	20.42	21.00	2
		1	24	20.54	20.55	20.55	21.00	2
		12	0	19.58	19.40	19.55	20.00	3
		12	6	19.50	19.42	19.42	20.00	3
		12	13	19.56	19.57	19.46	20.00	3
		25	0	19.49	19.54	19.59	20.00	3

LTE Band 12								
BW(MHz)	Modulation	RB Size	RB Offset	Conducted power (dBm)			Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
Frequency (MHz)				700.5	707.5	714.5		
Channel				23025	23095	23165		
3	QPSK	1	0	22.48	22.55	22.60	23.00	0
		1	7	22.58	22.55	22.54	23.00	0
		1	14	22.57	22.40	22.56	23.00	0
		8	0	21.60	21.59	21.55	22.00	1
		8	4	21.43	21.56	21.49	22.00	1
		8	7	21.56	21.57	21.47	22.00	1
		15	0	21.50	21.53	21.48	22.00	1
3	16-QAM	1	0	21.54	21.44	21.44	22.00	1
		1	7	21.59	21.59	21.43	22.00	1
		1	14	21.48	21.59	21.59	22.00	1
		8	0	20.45	20.46	20.59	21.00	2
		8	4	20.52	20.42	20.49	21.00	2
		8	7	20.49	20.51	20.45	21.00	2
		15	0	20.41	20.58	20.55	21.00	2
3	64-QAM	1	0	20.58	20.47	20.44	21.00	2
		1	7	20.48	20.55	20.45	21.00	2
		1	14	20.59	20.54	20.56	21.00	2
		8	0	19.46	19.41	19.42	20.00	3
		8	4	19.43	19.57	19.45	20.00	3
		8	7	19.53	19.54	19.54	20.00	3
		15	0	19.40	19.55	19.58	20.00	3

LTE Band 12								
BW(MHz)	Modulation	RB Size	RB Offset	Conducted power (dBm)			Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
Frequency (MHz)				699.7	707.5	715.3		
Channel				23017	23095	23173		
1.4	QPSK	1	0	22.44	22.54	22.43	23.00	0
		1	2	22.60	22.41	22.52	23.00	0
		1	5	22.56	22.55	22.52	23.00	0
		3	0	22.51	22.60	22.54	23.00	0
		3	2	22.40	22.60	22.56	23.00	0
		3	3	22.53	22.47	22.59	23.00	0
		6	0	21.47	21.59	21.56	22.00	1
1.4	16-QAM	1	0	21.59	21.51	21.56	22.00	1
		1	2	21.52	21.57	21.50	22.00	1
		1	5	21.48	21.43	21.49	22.00	1
		3	0	21.48	21.57	21.52	22.00	1
		3	2	21.44	21.45	21.56	22.00	1
		3	3	21.43	21.58	21.45	22.00	1
		6	0	20.45	20.43	20.56	21.00	2
1.4	64-QAM	1	0	20.55	20.47	20.49	21.00	2
		1	2	20.49	20.49	20.51	21.00	2
		1	5	20.56	20.48	20.47	21.00	2
		3	0	20.59	20.50	20.53	21.00	2
		3	2	20.45	20.58	20.49	21.00	2
		3	3	20.53	20.47	20.59	21.00	2
		6	0	19.50	19.45	19.50	20.00	3

LTE Band 17								
BW(MHz)	Modulation	RB Size	RB Offset	Conducted power (dBm)			Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
Frequency (MHz)				709	710	711		
Channel				23780	23790	23800		
10	QPSK	1	0	22.63	22.68	22.65	23.00	0
		1	25	22.59	22.53	22.59	23.00	0
		1	49	22.62	22.58	22.60	23.00	0
		25	0	21.37	21.35	21.34	22.00	1
		25	12	21.36	21.52	21.53	22.00	1
		25	25	21.52	21.52	21.45	22.00	1
		50	0	21.62	21.49	21.42	22.00	1
10	16-QAM	1	0	21.75	21.85	21.85	22.00	1
		1	25	21.81	21.72	21.80	22.00	1
		1	49	21.97	21.95	21.93	22.00	1
		25	0	20.40	20.36	20.35	21.00	2
		25	12	20.63	20.53	20.55	21.00	2
		25	25	20.51	20.52	20.49	21.00	2
		50	0	20.63	20.49	20.42	21.00	2
10	64-QAM	1	0	20.52	20.52	20.55	21.00	2
		1	25	20.53	20.54	20.57	21.00	2
		1	49	20.53	20.53	20.52	21.00	2
		25	0	19.41	19.47	19.50	20.00	3
		25	12	19.53	19.43	19.42	20.00	3
		25	25	19.59	19.41	19.49	20.00	3
		50	0	19.49	19.50	19.56	20.00	3

LTE Band 17								
BW(MHz)	Modulation	RB Size	RB Offset	Conducted power (dBm)			Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
Frequency (MHz)				706.5	710	713.5		
Channel				23755	23790	23825		
5	QPSK	1	0	22.42	22.42	22.47	23.00	0
		1	12	22.53	22.52	22.46	23.00	0
		1	24	22.58	22.50	22.53	23.00	0
		12	0	21.43	21.41	21.54	22.00	1
		12	6	21.48	21.58	21.49	22.00	1
		12	13	21.55	21.43	21.49	22.00	1
		25	0	21.51	21.51	21.50	22.00	1
5	16-QAM	1	0	21.52	21.59	21.55	22.00	1
		1	12	21.52	21.55	21.57	22.00	1
		1	24	21.58	21.51	21.60	22.00	1
		12	0	20.59	20.40	20.55	21.00	2
		12	6	20.57	20.51	20.48	21.00	2
		12	13	20.59	20.52	20.42	21.00	2
		25	0	20.53	20.59	20.44	21.00	2
5	64-QAM	1	0	20.50	20.45	20.53	21.00	2
		1	12	20.52	20.52	20.58	21.00	2
		1	24	20.49	20.45	20.49	21.00	2
		12	0	19.54	19.48	19.44	20.00	3
		12	6	19.49	19.53	19.53	20.00	3
		12	13	19.46	19.52	19.52	20.00	3
		25	0	19.50	19.47	19.46	20.00	3

LTE Band 26								
BW(MHz)	Modulation	RB Size	RB Offset	Conducted power (dBm)			Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
Frequency (MHz)				821.5	831.5	841.5		
Channel				26765	26865	26965		
15	QPSK	1	0	22.99	22.96	22.93	23.00	0
		1	36	22.95	22.94	22.79	23.00	0
		1	74	22.93	22.76	22.62	23.00	0
		36	0	21.99	21.93	21.91	22.00	1
		36	18	21.93	21.91	21.80	22.00	1
		36	37	21.97	21.90	21.68	22.00	1
		75	0	21.96	21.91	21.76	22.00	1
15	16-QAM	1	0	21.60	21.78	21.88	22.00	1
		1	36	21.63	21.75	21.88	22.00	1
		1	74	21.64	21.65	21.81	22.00	1
		36	0	20.87	20.71	20.66	21.00	2
		36	18	20.78	20.77	20.83	21.00	2
		36	37	20.77	20.64	20.70	21.00	2
		75	0	20.62	20.70	20.63	21.00	2
15	64-QAM	1	0	20.72	20.85	20.89	21.00	2
		1	36	20.86	20.83	20.67	21.00	2
		1	74	20.62	20.74	20.72	21.00	2
		36	0	19.75	19.66	19.78	20.00	3
		36	18	19.78	19.60	19.89	20.00	3
		36	37	19.63	19.61	19.64	20.00	3
		75	0	19.79	19.62	19.65	20.00	3

LTE Band 26								
BW(MHz)	Modulation	RB Size	RB Offset	Conducted power (dBm)			Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
Frequency (MHz)				819	831.5	844		
Channel				26740	26865	26990		
10	QPSK	1	0	22.62	22.82	22.66	23.00	0
		1	25	22.60	22.89	22.69	23.00	0
		1	49	22.72	22.67	22.84	23.00	0
		25	0	21.79	21.67	21.89	22.00	1
		25	12	21.64	21.62	21.76	22.00	1
		25	25	21.70	21.63	21.61	22.00	1
		50	0	21.85	21.88	21.73	22.00	1
10	16-QAM	1	0	21.73	21.82	21.77	22.00	1
		1	25	21.64	21.82	21.89	22.00	1
		1	49	21.77	21.89	21.87	22.00	1
		25	0	20.78	20.61	20.69	21.00	2
		25	12	20.61	20.76	20.83	21.00	2
		25	25	20.78	20.73	20.84	21.00	2
		50	0	20.79	20.73	20.62	21.00	2
10	64-QAM	1	0	20.73	20.78	20.62	21.00	2
		1	25	20.70	20.80	20.79	21.00	2
		1	49	20.64	20.81	20.73	21.00	2
		25	0	19.70	19.60	19.72	20.00	3
		25	12	19.80	19.73	19.71	20.00	3
		25	25	19.79	19.69	19.77	20.00	3
		50	0	19.80	19.90	19.80	20.00	3

LTE Band 26								
BW(MHz)	Modulation	RB Size	RB Offset	Conducted power (dBm)			Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
Frequency (MHz)				816.5	831.5	846.5		
Channel				26715	26865	27015		
5	QPSK	1	0	22.82	22.82	22.67	23.00	0
		1	12	22.62	22.85	22.80	23.00	0
		1	24	22.62	22.67	22.81	23.00	0
		12	0	21.76	21.78	21.81	22.00	1
		12	6	21.82	21.65	21.83	22.00	1
		12	13	21.73	21.79	21.87	22.00	1
		25	0	21.70	21.74	21.82	22.00	1
5	16-QAM	1	0	21.62	21.70	21.76	22.00	1
		1	12	21.63	21.85	21.63	22.00	1
		1	24	21.90	21.85	21.69	22.00	1
		12	0	20.81	20.86	20.66	21.00	2
		12	6	20.62	20.68	20.73	21.00	2
		12	13	20.73	20.84	20.74	21.00	2
		25	0	20.61	20.71	20.63	21.00	2
5	64-QAM	1	0	20.69	20.70	20.79	21.00	2
		1	12	20.64	20.64	20.70	21.00	2
		1	24	20.84	20.63	20.89	21.00	2
		12	0	19.65	19.82	19.81	20.00	3
		12	6	19.81	19.68	19.69	20.00	3
		12	13	19.88	19.83	19.78	20.00	3
		25	0	19.67	19.70	19.90	20.00	3

LTE Band 26								
BW(MHz)	Modulation	RB Size	RB Offset	Conducted power (dBm)			Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
Frequency (MHz)				815.5	831.5	847.5		
Channel				26705	26865	27025		
3	QPSK	1	0	22.62	22.69	22.75	23.00	0
		1	7	22.61	22.64	22.73	23.00	0
		1	14	22.70	22.69	22.74	23.00	0
		8	0	21.72	21.73	21.79	22.00	1
		8	4	21.62	21.71	21.64	22.00	1
		8	7	21.76	21.64	21.85	22.00	1
		15	0	21.60	21.60	21.71	22.00	1
3	16-QAM	1	0	21.69	21.71	21.61	22.00	1
		1	7	21.64	21.76	21.83	22.00	1
		1	14	21.80	21.67	21.87	22.00	1
		8	0	20.87	20.81	20.85	21.00	2
		8	4	20.86	20.68	20.73	21.00	2
		8	7	20.69	20.67	20.73	21.00	2
		15	0	20.79	20.72	20.61	21.00	2
3	64-QAM	1	0	20.88	20.63	20.77	21.00	2
		1	7	20.74	20.71	20.71	21.00	2
		1	14	20.73	20.81	20.67	21.00	2
		8	0	19.71	19.62	19.86	20.00	3
		8	4	19.83	19.82	19.79	20.00	3
		8	7	19.72	19.75	19.83	20.00	3
		15	0	19.63	19.66	19.86	20.00	3

LTE Band 26								
BW(MHz)	Modulation	RB Size	RB Offset	Conducted power (dBm)			Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
Frequency (MHz)				814.7	831.5	848.3		
Channel				26697	26865	27033		
1.4	QPSK	1	0	22.73	22.68	22.77	23.00	0
		1	2	22.87	22.87	22.70	23.00	0
		1	5	22.81	22.89	22.85	23.00	0
		3	0	22.79	22.61	22.65	23.00	0
		3	2	22.76	22.66	22.83	23.00	0
		3	3	22.63	22.67	22.77	23.00	0
		6	0	21.68	21.84	21.68	22.00	1
1.4	16-QAM	1	0	21.61	21.84	21.83	22.00	1
		1	2	21.85	21.62	21.77	22.00	1
		1	5	21.63	21.83	21.79	22.00	1
		3	0	21.75	21.78	21.63	22.00	1
		3	2	21.85	21.83	21.75	22.00	1
		3	3	21.83	21.65	21.79	22.00	1
		6	0	20.82	20.77	20.82	21.00	2
1.4	64-QAM	1	0	20.87	20.65	20.81	21.00	2
		1	2	20.76	20.88	20.89	21.00	2
		1	5	20.75	20.85	20.77	21.00	2
		3	0	20.72	20.73	20.89	21.00	2
		3	2	20.88	20.79	20.73	21.00	2
		3	3	20.67	20.81	20.72	21.00	2
		6	0	19.60	19.76	19.87	20.00	3

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LTE Band 2								
BW(MHz)	Modulation	RB Size	RB Offset	Conducted power (dBm)			Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
Frequency (MHz)				1860	1880	1900		
Channel				18700	18900	19100		
20	QPSK	1	0	22.54	22.58	22.64	23.00	0
		1	50	22.31	22.46	22.48	23.00	0
		1	99	22.29	22.33	22.32	23.00	0
		50	0	21.36	21.48	21.53	22.00	1
		50	25	21.37	21.46	21.51	22.00	1
		50	50	21.38	21.37	21.26	22.00	1
		100	0	21.73	21.44	21.39	22.00	1
20	16-QAM	1	0	21.81	21.82	21.75	22.00	1
		1	50	21.58	21.69	21.82	22.00	1
		1	99	21.61	21.74	21.69	22.00	1
		50	0	20.53	20.66	20.67	21.00	2
		50	25	20.55	20.56	20.66	21.00	2
		50	50	20.52	20.51	20.42	21.00	2
		100	0	20.68	20.58	20.57	21.00	2
20	64-QAM	1	0	20.31	20.28	20.43	21.00	2
		1	50	20.36	20.29	20.44	21.00	2
		1	99	20.22	20.39	20.23	21.00	2
		50	0	19.30	19.21	19.39	20.00	3
		50	25	19.46	19.28	19.32	20.00	3
		50	50	19.35	19.48	19.46	20.00	3
		100	0	19.22	19.34	19.46	20.00	3

LTE Band 2								
BW(MHz)	Modulation	RB Size	RB Offset	Conducted power (dBm)			Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
Frequency (MHz)				1857.5	1880	1902.5		
Channel				18675	18900	19125		
15	QPSK	1	0	22.23	22.44	22.34	23.00	0
		1	36	22.27	22.30	22.41	23.00	0
		1	74	22.34	22.48	22.32	23.00	0
		36	0	21.40	21.22	21.45	22.00	1
		36	18	21.43	21.49	21.43	22.00	1
		36	37	21.40	21.44	21.49	22.00	1
		75	0	21.34	21.30	21.40	22.00	1
15	16-QAM	1	0	21.41	21.21	21.24	22.00	1
		1	36	21.48	21.44	21.45	22.00	1
		1	74	21.24	21.41	21.25	22.00	1
		36	0	20.45	20.38	20.32	21.00	2
		36	18	20.38	20.32	20.36	21.00	2
		36	37	20.47	20.28	20.28	21.00	2
		75	0	20.24	20.21	20.23	21.00	2
15	64-QAM	1	0	20.35	20.37	20.41	21.00	2
		1	36	20.47	20.35	20.26	21.00	2
		1	74	20.40	20.28	20.41	21.00	2
		36	0	19.31	19.48	19.39	20.00	3
		36	18	19.20	19.38	19.25	20.00	3
		36	37	19.21	19.48	19.38	20.00	3
		75	0	19.40	19.46	19.23	20.00	3

LTE Band 2								
BW(MHz)	Modulation	RB Size	RB Offset	Conducted power (dBm)			Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
Frequency (MHz)				1855	1880	1905		
Channel				18650	18900	19150		
10	QPSK	1	0	22.48	22.44	22.35	23.00	0
		1	25	22.43	22.34	22.43	23.00	0
		1	49	22.36	22.39	22.38	23.00	0
		25	0	21.36	21.37	21.44	22.00	1
		25	12	21.32	21.20	21.49	22.00	1
		25	25	21.27	21.33	21.25	22.00	1
		50	0	21.41	21.24	21.29	22.00	1
10	16-QAM	1	0	21.39	21.25	21.43	22.00	1
		1	25	21.42	21.26	21.28	22.00	1
		1	49	21.23	21.32	21.46	22.00	1
		25	0	20.43	20.33	20.33	21.00	2
		25	12	20.39	20.38	20.24	21.00	2
		25	25	20.45	20.31	20.48	21.00	2
		50	0	20.42	20.44	20.29	21.00	2
10	64-QAM	1	0	20.39	20.47	20.27	21.00	2
		1	25	20.25	20.44	20.47	21.00	2
		1	49	20.46	20.50	20.21	21.00	2
		25	0	19.27	19.29	19.25	20.00	3
		25	12	19.46	19.36	19.41	20.00	3
		25	25	19.47	19.22	19.31	20.00	3
		50	0	19.29	19.20	19.34	20.00	3

LTE Band 2								
BW(MHz)	Modulation	RB Size	RB Offset	Conducted power (dBm)			Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
Frequency (MHz)				1852.5	1880	1907.5		
Channel				18625	18900	19175		
5	QPSK	1	0	22.24	22.45	22.27	23.00	0
		1	12	22.40	22.24	22.44	23.00	0
		1	24	22.31	22.35	22.38	23.00	0
		12	0	21.27	21.29	21.23	22.00	1
		12	6	21.45	21.22	21.43	22.00	1
		12	13	21.23	21.31	21.34	22.00	1
		25	0	21.21	21.26	21.29	22.00	1
5	16-QAM	1	0	21.46	21.27	21.37	22.00	1
		1	12	21.45	21.36	21.33	22.00	1
		1	24	21.25	21.20	21.29	22.00	1
		12	0	20.33	20.26	20.31	21.00	2
		12	6	20.23	20.50	20.22	21.00	2
		12	13	20.30	20.23	20.38	21.00	2
		25	0	20.45	20.43	20.39	21.00	2
5	64-QAM	1	0	20.40	20.44	20.29	21.00	2
		1	12	20.45	20.20	20.24	21.00	2
		1	24	20.26	20.41	20.30	21.00	2
		12	0	19.47	19.29	19.22	20.00	3
		12	6	19.28	19.44	19.39	20.00	3
		12	13	19.29	19.28	19.44	20.00	3
		25	0	19.33	19.24	19.38	20.00	3

