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SAR TEST REPORT





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

Product Name Notebook PC

Brand Name HP

Model No. TPN-Q228
Prepared for HP Inc.

3390 East Harmony Road, Fort Collins Colorado, USA

80528

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

KDB248227D01v02r02,KDB865664D01v01r04,

KDB865664D02v01r02,KDB447498D01v06,

KDB616217D04v01r02,

FCC ID B94-9560NGWCP

Date of Receipt Jul. 01, 2019

Date of Test(s) Jul. 12, 2019 ~ Jul. 19, 2019

Date of Issue Jul. 30, 2019

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 / Bond Tsai	Asst. Manager / John Yeh		
Ruby Ou	BondIsai	John Teh		

Date: Jul. 30, 2019

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Revision History

Report Number	Revision	Description	Issue Date
EN/2019/70001	Rev.00	Initial creation of document	Jul. 30, 2019

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1. General Information

1.1 Testing Laboratory

SGS Taiwan Ltd. Electronics & Communication Laboratory						
1F, No. 8, Alley	15, Lane 120, Sec. 1, NeiHu Rd., NeiHu Dist., Taipei City, Taiwan,					
11493.						
Tel	+886-2-2299-3279					
Fax	+886-2-2298-0488					
Internet	http://www.tw.sgs.com/					

1.2 Details of Applicant

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

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1.3 Description of EUT

General Information of Host.

General Information of									
Equipment Under Test	Notebook Computer								
Brand Name	HP	HP							
Model No.	TPN-Q228								
Integrated Module	Brand Name : Intel								
integrated Wedare	Model Name : 9560NGW								
FCC ID	B94-9560NGWCP								
Mode of Operation	⊠WLAN802.11 a/b/g/n(20M/40M)/ac(20M/40M/80M/10 ⊠Bluetooth	60M)							
Duty Cycle	WLAN802.11 a/b/g/n(20M/40M)/ ac(20M/40M/80M/160M)		1						
	Bluetooth		1						
	WLAN802.11 b/g/n(20M)	2412	_	2472					
	WLAN802.11 n(40M)	2422	_	2462					
	WLAN802.11 a/n(20M)/ac(20M) 5.2G	5180	_	5240					
	WLAN802.11 n(40M)/ac(40M) 5.2G	5190	_	5230					
	WLAN802.11 ac(80M) 5.2G	5210							
	WLAN802.11 ac(160M) 5.2G	5250							
	WLAN802.11 a/n(20M)/ac(20M) 5.3G	5260	_	5320					
TX Frequency Range	WLAN802.11 n(40M)/ac(40M) 5.3G	5270	_	5310					
(MHz)	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							
	WLAN802.11 a/n(20M)/ac(20M) 5.8G	5745		5825					
	WLAN802.11 n(40M)/ac(40M) 5.8G	5710	_	5795					
	WLAN802.11 ac(80M) 5.8G		5775						

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TX Frequency Range (MHz)	Bluetooth	2402	_	2480
(·····=)	WLAN802.11 b/g/n(20M)	1	_	13
	WLAN802.11 n(40M)	3	_	11
	WLAN802.11 a/n(20M)/ac(20M) 5.2G	36	_	48
	WLAN802.11 n(40M)/ac(40M) 5.2G	38	_	46
	WLAN802.11 ac(80M) 5.2G		42	
	WLAN802.11 ac(160M) 5.2G		50	
	WLAN802.11 a/n(20M)/ac(20M) 5.3G		_	64
	WLAN802.11 n(40M)/ac(40M) 5.3G	54	_	62
Channel Number (ARFCN)	WLAN802.11 ac(80M) 5.3G		58	
(Authory)	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(20M)/ac(20M) 5.8G	149	_	165
	WLAN802.11 n(40M)/ac(40M) 5.8G	151	_	159
	WLAN802.11 ac(80M) 5.8G		155	
	Bluetooth	0	_	78

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Max. SAR (1g) (Unit: W/Kg)									
Antenna	Band	Measured	Reported	Channel	Position				
	WLAN 802.11b	0.69	0.69	11	Top side				
	WLAN 802.11n(40M) 5.2G	0.72	0.74	38	Top side				
	WLAN 802.11ac(80M) 5.2G	0.80	0.81	42	Top side				
	WLAN 802.11a 5.3G	0.79	0.80	64	Top side				
Tx2	WLAN 802.11n(40M) 5.3G	0.86	0.87	54	Top side				
	WLAN 802.11n(40M) 5.6G	1.13	1.13	142	Top side				
	WLAN 802.11ac(80M) 5.6G	1.19	1.19	138	Top side				
	WLAN 802.11n(40M) 5.8G	1.11	1.12	151	Top side				
	WLAN 802.11ac(80M) 5.8G	1.14	1.15	155	Top side				
	WLAN802.11b	0.98	1.00	6	Top side				
	Bluetooth(GFSK)	0.10	0.10	78	Top side				
	WLAN 802.11n(40M) 5.2G	1.15	1.17	38	Top side				
	WLAN 802.11ac(80M) 5.2G	1.07	1.08	42	Top side				
Tx1	WLAN 802.11a 5.3G	1.16	1.17	56	Top side				
1 / 1	WLAN 802.11n(40M) 5.3G	1.14	1.15	54	Top side				
	WLAN 802.11n(40M) 5.6G	1.07	1.08	134	Top side				
	WLAN 802.11ac(80M) 5.6G	1.13	1.15	106	Top side				
	WLAN 802.11n(40M) 5.8G	1.16	1.17	159	Top side				
	WLAN 802.11ac(80M) 5.8G	1.13	1.15	155	Top side				

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INPAQ

INFAQ									
Max. SAR (1g) (Unit: W/Kg)									
Antenna	Band	Measured	Reported	Channel	Position				
	WLAN 802.11b	0.54	0.54	11	Top side				
	WLAN 802.11ac(80M) 5.2G	0.39	0.40	42	Top side				
Tx2	WLAN 802.11n(40M) 5.3G	0.46	0.47	54	Top side				
	WLAN 802.11ac(80M) 5.6G	0.53	0.53	106	Top side				
	WLAN 802.11ac(80M) 5.8G	0.50	0.51	155	Top side				
	WLAN 802.11b	0.46	0.52	6	Top side				
	Bluetooth(GFSK)	0.03	0.04	78	Top side				
Tv4	WLAN 802.11ac(80M) 5.2G	0.63	0.63	42	Top side				
-	WLAN 802.11n(40M) 5.3G	0.79	0.79	54	Top side				
	WLAN 802.11ac(80M) 5.6G	0.69	0.69	106	Top side				
	WLAN 802.11ac(80M) 5.8G	0.54	0.55	155	Top side				

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Antenna Information

	antonna mornadon									
	Tablet mode									
Vendor		нтк								
Antenna			Tx2 (PIFA)					Tx1 (PIFA)		
Part Number	DQ60ACQD037 (0ACQD019007N)						DQ60ACC	D037 (0ACQI	D019007N)	
Frequency	2402-2480	5150-5250	5250-5350	5470-5725	5725-5850	2402-2480	5150-5250	5250-5350	5470-5725	5725-5850
Gain (dBi)	-3.27	-2.69	-2.16	-1.84	-2.98	-2.3	-2.88	-3.20	-4.07	-4.13
					Laptop mode					
Vendor					H.	ГК				
Antenna	Tx2 (PIFA)							Tx1 (PIFA)		
Part Number	DQ60ACQD037 (0ACQD019007N)					DQ60ACQD037 (0ACQD019007N)				
Frequency	2402-2480	5150-5250	5250-5350	5470-5725	5725-5850	2402-2480	5150-5250	5250-5350	5470-5725	5725-5850
Gain (dBi)	-2.48	-1.04	0.03	-1.93	-1.97	-1.24	-2.91	-3.45	-1.58	-2.07

Tablet mode										
Vendor		INPAQ Corporation								
Antenna			Tx2 (PIFA)					Tx1 (PIFA)		
Part Number		DQ60PLBL	B27 (WA-P-LE	BLB-02-088)			DQ60PLBL	B27 (WA-P-LE	BLB-02-088)	
Frequency	2402-2480	5150-5250	5250-5350	5470-5725	5725-5850	2402-2480	5150-5250	5250-5350	5470-5725	5725-5850
Gain (dBi)	0.98	-1.22	-1.21	-0.39	-0.14	-0.98	0.77	-1.42	0.88	0.58
					Laptop mode					
Vendor					INPAQ Co	rporation				
Antenna			Tx2 (PIFA)					Tx1 (PIFA)		
Part Number	DQ60PLBLB27 (WA-P-LBLB-02-088)			DQ60PLBLB27 (WA-P-LBLB-02-088)						
Frequency	2402-2480	5150-5250	5250-5350	5470-5725	5725-5850	2402-2480	5150-5250	5250-5350	5470-5725	5725-5850
Gain (dBi)	0.41	-1.19	0.59	0.47	0.53	1.91	0.23	-0.62	0.37	0.83

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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	Tx1	Tx2	Tx1 + Tx2
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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HTK

Tablet mode (power level 2)

		Tx	2 Antenna			
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		1	2412		19.50	19.44
		2	2417		19.50	19.47
		6	2437		19.50	19.48
	802.11b	10	2457	1Mbps	19.50	19.35
		11	2462		19.50	19.49
		12	2467		18.50	18.38
		13	2472		15.00	14.83
		1	2412		16.00	15.79
		2	2417		18.50	18.44
		6	2437		19.50	19.38
	802.11g	10	2457	6Mbps	18.50	18.32
		11	2462		16.50	16.42
		12	2467		13.00	12.88
2450 MHz		13	2472		-6.50	-6.51
2430 WII IZ		1	2412		16.00	15.97
		2	2417		18.50	18.36
		6	2437		19.50	19.42
	802.11n20-HT0	10	2457	MCS0	18.50	18.42
		11	2462		16.50	16.32
		12	2467		13.00	12.85
		13	2472		-6.50	-6.58
		3	2422		14.50	14.30
		4	2427		16.00	15.77
		6	2437		16.00	15.88
	802.11n40-HT0	8	2447	MCS0	16.00	15.82
		9	2452		14.00	13.75
		10	2457		10.50	10.46
		11	2462		3.50	3.44

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		Tx	2 Antenna			
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		36	5180	- 6Mbps	16.00	15.88
	802.11a	40	5200		16.00	15.85
	002.11a	44	5220		16.00	15.74
		48	5240		16.00	15.79
	802.11n20-HT0	36	5180		16.00	15.86
		40	5200	MCS0	16.00	15.75
		44	5220	IVICSO	16.00	15.76
		48	5240		16.00	15.73
5.15-5.25 GHz		36	5180		16.00	15.74
0.13-3.23 GHZ	802.11ac20-VHT0	40	5200	MCS0	16.00	15.79
	002.11ac20-VH10	44	5220	MCSU	16.00	15.78
		48	5240		16.00	15.70
	802.11n40-HT0	38	5190	MCS0	16.00	15.93
	002.1111 4 0-Π10	46	5230	MCSU	16.00	15.88
	802.11ac40-VHT0	38	5190	MCS0	16.00	15.76
	002.11ac40-V1110	46	5230		16.00	15.73
	802.11ac80-VHT0	42	5210	MCS0	16.00	15.92
	802.11ac160-VHT0	50	5250	MCS0	13.50	13.22

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		Tx	2 Antenna			
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		52	5260		16.00	15.92
	802.11a	56	5280	6Mbps	16.00	15.89
	002.11a	60	5300	6Mbps	16.00	15.91
		64	5320		16.00	15.95
	802.11n20-HT0	52	5260		16.00	15.80
		56	5280	MCS0	16.00	15.84
		60	5300	WICOU	16.00	15.88
		64	5320		16.00	15.87
5.25-5.35 GHz		52	5260		16.00	15.81
	802.11ac20-VHT0	56	5280	MCS0	16.00	15.78
	002.11ac20-V1110	60	5300	MCSU	16.00	15.85
		64	5320		16.00	15.75
	802.11n40-HT0	54	5270	MCS0	16.00	15.92
	002.1111 4 0-1110	62	5310	IVICSO	14.50	14.22
	802.11ac40-VHT0	54	5270	MCS0	16.00	15.76
	002.118C4U-VH1U	62	5310		14.50	14.43
	802.11ac80-VHT0	58	5290	MCS0	15.50	15.35

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		Tx	2 Antenna			
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		100	5500		16.00	15.96
		116	5580		16.00	15.94
		120	5600		16.00	15.86
	802.11a	124	5620	6Mbps	16.00	15.74
		128	5640		16.00	15.78
		140	5700		16.00	15.92
		144	5720		16.00	15.74
		100	5500		16.00	15.79
		116	5580		16.00	15.72
		120	5600		16.00	15.81
5600 MHz	802.11n20-HT0	124	5620	MCS0	16.00	15.76
		128	5640		16.00	15.73
		140	5700		16.00	15.77
		144	5720		16.00	15.88
		100	5500		16.00	15.84
		116	5580		16.00	15.88
		120	5600		16.00	15.71
	802.11ac20-VHT0	124	5620	MCS0	16.00	15.78
		128	5640		16.00	15.75
		140	5700		16.00	15.84
		144	5720		16.00	15.86

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Tx2 Antenna									
	1	١X،	z Antenna						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)			
		102	5510		16.00	15.87			
		110	5550		16.00	15.91			
	802.11n40-HT0	118	5590	MCS0	16.00	15.78			
		126	5630		16.00	15.88			
		134	5670		16.00	15.97			
		142	5710		16.00	15.99			
		102	5510		16.00	15.84			
5600 MHz		110	5550		16.00	15.88			
3600 MHZ	802.11ac40-VHT0	118	5590	MCS0	16.00	15.76			
	002.11ac40-VH10	126	5630	MCSU	16.00	15.84			
		134	5670		16.00	15.82			
		142	5710		16.00	15.85			
		106	5530		16.00	15.97			
	802.11ac80-VHT0	122	5610	MCS0	16.00	15.93			
		138	5690		16.00	15.99			
	802.11ac160-VHT0	114	5570	MCS0	15.00	14.86			

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		Tx	2 Antenna			
Mode	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		149	5745		16.00	15.81
	802.11a	157	5785	6Mbps	16.00	15.77
		165	5825		16.00	15.86
		149	5745	MCS0	16.00	15.92
	802.11n20-HT0	157	5785		16.00	15.94
		165	5825		16.00	15.83
5800 MHz		149	5745		16.00	15.88
3000 1011 12	802.11ac20-VHT0	157	5785	MCS0	16.00	15.90
		165	5825		16.00	15.86
	802.11n40-HT0	151	5755	MCS0	16.00	15.95
	002.111140-1110	159	5795	IVICOU	16.00	15.87
	802.11ac40-VHT0	151	5755	MCS0	16.00	15.81
	002.11a040-VHTU	159	5795		16.00	15.81
	802.11ac80-VHT0	155	5775	MCS0	16.00	15.97

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		Tx	1 Antenna			
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		1	2412		19.50	19.45
		2	2417		19.50	19.32
		6	2437		19.50	19.43
	802.11b	10	2457	1Mbps	19.50	19.39
		11	2462		19.50	19.42
		12	2467		18.50	18.41
		13	2472		15.00	14.78
		1	2412		16.00	15.85
		2	2417	6Mbps	17.50	17.36
		6	2437		19.50	19.38
	802.11g	10	2457		18.50	18.22
		11	2462		16.00	15.79
		12	2467		13.50	13.23
2450 MHz		13	2472		-6.00	-6.06
2450 NIUZ		1	2412		16.00	15.82
		2	2417		17.50	17.34
		6	2437	1	19.50	19.38
	802.11n20-HT0	10	2457	MCS0	18.50	18.36
		11	2462		16.00	15.78
		12	2467]	13.50	13.44
		13	2472		-6.00	-6.03
		3	2422		15.00	14.82
		4	2427		16.00	15.81
		6	2437		16.00	15.77
	802.11n40-HT0	8	2447	MCS0	16.00	15.97
		9	2452		14.50	14.33
		10	2457		11.00	10.76
		11	2462		3.00	2.88

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		Tx	1 Antenna			
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		36	5180		16.00	15.88
	802.11a	40	5200	GMbps	16.00	15.94
	002.11a	44	5220	6Mbps	16.00	15.92
		48	5240	1	16.00	15.83
		36	5180	MCS0	16.00	15.74
	802.11n20-HT0	40	5200		16.00	15.84
	002.111120 - 1110	44	5220		16.00	15.89
		48	5240		16.00	15.86
5.15-5.25 GHz		36	5180		16.00	15.79
0.13-3.23 GHZ	802.11ac20-VHT0	40	5200	MCS0	16.00	15.94
	002.11ac20-VI110	44	5220	IVICSU	16.00	15.91
		48	5240		16.00	15.89
	802.11n40-HT0	38	5190	MCS0	16.00	15.94
	002.1111 4 0-Π10	46	5230	IVICSU	16.00	15.92
	802.11ac40-VHT0	38	5190	MCS0	16.00	15.85
	002.11a040-VH10	46	5230	INICSU	16.00	15.81
	802.11ac80-VHT0	42	5210	MCS0	16.00	15.97
	802.11ac160-VHT0	50	5250	MCS0	13.50	13.26

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		Tx	1 Antenna			
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		52	5260		16.00	15.98
	802.11a	56	5280	6Mbps	16.00	15.96
	002.11a	60	5300	Givibps	16.00	15.95
		64	5320		16.00	15.91
		52	5260		16.00	15.89
	802.11n20-HT0	56	5280	MCS0	16.00	15.80
	002.111120-1110	60	5300	IVICOU	16.00	15.77
		64	5320		16.00	15.94
5.25-5.35 GHz		52	5260		16.00	15.79
	802.11ac20-VHT0	56	5280	MCS0	16.00	15.75
	002.11ac20-V1110	60	5300	MCSU	16.00	15.92
		64	5320		16.00	15.84
	802.11n40-HT0	54	5270	MCS0	16.00	15.98
	002.111140-F110	62	5310	IVICOU	14.50	14.36
	802.11ac40-VHT0	54	5270	MCS0	16.00	15.91
	802.11ac40-VH10	62	5310		14.50	14.28
	802.11ac80-VHT0	58	5290	MCS0	15.50	15.37

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		Tx	1 Antenna			
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		100	5500		16.00	15.94
		116	5580		16.00	15.96
		120	5600		16.00	15.89
	802.11a	124	5620	6Mbps	16.00	15.76
		128	5640		16.00	15.71
		140	5700		16.00	15.73
		144	5720		16.00	15.87
		100	5500		16.00	15.87
		116	5580		16.00	15.80
		120	5600		16.00	15.83
5600 MHz	802.11n20-HT0	124	5620	MCS0	16.00	15.89
		128	5640		16.00	15.74
		140	5700		16.00	15.94
		144	5720		16.00	15.73
		100	5500		16.00	15.90
		116	5580		16.00	15.81
		120	5600		16.00	15.72
	802.11ac20-VHT0	124	5620	MCS0	16.00	15.80
		128	5640		16.00	15.76
		140	5700		16.00	15.82
		144	5720		16.00	15.77

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		TX	1 Antenna			
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		102	5510		16.00	15.84
		110	5550		16.00	15.90
	802.11n40-HT0	118	5590	MCS0	16.00	15.89
		126	5630		16.00	15.79
		134	5670		16.00	15.98
		142	5710		16.00	15.95
		102	5510		16.00	15.85
5600 MHz		110	5550		16.00	15.95
SOUU MINZ	000 44 - 40 1/1/170	118	5590	MCCO	16.00	15.91
	802.11ac40-VHT0	126	5630	MCS0	16.00	15.76
		134	5670		16.00	15.85
		142	5710		16.00	15.82
		106	5530		16.00	15.94
	802.11ac80-VHT0	122	5610	MCS0	16.00	15.88
		138	5690		16.00	15.99
	802.11ac160-VHT0	114	5570	MCS0	15.00	14.81

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		Tx	1 Antenna			
Mode	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		149	5745		16.00	15.83
	802.11a	157	5785	6Mbps	16.00	15.72
		165	5825		16.00	15.94
		149	5745	MCS0	16.00	15.87
	802.11n20-HT0	157	5785		16.00	15.72
		165	5825		16.00	15.76
5800 MHz		149	5745		16.00	15.90
3600 WITZ	802.11n40-VHT0	157	5785	MCS0	16.00	15.74
		165	5825		16.00	15.83
	802.11n40-HT0	151	5755	MCS0	16.00	15.97
	002.1111 4 0-1110	159	5795	IVICOU	16.00	15.98
	802 11ac/0 \/UT0	151	5755	MCS0	16.00	15.96
	802.11ac40-VHT0	159	5795		16.00	15.85
	802.11ac80-VHT0	155	5775	MCS0	16.00	15.92

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Laptop mode (power level 1)

		Tx	2 Antenna			
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		1	2412		19.50	19.34
		2	2417		20.50	20.45
		6	2437		20.50	20.46
	802.11b	10	2457	1Mbps	20.50	20.48
		11	2462		19.50	19.29
		12	2467	67	18.50	18.44
		13	2472		15.00	14.82
		1	2412		16.00	15.77
		2	2417		18.50	18.44
		6	2437		20.50	20.29
	802.11g	10	2457	6Mbps	18.50	18.41
		11	2462		16.50	16.45
		12	2467		13.00	12.89
2450 MHz		13	2472		-6.50	-6.57
2430 WII 12		1	2412		16.00	15.83
		2	2417		18.50	18.42
		6	2437		20.50	20.29
	802.11n20-HT0	10	2457	MCS0	18.50	18.33
		11	2462		16.50	16.41
		12	2467		13.00	12.82
		13	2472		-6.50	-6.54
		3	2422		14.50	14.27
		4	2427		16.00	15.97
		6	2437		16.00	15.75
	802.11n40-HT0	8	2447	MCS0	16.00	15.88
		9	2452		14.00	13.91
		10	2457		10.50	10.30
		11	2462		3.50	3.40

