PCTEST ENGINEERING LABORATORY, INC.
7185 Oakland Mills Road, Columbia, MD 21046 USA
Tel. +1.410.290.6652 / Fax +1.410.290.6654
http://www.pctest.com



SAR EVALUATION REPORT

Applicant Name:
Samsung Electronics Co., Ltd.
129, Samsung-ro, Maetan dong,
Yeongtong-gu, Suwon-si
Gyeonggi-do, 16677, Korea

Date of Testing:
05/30/19 - 07/03/19
Test Site/Location:
PCTEST Lab, Columbia, MD, USA
Document Serial No.:
1M1905220084-01-R1.A3L

FCC ID: **A3LSMN970U**

APPLICANT: **SAMSUNG ELECTRONICS CO., LTD.**

DUT Type: Portable Handset
Application Type: Certification
FCC Rule Part(s): CFR §2.1093
Model: SM-N970U
Additional Model(s): SM-N970U1, SM-N970W, SM-N970XU

Equipment Class	Band & Mode	Tx Frequency	SAR			
			1g Head (W/kg)	1g Body-Worn (W/kg)	1g Hotspot (W/kg)	10g Phablet (W/kg)
PCE	GSM/GPRS/EDGE 850	824.20 - 848.80 MHz	0.15	0.21	0.46	N/A
PCE	GSM/GPRS/EDGE 1900	1850.20 - 1909.80 MHz	< 0.1	0.38	0.98	2.74
PCE	UMTS 850	826.40 - 846.60 MHz	0.26	0.25	0.54	N/A
PCE	UMTS 1750	1712.4 - 1752.6 MHz	0.17	0.57	0.84	3.27
PCE	UMTS 1900	1852.4 - 1907.6 MHz	0.13	0.94	1.02	2.64
PCE	CDMA/EVDO BC10 (§90S)	817.90 - 823.10 MHz	0.24	0.28	0.58	N/A
PCE	CDMA/EVDO BC0 (§22H)	824.70 - 848.31 MHz	0.24	0.31	0.72	N/A
PCE	PCS CDMA/EVDO	1851.25 - 1908.75 MHz	0.15	0.95	0.89	2.63
PCE	LTE Band 71	665.5 - 695.5 MHz	0.16	0.27	0.35	N/A
PCE	LTE Band 12	699.7 - 715.3 MHz	0.15	0.24	0.35	N/A
PCE	LTE Band 13	779.5 - 784.5 MHz	0.16	0.25	0.45	N/A
PCE	LTE Band 14	790.5 - 795.5 MHz	0.18	0.35	0.54	N/A
PCE	LTE Band 26 (Cell)	814.7 - 848.3 MHz	0.19	0.37	0.63	N/A
PCE	LTE Band 5 (Cell)	824.7 - 848.3 MHz	0.30	0.41	0.78	N/A
PCE	LTE Band 66 (AWS)	1710.7 - 1779.3 MHz	0.19	0.81	0.94	2.99
PCE	LTE Band 4 (AWS)	1710.7 - 1754.3 MHz	N/A	N/A	N/A	N/A
PCE	LTE Band 25 (PCS)	1850.7 - 1914.3 MHz	0.14	0.90	0.91	2.89
PCE	LTE Band 2 (PCS)	1850.7 - 1909.3 MHz	N/A	N/A	N/A	N/A
PCE	LTE Band 30	2307.5 - 2312.5 MHz	< 0.1	0.40	0.53	2.06
PCE	LTE Band 7	2502.5 - 2567.5 MHz	0.11	0.34	0.83	1.99
CBE	LTE Band 48	3552.5 - 3697.5 MHz	< 0.1	0.23	0.76	N/A
PCE	LTE Band 41	2498.5 - 2687.5 MHz	0.12	0.50	1.00	2.04
PCE	LTE Band 38	2572.5 - 2617.5 MHz	N/A	N/A	N/A	N/A
DTS	2.4 GHz WLAN	2412 - 2462 MHz	0.25	0.14	0.45	N/A
NII	U-NII-1	5180 - 5240 MHz	N/A	N/A	N/A	N/A
NII	U-NII-2A	5260 - 5320 MHz	0.28	0.26	N/A	1.28
NII	U-NII-2C	5500 - 5720 MHz	0.28	0.24	N/A	1.51
NII	U-NII-3	5745 - 5825 MHz	0.24	0.24	0.41	N/A
DSS/DTS	Bluetooth	2402 - 2480 MHz	0.34	< 0.1	< 0.1	N/A
Simultaneous SAR per KDB 690783 D01v01r03:			0.92	1.47	1.59	3.96

Note: This revised Test Report (S/N: 1M1905220084-01-R1.A3L) supersedes and replaces the previously issued test report on the same subject device for the same type of testing as indicated. Please discard or destroy the previously issued test report(s) and dispose of it accordingly.
This wireless portable device has been shown to be capable of compliance for localized specific absorption rate (SAR) for uncontrolled environment/general population exposure limits specified in ANSI/IEEE C95.1-1992 and has been tested in accordance with the measurement procedures specified in Section 1.8 of this report; for North American frequency bands only.
I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them. Test results reported herein relate only to the item(s) tested.

Randy Ortanez
President

The SAR Tick is an initiative of the Mobile & Wireless Forum (MWF). While a product may be considered eligible, use of the SAR Tick logo requires an agreement with the MWF. Further details can be obtained by emailing: sartick@mwfai.info.

© 2019 PCTEST Engineering Laboratory, Inc.
REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

TABLE OF CONTENTS

1 DEVICE UNDER TEST 3

2 LTE INFORMATION 19

3 INTRODUCTION 20

4 DOSIMETRIC ASSESSMENT 21

5 DEFINITION OF REFERENCE POINTS 22

6 TEST CONFIGURATION POSITIONS 23

7 RF EXPOSURE LIMITS 27

8 FCC MEASUREMENT PROCEDURES 28

9 RF CONDUCTED POWERS 36

10 SYSTEM VERIFICATION 143

11 SAR DATA SUMMARY 149

12 FCC MULTI-TX AND ANTENNA SAR CONSIDERATIONS 179

13 SAR MEASUREMENT VARIABILITY 201

14 ADDITIONAL TESTING PER FCC GUIDANCE 203

15 EQUIPMENT LIST 217

16 MEASUREMENT UNCERTAINTIES 218

17 CONCLUSION 219

18 REFERENCES 220

APPENDIX A: SAR TEST PLOTS

APPENDIX B: SAR DIPOLE VERIFICATION PLOTS

APPENDIX C: PROBE AND DIPOLE CALIBRATION CERTIFICATES

APPENDIX D: SAR TISSUE SPECIFICATIONS

APPENDIX E: SAR SYSTEM VALIDATION

APPENDIX F: DUT ANTENNA DIAGRAM & SAR TEST SETUP PHOTOGRAPHS

APPENDIX G: POWER REDUCTION VERIFICATION

APPENDIX H: DOWNLINK LTE CA RF CONDUCTED POWERS

APPENDIX I: IEEE 802.11AX RU SAR EXCLUSION

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

1 DEVICE UNDER TEST

1.1 Device Overview

Band & Mode	Operating Modes	Tx Frequency
GSM/GPRS/EDGE 850	Voice/Data	824.20 - 848.80 MHz
GSM/GPRS/EDGE 1900	Voice/Data	1850.20 - 1909.80 MHz
UMTS 850	Voice/Data	826.40 - 846.60 MHz
UMTS 1750	Voice/Data	1712.4 - 1752.6 MHz
UMTS 1900	Voice/Data	1852.4 - 1907.6 MHz
CDMA/EVDO BC10 (§90S)	Voice/Data	817.90 - 823.10 MHz
CDMA/EVDO BC0 (§22H)	Voice/Data	824.70 - 848.31 MHz
PCS CDMA/EVDO	Voice/Data	1851.25 - 1908.75 MHz
LTE Band 71	Voice/Data	665.5 - 695.5 MHz
LTE Band 12	Voice/Data	699.7 - 715.3 MHz
LTE Band 13	Voice/Data	779.5 - 784.5 MHz
LTE Band 14	Voice/Data	790.5 - 795.5 MHz
LTE Band 26 (Cell)	Voice/Data	814.7 - 848.3 MHz
LTE Band 5 (Cell)	Voice/Data	824.7 - 848.3 MHz
LTE Band 66 (AWS)	Voice/Data	1710.7 - 1779.3 MHz
LTE Band 4 (AWS)	Voice/Data	1710.7 - 1754.3 MHz
LTE Band 25 (PCS)	Voice/Data	1850.7 - 1914.3 MHz
LTE Band 2 (PCS)	Voice/Data	1850.7 - 1909.3 MHz
LTE Band 30	Voice/Data	2307.5 - 2312.5 MHz
LTE Band 7	Voice/Data	2502.5 - 2567.5 MHz
LTE Band 48	Voice/Data	3552.5 - 3697.5 MHz
LTE Band 41	Voice/Data	2498.5 - 2687.5 MHz
LTE Band 38	Voice/Data	2572.5 - 2617.5 MHz
2.4 GHz WLAN	Voice/Data	2412 - 2462 MHz
U-NII-1	Voice/Data	5180 - 5240 MHz
U-NII-2A	Voice/Data	5260 - 5320 MHz
U-NII-2C	Voice/Data	5500 - 5720 MHz
U-NII-3	Voice/Data	5745 - 5825 MHz
Bluetooth	Data	2402 - 2480 MHz
NFC	Data	13.56 MHz
ANT+	Data	2402 - 2480 MHz
MST	Data	555 Hz - 8.33 kHz

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

1.2 Power Reduction for SAR

This device utilizes a power reduction mechanism for some wireless modes and bands for SAR compliance under portable hotspot conditions and under some conditions when the device is being used in close proximity to the user's hand, or when headphones are inserted. All hotspot SAR evaluations for this device were performed at the maximum allowed output power when hotspot is enabled. FCC KDB Publication 616217 D04v01r02 Section 6 was used as a guideline for selecting SAR test distances for this device when being used in phablet use conditions. Detailed descriptions of the power reduction mechanism are included in the operational description.

This device uses an independent fixed level power reduction mechanism for WLAN operations during voice or VoIP held to ear scenarios. Per FCC Guidance, the held-to-ear exposure conditions were evaluated at reduced power according to the head SAR positions described in IEEE 1528-2013. Detailed descriptions of the power reduction mechanism are included in the operational description.

1.3 Nominal and Maximum Output Power Specifications

This device operates using the following maximum and nominal output power specifications. SAR values were scaled to the maximum allowed power to determine compliance per KDB Publication 447498 D01v06.

1.3.1 Maximum 2G/3G/4G Output Power

Mode / Band		Voice (dBm)	Burst Average GMSK (dBm)				Burst Average 8-PSK (dBm)			
		1 TX Slot	*1 TX Slots*	*2 TX Slots*	*3 TX Slots*	*4 TX Slots*	*1 TX Slots*	*2 TX Slots*	*3 TX Slots*	*4 TX Slots*
GSM/GPRS/EDGE 850	Maximum	**33.5**	**33.5**	**32.5**	**30.5**	**28.5**	**28.0**	**26.0**	**24.0**	**23.0**
	Nominal	**32.5**	**32.5**	**31.5**	**29.5**	**27.5**	**27.0**	**25.0**	**23.0**	**22.0**
GSM/GPRS/EDGE 1900	Maximum	**30.5**	**30.5**	**29.5**	**27.5**	**25.5**	**27.0**	**25.0**	**23.0**	**22.0**
	Nominal	**29.5**	**29.5**	**28.5**	**26.5**	**24.5**	**26.0**	**24.0**	**22.0**	**21.0**

Mode / Band		Modulated Average (dBm)			
		3GPP WCDMA	*3GPP HSDPA*	*3GPP HSUPA*	*3GPP DC-HSDPA*
UMTS Band 5 (850 MHz)	Maximum	**25.5**	**24.5**	**24.5**	**24.5**
	Nominal	**24.5**	**23.5**	**23.5**	**23.5**
UMTS Band 4 (1750 MHz)	Maximum	**25.0**	**24.0**	**24.0**	**24.0**
	Nominal	**24.0**	**23.0**	**23.0**	**23.0**
UMTS Band 2 (1900 MHz)	Maximum	**25.0**	**24.0**	**24.0**	**24.0**
	Nominal	**24.0**	**23.0**	**23.0**	**23.0**

Mode / Band		Modulated Average (dBm)
CDMA/EVDO BC10 (§90S)	Maximum	**25.8**
	Nominal	**24.8**
CDMA/EVDO BC0 (§22H)	Maximum	**25.8**
	Nominal	**24.8**
PCS CDMA/EVDO	Maximum	**25.0**
	Nominal	**24.0**

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Mode / Band		Modulated Average (dBm)
LTE Band 71	Maximum	**25.5**
	Nominal	**24.5**
LTE Band 12	Maximum	**25.8**
	Nominal	**24.8**
LTE Band 13	Maximum	**25.8**
	Nominal	**24.8**
LTE Band 14	Maximum	**25.8**
	Nominal	**24.8**
LTE Band 26 (Cell)	Maximum	**25.8**
	Nominal	**24.8**
LTE Band 5 (Cell)	Maximum	**25.8**
	Nominal	**24.8**
LTE Band 66 (AWS)	Maximum	**25.0**
	Nominal	**24.0**
LTE Band 4 (AWS)	Maximum	**25.0**
	Nominal	**24.0**
LTE Band 25 (PCS)	Maximum	**25.0**
	Nominal	**24.0**
LTE Band 2 (PCS)	Maximum	**25.0**
	Nominal	**24.0**
LTE Band 30	Maximum	**23.5**
	Nominal	**22.5**
LTE Band 7	Maximum	**23.5**
	Nominal	**22.5**
LTE Band 48	Maximum	**23.5**
	Nominal	**22.5**
LTE Band 41 (PC3)	Maximum	**25.0**
	Nominal	**24.0**
LTE Band 41 (PC2)	Maximum	**27.5**
	Nominal	**26.5**
LTE Band 38	Maximum	**24.0**
	Nominal	**23.0**

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

1.3.2 Reduced 2G/3G/4G Output Power – Hotspot Mode Active

Mode / Band		Burst Average GMSK (dBm)				Burst Average 8-PSK (dBm)			
		1 TX Slots	*2 TX Slots*	*3 TX Slots*	*4 TX Slots*	*1 TX Slots*	*2 TX Slots*	*3 TX Slots*	*4 TX Slots*
GPRS/EDGE 1900	Maximum	**28.0**	**26.5**	**24.5**	**22.5**	**26.5**	**24.5**	**22.5**	**21.5**
	Nominal	**27.0**	**25.5**	**23.5**	**21.5**	**25.5**	**23.5**	**21.5**	**20.5**

Mode / Band		Modulated Average (dBm)			
		3GPP WCDMA	*3GPP HSDPA*	*3GPP HSUPA*	*3GPP DC-HSDPA*
UMTS Band 4 (1750 MHz)	Maximum	**20.5**	**19.5**	**19.5**	**19.5**
	Nominal	**19.5**	**18.5**	**18.5**	**18.5**
UMTS Band 2 (1900 MHz)	Maximum	**19.5**	**18.5**	**18.5**	**18.5**
	Nominal	**18.5**	**17.5**	**17.5**	**17.5**

Mode / Band		Modulated Average (dBm)
PCS CDMA/EVDO	Maximum	**19.5**
	Nominal	**18.5**

Mode / Band		Modulated Average (dBm)
LTE Band 66 (AWS)	Maximum	**20.5**
	Nominal	**19.5**
LTE Band 4 (AWS)	Maximum	**20.5**
	Nominal	**19.5**
LTE Band 25 (PCS)	Maximum	**19.5**
	Nominal	**18.5**
LTE Band 2 (PCS)	Maximum	**19.5**
	Nominal	**18.5**
LTE Band 30	Maximum	**21.0**
	Nominal	**20.0**
LTE Band 7	Maximum	**21.0**
	Nominal	**20.0**
LTE Band 41 (PC3)	Maximum	**22.0**
	Nominal	**21.0**
LTE Band 41 (PC2)	Maximum	**23.5**
	Nominal	**22.5**
LTE Band 38	Maximum	**22.0**
	Nominal	**21.0**

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

1.3.3 Reduced 2G/3G/4G Output Power – Proximity Sensor and/or Earjack Mode Active

Mode / Band		Voice (dBm)	Burst Average GMSK (dBm)				Burst Average 8-PSK (dBm)			
		1 TX Slot	*1 TX Slots*	*2 TX Slots*	*3 TX Slots*	*4 TX Slots*	*1 TX Slots*	*2 TX Slots*	*3 TX Slots*	*4 TX Slots*
GSM/GPRS/EDGE 1900	Maximum	**28.5**	**28.5**	**27.0**	**25.5**	**23.5**	**27.0**	**25.0**	**23.0**	**22.0**
	Nominal	**27.5**	**27.5**	**26.0**	**24.5**	**22.5**	**26.0**	**24.0**	**22.0**	**21.0**

Mode / Band		Modulated Average (dBm)			
		3GPP WCDMA	*3GPP HSDPA*	*3GPP HSUPA*	*3GPP DC-HSDPA*
UMTS Band 4 (1750 MHz)	Maximum	**20.5**	**19.5**	**19.5**	**19.5**
	Nominal	**19.5**	**18.5**	**18.5**	**18.5**
UMTS Band 2 (1900 MHz)	Maximum	**21.0**	**20.0**	**20.0**	**20.0**
	Nominal	**20.0**	**19.0**	**19.0**	**19.0**

Mode / Band		Modulated Average (dBm)
PCS CDMA/EVDO	Maximum	**21.0**
	Nominal	**20.0**

Mode / Band		Modulated Average (dBm)
LTE Band 66 (AWS)	Maximum	**20.5**
	Nominal	**19.5**
LTE Band 4 (AWS)	Maximum	**20.5**
	Nominal	**19.5**
LTE Band 25 (PCS)	Maximum	**21.0**
	Nominal	**20.0**
LTE Band 2 (PCS)	Maximum	**21.0**
	Nominal	**20.0**
LTE Band 30	Maximum	**21.0**
	Nominal	**20.0**
LTE Band 7	Maximum	**21.0**
	Nominal	**20.0**
LTE Band 41 (PC3)	Maximum	**22.5**
	Nominal	**21.5**
LTE Band 41 (PC2)	Maximum	**24.5**
	Nominal	**23.5**
LTE Band 38	Maximum	**22.5**
	Nominal	**21.5**

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

1.3.4 Maximum Bluetooth and SISO/MIMO WLAN Output Power

Note: Targets for 802.11ax RU operations can be found in Appendix I.

Mode / Band		Modulated Average - Single Tx Chain (dBm)
	Channel	1-11
IEEE 802.11b (2.4 GHz)	Maximum	**21.0**
	Nominal	**20.0**
IEEE 802.11g (2.4 GHz)	Maximum	**18.5**
	Nominal	**17.5**
IEEE 802.11n (2.4 GHz)	Maximum	**18.0**
	Nominal	**17.0**
IEEE 802.11ax SU (2.4 GHz)	Maximum	**17.0**
	Nominal	**16.0**

Mode / Band		Modulated Average - MIMO (dBm)
		20 MHz Bandwidth
	Channel	1-11
IEEE 802.11g (2.4 GHz)	Maximum	**21.5**
	Nominal	**20.5**
IEEE 802.11n (2.4 GHz)	Maximum	**21.0**
	Nominal	**20.0**
IEEE 802.11ax SU (2.4 GHz)	Maximum	**17.0**
	Nominal	**16.0**

Mode / Band		Modulated Average - Single Tx Chain (dBm)									
		20 MHz Bandwidth		40 MHz Bandwidth				80 MHz Bandwidth			
	Channel	36	40-165	38	46-54	62	102-159	42	58	106	122-155
IEEE 802.11a (5 GHz)	Maximum	**17.0**	**18.0**								
	Nominal	**16.0**	**17.0**								
IEEE 802.11n (5 GHz)	Maximum	**17.0**	**18.0**	**14.0**	**17.0**	**15.0**	**17.0**				
	Nominal	**16.0**	**17.0**	**13.0**	**16.0**	**14.0**	**16.0**				
IEEE 802.11ac (5 GHz)	Maximum	**17.0**	**18.0**	**14.0**	**17.0**	**15.0**	**17.0**	**15.5**	**14.5**	**14.5**	**16.0**
	Nominal	**16.0**	**17.0**	**13.0**	**16.0**	**14.0**	**16.0**	**14.5**	**13.5**	**13.5**	**15.0**
IEEE 802.11ax SU (5 GHz)	Maximum	**16.0**		**14.0**				**13.0**			
	Nominal	**15.0**		**13.0**				**12.0**			

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Mode / Band		Modulated Average - MIMO (dBm)									
		20 MHz Bandwidth		40 MHz Bandwidth				80 MHz Bandwidth			
	Channel	36	40-165	38	46-54	62	102-159	42	58	106	122-155
IEEE 802.11a (5 GHz)	Maximum	**20.0**	**21.0**								
	Nominal	**19.0**	**20.0**								
IEEE 802.11n (5 GHz)	Maximum	**20.0**	**21.0**	**17.0**	**20.0**	**18.0**	**20.0**				
	Nominal	**19.0**	**20.0**	**16.0**	**19.0**	**17.0**	**19.0**				
IEEE 802.11ac (5 GHz)	Maximum	**20.0**	**21.0**	**17.0**	**20.0**	**18.0**	**20.0**	**18.5**	**17.5**	**17.5**	**19.0**
	Nominal	**19.0**	**20.0**	**16.0**	**19.0**	**17.0**	**19.0**	**17.5**	**16.5**	**16.5**	**18.0**
IEEE 802.11ax SU (5 GHz)	Maximum	**16.0**		**14.0**				**13.0**			
	Nominal	**15.0**		**13.0**				**12.0**			

Mode/Band		Modulated Average (dBm)
Bluetooth	Maximum	**18.5**
	Nominal	**17.5**
Bluetooth EDR	Maximum	**13.5**
	Nominal	**12.5**
Bluetooth LE	Maximum	**10.0**
	Nominal	**9.0**

1.3.5 Reduced SISO/MIMO WLAN Output Power

Note: Targets for 802.11ax RU operations can be found in Appendix I.

Mode / Band		Modulated Average - Single Tx Chain (dBm)
	Channel	1-11
IEEE 802.11b (2.4 GHz)	Maximum	**17.0**
	Nominal	**16.0**
IEEE 802.11g (2.4 GHz)	Maximum	**17.0**
	Nominal	**16.0**
IEEE 802.11n (2.4 GHz)	Maximum	**17.0**
	Nominal	**16.0**
IEEE 802.11ax SU (2.4 GHz)	Maximum	**17.0**
	Nominal	**16.0**

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Mode / Band		Modulated Average - MIMO (dBm)
		20 MHz Bandwidth
	Channel	1-11
IEEE 802.11g (2.4 GHz)	Maximum	**20.0**
	Nominal	**19.0**
IEEE 802.11n (2.4 GHz)	Maximum	**20.0**
	Nominal	**19.0**
IEEE 802.11ax SU (2.4 GHz)	Maximum	**17.0**
	Nominal	**16.0**

Mode / Band		Modulated Average - Single Tx Chain (dBm)		
		20 MHz Bandwidth	40 MHz Bandwidth	80 MHz Bandwidth
	Channel	36 - 165	38 - 159	42-155
IEEE 802.11a (5 GHz)	Maximum	**14.0**		
	Nominal	**13.0**		
IEEE 802.11n (5 GHz)	Maximum	**14.0**	**14.0**	
	Nominal	**13.0**	**13.0**	
IEEE 802.11ac (5 GHz)	Maximum	**14.0**	**14.0**	**14.0**
	Nominal	**13.0**	**13.0**	**13.0**
IEEE 802.11ax SU (5 GHz)	Maximum	**14.0**	**14.0**	**13.0**
	Nominal	**13.0**	**13.0**	**12.0**

Mode / Band		Modulated Average - MIMO (dBm)		
		20 MHz Bandwidth	40 MHz Bandwidth	80 MHz Bandwidth
	Channel	36 - 165	38 - 159	42-155
IEEE 802.11a (5 GHz)	Maximum	**17.0**		
	Nominal	**16.0**		
IEEE 802.11n (5 GHz)	Maximum	**17.0**	**17.0**	
	Nominal	**16.0**	**16.0**	
IEEE 802.11ac (5 GHz)	Maximum	**17.0**	**17.0**	**17.0**
	Nominal	**16.0**	**16.0**	**16.0**
IEEE 802.11ax SU (5 GHz)	Maximum	**16.0**	**14.0**	**13.0**
	Nominal	**15.0**	**13.0**	**12.0**

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

1.3.6 Maximum Output Power During Conditions with Simultaneous 2.4 GHz WLAN and 5 GHz WLAN

Note: Targets for 802.11ax RU operations can be found in Appendix I.

Mode / Band		Modulated Average - Single Tx Chain (dBm)
	Channel	1-11
IEEE 802.11b (2.4 GHz)	Maximum	**17.0**
	Nominal	**16.0**
IEEE 802.11g (2.4 GHz)	Maximum	**17.0**
	Nominal	**16.0**
IEEE 802.11n (2.4 GHz)	Maximum	**17.0**
	Nominal	**16.0**
IEEE 802.11ax SU (2.4 GHz)	Maximum	**17.0**
	Nominal	**16.0**

Mode / Band		Modulated Average - MIMO (dBm)
		20 MHz Bandwidth
	Channel	1-11
IEEE 802.11g (2.4 GHz)	Maximum	**20.0**
	Nominal	**19.0**
IEEE 802.11n (2.4 GHz)	Maximum	**20.0**
	Nominal	**19.0**
IEEE 802.11ax SU (2.4 GHz)	Maximum	**17.0**
	Nominal	**16.0**

Mode / Band		Modulated Average - Single Tx Chain (dBm)		
		20 MHz Bandwidth	40 MHz Bandwidth	80 MHz Bandwidth
	Channel	36 - 165	38 - 159	42-155
IEEE 802.11a (5 GHz)	Maximum	**14.0**		
	Nominal	**13.0**		
IEEE 802.11n (5 GHz)	Maximum	**14.0**	**14.0**	
	Nominal	**13.0**	**13.0**	
IEEE 802.11ac (5 GHz)	Maximum	**14.0**	**14.0**	**14.0**
	Nominal	**13.0**	**13.0**	**13.0**
IEEE 802.11ax SU (5 GHz)	Maximum	**14.0**	**14.0**	**13.0**
	Nominal	**13.0**	**13.0**	**12.0**

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Mode / Band		Modulated Average - MIMO (dBm)		
		20 MHz Bandwidth	40 MHz Bandwidth	80 MHz Bandwidth
	Channel	36 - 165	38 - 159	42-155
IEEE 802.11a (5 GHz)	Maximum	**17.0**		
	Nominal	**16.0**		
IEEE 802.11n (5 GHz)	Maximum	**17.0**	**17.0**	
	Nominal	**16.0**	**16.0**	
IEEE 802.11ac (5 GHz)	Maximum	**17.0**	**17.0**	**17.0**
	Nominal	**16.0**	**16.0**	**16.0**
IEEE 802.11ax SU (5 GHz)	Maximum	**16.0**	**14.0**	**13.0**
	Nominal	**15.0**	**13.0**	**12.0**

1.3.7 Reduced Output Power During Conditions with Simultaneous 2.4 GHz WLAN and 5 GHz WLAN

Note: Targets for 802.11ax RU operations can be found in Appendix I.

Mode / Band		Modulated Average - Single Tx Chain (dBm)
	Channel	1-11
IEEE 802.11b (2.4 GHz)	Maximum	**14.0**
	Nominal	**13.0**
IEEE 802.11g (2.4 GHz)	Maximum	**14.0**
	Nominal	**13.0**
IEEE 802.11n (2.4 GHz)	Maximum	**14.0**
	Nominal	**13.0**
IEEE 802.11ax SU (2.4 GHz)	Maximum	**14.0**
	Nominal	**13.0**

Mode / Band		Modulated Average - MIMO (dBm)
		20 MHz Bandwidth
	Channel	1-11
IEEE 802.11g (2.4 GHz)	Maximum	**17.0**
	Nominal	**16.0**
IEEE 802.11n (2.4 GHz)	Maximum	**17.0**
	Nominal	**16.0**
IEEE 802.11ax SU (2.4 GHz)	Maximum	**17.0**
	Nominal	**16.0**

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Mode / Band		Modulated Average - Single Tx Chain (dBm)		
		20 MHz Bandwidth	40 MHz Bandwidth	80 MHz Bandwidth
	Channel	36 - 165	38 - 159	42-155
IEEE 802.11a (5 GHz)	Maximum	**14.0**		
	Nominal	**13.0**		
IEEE 802.11n (5 GHz)	Maximum	**14.0**	**14.0**	
	Nominal	**13.0**	**13.0**	
IEEE 802.11ac (5 GHz)	Maximum	**14.0**	**14.0**	**14.0**
	Nominal	**13.0**	**13.0**	**13.0**
IEEE 802.11ax SU (5 GHz)	Maximum	**14.0**	**14.0**	**13.0**
	Nominal	**13.0**	**13.0**	**12.0**

Mode / Band		Modulated Average - MIMO (dBm)		
		20 MHz Bandwidth	40 MHz Bandwidth	80 MHz Bandwidth
	Channel	36 - 165	38 - 159	42-155
IEEE 802.11a (5 GHz)	Maximum	**17.0**		
	Nominal	**16.0**		
IEEE 802.11n (5 GHz)	Maximum	**17.0**	**17.0**	
	Nominal	**16.0**	**16.0**	
IEEE 802.11ac (5 GHz)	Maximum	**17.0**	**17.0**	**17.0**
	Nominal	**16.0**	**16.0**	**16.0**
IEEE 802.11ax SU (5 GHz)	Maximum	**16.0**	**14.0**	**13.0**
	Nominal	**15.0**	**13.0**	**12.0**

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

1.4 DUT Antenna Locations

The overall dimensions of this device are > 9 x 5 cm. A diagram showing the location of the device antennas can be found in Appendix F. Since the diagonal dimension of this device is > 160 mm and <200 mm, it is considered a "phablet."

Table 1-1
Device Edges/Sides for SAR Testing

Mode	Back	Front	Top	Bottom	Right	Left
GPRS 850	Yes	Yes	No	Yes	Yes	Yes
GPRS 1900	Yes	Yes	No	Yes	Yes	Yes
UMTS 850	Yes	Yes	No	Yes	Yes	Yes
UMTS 1750	Yes	Yes	No	Yes	Yes	Yes
UMTS 1900	Yes	Yes	No	Yes	Yes	Yes
EVDO BC10 (§90S)	Yes	Yes	No	Yes	Yes	Yes
EVDO BC0 (§22H)	Yes	Yes	No	Yes	Yes	Yes
PCS EVDO	Yes	Yes	No	Yes	Yes	Yes
LTE Band 71	Yes	Yes	No	Yes	Yes	Yes
LTE Band 12	Yes	Yes	No	Yes	Yes	Yes
LTE Band 13	Yes	Yes	No	Yes	Yes	Yes
LTE Band 14	Yes	Yes	No	Yes	Yes	Yes
LTE Band 26 (Cell)	Yes	Yes	No	Yes	Yes	Yes
LTE Band 5 (Cell)	Yes	Yes	No	Yes	Yes	Yes
LTE Band 66 (AWS)	Yes	Yes	No	Yes	Yes	Yes
LTE Band 25 (PCS)	Yes	Yes	No	Yes	Yes	Yes
LTE Band 30	Yes	Yes	No	Yes	Yes	Yes
LTE Band 7	Yes	Yes	No	Yes	No	Yes
LTE Band 48	Yes	Yes	No	Yes	No	Yes
LTE Band 41	Yes	Yes	No	Yes	No	Yes
2.4 GHz WLAN Ant 1	Yes	Yes	Yes	No	No	Yes
2.4 GHz WLAN Ant 2	Yes	Yes	Yes	No	No	Yes
2.4 GHz WLAN MIMO	Yes	Yes	Yes	No	No	Yes
5 GHz WLAN Ant 1	Yes	Yes	Yes	No	No	Yes
5 GHz WLAN Ant 2	Yes	Yes	Yes	No	No	Yes
5 GHz WLAN MIMO	Yes	Yes	Yes	No	No	Yes
Bluetooth	Yes	Yes	Yes	No	No	Yes

Note: Particular DUT edges were not required to be evaluated for wireless router SAR or phablet SAR if the edges were greater than 2.5 cm from the transmitting antenna according to FCC KDB Publication 941225 D06v02r01 Section III and FCC KDB Publication 648474 D04v01r03. The distances between the transmit antennas and the edges of the device are included in the filing. When wireless router mode is enabled, U-NII-1, U-NII-2A, U-NII-2C operations are disabled.

1.5 Near Field Communications (NFC) Antenna

This DUT has NFC operations. The NFC antenna is integrated into the device for this model. Therefore, all SAR tests were performed with the device which already incorporates the NFC antenna. A diagram showing the location of the NFC antenna can be found in Appendix F.

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

1.6 Simultaneous Transmission Capabilities

According to FCC KDB Publication 447498 D01v06, transmitters are considered to be operating simultaneously when there is overlapping transmission, with the exception of transmissions during network hand-offs with maximum hand-off duration less than 30 seconds.

This device contains multiple transmitters that may operate simultaneously, and therefore requires a simultaneous transmission analysis according to FCC KDB Publication 447498 D01v06 4.3.2 procedures.

Table 1-2
Simultaneous Transmission Scenarios

No.	Capable Transmit Configuration	Head	Body-Worn Accessory	Wireless Router	Phablet	Notes
1	1x CDMA voice + 2.4 GHz WI-FI	Yes	Yes	N/A	Yes	
2	1x CDMA voice + 5 GHz WI-FI	Yes	Yes	N/A	Yes	
3	1x CDMA voice + 2.4 GHz Bluetooth	Yes^	Yes	N/A	Yes	^ Bluetooth Tethering is considered
4	1x CDMA voice + 2.4 GHz Bluetooth + 5GHz WI-FI	Yes^	Yes	N/A	Yes	^ Bluetooth Tethering is considered
5	1x CDMA voice + 2.4 GHz WI-FI MIMO	Yes	Yes	N/A	Yes	
6	1x CDMA voice + 5 GHz WI-FI MIMO	Yes	Yes	N/A	Yes	
7	1x CDMA voice + 2.4 GHz WI-FI + 5 GHz WI-FI	Yes	Yes	N/A	Yes	
8	1x CDMA voice + 2.4 GHz WI-FI MIMO + 5 GHz WI-FI MIMO	Yes	Yes	N/A	Yes	
9	1x CDMA voice + 2.4 GHz Bluetooth + 5 GHz WI-FI MIMO	Yes^	Yes	N/A	Yes	^ Bluetooth Tethering is considered
10	GSM voice + 2.4 GHz WI-FI	Yes	Yes	N/A	Yes	
11	GSM voice + 5 GHz WI-FI	Yes	Yes	N/A	Yes	
12	GSM voice + 2.4 GHz Bluetooth	Yes^	Yes	N/A	Yes	^ Bluetooth Tethering is considered
13	GSM voice + 2.4 GHz Bluetooth + 5 GHz WI-FI	Yes^	Yes	N/A	Yes	^ Bluetooth Tethering is considered
14	GSM voice + 2.4 GHz WI-FI MIMO	Yes	Yes	N/A	Yes	
15	GSM voice + 5 GHz WI-FI MIMO	Yes	Yes	N/A	Yes	
16	GSM voice + 2.4 GHz WI-FI + 5 GHz WI-FI	Yes	Yes	N/A	Yes	
17	GSM voice + 2.4 GHz WI-FI MIMO + 5 GHz WI-FI MIMO	Yes	Yes	N/A	Yes	
18	GSM voice + 2.4 GHz Bluetooth + 5 GHz WI-FI MIMO	Yes^	Yes	N/A	Yes	^ Bluetooth Tethering is considered
19	UMTS + 2.4 GHz WI-FI	Yes	Yes	Yes	Yes	
20	UMTS + 5 GHz WI-FI	Yes	Yes	Yes	Yes	
21	UMTS + 2.4 GHz Bluetooth	Yes^	Yes	Yes^	Yes	^ Bluetooth Tethering is considered
22	UMTS + 2.4 GHz Bluetooth + 5 GHz WI-FI	Yes^	Yes	Yes^	Yes	^ Bluetooth Tethering is considered
23	UMTS + 2.4 GHz WI-FI MIMO	Yes	Yes	Yes	Yes	
24	UMTS + 5 GHz WI-FI MIMO	Yes	Yes	Yes	Yes	
25	UMTS + 2.4 GHz WI-FI + 5 GHz WI-FI	Yes	Yes	Yes	Yes	
26	UMTS + 2.4 GHz WI-FI MIMO + 5 GHz WI-FI MIMO	Yes	Yes	Yes	Yes	
27	UMTS + 2.4 GHz Bluetooth + 5 GHz WI-FI MIMO	Yes^	Yes	Yes^	Yes	^ Bluetooth Tethering is considered
28	LTE + 2.4 GHz WI-FI	Yes	Yes	Yes	Yes	
29	LTE + 5 GHz WI-FI	Yes	Yes	Yes	Yes	
30	LTE + 2.4 GHz Bluetooth	Yes^	Yes	Yes^	Yes	^ Bluetooth Tethering is considered
31	LTE + 2.4 GHz Bluetooth + 5GHz WI-FI	Yes^	Yes	Yes^	Yes	^ Bluetooth Tethering is considered
32	LTE + 2.4 GHz WI-FI MIMO	Yes	Yes	Yes	Yes	
33	LTE + 5 GHz WI-FI MIMO	Yes	Yes	Yes	Yes	
34	LTE + 2.4 GHz WI-FI + 5 GHz WI-FI	Yes	Yes	Yes	Yes	
35	LTE + 2.4 GHz WI-FI MIMO + 5 GHz WI-FI MIMO	Yes	Yes	Yes	Yes	
36	LTE + 2.4 GHz Bluetooth + 5GHz WI-FI MIMO	Yes^	Yes	Yes^	Yes	^ Bluetooth Tethering is considered
37	CDMA/EVDO data + 2.4 GHz WI-FI	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
38	CDMA/EVDO data + 5 GHz WI-FI	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
39	CDMA/EVDO data + 2.4 GHz Bluetooth	Yes*^	Yes*	Yes^	Yes	* Pre-installed VOIP applications are considered ^ Bluetooth Tethering is considered
40	CDMA/EVDO data + 2.4 GHz Bluetooth + 5GHz WI-FI	Yes*^	Yes*	Yes^	Yes	* Pre-installed VOIP applications are considered ^ Bluetooth Tethering is considered
41	CDMA/EVDO data + 2.4 GHz WI-FI MIMO	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
42	CDMA/EVDO data + 5 GHz WI-FI MIMO	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
43	CDMA/EVDO data + 2.4 GHz WI-FI + 5 GHz WI-FI	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
44	CDMA/EVDO data + 2.4 GHz WI-FI MIMO + 5 GHz WI-FI MIMO	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
45	CDMA/EVDO data + 2.4 GHz Bluetooth + 5GHz WI-FI MIMO	Yes*^	Yes*	Yes^	Yes	* Pre-installed VOIP applications are considered ^ Bluetooth Tethering is considered
46	GPRS/EDGE + 2.4 GHz WI-FI	N/A	N/A	Yes	Yes	
47	GPRS/EDGE + 5 GHz WI-FI	N/A	N/A	Yes	Yes	
48	GPRS/EDGE + 2.4 GHz Bluetooth	N/A	N/A	Yes^	Yes	^ Bluetooth Tethering is considered
49	GPRS/EDGE + 2.4 GHz Bluetooth + 5GHz WI-FI	N/A	N/A	Yes^	Yes	^ Bluetooth Tethering is considered
50	GPRS/EDGE + 2.4 GHz WI-FI MIMO	N/A	N/A	Yes	Yes	
51	GPRS/EDGE + 5 GHz WI-FI MIMO	N/A	N/A	Yes	Yes	
52	GPRS/EDGE + 2.4 GHz WI-FI + 5 GHz WI-FI	N/A	N/A	Yes	Yes	
53	GPRS/EDGE + 2.4 GHz WI-FI MIMO + 5 GHz WI-FI MIMO	N/A	N/A	Yes	Yes	
54	GPRS/EDGE + 2.4 GHz Bluetooth + 5GHz WI-FI MIMO	N/A	N/A	Yes^	Yes	^ Bluetooth Tethering is considered

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

1. 2.4 GHz WLAN and 2.4 GHz Bluetooth share the same antenna path and cannot transmit simultaneously.
2. All licensed modes share the same antenna path and cannot transmit simultaneously.
3. When the user utilizes multiple services in UMTS 3G mode it uses multi-Radio Access Bearer or multi-RAB. The power control is based on a physical control channel (Dedicated Physical Control Channel [DPCCH]) and power control will be adjusted to meet the needs of both services. Therefore, the UMTS+WLAN scenario also represents the UMTS Voice/DATA + WLAN Hotspot scenario.
4. Per the manufacturer, WIFI Direct is not expected to be used in conjunction with a held-to-ear or body-worn accessory voice call. Therefore, there are no simultaneous transmission scenarios involving WIFI direct beyond that listed in the above table. 5 GHz Wireless Router is only supported for the U-NII-3 by S/W, therefore U-NII-1, U-NII-2A, and U-NII-2C were not evaluated for wireless router conditions.
5. 5 GHz Wireless Router is only supported for the U-NII-3 by S/W, therefore U-NII-1, U-NII2A, and U-NII2C were not evaluated for wireless router conditions.
6. This device supports 2x2 MIMO Tx for WLAN 802.11a/g/n/ac/ax. 802.11a/g/n/ac/ax supports CDD and STBC and 802.11n/ac/ax additionally supports SDM. Each WLAN antenna can transmit independently or together when operating with MIMO.
7. This device supports VOLTE.
8. This device supports VOWIFI.
9. This device supports Bluetooth Tethering.

1.7 Miscellaneous SAR Test Considerations

(A) WIFI/BT

Since U-NII-1 and U-NII-2A bands have the same maximum output power and the highest reported SAR for U-NII-2A is less than 1.2 W/kg, SAR is not required for U-NII-1 band according to FCC KDB Publication 248227 D01v02r02.

Since Wireless Router operations are not allowed by the chipset firmware using U-NII-1, U-NII-2A & U-NII-2C WIFI, only 2.4 GHz and U-NII-3 WIFI Hotspot SAR tests and combinations are considered for SAR with respect to Wireless Router configurations according to FCC KDB 941225 D06v02r01.

This device supports IEEE 802.11ax with the following features:

a) Up to 80 MHz Bandwidth only for 5 GHz
b) Up to 20 MHz Bandwidth only for 2.4 GHz
c) No aggregate channel configurations
d) 2 Tx antenna output
e) Up to 1024 QAM is supported
f) TDWR and Band gap channels are supported for 5 GHz
g) MU-MIMO UL Operations are not supported

Per FCC KDB Publication 648474 D04v01r03, this device is considered a "phablet" since the diagonal dimension is greater than 160mm and less than 200mm. Phablet SAR tests are required when wireless router mode does not apply or if wireless router 1g SAR > 1.2 W/kg. Because wireless router operations are not supported for U-NII-1, U-NII-2A & U-NII-2C WLAN, phablet SAR tests were performed. Phablet SAR was not evaluated for Bluetooth, 2.4 GHz WLAN, and U-NII-3 WLAN operations since wireless router 1g SAR was < 1.2 W/kg.

Per April 2019 TCB Workshop Notes, SAR testing was not required for 802.11ax when applying the initial test configuration procedures of KDB 248227, with 802.11ax considered a higher order 802.11 mode.

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

(B) Licensed Transmitter(s)

GSM/GPRS/EDGE DTM is not supported for US bands. Therefore, the GSM Voice modes in this report do not transmit simultaneously with GPRS/EDGE Data.

This device is only capable of QPSK HSUPA in the uplink. Therefore, no additional SAR tests are required beyond that described for devices with HSUPA in KDB 941225 D01v03r01.

LTE SAR for the higher modulations and lower bandwidths were not tested since the maximum average output power of all required channels and configurations was not more than 0.5 dB higher than the highest bandwidth; and the reported LTE SAR for the highest bandwidth was less than 1.45 W/kg for all configurations according to FCC KDB 941225 D05v02r04.

CDMA 1X Advanced technology was not required for SAR since the maximum allowed output powers for 1x Advanced was not more than 0.25 dB higher than the maximum powers for 1x and the measured SAR in any 1x mode exposure conditions was not greater than 1.2 W/kg per FCC KDB Publication 941225 D01v03r01.

This device supports LTE Carrier Aggregation (CA) in the downlink. All uplink communications are identical to Release 8 specifications. Per FCC KDB Publication 941225 D05A v01r02, SAR for LTE CA operations was not needed since the maximum average output power in LTE CA mode was not >0.25 dB higher than the maximum output power when downlink carrier aggregation was inactive. The downlink carrier aggregation exclusion analysis can be found in Appendix H.

Per FCC KDB Publication 648474 D04v01r03, this device is considered a "phablet" since the diagonal dimension is greater than 160mm and less than 200mm. Therefore, phablet SAR tests are required when wireless router mode does not apply or if wireless router 1g SAR > 1.2 W/kg.

This device supports downlink 4x4 MIMO operations for some LTE Bands. Per May 2017 TCB Workshop Notes, SAR for 4x4 DL MIMO was not needed since the maximum average output power in 4x4 DL MIMO mode was not more than 0.25 dB higher than the maximum output power with 4x4 DL MIMO inactive. Additionally, SAR for 4x4 MIMO Downlink Carrier Aggregation was not needed since the maximum average output power in 4x4 MIMO Downlink Carrier Aggregation mode was not more than 0.25 dB higher than the maximum output power with 4x4 MIMO Downlink and downlink carrier aggregation inactive.

This device supports LTE capabilities with overlapping transmission frequency ranges. When the supported frequency range of an LTE Band falls completely within an LTE band with a larger transmission frequency range, both LTE bands have the same target power (or the band with the larger transmission frequency range has a higher target power), and both LTE bands share the same transmission path and signal characteristics, SAR was only assessed for the band with the larger transmission frequency range.

This device supports both Power Class 2 (PC2) and Power Class 3 (PC3) for LTE Band 41. Per May 2017 TCB Workshop Notes, SAR tests were performed with Power Class 3 (given the specific UL/DL limitations for Power Class 2). Additionally, SAR testing for the Power Class 2 condition was evaluated for the highest configuration in Power Class 3 for each test configuration to confirm the results were scalable linearly (See Section 14.2).

This device supports LTE Carrier Aggregation (CA) for LTE Band 5, LTE Band 66, and LTE Band 41 with two component carriers in the uplink. SAR Measurements and conducted powers were evaluated per 2017 Fall TCB Workshop Notes.

This device supports 64QAM and 256QAM on the uplink and 256QAM on the downlink for LTE Operations. Conducted powers for 64QAM and 256QAM uplink configurations were measured per Section 5.1 of FCC KDB Publication 941225D05v02r05. SAR was not required for 64QAM or 256QAM since the highest

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

maximum output power for 64QAM and 256QAM is ≤ ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45W/kg, per Section 5.2.4 of FCC KDB Publication 941225 D05v02r05.

1.8 Guidance Applied

- IEEE 1528-2013
- FCC KDB Publication 941225 D01v03r01, D05v02r04, D05Av01r02, D06v02r01 (2G/3G/4G and Hotspot)
- FCC KDB Publication 248227 D01v02r02 (SAR Considerations for 802.11 Devices)
- FCC KDB Publication 447498 D01v06 (General SAR Guidance)
- FCC KDB Publication 865664 D01v01r04, D02v01r02 (SAR Measurements up to 6 GHz)
- FCC KDB Publication 648474 D04v01r03 (Phablet Procedures)
- FCC KDB Publication 616217 D04v01r02 (Proximity Sensor)
- October 2013 TCB Workshop Notes (GPRS Testing Considerations)
- May 2017 TCB Workshop Notes (LTE 4x4 Downlink MIMO, LTE Band 41 Power Class 2/3)
- April 2018 TCB Workshop Notes (LTE Carrier Aggregation)
- April 2019 TCB Workshop Notes (IEEE 802.11ax, Dynamic Antenna Tuning)

1.9 Device Serial Numbers

Several samples with identical hardware were used to support SAR testing. The manufacturer has confirmed that the device(s) tested have the same physical, mechanical and thermal characteristics and are within operational tolerances expected for production units. The serial numbers used for each test are indicated alongside the results in Section 11.

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

2 LTE INFORMATION

LTE Information					
Form Factor	Portable Handset				
Frequency Range of each LTE transmission band	LTE Band 71 (665.5 - 695.5 MHz)				
	LTE Band 12 (699.7 - 715.3 MHz)				
	LTE Band 13 (779.5 - 784.5 MHz)				
	LTE Band 14 (790.5 - 795.5 MHz)				
	LTE Band 26 (Cell) (814.7 - 848.3 MHz)				
	LTE Band 5 (Cell) (824.7 - 848.3 MHz)				
	LTE Band 66 (AWS) (1710.7 - 1779.3 MHz)				
	LTE Band 4 (AWS) (1710.7 - 1754.3 MHz)				
	LTE Band 25 (PCS) (1850.7 - 1914.3 MHz)				
	LTE Band 2 (PCS) (1850.7 - 1909.3 MHz)				
	LTE Band 30 (2307.5 - 2312.5 MHz)				
	LTE Band 7 (2502.5 - 2567.5 MHz)				
	LTE Band 48 (3552.5 - 3697.5 MHz)				
	LTE Band 41 (2498.5 - 2687.5 MHz)				
	LTE Band 38 (2572.5 - 2617.5 MHz)				
Channel Bandwidths	LTE Band 71: 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 12: 1.4 MHz, 3 MHz, 5 MHz, 10 MHz				
	LTE Band 13: 5 MHz, 10 MHz				
	LTE Band 14: 5 MHz, 10 MHz				
	LTE Band 26 (Cell): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz				
	LTE Band 5 (Cell): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz				
	LTE Band 66 (AWS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 4 (AWS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 25 (PCS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 2 (PCS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 30: 5 MHz, 10 MHz				
	LTE Band 7: 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 48: 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 41: 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 38: 5 MHz, 10 MHz, 15 MHz, 20 MHz				
Channel Numbers and Frequencies (MHz)	Low	Low-Mid	Mid	Mid-High	High
LTE Band 71: 5 MHz	665.5 (133147)		680.5 (133297)	695.5 (133447)	
LTE Band 71: 10 MHz	668 (133172)		680.5 (133297)	693 (133422)	
LTE Band 71: 15 MHz	670.5 (133197)		680.5 (133297)	690.5 (133397)	
LTE Band 71: 20 MHz	673 (133222)		680.5 (133297)	688 (133372)	
LTE Band 12: 1.4 MHz	699.7 (23017)		707.5 (23095)	715.3 (23173)	
LTE Band 12: 3 MHz	700.5 (23025)		707.5 (23095)	714.5 (23165)	
LTE Band 12: 5 MHz	701.5 (23035)		707.5 (23095)	713.5 (23155)	
LTE Band 12: 10 MHz	704 (23060)		707.5 (23095)	711 (23130)	
LTE Band 13: 5 MHz	779.5 (23205)		782 (23230)	784.5 (23255)	
LTE Band 13: 10 MHz	N/A		782 (23230)	N/A	
LTE Band 14: 5 MHz	790.5 (23305)		793 (23330)	795.5 (23355)	
LTE Band 14: 10 MHz	N/A		793 (23330)	N/A	
LTE Band 26 (Cell): 1.4 MHz	814.7 (26697)		831.5 (26865)	848.3 (27033)	
LTE Band 26 (Cell): 3 MHz	815.5 (26705)		831.5 (26865)	847.5 (27025)	
LTE Band 26 (Cell): 5 MHz	816.5 (26715)		831.5 (26865)	846.5 (27015)	
LTE Band 26 (Cell): 10 MHz	819 (26740)		831.5 (26865)	844 (26990)	
LTE Band 26 (Cell): 15 MHz	821.5 (26765)		831.5 (26865)	841.5 (26965)	
LTE Band 5 (Cell): 1.4 MHz	824.7 (20407)		836.5 (20525)	848.3 (20643)	
LTE Band 5 (Cell): 3 MHz	825.5 (20415)		836.5 (20525)	847.5 (20635)	
LTE Band 5 (Cell): 5 MHz	826.5 (20425)		836.5 (20525)	846.5 (20625)	
LTE Band 5 (Cell): 10 MHz	829 (20450)		836.5 (20525)	844 (20600)	
LTE Band 66 (AWS): 1.4 MHz	1710.7 (131979)		1745 (132322)	1779.3 (132665)	
LTE Band 66 (AWS): 3 MHz	1711.5 (131987)		1745 (132322)	1778.5 (132657)	
LTE Band 66 (AWS): 5 MHz	1712.5 (131997)		1745 (132322)	1777.5 (132647)	
LTE Band 66 (AWS): 10 MHz	1715 (132022)		1745 (132322)	1775 (132622)	
LTE Band 66 (AWS): 15 MHz	1717.5 (132047)		1745 (132322)	1772.5 (132597)	
LTE Band 66 (AWS): 20 MHz	1720 (132072)		1745 (132322)	1770 (132572)	
LTE Band 4 (AWS): 1.4 MHz	1710.7 (19957)		1732.5 (20175)	1754.3 (20393)	
LTE Band 4 (AWS): 3 MHz	1711.5 (19965)		1732.5 (20175)	1753.5 (20385)	
LTE Band 4 (AWS): 5 MHz	1712.5 (19975)		1732.5 (20175)	1752.5 (20375)	
LTE Band 4 (AWS): 10 MHz	1715 (20000)		1732.5 (20175)	1750 (20350)	
LTE Band 4 (AWS): 15 MHz	1717.5 (20025)		1732.5 (20175)	1747.5 (20325)	
LTE Band 4 (AWS): 20 MHz	1720 (20050)		1732.5 (20175)	1745 (20300)	
LTE Band 25 (PCS): 1.4 MHz	1850.7 (26047)		1882.5 (26365)	1914.3 (26683)	
LTE Band 25 (PCS): 3 MHz	1851.5 (26055)		1882.5 (26365)	1913.5 (26675)	
LTE Band 25 (PCS): 5 MHz	1852.5 (26065)		1882.5 (26365)	1912.5 (26665)	
LTE Band 25 (PCS): 10 MHz	1855 (26090)		1882.5 (26365)	1910 (26640)	
LTE Band 25 (PCS): 15 MHz	1857.5 (26115)		1882.5 (26365)	1907.5 (26615)	
LTE Band 25 (PCS): 20 MHz	1860 (26140)		1882.5 (26365)	1905 (26590)	
LTE Band 2 (PCS): 1.4 MHz	1850.7 (18607)		1880 (18900)	1909.3 (19193)	
LTE Band 2 (PCS): 3 MHz	1851.5 (18615)		1880 (18900)	1908.5 (19185)	
LTE Band 2 (PCS): 5 MHz	1852.5 (18625)		1880 (18900)	1907.5 (19175)	
LTE Band 2 (PCS): 10 MHz	1855 (18650)		1880 (18900)	1905 (19150)	
LTE Band 2 (PCS): 15 MHz	1857.5 (18675)		1880 (18900)	1902.5 (19125)	
LTE Band 2 (PCS): 20 MHz	1860 (18700)		1880 (18900)	1900 (19100)	
LTE Band 30: 5 MHz	2307.5 (27685)		2310 (27710)	2312.5 (27735)	
LTE Band 30: 10 MHz	N/A		2310 (27710)	N/A	
LTE Band 7: 5 MHz	2502.5 (20775)		2535 (21100)	2567.5 (21425)	
LTE Band 7: 10 MHz	2505 (20800)		2535 (21100)	2565 (21400)	
LTE Band 7: 15 MHz	2507.5 (20825)		2535 (21100)	2562.5 (21375)	
LTE Band 7: 20 MHz	2510 (20850)		2535 (21100)	2560 (21350)	
LTE Band 48: 5 MHz	3552.5 (55265)	3600.8 (55748)	N/A	3649.2 (56232)	3697.5 (56715)
LTE Band 48: 10 MHz	3555 (55290)	3601.7 (55757)	N/A	3648.3 (56223)	3695 (56690)
LTE Band 48: 15 MHz	3557.5 (55315)	3602.5 (55765)	N/A	3647.5 (56215)	3692.5 (56665)
LTE Band 48: 20 MHz	3560 (55340)	3603.3 (55773)	N/A	3646.7 (56207)	3690 (56640)
LTE Band 41: 5 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)
LTE Band 41: 10 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)
LTE Band 41: 15 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)
LTE Band 41: 20 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)
LTE Band 38: 5 MHz	2572.5 (37775)		2595 (38000)	2617.5 (38225)	
LTE Band 38: 10 MHz	2575 (37800)		2595 (38000)	2615 (38200)	
LTE Band 38: 15 MHz	2577.5 (37825)		2595 (38000)	2612.5 (38175)	
LTE Band 38: 20 MHz	2580 (37850)		2595 (38000)	2610 (38150)	
UE Category	DL UE Cat 20 (QPSK, 16QAM, 64QAM, 256QAM), UL UE Cat 18 (QPSK, 16QAM, 64QAM, 256QAM)				
Modulations Supported in UL	QPSK, 16QAM, 64QAM, 256QAM				
LTE MPR Permanently implemented per 3GPP TS 36.101 section 6.2.3~6.2.5? (manufacturer attestation to be provided)	YES				
A-MPR (Additional MPR) disabled for SAR Testing?	YES				
LTE Carrier Aggregation Possible Combinations	The technical description includes all the possible carrier aggregation combinations				
LTE Additional Information	This device does not support full CA features on 3GPP Release 15. It supports carrier aggregation, downlink MIMO, LAA features as shown in Section 9 and Appendix H. All other uplink communications are identical to the Release 8 specifications. Uplink communications are done on the PCC unless otherwise specified. The following LTE Release 15 Features are not supported: Relay, HetNet, Enhanced eICIC, MDH, eMBMS, Cross-Carrier Scheduling, Enhanced SC-FDMA.				

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

3 INTRODUCTION

The FCC and Innovation, Science, and Economic Development Canada have adopted the guidelines for evaluating the environmental effects of radio frequency (RF) radiation in ET Docket 93-62 on Aug. 6, 1996 and Health Canada Safety Code 6 to protect the public and workers from the potential hazards of RF emissions due to FCC-regulated portable devices. [1]

The safety limits used for the environmental evaluation measurements are based on the criteria published by the American National Standards Institute (ANSI) for localized specific absorption rate (SAR) in IEEE/ANSI C95.1-1992 Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz [3] and Health Canada RF Exposure Guidelines Safety Code 6 [22]. The measurement procedure described in IEEE/ANSI C95.3-2002 Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave [4] is used for guidance in measuring the Specific Absorption Rate (SAR) due to the RF radiation exposure from the Equipment Under Test (EUT). These criteria for SAR evaluation are similar to those recommended by the International Committee for Non-Ionizing Radiation Protection (ICNIRP) in Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields," Report No. Vol 74. 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.

3.1 SAR Definition

Specific Absorption Rate is defined as the time derivative (rate) of the incremental energy (dU) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dV) of a given density (ρ). It is also defined as the rate of RF energy absorption per unit mass at a point in an absorbing body (see Equation 3-1).

Equation 3-1
SAR Mathematical Equation

$$SAR = \frac{d}{dt}\left(\frac{dU}{dm}\right) = \frac{d}{dt}\left(\frac{dU}{\rho dv}\right)$$

SAR is expressed in units of Watts per Kilogram (W/kg).

$$SAR = \frac{\sigma \cdot E^2}{\rho}$$

where:

σ = conductivity of the tissue-simulating material (S/m)
ρ = mass density of the tissue-simulating material (kg/m^3)
E = Total RMS electric field strength (V/m)

NOTE: The primary factors that control rate of energy absorption were found to be the wavelength of the incident field in relation to the dimensions and geometry of the irradiated organism, the orientation of the organism in relation to the polarity of field vectors, the presence of reflecting surfaces, and whether conductive contact is made by the organism with a ground plane.[6]

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

4 DOSIMETRIC ASSESSMENT

4.1 Measurement Procedure

The evaluation was performed using the following procedure compliant to FCC KDB Publication 865664 D01v01r04 and IEEE 1528-2013:

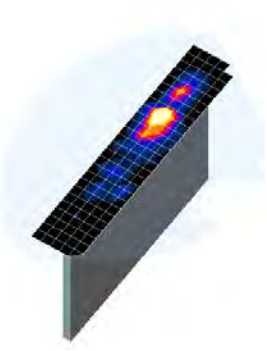


Figure 4-1
Sample SAR Area Scan

1. The SAR distribution at the exposed side of the head or body was measured at a distance no greater than 5.0 mm from the inner surface of the shell. The area covered the entire dimension of the device-head and body interface and the horizontal grid resolution was determined per FCC KDB Publication 865664 D01v01r04 (See Table 4-1) and IEEE 1528-2013.
2. The point SAR measurement was taken at the maximum SAR region determined from Step 1 to enable the monitoring of SAR fluctuations/drifts during the 1g/10g cube evaluation. SAR at this fixed point was measured and used as a reference value.
3. Based on the area scan data, the peak of the region with maximum SAR was determined by spline interpolation. Around this point, a volume was assessed according to the measurement resolution and volume size requirements of FCC KDB Publication 865664 D01v01r04 (See Table 4-1) and IEEE 1528-2013. On the basis of this data set, the spatial peak SAR value was evaluated with the following procedure (see references or the DASY manual online for more details):

   a. SAR values at the inner surface of the phantom are extrapolated from the measured values along the line away from the surface with spacing no greater than that in Table 4-1. The extrapolation was based on a least-squares algorithm. A polynomial of the fourth order was calculated through the points in the z-axis (normal to the phantom shell).

   b. After the maximum interpolated values were calculated between the points in the cube, the SAR was averaged over the spatial volume (1g or 10g) using a 3D-Spline interpolation algorithm. The 3D-spline is composed of three one-dimensional splines with the "Not a knot" condition (in x, y, and z directions). The volume was then integrated with the trapezoidal algorithm. One thousand points (10 x 10 x 10) were obtained through interpolation, in order to calculate the averaged SAR.

   c. All neighboring volumes were evaluated until no neighboring volume with a higher average value was found.
4. The SAR reference value, at the same location as step 2, was re-measured after the zoom scan was complete to calculate the SAR drift. If the drift deviated by more than 5%, the SAR test and drift measurements were repeated.

Table 4-1
Area and Zoom Scan Resolutions per FCC KDB Publication 865664 D01v01r04*

Frequency	Maximum Area Scan Resolution (mm) (Δx_{area}, Δy_{area})	Maximum Zoom Scan Resolution (mm) (Δx_{zoom}, Δy_{zoom})	Maximum Zoom Scan Spatial Resolution (mm)			Minimum Zoom Scan Volume (mm) (x,y,z)
			Uniform Grid	Graded Grid		
			$\Delta z_{zoom}(n)$	$\Delta z_{zoom}(1)$*	$\Delta z_{zoom}(n>1)$*	
≤ 2 GHz	≤ 15	≤ 8	≤ 5	≤ 4	≤ 1.5*$\Delta z_{zoom}(n-1)$	≥ 30
2-3 GHz	≤ 12	≤ 5	≤ 5	≤ 4	≤ 1.5*$\Delta z_{zoom}(n-1)$	≥ 30
3-4 GHz	≤ 12	≤ 5	≤ 4	≤ 3	≤ 1.5*$\Delta z_{zoom}(n-1)$	≥ 28
4-5 GHz	≤ 10	≤ 4	≤ 3	≤ 2.5	≤ 1.5*$\Delta z_{zoom}(n-1)$	≥ 25
5-6 GHz	≤ 10	≤ 4	≤ 2	≤ 2	≤ 1.5*$\Delta z_{zoom}(n-1)$	≥ 22

*Also compliant to IEEE 1528-2013 Table 6

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

5 DEFINITION OF REFERENCE POINTS

5.1 EAR REFERENCE POINT

Figure 5-2 shows the front, back and side views of the SAM Twin Phantom. The point "M" is the reference point for the center of the mouth, "LE" is the left ear reference point (ERP), and "RE" is the right ERP. The ERP is 15mm posterior to the entrance to the ear canal (EEC) along the B-M line (Back-Mouth), as shown in Figure 5-1. The plane passing through the two ear canals and M is defined as the Reference Plane. The line N-F (Neck-Front), also called the Reference Pivoting Line, is not perpendicular to the reference plane (see Figure 5-1). Line B-M is perpendicular to the N-F line. Both N-F and B-M lines are marked on the external phantom shell to facilitate handset positioning [5].

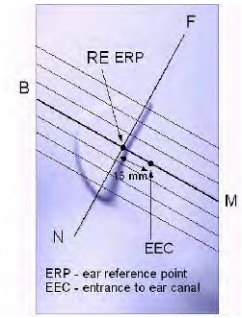


Figure 5-1
Close-Up Side view of ERP

5.2 HANDSET REFERENCE POINTS

Two imaginary lines on the handset were established: the vertical centerline and the horizontal line. The test device was placed in a normal operating position with the acoustic output located along the "vertical centerline" on the front of the device aligned to the "ear reference point" (See Figure 5-3). The acoustic output was than located at the same level as the center of the ear reference point. The test device was positioned so that the "vertical centerline" was bisecting the front surface of the handset at its top and bottom edges, positioning the "ear reference point" on the outer surface of the both the left and right head phantoms on the ear reference point.



Figure 5-2
Front, back and side view of SAM Twin Phantom

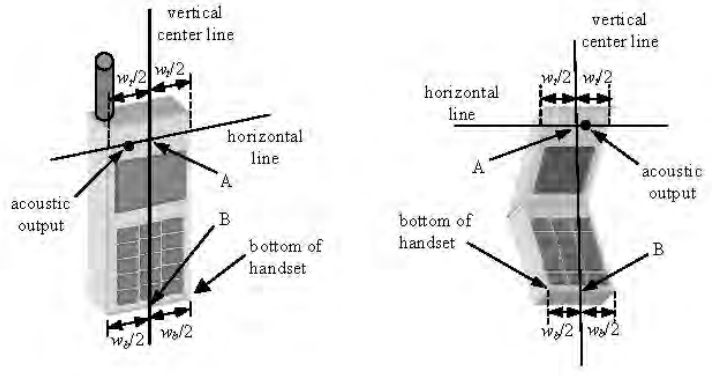


Figure 5-3
Handset Vertical Center & Horizontal Line Reference Points

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

6 TEST CONFIGURATION POSITIONS

6.1 Device Holder

The device holder is made out of low-loss POM material having the following dielectric parameters: relative permittivity ε = 3 and loss tangent δ = 0.02.

6.2 Positioning for Cheek

1. The test device was positioned with the device close to the surface of the phantom such that point A is on the (virtual) extension of the line passing through points RE and LE on the phantom (see Figure 6-1), such that the plane defined by the vertical center line and the horizontal line of the phone is approximately parallel to the sagittal plane of the phantom.



Figure 6-1 Front, Side and Top View of Cheek Position

2. The handset was translated towards the phantom along the line passing through RE & LE until the handset touches the pinna.
3. While maintaining the handset in this plane, the handset was rotated around the LE-RE line until the vertical centerline was in the reference plane.
4. The phone was then rotated around the vertical centerline until the phone (horizontal line) was symmetrical was respect to the line NF.
5. While maintaining the vertical centerline in the reference plane, keeping point A on the line passing through RE and LE, and maintaining the device contact with the ear, the device was rotated about the NF line until any point on the handset made contact with a phantom point below the ear (cheek) (See Figure 6-2).

6.3 Positioning for Ear / 15º Tilt

With the test device aligned in the “Cheek Position”:

1. While maintaining the orientation of the phone, the phone was retracted parallel to the reference plane far enough to enable a rotation of the phone by 15degrees.
2. The phone was then rotated around the horizontal line by 15 degrees.
3. While maintaining the orientation of the phone, the phone was moved parallel to the reference plane until any part of the handset touched the head. (In this position, point A was located on the line RE-LE). The tilted position is obtained when the contact is on the pinna. If the contact was at any location other than the pinna, the angle of the phone would then be reduced. In this situation, the tilted position was obtained when any part of the phone was in contact of the ear as well as a second part of the phone was in contact with the head (see Figure 6-2).

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

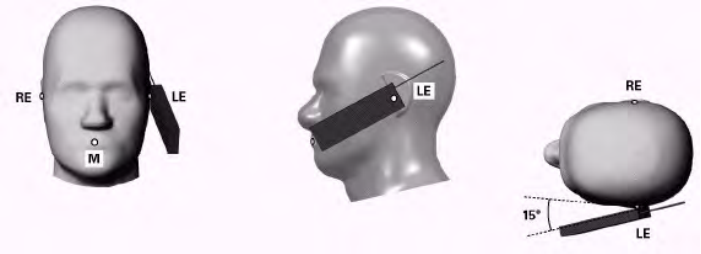


Figure 6-2 Front, Side and Top View of Ear/15º Tilt Position

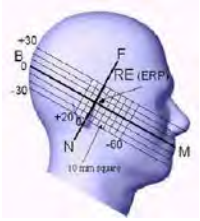


Figure 6-3
Side view w/ relevant markings

6.4 SAR Evaluations near the Mouth/Jaw Regions of the SAM Phantom

Antennas located near the bottom of a phone may require SAR measurements around the mouth and jaw regions of the SAM head phantom. This typically applies to clam-shell style phones that are generally longer in the unfolded normal use positions or to certain older style long rectangular phones. Per IEEE 1528-2013, a rotated SAM phantom is necessary to allow probe access to such regions. Both SAM heads of the TwinSAM-Chin20 are rotated 20 degrees around the NF line. Each head can be removed from the table for emptying and cleaning.

Under these circumstances, the following procedures apply, adopted from the FCC guidance on SAR handsets document FCC KDB Publication 648474 D04v01r03. The SAR required in these regions of SAM should be measured using a flat phantom. The phone should be positioned with a separation distance of 4 mm between the ear reference point (ERP) and the outer surface of the flat phantom shell. While maintaining this distance at the ERP location, the low (bottom) edge of the phone should be lowered from the phantom to establish the same separation distance between the peak SAR location identified by the truncated partial SAR distribution measured with the SAM phantom. The distance from the peak SAR location to the phone is determined by the straight line passing perpendicularly through the phantom surface. When it is not feasible to maintain 4 mm separation at the ERP while also establishing the required separation at the peak SAR location, the top edge of the phone will be allowed to touch the phantom with a separation < 4 mm at the ERP. The phone should not be tilted to the left or right while placed in this inclined position to the flat phantom.

6.5 Body-Worn Accessory Configurations

Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration (see Figure 6-4). Per FCC KDB Publication 648474 D04v01r03, Body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in FCC KDB Publication 447498 D01v06 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode, when applicable. When the reported SAR for a body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset.

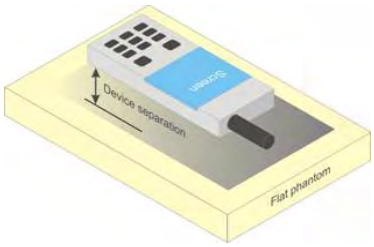


Figure 6-4
Sample Body-Worn Diagram

Accessories for Body-worn operation configurations are divided into two categories: those that do not contain metallic components and those that do contain metallic components. When multiple accessories that do not

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

contain metallic components are supplied with the device, the device is tested with only the accessory that dictates the closest spacing to the body. Then multiple accessories that contain metallic components are tested with the device with each accessory. If multiple accessories share an identical metallic component (i.e. the same metallic belt-clip used with different holsters with no other metallic components) only the accessory that dictates the closest spacing to the body is tested.

Body-worn accessories may not always be supplied or available as options for some devices intended to be authorized for body-worn use. In this case, a test configuration with a separation distance between the back of the device and the flat phantom is used. Test position spacing was documented.
Transmitters that are designed to operate in front of a person's face, as in push-to-talk configurations, are tested for SAR compliance with the front of the device positioned to face the flat phantom in head fluid. For devices that are carried next to the body such as a shoulder, waist or chest-worn transmitters, SAR compliance is tested with the accessories, including headsets and microphones, attached to the device and positioned against a flat phantom in a normal use configuration.

6.6 Extremity Exposure Configurations

Devices that are designed or intended for use on extremities or mainly operated in extremity only exposure conditions; i.e., hands, wrists, feet and ankles, may require extremity SAR evaluation. When the device also operates in close proximity to the user's body, SAR compliance for the body is also required. The 1g body and 10g extremity SAR Exclusion Thresholds found in KDB Publication 447498 D01v06 should be applied to determine SAR test requirements.

Per KDB Publication 447498 D01v06, Cell phones (handsets) are not normally designed to be used on extremities or operated in extremity only exposure conditions. The maximum output power levels of handsets generally do not require extremity SAR testing to show compliance. Therefore, extremity SAR was not evaluated for this device.

6.7 Wireless Router Configurations

Some battery-operated handsets have the capability to transmit and receive user data through simultaneous transmission of WIFI simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC KDB Publication 941225 D06v02r01 where SAR test considerations for handsets (L x W ≥ 9 cm x 5 cm) are based on a composite test separation distance of 10 mm from the front, back and edges of the device containing transmitting antennas within 2.5 cm of their edges, determined from general mixed use conditions for this type of devices. Since the hotspot SAR results may overlap with the body-worn accessory SAR requirements, the more conservative configurations can be considered, thus excluding some body-worn accessory SAR tests.

When the user enables the personal wireless router functions for the handset, actual operations include simultaneous transmission of both the WIFI transmitter and another licensed transmitter. Both transmitters often do not transmit at the same transmitting frequency and thus cannot be evaluated for SAR under actual use conditions due to the limitations of the SAR assessment probes. Therefore, SAR must be evaluated for each frequency transmission and mode separately and spatially summed with the WIFI transmitter according to FCC KDB Publication 447498 D01v06 procedures. The "Portable Hotspot" feature on the handset was NOT activated during SAR assessments, to ensure the SAR measurements were evaluated for a single transmission frequency RF signal at a time.

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

6.8 Phablet Configurations

For smart phones with a display diagonal dimension > 150 mm or an overall diagonal dimension > 160 mm that provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets that support voice calls next to the ear, the phablets procedures outlined in KDB Publication 648474 D04v01r03 should be applied to evaluate SAR compliance. A device marketed as phablets, regardless of form factors and operating characteristics must be tested as a phablet to determine SAR compliance. In addition to the normally required head and body-worn accessory SAR test procedures required for handsets, the UMPC mini-tablet procedures must also be applied to test the SAR of all surfaces and edges with an antenna <=25 mm from that surface or edge, in direct contact with the phantom, for 10g SAR. The UMPC mini-tablet 1g SAR at 5 mm is not required. When hotspot mode applies, 10g SAR is required only for the surfaces and edges with hotspot mode 1g SAR > 1.2 W/kg.

6.1 Proximity Sensor Considerations

This device uses a power reduction mechanism to reduce output powers in certain use conditions when the device is used close the user's body.

When the device's antenna is within a certain distance of the user, the sensor activates and reduces the maximum allowed output power. However, the sensor is not active when the device is moved beyond the sensor triggering distance and the maximum output power is no longer limited. Therefore, additional evaluation is needed in the vicinity of the triggering distance to ensure SAR is compliant when the device is allowed to operate at a nonreduced output power level. FCC KDB Publication 616217 D04v01r02 Section 6 was used as a guideline for selecting SAR test distances for this device at these additional test positions. Sensor triggering distance summary data is included in Appendix G.

The sensor is designed to support sufficient detection range and sensitivity to cover regions of the sensors in all applicable directions since the sensor entirely covers the antennas.

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

7 RF EXPOSURE LIMITS

7.1 Uncontrolled Environment

UNCONTROLLED ENVIRONMENTS are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure. The general population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity.

7.2 Controlled Environment

CONTROLLED ENVIRONMENTS are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e. as a result of employment or occupation). In general, occupational/controlled exposure limits are applicable to situations in which persons are exposed as a consequence of their employment, who have been made fully aware of the potential for exposure and can exercise control over their exposure. This exposure category is also applicable when the exposure is of a transient nature due to incidental passage through a location where the exposure levels may be higher than the general population/uncontrolled limits, but the exposed person is fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Table 7-1
SAR Human Exposure Specified in ANSI/IEEE C95.1-1992 and Health Canada Safety Code 6

HUMAN EXPOSURE LIMITS		
	UNCONTROLLED ENVIRONMENT *General Population* (W/kg) or (mW/g)	CONTROLLED ENVIRONMENT *Occupational* (W/kg) or (mW/g)
Peak Spatial Average SAR Head	1.6	8.0
Whole Body SAR	0.08	0.4
Peak Spatial Average SAR Hands, Feet, Ankle, Wrists, etc.	4.0	20

1. The Spatial Peak value of the SAR averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.
2. The Spatial Average value of the SAR averaged over the whole body.
3. The Spatial Peak value of the SAR averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

8 FCC MEASUREMENT PROCEDURES

Power measurements for licensed transmitters are performed using a base station simulator under digital average power.

8.1 Measured and Reported SAR

Per FCC KDB Publication 447498 D01v06, when SAR is not measured at the maximum power level allowed for production units, the results must be scaled to the maximum tune-up tolerance limit according to the power applied to the individual channels tested to determine compliance. For simultaneous transmission, the measured aggregate SAR must be scaled according to the sum of the differences between the maximum tune-up tolerance and actual power used to test each transmitter. When SAR is measured at or scaled to the maximum tune-up tolerance limit, the results are referred to as *reported* SAR. The highest *reported* SAR results are identified on the grant of equipment authorization according to procedures in KDB 690783 D01v01r03.

8.2 3G SAR Test Reduction Procedure

In FCC KDB Publication 941225 D01v03r01, certain transmission modes within a frequency band and wireless mode evaluated for SAR are defined as primary modes. The equivalent modes considered for SAR test reduction are denoted as secondary modes. When the maximum output power including tune-up tolerance specified for production units in a secondary mode is ≤ 0.25 dB higher than the primary mode or when the highest reported SAR of the primary mode, scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode, is ≤ 1.2 W/kg, SAR measurements are not required for the secondary mode. These criteria are referred to as the 3G SAR test reduction procedure. When the 3G SAR test reduction procedure is not satisfied, SAR measurements are additionally required for the secondary mode.

8.3 Procedures Used to Establish RF Signal for SAR

The following procedures are according to FCC KDB Publication 941225 D01v03r01 “3G SAR Measurement Procedures.”

The device is placed into a simulated call using a base station simulator in a RF shielded chamber. Establishing connections in this manner ensure a consistent means for testing SAR and are recommended for evaluating SAR [4]. Devices under test are evaluated prior to testing, with a fully charged battery and were configured to operate at maximum output power. In order to verify that the device is tested throughout the SAR test at maximum output power, the SAR measurement system measures a “point SAR” at an arbitrary reference point at the start and end of the 1 gram SAR evaluation, to assess for any power drifts during the evaluation. If the power drift deviates by more than 5%, the SAR test and drift measurements are repeated.

8.4 SAR Measurement Conditions for CDMA2000

The following procedures were performed according to FCC KDB Publication 941225 D01v03r01 “3G SAR Measurement Procedures.”

8.4.1 Output Power Verification

See 3GPP2 C.S0011/TIA-98-E as recommended by FCC KDB Publication 941225 D01v03r01 “3G SAR Measurement Procedures.” Maximum output power is verified on the High, Middle and Low channels according to procedures in section 4.4.5.2 of 3GPP2 C.S0011/TIA-98-E. SO55 tests were measured with power control bits in the “All Up” condition.

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

1. If the mobile station (MS) supports Reverse TCH RC 1 and Forward TCH RC 1, set up a call using Fundamental Channel Test Mode 1 (RC=1/1) with 9600 bps data rate only.
2. Under RC1, C.S0011 Table 4.4.5.2-1, Table 8-1 parameters were applied.
3. If the MS supports the RC 3 Reverse FCH, RC3 Reverse SCH_0 and demodulation of RC 3,4, or 5, set up a call using Supplemental Channel Test Mode 3 (RC 3/3) with 9600 bps Fundamental Channel and 9600 bps SCH0 data rate.
4. Under RC3, C.S0011 Table 4.4.5.2-2, Table 8-2 was applied.

Table 8-1
Parameters for Max. Power for RC1

Parameter	Units	Value
$\hat{I}_{or}$	dBm/1.23 MHz	-104
$\frac{\text{Pilot } E_c}{I_{or}}$	dB	-7
$\frac{\text{Traffic } E_c}{I_{or}}$	dB	-7.4

Table 8-2
Parameters for Max. Power for RC3

Parameter	Units	Value
$\hat{I}_{or}$	dBm/1.23 MHz	-86
$\frac{\text{Pilot } E_c}{I_{or}}$	dB	-7
$\frac{\text{Traffic } E_c}{I_{or}}$	dB	-7.4

5. FCHs were configured at full rate for maximum SAR with “All Up” power control bits.

8.4.2 Head SAR Measurements

SAR for next to the ear head exposure is measured in RC3 with the handset configured to transmit at fullrate in SO55. The 3G SAR test reduction procedure is applied to RC1 with RC3 as the primary mode; otherwise, SAR is required for the channel with maximum measured output in RC1 using the head exposure configuration that results in the highest reported SAR in RC3.

Head SAR is additionally evaluated using EVDO Rev. A to support compliance for VoIP operations. See Section 8.4.5 for EVDO Rev. A configuration parameters.

8.4.3 Body-worn SAR Measurements

SAR for body-worn exposure configurations is measured in RC3 with the DUT configured to transmit at full rate on FCH with all other code channels disabled using TDSO / SO32. The 3G SAR test reduction procedure is applied to the multiple code channel configuration (FCH+SCHn), with FCH only as the primary mode. Otherwise, SAR is required for multiple code channel configuration (FCH + SCHn), with FCH at full rate and SCH0 enabled at 9600 bps, using the highest reported SAR configuration for FCH only. When multiple code channels are enabled, the transmitter output can shift by more than 0.5 dB and may lead to higher SAR drifts and SCH dropouts.

The 3G SAR test reduction procedure is applied to body-worn accessory SAR in RC1 with RC3 as the primary mode. Otherwise, SAR is required for RC1, with SO55 and full rate, using the highest reported SAR configuration for body-worn accessory exposure in RC3.

8.4.4 Body-worn SAR Measurements for EVDO Devices

For handsets with EVDO capabilities, the 3G SAR test reduction procedure is applied to EVDO Rev. 0 with 1x RTT RC3 as the primary mode to determine body-worn accessory test requirements. Otherwise, body-worn accessory SAR is required for Rev. 0, at 153.6 kbps, using the highest reported SAR configuration for body-worn accessory exposure in RC3.

The 3G SAR test reduction procedure is applied to Rev. A, with Rev. 0 as the primary mode to determine body-worn accessory SAR test requirements. When SAR is not required for Rev. 0, the 3G SAR test reduction is applied with 1x RTT RC3 as the primary mode.

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

When SAR is required for EVDO Rev. A, SAR is measured with a Reverse Data Channel payload size of 4096 bits and a Termination Target of 16 slots defined for Subtype 2 Physical Layer configurations, using the highest reported SAR configuration for body-worn accessory exposure in Rev. 0 or 1x RTT RC3, as appropriate.

8.4.5 Body SAR Measurements for EVDO Hotspot

Hotspot Body SAR is measured using Subtype 0/1 Physical Layer configurations for Rev. 0. The 3G SAR test reduction procedure is applied to Rev. A, Subtype 2 Physical layer configuration, with Rev. 0 as the primary mode; otherwise, SAR is measured for Rev. A using the highest reported SAR configuration for body-worn accessory exposure in Rev. 0. The AT is tested with a Reverse Data Channel rate of 153.6 kbps in Subtype 0/1 Physical Layer configurations; and a Reverse Data Channel payload size of 4096 bits and Termination Target of 16 slots in Subtype 2 Physical Layer configurations.

For EVDO data devices that also support 1x RTT voice and/or data operations, the 3G SAR test reduction procedure is applied to 1x RTT RC3 and RC1 with EVDO Rev. 0 and Rev. A as the respective primary modes. Otherwise, the 'Body-Worn Accessory SAR' procedures in the '3GPP2 CDMA 2000 1x Handsets' section are applied.

8.4.6 CDMA2000 1x Advanced

This device additionally supports 1x Advanced. Conducted powers are measured using SO75 with RC8 on the uplink and RC11 on the downlink per FCC KDB Publication 941225 D01v03r01. Smart blanking is disabled for all measurements. The EUT is configured with forward power control Mode 000 and reverse power control at 400 bps. Conducted powers are measured on an Agilent 8960 Series 10 Wireless Communications Test Set, Model E5515C using the CDMA2000 1x Advanced application, Option E1962B-410.

The 3G SAR test reduction procedure is applied to the 1x-Advanced transmission mode with 1x RTT RC3 as the primary mode. When SAR measurement is required, the 1x-Advanced power measurement configurations are used. The1x Advanced SAR procedures are applied separately to head, body-worn accessory and other exposure conditions.

8.5 SAR Measurement Conditions for UMTS

8.5.1 Output Power Verification

Maximum output power is verified on the High, Middle and Low channels according to the general descriptions in section 5.2 of 3GPP TS 34.121, using the appropriate RMC with TPC (transmit power control) set to all "1s" or applying the required inner loop power control procedures to maintain maximum output power while HSUPA is active. Results for all applicable physical channel configurations (DPCCH, DPDCHn and spreading codes, HS-DPCCH etc) are tabulated in this test report. All configurations that are not supported by the DUT or cannot be measured due to technical or equipment limitations are identified.

8.5.2 Head SAR Measurements

SAR for next to the ear head exposure is measured using a 12.2 kbps RMC with TPC bits configured to all "1's". The 3G SAR test reduction procedure is applied to AMR configurations with 12.2 kbps RMC as the

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

primary mode. Otherwise, SAR is measured for 12.2 kbps AMR in 3.4 kbps SRB (signaling radio bearer) using the highest reported SAR configuration in 12.2 kbps RMC for head exposure.

8.5.3 Body SAR Measurements

SAR for body exposure configurations is measured using the 12.2 kbps RMC with the TPC bits all "1s". The 3G SAR test reduction procedure is applied to other spreading codes and multiple $DPDCH_n$ configurations supported by the handset with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured using an applicable RMC configuration with the corresponding spreading code or $DPDCH_n$, for the highest reported SAR configuration in 12.2 kbps RMC.

8.5.4 SAR Measurements with Rel 5 HSDPA

The 3G SAR test reduction procedure is applied to HSDPA body configurations with 12.2 kbps RMC as the primary mode. Otherwise, Body SAR for HSDPA is measured using an FRC with H-Set 1 in Sub-test 1 and a 12.2 kbps RMC configured in Test Loop Mode 1, for the highest reported SAR configuration in 12.2 kbps RMC without HSDPA. Handsets with both HSDPA and HSUPA are tested according to Release 6 HSPA test procedures.

8.5.5 SAR Measurements with Rel 6 HSUPA

The 3G SAR test reduction procedure is applied to HSPA (HSUPA/HSDPA with RMC) body configurations with 12.2 kbps RMC as the primary mode. Otherwise, Body SAR for HSPA is measured with E-DCH Sub-test 5, using H-Set 1 and QPSK for FRC and a 12.2 kbps RMC configured in Test Loop Mode 1 and power control algorithm 2, according to the highest reported body SAR configuration in 12.2 kbps RMC without HSPA.

When VOIP applies to head exposure, the 3G SAR test reduction procedure is applied with 12.2 kbps RMC as the primary mode; otherwise, the same HSPA configuration used for body SAR measurements are applied to head exposure testing.

8.5.6 SAR Measurement Conditions for DC-HSDPA

SAR is required for Rel. 8 DC-HSDPA when SAR is required for Rel. 5 HSDPA; otherwise, the 3G SAR test reduction procedure is applied to DC-HSDPA with 12.2 kbps RMC as the primary mode. Power is measured for DC-HSDPA according to the H-Set 12, FRC configuration in Table C.8.1.12 of 3GPP TS 34.121-1 to determine SAR test reduction. A primary and a secondary serving HS-DSCH Cell are required to perform the power measurement and for the results to be acceptable.

8.6 SAR Measurement Conditions for LTE

LTE modes are tested according to FCC KDB 941225 D05v02r04 publication. Establishing connections with base station simulators ensure a consistent means for testing SAR and are recommended for evaluating SAR [4]. The R&S CMW500 or Anritsu MT8820C simulators are used for LTE output power measurements and SAR testing. Closed loop power control was used so the UE transmits with maximum output power during SAR testing. SAR tests were performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI).

8.6.1 Spectrum Plots for RB Configurations

A properly configured base station simulator was used for SAR tests and power measurements. Therefore, spectrum plots for RB configurations were not required to be included in this report.

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

8.6.2 MPR

MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to 3GPP TS36.101 Section 6.2.3 – 6.2.5 under Table 6.2.3-1.

8.6.3 A-MPR

A-MPR (Additional MPR) has been disabled for all SAR tests by setting NS=01 on the base station simulator.

8.6.4 Required RB Size and RB Offsets for SAR Testing

According to FCC KDB 941225 D05v02r04:

a. Per Section 5.2.1, SAR is required for QPSK 1 RB Allocation for the largest bandwidth
    i. The required channel and offset combination with the highest maximum output power is required for SAR.
    ii. When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required. Otherwise, SAR is required for the remaining required test channels using the RB offset configuration with highest output power for that channel.
    iii. When the reported SAR for a required test channel is > 1.45 W/kg, SAR is required for all RB offset configurations for that channel.
b. Per Section 5.2.2, SAR is required for 50% RB allocation using the largest bandwidth following the same procedures outlined in Section 5.2.1.
c. Per Section 5.2.3, QPSK SAR is not required for the 100% allocation when the highest maximum output power for the 100% allocation is less than the highest maximum output power of the 1 RB and 50% RB allocations and the reported SAR for the 1 RB and 50% RB allocations is < 0.8 W/kg.
d. Per Section 5.2.4 and 5.3, SAR tests for higher order modulations and lower bandwidths configurations are not required when the conducted power of the required test configurations determined by Sections 5.2.1 through 5.2.3 is less than or equal to ½ dB higher than the equivalent configuration using QPSK modulation and when the QPSK SAR for those configurations is <1.45 W/kg.

8.6.5 TDD

LTE TDD testing is performed using the SAR test guidance provided in FCC KDB 941225 D05v02r04. TDD is tested at the highest duty factor using UL-DL configuration 0 with special subframe configuration 6 and applying the FDD LTE procedures in KDB 941225 D05v02r04. SAR testing is performed using the extended cyclic prefix listed in 3GPP TS 36.211 Section 4.

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

8.6.6 Downlink Only Carrier Aggregation

Conducted power measurements with LTE Carrier Aggregation (CA) (downlink only) active are made in accordance to KDB Publication 941225 D05Av01r02. The RRC connection is only handled by one cell, the primary component carrier (PCC) for downlink and uplink communications. After making a data connection to the PCC, the UE device adds secondary component carrier(s) (SCC) on the downlink only. All uplink communications and acknowledgements remain identical to specifications when downlink carrier aggregation is inactive on the PCC. Additional conducted output powers are measured with the downlink carrier aggregation active for the configuration with highest measured maximum conducted power with downlink carrier aggregation inactive measured among the channel bandwidth, modulation, and RB combinations in each frequency band. Per FCC KDB Publication 941225 D05Av01r02, no SAR measurements are required for downlink only carrier aggregation configurations when the average output power with downlink only carrier aggregation active is not more than 0.25 dB higher than the average output power with downlink only carrier aggregation inactive.

8.7 SAR Testing with 802.11 Transmitters

The normal network operating configurations of 802.11 transmitters are not suitable for SAR measurements. Unpredictable fluctuations in network traffic and antenna diversity conditions can introduce undesirable variations in SAR results. The SAR for these devices should be measured using chipset based test mode software to ensure the results are consistent and reliable. See KDB Publication 248227 D01v02r02 for more details.

8.7.1 General Device Setup

Chipset based test mode software is hardware dependent and generally varies among manufacturers. The device operating parameters established in test mode for SAR measurements must be identical to those programmed in production units, including output power levels, amplifier gain settings and other RF performance tuning parameters.

A periodic duty factor is required for current generation SAR systems to measure SAR. When 802.11 frame gaps are accounted for in the transmission, a maximum transmission duty factor of 92 - 96% is typically achievable in most test mode configurations. A minimum transmission duty factor of 85% is required to avoid certain hardware and device implementation issues related to wide range SAR scaling. The reported SAR is scaled to 100% transmission duty factor to determine compliance at the maximum tune-up tolerance limit.

8.7.2 U-NII-1 and U-NII-2A

For devices that operate in both U-NII-1 and U-NII-2A bands, when the same maximum output power is specified for both bands, SAR measurement using OFDM SAR test procedures is not required for U-NII-1 unless the highest reported SAR for U-NII-2A is > 1.2 W/kg. When different maximum output powers are specified for the bands, SAR measurement for the U-NII band with the lower maximum output power is not required unless the highest reported SAR for the U-NII band with the higher maximum output power, adjusted by the ratio of lower to higher specified maximum output power for the two bands, is > 1.2 W/kg. When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

8.7.3 U-NII-2C and U-NII-3

The frequency range covered by U-NII-2C and U-NII-3 is 380 MHz (5.47 – 5.85 GHz), which requires a minimum of at least two SAR probe calibration frequency points to support SAR measurements. When Terminal Doppler Weather Radar (TDWR) restriction applies, the channels at 5.60 – 5.65 GHz in U-NII-2C band must be disabled with acceptable mechanisms and documented in the equipment certification. Unless band gap channels are permanently disabled, SAR must be considered for these channels. Each band is tested independently according to the normally required OFDM SAR measurement and probe calibration frequency points requirements.

8.7.4 Initial Test Position Procedure

For exposure conditions with multiple test positions, such as handset operating next to the ear, devices with hotspot mode or UMPC mini-tablet, procedures for initial test position can be applied. Using the transmission mode determined by the DSSS procedure or initial test configuration, area scans are measured for all positions in an exposure condition. The test position with the highest extrapolated (peak) SAR is used as the initial test position. When reported SAR for the initial test position is ≤ 0.4 W/kg, no additional testing for the remaining test positions is required. Otherwise, SAR is evaluated at the subsequent highest peak SAR positions until the reported SAR result is ≤ 0.8 W/kg or all test positions are measured. When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

8.7.5 2.4 GHz SAR Test Requirements

SAR is measured for 2.4 GHz 802.11b DSSS using either the fixed test position or, when applicable, the initial test position procedure. SAR test reduction is determined according to the following:

1) 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 position 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.

2.4 GHz 802.11 g/n/ax OFDM are additionally evaluated for SAR if the highest reported SAR for 802.11b, adjusted by the ratio of the OFDM to DSSS specified maximum output power, is > 1.2 W/kg. When SAR is required for OFDM modes in 2.4 GHz band, the Initial Test Configuration Procedures should be followed. When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

8.7.6 OFDM Transmission Mode and SAR Test Channel Selection

When the same maximum output power was specified for multiple OFDM transmission mode configurations in a frequency band or aggregated band, SAR is measured using the configuration with the largest channel bandwidth, lowest order modulation and lowest data rate. When the maximum output power of a channel is the same for equivalent OFDM configurations; for example, 802.11a, 802.11n and 802.11ac or 802.11g and 802.11n with the same channel bandwidth, modulation and data rate etc., the lower order 802.11 mode i.e., 802.11a, then 802.11n and 802.11ac or 802.11g then 802.11n, is used for SAR measurement. When the maximum output power are the same for multiple test channels, either according to the default or additional power measurement requirements, SAR is measured using the channel closest to the middle of the frequency band or aggregated band. When there are multiple channels with the same maximum output power, SAR is measured using the higher number channel.

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

8.7.7 Initial Test Configuration Procedure

For OFDM, an initial test configuration is determined for each frequency band and aggregated band, according to the transmission mode with the highest maximum output power specified for SAR measurements. When the same maximum output power is specified for multiple OFDM transmission mode configurations in a frequency band or aggregated band, SAR is measured using the configuration(s) with the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order IEEE 802.11 mode. The channel of the transmission mode with the highest average RF output conducted power will be the initial test configuration.

When the reported SAR is ≤ 0.8 W/kg, no additional measurements on other test channels are required. Otherwise, SAR is evaluated using the subsequent highest average RF output channel until the reported SAR result is ≤ 1.2 W/kg or all channels are measured. When there are multiple untested channels having the same subsequent highest average RF output power, the channel with higher frequency from the lowest 802.11 mode is considered for SAR measurements (See Section 8.7.6). When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

8.7.8 Subsequent Test Configuration Procedures

For OFDM configurations in each frequency band and aggregated band, SAR is evaluated for initial test configuration using the fixed test position or the initial test position procedure. When the highest reported SAR (for the initial test configuration), adjusted by the ratio of the specified maximum output power of the subsequent test configuration to initial test configuration, is ≤ 1.2 W/kg, no additional SAR tests for the subsequent test configurations are required. When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

8.7.9 MIMO SAR considerations

Per KDB Publication 248227 D01v02r02, the simultaneous SAR provisions in KDB Publication 447498 D01v06 should be applied to determine simultaneous transmission SAR test exclusion for WIFI MIMO. If the sum of 1g single transmission chain SAR measurements is <1.6 W/kg, no additional SAR measurements for MIMO are required. Alternatively, SAR for MIMO can be measured with all antennas transmitting simultaneously at the specified maximum output power of MIMO operation. When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

9 RF CONDUCTED POWERS

9.1 CDMA Conducted Powers

Table 9-1
Maximum Conducted Power

Band	Channel	Rule Part	Frequency	SO55 [dBm]	SO55 [dBm]	SO75 [dBm]	TDSO SO32 [dBm]	TDSO SO32 [dBm]	1x EvDO Rev. 0 [dBm]	1x EvDO Rev. A [dBm]
	F-RC		MHz	RC1	RC3	RC11	FCH+SCH	FCH	(RTAP)	(RETAP)
Cellular	564	90S	820.1	24.67	24.69	24.72	24.65	24.68	24.62	24.57
Cellular	1013	22H	824.7	24.69	24.68	24.74	24.59	24.60	24.55	24.52
	384	22H	836.52	24.51	24.56	24.62	24.55	24.56	24.45	24.44
	777	22H	848.31	24.59	24.58	24.67	24.57	24.59	24.47	24.43
PCS	25	24E	1851.25	24.20	24.23	24.42	24.26	24.25	24.43	24.45
	600	24E	1880	24.31	24.45	24.47	24.29	24.28	24.50	24.48
	1175	24E	1908.75	23.79	23.80	23.91	23.79	23.78	24.04	24.05

Table 9-2
Reduced Conducted Power – Hotspot Mode Active

Band	Channel	Rule Part	Frequency	TDSO SO32 [dBm]	TDSO SO32 [dBm]	1x EvDO Rev. 0 [dBm]	1x EvDO Rev. A [dBm]
	F-RC		MHz	FCH+SCH	FCH	(RTAP)	(RETAP)
PCS	25	24E	1851.25	19.33	19.32	19.36	19.34
	600	24E	1880	19.38	19.36	19.31	19.31
	1175	24E	1908.75	18.84	18.86	19.09	19.07

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-3
Reduced Conducted Power – Proximity Sensor and/or Earjack Mode Active

Band	Channel	Rule Part	Frequency	SO55 [dBm]	SO55 [dBm]	SO75 [dBm]	TDSO SO32 [dBm]	TDSO SO32 [dBm]	1x EvDO Rev. 0 [dBm]	1x EvDO Rev. A [dBm]
	F-RC		MHz	RC1	RC3	RC11	FCH+SCH	FCH	(RTAP)	(RETAP)
PCS	25	24E	1851.25	20.64	20.63	20.73	20.68	20.66	20.63	20.68
	600	24E	1880	20.85	20.84	20.81	20.77	20.78	20.72	20.75
	1175	24E	1908.75	20.36	20.35	20.23	20.30	20.30	20.61	20.27

Note: RC1 is only applicable for IS-95 compatibility. For FCC Rule Part 90S, Per FCC KDB Publication 447498 D01v06 4.1.g), only one channel is required since the device operates within the transmission range of 817.90 – 823.10 MHz**.**

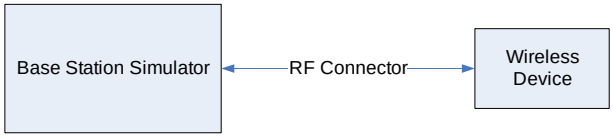


Figure 9-1
Power Measurement Setup

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

9.2 GSM Conducted Powers

Table 9-4
Maximum Conducted Power

Maximum Burst-Averaged Output Power										
		Voice	*GPRS/EDGE Data (GMSK)*				*EDGE Data (8-PSK)*			
Band	**Channel**	**GSM [dBm] CS (1 Slot)**	**GPRS [dBm] 1 Tx Slot**	**GPRS [dBm] 2 Tx Slot**	**GPRS [dBm] 3 Tx Slot**	**GPRS [dBm] 4 Tx Slot**	**EDGE [dBm] 1 Tx Slot**	**EDGE [dBm] 2 Tx Slot**	**EDGE [dBm] 3 Tx Slot**	**EDGE [dBm] 4 Tx Slot**
GSM 850	128	32.43	32.46	31.31	**29.24**	27.18	26.72	25.16	23.12	21.91
	190	32.33	32.34	31.22	**28.96**	27.22	26.40	24.91	22.47	22.45
	251	32.35	32.28	31.01	**29.05**	27.22	26.51	25.06	22.91	22.00
GSM 1900	512	29.80	29.77	28.58	**26.73**	24.74	25.39	23.83	21.94	20.73
	661	29.83	29.70	28.54	**26.54**	24.49	25.48	23.62	21.65	20.30
	810	29.42	29.42	28.10	**26.14**	24.13	25.03	23.49	21.48	20.44

Calculated Maximum Frame-Averaged Output Power										
		Voice	*GPRS/EDGE Data (GMSK)*				*EDGE Data (8-PSK)*			
Band	**Channel**	**GSM [dBm] CS (1 Slot)**	**GPRS [dBm] 1 Tx Slot**	**GPRS [dBm] 2 Tx Slot**	**GPRS [dBm] 3 Tx Slot**	**GPRS [dBm] 4 Tx Slot**	**EDGE [dBm] 1 Tx Slot**	**EDGE [dBm] 2 Tx Slot**	**EDGE [dBm] 3 Tx Slot**	**EDGE [dBm] 4 Tx Slot**
GSM 850	128	23.40	23.43	25.29	**24.98**	24.17	17.69	19.14	18.86	18.90
	190	23.30	23.31	25.20	**24.70**	24.21	17.37	18.89	18.21	19.44
	251	23.32	23.25	24.99	**24.79**	24.21	17.48	19.04	18.65	18.99
GSM 1900	512	20.77	20.74	22.56	**22.47**	21.73	16.36	17.81	17.68	17.72
	661	20.80	20.67	22.52	**22.28**	21.48	16.45	17.60	17.39	17.29
	810	20.39	20.39	22.08	**21.88**	21.12	16.00	17.47	17.22	17.43
GSM 850	**Frame Avg.Targets:**	23.47	23.47	25.48	**25.24**	24.49	17.97	18.98	18.74	18.99
GSM 1900		20.47	20.47	22.48	**22.24**	21.49	16.97	17.98	17.74	17.99

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-5
Reduced Conducted Power – Hotspot Mode Active

Maximum Burst-Averaged Output Power									
		GPRS/EDGE Data (GMSK)				*EDGE Data (8-PSK)*			
Band	**Channel**	**GPRS [dBm] 1 Tx Slot**	**GPRS [dBm] 2 Tx Slot**	**GPRS [dBm] 3 Tx Slot**	**GPRS [dBm] 4 Tx Slot**	**EDGE [dBm] 1 Tx Slot**	**EDGE [dBm] 2 Tx Slot**	**EDGE [dBm] 3 Tx Slot**	**EDGE [dBm] 4 Tx Slot**
GSM 1900	512	26.73	25.83	**23.86**	21.78	25.25	23.20	21.28	20.22
	661	26.78	25.66	**23.77**	21.66	25.36	23.22	20.93	19.73
	810	26.43	25.31	**23.31**	21.31	24.97	23.04	20.86	19.77

Calculated Maximum Frame-Averaged Output Power									
		GPRS/EDGE Data (GMSK)				*EDGE Data (8-PSK)*			
Band	**Channel**	**GPRS [dBm] 1 Tx Slot**	**GPRS [dBm] 2 Tx Slot**	**GPRS [dBm] 3 Tx Slot**	**GPRS [dBm] 4 Tx Slot**	**EDGE [dBm] 1 Tx Slot**	**EDGE [dBm] 2 Tx Slot**	**EDGE [dBm] 3 Tx Slot**	**EDGE [dBm] 4 Tx Slot**
GSM 1900	512	17.70	19.81	**19.60**	18.77	16.22	17.18	17.02	17.21
	661	17.75	19.64	**19.51**	18.65	16.33	17.20	16.67	16.72
	810	17.40	19.29	**19.05**	18.30	15.94	17.02	16.60	16.76
GSM 1900	**Frame Avg.Targets:**	17.97	19.48	**19.24**	18.49	16.47	17.48	17.24	17.49

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-6
Reduced Conducted Power – Proximity Sensor and/or Earjack Mode Active

Maximum Burst-Averaged Output Power										
		Voice	*GPRS/EDGE Data (GMSK)*				*EDGE Data (8-PSK)*			
Band	**Channel**	**GSM [dBm] CS (1 Slot)**	**GPRS [dBm] 1 Tx Slot**	**GPRS [dBm] 2 Tx Slot**	**GPRS [dBm] 3 Tx Slot**	**GPRS [dBm] 4 Tx Slot**	**EDGE [dBm] 1 Tx Slot**	**EDGE [dBm] 2 Tx Slot**	**EDGE [dBm] 3 Tx Slot**	**EDGE [dBm] 4 Tx Slot**
GSM 1900	512	27.66	27.70	26.70	**24.56**	22.55	25.56	24.06	22.23	20.98
	661	27.83	27.93	26.87	**24.47**	22.46	25.63	23.89	21.83	20.53
	810	27.04	27.09	25.98	**24.01**	22.05	25.06	23.73	21.74	20.57

Calculated Maximum Frame-Averaged Output Power										
		Voice	*GPRS/EDGE Data (GMSK)*				*EDGE Data (8-PSK)*			
Band	**Channel**	**GSM [dBm] CS (1 Slot)**	**GPRS [dBm] 1 Tx Slot**	**GPRS [dBm] 2 Tx Slot**	**GPRS [dBm] 3 Tx Slot**	**GPRS [dBm] 4 Tx Slot**	**EDGE [dBm] 1 Tx Slot**	**EDGE [dBm] 2 Tx Slot**	**EDGE [dBm] 3 Tx Slot**	**EDGE [dBm] 4 Tx Slot**
GSM 1900	512	18.63	18.67	20.68	**20.30**	19.54	16.53	18.04	17.97	17.97
	661	18.80	18.90	20.85	**20.21**	19.45	16.60	17.87	17.57	17.52
	810	18.01	18.06	19.96	**19.75**	19.04	16.03	17.71	17.48	17.56
GSM 1900	**Frame Avg.Targets:**	18.47	18.47	19.98	**20.24**	19.49	16.97	17.98	17.74	17.99

Note:

1. Both burst-averaged and calculated frame-averaged powers are included. Frame-averaged power was calculated from the measured burst-averaged power by converting the slot powers into linear units and calculating the energy over 8 timeslots.
2. GPRS/EDGE (GMSK) output powers were measured with coding scheme setting of 1 (CS1) on the base station simulator. CS1 was configured to measure GPRS output power measurements and SAR to ensure GMSK modulation in the signal. Our Investigation has shown that CS1 - CS4 settings do not have any impact on the output levels or modulation in the GPRS modes.
3. EDGE (8-PSK) output powers were measured with MCS7 on the base station simulator. MCS7 coding scheme was used to measure the output powers for EDGE since investigation has shown that choosing MCS7 coding scheme will ensure 8-PSK modulation. It has been shown that MCS levels that produce 8-PSK modulation do not have an impact on output power.

GSM Class: B
GPRS Multislot class: 33 (Max 4 Tx uplink slots)
EDGE Multislot class: 33 (Max 4 Tx uplink slots)
DTM Multislot Class: N/A



Figure 9-2
Power Measurement Setup

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

9.3 UMTS Conducted Powers

Table 9-7
Maximum Conducted Power

3GPP Release Version	Mode	3GPP 34.121 Subtest	Cellular Band [dBm]			AWS Band [dBm]			PCS Band [dBm]			3GPP MPR [dB]
			4132	4183	4233	1312	1412	1513	9262	9400	9538	
99	WCDMA	12.2 kbps RMC	24.90	24.77	24.74	24.10	24.78	24.71	24.67	24.78	24.18	-
99		12.2 kbps AMR	24.89	24.79	24.72	24.05	24.81	24.69	24.67	24.76	24.18	-
6	HSDPA	Subtest 1	23.61	23.65	23.62	23.16	23.94	23.80	23.89	23.82	23.21	0
6		Subtest 2	23.63	23.58	23.53	23.13	23.91	23.82	23.87	23.96	23.28	0
6		Subtest 3	23.12	23.00	23.04	22.58	23.34	23.24	23.14	23.26	22.77	0.5
6		Subtest 4	23.12	23.06	23.11	22.56	23.39	23.15	23.36	23.43	22.81	0.5
6	HSUPA	Subtest 1	23.62	23.58	23.54	23.13	23.92	23.82	23.83	23.99	23.32	0
6		Subtest 2	21.62	21.54	21.53	21.06	21.83	21.72	21.78	21.87	21.25	2
6		Subtest 3	22.61	22.58	22.56	22.04	22.82	22.75	22.77	22.88	22.23	1
6		Subtest 4	21.61	21.55	21.55	21.03	21.87	21.79	21.82	21.93	21.29	2
6		Subtest 5	23.66	23.61	23.64	23.10	23.93	23.86	23.85	24.00	23.37	0
8	DC-HSDPA	Subtest 1	23.74	23.68	23.60	23.07	23.95	23.89	23.91	24.00	23.31	0
8		Subtest 2	23.62	23.63	23.38	23.22	23.43	23.82	23.93	24.00	23.35	0
8		Subtest 3	23.26	22.94	23.01	22.65	23.07	23.32	23.25	23.37	22.85	0.5
8		Subtest 4	23.08	23.18	23.21	22.61	23.44	23.49	23.40	23.32	22.85	0.5

Table 9-8
Reduced Conducted Power – Hotspot Mode Active

3GPP Release Version	Mode	3GPP 34.121 Subtest	AWS Band [dBm]			PCS Band [dBm]			3GPP MPR [dB]
			1312	1412	1513	9262	9400	9538	
99	WCDMA	12.2 kbps RMC	19.49	20.10	20.05	19.32	19.50	18.95	-
99		12.2 kbps AMR	19.42	19.74	19.98	19.23	19.41	18.88	-
6	HSDPA	Subtest 1	18.48	19.18	19.09	18.40	18.50	18.08	0
6		Subtest 2	18.41	19.17	19.06	18.48	18.39	18.02	0
6		Subtest 3	18.28	19.06	18.98	18.44	18.39	18.00	0.5
6		Subtest 4	18.03	18.53	18.40	18.17	18.16	17.63	0.5
6	HSUPA	Subtest 1	18.49	19.25	19.14	18.41	18.49	18.12	0
6		Subtest 2	16.52	17.25	17.08	16.61	16.70	16.09	2
6		Subtest 3	17.96	18.22	18.06	17.58	17.70	17.08	1
6		Subtest 4	16.46	17.22	17.10	16.64	16.72	16.10	2
6		Subtest 5	18.48	19.32	19.20	18.43	18.50	18.11	0
8	DC-HSDPA	Subtest 1	18.50	18.40	19.20	17.96	18.41	17.51	0
8		Subtest 2	18.52	18.49	19.18	18.44	18.50	18.08	0
8		Subtest 3	17.75	18.79	18.66	18.08	17.78	17.57	0.5
8		Subtest 4	18.04	18.82	18.80	18.14	18.22	18.27	0.5

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-9
Reduced Conducted Power – Proximity Sensor and/or Earjack Mode Active

3GPP Release Version	Mode	3GPP 34.121 Subtest	AWS Band [dBm]			PCS Band [dBm]			3GPP MPR [dB]
			1312	1412	1513	9262	9400	9538	
99	WCDMA	12.2 kbps RMC	19.49	20.10	20.05	20.83	20.91	20.40	-
99		12.2 kbps AMR	19.42	19.74	19.98	20.87	20.93	20.45	-
6	HSDPA	Subtest 1	18.48	19.18	19.09	19.99	19.92	19.50	0
6		Subtest 2	18.41	19.17	19.06	19.95	19.99	19.42	0
6		Subtest 3	18.28	19.06	18.98	19.48	19.60	18.95	0.5
6		Subtest 4	18.03	18.53	18.40	19.50	19.61	18.97	0.5
6	HSUPA	Subtest 1	18.49	19.25	19.14	19.98	20.00	19.46	0
6		Subtest 2	16.52	17.25	17.08	17.97	17.94	17.42	2
6		Subtest 3	17.96	18.22	18.06	18.93	19.05	18.42	1
6		Subtest 4	16.46	17.22	17.10	17.93	18.04	17.43	2
6		Subtest 5	18.48	19.32	19.20	19.75	19.99	19.56	0
8	DC-HSDPA	Subtest 1	18.50	18.40	19.20	19.80	19.84	19.41	0
8		Subtest 2	18.52	18.49	19.18	19.98	19.99	19.51	0
8		Subtest 3	17.75	18.79	18.66	19.59	19.61	19.01	0.5
8		Subtest 4	18.04	18.82	18.80	19.54	19.93	19.01	0.5

DC-HSDPA considerations

- 3GPP Specification 34.121-1 Release 8 Ver 8.10.0 was used for DC-HSDPA guidance
- H-Set 12 (QPSK) was confirmed to be used during DC-HSDPA measurements
- The DUT supports UE category 24 for HSDPA

It is expected by the manufacturer that MPR for some HSPA subtests may be up to 2 dB more than specified by 3GPP, but also as low as 0 dB according to the chipset implementation in this model.