LTE Band 2								
BW(MHz)	Modulation	RB Size	RB Offset	Conducted power (dBm)			Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
Frequency (MHz)				1851.5	1880	1908.5		
Channel				18615	18900	19185		
3	QPSK	1	0	22.49	22.42	22.34	23.00	0
		1	7	22.42	22.49	22.23	23.00	0
		1	14	22.21	22.39	22.20	23.00	0
		8	0	21.42	21.33	21.41	22.00	1
		8	4	21.50	21.28	21.24	22.00	1
		8	7	21.29	21.35	21.23	22.00	1
		15	0	21.39	21.37	21.22	22.00	1
3	16-QAM	1	0	21.38	21.36	21.23	22.00	1
		1	7	21.28	21.24	21.38	22.00	1
		1	14	21.45	21.28	21.28	22.00	1
		8	0	20.20	20.29	20.24	21.00	2
		8	4	20.31	20.31	20.33	21.00	2
		8	7	20.40	20.43	20.48	21.00	2
		15	0	20.48	20.37	20.27	21.00	2
3	64-QAM	1	0	20.27	20.24	20.30	21.00	2
		1	7	20.46	20.22	20.49	21.00	2
		1	14	20.21	20.43	20.29	21.00	2
		8	0	19.43	19.45	19.31	20.00	3
		8	4	19.28	19.30	19.28	20.00	3
		8	7	19.49	19.20	19.26	20.00	3
		15	0	19.31	19.35	19.34	20.00	3

LTE Band 2								
BW(MHz)	Modulation	RB Size	RB Offset	Conducted power (dBm)			Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
Frequency (MHz)				1850.7	1880	1909.3		
Channel				18607	18900	19193		
1.4	QPSK	1	0	22.33	22.45	22.33	23.00	0
		1	2	22.38	22.25	22.22	23.00	0
		1	5	22.50	22.33	22.36	23.00	0
		3	0	22.37	22.28	22.35	23.00	0
		3	2	22.45	22.27	22.47	23.00	0
		3	3	22.27	22.38	22.41	23.00	0
		6	0	21.20	21.24	21.38	22.00	1
1.4	16-QAM	1	0	21.34	21.48	21.48	22.00	1
		1	2	21.35	21.42	21.41	22.00	1
		1	5	21.34	21.39	21.29	22.00	1
		3	0	21.38	21.41	21.28	22.00	1
		3	2	21.21	21.45	21.45	22.00	1
		3	3	21.42	21.44	21.38	22.00	1
		6	0	20.46	20.49	20.43	21.00	2
1.4	64-QAM	1	0	20.40	20.33	20.26	21.00	2
		1	2	20.34	20.44	20.42	21.00	2
		1	5	20.48	20.27	20.48	21.00	2
		3	0	20.47	20.24	20.24	21.00	2
		3	2	20.22	20.42	20.33	21.00	2
		3	3	20.45	20.27	20.40	21.00	2
		6	0	19.39	19.43	19.42	20.00	3

LTE Band 4								
BW(MHz)	Modulation	RB Size	RB Offset	Conducted power (dBm)			Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
Frequency (MHz)				1720	1732.5	1745		
Channel				20050	20175	20300		
20	QPSK	1	0	21.91	21.89	21.95	22.00	0
		1	50	21.81	21.85	21.88	22.00	0
		1	99	21.89	21.88	21.86	22.00	0
		50	0	20.68	20.63	20.64	21.00	1
		50	25	20.71	20.64	20.68	21.00	1
		50	50	20.70	20.63	20.64	21.00	1
		100	0	20.68	20.66	20.66	21.00	1
20	16-QAM	1	0	20.63	20.64	20.66	21.00	1
		1	50	20.69	20.61	20.67	21.00	1
		1	99	20.63	20.65	20.62	21.00	1
		50	0	19.62	19.68	19.67	20.00	2
		50	25	19.67	19.69	19.71	20.00	2
		50	50	19.63	19.64	19.65	20.00	2
		100	0	19.61	19.67	19.71	20.00	2
20	64-QAM	1	0	19.67	19.61	19.67	20.00	2
		1	50	19.61	19.67	19.64	20.00	2
		1	99	19.71	19.71	19.62	20.00	2
		50	0	18.61	18.62	18.64	19.00	3
		50	25	18.66	18.70	18.69	19.00	3
		50	50	18.61	18.68	18.65	19.00	3
		100	0	18.62	18.64	18.63	19.00	3

LTE Band 4								
BW(MHz)	Modulation	RB Size	RB Offset	Conducted power (dBm)			Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
Channel				20025	20175	20325		
15	QPSK	1	0	21.86	21.90	21.82	22.00	0
		1	36	21.84	21.89	21.83	22.00	0
		1	74	21.82	21.91	21.83	22.00	0
		36	0	20.61	20.71	20.61	21.00	1
		36	18	20.68	20.68	20.67	21.00	1
		36	37	20.67	20.64	20.61	21.00	1
		75	0	20.68	20.66	20.67	21.00	1
15	16-QAM	1	0	20.69	20.63	20.70	21.00	1
		1	36	20.66	20.71	20.63	21.00	1
		1	74	20.68	20.64	20.67	21.00	1
		36	0	19.70	19.65	19.68	20.00	2
		36	18	19.69	19.67	19.67	20.00	2
		36	37	19.69	19.66	19.62	20.00	2
		75	0	19.65	19.65	19.64	20.00	2
15	64-QAM	1	0	19.66	19.69	19.66	20.00	2
		1	36	19.66	19.67	19.62	20.00	2
		1	74	19.68	19.71	19.70	20.00	2
		36	0	18.61	18.69	18.63	19.00	3
		36	18	18.67	18.69	18.65	19.00	3
		36	37	18.66	18.66	18.63	19.00	3
		75	0	18.65	18.62	18.67	19.00	3

LTE Band 4								
BW(MHz)	Modulation	RB Size	RB Offset	Conducted power (dBm)			Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
Frequency (MHz)				1715	1732.5	1750		
Channel				20000	20175	20350		
10	QPSK	1	0	21.87	21.82	21.91	22.00	0
		1	25	21.90	21.84	21.84	22.00	0
		1	49	21.81	21.81	21.86	22.00	0
		25	0	20.64	20.62	20.66	21.00	1
		25	12	20.70	20.63	20.64	21.00	1
		25	25	20.65	20.67	20.67	21.00	1
		50	0	20.63	20.66	20.69	21.00	1
10	16-QAM	1	0	20.69	20.61	20.70	21.00	1
		1	25	20.63	20.64	20.67	21.00	1
		1	49	20.66	20.71	20.66	21.00	1
		25	0	19.63	19.68	19.69	20.00	2
		25	12	19.64	19.68	19.64	20.00	2
		25	25	19.70	19.67	19.71	20.00	2
		50	0	19.65	19.70	19.62	20.00	2
10	64-QAM	1	0	19.66	19.65	19.62	20.00	2
		1	25	19.65	19.71	19.68	20.00	2
		1	49	19.61	19.69	19.66	20.00	2
		25	0	18.67	18.66	18.70	19.00	3
		25	12	18.70	18.63	18.67	19.00	3
		25	25	18.66	18.67	18.70	19.00	3
		50	0	18.65	18.68	18.70	19.00	3

LTE Band 4								
BW(MHz)	Modulation	RB Size	RB Offset	Conducted power (dBm)			Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
Channel				19975	20175	20375		
5	QPSK	1	0	21.87	21.82	21.81	22.00	0
		1	12	21.83	21.88	21.91	22.00	0
		1	24	21.85	21.84	21.82	22.00	0
		12	0	20.65	20.65	20.69	21.00	1
		12	6	20.62	20.63	20.67	21.00	1
		12	13	20.68	20.64	20.71	21.00	1
		25	0	20.70	20.64	20.69	21.00	1
5	16-QAM	1	0	20.65	20.69	20.61	21.00	1
		1	12	20.61	20.65	20.70	21.00	1
		1	24	20.70	20.66	20.61	21.00	1
		12	0	19.63	19.71	19.66	20.00	2
		12	6	19.68	19.67	19.63	20.00	2
		12	13	19.68	19.63	19.66	20.00	2
		25	0	19.71	19.65	19.70	20.00	2
5	64-QAM	1	0	19.67	19.64	19.63	20.00	2
		1	12	19.65	19.63	19.69	20.00	2
		1	24	19.62	19.71	19.69	20.00	2
		12	0	18.69	18.67	18.64	19.00	3
		12	6	18.64	18.63	18.69	19.00	3
		12	13	18.65	18.68	18.67	19.00	3
		25	0	18.71	18.61	18.62	19.00	3

LTE Band 4								
BW(MHz)	Modulation	RB Size	RB Offset	Conducted power (dBm)			Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
Channel				19965	20175	20385		
3	QPSK	1	0	21.62	21.69	21.71	22.00	0
		1	7	21.68	21.69	21.66	22.00	0
		1	14	21.63	21.67	21.64	22.00	0
		8	0	20.65	20.62	20.61	21.00	1
		8	4	20.69	20.68	20.71	21.00	1
		8	7	20.61	20.64	20.62	21.00	1
		15	0	20.63	20.62	20.71	21.00	1
3	16-QAM	1	0	20.71	20.70	20.69	21.00	1
		1	7	20.67	20.69	20.61	21.00	1
		1	14	20.71	20.65	20.68	21.00	1
		8	0	19.67	19.68	19.71	20.00	2
		8	4	19.71	19.61	19.68	20.00	2
		8	7	19.67	19.68	19.68	20.00	2
		15	0	19.69	19.70	19.65	20.00	2
3	64-QAM	1	0	19.66	19.64	19.65	20.00	2
		1	7	19.69	19.61	19.71	20.00	2
		1	14	19.64	19.62	19.63	20.00	2
		8	0	18.69	18.67	18.66	19.00	3
		8	4	18.62	18.64	18.70	19.00	3
		8	7	18.71	18.65	18.67	19.00	3
		15	0	18.69	18.67	18.66	19.00	3

LTE Band 4								
BW(MHz)	Modulation	RB Size	RB Offset	Conducted power (dBm)			Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
Channel				19957	20175	20393		
1.4	QPSK	1	0	21.66	21.63	21.61	22.00	0
		1	2	21.63	21.69	21.68	22.00	0
		1	5	21.64	21.70	21.67	22.00	0
		3	0	20.65	20.66	20.66	22.00	0
		3	2	20.66	20.70	20.68	22.00	0
		3	3	20.61	20.68	20.64	22.00	0
		6	0	20.64	20.62	20.68	21.00	1
1.4	16-QAM	1	0	20.61	20.64	20.64	21.00	1
		1	2	20.61	20.71	20.64	21.00	1
		1	5	20.66	20.65	20.68	21.00	1
		3	0	20.62	20.61	20.70	21.00	1
		3	2	20.70	20.66	20.69	21.00	1
		3	3	20.70	20.70	20.68	21.00	1
		6	0	19.68	19.65	19.61	20.00	2
1.4	64-QAM	1	0	19.64	19.70	19.71	20.00	2
		1	2	19.65	19.62	19.64	20.00	2
		1	5	19.71	19.64	19.71	20.00	2
		3	0	19.71	19.70	19.64	20.00	2
		3	2	19.69	19.61	19.63	20.00	2
		3	3	19.68	19.71	19.65	20.00	2
		6	0	18.61	18.71	18.62	19.00	3

LTE Band 41										
BW(MHz)	Modulation	RB Size	RB Offset	Conducted power (dBm)					Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
Frequency (MHz)				2506	2549.5	2593	2636.5	2680		
Channel				39750	40185	40620	41055	41490		
20	QPSK	1	0	22.61	22.75	22.95	22.77	21.75	23.00	0
		1	50	22.52	22.71	22.93	22.73	21.71	23.00	0
		1	99	22.46	22.62	22.91	22.56	21.48	23.00	0
		50	0	21.71	21.85	21.91	21.81	20.88	22.00	1
		50	25	21.67	21.86	21.95	21.85	20.91	22.00	1
		50	50	21.76	21.93	21.82	21.74	20.78	22.00	1
		100	0	21.74	21.87	21.92	21.83	20.67	22.00	1
20	16-QAM	1	0	21.65	21.80	21.84	21.79	21.72	22.00	1
		1	50	21.71	21.96	21.83	21.83	21.65	22.00	1
		1	99	21.63	21.93	21.98	21.65	21.42	22.00	1
		50	0	20.80	20.81	20.81	20.98	20.85	21.00	2
		50	25	20.71	20.95	20.86	20.91	20.71	21.00	2
		50	50	20.73	20.87	20.87	20.88	20.81	21.00	2
		100	0	20.78	20.91	20.75	20.95	20.84	21.00	2
20	64-QAM	1	0	20.35	20.31	20.58	20.64	20.53	21.00	2
		1	50	20.37	20.57	20.76	20.81	20.41	21.00	2
		1	99	20.41	20.51	20.54	20.66	20.31	21.00	2
		50	0	19.70	19.89	19.94	19.98	19.87	20.00	3
		50	25	19.65	19.93	19.96	19.99	19.82	20.00	3
		50	50	19.71	19.94	19.93	19.95	19.93	20.00	3
		100	0	19.78	19.85	19.99	19.89	19.91	20.00	3

LTE Band 41										
BW(MHz)	Modulation	RB Size	RB Offset	Conducted power (dBm)					Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
Frequency (MHz)				2503.5	2548.3	2593	2637.8	2682.5		
Channel				39725	40173	40620	41068	41515		
15	QPSK	1	0	22.54	22.54	22.63	22.46	22.52	23.00	0
		1	36	22.54	22.53	22.68	22.48	22.66	23.00	0
		1	74	22.35	22.67	22.84	22.68	22.68	23.00	0
		36	0	21.59	21.53	21.68	21.50	21.68	22.00	1
		36	18	21.52	21.66	21.82	21.53	21.68	22.00	1
		36	37	21.44	21.65	21.87	21.47	21.58	22.00	1
		75	0	21.52	21.53	21.62	21.52	21.66	22.00	1
15	16-QAM	1	0	21.42	21.59	21.90	21.46	21.62	22.00	1
		1	36	21.51	21.54	21.85	21.61	21.55	22.00	1
		1	74	21.56	21.51	21.70	21.52	21.51	22.00	1
		36	0	20.45	20.68	20.63	20.65	20.55	21.00	2
		36	18	20.32	20.61	20.84	20.69	20.60	21.00	2
		36	37	20.57	20.63	20.67	20.64	20.56	21.00	2
		75	0	20.33	20.61	20.80	20.61	20.64	21.00	2
15	64-QAM	1	0	20.54	20.55	20.85	20.59	20.64	21.00	2
		1	36	20.42	20.58	20.76	20.68	20.62	21.00	2
		1	74	20.34	20.61	20.64	20.55	20.65	21.00	2
		36	0	19.38	19.55	19.71	19.59	19.57	20.00	3
		36	18	19.44	19.62	19.84	19.44	19.51	20.00	3
		36	37	19.48	19.60	19.78	19.56	19.52	20.00	3
		75	0	19.56	19.58	19.85	19.60	19.64	20.00	3

LTE Band 41										
BW(MHz)	Modulation	RB Size	RB Offset	Conducted power (dBm)					Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
Frequency (MHz)				2501	2547	2593	2639	2685		
Channel				39700	40160	40620	41080	41540		
10	QPSK	1	0	22.46	22.54	22.88	22.51	22.67	23.00	0
		1	25	22.42	22.56	22.63	22.51	22.69	23.00	0
		1	49	22.32	22.52	22.65	22.61	22.57	23.00	0
		25	0	21.56	21.57	21.80	21.53	21.60	22.00	1
		25	12	21.53	21.51	21.69	21.53	21.60	22.00	1
		25	25	21.49	21.55	21.80	21.53	21.56	22.00	1
		50	0	21.56	21.63	21.65	21.50	21.70	22.00	1
10	16-QAM	1	0	21.53	21.70	21.86	21.60	21.55	22.00	1
		1	25	21.31	21.53	21.83	21.50	21.65	22.00	1
		1	49	21.41	21.65	21.74	21.51	21.56	22.00	1
		25	0	20.38	20.57	20.70	20.51	20.67	21.00	2
		25	12	20.42	20.63	20.88	20.43	20.63	21.00	2
		25	25	20.43	20.65	20.64	20.70	20.64	21.00	2
		50	0	20.32	20.62	20.84	20.65	20.52	21.00	2
10	64-QAM	1	0	20.47	20.64	20.60	20.40	20.65	21.00	2
		1	25	20.33	20.54	20.79	20.65	20.52	21.00	2
		1	49	20.56	20.51	20.72	20.62	20.63	21.00	2
		25	0	19.39	19.51	19.80	19.45	19.63	20.00	3
		25	12	19.36	19.62	19.85	19.64	19.56	20.00	3
		25	25	19.33	19.65	19.74	19.65	19.59	20.00	3
		50	0	19.44	19.57	19.61	19.65	19.67	20.00	3

LTE Band 41										
BW(MHz)	Modulation	RB Size	RB Offset	Conducted power (dBm)					Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
Frequency (MHz)				2498.5	2545.8	2593	2640.3	2687.5		
Channel				39675	40148	40620	41093	41565		
5	QPSK	1	0	22.57	22.68	22.72	22.68	22.58	23.00	0
		1	12	22.45	22.54	22.62	22.57	22.52	23.00	0
		1	24	22.52	22.55	22.75	22.64	22.58	23.00	0
		12	0	21.36	21.63	21.62	21.50	21.59	22.00	1
		12	6	21.30	21.67	21.80	21.44	21.52	22.00	1
		12	13	21.58	21.67	21.86	21.69	21.61	22.00	1
		25	0	21.36	21.65	21.69	21.42	21.68	22.00	1
5	16-QAM	1	0	21.30	21.59	21.77	21.49	21.57	22.00	1
		1	12	21.46	21.60	21.70	21.47	21.66	22.00	1
		1	24	21.33	21.62	21.69	21.47	21.59	22.00	1
		12	0	20.42	20.67	20.61	20.41	20.69	21.00	2
		12	6	20.47	20.60	20.64	20.53	20.56	21.00	2
		12	13	20.47	20.66	20.64	20.66	20.68	21.00	2
		25	0	20.48	20.64	20.70	20.62	20.64	21.00	2
5	64-QAM	1	0	20.52	20.62	20.68	20.53	20.50	21.00	2
		1	12	20.41	20.66	20.78	20.56	20.60	21.00	2
		1	24	20.55	20.54	20.61	20.67	20.64	21.00	2
		12	0	19.60	19.59	19.66	19.65	19.52	20.00	3
		12	6	19.31	19.59	19.88	19.53	19.53	20.00	3
		12	13	19.48	19.52	19.78	19.64	19.62	20.00	3
		25	0	19.52	19.51	19.62	19.59	19.60	20.00	3

ULCA

CA_41C														
Combination 100RB + 100RB (20MHz + 20MHz)														
PCC						SCC						MPR (dB)	UL CA power	
Bandwidth [MHz]	Modulation	Frequency [MHz]	Channel	RB size	RB Offset	Bandwidth [MHz]	Modulation	Frequency [MHz]	Channel	RB size	RB Offset		Measured (dBm)	Tune-up limit (dBm)
20	QPSK	2680	41490	1	0	20	QPSK	2660.2	41292	1	99	0	21.71	23.00
20	QPSK	2506	39750	1	0	20	QPSK	2525.8	39948	1	99	0	22.58	23.00