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		Tv	2 Antonna			
		I X.	2 Antenna			
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		36	5180		19.00	18.91
	802.11a	40	5200	6Mbpc	20.50	20.42
	002.11a	44	5220	6Mbps	20.50	20.44
		48	5240		20.50	20.46
		36	5180	MCS0	19.00	18.79
	802.11n20-HT0	40	5200		20.50	20.38
	002.111120-H10	44	5220		20.50	20.23
		48	5240		20.50	20.31
5.15-5.25 GHz		36	5180		19.00	18.90
0.10-0.20 GHZ	802.11ac20-VHT0	40	5200	MCS0	20.50	20.26
	002.11ac20-V1110	44	5220	MCSU	20.50	20.35
		48	5240		20.50	20.37
	802.11n40-HT0	38	5190	MCS0	18.00	17.85
	002.111140-HTU	46	5230	IVICOU	19.00	18.76
	802.11ac40-VHT0	38	5190	MCS0	18.00	17.84
	002.11a040-VIII0	46	5230	IVICOU	19.00	18.89
[802.11ac80-VHT0	42	5210	MCS0	17.50	17.30
	802.11ac160-VHT0	50	5250	MCS0	13.50	13.28

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		Tx	2 Antenna			
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		52	5260		20.50	20.44
	802.11a	56	5280	6Mbps	20.50	20.47
	002.11a	60	5300	Olvibps	20.50	20.42
		64	5320		16.50	16.32
		52	5260	MCS0	20.50	20.44
	802.11n20-HT0	56	5280		20.50	20.34
	002.111120-1110	60	5300		20.50	20.41
		64	5320		16.50	16.22
5.25-5.35 GHz		52	5260		20.50	20.33
	802.11ac20-VHT0	56	5280	MCS0	20.50	20.18
	002.11ac20-V1110	60	5300	MCSU	20.50	20.23
		64	5320		16.50	16.22
	802.11n40-HT0	54	5270	MCS0	18.50	18.39
	ου2. Ι ΙΙΙ 4 υ - Π Ι υ	62	5310	IVICOU	14.50	14.23
	802.11ac40-VHT0	54	5270	MCS0	18.50	18.42
	002.11ac40-VH10	62	5310	IVICOU	14.50	14.45
	802.11ac80-VHT0	58	5290	MCS0	15.50	15.41

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		Tx	2 Antenna			
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		100	5500		19.00	18.84
		116	5580		20.50	20.25
		120	5600		20.50	20.42
	802.11a	124	5620	6Mbps	20.50	20.38
		128	5640		20.50	20.29
		140	5700		18.50	18.23
		144	5720		19.50	19.30
		100	5500		19.00	18.89
		116	5580		20.50	20.39
		120	5600		20.50	20.25
5600 MHz	802.11n20-HT0	124	5620	MCS0	20.50	20.27
		128	5640		20.50	20.41
		140	5700		18.50	18.31
		144	5720		19.50	19.36
		100	5500		19.00	18.84
		116	5580		20.50	20.28
		120	5600		20.50	20.24
	802.11ac20-VHT0	124	5620	MCS0	20.50	20.38
		128	5640		20.50	20.36
		140	5700		18.50	18.27
		144	5720		19.50	19.38

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		TX	2 Antenna			
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		102	5510		16.50	16.35
		110	5550		20.50	20.44
	802.11n40-HT0	118	5590	MCS0	20.50	20.28
		126	5630		20.50	20.40
		134	5670		19.50	19.28
		142	5710		19.50	19.45
		102	5510		16.50	16.37
5600 MHz		110	5550		20.50	20.23
3000 MITZ	802.11ac40-VHT0	118	5590	MCS0	20.50	20.42
	002.118040-7010	126	5630	IVICSU	20.50	20.43
		134	5670		19.50	19.29
		142	5710		19.50	19.40
		106	5530		17.00	16.97
	802.11ac80-VHT0	122	5610	MCS0	20.50	20.27
		138	5690		20.50	20.45
	802.11ac160-VHT0	114	5570	MCS0	15.00	14.83

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		Tx	2 Antenna			
Mode	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		149	5745		20.50	20.48
	802.11a	157	5785	6Mbps	20.50	20.44
		165	5825		20.50	20.46
		149	5745	MCS0	20.50	20.35
	802.11n20-HT0	157	5785		20.50	20.45
		165	5825		20.50	20.41
5800 MHz		149	5745		20.50	20.37
3000 1011 12	802.11ac20-VHT0	157	5785	MCS0	20.50	20.42
		165	5825		20.50	20.35
	802.11n40-HT0	151	5755	MCS0	18.50	18.23
	802.11N40-H10	159	5795	IVICOU	20.00	19.77
	802.11ac40-VHT0	151	5755	MCS0	18.50	18.40
	002.118040-VH10	159	5795		20.00	19.96
	802.11ac80-VHT0	155	5775	MCS0	18.50	18.41

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		Tx	1 Antenna			
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		1	2412		19.50	19.29
		2	2417		20.50	20.48
		6	2437		20.50	20.45
	802.11b	10	2457	1Mbps	20.50	20.39
		11	2462		19.50	19.46
		12	2467		18.50	18.38
		13	2472		15.00	14.93
		1 2412	16.00	15.92		
		2	2417	6Mbps	17.50	17.41
		6	2437		20.50	20.32
	802.11g	10	2457		18.50	18.24
		11	2462		16.00	15.67
		12	2467		13.50	13.19
2450 MHz		13	2472		-6.00	-6.02
2450 MITZ		1	2412		16.00	15.96
		2	2417		17.50	17.43
		6	2437		20.50	20.24
	802.11n20-HT0	10	2457	MCS0	18.50	18.21
		11	2462]	16.00	15.84
		12	2467		13.50	13.32
		13	2472		-6.00	-6.08
		3	2422		15.00	14.70
		4	2427		16.00	15.72
		6	2437		16.00	15.87
	802.11n40-HT0	8	2447	MCS0	16.00	15.82
		9	2452		14.50	14.39
		10	2457		11.00	10.94
		11	2462		3.00	2.92

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		Tx	1 Antenna			
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		36	5180		18.50	18.43
	000 11 -	40	5200	CMbas	20.00	19.98
	802.11a	44	5220	6Mbps	20.50	20.46
		48	5240		20.50	20.42
		36	5180	MCS0	18.50	18.33
	802.11n20-HT0	40	5200		20.00	19.77
	002.111120-H10	44	5220		20.50	20.41
		48	5240		20.50	20.27
5.15-5.25 GHz		36	5180		18.50	18.25
0.13-3.23 GHZ	802.11ac20-VHT0	40	5200	MCS0	20.00	19.94
	002.11ac20-VH10	44	5220	IVICOU	20.50	20.23
		48	5240		20.50	20.28
	802.11n40-HT0	38	5190	MCS0	18.00	17.85
	002.111140-HTU	46	5230	IVICOU	19.50	19.47
	802.11ac40-VHT0	38	5190	MCS0	18.00	17.91
	002.11a040-VIII0	46	5230	IVICSU	19.50	19.43
	802.11ac80-VHT0	42	5210	MCS0	18.00	17.78
	802.11ac160-VHT0	50	5250	MCS0	13.50	13.39

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		Tv	1 Antonna			
		ΙX	1 Antenna			
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		52	5260		20.50	20.43
	802.11a	56	5280	6Mbps	20.50	20.46
		60	5300	Olvibps	20.50	20.45
		64	5320		16.00	15.86
		52	5260	MCS0	20.50	20.40
	802.11n20-HT0	56	5280		20.50	20.22
	002.111120-1110	60	5300		20.50	20.35
		64	5320		16.00	15.79
5.25-5.35 GHz		52	5260		20.50	20.22
	802.11ac20-VHT0	56	5280	MCS0	20.50	20.27
	002.11ac20-V1110	60	5300	MCSU	20.50	20.38
		64	5320		16.00	15.85
	802.11n40-HT0	54	5270	MCS0	18.50	18.31
	002.111140-HTU	62	5310	IVICOU	14.50	14.31
	802.11ac40-VHT0	54	5270	MCS0	18.50	18.45
	002.11a040-VH10	62	5310	IVICSU	14.50	14.33
	802.11ac80-VHT0	58	5290	MCS0	15.50	15.31

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		Tx	1 Antenna			
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		100	5500		19.00	18.77
		116	5580		20.50	20.45
		120	5600		20.50	20.42
	802.11a	124	5620	6Mbps	20.50	20.36
		128	5640		20.50	20.41
		140	5700		18.50	18.30
		144	5720		20.00	19.84
		100	5500		19.00	18.81
		116	5580		20.50	20.19
		120	5600		20.50	20.24
5600 MHz	802.11n20-HT0	124	5620	MCS0	20.50	20.39
		128	5640		20.50	20.28
		140	5700		18.50	18.34
		144	5720		20.00	19.81
		100	5500		19.00	18.71
		116	5580		20.50	20.22
		120	5600		20.50	20.19
	802.11ac20-VHT0	124	5620	MCS0	20.50	20.39
		128	5640]	20.50	20.23
		140	5700		18.50	18.46
		144	5720		20.00	19.82

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		Tx	1 Antenna			
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		102	5510		17.00	16.88
		110	5550		20.50	20.48
	802.11n40-HT0	118	5590	MCS0	20.50	20.38
	602.1111 4 0-1110	126	5630	IVICOU	20.50	20.38
		134	5670		18.50	18.47
		142	5710		19.50	19.50
		102	5510		17.00	16.94
5600 MHz		110	5550		20.50	20.47
SOUU MINZ	802.11ac40-VHT0	118	5590	MCCO	20.50	20.38
	802.11ac40-VH10	126	5630	MCS0	20.50	20.23
		134	5670		18.50	18.38
		142	5710		19.50	19.40
		106	5530		17.50	17.27
	802.11ac80-VHT0	122	5610	MCS0	20.50	20.29
		138	5690		20.50	20.49
	802.11ac160-VHT0	114	5570	MCS0	15.00	14.77

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		Tx	1 Antenna			
Mode	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		149	5745		20.50	20.44
	802.11a	157	5785	6Mbps	20.50	20.45
		165	5825		20.50	20.47
		149	5745	MCS0	20.50	20.31
	802.11n20-HT0	157	5785		20.50	20.34
		165	5825		20.50	20.41
5800 MHz		149	5745		20.50	20.21
3000 1011 12	802.11n40-VHT0	157	5785	MCS0	20.50	20.28
		165	5825		20.50	20.33
	802.11n40-HT0	151	5755	MCS0	19.50	19.35
	802.11N40-H10	159	5795	IVICOU	20.00	19.81
	802.11ac40-VHT0	151	5755	MCS0	19.50	19.32
	002.11ac40-VH10	159	5795		20.00	19.79
	802.11ac80-VHT0	155	5775	MCS0	19.00	18.75

Bluetooth conducted nower table:

bluetooth conducted power table.								
Mode	Channel	Frequency (MHz)	Average	Max. Rated Avg. Power + Max.				
			1Mbps	2Mbps	3Mbps	Tolerance (dBm)		
	CH 00	2402	8.38	6.28	6.28			
BR/EDR	CH 39	2441	8.98	6.73	6.72	9.5		
	CH 78	2480	9.40	6.46	6.45			

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	Max. Rated Avg. Power + Max.	
			GFSK	Tolerance (dBm)	
	CH 00	2402	4.93		
LE	CH 20	2442	5.40	5.5	
	CH 39	2480	5.03		

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INPAQ

Tablet mode (power level 2)

Tx2 Antenna							
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)	
		1	2412	1Mbps	19.50	19.42	
		2	2417		19.50	19.43	
		6	2437		19.50	19.47	
	802.11b	10	2457		19.50	19.45	
		11	2462		19.50	19.49	
		12	2467		18.50	18.36	
		13	2472		15.00	14.91	
		1	2412		16.00	15.99	
	802.11g	2	2417	6Mbps	18.50	18.45	
		6	2437		19.50	19.43	
		10	2457		18.50	18.47	
		11	2462		16.50	16.41	
		12	2467		13.00	12.98	
2450 MHz		13	2472		-6.50	-6.58	
2450 NIUZ		1	2412	MCS0	16.00	15.96	
		2	2417		18.50	18.44	
		6	2437		19.50	19.42	
	802.11n20-HT0	10	2457		18.50	18.47	
		11	2462		16.50	16.45	
		12	2467		13.00	12.99	
		13	2472		-6.50	-6.56	
		3	2422	MCS0	14.50	14.48	
		4	2427		16.00	15.97	
		6	2437		16.00	15.89	
	802.11n40-HT0	8	2447		16.00	15.93	
		9	2452		14.00	13.99	
		10	2457		10.50	10.45	
		11	2462		3.50	3.47	

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Tx2 Antenna						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		36	5180	6Mbps	16.00	15.89
	000.44	40	5200		16.00	15.92
	802.11a	44	5220		16.00	15.87
		48	5240		16.00	15.93
		36	5180	MCS0	16.00	15.96
	802.11n20-HT0	40	5200		16.00	15.94
	002.111120 - 1110	44	5220		16.00	15.91
		48	5240		16.00	15.85
5.15-5.25 GHz		36	5180	MCS0	16.00	15.90
0.10-0.20 GHZ	802.11ac20-VHT0	40	5200		16.00	15.92
	002.11ac20-VH10	44	5220		16.00	15.87
		48	5240		16.00	15.95
	802.11n40-HT0	38	5190	MCS0	16.00	15.94
	002.111140-H10	46	5230		16.00	15.99
	802.11ac40-VHT0	38	5190	MCS0	16.00	15.92
	002.11a040-VITTU	46	5230	IVICOU	16.00	15.88
	802.11ac80-VHT0	42	5210	MCS0	16.00	15.97
	802.11ac160-VHT0	50	5250	MCS0	13.50	13.47

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		Tx	2 Antenna			
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		52	5260		16.00	15.99
	802.11a	56	5280	6Mbps	16.00	15.98
	002.11a	60	5300	OWISPO	16.00	15.91
		64	5320		16.00	15.97
		52	5260	MCS0	16.00	15.92
	802.11n20-HT0	56	5280		16.00	15.88
	002.111120-1110	60	5300		16.00	15.85
		64	5320		16.00	15.93
5.25-5.35 GHz		52	5260		16.00	15.91
	802.11ac20-VHT0	56	5280	MCS0	16.00	15.90
	002.11ac20-V1110	60	5300	MCSU	16.00	15.96
		64	5320		16.00	15.89
	802.11n40-HT0	54	5270	MCS0	16.00	15.99
	ου2. I III4U-Π I U	62	5310	IVICOU	14.50	14.41
	802.11ac40-VHT0	54	5270	MCS0	16.00	15.95
	802.11ac40-VH10	62	5310	IVICSU	14.50	14.43
	802.11ac80-VHT0	58	5290	MCS0	15.50	15.45

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		Tx	2 Antenna			
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		100	5500		16.00	15.88
		116	5580		16.00	15.85
		120	5600		16.00	15.92
	802.11a	124	5620	6Mbps	16.00	15.90
		128	5640		16.00	15.95
		140	5700		16.00	15.93
		144	5720		16.00	15.86
		100	5500		16.00	15.90
		116	5580		16.00	15.94
		120	5600		16.00	15.91
5600 MHz	802.11n20-HT0	124	5620	MCS0	16.00	15.93
		128	5640		16.00	15.89
		140	5700		16.00	15.97
		144	5720		16.00	15.92
		100	5500		16.00	15.84
		116	5580		16.00	15.81
		120	5600		16.00	15.88
	802.11ac20-VHT0	124	5620	MCS0	16.00	15.93
		128	5640		16.00	15.95
		140	5700		16.00	15.94
		144	5720		16.00	15.91

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	Tx2 Antenna									
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)				
		102	5510		16.00	15.49				
		110	5550		16.00	15.97				
	802.11n40-HT0	118	5590	MCS0	16.00	15.87				
		126	5630		16.00	15.90				
		134	5670		16.00	15.98				
		142	5710		16.00	15.93				
		102	5510		16.00	15.97				
5600 MHz		110	5550		16.00	15.95				
SOUU MITZ	000 44 - 40 1/1/170	118	5590	MCCO	16.00	15.92				
	802.11ac40-VHT0	126	5630	MCS0	16.00	15.85				
		134	5670		16.00	15.96				
		142	5710		16.00	15.92				
		106	5530		16.00	15.99				
	802.11ac80-VHT0	122	5610	MCS0	16.00	15.82				
		138	5690		16.00	15.94				
	802.11ac160-VHT0	114	5570	MCS0	15.00	14.98				

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		Tx	2 Antenna			
Mode	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		149	5745		16.00	15.88
	802.11a	157	5785	6Mbps	16.00	15.91
		165	5825		16.00	15.94
		149	5745	MCS0	16.00	15.96
	802.11n20-HT0	157	5785		16.00	15.85
		165	5825		16.00	15.90
5800 MHz		149	5745		16.00	15.92
3000 1011 12	802.11ac20-VHT0	157	5785	MCS0	16.00	15.89
		165	5825		16.00	15.93
	802.11n40-HT0	151	5755	MCS0	16.00	15.99
	002.111140-1110	159	5795	IVICOU	16.00	15.97
	802.11ac40-VHT0	151	5755	MCS0	16.00	15.94
	002.118040-VH10	159	5795		16.00	15.92
	802.11ac80-VHT0	155	5775	MCS0	16.00	15.95

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		Tx	1 Antenna			
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		1	2412		19.50	18.96
		2	2417		19.50	18.95
		6	2437		19.50	18.99
	802.11b	10	2457	1Mbps	19.50	18.93
		11	2462		19.50	18.98
		12	2467		18.50	18.40
		13	2472		15.00	14.96
		1	2412		16.00	15.99
		2	2417		17.50	17.48
		6	2437		19.50	18.92
	802.11g	10	2457	6Mbps	18.50	18.47
		11	2462		16.00	15.98
		12	2467		13.50	13.39
2450 MHz		13	2472		-6.00	-6.06
2450 WITZ		1	2412		16.00	15.97
		2	2417		17.50	17.41
		6	2437		19.50	19.41
	802.11n20-HT0	10	2457	MCS0	18.50	18.44
		11	2462		16.00	15.94
		12	2467		13.50	13.42
		13	2472		-6.00	-6.07
		3	2422		15.00	14.93
		4	2427		16.00	15.95
		6	2437		16.00	15.89
	802.11n40-HT0	8	2447	MCS0	16.00	15.98
		9	2452		14.50	14.46
		10	2457		11.00	10.99
		11	2462		3.00	2.97

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		Tx	1 Antenna			
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		36	5180		16.00	15.92
	802.11a	40	5200	6Mbpo	16.00	15.86
	002.11a	44	5220	6Mbps	16.00	15.83
		48	5240		16.00	15.91
		36	5180	MCS0	16.00	15.94
	802.11n20-HT0	40	5200		16.00	15.98
	002.111120-1110	44	5220		16.00	15.96
		48	5240		16.00	15.92
5.15-5.25 GHz		36	5180		16.00	15.90
0.13-3.23 GHZ	802.11ac20-VHT0	40	5200	MCS0	16.00	15.89
	002.11ac20-V1110	44	5220	MCSU	16.00	15.95
		48	5240		16.00	15.92
	802.11n40-HT0	38	5190	MCS0	16.00	15.99
	002.111140-1110	46	5230	IVICOU	16.00	15.97
	802.11ac40-VHT0	38	5190	MCS0	16.00	15.95
	002.11a040-VIIIU	46	5230	IVICOU	16.00	15.93
	802.11ac80-VHT0	42	5210	MCS0	16.00	15.99
	802.11ac160-VHT0	50	5250	MCS0	13.50	13.49

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		Tx	1 Antenna			
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		52	5260		16.00	15.98
	802.11a	56	5280	6Mbps	16.00	15.99
	002.11a	60	5300	Olvibps	16.00	15.97
		64	5320		16.00	15.95
		52	5260	MCS0	16.00	15.93
	802.11n20-HT0	56	5280		16.00	15.85
	002.111120-1110	60	5300		16.00	15.88
		64	5320		16.00	15.93
5.25-5.35 GHz		52	5260		16.00	15.90
	802.11ac20-VHT0	56	5280	MCS0	16.00	15.94
	002.118020-11110	60	5300	WCGO	16.00	15.93
		64	5320		16.00	15.95
	802.11n40-HT0	54	5270	MCS0	16.00	15.96
	002.111140-1110	62	5310	IVICOU	14.50	14.38
	802.11ac40-VHT0	54	5270	MCS0	16.00	15.94
	002.11a040-VIII0	62	5310	IVICOU	14.50	14.49
	802.11ac80-VHT0	58	5290	MCS0	15.50	15.47

