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SAR TEST REPORT





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

Product Name Notebook Computer

acer **Brand Name**

N20Q14 Model No.

Acer Incorporated **Prepared for**

8F., No. 88, Sec. 1, Xintai 5th Rd., Xizhi, New Taipei City

22181, Taiwan (R.O.C)

Standards IEEE/ANSI C95.1-1992. IEEE 1528-2013

FCC ID HLZ9560NGQ **Date of Receipt** Feb. 24, 2021

Apr. 01, 2021 ~Apr. 06, 2021 Date of Test(s)

Date of Issue Apr. 14, 2021

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

Remarks:

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

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Signed on behalf of SGS

Clerk / Ruby Ou	Engineer / Kiki Lin	Asst. Manager / John Yeh
Ruby Ou	Ziki Lin	John Teh
		Date: Apr. 14, 2021

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Revision History

Report Number	Revision	Description	Issue Date
ES/2021/20009	Rev.00	Initial creation of document	Apr. 14, 2021

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0. Guidance applied

The SAR testing method and procedure for this device is in accordance with the following standards:

IEEE/ANSI C95.1-1992

IEEE 1528-2013

KDB248227D01v02r02

KDB865664D01v01r04

KDB865664D02v01r02

KDB447498D01v06

KDB616217D04v01r02

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1. General Information

1.1 Testing Laboratory

SGS Taiwan Ltd. Central RF Lab						
No.134, Wu Kung Ro	No.134, Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei					
City, Taiwan						
FCC Designation	TW0027					
Number	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					
Tel	+886-2-2299-3279					
Fax	+886-2-2298-0488					
Internet	http://www.tw.sgs.com/					

1.2 Details of Applicant

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

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1.3 Description of EUT

General Information of Host:

Equipment Under Test	Notebook Computer					
Brand Name	acer					
Model No.	N20Q14					
Integrated Module	Brand Name: Intel Model Name: 9560NGW					
FCC ID	HLZ9560NGQ					
Mode of Operation	⊠WLAN802.11 a/b/g/n/ac(20M/40M/8 ⊠Bluetooth	30M/16	0M)			
Duty Cycle	WLAN802.11 a/b/g/n/ac(20M/40M/80/160M)	Ref	er to p 25-30			
	Bluetooth		77.19	6		
	WLAN802.11 b/g/n(20M)	2412	_	2472		
	WLAN802.11 n(40M)	2422	_	2462		
	WLAN802.11 a/n/ac(20M) 5.2G	5180	_	5240		
	WLAN802.11 n/ac(40M) 5.2G	5190	_	5230		
	WLAN802.11 ac(80M) 5.2G		5210)		
	WLAN802.11 ac(160M) 5.2G		5250)		
TX Frequency Range (MHz)	WLAN802.11 a/n/ac(20M) 5.3G	5260	_	5320		
()	WLAN802.11 n/ac(40M) 5.3G	5270	_	5310		
	WLAN802.11 ac(80M) 5.3G		5290)		
	WLAN802.11 a/n/ac(20M) 5.6G	5500	_	5720		
	WLAN802.11 n/ac(40M) 5.6G	5510	_	5710		
	WLAN802.11 ac(80M) 5.6G	5530	_	5690		
	WLAN802.11 ac(160M) 5.6G		5570)		

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	WLAN802.11 a/n/ac(20M) 5.8G	5745	_	5825
TX Frequency Range	WLAN802.11 n/ac(40M) 5.8G	5755	_	5795
(MHz)	WLAN802.11 ac(80M) 5.8G		5775	
	Bluetooth	2402	_	2480
	WLAN802.11 b/g/n(20M)	1	_	13
	WLAN802.11 n(40M)	3	_	11
	WLAN802.11 a/n/ac(20M) 5.2G	36	_	48
	WLAN802.11 n/ac(40M) 5.2G	38	_	46
	WLAN802.11 ac(80M) 5.2G		42	
	WLAN802.11 ac(160M) 5.2G		50	
	WLAN802.11 a/n/ac(20M) 5.3G	52	_	64
	WLAN802.11 n/ac(40M) 5.3G	54	_	62
Channel Number (ARFCN)	WLAN802.11 ac(80M) 5.3G		58	
(, , , , , , , , , , , , , , , , , , ,	WLAN802.11 a/n/ac(20M) 5.6G	100	_	144
	WLAN802.11 n/ac(40M) 5.6G	102	_	142
	WLAN802.11 ac(80M) 5.6G	106	_	138
	WLAN802.11 ac(160M) 5.6G		114	
	WLAN802.11 a/n/ac(20M) 5.8G	149	_	165
	WLAN802.11 n/ac(40M) 5.8G	151	_	159
	WLAN802.11 ac(80M) 5.8G		155	
	Bluetooth	0	_	78

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Tablet mode

	Max. SAR (1g) (Unit: W/Kg)							
Antenna	Band	Measured	Reported	Channel	Position			
	WLAN 802.11b	1.01	1.03	11	Left side			
	Bluetooth(GFSK)	0.11	0.20	78	Left side			
	WLAN 802.11n(40M) 5.2G	1.03	1.08	38	Left side			
	WLAN 802.11ac(80M) 5.2G	1.00	1.02	42	Left side			
Aux	WLAN 802.11n(40M) 5.3G	0.95	0.99	54	Left side			
Aux	WLAN 802.11ac(80M) 5.3G	0.99	1.01	58	Left side			
	WLAN 802.11ac(160M) 5.6G	0.90	0.93	114	Left side			
	WLAN 802.11ac(80M) 5.6G	0.96	1.00	106	Left side			
	WLAN 802.11n(40M) 5.8G	1.01	1.08	159	Left side			
	WLAN 802.11ac(80M) 5.8G	1.01	1.03	155	Left side			
	WLAN 802.11b	1.17	1.18	11	Right side			
	WLAN 802.11n(40M) 5.2G	1.13	1.19	38	Right side			
	WLAN 802.11ac(80M) 5.2G	1.00	1.02	42	Right side			
	WLAN 802.11n(40M) 5.3G	0.89	0.94	54	Right side			
Main	WLAN 802.11ac(80M) 5.3G	0.94	0.97	58	Right side			
	WLAN 802.11ac(160M) 5.6G	0.96	0.97	114	Right side			
	WLAN 802.11ac(80M) 5.6G	1.07	1.12	106	Right side			
	WLAN 802.11n(40M) 5.8G	1.12	1.19	159	Right side			
	WLAN 802.11ac(80M) 5.8G	0.85	0.86	155	Right side			

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Notebook mode

Notebook mode									
	Max. SAR (1g) (Unit: W/Kg)								
Antenna	Band	Measured	Reported	Channel	Position				
	WLAN 802.11b	0.07	0.08	6	Bottom side				
	Bluetooth(GFSK)	0.00	0.00	78	Bottom side				
	WLAN 802.11a 5.2G	0.24	0.24	40	Bottom side				
Aux	WLAN 802.11a 5.3G	0.21	0.21	56	Bottom side				
	WLAN 802.11n(40M) 5.6G	0.36	0.37	118	Bottom side				
	WLAN 802.11ac(80M) 5.6G	0.19	0.21	138	Bottom side				
	WLAN 802.11n(20M) 5.8G	0.13	0.13	157	Bottom side				
	WLAN 802.11b	0.04	0.04	6	Bottom side				
	WLAN 802.11a 5.2G	0.20	0.21	40	Bottom side				
	WLAN 802.11a 5.3G	0.32	0.33	56	Bottom side				
	WLAN 802.11ac(80M) 5.6G	0.14	0.15	138	Bottom side				
	WLAN 802.11a 5.8G	0.39	0.40	157	Bottom side				

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WLAN802.11 a/b/g/n(20M/40M)/ac(20M/40M/80M/160M) conducted power table:

Antenna	SI	SO	MIMO
Band	Main	Aux	Main + Aux
WLAN802.11b	V	V	-
WLAN802.11g	V	V	-
WLAN802.11n(20M)	V	V	V
WLAN802.11n(40M)	V	V	V
WLAN802.11a	V	V	-
WLAN802.11n(20M) 5G	V	V	V
WLAN802.11n(40M) 5G	V	V	V
WLAN802.11ac(20M) 5G	V	V	V
WLAN802.11ac(40M) 5G	V	V	V
WLAN802.11ac(80M) 5G	V	V	V
WLAN802.11ac(160M) 5G	V	V	V

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Tablet mode

Aux

	Aux Antenna							
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)		
		1	2412		18.50	18.47		
	802.11b	6	2437	1Mbps	18.50	18.36		
		11	2462		18.50	18.44		
	802.11g	1	2412		17.00	16.72		
		6	2437	6Mbps	18.50	18.26		
2450 MHz		11	2462		17.00	16.83		
2430 WII IZ		1	2412		16.50	16.34		
	802.11n20-HT0	6	2437	MCS0	18.50	18.25		
		11	2462		16.50	16.35		
		3	2422		15.00	14.86		
	802.11n40-HE0	6	2437	MCS0	16.00	15.74		
		9	2452		14.50	14.30		

	Aux Antenna								
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)			
		36	5180		15.00	14.90			
	802.11a	40	5200	6Mbps	15.00	14.87			
	002.11a	44	5220		15.00	14.77			
		48	5240		15.00	14.88			
	802.11n20-HT0	36	5180	MCS0	15.00	14.82			
		40	5200		15.00	14.86			
		44	5220		15.00	14.75			
		48	5240		15.00	14.72			
5.15-5.25 GHz	802.11ac20-VHT0	36	5180	MCS0	15.00	14.81			
0.10 0.20 0112		40	5200		15.00	14.72			
	002.11d020 V1110	44	5220	WOOO	15.00	14.73			
		48	5240		15.00	14.90			
	802.11n40-HT0	38	5190	MCS0	15.00	14.86			
	002.111140-1110	46	5230	WOOO	15.00	14.72			
	802.11ac40-VHT0	38	5190	MCS0	15.00	14.78			
		46	5230		15.00	14.84			
	802.11ac80-VHT0	42	5210	MCS0	15.00	14.94			
	802.11ac160-VHT0	50	5250	MCS0	14.00	13.79			

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	Aux Antenna									
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)				
		52	5260		15.00	14.85				
	802.11a	56	5280	6Mbps	15.00	14.84				
		60	5300	Olvibps	15.00	14.76				
		64	5320		15.00	14.79				
	802.11n20-HT0	52	5260		15.00	14.81				
		56	5280	MCS0	15.00	14.82				
		60	5300	IVICOU	15.00	14.85				
		64	5320		15.00	14.87				
5.25-5.35 GHz		52	5260		15.00	14.90				
	802.11ac20-VHT0	56	5280	MCS0	15.00	14.87				
	002.118620-71110	60	5300	MCSU	15.00	14.71				
		64	5320		15.00	14.88				
	802.11n40-HT0	54	5270	MCS0	15.00	14.90				
	002.111140-F110	62	5310	IVICOU	15.00	14.73				
	802.11ac40-VHT0	54	5270	MCS0	15.00	14.90				
	002.11ac40-VH10	62	5310		15.00	14.88				
	802.11ac80-VHT0	58	5290	MCS0	15.00	14.95				

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		Aux Ar	ntenna			
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		100	5500		14.00	13.88
	802.11a	120	5600	6Mbps MCS0	14.00	13.89
	002.11a	140	5700		14.00	13.73
		144	5720		14.00	13.80
		100	5500		14.00	13.84
	802.11n20-HT0	120	5600		14.00	13.87
	302.1.11.201113	140	5700		14.00	13.76
		144	5720		14.00	13.86
		100	5500	MCS0	14.00	13.74
	802.11ac20-VHT0	120	5600		14.00	13.81
	0020020	140	5700		14.00	13.88
5600 MHz		144	5720		14.00	13.82
		102	5510		14.00	13.83
	802.11n40-HT0	118	5590	MCS0	14.00	13.82
		134	5670		14.00	13.73
		142	5710		14.00	13.74
		102	5510		14.00	13.86
	802.11ac40-VHT0	118	5590	MCS0	14.00	13.82
		134	5670		14.00	13.88
		142	5710		14.00	13.73
	000 4400 \/\\\	106	5530	MOCC	14.00	13.89
	802.11ac80-VHT0	122	5610	MCS0	14.00	13.83
	000 44 400 \ /! !\T0	138	5690	M000	14.00	13.80
	802.11ac160-VHT0	114	5570	MCS0	14.00	13.91

Aux Antenna									
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)			
		149	5745		14.00	13.88			
	802.11a	157	5785	6Mbps	14.00	13.89			
		165	5825		14.00	13.78			
	802.11n20-HT0	149	5745	MCS0	14.00	13.76			
		157	5785		14.00	13.77			
		165	5825		14.00	13.75			
5800 MHz		149	5745		14.00	13.86			
3000 MITZ	802.11ac20-VHT0	157	5785	MCS0	14.00	13.90			
		165	5825		14.00	13.75			
	802.11n40-HT0	151	5755	MCS0	14.00	13.71			
	802.11N40-H10	159	5795	MCSU	14.00	13.75			
	802.11ac40-VHT0	151	5755	MCS0	14.00	13.86			
	002.118040-VH10	159	5795		14.00	13.78			
	802.11ac80-VHT0	155	5775	MCS0	14.00	13.96			

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Main

Main Antenna									
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)			
		1	2412		18.00	17.90			
	802.11b	6	2437	1Mbps	18.00	17.97			
		11	2462		18.00	17.99			
	802.11g	1	2412	6Mbps	17.00	16.79			
		6	2437		18.00	17.71			
2450 MHz		11	2462		17.00	16.85			
2430 101112		1	2412		16.50	16.36			
	802.11n20-HT0	6	2437	MCS0	18.00	17.78			
		11	2462		16.50	16.29			
		3	2422	MCS0	15.00	14.85			
	802.11n40-HE0	6	2437		16.00	15.73			
		9	2452		14.50	14.38			

		Main A	ntenna			
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		36	5180		15.00	14.76
	802.11a	40	5200	6Mbps	15.00	14.83
		44	5220		15.00	14.83
		48	5240		15.00	14.88
	802.11n20-HT0	36	5180		15.00	14.78
		40	5200	MCS0	15.00	14.74
		44	5220		15.00	14.83
		48	5240		15.00	14.71
5.15-5.25 GHz		36	5180		15.00	14.76
	802.11ac20-VHT0	40	5200	MCS0	15.00	14.82
	002.110020 11110	44	5220		15.00	14.72
		48	5240		15.00	14.84
	802.11n40-HT0	38	5190	MCS0	15.00	14.84
	002.11114011110	46	5230	WOOO	15.00	14.81
	802.11ac40-VHT0	38	5190	MCS0	15.00	14.71
		46	5230		15.00	14.73
	802.11ac80-VHT0	42	5210	MCS0	15.00	14.96
	802.11ac160-VHT0	50	5250	MCS0	14.00	13.84

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	Main Antenna									
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)				
		52	5260		14.50	14.38				
	802.11a	56	5280	6Mbps	14.50	14.30				
	002.11a	60	5300	Olvibps	14.50	14.26				
		64	5320		14.50	14.34				
	802.11n20-HT0	52	5260	MCS0	14.50	14.26				
		56	5280		14.50	14.24				
		60	5300		14.50	14.35				
		64	5320		14.50	14.36				
5.25-5.35 GHz		52	5260		14.50	14.29				
	802.11ac20-VHT0	56	5280	MCS0	14.50	14.33				
	002.118620-71110	60	5300	MCSU	14.50	14.25				
		64	5320		14.50	14.26				
	802.11n40-HT0	54	5270	MCS0	14.50	14.34				
	002.111140-F110	62	5310	IVICOU	14.50	14.22				
	802.11ac40-VHT0	54	5270	MCS0	14.50	14.39				
	002.118C4U-VH1U	62	5310		14.50	14.37				
	802.11ac80-VHT0	58	5290	MCS0	14.50	14.43				

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		Main A	ntenna			
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		100	5500		15.00	14.90
	802.11a	120	5600	6Mbps	15.00	14.83
		140	5700	011112	15.00	14.82
		144	5720		15.00	14.73
	100 5500		15.00	14.81		
	802.11n20-HT0	120	5600	MCS0	15.00	14.84
		140	5700		15.00	14.79
		144	5720		15.00	14.85
		100	5500	MCS0	15.00	14.83
	802.11ac20-VHT0	120	5600		15.00	14.86
		140	5700		15.00	14.82
5600 MHz		144	5720		15.00	14.78
		102	5510		15.00	14.76
	802.11n40-HT0	118	5590	MCS0	15.00	14.90
		134	5670		15.00	14.74
		142	5710		15.00	14.88
		102	5510		15.00	14.90
	802.11ac40-VHT0	118	5590	MCS0	15.00	14.71
		134	5670		15.00	14.85
		142	5710		15.00	14.73
	000 44 00 \/\\\\	106	5530	MCS0	15.00	14.87
	802.11ac80-VHT0	122	5610		15.00	14.77
	000 44 400 \ // UTO	138	5690	14000	15.00	14.75
	802.11ac160-VHT0	114	5570	MCS0	15.00	14.99

Main Antenna									
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)			
		149	5745		16.50	16.28			
	802.11a	157	5785	6Mbps	16.50	16.21			
		165	5825		16.50	16.32			
	802.11n20-HT0	149	5745	MCS0	16.50	16.30			
		157	5785		16.50	16.39			
		165	5825		16.50	16.30			
5800 MHz		149	5745		16.50	16.22			
3600 WITZ	802.11ac20-VHT0	157	5785	MCS0	16.50	16.40			
		165	5825		16.50	16.36			
	802.11n40-HT0	151	5755	MCS0	16.50	16.21			
	002.111140-1110	159	5795	MCSU	16.50	16.29			
	802.11ac40-VHT0	151	5755	MCS0	16.50	16.35			
	002.11ac40-VH10	159	5795		16.50	16.21			
	802.11ac80-VHT0	155	5775	MCS0	16.50	16.49			

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Notebook mode

Aux

	Aux Antenna									
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)				
		1	2412		19.50	19.47				
	802.11b	6	2437	1Mbps	21.00	20.96				
		11	2462		20.00	19.94				
	802.11g	1	2412	6Mbps	17.00	16.76				
		6	2437		21.00	20.88				
2450 MHz		11	2462		17.00	16.84				
2430 MITZ		1	2412		16.50	16.25				
	802.11n20-HT0	6	2437	MCS0	21.00	20.81				
		11	2462		16.50	16.38				
		3	2422	MCS0	15.00	14.78				
	802.11n40-HE0	6	2437		16.00	15.89				
		9	2452		14.50	14.34				

	Aux Antenna									
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)				
		36	5180		19.00	18.94				
	802.11a	40	5200	6Mbps	21.50	21.48				
	002.11d	44	5220		21.50	21.47				
		48	5240		21.00	20.95				
	802.11n20-HT0	36	5180	MCS0	18.00	17.78				
		40	5200		21.50	21.26				
		44	5220		21.50	21.23				
		48	5240		21.00	20.87				
5.15-5.25 GHz		36	5180		18.00	17.89				
0.10 0.20 0112	802.11ac20-VHT0	40	5200	MCS0	21.50	21.32				
	002.11ac20-V1110	44	5220	WICCO	21.50	21.34				
		48	5240		21.00	20.85				
	802.11n40-HT0	38	5190	MCS0	18.50	18.27				
	002.111140-1110	46	5230	MCGO	19.50	19.36				
	802.11ac40-VHT0	38	5190	MCS0	18.50	18.30				
	002.114040-71110	46	5230		19.50	19.24				
	802.11ac80-VHT0	42	5210	MCS0	18.50	18.22				
	802.11ac160-VHT0	50	5250	MCS0	14.00	13.86				

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	Aux Antenna									
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)				
		52	5260		21.00	20.98				
	802.11a	56	5280	6Mbps	21.50	21.49				
		60	5300	Olvibps	21.50	21.48				
		64	5320		16.50	16.40				
	802.11n20-HT0	52	5260	MCS0	21.00	20.78				
		56	5280		21.50	21.40				
		60	5300		21.50	21.26				
		64	5320		16.50	16.24				
5.25-5.35 GHz		52	5260		21.00	20.80				
	802.11ac20-VHT0	56	5280	MCS0	21.50	21.29				
	002.118620-71110	60	5300	MCSU	21.50	21.38				
		64	5320		16.50	16.38				
	802.11n40-HT0	54	5270	MCS0	19.00	18.90				
	002. I III40-Π I U	62	5310	IVICOU	15.00	14.81				
	802.11ac40-VHT0	54	5270	MCS0	19.00	18.82				
	002.11ac40-VH10	62	5310	1 IVICSU	15.00	14.76				
	802.11ac80-VHT0	58	5290	MCS0	16.00	15.74				

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		Aux Ar	ntenna			
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		100	5500		19.50	19.37
	802.11a	120	5600	6Mbps	21.00	20.73
	002.11a	140	5700		19.00	18.86
		144	5720		19.00	18.80
		100	5500		19.00	18.83
	802.11n20-HT0	120	5600	MCS0	21.00	20.72
	002.1111201110	140	5700	1	18.50	18.25
		144	5720		18.50	18.37
		100	5500	MCS0	19.00	18.72
	802.11ac20-VHT0	120	5600		21.00	20.82
	002.114020 11110	140	5700		18.50	18.37
5600 MHz		144	5720		18.50	18.31
		102	5510		17.00	16.98
	802.11n40-HT0	118	5590	MCS0	21.50	21.42
	002.11111011110	134	5670	I Wiese	19.00	18.97
		142	5710		19.00	18.92
		102	5510		17.00	16.85
	802.11ac40-VHT0	118	5590	MCS0	21.50	21.25
	332.1143.10 11110	134	5670		19.00	18.74
		142	5710		19.00	18.74
		106	5530		18.00	17.85
	802.11ac80-VHT0	122	5610	MCS0	21.00	20.81
		138	5690		20.50	20.26
	802.11ac160-VHT0	114	5570	MCS0	15.00	14.88

	Aux Antenna												
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)							
		149	5745		21.00	20.81							
	802.11a	157	5785	6Mbps	21.00	20.73							
		165	5825		21.00	20.83							
		149	5745		21.00	20.95							
	802.11n20-HT0	157	5785	MCS0	21.50	21.48							
		165	5825		21.00	20.99							
5800 MHz		149	5745		21.00	20.80							
3000 1011 12	802.11ac20-VHT0	157	5785	MCS0	21.50	21.21							
		165	5825		21.00	20.81							
	802.11n40-HT0	151	5755	MCS0	19.50	19.30							
	802.111140-1110	159	5795	IVICOU	20.00	19.74							
	802.11ac40-VHT0	151	5755	MCS0	19.50	19.36							
	002.11a040-V1110	159	5795	IVICOU	20.00	19.71							
	802.11ac80-VHT0	155	5775	MCS0	19.00	18.88							

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Main

	Main Antenna											
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)						
		1	2412		20.00	19.91						
	802.11b	6	2437	1Mbps	21.00	20.97						
		11	2462		19.50	19.48						
		1	2412		17.00	16.77						
	802.11g	6	2437	6Mbps	21.00	20.85						
2450 MHz		11	2462		17.00	16.75						
2450 MITZ		1	2412		16.50	16.31						
	802.11n20-HT0	6	2437	MCS0	21.00	20.83						
		11	2462		16.50	16.24						
		3	2422		15.00	14.88						
	802.11n40-HE0	6	2437	MCS0	16.00	15.84						
		9	2452		14.50	14.39						

		Main A	ntenna			
Band	Mode	Channel	Channel Frequency (MHz)		Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		36	5180		19.00	18.97
	802.11a	40	5200	6Mbps	21.50	21.46
		44	5220		21.50	21.43
		48	5240		21.00	20.92
		36	5180		18.50	18.34
	802.11n20-HT0	40	5200	MCS0	21.50	21.30
	332.111.23 1113	44	5220		21.50	21.21
		48	5240		20.50	20.22
5.15-5.25 GHz		36	5180		18.50	18.21
0.10 0.20 0112	802.11ac20-VHT0	40	5200	MCS0	21.50	21.32
	002:11d020 V1110	44	5220	WOOO	21.50	21.38
		48	5240		20.50	20.32
	802.11n40-HT0	38	5190	MCS0	18.50	18.39
	002.111140-1110	46	5230	WOOO	19.50	19.27
	802.11ac40-VHT0	38	5190	MCS0	18.50	18.36
	002.114040-71110	46	5230		19.50	19.40
	802.11ac80-VHT0	42	5210	MCS0	18.00	17.81
	802.11ac160-VHT0	50	5250	MCS0	14.00	13.71

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		Main A	ntenna			
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		52	5260		21.50	21.44
	802.11a	56	5280	6Mbps	21.50	21.45
	002.11a	60	5300	Olvibps	21.50	21.42
		64	5320		17.00	16.94
		52	5260		21.50	21.26
	802.11n20-HT0	56	5280	MCS0	21.50	21.37
	002.111120-1110	60	5300	MCSU	21.50	21.36
		64	5320		16.50	16.29
5.25-5.35 GHz		52	5260		21.50	21.22
	802.11ac20-VHT0	56	5280	MCS0	21.50	21.28
	802.11ac20-VH10	60	5300	MCSU	21.50	21.31
		64	5320		16.50	16.23
	802.11n40-HT0	54	5270	MCS0	19.00	18.82
	002.111140-1110	62	5310	MCSU	15.00	14.72
	802.11ac40-VHT0	54	5270	MCS0	19.00	18.83
	002.11a040-V1110	62	5310	IVICOU	15.00	14.90
	802.11ac80-VHT0	58	5290	MCS0	15.50	15.33