CA_41C														
Combination 75RB + 100RB (15MHz + 20MHz)														
PCC						SCC						MPR (dB)	UL CA power	
Bandwidth [MHz]	Modulation	Frequency [MHz]	Channel	RB size	RB Offset	Bandwidth [MHz]	Modulation	Frequency [MHz]	Channel	RB size	RB Offset		Measured (dBm)	Tune-up limit (dBm)
20	QPSK	2680	41490	1	50	15	QPSK	2662.9	41319	1	0	0	21.68	23.00
20	QPSK	2506	39750	1	0	15	QPSK	2523.1	39921	1	74	0	22.48	23.00

CA_41C														
Combination 75RB + 75RB (15MHz + 15MHz)														
PCC						SCC						MPR (dB)	UL CA power	
Bandwidth [MHz]	Modulation	Frequency [MHz]	Channel	RB size	RB Offset	Bandwidth [MHz]	Modulation	Frequency [MHz]	Channel	RB size	RB Offset		Measured (dBm)	Tune-up limit (dBm)
15	QPSK	2682.5	41515	1	36	15	QPSK	2667.5	41365	1	0	0	21.62	23.00
15	QPSK	2503.5	39725	1	0	15	QPSK	2518.5	39875	1	74	0	22.48	23.00

CA_41C														
Combination 50RB + 100RB (10MHz + 20MHz)														
PCC						SCC						MPR (dB)	UL CA power	
Bandwidth [MHz]	Modulation	Frequency [MHz]	Channel	RB size	RB Offset	Bandwidth [MHz]	Modulation	Frequency [MHz]	Channel	RB size	RB Offset		Measured (dBm)	Tune-up limit (dBm)
20	QPSK	2680	41490	1	50	10	QPSK	2665.6	41346	1	0	0	21.54	23.00
20	QPSK	2506	39750	1	0	10	QPSK	2520.4	39894	1	49	0	22.34	23.00

CA_41C														
Combination 50RB + 75RB (10MHz + 15MHz)														
PCC						SCC						MPR (dB)	UL CA power	
Bandwidth [MHz]	Modulation	Frequency [MHz]	Channel	RB size	RB Offset	Bandwidth [MHz]	Modulation	Frequency [MHz]	Channel	RB size	RB Offset		Measured (dBm)	Tune-up limit (dBm)
15	QPSK	2682.5	41515	1	36	10	QPSK	2670.5	41395	1	0	0	21.47	23.00
15	QPSK	2503.5	39725	1	0	10	QPSK	2515.5	39845	1	49	0	22.34	23.00

CA_41C														
Combination 25RB + 100RB (5MHz + 20MHz)														
PCC						SCC						MPR (dB)	UL CA power	
Bandwidth [MHz]	Modulation	Frequency [MHz]	Channel	RB size	RB Offset	Bandwidth [MHz]	Modulation	Frequency [MHz]	Channel	RB size	RB Offset		Measured (dBm)	Tune-up limit (dBm)
20	QPSK	2680	41490	1	50	5	QPSK	2668.3	41373	1	0	0	21.44	23.00
20	QPSK	2506	39750	1	0	5	QPSK	2517.7	39867	1	24	0	22.31	23.00

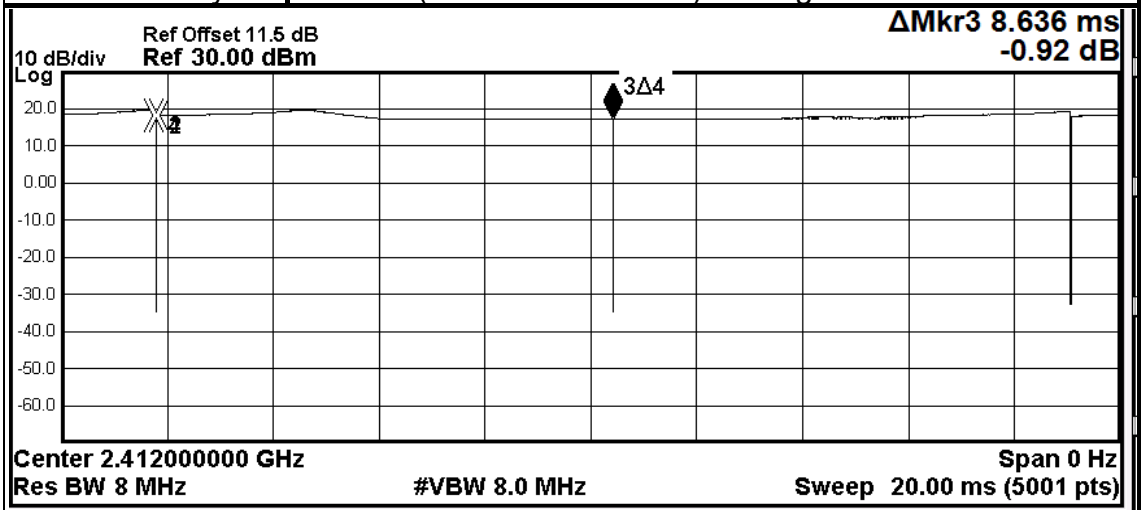
WLAN

Ant 7						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
2.45GHz	802.11b	1	2412	1Mbps	14.00	13.97
		6	2437		14.00	13.85
		11	2462		14.00	13.84
	802.11g	1	2412	6Mbps	13.00	12.90
		6	2437		13.00	12.93
		11	2462		13.00	12.91
	802.11n20-HT0	1	2412	MCS0	13.00	12.90
		6	2437		13.00	12.87
		11	2462		13.00	12.89
	802.11ac20-VHT0	1	2412	MCS0	13.00	12.90
		6	2437		13.00	12.87
		11	2462		13.00	12.85
	802.11ax20-HE0	1	2412	MCS0	13.00	12.93
		6	2437		13.00	12.90
		11	2462		13.00	12.92
	802.11n40-HT0	3	2422	MCS0	13.00	12.78
		6	2437		13.00	12.76
		9	2452		11.00	10.82
	802.11ac40-VHT0	3	2422	MCS0	13.00	12.80
		6	2437		13.00	12.79
		9	2452		11.00	10.75
	802.11ax40-HE0	3	2422	MCS0	13.00	12.84
		6	2437		13.00	12.82
		9	2452		11.00	10.86

Ant 8						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
2.45GHz	802.11b	1	2412	1Mbps	14.00	13.88
		6	2437		14.00	13.81
		11	2462		14.00	13.76
	802.11g	1	2412	6Mbps	13.00	12.73
		6	2437		13.00	12.71
		11	2462		13.00	12.75
	802.11n20-HT0	1	2412	MCS0	13.00	12.75
		6	2437		13.00	12.78
		11	2462		13.00	12.80
	802.11ac20-VHT0	1	2412	MCS0	13.00	12.71
		6	2437		13.00	12.70
		11	2462		13.00	12.68
	802.11ax20-HE0	1	2412	MCS0	13.00	12.75
		6	2437		13.00	12.81
		11	2462		13.00	12.83
	802.11n40-HT0	3	2422	MCS0	13.00	12.72
		6	2437		13.00	12.70
		9	2452		11.00	10.80
	802.11ac40-VHT0	3	2422	MCS0	13.00	12.67
		6	2437		13.00	12.65
		9	2452		11.00	10.73
	802.11ax40-HE0	3	2422	MCS0	13.00	12.72
		6	2437		13.00	12.79
		9	2452		11.00	10.82

Duty Cycle:

2.4G b duty	(8.624/8.636=0.999) Scaling Factor=1.001



MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	Δ2	1	t	(Δ) 8.624 ms	(Δ) -0.99 dB			
2	F	1	t	1.788 ms	18.10 dBm			
3	Δ4	1	t	(Δ) 8.636 ms	(Δ) -0.92 dB			
4	F	1	t	1.788 ms	18.10 dBm			
5								
6								
7								
8								
9								
10								
11								

1.3.1 LTE Downlink CA specification

LTE Downlink 2CA conducted power table

Two Component Carrier Maximum Conducted Power															
PCC									SCC				Power (Level 1)		Configurations
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 B41	20	41490	2680	QPSK	1	0	41490	2680	LTE B41	20	41292	2600.2	20.15	21.75	CA_41C
LTE B41	20	39750	2506	QPSK	1	0	39750	2506	LTE B41	20	39948	2525.8	20.93	22.61	CA_41C

LTE CA information

A)

The device supports downlink LTE Carrier Aggregation (CA) only. It supports a maximum of 2 carriers in the downlink. Other Release 10 features or higher features are not supported, including Enhanced SC-FDMA, 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 V16.6.0. The conducted power measurement results of downlink LTE CA are provided as above per 3GPP TS 36.521-1 V16.6.0. According to KDB 941225 D05A and RF exposure procedures in TCB workshop April 2018, the downlink LTE CA SAR test is not required.

B)

CA combination table

Index	2CC	Restriction	Completely Covered by Measurement Superset
2CC #1	CA 41C		No

Note:

1) The channel spacing and aggregated channel bandwidth for CA are identical to the associated specification in 3GPP TS 36.521-1 V16.6.0.

2) The reference test frequencies for CA refers to 3GPP TS 36.508 V16.6.0

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

4) Based on TCB workshop April 2018, only indicate “No” in CA combination table need power measurement

1.3.2 SAR test exclusion for LTE DL MIMO

SAR test exclusion for LTE DL MIMO was determined by UL power measurements with and without DL MIMO. SAR for DL MIMO was not needed since the maximum output power with DL MIMO active was not > 0.25dB higher than the maximum output power with DL MIMO inactive.

DL MIMO maximum power verification								
PCC							TX power level 1 (dBm)	
UL							DL MIMO active	DL MIMO inactive
Band	Bandwidth [MHz]	Modulation	RB	RB Offset	Frequency [MHz]	Channel		
LTE B41	20	QPSK	1	0	2593	40620	21.18	22.95

1.4 Test Environment

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

1.5 Operation Description

Use chipset specific software to control the EUT, and makes it transmit in maximum power. Measurements are performed respectively on the lowest, middle and highest channels of the operating band(s). The EUT is set to maximum power level during all tests, and at the beginning of each test the battery is fully charged.

Since the overall length and width of a device is > 9 cm x 5 cm (~3.5” x 2”), hotspot mode SAR is measured for all edges and surfaces of the device with a transmitting antenna located within 25 mm from that surface or edge, at a test separation distance of 10 mm.

Note:

802.11b DSSS SAR Test Requirements:

1. SAR is measured for 2.4 GHz 802.11b DSSS mode using the highest measured maximum output power channel, when the reported SAR of the highest measured maximum output power channel for the exposure configuration is ≤ 0.8 W/kg, no further SAR testing is required for 802.11b DSSS in that exposure configuration.

2. When the reported SAR is > 0.8 W/kg, SAR is required for that exposure configuration using the next highest measured output power channel. When any reported SAR is > 1.2 W/kg, SAR is required for the third channel; i.e., all channels require testing.

802.11g/n OFDM SAR Test Exclusion Requirements:

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

Initial Test Configuration:

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

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

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

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

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

1.6 The SAR Measurement System

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

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

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

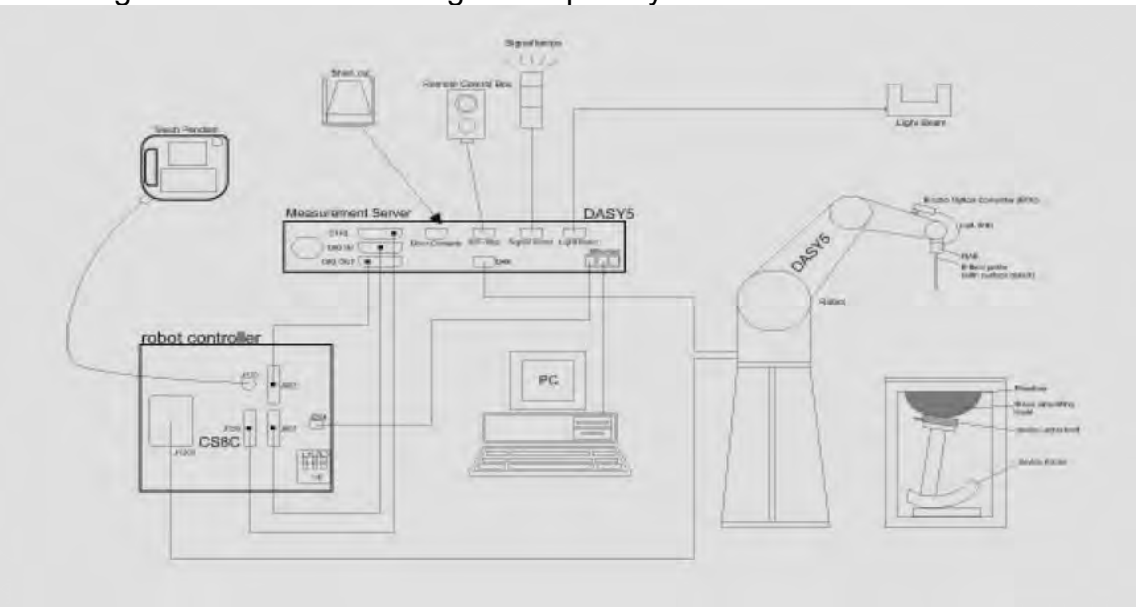


Fig. a The block diagram of SAR system

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

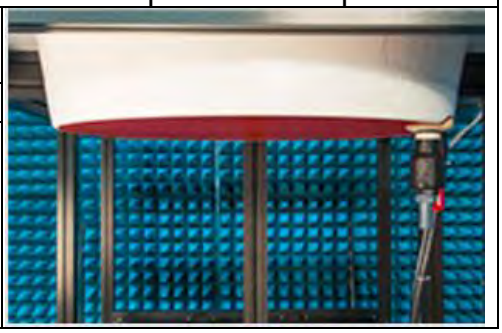
1.7 System Components

EX3DV4 E-Field Probe

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

PHANTOM

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



DEVICE HOLDER

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

Device Holder

1.8 SAR System Verification

The microwave circuit arrangement for system verification is sketched in Fig. b. The daily system accuracy verification occurs within the flat section of the SAM phantom. A SAR measurement was performed to see if the measured SAR was within +/- 10% from the target SAR values. These tests were done at 750/835/1750/1900/2450/2600 MHz. The tests were conducted on the same days as the measurement of the DUT. The obtained results from the system accuracy verification are displayed in the table 1 (SAR values are normalized to 1W forward power delivered to the dipole). During the tests, the liquid depth above the ear reference points was above 15 cm in all the cases. It is seen that the system is operating within its specification, as the results are within acceptable tolerance of the reference values.

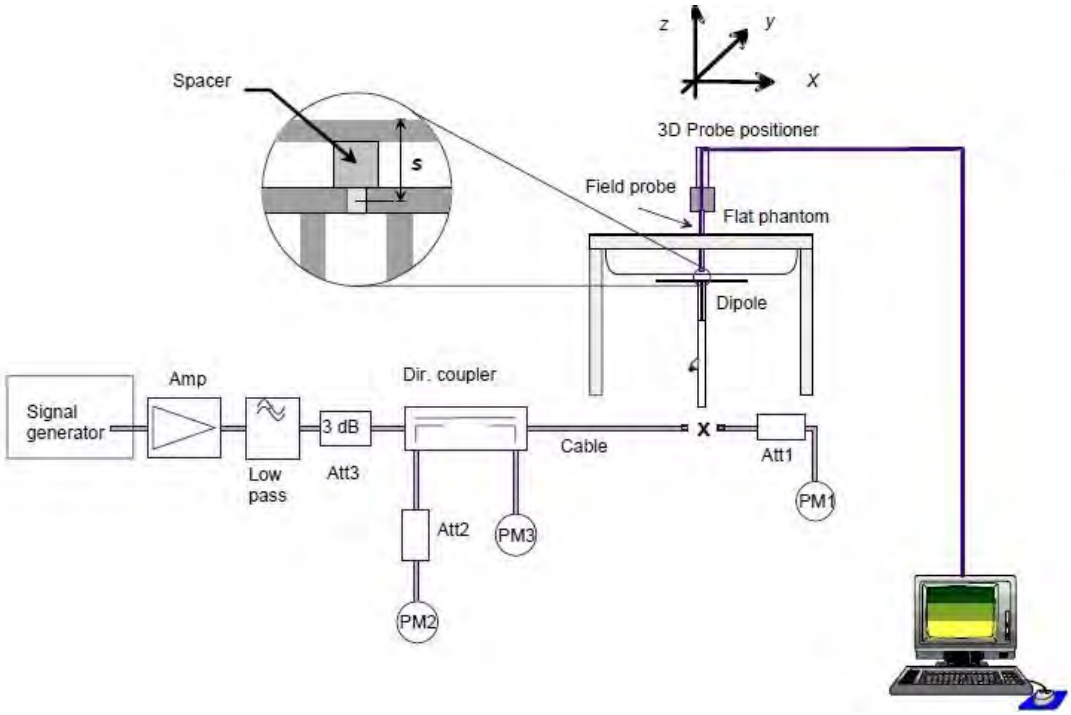


Fig. b The block diagram of system verification

Validation Kit	S/N	Frequency (MHz)	1W Target 1g-SAR (W/kg)	pin=250mW Measured 1g-SAR (W/kg)	Normalized to 1W 1g-SAR (W/kg)	Deviation (%)	Limit	Measurement Date
D750V3	1015	750	8.51	2.14	8.56	0.59	± 10%	Jun.08,2022
D835V2	4d063	835	9.64	2.42	9.68	0.41	± 10%	Jun.08,2022
D1750V2	1008	1750	36.6	9.15	36.6	0.00	± 10%	Jun.09,2022
D1900V2	5d173	1900	39.6	9.96	39.84	0.61	± 10%	Jun.09,2022
D2450V2	727	2450	52.8	13.34	53.36	1.06	± 10%	Jun.10,2022
D2600V2	1005	2600	56.8	14.09	56.36	-0.77	± 10%	Jun.10,2022

Table 1. Results of system validation

1.9 Tissue Simulant Fluid for the Frequency Band

The dielectric properties for this Head-simulant fluid were measured by using the SPEAG Dielectric Assessment Kit (DAKS-3.5)
All dielectric parameters of tissue simulates were measured within 24 hours of SAR measurements. The measured conductivity and permittivity are all within ± 5% of the target values.
The depth of the tissue simulant in the flat section of the phantom was ≥ 15 cm ± 5 mm during all tests. (Fig. 2)