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		Tx	1 Antenna			
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		100	5500		16.00	15.96
		116	5580		16.00	15.93
		120	5600		16.00	15.85
	802.11a	124	5620	6Mbps	16.00	15.87
		128	5640		16.00	15.89
		140	5700		16.00	15.95
		144	5720		16.00	15.92
		100	5500		16.00	15.97
		116	5580		16.00	15.93
		120	5600		16.00	15.90
5600 MHz	802.11n20-HT0	124	5620	MCS0	16.00	15.91
		128	5640		16.00	15.82
		140	5700		16.00	15.86
		144	5720		16.00	15.88
		100	5500		16.00	15.91
		116	5580		16.00	15.93
		120	5600		16.00	15.86
	802.11ac20-VHT0	124	5620	MCS0	16.00	15.89
		128	5640		16.00	15.92
		140	5700		16.00	15.94
		144	5720		16.00	15.90

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	TX1 Antenna									
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)				
		102	5510		16.00	15.94				
		110	5550		16.00	15.99				
	802.11n40-HT0	118	5590	MCS0	16.00	15.83				
		126	5630		16.00	15.88				
		134	5670		16.00	15.95				
		142	5710		16.00	15.96				
		102	5510		16.00	15.90				
5000 MILI-		110	5550		16.00	15.92				
5600 MHz	000 44 - 40 1/1/170	118	5590	MCCO	16.00	15.84				
	802.11ac40-VHT0	126	5630	MCS0	16.00	15.89				
		134	5670		16.00	15.91				
		142	5710		16.00	15.94				
		106	5530		16.00	15.99				
	802.11ac80-VHT0	122	5610	MCS0	16.00	15.92				
		138	5690		16.00	15.96				
	802.11ac160-VHT0	114	5570	MCS0	15.00	14.93				

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		Tx	1 Antenna			
Mode	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		149	5745		16.00	15.89
	802.11a	157	5785	6Mbps	16.00	15.85
		165	5825		16.00	15.92
		149	5745	MCS0	16.00	15.94
	802.11n20-HT0	157	5785		16.00	15.97
		165	5825		16.00	15.91
5800 MHz		149	5745		16.00	15.85
3600 WITZ	802.11n40-VHT0	157	5785	MCS0	16.00	15.93
		165	5825		16.00	15.94
	802.11n40-HT0	151	5755	MCS0	16.00	15.96
	002.1111 4 0-1110	159	5795	IVICOU	16.00	15.99
	802 11ac/0 \/UT0	151	5755	MCS0	16.00	15.90
	802.11ac40-VHT0	159	5795		16.00	15.92
	802.11ac80-VHT0	155	5775	MCS0	16.00	15.98

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Laptop mode (power level 1)

		Tx	2 Antenna			
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		1	2412		19.50	19.46
		2	2417		20.50	20.49
		6	2437		20.50	20.43
	802.11b	10	2457	1Mbps	20.50	20.46
		11	2462		19.50	19.42
		12	2467		18.50	18.47
		13	2472		15.00	14.98
		1	2412		16.00	15.97
		2	2417		18.50	18.46
		6	2437		20.50	20.41
	802.11g	10	2457	6Mbps	18.50	18.39
		11	2462		16.50	16.45
		12	2467		13.00	12.99
2450 MHz		13	2472		-6.50	-6.57
2430 WII 12		1	2412		16.00	15.96
		2	2417		18.50	18.45
		6	2437		20.50	20.37
	802.11n20-HT0	10	2457	MCS0	18.50	18.41
		11	2462		16.50	16.46
		12	2467		13.00	12.94
		13	2472		-6.50	-6.58
		3	2422		14.50	14.43
		4	2427		16.00	15.89
		6	2437		16.00	15.93
	802.11n40-HT0	8	2447	MCS0	16.00	15.99
		9	2452		14.00	13.98
		10	2457		10.50	10.47
		11	2462		3.50	3.45

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		Tx	2 Antenna			
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		36	5180		19.00	18.95
	802.11a	40	5200	6Mbpa	20.50	20.49
	002.11a	44	5220	6Mbps	20.50	20.47
		48	5240		20.50	20.43
		36	5180	MCS0	19.00	18.99
	802.11n20-HT0	40	5200		20.50	20.39
	002.111120 - 1110	44	5220		20.50	20.44
		48	5240		20.50	20.42
5.15-5.25 GHz		36	5180		19.00	18.96
0.10-0.20 GHZ	802.11ac20-VHT0	40	5200	MCS0	20.50	20.40
	002.11ac20-VH10	44	5220	MCSU	20.50	20.36
		48	5240		20.50	20.41
	802.11n40-HT0	38	5190	MCS0	18.00	17.94
	002.1111 4 0-1110	46	5230	IVICSO	19.00	18.88
	802.11ac40-VHT0	38	5190	MCS0	18.00	17.99
	002.11a040-VH10	46	5230	IVICOU	19.00	18.93
	802.11ac80-VHT0	42	5210	MCS0	17.50	17.46
	802.11ac160-VHT0	50	5250	MCS0	13.50	13.47

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		Tx	2 Antenna			
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		52	5260		20.50	20.45
	802.11a	56	5280	6Mbps	20.50	20.49
	002.11a	60	5300		20.50	20.48
		64	5320		16.50	16.43
	802.11n20-HT0	52	5260	MCS0	20.50	20.42
		56	5280		20.50	20.34
		60	5300		20.50	20.39
		64	5320		16.50	16.45
5.25-5.35 GHz		52	5260		20.50	20.40
	802.11ac20-VHT0	56	5280	MCS0	20.50	20.43
	002.11ac20-V1110	60	5300	MCSU	20.50	20.43
		64	5320		16.50	16.44
	802.11n40-HT0	54	5270	MCS0	18.50	18.47
	ου2. Ι ΙΙΙ 4 υ - Π Ι υ	62	5310	IVICOU	14.50	14.38
	802.11ac40-VHT0	54	5270	MCS0	18.50	18.46
	002.11a040-VH10	62	5310	IVICOU	14.50	14.39
	802.11ac80-VHT0	58	5290	MCS0	15.50	15.45

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		Tx	2 Antenna			
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		100	5500		19.00	18.84
		116	5580		20.50	20.41
		120	5600	6Mbps	20.50	20.39
	802.11a	124	5620		20.50	20.36
		128	5640		20.50	20.43
		140	5700		18.50	18.46
		144	5720		19.50	19.48
		100	5500		19.00	18.91
		116	5580		20.50	20.37
		120	5600		20.50	20.39
5600 MHz	802.11n20-HT0	124	5620	MCS0	20.50	20.41
		128	5640		20.50	20.43
		140	5700		18.50	18.35
		144	5720		19.50	19.41
		100	5500		19.00	18.98
		116	5580		20.50	20.41
		120	5600		20.50	20.42
	802.11ac20-VHT0	124	5620	MCS0	20.50	20.34
		128	5640		20.50	20.40
		140	5700		18.50	18.48
		144	5720		19.50	19.43

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		TX	2 Antenna			
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		102	5510		16.50	16.46
		110	5550	MCS0	20.50	20.46
	802.11n40-HT0	118	5590		20.50	20.44
		126	5630		20.50	20.41
		134	5670		19.50	19.47
		142	5710		19.50	19.45
		102	5510		16.50	16.44
5600 MHz		110	5550		20.50	20.39
3600 MHZ	802.11ac40-VHT0	118	5590	MCS0	20.50	20.42
	002.118040-VF10	126	5630	IVICOU	20.50	20.43
		134	5670		19.50	19.41
		142	5710		19.50	19.46
		106	5530	MCS0	17.00	16.99
	802.11ac80-VHT0	122	5610		20.50	20.40
		138	5690		20.50	20.49
	802.11ac160-VHT0	114	5570	MCS0	15.00	14.95

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		Tx	2 Antenna			
Mode	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
	802.11a	149	5745		20.50	20.46
		157	5785	6Mbps	20.50	20.43
		165	5825		20.50	20.47
	802.11n20-HT0	149	5745	MCS0	20.50	20.45
		157	5785		20.50	20.38
		165	5825		20.50	20.43
5800 MHz		149	5745		20.50	20.41
3000 1011 12	802.11ac20-VHT0	157	5785	MCS0	20.50	20.39
		165	5825		20.50	20.35
	802.11n40-HT0	151	5755	MCS0	18.50	18.44
	002.111140-1110	159	5795	IVICOU	20.00	19.89
	802.11ac40-VHT0	151	5755	MCS0	18.50	18.47
	002.118040-7110	159	5795	IVICOU	20.00	19.98
	802.11ac80-VHT0	155	5775	MCS0	18.50	18.45

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		Tx	1 Antenna			
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		1	2412		19.50	19.44
		2	2417		20.50	20.49
		6	2437		20.50	20.41
	802.11b	10	2457	1Mbps	20.50	20.48
		11	2462		19.50	19.43
		12	2467		18.50	18.48
		13	2472		15.00	14.97
		1	2412		16.00	15.99
		2	2417		17.50	17.42
		6	2437]	20.50	20.46
	802.11g	10	2457	6Mbps	18.50	18.40
		11	2462		16.00	15.93
		12	2467		13.50	13.38
2450 MHz		13	2472	1	-6.00	-6.01
2430 MITZ		1	2412		16.00	15.95
		2	2417	1	17.50	17.39
		6	2437	1	20.50	20.48
	802.11n20-HT0	10	2457	MCS0	18.50	18.41
		11	2462		16.00	15.89
		12	2467]	13.50	13.45
		13	2472		-6.00	-6.09
		3	2422		15.00	14.94
		4	2427		16.00	15.93
		6	2437		16.00	15.97
	802.11n40-HT0	8	2447	MCS0	16.00	15.88
		9	2452	1	14.50	14.45
		10	2457		11.00	10.98
		11	2462		3.00	2.97

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		Tx	1 Antenna			
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		36	5180	6Mbps	18.50	18.41
	802.11a	40	5200		20.00	19.96
		44	5220		20.50	20.49
		48	5240		20.50	20.43
	802.11n20-HT0	36	5180	MCS0	18.50	18.45
		40	5200		20.00	19.93
		44	5220		20.50	20.41
		48	5240		20.50	20.36
5.15-5.25 GHz		36	5180		18.50	18.42
0.10-0.20 GHZ	802.11ac20-VHT0	40	5200	MCS0	20.00	19.98
	002.11ac20-V1110	44	5220	MCSU	20.50	20.39
		48	5240		20.50	20.43
	802.11n40-HT0	38	5190	MCS0	18.00	17.95
	002.111140-1110	46	5230	MCSU	19.50	19.44
	802.11ac40-VHT0	38	5190	MCS0	18.00	17.92
	002.11a040-VH10	46	5230	IVICOU	19.50	19.38
	802.11ac80-VHT0	42	5210	MCS0	18.00	17.92
	802.11ac160-VHT0	50	5250	MCS0	13.50	13.48

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		Tx	1 Antenna			
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		52	5260		20.50	20.49
	802.11a	56	5280	6Mbps	20.50	20.48
	002.11a	60	5300		20.50	20.45
		64	5320		16.00	15.93
	802.11n20-HT0	52	5260		20.50	20.42
		56	5280	MCS0	20.50	20.43
		60	5300	IVICOU	20.50	20.44
		64	5320		16.00	15.98
5.25-5.35 GHz		52	5260		20.50	20.43
	802.11ac20-VHT0	56	5280	MCS0	20.50	20.41
	002.11ac20-V1110	60	5300	WCSO	20.50	20.38
		64	5320		16.00	15.97
	802.11n40-HT0	54	5270	MCS0	18.50	18.43
	002.1111 4 0-1110	62	5310	MCSU	14.50	14.48
	802.11ac40-VHT0	54	5270	MCS0	18.50	18.43
	002.11a040-VIII0	62	5310	IVICOU	14.50	14.41
	802.11ac80-VHT0	58	5290	MCS0	15.50	15.49

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		Tx	1 Antenna			
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		100	5500		19.00	18.98
		116	5580		20.50	20.36
		120	5600		20.50	20.41
	802.11a	124	5620	6Mbps	20.50	20.39
		128	5640		20.50	20.44
		140	5700		18.50	18.45
		144	5720		20.00	19.96
		100	5500		19.00	18.89
		116	5580		20.50	20.45
		120	5600		20.50	20.40
5600 MHz	802.11n20-HT0	124	5620	MCS0	20.50	20.43
		128	5640		20.50	20.42
		140	5700		18.50	18.45
		144	5720		20.00	19.97
		100	5500		19.00	18.94
		116	5580		20.50	20.44
		120	5600		20.50	20.36
	802.11ac20-VHT0	124	5620	MCS0	20.50	20.41
		128	5640		20.50	20.45
		140	5700		18.50	18.43
		144	5720		20.00	19.98

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		Tx	1 Antenna			
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		102	5510		17.00	16.99
		110	5550	MCS0	20.50	20.47
	802.11n40-HT0	118	5590		20.50	20.41
		126	5630		20.50	20.43
		134	5670		18.50	18.47
		142	5710		19.50	19.45
		102	5510		17.00	16.99
5600 MHz		110	5550		20.50	20.41
3000 MHZ	802.11ac40-VHT0	118	5590	MCS0	20.50	20.39
	002.11ac40-VH10	126	5630	MCSU	20.50	20.46
		134	5670		18.50	18.44
		142	5710		19.50	19.48
		106	5530	MCS0	17.50	17.47
	802.11ac80-VHT0	122	5610		20.50	20.43
		138	5690		20.50	20.48
	802.11ac160-VHT0	114	5570	MCS0	15.00	14.92

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		Tx	1 Antenna			
Mode	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
		149	5745		20.50	20.49
	802.11a	157	5785	6Mbps	20.50	20.47
		165	5825		20.50	20.43
	802.11n20-HT0	149	5745	MCS0	20.50	20.44
		157	5785		20.50	20.39
		165	5825		20.50	20.41
5800 MHz		149	5745		20.50	20.43
3000 1011 12	802.11n40-VHT0	157	5785	MCS0	20.50	20.45
		165	5825		20.50	20.42
	802.11n40-HT0	151	5755	MCS0	19.50	19.44
	002.111140-1110	159	5795	IVICOU	20.00	19.99
	802.11ac40-VHT0	151	5755	MCS0	19.50	19.43
	002.11a040-VH10	159	5795	IVICOU	20.00	19.89
	802.11ac80-VHT0	155	5775	MCS0	19.00	18.96

Bluetooth conducted power table:

Modo	Channol	Frequency	Average	Output Pow	ver (dBm)	Max. Rated Avg. Power + Max.
Mode Channel		(MHz)	1Mbps	2Mbps	3Mbps	Tolerance (dBm)
	CH 00	2402	8.66	7.13	7.11	
BR/EDR	CH 39	2441	9.26	7.54	7.52	9.5
	CH 78	2480	9.31	8.09	8.08	

Modo	Mada Channal		Average Output Power (dBm)	Max. Rated Avg. Power + Max.
Mode Channe	Chamilei	(MHz)	GFSK	Tolerance (dBm)
	CH 00	2402	5.46	
LE	CH 20	2442	5.47	5.5
	CH 39	2480	5.38	

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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 (Power level 2)

Backside/edges touch against the flat phantom

Laptop mode (Power level 1)

SAR measurement for Laptop mode is not required since the distance between antenna and user is > 20cm.

Note:

802.11b DSSS SAR Test Requirements:

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

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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.
- 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 TX1 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)
- 10. There are two antenna vendors, one is HTK, and another is INPAQ. Both of them were measured fully and respectively.

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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 ≤12.5 °	No TX Transmission
Laptop	12.5° < Lid angle ≤ 200°	Power Level 1
Tablet	200° < Lid angle ≤ 360°	Power Level 2

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1.6.1 Results and conclusion

The measured output power versus lid angle is tabulated in the following table, and the triggering verification complies with the device mode / power level declared by the manufacturer.

Operating mode validation by power measurement

Lid close to Tablet

	I 6		000 441	1405 5.00	14/15: (0014) 5.00	W.E. 5.00	14055 (4014) 5.00	140°E' (0014) E 00	1405 5.00	140'E' (0014) E 00
Antenna	Operation mode	Lid angle 0°	802.11b	WiFi a 5.2G	WiFi ac(80M) 5.2G	WiFi a 5.3G n/a	WiFi n(40M) 5.3G n/a	WiFi ac(80M) 5.6G n/a	WiFi a 5.8G	WiFi ac(80M) 5.8G n/a
			n/a	n/a	n/a				n/a	
		1°	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		2°	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		3°	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		4°	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		5°	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Lid close	6°	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		7°	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		8°	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		9°	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		10°	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		11°	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		12.5°	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		13.5°	20.40	20.47	17.49	20.35	18.49	20.38	20.38	18.34
		14.5°	20.31	20.31	17.35	20.40	18.37	20.37	20.44	18.40
		15.5°	20.45	20.38	17.45	20.47	18.42	20.39	20.31	18.43
		16.5°	20.40	20.49	17.39	20.35	18.46	20.36	20.37	18.48
		17.5°	20.50	20.41	17.50	20.37	18.47	20.39	20.41	18.33
		27°	20.40	20.41	17.47	20.46	18.34	20.32	20.39	18.41
		37°	20.34	20.43	17.32	20.38	18.37	20.46	20.48	18.41
		47°	20.37	20.43	17.45	20.48	18.33	20.48	20.47	18.31
		57°	20.40	20.49	17.49	20.46	18.37	20.46	20.33	18.37
		67°	20.46	20.49	17.49	20.42	18.41	20.39	20.50	18.36
		77°	20.46	20.38	17.39	20.42		20.39	20.50	18.36
		87°	20.32	20.50	17.36	20.37	18.36 18.31	20.37	20.40	18.32
		97°	20.40	20.38	17.44	20.45	18.48	20.32	20.37	18.42
	Laptop mode	107°	20.49	20.36	17.45	20.44	18.42	20.31	20.44	18.49
		117°	20.40	20.33	17.36	20.47	18.35	20.33	20.50	18.43
		127°	20.47	20.38	17.46	20.38	18.46	20.45	20.34	18.42
		137°	20.43	20.32	17.43	20.35	18.34	20.31	20.50	18.50
		147°	20.46	20.43	17.48	20.48	18.40	20.42	20.38	18.36
		157°	20.41	20.49	17.33	20.39	18.32	20.34	20.36	18.31
WLAN Tx2		167°	20.44	20.33	17.37	20.47	18.48	20.43	20.37	18.38
WLAIN IXZ		177°	20.41	20.33	17.45	20.42	18.34	20.49	20.31	18.32
		187°	20.33	20.42	17.50	20.39	18.45	20.50	20.46	18.40
		195°	20.39	20.33	17.45	20.46	18.48	20.32	20.34	18.46
		196°	20.49	20.42	17.33	20.41	18.45	20.48	20.48	18.39
		197°	20.50	20.41	17.41	20.43	18.47	20.47	20.47	18.37
		198°	20.48	20.41	17.39	20.33	18.48	20.32	20.32	18.49
		199°	20.31	20.37	17.49	20.39	18.47	20.49	20.37	18.37
		200°	20.42	20.41	17.32	20.45	18.50	20.34	20.33	18.37
		201°	19.35	15.82	15.88	15.92	15.92	15.97	15.86	15.90
		202°	19.33	15.89	15.93	15.99	15.85	15.96	15.83	15.96
		203°	19.39	15.88	15.83	15.98	15.91	15.90	15.84	15.97
		204°	19.44	15.89	15.96	15.85	15.82	15.82	15.84	15.97
		205°	19.43	15.81	15.82	15.98	15.88	15.98	15.85	15.89
		215°	19.43	16.00	15.82	15.94	15.86	15.90	15.87	15.93
		215 225°	19.34	15.85	15.62	15.82	15.86	15.90	15.82	15.93
		225°	19.42	15.85	15.93	15.82	15.85		15.82	15.93
								15.86		
		245°	19.44	15.93	15.94	15.86	15.95	15.97	15.97	15.95
		255°	19.41	15.86	15.96	15.81	15.92	15.85	15.97	15.95
		265°	19.43	15.96	15.93	15.90	15.86	15.87	15.96	15.89
		275°	19.32	15.90	15.87	15.83	15.98	15.95	15.94	15.85
	Tablet mode	285°	19.44	15.86	15.81	16.00	15.97	15.90	15.91	16.00
		295°	19.32	15.99	16.00	15.98	15.97	15.81	15.96	15.97
		305°	19.42	16.00	15.83	15.88	15.96	15.89	15.96	15.92
		315°	19.44	15.88	15.88	15.97	15.89	15.81	15.92	15.84
		325°	19.44	15.92	15.90	15.82	15.85	15.85	15.94	15.98
		335°	19.48	15.81	16.00	15.87	15.97	15.98	15.98	15.87
		345°	19.50	15.98	15.90	15.98	15.97	15.88	15.82	15.84
		355°	19.50	15.87	15.90	15.98	15.91	15.88	15.93	15.92
		356°	19.47	15.85	15.89	16.00	15.90	15.87	15.91	15.84
		357°	19.33	15.89	15.83	15.98	15.81	15.85	15.94	15.90
		358°	19.32	15.86	15.94	15.85	15.89	15.86	15.96	15.84
		359°	19.37	15.91	15.83	15.89	16.00	15.88	15.97	15.90
		360°	19.41	15.89	15.94	15.92	15.82	15.83	15.87	15.93
	1	300	10.71	10.00	10.07	10.02		10.00	10.07	