Figure 9-3
Power Measurement Setup

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

9.4 LTE Conducted Powers

9.4.1 LTE Band 71

Table 9-10
LTE Band 71 Conducted Powers - 20 MHz Bandwidth

LTE Band 71 20 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 133297 (680.5 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	**25.07**	0	0
	1	50	24.84		0
	1	99	24.73		0
	50	0	**24.06**	0-1	1
	50	25	24.04		1
	50	50	23.97		1
	100	0	23.99		1
16QAM	1	0	24.36	0-1	1
	1	50	24.06		1
	1	99	23.95		1
	50	0	23.01	0-2	2
	50	25	22.98		2
	50	50	22.96		2
	100	0	22.97		2
64QAM	1	0	23.32	0-2	2
	1	50	23.04		2
	1	99	22.91		2
	50	0	22.02	0-3	3
	50	25	22.01		3
	50	50	21.95		3
	100	0	21.96		3
256QAM	1	0	20.34	0-5	5
	1	50	20.01		5
	1	99	19.87		5
	50	0	20.03		5
	50	25	20.02		5
	50	50	19.96		5
	100	0	20.00		5

Note: LTE Band 71 at 20 MHz bandwidth does not support three non-overlapping channels. Per KDB Publication 941225 D05v02, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-11
LTE Band 71 Conducted Powers - 15 MHz Bandwidth

LTE Band 71 15 MHz Bandwidth					
Modulation	**RB Size**	**RB Offset**	**Mid Channel** **133297 (680.5 MHz)** **Conducted Power [dBm]**	**MPR Allowed per 3GPP [dB]**	**MPR [dB]**
QPSK	1	0	25.06	0	0
	1	36	24.88		0
	1	74	24.89		0
	36	0	24.11	0-1	1
	36	18	24.16		1
	36	37	24.10		1
	75	0	24.12		1
16QAM	1	0	24.37	0-1	1
	1	36	24.16		1
	1	74	24.01		1
	36	0	23.12	0-2	2
	36	18	23.16		2
	36	37	23.14		2
	75	0	23.08		2
64QAM	1	0	23.37	0-2	2
	1	36	23.10		2
	1	74	23.07		2
	36	0	22.11	0-3	3
	36	18	22.14		3
	36	37	22.09		3
	75	0	22.10		3
256QAM	1	0	20.17	0-5	5
	1	36	20.04		5
	1	74	20.11		5
	36	0	20.17		5
	36	18	20.21		5
	36	37	20.05		5
	75	0	20.01		5

Note: LTE Band 71 at 15 MHz bandwidth does not support three non-overlapping channels. Per KDB Publication 941225 D05v02, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-12
LTE Band 71 Conducted Powers - 10 MHz Bandwidth

LTE Band 71 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 133172 (668.0 MHz)	Mid Channel 133297 (680.5 MHz)	High Channel 133422 (693.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.98	24.88	24.86	0	0
	1	25	24.91	24.82	24.78		0
	1	49	24.82	24.83	24.72		0
	25	0	24.05	23.96	23.98	0-1	1
	25	12	24.06	23.94	23.96		1
	25	25	24.02	23.92	23.96		1
	50	0	24.06	23.96	23.98		1
16QAM	1	0	24.21	24.08	24.12	0-1	1
	1	25	24.14	24.02	24.05		1
	1	49	24.10	24.05	23.92		1
	25	0	23.06	22.98	23.11	0-2	2
	25	12	22.93	23.05	22.91		2
	25	25	22.95	22.78	23.04		2
	50	0	22.88	23.14	23.08		2
64QAM	1	0	22.74	22.96	22.99	0-2	2
	1	25	22.68	23.01	22.94		2
	1	49	22.74	22.94	22.92		2
	25	0	21.53	21.98	21.97	0-3	3
	25	12	22.07	21.97	21.96		3
	25	25	22.06	21.96	21.91		3
	50	0	22.09	21.95	21.97		3
256QAM	1	0	19.98	20.19	20.02	0-5	5
	1	25	19.95	19.89	19.98		5
	1	49	20.10	20.01	19.90		5
	25	0	20.06	20.07	19.96		5
	25	12	20.03	20.04	19.87		5
	25	25	20.02	20.02	19.84		5
	50	0	20.04	20.00	19.95		5

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-13
LTE Band 71 Conducted Powers - 5 MHz Bandwidth

LTE Band 71 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 133147 (665.5 MHz)	Mid Channel 133297 (680.5 MHz)	High Channel 133447 (695.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.42	24.73	24.71	0	0
	1	12	24.94	24.82	24.83		0
	1	24	24.97	24.83	24.85		0
	12	0	23.81	23.91	23.87	0-1	1
	12	6	24.11	23.99	23.96		1
	12	13	24.09	23.99	23.96		1
	25	0	24.09	23.97	23.92		1
16QAM	1	0	23.68	23.93	24.09	0-1	1
	1	12	24.25	24.09	24.08		1
	1	24	24.31	24.08	24.10		1
	12	0	22.75	22.88	22.90	0-2	2
	12	6	23.16	23.00	22.97		2
	12	13	23.16	22.97	23.01		2
	25	0	23.08	22.96	22.88		2
64QAM	1	0	22.65	22.96	23.03	0-2	2
	1	12	22.87	23.09	23.10		2
	1	24	22.77	23.09	22.92		2
	12	0	21.81	21.90	21.90	0-3	3
	12	6	21.69	22.03	21.98		3
	12	13	22.05	22.00	21.99		3
	25	0	21.33	21.94	21.88		3
256QAM	1	0	20.09	19.86	19.93	0-5	5
	1	12	19.93	20.12	19.85		5
	1	24	20.19	20.07	19.87		5
	12	0	20.12	19.88	19.82		5
	12	6	20.11	19.87	19.79		5
	12	13	20.08	19.94	19.92		5
	25	0	20.10	19.94	19.75		5

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

9.4.2 LTE Band 12

Table 9-14
LTE Band 12 Conducted Powers - 10 MHz Bandwidth

LTE Band 12 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 23095 (707.5 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	25.27	0	0
	1	25	**25.40**		0
	1	49	25.31		0
	25	0	**24.45**	0-1	1
	25	12	24.44		1
	25	25	24.37		1
	50	0	24.40		1
16QAM	1	0	24.69	0-1	1
	1	25	24.59		1
	1	49	24.60		1
	25	0	23.43	0-2	2
	25	12	23.44		2
	25	25	23.37		2
	50	0	23.42		2
64QAM	1	0	23.60	0-2	2
	1	25	23.35		2
	1	49	23.26		2
	25	0	22.22	0-3	3
	25	12	22.19		3
	25	25	22.28		3
	50	0	22.25		3
256QAM	1	0	20.49	0-5	5
	1	25	20.43		5
	1	49	20.39		5
	25	0	20.42		5
	25	12	20.38		5
	25	25	20.34		5
	50	0	20.38		5

Note: LTE Band 12 at 10 MHz bandwidth does not support three non-overlapping channels. Per KDB Publication 941225 D05v02, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-15
LTE Band 12 Conducted Powers - 5 MHz Bandwidth

LTE Band 12 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 23035 (701.5 MHz)	Mid Channel 23095 (707.5 MHz)	High Channel 23155 (713.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.42	25.31	25.35	0	0
	1	12	25.48	25.41	25.29		0
	1	24	25.43	25.36	25.11		0
	12	0	24.59	24.49	24.48	0-1	1
	12	6	24.63	24.50	24.50		1
	12	13	24.61	24.53	24.51		1
	25	0	24.65	24.54	24.48		1
16QAM	1	0	24.72	24.66	24.69	0-1	1
	1	12	24.76	24.69	24.64		1
	1	24	24.74	24.65	24.57		1
	12	0	23.65	23.61	23.50	0-2	2
	12	6	23.69	23.56	23.54		2
	12	13	23.66	23.55	23.52		2
	25	0	23.61	23.56	23.47		2
64QAM	1	0	23.36	23.44	23.47	0-2	2
	1	12	23.00	23.25	23.26		2
	1	24	22.85	23.24	23.02		2
	12	0	22.54	22.16	22.47	0-3	3
	12	6	22.40	22.37	22.39		3
	12	13	22.14	22.39	22.06		3
	25	0	22.30	22.28	22.11		3
256QAM	1	0	20.50	20.30	20.48	0-5	5
	1	12	20.29	20.35	20.49		5
	1	24	20.48	20.47	20.51		5
	12	0	20.47	20.36	20.39		5
	12	6	20.50	20.25	20.37		5
	12	13	20.15	20.40	20.30		5
	25	0	20.46	20.41	20.38		5

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-16
LTE Band 12 Conducted Powers - 3 MHz Bandwidth

LTE Band 12 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 23025 (700.5 MHz)	Mid Channel 23095 (707.5 MHz)	High Channel 23165 (714.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.43	25.35	25.31	0	0
	1	7	25.54	25.43	25.07		0
	1	14	25.47	25.41	24.82		0
	8	0	24.67	24.51	24.47	0-1	1
	8	4	24.71	24.50	24.55		1
	8	7	24.62	24.51	24.53		1
	15	0	24.67	24.50	24.56		1
16QAM	1	0	23.87	23.82	23.91	0-1	1
	1	7	23.74	23.76	23.60		1
	1	14	23.81	23.91	23.89		1
	8	0	23.67	23.53	23.55	0-2	2
	8	4	23.70	23.58	23.57		2
	8	7	23.67	23.55	23.54		2
	15	0	23.62	23.46	23.50		2
64QAM	1	0	23.52	23.24	23.14	0-2	2
	1	7	23.33	23.09	22.73		2
	1	14	23.16	23.16	22.97		2
	8	0	22.69	22.40	22.25	0-3	3
	8	4	22.57	22.39	22.48		3
	8	7	22.36	22.37	21.84		3
	15	0	22.48	22.31	21.98		3
256QAM	1	0	20.55	20.40	20.43	0-5	5
	1	7	20.55	20.55	20.54		5
	1	14	20.51	20.17	20.46		5
	8	0	20.30	20.37	20.39		5
	8	4	20.52	20.35	20.49		5
	8	7	20.47	20.38	20.43		5
	15	0	20.49	20.42	20.36		5

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-17
LTE Band 12 Conducted Powers -1.4 MHz Bandwidth

LTE Band 12 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 23017 (699.7 MHz)	Mid Channel 23095 (707.5 MHz)	High Channel 23173 (715.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.37	25.30	25.13	0	0
	1	2	25.51	25.32	25.05		0
	1	5	25.41	25.32	24.83		0
	3	0	25.51	25.32	25.30		0
	3	2	25.53	25.40	25.30		0
	3	3	25.49	25.39	25.24		0
	6	0	24.58	24.42	24.42	0-1	1
16QAM	1	0	24.68	24.57	24.52	0-1	1
	1	2	24.78	24.65	24.68		1
	1	5	24.67	24.61	24.57		1
	3	0	24.64	24.47	24.43		1
	3	2	24.62	24.53	24.51		1
	3	3	24.63	24.54	24.40		1
	6	0	23.64	23.46	23.49	0-2	2
64QAM	1	0	23.65	23.48	22.81	0-2	2
	1	2	23.70	23.42	23.15		2
	1	5	23.52	23.30	23.11		2
	3	0	23.69	23.41	22.77		2
	3	2	23.70	23.37	22.74		2
	3	3	23.64	23.26	22.97		2
	6	0	22.55	22.19	22.08	0-3	3
256QAM	1	0	20.54	20.34	20.31	0-5	5
	1	2	20.42	20.52	20.37		5
	1	5	20.45	20.24	20.52		5
	3	0	20.50	20.36	20.38		5
	3	2	20.52	20.41	20.52		5
	3	3	20.30	20.35	20.48		5
	6	0	20.43	20.39	20.36		5

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

9.4.3 LTE Band 13

Table 9-18
LTE Band 13 Conducted Powers - 10 MHz Bandwidth

LTE Band 13 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 23230 (782.0 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	25.38	0	0
	1	25	**25.51**		0
	1	49	25.26		0
	25	0	**24.55**	0-1	1
	25	12	24.54		1
	25	25	24.49		1
	50	0	24.54		1
16QAM	1	0	24.80	0-1	1
	1	25	24.64		1
	1	49	24.48		1
	25	0	23.50	0-2	2
	25	12	23.51		2
	25	25	23.45		2
	50	0	23.51		2
64QAM	1	0	23.30	0-2	2
	1	25	23.62		2
	1	49	23.51		2
	25	0	22.51	0-3	3
	25	12	22.47		3
	25	25	22.44		3
	50	0	22.49		3
256QAM	1	0	20.66	0-5	5
	1	25	20.49		5
	1	49	20.41		5
	25	0	20.48		5
	25	12	20.48		5
	25	25	20.42		5
	50	0	20.51		5

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-19
LTE Band 13 Conducted Powers - 5 MHz Bandwidth

LTE Band 13 5 MHz Bandwidth					
Modulation	**RB Size**	**RB Offset**	**Mid Channel** **23230 (782.0 MHz)** **Conducted Power [dBm]**	**MPR Allowed per 3GPP [dB]**	**MPR [dB]**
QPSK	1	0	25.43	0	0
	1	12	25.34		0
	1	24	25.11		0
	12	0	24.35	0-1	1
	12	6	24.36		1
	12	13	24.38		1
	25	0	24.40		1
16QAM	1	0	24.75	0-1	1
	1	12	24.63		1
	1	24	24.69		1
	12	0	23.36	0-2	2
	12	6	23.39		2
	12	13	23.24		2
	25	0	23.34		2
64QAM	1	0	23.25	0-2	2
	1	12	23.78		2
	1	24	23.77		2
	12	0	22.25	0-3	3
	12	6	22.26		3
	12	13	22.32		3
	25	0	22.41		3
256QAM	1	0	20.53	0-5	5
	1	12	20.48		5
	1	24	20.31		5
	12	0	20.44		5
	12	6	20.40		5
	12	13	20.32		5
	25	0	20.40		5

Note: LTE Band 13 at 5 MHz bandwidth does not support three non-overlapping channels. Per KDB Publication 941225 D05v02, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

9.4.4 LTE Band 14

Table 9-20
LTE Band 14 Conducted Powers - 10 MHz Bandwidth

LTE Band 14 10 MHz Bandwidth					
Modulation	**RB Size**	**RB Offset**	**Mid Channel** **23330** **(793.0 MHz)** **Conducted Power [dBm]**	**MPR Allowed per 3GPP [dB]**	**MPR [dB]**
QPSK	1	0	25.01	0	0
	1	25	**25.23**		0
	1	49	25.11		0
	25	0	24.36	0-1	1
	25	12	**24.37**		1
	25	25	24.30		1
	50	0	24.35		1
16QAM	1	0	24.42	0-1	1
	1	25	24.52		1
	1	49	24.53		1
	25	0	23.37	0-2	2
	25	12	23.38		2
	25	25	23.28		2
	50	0	23.34		2
64QAM	1	0	22.62	0-2	2
	1	25	23.15		2
	1	49	23.51		2
	25	0	21.66	0-3	3
	25	12	21.93		3
	25	25	22.13		3
	50	0	21.98		3
256QAM	1	0	20.45	0-5	5
	1	25	20.44		5
	1	49	20.32		5
	25	0	20.38		5
	25	12	20.35		5
	25	25	20.29		5
	50	0	20.36		5

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-21
LTE Band 14 Conducted Powers - 5 MHz Bandwidth

LTE Band 14 5 MHz Bandwidth					
Modulation	**RB Size**	**RB Offset**	**Mid Channel** **23330 (793.0 MHz)** **Conducted Power [dBm]**	**MPR Allowed per 3GPP [dB]**	**MPR [dB]**
QPSK	1	0	24.97	0	0
	1	12	25.17		0
	1	24	25.15		0
	12	0	24.28	0-1	1
	12	6	24.33		1
	12	13	24.31		1
	25	0	24.32		1
16QAM	1	0	24.35	0-1	1
	1	12	24.46		1
	1	24	24.43		1
	12	0	23.35	0-2	2
	12	6	23.31		2
	12	13	23.35		2
	25	0	23.35		2
64QAM	1	0	22.58	0-2	2
	1	12	22.84		2
	1	24	23.08		2
	12	0	21.84	0-3	3
	12	6	21.88		3
	12	13	21.91		3
	25	0	21.84		3
256QAM	1	0	20.36	0-5	5
	1	12	20.42		5
	1	24	20.35		5
	12	0	20.30		5
	12	6	20.36		5
	12	13	20.24		5
	25	50	20.30		5

Note: LTE Band 14 at 5 MHz bandwidth does not support three non-overlapping channels. Per KDB Publication 941225 D05v02, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

9.4.5 LTE Band 26 (Cell)

Table 9-22
LTE Band 26 (Cell) Conducted Powers - 15 MHz Bandwidth

LTE Band 26 (Cell) 15 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 26865 (831.5 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	**24.98**	0	0
	1	36	24.86		0
	1	74	24.88		0
	36	0	24.03	0-1	1
	36	18	**24.04**		1
	36	37	23.99		1
	75	0	24.01		1
16QAM	1	0	24.26	0-1	1
	1	36	24.17		1
	1	74	24.16		1
	36	0	23.02	0-2	2
	36	18	23.04		2
	36	37	22.95		2
	75	0	22.97		2
64QAM	1	0	23.24	0-2	2
	1	36	23.17		2
	1	74	23.11		2
	36	0	22.04	0-3	3
	36	18	22.05		3
	36	37	21.97		3
	75	0	21.98		3
256QAM	1	0	20.16	0-5	5
	1	36	20.16		5
	1	74	19.98		5
	36	0	20.04		5
	36	18	20.09		5
	36	37	19.97		5
	75	0	20.02		5

Note: LTE Band 26 (Cell) at 15 MHz bandwidth does not support three non-overlapping channels. Per KDB Publication 941225 D05v02, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-23
LTE Band 26 (Cell) Conducted Powers - 10 MHz Bandwidth

LTE Band 26 (Cell) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26740 (819.0 MHz)	Mid Channel 26865 (831.5 MHz)	High Channel 26990 (844.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.01	24.87	24.82	0	0
	1	25	24.87	24.72	24.77		0
	1	49	24.78	24.71	24.64		0
	25	0	23.94	23.86	23.88	0-1	1
	25	12	23.97	23.90	23.86		1
	25	25	23.93	23.86	23.86		1
	50	0	23.96	23.85	23.85		1
16QAM	1	0	24.20	24.06	24.14	0-1	1
	1	25	24.10	24.01	23.97		1
	1	49	24.00	23.85	23.96		1
	25	0	22.94	22.72	22.70	0-2	2
	25	12	22.87	22.68	22.81		2
	25	25	22.85	22.69	22.84		2
	50	0	23.07	23.03	23.01		2
64QAM	1	0	22.97	22.87	22.88	0-2	2
	1	25	23.04	22.89	22.90		2
	1	49	22.87	22.85	22.87		2
	25	0	21.96	21.88	21.86	0-3	3
	25	12	21.98	21.89	21.89		3
	25	25	21.81	21.85	21.85		3
	50	0	21.93	21.87	21.86		3
256QAM	1	0	20.12	20.01	19.98	0-5	5
	1	25	19.96	19.96	19.86		5
	1	49	19.76	19.65	19.71		5
	25	0	19.94	19.80	19.74		5
	25	12	19.98	19.83	19.77		5
	25	25	19.86	19.72	19.75		5
	50	0	19.89	19.78	19.72		5

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-24
LTE Band 26 (Cell) Conducted Powers - 5 MHz Bandwidth

LTE Band 26 (Cell) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26715 (816.5 MHz)	Mid Channel 26865 (831.5 MHz)	High Channel 27015 (846.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.88	24.62	24.83	0	0
	1	12	24.91	24.72	24.86		0
	1	24	24.90	24.70	24.80		0
	12	0	23.97	23.86	23.82	0-1	1
	12	6	24.02	23.87	23.90		1
	12	13	23.99	23.90	23.85		1
	25	0	23.97	23.84	23.81		1
16QAM	1	0	23.82	23.83	24.03	0-1	1
	1	12	23.91	23.92	24.07		1
	1	24	23.87	23.88	24.00		1
	12	0	23.03	22.84	22.85	0-2	2
	12	6	23.04	22.88	22.96		2
	12	13	23.00	22.93	22.86		2
	25	0	22.96	22.83	22.81		2
64QAM	1	0	23.23	22.90	22.90	0-2	2
	1	12	23.31	23.00	23.00		2
	1	24	23.21	22.93	22.89		2
	12	0	22.01	21.79	21.84	0-3	3
	12	6	22.08	21.88	21.96		3
	12	13	22.00	21.89	21.89		3
	25	0	21.95	21.81	21.85		3
256QAM	1	0	19.99	19.87	19.98	0-5	5
	1	12	20.09	19.94	19.89		5
	1	24	20.05	19.91	19.72		5
	12	0	19.95	19.77	19.69		5
	12	6	20.07	19.80	19.74		5
	12	13	19.98	19.79	19.70		5
	25	0	20.01	19.82	19.71		5

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-25
LTE Band 26 (Cell) Conducted Powers - 3 MHz Bandwidth

LTE Band 26 (Cell) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26705 (815.5 MHz)	Mid Channel 26865 (831.5 MHz)	High Channel 27025 (847.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.81	24.67	24.74	0	0
	1	7	24.86	24.74	24.68		0
	1	14	24.85	24.75	24.70		0
	8	0	23.97	23.82	23.86	0-1	1
	8	4	23.99	23.93	23.88		1
	8	7	23.94	23.90	23.85		1
	15	0	23.95	23.85	23.85		1
16QAM	1	0	23.60	23.94	23.93	0-1	1
	1	7	23.66	23.95	23.97		1
	1	14	23.56	23.97	23.85		1
	8	0	22.86	22.77	22.95	0-2	2
	8	4	22.88	22.86	22.96		2
	8	7	22.81	22.79	22.88		2
	15	0	22.94	22.90	22.93		2
64QAM	1	0	22.75	22.85	23.40	0-2	2
	1	7	22.80	22.82	23.36		2
	1	14	22.75	22.82	23.29		2
	8	0	22.07	21.83	21.99	0-3	3
	8	4	22.13	21.97	21.98		3
	8	7	22.05	21.89	21.92		3
	15	0	22.06	21.88	21.87		3
256QAM	1	0	19.93	19.81	19.60	0-5	5
	1	7	20.03	19.84	19.75		5
	1	14	20.01	19.84	19.76		5
	8	0	19.98	19.69	19.67		5
	8	4	20.01	19.82	19.65		5
	8	7	20.00	19.85	19.79		5
	15	0	20.02	19.79	19.82		5

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-26
LTE Band 26 (Cell) Conducted Powers -1.4 MHz Bandwidth

LTE Band 26 (Cell) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26697 (814.7 MHz)	Mid Channel 26865 (831.5 MHz)	High Channel 27033 (848.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.98	24.71	24.62	0	0
	1	2	25.01	24.85	24.69		0
	1	5	24.93	24.71	24.61		0
	3	0	24.86	24.68	24.70		0
	3	2	24.87	24.81	24.79		0
	3	3	24.85	24.77	24.67		0
	6	0	23.90	23.80	23.77	0-1	1
16QAM	1	0	23.93	23.42	23.85	0-1	1
	1	2	24.00	23.56	23.90		1
	1	5	23.98	23.52	23.85		1
	3	0	23.90	23.79	23.70		1
	3	2	23.93	23.91	23.78		1
	3	3	23.88	23.86	23.71		1
	6	0	22.86	22.75	22.81	0-2	2
64QAM	1	0	23.27	22.67	22.69	0-2	2
	1	2	23.37	22.80	22.78		2
	1	5	23.21	22.65	22.74		2
	3	0	22.91	22.82	22.69		2
	3	2	22.96	22.96	22.76		2
	3	3	22.87	22.88	22.72		2
	6	0	21.93	21.78	21.77	0-3	3
256QAM	1	0	19.96	19.67	19.72	0-5	5
	1	2	19.98	19.84	19.79		5
	1	5	20.02	19.72	19.62		5
	3	0	20.03	19.98	19.85		5
	3	2	20.05	19.74	19.77		5
	3	3	20.00	19.78	19.72		5
	6	0	19.97	19.75	19.65		5

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

9.4.6 LTE Band 5 (Cell)

Table 9-27
LTE Band 5 (Cell) Conducted Powers - 10 MHz Bandwidth

LTE Band 5 (Cell) 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 20525 (836.5 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	**24.58**	0	0
	1	25	24.48		0
	1	49	24.31		0
	25	0	**23.65**	0-1	1
	25	12	23.64		1
	25	25	23.54		1
	50	0	23.55		1
16QAM	1	0	23.95	0-1	1
	1	25	23.71		1
	1	49	23.61		1
	25	0	22.62	0-2	2
	25	12	22.64		2
	25	25	22.58		2
	50	0	22.56		2
64QAM	1	0	22.92	0-2	2
	1	25	22.78		2
	1	49	22.63		2
	25	0	21.62	0-3	3
	25	12	21.59		3
	25	25	21.48		3
	50	0	21.59		3
256QAM	1	0	19.89	0-5	5
	1	25	19.64		5
	1	49	19.60		5
	25	0	19.62		5
	25	12	19.66		5
	25	25	19.52		5
	50	0	19.58		5

Note: LTE Band 5 (Cell) at 10 MHz bandwidth does not support three non-overlapping channels. Per KDB Publication 941225 D05v02, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-28
LTE Band 5 (Cell) Conducted Powers - 5 MHz Bandwidth

LTE Band 5 (Cell) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20425 (826.5 MHz)	Mid Channel 20525 (836.5 MHz)	High Channel 20625 (846.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.54	24.46	24.47	0	0
	1	12	24.54	24.52	24.55		0
	1	24	24.53	24.54	24.51		0
	12	0	23.64	23.61	23.65	0-1	1
	12	6	23.80	23.70	23.70		1
	12	13	23.78	23.73	23.79		1
	25	0	23.77	23.66	23.69		1
16QAM	1	0	23.80	23.75	23.75	0-1	1
	1	12	23.90	23.86	23.91		1
	1	24	23.91	23.79	23.88		1
	12	0	22.71	22.60	22.68	0-2	2
	12	6	22.83	22.65	22.69		2
	12	13	22.83	22.73	22.77		2
	25	0	22.76	22.64	22.66		2
64QAM	1	0	22.76	22.80	22.74	0-2	2
	1	12	22.90	22.78	22.84		2
	1	24	22.92	22.80	22.80		2
	12	0	21.73	21.67	21.69	0-3	3
	12	6	21.84	21.69	21.75		3
	12	13	21.81	21.74	21.79		3
	25	0	21.78	21.64	21.69		3
256QAM	1	0	19.70	19.88	19.89	0-5	5
	1	12	19.90	19.94	19.88		5
	1	24	19.97	19.92	19.92		5
	12	0	19.80	19.82	19.68		5
	12	6	19.87	19.73	19.66		5
	12	13	19.90	19.92	19.76		5
	25	0	19.90	19.75	19.70		5

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-29
LTE Band 5 (Cell) Conducted Powers - 3 MHz Bandwidth

LTE Band 5 (Cell) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20415 (825.5 MHz)	Mid Channel 20525 (836.5 MHz)	High Channel 20635 (847.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.41	24.42	24.47	0	0
	1	7	24.50	24.50	24.48		0
	1	14	24.54	24.53	24.51		0
	8	0	23.68	23.60	23.62	0-1	1
	8	4	23.77	23.66	23.75		1
	8	7	23.77	23.71	23.72		1
	15	0	23.77	23.64	23.67		1
16QAM	1	0	23.70	23.70	23.80	0-1	1
	1	7	23.94	23.87	23.85		1
	1	14	23.87	23.83	23.89		1
	8	0	22.76	22.61	22.64	0-2	2
	8	4	22.84	22.68	22.80		2
	8	7	22.84	22.74	22.78		2
	15	0	22.76	22.60	22.62		2
64QAM	1	0	22.75	22.75	22.74	0-2	2
	1	7	22.89	22.77	22.76		2
	1	14	22.95	22.83	22.81		2
	8	0	21.76	21.62	21.64	0-3	3
	8	4	21.86	21.68	21.77		3
	8	7	21.84	21.71	21.75		3
	15	0	21.76	21.66	21.65		3
256QAM	1	0	19.85	19.71	19.88	0-5	5
	1	7	19.80	19.89	19.94		5
	1	14	19.92	19.89	19.91		5
	8	0	19.74	19.83	19.74		5
	8	4	19.97	19.80	19.85		5
	8	7	19.88	19.81	19.84		5
	15	0	19.87	19.85	19.74		5

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-30
LTE Band 5 (Cell) Conducted Powers -1.4 MHz Bandwidth

LTE Band 5 (Cell) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20407 (824.7 MHz)	Mid Channel 20525 (836.5 MHz)	High Channel 20643 (848.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.40	24.40	24.48	0	0
	1	2	24.49	24.49	24.47		0
	1	5	24.50	24.49	24.43		0
	3	0	24.47	24.46	24.46		0
	3	2	24.52	24.42	24.50		0
	3	3	24.49	24.47	24.47		0
	6	0	23.69	23.56	23.64	0-1	1
16QAM	1	0	23.74	23.67	23.57	0-1	1
	1	2	23.85	23.67	23.84		1
	1	5	23.78	23.81	23.80		1
	3	0	23.72	23.57	23.65		1
	3	2	23.76	23.65	23.74		1
	3	3	23.72	23.67	23.66		1
	6	0	22.70	22.62	22.72	0-2	2
64QAM	1	0	22.73	22.64	22.75	0-2	2
	1	2	22.83	22.71	22.80		2
	1	5	22.86	22.73	22.72		2
	3	0	22.78	22.62	22.71		2
	3	2	22.80	22.70	22.78		2
	3	3	22.77	22.72	22.74		2
	6	0	21.68	21.54	21.61	0-3	3
256QAM	1	0	19.72	19.69	19.74	0-5	5
	1	2	19.82	19.83	19.77		5
	1	5	19.89	19.71	19.87		5
	3	0	19.86	19.59	19.67		5
	3	2	19.93	19.94	19.83		5
	3	3	19.86	19.77	19.86		5
	6	0	19.84	19.84	19.71		5

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

9.4.7 LTE Band 66 (AWS)

Table 9-31
LTE Band 66 (AWS) Conducted Powers - 20 MHz Bandwidth

LTE Band 66 (AWS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 132072 (1720.0 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132572 (1770.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.08	24.12	**24.93**	0	0
	1	50	24.22	24.56	24.79		0
	1	99	24.01	24.84	24.65		0
	50	0	23.17	23.88	**23.99**	0-1	1
	50	25	23.46	23.96	23.95		1
	50	50	23.60	23.97	23.91		1
	100	0	23.51	23.92	23.93		1
16QAM	1	0	23.37	23.56	24.00	0-1	1
	1	50	23.57	23.96	23.87		1
	1	99	23.56	24.00	23.71		1
	50	0	22.32	22.90	22.97	0-2	2
	50	25	22.46	22.99	22.95		2
	50	50	22.58	22.97	22.89		2
	100	0	22.41	22.97	22.96		2
64QAM	1	0	22.30	22.14	23.00	0-2	2
	1	50	22.52	22.53	22.99		2
	1	99	22.59	22.84	22.41		2
	50	0	20.90	21.59	22.00	0-3	3
	50	25	21.14	21.46	21.98		3
	50	50	21.50	21.39	21.69		3
	100	0	21.00	21.48	21.87		3
256QAM	1	0	19.27	19.88	20.00	0-5	5
	1	50	19.51	19.89	19.92		5
	1	99	19.68	19.97	19.77		5
	50	0	19.35	19.86	19.98		5
	50	25	19.44	19.91	19.92		5
	50	50	19.51	19.90	19.84		5
	100	0	19.44	19.93	19.91		5

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-32
LTE Band 66 (AWS) Conducted Powers - 15 MHz Bandwidth

LTE Band 66 (AWS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 132047 (1717.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132597 (1772.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.37	24.51	24.79	0	0
	1	36	24.32	24.93	24.79		0
	1	74	24.41	24.74	24.60		0
	36	0	23.72	23.77	23.98	0-1	1
	36	18	23.75	23.99	23.94		1
	36	37	23.90	23.96	23.88		1
	75	0	23.70	23.89	23.93		1
16QAM	1	0	23.22	23.49	23.25	0-1	1
	1	36	23.42	23.99	23.99		1
	1	74	23.18	23.98	23.66		1
	36	0	22.70	22.65	22.98	0-2	2
	36	18	22.92	22.72	22.98		2
	36	37	22.90	22.78	22.90		2
	75	0	22.95	22.87	22.94		2
64QAM	1	0	22.79	22.02	22.33	0-2	2
	1	36	22.96	22.57	22.78		2
	1	74	22.72	22.86	22.57		2
	36	0	21.28	21.40	21.69	0-3	3
	36	18	21.18	21.28	21.55		3
	36	37	21.54	21.30	21.51		3
	75	0	21.48	21.31	21.61		3
256QAM	1	0	19.52	19.95	19.78	0-5	5
	1	36	19.38	19.75	19.66		5
	1	74	19.64	19.72	19.42		5
	36	0	19.47	19.58	19.59		5
	36	18	19.40	19.67	19.51		5
	36	37	19.54	19.63	19.55		5
	75	0	19.39	19.69	19.65		5

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-33
LTE Band 66 (AWS) Conducted Powers - 10 MHz Bandwidth

LTE Band 66 (AWS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 132022 (1715.0 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132622 (1775.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.11	24.29	24.82	0	0
	1	25	24.24	24.62	24.39		0
	1	49	24.17	24.67	24.50		0
	25	0	23.39	23.87	23.73	0-1	1
	25	12	23.43	23.84	23.71		1
	25	25	23.61	23.83	23.65		1
	50	0	23.48	23.68	23.70		1
16QAM	1	0	23.40	23.01	23.80	0-1	1
	1	25	23.54	23.26	23.65		1
	1	49	23.46	23.79	23.64		1
	25	0	22.64	22.92	22.73	0-2	2
	25	12	22.69	22.92	22.72		2
	25	25	22.64	22.89	22.69		2
	50	0	22.66	22.85	22.69		2
64QAM	1	0	22.11	22.45	22.28	0-2	2
	1	25	22.26	22.11	22.21		2
	1	49	22.21	22.18	21.94		2
	25	0	20.79	21.43	21.85	0-3	3
	25	12	20.87	21.40	21.71		3
	25	25	20.98	21.38	21.44		3
	50	0	20.88	21.23	21.41		3
256QAM	1	0	19.23	19.83	19.93	0-5	5
	1	25	19.37	19.66	19.85		5
	1	49	19.35	19.81	19.69		5
	25	0	19.27	19.93	19.68		5
	25	12	19.35	19.94	19.70		5
	25	25	19.34	19.90	19.76		5
	50	0	19.36	19.96	19.67		5

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-34
LTE Band 66 (AWS) Conducted Powers - 5 MHz Bandwidth

LTE Band 66 (AWS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 131997 (1712.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132647 (1777.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.02	24.50	24.61	0	0
	1	12	24.08	24.64	24.63		0
	1	24	24.13	24.69	24.70		0
	12	0	23.39	23.72	23.67	0-1	1
	12	6	23.46	23.78	23.74		1
	12	13	23.46	23.82	23.66		1
	25	0	23.24	23.69	23.52		1
16QAM	1	0	23.09	23.45	23.71	0-1	1
	1	12	23.17	23.65	23.66		1
	1	24	23.22	23.73	23.55		1
	12	0	22.49	22.76	22.74	0-2	2
	12	6	22.68	22.82	22.75		2
	12	13	22.67	22.89	22.75		2
	25	0	22.53	22.81	22.71		2
64QAM	1	0	22.17	22.33	22.43	0-2	2
	1	12	22.24	22.51	22.36		2
	1	24	22.27	22.63	22.25		2
	12	0	21.20	21.65	21.70	0-3	3
	12	6	21.30	21.69	21.67		3
	12	13	21.30	21.65	21.57		3
	25	0	21.10	21.57	21.63		3
256QAM	1	0	19.47	19.77	19.63	0-5	5
	1	12	19.40	19.83	19.49		5
	1	24	19.45	19.89	19.63		5
	12	0	19.32	19.83	19.67		5
	12	6	19.35	19.96	19.82		5
	12	13	19.41	19.93	19.81		5
	25	0	19.42	19.95	19.84		5

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-35
LTE Band 66 (AWS) Conducted Powers - 3 MHz Bandwidth

LTE Band 66 (AWS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 131987 (1711.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132657 (1778.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.12	24.62	24.52	0	0
	1	7	24.11	24.67	24.56		0
	1	14	24.14	24.63	24.55		0
	8	0	23.43	23.78	23.65	0-1	1
	8	4	23.51	23.84	23.71		1
	8	7	23.48	23.86	23.66		1
	15	0	23.45	23.79	23.65		1
16QAM	1	0	23.45	23.79	23.36	0-1	1
	1	7	23.45	23.91	23.31		1
	1	14	23.48	23.83	23.27		1
	8	0	22.39	22.83	22.57	0-2	2
	8	4	22.45	22.86	22.57		2
	8	7	22.42	22.88	22.55		2
	15	0	22.57	22.86	22.65		2
64QAM	1	0	22.18	22.52	22.43	0-2	2
	1	7	22.17	22.63	22.44		2
	1	14	22.20	22.69	22.40		2
	8	0	21.42	21.33	21.25	0-3	3
	8	4	21.50	21.42	21.32		3
	8	7	21.42	21.41	21.22		3
	15	0	21.46	21.27	21.25		3
256QAM	1	0	19.52	19.60	19.57	0-5	5
	1	7	19.47	19.87	19.64		5
	1	14	19.41	19.91	19.68		5
	8	0	19.36	19.95	19.72		5
	8	4	19.51	19.94	19.56		5
	8	7	19.45	19.92	19.62		5
	15	0	19.38	19.94	19.67		5

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-36
LTE Band 66 (AWS) Conducted Powers -1.4 MHz Bandwidth

LTE Band 66 (AWS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 131979 (1710.7 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132665 (1779.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.15	24.72	24.46	0	0
	1	2	24.20	24.88	24.56		0
	1	5	24.14	24.85	24.49		0
	3	0	24.29	24.64	24.49		0
	3	2	24.35	24.74	24.61		0
	3	3	24.31	24.73	24.51		0
	6	0	23.43	23.72	23.59	0-1	1
16QAM	1	0	23.40	23.76	23.20	0-1	1
	1	2	23.50	23.87	23.32		1
	1	5	23.53	23.88	23.25		1
	3	0	23.34	23.71	23.60		1
	3	2	23.45	23.84	23.71		1
	3	3	23.39	23.84	23.63		1
	6	0	22.48	22.69	22.57	0-2	2
64QAM	1	0	22.22	22.43	22.28	0-2	2
	1	2	22.29	22.58	22.38		2
	1	5	22.27	22.49	22.28		2
	3	0	22.20	22.24	22.04		2
	3	2	22.32	22.29	22.12		2
	3	3	22.24	22.16	22.06		2
	6	0	21.88	21.19	21.01	0-3	3
256QAM	1	0	19.32	19.77	19.89	0-5	5
	1	2	19.42	19.94	19.70		5
	1	5	19.44	19.75	19.68		5
	3	0	19.36	19.83	19.60		5
	3	2	19.43	19.88	19.63		5
	3	3	19.40	19.73	19.65		5
	6	0	19.38	19.87	19.79		5

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-37
LTE Band 66 (AWS) Reduced Conducted Powers - 20 MHz Bandwidth – Hotspot/Proximity Sensor and/or Earjack Mode Active

LTE Band 66 (AWS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 132072 (1720.0 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132572 (1770.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	19.31	19.64	19.80	0	0
	1	50	19.44	19.84	19.77		0
	1	99	19.71	**19.85**	19.61		0
	50	0	19.60	20.01	19.95	0-1	0
	50	25	19.62	**20.10**	19.88		0
	50	50	19.77	20.07	19.89		0
	100	0	19.66	19.72	19.82		0
16QAM	1	0	19.58	20.11	20.19	0-1	0
	1	50	19.80	20.13	20.11		0
	1	99	19.99	20.23	19.95		0
	50	0	19.56	20.05	19.98	0-2	0
	50	25	19.72	20.10	19.90		0
	50	50	19.79	20.04	19.85		0
	100	0	19.59	20.10	19.91		0
64QAM	1	0	19.68	20.14	20.20	0-2	0
	1	50	19.72	20.17	20.02		0
	1	99	19.95	20.23	19.82		0
	50	0	19.63	20.08	20.00	0-3	0
	50	25	19.68	20.12	19.88		0
	50	50	19.80	20.02	19.84		0
	100	0	19.71	20.13	19.91		0
256QAM	1	0	18.95	19.61	19.60	0-5	0.5
	1	50	19.14	19.63	19.43		0.5
	1	99	19.44	19.57	19.41		0.5
	50	0	19.09	19.56	19.60		0.5
	50	25	19.20	19.60	19.39		0.5
	50	50	19.26	19.61	19.32		0.5
	100	0	19.11	19.61	19.40		0.5

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-38
LTE Band 66 (AWS) Reduced Conducted Powers - 15 MHz Bandwidth – Hotspot/ Proximity Sensor and/or Earjack Mode Active

LTE Band 66 (AWS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 132047 (1717.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132597 (1772.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	19.11	19.86	19.81	0	0
	1	36	19.23	19.89	19.70		0
	1	74	19.32	19.86	19.59		0
	36	0	19.38	20.11	19.97	0-1	0
	36	18	19.37	20.10	19.91		0
	36	37	19.37	20.09	19.87		0
	75	0	19.51	20.17	19.96		0
16QAM	1	0	19.53	20.31	20.29	0-1	0
	1	36	19.56	20.26	20.23		0
	1	74	19.78	20.29	20.08		0
	36	0	19.51	20.17	20.07	0-2	0
	36	18	19.49	20.17	19.98		0
	36	37	19.55	20.14	19.92		0
	75	0	19.53	20.17	20.00		0
64QAM	1	0	19.53	20.21	20.24	0-2	0
	1	36	19.53	20.28	20.05		0
	1	74	19.82	20.25	19.95		0
	36	0	19.56	20.25	20.06	0-3	0
	36	18	19.59	20.22	20.02		0
	36	37	19.56	20.19	19.97		0
	75	0	19.56	20.20	20.01		0
256QAM	1	0	19.00	19.66	19.67	0-5	0.5
	1	36	19.05	19.87	19.69		0.5
	1	74	19.32	19.68	19.60		0.5
	36	0	19.03	19.55	19.52		0.5
	36	18	19.01	19.65	19.49		0.5
	36	37	18.98	19.63	19.46		0.5
	75	0	18.99	19.66	19.50		0.5

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-39
LTE Band 66 (AWS) Reduced Conducted Powers - 10 MHz Bandwidth – Hotspot/Proximity Sensor and/or Earjack Mode Active

LTE Band 66 (AWS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 132022 (1715.0 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132622 (1775.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	19.03	19.71	19.55	0	0
	1	25	19.10	19.76	19.47		0
	1	49	19.28	19.84	19.55		0
	25	0	19.22	19.93	19.72	0-1	0
	25	12	19.24	19.95	19.70		0
	25	25	19.22	19.90	19.65		0
	50	0	19.27	19.97	19.65		0
16QAM	1	0	19.27	20.00	19.83	0-1	0
	1	25	19.42	20.00	19.84		0
	1	49	19.53	20.13	19.82		0
	25	0	19.27	19.96	19.74	0-2	0
	25	12	19.31	19.94	19.73		0
	25	25	19.30	19.93	19.70		0
	50	0	19.31	19.96	19.71		0
64QAM	1	0	19.24	20.01	19.84	0-2	0
	1	25	19.41	20.09	19.80		0
	1	49	19.54	20.04	19.77		0
	25	0	19.28	19.98	19.74	0-3	0
	25	12	19.34	19.99	19.75		0
	25	25	19.29	19.94	19.68		0
	50	0	19.33	19.99	19.74		0
256QAM	1	0	18.82	19.52	19.40	0-5	0.5
	1	25	18.93	19.59	19.32		0.5
	1	49	19.10	19.54	19.31		0.5
	25	0	18.84	19.47	19.25		0.5
	25	12	18.88	19.46	19.23		0.5
	25	25	18.85	19.42	19.19		0.5
	50	0	18.84	19.41	19.22		0.5

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-40
LTE Band 66 (AWS) Reduced Conducted Powers - 5 MHz Bandwidth – Hotspot/Proximity Sensor and/or Earjack Mode Active

LTE Band 66 (AWS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 131997 (1712.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132647 (1777.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	19.00	19.73	19.61	0	0
	1	12	19.13	19.88	19.62		0
	1	24	19.25	19.90	19.64		0
	12	0	19.14	19.90	19.72	0-1	0
	12	6	19.26	19.98	19.76		0
	12	13	19.30	20.05	19.74		0
	25	0	19.25	19.97	19.78		0
16QAM	1	0	19.25	20.11	19.89	0-1	0
	1	12	19.37	20.18	19.99		0
	1	24	19.47	20.24	19.89		0
	12	0	19.18	20.02	19.81	0-2	0
	12	6	19.20	20.00	19.83		0
	12	13	19.23	20.00	19.83		0
	25	0	19.31	19.95	19.81		0
64QAM	1	0	19.27	20.07	19.83	0-2	0
	1	12	19.40	20.19	19.94		0
	1	24	19.51	20.25	19.90		0
	12	0	19.27	20.00	19.82	0-3	0
	12	6	19.26	20.01	19.83		0
	12	13	19.29	19.99	19.82		0
	25	0	19.34	20.03	19.82		0
256QAM	1	0	18.73	19.49	19.32	0-5	0.5
	1	12	18.94	19.59	19.36		0.5
	1	24	19.00	19.65	19.46		0.5
	12	0	18.67	19.42	19.25		0.5
	12	6	18.80	19.48	19.29		0.5
	12	13	18.84	19.49	19.24		0.5
	25	0	18.79	19.41	19.28		0.5

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-41
LTE Band 66 (AWS) Reduced Conducted Powers - 3 MHz Bandwidth – Hotspot/Proximity Sensor and/or Earjack Mode Active

LTE Band 66 (AWS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 131987 (1711.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132657 (1778.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	18.96	19.76	19.60	0	0
	1	7	19.03	19.84	19.60		0
	1	14	19.11	19.84	19.61		0
	8	0	19.07	19.92	19.74	0-1	0
	8	4	19.20	19.98	19.82		0
	8	7	19.18	20.01	19.77		0
	15	0	19.23	19.99	19.79		0
16QAM	1	0	19.26	20.11	19.95	0-1	0
	1	7	19.38	20.19	19.92		0
	1	14	19.49	20.18	19.93		0
	8	0	19.24	20.00	19.85	0-2	0
	8	4	19.32	20.06	19.85		0
	8	7	19.29	20.09	19.87		0
	15	0	19.25	19.99	19.80		0
64QAM	1	0	19.28	20.11	19.86	0-2	0
	1	7	19.34	20.17	19.91		0
	1	14	19.43	20.20	19.91		0
	8	0	19.23	20.05	19.86	0-3	0
	8	4	19.34	20.06	19.87		0
	8	7	19.37	20.07	19.83		0
	15	0	19.29	20.03	19.84		0
256QAM	1	0	18.71	19.50	19.41	0-5	0.5
	1	7	18.83	19.54	19.40		0.5
	1	14	18.85	19.56	19.40		0.5
	8	0	18.61	19.36	19.26		0.5
	8	4	18.74	19.43	19.34		0.5
	8	7	18.72	19.46	19.28		0.5
	15	0	18.71	19.38	19.29		0.5

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-42
LTE Band 66 (AWS) Reduced Conducted Powers -1.4 MHz Bandwidth – Hotspot/Proximity Sensor and/or Earjack Mode Active

LTE Band 66 (AWS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 131979 (1710.7 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132665 (1779.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	18.93	19.75	19.58	0	0
	1	2	19.07	19.90	19.60		0
	1	5	19.02	19.81	19.56		0
	3	0	19.01	19.78	19.55		0
	3	2	19.03	19.87	19.61		0
	3	3	19.03	19.85	19.56		0
	6	0	19.08	19.88	19.70	0-1	0
16QAM	1	0	19.65	20.00	19.89	0-1	0
	1	2	19.31	20.18	19.88		0
	1	5	19.27	20.03	19.85		0
	3	0	19.17	19.87	19.76		0
	3	2	19.18	20.05	19.76		0
	3	3	19.22	19.98	19.73		0
	6	0	19.16	19.96	19.76	0-2	0
64QAM	1	0	19.19	19.96	19.79	0-2	0
	1	2	19.31	20.06	19.81		0
	1	5	19.26	20.05	19.77		0
	3	0	19.21	19.93	19.76		0
	3	2	19.26	20.06	19.81		0
	3	3	19.19	20.03	19.71		0
	6	0	19.07	19.81	19.67	0-3	0
256QAM	1	0	18.70	19.46	19.29	0-5	0.5
	1	2	18.86	19.58	19.40		0.5
	1	5	18.77	19.56	19.28		0.5
	3	0	18.67	19.38	19.17		0.5
	3	2	18.75	19.53	19.25		0.5
	3	3	18.71	19.45	19.21		0.5
	6	0	18.62	19.34	19.15		0.5

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

9.4.8 LTE Band 25 (PCS)

Table 9-43
LTE Band 25 (PCS) Conducted Powers - 20 MHz Bandwidth

LTE Band 25 (PCS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26140 (1860.0 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26590 (1905.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.65	24.72	24.59	0	0
	1	50	24.63	**24.81**	24.44		0
	1	99	24.71	24.74	24.32		0
	50	0	23.76	23.94	23.59	0-1	1
	50	25	23.82	**24.00**	23.61		1
	50	50	23.81	23.99	23.60		1
	100	0	23.79	23.99	23.59		1
16QAM	1	0	23.96	23.98	23.99	0-1	1
	1	50	23.96	24.00	23.71		1
	1	99	24.00	23.99	23.74		1
	50	0	22.75	22.95	22.59	0-2	2
	50	25	22.82	23.00	22.63		2
	50	50	22.81	22.99	22.64		2
	100	0	22.80	22.98	22.61		2
64QAM	1	0	22.85	22.96	22.91	0-2	2
	1	50	22.89	22.95	22.75		2
	1	99	22.97	23.00	22.64		2
	50	0	21.78	21.75	21.71	0-3	3
	50	25	21.85	21.89	21.69		3
	50	50	21.82	22.00	21.68		3
	100	0	21.81	21.96	21.68		3
256QAM	1	0	19.85	19.86	19.90	0-5	5
	1	50	19.79	20.00	19.72		5
	1	99	19.95	19.99	19.58		5
	50	0	19.74	19.91	19.57		5
	50	25	19.84	19.98	19.63		5
	50	50	19.81	20.00	19.62		5
	100	0	19.77	19.96	19.64		5

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-44
LTE Band 25 (PCS) Conducted Powers - 15 MHz Bandwidth

LTE Band 25 (PCS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26115 (1857.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26615 (1907.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.58	24.87	24.44	0	0
	1	36	24.82	24.72	24.37		0
	1	74	24.85	24.75	24.37		0
	36	0	23.83	23.77	23.54	0-1	1
	36	18	23.91	23.82	23.64		1
	36	37	23.94	23.71	23.64		1
	75	0	23.88	23.68	23.58		1
16QAM	1	0	23.29	23.25	23.68	0-1	1
	1	36	23.50	23.34	23.64		1
	1	74	23.50	23.30	23.62		1
	36	0	22.82	22.26	22.60	0-2	2
	36	18	22.94	22.33	22.67		2
	36	37	22.93	22.33	22.68		2
	75	0	22.91	22.24	22.63		2
64QAM	1	0	22.31	22.63	22.54	0-2	2
	1	36	22.82	22.46	22.57		2
	1	74	22.80	22.75	22.87		2
	36	0	21.90	21.70	21.65	0-3	3
	36	18	21.71	21.88	21.74		3
	36	37	21.68	21.76	21.71		3
	75	0	21.90	21.98	21.57		3
256QAM	1	0	19.51	19.75	19.90	0-5	5
	1	36	19.89	19.96	19.75		5
	1	74	19.95	19.91	19.62		5
	36	0	19.78	19.90	19.56		5
	36	18	19.83	19.97	19.58		5
	36	37	19.86	19.98	19.58		5
	75	0	19.85	19.96	19.57		5

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-45
LTE Band 25 (PCS) Conducted Powers - 10 MHz Bandwidth

LTE Band 25 (PCS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26090 (1855.0 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26640 (1910.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.57	24.52	24.18	0	0
	1	25	24.46	24.47	24.05		0
	1	49	24.62	24.57	24.22		0
	25	0	23.68	23.85	23.29	0-1	1
	25	12	23.71	23.84	23.32		1
	25	25	23.75	23.88	23.33		1
	50	0	23.70	23.87	23.30		1
16QAM	1	0	23.34	23.79	23.42	0-1	1
	1	25	23.27	23.75	23.27		1
	1	49	23.35	23.81	23.36		1
	25	0	22.75	22.86	22.35	0-2	2
	25	12	22.78	22.89	22.37		2
	25	25	22.81	22.89	22.40		2
	50	0	22.76	22.84	22.39		2
64QAM	1	0	22.30	22.74	22.87	0-2	2
	1	25	22.43	22.69	22.77		2
	1	49	22.57	22.82	22.80		2
	25	0	21.79	21.97	21.36	0-3	3
	25	12	21.81	21.98	21.37		3
	25	25	21.85	21.77	21.40		3
	50	0	21.77	21.89	21.39		3
256QAM	1	0	19.68	19.83	19.66	0-5	5
	1	25	19.60	19.95	19.60		5
	1	49	19.49	19.67	19.49		5
	25	0	19.62	19.78	19.36		5
	25	12	19.59	19.81	19.37		5
	25	25	19.70	19.87	19.41		5
	50	0	19.58	19.89	19.45		5

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-46
LTE Band 25 (PCS) Conducted Powers - 5 MHz Bandwidth

LTE Band 25 (PCS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26065 (1852.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26665 (1912.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.61	24.64	24.00	0	0
	1	12	24.69	24.77	24.08		0
	1	24	24.71	24.73	23.99		0
	12	0	23.65	23.78	23.25	0-1	1
	12	6	23.78	23.87	23.30		1
	12	13	23.73	23.88	23.24		1
	25	0	23.70	23.81	23.31		1
16QAM	1	0	23.78	23.59	23.20	0-1	1
	1	12	23.89	23.80	23.32		1
	1	24	23.90	23.74	23.20		1
	12	0	22.71	22.84	22.29	0-2	2
	12	6	22.83	22.90	22.37		2
	12	13	22.80	22.86	22.31		2
	25	0	22.72	22.81	22.34		2
64QAM	1	0	22.43	22.95	22.26	0-2	2
	1	12	22.64	22.96	22.31		2
	1	24	22.73	22.99	22.25		2
	12	0	21.57	21.81	21.25	0-3	3
	12	6	21.71	21.88	21.30		3
	12	13	21.76	21.88	21.27		3
	25	0	21.69	21.80	21.34		3
256QAM	1	0	19.45	19.91	19.73	0-5	5
	1	12	19.45	19.80	19.40		5
	1	24	19.50	19.69	19.45		5
	12	0	19.59	19.68	19.62		5
	12	6	19.55	19.79	19.38		5
	12	13	19.62	19.67	19.37		5
	25	0	19.67	19.81	19.40		5

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-47
LTE Band 25 (PCS) Conducted Powers - 3 MHz Bandwidth

LTE Band 25 (PCS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26055 (1851.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26675 (1913.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.48	24.53	24.03	0	0
	1	7	24.56	24.68	24.06		0
	1	14	24.55	24.62	24.02		0
	8	0	23.62	23.73	23.27	0-1	1
	8	4	23.70	23.86	23.33		1
	8	7	23.67	23.75	23.23		1
	15	0	23.71	23.76	23.29		1
16QAM	1	0	23.29	23.75	23.22	0-1	1
	1	7	23.36	23.93	23.32		1
	1	14	23.32	23.85	23.18		1
	8	0	22.57	22.67	22.35	0-2	2
	8	4	22.63	22.74	22.38		2
	8	7	22.55	22.73	22.33		2
	15	0	22.70	22.86	22.36		2
64QAM	1	0	22.26	22.69	22.69	0-2	2
	1	7	22.34	22.73	22.77		2
	1	14	22.43	22.77	22.70		2
	8	0	21.56	21.80	21.38	0-3	3
	8	4	21.73	21.88	21.45		3
	8	7	21.73	21.87	21.36		3
	15	0	21.70	21.85	21.34		3
256QAM	1	0	19.70	19.63	19.48	0-5	5
	1	7	19.57	19.71	19.77		5
	1	14	19.68	19.85	19.48		5
	8	0	19.58	19.84	19.48		5
	8	4	19.68	19.85	19.45		5
	8	7	19.63	19.74	19.58		5
	15	0	19.58	19.89	19.49		5

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-48
LTE Band 25 (PCS) Conducted Powers -1.4 MHz Bandwidth

LTE Band 25 (PCS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26047 (1850.7 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26683 (1914.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.49	24.47	24.18	0	0
	1	2	24.57	24.67	24.26		0
	1	5	24.50	24.57	24.14		0
	3	0	24.49	24.62	24.13		0
	3	2	24.59	24.79	24.17		0
	3	3	24.52	24.64	24.10		0
	6	0	23.57	23.72	23.19	0-1	1
16QAM	1	0	23.21	23.76	23.22	0-1	1
	1	2	23.28	23.85	23.31		1
	1	5	23.28	23.82	23.22		1
	3	0	23.61	23.67	23.16		1
	3	2	23.69	23.80	23.25		1
	3	3	23.64	23.71	23.21		1
	6	0	22.57	22.77	22.17	0-2	2
64QAM	1	0	22.17	22.62	22.54	0-2	2
	1	2	22.28	22.76	22.68		2
	1	5	22.19	22.69	22.44		2
	3	0	22.43	22.64	22.19		2
	3	2	22.50	22.78	22.24		2
	3	3	22.45	22.65	22.19		2
	6	0	21.40	21.75	21.26	0-3	3
256QAM	1	0	19.65	19.68	19.57	0-5	5
	1	2	19.68	19.78	19.42		5
	1	5	19.68	19.85	19.32		5
	3	0	19.78	19.93	19.54		5
	3	2	19.72	19.74	19.57		5
	3	3	19.68	19.89	19.45		5
	6	0	19.83	19.78	19.42		5

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-49
LTE Band 25 (PCS) Reduced Conducted Powers - 20 MHz Bandwidth – Hotspot Mode Active

LTE Band 25 (PCS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26140 (1860.0 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26590 (1905.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	19.13	19.13	19.08	0	0
	1	50	19.04	**19.28**	18.89		0
	1	99	19.19	19.06	18.86		0
	50	0	19.19	19.36	18.98	0-1	0
	50	25	19.27	**19.42**	19.07		0
	50	50	19.29	19.37	19.05		0
	100	0	19.26	19.20	19.03		0
16QAM	1	0	19.37	19.42	19.30	0-1	0
	1	50	19.44	19.49	19.31		0
	1	99	19.50	19.44	19.16		0
	50	0	19.18	19.40	19.05	0-2	0
	50	25	19.28	19.48	19.05		0
	50	50	19.25	19.48	19.00		0
	100	0	19.26	19.42	19.05		0
64QAM	1	0	19.38	19.42	19.36	0-2	0
	1	50	19.39	19.30	19.24		0
	1	99	19.47	19.47	19.09		0
	50	0	19.22	19.41	19.04	0-3	0
	50	25	19.30	19.45	19.13		0
	50	50	19.29	19.43	19.15		0
	100	0	19.28	19.46	19.05		0
256QAM	1	0	19.39	19.38	19.27	0-5	0
	1	50	19.34	19.45	18.74		0
	1	99	19.36	19.44	18.94		0
	50	0	19.20	19.42	19.03		0
	50	25	19.30	19.46	19.08		0
	50	50	19.26	19.43	19.09		0
	100	0	19.25	19.49	19.05		0

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-50
LTE Band 25 (PCS) Reduced Conducted Powers - 15 MHz Bandwidth - Hotspot Mode Active

LTE Band 25 (PCS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26115 (1857.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26615 (1907.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	19.08	19.06	19.00	0	0
	1	36	19.17	19.04	18.95		0
	1	74	19.21	19.11	18.97		0
	36	0	19.24	19.17	19.02	0-1	0
	36	18	19.29	19.23	19.07		0
	36	37	19.32	19.23	19.05		0
	75	0	19.29	19.21	19.10		0
16QAM	1	0	19.39	19.28	19.32	0-1	0
	1	36	19.24	19.12	19.30		0
	1	74	19.49	19.37	19.23		0
	36	0	19.30	19.22	19.04	0-2	0
	36	18	19.38	19.31	19.13		0
	36	37	19.33	19.29	19.10		0
	75	0	19.34	19.27	19.11		0
64QAM	1	0	19.38	19.33	19.28	0-2	0
	1	36	19.38	19.41	19.18		0
	1	74	19.25	19.44	19.24		0
	36	0	19.39	19.26	19.10	0-3	0
	36	18	19.44	19.35	19.18		0
	36	37	19.41	19.36	19.14		0
	75	0	19.34	19.29	19.13		0
256QAM	1	0	19.30	19.46	19.30	0-5	0
	1	36	19.45	19.49	19.22		0
	1	74	19.47	19.50	19.29		0
	36	0	19.40	19.39	19.16		0
	36	18	19.47	19.45	19.21		0
	36	37	19.47	19.47	19.16		0
	75	0	19.36	19.43	19.18		0

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-51
LTE Band 25 (PCS) Reduced Conducted Powers - 10 MHz Bandwidth - Hotspot Mode Active

LTE Band 25 (PCS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26090 (1855.0 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26640 (1910.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	18.87	19.15	18.64	0	0
	1	25	18.89	19.07	18.63		0
	1	49	18.89	19.06	18.70		0
	25	0	19.15	19.22	18.68	0-1	0
	25	12	19.18	19.25	18.74		0
	25	25	19.22	19.27	18.73		0
	50	0	19.17	19.28	18.76		0
16QAM	1	0	19.18	19.38	18.90	0-1	0
	1	25	19.17	19.33	18.84		0
	1	49	19.23	19.43	18.89		0
	25	0	19.24	19.25	18.73	0-2	0
	25	12	19.08	19.27	18.74		0
	25	25	19.26	19.28	18.78		0
	50	0	19.20	19.27	18.74		0
64QAM	1	0	19.24	19.39	18.85	0-2	0
	1	25	19.19	19.42	18.88		0
	1	49	19.20	19.41	18.83		0
	25	0	19.18	19.29	18.78	0-3	0
	25	12	19.21	19.31	18.78		0
	25	25	19.29	19.32	18.79		0
	50	0	19.22	19.31	18.77		0
256QAM	1	0	19.38	19.46	19.06	0-5	0
	1	25	19.36	19.50	19.03		0
	1	49	19.40	19.49	19.05		0
	25	0	19.22	19.43	18.91		0
	25	12	19.26	19.44	18.92		0
	25	25	19.26	19.43	18.95		0
	50	0	19.24	19.40	18.92		0

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-52
LTE Band 25 (PCS) Reduced Conducted Powers - 5 MHz Bandwidth - Hotspot Mode Active

LTE Band 25 (PCS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26065 (1852.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26665 (1912.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	18.81	18.96	18.56	0	0
	1	12	18.90	19.14	18.63		0
	1	24	18.95	19.12	18.52		0
	12	0	18.97	19.15	18.64	0-1	0
	12	6	19.10	19.22	18.71		0
	12	13	19.08	19.22	18.65		0
	25	0	19.08	19.18	18.71		0
16QAM	1	0	19.18	19.19	18.79	0-1	0
	1	12	19.24	19.41	18.86		0
	1	24	19.27	19.37	18.73		0
	12	0	19.07	19.19	18.72	0-2	0
	12	6	19.16	19.28	18.75		0
	12	13	19.15	19.28	18.70		0
	25	0	19.06	19.21	18.73		0
64QAM	1	0	19.15	19.24	18.78	0-2	0
	1	12	19.22	19.45	18.90		0
	1	24	19.28	19.37	18.73		0
	12	0	19.10	19.21	18.81	0-3	0
	12	6	19.10	19.24	18.81		0
	12	13	19.11	19.23	18.81		0
	25	0	19.11	19.22	18.75		0
256QAM	1	0	19.37	19.42	18.98	0-5	0
	1	12	19.41	19.50	18.99		0
	1	24	19.43	19.49	18.95		0
	12	0	19.26	19.39	18.89		0
	12	6	19.29	19.43	18.95		0
	12	13	19.31	19.41	18.91		0
	25	0	19.29	19.40	18.94		0

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-53
LTE Band 25 (PCS) Reduced Conducted Powers - 3 MHz Bandwidth - Hotspot Mode Active

LTE Band 25 (PCS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26055 (1851.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26675 (1913.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	18.85	18.95	18.45	0	0
	1	7	18.93	19.11	18.53		0
	1	14	18.95	19.03	18.51		0
	8	0	19.00	19.13	18.57	0-1	0
	8	4	19.08	19.17	18.62		0
	8	7	19.05	19.13	18.55		0
	15	0	19.01	19.19	18.68		0
16QAM	1	0	19.11	19.11	18.74	0-1	0
	1	7	19.17	19.35	18.82		0
	1	14	19.16	19.27	18.70		0
	8	0	19.04	19.16	18.64	0-2	0
	8	4	19.07	19.25	18.72		0
	8	7	19.06	19.22	18.61		0
	15	0	19.01	19.11	18.61		0
64QAM	1	0	19.10	19.18	18.63	0-2	0
	1	7	19.22	19.35	18.79		0
	1	14	19.18	19.33	18.63		0
	8	0	18.99	19.12	18.77	0-3	0
	8	4	18.98	19.10	18.73		0
	8	7	19.00	19.12	18.75		0
	15	0	19.03	19.15	18.66		0
256QAM	1	0	19.30	19.47	19.01	0-5	0
	1	7	19.40	19.49	19.07		0
	1	14	19.38	19.44	19.03		0
	8	0	19.24	19.36	18.90		0
	8	4	19.29	19.41	18.98		0
	8	7	19.29	19.44	18.88		0
	15	0	19.31	19.48	18.92		0

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-54
LTE Band 25 (PCS) Reduced Conducted Powers -1.4 MHz Bandwidth - Hotspot Mode Active

LTE Band 25 (PCS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26047 (1850.7 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26683 (1914.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	18.92	19.05	18.57	0	0
	1	2	19.07	19.22	18.64		0
	1	5	19.01	19.08	18.51		0
	3	0	18.94	19.09	18.60		0
	3	2	19.02	19.24	18.65		0
	3	3	18.96	19.12	18.60		0
	6	0	19.12	19.25	18.72	0-1	0
16QAM	1	0	19.22	19.26	19.08	0-1	0
	1	2	19.34	19.37	18.90		0
	1	5	19.32	19.38	18.80		0
	3	0	19.12	19.25	18.73		0
	3	2	19.21	19.37	18.83		0
	3	3	19.15	19.31	18.76		0
	6	0	19.20	19.29	18.78	0-2	0
64QAM	1	0	19.25	19.37	18.84	0-2	0
	1	2	19.33	19.46	18.88		0
	1	5	19.31	19.47	18.83		0
	3	0	19.20	19.38	18.96		0
	3	2	19.22	19.39	19.10		0
	3	3	19.20	19.38	18.94		0
	6	0	19.15	19.23	18.73	0-3	0
256QAM	1	0	19.49	19.46	19.07	0-5	0
	1	2	19.50	19.50	19.05		0
	1	5	19.47	19.48	19.06		0
	3	0	19.37	19.46	19.00		0
	3	2	19.49	19.49	19.06		0
	3	3	19.42	19.43	19.01		0
	6	0	19.33	19.40	18.94		0

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-55
LTE Band 25 (PCS) Reduced Conducted Powers - 20 MHz Bandwidth – Proximity Sensor and/or Earjack Mode Active

LTE Band 25 (PCS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26140 (1860.0 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26590 (1905.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	20.53	20.66	20.52	0	0
	1	50	20.57	**20.82**	20.35		0
	1	99	20.65	20.70	20.26		0
	50	0	20.68	20.87	20.46	0-1	0
	50	25	20.73	**20.94**	20.54		0
	50	50	20.75	20.91	20.52		0
	100	0	20.71	20.81	20.47		0
16QAM	1	0	20.94	20.85	20.82	0-1	0
	1	50	20.87	21.00	20.68		0
	1	99	20.92	20.89	20.58		0
	50	0	20.65	20.84	20.54	0-2	0
	50	25	20.78	20.93	20.50		0
	50	50	20.70	20.91	20.48		0
	100	0	20.72	20.90	20.50		0
64QAM	1	0	20.86	20.80	20.75	0-2	0
	1	50	20.80	20.96	20.70		0
	1	99	20.71	20.91	20.54		0
	50	0	20.69	20.84	20.47	0-3	0
	50	25	20.76	20.88	20.55		0
	50	50	20.79	20.94	20.54		0
	100	0	20.71	20.83	20.54		0
256QAM	1	0	19.25	19.27	19.20	0-5	1
	1	50	19.40	19.49	19.08		1
	1	99	19.32	19.38	18.96		1
	50	0	19.18	19.34	19.04		1
	50	25	19.23	19.40	19.07		1
	50	50	19.27	19.39	19.00		1
	100	0	19.19	19.36	19.00		1

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-56
LTE Band 25 (PCS) Reduced Conducted Powers - 15 MHz Bandwidth - Proximity Sensor and/or Earjack Mode Active

LTE Band 25 (PCS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26115 (1857.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26615 (1907.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	20.44	20.73	20.26	0	0
	1	36	20.52	20.67	20.23		0
	1	74	20.54	20.69	20.25		0
	36	0	20.61	20.85	20.42	0-1	0
	36	18	20.70	20.91	20.45		0
	36	37	20.70	20.90	20.44		0
	75	0	20.71	20.92	20.42		0
16QAM	1	0	20.78	20.98	20.84	0-1	0
	1	36	20.83	20.88	20.63		0
	1	74	20.87	20.79	20.61		0
	36	0	20.70	20.92	20.45	0-2	0
	36	18	20.76	20.98	20.51		0
	36	37	20.77	20.96	20.51		0
	75	0	20.76	20.79	20.48		0
64QAM	1	0	20.74	20.65	20.68	0-2	0
	1	36	20.87	20.72	20.61		0
	1	74	20.89	20.55	20.55		0
	36	0	20.74	20.93	20.50	0-3	0
	36	18	20.83	20.98	20.52		0
	36	37	20.83	20.62	20.53		0
	75	0	20.77	20.96	20.47		0
256QAM	1	0	19.06	19.22	18.93	0-5	1
	1	36	19.17	19.42	18.90		1
	1	74	19.17	19.31	18.92		1
	36	0	19.03	19.13	18.91		1
	36	18	19.08	19.21	18.99		1
	36	37	19.04	19.23	18.96		1
	75	0	19.02	19.19	18.95		1

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-57
LTE Band 25 (PCS) Reduced Conducted Powers - 10 MHz Bandwidth - Proximity Sensor and/or Earjack Mode Active

LTE Band 25 (PCS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26090 (1855.0 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26640 (1910.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	20.41	20.73	20.15	0	0
	1	25	20.45	20.65	20.12		0
	1	49	20.43	20.72	20.14		0
	25	0	20.59	20.77	20.24	0-1	0
	25	12	20.57	20.77	20.28		0
	25	25	20.61	20.82	20.29		0
	50	0	20.76	20.95	20.50		0
16QAM	1	0	20.75	20.93	20.36	0-1	0
	1	25	20.75	20.92	20.36		0
	1	49	20.78	20.98	20.47		0
	25	0	20.59	20.80	20.25	0-2	0
	25	12	20.62	20.80	20.27		0
	25	25	20.62	20.83	20.28		0
	50	0	20.61	20.78	20.29		0
64QAM	1	0	20.68	20.83	20.30	0-2	0
	1	25	20.68	20.86	20.38		0
	1	49	20.71	20.92	20.39		0
	25	0	20.59	20.80	20.30	0-3	0
	25	12	20.62	20.82	20.31		0
	25	25	20.65	20.82	20.32		0
	50	0	20.64	20.83	20.30		0
256QAM	1	0	19.03	19.16	18.65	0-5	1
	1	25	19.06	19.17	18.70		1
	1	49	19.08	19.24	18.68		1
	25	0	18.92	19.10	18.59		1
	25	12	18.96	19.12	18.61		1
	25	25	18.95	19.14	18.63		1
	50	0	18.93	19.09	18.62		1

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-58
LTE Band 25 (PCS) Reduced Conducted Powers - 5 MHz Bandwidth - Proximity Sensor and/or Earjack Mode Active

LTE Band 25 (PCS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26065 (1852.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26665 (1912.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	20.39	20.50	20.08	0	0
	1	12	20.50	20.68	20.14		0
	1	24	20.52	20.66	20.07		0
	12	0	20.51	20.64	20.22	0-1	0
	12	6	20.60	20.75	20.31		0
	12	13	20.61	20.78	20.23		0
	25	0	20.61	20.72	20.24		0
16QAM	1	0	20.75	20.80	20.35	0-1	0
	1	12	20.75	20.92	20.45		0
	1	24	20.81	20.87	20.30		0
	12	0	20.57	20.71	20.26	0-2	0
	12	6	20.67	20.81	20.30		0
	12	13	20.63	20.77	20.26		0
	25	0	20.59	20.73	20.30		0
64QAM	1	0	20.71	20.84	20.37	0-2	0
	1	12	20.78	20.93	20.40		0
	1	24	20.75	20.94	20.30		0
	12	0	20.62	20.74	20.40	0-3	0
	12	6	20.60	20.74	20.37		0
	12	13	20.61	20.75	20.36		0
	25	0	20.64	20.80	20.29		0
256QAM	1	0	19.07	19.19	18.70	0-5	1
	1	12	19.16	19.33	18.74		1
	1	24	19.17	19.36	18.73		1
	12	0	18.96	19.07	18.61		1
	12	6	19.03	19.13	18.69		1
	12	13	19.04	19.16	18.63		1
	25	0	19.02	19.14	18.63		1

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-59
LTE Band 25 (PCS) Reduced Conducted Powers - 3 MHz Bandwidth - Proximity Sensor and/or Earjack Mode Active

LTE Band 25 (PCS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26055 (1851.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26675 (1913.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	20.46	20.59	20.08	0	0
	1	7	20.57	20.73	20.13		0
	1	14	20.57	20.67	20.06		0
	8	0	20.59	20.73	20.23	0-1	0
	8	4	20.65	20.80	20.33		0
	8	7	20.68	20.81	20.28		0
	15	0	20.64	20.76	20.29		0
16QAM	1	0	20.77	20.80	20.38	0-1	0
	1	7	20.84	20.78	20.43		0
	1	14	20.81	20.89	20.37		0
	8	0	20.67	20.77	20.30	0-2	0
	8	4	20.68	20.82	20.32		0
	8	7	20.72	20.82	20.27		0
	15	0	20.71	20.80	20.52		0
64QAM	1	0	20.69	20.82	20.28	0-2	0
	1	7	20.74	20.92	20.39		0
	1	14	20.77	20.88	20.37		0
	8	0	20.67	20.72	20.35	0-3	0
	8	4	20.63	20.73	20.42		0
	8	7	20.66	20.72	20.39		0
	15	0	20.66	20.76	20.27		0
256QAM	1	0	19.05	19.16	18.73	0-5	1
	1	7	19.08	19.31	18.82		1
	1	14	19.05	19.24	18.75		1
	8	0	18.91	19.12	18.64		1
	8	4	19.02	19.12	18.67		1
	8	7	19.00	19.11	18.58		1
	15	0	18.95	19.13	18.62		1

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-60
LTE Band 25 (PCS) Reduced Conducted Powers -1.4 MHz Bandwidth - Proximity Sensor and/or Earjack Mode Active

LTE Band 25 (PCS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26047 (1850.7 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26683 (1914.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	20.41	20.51	19.95	0	0
	1	2	20.52	20.63	20.08		0
	1	5	20.46	20.56	19.93		0
	3	0	20.41	20.53	20.01		0
	3	2	20.51	20.66	20.06		0
	3	3	20.48	20.57	20.03		0
	6	0	20.54	20.62	20.16	0-1	0
16QAM	1	0	20.60	20.78	20.48	0-1	0
	1	2	20.70	20.86	20.36		0
	1	5	20.62	20.84	20.26		0
	3	0	20.55	20.68	20.12		0
	3	2	20.69	20.78	20.23		0
	3	3	20.57	20.73	20.18		0
	6	0	20.62	20.75	20.23	0-2	0
64QAM	1	0	20.63	20.74	20.27	0-2	0
	1	2	20.71	20.94	20.33		0
	1	5	20.68	20.77	20.24		0
	3	0	20.63	20.78	20.32		0
	3	2	20.60	20.79	20.32		0
	3	3	20.56	20.80	20.31		0
	6	0	20.60	20.72	20.20	0-3	0
256QAM	1	0	19.02	19.11	18.64	0-5	1
	1	2	19.17	19.25	18.78		1
	1	5	19.06	19.21	18.70		1
	3	0	18.93	19.08	18.57		1
	3	2	19.03	19.17	18.64		1
	3	3	18.95	19.09	18.63		1
	6	0	18.87	19.04	18.59		1

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

9.4.9 LTE Band 30

Table 9-61
LTE Band 30 Maximum Conducted Powers - 10 MHz Bandwidth

LTE Band 30 10 MHz Bandwidth					
Modulation	**RB Size**	**RB Offset**	**Mid Channel** **27710** **(2310.0 MHz)** **Conducted Power [dBm]**	**MPR Allowed per 3GPP [dB]**	**MPR [dB]**
QPSK	1	0	23.03	0	0
	1	25	**23.04**		0
	1	49	22.96		0
	25	0	**22.19**	0-1	1
	25	12	22.17		1
	25	25	22.15		1
	50	0	22.16		1
16QAM	1	0	22.39	0-1	1
	1	25	22.31		1
	1	49	22.26		1
	25	0	21.18	0-2	2
	25	12	21.17		2
	25	25	21.13		2
	50	0	21.14		2
64QAM	1	0	20.67	0-2	2
	1	25	20.68		2
	1	49	21.20		2
	25	0	19.51	0-3	3
	25	12	19.61		3
	25	25	19.82		3
	50	0	19.61		3
256QAM	1	0	18.36	0-5	5
	1	25	18.17		5
	1	49	18.24		5
	25	0	18.18		5
	25	12	18.14		5
	25	25	18.08		5
	50	0	18.10		5

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-62
LTE Band 30 Maximum Conducted Powers - 5 MHz Bandwidth

LTE Band 30 5 MHz Bandwidth					
Modulation	**RB Size**	**RB Offset**	**Mid Channel** **27710** **(2310.0 MHz)** **Conducted Power [dBm]**	**MPR Allowed per 3GPP [dB]**	**MPR [dB]**
QPSK	1	0	22.94	0	0
	1	12	22.88		0
	1	24	22.85		0
	12	0	22.10	0-1	1
	12	6	22.09		1
	12	13	22.05		1
	25	0	22.02		1
16QAM	1	0	22.16	0-1	1
	1	12	22.23		1
	1	24	22.19		1
	12	0	21.11	0-2	2
	12	6	21.10		2
	12	13	21.07		2
	25	0	21.05		2
64QAM	1	0	20.47	0-2	2
	1	12	20.56		2
	1	24	20.82		2
	12	0	19.44	0-3	3
	12	6	19.58		3
	12	13	19.70		3
	25	0	19.59		3
256QAM	1	0	18.13	0-5	5
	1	12	18.15		5
	1	24	18.02		5
	12	0	18.10		5
	12	6	18.08		5
	12	13	18.06		5
	25	0	18.05		5

Note: LTE Band 30 at 5 MHz bandwidth does not support three non-overlapping channels. Per KDB Publication 941225 D05v02, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-63
LTE Band 30 Reduced Conducted Powers - 10 MHz Bandwidth - Hotspot/Proximity Sensor and/or Earjack Mode Active

LTE Band 30 10 MHz Bandwidth					
Modulation	**RB Size**	**RB Offset**	**Mid Channel** **27710** **(2310.0 MHz)** **Conducted Power [dBm]**	**MPR Allowed per 3GPP [dB]**	**MPR [dB]**
QPSK	1	0	**20.21**	0	0
	1	25	20.14		0
	1	49	20.10		0
	25	0	20.24	0-1	0
	25	12	**20.27**		0
	25	25	20.24		0
	50	0	20.20		0
16QAM	1	0	20.45	0-1	0
	1	25	20.33		0
	1	49	20.41		0
	25	0	20.29	0-2	0
	25	12	20.27		0
	25	25	20.25		0
	50	0	20.27		0
64QAM	1	0	20.49	0-2	0
	1	25	20.41		0
	1	49	20.40		0
	25	0	19.58	0-3	0.5
	25	12	19.74		0.5
	25	25	19.75		0.5
	50	0	19.78		0.5
256QAM	1	0	17.89	0-5	2.5
	1	25	17.76		2.5
	1	49	17.88		2.5
	25	0	17.79		2.5
	25	12	17.81		2.5
	25	25	17.72		2.5
	50	0	17.73		2.5

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-64
LTE Band 30 Reduced Conducted Powers - 5 MHz Bandwidth – Hotspot/Proximity Sensor and/or Earjack Mode Active

LTE Band 30 5 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 27710 (2310.0 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	20.10	0	0
	1	12	20.20		0
	1	24	20.07		0
	12	0	20.23	0-1	0
	12	6	20.33		0
	12	13	20.25		0
	25	0	20.26		0
16QAM	1	0	20.36	0-1	0
	1	12	20.49		0
	1	24	20.38		0
	12	0	20.29	0-2	0
	12	6	20.36		0
	12	13	20.25		0
	25	0	20.25		0
64QAM	1	0	20.37	0-2	0
	1	12	20.38		0
	1	24	20.30		0
	12	0	19.75	0-3	0.5
	12	6	19.85		0.5
	12	13	19.71		0.5
	25	0	19.67		0.5
256QAM	1	0	17.84	0-5	2.5
	1	12	17.87		2.5
	1	24	17.69		2.5
	12	0	17.76		2.5
	12	6	17.83		2.5
	12	13	17.65		2.5
	25	0	17.74		2.5

Note: LTE Band 30 at 5 MHz bandwidth does not support three non-overlapping channels. Per KDB Publication 941225 D05v02, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

9.4.10 LTE Band 7

Table 9-65
LTE Band 7 Conducted Powers - 20 MHz Bandwidth

LTE Band 7 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20850 (2510.0 MHz)	Mid Channel 21100 (2535.0 MHz)	High Channel 21350 (2560.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	22.84	23.00	23.04	0	0
	1	50	22.80	22.91	22.96		0
	1	99	23.00	**23.07**	22.95		0
	50	0	21.87	**22.02**	21.97	0-1	1
	50	25	22.00	21.95	21.98		1
	50	50	21.96	21.94	21.89		1
	100	0	21.92	21.92	21.97		1
16QAM	1	0	21.86	21.98	22.17	0-1	1
	1	50	21.94	22.09	22.08		1
	1	99	22.22	22.08	22.09		1
	50	0	20.87	20.91	21.04	0-2	2
	50	25	20.80	21.00	21.05		2
	50	50	20.94	20.99	21.08		2
	100	0	20.92	20.94	20.97		2
64QAM	1	0	20.77	20.82	21.15	0-2	2
	1	50	20.86	20.84	21.18		2
	1	99	20.89	20.90	21.14		2
	50	0	19.85	19.93	20.06	0-3	3
	50	25	19.89	19.98	20.03		3
	50	50	19.84	20.00	20.07		3
	100	0	19.78	19.91	20.00		3
256QAM	1	0	17.89	17.86	18.05	0-5	5
	1	50	17.92	17.82	18.04		5
	1	99	17.99	17.99	17.93		5
	50	0	17.88	17.84	18.00		5
	50	25	17.89	17.82	17.99		5
	50	50	17.75	17.92	17.93		5
	100	0	17.84	17.96	17.91		5

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-66
LTE Band 7 Conducted Powers - 15 MHz Bandwidth

LTE Band 7 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20825 (2507.5 MHz)	Mid Channel 21100 (2535.0 MHz)	High Channel 21375 (2562.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	22.53	23.15	22.89	0	0
	1	36	22.53	23.45	22.92		0
	1	74	22.61	23.47	22.83		0
	36	0	21.79	22.12	21.98	0-1	1
	36	18	21.45	21.87	22.03		1
	36	37	21.99	22.31	21.97		1
	75	0	21.39	22.50	21.97		1
16QAM	1	0	22.29	22.27	21.67	0-1	1
	1	36	22.25	22.13	22.19		1
	1	74	22.12	22.42	22.09		1
	36	0	20.90	21.17	21.04	0-2	2
	36	18	20.63	21.22	21.07		2
	36	37	21.19	21.24	21.02		2
	75	0	21.12	21.50	21.02		2
64QAM	1	0	20.70	20.78	20.91	0-2	2
	1	36	20.95	21.31	21.13		2
	1	74	20.97	21.05	20.84		2
	36	0	20.04	20.30	20.04	0-3	3
	36	18	19.89	20.14	20.14		3
	36	37	20.08	19.68	19.79		3
	75	0	19.89	19.88	19.56		3
256QAM	1	0	17.89	17.68	17.88	0-5	5
	1	36	17.74	17.74	18.01		5
	1	74	17.91	17.66	17.69		5
	36	0	17.74	17.67	17.71		5
	36	18	17.85	17.93	17.82		5
	36	37	17.81	17.55	17.63		5
	75	0	17.93	17.62	17.79		5

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-67
LTE Band 7 Conducted Powers - 10 MHz Bandwidth

LTE Band 7 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20800 (2505.0 MHz)	Mid Channel 21100 (2535.0 MHz)	High Channel 21400 (2565.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	22.34	23.35	23.38	0	0
	1	25	22.52	23.12	23.32		0
	1	49	22.38	23.24	23.39		0
	25	0	21.73	22.42	22.49	0-1	1
	25	12	21.76	22.32	21.89		1
	25	25	21.42	22.32	22.45		1
	50	0	21.42	22.30	21.78		1
16QAM	1	0	22.09	22.43	22.33	0-1	1
	1	25	22.25	22.38	22.33		1
	1	49	22.19	22.45	22.34		1
	25	0	21.25	21.43	21.23	0-2	2
	25	12	20.97	21.34	21.22		2
	25	25	20.59	21.33	20.98		2
	50	0	20.60	21.28	21.50		2
64QAM	1	0	20.65	21.26	21.31	0-2	2
	1	25	20.56	20.70	21.02		2
	1	49	20.58	20.55	21.01		2
	25	0	19.97	20.26	19.99	0-3	3
	25	12	19.71	20.21	19.94		3
	25	25	20.03	19.86	20.13		3
	50	0	20.01	19.84	20.17		3
256QAM	1	0	18.02	17.78	17.69	0-5	5
	1	25	17.92	17.85	17.78		5
	1	49	17.86	17.86	17.75		5
	25	0	17.78	17.67	17.83		5
	25	12	17.86	17.81	17.92		5
	25	25	17.84	17.89	17.81		5
	50	0	17.81	17.66	18.01		5

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-68
LTE Band 7 Conducted Powers - 5 MHz Bandwidth

LTE Band 7 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20775 (2502.5 MHz)	Mid Channel 21100 (2535.0 MHz)	High Channel 21425 (2567.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	22.91	23.29	23.27	0	0
	1	12	23.10	23.33	23.33		0
	1	24	23.01	23.37	23.31		0
	12	0	21.91	22.36	22.50	0-1	1
	12	6	21.98	22.43	22.33		1
	12	13	21.98	22.39	22.38		1
	25	0	21.69	22.41	22.33		1
16QAM	1	0	21.65	22.30	22.42	0-1	1
	1	12	21.95	22.30	22.38		1
	1	24	21.94	22.35	22.22		1
	12	0	20.92	21.40	21.12	0-2	2
	12	6	21.10	21.47	21.32		2
	12	13	21.12	21.39	21.38		2
	25	0	20.89	21.38	21.27		2
64QAM	1	0	20.98	21.08	20.82	0-2	2
	1	12	20.97	21.11	20.81		2
	1	24	20.73	21.05	20.66		2
	12	0	19.94	20.17	20.14	0-3	3
	12	6	19.88	20.20	20.10		3
	12	13	19.89	20.03	19.84		3
	25	0	20.05	19.90	19.86		3
256QAM	1	0	17.68	18.03	17.77	0-5	5
	1	12	17.81	17.63	17.81		5
	1	24	17.87	17.68	17.72		5
	12	0	17.64	17.61	17.75		5
	12	6	17.72	17.75	17.71		5
	12	13	17.67	17.69	17.64		5
	25	0	17.70	17.72	17.72		5

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-69
LTE Band 7 Reduced Conducted Powers - 20 MHz Bandwidth – Hotspot/Proximity Sensor and/or Earjack Mode Active

LTE Band 7 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20850 (2510.0 MHz)	Mid Channel 21100 (2535.0 MHz)	High Channel 21350 (2560.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	20.10	19.71	**20.32**	0	0
	1	50	20.00	19.52	20.20		0
	1	99	19.92	19.63	20.23		0
	50	0	20.11	19.85	20.26	0-1	0
	50	25	20.11	19.70	**20.31**		0
	50	50	20.13	19.75	20.27		0
	100	0	20.09	19.70	20.24		0
16QAM	1	0	20.20	20.14	20.13	0-1	0
	1	50	20.15	19.90	20.45		0
	1	99	20.14	19.99	20.50		0
	50	0	20.13	19.87	20.26	0-2	0
	50	25	20.16	19.78	20.33		0
	50	50	20.13	19.83	20.37		0
	100	0	19.92	19.84	20.30		0
64QAM	1	0	19.47	20.17	20.24	0-2	0
	1	50	19.65	19.90	20.40		0
	1	99	20.04	20.00	20.47		0
	50	0	19.30	19.85	20.27	0-3	0.5
	50	25	19.20	19.82	20.37		0.5
	50	50	19.25	19.89	20.39		0.5
	100	0	19.21	19.90	20.35		0.5
256QAM	1	0	17.96	18.00	18.45	0-5	2.5
	1	50	17.87	17.75	18.32		2.5
	1	99	17.80	17.84	18.40		2.5
	50	0	17.75	17.81	18.25		2.5
	50	25	17.90	17.71	18.34		2.5
	50	50	17.88	17.86	18.33		2.5
	100	0	17.88	17.88	18.30		2.5

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-70
LTE Band 7 Reduced Conducted Powers - 15 MHz Bandwidth – Hotspot/Proximity Sensor and/or Earjack Mode Active

LTE Band 7 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20825 (2507.5 MHz)	Mid Channel 21100 (2535.0 MHz)	High Channel 21375 (2562.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	20.12	19.82	20.43	0	0
	1	36	20.11	19.68	20.45		0
	1	74	20.14	19.80	20.37		0
	36	0	20.10	19.87	20.55	0-1	0
	36	18	20.24	19.89	20.60		0
	36	37	20.32	19.82	20.57		0
	75	0	20.29	19.89	20.60		0
16QAM	1	0	20.45	20.07	20.72	0-1	0
	1	36	20.41	19.85	20.72		0
	1	74	20.43	19.98	20.66		0
	36	0	20.20	19.91	20.55	0-2	0
	36	18	20.31	19.95	20.65		0
	36	37	20.38	19.87	20.60		0
	75	0	20.32	19.92	20.63		0
64QAM	1	0	20.07	20.10	20.48	0-2	0
	1	36	20.42	19.99	20.51		0
	1	74	20.34	20.03	20.49		0
	36	0	19.74	19.91	20.39	0-3	0.5
	36	18	19.71	19.94	20.48		0.5
	36	37	19.17	19.90	20.43		0.5
	75	0	19.30	19.93	20.44		0.5
256QAM	1	0	17.61	17.96	18.23	0-5	2.5
	1	36	17.86	17.67	18.33		2.5
	1	74	17.78	17.53	18.16		2.5
	36	0	17.83	17.50	18.19		2.5
	36	18	17.62	17.64	18.28		2.5
	36	37	17.70	17.48	18.19		2.5
	75	0	17.85	17.53	18.14		2.5

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-71
LTE Band 7 Reduced Conducted Powers - 10 MHz Bandwidth – Hotspot/Proximity Sensor and/or Earjack Mode Active

LTE Band 7 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20800 (2505.0 MHz)	Mid Channel 21100 (2535.0 MHz)	High Channel 21400 (2565.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	20.08	19.86	20.45	0	0
	1	25	20.11	19.77	20.47		0
	1	49	20.13	19.87	20.45		0
	25	0	20.15	19.88	20.63	0-1	0
	25	12	20.24	19.88	20.65		0
	25	25	20.27	19.83	20.61		0
	50	0	20.29	19.88	20.63		0
16QAM	1	0	20.49	20.12	20.78	0-1	0
	1	25	20.49	20.04	20.80		0
	1	49	20.44	20.10	20.78		0
	25	0	20.28	19.93	20.72	0-2	0
	25	12	20.35	19.94	20.69		0
	25	25	20.36	19.87	20.62		0
	50	0	20.34	19.90	20.71		0
64QAM	1	0	20.27	20.16	20.60	0-2	0
	1	25	20.51	20.08	20.53		0
	1	49	20.43	20.18	20.49		0
	25	0	19.73	19.99	20.49	0-3	0.5
	25	12	20.10	19.98	20.45		0.5
	25	25	19.91	19.96	20.43		0.5
	50	0	19.65	19.98	20.44		0.5
256QAM	1	0	17.57	17.86	18.01	0-5	2.5
	1	25	17.66	17.46	17.97		2.5
	1	49	17.54	17.72	17.81		2.5
	25	0	17.73	17.94	17.89		2.5
	25	12	17.80	17.64	18.13		2.5
	25	25	17.84	17.70	18.02		2.5
	50	0	17.86	17.62	18.10		2.5

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-72
LTE Band 7 Reduced Conducted Powers - 5 MHz Bandwidth – Hotspot/Proximity Sensor and/or Earjack Mode Active

LTE Band 7 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20775 (2502.5 MHz)	Mid Channel 21100 (2535.0 MHz)	High Channel 21425 (2567.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	20.03	19.74	20.40	0	0
	1	12	20.16	19.76	20.56		0
	1	24	20.13	19.81	20.57		0
	12	0	20.22	19.88	20.56	0-1	0
	12	6	20.30	19.93	20.71		0
	12	13	20.26	19.94	20.68		0
	25	0	20.31	19.95	20.66		0
16QAM	1	0	20.44	20.05	20.62	0-1	0
	1	12	20.54	20.10	20.70		0
	1	24	20.45	20.10	20.82		0
	12	0	20.34	19.98	20.70	0-2	0
	12	6	20.46	20.06	20.79		0
	12	13	20.38	20.06	20.77		0
	25	0	20.39	19.94	20.70		0
64QAM	1	0	20.09	20.09	20.49	0-2	0
	1	12	20.49	20.17	20.57		0
	1	24	20.48	20.16	20.55		0
	12	0	19.42	20.01	20.41	0-3	0.5
	12	6	19.76	20.05	20.50		0.5
	12	13	19.97	20.07	20.44		0.5
	25	0	19.66	19.98	20.41		0.5
256QAM	1	0	17.38	17.72	18.04	0-5	2.5
	1	12	17.70	17.47	17.93		2.5
	1	24	17.52	17.44	17.89		2.5
	12	0	17.84	17.57	17.82		2.5
	12	6	17.69	17.70	17.95		2.5
	12	13	17.75	17.64	18.12		2.5
	25	0	17.84	17.42	18.05		2.5

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

9.4.11 LTE Band 48

Table 9-73
LTE Band 48 Conducted Powers - 20 MHz Bandwidth

LTE Band 48 20 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel 55340 (3560.0 MHz)	Low-Mid Channel 55773 (3603.3 MHz)	Mid-High Channel 56207 (3646.7 MHz)	High Channel 56640 (3690.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]					
QPSK	1	0	22.96	23.17	**23.33**	23.01	0	0
	1	50	22.97	23.18	23.27	22.97		0
	1	99	23.14	23.32	23.20	23.06		0
	50	0	22.11	22.43	22.45	22.23	0-1	1
	50	25	22.15	22.45	**22.49**	22.21		1
	50	50	22.21	22.42	22.26	22.20		1
	100	0	22.16	22.44	22.45	22.22		1
16QAM	1	0	21.99	22.22	22.49	22.08	0-1	1
	1	50	22.01	22.29	22.36	21.97		1
	1	99	22.19	22.40	22.26	22.12		1
	50	0	21.11	21.45	21.44	21.27	0-2	2
	50	25	21.17	21.47	21.46	21.26		2
	50	50	21.21	21.43	21.50	21.24		2
	100	0	21.17	21.45	21.47	21.26		2
64QAM	1	0	20.45	20.60	20.95	20.50	0-2	2
	1	50	20.38	20.70	20.83	20.41		2
	1	99	20.57	20.81	21.11	20.56		2
	50	0	20.13	20.45	20.44	20.35	0-3	3
	50	25	20.19	20.49	20.50	20.36		3
	50	50	20.24	20.48	20.33	20.30		3
	100	0	20.16	20.45	20.46	20.29		3
256QAM	1	0	17.75	17.97	18.21	18.13	0-5	5
	1	50	17.92	18.08	18.37	18.04		5
	1	99	17.94	18.24	18.44	18.10		5
	50	0	18.14	18.45	18.41	18.41		5
	50	25	18.19	18.44	18.50	18.38		5
	50	50	18.24	18.47	18.43	18.37		5
	100	0	18.15	18.40	18.48	18.35		5

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-74
LTE Band 48 Conducted Powers - 15 MHz Bandwidth

LTE Band 48 15 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			55315 (3557.5 MHz)	55765 (3602.5 MHz)	56215 (3647.5 MHz)	56665 (3692.5 MHz)		
			Conducted Power [dBm]					
QPSK	1	0	23.02	23.28	23.27	23.05	0	0
	1	36	23.05	23.32	23.24	23.04		0
	1	74	23.08	23.32	23.30	23.03		0
	36	0	22.10	22.48	22.45	22.18	0-1	1
	36	18	22.17	22.36	22.42	22.21		1
	36	37	22.13	22.39	22.37	22.13		1
	75	0	22.15	22.35	22.39	22.13		1
16QAM	1	0	22.04	21.92	22.07	21.98	0-1	1
	1	36	22.09	21.90	22.05	21.63		1
	1	74	22.08	22.07	22.04	21.85		1
	36	0	21.15	21.41	21.45	21.24	0-2	2
	36	18	21.21	21.38	21.44	21.21		2
	36	37	21.17	21.38	21.45	21.12		2
	75	0	21.14	21.36	21.42	21.16		2
64QAM	1	0	20.95	20.91	21.10	21.10	0-2	2
	1	36	20.96	20.92	21.06	20.98		2
	1	74	20.98	20.93	20.99	20.96		2
	36	0	20.14	20.43	20.41	20.31	0-3	3
	36	18	20.20	20.41	20.41	20.27		3
	36	37	20.21	20.45	20.38	20.21		3
	75	0	20.15	20.41	20.33	20.22		3
256QAM	1	0	17.90	17.82	18.17	18.22	0-5	5
	1	36	17.85	17.78	18.20	18.14		5
	1	74	17.77	18.12	18.27	18.17		5
	36	0	18.04	18.16	18.38	18.36		5
	36	18	18.12	18.09	18.46	18.32		5
	36	37	18.05	18.29	18.40	18.39		5
	75	0	18.10	18.22	18.42	18.44		5

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-75
LTE Band 48 Conducted Powers - 10 MHz Bandwidth

LTE Band 48 10 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			55290 (3555.0 MHz)	55757 (3601.7 MHz)	56223 (3648.3 MHz)	56690 (3695.0 MHz)		
			Conducted Power [dBm]					
QPSK	1	0	22.89	23.14	23.26	23.04	0	0
	1	25	22.86	23.17	23.27	23.02		0
	1	49	23.14	23.30	23.27	23.17		0
	25	0	22.02	22.26	22.31	22.10	0-1	1
	25	12	22.09	22.29	22.37	22.15		1
	25	25	22.13	22.32	22.40	22.15		1
	50	0	22.10	22.28	22.45	22.13		1
16QAM	1	0	21.66	21.78	22.05	21.77	0-1	1
	1	25	21.68	21.87	22.17	21.66		1
	1	49	21.88	21.97	22.19	21.65		1
	25	0	21.05	21.23	21.38	21.15	0-2	2
	25	12	21.11	21.32	21.39	21.11		2
	25	25	21.13	21.34	21.38	21.10		2
	50	0	21.11	21.38	21.39	21.17		2
64QAM	1	0	20.98	20.88	21.22	20.65	0-2	2
	1	25	21.02	20.93	21.11	20.67		2
	1	49	21.14	20.92	21.15	20.79		2
	25	0	20.01	20.33	20.44	20.20	0-3	3
	25	12	20.08	20.40	20.40	20.20		3
	25	25	20.09	20.45	20.47	20.25		3
	50	0	20.11	20.34	20.41	20.22		3
256QAM	1	0	18.01	18.12	18.33	18.25	0-5	5
	1	25	18.06	18.11	18.39	18.36		5
	1	49	17.93	17.96	18.36	18.19		5
	25	0	18.22	17.89	18.46	18.21		5
	25	12	18.25	18.22	18.42	17.97		5
	25	25	18.12	18.31	18.29	17.96		5
	50	0	18.28	18.25	18.35	18.33		5

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-76
LTE Band 48 Conducted Powers - 5 MHz Bandwidth

LTE Band 48 5 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			55265 (3552.5 MHz)	55748 (3600.8 MHz)	56232 (3649.2 MHz)	56715 (3697.5 MHz)		
			Conducted Power [dBm]					
QPSK	1	0	22.92	23.16	23.05	23.11	0	0
	1	12	23.00	23.17	23.12	23.05		0
	1	24	23.04	23.19	23.24	22.98		0
	12	0	22.05	22.35	22.32	22.34	0-1	1
	12	6	22.12	22.36	22.31	22.23		1
	12	13	22.12	22.30	22.30	22.36		1
	25	0	22.11	22.27	22.25	22.30		1
16QAM	1	0	22.13	22.50	22.44	22.39	0-1	1
	1	12	22.26	22.41	22.34	22.44		1
	1	24	22.27	22.45	22.45	22.41		1
	12	0	21.08	21.31	21.24	21.15	0-2	2
	12	6	21.10	21.34	21.26	21.12		2
	12	13	21.12	21.37	21.23	21.11		2
	25	0	21.24	21.29	21.27	21.29		2
64QAM	1	0	21.38	21.33	21.20	20.88	0-2	2
	1	12	21.13	21.42	21.19	20.97		2
	1	24	21.12	21.25	21.29	20.92		2
	12	0	20.22	20.37	20.20	20.37	0-3	3
	12	6	20.23	20.40	20.20	20.25		3
	12	13	20.19	20.37	20.29	20.22		3
	25	0	20.07	20.31	20.27	20.23		3
256QAM	1	0	18.15	17.98	18.26	18.33	0-5	5
	1	12	18.22	18.23	18.25	18.19		5
	1	24	18.29	18.25	18.19	18.22		5
	12	0	17.97	18.37	18.21	18.25		5
	12	6	18.32	18.31	18.27	18.24		5
	12	13	18.29	18.33	18.32	18.13		5
	25	0	18.37	18.31	18.08	18.25		5

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

9.4.12 LTE Band 41

Table 9-77
LTE Band 41 PC3 Maximum Conducted Powers - 20 MHz Bandwidth

LTE Band 41 20 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	24.08	24.10	**24.37**	24.19	24.07	0	0
	1	50	23.95	24.14	24.27	24.09	24.34		0
	1	99	24.28	24.25	24.21	24.06	24.18		0
	50	0	23.16	23.31	23.59	23.42	23.45	0-1	1
	50	25	23.13	23.32	**23.67**	23.43	23.55		1
	50	50	23.29	23.45	23.55	23.34	23.46		1
	100	0	23.24	23.32	23.55	23.39	23.47		1
16QAM	1	0	22.99	23.08	23.55	23.35	23.29	0-1	1
	1	50	22.92	23.26	23.44	23.28	23.41		1
	1	99	23.29	23.39	23.10	23.12	23.28		1
	50	0	22.16	22.30	22.66	22.43	22.43	0-2	2
	50	25	22.26	22.36	22.72	22.35	22.53		2
	50	50	22.34	22.51	22.63	22.30	22.55		2
	100	0	22.23	22.39	22.61	22.36	22.31		2
64QAM	1	0	21.75	22.02	22.18	22.06	21.97	0-2	2
	1	50	21.69	22.02	22.21	22.04	22.11		2
	1	99	22.08	22.12	21.98	21.89	22.16		2
	50	0	21.13	21.90	21.75	21.42	21.47	0-3	3
	50	25	21.33	21.44	21.71	21.45	21.50		3
	50	50	21.35	21.50	21.56	21.40	21.53		3
	100	0	21.33	21.43	21.67	21.44	21.50		3
256QAM	1	0	18.92	19.01	19.45	19.17	19.15	0-5	5
	1	50	18.86	19.28	19.35	19.12	19.21		5
	1	99	19.14	19.41	19.10	18.88	19.33		5
	50	0	19.19	19.45	19.67	19.42	19.56		5
	50	25	19.21	19.44	19.77	19.37	19.61		5
	50	50	19.36	19.49	19.51	19.25	19.54		5
	100	0	19.23	19.42	19.66	19.24	19.47		5

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-78
LTE Band 41 PC3 Maximum Conducted Powers - 15 MHz Bandwidth

LTE Band 41 15 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	24.12	24.05	24.10	24.22	23.83	0	0
	1	36	24.04	24.14	24.04	24.25	23.88		0
	1	74	24.09	23.95	24.02	24.11	24.25		0
	36	0	23.06	22.95	23.01	23.20	22.73	0-1	1
	36	18	23.15	23.06	23.14	23.28	22.79		1
	36	37	23.11	23.02	23.11	23.22	23.07		1
	75	0	23.13	23.20	23.09	23.21	22.96		1
16QAM	1	0	23.17	23.11	23.18	23.03	22.86	0-1	1
	1	36	23.10	22.99	23.09	23.12	22.60		1
	1	74	23.18	23.01	23.11	22.98	23.24		1
	36	0	21.99	22.00	22.09	22.33	22.07	0-2	2
	36	18	22.03	22.05	22.11	22.41	21.90		2
	36	37	22.03	21.92	22.05	22.36	22.29		2
	75	0	22.05	21.88	22.04	22.31	21.95		2
64QAM	1	0	22.20	22.18	22.15	22.35	22.34	0-2	2
	1	36	22.05	21.85	22.00	22.45	22.05		2
	1	74	21.96	22.07	22.09	22.29	22.05		2
	36	0	21.01	21.10	21.17	21.35	21.09	0-3	3
	36	18	21.06	20.95	21.04	21.45	20.90		3
	36	37	21.06	21.04	21.09	21.43	21.29		3
	75	0	21.05	21.14	21.10	21.40	21.15		3
256QAM	1	0	19.33	19.21	19.51	19.45	19.17	0-5	5
	1	36	19.21	19.36	19.36	19.79	19.33		5
	1	74	19.32	19.41	19.40	19.62	19.28		5
	36	0	19.44	19.33	19.59	19.65	19.24		5
	36	18	19.57	19.26	19.45	19.69	19.31		5
	36	37	19.55	19.35	19.61	19.64	19.33		5
	75	0	19.63	19.42	19.65	19.63	19.30		5

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-79
LTE Band 41 PC3 Maximum Conducted Powers - 10 MHz Bandwidth

LTE Band 41 10 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	24.03	24.01	24.18	24.11	23.98	0	0
	1	25	23.87	24.11	24.53	24.02	23.97		0
	1	49	23.94	23.90	24.16	24.22	24.11		0
	25	0	23.29	23.06	23.58	23.68	23.60	0-1	1
	25	12	23.24	22.89	23.59	23.78	23.70		1
	25	25	23.25	23.00	23.55	23.70	23.69		1
	50	0	23.24	23.05	23.55	23.61	23.65		1
16QAM	1	0	23.31	22.89	23.13	23.04	23.22	0-1	1
	1	25	23.14	23.14	23.17	23.25	23.11		1
	1	49	23.38	23.36	23.37	23.42	23.22		1
	25	0	22.26	21.95	22.57	22.64	22.65	0-2	2
	25	12	22.25	21.91	22.63	22.70	22.71		2
	25	25	22.28	21.96	22.66	22.74	22.67		2
	50	0	22.23	21.81	22.63	22.79	22.78		2
64QAM	1	0	22.27	22.14	22.56	22.80	22.65	0-2	2
	1	25	21.96	22.67	22.46	22.71	22.64		2
	1	49	22.41	22.57	22.50	22.67	22.59		2
	25	0	21.16	21.14	21.61	21.74	21.68	0-3	3
	25	12	21.15	21.10	21.64	21.80	21.78		3
	25	25	21.13	21.15	21.66	21.82	21.80		3
	50	0	21.17	21.03	21.67	21.92	21.82		3
256QAM	1	0	18.97	19.51	19.36	19.22	19.33	0-5	5
	1	25	18.96	19.36	19.43	19.26	19.28		5
	1	49	19.12	19.44	19.52	19.35	19.26		5
	25	0	19.24	19.41	19.49	19.34	19.21		5
	25	12	19.28	19.26	19.59	19.37	19.32		5
	25	25	19.32	19.34	19.48	19.31	19.36		5
	50	0	19.19	19.32	19.47	19.42	19.29		5

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-80
LTE Band 41 PC3 Maximum Conducted Powers - 5 MHz Bandwidth

LTE Band 41 5 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	24.09	23.87	24.19	24.41	24.25	0	0
	1	12	24.10	24.14	24.06	24.47	24.12		0
	1	24	24.21	24.22	23.95	24.48	23.98		0
	12	0	23.31	23.03	23.21	23.51	23.30	0-1	1
	12	6	23.31	23.21	23.19	23.57	23.24		1
	12	13	23.31	23.26	23.07	23.64	23.13		1
	25	0	23.27	23.17	23.18	23.51	23.19		1
16QAM	1	0	22.99	22.87	22.97	23.42	23.09	0-1	1
	1	12	22.93	23.03	22.85	23.58	22.92		1
	1	24	23.01	23.27	22.79	23.55	22.79		1
	12	0	22.27	22.06	22.15	22.59	22.24	0-2	2
	12	6	22.28	22.12	22.14	22.57	22.21		2
	12	13	22.28	22.29	22.07	22.70	22.09		2
	25	0	22.36	22.15	22.22	22.55	22.24		2
64QAM	1	0	22.65	22.25	22.70	22.80	22.35	0-2	2
	1	12	22.68	22.27	22.55	22.87	22.36		2
	1	24	22.73	22.21	22.43	22.87	22.12		2
	12	0	21.16	21.07	21.11	21.73	21.15	0-3	3
	12	6	21.19	21.20	21.06	21.72	21.09		3
	12	13	21.19	21.30	20.97	21.83	21.07		3
	25	0	21.62	21.19	21.08	21.53	21.13		3
256QAM	1	0	19.22	19.44	19.56	19.51	19.27	0-5	5
	1	12	19.19	19.45	19.58	19.43	19.30		5
	1	24	19.28	19.51	19.55	19.52	19.29		5
	12	0	19.31	19.32	19.54	19.46	19.27		5
	12	6	19.17	19.33	19.53	19.44	19.26		5
	12	13	18.98	19.19	19.57	19.41	19.33		5
	25	0	18.96	19.26	19.49	19.40	19.28		5

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-81
LTE Band 41 PC2 Maximum Conducted Powers - 20 MHz Bandwidth

LTE Band 41 20 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	26.78	26.80	26.87	26.68	26.67	0	0
	1	50	26.56	26.79	26.92	26.60	26.80		0
	1	99	26.72	26.84	26.65	26.52	26.77		0
	50	0	26.02	25.92	26.02	25.90	25.93	0-1	1
	50	25	26.00	25.94	26.03	25.81	26.00		1
	50	50	25.95	25.93	25.96	25.70	26.01		1
	100	0	25.93	25.95	26.00	25.78	25.96		1
16QAM	1	0	25.99	26.01	26.04	25.94	25.95	0-1	1
	1	50	25.84	26.02	26.03	25.88	26.01		1
	1	99	25.72	25.92	25.84	25.60	26.12		1
	50	0	24.92	24.99	25.00	24.86	25.00	0-2	2
	50	25	24.83	24.94	24.97	24.83	25.05		2
	50	50	24.87	25.01	24.99	24.79	25.03		2
	100	0	24.88	25.02	25.00	24.80	25.01		2
64QAM	1	0	24.42	24.82	24.90	24.41	24.77	0-2	2
	1	50	24.48	24.79	24.93	24.43	24.84		2
	1	99	24.39	24.65	24.77	24.14	24.93		2
	50	0	23.43	23.93	23.93	23.41	24.02	0-3	3
	50	25	23.49	23.92	23.94	23.46	24.12		3
	50	50	23.50	23.97	24.01	23.46	24.07		3
	100	0	23.51	23.95	24.00	23.32	24.00		3
256QAM	1	0	22.02	21.82	21.90	21.78	21.74	0-5	5
	1	50	21.98	21.77	21.88	21.71	21.82		5
	1	99	21.95	21.84	21.69	21.44	21.95		5
	50	0	22.00	22.00	22.05	21.92	22.03		5
	50	25	22.04	22.02	21.95	21.86	22.04		5
	50	50	22.07	22.07	21.96	21.74	22.09		5
	100	0	21.98	21.98	21.97	21.79	22.00		5

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-82
LTE Band 41 PC2 Maximum Conducted Powers - 15 MHz Bandwidth

LTE Band 41 15 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel 39750 (2506.0 MHz)	Low-Mid Channel 40185 (2549.5 MHz)	Mid Channel 40620 (2593.0 MHz)	Mid-High Channel 41055 (2636.5 MHz)	High Channel 41490 (2680.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]						
QPSK	1	0	26.50	26.60	26.77	26.56	26.56	0	0
	1	36	26.45	26.67	27.01	26.43	26.80		0
	1	74	26.53	26.64	27.05	26.69	26.55		0
	36	0	25.89	25.58	26.12	25.81	25.97	0-1	1
	36	18	26.12	25.89	26.11	25.56	25.69		1
	36	37	26.16	25.83	26.23	25.73	25.63		1
	75	0	26.22	25.89	26.21	25.96	25.81		1
16QAM	1	0	26.00	25.96	25.98	25.92	25.62	0-1	1
	1	36	26.04	26.11	25.78	25.83	25.82		1
	1	74	26.11	25.97	26.10	25.72	25.88		1
	36	0	24.53	24.73	25.15	25.10	25.29	0-2	2
	36	18	24.58	24.65	25.25	25.14	24.82		2
	36	37	24.64	24.69	25.18	25.40	24.65		2
	75	0	24.58	24.60	25.09	25.12	24.65		2
64QAM	1	0	24.56	24.70	25.04	24.89	24.78	0-2	2
	1	36	24.55	24.79	25.14	24.83	24.86		2
	1	74	24.61	24.71	24.96	24.66	24.87		2
	36	0	23.53	23.64	24.05	23.67	23.56	0-3	3
	36	18	23.60	23.71	24.15	23.78	23.68		3
	36	37	23.65	23.69	24.17	23.41	23.49		3
	75	0	23.58	23.60	24.22	23.49	23.69		3
256QAM	1	0	21.50	21.78	21.91	21.69	21.91	0-5	5
	1	36	21.40	21.74	21.99	21.82	21.95		5
	1	74	21.59	21.86	21.98	21.79	21.70		5
	36	0	21.65	21.89	22.00	21.81	22.01		5
	36	18	21.71	21.92	22.09	21.85	21.97		5
	36	37	21.69	21.73	22.12	21.79	22.02		5
	75	0	21.60	21.85	22.07	21.81	22.05		5

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-83
LTE Band 41 PC2 Maximum Conducted Powers - 10 MHz Bandwidth

LTE Band 41 10 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	26.95	26.78	26.95	26.83	26.97	0	0
	1	25	26.86	26.82	26.92	26.90	26.68		0
	1	49	26.88	27.14	26.95	26.82	26.78		0
	25	0	26.32	26.22	26.32	26.20	26.23	0-1	1
	25	12	26.30	26.24	26.33	26.11	26.30		1
	25	25	26.25	26.23	26.26	26.00	26.31		1
	50	0	26.23	26.25	26.30	26.08	26.26		1
16QAM	1	0	26.29	26.31	26.34	26.24	26.25	0-1	1
	1	25	26.14	26.32	26.33	26.18	26.31		1
	1	49	26.02	26.22	26.14	25.90	26.42		1
	25	0	25.22	25.29	25.30	25.16	25.30	0-2	2
	25	12	25.13	25.24	25.27	25.13	25.35		2
	25	25	25.17	25.31	25.29	25.09	25.33		2
	50	0	25.18	25.32	25.30	25.10	25.31		2
64QAM	1	0	24.72	25.12	25.20	24.71	25.07	0-2	2
	1	25	24.78	25.09	25.23	24.73	25.14		2
	1	49	24.69	24.95	25.07	24.44	25.23		2
	25	0	23.73	24.12	23.97	23.71	23.95	0-3	3
	25	12	23.79	24.02	23.89	23.76	23.79		3
	25	25	23.80	23.97	24.12	23.89	23.73		3
	50	0	23.81	23.95	24.02	23.62	23.64		3
256QAM	1	0	21.97	21.65	21.90	21.77	21.74	0-5	5
	1	25	22.05	21.59	21.78	21.81	21.75		5
	1	49	22.01	21.78	21.69	21.65	21.89		5
	25	0	22.07	21.93	21.98	21.68	21.91		5
	25	12	22.04	21.82	21.89	21.60	22.07		5
	25	25	22.02	21.87	21.93	21.67	21.97		5
	50	0	22.06	21.91	22.04	21.62	21.95		5

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-84
LTE Band 41 PC2 Maximum Conducted Powers - 5 MHz Bandwidth

LTE Band 41 5 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	26.28	26.30	26.37	26.18	26.17	0	0
	1	12	26.06	26.29	26.42	26.10	26.30		0
	1	24	26.22	26.34	26.15	26.02	26.27		0
	12	0	25.52	25.42	25.52	25.40	25.43	0-1	1
	12	6	25.50	25.44	25.53	25.31	25.50		1
	12	13	25.45	25.43	25.46	25.20	25.51		1
	25	0	25.43	25.45	25.50	25.28	25.46		1
16QAM	1	0	25.49	25.51	25.54	25.44	25.45	0-1	1
	1	12	25.34	25.52	25.53	25.38	25.51		1
	1	24	25.22	25.42	25.34	25.10	25.62		1
	12	0	24.42	24.49	24.50	24.36	24.50	0-2	2
	12	6	24.33	24.44	24.47	24.33	24.55		2
	12	13	24.37	24.51	24.49	24.29	24.53		2
	25	0	24.38	24.52	24.50	24.30	24.51		2
64QAM	1	0	24.65	24.32	24.40	23.91	24.27	0-2	2
	1	12	24.62	24.29	24.43	23.93	24.34		2
	1	24	24.54	24.15	24.27	23.64	24.43		2
	12	0	23.59	23.43	23.43	23.45	23.52	0-3	3
	12	6	23.64	23.42	23.44	23.61	23.62		3
	12	13	23.66	23.47	23.51	23.52	23.57		3
	25	0	23.46	23.45	23.66	23.41	23.50		3
256QAM	1	0	21.79	21.65	21.70	21.54	21.72	0-5	5
	1	12	21.64	21.70	21.78	21.47	21.84		5
	1	24	21.69	21.72	21.65	21.54	21.86		5
	12	0	21.72	21.68	21.86	21.55	21.73		5
	12	6	21.76	21.81	21.87	21.64	21.77		5
	12	13	21.73	21.77	21.75	21.51	21.82		5
	25	0	21.84	21.76	21.82	21.59	21.84		5

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-85
LTE Band 41 PC3 Reduced Conducted Powers - 20 MHz Bandwidth – Hotspot Mode Active

LTE Band 41 20 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	20.81	21.41	**21.62**	21.42	21.23	0	0
	1	50	20.66	21.31	21.55	21.28	21.54		0
	1	99	21.05	21.61	21.47	21.09	21.52		0
	50	0	20.96	21.57	21.61	21.45	21.55	0-1	0
	50	25	20.98	21.53	**21.71**	21.48	21.63		0
	50	50	21.13	21.48	21.65	21.40	21.65		0
	100	0	21.09	21.55	21.61	21.52	21.61		0
16QAM	1	0	21.04	21.63	21.65	21.61	21.45	0-1	0
	1	50	21.01	21.64	21.65	21.45	21.68		0
	1	99	21.28	21.92	21.50	21.21	21.83		0
	50	0	20.99	21.54	21.50	21.53	21.51	0-2	0
	50	25	21.07	21.54	21.72	21.53	21.68		0
	50	50	21.12	21.50	21.63	21.40	21.60		0
	100	0	21.03	21.55	21.63	21.46	21.64		0
64QAM	1	0	20.88	21.53	21.63	21.34	21.21	0-2	0
	1	50	20.87	21.32	21.63	21.21	21.58		0
	1	99	21.01	21.59	21.37	21.30	21.64		0
	50	0	20.96	21.52	21.62	21.53	21.62	0-3	0
	50	25	21.05	21.46	21.73	21.50	21.61		0
	50	50	21.15	21.50	21.74	21.43	21.72		0
	100	0	21.02	21.43	21.60	21.44	21.60		0
256QAM	1	0	19.49	19.28	19.59	19.49	19.31	0-5	2
	1	50	19.27	19.49	19.46	19.26	19.49		2
	1	99	19.41	19.56	19.54	19.13	19.86		2
	50	0	19.52	19.47	19.85	19.62	19.68		2
	50	25	19.49	19.47	19.82	19.55	19.70		2
	50	50	19.58	19.49	19.82	19.47	19.75		2
	100	0	19.51	19.44	19.81	19.39	19.66		2

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-86
LTE Band 41 PC3 Reduced Conducted Powers - 15 MHz Bandwidth – Hotspot Mode Active

LTE Band 41 15 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	21.24	21.56	21.89	21.38	21.75	0	0
	1	36	21.23	21.45	21.82	20.98	21.79		0
	1	74	21.36	21.78	21.81	20.73	21.79		0
	36	0	21.21	21.60	21.83	21.13	21.66	0-1	0
	36	18	21.29	21.63	21.95	21.39	21.82		0
	36	37	21.36	21.58	21.99	21.25	21.80		0
	75	0	21.28	21.65	21.93	21.25	21.74		0
16QAM	1	0	21.32	21.70	21.94	21.28	21.72	0-1	0
	1	36	21.42	21.66	21.89	21.35	21.91		0
	1	74	21.49	21.89	21.88	21.55	21.91		0
	36	0	21.24	21.66	21.84	21.43	21.72	0-2	0
	36	18	21.35	21.57	21.95	21.33	21.84		0
	36	37	21.39	21.60	21.93	21.35	21.89		0
	75	0	21.31	21.64	21.91	21.36	21.77		0
64QAM	1	0	20.99	21.63	21.75	21.32	21.41	0-2	0
	1	36	21.07	21.43	21.89	21.20	21.56		0
	1	74	21.15	21.70	21.88	21.15	21.53		0
	36	0	21.19	21.62	21.58	21.24	21.70	0-3	0
	36	18	21.29	21.64	21.68	21.30	21.84		0
	36	37	21.37	21.55	21.67	21.22	21.79		0
	75	0	21.26	21.63	21.74	21.37	21.74		0
256QAM	1	0	19.49	19.54	19.64	19.50	19.60	0-5	2
	1	36	19.53	19.47	19.68	19.62	19.63		2
	1	74	19.40	19.35	19.66	19.53	19.72		2
	36	0	19.76	19.44	19.87	19.55	19.55		2
	36	18	19.71	19.39	19.81	19.49	19.66		2
	36	37	19.75	19.36	19.92	19.63	19.60		2
	75	0	19.77	19.47	19.90	19.57	19.62		2

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-87
LTE Band 41 PC3 Reduced Conducted Powers - 10 MHz Bandwidth – Hotspot Mode Active

LTE Band 41 10 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	21.09	21.35	21.84	21.28	21.55	0	0
	1	25	21.12	21.44	21.50	21.02	21.43		0
	1	49	21.05	21.64	21.79	21.12	21.43		0
	25	0	21.08	21.72	21.80	21.21	21.57	0-1	0
	25	12	21.10	21.36	21.86	21.20	21.64		0
	25	25	21.22	21.28	21.83	21.22	21.57		0
	50	0	21.09	21.29	21.84	21.36	21.56		0
16QAM	1	0	21.16	21.53	21.87	21.38	21.69	0-1	0
	1	25	21.20	21.34	21.78	21.25	21.54		0
	1	49	21.27	21.56	21.97	21.38	21.58		0
	25	0	21.11	21.22	21.75	21.33	21.62	0-2	0
	25	12	21.13	21.37	21.84	21.29	21.62		0
	25	25	21.13	21.40	21.80	21.40	21.57		0
	50	0	21.16	21.60	21.85	21.50	21.61		0
64QAM	1	0	20.90	21.57	21.85	21.42	21.02	0-2	0
	1	25	20.47	21.39	21.54	21.32	21.01		0
	1	49	20.51	21.57	21.65	21.19	21.10		0
	25	0	21.16	21.63	21.54	21.22	21.62	0-3	0
	25	12	21.16	21.66	21.59	21.34	21.66		0
	25	25	21.13	21.46	21.59	21.21	21.65		0
	50	0	21.14	21.43	21.67	21.40	21.65		0
256QAM	1	0	19.42	19.54	19.51	19.44	19.55	0-5	2
	1	25	19.30	19.36	19.56	19.32	19.64		2
	1	49	19.41	19.47	19.68	19.37	19.67		2
	25	0	19.45	19.52	19.65	19.33	19.59		2
	25	12	19.29	19.54	19.71	19.43	19.60		2
	25	25	19.41	19.46	19.63	19.42	19.61		2
	50	0	19.35	19.43	19.66	19.46	19.57		2

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-88
LTE Band 41 PC3 Reduced Conducted Powers - 5 MHz Bandwidth – Hotspot Mode Active

LTE Band 41 5 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	21.13	21.55	21.85	21.60	21.58	0	0
	1	12	21.11	21.54	21.87	21.12	21.62		0
	1	24	21.21	21.64	21.88	21.19	21.62		0
	12	0	21.10	21.61	21.83	21.22	21.56	0-1	0
	12	6	21.16	21.63	21.88	21.18	21.65		0
	12	13	21.13	21.55	21.89	21.35	21.65		0
	25	0	21.16	21.47	21.91	21.36	21.59		0
16QAM	1	0	21.14	21.53	21.50	21.16	21.36	0-1	0
	1	12	21.12	21.46	21.62	21.25	21.37		0
	1	24	21.18	21.36	21.66	21.40	21.38		0
	12	0	21.21	21.45	21.83	21.36	21.66	0-2	0
	12	6	21.27	21.59	21.97	21.46	21.69		0
	12	13	21.25	21.60	22.00	21.37	21.73		0
	25	0	21.07	21.44	21.90	21.41	21.62		0
64QAM	1	0	21.44	21.31	21.71	21.44	21.55	0-2	0
	1	12	21.48	21.42	21.82	21.25	21.61		0
	1	24	21.50	21.39	21.84	21.37	21.61		0
	12	0	21.10	21.40	21.68	21.30	21.68	0-3	0
	12	6	21.17	21.50	21.81	21.33	21.73		0
	12	13	21.20	21.43	21.77	21.57	21.76		0
	25	0	21.04	21.15	21.67	21.26	21.58		0
256QAM	1	0	19.28	19.35	19.28	19.32	19.45	0-5	2
	1	12	19.33	19.54	19.47	19.34	19.56		2
	1	24	19.41	19.40	19.62	19.42	19.69		2
	12	0	19.35	19.47	19.69	19.40	19.45		2
	12	6	19.37	19.50	19.57	19.37	19.67		2
	12	13	19.36	19.36	19.68	19.52	19.65		2
	25	0	19.28	19.42	19.64	19.47	19.59		2

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-89
LTE Band 41 PC2 Reduced Conducted Powers - 20 MHz Bandwidth – Hotspot Mode Active