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		Main A	ntenna			
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		100	5500		19.50	19.35
	802.11a	120	5600	6Mbps	19.50	19.36
	002.11a	140	5700	Olvibps	18.50	18.39
		144	5720		18.50	18.24
		100	5500		19.00	18.74
	802.11n20-HT0	120	5600	MCS0	19.50	19.34
	002.11112011110	140	5700		19.00	18.90
		144	5720		19.00	18.81
		100	5500		19.00	18.80
	802.11ac20-VHT0	120	5600	MCS0	19.50	19.23
	0020020	140	5700		19.00	18.82
5600 MHz		144	5720		19.00	18.87
		102	5510		16.50	16.22
	802.11n40-HT0	118	5590	MCS0	19.50	19.34
		134	5670		19.50	19.27
		142	5710		19.50	19.32
		102	5510		16.50	16.23
	802.11ac40-VHT0	118	5590	MCS0	19.50	19.35
		134	5670		19.50	19.24
		142	5710		19.50	19.38
	000 4400 \/\\\	106	5530	MOCC	17.50	17.43
	802.11ac80-VHT0	122	5610	MCS0	19.50	19.45
	000 44 400 \ // UTO	138	5690	M000	19.50	19.48
	802.11ac160-VHT0	114	5570	MCS0	15.00	14.88

		Main A	ntenna			
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		149	5745		21.00	20.94
	802.11a	157	5785	6Mbps	21.00	20.99
		165	5825		21.00	20.98
		149	5745		21.00	20.83
	802.11n20-HT0	157	5785	MCS0	21.00	20.79
		165	5825		21.00	20.79
5800 MHz		149	5745		21.00	20.84
3000 WII 12	802.11ac20-VHT0	157	5785	MCS0	21.00	20.75
		165	5825		21.00	20.84
	802.11n40-HT0	151	5755	MCS0	19.00	18.77
	002.111140-1110	159	5795	IVICOU	20.00	19.82
	802.11ac40-VHT0	151	5755	MCS0	19.00	18.85
	002.11a040=V1110	159	5795	IVICOU	20.00	19.72
	802.11ac80-VHT0	155	5775	MCS0	18.50	18.34

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Bluetooth conducted power table:

			1Mb	ps	2Mb	ps	3Mbps					
Mode	Channel	Frequency (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)				
	CH 00	2402		9.56		7.37		7.35				
BR/EDR	CH 39	2441	11.50	9.85	11.00	7.48	11.00	7.46				
	CH 78	2480		10.28		7.57		7.55				

Mode	Channel	Frequency	G	GFSK		
Mode	Channel	(MHz)	Max. Rated Avg.Power + Max. Tolerance (dBm)	Average Output Power (dBm)		
	CH 37	2402		6.26		
Bluetooth 4.0_1M	CH 17	2440	9	6.08		
	CH 39	2480		6.06		

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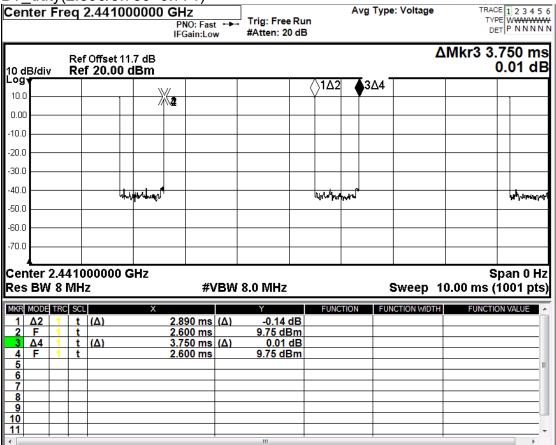
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BT_duty(2.890/3.750=0.771)

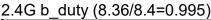


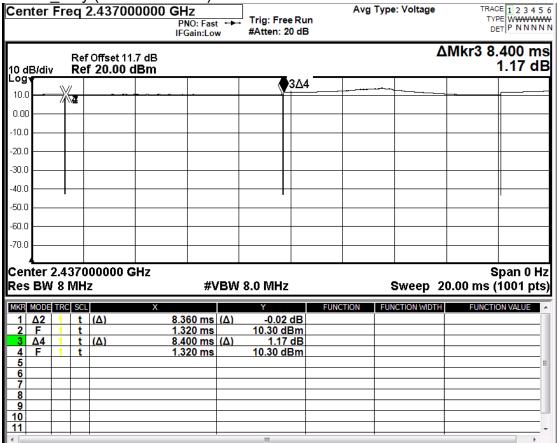
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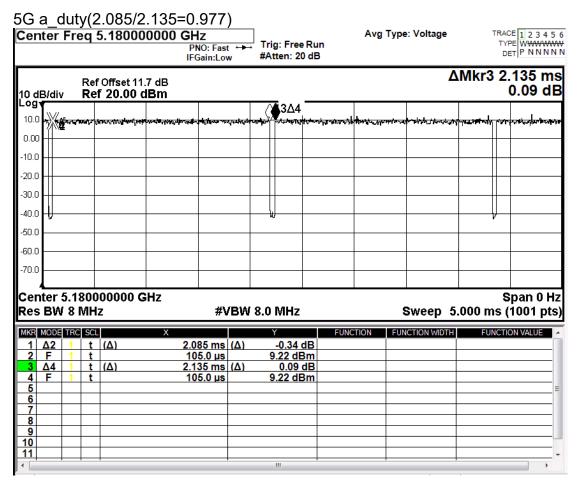
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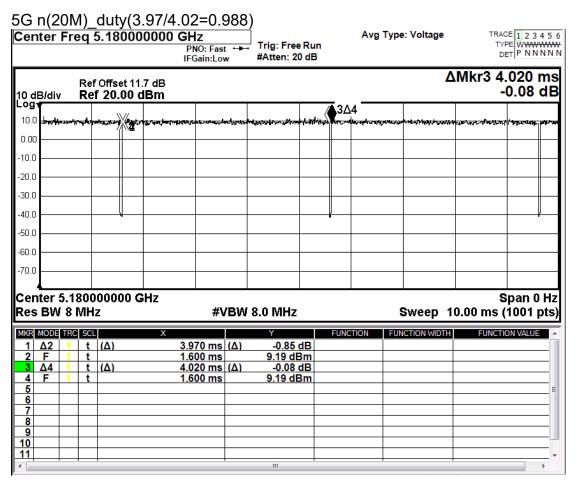
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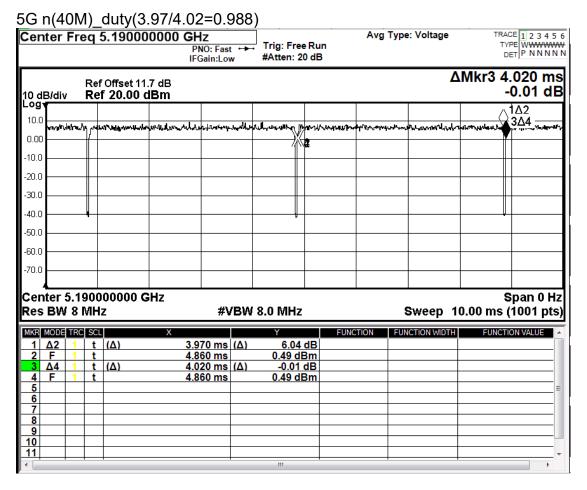
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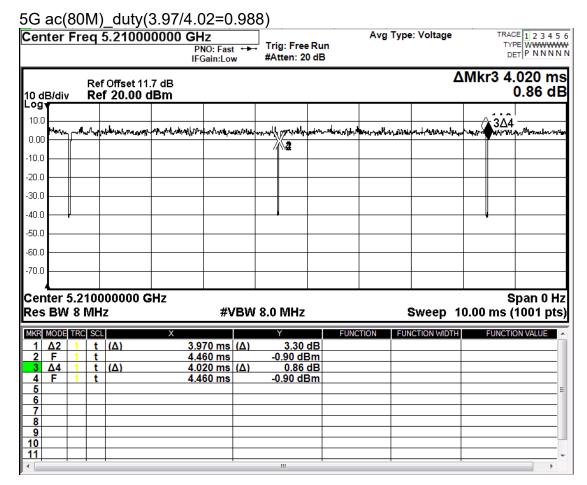
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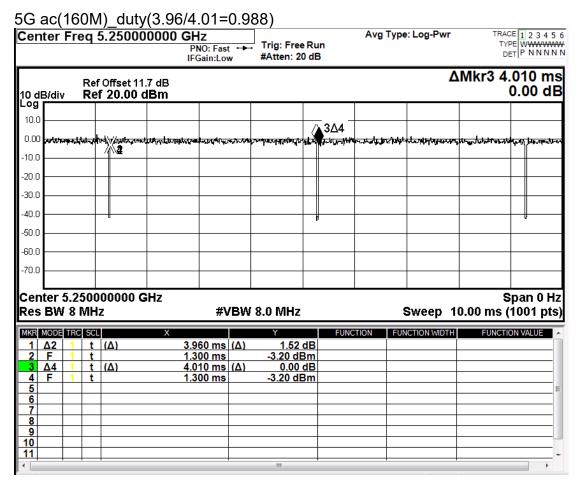


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1.4 Test Environment

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

1.5 Operation Description

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

The device is a convertible laptop computer with RF feature. The device will adjust the maximum output power for different user scenario and EUT was tested as below based on KDB inquiry.

Tablet mode

SAR is measured with back/edges 0mm (reduced power)

Laptop mode

SAR is measured with keyboard bottom touch against the flat phantom (full power)

Note:

802.11b DSSS SAR Test Requirements:

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

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802.11g/n OFDM SAR Test Exclusion Requirements:

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

Initial Test Configuration:

- 4. An initial test configuration is determined for OFDM transmission modes according to the channel bandwidth, modulation and data rate combination(s) with the highest maximum output power specified for production units in each standalone and aggregated frequency band.
- 5. SAR is measured using the highest measured maximum output power channel. When the reported SAR of the initial test configuration is > 0.8 W/kg, SAR measurement is required for the subsequent next highest measured output power channel(s) in the initial test configuration until the reported SAR is ≤ 1.2 W/kg or all required channels are tested.
- 6. Since the highest reported SAR for the initial test configuration is adjusted by the ratio of the subsequent test configuration to initial test configuration specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for subsequent test configuration.
- 7. BT and WLAN Aux use the same antenna path, but they can't transmit at the same time.
- 8. According to KDB447498 D01, testing of other required channels is not required when the reported 1-g SAR for the highest output channel is ≤ 0.8 W/kg, when the transmission band is ≤ 100 MHz.
- 9. According to KDB865664 D01, SAR measurement variability must be assessed for each frequency band. When the original highest measured SAR is ≥ 0.8 W/kg, repeated that measurement once. Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg (~10% from the 1-g SAR limit)

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1.6 Operating modes validation by power measurement

The device is a convertible laptop computer with predefined single fixed power to each device modes.

For the operating modes validation, the measured conducted output power is monitored qualitatively to identify the triggering characteristics and recorded quantitatively.

DUT operating mode	Lid Angle description	WLAN TX state
Lid-close	0° ≤ Lid angle < 45°	No TX transmission
Notebook	45° ≤ Lid angle ≤ 200°	Full Power Level
Tablet	200° ≤ Lid angle ≤ 360°	Reduced Power Level

1.6.1 Results and conclusion

The measured output power versus lid angle is tabulated in the following table based on the guidance from 2019-11 TCB workshop, and the triggering verification complies with the device mode / power level declared by the manufacturer.

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. 险非只有的明,此想些结果做新测验之缘具负责,同时此模具做是例如于。木型生产领土人司事而统可,不可可以推测。

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Operating mode validation by power measurement

