

SAR TEST REPORT



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

Equipment Under Test	Notebook Computer
Brand Name	HP
Model No.	HSN-I04C
Company Name	HP Inc.
Company Address	3390 East Harmony Road Fort Collins, Colorado 80528 United States
Standards	IEEE/ANSI C95.1-1992, IEEE 1528-2013, KDB616217D04v01r02,KDB865664D01v01r04, KDB865664D02v01r02,KDB941225D01v03r01, KDB941225D05v02r05,KDB447498D01v06, KDB248227D01v02r02
FCC ID	B94HNI04CAMWP
Date of Receipt	Mar. 17, 2017
Date of Test(s)	Mar. 28, 2017 ~ Apr. 04, 2017
Date of Issue In the configuration tested, the E	Apr. 10, 2017 UT complied with the standards specified above.

Remarks:

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

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Signed on behalf of SGS

Engineer

Bonditioni

Bond Tsai Date: Apr. 10, 2017 Supervisor

John Teh

John Yeh Date: Apr. 10, 2017

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Revision History

Report Number	Revision	Description	Issue Date
EN/2017/30006	Rev.00	Initial creation of document	Apr. 10, 2017

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1. General Information

1.1 Testing Laboratory

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

1.2 Details of Applicant

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

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1.3 Description of EUT

Equipment Under Test	Notebook Computer				
Brand Name	HP				
Model No.	HSN-I04C				
Integrated Module	WWAN	Brand Name : FOXCONN Model Name : T77W595			
integrated module	WLAN/BT	Brand Name : Intel Model Name : 8265D2W			
Antenna type	PIFA				
Antenna Gain	-8.98dBi (for LTE B12/LTE B17 -5.56dBi (for LTE B13) -6.53dBi (for GPRS850/EDGE BC0/LTE B5) -6.11dBi (for WCDMA B4/LTE -5.42dBi (for GPRS1900/EDGE BC1/LTE B2) -4.69dBi (for LTE B7)	850/WCDMA B5/CDMA B4)			
FCC ID	B94HNI04CAMWP				
Mode of Operation		MA ⊠HSDPA ⊠HSUPA A 1x EVDO Rev.0/ Rev.A			
	GPRS (support multi class 12 max)	1/2 (1Dn4UP) 1/2.76 (1Dn3UP) 1/4.1 (1Dn2UP) 1/8.3 (1Dn1UP)			
Duty Cycle	EDGE (support multi class 12 max)	1/2 (1Dn4UP) 1/2.76 (1Dn3UP) 1/4.1 (1Dn2UP) 1/8.3 (1Dn1UP)			
	WCDMA	1			
	CDMA 1xRTT/ EVDO Rev.0/ Rev. A	1			
	LTE	1			

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	GPRS850	824	_	849
	GPRS1900	1850	_	1910
	WCDMA Band II	1850	_	1910
	WCDMA Band IV	1710	—	1755
	WCDMA Band V	824	_	849
	CDMA (BC0)	824	_	849
TX Frequency Range	CDMA (BC1)	1850	—	1910
(MHz)	LTE FDD Band 2	1850	_	1910
	LTE FDD Band 4	1710	_	1755
	LTE FDD Band 5	824	_	849
	LTE FDD Band 7	2500	—	2570
	LTE FDD Band 12	699	—	716
	LTE FDD Band 13	777	_	787
	LTE FDD Band 17	704	—	716
	GPRS850	128	_	251
	GPRS1900	512	_	810
	WCDMA Band II	9262	—	9538
	WCDMA Band IV	1312	—	1513
	WCDMA Band V	4132	—	4233
	CDMA (BC0)	1013	_	777
Channel Number	CDMA (BC1)	25	—	1175
(ARFCN)	LTE FDD Band 2	18607	_	19193
	LTE FDD Band 4	19957	—	20393
	LTE FDD Band 5	20407	_	20643
	LTE FDD Band 7	20775	—	21425
	LTE FDD Band 12	23017	_	23173
	LTE FDD Band 13	23205	_	23255
	LTE FDD Band 17	23755	_	23825

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Max. SAR (1 g) (Unit: W/Kg)								
Band	Measured	Reported	Channel	Position				
GPRS 850	1.150	1.17	128	Left side				
GRPS 1900	0.927	0.94	810	Left side				
WCDMA Band II	0.957	0.96	9538	Left side				
WCDMA Band IV	1.030	1.10	1312	Left side				
WCDMA Band V	1.120	1.13	4132	Left side				
CDMA (BC0)	0.948	1.14	777	Left side				
CDMA (BC1)	0.962	0.97	1175	Left side				
LTE FDD Band 2	1.050	1.14	19100	Left side				
LTE FDD Band 4	0.955	0.99	20050	Left side				
LTE FDD Band 5	0.784	1.02	20525	Left side				
LTE FDD Band 7	1.010	1.06	21350	Left side				
LTE FDD Band 12	0.634	0.83	23095	Top side				
LTE FDD Band 13	0.872	1.19	23230	Top side				
LTE FDD Band 17	0.565	0.76	23800	Top side				

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Burst average power						
Max. Rated Avg. Power + Max. Tolerance (dBm)			33.5	33	31	29
			1Dn1UP	1Dn2UP	1Dn3UP	1Dn4UP
EUT mode	Frequency (MHz)	CH	Avg. (dBm)	Avg. (dBm)	Avg. (dBm)	Avg. (dBm)
GPRS	824.2	128	32.78	32.74	29.56	27.50
850	836.6	190	32.83	32.74	29.62	27.71
050	830 848.8		32.85	32.76	29.69	28.03
		Sc	ource-based tim	e average powe	er	
GPRS	824.2	128	23.75	26.72	25.30	24.49
850	836.6	190	23.80	26.72	25.36	24.70
050	848.8	251	23.82	26.74	25.43	25.02
The division factor compared to the number of TX time slot						
	Division factor			2 TX time slot	3 TX time slot	4 TX time slot
			-9.03	-6.02	-4.26	-3.01

GPRS/EDGE conducted power table (Full power):

Burst average power							
	Max. Rated Avg. Power + Max. Tolerance (dBm)			26.5	26.5	24.5	
			1Dn1UP	1Dn2UP	1Dn3UP	1Dn4UP	
EUT mode	Frequency (MHz)	СН	Avg. (dBm)	Avg. (dBm)	Avg. (dBm)	Avg. (dBm)	
EDGE	824.2	128	26.88	26.24	26.22	23.97	
850	836.6	190	26.86	26.48	26.13	23.93	
(MCS5)	848.8	251	27.23	26.50	26.32	24.26	
		Sc	ource-based tim	e average powe	er		
EDGE	824.2	128	17.85	20.22	21.96	20.96	
850	836.6	190	17.83	20.46	21.87	20.92	
(MCS5)	848.8	251	18.20	20.48	22.06	21.25	
	The division factor compared to the number of TX time slot						
	Division factor			2 TX time slot	3 TX time slot	4 TX time slot	
			-9.03	-6.02	-4.26	-3.01	

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Burst average power							
Max. Rated Avg. Power + Max. Tolerance (dBm)			31	30	28	26	
			1Dn1UP	1Dn2UP	1Dn3UP	1Dn4UP	
EUT mode	Frequency (MHz)	СН	Avg. (dBm)	Avg. (dBm)	Avg. (dBm)	Avg. (dBm)	
GPRS	1850.2	512	29.79	29.28	27.21	25.13	
1900	1880	661	29.97	29.63	27.00	24.92	
1900 1909.8		810	30.11	29.56	27.16	25.06	
		So	ource-based tim	e average powe	er		
GPRS	1850.2	512	20.76	23.26	22.95	22.12	
1900	1880	661	20.94	23.61	22.74	21.91	
1900	1909.8	810	21.08	23.54	22.90	22.05	
The division factor compared to the number of TX time slot							
Div	Division factor			2 TX time slot	3 TX time slot	4 TX time slot	
			-9.03	-6.02	-4.26	-3.01	

	Burst average power							
Max. Rated Avg. Power + Max. Tolerance (dBm)			26.5	25.5	25.5	23.5		
			1Dn1UP	1Dn2UP	1Dn3UP	1Dn4UP		
EUT mode	Frequency (MHz)	СН	A∨g. (dBm)	Avg. (dBm)	Avg. (dBm)	Avg. (dBm)		
EDGE	1850.2	512	25.57	25.48	25.41	23.38		
1900	1880	661	25.44	25.41	25.20	23.17		
(MCS5)	1909.8	810	25.55	25.38	25.29	23.35		
		Sc	ource-based tim	e average powe	er			
EDGE	1850.2	512	16.54	19.46	21.15	20.37		
1900	1880	661	16.41	19.39	20.94	20.16		
(MCS5)	1909.8	810	16.52	19.36	21.03	20.34		
	The division factor compared to the number of TX time slot							
Div	Division factor			2 TX time slot				
			-9.03	-6.02	-4.26	-3.01		

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			Burst avera	age power		
	ted Avg. Power olerance (dBr		31	30.5	28.5	26.5
			1Dn1UP	1Dn2UP	1Dn3UP	1Dn4UP
EUT mode	Frequency (MHz) CH		Avg. (dBm)	Avg. (dBm)	Avg. (dBm)	Avg. (dBm)
GPRS	824.2	128	30.88	30.41	27.81	25.45
850	836.6	190	30.75	30.24	27.78	25.83
050	848.8	251	30.98	30.47	28.07	26.22
		Sc	ource-based tim	e average powe	er	
GPRS	824.2	128	21.85	24.39	23.55	22.44
850	836.6	190	21.72	24.22	23.52	22.82
000	848.8	251	21.95	24.45	23.81	23.21
	The div	ision fa	ctor compared	to the number c	of TX time slot	
Div	ision factor		1 TX time slot	2 TX time slot	3 TX time slot	4 TX time slot
DI			-9.03	-6.02	-4.26	-3.01

GPRS/EDGE conducted power table (Reduced power):

			Burst avera	age power		
	ted Avg. Power olerance (dBr		26.5	25.5	23.5	21.5
			1Dn1UP	1Dn2UP	1Dn3UP	1Dn4UP
EUT mode	Frequency (MHz) CH		Avg. (dBm)	Avg. (dBm)	Avg. (dBm)	Avg. (dBm)
GPRS	1850.2	512	25.98	25.45	22.89	20.78
1900	1880	661	25.91	25.46	22.80	20.75
1900	1909.8	810	26.00	25.42	22.82	20.71
		Sc	ource-based tim	e average powe	er	
GPRS	1850.2	512	16.95	19.43	18.63	17.77
1900	1880	661	16.88	19.44	18.54	17.74
1900	1909.8	810	16.97	19.40	18.56	17.70
	The div	ision fa	ctor compared	to the number o	of TX time slot	
Div	ision factor		1 TX time slot	2 TX time slot	3 TX time slot	4 TX time slot
DI			-9.03	-6.02	-4.26	-3.01

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			Burst avera	age power		
	ted Avg. Power olerance (dBr		23	22	22	20
			1Dn1UP	1Dn2UP	1Dn3UP	1Dn4UP
EUT mode	Frequency (MHz) CH		Avg. (dBm)	Avg. (dBm)	Avg. (dBm)	Avg. (dBm)
EDGE	1850.2	512	22.98	21.97	21.96	19.93
1900	1880	661	22.89	21.92	21.85	19.84
(MCS5)	5) 1909.8 810		22.94	21.94	21.82	19.85
		Sc	ource-based tim	e average powe	er	
EDGE	1850.2	512	13.95	15.95	17.70	16.92
1900	1880	661	13.86	15.90	17.59	16.83
(MCS5)	1909.8	810	13.91	15.92	17.56	16.84
	The div	ision fa	ctor compared	to the number o	of TX time slot	
Div	ision factor		1 TX time slot	2 TX time slot	3 TX time slot	4 TX time slot
			-9.03	-6.02	-4.26	-3.01

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

	Band		WCDMA II	
	TX Channel	9262	9400	9538
F	requency (MHz)	1852.4	1880	1907.6
Max. Rated Avg.	Power+Max. Tolerance (dBm)		24.50	
3GPP Rel 99	RMC 12.2Kbps	23.58	23.86	23.82
Max. Rated Avg.	Power+Max. Tolerance (dBm)		23.50	
	HSDPA Subtest-1	22.96	23.14	23.14
3GPP Rel 5	HSDPA Subtest-2	22.89	23.11	23.13
JOFF Kei J	HSDPA Subtest-3	22.84	23.10	23.10
	HSDPA Subtest-4	22.80	23.06	23.07
	HSUPA Subtest-1	22.13	22.38	22.36
	HSUPA Subtest-2	21.61	21.74	21.81
3GPP Rel 6	HSUPA Subtest-3	22.03	22.33	22.35
	HSUPA Subtest-4	21.99	22.29	22.31
	HSUPA Subtest-5	21.97	22.21	22.29

	Band		WCDMA IV	,
	TX Channel	1312	1412	1513
F	requency (MHz)	1712.4	1732.4	1752.6
Max. Rated Avg.	Power+Max. Tolerance (dBm)		24.50	
3GPP Rel 99	RMC 12.2Kbps	23.73	23.87	23.75
Max. Rated Avg.	Power+Max. Tolerance (dBm)		23.50	
	HSDPA Subtest-1	23.06	23.26	23.10
3GPP Rel 5	HSDPA Subtest-2	23.03	23.20	23.06
SGFF Kei S	HSDPA Subtest-3	23.01	23.19	23.06
	HSDPA Subtest-4	22.98	23.15	23.05
	HSUPA Subtest-1	22.45	22.64	22.28
	HSUPA Subtest-2	21.94	22.11	21.71
3GPP Rel 6	HSUPA Subtest-3	22.43	22.62	22.22
	HSUPA Subtest-4	22.35	22.61	22.21
	HSUPA Subtest-5	22.24	22.45	22.13

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	Band		WCDMA V	
	TX Channel	4132	4183	4233
F	requency (MHz)	826.4	836.6	846.6
Max. Rated Avg.	Power+Max. Tolerance (dBm)		24.50	
3GPP Rel 99	RMC 12.2Kbps	24.47	24.17	24.50
Max. Rated Avg.	Power+Max. Tolerance (dBm)		23.50	
	HSDPA Subtest-1	23.50	23.26	23.62
3GPP Rel 5	HSDPA Subtest-2	23.45	23.24	23.61
SGFF Ref S	HSDPA Subtest-3	23.44	23.23	23.56
	HSDPA Subtest-4	23.41	23.19	23.52
	HSUPA Subtest-1	22.69	22.60	22.84
	HSUPA Subtest-2	22.23	21.91	22.23
3GPP Rel 6	HSUPA Subtest-3	22.66	22.56	22.77
	HSUPA Subtest-4	22.63	22.53	22.75
	HSUPA Subtest-5	22.59	22.42	22.73

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

	Band		WCDMA II	
	TX Channel	9262	9400	9538
F	requency (MHz)	1852.4	1880	1907.6
Max. Rated Avg.	Power+Max. Tolerance (dBm)		19.50	
3GPP Rel 99	RMC 12.2Kbps	19.21	19.50	19.49
Max. Rated Avg.	Power+Max. Tolerance (dBm)		18.50	
	HSDPA Subtest-1	17.75	18.13	18.12
3GPP Rel 5	HSDPA Subtest-2	17.41	17.61	17.58
JOFF Kers	HSDPA Subtest-3	17.23	17.54	17.61
	HSDPA Subtest-4	17.24	17.56	17.53
	HSUPA Subtest-1	17.61	18.12	17.90
	HSUPA Subtest-2	16.76	16.82	17.16
3GPP Rel 6	HSUPA Subtest-3	17.45	16.75	16.78
	HSUPA Subtest-4	16.75	17.30	17.33
	HSUPA Subtest-5	17.90	18.10	18.20

	Band		WCDMA IV	'
	TX Channel	1312	1412	1513
F	requency (MHz)	1712.4	1732.4	1752.6
Max. Rated Avg.	Power+Max. Tolerance (dBm)		19.50	
3GPP Rel 99	RMC 12.2Kbps	19.22	19.40	19.30
Max. Rated Avg.	Power+Max. Tolerance (dBm)		18.50	
	HSDPA Subtest-1	17.72	18.04	17.81
3GPP Rel 5	HSDPA Subtest-2	17.07	17.44	17.24
JOFF Rei J	HSDPA Subtest-3	17.21	17.45	17.29
	HSDPA Subtest-4	17.18	17.43	17.27
	HSUPA Subtest-1	17.56	17.32	17.70
	HSUPA Subtest-2	16.52	16.58	16.36
3GPP Rel 6	HSUPA Subtest-3	16.61	16.66	16.43
	HSUPA Subtest-4	16.77	16.75	16.79
	HSUPA Subtest-5	17.70	18.10	17.80

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Sub-Test for HSDPA

SUB-TEST	β _c	β_d	β _d (SF)	β _c /β _d	β _{HS} (Note1, Note 2)	CM (dB) (Note 3)	MPR (dB) (Note 3)
1	2/15	15/15	64	2/15	4/15	0.0	0.0
2	12/15	15/15	64	12/15	24/15	1.0	0.0
3	15/15	8/15	64	15/8	30/15	1.5	0.5
4	15/15	4/15	64	15/4	30/15	1.5	0.5

Sub-Test for HSUPA

SUB-TEST	βc	βd	β₀ (SF)	β _c /β _d	^{βнs} (Note1)	β _{ec}	β _{ed} (Note 5) (Note 6)	β _{ed} (SF)	β _{ed} (Codes)	CM (dB) (Note 2)	MPR (dB) (Note 2)	AG Index (Note 6)	E-TFCI
1	11/15	15/15	64	11/15	22/15	209/225	1309/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	β _{ed} 1: 47/15 β _{ed} 2: 47/15	4 4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15	15/15	64	15/15	30/15	24/15	134/15	4	1	1.0	0.0	21	81

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CDMA conducted power table (Full power):

			Target			1xRTT		EVDO		
Band Channel Frequency (MHz)	Max.	SO55	SO55	TDSO/SO32	TDSO/SO32	1x EvDO Rev. 0, FTAP/RTAP	1x EvDO Rev. A, FETAP/RETAP			
	Toleranc e (dBm)	RC1	RC3	FCH+SCH	FCH	Subtype 0/1	Subtype 2			
Callular	1013	824.7	25.00	24.01	23.98	24.11	24.15	24.18	24.12	
Cellular (BC0)	384	836.52	25.00	24.02	23.94	24.02	24.14	24.15	24.08	
(200)	777	848.31	25.00	24.08	23.99	24.01	24.19	24.21	24.09	
D 00	25	1851.25	25.00	23.85	23.81	23.94	23.95	23.98	23.91	
PCS (BC1)	600	1880	25.00	23.81	23.80	23.90	23.91	23.92	23.85	
(201)	1175	1908.75	25.00	23.89	23.75	23.88	23.90	23.89	23.81	

CDMA conducted power table (Reduced power):

		Target			1xRTT	EVDO										
Band	Channel	Frequency (MHz)	Frequency (MHz)						Frequency (MHz)	(Hz) Wax.	SO55	SO55	TDSO/SO32	TDSO/SO32	1x EvDO Rev. 0, FTAP/RTAP	1x EvDO Rev. A, FETAP/RETAP
		Toleranc e (dBm)	RC1	RC3	FCH+SCH	FCH	Subtype 0/1	Subtype 2								
00144	25	1851.25	19.50	19.24	19.18	19.15	19.20	19.24	19.21							
CDMA (BC1)	600	1880	19.50	19.35	19.25	19.35	19.33	19.41	19.40							
(801)	1175	1908.75	19.50	19.44	19.36	19.41	19.42	19.45	19.39							

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LTE FDD Band 2 / Band 4 / Band 5 / Band 7 / Band 12 / Band 13 / Band 17 power table:

lable.			FDD	Band 2 (Full P	ower)			
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
				1860	18700	22.82	24	0
			0	1880	18900	23.20	24	0
				1900	19100	23.04	24	0
				1860	18700	22.85	24	0
		1 RB	50	1880	18900	23.08	24	0
				1900	19100	23.11	24	0
				1860	18700	22.88	24	0
			99	1880	18900	23.08	24	0
				1900	19100	23.19	24	0
				1860	18700	21.92	23	0-1
	QPSK		0	1880	18900	22.17	23	0-1
				1900	19100	22.12	23	0-1
				1860	18700	21.82	23	0-1
		50 RB	25	1880	18900	21.98	23	0-1
				1900	19100	22.13	23	0-1
				1860	18700	21.89	23	0-1
			50	1880	18900	22.17	23	0-1
				1900	19100	21.96	23	0-1
			-	1860	18700	21.86	23	0-1
		100	ORB	1880	18900	22.09	23	0-1
20				1900	19100	22.08	23	0-1
20				1860	18700	21.83	23	0-1
			0	1880	18900	21.84	23	0-1
				1900	19100	21.39	23	0-1
				1860	18700	21.56	23	0-1
		1 RB	50	1880	18900	22.06	23	0-1
				1900	19100	21.83	23	0-1
				1860	18700	21.86	23	0-1
			99	1880	18900	21.47	23	0-1
				1900	19100	22.18	23	0-1
				1860	18700	20.82	22	0-2
	16-QAM		0	1880	18900	20.89	22	0-2
				1900	19100	20.98	22	0-2
				1860	18700	20.74	22	0-2
		50 RB	25	1880	18900	21.12	22	0-2
				1900	19100	21.04	22	0-2
				1860	18700	20.86	22	0-2
			50	1880	18900	21.01	22	0-2
				1900	19100	20.95	22	3GPP(dB) 0 0 0 0 0 0 0 0 0 0 0 0 0
				1860	18700	20.78	22	
		100	ORB	1880	18900	21.05	22	0-2
			1900	19100	21.05	22	0-2	

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			FDD	Band 2 (Full P	ower)					
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)		
				1857.5	18675	22.94	24	0		
			0	1880	18900	23.19	24	0		
				1902.5	19125	23.00	24	0		
				1857.5	18675	22.73	24	0		
		1 RB	36	1880	18900	23.05	24	0		
				1902.5	19125	23.00	24	0		
				1857.5	18675	22.88	24	0		
			74	1880	18900	23.09	24	0		
				1902.5	19125	23.09	24	0		
				1857.5	18675	21.82	23	0-1		
	QPSK		0	1880	18900	22.03	23	0-1		
				1902.5	19125	21.99	23	0-1		
				1857.5	18675	21.78	23	0-1		
		36 RB	18	1880	18900	22.03	23	MPR Allowed per 3GPP(dB) 0 <tr< td=""></tr<>		
				1902.5	19125	22.07	23			
				1857.5	18675	21.82	23			
			37	1880	18900	22.11	23			
				1902.5	19125	22.06	23	0-1		
				1857.5	18675	21.81	23	0-1		
		75	RB	1880	18900	22.13	23	0 0 0 0 0 0 0 0 0 0 0 0 0 0		
15				1902.5	19125	22.04	23	0-1		
15				1857.5	18675	21.79	23	0-1		
			0	1880	18900	22.03	23	0-1		
				1902.5	19125	21.84	23	0-1		
				1857.5	18675	21.64	23	0-1		
		1 RB	36	1880	18900	22.36	23	0-1		
				1902.5	19125	22.20	23	0-1		
				1857.5	18675	21.85	23	3GPP(dB) 0 0 0 0 0 0 0 0 0 0 0 0 0		
			74	1880	18900	22.20	23	0-1		
				1902.5	19125	22.32	23	0-1		
				1857.5	18675	20.67	22	0-2		
	16-QAM		0	1880	18900	20.92	22	0-2		
				1902.5	19125	21.00	22			
				1857.5	18675	20.60	22	0-1 0-2 0-2		
		36 RB	18	1880	18900	20.91	22			
				1902.5	19125	20.89	22			
				1857.5	18675	20.63	22			
			37	1880	18900	21.01	22			
				1902.5	19125	20.95	22			
				1857.5	18675	20.74	22			
		75RB		1880	18900	21.02	22			
				1902.5	19125	20.97	22	0-2		

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			FDD	Band 2 (Full P	ower)				
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)	
				1855	18650	22.71	24	0	
			0	1880	18900	22.95	24	0	
				1905	19150	22.93	24	0	
				1855	18650	22.62	24	0	
		1 RB	25	1880	18900	22.99	24	0	
				1905	19150	22.96	24	0	
				1855	18650	22.92	24	0	
			49	1880	18900	22.88	24	0	
				1905	19150	23.03	24	0	
				1855	18650	21.88	23	0-1	
	QPSK		0	1880	18900	22.01	23	0-1	
				1905	19150	22.08	23	0-1	
				1855	18650	21.66	23	0-1	
		25 RB	12	1880	18900	22.02	23	0-1	
				1905	19150	22.04	23	0-1	
				1855	18650	21.68	23	MPR Allowed per 3GPP(dB) 0	
			25	1880	18900	22.10	23		
				1905	19150	21.94	23	0-1	
				1855	18650	21.80	23	0-1	
		50	RB	1880	18900	22.07	23	3GPP(dB) 0 0 0 0 0 0 0 0 0 0 0 0 0	
10				1905	19150	22.05	23	0-1	
10				1855	18650	21.61	23	0-1	
			0	1880	18900	21.85	23	0-1	
				1905	19150	22.15	23	0-1	
				1855	18650	21.80	23	0-1	
		1 RB	25	1880	18900	21.77	23	0-1	
				1905	19150	21.89	23	0-1	
				1855	18650	21.87	23	0-1	
			49	1880	18900	22.11	23	0-1	
				1905	19150	22.01	23	0-1	
				1855	18650	20.78	22	0-2	
	16-QAM		0	1880	18900	21.10	22	0-2	
				1905	19150	21.02	22	0-2	
				1855	18650	20.56	22	0 0 0 0 0 0 0 0 0 0 0 0 0 0	
		25 RB	12	1880	18900	21.10	22		
				1905	19150	21.02	22		
				1855	18650	20.61	22		
			25	1880	18900	21.06	22		
				1905	19150	20.99	22	0 0-1 0-1 0-1 0-1 0-1 0-1 0-1 0-	
				1855	18650	20.65	22		
		50RB		1880	18900	20.95	22		
				1905	19150	21.01	22	0-2	

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			FDD	Band 2 (Full P	ower)						
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)			
				1852.5	18625	22.80	24	0			
			0	1880	18900	23.10	24	0			
				1907.5	19175	23.06	24	0			
				1852.5	18625	23.10	24	0			
		1 RB	12	1880	18900	23.04	24	0			
				1907.5	19175	23.01	24	0			
				1852.5	18625	22.68	24	0			
			24	1880	18900	22.98	24	0			
				1907.5	19175	23.02	24	0			
				1852.5	18625	21.91	23	0-1			
	QPSK		0	1880	18900	22.03	23	0-1			
				1907.5	19175	22.03	23	0-1			
				1852.5	18625	21.89	23	0-1			
		12 RB	6	1880	18900	22.02	23	Allowed per 3GPP(dB) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0-1 0-2 0-2			
				1907.5	19175	22.03	23	0-1			
				1852.5	18625	21.79	23	Allowed per 3GPP(dB) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0-1 0-2 0-2			
			13	1880	18900	22.09	23				
				1907.5	19175	21.96	23	0-1			
				1852.5	18625	21.89	23	0-1			
		25	RB	1880	18900	22.06	23	0 0 0 0 0 0 0 0 0 0 0 0 0 0			
5				1907.5	19175	22.03	23	0-1 0-1 0-1 0-1			
5			1852.5 18625 21.70		23	0-1					
			0	1880	18900	21.70	23	0-1			
				1907.5	19175	22.08	23	0-1			
				1852.5	18625	22.08	23	0-1			
		1 RB	12	1880	18900	22.11	23	0-1			
				1907.5	19175	21.89	23	0-1			
				1852.5	18625	21.91	23	Allowed per 3GPP(dB) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			
			24	1880	18900	22.31	23				
				1907.5	19175	21.82	23	0-1			
				1852.5	18625	20.80	22				
	16-QAM		0	1880	18900	21.07	22	0-2			
				1907.5	19175	20.98	22				
				1852.5	18625	20.75	22				
		12 RB	6	1880	18900	20.91	22	0 0			
				1907.5	19175	21.02	22				
				1852.5	18625	20.75	22				
			13	1880	18900	21.04	22				
				1907.5	19175	21.04	22				
				1852.5	18625	20.85	22				
	25RB	RB	1880	18900	21.02	22					
				1907.5	19175	21.14	22	0-2			

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			FDD	Band 2 (Full P	ower)						
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)			
				1851.5	18615	22.90	24	0			
			0	1880	18900	23.12	24	0			
				1908.5	19185	22.92	24	0			
				1851.5	18615	23.01	24	0			
		1 RB	7	1880	18900	23.08	24	0			
				1908.5	19185	23.03	24	0			
				1851.5	18615	22.60	24	0			
			14	1880	18900	23.03	24	0			
				1908.5	19185	23.27	24	0			
				1851.5	18615	21.89	23	0-1			
	QPSK		0	1880	18900	22.06	23	0-1			
				1908.5	19185	22.03	23	0-1			
				1851.5	18615	21.86	23	0-1			
		8 RB	4	1880	18900	22.05	23	0-1			
				1908.5	19185	22.04	23	0-1			
				1851.5	18615	21.93	23	+ MPR Allowed per 3GPP(dB)) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			
			7	1880	18900	22.12	23	0-1			
				1908.5	19185	21.97	23	0-1			
				1851.5	18615	21.91	23	0-1			
		15	RB	1880	18900	22.09	23	0-1			
3				1908.5	19185	22.03	23	0-1 0-1 0-1 0-1 0-1 0-1 0-1			
U				1851.5	18615	21.86	23				
			0	1880	18900	22.01	23	0-1			
				1908.5	19185	22.16	23	0-1			
				1851.5	18615	22.07	23	0-1			
		1 RB	7	1880	18900	22.15	23				
				1908.5	19185	21.77	23	0-1			
				1851.5	18615	21.79	23				
			14	1880	18900	21.64	23	3GPP(dB) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0-1 0-2 0-2 0-2 0-2 0-2 0-2 0-2			
				1908.5	19185	22.09	23				
				1851.5	18615	20.78	22				
	16-QAM		0	1880	18900	21.10	22	0 0			
				1908.5	19185	20.92	22				
		0.00		1851.5	18615	20.87	22				
		8 RB	4	1880	18900	21.09	22				
				1908.5	19185	21.10	22				
			-	1851.5	18615	20.87	22				
			7	1880	18900	21.06	22				
				1908.5	19185	20.99	22				
			חח	1851.5	18615	20.68	22				
		15RB		1880	18900	20.86	22				
				1908.5	19185	21.04	22	0-2			

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			FDD	Band 2 (Full P	ower)				
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)	
				1850.7	18607	22.91	24	0	
			0	1880	18900	23.04	24	0	
				1909.3	19193	23.07	24	0	
				1850.7	18607	22.81	24	0	
		1 RB	2	1880	18900	22.98	24	0	
				1909.3	19193	23.05	24	0	
				1850.7	18607	22.95	24	0	
			5	1880	18900	23.05	24	0	
				1909.3	19193	23.01	24	0	
				1850.7	18607	23.00	24	0	
	QPSK		0	1880	18900	23.02	24	0	
				1909.3	19193	23.07	24	0	
				1850.7	18607	22.98	24	MPR MPR Allowed per 3GPP(dB) 3GPP(dB) 0 0 0	
		3 RB	2	1880	18900	23.11	24		
				1909.3	19193	23.07	24	0	
				1850.7	18607	22.93	24	MPR Allowed per 3GPP(dB) 0 <tr< td=""></tr<>	
			3	1880	18900	23.03	24		
				1909.3	19193	23.02	24	0	
				1850.7	18607	21.96	23	0-1	
		6F	RB	1880	18900	22.11	23	3GPP(dB) 0 0 0 0 0 0 0 0 0 0 0 0 0	
1.4				1909.3	19193	22.23	23	0-1	
1.4				1850.7	18607	22.00	23	0-1	
			0	1880	18900	22.11	23	0-1	
				1909.3	19193	22.19	23	0-1	
				1850.7	18607	21.95	23	0-1	
		1 RB	2	1880	18900	22.13	23	0-1	
				1909.3	19193	22.04	23	0-1	
				1850.7	18607	21.81	23	0-1	
			5	1880	18900	21.52	23	0-1	
				1909.3	19193	21.84	23	0-1	
				1850.7	18607	21.86	23		
	16-QAM		0	1880	18900	22.05	23	0-1	
				1909.3	19193	22.04	23		
				1850.7	18607	21.97	23	0 0	
		3 RB	2			22.11	23		
						22.01	23		
						21.92	23		
			3	1880	18900	21.98	23		
				1909.3	19193	22.02	23		
				1850.7	18607	20.66	22		
	6RB		RB	1850.7 18607 1880 18900 1909.3 19193 1850.7 18607 1880 18900 1909.3 19193 1850.7 18607 1880 18900 1909.3 19193 1850.7 18607 1880 18900 1909.3 19193 1850.7 18607 1880 18900 1909.3 19193 1850.7 18607 1880 18900 1909.3 19193 1850.7 18607 1880 18900 1909.3 19193 1850.7 18607 1880 18900 1909.3 19193 1850.7 18607 1880 18900 1909.3 19193 1850.7 18607 1880 18900 1909.3 19193 1850.7 18607 <	21.02	22			
				1909.3	19193	20.83	22	0-2	

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			FDD Ba	nd 2 (Reduced	l Power)							
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)				
				1860	18700	18.93	19.5	0				
			0	1880	18900	19.24	19.5	0				
				1900	19100	19.16	19.5	0				
				1860	18700	18.79	19.5	0				
		1 RB	50	1880	18900	19.17	19.5	0				
				1900	19100	19.13	19.5	0				
				1860	18700	18.89	19.5	0				
			99	1880	18900	19.19	19.5	0				
				1900	19100	19.06	19.5	0				
				1860	18700	18.88	19.5	0-1				
	QPSK		0	1880	18900	19.25	19.5	0-1				
				1900	19100	19.24	19.5	0-1				
				1860	18700	18.77	19.5	0-1				
		50 RB	25	1880	18900	19.15	19.5	0-1				
				1900	19100	19.21	19.5	0-1				
				1860	18700	18.87	19.5	Allowed per 3GPP(dB) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0				
			50	1880	18900	19.23	19.5					
				1900	19100	19.15	19.5	0-1				
				1860	18700	18.81	19.5	0-1				
		100)RB	1880	18900	19.19	19.5	0-1				
20			-	1900	19100	19.15	19.5	0-1				
20				1860	18700	18.95	19.5	0-1				
			0	1880	18900	18.97	19.5	0-1				
				1900	19100	19.11	19.5	0-1				
				1860	18700	18.65	19.5	0-1				
		1 RB	50	1880	18900	19.03	19.5					
				1900	19100	19.05	19.5	0-1				
				1860	18700	18.87	19.5	0-1				
			99	1880	18900	19.10	19.5	0-1				
				1900	19100	19.03	19.5	0-1				
				1860	18700	18.84	19.5					
	16-QAM		0	1880	18900	19.11	19.5	0-2				
				1900	19100	19.21	19.5					
			_	1860	18700	18.76	19.5	Allowed per 3GPP(dB) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0				
		50 RB	25	1880	18900	19.19	19.5					
				1900	19100	19.17	19.5					
				1860	18700	18.84	19.5					
			50	1880	18900	19.20	19.5					
				1900	19100	19.19	19.5	0 0 0-1 0-1 0-1 0-1 0-1 0-1 0-1				
				1860	18700	18.83	19.5					
	100RE)KB	1880	18900	19.17	19.5					
				1900	19100	19.20	19.5	0-2				

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			FDD Ba	nd 2 (Reduced	d Power)							
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)				
				1857.5	18675	18.93	19.5	0				
			0	1880	18900	19.08	19.5	0				
				1902.5	19125	19.25	19.5	0				
				1857.5	18675	18.69	19.5	0				
		1 RB	36	1880	18900	19.13	19.5	0				
				1902.5	19125	19.07	19.5	0				
				1857.5	18675	18.83	19.5	0				
			74	1880	18900	19.15	19.5	0				
				1902.5	19125	19.08	19.5	0				
				1857.5	18675	18.81	19.5	0-1				
	QPSK		0	1880	18900	19.13	19.5	0-1				
				1902.5	19125	19.17	19.5	0-1				
				1857.5	18675	18.72	19.5	0-1				
		36 RB	18	1880	18900	19.12	19.5	0-1				
				1902.5	19125	19.16	19.5	0-1				
				1857.5	18675	18.76	19.5	0-1				
			37	1880	18900	19.17	19.5	0-1				
				1902.5	19125	19.15	19.5	0-1				
				1857.5	18675	18.77	19.5	0-1				
		75	RB	1880	18900	19.19	19.5	0-1				
15			-	1902.5	19125	19.19	19.5					
15				1857.5	18675	18.90	19.5	0-1				
			0	1880	18900	18.97	19.5	0-1				
				1902.5	19125	19.15	19.5	0-1				
				1857.5	18675	18.55	19.5	0-1				
		1 RB	36	1880	18900	19.02	19.5	0-1				
				1902.5	19125	19.00	19.5	0-1				
I				1857.5	18675	18.72	19.5	0-1				
			74	1880	18900	19.02	19.5	0-1				
				1902.5	19125	19.00	19.5	0-1				
				1857.5	18675	18.83	19.5	0-2				
	16-QAM		0	1880	18900	19.14	19.5	0-2				
				1902.5	19125	19.17	19.5	0-2				
				1857.5	18675	18.73	19.5	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0				
		36 RB	18	1880	18900	19.17	19.5					
				1902.5	19125	19.17	19.5					
				1857.5	18675	18.75	19.5	0-1 0-1 0-2 0-2 0-2 0-2 0-2 0-2 0-2 0-2 0-2 0-2				
			37	1880	18900	19.18	19.5					
				1902.5	19125	19.10	19.5	0 0 0 0 0 0 0 0 0 0 0 0 0 0				
				1857.5	18675	18.79	19.5					
	75RB		КB	1880 1902.5	18900	19.17	19.5					
					19125	19.14	19.5	0-2				

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			FDD Ba	nd 2 (Reduced	l Power)							
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)				
				1855	18650	18.91	19.5	0				
			0	1880	18900	19.09	19.5	0				
				1905	19150	19.17	19.5	0				
				1855	18650	18.76	19.5	0				
		1 RB	25	1880	18900	19.10	19.5	0				
				1905	19150	19.09	19.5	0				
				1855	18650	18.73	19.5	0				
			49	1880	18900	19.13	19.5	0				
				1905	19150	19.09	19.5	0				
				1855	18650	18.90	19.5	0-1				
	QPSK		0	1880	18900	19.14	19.5	0-1				
				1905	19150	19.18	19.5	0-1				
				1855	18650	18.63	19.5	0-1				
		25 RB	12	1880	18900	19.12	19.5	0-1				
				1905	19150	19.10	19.5	0-1				
				1855	18650	18.70	19.5	Allowed per 3GPP(dB) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0				
			25	1880	18900	19.14	19.5					
				1905	19150	19.10	19.5	0-1				
				1855	18650	18.84	19.5	0-1				
		50	RB	1880	18900	19.21	19.5	0-1				
10			-	1905	19150	19.08	19.5	0-1				
10				1855	18650	18.91	19.5	0-1				
			0	1880	18900	19.04	19.5	0-1				
				1905	19150	19.14	19.5	0-1				
				1855	18650	18.55	19.5	0-1				
		1 RB	25	1880	18900	18.99	19.5	0-1				
				1905	19150	18.98	19.5	0-1				
				1855	18650	18.66	19.5	-				
			49	1880	18900	19.09	19.5	0-1				
				1905	19150	18.99	19.5	0-1				
				1855	18650	18.88	19.5	0-2				
	16-QAM		0	1880	18900	19.21	19.5	0-2				
				1905	19150	19.14	19.5					
				1855	18650	18.73	19.5	Allowed per 3GPP(dB) 0 0 0 0 0 0 0 0 0 0 0 0 0				
		25 RB	12	1880	18900	19.21	19.5					
				1905	19150	19.16	19.5					
			_	1855	18650	18.76	19.5	0-1 0-1 0-2 0-2 0-2 0-2 0-2 0-2 0-2 0-2				
			25	1880	18900	19.23	19.5					
				1905	19150	19.15	19.5					
				1855	18650	18.79	19.5					
	50RB	RB	1880	18900	19.15	19.5						
				1905	19150	19.14	19.5	0-2				

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			FDD Ba	nd 2 (Reduced	l Power)						
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)			
				1852.5	18625	18.85	19.5	0			
			0	1880	18900	19.11	19.5	0			
				1907.5	19175	19.06	19.5	0			
				1852.5	18625	18.82	19.5	0			
		1 RB	12	1880	18900	19.12	19.5	0			
				1907.5	19175	19.03	19.5	0			
				1852.5	18625	18.73	19.5	0			
			24	1880	18900	19.24	19.5	0			
				1907.5	19175	19.07	19.5	0			
				1852.5	18625	18.83	19.5	0-1			
	QPSK		0	1880	18900	19.15	19.5	0-1			
				1907.5	19175	19.08	19.5	0-1			
				1852.5	18625	18.86	19.5	0-1			
		12 RB	6	1880	18900	19.16	19.5	MPR Allowed per 3GPP(dB) 5 0 6			
				1907.5	19175	19.07	19.5				
				1852.5	18625	18.74	19.5				
			13	1880	18900	19.18	19.5	0-1			
				1907.5	19175	19.10	19.5	0-1			
				1852.5	18625	18.89	19.5	0-1			
		25	RB	1880	18900	19.13	19.5	0-1			
5				1907.5	19175	19.11	19.5	0-1 0-1 0-1 0-1 0-1 0-1 0-1 0-1			
5				1852.5	18625	18.71	19.5	0-1			
			0	1880	18900	18.96	19.5	0-1			
				1907.5	19175	19.02	19.5	0-1			
				1852.5	18625	18.71	19.5	0-1			
		1 RB	12	1880	18900	19.04	19.5	0-1			
				1907.5	19175	18.87	19.5	0-1			
				1852.5	18625	18.67	19.5	0-1			
			24	1880	18900	19.03	19.5	0-1			
				1907.5	19175	18.92	19.5				
				1852.5	18625	18.89	19.5				
	16-QAM		0	1880	18900	19.19	19.5	0-2			
				1907.5	19175	19.11	19.5				
				1852.5	18625	18.88	19.5				
		12 RB	6	1880	18900	19.22	19.5				
				1907.5	19175	19.10	19.5				
				1852.5	18625	18.80	19.5				
			13	1880	18900	19.19	19.5				
				1907.5	19175	19.09	19.5				
				1852.5	18625	18.94	19.5				
		25RB	1880	18900	19.20	19.5					
				1907.5	19175	19.10	19.5	0-2			

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			FDD Ba	nd 2 (Reduced	l Power)						
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)			
				1851.5	18615	18.82	19.5	0			
			0	1880	18900	19.11	19.5	0			
				1908.5	19185	19.10	19.5	0			
				1851.5	18615	18.79	19.5	0			
		1 RB	7	1880	18900	19.10	19.5	0			
				1908.5	19185	19.04	19.5	0			
				1851.5	18615	18.82	19.5	0			
			14	1880	18900	19.16	19.5	0			
				1908.5	19185	19.07	19.5	0			
				1851.5	18615	18.84	19.5	0-1			
	QPSK		0	1880	18900	19.12	19.5	0-1			
				1908.5	19185	19.10	19.5	0-1			
				1851.5	18615	18.85	19.5	0-1			
		8 RB	4	1880	18900	19.15	19.5	0-1			
				1908.5	19185	19.06	19.5	0-1			
				1851.5	18615	18.84	19.5	Allowed per 3GPP(dB) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			
			7	1880	18900	19.15	19.5	0-1			
				1908.5	19185	19.08	19.5	0-1			
				1851.5	18615	18.89	19.5				
		15	RB	1880	18900	19.16	19.5	0 0 0 0 0 0 0 0 0 0 0 0 0 0			
3			-	1908.5	19185	19.08	19.5	0-1 0-1 0-1 0-1 0-1 0-1 0-1 0-1 0-1 0-1			
5				1851.5	18615	18.74	19.5	0-1			
			0	1880	18900	18.96	19.5	0-1			
				1908.5	19185	18.97	19.5	0-1			
				1851.5	18615	18.76	19.5	0-1			
		1 RB	7	1880	18900	19.02	19.5	0-1			
				1908.5	19185	19.04	19.5	0-1			
				1851.5	18615	18.77	19.5	-			
			14	1880	18900	19.04	19.5	0 0			
				1908.5	19185	18.99	19.5	0-1			
				1851.5	18615	18.92	19.5	0-2			
	16-QAM		0	1880	18900	19.16	19.5	0-2			
				1908.5	19185	19.09	19.5				
				1851.5	18615	18.88	19.5				
		8 RB	4	1880	18900	19.14	19.5				
				1908.5	19185	19.07	19.5				
				1851.5	18615	18.90	19.5				
			7	1880	18900	19.17	19.5				
				1908.5	19185	19.11	19.5				
				1851.5	18615	18.82	19.5				
		15RB		1880	18900	19.09	19.5				
				1908.5	19185	19.06	19.5	0-2			

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			FDD Ba	nd 2 (Reduced	l Power)					
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)		
				1850.7	18607	18.84	19.5	0		
			0	1880	18900	19.17	19.5	0		
				1909.3	19193	19.07	19.5	0		
				1850.7	18607	18.84	19.5	0		
		1 RB	2	1880	18900	19.14	19.5	0		
				1909.3	19193	19.07	19.5	0		
				1850.7	18607	18.84	19.5	0		
			5	1880	18900	19.18	19.5	0		
				1909.3	19193	19.09	19.5	0		
				1850.7	18607	18.85	19.5	0		
	QPSK		0	1880	18900	19.17	19.5	0		
				1909.3	19193	19.12	19.5	0		
				1850.7	18607	18.84	19.5	0		
		3 RB	2	1880	18900	19.12	19.5	0		
				1909.3	19193	19.09	19.5	0		
				1850.7	18607	18.82	19.5	Allowed per 3GPP(dB) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		
			3	1880	18900	19.19	19.5			
				1909.3	19193	19.08	19.5	0		
				1850.7	18607	18.87	19.5	0-1		
		6F	RB	1880	18900	19.18	19.5	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		
1.4			-	1909.3	19193	19.08	19.5	0-1		
1.4				1850.7	18607	18.82	19.5	0-1		
			0	1880	18900	19.09	19.5	0-1		
				1909.3	19193	18.99	19.5	0-1		
				1850.7	18607	18.76	19.5	0-1		
		1 RB	2	1880	18900	19.03	19.5	0-1		
				1909.3	19193	18.99	19.5	0-1		
				1850.7	18607	18.80	19.5	0-1		
			5	1880	18900	19.07	19.5	0-1		
				1909.3	19193	18.94	19.5	0-1		
				1850.7	18607	18.77	19.5	0-1		
	16-QAM		0	1880	18900	19.10	19.5	0-1		
				1909.3	19193	19.01	19.5			
				1850.7	18607	18.77	19.5			
		3 RB	2	1880	18900	19.06	19.5	0 0		
				1909.3	19193	18.99	19.5			
				1850.7	18607	18.80	19.5			
			3	1880	18900	19.10	19.5			
				1909.3	19193	19.00	19.5			
				1850.7	18607	18.79	19.5			
		6RB		1880	18900	19.06	19.5			
				1909.3	19193	19.00	19.5	0-2		

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			FDD	Band 4 (Full P	ower)			
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
				1720	20050	23.19	24	0
			0	1732.5	20175	23.25	24	0
				1745	20300	23.05	24	0
				1720	20050	22.64	24	0
		1 RB	50	1732.5	20175	22.73	24	0
				1745	20300	23.05	24	0
				1720	20050	22.94	24	0
			99	1732.5	20175	23.24	24	0
				1745	20300	22.90	24	0
				1720	20050	22.00	23	0-1
	QPSK		0	1732.5	20175	22.14	23	0-1
				1745	20300	22.02	23	0-1
				1720	20050	22.05	23	0-1
		50 RB	25	1732.5	20175	21.94	23	0-1
				1745	20300	22.02	23	0-1
			50	1720	20050	21.93	23	0-1
				1732.5	20175	21.99	23	0-1
				1745	20300	21.99	23	0-1
				1720	20050	22.01	23	0-1
		100)RB	1732.5	20175	22.04	23	0-1
20				1745	20300	21.93	23	0-1
20			0	1720	20050	21.82	23	0-1
				1732.5	20175	21.84	23	0-1
		1 RB		1745	20300	22.38	23	0-1
			50	1720	20050	21.70	23	0-1
				1732.5	20175	21.60	23	0-1
				1745	20300	22.47	23	0-1
				1720	20050	21.70	23	0-1
			99	1732.5	20175	21.73	23	0-1
				1745	20300	21.70	23	0-1
				1720	20050	20.91	22	0-2
	16-QAM		0	1732.5	20175	20.95	22	0-2
				1745	20300	21.07	22	0-2
				1720	20050	20.92	22	0-2
		50 RB	25	1732.5	20175	20.87	22	0-2
				1745	20300	21.08	22	0-2
				1720	20050	20.97	22	0-2
			50	1732.5	20175	20.93	22	0-2
				1745	20300	20.98	22	0-2
				1720	20050	21.04	22	0-2
		100)RB	1732.5	20175	20.86	22	0-2
				1745	20300	21.04	22	0-2

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			FDD	Band 4 (Full P	ower)			
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
				1717.5	20025	22.62	24	0
			0	1732.5	20175	22.99	24	0
				1747.5	20325	23.20	24	0
				1717.5	20025	23.00	24	0
		1 RB	36	1732.5	20175	22.87	24	0
				1747.5	20325	22.78	24	0
				1717.5	20025	22.87	24	0
			74	1732.5	20175	22.81	24	0
				1747.5	20325	22.95	24	0
				1717.5	20025	21.75	23	0-1
	QPSK		0	1732.5	20175	21.98	23	0-1
				1747.5	20325	21.99	23	0-1
				1717.5	20025	22.05	23	0-1
		36 RB	18	1732.5	20175	21.96	23	0-1
				1747.5	20325	21.95	23	0-1
			37	1717.5	20025	21.82	23	0-1
				1732.5	20175	21.98	23	0-1
				1747.5	20325	21.80	23	0-1
		75RB		1717.5	20025	22.00	23	0-1
				1732.5	20175	22.03	23	0-1
15				1747.5	20325	21.87	23	0-1
15			0	1717.5	20025	21.79	23	0-1
				1732.5	20175	21.37	23	0-1
		1 RB		1747.5	20325	21.56	23	0-1
			36	1717.5	20025	22.48	23	0-1
				1732.5	20175	21.68	23	0-1
				1747.5	20325	21.73	23	0-1
				1717.5	20025	22.21	23	0-1
			74	1732.5	20175	21.34	23	0-1
				1747.5	20325	21.63	23	0-1
				1717.5	20025	20.79	22	0-2
	16-QAM		0	1732.5	20175	20.92	22	0-2
				1747.5	20325	20.97	22	0-2
				1717.5	20025	20.89	22	0-2
		36 RB	18	1732.5	20175	20.92	22	0-2
				1747.5	20325	20.86	22	0-2
				1717.5	20025	20.75	22	0-2
			37	1732.5	20175	20.85	22	0-2
				1747.5	20325	20.86	22	0-2
				1717.5	20025	20.98	22	0-2
		75	RB	1732.5	20175	20.98	22	0-2
				1747.5	20325	21.39	22	0-2