LTE Band 41 20 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	22.23	22.74	22.95	22.76	22.73	0	0
	1	50	22.05	22.74	22.93	22.68	22.90		0
	1	99	22.22	22.89	22.62	22.42	22.88		0
	50	0	22.31	22.92	23.13	22.95	23.10	0-1	0
	50	25	22.33	22.95	23.14	22.87	23.12		0
	50	50	22.40	22.94	23.07	22.82	23.11		0
	100	0	22.37	22.93	22.85	22.88	22.94		0
16QAM	1	0	22.50	22.98	23.18	23.01	22.99	0-1	0
	1	50	22.30	23.00	23.20	22.91	23.16		0
	1	99	22.44	23.18	22.86	22.61	23.17		0
	50	0	22.28	22.91	23.16	22.95	23.08	0-2	0
	50	25	22.29	22.94	23.16	22.89	23.10		0
	50	50	22.35	22.96	23.07	22.82	23.11		0
	100	0	22.34	22.93	23.14	22.88	23.09		0
64QAM	1	0	22.30	22.80	23.00	22.86	22.81	0-2	0
	1	50	22.13	22.83	23.02	22.77	23.00		0
	1	99	22.28	23.00	22.67	22.50	22.95		0
	50	0	22.33	22.98	23.18	22.86	23.13	0-3	0
	50	25	22.35	23.00	23.21	22.82	23.18		0
	50	50	22.42	23.00	23.11	22.78	23.16		0
	100	0	22.35	22.95	23.13	22.83	23.10		0
256QAM	1	0	21.68	21.30	21.56	21.22	21.23	0-5	1
	1	50	21.45	21.28	21.56	21.18	21.41		1
	1	99	21.62	21.32	21.21	21.10	21.43		1
	50	0	21.66	21.29	21.71	21.39	21.51		1
	50	25	21.64	21.30	21.75	21.33	21.58		1
	50	50	21.74	21.29	21.64	21.26	21.57		1
	100	0	21.66	21.28	21.63	21.27	21.50		1

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-90
LTE Band 41 PC2 Reduced Conducted Powers - 15 MHz Bandwidth – Hotspot Mode Active

LTE Band 41 15 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	23.00	22.82	22.98	23.45	23.36	0	0
	1	36	23.03	22.79	22.99	23.34	23.36		0
	1	74	23.11	23.15	22.93	23.18	23.32		0
	36	0	22.95	22.81	23.00	23.42	23.40	0-1	0
	36	18	23.03	22.82	23.08	23.42	23.47		0
	36	37	23.05	22.80	23.11	23.39	23.45		0
	75	0	23.00	22.76	23.00	23.36	23.43		0
16QAM	1	0	23.17	23.28	23.22	23.12	23.26	0-1	0
	1	36	23.13	23.32	23.15	23.21	23.22		0
	1	74	23.21	23.20	23.17	23.18	23.17		0
	36	0	23.03	22.93	23.05	22.77	23.37	0-2	0
	36	18	23.11	22.96	23.15	22.78	23.44		0
	36	37	23.12	22.91	23.14	22.71	23.42		0
	75	0	23.02	22.97	23.07	22.68	23.40		0
64QAM	1	0	23.16	22.87	23.04	22.81	22.77	0-2	0
	1	36	23.18	22.69	23.12	22.78	22.66		0
	1	74	23.12	22.73	23.07	22.60	22.84		0
	36	0	22.63	22.69	22.77	22.98	23.35	0-3	0
	36	18	22.56	22.75	22.76	22.98	23.15		0
	36	37	22.45	22.89	22.77	22.87	23.22		0
	75	0	22.56	22.81	22.69	22.81	23.19		0
256QAM	1	0	21.38	21.33	21.55	21.78	21.74	0-5	1
	1	36	21.28	21.43	21.32	21.69	21.77		1
	1	74	21.46	21.44	21.57	21.70	21.61		1
	36	0	21.49	21.47	21.51	21.66	21.75		1
	36	18	21.43	21.33	21.51	21.69	21.79		1
	36	37	21.47	21.42	21.46	21.70	21.65		1
	75	0	21.41	21.40	21.50	21.72	21.63		1

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-91
LTE Band 41 PC2 Reduced Conducted Powers - 10 MHz Bandwidth – Hotspot Mode Active

LTE Band 41 10 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	22.75	22.68	22.69	23.24	23.33	0	0
	1	25	22.73	23.03	23.11	23.11	23.19		0
	1	49	22.81	23.10	23.10	23.10	23.19		0
	25	0	22.85	22.69	22.63	23.29	23.36	0-1	0
	25	12	22.88	22.72	22.58	23.24	23.39		0
	25	25	22.85	22.69	22.52	23.23	23.31		0
	50	0	22.86	22.69	22.56	23.24	23.33		0
16QAM	1	0	23.09	22.90	22.78	22.59	22.85	0-1	0
	1	25	23.00	22.83	22.87	22.49	22.75		0
	1	49	23.12	22.90	22.85	22.56	22.70		0
	25	0	22.91	22.86	22.59	22.54	23.39	0-2	0
	25	12	22.93	22.89	22.63	22.53	23.38		0
	25	25	22.93	22.88	22.63	22.53	23.34		0
	50	0	22.92	22.79	22.63	22.52	23.41		0
64QAM	1	0	23.21	22.97	22.85	22.95	23.31	0-2	0
	1	25	23.12	22.63	22.78	22.95	23.28		0
	1	49	23.20	22.73	22.86	22.89	23.27		0
	25	0	22.69	22.85	23.38	22.78	23.42	0-3	0
	25	12	22.52	22.89	23.39	22.76	23.47		0
	25	25	22.47	22.81	23.25	22.69	23.37		0
	50	0	22.48	22.82	23.17	22.78	23.41		0
256QAM	1	0	21.64	21.74	21.78	21.58	21.65	0-5	1
	1	25	21.55	21.71	21.70	21.51	21.61		1
	1	49	21.52	21.75	21.88	21.55	21.51		1
	25	0	21.47	21.69	21.65	21.42	21.65		1
	25	12	21.58	21.62	21.60	21.72	21.71		1
	25	25	21.63	21.64	21.71	21.66	21.62		1
	50	0	21.50	21.63	21.77	21.58	21.71		1

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-92
LTE Band 41 PC2 Reduced Conducted Powers - 5 MHz Bandwidth – Hotspot Mode Active

LTE Band 41 5 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	22.35	22.79	23.14	23.23	23.33	0	0
	1	12	22.25	23.04	23.11	23.15	23.27		0
	1	24	22.35	23.13	22.98	23.18	23.30		0
	12	0	22.41	22.76	22.97	23.25	23.34	0-1	0
	12	6	22.28	22.81	22.56	23.27	23.36		0
	12	13	22.24	22.81	22.37	23.29	23.41		0
	25	0	22.27	22.78	22.58	23.24	23.40		0
16QAM	1	0	22.50	22.79	22.48	23.24	23.36	0-1	0
	1	12	22.30	22.77	22.52	23.26	23.39		0
	1	24	22.33	22.83	22.56	23.28	23.39		0
	12	0	22.41	22.61	22.60	22.58	23.47	0-2	0
	12	6	22.29	22.72	22.68	22.62	23.45		0
	12	13	22.40	22.60	22.50	22.67	23.49		0
	25	0	22.24	22.68	22.61	22.54	23.38		0
64QAM	1	0	22.36	22.38	22.55	22.89	23.12	0-2	0
	1	12	22.25	22.39	22.69	22.92	23.10		0
	1	24	22.36	22.41	22.50	22.93	23.25		0
	12	0	22.39	22.56	23.30	22.60	23.33	0-3	0
	12	6	22.40	22.49	23.33	22.64	23.14		0
	12	13	22.45	22.61	23.25	22.68	23.26		0
	25	0	22.49	22.53	23.16	22.55	23.40		0
256QAM	1	0	21.46	21.71	21.72	21.55	21.60	0-5	1
	1	12	21.54	21.67	21.63	21.54	21.62		1
	1	24	21.49	21.78	21.71	21.63	21.68		1
	12	0	21.65	21.63	21.68	21.57	21.64		1
	12	6	21.67	21.67	21.67	21.59	21.65		1
	12	13	21.52	21.69	21.65	21.55	21.60		1
	25	0	21.53	21.60	21.60	21.64	21.59		1

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-93
LTE Band 41 PC3 Reduced Conducted Powers - 20 MHz Bandwidth – Proximity Sensor and/or Earjack Mode Active

LTE Band 41 20 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	21.26	21.73	21.89	21.93	21.71	0	0
	1	50	21.31	21.94	**22.08**	21.84	21.73		0
	1	99	21.39	22.00	21.72	21.55	21.97		0
	50	0	21.40	22.00	22.15	22.01	22.06	0-1	0
	50	25	21.47	22.05	**22.20**	21.94	22.08		0
	50	50	21.56	21.99	22.12	21.87	22.11		0
	100	0	21.55	22.05	22.07	21.88	22.07		0
16QAM	1	0	21.50	22.12	21.85	22.06	21.92	0-1	0
	1	50	21.54	22.16	22.14	21.92	22.01		0
	1	99	21.73	22.27	21.82	21.72	22.15		0
	50	0	21.47	22.02	22.16	21.73	22.07	0-2	0
	50	25	21.47	22.05	22.17	21.96	22.18		0
	50	50	21.63	22.06	22.08	21.96	22.14		0
	100	0	21.54	22.07	21.68	21.93	22.09		0
64QAM	1	0	21.31	21.91	21.80	21.91	21.66	0-2	0
	1	50	21.30	22.02	22.07	21.86	21.95		0
	1	99	21.48	22.09	21.70	21.86	22.06		0
	50	0	21.51	21.48	21.74	21.56	21.66	0-3	0.5
	50	25	21.59	21.48	21.84	21.57	21.68		0.5
	50	50	21.59	21.45	21.74	21.40	21.78		0.5
	100	0	21.46	21.41	21.70	21.42	21.60		0.5
256QAM	1	0	19.57	19.40	19.59	19.38	19.21	0-5	2.5
	1	50	19.44	19.42	19.76	19.26	19.58		2.5
	1	99	19.60	19.63	19.48	19.13	19.61		2.5
	50	0	19.49	19.41	19.80	19.57	19.58		2.5
	50	25	19.59	19.49	19.92	19.57	19.70		2.5
	50	50	19.66	19.45	19.75	19.36	19.71		2.5
	100	0	19.63	19.44	19.76	19.41	19.80		2.5

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-94
LTE Band 41 PC3 Reduced Conducted Powers - 15 MHz Bandwidth – Proximity Sensor and/or Earjack Mode Active

LTE Band 41 15 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	21.52	21.73	22.20	22.01	22.04	0	0
	1	36	21.41	21.94	22.17	21.94	22.08		0
	1	74	21.46	21.85	22.16	22.03	22.09		0
	36	0	21.45	21.70	22.14	22.04	22.00	0-1	0
	36	18	21.54	22.01	22.26	22.08	22.11		0
	36	37	21.60	22.04	22.26	22.11	22.14		0
	75	0	21.53	22.01	22.16	21.79	22.03		0
16QAM	1	0	21.73	22.06	22.16	22.14	22.02	0-1	0
	1	36	21.63	22.11	22.35	22.10	22.17		0
	1	74	21.65	21.98	22.32	21.96	22.10		0
	36	0	21.41	22.08	22.17	21.86	22.03	0-2	0
	36	18	21.50	21.96	22.29	21.96	22.16		0
	36	37	21.52	21.87	22.29	21.87	22.16		0
	75	0	21.51	22.04	22.24	22.01	22.06		0
64QAM	1	0	21.39	21.87	21.88	21.84	21.72	0-2	0
	1	36	21.45	22.12	22.04	21.79	21.86		0
	1	74	21.58	22.09	21.98	21.76	21.87		0
	36	0	21.13	21.33	21.44	21.65	21.69	0-3	0.5
	36	18	21.19	21.42	21.59	21.60	21.82		0.5
	36	37	21.23	21.50	21.59	21.51	21.80		0.5
	75	0	21.28	21.39	21.55	21.47	21.77		0.5
256QAM	1	0	19.36	19.22	19.43	19.53	19.49	0-5	2.5
	1	36	19.26	19.46	19.39	19.27	19.56		2.5
	1	74	19.21	19.41	19.31	19.36	19.63		2.5
	36	0	19.39	19.37	19.58	19.52	19.51		2.5
	36	18	19.36	19.26	19.67	19.45	19.62		2.5
	36	37	19.25	19.33	19.69	19.32	19.64		2.5
	75	0	19.21	19.31	19.70	19.54	19.69		2.5

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-95
LTE Band 41 PC3 Reduced Conducted Powers - 10 MHz Bandwidth – Proximity Sensor and/or Earjack Mode Active

LTE Band 41 10 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel 39750 (2506.0 MHz)	Low-Mid Channel 40185 (2549.5 MHz)	Mid Channel 40620 (2593.0 MHz)	Mid-High Channel 41055 (2636.5 MHz)	High Channel 41490 (2680.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]						
QPSK	1	0	21.39	21.62	22.10	21.93	21.91	0	0
	1	25	21.15	21.74	22.06	21.87	21.76		0
	1	49	21.36	21.90	22.06	21.99	21.81		0
	25	0	21.36	21.88	22.07	22.09	21.94	0-1	0
	25	12	21.41	22.11	22.13	22.14	21.96		0
	25	25	21.35	22.05	22.13	22.16	21.86		0
	50	0	21.40	21.96	22.12	21.96	22.18		0
16QAM	1	0	21.62	22.07	22.26	21.79	22.11	0-1	0
	1	25	21.56	22.16	22.02	22.15	22.05		0
	1	49	21.62	22.05	22.09	22.19	21.88		0
	25	0	21.33	22.13	22.05	22.17	21.90	0-2	0
	25	12	21.41	21.97	22.11	21.78	21.96		0
	25	25	21.35	21.78	22.08	22.08	21.92		0
	50	0	21.35	22.16	22.12	22.03	21.94		0
64QAM	1	0	21.44	22.13	21.88	21.96	21.74	0-2	0
	1	25	21.07	22.14	21.84	21.77	21.72		0
	1	49	21.53	21.88	22.19	22.16	21.31		0
	25	0	21.03	21.45	21.36	21.75	21.68	0-3	0.5
	25	12	21.08	21.55	21.41	21.70	21.74		0.5
	25	25	21.04	21.63	21.40	21.59	21.68		0.5
	50	0	21.15	21.54	21.49	21.60	21.55		0.5
256QAM	1	0	19.19	19.49	19.57	19.47	19.34	0-5	2.5
	1	25	19.32	19.36	19.63	19.42	19.45		2.5
	1	49	19.28	19.40	19.72	19.51	19.52		2.5
	25	0	19.27	19.71	19.61	19.46	19.61		2.5
	25	12	19.30	19.68	19.53	19.59	19.50		2.5
	25	25	19.41	19.63	19.65	19.48	19.55		2.5
	50	0	19.33	19.67	19.64	19.50	19.46		2.5

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-96
LTE Band 41 PC3 Reduced Conducted Powers - 5 MHz Bandwidth – Proximity Sensor and/or Earjack Mode Active

LTE Band 41 5 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel 39750 (2506.0 MHz)	Low-Mid Channel 40185 (2549.5 MHz)	Mid Channel 40620 (2593.0 MHz)	Mid-High Channel 41055 (2636.5 MHz)	High Channel 41490 (2680.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]						
QPSK	1	0	21.46	21.78	22.18	22.14	21.94	0	0
	1	12	21.37	21.93	22.08	22.05	21.94		0
	1	24	21.48	22.01	22.19	22.00	21.93		0
	12	0	21.44	22.13	22.10	21.78	21.93	0-1	0
	12	6	21.47	22.10	22.19	21.88	21.96		0
	12	13	21.44	22.08	22.18	21.79	22.01		0
	25	0	21.47	21.93	22.18	21.85	21.95		0
16QAM	1	0	21.15	22.15	21.85	21.69	21.65	0-1	0
	1	12	21.12	22.14	21.90	21.70	21.68		0
	1	24	21.18	22.10	21.94	21.94	21.65		0
	12	0	21.49	21.77	22.13	21.72	21.97	0-2	0
	12	6	21.55	22.17	22.27	21.81	21.98		0
	12	13	21.56	21.89	22.21	21.93	22.06		0
	25	0	21.48	21.74	22.15	22.01	21.95		0
64QAM	1	0	21.33	22.05	22.07	21.84	21.89	0-2	0
	1	12	21.39	21.87	22.09	22.12	21.93		0
	1	24	21.46	21.69	22.16	22.04	21.89		0
	12	0	21.18	21.65	21.50	21.65	21.71	0-3	0.5
	12	6	21.27	21.75	21.54	21.60	21.70		0.5
	12	13	21.25	21.73	21.60	21.46	21.76		0.5
	25	0	21.18	21.41	21.46	21.50	21.62		0.5
256QAM	1	0	19.42	19.56	19.42	19.69	19.55	0-5	2.5
	1	12	19.28	19.49	19.56	19.56	19.57		2.5
	1	24	19.30	19.44	19.64	19.57	19.63		2.5
	12	0	19.26	19.42	19.66	19.64	19.71		2.5
	12	6	19.22	19.39	19.57	19.52	19.72		2.5
	12	13	19.37	19.40	19.55	19.72	19.63		2.5
	25	0	19.23	19.39	19.52	19.78	19.66		2.5

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-97
LTE Band 41 PC2 Reduced Conducted Powers - 20 MHz Bandwidth – Proximity Sensor and/or Earjack Mode Active

LTE Band 41 20 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	22.95	23.52	23.55	23.53	23.48	0	0
	1	50	22.90	23.57	23.62	23.47	23.65		0
	1	99	23.08	23.68	23.39	23.26	23.65		0
	50	0	23.12	23.74	23.76	23.70	23.79	0-1	0
	50	25	23.16	23.73	23.81	23.66	23.87		0
	50	50	23.24	23.71	23.80	23.57	23.91		0
	100	0	23.19	23.72	23.75	23.63	23.72		0
16QAM	1	0	23.23	23.84	23.91	23.78	23.76	0-1	0
	1	50	23.14	23.85	23.92	23.74	23.95		0
	1	99	23.32	23.99	23.69	23.57	23.99		0
	50	0	23.12	23.73	23.81	23.71	23.85	0-2	0
	50	25	23.14	23.75	23.84	23.69	23.86		0
	50	50	23.25	23.79	23.79	23.55	23.84		0
	100	0	23.28	23.71	23.80	23.68	23.81		0
64QAM	1	0	23.58	24.00	23.97	24.00	23.93	0-2	0
	1	50	23.45	23.98	24.00	23.96	23.98		0
	1	99	23.57	23.94	23.86	23.76	23.99		0
	50	0	23.16	23.74	23.84	23.71	23.82	0-3	0
	50	25	23.19	23.75	23.86	23.67	23.88		0
	50	50	23.25	23.72	23.81	23.60	23.87		0
	100	0	23.25	23.70	23.75	23.62	23.81		0
256QAM	1	0	21.81	21.53	21.75	21.57	21.54	0-5	2
	1	50	21.80	21.52	21.85	21.51	21.77		2
	1	99	21.68	21.62	21.63	21.23	21.66		2
	50	0	21.85	22.02	22.25	22.10	22.22		2
	50	25	21.70	22.08	22.19	22.09	22.34		2
	50	50	21.75	22.03	22.34	22.02	22.32		2
	100	0	21.60	21.96	22.33	21.98	22.20		2

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-98
LTE Band 41 PC2 Reduced Conducted Powers - 15 MHz Bandwidth – Proximity Sensor and/or Earjack Mode Active

LTE Band 41 15 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	23.33	23.56	23.63	23.50	23.49	0	0
	1	36	22.94	23.22	23.68	23.38	23.55		0
	1	74	23.51	23.31	23.60	23.21	23.48		0
	36	0	23.48	23.62	23.65	23.45	23.54	0-1	0
	36	18	23.60	23.67	23.65	23.50	23.59		0
	36	37	23.50	22.77	23.72	23.37	23.57		0
	75	0	23.01	22.76	23.68	23.41	23.55		0
16QAM	1	0	23.50	22.96	23.77	23.22	23.94	0-1	0
	1	36	23.53	23.03	23.87	23.94	24.06		0
	1	74	23.56	23.44	23.55	23.75	24.04		0
	36	0	23.42	23.25	23.71	23.56	23.56	0-2	0
	36	18	23.47	23.45	23.83	23.82	23.64		0
	36	37	23.51	23.50	23.85	23.65	23.66		0
	75	0	23.54	23.47	23.75	23.50	23.60		0
64QAM	1	0	23.42	23.56	23.74	23.67	23.52	0-2	0
	1	36	23.35	23.63	23.90	23.77	23.66		0
	1	74	23.38	23.55	23.86	23.68	23.66		0
	36	0	23.58	23.68	23.38	23.70	23.57	0-3	0
	36	18	23.46	23.50	23.50	23.69	23.66		0
	36	37	23.55	23.46	23.45	23.50	23.63		0
	75	0	23.40	23.61	23.33	23.65	23.60		0
256QAM	1	0	21.47	21.56	21.97	21.81	21.78	0-5	2
	1	36	21.40	21.63	21.96	21.72	21.80		2
	1	74	21.36	21.73	22.05	21.88	21.72		2
	36	0	21.48	21.67	22.03	22.16	21.78		2
	36	18	21.45	21.56	22.14	22.18	21.77		2
	36	37	21.50	21.59	22.12	22.21	21.69		2
	75	0	21.47	21.63	22.12	21.67	21.70		2

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-99
LTE Band 41 PC2 Reduced Conducted Powers - 10 MHz Bandwidth – Proximity Sensor and/or Earjack Mode Active

LTE Band 41 10 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	23.39	23.20	23.69	23.30	23.46	0	0
	1	25	23.21	23.55	23.55	23.18	23.32		0
	1	49	23.31	23.56	23.64	23.20	23.26		0
	25	0	23.41	23.22	23.57	23.26	23.42	0-1	0
	25	12	23.42	23.22	23.68	23.31	23.41		0
	25	25	23.46	23.17	23.71	23.37	23.45		0
	50	0	23.39	23.23	23.72	23.31	23.45		0
16QAM	1	0	23.89	23.47	23.61	23.29	23.48	0-1	0
	1	25	23.83	23.44	23.63	23.28	23.51		0
	1	49	23.94	23.51	23.70	23.28	23.51		0
	25	0	23.43	23.55	23.66	23.66	23.50	0-2	0
	25	12	23.43	23.58	23.76	23.70	23.50		0
	25	25	23.52	23.45	23.78	23.56	23.54		0
	50	0	23.54	23.69	23.69	23.59	23.49		0
64QAM	1	0	23.37	23.60	23.93	23.63	24.10	0-2	0
	1	25	23.28	23.66	24.00	23.75	24.12		0
	1	49	23.38	23.53	24.01	23.64	24.08		0
	25	0	23.55	23.44	23.62	23.71	23.48	0-3	0
	25	12	23.68	23.52	23.55	23.62	23.51		0
	25	25	23.64	23.61	23.61	23.63	23.50		0
	50	0	23.57	23.42	23.47	23.57	23.41		0
256QAM	1	0	21.65	21.70	22.08	21.77	21.79	0-5	2
	1	25	21.63	21.75	21.82	21.73	21.81		2
	1	49	21.59	21.86	21.89	21.78	21.74		2
	25	0	21.64	21.82	22.02	21.71	21.65		2
	25	12	21.52	21.74	22.05	21.69	21.72		2
	25	25	21.57	21.83	22.11	21.65	21.68		2
	50	0	21.59	21.81	22.07	22.00	21.76		2

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-100
LTE Band 41 PC2 Reduced Conducted Powers - 5 MHz Bandwidth – Proximity Sensor and/or Earjack Mode Active

LTE Band 41 5 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	23.40	23.38	23.69	23.30	23.46	0	0
	1	12	23.20	23.62	23.55	23.18	23.32		0
	1	24	23.26	23.60	23.64	23.20	23.26		0
	12	0	23.32	23.65	23.57	23.26	23.42	0-1	0
	12	6	23.36	23.35	23.68	23.31	23.41		0
	12	13	23.39	23.55	23.71	23.37	23.45		0
	25	0	23.39	23.54	23.72	23.31	23.45		0
16QAM	1	0	23.45	23.64	23.61	23.29	23.48	0-1	0
	1	12	23.44	23.60	23.63	23.28	23.51		0
	1	24	23.47	23.67	23.70	23.28	23.51		0
	12	0	23.47	23.44	23.66	23.66	23.50	0-2	0
	12	6	23.48	23.52	23.76	23.70	23.50		0
	12	13	23.48	23.49	23.78	23.71	23.54		0
	25	0	23.41	23.50	23.69	23.60	23.49		0
64QAM	1	0	24.00	23.60	23.93	23.82	24.10	0-2	0
	1	12	24.04	23.55	24.00	23.85	24.12		0
	1	24	24.04	23.52	24.01	23.87	24.08		0
	12	0	23.60	23.64	23.65	23.71	23.48	0-3	0
	12	6	23.77	23.56	23.71	23.69	23.51		0
	12	13	23.71	23.62	23.67	23.59	23.50		0
	25	0	23.56	23.50	23.70	23.57	23.41		0
256QAM	1	0	21.64	21.78	21.78	21.68	21.77	0-5	2
	1	12	21.55	21.82	21.71	21.79	21.78		2
	1	24	21.63	21.70	21.82	21.62	21.82		2
	12	0	21.66	21.68	21.79	21.68	21.81		2
	12	6	21.56	22.01	21.77	21.67	21.69		2
	12	13	21.57	21.89	21.79	21.71	21.64		2
	25	0	21.62	21.76	22.06	21.70	21.71		2

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

9.4.13 LTE Uplink Carrier Aggregation Conducted Powers

Table 9-101
LTE Uplink Carrier Aggregation Maximum Conducted Powers

	PCC									SCC									Power	
Combination	PCC Band	PCC Bandwidth [MHz]	PCC UL Channel	PCC UL Frequency [MHz]	PCC DL Channel	PCC DL Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC UL Channel	SCC UL Frequency [MHz]	SCC DL Channel	SCC DL Frequency [MHz]	Modulation	SCC UL# RB	SCC UL RB Offset	LTE Tx.Power with UL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_5B	LTE B5	10	20525	836.5	2525	881.5	QPSK	1	0	LTE B5	5	20453	829.3	2453	874.3	QPSK	1	24	24.74	24.58

	PCC									SCC									Power	
Combination	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	PCC DL Channel	PCC DL Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL) Channel	SCC (UL) Frequency [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	Modulation	SCC UL# RB	SCC UL RB Offset	LTE Tx.Power with UL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_66C	LTE B66	20	132572	1770.0	67036	2170.0	QPSK	1	0	LTE B66	20	132374	1750.2	66838	2150.2	QPSK	1	99	24.32	24.93
CA_66B	LTE B66	10	132622	1775.0	67086	2175.0	QPSK	1	0	LTE B66	10	132523	1765.1	66987	2165.1	QPSK	1	49	23.80	24.82

	PCC							SCC							Power	
Combination	PCC Band	PCC Bandwidth [MHz]	PCC (UL/DL) Channel	PCC (UL/DL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL/DL) Channel	SCC (UL/DL) Frequency [MHz]	Modulation	SCC UL# RB	SCC UL RB Offset	LTE Tx.Power with UL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_41C	LTE B41	20	40620	2593.0	QPSK	1	0	LTE B41	20	40422	2573.2	QPSK	1	99	25.00	24.37

	PCC							SCC							Power	
Combination	PCC Band	PCC Bandwidth [MHz]	PCC (UL/DL) Channel	PCC (UL/DL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL/DL) Channel	SCC (UL/DL) Frequency [MHz]	Modulation	SCC UL# RB	SCC UL RB Offset	LTE Tx.Power with UL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_41C	LTE B41 PC2	20	40620	2593.0	QPSK	1	0	LTE B41 PC2	20	40422	2573.2	QPSK	1	99	27.47	26.87

Table 9-102
LTE Uplink Carrier Aggregation Reduced Conducted Powers – Hotspot Mode Active

	PCC									SCC									Power	
Combination	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	PCC DL Channel	PCC DL Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL) Channel	SCC (UL) Frequency [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	Modulation	SCC UL# RB	SCC UL RB Offset	LTE Tx.Power with UL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_66C	LTE B66	20	132572	1770	67036	2170	QPSK	100	0	LTE B66	20	132374	1750.2	66838	2150.2	QPSK	100	0	20.19	19.82
CA_66B	LTE B66	10	132622	1775	67086	2175	QPSK	50	0	LTE B66	10	132523	1765.1	66987	2165.1	QPSK	50	0	19.90	19.65

	PCC							SCC							Power	
Combination	PCC Band	PCC Bandwidth [MHz]	PCC (UL/DL) Channel	PCC (UL/DL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL/DL) Channel	SCC (UL/DL) Frequency [MHz]	Modulation	SCC UL# RB	SCC UL RB Offset	LTE Tx.Power with UL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_41C	LTE B41	20	41055	2636.5	QPSK	1	0	LTE B41	20	40857	2616.7	QPSK	1	99	21.40	21.42

	PCC							SCC							Power	
Combination	PCC Band	PCC Bandwidth [MHz]	PCC (UL/DL) Channel	PCC (UL/DL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL/DL) Channel	SCC (UL/DL) Frequency [MHz]	Modulation	SCC UL# RB	SCC UL RB Offset	LTE Tx.Power with UL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_41C	LTE B41 PC2	20	41055	2636.5	QPSK	1	0	LTE B41 PC2	20	40857	2616.7	QPSK	1	99	22.70	22.76

Table 9-103
LTE Uplink Carrier Aggregation Reduced Conducted Powers – Proximity Sensor and/or Earjack Mode Active

	PCC									SCC									Power	
Combination	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	PCC DL Channel	PCC DL Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL) Channel	SCC (UL) Frequency [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	Modulation	SCC UL# RB	SCC UL RB Offset	LTE Tx.Power with UL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_66C	LTE B66	20	132572	1770	67036	2170	QPSK	100	0	LTE B66	20	132374	1750.2	66838	2150.2	QPSK	100	0	20.19	19.82
CA_66B	LTE B66	10	132622	1775	67086	2175	QPSK	50	0	LTE B66	10	132523	1765.1	66987	2165.1	QPSK	50	0	19.90	19.65

	PCC							SCC							Power	
Combination	PCC Band	PCC Bandwidth [MHz]	PCC (UL/DL) Channel	PCC (UL/DL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL/DL) Channel	SCC (UL/DL) Frequency [MHz]	Modulation	SCC UL# RB	SCC UL RB Offset	LTE Tx.Power with UL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_41C	LTE B41	20	40185	2549.5	QPSK	1	99	LTE B41	20	40383	2569.3	QPSK	1	0	22.23	22.00

	PCC							SCC							Power	
Combination	PCC Band	PCC Bandwidth [MHz]	PCC (UL/DL) Channel	PCC (UL/DL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL/DL) Channel	SCC (UL/DL) Frequency [MHz]	Modulation	SCC UL# RB	SCC UL RB Offset	LTE Tx.Power with UL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_41C	LTE B41 PC2	20	40185	2549.5	QPSK	1	99	LTE B41 PC2	20	40383	2569.3	QPSK	1	0	24.37	23.68

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Notes:

1. This device supports uplink carrier aggregation for LTE CA_5B, LTE CA_66B, LTE CA_66C, and LTE CA_41C with a maximum of two component carriers. For intraband contiguous carrier aggregation scenarios, 3GPP 36.101 Table 6.2.2A-1 specifies that the aggregate maximum allowed output power is equivalent to the single carrier scenario. 3GPP 36.101 6.2.3A allows for several dB of MPR to be applied when non-contiguous RB allocation is implemented. The conducted powers and MPR settings in this device are permanently implemented per the above 3GPP requirements.
2. Per FCC Guidance, the output power with uplink CA active was measured for the configuration with the highest reported SAR with single carrier for each exposure condition. The power was measured with wideband signal integration over both component carriers.



Figure 9-4
Power Measurement Setup

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

9.5 WLAN Conducted Powers

Table 9-104
2.4 GHz WLAN Maximum Average RF Power – Ant 1

2.4GHz Conducted Power [dBm]					
Freq [MHz]	Channel	IEEE Transmission Mode			
		802.11b	802.11g	802.11n	802.11ax SU
		Average	Average	Average	Average
2412	1	20.85	18.48	17.73	16.40
2437	6	20.23	18.49	17.99	16.95
2462	11	20.35	18.20	17.45	16.64

Table 9-105
2.4 GHz WLAN Maximum Average RF Power – Ant 2

2.4GHz Conducted Power [dBm]					
Freq [MHz]	Channel	IEEE Transmission Mode			
		802.11b	802.11g	802.11n	802.11ax SU
		Average	Average	Average	Average
2412	1	20.98	18.47	17.75	16.96
2437	6	20.66	18.20	17.90	16.55
2462	11	20.51	18.06	17.51	16.85

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-106
5 GHz WLAN Maximum Average RF Power – Ant 1

5GHz (20MHz) Conducted Power [dBm]					
Freq [MHz]	Channel	IEEE Transmission Mode			
		802.11a	802.11n	802.11ac	802.11ax SU
		Average	Average	Average	Average
5180	36	16.89	16.91	16.96	15.99
5200	40	17.72	17.75	17.72	15.96
5220	44	17.73	17.78	17.82	15.98
5240	48	17.81	17.84	17.83	15.71
5260	52	17.87	17.92	17.94	15.85
5280	56	17.97	17.99	17.44	15.94
5300	60	17.98	17.55	17.62	15.51
5320	64	17.57	17.51	17.45	15.37
5500	100	17.53	17.52	17.51	15.49
5600	120	17.98	17.99	17.50	15.44
5620	124	17.92	17.92	17.92	15.40
5720	144	17.54	17.60	17.64	15.58
5745	149	17.92	17.86	17.92	15.75
5785	157	17.82	17.88	17.89	15.58
5825	165	17.47	17.53	17.45	15.73

Table 9-107
5 GHz WLAN Maximum Average RF Power – Ant 2

5GHz (20MHz) Conducted Power [dBm]					
Freq [MHz]	Channel	IEEE Transmission Mode			
		802.11a	802.11n	802.11ac	802.11ax SU
		Average	Average	Average	Average
5180	36	16.07	16.08	16.07	15.71
5200	40	17.57	17.99	17.97	15.72
5220	44	17.61	17.98	17.97	15.65
5240	48	17.60	17.97	17.94	15.74
5260	52	17.47	17.90	17.90	15.89
5280	56	17.98	17.84	17.86	15.85
5300	60	17.91	17.94	17.57	15.99
5320	64	17.97	17.90	17.48	15.96
5500	100	17.63	17.51	17.49	15.83
5600	120	17.56	17.40	17.46	15.86
5620	124	17.44	17.93	17.99	15.71
5720	144	17.70	17.66	17.68	15.97
5745	149	17.98	17.93	17.91	15.76
5785	157	17.57	17.86	17.89	15.68
5825	165	17.64	17.64	17.53	15.73

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-108
5 GHz WLAN Maximum Average RF Power – MIMO

5GHz (20MHz) 802.11n Conducted Power [dBm]				
Freq [MHz]	Channel	ANT1	ANT2	MIMO
5180	36	16.91	16.08	19.53
5200	40	17.75	17.99	20.88
5220	44	17.78	17.98	20.89
5240	48	17.84	17.97	20.92
5260	52	17.92	17.90	20.92
5280	56	17.99	17.84	20.93
5300	60	17.55	17.94	20.76
5320	64	17.51	17.90	20.72
5500	100	17.52	17.51	20.53
5600	120	17.99	17.40	20.72
5620	124	17.92	17.93	20.94
5720	144	17.60	17.66	20.64
5745	149	17.86	17.93	20.91
5785	157	17.88	17.86	20.88
5825	165	17.53	17.64	20.60

Table 9-109
Maximum Output Powers During Conditions with 2.4 GHz and 5 GHz WLAN

2.4GHz 802.11n Conducted Power [dBm]			
Freq [MHz]	Channel	ANT1	ANT2
2412	1	16.85	16.67
2437	6	16.25	16.99
2462	11	16.33	16.43

5GHz (80MHz) 802.11ac Conducted Power [dBm]			
Freq [MHz]	Channel	ANT1	ANT2
5210	42	13.89	13.90
5290	58	13.99	13.44
5530	106	13.52	13.98
5610	122	13.32	13.94
5690	138	13.33	13.92
5775	155	13.76	13.82

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-110
2.4 GHz WLAN Reduced Average RF Power – Ant 1

2.4GHz Conducted Power [dBm]					
Freq [MHz]	Channel	IEEE Transmission Mode			
		802.11b	802.11g	802.11n	802.11ax SU
		Average	Average	Average	Average
2412	1	16.46	16.92	16.85	16.40
2437	6	16.10	16.55	16.25	16.95
2462	11	16.13	16.86	16.33	16.64

Table 9-111
2.4 GHz WLAN Reduced Average RF Power – Ant 2

2.4GHz Conducted Power [dBm]					
Freq [MHz]	Channel	IEEE Transmission Mode			
		802.11b	802.11g	802.11n	802.11ax SU
		Average	Average	Average	Average
2412	1	16.34	16.73	16.67	16.96
2437	6	16.67	16.77	16.99	16.55
2462	11	16.77	16.74	16.43	16.85

Table 9-112
5 GHz WLAN Reduced Average RF Power – Ant 1

5GHz (80MHz) Conducted Power [dBm]		
Freq [MHz]	Channel	IEEE Transmission Mode
		802.11ac
		Average
5210	42	13.89
5290	58	13.99
5530	106	13.52
5610	122	13.32
5690	138	13.33
5775	155	13.76

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 9-113
5 GHz WLAN Reduced Average RF Power – Ant 2

5GHz (80MHz) Conducted Power [dBm]		
Freq [MHz]	Channel	IEEE Transmission Mode
		802.11ac
		Average
5210	42	13.90
5290	58	13.44
5530	106	13.98
5610	122	13.94
5690	138	13.92
5775	155	13.82

Justification for test configurations for WLAN per KDB Publication 248227 D01v02r02:

- Power measurements were performed for the transmission mode configuration with the highest maximum output power specified for production units.
- For transmission modes with the same maximum output power specification, powers were measured for the largest channel bandwidth, lowest order modulation and lowest data rate.
- For transmission modes with identical maximum specified output power, channel bandwidth, modulation and data rates, power measurements were required for all identical configurations.
- For each transmission mode configuration, powers were measured for the highest and lowest channels; and at the mid-band channel(s) when there were at least 3 channels supported. For configurations with multiple mid-band channels, due to an even number of channels, both channels were measured.

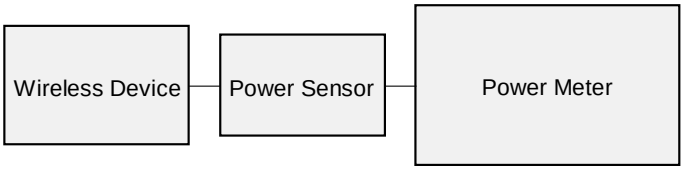


Figure 9-5
Power Measurement Setup

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

9.6 Bluetooth Conducted Powers

Table 9-114
Bluetooth Average RF Power

Frequency [MHz]	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
			[dBm]	[mW]
2402	1.0	0	18.11	64.714
2441	1.0	39	**18.49**	70.632
2480	1.0	78	16.79	47.753
2402	2.0	0	12.65	18.408
2441	2.0	39	13.14	20.606
2480	2.0	78	11.19	13.152
2402	3.0	0	12.51	17.824
2441	3.0	39	13.12	20.512
2480	3.0	78	11.24	13.305

Note: The bolded data rates and channel above were tested for SAR.

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

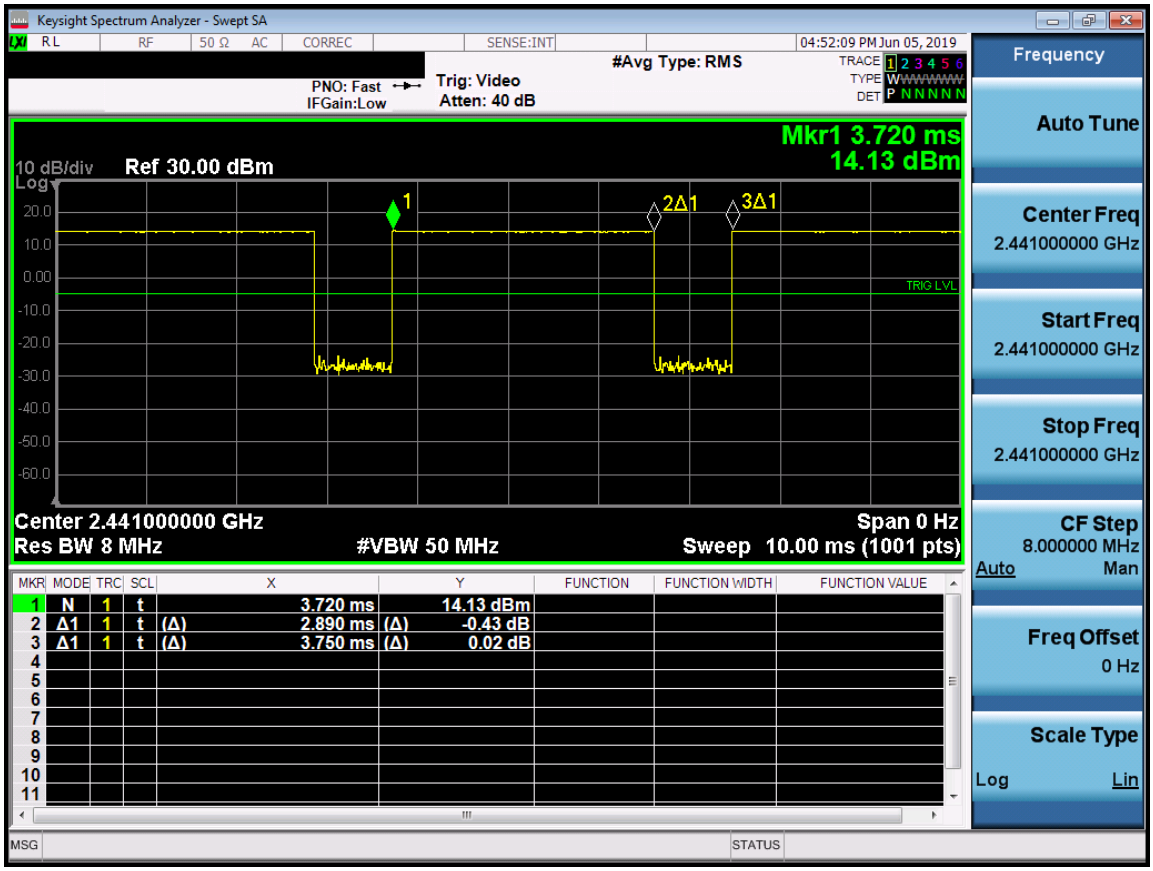


Figure 9-6
Bluetooth Transmission Plot

Equation 9-1
Bluetooth Duty Cycle Calculation

$$\boldsymbol{Duty\ Cycle} = \frac{\boldsymbol{Pulse\ Width}}{\boldsymbol{Period}} * \mathbf{100\%} = \frac{\mathbf{2.89}\boldsymbol{ms}}{\mathbf{3.75}\boldsymbol{ms}} * \mathbf{100\%} = \mathbf{77.1\%}$$

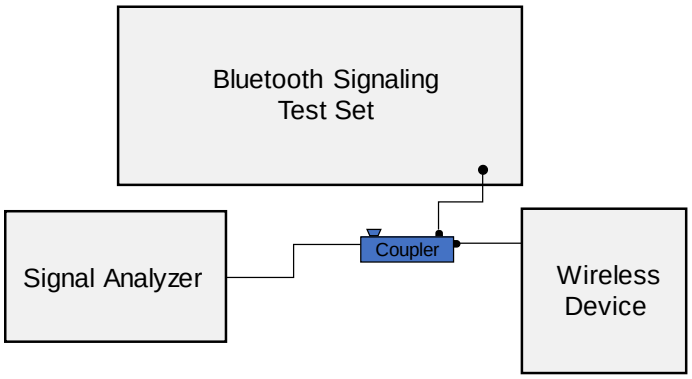


Figure 9-7
Power Measurement Setup

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

10 SYSTEM VERIFICATION

10.1 Tissue Verification

Table 10-1
Measured Tissue Properties - Head

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (°C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ε	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ε	% dev σ	% dev ε
6/4/2019	750H	22.2	680	0.869	43.202	0.888	42.305	-2.14%	2.12%
			695	0.874	43.158	0.889	42.227	-1.69%	2.20%
			700	0.876	43.144	0.889	42.201	-1.46%	2.23%
			710	0.880	43.111	0.890	42.149	-1.12%	2.28%
			740	0.891	43.010	0.893	41.994	-0.22%	2.42%
			755	0.896	42.963	0.894	41.916	0.22%	2.50%
			770	0.901	42.913	0.895	41.838	0.67%	2.57%
			785	0.906	42.863	0.896	41.760	1.12%	2.64%
			800	0.912	42.818	0.897	41.682	1.67%	2.73%
5/31/2019	835H	20.9	820	0.928	43.510	0.899	41.578	3.23%	4.65%
			835	0.931	43.395	0.900	41.500	3.44%	4.57%
			850	0.938	43.388	0.916	41.500	2.40%	4.55%
6/12/2019	835H	20.8	820	0.912	42.569	0.899	41.578	1.45%	2.38%
			835	0.918	42.527	0.900	41.500	2.00%	2.47%
			850	0.923	42.494	0.916	41.500	0.76%	2.40%
6/27/2019	835H	21.9	820	0.918	41.771	0.899	41.578	2.11%	0.46%
			835	0.923	41.734	0.900	41.500	2.56%	0.56%
			850	0.928	41.704	0.916	41.500	1.31%	0.49%
7/3/2019	835H	22.0	820	0.926	42.113	0.899	41.578	3.00%	1.29%
			835	0.932	42.078	0.900	41.500	3.56%	1.39%
			850	0.937	42.045	0.916	41.500	2.29%	1.31%
5/31/2019	1750H	21.7	1710	1.346	41.088	1.348	40.142	-0.15%	2.36%
			1750	1.372	41.017	1.371	40.079	0.07%	2.34%
			1790	1.392	40.940	1.394	40.016	-0.14%	2.31%
6/3/2019	1750H	21.0	1710	1.349	41.506	1.348	40.142	0.07%	3.40%
			1750	1.375	41.453	1.371	40.079	0.29%	3.43%
			1790	1.400	41.400	1.394	40.016	0.43%	3.46%
6/3/2019	1900H	22.3	1850	1.404	38.877	1.400	40.000	0.29%	-2.81%
			1880	1.434	38.729	1.400	40.000	2.43%	-3.18%
			1910	1.466	38.599	1.400	40.000	4.71%	-3.50%
5/30/2019	2300H	21.5	2300	1.724	38.461	1.670	39.500	3.23%	-2.63%
			2310	1.731	38.447	1.679	39.480	3.10%	-2.62%
			2320	1.739	38.430	1.687	39.460	3.08%	-2.61%
6/3/2019	2450H	21.9	2450	1.853	38.184	1.800	39.200	2.94%	-2.59%
			2500	1.892	38.102	1.855	39.136	1.99%	-2.64%
			2550	1.932	38.012	1.909	39.073	1.20%	-2.72%
			2600	1.972	37.919	1.964	39.009	0.41%	-2.79%
			2650	2.010	37.823	2.018	38.945	-0.40%	-2.88%
			2700	2.052	37.732	2.073	38.882	-1.01%	-2.96%
6/24/2019	2450H	21.3	2400	1.781	40.029	1.756	39.289	1.42%	1.88%
			2450	1.819	39.954	1.800	39.200	1.06%	1.92%
			2500	1.859	39.884	1.855	39.136	0.22%	1.91%
7/1/2019	2450H	21.3	2450	1.808	39.401	1.800	39.200	0.44%	0.51%
			2500	1.847	39.328	1.855	39.136	-0.43%	0.49%
			2550	1.886	39.251	1.909	39.073	-1.20%	0.46%
			2600	1.926	39.163	1.964	39.009	-1.93%	0.39%
			2650	1.967	39.092	2.018	38.945	-2.53%	0.38%
			2700	2.007	39.002	2.073	38.882	-3.18%	0.31%
6/17/2019	3500-3700H	20.6	3500	2.826	38.755	2.913	37.929	-2.99%	2.18%
			3550	2.875	38.664	2.964	37.871	-3.00%	2.09%
			3600	2.923	38.580	3.015	37.814	-3.05%	2.03%
			3645	2.968	38.497	3.061	37.763	-3.04%	1.94%
			3685	3.008	38.435	3.102	37.717	-3.03%	1.90%
			3725	3.046	38.365	3.143	37.671	-3.09%	1.84%
06/24/2019	5200-5800H	20.5	5240	4.684	36.041	4.696	35.940	-0.26%	0.28%
			5260	4.707	35.999	4.717	35.917	-0.21%	0.23%
			5280	4.730	35.967	4.737	35.894	-0.15%	0.20%
			5300	4.754	35.920	4.758	35.871	-0.08%	0.14%
			5520	5.001	35.531	4.983	35.620	0.36%	-0.25%
			5540	5.024	35.496	5.004	35.597	0.40%	-0.28%
			5600	5.096	35.375	5.065	35.529	0.61%	-0.43%
			5745	5.272	35.099	5.214	35.363	1.11%	-0.75%
			5765	5.296	35.066	5.234	35.340	1.18%	-0.78%
			5785	5.320	35.042	5.255	35.317	1.24%	-0.78%

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 10-2
Measured Tissue Properties – Body

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (°C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ε	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ε	% dev σ	% dev ε
6/4/2019	750B	23.1	680	0.916	57.053	0.958	55.804	-4.38%	2.24%
			695	0.921	57.022	0.959	55.745	-3.96%	2.29%
			740	0.939	56.914	0.963	55.570	-2.49%	2.42%
			755	0.945	56.872	0.964	55.512	-1.97%	2.45%
			770	0.950	56.835	0.965	55.453	-1.55%	2.49%
			785	0.955	56.795	0.966	55.395	-1.14%	2.53%
6/6/2019	750B	22.0	700	0.946	55.282	0.959	55.726	-1.36%	-0.80%
			710	0.949	55.259	0.960	55.687	-1.15%	-0.77%
			740	0.960	55.198	0.963	55.570	-0.31%	-0.67%
			755	0.966	55.167	0.964	55.512	0.21%	-0.62%
7/2/2019	750B	23.6	740	0.940	57.563	0.963	55.570	-2.39%	3.59%
			755	0.947	57.543	0.964	55.512	-1.76%	3.66%
			785	0.956	57.480	0.966	55.395	-1.04%	3.76%
			800	0.961	57.441	0.967	55.336	-0.62%	3.80%
6/3/2019	835B	20.0	820	0.980	53.012	0.969	55.258	1.14%	-4.06%
			835	0.987	52.997	0.970	55.200	1.75%	-3.99%
			850	0.993	52.976	0.988	55.154	0.51%	-3.95%
6/24/2019	835B	21.5	820	0.965	53.621	0.969	55.258	-0.41%	-2.96%
			835	0.980	53.474	0.970	55.200	1.03%	-3.13%
			850	0.995	53.334	0.988	55.154	0.71%	-3.30%
6/28/2019	835B	23.5	820	0.962	56.718	0.969	55.258	-0.72%	2.64%
			835	0.968	56.702	0.970	55.200	-0.21%	2.72%
			850	0.973	56.676	0.988	55.154	-1.52%	2.76%
6/14/2019	1750B	19.8	1710	1.493	51.507	1.463	53.537	2.05%	-3.79%
			1750	1.523	51.442	1.488	53.432	2.35%	-3.72%
			1790	1.550	51.348	1.514	53.326	2.38%	-3.71%
6/23/2019	1750B	21.9	1710	1.454	51.238	1.463	53.537	-0.62%	-4.29%
			1750	1.500	51.102	1.488	53.432	0.81%	-4.36%
			1790	1.545	50.940	1.514	53.326	2.05%	-4.47%
6/5/2019	1900B	22.2	1850	1.522	54.190	1.520	53.300	0.13%	1.67%
			1880	1.555	54.098	1.520	53.300	2.30%	1.50%
			1910	1.588	54.000	1.520	53.300	4.47%	1.31%
6/5/2019	1900B	23.5	1850	1.514	52.064	1.520	53.300	-0.39%	-2.32%
			1880	1.548	51.975	1.520	53.300	1.84%	-2.49%
			1910	1.583	51.879	1.520	53.300	4.14%	-2.67%
6/10/2019	1900B	23.1	1850	1.504	53.906	1.520	53.300	-1.05%	1.14%
			1880	1.536	53.813	1.520	53.300	1.05%	0.96%
			1910	1.568	53.730	1.520	53.300	3.16%	0.81%
6/12/2019	1900B	23.2	1850	1.510	51.888	1.520	53.300	-0.66%	-2.65%
			1880	1.542	51.791	1.520	53.300	1.45%	-2.83%
			1910	1.575	51.706	1.520	53.300	3.62%	-2.99%
7/1/2019	1900B	22.7	1850	1.503	51.182	1.520	53.300	-1.12%	-3.97%
			1880	1.536	51.067	1.520	53.300	1.05%	-4.19%
			1910	1.570	50.971	1.520	53.300	3.29%	-4.37%

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 10-3
Measured Tissue Properties – Body (Continued)

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (°C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ε	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ε	% dev σ	% dev ε
6/10/2019	2300B	23.1	2300	1.893	53.043	1.809	52.900	4.64%	0.27%
			2310	1.901	53.029	1.816	52.887	4.68%	0.27%
			2320	1.909	53.010	1.826	52.873	4.55%	0.26%
6/14/2019	2450B	22.6	2450	2.041	50.964	1.950	52.700	4.67%	-3.29%
			2500	2.098	50.815	2.021	52.636	3.81%	-3.46%
			2550	2.158	50.668	2.092	52.573	3.15%	-3.62%
			2600	2.217	50.527	2.163	52.509	2.50%	-3.77%
6/20/2019	2450B	24.0	2450	2.031	50.774	1.950	52.700	4.15%	-3.65%
			2550	2.144	50.471	2.092	52.573	2.49%	-4.00%
			2600	2.203	50.323	2.163	52.509	1.85%	-4.16%
6/24/2019	2450B	20.8	2400	1.981	53.453	1.902	52.767	4.15%	1.30%
			2450	2.028	53.361	1.950	52.700	4.00%	1.25%
			2500	2.075	53.310	2.021	52.636	2.67%	1.28%
6/25/2019	2450B	22.2	2450	2.035	50.873	1.950	52.700	4.36%	-3.47%
			2500	2.098	50.720	2.021	52.636	3.81%	-3.64%
			2550	2.159	50.577	2.092	52.573	3.20%	-3.80%
			2600	2.221	50.392	2.163	52.509	2.68%	-4.03%
			2650	2.281	50.241	2.234	52.445	2.10%	-4.20%
			2700	2.343	50.068	2.305	52.382	1.65%	-4.42%
6/26/2019	2450B	21.1	2400	1.986	53.164	1.902	52.767	4.42%	0.75%
			2450	2.031	53.083	1.950	52.700	4.15%	0.73%
			2500	2.076	53.022	2.021	52.636	2.72%	0.73%
6/27/2019	2450B	22.6	2450	2.006	51.261	1.950	52.700	2.87%	-2.73%
			2500	2.064	51.101	2.021	52.636	2.13%	-2.92%
			2550	2.123	50.960	2.092	52.573	1.48%	-3.07%
			2600	2.180	50.817	2.163	52.509	0.79%	-3.22%
			2650	2.239	50.665	2.234	52.445	0.22%	-3.39%
			2700	2.297	50.522	2.305	52.382	-0.35%	-3.55%
7/1/2019	2600B	22.6	2500	2.107	51.457	2.021	52.636	4.26%	-2.24%
			2550	2.171	51.313	2.092	52.573	3.78%	-2.40%
			2600	2.235	51.166	2.163	52.509	3.33%	-2.56%
			2650	2.296	51.004	2.234	52.445	2.78%	-2.75%
6/25/2019	3500-3700B	21.9	3500	3.369	50.694	3.314	51.321	1.66%	-1.22%
			3550	3.424	50.620	3.372	51.254	1.54%	-1.24%
			3600	3.478	50.558	3.431	51.186	1.37%	-1.23%
			3645	3.524	50.471	3.483	51.125	1.18%	-1.28%
			3685	3.565	50.417	3.530	51.070	0.99%	-1.28%
			3725	3.610	50.369	3.577	51.016	0.92%	-1.27%
06/14/2019	5200B-5800B	22.4	5240	5.430	47.693	5.346	48.960	1.57%	-2.59%
			5260	5.457	47.651	5.369	48.933	1.64%	-2.62%
			5280	5.484	47.642	5.393	48.906	1.69%	-2.58%
			5300	5.508	47.594	5.416	48.879	1.70%	-2.63%
			5500	5.800	47.215	5.650	48.607	2.65%	-2.86%
			5600	5.950	47.025	5.766	48.471	3.19%	-2.98%
			5700	6.103	46.837	5.883	48.336	3.74%	-3.10%
			5745	6.171	46.752	5.936	48.275	3.96%	-3.15%
			5765	6.196	46.711	5.959	48.248	3.98%	-3.19%
6/27/2019	5200B-5800B	22.1	5240	5.442	48.567	5.346	48.960	1.80%	-0.80%
			5260	5.465	48.532	5.369	48.933	1.79%	-0.82%
			5280	5.493	48.504	5.393	48.906	1.85%	-0.82%
			5300	5.524	48.466	5.416	48.879	1.99%	-0.84%
			5500	5.813	48.090	5.650	48.607	2.88%	-1.06%
			5600	5.972	47.912	5.766	48.471	3.57%	-1.15%
			5620	5.998	47.848	5.790	48.444	3.59%	-1.23%
			5700	6.135	47.729	5.883	48.336	4.28%	-1.26%
			5745	6.197	47.605	5.936	48.275	4.40%	-1.39%
			5765	6.228	47.556	5.959	48.248	4.51%	-1.43%
			5785	6.268	47.514	5.982	48.220	4.78%	-1.46%
			5825	6.323	47.483	6.029	48.166	4.88%	-1.42%

The above measured tissue parameters were used in the DASY software. The DASY software was used to perform interpolation to determine the dielectric parameters at the SAR test device frequencies (per KDB Publication 865664 D01v01r04 and IEEE 1528-2013 6.6.1.2). The tissue parameters listed in the SAR test plots may slightly differ from the table above due to significant digit rounding in the software.

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

10.2 Test System Verification

Prior to SAR assessment, the system is verified to ±10% of the SAR measurement on the reference dipole at the time of calibration by the calibration facility. Full system validation status and result summary can be found in Appendix E.

Table 10-4
System Verification Results – 1g Head

System Verification TARGET & MEASURED												
SAR System #	Tissue Frequency (MHz)	Tissue Type	Date	Amb. Temp (°C)	Liquid Temp (°C)	Input Power (W)	Source SN	Probe SN	Measured SAR_{1g} (W/kg)	1 W Target SAR_{1g} (W/kg)	1 W Normalized SAR_{1g} (W/kg)	$Deviation_{1g}$ (%)
I	750	HEAD	06/04/2019	23.2	22.2	0.200	1003	7357	1.720	8.280	8.600	3.86%
H	835	HEAD	05/31/2019	23.4	20.9	0.200	4d133	7409	2.010	9.430	10.050	6.57%
H	835	HEAD	06/12/2019	20.9	20.3	0.200	4d132	7406	2.070	9.590	10.350	7.92%
H	835	HEAD	06/27/2019	23.4	21.9	0.200	4d132	7406	1.960	9.590	9.800	2.19%
H	835	HEAD	07/03/2019	21.9	22.0	0.200	4d132	7406	2.050	9.590	10.250	6.88%
I	1750	HEAD	05/31/2019	21.6	21.4	0.100	1008	7357	3.730	36.200	37.300	3.04%
I	1750	HEAD	06/03/2019	21.2	20.5	0.100	1008	7357	3.870	36.200	38.700	6.91%
L	1900	HEAD	06/03/2019	21.6	20.8	0.100	5d080	7308	4.240	39.800	42.400	6.53%
E	2300	HEAD	05/30/2019	22.7	21.5	0.100	1064	3589	5.100	47.600	51.000	7.14%
E	2450	HEAD	06/03/2019	22.5	21.9	0.100	797	3589	5.340	52.700	53.400	1.33%
E	2450	HEAD	06/24/2019	21.4	21.3	0.100	797	3589	5.380	52.700	53.800	2.09%
E	2450	HEAD	07/01/2019	22.1	21.3	0.100	797	3589	5.320	52.700	53.200	0.95%
E	2600	HEAD	06/03/2019	22.5	21.9	0.100	1071	3589	5.830	56.300	58.300	3.55%
E	2600	HEAD	07/01/2019	22.1	21.3	0.100	1126	3589	5.750	54.500	57.500	5.50%
E	3500	HEAD	06/17/2019	22.5	20.6	0.100	1055	3589	6.590	66.800	65.900	-1.35%
E	3700	HEAD	06/17/2019	22.5	20.6	0.100	1002	3589	6.970	67.900	69.700	2.65%
H	5250	HEAD	06/24/2019	20.5	20.5	0.050	1191	7406	3.770	78.900	75.400	-4.44%
H	5600	HEAD	06/24/2019	20.5	20.5	0.050	1191	7406	4.030	83.600	80.600	-3.59%
H	5750	HEAD	06/24/2019	20.5	20.5	0.050	1191	7406	3.680	79.100	73.600	-6.95%

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 10-5
System Verification Results – 1g Body

System Verification TARGET & MEASURED												
SAR System #	Tissue Frequency (MHz)	Tissue Type	Date	Amb. Temp (°C)	Liquid Temp (°C)	Input Power (W)	Source SN	Probe SN	Measured SAR_{1g} (W/kg)	1 W Target SAR_{1g} (W/kg)	1 W Normalized SAR_{1g} (W/kg)	$Deviation_{1g}$ (%)
M	750	BODY	06/04/2019	22.2	22.1	0.200	1161	3287	1.750	8.430	8.750	3.80%
L	750	BODY	06/06/2019	22.0	20.5	0.200	1003	7308	1.690	8.580	8.450	-1.52%
D	750	BODY	07/02/2019	23.6	22.6	0.200	1003	3914	1.690	8.580	8.450	-1.52%
J	835	BODY	06/03/2019	18.7	19.8	0.200	4d132	7488	1.930	9.670	9.650	-0.21%
G	835	BODY	06/24/2019	22.0	21.5	0.200	4d132	7410	2.070	9.670	10.350	7.03%
D	835	BODY	06/28/2019	22.8	22.5	0.200	4d132	3914	2.070	9.670	10.350	7.03%
J	1750	BODY	06/14/2019	22.7	19.8	0.100	1008	7488	3.950	37.400	39.500	5.61%
I	1750	BODY	06/23/2019	19.5	21.6	0.100	1150	7357	3.880	36.600	38.800	6.01%
E	1900	BODY	06/05/2019	23.5	22.2	0.100	5d080	3589	4.200	39.200	42.000	7.14%
G	1900	BODY	06/05/2019	22.8	23.5	0.100	5d148	7410	4.220	39.100	42.200	7.93%
E	1900	BODY	06/10/2019	23.8	23.1	0.100	5d080	3589	4.080	39.200	40.800	4.08%
L	2300	BODY	06/10/2019	22.2	21.1	0.100	1064	7308	4.830	46.500	48.300	3.87%
K	2450	BODY	06/14/2019	23.2	22.6	0.100	719	7417	5.070	50.100	50.700	1.20%
K	2450	BODY	06/20/2019	23.5	22.5	0.100	719	7417	5.090	50.100	50.900	1.60%
L	2450	BODY	06/24/2019	21.3	20.3	0.100	981	7308	5.090	50.900	50.900	0.00%
K	2450	BODY	06/25/2019	23.2	22.3	0.100	719	7417	5.060	50.100	50.600	1.00%
L	2450	BODY	06/26/2019	22.2	21.1	0.100	981	7308	5.250	50.900	52.500	3.14%
K	2600	BODY	06/14/2019	23.2	22.6	0.100	1004	7417	5.400	54.800	54.000	-1.46%
K	2600	BODY	06/20/2019	23.9	22.5	0.100	1004	7417	5.420	54.800	54.200	-1.09%
K	2600	BODY	06/25/2019	23.2	22.3	0.100	1004	7417	5.480	54.800	54.800	0.00%
K	2600	BODY	07/01/2019	23.2	22.6	0.100	1004	7417	5.440	54.800	54.400	-0.73%
D	3500	BODY	06/25/2019	22.3	21.9	0.100	1055	3914	6.270	64.600	62.700	-2.94%
D	3700	BODY	06/25/2019	22.3	21.9	0.100	1002	3914	6.350	65.000	63.500	-2.31%
L	5250	BODY	06/14/2019	22.8	20.9	0.050	1237	7308	3.600	75.600	72.000	-4.76%
L	5250	BODY	06/27/2019	23.5	21.1	0.050	1191	7308	3.710	77.000	74.200	-3.64%
L	5600	BODY	06/14/2019	22.8	20.9	0.050	1237	7308	4.100	78.500	82.000	4.46%
L	5600	BODY	06/27/2019	23.5	21.1	0.050	1191	7308	3.890	79.200	77.800	-1.77%
L	5750	BODY	06/14/2019	22.8	20.9	0.050	1237	7308	3.750	75.900	75.000	-1.19%
L	5750	BODY	06/27/2019	23.5	21.1	0.050	1191	7308	3.580	76.100	71.600	-5.91%

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 10-6
System Verification Results – 10g

System Verification TARGET & MEASURED												
SAR System #	Tissue Frequency (MHz)	Tissue Type	Date	Amb. Temp (°C)	Liquid Temp (°C)	Input Power (W)	Source SN	Probe SN	Measured SAR_{10g} (W/kg)	1 W Target SAR_{10g} (W/kg)	1 W Normalized SAR_{10g} (W/kg)	$Deviation_{10g}$ (%)
I	1750	BODY	06/23/2019	19.5	21.6	0.100	1150	7357	2.040	19.400	20.400	5.15%
E	1900	BODY	06/10/2019	23.8	23.1	0.100	5d080	3589	2.110	20.600	21.100	2.43%
G	1900	BODY	06/12/2019	22.6	22.0	0.100	5d149	7410	2.050	20.700	20.500	-0.97%
J	1900	BODY	07/01/2019	20.7	22.7	0.100	5d080	7488	2.070	20.600	20.700	0.49%
L	2300	BODY	06/10/2019	22.2	21.1	0.100	1064	7308	2.300	22.600	23.000	1.77%
K	2450	BODY	06/14/2019	23.2	22.6	0.100	719	7417	2.320	23.700	23.200	-2.11%
K	2450	BODY	06/27/2019	23.9	21.8	0.100	719	7417	2.280	23.700	22.800	-3.80%
K	2600	BODY	06/14/2019	23.2	22.6	0.100	1004	7417	2.370	24.700	23.700	-4.05%
K	2600	BODY	06/27/2019	23.9	21.8	0.100	1004	7417	2.290	24.700	22.900	-7.29%
L	5250	BODY	06/27/2019	23.5	21.1	0.050	1191	7308	1.030	21.600	20.600	-4.63%
L	5600	BODY	06/27/2019	23.5	21.1	0.050	1191	7308	1.070	22.200	21.400	-3.60%
L	5750	BODY	06/27/2019	23.5	21.1	0.050	1191	7308	1.000	21.200	20.000	-5.66%

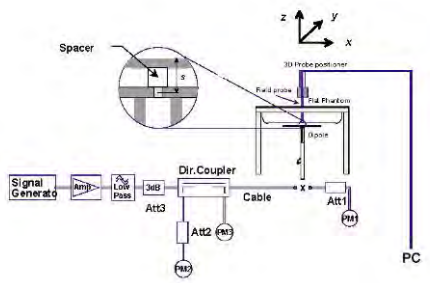


Figure 10-1
System Verification Setup Diagram



Figure 10-2
System Verification Setup Photo

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

11 SAR DATA SUMMARY

11.1 Standalone Head SAR Data

Table 11-1
GSM 850 Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
836.60	190	GSM 850	GSM	33.5	32.33	-0.03	Right	Cheek	1290M	1:8.3	0.116	1.309	0.152	A1
836.60	190	GSM 850	GSM	33.5	32.33	0.02	Right	Tilt	1290M	1:8.3	0.055	1.309	0.072	
836.60	190	GSM 850	GSM	33.5	32.33	0.05	Left	Cheek	1290M	1:8.3	0.084	1.309	0.110	
836.60	190	GSM 850	GSM	33.5	32.33	-0.07	Left	Tilt	1290M	1:8.3	0.047	1.309	0.062	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Head 1.6 W/kg (mW/g) averaged over 1 gram						

Table 11-2
GSM 1900 Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
1880.00	661	GSM 1900	GSM	30.5	29.83	0.12	Right	Cheek	1298M	1:8.3	0.034	1.167	0.040	
1880.00	661	GSM 1900	GSM	30.5	29.83	0.18	Right	Tilt	1298M	1:8.3	0.025	1.167	0.029	
1880.00	661	GSM 1900	GSM	30.5	29.83	-0.11	Left	Cheek	1298M	1:8.3	0.053	1.167	0.062	A2
1880.00	661	GSM 1900	GSM	30.5	29.83	0.21	Left	Tilt	1298M	1:8.3	0.017	1.167	0.020	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Head 1.6 W/kg (mW/g) averaged over 1 gram						

Table 11-3
UMTS 850 Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
836.60	4183	UMTS 850	RMC	25.5	24.77	2	0.02	Right	Cheek	1290M	1:1	0.223	1.183	0.264	A3
836.60	4183	UMTS 850	RMC	25.5	24.77	2	0.01	Right	Tilt	1290M	1:1	0.060	1.183	0.071	
836.60	4183	UMTS 850	RMC	25.5	24.77	2	0.10	Left	Cheek	1290M	1:1	0.100	1.183	0.118	
836.60	4183	UMTS 850	RMC	25.5	24.77	2	-0.04	Left	Tilt	1290M	1:1	0.051	1.183	0.060	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Head 1.6 W/kg (mW/g) averaged over 1 gram							

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 11-4
UMTS 1750 Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
1732.40	1412	UMTS 1750	RMC	25.0	24.78	26	0.17	Right	Cheek	1298M	1:1	0.057	1.052	0.060	
1732.40	1412	UMTS 1750	RMC	25.0	24.78	26	-0.19	Right	Tilt	1298M	1:1	0.041	1.052	0.043	
1732.40	1412	UMTS 1750	RMC	25.0	24.78	26	-0.15	Left	Cheek	1298M	1:1	0.158	1.052	0.166	A4
1732.40	1412	UMTS 1750	RMC	25.0	24.78	26	-0.17	Left	Tilt	1298M	1:1	0.075	1.052	0.079	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-5
UMTS 1900 Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
1880.00	9400	UMTS 1900	RMC	25.0	24.78	3	0.04	Right	Cheek	1298M	1:1	0.092	1.052	0.097	
1880.00	9400	UMTS 1900	RMC	25.0	24.78	3	0.17	Right	Tilt	1298M	1:1	0.070	1.052	0.074	
1880.00	9400	UMTS 1900	RMC	25.0	24.78	3	0.17	Left	Cheek	1298M	1:1	0.126	1.052	0.133	A5
1880.00	9400	UMTS 1900	RMC	25.0	24.78	3	0.21	Left	Tilt	1298M	1:1	0.049	1.052	0.052	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-6
CDMA BC10 (§90S) Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	25.8	24.69	2	0.02	Right	Cheek	1290M	1:1	0.175	1.291	0.226	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	25.8	24.69	2	0.00	Right	Tilt	1290M	1:1	0.090	1.291	0.116	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	25.8	24.69	2	-0.01	Left	Cheek	1290M	1:1	0.124	1.291	0.160	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	25.8	24.69	2	-0.04	Left	Tilt	1290M	1:1	0.070	1.291	0.090	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	25.8	24.57	2	0.05	Right	Cheek	1290M	1:1	0.178	1.327	0.236	A6
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	25.8	24.57	2	-0.02	Right	Tilt	1290M	1:1	0.100	1.327	0.133	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	25.8	24.57	2	-0.08	Left	Cheek	1290M	1:1	0.141	1.327	0.187	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	25.8	24.57	2	-0.03	Left	Tilt	1290M	1:1	0.085	1.327	0.113	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Head 1.6 W/kg (mW/g) averaged over 1 gram							

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 11-7
CDMA BC0 (§22H) Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	25.8	24.56	2	-0.05	Right	Cheek	1290M	1:1	0.175	1.330	0.233	
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	25.8	24.56	2	0.01	Right	Tilt	1290M	1:1	0.085	1.330	0.113	
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	25.8	24.56	2	-0.08	Left	Cheek	1290M	1:1	0.139	1.330	0.185	
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	25.8	24.56	2	0.05	Left	Tilt	1290M	1:1	0.072	1.330	0.096	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	25.8	24.44	2	-0.01	Right	Cheek	1290M	1:1	0.177	1.368	0.242	A7
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	25.8	24.44	2	0.00	Right	Tilt	1290M	1:1	0.092	1.368	0.126	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	25.8	24.44	2	-0.04	Left	Cheek	1290M	1:1	0.140	1.368	0.192	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	25.8	24.44	2	0.05	Left	Tilt	1290M	1:1	0.078	1.368	0.107	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-8
PCS CDMA Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
1880.00	600	PCS CDMA	RC3 / SO55	25.0	24.45	1	0.04	Right	Cheek	1298M	1:1	0.087	1.135	0.099	
1880.00	600	PCS CDMA	RC3 / SO55	25.0	24.45	1	-0.04	Right	Tilt	1298M	1:1	0.073	1.135	0.083	
1880.00	600	PCS CDMA	RC3 / SO55	25.0	24.45	1	-0.09	Left	Cheek	1298M	1:1	0.134	1.135	0.152	
1880.00	600	PCS CDMA	RC3 / SO55	25.0	24.45	1	-0.14	Left	Tilt	1298M	1:1	0.044	1.135	0.050	
1880.00	600	PCS CDMA	EVDO Rev. A	25.0	24.48	1	0.03	Right	Cheek	1298M	1:1	0.088	1.127	0.099	
1880.00	600	PCS CDMA	EVDO Rev. A	25.0	24.48	1	0.03	Right	Tilt	1298M	1:1	0.082	1.127	0.092	
1880.00	600	PCS CDMA	EVDO Rev. A	25.0	24.48	1	-0.02	Left	Cheek	1298M	1:1	0.137	1.127	0.154	A8
1880.00	600	PCS CDMA	EVDO Rev. A	25.0	24.48	1	-0.12	Left	Tilt	1298M	1:1	0.042	1.127	0.047	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Head 1.6 W/kg (mW/g) averaged over 1 gram							

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 11-9
LTE Band 71 Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
680.50	133297	Mid	LTE Band 71	20	25.5	25.07	1	-0.03	0	Right	Cheek	QPSK	1	0	1241M	1:1	0.129	1.104	0.142	
680.50	133297	Mid	LTE Band 71	20	24.5	24.06	1	-0.02	1	Right	Cheek	QPSK	50	0	1241M	1:1	0.110	1.107	0.122	
680.50	133297	Mid	LTE Band 71	20	25.5	25.07	1	0.19	0	Right	Tilt	QPSK	1	0	1241M	1:1	0.069	1.104	0.076	
680.50	133297	Mid	LTE Band 71	20	24.5	24.06	1	0.21	1	Right	Tilt	QPSK	50	0	1241M	1:1	0.057	1.107	0.063	
680.50	133297	Mid	LTE Band 71	20	25.5	25.07	1	0.01	0	Left	Cheek	QPSK	1	0	1241M	1:1	0.140	1.104	0.155	A9
680.50	133297	Mid	LTE Band 71	20	24.5	24.06	1	0.06	1	Left	Cheek	QPSK	50	0	1241M	1:1	0.115	1.107	0.127	
680.50	133297	Mid	LTE Band 71	20	25.5	25.07	1	0.07	0	Left	Tilt	QPSK	1	0	1241M	1:1	0.091	1.104	0.100	
680.50	133297	Mid	LTE Band 71	20	24.5	24.06	1	0.04	1	Left	Tilt	QPSK	50	0	1241M	1:1	0.065	1.107	0.072	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram										

Table 11-10
LTE Band 12 Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
707.50	23095	Mid	LTE Band 12	10	25.8	25.40	10	0.08	0	Right	Cheek	QPSK	1	25	1241M	1:1	0.133	1.096	0.146	A10
707.50	23095	Mid	LTE Band 12	10	24.8	24.45	10	0.09	1	Right	Cheek	QPSK	25	0	1241M	1:1	0.103	1.084	0.112	
707.50	23095	Mid	LTE Band 12	10	25.8	25.40	10	0.11	0	Right	Tilt	QPSK	1	25	1241M	1:1	0.081	1.096	0.089	
707.50	23095	Mid	LTE Band 12	10	24.8	24.45	10	0.12	1	Right	Tilt	QPSK	25	0	1241M	1:1	0.064	1.084	0.069	
707.50	23095	Mid	LTE Band 12	10	25.8	25.40	10	0.08	0	Left	Cheek	QPSK	1	25	1241M	1:1	0.127	1.096	0.139	
707.50	23095	Mid	LTE Band 12	10	24.8	24.45	10	0.04	1	Left	Cheek	QPSK	25	0	1241M	1:1	0.098	1.084	0.106	
707.50	23095	Mid	LTE Band 12	10	25.8	25.40	10	0.18	0	Left	Tilt	QPSK	1	25	1241M	1:1	0.069	1.096	0.076	
707.50	23095	Mid	LTE Band 12	10	24.8	24.45	10	0.15	1	Left	Tilt	QPSK	25	0	1241M	1:1	0.059	1.084	0.064	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram										

Table 11-11
LTE Band 13 Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
782.00	23230	Mid	LTE Band 13	10	25.8	25.51	1	0.07	0	Right	Cheek	QPSK	1	25	1241M	1:1	0.149	1.069	0.159	
782.00	23230	Mid	LTE Band 13	10	24.8	24.55	1	0.08	1	Right	Cheek	QPSK	25	0	1241M	1:1	0.124	1.059	0.131	
782.00	23230	Mid	LTE Band 13	10	25.8	25.51	1	0.09	0	Right	Tilt	QPSK	1	25	1241M	1:1	0.081	1.069	0.087	
782.00	23230	Mid	LTE Band 13	10	24.8	24.55	1	0.16	1	Right	Tilt	QPSK	25	0	1241M	1:1	0.066	1.059	0.070	
782.00	23230	Mid	LTE Band 13	10	25.8	25.51	1	0.05	0	Left	Cheek	QPSK	1	25	1241M	1:1	0.153	1.069	0.164	A11
782.00	23230	Mid	LTE Band 13	10	24.8	24.55	1	0.11	1	Left	Cheek	QPSK	25	0	1241M	1:1	0.123	1.059	0.130	
782.00	23230	Mid	LTE Band 13	10	25.8	25.51	1	0.06	0	Left	Tilt	QPSK	1	25	1241M	1:1	0.095	1.069	0.102	
782.00	23230	Mid	LTE Band 13	10	24.8	24.55	1	0.05	1	Left	Tilt	QPSK	25	0	1241M	1:1	0.075	1.059	0.079	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram										

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 11-12
LTE Band 14 Head SAR

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
793.00	23330	Mid	LTE Band 14	10	25.8	25.23	1	0.04	0	Right	Cheek	QPSK	1	25	1241M	1:1	0.160	1.140	0.182	A12
793.00	23330	Mid	LTE Band 14	10	24.8	24.37	1	0.05	1	Right	Cheek	QPSK	25	12	1241M	1:1	0.129	1.104	0.142	
793.00	23330	Mid	LTE Band 14	10	25.8	25.23	1	0.07	0	Right	Tilt	QPSK	1	25	1241M	1:1	0.082	1.140	0.093	
793.00	23330	Mid	LTE Band 14	10	24.8	24.37	1	0.12	1	Right	Tilt	QPSK	25	12	1241M	1:1	0.073	1.104	0.081	
793.00	23330	Mid	LTE Band 14	10	25.8	25.23	1	0.07	0	Left	Cheek	QPSK	1	25	1241M	1:1	0.128	1.140	0.146	
793.00	23330	Mid	LTE Band 14	10	24.8	24.37	1	0.14	1	Left	Cheek	QPSK	25	12	1241M	1:1	0.108	1.104	0.119	
793.00	23330	Mid	LTE Band 14	10	25.8	25.23	1	0.06	0	Left	Tilt	QPSK	1	25	1241M	1:1	0.089	1.140	0.101	
793.00	23330	Mid	LTE Band 14	10	24.8	24.37	1	0.12	1	Left	Tilt	QPSK	25	12	1241M	1:1	0.073	1.104	0.081	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population															Head 1.6 W/kg (mW/g) averaged over 1 gram					

Table 11-13
LTE Band 26 (Cell) Head SAR

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.8	24.98	1	0.00	0	Right	Cheek	QPSK	1	0	1291M	1:1	0.160	1.208	0.193	A13
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.8	24.04	1	0.06	1	Right	Cheek	QPSK	36	18	1291M	1:1	0.133	1.191	0.158	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.8	24.98	1	0.01	0	Right	Tilt	QPSK	1	0	1291M	1:1	0.080	1.208	0.097	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.8	24.04	1	0.10	1	Right	Tilt	QPSK	36	18	1291M	1:1	0.065	1.191	0.077	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.8	24.98	1	0.05	0	Left	Cheek	QPSK	1	0	1291M	1:1	0.119	1.208	0.144	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.8	24.04	1	0.07	1	Left	Cheek	QPSK	36	18	1291M	1:1	0.111	1.191	0.132	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.8	24.98	1	0.05	0	Left	Tilt	QPSK	1	0	1291M	1:1	0.070	1.208	0.085	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.8	24.04	1	-0.04	1	Left	Tilt	QPSK	36	18	1291M	1:1	0.069	1.191	0.082	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population															Head 1.6 W/kg (mW/g) averaged over 1 gram					

Table 11-14
LTE Band 5 (Cell) Head SAR

MEASUREMENT RESULTS																						
1 CC Uplink | 2 CC Uplink	Component Carrier	FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
		MHz	Ch.																(W/kg)		(W/kg)	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.8	24.58	76	0.16	0	Right	Cheek	QPSK	1	0	0982M	1:1	0.223	1.324	**0.295**	A14
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.8	23.65	76	0.00	1	Right	Cheek	QPSK	25	0	0982M	1:1	0.134	1.303	0.175	
2 CC Uplink	PCC	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.8	24.74	76	0.12	0	Right	Cheek	QPSK	1	0	0982M	1:1	0.212	1.276	0.271	
2 CC Uplink	SCC	829.30	20453	Mid	LTE Band 5 (Cell)	5									1	24						
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.8	24.58	76	-0.01	0	Right	Tilt	QPSK	1	0	0982M	1:1	0.078	1.324	0.103	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.8	23.65	76	0.09	1	Right	Tilt	QPSK	25	0	0982M	1:1	0.062	1.303	0.081	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.8	24.58	76	0.09	0	Left	Cheek	QPSK	1	0	0982M	1:1	0.142	1.324	0.188	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.8	23.65	76	0.05	1	Left	Cheek	QPSK	25	0	0982M	1:1	0.108	1.303	0.141	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.8	24.58	76	-0.02	0	Left	Tilt	QPSK	1	0	0982M	1:1	0.080	1.324	0.106	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.8	23.65	76	0.03	1	Left	Tilt	QPSK	25	0	0982M	1:1	0.059	1.303	0.077	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																	Head 1.6 W/kg (mW/g) averaged over 1 gram					

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 11-15
LTE Band 66 (AWS) Head SAR

MEASUREMENT RESULTS																							
1 CC Uplink | 2 CC Uplink	Component Carrier	FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g) (W/kg)	Scaling Factor	Reported SAR (1g) (W/kg)	Plot #
		MHz	Ch.																			
1 CC Uplink	N/A	1770.00	132572	High	LTE Band 66 (AWS)	20	25.0	24.93	30	0.05	0	Right	Cheek	QPSK	1	0	1291M	1:1	0.087	1.016	0.088	
1 CC Uplink	N/A	1770.00	132572	High	LTE Band 66 (AWS)	20	24.0	23.99	30	0.16	1	Right	Cheek	QPSK	50	0	1291M	1:1	0.066	1.002	0.066	
1 CC Uplink	N/A	1770.00	132572	High	LTE Band 66 (AWS)	20	25.0	24.93	30	0.15	0	Right	Tilt	QPSK	1	0	1291M	1:1	0.053	1.016	0.054	
1 CC Uplink	N/A	1770.00	132572	High	LTE Band 66 (AWS)	20	24.0	23.99	30	0.12	1	Right	Tilt	QPSK	50	0	1291M	1:1	0.042	1.002	0.042	
1 CC Uplink	N/A	1770.00	132572	High	LTE Band 66 (AWS)	20	25.0	24.93	30	0.10	0	Left	Cheek	QPSK	1	0	1291M	1:1	0.185	1.016	0.188	A15
1 CC Uplink	N/A	1775.00	132622	High	LTE Band 66 (AWS)	10	25.0	24.82	30	-0.19	0	Left	Cheek	QPSK	1	0	1291M	1:1	0.179	1.042	0.187	
1 CC Uplink	N/A	1770.00	132572	High	LTE Band 66 (AWS)	20	24.0	23.99	30	-0.17	1	Left	Cheek	QPSK	50	0	1291M	1:1	0.157	1.002	0.157	
CA_66C 2 CC Uplink	PCC	1770.00	132572	High	LTE Band 66 (AWS)	20	25.0	24.32	30	-0.16	0	Left	Cheek	QPSK	1	0	1291M	1:1	0.151	1.169	0.177	
	SCC	1750.20	132374	High	LTE Band 66 (AWS)	20									1	99						
CA_66B 2 CC Uplink	PCC	1775.00	132622	High	LTE Band 66 (AWS)	10	25.0	23.80	30	-0.06	0	Left	Cheek	QPSK	1	0	1291M	1:1	0.146	1.318	0.192	
	SCC	1765.10	132523	High	LTE Band 66 (AWS)	10									1	49						
1 CC Uplink	N/A	1770.00	132572	High	LTE Band 66 (AWS)	20	25.0	24.93	30	0.19	0	Left	Tilt	QPSK	1	0	1291M	1:1	0.064	1.016	0.065	
1 CC Uplink	N/A	1770.00	132572	High	LTE Band 66 (AWS)	20	24.0	23.99	30	0.21	1	Left	Tilt	QPSK	50	0	1291M	1:1	0.056	1.002	0.056	

ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population	Head 1.6 W/kg (mW/g) averaged over 1 gram

Table 11-16
LTE Band 25 (PCS) Head SAR

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g) (W/kg)	Scaling Factor	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																			
1882.50	26365	Mid	LTE Band 25 (PCS)	20	25.0	24.81	1	0.12	0	Right	Cheek	QPSK	1	50	1289M	1:1	0.095	1.045	0.099	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.0	24.00	1	0.02	1	Right	Cheek	QPSK	50	25	1289M	1:1	0.071	1.000	0.071	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	25.0	24.81	1	0.17	0	Right	Tilt	QPSK	1	50	1289M	1:1	0.127	1.045	0.133	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.0	24.00	1	-0.01	1	Right	Tilt	QPSK	50	25	1289M	1:1	0.097	1.000	0.097	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	25.0	24.81	1	-0.18	0	Left	Cheek	QPSK	1	50	1289M	1:1	0.133	1.045	0.139	A16
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.0	24.00	1	-0.08	1	Left	Cheek	QPSK	50	25	1289M	1:1	0.100	1.000	0.100	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	25.0	24.81	1	-0.16	0	Left	Tilt	QPSK	1	50	1289M	1:1	0.047	1.045	0.049	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.0	24.00	1	-0.13	1	Left	Tilt	QPSK	50	25	1289M	1:1	0.038	1.000	0.038	

ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population	Head 1.6 W/kg (mW/g) averaged over 1 gram

Table 11-17
LTE Band 30 Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g) (W/kg)	Scaling Factor	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																			
2310.00	27710	Mid	LTE Band 30	10	23.5	23.04	0.21	0	Right	Cheek	QPSK	1	25	1286M	1:1	0.045	1.112	0.050	
2310.00	27710	Mid	LTE Band 30	10	22.5	22.19	0.16	1	Right	Cheek	QPSK	25	0	1286M	1:1	0.036	1.074	0.039	
2310.00	27710	Mid	LTE Band 30	10	23.5	23.04	0.13	0	Right	Tilt	QPSK	1	25	1286M	1:1	0.029	1.112	0.032	
2310.00	27710	Mid	LTE Band 30	10	22.5	22.19	0.16	1	Right	Tilt	QPSK	25	0	1286M	1:1	0.022	1.074	0.024	
2310.00	27710	Mid	LTE Band 30	10	23.5	23.04	0.09	0	Left	Cheek	QPSK	1	25	1286M	1:1	0.068	1.112	0.076	A17
2310.00	27710	Mid	LTE Band 30	10	22.5	22.19	0.14	1	Left	Cheek	QPSK	25	0	1286M	1:1	0.057	1.074	0.061	
2310.00	27710	Mid	LTE Band 30	10	23.5	23.04	0.12	0	Left	Tilt	QPSK	1	25	1286M	1:1	0.011	1.112	0.012	
2310.00	27710	Mid	LTE Band 30	10	22.5	22.19	0.19	1	Left	Tilt	QPSK	25	0	1286M	1:1	0.010	1.074	0.011	

ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population	Head 1.6 W/kg (mW/g) averaged over 1 gram

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 11-18
LTE Band 7 Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
2535.00	21100	Mid	LTE Band 7	20	23.5	23.07	0.17	0	Right	Cheek	QPSK	1	99	1286M	1:1	0.077	1.104	0.085	
2535.00	21100	Mid	LTE Band 7	20	22.5	22.02	0.19	1	Right	Cheek	QPSK	50	0	1286M	1:1	0.014	1.117	0.016	
2535.00	21100	Mid	LTE Band 7	20	23.5	23.07	0.16	0	Right	Tilt	QPSK	1	99	1286M	1:1	0.087	1.104	0.096	
2535.00	21100	Mid	LTE Band 7	20	22.5	22.02	0.14	1	Right	Tilt	QPSK	50	0	1286M	1:1	0.017	1.117	0.019	
2535.00	21100	Mid	LTE Band 7	20	23.5	23.07	0.06	0	Left	Cheek	QPSK	1	99	1286M	1:1	0.095	1.104	0.105	A18
2535.00	21100	Mid	LTE Band 7	20	22.5	22.02	0.19	1	Left	Cheek	QPSK	50	0	1286M	1:1	0.018	1.117	0.020	
2535.00	21100	Mid	LTE Band 7	20	23.5	23.07	-0.19	0	Left	Tilt	QPSK	1	99	1286M	1:1	0.047	1.104	0.052	
2535.00	21100	Mid	LTE Band 7	20	22.5	22.02	0.08	1	Left	Tilt	QPSK	50	0	1286M	1:1	0.007	1.117	0.008	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population												Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-19
LTE Band 48 Head SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
3646.70	56207	Mid-High	LTE Band 48	20	23.5	23.33	0.21	0	Right	Cheek	QPSK	1	0	1286M	1:1.58	0.023	1.040	0.024	
3646.70	56207	Mid-High	LTE Band 48	20	22.5	22.49	0.13	1	Right	Cheek	QPSK	50	25	1286M	1:1.58	0.016	1.002	0.016	
3646.70	56207	Mid-High	LTE Band 48	20	23.5	23.33	0.15	0	Right	Tilt	QPSK	1	0	1286M	1:1.58	0.010	1.040	0.010	
3646.70	56207	Mid-High	LTE Band 48	20	22.5	22.49	0.04	1	Right	Tilt	QPSK	50	25	1286M	1:1.58	0.007	1.002	0.007	
3646.70	56207	Mid-High	LTE Band 48	20	23.5	23.33	0.20	0	Left	Cheek	QPSK	1	0	1286M	1:1.58	0.045	1.040	**0.047**	A19
3646.70	56207	Mid-High	LTE Band 48	20	22.5	22.49	0.17	1	Left	Cheek	QPSK	50	25	1286M	1:1.58	0.037	1.002	0.037	
3646.70	56207	Mid-High	LTE Band 48	20	23.5	23.33	0.19	0	Left	Tilt	QPSK	1	0	1286M	1:1.58	0.020	1.040	0.021	
3646.70	56207	Mid-High	LTE Band 48	20	22.5	22.49	-0.06	1	Left	Tilt	QPSK	50	25	1286M	1:1.58	0.014	1.002	0.014	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population												Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-20
LTE Band 41 Head SAR

MEASUREMENT RESULTS																						
1 CC Uplink | 2 CC Uplink, Power Class	Component Carrier	FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
		MHz	Ch.															(W/kg)		(W/kg)	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	25.0	24.37	0.12	0	Right	Cheek	QPSK	1	0	1020M	1:1.58	0.068	1.156	0.079	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	24.0	23.67	0.17	1	Right	Cheek	QPSK	50	25	1020M	1:1.58	0.061	1.079	0.066	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	25.0	24.37	0.14	0	Right	Tilt	QPSK	1	0	1020M	1:1.58	0.060	1.156	0.069	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	24.0	23.67	0.19	1	Right	Tilt	QPSK	50	25	1020M	1:1.58	0.045	1.079	0.049	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	25.0	24.37	0.13	0	Left	Cheek	QPSK	1	0	1020M	1:1.58	0.091	1.156	0.105	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	24.0	23.67	0.14	1	Left	Cheek	QPSK	50	25	1020M	1:1.58	0.061	1.079	0.066	
1 CC Uplink - Power Class 2	N/A	2593.00	40620	Mid	LTE Band 41	20	27.5	26.87	0.13	0	Left	Cheek	QPSK	1	0	1020M	1:2.31	0.101	1.156	0.117	
2 CC Uplink - Power Class 3	PCC	2593.00	40620	Mid	LTE Band 41	20	25.0	25.00	0.18	0	Left	Cheek	QPSK	1	0	1020M	1:1.58	0.105	1.000	0.105	
2 CC Uplink - Power Class 3	SCC	2573.20	40422	Mid	LTE Band 41	20								1	99						
2 CC Uplink - Power Class 2	PCC	2593.00	40620	Mid	LTE Band 41	20	27.5	27.47	0.13	0	Left	Cheek	QPSK	1	0	1020M	1:2.31	0.117	1.007	0.118	A20
2 CC Uplink - Power Class 2	SCC	2573.20	40422	Mid	LTE Band 41	20								1	99						
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	25.0	24.37	-0.13	0	Left	Tilt	QPSK	1	0	1020M	1:1.58	0.048	1.156	0.055	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	24.0	23.67	0.12	1	Left	Tilt	QPSK	50	25	1020M	1:1.58	0.036	1.079	0.039	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population														Head 1.6 W/kg (mW/g) averaged over 1 gram								

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 11-21
DTS Head SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													W/kg	(W/kg)			(W/kg)	
2412	1	802.11b	DSSS	22	17.0	16.46	0.17	Right	Cheek	1	1202M	1	99.9	0.357	-	1.132	1.001	-	
2412	1	802.11b	DSSS	22	17.0	16.46	0.06	Right	Tilt	1	1202M	1	99.9	0.381	0.222	1.132	1.001	**0.252**	A21
2412	1	802.11b	DSSS	22	17.0	16.46	0.19	Left	Cheek	1	1202M	1	99.9	0.121	-	1.132	1.001	-	
2412	1	802.11b	DSSS	22	17.0	16.46	0.21	Left	Tilt	1	1202M	1	99.9	0.091	-	1.132	1.001	-	
2462	11	802.11b	DSSS	22	17.0	16.77	0.15	Right	Cheek	2	1202M	1	99.9	0.011	-	1.054	1.001	-	
2462	11	802.11b	DSSS	22	17.0	16.77	0.08	Right	Tilt	2	1202M	1	99.9	0.013	0.004	1.054	1.001	0.004	
2462	11	802.11b	DSSS	22	17.0	16.77	0.04	Left	Cheek	2	1202M	1	99.9	0.011	-	1.054	1.001	-	
2462	11	802.11b	DSSS	22	17.0	16.77	0.19	Left	Tilt	2	1202M	1	99.9	0.013	-	1.054	1.001	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**								**Head** **1.6 W/kg (mW/g)** averaged over 1 gram											

Table 11-22
NII Head SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													W/kg	(W/kg)			(W/kg)	
5290	58	802.11ac	OFDM	80	14.0	13.99	-0.16	Right	Cheek	1	1050M	29.3	94.6	0.484	-	1.002	1.057	-	
5290	58	802.11ac	OFDM	80	14.0	13.99	0.19	Right	Tilt	1	1050M	29.3	94.6	0.557	0.262	1.002	1.057	**0.277**	A22
5290	58	802.11ac	OFDM	80	14.0	13.99	0.17	Left	Cheek	1	1050M	29.3	94.6	0.343	-	1.002	1.057	-	
5290	58	802.11ac	OFDM	80	14.0	13.99	0.17	Left	Tilt	1	1050M	29.3	94.6	0.305	-	1.002	1.057	-	
5290	58	802.11ac	OFDM	80	14.0	13.44	0.00	Right	Cheek	2	1050M	29.3	94.7	0.011	-	1.138	1.056	-	
5290	58	802.11ac	OFDM	80	14.0	13.44	0.10	Right	Tilt	2	1050M	29.3	94.7	0.013	-	1.138	1.056	-	
5290	58	802.11ac	OFDM	80	14.0	13.44	0.19	Left	Cheek	2	1050M	29.3	94.7	0.011	-	1.138	1.056	-	
5290	58	802.11ac	OFDM	80	14.0	13.44	0.00	Left	Tilt	2	1050M	29.3	94.7	0.013	0.004	1.138	1.056	0.005	
5530	106	802.11ac	OFDM	80	14.0	13.52	0.18	Right	Cheek	1	1050M	29.3	94.6	0.466	-	1.117	1.057	-	
5530	106	802.11ac	OFDM	80	14.0	13.52	0.13	Right	Tilt	1	1050M	29.3	94.6	0.594	0.234	1.117	1.057	**0.276**	
5530	106	802.11ac	OFDM	80	14.0	13.52	0.19	Left	Cheek	1	1050M	29.3	94.6	0.259	-	1.117	1.057	-	
5530	106	802.11ac	OFDM	80	14.0	13.52	0.16	Left	Tilt	1	1050M	29.3	94.6	0.314	-	1.117	1.057	-	
5530	106	802.11ac	OFDM	80	14.0	13.98	0.00	Right	Cheek	2	1050M	29.3	94.7	0.030	0.009	1.005	1.056	0.010	
5530	106	802.11ac	OFDM	80	14.0	13.98	0.20	Right	Tilt	2	1050M	29.3	94.7	0.015	-	1.005	1.056	-	
5530	106	802.11ac	OFDM	80	14.0	13.98	0.21	Left	Cheek	2	1050M	29.3	94.7	0.010	-	1.005	1.056	-	
5530	106	802.11ac	OFDM	80	14.0	13.98	0.19	Left	Tilt	2	1050M	29.3	94.7	0.010	-	1.005	1.056	-	
5775	155	802.11ac	OFDM	80	14.0	13.76	0.17	Right	Cheek	1	1050M	29.3	94.6	0.629	-	1.057	1.057	-	
5775	155	802.11ac	OFDM	80	14.0	13.76	0.16	Right	Tilt	1	1050M	29.3	94.6	0.921	0.217	1.057	1.057	0.242	
5775	155	802.11ac	OFDM	80	14.0	13.76	0.08	Left	Cheek	1	1050M	29.3	94.6	0.328	-	1.057	1.057	-	
5775	155	802.11ac	OFDM	80	14.0	13.76	0.15	Left	Tilt	1	1050M	29.3	94.6	0.504	-	1.057	1.057	-	
5775	155	802.11ac	OFDM	80	14.0	13.82	0.20	Right	Cheek	2	1050M	29.3	94.7	0.015	0.007	1.042	1.056	0.008	
5775	155	802.11ac	OFDM	80	14.0	13.82	0.14	Right	Tilt	2	1050M	29.3	94.7	0.007	-	1.042	1.056	-	
5775	155	802.11ac	OFDM	80	14.0	13.82	0.12	Left	Cheek	2	1050M	29.3	94.7	0.009	-	1.042	1.056	-	
5775	155	802.11ac	OFDM	80	14.0	13.82	0.21	Left	Tilt	2	1050M	29.3	94.7	0.010	-	1.042	1.056	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**								**Head** **1.6 W/kg (mW/g)** averaged over 1 gram											

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 11-23
DSS Head SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	SAR (1g)	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)			(W/kg)	
2441.00	39	Bluetooth	FHSS	18.5	18.49	0.17	Right	Cheek	1202M	1	77.1	0.259	1.002	1.297	**0.337**	A23
2441.00	39	Bluetooth	FHSS	18.5	18.49	-0.03	Right	Tilt	1202M	1	77.1	0.229	1.002	1.297	0.298	
2441.00	39	Bluetooth	FHSS	18.5	18.49	-0.03	Left	Cheek	1202M	1	77.1	0.069	1.002	1.297	0.090	
2441.00	39	Bluetooth	FHSS	18.5	18.49	-0.09	Left	Tilt	1202M	1	77.1	0.068	1.002	1.297	0.088	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**												**Head** **1.6 W/kg (mW/g)** averaged over 1 gram				

11.2 Standalone Body-Worn SAR Data

Table 11-24
GSM/UMTS/CDMA Body-Worn SAR Data

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	Power Drift [dB]	Spacing	Device Serial Number	Duty Cycle	Side	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
836.60	190	GSM 850	GSM	33.5	32.33	N/A	-0.04	15 mm	1290M	1:8.3	back	0.159	1.309	0.208	A24
1880.00	661	GSM 1900	GSM	30.5	29.83	N/A	-0.01	15 mm	1298M	1:8.3	back	0.327	1.167	0.382	A26
836.60	4183	UMTS 850	RMC	25.5	24.77	2	-0.12	15 mm	1290M	1:1	back	0.213	1.183	0.252	A28
1732.40	1412	UMTS 1750	RMC	25.0	24.78	28	-0.02	15 mm	1298M	1:1	back	0.537	1.052	0.565	A30
1852.40	9262	UMTS 1900	RMC	25.0	24.67	30	0.00	15 mm	1298M	1:1	back	0.733	1.079	0.791	
1880.00	9400	UMTS 1900	RMC	25.0	24.78	30	0.00	15 mm	1298M	1:1	back	0.728	1.052	0.766	
1907.60	9538	UMTS 1900	RMC	25.0	24.18	30	0.01	15 mm	1298M	1:1	back	0.781	1.208	0.943	A32
820.10	564	CDMA BC10 (§90S)	TDSO / SO32	25.8	24.68	76	0.02	15 mm	1290M	1:1	back	0.219	1.294	0.283	A34
836.52	384	CDMA BC0 (§22H)	TDSO / SO32	25.8	24.56	76	0.01	15 mm	1290M	1:1	back	0.231	1.330	0.307	A36
1851.25	25	PCS CDMA	TDSO / SO32	25.0	24.25	30	0.04	15 mm	1298M	1:1	back	0.802	1.189	**0.954**	A38
1880.00	600	PCS CDMA	TDSO / SO32	25.0	24.28	30	0.01	15 mm	1298M	1:1	back	0.675	1.180	0.797	
1908.75	1175	PCS CDMA	TDSO / SO32	25.0	23.78	30	0.05	15 mm	1298M	1:1	back	0.648	1.324	0.858	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**												**Body** **1.6 W/kg (mW/g)** averaged over 1 gram			

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 11-25
LTE Body-Worn SAR

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g) (W/kg)	Scaling Factor	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																			
680.50	133297	Mid	LTE Band 71	20	25.5	25.07	7	0.08	0	1241M	QPSK	1	0	15 mm	back	1:1	0.243	1.104	0.268	A40
680.50	133297	Mid	LTE Band 71	20	24.5	24.06	7	0.01	1	1241M	QPSK	50	0	15 mm	back	1:1	0.181	1.107	0.200	
707.50	23095	Mid	LTE Band 12	10	25.8	25.40	1	-0.01	0	1241M	QPSK	1	25	15 mm	back	1:1	0.217	1.096	0.238	A42
707.50	23095	Mid	LTE Band 12	10	24.8	24.45	1	-0.01	1	1241M	QPSK	25	0	15 mm	back	1:1	0.178	1.084	0.193	
782.00	23230	Mid	LTE Band 13	10	25.8	25.51	1	-0.01	0	1241M	QPSK	1	25	15 mm	back	1:1	0.238	1.069	0.254	A44
782.00	23230	Mid	LTE Band 13	10	24.8	24.55	1	-0.04	1	1241M	QPSK	25	0	15 mm	back	1:1	0.208	1.059	0.220	
793.00	23330	Mid	LTE Band 14	10	25.8	25.23	1	-0.02	0	1032M	QPSK	1	25	15 mm	back	1:1	0.303	1.140	0.345	A46
793.00	23330	Mid	LTE Band 14	10	24.8	24.37	1	-0.03	1	1032M	QPSK	25	12	15 mm	back	1:1	0.253	1.104	0.279	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.8	24.98	76	0.05	0	1110M	QPSK	1	0	15 mm	back	1:1	0.310	1.208	0.374	A48
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.8	24.04	76	0.01	1	1110M	QPSK	36	18	15 mm	back	1:1	0.241	1.191	0.287	
1860.00	26140	Low	LTE Band 25 (PCS)	20	25.0	24.71	27	0.00	0	1289M	QPSK	1	99	15 mm	back	1:1	0.837	1.069	0.895	A54
1882.50	26365	Mid	LTE Band 25 (PCS)	20	25.0	24.81	27	-0.03	0	1289M	QPSK	1	50	15 mm	back	1:1	0.826	1.045	0.863	
1905.00	26590	High	LTE Band 25 (PCS)	20	25.0	24.59	27	-0.02	0	1289M	QPSK	1	0	15 mm	back	1:1	0.763	1.099	0.839	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.0	24.00	27	0.05	1	1289M	QPSK	50	25	15 mm	back	1:1	0.661	1.000	0.661	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.0	23.99	27	0.00	1	1289M	QPSK	100	0	15 mm	back	1:1	0.661	1.002	0.662	
2310.00	27710	Mid	LTE Band 30	10	23.5	23.04	N/A	0.05	0	1286M	QPSK	1	25	15 mm	back	1:1	0.361	1.112	0.401	A56
2310.00	27710	Mid	LTE Band 30	10	22.5	22.19	N/A	0.00	1	1286M	QPSK	25	0	15 mm	back	1:1	0.303	1.074	0.325	
2535.00	21100	Mid	LTE Band 7	20	23.5	23.07	N/A	-0.08	0	1286M	QPSK	1	99	15 mm	back	1:1	0.308	1.104	0.340	A58
2535.00	21100	Mid	LTE Band 7	20	22.5	22.02	N/A	0.18	1	1286M	QPSK	50	0	15 mm	back	1:1	0.258	1.117	0.288	
3646.70	56207	Mid-High	LTE Band 48	20	23.5	23.33	N/A	0.00	0	0937M	QPSK	1	0	15 mm	back	1:1.58	0.216	1.040	**0.225**	A60
3646.70	56207	Mid-High	LTE Band 48	20	22.5	22.49	N/A	0.08	1	0937M	QPSK	50	25	15 mm	back	1:1.58	0.177	1.002	0.177	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**																	**Body** **1.6 W/kg (mW/g)** averaged over 1 gram			

Table 11-26
LTE Band 5 Body-Worn SAR

MEASUREMENT RESULTS																						
1 CC Uplink | 2 CC Uplink	Component Carrier	FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g) (W/kg)	Scaling Factor	Reported SAR (1g) (W/kg)	Plot #
		MHz	Ch.																			
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.8	24.58	2	0.04	0	0982M	QPSK	1	0	15 mm	back	1:1	0.308	1.324	0.408	A50
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.8	23.65	2	0.01	1	0982M	QPSK	25	0	15 mm	back	1:1	0.246	1.303	0.321	
2 CC Uplink	PCC	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.8	24.74	2	-0.15	0	0982M	QPSK	1	0	15 mm	back	1:1	0.306	1.276	0.390	
2 CC Uplink	SCC	829.30	20453	Mid	LTE Band 5 (Cell)	5									24	15 mm						
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**																	**Body** **1.6 W/kg (mW/g)** averaged over 1 gram					

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 11-27
LTE Band 66 Body-Worn SAR

MEASUREMENT RESULTS																							
1 CC Uplink | 2 CC Uplink	Component Carrier	FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g) (W/kg)	Scaling Factor	Reported SAR (1g) (W/kg)	Plot #
		MHz	Ch.																			
1 CC Uplink	N/A	1720.00	132072	Low	LTE Band 66 (AWS)	20	25.0	24.22	27	-0.04	0	1291M	QPSK	1	50	15 mm	back	1:1	0.560	1.197	0.670	
1 CC Uplink	N/A	1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.0	24.84	27	-0.02	0	1291M	QPSK	1	99	15 mm	back	1:1	0.739	1.038	0.767	
1 CC Uplink	N/A	1770.00	132572	High	LTE Band 66 (AWS)	20	25.0	24.93	27	-0.14	0	1291M	QPSK	1	0	15 mm	back	1:1	0.761	1.016	0.773	A52
1 CC Uplink	N/A	1775.00	132622	High	LTE Band 66 (AWS)	10	25.0	24.82	27	0.03	0	1291M	QPSK	1	0	15 mm	back	1:1	0.755	1.042	0.787	
1 CC Uplink	N/A	1770.00	132572	High	LTE Band 66 (AWS)	20	24.0	23.99	27	-0.02	1	1291M	QPSK	50	0	15 mm	back	1:1	0.711	1.002	0.712	
CA_66C 2 CC Uplink	PCC	1770.00	132572	High	LTE Band 66 (AWS)	20	25.0	24.32	27	-0.05	0	1291M	QPSK	1	0	15 mm	back	1:1	0.694	1.169	0.811	
	SCC	1750.20	132374	High	LTE Band 66 (AWS)	20									99	15 mm						
CA_66B 2 CC Uplink	PCC	1775.00	132622	High	LTE Band 66 (AWS)	10	25.0	23.80	27	0.16	0	1291M	QPSK	1	0	15 mm	back	1:1	0.592	1.318	0.780	
	SCC	1765.10	132523	High	LTE Band 66 (AWS)	10									49	15 mm						

ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population	Body 1.6 W/kg (mW/g) averaged over 1 gram

Table 11-28
LTE Band 41 Body-Worn SAR

MEASUREMENT RESULTS																					
1 CC Uplink | 2 CC Uplink, Power Class	Component Carrier	FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g) (W/kg)	Scaling Factor	Reported SAR (1g) (W/kg)	Plot #
		MHz	Ch.																		
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	25.0	24.37	0.02	0	0982M	QPSK	1	0	15 mm	back	1:1.58	0.342	1.156	0.395	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	24.0	23.67	0.08	1	0982M	QPSK	50	25	15 mm	back	1:1.58	0.323	1.079	0.349	
1 CC Uplink - Power Class 2	N/A	2593.00	40620	Mid	LTE Band 41	20	27.5	26.87	0.02	0	0982M	QPSK	1	0	15 mm	back	1:2.31	0.418	1.156	0.483	
2 CC Uplink - Power Class 3	PCC	2593.00	40620	Mid	LTE Band 41	20	25.0	25.00	0.14	0	0982M	QPSK	1	0	15 mm	back	1:1.58	0.413	1.000	0.413	
2 CC Uplink - Power Class 3	SCC	2573.20	40422	Mid	LTE Band 41	20								99	15 mm						
2 CC Uplink - Power Class 2	PCC	2593.00	40620	Mid	LTE Band 41	20	27.5	27.47	-0.02	0	0982M	QPSK	1	0	15 mm	back	1:2.31	0.497	1.007	0.500	A62
2 CC Uplink - Power Class 2	SCC	2573.20	40422	Mid	LTE Band 41	20								99	15 mm						

ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population	Body 1.6 W/kg (mW/g) averaged over 1 gram

Table 11-29
DTS Body-Worn SAR

MEASUREMENT RESULTS																		
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan W/kg	SAR (1g) (W/kg)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																		
2412	1	802.11b	DSSS	22	21.0	20.85	0.04	15 mm	1	1202M	1	back	99.9	0.087	0.057	1.035	1.001	0.059	
2412	1	802.11b	DSSS	22	21.0	20.98	0.00	15 mm	2	1202M	1	back	99.9	0.203	0.139	1.005	1.001	**0.140**	A64

ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population	Body 1.6 W/kg (mW/g) averaged over 1 gram

Table 11-30
DTS MIMO Body-Worn SAR for Conditions with 2.4 GHz and 5 GHz WLAN SAR

MEASUREMENT RESULTS																					
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power (Ant 1) [dBm]	Conducted Power (Ant 1) [dBm]	Maximum Allowed Power (Ant 2) [dBm]	Conducted Power (Ant 2) [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan W/kg	SAR (1g) (W/kg)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																				
2412	1	802.11n	OFDM	20	17.0	16.85	17.0	16.67	0.08	15 mm	MIMO	1087M	13	back	98.6	0.091	0.058	1.079	1.014	0.063	

ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population	Body 1.6 W/kg (mW/g) averaged over 1 gram

DTS MIMO was additionally evaluated at the maximum allowed output power during operations with Simultaneous 2.4 GHz and 5 GHz WLAN. 5 GHz WIFI was not transmitting during the above evaluations.

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 11-31
NII Body-Worn SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													W/kg	(W/kg)			(W/kg)	
5300	60	802.11a	OFDM	20	18.0	17.98	-0.06	15 mm	1	0952M	6	back	98.8	0.544	0.257	1.005	1.012	**0.261**	A66
5280	56	802.11a	OFDM	20	18.0	17.98	-0.13	15 mm	2	0952M	6	back	98.8	0.188	0.088	1.005	1.012	0.090	
5600	120	802.11a	OFDM	20	18.0	17.98	0.12	15 mm	1	0952M	6	back	98.8	0.534	0.239	1.005	1.012	0.243	
5720	144	802.11a	OFDM	20	18.0	17.70	0.10	15 mm	2	0952M	6	back	98.8	0.393	0.174	1.072	1.012	0.189	
5745	149	802.11a	OFDM	20	18.0	17.92	0.01	15 mm	1	0952M	6	back	98.8	0.557	0.237	1.019	1.012	0.244	
5745	149	802.11a	OFDM	20	18.0	17.98	0.09	15 mm	2	0952M	6	back	98.8	0.369	0.164	1.005	1.012	0.167	

ANSI / IEEE C95.1 1992 - SAFETY LIMIT	Body
Spatial Peak Uncontrolled Exposure/General Population	1.6 W/kg (mW/g) averaged over 1 gram

Table 11-32
DSS Body-Worn SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	SAR (1g)	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)			(W/kg)	
2441	39	Bluetooth	FHSS	18.5	18.49	-0.18	15 mm	1087M	1	back	77.1	0.025	1.002	1.297	**0.032**	A68

ANSI / IEEE C95.1 1992 - SAFETY LIMIT	Body
Spatial Peak Uncontrolled Exposure/General Population	1.6 W/kg (mW/g) averaged over 1 gram

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

11.3 Standalone Hotspot SAR Data

Table 11-33
GPRS/UMTS/CDMA Hotspot SAR Data

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	Power Drift [dB]	Spacing	Device Serial Number	# of Time Slots	Duty Cycle	Side	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.												(W/kg)		(W/kg)	
836.60	190	GSM 850	GPRS	30.5	28.96	N/A	-0.15	10 mm	1290M	3	1:2.76	back	0.322	1.426	0.459	A25
836.60	190	GSM 850	GPRS	30.5	28.96	N/A	-0.07	10 mm	1290M	3	1:2.76	front	0.179	1.426	0.255	
836.60	190	GSM 850	GPRS	30.5	28.96	N/A	-0.18	10 mm	1290M	3	1:2.76	bottom	0.179	1.426	0.255	
836.60	190	GSM 850	GPRS	30.5	28.96	N/A	-0.09	10 mm	1290M	3	1:2.76	right	0.191	1.426	0.272	
836.60	190	GSM 850	GPRS	30.5	28.96	N/A	-0.17	10 mm	1290M	3	1:2.76	left	0.072	1.426	0.103	
1850.20	512	GSM 1900	GPRS	24.5	23.86	N/A	0.07	10 mm	1298M	3	1:2.76	back	0.550	1.159	0.637	
1850.20	512	GSM 1900	GPRS	24.5	23.86	N/A	-0.05	10 mm	1298M	3	1:2.76	front	0.394	1.159	0.457	
1850.20	512	GSM 1900	GPRS	24.5	23.86	N/A	-0.01	10 mm	1298M	3	1:2.76	bottom	0.663	1.159	0.768	
1880.00	661	GSM 1900	GPRS	24.5	23.77	N/A	-0.02	10 mm	1298M	3	1:2.76	bottom	0.672	1.183	0.795	
1909.80	810	GSM 1900	GPRS	24.5	23.31	N/A	-0.01	10 mm	1298M	3	1:2.76	bottom	0.744	1.315	0.978	A27
1850.20	512	GSM 1900	GPRS	24.5	23.86	N/A	0.02	10 mm	1298M	3	1:2.76	right	0.071	1.159	0.082	
1850.20	512	GSM 1900	GPRS	24.5	23.86	N/A	0.00	10 mm	1298M	3	1:2.76	left	0.067	1.159	0.078	
836.60	4183	UMTS 850	RMC	25.5	24.77	2	-0.03	10 mm	0982M	N/A	1:1	back	0.452	1.183	0.535	A29
836.60	4183	UMTS 850	RMC	25.5	24.77	2	-0.03	10 mm	0982M	N/A	1:1	front	0.263	1.183	0.311	
836.60	4183	UMTS 850	RMC	25.5	24.77	2	0.02	10 mm	0982M	N/A	1:1	bottom	0.216	1.183	0.256	
836.60	4183	UMTS 850	RMC	25.5	24.77	2	0.01	10 mm	0982M	N/A	1:1	right	0.264	1.183	0.312	
836.60	4183	UMTS 850	RMC	25.5	24.77	2	0.03	10 mm	0982M	N/A	1:1	left	0.091	1.183	0.108	
1732.40	1412	UMTS 1750	RMC	20.5	20.10	28	0.04	10 mm	1298M	N/A	1:1	back	0.315	1.096	0.345	
1732.40	1412	UMTS 1750	RMC	20.5	20.10	28	-0.08	10 mm	1298M	N/A	1:1	front	0.284	1.096	0.311	
1712.40	1312	UMTS 1750	RMC	20.5	19.49	28	-0.07	10 mm	1298M	N/A	1:1	bottom	0.663	1.262	0.837	A31
1732.40	1412	UMTS 1750	RMC	20.5	20.10	28	-0.02	10 mm	1298M	N/A	1:1	bottom	0.586	1.096	0.642	
1752.60	1513	UMTS 1750	RMC	20.5	20.05	28	-0.02	10 mm	1298M	N/A	1:1	bottom	0.539	1.109	0.598	
1732.40	1412	UMTS 1750	RMC	20.5	20.10	28	-0.01	10 mm	1298M	N/A	1:1	right	0.027	1.096	0.030	
1732.40	1412	UMTS 1750	RMC	20.5	20.10	28	0.03	10 mm	1298M	N/A	1:1	left	0.051	1.096	0.056	
1880.00	9400	UMTS 1900	RMC	19.5	19.50	30	0.01	10 mm	1298M	N/A	1:1	back	0.475	1.000	0.475	
1880.00	9400	UMTS 1900	RMC	19.5	19.50	30	-0.01	10 mm	1298M	N/A	1:1	front	0.354	1.000	0.354	
1852.40	9262	UMTS 1900	RMC	19.5	19.32	30	0.01	10 mm	1298M	N/A	1:1	bottom	0.795	1.042	0.828	
1880.00	9400	UMTS 1900	RMC	19.5	19.50	30	-0.04	10 mm	1298M	N/A	1:1	bottom	0.853	1.000	0.853	
1907.60	9538	UMTS 1900	RMC	19.5	18.95	30	-0.04	10 mm	1298M	N/A	1:1	bottom	0.895	1.135	**1.016**	A33
1880.00	9400	UMTS 1900	RMC	19.5	19.50	30	0.10	10 mm	1298M	N/A	1:1	right	0.061	1.000	0.061	
1880.00	9400	UMTS 1900	RMC	19.5	19.50	30	-0.07	10 mm	1298M	N/A	1:1	left	0.058	1.000	0.058	
1907.60	9538	UMTS 1900	RMC	19.5	18.95	30	-0.03	10 mm	1298M	N/A	1:1	bottom	0.871	1.135	0.989	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	25.8	24.62	76	-0.08	10 mm	0982M	N/A	1:1	back	0.445	1.312	0.584	A35
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	25.8	24.62	76	-0.08	10 mm	0982M	N/A	1:1	front	0.266	1.312	0.349	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	25.8	24.62	76	0.00	10 mm	0982M	N/A	1:1	bottom	0.176	1.312	0.231	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	25.8	24.62	76	-0.02	10 mm	0982M	N/A	1:1	right	0.173	1.312	0.227	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	25.8	24.62	76	0.06	10 mm	0982M	N/A	1:1	left	0.110	1.312	0.144	
824.70	1013	CDMA BC0 (§22H)	EVDO Rev. 0	25.8	24.55	76	-0.09	10 mm	0982M	N/A	1:1	back	0.497	1.334	0.663	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	25.8	24.45	76	-0.01	10 mm	0982M	N/A	1:1	back	0.525	1.365	0.717	A37
848.31	777	CDMA BC0 (§22H)	EVDO Rev. 0	25.8	24.47	76	-0.06	10 mm	0982M	N/A	1:1	back	0.406	1.358	0.551	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	25.8	24.45	76	0.12	10 mm	0982M	N/A	1:1	front	0.290	1.365	0.396	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	25.8	24.45	76	0.02	10 mm	0982M	N/A	1:1	bottom	0.250	1.365	0.341	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	25.8	24.45	76	0.00	10 mm	0982M	N/A	1:1	right	0.202	1.365	0.276	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	25.8	24.45	76	0.01	10 mm	0982M	N/A	1:1	left	0.122	1.365	0.167	
1880.00	600	PCS CDMA	EVDO Rev. 0	19.5	19.31	30	-0.04	10 mm	1298M	N/A	1:1	back	0.478	1.045	0.500	
1880.00	600	PCS CDMA	EVDO Rev. 0	19.5	19.31	30	-0.06	10 mm	1298M	N/A	1:1	front	0.353	1.045	0.369	
1851.25	25	PCS CDMA	EVDO Rev. 0	19.5	19.36	30	-0.17	10 mm	1298M	N/A	1:1	bottom	0.746	1.033	0.771	
1880.00	600	PCS CDMA	EVDO Rev. 0	19.5	19.31	30	0.03	10 mm	1298M	N/A	1:1	bottom	0.767	1.045	0.802	
1908.75	1175	PCS CDMA	EVDO Rev. 0	19.5	19.09	30	-0.21	10 mm	1298M	N/A	1:1	bottom	0.811	1.099	0.891	A39
1880.00	600	PCS CDMA	EVDO Rev. 0	19.5	19.31	30	0.06	10 mm	1298M	N/A	1:1	right	0.053	1.045	0.055	
1880.00	600	PCS CDMA	EVDO Rev. 0	19.5	19.31	30	0.04	10 mm	1298M	N/A	1:1	left	0.043	1.045	0.045	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population												Body 1.6 W/kg (mW/g) averaged over 1 gram				

Note: Blue entry represents variability measurement.