Antenna	Occupies made	List seeds	800 445	802.11a 5.2G	900 44-(40M) F 00	800 44(804) F 20	802.11a 5.3G	802 44=(40M) E 2C	800 44(80M) £ 20	800 44==(80M) E 80	000 14/4000M F 00	802.11a 5.8G	800 44=(40M) E 80	000 44(00M) E 0C
Antenna	Operation mode	0°	802.11b n/a	n/a	n/a	802.11ac(80M) 5.2G n/a	n/a	n/a	n/a	802.11ac(80M) 5.6G n/a	n/a	n/a	n/a	802.11ac(80M) 5.8G n/a
	Lid close	10° 20°	n/a n/a											
		30°	n/a n/a	n/a n/a n/a	n/a n/a	n/a n/a	n/a n/a	n/a n/a n/a						
	Laptop	50°	20.94	21.41	19.40	17.91	21.43	18.81	15.49	19.49	14.81	20.86	19.86	18.43
	Сартор	45° 40°	20.87 n/a	21.38 n/a	19.34 n/a	17.89 n/a	21.39 n/a	18.99 n/a	15.36 n/a	19.34 n/a	14.86 n/a	20.82 n/a	19.89 n/a	18.36 n/a
	Lid close	41°	n/a	n/a	n/a	n/a	n/a	n/a n/a	n/a	n/a n/a	n/a n/a	n/a n/a	n/a	n/a n/a
	Lid close	42° 43°	n/a n/a	n/a n/a	n/a n/a	n/a n/a	n/a n/a	n/a	n/a n/a	n/a n/a	n/a n/a	n/a	n/a n/a	n/a n/a
		44° 45°	n/a 20.98	n/a 21.50	n/a 19.49	n/a 17.81	n/a 21.45	n/a 18.87	n/a 15.44	n/a 19.45	n/a 14.97	n/a 20.98	n/a 20.00	n/a 18.48
		460	20.81	21.39	19.35	17.85	21.46	18.92	15.37	19.42	14.92	20.88	19.84	18.48
		47° 48°	20.83 20.95	21.42 21.39	19.40 19.34	17.99 17.86	21.41 21.31	18.99 18.93	15.44 15.47	19.36 19.34	14.95 14.98	20.93 20.87	19.90 19.94	18.39 18.45
		49°	20.86	21.48 21.39	19.42	17.98 17.95	21.41	18.97 18.91	15.38 15.34	19.38 19.46	14.94 14.96	20.94	19.88 19.98	18.45
		50°	20.82 20.85	21.39 21.48	19.42 19.49	17.95 17.92	21.35 21.49	18.91 18.94	15.35	19.48	14 91	20.83 21.00	19.98 20.00	18.45 18.33
		70° 80°	20.91 20.82	21.45	19.45	17.95 17.84	21.47	18.91	15.38 15.48	19.50 19.40	15.00 14.88	20.85 20.99	19.98	18.35 18.50
	Laptop	90°		21.45	19.34	17.90	21.38	18.92					19.83	
	Laptop	100° 110°	20.97 20.87	21.45 21.50	19.32 19.37	17.86 17.89	21.34 21.36	18.97 18.98 18.98	15.46 15.43	19.40 19.33	14.89 14.91	20.83 20.92 20.96	19.90 19.92	18.45 18.36
		120°	21.00	21.45	19.47	17.91	21.37	18.98	15.43	19.34	14.94	20.96	19.81	18.32
		130° 140°	20.92	21.37 21.36	19.39 19.48	17.88 17.99	21.42	18.98 18.85	15.34 15.42	19.45 19.40	14.90 14.85	20.99 20.97	19.95 19.82	18.41 18.36
		150°	20.92 20.94	21.31	19.39	17.99 17.91	21.39 21.38	18.85 18.86	15.45 15.33	19.40 19.39	14.85 14.87 14.86	20.97 20.83	19.82 19.88	18.36 18.44
		160° 170°	20.84 20.96	21.32 21.46	19.41 19.34	17.96 17.98	21.46 21.35	18.94 18.94	15.35	19.36 19.33 19.41	14.88	20.91 20.90 20.98	19.94 19.99	18.34 18.33
		180°	20.89 21.00	21.38 21.49	19.31 19.38	17.98 17.93	21.32 21.43	18.89 18.94	15.33 15.36	19.41 19.39	14.95 14.93	20.98 20.94	19.83 19.96	18.31 18.44
	Tablet	200°	17.94	14.87	14.98	14.83	14.44	14.36	14.34	14.86	14.84	16.31	16.47	16.37
		105°	20.81 20.90	21.32 21.45	19.35 19.50	19.00	21.46	18.84 18.87	15.31 15.46	19.49 19.46	14.94	20.00	19.87 19.86	18.35 18.41
	Laptop	196° 197° 198°	20.92	21.43	19.35	17.95 17.87	21.42 21.34	18.92	15.42	19.40	14.88 14.89	20.82 21.00	19.92	18.34
		198°	20.98 20.93	21.38 21.37	19.38 19.42	17.86 17.92	21.32	18.86 18.97	15.43 15.49	19.44 19.40	14.90 14.84	20.88	19.86 19.99	18.41 18.50
		200°	17.84	14.81 14.93	14.83 14.86	15.00	14.48	14.34 14.34	14.34	19.40 14.83	14.89	20.87 16.45	16.37 16.41	16.42 16.44
		201° 202°	17.93 17.95	14.93 15.00	14.86 14.88	14.85 14.81	14.33	14.36	14.45 14.36	14.94 14.92 14.95	14.94 14.96	16.42 16.32 16.42	16.41 16.43	16.44 16.36
		203° 204°	17.83 17.97	14.96 14.86	14.97 15.00	14.91 14.87	14.38 14.49	14.31 14.46	14.44 14.45		14.94 14.99	16.42 16.43	16.46 16.48	16.40 16.46
		205°	17.90	14.95	14.84	14.83	14.37	14.32	14.50	14.96 14.90 14.95	14.81	16.47	16.45	16.47
		215° 225°	17.87 17.96	14.91 14.83	14.94 14.97	14.84 14.86	14.31 14.49	14.35 14.35	14.45 14.39	14.95 14.96	15.00 14.90	16.41 16.33	16.38 16.38	16.41 16.50
		235°	17.90	14.94	14.90	14.95	14.36	14.37	14.47	14.85	14.98	16.31	16.46	16.37
	Tablet	245° 255°	17.90 17.98	14.84 14.99	14.91 14.86	14.93 15.00	14.45 14.31	14.40 14.42	14.45 14.37	14.86 14.86	14.91 14.82	16.34 16.46	16.45 16.37	16.44 16.32
	Tablet	255° 265°	17.98 17.84	14.99 14.86	14.91	14.90	14.39	14.42 14.47	14.47	14.86 14.98	14.82 14.91	16.46 16.36	16.37 16.34	16.32 16.49
		275° 285° 295°	17.93 17.87 17.82	14.85 14.98 14.96	14.93 14.99 15.00	14.97 14.90 14.84	14.41 14.34 14.46	14.43 14.44 14.47	14.36 14.38 14.43	14.88 14.88 14.97	14.90 14.98 14.98	16.43 16.48 16.35	16.46 16.45 16.48	16.42 16.49 16.44
		295° 305°	17.82 17.95	14.96 14.88	15.00 14.86	14.84 14.81	14.46 14.49	14.47 14.31	14.43 14.47	14.97 14.85	14.98 14.93	16.35 16.34	16.48 16.47	16.44 16.50
		315°	17.88	14.82	14.92	14.87	14.36	14.40	44.30	14.85	44.07	16.41	16.37	16.50
		325° 335°	17.84 17.85	14.82 14.93	14.92 14.98 14.84	14.87 14.98 14.99	14.50 14.44	14.40 14.40 14.45	14.43 14.34	14.94 14.82 14.94	14.91 14.94	16.37 16.44	16.35 16.44	16.46 16.37
		345°	17.85	14.93 14.87 14.98										
		355° 360°	17.85 17.95 17.96	14.87 14.98	14.84 14.97	14.96 14.97	14.39 14.32	14.33 14.47	14.33 14.44	14.91 14.89	14.83 14.83	16.39 16.40	16.35 16.32	16.32 16.33
		350°	17.91	14.91	14.03	14.86	44.40					40.00		40.44
					14.83	14.00	14.46	14.36	14.42	14.88	14.92	16.33	16.46	16.41
Main		350° 340° 330°	17.96	14.88	14.97	14.81	14.40	14.36	14.50	14.88 14.90 14.82	14.81	16.36	16.34	16.41 16.43
Main			17.96	14.88	14.97	14.81	14.40	14.36	14.50		14.81	16.36	16.34	16.41 16.43 16.32
Main		330° 320° 310° 300°	17.96 17.93 17.86 17.95 17.90	14.88 14.90 14.93 14.81 14.90	14.97 14.90 14.88 14.83 14.93	14.81 14.97 14.94 14.82 14.97	14.40 14.33 14.44 14.35 14.48	14.36 14.41 14.46 14.43 14.35	14.50 14.42 14.40 14.37 14.40	14.82 14.85 14.87 14.91	14.81 14.95 14.81 14.97 14.98	16.36 16.34 16.37 16.50 16.47	16.34 16.41 16.40 16.35 16.48	16.41 16.43 16.32 16.35 16.33
Main		330° 320° 310° 300° 290°	17.96 17.93 17.86 17.95 17.90 17.87	14.88 14.90 14.93 14.81 14.90 14.96	14.97 14.90 14.88 14.83 14.93 14.90	14.81 14.97 14.94 14.82 14.97 14.86	14.40 14.33 14.44 14.35 14.48 14.47	14.36 14.41 14.46 14.43 14.35 14.31	14.50 14.42 14.40 14.37 14.40 14.38	14.82 14.86 14.87 14.91 14.93	14.81 14.95 14.81 14.97 14.98 14.81	16.36 16.34 16.37 16.50 16.47 16.40	16.34 16.41 16.40 16.35 16.48 16.40	16.41 16.43 16.32 16.35 16.33 16.37
Main	Tablet	330° 320° 310° 300° 290°	17.96 17.93 17.86 17.95 17.90 17.87	14.88 14.90 14.93 14.81 14.90 14.96	14.97 14.90 14.88 14.83 14.93 14.90	14.81 14.97 14.94 14.82 14.97 14.86	14.40 14.33 14.44 14.35 14.48 14.47	14.36 14.41 14.46 14.43 14.35 14.31	14.50 14.42 14.40 14.37 14.40 14.38	14.82 14.86 14.87 14.91 14.93	14.81 14.95 14.81 14.97 14.98 14.81	16.36 16.34 16.37 16.50 16.47 16.40	16.34 16.41 16.40 16.35 16.48 16.40	16.41 16.43 16.32 16.35 16.33 16.37
Main	Tablet	330° 320° 310° 300° 290° 280° 270° 260° 250°	17.96 17.93 17.86 17.95 17.90 17.87 18.00 17.96 17.88	14.88 14.90 14.93 14.81 14.90 14.96 14.90 14.88 14.98	14.97 14.90 14.88 14.83 14.93 14.90 14.82 14.84 14.99	14.81 14.97 14.94 14.82 14.97 14.86 14.85 14.97 14.81	14.40 14.33 14.44 14.35 14.48 14.47 14.38 14.40 14.35	14.36 14.41 14.46 14.43 14.35 14.31 14.47 14.35 14.44	14.50 14.42 14.40 14.37 14.40 14.38 14.41 14.34 14.47	14.82 14.86 14.87 14.91 14.93 14.96 14.99 15.00	14.81 14.95 14.81 14.97 14.98 14.81 14.86 14.81 14.83	16.36 16.34 16.37 16.50 16.47 16.40 16.36 16.46 16.43 16.38	16.34 16.41 16.40 16.35 16.48 16.40 16.33 16.33 16.33	16.41 16.43 16.32 16.35 16.33 16.37 16.43 16.48 16.33 16.34
Main	Tablet	330° 320° 310° 300° 290° 280° 270° 260° 250°	17.96 17.93 17.86 17.95 17.90 17.87 18.00 17.96 17.88 17.97	14.88 14.90 14.93 14.81 14.96 14.96 14.96 14.88 14.98 14.81	14.97 14.90 14.88 14.83 14.93 14.90 14.82 14.84 14.99	14.81 14.97 14.94 14.82 14.97 14.86 14.85 14.97 14.81 14.95	14.40 14.33 14.44 14.35 14.48 14.47 14.38 14.40 14.35 14.46	14.36 14.41 14.46 14.43 14.35 14.31 14.47 14.35 14.43 14.44 14.33	14.50 14.42 14.40 14.37 14.40 14.38 14.41 14.34 14.47 14.43	14.82 14.86 14.87 14.91 14.93 14.96 14.99 15.00 14.95	14.81 14.95 14.81 14.97 14.98 14.81 14.86 14.81 14.83 14.82	16.36 16.34 16.37 16.50 16.47 16.40 16.36 16.46 16.43 16.38	16.34 16.41 16.40 16.35 16.48 16.40 16.44 16.33 16.33	16.41 16.43 16.32 16.35 16.33 16.37 16.43 16.48 16.33 16.34
Main	Tablet	330° 320° 310° 300° 290° 280° 270° 260° 250° 240° 220°	17.96 17.93 17.86 17.95 17.90 17.87 18.00 17.96 17.88 17.97 17.91 17.95	14.88 14.90 14.93 14.81 14.90 14.96 14.90 14.88 14.81 14.94 14.94 14.97 14.98	14.97 14.90 14.88 14.83 14.93 14.90 14.82 14.84 14.99 14.98 14.94 14.92	14.81 14.97 14.94 14.82 14.97 14.86 14.97 14.85 14.97 14.81 14.95 15.00	14.40 14.33 14.44 14.35 14.48 14.47 14.38 14.40 14.35 14.46 14.35 14.46	14.36 14.41 14.46 14.43 14.35 14.37 14.37 14.47 14.36 14.43 14.44 14.33 14.44 14.33	14.50 14.42 14.40 14.37 14.40 14.38 14.41 14.34 14.41 14.43 14.43 14.43 14.43	14.82 14.86 14.87 14.91 14.93 14.96 14.99 15.00 14.95 14.95 14.95	14.81 14.95 14.81 14.97 14.98 14.81 14.86 14.81 14.83 14.82 14.95 14.91	16.36 16.34 16.37 16.50 16.47 16.40 16.46 16.43 16.38 16.42 16.41 16.45	16.34 16.41 16.40 16.35 16.48 16.40 16.33 16.33 16.33 16.37 16.33 16.43	16.41 16.43 16.32 16.32 16.33 16.37 16.43 16.48 16.34 16.34 16.37
Main	Tablet	330° 320° 310° 300° 280° 270° 260° 250° 240° 230°	17.96 17.93 17.86 17.95 17.90 17.87 18.00 17.96 17.88 17.97 17.91	14.88 14.90 14.93 14.81 14.90 14.96 14.96 14.98 14.88 14.98 14.81 14.94	14.97 14.90 14.88 14.83 14.93 14.90 14.82 14.84 14.99 14.98	14.81 14.97 14.94 14.82 14.97 14.86 14.85 14.97 14.81 14.95	14.40 14.33 14.44 14.35 14.48 14.47 14.38 14.40 14.35 14.46 14.35 14.35	14.36 14.41 14.46 14.43 14.35 14.35 14.47 14.47 14.35 14.47 14.33 14.42 14.33 14.44 14.33	14.50 14.42 14.40 14.37 14.40 14.38 14.41 14.34 14.47 14.43 14.43 14.43	14.82 14.86 14.87 14.91 14.93 14.96 15.00 14.96 14.96 14.96 14.96 14.96 14.96 14.96	14.81 14.95 14.81 14.97 14.98 14.81 14.86 14.81 14.83 14.82	16.36 16.34 16.37 16.50 16.47 16.40 16.36 16.46 16.43 16.38 16.42 16.41	16.34 16.41 16.40 16.35 16.48 16.40 16.44 16.33 16.33 16.33 16.37	16.41 16.43 16.32 16.35 16.33 16.37 16.43 16.43 16.33 16.34 16.34 16.36 16.36
Main	Tablet	330° 320° 310° 300° 280° 280° 270° 260° 260° 250° 240° 230° 210° 200° 190°	17.96 17.93 17.86 17.95 17.90 17.87 18.00 17.96 17.88 17.97 17.91 17.95	14.88 14.90 14.91 14.91 14.90 14.90 14.90 14.98 14.98 14.98 14.94 14.97 14.96 14.96 14.96	14.97 14.90 14.83 14.83 14.93 14.90 14.82 14.82 14.99 14.94 14.94 14.94 14.92 14.91 14.92 14.91	14.81 14.97 14.92 14.82 14.87 14.86 14.85 14.85 14.81 14.90 14.81 14.90 14.90 17.94	14.40 14.33 14.44 14.35 14.48 14.47 14.38 14.40 14.35 14.40 14.35 14.40 14.37 14.37 14.37	14.36 14.41 14.43 14.35 14.35 14.31 14.47 14.43 14.43 14.43 14.43 14.42 14.30 14.31 14.31 14.31	14.50 14.42 14.42 14.37 14.30 14.38 14.41 14.34 14.47 14.43 14.43 14.43 14.34 14.43 14.34 14.33 14.35	14.82 14.86 14.87 14.91 14.93 14.96 14.96 14.96 14.96 14.96 14.96 14.96 14.96 14.96 14.96	14.81 14.95 14.81 14.97 14.96 14.81 14.86 14.81 14.83 14.83 14.83 14.82 14.95 14.95	16.36 16.34 16.37 16.50 16.47 16.40 16.36 16.43 16.43 16.43 16.42 16.41 16.45 16.45 16.46 16.46	16.34 16.41 16.40 16.35 16.48 16.40 16.44 16.33 16.33 16.37 16.37 16.33 16.40 16.40 16.40	16.41 16.43 16.35 16.35 16.35 16.37 16.43 16.33 16.37 16.48 16.36 16.37 16.36 16.35 16.35
Main		330° 310° 310° 310° 250° 280° 280° 280° 270° 260° 250° 240° 230° 210° 220° 210° 200° 190° 190°	17.96 17.93 17.86 17.95 17.96 17.97 18.00 17.87 18.00 17.96 17.97 17.91 17.95 17.94 18.00 20.96 20.96 20.93	14.88 14.90 14.91 14.91 14.96 14.96 14.96 14.88 14.81 14.94 14.97 14.88 14.97 14.81 14.97 14.96 14.97	14.97 14.90 14.83 14.83 14.93 14.90 14.84 14.90 14.84 14.96 14.91 14.92 14.91 14.92 14.93 14.93 14.93	14.81 14.97 14.94 14.82 14.97 14.86 14.97 14.86 14.97 14.81 14.95 15.00 14.92 14.81 14.95 15.00 14.92 14.81 14.90 15.00 14.92	14.40 14.33 14.44 14.35 14.48 14.47 14.36 14.40 14.37 14.40 14.37 14.40 14.37 14.40 14.37 14.40 14.37 14.40	14.36 14.41 14.46 14.43 14.31 14.37 14.37 14.35 14.43 14.44 14.33 14.42 14.33 14.43 14.43 14.43 14.43 14.43 14.31 14.31 14.31	14.50 14.42 14.42 14.43 14.37 14.40 14.38 14.34 14.34 14.43 14.43 14.43 14.43 14.33 14.33 14.33 14.33 14.33 14.33	14.82 14.86 14.87 14.91 14.93 14.96 14.96 15.00 14.96 14.96 14.86 14.86 14.86 14.96 14.96	14.81 14.95 14.81 14.97 14.97 14.81 14.81 14.81 14.81 14.82 14.91 14.82 14.91 14.82 14.91 14.82 14.91 14.82	16.36 16.34 16.37 16.50 16.47 16.40 16.40 16.46 16.43 16.38 16.42 16.41 16.45 16.36 16.42 16.36 16.42	16.34 16.41 16.40 16.35 16.48 16.40 16.33 16.33 16.33 16.37 16.33 16.37 16.40 16.40 16.40 16.43 16.40 16.43 16.40 16.32	16.41 16.43 16.35 16.35 16.35 16.37 16.43 16.48 16.34 16.34 16.34 16.35 16.34 16.35 16.48 16.35 16.48 16.35 16.48 16.35 16.48
Main		330° 310° 310° 300° 290° 280° 280° 280° 280° 250° 240° 230° 220° 210° 190° 190° 190° 190°	17.96 17.93 17.86 17.95 17.96 17.96 17.96 17.87 18.00 17.87 18.00 17.89 17.96	14.88 14.90 14.93 14.81 14.81 14.90 14.90 14.90 14.88 14.89 14.81 14.97 14.88 14.97 14.97 14.97 14.97 14.97 14.90 14.91 14.90	14.97 14.90 14.83 14.83 14.93 14.93 14.90 14.84 14.94 14.94 14.94 14.95 14.91 14.91 14.91 14.91 14.91 14.91 14.91 14.93 16.93	14.81 14.97 14.94 14.94 14.97 14.86 14.97 14.86 14.87 14.81 14.81 14.85	14.40 14.33 14.44 14.35 14.46 14.47 14.36 14.47 14.36 14.40 14.37 14.40 14.37 14.40 14.37 14.40 14.37 14.40 14.37	14.36 14.41 14.46 14.45 14.35 14.35 14.37 14.43 14.35 14.43 14.44	14.50 14.42 14.40 14.37 14.43 14.33 14.41 14.33 14.43 14.43 14.43 14.34 14.34 14.33 14.34 14.33 15.33	14.82 14.86 14.87 14.91 14.93 14.96 14.96 15.00 14.96 14.96 14.96 14.96 14.96 14.96 14.96 14.96 14.96	14.81 14.95 14.81 14.97 14.99 14.81 14.86 14.85 16.85 16.85 16.85 16.85 16.85 16.85 16.85 16.85 16.85 16.85 16.85	16.36 16.34 16.37 16.50 16.47 16.40 16.40 16.40 16.43 16.44 16.38 16.42 16.45 16.45 16.45 16.46 16.36 16.47 16.36 16.47 16.36 16.47 16.36 16.47 16.36 16.47 16.49	16.34 16.41 16.40 16.35 16.48 16.40 16.33 16.33 16.33 16.33 16.37 16.37 16.37 16.39 16.40 16.30	16.41 16.43 16.35 16.35 16.37 16.43 16.43 16.43 16.57 16.43 16.57 16.46 16.57 16.46 16.36 16.36 16.36 16.36 16.36 16.36 16.36 16.36 16.36 16.36 16.36 16.36 16.36 16.36 16.36 16.36 16.36 16.37
Main		330° 330° 310° 310° 300° 290° 280° 280° 260° 240° 250° 240° 230° 210° 200° 196° 196° 196° 196° 197°	17.96 17.93 17.86 17.86 17.95	14.88 14.90 14.90 14.93 14.81 14.80 14.90 14.90 14.90 14.90 14.88 14.97 14.88 14.97 14.88 14.97 14.97 14.97 14.90	14.97 14.90 14.89 14.89 14.83 14.33 14.30 14.85 14.30 14.85 14.30 14.85 14.30 14.85 14.30 14.85 14.30 14.85 14.30 14.85 14.30 14.85 14.30 14.85 14.30 14.85 14.30 14.85 14.30 14.85 14.30 14.85 14.30 14.85 14.30 14.85 14.30 14.85 14.30 14.85 14.30 14.30 14.85 14.30	14.81 14.97 14.94 14.94 14.97 14.86 14.97 14.86 14.87 14.87 14.87 14.95	14.40 14.33 14.44 14.35 14.48 14.48 14.49 14.40 14.40 14.50	14.36 14.41 14.46 14.47 14.35 14.35 14.37 14.47 14.35 14.47 14.31 14.47 14.31 14.43 14.35 14.44 14.35 14.45 14.35 14.45 14.35 14.45 14.35 14.45 14.35 14.45 14.35 14.45 14.35 14.45 14.35 14.45 14.35 14.45 14.35 14.45	14.50 14.42 14.40 14.40 14.37 14.43 14.44 14.43	14.82 14.86 14.87 14.91 14.91 14.90 14.90 15.00 14.95	14.81 14.95 14.81 14.97 14.97 14.96 14.81 14.85	16.36 16.37 16.37 16.57 16.57 16.47 16.40 16.36 16.36 16.36 16.36 16.36 16.36 16.36 16.36 16.41 16.42 16.41 16.44 16.44 16.44 20.89 16.42 20.99 20.99 20.99	16.34 16.41 16.40 16.35 16.40 16.40 16.44 16.33 16.33 16.33 16.33 16.33 16.33 16.33 16.33 16.33 16.33 16.33 16.33 16.33 16.33 16.33 16.33 16.33 16.40	16.41 16.43 16.32 16.33 16.33 16.33 16.37 16.43
Main		330° 330° 310° 310° 300° 290° 270° 250° 250° 250° 240° 230° 210° 220° 210° 300° 190° 190° 190° 190° 190°	17.96 17.96 17.95 17.95 17.95 17.95 17.95 17.95 17.95 17.97 17.96 17.97 17.96 17.97 17.96 17.97 17.96 17.97 17.96 17.96 17.96 17.97 17.96	14.89 14.90 14.91 14.91 14.81 14.90 14.91 14.90 14.90 14.90 14.80 14.80 14.80 14.80 14.80 14.80 14.80 14.90 14.80 14.90 14.80 14.90	14.97 14.80 14.80 14.80 14.80 14.80 14.90	14.81 14.97 14.34 14.36 14.36 14.37 14.86 14.85 14.97 14.81 14.90 15.00 14.97 14.81 14.90 15.00 14.97 14.81 14.90 15.00 14.97 14.81 14.80 15.00 14.97 14.81 14.80 15.00 14.97 16.97 17.91 17.91 17.91 17.91 17.95 17.99 17.99	14.40 14.33 14.44 14.45 14.46 14.47 14.49 14.40 14.40 14.40 14.33 14.40 14.35 14.40 14.37 15.37 15.37 15.37 15.37 15.37 15.37 15.37 15.37 15.37 15.37 15.37	14.36 14.46 14.46 14.46 14.46 14.46 14.35 14.43 14.47 14.43 14.43 14.44 14.33 14.43 14.43 14.43 14.43 14.43 14.33 14.42 14.33 14.42 14.35 14.43 14.35 14.43 14.44 14.55 14.44 14.55 14.44 14.55 14.44 14.55 14.44 14.55 14.44 14.55 14.44 14.55 14.44 14.55 14.44 14.55 14.44 14.55 14.44 14.55 14.44 14.55 14.44 14.55	14.50 14.42 14.40 14.40 14.43 14.33 14.34 14.34 14.34 14.43 14.43 14.34 14.33 14.34 14.33 14.34 14.33 14.34 14.35 14.36	14.82 14.86 14.87 14.57 14.50 15.50	14.81 14.05 14.81 14.81 14.81 14.81 14.81 14.81 14.82 14.82 14.82 14.95 14.91 14.81 14.82 14.95 14.91 14.81 14.81 14.82 14.82 14.85 14.87 14.81 14.82 14.83 16.83	16.36 16.37 16.37 16.37 16.37 16.37 16.37 16.40 16.40 16.40 16.40 16.40 16.40 16.40 16.30 16.41 16.30 16.42 16.41 16.40 16.30 20.90 20.90 20.90 20.90 20.90	16.34 16.41 16.40 16.40 16.40 16.40 16.40 16.40 16.33	16.41 16.43 16.53 16.53 16.53 16.53 16.53 16.53 16.53 16.34 16.34 16.34 16.34 16.34 16.34 16.34 16.34 16.34 16.34 16.34 16.34 16.35 16.34 16.35 16.34 16.35 16.34 16.35 16.34 16.35 16.36 16.37
Main		330° 320° 310° 310° 300° 280° 280° 270° 280° 270° 220° 220° 220° 220° 220° 190° 190° 190° 190° 190° 190° 190° 19	17.96 17.96 17.96 17.96 17.96 17.96 17.96 17.96 17.96 17.97 18.00 17.97 18.00 17.98 17.99	14.89 14.90 14.91 14.91 14.93 14.93 14.95 14.95 14.90	14,97 14,80 14,88 14,83 14,83 14,83 14,80 14,80 14,80 14,80 14,80 14,80 14,90	14.81 14.97 14.34 14.22 14.22 14.22 14.86 14.86 14.97 14.81 14.95 15.00 14.92 14.81 14.90 15.00 14.92 17.94 17.94 17.94 17.95 17.95 17.95 17.95 17.95 17.95 17.95 17.95 17.95	14.40 14.35 14.45 14.45 14.45 14.47 14.48 14.47 14.38 14.40 14	14.36 14.41 14.46 14.43 16.64	14.50 14.42 14.40 14.37 14.37 14.38 14.38 14.43 14.34 14.34 14.34 14.34 14.34 14.34 14.34 14.34 14.34 15.36	14.82 14.86 14.87 14.87 14.95 14.95 14.95 15.00 14.95	14.81 14.05 14.87 14.87 14.87 14.87 14.87 14.88 14.83 14.82 14.83 14.85 14.95 14.95 14.95 14.95 14.95 14.85	16.36 16.34 16.34 16.34 16.37 16.47 16.40	16.34 16.41 16.40 16.35 16.35 16.30 16.40 16.40 16.33 16.33 16.33 16.33 16.33 16.33 16.33 16.43 16.40 16.32 16.39 19.99 19.99	16.41 16.43 16.32 16.33 16.33 16.33 16.37 16.48 16.43 16.33 16.33 16.33 16.34 16.36 16.37 16.48 16.30 16.37 16.48 16.30 16.37 16.48 16.30
Main		330° 330° 310° 310° 300° 290° 290° 270° 290° 220° 240° 230° 210° 220° 190° 190° 190° 190° 199° 199° 199° 19	17.96 17.96 17.96 17.96 17.96 17.96 17.96 17.96 17.96 17.97 18.00 17.97 18.00 17.98 17.99	14.89 14.90 14.90 14.90 14.90 14.90 14.90 14.90 14.90 14.90 14.90 14.80 14.80 14.81 14.90 14.81 14.90 14.87 14.90 14.97 14.90 14.97	14.97 14.09 15.09 16.09	14.81 14.97 14.94 14.97 14.80 14.80 14.80 14.80 14.80 14.80 14.81 14.80 15.00 15.00 17.94 17.94 17.94 17.93	14.40 14.35 14.45 14.45 14.45 14.47 14.48 14.40 14	14.36 14.45 14.45 14.45 14.35 14.35 14.37 14.47 14.35 14.45 14.45 14.45 14.45 14.45 14.45 14.35 14.45 14.35 14.45 14.35 14.45 14.35 14.35 14.35 14.35 14.35 14.35 14.35 14.35 14.35 14.35 14.35 14.35 14.35 14.35 14.35 14.35 14.45 14.35 14.45 14.35 14.35 14.35 14.45 14.35 14.45 14.35 14.45 14.35 14.45 14.35 14.45 14.35 14.45 14.35 14.45 14.35 14.45 14.35 14.45 14.35 14.45 14.35 14.35 14.45 14.35	14.50 14.40 14.40 14.40 14.40 14.40 14.40 14.41 14.31 14.41 14.31 14.47 14.43 14.47 14.43 15.50 16.50	14.82 14.87 14.87 14.87 14.95	14.81 14.00 14.00 14.00 14.00 14.00 14.81 14.80 14.83 14.82 14.83 14.82 14.83 16.83 16.83 16.83 16.83 16.83 16.83 16.83 16.83 16.83 16.83 16.83	16.36 16.37 16.37 16.37 16.37 16.37 16.47 16.40	16.34 16.45 16.45 16.40 16.40 16.40 16.40 16.40 16.40 16.33 16.33 16.33 16.33 16.33 16.33 16.33 16.30 16	16.41 16.43 16.52 16.53 16.33 16.37 16.43 16.43 16.34 16.34 16.34 16.35 16.35 16.37 16.34 16.34 16.36 16.36 16.37 16.43 16.37 16.43 16.43 16.43 16.44 16.45 16.47 16
Main		330° 330° 310° 310° 310° 310° 310° 280° 280° 280° 240° 250° 240° 220° 220° 210° 200° 190° 190° 190° 190° 190° 190° 190° 1	17.96 17.75	14.89 14.89	14.670 14.670 14.630 14.6.83 14.6.93 14.6.93 14.6.90 14.6.91 1	14.81 14.87	14.40 14.40	14.361 14.431 14.431 14.431 14.430 14.431 14.431 14.431 14.431 14.431 14.431 14.432 14.431 14.432 14.431 14	14.507 14.427 14.437 14.437 14.400 14.38 14.431 14.431 14.431 14.431 14.431 14.431 14.431 14.431 14.431 14.331 14.331 15.361 15.361 15.361 15.361 15.361 15.461 15.47 15.47 15.481 1	14.827 14.806 14.406 14.407 14.407 14.507 14.509 14.509 15.000 14.509 14.509 14.509 14.509 14.509 14.509 14.509 14.509 14.509 14.509 14.509 14.509 14.509 14.509 14.509 15.000 16.0000 16.00000 16.	14.81 14.82 14.82 14.82 14.82 14.82 14.82 14.82 14.82 14.82 14.82 14.82 14.82 14.85	16.361 16.361 16.361 16.502 16.503 16.503 16.407 16.407 16.403 16	16.341 10.441 10.441 10.441 10.451 10.521 10.522 10.5231 10.532 10.537 10.537 10.537 10.537 10.537 10.537 10.537 10.537 10.537 10.537 10.539 10.509 1	16.41 16.43 16.43 16.32 16.39 16.39 16.39 16.39 16.31
Main		330° 330° 330° 330° 330° 330° 330° 250° 250° 250° 250° 250° 250° 250° 25	17.96 17.96	14.89 14.90 14.90 14.90 14.90 14.90 14.90 14.90 14.90 14.90 14.88 14.91 14.81 14.81 14.81 14.81 14.81 14.81 14.81 14.81 14.81 14.81 14.81 14.81 14.81 14.81 14.81 14.81 14.81 14.81 14.81 14.97 14.89 14.91 14.97	14.07 14.07 14.07 14.00	14.81 14.97 14.82 14.82 14.83 14.85	14.401 14.334 14.335 14.435 14.436 14.437 14.439 14.440 14.437 14.439 14.437 14	14.36 14.47 14.47 14.43 14.44	14.50 14.42 14.42 14.43 14.43 14.40 14.39 14.41 14.34 14.41 14.34 14.43 14.43 14.43 14.43 14.43 14.43 15.34 15.35 16.35 17.35 18	14.826 14.826 14.826 14.430 14	14.81 14.00	16.361 16.361 16.361 16.361 16.502 16.503 16.503 16.647 16.403 16	16.34 16.44 16.45 16.35 16.35 16.40 16.40 16.40 16.33 16.33 16.33 16.33 16.33 16.33 16.33 16.33 16.30 16.40 16.30 16	16.41 16.43 16.43 16.43 16.37 16.33 16.33 16.37 16.43 16.43 16.43 16.43 16.43 16.43 16.37 16.37 16.43 16.31 16.31 16.31 16.31 16.31 16.35 16.31 16.31 16.35 16.31 16.35 16.37 16.49 16.30 16.31 16.40 16.30 16.40 16.30 16.40 16.30 16.40 16.30 16.40 16.30 16.40 16.30 16.40 16.30 16.40 16.30 16.40 16
Main	Laptop Tablet	300° 300° 300° 300° 300° 300° 200° 200°	17.963 17.933 17.933 17.735 17.735 17.736 17.736 17.87 18.000 17.87 18.000 17.88 17.	14.88 14.89 14.99 14.89	14.070 14	14.81 14.87 14.87 14.82 14.87 14.88 14.89 14.89 14.89 14.89 14.89 15.00 15.00 15.00 15.00 17.04 14.80 15.00 17.04 17.05	14.403 14.436 14.437 14.438 14.477 14.489 14.477 14.480 14.478 14.480 14.430 14	14.301 14.431 14.441 14.500 14.6000 14.6000 14.6000 14.6000 14.6000 14.6000 14.6000 14.6000 1	14.50 14.50	14.827 14.826 14.827 14.430 14	14.81 (4.87) (4.	16.361 16.361 16.361 16.361 16.502 16.503 16.503 16.647 16.403 16	16.341 10.441 10	16.41 16.43 16.43 16.43 16.53 16.33 16.37 16.33 16.37 16.34 16.34 16.34 16.34 16.34 16.34 16.34 16.34 16.34 16.34 16.34 16.34 16.35 16.34 16.35 16.35 16.35 16.36 16.36 16.37 16.36 16.37 16.36 16.37 16.36 16.37 16.36 16.37 16.36 16.37 16.36 16.37 16.36 16.37 16.36 16.37 16.36 16.37 16.36 16.37 16.36 16.37 16.36 16.37 16.36 16.37 16.36 16.37 16.36 16.37 16.36 16.37 16.36 16.37 16.37 16.37 16.38 16.38 16.40 16.30 16.40
Main		300° 300° 300° 300° 300° 300° 300° 200° 2	17.96 17.96	14.88 14.00	14.97 (14.87)	14.81 (4.81 (4.81 (4.81 (4.81 (4.81 (4.81 (4.82	14.40 14.40	14.30 1 14.30 1 14.40	14.50 (1.50	14.82 m 14.87	14.81 14.81 14.81 14.81 14.81 14.81 14.81 14.81 14.80	16, 36, 37 16, 37 16, 37 16, 5	16:34 1 16:34 1 16:40	16.41 (1.64
Main	Laptop Tablet	330° 1 320° 1 320° 1 320° 1 320° 1 320° 1 320° 2 20° 2 20° 2 20° 2 20° 2 20° 2 20° 1 20° 2 20° 1	17.96 17.97 17.97 17.96 17.97 17.96 17.97 17.96	14.88 14.88 14.88 14.88 14.89	14.970 14.970 14.970 14.830 14.831 14.831 14.831 14.831 14.831 14.832 14.832 14.832 14.832 14.832 14.832 14.832 14.832 14.832 14.832 14.832 14.832 14.832 14.832 14.832 14.833 14	14.81 14.82	14.46.21 14.43 14.45 14.45 14.45 14.45 14.45 14.47 14.	14.36 (14.42 (14.43 (14.43 (14.43 (14.44 (14.43 (14	14.62 14.62 14.62 14.62 14.63 14.63 14.63 14.63 14.63 14.63 14.63 14.63 14.63 14.63 14.63 14.63 16.63	14.42 1.21 1.41 1.42 1.42 1.42 1.42 1.42	14.81 (4.81)	16 36 37 16	16.33 (16.32 (16	16.41 (1.62)
Main	Laptop Tablet	300° 300° 300° 300° 300° 300° 300° 300°	17.96 17.96	14.88 (14.88)	14.07 (14	14.81 14.82	14.40 (14.50 (14	14.36 (14.42 (14	14.60 14.62 14.62 14.62 14.63 14.63 14.64 14.64 14.64 14.64 14.64 14.64 14.64 14.65 16.65	14.82 m 14.82	14.81 (4.81)	16.36 (1.50	6.33 (6.44 (6.52 (6.44 (6.53 (6.44 (6.53 (6.44 (6.53 (6.44 (6.53 (6.44 (6.53 (6.44 (6.53 (6.44 (6.53 (6.53 (6.44 (6.53 (16.41 (1.62
Main	Laptop Tablet	300' 300' 300' 300' 300' 300' 300' 300'	17.96 17.96	14.88 14.88 14.88 14.88 14.88 14.89	14.97 (14.85)	14.81 14.82 14.82 14.82 14.82 14.82 14.82 14.82 14.83 14.83 14.83 14.83 14.83 14.83 14.83 14.83 14.83 14.83 14.83 17.83	14.46.21 14.43 14.45 14.	14.36 (4.44) (4.	14.60 (14.62 (14	14.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12	14.81 (4.87	16 36 37 16	6.33 (6.40 (6.50 (16.41 (1.62
Main	Laptop Tablet	300' 300' 300' 300' 300' 300' 300' 300'	17.96 17.96	14.88 14.00 14.01 14.01 14.01 14.00 14.01 14.00	14.07 (14	14.81 14.82	14.40 14.10	14.50 14.50	14.60 14.60 14.27 14.60 14.37 14.60 14.40	14.182 14.	14.11 (1.11	16 36 37 16 16 37 16 37	6.33 (6.32 (64.41 16.21 16.21 16.21 16.21 16.22 16.23 16.2
Main	Laptop Tablet	300'0' 300'0' 300'0' 300'0' 200'1' 20	17.96 17.96	14.88 (14.88)	14.070 14.070 14.070 14.080 14.480 14.480 14.480 14.480 14.480 14.480 14.480 14.480 14.480 14.480 14.480 14.480 14.480 14.480 14.880 14.880 14.880 14.880 14.880 14.880 14.880 14.880 14.880 14.880 14.880 14.880 14.880 18	14.81 14.82 14.82 14.82 14.82 14.83 14.85 14.85 14.85 14.85 14.85 14.85 14.85 14.85 14.85 17.80	14.46 (1.45) (1.	14.50 14.50	14.60 14.42 14.43 14.44 14.44 14.44 14.44 14.44 14.44 14.45	14.182 14.	14.11 (1.11	16 36 37 37 37 37 37 37 37 37 37 37 37 37 37	6.33 (6.42 (6.52 (64.41 16.42 16.23 16.24 16.24 16.25 16.2
Main	Laptop Tablet	300'0' 300'0' 300'0' 300'0' 300'0' 300'0' 20	17.00 17.00	14.88 14.00 14.81 14.00 14.81 14.00 14.81 14.00 14.80 14.00 14.80 14.00	14.07 (14.07 (14.08 (14	14.81 14.82	14.40 (1.40	14.36 (14.43 (14	14.60 14.60 14.27 14.60 14.37 14.60 14.40 14.40 14.40 14.40 14.41	14.82 m 14.82	14.11 (1.11	16 36 37 16	6.33 (6.40 (64.41 16.21 16.22 16.23 16.24 16.24 16.25 16.2
Main	Laptop Tablet Laptop	300' 300' 300' 300' 300' 300' 300' 300'	17.96 17.96	14.88 (14.88)	14.070 14.070 14.080 14.480 14.480 14.480 14.480 14.480 14.480 14.480 14.480 14.480 14.480 14.480 14.480 14.480 14.480 14.480 14.880 14.880 14.880 14.880 14.880 14.880 14.880 14.880 14.880 14.880 14.880 14.880 14.880 18	14.81 14.82 14.82 14.82 14.82 14.83 14.85 14.85 14.85 14.85 14.85 14.85 14.85 14.85 14.85 17.84 14.85 17.84 17.84 17.84 17.84 17.85	14.46 (1.45) (1.	14.150 14.451 14.451 14.451 14.451 14.452 14.452 14.452 14.453 14	14.60 14.42 14.43 14.44 14.44 14.44 14.44 14.44 14.44 14.45	14.182 14.	14.81 (1.68) (1.	16 36 37 16 16 37 16 37	6.33 (6.42 (6.52 (64.41 16.42 16.23 16.24 16.24 16.25 16.2
Main	Laptop Tablet	3007 3007 3007 3007 3007 3007 3007 2007 2	17.00 17.00	14.88 14.00 14.81 14.00 14.81 14.00 14.81 14.00 14.80 14.00 14.80 14.00	14.07 (14.07 (14.08 (14	14.81 14.82	14.40 (1.40	14.36 (14.43 (14	14.60 14.60 14.27 14.60 14.37 14.60 14.40 14.40 14.40 14.40 14.41	14.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12	14.11 (1.11	16 36 37 16	6.33 (6.40 (64.41 16.21 16.22 16.23 16.24 16.24 16.25 16.2
Main	Laptop Tablet Laptop	300' 300' 300' 300' 300' 300' 300' 300'	17.96 17.96	14.88 14.00 14.01 14.01 14.02 14.03	14.07 (1.48) (1.	14.81 14.82	14.46 (1.45) 14.46 (1.45) 14.46 (1.45) 14.46 (1.45) 14.46 (1.45) 14.46 (1.45) 14.47 (1.45) 14.48 (1.45) 14.49	14.15 (1.15) (1.	14.60 14.60 14.27 14.60 14.27 14.60 14.27 14.60	14.82 m 14.82	14.81 (1.68) (1.	16 36 37 16	6.33 (6.40 (64.41 16.21 16.22 16.23 16.24 16.24 16.25 16.2
Main	Laptop Tablet Laptop	3007 3007 3007 3007 3007 3007 3007 2007 2	17.96 17.96	14.88 14.88	14.677 14.678 14.639 14.639 14.639 14.639 14.639 14.639 14.648 14.639 14.648 14.639 14.648 14.639 14.648 14.639 14	14.81 14.82 14.82 14.82 14.82 14.83 14.85 14.85 14.85 14.85 14.85 14.85 14.85 14.85 14.85 14.85 17.84 18.85	14.40 14.40	14.00 (14	14.60 14.62 14.62 14.63 14.63 14.63 14.63 14.63 14.64 14.63 14.63 14.63 14.63 14.63 14.63 14.63 14.63 14.63 16.63	14.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12	14.81 (4.87) (4.	16 36 37 37 37 37 37 37 37 37 37 37 37 37 37	6.33 (6.32 (64.1 1.6
Main	Laptop Tablet Laptop	3007 3007 3007 3007 3007 3007 3007 2007 2	17.96 17.96	14.88 14.00 14.81 14.00 14.81 14.00 14.81 14.00 14.80 14.00 14.80 14.00	14.07 14.07 14.07 14.07 14.07 14.07 14.07 14.08	14.81 14.82	14.40 14.20 14.40 14.30 14.40 14.30 14.40	14.50 (14.61 (14	14.60 14.60 14.72 14.60 14.73 14.60 14.73 14.60	14.182 14.	14.11 1.11 1.11 1.11 1.11 1.11 1.11 1.1	16 36 37 16	6.33 (6.42 (66.41 16.21 16.22 16.25 16.2
Main	Laptop Tablet Laptop	300' 300' 300' 300' 300' 300' 300' 300'	17.96 17.96	14.88 14.00 14.01 14.01 14.02 14.03	14.497 14.497 14.497 14.488 14.483 14	14.81 14.82	14.46 (1.45) (1.	14.36 14.47 14.40	14.60 14.27 14.27 14.27 14.27 14.27 14.27 14.27 14.28	14.82 14.82	14.81 (1.62	16 36 37 16 16 17	6.33 (6.40 (6641 1642 1643 1644 1644 1644 1645
Main	Laptop Tablet Laptop	3007 3007 3007 3007 3007 3007 3007 2007 2	17.96 17.96	14.88 14.80 14.81 14.81 14.80 14.81 14.80	14.07 14.07 14.07 14.07 14.07 14.07 14.07 14.05	14.81 14.82	14.46 (1.45) 14.40 (1.45) 14.40 (1.45) 14.40 (1.45) 14.40 (1.45) 14.40 (1.45) 14.40 (1.45) 14.40 (1.45) 14.40 (1.45) 14.40 (1.45) 14.40 (1.45) 14.40 (1.45) 14.40 (1.45) 14.40 (1.45) 14.41 (1.45) 14.42 (1.45) 14.43 (1.45) 14.44 (1.45) 14.45	14.50 14.60 14.43 14.43 14.43 14.43 14.43 14.44 14.44 14.43 14.44 14.43	14.60 14.60 14.70 14.60 14.70	14.182 14.	14.11 (1.12) (1.	16 36 37 16	6.33 (6.42 (1641 1632 1632 1633 1633 1633 1633 1644 1633 1643 1643
Main	Laptop Tablet Laptop Laptop	300'0' 300'0' 300'0' 300'0' 300'0' 300'0' 300'0' 20	17.90 17.90	14.88 14.00 14.01 14.01 14.02 14.01 14.02 14.03	14.07 14.07 14.07 14.07 14.08	14.81 14.82	14.46 (1.45) 14.46 (1.45) 14.46 (1.45) 14.46 (1.45) 14.46 (1.45) 14.47 (1.45) 14.48 (1.45) 14.49	14.15.0 (14.15.1 (14.	14.60 14.60	14. 827 14. 827 14. 827 14. 827 14. 827 14. 937 14. 937 14. 938 15. 938 16. 938 17. 93	14.81 (1.82 (1.83	16 36 37 16	6.33 (6.40 (1641 1642 1643 1644 1645
Main	Laptop Tablet Laptop	3907 3007 3007 3007 3007 3007 3007 2007 20	17.96 17.96	14.88 14.88	14.070 14.070 14.070 14.080 14.4.03 14.4.03 14.4.03 14.4.03 14.4.03 14.4.03 14.4.03 14.4.03 14.4.03 14.4.03 14.4.03 14.4.03 14.4.03 14.4.03 14.4.03 14.4.03 14.4.03 14.4.03 14.4.03 14.03 14.03 14.03 14.03 14.03 14.03 14.03 14.03 16.03	14.81 14.82 14.82 14.82 14.82 14.82 14.83 14.85 14.85 14.85 14.85 14.85 14.85 14.85 14.85 14.85 14.85 14.85 16.80 17.85	14.40 14.40	14.36 14.46 14.41 14.42 14.43 14.43 14.43 14.44 14.44 14.44 14.44 14.44 14.44 14.43	14.60 14.42 14.43 14.40 14.43 14.44 14.41 14.41 14.41 14.43 14.44 14.43 14.44 14.43 14.44 14.43 14.44 14.43 14.44 14.43 14.44 14.43	14. 827 14. 827 14. 827 14. 827 14. 827 14. 937 14. 937 14. 938 15. 938 16. 938 17. 93	14.81 (1.68) (1.	16 36 37 37 37 37 37 37 37 37 37 37 37 37 37	6.33 6.40 6.40 6.40 6.40 6.40 6.40 6.40 6.40	1641 1642 1643 1644 1645
Main	Laptop Tablet Laptop Laptop	3007 3007 3007 3007 3007 3007 3007 3007	17.96 17.96	14.88 14.00 14.11 14.00 14.11 14.00 14.11 14.00 14.10	14.070 14.070 14.070 14.070 14.080 18.080 18	14.81 14.82	14.40 14.40 14.30 14.40 14.30 14.40 14.30 14.40	14.36 14.43	14.60 14.62 14.62 14.62 14.63 16.63	14.182 14.	14.81 14.82 14.8	16 36 37 16	6.33 (6.42 (64.41 16.42 16.43 16.44 16.45 16.4
Main	Laptop Tablet Laptop Laptop	300'0' 300'0' 300'0' 300'0' 300'0' 300'0' 300'0' 20	17.96 17.96	14.88 14.08 14.00 14.01 14.01 14.02 14.03	14.070 14.070 14.070 14.070 14.080 18.080 18	14.81 14.82	14.40 14.40 14.30 14.40 14.30 14.40 14.30 14.40	14.36 14.43	14.60 14.62 14.62 14.62 14.63 16.63	14.182 14.	14.81 14.82 14.8	16 36 37 16	6.33 (6.42 (64.41 16.42 16.43 16.44 16.45 16.4
Main	Laptop Tablet Laptop Laptop	3007 3007 3007 3007 3007 3007 3007 3007	17.90 17.90	14.88 14.00 14.11 14.00 14.11 14.00 14.11 14.00 14.10	14.497 14.497 14.493 14.483 14.483 14.483 14.483 14.483 14.483 14.483 14.483 14.483 14.483 14.484 14.490 14.483 14.484 14.490 14.483 14.491 14	14.81 14.82	14.40 14.10	14.16.17 14.	14.60 14.62 14.62 14.62 14.63 14.63 14.63 14.64 14.63 14.64 14.64 14.64 14.64 14.64 14.64 14.64 14.64 16.65	14.182 14.	14.81 (1.68) (1.	16 16 17 16	6.33 6.34 6.30 6.30 6.30 6.30 6.30 6.30 6.30 6.30	1641 1642 1643 1644 1645
Main	Laptop Tablet Laptop Laptop	3007 3007 3007 3007 3007 3007 3007 3007	17.96 17.96	14.88 14.08 14.00 14.01 14.01 14.02 14.03	14.477 14.477 14.477 14.488 14.483 14	14.81 (14.82 (14	14.40 14.10	14.16.2 14.4.2 14.4.3 14.3 1	14.60 14.62 14.62 14.62 14.63 14.63 14.63 14.64 14.64 14.64 14.64 14.64 14.64 14.64 14.64 14.65 16.66	14. 827 14. 827 14. 827 14. 827 14. 827 14. 937 14. 937 14. 938 15. 938 16. 938 17. 93	14.81 (1.82 (1.83	16 36 37 16 16 17	6.33 16.30 1	64.41 16.42 16.23 16.24 16.24 16.25 16.2

