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

SAR EVALUATION REPORT

Applicant Name:
Panasonic Corporation of North America
Two Riverfront Plaza, 9th Floor
Newark, NJ 07102
United States

Date of Testing:
12/21/2015 – 12/28/2015,
03/28/2016 – 04/27/2016
Test Site/Location:
PCTEST Lab, Columbia, MD, USA
Document Serial No.:
0Y1603280612-R1.ACJ

FCC ID: **ACJFZN1B**

APPLICANT: **PANASONIC CORPORATION OF NORTH AMERICA**

DUT Type: Portable Handset
Application Type: Certification
FCC Rule Part(s): CFR §2.1093

Equipment Class	Band & Mode	Tx Frequency	SAR				
			1 gm Head (W/kg)	1 gm Body-Worn (W/kg)	1 gm Hotspot (W/kg)	10 gm Phablet (W/kg)	10 gm Extremity (W/kg)
PCE	GSM/GPRS/EDGE 850	824.20 - 848.80 MHz	0.54	0.43	0.67	N/A	0.41
PCE	GSM/GPRS/EDGE 1900	1850.20 - 1909.80 MHz	0.26	0.28	0.75		0.18
PCE	Cell. CDMA/EVDO	824.70 - 848.31 MHz	0.57	0.41	0.52		0.40
PCE	PCS CDMA/EVDO	1851.25 - 1908.75 MHz	0.57	0.53	1.09		0.29
PCE	UMTS 850	826.40 - 846.60 MHz	0.38	0.30	0.30		0.28
PCE	UMTS 1900	1852.4 - 1907.6 MHz	0.44	0.41	0.76		0.24
PCE	LTE Band 12	699.7 - 715.3 MHz	0.22	0.40	0.40		0.34
PCE	LTE Band 13	779.5 - 784.5 MHz	0.44	0.45	0.56		0.44
PCE	LTE Band 5 (Cell)	824.7 - 848.3 MHz	0.46	0.33	0.40		0.33
PCE	LTE Band 4 (AWS)	1710.7 - 1754.3 MHz	0.73	0.51	0.95		0.34
PCE	LTE Band 2 (PCS)	1850.7 - 1909.3 MHz	0.41	0.44	0.82		0.18
DTS	2.4 GHz WLAN	2412 - 2462 MHz	0.13	< 0.1	0.15		< 0.1
NII	U-NII-1	5180 - 5240 MHz	N/A				
NII	U-NII-2A	5260 - 5320 MHz	0.18	0.28	N/A	0.40	0.22
NII	U-NII-2C	5500 - 5700 MHz	0.28	0.39		0.68	0.26
NII	U-NII-3	5745 - 5825 MHz	0.23	0.45		0.64	0.28
DSS/DTS	Bluetooth	2402 - 2480 MHz	< 0.1	< 0.1	< 0.1	N/A	< 0.1
Simultaneous SAR per KDB 690783 D01v01r03:			1.01	0.96	1.24	0.68	0.72

Note: This revised Test Report (S/N: 0Y1603280612-R1.ACJ) supersedes and replaces the previously issued test report on the same subject accessory 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 1.10 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 Manufacturers Forum (MMF). While a product may be considered eligible, use of the SAR Tick logo requires an agreement with the MMF. Further details can be obtained by emailing: sartick@mmfai.info.

TABLE OF CONTENTS

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
Cell. CDMA/EVDO	Voice/Data	824.70 - 848.31 MHz
PCS CDMA/EVDO	Voice/Data	1851.25 - 1908.75 MHz
UMTS 850	Voice/Data	826.40 - 846.60 MHz
UMTS 1900	Voice/Data	1852.4 - 1907.6 MHz
LTE Band 12	Voice/Data	699.7 - 715.3 MHz
LTE Band 13	Voice/Data	779.5 - 784.5 MHz
LTE Band 5 (Cell)	Voice/Data	824.7 - 848.3 MHz
LTE Band 4 (AWS)	Voice/Data	1710.7 - 1754.3 MHz
LTE Band 2 (PCS)	Voice/Data	1850.7 - 1909.3 MHz
2.4 GHz WLAN	Data	2412 - 2462 MHz
U-NII-1	Data	5180 - 5240 MHz
U-NII-2A	Data	5260 - 5320 MHz
U-NII-2C	Data	5500 - 5700 MHz
U-NII-3	Data	5745 - 5825 MHz
Bluetooth	Data	2402 - 2480 MHz
NFC	Data	13.56 MHz

1.2 Power Reduction for SAR

There is no power reduction used for any band/mode implemented in this device for SAR purposes.

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.

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*
GSM/GPRS/EDGE 850	Maximum	**32.8**	**32.8**	**30.8**	**29.0**	**27.8**	**26.8**	**26.8**
	Nominal	**32.0**	**32.0**	**30.0**	**28.2**	**27.0**	**26.0**	**26.0**
GSM/GPRS/EDGE 1900	Maximum	**30.6**	**30.6**	**28.3**	**26.5**	**25.3**	**26.8**	**26.8**
	Nominal	**29.25**	**29.25**	**27.0**	**25.2**	**24.0**	**25.5**	**25.5**

Mode / Band		Modulated Average (dBm)		
		3GPP WCDMA	*3GPP HSDPA*	*3GPP HSUPA*
UMTS Band 5 (850 MHz)	Maximum	**24.0**	**24.0**	**23.0**
	Nominal	**23.0**	**23.0**	**22.0**
UMTS Band 2 (1900 MHz)	Maximum	**24.1**	**24.1**	**23.1**
	Nominal	**23.0**	**23.0**	**22.0**

Mode / Band		Modulated Average (dBm)
Cell. CDMA/EVDO	Maximum	**24.7**
	Nominal	**24.0**
PCS CDMA/EVDO	Maximum	**24.8**
	Nominal	**24.0**

Mode / Band		Modulated Average (dBm)
LTE Band 12	Maximum	**23.7**
	Nominal	**23.0**
LTE Band 13	Maximum	**23.5**
	Nominal	**23.0**
LTE Band 5 (Cell)	Maximum	**23.8**
	Nominal	**23.0**
LTE Band 4 (AWS)	Maximum	**23.8**
	Nominal	**23.0**
LTE Band 2 (PCS)	Maximum	**23.8**
	Nominal	**23.0**

Mode / Band		Modulated Average (dBm)		
IEEE 802.11b (2.4 GHz)	Channel	1-11		
	Maximum	**15.9**		
	Nominal	**14.0**		
	Minimum	**12.1**		
IEEE 802.11g (2.4 GHz)	Channel	1	2-10	11
	Maximum	**11.9**	**13.9**	**11.9**
	Nominal	**10.0**	**12.0**	**10.0**
	Minimum	**8.1**	**10.1**	**8.1**
IEEE 802.11n (2.4 GHz)	Channel	1	2-10	11
	Maximum	**11.9**	**12.9**	**11.9**
	Nominal	**10.0**	**11.0**	**10.0**
	Minimum	**8.1**	**9.1**	**8.1**

Mode / Band		Modulated Average (dBm)					
IEEE 802.11a/n/ac (5 GHz HT20)	Channel	36-48	52-60	64-100	104-136	140	149-165
	Maximum	**15.9**	**17.4**	**15.9**	**17.4**	**15.9**	**17.4**
	Nominal	**14.0**	**15.5**	**14.0**	**15.5**	**14.0**	**15.5**
	Minimum	**12.1**	**13.6**	**12.1**	**13.6**	**12.1**	**13.6**
IEEE 802.11n/ac (5 GHz HT40)	Channel	38-159					
	Maximum	**12.9**					
	Nominal	**11.0**					
	Minimum	**9.1**					
IEEE 802.11ac (5 GHz HT80)	Channel	42-155					
	Maximum	**13.4**					
	Nominal	**11.5**					
	Minimum	**9.6**					

Mode / Band		Modulated Average (dBm)		
Bluetooth (BR)	Channel	Low	Mid	High
	Maximum	**13.4**	**13.9**	**12.9**
	Nominal	**11.5**	**12.0**	**11.0**
	Minimum	**9.6**	**10.1**	**9.1**
Bluetooth (EDR 2 Mbps/3 Mbps)	Channel	Low	Mid	High
	Maximum	**11.2**	**11.7**	**10.7**
	Nominal	**9.3**	**9.8**	**8.8**
	Minimum	**7.4**	**7.9**	**6.9**
Bluetooth LE	Channel	Low	Mid	High
	Maximum	**4.9**	**5.4**	**4.4**
	Nominal	**3.0**	**3.5**	**2.5**
	Minimum	**1.1**	**1.6**	**0.6**

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
Cell. EVDO	Yes	Yes	No	Yes	Yes	Yes
PCS EVDO	Yes	Yes	No	Yes	Yes	Yes
UMTS 850	Yes	Yes	No	Yes	Yes	Yes
UMTS 1900	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 5 (Cell)	Yes	Yes	No	Yes	Yes	Yes
LTE Band 4 (AWS)	Yes	Yes	No	Yes	Yes	Yes
LTE Band 2 (PCS)	Yes	Yes	No	Yes	Yes	Yes
2.4 GHz WLAN	Yes	Yes	Yes	No	No	Yes
5 GHz WLAN	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, all 5 GHz bands 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.

1.6 Simultaneous Transmission Capabilities

According to FCC KDB Publication 447498 D01v06, transmitters are considered to be transmitting simultaneously when there is overlapping transmission, with the exception of transmissions during network hand-offs with maximum hand-off duration less than 30 seconds. Possible transmission paths for the DUT are shown in Figure 1-1 and are color-coded to indicate communication modes which share the same path. Modes which share the same transmission path cannot transmit simultaneously with one another.

Figure 1-1
Simultaneous Transmission Paths

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	Extremity	Phablet	Notes
1	1x CDMA voice + 2.4 GHz WI-FI	Yes	Yes	N/A	Yes	Yes	
2	1x CDMA voice + 5 GHz WI-FI	Yes	Yes	N/A	Yes	Yes	
3	1x CDMA voice + 2.4 GHz Bluetooth	N/A	Yes	N/A	Yes	Yes	
4	GSM voice + 2.4 GHz WI-FI	Yes	Yes	N/A	Yes	Yes	
5	GSM voice + 5 GHz WI-FI	Yes	Yes	N/A	Yes	Yes	
6	GSM voice + 2.4 GHz Bluetooth	N/A	Yes	N/A	Yes	Yes	
7	UMTS + 2.4 GHz WI-FI	Yes	Yes	Yes	Yes	Yes	
8	UMTS + 5 GHz WI-FI	Yes	Yes	N/A	Yes	Yes	
9	UMTS + 2.4 GHz Bluetooth	Yes	Yes	Yes	Yes	Yes	
10	LTE + 2.4 GHz WI-FI	Yes	Yes	Yes	Yes	Yes	
11	LTE + 5 GHz WI-FI	Yes	Yes	N/A	Yes	Yes	
12	LTE + 2.4 GHz Bluetooth	Yes	Yes	Yes	Yes	Yes	
13	CDMA/EVDO data + 2.4 GHz WI-FI	Yes*	Yes*	Yes	Yes	Yes	*-Pre-installed VOIP applications are considered.
14	CDMA/EVDO data + 5 GHz WI-FI	N/A	N/A	N/A	Yes	Yes	WIFI Direct Only
15	CDMA/EVDO data + 2.4 GHz Bluetooth	Yes*	Yes*	Yes	Yes	Yes	*-Pre-installed VOIP applications are considered.
16	GPRS/EDGE + 2.4 GHz WI-FI	Yes*	Yes*	Yes	Yes	Yes	*-Pre-installed VOIP applications are considered.
17	GPRS/EDGE + 5 GHz WI-FI	N/A	N/A	N/A	Yes	Yes	WIFI Direct Only
18	GPRS/EDGE + 2.4 GHz Bluetooth	Yes*	Yes*	Yes	Yes	Yes	*-Pre-installed VOIP applications are considered.

1. 2.4 GHz WLAN, 5 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. When wireless router mode is enabled, all 5 GHz bands are disabled.
6. This device supports VOLTE.

1.7 Body Holster and Hand Strap Device Accessories

This DUT may also be used with two accessories containing metallic components: a body holster and a hand strap. Per FCC KDB Publication 447498 D01 v06, the accessories were tested in conjunction with the host device to demonstrate compliance. The belt holster was evaluated as a body-worn accessory with front and back side evaluated for 1 g body-worn SAR with the belt holster for each wireless technology and frequency band at 0 mm from the phantom. The hand strap accessory was evaluated for compliance by measuring back side 10 g extremity SAR at 0 mm for each wireless technology and frequency band.

1.8 Additional Extended L-Battery

This DUT may be used with a standard battery or L-Battery. Per FCC KDB Publication 648474 D04v01r03, SAR was measured using the standard battery and then repeated with the L-battery for the configuration with the highest reported SAR for each wireless technology, frequency band, operating mode, and exposure condition. The L-battery cannot be used in conjunction with the Hand Strap Accessory.

1.9 Miscellaneous SAR Test Considerations

(A) WIFI/BT

Since Wireless Router operations are not allowed by the chipset firmware using 5 GHz WIFI, only 2.4 GHz WIFI Hotspot SAR tests and combinations are considered for SAR with respect to Wireless Router configurations according to FCC KDB Publication 941225 D06v02r01.

This device supports IEEE 802.11ac with the following features:
a) Up to 80 MHz Bandwidth only
b) No aggregate channel configurations
c) 1 Tx antenna output
d) 256 QAM is supported
e) TDWR channels are supported
f) Band gap channels 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 5 GHz WLAN, phablet SAR tests were performed. Phablet SAR was not evaluated for 2.4 GHz WLAN operations since wireless router 1g SAR was < 1.2 W/kg.

Since U-NII-2A has a higher maximum allowed output power than U-NII-1 and the highest reported SAR for U-NII-2A is less than 1.2 W/kg for 1g SAR, SAR is not required for U-NII-1 band according to FCC KDB 248227 D01v02r01.

(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.

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. Phablet SAR was not evaluated for licensed technologies since wireless router 1g SAR was < 1.2 W/kg for these modes.

1.10 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, Wireless Charging Cover)
- October 2013 TCB Workshop Notes (GPRS Testing Considerations)

1.11 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.

	Head Serial Number	Body-Worn Serial Number	Hotspot Serial Number	Phablet Serial Number	Extremity Serial Number
GSM/GPRS/EDGE 850	1416	1408	1408	-	1408
GSM/GPRS/EDGE 1900	1416	1408	1408	-	1408
Cell. CDMA/EVDO	1416	1416	1416	-	1416
PCS CDMA/EVDO	1416	1408	1408	-	1408
UMTS 850	1416	1408	1408	-	1408
UMTS 1900	1416	1408	1408	-	1408
LTE Band 12	1408	1416	1416	-	1416
LTE Band 13	1408	1416	1416	-	1416
LTE Band 5 (Cell)	1416	1408	1408	-	1408
LTE Band 4 (AWS)	1408	1408	1408	-	1408
LTE Band 2 (PCS)	1416	1416	1416	-	1416
2.4 GHz WLAN	1432	1432	1432	-	1432
5 GHz WLAN	2206	2206	-	2206	2206
Bluetooth	1432	1481	1481	-	1481

2 LTE INFORMATION

LTE Information			
FCC ID	**ACJFZN1B**		
Form Factor	Portable Handset		
Frequency Range of each LTE transmission band	LTE Band 12 (699.7 - 715.3 MHz)		
	LTE Band 13 (779.5 - 784.5 MHz)		
	LTE Band 5 (Cell) (824.7 - 848.3 MHz)		
	LTE Band 4 (AWS) (1710.7 - 1754.3 MHz)		
	LTE Band 2 (PCS) (1850.7 - 1909.3 MHz)		
Channel Bandwidths	LTE Band 12: 1.4 MHz, 3 MHz, 5 MHz, 10 MHz		
	LTE Band 13: 5 MHz, 10 MHz		
	LTE Band 5 (Cell): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz		
	LTE Band 4 (AWS): 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		
Channel Numbers and Frequencies (MHz)	Low	Mid	High
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 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 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 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)
UE Category	4		
Modulations Supported in UL	QPSK, 16QAM		
LTE MPR Permanently implemented per 3GPP TS 36.101 section 6.2.3~6.2.5? (manufacturer explanation provided in tune-up)	YES		
A-MPR (Additional MPR) disabled for SAR Testing?	YES		
LTE Carrier Aggregation Possible Combinations	N/A		
LTE Release 10 Additional Information	This device does not support full features on 3GPP Release 10. The following LTE Release 10 Features are not supported: Carrier Aggregation, Relay, HetNet, Enhanced MIMO, eICI, WIFI Offloading, MDH, eMBMA, Cross-Carrier Scheduling, Enhanced SC-FDMA.		

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]

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:

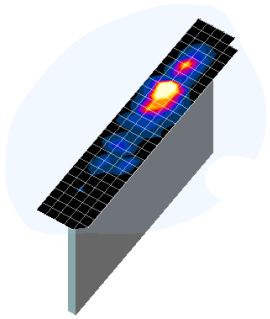


Figure 4-1
Sample SAR Area Scan

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*Δz_{zoom}(n-1)	≥ 30
2-3 GHz	≤ 12	≤ 5	≤ 5	≤ 4	≤ 1.5*Δz_{zoom}(n-1)	≥ 30
3-4 GHz	≤ 12	≤ 5	≤ 4	≤ 3	≤ 1.5*Δz_{zoom}(n-1)	≥ 28
4-5 GHz	≤ 10	≤ 4	≤ 3	≤ 2.5	≤ 1.5*Δz_{zoom}(n-1)	≥ 25
5-6 GHz	≤ 10	≤ 4	≤ 2	≤ 2	≤ 1.5*Δz_{zoom}(n-1)	≥ 22

*Also compliant to IEEE 1528-2013 Table 6

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].

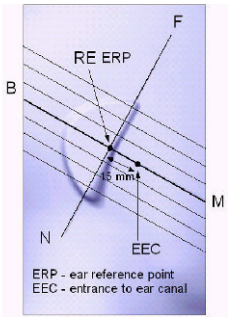


Figure 5-1
Close-Up Side view of ERP

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.

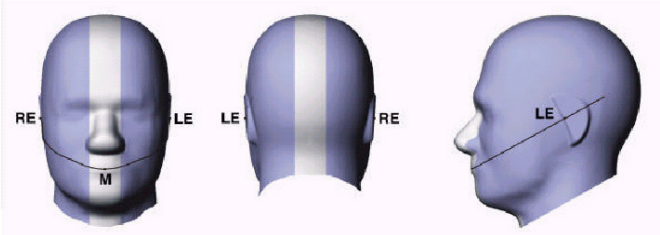


Figure 5-2
Front, back and side view of SAM Twin Phantom

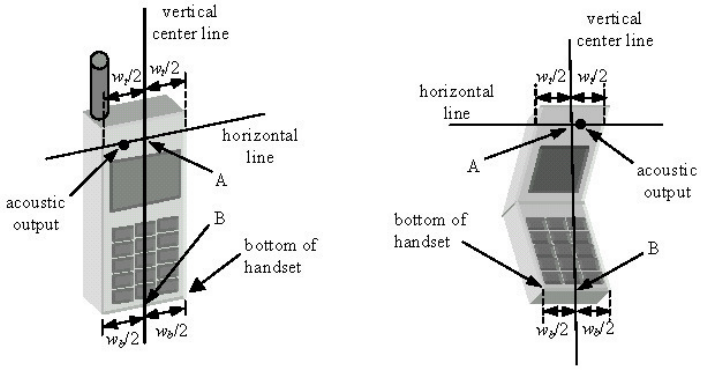


Figure 5-3
Handset Vertical Center & Horizontal Line Reference Points

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).