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			FDD	Band 4 (Full P	ower)			
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
				1715	20000	22.92	24	0
			0	1732.5	20175	22.86	24	0
				1750	20350	22.90	24	0
				1715	20000	22.83	24	0
		1 RB	25	1732.5	20175	22.81	24	0
				1750	20350	22.70	24	0
				1715	20000	22.85	24	0
			49	1732.5	20175	22.82	24	0
				1750	20350	22.84	24	0
				1715	20000	21.89	23	0-1
	QPSK		0	1732.5	20175	21.83	23	0-1
				1750	20350	22.10	23	0-1
				1715	20000	22.31	23	0-1
		25 RB	12	1732.5	20175	21.80	23	0-1
				1750	20350	21.83	23	0-1
			25	1715	20000	22.00	23	0-1
				1732.5	20175	21.91	23	0-1
				1750	20350	22.11	23	0-1
				1715	20000	22.20	23	0-1
		50	RB	1732.5	20175	21.99	23	0-1
10				1750	20350	22.11	23	0-1
10			0	1715	20000	22.19	23	0-1
				1732.5	20175	21.71	23	0-1
		1 RB		1750	20350	22.11	23	0-1
				1715	20000	21.84	23	0-1
			25	1732.5	20175	21.62	23	0-1
				1750	20350	22.19	23	0-1
				1715	20000	21.55	23	0-1
			49	1732.5	20175	22.08	23	0-1
				1750	20350	21.74	23	0-1
				1715	20000	20.97	22	0-2
	16-QAM		0	1732.5	20175	20.91	22	0-2
				1750	20350	21.14	22	0-2
				1715	20000	20.84	22	0-2
		25 RB	12	1732.5	20175	20.88	22	0-2
				1750	20350	21.29	22	0-2
				1715	20000	20.96	22	0-2
			25	1732.5	20175	20.86	22	0-2
				1750	20350	21.14	22	0-2
				1715	20000	21.26	22	0-2
		50	RB	1732.5	20175	20.97	22	0-2
				1750	20350	21.14	22	0-2

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			FDD	Band 4 (Full P	ower)			
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
				1712.5	19975	23.20	24	0
			0	1732.5	20175	22.94	24	0
				1752.5	20375	22.93	24	0
				1712.5	19975	22.85	24	0
		1 RB	12	1732.5	20175	22.98	24	0
				1752.5	20375	23.12	24	0
				1712.5	19975	22.91	24	0
			24	1732.5	20175	22.85	24	0
				1752.5	20375	22.94	24	0
				1712.5	19975	21.93	23	0-1
	QPSK		0	1732.5	20175	22.01	23	0-1
				1752.5	20375	22.24	23	0-1
				1712.5	19975	21.90	23	0-1
		12 RB	6	1732.5	20175	21.82	23	0-1
				1752.5	20375	21.88	23	0-1
			13	1712.5	19975	21.98	23	0-1
				1732.5	20175	21.86	23	0-1
				1752.5	20375	22.24	23	0-1
				1712.5	19975	21.95	23	0-1
		25RB		1732.5	20175	21.90	23	0-1
5					20375	22.24	23	0-1
5			0	1712.5	19975	21.58	23	0-1
				1732.5	20175	21.77	23	0-1
				1752.5	20375	22.05	23	0-1
		1 RB	12	1712.5	19975	22.32	23	0-1
				1732.5	20175	21.54	23	0-1
				1752.5	20375	22.16	23	0-1
				1712.5	19975	21.58	23	0-1
			24	1732.5	20175	22.00	23	0-1
				1752.5	20375	21.90	23	0-1
				1712.5	19975	20.94	22	0-2
	16-QAM		0	1732.5	20175	20.83	22	0-2
				1752.5	20375	20.81	22	0-2
				1712.5	19975	20.93	22	0-2
		12 RB	6	1732.5	20175	20.99	22	0-2
				1752.5	20375	20.97	22	0-2
				1712.5	19975	21.04	22	0-2
			13	1732.5	20175	21.05	22	0-2
				1752.5	20375	20.91	22	0-2
				1712.5	19975	20.94	22	0-2
		25	RB	1732.5	20175	20.97	22	0-2
				1752.5	20375	20.80	22	0-2

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			FDD	Band 4 (Full P	ower)			
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
				1711.5	19965	22.79	24	0
			0	1732.5	20175	22.82	24	0
				1753.5	20385	23.20	24	0
				1711.5	19965	22.80	24	0
		1 RB	7	1732.5	20175	22.70	24	0
				1753.5	20385	23.10	24	0
				1711.5	19965	22.75	24	0
			14	1732.5	20175	22.78	24	0
				1753.5	20385	22.96	24	0
				1711.5	19965	21.90	23	0-1
	QPSK		0	1732.5	20175	21.96	23	0-1
				1753.5	20385	21.80	23	0-1
				1711.5	19965	21.90	23	0-1
		8 RB	4	1732.5	20175	21.99	23	0-1
				1753.5	20385	21.87	23	0-1
			7	1711.5	19965	21.93	23	0-1
				1732.5	20175	21.96	23	0-1
				1753.5	20385	22.26	23	0-1
				1711.5	19965	21.96	23	0-1
		15	RB	1732.5	20175	21.94	23	0-1
3				1753.5	20385	21.80	23	0-1
5				1711.5	19965	22.10	23	0-1
			0	1732.5	20175	22.18	23	0-1
				1753.5	20385	21.71	23	0-1
		1 RB	7	1711.5	19965	22.16	23	0-1
				1732.5	20175	21.59	23	0-1
				1753.5	20385	22.16	23	0-1
				1711.5	19965	22.01	23	0-1
			14	1732.5	20175	21.90	23	0-1
				1753.5	20385	21.76	23	0-1
				1711.5	19965	20.91	22	0-2
	16-QAM		0	1732.5	20175	20.80	22	0-2
				1753.5	20385	20.92	22	0-2
				1711.5	19965	20.95	22	0-2
		8 RB	4	1732.5	20175	20.98	22	0-2
				1753.5	20385	20.99	22	0-2
				1711.5	19965	20.99	22	0-2
			7	1732.5	20175	21.10	22	0-2
				1753.5	20385	20.91	22	0-2
				1711.5	19965	20.90	22	0-2
		15	RB	1732.5	20175	20.97	22	0-2
				1753.5	20385	20.81	22	0-2

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			FDD	Band 4 (Full P	ower)			
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
				1710.7	19957	22.83	24	0
			0	1732.5	20175	22.91	24	0
				1754.3	20393	23.09	24	0
				1710.7	19957	22.91	24	0
		1 RB	2	1732.5	20175	22.61	24	0
				1754.3	20393	23.12	24	0
				1710.7	19957	22.91	24	0
			5	1732.5	20175	22.98	24	0
				1754.3	20393	22.99	24	0
				1710.7	19957	22.84	24	0
	QPSK		0	1732.5	20175	22.90	24	0
				1754.3	20393	23.03	24	0
				1710.7	19957	22.95	24	0
		3 RB	2	1732.5	20175	22.95	24	0
				1754.3	20393	23.06	24	0
			3	1710.7	19957	22.86	24	0
				1732.5	20175	22.85	24	0
				1754.3	20393	23.02	24	0
				1710.7	19957	21.92	23	0-1
		6RB		1732.5	20175	22.04	23	0-1
1.4				1754.3	20393	22.23	23	0-1
1.4			0	1710.7	19957	22.09	23	0-1
				1732.5	20175	21.52	23	0-1
		1 RB		1754.3	20393	21.71	23	0-1
				1710.7	19957	21.32	23	0-1
				1732.5	20175	22.16	23	0-1
				1754.3	20393	21.84	23	0-1
				1710.7	19957	21.63	23	0-1
			5	1732.5	20175	21.57	23	0-1
				1754.3	20393	22.05	23	0-1
				1710.7	19957	21.94	23	0-1
	16-QAM		0	1732.5	20175	21.69	23	0-1
				1754.3	20393	21.51	23	0-1
				1710.7	19957	21.89	23	0-1
		3 RB	2	1732.5	20175	22.12	23	0-1
				1754.3	20393	22.24	23	0-1
				1710.7	19957	21.99	23	0-1
			3	1732.5	20175	22.07	23	0-1
				1754.3	20393	22.17	23	0-1
				1710.7	19957	20.90	22	0-2
		6F	RB	1732.5	20175	20.69	22	0-2
				1754.3	20393	20.90	22	0-2

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			FDD Ba	nd 4 (Reduced	l Power)			
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
				1720	20050	19.37	19.5	0
			0	1732.5	20175	19.49	19.5	0
				1745	20300	19.43	19.5	0
				1720	20050	19.29	19.5	0
		1 RB	50	1732.5	20175	19.23	19.5	0
				1745	20300	19.30	19.5	0
				1720	20050	19.27	19.5	0
			99	1732.5	20175	19.35	19.5	0
				1745	20300	19.42	19.5	0
				1720	20050	19.37	19.5	0-1
	QPSK		0	1732.5	20175	19.49	19.5	0-1
				1745	20300	19.44	19.5	0-1
				1720	20050	19.27	19.5	0-1
		50 RB	25	1732.5	20175	19.33	19.5	0-1
				1745	20300	19.42	19.5	0-1
			50	1720	20050	19.22	19.5	0-1
				1732.5	20175	19.30	19.5	0-1
				1745	20300	19.36	19.5	0-1
		100RB		1720	20050	19.34	19.5	0-1
				1732.5	20175	19.40	19.5	0-1
20				1745	20300	19.33	19.5	0-1
20		1 RB	0	1720	20050	19.37	19.5	0-1
				1732.5	20175	19.44	19.5	0-1
				1745	20300	19.40	19.5	0-1
			50	1720	20050	19.27	19.5	0-1
				1732.5	20175	19.28	19.5	0-1
				1745	20300	19.31	19.5	0-1
				1720	20050	19.24	19.5	0-1
			99	1732.5	20175	19.34	19.5	0-1
				1745	20300	19.35	19.5	0-1
				1720	20050	19.39	19.5	0-2
	16-QAM		0	1732.5	20175	19.36	19.5	0-2
				1745	20300	19.42	19.5	0-2
			a-	1720	20050	19.35	19.5	0-2
		50 RB	25	1732.5	20175	19.35	19.5	0-2
				1745	20300	19.47	19.5	0-2
			50	1720	20050	19.29	19.5	0-2
			50	1732.5	20175	19.34	19.5	0-2
				1745	20300	19.49	19.5	0-2
				1720	20050	19.41	19.5	0-2
		100)RB	1732.5	20175	19.36	19.5	0-2
				1745	20300	19.47	19.5	0-2

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			FDD Ba	nd 4 (Reduced	l Power)			
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
				1717.5	20025	19.40	19.5	0
			0	1732.5	20175	19.45	19.5	0
				1747.5	20325	19.45	19.5	0
				1717.5	20025	19.36	19.5	0
		1 RB	36	1732.5	20175	19.30	19.5	0
				1747.5	20325	19.36	19.5	0
				1717.5	20025	19.35	19.5	0
			74	1732.5	20175	19.39	19.5	0
				1747.5	20325	19.38	19.5	0
				1717.5	20025	19.30	19.5	0-1
	QPSK		0	1732.5	20175	19.33	19.5	0-1
				1747.5	20325	19.42	19.5	0-1
				1717.5	20025	19.37	19.5	0-1
		36 RB	18	1732.5	20175	19.26	19.5	0-1
				1747.5	20325	19.35	19.5	0-1
			37	1717.5	20025	19.17	19.5	0-1
				1732.5	20175	19.27	19.5	0-1
				1747.5	20325	19.44	19.5	0-1
		75RB		1717.5	20025	19.31	19.5	0-1
				1732.5	20175	19.35	19.5	0-1
15				1747.5	20325	19.44	19.5 19.5 19.5	0-1
15			0	1717.5	20025	19.36	19.5	0-1
				1732.5	20175	19.41	19.5	0-1
				1747.5	20325	19.47	19.5	0-1
			36	1717.5	20025	19.34	19.5	0-1
		1 RB		1732.5	20175	19.28	19.5	0-1
				1747.5	20325	19.30	19.5	0-1
				1717.5	20025	19.33	19.5	0-1
			74	1732.5	20175	19.35	19.5	0-1
				1747.5	20325	19.37	19.5	0-1
				1717.5	20025	19.35	19.5	0-2
	16-QAM		0	1732.5	20175	19.31	19.5	0-2
				1747.5	20325	19.40	19.5	0-2
				1717.5	20025	19.37	19.5	0-2
		36 RB	18	1732.5	20175	19.32	19.5	0-2
				1747.5	20325	19.34	19.5	0-2
				1717.5	20025	19.20	19.5	0-2
			37	1732.5	20175	19.28	19.5	0-2
				1747.5	20325	19.45	19.5	0-2
				1717.5	20025	19.32	19.5	0-2
		75	RB	1732.5	20175	19.35	19.5	0-2
				1747.5	20325	19.43	19.5	0-2

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			FDD Ba	nd 4 (Reduced	l Power)			
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
				1715	20000	19.32	19.5	0
			0	1732.5	20175	19.31	19.5	0
				1750	20350	19.40	19.5	0
				1715	20000	19.28	19.5	0
		1 RB	25	1732.5	20175	19.30	19.5	0
				1750	20350	19.44	19.5	0
				1715	20000	19.27	19.5	0
			49	1732.5	20175	19.41	19.5	0
				1750	20350	19.37	19.5	0
				1715	20000	19.29	19.5	0-1
	QPSK		0	1732.5	20175	19.26	19.5	0-1
				1750	20350	19.45	19.5	0-1
				1715	20000	19.27	19.5	0-1
		25 RB	12	1732.5	20175	19.26	19.5	0-1
				1750	20350	19.41	19.5	0-1
				1715	20000	19.31	19.5	0-1
			25	1732.5	20175	19.29	19.5	0-1
				1750	20350	19.37	19.5	0-1
				1715	20000	19.33	19.5	0-1
		50	RB	1732.5	20175	19.34	19.5	0-1
10			-	1750	20350	19.48	19.5	0-1
10				1715	20000	19.31	19.5	0-1
			0	1732.5	20175	19.30	19.5	0-1
				1750	20350	19.44	19.5	0-1
				1715	20000	19.25	19.5	0-1
		1 RB	25	1732.5	20175	19.27	19.5	0-1
				1750	20350	19.40	19.5	0-1
				1715	20000	19.24	19.5	0-1
			49	1732.5	20175	19.34	19.5	0-1
				1750	20350	19.37	19.5	0-1
				1715	20000	19.35	19.5	0-2
	16-QAM		0	1732.5	20175	19.33	19.5	0-2
				1750	20350	19.43	19.5	0-2
				1715	20000	19.37	19.5	0-2
		25 RB	12	1732.5	20175	19.35	19.5	0-2
				1750	20350	19.48	19.5	0-2
				1715	20000	19.44	19.5	0-2
			25	1732.5	20175	19.30	19.5	0-2
				1750	20350	19.45	19.5	0-2
				1715	20000	19.38	19.5	0-2
		50RB		1732.5	20175	19.32	19.5	0-2
				1750	20350	19.50	19.5	0-2

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			FDD Ba	nd 4 (Reduced	l Power)			
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
				1712.5	19975	19.27	19.5	0
			0	1732.5	20175	19.26	19.5	0
				1752.5	20375	19.43	19.5	0
				1712.5	19975	19.17	19.5	0
		1 RB	12	1732.5	20175	19.25	19.5	0
				1752.5	20375	19.42	19.5	0
				1712.5	19975	19.30	19.5	0
			24	1732.5	20175	19.25	19.5	0
				1752.5	20375	19.36	19.5	0
				1712.5	19975	19.32	19.5	0-1
	QPSK		0	1732.5	20175	19.31	19.5	0-1
				1752.5	20375	19.39	19.5	0-1
				1712.5	19975	19.20	19.5	0-1
		12 RB	6	1732.5	20175	19.29	19.5	0-1
				1752.5	20375	19.38	19.5	0-1
				1712.5	19975	19.22	19.5	0-1
			13	1732.5	20175	19.26	19.5	0-1
				1752.5	20375	19.45	19.5	0-1
				1712.5	19975	19.33	19.5	0-1
		25	RB	1732.5	20175	19.30	19.5	0-1
5				1752.5	20375	19.47	19.5	0-1
Ũ				1712.5	19975	19.19	19.5	0-1
			0	1732.5	20175	19.24	19.5	0-1
				1752.5	20375	19.38	19.5	0-1
				1712.5	19975	19.13	19.5	0-1
		1 RB	12	1732.5	20175	19.22	19.5	0-1
				1752.5	20375	19.33	19.5	0-1
				1712.5	19975	19.14	19.5	0-1
			24	1732.5	20175	19.23	19.5	0-1
				1752.5	20375	19.30	19.5	0-1
			_	1712.5	19975	19.38	19.5	0-2
	16-QAM		0	1732.5	20175	19.34	19.5	0-2
				1752.5	20375	19.48	19.5	0-2
		10.55		1712.5	19975	19.32	19.5	0-2
	12 RB	12 RB	6	1732.5	20175	19.32	19.5	0-2
				1752.5	20375	19.48	19.5	0-2
			40	1712.5	19975	19.34	19.5	0-2
			13	1732.5	20175	19.32	19.5	0-2
				1752.5	20375	19.43	19.5	0-2
			1712.5	19975	19.38	19.5	0-2	
		25RB		1732.5 1752.5	20175	19.31	19.5	0-2
					20375	19.44	19.5	0-2

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			FDD Ba	nd 4 (Reduced	l Power)			
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
				1711.5	19965	19.34	19.5	0
			0	1732.5	20175	19.26	19.5	0
				1753.5	20385	19.46	19.5	0
				1711.5	19965	19.15	19.5	0
		1 RB	7	1732.5	20175	19.24	19.5	0
				1753.5	20385	19.34	19.5	0
				1711.5	19965	19.29	19.5	0
			14	1732.5	20175	19.30	19.5	0
				1753.5	20385	19.40	19.5	0
				1711.5	19965	19.28	19.5	0-1
	QPSK		0	1732.5	20175	19.31	19.5	0-1
				1753.5	20385	19.42	19.5	0-1
				1711.5	19965	19.36	19.5	0-1
		8 RB	4	1732.5	20175	19.27	19.5	0-1
				1753.5	20385	19.39	19.5	0-1
				1711.5	19965	19.22	19.5	0-1
			7	1732.5	20175	19.30	19.5	0-1
				1753.5	20385	19.38	19.5	0-1
				1711.5	19965	19.31	19.5	0-1
		15	RB	1732.5	20175	19.26	19.5	0-1
3				1753.5	20385	19.40	19.5	0-1
5				1711.5	19965	19.28	19.5	0-1
			0	1732.5	20175	19.28	19.5	0-1
				1753.5	20385	19.43	19.5	0-1
				1711.5	19965	19.19	19.5	0-1
		1 RB	7	1732.5	20175	19.27	19.5	0-1
				1753.5	20385	19.36	19.5	0-1
				1711.5	19965	19.20	19.5	0-1
			14	1732.5	20175	19.25	19.5	0-1
				1753.5	20385	19.34	19.5	0-1
				1711.5	19965	19.37	19.5	0-2
	16-QAM		0	1732.5	20175	19.35	19.5	0-2
				1753.5	20385	19.46	19.5	0-2
				1711.5	19965	19.37	19.5	0-2
		8 RB	4	1732.5	20175	19.33	19.5	0-2
				1753.5	20385	19.50	19.5	0-2
				1711.5	19965	19.33	19.5	0-2
			7	1732.5	20175	19.33	19.5	0-2
				1753.5	20385	19.43	19.5	0-2
				1711.5	19965	19.35	19.5	0-2
		15RE	RB	1732.5	20175	19.31	19.5	0-2
				1753.5	20385	19.42	19.5	0-2

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			FDD Ba	nd 4 (Reduced	d Power)			
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
				1710.7	19957	19.31	19.5	0
			0	1732.5	20175	19.31	19.5	0
				1754.3	20393	19.42	19.5	0
				1710.7	19957	19.32	19.5	0
		1 RB	2	1732.5	20175	19.32	19.5	0
				1754.3	20393	19.44	19.5	0
				1710.7	19957	19.35	19.5	0
			5	1732.5	20175	19.32	19.5	0
				1754.3	20393	19.46	19.5	0
				1710.7	19957	19.30	19.5	0
	QPSK		0	1732.5	20175	19.34	19.5	0
				1754.3	20393	19.47	19.5	0
				1710.7	19957	19.36	19.5	0
		3 RB	2	1732.5	20175	19.30	19.5	0
				1754.3	20393	19.42	19.5	0
				1710.7	19957	19.34	19.5	0
			3	1732.5	20175	19.30	19.5	0
				1754.3	20393	19.38	19.5	0
				1710.7	19957	19.31	19.5	0-1
		6F	RB	1732.5	20175	19.34	19.5	0-1
1.4				1754.3	20393	19.43	19.5	0-1
1.4				1710.7	19957	19.30	19.5	0-1
			0	1732.5	20175	19.31	19.5	0-1
				1754.3	20393	19.37	19.5	0-1
				1710.7	19957	19.25	19.5	0-1
		1 RB	2	1732.5	20175	19.24	19.5	0-1
				1754.3	20393	19.36	19.5	0-1
				1710.7	19957	19.24	19.5	0-1
			5	1732.5	20175	19.22	19.5	0-1
				1754.3	20393	19.34	19.5	0-1
				1710.7	19957	19.29	19.5	0-1
	16-QAM		0	1732.5	20175	19.26	19.5	0-1
				1754.3	20393	19.36	19.5	0-1
				1710.7	19957	19.26	19.5	0-1
		3 RB	2	1732.5	20175	19.25	19.5	0-1
				1754.3	20393	19.34	19.5	0-1
				1710.7	19957	19.33	19.5	0-1
			3	1732.5	20175	19.29	19.5	0-1
				1754.3	20393	19.37	19.5	0-1
				1710.7	19957	19.23	19.5	0-2
	6RB		RB	1732.5	20175	19.18	19.5	0-2
			1754.3	20393	19.37	19.5	0-2	

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			FDD	Band 5 (Full P	ower)						
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)			
				829	20450	22.87	24	0			
			0	836.5	20525	22.84	24	0			
				844	20600	22.86	24	0			
				829	20450	22.78	24	0			
		1 RB	25	836.5	20525	22.33	24	0			
				844	20600	22.81	24	0			
				829	20450	22.67	24	0			
			49	836.5	20525	22.61	24	0			
				844	20600	22.38	24	0			
				829	20450	21.71	23	0-1			
	QPSK		0	836.5	20525	21.76	23	0-1			
				844	20600	21.78	23	0-1			
				829	20450	21.87	23	0-1			
		25 RB	12	836.5	20525	21.62	23	0-1			
				844	20600	21.86	23	0-1			
				829	20450	21.85	23	0-1			
			25	836.5	20525	21.43	23	0-1			
				844	20600	21.80	23	0-1			
				829	20450	21.75	23	0-1			
		50	RB	836.5	20525	21.65	23	0-1			
10				844	20600	21.79	23	0-1 0-1 0-1 0-1			
10			0	829	20450	21.39	23	0-1			
			0	836.5	20525	21.87	23	0-1			
				844	20600	21.37	23	0-1			
				829	20450	21.67	23	0-1			
		1 RB	25	836.5	20525	21.28	23	0-1			
				844	20600	21.37	23	0-1			
				829	20450	21.75	23	0-1			
			49	836.5	20525	21.60	23	0-1			
				844	20600	21.47	23	0-1			
				829	20450	20.89	22	0-2			
	16-QAM		0	836.5	20525	20.65	22	0-2			
				844	20600	20.80	22	0-2			
			40	829	20450	20.78	22	0-2			
		25 RB	12	836.5	20525	20.63	22	0-2			
				844	20600	20.89	22	0-2			
			05	829	20450	20.68	22	0-2			
			25	836.5	20525	20.41	22	0-2			
				844	20600	20.88	22	0-2			
		50	חח	829	20450	20.97	22	0-2			
		50	RB	836.5	20525	20.63	22	0-2			
				844	20600	20.78	22	0-2			

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			FDD	Band 5 (Full P	ower)			
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
				826.5	20425	22.72	24	0
			0	836.5	20525	22.59	24	0
				846.5	20625	22.71	24	0
				826.5	20425	22.72	24	0
		1 RB	12	836.5	20525	22.48	24	0
				846.5	20625	22.76	24	0
				826.5	20425	22.76	24	0
			24	836.5	20525	22.32	24	0
				846.5	20625	22.79	24	0
				826.5	20425	21.72	23	0-1
	QPSK		0	836.5	20525	21.73	23	0-1
				846.5	20625	21.87	23	0-1
				826.5	20425	21.76	23	0-1
		12 RB	6	836.5	20525	21.55	23	0-1
				846.5	20625	21.86	23	0-1
				826.5	20425	21.84	23	0-1
			13	836.5	20525	21.46	23	0-1
				846.5	20625	21.82	23	0-1
				826.5	20425	21.71	23	0-1
		25	RB	836.5	20525	21.63	23	0-1
5				846.5	20625	21.83	23	0-1
Ū				826.5				0-1
			0	836.5	20425 21.76 23 0- 20525 21.55 23 0- 20625 21.86 23 0- 20425 21.84 23 0- 20525 21.46 23 0- 20525 21.46 23 0- 20625 21.82 23 0- 20625 21.82 23 0- 20625 21.71 23 0- 20525 21.63 23 0- 20525 21.63 23 0- 20525 21.63 23 0- 20625 21.83 23 0- 20625 21.36 23 0- 20525 21.36 23 0- 20625 21.90 23 0- 20425 21.77 23 0- 20525 21.27 23 0- 20525 21.85 23 0-	0-1		
				846.5				0-1
				826.5				0-1
		1 RB	12	836.5				0-1
				846.5				0-1
				826.5	20425	21.39	23	0-1
			24	836.5	20525	21.06	23	0-1
				846.5	20625	21.21	23	0-1
				826.5	20425	20.87	22	0-2
	16-QAM		0	836.5	20525	20.76	22	0-2
				846.5	20625	20.85	22	0-2
		40.55		826.5	20425	20.82	22	0-2
		12 RB	6	836.5	20525	20.63	22	0-2
				846.5	20625	20.75	22	0-2
			10	826.5	20425	20.82	22	0-2
			13	836.5	20525	20.48	22	0-2
				846.5	20625	20.93	22	0-2
		05	DD	826.5	20425	20.74	22	0-2
		25RB	κĎ	836.5	20525	20.58	22	0-2
				846.5	20625	20.86	22	0-2

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			FDD	Band 5 (Full P	ower)			
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
				825.5	20415	22.81	24	0
			0	836.5	20525	22.66	24	0
				847.5	20635	22.84	24	0
				825.5	20415	22.55	24	0
		1 RB	7	836.5	20525	22.48	24	0
				847.5	20635	22.79	24	0
				825.5	20415	22.71	24	0
			14	836.5	20525	22.36	24	0
				847.5	20635	22.88	24	0
				825.5	20415	21.72	23	0-1
	QPSK		0	836.5	20525	21.66	23	0-1
				847.5	20635	21.82	23	0-1
				825.5	20415	21.72	23	0-1
		8 RB	4	836.5	20525	21.51	23	0-1
				847.5	20635	21.80	23	0-1
				825.5	20415	21.77	23	0-1
			7	836.5	20525	21.59	23	0-1
				847.5	20635	21.88	23	0-1
				825.5	20415	21.80	23	0-1
		15	RB	836.5	20525	21.66	23	0-1
3				847.5	20635	21.84	23	0-1
5				825.5	20415	21.32	23	0-1
			0	836.5	20525	21.69	23	0-1
				847.5	20635	21.68	23	0-1
				825.5	20415	21.74	23	0-1
		1 RB	7	836.5	20525	21.49	23	0-1
				847.5	20635	21.51	23	0-1
				825.5	20415	21.79	23	0-1
			14	836.5	20525	21.34	23	0-1
				847.5	20635	21.84	23	0-1
				825.5	20415	20.74	22	0-2
	16-QAM		0	836.5	20525	20.74	22	0-2
				847.5	20635	20.96	22	0-2
				825.5	20415	20.66	22	0-2
		8 RB	4	836.5	20525	20.66	22	0-2
				847.5	20635	20.83	22	0-2
				825.5	20415	20.85	22	0-2
			7	836.5	20525	20.66	22	0-2
				847.5	20635	20.86	22	0-2
				825.5	20415	20.73	22	0-2
		15RB	RB	836.5	20525	20.53	22	0-2
				847.5	20635	20.87	22	0-2

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			FDD	Band 5 (Full P	ower)			
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
				824.7	20407	22.74	24	0
			0	836.5	20525	22.54	24	0
				848.3	20643	22.84	24	0
				824.7	20407	22.80	24	0
		1 RB	2	836.5	20525	22.53	24	0
				848.3	20643	22.82	24	0
				824.7	20407	22.72	24	0
			5	836.5	20525	22.49	24	0
				848.3	20643	22.91	24	0
				824.7	20407	22.83	24	0
	QPSK		0	836.5	20525	22.57	24	0
				848.3	20643	22.77	24	0
				824.7	20407	22.78	24	0
		3 RB	2	836.5	20525	22.52	24	0
				848.3	20643	22.73	24	0
				824.7	20407	22.77	24	0
			3	836.5	20525	22.48	24	0
				848.3	20643	22.67	24	0
				824.7	20407	21.77	23	0-1
		6F	RB	836.5	20525	21.60	23	0-1
1.4				848.3	20643	21.89	23	0-1
1.4				824.7	20407	21.93	23	0-1
			0	836.5	20525	21.80	23	0-1
				848.3	20643	22.06	23	0-1
				824.7	20407	21.68	23	0-1
		1 RB	2	836.5	20525	21.18	23	0-1
				848.3	20643	21.48	23	0-1
				824.7	20407	21.51	23	0-1
			5	836.5	20525	21.89	23	0-1
				848.3	20643	21.99	23	0-1
				824.7	20407	21.80	23	0-1
	16-QAM		0	836.5	20525	21.58	23	0-1
				848.3	20643	21.85	23	0-1
				824.7	20407	21.84	23	0-1
		3 RB	2	836.5	20525	21.51	23	0-1
				848.3	20643	21.86	23	0-1
				824.7	20407	21.71	23	0-1
			3	836.5	20525	21.61	23	0-1
				848.3	20643	22.06	23	0-1
				824.7	20407	20.73	22	0-2
	6RB	RB	836.5	20525	20.37	22	0-2	
				848.3	20643	20.83	22	0-2

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			FDD	Band 7 (Full P	ower)			
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
				2510	20850	22.70	24	0
			0	2535	21100	22.88	24	0
				2560	21350	23.39	24	0
				2510	20850	22.61	24	0
		1 RB	50	2535	21100	22.90	24	0
				2560	21350	22.91	24	0
				2510	20850	22.67	24	0
			99	2535	21100	23.30	24	0
				2560	21350	22.96	24	0
				2510	20850	21.66	23	0-1
	QPSK		0	2535	21100	22.22	23	0-1
				2560	21350	22.14	23	0-1
				2510	20850	21.78	23	0-1
		50 RB	25	2535	21100	22.25	23	0-1
				2560	21350	22.51	23	0-1
				2510	20850	21.88	23	0-1
			50	2535	21100	22.27	23	0-1
				2560	21350	22.04	23	0-1
				2510	20850	21.55	23	0-1
		100	RB	2535	21100	22.13	23	0-1
20			-	2560	21350	22.29	23	0-1
20				2510	20850	21.83	23	0-1
			0	2535	21100	21.65	23	0-1
				2560	21350	22.19	23	0-1
				2510	20850	21.63	23	0-1
		1 RB	50	2535	21100	22.36	23	0-1
				2560	21350	21.84	23	0-1
				2510	20850	21.57	23	0-1
			99	2535	21100	21.63	23	0-1
				2560	21350	21.90	23	
				2510	20850	20.71	22	
	16-QAM		0	2535	21100	20.89	22	0-2
				2560	21350	21.16	22	0-2
				2510	20850	20.79	22	0-2
		50 RB	25	2535	21100	21.03	22	
				2560	21350	21.12	22	0-2
				2510	20850	20.90	22	0 0 0 0 0-1 0-1 0-1 0-1 0-1 0-1 0-1 0-1
			50	2535	21100	21.19	22	
				2560	21350	21.09	22	
				2510	20850	20.62	22	
	100RE	RB	2535	21100	21.06	22		
				2560	21350	20.93	22	0-2

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			FDD	Band 7 (Full P	ower)			
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
				2507.5	20825	22.62	24	0
			0	2535	21100	23.03	24	0
				2562.5	21375	22.98	24	0
				2507.5	20825	22.34	24	0
		1 RB	36	2535	21100	23.17	24	0
				2562.5	21375	22.94	24	0
				2507.5	20825	22.62	24	0
			74	2535	21100	23.27	24	0
				2562.5	21375	22.93	24	0
				2507.5	20825	21.70	23	0-1
	QPSK		0	2535	21100	22.11	23	0-1
				2562.5	21375	22.14	23	0-1
				2507.5	20825	21.79	23	0-1
		36 RB	18	2535	21100	22.11	23	0-1
				2562.5	21375	22.04	23	0-1
				2507.5	20825	21.62	23	0-1
			37	2535	21100	22.14	23	0-1
				2562.5	21375	22.01	23	0-1
				2507.5	20825	21.77	23	0-1
		75	RB	2535	21100	22.11	23	0-1
15				2562.5	21375	21.92	23	0-1
15				2507.5	20825	21.14	23	0-1
			0	2535	21100	22.06	23	0-1
				2562.5	21375	21.64	23	0-1
				2507.5	20825	21.62	23	0-1
		1 RB	36	2535	21100	22.17	23	0-1
				2562.5	21375	21.49	23	0-1
				2507.5	20825	21.93	23	0-1
			74	2535	21100	22.35	23	0-1
				2562.5	21375	21.55	23	0-1
				2507.5	20825	20.72	22	0-2
	16-QAM		0	2535	21100	21.30	22	0-2
				2562.5	21375	21.28	22	0-2
				2507.5	20825	20.82	22	0-2
		36 RB	18	2535	21100	21.28	22	0 0 0 0 0 0 0 0 0 0 0 0 0 0
				2562.5	21375	21.07	22	
				2507.5	20825	20.69	22	
			37	2535	21100	21.10	22	
				2562.5	21375	21.00	22	
				2507.5	20825	20.77	22	
		75	RB	2535	21100	21.10	22	
				2562.5	21375	21.05	22	0-2

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			FDD	Band 7 (Full P	ower)						
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)			
				2505	20800	22.57	24	0			
			0	2535	21100	22.95	24	0			
				2565	21400	23.04	24	0			
				2505	20800	22.76	24	0			
		1 RB	25	2535	21100	23.11	24	0			
				2565	21400	23.03	24	0			
				2505	20800	22.76	24	0			
			49	2535	21100	23.30	24	0			
				2565	21400	22.96	24	0			
				2505	20800	21.53	23	0-1			
	QPSK		0	2535	21100	22.07	23	0-1			
				2565	21400	21.99	23	0-1			
				2505	20800	21.72	23	0-1			
		25 RB	12	2535	21100	22.13	23	0-1			
				2565	21400	21.96	23	0-1			
				2505	20800	21.78	23	0-1			
			25	2535	21100	22.13	23	0-1			
				2565	21400	21.99	23	0-1			
				2505	20800	21.81	23	0-1			
		50	RB	2535	21100	22.17	23	0-1			
10			-	2565	21400	21.96	23	0-1 0-1 0-1 0-1 0-1 0-1 0-1 0-1 0-1			
10				2505	20800	22.03	23	0-1			
			0	2535	21100	21.38	23	0-1			
				2565	21400	22.02	23	0-1			
				2505	20800	21.68	23	0-1			
		1 RB	25	2535	21100	21.82	23	0-1			
				2565	21400	22.03	23	0-1			
				2505	20800	21.58	23	0-1			
			49	2535	21100	22.09	23	0-1			
				2565	21400	21.44	23	0-1			
				2505	20800	20.73	22	0-2			
	16-QAM		0	2535	21100	21.20	22	0-2			
				2565	21400	21.09	22	0-2			
				2505	20800	20.76	22	0-2			
		25 RB	12	2535	21100	21.26	22	0-2			
				2565	21400	21.00	22	0-2			
			<i>a</i> -	2505	20800	20.83	22	0-2			
			25	2535	21100	21.20	22	0-2			
				2565	21400	21.01	22	0-2			
				2505	20800	20.73	22	0-2			
		50RB	RB	2535	21100	21.09	22	0-2			
				2565	21400	20.97	22	0-2			

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			FDD	Band 7 (Full P	ower)			
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
				2502.5	20775	22.42	24	0
			0	2535	21100	23.15	24	0
				2567.5	21425	23.02	24	0
				2502.5	20775	22.68	24	0
		1 RB	12	2535	21100	23.25	24	0
				2567.5	21425	23.15	24	0
				2502.5	20775	22.78	24	0
			24	2535	21100	23.00	24	0
				2567.5	21425	23.08	24	0
				2502.5	20775	22.19	23	0-1
	QPSK		0	2535	21100	22.12	23	0-1
				2567.5	21425	21.98	23	0-1
				2502.5	20775	21.70	23	0-1
		12 RB	6	2535	21100	22.15	23	0-1
				2567.5	21425	21.75	23	0-1
				2502.5	20775	21.81	23	0-1
			13	2535	21100	22.16	23	0-1
				2567.5	21425	21.94	23	0-1
				2502.5	20775	21.73	23	0-1
		25	RB	2535	21100	22.13	23	0-1
5				2567.5	21425	22.06	23	0-1
5				2502.5	20775	21.57	23	0-1
			0	2535	21100	21.80	23	0-1
				2567.5	21425	21.84	23	0-1
				2502.5	20775	21.68	23	0-1
		1 RB	12	2535	21100	21.90	23	0-1
				2567.5	21425	22.04	23	0-1
				2502.5	20775	21.51	23	0-1
			24	2535	21100	21.90	23	0-1
				2567.5	21425	21.52	23	0-1
				2502.5	20775	20.86	22	0-2
	16-QAM		0	2535	21100	21.29	22	0-2
				2567.5	21425	21.01	22	0-2
				2502.5	20775	20.72	22	0-2
		12 RB	6	2535	21100	21.31	22	0-2
				2567.5	21425	20.83	22	0-2
				2502.5	20775	20.87	22	0-2
			13	2535	21100	21.22	22	0-2
				2567.5	21425	20.93	22	0-2
				2502.5	20775	20.75	22	0-2
		25	RB	2535	21100	21.23	22	0-2
				2567.5	21425	21.23	22	0-2

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			FDD Ba	nd 7 (Reduced	l Power)			
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
				2510	20850	17.64	18	0
			0	2535	21100	17.90	18	0
				2560	21350	18.00	18	0
				2510	20850	17.63	18	0
		1 RB	50	2535	21100	17.75	18	0
				2560	21350	17.74	18	0
				2510	20850	17.43	18	0
			99	2535	21100	17.60	18	0
				2560	21350	17.78	18	0
				2510	20850	17.65	18	0-1
	QPSK		0	2535	21100	17.78	18	0-1
				2560	21350	17.82	18	0-1
				2510	20850	17.75	18	0-1
		50 RB	25	2535	21100	17.82	18	0-1
				2560	21350	17.84	18	0-1
				2510	20850	17.64	18	0-1
			50	2535	21100	17.76	18	0-1
				2560	21350	17.79	18	0-1
				2510	20850	17.61	18	0-1
		100	ORB	2535	21100	17.79	18	0-1
20				2560	21350	17.80	18	0-1
20				2510	20850	17.29	18	0-1
			0	2535	21100	17.64	18	0-1
				2560	21350	18.00	18	0-1
				2510	20850	17.52	18	0-1
		1 RB	50	2535	21100	17.67	18	0-1
				2560	21350	17.75	18	0-1
				2510	20850	17.56	18	0-1
			99	2535	21100	17.92	18	0-1
				2560	21350	17.76	18	0-1
				2510	20850	17.72	18	0-2
	16-QAM		0	2535	21100	17.84	18	0-2
				2560	21350	17.99	18	0-2
				2510	20850	17.70	18	0-2
		50 RB	25	2535	21100	17.77	18	0-2
				2560	21350	17.77	18	0-2
				2510	20850	17.62	18	0-2
			50	2535	21100	17.90	18	0-1 0-1 0-1 0-1 0-1 0-1 0-1 0-1 0-1 0-1
				2560	21350	17.76	18	0-2
				2510	20850	17.60	18	0-2
		100	ORB	2535	21100	17.82	18	0-2
				2560	21350	17.94	18	0-2

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			FDD Ba	nd 7 (Reduced	l Power)			
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
				2507.5	20825	17.58	18	0
			0	2535	21100	17.76	18	0
				2562.5	21375	17.79	18	0
				2507.5	20825	17.58	18	0
		1 RB	36	2535	21100	17.77	18	0
				2562.5	21375	17.75	18	0
				2507.5	20825	17.66	18	0
			74	2535	21100	17.84	18	0
				2562.5	21375	17.76	18	0
				2507.5	20825	17.61	18	0-1
	QPSK		0	2535	21100	17.85	18	0-1
				2562.5	21375	17.74	18	0-1
				2507.5	20825	17.59	18	0-1
		36 RB	18	2535	21100	17.78	18	0-1
				2562.5	21375	17.75	18	0-1
				2507.5	20825	17.57	18	0-1
			37	2535	21100	17.74	18	0-1
				2562.5	21375	17.76	18	0-1
				2507.5	20825	17.59	18	0-1
		75	RB	2535	21100	17.78	18	0-1
15			-	2562.5	21375	17.73	18	0-1
10				2507.5	20825	17.37	18	0-1
			0	2535	21100	17.64	18	0-1
				2562.5	21375	17.90	18	0-1
				2507.5	20825	17.58	18	0-1
		1 RB	36	2535	21100	17.63	18	0-1
				2562.5	21375	17.68	18	0-1
				2507.5	20825	17.58	18	0-1
			74	2535	21100	17.74	18	0-1
				2562.5	21375	17.72	18	0-1
				2507.5	20825	17.46	18	0-2
	16-QAM		0	2535	21100	17.81	18	0-2
				2562.5	21375	17.89	18	0-2
				2507.5	20825	17.61	18	0-2
		36 RB	18	2535	21100	17.74	18	
				2562.5	21375	17.75	18	
				2507.5	20825	17.65	18	
			37	2535	21100	17.76	18	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
				2562.5	21375	17.76	18	
				2507.5	20825	17.60	18	
	75R	RB	2535	21100	17.77	18		
				2562.5	21375	17.73	18	0-2

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			FDD Ba	nd 7 (Reduced	l Power)			
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
				2505	20800	17.59	18	0
			0	2535	21100	17.77	18	0
				2565	21400	17.77	18	0
				2505	20800	17.58	18	0
		1 RB	25	2535	21100	17.72	18	0
				2565	21400	17.73	18	0
				2505	20800	17.63	18	0
			49	2535	21100	17.83	18	0
				2565	21400	17.78	18	0
				2505	20800	17.57	18	0-1
	QPSK		0	2535	21100	17.76	18	0-1
				2565	21400	17.72	18	0-1
				2505	20800	17.59	18	0-1
		25 RB	12	2535	21100	17.74	18	0-1
				2565	21400	17.77	18	0-1
				2505	20800	17.57	18	0-1
			25	2535	21100	17.76	18	0-1
				2565	21400	17.76	18	0-1
				2505	20800	17.58	18	0-1
		50	RB	2535	21100	17.74	18	0-1
10				2565	21400	17.77	18	0-1
10				2505	20800	17.33	18	0-1
			0	2535	21100	17.72	18	0-1
				2565	21400	17.82	18	0-1
				2505	20800	17.51	18	0-1
1		1 RB	25	2535	21100	17.64	18	0-1
				2565	21400	17.69	18	0-1
1				2505	20800	17.56	18	0-1
			49	2535	21100	17.77	18	0-1
				2565	21400	17.71	18	0-1
				2505	20800	17.46	18	0-2
	16-QAM		0	2535	21100	17.81	18	0-2
				2565	21400	17.80	18	0-2
				2505	20800	17.67	18	0-2
		25 RB	12	2535	21100	17.80	18	
				2565	21400	17.79	18	
			a -	2505	20800	17.68	18	0-2
			25	2535	21100	17.77	18	0 0 0 0 0 0 0 0 0 1 0 0 1 0 -1 0 -1 0 -
				2565	21400	17.77	18	
				2505	20800	17.58	18	
	50R	КB	2535	21100	17.78	18		
				2565	21400	17.76	18	0-2

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			FDD Ba	nd 7 (Reduced	l Power)			
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
				2502.5	20775	17.56	18	0
			0	2535	21100	17.79	18	0
				2567.5	21425	17.71	18	0
				2502.5	20775	17.56	18	0
		1 RB	12	2535	21100	17.72	18	0
				2567.5	21425	17.68	18	0
				2502.5	20775	17.60	18	0
			24	2535	21100	17.74	18	0
				2567.5	21425	17.73	18	0
				2502.5	20775	17.62	18	0-1
	QPSK		0	2535	21100	17.79	18	0-1
				2567.5	21425	17.69	18	0-1
				2502.5	20775	17.60	18	0-1
		12 RB	6	2535	21100	17.78	18	0-1
				2567.5	21425	17.72	18	0-1
				2502.5	20775	17.59	18	0-1
			13	2535	21100	17.80	18	0-1
				2567.5	21425	17.72	18	0-1
				2502.5	20775	17.60	18	0-1
		25	RB	2535	21100	17.79	18	0-1
5				2567.5	21425	17.71	18	0-1
5				2502.5	20775	17.47	18	0-1
			0	2535	21100	17.71	18	0-1
				2567.5	21425	17.65	18	0-1
				2502.5	20775	17.54	18	0-1
		1 RB	12	2535	21100	17.64	18	0-1
				2567.5	21425	17.63	18	0-1
				2502.5	20775	17.56	18	0-1
			24	2535	21100	17.67	18	0-1
				2567.5	21425	17.65	18	0-1
				2502.5	20775	17.56	18	0-2
	16-QAM		0	2535	21100	17.80	18	0-2
				2567.5	21425	17.78	18	0-2
				2502.5	20775	17.63	18	0-2
		12 RB	6	2535	21100	17.78	18	0-2
				2567.5	21425	17.77	18	0-2
				2502.5	20775	17.68	18	0-2
			13	2535	21100	17.78	18	0-2
				2567.5	21425	17.78	18	0-2
				2502.5	20775	17.61	18	0-2
	25RB	RB	2535	21100	17.76	18	0-2	
				2567.5	21425	17.80	18	0-2

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			FDD E	Band 12 (Full F	Power)			
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
				704	23060	22.73	24	0
			0	707.5	23095	22.83	24	0
				711	23130	22.69	24	0
				704	23060	22.66	24	0
		1 RB	25	707.5	23095	22.63	24	0
				711	23130	22.57	24	0
				704	23060	22.48	24	0
			49	707.5	23095	22.61	24	0
				711	23130	22.53	24	0
				704	23060	21.66	23	0-1
	QPSK		0	707.5	23095	21.75	23	0-1
				711	23130	21.68	23	0-1
				704	23060	21.78	23	0-1
		25 RB	12	707.5	23095	21.79	23	0-1
				711	23130	21.81	23	0-1
				704	23060	21.71	23	0-1
			25	707.5	23095	21.75	23	0-1
				711	23130	21.67	23	0-1
				704	23060	21.71	23	0-1
		50	RB	707.5	23095	21.74	23	0-1
10				711	23130	21.69	23	0-1
10				704	23060	21.65	23	0-1
			0	707.5	23095	21.25	23	0-1
				711	23130	21.61	23	0-1
				704	23060	21.52	23	0-1
		1 RB	25	707.5	23095	22.06	23	0-1
				711	23130	21.65	23	0-1
				704	23060	21.48	23	0-1
			49	707.5	23095	21.83	23	0-1
				711	23130	21.55	23	0-1
				704	23060	20.71	22	0-2
	16-QAM		0	707.5	23095	20.73	22	0-2
				711	23130	20.78	22	0-2
				704	23060	20.80	22	0-2
		25 RB	12	707.5	23095	20.64	22	
				711	23130	20.70	22	
				704	23060	20.76	22	3GPP(dB) 0 0 0 0 0 0 0 0 0 0 0 0 0
			25	707.5	23095	20.80	22	
				711	23130	20.70	22	
				704	23060	20.61	22	
	50	RB	707.5	23095	20.68	22		
			711	23130	20.63	22	0-2	

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			FDD E	Band 12 (Full F	Power)			
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
				701.5	23035	22.44	24	0
			0	707.5	23095	22.35	24	0
				713.5	23155	22.67	24	0
				701.5	23035	22.48	24	0
		1 RB	12	707.5	23095	22.55	24	0
				713.5	23155	22.60	24	0
				701.5	23035	22.65	24	0
			24	707.5	23095	22.48	24	0
				713.5	23155	22.67	24	0
				701.5	23035	21.59	23	0-1
	QPSK		0	707.5	23095	21.67	23	0-1
				713.5	23155	21.70	23	0-1
				701.5	23035	21.72	23	0-1
		12 RB	6	707.5	23095	21.68	23	0-1
				713.5	23155	21.61	23	0-1
				701.5	23035	21.64	23	0-1
			13	707.5	23095	21.67	23	0-1
				713.5	23155	21.90	23	0-1
				701.5	23035	21.72	23	0-1
		25	RB	707.5	23095	21.71	23	0-1
5			-	713.5	23155	21.70	23	0-1
U				701.5	23035	21.28	23	0-1
			0	707.5	23095	21.87	23	0-1
				713.5	23155	21.42	23	0-1
				701.5	23035	21.09	23	0-1
		1 RB	12	707.5	23095	21.47	23	0-1
				713.5	23155	21.26	23	0-1
				701.5	23035	21.45	23	0-1
			24	707.5	23095	21.64	23	0-1
				713.5	23155	21.50	23	0-1
				701.5	23035	20.69	22	0-2
	16-QAM		0	707.5	23095	20.77	22	0-2
				713.5	23155	20.70	22	0-2
				701.5	23035	20.65	22	0-2
		12 RB	6	707.5	23095	20.61	22	0-2
				713.5	23155	20.58	22	0-2
				701.5	23035	20.78	22	0-2
			13	707.5	23095	20.72	22	0-2
				713.5	23155	21.02	22	0-2
				701.5	23035	20.75	22	0-2
		25	RB	707.5	23095	20.76	22	0-2
				713.5	23155	20.71	22	0-2