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.

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Antenna	Operation mode	Lid angle	802.11b	802.11a 5.2G	802.11n(40M) 5.2G	802.11ac(80M) 5.2G	802.11a 5.3G	802.11n(40M) 5.3G	802.11ac(80M) 5.3G	802.11n(40M) 5.6G	802.11ac(80M) 5.6G	802.11ac(160M) 5.6G	802.11n(20M) 5.8G	802.11n(40M) 5.8G	802.11ac(80M) 5.8G
		0° 10°	n/a n/a												
	Lid close	20°	n/a n/a												
		40° 50°	n/a 20.81	n/a 21.47	n/a 19.44	n/a 18.34	n/a 21.44	n/a 18.94	n/a 15.89	n/a 21.40	n/a 20.86	n/a 14.85	n/a 21.48	n/a 19.84	n/a 18.90
	Laptop	45°	20.96	21.43	19.42	18.34	21.39	18.91	15.95	21.38	20.89	14.85	21.45	19.81	18.86
		40° 41°	n/a n/a												
	Lid close	42° 43°	n/a n/a												
		44*	n/a	n/a	n/a 19.44	n/a 18.47	n/a	n/a	n/a	n/a	n/a 20.92	n/a	n/a	n/a 19.82	n/a
		45° 46°	20.85 21.00	21.38 21.37	19.35	18.49	21.50 21.49	19.00 18.93	15.95 15.88	21.47 21.36	20.96	14.97 14.89	21.35 21.35	19.89	18.82 18.93
		47° 48°	20.91 20.88	21.31 21.42	19.32 19.42	18.46 18.42	21.45 21.50	18.96 18.83	15.84 15.88	21.32 21.37	20.93 20.94	14.89 15.00	21.33 21.39	19.86 19.97	18.81 18.94
		49° 50°	21.00 20.91	21.40 21.38	19.38 19.43	18.43 18.37	21.46 21.46	18.91 18.93	15.87 15.97	21.43 21.41	20.94 20.85	14.87 14.97	21.37 21.45	19.84 19.97	18.97 18.84
		60°	20.94 20.86	21.46 21.31	19.35 19.37	18.31 18.48	21.34 21.34	18.85 18.82	15.99 15.84	21.46 21.44	20.97 20.82	14.90 14.87	21.48 21.45	19.82 19.82	18.94 18.90
		80"	20.95	21.42	19.47	18.32	21.41	18.94	15.91	21.31	20.81	14.84	21.39	19.92	18.98
	Laptop	90° 100°	20.84 20.96	21.47 21.44	19.39 19.39	18.38 18.48	21.36 21.35	18.97 18.94	15.96 15.98	21.40 21.48	20.84 20.85	14.88	21.32 21.50	19.89 19.91	18.86 18.95
		100° 110° 120°	20.89 20.88	21.43 21.43	19.39 19.42 19.41	18.33 18.38	21.39 21.47	18.92 18.95	15.98 15.81 15.90	21.48 21.45	20.86 20.98	14.94 14.81 14.82	21.33	19.91 19.83 19.93	18.90 18.96
		130°	20.92	21.45	19.49	18.40	21.36	18.96	15.83 15.83	21.42	20.97	14.92	21.36 21.31	19.86	18.84
		140° 150°	20.85 21.00	21.41 21.45	19.36 19.31	18.49 18.45	21.42 21.42	18.86 18.89	15.82	21.45 21.31	20.86 20.96	14.94 14.87	21.40	19.88 19.96	18.92 18.95
		160° 170°	20.87 20.85	21.49 21.33	19.31 19.34	18.41 18.37	21.35 21.48	18.81 18.89	15.86 15.95	21.49 21.37	20.81 20.91	14.94 14.95	21.48 21.32	19.95 19.86	18.86 19.00
		180*	20.99	21.40 21.45	19.43 19.49	18.35 18.46	21.46 21.42	18.85 18.91	16.00 15.96	21.48 21.41	20.82 20.89	15.00 14.92	21.37 21.48	20.00	18.85 18.99
	Tablet	200*	18.34	14.93	15.00	14.82	14.93	14.89	14.84	13.86	13.99	13.86	13.98	13.90	13.82
		195° 196° 197°	20.87 20.99 20.99	21.49 21.36 21.31	19.42 19.40 19.50	18.39 18.42 18.31	21.40 21.43 21.37	18.85 18.95 18.83	15.85 15.81 15.82	21.45 21.46 21.33	20.94 20.90 21.00	14.87 14.85 14.88	21.49 21.40 21.45	19.84 19.85 19.95	18.92 18.81 18.84
	Laptop	197" 198"	20.99 20.86	21.31 21.33	19.50 19.48	18.31 18.48	21.37 21.36	18.83 18.90	15.82 15.91	21.33 21.47	21.00 20.95	14.88 14.88	21.45 21.38	19.95 19.90	18.84 18.83
		199°	20.99	21.38	19.50	18.48	21.38	18.83	15.84	21.47	20.86	14.95	21.50	19.97	18.81
		200° 201°	18.38 18.39	14.86 14.87	14.84 14.95 15.00	14.92 14.97 14.86	14.81 14.89 14.92	14.92 14.90	14.85 14.93 14.93	13.85 13.92 13.99	13.92 13.89	13.91 13.92	13.89 13.97	13.96 13.96	13.96 13.84 13.90
		202° 203°	18.36 18.50	14.95 14.88	15.00 14.85 14.89	14.87	14.92 14.94	14.91 14.89	14.93 14.98 14.86	13.81	13.86 13.94	13.82 13.84	13.93 13.86	13.88 13.83	13.82
		204"	18.46	14.82	14.89 14.96	14.99	14.94 14.84 14.96	14.89 14.81 14.87	14.86 14.86	13.88	13.82	13.83	13.86	13.88	13.92
		205° 215°	18.44 18.41 18.35	14.94	14.96 14.81	14.93 14.84	14.95	14.91 14.96	14.86 14.94 14.97	13.98 13.95	13.92 13.88	13.95 13.91	13.90 13.99 13.83	13.84	13.87 13.88
		225° 235°	18.40	14.91 14.91	14.95 14.82	14.81 14.81	14.86 14.99	14.86	14 99	13.93 14.00	13.89 14.00	13.98 13.90	13.94	14.00 13.99	13.84 13.98
	Tablet	245° 255°	18.34 18.35	14.92 14.91	14.89 14.85	14.95 14.87	14.81 14.97	14.97 14.91	14.90 14.99	13.94 13.88	13.82 13.95	13.89 13.94	13.99 13.84	13.82 13.92	13.95 13.92
	Tablet	265° 275°	18.37 18.44	14.96 14.99	14.81	14.92 14.81	14.84 14.99	14.91 14.91	14.81 14.95	13.89 13.86	13.91 13.91	13.85 13.87	13.93	13.93 13.91	13.91 13.89
		285*	18.32 18.38	14.85 14.85	14.89	15.00 14.86	14.90 14.95	14.84	14.92	13.81 13.88	13.97	13.95 13.89	13.84	13.84	13.88 13.82
		295° 305° 315°	18.38 18.49 18.34	14.93 14.94	14.95 14.81	14.94 14.96	14.98 14.83	14.98 14.81 14.84	14.93 14.91 14.86	13.94 13.90	13.96 13.88	13.92 13.98	13.84 13.95 13.87	13.93 13.98 13.84	13.82 13.91 13.88
		315° 325°	18.34 18.38	14.94 14.98	14.81 14.82	14.96 14.86	14.83 14.96	14.84 14.90	14.86 14.97	13.90 13.82	13.88	13.98 13.89	13.87	13.84 13.96	13.88 13.89
		335*	18.35	14.89	14.86	14.91	14.89 14.87 14.89	15.00	14.82	13.90	13.84	13.83	13.89	13.93	13.86
		345° 355°	18.32 18.43	15.00 14.91	14.94 14.88	15.00 14.93	14.89	15.00 14.90	14.83 14.95	13.86 13.89	13.86 13.81	13.86 13.84	13.95 13.95	13.96 13.90	13.96 13.97
		360° 350°	18.43 18.48	14.91 14.98	14.86 14.83	14.90 14.81	14.99 14.81	14.83 14.94	14.89 14.84	13.97 13.98	13.85 13.82	13.97 13.99	13.97 13.94	13.87 13.97	13.86 13.89
Aux		340° 330°	18.37 18.46	14.95 14.81	14.98	14.91 14.92	14.85 14.93	14.95 14.90	15.00 14.83	13.92 13.93	13.89 13.88	13.90 13.83	13.95 13.98	13.98 13.95	13.94 13.92
		320° 310°	18.46 18.31	14.85 14.83	14.82 14.82	14.81 14.95	14.95 14.87	14.89 14.84	14.82 14.89	13.83 13.98	13.96 13.83	13.95 13.96	13.81	13.92 13.82	13.94 14.00
		300° 290°	18.32 18.44	14.96 14.90	14.98 14.89	14.94 14.88	14.93 14.85	14.82 14.84	14.95 14.88	13.89	13.86 13.86	13.92 13.82	13.89 13.90	13.84	13.84 14.00
	Tablet	280"	18.44	14.98	14.89	14.87	14.90	14.99	14.83	13.88 13.92	13.86	13.96	13.96	13.99 13.88	13.86
	Tablet	270° 260°	18.35 18.48	14.98 14.81	14.81 14.93	14.93 14.88	14.88 14.94	14.97 14.91	14.81 14.96	13.91 14.00	13.83 13.86	13.98 13.91	13.96	13.87 13.84	13.94 13.93
		250° 240°	18.32 18.32	14.95 14.85	14.92 14.96	14.81 14.93	14.97 14.94	14.85 14.90	14.87 14.90	13.91 13.97	13.83 13.81	13.91 13.96	14.00 13.93	14.00 13.89	13.99 13.95
		230° 220°	18.46 18.37	14.85 14.88	14.84 14.82	14.82	15.00 14.98	14.94 14.92	14.94	13.89 13.93	13.96 13.97	13.91 13.91	14.00 13.88	13.97 13.81	13.91 13.98
		210"	18.48	15.00	14.85	14.88	14.89	14.90	14.86	13.85	13.87	13.87	13.89	13.94	13.81
		200° 190°	18.37 20.81	14.87 21.44	14.82 19.45	14.95 18.40	14.94 21.35	14.88 18.92	14.98 15.99	13.99 21.44	13.97 20.86	13.86 14.82	14.00 21.46	13.96 20.00	13.96 18.82
	Laptop	195°	20.88	21.44 14.96	19.36 15.00	18 39	21 48	18.82	15.96	21.48 14.00	20.93	14.88	21.41	19.97 13.86	18.82
	HUM	200° 199°	21.00 20.94	21.48	19.50	14.94 18.34	15.00 21.32 21.42	14.97 18.96	14.94 15.84	21.50 21.34	20.94 20.84	13.87 14.95 14.87	21.39	19.99	13.86 18.96 18.99
		198" 197"	20.84	21.45 21.33	19.42 19.35	18.39 18.39	21.34	18.81 18.88	15.97 15.90	21.41	20.99	14.96	21.32 21.34	19.81 20.00	18.91
		196" 195"	20.98 20.96	21.39 21.46	19.47 19.42	18.47 18.47	21.43 21.31	18.89 18.84	15.94 15.93	21.38 21.36	20.98 20.96	14.81 14.89	21.38	19.95 19.88	18.87 18.96
		195° 194°	20.96 20.95 20.87	21.46 21.40 21.42	19.42 19.38 19.50	18.47 18.42 18.36	21.31 21.32 21.44	18.84 18.90 18.93	15.93 15.83 15.87	21.36 21.35 21.35	20.95	14.89 14.86 14.81	21.42 21.32 21.39	19.88 19.85 19.92	18.96 18.87
		193° 192°	20.93	21.35	19.34	18.40	21.35	18.87	15.97	21.47	20.81	14.91	21.32	19.86	18.83 18.95
		191" 190"	20.88 20.83	21.40 21.34	19.36 19.38	18.49 18.50	21.40 21.36	18.98 18.83	15.84 15.95	21.34 21.46	20.93 20.86	14.85 14.86	21.50 21.35	19.92 19.99	18.81 18.92
		180° 170°	20.83 20.99	21.39 21.42	19.37 19.50	18.38 18.35	21.47	18.93 18.84	15.96 15.84	21.37 21.47	20.83 20.96	14.83 14.98	21.44	19.91 19.90	18.91 18.93
	Laptop	160"	20.82	21.50	19.38	18 37	21.40 21.39	18.84	15.83	21 37	20.88	14.90	21.33 21.38	19.94	19.00
		150° 140°	20.81 20.86	21.42 21.32	19.36 19.44	18.34 18.49	21.41 21.46	18.93 18.89	15.93 15.97	21.37 21.46	20.86 20.98	14.97 14.88	21.32 21.46	19.98 19.92	18.91 18.91
		130° 120°	20.93 20.82	21.31 21.39	19.33 19.35	18.34 18.42	21.36 21.39	18.99 18.84	15.95 15.95	21.38 21.46	20.86 20.81	14.86 14.93	21.44 21.42	19.87 19.98	18.88 18.97
		110*	20.92 20.95	21.42	19.32 19.48	18.42 18.38	21.46 21.31	18.94	15.81 15.83	21.48 21.45	20.98	14.95	21.48	19.97 19.89	18.84
		100°		21.44 21.34		18.33		18.91 18.98	15.91	21.35	20.81 20.82	14.86 14.83	21.34 21.47		18.92 18.95
		80° 70°	20.86 20.84	21.42 21.36	19.40 19.33	18.47 18.46	21.48 21.43	18.97 18.95	15.87 15.91	21.42 21.38	21.00 21.00	14.97 14.93	21.44 21.49	19.95 19.85	18.89 18.99
		60*	20.98	21.32	19.39	18.47	21.50	18.93	15.87	21.32	20.95	14.93	21.47	19.93	18.96
	Lid close	50° 40°	20.86 n/a	21.33 n/a	19.47 n/a	18.34 n/a	21.31 n/a	18.93 n/a	15.85 n/a	21.42 n/a	20.88 n/a	14.94 n/a	21.46 n/a	20.00 n/a	19.00 n/a
	Laptop	45° 44°	20.92 n/a	21.47 n/a	19.43 n/a	18.39 n/a	21.39 n/a	18.88 n/a	15.97 n/a	21.45 n/a	20.86 n/a	14.98 n/a	21.37 n/a	19.82 n/a	18.81 n/a
		43*	n/a	n/a n/a	n/a	n/a	n/a	n/a	n/a						
		42" 41"	n/a n/a	n/a	n/a n/a	n/a n/a	n/a n/a	n/a	n/a n/a						
		40° 39°	n/a n/a												
		38"	n/a	n/a	n/a n/a	n/a	n/a	n/a n/a	n/a	n/a n/a	n/a	n/a	n/a	nia nia	n/a
	Lid close	37° 36°	n/a n/a	n/a n/a	n/a	n/a n/a	n/a n/a	n/a	n/a n/a	n/a	n/a n/a	n/a n/a	n/a n/a	n/a	n/a n/a
		35° 25°	n/a n/a												
		15° 5°	n/a n/a												
		4*	n/a	n/a n/a	n/a n/a	n/a n/a	n/a	n/a	n/a n/a	n/a	n/a	n/a n/a	n/a n/a	nia	n/a n/a
		2°	n/a n/a	n/a	n/a	n/a	n/a	n/a n/a	n/a	n/a n/a	n/a n/a	n/a	n/a	n/a n/a	n/a
1		1° 0°	n/a n/a												