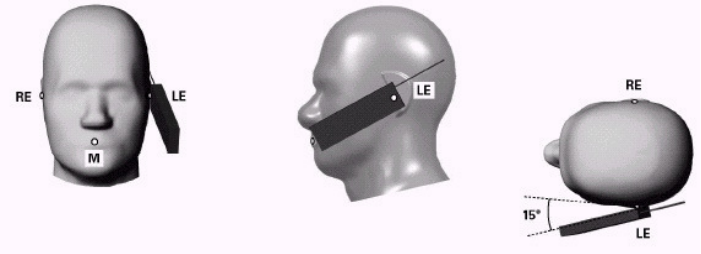


Figure 6-2 Front, Side and Top View of Ear/15º Tilt Position

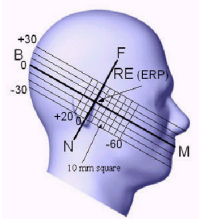


Figure 6-3
Side view w/ relevant markings

6.4 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.

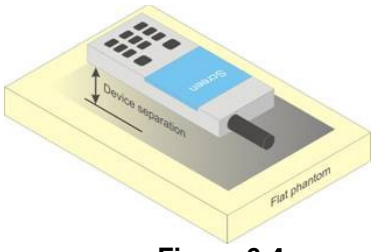


Figure 6-4
Sample Body-Worn Diagram

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 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.

6.5 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 1-g body and 10-g extremity SAR Exclusion Thresholds found in KDB Publication 447498 D01v06 should be applied to determine SAR test requirements.

6.6 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.

6.7 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 10-g SAR. The UMPC mini-tablet 1-g SAR at 5 mm is not required. When hotspot mode applies, 10-g SAR is required only for the surfaces and edges with hotspot mode 1-g SAR > 1.2 W/kg.

6.8 SAR Test Positioning Based on Form Factor

This phablet has sloped surfaces on the back side and top edge of the device. Two device orientations were considered to evaluate the back side and top edge Phablet SAR based on possible usage conditions and worst case exposure scenarios. Per KDB Publication 648474 D04 for SAR testing for phablets, the device was first positioned with the back and top surfaces touching and top surface parallel to the flat phantom. In addition to standard testing, the device was positioned tilted with the sloped back side touching the flat phantom (back tilt), and with the sloped top edge touching the flat phantom (top tilt).

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.

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 $\leq$ 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 $\leq$ 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.

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 Ev-Do capabilities, the 3G SAR test reduction procedure is applied to Ev-Do 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.

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 Ev-Do data devices that also support 1x RTT voice and/or data operations, the 3G SAR test reduction procedure is applied to 1x RTT RC3 and RC1 with Ev-Do Rev. 0 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.

8.5 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 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.

8.6 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.

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.

8.7 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.

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. 10 g measurement analysis applies a factor of 2.5 applies to the procedures outlined 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 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. 10 g measurement analysis applies a factor of 2.5 applies to the procedures outlined above.

8.7.6 OFDM Transmission Mode and SAR Test Channel Selection

For the 2.4 GHz and 5 GHz bands, 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.

8.7.7 Initial Test Configuration Procedure

For OFDM, in both 2.4 and 5 GHz bands, 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). 10 g measurement analysis applies a factor of 2.5 applies to the procedures outlined 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.

9 RF CONDUCTED POWERS

9.1 CDMA Conducted Powers

Band	Channel	Frequency	SO55 [dBm]	SO55 [dBm]	TDSO SO32 [dBm]	TDSO SO32 [dBm]	1x EvDO Rev. 0 [dBm]	1x EvDO Rev. A [dBm]
	F-RC	MHz	RC1	RC3	FCH+SCH	FCH	(RTAP)	(RETAP)
Cellular	1013	824.7	23.70	23.72	23.75	23.71	23.72	23.75
	384	836.52	23.73	23.75	23.83	23.74	23.75	23.78
	777	848.31	23.54	23.62	23.87	23.61	23.74	23.58
PCS	25	1851.25	24.07	24.06	24.07	24.06	24.05	24.07
	600	1880	24.08	24.07	24.08	24.08	24.06	24.10
	1175	1908.75	24.34	24.33	24.35	24.31	24.32	24.36

Note: RC1 is only applicable for IS-95 compatibility.

Figure 9-1
Power Measurement Setup

9.2 GSM Conducted Powers

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
GSM 850	128	31.80	31.80	29.93	28.37	**27.01**	26.50	26.41
	190	31.80	31.79	29.96	28.33	**26.79**	26.44	26.40
	251	32.02	31.99	29.88	28.21	**26.93**	26.40	26.32
GSM 1900	512	29.87	29.90	27.64	25.78	**24.54**	25.80	25.78
	661	29.71	29.68	27.41	25.70	**24.40**	25.66	25.64
	810	29.81	29.76	27.37	25.63	**24.33**	25.57	25.52

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
GSM 850	128	22.77	22.77	23.91	24.11	**24.00**	17.47	20.39
	190	22.77	22.76	23.94	24.07	**23.78**	17.41	20.38
	251	22.99	22.96	23.86	23.95	**23.92**	17.37	20.30
GSM 1900	512	20.84	20.87	21.62	21.52	**21.53**	16.77	19.76
	661	20.68	20.65	21.39	21.44	**21.39**	16.63	19.62
	810	20.78	20.73	21.35	21.37	**21.32**	16.54	19.50
GSM 850	Frame Avg.Targets:	22.97	22.97	23.98	23.94	**23.99**	16.97	19.98
GSM 1900		20.22	20.22	20.98	20.94	**20.99**	16.47	19.48

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 8PSK modulation do not have an impact on output power.

GSM Class: B
GPRS Multislot class: 12 (Max 4 Tx uplink slots)
EDGE Multislot class: 10 (Max 2 Tx uplink slots)
DTM Multislot Class: N/A

Figure 9-2
Power Measurement Setup

9.3 UMTS Conducted Powers

3GPP Release Version	Mode	3GPP 34.121 Subtest	Cellular Band [dBm]			PCS Band [dBm]			3GPP MPR [dB]
			4132	4183	4233	9262	9400	9538	
99	WCDMA	12.2 kbps RMC	23.10	23.29	22.70	23.32	23.70	23.87	-
99		12.2 kbps AMR	23.20	23.28	22.68	23.39	23.64	23.85	-
6	HSDPA	Subtest 1	22.41	22.60	22.25	22.62	22.64	22.85	0
6		Subtest 2	22.45	22.62	22.22	22.47	22.63	22.93	0
6		Subtest 3	21.84	22.10	21.73	21.95	22.12	22.32	0.5
6		Subtest 4	21.88	22.11	21.75	21.97	22.15	22.33	0.5
6	HSUPA	Subtest 1	21.76	22.13	22.15	22.02	22.18	22.57	0
6		Subtest 2	20.95	20.98	20.59	20.69	20.83	21.00	2
6		Subtest 3	21.05	21.33	21.25	21.22	21.42	21.48	1
6		Subtest 4	21.36	21.67	21.43	21.78	21.92	21.90	2
6		Subtest 5	22.37	22.54	22.25	22.51	22.64	22.82	0

This device does not support DC-HSDPA.

Figure 9-3
Power Measurement Setup

9.4 LTE Conducted Powers

9.4.1 LTE Band 12

Table 9-1
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	23.38	0	0
	1	25	23.34		0
	1	49	**23.39**		0
	25	0	22.36	0-1	1
	25	12	22.32		1
	25	25	**22.40**		1
	50	0	22.36		1
16QAM	1	0	22.43	0-1	1
	1	25	22.45		1
	1	49	22.48		1
	25	0	21.35	0-2	2
	25	12	21.30		2
	25	25	21.29		2
	50	0	21.34		2

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.

Table 9-2
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) Conducted Power [dBm]	Mid Channel 23095 (707.5 MHz) Conducted Power [dBm]	High Channel 23155 (713.5 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	23.44	23.08	23.34	0	0
	1	12	23.52	23.21	23.42		0
	1	24	23.46	23.24	23.33		0
	12	0	22.47	22.29	22.34	0-1	1
	12	6	22.43	22.35	22.39		1
	12	13	22.45	22.39	22.46		1
	25	0	22.44	22.40	22.32		1
16QAM	1	0	22.50	22.22	22.39	0-1	1
	1	12	22.49	22.27	22.54		1
	1	24	22.34	22.33	22.41		1
	12	0	21.39	21.25	21.28	0-2	2
	12	6	21.36	21.31	21.39		2
	12	13	21.27	21.35	21.40		2
	25	0	21.44	21.37	21.30		2

Table 9-3
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	23.32	23.25	23.43	0	0
	1	7	23.28	23.35	23.24		0
	1	14	23.40	23.41	23.27		0
	8	0	22.39	22.23	22.39	0-1	1
	8	4	22.45	22.36	22.42		1
	8	7	22.44	22.34	22.27		1
	15	0	22.44	22.35	22.45		1
16QAM	1	0	22.53	22.21	22.35	0-1	1
	1	7	22.48	22.24	22.55		1
	1	14	22.38	22.34	22.43		1
	8	0	21.38	21.27	21.28	0-2	2
	8	4	21.37	21.35	21.42		2
	8	7	21.25	21.32	21.41		2
	15	0	21.48	21.33	21.34		2

Table 9-4
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	23.57	23.30	23.25	0	0
	1	2	23.51	23.19	23.23		0
	1	5	23.55	23.42	23.28		0
	3	0	23.38	23.41	23.27		0
	3	2	23.36	23.31	23.31		0
	3	3	23.41	23.39	23.29		0
	6	0	22.44	22.45	22.29	0-1	1
16QAM	1	0	22.55	22.18	22.32	0-1	1
	1	2	22.46	22.22	22.54		1
	1	5	22.42	22.36	22.40		1
	3	0	22.42	22.23	22.25		1
	3	2	22.40	22.32	22.42		1
	3	3	22.22	22.35	22.44		1
	6	0	21.51	21.34	21.31	0-2	2

9.4.2 LTE Band 13

Table 9-5
LTE Band 13 Conducted Powers - 10 MHz Bandwidth

LTE Band 13 10 MHzBandwidth					
Modulation	RB Size	RB Offset	Mid Channel 23230 (782.0 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	22.90	0	0
	1	25	**23.48**		0
	1	49	23.40		0
	25	0	**22.50**	0-1	1
	25	12	22.49		1
	25	25	22.41		1
	50	0	22.47		1
16QAM	1	0	22.10	0-1	1
	1	25	22.49		1
	1	49	22.43		1
	25	0	21.48	0-2	2
	25	12	21.49		2
	25	25	21.46		2
	50	0	21.47		2

Table 9-6
LTE Band 13 Conducted Powers - 5 MHz Bandwidth

LTE Band 13 5 MHzBandwidth					
Modulation	RB Size	RB Offset	Mid Channel 23230 (782.0 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	23.35	0	0
	1	12	23.43		0
	1	24	23.39		0
	12	0	22.50	0-1	1
	12	6	22.38		1
	12	13	22.42		1
	25	0	22.41		1
16QAM	1	0	22.40	0-1	1
	1	12	22.44		1
	1	24	22.45		1
	12	0	21.44	0-2	2
	12	6	21.46		2
	12	13	21.43		2
	25	0	21.45		2

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.

9.4.3 LTE Band 5 (Cell)

Table 9-7
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	22.96	0	0
	1	25	23.01		0
	1	49	**23.20**		0
	25	0	**22.15**	0-1	1
	25	12	22.07		1
	25	25	22.09		1
	50	0	22.11		1
16QAM	1	0	22.33	0-1	1
	1	25	22.34		1
	1	49	22.37		1
	25	0	21.29	0-2	2
	25	12	21.19		2
	25	25	21.17		2
	50	0	21.14		2

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.

Table 9-8
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	22.94	22.90	23.01	0	0
	1	12	22.94	22.85	22.99		0
	1	24	23.08	23.03	23.20		0
	12	0	21.89	22.03	22.11	0-1	1
	12	6	21.90	22.04	22.08		1
	12	13	22.07	22.06	22.31		1
	25	0	21.93	22.03	22.20		1
16QAM	1	0	22.09	22.05	22.32	0-1	1
	1	12	22.00	22.01	22.21		1
	1	24	22.10	22.09	22.31		1
	12	0	20.78	20.98	21.20	0-2	2
	12	6	20.80	21.03	21.19		2
	12	13	20.85	20.98	21.32		2
	25	0	20.88	21.06	21.15		2

Table 9-9
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	22.88	22.87	22.95	0	0
	1	7	23.00	22.87	22.96		0
	1	14	23.14	23.10	23.26		0
	8	0	21.90	22.09	22.14	0-1	1
	8	4	21.93	21.95	22.12		1
	8	7	22.10	22.03	22.23		1
	15	0	21.87	22.11	22.25		1
16QAM	1	0	22.05	22.09	22.24	0-1	1
	1	7	22.04	22.09	22.25		1
	1	14	22.04	22.06	22.29		1
	8	0	20.71	20.99	21.13	0-2	2
	8	4	20.82	21.05	21.21		2
	8	7	20.85	20.95	21.32		2
	15	0	20.83	21.02	21.12		2

Table 9-10
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	22.86	23.17	22.97	0	0
	1	2	22.93	22.79	22.93		0
	1	5	23.10	23.18	23.27		0
	3	0	22.97	23.12	23.16		0
	3	2	22.85	22.98	23.20		0
	3	3	23.09	23.07	23.26		0
	6	0	21.83	22.06	22.31	0-1	1
16QAM	1	0	22.11	22.10	22.32	0-1	1
	1	2	22.10	22.11	22.29		1
	1	5	22.05	22.01	22.34		1
	3	0	21.74	22.06	22.05		1
	3	2	21.89	21.98	22.13		1
	3	3	21.92	22.03	22.37		1
	6	0	20.85	21.07	21.12	0-2	2

9.4.4 LTE Band 4 (AWS)

Table 9-11
LTE Band 4 (AWS) Conducted Powers - 20 MHz Bandwidth

LTE Band 4 (AWS) 20 MHzBandwidth					
Modulation	RB Size	RB Offset	Mid Channel 20175 (1732.5 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	**23.70**	0	0
	1	50	23.66		0
	1	99	23.61		0
	50	0	22.71	0-1	1
	50	25	22.74		1
	50	50	**22.79**		1
	100	0	22.78		1
16QAM	1	0	22.77	0-1	1
	1	50	22.73		1
	1	99	22.72		1
	50	0	21.66	0-2	2
	50	25	21.67		2
	50	50	21.71		2
	100	0	21.75		2

Note: LTE Band 4 (AWS) 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.

Table 9-12
LTE Band 4 (AWS) Conducted Powers - 15 MHz Bandwidth

LTE Band 4 (AWS) 15 MHzBandwidth							
Modulation	RB Size	RB Offset	Low Channel 20025 (1717.5 MHz)	Mid Channel 20175 (1732.5 MHz)	High Channel 20325 (1747.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.74	23.62	23.63	0	0
	1	36	23.78	23.59	23.60		0
	1	74	23.75	23.66	23.52		0
	36	0	22.71	22.66	22.59	0-1	1
	36	18	22.69	22.68	22.54		1
	36	37	22.62	22.65	22.56		1
	75	0	22.79	22.67	22.62		1
16QAM	1	0	22.79	22.77	22.75	0-1	1
	1	36	22.72	22.79	22.70		1
	1	74	22.68	22.71	22.68		1
	36	0	21.68	21.58	21.67	0-2	2
	36	18	21.65	21.63	21.69		2
	36	37	21.71	21.60	21.73		2
	75	0	21.79	21.68	21.74		2

Table 9-13
LTE Band 4 (AWS) Conducted Powers - 10 MHz Bandwidth

LTE Band 4 (AWS) 10 MHzBandwidth							
Modulation	RB Size	RB Offset	Low Channel 20000 (1715.0 MHz)	Mid Channel 20175 (1732.5 MHz)	High Channel 20350 (1750.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.77	23.63	23.66	0	0
	1	25	23.74	23.55	23.58		0
	1	49	23.77	23.62	23.52		0
	25	0	22.67	22.69	22.62	0-1	1
	25	12	22.72	22.70	22.50		1
	25	25	22.65	22.64	22.56		1
	50	0	22.76	22.63	22.59		1
16QAM	1	0	22.78	22.77	22.77	0-1	1
	1	25	22.73	22.79	22.69		1
	1	49	22.68	22.70	22.72		1
	25	0	21.71	21.62	21.70	0-2	2
	25	12	21.65	21.66	21.66		2
	25	25	21.75	21.56	21.72		2
	50	0	21.76	21.69	21.71		2

Table 9-14
LTE Band 4 (AWS) Conducted Powers - 5 MHz Bandwidth

LTE Band 4 (AWS) 5 MHzBandwidth							
Modulation	RB Size	RB Offset	Low Channel 19975 (1712.5 MHz)	Mid Channel 20175 (1732.5 MHz)	High Channel 20375 (1752.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.78	23.57	23.58	0	0
	1	12	23.77	23.51	23.65		0
	1	24	23.79	23.70	23.52		0
	12	0	22.60	22.63	22.65	0-1	1
	12	6	22.78	22.69	22.49		1
	12	13	22.59	22.56	22.63		1
	25	0	22.76	22.66	22.58		1
16QAM	1	0	22.74	22.73	22.76	0-1	1
	1	12	22.72	22.72	22.62		1
	1	24	22.65	22.78	22.65		1
	12	0	21.77	21.66	21.73	0-2	2
	12	6	21.72	21.63	21.70		2
	12	13	21.70	21.52	21.75		2
	25	0	21.76	21.68	21.66		2

Table 9-15
LTE Band 4 (AWS) Conducted Powers - 3 MHz Bandwidth

LTE Band 4 (AWS) 3 MHzBandwidth							
Modulation	RB Size	RB Offset	Low Channel 19965 (1711.5 MHz)	Mid Channel 20175 (1732.5 MHz)	High Channel 20385 (1753.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.74	23.60	23.64	0	0
	1	7	23.72	23.52	23.66		0
	1	14	23.79	23.78	23.57		0
	8	0	22.61	22.71	22.57	0-1	1
	8	4	22.71	22.64	22.50		1
	8	7	22.60	22.54	22.62		1
	15	0	22.73	22.68	22.55		1
16QAM	1	0	22.78	22.78	22.71	0-1	1
	1	7	22.64	22.70	22.62		1
	1	14	22.63	22.78	22.64		1
	8	0	21.74	21.61	21.78	0-2	2
	8	4	21.67	21.66	21.63		2
	8	7	21.68	21.48	21.76		2
	15	0	21.77	21.66	21.72		2

Table 9-16
LTE Band 4 (AWS) Conducted Powers -1.4 MHz Bandwidth

LTE Band 4 (AWS) 1.4 MHzBandwidth							
Modulation	RB Size	RB Offset	Low Channel 19957 (1710.7 MHz)	Mid Channel 20175 (1732.5 MHz)	High Channel 20393 (1754.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.67	23.63	23.67	0	0
	1	2	23.71	23.47	23.71		0
	1	5	23.79	23.72	23.54		0
	3	0	23.69	23.71	23.51		0
	3	2	23.71	23.67	23.57		0
	3	3	23.57	23.60	23.58		0
	6	0	22.66	22.75	22.51	0-1	1
16QAM	1	0	22.73	22.78	22.71	0-1	1
	1	2	22.68	22.67	22.57		1
	1	5	22.71	22.77	22.57		1
	3	0	22.78	22.66	22.75		1
	3	2	22.63	22.64	22.63		1
	3	3	22.67	22.55	22.70		1
	6	0	21.75	21.74	21.72	0-2	2