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			FDD E	Band 12 (Full F	Power)					
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)		
				700.5	23025	22.49	24	0		
			0	707.5	23095	23.07	24	0		
				714.5	23165	22.66	24	0		
				700.5	23025	22.81	24	0		
		1 RB	7	707.5	23095	22.66	24	0		
				714.5	23165	22.57	24	0		
				700.5	23025	22.54	24	0		
			14	707.5	23095	22.63	24	0		
				714.5	23165	22.36	24	0		
				700.5	23025	21.58	23	0-1		
	QPSK		0	707.5	23095	21.71	23	0-1		
				714.5	23165	21.62	23	0-1		
				700.5	23025	21.60	23	0-1		
		8 RB	4	707.5	23095	21.63	23	0-1		
				714.5	23165	21.79	23	0-1		
				700.5	23025	21.65	23	0-1		
			7	707.5	23095	21.54	23	0-1		
				714.5	23165	21.70	23	0-1		
				700.5	23025	21.67	23	0-1		
		15	RB	707.5	23095	21.67	23	0-1		
3				714.5	23165	21.82	23	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		
Ũ				700.5	23025	21.64	23			
			0	707.5	23095	21.75	23	0-1		
				714.5	23165	21.20	23	0-1		
				700.5	23025	21.46	23	0-1		
		1 RB	7	707.5	23095	21.41	23			
				714.5	23165	21.45	23			
				700.5	23025	21.85	23			
			14	707.5	23095	21.57	23			
				714.5	23165	21.69	23			
				700.5	23025	20.54	22			
	16-QAM		0	707.5	23095	20.67	22	0-2		
				714.5	23165	20.66	22			
		0.55		700.5	23025	20.57	22			
		8 RB	4	707.5	23095	20.56	22			
				714.5	23165	20.48	22			
			_	700.5	23025	20.64	22			
			7	707.5	23095	20.49	22			
				714.5	23165	20.64	22			
			חח	700.5	23025	20.55	22	0-2		
		15	RB	707.5	23095	20.53	22	0-2		
				714.5	23165	20.56	22	0-2		

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			FDD E	Band 12 (Full F	Power)			
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
				699.7	23017	22.39	24	0
			0	707.5	23095	22.46	24	0
				715.3	23173	22.44	24	0
				699.7	23017	22.42	24	0
		1 RB	2	707.5	23095	22.54	24	0
				715.3	23173	22.43	24	0
				699.7	23017	22.77	24	0
			5	707.5	23095	22.45	24	0
				715.3	23173	22.99	24	0
				699.7	23017	22.38	24	0
	QPSK		0	707.5	23095	23.00	24	0
				715.3	23173	22.48	24	0
				699.7	23017	22.77	24	0
		3 RB	2	707.5	23095	22.55	24	0
				715.3	23173	22.50	24	0
				699.7	23017	22.77	24	0
			3	707.5	23095	22.49	24	0
				715.3	23173	22.97	24	0
				699.7	23017	21.67	23	0-1
		6F	RB	707.5	23095	21.53	23	0-1
1.4				715.3	23173	21.73	23	0-1
				699.7	23017	21.65	23	0-1
			0	707.5	23095	21.46	23	0-1
				715.3	23173	21.82	23	0-1
				699.7	23017	21.50	23	0-1
		1 RB	2	707.5	23095	21.44	23	0-1
				715.3	23173	21.63	23	0-1
				699.7	23017	21.87	23	0-1
			5	707.5	23095	21.49	23	0-1
				715.3	23173	21.70	23	0-1
				699.7	23017	21.34	23	0-1
	16-QAM		0	707.5	23095	21.63	23	0-1
				715.3	23173	21.44	23	0-1
		0.55		699.7	23017	21.98	23	0-1
		3 RB	2	707.5	23095	21.63	23	0-1
				715.3	23173	21.45	23	0-1
				699.7	23017	21.51	23	0-1
			3	707.5	23095	21.54	23	0-1
				715.3	23173	21.46	23	0-1
				699.7	23017	20.54	22	0-2
	6RB		ΚB	707.5	23095	20.39	22	0-2
				715.3	23173	20.49	22	0-2

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			FDD E	3and 13 (Full F	ower)			
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
			0	782	23230	22.65	24	0
		1 RB	25	782	23230	22.48	24	0
			49	782	23230	22.60	24	0
	QPSK		0	782	23230	21.72	23	0-1
		25 RB	12	782	23230	21.80	23	0-1
			25	782	23230	21.72	23	0-1
10		50	RB	782	23230	21.75	23	0-1
10			0	782	23230	22.11	23	0-1
		1 RB	25	782	23230	21.54	23	0-1
			49	782	23230	21.67	23	0-1
	16-QAM		0	782	23230	20.65	22	0-2
		25 RB	12	782	23230	20.72	22	0-2
			25	782	23230	20.69	22	0-2
		50	RB	782	23230	20.66	22	0-2

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

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			FDD E	Band 13 (Full F	Power)			
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
				779.5	23205	22.40	24	0
			0	782	23230	22.46	24	0
				784.5	23255	22.62	24	0
				779.5	23205	22.82	24	0
		1 RB	12	782	23230	22.52	24	0
				784.5	23255	22.62	24	0
				779.5	23205	22.65	24	0
			24	782	23230	22.61	24	0
				784.5	23255	22.58	24	0
				779.5	23205	21.63	23	0-1
	QPSK		0	782	23230	21.64	23	0-1
				784.5	23255	21.72	23	0-1
				779.5	23205	22.00	23	0-1
		12 RB	6	782	23230	21.71	23	0-1
				784.5	23255	21.61	23	0-1
				779.5	23205	21.69	23	0-1
			13	782	23230	21.67	23	0-1
				784.5	23255	21.55	23	0-1
				779.5	23205	21.40	23	0-1
		25	RB	782	23230	21.69	23	0-1
5				784.5	23255	21.74	23	0-1
U				779.5	23205	21.74	23 0-1 23 0-1 23 0-1	
			0	782	23230	21.41		0-1
				784.5	23255	21.59		0-1
				779.5	23205	21.58	23	0-1
		1 RB	12	782	23230	21.31	23	0-1
				784.5	23255	21.25	23	0-1
				779.5	23205	21.11	23	0-1
			24	782	23230	22.00	23	0-1
				784.5	23255	21.49	23	0-1
				779.5	23205	20.66	22	0-2
	16-QAM		0	782	23230	20.69	22	0-2
				784.5	23255	20.69	22	0-2
		10.55		779.5	23205	20.48	22	0-2
		12 RB	6	782	23230	20.72	22	0-2
				784.5	23255	20.56	22	0-2
			40	779.5	23205	20.63	22	0-2
			13	782	23230	20.71	22	0-2
				784.5	23255	20.67	22	0-2
				779.5	23205	20.48	22	0-2
		25	RB	782	23230	20.70	22	0-2
				784.5	23255	20.70	22	0-2

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			FDD E	Band 17 (Full F	Power)				
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)	
				709	23780	22.45	24	0	
			0	710	23790	22.65	24	0	
				711	23800	22.49	24	0	
				709	23780	22.72	24	0	
		1 RB	25	710	23790	22.91	24	0	
				711	23800	22.69	24	0	
				709	23780	22.57	24	0	
			49	710	23790	22.71	24	0	
				711	23800	22.32	24	0	
				709	23780	21.61	23	0-1	
	QPSK		0	710	23790	21.67	23	0-1	
				711	23800	21.62	23	0-1	
				709	23780	21.66	23	0-1	
		25 RB	12	710	23790	21.60	23	0-1	
				711	23800	21.66	23	0-1	
				709	23780	21.67	23	0-1	
			25	710	23790	21.71	23	0-1	
				711	23800	21.72	23	0-1	
				709	23780	21.73	23	0-1	
		50	RB	710	23790	21.69	23	0-1	
10			-	711	23800	21.63	23	Allowed per 3GPP(dB) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
10				709	23780	21.80	23	0-1	
			0	710	23790	21.81	23	0-1	
				711	23800	21.76	23	0-1	
				709	23780	21.46	23	0-1	
		1 RB	25	710	23790	21.84	23		
				711	23800	21.81	23	0-1	
				709	23780	21.21	23	0-1	
			49	710	23790	21.91	23	0-1	
				711	23800	21.81	23	0-1	
				709	23780	20.64	22		
	16-QAM		0	710	23790	20.64	22	0-2	
				711	23800	20.70	22		
				709	23780	20.78	22		
		25 RB	12	710	23790	20.61	22		
				711	23800	20.56	22		
				709	23780	20.65	22	3GPP(dB) 0	
			25	710	23790	20.76	22		
				711	23800	20.66	22		
				709	23780	20.77	22		
		50	RB	710	23790	20.50	22		
				711	23800	20.44	22	0-2	

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			FDD E	Band 17 (Full F	Power)			
BW(Mhz)	Modulation	RB Size	RB Offset	Frequency (MHz)	Channel	Conducted power (dBm)	Target Power + Max. Tolerance (dBm)	MPR Allowed per 3GPP(dB)
				706.5	23755	22.46	24	0
			0	710	23790	22.74	24	0
				713.5	23825	22.77	24	0
				706.5	23755	23.24	24	0
		1 RB	12	710	23790	22.52	24	0
				713.5	23825	22.61	24	0
				706.5	23755	22.51	24	0
			24	710	23790	22.66	24	0
				713.5	23825	22.62	24	0
				706.5	23755	21.54	23	0-1
	QPSK		0	710	23790	21.62	23	0-1
				713.5	23825	21.67	23	0-1
				706.5	23755	21.63	23	0-1
		12 RB	6	710	23790	21.57	23	0-1
				713.5	23825	21.60	23	0-1
				706.5	23755	21.72	23	Allowed per 3GPP(dB) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0-1 0-2 0-2 0-2 0-2 0-2 0-2 0-2
			13	710	23790	21.74	23	0-1
				713.5	23825	21.45	23	0-1
				706.5	23755	21.68	23	0-1
		25	RB	710	23790	21.56	23	0-1
5				713.5	23825	21.68	23	0-1
Ū				706.5	23755	21.59	23	23 0-1 23 0-1
			0	710	23790	21.66	23	0-1
				713.5	23825	21.80	23	0-1
				706.5	23755	21.79	23	0-1
		1 RB	12	710	23790	21.77		0-1
				713.5	23825	21.67		0-1
				706.5	23755	21.56		0-1
			24	710	23790	21.88	23	
				713.5	23825	21.72	23	
				706.5	23755	20.55	22	
	16-QAM		0	710	23790	20.61	22	0-2
				713.5	23825	20.63	22	
				706.5	23755	20.65	22	0-1 0-2 0-2
		12 RB	6	710	23790	20.58	22	
				713.5	23825	20.62	22	
			40	706.5	23755	20.69	22	
			13	710	23790	20.76	22	
				713.5	23825	20.56	22	
				706.5	23755	20.63	22	
		25RB		710	23790	20.72	22	
				713.5	23825	20.55	22	0-2

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1.4 Test Environment

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

1.5 Operation Description

1. WWAN:

SAR is measured as below and confirmed by KDB inquiry.

GPRS850/1900, WCDMA B2/4, CDMA BC1, LTE B2/4/7:

Laptop mode without power reduction

Stand mode without power reduction

Tablet mode with power reduction

WCDMA B5, CDMA BC0, LTE B5/12/13/17:

Laptop mode without power reduction

Stand mode without power reduction

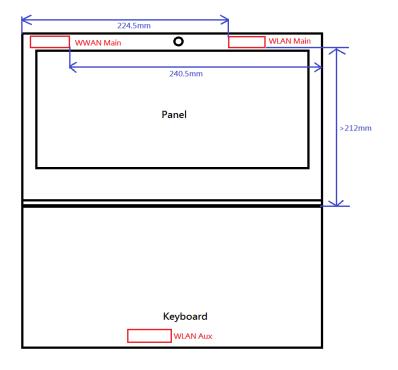
Tablet mode without power reduction

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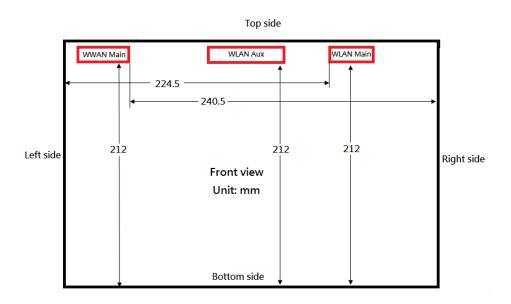
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Antenna location (Laptop Mode)



Antenna location (Tablet Mode)

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2. WLAN

For WLAN, since the RF hardware/software of FCC ID: B94HNI04CAMWP is the same with that of FCC ID: PD98265D2, so the WLAN is refer to the WLAN SAR report of FCC ID: PD98265D2 after verifying the worst cases of the WLAN SAR report. Besides, for WLAN Main, we tested laptop mode and left side of tablet mode for the simultaneous transmission evaluation, and we tested stand mode based on KDB inquiry. For WLAN Aux, we tested left side of tablet mode for the simultaneous transmission evaluation, and we tested on KDB inquiry.

Note:

- The EUT is controlled by using a Radio Communication Tester (Anritsu MT8820C / CMU200), and the communication between the EUT and the tester is established by air link.
- 2. 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.
- 3. During the SAR testing, the DASY 5 system checks power drift by comparing the e-field strength of one specific location measured at the beginning with that measured at the end of the SAR testing.
- 4. SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power. The data mode with highest specified time-averaged output power should be tested for SAR compliance. The GMSK EDGE configurations are grouped with GPRS and considered with respect to time-averaged maximum output power to determine compliance. The 3G SAR test reduction procedure is applied to 8-PSK EDGE with GMSK GPRS/EDGE as the primary mode. Since the maximum output power in a secondary mode (8-PSK EDGE) is ≤ ¼ dB higher than the primary mode (GMSK GPRS/EDGE), SAR measurement is not required for the secondary mode (8-PSK EDGE).
- The 3G SAR test reduction procedure is applied to HSDPA with 12.2 kbps RMC as the primary mode. Since the maximum output power in a secondary mode (HSDPA) is ≤ ¼ dB higher than the primary mode (WCDMA), SAR measurement is not required for the secondary mode (HSDPA).
- The 3G SAR test reduction procedure is applied to HSPA (HSUPA/HSDPA with RMC) with 12.2 kbps RMC as the primary mode. Since the maximum output power in a secondary mode (HSPA) is ≤ ¼ dB higher than the primary mode (WCDMA), SAR measurement is not required for the secondary mode (HSPA).

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Body SAR is measured using Subtype 0/1 Physical Layer configurations for Rev. 7. 0. The 3G SAR test reduction procedure is applied to Rev. A, Subtype 2 Physical layer configuration, with Rev. 0 as the primary mode since the maximum output power in a secondary mode is $\leq \frac{1}{4}$ dB higher than the primary mode. For Ev-Do data devices that also support 1x RTT voice and/or data operations, the 3G SAR test reduction procedure is applied to 1x RTT RC3 and RC1 with Ev-Do Rev. 0, Rev. A and Rev. B as the respective primary modes.

LTE modes test according to KDB 941225D05v02r05. 8.

a. Per Section 5.2.1, the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation.

Using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.

When the reported SAR is \leq 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required for 1 RB allocation; otherwise, SAR is required for the remaining required test channels and only for the RB offset configuration with the highest output power for that channel.

When the reported SAR of a required test channel is > 1.45 W/kg, SAR is required for all three RB offset configurations for that required test channel. b. Per Section 5.2.2, the largest channel bandwidth and measure SAR for QPSK with 50% RB allocation

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

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

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

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

d. Per Section 5.2.4, Higher order modulations

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

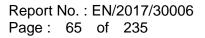
e. Per Section 5.3, other channel bandwidth standalone SAR test requirements

For the other channel bandwidths used by the device in a frequency band, apply all the procedures required for the largest channel bandwidth in section 5.2

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to determine the channels and RB configurations that need SAR testing and only measure SAR when the highest maximum output power of a configuration requiring testing in the smaller channel bandwidth is $> \frac{1}{2}$ dB higher than the equivalent channel configurations in the largest channel bandwidth configuration or the reported SAR of a configuration for the largest channel bandwidth is > 1.45 W/kg. The equivalent channel configuration for the RB allocation, RB offset and modulation etc. is determined for the smaller channel bandwidth according to the same number of RB allocated in the largest channel bandwidth.

- According to **KDB447498D01v06**, testing of other required channels is not 9. required when the reported 1-g SAR for the highest output channel is ≤ 0.8 W/kg, when the transmission band is \leq 100 MHz.
- 10. According to KDB865664D01v01r04, SAR measurement variability must be assessed for each frequency band. When the original highest measured SAR is \geq 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 \geq 1.45 W/kg (~ 10% from the 1-g SAR limit)

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1.6 Operation description

The device is a convertible laptop computer with a lid open up to x360 degree. Device modes are defined for different use scenarios.

For those device modes under RF exposure concern, the radio power reduction will be triggered. There are the sensors at the lid and the base of laptop, and the sensors can calculate the angle between the screen and the keyboard base, and then reduce the maximum power based on each device mode accordingly. When the device is operated at the laptop mode (hinge angle<160 degree), the power reduction will not be triggered, but when the hinge angle>160 degree, the power reduction will be triggered. Besides, the power reduction is a single fixed level of power reduction, and the power reduction level will be the same with the different hinge angle (different use scenarios, like flat, tent, tablet mode). Also, the power reduction will only be triggered on WWAN, not on WLAN, and the sensor can tell if the device is in stand or tent mode even though the two modes have the same hinge angles between the screen and keyboard base. Stand mode is defined only when the base is placed horizontally.

The reduced power for each technology/band is defined in Table1-1 and Table1-2.

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Band	Power Reduction
GPRS850	YES
EDGE850	NO
GPRS1900	YES
EDGE1900	YES
WCDMA B2	YES
WCDMA B4	YES
WCDMA B5	NO
CDMA BC0	NO
CDMA BC1	YES
LTE B2	YES
LTE B4	YES
LTE B5	NO
LTE B7	YES
LTE B12	NO
LTE B13	NO
LTE B17	NO
WLAN	NO
ВТ	NO

Table1-1 : The power reduction scenario table

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Technology / Band	Mode	Default Maximum Power (dBm)
GPRS 850	Class 8	31.0
	Class 10	30.5
	Class 11	28.5
	Class 12	26.5
GPRS 1900	Class 8	26.5
	Class 10	25.5
	Class 11	23.5
	Class 12	21.5
	Class 8	23.0
EDGE 1900	Class 10	22.0
	Class 11	22.0
	Class 12	20.0
UMTS B2	RMC 12.2K data	19.5
	HSDPA case 1	18.5
	HSDPA case 2	18.5
	HSDPA case 3	18.5
	HSDPA case 4	18.5
	HSUPA case 1	18.5
	HSUPA case 2	18.5
	HSUPA case 3	18.5
	HSUPA case 4	18.5
	HSUPA case 5	18.5

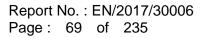
Table1-2: The maximum reduced power

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Technology / Band	Mode	Default Maximum Power (dBm)
UMTS B4	RMC 12.2K data	19.5
	HSDPA case 1	18.5
	HSDPA case 2	18.5
	HSDPA case 3	18.5
	HSDPA case 4	18.5
	HSUPA case 1	18.5
	HSUPA case 2	18.5
	HSUPA case 3	18.5
	HSUPA case 4	18.5
	HSUPA case 5	18.5
CDMA BC1	All	19.5
LTE B2	All	19.5
LTE B4	All	19.5
LTE B7	All	18.0

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1.7 The SAR Measurement System

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

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

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

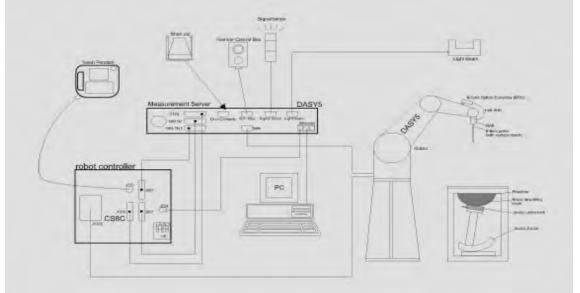


Fig. a The block diagram of SAR system

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

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1.8 System Components

EX3DV4 E-Field Probe

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

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PHANTOM

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

DEVICE HOLDER

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

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1.9 SAR System Verification

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

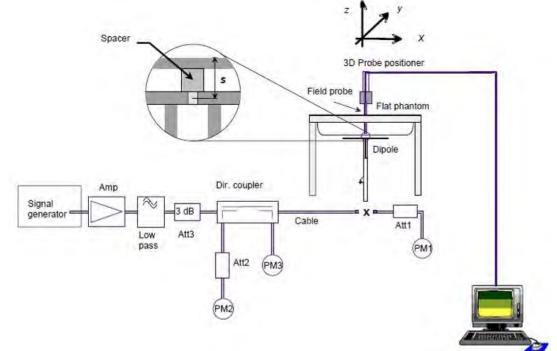


Fig. b The block diagram of system verification

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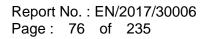
Validation Kit	S/N	Frequency (MHz)		1W Target SAR-1g (mW/g)	Measured SAR-1g (mW/g)	Measured SAR-1g normalized to 1W	Deviation (%)	Measured Date
D750V3	1015	750	Body	8.77	2.24	8.96	2.17%	Mar. 28, 2017
D730V3	1015	750	Douy	8.77	2.21	8.84	0.80%	Mar. 29, 2017
D835V2	4d063	835	Body	9.57	2.49	9.96	4.08%	Mar. 30, 2017
D1750V2	1008	1750	Body	37.3	9.29	37.16	-0.38%	Mar. 31, 2017
D1900V2	5d027	1900	Body	39.7	9.71	38.84	-2.17%	Apr. 01, 2017
D2450V2	727	2450	Body	49.6	12.7	50.8	2.42%	Apr. 03, 2017
D2600V2	1005	2600	Body	55.1	14.1	56.4	2.36%	Apr. 02, 2017
		5300	Body	76.1	7.55	75.5	-0.79%	Apr. 03, 2017
D5GHzV2	1023	5600	Body	79.6	8.05	80.5	1.13%	Apr. 04, 2017
		5800	Body	75.9	7.57	75.7	-0.26%	Apr. 04, 2017

Table 1. Results of system verification

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1.10 Tissue Simulant Fluid for the Frequency Band

The dielectric properties for this body-simulant fluid were measured by using the Schmid & Partner Engineering AG Model DAKS-3.5 Dielectric Probe Kit in conjunction with Network Analyzer.

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

Tissue Type	Measurement Date	Measured Frequency (MHz)	Target Dielectric Constant, εr	Target Conductivity, σ (S/m)	Measured Dielectric Constant, ɛr	Measured Conductivity, σ (S/m)	% dev ɛr	% dev σ
		704	55.710	0.960	56.416	0.940	-1.27%	2.06%
		707.5	55.697	0.960	56.392	0.952	-1.25%	0.84%
	Mar. 28, 2017	709	55.691	0.960	56.377	0.960	-1.23%	0.02%
	Mar. 20, 2017	710	55.687	0.960	56.367	0.966	-1.22%	-0.60%
		711	55.683	0.960	56.359	0.969	-1.21%	-0.90%
		750	55.531	0.963	55.892	0.970	-0.65%	-0.69%
	Mar. 29, 2017	750	55.531	0.963	55.945	0.972	-0.75%	-0.90%
	War. 29, 2017	782	55.406	0.966	55.902	0.974	-0.89%	-0.84%
		824.2	55.242	0.969	56.167	0.961	-1.67%	0.84%
		824.7	55.240	0.969	56.146	0.963	-1.64%	0.64%
		826.4	55.234	0.969	55.977	0.965	-1.35%	0.45%
		829	55.223	0.970	55.973	0.970	-1.36%	-0.07%
		835	55.200	0.970	55.888	0.978	-1.25%	-0.82%
Body	Mar. 30, 2017	836.5	55.195	0.972	55.872	0.979	-1.23%	-0.74%
	War. 30, 2017	836.52	55.195	0.972	55.871	0.981	-1.22%	-0.94%
		836.6	55.195	0.972	55.870	0.985	-1.22%	-1.34%
		844	55.172	0.981	55.865	0.986	-1.26%	-0.52%
		846.6	55.164	0.984	55.861	0.990	-1.26%	-0.60%
		848.31	55.159	0.986	55.811	0.998	-1.18%	-1.18%
		848.8	55.158	0.987	55.790	0.999	-1.15%	-1.22%
		1712.4	53.531	1.465	53.912	1.478	-0.71%	-0.91%
		1720	53.511	1.469	53.893	1.483	-0.71%	-0.92%
		1732.4	53.478	1.477	53.862	1.484	-0.72%	-0.45%
	Mar. 31, 2017	1732.5	53.478	1.477	53.861	1.491	-0.72%	-0.92%
		1745	53.445	1.485	53.851	1.492	-0.76%	-0.45%
		1750	53.432	1.488	53.845	1.505	-0.77%	-1.11%
		1752.6	53.425	1.490	53.831	1.507	-0.76%	-1.12%

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Tissue Type	Measurement Date	Measured Frequency (MHz)	Target Dielectric Constant, εr	Target Conductivity, σ (S/m)	Measured Dielectric Constant, ɛr	Measured Conductivity, σ (S/m)	% dev ɛr	% dev σ
		1850.2	53.300	1.520	53.797	1.530	-0.93%	-0.66%
		1851.25	53.300	1.520	53.758	1.533	-0.86%	-0.86%
		1852.4	53.300	1.520	53.752	1.534	-0.85%	-0.92%
		1860	53.300	1.520	53.738	1.537	-0.82%	-1.12%
	Apr. 1, 2017	1880	53.300	1.520	53.454	1.545	-0.29%	-1.64%
		1900	53.300	1.520	53.450	1.546	-0.28%	-1.73%
		1907.6	53.300	1.520	53.445	1.547	-0.27%	-1.76%
		1908.75	53.300	1.520	53.415	1.550	-0.22%	-1.96%
		1909.8	53.300	1.520	53.335	1.558	-0.07%	-2.49%
		2412	52.751	1.914	53.456	1.931	-1.34%	-0.90%
		2437	52.717	1.938	53.355	1.956	-1.21%	-0.95%
	Apr. 3, 2017	2441	52.712	1.941	53.339	1.960	-1.19%	-0.96%
Body		2450	52.700	1.950	53.298	1.969	-1.13%	-0.97%
Douy		2462	52.685	1.967	53.250	1.981	-1.07%	-0.71%
		2510	52.624	2.035	51.888	1.987	1.40%	2.36%
	Apr. 2, 2017	2535	52.592	2.071	51.859	2.104	1.39%	-1.62%
	Apr. 2, 2017	2560	52.560	2.106	51.834	2.129	1.38%	-1.09%
		2600	52.509	2.163	51.883	2.132	1.19%	1.42%
	Apr 2 2017	5280	48.906	5.393	48.799	5.347	0.22%	0.85%
	Apr. 3, 2017	5300	48.879	5.416	48.703	5.407	0.36%	0.17%
		5580	48.499	5.743	48.370	5.793	0.27%	-0.87%
		5600	48.471	5.766	48.006	5.815	0.96%	-0.84%
	Apr. 4, 2017	5620	48.444	5.790	47.985	5.875	0.95%	-1.47%
	- Apr. 4, 2017	5785	48.220	5.982	47.757	6.069	0.96%	-1.45%
		5800	48.200	6.000	47.532	6.077	1.39%	-1.28%
		5825	48.166	6.029	47.510	6.095	1.36%	-1.09%

Table 2. Dielectric Parameters of Tissue Simulant Fluid

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

The composition of the body tissue simulating liquid:

Simulating Liquids for 5 GHz, Manufactured by SPEAG:

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

Table 3. Recipes for Tissue Simulating Liquid

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1.11 Evaluation Procedures

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

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

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

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

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

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

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

1.12 Probe Calibration Procedures

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

1.12.1 Transfer Calibration with Temperature Probes

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

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

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

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

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

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

1.12.2 Calibration with Analytical Fields

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

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

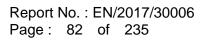
- 1. The setup must enable accurate determination of the incident power.
- 2. The accuracy of the calculated field strength will depend on the assessment of the dielectric parameters of the liquid.

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

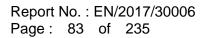
References

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- 3. K. Jokela, P. Hyysalo, and L. Puranen, \Calibration of specific absorption rate (SAR) probes in waveguide at 900 MHz", *IEEE Transactions on Instrumentation and Measurements*, vol. 47, no. 2, pp. 432{438, Apr. 1998.

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1.13 Test Standards and Limits

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

- Limits for Occupational/Controlled exposure: 0.4 W/kg as averaged over the 1. 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.
- Limits for General Population/Uncontrolled exposure: 0.08 W/kg as 3. 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

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

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

Table 4. RF exposure limits

Notes:

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

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2. Summary of Results

GPRS 850 MHz (without power reduction)

Mode	Position	Distanc e (mm)	СН	Freq.	Max. Rated Avg. Power + Max. Tolerance (dBm)	Avg. Power	Scaling	(۷۷/	g 'kg)	Plot page
						(dBm)		Measured	Reported	
GPRS 850	Laptop mode	0	251	848.8	33	32.76	5.68%	0.012	0.013	-
(1Dn2UP)	Stand mode	0	251	848.8	33	32.76	5.68%	0.011	0.012	-

GPRS 850 MHz (with power reduction)

Mode	Position	Distanc e (mm)	СН	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power	Scaling	Averaged 1 (W/	Plot page	
		()				(dBm)		Measured	Reported	
	Top side	0	128	824.2	30.5	30.41	2.09%	0.948	0.968	-
	Top side	0	190	836.6	30.5	30.24	6.17%	0.838	0.890	-
	Top side	0	251	848.8	30.5	30.47	0.69%	0.596	0.600	-
GPRS 850	Back side	0	251	848.8	30.5	30.47	0.69%	0.154	0.155	-
(1Dn2UP)	Left side	0	128	824.2	30.5	30.41	2.09%	1.150	1.174	130
	Left side*	0	128	824.2	30.5	30.41	2.09%	1.140	1.164	-
	Left side	0	190	836.6	30.5	30.24	6.17%	0.942	1.000	-
	Left side	0	251	848.8	30.5	30.47	0.69%	0.843	0.849	-

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

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GPRS 1900 MHz (without power reduction)

Mode	Position	Distanc e (mm)	СН	Freq.	Max. Rated Avg. Power + Max. Tolerance (dBm)	Avg. Power	Scaling	Averaged SAR over 1g (W/kg)		Plot page
								Measured	Reported	
GPRS 1900	Laptop mode	0	661	1880	30	29.63	8.89%	0.015	0.016	-
(1Dn2UP)	Stand mode	0	661	1880	30	29.63	8.89%	0.012	0.013	-

GPRS 1900 MHz (with power reduction)

Mode	Position	Distanc e (mm)	СН	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Avg. Power	Scaling	Averaged 1 (W/	g	Plot page
		()			· • • • • • • • • • • • • • • • • • • •			Measured	Reported	
	Top side	0	661	1880	25.5	25.46	0.93%	0.573	0.578	-
	Back side	0	661	1880	25.5	25.46	0.93%	0.044	0.044	-
GPRS 1900	Left side	0	512	1850.2	25.5	25.45	1.16%	0.718	0.726	-
(1Dn2UP)	Left side	0	661	1880	25.5	25.46	0.93%	0.856	0.864	-
	Left side	0	810	1909.8	25.5	25.42	1.86%	0.927	0.944	131
	Left side*	0	810	1909.8	25.5	25.42	1.86%	0.911	0.928	-

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

WCDMA Band II (without power reduction)

Mode	Position	Distanc e (mm)	СН	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Avg. Power	Scaling	Averaged 1 (W/	g	Plot page
		()				(dBm)		Measured	Reported	
WCDMA	Laptop mode	0	9400	1880	24.5	23.86	15.88%	0.017	0.020	-
Band II	Stand mode	0	9400	1880	24.5	23.86	15.88%	0.014	0.016	-

WCDMA Band II (with power reduction)

Mode	Position	Distanc e (mm)	СН	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Avg. Power	Scaling	1	0	Plot page
		()				(dBm)		Measured	Reported	
	Top side	0	9400	1880	19.5	19.50	0.00%	0.662	0.662	-
	Back side	0	9400	1880	19.5	19.50	0.00%	0.051	0.051	-
WCDMA	Left side	0	9262	1852.4	19.5	19.21	6.91%	0.671	0.717	-
Band II	Left side	0	9400	1880	19.5	19.50	0.00%	0.935	0.935	-
	Left side	0	9538	1907.6	19.5	19.49	0.23%	0.957	0.959	132
	Left side*	0	9538	1907.6	19.5	19.49	0.23%	0.951	0.953	-

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

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WCDMA Band IV (without power reduction)

Mode	Position	Distanc e (mm)	СН	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Avg. Power	Scaling	Averaged 1 (W/ Measured	g kg)	Plot page
WCDMA	Laptop mode	0	1412	1732.4	24.5	23.87	15.61%	0.017	0.020	-
Band IV	Stand mode	0	1412	1732.4	24.5	23.87	15.61%	0.016	0.018	-

WCDMA Band IV (with power reduction)

Mode	Position	Distanc e (mm)	СН	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Avg. Power	Scaling	(W/	kg)	Plot page
						(ubiii)		Measured	керопеа	
	Top side	0	1412	1732.4	19.5	19.40	2.33%	0.666	0.682	-
	Back side	0	1412	1732.4	19.5	19.40	2.33%	0.057	0.058	-
WCDMA	Left side	0	1312	1712.4	19.5	19.22	6.66%	1.030	1.099	133
Band IV	Left side*	0	1312	1712.4	19.5	19.22	6.66%	1.010	1.077	-
	Left side	0	1412	1732.4	19.5	19.40	2.33%	0.968	0.991	-
	Left side	0	1513	1752.6	19.5	19.30	4.71%	0.938	0.982	-

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

WCDMA Band V

Mode	Position	Distanc e (mm)	СН	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power	Scaling	Averaged 1 (W/	g	Plot page
		(11111)				(dBm)		Measured	Reported	
	Laptop mode	0	4233	846.6	24.5	24.50	0.00%	0.017	0.017	-
	Stand mode	0	4233	846.4	24.5	24.50	0.00%	0.015	0.015	-
	Top side	0	4132	826.4	24.5	24.47	0.69%	0.923	0.929	-
	Top side	0	4183	836.4	24.5	24.17	7.89%	0.798	0.861	-
WCDMA	Top side	0	4233	846.6	24.5	24.50	0.00%	0.800	0.800	-
Band V	Back side	0	4233	846.6	24.5	24.50	0.00%	0.198	0.198	-
	Left side	0	4132	826.4	24.5	24.47	0.69%	1.120	1.128	134
	Left side*	0	4132	826.4	24.5	24.47	0.69%	1.000	1.007	-
	Left side	0	4183	836.4	24.5	24.17	7.89%	0.950	1.025	-
	Left side	0	4233	846.6	24.5	24.50	0.00%	0.913	0.913	-

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

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CDMA / EVDO (BC0)

Mode		Service	Position	Distance (mm)	СН	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged S (W/	•	Plot page
							Tolerance (ubiii)	(ubiii)		Measured	Reported	
			Laptop mode	0	777	848.31	25	24.21	19.95%	0.016	0.019	-
		Stand mode	0	777	848.31	25	24.21	19.95%	0.015	0.018	-	
			Top side	0	1013	824.7	25	24.18	20.78%	0.819	0.989	-
			Top side	0	384	836.52	25	24.15	21.62%	0.811	0.986	-
CDMA	EVDO	Rev. 0	Top side	0	777	848.31	25	24.21	19.95%	0.824	0.988	-
BC 0	EVDO	Subtype 0/1	Back side	0	777	848.31	25	24.21	19.95%	0.204	0.245	-
			Left side	0	1013	824.7	25	24.18	20.78%	0.940	1.135	-
			Left side	0	384	836.52	25	24.15	21.62%	0.932	1.133	-
			Left side	0	777	848.31	25	24.21	19.95%	0.948	1.137	135
			Left side*	0	777	848.31	25	24.21	19.95%	0.939	1.126	-

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

CDMA / EVDO (BC1) (without power reduction)

Mode		Service	Position	Distance (mm)	СН	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged S (W/		Plot page
							Tolerance (ubiii)	(dbiii)		Measured	Reported	
CDMA	EVDO	Rev. 0	Laptop mode	0	1175	1908.75	25	23.89	29.12%	0.014	0.018	-
BC 1	EVDO	Subtype 0/1	Stand mode	0	1175	1908.75	25	23.89	29.12%	0.013	0.017	-

CDMA / EVDO (BC1) (with power reduction)

Mode		Service	Position	Distance (mm)	СН	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Scaling	Averaged S (W/	•	Plot page
							Tolerance (ubin)	(ubiii)		Measured	Reported	
			Top side	0	1175	1908.75	19.5	19.45	1.16%	0.624	0.631	-
			Back side	0	1175	1908.75	19.5	19.45	1.16%	0.054	0.055	-
CDMA		Rev. 0	Left side	0	25	1851.25	19.5	19.24	6.17%	0.702	0.745	-
BC 1		Subtype 0/1	Left side	0	600	1800	19.5	19.41	2.09%	0.933	0.953	-
			Left side	0	1175	1908.75	19.5	19.45	1.16%	0.962	0.973	136
			Left side*	0	1175	1908.75	19.5	19.45	1.16%	0.961	0.972	-

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

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LTE FDD Band 2 (without power reduction)

	Bandwi							_	Max. Rated Avg.	Measure d		Averaged 3 1g (W		
Mode	1ode dth Modulatior (MHz)	RB Size	RB start	Position	Distance (mm)	СН	Freq. (MHz)	Power + Max. Toleranc e (dBm)	Avg. Power (dBm)	Scaling	Measured	Reported	Plot page	
			1 RB	0	Laptop mode	0	18900	1880	24	23.20	20.23%	0.019	0.023	-
			TRD	0	Stand mode	0	18900	1880	24	23.20	20.23%	0.019	0.023	-
LTE	20MHz	ODSK	50 RB	0	Laptop mode	0	18900	1880	23	22.17	21.06%	0.017	0.021	-
Band 2		QF ON	30 KB	0	Stand mode	0	18900	1880	23	22.17	21.06%	0.013	0.016	-
			100	RB	Laptop mode	0	18900	1880	23	22.09	23.31%	0.016	0.020	-
			100	КD	Stand mode	0	18900	1880	23	22.09	23.31%	0.014	0.017	-

LTE FDD Band 2 (with power reduction)

	Bandwi								Max. Rated Avg.	Measure d		Averaged 1g (W		
Mode		Modulatior	RB Size	RB start	Position	Distance (mm)	СН	Freq. (MHz)	Power + Max. Toleranc e (dBm)	Avg. Power	Scaling	Measured	Reported	Plot page
					Top side	0	18900	1880	19.5	19.24	6.17%	0.632	0.671	-
					Back side	0	18900	1880	19.5	19.24	6.17%	0.052	0.055	-
		1 RB	0	Left side	0	18700	1860	19.5	18.93	14.02%	0.744	0.848	-	
					Left side	0	18900	1880	19.5	19.24	6.17%	0.889	0.944	-
					Left side	0	19100	1900	19.5	19.16	8.14%	0.936	1.012	-
					Top side	0	18900	1880	19.5	19.25	5.93%	0.613	0.649	-
					Back side	0	18900	1880	19.5	19.25	5.93%	0.052	0.055	-
LTE	20MHz	QPSK	50 RB	0	Left side	0	18700	1860	19.5	18.88	15.35%	0.755	0.871	-
Band 2	20101112	QFON			Left side	0	18900	1880	19.5	19.25	5.93%	0.901	0.954	-
					Left side	0	19100	1900	19.5	19.24	6.17%	0.942	1.000	-
					Top side	0	18900	1880	19.5	19.19	7.40%	0.657	0.706	-
					Back side	0	18900	1880	19.5	19.19	7.40%	0.051	0.055	-
			100	DB	Left side	0	18700	1860	19.5	18.81	17.22%	0.777	0.911	-
			100	ND	Left side	0	18900	1880	19.5	19.19	7.40%	0.948	1.018	-
					Left side	0	19100	1900	19.5	19.15	8.39%	1.050	1.138	137
				Left side	0	19100	1900	19.5	19.15	8.39%	1.040	1.127	-	

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

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LTE FDD Band 4 (without power reduction)

	Bandwi							_	Max. Rated Avg.	Measure d		Averaged 3 1g (W		
Mode	lode dth Modulatior (MHz)		RB Size	RB start	Position	Distance (mm)	СН	Freq. (MHz)	Power + Max. Toleranc e (dBm)	Avg. Power (dBm)	Scaling	Measured	Reported	Plot page
			1 RB	0	Laptop mode	0	20175	1732.5	24	23.25	18.85%	0.018	0.021	-
			TKD	0	Stand mode	0	20175	1732.5	24	23.25	18.85%	0.016	0.019	-
LTE	20141-	ODSK	50 RB	0	Laptop mode	0	20175	1732.5	23	22.14	21.90%	0.015	0.018	-
Band 4		QF ON	30 KB	0	Stand mode	0	20175	1732.5	23	22.14	21.90%	0.014	0.017	-
			100	DB	Laptop mode	0	20175	1732.5	23	22.04	24.74%	0.015	0.019	-
		100	КD	Stand mode	0	20175	1732.5	23	22.04	24.74%	0.014	0.017	-	

LTE FDD Band 4 (with power reduction)

	Bandwi								Max. Rated Avg.	Measure d		Averaged 1g (W		
Mode		Modulatior	RB Size	RB start	Position	Distance (mm)	СН	Freq. (MHz)	Power + Max. Toleranc e (dBm)	Avg. Power	Scaling	Measured	Reported	Plot page
					Top side	0	20175	1732.5	19.5	19.49	0.23%	0.667	0.669	-
					Back side	0	20175	1732.5	19.5	19.49	0.23%	0.052	0.052	-
		1 RB	0	Left side	0	20050	1720	19.5	19.37	3.04%	0.880	0.907	-	
					Left side	0	20175	1732.5	19.5	19.49	0.23%	0.872	0.874	-
					Left side	0	20300	1745	19.5	19.43	1.62%	0.850	0.864	-
					Top side	0	20175	1732.5	19.5	19.49	0.23%	0.645	0.646	-
					Back side	0	20175	1732.5	19.5	19.49	0.23%	0.052	0.052	-
LTE	20MHz	QPSK	50 RB	0	Left side	0	20050	1720	19.5	19.37	3.04%	0.876	0.903	-
Band 4	20101112	QF SK			Left side	0	20175	1732.5	19.5	19.49	0.23%	0.859	0.861	-
					Left side	0	20300	1745	19.5	19.44	1.39%	0.823	0.834	-
					Top side	0	20175	1732.5	19.5	19.40	2.33%	0.635	0.650	-
					Back side	0	20175	1732.5	19.5	19.40	2.33%	0.054	0.055	-
			100	DB	Left side	0	20050	1720	19.5	19.34	3.75%	0.955	0.991	-
			100	ND	Left side	0	20175	1732.5	19.5	19.40	2.33%	0.967	0.990	138
					Left side*	0	20175	1732.5	19.5	19.40	2.33%	0.961	0.983	-
					Left side	0	20300	1745	19.5	19.33	3.99%	0.942	0.980	-

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

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LTE FDD Band 5

	Dondui								Max. Rated	Measure		Averaged 3 1g (W		
Mode	Bandwi dth (MHz)	Modulatior	RB Size	RB start	Position	Distance (mm)	СН	Freq. (MHz)	Avg. Power + Max. Toleranc e (dBm)	d Avg. Power (dBm)	Scaling	Measured	Reported	Plot page
					Laptop mode	0	20450	829	24	22.87	29.72%	0.011	0.014	-
					Stand mode	0	20450	829	24	22.87	29.72%	0.016	0.021	-
					Top side	0	20450	829	24	22.87	29.72%	0.652	0.846	-
			1 RB	0	Top side	0	20525	836.5	24	22.84	30.62%	0.784	1.024	139
			TRD	0	Top side*	0	20525	836.5	24	22.84	30.62%	0.781	1.020	-
					Top side	0	20600	844	24	22.86	30.02%	0.634	0.824	-
					Back side	0	20450	829	24	22.87	29.72%	0.177	0.230	-
					Left side	0	20450	829	24	22.87	29.72%	0.504	0.654	-
LTE	10MHz	QPSK			Laptop mode	0	20450	829	23	21.87	29.72%	0.009	0.012	-
Band 5	1010112	GION			Stand mode	0	20450	829	23	21.87	29.72%	0.014	0.018	-
			25 RB	12	Top side	0	20450	829	23	21.87	29.72%	0.511	0.663	-
					Back side	0	20450	829	23	21.87	29.72%	0.134	0.174	-
					Left side	0	20450	829	23	21.87	29.72%	0.391	0.507	-
					Laptop mode	0	20600	844	23	21.79	32.13%	0.010	0.013	-
					Stand mode	0	20600	844	23	21.79	32.13%	0.014	0.018	-
			50 F	RB	Top side	0	20600	844	23	21.79	32.13%	0.476	0.629	-
					Back side	0	20600	844	23	21.79	32.13%	0.117	0.155	-
					Left side	0	20600	844	23	21.79	32.13%	0.345	0.456	-

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

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LTE FDD Band 7 (without power reduction)

	Bandwi								Max. Rated Avg.	Measure d		Averaged 1g (W		
Mode		Modulatior	RB Size		Position	Distance (mm)	СН	Freq. (MHz)	Power + Max. Toleranc e (dBm)	Avg. Power (dBm)	Scaling	Measured	Reported	Plot page
			1 PB	0	Laptop mode	0	21350	2560	24	23.39	15.08%	0.012	0.014	-
				0	Stand mode	0	21350	2560	24	23.39	15.08%	0.017	0.020	-
LTE	20MHz	ODSK		25	Laptop mode	0	21350	2560	23	22.51	11.94%	0.009	0.010	-
Band 7	20101112	QFON		25	Stand mode	0	21350	2560	23	22.51	11.94%	0.015	0.017	-
				DB	Laptop mode	0	21350	2560	23	22.29	17.76%	0.009	0.011	-
				ND	Stand mode	0	21350	2560	23	22.29	17.76%	0.015	0.018	-

LTE FDD Band 7 (with power reduction)

	Bandwi								Max. Rated Avg.	Measure d		Averaged 1g (W		
Mode		Modulatior	RB Size	RB start	Position	Distance (mm)	СН	Freq. (MHz)	Power + Max. Toleranc e (dBm)	Avg. Power (dBm)	Scaling	Measured	Reported	Plot page
					Top side	0	20850	2510	18	17.64	8.64%	0.728	0.791	-
					Top side	0	21100	2535	18	17.90	2.33%	0.901	0.922	-
					Top side	0	21350	2560	18	18.00	0.00%	0.953	0.953	-
			1 RB	0	Back side	0	21350	2560	18	18.00	0.00%	0.152	0.152	-
			TRD		Left side	0	20850	2510	18	17.64	8.64%	0.925	1.005	-
					Left side	0	21100	2535	18	17.90	2.33%	0.982	1.005	-
					Left side	0	21350	2560	18	18.00	0.00%	1.050	1.050	140
					Left side*	0	21350	2560	18	18.00	0.00%	% 1.050 1.050 1 % 1.040 1.040 1 % 0.712 0.754 1	-	
					Top side	0	20850	2510	18	17.75	5.93%	0.712	0.754	-
					Top side	0	21100	2535	18	17.82	4.23%	0.888	0.926	-
LTE	20MHz	QPSK			Top side	0	21350	2560	18	17.84	3.75%	0.941	0.976	-
Band 7	20101112	QI OIX	50 RB	25	Back side	0	21350	2560	18	17.84	3.75%	0.151	0.157	-
					Left side	0	20850	2510	18	17.75	5.93%	0.909	0.963	-
					Left side	0	21100	2535	18	17.82	4.23%	0.971	1.012	-
					Left side	0	21350	2560	18	17.84	3.75%	1.000	1.038	-
					Top side	0	20850	2510	18	17.61	9.40%	0.731	0.800	-
					Top side	0	21100	2535	18	17.79	4.95%	0.872	0.915	-
					Top side	0	21350	2560	18	17.80	4.71%	0.942	0.986	-
			100	RB	Back side	0	21350	2560	18	17.80	4.71%	0.159	0.166	-
					Left side	0	20850	2510	18	17.61	9.40%	0.911	0.997	-
					Left side	0	21100	2535	18	17.79	4.95%	0.965	1.013	-
					Left side	0	21350	2560	18	17.80	4.71%	1.010	1.058	-

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

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LTE FDD Band 12

	D								Max. Rated	Measure		Averaged 1g (W		
Mode	Bandwi dth (MHz)	Modulatior	RB Size	RB start	Position	Distance (mm)	СН	Freq. (MHz)	Avg. Power + Max. Toleranc e (dBm)	d Avg. Power (dBm)	Scaling	Measured	Reported	Plot page
					Laptop mode	0	23095	707.5	24	22.83	30.92%	0.006	0.008	-
					Stand mode	0	23095	707.5	24	22.83	30.92%	0.008	0.010	-
					Top side	0	23060	704	24	22.73	33.97%	0.610	0.817	-
			1 RB	0	Top side	0	23095	707.5	24	22.83	30.92%	0.634	0.830	141
			TRD	0	Top side*	0	23095	707.5	24	22.83	30.92%	0.622	0.814	-
					Top side	0	23130	711	24	22.69	35.21%	0.608	0.822	-
					Back side	0	23095	707.5	24	22.83	30.92%	0.044	0.058	-
					Left side	0	23095	707.5	24	22.83	30.92%	0.199	0.261	-
LTE					Laptop mode	0	23130	711	23	21.81	31.52%	0.005	0.007	-
Band	10MHz	QPSK			Stand mode	0	23130	711	23	21.81	31.52%	0.006	0.008	-
12	1010112	GIOR			Top side	0	23060	704	23	21.78	32.43%	0.492	0.652	-
			25 RB	12	Top side	0	23095	707.5	23	21.79	32.13%	0.504	0.666	-
					Top side	0	23130	711	23	21.81	31.52%	0.582	0.765	-
					Back side	0	23130	711	23	21.81	31.52%	0.039	0.051	-
					Left side	0	23130	711	23	21.81	31.52%	0.180	0.237	-
					Laptop mode	0	23095	707.5	23	21.74	33.66%	0.005	0.007	-
					Stand mode	0	23095	707.5	23	21.74	33.66%	0.006	0.008	-
			50 F	RB	Top side	0	23095	707.5	23	21.74	33.66%	0.562	0.751	-
					Back side	0	23095	707.5	23	21.74	33.66%	0.037	0.049	-
					Left side	0	23095	707.5	23	21.74	33.66%	0.177	0.237	-

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

LTE FDD Band 13

	Bandwi								Max. Rated Avg.	Measure d		Averaged 1g (W		
Mode		Modulatior	RB Size	RB start	Position	Distance (mm)	СН	Freq. (MHz)	Power + Max. Toleranc e (dBm)	Avg. Power	Scaling	Measured	Reported	Plot page
					Laptop mode	0	23230	782	24	22.65	36.46%	0.017	0.023	-
					Stand mode	0	23230	782	24	22.65	36.46%	0.021	0.029	-
				0	Top side	0	23230	782	24	22.65	36.46%	0.872	1.190	142
				0	Top side*	0	23230	782	24	22.65	36.46%	0.851	1.161	-
			1 RB		Back side	0	23230	782	24	22.65	36.46%	0.129	0.176	-
			TRD		Left side	0	23230	782	24	22.65	36.46%	0.730	0.996	-
				25	Top side	0	23230	782	24	22.48	41.91%	0.569	W/kg) d Reported 0.023 0.029 1.190 1.161 0.176	-
				25	Left side	0	23230	782	24	22.48	41.91%	0.405	0.575	-
				49	Top side	0	23230	782	24	22.60	38.04%	0.532	0.734	-
LTE				43	Left side	0	23230	782	24	22.60	38.04%	0.437	0.603	-
Band	10MHz	QPSK		0	Top side	0	23230	782	23	21.72	34.28%	0.507	0.681	-
13	1010112	QI OI			Laptop mode	0	23230	782	23	21.80	31.83%	0.018	0.024	-
					Stand mode	0	23230	782	23	21.80	31.83%	0.019	0.025	-
			25 RB	12	Top side	0	23230	782	23	21.80	31.83%	0.699	0.921	-
					Back side	0	23230	782	23	21.80	31.83%	0.112	0.148	-
					Left side	0	23230	782	23	21.80	31.83%	0.601	0.792	-
				25	Top side	0	23230	782	23	21.72	34.28%	0.578	0.776	-
					Laptop mode	0	23230	782	23	21.75	33.35%	0.017	0.023	-
					Stand mode	0	23230	782	23	21.75	33.35%	0.019		-
			50 F	RB	Top side	0	23230	782	23	21.75	33.35%	0.714	0.952	-
					Back side	0	23230	782	23	21.75	33.35%	0.114	0.152	-
					Left side	0	23230	782	23	21.75	33.35%	0.602	0.803	-

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

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LTE FDD Band 17

	Derekui								Max. Rated	Measure		Averaged 3 1g (W		
Mode	Bandwi dth (MHz)	Modulatior	RB Size	RB start	Position	Distance (mm)	СН	Freq. (MHz)	Avg. Power + Max. Toleranc e (dBm)	d Avg. Power (dBm)	Scaling	Measured	Reported	Plot page
					Laptop mode	0	23790	710	24	22.91	28.53%	0.007	0.009	-
					Stand mode	0	23790	710	24	22.91	28.53%	0.008	0.010	-
			1 RB	25	Top side	0	23790	710	24	22.91	28.53%	0.583	0.749	143
			TRD	25	Top side*	0	23790	710	24	22.91	28.53%	0.581	0.747	-
					Back side	0	23790	710	24	22.91	28.53%	0.047	0.060	-
					Left side	0	23790	710	24	22.91	28.53%	0.319	0.410	-
					Laptop mode	0	23800	711	23	21.72	34.28%	0.005	0.007	-
LTE					Stand mode	0	23800	711	23	21.72	34.28%	0.006	0.008	-
Band	10MHz	QPSK			Top side	0	23780	709	23	21.67	35.83%	0.441	0.599	-
17	1010112		25 RB	25	Top side	0	23790	710	23	21.71	34.59%	0.454	0.611	-
··					Top side	0	23800	711	23	21.72	34.28%	0.565	0.759	-
					Back side	0	23800	711	23	21.72	34.28%	0.039	0.052	-
					Left side	0	23800	711	23	21.72	34.28%	0.266	0.357	-
					Laptop mode	0	23780	709	23	21.73	33.97%	0.005	0.007	-
					Stand mode	0	23780	709	23	21.73	33.97%	0.006	0.008	-
			50 F	RB	Top side	0	23780	709	23	21.73	33.97%	0.561	0.752	-
					Back side	0	23780	709	23	21.73	33.97%	0.038	0.051	-
					Left side	0	23780	709	23	21.73	33.97%	0.253	0.339	-

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

In order to evaluate the simultaneous transmission SAR analysis based on the SAR data from both SAR reports(FCC ID: B94HNI04CAMWP & FCC ID: PD98265D2), we check the worst cases of WLAN SAR report in 2.4G and 5G respectively as below.