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 11-34
LTE Band 71 Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
680.50	133297	Mid	LTE Band 71	20	25.5	25.07	7	-0.08	0	1241M	QPSK	1	0	10 mm	back	1:1	0.320	1.104	0.353	A41
680.50	133297	Mid	LTE Band 71	20	24.5	24.06	7	-0.05	1	1241M	QPSK	50	0	10 mm	back	1:1	0.238	1.107	0.263	
680.50	133297	Mid	LTE Band 71	20	25.5	25.07	7	0.01	0	1241M	QPSK	1	0	10 mm	front	1:1	0.250	1.104	0.276	
680.50	133297	Mid	LTE Band 71	20	24.5	24.06	7	0.02	1	1241M	QPSK	50	0	10 mm	front	1:1	0.194	1.107	0.215	
680.50	133297	Mid	LTE Band 71	20	25.5	25.07	7	-0.03	0	1241M	QPSK	1	0	10 mm	bottom	1:1	0.132	1.104	0.146	
680.50	133297	Mid	LTE Band 71	20	24.5	24.06	7	0.05	1	1241M	QPSK	50	0	10 mm	bottom	1:1	0.102	1.107	0.113	
680.50	133297	Mid	LTE Band 71	20	25.5	25.07	7	0.06	0	1241M	QPSK	1	0	10 mm	right	1:1	0.187	1.104	0.206	
680.50	133297	Mid	LTE Band 71	20	24.5	24.06	7	-0.03	1	1241M	QPSK	50	0	10 mm	right	1:1	0.149	1.107	0.165	
680.50	133297	Mid	LTE Band 71	20	25.5	25.07	7	0.05	0	1241M	QPSK	1	0	10 mm	left	1:1	0.167	1.104	0.184	
680.50	133297	Mid	LTE Band 71	20	24.5	24.06	7	0.03	1	1241M	QPSK	50	0	10 mm	left	1:1	0.124	1.107	0.137	

ANSI / IEEE C95.1 1992 - SAFETY LIMIT	Body
Spatial Peak	1.6 W/kg (mW/g)
Uncontrolled Exposure/General Population	averaged over 1 gram

Table 11-35
LTE Band 12 Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
707.50	23095	Mid	LTE Band 12	10	25.8	25.40	1	-0.14	0	1241M	QPSK	1	25	10 mm	back	1:1	0.315	1.096	0.345	A43
707.50	23095	Mid	LTE Band 12	10	24.8	24.45	1	-0.07	1	1241M	QPSK	25	0	10 mm	back	1:1	0.256	1.084	0.278	
707.50	23095	Mid	LTE Band 12	10	25.8	25.40	1	-0.02	0	1241M	QPSK	1	25	10 mm	front	1:1	0.238	1.096	0.261	
707.50	23095	Mid	LTE Band 12	10	24.8	24.45	1	-0.02	1	1241M	QPSK	25	0	10 mm	front	1:1	0.195	1.084	0.211	
707.50	23095	Mid	LTE Band 12	10	25.8	25.40	1	-0.03	0	1241M	QPSK	1	25	10 mm	bottom	1:1	0.166	1.096	0.182	
707.50	23095	Mid	LTE Band 12	10	24.8	24.45	1	-0.01	1	1241M	QPSK	25	0	10 mm	bottom	1:1	0.133	1.084	0.144	
707.50	23095	Mid	LTE Band 12	10	25.8	25.40	1	0.01	0	1241M	QPSK	1	25	10 mm	right	1:1	0.194	1.096	0.213	
707.50	23095	Mid	LTE Band 12	10	24.8	24.45	1	-0.01	1	1241M	QPSK	25	0	10 mm	right	1:1	0.168	1.084	0.182	
707.50	23095	Mid	LTE Band 12	10	25.8	25.40	1	0.01	0	1241M	QPSK	1	25	10 mm	left	1:1	0.181	1.096	0.198	
707.50	23095	Mid	LTE Band 12	10	24.8	24.45	1	0.01	1	1241M	QPSK	25	0	10 mm	left	1:1	0.157	1.084	0.170	

ANSI / IEEE C95.1 1992 - SAFETY LIMIT	Body
Spatial Peak	1.6 W/kg (mW/g)
Uncontrolled Exposure/General Population	averaged over 1 gram

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 11-36
LTE Band 13 Hotspot SAR

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
782.00	23230	Mid	LTE Band 13	10	25.8	25.51	1	0.00	0	1241M	QPSK	1	25	10 mm	back	1:1	0.425	1.069	0.454	A45
782.00	23230	Mid	LTE Band 13	10	24.8	24.55	1	-0.02	1	1241M	QPSK	25	0	10 mm	back	1:1	0.346	1.059	0.366	
782.00	23230	Mid	LTE Band 13	10	25.8	25.51	1	0.03	0	1241M	QPSK	1	25	10 mm	front	1:1	0.265	1.069	0.283	
782.00	23230	Mid	LTE Band 13	10	24.8	24.55	1	-0.01	1	1241M	QPSK	25	0	10 mm	front	1:1	0.232	1.059	0.246	
782.00	23230	Mid	LTE Band 13	10	25.8	25.51	1	-0.19	0	1241M	QPSK	1	25	10 mm	bottom	1:1	0.150	1.069	0.160	
782.00	23230	Mid	LTE Band 13	10	24.8	24.55	1	-0.06	1	1241M	QPSK	25	0	10 mm	bottom	1:1	0.076	1.059	0.080	
782.00	23230	Mid	LTE Band 13	10	25.8	25.51	1	-0.16	0	1241M	QPSK	1	25	10 mm	right	1:1	0.243	1.069	0.260	
782.00	23230	Mid	LTE Band 13	10	24.8	24.55	1	0.01	1	1241M	QPSK	25	0	10 mm	right	1:1	0.223	1.059	0.236	
782.00	23230	Mid	LTE Band 13	10	25.8	25.51	1	-0.17	0	1241M	QPSK	1	25	10 mm	left	1:1	0.155	1.069	0.166	
782.00	23230	Mid	LTE Band 13	10	24.8	24.55	1	0.01	1	1241M	QPSK	25	0	10 mm	left	1:1	0.136	1.059	0.144	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population														Body 1.6 W/kg (mW/g) averaged over 1 gram						

Table 11-37
LTE Band 14 Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
793.00	23330	Mid	LTE Band 14	10	25.8	25.23	1	-0.10	0	1032M	QPSK	1	25	10 mm	back	1:1	0.469	1.140	0.535	A47
793.00	23330	Mid	LTE Band 14	10	24.8	24.37	1	-0.05	1	1032M	QPSK	25	12	10 mm	back	1:1	0.393	1.104	0.434	
793.00	23330	Mid	LTE Band 14	10	25.8	25.23	1	0.09	0	1032M	QPSK	1	25	10 mm	front	1:1	0.342	1.140	0.390	
793.00	23330	Mid	LTE Band 14	10	24.8	24.37	1	0.12	1	1032M	QPSK	25	12	10 mm	front	1:1	0.252	1.104	0.278	
793.00	23330	Mid	LTE Band 14	10	25.8	25.23	1	0.02	0	1032M	QPSK	1	25	10 mm	bottom	1:1	0.262	1.140	0.299	
793.00	23330	Mid	LTE Band 14	10	24.8	24.37	1	0.01	1	1032M	QPSK	25	12	10 mm	bottom	1:1	0.217	1.104	0.240	
793.00	23330	Mid	LTE Band 14	10	25.8	25.23	1	-0.03	0	1032M	QPSK	1	25	10 mm	right	1:1	0.330	1.140	0.376	
793.00	23330	Mid	LTE Band 14	10	24.8	24.37	1	0.02	1	1032M	QPSK	25	12	10 mm	right	1:1	0.271	1.104	0.299	
793.00	23330	Mid	LTE Band 14	10	25.8	25.23	1	0.03	0	1032M	QPSK	1	25	10 mm	left	1:1	0.160	1.140	0.182	
793.00	23330	Mid	LTE Band 14	10	24.8	24.37	1	-0.01	1	1032M	QPSK	25	12	10 mm	left	1:1	0.124	1.104	0.137	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population														Body 1.6 W/kg (mW/g) averaged over 1 gram						

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 11-38
LTE Band 26 (Cell) Hotspot SAR

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.8	24.98	76	-0.10	0	1110M	QPSK	1	0	10 mm	back	1:1	0.517	1.208	0.625	A49
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.8	24.04	76	-0.11	1	1110M	QPSK	36	18	10 mm	back	1:1	0.421	1.191	0.501	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.8	24.98	76	-0.07	0	1110M	QPSK	1	0	10 mm	front	1:1	0.359	1.208	0.434	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.8	24.04	76	-0.03	1	1110M	QPSK	36	18	10 mm	front	1:1	0.296	1.191	0.353	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.8	24.98	76	0.04	0	1110M	QPSK	1	0	10 mm	bottom	1:1	0.269	1.208	0.325	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.8	24.04	76	0.02	1	1110M	QPSK	36	18	10 mm	bottom	1:1	0.223	1.191	0.266	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.8	24.98	76	0.09	0	1110M	QPSK	1	0	10 mm	right	1:1	0.315	1.208	0.381	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.8	24.04	76	0.04	1	1110M	QPSK	36	18	10 mm	right	1:1	0.236	1.191	0.281	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.8	24.98	76	-0.19	0	1110M	QPSK	1	0	10 mm	left	1:1	0.177	1.208	0.214	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.8	24.04	76	0.02	1	1110M	QPSK	36	18	10 mm	left	1:1	0.125	1.191	0.149	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population											Body 1.6 W/kg (mW/g) averaged over 1 gram										

Table 11-39
LTE Band 5 (Cell) Hotspot SAR

MEASUREMENT RESULTS																						
1 CC Uplink | 2 CC Uplink	Component Carrier	FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
		MHz	Ch.																(W/kg)		(W/kg)	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.8	24.58	2	-0.12	0	0982M	QPSK	1	0	10 mm	back	1:1	0.568	1.324	0.752	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.8	23.65	2	-0.02	1	0982M	QPSK	25	0	10 mm	back	1:1	0.466	1.303	0.607	
2 CC Uplink	PCC	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.8	24.74	2	-0.04	0	0982M	QPSK	1	0	10 mm	back	1:1	0.610	1.276	0.778	A51
2 CC Uplink	SCC	829.30	20453	Mid	LTE Band 5 (Cell)	5								1	24							
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.8	24.58	2	0.13	0	0982M	QPSK	1	0	10 mm	front	1:1	0.411	1.324	0.544	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.8	23.65	2	0.07	1	0982M	QPSK	25	0	10 mm	front	1:1	0.335	1.303	0.437	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.8	24.58	2	0.04	0	0982M	QPSK	1	0	10 mm	bottom	1:1	0.320	1.324	0.424	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.8	23.65	2	0.05	1	0982M	QPSK	25	0	10 mm	bottom	1:1	0.266	1.303	0.347	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.8	24.58	2	-0.01	0	0982M	QPSK	1	0	10 mm	right	1:1	0.247	1.324	0.327	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.8	23.65	2	-0.03	1	0982M	QPSK	25	0	10 mm	right	1:1	0.193	1.303	0.251	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	25.8	24.58	2	0.12	0	0982M	QPSK	1	0	10 mm	left	1:1	0.120	1.324	0.159	
1 CC Uplink	N/A	836.50	20525	Mid	LTE Band 5 (Cell)	10	24.8	23.65	2	0.06	1	0982M	QPSK	25	0	10 mm	left	1:1	0.102	1.303	0.133	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Body 1.6 W/kg (mW/g) averaged over 1 gram									

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 11-40
LTE Band 66 (AWS) Hotspot SAR

MEASUREMENT RESULTS																							
1 CC Uplink | 2 CC Uplink	Component Carrier	FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g) (W/kg)	Scaling Factor	Reported SAR (1g) (W/kg)	Plot #
		MHz	Ch.																			
1 CC Uplink	N/A	1745.00	132322	Mid	LTE Band 66 (AWS)	20	20.5	19.85	27	-0.01	0	1291M	QPSK	1	99	10 mm	back	1:1	0.359	1.161	0.417	
1 CC Uplink	N/A	1745.00	132322	Mid	LTE Band 66 (AWS)	20	20.5	20.10	27	0.00	0	1291M	QPSK	50	25	10 mm	back	1:1	0.382	1.096	0.419	
1 CC Uplink	N/A	1745.00	132322	Mid	LTE Band 66 (AWS)	20	20.5	19.85	27	-0.03	0	1291M	QPSK	1	99	10 mm	front	1:1	0.259	1.161	0.301	
1 CC Uplink	N/A	1745.00	132322	Mid	LTE Band 66 (AWS)	20	20.5	20.10	27	-0.03	0	1291M	QPSK	50	25	10 mm	front	1:1	0.271	1.096	0.297	
1 CC Uplink	N/A	1720.00	132072	Low	LTE Band 66 (AWS)	20	20.5	19.71	27	0.10	0	1291M	QPSK	1	99	10 mm	bottom	1:1	0.525	1.199	0.629	
1 CC Uplink	N/A	1745.00	132322	Mid	LTE Band 66 (AWS)	20	20.5	19.85	27	0.01	0	1291M	QPSK	1	99	10 mm	bottom	1:1	0.570	1.161	0.662	
1 CC Uplink	N/A	1770.00	132572	High	LTE Band 66 (AWS)	20	20.5	19.80	27	-0.06	0	1291M	QPSK	1	0	10 mm	bottom	1:1	0.751	1.175	0.882	
1 CC Uplink	N/A	1745.00	132322	Mid	LTE Band 66 (AWS)	20	20.5	20.10	27	0.02	0	1291M	QPSK	50	25	10 mm	bottom	1:1	0.586	1.096	0.642	
1 CC Uplink	N/A	1775.00	132622	High	LTE Band 66 (AWS)	10	20.5	19.65	27	-0.01	0	1291M	QPSK	50	0	10 mm	bottom	1:1	0.751	1.216	0.913	
1 CC Uplink	N/A	1770.00	132572	High	LTE Band 66 (AWS)	20	20.5	19.82	27	-0.01	0	1291M	QPSK	100	0	10 mm	bottom	1:1	0.782	1.169	0.914	
CA_66C 2 CC Uplink	PCC	1770.00	132572	High	LTE Band 66 (AWS)	20	20.5	20.19	27	0.04	0	1291M	QPSK	100	0	10 mm	bottom	1:1	0.873	1.074	0.938	A53
	SCC	1750.20	132374	High	LTE Band 66 (AWS)	20								100	0							
CA_66B 2 CC Uplink	PCC	1775.00	132622	High	LTE Band 66 (AWS)	10	20.5	19.90	27	-0.01	0	1291M	QPSK	50	0	10 mm	bottom	1:1	0.805	1.148	0.924	
	SCC	1765.10	132523	High	LTE Band 66 (AWS)	10								50	0							
1 CC Uplink	N/A	1745.00	132322	Mid	LTE Band 66 (AWS)	20	20.5	19.85	27	0.14	0	1291M	QPSK	1	99	10 mm	right	1:1	0.030	1.161	0.035	
1 CC Uplink	N/A	1745.00	132322	Mid	LTE Band 66 (AWS)	20	20.5	20.10	27	0.14	0	1291M	QPSK	50	25	10 mm	right	1:1	0.033	1.096	0.036	
1 CC Uplink	N/A	1745.00	132322	Mid	LTE Band 66 (AWS)	20	20.5	19.85	27	0.04	0	1291M	QPSK	1	99	10 mm	left	1:1	0.046	1.161	0.053	
1 CC Uplink	N/A	1745.00	132322	Mid	LTE Band 66 (AWS)	20	20.5	20.10	27	-0.09	0	1291M	QPSK	50	25	10 mm	left	1:1	0.048	1.096	0.053	
CA_66C 2 CC Uplink	PCC	1770.00	132572	High	LTE Band 66 (AWS)	20	20.5	20.19	27	0.10	0	1291M	QPSK	100	0	10 mm	bottom	1:1	0.864	1.074	0.928	
	SCC	1750.20	132374	High	LTE Band 66 (AWS)	20								100	0							
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population														Body 1.6 W/kg (mW/g) averaged over 1 gram								

Note: Blue entry represents variability measurement.

Table 11-41
LTE Band 25 (PCS) Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g) (W/kg)	Scaling Factor	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																			
1882.50	26365	Mid	LTE Band 25 (PCS)	20	19.5	19.28	27	0.00	0	1289M	QPSK	1	50	10 mm	back	1:1	0.516	1.052	0.543	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	19.5	19.42	27	0.02	0	1289M	QPSK	50	25	10 mm	back	1:1	0.536	1.019	0.546	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	19.5	19.28	27	-0.05	0	1289M	QPSK	1	50	10 mm	front	1:1	0.406	1.052	0.427	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	19.5	19.42	27	-0.04	0	1289M	QPSK	50	25	10 mm	front	1:1	0.421	1.019	0.429	
1860.00	26140	Low	LTE Band 25 (PCS)	20	19.5	19.19	27	-0.09	0	1289M	QPSK	1	99	10 mm	bottom	1:1	0.795	1.074	0.854	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	19.5	19.28	27	-0.08	0	1289M	QPSK	1	50	10 mm	bottom	1:1	0.786	1.052	0.827	
1905.00	26590	High	LTE Band 25 (PCS)	20	19.5	19.08	27	-0.11	0	1289M	QPSK	1	0	10 mm	bottom	1:1	0.797	1.102	0.878	
1860.00	26140	Low	LTE Band 25 (PCS)	20	19.5	19.29	27	-0.05	0	1289M	QPSK	50	50	10 mm	bottom	1:1	0.823	1.050	0.864	A55
1882.50	26365	Mid	LTE Band 25 (PCS)	20	19.5	19.42	27	-0.05	0	1289M	QPSK	50	25	10 mm	bottom	1:1	0.815	1.019	0.830	
1905.00	26590	High	LTE Band 25 (PCS)	20	19.5	19.07	27	-0.03	0	1289M	QPSK	50	25	10 mm	bottom	1:1	0.822	1.104	0.907	
1860.00	26140	Low	LTE Band 25 (PCS)	20	19.5	19.26	27	-0.04	0	1289M	QPSK	100	0	10 mm	bottom	1:1	0.803	1.057	0.849	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	19.5	19.28	27	0.00	0	1289M	QPSK	1	50	10 mm	right	1:1	0.066	1.052	0.069	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	19.5	19.42	27	0.01	0	1289M	QPSK	50	25	10 mm	right	1:1	0.068	1.019	0.069	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	19.5	19.28	27	0.08	0	1289M	QPSK	1	50	10 mm	left	1:1	0.055	1.052	0.058	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	19.5	19.42	27	-0.01	0	1289M	QPSK	50	25	10 mm	left	1:1	0.058	1.019	0.059	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population														Body 1.6 W/kg (mW/g) averaged over 1 gram						

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 11-42
LTE Band 30 Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
2310.00	27710	Mid	LTE Band 30	10	21.0	20.21	0.08	0	1286M	QPSK	1	0	10 mm	back	1:1	0.220	1.199	0.264	
2310.00	27710	Mid	LTE Band 30	10	21.0	20.27	0.03	0	1286M	QPSK	25	12	10 mm	back	1:1	0.236	1.183	0.279	
2310.00	27710	Mid	LTE Band 30	10	21.0	20.21	-0.13	0	1286M	QPSK	1	0	10 mm	front	1:1	0.157	1.199	0.188	
2310.00	27710	Mid	LTE Band 30	10	21.0	20.27	-0.16	0	1286M	QPSK	25	12	10 mm	front	1:1	0.167	1.183	0.198	
2310.00	27710	Mid	LTE Band 30	10	21.0	20.21	-0.16	0	1286M	QPSK	1	0	10 mm	bottom	1:1	0.427	1.199	0.512	
2310.00	27710	Mid	LTE Band 30	10	21.0	20.27	-0.09	0	1286M	QPSK	25	12	10 mm	bottom	1:1	0.451	1.183	0.534	A57
2310.00	27710	Mid	LTE Band 30	10	21.0	20.21	0.17	0	1286M	QPSK	1	0	10 mm	right	1:1	0.027	1.199	0.032	
2310.00	27710	Mid	LTE Band 30	10	21.0	20.27	-0.04	0	1286M	QPSK	25	12	10 mm	right	1:1	0.029	1.183	0.034	
2310.00	27710	Mid	LTE Band 30	10	21.0	20.21	-0.10	0	1286M	QPSK	1	0	10 mm	left	1:1	0.032	1.199	0.038	
2310.00	27710	Mid	LTE Band 30	10	21.0	20.27	-0.17	0	1286M	QPSK	25	12	10 mm	left	1:1	0.035	1.183	0.041	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Body 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-43
LTE Band 7 Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
2560.00	21350	High	LTE Band 7	20	21.0	20.32	0.02	0	1286M	QPSK	1	0	10 mm	back	1:1	0.318	1.169	0.372	
2560.00	21350	High	LTE Band 7	20	21.0	20.31	0.03	0	1286M	QPSK	50	25	10 mm	back	1:1	0.323	1.172	0.379	
2560.00	21350	High	LTE Band 7	20	21.0	20.32	0.09	0	1286M	QPSK	1	0	10 mm	front	1:1	0.266	1.169	0.311	
2560.00	21350	High	LTE Band 7	20	21.0	20.31	0.01	0	1286M	QPSK	50	25	10 mm	front	1:1	0.269	1.172	0.315	
2510.00	20850	Low	LTE Band 7	20	21.0	20.10	-0.10	0	1286M	QPSK	1	0	10 mm	bottom	1:1	0.651	1.230	0.801	
2535.00	21100	Mid	LTE Band 7	20	21.0	19.71	0.08	0	1286M	QPSK	1	0	10 mm	bottom	1:1	0.619	1.346	0.833	
2560.00	21350	High	LTE Band 7	20	21.0	20.32	0.03	0	1286M	QPSK	1	0	10 mm	bottom	1:1	0.652	1.169	0.762	A59
2560.00	21350	High	LTE Band 7	20	21.0	20.31	-0.02	0	1286M	QPSK	50	25	10 mm	bottom	1:1	0.649	1.172	0.761	
2560.00	21350	High	LTE Band 7	20	21.0	20.24	-0.11	0	1286M	QPSK	100	0	10 mm	bottom	1:1	0.596	1.191	0.710	
2560.00	21350	High	LTE Band 7	20	21.0	20.32	-0.05	0	1286M	QPSK	1	0	10 mm	left	1:1	0.122	1.169	0.143	
2560.00	21350	High	LTE Band 7	20	21.0	20.31	-0.04	0	1286M	QPSK	50	25	10 mm	left	1:1	0.125	1.172	0.147	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Body 1.6 W/kg (mW/g) averaged over 1 gram							

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 11-44
LTE Band 48 Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
3646.70	56207	Mid-High	LTE Band 48	20	23.5	23.33	-0.15	0	0937M	QPSK	1	0	10 mm	back	1:1.58	0.429	1.040	0.446	
3646.70	56207	Mid-High	LTE Band 48	20	22.5	22.49	-0.14	1	0937M	QPSK	50	25	10 mm	back	1:1.58	0.346	1.002	0.347	
3646.70	56207	Mid-High	LTE Band 48	20	23.5	23.33	0.04	0	0937M	QPSK	1	0	10 mm	front	1:1.58	0.267	1.040	0.278	
3646.70	56207	Mid-High	LTE Band 48	20	22.5	22.49	0.07	1	0937M	QPSK	50	25	10 mm	front	1:1.58	0.212	1.002	0.212	
3560.00	55340	Low	LTE Band 48	20	23.5	23.14	-0.19	0	0937M	QPSK	1	99	10 mm	bottom	1:1.58	0.639	1.086	0.694	
3603.30	55773	Low-Mid	LTE Band 48	20	23.5	23.32	0.03	0	0937M	QPSK	1	99	10 mm	bottom	1:1.58	0.723	1.042	0.753	
3646.70	56207	Mid-High	LTE Band 48	20	23.5	23.33	0.01	0	0937M	QPSK	1	0	10 mm	bottom	1:1.58	0.733	1.040	**0.762**	A61
3690.00	56640	High	LTE Band 48	20	23.5	23.06	0.06	0	0937M	QPSK	1	99	10 mm	bottom	1:1.58	0.667	1.107	0.738	
3560.00	55340	Low	LTE Band 48	20	22.5	22.21	0.06	1	0937M	QPSK	50	50	10 mm	bottom	1:1.58	0.487	1.069	0.521	
3603.30	55773	Low-Mid	LTE Band 48	20	22.5	22.45	0.08	1	0937M	QPSK	50	25	10 mm	bottom	1:1.58	0.592	1.012	0.599	
3646.70	56207	Mid-High	LTE Band 48	20	22.5	22.49	-0.01	1	0937M	QPSK	50	25	10 mm	bottom	1:1.58	0.625	1.002	0.626	
3690.00	56640	High	LTE Band 48	20	22.5	22.23	0.04	1	0937M	QPSK	50	0	10 mm	bottom	1:1.58	0.561	1.064	0.597	
3646.70	56207	Mid-High	LTE Band 48	20	22.5	22.45	0.02	1	0937M	QPSK	100	0	10 mm	bottom	1:1.58	0.614	1.012	0.621	
3646.70	56207	Mid-High	LTE Band 48	20	23.5	23.33	-0.12	0	0937M	QPSK	1	0	10 mm	left	1:1.58	0.193	1.040	0.201	
3646.70	56207	Mid-High	LTE Band 48	20	22.5	22.49	-0.03	1	0937M	QPSK	50	25	10 mm	left	1:1.58	0.122	1.002	0.122	

ANSI / IEEE C95.1 1992 - SAFETY LIMIT	Body
Spatial Peak	1.6 W/kg (mW/g)
Uncontrolled Exposure/General Population	averaged over 1 gram

Table 11-45
LTE Band 41 Hotspot SAR

MEASUREMENT RESULTS																					
1 CC Uplink | 2 CC Uplink, Power Class	Component Carrier	FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
		MHz	Ch.															(W/kg)		(W/kg)	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	22.0	21.62	-0.04	0	0982M	QPSK	1	0	10 mm	back	1:1.58	0.311	1.091	0.339	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	22.0	21.71	0.01	0	0982M	QPSK	50	25	10 mm	back	1:1.58	0.330	1.069	0.353	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	22.0	21.62	-0.04	0	0982M	QPSK	1	0	10 mm	front	1:1.58	0.187	1.091	0.204	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	22.0	21.71	-0.02	0	0982M	QPSK	50	25	10 mm	front	1:1.58	0.203	1.069	0.217	
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	22.0	21.05	-0.04	0	1020M	QPSK	1	99	10 mm	bottom	1:1.58	0.559	1.245	0.696	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	22.0	21.61	0.00	0	1020M	QPSK	1	99	10 mm	bottom	1:1.58	0.683	1.094	0.747	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	22.0	21.62	-0.04	0	1020M	QPSK	1	0	10 mm	bottom	1:1.58	0.577	1.091	0.630	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	22.0	21.42	-0.04	0	1020M	QPSK	1	0	10 mm	bottom	1:1.58	0.876	1.143	1.001	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	22.0	21.54	-0.01	0	1020M	QPSK	1	50	10 mm	bottom	1:1.58	0.600	1.112	0.667	
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	22.0	21.13	-0.04	0	1020M	QPSK	50	50	10 mm	bottom	1:1.58	0.535	1.222	0.654	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	22.0	21.57	-0.07	0	1020M	QPSK	50	0	10 mm	bottom	1:1.58	0.877	1.104	0.968	A63
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	22.0	21.71	-0.02	0	1020M	QPSK	50	25	10 mm	bottom	1:1.58	0.720	1.069	0.770	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	22.0	21.48	-0.04	0	1020M	QPSK	50	25	10 mm	bottom	1:1.58	0.836	1.127	0.942	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	22.0	21.65	-0.03	0	1020M	QPSK	50	50	10 mm	bottom	1:1.58	0.648	1.084	0.702	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	22.0	21.61	-0.04	0	1020M	QPSK	100	0	10 mm	bottom	1:1.58	0.749	1.094	0.819	
1 CC Uplink - Power Class 2	N/A	2636.50	41055	Mid-High	LTE Band 41	20	23.5	22.76	-0.04	0	1020M	QPSK	1	0	10 mm	bottom	1:2.31	0.817	1.186	0.969	
2 CC Uplink - Power Class 3	PCC	2636.50	41055	Mid-High	LTE Band 41	20	22.0	21.40	-0.03	0	1020M	QPSK	1	0	10 mm	bottom	1:1.58	0.830	1.148	0.953	
2 CC Uplink - Power Class 3	SCC	2616.70	40857	Mid-High	LTE Band 41	20							1	99							
2 CC Uplink - Power Class 2	PCC	2636.50	41055	Mid-High	LTE Band 41	20	23.5	22.70	-0.17	0	1020M	QPSK	1	0	10 mm	bottom	1:2.31	0.772	1.202	0.928	
2 CC Uplink - Power Class 2	SCC	2616.70	40857	Mid-High	LTE Band 41	20							1	99							
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	22.0	21.62	0.05	0	0982M	QPSK	1	0	10 mm	left	1:1.58	0.084	1.091	0.092	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	22.0	21.71	-0.09	0	0982M	QPSK	50	25	10 mm	left	1:1.58	0.088	1.069	0.094	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	22.0	21.57	-0.03	0	1020M	QPSK	50	0	10 mm	bottom	1:1.58	0.856	1.104	0.945	

ANSI / IEEE C95.1 1992 - SAFETY LIMIT	Body
Spatial Peak	1.6 W/kg (mW/g)
Uncontrolled Exposure/General Population	averaged over 1 gram

Note: Blue entry represents variability measurement.

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 11-46
WLAN Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													W/kg	(W/kg)			(W/kg)	
2412	1	802.11b	DSSS	22	21.0	20.85	-0.06	10 mm	1	1202M	1	back	99.9	0.219	0.137	1.035	1.001	0.142	
2412	1	802.11b	DSSS	22	21.0	20.85	-0.12	10 mm	1	1202M	1	front	99.9	0.122	-	1.035	1.001	-	
2412	1	802.11b	DSSS	22	21.0	20.85	-0.13	10 mm	1	1202M	1	top	99.9	0.128	-	1.035	1.001	-	
2412	1	802.11b	DSSS	22	21.0	20.85	-0.13	10 mm	1	1202M	1	left	99.9	0.197	-	1.035	1.001	-	
2412	1	802.11b	DSSS	22	21.0	20.98	-0.04	10 mm	2	1202M	1	back	99.9	0.665	0.451	1.005	1.001	**0.454**	A65
2412	1	802.11b	DSSS	22	21.0	20.98	-0.20	10 mm	2	1202M	1	front	99.9	0.011	-	1.005	1.001	-	
2412	1	802.11b	DSSS	22	21.0	20.98	-0.19	10 mm	2	1202M	1	top	99.9	0.030	-	1.005	1.001	-	
2412	1	802.11b	DSSS	22	21.0	20.98	0.03	10 mm	2	1202M	1	left	99.9	0.081	0.053	1.005	1.001	0.053	
5745	149	802.11a	OFDM	20	18.0	17.92	0.05	10 mm	1	0952M	6	back	98.8	1.022	0.399	1.019	1.012	**0.411**	
5745	149	802.11a	OFDM	20	18.0	17.92	-0.13	10 mm	1	0952M	6	front	98.8	0.127	-	1.019	1.012	-	
5745	149	802.11a	OFDM	20	18.0	17.92	-0.10	10 mm	1	0952M	6	top	98.8	0.396	-	1.019	1.012	-	
5745	149	802.11a	OFDM	20	18.0	17.92	-0.16	10 mm	1	0952M	6	left	98.8	0.518	0.195	1.019	1.012	0.201	
5745	149	802.11a	OFDM	20	18.0	17.98	0.10	10 mm	2	0952M	6	back	98.8	0.715	0.359	1.005	1.012	0.365	
5745	149	802.11a	OFDM	20	18.0	17.98	-0.17	10 mm	2	0952M	6	front	98.8	0.030	-	1.005	1.012	-	
5745	149	802.11a	OFDM	20	18.0	17.98	-0.03	10 mm	2	0952M	6	top	98.8	0.066	-	1.005	1.012	-	
5745	149	802.11a	OFDM	20	18.0	17.98	-0.13	10 mm	2	0952M	6	left	98.8	0.161	-	1.005	1.012	-	

ANSI / IEEE C95.1 1992 - SAFETY LIMIT	**Body**
Spatial Peak	**1.6 W/kg (mW/g)**
Uncontrolled Exposure/General Population	averaged over 1 gram

Table 11-47
WLAN MIMO Hotspot SAR

MEASUREMENT RESULTS																					
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power (Ant 1) [dBm]	Conducted Power (Ant 1) [dBm]	Maximum Allowed Power (Ant 2) [dBm]	Conducted Power (Ant 2) [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.															W/kg	(W/kg)			(W/kg)	
5745	149	802.11n	OFDM	20	18.0	17.86	18.0	17.93	0.15	10 mm	MIMO	1210M	13	back	99.7	1.484	0.661	1.033	1.003	0.685	A67
5785	157	802.11n	OFDM	20	18.0	17.88	18.0	17.86	-0.08	10 mm	MIMO	1210M	13	back	99.7	1.233	0.520	1.033	1.003	0.539	
5825	165	802.11n	OFDM	20	18.0	17.53	18.0	17.64	-0.08	10 mm	MIMO	1210M	13	back	99.7	1.325	0.530	1.114	1.003	0.592	
5745	149	802.11n	OFDM	20	18.0	17.86	18.0	17.93	0.17	10 mm	MIMO	1210M	13	front	99.7	0.234	-	1.033	1.003	-	
5745	149	802.11n	OFDM	20	18.0	17.86	18.0	17.93	-0.04	10 mm	MIMO	1210M	13	top	99.7	0.868	0.374	1.033	1.003	0.388	
5745	149	802.11n	OFDM	20	18.0	17.86	18.0	17.93	0.04	10 mm	MIMO	1210M	13	left	99.7	0.851	-	1.033	1.003	-	

ANSI / IEEE C95.1 1992 - SAFETY LIMIT	**Body**
Spatial Peak	**1.6 W/kg (mW/g)**
Uncontrolled Exposure/General Population	averaged over 1 gram

For channels 149, 157, and 165 to achieve the 21 dBm maximum allowed MIMO power shown in the documentation, each antenna transmits at a maximum allowed power of 18 dBm.

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 **PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.**

Table 11-48
WLAN Hotspot SAR for Conditions with 2.4 GHz and 5 GHz WLAN SAR

MEASUREMENT RESULTS																					
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power (Ant 1) [dBm]	Conducted Power (Ant 1) [dBm]	Maximum Allowed Power (Ant 2) [dBm]	Conducted Power (Ant 2) [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.															W/kg	(W/kg)			(W/kg)	
2412	1	802.11n	OFDM	20	17.0	16.85	17.0	16.67	-0.18	10 mm	MIMO	1087M	13	back	98.6	0.229	0.174	1.079	1.014	0.190	
2412	1	802.11n	OFDM	20	17.0	16.85	17.0	16.67	0.16	10 mm	MIMO	1087M	13	front	98.6	0.059	-	1.079	1.014	-	
2412	1	802.11n	OFDM	20	17.0	16.85	17.0	16.67	0.19	10 mm	MIMO	1087M	13	top	98.6	0.083	-	1.079	1.014	-	
2412	1	802.11n	OFDM	20	17.0	16.85	17.0	16.67	0.18	10 mm	MIMO	1087M	13	left	98.6	0.110	-	1.079	1.014	-	
5775	155	802.11ac	OFDM	80	14.0	13.76	14.0	13.82	-0.09	10 mm	MIMO	1210M	58.5	back	90.0	0.482	0.167	1.057	1.111	0.196	
5775	155	802.11ac	OFDM	80	14.0	13.76	14.0	13.82	0.13	10 mm	MIMO	1210M	58.5	front	90.0	0.069	-	1.057	1.111	-	
5775	155	802.11ac	OFDM	80	14.0	13.76	14.0	13.82	0.16	10 mm	MIMO	1210M	58.5	top	90.0	0.237	-	1.057	1.111	-	
5775	155	802.11ac	OFDM	80	14.0	13.76	14.0	13.82	0.21	10 mm	MIMO	1210M	58.5	left	90.0	0.250	-	1.057	1.111	-	

ANSI / IEEE C95.1 1992 - SAFETY LIMIT	Body
Spatial Peak	1.6 W/kg (mW/g)
Uncontrolled Exposure/General Population	averaged over 1 gram

DTS and NII MIMO was additionally evaluated at the maximum allowed output power during operations with Simultaneous 2.4 GHz and 5 GHz WLAN. 2.4 GHz WIFI was not transmitting during NII MIMO evaluations and 5 GHz WIFI was not transmitting during DTS MIMO evaluations.

Table 11-49
DSS Hotspot SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	SAR (1g)	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)			(W/kg)	
2441	39	Bluetooth	FHSS	18.5	18.49	0.16	10 mm	1087M	1	back	77.1	0.061	1.002	1.297	**0.079**	A69
2441	39	Bluetooth	FHSS	18.5	18.49	-0.15	10 mm	1087M	1	front	77.1	0.029	1.002	1.297	0.038	
2441	39	Bluetooth	FHSS	18.5	18.49	-0.17	10 mm	1087M	1	top	77.1	0.057	1.002	1.297	0.074	
2441	39	Bluetooth	FHSS	18.5	18.49	-0.16	10 mm	1087M	1	left	77.1	0.052	1.002	1.297	0.068	

ANSI / IEEE C95.1 1992 - SAFETY LIMIT	Body
Spatial Peak	1.6 W/kg (mW/g)
Uncontrolled Exposure/General Population	averaged over 1 gram

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

11.4 Standalone Phablet SAR Data

Table 11-50
GPRS/UMTS/CDMA Phablet SAR Data

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	Power Drift [dB]	Spacing	Device Serial Number	# of Time Slots	Duty Cycle	Side	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.												(W/kg)		(W/kg)	
1850.20	512	GSM 1900	GPRS	27.5	26.73	N/A	0.03	6 mm	1298M	3	1:2.76	back	0.705	1.194	0.842	
1850.20	512	GSM 1900	GPRS	27.5	26.73	N/A	-0.01	4 mm	1298M	3	1:2.76	front	0.720	1.194	0.860	
1850.20	512	GSM 1900	GPRS	27.5	26.73	N/A	0.03	10 mm	1298M	3	1:2.76	bottom	0.686	1.194	0.819	
1850.20	512	GSM 1900	GPRS	27.5	26.73	N/A	-0.05	0 mm	1298M	3	1:2.76	right	0.195	1.194	0.233	
1850.20	512	GSM 1900	GPRS	27.5	26.73	N/A	-0.06	0 mm	1298M	3	1:2.76	left	0.289	1.194	0.345	
1850.20	512	GSM 1900	GPRS	25.5	24.56	N/A	-0.02	0 mm	1110M	3	1:2.76	back	1.460	1.242	1.813	
1880.00	661	GSM 1900	GPRS	25.5	24.47	N/A	0.15	0 mm	1110M	3	1:2.76	back	1.310	1.268	1.661	
1909.80	810	GSM 1900	GPRS	25.5	24.01	N/A	-0.07	0 mm	1110M	3	1:2.76	back	1.500	1.409	2.114	
1850.20	512	GSM 1900	GPRS	25.5	24.56	N/A	-0.02	0 mm	1110M	3	1:2.76	front	1.380	1.242	1.714	
1850.20	512	GSM 1900	GPRS	25.5	24.56	N/A	-0.08	0 mm	1110M	3	1:2.76	bottom	1.640	1.242	2.037	
1880.00	661	GSM 1900	GPRS	25.5	24.47	N/A	0.15	0 mm	1110M	3	1:2.76	bottom	2.160	1.268	2.739	A70
1909.80	810	GSM 1900	GPRS	25.5	24.01	N/A	0.05	0 mm	1110M	3	1:2.76	bottom	1.940	1.409	2.733	
1732.40	1412	UMTS 1750	RMC	25.0	24.78	28	-0.03	6 mm	0982M	N/A	1:1	back	1.250	1.052	1.315	
1732.40	1412	UMTS 1750	RMC	25.0	24.78	28	-0.08	4 mm	0982M	N/A	1:1	front	1.300	1.052	1.368	
1732.40	1412	UMTS 1750	RMC	25.0	24.78	28	-0.01	10 mm	0982M	N/A	1:1	bottom	1.060	1.052	1.115	
1732.40	1412	UMTS 1750	RMC	25.0	24.78	28	-0.01	0 mm	0982M	N/A	1:1	right	0.271	1.052	0.285	
1732.40	1412	UMTS 1750	RMC	25.0	24.78	28	0.11	0 mm	0982M	N/A	1:1	left	0.417	1.052	0.439	
1732.40	1412	UMTS 1750	RMC	20.5	20.10	28	-0.05	0 mm	0982M	N/A	1:1	back	1.790	1.096	1.962	
1732.40	1412	UMTS 1750	RMC	20.5	20.10	28	-0.06	0 mm	0982M	N/A	1:1	front	1.500	1.096	1.644	
1712.40	1312	UMTS 1750	RMC	20.5	19.49	28	0.00	0 mm	0982M	N/A	1:1	bottom	2.590	1.262	**3.269**	
1732.40	1412	UMTS 1750	RMC	20.5	20.10	28	0.02	0 mm	0982M	N/A	1:1	bottom	2.690	1.096	2.948	
1752.60	1513	UMTS 1750	RMC	20.5	20.05	28	0.03	0 mm	0982M	N/A	1:1	bottom	2.950	1.109	**3.272**	A71
1752.60	1513	UMTS 1750	RMC	20.5	20.05	28	0.03	0 mm	0982M	N/A	1:1	bottom	2.950	1.109	**3.272**	
1880.00	9400	UMTS 1900	RMC	25.0	24.78	30	0.10	6 mm	1298M	N/A	1:1	back	1.360	1.052	1.431	
1880.00	9400	UMTS 1900	RMC	25.0	24.78	30	-0.04	4 mm	1298M	N/A	1:1	front	1.230	1.052	1.294	
1880.00	9400	UMTS 1900	RMC	25.0	24.78	30	-0.01	10 mm	1298M	N/A	1:1	bottom	1.390	1.052	1.462	
1880.00	9400	UMTS 1900	RMC	25.0	24.78	30	0.01	0 mm	1298M	N/A	1:1	right	0.348	1.052	0.366	
1880.00	9400	UMTS 1900	RMC	25.0	24.78	30	-0.18	0 mm	1298M	N/A	1:1	left	0.578	1.052	0.608	
1852.40	9262	UMTS 1900	RMC	21.0	20.83	30	-0.09	0 mm	1298M	N/A	1:1	back	2.100	1.040	2.184	
1880.00	9400	UMTS 1900	RMC	21.0	20.91	30	-0.08	0 mm	1298M	N/A	1:1	back	2.060	1.021	2.103	
1907.60	9538	UMTS 1900	RMC	21.0	20.40	30	-0.05	0 mm	1298M	N/A	1:1	back	1.980	1.148	2.273	
1880.00	9400	UMTS 1900	RMC	21.0	20.91	30	-0.05	0 mm	1298M	N/A	1:1	front	1.710	1.021	1.746	
1852.40	9262	UMTS 1900	RMC	21.0	20.83	30	-0.06	0 mm	1298M	N/A	1:1	bottom	2.540	1.040	2.642	A72
1880.00	9400	UMTS 1900	RMC	21.0	20.91	30	-0.05	0 mm	1298M	N/A	1:1	bottom	2.440	1.021	2.491	
1907.60	9538	UMTS 1900	RMC	21.0	20.40	30	-0.05	0 mm	1298M	N/A	1:1	bottom	2.280	1.148	2.617	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.0	24.50	30	0.03	6 mm	1298M	N/A	1:1	back	1.270	1.122	1.425	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.0	24.50	30	0.04	4 mm	1298M	N/A	1:1	front	1.650	1.122	1.851	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.0	24.50	30	-0.02	10 mm	1298M	N/A	1:1	bottom	1.210	1.122	1.358	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.0	24.50	30	0.04	0 mm	1298M	N/A	1:1	right	0.107	1.122	0.120	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.0	24.50	30	0.16	0 mm	1298M	N/A	1:1	left	0.097	1.122	0.109	
1851.25	25	PCS CDMA	EVDO Rev. 0	21.0	20.63	30	-0.05	0 mm	1110M	N/A	1:1	back	1.700	1.089	1.851	
1880.00	600	PCS CDMA	EVDO Rev. 0	21.0	20.72	30	-0.06	0 mm	1110M	N/A	1:1	back	1.950	1.067	2.081	
1908.75	1175	PCS CDMA	EVDO Rev. 0	21.0	20.61	30	-0.03	0 mm	1110M	N/A	1:1	back	2.240	1.094	2.451	
1880.00	600	PCS CDMA	EVDO Rev. 0	21.0	20.72	30	-0.08	0 mm	1110M	N/A	1:1	front	1.740	1.067	1.857	
1851.25	25	PCS CDMA	EVDO Rev. 0	21.0	20.63	30	-0.16	0 mm	1110M	N/A	1:1	bottom	2.030	1.089	2.211	
1880.00	600	PCS CDMA	EVDO Rev. 0	21.0	20.72	30	-0.11	0 mm	1110M	N/A	1:1	bottom	2.460	1.067	2.625	A73
1908.75	1175	PCS CDMA	EVDO Rev. 0	21.0	20.61	30	-0.14	0 mm	1110M	N/A	1:1	bottom	2.260	1.094	2.472	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Phablet 4.0 W/kg (mW/g) averaged over 10 grams							

Note: Blue entry represents variability measurement.

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 11-51
LTE Band 66 Phablet SAR

MEASUREMENT RESULTS																								
1 CC Uplink | 2 CC Uplink	Component Carrier	FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	Power Drift [dB]	MPR [dB]	Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
		MHz	Ch.																(W/kg)		(W/kg)	
1 CC Uplink	N/A	1770.00	132572	High	LTE Band 66 (AWS)	20	25.0	24.93	27	-0.17	0	0977M	QPSK	1	0	6 mm	back	1:1	1.270	1.016	1.290	
1 CC Uplink	N/A	1770.00	132572	High	LTE Band 66 (AWS)	20	24.0	23.99	27	0.01	1	0977M	QPSK	50	0	6 mm	back	1:1	1.080	1.002	1.082	
1 CC Uplink	N/A	1770.00	132572	High	LTE Band 66 (AWS)	20	25.0	24.93	27	-0.07	0	0977M	QPSK	1	0	4 mm	front	1:1	1.430	1.016	1.453	
1 CC Uplink	N/A	1770.00	132572	High	LTE Band 66 (AWS)	20	24.0	23.99	27	-0.03	1	0977M	QPSK	50	0	4 mm	front	1:1	1.220	1.002	1.222	
1 CC Uplink	N/A	1770.00	132572	High	LTE Band 66 (AWS)	20	25.0	24.93	27	-0.02	0	0977M	QPSK	1	0	10 mm	bottom	1:1	1.170	1.016	1.189	
1 CC Uplink	N/A	1770.00	132572	High	LTE Band 66 (AWS)	20	24.0	23.99	27	-0.02	1	0977M	QPSK	50	0	10 mm	bottom	1:1	1.000	1.002	1.002	
1 CC Uplink	N/A	1770.00	132572	High	LTE Band 66 (AWS)	20	25.0	24.93	27	0.03	0	0977M	QPSK	1	0	0 mm	right	1:1	0.314	1.016	0.319	
1 CC Uplink	N/A	1770.00	132572	High	LTE Band 66 (AWS)	20	24.0	23.99	27	-0.04	1	0977M	QPSK	50	0	0 mm	right	1:1	0.263	1.002	0.264	
1 CC Uplink	N/A	1770.00	132572	High	LTE Band 66 (AWS)	20	25.0	24.93	27	0.02	0	0977M	QPSK	1	0	0 mm	left	1:1	0.394	1.016	0.400	
1 CC Uplink	N/A	1770.00	132572	High	LTE Band 66 (AWS)	20	24.0	23.99	27	0.04	1	0977M	QPSK	50	0	0 mm	left	1:1	0.335	1.002	0.336	
1 CC Uplink	N/A	1745.00	132322	Mid	LTE Band 66 (AWS)	20	20.5	19.85	27	-0.01	0	0977M	QPSK	1	99	0 mm	back	1:1	1.430	1.161	1.660	
1 CC Uplink	N/A	1745.00	132322	Mid	LTE Band 66 (AWS)	20	20.5	20.10	27	0.02	0	0977M	QPSK	50	25	0 mm	back	1:1	1.430	1.096	1.567	
1 CC Uplink	N/A	1745.00	132322	Mid	LTE Band 66 (AWS)	20	20.5	19.85	27	-0.03	0	0977M	QPSK	1	99	0 mm	front	1:1	0.980	1.161	1.138	
1 CC Uplink	N/A	1745.00	132322	Mid	LTE Band 66 (AWS)	20	20.5	20.10	27	-0.04	0	0977M	QPSK	50	25	0 mm	front	1:1	0.980	1.096	1.074	
1 CC Uplink	N/A	1720.00	132072	Low	LTE Band 66 (AWS)	20	20.5	19.71	27	0.04	0	0977M	QPSK	1	99	0 mm	bottom	1:1	2.290	1.199	2.746	
1 CC Uplink	N/A	1745.00	132322	Mid	LTE Band 66 (AWS)	20	20.5	19.85	27	0.02	0	0977M	QPSK	1	99	0 mm	bottom	1:1	2.270	1.161	2.635	
1 CC Uplink	N/A	1770.00	132572	High	LTE Band 66 (AWS)	20	20.5	19.80	27	0.00	0	0977M	QPSK	1	0	0 mm	bottom	1:1	2.420	1.175	2.844	
1 CC Uplink	N/A	1720.00	132072	Low	LTE Band 66 (AWS)	20	20.5	19.77	27	0.01	0	0977M	QPSK	50	50	0 mm	bottom	1:1	2.460	1.183	2.910	
1 CC Uplink	N/A	1745.00	132322	Mid	LTE Band 66 (AWS)	20	20.5	20.10	27	-0.01	0	0977M	QPSK	50	25	0 mm	bottom	1:1	2.320	1.096	2.543	
1 CC Uplink	N/A	1770.00	132572	High	LTE Band 66 (AWS)	20	20.5	19.95	27	0.01	0	0977M	QPSK	50	0	0 mm	bottom	1:1	2.560	1.135	2.906	
1 CC Uplink	N/A	1775.00	132622	High	LTE Band 66 (AWS)	10	20.5	19.65	27	0.06	0	0977M	QPSK	50	0	0 mm	bottom	1:1	2.420	1.216	2.943	
1 CC Uplink	N/A	1770.00	132572	High	LTE Band 66 (AWS)	20	20.5	19.82	27	0.01	0	0977M	QPSK	100	0	0 mm	bottom	1:1	2.560	1.169	2.993	
CA_66B 2 CC Uplink	PCC	1775.00	132622	High	LTE Band 66 (AWS)	10	20.5	19.90	27	-0.05	0	0977M	QPSK	50	0	0 mm	bottom	1:1	2.560	1.148	2.939	
	SCC	1765.10	132523	High	LTE Band 66 (AWS)	10								50	0							
CA_66C 2 CC Uplink	PCC	1770.00	132572	High	LTE Band 66 (AWS)	20	20.5	20.19	27	0.13	0	0977M	QPSK	100	0	0 mm	bottom	1:1	2.650	1.074	2.846	A74
	SCC	1750.20	132374	High	LTE Band 66 (AWS)	20								100	0							
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population														Phablet 4.0 W/kg (mW/g) averaged over 10 grams								

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 11-52
LTE Band 25 Phablet SAR

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Ant State	Power Drift [dB]	MPR [dB]	Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	25.0	24.81	27	0.09	0	1289M	QPSK	1	50	6 mm	back	1:1	1.640	1.045	1.714	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.0	24.00	27	0.02	1	1289M	QPSK	50	25	6 mm	back	1:1	1.350	1.000	1.350	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	25.0	24.81	27	-0.19	0	1289M	QPSK	1	50	4 mm	front	1:1	1.610	1.045	1.682	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.0	24.00	27	-0.11	1	1289M	QPSK	50	25	4 mm	front	1:1	1.340	1.000	1.340	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	25.0	24.81	27	-0.05	0	1289M	QPSK	1	50	10 mm	bottom	1:1	1.450	1.045	1.515	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.0	24.00	27	0.04	1	1289M	QPSK	50	25	10 mm	bottom	1:1	1.190	1.000	1.190	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	25.0	24.81	27	0.03	0	1289M	QPSK	1	50	0 mm	right	1:1	0.359	1.045	0.375	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.0	24.00	27	-0.04	1	1289M	QPSK	50	25	0 mm	right	1:1	0.302	1.000	0.302	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	25.0	24.81	27	-0.18	0	1289M	QPSK	1	50	0 mm	left	1:1	0.485	1.045	0.507	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.0	24.00	27	-0.17	1	1289M	QPSK	50	25	0 mm	left	1:1	0.403	1.000	0.403	
1860.00	26140	Low	LTE Band 25 (PCS)	20	21.0	20.65	27	0.10	0	1289M	QPSK	1	99	0 mm	back	1:1	2.210	1.084	2.396	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	21.0	20.82	27	0.13	0	1289M	QPSK	1	50	0 mm	back	1:1	2.130	1.042	2.219	
1905.00	26590	High	LTE Band 25 (PCS)	20	21.0	20.52	27	0.10	0	1289M	QPSK	1	0	0 mm	back	1:1	2.070	1.117	2.312	
1860.00	26140	Low	LTE Band 25 (PCS)	20	21.0	20.75	27	0.09	0	1289M	QPSK	50	50	0 mm	back	1:1	2.280	1.059	2.415	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	21.0	20.94	27	0.12	0	1289M	QPSK	50	25	0 mm	back	1:1	2.190	1.014	2.221	
1905.00	26590	High	LTE Band 25 (PCS)	20	21.0	20.54	27	0.15	0	1289M	QPSK	50	25	0 mm	back	1:1	2.130	1.112	2.369	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	21.0	20.81	27	0.12	0	1289M	QPSK	100	0	0 mm	back	1:1	1.960	1.045	2.048	
1860.00	26140	Low	LTE Band 25 (PCS)	20	21.0	20.65	27	-0.14	0	1289M	QPSK	1	99	0 mm	front	1:1	2.210	1.084	2.396	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	21.0	20.82	27	0.00	0	1289M	QPSK	1	50	0 mm	front	1:1	2.020	1.042	2.105	
1905.00	26590	High	LTE Band 25 (PCS)	20	21.0	20.52	27	-0.09	0	1289M	QPSK	1	0	0 mm	front	1:1	2.420	1.117	2.703	
1860.00	26140	Low	LTE Band 25 (PCS)	20	21.0	20.75	27	-0.11	0	1289M	QPSK	50	50	0 mm	front	1:1	2.290	1.059	2.425	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	21.0	20.94	27	0.00	0	1289M	QPSK	50	25	0 mm	front	1:1	2.050	1.014	2.079	
1905.00	26590	High	LTE Band 25 (PCS)	20	21.0	20.54	27	-0.07	0	1289M	QPSK	50	25	0 mm	front	1:1	2.460	1.112	2.736	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	21.0	20.81	27	-0.03	0	1289M	QPSK	100	0	0 mm	front	1:1	2.050	1.045	2.142	
1860.00	26140	Low	LTE Band 25 (PCS)	20	21.0	20.65	27	0.13	0	1289M	QPSK	1	99	0 mm	bottom	1:1	2.570	1.084	2.786	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	21.0	20.82	27	0.01	0	1289M	QPSK	1	50	0 mm	bottom	1:1	2.510	1.042	2.615	
1905.00	26590	High	LTE Band 25 (PCS)	20	21.0	20.52	27	0.04	0	1289M	QPSK	1	0	0 mm	bottom	1:1	2.130	1.117	2.379	
1860.00	26140	Low	LTE Band 25 (PCS)	20	21.0	20.75	27	0.01	0	1289M	QPSK	50	50	0 mm	bottom	1:1	2.730	1.059	2.891	A75
1882.50	26365	Mid	LTE Band 25 (PCS)	20	21.0	20.94	27	0.14	0	1289M	QPSK	50	25	0 mm	bottom	1:1	2.610	1.014	2.647	
1905.00	26590	High	LTE Band 25 (PCS)	20	21.0	20.54	27	0.13	0	1289M	QPSK	50	25	0 mm	bottom	1:1	2.410	1.112	2.680	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	21.0	20.81	27	0.15	0	1289M	QPSK	100	0	0 mm	bottom	1:1	2.590	1.045	2.707	
1860.00	26140	Low	LTE Band 25 (PCS)	20	21.0	20.75	27	0.00	0	1289M	QPSK	50	50	0 mm	bottom	1:1	2.470	1.059	2.616	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																	Phablet 4.0 W/kg (mW/g) averaged over 10 grams			

Note: Blue entry represents variability measurement.

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 11-53
LTE Band 30 Phablet SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
2310.00	27710	Mid	LTE Band 30	10	23.5	23.04	0.08	0	1286M	QPSK	1	25	6 mm	back	1:1	0.689	1.112	0.766	
2310.00	27710	Mid	LTE Band 30	10	22.5	22.19	0.00	1	1286M	QPSK	25	0	6 mm	back	1:1	0.563	1.074	0.605	
2310.00	27710	Mid	LTE Band 30	10	23.5	23.04	-0.04	0	1286M	QPSK	1	25	4 mm	front	1:1	0.719	1.112	0.800	
2310.00	27710	Mid	LTE Band 30	10	22.5	22.19	-0.02	1	1286M	QPSK	25	0	4 mm	front	1:1	0.582	1.074	0.625	
2310.00	27710	Mid	LTE Band 30	10	23.5	23.04	-0.02	0	1286M	QPSK	1	25	10 mm	bottom	1:1	0.789	1.112	0.877	
2310.00	27710	Mid	LTE Band 30	10	22.5	22.19	-0.07	1	1286M	QPSK	25	0	10 mm	bottom	1:1	0.676	1.074	0.726	
2310.00	27710	Mid	LTE Band 30	10	23.5	23.04	0.07	0	1286M	QPSK	1	25	0 mm	right	1:1	0.154	1.112	0.171	
2310.00	27710	Mid	LTE Band 30	10	22.5	22.19	0.06	1	1286M	QPSK	25	0	0 mm	right	1:1	0.128	1.074	0.137	
2310.00	27710	Mid	LTE Band 30	10	23.5	23.04	0.02	0	1286M	QPSK	1	25	0 mm	left	1:1	0.293	1.112	0.326	
2310.00	27710	Mid	LTE Band 30	10	22.5	22.19	0.04	1	1286M	QPSK	25	0	0 mm	left	1:1	0.255	1.074	0.274	
2310.00	27710	Mid	LTE Band 30	10	21.0	20.21	-0.08	0	1286M	QPSK	1	0	0 mm	back	1:1	1.290	1.199	1.547	
2310.00	27710	Mid	LTE Band 30	10	21.0	20.27	-0.10	0	1286M	QPSK	25	12	0 mm	back	1:1	1.390	1.183	1.644	
2310.00	27710	Mid	LTE Band 30	10	21.0	20.21	-0.02	0	1286M	QPSK	1	0	0 mm	front	1:1	0.802	1.199	0.962	
2310.00	27710	Mid	LTE Band 30	10	21.0	20.27	0.00	0	1286M	QPSK	25	12	0 mm	front	1:1	0.866	1.183	1.024	
2310.00	27710	Mid	LTE Band 30	10	21.0	20.21	-0.13	0	1286M	QPSK	1	0	0 mm	bottom	1:1	1.580	1.199	1.894	
2310.00	27710	Mid	LTE Band 30	10	21.0	20.27	-0.15	0	1286M	QPSK	25	12	0 mm	bottom	1:1	1.740	1.183	2.058	A76
2310.00	27710	Mid	LTE Band 30	10	21.0	20.20	-0.11	0	1286M	QPSK	50	0	0 mm	bottom	1:1	1.700	1.202	2.043	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																Phablet 4.0 W/kg (mW/g) averaged over 10 grams			

Table 11-54
LTE Band 7 Phablet SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
2535.00	21100	Mid	LTE Band 7	20	23.5	23.07	-0.17	0	0937M	QPSK	1	99	6 mm	back	1:1	0.412	1.104	0.455	
2535.00	21100	Mid	LTE Band 7	20	22.5	22.02	-0.21	1	0937M	QPSK	50	0	6 mm	back	1:1	0.318	1.117	0.355	
2535.00	21100	Mid	LTE Band 7	20	23.5	23.07	0.00	0	0937M	QPSK	1	99	4 mm	front	1:1	0.408	1.104	0.450	
2535.00	21100	Mid	LTE Band 7	20	22.5	22.02	0.03	1	0937M	QPSK	50	0	4 mm	front	1:1	0.293	1.117	0.327	
2535.00	21100	Mid	LTE Band 7	20	23.5	23.07	0.03	0	0937M	QPSK	1	99	10 mm	bottom	1:1	0.406	1.104	0.448	
2535.00	21100	Mid	LTE Band 7	20	22.5	22.02	0.00	1	0937M	QPSK	50	0	10 mm	bottom	1:1	0.307	1.117	0.343	
2535.00	21100	Mid	LTE Band 7	20	23.5	23.07	-0.15	0	0937M	QPSK	1	99	0 mm	left	1:1	0.721	1.104	0.796	
2535.00	21100	Mid	LTE Band 7	20	22.5	22.02	-0.16	1	0937M	QPSK	50	0	0 mm	left	1:1	0.550	1.117	0.614	
2560.00	21350	High	LTE Band 7	20	21.0	20.32	-0.20	0	1286M	QPSK	1	0	0 mm	back	1:1	1.450	1.169	1.695	
2510.00	20850	Low	LTE Band 7	20	21.0	20.13	-0.15	0	1286M	QPSK	50	50	0 mm	back	1:1	1.630	1.222	1.992	A77
2535.00	21100	Mid	LTE Band 7	20	21.0	19.85	-0.12	0	1286M	QPSK	50	0	0 mm	back	1:1	1.530	1.303	1.994	
2560.00	21350	High	LTE Band 7	20	21.0	20.31	-0.19	0	1286M	QPSK	50	25	0 mm	back	1:1	1.480	1.172	1.735	
2560.00	21350	High	LTE Band 7	20	21.0	20.32	-0.07	0	1286M	QPSK	1	0	0 mm	front	1:1	0.877	1.169	1.025	
2560.00	21350	High	LTE Band 7	20	21.0	20.31	-0.05	0	1286M	QPSK	50	25	0 mm	front	1:1	0.892	1.172	1.045	
2560.00	21350	High	LTE Band 7	20	21.0	20.32	-0.14	0	1286M	QPSK	1	0	0 mm	bottom	1:1	1.260	1.169	1.473	
2560.00	21350	High	LTE Band 7	20	21.0	20.31	-0.10	0	1286M	QPSK	50	25	0 mm	bottom	1:1	1.310	1.172	1.535	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																Phablet 4.0 W/kg (mW/g) averaged over 10 grams			

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 11-55
LTE Band 41 Phablet SAR

MEASUREMENT RESULTS																						
1 CC Uplink | 2 CC Uplink, Power Class	Component Carrier	FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
		MHz	Ch.															(W/kg)		(W/kg)	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	25.0	24.37	-0.02	0	1020M	QPSK	1	0	6 mm	back	1:1.58	0.641	1.156	0.741	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	24.0	23.67	-0.02	1	1020M	QPSK	50	25	6 mm	back	1:1.58	0.589	1.079	0.636	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	25.0	24.37	-0.02	0	1020M	QPSK	1	0	4 mm	front	1:1.58	0.568	1.156	0.657	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	24.0	23.67	-0.05	1	1020M	QPSK	50	25	4 mm	front	1:1.58	0.496	1.079	0.535	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	25.0	24.37	-0.04	0	1020M	QPSK	1	0	10 mm	bottom	1:1.58	0.546	1.156	0.631	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	24.0	23.67	0.10	1	1020M	QPSK	50	25	10 mm	bottom	1:1.58	0.468	1.079	0.505	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	25.0	24.37	-0.11	0	1020M	QPSK	1	0	0 mm	left	1:1.58	0.749	1.156	0.866	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	24.0	23.67	-0.09	1	1020M	QPSK	50	25	0 mm	left	1:1.58	0.660	1.079	0.712	
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	22.5	21.39	-0.06	0	1020M	QPSK	1	99	0 mm	back	1:1.58	1.230	1.291	1.588	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	22.5	22.00	-0.02	0	1020M	QPSK	1	99	0 mm	back	1:1.58	1.660	1.122	1.863	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	22.5	22.08	0.06	0	1020M	QPSK	1	50	0 mm	back	1:1.58	1.480	1.102	1.631	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	22.5	21.93	0.06	0	1020M	QPSK	1	0	0 mm	back	1:1.58	1.610	1.140	1.835	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	22.5	21.97	0.08	0	1020M	QPSK	1	99	0 mm	back	1:1.58	1.540	1.130	1.740	
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	22.5	21.56	-0.05	0	1020M	QPSK	50	50	0 mm	back	1:1.58	1.330	1.242	1.652	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	22.5	22.05	-0.01	0	1020M	QPSK	50	25	0 mm	back	1:1.58	1.470	1.109	1.630	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	22.5	22.20	0.05	0	1020M	QPSK	50	25	0 mm	back	1:1.58	1.540	1.072	1.651	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	22.5	22.01	0.06	0	1020M	QPSK	50	0	0 mm	back	1:1.58	1.650	1.119	1.846	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	22.5	22.11	0.12	0	1020M	QPSK	50	50	0 mm	back	1:1.58	1.590	1.094	1.739	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	22.5	22.07	0.03	0	1020M	QPSK	100	0	0 mm	back	1:1.58	1.550	1.104	1.711	
1 CC Uplink - Power Class 2	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	24.5	23.68	0.05	0	1020M	QPSK	1	99	0 mm	back	1:2.31	1.610	1.208	1.945	
2 CC Uplink - Power Class 3	PCC	2549.50	40185	Low-Mid	LTE Band 41	20	22.5	22.23	-0.17	0	1020M	QPSK	1	99	0 mm	back	1:1.58	1.710	1.064	1.819	
2 CC Uplink - Power Class 3	SCC	2569.30	40383	Low-Mid	LTE Band 41	20							1	0							
2 CC Uplink - Power Class 2	PCC	2549.50	40185	Low-Mid	LTE Band 41	20	24.5	24.37	0.13	0	1020M	QPSK	1	99	0 mm	back	1:2.31	1.980	1.030	2.039	A78
2 CC Uplink - Power Class 2	SCC	2569.30	40383	Low-Mid	LTE Band 41	20							1	0							
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	22.5	22.08	-0.04	0	1020M	QPSK	1	50	0 mm	front	1:1.58	0.756	1.102	0.833	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	22.5	22.20	-0.04	0	1020M	QPSK	50	25	0 mm	front	1:1.58	0.781	1.072	0.837	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	22.5	22.08	-0.10	0	1020M	QPSK	1	50	0 mm	bottom	1:1.58	1.330	1.102	1.466	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	22.5	22.20	-0.10	0	1020M	QPSK	50	25	0 mm	bottom	1:1.58	1.390	1.072	1.490	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																	Phablet 4.0 W/kg (mW/g) averaged over 10 grams				

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 11-56
WLAN Phablet SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (10g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (10g)	Plot #
MHz	Ch.													W/kg	(W/kg)			(W/kg)	
5300	60	802.11a	OFDM	20	18.0	17.98	0.08	0 mm	1	0952M	6	back	98.8	10.496	-	1.005	1.012	-	
5300	60	802.11a	OFDM	20	18.0	17.98	-0.17	0 mm	1	0952M	6	front	98.8	2.204	0.432	1.005	1.012	0.439	
5300	60	802.11a	OFDM	20	18.0	17.98	-0.13	0 mm	1	0952M	6	top	98.8	7.597	-	1.005	1.012	-	
5300	60	802.11a	OFDM	20	18.0	17.98	-0.16	0 mm	1	0952M	6	left	98.8	10.957	0.931	1.005	1.012	0.947	
5280	56	802.11a	OFDM	20	18.0	17.98	0.10	0 mm	2	0952M	6	back	98.8	16.839	1.260	1.005	1.012	1.281	
5280	56	802.11a	OFDM	20	18.0	17.98	0.15	0 mm	2	0952M	6	front	98.8	0.200	0.014	1.005	1.012	0.014	
5280	56	802.11a	OFDM	20	18.0	17.98	0.14	0 mm	2	0952M	6	top	98.8	0.132	-	1.005	1.012	-	
5280	56	802.11a	OFDM	20	18.0	17.98	-0.14	0 mm	2	0952M	6	left	98.8	0.478	0.036	1.005	1.012	0.037	
5500	100	802.11a	OFDM	20	18.0	17.53	0.15	0 mm	1	0952M	6	back	98.8	7.624	0.877	1.114	1.012	0.989	
5600	120	802.11a	OFDM	20	18.0	17.98	0.07	0 mm	1	0952M	6	back	98.8	11.446	1.480	1.005	1.012	**1.505**	
5720	144	802.11a	OFDM	20	18.0	17.54	0.05	0 mm	1	0952M	6	back	98.8	9.177	1.140	1.112	1.012	1.283	
5600	120	802.11a	OFDM	20	18.0	17.98	-0.16	0 mm	1	0952M	6	front	98.8	1.911	0.347	1.005	1.012	0.353	
5600	120	802.11a	OFDM	20	18.0	17.98	0.16	0 mm	1	0952M	6	top	98.8	6.488	-	1.005	1.012	-	
5600	120	802.11a	OFDM	20	18.0	17.98	-0.12	0 mm	1	0952M	6	left	98.8	10.819	0.838	1.005	1.012	0.852	
5720	144	802.11a	OFDM	20	18.0	17.70	-0.07	0 mm	2	0952M	6	back	98.8	10.929	1.300	1.072	1.012	1.410	
5720	144	802.11a	OFDM	20	18.0	17.70	0.13	0 mm	2	0952M	6	front	98.8	0.483	0.033	1.072	1.012	0.036	
5720	144	802.11a	OFDM	20	18.0	17.70	0.20	0 mm	2	0952M	6	top	98.8	0.309	-	1.072	1.012	-	
5720	144	802.11a	OFDM	20	18.0	17.70	-0.09	0 mm	2	0952M	6	left	98.8	1.019	0.099	1.072	1.012	0.107	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Phablet 4.0 W/kg (mW/g) averaged over 10 grams									

Table 11-57
WLAN MIMO Phablet SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power (Ant 1) [dBm]	Conducted Power (Ant 1) [dBm]	Maximum Allowed Power (Ant 2) [dBm]	Conducted Power (Ant 2) [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (10g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (10g)	Plot #
MHz	Ch.															W/kg	(W/kg)			(W/kg)	
5260	52	802.11n	OFDM	20	18.0	17.92	18.0	17.90	0.05	0 mm	MIMO	0952M	13	back	99.7	12.901	2.060	1.023	1.003	2.114	
5280	56	802.11n	OFDM	20	18.0	17.99	18.0	17.84	-0.19	0 mm	MIMO	0952M	13	back	99.7	15.013	2.620	1.038	1.003	2.728	
5280	56	802.11n	OFDM	20	18.0	17.99	18.0	17.84	-0.14	0 mm	MIMO	0952M	13	front	99.7	4.444	0.438	1.038	1.003	0.456	
5280	56	802.11n	OFDM	20	18.0	17.99	18.0	17.84	-0.10	0 mm	MIMO	0952M	13	top	99.7	8.733	-	1.038	1.003	-	
5280	56	802.11n	OFDM	20	18.0	17.99	18.0	17.84	0.04	0 mm	MIMO	0952M	13	left	99.7	12.529	1.260	1.038	1.003	1.312	
5500	100	802.11n	OFDM	20	18.0	17.52	18.0	17.51	-0.16	0 mm	MIMO	0952M	13	back	99.7	13.134	1.960	1.119	1.003	2.200	
5600	120	802.11n	OFDM	20	18.0	17.99	18.0	17.40	-0.08	0 mm	MIMO	0952M	13	back	99.7	23.209	2.760	1.148	1.003	3.178	
5620	124	802.11n	OFDM	20	18.0	17.92	18.0	17.93	-0.20	0 mm	MIMO	0952M	13	back	99.7	17.028	2.490	1.019	1.003	2.545	
5720	144	802.11n	OFDM	20	18.0	17.60	18.0	17.66	0.18	0 mm	MIMO	0952M	13	back	99.7	21.408	2.970	1.096	1.003	3.265	A79
5620	124	802.11n	OFDM	20	18.0	17.92	18.0	17.93	-0.15	0 mm	MIMO	0952M	13	front	99.7	1.852	0.258	1.019	1.003	0.264	
5620	124	802.11n	OFDM	20	18.0	17.92	18.0	17.93	-0.19	0 mm	MIMO	0952M	13	top	99.7	6.322	-	1.019	1.003	-	
5620	124	802.11n	OFDM	20	18.0	17.92	18.0	17.93	-0.19	0 mm	MIMO	0952M	13	left	99.7	12.179	0.957	1.019	1.003	0.978	
5280	56	802.11n	OFDM	20	18.0	17.99	18.0	17.84	0.02	0 mm	MIMO	0952M	13	back	99.7	11.030	2.620	1.038	1.003	2.728	
5600	120	802.11n	OFDM	20	18.0	17.99	18.0	17.40	0.15	0 mm	MIMO	0952M	13	back	99.7	23.243	2.730	1.148	1.003	3.143	
5720	144	802.11n	OFDM	20	18.0	17.60	18.0	17.66	0.18	0 mm	MIMO	0952M	13	back	99.7	23.109	2.950	1.096	1.003	3.243	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population												Phablet 4.0 W/kg (mW/g) averaged over 10 grams									

Note: 1) Blue entry represents variability measurement.
2) For channels 52, 56, 100, 120, 124, and 144 to achieve the 21 dBm maximum allowed MIMO power shown in the documentation, each antenna transmits at a maximum allowed power of 18 dBm.

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

11.5 SAR Test Notes

General Notes:

1. The test data reported are the worst-case SAR values according to test procedures specified in IEEE 1528-2013, and FCC KDB Publication 447498 D01v06.
2. Batteries are fully charged at the beginning of the SAR measurements.
3. Liquid tissue depth was at least 15.0 cm for all frequencies.
4. The manufacturer has confirmed that the device(s) tested have the same physical, mechanical and thermal characteristics and are within operational tolerances expected for production units.
5. SAR results were scaled to the maximum allowed power to demonstrate compliance per FCC KDB Publication 447498 D01v06.
6. Device was tested using a fixed spacing for body-worn accessory testing. A separation distance of 15 mm was considered because the manufacturer has determined that there will be body-worn accessories available in the marketplace for users to support this separation distance.
7. Per FCC KDB Publication 648474 D04v01r03, body-worn SAR was evaluated without a headset connected to the device. Since the standalone reported body-worn SAR was ≤ 1.2 W/kg, no additional body-worn SAR evaluations using a headset cable were required.
8. Per FCC KDB 865664 D01v01r04, variability SAR tests were performed when the measured SAR results for a frequency band were greater than or equal to 0.8 W/kg for 1g SAR and 2.0 W/kg for 10g SAR. Repeated SAR measurements are highlighted in the tables above for clarity. Please see Section 13 for variability analysis.
9. During SAR Testing for the Wireless Router conditions per FCC KDB Publication 941225 D06v02r01, the actual Portable Hotspot operation (with actual simultaneous transmission of a transmitter with WIFI) was not activated (See Section 6.7 for more details).
10. Per FCC KDB Publication 648474 D04v01r03, this device is considered a "phablet" since the diagonal dimension is > 160 mm and < 200 mm. Therefore, phablet SAR tests are required when wireless router mode does not apply or if wireless router 1g SAR > 1.2 W/kg.
11. This device supports dynamic antenna tuning for some bands. Per April 2019 TCB Workshop Notes, SAR was measured according to the normally required SAR measurement configurations with tuner active. The auto-tune state determined by the device was verified before and after each SAR measurement and is listed in tables above. Please see Section 14 for supplemental data.
12. This device utilizes power reduction for some wireless modes and technologies, as outlined in Section 1.3. The maximum output power allowed for each transmitter and exposure condition was evaluated for SAR compliance based on expected use conditions and simultaneous transmission scenarios.
13. Unless otherwise noted, when 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds below.
14. Additional SAR tests for phablet SAR were evaluated per KDB 616217 Section 6 (See Section 6.9 for more information).

GSM Test Notes:

1. Body-Worn accessory testing is typically associated with voice operations. Therefore, GSM voice was evaluated for body-worn SAR.
2. Justification for reduced test configurations per KDB Publication 941225 D01v03r01 and October 2013 TCB Workshop Notes: The source-based frame-averaged output power was evaluated for all GPRS/EDGE slot configurations. The configuration with the highest target frame averaged output power was evaluated for hotspot SAR. When the maximum frame-averaged powers are equivalent across two or more slots (within 0.25 dB), the configuration with the most number of time slots was tested.
3. Per FCC KDB Publication 447498 D01v06, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg for 1g evaluations then testing at the other channels is not required for such test configuration(s). When the maximum output power variation across the required test channels is > ½ dB, instead of the middle channel, the highest output power channel was used.

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

CDMA Notes:

1. Head SAR for CDMA2000 mode was tested under RC3/SO55 per FCC KDB Publication 941225 D01v03r01.
2. Body-Worn SAR was tested with 1x RTT with TDSO / SO32 FCH Only. EVDO Rev0 and RevA and TDSO / SO32 FCH+SCH SAR tests were not required per the 3G SAR Test Reduction Procedure in FCC KDB Publication 941225 D01v03r01.
3. CDMA Wireless Router SAR is measured using Subtype 0/1 Physical Layer configurations for Rev. 0 according to KDB 941225 D01v03r01 procedures for data devices. Wireless Router SAR tests for Subtype 2 of Rev.A and 1x RTT configurations were not required per the 3G SAR Test Reduction Policy in KDB Publication 941225 D01v03r01.
4. Head SAR was additionally evaluated using EVDO Rev. A to determine compliance for VoIP operations.
5. Per FCC KDB Publication 447498 D01v06, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg for 1g evaluations then testing at the other channels is not required for such test configuration(s). When the maximum output power variation across the required test channels is > ½ dB, instead of the middle channel, the highest output power channel was used.
6. CDMA 1X Advanced technology was not required for SAR since the maximum allowed output powers for 1X Advanced was not more than 0.25 dB higher than the maximum powers for 1X.

UMTS Notes:

1. UMTS mode in was tested under RMC 12.2 kbps with HSPA Inactive per KDB Publication 941225 D01v03r01. AMR and HSPA SAR was not required per the 3G Test Reduction Procedure in KDB Publication 941225 D01v03r01.
2. Per FCC KDB Publication 447498 D01v06, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg for 1g evaluations then testing at the other channels is not required for such test configuration(s). When the maximum output power variation across the required test channels is > ½ dB, instead of the middle channel, the highest output power channel was used.

LTE Notes:

1. LTE Considerations: LTE test configurations are determined according to SAR Evaluation Considerations for LTE Devices in FCC KDB Publication 941225 D05v02r04. The general test procedures used for testing can be found in Section 8.6.4.
2. MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to 3GPP TS36.101 Section 6.2.3 – 6.2.5 under Table 6.2.3-1.
3. A-MPR was disabled for all SAR tests by setting NS=01 and MCC=001 on the base station simulator. SAR tests were performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI).
4. Per FCC KDB Publication 447498 D01v06, when the reported LTE Band 41 and LTE Band 48 SAR measured at the highest output power channel in a given a test configuration was > 0.6 W/kg for 1g evaluations, testing at the other channels was required for such test configurations.
5. TDD LTE was tested per the guidance provided in FCC KDB Publication 941225 D05v02r04. Testing was performed using UL-DL configuration 0 with 6 UL subframes and 2 S subframes using extended cyclic prefix only and special subframe configuration 6. SAR tests were performed at maximum output power and worst-case transmission duty factor in extended cyclic prefix. Per 3GPP 36.211 Section 4, the duty factor for special subframe configuration 6 using extended cyclic prefix is 0.633.
6. Per KDB Publication 941225 D05Av01r02, SAR for downlink only LTE CA operations was not needed since the maximum average output power in LTE CA mode was not >0.25 dB higher than the maximum output power when downlink carrier aggregation was inactive.

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

7. This device supports Power Class 2 and Power Class 3 operations for LTE Band 41. The highest available duty cycle for Power Class 2 operations is 43.3 % using UL-DL configuration 1. Per FCC Guidance, all SAR tests were performed using Power Class 3. SAR with power class 2 at the available duty factor was additionally performed for the power class 3 configuration with the highest SAR configuration for each exposure conditions. Please see Section 14 for linearity results.
8. For LTE Band 5, LTE Band 66, and LTE Band 41, per FCC guidance, SAR was first measured with only a single carrier active in the uplink (carrier aggregation not active). For each exposure condition, the uplink CA scenario with two component carriers was additionally tested for the configuration with the highest SAR when carrier aggregation was not active. The SCC was configured with the closest available contiguous channel. The two component carriers were configured so the resource blocks are physically allocated side by side to achieve the maximum output power.
9. This device supports ULCA active with Power Class 2. Highest SAR test configuration for each exposure condition in Power Class 3 with ULCA active was repeated with Power Class 2 with ULCA active.

WLAN Notes:

1. For held-to-ear, hotspot, and phablet operations, the initial test position procedures were applied. The test position with the highest extrapolated peak SAR will be used as the initial test position. When reported SAR for the initial test position is ≤ 0.4 W/kg for 1g evaluations, no additional testing for the remaining test positions was required. Otherwise, SAR is evaluated at the subsequent highest peak SAR positions until the reported SAR result is ≤ 0.8 W/kg or all test positions are measured.
2. Justification for test configurations for WLAN per KDB Publication 248227 D01v02r02 for 2.4 GHz WIFI single transmission chain operations, the highest measured maximum output power channel for DSSS was selected for SAR measurement. SAR for OFDM modes (2.4 GHz 802.11g/n/ax) was not required due to the maximum allowed powers and the highest reported DSSS SAR. See Section 8.7.5 for more information.
3. Justification for test configurations for WLAN per KDB Publication 248227 D01v02r02 for 5 GHz WIFI single transmission chain operations, the initial test configuration was selected according to the transmission mode with the highest maximum allowed powers. Other transmission modes were not investigated since the highest reported SAR for initial test configuration adjusted by the ratio of maximum output powers is less than 1.2 W/kg for 1g evaluations. See Section 8.7.6 for more information.
4. Per KDB Publication 248227 D01v02r02, SAR for MIMO was evaluated by following the simultaneous SAR provisions from KDB Publication 447498 D01v06 by either evaluating the sum of the 1g SAR values of each antenna transmitting independently or making a SAR measurement with both antennas transmitting simultaneously. Please see Section 12 for complete analysis.
5. When the maximum reported 1g averaged SAR is ≤0.8 W/kg, SAR testing on additional channels was not required. Otherwise, SAR for the next highest output power channel was required until the reported SAR result was ≤ 1.20 W/kg for 1g evaluations or all test channels were measured.
6. The device was configured to transmit continuously at the required data rate, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools. The reported SAR was scaled to the 100% transmission duty factor to determine compliance. Procedures used to measure the duty factor are identical to that in the associated EMC test reports.
7. When 10-g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

Bluetooth Notes

1. Bluetooth SAR was measured with the device connected to a call box with hopping disabled with DH5 operation and Tx Tests test mode type. Per October 2016 TCB Workshop Notes, the reported SAR was scaled to the 100% transmission duty factor to determine compliance. See Section 9.6 for the time domain plot and calculation for the duty factor of the device.
2. Head and Hotspot Bluetooth SAR were evaluated for BT BR tethering applications.

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

12 FCC MULTI-TX AND ANTENNA SAR CONSIDERATIONS

12.1 Introduction

The following procedures adopted from FCC KDB Publication 447498 D01v06 are applicable to devices with built-in unlicensed transmitters such as 802.11 and Bluetooth devices which may simultaneously transmit with the licensed transmitter.

12.2 Simultaneous Transmission Procedures

This device contains transmitters that may operate simultaneously. Therefore, simultaneous transmission analysis is required. Per FCC KDB Publication 447498 D01v06 4.3.2 and IEEE 1528-2013 Section 6.3.4.1.2, simultaneous transmission SAR test exclusion may be applied when the sum of the 1g SAR for all the simultaneous transmitting antennas in a specific a physical test configuration is ≤1.6 W/kg. The different test positions in an exposure condition may be considered collectively to determine SAR test exclusion according to the sum of 1g or 10g SAR.

12.3 Head SAR Simultaneous Transmission Analysis

Table 12-1
Simultaneous Transmission Scenario with 2.4 GHz WLAN (Held to Ear)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Head SAR	GSM 850	0.152	0.252	0.004	0.404	0.156	0.408
	GSM 1900	0.062	0.252	0.004	0.314	0.066	0.318
	UMTS 850	0.264	0.252	0.004	0.516	0.268	0.520
	UMTS 1750	0.166	0.252	0.004	0.418	0.170	0.422
	UMTS 1900	0.133	0.252	0.004	0.385	0.137	0.389
	CDMA/EVDO BC10 (§90S)	0.236	0.252	0.004	0.488	0.240	0.492
	CDMA/EVDO BC0 (§22H)	0.242	0.252	0.004	0.494	0.246	0.498
	PCS CDMA/EVDO	0.154	0.252	0.004	0.406	0.158	0.410
	LTE Band 71	0.155	0.252	0.004	0.407	0.159	0.411
	LTE Band 12	0.146	0.252	0.004	0.398	0.150	0.402
	LTE Band 13	0.164	0.252	0.004	0.416	0.168	0.420
	LTE Band 14	0.182	0.252	0.004	0.434	0.186	0.438
	LTE Band 26 (Cell)	0.193	0.252	0.004	0.445	0.197	0.449
	LTE Band 5 (Cell)	0.295	0.252	0.004	0.547	0.299	**0.551**
	LTE Band 66 (AWS)	0.192	0.252	0.004	0.444	0.196	0.448
	LTE Band 25 (PCS)	0.139	0.252	0.004	0.391	0.143	0.395
	LTE Band 30	0.076	0.252	0.004	0.328	0.080	0.332
	LTE Band 7	0.105	0.252	0.004	0.357	0.109	0.361
	LTE Band 48	0.047	0.252	0.004	0.299	0.051	0.303
	LTE Band 41	0.118	0.252	0.004	0.370	0.122	0.374

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 12-2
Simultaneous Transmission Scenario with 5 GHz WLAN (Held to Ear)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Head SAR	GSM 850	0.152	0.277	0.010	0.429	0.162	0.439
	GSM 1900	0.062	0.277	0.010	0.339	0.072	0.349
	UMTS 850	0.264	0.277	0.010	0.541	0.274	0.551
	UMTS 1750	0.166	0.277	0.010	0.443	0.176	0.453
	UMTS 1900	0.133	0.277	0.010	0.410	0.143	0.420
	CDMA/EVDO BC10 (§90S)	0.236	0.277	0.010	0.513	0.246	0.523
	CDMA/EVDO BC0 (§22H)	0.242	0.277	0.010	0.519	0.252	0.529
	PCS CDMA/EVDO	0.154	0.277	0.010	0.431	0.164	0.441
	LTE Band 71	0.155	0.277	0.010	0.432	0.165	0.442
	LTE Band 12	0.146	0.277	0.010	0.423	0.156	0.433
	LTE Band 13	0.164	0.277	0.010	0.441	0.174	0.451
	LTE Band 14	0.182	0.277	0.010	0.459	0.192	0.469
	LTE Band 26 (Cell)	0.193	0.277	0.010	0.470	0.203	0.480
	LTE Band 5 (Cell)	0.295	0.277	0.010	0.572	0.305	**0.582**
	LTE Band 66 (AWS)	0.192	0.277	0.010	0.469	0.202	0.479
	LTE Band 25 (PCS)	0.139	0.277	0.010	0.416	0.149	0.426
	LTE Band 30	0.076	0.277	0.010	0.353	0.086	0.363
	LTE Band 7	0.105	0.277	0.010	0.382	0.115	0.392
	LTE Band 48	0.047	0.277	0.010	0.324	0.057	0.334
	LTE Band 41	0.118	0.277	0.010	0.395	0.128	0.405

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 12-3
Simultaneous Transmission Scenario with 2.4 GHz WLAN MIMO and 5 GHz WLAN MIMO (Held to Ear)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	5	1+2+3+4+5
Head SAR	GSM 850	0.152	0.252	0.004	0.277	0.010	0.695
	GSM 1900	0.062	0.252	0.004	0.277	0.010	0.605
	UMTS 850	0.264	0.252	0.004	0.277	0.010	0.807
	UMTS 1750	0.166	0.252	0.004	0.277	0.010	0.709
	UMTS 1900	0.133	0.252	0.004	0.277	0.010	0.676
	CDMA/EVDO BC10 (§90S)	0.236	0.252	0.004	0.277	0.010	0.779
	CDMA/EVDO BC0 (§22H)	0.242	0.252	0.004	0.277	0.010	0.785
	PCS CDMA/EVDO	0.154	0.252	0.004	0.277	0.010	0.697
	LTE Band 71	0.155	0.252	0.004	0.277	0.010	0.698
	LTE Band 12	0.146	0.252	0.004	0.277	0.010	0.689
	LTE Band 13	0.164	0.252	0.004	0.277	0.010	0.707
	LTE Band 14	0.182	0.252	0.004	0.277	0.010	0.725
	LTE Band 26 (Cell)	0.193	0.252	0.004	0.277	0.010	0.736
	LTE Band 5 (Cell)	0.295	0.252	0.004	0.277	0.010	**0.838**
	LTE Band 66 (AWS)	0.192	0.252	0.004	0.277	0.010	0.735
	LTE Band 25 (PCS)	0.139	0.252	0.004	0.277	0.010	0.682
	LTE Band 30	0.076	0.252	0.004	0.277	0.010	0.619
	LTE Band 7	0.105	0.252	0.004	0.277	0.010	0.648
	LTE Band 48	0.047	0.252	0.004	0.277	0.010	0.590
	LTE Band 41	0.118	0.252	0.004	0.277	0.010	0.661

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 12-4
Simultaneous Transmission Scenario with Bluetooth (Held to Ear)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Head SAR	GSM 850	0.152	0.337	0.489
	GSM 1900	0.062	0.337	0.399
	UMTS 850	0.264	0.337	0.601
	UMTS 1750	0.166	0.337	0.503
	UMTS 1900	0.133	0.337	0.470
	CDMA/EVDO BC10 (§90S)	0.236	0.337	0.573
	CDMA/EVDO BC0 (§22H)	0.242	0.337	0.579
	PCS CDMA/EVDO	0.154	0.337	0.491
	LTE Band 71	0.155	0.337	0.492
	LTE Band 12	0.146	0.337	0.483
	LTE Band 13	0.164	0.337	0.501
	LTE Band 14	0.182	0.337	0.519
	LTE Band 26 (Cell)	0.193	0.337	0.530
	LTE Band 5 (Cell)	0.295	0.337	**0.632**
	LTE Band 66 (AWS)	0.192	0.337	0.529
	LTE Band 25 (PCS)	0.139	0.337	0.476
	LTE Band 30	0.076	0.337	0.413
	LTE Band 7	0.105	0.337	0.442
	LTE Band 48	0.047	0.337	0.384
	LTE Band 41	0.118	0.337	0.455

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 12-5
Simultaneous Transmission Scenario with Bluetooth and 5 GHz WLAN (Held to Ear)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Head SAR	GSM 850	0.152	0.337	0.277	0.010	0.776
	GSM 1900	0.062	0.337	0.277	0.010	0.686
	UMTS 850	0.264	0.337	0.277	0.010	0.888
	UMTS 1750	0.166	0.337	0.277	0.010	0.790
	UMTS 1900	0.133	0.337	0.277	0.010	0.757
	CDMA/EVDO BC10 (§90S)	0.236	0.337	0.277	0.010	0.860
	CDMA/EVDO BC0 (§22H)	0.242	0.337	0.277	0.010	0.866
	PCS CDMA/EVDO	0.154	0.337	0.277	0.010	0.778
	LTE Band 71	0.155	0.337	0.277	0.010	0.779
	LTE Band 12	0.146	0.337	0.277	0.010	0.770
	LTE Band 13	0.164	0.337	0.277	0.010	0.788
	LTE Band 14	0.182	0.337	0.277	0.010	0.806
	LTE Band 26 (Cell)	0.193	0.337	0.277	0.010	0.817
	LTE Band 5 (Cell)	0.295	0.337	0.277	0.010	**0.919**
	LTE Band 66 (AWS)	0.192	0.337	0.277	0.010	0.816
	LTE Band 25 (PCS)	0.139	0.337	0.277	0.010	0.763
	LTE Band 30	0.076	0.337	0.277	0.010	0.700
	LTE Band 7	0.105	0.337	0.277	0.010	0.729
	LTE Band 48	0.047	0.337	0.277	0.010	0.671
	LTE Band 41	0.118	0.337	0.277	0.010	0.742

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

12.4 Body-Worn Simultaneous Transmission Analysis

Table 12-6
Simultaneous Transmission Scenario with 2.4 GHz WLAN (Body-Worn at 1.5 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Body-Worn	GSM 850	0.208	0.059	0.140	0.267	0.348	0.407
	GSM 1900	0.382	0.059	0.140	0.441	0.522	0.581
	UMTS 850	0.252	0.059	0.140	0.311	0.392	0.451
	UMTS 1750	0.565	0.059	0.140	0.624	0.705	0.764
	UMTS 1900	0.943	0.059	0.140	1.002	1.083	1.142
	CDMA BC10 (§90S)	0.283	0.059	0.140	0.342	0.423	0.482
	CDMA BC0 (§22H)	0.307	0.059	0.140	0.366	0.447	0.506
	PCS CDMA	0.954	0.059	0.140	1.013	1.094	**1.153**
	LTE Band 71	0.268	0.059	0.140	0.327	0.408	0.467
	LTE Band 12	0.238	0.059	0.140	0.297	0.378	0.437
	LTE Band 13	0.254	0.059	0.140	0.313	0.394	0.453
	LTE Band 14	0.345	0.059	0.140	0.404	0.485	0.544
	LTE Band 26 (Cell)	0.374	0.059	0.140	0.433	0.514	0.573
	LTE Band 5 (Cell)	0.408	0.059	0.140	0.467	0.548	0.607
	LTE Band 66 (AWS)	0.811	0.059	0.140	0.870	0.951	1.010
	LTE Band 25 (PCS)	0.895	0.059	0.140	0.954	1.035	1.094
	LTE Band 30	0.401	0.059	0.140	0.460	0.541	0.600
	LTE Band 7	0.340	0.059	0.140	0.399	0.480	0.539
	LTE Band 48	0.225	0.059	0.140	0.284	0.365	0.424
	LTE Band 41	0.500	0.059	0.140	0.559	0.640	0.699

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 12-7
Simultaneous Transmission Scenario with 5 GHz WLAN (Body-Worn at 1.5 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Body-Worn	GSM 850	0.208	0.261	0.189	0.469	0.397	0.658
	GSM 1900	0.382	0.261	0.189	0.643	0.571	0.832
	UMTS 850	0.252	0.261	0.189	0.513	0.441	0.702
	UMTS 1750	0.565	0.261	0.189	0.826	0.754	1.015
	UMTS 1900	0.943	0.261	0.189	1.204	1.132	1.393
	CDMA BC10 (§90S)	0.283	0.261	0.189	0.544	0.472	0.733
	CDMA BC0 (§22H)	0.307	0.261	0.189	0.568	0.496	0.757
	PCS CDMA	0.954	0.261	0.189	1.215	1.143	**1.404**
	LTE Band 71	0.268	0.261	0.189	0.529	0.457	0.718
	LTE Band 12	0.238	0.261	0.189	0.499	0.427	0.688
	LTE Band 13	0.254	0.261	0.189	0.515	0.443	0.704
	LTE Band 14	0.345	0.261	0.189	0.606	0.534	0.795
	LTE Band 26 (Cell)	0.374	0.261	0.189	0.635	0.563	0.824
	LTE Band 5 (Cell)	0.408	0.261	0.189	0.669	0.597	0.858
	LTE Band 66 (AWS)	0.811	0.261	0.189	1.072	1.000	1.261
	LTE Band 25 (PCS)	0.895	0.261	0.189	1.156	1.084	1.345
	LTE Band 30	0.401	0.261	0.189	0.662	0.590	0.851
	LTE Band 7	0.340	0.261	0.189	0.601	0.529	0.790
	LTE Band 48	0.225	0.261	0.189	0.486	0.414	0.675
	LTE Band 41	0.500	0.261	0.189	0.761	0.689	0.950

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 12-8
Simultaneous Transmission Scenario with 2.4 GHz WLAN MIMO and 5 GHz WLAN MIMO (Body-Worn at 1.5 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN MIMO at 19 dBm SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body-Worn	GSM 850	0.208	0.063	0.261	0.189	0.721
	GSM 1900	0.382	0.063	0.261	0.189	0.895
	UMTS 850	0.252	0.063	0.261	0.189	0.765
	UMTS 1750	0.565	0.063	0.261	0.189	1.078
	UMTS 1900	0.943	0.063	0.261	0.189	1.456
	CDMA BC10 (§90S)	0.283	0.063	0.261	0.189	0.796
	CDMA BC0 (§22H)	0.307	0.063	0.261	0.189	0.820
	PCS CDMA	0.954	0.063	0.261	0.189	**1.467**
	LTE Band 71	0.268	0.063	0.261	0.189	0.781
	LTE Band 12	0.238	0.063	0.261	0.189	0.751
	LTE Band 13	0.254	0.063	0.261	0.189	0.767
	LTE Band 14	0.345	0.063	0.261	0.189	0.858
	LTE Band 26 (Cell)	0.374	0.063	0.261	0.189	0.887
	LTE Band 5 (Cell)	0.408	0.063	0.261	0.189	0.921
	LTE Band 66 (AWS)	0.811	0.063	0.261	0.189	1.324
	LTE Band 25 (PCS)	0.895	0.063	0.261	0.189	1.408
	LTE Band 30	0.401	0.063	0.261	0.189	0.914
	LTE Band 7	0.340	0.063	0.261	0.189	0.853
	LTE Band 48	0.225	0.063	0.261	0.189	0.738
	LTE Band 41	0.500	0.063	0.261	0.189	1.013

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 12-9
Simultaneous Transmission Scenario with Bluetooth (Body-Worn at 1.5 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Body-Worn	GSM 850	0.208	0.032	0.240
	GSM 1900	0.382	0.032	0.414
	UMTS 850	0.252	0.032	0.284
	UMTS 1750	0.565	0.032	0.597
	UMTS 1900	0.943	0.032	0.975
	CDMA BC10 (§90S)	0.283	0.032	0.315
	CDMA BC0 (§22H)	0.307	0.032	0.339
	PCS CDMA	0.954	0.032	**0.986**
	LTE Band 71	0.268	0.032	0.300
	LTE Band 12	0.238	0.032	0.270
	LTE Band 13	0.254	0.032	0.286
	LTE Band 14	0.345	0.032	0.377
	LTE Band 26 (Cell)	0.374	0.032	0.406
	LTE Band 5 (Cell)	0.408	0.032	0.440
	LTE Band 66 (AWS)	0.811	0.032	0.843
	LTE Band 25 (PCS)	0.895	0.032	0.927
	LTE Band 30	0.401	0.032	0.433
	LTE Band 7	0.340	0.032	0.372
	LTE Band 48	0.225	0.032	0.257
	LTE Band 41	0.500	0.032	0.532

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 12-10
Simultaneous Transmission Scenario with Bluetooth and 5 GHz WLAN (Body-Worn at 1.5 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Body-Worn	GSM 850	0.208	0.032	0.261	0.189	0.690
	GSM 1900	0.382	0.032	0.261	0.189	0.864
	UMTS 850	0.252	0.032	0.261	0.189	0.734
	UMTS 1750	0.565	0.032	0.261	0.189	1.047
	UMTS 1900	0.943	0.032	0.261	0.189	1.425
	CDMA BC10 (§90S)	0.283	0.032	0.261	0.189	0.765
	CDMA BC0 (§22H)	0.307	0.032	0.261	0.189	0.789
	PCS CDMA	0.954	0.032	0.261	0.189	**1.436**
	LTE Band 71	0.268	0.032	0.261	0.189	0.750
	LTE Band 12	0.238	0.032	0.261	0.189	0.720
	LTE Band 13	0.254	0.032	0.261	0.189	0.736
	LTE Band 14	0.345	0.032	0.261	0.189	0.827
	LTE Band 26 (Cell)	0.374	0.032	0.261	0.189	0.856
	LTE Band 5 (Cell)	0.408	0.032	0.261	0.189	0.890
	LTE Band 66 (AWS)	0.811	0.032	0.261	0.189	1.293
	LTE Band 25 (PCS)	0.895	0.032	0.261	0.189	1.377
	LTE Band 30	0.401	0.032	0.261	0.189	0.883
	LTE Band 7	0.340	0.032	0.261	0.189	0.822
	LTE Band 48	0.225	0.032	0.261	0.189	0.707
	LTE Band 41	0.500	0.032	0.261	0.189	0.982

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

12.5 Hotspot SAR Simultaneous Transmission Analysis

Per FCC KDB Publication 941225 D06v02r01, the devices edges with antennas more than 2.5 cm from edge are not required to be evaluated for SAR ("-").

(*) For test positions that were not required to be evaluated for WLAN SAR per FCC KDB publication 248227, the worst case WLAN SAR result for the applicable exposure conditions was used for simultaneous transmission analysis.

Table 12-11
Simultaneous Transmission Scenario with 2.4 GHz WLAN (Hotspot at 1.0 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Hotspot SAR	GPRS 850	0.459	0.142	0.454	0.601	0.913	1.055
	GPRS 1900	0.978	0.142	0.454	1.120	1.432	**1.574**
	UMTS 850	0.535	0.142	0.454	0.677	0.989	1.131
	UMTS 1750	0.837	0.142	0.454	0.979	1.291	1.433
	UMTS 1900	1.016	0.142	0.454	1.158	1.470	See Table Below
	EVDO BC10 (§90S)	0.584	0.142	0.454	0.726	1.038	1.180
	EVDO BC0 (§22H)	0.717	0.142	0.454	0.859	1.171	1.313
	PCS EVDO	0.891	0.142	0.454	1.033	1.345	1.487
	LTE Band 71	0.353	0.142	0.454	0.495	0.807	0.949
	LTE Band 12	0.345	0.142	0.454	0.487	0.799	0.941
	LTE Band 13	0.454	0.142	0.454	0.596	0.908	1.050
	LTE Band 14	0.535	0.142	0.454	0.677	0.989	1.131
	LTE Band 26 (Cell)	0.625	0.142	0.454	0.767	1.079	1.221
	LTE Band 5 (Cell)	0.778	0.142	0.454	0.920	1.232	1.374
	LTE Band 66 (AWS)	0.938	0.142	0.454	1.080	1.392	1.534
	LTE Band 25 (PCS)	0.907	0.142	0.454	1.049	1.361	1.503
	LTE Band 30	0.534	0.142	0.454	0.676	0.988	1.130
	LTE Band 7	0.833	0.142	0.454	0.975	1.287	1.429
	LTE Band 48	0.762	0.142	0.454	0.904	1.216	1.358
	LTE Band 41	1.001	0.142	0.454	1.143	1.455	See Table Below

Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.475	0.142	0.454	**1.071**
	Front	0.354	0.142*	0.454*	0.950
	Top	-	0.142*	0.454*	0.596
	Bottom	1.016	-	-	1.016
	Right	0.061	-	-	0.061
	Left	0.058	0.142*	0.053	0.253

Simult Tx	Configuration	LTE Band 41 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.353	0.142	0.454	0.949
	Front	0.217	0.142*	0.454*	0.813
	Top	-	0.142*	0.454*	0.596
	Bottom	1.001	-	-	**1.001**
	Right	-	-	-	-
	Left	0.094	0.142*	0.053	0.289

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 12-12
Simultaneous Transmission Scenario with 5 GHz WLAN (Hotspot at 1.0 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	1+2	1+3
Hotspot SAR	GPRS 850	0.459	0.411	0.365	0.870	0.824
	GPRS 1900	0.978	0.411	0.365	1.389	1.343
	UMTS 850	0.535	0.411	0.365	0.946	0.900
	UMTS 1750	0.837	0.411	0.365	1.248	1.202
	UMTS 1900	1.016	0.411	0.365	**1.427**	1.381
	EVDO BC10 (§90S)	0.584	0.411	0.365	0.995	0.949
	EVDO BC0 (§22H)	0.717	0.411	0.365	1.128	1.082
	PCS EVDO	0.891	0.411	0.365	1.302	1.256
	LTE Band 71	0.353	0.411	0.365	0.764	0.718
	LTE Band 12	0.345	0.411	0.365	0.756	0.710
	LTE Band 13	0.454	0.411	0.365	0.865	0.819
	LTE Band 14	0.535	0.411	0.365	0.946	0.900
	LTE Band 26 (Cell)	0.625	0.411	0.365	1.036	0.990
	LTE Band 5 (Cell)	0.778	0.411	0.365	1.189	1.143
	LTE Band 66 (AWS)	0.938	0.411	0.365	1.349	1.303
	LTE Band 25 (PCS)	0.907	0.411	0.365	1.318	1.272
	LTE Band 30	0.534	0.411	0.365	0.945	0.899
	LTE Band 7	0.833	0.411	0.365	1.244	1.198
	LTE Band 48	0.762	0.411	0.365	1.173	1.127
	LTE Band 41	1.001	0.411	0.365	1.412	1.366

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	GPRS 850	0.459	0.685	1.144
	GPRS 1900	0.978	0.685	See Table Below
	UMTS 850	0.535	0.685	1.220
	UMTS 1750	0.837	0.685	1.522
	UMTS 1900	1.016	0.685	See Table Below
	EVDO BC10 (§90S)	0.584	0.685	1.269
	EVDO BC0 (§22H)	0.717	0.685	1.402
	PCS EVDO	0.891	0.685	1.576
	LTE Band 71	0.353	0.685	1.038
	LTE Band 12	0.345	0.685	1.030
	LTE Band 13	0.454	0.685	1.139
	LTE Band 14	0.535	0.685	1.220
	LTE Band 26 (Cell)	0.625	0.685	1.310
	LTE Band 5 (Cell)	0.778	0.685	1.463
	LTE Band 66 (AWS)	0.938	0.685	See Table Below
	LTE Band 25 (PCS)	0.907	0.685	**1.592**
	LTE Band 30	0.534	0.685	1.219
	LTE Band 7	0.833	0.685	1.518
	LTE Band 48	0.762	0.685	1.447
	LTE Band 41	1.001	0.685	See Table Below

Simult Tx	Configuration	GPRS 1900 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.637	0.685	**1.322**
	Front	0.457	0.685*	1.142
	Top	-	0.388	0.388
	Bottom	0.978	-	0.978
	Right	0.082	-	0.082
	Left	0.078	0.685*	0.763

Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.475	0.685	**1.160**
	Front	0.354	0.685*	1.039
	Top	-	0.388	0.388
	Bottom	1.016	-	1.016
	Right	0.061	-	0.061
	Left	0.058	0.685*	0.743

Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.419	0.685	**1.104**
	Front	0.301	0.685*	0.986
	Top	-	0.388	0.388
	Bottom	0.938	-	0.938
	Right	0.036	-	0.036
	Left	0.053	0.685*	0.738

Simult Tx	Configuration	LTE Band 41 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	Back	0.353	0.685	**1.038**
	Front	0.217	0.685*	0.902
	Top	-	0.388	0.388
	Bottom	1.001	-	1.001
	Right	-	-	-
	Left	0.094	0.685*	0.779

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 12-13
Simultaneous Transmission Scenario with 2.4 GHz WLAN MIMO and 5 GHz WLAN MIMO (Hotspot at 1.0 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN MIMO at 19 dBm SAR (W/kg)	5 GHz WLAN MIMO at 16 dBm SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	GPRS 850	0.459	0.190	0.196	0.845
	GPRS 1900	0.978	0.190	0.196	1.364
	UMTS 850	0.535	0.190	0.196	0.921
	UMTS 1750	0.837	0.190	0.196	1.223
	UMTS 1900	1.016	0.190	0.196	**1.402**
	EVDO BC10 (§90S)	0.584	0.190	0.196	0.970
	EVDO BC0 (§22H)	0.717	0.190	0.196	1.103
	PCS EVDO	0.891	0.190	0.196	1.277
	LTE Band 71	0.353	0.190	0.196	0.739
	LTE Band 12	0.345	0.190	0.196	0.731
	LTE Band 13	0.454	0.190	0.196	0.840
	LTE Band 14	0.535	0.190	0.196	0.921
	LTE Band 26 (Cell)	0.625	0.190	0.196	1.011
	LTE Band 5 (Cell)	0.778	0.190	0.196	1.164
	LTE Band 66 (AWS)	0.938	0.190	0.196	1.324
	LTE Band 25 (PCS)	0.907	0.190	0.196	1.293
	LTE Band 30	0.534	0.190	0.196	0.920
	LTE Band 7	0.833	0.190	0.196	1.219
	LTE Band 48	0.762	0.190	0.196	1.148
	LTE Band 41	1.001	0.190	0.196	1.387

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 12-14
Simultaneous Transmission Scenario with Bluetooth (Hotspot at 1.0 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	GPRS 850	0.459	0.079	0.538
	GPRS 1900	0.978	0.079	1.057
	UMTS 850	0.535	0.079	0.614
	UMTS 1750	0.837	0.079	0.916
	UMTS 1900	1.016	0.079	**1.095**
	EVDO BC10 (§90S)	0.584	0.079	0.663
	EVDO BC0 (§22H)	0.717	0.079	0.796
	PCS EVDO	0.891	0.079	0.970
	LTE Band 71	0.353	0.079	0.432
	LTE Band 12	0.345	0.079	0.424
	LTE Band 13	0.454	0.079	0.533
	LTE Band 14	0.535	0.079	0.614
	LTE Band 26 (Cell)	0.625	0.079	0.704
	LTE Band 5 (Cell)	0.778	0.079	0.857
	LTE Band 66 (AWS)	0.938	0.079	1.017
	LTE Band 25 (PCS)	0.907	0.079	0.986
	LTE Band 30	0.534	0.079	0.613
	LTE Band 7	0.833	0.079	0.912
	LTE Band 48	0.762	0.079	0.841
	LTE Band 41	1.001	0.079	1.080

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 12-15
Simultaneous Transmission Scenario with Bluetooth and 5 GHz WLAN (Hotspot at 1.0 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	GPRS 850	0.459	0.079	0.685	1.223
	GPRS 1900	0.978	0.079	0.685	See Table Below
	UMTS 850	0.535	0.079	0.685	1.299
	UMTS 1750	0.837	0.079	0.685	See Table Below
	UMTS 1900	1.016	0.079	0.685	See Table Below
	EVDO BC10 (§90S)	0.584	0.079	0.685	1.348
	EVDO BC0 (§22H)	0.717	0.079	0.685	1.481
	PCS EVDO	0.891	0.079	0.685	See Table Below
	LTE Band 71	0.353	0.079	0.685	1.117
	LTE Band 12	0.345	0.079	0.685	1.109
	LTE Band 13	0.454	0.079	0.685	1.218
	LTE Band 14	0.535	0.079	0.685	1.299
	LTE Band 26 (Cell)	0.625	0.079	0.685	1.389
	LTE Band 5 (Cell)	0.778	0.079	0.685	**1.542**
	LTE Band 66 (AWS)	0.938	0.079	0.685	See Table Below
	LTE Band 25 (PCS)	0.907	0.079	0.685	See Table Below
	LTE Band 30	0.534	0.079	0.685	1.298
	LTE Band 7	0.833	0.079	0.685	See Table Below
	LTE Band 48	0.762	0.079	0.685	1.526
	LTE Band 41	1.001	0.079	0.685	See Table Below

Simult Tx	Configuration	GPRS 1900 SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3			1	2	3	1+2+3
Hotspot SAR	Back	0.637	0.079	0.685	**1.401**	Hotspot SAR	Back	0.345	0.079	0.685	**1.109**
	Front	0.457	0.038	0.685*	1.180		Front	0.311	0.038	0.685*	1.034
	Top	-	0.074	0.388	0.462		Top	-	0.074	0.388	0.462
	Bottom	0.978	-	-	0.978		Bottom	0.837	-	-	0.837
	Right	0.082	-	-	0.082		Right	0.030	-	-	0.030
	Left	0.078	0.068	0.685*	0.831		Left	0.056	0.068	0.685*	0.809

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.475	0.079	0.685	**1.239**
	Front	0.354	0.038	0.685*	1.077
	Top	-	0.074	0.388	0.462
	Bottom	1.016	-	-	1.016
	Right	0.061	-	-	0.061
	Left	0.058	0.068	0.685*	0.811

Simult Tx	Configuration	PCS EVDO SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.500	0.079	0.685	**1.264**
	Front	0.369	0.038	0.685*	1.092
	Top	-	0.074	0.388	0.462
	Bottom	0.891	-	-	0.891
	Right	0.055	-	-	0.055
	Left	0.045	0.068	0.685*	0.798

Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.419	0.079	0.685	**1.183**
	Front	0.301	0.038	0.685*	1.024
	Top	-	0.074	0.388	0.462
	Bottom	0.938	-	-	0.938
	Right	0.036	-	-	0.036
	Left	0.053	0.068	0.685*	0.806

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.546	0.079	0.685	**1.310**
	Front	0.429	0.038	0.685*	1.152
	Top	-	0.074	0.388	0.462
	Bottom	0.907	-	-	0.907
	Right	0.069	-	-	0.069
	Left	0.059	0.068	0.685*	0.812

Simult Tx	Configuration	LTE Band 7 SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.379	0.079	0.685	**1.143**
	Front	0.315	0.038	0.685*	1.038
	Top	-	0.074	0.388	0.462
	Bottom	0.833	-	-	0.833
	Right	-	-	-	-
	Left	0.147	0.068	0.685*	0.900

Simult Tx	Configuration	LTE Band 41 SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.353	0.079	0.685	**1.117**
	Front	0.217	0.038	0.685*	0.940
	Top	-	0.074	0.388	0.462
	Bottom	1.001	-	-	1.001
	Right	-	-	-	-
	Left	0.094	0.068	0.685*	0.847

12.6 Phablet Simultaneous Transmission Analysis

Per FCC KDB Publication 941225 D06v02r01, the devices edges with antennas more than 2.5 cm from edge are not required to be evaluated for SAR ("-").

(*) For test positions that were not required to be evaluated for WLAN SAR per FCC KDB publication 248227, the worst case WLAN SAR result for the applicable exposure conditions was used for simultaneous transmission analysis.

Per FCC KDB Publication 648474 D04 Handset SAR, Phablet SAR tests were not required if wireless router 1g SAR (scaled to the maximum output power, including tolerance) < 1.2 W/kg. Therefore, no further analysis beyond the tables included in this section was required to determine that possible simultaneous transmission scenarios would not exceed the SAR limit.

For SAR summation, the highest reported SAR across all test distances was used as the most conservative evaluation for simultaneous transmission analysis for each device edge.

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 12-16
Simultaneous Transmission Scenario with 5 GHz WLAN SISO (Phablet)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	1+2	1+3
Phablet SAR	GPRS 1900	2.739	1.505	1.410	See Table Below	See Table Below
	UMTS 1750	3.272	1.505	1.410	See Table Below	See Table Below
	UMTS 1900	2.642	1.505	1.410	See Table Below	See Table Below
	PCS EVDO	2.625	1.505	1.410	See Table Below	See Table Below
	LTE Band 66 (AWS)	2.993	1.505	1.410	See Table Below	See Table Below
	LTE Band 25 (PCS)	2.891	1.505	1.410	See Table Below	See Table Below
	LTE Band 30	2.058	1.505	1.410	**3.563**	3.468
	LTE Band 7	1.994	1.505	1.410	3.499	3.404
	LTE Band 41	2.039	1.505	1.410	3.544	3.449

Simult Tx	Configuration	GPRS 1900 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	1+2	1+3
Phablet SAR	Back	2.114	1.505	1.410	**3.619**	3.524
	Front	1.714	0.439	0.036	2.153	1.750
	Top	-	1.505*	1.410*	1.505	1.410
	Bottom	2.739	-	-	2.739	2.739
	Right	0.233	-	-	0.233	0.233
	Left	0.345	0.947	0.107	1.292	0.452

Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	1+2	1+3
Phablet SAR	Back	1.962	1.505	1.410	**3.467**	3.372
	Front	1.644	0.439	0.036	2.083	1.680
	Top	-	1.505*	1.410*	1.505	1.410
	Bottom	3.272	-	-	3.272	3.272
	Right	0.285	-	-	0.285	0.285
	Left	0.439	0.947	0.107	1.386	0.546

Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	1+2	1+3
Phablet SAR	Back	2.273	1.505	1.410	**3.778**	3.683
	Front	1.746	0.439	0.036	2.185	1.782
	Top	-	1.505*	1.410*	1.505	1.410
	Bottom	2.642	-	-	2.642	2.642
	Right	0.366	-	-	0.366	0.366
	Left	0.608	0.947	0.107	1.555	0.715

Simult Tx	Configuration	PCS EVDO SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	1+2	1+3
Phablet SAR	Back	2.451	1.505	1.410	**3.956**	3.861
	Front	1.857	0.439	0.036	2.296	1.893
	Top	-	1.505*	1.410*	1.505	1.410
	Bottom	2.625	-	-	2.625	2.625
	Right	0.120	-	-	0.120	0.120
	Left	0.109	0.947	0.107	1.056	0.216

Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	1+2	1+3
Phablet SAR	Back	1.660	1.505	1.410	**3.165**	3.070
	Front	1.453	0.439	0.036	1.892	1.489
	Top	-	1.505*	1.410*	1.505	1.410
	Bottom	2.993	-	-	2.993	2.993
	Right	0.319	-	-	0.319	0.319
	Left	0.400	0.947	0.107	1.347	0.507

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	
		1	2	3	1+2	1+3
Phablet SAR	Back	2.415	1.505	1.410	**3.920**	3.825
	Front	2.736	0.439	0.036	3.175	2.772
	Top	-	1.505*	1.410*	1.505	1.410
	Bottom	2.891	-	-	2.891	2.891
	Right	0.375	-	-	0.375	0.375
	Left	0.507	0.947	0.107	1.454	0.614

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 12-17
Simultaneous Transmission Scenario with 5 GHz WLAN MIMO (Phablet)

Simult Tx	Configuration	GPRS 1900 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	2.114	3.265	See Note 1	0.09
	Front	1.714	0.456	2.170	N/A
	Top	-	3.265*	**3.265**	N/A
	Bottom	2.739	-	2.739	N/A
	Right	0.233	-	0.233	N/A
	Left	0.345	1.312	1.657	N/A

Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	1.962	3.265	See Note 1	0.09
	Front	1.644	0.456	2.100	N/A
	Top	-	3.265*	3.265	N/A
	Bottom	3.272	-	**3.272**	N/A
	Right	0.285	-	0.285	N/A
	Left	0.439	1.312	1.751	N/A

Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	2.273	3.265	See Note 1	0.10
	Front	1.746	0.456	2.202	N/A
	Top	-	3.265*	**3.265**	N/A
	Bottom	2.642	-	2.642	N/A
	Right	0.366	-	0.366	N/A
	Left	0.608	1.312	1.920	N/A

Simult Tx	Configuration	PCS EVDO SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	2.451	3.265	See Note 1	0.10
	Front	1.857	0.456	2.313	N/A
	Top	-	3.265*	**3.265**	N/A
	Bottom	2.625	-	2.625	N/A
	Right	0.120	-	0.120	N/A
	Left	0.109	1.312	1.421	N/A

Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	1.660	3.265	See Note 1	0.08
	Front	1.453	0.456	1.909	N/A
	Top	-	3.265*	**3.265**	N/A
	Bottom	2.993	-	2.993	N/A
	Right	0.319	-	0.319	N/A
	Left	0.400	1.312	1.712	N/A

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	2.415	3.265	See Note 1	0.10
	Front	2.736	0.456	3.192	N/A
	Top	-	3.265*	**3.265**	N/A
	Bottom	2.891	-	2.891	N/A
	Right	0.375	-	0.375	N/A
	Left	0.507	1.312	1.819	N/A

Simult Tx	Configuration	LTE Band 30 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	1.644	3.265	See Note 1	0.09
	Front	1.024	0.456	1.480	N/A
	Top	-	3.265*	**3.265**	N/A
	Bottom	2.058	-	2.058	N/A
	Right	0.171	-	0.171	N/A
	Left	0.326	1.312	1.638	N/A

Simult Tx	Configuration	LTE Band 7 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	1.994	3.265	See Note 1	0.10
	Front	1.045	0.456	1.501	N/A
	Top	-	3.265*	**3.265**	N/A
	Bottom	1.535	-	1.535	N/A
	Right	-	-	-	N/A
	Left	0.796	1.312	2.108	N/A

Simult Tx	Configuration	LTE Band 41 SAR (W/kg)	5 GHz WLAN MIMO SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	2.039	3.265	See Note 1	0.10
	Front	0.837	0.456	1.293	N/A
	Top	-	3.265*	**3.265**	N/A
	Bottom	1.490	-	1.490	N/A
	Right	-	-	-	N/A
	Left	0.866	1.312	2.178	N/A

Notes:

1. No evaluation was performed to determine the aggregate 10g SAR for these configurations as the SPLS ratio between the antenna pairs was not greater than 0.10 per FCC KDB 447498 D01v06. See Section 12.7 for detailed SPLS ratio analysis.