Tissue Type	Measurement Date	Measured Frequency (MHz)	Target Dielectric Constant, εr	Target Conductivity, σ (S/m)	Measured Dielectric Constant, εr	Measured Conductivity, σ (S/m)	% dev εr	% dev σ
Head	Jun. 08, 2022	704	42.145	0.887	42.441	0.896	0.70%	0.98%
		707.5	42.127	0.887	42.420	0.896	0.70%	1.02%
		709	42.119	0.887	42.415	0.896	0.70%	1.02%
		710	42.113	0.887	42.409	0.896	0.70%	1.03%
		711	42.108	0.887	42.404	0.897	0.70%	1.03%
		750	41.900	0.890	42.202	0.899	0.72%	1.04%
		821.5	41.564	0.898	41.862	0.913	0.72%	1.58%
		826.4	41.540	0.899	41.847	0.914	0.74%	1.68%
		829	41.528	0.899	41.836	0.915	0.74%	1.78%
		831.5	41.516	0.900	41.826	0.916	0.74%	1.87%
		835	41.500	0.900	41.815	0.918	0.76%	1.95%
		836.5	41.500	0.902	41.807	0.918	0.74%	1.84%
		836.6	41.500	0.902	41.807	0.918	0.74%	1.83%
		841.5	41.500	0.907	41.789	0.920	0.70%	1.44%
		844	41.500	0.910	41.782	0.921	0.68%	1.22%
		846.6	41.500	0.912	41.771	0.922	0.65%	1.02%
	Jun. 09, 2022	1712.4	40.125	1.350	40.399	1.356	0.68%	0.46%
		1720	40.114	1.354	40.386	1.361	0.68%	0.48%
		1732.4	40.096	1.361	40.367	1.368	0.68%	0.48%
		1732.5	40.096	1.361	40.366	1.369	0.67%	0.52%
		1745	40.079	1.369	40.347	1.376	0.67%	0.51%
		1750	40.071	1.371	40.339	1.378	0.67%	0.51%
		1752.6	40.068	1.373	40.334	1.380	0.67%	0.53%
		1852.4	40.000	1.400	40.260	1.411	0.65%	0.75%
		1860	40.000	1.400	40.260	1.411	0.65%	0.77%
		1880	40.000	1.400	40.260	1.411	0.65%	0.81%
		1900	40.000	1.400	40.260	1.412	0.65%	0.83%
		1907.6	40.000	1.400	40.260	1.412	0.65%	0.83%
	Jun. 10, 2022	2412	39.265	1.766	39.528	1.786	0.67%	1.13%
		2437	39.222	1.788	39.483	1.808	0.66%	1.08%
		2450	39.200	1.800	39.460	1.819	0.66%	1.06%
		2462	39.184	1.813	39.445	1.830	0.67%	0.93%
	Jun. 10, 2022	2506	39.125	1.860	39.389	1.869	0.67%	0.51%
		2549.5	39.067	1.906	39.333	1.909	0.68%	0.14%
		2593	39.009	1.953	39.278	1.948	0.69%	-0.25%
		2600	39.000	1.960	39.269	1.954	0.69%	-0.30%
		2636.5	38.954	2.000	39.222	1.988	0.69%	-0.62%
		2680	38.900	2.048	39.167	2.027	0.69%	-1.01%

Table 2. Dielectric Parameters of Tissue Simulant Fluid

The composition of the brain tissue simulating liquid is:

Simulating Liquids for 600 MHz -10 GHz, Manufactured by SPEAG:

Broad-band head tissue simulating liquids	SPEAG Product	Frequency range (MHz)	Main Ingredients
	HBBL600-10000V6	600 - 10000	Water, Oil

Table 3. Recipes for tissue simulating liquid

1.10 Evaluation Procedures

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

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

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

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

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

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

The first procedure is an extrapolation (incl. Boundary correction) to get the points between the lowest measured plane and the surface. The next step uses 3D

interpolation to get all points within the measured volume. In the last step, a 1g cube is placed numerically into the volume and its averaged SAR is calculated. This cube is the moved around until the highest averaged SAR is found. If the highest SAR is found at the edge of the measured volume, the system will issue a warning: higher SAR values might be found outside of the measured volume. In that case the cube measurement can be repeated, using the new interpolated maximum as the center.

1.11 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:

1.11.1 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.

$$SAR = C \frac{\delta T}{\delta t},$$

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

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

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

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

1.11.2 Calibration with Analytical Fields

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

- The setup must enable accurate determination of the incident power.
- The accuracy of the calculated field strength will depend on the assessment of the dielectric parameters of the liquid.
- Due to the small wavelength in liquids with high permittivity, even small

setups might be above the resonant cutoff frequencies. The field distribution in the setup must be carefully checked for conformity with the theoretical field distribution.

References

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

1.12 Test Standards and Limits

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

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

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

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

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

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

Table 4. RF exposure limits

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

2. Summary of Results

2.1 Decision rules

Reported measurement data comply with IEEE 1528-2013:
Determining compliance shall be based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.2 Summary of Results

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Band	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		ID
								Measured	Reported	
WCDMA Band V	Front Surface	10	4132	826.4	24.0	23.41	114.55%	0.619	0.709	-
WCDMA Band V	Front Surface	10	4183	836.6	24.0	23.25	118.85%	0.631	0.750	001
WCDMA Band V	Front Surface	10	4233	846.6	24.0	23.37	115.61%	0.625	0.723	-
WCDMA Band V	Back Surface	10	4132	826.4	24.0	23.41	114.55%	0.604	0.692	-
WCDMA Band V	Top Edge	10	4132	826.4	24.0	23.41	114.55%	0.353	0.404	-
WCDMA Band V	Bottom Edge	10	4132	826.4	24.0	23.41	114.55%	0.374	0.428	-
WCDMA Band V	Left Edge	10	4132	826.4	24.0	23.41	114.55%	0.001	0.001	-
WCDMA Band V	Right Edge	10	4132	826.4	24.0	23.41	114.55%	0.142	0.163	-

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)		ID
												Measured	Reported	
LTE Band 5	10MHz	QPSK	1	0	Front Surface	10	20450	829	23.00	22.99	100.23%	0.583	0.584	-
LTE Band 5			1	0	Front Surface	10	20525	836.5	23.00	22.95	101.16%	0.590	0.597	-
LTE Band 5			1	0	Front Surface	10	20600	844	23.00	22.91	102.09%	0.597	0.610	002
LTE Band 5			25	0	Front Surface	10	20450	829	22.00	21.99	100.23%	0.498	0.499	-
LTE Band 5			50RB		Front Surface	10	20450	829	22.00	21.99	100.23%	0.542	0.543	-
LTE Band 5			1	0	Back Surface	10	20450	829	23.00	22.99	100.23%	0.555	0.556	-
LTE Band 5			25	0	Back Surface	10	20450	829	22.00	21.99	100.23%	0.448	0.449	-
LTE Band 5			50RB		Back Surface	10	20450	829	22.00	21.99	100.23%	0.485	0.486	-
LTE Band 5			1	0	Top Edge	10	20450	829	23.00	22.99	100.23%	0.331	0.332	-
LTE Band 5			25	0	Top Edge	10	20450	829	22.00	21.99	100.23%	0.304	0.305	-
LTE Band 5			50RB		Top Edge	10	20450	829	22.00	21.99	100.23%	0.282	0.283	-
LTE Band 5			1	0	Bottom Edge	10	20450	829	23.00	22.99	100.23%	0.348	0.349	-
LTE Band 5			25	0	Bottom Edge	10	20450	829	22.00	21.99	100.23%	0.305	0.306	-
LTE Band 5			50RB		Bottom Edge	10	20450	829	22.00	21.99	100.23%	0.329	0.330	-
LTE Band 5			1	0	Left Edge	10	20450	829	23.00	22.99	100.23%	0.001	0.001	-
LTE Band 5			25	0	Left Edge	10	20450	829	22.00	21.99	100.23%	0.001	0.001	-
LTE Band 5			50RB		Left Edge	10	20450	829	22.00	21.99	100.23%	0.001	0.001	-
LTE Band 5			1	0	Right Edge	10	20450	829	23.00	22.99	100.23%	0.119	0.119	-
LTE Band 5			25	0	Right Edge	10	20450	829	22.00	21.99	100.23%	0.096	0.096	-
LTE Band 5			50RB		Right Edge	10	20450	829	22.00	21.99	100.23%	0.115	0.115	-
LTE Band 12	10MHz	QPSK	1	0	Front Surface	10	23060	704	23.00	22.63	108.89%	0.409	0.445	-
LTE Band 12			1	0	Front Surface	10	23095	707.5	23.00	22.72	106.66%	0.416	0.444	-
LTE Band 12			1	0	Front Surface	10	23130	711	23.00	22.65	108.39%	0.417	0.452	003
LTE Band 12			25	25	Front Surface	10	23060	704	22.00	21.66	108.14%	0.384	0.415	-
LTE Band 12			50RB		Front Surface	10	23095	707.5	22.00	21.66	108.14%	0.377	0.408	-
LTE Band 12			1	0	Back Surface	10	23095	707.5	23.00	22.72	106.66%	0.403	0.430	-
LTE Band 12			25	50	Back Surface	10	23060	704	22.00	21.66	108.14%	0.351	0.380	-
LTE Band 12			50RB		Back Surface	10	23095	707.5	22.00	21.66	108.14%	0.336	0.363	-
LTE Band 12			1	0	Top Edge	10	23095	707.5	23.00	22.72	106.66%	0.255	0.272	-
LTE Band 12			25	50	Top Edge	10	23060	704	22.00	21.66	108.14%	0.223	0.241	-
LTE Band 12			50RB		Top Edge	10	23095	707.5	22.00	21.66	108.14%	0.222	0.240	-
LTE Band 12			1	0	Bottom Edge	10	23095	707.5	23.00	22.72	106.66%	0.292	0.311	-
LTE Band 12			25	50	Bottom Edge	10	23060	704	22.00	21.66	108.14%	0.262	0.283	-
LTE Band 12			50RB		Bottom Edge	10	23095	707.5	22.00	21.66	108.14%	0.252	0.273	-
LTE Band 12			1	0	Left Edge	10	23095	707.5	23.00	22.72	106.66%	0.001	0.001	-
LTE Band 12			25	50	Left Edge	10	23060	704	22.00	21.66	108.14%	0.001	0.001	-
LTE Band 12			50RB		Left Edge	10	23095	707.5	22.00	21.66	108.14%	0.001	0.001	-
LTE Band 12			1	0	Right Edge	10	23095	707.5	23.00	22.72	106.66%	0.019	0.020	-
LTE Band 12			25	50	Right Edge	10	23060	704	22.00	21.66	108.14%	0.017	0.018	-
LTE Band 12			50RB		Right Edge	10	23095	707.5	22.00	21.66	108.14%	0.015	0.016	-
LTE Band 17	10MHz	QPSK	1	0	Front Surface	10	23780	709	23.00	22.63	108.89%	0.412	0.449	-
LTE Band 17			1	0	Front Surface	10	23790	710	23.00	22.68	107.65%	0.420	0.452	004
LTE Band 17			1	0	Front Surface	10	23800	711	23.00	22.65	108.39%	0.415	0.450	-
LTE Band 17			25	12	Front Surface	10	23800	711	22.00	21.53	111.43%	0.393	0.438	-
LTE Band 17			50RB		Front Surface	10	23780	709	22.00	21.62	109.14%	0.363	0.396	-
LTE Band 17			1	0	Back Surface	10	23790	710	23.00	22.68	107.65%	0.408	0.439	-
LTE Band 17			25	25	Back Surface	10	23800	711	22.00	21.53	111.43%	0.350	0.390	-
LTE Band 17			50RB		Back Surface	10	23780	709	22.00	21.62	109.14%	0.298	0.325	-
LTE Band 17			1	0	Top Edge	10	23790	710	23.00	22.68	107.65%	0.269	0.290	-
LTE Band 17			25	25	Top Edge	10	23800	711	22.00	21.53	111.43%	0.225	0.251	-
LTE Band 17			50RB		Top Edge	10	23780	709	22.00	21.62	109.14%	0.204	0.223	-
LTE Band 17			1	0	Bottom Edge	10	23790	710	23.00	22.68	107.65%	0.273	0.294	-
LTE Band 17			25	25	Bottom Edge	10	23800	711	22.00	21.53	111.43%	0.263	0.293	-
LTE Band 17			50RB		Bottom Edge	10	23780	709	22.00	21.62	109.14%	0.219	0.239	-
LTE Band 17			1	0	Left Edge	10	23790	710	23.00	22.68	107.65%	0.001	0.001	-
LTE Band 17			25	25	Left Edge	10	23800	711	22.00	21.53	111.43%	0.001	0.001	-
LTE Band 17			50RB		Left Edge	10	23780	709	22.00	21.62	109.14%	0.001	0.001	-
LTE Band 17			1	0	Right Edge	10	23790	710	23.00	22.68	107.65%	0.011	0.012	-
LTE Band 17			25	25	Right Edge	10	23800	711	22.00	21.53	111.43%	0.010	0.011	-
LTE Band 17			50RB		Right Edge	10	23780	709	22.00	21.62	109.14%	0.010	0.011	-
LTE Band 26_FCC	15MHz	QPSK	1	0	Front Surface	10	26765	821.5	23.00	22.99	100.23%	0.505	0.506	-
LTE Band 26_FCC			1	0	Front Surface	10	26865	831.5	23.00	22.96	100.93%	0.575	0.580	-
LTE Band 26_FCC			1	0	Front Surface	10	26965	841.5	23.00	22.93	101.62%	0.588	0.598	005
LTE Band 26_FCC			36	0	Front Surface	10	26765	821.5	22.00	21.99	100.23%	0.559	0.560	-
LTE Band 26_FCC			75RB		Front Surface	10	26765	821.5	22.00	21.96	100.93%	0.449	0.453	-
LTE Band 26_FCC			1	0	Back Surface	10	26765	821.5	23.00	22.99	100.23%	0.463	0.464	-
LTE Band 26_FCC			36	0	Back Surface	10	26765	821.5	22.00	21.99	100.23%	0.454	0.455	-
LTE Band 26_FCC			75RB		Back Surface	10	26765	821.5	22.00	21.96	100.93%	0.440	0.444	-
LTE Band 26_FCC			1	0	Top Edge	10	26765	821.5	23.00	22.99	100.23%	0.259	0.260	-
LTE Band 26_FCC			36	0	Top Edge	10	26765	821.5	22.00	21.99	100.23%	0.257	0.258	-
LTE Band 26_FCC			75RB		Top Edge	10	26765	821.5	22.00	21.96	100.93%	0.241	0.243	-
LTE Band 26_FCC			1	0	Bottom Edge	10	26765	821.5	23.00	22.99	100.23%	0.279	0.280	-
LTE Band 26_FCC			36	0	Bottom Edge	10	26765	821.5	22.00	21.99	100.23%	0.258	0.259	-
LTE Band 26_FCC			75RB		Bottom Edge	10	26765	821.5	22.00	21.96	100.93%	0.223	0.225	-
LTE Band 26_FCC			1	0	Left Edge	10	26765	821.5	23.00	22.99	100.23%	0.001	0.001	-
LTE Band 26_FCC			36	0	Left Edge	10	26765	821.5	22.00	21.99	100.23%	0.001	0.001	-
LTE Band 26_FCC			75RB		Left Edge	10	26765	821.5	22.00	21.96	100.93%	0.001	0.001	-
LTE Band 26_FCC			1	0	Right Edge	10	26765	821.5	23.00	22.99	100.23%	0.142	0.142	-
LTE Band 26_FCC			36	0	Right Edge	10	26765	821.5	22.00	21.99	100.23%	0.132	0.132	-
LTE Band 26_FCC			75RB		Right Edge	10	26765	821.5	22.00	21.96	100.93%	0.127	0.128	-

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Band	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged SAR over 1g (W/kg)		ID
								Measured	Reported	
WCDMA Band II	Front Surface	10	9262	1852.4	23.0	22.27	118.30%	1.050	1.242	-
WCDMA Band II	Front Surface	10	9400	1880	23.0	22.25	118.85%	1.060	1.260	-
WCDMA Band II	Front Surface	10	9538	1907.6	23.0	22.38	115.35%	1.070	1.234	006
WCDMA Band II	Back Surface	10	9538	1907.6	23.0	22.38	115.35%	0.915	1.055	-
WCDMA Band II	Top Edge	10	9538	1907.6	23.0	22.38	115.35%	0.116	0.134	-
WCDMA Band II	Bottom Edge	10	9538	1907.6	23.0	22.38	115.35%	0.438	0.505	-
WCDMA Band II	Left Edge	10	9538	1907.6	23.0	22.38	115.35%	0.338	0.390	-
WCDMA Band II	Right Edge	10	9538	1907.6	23.0	22.38	115.35%	0.001	0.001	-
WCDMA Band IV	Front Surface	10	1312	1712.4	22.0	21.72	106.66%	1.080	1.152	-
WCDMA Band IV	Front Surface	10	1412	1732.4	22.0	21.75	105.93%	1.270	1.345	-
WCDMA Band IV	Front Surface	10	1513	1752.6	22.0	21.78	105.20%	1.340	1.410	007
WCDMA Band IV	Back Surface	10	1513	1752.6	22.0	21.78	105.20%	0.415	0.437	-
WCDMA Band IV	Top Edge	10	1513	1752.6	22.0	21.78	105.20%	0.130	0.137	-
WCDMA Band IV	Bottom Edge	10	1513	1752.6	22.0	21.78	105.20%	0.426	0.448	-
WCDMA Band IV	Left Edge	10	1513	1752.6	22.0	21.78	105.20%	0.357	0.376	-
WCDMA Band IV	Right Edge	10	1513	1752.6	22.0	21.78	105.20%	0.001	0.001	-