9.4.5 LTE Band 2 (PCS)

Table 9-17
LTE Band 2 (PCS) Conducted Powers - 20 MHz Bandwidth

LTE Band 2 (PCS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 18700 (1860.0 MHz)	Mid Channel 18900 (1880.0 MHz)	High Channel 19100 (1900.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.07	23.36	23.48	0	0
	1	50	23.19	23.45	**23.62**		0
	1	99	23.23	23.61	23.50		0
	50	0	22.20	22.48	**22.69**	0-1	1
	50	25	22.33	22.47	22.66		1
	50	50	22.32	22.51	22.65		1
	100	0	22.30	22.38	22.66		1
16QAM	1	0	22.12	22.28	22.75	0-1	1
	1	50	22.10	22.37	22.76		1
	1	99	22.08	22.67	22.71		1
	50	0	21.15	21.25	21.53	0-2	2
	50	25	21.16	21.23	21.54		2
	50	50	21.14	21.40	21.55		2
	100	0	21.12	21.22	21.58		2

Table 9-18
LTE Band 2 (PCS) Conducted Powers - 15 MHz Bandwidth

LTE Band 2 (PCS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 18675 (1857.5 MHz)	Mid Channel 18900 (1880.0 MHz)	High Channel 19125 (1902.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.30	23.39	23.64	0	0
	1	36	23.29	23.51	23.63		0
	1	74	23.28	23.69	23.70		0
	36	0	22.20	22.56	22.62	0-1	1
	36	18	22.19	22.50	22.64		1
	36	37	22.27	22.61	22.61		1
	75	0	22.23	22.52	22.53		1
16QAM	1	0	22.25	22.58	22.76	0-1	1
	1	36	22.31	22.72	22.68		1
	1	74	22.35	22.74	22.72		1
	36	0	21.09	21.42	21.53	0-2	2
	36	18	21.21	21.40	21.48		2
	36	37	21.19	21.51	21.52		2
	75	0	21.15	21.42	21.60		2

Table 9-19
LTE Band 2 (PCS) Conducted Powers - 10 MHz Bandwidth

LTE Band 2 (PCS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 18650 (1855.0 MHz)	Mid Channel 18900 (1880.0 MHz)	High Channel 19150 (1905.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.26	23.43	23.65	0	0
	1	25	23.20	23.56	23.58		0
	1	49	23.18	23.67	23.52		0
	25	0	22.32	22.48	22.61	0-1	1
	25	12	22.18	22.55	22.63		1
	25	25	22.17	22.52	22.62		1
	50	0	22.20	22.54	22.63		1
16QAM	1	0	22.27	22.61	22.73	0-1	1
	1	25	22.35	22.74	22.72		1
	1	49	22.37	22.75	22.73		1
	25	0	21.08	21.42	21.51	0-2	2
	25	12	21.21	21.43	21.45		2
	25	25	21.21	21.47	21.49		2
	50	0	21.14	21.38	21.63		2

Table 9-20
LTE Band 2 (PCS) Conducted Powers - 5 MHz Bandwidth

LTE Band 2 (PCS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 18625 (1852.5 MHz)	Mid Channel 18900 (1880.0 MHz)	High Channel 19175 (1907.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.39	23.28	23.71	0	0
	1	12	23.41	23.41	23.66		0
	1	24	23.35	23.48	23.65		0
	12	0	22.24	22.54	22.64	0-1	1
	12	6	22.28	22.53	22.55		1
	12	13	22.16	22.50	22.54		1
	25	0	22.23	22.52	22.58		1
16QAM	1	0	22.28	22.65	22.75	0-1	1
	1	12	22.33	22.75	22.70		1
	1	24	22.38	22.75	22.70		1
	12	0	21.09	21.45	21.48	0-2	2
	12	6	21.19	21.40	21.43		2
	12	13	21.19	21.49	21.48		2
	25	0	21.14	21.38	21.65		2

Table 9-21
LTE Band 2 (PCS) Conducted Powers - 3 MHz Bandwidth

LTE Band 2 (PCS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 18615 (1851.5 MHz)	Mid Channel 18900 (1880.0 MHz)	High Channel 19185 (1908.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.24	23.52	23.66	0	0
	1	7	23.23	23.54	23.65		0
	1	14	23.35	23.51	23.62		0
	8	0	22.16	22.52	22.59	0-1	1
	8	4	22.21	22.53	22.55		1
	8	7	22.19	22.52	22.54		1
	15	0	22.22	22.51	22.56		1
16QAM	1	0	22.24	22.63	22.75	0-1	1
	1	7	22.33	22.79	22.68		1
	1	14	22.38	22.71	22.66		1
	8	0	21.09	21.42	21.44	0-2	2
	8	4	21.22	21.39	21.39		2
	8	7	21.15	21.48	21.47		2
	15	0	21.16	21.37	21.62		2

Table 9-22
LTE Band 2 (PCS) Conducted Powers -1.4 MHz Bandwidth

LTE Band 2 (PCS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 18607 (1850.7 MHz)	Mid Channel 18900 (1880.0 MHz)	High Channel 19193 (1909.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.22	23.75	23.65	0	0
	1	2	23.15	23.68	23.61		0
	1	5	23.22	23.74	23.62		0
	3	0	23.27	23.61	23.56		0
	3	2	23.29	23.57	23.54		0
	3	3	23.25	23.60	23.58		0
	6	0	22.24	22.59	22.52	0-1	1
16QAM	1	0	22.27	22.60	22.72	0-1	1
	1	2	22.37	22.78	22.65		1
	1	5	22.42	22.74	22.69		1
	3	0	22.10	22.45	22.42		1
	3	2	22.24	22.36	22.39		1
	3	3	22.13	22.47	22.43		1
	6	0	21.20	21.40	21.64	0-2	2

9.5 WLAN Conducted Powers

Table 9-23
2.4 GHz WLAN 802.11b Average RF Power

Freq [MHz]	Channel	2.4GHz Conducted Power [dBm]
		IEEE Transmission Mode
		802.11b
2412	1	**14.23**
2437	6	14.12
2462	11	14.03

Table 9-24
2.4 GHz WLAN 802.11g Average RF Power

Freq [MHz]	Channel	2.4GHz Conducted Power [dBm]
		IEEE Transmission Mode
		802.11g
2412	1	9.88
2417	2	11.94
2437	6	12.09
2457	10	11.93
2462	11	9.67

Table 9-25
5 GHz WLAN (20 MHz) Average RF Power

Freq [MHz]	Channel	5GHz (20MHz) Conducted Power [dBm]		
		IEEE Transmission Mode		
		802.11a	802.11n	802.11ac
5180	36	14.01	13.81	14.00
5200	40	13.94	13.92	13.90
5220	44	14.00	13.99	13.94
5240	48	13.96	13.89	13.94
5260	52	15.61	15.59	15.66
5280	56	**15.67**	15.53	15.55
5300	60	15.60	15.40	15.57
5320	64	13.98	13.94	13.84
5500	100	14.06	13.98	14.03
5520	104	15.55	15.54	15.51
5600	120	**15.61**	15.56	15.53
5680	136	15.50	15.45	15.42
5700	140	14.00	13.90	13.79
5745	149	**15.63**	15.51	15.52
5785	157	15.57	15.55	15.42
5825	165	15.55	15.61	15.56

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.
- The bolded data rate and channel above were tested for SAR.
- For U-NII-2C, channel 104 and 136 were additionally considered for SAR testing since channels 100 and 140 have lower maximum allowed output power.

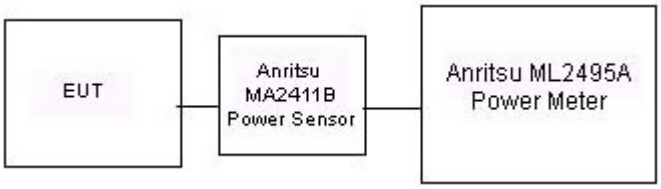


Figure 9-4
Power Measurement Setup for Bandwidths < 50 MHz

Table 9-26
Bluetooth Average RF Power

Frequency [MHz]	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
			[dBm]	[mW]
2402	1.0	0	10.64	11.599
2441	1.0	39	**11.94**	15.628
2480	1.0	78	10.09	10.203
2402	2.0	0	7.89	6.152
2441	2.0	39	8.63	7.295
2480	2.0	78	7.45	5.559
2402	3.0	0	7.86	6.109
2441	3.0	39	8.62	7.278
2480	3.0	78	7.45	5.557

Note: The bolded data rate and channel above was tested for SAR

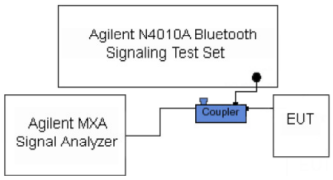


Figure 9-5
Bluetooth Power Measurement Setup

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
3/31/2016	750H	22.5	700	0.859	43.510	0.889	42.201	-3.37%	3.10%
			707.5	0.867	43.491	0.890	42.162	-2.53%	3.15%
			710	0.870	43.485	0.890	42.149	-2.25%	3.17%
			740	0.900	43.005	0.893	41.994	0.78%	2.41%
			750	0.909	42.850	0.894	41.942	1.68%	2.17%
			755	0.913	42.773	0.894	41.916	2.13%	2.04%
			770	0.930	42.566	0.895	41.838	3.91%	1.74%
			782	0.938	42.375	0.896	41.776	4.71%	1.43%
			785	0.940	42.327	0.896	41.760	4.91%	1.36%
3/30/2016	835H	22.1	820	0.895	40.805	0.899	41.578	-0.44%	-1.86%
			824.2	0.899	40.750	0.899	41.556	-0.01%	-1.94%
			824.7	0.900	40.743	0.899	41.554	0.04%	-1.95%
			826.4	0.901	40.721	0.899	41.545	0.22%	-1.98%
			835	0.910	40.607	0.900	41.500	1.11%	-2.15%
			836.5	0.911	40.586	0.902	41.500	1.09%	-2.20%
			836.52	0.911	40.586	0.902	41.500	1.09%	-2.20%
			836.6	0.911	40.585	0.902	41.500	1.09%	-2.20%
			846.6	0.921	40.448	0.912	41.500	0.93%	-2.54%
			848.31	0.922	40.424	0.914	41.500	0.90%	-2.59%
			848.8	0.923	40.417	0.915	41.500	0.89%	-2.61%
			850	0.924	40.401	0.916	41.500	0.87%	-2.65%
3/28/2016	1750H	20.9	1710	1.358	39.067	1.348	40.142	0.74%	-2.68%
			1732.5	1.381	38.957	1.361	40.107	1.44%	-2.87%
			1750	1.398	38.871	1.371	40.079	1.97%	-3.01%
3/28/2016	1900H	21.5	1850	1.393	40.293	1.400	40.000	-0.50%	0.73%
			1852.4	1.396	40.282	1.400	40.000	-0.29%	0.70%
			1860	1.406	40.247	1.400	40.000	0.43%	0.62%
			1880	1.432	40.154	1.400	40.000	2.29%	0.39%
			1900	1.450	40.109	1.400	40.000	3.57%	0.27%
			1907.6	1.457	40.091	1.400	40.000	4.07%	0.23%
			1910	1.459	40.086	1.400	40.000	4.21%	0.21%
4/1/2016	1900H	23.0	1850	1.336	41.377	1.400	40.000	-4.57%	3.44%
			1850.2	1.336	41.376	1.400	40.000	-4.57%	3.44%
			1851.25	1.337	41.373	1.400	40.000	-4.50%	3.43%
			1880	1.369	41.276	1.400	40.000	-2.21%	3.19%
			1900	1.388	41.204	1.400	40.000	-0.88%	3.01%
			1908.75	1.396	41.172	1.400	40.000	-0.29%	2.93%
			1909.8	1.397	41.169	1.400	40.000	-0.21%	2.92%
			1910	1.397	41.168	1.400	40.000	-0.21%	2.92%
3/29/2016	2450H	23.5	2400	1.812	38.831	1.756	39.289	3.19%	-1.17%
			2412	1.825	38.790	1.767	39.268	3.28%	-1.22%
			2437	1.852	38.706	1.789	39.223	3.52%	-1.32%
			2450	1.866	38.662	1.800	39.200	3.67%	-1.37%
			2462	1.880	38.601	1.813	39.185	3.70%	-1.49%
			2500	1.924	38.409	1.855	39.136	3.72%	-1.86%
4/25/2016	2450H	23.3	2400	1.835	38.690	1.756	39.289	4.50%	-1.52%
			2402	1.837	38.684	1.758	39.285	4.49%	-1.53%
			2441	1.866	38.562	1.792	39.216	4.13%	-1.67%
			2450	1.873	38.534	1.800	39.200	4.06%	-1.70%
			2480	1.911	38.428	1.833	39.162	4.26%	-1.87%
			2500	1.937	38.358	1.855	39.136	4.42%	-1.99%
12/21/2015	5200H-5800H	21.4	5240	4.514	34.988	4.696	35.940	-3.88%	-2.65%
			5250	4.523	34.974	4.707	35.929	-3.90%	-2.66%
			5260	4.532	34.959	4.717	35.917	-3.92%	-2.67%
			5280	4.559	34.932	4.737	35.894	-3.76%	-2.68%
			5300	4.574	34.905	4.758	35.871	-3.87%	-2.69%
			5320	4.590	34.858	4.778	35.849	-3.93%	-2.76%
			5500	4.761	34.627	4.963	35.643	-4.07%	-2.85%
			5520	4.793	34.574	4.983	35.620	-3.81%	-2.94%
			5580	4.855	34.493	5.045	35.551	-3.77%	-2.98%
			5600	4.879	34.483	5.065	35.529	-3.67%	-2.94%
			5660	4.937	34.394	5.127	35.460	-3.71%	-3.01%
			5680	4.955	34.364	5.147	35.437	-3.73%	-3.03%
			5700	4.970	34.331	5.168	35.414	-3.83%	-3.06%
			5745	5.028	34.255	5.214	35.363	-3.57%	-3.13%
			5750	5.032	34.252	5.217	35.360	-3.55%	-3.13%
			5765	5.044	34.244	5.234	35.340	-3.63%	-3.10%
			5785	5.063	34.223	5.255	35.317	-3.65%	-3.10%
			5825	5.114	34.175	5.296	35.271	-3.44%	-3.11%

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
4/6/2016	750B	23.3	700	0.918	54.322	0.959	55.726	-4.28%	-2.52%
			707.5	0.925	54.185	0.960	55.697	-3.62%	-2.71%
			710	0.928	54.139	0.960	55.687	-3.33%	-2.78%
			740	0.952	53.847	0.963	55.570	-1.14%	-3.10%
			750	0.961	53.810	0.964	55.531	-0.24%	-3.10%
			755	0.966	53.791	0.964	55.512	0.21%	-3.10%
			770	0.980	53.583	0.965	55.453	1.55%	-3.37%
			782	0.991	53.461	0.966	55.407	2.63%	-3.51%
			785	0.994	53.430	0.966	55.395	2.90%	-3.55%
3/31/2016	835B	22.9	820	0.992	54.450	0.969	55.258	2.37%	-1.46%
			824.2	0.996	54.410	0.969	55.242	2.75%	-1.51%
			835	1.006	54.308	0.970	55.200	3.71%	-1.62%
			836.6	1.008	54.293	0.972	55.195	3.67%	-1.64%
			848.8	1.020	54.176	0.987	55.158	3.37%	-1.78%
			850	1.021	54.164	0.988	55.154	3.34%	-1.79%
4/4/2016	835B	21.4	820	0.987	54.175	0.969	55.258	1.86%	-1.96%
			824.7	0.993	54.123	0.969	55.240	2.41%	-2.02%
			826.4	0.995	54.105	0.969	55.233	2.60%	-2.04%
			835	1.005	54.010	0.970	55.200	3.61%	-2.16%
			836.5	1.006	53.998	0.972	55.195	3.56%	-2.17%
			836.52	1.006	53.997	0.972	55.195	3.56%	-2.17%
			836.6	1.006	53.997	0.972	55.195	3.50%	-2.17%
			848.31	1.017	53.900	0.986	55.159	3.19%	-2.28%
			850	1.019	53.886	0.988	55.154	3.14%	-2.30%
4/10/2016	835B	20.5	820	0.958	53.153	0.969	55.258	-1.14%	-3.81%
			826.4	0.964	53.068	0.969	55.233	-0.52%	-3.92%
			835	0.973	52.954	0.970	55.200	0.31%	-4.07%
			836.6	0.974	52.938	0.972	55.195	0.21%	-4.09%
			846.6	0.983	52.840	0.984	55.164	-0.10%	-4.21%
			850	0.986	52.806	0.988	55.154	-0.20%	-4.26%
3/29/2016	1750B	22.0	1710	1.437	51.103	1.463	53.537	-1.78%	-4.55%
			1732.5	1.463	51.021	1.477	53.478	-0.96%	-4.59%
			1750	1.483	50.957	1.488	53.432	-0.34%	-4.63%
3/29/2016	1900B	23.2	1850	1.457	52.026	1.520	53.300	-4.14%	-2.39%
			1852.4	1.459	52.017	1.520	53.300	-4.02%	-2.41%
			1860	1.465	51.988	1.520	53.300	-3.62%	-2.46%
			1880	1.481	51.913	1.520	53.300	-2.57%	-2.60%
			1900	1.503	51.873	1.520	53.300	-1.12%	-2.68%
			1907.6	1.511	51.858	1.520	53.300	-0.57%	-2.71%
			1910	1.514	51.853	1.520	53.300	-0.39%	-2.71%
4/4/2016	1900B	22.0	1850	1.475	51.544	1.520	53.300	-2.96%	-3.29%
			1850.2	1.475	51.543	1.520	53.300	-2.95%	-3.30%
			1851.25	1.476	51.539	1.520	53.300	-2.88%	-3.30%
			1880	1.504	51.431	1.520	53.300	-1.05%	-3.51%
			1900	1.531	51.348	1.520	53.300	0.75%	-3.66%
			1908.75	1.543	51.312	1.520	53.300	1.53%	-3.73%
			1909.8	1.545	51.308	1.520	53.300	1.63%	-3.74%
			1910	1.545	51.307	1.520	53.300	1.64%	-3.74%
3/30/2016	2450B	22.6	2400	1.974	53.267	1.902	52.767	3.79%	0.95%
			2412	1.988	53.232	1.914	52.751	3.88%	0.91%
			2437	2.016	53.158	1.938	52.717	4.02%	0.84%
			2450	2.031	53.120	1.950	52.700	4.15%	0.80%
			2462	2.047	53.075	1.967	52.685	4.07%	0.74%
			2500	2.096	52.933	2.021	52.636	3.71%	0.56%
4/4/2016	2450B	21.9	2400	1.916	51.890	1.902	52.767	0.74%	-1.66%
			2402	1.919	51.887	1.904	52.764	0.79%	-1.66%
			2412	1.933	51.875	1.914	52.751	0.99%	-1.66%
			2437	1.968	51.843	1.938	52.717	1.55%	-1.66%
			2441	1.973	51.838	1.941	52.712	1.65%	-1.66%
			2450	1.986	51.827	1.950	52.700	1.85%	-1.66%
			2462	2.001	51.775	1.967	52.685	1.73%	-1.73%
			2480	2.023	51.697	1.993	52.662	1.51%	-1.83%
			2500	2.048	51.611	2.021	52.636	1.34%	-1.95%
4/27/2016	2450B	21.9	2400	1.967	51.485	1.902	52.767	3.42%	-2.43%
			2402	1.970	51.479	1.904	52.764	3.47%	-2.44%
			2441	2.019	51.357	1.941	52.712	4.02%	-2.57%
			2450	2.031	51.329	1.950	52.700	4.15%	-2.60%
			2480	2.071	51.185	1.993	52.662	3.91%	-2.80%
			2500	2.097	51.089	2.021	52.636	3.76%	-2.94%
12/21/2015	5200B-5800B	24.0	5745	6.022	46.409	5.936	48.275	1.45%	-3.87%
			5785	6.075	46.346	5.982	48.220	1.55%	-3.89%
			5800	6.091	46.307	6.000	48.200	1.52%	-3.93%
			5825	6.124	46.286	6.029	48.166	1.58%	-3.90%
12/28/2015	5200B-5800B	22.6	5250	5.377	47.577	5.358	48.947	0.36%	-2.80%
			5260	5.390	47.567	5.369	48.933	0.39%	-2.79%
			5280	5.419	47.562	5.393	48.906	0.48%	-2.75%
			5300	5.435	47.514	5.416	48.879	0.35%	-2.79%
			5320	5.469	47.484	5.439	48.851	0.55%	-2.80%
			5500	5.704	47.196	5.650	48.607	0.96%	-2.90%
			5520	5.731	47.128	5.673	48.580	1.02%	-2.99%
			5580	5.820	47.028	5.743	48.499	1.34%	-3.03%
			5600	5.839	47.011	5.766	48.471	1.27%	-3.01%
			5660	5.915	46.905	5.837	48.390	1.34%	-3.07%
			5680	5.946	46.884	5.860	48.363	1.47%	-3.06%
			5700	5.970	46.895	5.883	48.336	1.48%	-2.98%
			5745	6.047	46.769	5.936	48.275	1.87%	-3.12%
			5785	6.096	46.730	5.982	48.220	1.91%	-3.09%
			5800	6.117	46.686	6.000	48.200	1.95%	-3.14%
			5825	6.156	46.643	6.029	48.166	2.11%	-3.16%

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.