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

12.7 SPLSR Evaluation and Analysis

Per FCC KDB Publication 447498 D01v06, when the sum of the standalone transmitters is more than 4 W/kg for 10g, the SAR sum to peak locations can be analyzed to determine SAR distribution overlaps. When the SAR peak to location ratio (shown below) for each pair of antennas is ≤0.10 for 10g, simultaneous SAR evaluation is not required. The distance between the transmitters was calculated using the following formula.

$$\text{Distance}_{Tx1-Tx2} = R_i = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2} \text{ (Phablet)}$$

$$\text{SPLS Ratio} = \frac{(SAR_1 + SAR_2)^{1.5}}{R_i}$$

12.7.1 Back Side SPLSR Evaluation and Analysis

Table 12-18
Peak SAR Locations for Body Back Side

Mode/Band	x (mm)	y (mm)
5 GHz WLAN MIMO	-3.00	52.00
GPRS 1900	-31.00	-78.00
UMTS 1750	-23.50	-81.00
UMTS 1900	-31.00	-76.50
PCS EVDO	-31.50	-75.00
LTE Band 66 (AWS)	-23.50	-81.00
LTE Band 25 (PCS)	-26.50	-75.00
LTE Band 30	-7.80	-73.20
LTE Band 7	-2.20	-70.80
LTE Band 41	2.50	-67.40

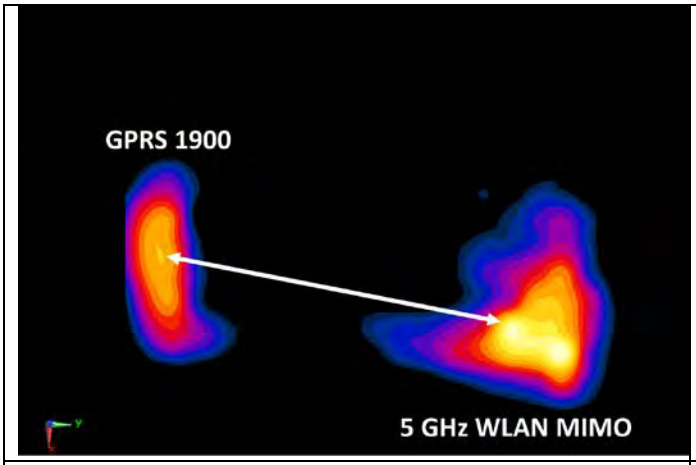
Table 12-19
Back Side SAR to Peak Location Separation Ratio Calculations

Antenna Pair		Standalone SAR (W/kg)		Standalone SAR Sum (W/kg)	Peak SAR Separation Distance (mm)	SPLS Ratio	Plot Number
Ant "a"	Ant "b"	a	b	a+b	D_{a-b}	$(a+b)^{1.5}/D_{a-b}$	
5 GHz WLAN MIMO	GPRS 1900	3.265	2.114	5.379	132.98	0.09	1
5 GHz WLAN MIMO	UMTS 1750	3.265	1.962	5.227	134.57	0.09	2
5 GHz WLAN MIMO	UMTS 1900	3.265	2.273	5.538	131.52	0.10	3
5 GHz WLAN MIMO	PCS EVDO	3.265	2.451	5.716	130.16	0.10	4
5 GHz WLAN MIMO	LTE Band 66 (AWS)	3.265	1.660	4.925	134.57	0.08	5
5 GHz WLAN MIMO	LTE Band 25 (PCS)	3.265	2.415	5.68	129.16	0.10	6
5 GHz WLAN MIMO	LTE Band 30	3.265	1.644	4.909	125.29	0.09	7
5 GHz WLAN MIMO	LTE Band 7	3.265	1.994	5.259	122.80	0.10	8
5 GHz WLAN MIMO	LTE Band 41	3.265	2.039	5.304	119.53	0.10	9

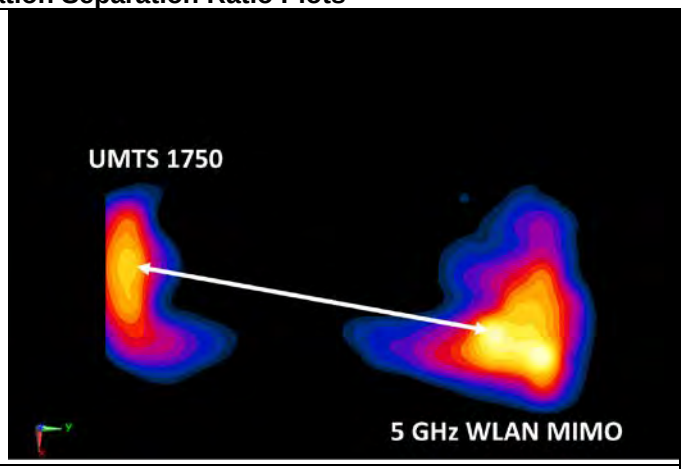
© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

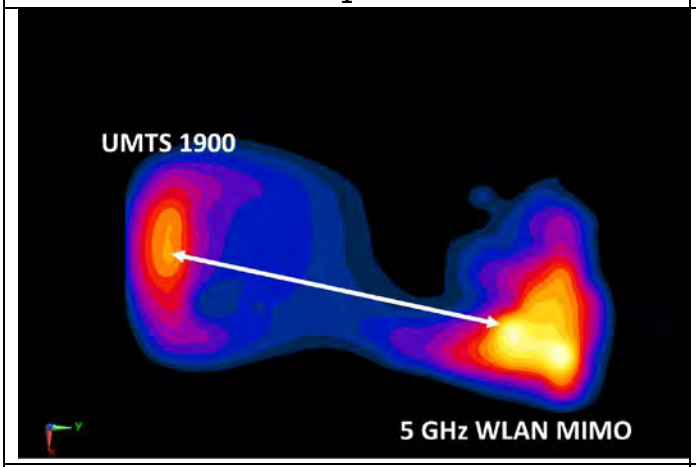
Table 12-20
Back Side SAR to Peak Location Separation Ratio Plots



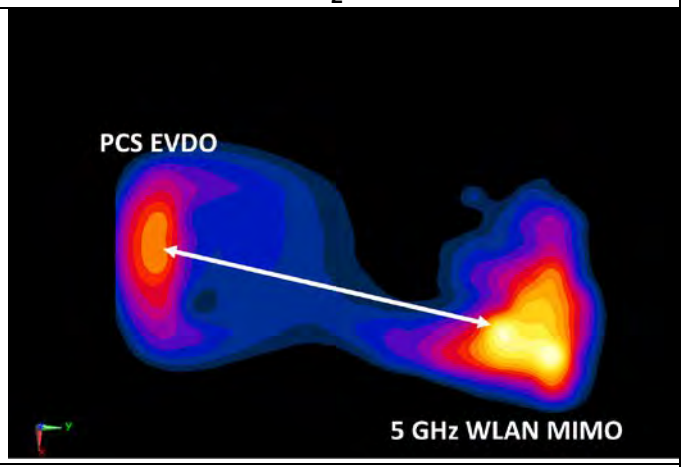
1



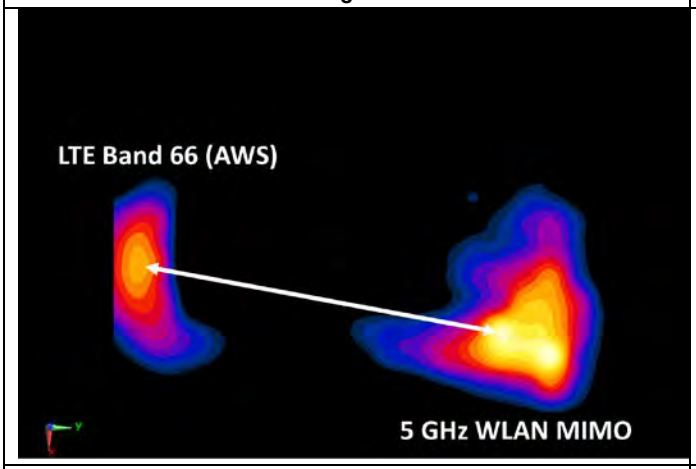
2



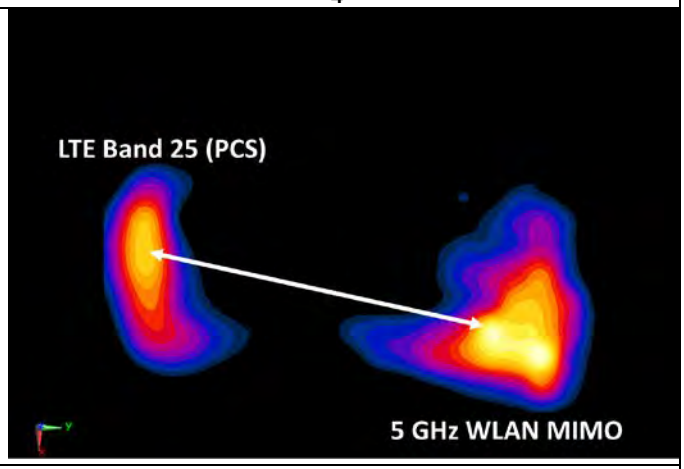
3



4



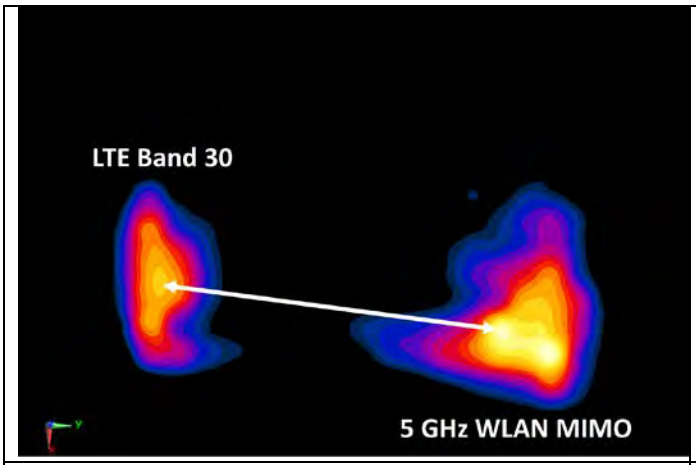
5



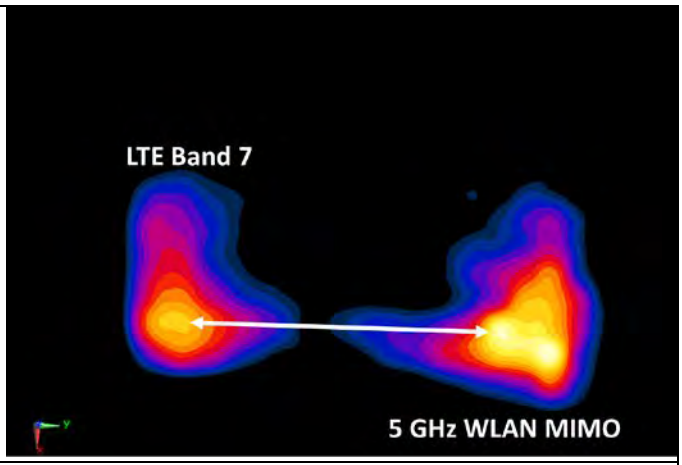
6

© 2019 PCTEST Engineering Laboratory, Inc.

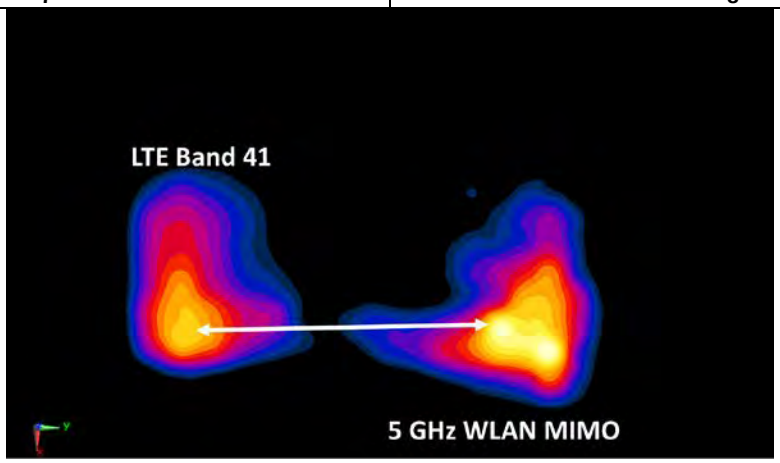
© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.



7



8



9

12.8 Simultaneous Transmission Conclusion

The above numerical summed SAR results and SPLSR analysis are sufficient to determine that simultaneous transmission cases will not exceed the SAR limit and therefore no measured volumetric simultaneous SAR summation is required per FCC KDB Publication 447498 D01v06 and IEEE 1528- 2013 Section 6.3.4.1.2.

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

13 SAR MEASUREMENT VARIABILITY

13.1 Measurement Variability

Per FCC KDB Publication 865664 D01v01r04, SAR measurement variability was assessed for each frequency band, which was determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media were required for SAR measurements in a frequency band, the variability measurement procedures were applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium. These additional measurements were repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device was returned to ambient conditions (normal room temperature) with the battery fully charged before it was re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

SAR Measurement Variability was assessed using the following procedures for each frequency band:

1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.
2) A second repeated measurement was performed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1g SAR limit).
3) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.
4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg
5) When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

Table 13-1
Body SAR Measurement Variability Results

BODY VARIABILITY RESULTS													
Band	FREQUENCY		Mode	Service	Side	Spacing	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	Ratio	3rd Repeated SAR (1g)	Ratio
	MHz	Ch.					(W/kg)	(W/kg)		(W/kg)		(W/kg)	
1750	1770.00	132572	LTE Band 66 (AWS), 20 MHz Bandwidth, ULCA	QPSK, 100 RB, 0 RB Offset	bottom	10 mm	0.873	0.864	1.01	N/A	N/A	N/A	N/A
	1750.20	132374		QPSK, 100 RB, 0 RB Offset									
1900	1907.60	9538	UMTS 1900	RMC	bottom	10 mm	0.895	0.871	1.03	N/A	N/A	N/A	N/A
2600	2549.50	40185	LTE Band 41, 20 MHz Bandwidth	QPSK, 50 RB, 0 RB Offset	bottom	10 mm	0.877	0.856	1.02	N/A	N/A	N/A	N/A
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population						Body 1.6 W/kg (mW/g) averaged over 1 gram							

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 13-2
Phablet SAR Measurement Variability Results

PHABLET VARIABILITY RESULTS														
Band	FREQUENCY		Mode	Service	Data Rate (Mbps)	Side	Spacing	Measured SAR (10g)	1st Repeated SAR (10g)	Ratio	2nd Repeated SAR (10g)	Ratio	3rd Repeated SAR (10g)	Ratio
	MHz	Ch.						(W/kg)	(W/kg)		(W/kg)		(W/kg)	
1750	1752.60	1513	UMTS 1750	RMC	N/A	bottom	0 mm	2.950	2.950	1.00	N/A	N/A	N/A	N/A
1900	1860.00	26140	LTE Band 25 (PCS), 20 MHz Bandwidth	QPSK, 50 RB, 50 RB Offset	N/A	bottom	0 mm	2.730	2.470	1.11	N/A	N/A	N/A	N/A
5250	5280.00	56	802.11n, 20 MHz Bandwidth	OFDM, MIMO	13	back	0 mm	2.620	2.620	1.00	N/A	N/A	N/A	N/A
5600	5600.00	120	802.11n, 20 MHz Bandwidth	OFDM, MIMO	13	back	0 mm	2.760	2.730	1.01	N/A	N/A	N/A	N/A
5750	5720.00	144	802.11n, 20 MHz Bandwidth	OFDM, MIMO	13	back	0 mm	2.970	2.950	1.01	N/A	N/A	N/A	N/A
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**								**Phablet** **4.0 W/kg (mW/g)** averaged over 10 grams						

13.2 Measurement Uncertainty

The measured SAR was <1.5 W/kg for 1g and <3.75 W/kg for 10g for all frequency bands. Therefore, per KDB Publication 865664 D01v01r04, the extended measurement uncertainty analysis per IEEE 1528-2013 was not required.

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

14 ADDITIONAL TESTING PER FCC GUIDANCE

14.1 Tuner Testing

The following test procedures were followed to demonstrate that the SAR results in Section 11 represented the appropriate SAR test conditions. For bands with dynamic tuning implemented, SAR was measured according to the required FCC SAR test procedures with the dynamic tuner active to allow the device to automatically tune to the antenna state for the respective RF exposure test configurations. Additional single point SAR time-sweep measurements were evaluated for other tuner states to determine that the other tuner configurations would result in equivalent or lower SAR values. The additional tuner hardware has no influence on the antenna characteristics, other than impedance matching.

Per April 2019 TCB Workshop notes, in order to evaluate all the tuner states, the 80 tuner states were divided among evenly among each supported band and exposure condition combination. Single point time-sweep measurements were performed at the peak SAR location determined by the zoom scan of the configuration with the highest reported SAR for each combination. The tuner state was able to be established remotely so that the device was not moved for the entire series of single point SAR for the tuner states in each combination. The SAR probe remained stationary at the same position throughout the entire series of single point measurements for each combination. When the single point SAR or 1g SAR was > 1.2 W/kg for a particular band/mode/exposure condition, point SAR measurements were made for all 80 states. For CDMA BC0 and BC10, the highest reported SAR configuration per exposure condition was considered for point SAR measurements.

The operational description contains more information about the design and implementation of the dynamic antenna tuning.

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 14-1
UMTS/CDMA Supplemental Head SAR Data

Supplemental Head SAR Data									
UMTS Band 5		UMTS Band 4		UMTS Band 2		CDMA BC0		CDMA BC1	
RMC		RMC		RMC		EVDO Rev. A		EVDO Rev. A	
Test Position	Right Cheek	Test Position	Left Cheek	Test Position	Left Cheek	Test Position	Right Cheek	Test Position	Left Cheek
Frequency (MHz)	836.6	Frequency (MHz)	1732.4	Frequency (MHz)	1880.0	Frequency (MHz)	836.52	Frequency (MHz)	1880.0
Channel	4183	Channel	1412	Channel	9400	Channel	384	Channel	600
Measured 1g SAR (W/kg)	0.223	Measured 1g SAR (W/kg)	0.158	Measured 1g SAR (W/kg)	0.126	Measured 1g SAR (W/kg)	0.177	Measured 1g SAR (W/kg)	0.137
Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)	
Auto-tune (State 2)	0.290	Auto-tune (State 26)	0.188	Auto-tune (State 3)	0.181	Auto-tune (State 2)	0.264	Auto-tune (State 1)	0.202
Default (State 1)	0.300	Default (State 1)	0.186	Default (State 1)	0.182	Default (State 1)	0.277	Default (State 1)	0.198
State 0	0.304	State 1	0.186	State 1	0.182	State 1	0.277	State 1	0.198
State 1	0.300	State 6	0.178	State 3	0.182	State 2	0.269	State 21	0.183
State 2	0.295	State 7	0.177	State 11	0.132	State 17	0.214	State 22	0.186
State 3	0.290	State 8	0.177	State 12	0.112	State 18	0.245	State 23	0.187
State 4	0.286	State 9	0.173	State 13	0.098	State 19	0.246	State 24	0.191
State 5	0.283	State 26	0.190	State 68	0.176	State 20	0.246	State 25	0.185

Table 14-2
LTE Supplemental Head SAR Data

Supplemental Head SAR Data															
LTE Band 71		LTE Band 12		LTE Band 13		LTE Band 14		LTE Band 5		LTE Band 26		LTE Band 66		LTE Band 25	
QPSK, 20 MHz Bandwidth, 1 RB, 0 RB Offsets		QPSK, 10 MHz Bandwidth, 1 RB, 25 RB Offsets		QPSK, 10 MHz Bandwidth, 1 RB, 25 RB Offsets		QPSK, 10 MHz Bandwidth, 1 RB, 25 RB Offsets		QPSK, 10 MHz Bandwidth, 1 RB, 0 RB Offsets		QPSK, 15 MHz Bandwidth, 1 RB, 0 RB Offsets		QPSK, 20 MHz Bandwidth, 1 RB, 0 RB Offsets		QPSK, 20 MHz Bandwidth, 1 RB, 50 RB Offsets	
Test Position	Left Cheek	Test Position	Right Cheek	Test Position	Left Cheek	Test Position	Right Cheek	Test Position	Right Cheek	Test Position	Right Cheek	Test Position	Left Cheek	Test Position	Left Cheek
Frequency (MHz)	680.5	Frequency (MHz)	707.5	Frequency (MHz)	782.0	Frequency (MHz)	793.0	Frequency (MHz)	836.5	Frequency (MHz)	831.5	Frequency (MHz)	1770.0	Frequency (MHz)	1882.5
Channel	133297	Channel	23095	Channel	23230	Channel	23330	Channel	20525	Channel	26865	Channel	132572	Channel	26365
Measured 1g SAR (W/kg)	0.140	Measured 1g SAR (W/kg)	0.133	Measured 1g SAR (W/kg)	0.153	Measured 1g SAR (W/kg)	0.160	Measured 1g SAR (W/kg)	0.223	Measured 1g SAR (W/kg)	0.160	Measured 1g SAR (W/kg)	0.185	Measured 1g SAR (W/kg)	0.133
Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)	
Auto-tune (State 1)	0.162	Auto-tune (State 10)	0.180	Auto-tune (State 1)	0.162	Auto-tune (State 1)	0.252	Auto-tune (State 76)	0.306	Auto-tune (State 1)	0.284	Auto-tune (State 30)	0.268	Auto-tune (State 1)	0.183
Default (State 1)	0.169	Default (State 1)	0.120	Default (State 1)	0.168	Default (State 1)	0.260	Default (State 1)	0.304	Default (State 1)	0.291	Default (State 1)	0.249	Default (State 1)	0.188
State 1	0.169	State 1	0.120	State 1	0.168	State 0	0.260	State 0	0.304	State 1	0.291	State 1	0.249	State 1	0.188
State 25	0.055	State 10	0.179	State 51	0.114	State 1	0.260	State 1	0.304	State 68	0.291	State 30	0.256	State 19	0.184
State 26	0.041	State 51	0.067	State 52	0.115	State 56	0.156	State 64	0.289	State 69	0.176	State 72	0.245	State 20	0.179
State 27	0.029	State 52	0.066	State 53	0.114	State 57	0.144	State 65	0.218	State 71	0.192	State 75	0.202	State 21	0.179
State 28	0.018	State 65	0.039	State 54	0.112	State 58	0.127	State 66	0.266	State 72	0.288	State 76	0.250	State 22	0.179
State 29	0.059	State 69	0.039	State 55	0.106	State 59	0.108	State 67	0.231	State 73	0.174	State 77	0.186	State 23	0.185
State 70	0.151	State 72	0.12	State 56	0.101	State 60	0.081	State 76	0.305	State 75	0.186	State 79	0.211	State 71	0.167

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 14-3
UMTS/CDMA Supplemental Body SAR Data

Supplemental Body SAR Data					
UMTS Band 5		UMTS Band 4		CDMA BC0	
RMC		RMC		EVDO Rev. 0	
Test Position	Back	Test Position	Bottom	Test Position	Back
Spacing	10 mm	Spacing	10 mm	Spacing	10 mm
Frequency (MHz)	836.6	Frequency (MHz)	1712.4	Frequency (MHz)	836.52
Channel	4183	Channel	1312	Channel	384
Measured 1g SAR (W/kg)	0.452	Measured 1g SAR (W/kg)	0.663	Measured 1g SAR (W/kg)	0.525
Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)	
Auto-tune (State 2)	0.727	Auto-tune (State 28)	1.145	Auto-tune (State 76)	0.804
Default (State 1)	0.719	Default (State 1)	0.843	Default (State 1)	0.790
State 1	0.719	State 0	0.837	State 1	0.790
State 2	0.713	State 1	0.843	State 10	0.439
State 20	0.635	State 2	0.920	State 11	0.356
State 21	0.636	State 3	0.933	State 13	0.208
State 22	0.633	State 4	0.940	State 14	0.158
State 23	0.627	State 5	0.948	State 15	0.110
State 24	0.626	State 28	1.127	State 61	0.228
State 25	0.580	State 42	0.482	State 63	0.111
State 66	0.591	State 76	0.852	State 76	0.788

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Supplemental Body SAR Data			
UMTS Band 2		CDMA BC1	
RMC		TDSO / SO32	
Test Position	Bottom	Test Position	Back
Spacing	10 mm	Spacing	15 mm
Frequency (MHz)	1907.6	Frequency (MHz)	1851.25
Channel	9538	Channel	25
Measured 1g SAR (W/kg)	0.895	Measured 1g SAR (W/kg)	0.802
Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)	
Auto-tune (State 30)	1.364	Auto-tune (State 30)	1.455
Default (State 1)	1.320	Default (State 1)	1.399
State 0	1.314	State 0	1.400
State 1	1.320	State 1	1.399
State 2	1.296	State 2	1.382
State 3	1.285	State 3	1.375
State 4	1.281	State 4	1.373
State 5	1.278	State 5	1.364
State 6	1.264	State 6	1.345
State 7	1.256	State 7	1.332
State 8	1.257	State 8	1.335
State 9	1.223	State 9	1.302
State 10	1.192	State 10	1.266
State 11	1.141	State 11	1.216
State 12	1.066	State 12	1.148
State 13	1.003	State 13	1.080
State 14	0.915	State 14	0.980
State 15	0.793	State 15	0.850
State 16	0.975	State 16	1.025
State 17	1.000	State 17	1.048
State 18	1.098	State 18	1.152
State 19	1.120	State 19	1.172
State 20	1.131	State 20	1.185
State 21	1.142	State 21	1.194
State 22	1.173	State 22	1.229
State 23	1.187	State 23	1.240
State 24	1.175	State 24	1.238
State 25	1.229	State 25	1.299
State 26	1.285	State 26	1.356
State 27	1.342	State 27	1.403
State 28	1.399	State 28	1.469
State 29	1.422	State 29	1.453
State 30	1.378	State 30	1.456
State 31	1.255	State 31	1.284
State 32	1.004	State 32	1.058
State 33	1.000	State 33	1.051
State 34	0.887	State 34	0.937
State 35	0.865	State 35	0.914
State 36	0.859	State 36	0.894
State 37	0.850	State 37	0.879
State 38	0.806	State 38	0.831
State 39	0.775	State 39	0.805
State 40	0.790	State 40	0.821
State 41	0.708	State 41	0.738
State 42	0.643	State 42	0.687
State 43	0.561	State 43	0.598
State 44	0.459	State 44	0.491
State 45	0.394	State 45	0.421
State 46	0.323	State 46	0.345
State 47	0.241	State 47	0.259
State 48	1.163	State 48	1.215
State 49	1.164	State 49	1.212
State 50	1.150	State 50	1.196
State 51	1.149	State 51	1.192
State 52	1.147	State 52	1.188
State 53	1.140	State 53	1.184
State 54	1.126	State 54	1.173
State 55	1.118	State 55	1.154
State 56	1.114	State 56	1.152
State 57	1.086	State 57	1.127
State 58	1.051	State 58	1.096
State 59	1.012	State 59	1.056
State 60	0.942	State 60	0.986
State 61	0.889	State 61	0.935
State 62	0.811	State 62	0.858
State 63	0.700	State 63	0.745
State 64	1.170	State 64	1.223
State 65	0.892	State 65	0.938
State 66	0.769	State 66	0.817
State 67	1.014	State 67	1.075
State 68	1.306	State 68	1.381
State 69	0.983	State 69	1.038
State 70	0.986	State 70	1.055
State 71	1.148	State 71	1.216
State 72	1.252	State 72	1.333
State 73	0.905	State 73	0.961
State 74	0.912	State 74	0.976
State 75	1.102	State 75	1.169
State 76	1.319	State 76	1.402
State 77	0.995	State 77	1.056
State 78	1.001	State 78	1.069
State 79	1.161	State 79	1.230

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 14-4
LTE Supplemental Body SAR Data

Supplemental Body SAR Data											
LTE Band 71		LTE Band 12		LTE Band 13		LTE Band 14		LTE Band 5		LTE Band 26	
QPSK, 20 MHz Bandwidth, 1 RB, 0 RB Offsets		QPSK, 10 MHz Bandwidth, 1 RB, 25 RB Offsets		QPSK, 10 MHz Bandwidth, 1 RB, 25 RB Offsets		QPSK, 10 MHz Bandwidth, 1 RB, 25 RB Offsets		QPSK, 10 MHz Bandwidth, 1 RB, 0 RB Offsets		QPSK, 15 MHz Bandwidth, 1 RB, 0 RB Offsets	
Test Position	Back	Test Position	Back	Test Position	Back	Test Position	Back	Test Position	Back	Test Position	Back
Spacing	10 mm	Spacing	10 mm	Spacing	10 mm	Spacing	10 mm	Spacing	10 mm	Spacing	10 mm
Frequency (MHz)	680.5	Frequency (MHz)	707.5	Frequency (MHz)	782.0	Frequency (MHz)	793.0	Frequency (MHz)	836.5	Frequency (MHz)	831.5
Channel	133297	Channel	23095	Channel	23230	Channel	23330	Channel	20525	Channel	26865
Measured 1g SAR (W/kg)	0.320	Measured 1g SAR (W/kg)	0.315	Measured 1g SAR (W/kg)	0.425	Measured 1g SAR (W/kg)	0.469	Measured 1g SAR (W/kg)	0.568	Measured 1g SAR (W/kg)	0.517
Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)	
Auto-tune (State 7)	0.397	Auto-tune (State 1)	0.496	Auto-tune (State 1)	0.621	Auto-tune (State 1)	0.873	Auto-tune (State 2)	0.767	Auto-tune (State 76)	0.829
Default (State 1)	0.240	Default (State 1)	0.496	Default (State 1)	0.618	Default (State 1)	0.884	Default (State 1)	0.787	Default (State 1)	0.844
State 1	0.240	State 1	0.496	State 1	0.618	State 1	0.884	State 1	0.787	State 1	0.844
State 7	0.413	State 25	0.244	State 30	0.043	State 51	0.669	State 2	0.771	State 43	0.366
State 19	0.064	State 26	0.180	State 31	0.025	State 52	0.677	State 56	0.679	State 44	0.271
State 20	0.064	State 27	0.130	State 44	0.181	State 53	0.682	State 57	0.633	State 45	0.220
State 21	0.063	State 28	0.081	State 48	0.301	State 54	0.690	State 58	0.564	State 46	0.166
State 22	0.052	State 29	0.059	State 49	0.307	State 55	0.689	State 59	0.472	State 66	0.798
State 23	0.047	State 30	0.040	State 50	0.401	State 56	0.684	State 60	0.346	State 68	0.852
State 64	0.224	State 43	0.148	State 51	0.394	State 72	0.880	State 61	0.275	State 76	0.846

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Supplemental Body SAR Data			
LTE Band 66		LTE Band 25	
QPSK, 20 MHz Bandwidth, 100 RB, 0 RB Offsets		QPSK, 20 MHz Bandwidth, 50 RB, 25 RB Offsets	
Test Position	Bottom	Test Position	Bottom
Spacing	10 mm	Spacing	10 mm
Frequency (MHz)	1770.0	Frequency (MHz)	1905.0
Channel	132572	Channel	26590
Measured 1g SAR (W/kg)	0.782	Measured 1g SAR (W/kg)	0.822
Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)	
Auto-tune (State 27)	1.266	Auto-tune (State 27)	1.306
Default (State 1)	1.099	Default (State 1)	1.325
State 0	1.093	State 0	1.317
State 1	1.099	State 1	1.325
State 2	1.125	State 2	1.301
State 3	1.125	State 3	1.295
State 4	1.127	State 4	1.289
State 5	1.126	State 5	1.287
State 6	1.127	State 6	1.264
State 7	1.127	State 7	1.245
State 8	1.124	State 8	1.249
State 9	1.125	State 9	1.210
State 10	1.120	State 10	1.153
State 11	1.113	State 11	1.086
State 12	1.084	State 12	0.968
State 13	1.058	State 13	0.873
State 14	1.012	State 14	0.750
State 15	0.924	State 15	0.593
State 16	0.691	State 16	1.039
State 17	0.717	State 17	1.072
State 18	0.856	State 18	1.170
State 19	0.881	State 19	1.178
State 20	0.894	State 20	1.192
State 21	0.908	State 21	1.203
State 22	0.957	State 22	1.225
State 23	0.958	State 23	1.232
State 24	0.982	State 24	1.227
State 25	1.071	State 25	1.272
State 26	1.157	State 26	1.266
State 27	1.243	State 27	1.298
State 28	1.273	State 28	1.258
State 29	1.215	State 29	1.193
State 30	1.042	State 30	1.055
State 31	0.736	State 31	0.832
State 32	0.916	State 32	1.061
State 33	0.898	State 33	1.059
State 34	0.783	State 34	0.948
State 35	0.762	State 35	0.924
State 36	0.750	State 36	0.909
State 37	0.738	State 37	0.897
State 38	0.697	State 38	0.846
State 39	0.676	State 39	0.817
State 40	0.681	State 40	0.837
State 41	0.613	State 41	0.749
State 42	0.556	State 42	0.681
State 43	0.489	State 43	0.590
State 44	0.404	State 44	0.475
State 45	0.348	State 45	0.399
State 46	0.287	State 46	0.318
State 47	0.218	State 47	0.229
State 48	0.916	State 48	1.164
State 49	0.881	State 49	1.177
State 50	0.946	State 50	1.173
State 51	0.959	State 51	1.173
State 52	0.970	State 52	1.176
State 53	0.971	State 53	1.163
State 54	0.995	State 54	1.154
State 55	1.005	State 55	1.145
State 56	0.993	State 56	1.140
State 57	1.033	State 57	1.120
State 58	1.060	State 58	1.086
State 59	1.096	State 59	1.029
State 60	1.130	State 60	0.939
State 61	1.142	State 61	0.862
State 62	1.123	State 62	0.753
State 63	1.037	State 63	0.603
State 64	1.006	State 64	1.101
State 65	0.613	State 65	0.914
State 66	0.776	State 66	0.785
State 67	0.799	State 67	0.989
State 68	1.086	State 68	1.299
State 69	0.709	State 69	1.038
State 70	0.884	State 70	1.035
State 71	0.871	State 71	1.155
State 72	1.054	State 72	1.199
State 73	0.647	State 73	0.924
State 74	0.881	State 74	0.934
State 75	0.838	State 75	1.068
State 76	1.092	State 76	1.308
State 77	0.715	State 77	1.051
State 78	0.891	State 78	1.049
State 79	0.879	State 79	1.171

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

14.2 LTE Band 41 Power Class 2 and Power Class 3 Linearity

This device supports Power Class 2 and Power Class 3 operations for LTE Band 41. The highest available duty cycle for Power Class 2 operations is 43.3 % using UL-DL configuration 1. Per May 2017 TCB Workshop Notes based on the device behavior, all SAR tests were performed using Power Class 3. SAR with Power Class 2 at the highest power and available duty factor was additionally performed for the Power Class 3 configuration with the highest SAR for each exposure condition. The linearity between the Power Class 2 and Power Class 3 SAR results and the respective frame averaged powers was calculated to determine that the results were linear. When ULCA is active, the linearity between the Power Class 2 with ULCA active and Power Class 3 with ULCA active SAR results and the respective frame averaged powers was calculated to determine that the results were linear. Per May 2017 TCB Workshop, no additional SAR measurements were required since the linearity between power classes was < 10% and all reported SAR values were < 1.4 W/kg for 1g and < 3.5 W/kg for 10g.

Table 14-5
LTE Band 41 Head Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	25.0	27.5
Measured Output Power (dBm)	24.37	26.87
Measured SAR (W/kg)	0.091	0.101
Measured Power (mW)	273.53	486.41
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	173.14	210.61
% deviation from expected linearity		-8.76%

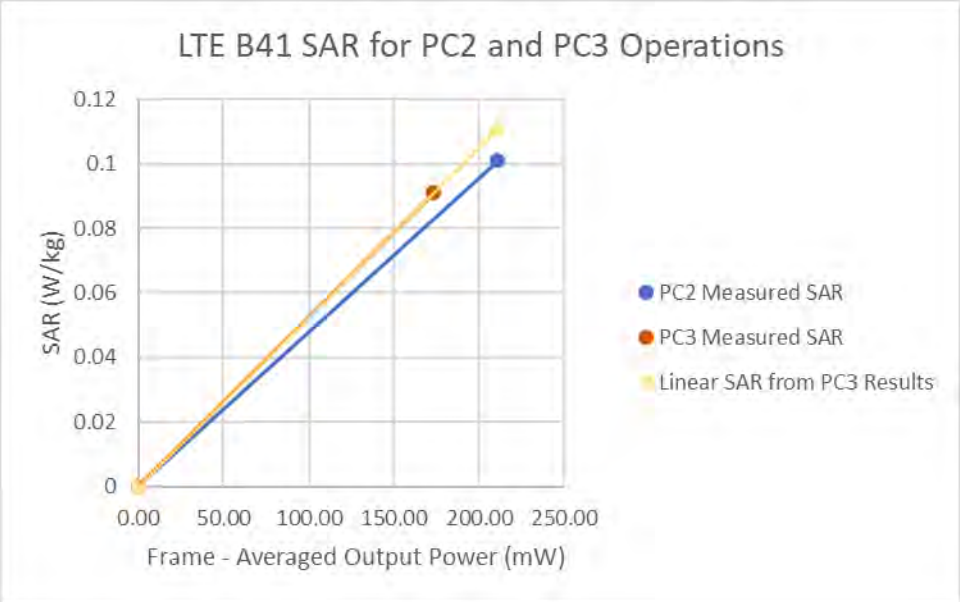


Figure 14-1
LTE Band 41 Head Linearity

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 14-6
LTE Band 41 ULCA Head Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	25.0	27.5
Measured Output Power (dBm)	25.00	27.47
Measured SAR (W/kg)	0.105	0.117
Measured Power (mW)	316.23	558.47
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	200.17	241.82
% deviation from expected linearity		-7.76%

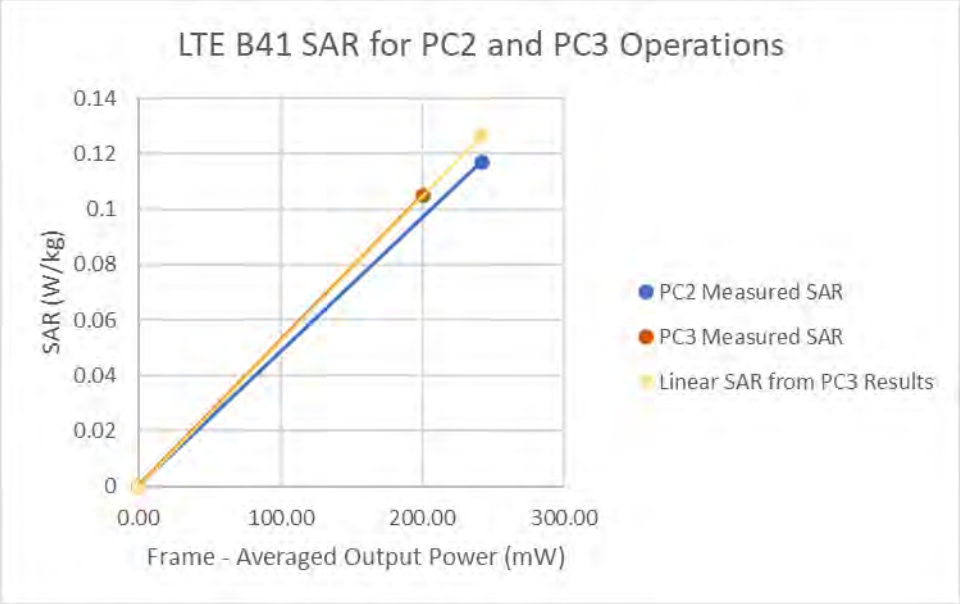


Figure 14-2
LTE Band 41 ULCA Head Linearity

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 14-7
LTE Band 41 Body-Worn Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	25.0	27.5
Measured Output Power (dBm)	24.37	26.87
Measured SAR (W/kg)	0.342	0.418
Measured Power (mW)	273.53	486.41
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	173.14	210.61
% deviation from expected linearity		0.48%

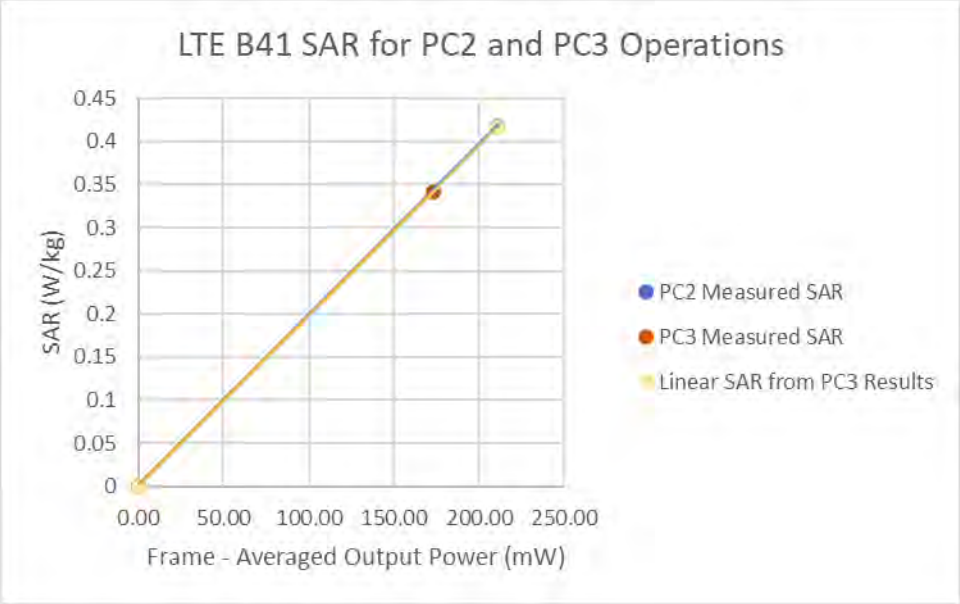


Figure 14-3
LTE Band 41 Body-Worn Linearity

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 14-8
LTE Band 41 ULCA Body-Worn Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	25.0	27.5
Measured Output Power (dBm)	25.00	27.47
Measured SAR (W/kg)	0.413	0.497
Measured Power (mW)	316.23	558.47
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	200.17	241.82
% deviation from expected linearity		-0.39%

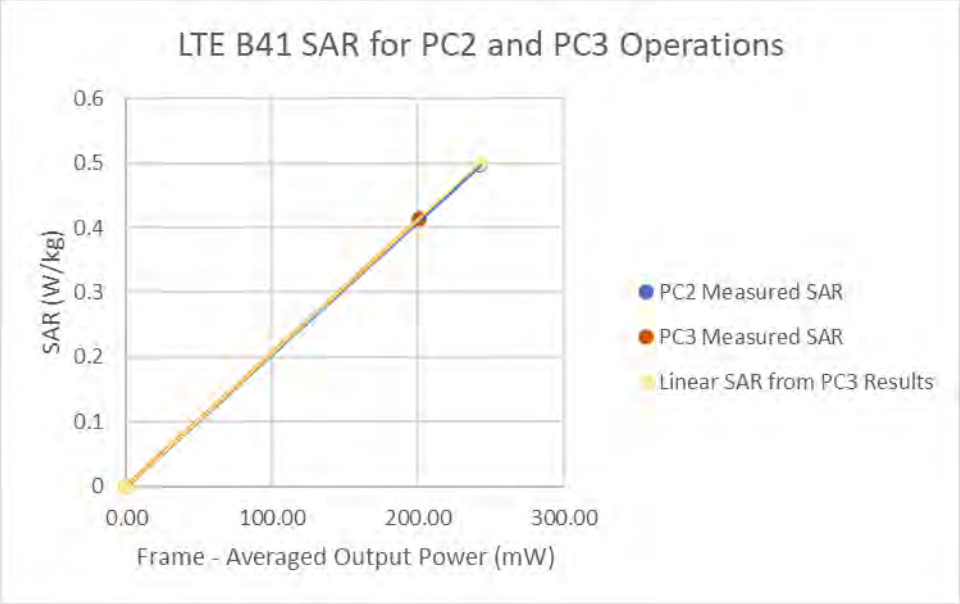


Figure 14-4
LTE Band 41 ULCA Body-Worn Linearity

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 14-9
LTE Band 41 Hotspot Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	22.0	23.5
Measured Output Power (dBm)	21.42	22.76
Measured SAR (W/kg)	0.876	0.817
Measured Power (mW)	138.68	188.80
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	87.78	81.75
% deviation from expected linearity		0.15%

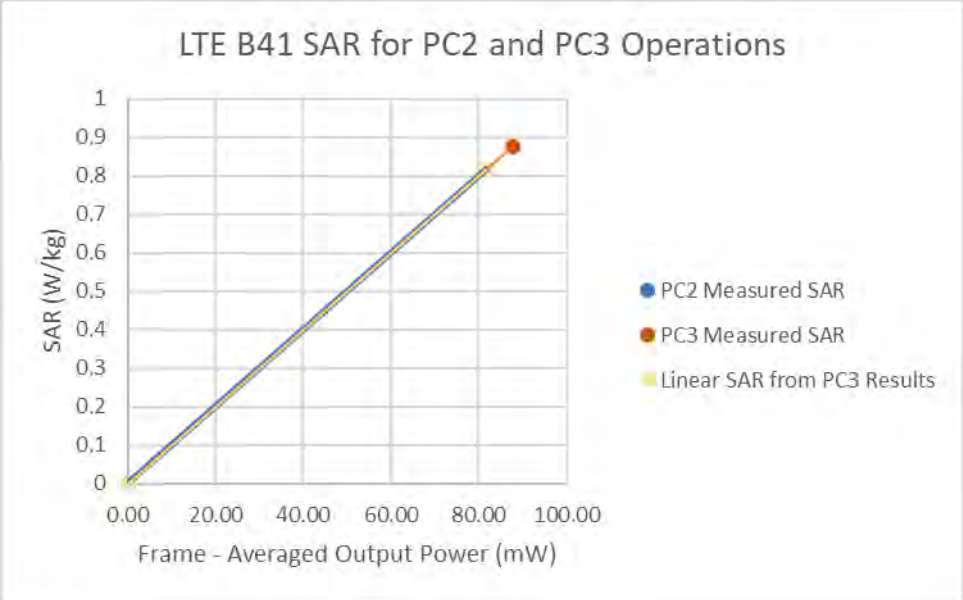


Figure 14-5
LTE Band 41 Hotspot Linearity

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 14-10
LTE Band 41 ULCA Hotspot Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	22.0	23.5
Measured Output Power (dBm)	21.40	22.70
Measured SAR (W/kg)	0.830	0.772
Measured Power (mW)	138.04	186.21
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	87.38	80.63
% deviation from expected linearity		0.80%

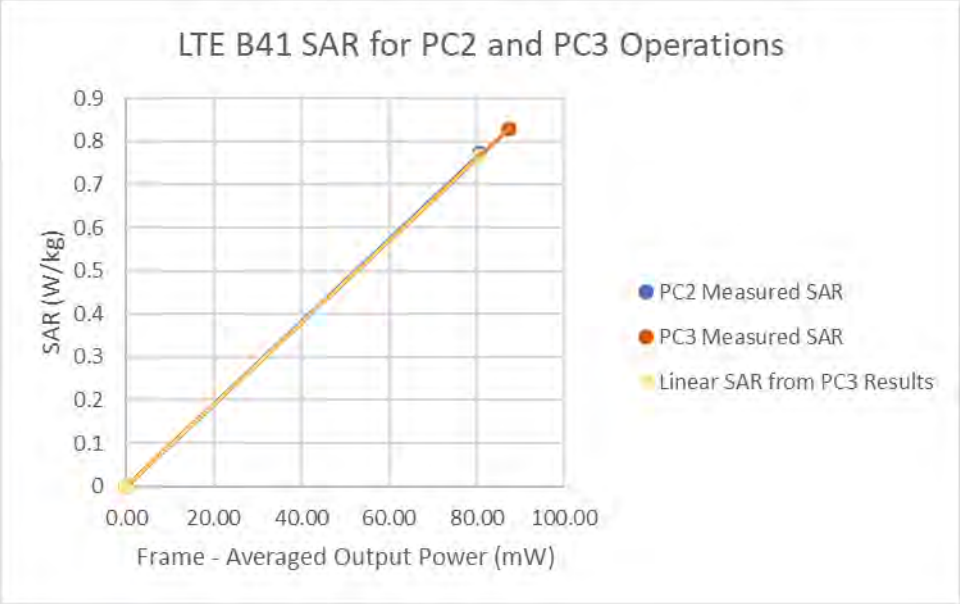


Figure 14-6
LTE Band 41 ULCA Hotspot Linearity

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 14-11
LTE Band 41 Phablet Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	22.5	24.5
Measured Output Power (dBm)	22.00	23.68
Measured SAR (W/kg)	1.660	1.610
Measured Power (mW)	158.49	233.35
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	100.32	101.04
% deviation from expected linearity		-3.70%

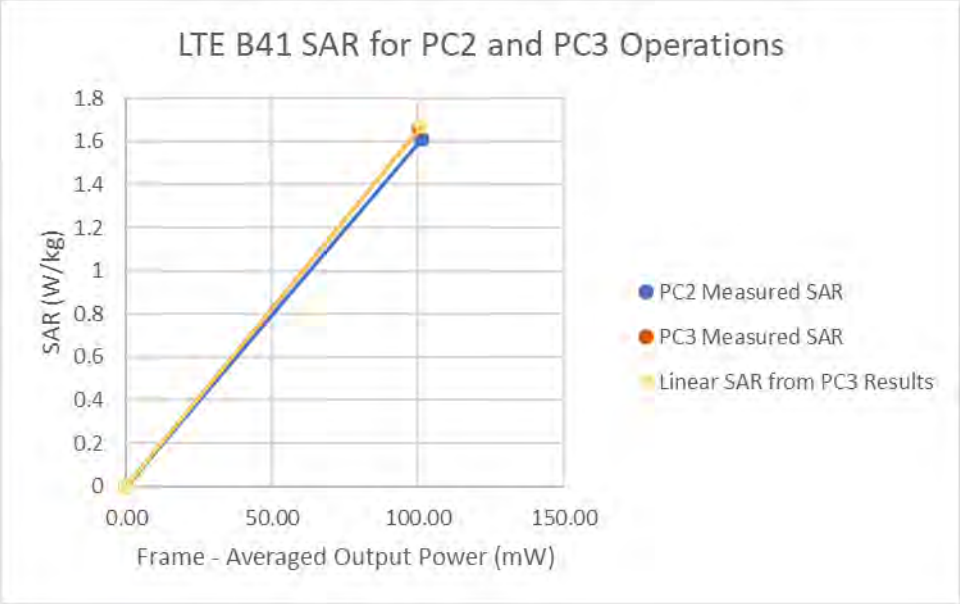


Figure 14-7
LTE Band 41 Phablet Linearity

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

Table 14-12
LTE Band 41 ULCA Phablet Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	22.5	24.5
Measured Output Power (dBm)	22.23	24.37
Measured SAR (W/kg)	1.710	1.980
Measured Power (mW)	167.11	273.53
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	105.78	118.44
% deviation from expected linearity		3.42%

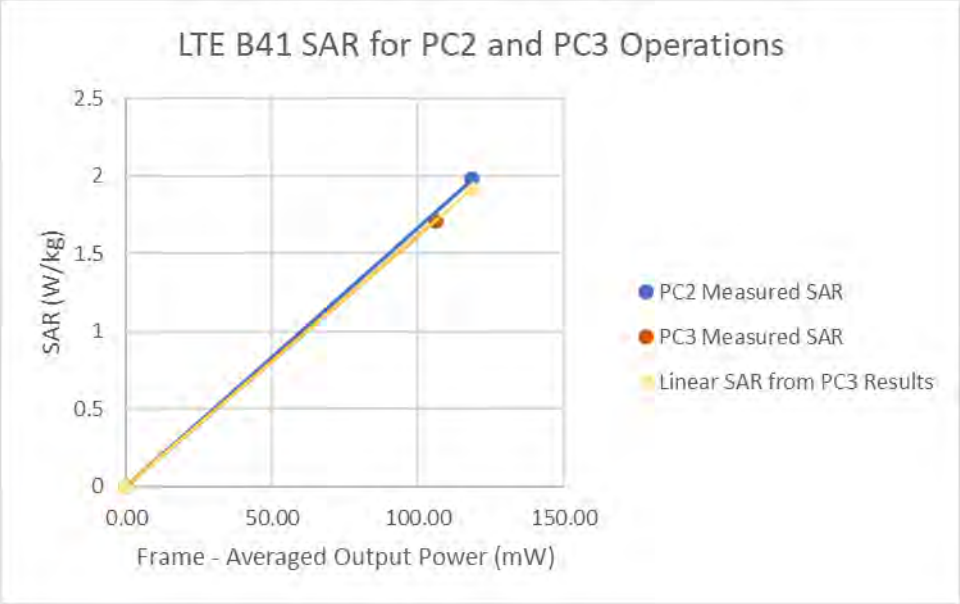


Figure 14-8
LTE Band 41 ULCA Phablet Linearity

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

15 EQUIPMENT LIST

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Agilent	8594A	(9kHz-2.9GHz) Spectrum Analyzer	N/A	N/A	N/A	3051A00187
Agilent	8753E	(30kHz-6GHz) Network Analyzer	9/28/2018	Annual	9/28/2019	JP38020182
Agilent	E5515C	Wireless Communications Test Set	2/28/2018	Biennial	2/28/2020	GB41450275
Agilent	N9020A	MXA Signal Analyzer	4/20/2019	Annual	4/20/2020	US46470561
Agilent	N4010A	Wireless Connectivity Test Set	N/A	N/A	N/A	GB46170464
Agilent	N4010A	Wireless Connectivity Test Set	N/A	N/A	N/A	GB44450273
Agilent	E5515C	Wireless Communications Test Set	2/7/2018	Triennial	2/7/2021	GB43304447
Agilent	E5515C	Wireless Communications Test Set	5/22/2018	Biennial	5/22/2020	GB43193563
Agilent	N5182A	MXG Vector Signal Generator	11/28/2018	Annual	11/28/2019	MY47420603
Agilent	E4438C	ESG Vector Signal Generator	3/8/2019	Biennial	3/8/2021	MY42082385
Agilent	E4438C	ESG Vector Signal Generator	3/11/2019	Biennial	3/11/2021	MY45090700
Agilent	8753ES	S-Parameter Network Analyzer	10/2/2018	Annual	10/2/2019	US39170118
Agilent	8753ES	S-Parameter Network Analyzer	7/30/2018	Annual	7/30/2019	MY40000670
Agilent	8753ES	Network Analyzer	3/19/2019	Annual	3/19/2020	MY40001472
Agilent	8753ES	S-Parameter Vector Network Analyzer	8/30/2018	Annual	8/30/2019	MY40003841
Agilent	85033E	3.5mm Standard Calibration Kit	8/13/2018	Annual	8/13/2019	MY53402352
Amplifier Research	1S51G6	Amplifier	CBT	N/A	CBT	433971
Amplifier Research	1S51G6	Amplifier	CBT	N/A	CBT	433972
Amplifier Research	1S51G6	Amplifier	CBT	N/A	CBT	433974
Anritsu	ML2495A	Power Meter	10/21/2018	Annual	10/21/2019	941001
Anritsu	ML2495A	Power Meter	11/20/2018	Annual	11/20/2019	1039008
Anritsu	MT8821C	Radio Communication Analyzer	11/6/2018	Annual	11/6/2019	6200901190
Anritsu	MA24106A	USB Power Sensor	5/6/2019	Annual	5/6/2020	1231538
Anritsu	MA24106A	USB Power Sensor	5/22/2019	Annual	5/22/2020	1231535
Anritsu	MA24106A	USB Power Sensor	1/31/2019	Annual	1/31/2020	1244524
Anritsu	MT8820C	Radio Communication Analyzer	3/29/2019	Annual	3/29/2020	6201300731
Anritsu	MT8821C	Radio Communication Analyzer	7/26/2018	Annual	7/26/2019	6201144418
Anritsu	MT8821C	Radio Communication Analyzer	3/18/2019	Annual	3/18/2020	6201144419
Anritsu	MA2411B	Pulse Power Sensor	10/30/2018	Annual	10/30/2019	1207470
Anritsu	MA2411B	Pulse Power Sensor	11/20/2018	Annual	11/20/2019	1339007
Anritsu	MA2411B	Pulse Power Sensor	11/20/2018	Annual	11/20/2019	1339008
Anritsu	MT8821C	Radio Communication Analyzer	7/24/2018	Annual	7/24/2019	6201664756
Anritsu	MT8821C	Radio Communication Analyzer	3/6/2019	Annual	3/6/2020	6201381794
Anritsu	MT8862A	Wireless Connectivity Test Set	7/3/2018	Annual	7/3/2019	6261782395
Anritsu	MT8821C	Radio Communication Analyzer	1/25/2019	Annual	1/25/2020	6261895213
Anritsu	MT8000A	Radio Communication Test Station	11/14/2018	Annual	11/14/2019	6261914237
COMTECH	AR85729-5/5759B	Solid State Amplifier	CBT	N/A	CBT	M3W1A00-1002
COMTech	AR85729-S	Solid State Amplifier	CBT	N/A	CBT	M1SSA00-009
Control Company	4040	Temperature / Humidity Monitor	2/28/2018	Biennial	2/28/2020	150761911
Control Company	4352	Ultra Long Stem Thermometer	8/2/2018	Biennial	8/2/2020	181334684
Control Company	4352	Ultra Long Stem Thermometer	8/2/2018	Biennial	8/2/2020	181334694
Control Company	4352	Ultra Long Stem Thermometer	8/2/2018	Biennial	8/2/2020	181292000
Control Company	4040	Therm./ Clock/ Humidity Monitor	10/9/2018	Biennial	10/9/2020	181647811
Control Company	4040	Therm./ Clock/ Humidity Monitor	10/9/2018	Biennial	10/9/2020	181647802
Control Company	4040	Therm./ Clock/ Humidity Monitor	10/9/2018	Biennial	10/9/2020	181647812
Keysight	772D	Dual Directional Coupler	CBT	N/A	CBT	MY52180215
MCL	BW-N6W5+	6dB Attenuator	CBT	N/A	CBT	1139
MiniCircuits	SLP-2400+	Low Pass Filter	CBT	N/A	CBT	R8979500903
MiniCircuits	VLF-6000+	Low Pass Filter	CBT	N/A	CBT	N/A
MiniCircuits	VLF-6000+	Low Pass Filter	CBT	N/A	CBT	N/A
Mini-Circuits	BW-N20W5+	DC to 18 GHz Precision Fixed 20 dB Attenuator	CBT	N/A	CBT	N/A
Mini-Circuits	NLP-2950+	Low Pass Filter DC to 2700 MHz	CBT	N/A	CBT	N/A
Mini-Circuits	NLP-1200+	Low Pass Filter DC to 1000 MHz	CBT	N/A	CBT	N/A
Mini-Circuits	BW-N20W5	Power Attenuator	CBT	N/A	CBT	1226
Mitutoyo	CD-6"CSX	Digital Caliper	4/18/2018	Biennial	4/18/2020	13264165
Narda	4772-3	Attenuator (3dB)	CBT	N/A	CBT	9406
Narda	BW-S3W2	Attenuator (3dB)	CBT	N/A	CBT	120
Narda	4014C-6	4 - 8 GHz SMA 6 dB Directional Coupler	CBT	N/A	CBT	N/A
Pasternack	PE2208-6	Bidirectional Coupler	CBT	N/A	CBT	N/A
Pasternack	PE2209-10	Bidirectional Coupler	CBT	N/A	CBT	N/A
Pasternack	NC-100	Torque Wrench	11/1/2017	Biennial	11/1/2019	N/A
Pasternack	NC-100	Torque Wrench	5/23/2018	Biennial	5/23/2020	N/A
Pasternack	PE5011-1	Torque Wrench	7/19/2017	Biennial	7/19/2019	N/A
Rohde & Schwarz	CMW500	Radio Communication Tester	11/14/2018	Annual	11/14/2019	100976
Rohde & Schwarz	CMW500	Radio Communication Tester	7/5/2018	Annual	7/5/2019	106578
Rohde & Schwarz	CMW500	Radio Communication Tester	10/4/2018	Annual	10/4/2019	109366
Rohde & Schwarz	CMW500	Radio Communication Tester	8/10/2018	Annual	8/10/2019	116743
Rohde & Schwarz	CMW500	Radio Communication Tester	4/19/2019	Annual	4/19/2020	128633
Rohde & Schwarz	CMU200	Base Station Simulator	6/3/2019	Annual	6/3/2020	109892
SPEAG	D750V3	750 MHz SAR Dipole	1/15/2018	Biennial	1/15/2020	1003
SPEAG	D835V2	835 MHz SAR Dipole	10/19/2018	Annual	10/19/2019	4d133
SPEAG	D835V2	835 MHz SAR Dipole	1/22/2019	Annual	1/22/2020	4d132
SPEAG	D1765V2	1765 MHz SAR Dipole	5/23/2018	Biennial	5/23/2020	1008
SPEAG	D1900V2	1900 MHz SAR Dipole	10/23/2018	Annual	10/23/2019	5d080
SPEAG	D2300V2	2300 MHz SAR Dipole	11/8/2017	Biennial	11/8/2019	1064
SPEAG	D2450V2	2450 MHz SAR Dipole	9/11/2017	Biennial	9/11/2019	797
SPEAG	D2600V2	2600 MHz SAR Dipole	9/13/2016	Triennial	9/13/2019	1071
SPEAG	D2600V2	2600 MHz SAR Dipole	8/13/2018	Annual	8/13/2019	1126
SPEAG	D3500V2	3500 MHz SAR Dipole	8/15/2018	Annual	8/15/2019	1055
SPEAG	D3700V2	3700 MHz SAR Dipole	9/13/2018	Annual	9/13/2019	1002
SPEAG	D5GHzV2	5 GHz SAR Dipole	9/21/2016	Triennial	9/21/2019	1191
SPEAG	D750V3	750 MHz SAR Dipole	10/19/2018	Annual	10/19/2019	1161
SPEAG	D1750V2	1750 MHz SAR Dipole	10/22/2018	Annual	10/22/2019	1150
SPEAG	D1900V2	1900 MHz SAR Dipole	2/21/2019	Annual	2/21/2020	5d148
SPEAG	D2450V2	2450 MHz SAR Dipole	8/17/2017	Biennial	8/17/2019	719
SPEAG	D2450V2	2450 MHz SAR Dipole	8/16/2018	Annual	8/16/2019	981
SPEAG	D2600V2	2600 MHz SAR Dipole	4/11/2018	Biennial	4/11/2020	1004
SPEAG	D5GHzV2	5 GHz SAR Dipole	8/10/2018	Annual	8/10/2019	1237
SPEAG	D1900V2	1900 MHz SAR Dipole	10/23/2018	Annual	10/23/2019	5d149
SPEAG	EX3DV4	SAR Probe	4/24/2019	Annual	4/24/2020	7357
SPEAG	EX3DV4	SAR Probe	6/25/2018	Annual	6/25/2019	7409
SPEAG	EX3DV4	SAR Probe	5/16/2019	Annual	5/16/2020	7406
SPEAG	EX3DV4	SAR Probe	8/23/2018	Annual	8/23/2019	7308
SPEAG	ES3DV3	SAR Probe	10/22/2018	Annual	10/22/2019	3287
SPEAG	EX3DV4	SAR Probe	2/19/2019	Annual	2/19/2020	3914
SPEAG	EX3DV4	SAR Probe	1/24/2019	Annual	1/24/2020	7488
SPEAG	EX3DV4	SAR Probe	7/20/2018	Annual	7/20/2019	7410
SPEAG	EX3DV4	SAR Probe	1/25/2019	Annual	1/25/2020	3589
SPEAG	EX3DV4	SAR Probe	2/19/2019	Annual	2/19/2020	7417
SPEAG	DAE4	Dasy Data Acquisition Electronics	4/18/2019	Annual	4/18/2020	1407
SPEAG	DAE4	Dasy Data Acquisition Electronics	6/18/2018	Annual	6/18/2019	1334
SPEAG	DAE4	Dasy Data Acquisition Electronics	5/8/2019	Annual	5/8/2020	859
SPEAG	DAE4	Dasy Data Acquisition Electronics	10/3/2018	Annual	10/3/2019	1558
SPEAG	DAE4	Dasy Data Acquisition Electronics	8/22/2018	Annual	8/22/2019	1450
SPEAG	DAE4	Dasy Data Acquisition Electronics	10/18/2018	Annual	10/18/2019	1333
SPEAG	DAE4	Dasy Data Acquisition Electronics	2/14/2019	Annual	2/14/2020	1272
SPEAG	DAE4	Dasy Data Acquisition Electronics	1/15/2019	Annual	1/15/2020	1530
SPEAG	DAE4	Dasy Data Acquisition Electronics	7/11/2018	Annual	7/11/2019	1322
SPEAG	DAE4	Dasy Data Acquisition Electronics	2/13/2019	Annual	2/13/2020	665
SPEAG	DAK-3.5	Dielectric Assessment Kit	5/7/2019	Annual	5/7/2020	1070

Note: 1) CBT (Calibrated Before Testing). Prior to testing, the measurement paths containing a cable, amplifier, attenuator, coupler or filter were connected to a calibrated source (i.e. a signal generator) to determine the losses of the measurement path. The power meter offset was then adjusted to compensate for the measurement system losses. This level offset is stored within the power meter before measurements are made. This calibration verification procedure applies to the system verification and output power measurements. The calibrated reading is then taken directly from the power meter after compensation of the losses for all final power measurements.

2) Each equipment item was used solely within its respective calibration period.

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

16 MEASUREMENT UNCERTAINTIES

a	c	d	e= f(d,k)	f	g	h = c x f/e	i = c x g/e	k
Uncertainty Component	**Tol. (± %)**	**Prob. Dist.**	**Div.**	**c_i 1gm**	**c_i 10 gms**	**1gm u_i (± %)**	**10gms u_i (± %)**	**v_i**
Measurement System								
Probe Calibration	6.55	N	1	1.0	1.0	6.6	6.6	∞
Axial Isotropy	0.25	N	1	0.7	0.7	0.2	0.2	∞
Hemishperical Isotropy	1.3	N	1	0.7	0.7	0.9	0.9	∞
Boundary Effect	2.0	R	1.73	1.0	1.0	1.2	1.2	∞
Linearity	0.3	N	1	1.0	1.0	0.3	0.3	∞
System Detection Limits	0.25	R	1.73	1.0	1.0	0.1	0.1	∞
Readout Electronics	0.3	N	1	1.0	1.0	0.3	0.3	∞
Response Time	0.8	R	1.73	1.0	1.0	0.5	0.5	∞
Integration Time	2.6	R	1.73	1.0	1.0	1.5	1.5	∞
RF Ambient Conditions - Noise	3.0	R	1.73	1.0	1.0	1.7	1.7	∞
RF Ambient Conditions - Reflections	3.0	R	1.73	1.0	1.0	1.7	1.7	∞
Probe Positioner Mechanical Tolerance	0.4	R	1.73	1.0	1.0	0.2	0.2	∞
Probe Positioning w/ respect to Phantom	6.7	R	1.73	1.0	1.0	3.9	3.9	∞
Extrapolation, Interpolation & Integration algorithms for Max. SAR Evaluation	4.0	R	1.73	1.0	1.0	2.3	2.3	∞
Test Sample Related								
Test Sample Positioning	2.7	N	1	1.0	1.0	2.7	2.7	35
Device Holder Uncertainty	1.67	N	1	1.0	1.0	1.7	1.7	5
Output Power Variation - SAR drift measurement	5.0	R	1.73	1.0	1.0	2.9	2.9	∞
SAR Scaling	0.0	R	1.73	1.0	1.0	0.0	0.0	∞
Phantom & Tissue Parameters								
Phantom Uncertainty (Shape & Thickness tolerances)	7.6	R	1.73	1.0	1.0	4.4	4.4	∞
Liquid Conductivity - measurement uncertainty	4.2	N	1	0.78	0.71	3.3	3.0	10
Liquid Permittivity - measurement uncertainty	4.1	N	1	0.23	0.26	1.0	1.1	10
Liquid Conductivity - Temperature Uncertainty	3.4	R	1.73	0.78	0.71	1.5	1.4	∞
Liquid Permittivity - Temperature Unceritainty	0.6	R	1.73	0.23	0.26	0.1	0.1	∞
Liquid Conductivity - deviation from target values	5.0	R	1.73	0.64	0.43	1.8	1.2	∞
Liquid Permittivity - deviation from target values	5.0	R	1.73	0.60	0.49	1.7	1.4	∞
Combined Standard Uncertainty (k=1)		RSS				11.5	11.3	60
Expanded Uncertainty (95% CONFIDENCE LEVEL)		k=2				23.0	22.6	

© 2019 PCTEST Engineering Laboratory, Inc.

REV 21.3 M
02/15/2019

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

17 CONCLUSION

17.1 Measurement Conclusion

The SAR evaluation indicates that the EUT complies with the RF radiation exposure limits of the FCC and Innovation, Science, and Economic Development Canada, with respect to all parameters subject to this test. These measurements were taken to simulate the RF effects of RF exposure under worst-case conditions. Precise laboratory measures were taken to assure repeatability of the tests. The results and statements relate only to the item(s) tested.

Please note that the absorption and distribution of electromagnetic energy in the body are very complex phenomena that depend on the mass, shape, and size of the body, the orientation of the body with respect to the field vectors, and the electrical properties of both the body and the environment. Other variables that may play a substantial role in possible biological effects are those that characterize the environment (e.g. ambient temperature, air velocity, relative humidity, and body insulation) and those that characterize the individual (e.g. age, gender, activity level, debilitation, or disease). Because various factors may interact with one another to vary the specific biological outcome of an exposure to electromagnetic fields, any protection guide should consider maximal amplification of biological effects as a result of field-body interactions, environmental conditions, and physiological variables. [3]

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

18 REFERENCES

[1] Federal Communications Commission, ET Docket 93-62, Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation, Aug. 1996.

[2] ANSI/IEEE C95.1-2005, American National Standard safety levels with respect to human exposure to radio frequency electromagnetic fields, 3kHz to 300GHz, New York: IEEE, 2006.

[3] ANSI/IEEE C95.1-1992, American National Standard safety levels with respect to human exposure to radio frequency electromagnetic fields, 3kHz to 300GHz, New York: IEEE, Sept. 1992.

[4] ANSI/IEEE C95.3-2002, IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave, New York: IEEE, December 2002.

[5] IEEE Standards Coordinating Committee 39 –Standards Coordinating Committee 34 – IEEE Std. 1528-2013, IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques.

[6] NCRP, National Council on Radiation Protection and Measurements, Biological Effects and Exposure Criteria for RadioFrequency Electromagnetic Fields, NCRP Report No. 86, 1986. Reprinted Feb. 1995.

[7] T. Schmid, O. Egger, N. Kuster, Automated E-field scanning system for dosimetric assessments, IEEE Transaction on Microwave Theory and Techniques, vol. 44, Jan. 1996, pp. 105-113.

[8] K. Pokovic, T. Schmid, N. Kuster, Robust setup for precise calibration of E-field probes in tissue simulating liquids at mobile communications frequencies, ICECOM97, Oct. 1997, pp. 1 -124.

[9] K. Pokovic, T. Schmid, and N. Kuster, E-field Probe with improved isotropy in brain simulating liquids, Proceedings of the ELMAR, Zadar, Croatia, June 23-25, 1996, pp. 172-175.

[10] Schmid & Partner Engineering AG, Application Note: Data Storage and Evaluation, June 1998, p2.

[11] V. Hombach, K. Meier, M. Burkhardt, E. Kuhn, N. Kuster, The Dependence of EM Energy Absorption upon Human Modeling at 900 MHz, IEEE Transaction on Microwave Theory and Techniques, vol. 44 no. 10, Oct. 1996, pp. 1865-1873.

[12] N. Kuster and Q. Balzano, Energy absorption mechanism by biological bodies in the near field of dipole antennas above 300MHz, IEEE Transaction on Vehicular Technology, vol. 41, no. 1, Feb. 1992, pp. 17-23.

[13] G. Hartsgrove, A. Kraszewski, A. Surowiec, Simulated Biological Materials for Electromagnetic Radiation Absorption Studies, University of Ottawa, Bioelectromagnetics, Canada: 1987, pp. 29-36.

[14] Q. Balzano, O. Garay, T. Manning Jr., Electromagnetic Energy Exposure of Simulated Users of Portable Cellular Telephones, IEEE Transactions on Vehicular Technology, vol. 44, no.3, Aug. 1995.

[15] W. Gander, Computermathematick, Birkhaeuser, Basel, 1992.

[16] W.H. Press, S.A. Teukolsky, W.T. Vetterling, and B.P. Flannery, Numerical Recipes in C, The Art of Scientific Computing, Second edition, Cambridge University Press, 1992.

[17] N. Kuster, R. Kastle, T. Schmid, Dosimetric evaluation of mobile communications equipment with known precision, IEEE Transaction on Communications, vol. E80-B, no. 5, May 1997, pp. 645-652.

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

[18] CENELEC CLC/SC111B, European Prestandard (prENV 50166-2), Human Exposure to Electromagnetic Fields High-frequency: 10kHz-300GHz, Jan. 1995.

[19] Prof. Dr. Niels Kuster, ETH, Eidgenössische Technische Hoschschule Zürich, Dosimetric Evaluation of the Cellular Phone.

[20] IEC 62209-1, Measurement procedure for the assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices - Part 1: Devices used next to the ear (Frequency range of 300 MHz to 6 GHz), July 2016.

[21] Innovation, Science, Economic Development Canada RSS-102 Radio Frequency Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands) Issue 5, March 2015.

[22] Health Canada Safety Code 6 Limits of Human Exposure to Radio Frequency Electromagnetic Fields in the Frequency Range from 3 kHz – 300 GHz, 2015

[23] FCC SAR Test Procedures for 2G-3G Devices, Mobile Hotspot and UMPC Devices KDB Publications 941225, D01-D07

[24] SAR Measurement Guidance for IEEE 802.11 Transmitters, KDB Publication 248227 D01

[25] FCC SAR Considerations for Handsets with Multiple Transmitters and Antennas, KDB Publications 648474 D03-D04

[26] FCC SAR Evaluation Considerations for Laptop, Notebook, Netbook and Tablet Computers, FCC KDB Publication 616217 D04

[27] FCC SAR Measurement and Reporting Requirements for 100MHz – 6 GHz, KDB Publications 865664 D01-D02

[28] FCC General RF Exposure Guidance and SAR Procedures for Dongles, KDB Publication 447498, D01-D02

[29] Anexo à Resolução No. 533, de 10 de Septembro de 2009.

[30] IEC 62209-2, Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices - Human models, instrumentation, and procedures - Part 2: Procedure to determine the specific absorption rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz), Mar. 2010.

© 2019 PCTEST Engineering Laboratory, Inc.

© 2019 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTEST.COM.

APPENDIX A: SAR TEST DATA

© 2019 PCTEST Engineering Laboratory, Inc.

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN970U; Type: Portable Handset; Serial: 1290M

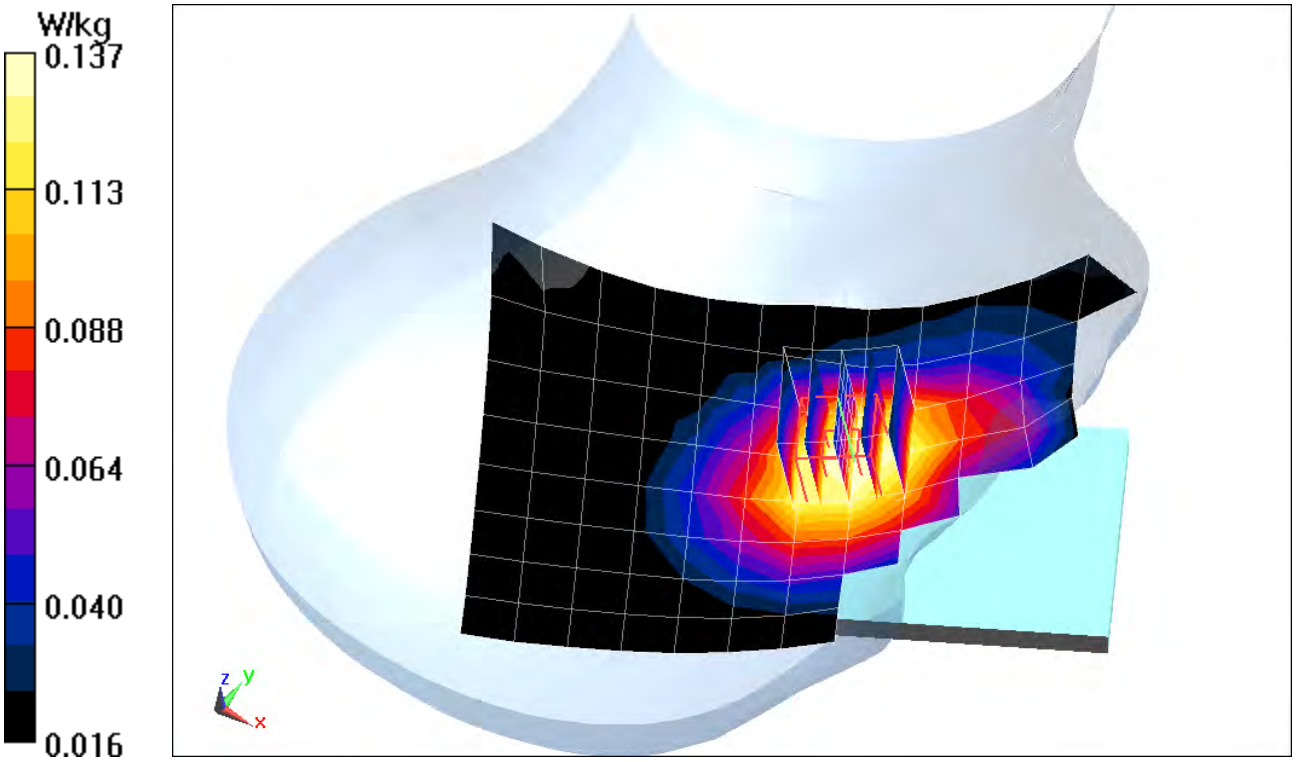
Communication System: UID 0, GSM; Frequency: 836.6 MHz; Duty Cycle: 1:8.3
Medium: 835 Head Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.932 S/m; ε_r = 43.394; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 05-31-2019; Ambient Temp: 23.4°C; Tissue Temp: 20.9°C

Probe: EX3DV4 - SN7409; ConvF(9.67, 9.67, 9.67) @ 836.6 MHz; Calibrated: 6/25/2018
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1334; Calibrated: 6/18/2018
Phantom: SAM 30 with CRP v5.0 right; Type: QD000P40CD; Serial: TP:1759
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: GSM 850, Right Head, Cheek, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.54 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.152 W/kg
SAR(1 g) = 0.116 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN970U; Type: Portable Handset; Serial: 1298M

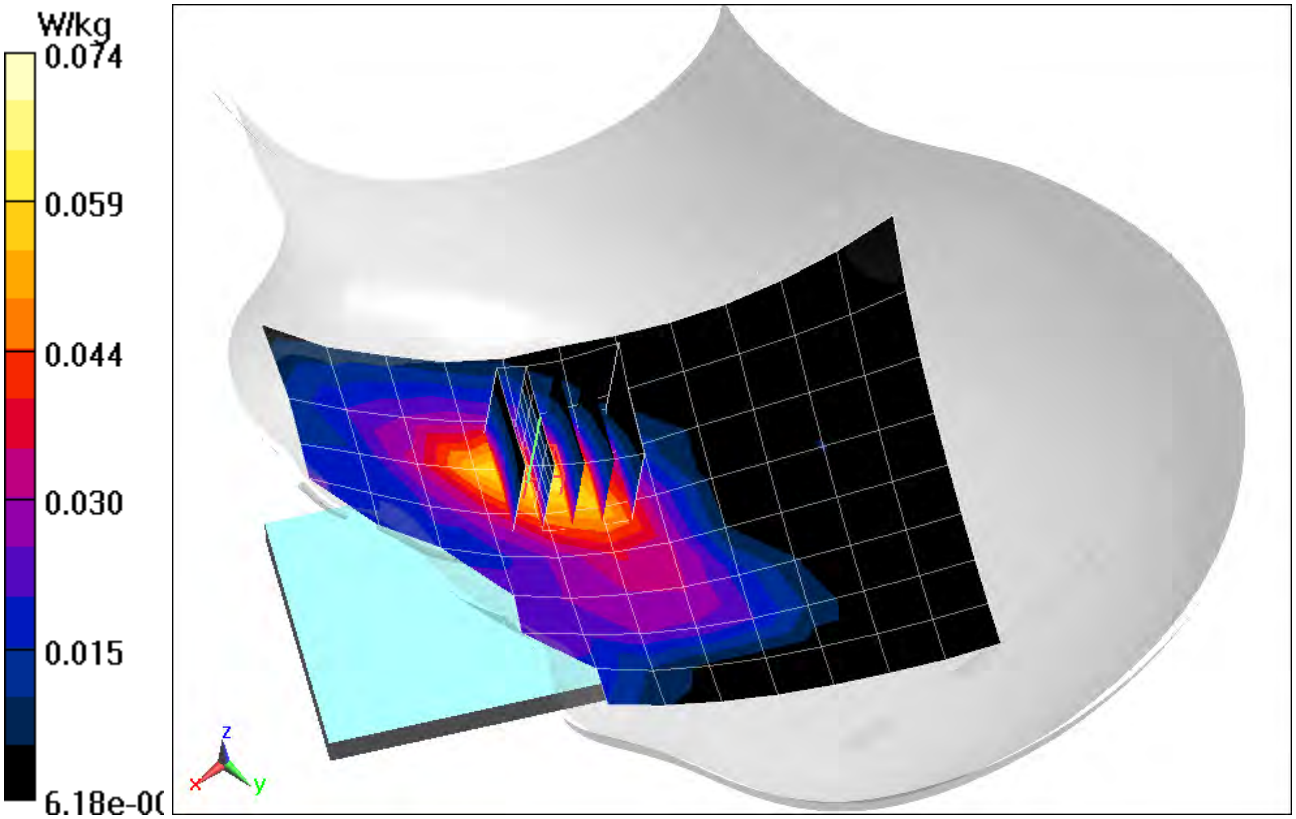
Communication System: UID 0, GSM; Frequency: 1880 MHz; Duty Cycle: 1:8.3
Medium: 1900 Head Medium parameters used:
f = 1880 MHz; σ = 1.434 S/m; ε_r = 38.729; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 06-03-2019; Ambient Temp: 21.6°C; Tissue Temp: 20.8°C

Probe: EX3DV4 - SN7308; ConvF(8.26, 8.26, 8.26) @ 1880 MHz; Calibrated: 8/23/2018
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1558; Calibrated: 10/3/2018
Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 1966
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: GSM 1900, Left Head, Cheek, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.062 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 0.0870 W/kg
SAR(1 g) = 0.053 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1290M

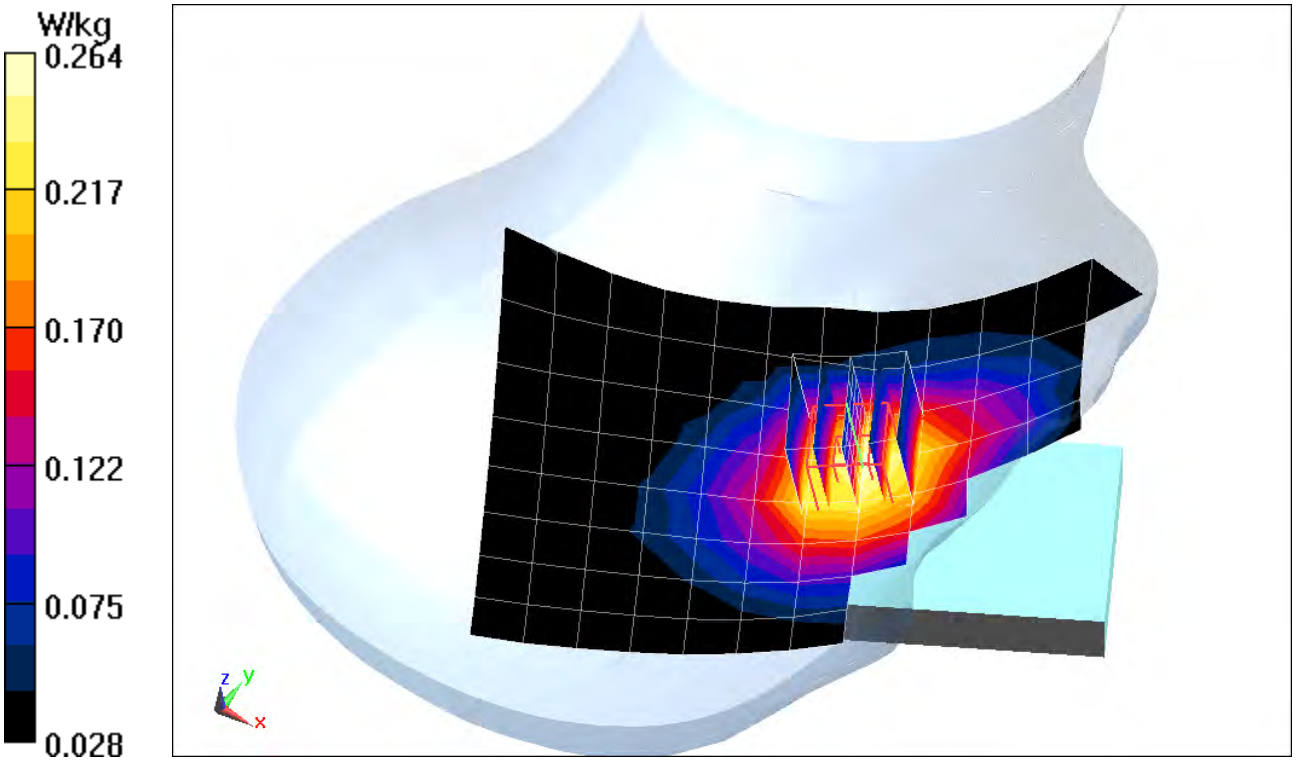
Communication System: UID 0, UMTS; Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.924 S/m; ε_r = 41.731; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 06-27-2019; Ambient Temp: 23.4°C; Tissue Temp: 21.9°C

Probe: EX3DV4 - SN7406; ConvF(9.78, 9.78, 9.78) @ 836.6 MHz; Calibrated: 5/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/8/2019
Phantom: SAM 30 with CRP v5.0 right; Type: QD000P40CD; Serial: TP:1759
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: UMTS 850, Right Head, Cheek, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.03 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.292 W/kg
SAR(1 g) = 0.223 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1298M

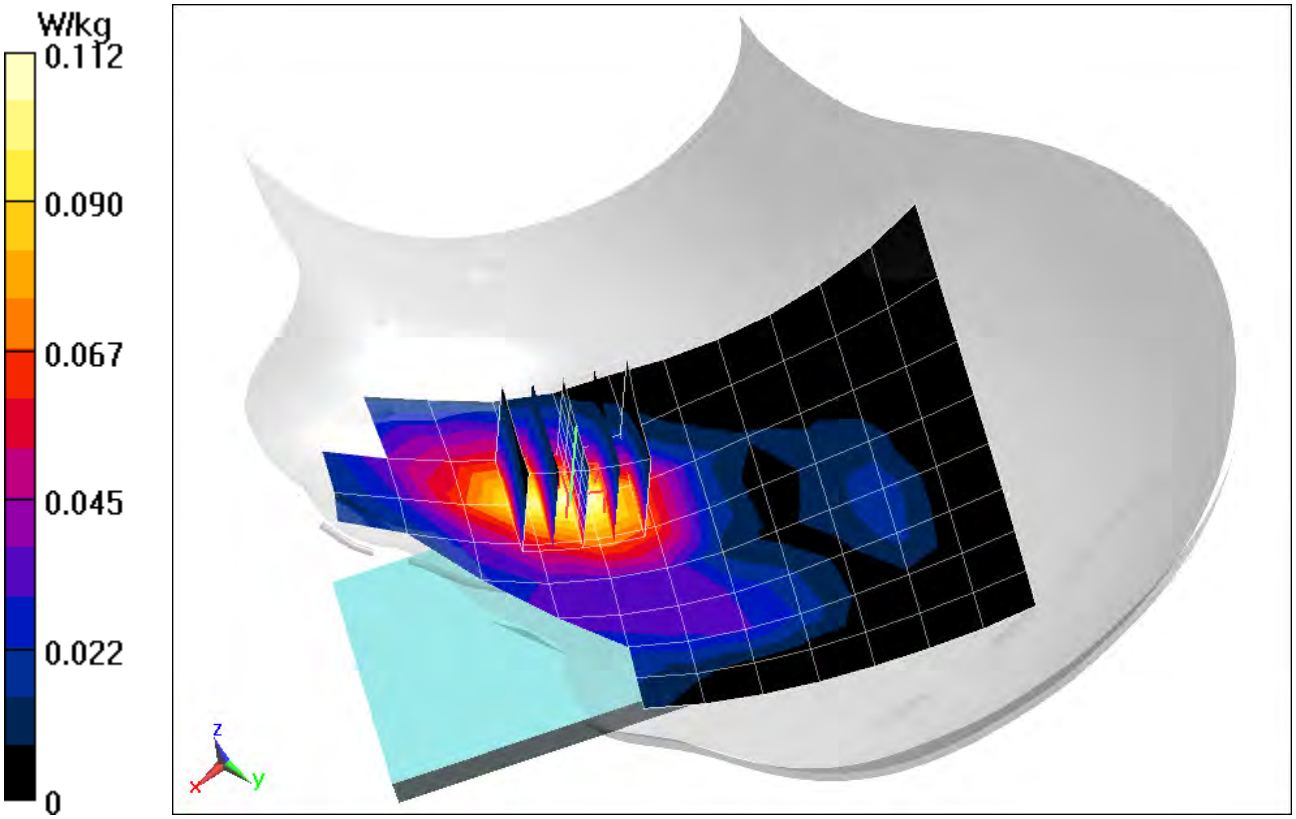
Communication System: UID 0, UMTS; Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium: 1750 Head Medium parameters used (interpolated):
f = 1732.4 MHz; σ = 1.361 S/m; ε_r = 41.048; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 05-31-2019; Ambient Temp: 21.6°C; Tissue Temp: 21.4°C

Probe: EX3DV4 - SN7357; ConvF(8.69, 8.69, 8.69) @ 1732.4 MHz; Calibrated: 4/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/18/2019
Phantom: Twin-SAM V5.0 Back Right; Type: QD 000 P40 CD; Serial: 1692
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: UMTS 1750, Left Head, Cheek, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.18 V/m; Power Drift = -0.15 dB
Peak SAR (extrapolated) = 0.243 W/kg
SAR(1 g) = 0.158 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN970U; Type: Portable Handset; Serial: 1298M

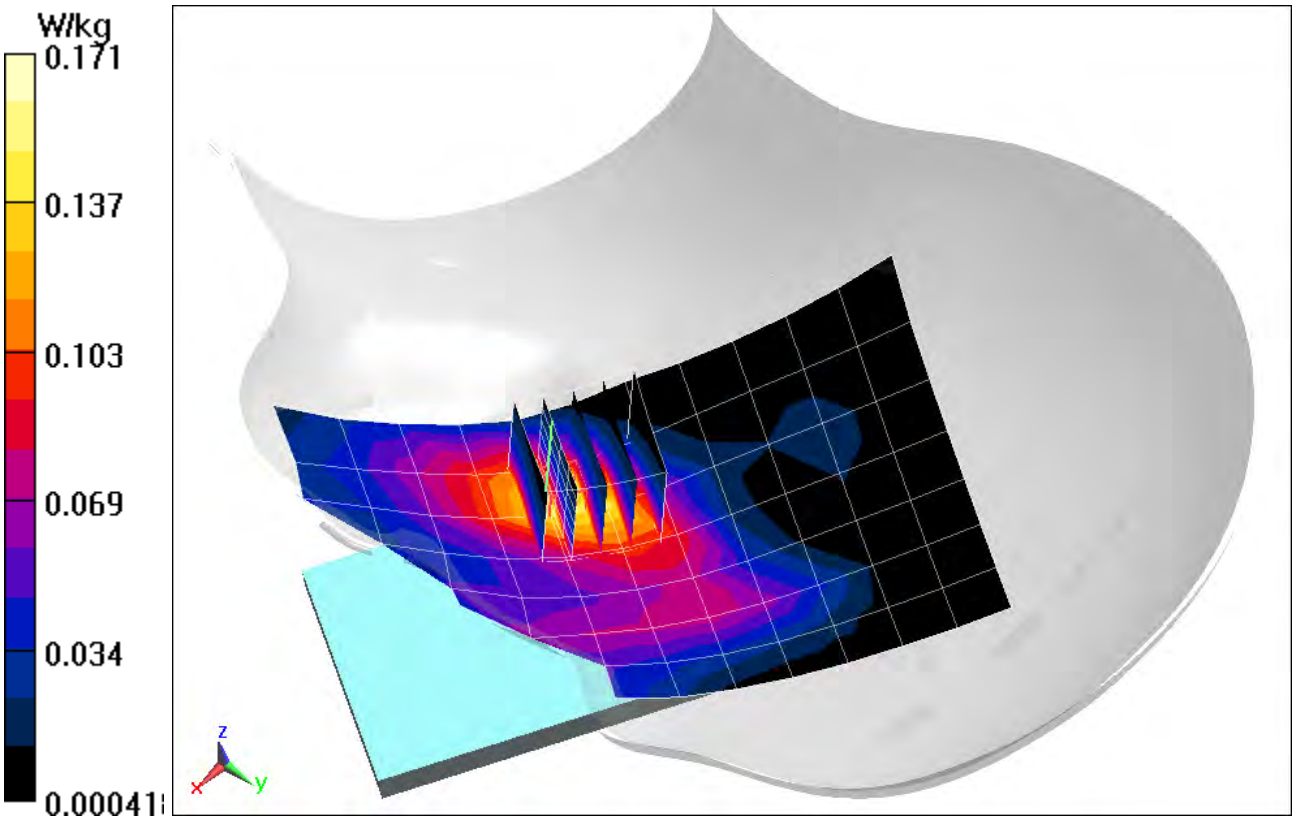
Communication System: UID 0, UMTS; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Head Medium parameters used:
f = 1880 MHz; σ = 1.434 S/m; ε_r = 38.729; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 06-03-2019; Ambient Temp: 21.6°C; Tissue Temp: 20.8°C

Probe: EX3DV4 - SN7308; ConvF(8.26, 8.26, 8.26) @ 1880 MHz; Calibrated: 8/23/2018
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1558; Calibrated: 10/3/2018
Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 1966
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: UMTS 1900, Left Head, Cheek, Mid.ch

Area Scan (8x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.928 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 0.204 W/kg
SAR(1 g) = 0.126 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1290M

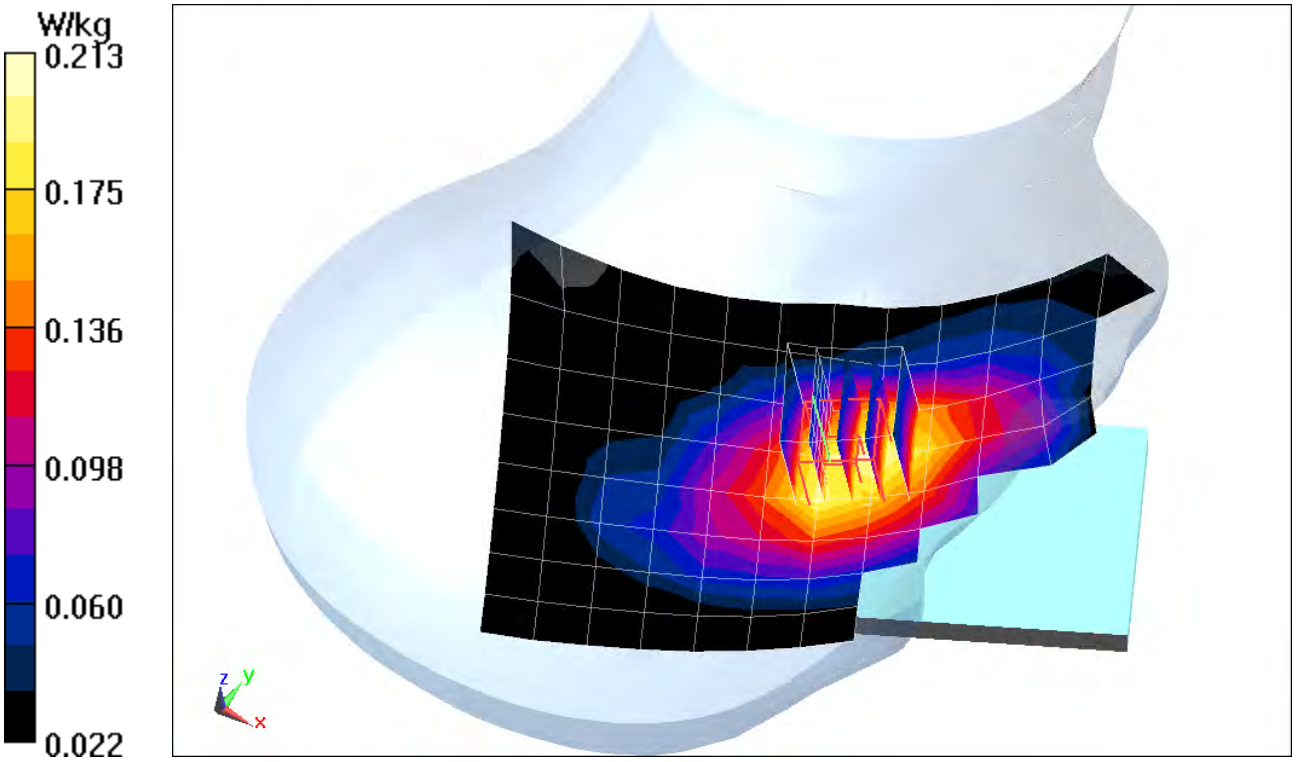
Communication System: UID 0, Cellular CDMA; Frequency: 820.1 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
f = 820.1 MHz; σ = 0.928 S/m; ε_r = 43.509; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 05-31-2019; Ambient Temp: 23.4°C; Tissue Temp: 20.9°C

Probe: EX3DV4 - SN7409; ConvF(9.67, 9.67, 9.67) @ 820.1 MHz; Calibrated: 6/25/2018
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1334; Calibrated: 6/18/2018
Phantom: SAM 30 with CRP v5.0 right; Type: QD000P40CD; Serial: TP:1759
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: Cell. EVDO Rev. A, Rule Part 90S, Right Head, Cheek, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.14 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.236 W/kg
SAR(1 g) = 0.178 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1290M

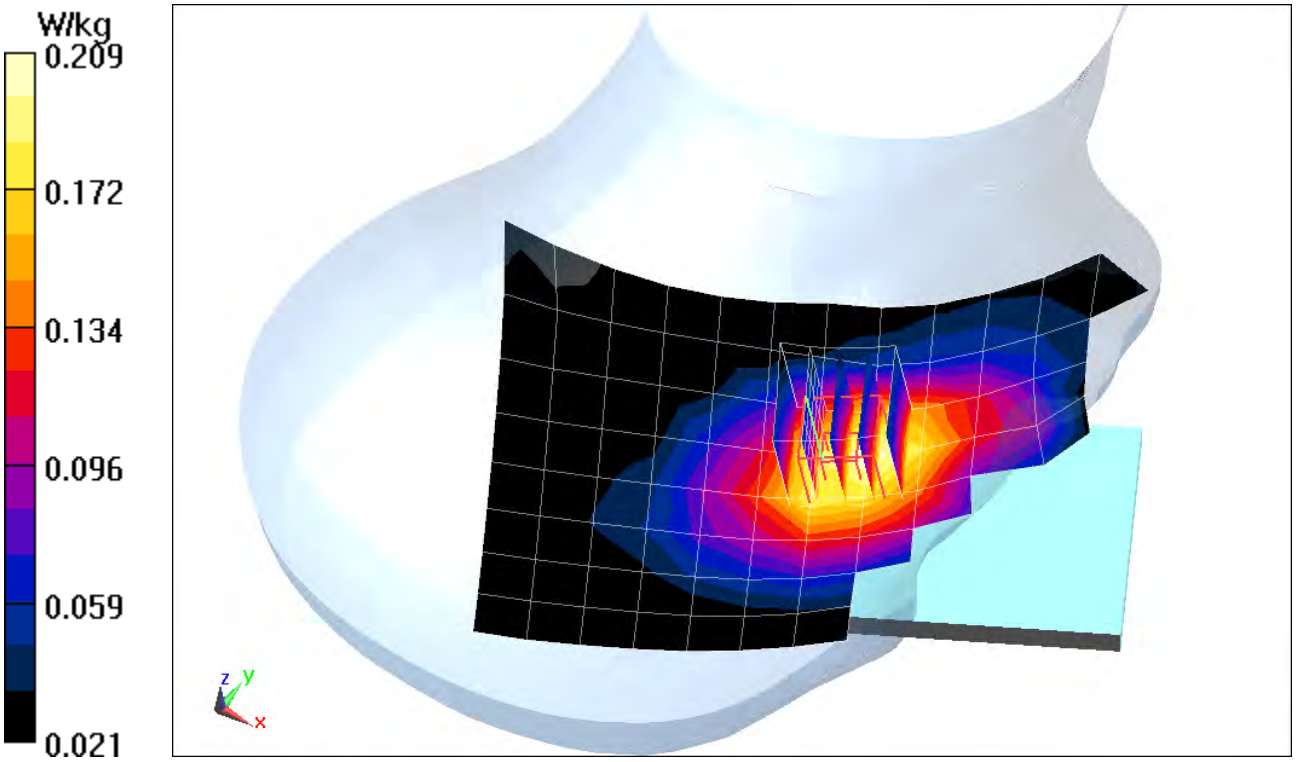
Communication System: UID 0, CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
f = 836.52 MHz; σ = 0.932 S/m; ε_r = 43.394; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 05-31-2019; Ambient Temp: 23.4°C; Tissue Temp: 20.9°C

Probe: EX3DV4 - SN7409; ConvF(9.67, 9.67, 9.67) @ 836.52 MHz; Calibrated: 6/25/2018
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1334; Calibrated: 6/18/2018
Phantom: SAM 30 with CRP v5.0 right; Type: QD000P40CD; Serial: TP:1759
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: Cell. EVDO Rev. A, Rule Part 22H, Right Head, Cheek, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.18 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.233 W/kg
SAR(1 g) = 0.177 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1298M

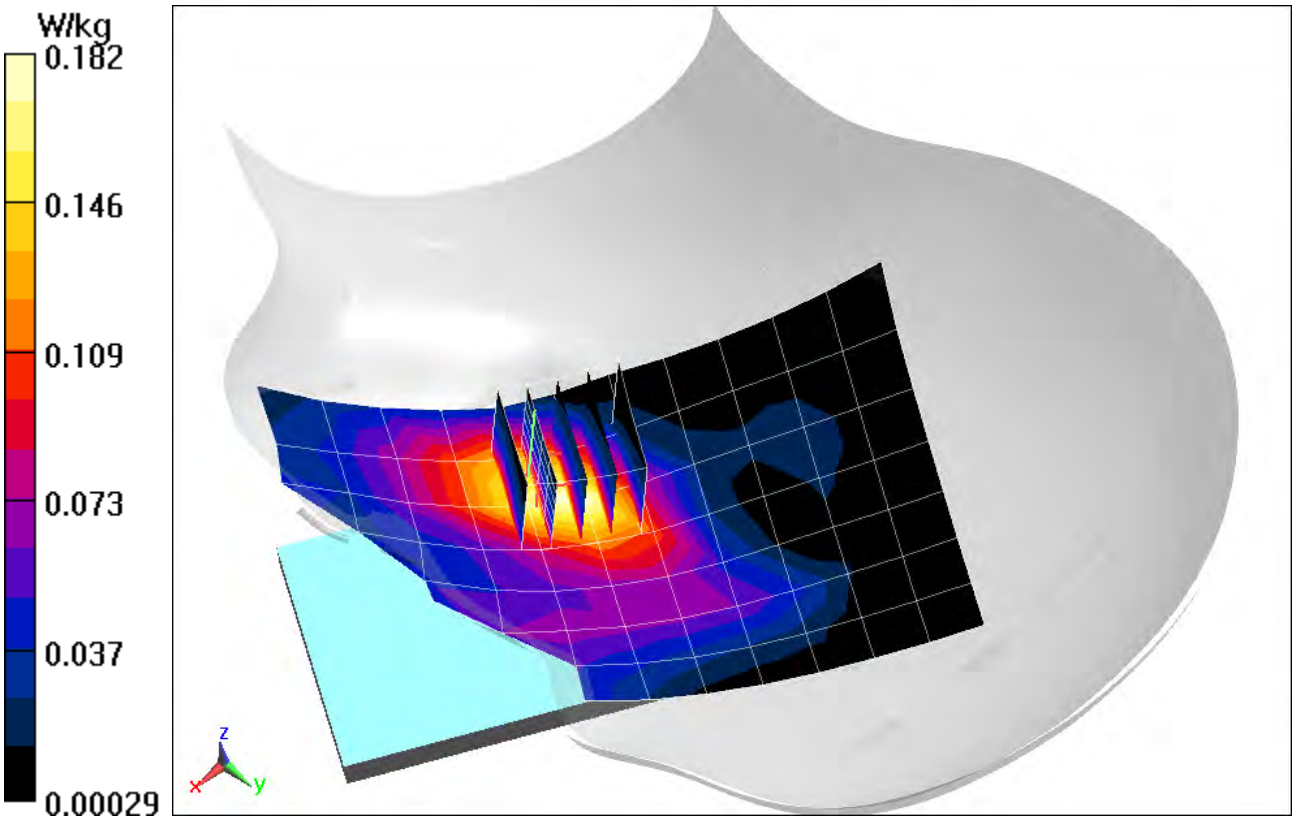
Communication System: UID 0, PCS CDMA; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Head Medium parameters used:
f = 1880 MHz; σ = 1.434 S/m; ε_r = 38.729; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 06-03-2019; Ambient Temp: 21.6°C; Tissue Temp: 20.8°C

Probe: EX3DV4 - SN7308; ConvF(8.26, 8.26, 8.26) @ 1880 MHz; Calibrated: 8/23/2018
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1558; Calibrated: 10/3/2018
Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 1966
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: PCS EVDO Rev. A, Left Head, Cheek, Mid.ch

Area Scan (8x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.18 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.222 W/kg
SAR(1 g) = 0.137 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1241M

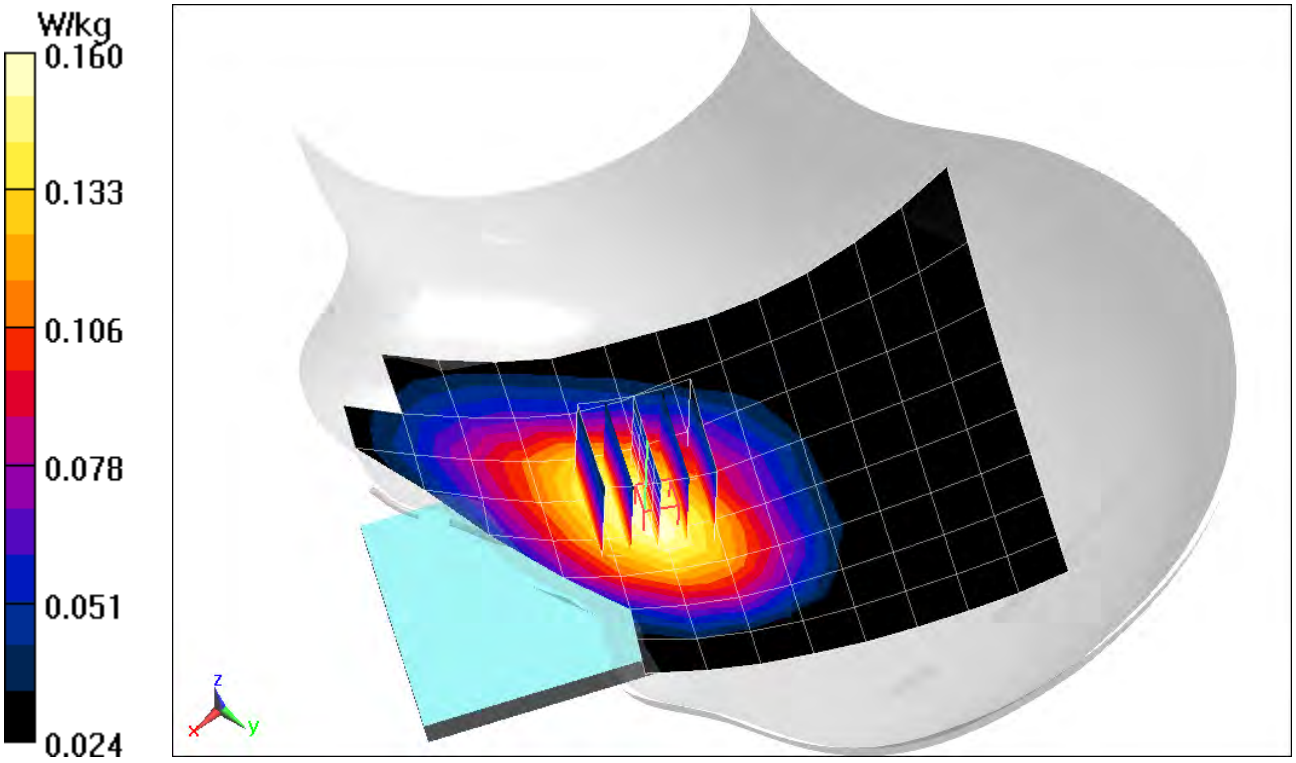
Communication System: UID 0, LTE Band 71; Frequency: 680.5 MHz; Duty Cycle: 1:1
Medium: 750 Head Medium parameters used (interpolated):
$f = 680.5$ MHz; $\sigma = 0.869$ S/m; $\varepsilon_r = 43.201$; $\rho = 1000$ kg/m^3
Phantom section: Left Section

Test Date: 06-04-2019; Ambient Temp: 23.2°C; Tissue Temp: 22.2°C

Probe: EX3DV4 - SN7357; ConvF(10.26, 10.26, 10.26) @ 680.5 MHz; Calibrated: 4/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/18/2019
Phantom: Twin-SAM V5.0 (30) Back Right; Type: QD 000 P40 CD; Serial: 1692
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 71, Left Head, Cheek, Mid.ch, 20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.37 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.170 W/kg
SAR(1 g) = 0.140 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1241M

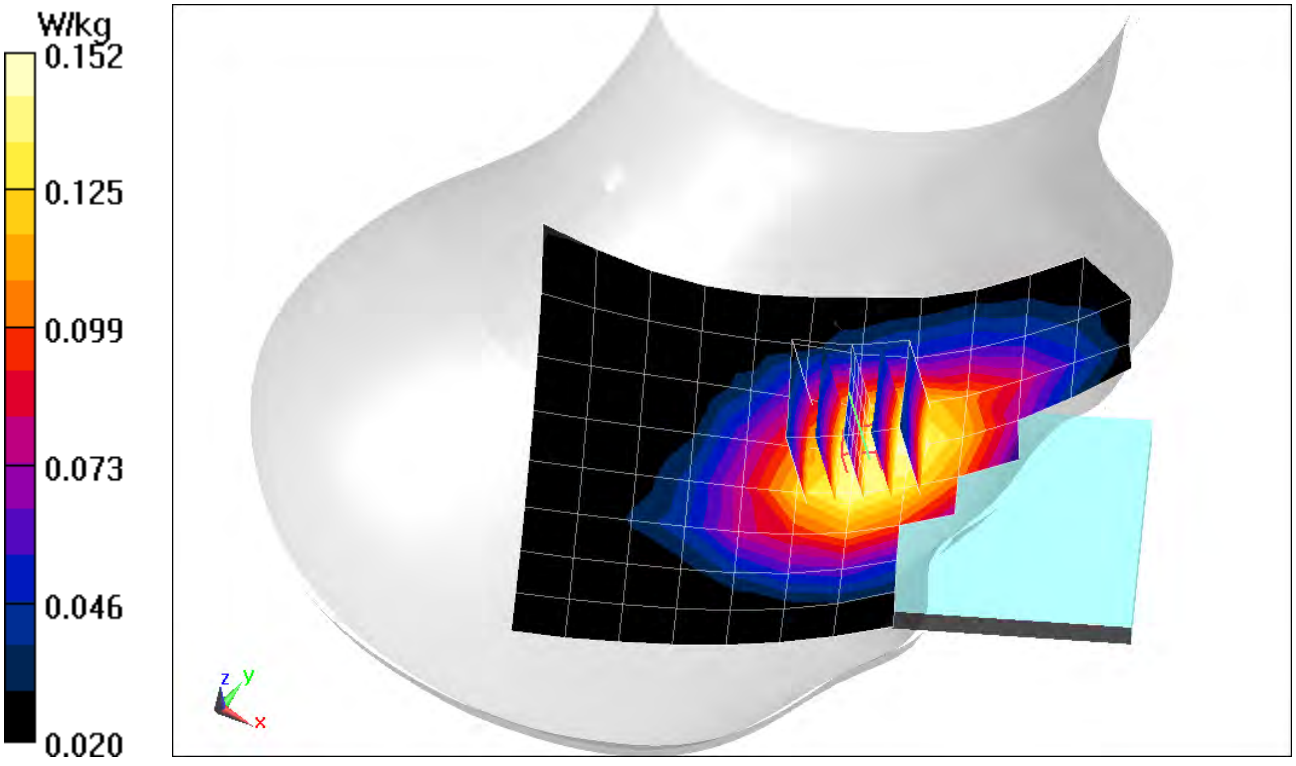
Communication System: UID 0, LTE Band 12; Frequency: 707.5 MHz; Duty Cycle: 1:1
Medium: 750 Head Medium parameters used (interpolated):
f = 707.5 MHz; σ = 0.879 S/m; ε_r = 43.119; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 06-04-2019; Ambient Temp: 23.2°C; Tissue Temp: 22.2°C

Probe: EX3DV4 - SN7357; ConvF(10.26, 10.26, 10.26) @ 707.5 MHz; Calibrated: 4/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/18/2019
Phantom: Twin-SAM V5.0 (30) Back Right; Type: QD 000 P40 CD; Serial: 1692
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 12, Right Head, Cheek, Mid.ch, 10 MHz Bandwidth, QPSK, 1 RB, 25 RB Offset

Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.86 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 0.162 W/kg
SAR(1 g) = 0.133 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1241M

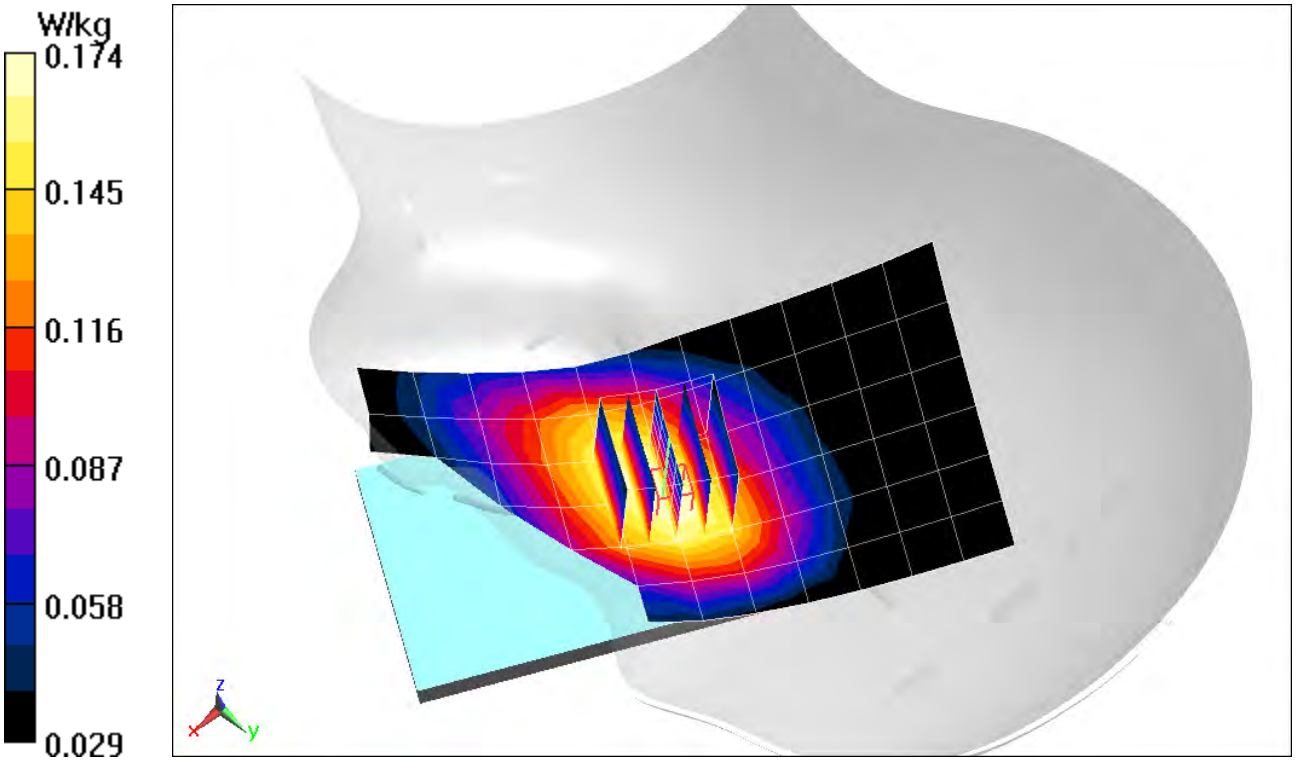
Communication System: UID 0, LTE Band 13; Frequency: 782 MHz; Duty Cycle: 1:1
Medium: 750 Head Medium parameters used (interpolated):
f = 782 MHz; σ = 0.905 S/m; ε_r = 42.873; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 06-04-2019; Ambient Temp: 23.2°C; Tissue Temp: 22.2°C

Probe: EX3DV4 - SN7357; ConvF(10.26, 10.26, 10.26) @ 782 MHz; Calibrated: 4/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/18/2019
Phantom: Twin-SAM V5.0 (30) Back Right; Type: QD 000 P40 CD; Serial: 1692
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 13, Left Head, Cheek, Mid.ch, QPSK,
10 MHz Bandwidth, 1 RB, 25 RB Offset

Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.79 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.187 W/kg
SAR(1 g) = 0.153 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1241M