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)		ID
												Measured	Reported	
LTE Band 2	20MHz	QPSK	1	0	Front Surface	10	18700	1860	23.00	22.54	111.17%	1.090	1.212	008
LTE Band 2			1	0	Front Surface	10	18900	1880	23.00	22.58	110.15%	1.050	1.157	-
LTE Band 2			1	0	Front Surface	10	19100	1900	23.00	22.64	108.64%	1.030	1.119	-
LTE Band 2			50	0	Front Surface	10	19100	1860	22.00	21.53	111.43%	0.977	1.089	-
LTE Band 2			100RB		Front Surface	10	18700	1860	22.00	21.73	106.41%	0.954	1.015	-
LTE Band 2			1	0	Back Surface	10	19100	1900	23.00	22.64	108.64%	1.030	1.119	-
LTE Band 2			50	0	Back Surface	10	19100	1860	22.00	21.53	111.43%	0.945	1.053	-
LTE Band 2			100RB		Back Surface	10	18700	1860	22.00	21.73	106.41%	0.931	0.991	-
LTE Band 2			1	0	Top Edge	10	19100	1900	23.00	22.64	108.64%	0.106	0.115	-
LTE Band 2			50	0	Top Edge	10	19100	1860	22.00	21.53	111.43%	0.088	0.098	-
LTE Band 2			100RB		Top Edge	10	18700	1860	22.00	21.73	106.41%	0.071	0.076	-
LTE Band 2			1	0	Bottom Edge	10	19100	1900	23.00	22.64	108.64%	0.412	0.448	-
LTE Band 2			50	0	Bottom Edge	10	19100	1860	22.00	21.53	111.43%	0.385	0.429	-
LTE Band 2			100RB		Bottom Edge	10	18700	1860	22.00	21.73	106.41%	0.377	0.401	-
LTE Band 2			1	0	Left Edge	10	19100	1900	23.00	22.64	108.64%	0.266	0.289	-
LTE Band 2			50	0	Left Edge	10	19100	1860	22.00	21.53	111.43%	0.257	0.286	-
LTE Band 2			100RB		Left Edge	10	18700	1860	22.00	21.73	106.41%	0.244	0.260	-
LTE Band 2			1	0	Right Edge	10	19100	1900	23.00	22.64	108.64%	0.001	0.001	-
LTE Band 2			50	0	Right Edge	10	19100	1860	22.00	21.53	111.43%	0.001	0.001	-
LTE Band 2			100RB		Right Edge	10	18700	1860	22.00	21.73	106.41%	0.001	0.001	-
LTE Band 4	20MHz	QPSK	1	0	Front Surface	10	20050	1720	22.00	21.91	102.09%	1.010	1.031	-
LTE Band 4			1	0	Front Surface	10	20175	1732.5	22.00	21.89	102.57%	1.200	1.231	009
LTE Band 4			1	0	Front Surface	10	20300	1745	22.00	21.95	101.16%	1.060	1.072	-
LTE Band 4			50	25	Front Surface	10	20050	1720	21.00	20.71	106.91%	1.011	1.081	-
LTE Band 4			100RB		Front Surface	10	20050	1720	21.00	20.68	107.65%	0.989	1.065	-
LTE Band 4			1	0	Back Surface	10	20300	1745	22.00	21.95	101.16%	0.739	0.748	-
LTE Band 4			50	25	Back Surface	10	20050	1720	21.00	20.71	106.91%	0.725	0.775	-
LTE Band 4			100RB		Back Surface	10	20050	1720	21.00	20.68	107.65%	0.714	0.769	-
LTE Band 4			1	0	Top Edge	10	20300	1745	22.00	21.95	101.16%	0.084	0.085	-
LTE Band 4			50	25	Top Edge	10	20050	1720	21.00	20.71	106.91%	0.077	0.082	-
LTE Band 4			100RB		Top Edge	10	20050	1720	21.00	20.68	107.65%	0.071	0.076	-
LTE Band 4			1	0	Bottom Edge	10	20300	1745	22.00	21.95	101.16%	0.308	0.312	-
LTE Band 4			50	25	Bottom Edge	10	20050	1720	21.00	20.71	106.91%	0.286	0.306	-
LTE Band 4			100RB		Bottom Edge	10	20050	1720	21.00	20.68	107.65%	0.264	0.284	-
LTE Band 4			1	0	Left Edge	10	20300	1745	22.00	21.95	101.16%	0.246	0.249	-
LTE Band 4			50	25	Left Edge	10	20050	1720	21.00	20.71	106.91%	0.233	0.249	-
LTE Band 4			100RB		Left Edge	10	20050	1720	21.00	20.68	107.65%	0.215	0.231	-
LTE Band 4			1	0	Right Edge	10	20300	1745	22.00	21.95	101.16%	0.001	0.001	-
LTE Band 4			50	25	Right Edge	10	20050	1720	21.00	20.71	106.91%	0.001	0.001	-
LTE Band 4			100RB		Right Edge	10	20050	1720	21.00	20.68	107.65%	0.001	0.001	-
LTE Band 41	20MHz	QPSK	1	0	Front Surface	10	39750	2506	23.00	22.61	109.40%	0.309	0.338	-
LTE Band 41			1	0	Front Surface	10	40185	2549.5	23.00	22.75	105.93%	0.304	0.322	-
LTE Band 41			1	0	Front Surface	10	40620	2593	23.00	22.95	101.16%	0.414	0.419	010
LTE Band 41			1	0	Front Surface	10	41055	2636.5	23.00	22.77	105.44%	0.409	0.431	-
LTE Band 41			1	0	Front Surface	10	41490	2680	23.00	21.75	133.35%	0.386	0.515	-
LTE Band 41			50	25	Front Surface	10	40620	2593	22.00	21.95	101.16%	0.344	0.348	-
LTE Band 41			100RB		Front Surface	10	40620	2593	22.00	21.92	101.86%	0.326	0.332	-
LTE Band 41			1	0	Back Surface	10	40620	2593	23.00	22.95	101.16%	0.354	0.358	-
LTE Band 41			50	25	Back Surface	10	40620	2593	22.00	21.95	101.16%	0.322	0.326	-
LTE Band 41			100RB		Back Surface	10	40620	2593	22.00	21.92	101.86%	0.317	0.323	-
LTE Band 41			1	0	Top Edge	10	40620	2593	23.00	22.95	101.16%	0.149	0.151	-
LTE Band 41			50	25	Top Edge	10	40620	2593	22.00	21.95	101.16%	0.124	0.125	-
LTE Band 41			100RB		Top Edge	10	40620	2593	22.00	21.92	101.86%	0.115	0.117	-
LTE Band 41			1	0	Bottom Edge	10	40620	2593	23.00	22.95	101.16%	0.206	0.208	-
LTE Band 41			50	25	Bottom Edge	10	40620	2593	22.00	21.95	101.16%	0.186	0.188	-
LTE Band 41			100RB		Bottom Edge	10	40620	2593	22.00	21.92	101.86%	0.165	0.168	-
LTE Band 41			1	0	Left Edge	10	40620	2593	23.00	22.95	101.16%	0.153	0.155	-
LTE Band 41			50	25	Left Edge	10	40620	2593	22.00	21.95	101.16%	0.133	0.135	-
LTE Band 41			100RB		Left Edge	10	40620	2593	22.00	21.92	101.86%	0.126	0.128	-
LTE Band 41			1	0	Right Edge	10	40620	2593	23.00	22.95	101.16%	0.001	0.001	-
LTE Band 41			50	25	Right Edge	10	40620	2593	22.00	21.95	101.16%	0.001	0.001	-
LTE Band 41			100RB		Right Edge	10	40620	2593	22.00	21.92	101.86%	0.001	0.001	-
ULCA_41C spot check	20MHz	QPSK	1	0	Front Surface	10	39750	2506	23.00	22.58	110.15%	0.210	0.231	011

WLAN

Ant 7

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Duty cycle scaling	Power scaling	Averaged SAR over 1g (W/kg)		ID
									Measured	Reported	
WLAN 802.11b	Front Surface	10	1	2412	14.00	13.97	1.001	100.69%	0.014	0.014	-
WLAN 802.11b	Back Surface	10	1	2412	14.00	13.97	1.001	100.69%	0.016	0.016	-
WLAN 802.11b	Top Edge	10	1	2412	14.00	13.97	1.001	100.69%	0.033	0.033	-
WLAN 802.11b	Top Edge	10	6	2437	14.00	13.85	1.001	103.51%	0.044	0.046	012
WLAN 802.11b	Top Edge	10	11	2462	14.00	13.84	1.001	103.75%	0.038	0.040	-
WLAN 802.11b	Bottom Edge	10	1	2412	14.00	13.97	1.001	100.69%	0.001	0.001	-
WLAN 802.11b	Left Edge	10	1	2412	14.00	13.97	1.001	100.69%	0.001	0.001	-
WLAN 802.11b	Right Edge	10	1	2412	14.00	13.97	1.001	100.69%	0.001	0.001	-

Ant 8

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Duty cycle scaling	Power scaling	Averaged SAR over 1g (W/kg)		ID
									Measured	Reported	
WLAN 802.11b	Front Surface	10	1	2412	14.00	13.88	1.001	102.80%	0.050	0.051	-
WLAN 802.11b	Back Surface	10	1	2412	14.00	13.88	1.001	102.80%	0.061	0.063	-
WLAN 802.11b	Top Edge	10	1	2412	14.00	13.88	1.001	102.80%	0.001	0.001	-
WLAN 802.11b	Bottom Edge	10	1	2412	14.00	13.88	1.001	102.80%	0.137	0.141	-
WLAN 802.11b	Bottom Edge	10	6	2437	14.00	13.81	1.001	104.47%	0.162	0.169	013
WLAN 802.11b	Bottom Edge	10	11	2462	14.00	13.76	1.001	105.68%	0.115	0.122	-
WLAN 802.11b	Left Edge	10	1	2412	14.00	13.88	1.001	102.80%	0.001	0.001	-
WLAN 802.11b	Right Edge	10	1	2412	14.00	13.88	1.001	102.80%	0.001	0.001	-

Note:

Scaling = $\frac{\text{reported SAR}}{\text{measured SAR}} = \frac{\text{P2(mW)}}{\text{P1(mW)}} = 10^{\left(\frac{\text{P2}-\text{P1}}{10}\right)(\text{dBm})}$

Reported SAR = measured SAR * (scaling)

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

2.3 Reporting statements of conformity

The conformity statement in this report is based solely on the test results, measurement uncertainty is excluded.

3. Simultaneous Transmission Analysis

Simultaneous Transmission Scenarios:

Simultaneous Transmit Configurations	Body
WWAN + WLAN 2.4GHz Ant7 + WLAN 2.4GHz Ant8	Yes

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:

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

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

3.2 SPLSR evaluation and analysis

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

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

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

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

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

WWAN	Exposure position 1g(W/kg)	0	1	2	0+1+2 Sum
		WWAN Ant1	WLAN 2.4GHz Ant7	WLAN 2.4GHz Ant8	
WCDMA V	Front Surface_10mm	0.750	0.014	0.051	0.815
WCDMA V	Back Surface_10mm	0.692	0.016	0.063	0.771
WCDMA V	Top Edge_10mm	0.404	0.046	0.001	0.451
WCDMA V	Bottom Edge_10mm	0.428	0.001	0.169	0.598
WCDMA V	Left Edge_10mm	0.001	0.001	0.001	0.003
WCDMA V	Right Edge_10mm	0.163	0.001	0.001	0.165
LTE B5	Front Surface_10mm	0.610	0.014	0.051	0.675
LTE B5	Back Surface_10mm	0.556	0.016	0.063	0.635
LTE B5	Top Edge_10mm	0.332	0.046	0.001	0.379
LTE B5	Bottom Edge_10mm	0.349	0.001	0.169	0.519
LTE B5	Left Edge_10mm	0.001	0.001	0.001	0.003
LTE B5	Right Edge_10mm	0.119	0.001	0.001	0.121
LTE B12	Front Surface_10mm	0.452	0.014	0.051	0.517
LTE B12	Back Surface_10mm	0.430	0.016	0.063	0.509
LTE B12	Top Edge_10mm	0.272	0.046	0.001	0.319
LTE B12	Bottom Edge_10mm	0.311	0.001	0.169	0.481
LTE B12	Left Edge_10mm	0.001	0.001	0.001	0.003
LTE B12	Right Edge_10mm	0.020	0.001	0.001	0.022
LTE B17	Front Surface_10mm	0.452	0.014	0.051	0.517
LTE B17	Back Surface_10mm	0.439	0.016	0.063	0.518
LTE B17	Top Edge_10mm	0.290	0.046	0.001	0.337
LTE B17	Bottom Edge_10mm	0.294	0.001	0.169	0.464
LTE B17	Left Edge_10mm	0.001	0.001	0.001	0.003
LTE B17	Right Edge_10mm	0.012	0.001	0.001	0.014
LTE B26	Front Surface_10mm	0.598	0.014	0.051	0.663
LTE B26	Back Surface_10mm	0.464	0.016	0.063	0.543
LTE B26	Top Edge_10mm	0.260	0.046	0.001	0.307
LTE B26	Bottom Edge_10mm	0.280	0.001	0.169	0.450
LTE B26	Left Edge_10mm	0.001	0.001	0.001	0.003
LTE B26	Right Edge_10mm	0.142	0.001	0.001	0.144

WWAN	Exposure position 1g(W/kg)	0	1	2	0+1+2 Sum
		WWAN Ant3	WLAN 2.4GHz Ant7	WLAN 2.4GHz Ant8	
WCDMA II	Front Surface_10mm	1.260	0.014	0.051	1.325
WCDMA II	Back Surface_10mm	1.055	0.016	0.063	1.134
WCDMA II	Top Edge_10mm	0.134	0.046	0.001	0.181
WCDMA II	Bottom Edge_10mm	0.505	0.001	0.169	0.675
WCDMA II	Left Edge_10mm	0.390	0.001	0.001	0.392
WCDMA II	Right Edge_10mm	0.001	0.001	0.001	0.003
WCDMA IV	Front Surface_10mm	1.410	0.014	0.051	1.475
WCDMA IV	Back Surface_10mm	0.437	0.016	0.063	0.516
WCDMA IV	Top Edge_10mm	0.137	0.046	0.001	0.184
WCDMA IV	Bottom Edge_10mm	0.448	0.001	0.169	0.618
WCDMA IV	Left Edge_10mm	0.376	0.001	0.001	0.378
WCDMA IV	Right Edge_10mm	0.001	0.001	0.001	0.003
LTE B2	Front Surface_10mm	1.212	0.014	0.051	1.277
LTE B2	Back Surface_10mm	1.119	0.016	0.063	1.198
LTE B2	Top Edge_10mm	0.115	0.046	0.001	0.162
LTE B2	Bottom Edge_10mm	0.448	0.001	0.169	0.618
LTE B2	Left Edge_10mm	0.289	0.001	0.001	0.291
LTE B2	Right Edge_10mm	0.001	0.001	0.001	0.003
LTE B4	Front Surface_10mm	1.231	0.014	0.051	1.296
LTE B4	Back Surface_10mm	0.748	0.016	0.063	0.827
LTE B4	Top Edge_10mm	0.085	0.046	0.001	0.132
LTE B4	Bottom Edge_10mm	0.312	0.001	0.169	0.482
LTE B4	Left Edge_10mm	0.249	0.001	0.001	0.251
LTE B4	Right Edge_10mm	0.001	0.001	0.001	0.003
LTE B41	Front Surface_10mm	0.515	0.014	0.051	0.580
LTE B41	Back Surface_10mm	0.358	0.016	0.063	0.437
LTE B41	Top Edge_10mm	0.151	0.046	0.001	0.198
LTE B41	Bottom Edge_10mm	0.208	0.001	0.169	0.378
LTE B41	Left Edge_10mm	0.155	0.001	0.001	0.157
LTE B41	Right Edge_10mm	0.001	0.001	0.001	0.003

4. Instruments List

SAR Test Site: SAR_1					
Manufacturer	**Device**	**Type**	**Serial number**	**Date of last calibration**	**Date of next calibration**
SPEAG	Dosimetric E-Field Probe	EX3DV4	7712	Mar/21/2022	Mar/20/2023
SPEAG	System Validation Dipole	D750V3	1015	Oct/14/2021	Oct/13/2022
SPEAG	System Validation Dipole	D835V2	4d063	Oct/18/2021	Oct/17/2022
SPEAG	System Validation Dipole	D1750V2	1008	Oct/19/2021	Oct/18/2022
SPEAG	System Validation Dipole	D1900V2	5d173	Apr/28/2022	Apr/27/2023
SPEAG	System Validation Dipole	D2450V2	727	Apr/25/2022	Apr/24/2023
SPEAG	System Validation Dipole	D2600V2	1005	Jan/18/2022	Jan/17/2023
SPEAG	Data acquisition Electronics	DAE4	1719	Mar/25/2022	Mar/24/2023
SPEAG	Software	DASY 52 V52.10.4	N/A	Calibration not required	Calibration not required
SPEAG	Phantom	ELI	N/A	Calibration not required	Calibration not required
SPEAG	Dielectric Assessment Kit	DAKS-3.5	1053	Feb/28/2022	Feb/27/2023
R&S	Radio Communication Test	CMW 500	165070	Oct/12/2021	Oct/11/2022
Agilent	Dual-directional coupler	778D	MY48220468	Aug/16/2021	Aug/15/2022
Agilent	Dual-directional coupler	772D	MY46151242	Aug/16/2021	Aug/15/2022
Agilent	MXG Analog Signal Generator	N5181A	MY50144143	May/19/2022	May/18/2023
EMCI	Amplifier	ZHL-42	980189	Calibration not required	Calibration not required
EMCI	Amplifier	ZVE-8G	980190	Calibration not required	Calibration not required
Anritsu	Power Meter	ML2496A	1337004	Oct/08/2021	Oct/07/2022
Anritsu	Power Sensor	MA2411B	1306052	Oct/08/2021	Oct/07/2022
R&S	Power Sensor	NRP18S	101973	Jan/22/2022	Jan/21/2023
LKM	Digital thermometer	DTM3000	EC14010603	Nov/09/2021	Nov/08/2022
TECPEL	Digital thermometer	DTM-303A	TP130075	Oct/28/2021	Oct/27/2022

5. Measurements

Date: 2022/6/8

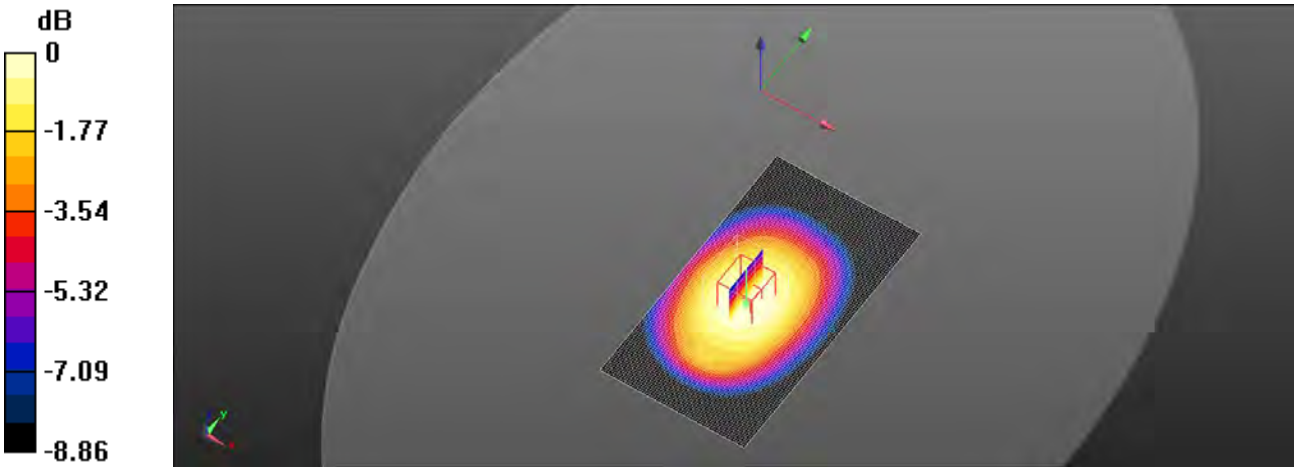
ID: 001
Report No. : TESA2204000067ES
WCDMA Band V_Body_Front Surface_CH 4183_10mm_Ant 1
Communication System: WCDMA; Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium parameters used: f = 836.6 MHz; σ = 0.918 S/m; ε_r = 41.807; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 23.1°C; Liquid temperature: 22.6℃

DASY5 Configuration:

- Probe: EX3DV4 - SN7712; ConvF(10.87, 10.87, 10.87); Calibrated: 2022/2/10
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1719; Calibrated: 2022/3/25
- Phantom: ELI
- DASY52 4.7.80(0); SEMCAD X 14.6.14(7483)

Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 0.728 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.742 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.790 W/kg
SAR(1 g) = 0.631 W/kg; SAR(10 g) = 0.476 W/kg
Smallest distance from peaks to all points 3 dB below = 10.5 mm
Ratio of SAR at M2 to SAR at M1 = 79.4%
Maximum value of SAR (measured) = 0.723 W/kg