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	WiFi a 5.2G	WiFi ac(80M) 5.2G	WiFi a 5.3G	WiFi n(40M) 5.3G	WiFi ac(80M) 5.6G	WiFi a 5.8G	WiFi ac(80M) 5.8
Antenna	Operation mode	0°	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		1°	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		2°	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		3°	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		4°	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		5°	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Lid close	6°	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		7°	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		8°	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		9°	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		10°	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		11°	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		12.5°	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		13.5°	20.44	20.38	17.95	20.44	18.42	20.37	20.41	18.94
		14.5°	20.50	20.45	17.94	20.47	18.35	20.31	20.38	18.96
		15.5°	20.45	20.40	17.90	20.37	18.33	20.50	20.43	18.88
		16.5°	20.37	20.46	17.99	20.39	18.43	20.31	20.33	18.97
		17.5°	20.36	20.36	17.94	20.45	18.49	20.31	20.44	18.98
		27°	20.32	20.31	17.91	20.42	18.48	20.33	20.49	18.86
		37°	20.35	20.36	17.82	20.49	18.42	20.48	20.38	18.92
		47°	20.37	20.32	17.92	20.48	18.46	20.38	20.34	18.94
		57°	20.46	20.38	17.89	20.44	18.33	20.32	20.34	18.93
		67°	20.37	20.34	17.82	20.34	18.39	20.45	20.48	19.00
		77°	20.33	20.32	17.92	20.44	18.47	20.38	20.48	18.88
		87°	20.49	20.33	18.00	20.48	18.49	20.38	20.45	18.83
		97°	20.43	20.49	17.82	20.50	18.37	20.34	20.36	18.82
	Laptop mode	107°	20.43	20.39	17.85	20.39	18.38	20.33	20.37	18.92
		117°	20.36	20.34	17.94	20.48	18.37	20.33	20.42	18.97
		127°	20.41	20.48	17.88	20.39	18.42	20.36	20.49	18.92
		137°	20.46	20.31	17.82	20.48	18.34	20.50	20.48	18.90
		147° 157°	20.46	20.41 20.43	17.93 17.92	20.48 20.48	18.48 18.32	20.40 20.38	20.42	18.81 18.81
		167°	20.36	20.43	17.92	20.46	18.35	20.36	20.41	18.88
WLAN Tx1		167 177°	20.46	20.33	17.81	20.49	18.39	20.47	20.41	18.97
		187°	20.31	20.43	17.95	20.43	18.42	20.37	20.34	18.81
		195°	20.43	20.45	17.85	20.40	18.32	20.46	20.34	18.97
		196°	20.43	20.43	17.91	20.44	18.37	20.38	20.48	18.90
		197°	20.38	20.43	17.88	20.31	18.32	20.36	20.33	18.95
		198°	20.45	20.48	17.89	20.46	18.34	20.48	20.42	19.00
		199°	20.34	20.47	17.85	20.48	18.37	20.44	20.48	18.83
		200°	20.42	20.36	17.93	20.33	18.42	20.32	20.38	18.90
		201°	19.44	15.96	15.83	15.82	15.87	15.81	16.00	15.94
		202°	19.38	15.85	15.94	15.96	15.92	15.89	15.95	15.96
		203°	19.35	15.97	15.87	15.89	15.84	16.00	15.91	15.88
		204°	19.46	15.85	15.86	15.90	15.83	15.92	15.96	15.98
		205°	19.36	15.97	15.88	15.83	15.92	15.81	15.82	15.88
		215°	19.41	15.99	15.83	15.86	15.95	15.95	15.97	15.91
		225°	19.31	15.86	15.93	15.81	15.84	15.97	15.85	15.96
		235°	19.35	15.82	15.95	15.81	15.95	15.85	15.96	15.91
		245°	19.45	15.87	15.97	15.97	16.00	15.92	15.89	15.83
		255°	19.39	15.96	15.92	15.91	15.93	15.84	15.86	15.84
		265°	19.49	15.93	15.89	15.92	15.97	15.96	15.81	15.87
		275°	19.39	15.97	16.00	15.93	15.87	16.00	15.85	15.99
	Tablet mode	285°	19.32	15.90	15.97	15.93	15.89	15.89	15.82	15.93
		295°	19.37	15.82	15.86	15.92	15.89	15.92	15.81	15.88
		305°	19.38	15.84	15.85	15.95	15.94	15.99	15.93	15.93
		315°	19.48	15.88	15.87	15.95	15.94	15.93	15.81	15.96
		325°	19.47	15.84	15.90	15.81	15.90	16.00	15.84	15.99
		335°	19.38	15.94	15.88	15.81	15.92	15.86	16.00	15.93
		345°	19.33	15.86	15.93	15.93	15.95	15.81	16.00	15.89
		355°	19.44	15.90	15.92	15.81	15.95	15.82	15.86	15.89
		356°	19.33	15.92	15.82	15.93	15.83	15.89	15.93	15.96
		357°	19.50	15.86	15.81	15.98	15.91	15.81	15.96	15.83
		358°	19.45	16.00	15.81	15.93	15.95	15.88	15.81	15.97
		359°	19.50	15.95	15.98	15.98	15.92	15.97	15.88	15.87
		360°	19.36	15.84	15.81	15.93	15.81	15.94	15.91	15.96

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Tablet to Lid close

Antenna	Operation mode	Lid angle	802.11b	WiFi a 5.2G	WiFi ac(80M) 5.2G	WiFi a 5.3G	WiFi n(40M) 5.3G	WiFi ac(80M) 5.6G	WiFi a 5.8G	WiFi ac(80M) 5.8
	,	360°	19.36	15.87	15.86	15.91	15.89	15.97	15.83	15.81
		359°	19.44	15.95	15.89	15.83	15.90	15.91	15.84	15.83
	358°	19.35	15.92	15.85	15.85	15.96	15.99	15.97	15.81	
	357°	19.37	15.94	15.83	16.00	15.99	15.92	15.99	15.94	
	356°	19.35	15.86	15.86	15.84	16.00	15.87	15.82	15.92	
	355°	19.32	15.92	15.89	15.81	15.82	15.95	15.90	15.98	
		345°	19.32	15.92	15.69	15.99	15.83	15.95	15.90	15.96
		335°	19.35	15.87	15.86	15.81	15.93	15.88	15.81	15.93
		325°	19.48	15.99	15.98	15.90	15.92	15.97	15.89	15.90
		315°	19.37	15.96	15.99	15.81	15.87	15.96	15.97	15.89
		305°	19.41	16.00	15.93	15.87	15.83	15.90	15.95	15.96
		295°	19.38	15.83	16.00	15.86	15.87	15.97	15.99	15.91
		285°	19.38	15.97	15.97	15.99	15.86	15.99	15.91	15.82
		275°	19.37	15.90	15.96	15.92	15.88	15.86	15.95	15.97
	Tablet mode	265°	19.47	15.84	15.89	15.95	15.85	15.88	15.86	15.91
		255°	19.32	15.99	15.96	16.00	15.91	15.93	15.88	15.83
		245°	19.34	15.92	15.91	15.94	15.99	15.96	15.88	15.98
		235°	19.32	15.94	15.86	15.97	15.96	15.87	15.97	15.81
		225°	19.35	15.98	15.91	15.81	15.81	15.93	16.00	15.89
		215°	19.36	16.00	15.89	15.86	15.97	15.82	15.92	15.94
		205°	19.46	15.98	15.84	15.94	15.82	15.83	15.89	15.94
		195°	19.41	15.81	15.92	15.85	15.81	15.85	15.94	15.82
		185°	19.49	15.85	15.87	15.93	15.81	15.94	15.94	15.98
				15.97						
		175°	19.41		15.99	15.84	15.85	15.92	16.00	15.97
		165°	19.36	15.94	15.95	15.87	15.81	15.82	15.82	15.92
		164°	19.42	15.85	15.93	15.91	15.81	15.89	15.94	15.82
		163°	19.31	15.90	15.93	15.96	15.99	15.83	15.99	15.96
		162°	19.34	15.90	15.93	15.90	15.97	15.86	15.90	15.99
		161°	19.50	15.86	15.81	15.99	15.94	15.97	15.95	15.85
		160°	20.33	20.41	17.37	20.37	18.36	20.39	20.34	18.36
		159°	20.33	20.31	17.49	20.49	18.35	20.37	20.50	18.39
		158°	20.45	20.31	17.35	20.31	18.36	20.39	20.32	18.31
		157°	20.36	20.41	17.49	20.32	18.49	20.50	20.50	18.38
WLAN Tx2		156°	20.38	20.31	17.44	20.44	18.44	20.31	20.34	18.38
		155°	20.33	20.34	17.42	20.44	18.42	20.40	20.36	18.43
		145°	20.42	20.44	17.41	20.36	18.42	20.35	20.41	18.39
		135°	20.46	20.48	17.48	20.44	18.45	20.50	20.31	18.37
		125°	20.45	20.43	17.47	20.33	18.42	20.31	20.43	18.41
		115°	20.45	20.48	17.37	20.38	18.42	20.34	20.39	18.37
		105°	20.32	20.48	17.38	20.35	18.47	20.47	20.47	18.44
		95°	20.47	20.48	17.49	20.39	18.37	20.35	20.47	18.39
	Laptop mode	95 85°	20.47	20.33	17.49	20.39	18.35	20.35	20.45	18.46
		75°	20.38	20.42	17.43	20.45	18.36	20.39	20.31	18.44
		65°	20.38	20.41	17.50	20.34	18.32	20.48	20.44	18.39
		55°	20.42	20.49	17.40	20.42	18.39	20.39	20.43	18.34
		45°	20.40	20.43	17.47	20.31	18.45	20.43	20.36	18.31
		35°	20.35	20.41	17.50	20.43	18.40	20.32	20.36	18.45
		25°	20.38	20.41	17.46	20.46	18.44	20.32	20.34	18.34
		17.5°	20.48	20.33	17.50	20.41	18.37	20.38	20.38	18.31
		16.5°	20.46	20.42	17.31	20.40	18.40	20.36	20.31	18.38
		15.5°	20.45	20.41	17.31	20.45	18.48	20.36	20.49	18.40
		14.5°	20.37	20.48	17.47	20.35	18.32	20.36	20.44	18.49
		13.5°	20.37	20.46	17.39	20.37	18.42	20.47	20.32	18.34
		12.5°	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		11°	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		10°	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		9°	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	
		8°	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		7°	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Lid close	6°	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		5°	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		4°	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		3°	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-
		2°	n/a	n/a	n/a	n/a	II/d	riva	n/a	n/a
		2° 1°	n/a n/a	n/a n/a	n/a n/a	n/a	n/a	n/a	n/a	n/a

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				I	I		I			I
Antenna	Operation mode	Lid angle	802.11b	WiFi a 5.2G	WiFi ac(80M) 5.2G	WiFi a 5.3G	WiFi n(40M) 5.3G	WiFi ac(80M) 5.6G	WiFi a 5.8G	WiFi ac(80M) 5.8G
		360°	19.45	15.90	15.81	15.97	15.96	15.96	15.86	15.81
		359°	19.34	15.85	15.82	15.97	15.86	15.92	15.87	15.96
		358°	19.37	15.93	15.90	15.94	15.92	15.96	15.99	15.91
		357°	19.42	15.91	15.94	16.00	15.89	15.92	15.92	15.82
		356°	19.48	15.83	15.99	15.93	15.98	16.00	15.81	15.95
		355° 345°	19.41	15.90	15.92	15.93	15.91	15.94	15.85	15.90
		345°	19.45 19.40	15.86 15.83	15.93 15.95	15.81 15.98	15.81 15.96	15.84 15.82	15.90 15.86	15.86 15.91
		335°	19.40	15.83	15.95	15.98	15.96	15.82	15.86	15.91
		325 315°	19.33	15.96	15.96	15.93	15.86	15.94	15.98	15.84
		305°	19.43	15.86	15.88	15.98	15.96	15.94	15.90	15.90
		295°	19.43	15.96	15.93	15.83	16.00	15.87	15.97	15.97
		285°	19.42	15.94	15.89	15.91	15.91	15.99	15.83	15.83
		275°	19.42	15.92	15.92	15.88	15.84	15.83	15.98	15.95
	Tablet mode	265°	19.35	15.92	15.90	15.92	15.84	16.00	15.97	15.95
	Tablet Hode	255°	19.45	15.86	16.00	15.88	16.00	15.82	16.00	15.91
		245°	19.49	15.87	15.88	15.97	15.90	15.62	15.86	15.98
		235°	19.33	15.90	15.87	15.90	15.84	15.83	15.81	15.96
		235°	19.33	15.90	15.89	15.90	15.04	15.63	15.61	15.96
		215°	19.50	15.85	15.90	15.85	15.93	15.95	15.85	15.98
		205°	19.35	16.00	15.88	15.96	15.91	15.85	16.00	15.96
		195°	19.42	15.94	15.81	15.83	15.82	15.98	15.88	15.83
		185°	19.33	15.96	15.87	15.86	15.94	16.00	15.87	15.89
	1	175°	19.36	15.82	15.94	15.91	15.86	15.86	15.98	15.82
		165°	19.35	15.85	15.96	15.89	15.86	15.85	15.83	15.88
		164°	19.45	15.84	16.00	15.83	16.00	15.96	16.00	16.00
		163°	19.48	15.95	15.84	15.97	15.89	15.96	15.97	15.85
		162°	19.36	15.97	15.95	15.90	15.88	15.96	15.93	15.99
	ŀ	161°	19.40	15.95	15.88	15.83	15.87	15.99	15.87	15.92
		160°	20.48	20.37	17.98	20.38	18.44	20.34	20.47	18.87
		159°	20.33	20.34	17.83	20.38	18.34	20.50	20.47	18.91
		158°	20.37	20.38	17.92	20.37	18.50	20.40	20.49	18.86
		157°	20.40	20.32	17.88	20.33	18.49	20.34	20.47	18.98
WLAN Tx1		156°	20.50	20.31	17.95	20.37	18.44	20.39	20.39	18.96
		155°	20.45	20.42	17.85	20.44	18.46	20.47	20.50	18.92
		145°	20.48	20.50	17.89	20.38	18.37	20.37	20.42	18.95
		135°	20.46	20.44	17.81	20.31	18.38	20.35	20.36	19.00
		125°	20.31	20.43	17.87	20.35	18.44	20.39	20.45	18.92
		115°	20.33	20.39	18.00	20.44	18.50	20.37	20.46	18.86
		105°	20.43	20.32	17.90	20.46	18.43	20.44	20.35	18.81
		95°	20.32	20.31	17.93	20.39	18.45	20.31	20.41	18.91
	Laptop mode	85°	20.32	20.36	17.99	20.46	18.47	20.50	20.48	18.92
		75°	20.48	20.45	17.99	20.38	18.32	20.37	20.42	18.95
		65°	20.36	20.43	17.82	20.49	18.34	20.39	20.45	18.84
		55°	20.45	20.48	17.82	20.43	18.42	20.45	20.40	18.97
		45°	20.43	20.42	18.00	20.39	18.33	20.39	20.47	18.91
		35°	20.41	20.46	17.90	20.36	18.48	20.46	20.41	18.96
		25°	20.42	20.48	17.96	20.34	18.41	20.46	20.34	18.81
		17.5°	20.48	20.37	17.95	20.35	18.39	20.39	20.49	18.90
		16.5°	20.32	20.45	17.83	20.46	18.35	20.35	20.40	18.96
		15.5°	20.49	20.33	17.85	20.43	18.47	20.38	20.42	18.88
		14.5°	20.32	20.40	17.91	20.37	18.42	20.42	20.38	18.81
		13.5°	20.33	20.31	17.85	20.44	18.40	20.50	20.37	18.86
		12.5°	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		11°	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		10°	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		9°	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	1	8°	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	[l	7°	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Lid close	6°	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		5°	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	}	4°	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		3°	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		3° 2°	n/a n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		3°	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.

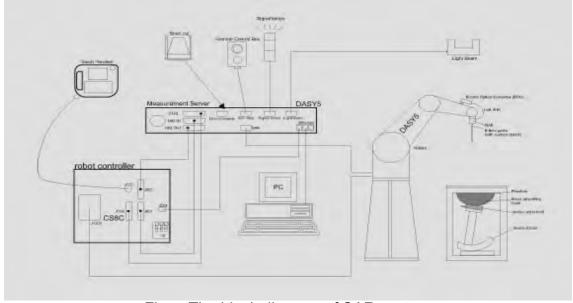


Fig. a The block diagram of SAR system

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

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1.8 System Components

EX3DV4 E-Field Probe

Construction	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	Basic Broad Band Calibration in air Conversion Factors (CF) for HSL 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

PHANTOM		
Model	ELI	
Construction	body-mounted wireless devices to 6 GHz. ELI is fully constandard and all known tissue optimized regarding its performance our standard phantom tables. A liquid. Reference markings on the complete setup, including	ompliance testing of handheld and is in the frequency range of 30 MHz impatible with the IEC 62209-2 is simulating liquids. ELI has been mance and can be integrated into a cover prevents evaporation of the integrated the phantom allow installation of all predefined phantom positions eaching three points. The phantom dosimetric probes and dipoles.
Shell	2 ± 0.2 mm	1
Thickness		
Filling Volume	Approx. 30 liters	
Dimensions	Major axis: 600 mm Minor axis: 400 mm	

DEVICE HOLDER

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

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1.9 SAR System Verification

The microwave circuit arrangement for system verification is sketched in Fig. b. The daily system accuracy verification occurs within the flat section of the SAM phantom. A SAR measurement was performed to see if the measured SAR was within +/- 10% from the target SAR values. These tests were done at 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 > 3 G Hz) in all the cases. It is seen that the system is operating within its specification, as the results are within acceptable tolerance of the reference values.

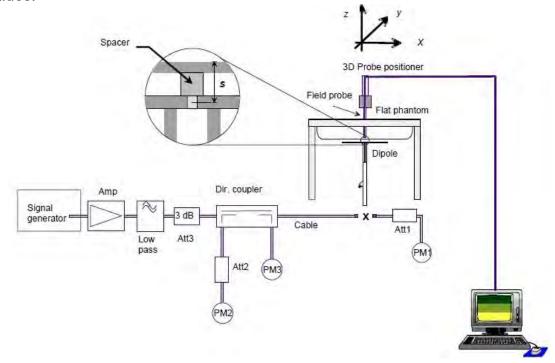


Fig. b The block diagram of system verification

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Validation Kit	S/N	Frequency (MHz)		1W Target SAR-1g (mW/g)	pin=250mW Measured SAR-1g (mW/g)	Measured SAR-1g normalized to 1W (mW/g)	Deviation (%)	Measured Date	
D2450V2	727	2450 Head		53	13.70	49.6	-6.42%	Jul. 12, 2019	
Validation Kit	S/N	Frequency (MHz)		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	79.2	7.91	79.1	-0.13%	Jul. 13, 2019
D5GHzV2	1023	5300	Head	82.6	8.25	82.5	-0.12%	Jul. 16, 2019	
DOGHZVZ	1023	5600	Head	85.7	8.61	86.1	0.47%	Jul. 17, 2019	
		5800	Head	80.4	8.11	81.1	0.87%	Jul. 19, 2019	

Table 1. Results of system verification

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1.10 Tissue Simulant Fluid for the Frequency Band

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

All dielectric parameters of tissue simulates were measured within 24 hours of SAR measurements. The measured conductivity and permittivity are all within ± 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, εr	Target Conductivity, σ (S/m)	Measured Dielectric Constant, εr	Measured Conductivity, σ (S/m)	% dev εr	% dev σ
		2402	39.285	1.757	39.179	1.742	-0.27%	-0.87%
		2412	39.268	1.766	39.141	1.750	-0.32%	-0.92%
		2417	39.259	1.771	39.134	1.754	-0.32%	-0.94%
		2437	39.223	1.788	39.114	1.773	-0.28%	-0.86%
	Jul, 12. 2019	2441	39.216	1.792	39.109	1.776	-0.27%	-0.89%
		2450	39.200	1.800	39.085	1.783	-0.29%	-0.94%
		2457	39.191	1.808	39.079	1.791	-0.29%	-0.92%
		2462	39.185	1.813	39.075	1.797	-0.28%	-0.89%
		2480	39.162	1.827	39.052	1.810	-0.28%	-0.91%
		5190	35.997	4.645	36.456	4.579	1.27%	-1.42%
		5200	35.986	4.655	36.454	4.588	1.30%	-1.44%
	Jul, 13. 2019	5210	35.974	4.665	36.447	4.602	1.31%	-1.36%
		5220	35.963	4.676	36.434	4.611	1.31%	-1.38%
		5230	35.951	4.686	36.408	4.622	1.27%	-1.36%
		5240	35.940	4.696	36.396	4.631	1.27%	-1.38%
	Jul, 16. 2019	5260	35.917	4.717	36.211	4.665	0.82%	-1.09%
Head		5270	35.906	4.727	36.208	4.676	0.84%	-1.07%
		5280	35.894	4.737	36.185	4.686	0.81%	-1.08%
		5300	35.871	4.758	36.153	4.707	0.78%	-1.06%
		5320	35.849	4.778	36.148	4.726	0.84%	-1.09%
		5530	35.609	4.993	35.911	4.926	0.85%	-1.35%
		5550	35.586	5.014	35.899	4.948	0.88%	-1.31%
	h.l. 47, 0040	5600	35.529	5.065	35.863	4.999	0.94%	-1.30%
	Jul, 17. 2019	5670	35.449	5.137	35.757	5.072	0.87%	-1.26%
		5690	35.426	5.157	35.748	5.091	0.91%	-1.28%
		5710	35.403	5.178	35.740	5.109	0.95%	-1.33%
		5745	35.363	5.214	35.737	5.153	1.06%	-1.16%
		5755	35.351	5.224	35.724	5.161	1.05%	-1.20%
		5775	35.329	5.244	35.711	5.181	1.08%	-1.21%
	Jul, 19. 2019	5785	35.317	5.255	35.709	5.189	1.11%	-1.25%
		5795	35.306	5.265	35.699	5.200	1.11%	-1.23%
		5800	35.300	5.270	35.698	5.206	1.13%	-1.21%
		5825	35.271	5.296	35.666	5.230	1.12%	-1.24%

Table 2. Dielectric Parameters of Tissue Simulant Fluid

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The composition of the tissue simulating liquid:

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

Simulating Liquids for 5 GHz. Manufactured by SPEAG:

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

Table 3. Recipes for Tissue Simulating Liquid

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1.11 Evaluation Procedures

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

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

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

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

The maximum search is automatically performed after each area scan measurement. It is based on splines in two or three dimensions. The procedure can find the maximum for most SAR distributions even with relatively large grid spacing. After the area scanning measurement, the probe is automatically moved to a position at the interpolated maximum. The following scan can directly use this position for reference, e.g., for a finer resolution grid or the cube evaluations. The 1g and 10g peak evaluations are only available for the predefined cube 7x7x7 scans. The routines are verified and optimized for the grid dimensions used in 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 (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 ($\sim 2\%$ for c; much better for ρ), there is no standard for the measurement of the conductivity. Depending on the method and liquid, the error can well exceed ±5%.
- Temperature rise measurements are not very sensitive and therefore are often performed at a higher power level than the E-field The nonlinearities in the system (e.g., measurements. measurements, different components, etc.) must be considered.