WLAN SISO

Mode	Antenna	Position	Distance	СН	Freq.	Max. Rated Avg. Power +	Measured Avg. Power	Scaling	U U	SAR over 1g /kg)	Plot
Wode	Antenna	1 USILION	(mm)	OIT	(MHz)	Max. Tolerance (dBm)	(dBm)	ocanny	Measured	Reported	page
WLAN802.11b	Main	Top side	0	11	2462	20.50	20.46	0.93%	0.596	0.602	-
WEANOUZ.TTD	Aux	Bottom side	0	6	2437	17.50	17.48	0.46%	0.385	0.387	-
Bluetooth (GFSK)	Aux	Bottom side	0	39	2441	11.50	11.50	0.00%	0.081	0.081	-
WLAN802.11a 5.3G	Aux	Bottom side	0	56	5280	13.50	13.45	1.16%	0.612	0.619	-
WLAN802.11a 5.6G	Main	Top side	0	124	5620	15.00	15.00	0.00%	0.511	0.511	-

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WLAN-Main: full tested laptop mode, left side of tablet mode and stand mode. **WLAN-Aux:** full tested left side of tablet mode and stand mode.

Mode	Antenn	Position	Distanc e	СН	Freq.	Max. Rated Avg. Power +	Measured Avg.	Scaling	Averaged 1 (W/	g	Plot
	а		(mm)		(MHz)	Max. Tolerance (dBm)	Power (dBm)	3	Measured	Reported	page
		Stand mode	0	6	2437	20.50	20.50	0.00%	0.008	0.008	-
	Main	Laptop mode	0	6	2437	20.50	20.50	0.00%	0.004	0.004	-
WLAN802.11b		Left side	0	6	2437	20.50	20.50	0.00%	0.044	0.044	-
112 11002.110		Stand mode	0	1	2412	17.50	17.45	1.16%	0.508	0.514	-
	Aux	Stand mode	0	6	2437	17.50	17.42	1.86%	0.527	0.537	144
		Left side	0	1	2412	17.50	17.45	1.16%	0.015	0.015	-
Bluetooth (GFSK)	Aux	Stand mode	0	39	2441	11.50	11.50	0.00%	0.070	0.070	-
Didetootin (OF Sit)	Aux	Left side	0	39	2441	11.50	11.50	0.00%	0.001	0.001	-
	Main	Stand mode	0	60	5300	15.00	15.00	0.00%	0.010	0.010	-
		Laptop	0	60	5300	15.00	15.00	0.00%	0.006	0.006	-
WLAN802.11a 5.3G		Left side	0	60	5300	15.00	15.00	0.00%	0.030	0.030	-
WLAN002.11a 5.5G		Stand mode	0	56	5280	13.50	13.45	1.16%	0.595	0.602	145
	Aux	Stand mode	0	60	5300	13.50	13.50	0.00%	0.582	0.582	-
		Left side	0	60	5300	13.50	13.50	0.00%	0.038	0.038	-
		Stand mode	0	124	5620	15.00	15.00	0.00%	0.018	0.018	-
	Main	Laptop	0	124	5620	15.00	15.00	0.00%	0.005	0.005	-
WLAN802.11a 5.6G		Left side	0	124	5620	15.00	15.00	0.00%	0.038	0.038	-
WLAN002.118 5.0G		Stand mode	0	116	5580	13.50	13.50	0.00%	0.561	0.561	-
	Aux	Stand mode	0	124	5620	13.50	13.50	0.00%	0.579	0.579	146
		Left side	0	116	5580	13.50	13.50	0.00%	0.016	0.016	-
		Stand mode	0	157	5785	15.00	15.00	0.00%	0.020	0.020	-
	Main	Laptop	0	157	5785	15.00	15.00	0.00%	0.007	0.007	-
WLAN802.11a 5.8G		Left side	0	157	5785	15.00	15.00	0.00%	0.059	0.059	-
	Aux	Stand mode	0	157	5785	13.50	13.50	0.00%	0.251	0.251	147
	Aux	Left side	0	165	5825	13.50	13.46	0.93%	0.008	0.008	-

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3. Simultaneous Transmission Analysis

Simultaneous Transmission Scenarios:

NO.	Simultaneous Transmit Configurations	Body
1	GPRS/EDGE + 2.4GHz WLAN Main / 2.4GHz WLAN Aux / 2.4GHz MIMO	YES
2	GPRS/EDGE + 5GHz WLAN Main / 5GHz WLAN Aux / 5GHz MIMO	YES
3	GPRS/EDGE + BT	YES
4	GPRS/EDGE + 2.4/5GHz WLAN Main + BT	YES
5	UMTS + 2.4GHz WLAN Main / 2.4GHz WLAN Aux / 2.4GHz MIMO	YES
6	UMTS + 5GHz WLAN Main / 5GHz WLAN Aux / 5GHz MIMO	YES
7	UMTS + BT	YES
8	UMTS + 2.4/5GHz WLAN Main + BT	YES
9	CDMA + 2.4GHz WLAN Main / 2.4GHz WLAN Aux / 2.4GHz MIMO	YES
10	CDMA + 5GHz WLAN Main / 5GHz WLAN Aux / 5GHz MIMO	YES
11	CDMA + BT	YES
12	CDMA + 2.4/5GHz WLAN Main + BT	YES
13	LTE + 2.4GHz WLAN Main / 2.4GHz WLAN Aux / 2.4GHz MIMO	YES
14	LTE + 5GHz WLAN Main / 5GHz WLAN Aux / 5GHz MIMO	YES
15	LTE + BT	YES
16	LTE + 2.4/5GHz WLAN Main + BT	YES

Note :

1) WWAN and WLAN may transmit simultaneously.

2) Bluetooth and WLAN Aux share the same antenna path, but Bluetooth can't transmit with WLAN Aux simultaneously.

2) Bluetooth can transmit with WLAN Main simultaneously.

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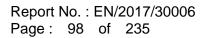
Antenna	Band		Highest Re	ported 1-g S [W/kg]	Laptop 0.004 0.007 0.660 1.250 0.190 0.013 0.016 0.020 0.020 0.020 0.017 0.023 0.021 0.023 0.024 0.014 0.014 0.014 0.014 0.014 0.014 0.014 0.014 0.014 0.014 0.014 0.014 0.014 0.014 0.014	
Antenna	Dariu	Back	Top (Bottom)	Left	Laptop	Stand
WLAN Main	2.4GHz	0.210	0.690	0.044	0.004	0.008
	5GHz	0.040	0.620	0.059	0.007	0.020
	2.4GHz	0.200	0.440	0.015	0.660	0.537
WLAN Aux	5GHz	0.180	0.660	0.038	1.250	0.602
	BT	0.060	0.130	0.001	0.190	0.070
	GPRS 850	0.155	0.968	1.174	0.013	0.012
	GPRS 1900	0.044	0.578	0.944	0.016	0.013
	WCDMA Band II	0.051	0.662	0.959	0.020	0.016
	WCDMA Band IV	0.058	0.682	1.099	0.020	0.018
	WCDMA Band V	0.198	0.929	1.128	0.017	0.015
	LTE Band 2	0.055	0.706	1.138	0.023	0.023
WWAN	LTE Band 4	0.055	0.669	0.991	0.021	0.019
VVVAN	LTE Band 5	0.230	1.024	0.654	0.014	0.021
	LTE Band 7	0.166	0.986	1.058	0.014	0.020
	LTE Band 12	0.058	0.830	0.261	0.008	0.010
	LTE Band 13	0.176	1.190	0.996	0.024	0.029
	LTE Band 17	0.060	0.759	0.410	0.009	0.010
	CDMA BC0	0.245	0.989	1.137	0.019	0.018
	CDMA BC1	0.055	0.631	0.973	0.018	0.017

Max highest reported 1-g SAR (0mm) for WWAN & WLAN

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3.2 SPLSR evaluation and analysis

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

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

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

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

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

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		Siı	nultaneo	us Transr	nission S	cenario			001.00	
No.	Test Position	GPRS 850	2.40	GHz	5G	iHz	Bluetooth	Σ SAR 1g (W/kg)	SPLSR (Yes/No)	Figure
	1 collion	GFK3 650	Main	Aux	Main	Aux	Bideloolii	(11/13)	(100/110)	
		0.155	0.210	0.200	-	-	-	0.565	No	-
	Back side	0.155	0.210	-	-	-	0.060	0.425	No	-
	Dack Side	0.155	-	-	0.040	0.180	-	0.375	No	-
		0.155	-	-	0.040	-	0.060	0.255	No	-
		0.968	0.690	0.440	-	-	-	2.098	Yes	1
	Top side	0.968	0.690	-	-	-	0.130	1.788	Yes	2
	T UP Side	0.968	-	-	0.620	0.660	-	2.248	Yes	3
		0.968	-	-	0.620	-	0.130	1.718	Yes	4
		1.174	0.044	0.015	-	-	-	1.233	No	-
1~4	Left side	1.174	0.044	-	-	-	0.001	1.219	No	-
1~4	Len side	1.174	-	-	0.059	0.038	-	1.271	No	-
		1.174	-	-	0.059	-	0.001	1.234	No	-
		0.013	0.004	0.660	-	-	-	0.677	No	-
	Laptop	0.013	0.004	-	-	-	0.190	0.207	No	-
	сартор	0.013	-	-	0.007	1.250	-	1.270	No	-
		0.013	-	-	0.007	-	0.190	0.210	No	-
		0.012	0.008	0.537	-	-	-	0.557	No	-
	Stand	0.012	0.008	-	-	-	0.070	0.090	No	-
	Stanu	0.012	-	-	0.020	0.602	-	0.634	No	-
		0.012	-	-	0.020	-	0.070	0.102	No	-

Sum of the SAR for GPRS 850 + WLAN + Bluetooth

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		Siı	multaneo	us Transr	nission S	cenario			001.00	
No.	Test Position	GPRS 1900	2.4	GHz	5G	iHz	Bluetooth	Σ SAR 1g (W/kg)		Figure
	1 collion	GFK3 1900	Main	Aux	Main	Aux	Bideloolii	(11/13)	SPLSR (Yes/No) No No No Yes No Yes No Yes No Yes No No	
		0.044	0.210	0.200	-	-	-	0.454	No	-
	Back side	0.044	0.210	-	-	-	0.060	0.314	No	-
	Dack Side	0.044	-	-	0.040	0.180	-	0.264	No	-
		0.044	-	-	0.040	-	0.060	0.144	No	-
		0.578	0.690	0.440	-	-	-	1.708	Yes	5
	Top side	0.578	0.690	-	-	-	0.130	1.398	No	-
	T UP Side	0.578	-	-	0.620	0.660	-	1.858	Yes	6
		0.578	-	-	0.620	-	0.130	1.328	No	-
		0.944	0.044	0.015	-	-	-	1.003	No	-
1~4	Left side	0.944	0.044	-	-	-	0.001	0.989	No	-
1~4	Lent side	0.944	-	-	0.059	0.038	-	1.041	No	-
		0.944	-	-	0.059	-	0.001	1.004	No	-
		0.016	0.004	0.660	-	-	-	0.680	No	-
	Laptop	0.016	0.004	-	-	-	0.190	0.210	No	-
	сартор	0.016	-	-	0.007	1.250	-	1.273	No	-
		0.016	-	-	0.007	-	0.190	0.213	No	-
		0.013	0.008	0.537	-	-	-	0.558	No	-
	Stand	0.013	0.008	-	-	-	0.070	0.091	No	-
	Stanu	0.013	-	-	0.020	0.602	-	0.635	No	-
		0.013	-	-	0.020	-	0.070	0.103	No	-

Sum of the SAR for GPRS 1900 + WLAN + Bluetooth

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	-	Sir	nultaneo	us Transr	nission S	cenario		S SAR 1a		
No.	Test Position	WCDMA Band	2.4	GHz	5G	iHz	Bluetooth	Σ SAR 1g (W/kg)	SPLSR (Yes/No)	Figure
	1 conton	II	Main	Aux	Main	Aux	Bideloolii	(11/13)	(100/110)	
		0.051	0.210	0.200	-	-	-	0.461	No	-
	Back side	0.051	0.210	-	-	-	0.060	0.321	No	-
	Dack Side	0.051	-	-	0.040	0.180	-	0.271	No	-
		0.051	-	-	0.040	-	0.060	0.151	No	-
		0.662	0.690	0.440	-	-	-	1.792	Yes	7
	Top side	0.662	0.690	-	-	-	0.130	1.482	No	-
	Top side	0.662	-	-	0.620	0.660	-	1.942	Yes	8
		0.662	-	-	0.620	-	0.130	1.412	No	-
	Left side	0.959	0.044	0.015	-	-	-	1.018	No	-
5~8		0.959	0.044	-	-	-	0.001	1.004	No	-
5~0		0.959	-	-	0.059	0.038	-	1.056	No	-
		0.959	-	-	0.059	-	0.001	1.019	No	-
		0.020	0.004	0.660	-	-	-	0.684	No	-
	Laptop	0.020	0.004	-	-	-	0.190	0.214	No	-
	сартор	0.020	-	-	0.007	1.250	-	1.277	No	-
		0.020	-	-	0.007	-	0.190	0.217	No	-
		0.016	0.008	0.537	-	-	-	0.561	No	-
	Stand	0.016	0.008	-	-	-	0.070	0.094	No	-
	Stand	0.016	-	-	0.020	0.602	-	0.638	No	-
		0.016	-	-	0.020	-	0.070	0.106	No	-

Sum of the SAR for WCDMA Band II + WLAN + Bluetooth

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		Sir	nultaneo	us Transr	nission S	cenario		S SAR 1a		
No.	Test Position	WCDMA Band	2.4	GHz	5G	iHz	Bluetooth	Σ SAR 1g (W/kg)	SPLSR (Yes/No)	Figure
	1 conton	IV	Main	Aux	Main	Aux	Bideloolii	(11/13)	(100/110)	
		0.058	0.210	0.200	-	-	-	0.468	No	-
	Back side	0.058	0.210	-	-	-	0.060	0.328	No	-
	Dack Side	0.058	-	-	0.040	0.180	-	0.278	No	-
		0.058	-	-	0.040	-	0.060	0.158	No	-
		0.682	0.690	0.440	-	-	-	1.812	Yes	9
	Top side	0.682	0.690	-	-	-	0.130	1.502	No	-
	Top side	0.682	-	-	0.620	0.660	-	1.962	Yes	10
		0.682	-	-	0.620	-	0.130	1.432	No	-
	Left side	1.099	0.044	0.015	-	-	-	1.158	No	-
5~8		1.099	0.044	-	-	-	0.001	1.144	No	-
5~0		1.099	-	-	0.059	0.038	-	1.196	No	-
		1.099	-	-	0.059	-	0.001	1.159	No	-
		0.020	0.004	0.660	-	-	-	0.684	No	-
	Laptop	0.020	0.004	-	-	-	0.190	0.214	No	-
	сартор	0.020	-	-	0.007	1.250	-	1.277	No	-
		0.020	-	-	0.007	-	0.190	0.217	No	-
		0.018	0.008	0.537	-	-	-	0.563	No	-
	Stand	0.018	0.008	-	-	-	0.070	0.096	No	-
	Stand	0.018	-	-	0.020	0.602	-	0.640	No	-
		0.018	-	-	0.020	-	0.070	0.108	No	-

Sum of the SAR for WCDMA Band IV + WLAN + Bluetooth

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	-	Sir	nultaneo	us Transr	nission S	cenario		S SAD 1a		
No.	Test Position	WCDMA Band	2.4	GHz	50	iHz	Bluetooth	Σ SAR 1g (W/kg)	SPLSR (Yes/No)	Figure
	1 controll	v	Main	Aux	Main	Aux	Bideloolii	(11/13)	(100,110)	
		0.198	0.210	0.200	-	-	-	0.608	No	-
	Back side	0.198	0.210	-	-	-	0.060	0.468	No	-
	Dack Side	0.198	-	-	0.040	0.180	-	0.418	No	-
		0.198	-	-	0.040	-	0.060	0.298	No	-
		0.929	0.690	0.440	-	-	-	2.059	Yes	11
	Top side	0.929	0.690	-	-	-	0.130	1.749	Yes	12
	Top side	0.929	-	-	0.620	0.660	-	2.209	Yes	13
		0.929	-	-	0.620	-	0.130	1.679	Yes	14
	Left side	1.128	0.044	0.015	-	-	-	1.187	No	-
5~8		1.128	0.044	-	-	-	0.001	1.173	No	-
5~0		1.128	-	-	0.059	0.038	-	1.225	No	-
		1.128	-	-	0.059	-	0.001	1.188	No	-
		0.017	0.004	0.660	-	-	-	0.681	No	-
	Laptop	0.017	0.004	-	-	-	0.190	0.211	No	-
	сартор	0.017	-	-	0.007	1.250	-	1.274	No	-
		0.017	-	-	0.007	-	0.190	0.214	No	-
		0.015	0.008	0.537	-	-	-	0.560	No	-
	Stand	0.015	0.008	-	-	-	0.070	0.093	No	-
	Stand	0.015	-	-	0.020	0.602	-	0.637	No	-
		0.015	-	-	0.020	-	0.070	0.105	No	-

Sum of the SAR for WCDMA Band V + WLAN + Bluetooth

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	Test Position	Siı	multaneo	us Transr	nission S	cenario		S SAD 4m		
No.		CDMA BC0	2.40	GHz	5G	iHz	Bluetooth	Σ SAR 1g (W/kg)	SPLSR (Yes/No)	Figure
	1 collion	CDIMA BCO	Main	Aux	Main	Aux	Bideloolii	(11/13)	(100,110)	
		0.245	0.210	0.200	-	-	-	0.655	No	-
	Back side	0.245	0.210	-	-	-	0.060	0.515	No	-
	Dack Side	0.245	-	-	0.040	0.180	-	0.465	No	-
		0.245	-	-	0.040	-	0.060	0.345	No	-
		0.989	0.690	0.440	-	-	-	2.119	Yes	15
	Top side	0.989	0.690	-	-	-	0.130	1.809	Yes	16
	i op side	0.989	-	-	0.620	0.660	-	2.269	Yes	17
		0.989	-	-	0.620	-	0.130	1.739	Yes	18
	Left side	1.137	0.044	0.015	-	-	-	1.196	No	-
9~12		1.137	0.044	-	-	-	0.001	1.182	No	-
9~12		1.137	-	-	0.059	0.038	-	1.234	No	-
		1.137	-	-	0.059	-	0.001	1.197	No	-
		0.019	0.004	0.660	-	-	-	0.683	No	-
	Lanton	0.019	0.004	-	-	-	0.190	0.213	No	-
	Laptop	0.019	-	-	0.007	1.250	-	1.276	No	-
		0.019	-	-	0.007	-	0.190	0.216	No	-
		0.018	0.008	0.537	-	-	-	0.563	No	-
	Stand	0.018	0.008	-	-	-	0.070	0.096	No	-
		0.018	-	-	0.020	0.602	-	0.640	No	-
		0.018	-	-	0.020	-	0.070	0.108	No	-

Sum of the SAR for CDMA BC0 + WLAN + Bluetooth

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	_	Siı	multaneo	us Transr	nission S	cenario		Σ SAR 1g	SPLSR	
No.	Test Position	CDMA BC1	2.40	GHz	5G	iHz	Bluetooth	Σ SAR 1g (W/kg)	(Yes/No)	Figure
	1 collion	CDIMA BCT	Main	Aux	Main	Aux	Bideloolii	(11/13)	(100/110)	
		0.055	0.210	0.200	-	-	-	0.465	No	-
	Back side	0.055	0.210	-	-	-	0.060	0.325	No	-
	Dack Side	0.055	-	-	0.040	0.180	-	0.275	No	-
		0.055	-	-	0.040	-	0.060	0.155	No	-
		0.631	0.690	0.440	-	-	-	1.761	Yes	19
	Top side	0.631	0.690	-	-	-	0.130	1.451	No	-
	i op side	0.631	-	-	0.620	0.660	-	1.911	Yes	20
		0.631	-	-	0.620	-	0.130	1.381	No	-
	Left side	0.973	0.044	0.015	-	-	-	1.032	No	-
9~12		0.973	0.044	-	-	-	0.001	1.018	No	-
9~12		0.973	-	-	0.059	0.038	-	1.070	No	-
		0.973	-	-	0.059	-	0.001	1.033	No	-
		0.018	0.004	0.660	-	-	-	0.682	No	-
	Laptop	0.018	0.004	-	-	-	0.190	0.212	No	-
	сарюр	0.018	-	-	0.007	1.250	-	1.275	No	-
		0.018	-	-	0.007	-	0.190	0.215	No	-
		0.017	0.008	0.537	-	-	-	0.562	No	-
	Stand	0.017	0.008	-	-	-	0.070	0.095	No	-
	Stand	0.017	-	-	0.020	0.602	-	0.639	No	-
		0.017	-	-	0.020	-	0.070	0.107	No	-

Sum of the SAR for CDMA BC1 + WLAN + Bluetooth

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	Test Position	Sir	nultaneo	us Transr	nission S	cenario		S SAD 4m		
No.		LTE Band 2	2.40	GHz	5G	iHz	Bluetooth	Σ SAR 1g (W/kg)	SPLSR (Yes/No)	Figure
	1 controll	LIE Banu Z	Main	Aux	Main	Aux	Bluetootii	(11/1.9)	(100,110)	
		0.055	0.210	0.200	-	-	-	0.465	No	-
	Back side	0.055	0.210	-	-	-	0.060	0.325	No	-
	Dack Sluc	0.055	-	-	0.040	0.180	-	0.275	No	-
		0.055	-	-	0.040	-	0.060	0.155	No	-
		0.706	0.690	0.440	-	-	-	1.836	Yes	21
	Top side	0.706	0.690	-	-	-	0.130	1.526	No	-
	i op side	0.706	-	-	0.620	0.660	-	1.986	Yes	22
		0.706	-	-	0.620	-	0.130	1.456	No	-
	Left side	1.138	0.044	0.015	-	-	-	1.197	No	-
13~16		1.138	0.044	-	-	-	0.001	1.183	No	-
15~10		1.138	-	-	0.059	0.038	-	1.235	No	-
		1.138	-	-	0.059	-	0.001	1.198	No	-
		0.023	0.004	0.660	-	-	-	0.687	No	-
	Laptop	0.023	0.004	-	-	-	0.190	0.217	No	-
	сарюр	0.023	-	-	0.007	1.250	-	1.280	No	-
		0.023	-	-	0.007	-	0.190	0.220	No	-
		0.023	0.008	0.537	-	-	-	0.568	No	-
	Stand	0.023	0.008	-	-	-	0.070	0.101	No	-
	Stand	0.023	-	-	0.020	0.602	-	0.645	No	-
		0.023	-	-	0.020	-	0.070	0.113	No	-

Sum of the SAR for LTE Band 2 + WLAN + Bluetooth

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	Test	Sir	nultaneo	us Transr	nission S	cenario		5 CAD 4-		
No.	Test Position	LTE Band 4	2.40	GHz	5G	iHz	Bluetooth	Σ SAR 1g (W/kg)	SPLSR (Yes/No)	Figure
	1 conton	LTE Banu 4	Main	Aux	Main	Aux	Bideloolii	(11/13)	(100/110)	
		0.055	0.210	0.200	-	-	-	0.465	No	-
	Back side	0.055	0.210	-	-	-	0.060	0.325	No	-
	Dack Side	0.055	-	-	0.040	0.180	-	0.275	No	-
		0.055	-	-	0.040	-	0.060	0.155	No	-
		0.669	0.690	0.440	-	-	-	1.799	Yes	23
	Top side	0.669	0.690	-	-	-	0.130	1.489	No	-
	i op side	0.669	-	-	0.620	0.660	-	1.949	Yes	24
		0.669	-	-	0.620	-	0.130	1.419	No	-
	Left side	0.991	0.044	0.015	-	-	-	1.050	No	-
13~16		0.991	0.044	-	-	-	0.001	1.036	No	-
13~10		0.991	-	-	0.059	0.038	-	1.088	No	-
		0.991	-	-	0.059	-	0.001	1.051	No	-
		0.021	0.004	0.660	-	-	-	0.685	No	-
	Laptop	0.021	0.004	-	-	-	0.190	0.215	No	-
	сарюр	0.021	-	-	0.007	1.250	-	1.278	No	-
		0.021	-	-	0.007	-	0.190	0.218	No	-
		0.019	0.008	0.537	-	-	-	0.564	No	-
	Stand	0.019	0.008	-	-	-	0.070	0.097	No	-
	Stand	0.019	-	-	0.020	0.602	-	0.641	No	-
		0.019	-	-	0.020	-	0.070	0.109	No	-

Sum of the SAR for LTE FDD Band 4 + WLAN + Bluetooth

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	Test Position	Sir	nultaneo	us Transr	nission S	cenario		S SAD 4m		
No.		LTE Band 5	2.4	GHz	5G	iHz	Bluetooth	Σ SAR 1g (W/kg)	SPLSR (Yes/No)	Figure
	1 conton		Main	Aux	Main	Aux	Bideloolii	(11/13)	(100/110)	
		0.230	0.210	0.200	-	-	-	0.640	No	-
	Back side	0.230	0.210	-	-	-	0.060	0.500	No	-
	Dack Side	0.230	-	-	0.040	0.180	-	0.450	No	-
		0.230	-	-	0.040	-	0.060	0.330	No	-
		1.024	0.690	0.440	-	-	-	2.154	Yes	25
	Top side	1.024	0.690	-	-	-	0.130	1.844	Yes	26
	i op side	1.024	-	-	0.620	0.660	-	2.304	Yes	27
		1.024	-	-	0.620	-	0.130	1.774	Yes	28
	Left side	0.654	0.044	0.015	-	-	-	0.713	No	-
13~16		0.654	0.044	-	-	-	0.001	0.699	No	-
13~10		0.654	-	-	0.059	0.038	-	0.751	No	-
		0.654	-	-	0.059	-	0.001	0.714	No	-
		0.014	0.004	0.660	-	-	-	0.678	No	-
	Laptop	0.014	0.004	-	-	-	0.190	0.208	No	-
	сарюр	0.014	-	-	0.007	1.250	-	1.271	No	-
		0.014	-	-	0.007	-	0.190	0.211	No	-
		0.021	0.008	0.537	-	-	-	0.566	No	-
	Stand	0.021	0.008	-	-	-	0.070	0.099	No	-
		0.021	-	-	0.020	0.602	-	0.643	No	-
		0.021	-	-	0.020	-	0.070	0.111	No	-

Sum of the SAR for LTE FDD Band 5 + WLAN + Bluetooth

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	-	Sir	nultaneo	us Transr	nission S	cenario			001.00	
No.	Test Position	LTE Band 7	2.40	GHz	5G	iHz	Bluetooth	Σ SAR 1g (W/kg)	SPLSR (Yes/No)	Figure
	1 conton		Main	Aux	Main	Aux	Bideloolii	(11/13)	(100/110)	
		0.166	0.210	0.200	-	-	-	0.576	No	-
	Back side	0.166	0.210	-	-	-	0.060	0.436	No	-
	Dack Side	0.166	-	-	0.040	0.180	-	0.386	No	-
		0.166	-	-	0.040	-	0.060	0.266	No	-
		0.986	0.690	0.440	-	-	-	2.116	Yes	29
	Top side	0.986	0.690	-	-	-	0.130	1.806	Yes	30
	T OP SIDE	0.986	-	-	0.620	0.660	-	2.266	Yes	31
		0.986	-	-	0.620	-	0.130	1.736	Yes	32
		1.058	0.044	0.015	-	-	-	1.117	No	-
13~16	Left side	1.058	0.044	-	-	-	0.001	1.103	No	-
13~10	Left Side	1.058	-	-	0.059	0.038	-	1.155	No	-
		1.058	-	-	0.059	-	0.001	1.118	No	-
		0.014	0.004	0.660	-	-	-	0.678	No	-
	Laptop	0.014	0.004	-	-	-	0.190	0.208	No	-
	Laptop	0.014	-	-	0.007	1.250	-	1.271	No	-
		0.014	-	-	0.007	-	0.190	0.211	No	-
		0.020	0.008	0.537	-	-	-	0.565	No	-
	Stand	0.020	0.008	-	-	-	0.070	0.098	No	-
	Stariu	0.020	-	-	0.020	0.602	-	0.642	No	-
		0.020	-	-	0.020	-	0.070	0.110	No	-

Sum of the SAR for LTE FDD Band 7 + WLAN + Bluetooth

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		Sir	multaneo	us Transr	nission S	cenario			001.00	
No.	Test Position	LTE Band 12	2.40	GHz	5G	iHz	Bluetooth	Σ SAR 1g (W/kg)	SPLSR (Yes/No)	Figure
	1 conton	LTE Ballu TZ	Main	Aux	Main	Aux	Bideloolii	(11/13)	(100/110)	
		0.058	0.210	0.200	-	-	-	0.468	No	-
	Back side	0.058	0.210	-	-	-	0.060	0.328	No	-
	Dack Side	0.058	-	-	0.040	0.180	-	0.278	No	-
		0.058	-	-	0.040	-	0.060	0.158	No	-
		0.830	0.690	0.440	-	-	-	1.960	Yes	33
	Top side	0.830	0.690	-	-	-	0.130	1.650	Yes	34
	Top side	0.830	-	-	0.620	0.660	-	2.110	Yes	35
		0.830	-	-	0.620	-	0.130	1.580	No	-
		0.261	0.044	0.015	-	-	-	0.320	No	-
13~16	Left side	0.261	0.044	-	-	-	0.001	0.306	No	-
13~10	Len side	0.261	-	-	0.059	0.038	-	0.358	No	-
		0.261	-	-	0.059	-	0.001	0.321	No	-
		0.008	0.004	0.660	-	-	-	0.672	No	-
	Laptop	0.008	0.004	-	-	-	0.190	0.202	No	-
	сартор	0.008	-	-	0.007	1.250	-	1.265	No	-
		0.008	-	-	0.007	-	0.190	0.205	No	-
		0.010	0.008	0.537	-	-	-	0.555	No	-
	Stand	0.010	0.008	-	-	-	0.070	0.088	No	-
	Stanu	0.010	-	-	0.020	0.602	-	0.632	No	-
		0.010	-	-	0.020	-	0.070	0.100	No	-

Sum of the SAR for LTE FDD Band 12 + WLAN + Bluetooth

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		Sir	nultaneo	us Transr	nission S	cenario			001.00	
No.	Test Position	LTE Band 13	2.4	GHz	5G	iHz	Bluetooth	Σ SAR 1g (W/kg)	SPLSR (Yes/No)	Figure
	1 conton	LTE Ballu 15	Main	Aux	Main	Aux	Bideloolii	(11/1.9)	(100/110)	
		0.176	0.210	0.200	-	-	-	0.586	No	-
	Back side	0.176	0.210	-	-	-	0.060	0.446	No	-
	Dack Side	0.176	-	-	0.040	0.180	-	0.396	No	-
		0.176	-	-	0.040	-	0.060	0.276	No	-
		1.190	0.690	0.440	-	-	-	2.320	Yes	36
	Top side	1.190	0.690	-	-	-	0.130	2.010	Yes	37
	Top side	1.190	-	-	0.620	0.660	-	2.470	Yes	38
		1.190	-	-	0.620	-	0.130	1.940	Yes	39
		0.996	0.044	0.015	-	-	-	1.055	No	-
13~16	Left side	0.996	0.044	-	-	-	0.001	1.041	No	-
15~10	Left Side	0.996	-	-	0.059	0.038	-	1.093	No	-
		0.996	-	-	0.059	-	0.001	1.056	No	-
		0.024	0.004	0.660	-	-	-	0.688	No	-
	Laptop	0.024	0.004	-	-	-	0.190	0.218	No	-
	сартор	0.024	-	-	0.007	1.250	-	1.281	No	-
		0.024	-	-	0.007	-	0.190	0.221	No	-
		0.029	0.008	0.537	-	-	-	0.574	No	-
	Stand	0.029	0.008	-	-	-	0.070	0.107	No	-
		0.029	-	-	0.020	0.602	-	0.651	No	-
		0.029	-	-	0.020	-	0.070	0.119	No	-

Sum of the SAR for LTE FDD Band 13 + WLAN + Bluetooth

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	-	Sir	nultaneo	us Transr	nission S	cenario			001.00	
No.	Test Position	LTE Band 17	2.40	GHz	5G	iHz	Bluetooth	Σ SAR 1g (W/kg)	SPLSR (Yes/No)	Figure
	redition		Main	Aux	Main	Aux	Bideloolii	(11/13)	(100,110)	
		0.060	0.210	0.200	-	-	-	0.470	No	-
	Back side	0.060	0.210	-	-	-	0.060	0.330	No	-
	Dack Side	0.060	-	-	0.040	0.180	-	0.280	No	-
		0.060	-	-	0.040	-	0.060	0.160	No	-
		0.759	0.690	0.440	-	-	-	1.889	Yes	40
	Top side	0.759	0.690	-	-	-	0.130	1.579	No	-
	Top side	0.759	-	-	0.620	0.660	-	2.039	Yes	41
		0.759	-	-	0.620	-	0.130	1.509	No	-
		0.410	0.044	0.015	-	-	-	0.469	No	-
13~16	Left side	0.410	0.044	-	-	-	0.001	0.455	No	-
13~10	Left Side	0.410	-	-	0.059	0.038	-	0.507	No	-
		0.410	-	-	0.059	-	0.001	0.470	No	-
		0.009	0.004	0.660	-	-	-	0.673	No	-
	Laptop	0.009	0.004	-	-	-	0.190	0.203	No	-
	сарюр	0.009	-	-	0.007	1.250	-	1.266	No	-
		0.009	-	-	0.007	-	0.190	0.206	No	-
		0.010	0.008	0.537	-	-	-	0.555	No	-
	Stand	0.010	0.008	-	-	-	0.070	0.088	No	-
	Stanu	0.010	-	-	0.020	0.602	-	0.632	No	-
		0.010	-	-	0.020	-	0.070	0.100	No	-

Sum of the SAR for LTE FDD Band 17 + WLAN + Bluetooth

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Figures

Sim	nultaneous Trans	mission Sc	enario				WW/	AN+Main+Aux		
			SAR	Coor	dinates	(mm)		Peak Location		
Figure	Conditions	Position	Value (W/kg)	x	У	z	ΣSAR (W/kg)	Separation Distance (mm)	SPLSR	Result
	GPRS 850	Top side	0.968	-3.9	-123	-4.29	1.658	195.60	0.011	SPLSR<0.04,
	2.4GHz Main	Top side	0.690	-3.8	72.6	-4.69	1.050	195.00	0.011	Not required
	GPRS 850	Top side	0.968	-3.9	-123	-4.29	1.408	138.49	0.012	SPLSR<0.04,
	2.4GHz Aux	Top side	0.440	-12.8	15.2	-4.59	1.408	138.49	0.012	Not required
1		6		WAN	v	LAN A		AN Main		

Sim	ultaneous Trans	mission Sc	enario				WW.	AN+Main+BT		
			SAR	Coor	dinates	(mm)	TOAD	Peak Location		
Figure	Conditions	Position	Value (W/kg)	x	у	z	ΣSAR (W/kg)	Separation Distance (mm)	SPLSR	Result
	GPRS 850	Top side	0.968	-3.9	-123	-4.29	1.658	195.60	0.011	SPLSR<0.04,
	2.4GHz Main	T OP SIDE	0.690	-3.8	72.6	-4.69	1.050	195.00	0.011	Not required
	GPRS 850	Top side	0.968	-3.9	-123	-4.29	1.098	96.17	0.012	SPLSR<0.04,
	Bluetooth	Top side	0.130	-9.6	-27	-3.75	1.090	90.17	0.012	Not required
2			****		BT	_	ILAN MI	la		

Sim	nultaneous Trans	mission Sc	enario				WWA	N+Main+Aux		
			SAR	Coor	dinates	(mm)		Peak Location		
Figure	Conditions	Position	Value (W/kg)	x	у	z	ΣSAR (W/kg)	Separation Distance (mm)	SPLSR	Result
	GPRS 850	Top side	0.968	-3.9	-123	-4.29	1.588	220.30	0.009	SPLSR<0.04,
	5GHz Main	Top side	0.620	-10.6	97.2	-3.57	1.500	220.30	0.009	Not required
	GPRS 850	Tan aida	0.968	-3.9	-123	-4.29	1 000	1 40 00	0.015	SPLSR<0.04,
	5GHz Aux	Top side	0.660	-9	17	-3.79	1.628	140.09	0.015	Not required
3		0	****	M	WLAN	Aus	WLAN	Main		

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Sim	ultaneous Trans	smission Sc	enario				WW.	AN+Main+BT		
			SAR	Coor	dinates	(mm)		Peak Location		
Figure	Conditions	Position	Value (W/kg)	x	у	z	ΣSAR (W/kg)	Separation Distance (mm)	SPLSR	Result
	GPRS 850	Top side	0.968	-3.9	-123	-4.29	1.588	220.30	0.009	SPLSR<0.04,
	5GHz Main	Top side	0.620	-10.6	97.2	-3.57	1.500	220.30	0.009	Not required
	GPRS 850	Tan aida	0.968	-3.9	-123	-4.29	1 009	96.17	0.012	SPLSR<0.04,
	Bluetooth	Top side	0.130	-9.6	-27	-3.75	1.098	90.17	0.012	Not required
4		6	WWAI	1	et 1	٧	YLAN M	nto		

Sim	ultaneous Trans	mission Sc	enario				WWA	AN+Main+Aux		
			SAR	Coor	dinates	(mm)	ΣSAR	Peak Location Separation		
Figure	Conditions	Position	Value (W/kg)	x	у	z	(W/kg)	Distance (mm)	SPLSR	Result
	GPRS 1900	Top side	0.578	-2.5	-136	-3.69	1.268	208.61	0.007	SPLSR<0.04,
	2.4GHz Main	T OP SIDE	0.690	-3.8	72.6	-4.69	1.200	200.01	0.007	Not required
	GPRS 1900	Top side	0.578	-2.5	-136	-3.69	1.018	151.55	0.007	SPLSR<0.04,
	2.4GHz Aux	Top side	0.440	-12.8	15.2	-4.59	1.010	151.55	0.007	Not required
5		0	WW	AN .	WLA	N Aux WLA	H Main	-		

Sim	ultaneous Trans	mission Sc	enario				WWA	N+Main+Aux		
			SAR	Coor	dinates	(mm)		Peak Location		
Figure	Conditions	Position	Value (W/kg)	x	у	z	ΣSAR (W/kg)	Separation Distance (mm)	SPLSR	Result
	GPRS 1900	Top side	0.578	-2.5	-136	-3.69	1.198	233.34	0.006	SPLSR<0.04,
	5GHz Main	T OP SIDE	0.620	-10.6	97.2	-3.57	1.130	200.04	0.000	Not required
	GPRS 1900	Top side	0.578	-2.5	-136	-3.69	1.238	153.14	0.009	SPLSR<0.04,
	5GHz Aux	Top side	0.660	-9	17	-3.79	1.230	155.14	0.009	Not required
6		0		AN .		AH Aux	WLAN N	lain		

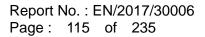
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Sin	nultaneous Trans	mission Sc	enario				WWA	N+Main+Aux		
			SAR	Coor	dinates	(mm)	ΣSAR	Peak Location		
Figure	Conditions	Position	Value (W/kg)	x	у	z	(W/kg)	Separation Distance (mm)	SPLSR	Result
	WCDMA Band II	Top side	0.662	-1	-134.5	-3.58	1.352	207.12	0.008	SPLSR<0.04,
	2.4GHz Main	Top side	0.690	-3.8	72.6	-4.69	1.352	207.12	0.008	Not required
	WCDMA Band II	Top side	0.662	-1	-134.5	-3.58	1.102	150.17	0.008	SPLSR<0.04,
	2.4GHz Aux	Top Side	0.440	-12.8	15.2	-4.59	1.102	150.17	0.000	Not required
7		0	WWA	N	WLAN		LAN Ma	in		

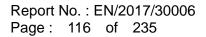
Sin	nultaneous Trans	mission Sc	enario				WW/	N+Main+Aux		
			SAR	Coor	dinates	(mm)	5040	Peak Location		
Figure	Conditions	Position	Value (W/kg)	x	у	z	ΣSAR (W/kg)	Separation Distance (mm)	SPLSR	Result
	WCDMA Band II	Top side	0.662	-1	-134.5	-3.58	1.282	231.90	0.006	SPLSR<0.04,
	5GHz Main	Top Side	0.620	-10.6	97.2	-3.57	1.202	231.90	0.000	Not required
	WCDMA Band II	Top side	0.662	-1	-134.5	-3.58	1.322	151.71	0.010	SPLSR<0.04,
	5GHz Aux	Top Side	0.660	-9	17	-3.79	1.522	101.71	0.010	Not required
8		0	WW	AN	WLAN	Aux	WLAN	Main		

			SAR	Coor	dinates	(mm)		Peak Location		
Figure	Conditions	Position	Value (W/kg)	x	у	z	ΣSAR (W/kg)	Separation Distance (mm)	SPLSR	Result
	WCDMA Band	Top side	0.682	-3.6	-140.5	-3.56	1.372	213.10	0.008	SPLSR<0.04,
	2.4GHz Main	TOP SIDE	0.690	-3.8	72.6	-4.69	1.572	210.10	0.000	Not required
	WCDMA Band	Top side	0.682	-3.6	-140.5	-3.56	1.122	155.97	0.008	SPLSR<0.04,
	2.4GHz Aux	Top side	0.440	-12.8	15.2	-4.59	1.122	155.97	0.000	Not required
9			ww		WLAN		ILAH M.	lin		

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Sim	nultaneous Trans	mission Sc	enario				WW/	N+Main+Aux		
Figure	Conditions	Position	SAR Value	Coor	dinates	(mm)	ΣSAR (W/kg)	Peak Location Separation Distance	SPLSR	Result
			(W/kg)	х	у	z	· •	(mm)		
	WCDMA Band	Top side	0.682	-3.6	-140.5	-3.56	1.302	237.80	0.006	SPLSR<0.04,
	5GHz Main	T OP SIDE	0.620	-10.6	97.2	-3.57	1.502	237.00	0.000	Not required
	WCDMA Band	Top side	0.682	-3.6	-140.5	-3.56	1.342	157.59	0.010	SPLSR<0.04,
	5GHz Aux	T OP SIDE	0.660	-9	17	-3.79	1.542	107.00	0.010	Not required
10		0	ww		WLA	N Aux	WLAN	Main		

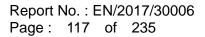
Sin	nultaneous Trans	mission Sc	enario				WWA	N+Main+Aux		
			SAR	Coor	dinates	(mm)		Peak Location		
Figure	Conditions	Position	Value (W/kg)	x	У	z	ΣSAR (W/kg)	Separation Distance (mm)	SPLSR	Result
	WCDMA Band V	Top side	0.929	-4	-131	-4.42	1.619	203.60	0.010	SPLSR<0.04,
	2.4GHz Main	Top Side	0.690	-3.8	72.6	-4.69	1.013	200.00	0.010	Not required
	WCDMA Band V	Top side	0.929	-4	-131	-4.42	1.369	146.46	0.011	SPLSR<0.04,
	2.4GHz Aux	Top side	0.440	-12.8	15.2	-4.59	1.309	140.40	0.011	Not required
11		0	ww	M	WLA	N Aux	ILAN M	in		

Sin	nultaneous Trans	mission Sc	enario				WW	AN+Main+BT		
			SAR	Coor	dinates	(mm)	5045	Peak Location		
Figure	Conditions	Position	Value (W/kg)	x	у	z	ΣSAR (W/kg)	Separation Distance (mm)	SPLSR	Result
	WCDMA Band V	Top side	0.929	-4	-131	-4.42	1.619	203.60	0.010	SPLSR<0.04,
	2.4GHz Main	1 op side	0.690	-3.8	72.6	-4.69	1.010	200.00	0.010	Not required
	WCDMA Band V	Top side	0.929	-4	-131	-4.42	1.059	104.15	0.010	SPLSR<0.04,
	Bluetooth	T OP SIDE	0.130	-9.6	-27	-3.75	1.055	104.15	0.010	Not required
12		0	ww	AN	at	-	AN Mai			

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Sin	nultaneous Trans	mission Sc	enario				WW/	N+Main+Aux		
			SAR	Coor	dinates	(mm)		Peak Location		
Figure	Conditions	Position	Value (W/kg)	x	у	z	ΣSAR (W/kg)	Separation Distance (mm)	SPLSR	Result
	WCDMA Band V	Top side	0.929	-4	-131	-4.42	1.549	228.30	0.008	SPLSR<0.04,
	5GHz Main	Top side	0.620	-10.6	97.2	-3.57	1.040	220.00	0.000	Not required
	WCDMA Band V	Top side	0.929	-4	-131	-4.42	1.589	148.09	0.014	SPLSR<0.04,
	5GHz Aux	Top side	0.660	-9	17	-3.79	1.505	140.09	0.014	Not required
13			****	N		N Aus	WLAH	Main		

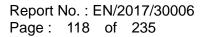
Sin	nultaneous Trans	mission Sc	enario				WWA	WWAN+Main+Aux			
			SAR	Coor	dinates	(mm)		Peak Location			
Figure	Conditions	Position	Value (W/kg)	x	у	z	ΣSAR (W/kg)	Separation Distance (mm)	SPLSR	Result	
	WCDMA Band V	Top side	0.929	-4	-131	-4.42	1.549	228.30	0.008	SPLSR<0.04,	
	5GHz Main	Top side	0.620	-10.6	97.2	-3.57	1.543	220.30	0.000	Not required	
	WCDMA Band V	Top side	0.929	-4	-131	-4.42	1.589	148.09	0.014	SPLSR<0.04,	
	5GHz Aux	Top side	0.660	-9	17	-3.79	1.505	140.09	0.014	Not required	
13		6	-	. 14		N Aus	WLAH	Mala			

Sin	nultaneous Trans	mission Sc	enario				ww	AN+Main+BT		
			SAR	Coor	dinates	(mm)		Peak Location		
Figure	Conditions	Position	Value (W/kg)	x	У	z	ΣSAR (W/kg)	Separation Distance (mm)	SPLSR	Result
	WCDMA Band V	Top side	0.929	-4	-131	-4.42	1.549	228.30	0.008	SPLSR<0.04,
	5GHz Main	Top side	0.620	-10.6	97.2	-3.57	1.543	220.30	0.000	Not required
	WCDMA Band V	Top side	0.929	-4	-131	-4.42	1.059	104.15	0.010	SPLSR<0.04,
	Bluetooth	Top side	0.130	-9.6	-27	-3.75	1.059	104.15	0.010	Not required
14		6	-		BT		WLAN	Main		