0 dB = 0.723 W/kg = -1.41 dBW/kg

Date: 2022/6/8

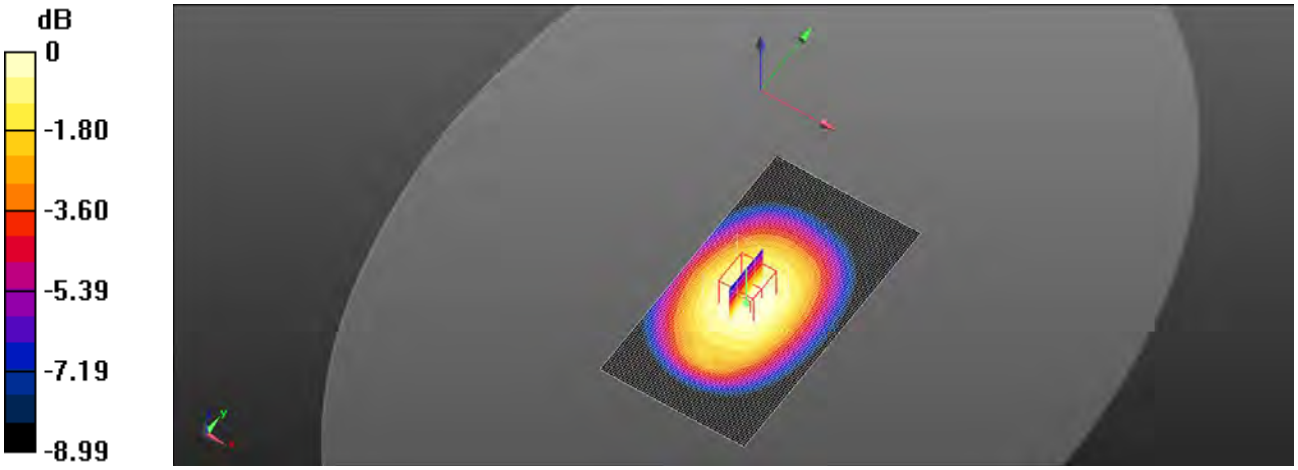
ID: 002
Report No. : TESA2204000067ES
LTE Band 5 (10MHz)_Body_Front Surface_CH 20600_QPSK_1-0_10mm_Ant 1
Communication System: LTE; Frequency: 844 MHz; Duty Cycle: 1:1
Medium parameters used: f = 844 MHz; σ = 0.921 S/m; ε_r = 41.782; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 23.1°C; Liquid temperature: 22.6℃

DASY5 Configuration:

- Probe: EX3DV4 - SN7712; ConvF(10.87, 10.87, 10.87); Calibrated: 2022/2/10
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1719; Calibrated: 2022/3/25
- Phantom: ELI
- DASY52 4.7.80(0); SEMCAD X 14.6.14(7483)

Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 0.690 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.731 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.753 W/kg
SAR(1 g) = 0.597 W/kg; SAR(10 g) = 0.450 W/kg
Smallest distance from peaks to all points 3 dB below = 9.1 mm
Ratio of SAR at M2 to SAR at M1 = 78.9%
Maximum value of SAR (measured) = 0.689 W/kg



0 dB = 0.689 W/kg = -1.62 dBW/kg

Date: 2022/6/8

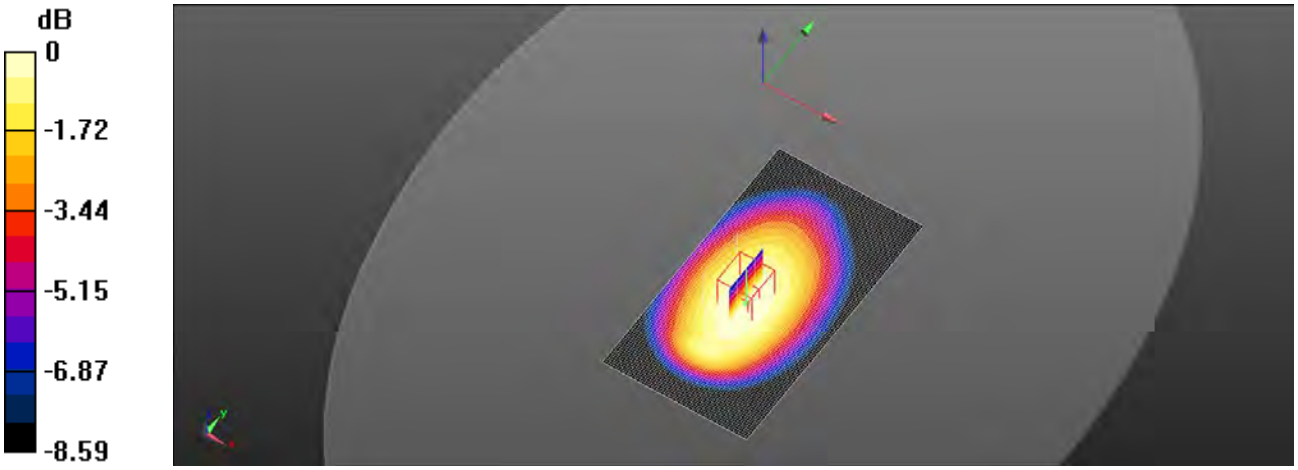
ID: 003
Report No. : TESA2204000067ES
LTE Band 12 (10MHz)_Body_Front Surface_CH 23130_QPSK_1-0_10mm_Ant 1
Communication System: LTE; Frequency: 711 MHz; Duty Cycle: 1:1
Medium parameters used: f = 711 MHz; σ = 0.897 S/m; ε_r = 42.404; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 23.1°C; Liquid temperature: 22.6℃

DASY5 Configuration:

- Probe: EX3DV4 - SN7712; ConvF(11.14, 11.14, 11.14); Calibrated: 2022/2/10
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1719; Calibrated: 2022/3/25
- Phantom: ELI
- DASY52 4.7.80(0); SEMCAD X 14.6.14(7483)

Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 0.481 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.281 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.524 W/kg
SAR(1 g) = 0.417 W/kg; SAR(10 g) = 0.316 W/kg
Smallest distance from peaks to all points 3 dB below = 9.4 mm
Ratio of SAR at M2 to SAR at M1 = 72.7%
Maximum value of SAR (measured) = 0.479 W/kg



0 dB = 0.479 W/kg = -3.19 dBW/kg

Date: 2022/6/8

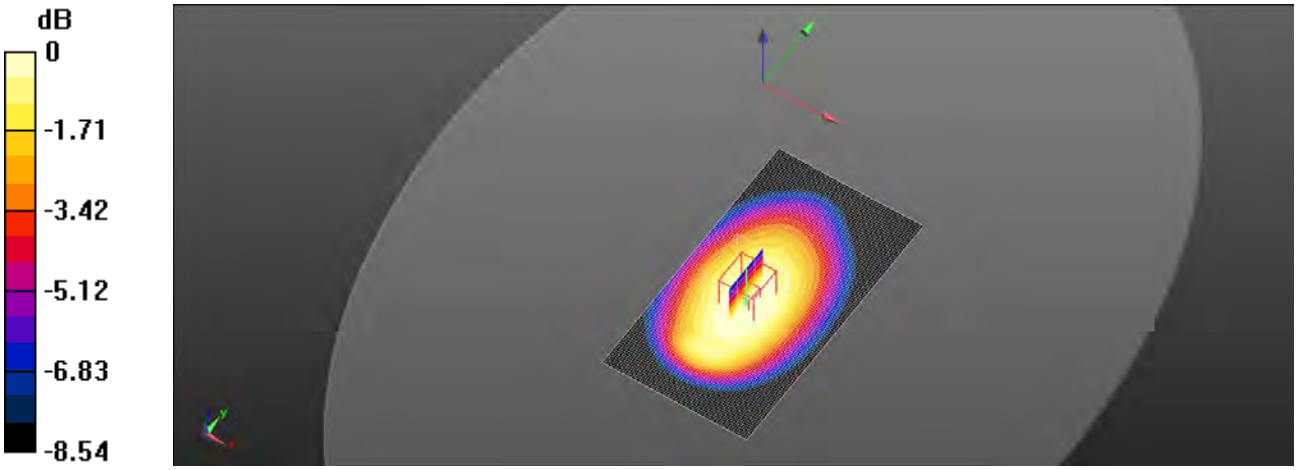
ID: 004
Report No. : TESA2204000067ES
LTE Band 17 (10MHz)_Body_Front Surface_CH 23790_QPSK_1-0_10mm_Ant 1
Communication System: LTE; Frequency: 710 MHz; Duty Cycle: 1:1
Medium parameters used: f = 710 MHz; σ = 0.896 S/m; ε_r = 42.409; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 23.1°C; Liquid temperature: 22.6℃

DASY5 Configuration:

- Probe: EX3DV4 - SN7712; ConvF(11.14, 11.14, 11.14); Calibrated: 2022/2/10
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1719; Calibrated: 2022/3/25
- Phantom: ELI
- DASY52 4.7.80(0); SEMCAD X 14.6.14(7483)

Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 0.488 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.304 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.527 W/kg
SAR(1 g) = 0.420 W/kg; SAR(10 g) = 0.317 W/kg
Smallest distance from peaks to all points 3 dB below = 9.8 mm
Ratio of SAR at M2 to SAR at M1 = 79.1%
Maximum value of SAR (measured) = 0.483 W/kg



0 dB = 0.483 W/kg = -3.16 dBW/kg

Date: 2022/6/8

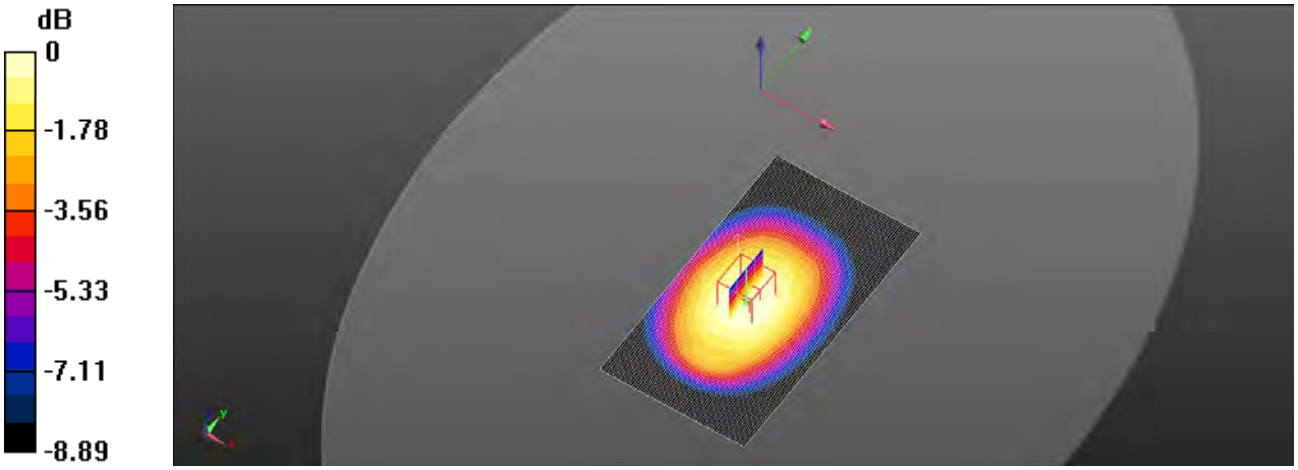
ID: 005
Report No. : TESA2204000067ES
LTE Band 26 (15MHz)_Body_Front Surface_CH 26965_QPSK_1-0_10mm_Ant 1
Communication System: LTE; Frequency: 841.5 MHz; Duty Cycle: 1:1
Medium parameters used: f = 841.5 MHz; σ = 0.92 S/m; ε_r = 41.789; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 23.1°C; Liquid temperature: 22.6℃

DASY5 Configuration:

- Probe: EX3DV4 - SN7712; ConvF(10.87, 10.87, 10.87); Calibrated: 2022/2/10
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1719; Calibrated: 2022/3/25
- Phantom: ELI
- DASY52 4.7.80(0); SEMCAD X 14.6.14(7483)

Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 0.680 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.708 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.739 W/kg
SAR(1 g) = 0.588 W/kg; SAR(10 g) = 0.442 W/kg
Smallest distance from peaks to all points 3 dB below = 10.2 mm
Ratio of SAR at M2 to SAR at M1 = 71.6%
Maximum value of SAR (measured) = 0.677 W/kg



0 dB = 0.677 W/kg = -1.69 dBW/kg

Date: 2022/6/9

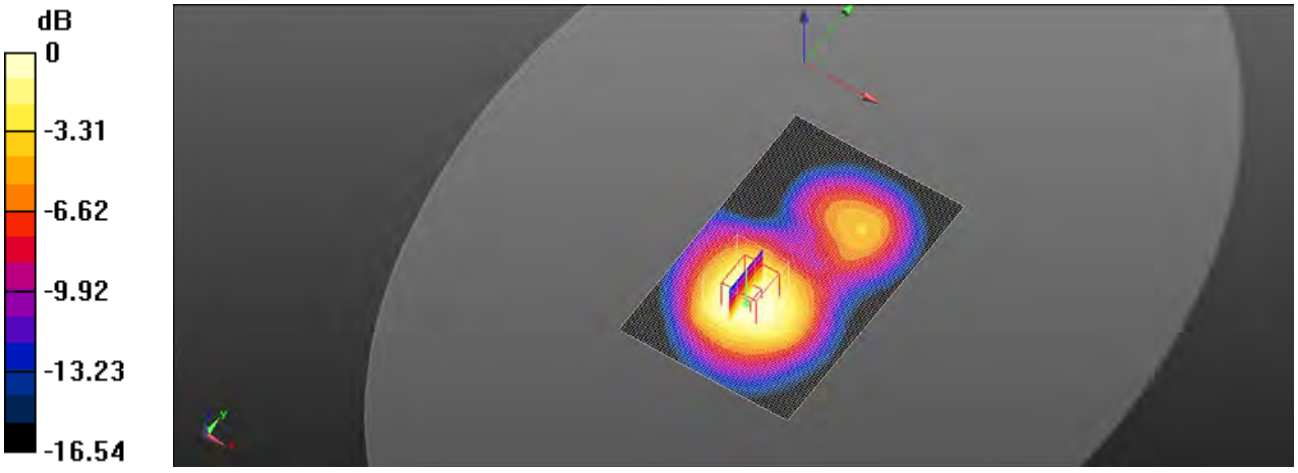
ID: 006
Report No. : TESA2204000067ES
WCDMA Band II_Body_Front Surface_CH 9538_10mm_Ant 3
Communication System: WCDMA; Frequency: 1907.6 MHz; Duty Cycle: 1:1
Medium parameters used: f = 1907.6 MHz; σ = 1.412 S/m; ε_r = 40.26; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.9°C; Liquid temperature: 22.5℃

DASY5 Configuration:

- Probe: EX3DV4 - SN7712; ConvF(8.54, 8.54, 8.54); Calibrated: 2022/2/10
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1719; Calibrated: 2022/3/25
- Phantom: ELI
- DASY52 4.7.80(0); SEMCAD X 14.6.14(7483)

Area Scan (71x111x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 1.41 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.126 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 1.67 W/kg
SAR(1 g) = 1.07 W/kg; SAR(10 g) = 0.666 W/kg
Smallest distance from peaks to all points 3 dB below = 22.6 mm
Ratio of SAR at M2 to SAR at M1 = 63.3%
Maximum value of SAR (measured) = 1.38 W/kg



0 dB = 1.38 W/kg = 1.39 dBW/kg

Date: 2022/6/9

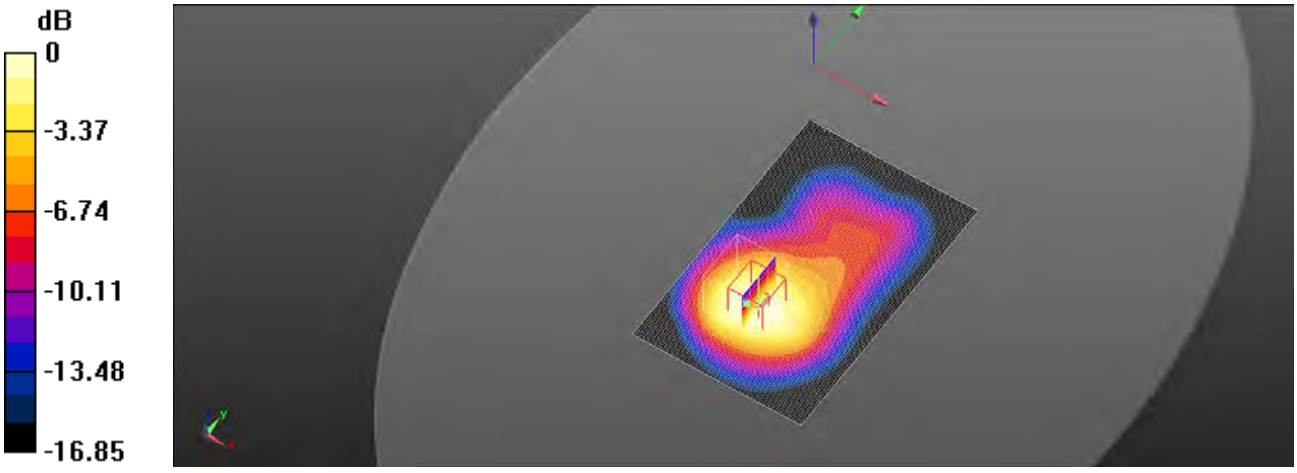
ID: 007
Report No. : TESA2204000067ES
WCDMA Band IV_Body_Front Surface_CH 1513_10mm_Ant 3
Communication System: WCDMA; Frequency: 1752.6 MHz; Duty Cycle: 1:1
Medium parameters used: f = 1752.6 MHz; σ = 1.38 S/m; ε_r = 40.334; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.9°C; Liquid temperature: 22.5℃

DASY5 Configuration:

- Probe: EX3DV4 - SN7712; ConvF(9.03, 9.03, 9.03); Calibrated: 2022/2/10
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1719; Calibrated: 2022/3/25
- Phantom: ELI
- DASY52 4.7.80(0); SEMCAD X 14.6.14(7483)

Area Scan (71x111x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 1.78 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.717 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 2.06 W/kg
SAR(1 g) = 1.34 W/kg; SAR(10 g) = 0.841 W/kg
Smallest distance from peaks to all points 3 dB below = 19.5 mm
Ratio of SAR at M2 to SAR at M1 = 64.8%
Maximum value of SAR (measured) = 1.70 W/kg