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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.

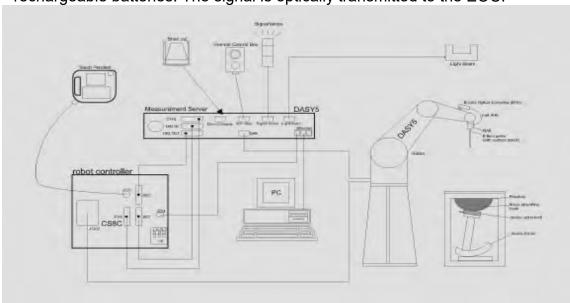


Fig. a The block diagram of SAR system

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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.
- Tissue simulating liquid mixed according to the given recipes.
- Validation dipole kits allowing to validate the proper functioning of the system.

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1.8 System Components

EX3DV4 E-Field Probe

	014 1 1000
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 2450/5200/5300/5600/5800 MHz Additional CF for other liquids and frequencies upon request
Frequency	10 MHz to > 6 GHz
Directivity	± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)
Dynamic	10 μW/g to > 100 mW/g
Range	Linearity: ± 0.2 dB (noise: typically < 1 μW/g)
Dimensions	Tip diameter: 2.5 mm
Application	High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields). Only probe which enables compliance testing for frequencies up to 6 GHz with precision of better 30%.

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PHANTOM

IIIANION		
Model	ELI	
Construction	body-mounted wireless device to 6 GHz. ELI is fully co standard and all known tissue optimized regarding its perfor our standard phantom tables. I liquid. Reference markings or the complete setup, including	compliance testing of handheld and is in the frequency range of 30 MHz in the frequency range of the frequency freque
Shell	2 ± 0.2 mm	The same of the sa
Thickness		
Filling Volume	Approx. 30 liters	
Dimensions	Major axis: 600 mm	IN SHARREST TRESCRIPTION OF THE
	Minor axis: 400 mm	

DEVICE HOLDER

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

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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 2450/5200/5300/5600/5800 MHz. The tests were conducted on the same days as the measurement of the DUT. The obtained results from the system accuracy verification are displayed in the table 1 (SAR values are normalized to 1W forward power delivered to the dipole). During the tests, the liquid depth above the ear reference points was \geq 15 cm \pm 5 mm (frequency \leq 3 GHz) or \geq 10 cm \pm 5 mm (frequency \geq 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.

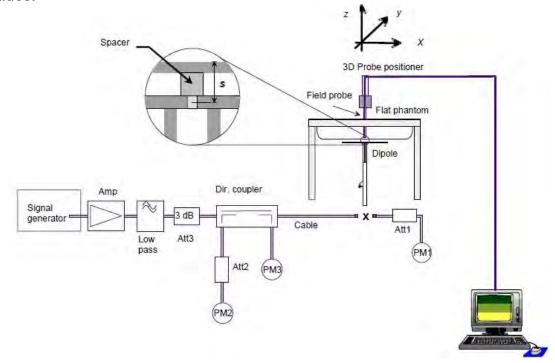


Fig. b The block diagram of system verification

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Validation Kit	S/N		uency Hz)	1W Target SAR-1g (mW/g)	pin=250mW Measured SAR-1g (mW/g)	Measured SAR-1g normalized to 1W (mW/g)	Deviation (%)	Measured Date
D2450V2	727	2450	Head	52.6	13.60	54.4	3.42%	Apr. 01, 2021
Validation Kit	S/N		uency Hz)	1W Target SAR-1g (mW/g)	Pin=100mW Measured SAR-1g (mW/g)	Measured SAR-1g normalized to 1W (mW/g)	Deviation (%)	Measured Date
		5200	Head	80.1	8.03	80.3	0.25%	Apr. 02, 2021
D5GHzV2	D5GHzV2 1023 5300		Head	82.8	8.33	83.3	83.3 0.60%	
DOGHZVZ	1023	5600 Head		83.1	8.63	86.3	3.85%	Apr. 04, 2021
		5800	Head	81.4	7.97	79.7	-2.09%	Apr. 06, 2021

Table 1. Results of system validation

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1.10 Tissue Simulant Fluid for the Frequency Band

The dielectric properties for this Head-simulant fluid were measured by using the SPEAG Dielectric Assessment Kit (DAKS-3.5)

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

The depth of the tissue simulant in the flat section of the phantom was \geq 15 cm \pm 5 mm (Frequency \leq 3G) or \geq 10 cm \pm 5 mm (Frequency >3G) during all tests. (Fig. 2)

Tissue Type	Measurement Date	Measured Frequency (MHz)	Target Dielectric Constant, Er	Target Conductivity, σ (S/m)	Measured Dielectric Constant, Er	Measured Conductivity, σ (S/m)	% dev εr	% dev σ
		2412	39.268	1.766	39.122	1.754	-0.37%	-0.69%
		2437	39.223	1.788	39.051	1.777	-0.44%	-0.64%
	Apr, 01. 2021	2450	39.200	1.800	39.024	1.788	-0.45%	-0.67%
		2462	39.185	1.813	39.020	1.801	-0.42%	-0.67%
		2480	39.162	1.827	38.990	1.814	-0.44%	-0.69%
		5190	35.997	4.645	35.572	4.575	-1.18%	-1.50%
		5200	35.986	4.655	35.557	4.584	-1.19%	-1.53%
	Apr, 02. 2021	5210	35.974	4.665	35.548	4.594	-1.18%	-1.53%
		5220	35.963	4.676	35.543	4.607	-1.17%	-1.47%
		5230	35.951	4.686	35.531	4.615	-1.17%	-1.51%
	Apr, 03. 2021	5270	35.906	4.727	35.475	4.655	-1.20%	-1.52%
		5280	35.894	4.737	35.456	4.666	-1.22%	-1.50%
		5290	35.883	4.747	35.452	4.675	-1.20%	-1.52%
		5300	35.871	4.758	35.439	4.687	-1.21%	-1.48%
Head		5510	35.631	4.973	35.189	4.896	-1.24%	-1.54%
пеац		5530	35.609	4.993	35.185	4.920	-1.19%	-1.47%
		5570	35.563	5.034	35.129	4.959	-1.22%	-1.49%
		5590	35.540	5.055	35.115	4.976	-1.20%	-1.56%
	Apr, 04. 2021	5600	35.529	5.065	35.113	4.988	-1.17%	-1.52%
		5610	35.517	5.075	35.073	4.997	-1.25%	-1.54%
		5670	35.449	5.137	35.037	5.061	-1.16%	-1.47%
		5690	35.426	5.157	34.997	5.079	-1.21%	-1.52%
		5710	35.403	5.178	34.960	5.097	-1.25%	-1.56%
		5745	35.363	5.214	34.956	5.133	-1.15%	-1.55%
		5755	35.351	5.224	34.931	5.146	-1.19%	-1.49%
		5775	35.329	5.244	34.907	5.167	-1.19%	-1.48%
	Apr, 06. 2021	5785	35.317	5.255	34.893	5.178	-1.20%	-1.46%
		5795	35.306	5.265	34.876	5.186	-1.22%	-1.50%
		5800	35.300	5.270	34.869	5.189	-1.22%	-1.54%
		5825	35.271	5.296	34.859	5.217	-1.17%	-1.48%

Table 2. Dielectric Parameters of Tissue Simulant Fluid

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The composition of the tissue simulating liquid:

		•						
-			T-4-1					
Frequency (MHz)	Mode	DGMBE	Water	Salt	Preventol D-7	Cellulose	Sugar	Total amount
2450M	Head	550ml	450ml	_	_	_	_	1.0L(Kg)

Body Simulating Liquids for 5 GHz. Manufactured by SPEAG:

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

Table 3. Recipes for Tissue Simulating Liquid

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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.

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

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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 ($_{\it E}$) and the temperature gradient (δ^{7} / δ^{t}) in the liquid.

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

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

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

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• The temperature gradient is not directly measurable but must be evaluated from temperature measurements at different time steps. Special precaution is necessary to avoid measurement errors caused by temperature gradients due to energy equalizing effects or convection currents in the liquid. Such effects cannot be completely avoided, as the measured field itself destroys the thermal equilibrium in the liquid. With a careful setup these errors can be kept small.

- The measured volume around the temperature probe is not well defined. It is difficult to calculate the energy transfer from a surrounding gradient temperature field into the probe. These effects must be considered, since temperature probes are calibrated in liquid with homogeneous temperatures. There is no traceable standard for temperature rise measurements.
- The calibration depends on the assessment of the specific density, the heat capacity and the conductivity of the medium. While the specific density and heat capacity can be measured accurately with standardized procedures (~ 2% for c; much better for ρ), there is no standard for the measurement of the conductivity. Depending on the method and liquid, the error can well exceed ±5%.
- Temperature rise measurements are not very sensitive and therefore are often performed at a higher power level than the E-field measurements. The nonlinearities in the system (e.g., power measurements, different components, etc.) must be considered.

Considering these problems, the possible accuracy of the calibration of E-field probes with temperature gradient measurements in a carefully designed setup is about $\pm 10\%$ (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 ± 7 -9% (RSS) when not, which is in good agreement with the estimates given in [2].

1.12.2 Calibration with Analytical Fields

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

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

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

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1.13 Test Standards and Limits

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

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

2.1 Decision rules

Reported measurement data comply with IEEE 1528-2013:

Determining compliance shall be based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.2 Summary of Results

Tablet mode

WLAN Aux Antenna

Antenna	Mode	Position	Distance (mm)	СН	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Duty cycle scaling	Power scaling	Averaged S (W	/kg)	Plot
						` '		-	_	Measured	Reported	
		Back side	0	1	2412	18.50	18.47	1.005	100.69%	0.213	0.216	-
		Top side	0	1	2412	18.50	18.47	1.005	100.69%	0.055	0.056	-
		Bottom side	0	1	2412	18.50	18.47	1.005	100.69%	0.038	0.038	-
	WLAN 802.11b	Left side	0	1	2412	18.50	18.47	1.005	100.69%	0.948	0.959	
		Left side	0	6	2437	18.50	18.36	1.005	103.28%	0.889	0.923	-
		Left side	0	11	2462	18.50	18.44	1.005	101.39%	1.010	1.029	57
		Left side*	0	11	2462	18.50	18.44	1.005	101.39%	0.994	1.013	-
		Back side	0	78	2480	11.50	10.28	1.297	132.43%	0.022	0.038	
	Bluetooth	Top side	0	78	2480	11.50	10.28	1.297	132.43%	0.008	0.014	
	(GFSK)	Bottom side	0	78	2480	11.50	10.28	1.297	132.43%	0.005	0.008	-
		Left side	0	78	2480	11.50	10.28	1.297	132.43%	0.114	0.196	58
		Back side	0	38	5190	15.00	14.86	1.012	103.28%	0.177	0.185	-
		Top side	0	38	5190	15.00	14.86	1.012	103.28%	0.022	0.023	-
		Bottom side	0	38	5190	15.00	14.86	1.012	103.28%	0.013	0.014	-
	WLAN 802.11n(40M) 5.2G	Left side	0	38	5190	15.00	14.86	1.012	103.28%	1.030	1.077	59
		Left side*	0	38	5190	15.00	14.86	1.012	103.28%	1.020	1.066	-
		Left side	0	46	5230	15.00	14.72	1.012	106.66%	0.912	0.985	-
		Back side	0	42	5210	15.00	14.94	1.012	101.39%	0.184	0.189	-
		Top side	0	42	5210	15.00	14.94	1.012	101.39%	0.026	0.027	-
	WLAN 802.11ac(80M) 5.2G	Bottom side	0	42	5210	15.00	14.94	1.012	101.39%	0.017	0.017	
	112 11 002: 1 1d0(0011) 0:20	Left side	0	42	5210	15.00	14.94	1.012	101.39%	0.996	1.022	60
		Left side*	0	42	5210	15.00	14.94	1.012	101.39%	0.989	1.015	-
		Back side	0	54	5270	15.00	14.90	1.012	102.33%	0.113	0.117	
		Top side	0	54	5270	15.00	14.90	1.012	102.33%	0.020	0.021	
		Bottom side	0	54	5270	15.00	14.90	1.012	102.33%	0.020	0.021	
	WLAN 802.11n(40M) 5.3G	Left side	0	54	5270	15.00	14.90	1.012	102.33%	0.953	0.011	61
												01
		Left side*	0	54	5270	15.00	14.90	1.012	102.33%	0.941	0.975	-
Aux		Left side	0	62	5310	15.00	14.73	1.012	106.41%	0.884	0.952	
		Back side	0	58	5290	15.00	14.95	1.012	101.16%	0.102	0.104	-
		Top side	0	58	5290	15.00	14.95	1.012	101.16%	0.024	0.025	-
	WLAN 802.11ac(80M) 5.3G	Bottom side	0	58	5290	15.00	14.95	1.012	101.16%	0.008	0.008	-
		Left side	0	58	5290	15.00	14.95	1.012	101.16%	0.988	1.012	62
		Left side*	0	58	5290	15.00	14.95	1.012	101.16%	0.966	0.989	-
		Back side	0	114	5570	14.00	13.91	1.012	102.09%	0.074	0.076	
		Top side	0	114	5570	14.00	13.91	1.012	102.09%	0.023	0.024	
	WLAN 802.11ac(160M) 5.6G	Bottom side	0	114	5570	14.00	13.91	1.012	102.09%	0.017	0.018	
		Left side	0	114	5570	14.00	13.91	1.012	102.09%	0.902	0.932	63
		Left side*	0	114	5570	14.00	13.91	1.012	102.09%	0.893	0.923	-
		Back side	0	106	5530	14.00	13.89	1.012	102.57%	0.086	0.089	-
		Top side	0	106	5530	14.00	13.89	1.012	102.57%	0.022	0.023	-
	MII ANI 000 44(00M F 00	Bottom side	0	106	5530	14.00	13.89	1.012	102.57%	0.011	0.011	-
	WLAN 802.11ac(80M) 5.6G	Left side	0	106	5530	14.00	13.89	1.012	102.57%	0.963	1.000	64
		Left side*	0	106	5530	14.00	13.89	1.012	102.57%	0.950	0.986	-
		Left side	0	138	5690	14.00	13.80	1.012	104.71%	0.886	0.939	-
		Back side	0	159	5795	14.00	13.75	1.012	105.93%	0.158	0.169	-
		Top side	0	159	5795	14.00	13.75	1.012	105.93%	0.018	0.019	-
		Bottom side	0	159	5795	14.00	13.75	1.012	105.93%	0.016	0.017	
	WLAN 802.11n(40M) 5.8G	Left side	0	151	5755	14.00	13.71	1.012	106.91%	0.929	1.005	-
		Left side	0	159	5795	14.00	13.75	1.012	105.93%	1.010	1.083	65
		Left side*	0	159	5795	14.00	13.75	1.012	105.93%	0.994	1.066	-
		Back side	0	155	5775	14.00	13.75	1.012	100.93%	0.167	0.171	
					_							
	MII ANI 000 44(00M F 00	Top side	0	155	5775	14.00	13.96	1.012	100.93%	0.020	0.020	
	WLAN 802.11ac(80M) 5.8G	Bottom side	0	155	5775	14.00	13.96	1.012	100.93%	0.018	0.018	-
		Left side	0	155	5775	14.00	13.96	1.012	100.93%	1.010	1.032	66
	İ	Left side*	0	155	5775	14.00	13.96	1.012	100.93%	1.000	1.022	

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

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WLAN Main Antenna

Antenna	Mode	Position	Distance (mm)	СН	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Duty cycle scaling	Power scaling	Averaged S (W	/kg)	Plot page
			` ′		, ,	, ,	. ,			Measured	Reported	
		Back side	0	11	2462	18.00	17.99	1.005	100.23%	0.202	0.203	-
		Top side	0	11	2462	18.00	17.99	1.005	100.23%	0.043	0.043	-
		Bottom side	0	11	2462	18.00	17.99	1.005	100.23%	0.112	0.113	-
	WLAN 802.11b	Right side	0	1	2412	18.00	17.90	1.005	102.33%	1.100	1.131	-
		Right side	0	6	2437	18.00	17.97	1.005	100.69%	1.020	1.032	-
		Right side	0	11	2462	18.00	17.99	1.005	100.23%	1.170	1.179	67
		Right side*	0	11	2462	18.00	17.99	1.005	100.23%	1.150	1.158	-
		Back side	0	38	5190	15.00	14.84	1.012	103.75%	0.355	0.373	-
		Top side	0	38	5190	15.00	14.84	1.012	103.75%	0.040	0.042	
	WLAN 802.11n(40M) 5.2G	Bottom side	0	38	5190	15.00	14.84	1.012	103.75%	0.047	0.049	-
	WEAN 802.111(40W) 5.2G	Right side	0	38	5190	15.00	14.84	1.012	103.75%	1.130	1.187	68
		Right side*	0	38	5190	15.00	14.84	1.012	103.75%	1.100	1.155	-
		Right side	0	46	5230	15.00	14.81	1.012	104.47%	1.030	1.089	-
		Back side	0	42	5210	15.00	14.96	1.012	100.93%	0.320	0.327	-
		Top side	0	42	5210	15.00	14.96	1.012	100.93%	0.035	0.036	-
	WLAN 802.11ac(80M) 5.2G	Bottom side	0	42	5210	15.00	14.96	1.012	100.93%	0.045	0.046	-
		Right side	0	42	5210	15.00	14.96	1.012	100.93%	0.996	1.017	69
		Right side*	0	42	5210	15.00	14.96	1.012	100.93%	0.985	1.006	-
		Back side	0	54	5270	14.50	14.34	1.012	103.75%	0.298	0.313	-
		Top side	0	54	5270	14.50	14.34	1.012	103.75%	0.042	0.044	-
		Bottom side	0	54	5270	14.50	14.34	1.012	103.75%	0.035	0.037	-
	WLAN 802.11n(40M) 5.3G	Right side	0	54	5270	14.50	14.34	1.012	103.75%	0.890	0.935	70
		Right side*	0	54	5270	14.50	14.34	1.012	103.75%	0.879	0.923	
		Right side	0	62	5310	14.50	14.22	1.012	106.66%	0.834	0.900	-
		Back side	0	58	5290	14.50	14.43	1.012	101.62%	0.318	0.327	-
		Top side	0	58	5290	14.50	14.43	1.012	101.62%	0.047	0.048	
Main	WLAN 802.11ac(80M) 5.3G	Bottom side	0	58	5290	14.50	14.43	1.012	101.62%	0.038	0.039	
		Right side	0	58	5290	14.50	14.43	1.012	101.62%	0.942	0.969	71
		Right side*	0	58	5290	14.50	14.43	1.012	101.62%	0.923	0.949	
		Back side	0	114	5570	15.00	14.99	1.012	100.23%	0.403	0.409	-
		Top side	0	114	5570	15.00	14.99	1.012	100.23%	0.047	0.048	
	WLAN 802.11ac(160M) 5.6G	Bottom side	0	114	5570	15.00	14.99	1.012	100.23%	0.040	0.041	ı i
	WENT 002. 1180 (100W) 5.00	Right side	0	114	5570	15.00	14.99	1.012	100.23%	0.955	0.969	72
		Right side*	0	114	5570	15.00	14.99	1.012	100.23%	0.934	0.948	12
		Back side	0	106	5530	15.00	14.87	1.012	103.04%	0.630	0.657	-
		Top side	0	106	5530	15.00	14.87	1.012	103.04%	0.058	0.060	-
		Bottom side	0	106	5530	15.00	14.87	1.012	103.04%	0.038	0.050	ı –
	WLAN 802.11ac(80M) 5.6G	Right side	0	106	5530	15.00	14.87	1.012	103.04%	1.070	1.116	73
		Right side*	0	106	5530	15.00	14.87	1.012	103.04%	1.060	1.105	- 13
			_									<u> </u>
		Right side	0	138 159	5690	15.00 16.50	14.75 16.29	1.012	105.93% 104.95%	0.912	0.978	
		Back side	0		5795 5795		16.29			0.733	0.779	_
		Top side		159	0.00	16.50		1.012	104.95%			-
	WLAN 802.11n(40M) 5.8G	Bottom side	0	159	5795	16.50	16.29	1.012	104.95%	0.044	0.047	<u> </u>
		Right side	0	151	5755	16.50	16.21	1.012	106.91%	1.040	1.125	-
		Right side	0	159	5795	16.50	16.29	1.012	104.95%	1.120	1.190	74
		Right side*	0	159	5795	16.50	16.29	1.012	104.95%	1.110	1.179	_
		Back side	0	155	5775	16.50	16.49	1.012	100.23%	0.840	0.852	-
		Back side*	0	155	5775	16.50	16.49	1.012	100.23%	0.821	0.833	-
	WLAN 802.11ac(80M) 5.8G	Top side	0	155	5775	16.50	16.49	1.012	100.23%	0.039	0.040	-
		Bottom side	0	155	5775	16.50	16.49	1.012	100.23%	0.047	0.048	-
		Right side	0	155	5775	16.50	16.49	1.012	100.23%	0.848	0.860	75
		Right side*	0	155	5775	16.50	16.49	1.012	100.23%	0.826	0.838	_