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Sim	nultaneous Trans	mission Sc	enario				WW.	AN+Main+BT		
			SAR	Coor	dinates	(mm)		Peak Location		
Figure	Conditions	Position	Value (W/kg)	x	у	z	ΣSAR (W/kg)	Separation Distance (mm)	SPLSR	Result
	CDMA BC0	Top side	0.989	-3.9	-132.6	-4.41	1.679	205.20	0.011	SPLSR<0.04,
	2.4GHz Main	Top side	0.690	-3.8	72.6	-4.69	1.073	205.20	0.011	Not required
	CDMA BC0	Top side	0.989	-3.9	-132.6	-4.41	1.429	148.07	0.012	SPLSR<0.04,
	2.4GHz Aux	Tup side	0.440	-12.8	15.2	-4.59	1.429	140.07	0.012	Not required
15					BT		WLAN	Main		

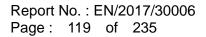
Sim	nultaneous Trans	mission Sc	enario				WW	AN+Main+BT		
			SAR	Coor	dinates	(mm)		Peak Location		
Figure	Conditions	Position	Value (W/kg)	x	У	z	ΣSAR (W/kg)	Separation Distance (mm)	SPLSR	Result
	CDMA BC0	Top side	0.989	-3.9	-132.6	-4.41	1.679	205.20	0.011	SPLSR<0.04,
	2.4GHz Main	Tup side	0.690	-3.8	72.6	-4.69	1.079	205.20	0.011	Not required
	CDMA BC0	Top side	0.989	-3.9	-132.6	-4.41	1.119	105.76	0.011	SPLSR<0.04,
	Bluetooth	Tup side	0.130	-9.6	-27	-3.75	1.119	105.76	0.011	Not required
16		•	wwat		ат	-	LAN M	hin		

Sim	ultaneous Trans	mission Sc	enario				WW	AN+Main+BT		
			SAR	Coor	dinates	(mm)		Peak Location		
Figure	Conditions	Position	Value (W/kg)	x	у	z	ΣSAR (W/kg)	Separation Distance (mm)	SPLSR	Result
	CDMA BC0	Top side	0.989	-3.9	-132.6	-4.41	1.609	229.90	0.009	SPLSR<0.04,
	5GHz Main	Top side	0.620	-10.6	97.2	-3.57	1.003	229.90	0.003	Not required
	CDMA BC0	Top side	0.989	-3.9	-132.6	-4.41	1.649	149.69	0.014	SPLSR<0.04,
	5GHz Aux	Top side	0.660	-9	17	-3.79	1.043	149.09	0.014	Not required
17		•	WWAR		WLA	N Aux	WL	W Main		

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Sim	ultaneous Trans	mission Sc	enario				WW	AN+Main+BT		
			SAR	Coor	dinates	(mm)		Peak Location		
Figure	Conditions	Position	Value (W/kg)	x	у	z	ΣSAR (W/kg)	Separation Distance (mm)	SPLSR	Result
	CDMA BC0	Top side	0.989	-3.9	-132.6	-4.41	1.609	229.90	0.009	SPLSR<0.04,
	5GHz Main	Tup side	0.620	-10.6	97.2	-3.57	1.009	229.90	0.009	Not required
	CDMA BC0	Top side	0.989	-3.9	-132.6	-4.41	1.119	105.76	0.011	SPLSR<0.04,
	Bluetooth	Tup side	0.130	-9.6	-27	-3.75	1.119	105.70	0.011	Not required
18		•	WWA		BT		WLAI	t Main		

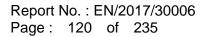
Sim	nultaneous Trans	mission Sc	enario				WW	AN+Main+BT		
			SAR	Coor	dinates	(mm)		Peak Location		
Figure	Conditions	Position	Value (W/kg)	x	у	z	ΣSAR (W/kg)	Separation Distance (mm)	SPLSR	Result
	CDMA BC1	Top side	0.631	-1	-134.5	-3.57	1.321	207.12	0.007	SPLSR<0.04,
	2.4GHz Main	T OP Side	0.690	-3.8	72.6	-4.69	1.521	207.12	0.007	Not required
	CDMA BC1	Top side	0.631	-1	-134.5	-3.57	1.071	150.17	0.007	SPLSR<0.04,
	2.4GHz Aux	T OP Side	0.440	-12.8	15.2	-4.59	1.071	130.17	0.007	Not required
19		•	WWAR		WLAN		VLAN M	ain		

Sim	nultaneous Trans	mission Sc	enario				WW	AN+Main+BT		
			SAR	Coor	dinates	(mm)		Peak Location		
Figure	Conditions	Position	Value (W/kg)	x	у	z	ΣSAR (W/kg)	Separation Distance (mm)	SPLSR	Result
	CDMA BC1	Top side	0.631	-1	-134.5	-3.57	1.251	231.90	0.006	SPLSR<0.04,
	5GHz Main	Top side	0.620	-10.6	97.2	-3.57	1.231	231.90	0.000	Not required
	CDMA BC1	Top side	0.631	-1	-134.5	-3.57	1.291	151.71	0.010	SPLSR<0.04,
	5GHz Aux	Top side	0.660	-9	17	-3.79	1.231	131.71	0.010	Not required
20			WWAN	1	WLAN	Aux	WLAN	Main		

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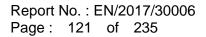
Sim	nultaneous Trans	mission Sc	enario				ww	AN+Main+BT		
			SAR	Coor	dinates	(mm)		Peak Location		
Figure	Conditions	Position	Value (W/kg)	x	у	z	ΣSAR (W/kg)	Separation Distance (mm)	SPLSR	Result
	LTE Band 2	Top side	0.706	-3.9	-135.9	-3.87	1.396	208.50	0.008	SPLSR<0.04,
	2.4GHz Main	Tup side	0.690	-3.8	72.6	-4.69	1.590	208.50	0.008	Not required
	LTE Band 2	Top side	0.706	-3.9	-135.9	-3.87	1.146	151.36	0.008	SPLSR<0.04,
	2.4GHz Aux	Tup side	0.440	-12.8	15.2	-4.59	1.140	151.50	0.008	Not required
21		6	***		wi	AN A	ux () VLAN N	tain		

Sim	ultaneous Trans	mission Sc	enario				ww	AN+Main+BT		
			SAR	Coor	dinates	(mm)		Peak Location		
Figure	Conditions	Position	Value (W/kg)	x	у	z	ΣSAR (W/kg)	Separation Distance (mm)	SPLSR	Result
	LTE Band 2	Top side	0.706	-3.9	-135.9	-3.87	1.326	233.20	0.007	SPLSR<0.04,
	5GHz Main	Top side	0.620	-10.6	97.2	-3.57	1.520	233.20	0.007	Not required
	LTE Band 2	Top side	0.706	-3.9	-135.9	-3.87	1.366	152.99	0.010	SPLSR<0.04,
	5GHz Aux	Tup side	0.660	-9	17	-3.79	1.500	152.99	0.010	Not required
22		6			WL	AH AU	-	IN Main		

Sim	nultaneous Trans	mission Sc	enario				ww	AN+Main+BT		
			SAR	Coor	dinates	(mm)		Peak Location		
Figure	Conditions	Position	Value (W/kg)	x	у	z	ΣSAR (W/kg)	Separation Distance (mm)	SPLSR	Result
	LTE Band 4	Top side	0.669	-5.3	-134.3	-3.63	1.359	206.91	0.008	SPLSR<0.04,
	2.4GHz Main	T OP Side	0.690	-3.8	72.6	-4.69	1.555	200.91	0.000	Not required
	LTE Band 4	Top side	0.669	-5.3	-134.3	-3.63	1.109	149.69	0.008	SPLSR<0.04,
	2.4GHz Aux	T OP Side	0.440	-12.8	15.2	-4.59	1.103	149.09	0.000	Not required
23		0	****		WLA	M Aua	WLAN	Main		

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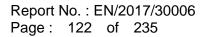
Sim	ultaneous Trans	mission Sc	enario				WW	AN+Main+BT		
			SAR	Coor	dinates	(mm)		Peak Location		
Figure	Conditions	Position	Value (W/kg)	x	у	z	ΣSAR (W/kg)	Separation Distance (mm)	SPLSR	Result
	LTE Band 4	Top side	0.669	-5.3	-134.3	-3.63	1.289	231.56	0.006	SPLSR<0.04,
	5GHz Main	Tup side	0.620	-10.6	97.2	-3.57	1.209	231.50	0.000	Not required
	LTE Band 4	Top side	0.669	-5.3	-134.3	-3.63	1.329	151.35	0.010	SPLSR<0.04,
	5GHz Aux	Tup side	0.660	-9	17	-3.79	1.529	151.55	0.010	Not required
24		•	-	N	wL	ан аш }	WLA	N Main		

Sim	nultaneous Trans	mission Sc	enario				ww.	AN+Main+BT		
			SAR	Coor	dinates	(mm)		Peak Location		
Figure	Conditions	Position	Value (W/kg)	x	у	z	ΣSAR (W/kg)	Separation Distance (mm)	SPLSR	Result
	LTE Band 5	Top side	1.024	-4	-131	-4.47	1.714	203.60	0.011	SPLSR<0.04,
	2.4GHz Main	Top side	0.690	-3.8	72.6	-4.69	1.714	205.00	0.011	Not required
	LTE Band 5	Top side	1.024	-4	-131	-4.47	1.464	146.46	0.012	SPLSR<0.04,
	2.4GHz Aux	Top side	0.440	-12.8	15.2	-4.59	1.404	140.40	0.012	Not required
25		•	WWAI	N	WLA	N Aux	WLAN	Minte		

Sin	nultaneous Trans	mission Sc	enario				WW	AN+Main+BT		
			SAR	Coor	dinates	(mm)		Peak Location		
Figure	Conditions	Position	Value (W/kg)	x	у	z	ΣSAR (W/kg)	Separation Distance (mm)	SPLSR	Result
	LTE Band 5	Top side	1.024	-4	-131	-4.47	1.714	203.60	0.011	SPLSR<0.04,
	2.4GHz Main	T OP SIDE	0.690	-3.8	72.6	-4.69	1.714	203.00	0.011	Not required
	LTE Band 5	Top side	1.024	-4	-131	-4.47	1.154	104.15	0.012	SPLSR<0.04,
	Bluetooth	Tup side	0.130	-9.6	-27	-3.75	1.134	104.15	0.012	Not required
26			****	IN .			WLAN	Main		

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Sim	nultaneous Trans	mission Sc	enario				WW	AN+Main+BT		
			SAR	Coor	dinates	(mm)		Peak Location		
Figure	Conditions	Position	Value (W/kg)	x	у	z	ΣSAR (W/kg)	Separation Distance (mm)	SPLSR	Result
	LTE Band 5	Top side	1.024	-4	-131	-4.47	1.644	228.30	0.009	SPLSR<0.04,
	5GHz Main	Tup side	0.620	-10.6	97.2	-3.57	1.044	220.30	0.009	Not required
	LTE Band 5	Top side	1.024	-4	-131	-4.47	1.684	148.09	0.015	SPLSR<0.04,
	5GHz Aux	Tup side	0.660	-9	17	-3.79	1.004	146.09	0.015	Not required
27			wwa		WL	AN Au		AH Main		

Sim	ultaneous Trans	mission Sc	enario				ww	AN+Main+BT		
_			SAR	Coor	dinates	(mm)		Peak Location		
Figure	Conditions	Position	Value (W/kg)	x	у	z	ΣSAR (W/kg)	Separation Distance (mm)	SPLSR	Result
	LTE Band 5	Top side	1.024	-4	-131	-4.47	1.644	228.30	0.009	SPLSR<0.04,
	5GHz Main	T OP SIDE	0.620	-10.6	97.2	-3.57	1.044	220.30	0.003	Not required
	LTE Band 5	Top side	1.024	-4	-131	-4.47	1.154	104.15	0.012	SPLSR<0.04,
	Bluetooth	Tup side	0.130	-9.6	-27	-3.75	1.154	104.15	0.012	Not required
28		0	WWA				WLAP	i Main		

Sim	nultaneous Trans	mission Sc	enario				WW	AN+Main+BT		
			SAR	Coor	dinates	(mm)		Peak Location		
Figure	Conditions	Position	Value (W/kg)	x	у	z	ΣSAR (W/kg)	Separation Distance (mm)	SPLSR	Result
	LTE Band 7	Top side	0.986	-4.2	-136	-4.1	1.676	208.60	0.010	SPLSR<0.04,
	2.4GHz Main	T OP SIDE	0.690	-3.8	72.6	-4.69	1.070	200.00	0.010	Not required
	LTE Band 7	Top side	0.986	-4.2	-136	-4.1	1.426	151.45	0.011	SPLSR<0.04,
	2.4GHz Aux	T OP SIDE	0.440	-12.8	15.2	-4.59	1.420	131.43	0.011	Not required
29		•	WWA		WLAI	4 Aux	WLAN	Main		

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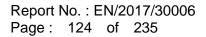
Sim	nultaneous Trans	mission Sc	enario				ww	AN+Main+BT		
			SAR	Coor	dinates	(mm)		Peak Location		
Figure	Conditions	Position	Value (W/kg)	x	у	z	ΣSAR (W/kg)	Separation Distance (mm)	SPLSR	Result
	LTE Band 7	Top side	0.986	-4.2	-136	-4.1	1.676	208.60	0.010	SPLSR<0.04,
	2.4GHz Main	Tup side	0.690	-3.8	72.6	-4.69	1.070	208.00	0.010	Not required
	LTE Band 7	Top side	0.986	-4.2	-136	-4.1	1.116	109.13	0.011	SPLSR<0.04,
	Bluetooth	Tup side	0.130	-9.6	-27	-3.75	1.110	109.13	0.011	Not required
30			-		BT	w	LAN M	ata		

Sim	ultaneous Trans	mission Sc	enario				WW	AN+Main+BT		
			SAR	Coor	dinates	(mm)		Peak Location		
Figure	Conditions	Position	Value (W/kg)	x	У	z	ΣSAR (W/kg)	Separation Distance (mm)	SPLSR	Result
	LTE Band 7	Top side	0.986	-4.2	-136	-4.1	1.606	233.29	0.009	SPLSR<0.04,
	5GHz Main	T OP SIDE	0.620	-10.6	97.2	-3.57	1.000	233.29	0.003	Not required
	LTE Band 7	Top side	0.986	-4.2	-136	-4.1	1.646	153.08	0.014	SPLSR<0.04,
	5GHz Aux	Tup side	0.660	-9	17	-3.79	1.040	155.06	0.014	Not required
31			WWA	N	WL	AN AU		Ve Main		

Sim	nultaneous Trans	mission Sc	enario				WW	AN+Main+BT		
			SAR	Coor	dinates	(mm)		Peak Location		
Figure	Conditions	Position	Value (W/kg)	x	у	z	ΣSAR (W/kg)	Separation Distance (mm)	SPLSR	Result
	LTE Band 7	Top side	0.986	-4.2	-136	-4.1	1.606	233.29	0.009	SPLSR<0.04,
	5GHz Main	Top side	0.620	-10.6	97.2	-3.57	1.000	200.29	0.003	Not required
	LTE Band 7	Top cido	0.986	-4.2	-136	-4.1	1.116	109.13	0.011	SPLSR<0.04,
	Bluetooth	Top side	0.130	-9.6	-27	-3.75	1.110		0.011	Not required
32		•	WWA	14	OT	1	WLAP	Main		

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Sim	nultaneous Trans	mission Sc	enario				WW.	AN+Main+BT		
			SAR	Coor	dinates	(mm)		Peak Location		
Figure	Conditions	Position	Value (W/kg)	x	у	z	ΣSAR (W/kg)	Separation Distance (mm)	SPLSR	Result
	LTE Band 12	Top side	0.830	-5.3	-131	-4.43	1.520	203.61	0.009	SPLSR<0.04,
	2.4GHz Main	Top side	0.690	-3.8	72.6	-4.69	1.520	203.01	0.003	Not required
	LTE Band 12	Top side	0.830	-5.3	-131	-4.43	1.270	146.39	0.010	SPLSR<0.04,
	2.4GHz Aux	Top side	0.440	-12.8	15.2	-4.59	1.270	140.39	0.010	Not required
33			*****	H	WLA	N AUN	WLAN	Main		

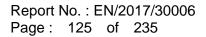
Sim	nultaneous Trans	mission Sc	enario				ww	AN+Main+BT		
			SAR	Coor	dinates	(mm)		Peak Location		
Figure	Conditions	Position	Value (W/kg)	x	у	z	ΣSAR (W/kg)	Separation Distance (mm)	SPLSR	Result
	LTE Band 12	Top side	0.830	-5.3	-131	-4.43	1.520	203.61	0.009	SPLSR<0.04,
	2.4GHz Main	Top side	0.690	-3.8	72.6	-4.69	1.520	203.01	0.003	Not required
	LTE Band 12	Top cido	0.830	-5.3	-131	-4.43	0.960	104.09	0.009	SPLSR<0.04,
	Bluetooth	Top side	0.130	-9.6	-27	-3.75	0.900	104.00	0.009	Not required
34		0	*****		eT		WLAN	Kain		

Sim	nultaneous Trans	mission Sc	enario				WW	AN+Main+BT		
			SAR	Coor	dinates	(mm)		Peak Location		
Figure	Conditions	Position	Value (W/kg)	x	у	z	ΣSAR (W/kg)	Separation Distance (mm)	SPLSR	Result
	LTE Band 12	Top side	0.830	-5.3	-131	-4.43	1.450	228.26	0.008	SPLSR<0.04,
	5GHz Main	T OP Side	0.620	-10.6	97.2	-3.57	1.430	220.20	0.000	Not required
	LTE Band 12	Top side	0.830	-5.3	-131	-4.43	1.490	148.05	0.012	SPLSR<0.04,
	5GHz Aux	I op side	0.660	-9	17	-3.79	1.490	146.05	0.012	Not required
35		0			WL	AN AU		M Main		

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Sim	nultaneous Trans	mission Sc	enario				WW	AN+Main+BT		
			SAR	Coor	dinates	(mm)		Peak Location		
Figure	Conditions	Position	Value (W/kg)	x	у	z	ΣSAR (W/kg)	Separation Distance (mm)	SPLSR	Result
	LTE Band 13	Top side	1.190	-2.5	-121.5	-4.72	1.880	194.10	0.013	SPLSR<0.04,
	2.4GHz Main	Tup side	0.690	-3.8	72.6	-4.69	1.000	194.10	0.013	Not required
	LTE Band 13	Top aida	1.190	-2.5	-121.5	-4.72	1.630	137.09	0.015	SPLSR<0.04,
	2.4GHz Aux	Top side	0.440	-12.8	15.2	-4.59	1.030	137.09	0.015	Not required
36		•	WWA	N	WLAP		NLAN N	Amin		

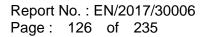
Sim	ultaneous Trans	mission Sc	enario				WW	AN+Main+BT		
			SAR	Coor	dinates	(mm)		Peak Location		
Figure	Conditions	Position	Value (W/kg)	x	у	z	ΣSAR (W/kg)	Separation Distance (mm)	SPLSR	Result
	LTE Band 13	Top side	1.190	-2.5	-121.5	-4.72	1.880	194.10	0.013	SPLSR<0.04,
	2.4GHz Main	Top side	0.690	-3.8	72.6	-4.69	1.000	194.10	0.013	Not required
	LTE Band 13	Top side	1.190	-2.5	-121.5	-4.72	1.320	94.77	0.016	SPLSR<0.04,
	Bluetooth		0.130	-9.6	-27	-3.75	1.520		0.010	Not required
37		•		•	87	-	NLAN N	Inin		

Sim	nultaneous Trans	mission Sc	enario				WW	AN+Main+BT		
			SAR	Coor	dinates	(mm)		Peak Location		
Figure	Conditions	Position	Value (W/kg)	x	у	z	ΣSAR (W/kg)	Separation Distance (mm)	SPLSR	Result
	LTE Band 13	Top side	1.190	-2.5	-121.5	-4.72	1.810	218.85	0.011	SPLSR<0.04,
	5GHz Main	Top side	0.620	-10.6	97.2	-3.57	1.010	210.00	0.011	Not required
	LTE Band 13	Top side	1.190	-2.5	-121.5	-4.72	1.850	138.66	0.018	SPLSR<0.04,
	5GHz Aux	Top side	0.660	-9	17	-3.79	1.650	130.00	0.010	Not required
38		0	WWA		WLA	M Aus		N Main		

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Sim	nultaneous Trans	mission Sc	enario				WW.	AN+Main+BT		
			SAR	Coor	dinates	(mm)		Peak Location		
Figure	Conditions	Position	Value (W/kg)	x	у	z	ΣSAR (W/kg)	Separation Distance (mm)	SPLSR	Result
	LTE Band 13	Top side	1.190	-2.5	-121.5	-4.72	1.810	218.85	0.011	SPLSR<0.04,
	5GHz Main	Tup side	0.620	-10.6	97.2	-3.57	1.010	210.00	0.011	Not required
	LTE Band 13	Top side	1.190	-2.5	-121.5	-4.72	1.320	94.77	0.016	SPLSR<0.04,
	Bluetooth	Top side	0.130	-9.6	-27	-3.75	1.520	54.77	0.010	Not required
39		0	WWA	N	BT		WLAN	Main		

Sim	ultaneous Trans	mission Sc	enario				WW.	AN+Main+BT		
			SAR	Coordinates (mm)			Peak Location			
Figure	Conditions	Position	Value (W/kg)	x	У	z	ΣSAR (W/kg)	Separation Distance (mm)	SPLSR	Result
	LTE Band 17	Top side	0.759	-5.3	-131	-4.46	1.449	203.61	0.001	SPLSR<0.04,
	2.4GHz Main	Top side	0.690	-3.8	72.6	-4.69	1.443	203.01	0.001	Not required
	LTE Band 17	Top cido	0.759	-5.3	-131	-4.46	1.199	146.39	0.001	SPLSR<0.04,
	2.4GHz Aux	Top side	0.440	-12.8	15.2	-4.59	1.199		0.001	Not required
40		•	wwa		WLA	N Aux	WLAN I	Nain		

Sin	nultaneous Trans	mission Sc	enario				WW	AN+Main+BT		
			SAR	Coor	dinates	(mm)		Peak Location		
Figure	Conditions	Position	Value (W/kg)	x	у	z	ΣSAR (W/kg)	Separation Distance (mm)	SPLSR	Result
	LTE Band 17	Top side	0.759	-5.3	-131	-4.46	1.379	228.26	0.001	SPLSR<0.04,
	5GHz Main	Top side	0.620	-10.6	97.2	-3.57	1.575	220.20	0.001	Not required
	LTE Band 17	Top side	0.759	-5.3	-131	-4.46	1.419	148.05	0.001	SPLSR<0.04,
	5GHz Aux	Top side	0.660	-9	17	-3.79	1.419	140.00	0.001	Not required
41		0	wwa		WL	AN AU		LA Main		

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

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4. Instruments List

Manufacturer	Device	Туре	Serial number	Date of last calibration	Date of next calibration
Schmid & Partner Engineering AG	Dosimetric E-Field Probe	EX3DV4	3923	Sep.02,2016	Sep.01,2017
		D750V2	1015	Aug.30,2016	Aug.29,2017
		D835V2	4d063	Aug.25,2016	Aug.24,2017
Schmid &		D1750V2	1008	Aug.31,2016	Aug.30,2017
Partner	System Validation Dipole	D1900V2	5d027	Apr.25,2016	Apr.24,2017
Engineering AG		D2450V2	727	Apr.19,2016	Apr.18,2017
		D2600V2	1005	Jan.25,2017	Jan.24,2018
		D5GHzV2	1023	Jan.20,2017	Jan.19,2018
Schmid & Partner Engineering AG	Data acquisition Electronics	DAE4	1374	Aug.23,2016	Aug.22,2017
Schmid & Partner Engineering AG	Software	DASY 52 V52.8.8	N/A	Calibration not required	Calibration not required
Schmid & Partner Engineering AG	Phantom	ELI	N/A	Calibration not required	Calibration not required
Schmid & Partner Engineering AG	Vector Network Analyzer and Vector Reflect meter	DAKS VNA R140	0040513	Jan.24,2016	Jan.23,2018
Schmid & Partner Engineering AG	Dielectric Probe Kit	DAKS-3.5	1053	Jan.24,2017	Jan.23,2018

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Manufacturer	Device	Туре	Serial number	Date of last calibration	Date of next calibration
Agilent	Dual-directional	772D	MY46151242	Jul.11,2016	Jul.10,2017
Aglient	coupler	778D	MY48220468	Jul.06,2016	Jul.05,2017
Agilent	RF Signal Generator	N5181A	MY50144143	Mar.01,2017	Feb.28,2018
Agilent	Power Meter	E4417A	MY52240003	Oct.17,2016	Oct.16,2017
Agilopt	Power Sensor	E9301H	MY52200003	Oct.17,2016	Oct.16,2017
Agilent	Fower Sensor		MY52200004	Oct.17,2016	Oct.16,2017
TECPEL	Digital thermometer	DTM-303A	TP130078	May.30,2016	May.29,2017
Anritsu	Radio Communication Test	MT8820C	6201061049	Apr.08,2016	Apr.07,2017
R&S	Radio Communication Test	CMU200	113505	Aug.19,2016	Aug.18,2017

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5. Measurements

Date: 2017/3/30

GPRS 850_Body_Left side_CH 128_0mm

Communication System: GPRS (1Dn2Up); Frequency: 824.2 MHz; Duty Cycle: 1:4.1 Medium parameters used: f = 824.2 MHz; σ = 0.961 S/m; ϵ_r = 55.167; ρ = 1000 kg/m³ Phantom section: Flat Section Ambient temperature: 22.2° C ; Liquid temperature: 22.1° C

DASY5 Configuration:

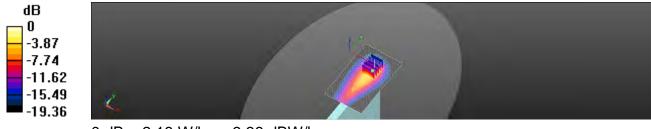
- Probe: EX3DV4 SN3923; ConvF(10.67, 10.67, 10.67); Calibrated: 2016/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2016/8/23
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Head/Area Scan (61x101x1): Interpolated grid: dx=15 mm, dy=15 mm

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

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

dy=8mm, dz=5mm Reference Value = 8.549 V/m; Power Drift = 0.08 dB Peak SAR (extrapolated) = 3.27 W/kg SAR(1 g) = 1.15 W/kg; SAR(10 g) = 0.530 W/kg Maximum value of SAR (measured) = 2.18 W/kg



0 dB = 2.18 W/kg = 3.38 dBW/kg

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Date: 2017/4/1

GPRS 1900_Body_Left side_CH 810_0mm

Communication System: GPRS (1Dn2Up); Frequency: 1909.8 MHz; Duty Cycle: 1:4.1 Medium parameters used: f = 1910 MHz; σ = 1.558 S/m; ϵ_r = 53.335; ρ = 1000 kg/m³ Phantom section: Flat Section Ambient temperature: 22.2° C; Liquid temperature: 21.9° C

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DASY5 Configuration:

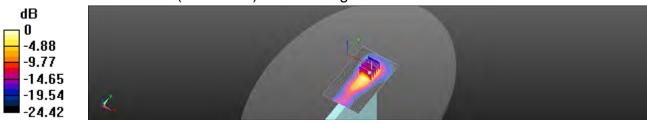
- Probe: EX3DV4 SN3923; ConvF(8.47, 8.47, 8.47); Calibrated: 2016/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2016/8/23
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Head/Area Scan (61x101x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 1.28 W/kg

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

dy=8mm, dz=5mm Reference Value = 4.606 V/m; Power Drift = 0.16 dB Peak SAR (extrapolated) = 2.06 W/kg SAR(1 g) = 0.927 W/kg; SAR(10 g) = 0.420 W/kg Maximum value of SAR (measured) = 1.50 W/kg



0 dB = 1.50 W/kg = 1.75 dBW/kg

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Date: 2017/4/1

WCDMA Band II_Body_Left side_CH 9538_0mm

Communication System: WCDMA; Frequency: 1907.6 MHz; Duty Cycle: 1:1 Medium parameters used: f = 1908 MHz; σ = 1.547 S/m; ϵ_r = 53.445; ρ = 1000 kg/m³ Phantom section: Flat Section Ambient temperature: 22.2° C; Liquid temperature: 21.9° C

DASY5 Configuration:

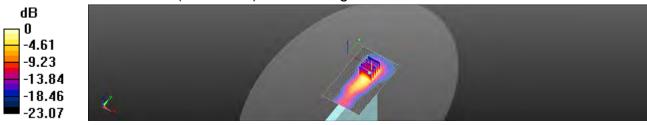
- Probe: EX3DV4 SN3923; ConvF(8.47, 8.47, 8.47); Calibrated: 2016/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2016/8/23
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Head/Area Scan (61x101x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 1.30 W/kg

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

dy=8mm, dz=5mm Reference Value = 6.445 V/m; Power Drift = 0.12 dB Peak SAR (extrapolated) = 2.01 W/kg SAR(1 g) = 0.957 W/kg; SAR(10 g) = 0.446 W/kg Maximum value of SAR (measured) = 1.47 W/kg



0 dB = 1.47 W/kg = 1.68 dBW/kg

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Date: 2017/3/31

WCDMA Band IV_Body_Left side_CH 1312_0mm

Communication System: WCDMA; Frequency: 1712.4 MHz; Duty Cycle: 1:1 Medium parameters used: f = 1712.4 MHz; σ = 1.478 S/m; ϵ_r = 53.912; ρ = 1000 kg/m³ Phantom section: Flat Section Ambient temperature: 22.1° C ; Liquid temperature: 22.1° C

DASY5 Configuration:

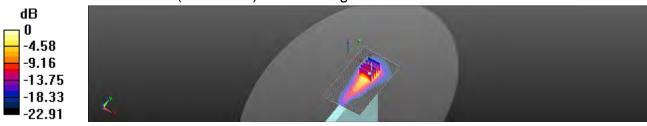
- Probe: EX3DV4 SN3923; ConvF(8.78, 8.78, 8.78); Calibrated: 2016/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2016/8/23
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Head/Area Scan (61x101x1): Interpolated grid: dx=15 mm, dy=15 mm

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

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

dy=8mm, dz=5mm Reference Value = 1.584 V/m; Power Drift = 0.04 dB Peak SAR (extrapolated) = 2.43 W/kg SAR(1 g) = 1.03 W/kg; SAR(10 g) = 0.465 W/kg Maximum value of SAR (measured) = 1.65 W/kg



0 dB = 1.65 W/kg = 2.16 dBW/kg

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Date: 2017/3/30

WCDMA Band V_Body_Left side_CH 4132_0mm

Communication System: WCDMA; Frequency: 826.4 MHz; Duty Cycle: 1:1 Medium parameters used: f = 826.4 MHz; σ = 0.965 S/m; ϵ_r = 55.977; ρ = 1000 kg/m³ Phantom section: Flat Section Ambient temperature: 22.2° C; Liquid temperature: 22.1° C

DASY5 Configuration:

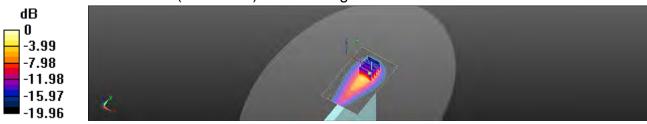
- Probe: EX3DV4 SN3923; ConvF(10.67, 10.67, 10.67); Calibrated: 2016/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2016/8/23
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Head/Area Scan (61x101x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 1.04 W/kg

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

dy=8mm, dz=5mm Reference Value = 7.011 V/m; Power Drift = 0.02 dB Peak SAR (extrapolated) = 3.50 W/kg SAR(1 g) = 1.12 W/kg; SAR(10 g) = 0.488 W/kg Maximum value of SAR (measured) = 2.29 W/kg



0 dB = 2.29 W/kg = 3.60 dBW/kg

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Date: 2017/3/30

1xEVDO Cellular BC0_Body_Left side_CH 777_0mm

Communication System: 1xEvDO; Frequency: 848.31 MHz; Duty Cycle: 1:1 Medium parameters used: f = 848.31 MHz; σ = 0.998 S/m; ϵ_r = 55.811; ρ = 1000 kg/m³ Phantom section: Flat Section Ambient temperature: 22.2° C; Liquid temperature: 22.1° C

DASY5 Configuration:

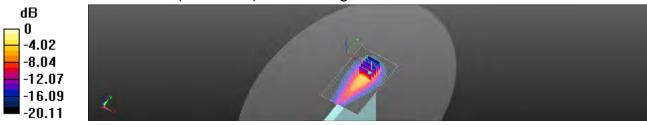
- Probe: EX3DV4 SN3923; ConvF(10.67, 10.67, 10.67); Calibrated: 2016/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2016/8/23
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Head/Area Scan (61x101x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.873 W/kg

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

dy=8mm, dz=5mm Reference Value = 5.941 V/m; Power Drift = 0.01 dB Peak SAR (extrapolated) = 2.99 W/kg SAR(1 g) = 0.948 W/kg; SAR(10 g) = 0.414 W/kg Maximum value of SAR (measured) = 1.95 W/kg



0 dB = 1.95 W/kg = 2.91 dBW/kg

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Date: 2017/4/1

1xEVDO PCS BC1_Body_Left side_CH 1175_0mm

Communication System: 1xEvDO; Frequency: 1908.75 MHz; Duty Cycle: 1:1 Medium parameters used: f = 1909 MHz; σ = 1.55 S/m; ϵ_r = 53.415; ρ = 1000 kg/m³ Phantom section: Flat Section Ambient temperature: 22.2° C; Liquid temperature: 21.9° C

DASY5 Configuration:

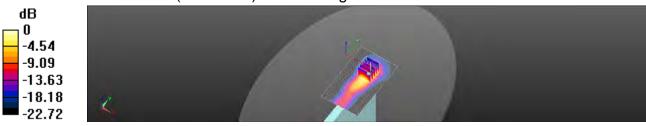
- Probe: EX3DV4 SN3923; ConvF(8.47, 8.47, 8.47); Calibrated: 2016/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2016/8/23
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Head/Area Scan (61x101x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 1.33 W/kg

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

dy=8mm, dz=5mm Reference Value = 6.237 V/m; Power Drift = 0.13 dB Peak SAR (extrapolated) = 2.08 W/kg SAR(1 g) = 0.962 W/kg; SAR(10 g) = 0.443 W/kg Maximum value of SAR (measured) = 1.54 W/kg



0 dB = 1.54 W/kg = 1.87 dBW/kg

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Date: 2017/4/1

LTE Band 2 (20MHz)_Body_Left side_CH 19100_QPSK_100-0_0mm

Communication System: LTE; Frequency: 1900 MHz; Duty Cycle: 1:1 Medium parameters used: f = 1900 MHz; σ = 1.546 S/m; ϵ_r = 53.45; ρ = 1000 kg/m³ Phantom section: Flat Section Ambient temperature: 22.2° C; Liquid temperature: 21.9° C

DASY5 Configuration:

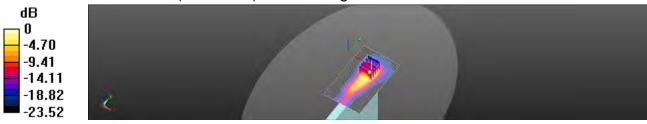
- Probe: EX3DV4 SN3923; ConvF(8.47, 8.47, 8.47); Calibrated: 2016/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2016/8/23
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Head/Area Scan (61x101x1): Interpolated grid: dx=15 mm, dy=15 mm

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

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

dy=8mm, dz=5mm Reference Value = 4.738 V/m; Power Drift = 0.08 dB Peak SAR (extrapolated) = 2.31 W/kg SAR(1 g) = 1.05 W/kg; SAR(10 g) = 0.481 W/kg Maximum value of SAR (measured) = 1.58 W/kg



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

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Date: 2017/3/31

LTE Band 4 (20MHz)_Body_Left side_CH 20175_QPSK_100-0_0mm

Communication System: LTE; Frequency: 1732.5 MHz; Duty Cycle: 1:1 Medium parameters used: f = 1732.5 MHz; σ = 1.491 S/m; ϵ_r = 53.861; ρ = 1000 kg/m³ Phantom section: Flat Section

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

DASY5 Configuration:

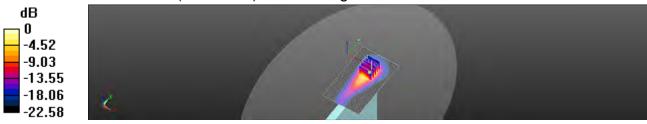
- Probe: EX3DV4 SN3923; ConvF(8.78, 8.78, 8.78); Calibrated: 2016/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2016/8/23
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Head/Area Scan (61x101x1): Interpolated grid: dx=15 mm, dy=15 mm

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

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

dy=8mm, dz=5mm Reference Value = 2.648 V/m; Power Drift = 0.11 dB Peak SAR (extrapolated) = 2.25 W/kg SAR(1 g) = 0.967 W/kg; SAR(10 g) = 0.434 W/kg Maximum value of SAR (measured) = 1.64 W/kg



0 dB = 1.64 W/kg = 2.14 dBW/kg

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Date: 2017/3/30

LTE Band 5 (10MHz)_Body_Top side_CH 20525_QPSK_1-0_0mm

Communication System: LTE; Frequency: 836.5 MHz; Duty Cycle: 1:1 Medium parameters used: f = 836.5 MHz; σ = 0.979 S/m; ϵ_r = 55.872; ρ = 1000 kg/m³ Phantom section: Flat Section

Ambient temperature: 22.2° C ; Liquid temperature: 22.1° C

DASY5 Configuration:

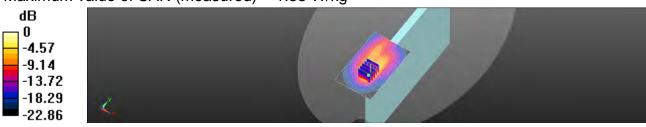
- Probe: EX3DV4 SN3923; ConvF(10.67, 10.67, 10.67); Calibrated: 2016/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2016/8/23
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Head/Area Scan (61x101x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.851 W/kg

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

dy=8mm, dz=5mm Reference Value = 5.230 V/m; Power Drift = 0.15 dB Peak SAR (extrapolated) = 2.34 W/kg SAR(1 g) = 0.784 W/kg; SAR(10 g) = 0.324 W/kg Maximum value of SAR (measured) = 1.53 W/kg



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

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Date: 2017/4/2

LTE Band 7 (20MHz)_Body_Left side_CH 21350_QPSK_1-0_0mm

Communication System: LTE; Frequency: 2560 MHz; Duty Cycle: 1:1 Medium parameters used: f = 2560 MHz; σ = 2.129 S/m; ϵ_r = 51.834; ρ = 1000 kg/m³ Phantom section: Flat Section Ambient temperature: 22.4° C; Liquid temperature: 21.7° C

DASY5 Configuration:

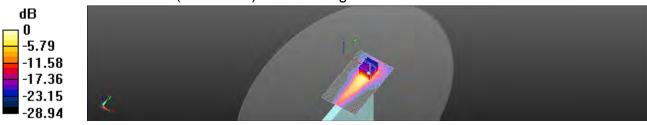
- Probe: EX3DV4 SN3923; ConvF(7.84, 7.84, 7.84); Calibrated: 2016/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2016/8/23
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Head/Area Scan (71x121x1): Interpolated grid: dx=12 mm, dy=12 mm

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

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

dy=5mm, dz=5mm Reference Value = 3.285 V/m; Power Drift = 0.05 dB Peak SAR (extrapolated) = 2.92 W/kg SAR(1 g) = 1.05 W/kg; SAR(10 g) = 0.409 W/kg Maximum value of SAR (measured) = 1.90 W/kg



0 dB = 1.90 W/kg = 2.79 dBW/kg

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Date: 2017/3/28

LTE Band 12 (10MHz)_Body_Top side_CH 23095_QPSK_1-0_0mm

Communication System: LTE; Frequency: 707.5 MHz; Duty Cycle: 1:1 Medium parameters used: f = 707.5 MHz; σ = 0.952 S/m; ϵ_r = 56.392; ρ = 1000 kg/m³ Phantom section: Flat Section

Ambient temperature: 22.4° C ; Liquid temperature: 21.8° C

DASY5 Configuration:

- Probe: EX3DV4 SN3923; ConvF(10.83, 10.83, 10.83); Calibrated: 2016/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2016/8/23
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Head/Area Scan (61x101x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.847 W/kg

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

dy=8mm, dz=5mm Reference Value = 5.032 V/m; Power Drift = 0.13 dB Peak SAR (extrapolated) = 1.91 W/kg SAR(1 g) = 0.634 W/kg; SAR(10 g) = 0.259 W/kg Maximum value of SAR (measured) = 0.994 W/kg



0 dB = 0.994 W/kg = -0.02 dBW/kg

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Date: 2017/3/29

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

Communication System: LTE; Frequency: 782 MHz; Duty Cycle: 1:1 Medium parameters used: f = 782 MHz; σ = 0.974 S/m; ϵ_r = 55.902; ρ = 1000 kg/m³ Phantom section: Flat Section Ambient temperature: 22.4° C ; Liquid temperature: 21.8° C

DASY5 Configuration:

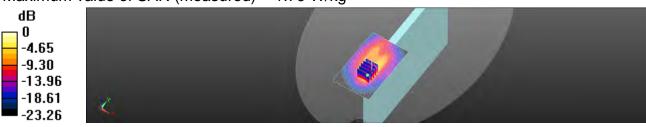
- Probe: EX3DV4 SN3923; ConvF(10.83, 10.83, 10.83); Calibrated: 2016/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2016/8/23
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Head/Area Scan (61x101x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.911 W/kg

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

dy=8mm, dz=5mm Reference Value = 5.102 V/m; Power Drift = 0.11 dB Peak SAR (extrapolated) = 2.66 W/kg SAR(1 g) = 0.872 W/kg; SAR(10 g) = 0.353 W/kg Maximum value of SAR (measured) = 1.79 W/kg



0 dB = 1.79 W/kg = 2.53 dBW/kg

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Date: 2017/3/28

LTE Band 17 (10MHz)_Body_Top side_CH 23790_QPSK_1-25_0mm

Communication System: LTE; Frequency: 710 MHz; Duty Cycle: 1:1 Medium parameters used: f = 710 MHz; σ = 0.966 S/m; ϵ_r = 56.367; ρ = 1000 kg/m³ Phantom section: Flat Section Ambient temperature: 22.4° C ; Liquid temperature: 21.8° C

DASY5 Configuration:

- Probe: EX3DV4 SN3923; ConvF(10.83, 10.83, 10.83); Calibrated: 2016/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2016/8/23
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Head/Area Scan (61x101x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.779 W/kg

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

dy=8mm, dz=5mm Reference Value = 4.853 V/m; Power Drift = 0.07 dB Peak SAR (extrapolated) = 1.75 W/kg SAR(1 g) = 0.583 W/kg; SAR(10 g) = 0.239 W/kg Maximum value of SAR (measured) = 0.919 W/kg



0 dB = 0.919 W/kg = -0.37 dBW/kg

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Date: 2017/4/3

WLAN 802.11b_Body_Bake side_CH 6_Aux_0mm_Stand mode

Communication System: WLAN 2.45G; Frequency: 2437 MHz; Duty Cycle: 1:1 Medium parameters used: f = 2437 MHz; σ = 1.956 S/m; ϵ_r = 53.355; ρ = 1000 kg/m³ Phantom section: Flat Section

Ambient temperature: 22.3° C ; Liquid temperature: 21.8° C

DASY5 Configuration:

- Probe: EX3DV4 SN3923; ConvF(8.06, 8.06, 8.06); Calibrated: 2016/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2016/8/23
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Head/Area Scan (61x121x1): Interpolated grid: dx=12 mm, dy=12 mm

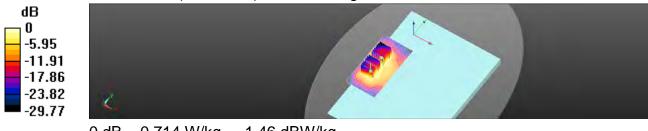
Maximum value of SAR (interpolated) = 0.863 W/kg

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

dy=5mm, dz=5mm Reference Value = 0.9540 V/m; Power Drift = 0.14 dB Peak SAR (extrapolated) = 1.05 W/kg SAR(1 g) = 0.527 W/kg; SAR(10 g) = 0.235 W/kg Maximum value of SAR (measured) = 0.789 W/kg

Configuration/Head/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm,

dy=5mm, dz=5mm Reference Value = 0.9540 V/m; Power Drift = 0.14 dB Peak SAR (extrapolated) = 1.01 W/kg SAR(1 g) = 0.486 W/kg; SAR(10 g) = 0.224 W/kg Maximum value of SAR (measured) = 0.714 W/kg



0 dB = 0.714 W/kg = -1.46 dBW/kg

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WLAN 802.11a 5.3G_Body_Bake side_CH 56_Aux_0mm_Stand mode

Communication System: WLAN 5G; Frequency: 5280 MHz; Duty Cycle: 1:1 Medium parameters used: f = 5280 MHz; σ = 5.347 S/m; ϵ_r = 48.799; ρ = 1000 kg/m³ Phantom section: Flat Section

Ambient temperature: 22.5° C ; Liquid temperature: 21.6° C

DASY5 Configuration:

- Probe: EX3DV4 SN3923; ConvF(4.58, 4.58, 4.58); Calibrated: 2016/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2016/8/23
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Head/Area Scan (81x141x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 1.38 W/kg

Configuration/Head/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm,

dy=4mm, dz=2mm Reference Value = 1.593 V/m; Power Drift = 0.07 dB Peak SAR (extrapolated) = 2.78 W/kg SAR(1 g) = 0.595 W/kg; SAR(10 g) = 0.190 W/kg Maximum value of SAR (measured) = 1.21 W/kg



0 dB = 1.21 W/kg = 0.81 dBW/kg

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WLAN 802.11a 5.6G_Body_Bake side_CH 124_Aux_0mm_Stand mode

Communication System: WLAN 5G; Frequency: 5620 MHz; Duty Cycle: 1:1 Medium parameters used: f = 5620 MHz; σ = 5.875 S/m; ϵ_r = 47.985; ρ = 1000 kg/m³ Phantom section: Flat Section

Ambient temperature: 22.6° C ; Liquid temperature: 21.5° C

DASY5 Configuration:

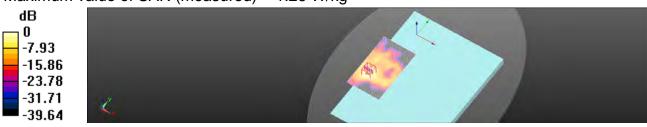
- Probe: EX3DV4 SN3923; ConvF(4, 4, 4); Calibrated: 2016/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2016/8/23
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Head/Area Scan (81x141x1): Interpolated grid: dx=10 mm, dy=10 mm

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

Configuration/Head/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm,

dy=4mm, dz=2mm Reference Value = 1.965 V/m; Power Drift = 0.05 dB Peak SAR (extrapolated) = 2.63 W/kg SAR(1 g) = 0.579 W/kg; SAR(10 g) = 0.186 W/kg Maximum value of SAR (measured) = 1.26 W/kg



0 dB = 1.26 W/kg = 0.99 dBW/kg

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WLAN 802.11a 5.8G_Body_Bake side_CH 157_Aux_0mm_Stand mode

Communication System: WLAN 5G; Frequency: 5785 MHz; Duty Cycle: 1:1 Medium parameters used: f = 5785 MHz; σ = 6.069 S/m; ϵ_r = 47.757; ρ = 1000 kg/m³ Phantom section: Flat Section

Ambient temperature: 22.5° C ; Liquid temperature: 21.4° C

DASY5 Configuration:

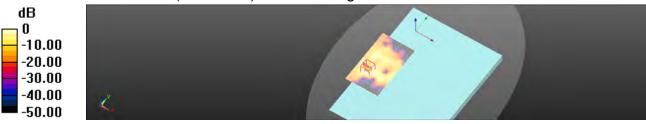
- Probe: EX3DV4 SN3923; ConvF(4.19, 4.19, 4.19); Calibrated: 2016/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2016/8/23
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Configuration/Head/Area Scan (81x141x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 0.679 W/kg

Configuration/Head/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm,

dy=4mm, dz=2mm Reference Value = 1.367 V/m; Power Drift = 0.07 dB Peak SAR (extrapolated) = 1.24 W/kg SAR(1 g) = 0.251 W/kg; SAR(10 g) = 0.078 W/kg Maximum value of SAR (measured) = 0.546 W/kg



0 dB = 0.546 W/kg = -2.63 dBW/kg

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6. SAR System Performance Verification

Date: 2017/3/28

Dipole 750 MHz_SN:1015

Communication System: CW; Frequency: 750 MHz; Duty Cycle: 1:1 Medium parameters used: f = 750 MHz; σ = 0.97 S/m; ϵ_r = 55.892; ρ = 1000 kg/m³ Phantom section: Flat Section Ambient temperature: 22.4° C ; Liquid temperature: 21.8° C

DASY5 Configuration:

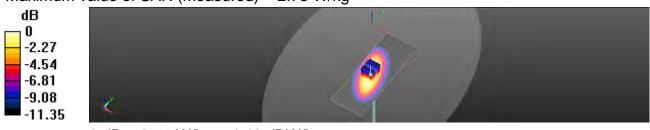
- Probe: EX3DV4 SN3923; ConvF(10.83, 10.83, 10.83); Calibrated: 2016/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2016/8/23
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

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

Maximum value of SAR (interpolated) = 2.58 W/kg

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

dx=5mm, dy=5mm, dz=5mm Reference Value = 55.43 V/m; Power Drift = -0.07 dB Peak SAR (extrapolated) = 3.27 W/kg SAR(1 g) = 2.24 W/kg; SAR(10 g) = 1.48 W/kg Maximum value of SAR (measured) = 2.75 W/kg



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

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Dipole 750 MHz_SN:1015

Communication System: CW; Frequency: 750 MHz; Duty Cycle: 1:1 Medium parameters used: f = 750 MHz; σ = 0.972 S/m; ϵ_r = 55.945; ρ = 1000 kg/m³ Phantom section: Flat Section Ambient temperature: 22.3° C; Liquid temperature: 21.9° C

DASY5 Configuration:

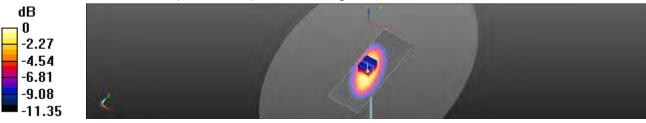
- Probe: EX3DV4 SN3923; ConvF(10.83, 10.83, 10.83); Calibrated: 2016/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2016/8/23
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