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

1.12.2 Calibration with Analytical Fields

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

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

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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.

- 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).
- Occupational/Controlled limits apply when persons are exposed as a consequence of their employment provided these persons are fully aware of and exercise control over their exposure. Awareness of exposure can be accomplished by use of warning labels or by specific training or education through appropriate means, such as an RF safety program in a work environment.
- Limits for General Population/Uncontrolled exposure: 0.08 W/kg as 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

HTK

Tx2 Antenna (Tablet mode)

Antenna	Mode	Position	Distance (mm)	СН	Freq.	Max. Rated Avg. Power + Max.	Measured Avg. Power	Scaling	Averaged S (W	AR over 1g /kg)	Plot page
			()		(Tolerance (dBm)	(dBm)		Measured	Reported	1-3-
		Back side	0	11	2462	19.50	19.49	100.23%	0.111	0.111	-
		Top side	0	11	2462	19.50	19.49	100.23%	0.689	0.691	93
	WLAN 802.11b	Bottom side	0	11	2462	19.50	19.49	100.23%	0.010	0.010	-
		Right side	0	11	2462	19.50	19.49	100.23%	0.019	0.019	-
		Left side	0	11	2462	19.50	19.49	100.23%	0.225	0.226	-
		Back side	0	38	5190	16.00	15.93	101.62%	0.048	0.049	-
		Top side	0	38	5190	16.00	15.93	101.62%	0.723	0.735	94
	WLAN 802.11n(40M) 5.2G	Bottom side	0	38	5190	16.00	15.93	101.62%	0.004	0.004	-
		Right side	0	38	5190	16.00	15.93	101.62%	0.032	0.033	-
		Left side	0	38	5190	16.00	15.93	101.62%	0.139	0.141	-
		Back side	0	42	5210	16.00	15.92	101.86%	0.053	0.054	-
		Top side	0	42	5210	16.00	15.92	101.86%	0.798	0.813	95
Tx2	WLAN 802.11ac(80M) 5.2G	Bottom side	0	42	5210	16.00	15.92	101.86%	0.005	0.005	-
11/2		Right side	0	42	5210	16.00	15.92	101.86%	0.036	0.037	-
		Left side	0	42	5210	16.00	15.92	101.86%	0.152	0.155	-
		Back side	0	64	5320	16.00	15.95	101.16%	0.051	0.052	-
		Top side	0	64	5320	16.00	15.95	101.16%	0.786	0.795	96
	WLAN 802.11a 5.3G	Bottom side	0	64	5320	16.00	15.95	101.16%	0.005	0.005	-
		Right side	0	64	5320	16.00	15.95	101.16%	0.034	0.034	-
		Left side	0	64	5320	16.00	15.95	101.16%	0.151	0.153	-
		Back side	0	54	5270	16.00	15.92	101.86%	0.055	0.056	-
		Top side	0	54	5270	16.00	15.92	101.86%	0.858	0.874	97
	WLAN 802.11n(40M) 5.3G	Top side*	0	54	5270	16.00	15.92	101.86%	0.847	0.863	-
	WLAN OUZ. (TR(40M) 5.3G	Bottom side	0	54	5270	16.00	15.92	101.86%	0.005	0.005	-
		Right side	0	54	5270	16.00	15.92	101.86%	0.038	0.039	-
		Left side	0	54	5270	16.00	15.92	101.86%	0.164	0.167	-

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

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Antenna	Mode	Position	Distance (mm)	СН	Freq.	Max. Rated Avg. Power + Max.	Measured Avg. Power	Scaling		SAR over 1g /kg)	Plot page
			()		(2)	Tolerance (dBm)	(dBm)		Measured	Reported	page
		Back side	0	142	5710	16.00	15.99	100.23%	0.074	0.074	-
		Top side	0	110	5550	16.00	15.91	102.09%	1.020	1.041	-
		Top side	0	134	5670	16.00	15.97	100.69%	1.100	1.108	-
	W/I ANI 900 11 m/40MM E GO	Top side	0	142	5710	16.00	15.99	100.23%	1.130	1.133	98
	WLAN 802.11n(40M) 5.6G	Top side*	0	142	5710	16.00	15.99	100.23%	1.110	1.113	-
		Bottom side	0	142	5710	16.00	15.99	100.23%	0.007	0.007	-
		Right side	0	142	5710	16.00	15.99	100.23%	0.051	0.051	-
		Left side	0	142	5710	16.00	15.99	100.23%	0.217	0.218	-
		Back side	0	138	5690	16.00	15.99	100.23%	0.077	0.077	-
		Top side	0	106	5530	16.00	15.97	100.69%	1.080	1.087	-
		Top side	0	138	5690	16.00	15.99	100.23%	1.190	1.193	99
	WLAN 802.11ac(80M) 5.6G	Top side*	0	138	5690	16.00	15.99	100.23%	1.180	1.183	-
		Bottom side	0	138	5690	16.00	15.99	100.23%	0.007	0.007	-
Tx2		Right side	0	138	5690	16.00	15.99	100.23%	0.053	0.053	-
1XZ		Left side	0	138	5690	16.00	15.99	100.23%	0.222	0.223	-
		Back side	0	151	5755	16.00	15.95	101.16%	0.081	0.082	-
		Top side	0	151	5755	16.00	15.95	101.16%	1.110	1.123	100
		Top side*	0	151	5755	16.00	15.95	101.16%	1.090	1.103	-
	WLAN 802.11n(40M) 5.8G	Top side	0	159	5795	16.00	15.87	103.04%	1.080	1.113	-
		Bottom side	0	151	5755	16.00	15.95	101.16%	0.007	0.007	-
		Right side	0	151	5755	16.00	15.95	101.16%	0.054	0.055	-
		Left side	0	151	5755	16.00	15.95	101.16%	0.221	0.224	-
		Back side	0	155	5775	16.00	15.97	100.69%	0.076	0.077	-
		Top side	0	155	5775	16.00	15.97	100.69%	1.140	1.148	101
	WLAN 802.11ac(80M) 5.8G	Top side*	0	155	5775	16.00	15.97	100.69%	1.110	1.118	-
	VVLAIN 8UZ. I TAC(8UM) 5.8G	Bottom side	0	155	5775	16.00	15.97	100.69%	0.007	0.007	-
		Right side	0	155	5775	16.00	15.97	100.69%	0.049	0.049	-
		Left side	0	155	5775	16.00	15.97	100.69%	0.219	0.221	-

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

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Tx1 Antenna (Tablet mode)

Intenna	Mode	Position	Distance	СН	Freq.	Max. Rated Avg. Power + Max.	Measured Avg. Power	Scaling	Averaged S (W	AR over 1g /kg)	Plo
			(mm)		(MHz)	Tolerance (dBm)	(dBm)	-	Measured	Reported	pag
		Back side	0	1	2412	19.50	19.45	101.16%	0.105	0.106	-
		Top side	0	1	2412	19.50	19.45	101.16%	0.913	0.924	-
		Top side	0	6	2437	19.50	19.43	101.62%	0.981	0.997	10:
		Top side*	0	6	2437	19.50	19.43	101.62%	0.962	0.978	١.
	WLAN 802.11b	Top side	0	11	2462	19.50	19.42	101.86%	0.895	0.912	١.
		Bottom side	0	1	2412	19.50	19.45	101.16%	0.033	0.033	١.
		Right side	0	1	2412	19.50	19.45	101.16%	0.296	0.299	Ι.
		Left side	0	1	2412	19.50	19.45	101.16%	0.042	0.042	Η.
		Back side	0	78	2480	9.50	9.40	102.33%	0.011	0.011	١.
		Top side	0	78	2480	9.50	9.40	102.33%	0.099	0.101	10
	Bluetooth	Bottom side	0	78	2480	9.50	9.40	102.33%	0.004	0.004	-
	(GFSK)				1						┈
		Right side	0	78	2480	9.50	9.40	102.33%	0.033	0.034	H
		Left side	0	78	2480	9.50	9.40	102.33%	0.005	0.005	<u> </u>
		Back side	0	38	5190	16.00	15.94	101.39%	0.086	0.087	H
		Top side	0	38	5190	16.00	15.94	101.39%	1.150	1.166	10
		Top side*	0	38	5190	16.00	15.94	101.39%	1.130	1.146	<u> </u>
	WLAN 802.11n(40M) 5.2G	Top side	0	46	5230	16.00	15.92	101.86%	0.970	0.988	
		Bottom side	0	38	5190	16.00	15.94	101.39%	0.024	0.024	
		Right side	0	38	5190	16.00	15.94	101.39%	0.241	0.244	Ŀ
		Left side	0	38	5190	16.00	15.94	101.39%	0.038	0.039	
		Back side	0	42	5210	16.00	15.97	100.69%	0.080	0.080	
		Top side	0	42	5210	16.00	15.97	100.69%	1.070	1.077	10
	W/I AN 902 11cc/90M/ F 20	Top side	0	42	5210	16.00	15.97	100.69%	1.040	1.047	
	WLAIN 602. I Tac(60IVI) 5.26	Bottom side	0	42	5210	16.00	15.97	100.69%	0.022	0.022	
		Right side	0	42	5210	16.00	15.97	100.69%	0.223	0.225	
		Left side	0	42	5210	16.00	15.97	100.69%	0.035	0.035	
		Back side	0	52	5260	16.00	15.98	100.46%	0.084	0.084	١.
		Top side	0	52	5260	16.00	15.98	100.46%	1.130	1.135	Ι.
		Top side	0	56	5280	16.00	15.96	100.93%	1.160	1.171	10
		Top side*	0	56	5280	16.00	15.96	100.93%	1.070	1.080	١.
		Bottom side	0	52	5260	16.00	15.98	100.46%	0.021	0.021	١.
		Right side	0	52	5260	16.00	15.98	100.46%	0.233	0.234	Η.
		Left side	0	52	5260	16.00	15.98	100.46%	0.037	0.037	١.
Tx1		Back side	0	54	5270	16.00	15.98	100.46%	0.085	0.085	
		Top side	0	54	5270	16.00	15.98	100.46%	1.140	1.145	10
		Top side*	0	54	5270	16.00	15.98	100.46%	1.050	1.055	Η"
	WLAN 802.11n(40M) 5.3G	Bottom side	0	54	5270	16.00	15.98	100.46%	0.019	0.019	
			0	54	5270	16.00	15.98	100.46%	0.019	0.019	
	WLAN 802.11n(40M) 5.3G	Right side		_							+-
		Left side	0	54	5270	16.00	15.98	100.46%	0.036	0.036	-
		Back side	0	134	5670	16.00	15.98	100.46%	0.081	0.081	٠
		Top side	0	134	5670	16.00	15.98	100.46%	1.070	1.075	10
		Top side*	0	134	5670	16.00	15.98	100.46%	1.070	1.075	┵
	WLAN 802.11n(40M) 5.6G	Top side	0	142	5710	16.00	15.95	101.16%	1.060	1.072	<u> </u>
		Bottom side	0	134	5670	16.00	15.98	100.46%	0.018	0.018	L.
		Right side	0	134	5670	16.00	15.98	100.46%	0.219	0.220	ļ .
		Left side	0	134	5670	16.00	15.98	100.46%	0.033	0.033	
		Back side	0	138	5690	16.00	15.99	100.23%	0.084	0.084	
		Top side	0	106	5530	16.00	15.94	101.39%	1.130	1.146	10
		Top side*	0	106	5530	16.00	15.94	101.39%	1.060	1.075	
	WLAN 802.11ac(80M) 5.6G	Top side	0	138	5690	16.00	15.99	100.23%	1.120	1.123	
		Bottom side	0	138	5690	16.00	15.99	100.23%	0.020	0.020	Γ.
	WLAN 802.11n(40M) 5.3G WLAN 802.11n(40M) 5.6G	Right side	0	138	5690	16.00	15.99	100.23%	0.215	0.215	П
		Left side	0	138	5690	16.00	15.99	100.23%	0.031	0.031	١.
		Back side	0	159	5795	16.00	15.98	100.46%	0.081	0.081	١.
		Top side	0	151	5755	16.00	15.97	100.69%	1.070	1.077	١.
		Top side	0	159	5795	16.00	15.98	100.46%	1.160	1.165	1
	WLAN 802.11n(40M) 5.8G	Top side*	0	159	5795	16.00	15.98	100.46%	1.130	1.135	T.
		Bottom side	0	159	5795	16.00	15.98	100.46%	0.019	0.019	
		Right side	0	159	5795	16.00	15.98	100.46%	0.019	0.019	
		Left side	0	159		16.00	15.98	100.46%	0.226	0.227	
					5795						
		Back side	0	155	5775	16.00	15.92	101.86%	0.089	0.091	-
		Top side	0	155	5775	16.00	15.92	101.86%	1.130	1.151	11
	WLAN 802.11ac(80M) 5.8G	Top side*	0	155	5775	16.00	15.92	101.86%	1.120	1.141	
	(,	Bottom side	0	155	5775	16.00	15.92	101.86%	0.023	0.023	<u> </u>
		Right side	0	155	5775	16.00	15.92	101.86%	0.224	0.228	
			0	155	5775	16.00	15.92	101.86%	0.036	0.037	-

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

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INPAQ

Tx2 Antenna (Tablet mode)

Antenna	Mode	Position	Distance (mm)	СН	Freq.	Max. Rated Avg. Power + Max.	Measured Avg. Power	Scaling		SAR over 1g /kg)	Plot page
			()		(11112)	Tolerance (dBm)	(dBm)		Measured	Reported 0.088 0.543 0.008 0.017 0.218 0.029 0.397 0.001 0.009 0.079 0.036 0.465 0.001 0.013 0.093 0.042 0.533 0.001 0.001 0.001 0.001 0.0038	page
		Back side	0	11	2462	19.50	19.49	100.23%	0.088	0.088	-
		Top side	0	11	2462	19.50	19.49	100.23%	0.542	0.543	112
	WLAN 802.11b	Bottom side	0	11	2462	19.50	19.49	100.23%	0.008	0.008	-
		Right side	0	11	2462	19.50	19.49	100.23%	0.017	0.017	-
		Left side	0	11	2462	19.50	19.49	100.23%	0.217	0.218	-
		Back side	0	42	5210	16.00	15.97	100.69%	0.029	0.029	-
		Top side	0	42	5210	16.00	15.97	100.69%	0.394	0.397	113
	WLAN 802.11ac(80M) 5.2G	Bottom side	0	42	5210	16.00	15.97	100.69%	0.001	0.001	-
		Right side	0	42	5210	16.00	15.97	100.69%	0.009	0.009	-
-		Left side	0	42	5210	16.00	15.97	100.69%	0.078	0.079	-
		Back side	0	54	5270	16.00	15.99	100.23%	0.036	0.036	-
		Top side	0	54	5270	16.00	15.99	100.23%	0.464	0.465	114
Tx2	WLAN 802.11n(40M) 5.3G	Bottom side	0	54	5270	16.00	15.99	100.23%	0.001	0.001	-
		Right side	0	54	5270	16.00	15.99	100.23%	0.013	0.013	-
		Left side	0	54	5270	16.00	15.99	100.23%	0.093	0.093	-
		Back side	0	106	5530	16.00	15.99	100.23%	0.042	0.042	-
		Top side	0	106	5530	16.00	15.99	100.23%	0.532	0.533	115
	WLAN 802.11ac(80M) 5.6G	Bottom side	0	106	5530	16.00	15.99	100.23%	0.001	0.001	-
		Right side	0	106	5530	16.00	15.99	100.23%	0.015	0.015	-
		Left side	0	106	5530	16.00	15.99	100.23%	0.101	0.101	-
-		Back side	0	155	5775	16.00	15.95	101.16%	0.038	0.038	-
		Top side	0	155	5775	16.00	15.95	101.16%	0.499	0.505	116
	WLAN 802.11ac(80M) 5.8G	Bottom side	0	155	5775	16.00	15.95	101.16%	0.001	0.001	-
		Right side	0	155	5775	16.00	15.95	101.16%	0.014	0.014	-
		Left side	0	155	5775	16.00	15.95	101.16%	0.097	0.098	-

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Tx1 Antenna (Tablet mode)

Antenna	Mode	Position	Distance (mm)	СН	Freq.	Max. Rated Avg. Power + Max.	Measured Avg. Power	Scaling		SAR over 1g /kg)	Plot page
			()		(/	Tolerance (dBm)	(dBm)		Measured	Reported	1-3-
		Back side	0	6	2437	19.50	18.99	112.46%	0.085	0.096	-
		Top side	0	6	2437	19.50	18.99	112.46%	0.462	0.520	117
	WLAN 802.11b	Bottom side	0	6	2437	19.50	18.99	112.46%	0.047	0.053	-
		Right side	0	6	2437	19.50	18.99	112.46%	0.303	0.341	-
		Left side	0	6	2437	19.50	18.99	112.46%	0.043	0.048	-
		Back side	0	78	2480	9.50	9.31	104.47%	0.006	0.007	-
		Top side	0	78	2480	9.50	9.31	104.47%	0.034	0.036	118
	Bluetooth (GFSK)	Bottom side	0	78	2480	9.50	9.31	104.47%	0.003	0.004	-
	(Gr GiV)	Right side	0	78	2480	9.50	9.31	104.47%	0.022	0.023	-
		Left side	0	78	2480	9.50	9.31	104.47%	0.003	0.003	-
		Back side	0	42	5210	16.00	15.99	100.23%	0.023	0.023	-
	WLAN 802.11ac(80M) 5.2G	Top side	0	42	5210	16.00	15.99	100.23%	0.629	0.630	119
		Bottom side	0	42	5210	16.00	15.99	100.23%	0.014	0.014	-
		Right side	0	42	5210	16.00	15.99	100.23%	0.056	0.056	-
T. 4		Left side	0	42	5210	16.00	15.99	100.23%	0.010	0.010	-
Tx1		Back side	0	54	5270	16.00	15.96	100.93%	0.034	0.034	-
		Top side	0	54	5270	16.00	15.96	100.93%	0.785	0.792	120
	WLAN 802.11n(40M) 5.3G	Bottom side	0	54	5270	16.00	15.96	100.93%	0.020	0.020	-
		Right side	0	54	5270	16.00	15.96	100.93%	0.066	0.067	-
		Left side	0	54	5270	16.00	15.96	100.93%	0.015	0.015	-
		Back side	0	106	5530	16.00	15.99	100.23%	0.026	0.026	-
		Top side	0	106	5530	16.00	15.99	100.23%	0.689	0.691	121
	WLAN 802.11ac(80M) 5.6G	Bottom side	0	106	5530	16.00	15.99	100.23%	0.016	0.016	-
		Right side	0	106	5530	16.00	15.99	100.23%	0.060	0.060	-
		Left side	0	106	5530	16.00	15.99	100.23%	0.012	0.012	-
		Back side	0	155	5775	16.00	15.98	100.46%	0.018	0.018	-
		Top side	0	155	5775	16.00	15.98	100.46%	0.544	0.547	122
	WLAN 802.11ac(80M) 5.8G	Bottom side	0	155	5775	16.00	15.98	100.46%	0.011	0.011	-
		Right side	0	155	5775	16.00	15.98	100.46%	0.043	0.043	-
		Left side	0	155	5775	16.00	15.98	100.46%	0.008	0.008	-

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 TX2	Yes
BT + 5GHz WLAN TX2	Yes

Note:

- 1. Bluetooth and WLAN TX1 share the same antenna path, and BT can transmit with WLAN TX2 simultaneously.
- 2. For 2.4/5GHz WLAN TX2 and TX1 antennas, the maximum output power of each antenna during simultaneous transmission is 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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HTK