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

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Notebook mode

WLAN Aux Antenna

Antenna	Mode	Position	Distance (mm)	СН	Freq.	Max. Rated Avg. Power + Max.	Measured Avg. Power	Duty cycle scaling	Power scaling	Averaged SAR over 1g (W/kg)		Plot page
			()		(/	Tolerance (dBm)	(dBm)			Measured	Reported	page
		Bottom side	0	1	2412	19.50	19.47	1.005	100.69%	0.052	0.053	-
	WLAN 802.11b	Bottom side	0	6	2437	21.00	20.96	1.005	100.93%	0.074	0.075	76
		Bottom side	0	11	2462	20.00	19.94	1.005	101.39%	0.063	0.064	-
	Bluetooth (GFSK)	Bottom side	0	78	2480	11.50	10.28	1.297	132.43%	0.000	0.000	77
	WLAN 802.11a 5.2G	Bottom side	0	40	5200	21.50	21.48	1.024	100.46%	0.236	0.243	78
Aux	WLAN 802.11a 5.3G	Bottom side	0	56	5280	21.50	21.49	1.024	100.23%	0.208	0.213	79
Aux		Bottom side	0	102	5510	17.00	16.98	1.012	100.46%	0.181	0.184	-
	WLAN 802.11n(40M) 5.6G	Bottom side	0	118	5590	21.50	21.42	1.012	101.86%	0.362	0.373	80
	WEAN 602.1111(40W) 5.0G	Bottom side	0	134	5670	19.00	18.97	1.012	100.69%	0.222	0.226	-
		Bottom side	0	142	5710	19.00	18.92	1.012	101.86%	0.208	0.214	-
	WLAN 802.11ac(80M) 5.6G	Bottom side	0	138	5690	20.50	20.26	1.012	105.68%	0.194	0.208	81
	WLAN 802.11n(20M) 5.8G	Bottom side	0	157	5785	21.50	21.48	1.012	100.46%	0.132	0.134	82

WLAN Main Antenna

Antenna	Mode	Position	Distance (mm)	СН	Freq.	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power	Duty cycle scaling	Power scaling	Averaged SAR over 1g (W/kg)		Plot page
			()		(/		(dBm)			Measured	Reported	F-9-
		Bottom side	0	1	2412	20.00	19.91	1.005	102.09%	0.030	0.031	-
	WLAN 802.11b	Bottom side	0	6	2437	21.00	20.97	1.005	100.69%	0.037	0.037	83
		Bottom side	0	11	2462	19.50	19.48	1.005	100.46%	0.021	0.021	-
	WLAN 802.11a 5.2G	Bottom side	0	40	5200	21.50	21.46	1.024	100.93%	0.202	0.209	84
Main	WLAN 802.11a 5.3G	Bottom side	0	56	5280	21.50	21.45	1.024	101.16%	0.315	0.326	85
	WLAN 802.11ac(80M) 5.6G	Bottom side	0	138	5690	19.50	19.48	1.012	100.46%	0.144	0.146	86
		Bottom side	0	149	5745	21.00	20.94	1.024	101.39%	0.381	0.395	-
	WLAN 802.11a 5.8G	Bottom side	0	157	5785	21.00	20.99	1.024	100.23%	0.390	0.400	87
		Bottom side	0	165	5825	21.00	20.98	1.024	100.46%	0.369	0.379	-

Note:

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

Reported SAR = measured SAR * (scaling)

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

2.3 Reporting statements of conformity

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

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3. Simultaneous Transmission Analysis

Simultaneous Transmission Scenarios:

Simultaneous Transmit Configurations	Body
2.4GHz WLAN MIMO	Yes
5GHz WLAN MIMO	Yes
BT + 2.4GHz WLAN Main	Yes
BT + 5GHz WLAN Main	Yes
BT + 5GHz WLAN MIMO	Yes

Note:

- 1. Bluetooth and WLAN Aux share the same antenna path, and BT can transmit with WLAN Main simultaneously.
- 2. For 2.4/5GHz WLAN Main and Aux antennas, the maximum output power of each antenna during simultaneous transmission is the same with (or less than) that used in standalone transmission, and we used the sum of 1-g SAR provision in KDB447498D01 to exclude the simultaneous transmitted SAR measurement.

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3.1 Estimated SAR calculation

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

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

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

3.2 SPLSR evaluation and analysis

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

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

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

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

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

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The simultaneous Transmission conditions (Tablet mode)

		THE SITE	ultarieous man	SITIISSIUIT CUTIUI	lions (Tabletin	oue)				
	1	2	3	4	5	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
Exposure position 1g(W/kg)	WLAN 2.4GHz Main	WLAN 2.4GHz Aux	WLAN 5GHz Main	WLAN 5GHz Aux	BT (Aux)	1+2 Sum	3+4 Sum	1+5 Sum	3+5 Sum	3+4+5 Sum
Back side	0.203	0.216	0.852	0.189	0.038	0.419	1.041	0.241	0.254	1.079
Top side	0.043	0.056	0.060	0.027	0.014	0.099	0.087	0.057	0.070	0.101
Bottom side	0.113	0.038	0.050	0.018	0.008	0.151	0.068	0.121	0.046	0.076
Right side	1.179	-	1.190	-	1	1.179	1.190	1.179	-	1.190
Left side	-	1.029	-	1.083	0.196	1.029	1.083	0.196	1.225	1.279

The simultaneous Transmission conditions (Notebook mode)

_	1	2	3	4	5	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
Exposure position 1g(W/kg)	WLAN 2.4GHz Main	WLAN 2.4GHz Aux	WLAN 5GHz Main	WLAN 5GHz Aux	BT (Aux)	1+2 Sum	3+4 Sum	1+5 Sum	3+5 Sum	3+4+5 Sum
Bottom side	0.037	0.075	0.400	0.373	0.000	0.112	0.773	0.037	0.075	0.773

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4. Instruments List

Manufacturer	Device	Туре	Serial number	Date of last calibration	Date of next calibration	
SPEAG	Dosimetric E-Field Probe	EX3DV4	7466	Jan.29,2021	Jan.28,2022	
SPEAG	System Validation	D2450V2	727	Apr.22,2020	Apr.21,2021	
	Dipole	D5GHzV2	1023	Jan.26.2021	Jan.25.2022	
SPEAG	Data acquisition Electronics	DAE4	1260	Dec.16,2020	Dec.15,2021	
SPEAG	Software	DASY 52 52.10.4	N/A	Calibration not required	Calibration not required	
SPEAG	Dielectric Assessment Kit	DAKS-3.5	1011	May.26,2020	May.25,2021	
Agilent	Dual-directional coupler	772D	MY46151242	Aug.17,2020	Aug.16,2021	
		778D	MY48220468	Aug.17,2020	Aug.16,2021	
Agilent	Signal Generator	N5181A	MY50141235	May.04,2020	May.03,2021	
Agilent	Power Meter	E4417A	MY52200004	Oct.18,2020	Oct.17,2021	
Agilent	Power Sensor	F020411	MY52240003	Oct.18,2020	Oct.17,2021	
		E9301H	MY52200003	Oct.18,2020	Oct.17,2021	
TECPEL	Digital thermometer	DTM-303A	TP190085	Dec.22,2020	Dec.14,2021	

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5. Measurements

Date: 2021/4/1

Report No.: ES/2021/20009

WLAN 802.11b_Body_Left side_CH 11_Aux_0mm

Communication System: WLAN; Frequency: 2462 MHz; Duty Cycle: 1:1.005

Medium parameters used: f = 2462 MHz; $\sigma = 1.801 \text{ S/m}$; $\varepsilon_r = 39.02$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY5 Configuration:

Probe: EX3DV4 - SN7466; ConvF(8.08, 8.08, 8.08); Calibrated: 2021/01/29

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1260; Calibrated: 2020/12/16

Phantom: ELI

DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (71x101x1): Interpolated grid: dx=12 mm, dy=12 mm

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

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

Reference Value = 5.394 V/m; Power Drift = 0.13 dB

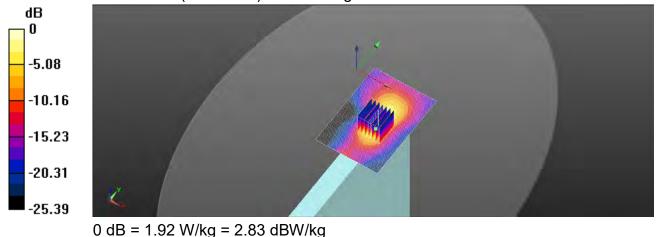
Peak SAR (extrapolated) = 3.31 W/kg

SAR(1 g) = 1.01 W/kg; SAR(10 g) = 0.341 W/kg

Smallest distance from peaks to all points 3 dB below = 5.5 mm

Ratio of SAR at M2 to SAR at M1 = 44.1%

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



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Date: 2021/4/1

Report No.: ES/2021/20009

Bluetooth(GFSK) Body Left side CH 78 Aux 0mm

Communication System: Bluetooth; Frequency: 2480 MHz; Duty Cycle: 1:1.297 Medium parameters used: f = 2480 MHz; $\sigma = 1.814 \text{ S/m}$; $\varepsilon_r = 38.99$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY5 Configuration:

Probe: EX3DV4 - SN7466; ConvF(8.08, 8.08, 8.08); Calibrated: 2021/01/29

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1260; Calibrated: 2020/12/16

Phantom: ELI

DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (71x81x1): Interpolated grid: dx=12 mm, dy=12 mm

Maximum value of SAR (interpolated) = 0.191 W/kg

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

Reference Value = 1.651 V/m; Power Drift = 0.15 dB

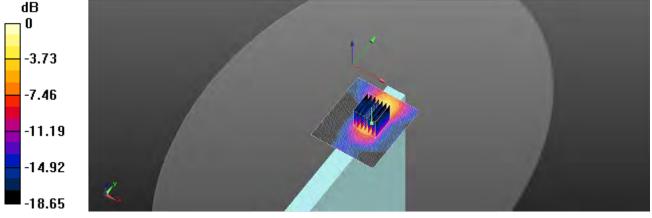
Peak SAR (extrapolated) = 0.380 W/kg

SAR(1 g) = 0.114 W/kg; SAR(10 g) = 0.038 W/kg

Smallest distance from peaks to all points 3 dB below = 5.4 mm

Ratio of SAR at M2 to SAR at M1 = 43.2%

Maximum value of SAR (measured) = 0.217 W/kg



0 dB = 0.217 W/kg = -6.63 dBW/kg

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Date: 2021/4/2

Report No.: ES/2021/20009

WLAN 802.11n(40M) 5.2G Body Left side CH 38 Aux 0mm

Communication System: WLAN; Frequency: 5190 MHz; Duty Cycle: 1:1.012

Medium parameters used: f = 5190 MHz; σ = 4.575 S/m; ε_r = 35.572; ρ = 1000 kg/m³

Phantom section: Flat Section

Ambient temperature: 22.2°C; Liquid temperature: 22.6°C

DASY5 Configuration:

- Probe: EX3DV4 SN7466; ConvF(5.6, 5.6, 5.6); Calibrated: 2021/01/29
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1260; Calibrated: 2020/12/16
- Phantom: ELI
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (81x121x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 2.21 W/kg

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

Reference Value = 5.299 V/m; Power Drift = 0.14 dB

Peak SAR (extrapolated) = 4.06 W/kg

SAR(1 g) = 1.03 W/kg; SAR(10 g) = 0.346 W/kg

Smallest distance from peaks to all points 3 dB below = 7.2 mm

Ratio of SAR at M2 to SAR at M1 = 53.6%

Maximum value of SAR (measured) = 2.04 W/kg

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

Reference Value = 5.299 V/m; Power Drift = 0.14 dB

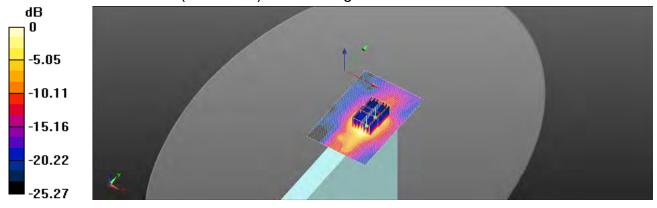
Peak SAR (extrapolated) = 3.74 W/kg

SAR(1 g) = 0.910 W/kg; SAR(10 g) = 0.288 W/kg

Smallest distance from peaks to all points 3 dB below = 6.8 mm

Ratio of SAR at M2 to SAR at M1 = 55.1%

Maximum value of SAR (measured) = 1.84 W/kg



0 dB = 1.84 W/kg = 2.64 dBW/kg

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Date: 2021/4/2

Report No.: ES/2021/20009

WLAN 802.11ac(80M) 5.2G Body Left side CH 42 Aux 0mm

Communication System: WLAN; Frequency: 5210 MHz; Duty Cycle: 1:1.012

Medium parameters used: f = 5210 MHz; σ = 4.594 S/m; ε_r = 35.548; ρ = 1000 kg/m³

Phantom section: Flat Section

Ambient temperature: 22.2°C; Liquid temperature: 22.6°C

DASY5 Configuration:

Probe: EX3DV4 - SN7466; ConvF(5.6, 5.6, 5.6); Calibrated: 2021/01/29

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1260; Calibrated: 2020/12/16

Phantom: ELI

DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (81x121x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 1.99 W/kg

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

Reference Value = 4.072 V/m; Power Drift = 0.11 dB

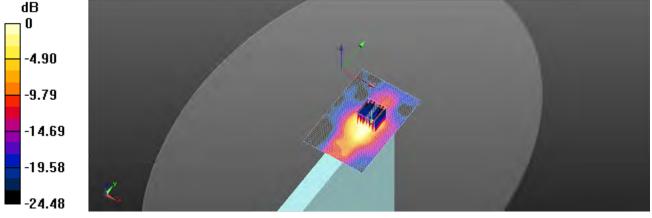
Peak SAR (extrapolated) = 3.99 W/kg

SAR(1 q) = 0.996 W/kq; SAR(10 q) = 0.324 W/kq

Smallest distance from peaks to all points 3 dB below = 6.6 mm

Ratio of SAR at M2 to SAR at M1 = 54.9%

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



0 dB = 1.94 W/kg = 2.88 dBW/kg

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Date: 2021/4/3

Report No.: ES/2021/20009

WLAN 802.11n(40M) 5.3G Body Left side CH 54 Aux 0mm

Communication System: WLAN; Frequency: 5270 MHz; Duty Cycle: 1:1.012

Medium parameters used: f = 5270 MHz; $\sigma = 4.655 \text{ S/m}$; $\varepsilon_r = 35.475$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Ambient temperature: 22.2°C; Liquid temperature: 22.8°C

DASY5 Configuration:

Probe: EX3DV4 - SN7466; ConvF(5.5, 5.5, 5.5); Calibrated: 2021/01/29

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1260; Calibrated: 2020/12/16

Phantom: ELI

DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (81x121x1): Interpolated grid: dx=10 mm, dy=10 mm

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

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

Reference Value = 3.987 V/m; Power Drift = 0.13 dB

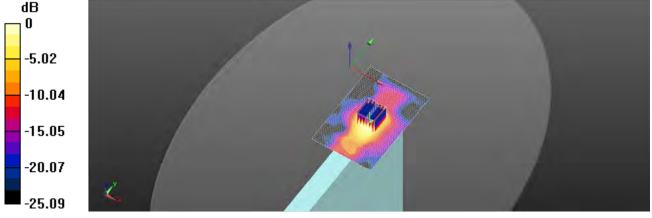
Peak SAR (extrapolated) = 4.15 W/kg

SAR(1 g) = 0.953 W/kg; SAR(10 g) = 0.351 W/kg

Smallest distance from peaks to all points 3 dB below = 5.6 mm

Ratio of SAR at M2 to SAR at M1 = 50.9%

Maximum value of SAR (measured) = 1.86 W/kg



0 dB = 1.86 W/kg = 2.70 dBW/kg

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Date: 2021/4/3

Report No.: ES/2021/20009

WLAN 802.11ac(80M) 5.3G Body Left side CH 58 Aux 0mm

Communication System: WLAN; Frequency: 5290 MHz; Duty Cycle: 1:1.012

Medium parameters used: f = 5290 MHz; σ = 4.675 S/m; ε_r = 35.452; ρ = 1000 kg/m³

Phantom section: Flat Section

Ambient temperature: 22.2°C; Liquid temperature: 22.8°C

DASY5 Configuration:

Probe: EX3DV4 - SN7466; ConvF(5.5, 5.5, 5.5); Calibrated: 2021/01/29

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1260; Calibrated: 2020/12/16

Phantom: ELI

DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (81x121x1): Interpolated grid: dx=10 mm, dy=10 mm

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

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

Reference Value = 3.953 V/m; Power Drift = 0.18 dB

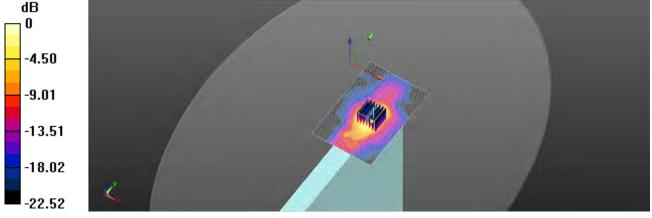
Peak SAR (extrapolated) = 4.22 W/kg

SAR(1 g) = 0.988 W/kg; SAR(10 g) = 0.338 W/kg

Smallest distance from peaks to all points 3 dB below = 6.4 mm

Ratio of SAR at M2 to SAR at M1 = 53.1%

Maximum value of SAR (measured) = 1.97 W/kg



0 dB = 1.97 W/kg = 2.94 dBW/kg

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Date: 2021/4/4

Report No.: ES/2021/20009

WLAN 802.11ac(160M) 5.6G Body Left side CH 114 Aux 0mm

Communication System: WLAN; Frequency: 5570 MHz; Duty Cycle: 1:1.012

Medium parameters used: f = 5570 MHz; $\sigma = 4.959 \text{ S/m}$; $\varepsilon_r = 35.129$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Ambient temperature: 22.3°C; Liquid temperature: 22.8°C

DASY5 Configuration:

Probe: EX3DV4 - SN7466; ConvF(5.04, 5.04, 5.04); Calibrated: 2021/01/29

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1260; Calibrated: 2020/12/16

Phantom: ELI

DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (81x121x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 1.60 W/kg

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

Reference Value = 3.507 V/m; Power Drift = 0.12 dB

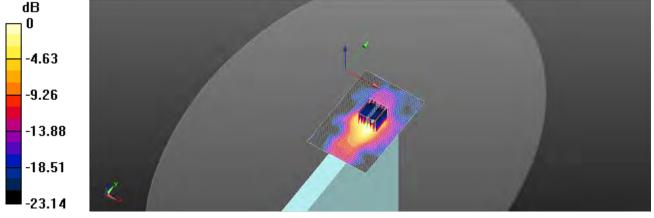
Peak SAR (extrapolated) = 4.12 W/kg

SAR(1 q) = 0.902 W/kq; SAR(10 q) = 0.303 W/kq

Smallest distance from peaks to all points 3 dB below = 6.1 mm

Ratio of SAR at M2 to SAR at M1 = 59.6%

Maximum value of SAR (measured) = 1.85 W/kg



0 dB = 1.85 W/kg = 2.68 dBW/kg

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Date: 2021/4/4

Report No.: ES/2021/20009

WLAN 802.11ac(80M) 5.6G Body Left side CH 106 Aux 0mm

Communication System: WLAN; Frequency: 5530 MHz; Duty Cycle: 1:1.012

Medium parameters used: f = 5530 MHz; σ = 4.92 S/m; ε_r = 35.185; ρ = 1000 kg/m³

Phantom section: Flat Section

Ambient temperature: 22.3°C; Liquid temperature: 22.8°C

DASY5 Configuration:

Probe: EX3DV4 - SN7466; ConvF(5.04, 5.04, 5.04); Calibrated: 2021/01/29

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1260; Calibrated: 2020/12/16

Phantom: ELI

DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (81x121x1): Interpolated grid: dx=10 mm, dy=10 mm

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

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

Reference Value = 3.759 V/m; Power Drift = 0.17 dB

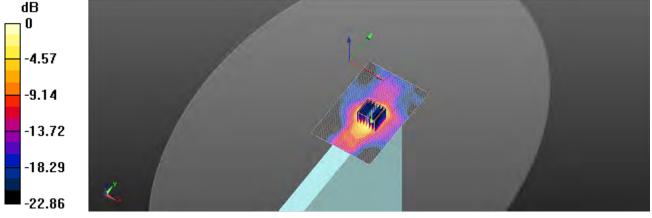
Peak SAR (extrapolated) = 4.37 W/kg

SAR(1 g) = 0.963 W/kg; SAR(10 g) = 0.316 W/kg

Smallest distance from peaks to all points 3 dB below = 5.8 mm

Ratio of SAR at M2 to SAR at M1 = 59.4%

Maximum value of SAR (measured) = 1.88 W/kg



0 dB = 1.88 W/kg = 2.75 dBW/kg

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Date: 2021/4/6

Report No.: ES/2021/20009

WLAN 802.11n(40M) 5.8G Body Left side CH 159 Aux 0mm

Communication System: WLAN; Frequency: 5795 MHz; Duty Cycle: 1:1.012

Medium parameters used: f = 5795 MHz; $\sigma = 5.186 \text{ S/m}$; $\varepsilon_r = 34.876$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Ambient temperature: 22.3°C; Liquid temperature: 22.9°C

DASY5 Configuration:

Probe: EX3DV4 - SN7466; ConvF(5.02, 5.02, 5.02); Calibrated: 2021/01/29

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1260; Calibrated: 2020/12/16

Phantom: ELI

DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (81x121x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 1.89 W/kg

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

Reference Value = 2.390 V/m; Power Drift = 0.06 dB

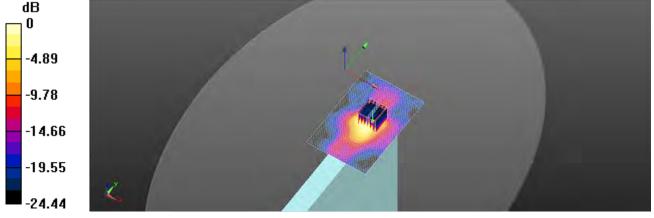
Peak SAR (extrapolated) = 4.51 W/kg

SAR(1 g) = 1.01 W/kg; SAR(10 g) = 0.319 W/kg

Smallest distance from peaks to all points 3 dB below = 6.4 mm

Ratio of SAR at M2 to SAR at M1 = 61.7%

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



0 dB = 2.13 W/kg = 3.28 dBW/kg

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Report No.: ES/2021/20009

WLAN 802.11ac(80M) 5.8G Body Left side CH 155 Aux 0mm

Communication System: WLAN; Frequency: 5775 MHz; Duty Cycle: 1:1.012

Medium parameters used: f = 5775 MHz; $\sigma = 5.167$ S/m; $\varepsilon_r = 34.907$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient temperature: 22.3°C; Liquid temperature: 22.9°C

DASY5 Configuration:

Probe: EX3DV4 - SN7466; ConvF(5.02, 5.02, 5.02); Calibrated: 2021/01/29

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1260; Calibrated: 2020/12/16

Phantom: ELI

DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (81x121x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 1.97 W/kg

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

Reference Value = 2.715 V/m; Power Drift = 0.18 dB

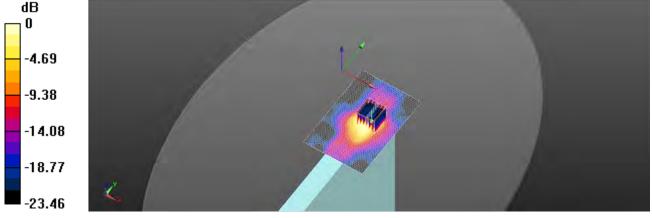
Peak SAR (extrapolated) = 4.56 W/kg

SAR(1 g) = 1.01 W/kg; SAR(10 g) = 0.319 W/kg

Smallest distance from peaks to all points 3 dB below = 6.4 mm

Ratio of SAR at M2 to SAR at M1 = 61.5%

Maximum value of SAR (measured) = 2.04 W/kg



0 dB = 2.04 W/kg = 3.09 dBW/kg

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Date: 2021/4/1

Report No.: ES/2021/20009

WLAN 802.11b Body Right side CH 11 Main 0mm

Communication System: WLAN; Frequency: 2462 MHz; Duty Cycle: 1:1.005

Medium parameters used: f = 2462 MHz; $\sigma = 1.801 \text{ S/m}$; $\varepsilon_r = 39.02$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY5 Configuration:

Probe: EX3DV4 - SN7466; ConvF(8.08, 8.08, 8.08); Calibrated: 2021/01/29

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1260; Calibrated: 2020/12/16