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

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

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

dx=5mm, dy=5mm, dz=5mm Reference Value = 55.28 V/m; Power Drift = -0.06 dB Peak SAR (extrapolated) = 3.17 W/kg SAR(1 g) = 2.21 W/kg; SAR(10 g) = 1.43 W/kg Maximum value of SAR (measured) = 2.75 W/kg



0 dB = 2.65 W/kg = 4.30 dBW/kg

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Dipole 835 MHz_SN:4d063

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1 Medium parameters used: f = 835 MHz; σ = 0.978 S/m; ϵ_r = 55.888; ρ = 1000 kg/m³ Phantom section: Flat Section Ambient temperature: 22.2° C; Liquid temperature: 22.1° C

DASY5 Configuration:

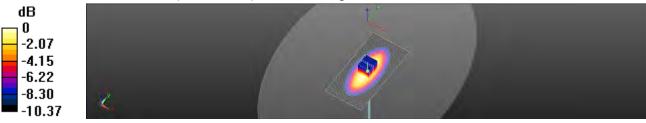
- Probe: EX3DV4 SN3923; ConvF(10.67, 10.67, 10.67); Calibrated: 2016/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2016/8/23
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

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

Maximum value of SAR (interpolated) = 2.93 W/kg

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

dx=5mm, dy=5mm, dz=5mm Reference Value = 56.11 V/m; Power Drift = -0.01 dB Peak SAR (extrapolated) = 3.45 W/kg SAR(1 g) = 2.49 W/kg; SAR(10 g) = 1.62 W/kg Maximum value of SAR (measured) = 2.93 W/kg



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

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Dipole 1750 MHz_SN:1008

Communication System: CW; Frequency: 1750 MHz; Duty Cycle: 1:1 Medium parameters used: f = 1750 MHz; σ = 1.505 S/m; ϵ_r = 53.845; ρ = 1000 kg/m³ Phantom section: Flat Section Ambient temperature: 22.1° C; Liquid temperature: 22.1° C

DASY5 Configuration:

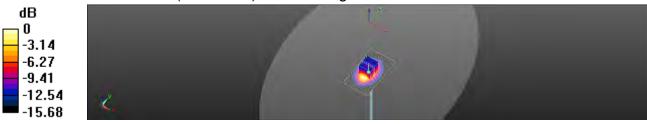
- Probe: EX3DV4 SN3923; ConvF(8.78, 8.78, 8.78); Calibrated: 2016/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2016/8/23
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

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

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

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

dx=5mm, dy=5mm, dz=5mm Reference Value = 92.62 V/m; Power Drift = 0.01 dB Peak SAR (extrapolated) = 15.2 W/kg SAR(1 g) = 9.29 W/kg; SAR(10 g) = 4.92 W/kg Maximum value of SAR (measured) = 12.2 W/kg



0 dB = 12.2 W/kg = 10.87 dBW/kg

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Dipole 1900 MHz_SN:5d027

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1 Medium parameters used: f = 1900 MHz; σ = 1.546 S/m; ϵ_r = 53.45; ρ = 1000 kg/m³ Phantom section: Flat Section Ambient temperature: 22.2° C; Liquid temperature: 21.9° C

DASY5 Configuration:

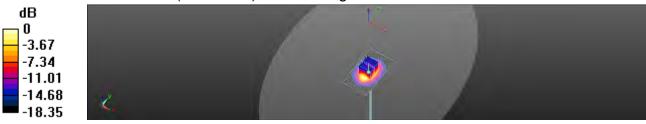
- Probe: EX3DV4 SN3923; ConvF(8.47, 8.47, 8.47); Calibrated: 2016/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2016/8/23
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

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

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

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

dx=5mm, dy=5mm, dz=5mm Reference Value = 95.62 V/m; Power Drift = -0.01 dB Peak SAR (extrapolated) = 18.0 W/kg SAR(1 g) = 9.71 W/kg; SAR(10 g) = 5.28 W/kg Maximum value of SAR (measured) = 14.0 W/kg



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

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Dipole 2450 MHz_SN:727

Communication System: CW; Frequency: 2450 MHz; Duty Cycle: 1:1 Medium parameters used: f = 2450 MHz; σ = 1.969 S/m; ϵ_r = 53.298; ρ = 1000 kg/m³ Phantom section: Flat Section Ambient temperature: 22.3° C; Liquid temperature: 21.8° C

DASY5 Configuration:

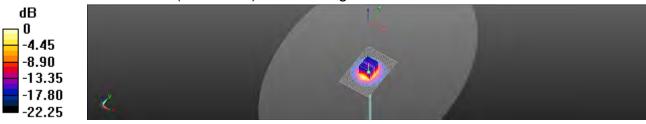
- Probe: EX3DV4 SN3923; ConvF(8.06, 8.06, 8.06); Calibrated: 2016/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2016/8/23
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

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

Maximum value of SAR (interpolated) = 20.4 W/kg

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

dx=5mm, dy=5mm, dz=5mm Reference Value = 100.4 V/m; Power Drift = -0.01 dB Peak SAR (extrapolated) = 26.4 W/kg SAR(1 g) = 12.7 W/kg; SAR(10 g) = 5.83 W/kg Maximum value of SAR (measured) = 19.4 W/kg



0 dB = 19.4 W/kg = 12.89 dBW/kg

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Dipole 2600 MHz_SN:1005

Communication System: CW; Frequency: 2600 MHz; Duty Cycle: 1:1 Medium parameters used: f = 2600 MHz; σ = 2.132 S/m; ϵ_r = 51.883; ρ = 1000 kg/m³ Phantom section: Flat Section Ambient temperature: 22.4° C; Liquid temperature: 21.7° C

DASY5 Configuration:

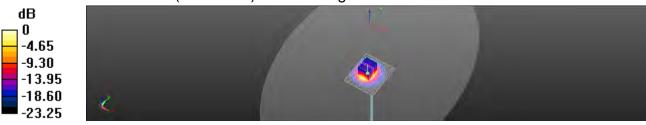
- Probe: EX3DV4 SN3923; ConvF(7.84, 7.84, 7.84); Calibrated: 2016/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2016/8/23
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

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

Maximum value of SAR (interpolated) = 23.7 W/kg

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

dx=5mm, dy=5mm, dz=5mm Reference Value = 94.45 V/m; Power Drift = -0.10 dB Peak SAR (extrapolated) = 29.4 W/kg SAR(1 g) = 14.1 W/kg; SAR(10 g) = 6.14 W/kg Maximum value of SAR (measured) = 21.7 W/kg



0 dB = 21.7 W/kg = 13.37 dBW/kg

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Dipole 5300 MHz_SN:1023

Communication System: CW; Frequency: 5300 MHz; Duty Cycle: 1:1 Medium parameters used: f = 5300 MHz; σ = 5.407 S/m; ϵ_r = 48.703; ρ = 1000 kg/m³ Phantom section: Flat Section Ambient temperature: 22.5° C; Liquid temperature: 21.6° C

DASY5 Configuration:

- Probe: EX3DV4 SN3923; ConvF(4.58, 4.58, 4.58); Calibrated: 2016/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2016/8/23
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

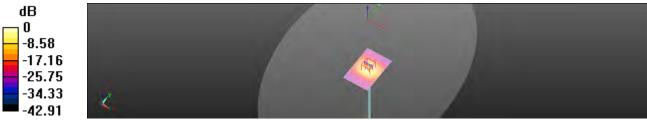
Configuration/Pin=100mW/Area Scan (61x91x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 16.4 W/kg

Configuration/Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid:

dx=4mm, dy=4mm, dz=2mm Reference Value = 56.45 V/m; Power Drift = -0.09 dB Peak SAR (extrapolated) = 32.4 W/kg SAR(1 g) = 7.55 W/kg; SAR(10 g) = 2.18 W/kg

Maximum value of SAR (measured) = 15.5 W/kg



0 dB = 15.5 W/kg = 11.90 dBW/kg

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Dipole 5600 MHz_SN:1023

Communication System: CW; Frequency: 5600 MHz; Duty Cycle: 1:1 Medium parameters used: f = 5600 MHz; σ = 5.815 S/m; ϵ_r = 48.006; ρ = 1000 kg/m³ Phantom section: Flat Section Ambient temperature: 22.6° C; Liquid temperature: 21.5° C

DASY5 Configuration:

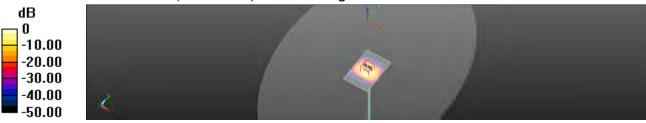
- Probe: EX3DV4 SN3923; ConvF(4, 4, 4); Calibrated: 2016/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2016/8/23
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

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

Maximum value of SAR (interpolated) = 18.6 W/kg

Configuration/Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid:

dx=4mm, dy=4mm, dz=2mm Reference Value = 59.93 V/m; Power Drift = -0.06 dB Peak SAR (extrapolated) = 36.7 W/kg SAR(1 g) = 8.05 W/kg; SAR(10 g) = 2.28 W/kg Maximum value of SAR (measured) = 17.5 W/kg



0 dB = 17.5 W/kg = 12.43 dBW/kg

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Dipole 5800 MHz_SN:1023

Communication System: CW; Frequency: 5800 MHz; Duty Cycle: 1:1 Medium parameters used: f = 5800 MHz; σ = 6.077 S/m; ϵ_r = 47.532; ρ = 1000 kg/m³ Phantom section: Flat Section Ambient temperature: 22.5° C; Liquid temperature: 21.4° C

DASY5 Configuration:

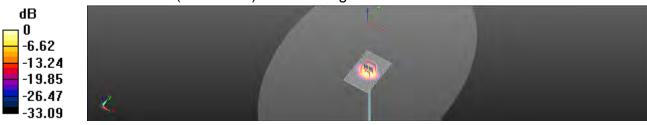
- Probe: EX3DV4 SN3923; ConvF(4.19, 4.19, 4.19); Calibrated: 2016/9/2;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1374; Calibrated: 2016/8/23
- Phantom: Body
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

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

Maximum value of SAR (interpolated) = 19.1 W/kg

Configuration/Pin=100mW/Zoom Scan (7x7x12)/Cube 0: Measurement grid:

dx=4mm, dy=4mm, dz=2mm Reference Value = 58.71 V/m; Power Drift = -0.02 dB Peak SAR (extrapolated) = 38.1 W/kg SAR(1 g) = 7.57 W/kg; SAR(10 g) = 2.11 W/kg Maximum value of SAR (measured) = 17.9 W/kg



0 dB = 17.9 W/kg = 12.52 dBW/kg

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7. DAE & Probe Calibration Certificate

credited by the Swiss Accredit e Swiss Accreditation Servic utilateral Agreement for the	e is one of the signatories	to the EA	o.: SCS 0108
ient SGS-TW (Aud		to the second	DAE4-1374_Aug16
ALIBRATION	CERTIFICATE		
Neject	DAE4 SD 000 D	04 BM - SN: 1374	
Calibration procedure(a)	QA CAL-06,v29 Calibration proces	ture for the data acquisition electr	onics (DAE)
Calibration date:	August 23, 2016		
The measuraments and the unit	ontaindes with confidence pri	snal standards, which realize the physical units obstitify are given on the following pages and γ facility: environment temperature (22 ± 3) °C (are part of the certificate.
The measurements and the unit	ortaindes with confidence projucted in the clased laboratory	obebility are given on the following pages and	are part of the certificate.
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Calibration Laboratory of Schmid & Partner Engineering AG Zeughaisstrasse 43, 8009 Zurich, Switzerland

Accredited by the Swiss Accreditation Service (SAS)



S Schweizerischer Kallbrierdienel Service suisse d'étalonnage Servizie svizzere di tareture S swiss Callbridion Service

Accreditation No.: SCS 0108

Glossary

DAE Connector angle

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

Methods Applied and Interpretation of Parameters

The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration outlificates

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

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DC Voltage Measurement

A/D - Converter Resolution nominal High Range: 1LSB = 6.1µV. full range = 100...+300 mV Low Range: ILSB = 61nV full range = -1+3mV DASY measurement parameters: Auto Zaro Time. 3 sec. Measuring time: 3 sec.

Calibration Factors	X	Ŷ	z
High Bange	403.637 ± 0.02% (k=2)	403.886 ± 0.02% (k=2)	404.160±0.02% (k=2)
Low Range	3.98275 ± 1.50% (k=2)	3.96719 ± 1.50% ()=2)	3.99036 ± 1.50% (I⊫≥)

Connector Angle

Connector Angle to be used in DASY system	42.5°±1°

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Appendix (Additional assessments outside the scope of SCS0108)

1. DC Voltage Linearity

High Range	Reading (µV)	Difference (µV)	Erroir (%)
Channel X + Input	200039.11	0.18	0.00
Channel X + Input	20005.23	0.57	0.00
Channel X - Input	-20004.46	1.52	-0.01
Channel Y + Input	200041 10	3.98	0.00
Channel Y + Input	20002.96	-1,76	-0.01
Channel Y - Input	-20007,46	-1.33	0,01
Channel Z + Input	200039.71	2.56	0.00
Channel Z + Input	20002.57	-2.04	-0.01
Channel Z - Input	-20008.39	-2.20	0.01

Low Range	Reading (µV)	Difference (µV)	Error (%)
Channel X. + Input	2001.14	0.37	0.02
Channel X + Input	200.90	0.07	0.03
Channel X - Input	-198.75	0.41	-0.20
Channel Y + Input	2000.82	0.06	0.00
Channel Y + Input	200.17	-0.51	-0.25
Channel Y - Input	-199.47	-0.29	0.15
Channel Z + Input	2000.50	-0.29	-0.01
Channel Z + Input	199.36	-1,24	-0.62
Channel Z - Input	-200.79	-1.45	0.73

2. Common mode sensitivity

DASY measurement parameters: Auto Zoro Time: 3 sec; Measuring time: 3 sec.

	Common mode Input Voltage (mV)	High Range Average Reading (µV)	Low Range Average Reading (µV)
Channel X	200	6,08	3.93
1	- 200	-2.69	-4.73
Channel Y	200	7,56	7.12
	200	-8.69	8.88
Channel Z	200	5.83	817.c
	- 200	-8.94	-8/16

3. Channel separation

	Input Voltage (mV)	Channel X (µV)	Chennel Y (µV)	Channel Z (µV)
Channel X	200		-2.29	-1.91
Channel Y	200	4.85	-1	-1.13
Channel Z	200	10.99	2.02	

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4. AD-Converter Values with inputs shorted

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

	High Range (LSB)	Low Range (LSB)
Channel X	1.5938	14709
Channel Y	16155	14646
Channel Z	16005	15566

5. Input Offset Measurement

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

	Average (µV)	min. Offset (µV)	max. Offset (µV)	Std. Deviation (µV)
Channel X	1.17	0.20	1.90	0.33
Channel Y	0.61	-0.17	1.24	0.30
Channel Z	-1,30	-2.42	-0.33	0.37

6. Input Offset Current

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

7. Input Resistance (Typical values for information)

Zeroing (kOhm)	Measuring (MOhm)
200	500
200	200
200	200
	Zeroing (kOhm) 200 200 200 200

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

Typical values	Alarm Level (VDC)	
Supply (+ Vcc)	+7.9	
Supply (- Vcc)	-7,6	

9. Power Consumption (Typical values for information)

Typical values	Switched off (mA)	Stand by (mA)	Transmitting (mA)
Supply (+ Vcc)	+0,01	+6	+14
Supply (- Vcc)	-0.01	-6	B

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berd SGS-TW (Aud	en)	Gernificanti Mo:	EX3-3923_Sep16
CALIBRATION	CERTIFICATE		
Shiped	EX3DV4 - SN:392	3	
Calibriting prevedure(s)		V CAL-14.v4. QA CAL-23.v5, QA ure for dosimetric E-field probes	CAL-25.v6
Calibratico data	September 2, 2016	5	
All calibrations have been cond	usted in the closed into relay	facility' environment temperature (22 ± 3)°C p	ed humidity = 70%
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Calibration Equipment used (M Primary Standards Power miller NRP Power sensor NRP-291 Power sensor NRP-291	5 TE critical for cellination) SN: 104778 SN: 104778 SN: 105245	Cai Data (Certificate No.) D6-Apt-16 (No. 217-02288/02289) 101-Apt-18 (No. 217-02288) 06-Apt-16 (No. 217-02288) 07-Apt-16 (No. 217-02289) 07-Apt-16 (No. 217-02289) 31-Dec 15 (No. 253-3013 Dec15)	Scheenled Calibration Apr-17 Apr-17 Apr-17 Apr-17 Dac-18
Calibration Equipment used (Mi Primary Standards Power realiar NRP- Power sensor NRP-251 Roleronce 20 dS Attenuator	6 TE ontroit for calibration) SN: 104778 SN: 105244 SN: 105245 SN: 55277 (20a)	Cal Date (Certificate No.) D6-Api-16 (No. 217-02288/02289) (M-Api-18 (No. 217-02288) (C-Api-16 (No. 217-02289) (C-Api-16 (No. 217-02293)	Scheenled Colibration Apr-17 Apr-17 Apr-17 Apr-17 Apr-17
Calibration Equipment used (Mi Primary Standards Privati Instan NRP- Power sensor NRP-251 Priver sensor NRP-251 Rolanosci 20 dB Attenuator Rolanosci 20 dB Attenuator Rolanosci Phobe ES30/42 DAE4	81E critical for cellination) SN: 104778 SN: 103245 SN: 55277 (20a) SN: 55277 (20a) SN: 3013 SN: 600	Cal Data (Certificate Nd.) D6-Api-16 (No. 217-02288/02289) 08-Api-16 (No. 217-02288) 08-Api-16 (No. 217-02288) 08-Api-16 (No. 217-02283) 31-Dati-15 (No. DAE4-862, Dec15) 23-Dati-15 (No. DAE4-862, Dec15)	Scheeuled Calibration Apr-17 Apr-17 Apr-17 Apr-17 Disc-18 Disc-16 Disc-16
Calibration Equipment used (Mi Prenary Standards Power reniar NRP- Power sensor NRP-251 Rolesonce 20 dS Attenuator Rolesonce 20 dS Attenuator	6 TE orbodi for calibution) EN: 104778 SN: 105245 SN: 105245 SN: 55277 (20a) SN: 5013 SN: 660 10	Car Data (Certificate No.) D6-Api-16 (No. 217-02298/02299) U9-Api-16 (No. 217-02289) O6-Api-16 (No. 217-02289) O5-Api-16 (No. 217-02293) 31-Dati-15 (No. 253-3013, Dec15) 23-Dati-15 (No. DAE4-660, Dec15) Check Date (in focuse)	Scheeoled Calibration Apr-17 Apr-17 Apr-17 Aor-17 Disc16 Disc16 Disc16 Scheduled Cheek
Calibration Equipment used (Mi Primary Standards Power malar NRP- Power sensor NRP-251 Rolanence 20 dB Attenuator Reference 20 dB Attenuator	61E onnow for extinution) E SN: 104778 SN: 10245 SN: 05245 SN: 05245 SN: 0513 SN: 000 10 SN: 10841293874	Col Date (Certificate No.) D6-Api-16 (No. 217-02288/02289) (M-Api-18 (No. 217-02288) (C-Api-18 (No. 217-02288) C6-Api-18 (No. 217-02289) 31-Dao-15 (No. 217-02293) 31-Dao-15 (No. 217-02293) 23-Dao-15 (No. DAE-4.692, Dec15) 23-Dao-15 (No. DAE-4.692, Dec15) Check Date (in Actual) D6-Api-18 (in Actual)	Scheeuled Calibration Apr-17 Apr-17 Apr-17 Apr-17 Disc-18 Disc-16 Disc-16
Calibration Equipment used (M Primary Standards Power online NRP- Power sensor NRP-281 Power sensor NRP-281 Power sensor NRP-281 Rolaronco 20 dB Attenuator Rolaronco 20 dB Attenuator Rolaronco 20 dB Attenuator Rolaronco 20 dB Attenuator Rolaronco 21 dB Attenuator Rolaron comercial (NRP-281) Power sensor E44 (2A	61E onnow for extinution) E SN: 104778 SN: 105245 SN: 105245 SN: 35177 (20) SN: 3013 SN: 3013 SN: 000 10 SN: 10841293874 SN: 10841293874 SN: 10841293874	Car Data (Certificate No.) D6-Apt-16 (No. 217-02288/02289) 08-Apt-18 (No. 217-02288) 08-Apt-16 (No. 217-02288) 07-Apt-16 (No. 217-02288) 31-Dec 15 (No. ES3-3013 Dec15) 23-Dec 15 (No. ES3-3013 Dec15) 23-Dec 15 (No. DAE4-662 Dec15) Check Date (in foliae) D6-Apt-10 (in foliae check Jun-16) D6-Apt-10 (in foliae check Jun-16)	Scheenjed Calibration Apr-17 Apr-17 Apr-17 Apr-17 Disc-18 Disc-18 Disc-18 Schedulet Check in tause steck, Jun-18
Calibration Equipment used (M Primary Standards Power patier NRP Power sensor NRP-291 Power sensor NRP-291 Rolaronic 20 Ed Attenuator Rolaronic 20 Ed Attenuator Rolaronic 20 Ed Attenuator Rolaronic 20 Ed Attenuator Rolaronic 20 Ed Attenuator Power sensor Ed412A Power sensor Ed412A	61E onnext for extinution) EE EN: 104778 EN: 105244 EN: 105245 EN: 105245 EN: 105245 EN: 105247 EN: 2013 EN: 2013 EN: 200 ID EN: 10541293874 EN: 10541293874 EN: 10741428067 SN: 000110210	Col Date (Certificate No.) D6-Api-16 (No. 217-02288/02289) (M-Api-18 (No. 217-02288) (C-Api-18 (No. 217-02288) C6-Api-18 (No. 217-02289) 31-Dao-15 (No. 217-02293) 31-Dao-15 (No. 217-02293) 23-Dao-15 (No. DAE-4.692, Dec15) 23-Dao-15 (No. DAE-4.692, Dec15) Check Date (in Actual) D6-Api-18 (in Actual)	Scheenled Calibration Apr-17 Apr-17 Apr-17 Dac-18 Diec-18 Diec-18 Diec-18 Scheduled Check In tause check Jun-19 In base offeck Jun-18
Calibration Equipment used (M Primary Standards Power online NRP- Power sensor NRP-281 Power sensor NRP-281 Power sensor NRP-281 Rolaronco 20 dB Attenuator Rolaronco 20 dB Attenuator Rolaronco 20 dB Attenuator Rolaronco 20 dB Attenuator Rolaronco 21 dB Attenuator Rolaron comercial (NRP-281) Power sensor E44 (2A	61E onnow for extinution) E SN: 104778 SN: 105245 SN: 105245 SN: 35177 (20) SN: 3013 SN: 3013 SN: 000 10 SN: 10841293874 SN: 10841293874 SN: 10841293874	Cai Data (Certificate No.) D6-Api-16 (No. 217-02289/02289) 08-Api-18 (No. 217-02289) 08-Api-18 (No. 217-02289) 09-Api-18 (No. 217-02289) 09-Api-18 (No. 217-02293) 31-Duo-15 (No. DAE4-860, Dec15) 23-Dac-15 (No. DAE4-860, Dec15) Check Date (in foliae) 00-Api-10 (in foliae) 00-Api-10 (in foliae) 05-Api-10 (in foliae)	Scheouled Calibration Apr-17 Apr-17 Apr-17 Dec-18 Dec-18 Dec-18 Schedulet Check of Tause check Jon-18 In bause check Jon-18 In bause check Jon-18
Calibration Equipment used (Mi Primary Standards Power sensor NRP-251 Rolesence 20 dS Attenuator Rolesence 20 dS Attenuator Power sensor E4412A Power sensor E4412A Power sensor E4412A	61E other# for extinution) E SN: 104778 SN: 105245 SN: 105245 SN: 35177 (20) SN: 2013 SN: 2014 SN: 2013 SN: 2014 SN: 2013 SN: 2017 SN:	Cai Data (Certificate No.) D6-Api-16 (No. 217-02298/02299) 09-Api-18 (No. 217-02298) 08-Api-18 (No. 217-02298) 09-Api-18 (No. 217-02298) 09-Api-18 (No. 217-02298) 09-Api-18 (No. 253-3013 Dec15) 23-Dac-15 (No. DAE-4-600 Dec15) Check Date (in foliae) D6-Api-10 (in foliae) D6-Api-10 (in foliae) D6-Api-10 (in foliae) check Api-16) D6-Api-16 (in foliae check Api-16) D6-Api-16 (in foliae check Api-16) D6-Api-16 (in foliae check Api-16) D6-Api-16 (in foliae check Api-16) D6-Api-16 (in house check Api-16) D6-Api-16 (in house check Col-19)	Scheeoled Calibration Apr-17 Apr-17 Apr-17 Dec-18 Dec-18 Dec-18 Dec-18 Schedules Check in tause check ain-18 in tause check ain-18 in tause check ain-18 in tause check ain-18 in tause check ain-18
Calibration Equipment used (Mi Primary Standards Power sensor NRP-251 Rolesensor NRP-251 Rolesensor NRP-251 Rolesensor 20145 Attenuator Reterinical Probe ESISCV2 DAE4 Secondally Standards Power sensor E44198 Power sensor E4412A Power sensor E4412A Power sensor E4412A	6 TE orboni for calibution) E SN: 104778 SN: 103245 SN: 105245 SN: 55277 (20a) SN: 35277 (20a) SN: 3013 SN: 65677 SN: 680 10 SN: 6841293874 SN: NY41438087 SN: 033812001705	Car Date (Certificate No.) D6-Api-16 (No. 217-02298/02299) 08-Api-16 (No. 217-02289) 08-Api-16 (No. 217-02289) 08-Api-16 (No. 217-02293) 31-Dati-15 (No. DA54-660, Dect5) 23-Dati-15 (No. DA54-660, Dect5) Check Date (in house dect, Jui-16) 06-Api-10 (in house deck, Jui-16) 06-Api-16 (in house check, Jui-16) 06-Api-16 (in house check, Jui-16) 04-Aug-86 (in house check Jui-18)	Scheeoled Calibration Apr-17 Apr-17 Apr-17 Dec-18 Dec-18 Dec-18 Dec-18 Schedules Check in tause check ain-18 in tause check ain-18 in tause check ain-18 in tause check ain-18 in tause check ain-18
Calibration Equipment used (M Primary Standards Proven resider NRP- Hywer sensor NRP-281 Forvers sensor NRP-281 Rolaronce 20 dB Attenuator Rolaronce 20 dB Attenuator Rolaronce 21 dB A	6 TE orboni for calibution) E SN: 104778 SN: 103245 SN: 05277 (20a) SN: 05277 (20a) SN: 05277 (20a) SN: 05277 (20a) SN: 013 SN: 0245 SN: 03245 SN: 03245 SN: 04704 SN: 04704 SN: 04704 SN: 04410210 SN: 033612001706 SN: 033612001706 SN: 033612001706	Cai Data (Certificate Mo.) D6-Api-16 (No. 217-02288/02289) 08-Api-16 (No. 217-02288) 08-Api-16 (No. 217-02288) 09-Api-16 (No. 217-02288) 31-Dati-15 (No. DAE4-660, Dect5) 23-Dati-15 (No. DAE4-660, Dect5) 23-Dati-15 (No. DAE4-660, Dect5) 06-Api-10 (In house check, Jun-16) 06-Api-10 (In house check, Jun-16) 06-Api-10 (In house check, Jun-16) 04-Aug-09 (In house check, Jun-16) 16-Cit-01 (In house check, Cot-19) Function	Scheeoled Calibration Apr-17 Apr-17 Apr-17 Dec-18 Dec-18 Dec-18 Dec-18 Schedules Check in tause check Jun-18 in tause check Jun-18 in tause check Jun-18 in tause check Jun-18

Certificate No: EX3-3923_Sep16

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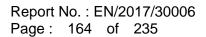
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Calibration Laboratory of Schmid & Partner Engineering AG Zwghausstmase 43, 6004 Zurich, Switzerland



Schweizerinster Kellbrietie Sarvice sultant d'étalemage C Servizio svizzero di tarettarà Swits Calibration Evryicu

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Accreditation No | SCS 010E

Approximation by the Sween Approximation Secondar (SAS) The Swike Accorditation Barvios is one of the signatories to the EA Number of Calibration Definition of Calibration Definitions

Gloseary

Glussaly.	
TSL	hispine sustaine sustaine
NORMx,y,z	sensitivity in the space
CDRVF	ausalivity in TSL / NORMs.v.z
DCP	diade compression point
CE	crest factor (1/duty_cycle) of the RF signal
A.E.C.U	modulation dependent linearization parameters
Polarization w	a rotation around probe axis
Polatization II	If relation around an axis that is in the plane normal to probe exis (at measurement center),
· · · · · · · · · · · · · · · · · · ·	a = 0 is normal to unite axis

Connector Angle information used in DASY system to align probe sensor X to the robot coordinate system

Calibration Is Performed According to the Following Standards:

- a) IEEE Std 1526-2013, "IEEE Recommended Practice for Defarmining the Peak Spalial-Averaged Specific a) type and two sets to the set of the set
- used in close proximity to the human body (flequency range of 30 MHz to 6 GHz)*. March 2010 d) KDB 365664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Methods Applied and Interpretation of Parameters:

- NORMs, y.z. Assessed for E-field potanization b = 0 (f < 900 MHz in TEM-cell; f < 1800 MHz; R22 waveguide), NORMs, y.z are only intermediate values, i.e., the uncertainties of NORMs, y.z does not affect the C³-field. uncertainty inside TSL (see below ConvP)
- NORM/I/JX.y.z = NORMX.y.z * frequency, response (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the trequency response is included In the stated uncertainty of ConvP.
- DCPx, y.e. DCP are iniminited linearization parameters assessed based on the data of power swince with CW signal (no uncertainty (equired), DCP does not depend on frequency nor media.
- PAR: PAR = the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- Ax,y,z; Bx,y,z; Cx,y,z; Cx,y,z; VX,z, V,Z; A, B, C, D are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on requency nor media. VR is the maximum calibration range expressed in RMS voltage across the diode.
- ConvF and Boundary Effect Parameters: Assessed in fat phantom using E-field (or Temperature Transfer Standard for I < 800 Minz) and inside wavegrade using analytical field distributions based on power measurements for t > 800 Minz. The same satups are used for assessment of the parameters applied for boundary compensation (alphin, depth) of which typical uncertainty volues are given. These persimitars and toundary compensation (alphin, depth) of which typical uncertainty volues are given. These persimitars and used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORMs, v.z.* ConvF whereby the uncertainty corresponds to that given for ConvF. A frequency dependent. ConvF is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100. Mitz
- Spherical lastropy (SD downtion from isotropy); in a field of low gradients realized using a flat phareoni esposed by a pulch antenna.
- Sensor Offser. The sensor offset corresponds to the ulfiset of virtual measurement penter from the probe tip (on probe exist, No tolerance required.
- Connector Angla: The angle is assessed using the information gained by determining the NORMs (no uncertainty required)

Certificate Not EX3-3923 Sep16

Frage 2 pl 11

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Report No. : EN/2017/30006 Page : 165 of 235

EX3DV4 - SN 3923

September 2, 2016

Probe EX3DV4

SN:3923

Manufactured: Repaired: Calibrated; March 8, 2013 August 30, 2016 September 2, 2016

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

Cartificale No: EX3-3923_Sep16

Price Idl 11

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EX3074 SN:3923

Semiamber 2, 2016

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3923

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc h=2
Norm (µV/(V/m) ²) ^A	0.55	0.46	0.45	± 10.1 %
DCP (mV)*	101.5	102.8	106.7	

Modulation Calibration Parameters

UID	Communication System Name		A dB	B dBõV	C	D dE	VR mV	Unc ^E (k=2)
0	CW	X	0.0	0.0	1.0	0.00	150.8	±3.0 %
		Y	0.0	0.0	1.0		149.7	1,222
		Z	0.0	0.0	1.0	-	151.5	

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

^A The uncertainties of Nomi X,Y,Z do not attact the E² field uncertainty inside T6L (see Pages 5 and 6). ^b Numerical inconcation permitted: substantienty not required. ^b Uncertainty is determined using the most, deviation from linear response analying restangular chilinoidies, and a separate of the field value.

Certificate No. EX3-3923, Sep16

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EX3DV/4- SN/3923

September 2, 2016

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3923

r (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ⁷	ConvF X	ConvF Y	ConvF Z	Alpha	Depth ^a (mm)	Unic (k=2)
750	41,9	0.89	11.01	11.01	11.01	0.53	0.80	±12.0 %
835	41.5	0.90	10.66	10.66	10.65	0.47	D.80	±12.0%
900	41.5	0.87	10.40	10.40	10.40	0.36	0.93	±12.0 %
1750	40.1	1.37	9,27	9.27	9.27	0.29	0.80	± 12.0 %
1900	40.0	1.40	8.90	8.90	8.90	0.30	0.80	±12.0 %
2000	40.0	1,40	8.92	8.92	8.92	0.34	0.80	± 12.0 %
2450	39.2	1,80	7.95	7.95	7.95	0.33	0.85	± 12.0 9
2600	39.0	1,96	7.77	7.77	7.77	0.33	0.80	± 12.0 %
0250	35.9	4.71	5.36	5,36	5.36	0.30	1.80	±13.1 %
5800	35.5	5,07	4.94	4.94	4.94	0:40	1.80	± 13.1 %
5750	35.4	5.22	4.96	4.96	4.96	0.40	1.80	±13.1 %

Calibration Parameter Determined in Head Tissue Simulating Media

⁶ Frequency unitary above 300 WHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is methicised to ± 50 MHz. The uncertainty at line RSS of the DoneF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Prequency welday below 300 MHz is ± 90.25, 40, 59 and 70 MHz to ± 00.25, 40, 59 and 70 MHz. The sequences below 3 GHz the validity of tissue parameters (*x* and *x*) and 230 MHz they section station of the sequence below 30 MHz. The measured SAR values. A Requested study 3 GHz, the validity of tissue parameters (*x* and *x*) and 10 ± 10% if they do they section to the fast of the to the the validity of the sequences below 3 GHz, the validity of times parameters (*x* and *x*) and 200 MHz they excite the fast of the Convertised to ± 100 MHz. The validity of times parameters (*x* and *x*) are september to the convertise they and the validity of the validity of times parameters (*x* and *x*) are september to ± 10%. The uncertainty is the RSS of the Convertise they are integrated to ± 0.56. Note that the convertise they are they are the they are the RSS of the Convertise they are they are they are there are parameters in the analysis and they are the they are they are they are the to the to they are the

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EX3DV4- 8N:3923

September 2, 2016

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3923

(Miliz) c	Relative Permittivity ⁶	Gondostivity (S/m)	ConvF X	ConvF Y	ConvF Z	Alpha ⁶	Depth ^G (mm)	Unc (k=2)
750	58.5	0.96	10.B3	10.83	10.83	0.32	0.98	± 12.0 %
835	55.2	0.97	10.67	10.67	10.87	0,37	0.96	± 12.0 %
900	55.0	1.05	10.52	10.52	10.52	0.44	ū.80	112.0 %
1760	53.4	1.49	8,78	8.78	8.78	0.39	0.81	± 12.0 %
1900	53.3	1,52	8.47	8.47	8.47	0.37	0.80	± 12.0 9
2000	53.3	1.52	8.68	8.68	8.68	0.38	0.80	± 12.0 %
2450	52.7	1.95	B.06	8.06	8.06	0.30	0.80	± 12.0 %
2600	52.5	2.16	7.84	7.84	7.84	0.27	0.80	± 12.0 %
5250	48.9	5.36	4.58	4.58	4.58	0.50	1,90	1 13.1 %
5600	48.5	5.77	4.00	4.00	4.00	0,65	1,90	# 13.1 5
5750	46.3	5.94	4.19	4.19	4.19	0.55	1.90	± 13.1 9

Calibration Parameter Determined in Body Tissue Simulating Media

¹ Preparency validity abuve 500 MHz of ± 100 MHz only epplate for DASY vA.4 and Nigher (see Page 2), else if in rewrited is ± 50 MHz. The uncertainty is the RSS of the CarVF uncertainty at extension frequency and the uncertainty for the indicator frequency. And the second frequency and the uncertainty for the indicator frequency and is ± 50 MHz. The babw 300 MHz is ± 10, 25, 40, 00 and 10 MHz for CorVF assessments at 30, 64, 125, 100 and 200 MHz expectedly. Active 5 GHz trequency validity babw 300 MHz is ± 10, 25, 40, 00 and 10 MHz for CorVF assessments at 30, 64, 125, 100 and 220 MHz expectedly. Active 5 GHz trequency validity can be estimated to ± 10 MHz. The analysis access balance 5 GHz trequencies (a corV or correct) and the uncertainty of the indicator 5 GHz trequencies (a corV or correct) and the uncertainty of the indicator 5 GHz trequencies (a corV or correct) and the uncertainty of the indicator 5 GHz trequencies (a corV or correct) and the uncertainty of the indicator formula is applied to the indicator 5 GHz trequencies (a corV or correct) and the uncertainty of indicator formula (a corVF or correct) and the uncertainty of the indicator formula (a corVF or correct) and the uncertainty of indicator formula (a corVF or correct) and the uncertainty of indicator formula (a corVF or correct) and the uncertainty of indicator formula (a corVF or correct) and the uncertainty of indicator formula (a corVF or corVF or correct) and the uncertainty of the indicator formula (a corVF or corVF or

Certificate No. EX3-3923 Sep15

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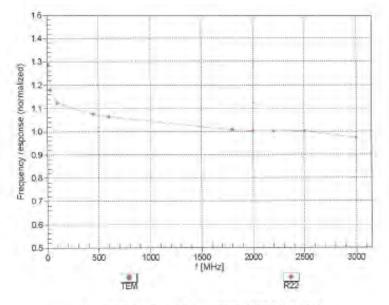
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EX3DV4- SN:3923

September 2, 2016

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



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

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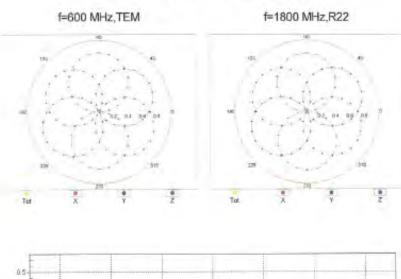
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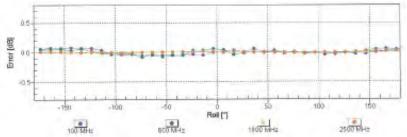
Report No. : EN/2017/30006 Page : 170 of 235

EX3DV4-SN:3923

September 2, 2016



Receiving Pattern (6), 9 = 0°



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

Certificate No: EX3-3923_Sep16

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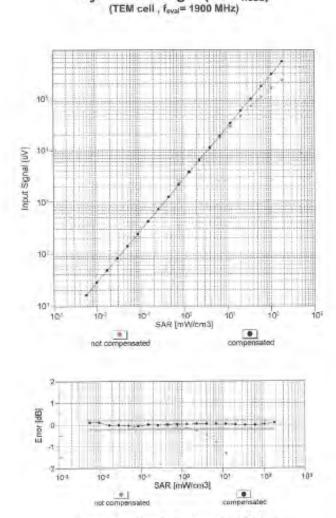
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EX3DV4- SN:3923

September 2, 2016



Dynamic Range f(SARhead)

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

Certificate No: EX3-3923_Sep16

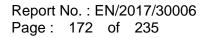
Page 9 of 11

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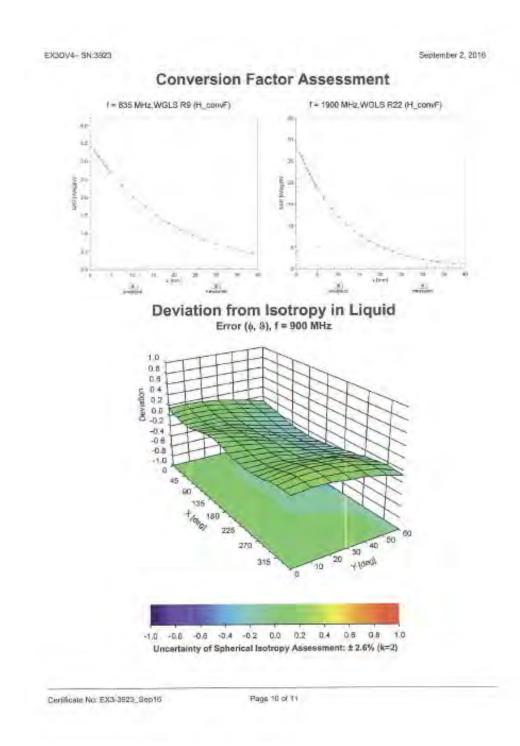
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EX3DV4- SN 3923

September 2, 2016

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3923

Other	Probe	Parame	ers

Sensor Arrangement	Triangular
Connector Angle (").	26,4
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	peldesity
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	9 mm
Tip Diameter	2,5 mm
Probe Tip to Sensor X Calibration Point	1 mm
Probe-Tip to Sensor Y Calibration Point	1 mm
Probe Tip to Sensor Z Calibration Point.	t nun
Recommended Measumment Distance from Surface	1.4 mm

Certificate We: EX3-3925, Sep15

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8. Uncertainty Budget

A	с	D	е		f	g	h=c * f / e	i=c * g / e	k
Source of Uncertainty	Tolerance/ Uncertainty	Probabilit v	Div	Div Value	ci (1g)	ci (10g)	Standard uncertainty	Standard uncertainty	vi, or Veff
Measurement system									
Probe calibration	6.55%	N	1	1	1	1	6.55%	6.55%	œ
Isotropy , Axial	3.50%	R	√3	1.732	1	1	2.02%	2.02%	œ
lsotropy, Hemispherical	9.60%	R	√3	1.732	1	1	5.54%	5.54%	00
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%	00
Linearity	4.70%	R	√3	1.732	1	1	2.71%	2.71%	00
Detection Limits	1.00%	R	√3	1.732	1	1	0.58%	0.58%	00
Readout Electronics	0.30%	Ν	1	1	1	1	0.30%	0.30%	00
Response time	0.80%	R	√3	1.732	1	1	0.46%	0.46%	00
Integration Time	2.60%	R	√3	1.732	1	1	1.50%	1.50%	00
Measurement drift (class A evaluation)	1.75%	R	√3	1.732	1	1	1.01%	1.01%	00
RF ambient condition - noise	3.00%	R	√3	1.732	1	1	1.73%	1.73%	00
RF ambient conditions - reflections	3.00%	R	√3	1.732	1	1	1.73%	1.73%	00
Probe positioner Mechanical restrictions	0.40%	R	√3	1.732	1	1	0.23%	0.23%	00
Probe Positioning with respect to phantom	2.90%	R	√3	1.732	1	1	1.67%	1.67%	00
Post-processing	1.00%	R	√3	1.732	1	1	0.58%	0.58%	00
Max SAR Eval	1.00%	R	√3	1.732	1	1	0.58%	0.58%	00
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%	œ
Phantom and Setup									
Phantom Uncertainty	4.00%	R	√3	1.732	1	1	2.31%	2.31%	00
Liquid permittivity (mea.)	1.39%	N	1	1	0.64	0.43	0.89%	0.60%	М
Liquid Conductivity (mea.)	1.47%	N	1	1	0.6	0.49	0.88%	0.72%	М
Combined standard uncertainty		RSS					11.78%	11.74%	
Expant uncertainty (95% confidence							23.57%	23.49%	

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

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					1	1		1	1
A	с	D	е		f	g	h=c * f / e	i=c * g / e	k
Source of Uncertainty	Tolerance/ Uncertainty	Probabilit y	Div	Div Value	ci (1g)	ci (10g)	Standard uncertainty	Standard uncertainty	vi, or Veff
Measurement system									
Probe calibration	6.00%	N	1	1	1	1	6.00%	6.00%	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Isotropy , Axial	3.50%	R	√3	1.732	1	1	2.02%	2.02%	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
lsotropy, 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%	Ν	1	1	1	1	0.30%	0.30%	∞
Response time	0.80%	R	√3	1.732	1	1	0.46%	0.46%	∞
Integration Time	2.60%	R	√3	1.732	1	1	1.50%	1.50%	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Measurement drift (class A evaluation)	1.75%	R	√3	1.732	1	1	1.01%	1.01%	∞
RF ambient condition - noise	3.00%	R	√3	1.732	1	1	1.73%	1.73%	∞
RF ambient conditions - reflections	3.00%	R	√3	1.732	1	1	1.73%	1.73%	∞
Probe positioner Mechanical restrictions	0.40%	R	√3	1.732	1	1	0.23%	0.23%	∞
Probe Positioning with respect to phantom	2.90%	R	√3	1.732	1	1	1.67%	1.67%	∞
Post-processing	1.00%	R	√3	1.732	1	1	0.58%	0.58%	∞
Max SAR Eval	1.00%	R	√3	1.732	1	1	0.58%	0.58%	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Test Sample related									
Test sample positioning	2.90%	N	1	1	1	1	2.90%	2.90%	M-1
Device Holder Uncertainty	3.60%	N	1	1	1	1	3.60%	3.60%	M-1
Drift of output power	5.00%	R	√3	1.732	1	1	2.89%	2.89%	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Phantom and Setup									
Phantom Uncertainty	4.00%	R	√3	1.732	1	1	2.31%	2.31%	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Liquid permittivity (mea.)	1.67%	N	1	1	0.64	0.43	1.07%	0.72%	М
Liquid Conductivity (mea.)	2.49%	N	1	1	0.6	0.49	1.49%	1.22%	М
Combined standard uncertainty		RSS					11.56%	11.50%	
Expant uncertainty (95% confidence							23.13%	22.99%	

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

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9. System Validation from Original Equipment Supplier

condited by the Swiss Accredits to Swiss Accreditation Servic utilisteral Agreement for the n	e is one of the signatorie		Accreditation No.: SCS 0108
inni SGS-TW (Aude	20)	Certificato	No: D750V3-1015_Aug16
ALIBRATION	CERTIFICATE		
bjaci	D750V3 - SN: 10	15	
alibration procedure(s)	QA CAL-05.v9		
	Calibration proce	dure for dipole validation kits a	bove 700 MHz
alibration clate:	August 30, 2016		
		ional standards, which realize the physical robability are given on the following pages	
the community of the sector of the sector	a participation of the participation of the	commentance description (commended bothers	and all ber at the estimate.
I calibrations have been condu	ched in the closed laborato	ry facility: environment temperature (22 ±)	3)°G and humidity < 70%.
		ry facility: environment temperature (22 \pm	3)°G and humidity < 70%.
il calbrations have been condu astmation Equipment used (M&		ry facility: environment temperature (22 x)	9)°G and humidity $<70\%$
aitmation Equipment used (M&	TE ontical for calibration)		
altration Equipment used (M&		ry facility: anvironment jemperature (22 ±) Cal Date (Centilicate No.) 06-Apr-16 (No. 217-02288/02288)	3)°C and humidity < 70%. Schaduled Calibration Apr-17
atimation Equipment used (M& rimary Saindards owar mater NRP	FE critical for calibration)	Cal Date (Certificate No.)	Schaduled Calibration
silination Equipment used (M& imary Saindards ovair motor NRP over sensor NRP-791	FE onlical for calibrationi ID # SN: 104778	Cal Date (Certificate No.) 06-Apr-16 (No. 217-02288/02288)	Echaduled Calibration Apr-17
almation Equipment used (M& imary Saindards wair mater NRP wer sensor NRP-291 wer sensor NRP-291	FE ontical for calibration(ID A SN: 104778 SN: 103244	Cal Date (Certificate No.) 06-Apr-16 (No. 217-02288/02288) 06-Apr-16 (No. 217-02288)	Echadulaed Galibration Apr-17 Apr-17
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台灣檢驗科技股份有限公司

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Calibration Laboratory of Schmid & Partner Engineering AG Zaugheusstresse 43, 1004 Zurich, Switzerland



Schweizmischer Kalibrierds Service suisse d'étalonnage Servizio avizzoro di tereture Swiss Calibration Service

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condition No.: SCS 0108

According by the Bass Accordistion Service (SAS) The Swise Accorditation Service is one of the signatories to the EA Molflisterni Agreement for the recognition of calibration certificausa

Glossary:

TSL

N/A

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

Calibration is Performed According to the Following Standards.