2.4 GHz WI AN MIMO

	SIIZ VVLAIN IVIIIVIO					
No.	Conditions	Position	Tx2	Tx1	SAR Sum	SPLSR
		Back side	0.111	0.106	0.217	ΣSAR<1.6, Not required
	1 2.4 GHz WLAN MIMO	Top side	0.691	0.997	1.688	Analyzed as below
1		Bottom side	0.010	0.033	0.043	ΣSAR<1.6, Not required
		Right side	0.019	0.299	0.318	ΣSAR<1.6, Not required
		Left side	0.226	0.042	0.268	ΣSAR<1.6, Not required

A OLI- VALLANDADA

2.4 GHz WL	AN MIM	O							
Conditions	(W/kg)				em)	ΣSAR (W/kg)	Peak Location Separation	SPLSR	Simultaneous Transmission
		(W/kg)	x	у	Z	(VV/Ng)	Distance (mm)		SAR Test
WLAN Tx2	2 Top side 0.691 -0.30 -9.46		-9.46	0.42	1.688	205.61	0.011	SPLSR<0.04,	
WLAN Tx1	Top side	0.997	-0.28	11.10	0.41	1.000	200.01	0.011	Not required
				J					
				Í					
	Mai	n					Г	Aux	
	•								

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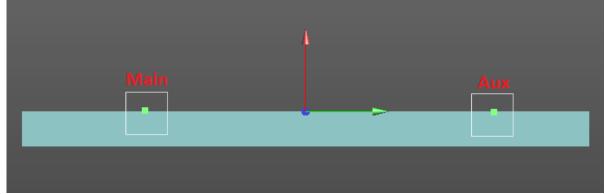
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5 GHz WLAN MIMO

No.	Conditions	Position	Tx2	Tx1	SAR Sum	SPLSR
		Back side	0.082	0.091	0.173	ΣSAR<1.6, Not required
	2 5 GHz WLAN MIMO	Top side	1.193	1.171	2.364	Analyzed as below
2		Bottom side	0.007	0.024	0.031	ΣSAR<1.6, Not required
		Right side	0.055	0.244	0.299	ΣSAR<1.6, Not required
		Left side	0.224	0.039	0.263	ΣSAR<1.6, Not required

5 GHz WLAN MIMO

Conditions	Position	SAR Value	Coordinates (cm)			ΣSAR (W/kg)	Peak Location Separation	SPLSR	Simultaneous Transmission
		(W/kg)	х	у	Z	(vv/kg)	Distance (mm)		SAR Test
WLAN Tx2	Ti-d-	1.193	0.06	-9.18	0.40	2.364	199.61	0.018	SPLSR<0.04,
WLAN Tx1	Top side	1.171	-0.03	10.78	0.42	2.304	199.01	0.018	Not required



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BT+ 2.4GHz WLAN Tx2

	1. E.TONE WEAR INE								
No.	Conditions	Position	Tx2	ВТ	SAR Sum	SPLSR			
	3 2.4 GHz WLAN Tx2 + BT	Back side	0.111	0.011	0.122	ΣSAR<1.6, Not required			
		Top side	0.691	0.102	0.793	ΣSAR<1.6, Not required			
3		Bottom side	0.010	0.004	0.014	ΣSAR<1.6, Not required			
		Right side	0.019	0.034	0.053	ΣSAR<1.6, Not required			
		Left side	0.226	0.005	0.231	ΣSAR<1.6, Not required			

BT+ 5GHz WLAN Tx2

	JOHZ WEAR TAZ					
No.	Conditions	Position	Tx2	ВТ	SAR Sum	SPLSR
		Back side	0.082	0.011	0.093	ΣSAR<1.6, Not required
	5 GHz WLAN Tx2 + BT	Top side	1.193	0.102	1.295	ΣSAR<1.6, Not required
4		Bottom side	0.007	0.004	0.011	ΣSAR<1.6, Not required
		Right side	0.055	0.034	0.089	ΣSAR<1.6, Not required
		Left side	0.224	0.005	0.229	ΣSAR<1.6, Not required

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INPAQ

2.4 GHz WI AN MIMO

	H OHE WEAR MINIO							
No.	Conditions	Position	Tx2	Tx1	SAR Sum	SPLSR		
		Back side	0.088	0.096	0.184	ΣSAR<1.6, Not required		
		Top side	0.543	0.520	1.063	ΣSAR<1.6, Not required		
1	2.4 GHz WLAN MIMO	Bottom side	0.008	0.053	0.061	ΣSAR<1.6, Not required		
		Right side	0.017	0.341	0.358	ΣSAR<1.6, Not required		
		Left side	0.218	0.048	0.266	ΣSAR<1.6, Not required		

5 GHz WLAN MIMO

No.	Conditions	Position	Tx2	Tx1	SAR Sum	SPLSR
	2 5 GHz WLAN MIMO	Back side	0.042	0.034	0.076	ΣSAR<1.6, Not required
		Top side	0.533	0.792	1.325	ΣSAR<1.6, Not required
2		Bottom side	0.001	0.020	0.021	ΣSAR<1.6, Not required
		Right side	0.015	0.067	0.082	ΣSAR<1.6, Not required
		Left side	0.101	0.015	0.116	ΣSAR<1.6, Not required

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BT+ 2.4GHz WLAN Tx2

	1 · L.+OHZ WEAR TAE								
No.	Conditions	Position	Tx2	ВТ	SAR Sum	SPLSR			
	3 2.4 GHz WLAN Tx2 + BT	Back side	0.088	0.007	0.095	ΣSAR<1.6, Not required			
		Top side	0.543	0.036	0.579	ΣSAR<1.6, Not required			
3		Bottom side	0.008	0.004	0.012	ΣSAR<1.6, Not required			
		Right side	0.017	0.023	0.040	ΣSAR<1.6, Not required			
		Left side	0.218	0.003	0.221	ΣSAR<1.6, Not required			

BT+ 5GHz WLAN Tx2

No.	Conditions	Position	Tx2	ВТ	SAR Sum	SPLSR
	4 5 GHz WLAN Tx2 + BT	Back side	0.042	0.007	0.049	ΣSAR<1.6, Not required
		Top side	0.533	0.036	0.569	ΣSAR<1.6, Not required
4		Bottom side	0.001	0.004	0.005	ΣSAR<1.6, Not required
		Right side	0.015	0.023	0.038	ΣSAR<1.6, Not required
		Left side	0.101	0.003	0.104	ΣSAR<1.6, Not required

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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	Feb.04,2019	Feb.03,2020				
SPEAG	System Validation	D2450V2	727	Apr.24,2019	Apr.23,2020				
SPEAG	Dipole	D5GHzV2	1023	Jan.30,2019	Jan.29,2020				
SPEAG	Data acquisition Electronics	DAE4	547	Mar.22,2019	Mar.21,2020				
SPEAG	Software	DASY 52 52.8.8	N/A	Calibration not required	Calibration not required				
SPEAG	Phantom	ELI	N/A	Calibration not required	Calibration not required				
Agilent	Network Analyzer	E5071C	MY46107530	Feb.23,2019	Feb.22,2020				
Agilent	Dielectric Probe Kit	85070E	MY44300677	Calibration not required	Calibration not required				
Agilent	Dual-directional	772D	MY46151242	Aug.28,2018	Aug.27,2019				
Agilent	coupler	778D	MY48220468	Aug.28,2018	Aug.27,2019				
Agilent	Signal Generator	N5181A	MY50141235	Apr.22,2019	Apr.21,2020				
Agilent	Power Meter	ML2496A	1326001	Aug.09,2018	Aug.02,2019				
Agilent	Power Sensor	MA2411B	1315048	Aug.09,2018	Aug.02,2019				
Aglient	I OWEL SELISOI	IVIAZ4 I I D	1315049	Aug.09,2018	Aug.02,2019				
Changzhou Xinwang	Digital thermometer	DTM-303A	TP130074	Mar.26,2019	Mar.25,2020				

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5. Measurements

Date: 2019/7/12

WLAN 802.11b_Body_Top side_CH 11_0mm_Tx2

Communication System: IEEE 802.11b WLAN; Frequency: 2462 MHz; Duty Cycle: 1:1 Medium parameters used: f = 2462 MHz; σ = 1.797 S/m; ϵ_r = 39.075; ρ = 1000 kg/m³

Phantom section: Flat Section

Ambient temperature: 22.1°C; Liquid temperature: 21.6°C

DASY5 Configuration:

Probe: EX3DV4 - SN7466; ConvF(7.66, 7.66, 7.66); Calibrated: 2019/2/4;

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn547; Calibrated: 2019/3/22

Phantom: ELI

DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

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

Maximum value of SAR (interpolated) = 0.913 W/kg

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

Reference Value = 6.758 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 1.94 W/kg

SAR(1 g) = 0.689 W/kg; SAR(10 g) = 0.266 W/kg

Maximum value of SAR (measured) = 1.24 W/kg

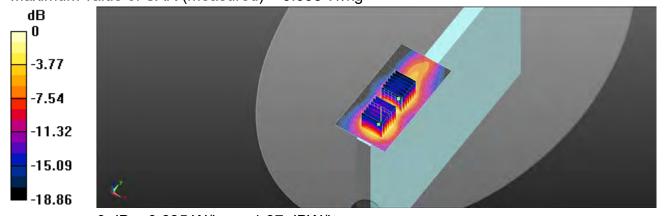
Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.758 V/m: Power Drift = -0.05 dB

Peak SAR (extrapolated) = 0.831 W/kg

SAR(1 g) = 0.441 W/kg; SAR(10 g) = 0.231 W/kg

Maximum value of SAR (measured) = 0.635 W/kg



0 dB = 0.635 W/kg = -1.97 dBW/kg

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Date: 2019/7/13

WLAN 802.11n(40M) 5.2G_Body_Top side_CH 38_0mm_Tx2

Communication System: IEEE 802.11n HT40_5GHz; Frequency: 5190 MHz; Duty Cycle:

1:1

Medium parameters used: f = 5190 MHz; σ = 4.579 S/m; ε_r = 36.456; ρ = 1000 kg/m³

Phantom section: Flat Section

Ambient temperature: 22.2°C; Liquid temperature: 21.8°C

DASY5 Configuration:

Probe: EX3DV4 - SN7466; ConvF(5.56, 5.56, 5.56); Calibrated: 2019/2/4;

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn547; Calibrated: 2019/3/22

· Phantom: ELI

DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Area Scan (71x111x1): Interpolated grid: dx=10 mm, dy=10 mm

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

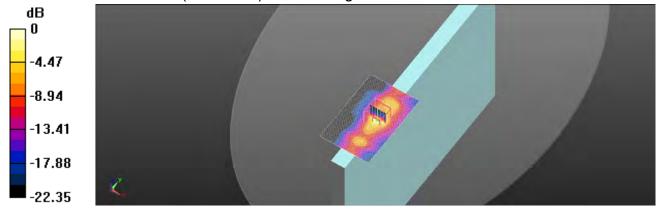
Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 5.516 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 3.72 W/kg

SAR(1 g) = 0.723 W/kg; SAR(10 g) = 0.187 W/kg

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



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

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Date: 2019/7/13

WLAN 802.11ac(80M) 5.2G_Body_Top side_CH 42_0mm_Tx2

Communication System: IEEE 802.11ac; Frequency: 5210 MHz; Duty Cycle: 1:1 Medium parameters used: f = 5210 MHz; $\sigma = 4.602$ S/m; $\epsilon_r = 36.447$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient temperature: 22.2°C; Liquid temperature: 21.8°C

DASY5 Configuration:

- Probe: EX3DV4 SN7466; ConvF(5.56, 5.56, 5.56); Calibrated: 2019/2/4;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2019/3/22
- Phantom: ELI
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Area Scan (71x111x1): Interpolated grid: dx=10 mm, dy=10 mm

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

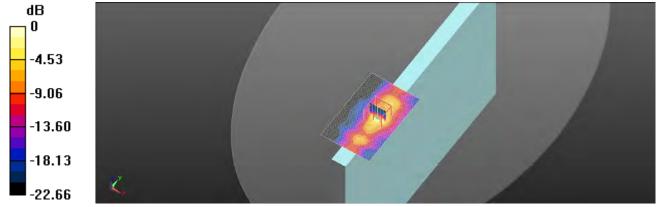
Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 6.106 V/m: Power Drift = -0.03 dB

Peak SAR (extrapolated) = 4.18 W/kg

SAR(1 g) = 0.798 W/kg; SAR(10 g) = 0.205 W/kg

Maximum value of SAR (measured) = 1.73 W/kg



0 dB = 1.73 W/kg = 2.37 dBW/kg

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Date: 2019/7/16

WLAN 802.11a 5.3G_Body_Top side_CH 64_0mm_Tx2

Communication System: IEEE 802.11a; Frequency: 5320 MHz; Duty Cycle: 1:1 Medium parameters used: f = 5320 MHz; $\sigma = 4.726$ S/m; $\epsilon_r = 36.148$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient temperature: 22.1°C; Liquid temperature: 21.4°C

DASY5 Configuration:

- Probe: EX3DV4 SN7466; ConvF(5.41, 5.41, 5.41); Calibrated: 2019/2/4;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2019/3/22
- Phantom: ELI
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Area Scan (71x111x1): Interpolated grid: dx=10 mm, dy=10 mm

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

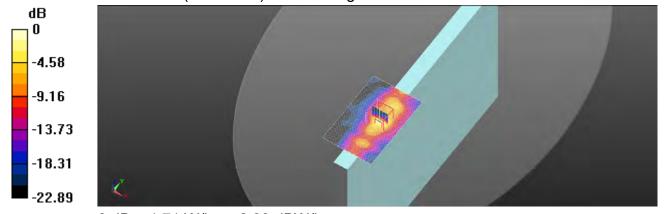
Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 6.273 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 4.25 W/kg

SAR(1 g) = 0.786 W/kg; SAR(10 g) = 0.201 W/kg

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



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

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Date: 2019/7/16

WLAN 802.11n(40M) 5.3G_Body_Top side_CH 54_0mm_Tx2

Communication System: IEEE 802.11n HT40_5GHz; Frequency: 5270 MHz; Duty Cycle:

1:1

Medium parameters used: f = 5270 MHz; σ = 4.676 S/m; ϵ_r = 36.208; ρ = 1000 kg/m³

Phantom section: Flat Section

Ambient temperature: 22.1°C; Liquid temperature: 21.4°C

DASY5 Configuration:

- Probe: EX3DV4 SN7466; ConvF(5.41, 5.41, 5.41); Calibrated: 2019/2/4;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2019/3/22
- Phantom: ELI
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Area Scan (71x111x1): Interpolated grid: dx=10 mm, dy=10 mm

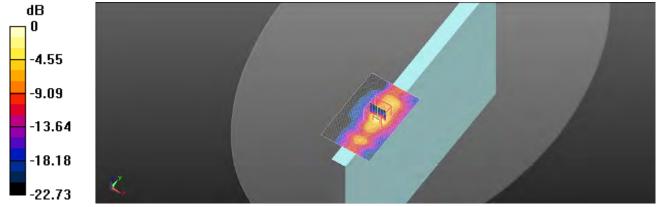
Maximum value of SAR (interpolated) = 1.47 W/kg

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

Reference Value = 6.328 V/m: Power Drift = 0.02 dB

Peak SAR (extrapolated) = 4.68 W/kg

SAR(1 g) = 0.858 W/kg; SAR(10 g) = 0.219 W/kg Maximum value of SAR (measured) = 1.88 W/kg



0 dB = 1.88 W/kg = 2.73 dBW/kg

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Date: 2019/7/17

WLAN 802.11n(40M) 5.6G_Body_Top side_CH 142_0mm_Tx2

Communication System: IEEE 802.11n HT40_5GHz; Frequency: 5710 MHz; Duty Cycle:

1:1

Medium parameters used: f = 5710 MHz; σ = 5.109 S/m; ε_r = 35.74; ρ = 1000 kg/m³

Phantom section: Flat Section

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

DASY5 Configuration:

Probe: EX3DV4 - SN7466; ConvF(5.06, 5.06, 5.06); Calibrated: 2019/2/4

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn547; Calibrated: 2019/3/22

Phantom: ELI

DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Area Scan (71x111x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 2.18 W/kg

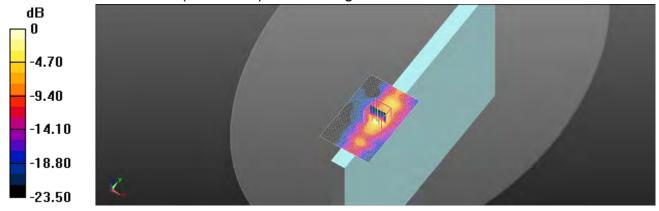
Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 7.097 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 6.21 W/kg

SAR(1 g) = 1.13 W/kg; SAR(10 g) = 0.288 W/kg

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



0 dB = 2.58 W/kg = 4.11 dBW/kg

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Date: 2019/7/17

WLAN 802.11ac(80M) 5.6G_Body_Top side_CH 138_0mm_Tx2

Communication System: IEEE 802.11ac; Frequency: 5690 MHz; Duty Cycle: 1:1 Medium parameters used: f = 5690 MHz; $\sigma = 5.091$ S/m; $\epsilon_r = 35.748$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 SN7466; ConvF(4.88, 4.88, 4.88); Calibrated: 2019/2/4;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2019/3/22
- Phantom: ELI
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Area Scan (71x111x1): Interpolated grid: dx=10 mm, dy=10 mm

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

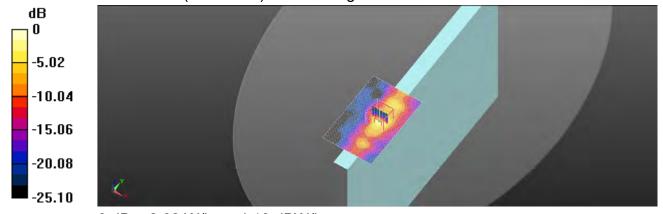
Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 7.461 V/m: Power Drift = 0.06 dB

Peak SAR (extrapolated) = 6.60 W/kg

SAR(1 g) = 1.19 W/kg; SAR(10 g) = 0.298 W/kg

Maximum value of SAR (measured) = 2.62 W/kg



0 dB = 2.62 W/kg = 4.18 dBW/kg

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Date: 2019/7/19

WLAN 802.11n(40M) 5.8G_Body_Top side_CH 151_0mm_Tx2

Communication System: IEEE 802.11n HT40_5GHz; Frequency: 5755 MHz; Duty Cycle:

1:1

Medium parameters used: f = 5755 MHz; σ = 5.161 S/m; ε_r = 35.724; ρ = 1000 kg/m³

Phantom section: Flat Section

Ambient temperature: 22.1°C; Liquid temperature: 21.3°C

DASY5 Configuration:

- Probe: EX3DV4 SN7466; ConvF(5.06, 5.06, 5.06); Calibrated: 2019/2/4;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2019/3/22
- Phantom: ELI
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Area Scan (71x111x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 2.22 W/kg

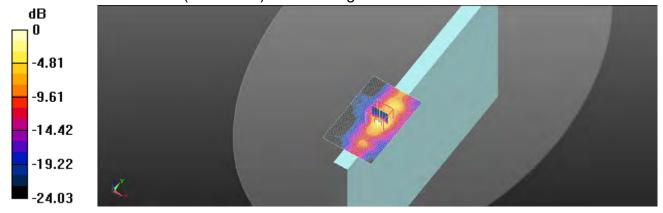
Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 7.145 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 6.38 W/kg

SAR(1 g) = 1.11 W/kg; SAR(10 g) = 0.279 W/kg

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



0 dB = 2.53 W/kg = 4.03 dBW/kg

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Date: 2019/7/19

WLAN 802.11ac(80M) 5.8G_Body_Top side_CH 155_0mm_Tx2

Communication System: IEEE 802.11ac; Frequency: 5775 MHz; Duty Cycle: 1:1 Medium parameters used: f = 5775 MHz; $\sigma = 5.181$ S/m; $\varepsilon_r = 35.711$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient temperature: 22.1°C; Liquid temperature: 21.3°C

DASY5 Configuration:

- Probe: EX3DV4 SN7466; ConvF(5.06, 5.06, 5.06); Calibrated: 2019/2/4;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2019/3/22
- Phantom: ELI
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Area Scan (71x111x1): Interpolated grid: dx=10 mm, dy=10 mm

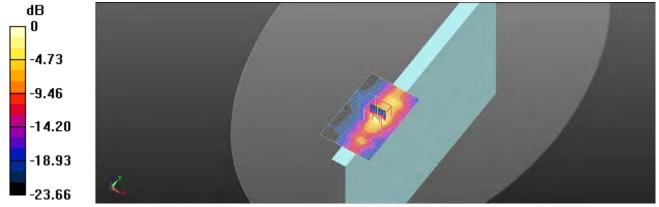
Maximum value of SAR (interpolated) = 2.20 W/kg

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

Reference Value = 7.281 V/m: Power Drift = 0.04 dB

Peak SAR (extrapolated) = 6.35 W/kg

SAR(1 g) = 1.14 W/kg; SAR(10 g) = 0.291 W/kgMaximum value of SAR (measured) = 2.47 W/kg



0 dB = 2.47 W/kg = 3.93 dBW/kg

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Date: 2019/7/12

WLAN 802.11b_Body_Top side_CH 6_0mm_Tx1

Communication System: IEEE 802.11b WLAN; Frequency: 2437 MHz; Duty Cycle: 1:1 Medium parameters used: f = 2437 MHz; $\sigma = 1.773$ S/m; $\varepsilon_r = 39.114$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient temperature: 22.1°C; Liquid temperature: 21.6°C