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 10-3
System Verification Results – 1 g

System Verification TARGET & MEASURED												
SAR System #	Tissue Frequency (MHz)	Tissue Type	Date:	Amb. Temp (°C)	Liquid Temp (°C)	Input Power (W)	Dipole SN	Probe SN	Measured SAR_{1g} (W/kg)	1 W Target SAR_{1g} (W/kg)	1 W Normalized SAR_{1g} (W/kg)	$Deviation_{1g}$ (%)
K	750	HEAD	03/31/2016	22.6	22.5	0.200	1054	3022	1.680	8.220	8.400	2.19%
A	835	HEAD	03/30/2016	23.1	22.1	0.200	4d132	3332	1.950	9.470	9.750	2.96%
J	1750	HEAD	03/28/2016	19.5	20.8	0.100	1051	3318	3.520	36.200	35.200	-2.76%
G	1900	HEAD	03/28/2016	23.8	22.1	0.100	5d149	3334	3.990	40.700	39.900	-1.97%
A	1900	HEAD	04/01/2016	24.0	23.2	0.100	5d141	3332	3.830	39.900	38.300	-4.01%
E	2450	HEAD	03/29/2016	24.5	23.5	0.100	719	3351	5.620	54.200	56.200	3.69%
H	2450	HEAD	04/25/2016	24.3	23.6	0.100	882	3319	5.370	50.500	53.700	6.34%
E	5250	HEAD	12/21/2015	23.9	22.2	0.050	1191	7308	3.970	82.500	79.400	-3.76%
E	5600	HEAD	12/21/2015	23.9	22.2	0.050	1191	7308	4.390	84.500	87.800	3.91%
E	5750	HEAD	12/21/2015	23.9	22.2	0.050	1191	7308	3.990	80.000	79.800	-0.25%
A	750	BODY	04/06/2016	23.3	23.3	0.200	1003	3332	1.770	8.660	8.850	2.19%
I	835	BODY	03/31/2016	23.5	22.8	0.200	4d133	3333	1.990	9.250	9.950	7.57%
J	835	BODY	04/04/2016	22.0	21.4	0.200	4d133	3318	1.990	9.250	9.950	7.57%
J	835	BODY	04/10/2016	20.1	20.5	0.200	4d133	3318	2.000	9.250	10.000	8.11%
H	1750	BODY	03/29/2016	23.4	22.3	0.100	1051	3263	3.830	37.100	38.300	3.23%
C	1900	BODY	03/29/2016	24.2	23.2	0.100	5d141	3288	4.010	40.000	40.100	0.25%
C	1900	BODY	04/04/2016	23.3	22.2	0.100	5d141	3288	4.060	40.000	40.600	1.50%
G	2450	BODY	03/30/2016	20.7	21.4	0.100	719	3334	5.350	51.900	53.500	3.08%
G	2450	BODY	04/04/2016	22.2	21.9	0.100	719	3334	5.230	51.900	52.300	0.77%
K	2450	BODY	04/27/2016	23.4	21.8	0.100	719	3022	5.470	51.900	54.700	5.39%
D	5300	BODY	12/28/2015	22.3	22.6	0.050	1057	7357	3.780	74.200	75.600	1.89%
D	5600	BODY	12/28/2015	22.4	22.6	0.050	1057	7357	4.000	77.700	80.000	2.96%
D	5800	BODY	12/28/2015	22.4	22.6	0.050	1057	7357	3.690	75.100	73.800	-1.73%

Table 10-4
System Verification Results – 10 g

System Verification TARGET & MEASURED												
SAR System #	Tissue Frequency (MHz)	Tissue Type	Date:	Amb. Temp (°C)	Liquid Temp (°C)	Input Power (W)	Dipole SN	Probe SN	Measured SAR_{10g} (W/kg)	1 W Target SAR_{10g} (W/kg)	1 W Normalized SAR_{10g} (W/kg)	$Deviation_{10g}$ (%)
A	750	BODY	04/06/2016	23.3	23.3	0.200	1003	3332	1.170	5.730	5.850	2.09%
I	835	BODY	03/31/2016	23.5	22.8	0.200	4d133	3333	1.310	6.080	6.550	7.73%
J	835	BODY	04/04/2016	22.0	21.4	0.200	4d133	3318	1.310	6.080	6.550	7.73%
H	1750	BODY	03/29/2016	23.4	22.3	0.100	1051	3263	2.040	20.000	20.400	2.00%
C	1900	BODY	03/29/2016	24.2	23.2	0.100	5d141	3288	2.100	21.200	21.000	-0.94%
C	1900	BODY	04/04/2016	23.3	22.2	0.100	5d141	3288	2.120	21.200	21.200	0.00%
G	2450	BODY	04/04/2016	22.2	21.9	0.100	719	3334	2.400	24.300	24.000	-1.23%
D	5300	BODY	12/28/2015	22.3	22.6	0.050	1057	7357	1.060	20.900	21.200	1.44%
D	5500	BODY	12/28/2015	22.3	22.6	0.050	1057	7357	1.090	22.000	21.800	-0.91%
D	5600	BODY	12/28/2015	22.4	22.6	0.050	1057	7357	1.120	21.500	22.400	4.19%
D	5800	BODY	12/21/2015	23.4	22.1	0.050	1057	7357	1.030	20.600	20.600	0.00%
D	5800	BODY	12/28/2015	22.4	22.6	0.050	1057	7357	1.040	20.600	20.800	0.97%

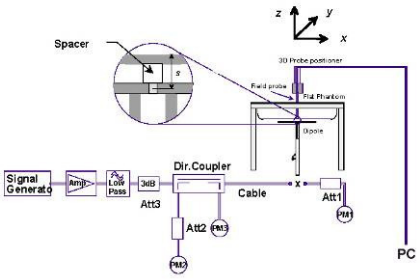


Figure 10-1
System Verification Setup Diagram

Figure 10-2
System Verification Setup Photo

11 SAR DATA SUMMARY

11.1 Standalone Head SAR Data

Table 11-1
GSM/GPRS 850 Head SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Battery Type	Device Serial Number	# of Time Slots	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.												(W/kg)		(W/kg)	
836.60	190	GSM 850	GSM	32.8	31.80	-0.02	Right	Cheek	Standard	1416	1	1:8.3	0.409	1.259	0.515	
836.60	190	GSM 850	GSM	32.8	31.80	-0.04	Right	Cheek	L-Battery	1416	1	1:8.3	0.408	1.259	0.514	
836.60	190	GSM 850	GSM	32.8	31.80	0.04	Right	Tilt	Standard	1416	1	1:8.3	0.243	1.259	0.306	
836.60	190	GSM 850	GSM	32.8	31.80	0.00	Left	Cheek	Standard	1416	1	1:8.3	0.390	1.259	0.491	
836.60	190	GSM 850	GSM	32.8	31.80	0.00	Left	Tilt	Standard	1416	1	1:8.3	0.205	1.259	0.258	
836.60	190	GSM 850	GPRS	27.8	26.79	0.15	Right	Cheek	Standard	1416	4	1:2.076	0.431	1.262	0.544	A1
836.60	190	GSM 850	GPRS	27.8	26.79	0.11	Right	Cheek	L-Battery	1416	4	1:2.076	0.394	1.262	0.497	
836.60	190	GSM 850	GPRS	27.8	26.79	-0.07	Right	Tilt	Standard	1416	4	1:2.076	0.228	1.262	0.288	
836.60	190	GSM 850	GPRS	27.8	26.79	-0.05	Left	Cheek	Standard	1416	4	1:2.076	0.411	1.262	0.519	
836.60	190	GSM 850	GPRS	27.8	26.79	0.00	Left	Tilt	Standard	1416	4	1:2.076	0.203	1.262	0.256	
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/GPRS 1900 Head SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Battery Type	Device Serial Number	# of Time Slots	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.												(W/kg)		(W/kg)	
1880.00	661	GSM 1900	GSM	30.6	29.71	-0.06	Right	Cheek	Standard	1416	1	1:8.3	0.122	1.227	0.150	
1880.00	661	GSM 1900	GSM	30.6	29.71	0.07	Right	Tilt	Standard	1416	1	1:8.3	0.081	1.227	0.099	
1880.00	661	GSM 1900	GSM	30.6	29.71	-0.13	Left	Cheek	Standard	1416	1	1:8.3	0.169	1.227	0.207	
1880.00	661	GSM 1900	GSM	30.6	29.71	-0.02	Left	Cheek	L-Battery	1416	1	1:8.3	0.155	1.227	0.190	
1880.00	661	GSM 1900	GSM	30.6	29.71	0.04	Left	Tilt	Standard	1416	1	1:8.3	0.082	1.227	0.101	
1880.00	661	GSM 1900	GPRS	25.3	24.40	0.02	Right	Cheek	Standard	1416	4	1:2.076	0.164	1.230	0.202	
1880.00	661	GSM 1900	GPRS	25.3	24.40	-0.02	Right	Tilt	Standard	1416	4	1:2.076	0.101	1.230	0.124	
1880.00	661	GSM 1900	GPRS	25.3	24.40	-0.11	Left	Cheek	Standard	1416	4	1:2.076	0.213	1.230	0.262	A2
1880.00	661	GSM 1900	GPRS	25.3	24.40	-0.13	Left	Cheek	L-Battery	1416	4	1:2.076	0.187	1.230	0.230	
1880.00	661	GSM 1900	GPRS	25.3	24.40	0.00	Left	Tilt	Standard	1416	4	1:2.076	0.101	1.230	0.124	
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
Cell. CDMA/EVDO Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Battery Type	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
836.52	384	Cell. CDMA	RC3 / SO55	24.7	23.75	0.02	Right	Cheek	Standard	1416	1:1	0.461	1.245	0.574	A3
836.52	384	Cell. CDMA	RC3 / SO55	24.7	23.75	-0.05	Right	Cheek	L-Battery	1416	1:1	0.423	1.245	0.527	
836.52	384	Cell. CDMA	RC3 / SO55	24.7	23.75	0.06	Right	Tilt	Standard	1416	1:1	0.290	1.245	0.361	
836.52	384	Cell. CDMA	RC3 / SO55	24.7	23.75	-0.01	Left	Cheek	Standard	1416	1:1	0.397	1.245	0.494	
836.52	384	Cell. CDMA	RC3 / SO55	24.7	23.75	-0.04	Left	Tilt	Standard	1416	1:1	0.277	1.245	0.345	
836.52	384	Cell. CDMA	EVDO Rev. A	24.7	23.78	0.00	Right	Cheek	Standard	1416	1:1	0.433	1.236	0.535	
836.52	384	Cell. CDMA	EVDO Rev. A	24.7	23.78	0.00	Right	Cheek	L-Battery	1416	1:1	0.424	1.236	0.524	
836.52	384	Cell. CDMA	EVDO Rev. A	24.7	23.78	0.03	Right	Tilt	Standard	1416	1:1	0.235	1.236	0.290	
836.52	384	Cell. CDMA	EVDO Rev. A	24.7	23.78	0.05	Left	Cheek	Standard	1416	1:1	0.412	1.236	0.509	
836.52	384	Cell. CDMA	EVDO Rev. A	24.7	23.78	0.01	Left	Tilt	Standard	1416	1:1	0.272	1.236	0.336	
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 11-4
PCS CDMA/EVDO Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Battery Type	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	24.8	24.07	-0.02	Right	Cheek	Standard	1416	1:1	0.350	1.183	0.414	
1880.00	600	PCS CDMA	RC3 / SO55	24.8	24.07	0.00	Right	Tilt	Standard	1416	1:1	0.219	1.183	0.259	
1880.00	600	PCS CDMA	RC3 / SO55	24.8	24.07	-0.06	Left	Cheek	Standard	1416	1:1	0.465	1.183	0.550	
1880.00	600	PCS CDMA	RC3 / SO55	24.8	24.07	-0.04	Left	Cheek	L-Battery	1416	1:1	0.428	1.183	0.506	
1880.00	600	PCS CDMA	RC3 / SO55	24.8	24.07	0.05	Left	Tilt	Standard	1416	1:1	0.215	1.183	0.254	
1880.00	600	PCS CDMA	EVDO Rev. A	24.8	24.10	-0.01	Right	Cheek	Standard	1416	1:1	0.334	1.175	0.392	
1880.00	600	PCS CDMA	EVDO Rev. A	24.8	24.10	-0.02	Right	Tilt	Standard	1416	1:1	0.221	1.175	0.260	
1880.00	600	PCS CDMA	EVDO Rev. A	24.8	24.10	-0.06	Left	Cheek	Standard	1416	1:1	0.485	1.175	0.570	A4
1880.00	600	PCS CDMA	EVDO Rev. A	24.8	24.10	-0.05	Left	Cheek	L-Battery	1416	1:1	0.428	1.175	0.503	
1880.00	600	PCS CDMA	EVDO Rev. A	24.8	24.10	0.03	Left	Tilt	Standard	1416	1:1	0.237	1.175	0.278	
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 850 Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Battery Type	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	24.0	23.29	-0.01	Right	Cheek	Standard	1416	1:1	0.323	1.178	0.380	A5
836.60	4183	UMTS 850	RMC	24.0	23.29	-0.03	Right	Cheek	L-Battery	1416	1:1	0.306	1.178	0.360	
836.60	4183	UMTS 850	RMC	24.0	23.29	0.01	Right	Tilt	Standard	1416	1:1	0.174	1.178	0.205	
836.60	4183	UMTS 850	RMC	24.0	23.29	-0.03	Left	Cheek	Standard	1416	1:1	0.292	1.178	0.344	
836.60	4183	UMTS 850	RMC	24.0	23.29	-0.05	Left	Tilt	Standard	1416	1:1	0.158	1.178	0.186	
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
UMTS 1900 Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Battery Type	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
1907.60	9538	UMTS 1900	RMC	24.1	23.87	-0.06	Right	Cheek	Standard	1416	1:1	0.272	1.054	0.287	
1907.60	9538	UMTS 1900	RMC	24.1	23.87	-0.03	Right	Tilt	Standard	1416	1:1	0.142	1.054	0.150	
1907.60	9538	UMTS 1900	RMC	24.1	23.87	-0.01	Left	Cheek	Standard	1416	1:1	0.418	1.054	0.441	A6
1907.60	9538	UMTS 1900	RMC	24.1	23.87	-0.03	Left	Cheek	L-Battery	1416	1:1	0.337	1.054	0.355	
1907.60	9538	UMTS 1900	RMC	24.1	23.87	-0.01	Left	Tilt	Standard	1416	1:1	0.177	1.054	0.187	
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 11-7
LTE Band 12 Head SAR