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

Additional Documentation:

e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

Certificate No: D750V3 1015 Aug10

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Measurement Conditions

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

DASY Version	DASY5	V52.8.8
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL.	13 mm.	with Spacar
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	750 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.9	0.89 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	42.4 ± 6 %	0.91 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		

SAR result with Head TSL

SAR averaged over 1 cm ⁴ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.11 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	8.32 W/kg ± 17.0 % (k=2)
	L contraine L	
SAR everaged over 10 cm ² (10 g) of Head TSL	condition	
SAR averaged over 10 cm ² (10 g) of Head TSL SAR measured	condition 250 mW input power	1.36 W/kg

Body TSL parameters

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	55.5	0,96 inho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	54.9 ± 6 %	0.99 mbis/m ± 6 %
Body TSL temperature change during test	<0.5°C	(-

SAR result with Body TSL

SAR averaged over 1 cm ² (1 g) of Body TSL	Condition	
SAFI measured	250 mW input power.	2,25 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	8.77 W/kg + 17.0 % (k=2)
SAR sveraged over 10 cm ¹ (10 g) of Body TSL	condition	
SAR averaged over 10 cm ⁴ (10 g) of Body TSL SAR measured	condition 250 mW input power	1,47 ₩/kg

Certificate No: 0750V3-1015_Aug16

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Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	53.1 Q - 0.2 jQ	
Return Loss	-30.5 dB	

Antenna Parameters with Body TSL

Impedance, transformed to feed point	49.0 G - 2,8 jG
Return Loss	· 30.6 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.037 ns

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

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	March 22, 2010

Centilicatio No. 0750VS-1015_Aug16

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Date: 30,08.2016

DASY5 Validation Report for Head TSL

Test Laboratory: SPEAG, Zurich, Switzerland

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

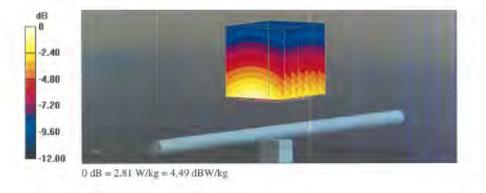
Communication System: UID 0 - CW; Frequency: 750 MHz Medium parameters used: f = 750 MHz, $\sigma = 0.91$ S/m; $v_c = 42.4$; p = 1000 kg/m³ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 SN7349; ConvF(10.07, 10.07, 10.07); Calibrated: 15.06.2016;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.12,2015
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7372)

Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 58.26 V/m; Power Drift = 0.02 dB Peak SAR (extrapolated) = 3.16 W/kg

SAR(1 g) = 2.11 W/kg; SAR(10 g) = 1.38 W/kg Maximum value of SAR (measured) = 2.81 W/kg



Certificate No: D750V3-1015_Aug16

Page 5 of 8

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Member of SGS Group



Date: 30.08.2016

DASY5 Validation Report for Body TSL

Test Laboratory: SPEAG, Zurich, Switzerland

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

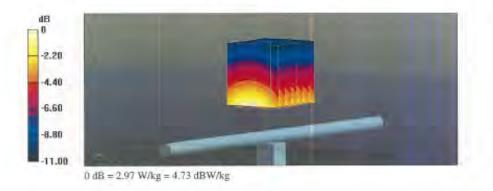
Communication System: UID 0 - CW; Frequency; 750 MHz Medium parameters used: l = 750 MHz; $\sigma = 0.99$ S/m; $\epsilon_r = 54.9$; p = 1000 kg/m⁵ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 SN7349; ConvF(9.99, 9.99, 9.99); Calibrated: 15.06.2016;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sp601; Calibrated: 30.12.2015
- · Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7372)

Dipole Calibration for Body Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5num, dy=5num, dz=5num Reference Value = 57.47 V/m; Power Drift = -0.01 dB Peak SAR (extrapolated) = 3.39 W/kg SAR(1 g) = 2.25 W/kg; SAR(10 g) = 1.47 W/kg

Maximum value of SAR (measured) = 2.97 W/kg



Certificate No: D750V3-1015_Aug16

Page 7 of 8

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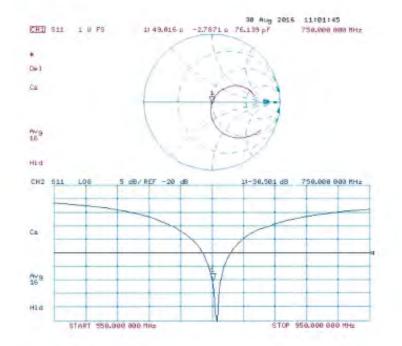
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Report No. : EN/2017/30006 Page : 182 of 235

Impedance Measurement Plot for Body TSL



Certificate No: D750V3-1015_Aug16

Page 8 of 8

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Report No. : EN/2017/30006 Page : 184 of 235

Calibration Laboratory of Schmid & Partner Engineering AG Zoughausstrasse 43, 8004 Zurich, Switzenami



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Aboreditation No.: SCS 0108

Accessful by the Swiss Accessful on Service (SAS) The Swise Accessful of Service is one of the signal ories to the EA Multi-annual Agrammum for the recognition of calibration certification

Glossary: TSL ConvF

N/A

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

Gevillipate No: Ges5V3-46063_Aug16

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Measurement Conditions

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

DASY Version	DASY5	V52.8.8
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL.	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, d2 = 5 mm	
Frequency	835 MHz = 1 MHz	

Head TSL parameters

The following parameters and calculations were applied

	Temperature	Parmittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.5	0.90 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	42.1 ± 8 %	0.93 mha/m ± 6 %
Head TSL lemperature change during test	< 0.5 °C		-

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.40 W/kg
SAR for nominal Head TSL parameters	Wf of basilemon	9.40 W/kg = 17.0 % (k=2)
SAR averaged over 10 cm ² (10 g) of Head TSL	condition	
SAR averaged over 10 cm ² (10 g) of Haad TSL SAR measured	condition 250 mW input power	1.54 W/kg

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	55.2	0.97 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	54.7 ± 6.%	1.01 mborn = 6 %
Body TSL temperature change during test	< 0.5 °C	-	-

SAR result with Body TSL

SAR averaged over 1 cm ⁷ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	2.47 W//kg
SAR for nominal Body TSL parameters	normalized to 1W	9.57 W/kg ± 17.0 % (k=2)
	the second se	
SAR averaged over 10 cm ² (10 g) of Body TSL	candition	
SAR averaged over 10 cm ² (10 g) of Body TSL SAR measured	candition 250 mW input power	1.81 W/kg

Certilicate No: D835V2-4d063_Aug16

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Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impadance, transformed to feed point	51.2 D - 2.8 ji)
Return Loss	- 30,3 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	-47.3 Ω - 5,5 jΩ
Relum Loss	-24.0 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.392 ns

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

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

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

Additional EUT Data

Manufactured by	SPEAG	
Manufactured on	November 27, 2006	

Centilicate No. D635V2-4d003_Aug16

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Page 4 of 6

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DASY5 Validation Report for Head TSL

Date: 25.08.2016

Test Laboratory: SPEAG, Zurich, Switzerland

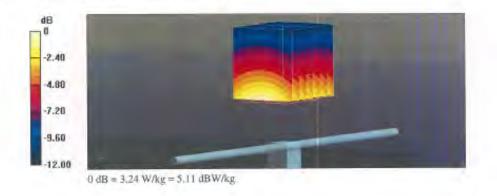
DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d063

Communication System: UID 0 - CW; Frequency: 835 MHz Medium parameters used: f = 835 MHz; $\sigma = 0.93$ S/m; $v_r = 42.1$; $\rho = 1000$ kg/m³ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 SN7349; ConvF(9.72, 9.72, 9.72); Calibrated: 15.06.2016;
- Sensor-Surface: 1,4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.12.2015
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7372)

Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 61.75 V/m; Power Drift = 0.03 dB Peak SAR (extrapolated) = 3.65 W/kg SAR(1 g) = 2.4 W/kg; SAR(10 g) = 1.54 W/kg Maximum value of SAR (measured) = 3.24 W/kg



Certificate No: D835V2-4d063_Aug16

Page 5 of 8

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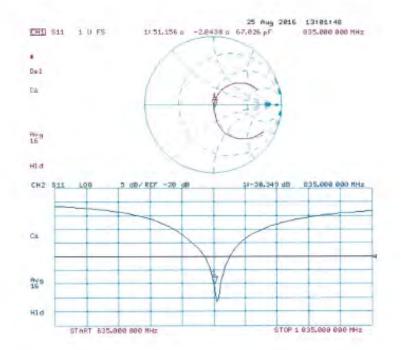
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Impedance Measurement Plot for Head TSL



Certificate No: D835V2-4d063_Aug16

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Date: 25.08.2016

DASY5 Validation Report for Body TSL

Test Laboratory: SPEAG, Zurich, Switzerland

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

Communication System: UID 0 - CW; Frequency; 835 MHz Medium parameters used: f = 835 MHz; $\sigma = 1.01$ S/m; $\epsilon_r = 54.7$; $\rho = 1000$ kg/m⁵ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63 19-2011)

DASY52 Configuration:

- Probe: EX3DV4 SN7349; ConvF(9.73, 9.73, 9.73); Calibrated: 15.06.2016;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Su601; Calibrated: 30.12.2015
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7372)

Dipole Calibration for Body Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 59.83 V/m; Power Drift = -0.00 dB Peak SAR (extrapolated) = 3.63 W/kg SAR(1 g) = 2.47 W/kg; SAR(10 g) = 1.61 W/kg Maximum value of SAR (measured) = 3.25 W/kg



Certilicate No: DE35V2-4d063_Aug16

Page 7 of 8

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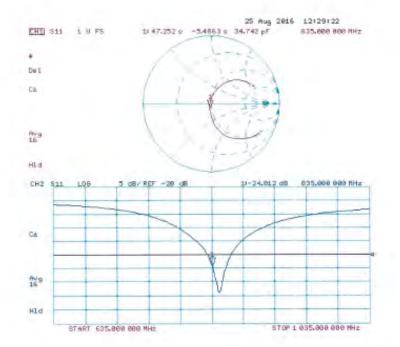
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Impedance Measurement Plot for Body TSL



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lient SGS-TW (Aud	en)	Cortificate N	o: D1750V2-1008_Aug16
CALIBRATION	CERTIFICATE		
Doject	D1750V2 - SN:10	900	
Calibration procedure(s)	QA CAL-05.v9 Calibration proce	dure for dipole validation kits ab	ove 700 MHz
Calibration date:	August 31, 2016		
		robability are given on the following pages a ry lacility: environment temperature (22 + 3)	
VI calibrations have been condu Calibration Equipment used (MS	ucted in the closed laborato	ry isolity: environment temperature (22 ± 3)	© and humidity < 70%.
Al calibrations have been condu Calibration Equipment used (Mi Primary Standards	icted in the closed laborato		
Vicalibrations have been condu Calibration Equipment used (Mi Primary Standards Power meter NAP	noted in the closed laborato TE critical for calibration)	ry isolity: environment temperature (22 + 3) Cal Data (Cerificata No.)	C and humidity < 70%. Scheduled Calibration
VI calibrations have been condu Calibration Equipment used (Mi Primary Standards Power meter NAP Power sensor NAP/291	ID #	ry lacility: environment templeature (22° ± 3) Cal Date (Cerificats No.) 06-Api-16 (No. 217-02288/02289)	© and humidity < 70%. Bohaduled Calibration Apr-17
VI calibrations have been condu Calibration Equipment used (Wi Primary Standards Power meter NRP Power sensor NRP-7291 Power sensor NRP-7291	ID # SN: 104728 SN: 103244	Cal Date (Cerificate No.) 06-Apr-16 (No. 217-02288/02289) 06-Apr-16 (No. 217-02288/02289)	© and numidity < 70%. <u>Bohodulad Calibration</u> Apr-17 Apr-17
Al calibrations have been condu- Calibration Equipment used (M8 Primary Standards Power meter NAP Power sensor NAP/291 Perview sensor NAP/291 Reference 20 dB Attenuator	ID # SN: 164778 SN: 164778 SN: 103244 SN: 103245	ry lacility: environment templosture (22 ± 3) Cal Date (Certificate No.) 06-Api-16 (No. 217-02288/02289) 06-Api-16 (No. 217-02288) 06-Api-16 (No. 217-02289)	© and humidity < 70%. Behaduled Calibration Apr-17 Apr-17 Apr-17
Vi calibrations have been condu Calibration Equipment used (Mi Primary Standards Power meter NAP Power sensor NAP/291 Power sensor NAP/291 Paleisence 20 dB Attenuator (vpe-N mismatch combinetion	TE critical for calibration) TO # SN: 164778 SN: 103244 SN: 103245 SN: 5058 (20k)	ry lacility: environment temploature (22 ± 3) Cal Date (Certificate No.) 06-Api-16 (No. 217-02288/02299) 06-Api-16 (No. 217-02288) 06-Api-16 (No. 217-02280) 06-Api-16 (No. 217-02292)	© and humidity < 70%. <u>Scheduled Calibration</u> Apr-17 Apr-17 Apr-17 Apr-17
All calibrations have been condu Calibration Equipment used (Mil Primary Standards Power meter NAP Power sensor NAP/281 Power sensor NAP/281 Peterence 20 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4	ID # SN: 164778 SN: 104778 SN: 103244 SN: 103244 SN: 5058 (20%) SN: 5047.2 / 06927	Cal Data (Contricate No.) 06-Api-16 (No. 217-02288/02289) 06-Api-16 (No. 217-02288/02289) 06-Api-16 (No. 217-02288) 06-Api-16 (No. 217-02289) 06-Api-16 (No. 217-02292) 06-Api-18 (No. 217-02296)	© end numidity < 70%. <u>Bohadulad Calibration</u> Apr-17 Apr-17 Apr-17 Apr-17 Apr-17
VI calibrations have been condu- Calibration Equipment used (Mi Primary Standards Power meter NAP Power sensor NAP/291 Power sensor NAP/291 Reference 20 dB Attenuator Pype-N mismatch combination Reference Probe EX30V4 DAE4	ID # SN: 104778 SN: 104778 SN: 103244 SN: 103244 SN: 103244 SN: 5068 (20x) SN: 5047.2 / 06327 SN: 7349	Cal Data (Cerificata No.) 06-Ap-16 (No. 217-02288/02289) 06-Ap-16 (No. 217-02288/02289) 06-Ap-16 (No. 217-02288) 06-Ap-16 (No. 217-02289) 05-Ap-16 (No. 217-02292) 05-Ap-18 (No. 217-02292) 05-Ap-18 (No. 217-02295) 15-Jun-16 (No. 217-02295) 15-Jun-16 (No. 217-02295) 30-Dec-15 (No. DA54-601_Dec15)	© and numidity < 70%. <u>Bohodulad Calibration</u> Apr-17 Apr-17 Apr-17 Apr-17 Apr-17 Jun-17 Dac-16
All calibrations have been condu Calibration Equipment used (Mi Primary Standards Power meter NRP Power sensor NRP-291 Power sensor NRP-291 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4 DAE4 Secondary Standards	ID # SN: 104778 SN: 104778 SN: 103244 SN: 103245 SN: 5068 (20%) SN: 5067.2 / 06927 SN: 7349 SN: 601	ry lacility: environment templeature (22 ± 3) Cal Data (Cerificata No.) 06-Api-16 (No. 217-02288/02289) 06-Api-16 (No. 217-02288) 06-Api-16 (No. 217-02289) 06-Api-16 (No. 217-02290) 06-Api-16 (No. 217-02296) 15-Jun-16 (No. EX3-7348_Jun16)	© end numidity < 70%. <u>Schoduled Calibration</u> Apr-17 Apr-17 Apr-17 Apr-17 Apr-17 Jun-17 Jun-17
VI calibrations have been condu Calibration Equipment used (Mil Primary Standards Power meter NAP Rower sensor NRP-Z91 Reference 20 dB Attenuator Reference 20 dB Attenuator Reference 20 dB Attenuator Reference Probe EX3DV4 DAE4 Secondary Standards Power meter EPM-442A	ID # ID # SN: 164778 SN: 164778 SN: 103244 SN: 103245 SN: 5058 (20k) SN: 5047.2 / 06927 SN: 7349 SN: 601 ID #	ry lacility: environment templeature (22 ± 3) Cal Date (Certificate No.) 06-Api-16 (No. 217-02288/02289) 06-Api-16 (No. 217-02288) 06-Api-16 (No. 217-02289) 06-Api-16 (No. 217-02292) 06-Api-16 (No. 217-02292) 06-Api-16 (No. 217-02292) 06-Api-16 (No. 217-02295) 15-Jun-16 (No. EX9-7346_Jun16) 30-Dec-15 (No. DAE4-601_Dec15) Check Date (in house)	© and humidity < 70%. <u>Behaduled Calibration</u> Apr-17 Apr-17 Apr-17 Apr-17 Apr-17 Jun-17 Dec-16 Scheduled Check:
All calibrations have been condu Calibration Equipment used (Mil Primary Standards Power meter NRP Power sensor NRP/291 Reversensor NRP/291 Revers	ID # SN: 104728 SN: 104728 SN: 103244 SN: 103244 SN: 5068 (20x) SN: 5047,2 / 06827 SN: 7349 SN: 7601 ID # SN: 66337480704	Cal Date (Certificate No.) 06-Api-16 (No. 217-02288/02289) 06-Api-16 (No. 217-02288/02289) 06-Api-16 (No. 217-02288) 06-Api-16 (No. 217-02282) 06-Api-16 (No. 217-02282) 06-Api-16 (No. 217-02282) 06-Api-16 (No. 217-02285) 15-Jun-16 (No. 217-02285) 15-Jun-16 (No. 217-02285) 07-Oct-15 (No. 217-02282)	© end humidity < 70%. <u>Behaduled Calibration</u> Apr-17 Apr-17 Apr-17 Apr-17 Apr-17 Jun-17 Dec-16 Scheduled Check In house object: Oct-16
VI calibrations have been condu Calibration Equipment used (MV Primury Standards Rower meter NHP Rower sensor NHP/291 Rever sensor NHP/291 Rever sensor NHP/291 Reference 20 dB Attenuator Fype-N mismatch combinetion Reference Probe EX30V4 DAE4 Secondary Standards Power sensor HP S401A Power sensor HP S401A Power sensor HP S401A	ID # ID # SN: 104778 SN: 103244 SN: 103244 SN: 103245 SN: 5047.2 / 06327 SN: 5047.2 / 06327 SN: 7349 SN: 601 ID # SN: 6837480704 SN: US37292783	ry lacility: environment templeature (22 ± 3) O6-Api-16 (No. 217-02288/02289) O6-Api-16 (No. 217-02288) O6-Api-16 (No. 217-02288) O6-Api-16 (No. 217-02289) O6-Api-16 (No. 217-02296) 15-Jun-16 (No. 217-02296) 15-Jun-16 (No. EX3-7348_Jun16) 30-Dec-15 (No. DAE4-601_Dec15) Check Date (in house) 07-Oct-15 (No. 217-02282) 07-Oct-15 (No. 217-02282)	© end numidity < 70%. <u>Scheduled Calibration</u> Apr-17 Apr-17 Apr-17 Apr-17 Jun-17 Jun-17 Jun-17 Dac-16 Scheduled Check In house check: Oct-16 In house check: Oct-16
All calibrations have been condu- Calibration Equipment used (Mi Primary Blandards Power meter NHP Power sensor NHP-Z91 Power sensor NHP-Z91 Power sensor NHP-Z91 Power sensor NHP-Z91 Power sensor NHP-Z91 Power sensor HP B401A Power sensor HP B401A	ID # ID # SN: 104778 SN: 103244 SN: 103245 SN: 5058 (20x) SN: 5058 (20x) SN: 5069 (20x) SN: 5069 (20x) SN: 5071 ID # SN: 601 ID # SN: 69337480704 SN: 08337292783 SN: MY41092317	Cal Date (Cerificate No.) 06-Apr-16 (No. 217-02288/02289) 06-Apr-16 (No. 217-02288/02289) 06-Apr-16 (No. 217-02288) 06-Apr-16 (No. 217-02289) 06-Apr-16 (No. 217-02296) 15-Jun-16 (No. 217-02296) 15-Jun-16 (No. 217-02296) 15-Jun-16 (No. 217-02296) 07-Oct-15 (No. 217-02222) 07-Oct-15 (No. 217-02222) 07-Oct-15 (No. 217-02222) 07-Oct-15 (No. 217-02222) 07-Oct-15 (No. 217-02222)	© end humidity < 70%. <u>Scheduled Calibration</u> Apr-17 Apr-17 Apr-17 Apr-17 Jun-17 Jun-17 Dac-10 Scheduled Check In house check: Oct-16 In house check: Oct-16 In house check: Oct-16
All calibrations have been condu- Calibration Equipment used (Mi Primary Blandards Power meter NHP Power sensor NHP-Z91 Power sensor NHP-Z91 Power sensor NHP-Z91 Power sensor NHP-Z91 Power sensor NHP-Z91 Power sensor HP B401A Power sensor HP B401A	ID # ID # SN: 104778 SN: 103244 SN: 103244 SN: 103244 SN: 5061200 SN: 5047.2 / 06327 SN: 7349 SN: 601 ID # SN: 6837480704 SN: 037290585 SN: 103972 SN: 103972 S	ry lacility: environment templeoture (22 ± 3) Cal Data (Cerificata No.) 06-Api-16 (No. 217-02288/02289) 06-Api-16 (No. 217-02288) 06-Api-16 (No. 217-02280) 06-Api-16 (No. 217-02290) 06-Api-16 (No. 217-02290) 15-Jun-16 (No. EX3-7348_Jun16) 30-Dec:15 (No. 217-02290) 15-Jun-16 (No. 217-02220) 07-Oct-15 (No. 217-02220) 07-Oct-15 (No. 217-02220) 15-Jun-15 (In focuse check Jun-15) 16-Oct-01 (In focuse check Jun-15) 16-Oct-01 (In focuse check Cot-15) Function	© end humidity < 70%. <u>Scheduled Calibration</u> Apr-17 Apr-17 Apr-17 Apr-17 Jun-17 Dac-16 Scheduled Check In house check: Oct-16 In house check: Oct-16
All calibrations have been condu Calibration Equipment used (Mil Primary Standards Power meter NRP Power sensor NRP/291 Reference 20 dB Attenuator Type-N mismatch combination Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4 DAE4 Secondary Standards Power meter EPN-442A Power sensor HP IMPTA Power sensor HP IMPTA	ID # ID # SN: 104778 SN: 103245 SN: 103245 SN: 503245 SN: 503245 SN: 5047.2 / 06927 SN: 7349 SN: 601 ID # SN: 6837480704 SN: 0837292783 SN: MY41032317 SN: 00372 SN: US37390585	Cal Dete (Cerificata No.) 06-Api-16 (No. 217-02288/02289) 06-Api-16 (No. 217-02288/02289) 06-Api-16 (No. 217-02288) 06-Api-16 (No. 217-02280) 06-Api-16 (No. 217-02280) 06-Api-16 (No. 217-02280) 15-Jun-16 (No. 217-02280) 15-Jun-16 (No. 217-02280) 07-Oct-15 (No. 217-02220) 07-Oct-15 (No. 217-02222) 07-Oct-15 (No. 217-02222) 07-Oct-15 (No. 217-02222) 15-Jun-15 (In focuse check Jun-15) 16-Oct-01 (In focuse check Jun-15) 16-Oct-01 (In focuse check Cot-15)	© end humidity < 70%. <u>Behaduled Calibration</u> Apr-17 Apr-17 Apr-17 Apr-17 Jun-17 Jun-17 Dac-16 Scheduled Check In house check: Oct-16 In house check: Oct-16
All calibrations have been conducted by an endowed (Mill Primary Standards Power meter NRP Power sensor NRP-291 Reference 20 dB Attenuator Type-N mismatch combinetion Reference Probe EX3DV4 DAE4 Secondary Standards Power sensor HP 8491A Power	ID # ID # SN: 104778 SN: 103244 SN: 103244 SN: 103244 SN: 5061200 SN: 5047.2 / 06327 SN: 7349 SN: 601 ID # SN: 6837480704 SN: 037290585 SN: 103972 SN: 103972 S	ry lacility: environment templeoture (22 ± 3) Cal Data (Cerificata No.) 06-Api-16 (No. 217-02288/02289) 06-Api-16 (No. 217-02288) 06-Api-16 (No. 217-02280) 06-Api-16 (No. 217-02290) 06-Api-16 (No. 217-02290) 15-Jun-16 (No. EX3-7348_Jun16) 30-Dec:15 (No. 217-02290) 15-Jun-16 (No. 217-02220) 07-Oct-15 (No. 217-02220) 07-Oct-15 (No. 217-02220) 15-Jun-15 (In focuse check Jun-15) 16-Oct-01 (In focuse check Jun-15) 16-Oct-01 (In focuse check Cot-15) Function	© end humidity < 70%. <u>Behaduled Calibration</u> Apr-17 Apr-17 Apr-17 Apr-17 Jun-17 Jun-17 Dac-16 Scheduled Check In house check: Oct-16 In house check: Oct-16
All calibrations have been conducted in Equipment used (Mill Primary Standards Power meter NRP Power sensor NRP-291 Power sensor NRP-291 Reference 20 dB Attenuator Type-N mismatch combination Reference Picto EX3DV4 DAE4 Secondary Standards Power meter EPN-442A Power sensor HP IMENA Power sensor Power sensor Power Power sensor Power Power Power sensor Power Power Power Power sensor Power sensor Power sensor Pow	Acted in the closed laborato TE entitical for calibration() TD # SN: 164778 SN: 103244 SN: 103244 SN: 5068 (20x) SN: 5047,2 / 06827 SN: 5047,2 / 06827 SN: 5047,2 / 06827 SN: 601 SN: 6837480704 SN: 0837292783 SN: MY41032317 SN: M37390586 Name Johannes Kumica	Cal Data (Conificada No.) 06-Api-16 (No. 217-02288/02299) 06-Api-16 (No. 217-02288/02299) 06-Api-16 (No. 217-02288) 06-Api-16 (No. 217-02298) 06-Api-16 (No. 217-02290) 06-Api-18 (No. 217-02290) 06-Api-18 (No. 217-02290) 06-Api-18 (No. 217-02290) 07-Oct-15 (No. 217-02220) 07-Oct-15 (No. 217-02220) 07-Oct-15 (No. 217-02220) 07-Oct-15 (No. 217-02220) 15-Jun-15 (in focuse check Jun-15) 16-Oct-01 (in risuse check Jun-15)	© end humidity < 70%. <u>Behaduled Calibration</u> Apr-17 Apr-17 Apr-17 Apr-17 Jun-17 Jun-17 Dac-16 Scheduled Check In house check: Oct-16 In house check: Oct-16

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Accreditation No.: SCS 0108

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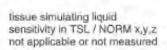
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Glossary: TSL ConvF

N/A



Calibration is Performed According to the Following Standards:

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

Additional Documentation:

e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

Geridicate No: D1750V2-1006, Aug 16

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Measurement Conditions

DASY system conliguration, as far as not given an page 1.

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

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	40.1	1.37 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	40:3 ± 6 %	1.37 mha/m ± 8 %
Head TSL temperature change during test	< 0.5 °C		1

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	9.28 W/kg.
SAR for nominal Head TSL parameters	normalized to 1W	37.2 W/kg = 17.0 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR everaged over 10 cm ³ (10 g) of Head TSL SAR measured	condition 250 mW input power	4.90 W/kg

Body TSL parameters

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	53,4	1,19 mha/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	50.1±0 %	1.49 mho/m ± 6.%
Body TSL temperature change during test	<0.5 °C	-	

SAR result with Body TSL

SAR averaged over 1 cm ² (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	9.34 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	37.3 W/kg + 17.0 % (k=2)
SAD suscessed must 10 pm ² (10 p) of Rodu TSI	crathing	
SAR averaged over 10 cm ³ (10 g) of Body TSL SAR massured	condition 250 mW input power	4.96 W/kg

Certificate No: D1750V2-1008_Aug18.

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Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to lead point	51.0 Ω - 0.2 jΩ
Ratum Loss	-40.1 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	46.7 Ω - 0.5 jΩ
Return Loss	- 29,3 ttB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.221 ns

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

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

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

Additional EUT Data

Manufactured by	SPEAG	
Manufactured on	May 27, 2003	

Cartilloale No: D1756V2-1008_Aug16

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DASY5 Validation Report for Head TSL

Test Laboratory: SPEAG, Zurich, Switzerland

Date: 24.08.2016

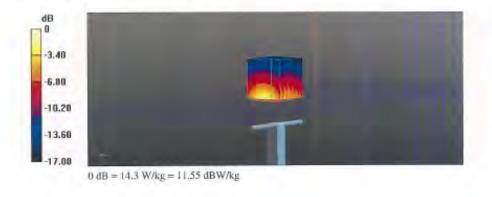
DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN:1008

Communication System: UID 0 – CW; Frequency: 1750 MHz Medium parameters used: f = 1750 MHz; $\pi = 1.37$ S/m; $\epsilon_r = 40.3$; $\rho = 1000$ kg/m³ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

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

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



Certificate No: D1750V2-1008_Aug16

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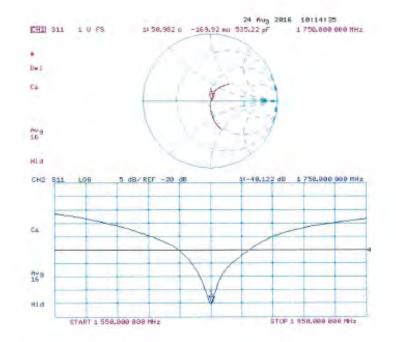
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Impedance Measurement Plot for Head TSL



Certificate No: D1750V2-1008_Aug16

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DASY5 Validation Report for Body TSL

Date: 31.08 2016

Test Laboratory: SPEAG, Zurich, Switzerland

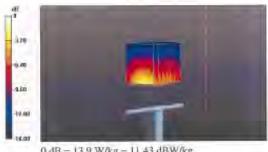
DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN:1008

Communication System: UID 0 - CW; Frequency: 1750 MHz Medium parameters used: f = 1750 MHz; $\sigma = 1.49$ S/m; $c_c = 53.1$; $\rho = 1000$ kg/m³ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

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

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



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

Certificate No: D1750V2-1008_Aug16

Page 7 of 8

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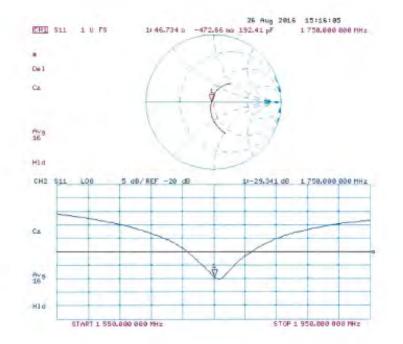
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Impedance Measurement Plot for Body TSL



Certificate No: D1750V2-1008_Aug16

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		ry facility: environment temperature (22 \pm 3) $^{\rm eff}$	C and humidity < 70%.
Calibration Equipment used (M&	TE critical for calibration)		
Calibration Equipment used (M&	TE critical for calibration)	Cal Date (Certificate No.)	Scheduled Calibration
Calibration Equipment used (M& Primary Standards Power meter NRP	TE critical lor calibration)	Cal Date (Certificate No.) 06-Apr-16 (No. 217-02288/02389)	Scheduled Calibration
Calibration Equipment used (M& Primary Standards Power meter NIRP Power sensor NIRP-291	TE critical for calibration)	Cal Date (Certificate No.) 06-Apr-16 (No. 217-02288/02289) 06-Apr-16 (No. 217-02288)	Scheduled Calibration
Calibration Equipment used (M8 Primary Standards Power meter NRP Power sensor NRP-291 Power sensor NRP-291	TE critical loncationation) ID # SNE 104778 SNE 103244	Cal Date (Certificate No.) 06-Apr-16 (No. 217-02288/02389)	Scheduled Calibration Apr 17 Apr 17
Calibration Equipment used (M& Primary Standards Power meter NRP Power sensor NRP-291 Power sensor NRP-291 Reference 20 dB Attenuator	TE critical lor calibration) ID # SN: 104778 SN: 103244 SN: 103245	Cal Date (Certificate No.) 06-Apr-16 (No. 217-02288/02389) 06-Apr-16 (No. 217-02288) 06-Apr-16 (No. 217-02288)	Scheidulied Calibration Apr-17 Apr-17 Apr-17
Calibration Equipment used (M& Primary Standards Power meter NRP Power sensor NRP-291 Power sensor NRP-291 Reference 20 dB Attenuator Type-N mismatch combinetion	TE critical lor calibration) ID # SN: 104778 SN: 103244 SN: 103245 SN: 5058 (20k)	Cal Date (Certificate No.) 06-Apr-16 (No. 217-02288/02289) 06-Apr-16 (No. 217-02288) 06-Apr-16 (No. 217-02288) 05-Apr-16 (No. 217-02288)	Scheidulied Carbination Apr:17 Apr:17 Apr:17 Apr:17
Calibration Equipment used (M& Primary Standards Power meter NPP Power sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismatch combinetion Reference Probe EX3DV4	TE critical loncalibration) ID # SN: 104778 SN: 103244 SN: 103245 SN: 5058 (20k) SN: 5047.2 / 06327	Cal Date (Certificate No.) 06-Apr-16 (No. 217-02288/02289) 06-Apr-16 (No. 217-02288) 06-Apr-16 (No. 217-02280) 05-Apr-16 (No. 217-02292) 05-Apr-16 (No. 217-02292)	Scheidulied Carbination Apr:17 Apr:17 Apr:17 Apr:17 Apr:17
Calibration Egypment used (M8 Primary Standards Power meter NRP Power sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismatch combinetion Reference Probe EX3DV4 DAE4	TE critical lor calibration) ID # SN: 104778 SN: 103244 SN: 103245 SN: 5058 (20k) SN: 5058 (20k) SN: 5047.2 / 06327 SN: 5047.2 / 06327 SN: 7349 SN: 601	Cal Date (Certificate No.) D6-Apr-16 (No. 217-02288/02289) 06-Apr-16 (No. 217-02288) D5-Apr-16 (No. 217-02289) 05-Apr-16 (No. 217-02292) 05-Apr-16 (No. 217-02295) 31-Dec-15 (No. 207-02295) 30-Dec-15 (No. DAEe-601, Dec15)	Scheiduled Calibration Apr-17 Apr-17 Apr-17 Apr-17 Apr-17 Dec-16 Dec-16
Calibration Equipment used (M8 Primary Standards Power meter NRP Power sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4 DAE4 Secondary Standards	TE critical loncalibration) 5N-104778 SN-103244 SN-103245 SN-5058 (20k) SN-5058 (20k) SN-3047.2 / 06327 SN: 7349	Cal Date (Certificate No.) 06-Apr-16 (No. 217-02288/02289) 06-Apr-16 (No. 217-02289) 05-Apr-16 (No. 217-02292) 05-Apr-16 (No. 217-02292) 05-Apr-16 (No. 217-02295) 31-Dec-15 (No. EX3-7349_Dec15)	Scheiduled Carbealian Apr/17 Apr/17 Apr/17 Apr/17 Apr/17 Dec/16
Calibration Equipment used (M8 Primary Stanclands Power meter NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismaich combination Reference Probe EX3DV4 DAE4 Secondary Standards Power meter EPM-442A	TE critical lor salibration) ID # SN: 104778 SN: 103244 SN: 103245 SN: 5058 (20k) SN: 5058 (20k) SN: 3047.2 / 06387 SN: 7349 SN: 601 ID #	Cal Date (Certificato No.) 06-Apr-16 (No. 217-02288/02289) 06-Apr-16 (No. 217-02288) 05-Apr-16 (No. 217-02289) 05-Apr-16 (No. 217-02292) 05-Apr-16 (No. 217-02292) 05-Apr-16 (No. 217-02292) 05-Apr-15 (No. 217-02295) 31-Dec-15 (No. 247-02295) 30-Dec-15 (No. DAE4-601, Dec15) Check Date (In house)	Scheidulied Carbeation Apr:17 Apr:17 Apr:17 Apr:17 Apr:17 Dec.16 Dec-16 Scheduled Check
Calibration Equipment used (M8 Primary Standards Power meter NRP-291 Power sensor NRP-291 Power sensor NRP-291 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4 DAE4 Secondary Standards Power meter EPM-442A Power meter EPM-442A	TE critical lor calibration) ID # SN: 104778 SN: 103244 SN: 103245 SN: 5058 (20k) SN: 5058 (20k) SN: 5058 (20k) SN: 5047 2 / 06327 SN: 7349 SN: 601 ID # SN: 601	Cal Date (Certificate No.) 06-Apr-16 (No. 217-02288/02289) 06-Apr-16 (No. 217-02288) 06-Apr-16 (No. 217-02280) 05-Apr-16 (No. 217-02292) 05-Apr-16 (No. 217-02292) 31-Dec-15 (No. 217-02295) 31-Dec-15 (No. 217-02295) 30-Dec-15 (No. 217-02292) Check Date (In Insuse) 07-Oct-15 (No. 217-02222)	Scheidulied Carbination Apri 17 Apri 17 Apri 17 Apri 17 Apri 17 Apri 17 Apri 17 Deci 16 Deci 16 Scheiduled Check In house check Coli 18
Calibration Egupment used (M& Primary Standards Power meter NRP Power sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenustor Type-N mismatch combinetion Reference Probe EX3DV4 DAE4 Secondary Standards Power meter EPM-442A Power sensor HP 8481A Power sensor HP 8481A	TE critical lor salibration) ID # SN: 103244 SN: 103244 SN: 103245 SN: 5058 (20k) SN: 5058 (20k) SN: 5058 (20k) SN: 5057 (20k) SN: 601 ID # SN: GB37480704 SN: US37292783 SN: WY41002317 SN: 105072	Cel Date (Certificate No.) D6-Apr-16 (No. 217-02288/02389) 06-Apr-16 (No. 217-02288) D5-Apr-16 (No. 217-02280) D5-Apr-16 (No. 217-02290) D5-Apr-16 (No. 217-02292) 05-Apr-16 (No. 217-02295) 31-Dec-15 (No. D45e-601, Dec15) 30-Dec-15 (No. D45e-601, Dec15) Check Date (In Isouse) 07-Oct-15 (No. 217-02222) 07-Oct-15 (No. 217-02222) 07-Oct-15 (No. 217-02222) 07-Oct-15 (No. 217-02222) 07-Oct-15 (No. 217-02222) 07-Oct-15 (No. 217-02222) 07-Oct-15 (No. 217-02222)	Scheiduled Calibration Apr:17 Apr:17 Apr:17 Apr:17 Apr:17 Dec:16 Dec:16 Dec:16 Scheduled Check In house check: Oct-18 In house check: Oct-18 In nouse check: Oct-18 In nouse check: Oct-18
Calibration Egupment used (M8 Primary Standards Power meter NRP Power sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismatch combinetion Reference 20 dB Attenuator Type-N mismatch combinetion Reference Probe EX3D/V4 DAE4 Secondary Standards Power meter EPM-442A Power sensor HIP 8481A RF generator RBS SMT-06	TE critical lor calibration/ ID # SN: 103244 SN: 103245 SN: 5058 (20k) SN: 5047 2 (00827 SN: 5047 2 (00827 SN: 5047 SN: 601 ID # SN: 601 ID # SN: 601 ID # SN: 6037280704 SN: 0537292783 SN: WY41022317	Cal Date (Certificate No.) 06-Apr-16 (No. 217-02288/02289) 06-Apr-16 (No. 217-02288) 05-Apr-16 (No. 217-02280) 05-Apr-16 (No. 217-02290) 05-Apr-16 (No. 217-02292) 05-Apr-16 (No. 217-02295) 31-Dec-15 (No. 217-02295) 31-Dec-15 (No. 217-02295) Check Date (In Interse) 07-Oct-15 (No. 217-02222) 07-Oct-15 (No. 217-02222) 07-Oct-15 (No. 217-02222) 07-Oct-15 (No. 217-02222)	Scheduled Calibration Apr:17 Apr:17 Apr:17 Apr:17 Apr:17 Dec-16 Dec-16 Dec-16 Scheduled Check In House check Oct-16 In house check: Oct-16 In house check: Oct-16
Calibration Egupment used (M8 Primary Standards Power meter NRP Power sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismatch combinetion Reference 20 dB Attenuator Type-N mismatch combinetion Reference Probe EX3D/V4 DAE4 Secondary Standards Power meter EPM-442A Power sensor HIP 8481A RF generator RBS SMT-06	TE critical lor salibration) ID # SN: 104778 SN: 103244 SN: 103245 SN: 5058 (20k) SN: 5058 (20k) SN: 5058 (20k) SN: 5051 ID # SN: GBS7480704 SN: GBS7480704 SN: USS7290783 SN: 100872 SN: 100872	Cal Date (Certificato No.) 06-Apr-16 (No. 217-02288/02289) 06-Apr-16 (No. 217-02288) 05-Apr-16 (No. 217-02288) 05-Apr-16 (No. 217-02292) 05-Apr-16 (No. 217-02292) 05-Apr-16 (No. 217-02292) 07-Doc-15 (No. DAE+-601 Dec15) D1-Doc-15 (No. 217-02222) 07-Oct-15 (No. 217-02222) 07-Oct-15 (No. 217-02222) 07-Oct-15 (No. 217-02222) 07-Oct-15 (No. 217-02222) 07-Oct-15 (No. 217-02222) 15-Jun-15 (in inquise check Jort-15)	Scheiduled Calibration Apr:17 Apr:17 Apr:17 Apr:17 Apr:17 Dec:16 Dec:16 Dec:16 Scheduled Check In house check: Oct-18 In house check: Oct-18 In nouse check: Oct-18 In nouse check: Oct-18
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Calibration Laboratory of Schmid & Partner Engineering AG Zoughausstrass 43, 8004 Zurich, Switzerland



- - Schweizenscher Kalibrierdimitt Service suisse d'étalonnage Servizie svizzere di terature Swiss Calibration Service

Accreditation No.: SCS 0108

Accessiled by the Sweet Accenditation Service (SAS)

The Swiss Accreditation Service is one of the algostories to the EA Multilatoral Agreement for the recognition of calibration certificates Glossary:

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

a) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

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Measurement Conditions

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

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

Head TSL parameters

The following parameters and calculations were applied.

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

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	9.55 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	38.7 W/kg ± 17.0 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR averaged over 10 cm ³ (10 g) of Head TSL SAR measured	condition 250 mW input power	5.03 W/kg

Body TSL parameters

The following parameters and calculations were applied.

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

SAR result with Body TSL

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	9.83 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	39.7 W/kg ± 17.0 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR averaged over 10 cm ³ (10 g) of Body TSL SAR measured	condition 250 mW input power	5.21 W/kg

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Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

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

Antenna Parameters with Body TSL

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

General Antenna Parameters and Design

Electrical Delay (one direction)	1.196 ns

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

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	December 17, 2002

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DASY5 Validation Report for Head TSL

Date: 25.04.2016

Test Laboratory: SPEAG, Zurich, Switzerland

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

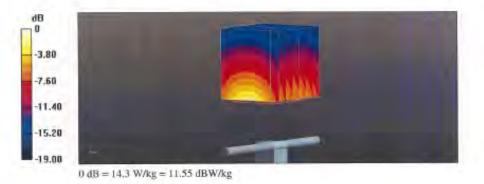
Communication System: UID 0 - CW; Frequency: 1900 MHz Medium parameters used: f = 1900 MHz; $\sigma = 1.37$ S/m; $\varepsilon_c = 40$; $\rho = 1000$ kg/m³ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

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

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

SAR(1 g) = 9.55 W/kg; SAR(10 g) = 5.03 W/kg Maximum value of SAR (measured) = 14.3 W/kg



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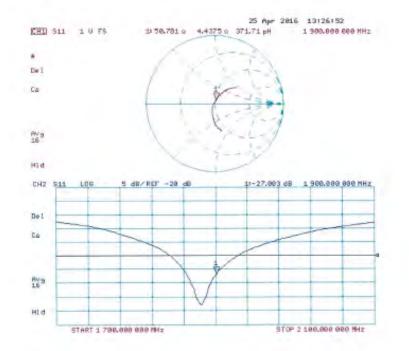
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Impedance Measurement Plot for Head TSL



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DASY5 Validation Report for Body TSL

Date: 25.04.2016

Test Laboratory: SPEAG, Zurich, Switzerland

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

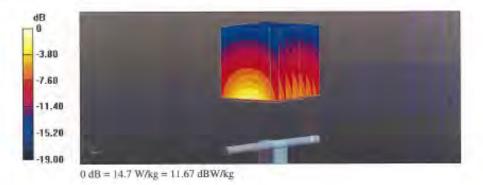
Communication System: UID 0 - CW; Frequency: 1900 MHz Medium parameters used: f = 1900 MHz; $\sigma = 1.49$ S/m; $\epsilon_r = 52.9$; $\rho = 1000$ kg/m³ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

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

Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 104.2 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 17.2 W/kg SAR(1 g) = 9.83 W/kg; SAR(10 g) = 5.21 W/kg Maximum value of SAR (measured) = 14.7 W/kg



Certificate No: D1900V2-5d027_Apr16

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

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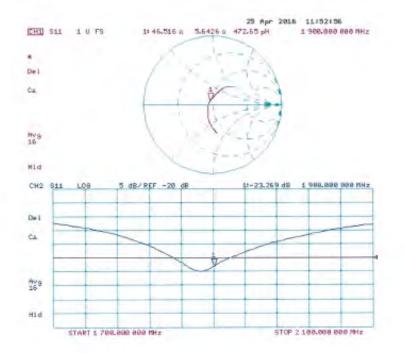
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Report No. : EN/2017/30006 Page : 206 of 235