DASY5 Configuration:

- Probe: EX3DV4 SN7466; ConvF(7.66, 7.66, 7.66); Calibrated: 2019/2/4;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2019/3/22
- Phantom: ELI
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Area Scan (61x131x1): Interpolated grid: dx=12 mm, dy=12 mm

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

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

Reference Value = 6.379 V/m: Power Drift = 0.01 dB

Peak SAR (extrapolated) = 2.84 W/kg

SAR(1 g) = 0.981 W/kg; SAR(10 g) = 0.377 W/kg

Maximum value of SAR (measured) = 1.87 W/kg

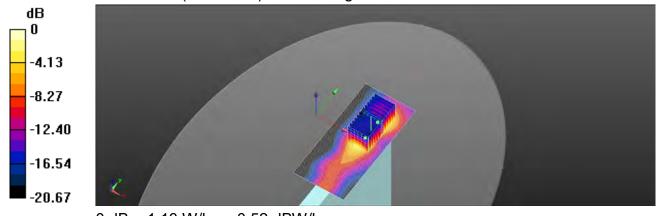
Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.379 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 1.60 W/kg

SAR(1 g) = 0.707 W/kg; SAR(10 g) = 0.357 W/kg

Maximum value of SAR (measured) = 1.13 W/kg



0 dB = 1.13 W/kg = 0.52 dBW/kg

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Date: 2019/7/12

Bluetooth(GFSK)_Body_Top side_CH 78_0mm_Tx1

Communication System: Bluetooth; Frequency: 2480 MHz; Duty Cycle: 1:1

Medium parameters used: f = 2480 MHz; $\sigma = 1.938 \text{ S/m}$; $\varepsilon_r = 39.756$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Ambient temperature: 22.1°C; Liquid temperature: 21.6°C

DASY5 Configuration:

- Probe: EX3DV4 SN7466; ConvF(7.66, 7.66, 7.66); Calibrated: 2019/2/4;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2019/3/22
- Phantom: ELI
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Area Scan (61x131x1): Interpolated grid: dx=12 mm, dy=12 mm

Maximum value of SAR (interpolated) = 0.138 W/kg

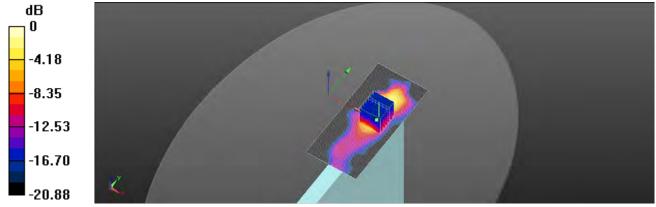
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 1.497 V/m: Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.290 W/kg

SAR(1 g) = 0.099 W/kg; SAR(10 g) = 0.038 W/kg

Maximum value of SAR (measured) = 0.183 W/kg



0 dB = 0.183 W/kg = -7.38 dBW/kg

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Date: 2019/7/13

WLAN 802.11n(40M) 5.2G_Body_Top side_CH 38_0mm_Tx1

Communication System: IEEE 802.11n HT40_5GHz; Frequency: 5190 MHz; Duty Cycle:

Medium parameters used: f = 5190 MHz; σ = 4.824 S/m; ϵ_r = 34.295; ρ = 1000 kg/m³

Phantom section: Flat Section

Ambient temperature: 22.2°C; Liquid temperature: 21.8°C

DASY5 Configuration:

- Probe: EX3DV4 SN7466; ConvF(5.56, 5.56, 5.56); Calibrated: 2019/2/4;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2019/3/22
- Phantom: ELI
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Area Scan (71x121x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 2.45 W/kg

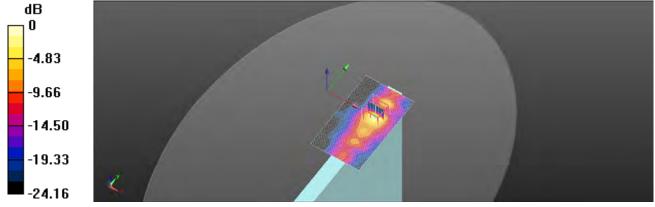
Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 5.504 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 5.43 W/kg

SAR(1 g) = 1.15 W/kg; SAR(10 g) = 0.300 W/kg

Maximum value of SAR (measured) = 2.54 W/kg



0 dB = 2.54 W/kg = 4.05 dBW/kg

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Date: 2019/7/13

WLAN 802.11ac(80M) 5.2G_Body_Top side_CH 42_0mm_Tx1

Communication System: IEEE 802.11a; Frequency: 5210 MHz; Duty Cycle: 1:1 Medium parameters used: f = 5210 MHz; σ = 4.79 S/m; ε_r = 34.865; ρ = 1000 kg/m³

Phantom section: Flat Section

Ambient temperature: 22.2°C; Liquid temperature: 21.8°C

DASY5 Configuration:

Probe: EX3DV4 - SN7466; ConvF(5.56, 5.56, 5.56); Calibrated: 2019/2/4

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn547; Calibrated: 2019/3/22

Phantom: ELI

DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Area Scan (71x121x1): Interpolated grid: dx=10 mm, dy=10 mm

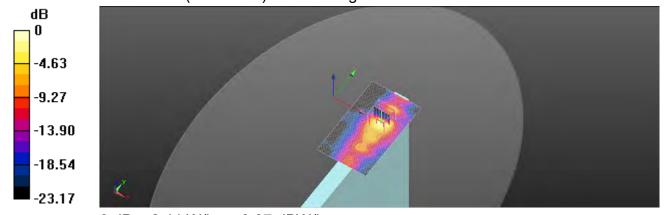
Maximum value of SAR (interpolated) = 2.47 W/kg

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

Reference Value = 6.262 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 5.47 W/kg

SAR(1 g) = 1.07 W/kg; SAR(10 g) = 0.309 W/kaMaximum value of SAR (measured) = 2.44 W/kg



0 dB = 2.44 W/kg = 3.87 dBW/kg

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Date: 2019/7/16

WLAN 802.11a 5.3G_Body_Top side_CH 56_0mm_Tx1

Communication System: IEEE 802.11a; Frequency: 5280 MHz; Duty Cycle: 1:1 Medium parameters used: f = 5280 MHz; $\sigma = 4.79$ S/m; $\epsilon_r = 34.865$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient temperature: 22.1°C; Liquid temperature: 21.4°C

DASY5 Configuration:

- Probe: EX3DV4 SN7466; ConvF(5.41, 5.41, 5.41); Calibrated: 2019/2/4;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2019/3/22
- Phantom: ELI
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Area Scan (71x121x1): Interpolated grid: dx=10 mm, dy=10 mm

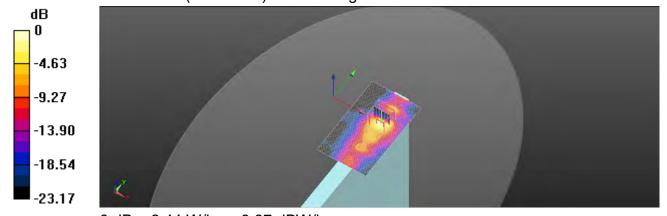
Maximum value of SAR (interpolated) = 2.47 W/kg

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

Reference Value = 6.262 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 5.47 W/kg

SAR(1 g) = 1.16 W/kg; SAR(10 g) = 0.309 W/kg Maximum value of SAR (measured) = 2.44 W/kg



0 dB = 2.44 W/kg = 3.87 dBW/kg

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Date: 2019/7/16

WLAN 802.11n(40M) 5.3G_Body_Top side_CH 54_0mm_Tx1

Communication System: IEEE 802.11n HT40_5GHz; Frequency: 5270 MHz; Duty Cycle:

Medium parameters used: f = 5270 MHz; $\sigma = 4.766 \text{ S/m}$; $\varepsilon_r = 34.27$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Ambient temperature: 22.1°C; Liquid temperature: 21.4°C

DASY5 Configuration:

- Probe: EX3DV4 SN7466; ConvF(5.41, 5.41, 5.41); Calibrated: 2019/2/4;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2019/3/22
- Phantom: ELI
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Area Scan (71x121x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 2.44 W/kg

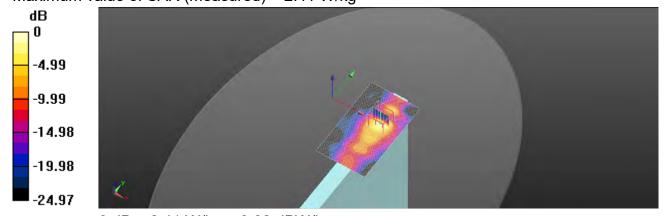
Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 6.941 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 5.34 W/kg

SAR(1 g) = 1.14 W/kg; SAR(10 g) = 0.301 W/kg

Maximum value of SAR (measured) = 2.41 W/kg



0 dB = 2.41 W/kg = 3.82 dBW/kg

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Date: 2019/7/17

WLAN 802.11n(40M) 5.6G_Body_Top side_CH 134_0mm_Tx1

Communication System: IEEE 802.11n HT40_5GHz; Frequency: 5670 MHz; Duty Cycle:

Medium parameters used: f = 5670 MHz; σ = 5.292 S/m; ϵ_r = 33.858; ρ = 1000 kg/m³

Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 SN7466; ConvF(4.88, 4.88, 4.88); Calibrated: 2019/2/4;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2019/3/22
- Phantom: ELI
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Area Scan (71x121x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 2.26 W/kg

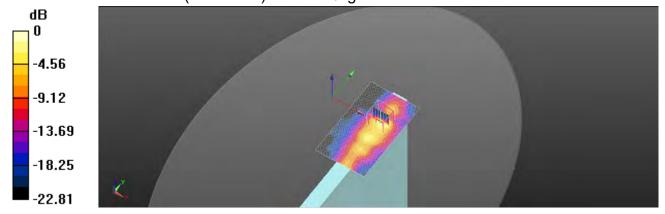
Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 6.922 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 5.68 W/kg

SAR(1 g) = 1.07 W/kg; SAR(10 g) = 0.283 W/kg

Maximum value of SAR (measured) = 2.27 W/kg



0 dB = 2.27 W/kg = 3.57 dBW/kg

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Date: 2019/7/17

WLAN 802.11ac(80M) 5.6G_Body_Top side_CH 106_0mm_Tx1

Communication System: IEEE 802.11ac; Frequency: 5530 MHz; Duty Cycle: 1:1 Medium parameters used: f = 5530 MHz; $\sigma = 5.276$ S/m; $\epsilon_r = 33.917$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 SN7466; ConvF(4.88, 4.88, 4.88); Calibrated: 2019/2/4;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2019/3/22
- Phantom: ELI
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Area Scan (71x121x1): Interpolated grid: dx=10 mm, dy=10 mm

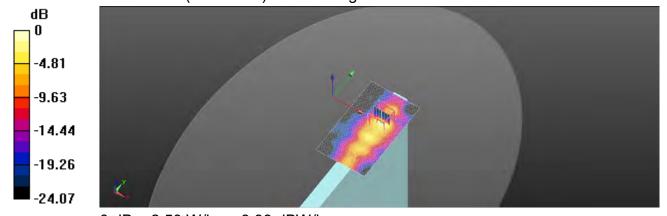
Maximum value of SAR (interpolated) = 2.39 W/kg

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

Reference Value = 2.642 V/m: Power Drift = 0.04 dB

Peak SAR (extrapolated) = 6.02 W/kg

SAR(1 g) = 1.13 W/kg; SAR(10 g) = 0.297 W/kg Maximum value of SAR (measured) = 2.50 W/kg



0 dB = 2.50 W/kg = 3.98 dBW/kg

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Date: 2019/7/19

WLAN 802.11n(40M) 5.8G_Body_Top side_CH 159_0mm_Tx1

Communication System: IEEE 802.11n HT40_5GHz; Frequency: 5795 MHz; Duty Cycle:

Medium parameters used: f = 5795 MHz; σ = 5.519 S/m; ϵ_r = 34.204; ρ = 1000 kg/m³

Phantom section: Flat Section

Ambient temperature: 22.1°C; Liquid temperature: 21.3°C

DASY5 Configuration:

Probe: EX3DV4 - SN7466; ConvF(5.06, 5.06, 5.06); Calibrated: 2019/2/4;

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn547; Calibrated: 2019/3/22

Phantom: ELI

DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Area Scan (71x121x1): Interpolated grid: dx=10 mm, dy=10 mm

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

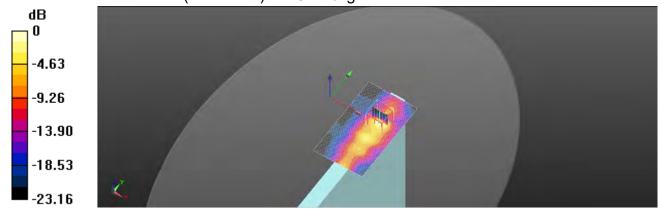
Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 7.515 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 6.83 W/kg

SAR(1 g) = 1.16 W/kg; SAR(10 g) = 0.300 W/kg

Maximum value of SAR (measured) = 2.57 W/kg



0 dB = 2.57 W/kg = 4.10 dBW/kg

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Date: 2019/7/19

WLAN 802.11ac(80M) 5.8G_Body_Top side_CH 155_0mm_Tx1

Communication System: IEEE 802.11ac; Frequency: 5775 MHz; Duty Cycle: 1:1 Medium parameters used: f = 5775 MHz; $\sigma = 5.402$ S/m; $\varepsilon_r = 34.986$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient temperature: 22.1°C; Liquid temperature: 21.3°C

DASY5 Configuration:

- Probe: EX3DV4 SN7466; ConvF(5.06, 5.06, 5.06); Calibrated: 2019/2/4;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2019/3/22
- Phantom: ELI
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Area Scan (71x121x1): Interpolated grid: dx=10 mm, dy=10 mm

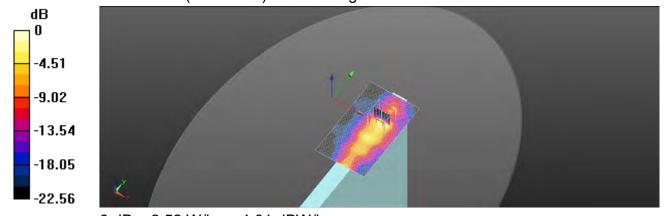
Maximum value of SAR (interpolated) = 2.29 W/kg

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

Reference Value = 7.565 V/m: Power Drift = -0.04 dB

Peak SAR (extrapolated) = 6.26 W/kg

SAR(1 g) = 1.13 W/kg; SAR(10 g) = 0.296 W/kaMaximum value of SAR (measured) = 2.52 W/kg



0 dB = 2.52 W/kg = 4.01 dBW/kg

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Date: 2019/7/12

WLAN 802.11b_Body_Top side_CH 11_0mm_Tx2

Communication System: IEEE 802.11b WLAN; Frequency: 2462 MHz; Duty Cycle: 1:1 Medium parameters used: f = 2462 MHz; $\sigma = 1.797 \text{ S/m}$; $\varepsilon_r = 39.075$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Ambient temperature: 22.1°C; Liquid temperature: 21.6°C

DASY5 Configuration:

- Probe: EX3DV4 SN7466; ConvF(7.66, 7.66, 7.66); Calibrated: 2019/2/4;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2019/3/22
- Phantom: ELI
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

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

Maximum value of SAR (interpolated) = 0.815 W/kg

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

Reference Value = 6.677 V/m: Power Drift = 0.05 dB

Peak SAR (extrapolated) = 1.36 W/kg

SAR(1 g) = 0.542 W/kg; SAR(10 g) = 0.223 W/kg

Maximum value of SAR (measured) = 0.920 W/kg

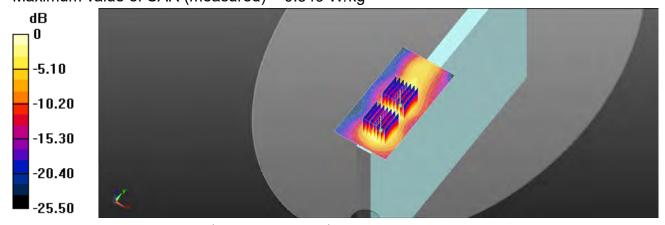
Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.677 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.756 W/kg

SAR(1 g) = 0.358 W/kg; SAR(10 g) = 0.168 W/kg

Maximum value of SAR (measured) = 0.549 W/kg



0 dB = 0.549 W/kg = -2.61 dBW/kg

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Date: 2019/7/13

WLAN 802.11ac(80M) 5.2G_Body_Top side_CH 42_0mm_Tx2

Communication System: IEEE 802.11ac; Frequency: 5210 MHz; Duty Cycle: 1:1 Medium parameters used: f = 5210 MHz; $\sigma = 4.602$ S/m; $\epsilon_r = 36.447$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient temperature: 22.2°C; Liquid temperature: 21.8°C

DASY5 Configuration:

- Probe: EX3DV4 SN7466; ConvF(5.56, 5.56, 5.56); Calibrated: 2019/2/4;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2019/3/22
- Phantom: ELI
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Area Scan (71x111x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 0.795 W/kg

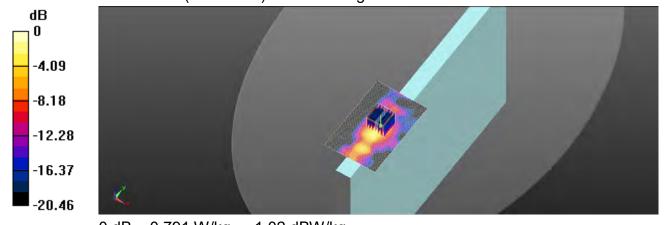
Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 2.626 V/m: Power Drift = 0.04 dB

Peak SAR (extrapolated) = 1.60 W/kg

SAR(1 g) = 0.394 W/kg; SAR(10 g) = 0.113 W/kg

Maximum value of SAR (measured) = 0.791 W/kg



0 dB = 0.791 W/kg = -1.02 dBW/kg

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Date: 2019/7/16

WLAN 802.11n(40M) 5.3G_Body_Top side_CH 54_0mm_Tx2

Communication System: IEEE 802.11n HT40_5GHz; Frequency: 5270 MHz; Duty Cycle:

Medium parameters used: f = 5270 MHz; σ = 4.676 S/m; ϵ_r = 36.208; ρ = 1000 kg/m³

Phantom section: Flat Section

Ambient temperature: 22.1°C; Liquid temperature: 21.4°C

DASY5 Configuration:

Probe: EX3DV4 - SN7466; ConvF(5.41, 5.41, 5.41); Calibrated: 2019/2/4;

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn547; Calibrated: 2019/3/22

Phantom: ELI

DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Area Scan (71x111x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 0.932 W/kg

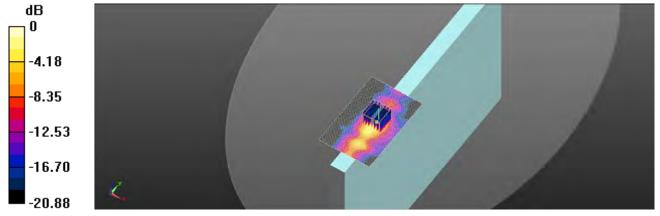
Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 3.194 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 1.85 W/kg

SAR(1 g) = 0.464 W/kg; SAR(10 g) = 0.133 W/kg

Maximum value of SAR (measured) = 0.949 W/kg



0 dB = 0.949 W/kq = -0.23 dBW/kq

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Date: 2019/7/17

WLAN 802.11ac(80M) 5.6G_Body_Top side_CH 106_0mm_Tx2

Communication System: IEEE 802.11ac; Frequency: 5530 MHz; Duty Cycle: 1:1 Medium parameters used: f = 5530 MHz; $\sigma = 4.926$ S/m; $\epsilon_r = 35.911$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 SN7466; ConvF(4.88, 4.88, 4.88); Calibrated: 2019/2/4;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2019/3/22
- Phantom: ELI
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Area Scan (71x111x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 1.12 W/kg

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

Reference Value = 2.671 V/m: Power Drift = 0.01 dB

Peak SAR (extrapolated) = 2.27 W/kg

SAR(1 g) = 0.532 W/kg; SAR(10 g) = 0.169 W/kg

Maximum value of SAR (measured) = 1.10 W/kg

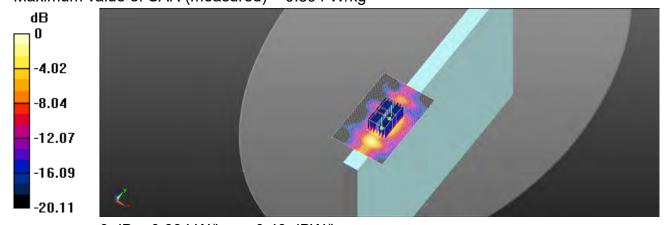
Zoom Scan (7x7x12)/Cube 1: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 2.671 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 1.95 W/kg

SAR(1 g) = 0.436 W/kg; SAR(10 g) = 0.141 W/kg

Maximum value of SAR (measured) = 0.894 W/kg



0 dB = 0.894 W/kg = -0.49 dBW/kg

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Date: 2019/7/19

WLAN 802.11ac(80M) 5.8G_Body_Top side_CH 155_0mm_Tx2

Communication System: IEEE 802.11ac; Frequency: 5775 MHz; Duty Cycle: 1:1 Medium parameters used: f = 5775 MHz; $\sigma = 5.181$ S/m; $\varepsilon_r = 35.711$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient temperature: 22.1°C; Liquid temperature: 21.3°C