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Battery Type	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)	
707.50	23095	Mid	LTE Band 12	10	Standard	23.7	23.39	0.00	0	Right	Cheek	QPSK	1	49	1408	1:1	0.201	1.074	0.216	
707.50	23095	Mid	LTE Band 12	10	Standard	22.7	22.40	0.14	1	Right	Cheek	QPSK	25	25	1408	1:1	0.155	1.072	0.166	
707.50	23095	Mid	LTE Band 12	10	Standard	23.7	23.39	-0.02	0	Right	Tilt	QPSK	1	49	1408	1:1	0.126	1.074	0.135	
707.50	23095	Mid	LTE Band 12	10	Standard	22.7	22.40	0.04	1	Right	Tilt	QPSK	25	25	1408	1:1	0.096	1.072	0.103	
707.50	23095	Mid	LTE Band 12	10	Standard	23.7	23.39	0.06	0	Left	Cheek	QPSK	1	49	1408	1:1	0.209	1.074	0.224	A7
707.50	23095	Mid	LTE Band 12	10	L-Battery	23.7	23.39	-0.04	0	Left	Cheek	QPSK	1	49	1408	1:1	0.194	1.074	0.208	
707.50	23095	Mid	LTE Band 12	10	Standard	22.7	22.40	0.02	1	Left	Cheek	QPSK	25	25	1408	1:1	0.152	1.072	0.163	
707.50	23095	Mid	LTE Band 12	10	Standard	23.7	23.39	-0.01	0	Left	Tilt	QPSK	1	49	1408	1:1	0.133	1.074	0.143	
707.50	23095	Mid	LTE Band 12	10	Standard	22.7	22.40	0.06	1	Left	Tilt	QPSK	25	25	1408	1:1	0.097	1.072	0.104	
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
LTE Band 13 Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Battery Type	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)	
782.00	23230	Mid	LTE Band 13	10	Standard	23.5	23.48	-0.02	0	Right	Cheek	QPSK	1	25	1408	1:1	0.432	1.005	0.434	
782.00	23230	Mid	LTE Band 13	10	Standard	22.5	22.50	0.00	1	Right	Cheek	QPSK	25	0	1408	1:1	0.333	1.000	0.333	
782.00	23230	Mid	LTE Band 13	10	Standard	23.5	23.48	0.10	0	Right	Tilt	QPSK	1	25	1408	1:1	0.272	1.005	0.273	
782.00	23230	Mid	LTE Band 13	10	Standard	22.5	22.50	0.01	1	Right	Tilt	QPSK	25	0	1408	1:1	0.207	1.000	0.207	
782.00	23230	Mid	LTE Band 13	10	Standard	23.5	23.48	0.08	0	Left	Cheek	QPSK	1	25	1408	1:1	0.434	1.005	0.436	A8
782.00	23230	Mid	LTE Band 13	10	L-Battery	23.5	23.48	0.05	0	Left	Cheek	QPSK	1	25	1408	1:1	0.365	1.005	0.367	
782.00	23230	Mid	LTE Band 13	10	Standard	22.5	22.50	0.02	1	Left	Cheek	QPSK	25	0	1408	1:1	0.327	1.000	0.327	
782.00	23230	Mid	LTE Band 13	10	Standard	23.5	23.48	0.04	0	Left	Tilt	QPSK	1	25	1408	1:1	0.261	1.005	0.262	
782.00	23230	Mid	LTE Band 13	10	Standard	22.5	22.50	0.02	1	Left	Tilt	QPSK	25	0	1408	1:1	0.186	1.000	0.186	
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 11-9
LTE Band 5 (Cell) Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Battery Type	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)	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Standard	23.8	23.20	0.03	0	Right	Cheek	QPSK	1	49	1416	1:1	0.398	1.148	0.457	A9
836.50	20525	Mid	LTE Band 5 (Cell)	10	L-Battery	23.8	23.20	-0.06	0	Right	Cheek	QPSK	1	49	1416	1:1	0.360	1.148	0.413	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Standard	22.8	22.15	-0.01	1	Right	Cheek	QPSK	25	0	1416	1:1	0.303	1.161	0.352	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Standard	23.8	23.20	-0.03	0	Right	Tilt	QPSK	1	49	1416	1:1	0.271	1.148	0.311	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Standard	22.8	22.15	0.09	1	Right	Tilt	QPSK	25	0	1416	1:1	0.207	1.161	0.240	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Standard	23.8	23.20	0.00	0	Left	Cheek	QPSK	1	49	1416	1:1	0.370	1.148	0.425	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Standard	22.8	22.15	0.03	1	Left	Cheek	QPSK	25	0	1416	1:1	0.289	1.161	0.336	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Standard	23.8	23.20	0.06	0	Left	Tilt	QPSK	1	49	1416	1:1	0.194	1.148	0.223	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Standard	22.8	22.15	0.09	1	Left	Tilt	QPSK	25	0	1416	1:1	0.163	1.161	0.189	
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 4 (AWS) Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Battery Type	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)	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Standard	23.8	23.70	0.04	0	Right	Cheek	QPSK	1	0	1408	1:1	0.611	1.023	0.625	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Standard	22.8	22.79	0.01	1	Right	Cheek	QPSK	50	50	1408	1:1	0.417	1.002	0.418	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Standard	23.8	23.70	-0.03	0	Right	Tilt	QPSK	1	0	1408	1:1	0.393	1.023	0.402	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Standard	22.8	22.79	0.06	1	Right	Tilt	QPSK	50	50	1408	1:1	0.300	1.002	0.301	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Standard	23.8	23.70	-0.15	0	Left	Cheek	QPSK	1	0	1408	1:1	0.710	1.023	0.726	A10
1732.50	20175	Mid	LTE Band 4 (AWS)	20	L-Battery	23.8	23.70	-0.03	0	Left	Cheek	QPSK	1	0	1408	1:1	0.600	1.023	0.614	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Standard	22.8	22.79	-0.05	1	Left	Cheek	QPSK	50	50	1408	1:1	0.546	1.002	0.547	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Standard	23.8	23.70	-0.03	0	Left	Tilt	QPSK	1	0	1408	1:1	0.401	1.023	0.410	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Standard	22.8	22.79	0.07	1	Left	Tilt	QPSK	50	50	1408	1:1	0.315	1.002	0.316	
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 2 (PCS) Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Battery Type	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)	
1900.00	19100	High	LTE Band 2 (PCS)	20	Standard	23.8	23.62	-0.16	0	Right	Cheek	QPSK	1	50	1416	1:1	0.288	1.042	0.300	
1900.00	19100	High	LTE Band 2 (PCS)	20	Standard	22.8	22.69	-0.10	1	Right	Cheek	QPSK	50	0	1416	1:1	0.248	1.026	0.254	
1900.00	19100	High	LTE Band 2 (PCS)	20	Standard	23.8	23.62	0.00	0	Right	Tilt	QPSK	1	50	1416	1:1	0.166	1.042	0.173	
1900.00	19100	High	LTE Band 2 (PCS)	20	Standard	22.8	22.69	-0.05	1	Right	Tilt	QPSK	50	0	1416	1:1	0.129	1.026	0.132	
1900.00	19100	High	LTE Band 2 (PCS)	20	Standard	23.8	23.62	-0.05	0	Left	Cheek	QPSK	1	50	1416	1:1	0.393	1.042	0.410	A11
1900.00	19100	High	LTE Band 2 (PCS)	20	L-Battery	23.8	23.62	-0.14	0	Left	Cheek	QPSK	1	50	1416	1:1	0.351	1.042	0.366	
1900.00	19100	High	LTE Band 2 (PCS)	20	Standard	22.8	22.69	-0.04	1	Left	Cheek	QPSK	50	0	1416	1:1	0.318	1.026	0.326	
1900.00	19100	High	LTE Band 2 (PCS)	20	Standard	23.8	23.62	-0.01	0	Left	Tilt	QPSK	1	50	1416	1:1	0.166	1.042	0.173	
1900.00	19100	High	LTE Band 2 (PCS)	20	Standard	22.8	22.69	0.04	1	Left	Tilt	QPSK	50	0	1416	1:1	0.136	1.026	0.140	
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 11-12
DTS Head SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Battery Type	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	15.9	14.23	-0.05	Right	Cheek	Standard	1432	1	99.8	0.110	0.090	1.469	1.002	**0.132**	A12
2412	1	802.11b	DSSS	22	15.9	14.23	-0.08	Right	Cheek	L-Battery	1432	1	99.8	0.093	0.079	1.469	1.002	0.116	
2412	1	802.11b	DSSS	22	15.9	14.23	0.09	Right	Tilt	Standard	1432	1	99.8	0.043	-	1.469	1.002	-	
2412	1	802.11b	DSSS	22	15.9	14.23	-0.16	Left	Cheek	Standard	1432	1	99.8	0.057	-	1.469	1.002	-	
2412	1	802.11b	DSSS	22	15.9	14.23	0.19	Left	Tilt	Standard	1432	1	99.8	0.028	-	1.469	1.002	-	
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
NII Head SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Battery Type	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)	
5280	56	802.11a	OFDM	20	17.4	15.67	-0.01	Right	Cheek	Standard	2206	6	97.2	0.257	-	1.489	1.029	-	
5280	56	802.11a	OFDM	20	17.4	15.67	0.16	Right	Tilt	Standard	2206	6	97.2	0.199	-	1.489	1.029	-	
5280	56	802.11a	OFDM	20	17.4	15.67	0.15	Left	Cheek	Standard	2206	6	97.2	0.267	0.119	1.489	1.029	0.182	
5280	56	802.11a	OFDM	20	17.4	15.67	0.18	Left	Tilt	Standard	2206	6	97.2	0.254	-	1.489	1.029	-	
5600	120	802.11a	OFDM	20	17.4	15.61	0.06	Right	Cheek	Standard	2206	6	97.2	0.425	0.180	1.510	1.029	**0.280**	A13
5600	120	802.11a	OFDM	20	17.4	15.61	0.13	Right	Cheek	L-Battery	2206	6	97.2	0.417	0.165	1.510	1.029	0.256	
5600	120	802.11a	OFDM	20	17.4	15.61	-0.05	Right	Tilt	Standard	2206	6	97.2	0.414	-	1.510	1.029	-	
5600	120	802.11a	OFDM	20	17.4	15.61	0.06	Left	Cheek	Standard	2206	6	97.2	0.399	-	1.510	1.029	-	
5600	120	802.11a	OFDM	20	17.4	15.61	0.07	Left	Tilt	Standard	2206	6	97.2	0.404	-	1.510	1.029	-	
5745	149	802.11a	OFDM	20	17.4	15.63	-0.07	Right	Cheek	Standard	2206	6	97.2	0.283	-	1.503	1.029	-	
5745	149	802.11a	OFDM	20	17.4	15.63	-0.08	Right	Tilt	Standard	2206	6	97.2	0.292	-	1.503	1.029	-	
5745	149	802.11a	OFDM	20	17.4	15.63	-0.16	Left	Cheek	Standard	2206	6	97.2	0.345	-	1.503	1.029	-	
5745	149	802.11a	OFDM	20	17.4	15.63	0.06	Left	Tilt	Standard	2206	6	97.2	0.353	0.147	1.503	1.029	0.227	
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
DSS Head SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Battery Type	Device Serial Number	Data Rate (Mbps)	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.												(W/kg)		(W/kg)	
2441	39	Bluetooth	FHSS	13.9	11.94	-0.08	Right	Cheek	Standard	1432	1	1:1	0.031	1.570	0.048	A14
2441	39	Bluetooth	FHSS	13.9	11.94	0.13	Right	Cheek	L-Battery	1432	1	1:1	0.025	1.570	0.038	
2441	39	Bluetooth	FHSS	13.9	11.94	0.11	Right	Tilt	Standard	1432	1	1:1	0.010	1.570	0.016	
2441	39	Bluetooth	FHSS	13.9	11.94	0.13	Left	Cheek	Standard	1432	1	1:1	0.012	1.570	0.019	
2441	39	Bluetooth	FHSS	13.9	11.94	0.18	Left	Tilt	Standard	1432	1	1:1	0.006	1.570	0.010	
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 11-15
GSM/GPRS/UMTS/CDMA Body-Worn SAR Data

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Accessory Type	Battery Type	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	GSM	32.8	31.80	0.01	10 mm	None	Standard	1408	1	1:8.3	back	0.344	1.259	0.433	A15
836.60	190	GSM 850	GSM	32.8	31.80	0.05	10 mm	None	L-Battery	1408	1	1:8.3	back	0.312	1.259	0.393	
836.60	190	GSM 850	GSM	32.8	31.80	-0.04	0 mm	Holster	Standard	1408	1	1:8.3	back	0.212	1.259	0.267	
836.60	190	GSM 850	GSM	32.8	31.80	-0.01	0 mm	Holster	Standard	1408	1	1:8.3	front	0.320	1.259	0.403	
836.60	190	GSM 850	GPRS	27.8	26.79	0.07	10 mm	None	Standard	1408	4	1:2.076	back	0.341	1.262	0.430	
836.60	190	GSM 850	GPRS	27.8	26.79	0.03	10 mm	None	L-Battery	1408	4	1:2.076	back	0.283	1.262	0.357	
836.60	190	GSM 850	GPRS	27.8	26.79	-0.08	0 mm	Holster	Standard	1408	4	1:2.076	back	0.125	1.262	0.158	
836.60	190	GSM 850	GPRS	27.8	26.79	-0.02	0 mm	Holster	Standard	1408	4	1:2.076	front	0.341	1.262	0.430	
1880.00	661	GSM 1900	GSM	30.6	29.71	-0.01	10 mm	None	Standard	1408	1	1:8.3	back	0.199	1.227	0.244	
1880.00	661	GSM 1900	GSM	30.6	29.71	0.01	10 mm	None	L-Battery	1408	1	1:8.3	back	0.076	1.227	0.093	
1880.00	661	GSM 1900	GSM	30.6	29.71	-0.02	0 mm	Holster	Standard	1408	1	1:8.3	back	0.105	1.227	0.129	
1880.00	661	GSM 1900	GSM	30.6	29.71	0.04	0 mm	Holster	Standard	1408	1	1:8.3	front	0.132	1.227	0.162	
1880.00	661	GSM 1900	GPRS	25.3	24.40	0.02	10 mm	None	Standard	1408	4	1:2.076	back	0.229	1.230	0.282	A18
1880.00	661	GSM 1900	GPRS	25.3	24.40	-0.01	10 mm	None	L-Battery	1408	4	1:2.076	back	0.086	1.230	0.106	
1880.00	661	GSM 1900	GPRS	25.3	24.40	-0.08	0 mm	Holster	Standard	1408	4	1:2.076	back	0.103	1.230	0.127	
1880.00	661	GSM 1900	GPRS	25.3	24.40	0.00	0 mm	Holster	Standard	1408	4	1:2.076	front	0.151	1.230	0.186	
836.52	384	Cell. CDMA	TDSO / SO32	24.7	23.74	0.01	10 mm	None	Standard	1416	N/A	1:1	back	0.332	1.247	0.414	A21
836.52	384	Cell. CDMA	TDSO / SO32	24.7	23.74	0.00	10 mm	None	L-Battery	1416	N/A	1:1	back	0.320	1.247	0.399	
836.52	384	Cell. CDMA	TDSO / SO32	24.7	23.74	0.03	0 mm	Holster	Standard	1416	N/A	1:1	back	0.147	1.247	0.183	
836.52	384	Cell. CDMA	TDSO / SO32	24.7	23.74	-0.03	0 mm	Holster	Standard	1416	N/A	1:1	front	0.250	1.247	0.312	
1880.00	600	PCS CDMA	TDSO / SO32	24.8	24.08	0.00	10 mm	None	Standard	1408	N/A	1:1	back	0.378	1.180	0.446	
1880.00	600	PCS CDMA	TDSO / SO32	24.8	24.08	-0.02	0 mm	Holster	Standard	1408	N/A	1:1	back	0.189	1.180	0.223	
1880.00	600	PCS CDMA	TDSO / SO32	24.8	24.08	-0.01	0 mm	Holster	Standard	1408	N/A	1:1	front	0.452	1.180	0.533	A24
1880.00	600	PCS CDMA	TDSO / SO32	24.8	24.08	-0.02	0 mm	Holster	L-Battery	1408	N/A	1:1	front	0.328	1.180	0.387	
836.60	4183	UMTS 850	RMC	24.0	23.29	0.04	10 mm	None	Standard	1408	N/A	1:1	back	0.255	1.178	0.300	A27
836.60	4183	UMTS 850	RMC	24.0	23.29	0.00	10 mm	None	L-Battery	1408	N/A	1:1	back	0.232	1.178	0.273	
836.60	4183	UMTS 850	RMC	24.0	23.29	0.02	0 mm	Holster	Standard	1408	N/A	1:1	back	0.108	1.178	0.127	
836.60	4183	UMTS 850	RMC	24.0	23.29	-0.01	0 mm	Holster	Standard	1408	N/A	1:1	front	0.171	1.178	0.201	
1907.60	9538	UMTS 1900	RMC	24.1	23.87	-0.02	10 mm	None	Standard	1408	N/A	1:1	back	0.387	1.054	0.408	A29
1907.60	9538	UMTS 1900	RMC	24.1	23.87	-0.01	10 mm	None	L-Battery	1408	N/A	1:1	back	0.148	1.054	0.156	
1907.60	9538	UMTS 1900	RMC	24.1	23.87	-0.13	0 mm	Holster	Standard	1408	N/A	1:1	back	0.216	1.054	0.228	
1907.60	9538	UMTS 1900	RMC	24.1	23.87	0.07	0 mm	Holster	Standard	1408	N/A	1:1	front	0.325	1.054	0.343	
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 11-16
LTE Body-Worn SAR

MEASUREMENT RESULTS																						
FREQUENCY			Mode	Bandwidth [MHz]	Battery Type	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Accessory Type	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	Standard	23.7	23.39	-0.10	0	None	1416	QPSK	1	49	10 mm	back	1:1	0.371	1.074	0.398	A32
707.50	23095	Mid	LTE Band 12	10	L-Battery	23.7	23.39	0.00	0	None	1416	QPSK	1	49	10 mm	back	1:1	0.287	1.074	0.308	
707.50	23095	Mid	LTE Band 12	10	Standard	23.7	23.39	0.03	0	Holster	1416	QPSK	1	49	0 mm	back	1:1	0.242	1.074	0.260	
707.50	23095	Mid	LTE Band 12	10	Standard	22.7	22.40	0.19	1	None	1416	QPSK	25	25	10 mm	back	1:1	0.282	1.072	0.302	
707.50	23095	Mid	LTE Band 12	10	Standard	22.7	22.40	-0.03	1	Holster	1416	QPSK	25	25	0 mm	back	1:1	0.180	1.072	0.193	
707.50	23095	Mid	LTE Band 12	10	Standard	23.7	23.39	0.18	0	Holster	1416	QPSK	1	49	0 mm	front	1:1	0.277	1.074	0.297	
707.50	23095	Mid	LTE Band 12	10	Standard	22.7	22.40	0.04	1	Holster	1416	QPSK	25	25	0 mm	front	1:1	0.227	1.072	0.243	
782.00	23230	Mid	LTE Band 13	10	Standard	23.5	23.48	0.00	0	None	1416	QPSK	1	25	10 mm	back	1:1	0.447	1.005	0.449	A34
782.00	23230	Mid	LTE Band 13	10	L-Battery	23.5	23.48	0.00	0	None	1416	QPSK	1	25	10 mm	back	1:1	0.427	1.005	0.429	
782.00	23230	Mid	LTE Band 13	10	Standard	23.5	23.48	-0.04	0	Holster	1416	QPSK	1	25	0 mm	back	1:1	0.257	1.005	0.258	
782.00	23230	Mid	LTE Band 13	10	Standard	22.5	22.50	0.01	1	None	1416	QPSK	25	0	10 mm	back	1:1	0.358	1.000	0.358	
782.00	23230	Mid	LTE Band 13	10	Standard	22.5	22.50	0.00	1	Holster	1416	QPSK	25	0	0 mm	back	1:1	0.205	1.000	0.205	
782.00	23230	Mid	LTE Band 13	10	Standard	23.5	23.48	-0.01	0	Holster	1416	QPSK	1	25	0 mm	front	1:1	0.438	1.005	0.440	
782.00	23230	Mid	LTE Band 13	10	Standard	22.5	22.50	-0.04	1	Holster	1416	QPSK	25	0	0 mm	front	1:1	0.346	1.000	0.346	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Standard	23.8	23.20	-0.02	0	None	1408	QPSK	1	49	10 mm	back	1:1	0.278	1.148	0.319	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Standard	23.8	23.20	0.00	0	Holster	1408	QPSK	1	49	0 mm	back	1:1	0.171	1.148	0.196	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Standard	22.8	22.15	0.03	1	None	1408	QPSK	25	0	10 mm	back	1:1	0.235	1.161	0.273	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Standard	22.8	22.15	-0.03	1	Holster	1408	QPSK	25	0	0 mm	back	1:1	0.107	1.161	0.124	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Standard	23.8	23.20	0.06	0	Holster	1408	QPSK	1	49	0 mm	front	1:1	0.284	1.148	0.326	A37
836.50	20525	Mid	LTE Band 5 (Cell)	10	L-Battery	23.8	23.20	-0.05	0	Holster	1408	QPSK	1	49	0 mm	front	1:1	0.211	1.148	0.242	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Standard	22.8	22.15	0.00	1	Holster	1408	QPSK	25	0	0 mm	front	1:1	0.198	1.161	0.230	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Standard	23.8	23.70	0.04	0	None	1408	QPSK	1	0	10 mm	back	1:1	0.500	1.023	0.512	A40
1732.50	20175	Mid	LTE Band 4 (AWS)	20	L-Battery	23.8	23.70	0.14	0	None	1408	QPSK	1	0	10 mm	back	1:1	0.375	1.023	0.384	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Standard	23.8	23.70	-0.07	0	Holster	1408	QPSK	1	0	0 mm	back	1:1	0.100	1.023	0.102	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Standard	22.8	22.79	0.03	1	None	1408	QPSK	50	50	10 mm	back	1:1	0.362	1.002	0.363	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Standard	22.8	22.79	-0.08	1	Holster	1408	QPSK	50	50	0 mm	back	1:1	0.081	1.002	0.081	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Standard	23.8	23.70	0.01	0	Holster	1408	QPSK	1	0	0 mm	front	1:1	0.159	1.023	0.163	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Standard	22.8	22.79	0.17	1	Holster	1408	QPSK	50	50	0 mm	front	1:1	0.122	1.002	0.122	
1900.00	19100	High	LTE Band 2 (PCS)	20	Standard	23.8	23.62	0.01	0	None	1416	QPSK	1	50	10 mm	back	1:1	0.420	1.042	0.438	A43
1900.00	19100	High	LTE Band 2 (PCS)	20	L-Battery	23.8	23.62	-0.03	0	None	1416	QPSK	1	50	10 mm	back	1:1	0.153	1.042	0.159	
1900.00	19100	High	LTE Band 2 (PCS)	20	Standard	23.8	23.62	0.07	0	Holster	1416	QPSK	1	50	0 mm	back	1:1	0.195	1.042	0.203	
1900.00	19100	High	LTE Band 2 (PCS)	20	Standard	22.8	22.69	-0.01	1	None	1416	QPSK	50	0	10 mm	back	1:1	0.326	1.026	0.334	
1900.00	19100	High	LTE Band 2 (PCS)	20	Standard	22.8	22.69	-0.02	1	Holster	1416	QPSK	50	0	0 mm	back	1:1	0.152	1.026	0.156	
1900.00	19100	High	LTE Band 2 (PCS)	20	Standard	23.8	23.62	-0.01	0	Holster	1416	QPSK	1	50	0 mm	front	1:1	0.400	1.042	0.417	
1900.00	19100	High	LTE Band 2 (PCS)	20	Standard	22.8	22.69	-0.05	1	Holster	1416	QPSK	50	0	0 mm	front	1:1	0.314	1.026	0.322	