Impedance Measurement Plot for Body TSL



Certificate No: D1900V2-5d027_Apr16

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

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ocredited by the Swiss Accredite he Swiss Accreditation Service suttilateral Agreement for the n	e is one of the signatorie	s to the EA	coreditation No.: SCS 0108
Sent SGS-TW (Audo	10)	Gertificate No	D2450V2-727_Apr16
CALIBRATION	ERTIFICATE		
SHEIDINATION C			
Disject	D2450V2 - SN:72	27	
Calibration procedure(a)	QA CAL-05.V9	den for the contraction that the	700 141
	Calibration proce	dure for dipole validation kits abo	ave 700 MHz
Calibration date:	April 19, 2016		
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	and the second	robability are given on the following pages ar	
The spectra separate and the crick	diministry and reactions to	company are then on the lowering pages of	in the part of the pollinoate.
We will be address it is not the state of th	and in this stand with sector	- Intelling the descention internation on AND - 1985	Presid Receivities when
All calibrations have been condu	cted in the closed suborato	ry facility: $u_{\rm IV}$ formes tompsiature (22 ± 3)*	D and humidity = 70%
		ry laciilly: law/communit temperature (22 \pm 3)*	D and humidity = 70%
		ry lacility: tenvironnen tompetature (22 ± 3)*	D and humidity = 70%.
Calibration Equipment used (M&			D and humidity = 70%. Schiedused Calibration
Calibration Equipment used (M&	TE critical for calibration)	ry lacility: tervironment tempetature (22 ± 3)* Cel Date (Certitioste No.) 06-Apr-16 (No. 217-02280/02289)	
Calibration Equipment used (M8 Primary Standards Power mister NRP	TE onlical for calibration)	Cel Dale (Certificale No.)	Scheduled Calibration
Calibration Equipment used (M8 Primary Standards Power mister NRP Power sensor NRP-291	TE onlical for calibration)	Cal Date (Certificate No.) 06-Apr-16 (No. 217-02280/02289)	Scheduled Calibration Apr-17
Calibration Equipment used (M8 Primary Standards Power iniciter NRP Power sensor NRP-291 Power sensor NRP-291	TE oritical for calibration) ID # SN: 104778 SN: 103244	Cel Dale (Certificalie No.) 06-Apr-16 (No. 217-02380/02289) 06-Apr-16 (No. 217-02388)	Scheckled Calibration Apr 17 Apr 17
Calibration Equipment used (M8 Primary Standards Power mister NRP Power sensor NRP-291 Power sensor NRP-291	TE onitical for calibration) ID 4 SN: 104778 SN: 103244 SN: 103245	Cel Dale (Certilicate No.) 06-Apr-16 (No. 217-02288/02289) 06-Apr-16 (No. 217-02288) 06-Apr-16 (No. 217-02288)	Schieduled Calibration Apr-17 Apr-17 Apr-17
Calibration Equipment used (M8 Primary Standards Power motor NRP Power sensor NRP-291 Power sensor NRP-291 Roforance 20 dB Attenuator Type-N mismatch combination	TE onlical for calibration) ID # SN: 104778 SN: 103244 SN: 103245 SN: 5058 (20k)	Cel Date (Certitione No.) C6-Apr-16 (No. 217-02280/02289) 06-Apr-16 (No. 217-02288) 06-Apr-16 (No. 217-02289) 06-Apr-16 (No. 217-02282)	Schieduked Calibration Apr-17 Apr-17 Apr-17 Apr-17
Calibration Equipment used (M8 Primary Standards Power midter NRP Power sensor NRP-291 Power sensor NRP-291 Rolaronco 2018 Attenuator Type-N mismatch combination Rolaronce Probe EX30V4	TE onitical for calibration) ID # SN: 104778 SN: 103244 SN: 103245 SN: 5048 (20k) SN: 5047.2 / 06327	Cel Date (Certilicate No.) 06-Apr-16 (No. 217-02288/02288) 06-Apr-16 (No. 217-02288) 06-Apr-16 (No. 217-02289) 06-Apr-16 (No. 217-02286) 06-Apr-16 (No. 217-02286)	Schieduker Calibration Apr-17 Apr-17 Apr-17 Apr-17 Apr-17
Calibration Equipment used (M8 Primary Standards Power ensiter NRP Power sensor NRP-291 Power sensor NRP-291 Reference 20 cB Attenuator Type-N mismatch combination Reference Probe EX30V4 (OAE4	TE oritical for calibration) ID 4 SN: 104778 SN: 103244 SN: 103245 SN: 5058 (20k) SN: 5047.2 / 06327 SN: 7349 SN: 601	Cal Date (Certilicate No.) 06-Apr-16 (No. 217-02280/02289) 06-Apr-16 (No. 217-02288) 06-Apr-16 (No. 217-02289) 06-Apr-16 (No. 217-02289) 06-Apr-16 (No. 217-02286) 31-Dec-15 (No. EX3-7349_Dec16) 30-Dec-15 (No. DAE4-601_Dec15)	Schieduled Calibitation Apr-17 Apr-17 Apr-17 Apr-17 Apr-17 Apr-17 Direc-16 Direc-16
Calibration Equipment used (M& Primary Standards Power mister NEIP Power sensor NEIP-291 Power sensor NEIP-291 Reterance 29 dB Abenuator Type-N mismatich cambination Reterance Probe EX3DV4 OAE4 Secondary Standards	TE oritical for calibration) ID # SN: 104778 SN: 103244 SN: 103245 SN: 5038 (20k) SN: 5047.2 / 05327 SN: 7349 SN: 601	Cel Dale (Certilionite No.) 06-Apr-16 (No. 217-02280/02289) 06-Apr-16 (No. 217-02288) 06-Apr-16 (No. 217-02288) 06-Apr-16 (No. 217-02288) 05-Apr-16 (No. 217-02288) 31-Dec-15 (No. EX3-7349_Dec16) 30-Dec-15 (No. EX3-7349_Dec16) 30-Dec-15 (No. EX4-601_Dec15) Check Date (in house)	Schiedused Calibration Apr 17 Apr 17 Apr 17 Apr 17 Apr 17 Apr 17 Apr 17 Direc 16 Direc 16 Scheduled Check
Calibration Equipment used (M8 Primary Standards Power sensor NEIP-291 Power sensor NEIP-291 Rotoronce 20 dB Abenuator Type-N mismatch combination Rotorionce Probe EX3DV4 OAE4 Sacondary Standards Power meter EPM-442A	TE onitical for calibration) ID # SN: 104778 SN: 103244 SN: 103245 SN: 5038 (20k) SN: 5047.2 / 06327 SN: 7349 SN: 601 ID 4 SN: 0837460704	Cel Date (Certitione No.) 06-Apr-16 (No. 217-02280/02289) 06-Apr-16 (No. 217-02288) 06-Apr-16 (No. 217-02288) 05-Apr-16 (No. 217-02289) 05-Apr-16 (No. 217-02289) 31-Dec-15 (No. 217-02289) 31-Dec-15 (No. 217-02289) 30-Dec-15 (No. DAE4-601_Dec15) Check Date (in fouse) 07-Oct-15 (No. 217-02222)	Schieduked Calibration Apr-17 Apr-17 Apr-17 Apr-17 Apr-17 Diec-16 Diec-16 Schadulied Chieds In house check: Oct-16
Calibration Equipment used (M8 Primary Standards Power motor NRP-291 Power sensor NRP-291 Power sensor NRP-291 Rotaronca 20 GB Abanuator Type-N misematch combination Rotaronce Probe EX3DV4 OAE4 Secondary Standards Power motor EPM-442A Power sensor HP 8481A	TE critical for calibration) ID 4 SN: 104778 SN: 103244 SN: 103245 SN: 5088 (204) SN: 5047.2 / 06327 SN: 5047.2 / 06327 SN: 601 ID.4 SN: 0837480704 SN: US37282789	Cel Date (Certificate No.) Ce-Apr-16 (No. 217-02380/02389) 06-Apr-16 (No. 217-02388) 06-Apr-16 (No. 217-02389) 06-Apr-16 (No. 217-02389) 06-Apr-16 (No. 217-02389) 05-Apr-16 (No. 217-02389) 31-Dec-15 (No. EX3-7349_Dec16) 30-Dec-15 (No. 217-0239) Check Date (in house) 07-Oct-15 (No. 217-02322) 07-Oct-15 (No. 217-02322)	Scheduled Calibration Apr-17 Apr-17 Apr-17 Apr-17 Apr-17 Dec-16 Dec-16 Dec-16 Scheduled Check In house check: Oct-16 In house check: Oct-16
Calibration Equipment used (M8 Primary Standards Power sensor NRP-291 Power sensor NRP-291 Reference 29 dB Attenuation Type-N mismatch combination Reference Probe EX30V4 UAE4 Sacondary Standards Power sensor HP 9481A Power sensor HP 9481A	TE onitical for calibration) ID # SN: 104778 SN: 103244 SN: 5038 (20k) SN: 5047, 206327 SN: 5047, 206327 SN: 5047, 206327 SN: 5047, 206327 SN: 601 ID # SN: 0837480704 SN: 0837480704 SN: 0837480704 SN: 0837480704	Cal Date (Certilicate No.) C6-Apr-16 (No. 217-02380(02288) 06-Apr-16 (No. 217-02388) 06-Apr-16 (No. 217-02388) 06-Apr-16 (No. 217-02388) 06-Apr-16 (No. 217-02388) 05-Apr-16 (No. 217-02388) 01-Dect 15 (No. 217-02383) Check Date (in house) 07-Oct-15 (No. 217-02322) 07-Oct-15 (No. 217-02322) 07-Oct-15 (No. 217-02322)	Scheduled Calibration Apr-17 Apr-17 Apr-17 Apr-17 Apr-17 Diec-16 Diec-16 Diec-16 Scheduled Check In house check: Oct-16 In house check: Oct-16 In house check: Oct-16
Calibration Equipment used (M8 Primary Standards Power sensor NRP-291 Power sensor NRP-291 Reference 20 dB Abenuator Type-N mismatch combination Reference Probe EX30V4 OAE4 Secondary Standards Power sensor HP 8481A Power sensor HP 8481A Power sensor HP 8481A Power sensor HP 8481A	TE oritical for calibration) ID 4 SN: 104778 SN: 103244 SN: 5038 (20k) SN: 5047,2 / 05327 SN: 5047,2 / 05377 SN: 5047,2 / 05377 SN: 5047,2 / 05377 SN: 5047,2 / 05377 SN: 5047,2 / 05477 SN: 50477 SN: 504777 SN: 504777 SN: 504777 S	Cal Date (Certilicate No.) 06-Apr-16 (No. 217-02280/02289) 06-Apr-16 (No. 217-02280/02289) 06-Apr-16 (No. 217-02289) 06-Apr-16 (No. 217-02289) 06-Apr-16 (No. 217-02289) 31-Dec-15 (No. 217-02289) 31-Dec-15 (No. 217-02289) 30-Dec-15 (No. 217-02280) Check Date (in frame) 07-Oct-15 (No. 217-02222) 07-Oct-15 (No. 217-02222) 07-Oct-15 (No. 217-02222) 07-Oct-15 (No. 217-02222) 15-Jun-15 (in frame)	Echicoluled Calibitation Apr-17 Apr-17 Apr-17 Apr-17 Apr-17 Dec-16 Dec-16 Schaduled Check In house check: Oct-16 In house check: Oct-16
Calibration Equipment used (M& Primary Standards Power mister NEIP Power sensor NEIP-291 Power sensor NEIP-291 Reference 25 dB Abonuator	TE onitical for calibration) ID # SN: 104778 SN: 103244 SN: 5038 (20k) SN: 5047, 206327 SN: 5047, 206327 SN: 5047, 206327 SN: 5047, 206327 SN: 601 ID # SN: 0837480704 SN: 0837480704 SN: 0837480704 SN: 0837480704	Cal Date (Certilicate No.) C6-Apr-16 (No. 217-02380(02288) 06-Apr-16 (No. 217-02388) 06-Apr-16 (No. 217-02388) 06-Apr-16 (No. 217-02388) 06-Apr-16 (No. 217-02388) 05-Apr-16 (No. 217-02388) 01-Dect 15 (No. 217-02383) Check Date (in house) 07-Oct-15 (No. 217-02322) 07-Oct-15 (No. 217-02322) 07-Oct-15 (No. 217-02322)	Scheduled Calibration Apr-17 Apr-17 Apr-17 Apr-17 Apr-17 Diec-16 Diec-16 Diec-16 Scheduled Check In house check: Oct-16 In house check: Oct-16 In house check: Oct-16
Calibration Equipment used (M8 Primary Standards Power sensor NRP-291 Power sensor NRP-291 Reference 20 dB Abenuator Type-N mismatch combination Reference Probe EX30V4 (0AE4 Secondary Standards Power sensor HP 8481A Power sensor HP 8481A RF generator R&S SMT-06	TE oritical for calibration) ID 4 SN: 104778 SN: 103244 SN: 5038 (20k) SN: 5047,2 / 05327 SN: 5047,2 / 05377 SN: 5047,2 / 05377 SN: 5047,2 / 05377 SN: 5047,2 / 05377 SN: 5047,2 / 05477 SN: 50477 SN: 504777 SN: 504777 SN: 504777 S	Cal Date (Certilicate No.) 06-Apr-16 (No. 217-02280/02289) 06-Apr-16 (No. 217-02280/02289) 06-Apr-16 (No. 217-02289) 06-Apr-16 (No. 217-02289) 06-Apr-16 (No. 217-02289) 31-Dec-15 (No. 217-02289) 31-Dec-15 (No. 217-02289) 30-Dec-15 (No. 217-02280) Check Date (in frame) 07-Oct-15 (No. 217-02222) 07-Oct-15 (No. 217-02222) 07-Oct-15 (No. 217-02222) 07-Oct-15 (No. 217-02222) 15-Jun-15 (in frame)	Echicoluled Calibitation Apr-17 Apr-17 Apr-17 Apr-17 Apr-17 Dec-16 Dec-16 Schaduled Check In house check: Oct-16 In house check: Oct-16
Calibration Equipment used (M8 Primary Standards Power sensor NRP-291 Power sensor NRP-291 Reference 20 dB Abenuator Type-N mismatch combination Reference Probe EX30V4 (0AE4 Secondary Standards Power sensor HP 8481A Power sensor HP 8481A RF generator R&S SMT-06	TE oritical for calibration) ID # SN: 104778 SN: 103244 SN: 03244 SN: 5038 (20k) SN: 5047.2 / 05327 SN: 7349 SN: 601 ID 4 SN: 0837460704 SN: 0837460704	Cel Qale (Certilicate No.) 06-Apr-16 (No. 217-02280/02289) 06-Apr-16 (No. 217-02280) 06-Apr-16 (No. 217-02280) 06-Apr-16 (No. 217-02280) 05-Apr-16 (No. 217-02280) 05-Apr-16 (No. 217-02280) 31-Dec-15 (No. 217-02280) 30-Dec-15 (No. 217-02280) 07-Oct-15 (No. 217-02282) 07-Oct-15 (No. 217-02282) 07-Oct-15 (No. 217-02282) 07-Oct-15 (No. 217-02282) 07-Oct-16 (No. 217-02282) 07-Oct-15 (No. 217-02282) 15-Jun-15 (ni rotuse check Jun-15) 18-Oct-01 (ni notuse check Dct-15)	Echeculad Calibration Apr-17 Apr-17 Apr-17 Apr-17 Apr-17 Dec-16 Dec-16 Scheduled Check In house check: Oct-16 In house check: Oct-16
Calibration Equipment used (M8 Primary Standards Power motor NRP-291 Power sensor NRP-291 Power sensor NRP-291 Rotaronca 20 GB Abonuator Type-N mismatch combination Rotaronce Probe EX3DV4 OAE4 Sacondary Standards Power sensor HP 8481A Power sensor HP 8481A Power sensor HP 8481A The generator R63 SIMT-06 Network Analyzer HP 6753E	TE critical for calibration) ID 4 SN: 104778 SN: 103244 SN: 103245 SN: 5038 (204) SN: 5047.2 / 06327 SN: 5047.2 / 06327 SN: 601 ID 4 SN: 0B37460704 SN: 0B37292709 SN: MY44082317 SN: 103772 SN: 103772 SN: 103772 SN: 10377300535 Nemel	Cal Data (Certificate No.) 06-Apr-16 (No. 217-02280/02288) 06-Apr-16 (No. 217-02288) 06-Apr-16 (No. 217-02288) 06-Apr-16 (No. 217-02288) 05-Apr-16 (No. 217-02283) 31-Dec-15 (No. 217-02283) 30-Dec-15 (No. 217-02283) 30-Dec-15 (No. 217-02282) 07-Oct-15 (No. 217-02222) 07-Oct-16 (No. 217-02222) 07-Oct-16 (No. 217-02223) 15-Jun-15 (n thuse check Jun-15) 18-Det-01 (n nouse check Oct-15) Function	Schieduled Calibration Apr-17 Apr-17 Apr-17 Apr-17 Apr-17 Apr-17 Dec-16 Dec-16 Scheduled Check In house check: Oct-16 In house check: Oct-16
Calibration Equipment used (M8 Primary Standards Power sensor NRP-291 Power sensor NRP-291 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX30V4 (0AE4 Secondary Standards Power sensor HP 8451A Power sensor HP 8451A Power sensor HP 8451A NF generator RSS SMT-06 Network Analyzer HP 8753E Calibrated by:	TE oritical for calibration) ID 4 SN: 104778 SN: 103244 SN: 5038 (20k) SN: 5038 (20k) SN: 5037,27,05327 SN: 7349 SN: 601 ID 4 SN: 0837460704 SN: 0837460704 SN: 0837460704 SN: 0837460704 SN: 037290535 Nemel Michael Weber	Cal Date (Cartilicana Na.) 06-Apr-16 (No. 217-02290/02299) 06-Apr-16 (No. 217-02298) 06-Apr-16 (No. 217-02298) 06-Apr-16 (No. 217-02298) 06-Apr-16 (No. 217-02298) 06-Apr-16 (No. 217-02298) 07-Dat-15 (No. EX0-7349 Deet 6) 07-Dat-15 (No. EX0-7349 Deet 6) 07-Dat-15 (No. 217-02292) 07-Dat-15 (No. 217-02292) 07-Dat-16 (No. 217-02292) 07-Dat-16 (No. 217-02292) 15-Jun-15 (ni frause check Jun-15) 16-Dat-16 (ni nouse check Jun-15) 16-Dat-16 (ni nouse check Jun-15) 16-Dat-16 (ni nouse check Dat-15) 16-Dat-16 (ni nouse check Dat-15) 18-Dat-16 (ni nouse check Dat-15) 18-Dat-16 (ni nouse check Jun-15) 18-Dat-16 (ni nouse check Dat-15)	Echeculad Calibration Apr-17 Apr-17 Apr-17 Apr-17 Apr-17 Dec-16 Dec-16 Scheduled Check In house check: Oct-16 In house check: Oct-16
Calibration Equipment used (M8 Primary Standards Power motor NRP-291 Power sensor NRP-291 Power sensor NRP-291 Rotaronica 29 dB Abanuation Type-N missmatch combination Rotarionice Probe EX3DV4 OAE4 Secondary Standards Power motor EPM-442A Power sensor HP 8481A Power sensor HP 8481A The generator R&S SMT-06 Network Analyzer HP 6753E	TE critical for calibration) ID 4 SN: 104778 SN: 103244 SN: 103245 SN: 5038 (204) SN: 5047.2 / 06327 SN: 5047.2 / 06327 SN: 601 ID 4 SN: 0B37460704 SN: 0B37292709 SN: MY44082317 SN: 103772 SN: 103772 SN: 103772 SN: 10377300535 Nemel	Cal Data (Certificate No.) 06-Apr-16 (No. 217-02280/02288) 06-Apr-16 (No. 217-02288) 06-Apr-16 (No. 217-02288) 06-Apr-16 (No. 217-02288) 05-Apr-16 (No. 217-02283) 31-Dec-15 (No. 217-02283) 30-Dec-15 (No. 217-02283) 30-Dec-15 (No. 217-02282) 07-Oct-15 (No. 217-02222) 07-Oct-16 (No. 217-02222) 07-Oct-16 (No. 217-02223) 15-Jun-15 (n thuse check Jun-15) 18-Det-01 (n nouse check Oct-15) Function	Echeculad Calibration Apr-17 Apr-17 Apr-17 Apr-17 Apr-17 Dec-16 Dec-16 Scheduled Check In house check: Oct-16 In house check: Oct-16
Calibration Equipment used (M8 Primary Standards Power sensor NRP-291 Power sensor NRP-291 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX30V4 (0AE4 Secondary Standards Power sensor HP 8451A Power sensor HP 8451A Power sensor HP 8451A NF generator RSS SMT-06 Network Analyzer HP 8753E Calibrated by:	TE oritical for calibration) ID 4 SN: 104778 SN: 103244 SN: 5038 (20k) SN: 5038 (20k) SN: 5037,27,05327 SN: 7349 SN: 601 ID 4 SN: 0837460704 SN: 0837460704 SN: 0837460704 SN: 0837460704 SN: 037290535 Nemel Michael Weber	Cal Date (Cartilicana Na.) 06-Apr-16 (No. 217-02290/02299) 06-Apr-16 (No. 217-02298) 06-Apr-16 (No. 217-02298) 06-Apr-16 (No. 217-02298) 06-Apr-16 (No. 217-02298) 06-Apr-16 (No. 217-02298) 07-Dat-15 (No. EX0-7349 Deet 6) 07-Dat-15 (No. EX0-7349 Deet 6) 07-Dat-15 (No. 217-02292) 07-Dat-15 (No. 217-02292) 07-Dat-16 (No. 217-02292) 07-Dat-16 (No. 217-02292) 15-Jun-15 (ni frause check Jun-15) 16-Dat-16 (ni nouse check Jun-15) 16-Dat-16 (ni nouse check Jun-15) 16-Dat-16 (ni nouse check Dat-15) 16-Dat-16 (ni nouse check Dat-15) 18-Dat-16 (ni nouse check Dat-15) 18-Dat-16 (ni nouse check Jun-15) 18-Dat-16 (ni nouse check Dat-15)	Echeckaled Calibration Apr-17 Apr-17 Apr-17 Apr-17 Dec-16 Dec-16 Dec-16 Schadulad Check Oct-16 In house check: Oct-16 In house check: Oct-16
Calibration Equipment used (M8 Primary Standards Power sensor NRIP-291 Power sensor NRIP-291 Rotoronce 20 dB Abenuator Type-N mismatch combination Rotoronce Probe EX30V4 OAE4 Sacondary Standards Power sensor HP 8451A Power sensor HP 8451A Cellibratud ty:	TE oritical for calibration) ID 4 SN: 104778 SN: 103244 SN: 03244 SN: 5038 (20k) SN: 5047,206327 SN: 5047,206327 SN: 507 ID 4 SN: 0837460704 SN: 0837460704 SN: 05372802709 SN: MY4+082317 SN: 10537300585 Neme Michael Weber Kalja Pokowc	Cal Date (Cartilicana Na.) 06-Apr-16 (No. 217-02290/02299) 06-Apr-16 (No. 217-02298) 06-Apr-16 (No. 217-02298) 06-Apr-16 (No. 217-02298) 06-Apr-16 (No. 217-02298) 06-Apr-16 (No. 217-02298) 07-Dat-15 (No. EX0-7349 Deet 6) 07-Dat-15 (No. EX0-7349 Deet 6) 07-Dat-15 (No. 217-02292) 07-Dat-15 (No. 217-02292) 07-Dat-16 (No. 217-02292) 07-Dat-16 (No. 217-02292) 15-Jun-15 (ni frause check Jun-15) 16-Dat-16 (ni nouse check Jun-15) 16-Dat-16 (ni nouse check Jun-15) 16-Dat-16 (ni nouse check Dat-15) 16-Dat-16 (ni nouse check Dat-15) 18-Dat-16 (ni nouse check Dat-15) 18-Dat-16 (ni nouse check Jun-15) 18-Dat-16 (ni nouse check Dat-15)	Echicoluled Calibration Apr-17 Apr-17 Apr-17 Apr-17 Diec-16 Dec-16 Dec-16 Schaduled Check: Oct-16 In House check: Oct-17

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



- s C s
 - Schweizerischer Kallbrierdien Service suisse d'étationnage Servizio evizzero di taratura Swiss Calibration Service

ditation No.: SCS 0108

According by the Swiss Accordination Service (SAS)

The Swiss Accreditation Service is one of the signatories to the EA. Multilinieral Agreement for the recognition of calibration certificates Glossary:

TSL ConvF

N/A

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

Centificate No! D2450V2-727_April 9

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Measurement Conditions

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

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

Head TSL parameters

The following parameters and calculations were applied.

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

SAR result with Head TSL

SAR averaged over 1 cm ² (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	12.8 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	51.0 W/kg ± 17.0 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR averaged over 10 cm ³ (10 g) of Head TSL SAR measured	condition 250 mW input power	5.93 W/kg

Body TSL parameters

The following parameters and calculations were applied.

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

SAR result with Body TSL

SAR averaged over 1 cm ² (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	12.5 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	49.6 W/kg ± 17.0 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR averaged over 10 cm ³ (10 g) of Body TSL SAR measured	condition 250 mW input power	5.86 W/kg

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Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

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

Antenna Parameters with Body TSL

Impedanc	e, transformed to feed point	52.1 Ω + 4.8 jΩ
Return Lo	55	- 25.9 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.148 ns

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

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	January 09, 2003

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DASY5 Validation Report for Head TSL

Date: 19.04.2016

Test Laboratory: SPEAG, Zurich, Switzerland

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

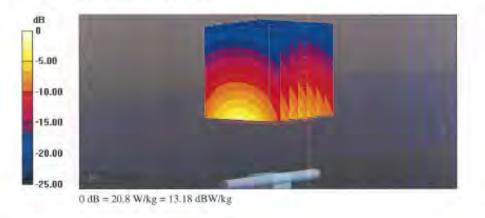
Communication System: UID 0 - CW; Frequency; 2450 MHz Medium parameters used: f = 2450 MHz; $\sigma = 1.83$ S/m; $\epsilon_r = 40$; $\rho = 1000$ kg/m³ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

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

Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 112.1 V/m; Power Drift = 0.05 dB Peak SAR (extrapolated) = 25.7 W/kg SAR(1 g) = 12.8 W/kg; SAR(10 g) = 5.93 W/kg

Maximum value of SAR (measured) = 20.8 W/kg



Certificate No: D2450V2-727_Apr16

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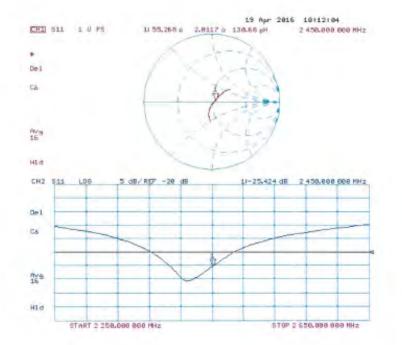
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Impedance Measurement Plot for Head TSL



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SALIBRATION			
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Calibration procedure(s)	QA CAL-05.v9 Calibration proce	idure for dipole validation kits abo	we 700 MHz
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Certificate No: D2600V2-1005_Jan17

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Calibration Laboratory of Schmid & Partner Engineering AG Zeigthuusstasse 3, 0004 Zurich, Switzerand



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Acceptelitation No.: SCS 0108

Accredies by the Swee Accreditation Service (SAS)

The Swiss Accreditation Service is one of the signatories to the EA. Multilateral Agreement for the recognition of cellbration certificates Glossary:

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

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Measurement Conditions

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

DASY Version	DASYS	V52.8.8
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	2600 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	39.0	1.95 mino/mi
Measured Head TSL parameters	(22,0 ± 0.2) *C	37.4 ± 6 %	2.05 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		-

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	14.3 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	55.5 W/kg = 17.0 % (k=2)
PAR	oondilitoo	
SAR everaged over 10 cm ⁸ (10 g) of Head TSL	coridition	
SAR averaged over 10 cm ⁸ (10 g) of Head TSL SAR measured	condition 250 mW input power	6.32 W/kg

Body TSL parameters

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.8 °C	52.5	2.16 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	52.3 ± 6 %	2.20 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	(1000)	

SAR result with Body TSL

SAR averaged over 1 cm ² (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	13.9 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	55.1 W/kg ± 17.0 % (k=2)
SAR averaged over 10 cm ² (10 g) of Body TSL	condition	
SAR averaged over 10 cm ⁵ (10 g) of Body TSL SAR measured	candition 250 mW input power	6.20 W/kg

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Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impediance, transformed to feed ppint	49.3 Ω - 4.7 JΩ
Fietum Loss	- 26.5 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	44.7 0 3.2 0
Return Loss	-23.7 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.154 ns	
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After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	December 23, 2006

Conticute	Na:	D2800V2-1005_Jan17

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Date: 25.01.2017

DASY5 Validation Report for Head TSL

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2 - SN:1005

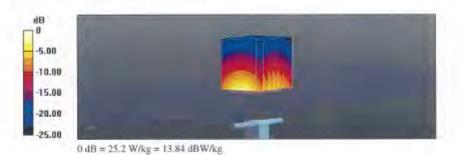
Communication System: UID 0 - CW; Frequency: 2600 MHz Medium parameters used: f = 2600 MHz; σ = 2.05 S/m; ϵ_{e} = 37.4; p = 1000 kg/m³ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63,19-2011)

DASY52 Configuration:

- Probe: EX3DV4 SN7349; ConvF(7.56, 7.56, 7.56); Calibrated: 31.12.2016;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.01.2017
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7372).

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

Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 116.2 V/m; Power Drift = -0.07 dB Peak SAR (extrapolated) = 30.5 W/kg SAR(1 g) = 14.3 W/kg; SAR(10 g) = 6.32 W/kg Maximum value of SAR (measured) = 24.2 W/kg



Certificate No: D2600V2-1005_Jan17

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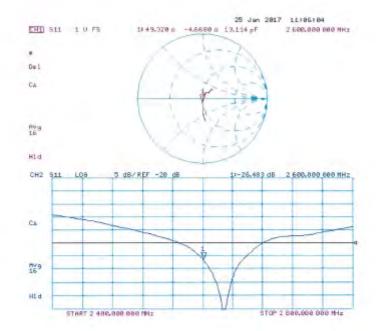
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Impedance Measurement Plot for Head TSL



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Date: 18.01.2017

DASY5 Validation Report for Body TSL

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2 - SN:1005

Communication System: UID 0 - CW; Frequency: 2600 MHz. Medium parameters used: f = 2600 MHz; σ = 2.2 S/m; z_c = 52.3; ρ = 1000 kg/m³ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 SN7349; ConvF(7.48, 7.48, 7.48); Calibrated: 31.12.2016;
- · Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.01.2017
- · Phantom: Flat Phantom 5.0 (back); Type: QD 000 P50 AA; Serial: 1002
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7372)

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

Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 108.8 V/m; Power Drift = -0.04 dB Peak SAR (extrapolated) = 28.8 W/kg SAR(1 g) = 13.9 W/kg; SAR(10 g) = 6.2 W/kg Maximum value of SAR (measured) = 23.3 W/kg



Certificate No: D2600V2-1005_Jan17

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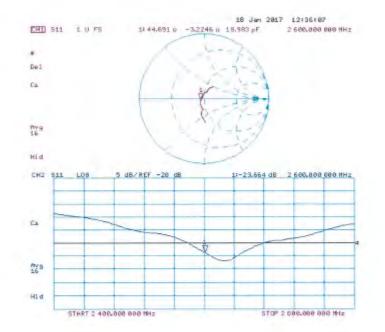
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Impedance Measurement Plot for Body TSL



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ent SGS-TW (Aude	n)	Certificate No.	D5GHzV2-1023_Jan17
ALIBRATION C	ERTIFICATE		
Object	D5GHzV2 - SN:1	023	
Caribration priceduralis)	QA CAL-22.v2 Calibration proce	dure for dipole validation kits betw	veen 3-6 GHz
Calibration date:	January 20, 2017		
		ry facility, anwionmant tomperature $(22 \pm 3)^{\circ}$	C and humidity < 70% .
Calibration Equipment used (M&		ry facility, anwormant temperature (22 ± 3)*C Cal Date (Centificate No.)	Cand humidity < 70%. Schequied Calibration
Calibration Equipment used (M&	TE ortical for calibration)	Cal Date (Centificate No.) 06-Apr.=6 (No. 217-02288/02289)	Scheduled Calibration Apr-17
Calification Equipment used (M8 Primary Standards Power meter MPP Power sensor NPP-291	TE ortical for calibration) ID # SN: 104778 SN: 103244	Cal Date (Contilicate No.) 06-Apr-96 (No. 217-02289/02289) 06-Apr-16 (No. 217-02288)	Scheduled Calibution Apr-17 Apr-17
Calibration Equipment used (M8 Primary Standards Power meter NPP Power sensor NPP-291 Power sensor NPP-291	TE ortical for calibration) ID # SNc 104778 SNc 103244 SNI 103245	Cal Date (Contricate No.) 06-Apr-16 (No. 217-02289/02289) 06-Apr-16 (No. 217-02289) 06-Apr-16 (No. 217-02280)	Scheduled Calibration Apr-17 Apr-17 Apr-17
Calibration Equipment used (M8 Primary Standards Power meter NPP Power sensor NPP-Z31 Power sensor NPP-Z31 Reference 20 dB Attenuator	TE onteral for calibration) ID * SN: 104778 SN: 103244 SN: 103245 SN: 5058 (20k)	Cal Date (Centificate No.) 06-Apr-16 (No. 217-02289/02289) 06-Apr-16 (No. 217-02288) 06-Apr-16 (No. 217-02280) 05-Apr-16 (No. 217-02280)	Schequied Calibration Apr-17 Apr-17 Apr-17 Apr-17
Calibration Equipment used (M8 Primary Standards Power meter NPP Power sensor NRP-231 Power sensor NRP-231 Reference 20 dB Attenuator Type-N mismatch combination	TE ortical for calibration) ID * SN: 104778 SN: 103244 SN: 103245 SN: 103245 SN: 5056 (20k) SN: 5047.2 / 06327	Cal Date (Conflicate No.) 06-Apr-36 (No. 217-02288/02289) 06-Apr-36 (No. 217-02288) 06-Apr-36 (No. 217-02280) 05-Apr-16 (No. 217-02280) 05-Apr-16 (No. 217-02295)	Scheduled Calibration Apr-17 Apr-17 Apr-17
Calibration Equipment used (M8 Primary Standards Power meter MPP Power sensor NRP-291 Power sensor NRP-291 Power sensor NRP-291 Reference 20 dB Attanuator Type-N mismitch combination Reference Probe EX30V4	TE orteal for calibration) ID * SN: 104778 SN: 103244 SN: 103245 SN: 5058 (20k)	Cal Date (Centificate No.) 06-Apr-16 (No. 217-02289/02289) 06-Apr-16 (No. 217-02288) 06-Apr-16 (No. 217-02280) 05-Apr-16 (No. 217-02280)	Scheduled Calibution Apr-17 Apr-17 Apr-17 Apr-17 Apr-17
Calibration Equipment used (M8 Primary Standards Power meter NPP Power sensor NPP-Z31 Power sensor NPP-Z31 Reference 20 dB Attenuator	TE ortical for calibration) ID # SN: 104778 SN: 103244 SN: 103245 SN: 5058 (25k) SN: 5047 2 / 06327 SN: 3603	Cal Date (Contilicate No.] 06-Apr-96 (No. 217-02289/02289) 06-Apr-96 (No. 217-02288) 06-Apr-96 (No. 217-02280) 05-Apr-16 (No. 217-02280) 05-Apr-16 (No. 217-02280) 31-Dec-16 (No. EX5-8503_Dec.16)	Scheduled Calbudion Apr-17 Apr-17 Apr-17 Apr-17 Apr-17 Dec-17 Jan-18 Scheduled Check
Calibration Equipment used (M8 Primary Standards Power meter NPP Power sensor NPP-291 Power sensor NPP-291 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4 DAE4	TE ortical for calibration) ID # SN: 104778 SN: 103244 SN: 103245 SN: 5056 (20k) SN: 5047 2 / 06367 SN: 503 SN: 801	Cal Date [Centificate No.] 06-Apr-16 [No. 217-02289/02289] 06-Apr-16 [No. 217-02280] 05-Apr-16 [No. 217-02280] 05-Apr-16 [No. 217-02280] 05-Apr-16 [No. 217-02295] 01-Dec-16 [No. 217-02295] 01-Dec-16 [No. 217-02295] 04-Jen-17 [No. DAE4-601_Jon17]	Scheduled Calibution Apr-17 Apr-17 Apr-17 Apr-17 Dec-17 Jan-18 Schedulet Chick In folge chick
Calibration Equipment used (M8 Primary Standards Power meter NPP Power sensor NRP-231 Power sensor NRP-231 Reference 20 dB Attenuator Type-N mismutch combination Reference Probe EX30V4 DAE4 Secondary Standards	TE ortical for calibration) ID + SN: 104778 SN: 103244 SN: 103245 SN: 5056 (20k) SN: 5047.2 / 06327 SN: 3603 SN: 801 ID +	Cal Date (Centificate No.] 06-Apr-96 (No. 217-02289/02289) 06-Apr-96 (No. 217-02289) 06-Apr-96 (No. 217-02280) 05-Apr-16 (No. 217-02280) 05-Apr-16 (No. 217-02280) 05-Apr-16 (No. 217-02280) 01-Dec-16 (No.	Scheduled Calibution Apr-17 Apr-17 Apr-17 Apr-17 Dec-17 Jan-18 Schedulet Check In house check Oct-18 In house check Oct-18
Calibration Equipment used (M8 Primary Standards Power meter MPP Power sensor NRP-291 Power sensor NRP-291 Power sensor NRP-291 Reference 20 dB Attanuator Type-N instantish combination Reference Probe EX30V4 DAE4 Secondary Stancards Power meser EPM-442A	TE ortical for calibration) ID 4 SN: 104778 SN: 103244 SN: 103245 SN: 5047 2 (2k) SN:	Cal Date [Centificate No.] 06-Apr-36 [No. 217-02289/02289] 06-Apr-36 [No. 217-02289] 06-Apr-36 [No. 217-02280] 05-Apr-16 [No. 217-02280] 05-Apr-16 [No. 217-02295] 01-Dec-16 [No. 217-02295] 07-Oct-16 [In house check Oct-16] 07-Oct-16 [In house check Oct-16] 07-Oct-16 [In house check Oct-16]	Schemiled Calibration Apr-17 Apr-17 Apr-17 Apr-17 Apr-17 Dec-17 Jan-18 Schemiles Check In house check Dot-18 In house check Dot-18 In house check Dot-10
Calibration Equipment used (M8 Primary Standards Power meter MPP Power sensor NRP-231 Power sensor NRP-231 Power sensor NRP-231 Reference 20 dB Attanuator Type-N mismatch combination Reference Probe EX30V4 DAE4 Secondary Stansards Power meser EPM-442A Power sonsor HP 9481A	TE ortical for calibration) ID + SN: 104778 SN: 103244 SN: 103245 SN: 5005 (20k) SN: 5047 2 / 06327 SN: 3503 SN: 801 ID # SN: 6057480704 SN: US37292780 SN: 100972	Cal Date (Centificate No.) 06-Apr16 (No. 217-02288/02289) 06-Apr16 (No. 217-02288) 06-Apr16 (No. 217-02280) 05-Apr16 (No. 217-02296) 05-Apr16 (No. 217-02296) 01-Dec-16 (No. 217-02296) 07-Det-16 (In house check Det16) 07-Det-16 (In house check Det16) 07-Opt15 (In house check Det16)	Scheduled Calibution Apr-17 Apr-17 Apr-17 Apr-17 Apr-17 Dec-17 Jan-18 Scheduled Check In house check Oct-18 In house check Oct-18 In house check Oct-18 In house check Oct-18
Calibration Equipment used (M8 Primary Standards Power meter MPP Power sensor NPP-231 Power sensor NPP-231 Power sensor NPP-231 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX30V4 DAE4 Secondary Standards Power sensor HP 9481A Power sensor HP 9481A	TE ortical for calibration) ID 4 SN: 104778 SN: 103244 SN: 103245 SN: 5047 2 (2k) SN:	Cal Date [Centificate No.] 06-Apr-36 [No. 217-02289/02289] 06-Apr-36 [No. 217-02289] 06-Apr-36 [No. 217-02280] 05-Apr-16 [No. 217-02280] 05-Apr-16 [No. 217-02295] 01-Dec-16 [No. 217-02295] 07-Oct-16 [In house check Oct-16] 07-Oct-16 [In house check Oct-16] 07-Oct-16 [In house check Oct-16]	Schemiled Calibration Apr-17 Apr-17 Apr-17 Apr-17 Apr-17 Dec-17 Jan-18 Schemiles Check In house check Dot-18 In house check Dot-18 In house check Dot-10
Calibration Equipment used (M8 Primary Standards Power sensor NRP-291 Power sensor NRP-291 Power sensor NRP-291 Power sensor NRP-291 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX30V4 DAE4 Secondary Standards Power sensor HP 8481A Power sensor HP 8481A RF generator R85 SMT-00 Notwork Analyzer HP 8753E	TE ortical for calibration) ID # SR: 104778 SR: 103244 SN: 103244 SN: 103245 SN: 5047 (200) SN: 5047 (200) SN: 601 ID # SN: 0037480704 SN: 003728780 SN: 100372 SN: 1037390585 Name	Cal Date [Centificate No.] 06-Apr-16 [No. 217-02289/02289] 06-Apr-16 [No. 217-02280] 06-Apr-16 [No. 217-02280] 05-Apr-16 [No. 217-02280] 05-Apr-16 [No. 217-02280] 05-Apr-16 [No. 217-02280] 05-Apr-16 [No. 217-02280] 04-Jen-17 [No. DAE-4-601_Jan17] Check Date (In Fouse Incode Oct-16) 07-02-15 [In Fouse Incode Oct-16] 07-02-15 [In Fouse Incode Oct-16] 07-02-15 [In Fouse Incode Oct-16] 15-Jen-15 (In Fouse Incode Oct-16]	Scheduled Calibution Apr-17 Apr-17 Apr-17 Apr-17 Apr-17 Dec-17 Jan-18 Scheduled Check In house check Oct-18 In house check Oct-18 In house check Oct-18 In house check Oct-18
Calibration Equipment used (M8 Primary Standards Power meter NPP Power sensor NRP-231 Power sensor NRP-231 Reference 20 dB Attenuator Type-N mismutch combination Reference Probe EX30V4 DAE4 Secondary Standards Power sensor IPD 9481A Power sensor IPD 9481A RE generator IRS SMT-00	TE ortical for calibration) ID + SN: 103244 SN: 103245 SN: 103245 SN: 5058 (25%) SN: 5057 2 / 06327 SN: 3603 SN: 801 ID # SN: 6037480704 SN: 0537282177 SN: 10337280585	Cal Date (Contilicate No.] OE-Apr-86 (No. 217-02289/02289) 90-Apr-86 (No. 217-02289) 06-Apr-16 (No. 217-02280) 05-Apr-16 (No. 217-02280) 05-Apr-16 (No. 217-02280) 05-Apr-16 (No. 217-02280) 05-Apr-16 (No. 217-02280) 01-06-16 (No. 217-02280) 01-06-16 (No. 217-02280) 01-06-16 (No. 217-02280) 07-06-16 (No. 217-02280) 07-06-16 (No. 217-02280) 07-06-16 (No. 217-02280) 07-06-16 (No. 201-001, No. 201-06) 07-06-16 (No. 201-06)	Scheduled Calibution Apr-17 Apr-17 Apr-17 Apr-17 Dec-17 Jan-18 Scheduled Chrick In house check: Oct-18 In house check: Oct-18
Calibration Equipment used (M8 Primary Standards Power meter MPP Power sensor NPP-291 Power sensor NPP-291 Power sensor NPP-291 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX30V4 DAE4 Secondary Standards Power sensor HP 8481A Power sensor HP 8481A Power sensor HP 8481A R generator R&S SMT-00 Notwork Analyzer HP 8753E	TE ortical for calibration) ID # SR: 104778 SR: 103244 SN: 103244 SN: 103245 SN: 5047 (200) SN: 5047 (200) SN: 601 ID # SN: 0037480704 SN: 003728780 SN: 100372 SN: 1037390585 Name	Cal Date [Centificate No.] 06-Apr-16 [No. 217-02289/02289] 06-Apr-16 [No. 217-02280] 06-Apr-16 [No. 217-02280] 05-Apr-16 [No. 217-02280] 05-Apr-16 [No. 217-02280] 05-Apr-16 [No. 217-02280] 05-Apr-16 [No. 217-02280] 04-Jen-17 [No. DAE-4-601_Jan17] Check Date (In Fouse Incode Oct-16) 07-02-15 [In Fouse Incode Oct-16] 07-02-15 [In Fouse Incode Oct-16] 07-02-15 [In Fouse Incode Oct-16] 15-Jen-15 (In Fouse Incode Oct-16]	Scheduled Calibution Apr-17 Apr-17 Apr-17 Apr-17 Dec-17 Jan-18 Scheduled Chrick In house check: Oct-18 In house check: Oct-18

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Calibration Laboratory of Schmid & Panner Engineering AG



S Schweizenscher Kalibrierdien G Service suitese trittelerenge Service witzere di termine S Swiss Calibration Service

Accreditation Net: SCS 0108

Accession by the Series Accordington Service (EAS)

The Swiss Accreditation Service is one of the signatoriae to the EA Multipleral Agreement for the recognition of calibration certificates

Glossary:

tissue simulating liquid
sensitivity in TSL / NORM x.y.z.
not applicable or not measured

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

d) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

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Measurement Conditions

DASY system configuration, as far as not	given on page 1.
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DASY Version	DASYS	V52.8.8
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V5.0	1
Distance Dipole Center - TSL	10 mm	with Specer
Zoom Scan Resolution	dx, dy = 4,0 mm, dz = 1,4 mm	Graded Ratio = 1.4 (Z direction)
Frequency	1200 MHz ± 1 MHz 5300 MHz ± 1 MHz 5600 MHz ± 1 MHz 5600 MHz ± 1 MHz 5800 MHz ± 1 MHz	

Head TSL parameters at 5200 MHz

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	38.0	4.66 mha/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	35.4 ± 6 %	4.45 mho/m ± 6.%
Hend TSL temperature change during test	<05°C		-

SAR result with Head TSL at 5200 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	7.55 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	75.2 W/kg ± 19.9 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR averaged over 10 cm ³ (10 g) of Head TSL SAR measured	notibros	2.16 W/kg

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Head TSL parameters at 5300 MHz

The following	parameters	and	calculations	ware app	lied.

	Temperature	Parmittivity	Conductivity
Nominal Head TSL parameters	22.0 °G	35.9	4.76 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) "G	35,2 ± 8 %	4.55 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		

SAR result with Head TSL at 5300 MHz

SAR averaged over 1 cm ² (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.22 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	81.8 W / kg ± 19.9 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR averaged over 10 cm ³ (10 g) of Head TSL SAR measured	condition 100 mW input power	2.35 W/kg

Head TSL parameters at 5600 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.5	5.07 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	347 = 5 %	4.85 mho/m ± β %
Head TSL temperature change during test	< 0.5°C		1.00

SAR result with Head TSL at 5600 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.22 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	81.7 W/kg ± 19.9 % (k=2)
SAR averaged over 10 cm ² (10 g) of Head TSL	condition	
SAR averaged over 10 cm ² (10 g) of Head TSL SAR measured	condition 100 mW input power	2.33 W/kg

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Head TSL parameters at 5800 MHz

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.3	5.27 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	34.4 ± 6 %	5.05 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		-

SAR result with Head TSL at 5800 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	7.82 W/kg
SAR for nominal Head TSL parameters	Wf of besilemon	77.6 W/kg ± 19.9 % (k=2)
SAR averaged over 10 cm ² (10 g) of Head TSL	condition	
	condition 100 mW input power	2.22 W/kg

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Body TSL parameters at 5200 MHz

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 5	49.0	5.30 mhalm
Measured Body TSL parameters	(22.0 ± 0.2) "C	47.5±6%	5.36 mitro/m ± 8 %
Body TSL temperature change during test	<0.5 °C		

SAR result with Body TSL at 5200 MHz

SAR measured	100 mW input power	7,32 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	72.8 W/kg ± 19.9 % (k=2)

SAR measured	100 mW input power	.2.05 W/kg
SAR for nominal Body TSL parameters	W1 of besilemton	20.3 W/kg ± 19.5 % (k=2)

Body TSL parameters at 5300 MHz

The following parameters and calculations were applied

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.9	5.42 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) "C	47.3±6%	5,50 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C		

SAR result with Body TSL at 5300 MHz

SAR averaged over 1 cm ² (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.68 W/kg
SAR for nominal Body TSL parameters	W1 of balance	76.1 W/kg ± 19.9 % (k=2)
generation and the parameters		
SAR averaged over 10 cm ² (10 g) of Body TSL	condition	
	condition 100 mW input power	2.15 W/kg

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Body TSL parameters at 5600 MHz

The following parameters and calculations were applied

Temperature	Permittivity	Conductivity
22.0 °C	48.5	5.77 mha/m
(22.0 ± 0.2) °C	46.6 ± 6 %	5.90 mho/m ± 6 %
< 0.5 🖤	-	
	22.0 °C (22.0 ± 0.2) °C	22.0 °C 48.5 (22.0 ± 0.2) °C 46.6 ± 6 %

SAR result with Body TSL at 5600 MHz

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	8.02 W/kg
SAB for nominal Body TBL parameters	normalized to 1W	79.6 W/kg ± 19.9 % (k=2)
SAR sveraged over 10 cm ³ (10 g) of Bady TSL	condition	
SAR sveraged over 10 cm ² (10 g) of Body TSL. SAR measured	condition 100 mW input power	2.26 W/kg

SAR for nominal Body TSL parameters Body TSL parameters at 5800 MHz

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.2	6.00 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) "C	48,3±6%	6 17 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C		

SAR result with Body TSL at 5800 MHz

SAR averaged over 1 cm2 (1 g) of Body TSL	Condition	
SAR measured	100 mW Input power	7.64 W/Kg
SAR for nominal Body TSL parameters	normalized to 1W	75.9 W/kg ± 19.9 % (k=2)
SAR averaged over 10 cm ² (10 g) of Body TSL	condition	
SAR averaged over 10 cm ³ (10 g) of Body TSL SAR measured	condition 100 mW input power	2.13 W/kg

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Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL at 5200 MHz

Impedance, transformed to feed point	49.6 Ω - 6.7 μΩ
Fletum Loss	- 23.4 dB

Antenna Parameters with Head TSL at 5300 MHz

Impedance, transformed to feed point	49.0 Ω = 1.8 jΩ
Return Loss	-33.5 dB

Antenna Parameters with Head TSL at 5600 MHz

Impediance, transformed to feed point	54.1 Ω - 0,2 jΩ	
Fieturn Loss	- 28.2 dB	

Antenna Parameters with Head TSL at 5800 MHz

55.4 Q + 2.8 jQ
-24.8 dB

Antenna Parameters with Body TSL at 5200 MHz

Impedance, transformed to feed point	48.9.Ω - 7.0 jΩ
Return Loss	- 22.9 dB

Antenna Parameters with Body TSL at 5300 MHz

Impedance, transformed to feed point	51.0 Ω - 1.0 jΩ
Return Loss	- 37.0 dB

Antenna Parameters with Body TSL at 5600 MHz

Impedance, transformed to feed point	55.6 Ω + 1.5 jΩ
Return Loss	- 25.2 dB

Antenna Parameters with Body TSL at 5800 MHz

Impediance, transformed to feed point	56.6 Ω + 2.7 jΩ
Return Loss	- 23.6 dB

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General Antenna Parameters and Design

Electrical Delay (one direction)	1.199 ns

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

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	February 05, 2004

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DASY5 Validation Report for Head TSL

Date: 20.01.2017

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1023

Communication System: UID 0 - CW; Frequency: 5200 MHz, Frequency: 5300 MHz, Frequency: 5600 MHz, Frequency: 5800 MHz, Medium parameters used: f = 5200 MHz; $\sigma = 4.45$ S/m; $\varepsilon_r = 35.4$; $\rho = 1000$ kg/m³. Medium parameters used: f = 5300 MHz; $\sigma = 4.55$ S/m; $\varepsilon_r = 35.2$; $\rho = 1000$ kg/m³. Medium parameters used: f = 5600 MHz; $\pi = 4.85$ S/m; $\varepsilon_r = 34.7$; $\rho = 1000$ kg/m³. Medium parameters used: f = 5800 MHz; $\pi = 5.05$ S/m; $\varepsilon_r = 34.4$; $\rho = 1000$ kg/m³ Phantom section; Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63, 19-2011)

DASY52 Configuration:

- Probe: EX3DV4 SN3503; ConvF(5.76, 5.76, 5.76); Calibrated: 31.12.2016, ConvF(5.35, 5.35, 5.35); Calibrated: 31.12.2016, ConvF(5.09, 5.09); Calibrated: 31.12.2016, ConvF(5.0), 5.01); Calibrated: 31.12.2016;
- Sensor-Surface: L4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.01.2017
- Phantom: Flut Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7372)

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5200 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=0mm, dy=4mm, dz=1.4mm Reference Value = 70.58 V/m; Power Drift = -0.08 dB Peak SAR (extrapolated) = 27.6 W/kg

SAR(1 g) = 7.55 W/kg; SAR(10 g) = 2.16 W/kg Miximum value of SAR (measured) = 17.4 W/kg

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5300 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0; Measurement grid: dx=4mm, dy=4mm, dz=1.4mm Reference Value = 73.0) V/m; Power Drift = -0.05 dB Peak SAR (extrapolated) = 31.6 W/kg SAR(1 g) = 8.22 W/kg; SAR(10 g) = 2.35 W/kg Maximum value of SAR (measured) = 19.3 W/kg.

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5600 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm Reference Value = 71.94 V/m; Power Drift = -0.04 dB Peak SAR (extrapolated) = 33.2 W/kg SAR(1 g) = 8.22 W/kg; SAR(10 g) = 2.33 W/kg Maximum value of SAR (measured) = 19.8 W/kg

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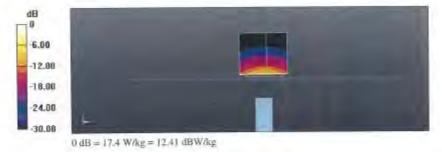
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Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5800 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm Reference Value = 69.84 V/m; Power Drift = -0.08 dB Peak SAR (extrapolated) = 32.7 W/kg SAR(1 g) = 7.82 W/kg; SAR(10 g) = 2.22 W/kg Maximum value of SAR (measured) = 19.5 W/kg



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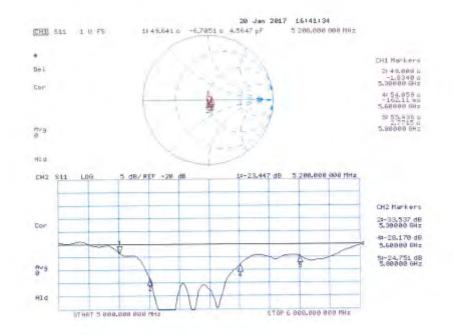
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Impedance Measurement Plot for Head TSL



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Date: 19/01/2017

DASY5 Validation Report for Body TSL

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1023

Communication System: UID 0 - CW; Frequency: 5200 MHz, Frequency: 5300 MHz, Frequency: 5600 MHz, Frequency: 5800 MHz Medium parameters used: f = 5200 MHz; $\sigma = 5.36$ S/m; $v_r = 47.5$; $\rho = 1000$ kg/m³. Medium parameters used: f = 5300 MHz; $\sigma = 5.5$ S/m; $v_r = 47.5$; $\rho = 1000$ kg/m³. Medium parameters used: f = 5600 MHz; $\sigma = 5.9$ S/m; $v_r = 46.6$; $\rho = 1000$ kg/m³. Medium parameters used: f = 5600 MHz; $\sigma = 6.17$ S/m; $v_r = 46.3$; $\rho = 1000$ kg/m³. Medium parameters used: f = 5800 MHz; $\sigma = 6.17$ S/m; $v_r = 46.3$; $\rho = 1000$ kg/m³. Medium parameters used: f = 5800 MHz; $\sigma = 6.17$ S/m; $v_r = 46.3$; $\rho = 1000$ kg/m³.

DASY52 Configuration:

- Probe: EX3DV4 SN3503; ConvF(5.29, 5.29, 5.29); Calibrated: 31-12.2016, ConvF(5.04, 5.04, 5.04); Calibrated: 31-12.2016, ConvF(4.57, 4.57, 4.57); Calibrated: 11-12.2016, ConvF(4.48, 4.48); Calibrated: 31-12.2016;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- · Electronics: DAE4 Sn601, Calibrated: 04.01.2017
- Phantom: Flat Phantom 5.0 (back); Type: QD 000 P50 AA: Serial: 1002
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7372)

Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5200 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm Reference Value = 65.54 V/m; Power Drift = -0.06 dB Peak SAR (extrapolated) = 28.1 W/kg SAR(1 g) = 7.32 W/kg; SAR(10 g) = 2.05 W/kg Maximum value of SAR (measured) = 16.6 W/kg

Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5300 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1,4mm Reference Value = 66.93 V/m; Power Drift = -0.07 dB Peak SAR (extrapolated) = 30.1 W/kg SAR(1 g) = 7.66 W/kg; SAR(10 g) = 2.15 W/kg Maximum value of SAR (measured) = 17.6 W/kg

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

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Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5800 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm Reference Value = 65.14 V/m; Power Drift = -0.06 dB Peak SAR (extrapolated) = 34.0 W/kg SAR(1 g) = 7.64 W/kg; SAR(10 g) = 2.13 W/kg Maximum value of SAR (measured) = 18.3 W/kg



0 dB = 16.6 W/kg = 12.20 dBW/kg

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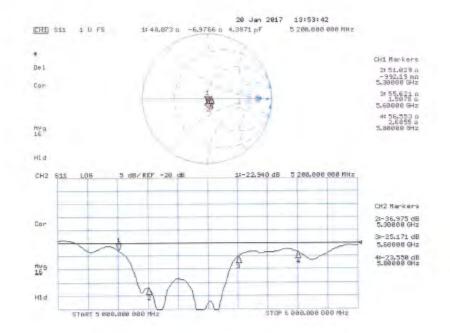
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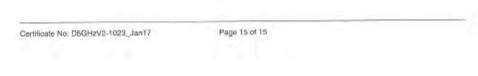
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Impedance Measurement Plot for Body TSL





- End of 1st part of report -

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