Phantom: ELI

DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (71x101x1): Interpolated grid: dx=12 mm, dy=12 mm

Maximum value of SAR (interpolated) = 1.81 W/kg

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

Reference Value = 5.750 V/m; Power Drift = 0.18 dB

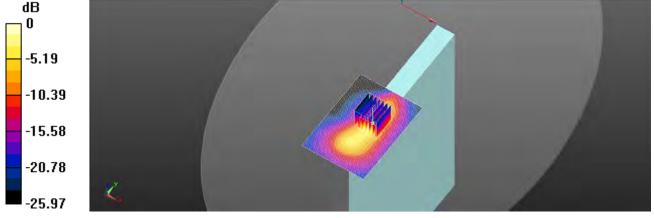
Peak SAR (extrapolated) = 3.58 W/kg

SAR(1 g) = 1.17 W/kg; SAR(10 g) = 0.401 W/kg

Smallest distance from peaks to all points 3 dB below = 5.5 mm

Ratio of SAR at M2 to SAR at M1 = 47.7%

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



0 dB = 2.13 W/kg = 3.28 dBW/kg

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Date: 2021/4/2

Report No.: ES/2021/20009

WLAN 802.11n(40M) 5.2G Body Right side CH 38 Main 0mm

Communication System: WLAN; Frequency: 5190 MHz; Duty Cycle: 1:1.012

Medium parameters used: f = 5190 MHz; σ = 4.575 S/m; ε_r = 35.572; ρ = 1000 kg/m³

Phantom section: Flat Section

Ambient temperature: 22.2°C; Liquid temperature: 22.6°C

DASY5 Configuration:

- Probe: EX3DV4 SN7466; ConvF(5.6, 5.6, 5.6); Calibrated: 2021/01/29
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1260; Calibrated: 2020/12/16
- Phantom: ELI
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (81x121x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 2.01 W/kg

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

Reference Value = 5.602 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 4.74 W/kg

SAR(1 g) = 1.13 W/kg; SAR(10 g) = 0.338 W/kg

Smallest distance from peaks to all points 3 dB below = 5.8 mm

Ratio of SAR at M2 to SAR at M1 = 55.8%

Maximum value of SAR (measured) = 2.33 W/kg

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

Reference Value = 5.602 V/m; Power Drift = -0.01 dB

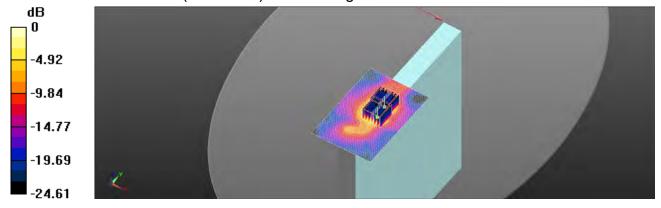
Peak SAR (extrapolated) = 3.95 W/kg

SAR(1 g) = 0.901 W/kg; SAR(10 g) = 0.276 W/kg

Smallest distance from peaks to all points 3 dB below = 6.2 mm

Ratio of SAR at M2 to SAR at M1 = 54.7%

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



0 dB = 1.80 W/kg = 2.56 dBW/kg

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Date: 2021/4/2

Report No.: ES/2021/20009

WLAN 802.11ac(80M) 5.2G Body Right side CH 42 Main 0mm

Communication System: WLAN; Frequency: 5210 MHz; Duty Cycle: 1:1.012

Medium parameters used: f = 5210 MHz; σ = 4.594 S/m; ε_r = 35.548; ρ = 1000 kg/m³

Phantom section: Flat Section

Ambient temperature: 22.2°C; Liquid temperature: 22.6°C

DASY5 Configuration:

- Probe: EX3DV4 SN7466; ConvF(5.6, 5.6, 5.6); Calibrated: 2021/01/29
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1260; Calibrated: 2020/12/16
- Phantom: ELI
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (81x121x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 1.86 W/kg

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

Reference Value = 5.078 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 4.04 W/kg

SAR(1 g) = 0.996 W/kg; SAR(10 g) = 0.306 W/kg

Smallest distance from peaks to all points 3 dB below = 6.8 mm

Ratio of SAR at M2 to SAR at M1 = 56.2%

Maximum value of SAR (measured) = 2.00 W/kg

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

Reference Value = 5.078 V/m; Power Drift = 0.13 dB

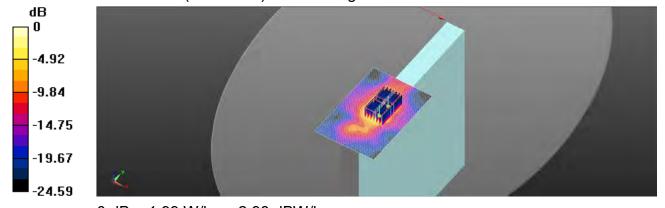
Peak SAR (extrapolated) = 4.10 W/kg

SAR(1 g) = 0.926 W/kg; SAR(10 g) = 0.290 W/kg

Smallest distance from peaks to all points 3 dB below = 6.1 mm

Ratio of SAR at M2 to SAR at M1 = 53.5%

Maximum value of SAR (measured) = 1.99 W/kg



0 dB = 1.99 W/kg = 2.98 dBW/kg

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Date: 2021/4/3

Report No.: ES/2021/20009

WLAN 802.11n(40M) 5.3G Body Right side CH 54 Main 0mm

Communication System: WLAN; Frequency: 5270 MHz; Duty Cycle: 1:1.012

Medium parameters used: f = 5270 MHz; $\sigma = 4.655 \text{ S/m}$; $\varepsilon_r = 35.475$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Ambient temperature: 22.2°C; Liquid temperature: 22.8°C

DASY5 Configuration:

- Probe: EX3DV4 SN7466; ConvF(5.5, 5.5, 5.5); Calibrated: 2021/01/29
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1260; Calibrated: 2020/12/16
- Phantom: ELI
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (81x121x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 1.86 W/kg

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

Reference Value = 5.971 V/m; Power Drift = 0.12 dB

Peak SAR (extrapolated) = 3.71 W/kg

SAR(1 g) = 0.890 W/kg; SAR(10 g) = 0.282 W/kg

Smallest distance from peaks to all points 3 dB below = 6.4 mm

Ratio of SAR at M2 to SAR at M1 = 54.1%

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

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

Reference Value = 5.971 V/m; Power Drift = 0.12 dB

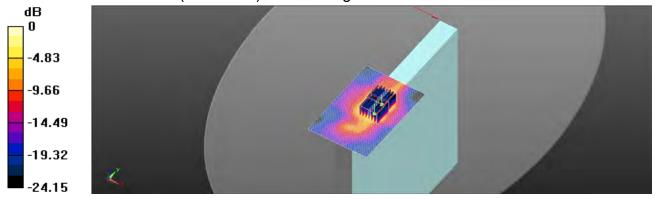
Peak SAR (extrapolated) = 3.38 W/kg

SAR(1 g) = 0.762 W/kg; SAR(10 g) = 0.244 W/kg

Smallest distance from peaks to all points 3 dB below = 6.1 mm

Ratio of SAR at M2 to SAR at M1 = 52.3%

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



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

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Date: 2021/4/3

Report No.: ES/2021/20009

WLAN 802.11ac(80M) 5.3G Body Right side CH 58 Main 0mm

Communication System: WLAN; Frequency: 5290 MHz; Duty Cycle: 1:1.012

Medium parameters used: f = 5290 MHz; σ = 4.675 S/m; ε_r = 35.452; ρ = 1000 kg/m³

Phantom section: Flat Section

Ambient temperature: 22.2°C; Liquid temperature: 22.8°C

DASY5 Configuration:

- Probe: EX3DV4 SN7466; ConvF(5.5, 5.5, 5.5); Calibrated: 2021/01/29
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1260; Calibrated: 2020/12/16
- Phantom: ELI
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (81x121x1): Interpolated grid: dx=10 mm, dy=10 mm

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

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

Reference Value = 5.858 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 3.89 W/kg

SAR(1 g) = 0.942 W/kg; SAR(10 g) = 0.295 W/kg

Smallest distance from peaks to all points 3 dB below = 6.4 mm

Ratio of SAR at M2 to SAR at M1 = 55%

Maximum value of SAR (measured) = 1.89 W/kg

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

Reference Value = 5.858 V/m; Power Drift = 0.03 dB

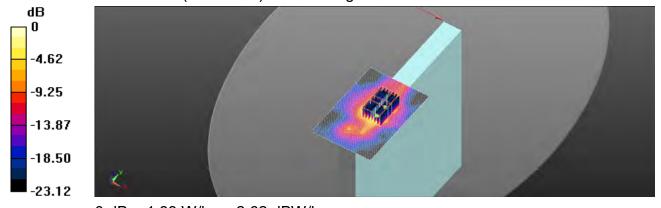
Peak SAR (extrapolated) = 3.89 W/kg

SAR(1 g) = 0.859 W/kg; SAR(10 g) = 0.273 W/kg

Smallest distance from peaks to all points 3 dB below = 5.7 mm

Ratio of SAR at M2 to SAR at M1 = 53.7%

Maximum value of SAR (measured) = 1.83 W/kg



0 dB = 1.83 W/kg = 2.62 dBW/kg

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Date: 2021/4/4

Report No.: ES/2021/20009

WLAN 802.11ac(160M) 5.6G Body Right side CH 114 Main 0mm

Communication System: WLAN; Frequency: 5570 MHz; Duty Cycle: 1:1.012

Medium parameters used: f = 5570 MHz; $\sigma = 4.959 \text{ S/m}$; $\varepsilon_r = 35.129$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Ambient temperature: 22.3°C; Liquid temperature: 22.8°C

DASY5 Configuration:

Probe: EX3DV4 - SN7466; ConvF(5.04, 5.04, 5.04); Calibrated: 2021/01/29

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1260; Calibrated: 2020/12/16

Phantom: ELI

DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (81x121x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 1.99 W/kg

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

Reference Value = 5.984 V/m; Power Drift = 0.11 dB

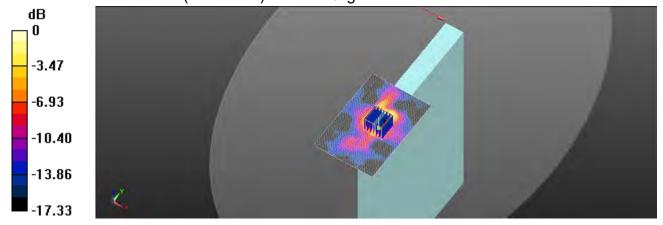
Peak SAR (extrapolated) = 3.94 W/kg

SAR(1 q) = 0.955 W/kq; SAR(10 q) = 0.320 W/kq

Smallest distance from peaks to all points 3 dB below = 6.2 mm

Ratio of SAR at M2 to SAR at M1 = 58.6%

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



0 dB = 1.41 W/kg = 3.19 dBW/kg

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Date: 2021/4/4

Report No.: ES/2021/20009

WLAN 802.11ac(80M) 5.6G Body Right side CH 106 Main 0mm

Communication System: WLAN; Frequency: 5530 MHz; Duty Cycle: 1:1.012

Medium parameters used: f = 5530 MHz; σ = 4.92 S/m; ε_r = 35.185; ρ = 1000 kg/m³

Phantom section: Flat Section

Ambient temperature: 22.3°C; Liquid temperature: 22.8°C

DASY5 Configuration:

- Probe: EX3DV4 SN7466; ConvF(5.04, 5.04, 5.04); Calibrated: 2021/01/29
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1260; Calibrated: 2020/12/16
- Phantom: ELI
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (81x121x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 2.21 W/kg

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

Reference Value = 4.099 V/m; Power Drift = 0.17 dB

Peak SAR (extrapolated) = 5.06 W/kg

SAR(1 g) = 1.06 W/kg; SAR(10 g) = 0.336 W/kg

Smallest distance from peaks to all points 3 dB below = 6.2 mm

Ratio of SAR at M2 to SAR at M1 = 51.4%

Maximum value of SAR (measured) = 2.24 W/kg

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

Reference Value = 4.099 V/m; Power Drift = 0.17 dB

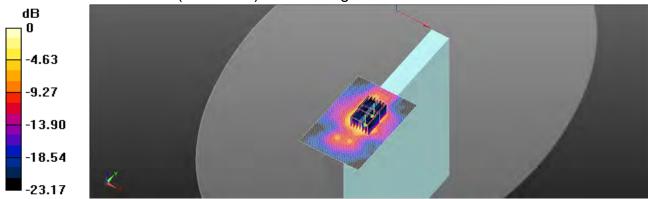
Peak SAR (extrapolated) = 4.76 W/kg

SAR(1 g) = 1.07 W/kg; SAR(10 g) = 0.357 W/kg

Smallest distance from peaks to all points 3 dB below = 6.1 mm

Ratio of SAR at M2 to SAR at M1 = 53.4%

Maximum value of SAR (measured) = 2.23 W/kg



0 dB = 2.23 W/kg = 3.48 dBW/kg

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Date: 2021/4/6

Report No.: ES/2021/20009

WLAN 802.11n(40M) 5.8G Body Right side CH 159 Main 0mm

Communication System: WLAN; Frequency: 5795 MHz; Duty Cycle: 1:1.012

Medium parameters used: f = 5795 MHz; $\sigma = 5.186 \text{ S/m}$; $\varepsilon_r = 34.876$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Ambient temperature: 22.3°C; Liquid temperature: 22.9°C

DASY5 Configuration:

- Probe: EX3DV4 SN7466; ConvF(5.02, 5.02, 5.02); Calibrated: 2021/01/29
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1260; Calibrated: 2020/12/16
- Phantom: ELI
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (81x121x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 2.60 W/kg

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

Reference Value = 2.582 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 6.03 W/kg

SAR(1 g) = 1.06 W/kg; SAR(10 g) = 0.331 W/kg

Smallest distance from peaks to all points 3 dB below = 6.1 mm

Ratio of SAR at M2 to SAR at M1 = 59.3%

Maximum value of SAR (measured) = 2.56 W/kg

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

Reference Value = 2.582 V/m; Power Drift = 0.05 dB

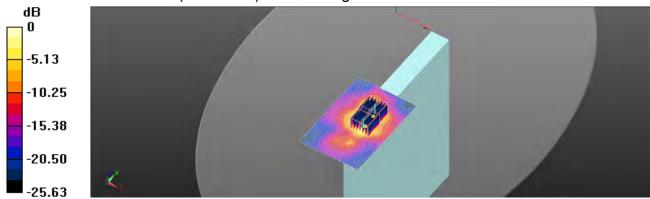
Peak SAR (extrapolated) = 6.28 W/kg

SAR(1 g) = 1.12 W/kg; SAR(10 g) = 0.352 W/kg

Smallest distance from peaks to all points 3 dB below = 5.7 mm

Ratio of SAR at M2 to SAR at M1 = 55.2%

Maximum value of SAR (measured) = 2.65 W/kg



0 dB = 2.65 W/kg = 4.24 dBW/kg

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Date: 2021/4/6

Report No.: ES/2021/20009

WLAN 802.11ac(80M) 5.8G Body Right side CH 155 Main 0mm

Communication System: WLAN; Frequency: 5775 MHz; Duty Cycle: 1:1.012

Medium parameters used: f = 5775 MHz; $\sigma = 5.167$ S/m; $\varepsilon_r = 34.907$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient temperature: 22.3°C; Liquid temperature: 22.9°C

DASY5 Configuration:

- Probe: EX3DV4 SN7466; ConvF(5.02, 5.02, 5.02); Calibrated: 2021/01/29
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1260; Calibrated: 2020/12/16
- Phantom: ELI
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (81x121x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 1.85 W/kg

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

Reference Value = 2.169 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 4.17 W/kg

SAR(1 g) = 0.838 W/kg; SAR(10 g) = 0.242 W/kg

Smallest distance from peaks to all points 3 dB below = 5.8 mm

Ratio of SAR at M2 to SAR at M1 = 55.6%

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

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

Reference Value = 2.169 V/m; Power Drift = 0.01 dB

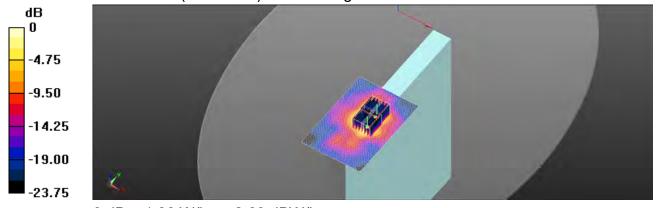
Peak SAR (extrapolated) = 4.15 W/kg

SAR(1 g) = 0.848 W/kg; SAR(10 g) = 0.256 W/kg

Smallest distance from peaks to all points 3 dB below = 5.8 mm

Ratio of SAR at M2 to SAR at M1 = 54.6%

Maximum value of SAR (measured) = 1.86 W/kg



0 dB = 1.86 W/kg = 2.69 dBW/kg

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Date: 2021/4/1

Report No.: ES/2021/20009

WLAN 802.11b Body Bottom side CH 6 Aux 0mm

Communication System: WLAN; Frequency: 2437 MHz; Duty Cycle: 1:1.005

Medium parameters used: f = 2437 MHz; $\sigma = 1.777$ S/m; $\varepsilon_r = 39.051$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY5 Configuration:

Probe: EX3DV4 - SN7466; ConvF(8.08, 8.08, 8.08); Calibrated: 2021/01/29

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1260; Calibrated: 2020/12/16

Phantom: ELI

DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (81x91x1): Interpolated grid: dx=12 mm, dy=12 mm

Maximum value of SAR (interpolated) = 0.110 W/kg

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

Reference Value = 2.284 V/m; Power Drift = 0.13 dB

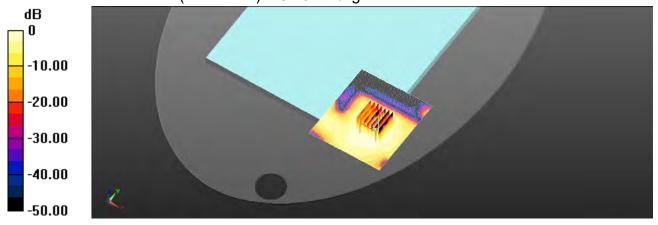
Peak SAR (extrapolated) = 0.144 W/kg

SAR(1 g) = 0.074 W/kg; SAR(10 g) = 0.040 W/kg

Smallest distance from peaks to all points 3 dB below = 16.3 mm

Ratio of SAR at M2 to SAR at M1 = 49.1%

Maximum value of SAR (measured) = 0.107 W/kg



0 dB = 0.107 W/kg = -9.72 dBW/kg

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Date: 2021/4/1

Report No.: ES/2021/20009

Bluetooth(GFSK) Body Bottom side CH 78 Aux 0mm

Communication System: Bluetooth; Frequency: 2480 MHz; Duty Cycle: 1:1.297 Medium parameters used: f = 2480 MHz; $\sigma = 1.814 \text{ S/m}$; $\varepsilon_r = 38.99$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY5 Configuration:

Probe: EX3DV4 - SN7466; ConvF(8.08, 8.08, 8.08); Calibrated: 2021/01/29

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1260; Calibrated: 2020/12/16

Phantom: ELI

DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (81x91x1): Interpolated grid: dx=12 mm, dy=12 mm

Maximum value of SAR (interpolated) = 0.00224 W/kg

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

Reference Value = 1.231 V/m; Power Drift = 0.15 dB

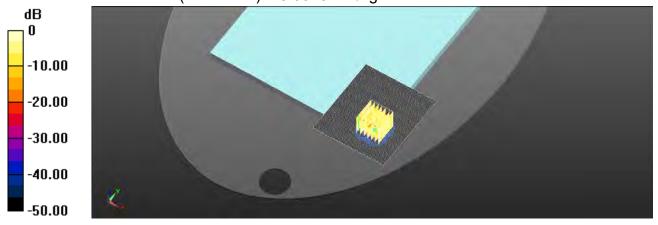
Peak SAR (extrapolated) = 0.00502 W/kg

SAR(1 q) = 0.000064 W/kq; SAR(10 q) = 0.0000119 W/kq

Smallest distance from peaks to all points 3 dB below = 11.1 mm

Ratio of SAR at M2 to SAR at M1 = 51.8%

Maximum value of SAR (measured) = 0.00284 W/kg



0 dB = 0.00284 W/kg = -25.46 dBW/kg

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Date: 2021/4/2

Report No.: ES/2021/20009

WLAN 802.11a 5.2G Body Bottom side CH 40 Aux 0mm

Communication System: WLAN; Frequency: 5200 MHz; Duty Cycle: 1:1.024

Medium parameters used: f = 5200 MHz; $\sigma = 4.584 \text{ S/m}$; $\varepsilon_r = 35.557$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Ambient temperature: 22.2°C; Liquid temperature: 22.6°C

DASY5 Configuration:

Probe: EX3DV4 - SN7466; ConvF(5.6, 5.6, 5.6); Calibrated: 2021/01/29

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1260; Calibrated: 2020/12/16

Phantom: ELI

DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (91x91x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 0.456 W/kg

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

Reference Value = 5.258 V/m; Power Drift = 0.05 dB

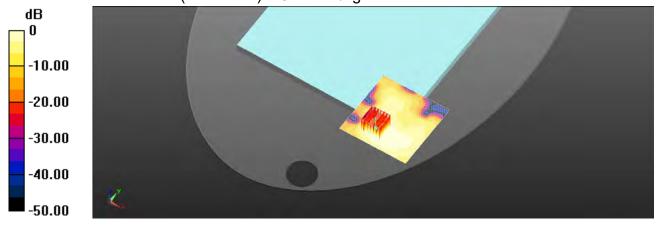
Peak SAR (extrapolated) = 0.759 W/kg

SAR(1 g) = 0.236 W/kg; SAR(10 g) = 0.093 W/kg

Smallest distance from peaks to all points 3 dB below = 12 mm

Ratio of SAR at M2 to SAR at M1 = 56.9%

Maximum value of SAR (measured) = 0.424 W/kg



0 dB = 0.424 W/kg = -3.73 dBW/kg

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Date: 2021/4/3

Report No.: ES/2021/20009

WLAN 802.11a 5.3G Body Bottom side CH 56 Aux 0mm

Communication System: WLAN; Frequency: 5280 MHz; Duty Cycle: 1:1.024

Medium parameters used: f = 5280 MHz; σ = 4.666 S/m; ϵ_r = 35.456; ρ = 1000 kg/m³

Phantom section: Flat Section

Ambient temperature: 22.2°C; Liquid temperature: 22.8°C

DASY5 Configuration:

Probe: EX3DV4 - SN7466; ConvF(5.5, 5.5, 5.5); Calibrated: 2021/01/29

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1260; Calibrated: 2020/12/16

Phantom: ELI

DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (91x91x1): Interpolated grid: dx=10 mm, dy=10 mm

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

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

Reference Value = 5.317 V/m; Power Drift = 0.07 dB

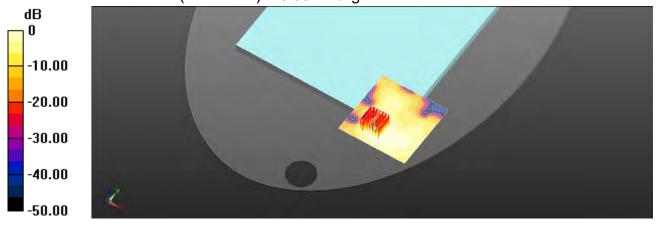
Peak SAR (extrapolated) = 0.714 W/kg

SAR(1 g) = 0.208 W/kg; SAR(10 g) = 0.074 W/kg

Smallest distance from peaks to all points 3 dB below = 11.2 mm

Ratio of SAR at M2 to SAR at M1 = 52.2%

Maximum value of SAR (measured) = 0.392 W/kg



0 dB = 0.392 W/kg = -4.11 dBW/kg

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Date: 2021/4/4

Report No.: ES/2021/20009

WLAN 802.11n(40M) 5.6G Body Bottom side CH 118 Aux 0mm

Communication System: WLAN; Frequency: 5590 MHz; Duty Cycle: 1:1.012

Medium parameters used: f = 5590 MHz; σ = 4.976 S/m; ϵ_r = 35.115; ρ = 1000 kg/m³

Phantom section: Flat Section

Ambient temperature: 22.3°C; Liquid temperature: 22.8°C

DASY5 Configuration:

Probe: EX3DV4 - SN7466; ConvF(5.04, 5.04, 5.04); Calibrated: 2021/01/29

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1260; Calibrated: 2020/12/16

Phantom: ELI

DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (91x91x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 0.698 W/kg