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 11-17
DTS Body-Worn SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Accessory Type	Battery Type	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	15.9	14.23	0.08	10 mm	None	Standard	1432	1	back	99.8	0.046	0.040	1.469	1.002	0.059	A46
2412	1	802.11b	DSSS	22	15.9	14.23	0.03	10 mm	None	L-Battery	1432	1	back	99.8	0.016	0.013	1.469	1.002	0.019	
2412	1	802.11b	DSSS	22	15.9	14.23	0.07	0 mm	Holster	Standard	1432	1	back	99.8	0.045	0.037	1.469	1.002	0.054	
2412	1	802.11b	DSSS	22	15.9	14.23	-0.02	0 mm	Holster	Standard	1432	1	front	99.8	0.017	-	1.469	1.002	-	

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 11-18
NII Body-Worn SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Battery Type	Accessory Type	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)	
5280	56	802.11a	OFDM	20	17.4	15.67	0.08	10 mm	Standard	None	2206	6	back	97.2	0.276	0.140	1.489	1.029	0.214	
5280	56	802.11a	OFDM	20	17.4	15.67	0.16	0 mm	Standard	Holster	2206	6	back	97.2	0.361	0.181	1.489	1.029	0.278	
5280	56	802.11a	OFDM	20	17.4	15.67	0.16	0 mm	Standard	Holster	2206	6	front	97.2	0.051	-	1.489	1.029	-	
5600	120	802.11a	OFDM	20	17.4	15.61	0.11	10 mm	Standard	None	2206	6	back	97.2	0.415	0.211	1.510	1.029	0.328	
5600	120	802.11a	OFDM	20	17.4	15.61	0.18	0 mm	Standard	Holster	2206	6	back	97.2	0.511	0.249	1.510	1.029	0.387	
5600	120	802.11a	OFDM	20	17.4	15.61	-0.10	0 mm	Standard	Holster	2206	6	front	97.2	0.073	-	1.510	1.029	-	
5745	149	802.11a	OFDM	20	17.4	15.63	0.12	10 mm	Standard	None	2206	6	back	97.2	0.540	0.265	1.503	1.029	0.410	
5745	149	802.11a	OFDM	20	17.4	15.63	0.14	10 mm	L-Battery	None	2206	6	back	97.2	0.581	0.292	1.503	1.029	**0.452**	A49
5745	149	802.11a	OFDM	20	17.4	15.63	0.10	0 mm	Standard	Holster	2206	6	back	97.2	0.394	0.190	1.503	1.029	0.300	
5785	157	802.11a	OFDM	20	17.4	15.57	0.18	10 mm	Standard	None	2206	6	back	97.2	0.522	0.251	1.524	1.029	0.397	
5825	165	802.11a	OFDM	20	17.4	15.55	0.16	10 mm	Standard	None	2206	6	back	97.2	0.465	0.235	1.531	1.029	0.396	
5745	149	802.11a	OFDM	20	17.4	15.63	-0.09	0 mm	Standard	Holster	2206	6	front	97.2	0.061	-	1.503	1.029	-	

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 11-19
DSS Body-Worn SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Accessory Type	Battery Type	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.													(W/kg)		(W/kg)	
2441	39	Bluetooth	FHSS	13.9	11.94	0.09	10 mm	None	Standard	1481	1	back	1:1	0.005	1.570	0.008	
2441	39	Bluetooth	FHSS	13.9	11.94	0.15	0 mm	Holster	Standard	1481	1	back	1:1	0.012	1.570	**0.019**	A52
2441	39	Bluetooth	FHSS	13.9	11.94	-0.15	0 mm	Holster	L-Battery	1481	1	back	1:1	0.007	1.570	0.011	
2441	39	Bluetooth	FHSS	13.9	11.94	0.17	0 mm	Holster	Standard	1481	1	front	1:1	0.002	1.570	0.003	

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

11.3 Standalone Hotspot SAR Data

Table 11-20
GPRS/UMTS/EVDO Hotspot SAR Data

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Battery Type	Device Serial Number	# of GPRS Slots	Duty Cycle	Side	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.												(W/kg)		(W/kg)	
836.60	190	GSM 850	GPRS	27.8	26.79	0.07	10 mm	Standard	1408	4	1:2.076	back	0.341	1.262	0.430	
836.60	190	GSM 850	GPRS	27.8	26.79	0.14	10 mm	Standard	1408	4	1:2.076	front	0.534	1.262	0.674	A16
836.60	190	GSM 850	GPRS	27.8	26.79	0.12	10 mm	L-Battery	1408	4	1:2.076	front	0.487	1.262	0.615	
836.60	190	GSM 850	GPRS	27.8	26.79	0.06	10 mm	Standard	1408	4	1:2.076	bottom	0.036	1.262	0.045	
836.60	190	GSM 850	GPRS	27.8	26.79	-0.03	10 mm	Standard	1408	4	1:2.076	right	0.336	1.262	0.424	
836.60	190	GSM 850	GPRS	27.8	26.79	-0.12	10 mm	Standard	1408	4	1:2.076	left	0.321	1.262	0.405	
1880.00	661	GSM 1900	GPRS	25.3	24.40	0.02	10 mm	Standard	1408	4	1:2.076	back	0.229	1.230	0.282	
1880.00	661	GSM 1900	GPRS	25.3	24.40	0.07	10 mm	Standard	1408	4	1:2.076	front	0.449	1.230	0.552	
1880.00	661	GSM 1900	GPRS	25.3	24.40	0.08	10 mm	L-Battery	1408	4	1:2.076	front	0.607	1.230	0.747	A19
1880.00	661	GSM 1900	GPRS	25.3	24.40	-0.04	10 mm	Standard	1408	4	1:2.076	bottom	0.207	1.230	0.255	
1880.00	661	GSM 1900	GPRS	25.3	24.40	-0.02	10 mm	Standard	1408	4	1:2.076	right	0.147	1.230	0.181	
1880.00	661	GSM 1900	GPRS	25.3	24.40	0.07	10 mm	Standard	1408	4	1:2.076	left	0.101	1.230	0.124	
836.52	384	Cell. CDMA	EVDO Rev. 0	24.7	23.75	0.01	10 mm	Standard	1416	N/A	1:1	back	0.316	1.245	0.393	
836.52	384	Cell. CDMA	EVDO Rev. 0	24.7	23.75	0.05	10 mm	Standard	1416	N/A	1:1	front	0.413	1.245	0.514	
836.52	384	Cell. CDMA	EVDO Rev. 0	24.7	23.75	0.00	10 mm	L-Battery	1416	N/A	1:1	front	0.416	1.245	0.518	A22
836.52	384	Cell. CDMA	EVDO Rev. 0	24.7	23.75	0.01	10 mm	Standard	1416	N/A	1:1	bottom	0.038	1.245	0.047	
836.52	384	Cell. CDMA	EVDO Rev. 0	24.7	23.75	-0.03	10 mm	Standard	1416	N/A	1:1	right	0.318	1.245	0.396	
836.52	384	Cell. CDMA	EVDO Rev. 0	24.7	23.75	-0.01	10 mm	Standard	1416	N/A	1:1	left	0.294	1.245	0.366	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.8	24.06	-0.02	10 mm	Standard	1408	N/A	1:1	back	0.380	1.186	0.451	
1851.25	25	PCS CDMA	EVDO Rev. 0	24.8	24.05	-0.01	10 mm	Standard	1408	N/A	1:1	front	0.882	1.189	1.049	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.8	24.06	0.00	10 mm	Standard	1408	N/A	1:1	front	0.796	1.186	0.944	
1908.75	1175	PCS CDMA	EVDO Rev. 0	24.8	24.32	0.00	10 mm	Standard	1408	N/A	1:1	front	0.978	1.117	**1.092**	A25
1908.75	1175	PCS CDMA	EVDO Rev. 0	24.8	24.32	0.01	10 mm	L-Battery	1408	N/A	1:1	front	0.826	1.117	0.923	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.8	24.06	-0.04	10 mm	Standard	1408	N/A	1:1	bottom	0.345	1.186	0.409	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.8	24.06	0.12	10 mm	Standard	1408	N/A	1:1	right	0.256	1.186	0.304	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.8	24.06	0.02	10 mm	Standard	1408	N/A	1:1	left	0.188	1.186	0.223	
1908.75	1175	PCS CDMA	EVDO Rev. 0	24.8	24.32	-0.03	10 mm	Standard	1408	N/A	1:1	front	0.975	1.117	1.089	
836.60	4183	UMTS 850	RMC	24.0	23.29	0.04	10 mm	Standard	1408	N/A	1:1	back	0.255	1.178	0.300	A27
836.60	4183	UMTS 850	RMC	24.0	23.29	0.00	10 mm	L-Battery	1408	N/A	1:1	back	0.232	1.178	0.273	
836.60	4183	UMTS 850	RMC	24.0	23.29	0.01	10 mm	Standard	1408	N/A	1:1	front	0.240	1.178	0.283	
836.60	4183	UMTS 850	RMC	24.0	23.29	0.12	10 mm	Standard	1408	N/A	1:1	bottom	0.017	1.178	0.020	
836.60	4183	UMTS 850	RMC	24.0	23.29	0.01	10 mm	Standard	1408	N/A	1:1	right	0.168	1.178	0.198	
836.60	4183	UMTS 850	RMC	24.0	23.29	-0.01	10 mm	Standard	1408	N/A	1:1	left	0.165	1.178	0.194	
1907.60	9538	UMTS 1900	RMC	24.1	23.87	-0.02	10 mm	Standard	1408	N/A	1:1	back	0.387	1.054	0.408	
1907.60	9538	UMTS 1900	RMC	24.1	23.87	0.01	10 mm	Standard	1408	N/A	1:1	front	0.719	1.054	0.758	
1907.60	9538	UMTS 1900	RMC	24.1	23.87	-0.01	10 mm	L-Battery	1408	N/A	1:1	front	0.723	1.054	0.762	A30
1907.60	9538	UMTS 1900	RMC	24.1	23.87	-0.06	10 mm	Standard	1408	N/A	1:1	bottom	0.311	1.054	0.328	
1907.60	9538	UMTS 1900	RMC	24.1	23.87	0.00	10 mm	Standard	1408	N/A	1:1	right	0.269	1.054	0.284	
1907.60	9538	UMTS 1900	RMC	24.1	23.87	-0.01	10 mm	Standard	1408	N/A	1:1	left	0.183	1.054	0.193	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Body 1.6 W/kg (mW/g) averaged over 1 gram			

Blue entry represents variability data

Table 11-21
LTE Band 12 Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Battery Type	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)	
707.50	23095	Mid	LTE Band 12	10	Standard	23.7	23.39	-0.10	0	1416	QPSK	1	49	10 mm	back	1:1	0.371	1.074	0.398	A32
707.50	23095	Mid	LTE Band 12	10	L-Battery	23.7	23.39	0.00	0	1416	QPSK	1	49	10 mm	back	1:1	0.287	1.074	0.308	
707.50	23095	Mid	LTE Band 12	10	Standard	22.7	22.40	0.19	1	1416	QPSK	25	25	10 mm	back	1:1	0.282	1.072	0.302	
707.50	23095	Mid	LTE Band 12	10	Standard	23.7	23.39	0.00	0	1416	QPSK	1	49	10 mm	front	1:1	0.332	1.074	0.357	
707.50	23095	Mid	LTE Band 12	10	Standard	22.7	22.40	0.00	1	1416	QPSK	25	25	10 mm	front	1:1	0.250	1.072	0.268	
707.50	23095	Mid	LTE Band 12	10	Standard	23.7	23.39	0.00	0	1416	QPSK	1	49	10 mm	bottom	1:1	0.013	1.074	0.014	
707.50	23095	Mid	LTE Band 12	10	Standard	22.7	22.40	0.16	1	1416	QPSK	25	25	10 mm	bottom	1:1	0.009	1.072	0.010	
707.50	23095	Mid	LTE Band 12	10	Standard	23.7	23.39	0.02	0	1416	QPSK	1	49	10 mm	right	1:1	0.282	1.074	0.303	
707.50	23095	Mid	LTE Band 12	10	Standard	22.7	22.40	0.05	1	1416	QPSK	25	25	10 mm	right	1:1	0.200	1.072	0.214	
707.50	23095	Mid	LTE Band 12	10	Standard	23.7	23.39	0.01	0	1416	QPSK	1	49	10 mm	left	1:1	0.307	1.074	0.330	
707.50	23095	Mid	LTE Band 12	10	Standard	22.7	22.40	-0.06	1	1416	QPSK	25	25	10 mm	left	1:1	0.218	1.072	0.234	
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 11-22
LTE Band 13 Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Battery Type	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)	
782.00	23230	Mid	LTE Band 13	10	Standard	23.5	23.48	0.00	0	1416	QPSK	1	25	10 mm	back	1:1	0.447	1.005	0.449	
782.00	23230	Mid	LTE Band 13	10	Standard	22.5	22.50	0.01	1	1416	QPSK	25	0	10 mm	back	1:1	0.358	1.000	0.358	
782.00	23230	Mid	LTE Band 13	10	Standard	23.5	23.48	-0.01	0	1416	QPSK	1	25	10 mm	front	1:1	0.557	1.005	0.560	A35
782.00	23230	Mid	LTE Band 13	10	L-Battery	23.5	23.48	0.02	0	1416	QPSK	1	25	10 mm	front	1:1	0.509	1.005	0.512	
782.00	23230	Mid	LTE Band 13	10	Standard	22.5	22.50	0.03	1	1416	QPSK	25	0	10 mm	front	1:1	0.441	1.000	0.441	
782.00	23230	Mid	LTE Band 13	10	Standard	23.5	23.48	0.10	0	1416	QPSK	1	25	10 mm	bottom	1:1	0.023	1.005	0.023	
782.00	23230	Mid	LTE Band 13	10	Standard	22.5	22.50	0.00	1	1416	QPSK	25	0	10 mm	bottom	1:1	0.017	1.000	0.017	
782.00	23230	Mid	LTE Band 13	10	Standard	23.5	23.48	0.01	0	1416	QPSK	1	25	10 mm	right	1:1	0.427	1.005	0.429	
782.00	23230	Mid	LTE Band 13	10	Standard	22.5	22.50	0.08	1	1416	QPSK	25	0	10 mm	right	1:1	0.340	1.000	0.340	
782.00	23230	Mid	LTE Band 13	10	Standard	23.5	23.48	0.05	0	1416	QPSK	1	25	10 mm	left	1:1	0.458	1.005	0.460	
782.00	23230	Mid	LTE Band 13	10	Standard	22.5	22.50	0.03	1	1416	QPSK	25	0	10 mm	left	1:1	0.362	1.000	0.362	
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 11-23
LTE Band 5 (Cell) Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Battery Type	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)	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Standard	23.8	23.20	-0.02	0	1408	QPSK	1	49	10 mm	back	1:1	0.278	1.148	0.319	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Standard	22.8	22.15	0.03	1	1408	QPSK	25	0	10 mm	back	1:1	0.235	1.161	0.273	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Standard	23.8	23.20	0.01	0	1408	QPSK	1	49	10 mm	front	1:1	0.349	1.148	0.401	A38
836.50	20525	Mid	LTE Band 5 (Cell)	10	L-Battery	23.8	23.20	-0.03	0	1408	QPSK	1	49	10 mm	front	1:1	0.339	1.148	0.389	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Standard	22.8	22.15	-0.04	1	1408	QPSK	25	0	10 mm	front	1:1	0.292	1.161	0.339	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Standard	23.8	23.20	-0.08	0	1408	QPSK	1	49	10 mm	bottom	1:1	0.035	1.148	0.040	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Standard	22.8	22.15	0.06	1	1408	QPSK	25	0	10 mm	bottom	1:1	0.025	1.161	0.029	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Standard	23.8	23.20	0.04	0	1408	QPSK	1	49	10 mm	right	1:1	0.262	1.148	0.301	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Standard	22.8	22.15	-0.04	1	1408	QPSK	25	0	10 mm	right	1:1	0.213	1.161	0.247	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Standard	23.8	23.20	0.00	0	1408	QPSK	1	49	10 mm	left	1:1	0.253	1.148	0.290	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Standard	22.8	22.15	0.01	1	1408	QPSK	25	0	10 mm	left	1:1	0.222	1.161	0.258	
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 11-24
LTE Band 4 (AWS) Hotspot SAR