DASY5 Configuration:

- Probe: EX3DV4 SN7466; ConvF(5.06, 5.06, 5.06); Calibrated: 2019/2/4;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2019/3/22
- Phantom: ELI
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Area Scan (71x111x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 1.10 W/kg

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

Reference Value = 2.898 V/m: Power Drift = 0.04 dB

Peak SAR (extrapolated) = 2.36 W/kg

SAR(1 g) = 0.499 W/kg; SAR(10 g) = 0.159 W/kg

Maximum value of SAR (measured) = 1.06 W/kg

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

Reference Value = 2.898 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 2.16 W/kg

SAR(1 g) = 0.478 W/kg; SAR(10 g) = 0.149 W/kg

Maximum value of SAR (measured) = 1.00 W/kg

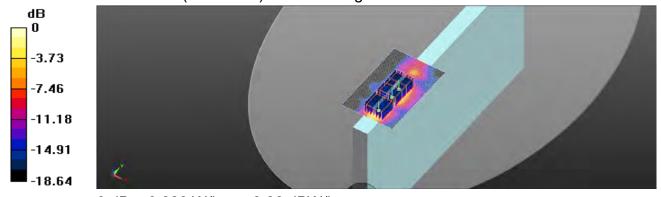
Zoom Scan (7x7x12)/Cube 2: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 2.898 V/m: Power Drift = 0.04 dB

Peak SAR (extrapolated) = 1.66 W/kg

SAR(1 g) = 0.385 W/kg; SAR(10 g) = 0.108 W/kg

Maximum value of SAR (measured) = 0.820 W/kg



0 dB = 0.820 W/kg = -0.86 dBW/kg

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Date: 2019/7/12

WLAN 802.11b_Body_Top side_CH 6_0mm_Tx1

Communication System: IEEE 802.11b WLAN; Frequency: 2437 MHz; Duty Cycle: 1:1 Medium parameters used: f = 2437 MHz; $\sigma = 1.773 \text{ S/m}$; $\varepsilon_r = 39.114$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Ambient temperature: 22.1°C; Liquid temperature: 21.6°C

DASY5 Configuration:

- Probe: EX3DV4 SN7466; ConvF(7.66, 7.66, 7.66); Calibrated: 2019/2/4;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2019/3/22
- Phantom: ELI
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Area Scan (61x111x1): Interpolated grid: dx=12 mm, dy=12 mm

Maximum value of SAR (interpolated) = 0.721 W/kg

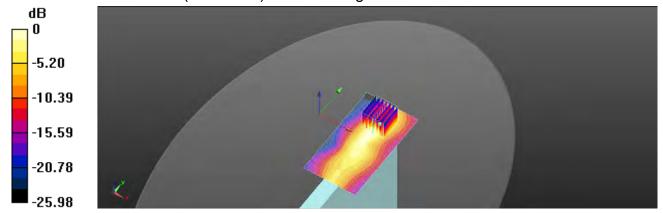
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.372 V/m: Power Drift = 0.06 dB

Peak SAR (extrapolated) = 1.10 W/kg

SAR(1 g) = 0.462 W/kg; SAR(10 g) = 0.222 W/kg

Maximum value of SAR (measured) = 0.740 W/kg



0 dB = 0.740 W/kg = -1.31 dBW/kg

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Date: 2019/7/12

Bluetooth(GFSK)_Body_Top side_CH 78_0mm_Tx1

Communication System: Bluetooth; Frequency: 2480 MHz; Duty Cycle: 1:1

Medium parameters used: f = 2480 MHz; $\sigma = 1.81 \text{ S/m}$; $\varepsilon_r = 39.052$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Ambient temperature: 22.1°C; Liquid temperature: 21.6°C

DASY5 Configuration:

Probe: EX3DV4 - SN7466; ConvF(7.66, 7.66, 7.66); Calibrated: 2019/2/4;

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn547; Calibrated: 2019/3/22

Phantom: ELI

DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Area Scan (61x111x1): Interpolated grid: dx=12 mm, dy=12 mm

Maximum value of SAR (interpolated) = 0.0587 W/kg

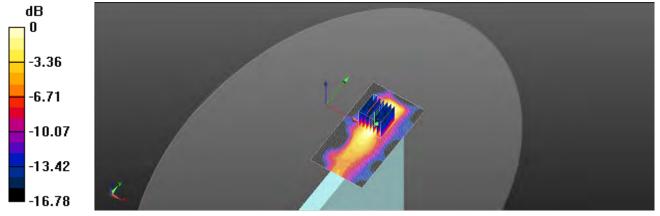
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.232 V/m: Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.0690 W/kg

SAR(1 g) = 0.034 W/kg; SAR(10 g) = 0.015 W/kg

Maximum value of SAR (measured) = 0.0591 W/kg



0 dB = 0.0591 W/kg = -12.28 dBW/kg

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Date: 2019/7/13

WLAN 802.11ac(80M) 5.2G_Body_Top side_CH 42_0mm_Tx1

Communication System: IEEE 802.11ac; Frequency: 5210 MHz; Duty Cycle: 1:1 Medium parameters used: f = 5210 MHz; $\sigma = 4.602 \text{ S/m}$; $\varepsilon_r = 36.447$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Ambient temperature: 22.2°C; Liquid temperature: 21.8°C

DASY5 Configuration:

- Probe: EX3DV4 SN7466; ConvF(5.56, 5.56, 5.56); Calibrated: 2019/2/4;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2019/3/22
- Phantom: ELI
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

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

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

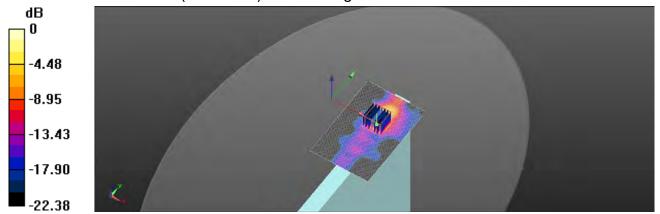
Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 2.373 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 2.74 W/kg

SAR(1 g) = 0.629 W/kg; SAR(10 g) = 0.149 W/kg

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



0 dB = 1.38 W/kg = 1.41 dBW/kg

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C

Date: 2019/7/16

WLAN 802.11n(40M) 5.3G_Body_Top side_CH 54_0mm_Tx1

Communication System: IEEE 802.11n HT40_5GHz; Frequency: 5270 MHz; Duty Cycle:

1:1

Medium parameters used: f = 5270 MHz; σ = 4.676 S/m; ε_r = 36.208; ρ = 1000 kg/m³

Phantom section: Flat Section

Ambient temperature: 22.1°C; Liquid temperature: 21.4°C

DASY5 Configuration:

Probe: EX3DV4 - SN7466; ConvF(5.41, 5.41, 5.41); Calibrated: 2019/2/4;

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn547; Calibrated: 2019/3/22

· Phantom: ELI

DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

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

Maximum value of SAR (interpolated) = 1.37 W/kg

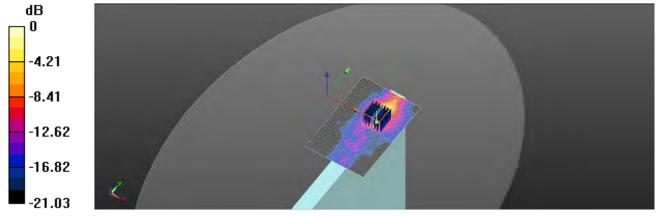
Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 2.698 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 3.81 W/kg

SAR(1 g) = 0.785 W/kg; SAR(10 g) = 0.191 W/kg

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



0 dB = 1.58 W/kg = 2.00 dBW/kg

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Date: 2019/7/17

WLAN 802.11ac(80M) 5.6G_Body_Top side_CH 106_0mm_Tx1

Communication System: IEEE 802.11ac; Frequency: 5530 MHz; Duty Cycle: 1:1 Medium parameters used: f = 5530 MHz; $\sigma = 4.926$ S/m; $\epsilon_r = 35.911$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY5 Configuration:

- Probe: EX3DV4 SN7466; ConvF(4.88, 4.88, 4.88); Calibrated: 2019/2/4;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2019/3/22
- Phantom: ELI
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

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

Maximum value of SAR (interpolated) = 1.17 W/kg

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

Reference Value = 2.522 V/m: Power Drift = 0.06 dB

Peak SAR (extrapolated) = 3.34 W/kg

SAR(1 g) = 0.689 W/kg; SAR(10 g) = 0.167 W/kg

Maximum value of SAR (measured) = 1.45 W/kg

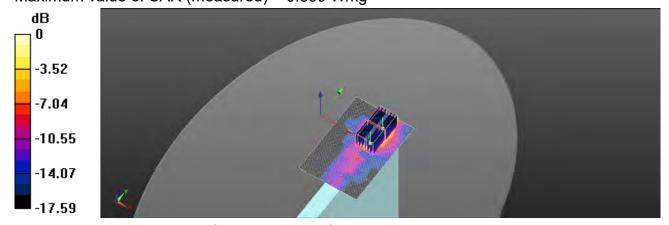
Zoom Scan (7x7x12)/Cube 1: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 2.522 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 1.66 W/kg

SAR(1 g) = 0.418 W/kg; SAR(10 g) = 0.134 W/kg

Maximum value of SAR (measured) = 0.839 W/kg



0 dB = 0.839 W/kg = -0.76 dBW/kg

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Date: 2019/7/19

WLAN 802.11ac(80M) 5.8G_Body_Top side_CH 155_0mm_Tx1

Communication System: IEEE 802.11ac; Frequency: 5775 MHz; Duty Cycle: 1:1 Medium parameters used: f = 5775 MHz; $\sigma = 5.181$ S/m; $\varepsilon_r = 35.711$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Ambient temperature: 22.1°C; Liquid temperature: 21.3°C

DASY5 Configuration:

- Probe: EX3DV4 SN7466; ConvF(5.06, 5.06, 5.06); Calibrated: 2019/2/4;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2019/3/22
- Phantom: ELI
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

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

Maximum value of SAR (interpolated) = 0.900 W/kg

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

Reference Value = 2.380 V/m: Power Drift = 0.05 dB

Peak SAR (extrapolated) = 2.94 W/kg

SAR(1 g) = 0.544 W/kg; SAR(10 g) = 0.126 W/kg

Maximum value of SAR (measured) = 1.17 W/kg

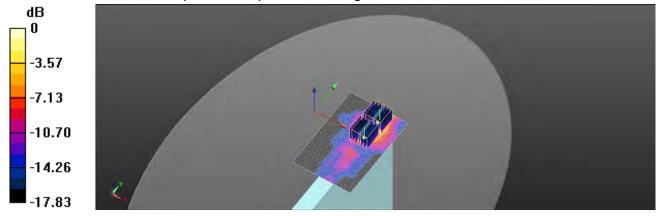
Zoom Scan (7x7x12)/Cube 1: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 2.380 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 1.47 W/kg

SAR(1 g) = 0.380 W/kg; SAR(10 g) = 0.123 W/kg

Maximum value of SAR (measured) = 0.792 W/kg



0 dB = 0.792 W/kg = -1.01 dBW/kg

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6. SAR System Performance Verification

Date: 2019/7/12

Dipole 2450 MHz SN:727

Communication System: CW2450; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium parameters used: f = 2450 MHz; $\sigma = 1.783 \text{ S/m}$; $\varepsilon_r = 39.085$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Ambient temperature: 22.1°C; Liquid temperature: 21.6°C

DASY5 Configuration:

Probe: EX3DV4 - SN7466; ConvF(7.66, 7.66, 7.66); Calibrated: 2019/2/4;

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn547; Calibrated: 2019/3/22

Phantom: ELI

DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Area Scan (51x71x1): Interpolated grid: dx=12 mm, dy=12 mm

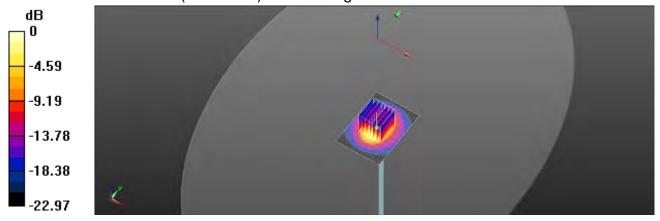
Maximum value of SAR (interpolated) = 23.3 W/kg

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

Reference Value = 108.3 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 28.7 W/kg

SAR(1 g) = 13.7 W/kg; SAR(10 g) = 6.28 W/kgMaximum value of SAR (measured) = 21.1 W/kg



0 dB = 21.1 W/kg = 13.24 dBW/kg

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Date: 2019/7/13

Dipole 5200 MHz_SN:1023

Communication System: CW5GHz; Frequency: 5200 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5200 MHz; $\sigma = 4.588 \text{ S/m}$; $\varepsilon_r = 36.454$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Ambient temperature: 22.2°C; Liquid temperature: 21.8°C

DASY5 Configuration:

- Probe: EX3DV4 SN7466; ConvF(5.56, 5.56, 5.56); Calibrated: 2019/2/4;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2019/3/22
- Phantom: ELI
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Area Scan (61x81x1): Interpolated grid: dx=10 mm, dy=10 mm

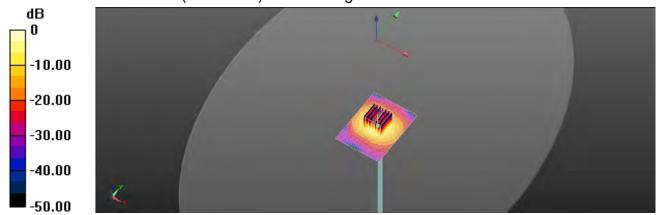
Maximum value of SAR (interpolated) = 16.8 W/kg

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

Reference Value = 59.85 V/m: Power Drift = -0.03 dB

Peak SAR (extrapolated) = 34.3 W/kg

SAR(1 g) = 7.91 W/kg; SAR(10 g) = 2.25 W/kg Maximum value of SAR (measured) = 16.7 W/kg



0 dB = 16.7 W/kg = 12.23 dBW/kg

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Date: 2019/7/16

Dipole 5300 MHz_SN:1023

Communication System: CW5GHz; Frequency: 5300 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5300 MHz; $\sigma = 4.707 \text{ S/m}$; $\varepsilon_r = 36.153$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Ambient temperature: 22.1°C; Liquid temperature: 21.4°C

DASY5 Configuration:

- Probe: EX3DV4 SN7466; ConvF(5.41, 5.41, 5.41); Calibrated: 2019/2/4;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2019/3/22
- Phantom: ELI
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Area Scan (61x81x1): Interpolated grid: dx=10 mm, dy=10 mm

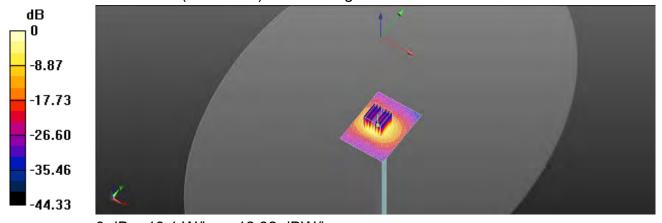
Maximum value of SAR (interpolated) = 18.0 W/kg

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

Reference Value = 59.34 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 40.0 W/kg

SAR(1 g) = 8.25 W/kg; SAR(10 g) = 2.35 W/kg Maximum value of SAR (measured) = 19.1 W/kg



0 dB = 19.1 W/kg = 12.82 dBW/kg

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Date: 2019/7/17

Dipole 5600 MHz SN:1023

Communication System: CW5GHz; Frequency: 5600 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5600 MHz; $\sigma = 4.999 \text{ S/m}$; $\varepsilon_r = 35.863$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY5 Configuration:

Probe: EX3DV4 - SN7466; ConvF(4.88, 4.88, 4.88); Calibrated: 2019/2/4;

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE4 Sn547; Calibrated: 2019/3/22

Phantom: ELI

DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Area Scan (61x81x1): Interpolated grid: dx=10 mm, dy=10 mm

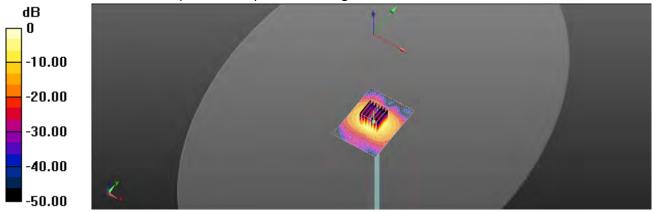
Maximum value of SAR (interpolated) = 19.5 W/kg

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

Reference Value = 64.26 V/m: Power Drift = -0.02 dB

Peak SAR (extrapolated) = 43.0 W/kg

SAR(1 g) = 8.61 W/kg; SAR(10 g) = 2.44 W/kgMaximum value of SAR (measured) = 19.6 W/kg



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

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Date: 2019/7/19

Dipole 5800 MHz_SN:1023

Communication System: CW5GHz; Frequency: 5800 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5800 MHz; $\sigma = 5.206 \text{ S/m}$; $\epsilon_r = 35.698$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Ambient temperature: 22.1°C; Liquid temperature: 21.3°C

DASY5 Configuration:

- Probe: EX3DV4 SN7466; ConvF(5.06, 5.06, 5.06); Calibrated: 2019/2/4;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn547; Calibrated: 2019/3/22
- Phantom: ELI
- DASY52 52.8.8(1258); SEMCAD X 14.6.10(7373)

Area Scan (61x81x1): Interpolated grid: dx=10 mm, dy=10 mm

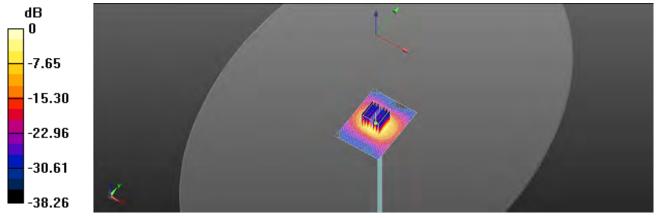
Maximum value of SAR (interpolated) = 17.7 W/kg

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

Reference Value = 60.37 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 38.3 W/kg

SAR(1 g) = 8.11 W/kg; SAR(10 g) = 2.29 W/kg Maximum value of SAR (measured) = 17.0 W/kg



0 dB = 17.0 W/kg = 12.29 dBW/kg

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7. Uncertainty Budget

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

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%	∞
Isotropy , Axial	3.50%	R	√3	1.732	1	1	2.02%	2.02%	∞
Isotropy, Hemispherical	9.60%	R	√3	1.732	1	1	5.54%	5.54%	∞
Modulation Response	2.40%	R	√3	1.732	1	1	1.40%	1.40%	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%	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%	∞
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%	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%	∞
Max SAR Eval	1.00%	R	√3	1.732	1	1	0.58%	0.58%	∞
Test Sample related									
Test sample positioning	2.90%	N	1	1	1	1	2.90%	2.90%	M-1
Device Holder Uncertainty	3.60%	N	1	1	1	1	3.60%	3.60%	M-1
Drift of output power	5.00%	R	√3	1.732	1	1	2.89%	2.89%	∞
Phantom and Setup									
Phantom Uncertainty	4.00%	R	√3	1.732	1	1	2.31%	2.31%	∞
Liquid permittivity (mea.)	1.31%	N	1	1	0.64	0.43	0.84%	0.56%	М
Liquid Conductivity (mea.)	1.44%	N	1	1	0.6	0.49	0.86%	0.71%	М
Combined standard uncertainty		RSS					11.78%	11.74%	
Expant uncertainty (95% confidence interval), K=2							23.56%	23.48%	

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

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	6.00%	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%	8
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%	8
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%	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%	∞
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%	8
RF ambient conditions - reflections	3.00%	R	√3	1.732	1	1	1.73%	1.73%	∞
Probe positioner Mechanical restrictions	0.40%	R	√3	1.732	1	1	0.23%	0.23%	∞
Probe Positioning with respect to phantom shell	2.90%	R	√3	1.732	1	1	1.67%	1.67%	∞
Post-processing	1.00%	R	√3	1.732	1	1	0.58%	0.58%	∞
Max SAR Eval	1.00%	R	√3	1.732	1	1	0.58%	0.58%	~
Test Sample related									
Test sample positioning	2.90%	N	1	1	1	1	2.90%	2.90%	M-1
Device Holder Uncertainty	3.60%	N	1	1	1	1	3.60%	3.60%	M-1
Drift of output power	5.00%	R	√3	1.732	1	1	2.89%	2.89%	∞
Phantom and Setup									
Phantom Uncertainty	4.00%	R	√3	1.732	1	1	2.31%	2.31%	∞
Liquid permittivity (mea.)	0.32%	N	1	1	0.64	0.43	0.20%	0.14%	М
Liquid Conductivity (mea.)	0.94%	N	1	1	0.6	0.49	0.56%	0.46%	М
Combined standard uncertainty		RSS					11.43%	11.42%	
Expant uncertainty (95% confidence interval), K=2							22.87%	22.84%	

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Appendixes

Refer to separated files for the following appendixes.

EN201970001 SAR_Appendix A Photographs

EN201970001 SAR Appendix B DAE & Probe Cal. Certificate

EN201970001 SAR_Appendix C Phantom Description & Dipole Cal. Certificate

- End of report -

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