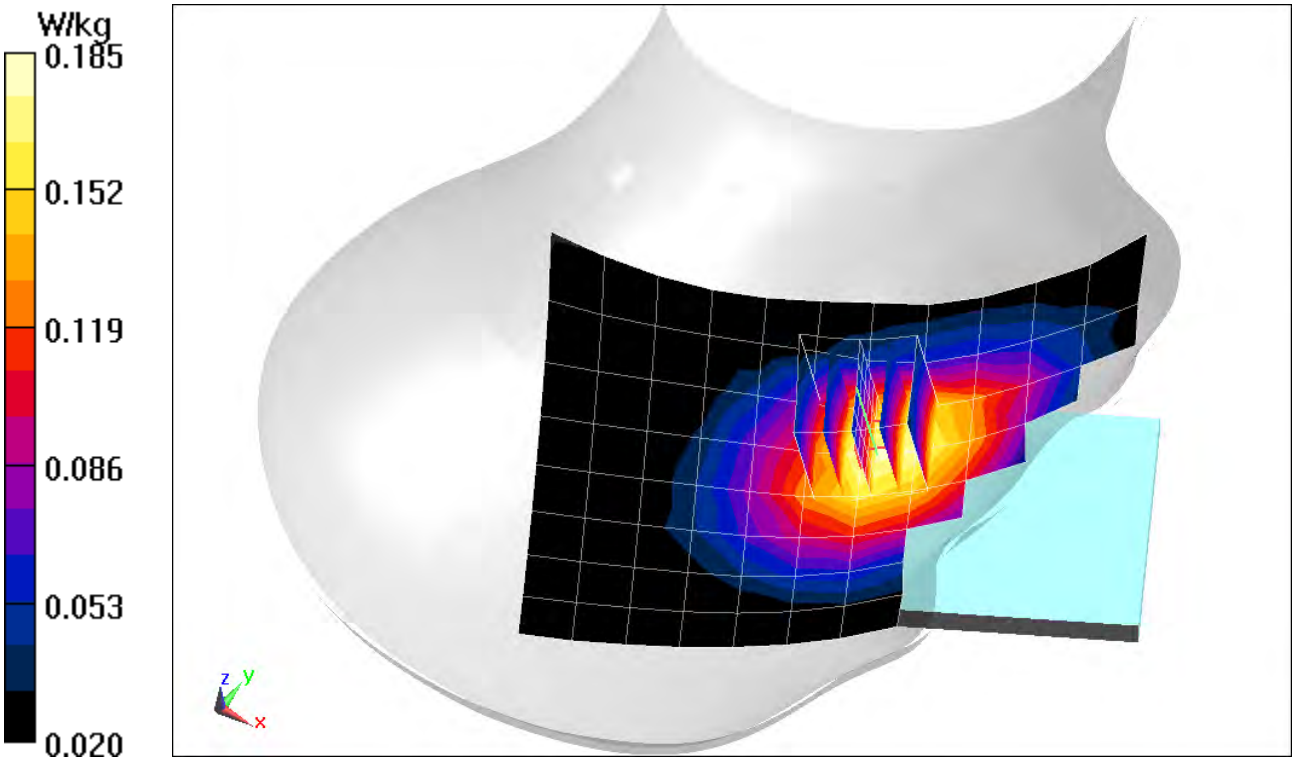
Communication System: UID 0, LTE Band 14; Frequency: 793 MHz; Duty Cycle: 1:1
Medium: 750 Head Medium parameters used (interpolated):
f = 793 MHz; σ = 0.909 S/m; ε_r = 42.839; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 06-04-2019; Ambient Temp: 23.2°C; Tissue Temp: 22.2°C

Probe: EX3DV4 - SN7357; ConvF(10.26, 10.26, 10.26) @ 793 MHz; Calibrated: 4/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/18/2019
Phantom: Twin-SAM V5.0 (30) Back Right; Type: QD 000 P40 CD; Serial: 1692
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 14, Right Head, Cheek, Mid.ch, 10 MHz Bandwidth, QPSK, 1 RB, 25 RB Offset

Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.95 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.199 W/kg
SAR(1 g) = 0.160 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1291M

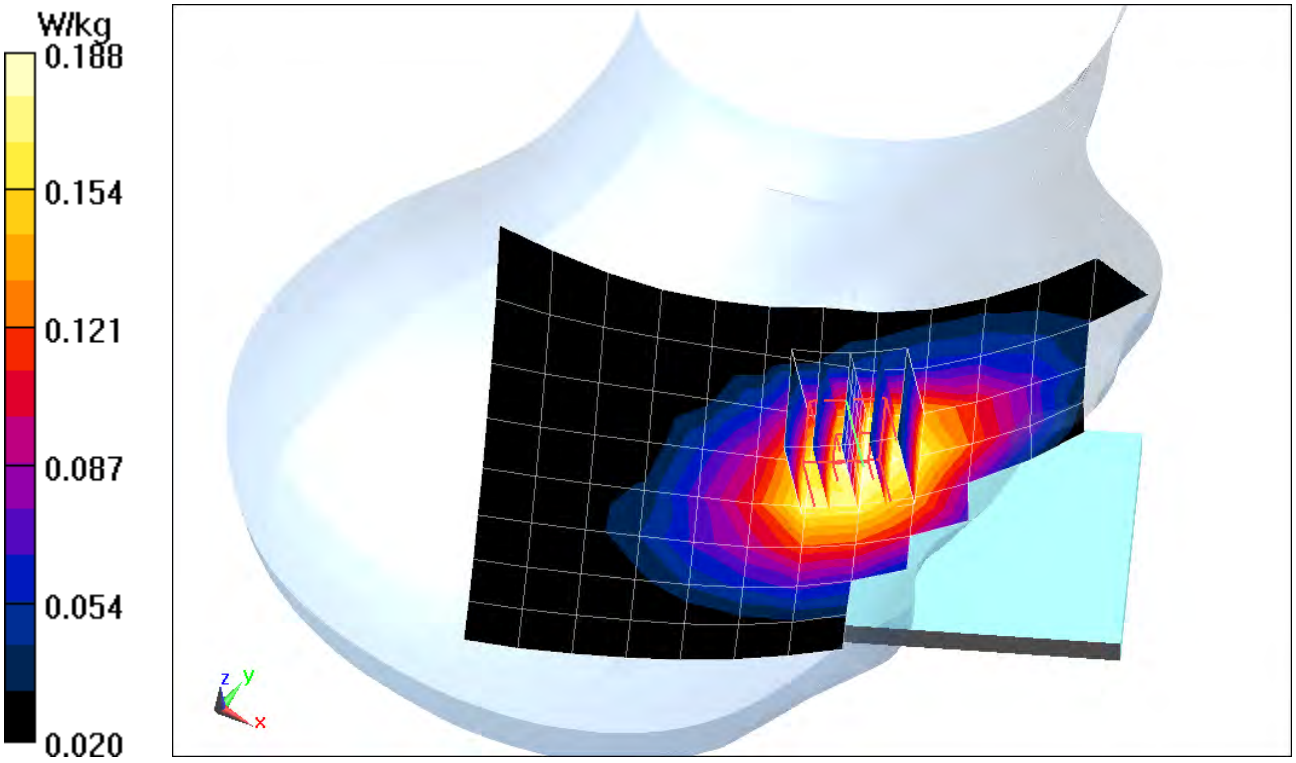
Communication System: UID 0, LTE Band 26; Frequency: 831.5 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
f = 831.5 MHz; σ = 0.917 S/m; ε_r = 42.537; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 06-12-2019; Ambient Temp: 20.9°C; Tissue Temp: 20.3°C

Probe: EX3DV4 - SN7406; ConvF(9.78, 9.78, 9.78) @ 831.5 MHz; Calibrated: 5/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/8/2019
Phantom: SAM 30 with CRP v5.0 right; Type: QD000P40CD; Serial: TP:1759
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 26 (Cell.), Right Head, Cheek, Mid.ch, 15 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.98 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.206 W/kg
SAR(1 g) = 0.160 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 0982M

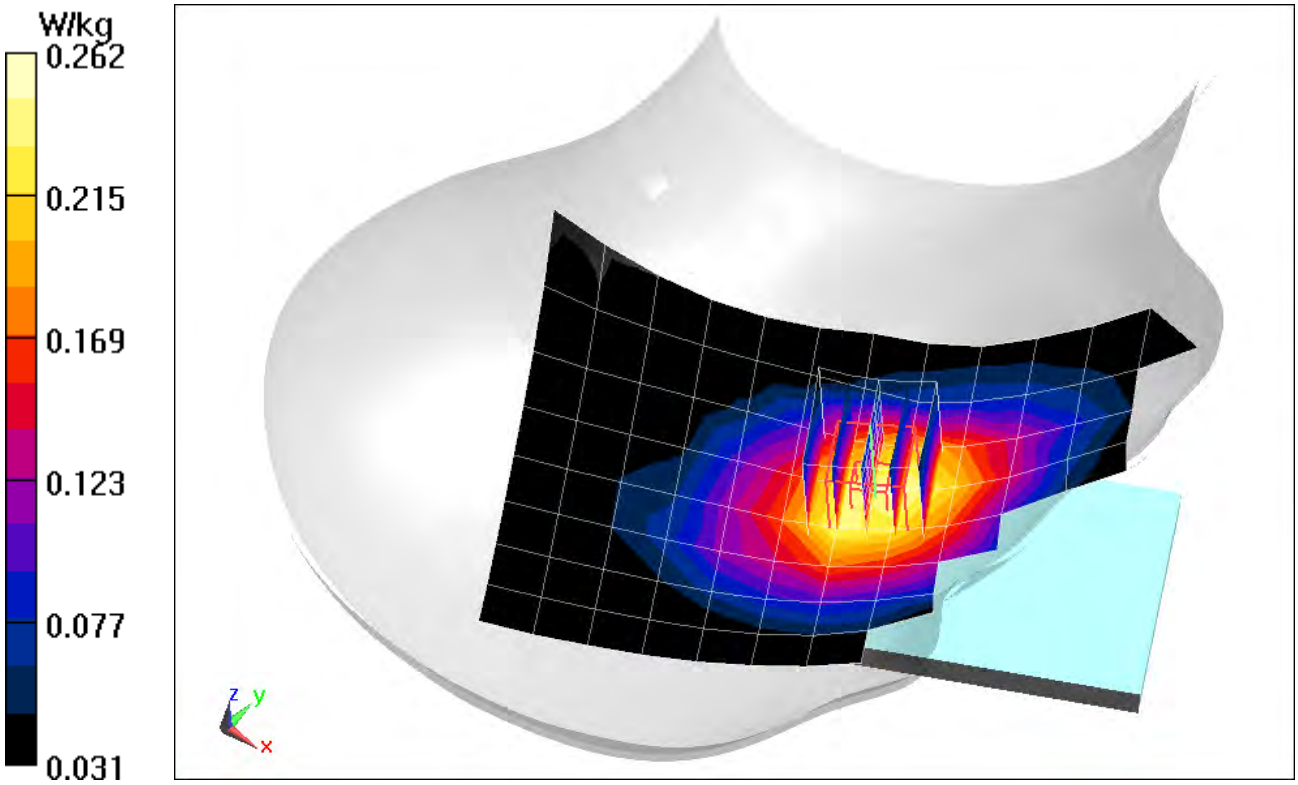
Communication System: UID 0, LTE Band 5 (Cell.); Frequency: 836.5 MHz; Duty Cycle: 1:1
Medium: 835 MHz Head Medium parameters used (interpolated):
$f = 836.5$ MHz; $\sigma = 0.933$ S/m; $\varepsilon_r = 42.075$; $\rho = 1000$ kg/m^3
Phantom section: Right Section

Test Date: 07-03-2019; Ambient Temp: 21.9°C; Tissue Temp: 22.0°C

Probe: EX3DV4 - SN7406; ConvF(9.78, 9.78, 9.78) @ 836.5 MHz; Calibrated: 5/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/8/2019
Phantom: Twin-SAM V5.0 Right 30; Type: QD 000 P40 CD; Serial: 1759
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 5 (Cell.), Right Head, Cheek, Mid.ch, 10 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.64 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 0.282 W/kg
SAR(1 g) = 0.223 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1291M

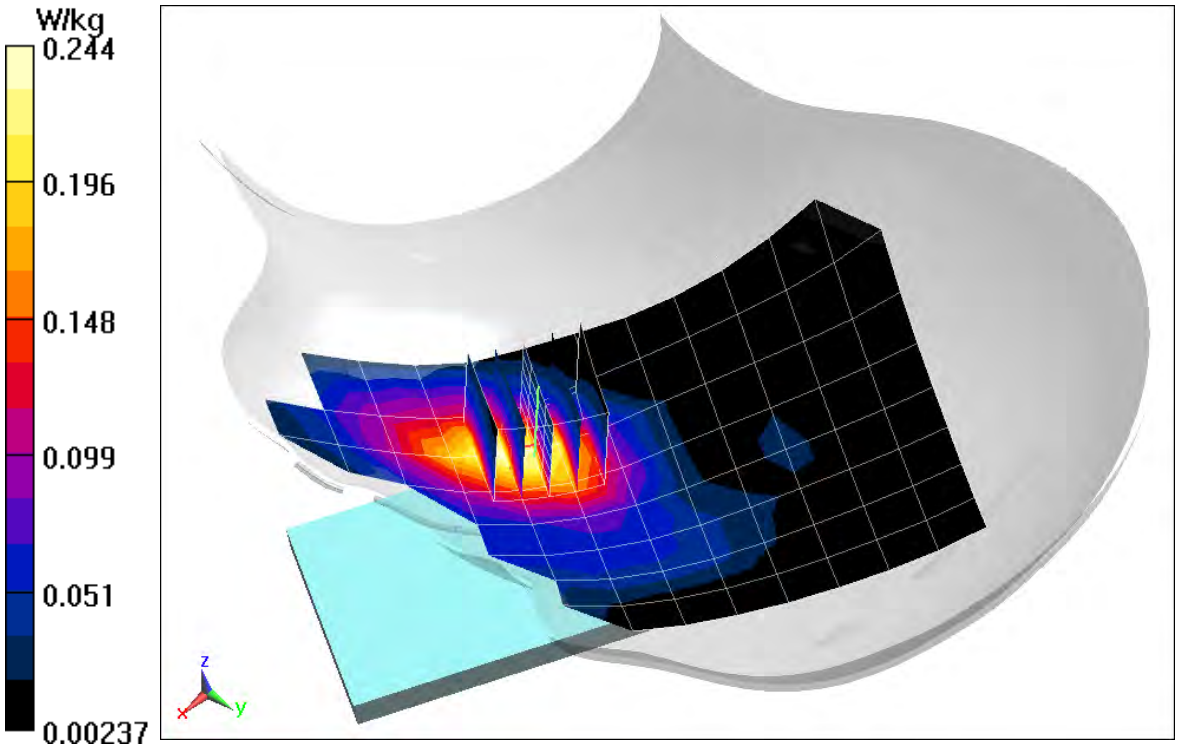
Communication System: UID 0, LTE Band 66 (AWS); Frequency: 1770 MHz; Duty Cycle: 1:1
Medium: 1750 Head Medium parameters used (interpolated):
$f = 1770$ MHz; $\sigma = 1.387$ S/m; $\varepsilon_r = 41.426$; $\rho = 1000$ kg/m^3
Phantom section: Left Section

Test Date: 06-03-2019; Ambient Temp: 21.2°C; Tissue Temp: 20.5°C

Probe: EX3DV4 - SN7357; ConvF(8.69, 8.69, 8.69) @ 1770 MHz; Calibrated: 4/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/18/2019
Phantom: Twin-SAM V5.0 Back Right; Type: QD 000 P40 CD; Serial: 1692
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 66 (AWS), Left Head, Cheek, High.ch, 20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.67 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 0.287 W/kg
SAR(1 g) = 0.185 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1289M

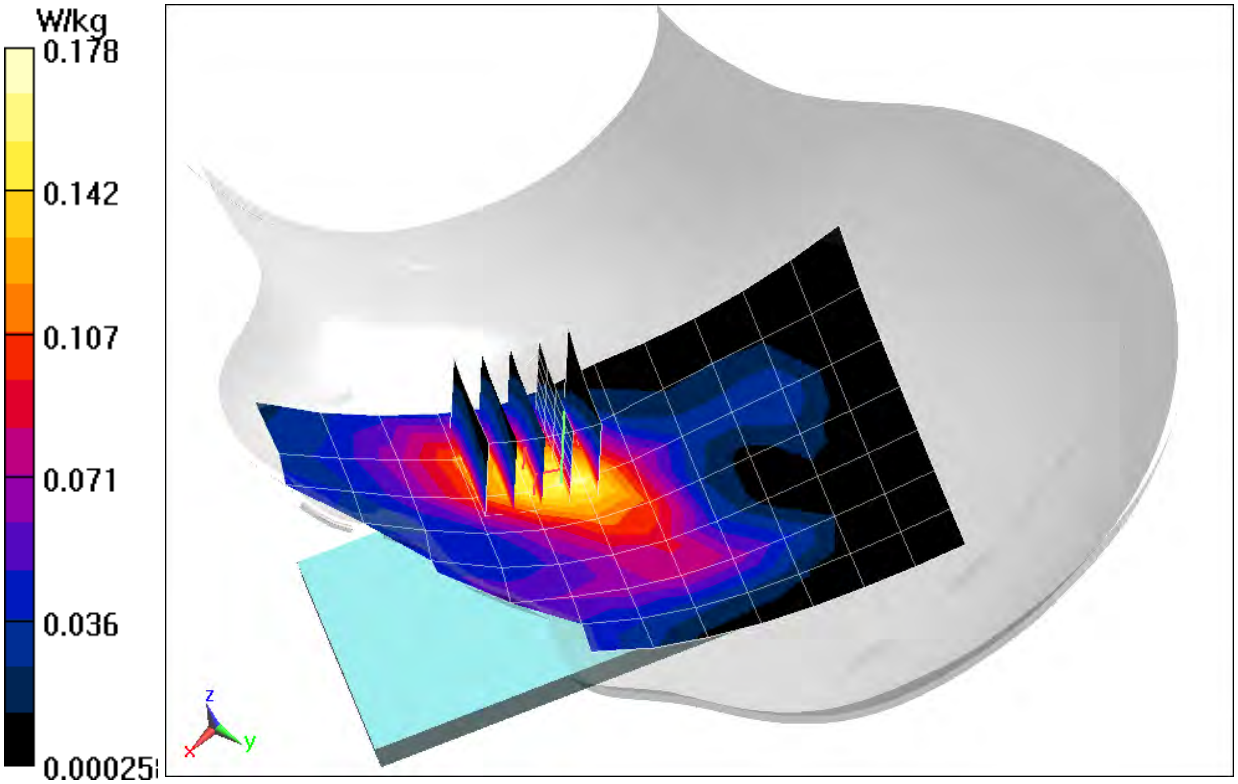
Communication System: UID 0, LTE Band 25 (PCS); Frequency: 1882.5 MHz; Duty Cycle: 1:1
Medium: 1900 Head Medium parameters used (interpolated):
f = 1882.5 MHz; σ = 1.437 S/m; ε_r = 38.718; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 06-03-2019; Ambient Temp: 21.6°C; Tissue Temp: 20.8°C

Probe: EX3DV4 - SN7308; ConvF(8.26, 8.26, 8.26) @ 1882.5 MHz; Calibrated: 8/23/2018
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1558; Calibrated: 10/3/2018
Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 1966
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 25 (PCS), Left Head, Cheek, Mid.ch, 20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset

Area Scan (8x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.23 V/m; Power Drift = -0.18 dB
Peak SAR (extrapolated) = 0.216 W/kg
SAR(1 g) = 0.133 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1286M

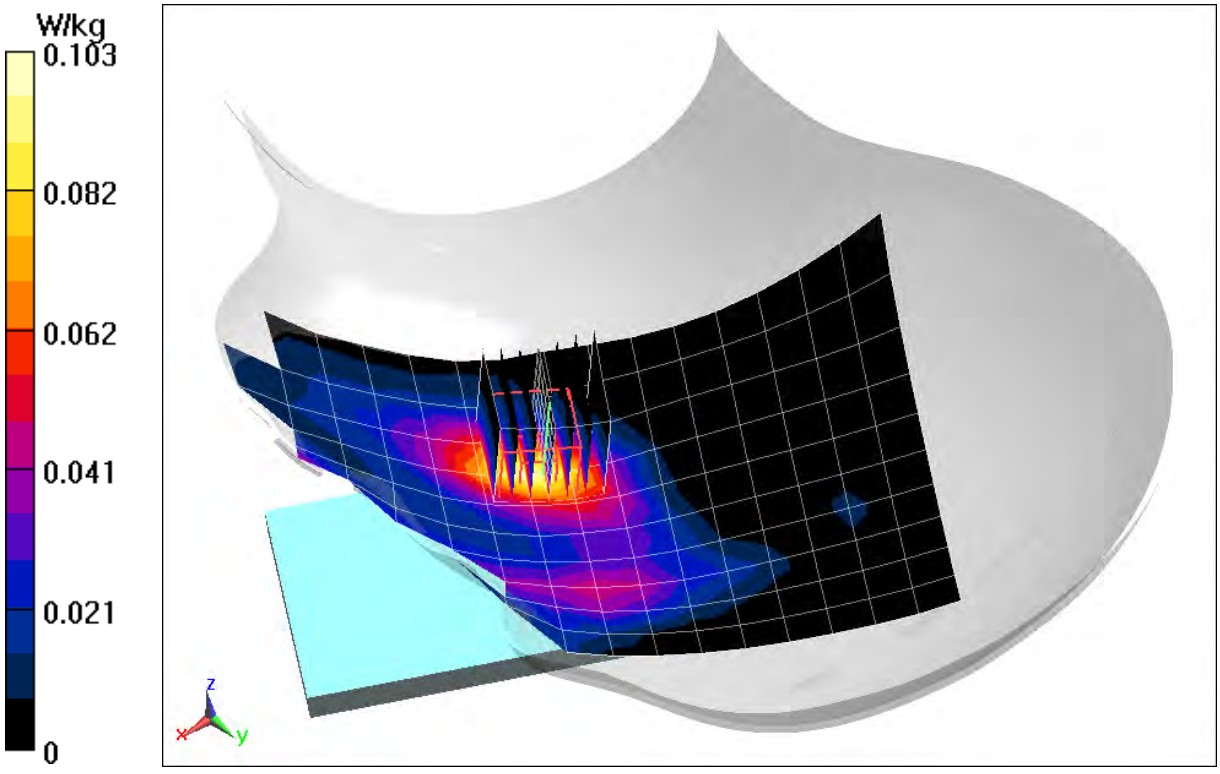
Communication System: UID 0, LTE Band 30; Frequency: 2310 MHz; Duty Cycle: 1:1
Medium: 2450 Head Medium parameters used:
f = 2310 MHz; σ = 1.731 S/m; ε_r = 38.447; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 05-30-2019; Ambient Temp: 22.7°C; Tissue Temp: 21.5°C

Probe: EX3DV4 - SN3589; ConvF(6.77, 6.77, 6.77) @ 2310 MHz; Calibrated: 1/25/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 8/22/2018
Phantom: Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1647
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 30, Left Head, Cheek, Mid.ch, 10 MHz Bandwidth, QPSK, 1 RB, 25 RB Offset

Area Scan (11x18x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.986 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.129 W/kg
SAR(1 g) = 0.068 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1286M

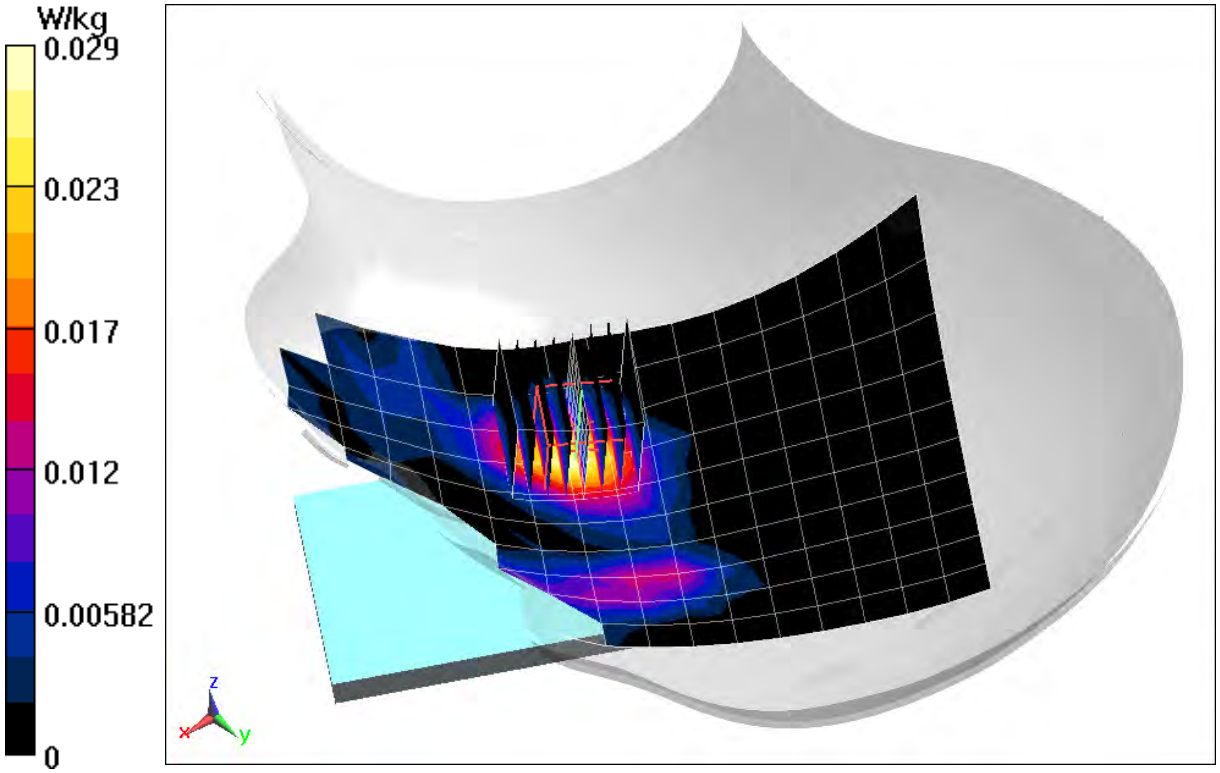
Communication System: UID 0, _LTE Band 7; Frequency: 2535 MHz; Duty Cycle: 1:1
Medium: 2450 Head Medium parameters used (interpolated):
$f = 2535$ MHz; $\sigma = 1.92$ S/m; $\varepsilon_r = 38.039$; $\rho = 1000$ kg/m^3
Phantom section: Left Section

Test Date: 06-03-2019; Ambient Temp: 22.5°C; Tissue Temp: 21.9°C

Probe: EX3DV4 - SN3589; ConvF(6.25, 6.25, 6.25) @ 2535 MHz; Calibrated: 1/25/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 8/22/2018
Phantom: Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1647
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 7, Left Head, Cheek, Mid.ch, QPSK,
20 MHz Bandwidth, 1 RB, 99 RB Offset

Area Scan (11x18x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.466 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.181 W/kg
SAR(1 g) = 0.095 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1286M

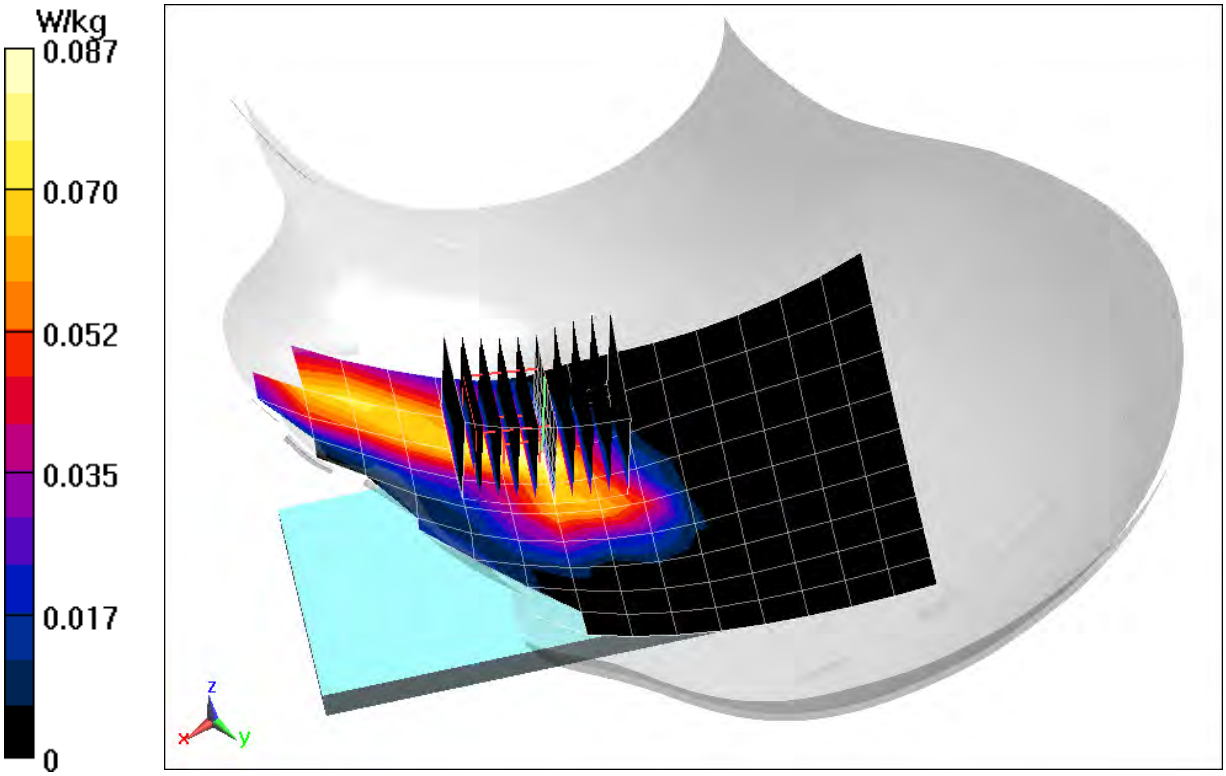
Communication System: UID 0, LTE Band 48; Frequency: 3646.7 MHz; Duty Cycle: 1:1.58
Medium: 3500 Head Medium parameters used (interpolated):
f = 3646.7 MHz; σ = 2.97 S/m; ε_r = 38.494; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 06-17-2019; Ambient Temp: 22.5°C; Tissue Temp: 20.6°C

Probe: EX3DV4 - SN3589; ConvF(6.02, 6.02, 6.02) @ 3646.7 MHz; Calibrated: 1/25/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 8/22/2018
Phantom: Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1647
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 48, Left Head, Cheek, Mid-High.ch, QPSK, 20 MHz Bandwidth, 1 RB, 0 RB Offset

Area Scan (10x17x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (8x10x8)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 4.331 V/m; Power Drift = 0.20 dB
Peak SAR (extrapolated) = 0.124 W/kg
SAR(1 g) = 0.045 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1020M

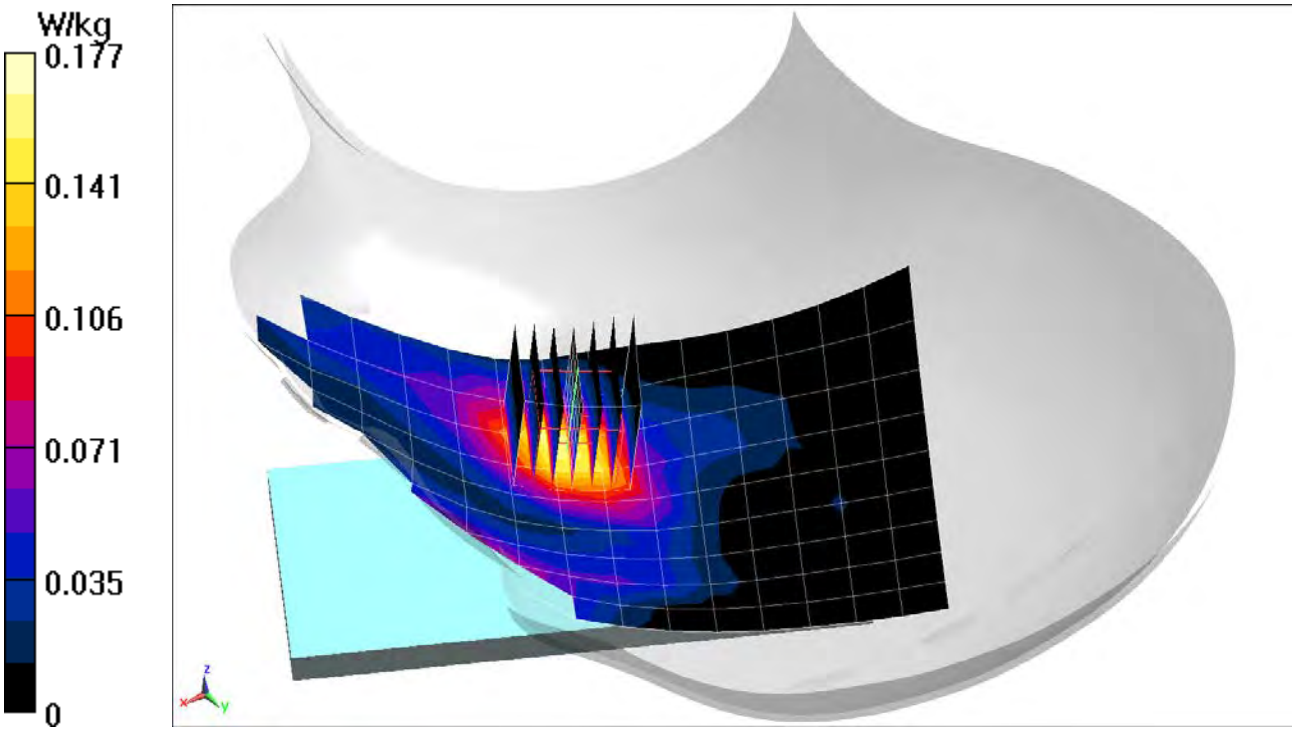
Communication System: UID 0, LTE Band 41 (Class 2); Frequency: 2593 MHz; Duty Cycle: 1:2.31
Medium: 2450 Head Medium parameters used (interpolated):
$f = 2593$ MHz; $\sigma = 1.92$ S/m; $\varepsilon_r = 39.175$; $\rho = 1000$ kg/m^3
Phantom section: Left Section

Test Date: 07-01-2019; Ambient Temp: 22.1°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN3589; ConvF(6.25, 6.25, 6.25) @ 2593 MHz; Calibrated: 1/25/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 8/22/2018
Phantom: Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1647
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 41 (PC2) ULCA, Left Head, Cheek, Mid.ch, QPSK,
PCC: 20 MHz Bandwidth, QPSK, Ch. 40620, 1 RB, 0 RB Offset
SCC: 20 MHz Bandwidth, QPSK, Ch. 40422, 1 RB, 99 RB Offset

Area Scan (10x17x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.153 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 0.214 W/kg
SAR(1 g) = 0.117 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1202M

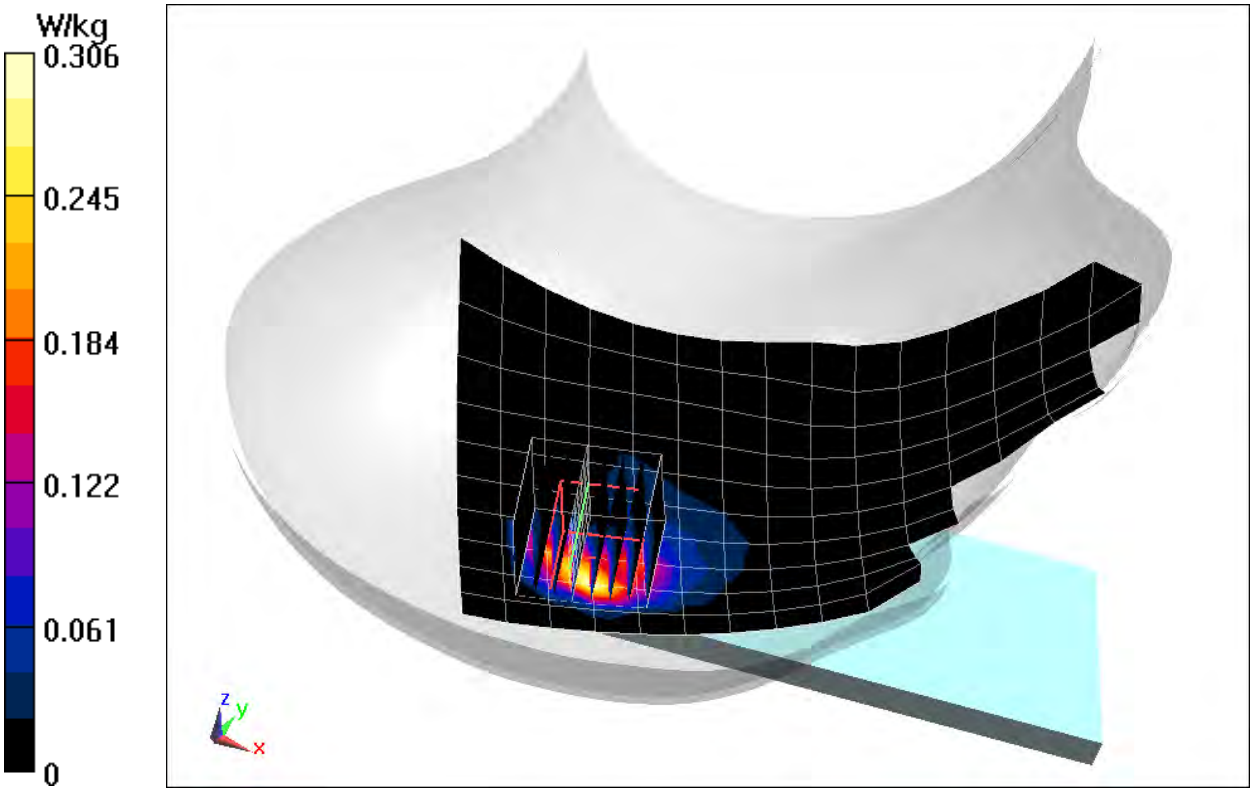
Communication System: UID 0, _IEEE 802.11b; Frequency: 2412 MHz; Duty Cycle: 1:1
Medium: 2450 Head Medium parameters used (interpolated):
f = 2412 MHz; σ = 1.79 S/m; ε_r = 40.011; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 06-24-2019; Ambient Temp: 21.4°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN3589; ConvF(6.46, 6.46, 6.46) @ 2412 MHz; Calibrated: 1/25/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 8/22/2018
Phantom: Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1647
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: IEEE 802.11b, 22 MHz Bandwidth, Antenna 1, Right Head, Tilt, Ch 1, 1 Mbps

Area Scan (11x18x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x8x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.010 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.643 W/kg
SAR(1 g) = 0.222 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1050M

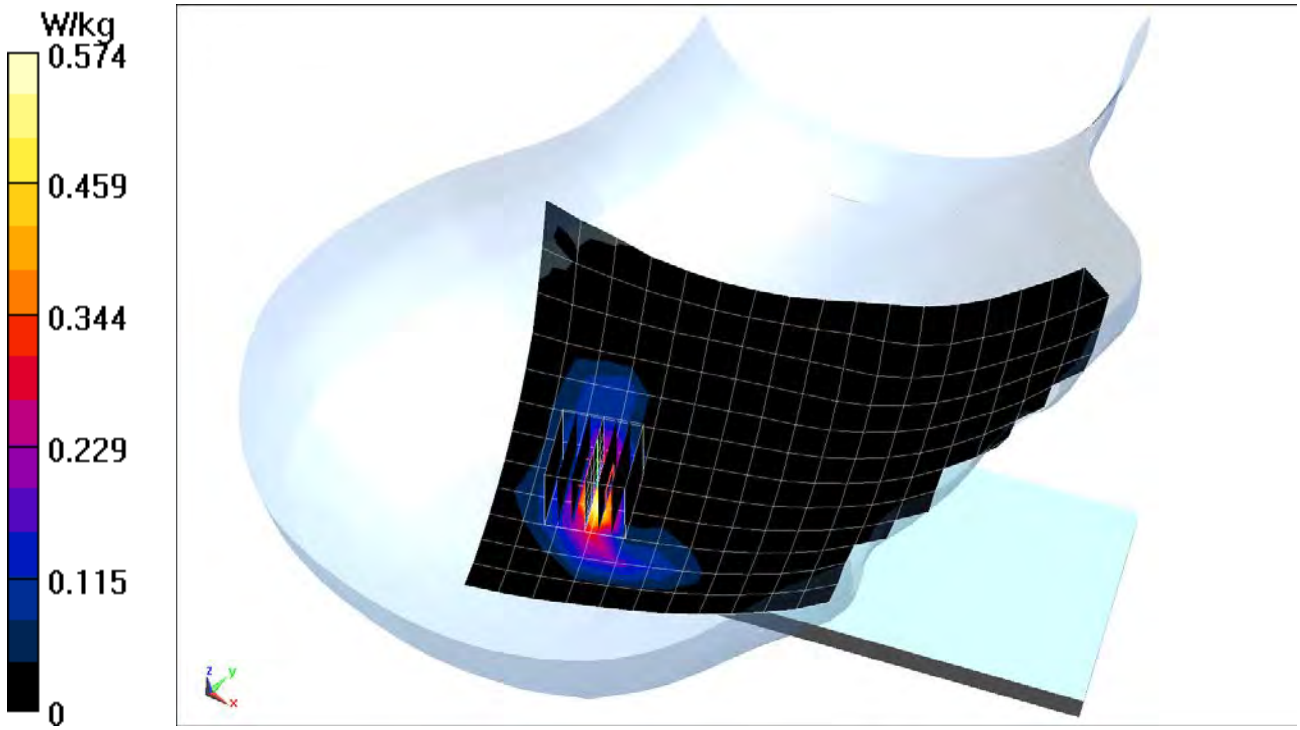
Communication System: UID 0, _IEEE 802.11ac; Frequency: 5290 MHz; Duty Cycle: 1:1
Medium: 5GHzHead Medium parameters used (interpolated):
f = 5290 MHz; σ = 4.742 S/m; ε_r = 35.944; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 06-24-2019; Ambient Temp: 20.5°C; Tissue Temp: 20.5°C

Probe: EX3DV4 - SN7406; ConvF(5.54, 5.54, 5.54) @ 5290 MHz; Calibrated: 5/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/8/2019
Phantom: SAM with CRP v5.0 (Right); Type: QD000P40CD; Serial: TP:1759
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: IEEE 802.11ac, U-NII-2A, 80 MHz Bandwidth, Antenna 1, Right Head, Tilt, Ch 58, 29.3 Mbps

Area Scan (13x21x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 2.660 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 1.27 W/kg
SAR(1 g) = 0.262 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1202M

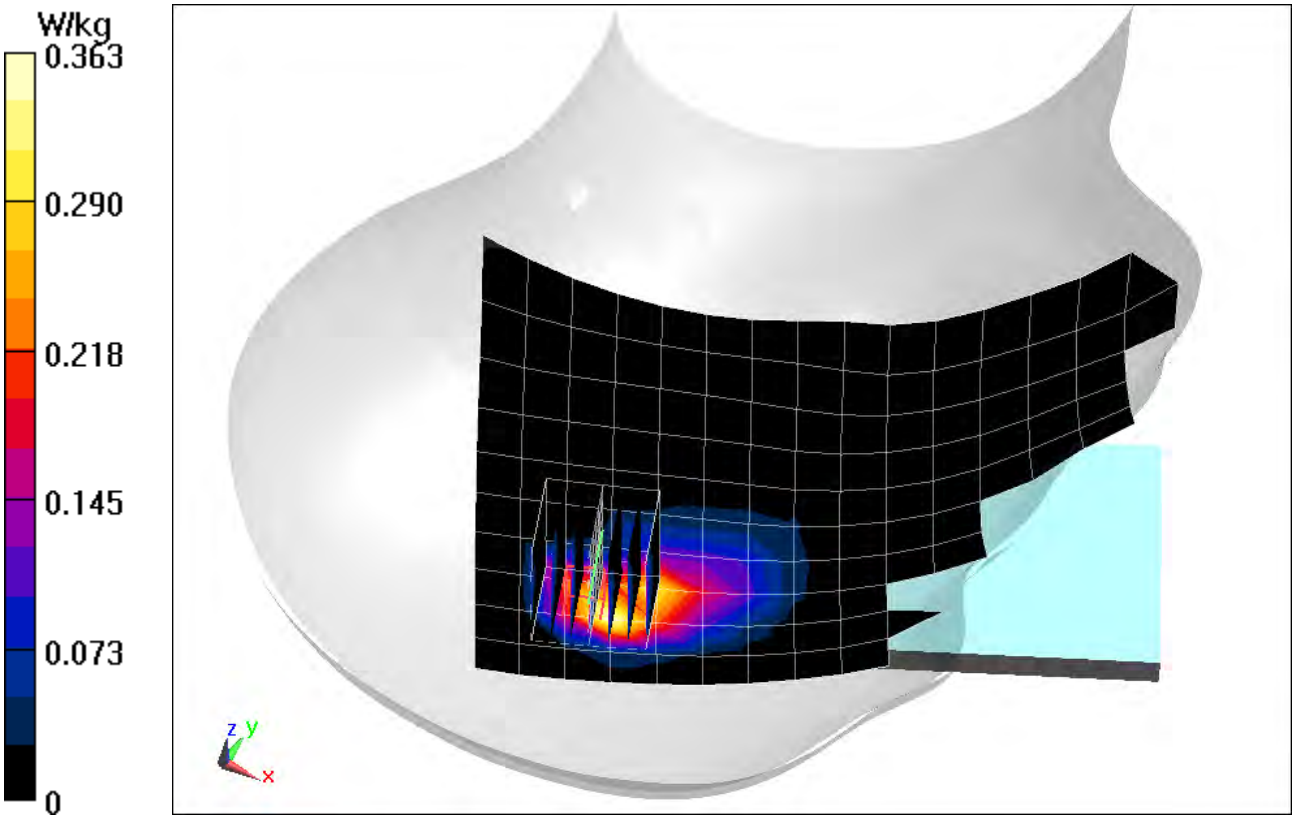
Communication System: UID 0, Bluetooth; Frequency: 2441 MHz; Duty Cycle: 1:1.297
Medium: 2450 Head Medium parameters used (interpolated):
f = 2441 MHz; σ = 1.812 S/m; ε_r = 39.968; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 06-24-2019; Ambient Temp: 21.4°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN3589; ConvF(6.46, 6.46, 6.46) @ 2441 MHz; Calibrated: 1/25/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 8/22/2018
Phantom: Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1647
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: Bluetooth, Right Head, Cheek, Ch 39, 1 Mbps

Area Scan (11x19x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.87 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 0.805 W/kg
SAR(1 g) = 0.259 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1290M

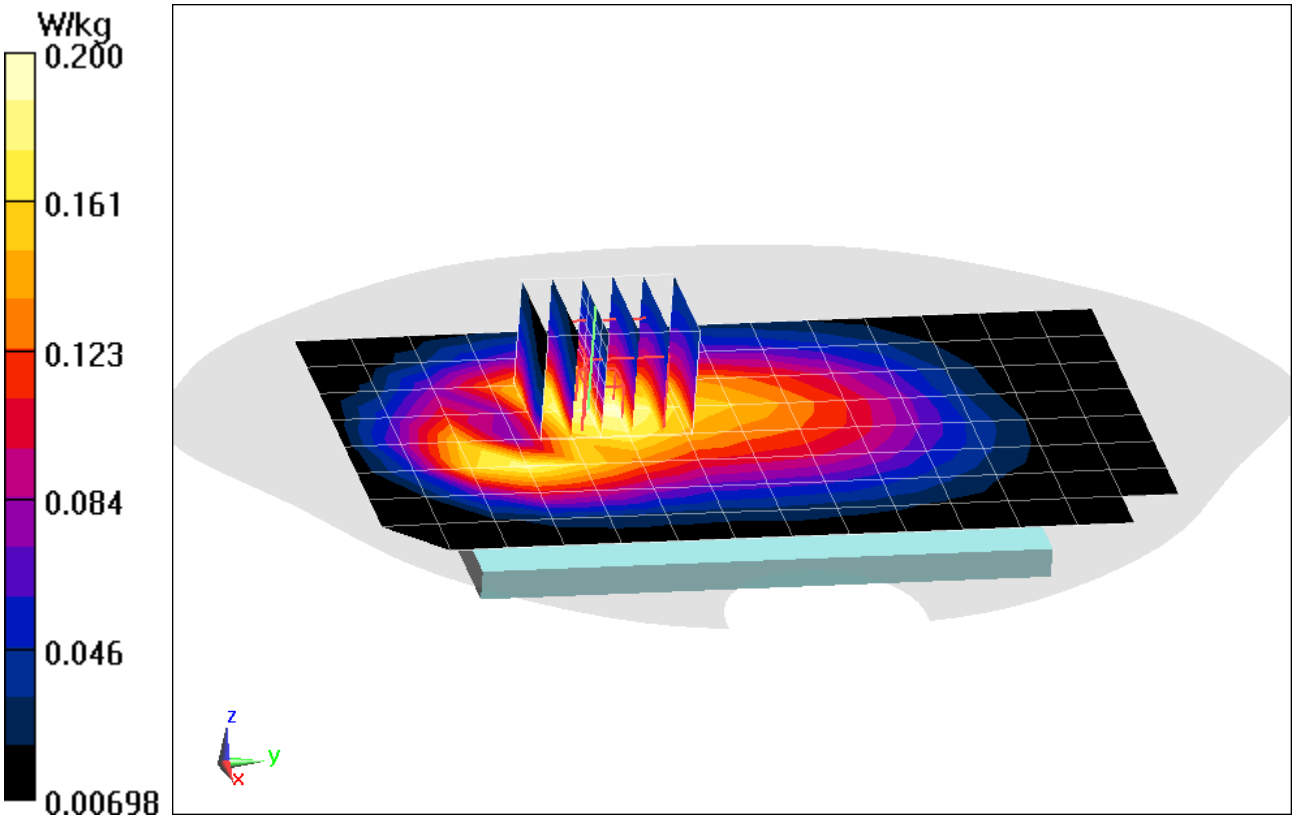
Communication System: UID 0, GSM; Frequency: 836.6 MHz; Duty Cycle: 1:8.3
Medium: 835 Body Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.988 S/m; ε_r = 52.995; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-03-2019 Ambient Temp: 18.7°C; Tissue Temp: 19.8 °C

Probe: EX3DV4 - SN7488; ConvF(11.03, 11.03, 11.03) @ 836.6 MHz; Calibrated: 1/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1530; Calibrated: 1/15/2019
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: GSM 850, Body SAR, Back side, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.92 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.224 W/kg
SAR(1 g) = 0.159 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1290M

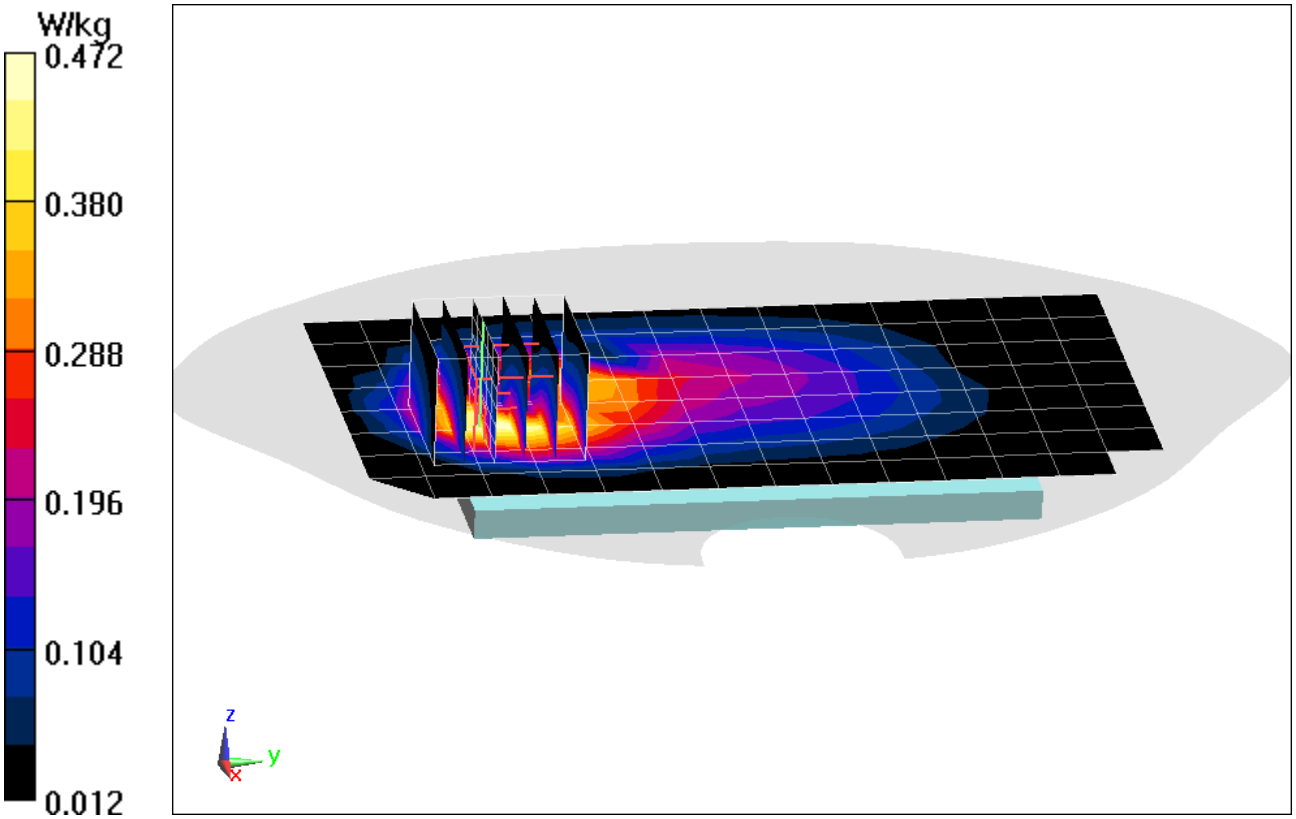
Communication System: UID 0, GSM GPRS; 3 Tx slots; Frequency: 836.6 MHz; Duty Cycle: 1:2.76
Medium: 835 Body Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.988 S/m; ε_r = 52.995; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-03-2019 Ambient Temp: 18.7°C; Tissue Temp: 19.8 °C

Probe: EX3DV4 - SN7488; ConvF(11.03, 11.03, 11.03) @ 836.6 MHz; Calibrated: 1/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1530; Calibrated: 1/15/2019
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: GPRS 850, Body SAR, Back side, Mid.ch, 3 Tx Slots

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.75 V/m; Power Drift = -0.15 dB
Peak SAR (extrapolated) = 0.576 W/kg
SAR(1 g) = 0.322 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1298M

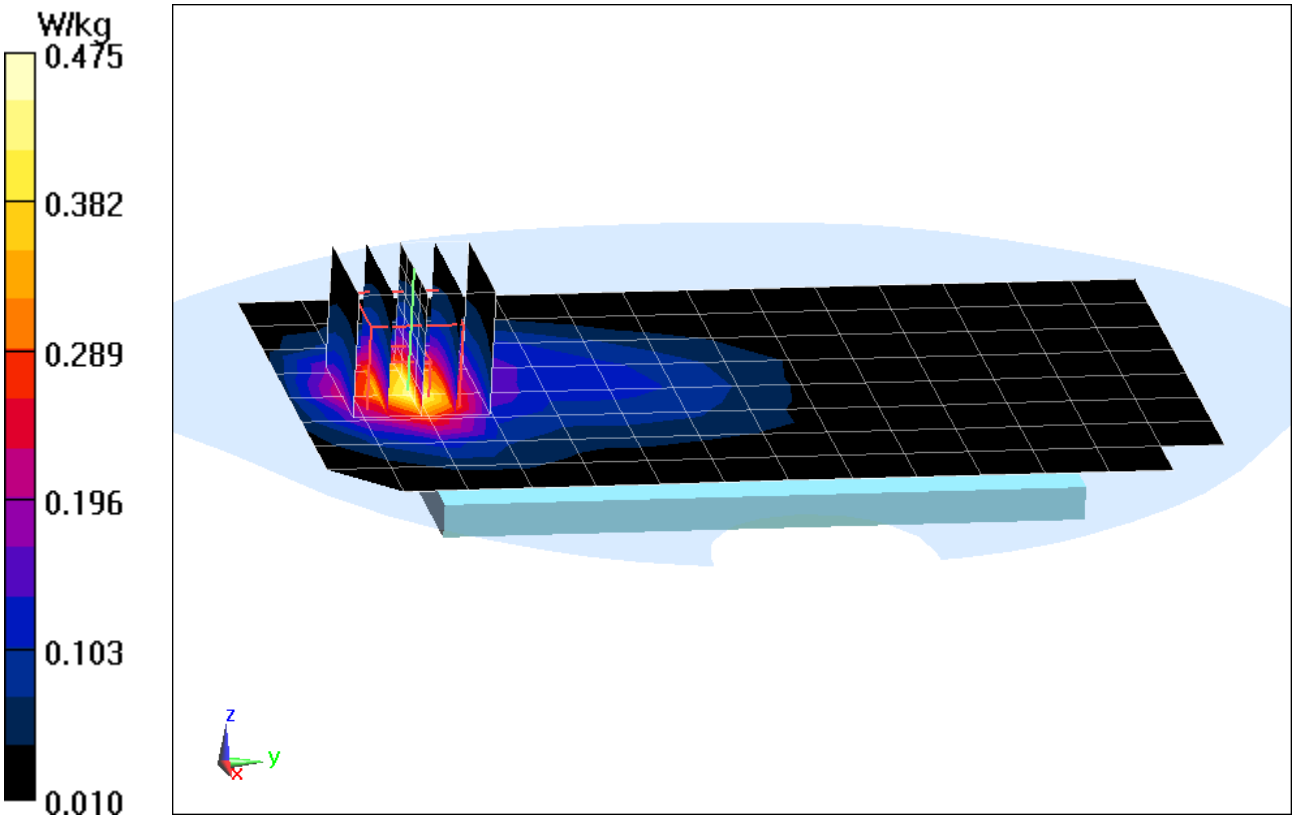
Communication System: UID 0, GSM; Frequency: 1880 MHz; Duty Cycle: 1:8.3
Medium: 1900 Body Medium parameters used:
f = 1880 MHz; σ = 1.555 S/m; ε_r = 54.098; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-05-2019; Ambient Temp: 23.5°C; Tissue Temp: 22.2°C

Probe: EX3DV4 - SN3589; ConvF(6.75, 6.75, 6.75) @ 1880 MHz; Calibrated: 1/25/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 8/22/2018
Phantom: SAM 5.0 front; Type: QD000P40CD; Serial: 1648
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: GSM 1900, Body SAR, Back side, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.21 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.558 W/kg
SAR(1 g) = 0.327 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1298M

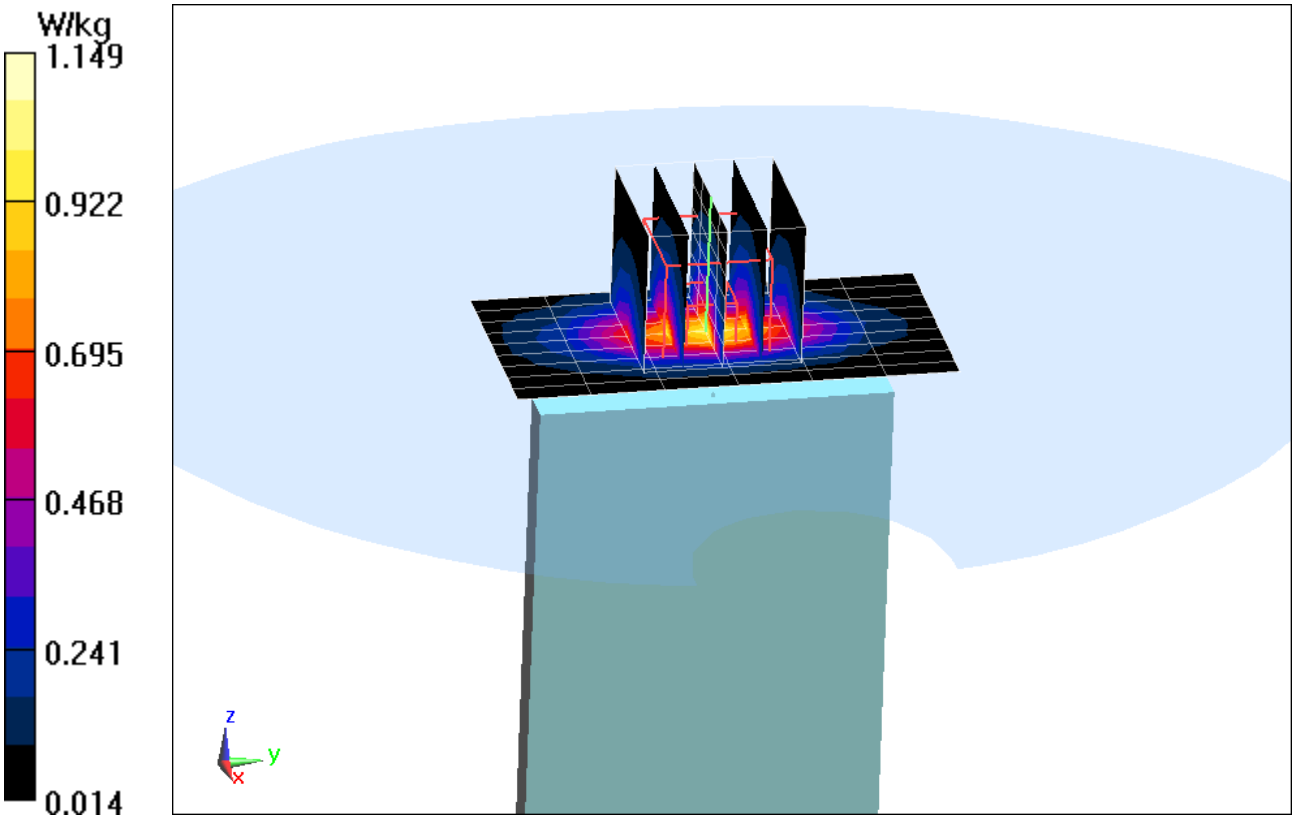
Communication System: UID 0, GSM GPRS; 3 Tx slots; Frequency: 1909.8 MHz; Duty Cycle: 1:2.76
Medium: 1900 Body Medium parameters used:
f = 1910 MHz; σ = 1.588 S/m; ε_r = 54; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-05-2019; Ambient Temp: 23.5°C; Tissue Temp: 22.2°C

Probe: EX3DV4 - SN3589; ConvF(6.75, 6.75, 6.75) @ 1909.8 MHz; Calibrated: 1/25/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 8/22/2018
Phantom: SAM 5.0 front; Type: QD000P40CD; Serial: 1648
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: GPRS 1900, Body SAR, Bottom Edge, High.ch, 3 Tx Slots

Area Scan (10x7x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.76 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.39 W/kg
SAR(1 g) = 0.744 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1290M

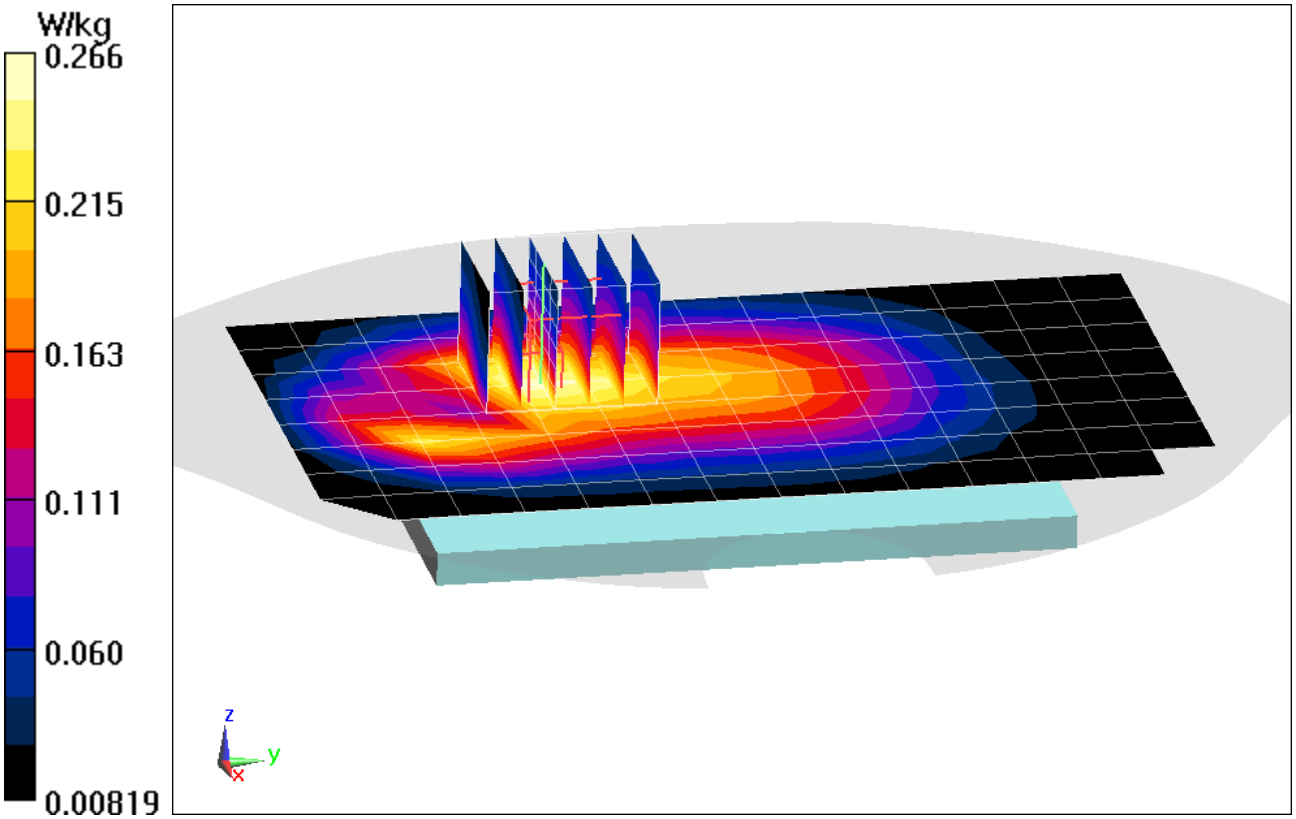
Communication System: UID 0, UMTS; Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.988 S/m; ε_r = 52.995; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-03-2019 Ambient Temp: 18.7°C; Tissue Temp: 19.8 °C

Probe: EX3DV4 - SN7488; ConvF(11.03, 11.03, 11.03) @ 836.6 MHz; Calibrated: 1/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1530; Calibrated: 1/15/2019
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: UMTS 850, Body SAR, Back side, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.94 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 0.295 W/kg
SAR(1 g) = 0.213 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 0982M

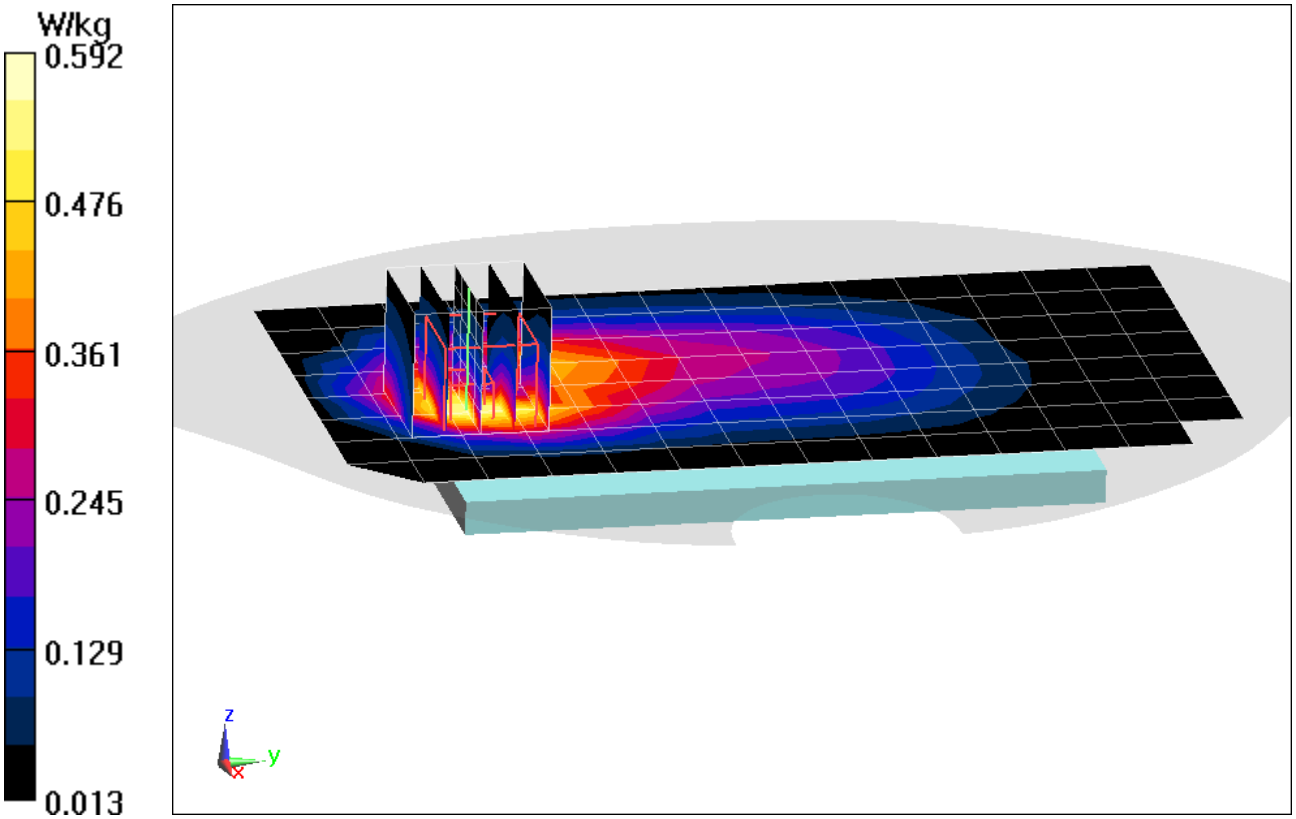
Communication System: UID 0, UMTS; Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.969 S/m; ε_r = 56.699; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-28-2019; Ambient Temp: 22.8°C; Tissue Temp: 22.5°C

Probe: EX3DV4 - SN3914; ConvF(9.46, 9.46, 9.46) @ 836.6 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/14/2019
Phantom: SAM with CRP v5.0 Left; Type: QD000P40CD; Serial: 1687
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: UMTS 850, Body SAR, Back side, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.36 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.808 W/kg
SAR(1 g) = 0.452 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1298M

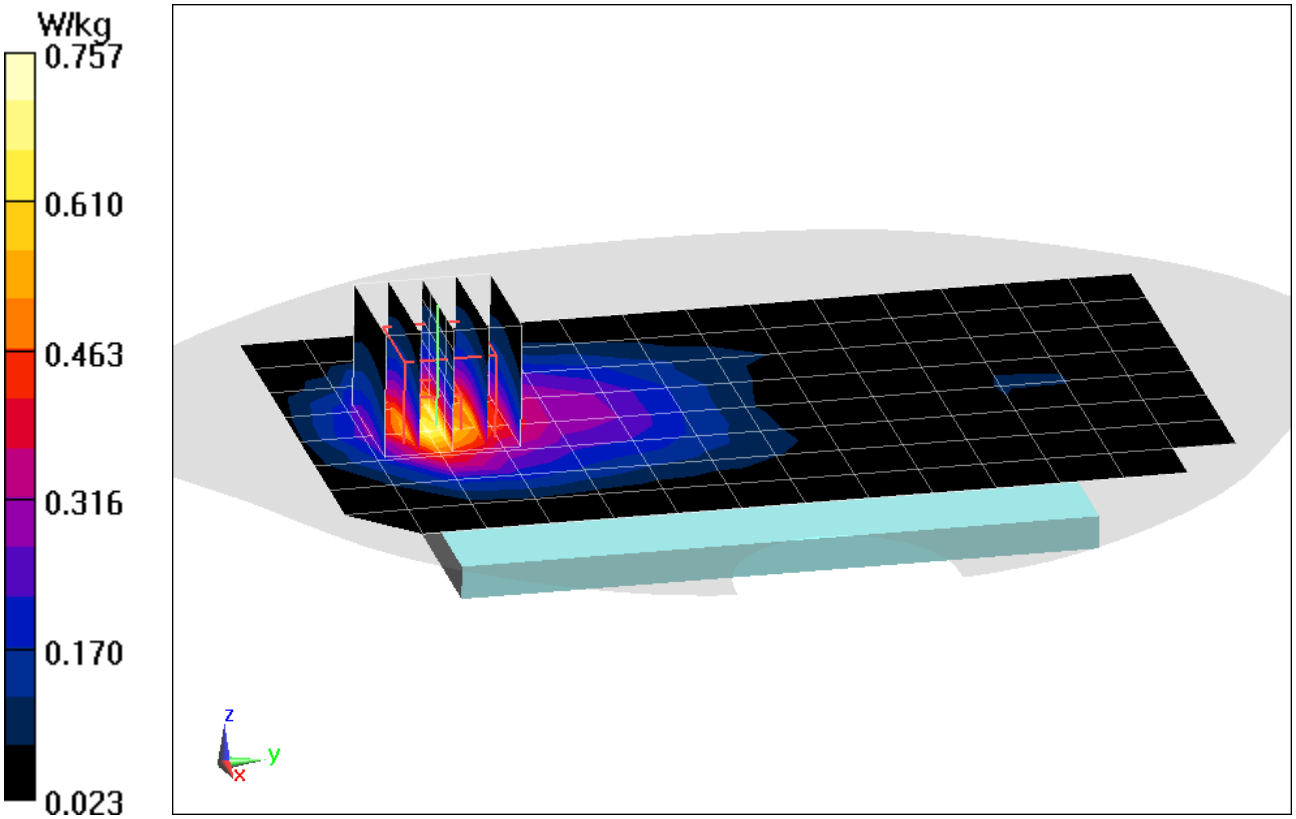
Communication System: UID 0, UMTS; Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used (interpolated):
f = 1732.4 MHz; σ = 1.51 S/m; ε_r = 51.471; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-14-2019; Ambient Temp: 22.7°C; Tissue Temp: 19.8°C

Probe: EX3DV4 - SN7488; ConvF(8.68, 8.68, 8.68) @ 1732.4 MHz; Calibrated: 1/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1530; Calibrated: 1/15/2019
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: UMTS 1750, Body SAR, Back side, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.69 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.871 W/kg
SAR(1 g) = 0.537 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1298M

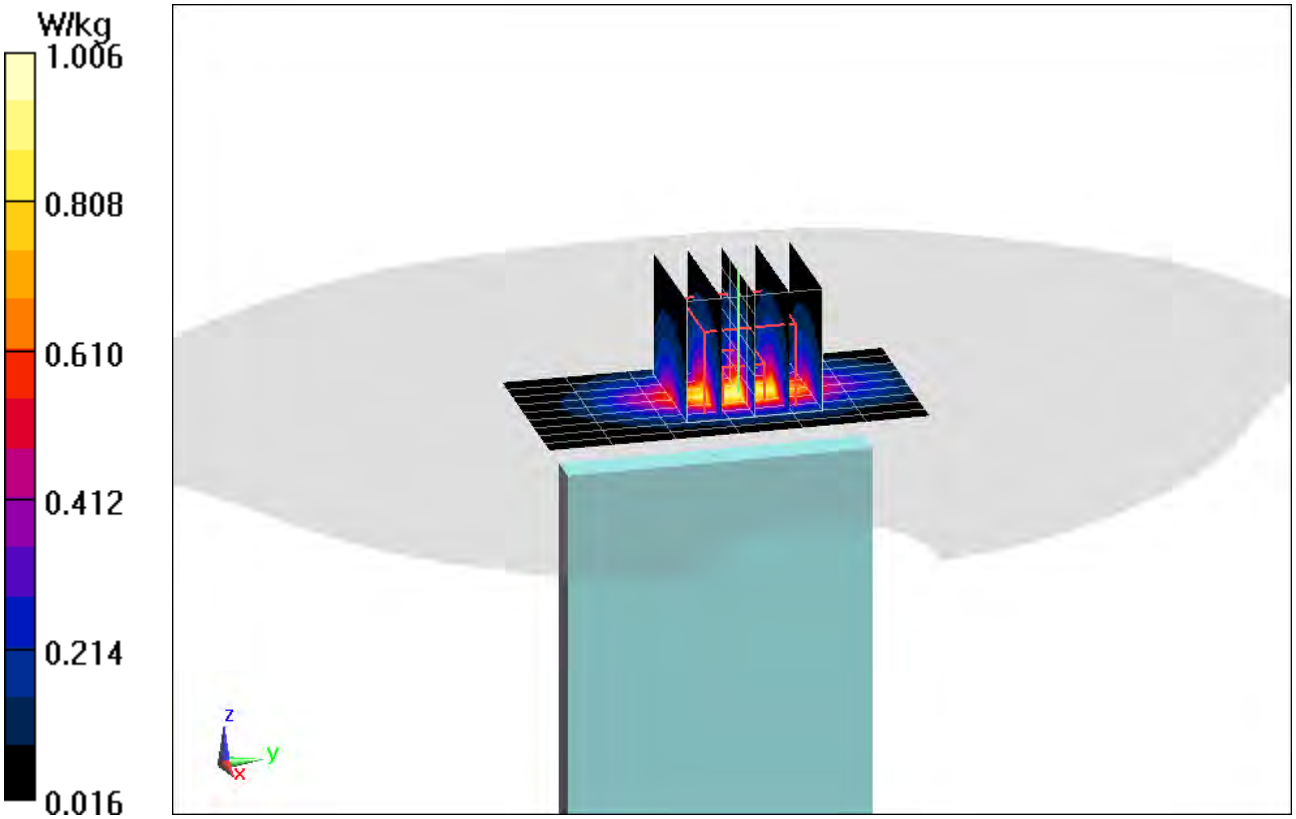
Communication System: UID 0, _UMTS; Frequency: 1712.4 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used (interpolated):
f = 1712.4 MHz; σ = 1.495 S/m; ε_r = 51.503; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-14-2019; Ambient Temp: 22.7°C; Tissue Temp: 19.8°C

Probe: EX3DV4 - SN7488; ConvF(8.68, 8.68, 8.68) @ 1712.4 MHz; Calibrated: 1/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1530; Calibrated: 1/15/2019
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: UMTS 1750, Body SAR, Bottom Edge, Low.ch

Area Scan (10x7x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.31 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 1.19 W/kg
SAR(1 g) = 0.663 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1298M

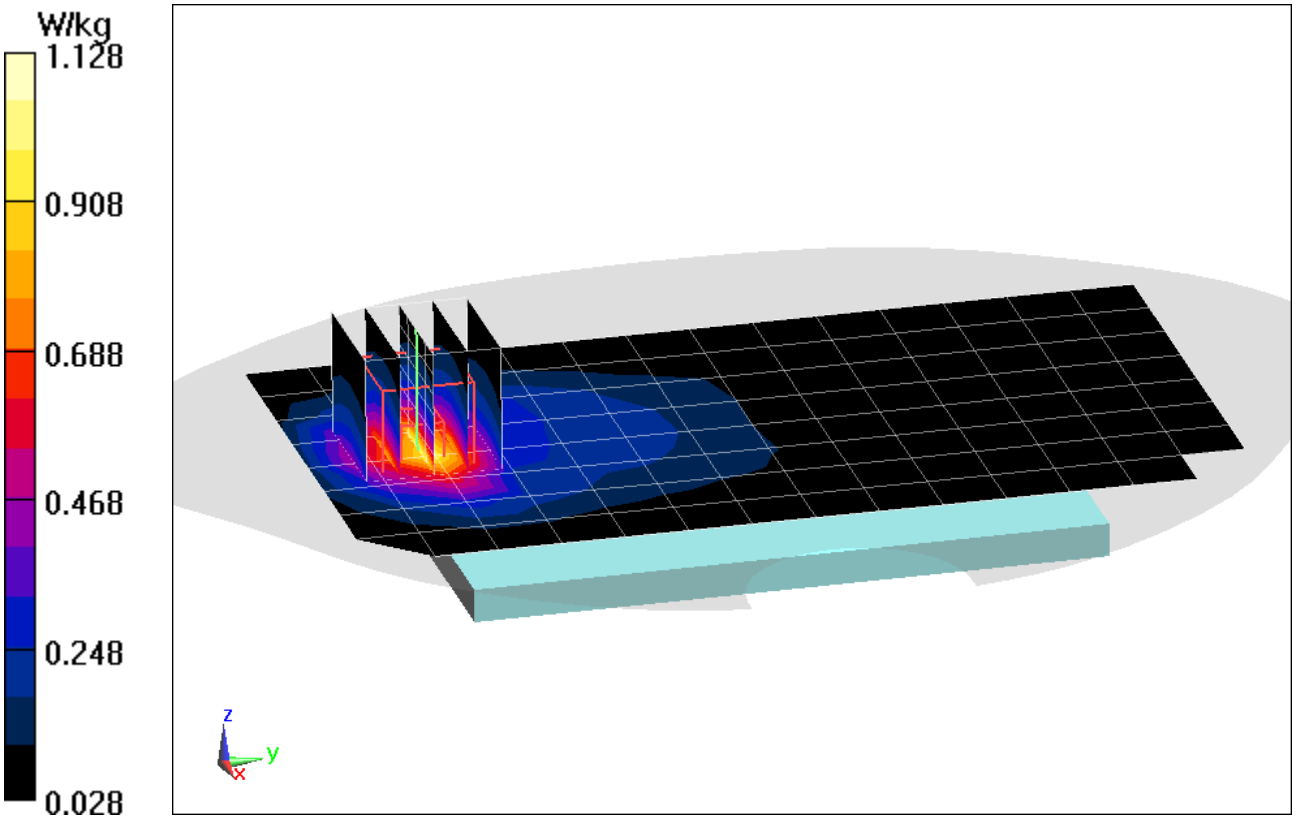
Communication System: UID 0, UMTS; Frequency: 1907.6 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
f = 1907.6 MHz; σ = 1.58 S/m; ε_r = 51.887; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-05-2019; Ambient Temp: 22.8°C; Tissue Temp: 23.5°C

Probe: EX3DV4 - SN7410; ConvF(7.78, 7.78, 7.78) @ 1907.6 MHz; Calibrated: 7/20/2018
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/11/2018
Phantom: Front; Type: QD 000 P40 CD; Serial: 1686
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: UMTS 1900, Body SAR, Back side, High.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.47 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 1.31 W/kg
SAR(1 g) = 0.781 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1298M

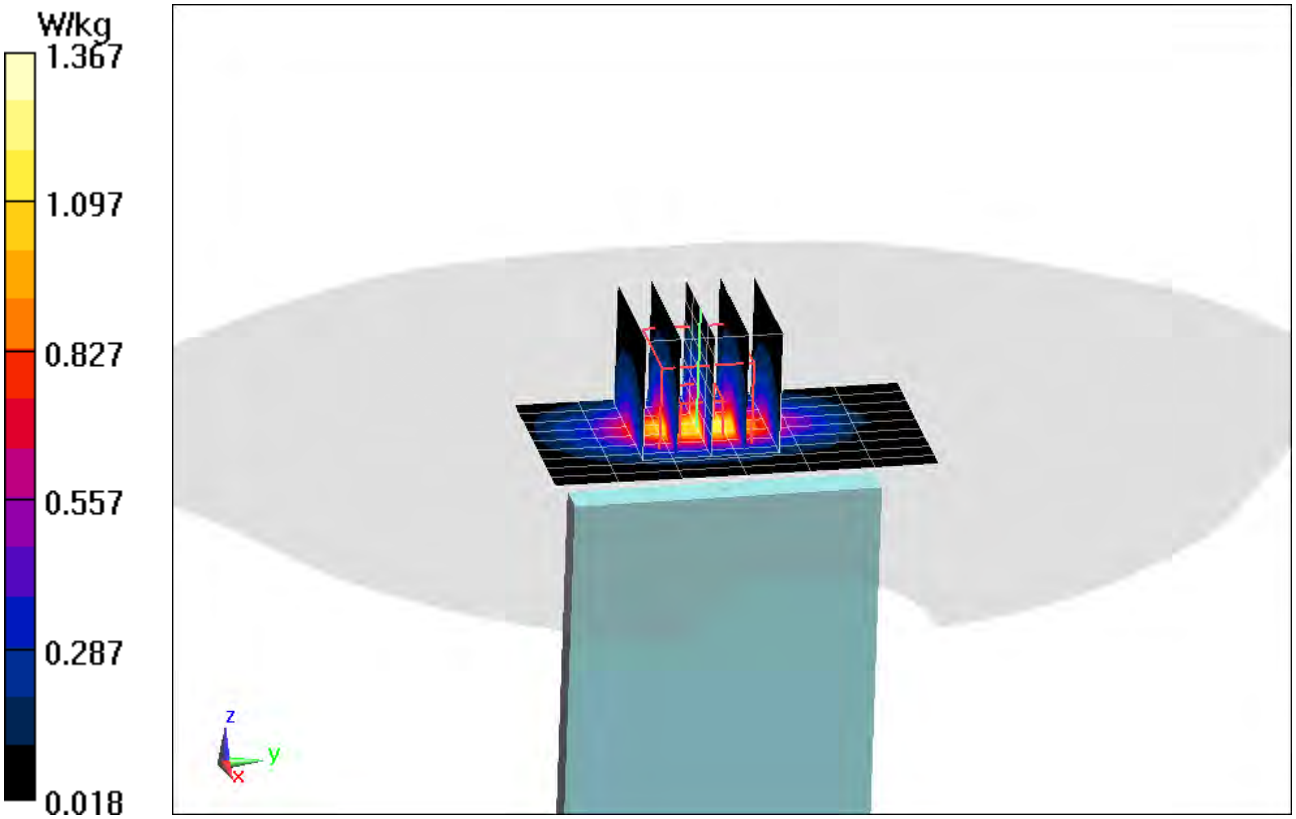
Communication System: UID 0, UMTS; Frequency: 1907.6 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
f = 1907.6 MHz; σ = 1.58 S/m; ε_r = 51.887; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-05-2019; Ambient Temp: 22.8°C; Tissue Temp: 23.5°C

Probe: EX3DV4 - SN7410; ConvF(7.78, 7.78, 7.78) @ 1907.6 MHz; Calibrated: 7/20/2018
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/11/2018
Phantom: Front; Type: QD 000 P40 CD; Serial: 1686
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: UMTS 1900, Body SAR, Bottom Edge, High.ch

Area Scan (10x7x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.41 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 1.61 W/kg
SAR(1 g) = 0.895 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1290M

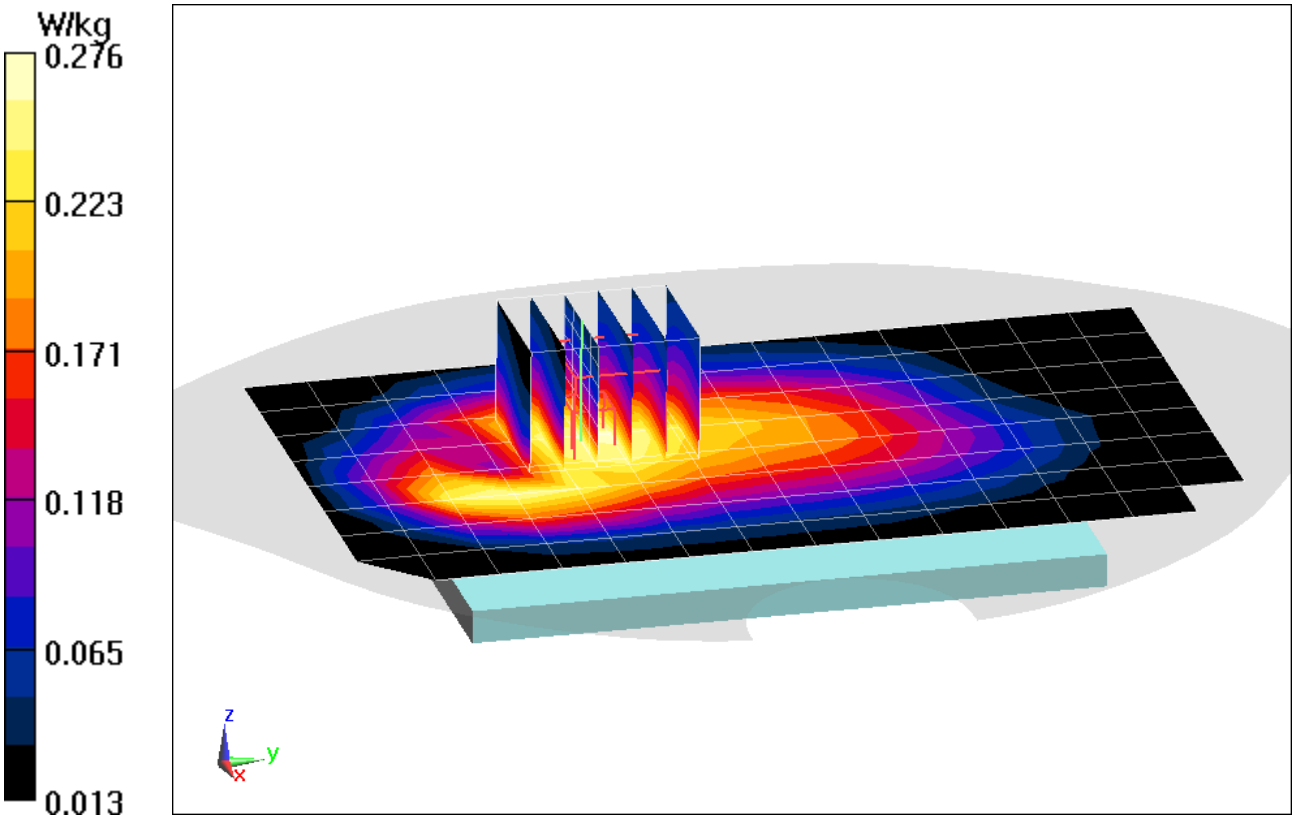
Communication System: UID 0, CDMA; Frequency: 820.1 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 820.1 MHz; σ = 0.98 S/m; ε_r = 53.012; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-03-2019 Ambient Temp: 18.7°C; Tissue Temp: 19.8 °C

Probe: EX3DV4 - SN7488; ConvF(11.03, 11.03, 11.03) @ 820.1 MHz; Calibrated: 1/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1530; Calibrated: 1/15/2019
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: Cell. CDMA BC10, Rule Part 90S, Body SAR, Back side, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.16 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.307 W/kg
SAR(1 g) = 0.219 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 0982M

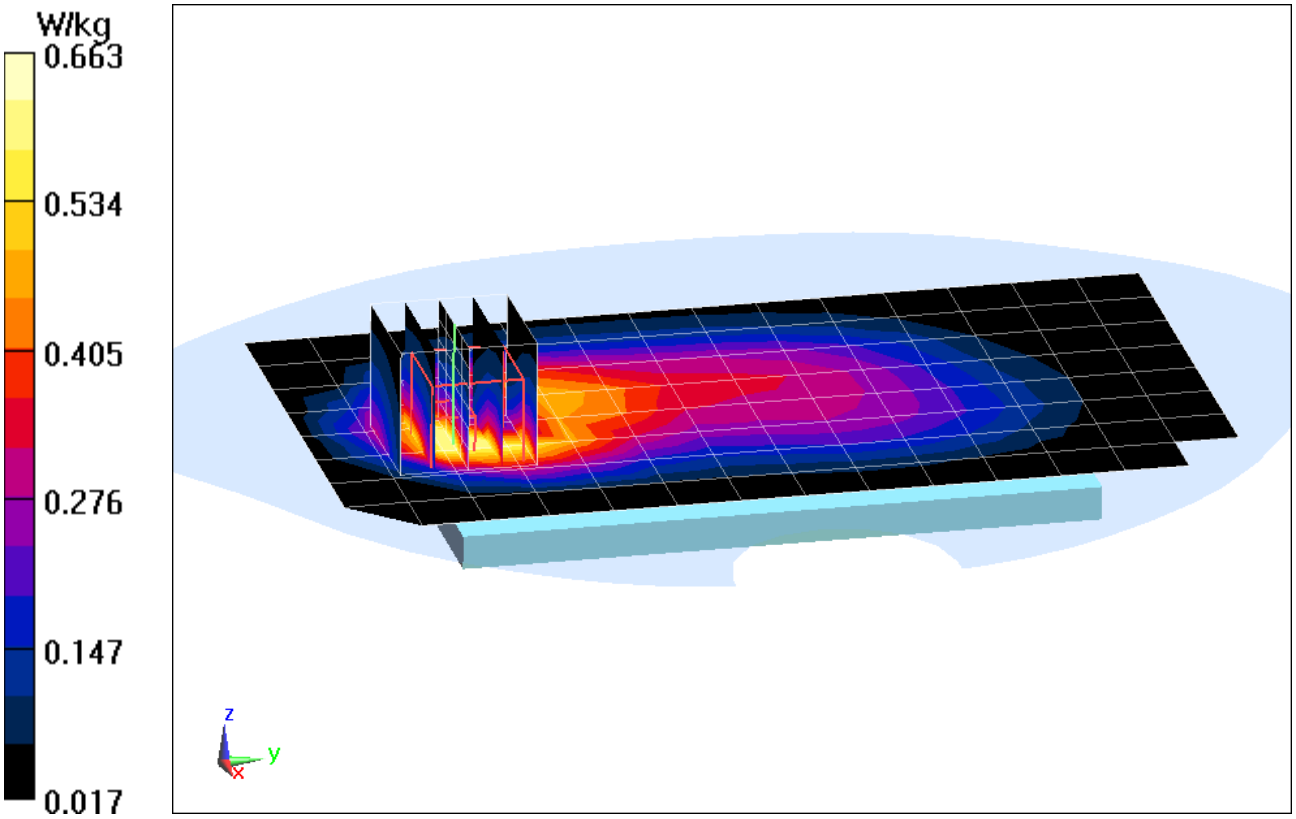
Communication System: UID 0, CDMA; Frequency: 820.1 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 820.1 MHz; σ = 0.962 S/m; ε_r = 56.718; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-28-2019; Ambient Temp: 22.8°C; Tissue Temp: 22.5°C

Probe: EX3DV4 - SN3914; ConvF(9.46, 9.46, 9.46) @ 820.1 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/14/2019
Phantom: SAM with CRP v5.0 Left; Type: QD000P40CD; Serial: 1687
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: Cell. BC10 EVDO Rev. 0, Rule Part 90S, Body SAR, Back side, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.20 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 0.802 W/kg
SAR(1 g) = 0.445 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1290M

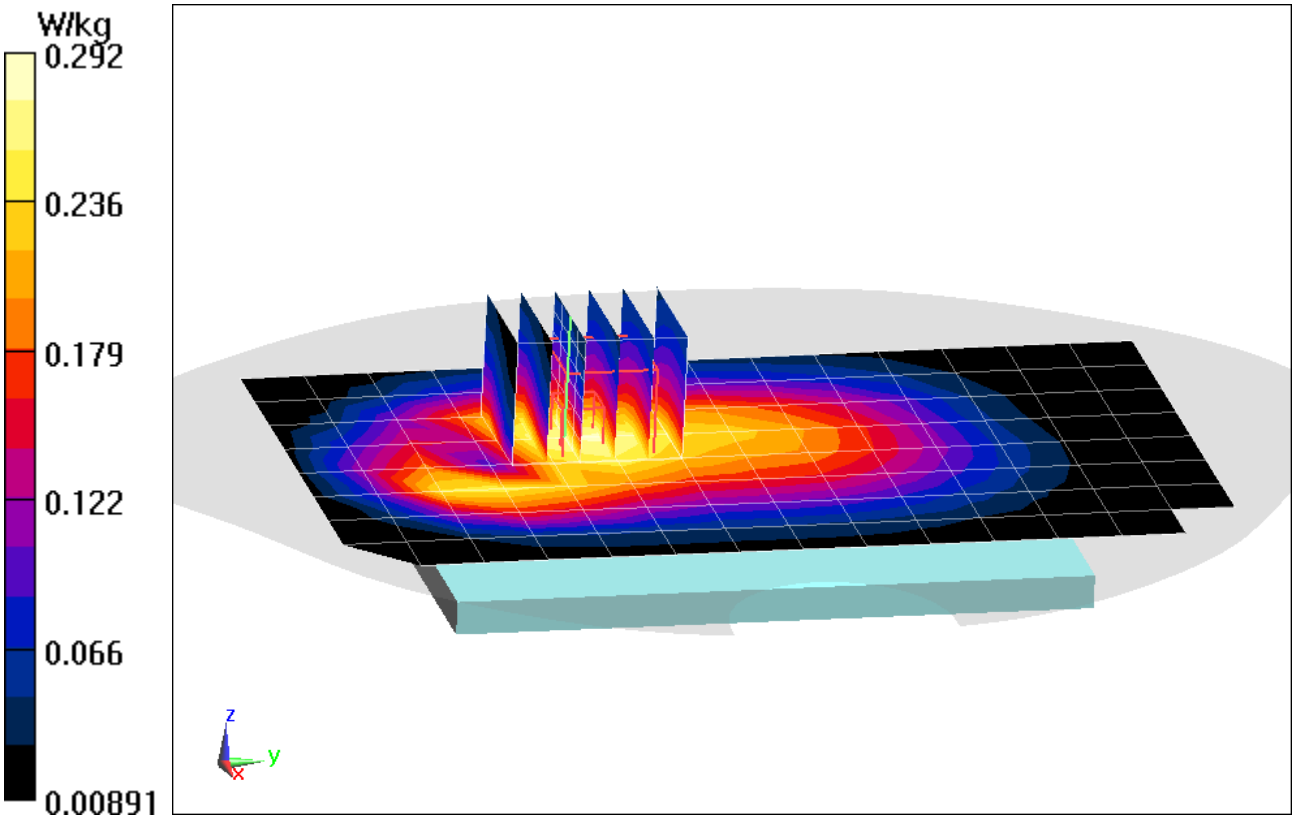
Communication System: UID 0, CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 836.52 MHz; σ = 0.988 S/m; ε_r = 52.995; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-03-2019 Ambient Temp: 18.7°C; Tissue Temp: 19.8 °C

Probe: EX3DV4 - SN7488; ConvF(11.03, 11.03, 11.03) @ 836.52 MHz; Calibrated: 1/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1530; Calibrated: 1/15/2019
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: Cell. CDMA, Rule Part 22H, Body SAR, Back side, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.53 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.327 W/kg
SAR(1 g) = 0.231 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 0982M

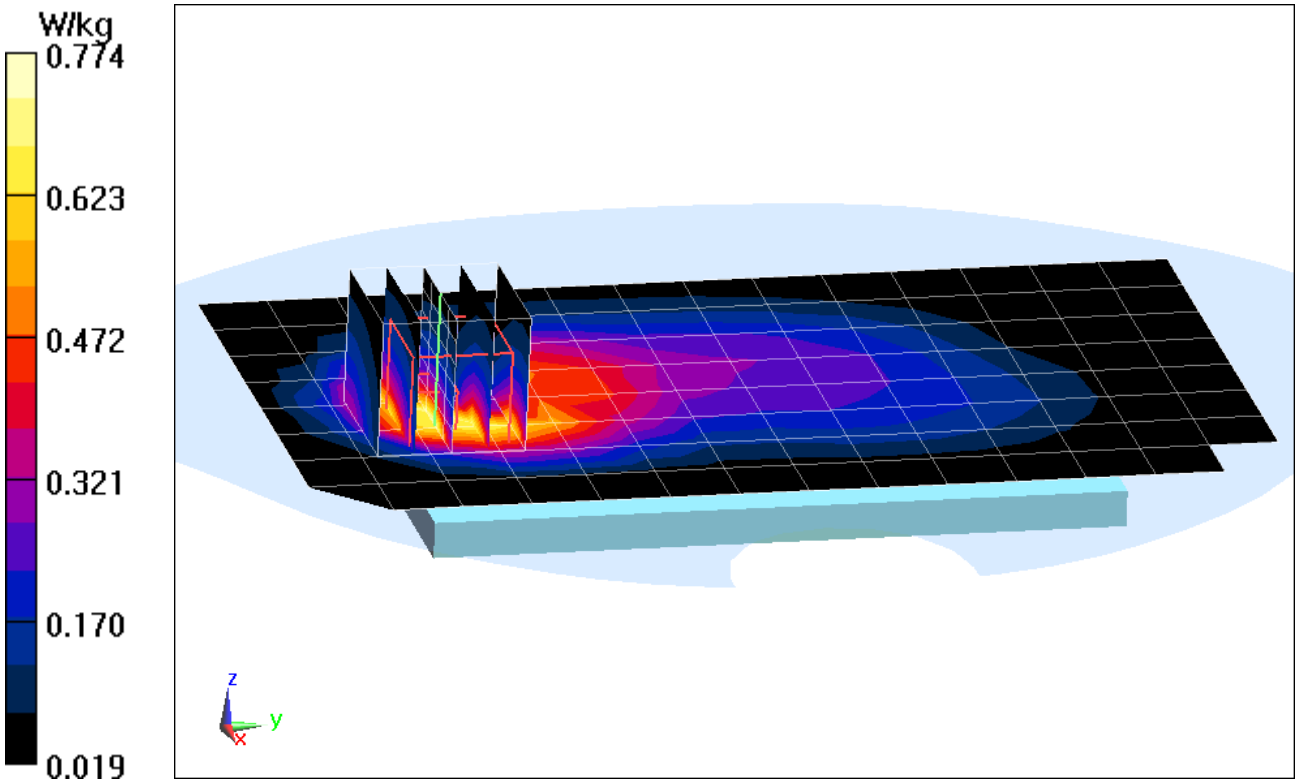
Communication System: UID 0, CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 836.52 MHz; σ = 0.969 S/m; ε_r = 56.699; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-28-2019; Ambient Temp: 22.8°C; Tissue Temp: 22.5°C

Probe: EX3DV4 - SN3914; ConvF(9.46, 9.46, 9.46) @ 836.52 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/14/2019
Phantom: SAM with CRP v5.0 Left; Type: QD000P40CD; Serial: 1687
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: Cell. EVDO Rev. 0, Rule Part 22H, Body SAR, Back side, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.12 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.944 W/kg
SAR(1 g) = 0.525 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1298M

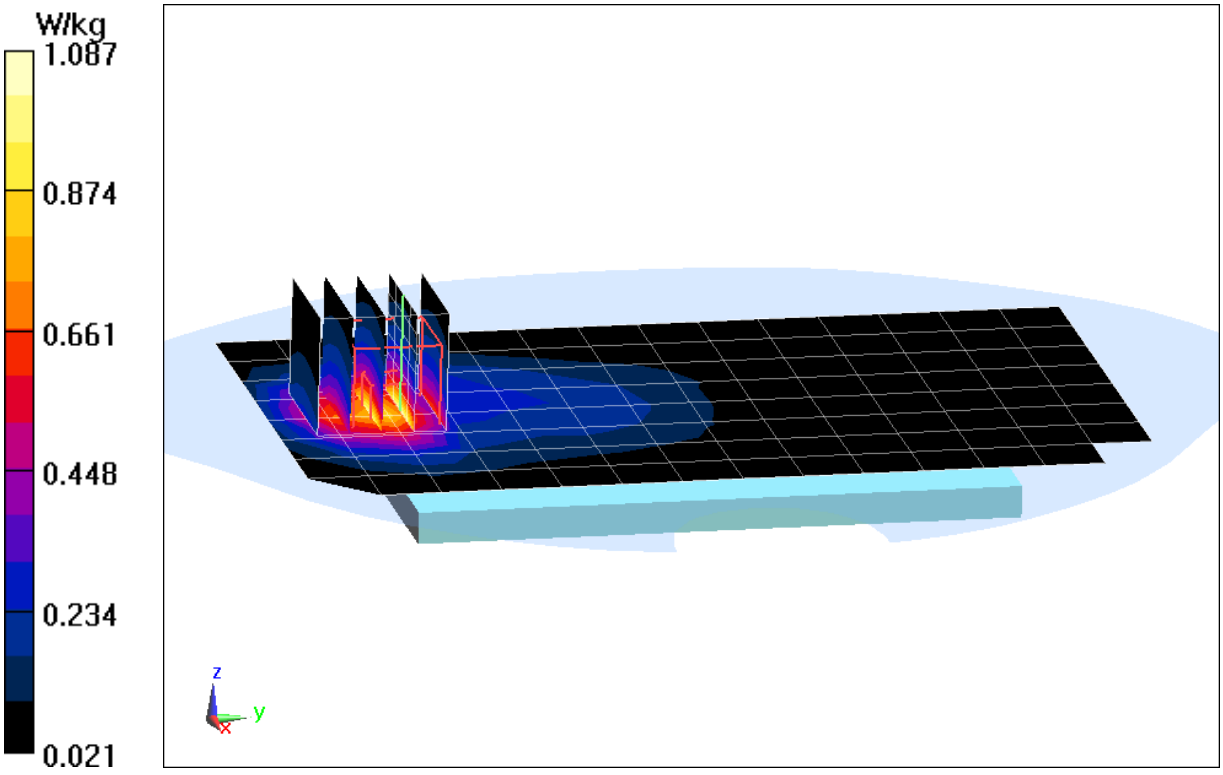
Communication System: UID 0, CDMA; Frequency: 1851.25 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
f = 1851.25 MHz; σ = 1.505 S/m; ε_r = 53.902; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-10-2019; Ambient Temp: 23.8°C; Tissue Temp: 23.1°C

Probe: EX3DV4 - SN3589; ConvF(6.75, 6.75, 6.75) @ 1851.25 MHz; Calibrated: 1/25/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 8/22/2018
Phantom: SAM 5.0 front; Type: QD000P40CD; Serial: 1648
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: PCS CDMA, Body SAR, Back side, Low.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.17 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 1.34 W/kg
SAR(1 g) = 0.802 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1298M

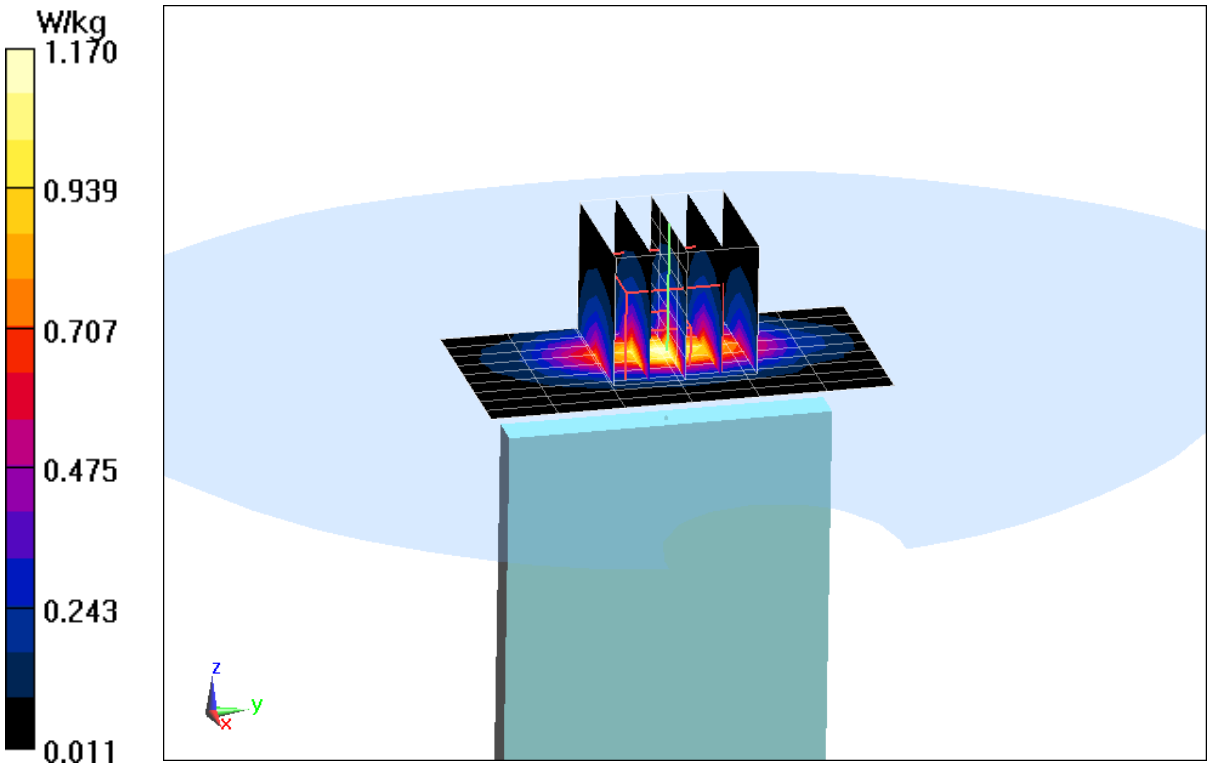
Communication System: UID 0, CDMA; Frequency: 1908.75 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
f = 1908.75 MHz; σ = 1.567 S/m; ε_r = 53.733; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-10-2019; Ambient Temp: 23.8°C; Tissue Temp: 23.1°C

Probe: EX3DV4 - SN3589; ConvF(6.75, 6.75, 6.75) @ 1908.75 MHz; Calibrated: 1/25/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 8/22/2018
Phantom: SAM 5.0 front; Type: QD000P40CD; Serial: 1648
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: PCS EVDO Rev. 0, Body SAR, Bottom Edge, High.ch

Area Scan (10x7x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.36 V/m; Power Drift = -0.21 dB
Peak SAR (extrapolated) = 1.52 W/kg
SAR(1 g) = 0.811 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1241M

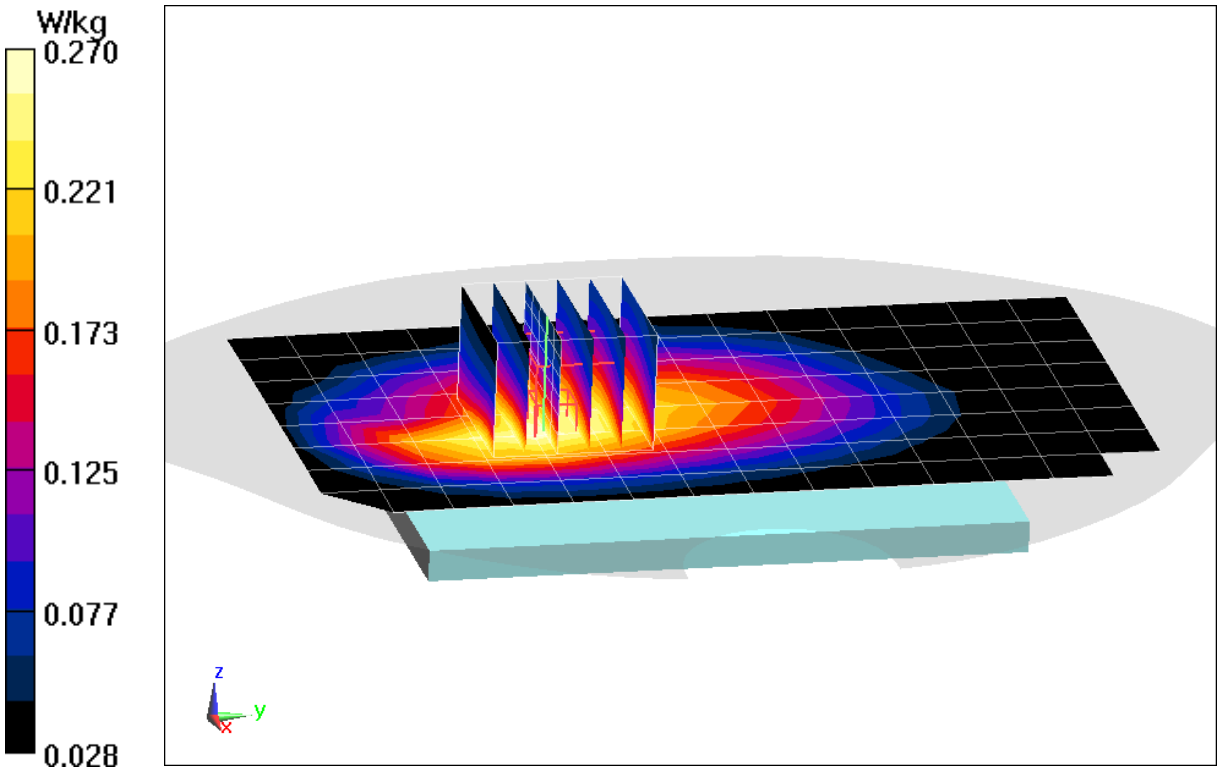
Communication System: UID 0, LTE Band 71; Frequency: 680.5 MHz; Duty Cycle: 1:1
Medium: 750 Body Medium parameters used (interpolated):
f = 680.5 MHz; σ = 0.916 S/m; ε_r = 57.052; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-04-2019; Ambient Temp: 22.2°C; Tissue Temp: 22.1°C

Probe: ES3DV3 - SN3287; ConvF(6.43, 6.43, 6.43) @ 680.5 MHz; Calibrated: 10/22/2018
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1333; Calibrated: 10/18/2018
Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 1964
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 71, Body SAR, Back side, Mid.ch, 20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.79 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 0.328 W/kg
SAR(1 g) = 0.243 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1241M

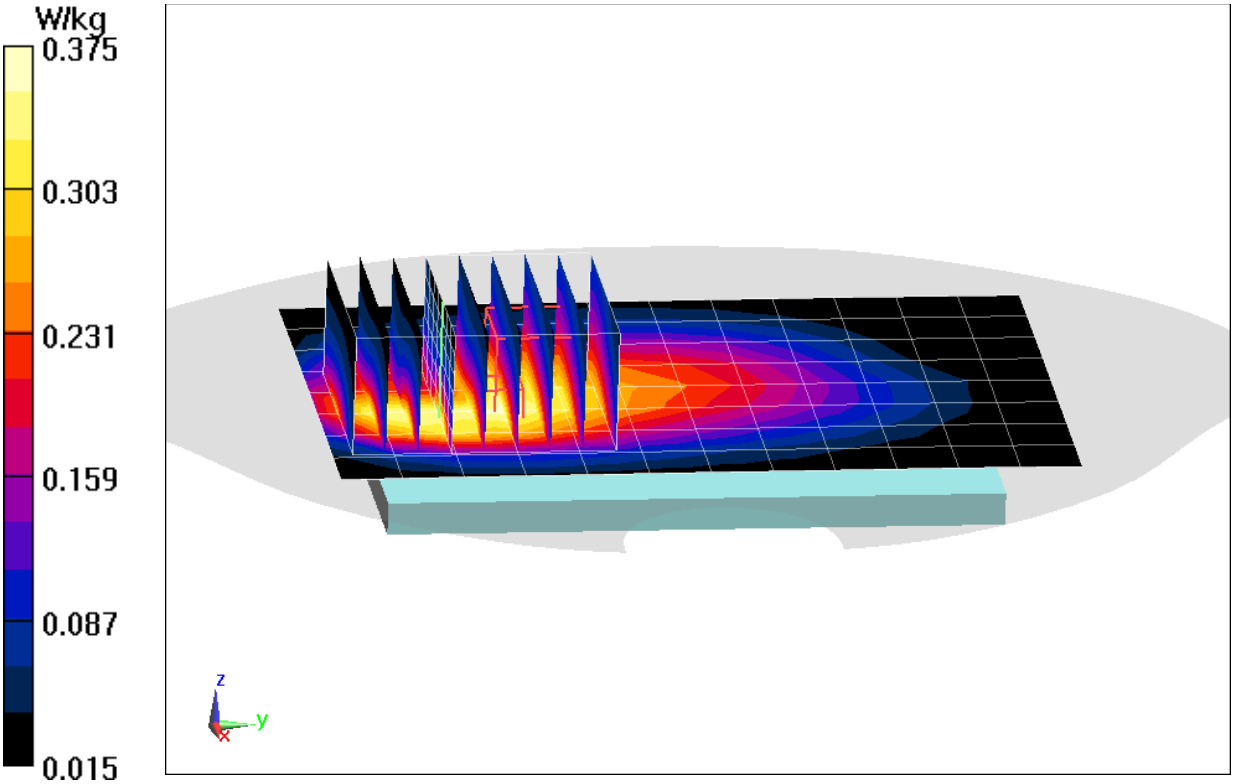
Communication System: UID 0, LTE Band 71; Frequency: 680.5 MHz; Duty Cycle: 1:1
Medium: 750 Body Medium parameters used (interpolated):
f = 680.5 MHz; σ = 0.916 S/m; ε_r = 57.052; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-04-2019; Ambient Temp: 22.2°C; Tissue Temp: 22.1°C

Probe: ES3DV3 - SN3287; ConvF(6.43, 6.43, 6.43) @ 680.5 MHz; Calibrated: 10/22/2018
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1333; Calibrated: 10/18/2018
Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 1964
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 71, Body SAR, Back side, Mid.ch, 20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (8x9x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.51 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 0.515 W/kg
SAR(1 g) = 0.320 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1241M

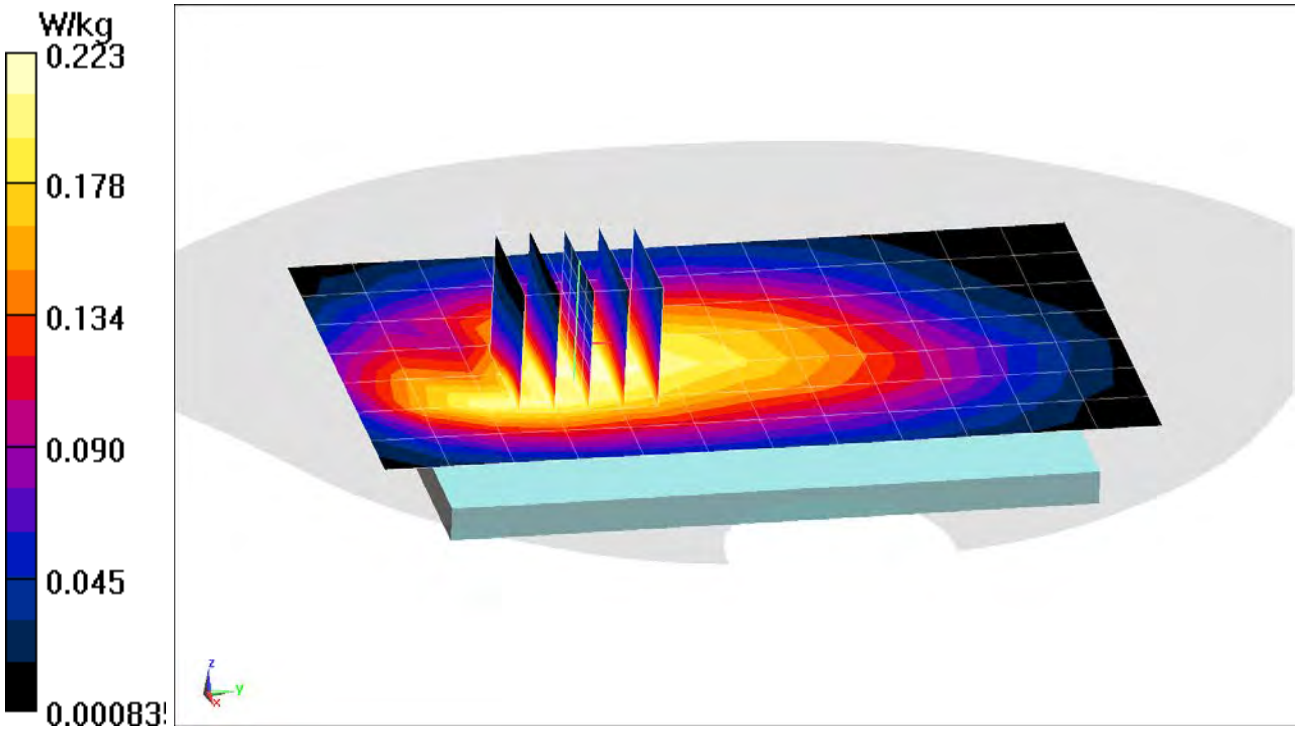
Communication System: UID 0, LTE Band 12; Frequency: 707.5 MHz; Duty Cycle: 1:1
Medium: 750MHz Body Medium parameters used (interpolated):
f = 707.5 MHz; σ = 0.948 S/m; ε_r = 55.265; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-06-2019; Ambient Temp:22.0°C; Tissue Temp: 20.5°C

Probe: EX3DV4 - SN7308; ConvF(10.38, 10.38, 10.38) @ 707.5 MHz; Calibrated: 8/23/2018
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1558; Calibrated: 10/3/2018
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 12, Body SAR, Back side, Mid.ch, 10 MHz Bandwidth, QPSK, 1 RB, 25 RB Offset

Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.39 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.308 W/kg
SAR(1 g) = 0.217 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1241M