0 dB = 1.70 W/kg = 2.31 dBW/kg

Date: 2022/6/9

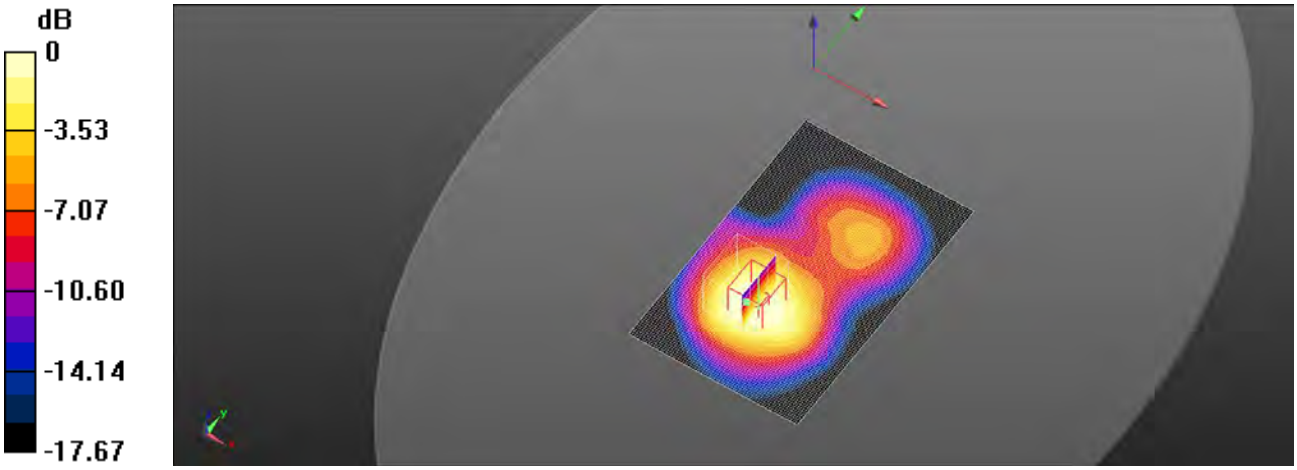
ID: 008
Report No. : TESA2204000067ES
LTE Band 2 (20MHz)_Body_Front Surface_CH 18700_QPSK_1-0_10mm_Ant 3
Communication System: LTE; Frequency: 1860 MHz; Duty Cycle: 1:1
Medium parameters used: f = 1860 MHz; σ = 1.411 S/m; ε_r = 40.26; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.9°C; Liquid temperature: 22.5℃

DASY5 Configuration:

- Probe: EX3DV4 - SN7712; ConvF(8.54, 8.54, 8.54); Calibrated: 2022/2/10
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1719; Calibrated: 2022/3/25
- Phantom: ELI
- DASY52 4.7.80(0); SEMCAD X 14.6.14(7483)

Area Scan (71x111x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 1.45 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.283 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 1.69 W/kg
SAR(1 g) = 1.09 W/kg; SAR(10 g) = 0.683 W/kg
Smallest distance from peaks to all points 3 dB below = 19.5 mm
Ratio of SAR at M2 to SAR at M1 = 67.7%
Maximum value of SAR (measured) = 1.39 W/kg



0 dB = 1.39 W/kg = 1.43 dBW/kg

Date: 2022/6/9

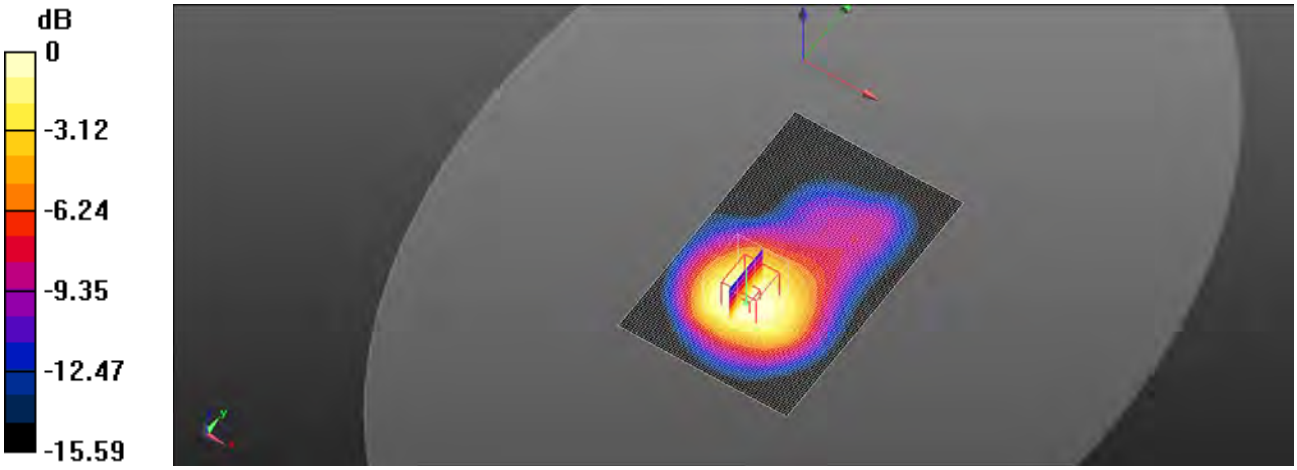
ID: 009
Report No. : TESA2204000067ES
LTE Band 4 (20MHz)_Body_Front Surface_CH 20175_QPSK_1-0_10mm_Ant 3
Communication System: LTE; Frequency: 1732.5 MHz; Duty Cycle: 1:1
Medium parameters used: f = 1732.5 MHz; σ = 1.369 S/m; ε_r = 40.366; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.9°C; Liquid temperature: 22.5℃

DASY5 Configuration:

- Probe: EX3DV4 - SN7712; ConvF(9.03, 9.03, 9.03); Calibrated: 2022/2/10
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1719; Calibrated: 2022/3/25
- Phantom: ELI
- DASY52 4.7.80(0); SEMCAD X 14.6.14(7483)

Area Scan (71x111x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 1.54 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.609 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 1.84 W/kg
SAR(1 g) = 1.2 W/kg; SAR(10 g) = 0.753 W/kg
Smallest distance from peaks to all points 3 dB below = 18.7 mm
Ratio of SAR at M2 to SAR at M1 = 64.5%
Maximum value of SAR (measured) = 1.54 W/kg



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

Date: 2022/6/10

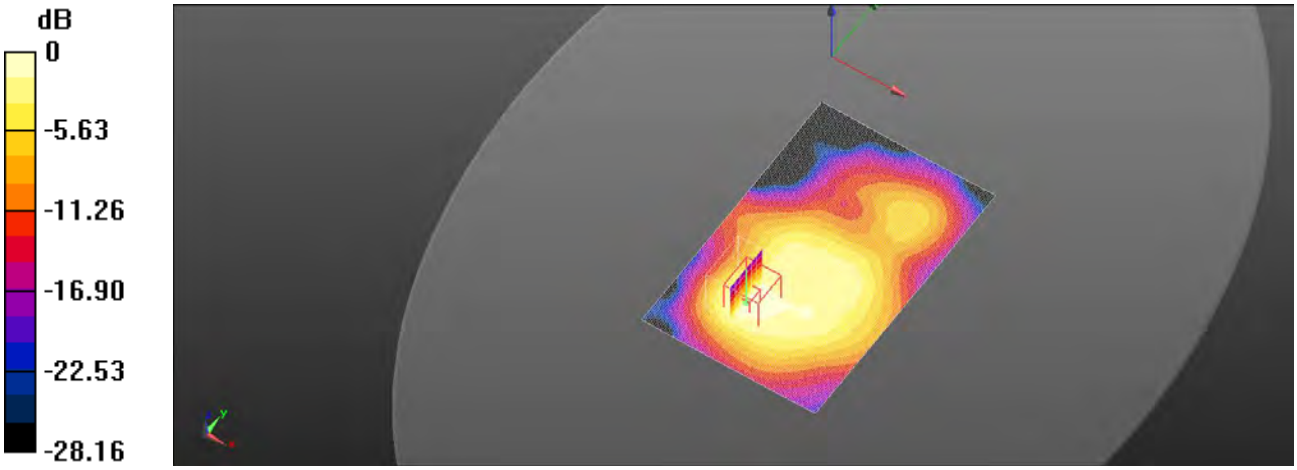
ID: 010
Report No. : TESA2204000067ES
LTE Band 41 (20MHz)_Body_Front Surface_CH 40620_QPSK_1-0_10mm_Ant 3
Communication System: LTE; Frequency: 2593 MHz; Duty Cycle: 1:1
Medium parameters used: f = 2593 MHz; σ = 1.948 S/m; ε_r = 39.278; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.7°C; Liquid temperature: 22.2℃

DASY5 Configuration:

- Probe: EX3DV4 - SN7712; ConvF(7.91, 7.91, 7.91); Calibrated: 2022/2/10
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1719; Calibrated: 2022/3/25
- Phantom: ELI
- DASY52 4.7.80(0); SEMCAD X 14.6.14(7483)

Area Scan (91x141x1): Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 0.641 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.258 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.854 W/kg
SAR(1 g) = 0.414 W/kg; SAR(10 g) = 0.210 W/kg
Smallest distance from peaks to all points 3 dB below = 12.4 mm
Ratio of SAR at M2 to SAR at M1 = 58.3%
Maximum value of SAR (measured) = 0.617 W/kg



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

Date: 2022/6/10

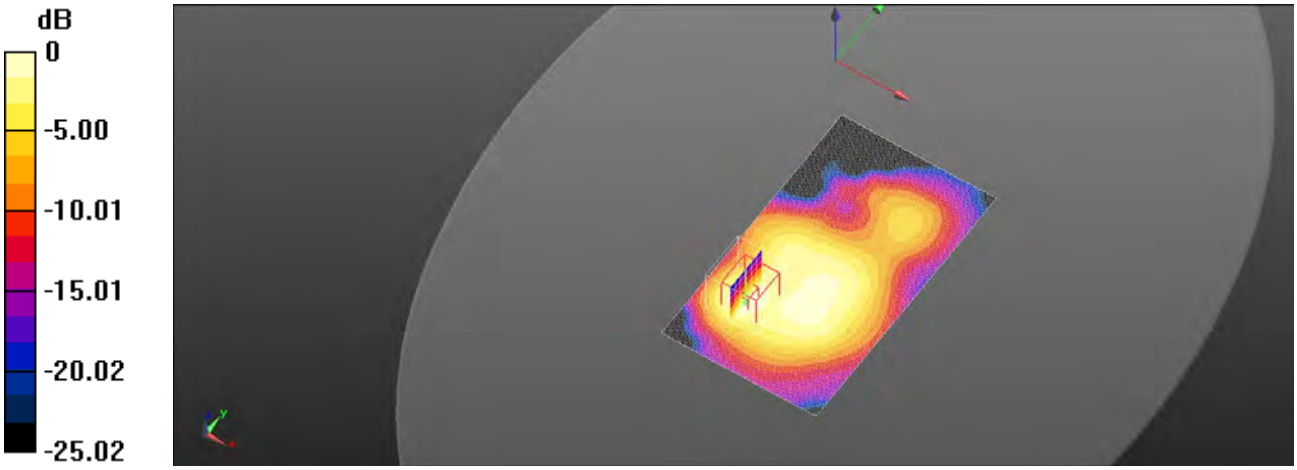
ID: 011
Report No. : TESA2204000067ES
ULCA_41C (20MHz)_Body_Front Surface_CH 39750/CH 39948_QPSK_1-0/1-99_10mm_Ant 3
Communication System: LTE; Frequency: 2506 MHz; Duty Cycle: 1:1
Medium parameters used: f = 2506 MHz; σ = 1.869 S/m; ε_r = 39.389; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.7°C; Liquid temperature: 22.2℃

DASY5 Configuration:

- Probe: EX3DV4 - SN7712; ConvF(7.91, 7.91, 7.91); Calibrated: 2022/2/10
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1719; Calibrated: 2022/3/25
- Phantom: ELI
- DASY52 4.7.80(0); SEMCAD X 14.6.14(7483)

Area Scan (81x141x1): Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 0.319 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.967 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.443 W/kg
SAR(1 g) = 0.210 W/kg; SAR(10 g) = 0.103 W/kg
Smallest distance from peaks to all points 3 dB below = 11.2 mm
Ratio of SAR at M2 to SAR at M1 = 54.2%
Maximum value of SAR (measured) = 0.314 W/kg



0 dB = 0.314 W/kg = -5.03 dBW/kg

Date: 2022/6/10

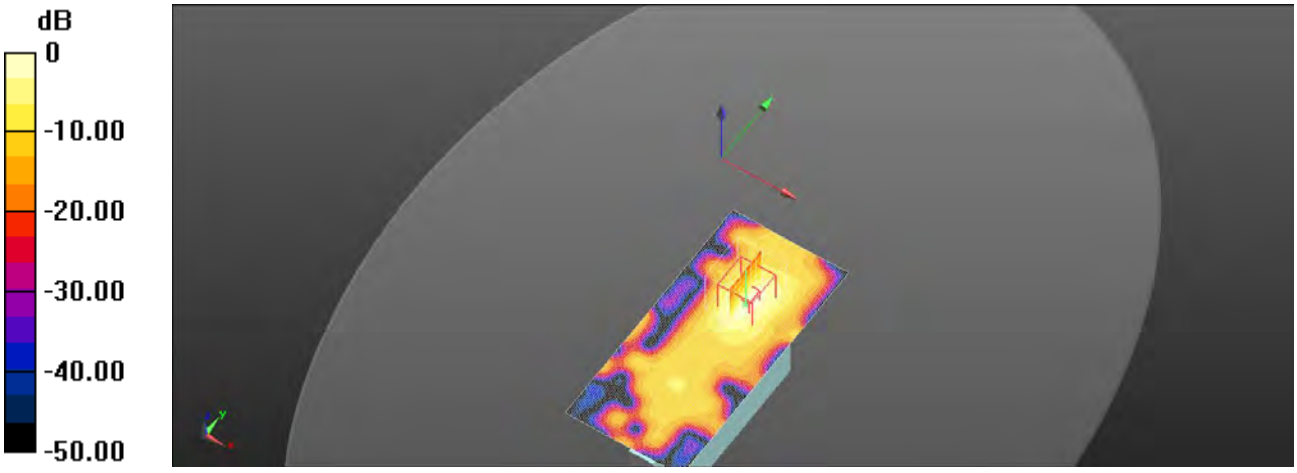
ID: 012
Report No. : TESA2204000067ES
WLAN 802.11b_Body_Top Edge_CH 6_10mm_Ant 7
Communication System: WLAN; Frequency: 2437 MHz; Duty Cycle: 1:1.011
Medium parameters used: f = 2437 MHz; σ = 1.808 S/m; ε_r = 39.483; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.7°C; Liquid temperature: 22.2℃

DASY5 Configuration:

- Probe: EX3DV4 - SN7712; ConvF(8.16, 8.16, 8.16); Calibrated: 2022/2/10
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1719; Calibrated: 2022/3/25
- Phantom: ELI
- DASY52 4.7.80(0); SEMCAD X 14.6.14(7483)

Area Scan (61x131x1): Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 0.0715 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.087 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.102 W/kg
SAR(1 g) = 0.044 W/kg; SAR(10 g) = 0.018 W/kg
Smallest distance from peaks to all points 3 dB below = 7.9 mm
Ratio of SAR at M2 to SAR at M1 = 66.4%
Maximum value of SAR (measured) = 0.0723 W/kg



0 dB = 0.0723 W/kg = -11.41 dBW/kg

Date: 2022/6/10

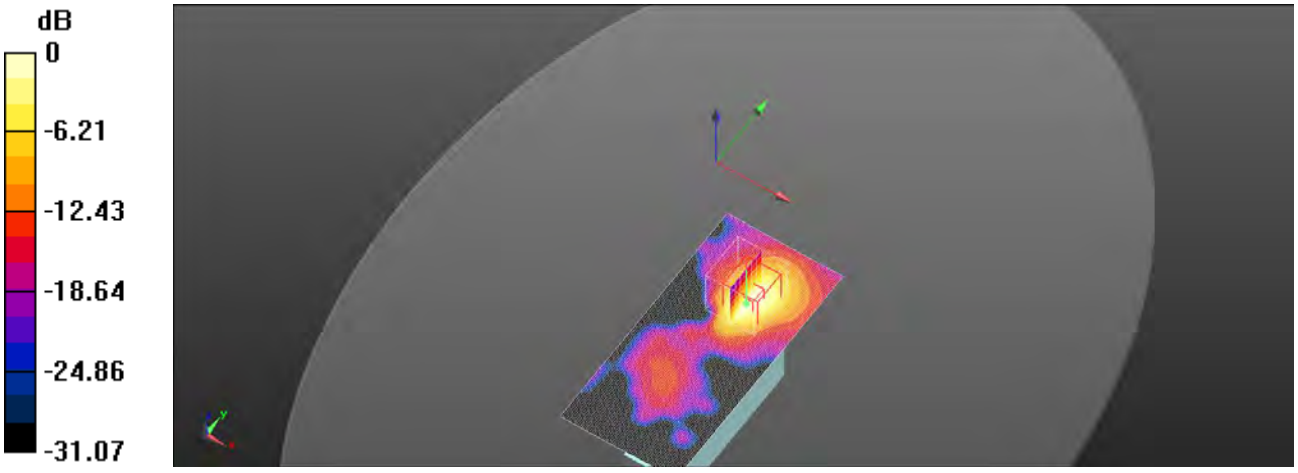
ID: 013
Report No. : TESA2204000067ES
WLAN 802.11b_Body_Bottom Edge_CH 6_10mm_Ant 8
Communication System: WLAN; Frequency: 2437 MHz; Duty Cycle: 1:1.011
Medium parameters used: f = 2437 MHz; σ = 1.808 S/m; ε_r = 39.483; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.7°C; Liquid temperature: 22.2℃

DASY5 Configuration:

- Probe: EX3DV4 - SN7712; ConvF(8.16, 8.16, 8.16); Calibrated: 2022/2/10
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1719; Calibrated: 2022/3/25
- Phantom: ELI
- DASY52 4.7.80(0); SEMCAD X 14.6.14(7483)

Area Scan (61x131x1): Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 0.276 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.029 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.357 W/kg
SAR(1 g) = 0.162 W/kg; SAR(10 g) = 0.070 W/kg
Smallest distance from peaks to all points 3 dB below = 8.3 mm
Ratio of SAR at M2 to SAR at M1 = 67.9%
Maximum value of SAR (measured) = 0.256 W/kg



0 dB = 0.256 W/kg = -5.91 dBW/kg

6. SAR System Performance Verification

Date: 2022/6/8

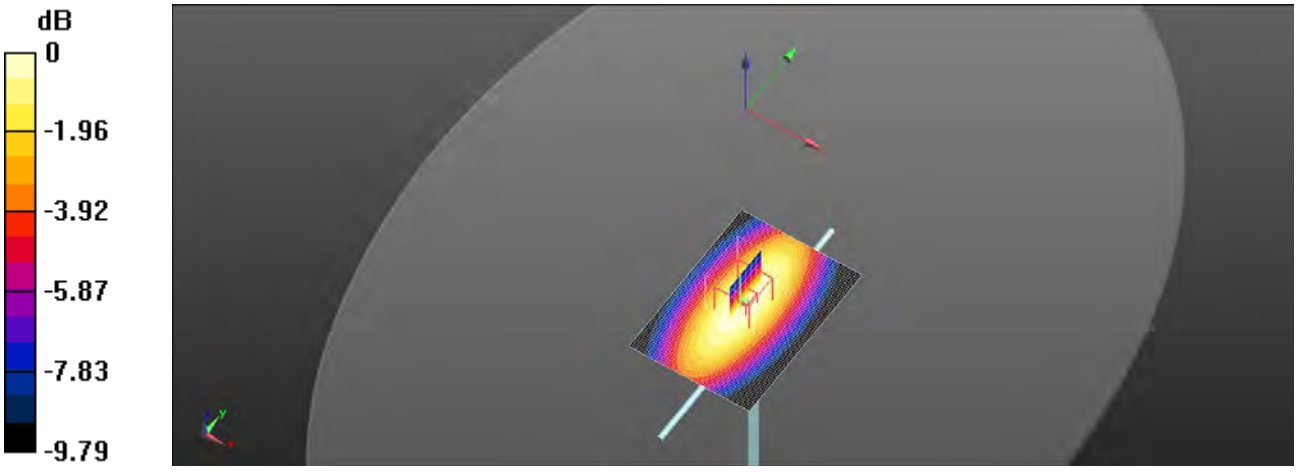
Report No. : TESA2204000067ES
Dipole 750 MHz_SN:1015
Communication System: CW; Frequency: 750 MHz; Duty Cycle: 1:1
Medium parameters used: f = 750 MHz; σ = 0.899 S/m; ε_r = 42.202; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 23.1°C; Liquid temperature: 22.6℃