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Battery Type	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)	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Standard	23.8	23.70	0.04	0	1408	QPSK	1	0	10 mm	back	1:1	0.500	1.023	0.512	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Standard	22.8	22.79	0.03	1	1408	QPSK	50	50	10 mm	back	1:1	0.362	1.002	0.363	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Standard	23.8	23.70	-0.02	0	1408	QPSK	1	0	10 mm	front	1:1	0.875	1.023	0.895	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	L-Battery	23.8	23.70	-0.03	0	1408	QPSK	1	0	10 mm	front	1:1	0.924	1.023	0.945	A41
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Standard	22.8	22.79	0.03	1	1408	QPSK	50	50	10 mm	front	1:1	0.665	1.002	0.666	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Standard	22.8	22.78	-0.02	1	1408	QPSK	100	0	10 mm	front	1:1	0.678	1.005	0.681	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Standard	23.8	23.70	0.04	0	1408	QPSK	1	0	10 mm	bottom	1:1	0.245	1.023	0.251	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Standard	22.8	22.79	0.02	1	1408	QPSK	50	50	10 mm	bottom	1:1	0.192	1.002	0.192	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Standard	23.8	23.70	-0.04	0	1408	QPSK	1	0	10 mm	right	1:1	0.343	1.023	0.351	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Standard	22.8	22.79	-0.05	1	1408	QPSK	50	50	10 mm	right	1:1	0.259	1.002	0.260	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Standard	23.8	23.70	0.01	0	1408	QPSK	1	0	10 mm	left	1:1	0.335	1.023	0.343	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Standard	22.8	22.79	0.07	1	1408	QPSK	50	50	10 mm	left	1:1	0.265	1.002	0.266	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	L-Battery	23.8	23.70	0.11	0	1408	QPSK	1	0	10 mm	front	1:1	0.850	1.023	0.870	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population											Body 1.6 W/kg (mW/g) averaged over 1 gram										

Blue entry represents variability data

Table 11-25
LTE Band 2 (PCS) Hotspot SAR

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Battery Type	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)	
1900.00	19100	High	LTE Band 2 (PCS)	20	Standard	23.8	23.62	0.01	0	1416	QPSK	1	50	10 mm	back	1:1	0.420	1.042	0.438	
1900.00	19100	High	LTE Band 2 (PCS)	20	Standard	22.8	22.69	-0.01	1	1416	QPSK	50	0	10 mm	back	1:1	0.326	1.026	0.334	
1860.00	18700	Low	LTE Band 2 (PCS)	20	Standard	23.8	23.23	0.05	0	1416	QPSK	1	99	10 mm	front	1:1	0.651	1.140	0.742	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	Standard	23.8	23.61	-0.05	0	1416	QPSK	1	99	10 mm	front	1:1	0.734	1.045	0.767	
1900.00	19100	High	LTE Band 2 (PCS)	20	Standard	23.8	23.62	0.03	0	1416	QPSK	1	50	10 mm	front	1:1	0.785	1.042	0.818	A44
1900.00	19100	High	LTE Band 2 (PCS)	20	L-Battery	23.8	23.62	0.05	0	1416	QPSK	1	50	10 mm	front	1:1	0.782	1.042	0.815	
1900.00	19100	High	LTE Band 2 (PCS)	20	Standard	22.8	22.69	0.03	1	1416	QPSK	50	0	10 mm	front	1:1	0.622	1.026	0.638	
1900.00	19100	High	LTE Band 2 (PCS)	20	Standard	22.8	22.66	-0.07	1	1416	QPSK	100	0	10 mm	front	1:1	0.656	1.033	0.678	
1900.00	19100	High	LTE Band 2 (PCS)	20	Standard	23.8	23.62	-0.03	0	1416	QPSK	1	50	10 mm	bottom	1:1	0.406	1.042	0.423	
1900.00	19100	High	LTE Band 2 (PCS)	20	Standard	22.8	22.69	0.01	1	1416	QPSK	50	0	10 mm	bottom	1:1	0.312	1.026	0.320	
1900.00	19100	High	LTE Band 2 (PCS)	20	Standard	23.8	23.62	-0.08	0	1416	QPSK	1	50	10 mm	right	1:1	0.261	1.042	0.272	
1900.00	19100	High	LTE Band 2 (PCS)	20	Standard	22.8	22.69	-0.09	1	1416	QPSK	50	0	10 mm	right	1:1	0.216	1.026	0.222	
1900.00	19100	High	LTE Band 2 (PCS)	20	Standard	23.8	23.62	-0.12	0	1416	QPSK	1	50	10 mm	left	1:1	0.158	1.042	0.165	
1900.00	19100	High	LTE Band 2 (PCS)	20	Standard	22.8	22.69	0.13	1	1416	QPSK	50	0	10 mm	left	1:1	0.124	1.026	0.127	
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
2.4 GHz WLAN Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Battery Type	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	15.9	14.23	0.08	10 mm	Standard	1432	1	back	99.8	0.046	-	1.469	1.002	-	
2412	1	802.11b	DSSS	22	15.9	14.23	0.07	10 mm	Standard	1432	1	front	99.8	0.038	-	1.469	1.002	-	
2412	1	802.11b	DSSS	22	15.9	14.23	0.01	10 mm	Standard	1432	1	top	99.8	0.017	-	1.469	1.002	-	
2412	1	802.11b	DSSS	22	15.9	14.23	0.15	10 mm	Standard	1432	1	left	99.8	0.128	0.100	1.469	1.002	0.147	A47
2412	1	802.11b	DSSS	22	15.9	14.23	0.09	10 mm	L-Battery	1432	1	left	99.8	0.035	0.027	1.469	1.002	0.040	
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 11-27
DSS Hotspot SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Battery Type	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.												(W/kg)		(W/kg)	
2441	39	Bluetooth	FHSS	13.9	11.94	0.09	10 mm	Standard	1481	1	back	1:1	0.005	1.570	0.008	
2441	39	Bluetooth	FHSS	13.9	11.94	0.18	10 mm	Standard	1481	1	front	1:1	0.009	1.570	0.014	
2441	39	Bluetooth	FHSS	13.9	11.94	0.18	10 mm	Standard	1481	1	top	1:1	0.003	1.570	0.005	
2441	39	Bluetooth	FHSS	13.9	11.94	0.07	10 mm	Standard	1481	1	left	1:1	0.030	1.570	**0.046**	A53
2441	39	Bluetooth	FHSS	13.9	11.94	0.01	10 mm	L-Battery	1481	1	left	1:1	0.025	1.570	0.039	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**								**Body** **1.6 W/kg (mW/g)** averaged over 1 gram								

11.4 Standalone Phablet/Extremity SAR Data

Table 11-28
GPRS/UMTS/CDMA Extremity SAR Data

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Accessory Type	Device Serial Number	# of GPRS Slots	Duty Cycle	Side	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.												(W/kg)		(W/kg)	
836.60	190	GSM 850	GPRS	27.8	26.79	0.01	0 mm	Hand Strap	1408	4	1:2.076	back	0.324	1.262	0.409	A17
1880.00	661	GSM 1900	GPRS	25.3	24.40	0.01	0 mm	Hand Strap	1408	4	1:2.076	back	0.147	1.230	0.181	A20
836.52	384	Cell. CDMA	EVDO Rev. 0	24.7	23.75	0.02	0 mm	Hand Strap	1416	N/A	1:1	back	0.322	1.245	0.401	A23
1880.00	600	PCS CDMA	EVDO Rev. 0	24.8	24.06	-0.13	0 mm	Hand Strap	1408	N/A	1:1	back	0.241	1.186	0.286	A26
836.60	4183	UMTS 850	RMC	24.0	23.29	0.02	0 mm	Hand Strap	1408	N/A	1:1	back	0.234	1.178	0.276	A28
1907.60	9538	UMTS 1900	RMC	24.1	23.87	-0.09	0 mm	Hand Strap	1408	N/A	1:1	back	0.225	1.054	0.237	A31
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**								**Extremity** **4.0 W/kg (mW/g)** averaged over 10 grams								

Table 11-29
LTE Extremity SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Accessory Type	Device 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)	
707.50	23095	Mid	LTE Band 12	10	23.7	23.39	-0.03	0	Hand Strap	1416	QPSK	1	49	0 mm	back	1:1	0.315	1.074	0.338	A33
707.50	23095	Mid	LTE Band 12	10	22.7	22.40	-0.02	1	Hand Strap	1416	QPSK	25	25	0 mm	back	1:1	0.244	1.072	0.262	
782.00	23230	Mid	LTE Band 13	10	23.5	23.48	-0.02	0	Hand Strap	1416	QPSK	1	25	0 mm	back	1:1	0.435	1.005	**0.437**	A36
782.00	23230	Mid	LTE Band 13	10	22.5	22.50	0.05	1	Hand Strap	1416	QPSK	25	0	0 mm	back	1:1	0.351	1.000	0.351	
836.50	20525	Mid	LTE Band 5 (Cell)	10	23.8	23.20	0.03	0	Hand Strap	1408	QPSK	1	49	0 mm	back	1:1	0.289	1.148	0.332	A39
836.50	20525	Mid	LTE Band 5 (Cell)	10	22.8	22.15	-0.01	1	Hand Strap	1408	QPSK	25	0	0 mm	back	1:1	0.215	1.161	0.250	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.8	23.70	0.00	0	Hand Strap	1408	QPSK	1	0	0 mm	back	1:1	0.328	1.023	0.336	A42
1732.50	20175	Mid	LTE Band 4 (AWS)	20	22.8	22.79	-0.07	1	Hand Strap	1408	QPSK	50	50	0 mm	back	1:1	0.247	1.002	0.247	
1900.00	19100	High	LTE Band 2 (PCS)	20	23.8	23.62	0.02	0	Hand Strap	1416	QPSK	1	50	0 mm	back	1:1	0.170	1.042	0.177	A45
1900.00	19100	High	LTE Band 2 (PCS)	20	22.8	22.69	0.00	1	Hand Strap	1416	QPSK	50	0	0 mm	back	1:1	0.130	1.026	0.133	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**									**Extremity** **4.0 W/kg (mW/g)** averaged over 10 grams											

Table 11-30
2.4 GHz WLAN Extremity SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Accessory Type	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)	
2412	1	802.11b	DSSS	22	15.9	14.23	-0.12	0 mm	Hand Strap	1432	1	back	99.8	0.067	0.034	1.469	1.002	**0.050**	A48
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population														Extremity 4.0 W/kg (mW/g) averaged over 10 grams					

Table 11-31
5 GHz WLAN Phablet/Extremity SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Battery Type	Accessory Type	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)	
5280	56	802.11a	OFDM	20	17.4	15.67	0.06	0 mm	Standard	None	2206	6	back	97.2	1.199	-	1.489	1.029	-	
5280	56	802.11a	OFDM	20	17.4	15.67	0.11	0 mm	Standard	None	2206	6	back tilt	97.2	1.320	-	1.489	1.029	-	
5280	56	802.11a	OFDM	20	17.4	15.67	0.15	0 mm	Standard	Hand Strap	2206	6	back	97.2	0.688	0.142	1.489	1.029	0.217	
5280	56	802.11a	OFDM	20	17.4	15.67	-0.05	0 mm	Standard	None	2206	6	front	97.2	0.286	-	1.489	1.029	-	
5280	56	802.11a	OFDM	20	17.4	15.67	0.16	0 mm	Standard	None	2206	6	top	97.2	0.313	-	1.489	1.029	-	
5280	56	802.11a	OFDM	20	17.4	15.67	-0.08	0 mm	Standard	None	2206	6	top tilt	97.2	0.439	-	1.489	1.029	-	
5280	56	802.11a	OFDM	20	17.4	15.67	0.11	0 mm	Standard	None	2206	6	left	97.2	2.599	0.263	1.489	1.029	0.403	
5600	120	802.11a	OFDM	20	17.4	15.61	0.16	0 mm	Standard	None	2206	6	back	97.2	1.370	-	1.510	1.029	-	
5600	120	802.11a	OFDM	20	17.4	15.61	0.17	0 mm	Standard	None	2206	6	back tilt	97.2	1.750	-	1.510	1.029	-	
5600	120	802.11a	OFDM	20	17.4	15.61	0.13	0 mm	Standard	Hand Strap	2206	6	back	97.2	0.822	0.170	1.510	1.029	0.264	
5600	120	802.11a	OFDM	20	17.4	15.61	0.12	0 mm	Standard	None	2206	6	front	97.2	0.408	-	1.510	1.029	-	
5600	120	802.11a	OFDM	20	17.4	15.61	0.01	0 mm	Standard	None	2206	6	top	97.2	0.495	-	1.510	1.029	-	
5600	120	802.11a	OFDM	20	17.4	15.61	-0.02	0 mm	Standard	None	2206	6	top tilt	97.2	0.651	-	1.510	1.029	-	
5520	104	802.11a	OFDM	20	17.4	15.55	0.10	0 mm	Standard	None	2206	6	left	97.2	5.341	0.412	1.531	1.029	0.649	
5600	120	802.11a	OFDM	20	17.4	15.61	-0.20	0 mm	Standard	None	2206	6	left	97.2	4.268	0.418	1.510	1.029	0.649	
5600	120	802.11a	OFDM	20	17.4	15.61	0.07	0 mm	L-Battery	None	2206	6	left	97.2	4.058	0.435	1.510	1.029	**0.676**	A50
5680	136	802.11a	OFDM	20	17.4	15.50	-0.16	0 mm	Standard	None	2206	6	left	97.2	4.379	0.381	1.549	1.029	0.607	
5745	149	802.11a	OFDM	20	17.4	15.63	0.02	0 mm	Standard	None	2206	6	back	97.2	1.516	-	1.503	1.029	-	
5745	149	802.11a	OFDM	20	17.4	15.63	-0.02	0 mm	Standard	None	2206	6	back tilt	97.2	1.804	-	1.503	1.029	-	
5745	149	802.11a	OFDM	20	17.4	15.63	0.19	0 mm	Standard	Hand Strap	2206	6	back	97.2	0.900	0.181	1.503	1.029	**0.280**	A51
5745	149	802.11a	OFDM	20	17.4	15.63	0.15	0 mm	Standard	None	2206	6	front	97.2	0.246	-	1.503	1.029	-	
5745	149	802.11a	OFDM	20	17.4	15.63	0.14	0 mm	Standard	None	2206	6	top tilt	97.2	0.435	-	1.503	1.029	-	
5745	149	802.11a	OFDM	20	17.4	15.63	0.13	0 mm	Standard	None	2206	6	top	97.2	0.391	-	1.503	1.029	-	
5745	149	802.11a	OFDM	20	17.4	15.63	-0.10	0 mm	Standard	None	2206	6	left	97.2	4.961	0.411	1.503	1.029	0.636	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population															Phablet/Extremity 4.0 W/kg (mW/g) averaged over 10 grams					

Table 11-32
DSS Extremity SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Accessory Type	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.												(W/kg)		(W/kg)	
2441	39	Bluetooth	FHSS	13.9	11.94	0.05	0 mm	Hand Strap	1481	1	back	1:1	0.008	1.570	**0.013**	A54
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Extremity 4.0 W/kg (mW/g) averaged over 10 grams			

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. The test data reported are the worst-case SAR values according to test procedures specified in 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. 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.
7. 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. Repeated SAR measurements are highlighted in the tables above for clarity. Please see Section 13 for variability analysis.
8. 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 6.6 for more details).
9. 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.
10. Device was tested using a fixed spacing for body-worn accessory testing. A separation distance of 10 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. A body-worn distance of 0 mm was used for testing with the belt holster accessory.
11. Per FCC KDB Publication 447498 D01v06, the metallic body-worn accessories (body-holster and hand strap) were tested in conjunction with the host device to demonstrate compliance. The belt holster was evaluated as a body-worn accessory with front and back side evaluated for 1 g body-worn SAR with the belt holster for each wireless technology and frequency band at 0 mm from the phantom. The hand strap accessory was evaluated for compliance by measuring back side 10 g extremity SAR at 0 mm for each wireless technology and frequency band.
12. Per FCC KDB Publication 648474 D04v01r03, SAR was measured using the standard battery and then repeated with the L-battery for the configuration with the highest reported SAR for each wireless technology, frequency band, operating mode, and exposure condition. L-battery in conjunction with hand strap is not applicable for the device. Since reported SAR did not exceed 1.2 W/kg, additional testing with the L-Battery was not required.

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 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.
4. GPRS was additionally evaluated for head and body-worn exposure condition to address possible VoIP scenarios

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 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.

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 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 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).

WLAN Notes:

1. For held-to-ear and hotspot 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, 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) 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. See Section 8.7.6 for more information.
4. 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 or all test channels were measured.
5. 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.
6. For U-NII-2C, channel 104 and 136 were additionally considered for SAR testing since channels 100 and 140 have lower maximum allowed output power.
7. Additional channels were tested for the configuration with the highest reported SAR for each 1 g and 10 g per Manufacturer's request.

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 1-g 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 1-g or 10-g SAR.

Main antenna SAR testing was not required for phablet exposure conditions per FCC KDB 648474 D04v01r03. Therefore, no further analysis was required to determine that possible simultaneous scenarios would not exceed the SAR limit.

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 SAR (W/kg)	Σ SAR (W/kg)
Head SAR	GSM/GPRS 850	0.544	0.132	0.676
	GSM/GPRS 1900	0.262	0.132	0.394
	Cell. CDMA/EVDO	0.574	0.132	0.706
	PCS CDMA/EVDO	0.570	0.132	0.702
	UMTS 850	0.380	0.132	0.512
	UMTS 1900	0.441	0.132	0.573
	LTE Band 12	0.224	0.132	0.356
	LTE Band 13	0.436	0.132	0.568
	LTE Band 5 (Cell)	0.457	0.132	0.589
	LTE Band 4 (AWS)	0.726	0.132	**0.858**
	LTE Band 2 (PCS)	0.410	0.132	0.542

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 SAR (W/kg)	Σ SAR (W/kg)
Head SAR	GSM 850	0.515	0.280	0.795
	GSM 1900	0.207	0.280	0.487
	Cell. CDMA	0.574	0.280	0.854
	PCS CDMA	0.550	0.280	0.830
	UMTS 850	0.380	0.280	0.660
	UMTS 1900	0.441	0.280	0.721
	LTE Band 12	0.224	0.280	0.504
	LTE Band 13	0.436	0.280	0.716
	LTE Band 5 (Cell)	0.457	0.280	0.737
	LTE Band 4 (AWS)	0.726	0.280	**1.006**
	LTE Band 2 (PCS)	0.410	0.280	0.690

Table 12-3
Simultaneous Transmission Scenario with Bluetooth (Held to Ear)

Exposure Condition	Mode	3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
Head SAR	GPRS 850	0.544	0.048	0.592
	GPRS 1900	0.262	0.048	0.310
	Cell. EVDO	0.535	0.048	0.583
	PCS EVDO	0.570	0.048	0.618
	UMTS 850	0.380	0.048	0.428
	UMTS 1900	0.441	0.048	0.489
	LTE Band 12	0.224	0.048	0.272
	LTE Band 13	0.436	0.048	0.484
	LTE Band 5 (Cell)	0.457	0.048	0.505
	LTE Band 4 (AWS)	0.726	0.048	**0.774**
	LTE Band 2 (PCS)	0.410	0.048	0.458

12.4 Body-Worn Simultaneous Transmission Analysis

Table 12-4
Simultaneous Transmission Scenario with 2.4 GHz WLAN (Body-Worn at 1.0 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body-Worn	GSM/GPRS 850	0.433	0.059	0.492
	GSM/GPRS 1900	0.282	0.059	0.341
	Cell. CDMA	0.414	0.059	0.473
	PCS CDMA	0.446	0.059	0.505
	UMTS 850	0.300	0.059	0.359
	UMTS 1900	0.408	0.059	0.467
	LTE Band 12	0.398	0.059	0.457
	LTE Band 13	0.449	0.059	0.508
	LTE Band 5 (Cell)	0.319	0.059	0.378
	LTE Band 4 (AWS)	0.512	0.059	**0.571**
	LTE Band 2 (PCS)	0.438	0.059	0.497