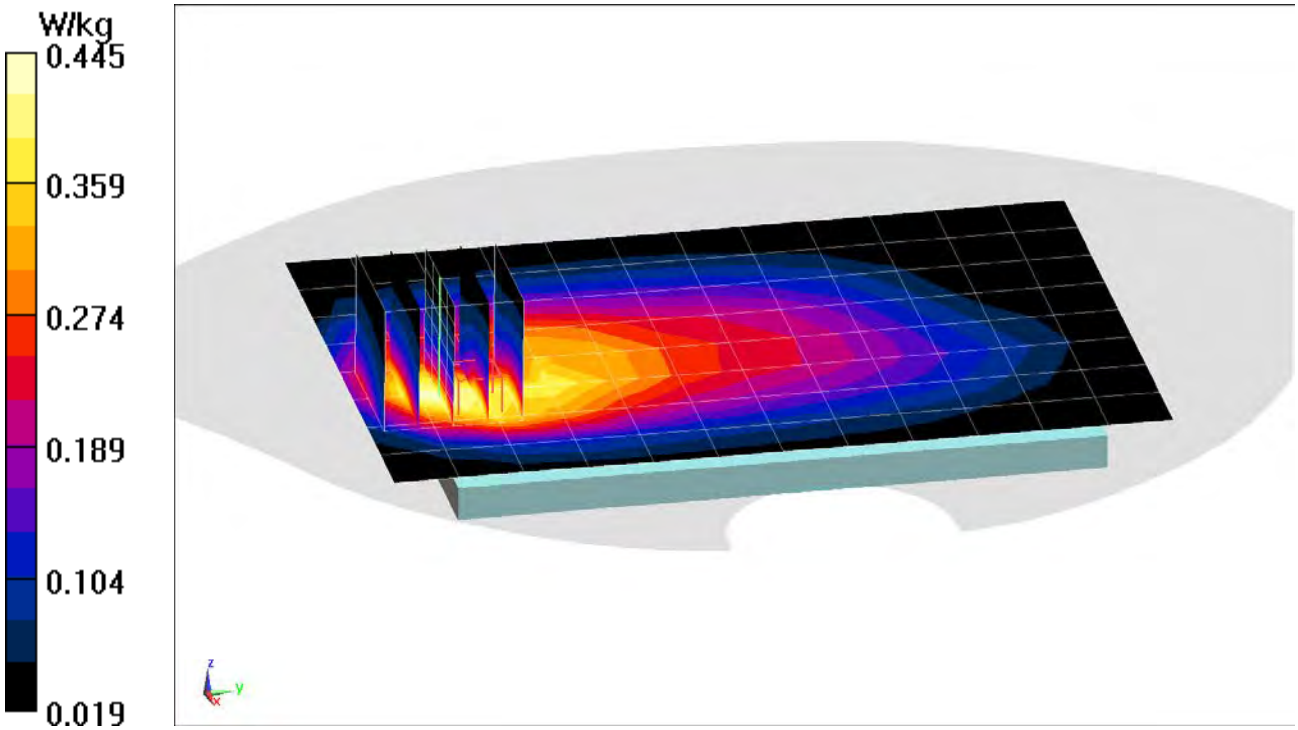
Communication System: UID 0, LTE Band 12; Frequency: 707.5 MHz; Duty Cycle: 1:1
Medium: 750MHz Body Medium parameters used (interpolated):
f = 707.5 MHz; σ = 0.948 S/m; ε_r = 55.265; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-06-2019; Ambient Temp:22.0°C; Tissue Temp: 20.5°C

Probe: EX3DV4 - SN7308; ConvF(10.38, 10.38, 10.38) @ 707.5 MHz; Calibrated: 8/23/2018
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1558; Calibrated: 10/3/2018
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 12, Body SAR, Back side, Mid.ch, 10 MHz Bandwidth, QPSK, 1 RB, 25 RB Offset

Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.39 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 0.554 W/kg
SAR(1 g) = 0.315 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1241M

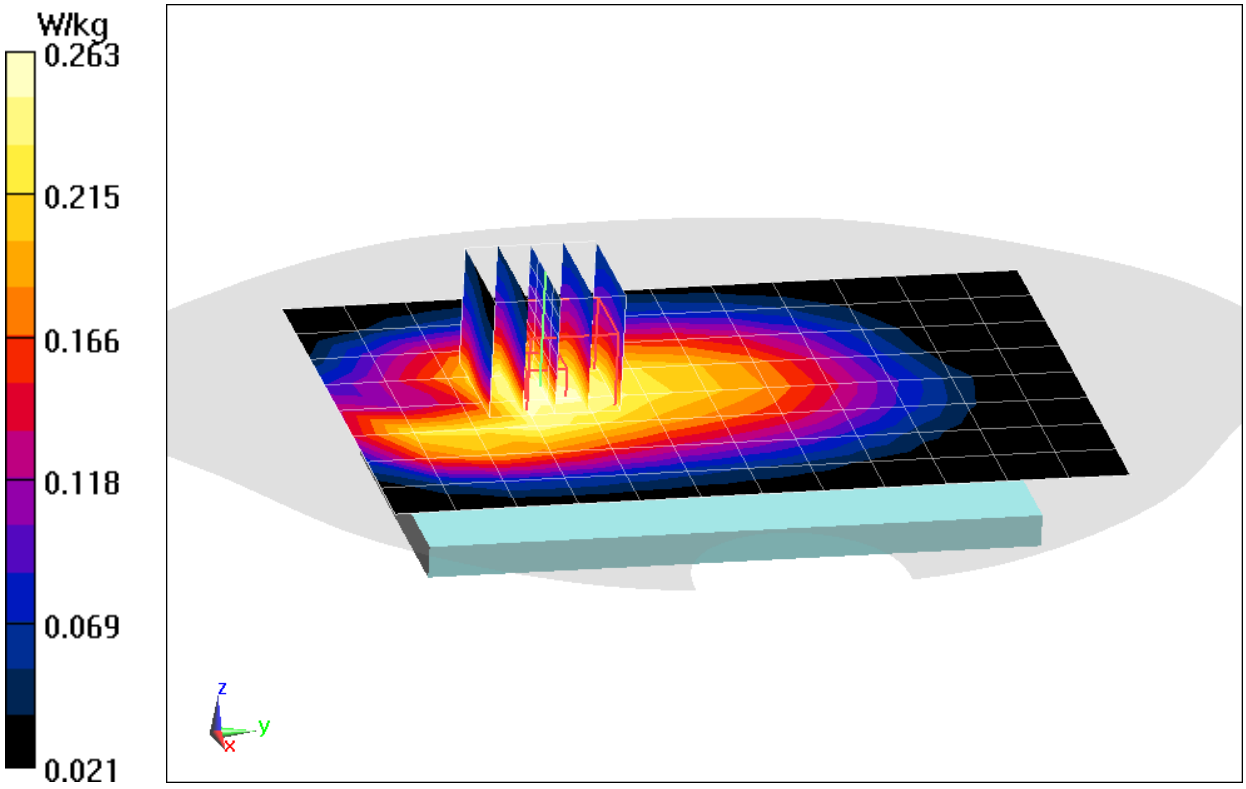
Communication System: UID 0, LTE Band 13; Frequency: 782 MHz; Duty Cycle: 1:1
Medium: 750 Body Medium parameters used (interpolated):
f = 782 MHz; σ = 0.954 S/m; ε_r = 56.803; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-04-2019; Ambient Temp: 22.2°C; Tissue Temp: 22.1°C

Probe: ES3DV3 - SN3287; ConvF(6.43, 6.43, 6.43) @ 782 MHz; Calibrated: 10/22/2018
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1333; Calibrated: 10/18/2018
Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 1964
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 13, Body SAR, Back side, Mid.ch, 10 MHz Bandwidth, QPSK, 1 RB, 25 RB Offset

Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.37 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.307 W/kg
SAR(1 g) = 0.238 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1241M

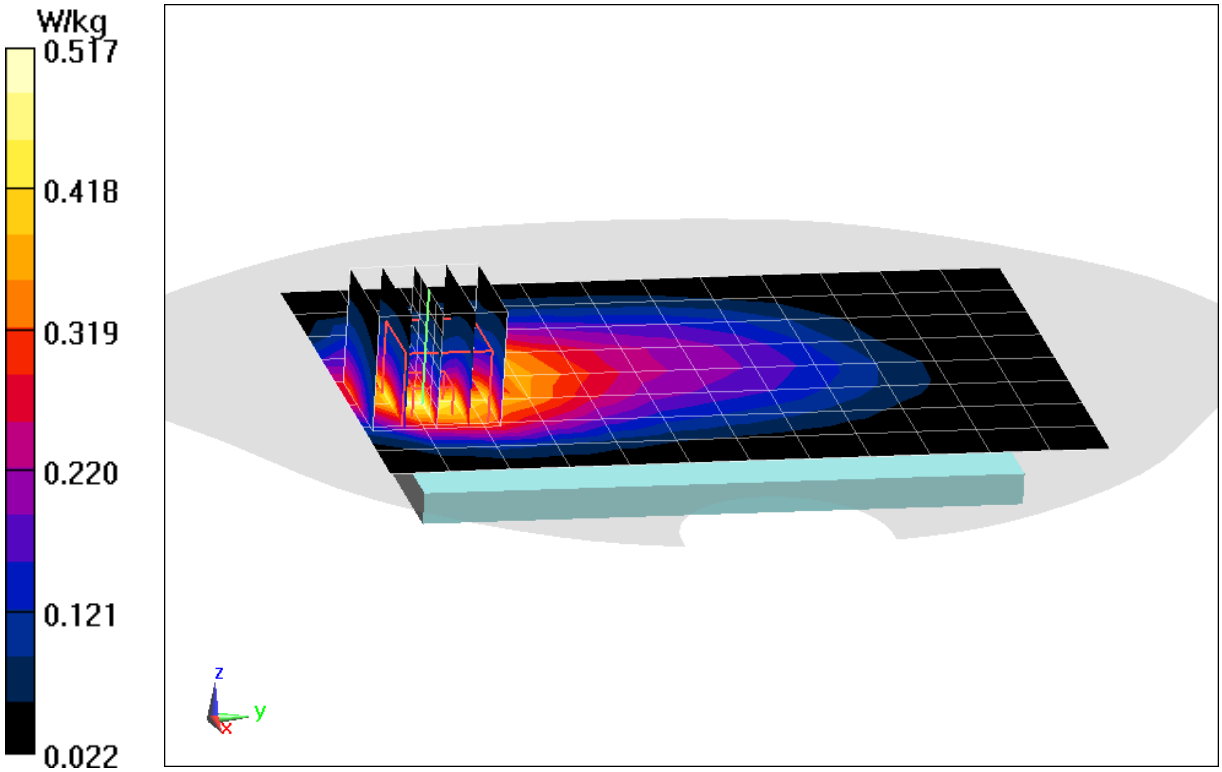
Communication System: UID 0, LTE Band 13; Frequency: 782 MHz; Duty Cycle: 1:1
Medium: 750 Body Medium parameters used (interpolated):
f = 782 MHz; σ = 0.954 S/m; ε_r = 56.803; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-04-2019; Ambient Temp: 22.2°C; Tissue Temp: 22.1°C

Probe: ES3DV3 - SN3287; ConvF(6.43, 6.43, 6.43) @ 782 MHz; Calibrated: 10/22/2018
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1333; Calibrated: 10/18/2018
Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 1964
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 13, Body SAR, Back side, Mid.ch, 10 MHz Bandwidth, QPSK, 1 RB, 25 RB Offset

Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.23 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.722 W/kg
SAR(1 g) = 0.425 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1032M

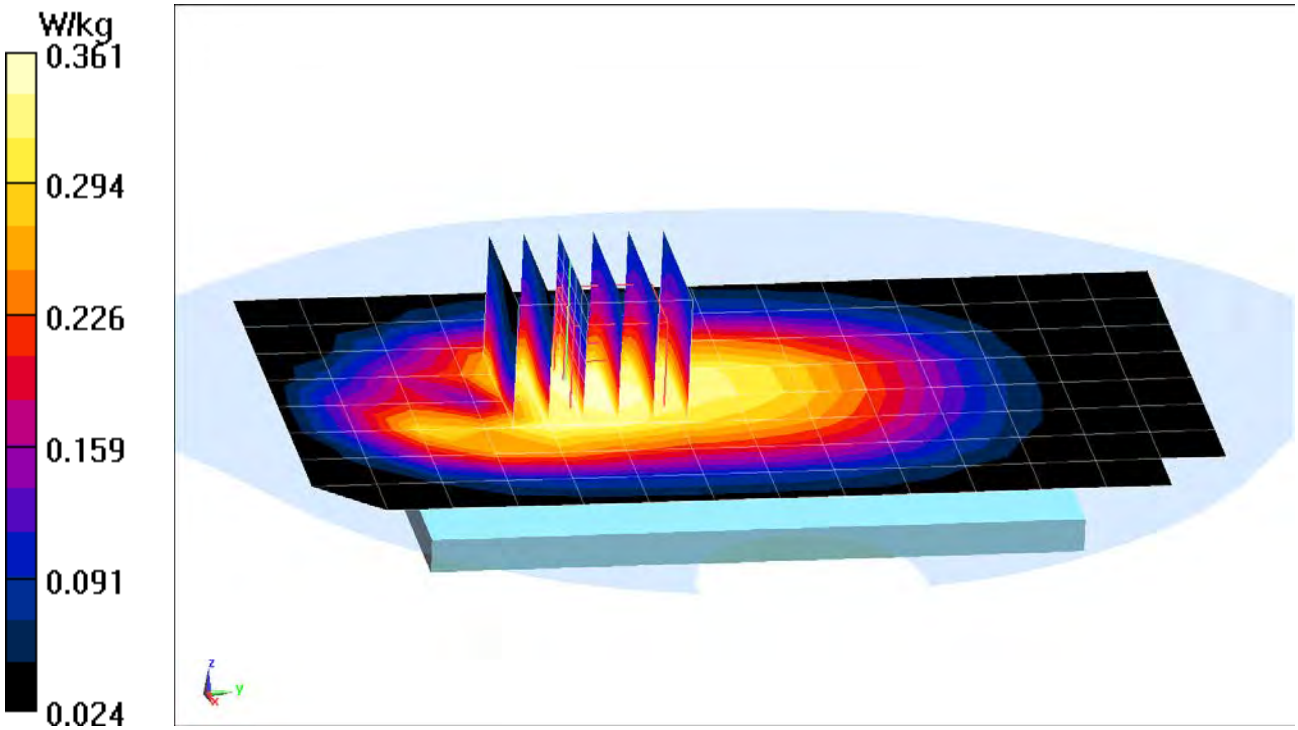
Communication System: UID 0, LTE Band 14; Frequency: 793 MHz; Duty Cycle: 1:1
Medium: 750 Body Medium parameters used (interpolated):
f = 793 MHz; σ = 0.959 S/m; ε_r = 57.459; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 07-02-2019; Ambient Temp: 23.6°C; Tissue Temp: 22.6°C

Probe: EX3DV4 - SN3914; ConvF(9.73, 9.73, 9.73) @ 793 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/14/2019
Phantom: SAM with CRP v5.0 Left; Type: QD000P40CD; Serial: 1687
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 14, Body SAR, Back side, Mid.ch, 10 MHz Bandwidth, QPSK, 1 RB, 25 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.03 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.397 W/kg
SAR(1 g) = 0.303 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1032M

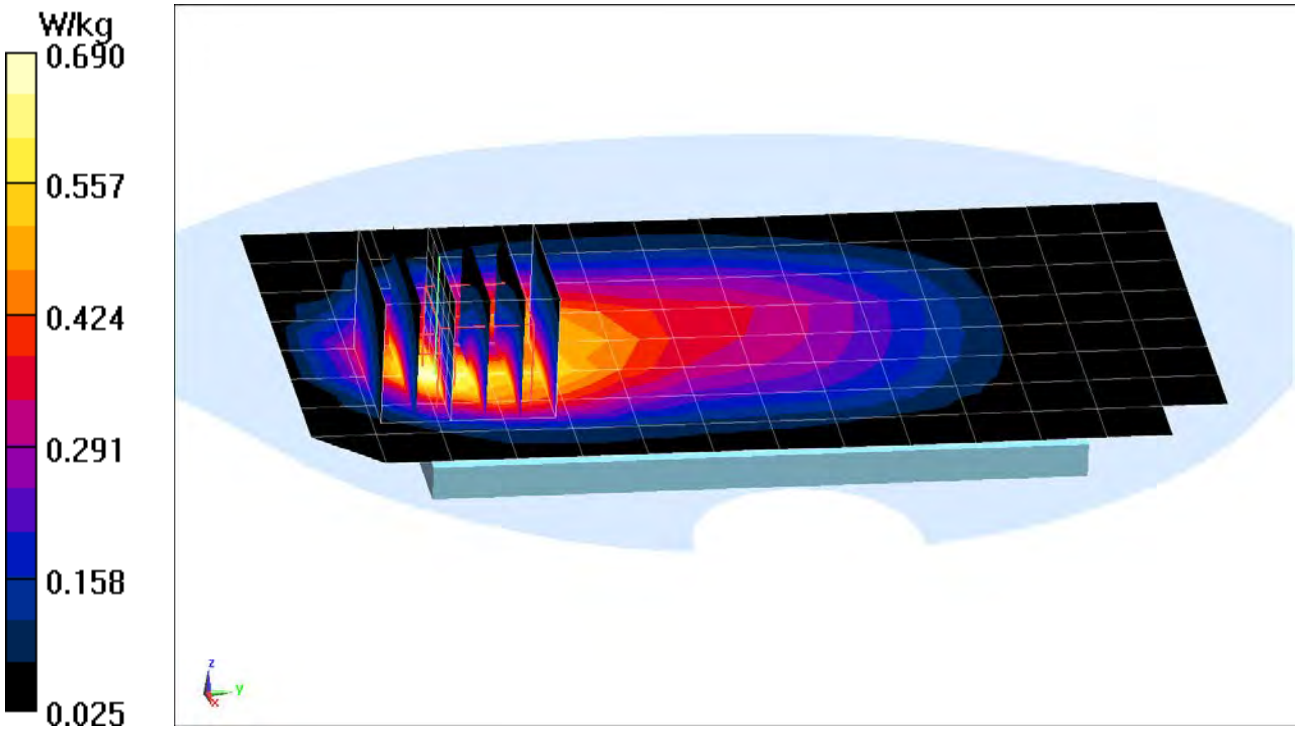
Communication System: UID 0, LTE Band 14; Frequency: 793 MHz; Duty Cycle: 1:1
Medium: 750 Body Medium parameters used (interpolated):
f = 793 MHz; σ = 0.959 S/m; ε_r = 57.459; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-02-2019; Ambient Temp: 23.6°C; Tissue Temp: 22.6°C

Probe: EX3DV4 - SN3914; ConvF(9.73, 9.73, 9.73) @ 793 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/14/2019
Phantom: SAM with CRP v5.0 Left; Type: QD000P40CD; Serial: 1687
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 14, Body SAR, Back side, Mid.ch, 10 MHz Bandwidth, QPSK, 1 RB, 25 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.80 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 0.831 W/kg
SAR(1 g) = 0.469 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1110M

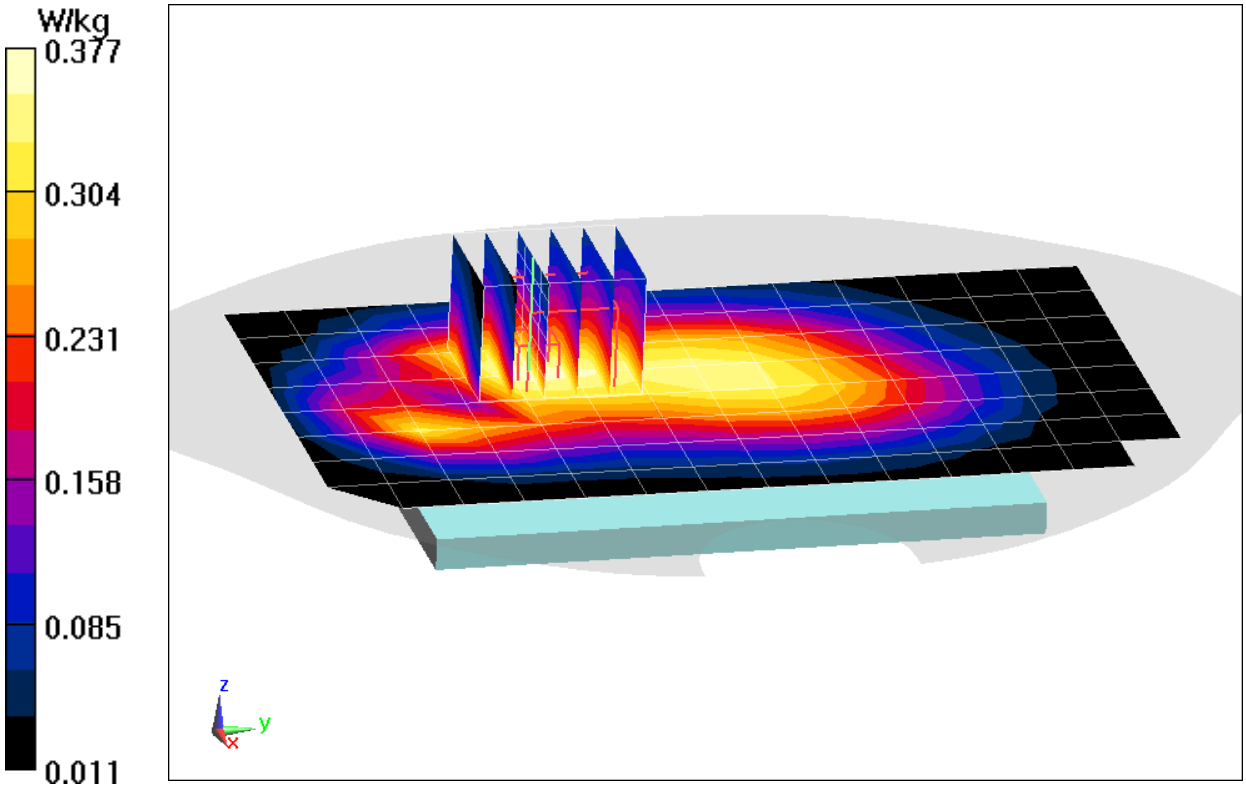
Communication System: UID 0, LTE Band 26; Frequency: 831.5 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 831.5 MHz; σ = 0.976 S/m; ε_r = 53.508; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-24-2019; Ambient Temp: 22.0°C; Tissue Temp: 21.5°C

Probe: EX3DV4 - SN7410; ConvF(9.63, 9.63, 9.63) @ 831.5 MHz; Calibrated: 7/20/2018
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/11/2018
Phantom: Front; Type: QD 000 P40 CD; Serial: 1686
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 26 (Cell.), Body SAR, Back side, Mid.ch, 15 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.22 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.411 W/kg
SAR(1 g) = 0.310 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1110M

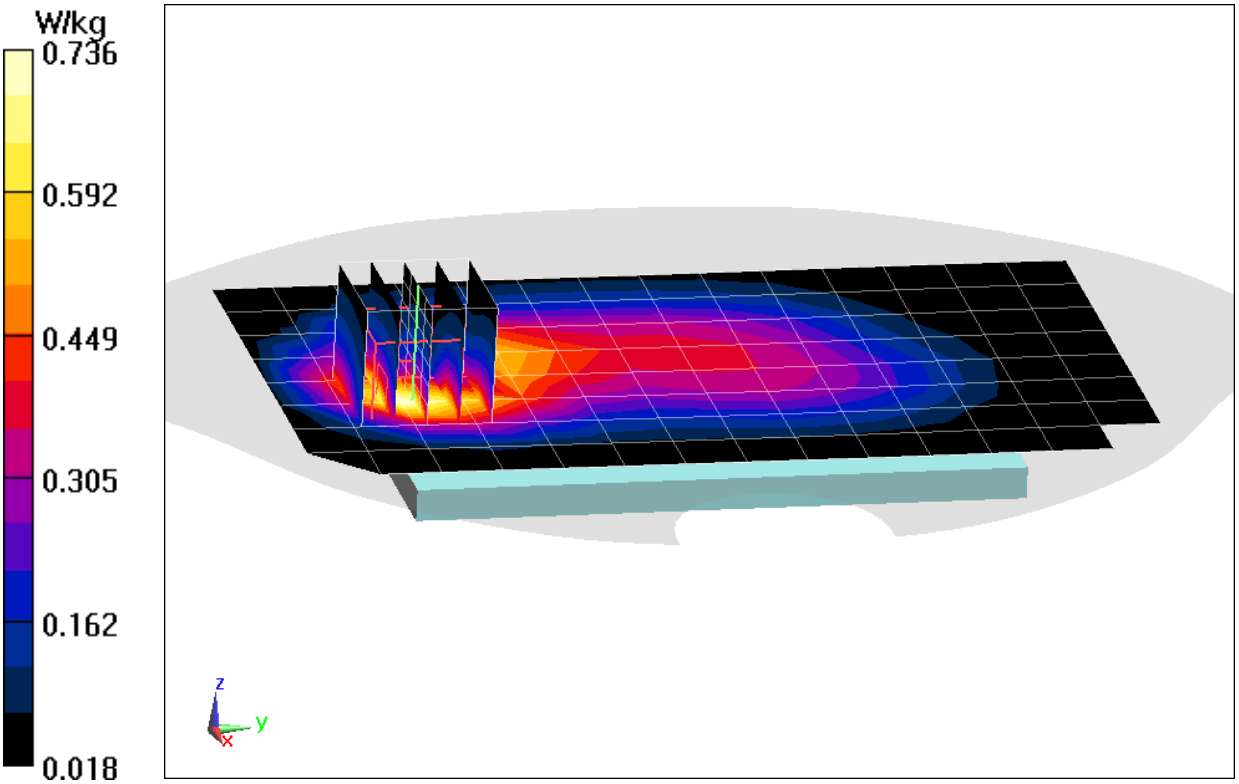
Communication System: UID 0, LTE Band 26; Frequency: 831.5 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 831.5 MHz; σ = 0.976 S/m; ε_r = 53.508; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-24-2019; Ambient Temp: 22.0°C; Tissue Temp: 21.5°C

Probe: EX3DV4 - SN7410; ConvF(9.63, 9.63, 9.63) @ 831.5 MHz; Calibrated: 7/20/2018
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/11/2018
Phantom: Front; Type: QD 000 P40 CD; Serial: 1686
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 26 (Cell.), Body SAR, Back side, Mid.ch, 15 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.87 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 0.892 W/kg
SAR(1 g) = 0.517 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 0982M

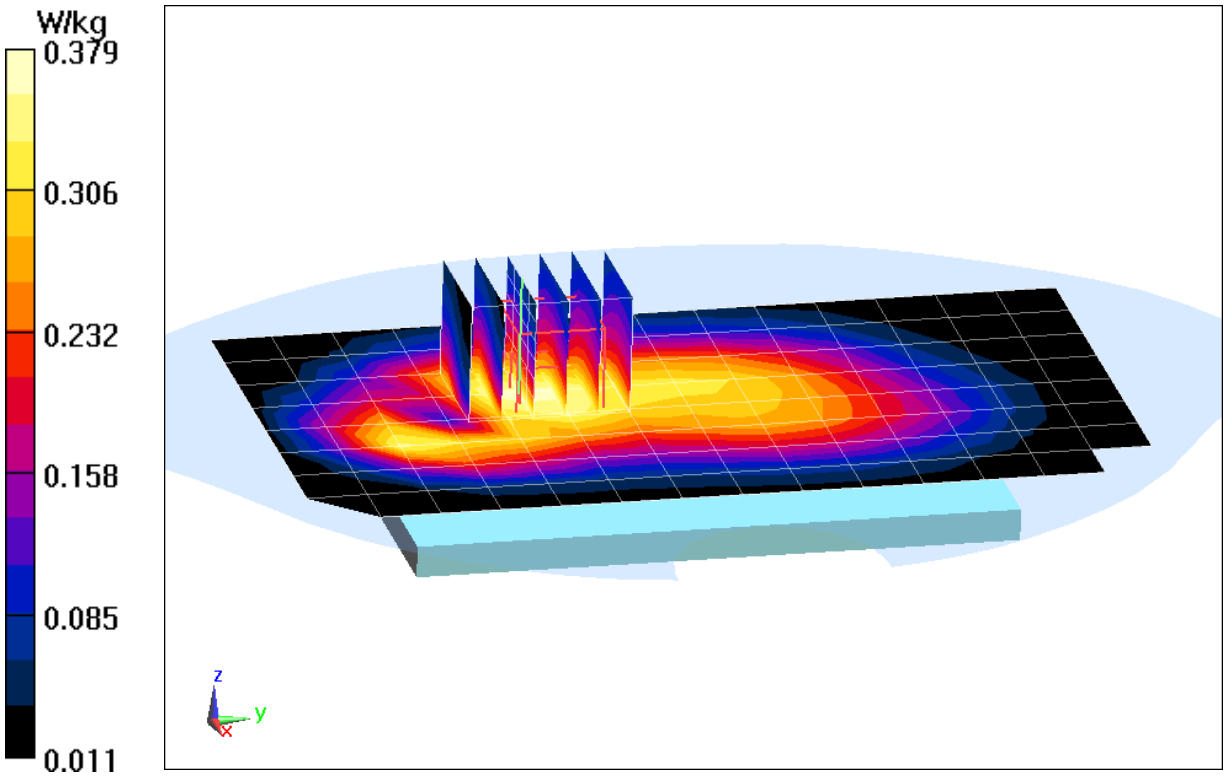
Communication System: UID 0, LTE Band 5; Frequency: 836.5 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 836.5 MHz; σ = 0.969 S/m; ε_r = 56.699; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-28-2019; Ambient Temp: 22.8°C; Tissue Temp: 22.5°C

Probe: EX3DV4 - SN3914; ConvF(9.46, 9.46, 9.46) @ 836.5 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/14/2019
Phantom: SAM with CRP v5.0 Left; Type: QD000P40CD; Serial: 1687
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 5 (Cell.), Body SAR, Back side, Mid.ch, 10 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.06 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.423 W/kg
SAR(1 g) = 0.308 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 0982M

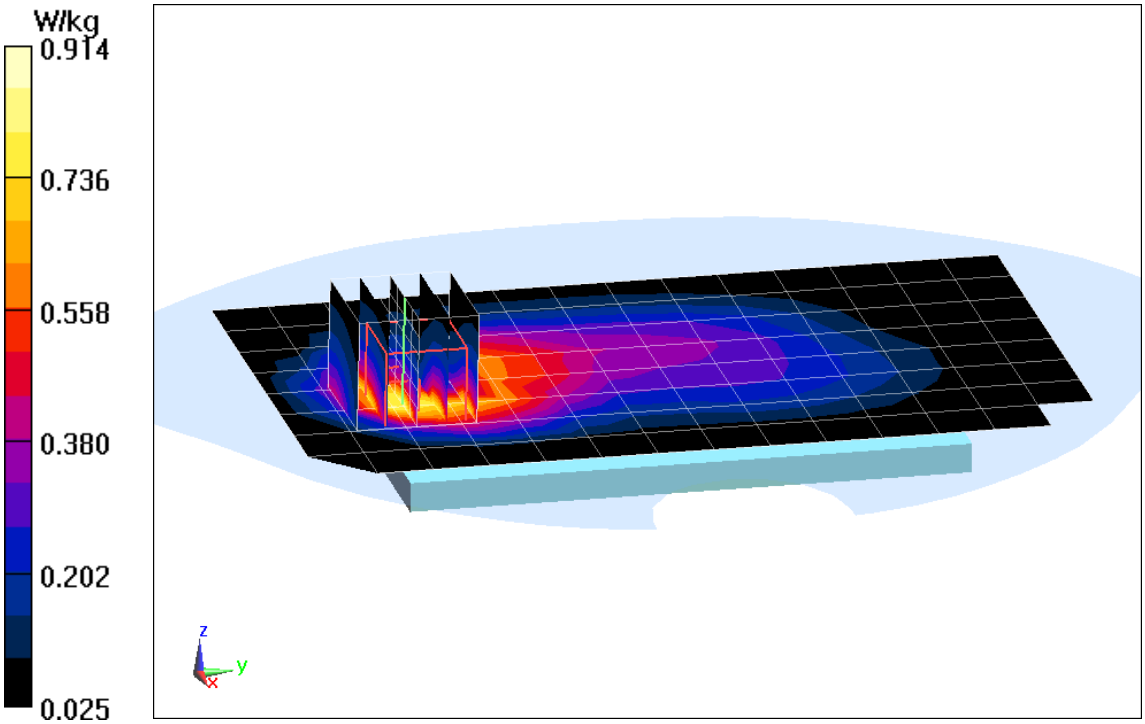
Communication System: UID 0, LTE Band 5; Frequency: 836.5 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 836.5 MHz; σ = 0.969 S/m; ε_r = 56.699; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-28-2019; Ambient Temp: 22.8°C; Tissue Temp: 22.5°C

Probe: EX3DV4 - SN3914; ConvF(9.46, 9.46, 9.46) @ 836.5 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/14/2019
Phantom: SAM with CRP v5.0 Left; Type: QD000P40CD; Serial: 1687
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 5 (Cell.) ULCA, Body SAR, Back side,
PCC: 10 MHz Bandwidth, QPSK, Ch. 20525, 1 RB, 0 RB Offset
SCC: 5 MHz Bandwidth, QPSK, Ch. 20453, 1 RB, 24 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.00 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 1.10 W/kg
SAR(1 g) = 0.610 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1291M

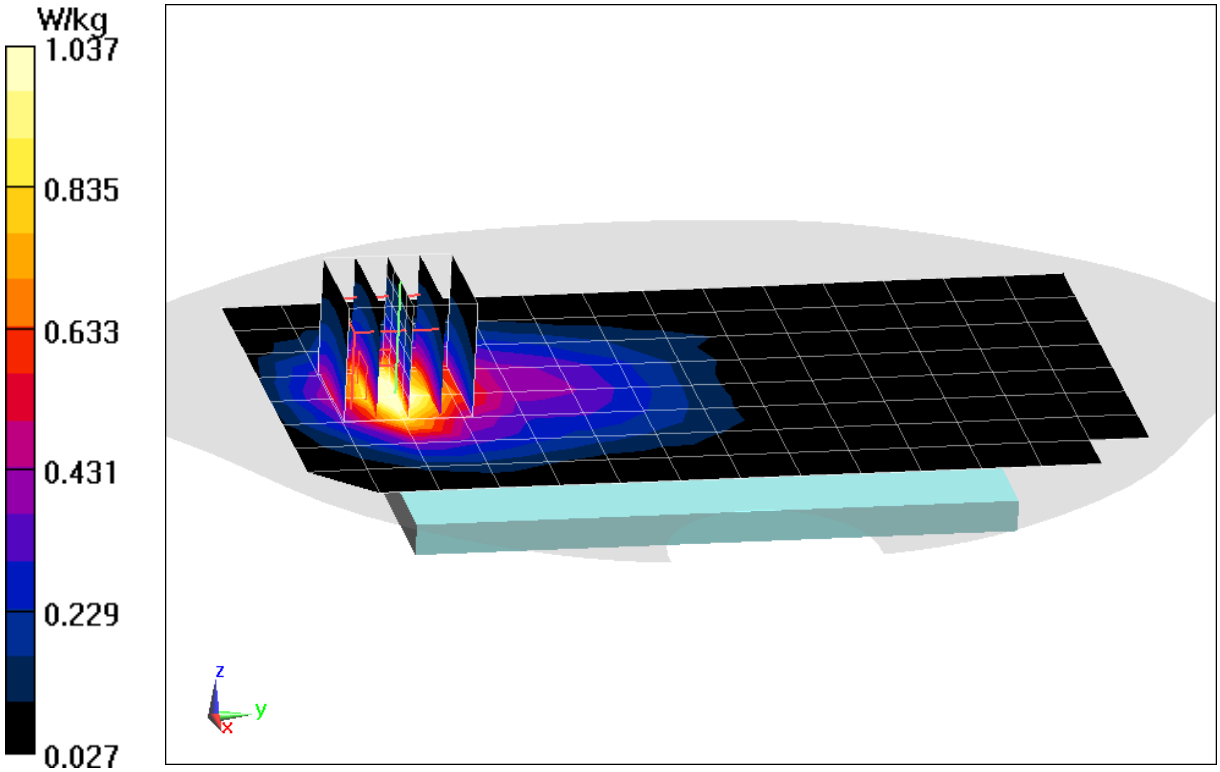
Communication System: UID 0, LTE Band 66 (AWS); Frequency: 1770 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used (interpolated):
$f = 1770$ MHz; $\sigma = 1.536$ S/m; $\varepsilon_r = 51.395$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 6-14-2019; Ambient Temp: 22.7°C; Tissue Temp: 19.8°C

Probe: EX3DV4 - SN7488; ConvF(8.68, 8.68, 8.68) @ 1770 MHz; Calibrated: 1/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1530; Calibrated: 1/15/2019
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 66 (AWS), Body SAR, Back side, High.ch, 20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.17 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 1.22 W/kg
SAR(1 g) = 0.761 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1291M

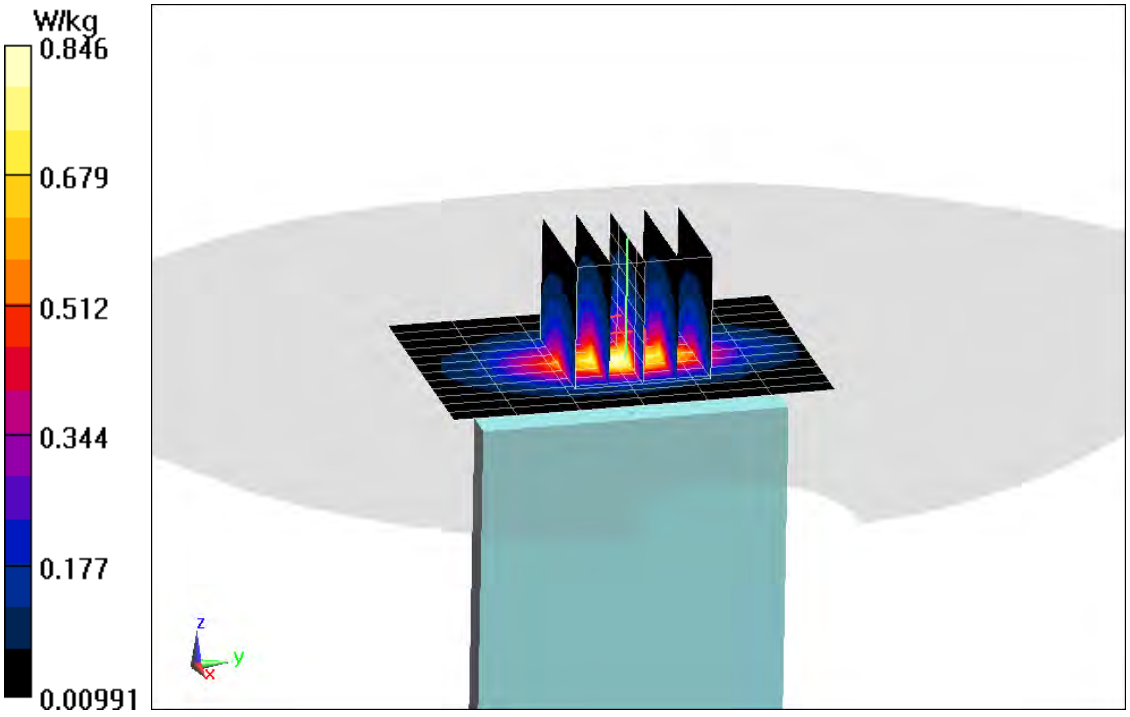
Communication System: UID 0, LTE Band 66 (AWS); Frequency: 1770 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used (interpolated):
$f = 1770$ MHz; $\sigma = 1.523$ S/m; $\varepsilon_r = 51.021$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-23-2019; Ambient Temp: 19.5°C; Tissue Temp: 21.6°C

Probe: EX3DV4 - SN7357; ConvF(8.26, 8.26, 8.26) @ 1770 MHz; Calibrated: 4/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/18/2019
Phantom: Twin-SAM V5.0 Back Right; Type: QD 000 P40 CD; Serial: 1692
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 66 (AWS) ULCA, Body SAR, Bottom Edge,
PCC: 20 MHz Bandwidth, QPSK, Ch. 132572, 100 RB, 0 RB Offset
SCC: 20 MHz Bandwidth, QPSK, Ch. 132374, 100 RB, 0 RB Offset

Area Scan (13x7x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.30 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 1.55 W/kg
SAR(1 g) = 0.873 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1289M

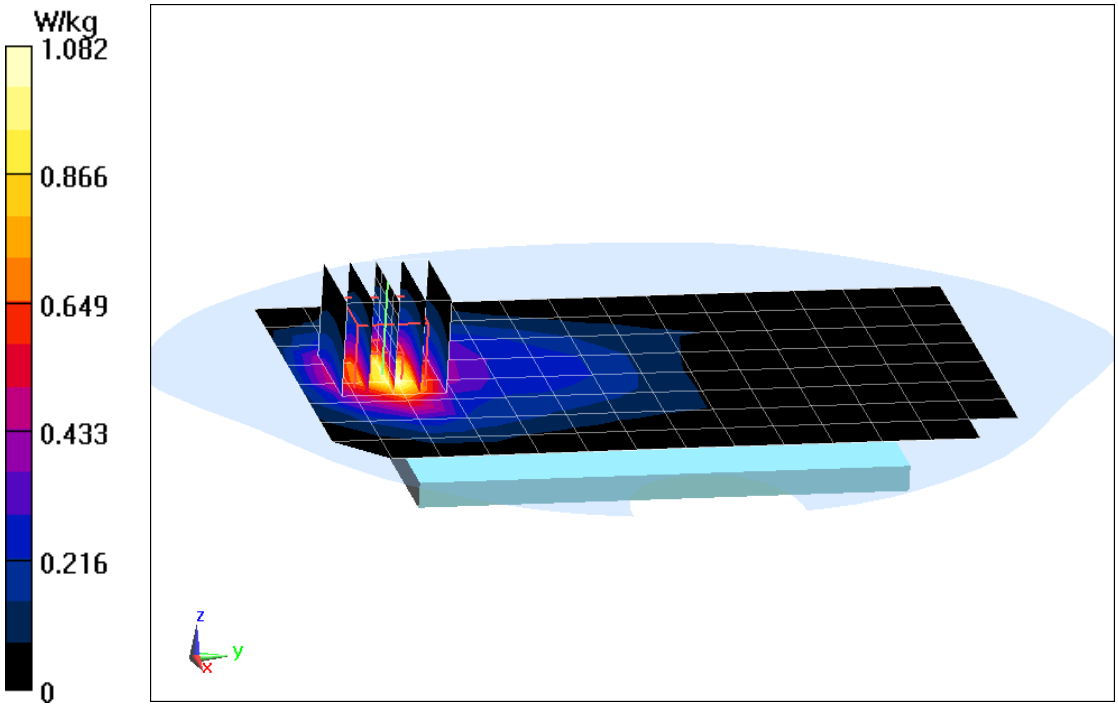
Communication System: UID 0, LTE Band 25 (PCS); Frequency: 1860 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
f = 1860 MHz; σ = 1.533 S/m; ε_r = 54.159; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-05-2019; Ambient Temp: 23.5°C; Tissue Temp: 22.2°C

Probe: EX3DV4 - SN3589; ConvF(6.75, 6.75, 6.75) @ 1860 MHz; Calibrated: 1/25/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 8/22/2018
Phantom: SAM 5.0 front; Type: QD000P40CD; Serial: 1648
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 25 (PCS), Body SAR, Back side, Low.ch, 20 MHz Bandwidth, QPSK, 1 RB, 99 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.44 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 1.40 W/kg
SAR(1 g) = 0.837 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1289M

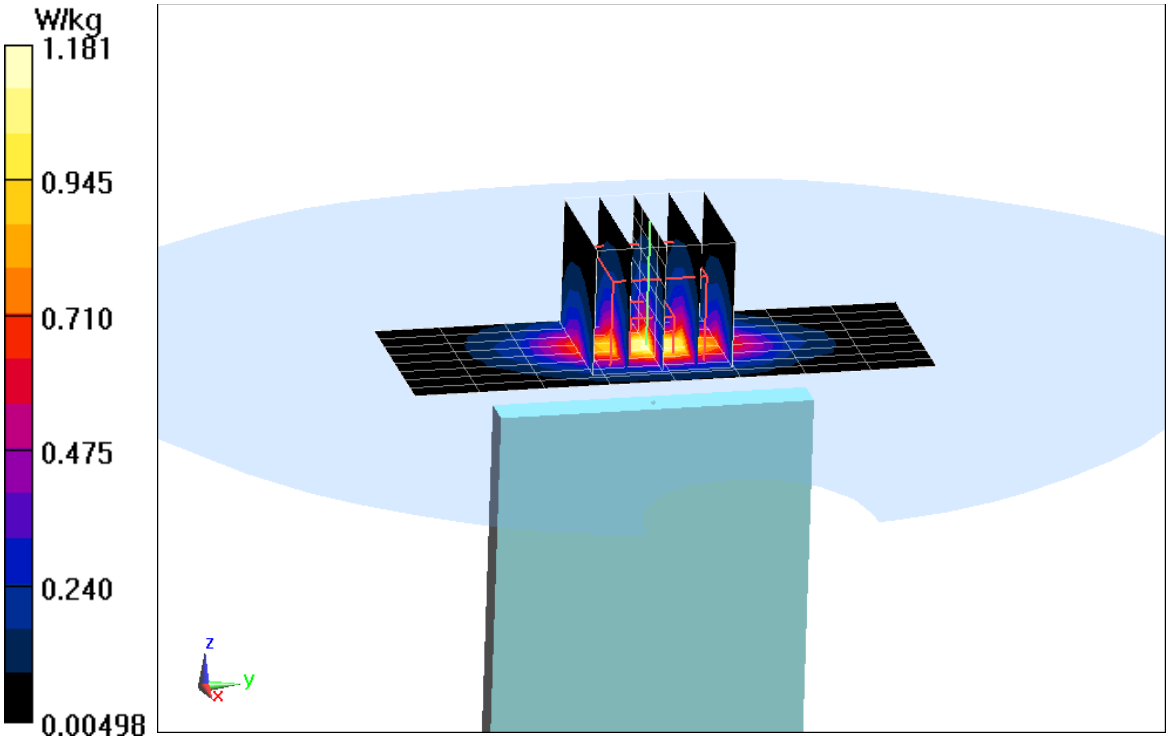
Communication System: UID 0, LTE Band 25 (PCS); Frequency: 1860 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
f = 1860 MHz; σ = 1.533 S/m; ε_r = 54.159; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-05-2019; Ambient Temp: 23.5°C; Tissue Temp: 22.2°C

Probe: EX3DV4 - SN3589; ConvF(6.75, 6.75, 6.75) @ 1860 MHz; Calibrated: 1/25/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 8/22/2018
Phantom: SAM 5.0 front; Type: QD000P40CD; Serial: 1648
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 25 (PCS), Body SAR, Bottom Edge, Low.ch, 20 MHz Bandwidth, QPSK, 50 RB, 50 RB Offset

Area Scan (9x9x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.36 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 1.50 W/kg
SAR(1 g) = 0.823 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1286M

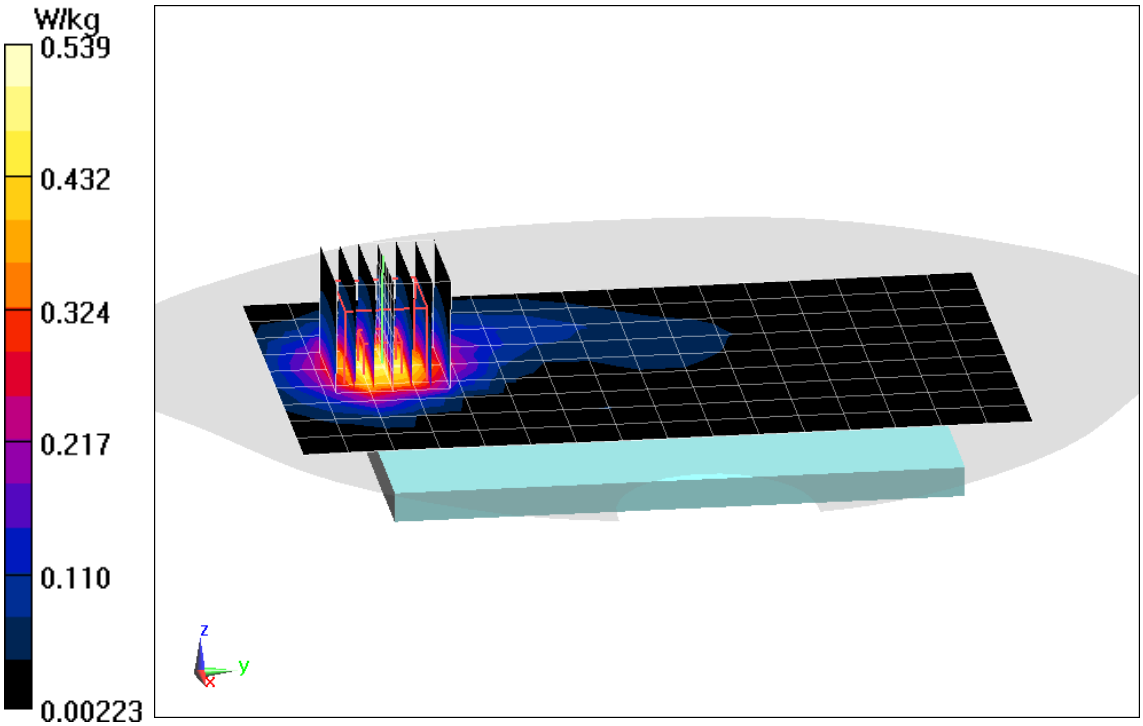
Communication System: UID 0, LTE Band 30; Frequency: 2310 MHz; Duty Cycle: 1:1
Medium: 2450 MHz Body Medium parameters used:
f = 2310 MHz; σ = 1.901 S/m; ε_r = 53.029; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-10-2019; Ambient Temp: 22.2°C; Tissue Temp: 21.1°C

Probe: EX3DV4 - SN7308; ConvF(7.73, 7.73, 7.73) @ 2310 MHz; Calibrated: 8/23/2018
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1558; Calibrated: 10/3/2018
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 30, Body SAR, Back side, Mid.ch, 10 MHz Bandwidth, QPSK, 1 RB, 25 RB Offset

Area Scan (10x17x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.25 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.657 W/kg
SAR(1 g) = 0.361 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1286M

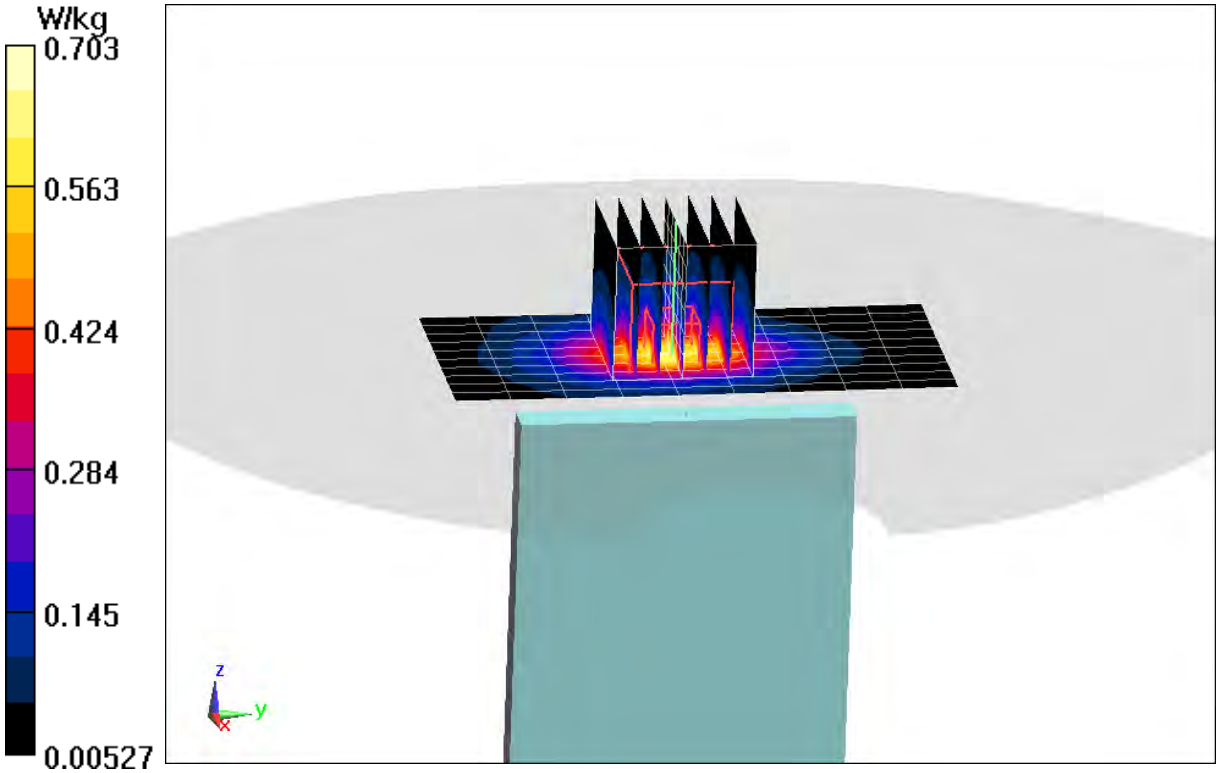
Communication System: UID 0, LTE Band 30; Frequency: 2310 MHz; Duty Cycle: 1:1
Medium: 2450 MHz Body Medium parameters used:
f = 2310 MHz; σ = 1.901 S/m; ε_r = 53.029; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-10-2019; Ambient Temp: 22.2°C; Tissue Temp: 21.1°C

Probe: EX3DV4 - SN7308; ConvF(7.73, 7.73, 7.73) @ 2310 MHz; Calibrated: 8/23/2018
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1558; Calibrated: 10/3/2018
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 30, Body SAR, Bottom Edge, Mid.ch, 10 MHz Bandwidth, QPSK, 25 RB, 12 RB Offset

Area Scan (11x10x1): Measurement grid: dx=5mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 16.19 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 0.855 W/kg
SAR(1 g) = 0.451 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1286M

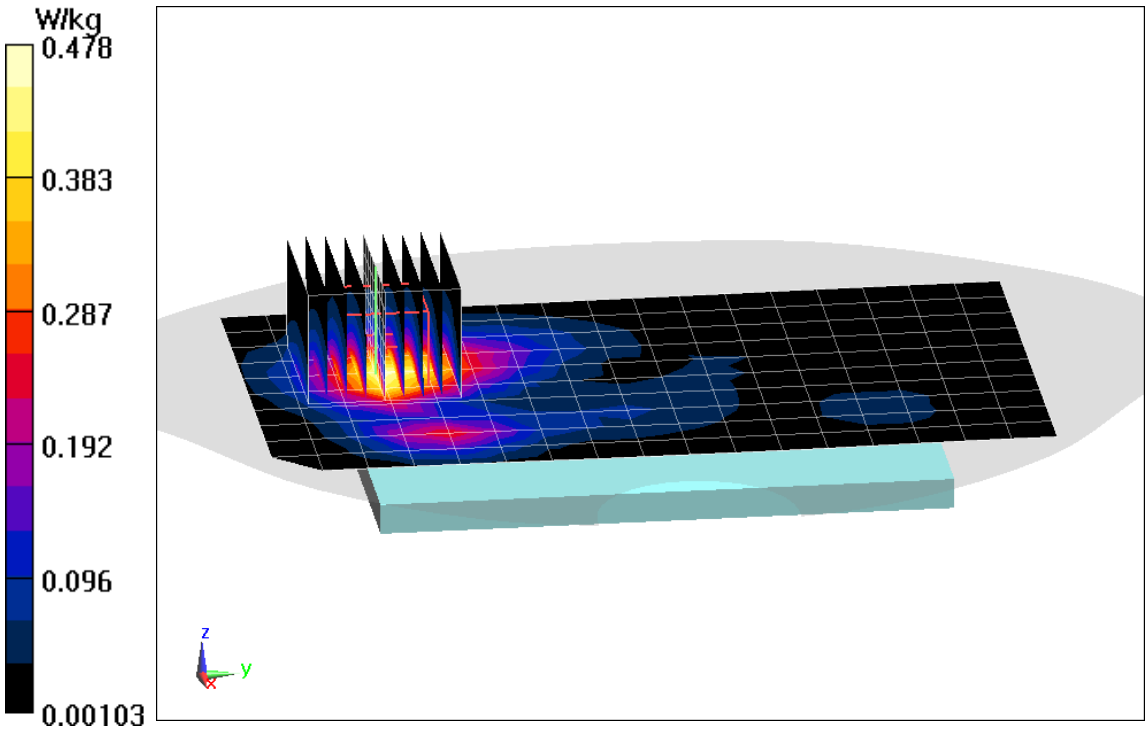
Communication System: UID 0, LTE Band 7; Frequency: 2535 MHz; Duty Cycle: 1:1
Medium: 2450 Body Medium parameters used (interpolated):
$f = 2535$ MHz; $\sigma = 2.14$ S/m; $\varepsilon_r = 50.712$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-14-2019; Ambient Temp: 23.2°C; Tissue Temp: 22.6°C

Probe: EX3DV4 - SN7417; ConvF(7.37, 7.37, 7.37) @ 2535 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/13/2019
Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP1375
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 7, Body SAR, Back side, Mid.ch, 20 MHz Bandwidth, QPSK, 1 RB, 99 RB Offset

Area Scan (11x18x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (10x9x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.16 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 0.588 W/kg
SAR(1 g) = 0.308 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1286M

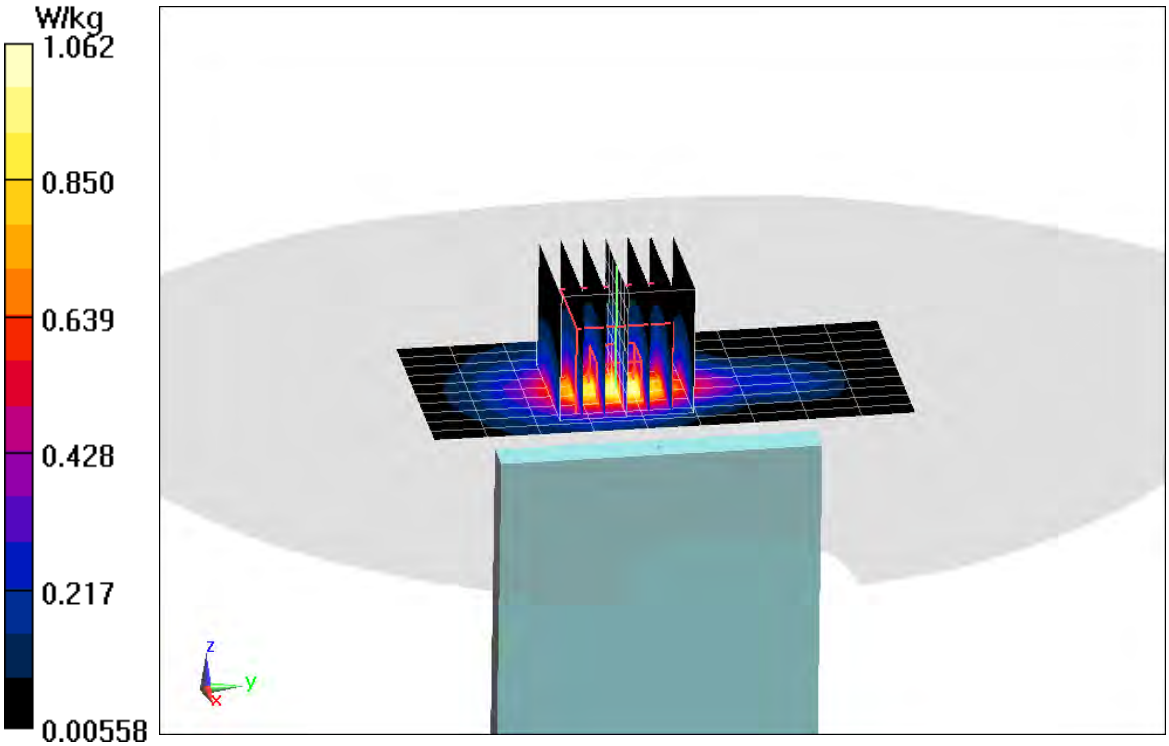
Communication System: UID 0, LTE Band 7; Frequency: 2560 MHz; Duty Cycle: 1:1
Medium: 2450 Body Medium parameters used (interpolated):
f = 2560 MHz; σ = 2.17 S/m; ε_r = 50.64; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-14-2019; Ambient Temp: 23.2°C; Tissue Temp: 22.6°C

Probe: EX3DV4 - SN7417; ConvF(7.37, 7.37, 7.37) @ 2560 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/13/2019
Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP1375
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 7, Body SAR, Bottom Edge, High.ch, 20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

Area Scan (11x10x1): Measurement grid: dx=5mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 18.38 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.32 W/kg
SAR(1 g) = 0.652 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 0937M

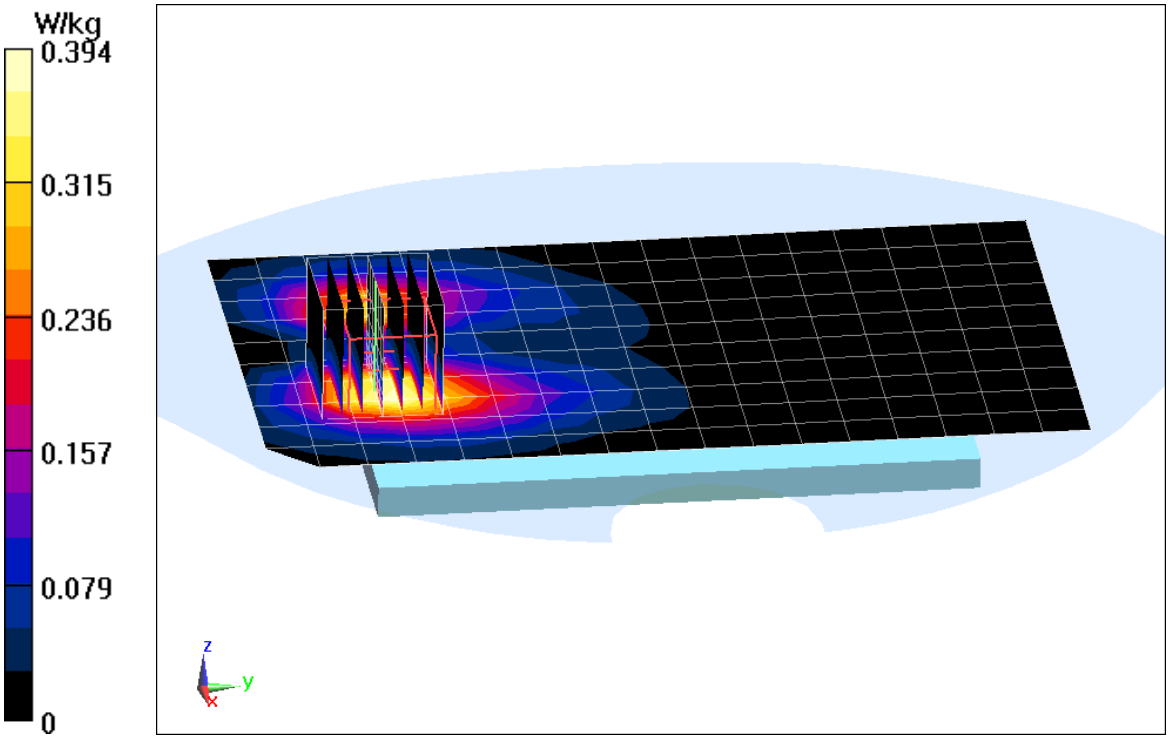
Communication System: UID 0, LTE Band 48; Frequency: 3646.7 MHz; Duty Cycle: 1:1.58
Medium: 3500-3700 Body Medium parameters used (interpolated):
f = 3646.7 MHz; σ = 3.526 S/m; ε_r = 50.469; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-25-2019; Ambient Temp: 22.3°C; Tissue Temp: 21.9°C

Probe: EX3DV4 - SN3914; ConvF(6.58, 6.58, 6.58) @ 3646.7 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/14/2019
Phantom: SAM with CRP v5.0 Front; Type: QD000P40CD; Serial: 1646
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 48, Body SAR, Back side, Mid-High.ch, 20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

Area Scan (11x18x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x8)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 8.102 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.557 W/kg
SAR(1 g) = 0.216 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 0937M

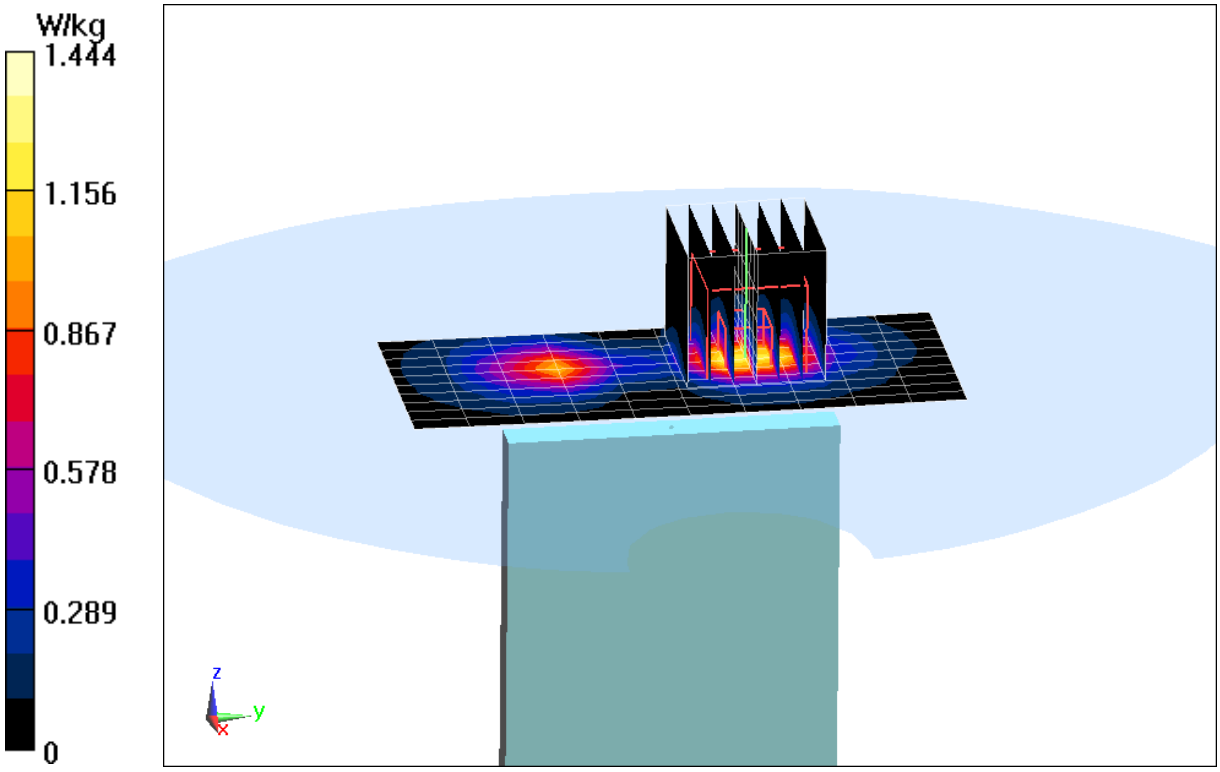
Communication System: UID 0, LTE Band 48; Frequency: 3646.7 MHz; Duty Cycle: 1:1.58
Medium: 3500-3700 Body Medium parameters used (interpolated):
f = 3646.7 MHz; σ = 3.526 S/m; ε_r = 50.469; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-25-2019; Ambient Temp: 22.3°C; Tissue Temp: 21.9°C

Probe: EX3DV4 - SN3914; ConvF(6.58, 6.58, 6.58) @ 3646.7 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/14/2019
Phantom: SAM with CRP v5.0 Front; Type: QD000P40CD; Serial: 1646
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 48, Body SAR, Bottom Edge, Mid-High.ch, 20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

Area Scan (11x11x1): Measurement grid: dx=5mm, dy=12mm
Zoom Scan (7x7x8)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 15.09 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 2.12 W/kg
SAR(1 g) = 0.733 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 0982M

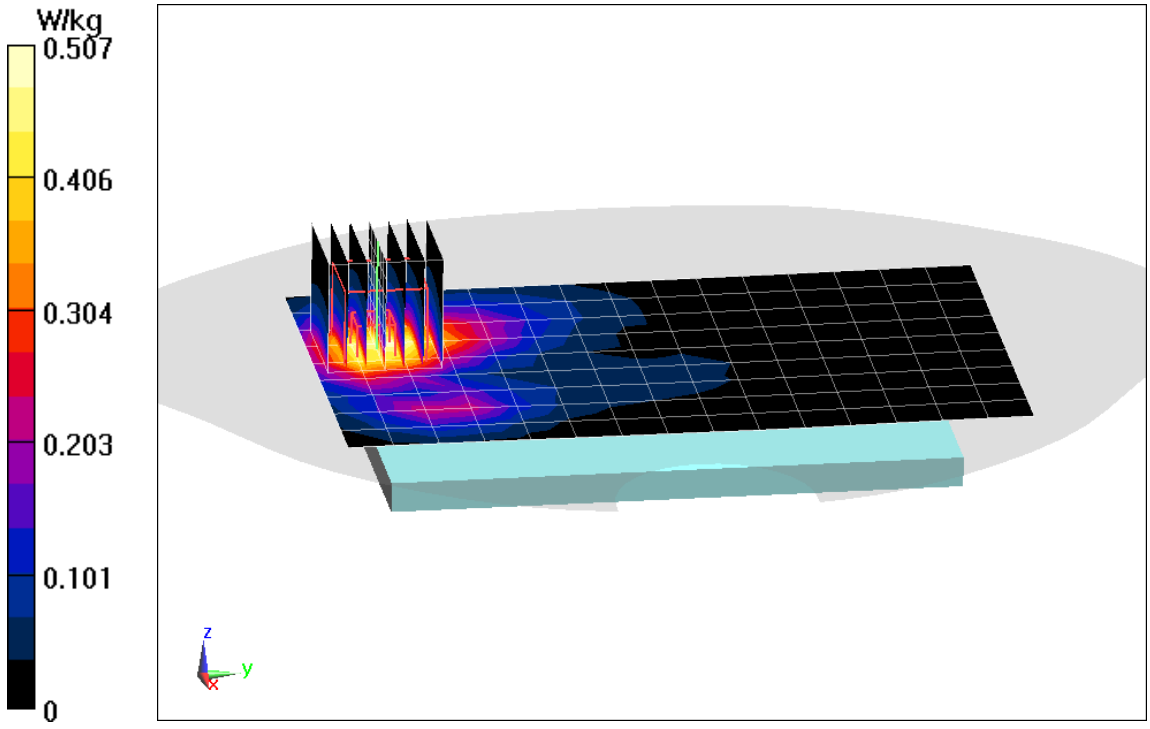
Communication System: UID 0, LTE Band 41 (Class 2); Frequency: 2593 MHz; Duty Cycle: 1:2.31
Medium: 2450 Body Medium parameters used (interpolated):
f = 2593 MHz; σ = 2.195 S/m; ε_r = 50.344; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-20-2019; Ambient Temp: 23.9°C; Tissue Temp: 22.5°C

Probe: EX3DV4 - SN7417; ConvF(7.37, 7.37, 7.37) @ 2593 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/13/2019
Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP1375
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 41 (PC2) ULCA, Body SAR, Back side,
PCC: 20 MHz Bandwidth, QPSK, Ch. 40620, 1 RB, 0 RB Offset
SCC: 20 MHz Bandwidth, QPSK, Ch. 40422, 1 RB, 99 RB Offset

Area Scan (10x16x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.71 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.939 W/kg
SAR(1 g) = 0.497 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1020M

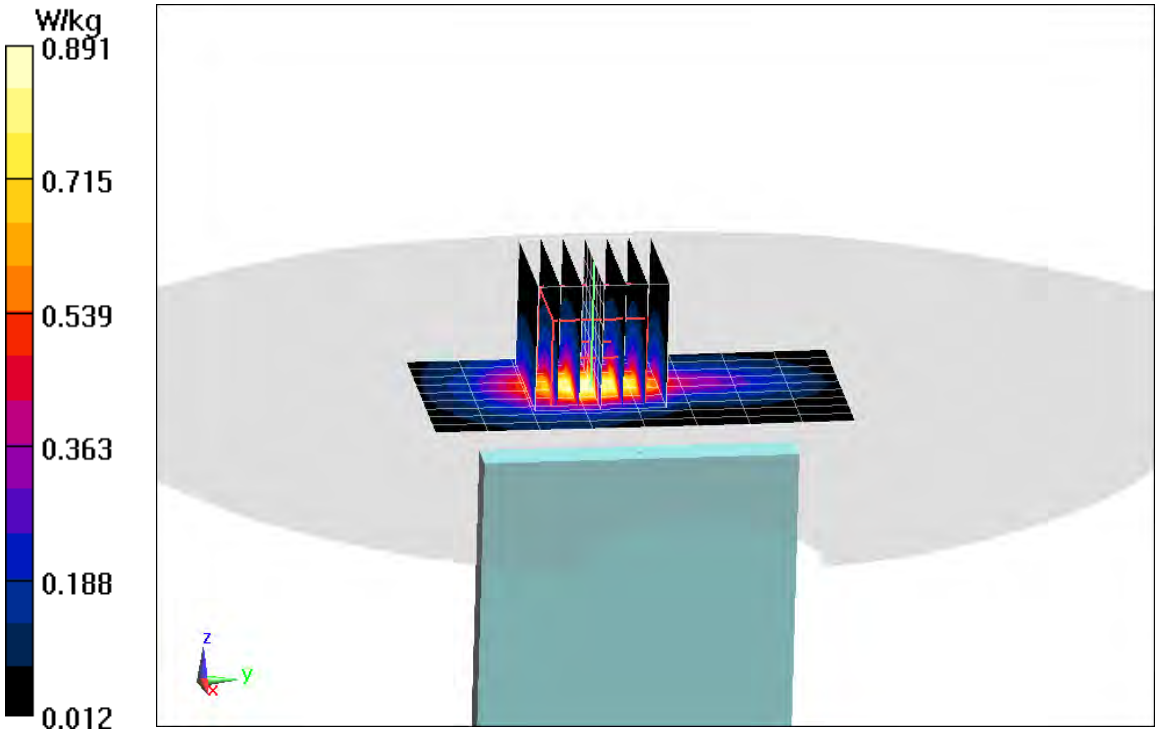
Communication System: UID 0, LTE Band 41 (Class 3); Frequency: 2549.5 MHz; Duty Cycle: 1:1.58
Medium: 2450 Body Medium parameters used:
f = 2550 MHz; σ = 2.159 S/m; ε_r = 50.577; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-25-2019; Ambient Temp: 23.2°C; Tissue Temp: 22.3°C

Probe: EX3DV4 - SN7417; ConvF(7.37, 7.37, 7.37) @ 2549.5 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/13/2019
Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP1375
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 41 (PC3), Body SAR, Bottom Edge, Low-Mid.ch, 20 MHz Bandwidth, QPSK, 50 RB, 0 RB Offset

Area Scan (10x9x1): Measurement grid: dx=5mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 21.38 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 1.78 W/kg
SAR(1 g) = 0.877 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1202M

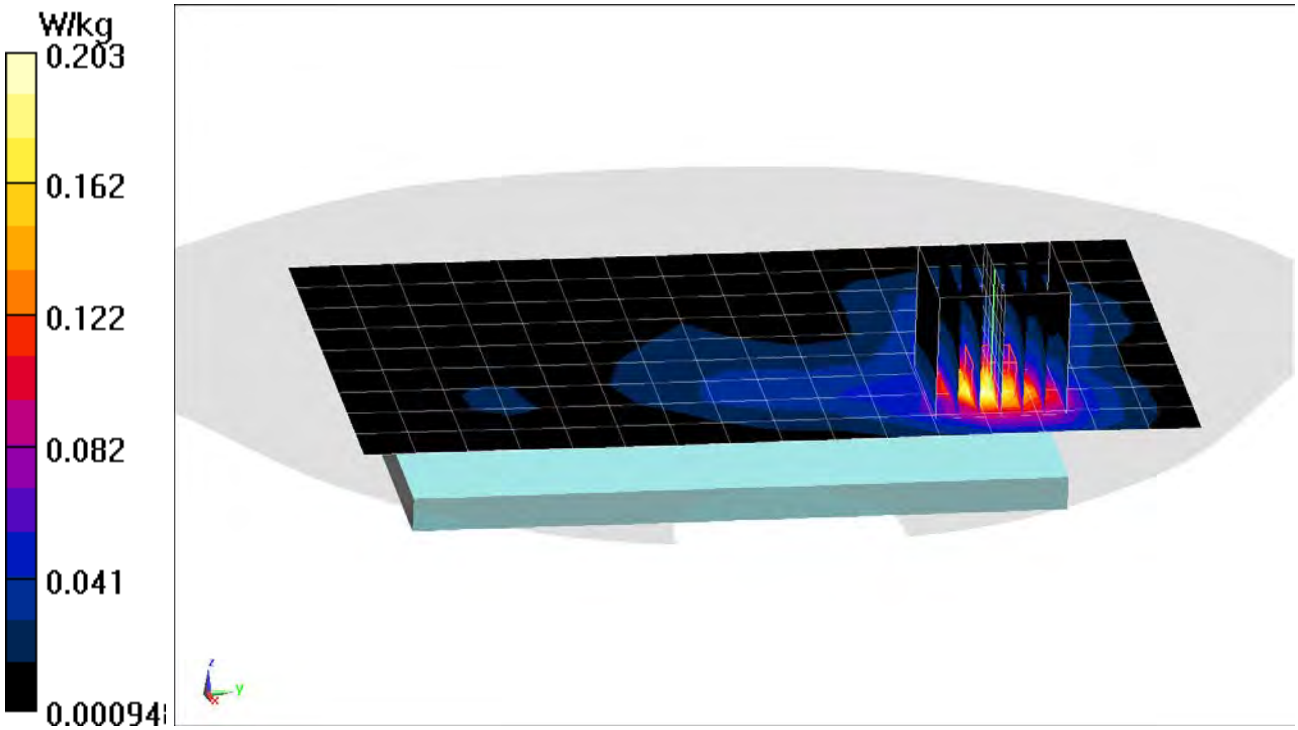
Communication System: UID 0, _IEEE 802.11b; Frequency: 2412 MHz; Duty Cycle: 1:1
Medium: 2450 MHz Body Medium parameters used (interpolated):
f = 2412 MHz; σ = 1.997 S/m; ε_r = 53.145; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-26-2019; Ambient Temp: 22.2°C; Tissue Temp: 21.1°C

Probe: EX3DV4 - SN7308; ConvF(7.57, 7.57, 7.57) @ 2412 MHz; Calibrated: 8/23/2018
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1558; Calibrated: 10/3/2018
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: IEEE 802.11b, 22 MHz Bandwidth, Antenna 2, Body SAR,
Ch 01, 1 Mbps, Back Side

Area Scan (10x17x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.933 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.289 W/kg
SAR(1 g) = 0.139 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1202M

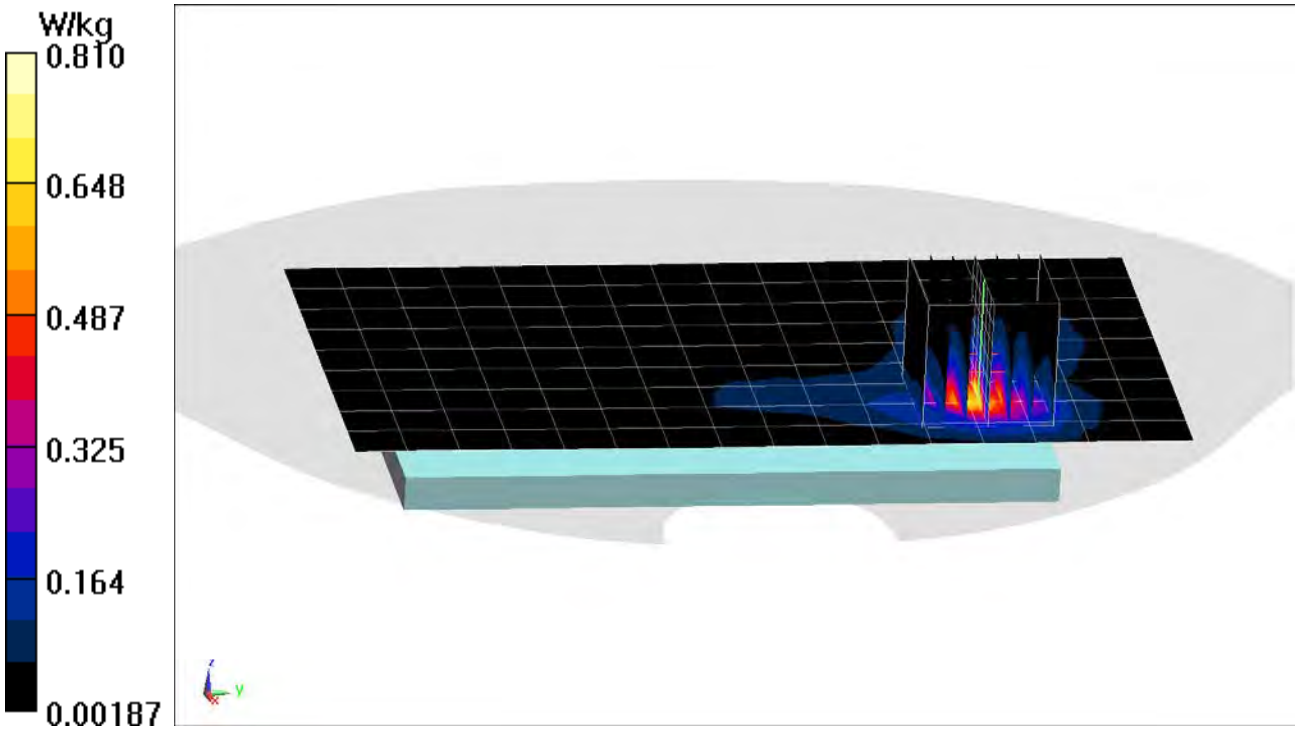
Communication System: UID 0, _IEEE 802.11b; Frequency: 2412 MHz; Duty Cycle: 1:1
Medium: 2450 MHz Body Medium parameters used (interpolated):
f = 2412 MHz; σ = 1.997 S/m; ε_r = 53.145; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-26-2019; Ambient Temp: 22.2°C; Tissue Temp: 21.1°C

Probe: EX3DV4 - SN7308; ConvF(7.57, 7.57, 7.57) @ 2412 MHz; Calibrated: 8/23/2018
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1558; Calibrated: 10/3/2018
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: IEEE 802.11b, 22 MHz Bandwidth, Antenna 2, Body SAR,
Ch 01, 1 Mbps, Back Side

Area Scan (10x17x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 16.35 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 1.06 W/kg
SAR(1 g) = 0.451 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 0952M

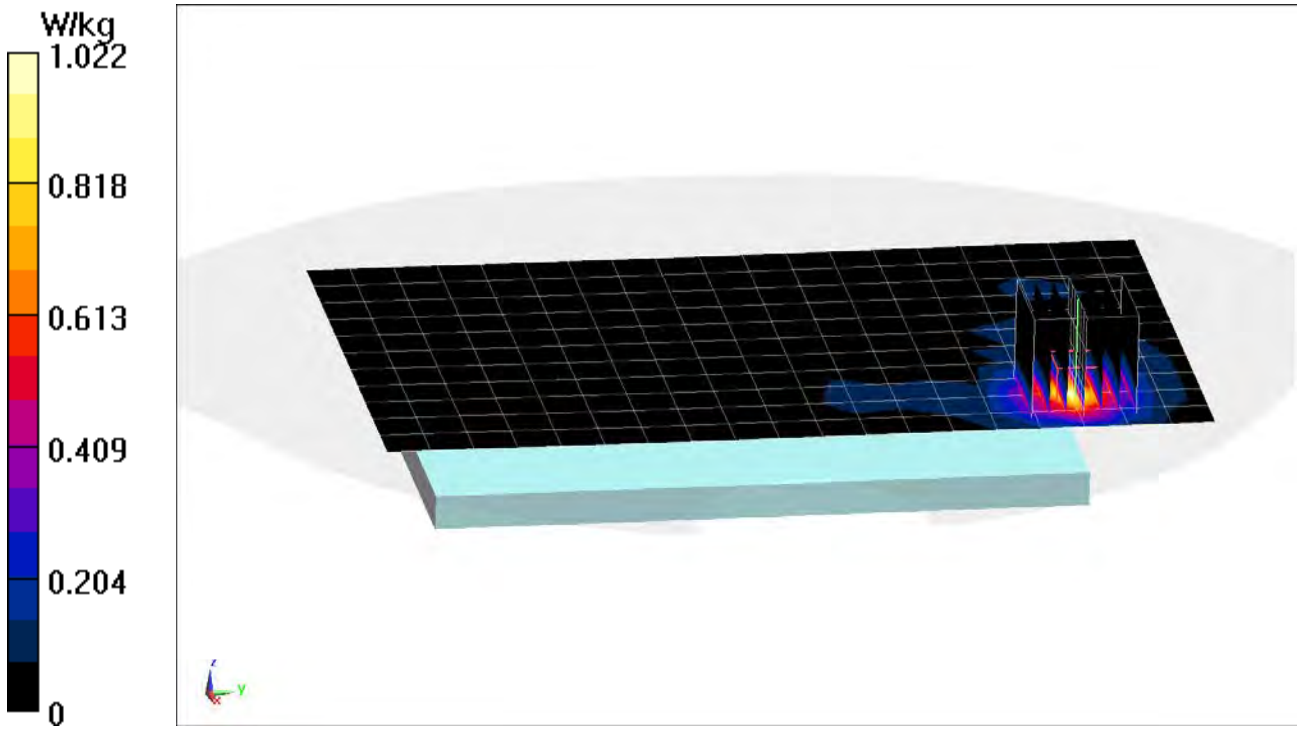
Communication System: UID 0, 802.11a 5.2-5.8 GHz Band; Frequency: 5300 MHz; Duty Cycle: 1:1
Medium: 5GHz Body Medium parameters used:
f = 5300 MHz; σ = 5.508 S/m; ε_r = 47.594; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-14-2019; Ambient Temp: 22.8°C; Tissue Temp: 20.9°C

Probe: EX3DV4 - SN7308; ConvF(4.48, 4.48, 4.48) @ 5300 MHz; Calibrated: 8/23/2018
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1558; Calibrated: 10/3/2018
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: IEEE 802.11a, UNII-2A, 20 MHz Bandwidth, Antenna 1, Body SAR, Ch 60, 6 Mbps, Back Side

Area Scan (12x20x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 7.222 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 0.930 W/kg
SAR(1 g) = 0.257 W/kg



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMN970U; Type: Portable Handset; Serial: 1210M

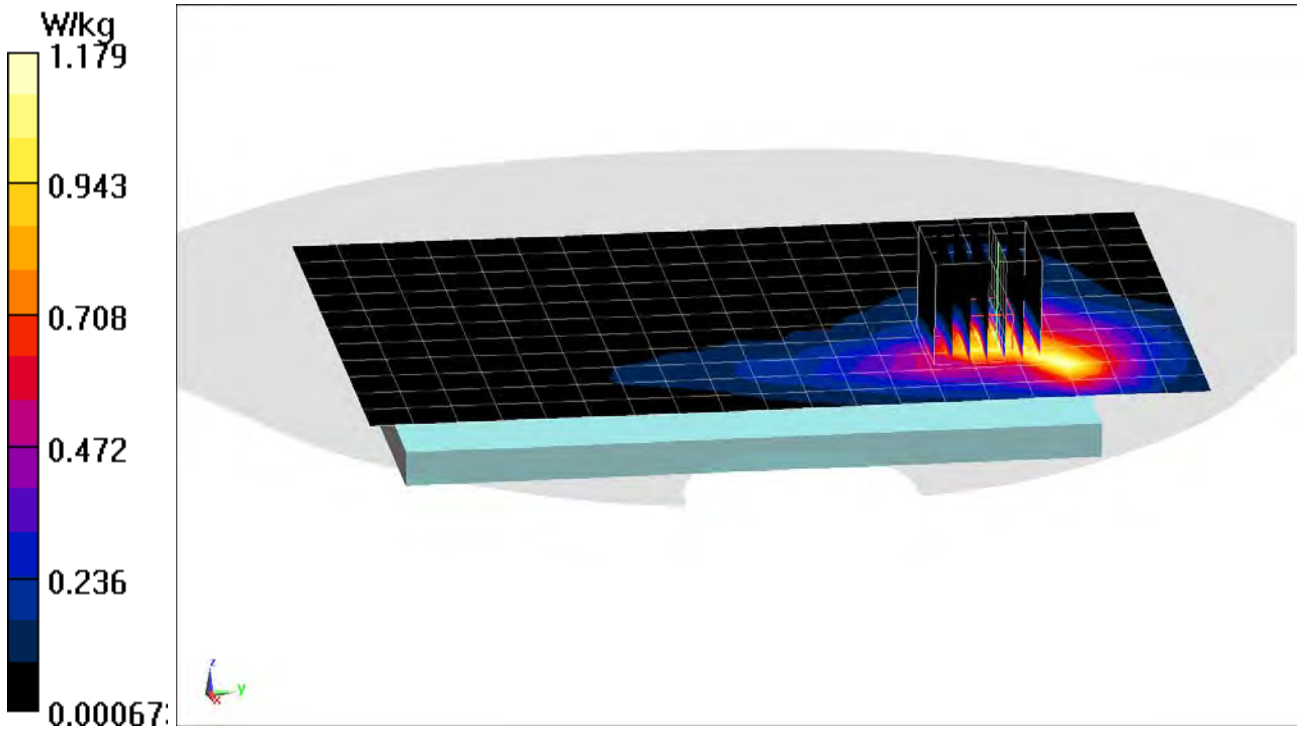
Communication System: UID 0, 802.11n 5.2-5.8 GHz Band; Frequency: 5745 MHz; Duty Cycle: 1:1
Medium: 5GHz Body Medium parameters used:
f = 5745 MHz; σ = 6.197 S/m; ε_r = 47.605; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-27-2019; Ambient Temp: 23.5°C; Tissue Temp: 21.1°C

Probe: EX3DV4 - SN7308; ConvF(4.18, 4.18, 4.18) @ 5745 MHz; Calibrated: 8/23/2018
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1558; Calibrated: 10/3/2018
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: IEEE 802.11n, UNII-3, 20 MHz Bandwidth, MIMO, Body SAR, Ch 149, 13 Mbps, Back Side

Area Scan (12x20x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 10.68 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 3.15 W/kg
SAR(1 g) = 0.661 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1087M

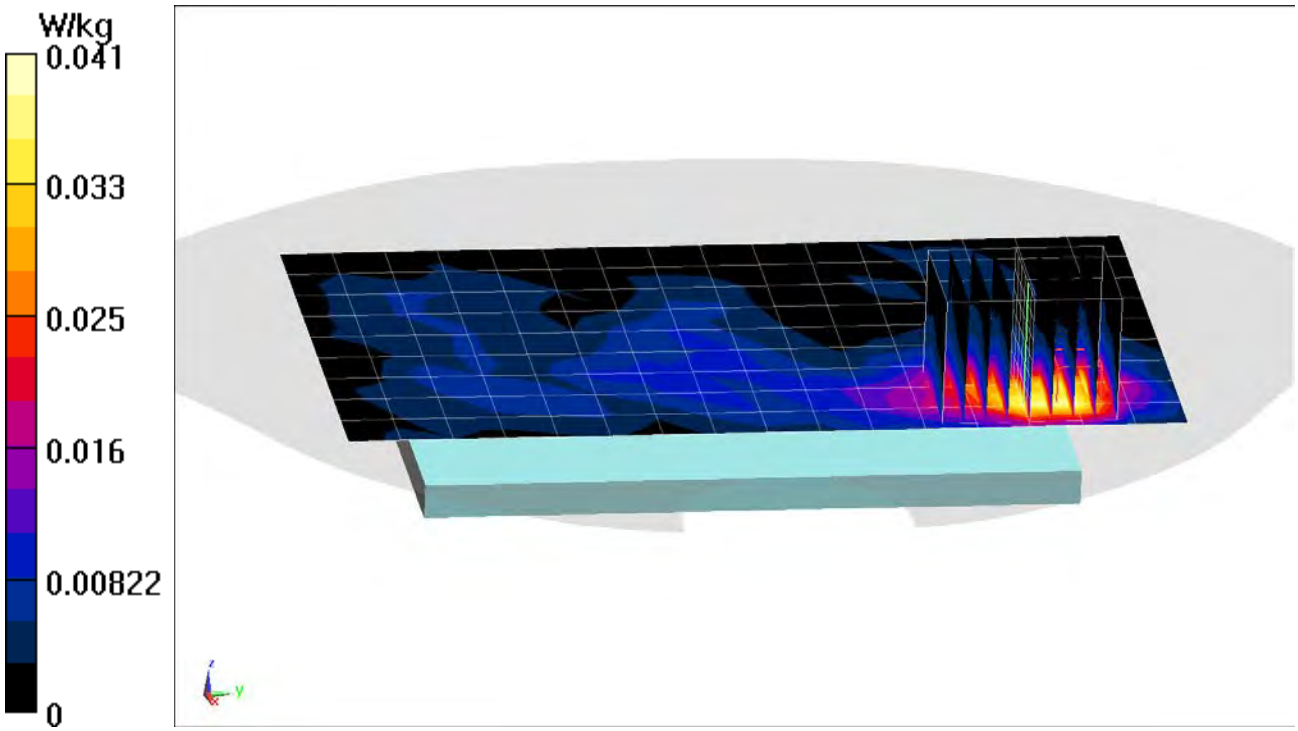
Communication System: UID 0, Bluetooth; Frequency: 2441 MHz; Duty Cycle: 1:1.297
Medium: 2450 MHz Body Medium parameters used (interpolated):
f = 2441 MHz; σ = 2.02 S/m; ε_r = 53.378; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-24-2019; Ambient Temp: 21.3°C; Tissue Temp: 20.3°C

Probe: EX3DV4 - SN7308; ConvF(7.57, 7.57, 7.57) @ 2441 MHz; Calibrated: 8/23/2018
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1558; Calibrated: 10/3/2018
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: Bluetooth, Body SAR, Ch 39, 1 Mbps, Back Side

Area Scan (10x17x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x9x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.864 V/m; Power Drift = -0.18 dB
Peak SAR (extrapolated) = 0.0900 W/kg
SAR(1 g) = 0.025 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1087M

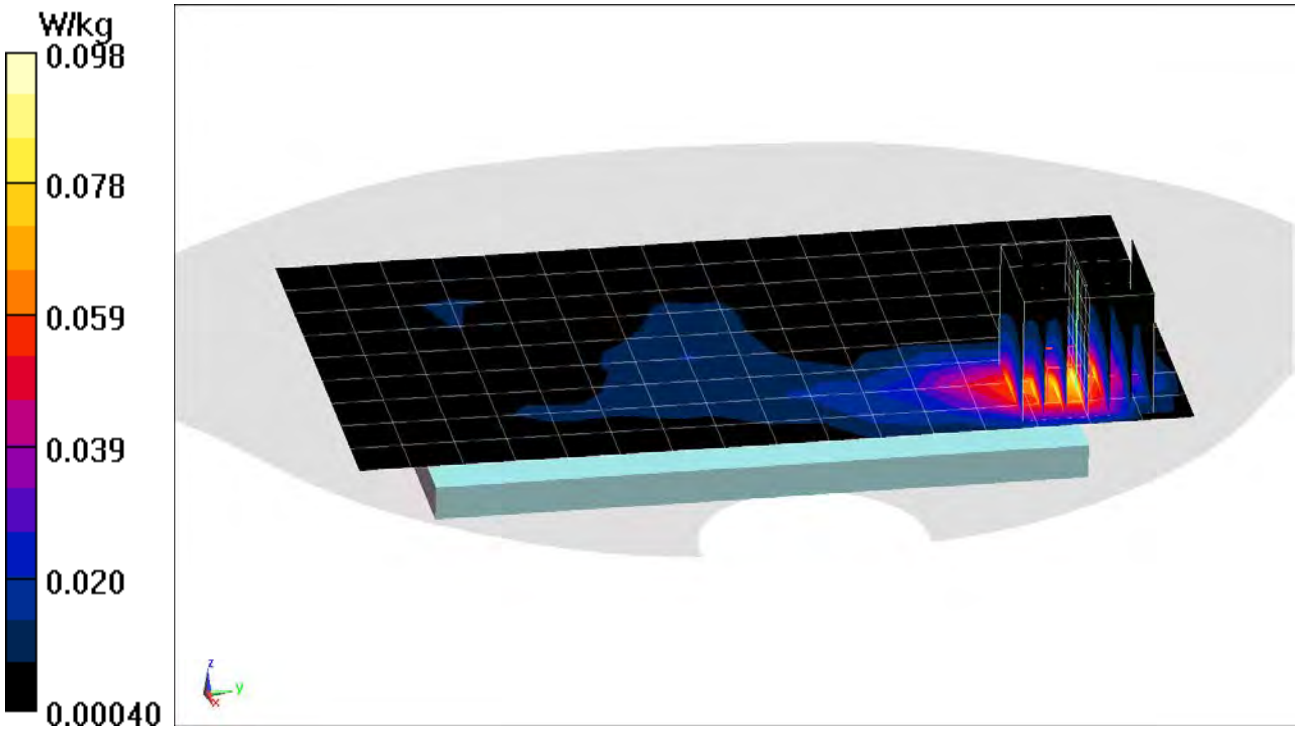
Communication System: UID 0, Bluetooth; Frequency: 2441 MHz; Duty Cycle: 1:1.297
Medium: 2450 MHz Body Medium parameters used (interpolated):
f = 2441 MHz; σ = 2.02 S/m; ε_r = 53.378; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-24-2019; Ambient Temp: 21.3°C; Tissue Temp: 20.3°C

Probe: EX3DV4 - SN7308; ConvF(7.57, 7.57, 7.57) @ 2441 MHz; Calibrated: 8/23/2018
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1558; Calibrated: 10/3/2018
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: Bluetooth, Body SAR, Ch 39, 1 Mbps, Back Side

Area Scan (10x17x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.581 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 0.125 W/kg
SAR(1 g) = 0.061 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1110M

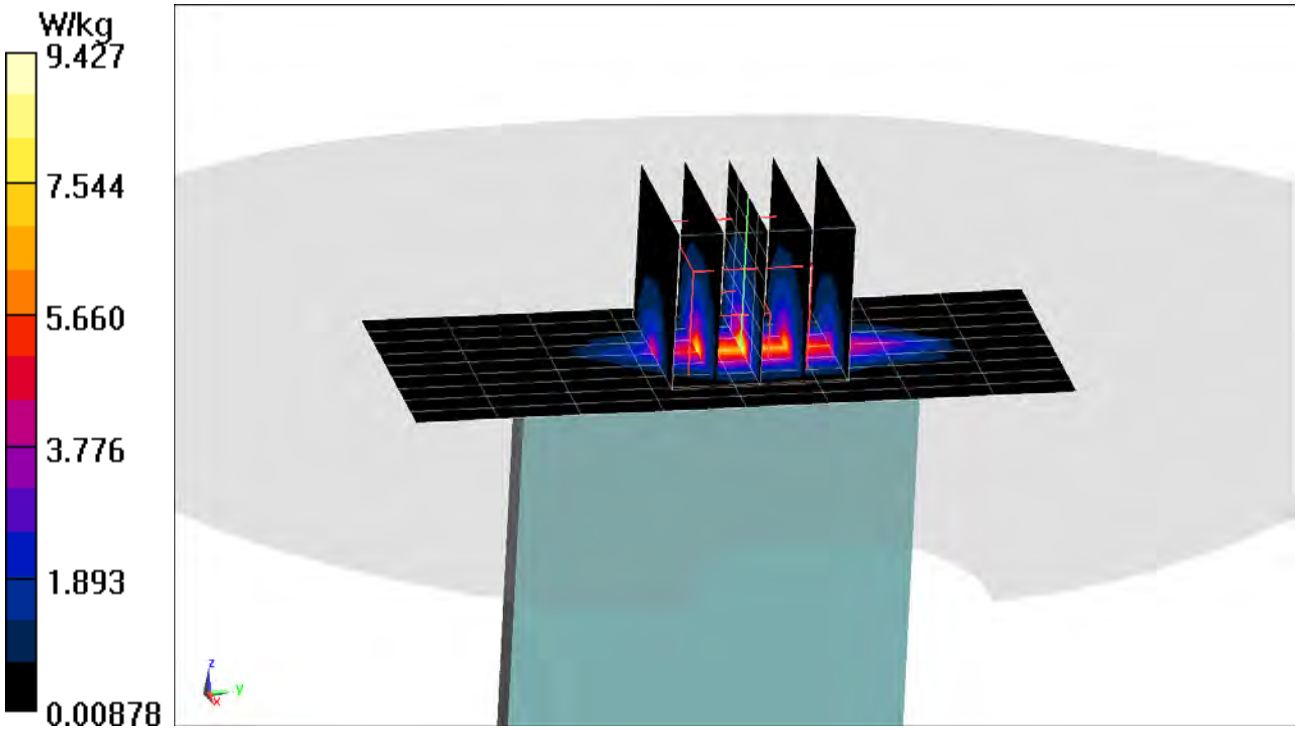
Communication System: UID 0, GSM GPRS; 3 Tx slots; Frequency: 1880 MHz; Duty Cycle: 1:2.76
Medium: 1900 Body Medium parameters used (interpolated):
$f = 1880$ MHz; $\sigma = 1.536$ S/m; $\varepsilon_r = 51.067$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 07-01-2019; Ambient Temp: 20.7°C; Tissue Temp: 22.7°C

Probe: EX3DV4 - SN7488; ConvF(8.37, 8.37, 8.37) @ 1880 MHz; Calibrated: 1/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1530; Calibrated: 1/15/2019
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: GPRS 1900, Phablet SAR, Bottom Edge, Mid.ch, 3 Tx Slots

Area Scan (10x9x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 81.38 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 11.4 W/kg
SAR(10 g) = 2.16 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 0982M

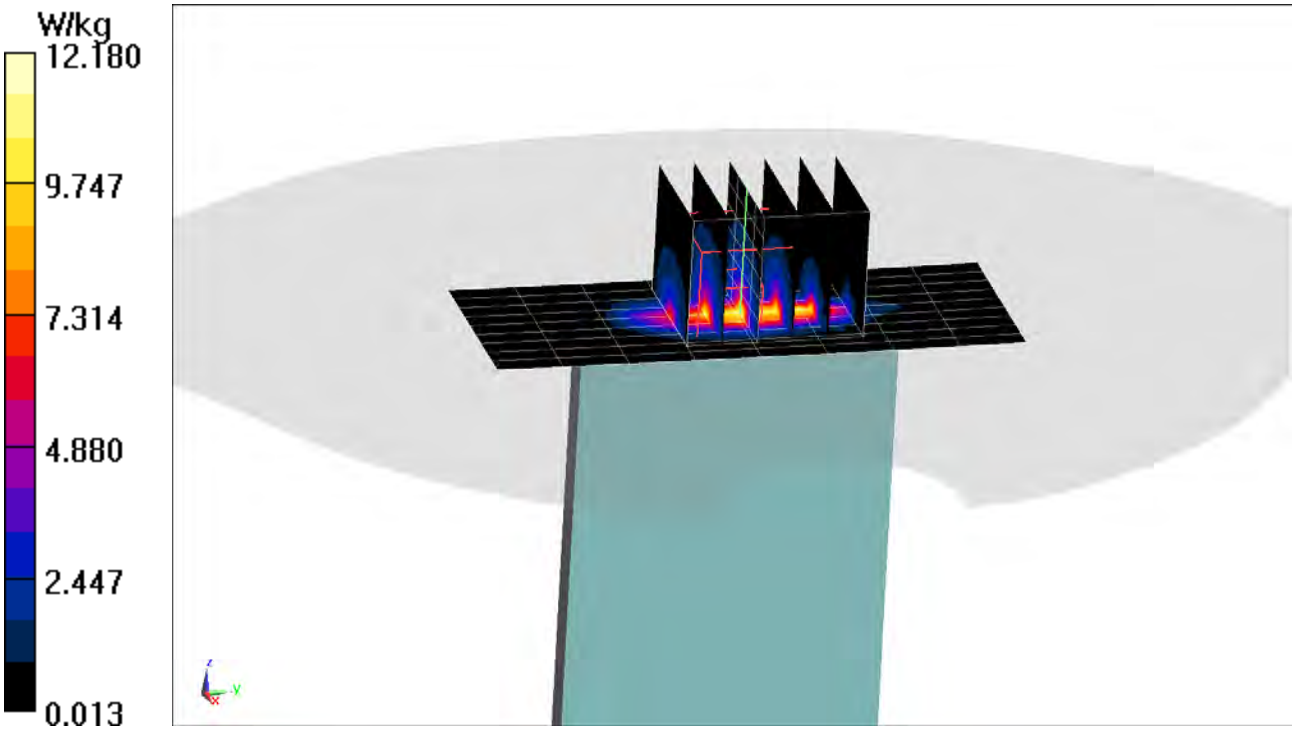
Communication System: UID 0, UMTS; Frequency: 1752.6 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used (interpolated):
f = 1752.6 MHz; σ = 1.503 S/m; ε_r = 51.091; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 06-23-2019; Ambient Temp: 19.5°C; Tissue Temp: 21.6°C

Probe: EX3DV4 - SN7357; ConvF(8.26, 8.26, 8.26) @ 1752.6 MHz; Calibrated: 4/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/18/2019
Phantom: Twin-SAM V5.0 Back Right; Type: QD 000 P40 CD; Serial: 1692
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: UMTS 1750, Phablet SAR, Bottom Edge, High.ch

Area Scan (10x9x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 67.36 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 14.7 W/kg
SAR(10 g) = 2.95 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1298M

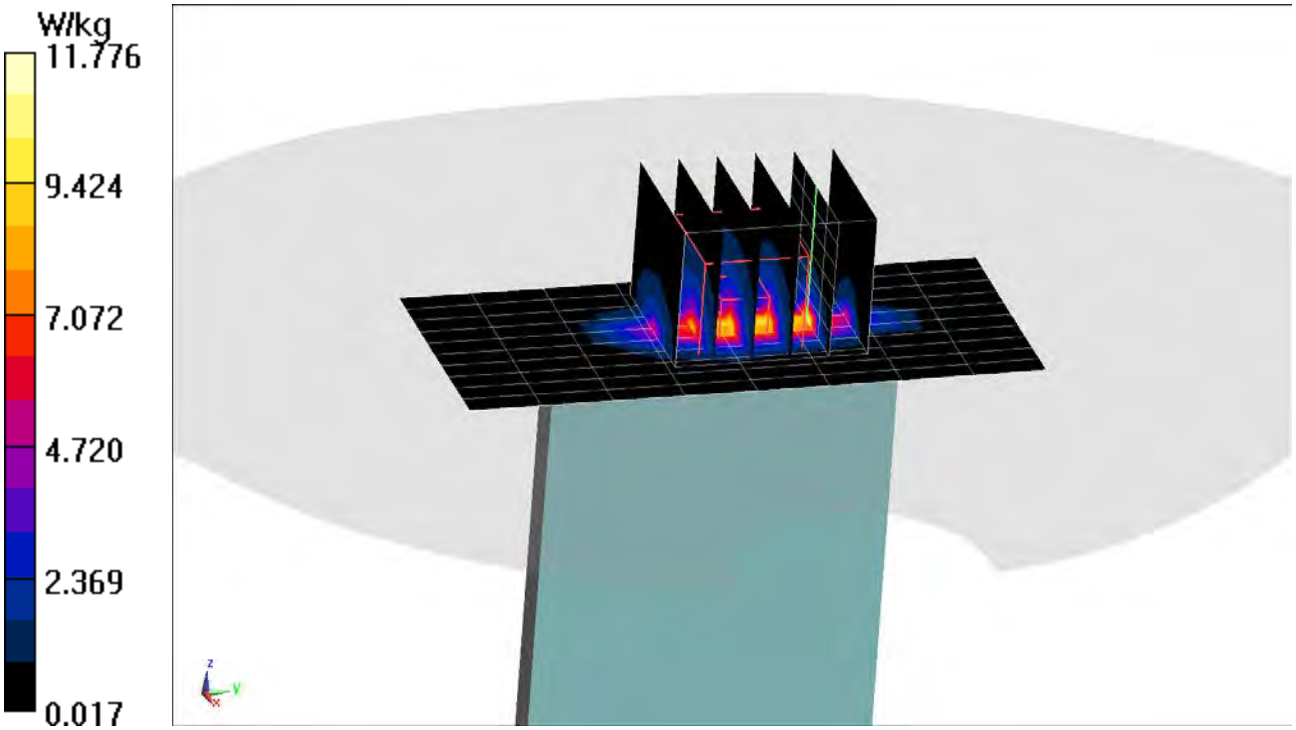
Communication System: UID 0, UMTS; Frequency: 1852.4 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
f = 1852.4 MHz; σ = 1.513 S/m; ε_r = 51.88; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 06-12-2019; Ambient Temp: 22.6°C; Tissue Temp: 22.0°C

Probe: EX3DV4 - SN7410; ConvF(7.78, 7.78, 7.78) @ 1852.4 MHz; Calibrated: 7/20/2018
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/11/2018
Phantom: Front; Type: QD 000 P40 CD; Serial: 1686
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: UMTS 1900, Phablet SAR, Bottom Edge, Low.ch

Area Scan (11x9x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 63.75 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 15.7 W/kg
SAR(10 g) = 2.54 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1110M

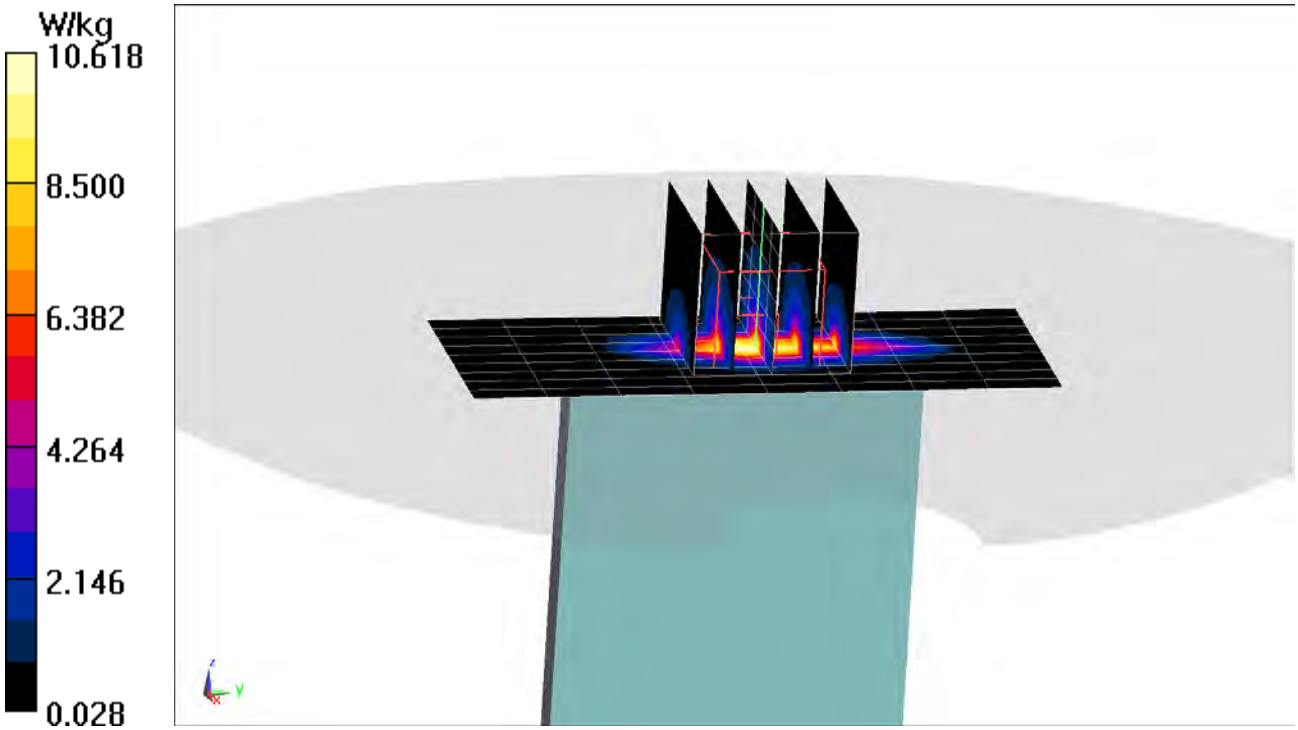
Communication System: UID 0, CDMA; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used:
f = 1880 MHz; σ = 1.536 S/m; ε_r = 51.067; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 07-01-2019; Ambient Temp: 20.7°C; Tissue Temp: 22.7°C

Probe: EX3DV4 - SN7488; ConvF(8.37, 8.37, 8.37) @ 1880 MHz; Calibrated: 1/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1530; Calibrated: 1/15/2019
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: PCS EVDO Rev. 0, Phablet SAR, Bottom Edge, Mid.ch

Area Scan (10x9x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 59.44 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 13.0 W/kg
SAR(10 g) = 2.46 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 0977M

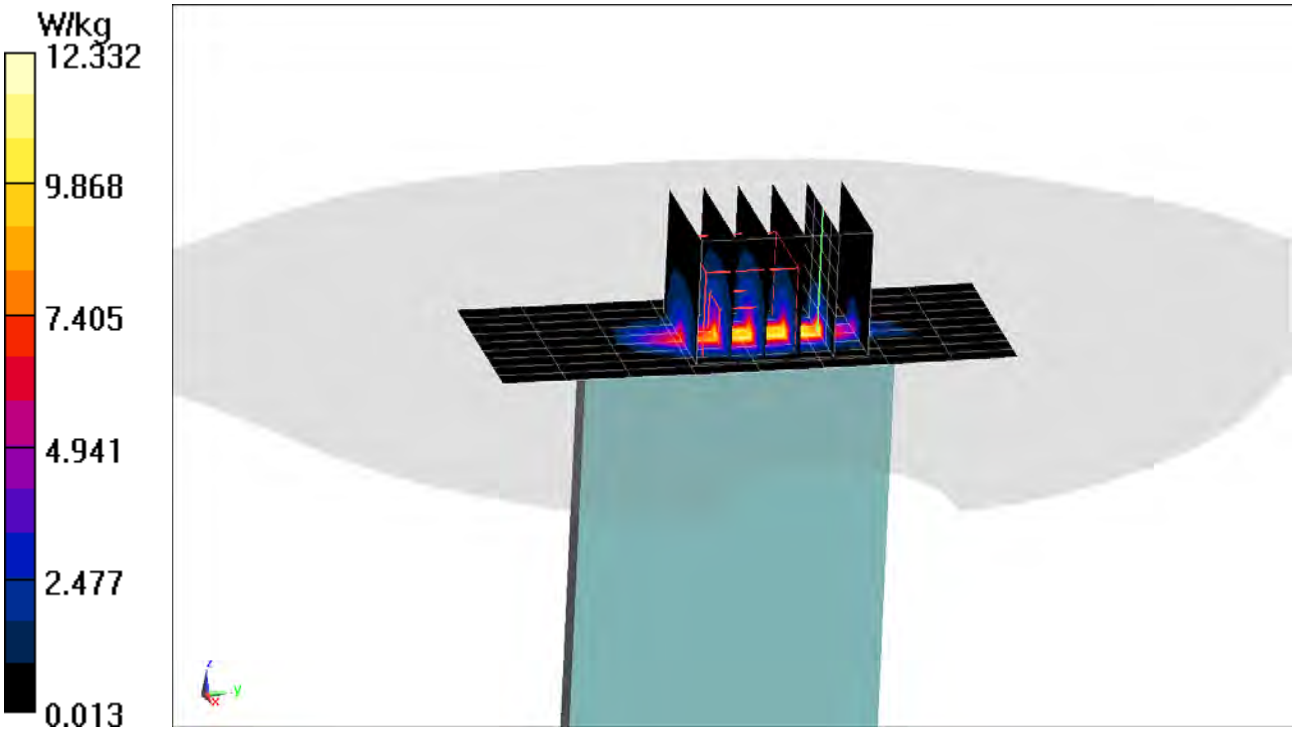
Communication System: UID 0, LTE Band 66 (AWS); Frequency: 1770 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used (interpolated):
$f = 1770$ MHz; $\sigma = 1.523$ S/m; $\varepsilon_r = 51.021$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 06-23-2019; Ambient Temp: 19.5°C; Tissue Temp: 21.6°C

Probe: EX3DV4 - SN7357; ConvF(8.26, 8.26, 8.26) @ 1770 MHz; Calibrated: 4/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/18/2019
Phantom: Twin-SAM V5.0 Back Right; Type: QD 000 P40 CD; Serial: 1692
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 66 (AWS) ULCA, Phablet SAR, Bottom Edge,
PCC: 20 MHz Bandwidth, QPSK, Ch. 132572, 100 RB, 0 RB Offset
SCC: 20 MHz Bandwidth, QPSK, Ch. 132374, 100 RB, 0 RB Offset

Area Scan (10x9x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 65.23 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 17.3 W/kg
SAR(10 g) = 2.65 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1289M

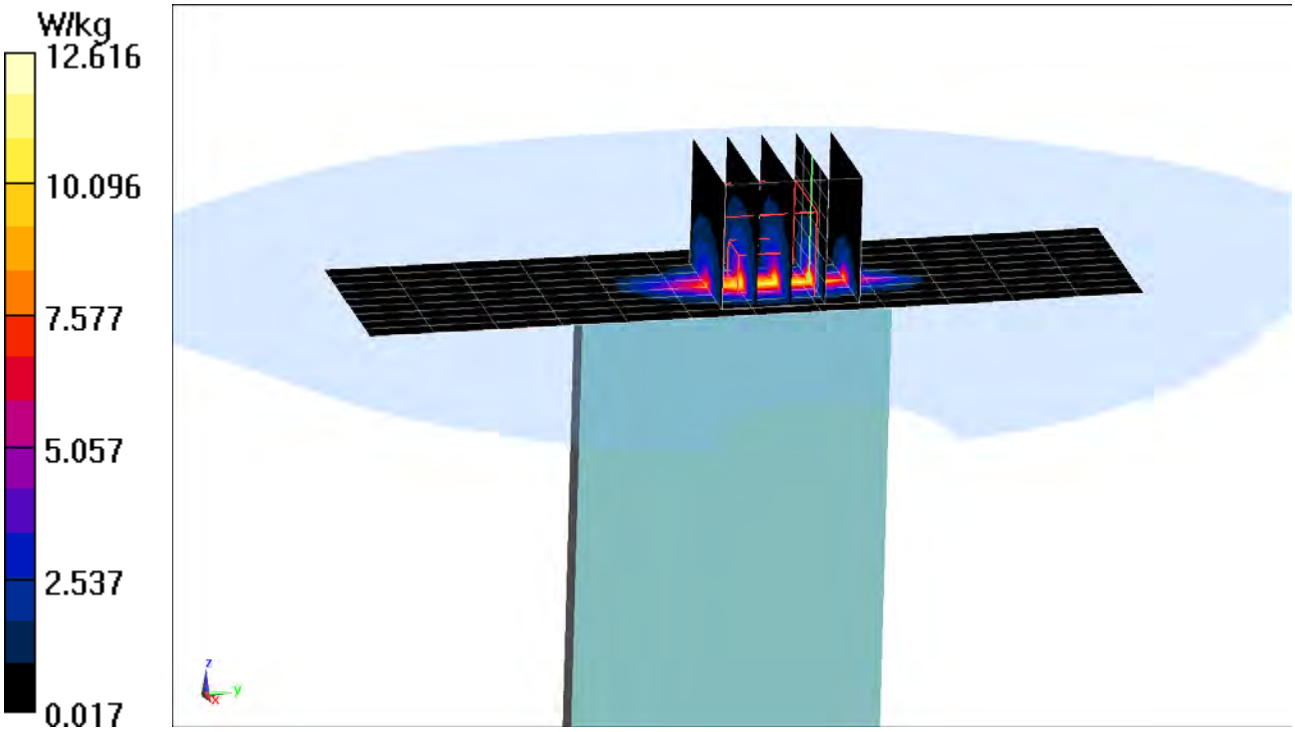
Communication System: UID 0, LTE Band 25 (PCS); Frequency: 1860 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
f = 1860 MHz; σ = 1.515 S/m; ε_r = 53.875; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 06-10-2019; Ambient Temp: 23.8°C; Tissue Temp: 23.1°C

Probe: EX3DV4 - SN3589; ConvF(6.75, 6.75, 6.75) @ 1860 MHz; Calibrated: 1/25/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 8/22/2018
Phantom: SAM 5.0 front; Type: QD000P40CD; Serial: 1648
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 25 (PCS), Phablet SAR, Bottom Edge, Low.ch, 20 MHz Bandwidth, QPSK, 50 RB, 50 RB Offset

Area Scan (10x13x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 66.73 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 15.8 W/kg
SAR(10 g) = 2.73 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1286M

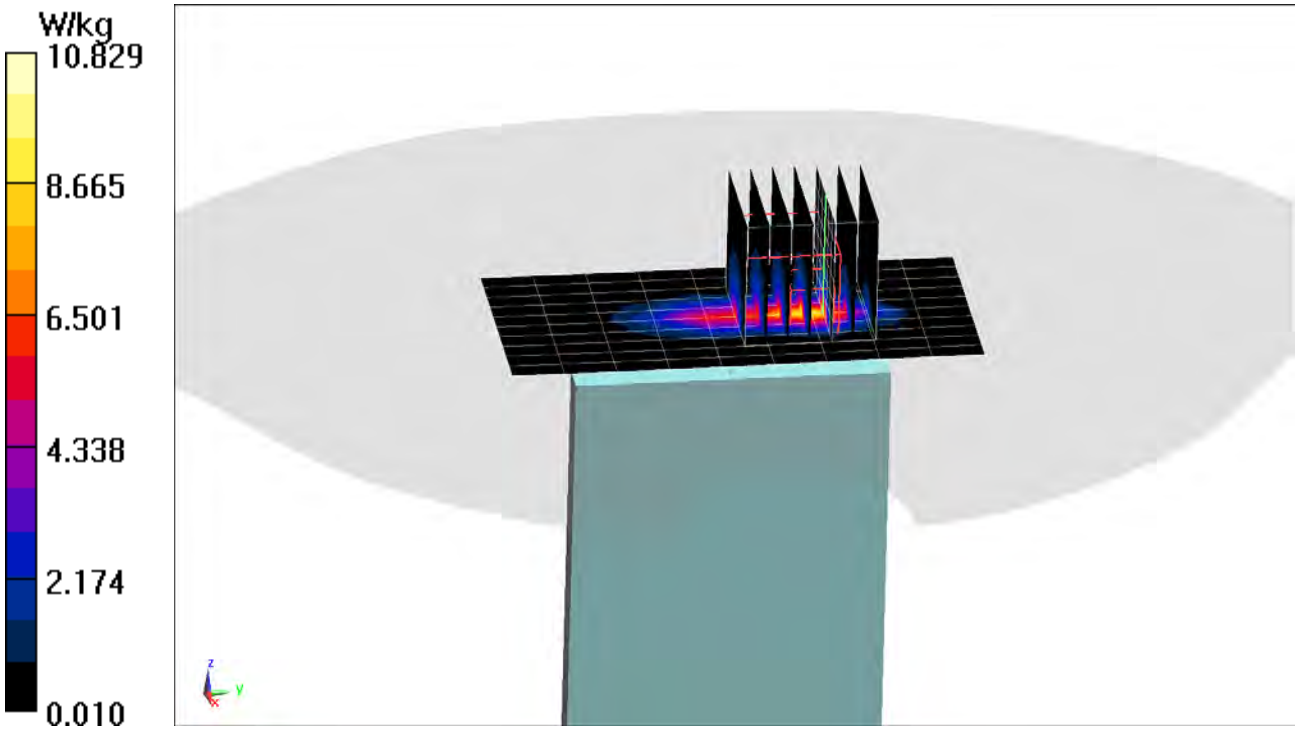
Communication System: UID 0, LTE Band 30; Frequency: 2310 MHz; Duty Cycle: 1:1
Medium: 2450 MHz Body Medium parameters used:
f = 2310 MHz; σ = 1.901 S/m; ε_r = 53.029; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 06-10-2019; Ambient Temp: 22.2°C; Tissue Temp: 21.1°C

Probe: EX3DV4 - SN7308; ConvF(7.73, 7.73, 7.73) @ 2310 MHz; Calibrated: 8/23/2018
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1558; Calibrated: 10/3/2018
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 30, Phablet SAR, Bottom Edge, Mid.ch, 10 MHz Bandwidth, QPSK, 25 RB, 12 RB Offset

Area Scan (11x10x1): Measurement grid: dx=5mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 52.78 V/m; Power Drift = -0.15 dB
Peak SAR (extrapolated) = 15.7 W/kg
SAR(10 g) = 1.74 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1286M

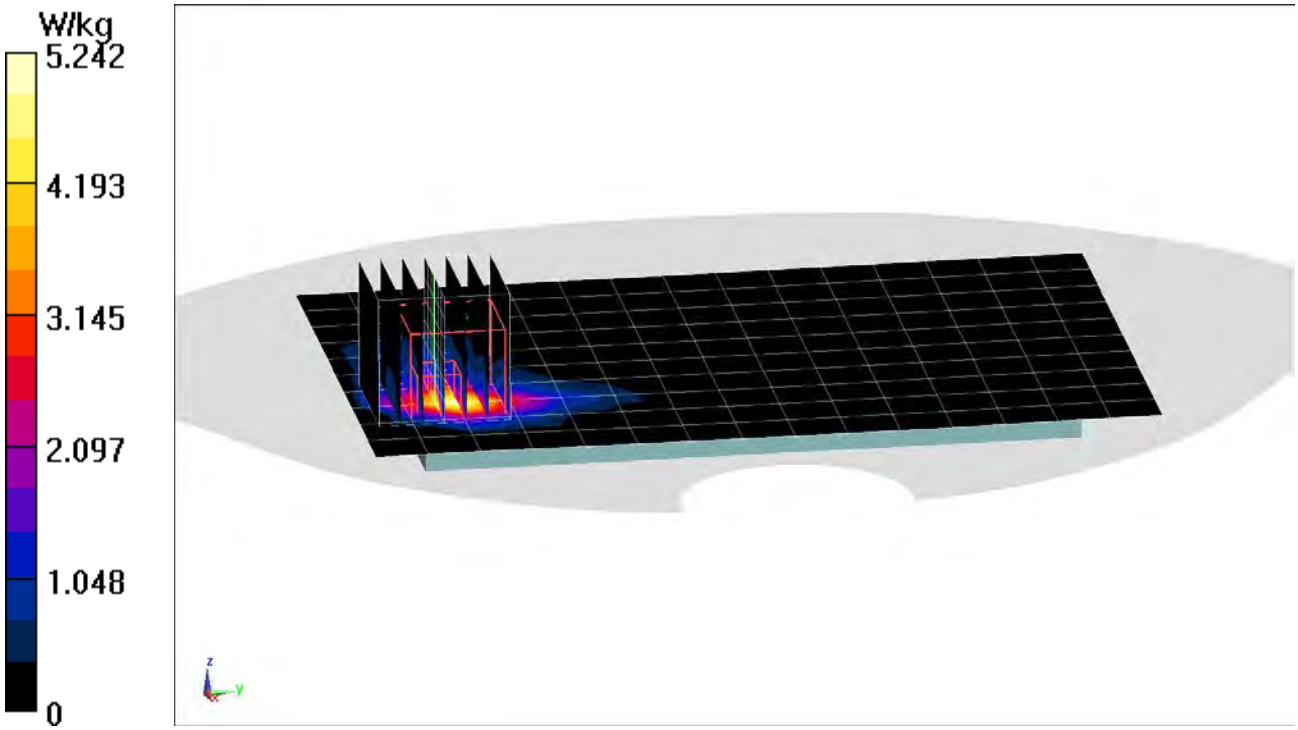
Communication System: UID 0, LTE Band 7; Frequency: 2510 MHz; Duty Cycle: 1:1
Medium: 2450 Body Medium parameters used (interpolated):
$f = 2510$ MHz; $\sigma = 2.11$ S/m; $\varepsilon_r = 50.786$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 06-14-2019; Ambient Temp: 23.2°C; Tissue Temp: 22.6°C

Probe: EX3DV4 - SN7417; ConvF(7.51, 7.51, 7.51) @ 2510 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/13/2019
Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP1375
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 7, Phablet SAR, Back side, Low.ch, 20 MHz Bandwidth, QPSK, 50 RB, 50 RB Offset

Area Scan (11x16x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 48.20 V/m; Power Drift = -0.15 dB
Peak SAR (extrapolated) = 13.5 W/kg
SAR(10 g) = 1.63 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 1020M

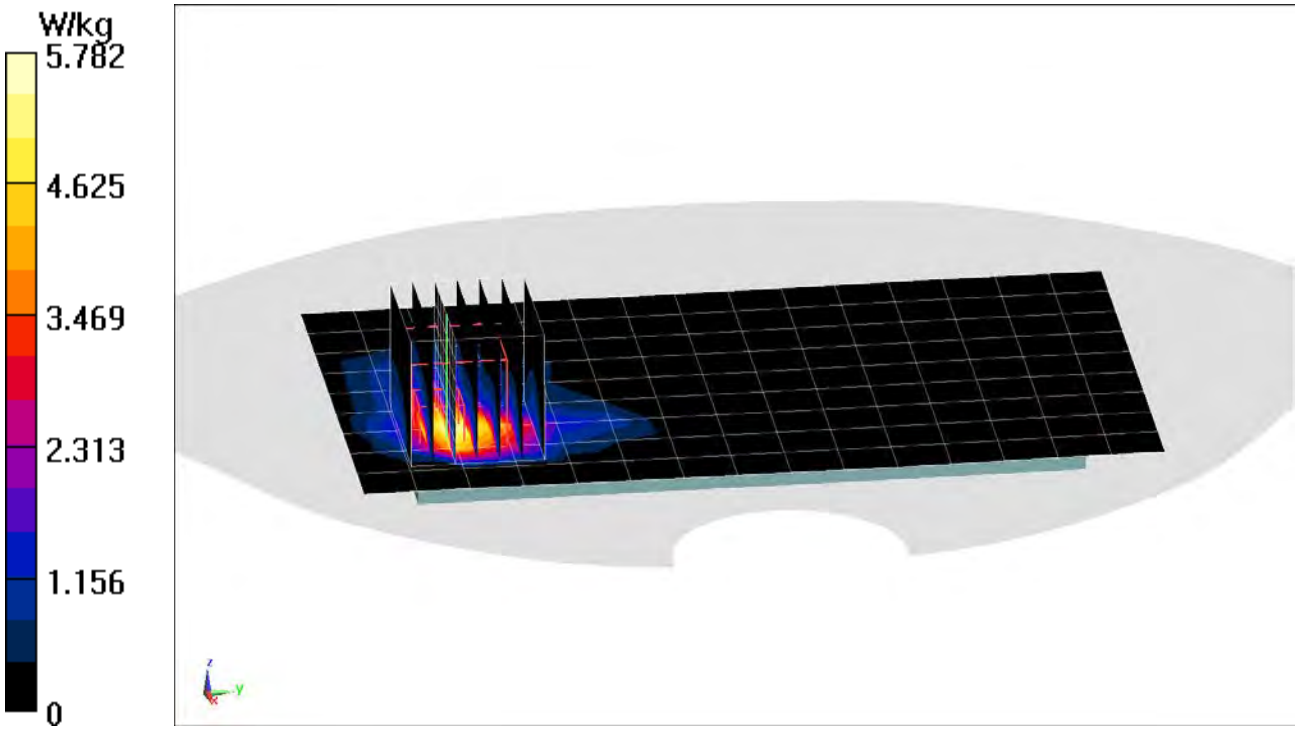
Communication System: UID 0, LTE Band 41 (Class 2); Frequency: 2549.5 MHz; Duty Cycle: 1:2.31
Medium: 2450 Body Medium parameters used:
f = 2550 MHz; σ = 2.123 S/m; ε_r = 50.96; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 06-27-2019; Ambient Temp: 23.9°C; Tissue Temp: 21.8°C

Probe: EX3DV4 - SN7417; ConvF(7.37, 7.37, 7.37) @ 2549.5 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/13/2019
Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP1375
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: LTE Band 41 (PC2) ULCA, Phablet SAR, Back side, Low-Mid.ch,
PCC: 20 MHz Bandwidth, QPSK, Ch. 40185, 1 RB, 99 RB Offset
SCC: 20 MHz Bandwidth, QPSK, Ch. 40383, 1 RB, 0 RB Offset

Area Scan (10x16x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (8x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 45.02 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 12.5 W/kg
SAR(10 g) = 1.98 W/kg



DUT: A3LSMN970U; Type: Portable Handset; Serial: 0952M

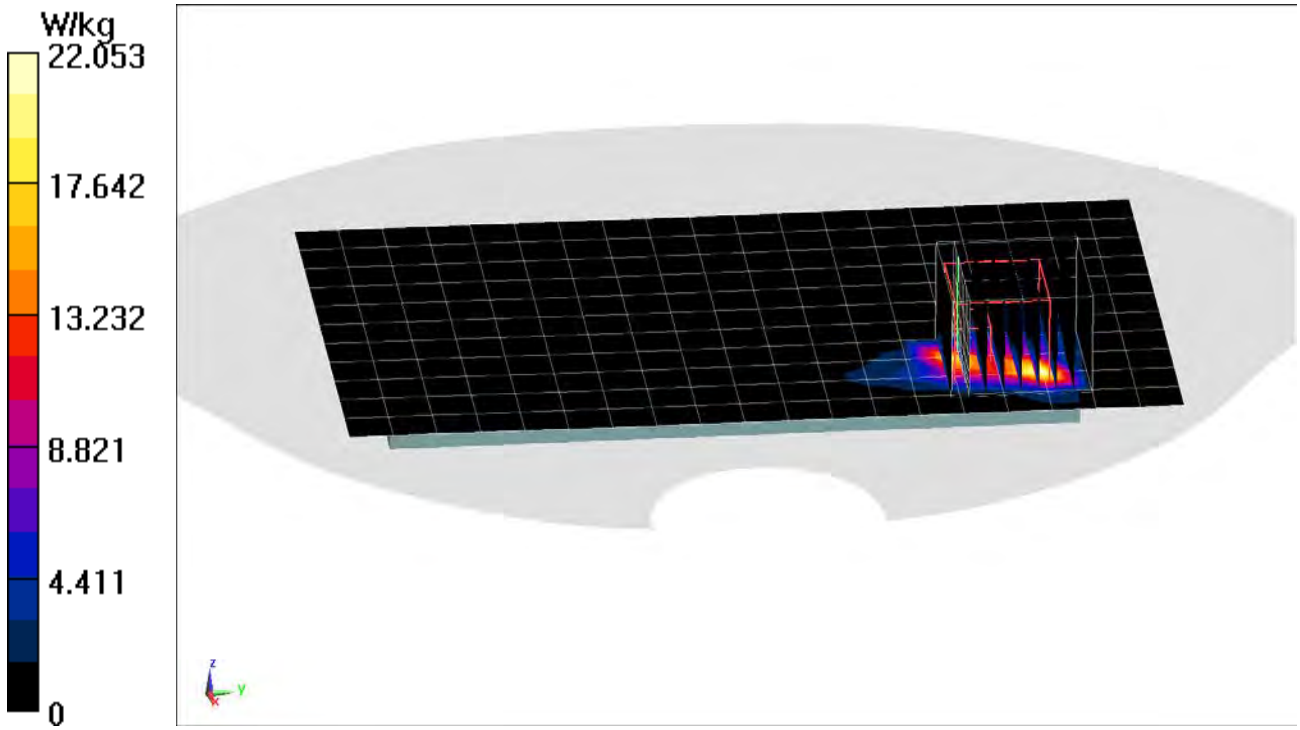
Communication System: UID 0, 802.11n 5.2-5.8 GHz Band; Frequency: 5720 MHz; Duty Cycle: 1:1
Medium: 5GHz Body Medium parameters used (interpolated):
$f = 5720$ MHz; $\sigma = 6.163$ S/m; $\varepsilon_r = 47.674$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 06-27-2019; Ambient Temp: 23.5°C; Tissue Temp: 21.1°C

Probe: EX3DV4 - SN7308; ConvF(4.18, 4.18, 4.18) @ 5720 MHz; Calibrated: 8/23/2018
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1558; Calibrated: 10/3/2018
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

Mode: IEEE 802.11n, UNII-2C, MIMO, 20 MHz Bandwidth, Phablet SAR, Ch 144, 13 Mbps, Back Side

Area Scan (12x20x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (9x9x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 43.77 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 77.8 W/kg
SAR(10 g) = 2.97 W/kg



APPENDIX B: SYSTEM VERIFICATION

© 2019 PCTEST Engineering Laboratory, Inc.