DASY5 Configuration:

- Probe: EX3DV4 - SN7712; ConvF(11.14, 11.14, 11.14); Calibrated: 2022/2/10
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1719; Calibrated: 2022/3/25
- Phantom: ELI
- DASY52 4.7.80(0); SEMCAD X 14.6.14(7483)

Area Scan (51x71x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 2.15 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 49.62 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 2.55 W/kg
SAR(1 g) = 2.14 W/kg; SAR(10 g) = 1.41 W/kg
Smallest distance from peaks to all points 3 dB below = 9.6 mm
Ratio of SAR at M2 to SAR at M1 = 68.4%
Maximum value of SAR (measured) = 2.18 W/kg



0 dB = 2.18 W/kg = 3.39 dBW/kg

Date: 2022/6/8

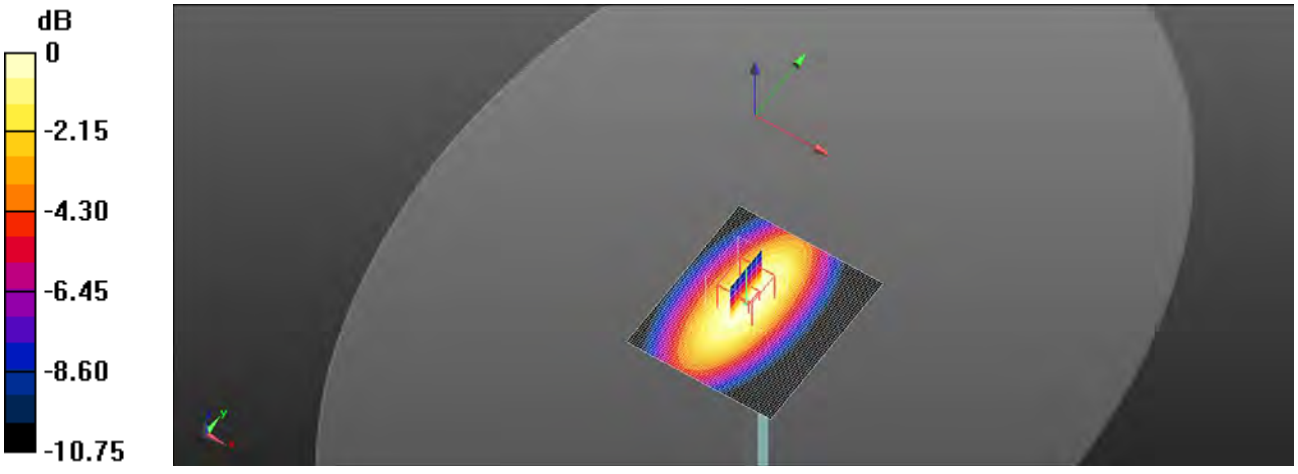
Report No. : TESA2204000067ES
Dipole 835 MHz_SN:4d063
Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium parameters used: f = 835 MHz; σ = 0.918 S/m; ε_r = 41.815; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 23.1°C; Liquid temperature: 22.6℃

DASY5 Configuration:

- Probe: EX3DV4 - SN7712; ConvF(10.87, 10.87, 10.87); Calibrated: 2022/2/10
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1719; Calibrated: 2022/3/25
- Phantom: ELI
- DASY52 4.7.80(0); SEMCAD X 14.6.14(7483)

Area Scan (61x71x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 1.84 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 43.03 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 2.21 W/kg
SAR(1 g) = 2.42 W/kg; SAR(10 g) = 1.58 W/kg
Smallest distance from peaks to all points 3 dB below = 10.3 mm
Ratio of SAR at M2 to SAR at M1 = 66%
Maximum value of SAR (measured) = 1.87 W/kg



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

Date: 2022/6/9

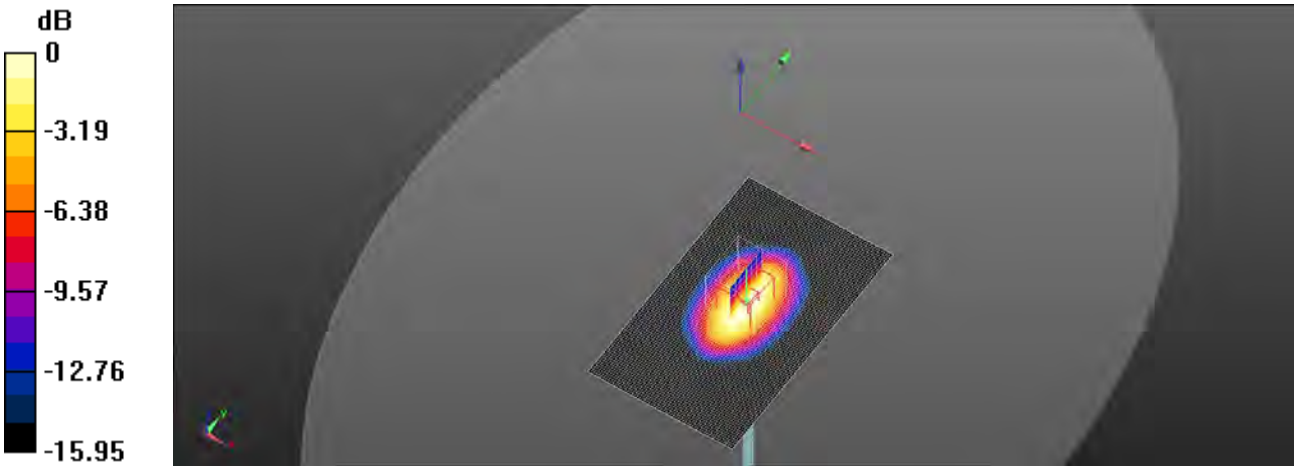
Report No. : TESA2204000067ES
Dipole 1750 MHz_SN:1008
Communication System: CW; Frequency: 1750 MHz; Duty Cycle: 1:1
Medium parameters used: f = 1750 MHz; σ = 1.378 S/m; ε_r = 40.339; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.9°C; Liquid temperature: 22.5℃

DASY5 Configuration:

- Probe: EX3DV4 - SN7712; ConvF(9.03, 9.03, 9.03); Calibrated: 2022/2/10
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1719; Calibrated: 2022/3/25
- Phantom: ELI
- DASY52 4.7.80(0); SEMCAD X 14.6.14(7483)

Area Scan (61x101x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 16.2 W/kg

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) = 19.3 W/kg
SAR(1 g) = 9.15 W/kg; SAR(10 g) = 4.79 W/kg
Smallest distance from peaks to all points 3 dB below = 10 mm
Ratio of SAR at M2 to SAR at M1 = 57.1%
Maximum value of SAR (measured) = 15.3 W/kg



0 dB = 15.3 W/kg = 11.86 dBW/kg

Date: 2022/6/9

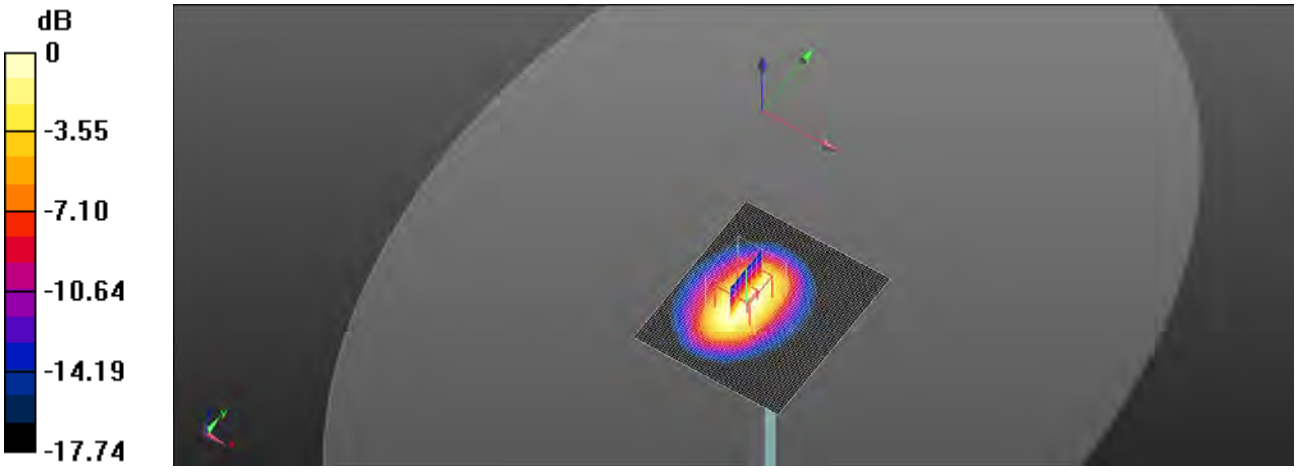
Report No. : TESA2204000067ES
Dipole 1900 MHz_SN:5d173
Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.412 S/m; ε_r = 40.26; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.9°C; Liquid temperature: 22.5℃

DASY5 Configuration:

- Probe: EX3DV4 - SN7712; ConvF(8.54, 8.54, 8.54); Calibrated: 2022/2/10
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1719; Calibrated: 2022/3/25
- Phantom: ELI
- DASY52 4.7.80(0); SEMCAD X 14.6.14(7483)

Area Scan (61x71x1): Interpolated grid: dx=15 mm, dy=15 mm
Maximum value of SAR (interpolated) = 8.41 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 57.96 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 10.4 W/kg
SAR(1 g) = 9.96 W/kg; SAR(10 g) = 5.24 W/kg
Smallest distance from peaks to all points 3 dB below = 10.7 mm
Ratio of SAR at M2 to SAR at M1 = 53.8%
Maximum value of SAR (measured) = 8.05 W/kg



0 dB = 8.05 W/kg = 9.06 dBW/kg

Date: 2022/6/10

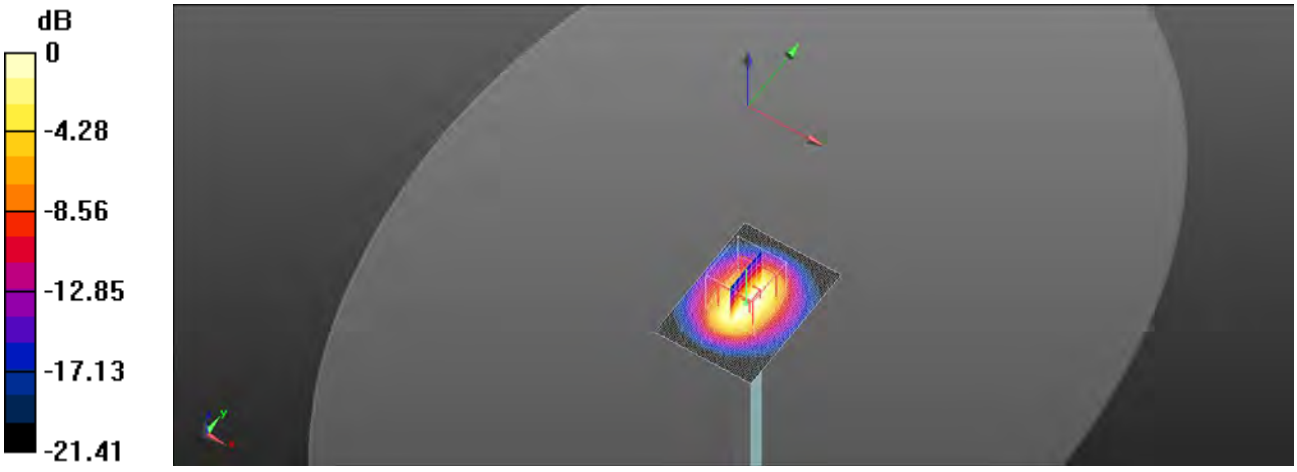
Report No. : TESA2204000067ES
Dipole 2450 MHz_SN:727
Communication System: CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; σ = 1.819 S/m; ε_r = 39.46; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.7°C; Liquid temperature: 22.2℃

DASY5 Configuration:

- Probe: EX3DV4 - SN7712; ConvF(8.16, 8.16, 8.16); Calibrated: 2022/2/10
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1719; Calibrated: 2022/3/25
- Phantom: ELI
- DASY52 4.7.80(0); SEMCAD X 14.6.14(7483)

Area Scan (51x71x1): Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 14.3 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 86.18 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 17.1 W/kg
SAR(1 g) = 13.34 W/kg; SAR(10 g) = 6.33 W/kg
Smallest distance from peaks to all points 3 dB below = 9.2mm
Ratio of SAR at M2 to SAR at M1 = 53.7%
Maximum value of SAR (measured) = 13.0 W/kg



0 dB = 13.0 W/kg = 11.13 dBW/kg

Date: 2022/6/10

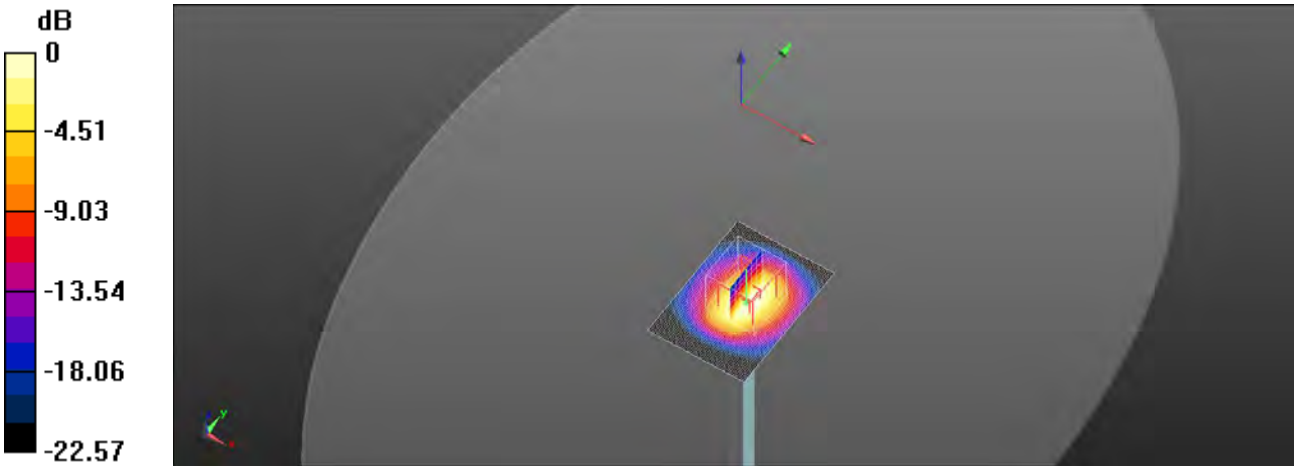
Report No. : TESA2204000067ES
Dipole 2600 MHz_SN:1005
Communication System: CW; Frequency: 2600 MHz; Duty Cycle: 1:1
Medium parameters used: f = 2600 MHz; σ = 1.954 S/m; ε_r = 39.269; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.7°C; Liquid temperature: 22.2℃

DASY5 Configuration:

- Probe: EX3DV4 - SN7712; ConvF(7.91, 7.91, 7.91); Calibrated: 2022/2/10
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1719; Calibrated: 2022/3/25
- Phantom: ELI
- DASY52 4.7.80(0); SEMCAD X 14.6.14(7483)

Area Scan (51x71x1): Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 14.6 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 80.92 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 17.9 W/kg
SAR(1 g) = 14.09 W/kg; SAR(10 g) = 6.31 W/kg
Smallest distance from peaks to all points 3 dB below = 8.4 mm
Ratio of SAR at M2 to SAR at M1 = 59.4%
Maximum value of SAR (measured) = 13.4 W/kg



0 dB = 13.4 W/kg = 11.29 dBW/kg

7. Uncertainty Budget

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

A	c	D	e		f	g	h=c * f / e	i=c * g / e	k
Source of Uncertainty	Tolerance/ Uncertainty	Probability Distributio	Div	Div Value	ci (1g)	ci (10g)	Standard uncertainty	Standard uncertainty	vi, or Veff
Measurement system									
Probe calibration	6.00%	N	1	1	1	1	6.00%	6.00%	∞
Isotropy , Axial	3.50%	R	√3	1.732	1	1	2.02%	2.02%	∞
Isotropy, Hemispherical	9.60%	R	√3	1.732	1	1	5.54%	5.54%	∞
Modulation Response	2.40%	R	√3	1.732	1	1	1.40%	1.40%	∞
Boundary Effect	1.00%	R	√3	1.732	1	1	0.58%	0.58%	∞
Linearity	4.70%	R	√3	1.732	1	1	2.71%	2.71%	∞
Detection Limits	1.00%	R	√3	1.732	1	1	0.58%	0.58%	∞
Readout Electronics	0.30%	N	1	1	1	1	0.30%	0.30%	∞
Response time	0.80%	R	√3	1.732	1	1	0.46%	0.46%	∞
Integration Time	2.60%	R	√3	1.732	1	1	1.50%	1.50%	∞
Measurement drift (class A evaluation)	1.75%	R	√3	1.732	1	1	1.01%	1.01%	∞
RF ambient condition - noise	3.00%	R	√3	1.732	1	1	1.73%	1.73%	∞
RF ambient conditions - reflections	3.00%	R	√3	1.732	1	1	1.73%	1.73%	∞
Probe positioner Mechanical restrictions	0.40%	R	√3	1.732	1	1	0.23%	0.23%	∞
Probe Positioning with respect to phantom shell	2.90%	R	√3	1.732	1	1	1.67%	1.67%	∞
Post-processing	1.00%	R	√3	1.732	1	1	0.58%	0.58%	∞
Max SAR Eval	1.00%	R	√3	1.732	1	1	0.58%	0.58%	∞
Test Sample related									
Test sample positioning	2.90%	N	1	1	1	1	2.90%	2.90%	M-1
Device Holder Uncertainty	3.60%	N	1	1	1	1	3.60%	3.60%	M-1
Drift of output power	5.00%	R	√3	1.732	1	1	2.89%	2.89%	∞
Phantom and Setup									
Phantom Uncertainty	4.00%	R	√3	1.732	1	1	2.31%	2.31%	∞
Liquid permittivity (mea.)	0.76%	N	1	1	0.64	0.43	0.49%	0.33%	M
Liquid Conductivity (mea.)	1.95%	N	1	1	0.6	0.49	1.17%	0.96%	M
Combined standard uncertainty		RSS					11.49%	11.45%	
Expant uncertainty (95% confidence interval), K=2							22.98%	22.91%	

Appendixes

Refer to separated files for the following appendixes.

TESA2204000067ES SAR_Appendix A Photographs

TESA2204000067ES SAR_Appendix B DAE & Probe Cal. Certificate

TESA2204000067ES SAR_Appendix C Phantom Description & Dipole Cal. Certificate

- End of Report -