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

Reference Value = 7.462 V/m; Power Drift = 0.12 dB

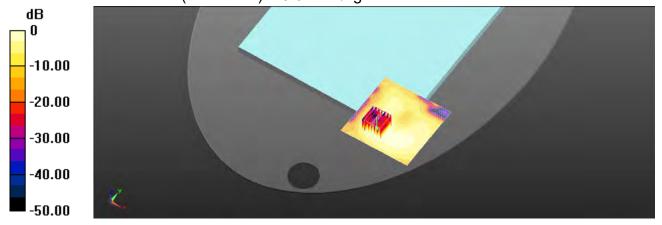
Peak SAR (extrapolated) = 1.31 W/kg

SAR(1 g) = 0.362 W/kg; SAR(10 g) = 0.140 W/kg

Smallest distance from peaks to all points 3 dB below = 12 mm

Ratio of SAR at M2 to SAR at M1 = 53.5%

Maximum value of SAR (measured) = 0.672 W/kg



0 dB = 0.672 W/kg = -1.73 dBW/kg

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Date: 2021/4/4

Report No.: ES/2021/20009

WLAN 802.11ac(80M) 5.6G Body Bottom side CH 138 Aux 0mm

Communication System: WLAN; Frequency: 5690 MHz; Duty Cycle: 1:1.012

Medium parameters used: f = 5690 MHz; σ = 5.079 S/m; ϵ_r = 34.997; ρ = 1000 kg/m³

Phantom section: Flat Section

Ambient temperature: 22.3°C; Liquid temperature: 22.8°C

DASY5 Configuration:

Probe: EX3DV4 - SN7466; ConvF(5.04, 5.04, 5.04); Calibrated: 2021/01/29

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1260; Calibrated: 2020/12/16

Phantom: ELI

DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (91x91x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 0.371 W/kg

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

Reference Value = 4.342 V/m; Power Drift = 0.17 dB

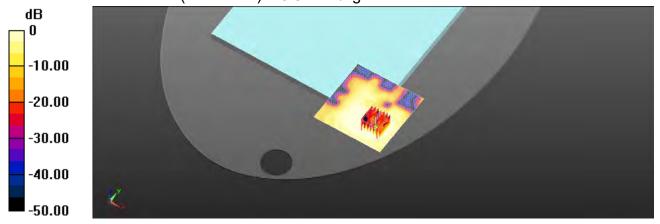
Peak SAR (extrapolated) = 0.732 W/kg

SAR(1 g) = 0.194 W/kg; SAR(10 g) = 0.076 W/kg

Smallest distance from peaks to all points 3 dB below = 13 mm

Ratio of SAR at M2 to SAR at M1 = 51.1%

Maximum value of SAR (measured) = 0.371 W/kg



0 dB = 0.371 W/kg = -4.30 dBW/kg

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Date: 2021/4/6

Report No.: ES/2021/20009

WLAN 802.11n(20M) 5.8G Body Bottom side CH 157 Aux 0mm

Communication System: WLAN; Frequency: 5785 MHz; Duty Cycle: 1:1.012

Medium parameters used: f = 5785 MHz; $\sigma = 5.178 \text{ S/m}$; $\varepsilon_r = 34.893$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Ambient temperature: 22.3°C; Liquid temperature: 22.9°C

DASY5 Configuration:

Probe: EX3DV4 - SN7466; ConvF(5.02, 5.02, 5.02); Calibrated: 2021/01/29

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1260; Calibrated: 2020/12/16

Phantom: ELI

DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (91x91x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 0.274 W/kg

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

Reference Value = 4.265 V/m; Power Drift = 0.16 dB

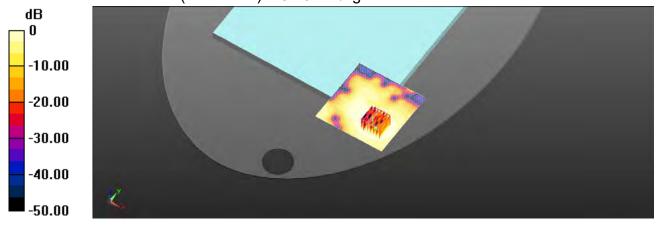
Peak SAR (extrapolated) = 0.524 W/kg

SAR(1 g) = 0.132 W/kg; SAR(10 g) = 0.052 W/kg

Smallest distance from peaks to all points 3 dB below = 12.6 mm

Ratio of SAR at M2 to SAR at M1 = 47.9%

Maximum value of SAR (measured) = 0.267 W/kg



0 dB = 0.267 W/kg = -5.74 dBW/kg

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Date: 2021/4/1

Report No.: ES/2021/20009

WLAN 802.11b Body Bottom side CH 6 Main 0mm

Communication System: WLAN; Frequency: 2437 MHz; Duty Cycle: 1:1.005

Medium parameters used: f = 2437 MHz; $\sigma = 1.777$ S/m; $\varepsilon_r = 39.051$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY5 Configuration:

Probe: EX3DV4 - SN7466; ConvF(8.08, 8.08, 8.08); Calibrated: 2021/01/29

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1260; Calibrated: 2020/12/16

Phantom: ELI

DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (81x91x1): Interpolated grid: dx=12 mm, dy=12 mm

Maximum value of SAR (interpolated) = 0.0534 W/kg

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

Reference Value = 2.268 V/m; Power Drift = 0.18 dB

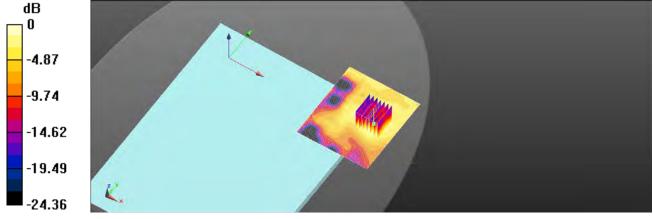
Peak SAR (extrapolated) = 0.0700 W/kg

SAR(1 g) = 0.037 W/kg; SAR(10 g) = 0.019 W/kg

Smallest distance from peaks to all points 3 dB below = 13.9 mm

Ratio of SAR at M2 to SAR at M1 = 53.1%

Maximum value of SAR (measured) = 0.0543 W/kg



0 dB = 0.0543 W/kg = -12.65 dBW/kg

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Date: 2021/4/2

Report No.: ES/2021/20009

WLAN 802.11a 5.2G Body Bottom side CH 40 Main 0mm

Communication System: WLAN; Frequency: 5200 MHz; Duty Cycle: 1:1.024

Medium parameters used: f = 5200 MHz; $\sigma = 4.584 \text{ S/m}$; $\varepsilon_r = 35.557$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Ambient temperature: 22.2°C; Liquid temperature: 22.6°C

DASY5 Configuration:

Probe: EX3DV4 - SN7466; ConvF(5.6, 5.6, 5.6); Calibrated: 2021/01/29

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1260; Calibrated: 2020/12/16

Phantom: ELI

DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (91x101x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 0.367 W/kg

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

Reference Value = 5.363 V/m; Power Drift = 0.12 dB

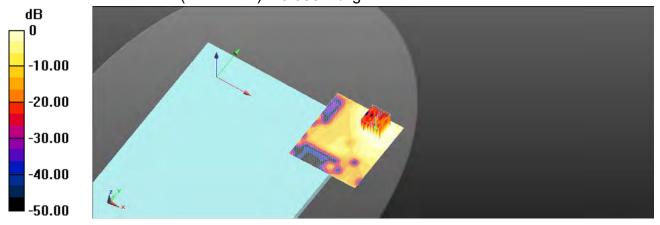
Peak SAR (extrapolated) = 0.668 W/kg

SAR(1 q) = 0.202 W/kq; SAR(10 q) = 0.083 W/kq

Smallest distance from peaks to all points 3 dB below = 16.4 mm

Ratio of SAR at M2 to SAR at M1 = 55.8%

Maximum value of SAR (measured) = 0.358 W/kg



0 dB = 0.358 W/kg = -4.46 dBW/kg

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Date: 2021/4/3

Report No.: ES/2021/20009

WLAN 802.11a 5.3G Body Bottom side CH 56 Main 0mm

Communication System: WLAN; Frequency: 5280 MHz; Duty Cycle: 1:1.024

Medium parameters used: f = 5280 MHz; σ = 4.666 S/m; ϵ_r = 35.456; ρ = 1000 kg/m³

Phantom section: Flat Section

Ambient temperature: 22.2°C; Liquid temperature: 22.8°C

DASY5 Configuration:

Probe: EX3DV4 - SN7466; ConvF(5.5, 5.5, 5.5); Calibrated: 2021/01/29

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1260; Calibrated: 2020/12/16

Phantom: ELI

DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (91x101x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 0.585 W/kg

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

Reference Value = 8.538 V/m; Power Drift = 0.09 dB

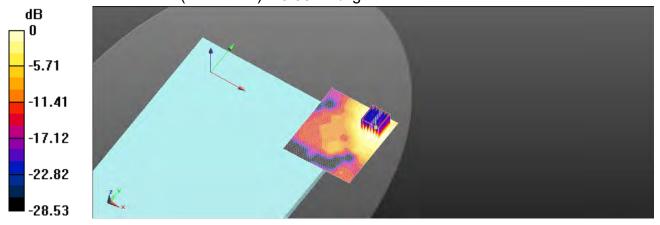
Peak SAR (extrapolated) = 1.03 W/kg

SAR(1 q) = 0.315 W/kq; SAR(10 q) = 0.135 W/kq

Smallest distance from peaks to all points 3 dB below = 16.4 mm

Ratio of SAR at M2 to SAR at M1 = 56.2%

Maximum value of SAR (measured) = 0.564 W/kg



0 dB = 0.564 W/kg = -2.49 dBW/kg

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Date: 2021/4/4

Report No.: ES/2021/20009

WLAN 802.11ac(80M) 5.6G Body Bottom side CH 138 Main 0mm

Communication System: WLAN; Frequency: 5690 MHz; Duty Cycle: 1:1.012

Medium parameters used: f = 5690 MHz; σ = 5.079 S/m; ϵ_r = 34.997; ρ = 1000 kg/m³

Phantom section: Flat Section

Ambient temperature: 22.3°C; Liquid temperature: 22.8°C

DASY5 Configuration:

Probe: EX3DV4 - SN7466; ConvF(5.04, 5.04, 5.04); Calibrated: 2021/01/29

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1260; Calibrated: 2020/12/16

Phantom: ELI

DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (91x101x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 0.397 W/kg

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

Reference Value = 3.453 V/m; Power Drift = 0.08 dB

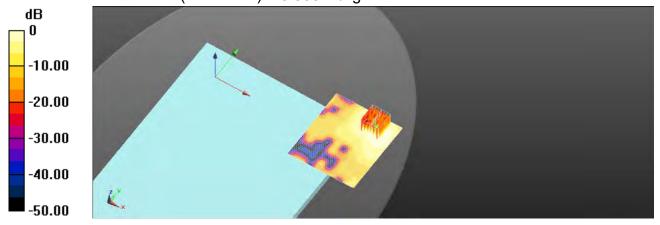
Peak SAR (extrapolated) = 0.741 W/kg

SAR(1 q) = 0.144 W/kq; SAR(10 q) = 0.060 W/kq

Smallest distance from peaks to all points 3 dB below = 12.6 mm

Ratio of SAR at M2 to SAR at M1 = 50.5%

Maximum value of SAR (measured) = 0.368 W/kg



0 dB = 0.368 W/kg = -4.34 dBW/kg

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Date: 2021/4/6

Report No.: ES/2021/20009

WLAN 802.11a 5.8G Body Bottom side CH 157 Main 0mm

Communication System: WLAN; Frequency: 5785 MHz; Duty Cycle: 1:1.024

Medium parameters used: f = 5785 MHz; $\sigma = 5.178 \text{ S/m}$; $\varepsilon_r = 34.893$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Ambient temperature: 22.3°C; Liquid temperature: 22.9°C

DASY5 Configuration:

Probe: EX3DV4 - SN7466; ConvF(5.02, 5.02, 5.02); Calibrated: 2021/01/29

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1260; Calibrated: 2020/12/16

Phantom: ELI

DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (91x101x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 0.731 W/kg

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

Reference Value = 8.702 V/m; Power Drift = 0.17 dB

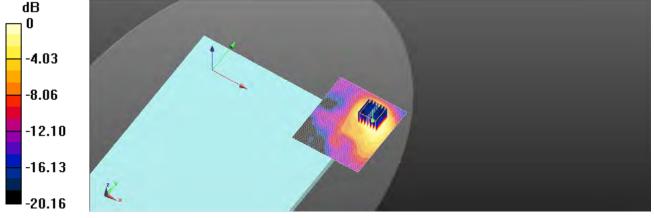
Peak SAR (extrapolated) = 1.37 W/kg

SAR(1 q) = 0.390 W/kq; SAR(10 q) = 0.164 W/kq

Smallest distance from peaks to all points 3 dB below = 11.9 mm

Ratio of SAR at M2 to SAR at M1 = 54.3%

Maximum value of SAR (measured) = 0.699 W/kg



0 dB = 0.699 W/kg = -1.55 dBW/kg

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6. SAR System Performance Verification

Date: 2021/4/1

Report No.: ES/2021/20009 Dipole 2450 MHz SN:727

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

Medium parameters used: f = 2450 MHz; $\sigma = 1.788 \text{ S/m}$; $\varepsilon_r = 39.024$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY5 Configuration:

Probe: EX3DV4 - SN7466; ConvF(8.08, 8.08, 8.08); Calibrated: 2021/01/29

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1260; Calibrated: 2020/12/16

Phantom: ELI

DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (51x61x1): Interpolated grid: dx=12 mm, dy=12 mm

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

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

Reference Value = 106.3 V/m; Power Drift = -0.09 dB

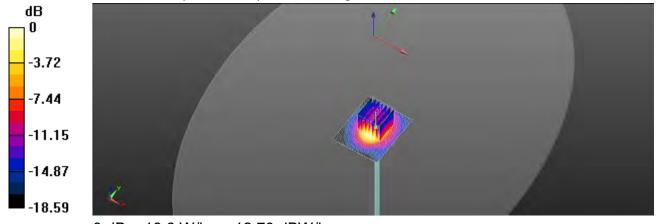
Peak SAR (extrapolated) = 24.4 W/kg

SAR(1 g) = 13.6 W/kg; SAR(10 g) = 6.19 W/kg

Smallest distance from peaks to all points 3 dB below = 9.1 mm

Ratio of SAR at M2 to SAR at M1 = 59.5%

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



0 dB = 18.6 W/kg = 12.70 dBW/kg

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Date: 2021/4/2

Report No.: ES/2021/20009 **Dipole 5200 MHz SN:1023**

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

Medium parameters used: f = 5200 MHz; $\sigma = 4.584 \text{ S/m}$; $\epsilon_r = 35.557$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Ambient temperature: 22.2°C; Liquid temperature: 22.6°C

DASY5 Configuration:

Probe: EX3DV4 - SN7466; ConvF(5.6, 5.6, 5.6); Calibrated: 2021/01/29

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1260; Calibrated: 2020/12/16

Phantom: ELI

DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (61x91x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 17.9 W/kg

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

Reference Value = 63.71 V/m; Power Drift = -0.02 dB

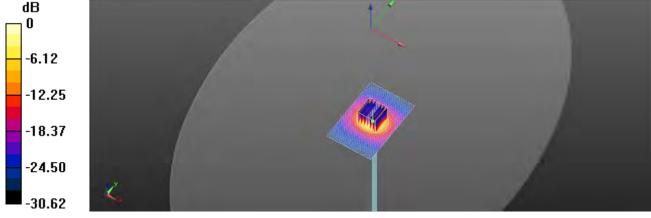
Peak SAR (extrapolated) = 33.3 W/kg

SAR(1 g) = 8.03 W/kg; SAR(10 g) = 2.28 W/kg

Smallest distance from peaks to all points 3 dB below = 8.5 mm

Ratio of SAR at M2 to SAR at M1 = 54.9%

Maximum value of SAR (measured) = 17.0 W/kg



0 dB = 17.0 W/kg = 12.30 dBW/kg

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Date: 2021/4/3

Report No.: ES/2021/20009 **Dipole 5300 MHz SN:1023**

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

Medium parameters used: f = 5300 MHz; $\sigma = 4.687 \text{ S/m}$; $\epsilon_r = 35.439$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Ambient temperature: 22.2°C; Liquid temperature: 22.8°C

DASY5 Configuration:

Probe: EX3DV4 - SN7466; ConvF(5.5, 5.5, 5.5); Calibrated: 2021/01/29

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1260; Calibrated: 2020/12/16

Phantom: ELI

DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (61x91x1): Interpolated grid: dx=10 mm, dy=10 mm

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

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

Reference Value = 65.79 V/m; Power Drift = 0.00 dB

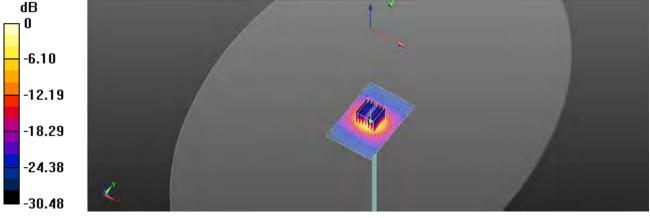
Peak SAR (extrapolated) = 35.3 W/kg

SAR(1 g) = 8.33 W/kg; SAR(10 g) = 2.34 W/kg

Smallest distance from peaks to all points 3 dB below = 8.5 mm

Ratio of SAR at M2 to SAR at M1 = 54.1%

Maximum value of SAR (measured) = 17.7 W/kg



0 dB = 17.7 W/kg = 12.51 dBW/kg

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Date: 2021/4/4

Report No.: ES/2021/20009 **Dipole 5600 MHz SN:1023**

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

Medium parameters used: f = 5600 MHz; $\sigma = 4.988 \text{ S/m}$; $\epsilon_r = 35.113$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Ambient temperature: 22.3°C; Liquid temperature: 22.8°C

DASY5 Configuration:

Probe: EX3DV4 - SN7466; ConvF(5.04, 5.04, 5.04); Calibrated: 2021/01/29

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1260; Calibrated: 2020/12/16

Phantom: ELI

DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (61x91x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 20.7 W/kg

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

Reference Value = 66.67 V/m; Power Drift = -0.09 dB

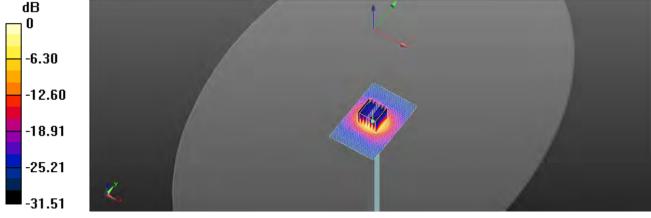
Peak SAR (extrapolated) = 40.4 W/kg

SAR(1 g) = 8.63 W/kg; SAR(10 g) = 2.45 W/kg

Smallest distance from peaks to all points 3 dB below = 8.3 mm

Ratio of SAR at M2 to SAR at M1 = 51.6%

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



0 dB = 19.0 W/kg = 13.39 dBW/kg

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Date: 2021/4/6

Report No.: ES/2021/20009 **Dipole 5800 MHz SN:1023**

Communication System: CW; Frequency: 5800 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5800 MHz; $\sigma = 5.189 \text{ S/m}$; $\varepsilon_r = 34.869$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Ambient temperature: 22.3°C; Liquid temperature: 22.9°C

DASY5 Configuration:

Probe: EX3DV4 - SN7466; ConvF(5.02, 5.02, 5.02); Calibrated: 2021/01/29

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1260; Calibrated: 2020/12/16

Phantom: ELI

DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (61x91x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 17.5 W/kg

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

Reference Value = 61.28 V/m; Power Drift = -0.01 dB

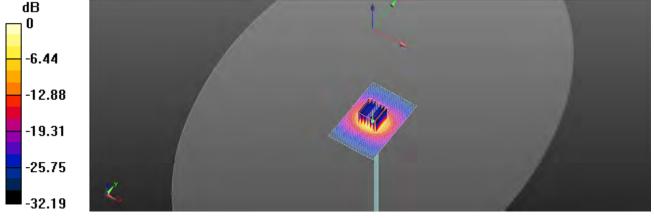
Peak SAR (extrapolated) = 36.1 W/kg

SAR(1 g) = 7.97 W/kg; SAR(10 g) = 2.26 W/kg

Smallest distance from peaks to all points 3 dB below = 8.2 mm

Ratio of SAR at M2 to SAR at M1 = 50%

Maximum value of SAR (measured) = 16.1 W/kg



0 dB = 16.1 W/kg = 11.58 dBW/kg

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7. Uncertainty Budget

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

	1			1	l	l	ı	I	
A	С	D	е		f	g	h=c * f / e	i=c * g / e	k
Source of Uncertainty	Tolerance/ Uncertainty	Probability Distributio	Div	Div Value	ci (1g)	ci (10g)	Standard uncertainty	Standard uncertainty	vi, or Veff
Measurement system									
Probe calibration	6.55%	N	1	1	1	1	6.55%	6.55%	00
Isotropy , Axial	3.50%	R	√3	1.732	1	1	2.02%	2.02%	80
Isotropy, Hemispherical	9.60%	R	√3	1.732	1	1	5.54%	5.54%	80
Modulation Response	2.40%	R	√3	1.732	1	1	1.40%	1.40%	8
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%	8
Detection Limits	1.00%	R	√3	1.732	1	1	0.58%	0.58%	80
Readout Electronics	0.30%	N	1	1	1	1	0.30%	0.30%	8
Response time	0.80%	R	√3	1.732	1	1	0.46%	0.46%	8
Integration Time	2.60%	R	√3	1.732	1	1	1.50%	1.50%	8
Measurement drift (class A evaluation)	1.75%	R	√3	1.732	1	1	1.01%	1.01%	8
RF ambient condition - noise	3.00%	R	√3	1.732	1	1	1.73%	1.73%	8
RF ambient conditions - reflections	3.00%	R	√3	1.732	1	1	1.73%	1.73%	8
Probe positioner Mechanical restrictions	0.40%	R	√3	1.732	1	1	0.23%	0.23%	8
Probe Positioning with respect to phantom shell	2.90%	R	√3	1.732	1	1	1.67%	1.67%	8
Post-processing	1.00%	R	√3	1.732	1	1	0.58%	0.58%	8
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%	œ
Liquid permittivity (mea.)	1.25%	N	1	1	0.64	0.43	0.80%	0.54%	М
Liquid Conductivity (mea.)	1.56%	N	1	1	0.6	0.49	0.94%	0.76%	М
Combined standard uncertainty		RSS					11.78%	11.74%	
Expant uncertainty (95% confidence interval), K=2							23.56%	23.49%	

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

А	С	D	е		f	g	h=c * f / e	i=c * g / e	k
Source of Uncertainty	Tolerance/ Uncertainty	Probability Distributio	Div	Div Value	ci (1g)	ci (10g)	Standard uncertainty	Standard uncertainty	vi, or Veff
Measurement system									
Probe calibration	6.00%	N	1	1	1	1	6.00%	6.00%	∞
Isotropy , Axial	3.50%	R	√3	1.732	1	1	2.02%	2.02%	8
Isotropy, Hemispherical	9.60%	R	√3	1.732	1	1	5.54%	5.54%	∞
Modulation Response	2.40%	R	√3	1.732	1	1	1.40%	1.40%	∞
Boundary Effect	1.00%	R	√3	1.732	1	1	0.58%	0.58%	∞
Linearity	4.70%	R	√3	1.732	1	1	2.71%	2.71%	∞
Detection Limits	1.00%	R	√3	1.732	1	1	0.58%	0.58%	8
Readout Electronics	0.30%	N	1	1	1	1	0.30%	0.30%	∞
Response time	0.80%	R	√3	1.732	1	1	0.46%	0.46%	8
Integration Time	2.60%	R	√3	1.732	1	1	1.50%	1.50%	∞
Measurement drift (class A evaluation)	1.75%	R	√3	1.732	1	1	1.01%	1.01%	∞
RF ambient condition - noise	3.00%	R	√3	1.732	1	1	1.73%	1.73%	∞
RF ambient conditions - reflections	3.00%	R	√3	1.732	1	1	1.73%	1.73%	∞
Probe positioner Mechanical restrictions	0.40%	R	√3	1.732	1	1	0.23%	0.23%	∞
Probe Positioning with respect to phantom shell	2.90%	R	√3	1.732	1	1	1.67%	1.67%	∞
Post-processing	1.00%	R	√3	1.732	1	1	0.58%	0.58%	∞
Max SAR Eval	1.00%	R	√3	1.732	1	1	0.58%	0.58%	8
Test Sample related									
Test sample positioning	2.90%	N	1	1	1	1	2.90%	2.90%	M-1
Device Holder Uncertainty	3.60%	N	1	1	1	1	3.60%	3.60%	M-1
Drift of output power	5.00%	R	√3	1.732	1	1	2.89%	2.89%	∞
Phantom and Setup									
Phantom Uncertainty	4.00%	R	√3	1.732	1	1	2.31%	2.31%	∞
Liquid permittivity (mea.)	0.45%	N	1	1	0.64	0.43	0.29%	0.19%	М
Liquid Conductivity (mea.)	0.69%	N	1	1	0.6	0.49	0.41%	0.34%	М
Combined standard uncertainty		RSS					11.43%	11.41%	
Expant uncertainty (95% confidence interval), K=2							22.86%	22.83%	

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Appendixes

Refer to separated files for the following appendixes.

ES202120009 SAR_Appendix A Photographs

ES202120009 SAR Appendix B DAE & Probe Cal. Certificate

ES202120009 SAR_Appendix C Phantom Description & Dipole Cal. Certificate

- End of report -

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