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 750 MHz; Type: D750V3; Serial: 1003

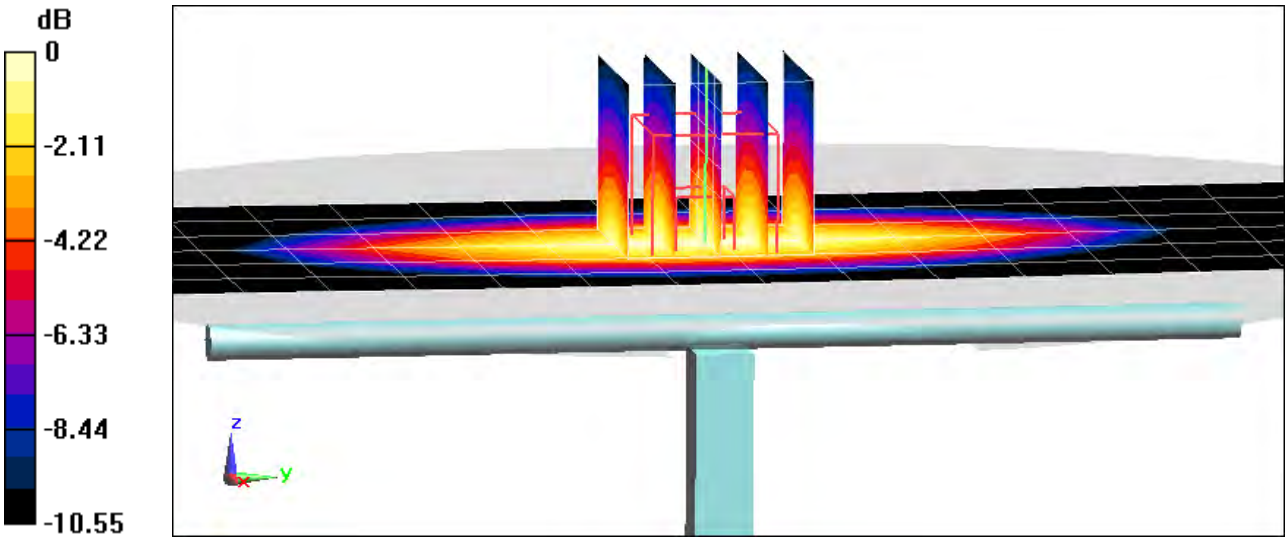
Communication System: UID 0, CW; Frequency: 750 MHz; Duty Cycle: 1:1
Medium: 750 Head; Medium parameters used (interpolated):
f = 750 MHz; σ = 0.894 S/m; ε_r = 42.979; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-04-2019; Ambient Temp: 23.2°C; Tissue Temp: 22.2°C

Probe: EX3DV4 - SN7357; ConvF(10.26, 10.26, 10.26) @ 750 MHz; Calibrated: 4/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/18/2019
Phantom: Twin-SAM V5.0 Back Right; Type: QD 000 P40 CD; Serial: 1692
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

750 MHz System Verification at 23.0 dBm (200 mW)

Area Scan (7x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 2.59 W/kg
SAR(1 g) = 1.72 W/kg
Deviation(1 g) = 3.86%



0 dB = 2.30 W/kg = 3.62 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d133

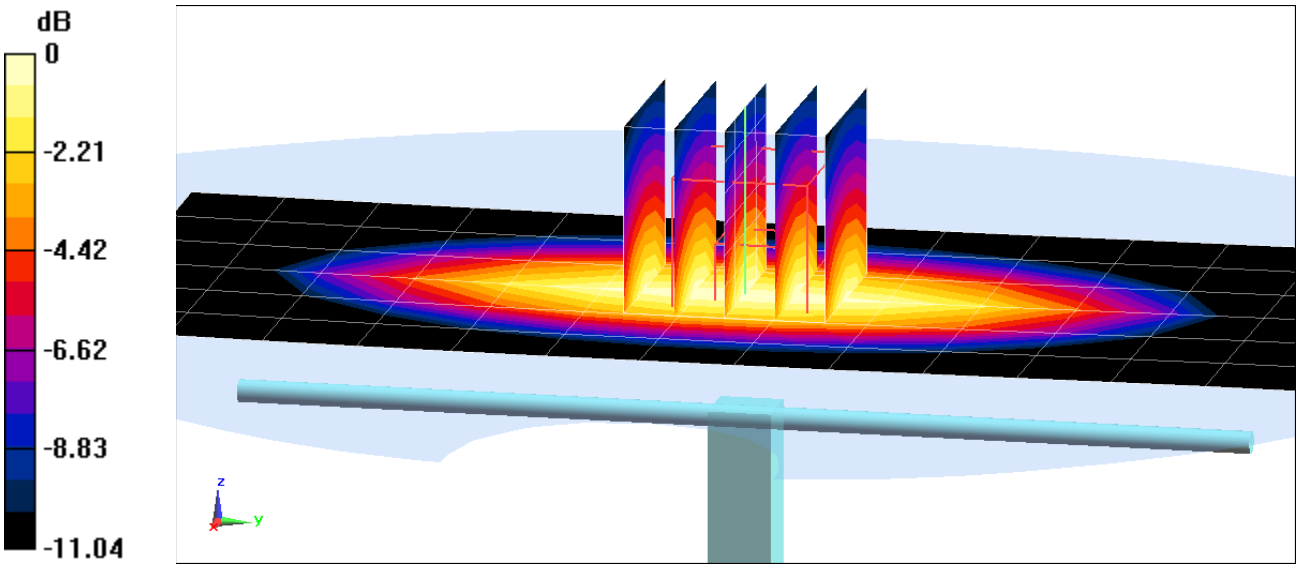
Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used:
f = 835 MHz; σ = 0.931 S/m; ε_r = 43.395; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 05-31-2019; Ambient Temp: 23.4°C; Tissue Temp: 20.9°C

Probe: EX3DV4 - SN7409; ConvF(9.67, 9.67, 9.67) @ 835 MHz; Calibrated: 6/25/2018
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1334; Calibrated: 6/18/2018
Phantom: SAM 30 with CRP v5.0 right; Type: QD000P40CD; Serial: TP:1759
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

835 MHz System Verification at 23.0 dBm (200 mW)

Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 3.10 W/kg
SAR(1 g) = 2.01 W/kg
Deviation(1 g) = 6.57%;



0 dB = 2.71 W/kg = 4.33 dBW/kg

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d132

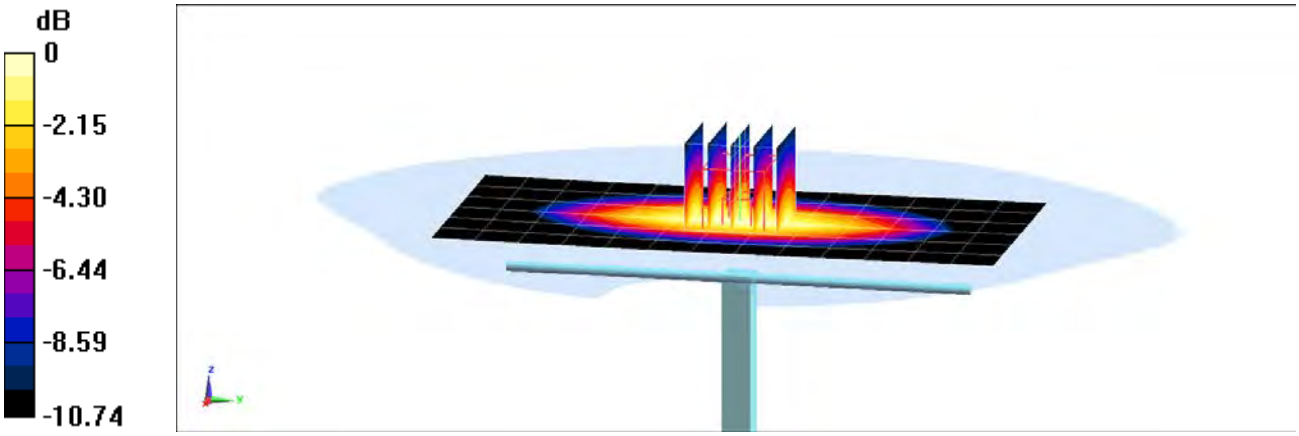
Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used:
f = 835 MHz; σ = 0.918 S/m; ε_r = 42.527; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-12-2019; Ambient Temp: 20.9°C; Tissue Temp: 20.3°C

Probe: EX3DV4 - SN7406; ConvF(9.78, 9.78, 9.78) @ 835 MHz; Calibrated: 5/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/8/2019
Phantom: SAM 30 with CRP v5.0 right; Type: QD000P40CD; Serial: TP:1759
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

835 MHz System Verification at 23.0 dBm (200 mW)

Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 3.11 W/kg
SAR(1 g) = 2.07 W/kg
Deviation(1 g) = 7.92%



0 dB = 2.77 W/kg = 4.42 dBW/kg

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d132

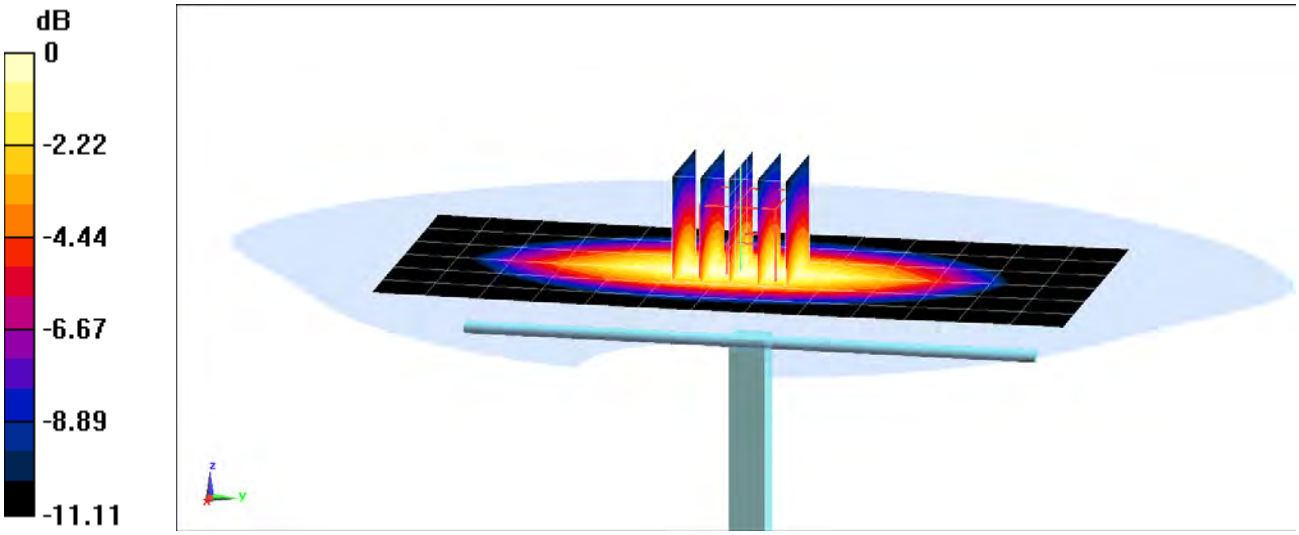
Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used:
f = 835 MHz; σ = 0.923 S/m; ε_r = 41.734; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-27-2019; Ambient Temp: 23.4°C; Tissue Temp: 21.9°C

Probe: EX3DV4 - SN7406; ConvF(9.78, 9.78, 9.78) @ 835 MHz; Calibrated: 5/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/8/2019
Phantom: SAM 30 with CRP v5.0 right; Type: QD000P40CD; Serial: TP:1759
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

835 MHz System Verification at 23.0 dBm (200 mW)

Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 2.99 W/kg
SAR(1 g) = 1.96 W/kg
Deviation(1 g) = 2.19%



0 dB = 2.63 W/kg = 4.20 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d132

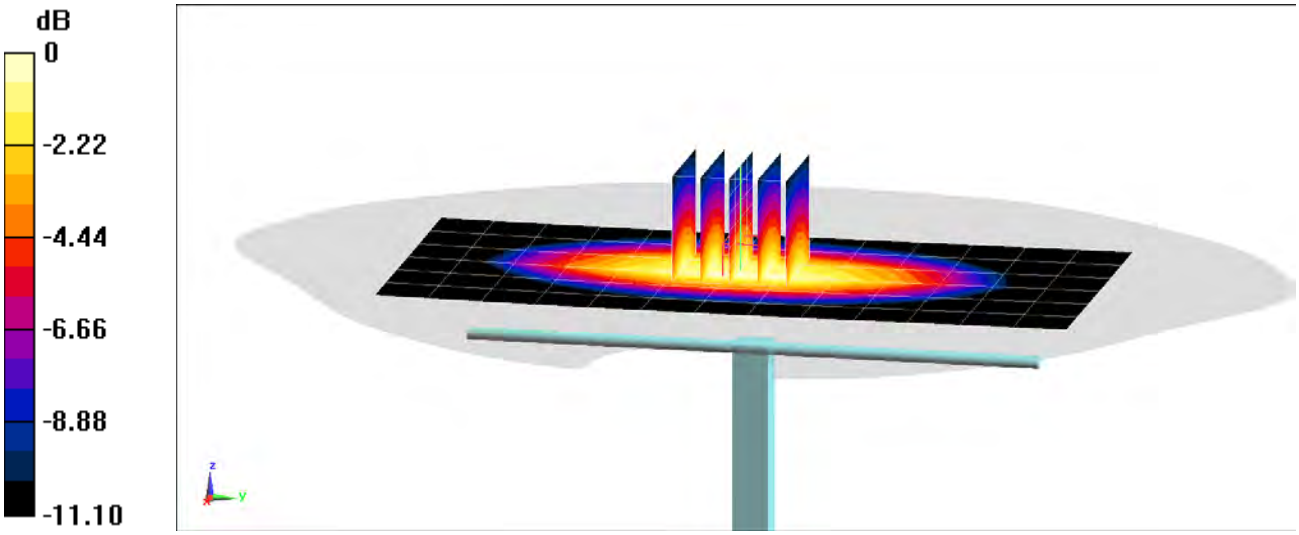
Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: 835 MHz Head; Medium parameters used:
f = 835 MHz; σ = 0.932 S/m; ε_r = 42.078; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 07-03-2019; Ambient Temp: 21.9°C; Tissue Temp: 22.0°C

Probe: EX3DV4 - SN7406; ConvF(9.78, 9.78, 9.78) @ 835 MHz; Calibrated: 5/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/8/2019
Phantom: Twin-SAM V5.0 Right 30; Type: QD 000 P40 CD; Serial: 1759
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

835 MHz System Verification at 23.0 dBm (200 mW)

Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 3.20 W/kg
SAR(1 g) = 2.05 W/kg
Deviation(1 g) = 6.88%



0 dB = 2.80 W/kg = 4.47 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 1750 MHz; Type: D1765V2; Serial: 1008

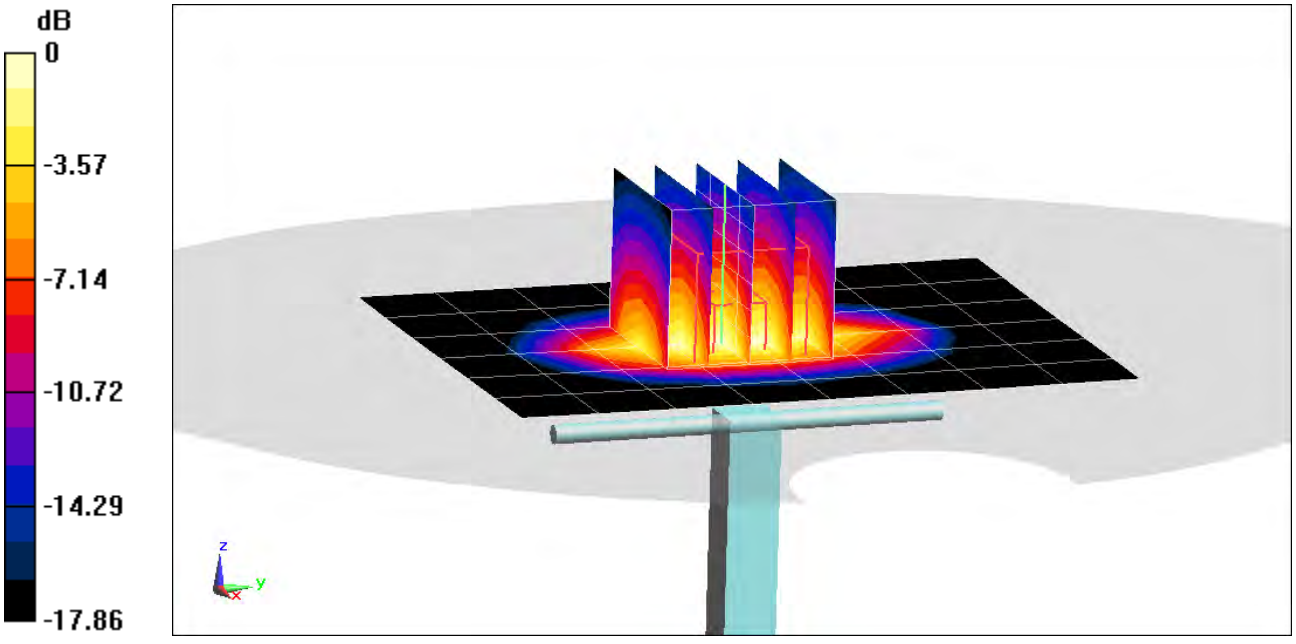
Communication System: UID 0, CW; Frequency: 1750 MHz; Duty Cycle: 1:1
Medium: 1750 Head; Medium parameters used:
f = 1750 MHz; σ = 1.372 S/m; ε_r = 41.017; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-31-2019; Ambient Temp: 21.6°C; Tissue Temp: 21.4°C

Probe: EX3DV4 - SN7357; ConvF(8.69, 8.69, 8.69) @ 1750 MHz; Calibrated: 4/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/18/2019
Phantom: Twin-SAM V5.0 Back Right; Type: QD 000 P40 CD; Serial: 1692
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

1750 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (7x9x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 7.13 W/kg
SAR(1 g) = 3.73 W/kg
Deviation(1 g) = 3.04%



0 dB = 5.85 W/kg = 7.67 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 1750 MHz; Type: D1765V2; Serial: 1008

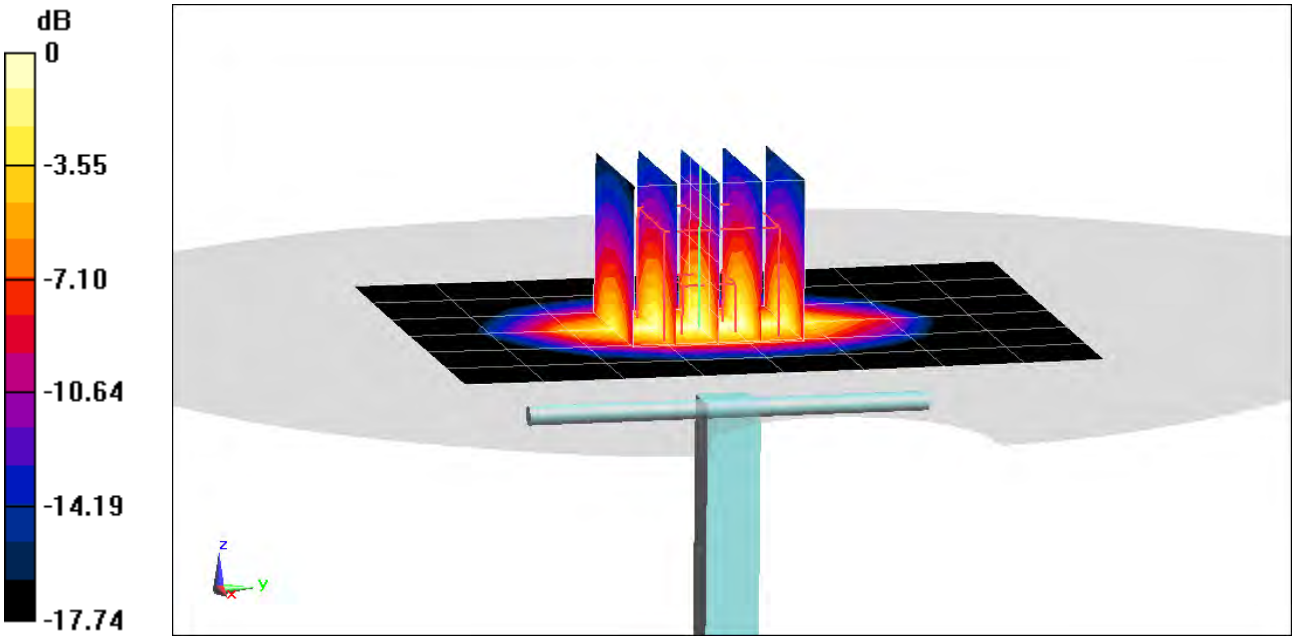
Communication System: UID 0, CW; Frequency: 1750 MHz; Duty Cycle: 1:1
Medium: 1750 Head; Medium parameters used:
f = 1750 MHz; σ = 1.375 S/m; ε_r = 41.453; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-03-2019; Ambient Temp: 21.2°C; Tissue Temp: 20.5°C

Probe: EX3DV4 - SN7357; ConvF(8.69, 8.69, 8.69) @ 1750 MHz; Calibrated: 4/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/18/2019
Phantom: Twin-SAM V5.0 Back Right; Type: QD 000 P40 CD; Serial: 1692
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

1750 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (7x9x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 7.34 W/kg
SAR(1 g) = 3.87 W/kg
Deviation(1 g) = 6.91%



0 dB = 6.08 W/kg = 7.84 dBW/kg

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 5d080

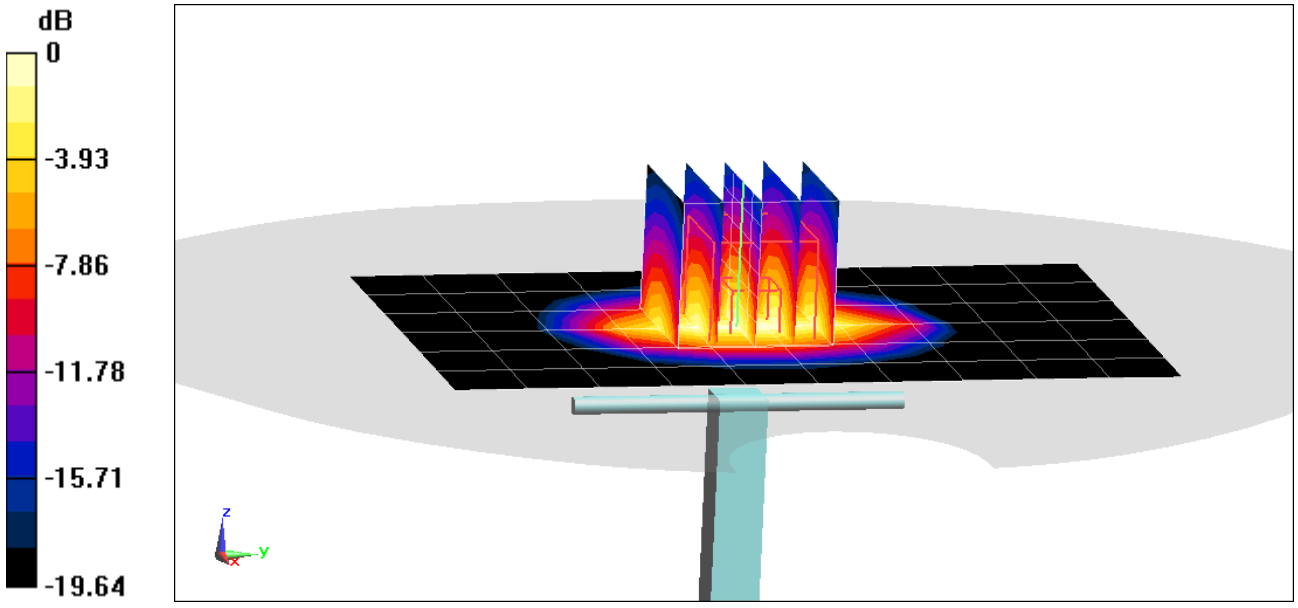
Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: 1900 Head Medium parameters used (interpolated):
f = 1900 MHz; σ = 1.455 S/m; ε_r = 38.642; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-03-2019; Ambient Temp: 21.6°C; Tissue Temp: 20.8°C

Probe: EX3DV4 - SN7308; ConvF(8.26, 8.26, 8.26) @ 1900 MHz; Calibrated: 8/23/2018
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1558; Calibrated: 10/3/2018
Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 1966
Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

1900 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 8.54 W/kg
SAR(1 g) = 4.24 W/kg
Deviation(1 g) = 6.53%



0 dB = 6.84 W/kg = 8.35 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 2300 MHz; Type: D2300V2; Serial: 1064

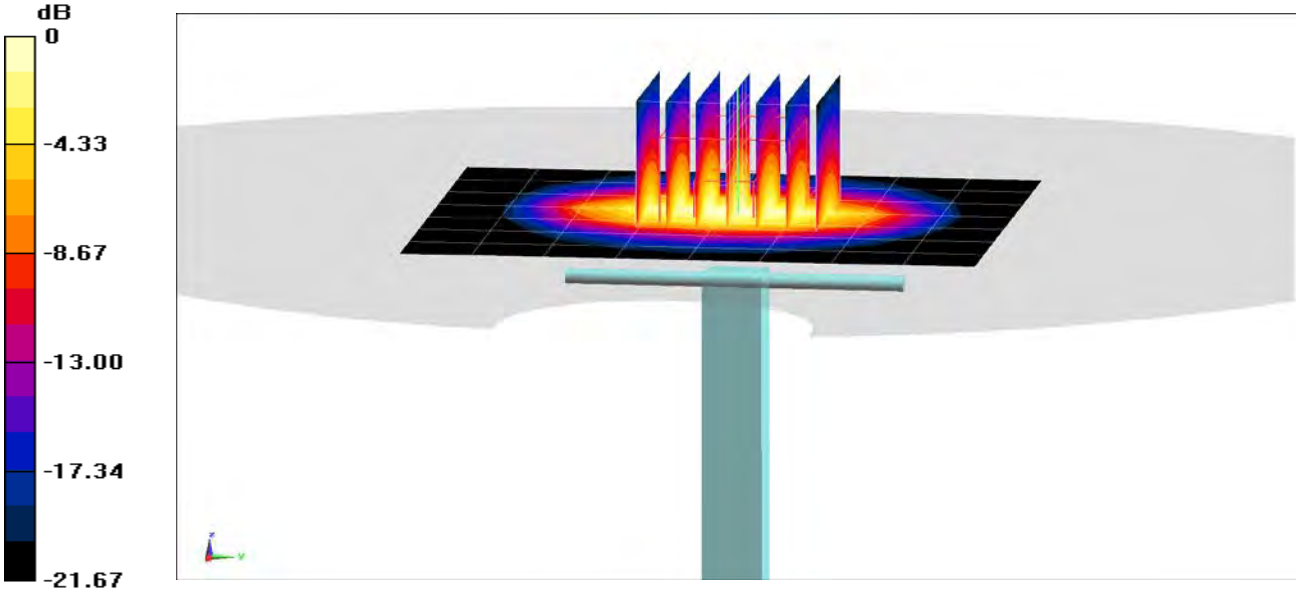
Communication System: UID 0, CW; Frequency: 2300 MHz; Duty Cycle: 1:1
Medium: 2450 Head Medium parameters used:
f = 2300 MHz; σ = 1.724 S/m; ε_r = 38.461; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 05-30-2019; Ambient Temp: 22.7°C; Tissue Temp: 21.5°C

Probe: EX3DV4 - SN3589; ConvF(6.77, 6.77, 6.77) @ 2300 MHz; Calibrated: 1/25/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 8/22/2018
Phantom: Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1647
Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

2300 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 10.7 W/kg
SAR(1 g) = 5.1 W/kg
Deviation(1 g) = 7.14%



0 dB = 8.52 W/kg = 9.30 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 797

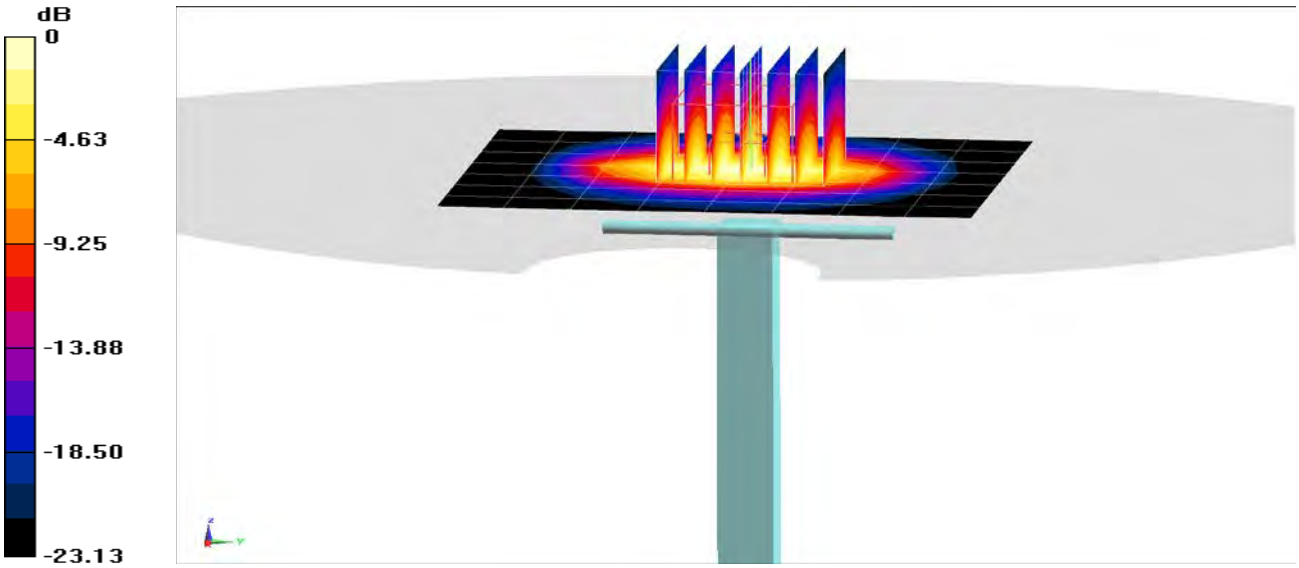
Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: 2450 Head Medium parameters used:
f = 2450 MHz; σ = 1.853 S/m; ε_r = 38.184; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-03-2019; Ambient Temp: 22.5°C; Tissue Temp: 21.9°C

Probe: EX3DV4 - SN3589; ConvF(6.46, 6.46, 6.46) @ 2450 MHz; Calibrated: 1/25/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 8/22/2018
Phantom: Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1647
Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

2450 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 11.6 W/kg
SAR(1 g) = 5.34 W/kg
Deviation(1 g) = 1.33%



0 dB = 9.11 W/kg = 9.60 dBW/kg

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 797

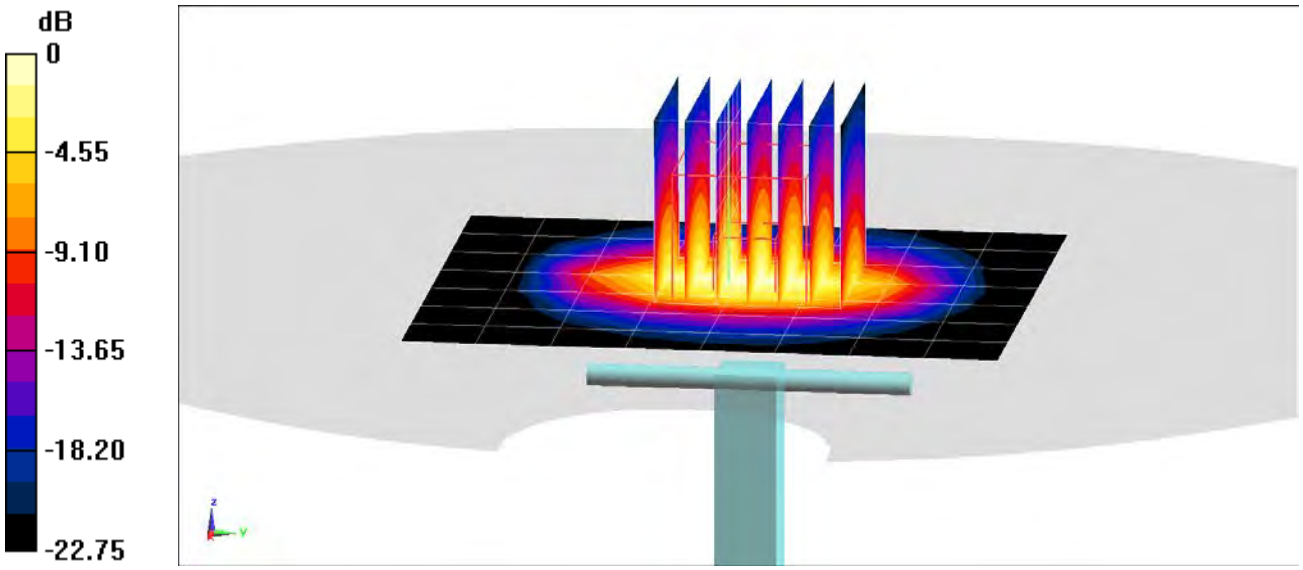
Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: 2450 Head Medium parameters used:
f = 2450 MHz; σ = 1.819 S/m; ε_r = 39.954; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-24-2019; Ambient Temp: 21.4°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN3589; ConvF(6.46, 6.46, 6.46) @ 2450 MHz; Calibrated: 1/25/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 8/22/2018
Phantom: Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1647
Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

2450 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 11.6 W/kg
SAR(1 g) = 5.38 W/kg
Deviation(1 g) = 2.09%



0 dB = 9.07 W/kg = 9.58 dBW/kg

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 797

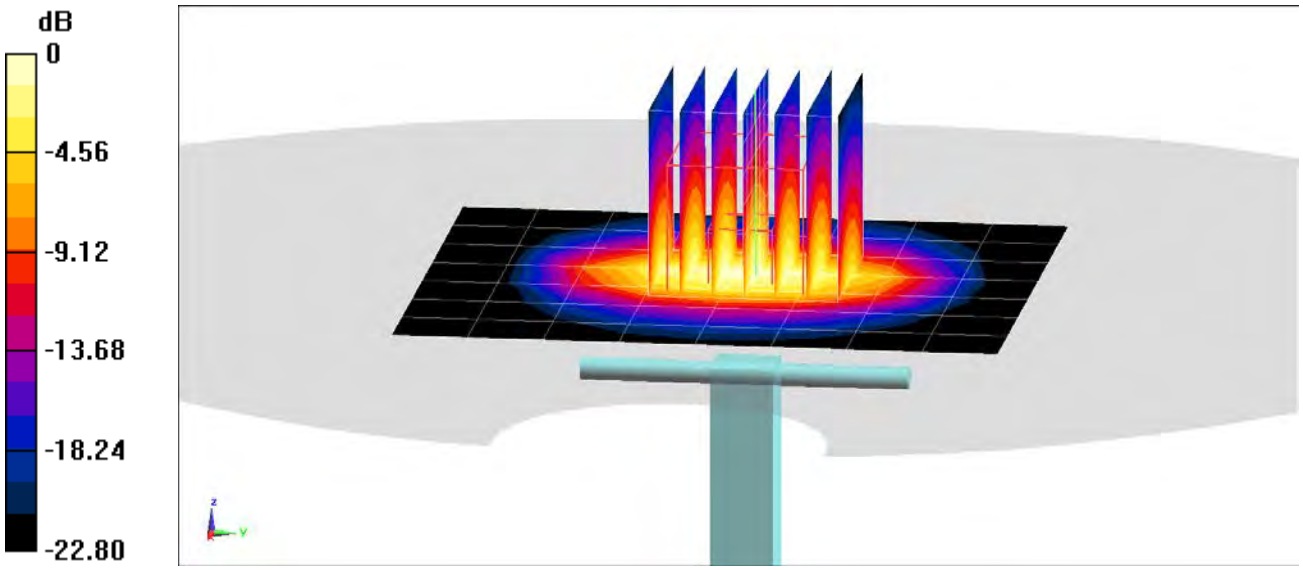
Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: 2450 Head Medium parameters used:
f = 2450 MHz; σ = 1.808 S/m; ε_r = 39.401; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-01-2019; Ambient Temp: 22.1°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN3589; ConvF(6.46, 6.46, 6.46) @ 2450 MHz; Calibrated: 1/25/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 8/22/2018
Phantom: Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1647
Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

2450 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 11.4 W/kg
SAR(1 g) = 5.32 W/kg
Deviation(1 g) = 0.95%



0 dB = 9.00 W/kg = 9.54 dBW/kg

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: 1071

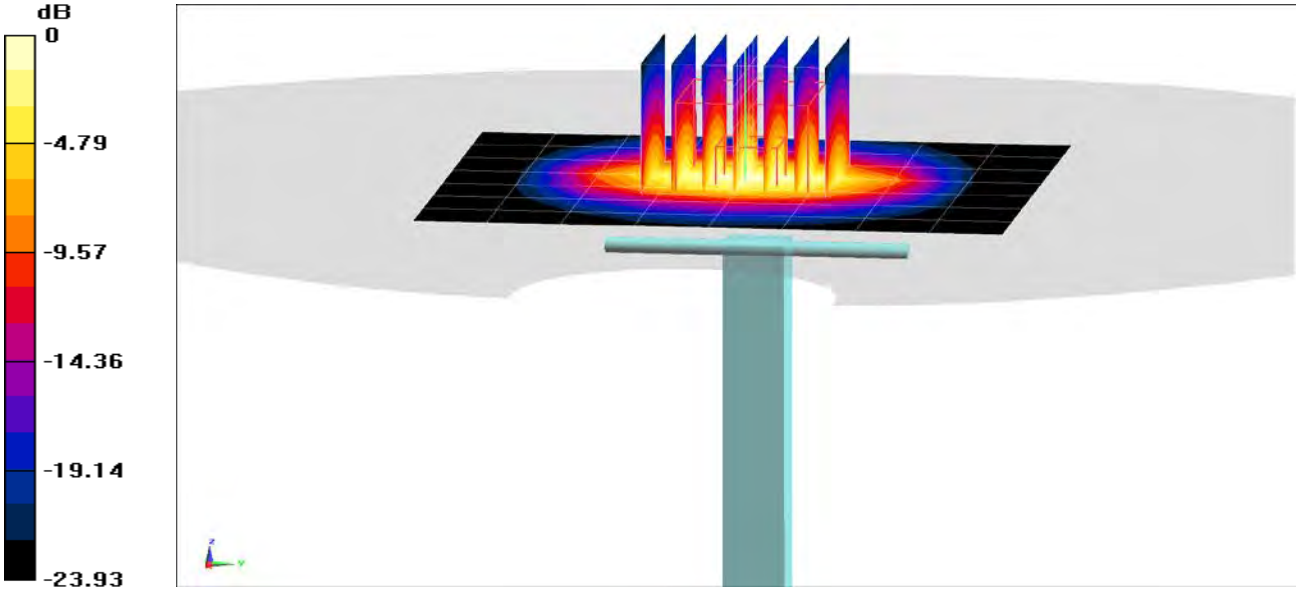
Communication System: UID 0, CW; Frequency: 2600 MHz; Duty Cycle: 1:1
Medium: 2450 Head Medium parameters used:
f = 2600 MHz; σ = 1.972 S/m; ε_r = 37.919; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-03-2019; Ambient Temp: 22.5°C; Tissue Temp: 21.9°C

Probe: EX3DV4 - SN3589; ConvF(6.25, 6.25, 6.25) @ 2600 MHz; Calibrated: 1/25/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 8/22/2018
Phantom: Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1647
Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

2600 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 12.8 W/kg
SAR(1 g) = 5.83 W/kg
Deviation(1 g) = 3.55%



0 dB = 10.1 W/kg = 10.04 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: 1126

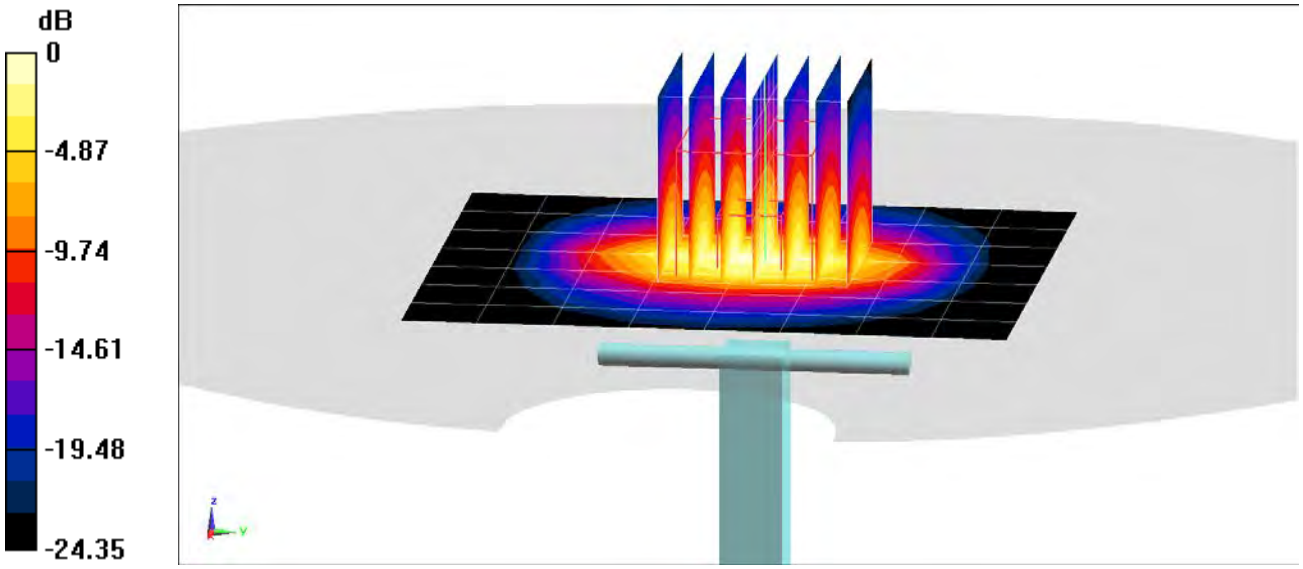
Communication System: UID 0, CW; Frequency: 2600 MHz; Duty Cycle: 1:1
Medium: 2450 Head Medium parameters used:
f = 2600 MHz; σ = 1.926 S/m; ε_r = 39.163; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-01-2019; Ambient Temp: 22.1°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN3589; ConvF(6.25, 6.25, 6.25) @ 2600 MHz; Calibrated: 1/25/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 8/22/2018
Phantom: Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1647
Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

2600 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 12.6 W/kg
SAR(1 g) = 5.75 W/kg
Deviation(1 g) = 5.50%



0 dB = 9.89 W/kg = 9.95 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 3500 MHz; Type: D3500V2; Serial: 1055

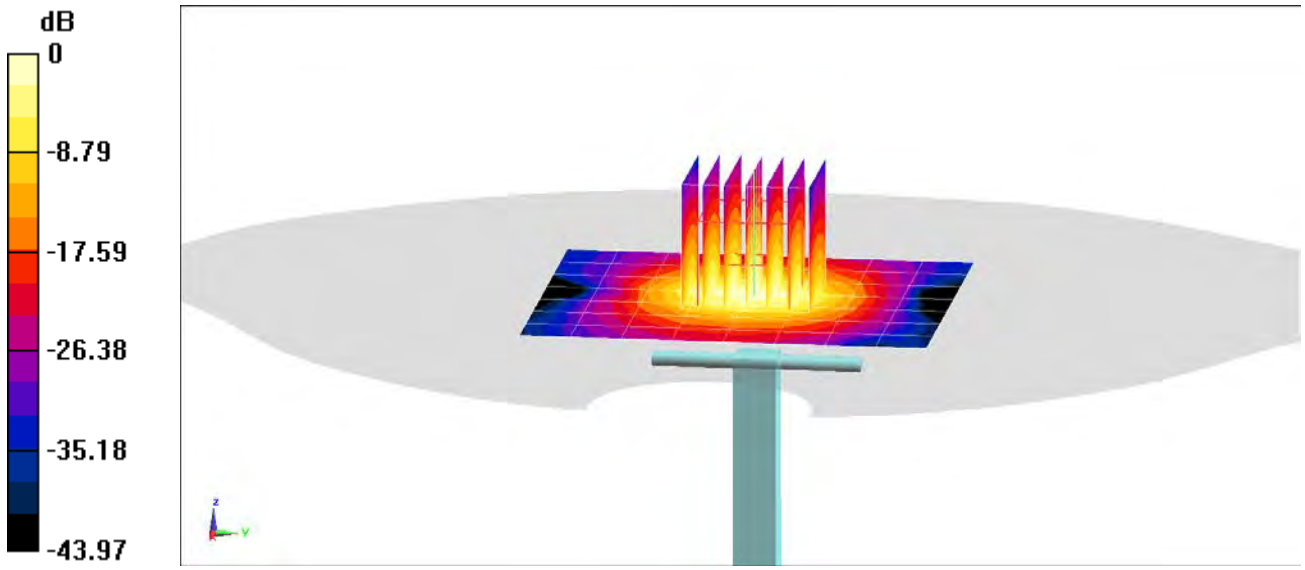
Communication System: UID 0, CW; Frequency: 3500 MHz; Duty Cycle: 1:1
Medium: 3500 Head Medium parameters used:
f = 3500 MHz; σ = 2.826 S/m; ε_r = 38.755; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-17-2019; Ambient Temp: 22.5°C; Tissue Temp: 20.6°C

Probe: EX3DV4 - SN3589; ConvF(6.16, 6.16, 6.16) @ 3500 MHz; Calibrated: 1/25/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 8/22/2018
Phantom: Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1647
Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

3500 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x8)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=1.4mm; Graded Ratio: 1.4
Peak SAR (extrapolated) = 18.6 W/kg
SAR(1 g) = 6.59 W/kg
Deviation(1 g) = -1.35%



0 dB = 13.0 W/kg = 11.14 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 3700 MHz; Type: D3700V2; Serial: 1002

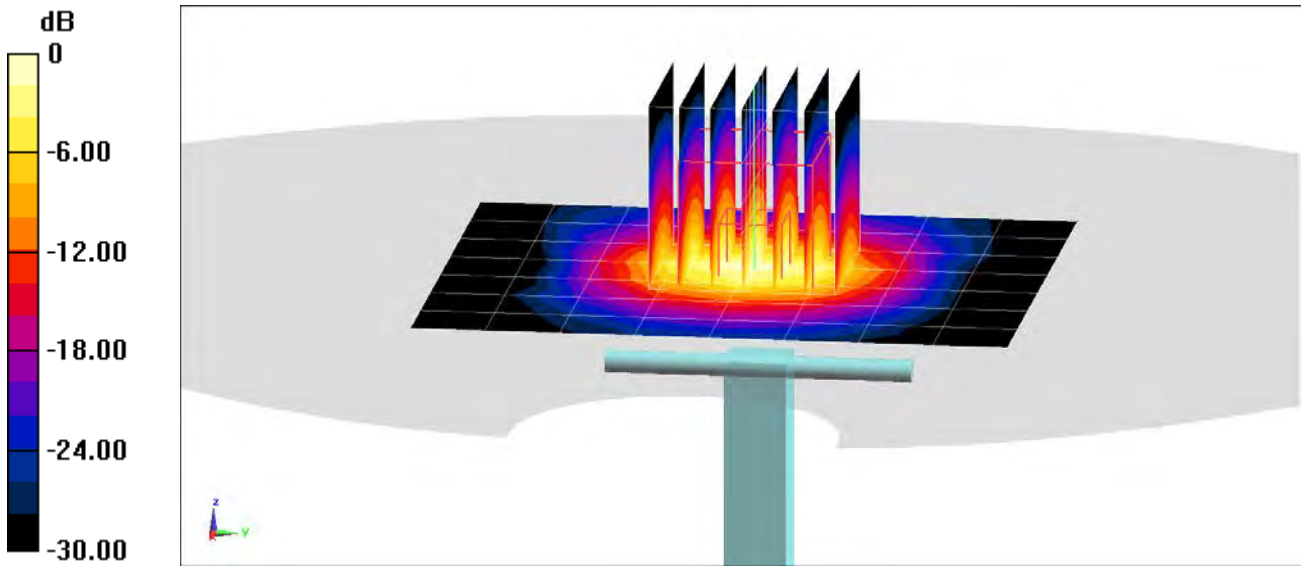
Communication System: UID 0, CW; Frequency: 3700 MHz; Duty Cycle: 1:1
Medium: 3500 Head Medium parameters used (interpolated):
f = 3700 MHz; σ = 3.022 S/m; ε_r = 38.409; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-17-2019; Ambient Temp: 22.5°C; Tissue Temp: 20.6°C

Probe: EX3DV4 - SN3589; ConvF(6.02, 6.02, 6.02) @ 3700 MHz; Calibrated: 1/25/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 8/22/2018
Phantom: Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1647
Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

3700 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x8)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=1.4mm; Graded Ratio: 1.4
Peak SAR (extrapolated) = 20.6 W/kg
SAR(1 g) = 6.97 W/kg
Deviation(1 g) = 2.65%



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

DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1191

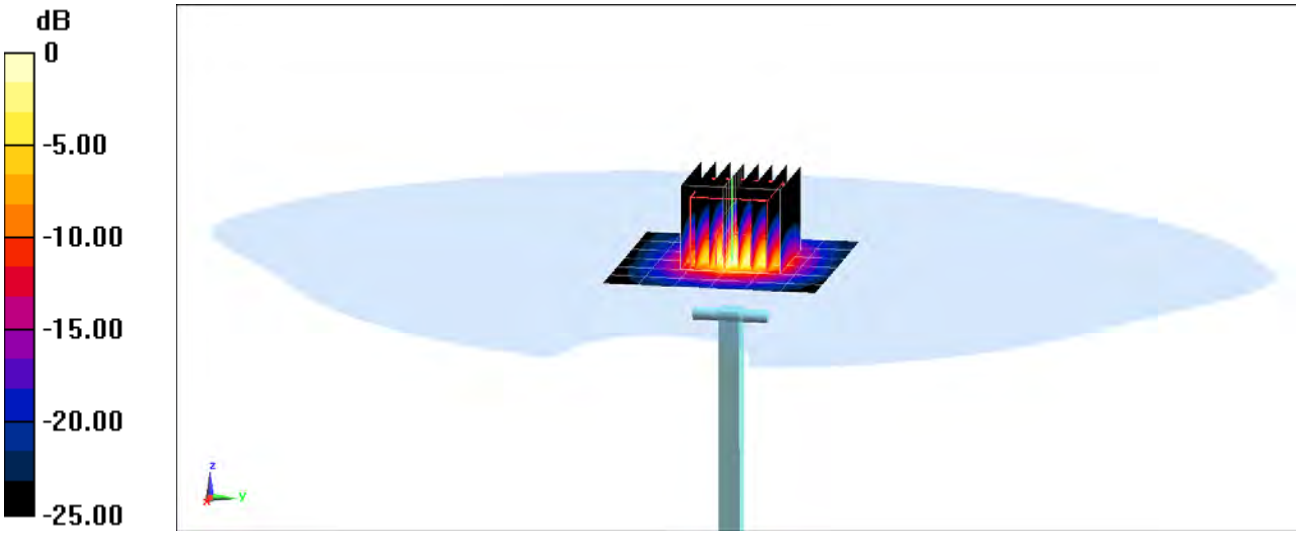
Communication System: UID 0, CW; Frequency: 5250 MHz; Duty Cycle: 1:1
Medium: 5GHzHead Medium parameters used (interpolated):
f = 5250 MHz; σ = 4.695 S/m; ε_r = 36.02; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-24-2019; Ambient Temp: 20.5°C; Tissue Temp: 20.5°C

Probe: EX3DV4 - SN7406; ConvF(5.54, 5.54, 5.54) @ 5250 MHz; Calibrated: 5/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/8/2019
Phantom: SAM with CRP v5.0 (Right); Type: QD000P40CD; Serial: TP:1759
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

5250 MHz System Verification at 17.0 dBm (50 mW)

Area Scan (7x7x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Peak SAR (extrapolated) = 15.6 W/kg
SAR(1 g) = 3.77 W/kg
Deviation(1 g) = -4.44%



0 dB = 9.26 W/kg = 9.67 dBW/kg

DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1191

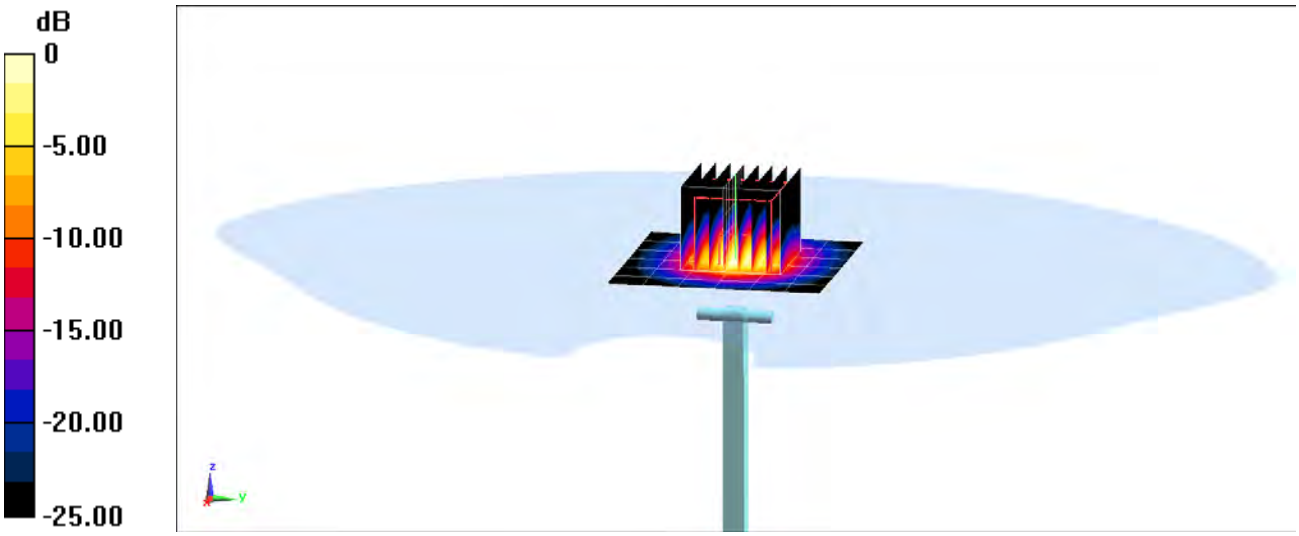
Communication System: UID 0, CW; Frequency: 5600 MHz; Duty Cycle: 1:1
Medium: 5GHzHead Medium parameters used:
f = 5600 MHz; σ = 5.096 S/m; ε_r = 35.375; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-24-2019; Ambient Temp: 20.5°C; Tissue Temp: 20.5°C

Probe: EX3DV4 - SN7406; ConvF(4.94, 4.94, 4.94) @ 5600 MHz; Calibrated: 5/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/8/2019
Phantom: SAM with CRP v5.0 (Right); Type: QD000P40CD; Serial: TP:1759
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

5600 MHz System Verification at 17.0 dBm (50 mW)

Area Scan (7x7x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Peak SAR (extrapolated) = 17.9 W/kg
SAR(1 g) = 4.03 W/kg
Deviation(1 g) = -3.59%



0 dB = 9.68 W/kg = 9.86 dBW/kg

DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1191

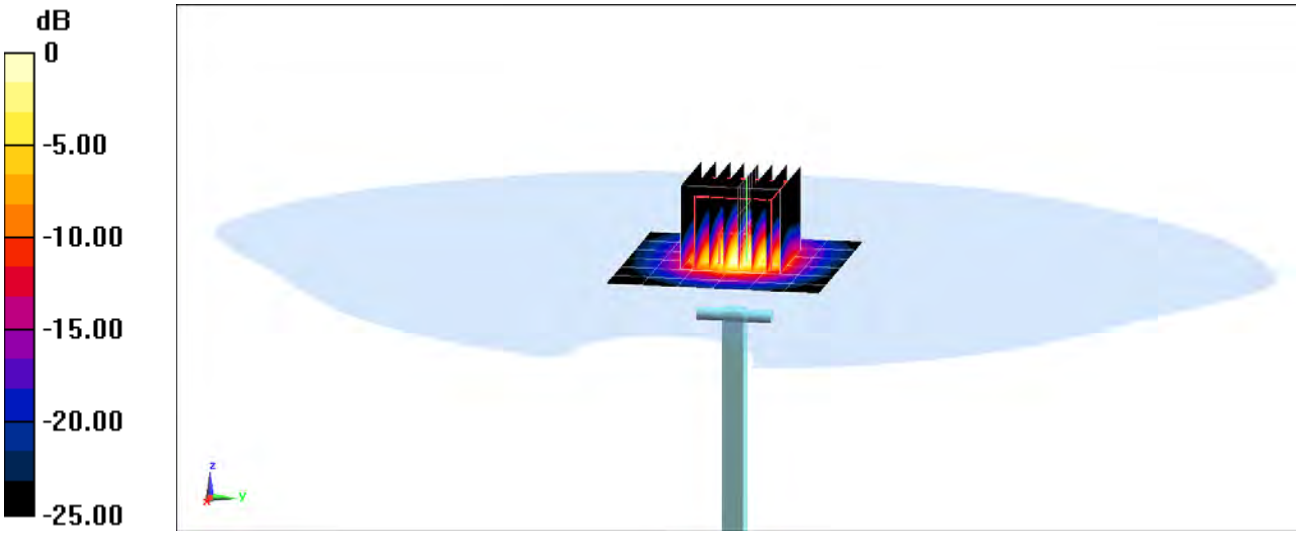
Communication System: UID 0, CW; Frequency: 5750 MHz; Duty Cycle: 1:1
Medium: 5GHzHead Medium parameters used (interpolated):
f = 5750 MHz; σ = 5.278 S/m; ε_r = 35.091; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-24-2019; Ambient Temp: 20.5°C; Tissue Temp: 20.5°C

Probe: EX3DV4 - SN7406; ConvF(5.23, 5.23, 5.23) @ 5750 MHz; Calibrated: 5/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/8/2019
Phantom: SAM with CRP v5.0 (Right); Type: QD000P40CD; Serial: TP:1759
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

5750 MHz System Verification at 17.0 dBm (50 mW)

Area Scan (7x7x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Peak SAR (extrapolated) = 17.4 W/kg
SAR(1 g) = 3.68 W/kg
Deviation(1 g) = -6.95%



0 dB = 9.00 W/kg = 9.54 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 750 MHz; Type: D750V3; Serial: 1161

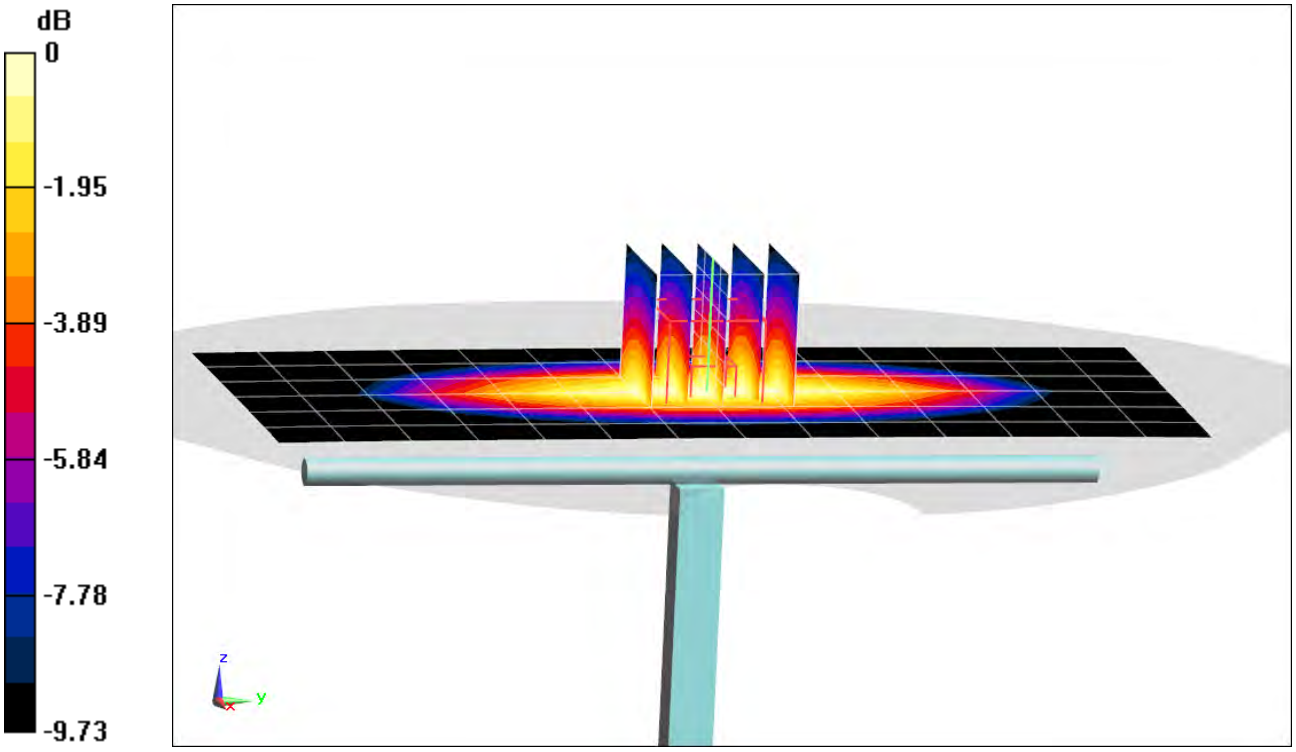
Communication System: UID 0, CW; Frequency: 750 MHz; Duty Cycle: 1:1
Medium: 750 Body; Medium parameters used (interpolated):
f = 750 MHz; σ = 0.943 S/m; ε_r = 56.886; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-04-2019; Ambient Temp: 22.2°C; Tissue Temp: 22.1°C

Probe: ES3DV3 - SN3287; ConvF(6.43, 6.43, 6.43) @ 750 MHz; Calibrated: 10/22/2018
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1333; Calibrated: 10/18/2018
Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 1964
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

750 MHz System Verification at 23.0 dBm (200 mW)

Area Scan (7x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 2.54 W/kg
SAR(1 g) = 1.75 W/kg
Deviation(1 g) = 3.80%



0 dB = 2.03 W/kg = 3.07 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 750 MHz; Type: D750V3; Serial: 1003

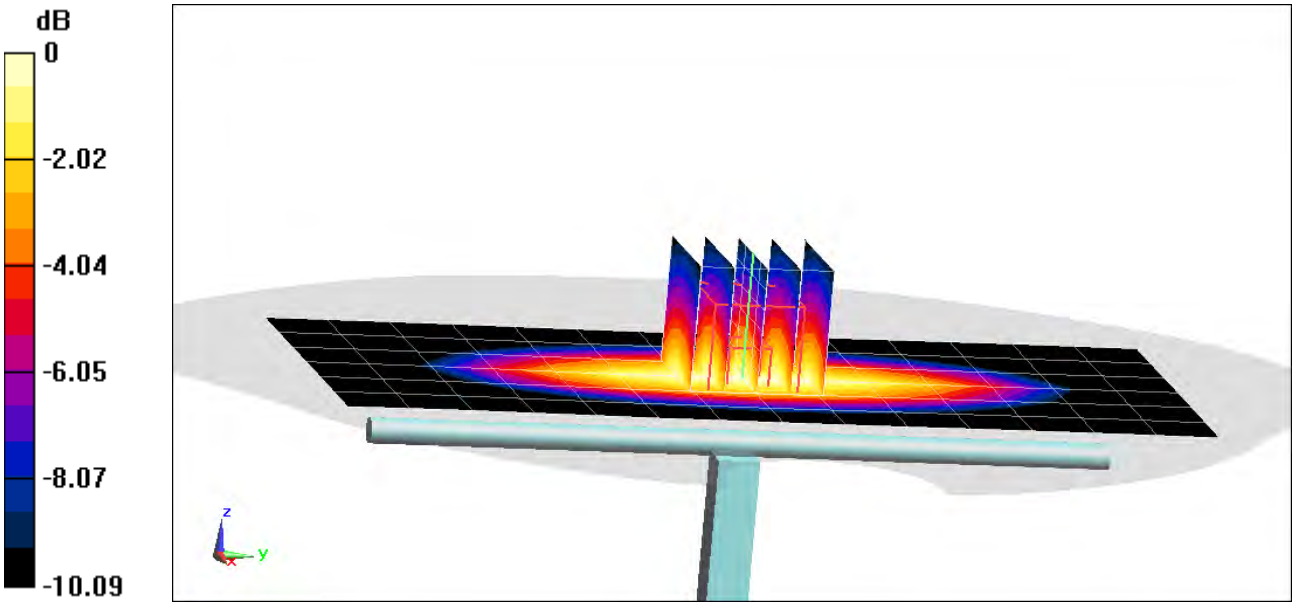
Communication System: UID 0, CW; Frequency: 750 MHz; Duty Cycle: 1:1
Medium: 750MHz Body Medium parameters used (interpolated):
f = 750 MHz; σ = 0.964 S/m; ε_r = 55.177; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-06-2019; Ambient Temp:22.0°C; Tissue Temp: 20.5°C

Probe: EX3DV4 - SN7308; ConvF(10.38, 10.38, 10.38) @ 750 MHz; Calibrated: 8/23/2018
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1558; Calibrated: 10/3/2018
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

750 MHz System Verification at 23.0 dBm (200 mW)

Area Scan (7x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 2.54 W/kg
SAR(1 g) = 1.69 W/kg
Deviation(1 g) = -1.52%



0 dB = 2.25 W/kg = 3.52 dBW/kg

DUT: Dipole 750 MHz; Type: D750V3; Serial: 1003

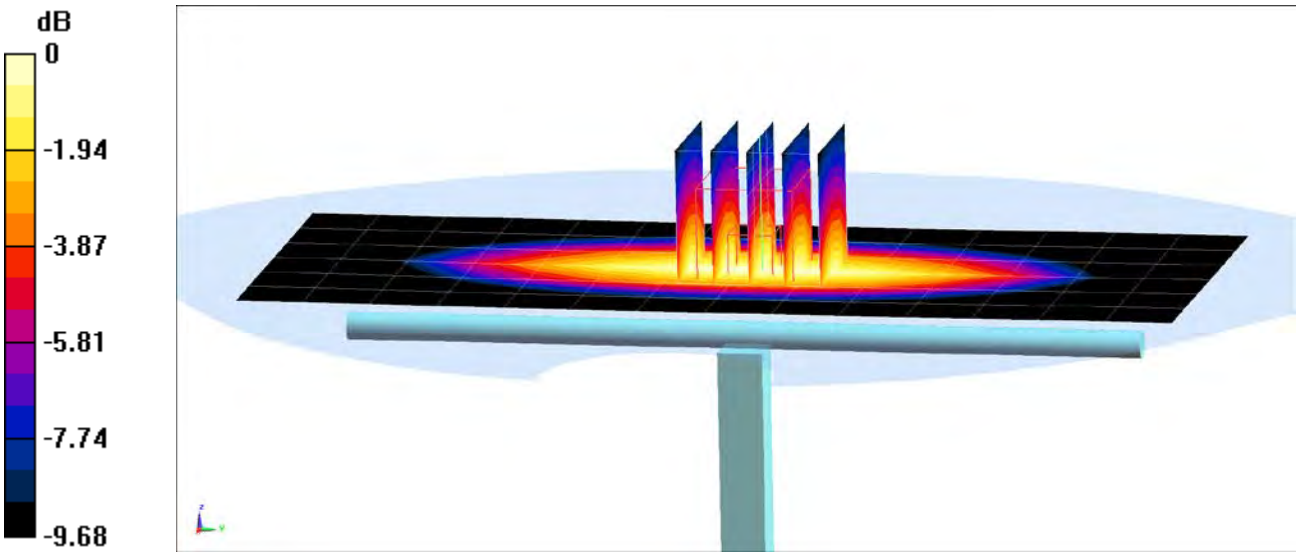
Communication System: UID 0, CW; Frequency: 750 MHz; Duty Cycle: 1:1
Medium: 750 Body Medium parameters used (interpolated):
f = 750 MHz; σ = 0.945 S/m; ε_r = 57.55; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 07-02-2019; Ambient Temp: 23.6°C; Tissue Temp: 22.6°C

Probe: EX3DV4 - SN3914; ConvF(9.73, 9.73, 9.73) @ 750 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/14/2019
Phantom: SAM with CRP v5.0 Left; Type: QD000P40CD; Serial: 1687
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

750 MHz System Verification at 23.0 dBm (200 mW)

Area Scan (7x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 2.48 W/kg
SAR(1 g) = 1.69 W/kg
Deviation(1 g) = -1.52%



0 dB = 2.22 W/kg = 3.46 dBW/kg

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d132

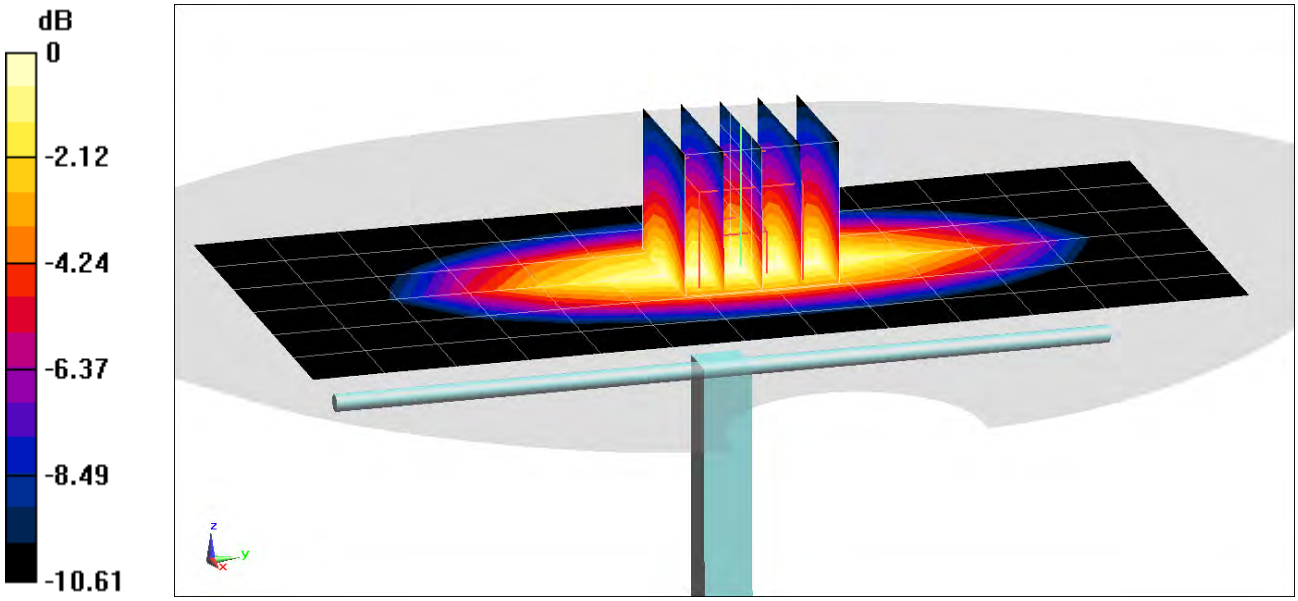
Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used:
f = 835 MHz; σ = 0.987 S/m; ε_r = 52.997; ρ = 1000 kg/m^3
Phantom section: Flat Section Space: 1.5 cm

Test Date: 06-03-2019 Ambient Temp: 18.7°C; Tissue Temp: 19.8 °C

Probe: EX3DV4 - SN7488; ConvF(11.03, 11.03, 11.03) @ 835 MHz; Calibrated: 1/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1530; Calibrated: 1/15/2019
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

835 MHz System Verification at 23.0 dBm (200 mW)

Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 2.97 W/kg
SAR(1 g) = 1.93 W/kg
Deviation(1 g) = -0.21%



0 dB = 2.61 W/kg = 4.17 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d132

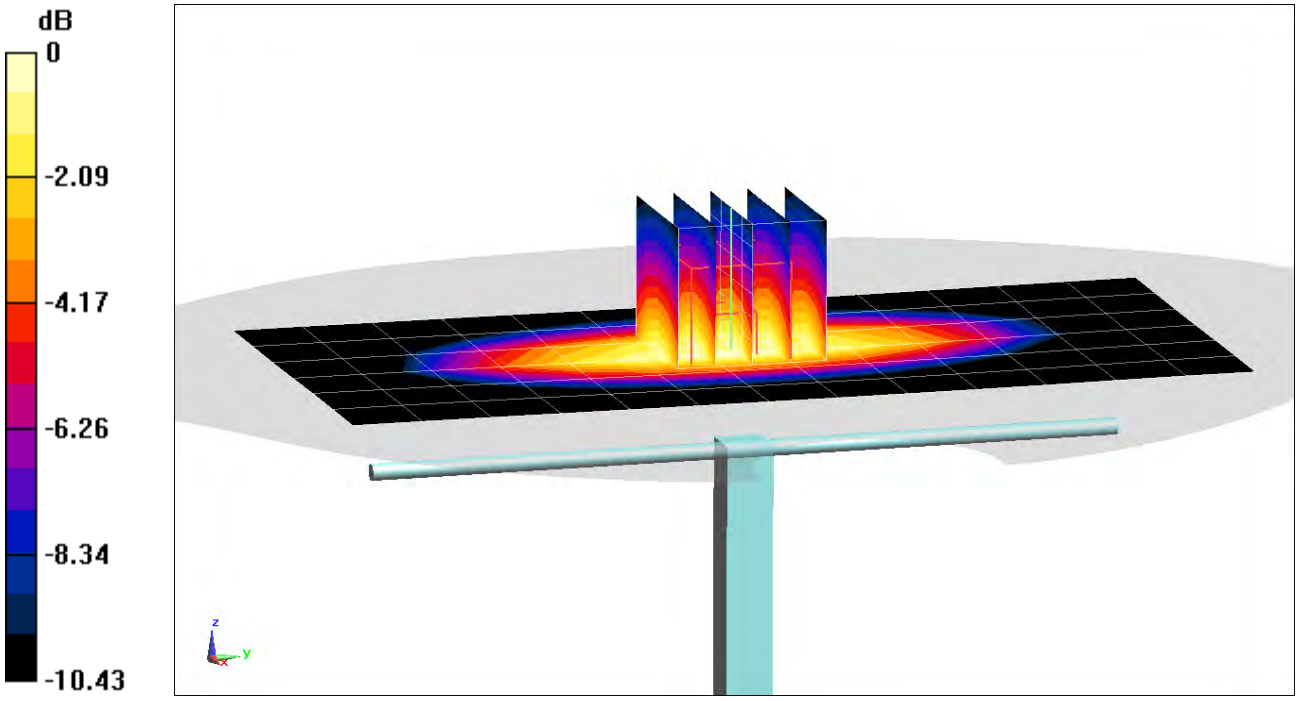
Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used:
f = 835 MHz; σ = 0.98 S/m; ε_r = 53.474; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-24-2019; Ambient Temp: 22.0°C; Tissue Temp: 21.5°C

Probe: EX3DV4 - SN7410; ConvF(9.63, 9.63, 9.63) @ 835 MHz; Calibrated: 7/20/2018
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/11/2018
Phantom: Front; Type: QD 000 P40 CD; Serial: 1686
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

835 MHz System Verification at 23.0 dBm (200 mW)

Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 3.10 W/kg
SAR(1 g) = 2.07 W/kg
Deviation(1 g) = 7.03%



0 dB = 2.76 W/kg = 4.41 dBW/kg

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d132

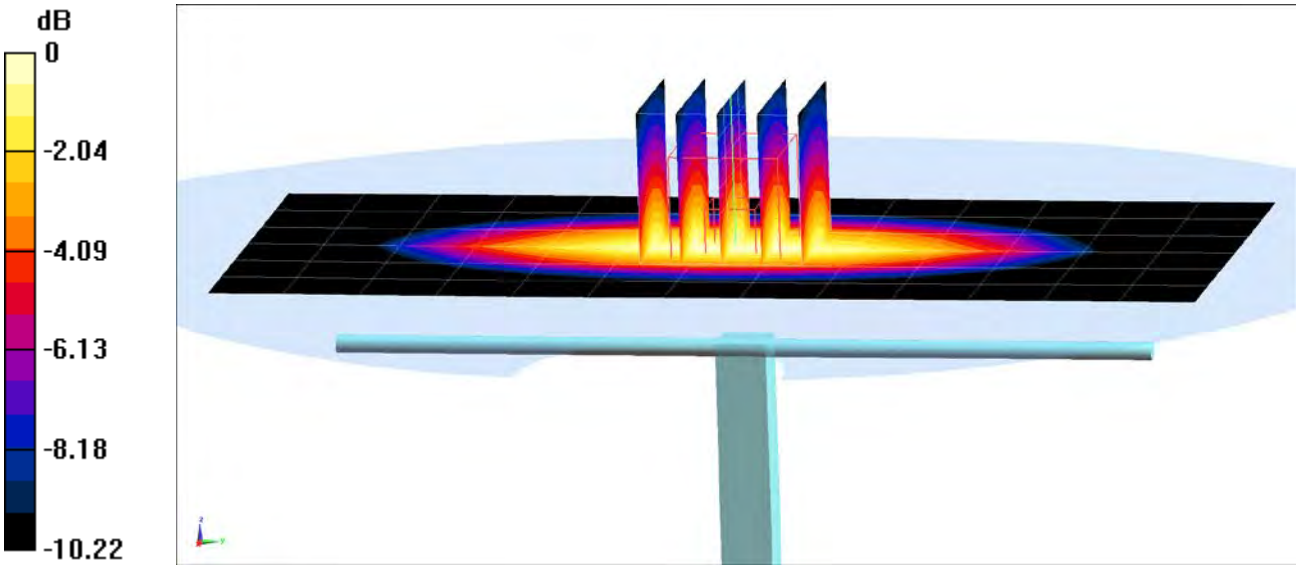
Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used:
f = 835 MHz; σ = 0.968 S/m; ε_r = 56.702; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 06-28-2019; Ambient Temp: 22.8°C; Tissue Temp: 22.5°C

Probe: EX3DV4 - SN3914; ConvF(9.46, 9.46, 9.46) @ 835 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/14/2019
Phantom: SAM with CRP v5.0 Left; Type: QD000P40CD; Serial: 1687
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

835 MHz System Verification at 23.0 dBm (200 mW)

Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 3.13 W/kg
SAR(1 g) = 2.07 W/kg
Deviation(1 g) = 7.03%



0 dB = 2.76 W/kg = 4.41 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 1750 MHz; Type: D1765V2; Serial: 1008

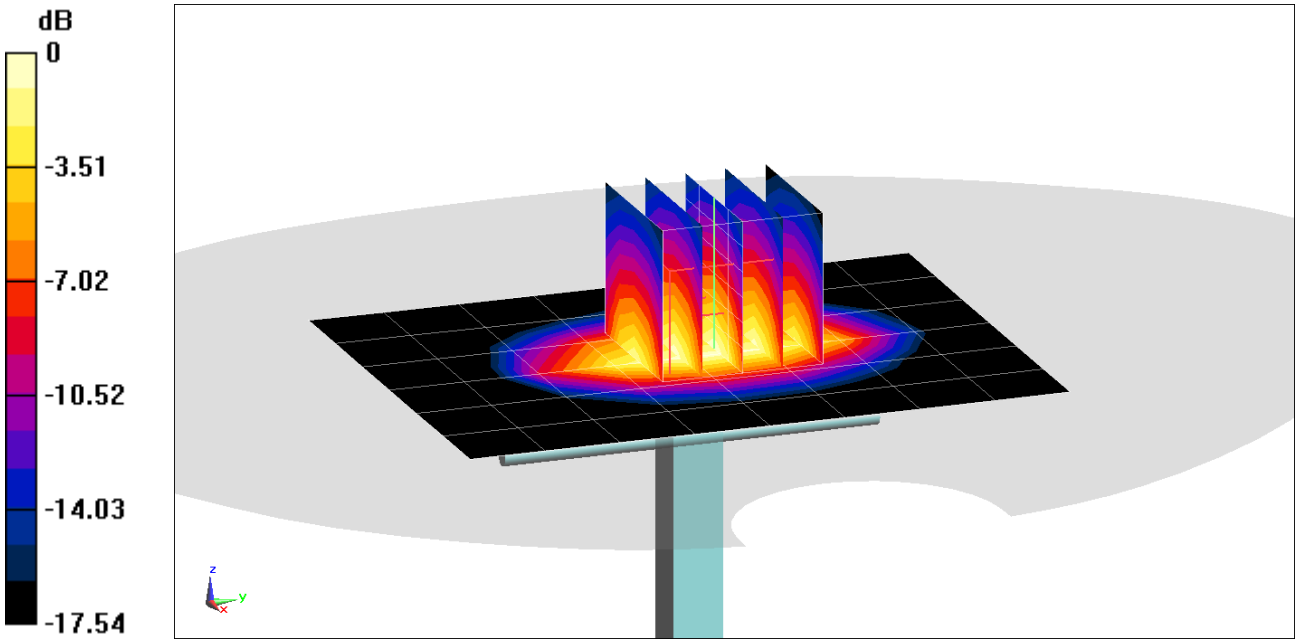
Communication System: UID 0, CW; Frequency: 1750 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used:
f = 1750 MHz; σ = 1.523 S/m; ε_r = 51.442; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-14-2019; Ambient Temp: 22.7°C; Tissue Temp: 19.8°C

Probe: EX3DV4 - SN7488; ConvF(8.68, 8.68, 8.68) @ 1750 MHz; Calibrated: 1/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1530; Calibrated: 1/15/2019
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

1750 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (7x9x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 7.31 W/kg
SAR(1 g) = 3.95 W/kg
Deviation(1 g) = 5.61%



0 dB = 6.11 W/kg = 7.86 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: 1150

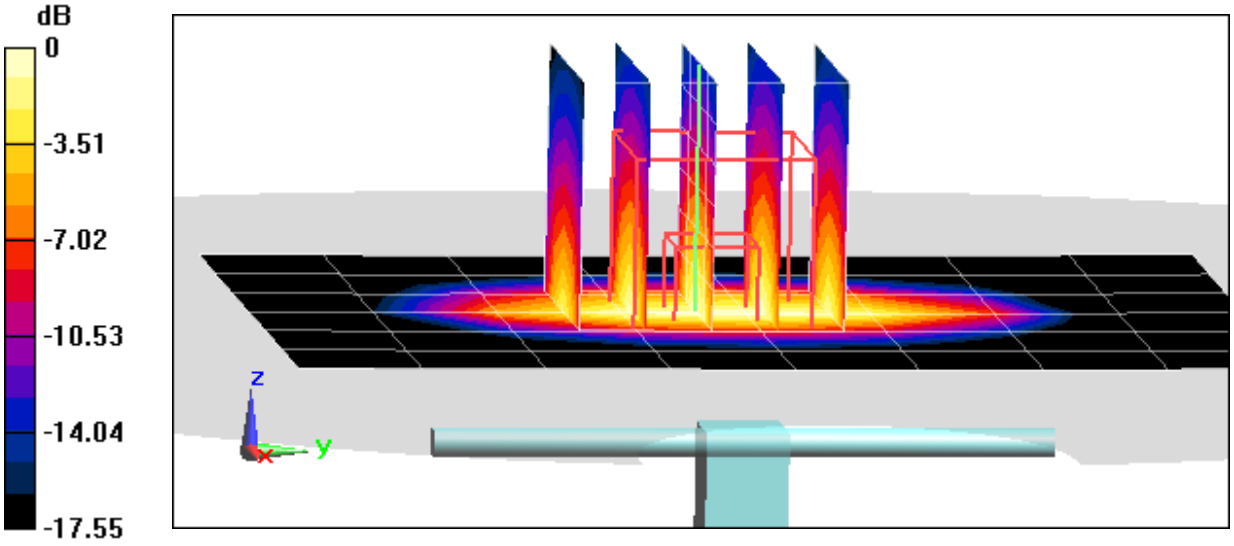
Communication System: UID 0, CW; Frequency: 1750 MHz; Duty Cycle: 1:1
Medium: 1750 Body; Medium parameters used:
f = 1750 MHz; σ = 1.5 S/m; ε_r = 51.102; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-23-2019; Ambient Temp: 19.5°C; Tissue Temp: 21.6°C

Probe: EX3DV4 - SN7357; ConvF(8.26, 8.26, 8.26) @ 1750 MHz; Calibrated: 4/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/18/2019
Phantom: Twin-SAM V5.0 Back Right; Type: QD 000 P40 CD; Serial: 1692
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

1750 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (7x9x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 7.09 W/kg
SAR(1 g) = 3.88 W/kg; SAR(10 g) = 2.04 W/kg
Deviation(1 g) = 6.01%; Deviation(10 g) = 5.15%



0 dB = 5.90 W/kg = 7.71 dBW/kg

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 5d080

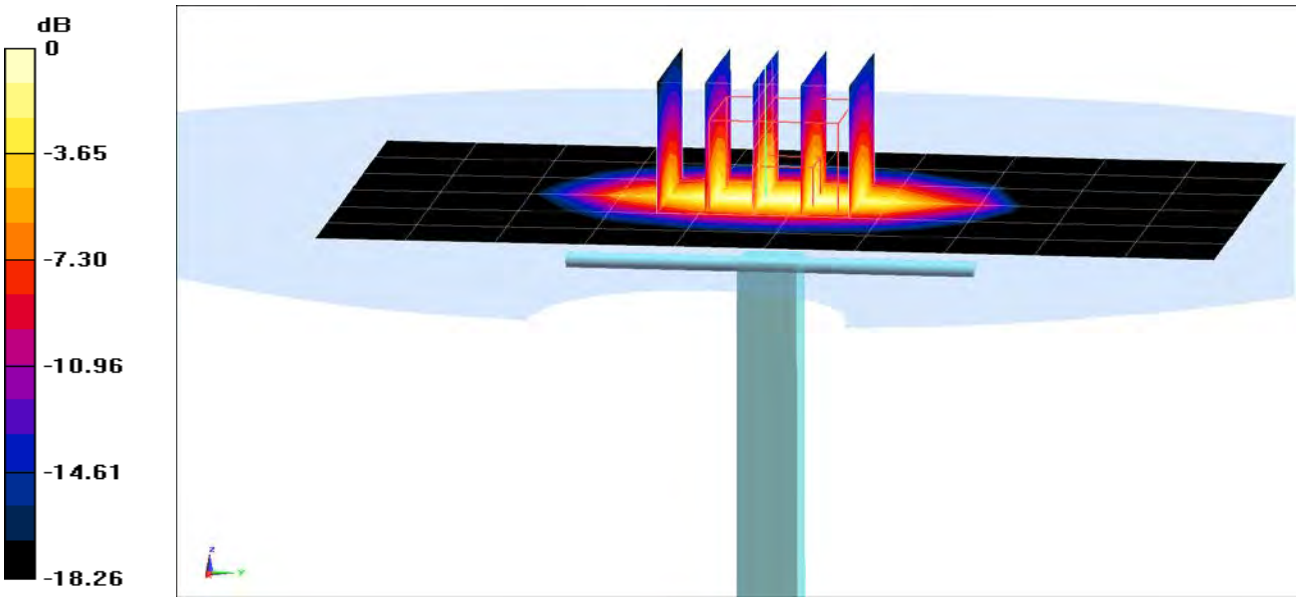
Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
f = 1900 MHz; σ = 1.577 S/m; ε_r = 54.033; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-05-2019; Ambient Temp: 23.5°C; Tissue Temp: 22.2°C

Probe: EX3DV4 - SN3589; ConvF(6.75, 6.75, 6.75) @ 1900 MHz; Calibrated: 1/25/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 8/22/2018
Phantom: SAM 5.0 front; Type: QD000P40CD; Serial: 1648
Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

1900 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 7.82 W/kg
SAR(1 g) = 4.2 W/kg
Deviation(1 g) = 7.14%



0 dB = 6.46 W/kg = 8.10 dBW/kg

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 5d148

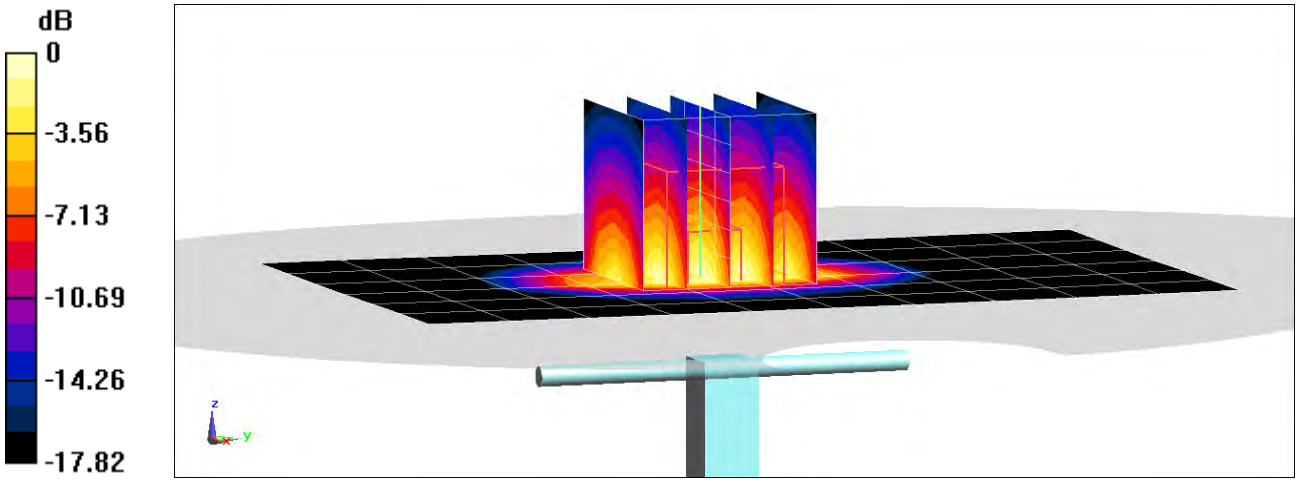
Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
f = 1900 MHz; σ = 1.571 S/m; ε_r = 51.911; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-05-2019; Ambient Temp: 22.8°C; Tissue Temp: 23.5°C

Probe: EX3DV4 - SN7410; ConvF(7.78, 7.78, 7.78) @ 1900 MHz; Calibrated: 7/20/2018
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/11/2018
Phantom: Front; Type: QD 000 P40 CD; Serial: 1686
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

1900 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 7.78 W/kg
SAR(1 g) = 4.22 W/kg
Deviation(1 g) = 7.93%



0 dB = 6.56 W/kg = 8.17 dBW/kg

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 5d080

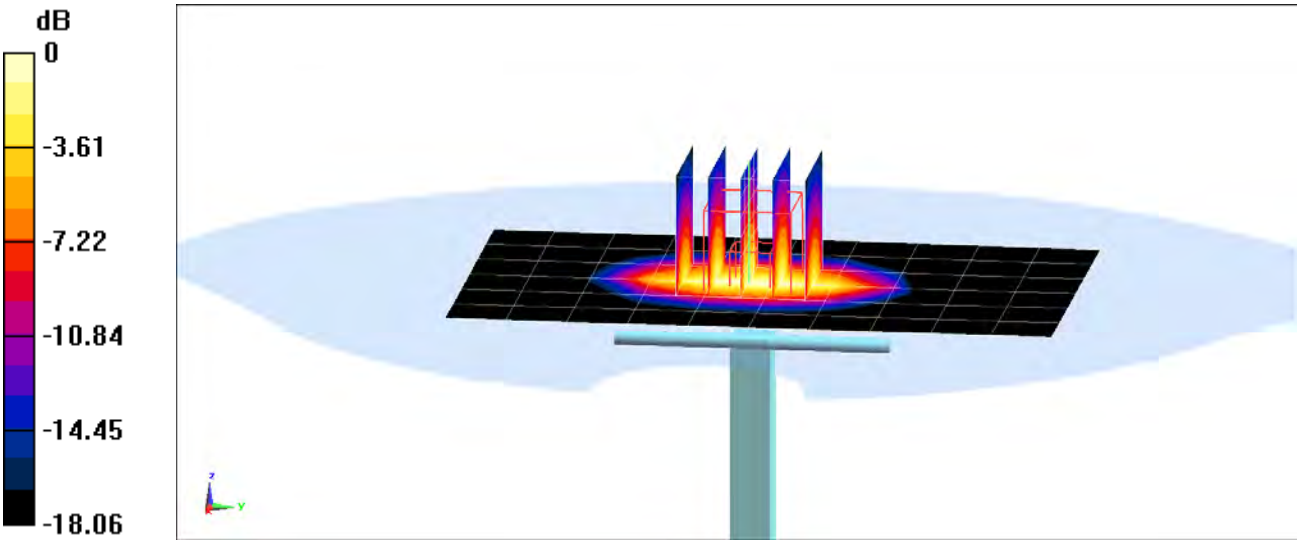
Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
f = 1900 MHz; σ = 1.557 S/m; ε_r = 53.758; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-10-2019; Ambient Temp: 23.8°C; Tissue Temp: 23.1°C

Probe: EX3DV4 - SN3589; ConvF(6.75, 6.75, 6.75) @ 1900 MHz; Calibrated: 1/25/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 8/22/2018
Phantom: SAM 5.0 front; Type: QD000P40CD; Serial: 1648
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

1900 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 7.60 W/kg
SAR(1 g) = 4.08 W/kg; SAR(10 g) = 2.11 W/kg
Deviation(1 g) = 4.08%; Deviation(10 g) = 2.43%



0 dB = 6.36 W/kg = 8.03 dBW/kg

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 5d149

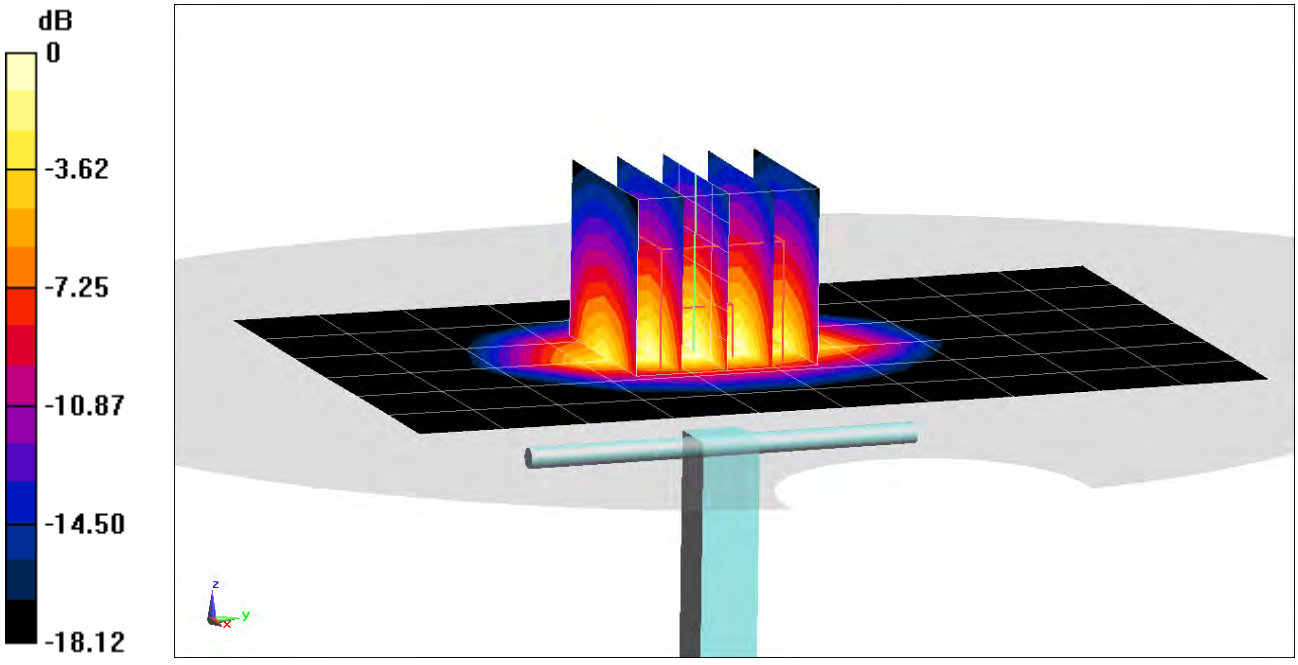
Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
f = 1900 MHz; σ = 1.564 S/m; ε_r = 51.734; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-12-2019; Ambient Temp: 22.6°C; Tissue Temp: 22.0°C

Probe: EX3DV4 - SN7410; ConvF(7.78, 7.78, 7.78) @ 1900 MHz; Calibrated: 7/20/2018
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/11/2018
Phantom: Front; Type: QD 000 P40 CD; Serial: 1686
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

1900 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 7.41 W/kg
SAR(10 g) = 2.05 W/kg
Deviation(10 g) = -0.97%



0 dB = 6.24 W/kg = 7.95 dBW/kg

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 5d080

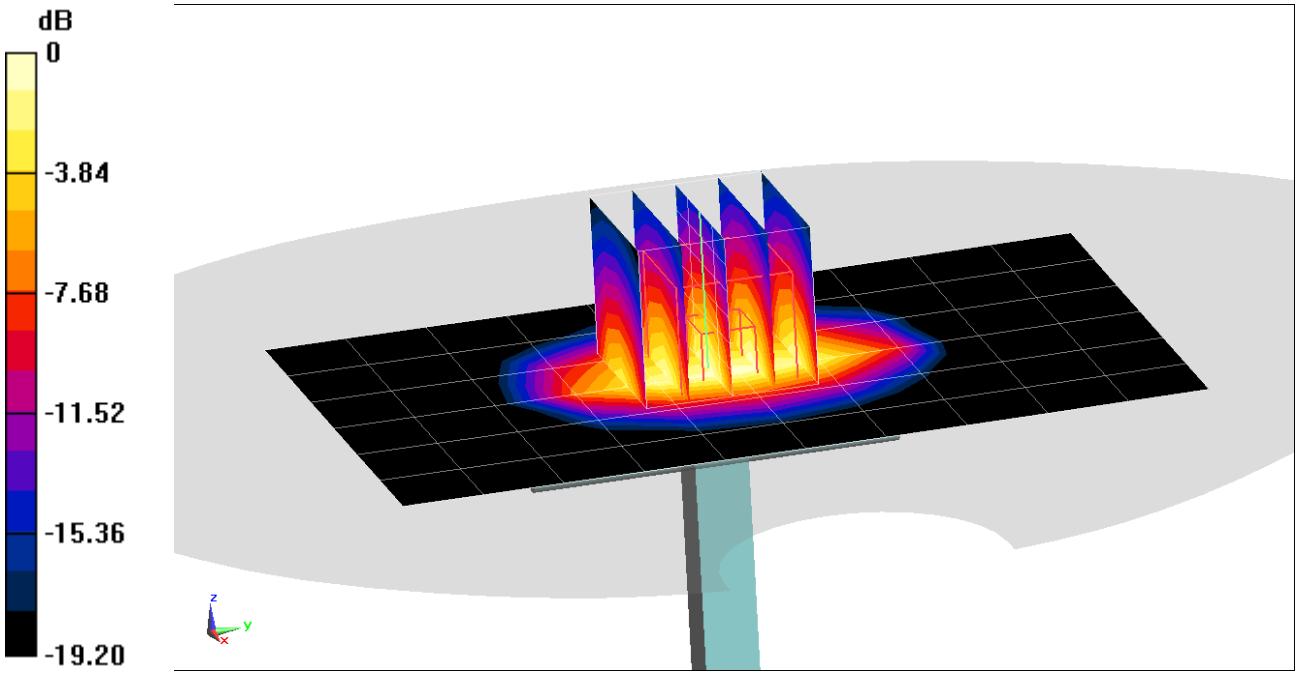
Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
f = 1900 MHz; σ = 1.559 S/m; ε_r = 51.003; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-01-2019; Ambient Temp: 20.7°C; Tissue Temp: 22.7°C

Probe: EX3DV4 - SN7488; ConvF(8.37, 8.37, 8.37) @ 1900 MHz; Calibrated: 1/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1530; Calibrated: 1/15/2019
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

1900 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 7.84 W/kg
SAR(10 g) = 2.07 W/kg
Deviation(10 g) = 0.49%



0 dB = 6.39 W/kg = 8.06 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 2300 MHz; Type: D2300V2; Serial: 1064

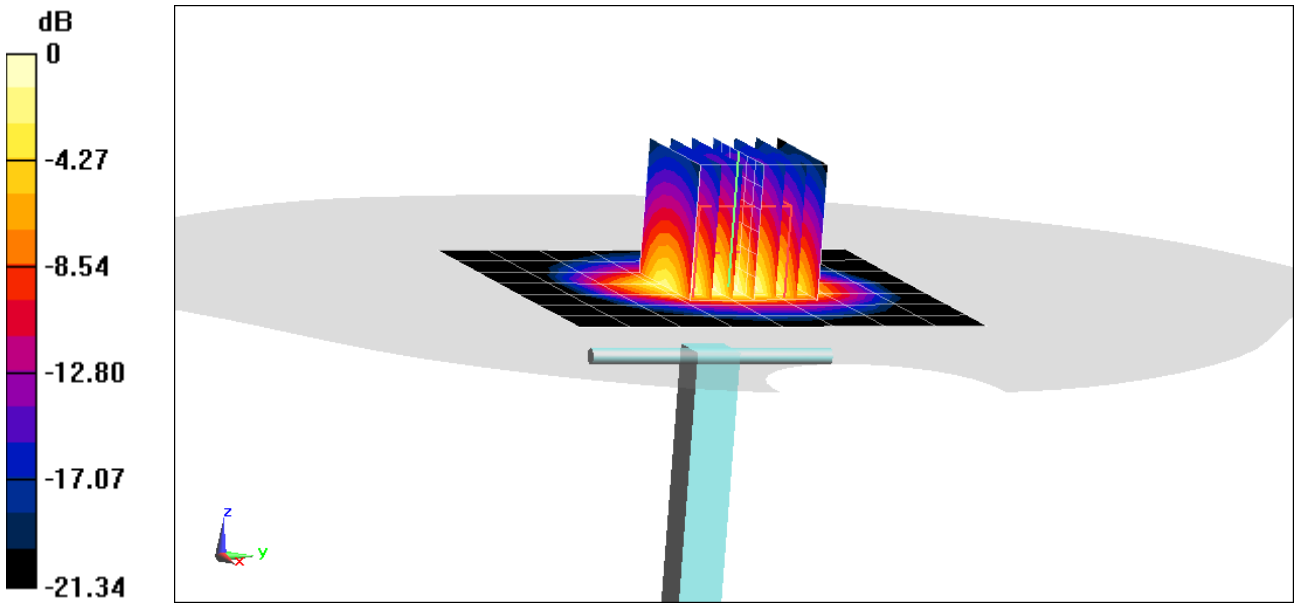
Communication System: UID 0, CW; Frequency: 2300 MHz; Duty Cycle: 1:1
Medium: 2450 MHz Body Medium parameters used:
f = 2300 MHz; σ = 1.893 S/m; ε_r = 53.043; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-10-2019; Ambient Temp: 22.2°C; Tissue Temp: 21.1°C

Probe: EX3DV4 - SN7308; ConvF(7.73, 7.73, 7.73) @ 2300 MHz; Calibrated: 8/23/2018
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1558; Calibrated: 10/3/2018
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

2300 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 9.99 W/kg
SAR(1 g) = 4.83 W/kg; SAR(10 g) = 2.3 W/kg
Deviation(1 g) = 3.87%; Deviation(10 g) = 1.77%



0 dB = 8.01 W/kg = 9.04 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 719

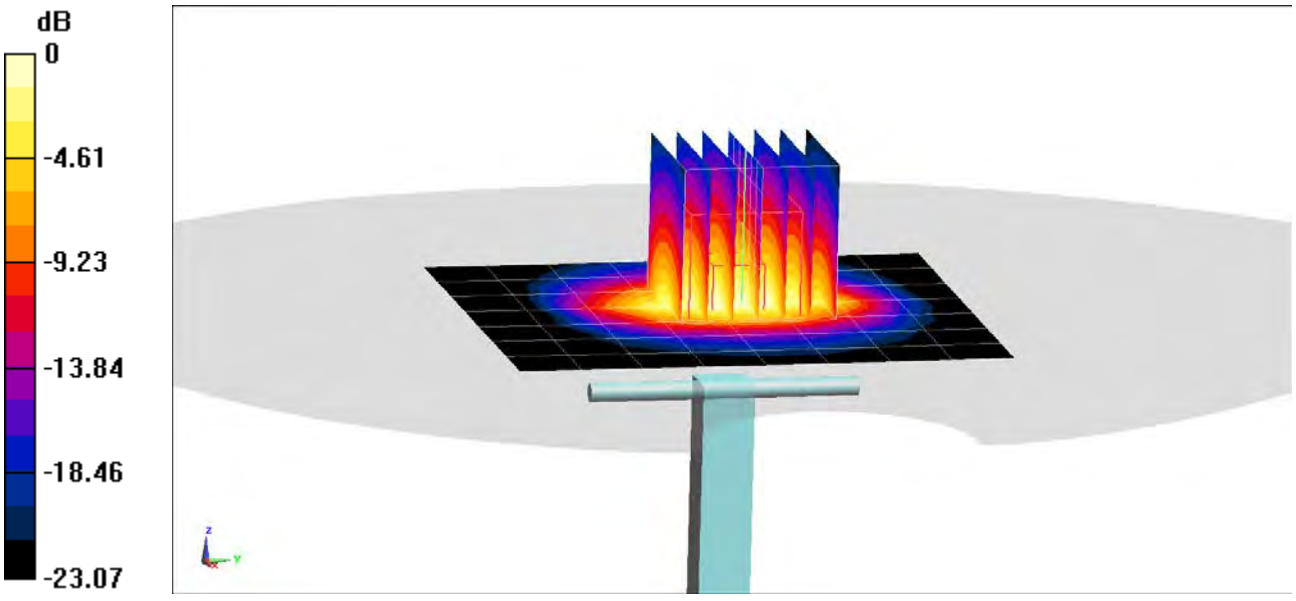
Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: 2450 Body; Medium parameters used:
f = 2450 MHz; σ = 2.041 S/m; ε_r = 50.964; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 06-14-2019; Ambient Temp: 23.2°C; Tissue Temp: 22.6°C

Probe: EX3DV4 - SN7417; ConvF(7.51, 7.51, 7.51) @ 2450 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/13/2019
Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP1375
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

2450 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 10.6 W/kg
SAR(1 g) = 5.07 W/kg; SAR(10 g) = 2.32 W/kg
Deviation(1 g) = 1.20%; Deviation(10 g) = -2.11%



0 dB = 8.51 W/kg = 9.30 dBW/kg