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body-Worn	GSM 850	0.433	0.452	0.885
	GSM 1900	0.244	0.452	0.696
	Cell. CDMA	0.414	0.452	0.866
	PCS CDMA	0.446	0.452	0.898
	UMTS 850	0.300	0.452	0.752
	UMTS 1900	0.408	0.452	0.860
	LTE Band 12	0.398	0.452	0.850
	LTE Band 13	0.449	0.452	0.901
	LTE Band 5 (Cell)	0.319	0.452	0.771
	LTE Band 4 (AWS)	0.512	0.452	**0.964**
	LTE Band 2 (PCS)	0.438	0.452	0.890

Table 12-6
Simultaneous Transmission Scenario with Bluetooth (Body-Worn at 1.0 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
Body-Worn	GSM/GPRS 850	0.433	0.008	0.441
	GSM/GPRS 1900	0.282	0.008	0.290
	Cell. CDMA	0.414	0.008	0.422
	PCS CDMA	0.446	0.008	**0.454**
	UMTS 850	0.300	0.008	0.308
	UMTS 1900	0.408	0.008	0.416
	LTE Band 12	0.398	0.008	0.406
	LTE Band 13	0.449	0.008	0.457
	LTE Band 5 (Cell)	0.319	0.008	0.327
	LTE Band 4 (AWS)	0.512	0.008	0.520
	LTE Band 2 (PCS)	0.438	0.008	0.446

Table 12-7
Simultaneous Transmission Scenario with 2.4 GHz WLAN (Body Holster Accessory at 0.0 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body-Worn	GSM/GPRS 850	0.430	0.054	0.484
	GSM/GPRS 1900	0.186	0.054	0.240
	Cell. CDMA	0.312	0.054	0.366
	PCS CDMA	0.533	0.054	**0.587**
	UMTS 850	0.201	0.054	0.255
	UMTS 1900	0.343	0.054	0.397
	LTE Band 12	0.297	0.054	0.351
	LTE Band 13	0.440	0.054	0.494
	LTE Band 5 (Cell)	0.326	0.054	0.380
	LTE Band 4 (AWS)	0.163	0.054	0.217
	LTE Band 2 (PCS)	0.417	0.054	0.471

Table 12-8
Simultaneous Transmission Scenario with 5 GHz WLAN (Body Holster Accessory at 0.0 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body-Worn	GSM 850	0.403	0.387	0.790
	GSM 1900	0.162	0.387	0.549
	Cell. CDMA	0.312	0.387	0.699
	PCS CDMA	0.533	0.387	**0.920**
	UMTS 850	0.201	0.387	0.588
	UMTS 1900	0.343	0.387	0.730
	LTE Band 12	0.297	0.387	0.684
	LTE Band 13	0.440	0.387	0.827
	LTE Band 5 (Cell)	0.326	0.387	0.713
	LTE Band 4 (AWS)	0.163	0.387	0.550
	LTE Band 2 (PCS)	0.417	0.387	0.804

Table 12-9
Simultaneous Transmission Scenario with Bluetooth (Body Holster Accessory at 0.0 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
Body-Worn	GSM/GPRS 850	0.430	0.019	0.449
	GSM/GPRS 1900	0.186	0.019	0.205
	Cell. CDMA	0.312	0.019	0.331
	PCS CDMA	0.533	0.019	**0.552**
	UMTS 850	0.201	0.019	0.220
	UMTS 1900	0.343	0.019	0.362
	LTE Band 12	0.297	0.019	0.316
	LTE Band 13	0.440	0.019	0.459
	LTE Band 5 (Cell)	0.326	0.019	0.345
	LTE Band 4 (AWS)	0.163	0.019	0.182
	LTE Band 2 (PCS)	0.417	0.019	0.436

12.5 Hotspot SAR Simultaneous Transmission Analysis

Table 12-10
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 SAR (W/kg)	Σ SAR (W/kg)
Hotspot SAR	GPRS 850	0.674	0.147	0.821
	GPRS 1900	0.747	0.147	0.894
	Cell. EVDO	0.518	0.147	0.665
	PCS EVDO	1.092	0.147	**1.239**
	UMTS 850	0.300	0.147	0.447
	UMTS 1900	0.762	0.147	0.909
	LTE Band 12	0.398	0.147	0.545
	LTE Band 13	0.560	0.147	0.707
	LTE Band 5 (Cell)	0.401	0.147	0.548
	LTE Band 4 (AWS)	0.945	0.147	1.092
	LTE Band 2 (PCS)	0.818	0.147	0.965

Table 12-11
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)
Hotspot SAR	GPRS 850	0.674	0.046	0.720
	GPRS 1900	0.747	0.046	0.793
	Cell. EVDO	0.518	0.046	0.564
	PCS EVDO	1.092	0.046	**1.138**
	UMTS 850	0.300	0.046	0.346
	UMTS 1900	0.762	0.046	0.808
	LTE Band 12	0.398	0.046	0.444
	LTE Band 13	0.560	0.046	0.606
	LTE Band 5 (Cell)	0.401	0.046	0.447
	LTE Band 4 (AWS)	0.945	0.046	0.991
	LTE Band 2 (PCS)	0.818	0.046	0.864

12.6 Extremity SAR Simultaneous Transmission Analysis

Table 12-12
Simultaneous Transmission Scenario with 2.4 GHz WLAN (Hand Strap Accessory at 0.0 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Extremity SAR	GSM 850	0.409	0.050	0.459
	GSM 1900	0.181	0.050	0.231
	Cell. CDMA	0.401	0.050	0.451
	PCS CDMA	0.286	0.050	0.336
	UMTS 850	0.276	0.050	0.326
	UMTS 1900	0.237	0.050	0.287
	LTE Band 12	0.338	0.050	0.388
	LTE Band 13	0.437	0.050	**0.487**
	LTE Band 5 (Cell)	0.332	0.050	0.382
	LTE Band 4 (AWS)	0.336	0.050	0.386
	LTE Band 2 (PCS)	0.177	0.050	0.227

Table 12-13
Simultaneous Transmission Scenario with 5 GHz WLAN (Hand Strap Accessory at 0.0 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Extremity SAR	GSM 850	0.409	0.280	0.689
	GSM 1900	0.181	0.280	0.461
	Cell. CDMA	0.401	0.280	0.681
	PCS CDMA	0.286	0.280	0.566
	UMTS 850	0.276	0.280	0.556
	UMTS 1900	0.237	0.280	0.517
	LTE Band 12	0.338	0.280	0.618
	LTE Band 13	0.437	0.280	**0.717**
	LTE Band 5 (Cell)	0.332	0.280	0.612
	LTE Band 4 (AWS)	0.336	0.280	0.616
	LTE Band 2 (PCS)	0.177	0.280	0.457

Table 12-14
Simultaneous Transmission Scenario with Bluetooth (Hand Strap Accessory at 0.0 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
Extremity SAR	GSM 850	0.409	0.013	0.422
	GSM 1900	0.181	0.013	0.194
	Cell. CDMA	0.401	0.013	0.414
	PCS CDMA	0.286	0.013	0.299
	UMTS 850	0.276	0.013	0.289
	UMTS 1900	0.237	0.013	0.250
	LTE Band 12	0.338	0.013	0.351
	LTE Band 13	0.437	0.013	**0.450**
	LTE Band 5 (Cell)	0.332	0.013	0.345
	LTE Band 4 (AWS)	0.336	0.013	0.349
	LTE Band 2 (PCS)	0.177	0.013	0.190

12.7 Simultaneous Transmission Conclusion

The above numerical summed SAR results for all the worst-case simultaneous transmission conditions were below the SAR limit. Therefore, the above analysis is 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.

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 preformed 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 1-g 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

Table 13-1
Body SAR Measurement Variability Results

BODY VARIABILITY RESULTS														
Band	FREQUENCY		Mode	Service	Battery Type	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)	
1900	1908.75	1175	PCS CDMA	EVDO Rev. 0	Standard	front	10 mm	0.978	0.975	1.00	N/A	N/A	N/A	N/A
1750	1732.50	20175	LTE Band 4 (AWS), 20 MHz Bandwidth	QPSK, 1 RB, 0 RB Offset	L-Battery	front	10 mm	0.924	0.850	1.09	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						

13.2 Measurement Uncertainty

The measured SAR was <1.5 W/kg for all frequency bands. Therefore, per KDB Publication 865664 D01v01r04, the extended measurement uncertainty analysis per IEEE 1528-2013 was not required.

14 EQUIPMENT LIST

Applicable for 12/21/2015 – 12/28/2015

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Agilent	E8257D	(250kHz-20GHz) Signal Generator	3/15/2015	Annual	3/15/2016	MY45470194
Agilent	E4438C	ESG Vector Signal Generator	3/12/2015	Annual	3/12/2016	MY45090700
Agilent	N9020A	MXA Signal Analyzer	11/5/2015	Annual	11/5/2016	US46470561
Agilent	N5182A	MXG Vector Signal Generator	3/16/2015	Annual	3/16/2016	MY47420800
Agilent	8753ES	Network Analyzer	3/20/2015	Annual	3/20/2016	MY40001472
Agilent	N4010A	Wireless Connectivity Test Set	N/A	N/A	N/A	GB44450273
Amplifier Research	15S1G6	Amplifier	N/A	CBT	N/A	433977
Amplifier Research	15S1G6	Amplifier	N/A	CBT	N/A	433978
Anritsu	ML2495A	Power Meter	10/16/2015	Biennial	10/15/2017	941001
Anritsu	MA2481A	Power Sensor	3/11/2015	Annual	3/11/2016	5318
Anritsu	MA2411B	Pulse Power Sensor	8/3/2015	Annual	8/3/2016	1126066
Anritsu	MA2411B	Pulse Power Sensor	3/13/2015	Annual	3/13/2016	1207470
Anritsu	MT8820C	Radio Communication Analyzer	11/12/2015	Annual	11/12/2016	6201144418
Anritsu	MT8820C	Radio Communication Analyzer	12/4/2015	Annual	12/4/2016	6201300731
Anritsu	MA24106A	USB Power Sensor	3/11/2015	Annual	3/11/2016	1349509
Anritsu	MA24106A	USB Power Sensor	3/11/2015	Annual	3/11/2016	1349514
COMTech	AR85729-5	Solid State Amplifier	N/A	CBT	N/A	M1S5A00-009
COMTECH	AR85729-5/5759B	Solid State Amplifier	N/A	CBT	N/A	M3W1A00-1002
Control Company	4040	Digital Thermometer	3/18/2015	Biennial	3/18/2017	150194895
Control Company	4040	Digital Thermometer	3/18/2015	Biennial	3/18/2017	150194896
Control Company	4353	Long Stem Thermometer	3/5/2015	Biennial	3/5/2017	150149534
Control Company	4353	Long Stem Thermometer	3/5/2015	Biennial	3/5/2017	150149565
Keysight	772D	Dual Directional Coupler	N/A	CBT	N/A	MY52180215
MCL	BW-N6W5+	6dB Attenuator	N/A	CBT	N/A	1139
MiniCircuits	VLF-6000+	Low Pass Filter	N/A	CBT	N/A	N/A
MiniCircuits	SLP-2400+	Low Pass Filter	N/A	CBT	N/A	R8979500903
Mini-Circuits	BW-N20W5+	DC to 18 GHz Precision Fixed 20 dB Attenuator	N/A	CBT	N/A	N/A
Mini-Circuits	BW-N20W5	Power Attenuator	N/A	CBT	N/A	1226
Mitutoyo	CD-6"CSX	Digital Caliper	5/8/2014	Biennial	5/8/2016	13264165
Narda	4014C-6	4 - 8 GHz SMA 6 dB Directional Coupler	N/A	CBT	N/A	N/A
Narda	BW-S3W2	Attenuator (3dB)	N/A	CBT	N/A	120
Narda	4772-3	Attenuator (3dB)	N/A	CBT	N/A	9406
Pasternack	PE2208-6	Bidirectional Coupler	N/A	CBT	N/A	N/A
Pasternack	PE2209-10	Bidirectional Coupler	N/A	CBT	N/A	N/A
Pasternack	NC-100	Torque Wrench	5/21/2015	Biennial	5/21/2017	N/A
Seekonk	NC-100	Torque Wrench	3/18/2014	Biennial	3/18/2016	22313
Seekonk	NC-100	Torque Wrench	3/18/2014	Biennial	3/18/2016	N/A
SPEAG	D5GHzV2	5 GHz SAR Dipole	9/16/2015	Annual	9/16/2016	1191
SPEAG	D5GHzV2	5 GHz SAR Dipole	1/21/2015	Annual	1/21/2016	1057
SPEAG	DAE4	Dasy Data Acquisition Electronics	8/24/2015	Annual	8/24/2016	1322
SPEAG	DAE4	Dasy Data Acquisition Electronics	4/20/2015	Annual	4/20/2016	1407
SPEAG	DAK-3.5	Dielectric Assessment Kit	5/12/2015	Annual	5/12/2016	1070
SPEAG	DAK-3.5	Dielectric Assessment Kit	10/20/2015	Annual	10/20/2016	1091
SPEAG	EX3DV4	SAR Probe	7/21/2015	Annual	7/21/2016	7308
SPEAG	EX3DV4	SAR Probe	4/23/2015	Annual	4/23/2016	7357

Applicable for 03/28/2016 – 04/27/2016

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	E8257D	(250kHz-20GHz) Signal Generator	3/2/2016	Annual	3/2/2017	MY45470194
SPEAG	D750V3	750 MHz Dipole	3/16/2016	Annual	3/16/2017	1054
SPEAG	D750V3	750 MHz SAR Dipole	1/15/2016	Annual	1/15/2017	1003
SPEAG	D835V2	835 MHz SAR Dipole	1/20/2016	Annual	1/20/2017	4d132
SPEAG	D835V2	835 MHz SAR Dipole	7/23/2015	Annual	7/23/2016	4d133
SPEAG	D1750V2	1750 MHz SAR Dipole	4/15/2015	Annual	4/15/2016	1051
SPEAG	D1900V2	1900 MHz SAR Dipole	4/14/2015	Annual	4/14/2016	5d141
SPEAG	D1900V2	1900 MHz SAR Dipole	7/14/2015	Annual	7/14/2016	5d149
SPEAG	D2450V2	2450 MHz SAR Dipole	8/20/2015	Annual	8/20/2016	719
SPEAG	D2450V2	2450 MHz SAR Dipole	2/18/2016	Annual	2/18/2017	882
SPEAG	ES3DV2	SAR Probe	8/26/2015	Annual	8/26/2016	3022
SPEAG	ES3DV3	SAR Probe	5/20/2015	Annual	5/20/2016	3263
SPEAG	ES3DV3	SAR Probe	2/19/2016	Annual	2/19/2017	3318
SPEAG	ES3DV3	SAR Probe	9/18/2015	Annual	9/18/2016	3288
SPEAG	ES3DV3	SAR Probe	9/18/2015	Annual	9/18/2016	3332
SPEAG	ES3DV3	SAR Probe	10/29/2015	Annual	10/29/2016	3333
SPEAG	ES3DV3	SAR Probe	11/17/2015	Annual	11/17/2016	3334
SPEAG	ES3DV3	SAR Probe	6/22/2015	Annual	6/22/2016	3351
SPEAG	ES3DV3	SAR Probe	3/18/2016	Annual	3/18/2017	3319
SPEAG	DAE4	Dasy Data Acquisition Electronics	6/17/2015	Annual	6/17/2016	859
SPEAG	DAE4	Dasy Data Acquisition Electronics	9/16/2015	Annual	9/16/2016	1323
SPEAG	DAE4	Dasy Data Acquisition Electronics	10/27/2015	Annual	10/27/2016	1333
SPEAG	DAE4	Dasy Data Acquisition Electronics	8/24/2015	Annual	8/24/2016	1322
SPEAG	DAE4	Dasy Data Acquisition Electronics	9/18/2015	Annual	9/18/2016	1364
SPEAG	DAE4	Dasy Data Acquisition Electronics	11/11/2015	Annual	11/11/2016	1415
SPEAG	DAE4	Dasy Data Acquisition Electronics	1/15/2016	Annual	1/15/2017	1466
SPEAG	DAE4	Dasy Data Acquisition Electronics	2/19/2016	Annual	2/19/2017	665
SPEAG	DAE4	Dasy Data Acquisition Electronics	3/14/2016	Annual	3/14/2017	1368
Rohde & Schwarz	CMU200	Base Station Simulator	12/2/2015	Annual	12/2/2016	833855/0010
Rohde & Schwarz	CMU200	Base Station Simulator	6/3/2015	Annual	6/3/2016	109892
SPEAG	DAK-3.5	Dielectric Assessment Kit	5/12/2015	Annual	5/12/2016	1070
SPEAG	DAK-3.5	Dielectric Assessment Kit	10/20/2015	Annual	10/20/2016	1091
Mitutoyo	CD-6"CSX	Digital Caliper	5/8/2014	Biennial	5/8/2016	13264162
Mitutoyo	CD-6"CSX	Digital Caliper	5/8/2014	Biennial	5/8/2016	13264165
Control Company	4040	Digital Thermometer	3/15/2015	Biennial	3/15/2017	150194929
Control Company	4040	Digital Thermometer	3/18/2015	Biennial	3/18/2017	150194987
Agilent	E4438C	ESG Vector Signal Generator	3/13/2015	Biennial	3/13/2017	MY42082385
Agilent	E4438C	ESG Vector Signal Generator	3/12/2015	Biennial	3/12/2017	MY45090700
Control Company	4353	Long Stem Thermometer	1/22/2015	Biennial	1/22/2017	150053081
Control Company	4353	Long Stem Thermometer	1/22/2015	Biennial	1/22/2017	150053059
Agilent	N9020A	MXA Signal Analyzer	11/5/2015	Annual	11/5/2016	US46470561
Agilent	N5182A	MXG Vector Signal Generator	11/6/2015	Annual	11/6/2016	MY47420603
Anritsu	ML2495A	Power Meter	10/16/2015	Biennial	10/16/2017	941001
Anritsu	ML2495A	Power Meter	10/16/2015	Biennial	10/16/2017	1039008
Anritsu	MA2411B	Pulse Power Sensor	12/7/2015	Annual	12/7/2016	1207364
Anritsu	MA2411B	Pulse Power Sensor	8/3/2015	Annual	8/3/2016	1126066
Anritsu	MT8820C	Radio Communication Analyzer	7/24/2015	Annual	7/24/2016	6200901190
Anritsu	MT8820C	Radio Communication Analyzer	6/12/2015	Annual	6/12/2016	6201240328
Rohde & Schwarz	CMW500	Radio Communication Tester	10/13/2015	Annual	10/13/2016	100976
Rohde & Schwarz	CMW500	Radio Communication Tester	5/15/2015	Annual	5/15/2016	112347
Agilent	8753ES	S-Parameter Network Analyzer	11/4/2015	Annual	11/4/2016	US39170118
Seekonk	NC-100	Torque Wrench	11/6/2015	Biennial	11/6/2017	N/A
Seekonk	NC-100	Torque Wrench	11/6/2015	Biennial	11/6/2017	22313
Gigatronics	8651A	Universal Power Meter	11/4/2015	Annual	11/4/2016	8650319
Anritsu	MA24106A	USB Power Sensor	5/29/2015	Annual	5/29/2016	1231538
Anritsu	MA24106A	USB Power Sensor	5/29/2015	Annual	5/29/2016	1231535
Agilent	E5515C	Wireless Communications Test Set	6/18/2015	Biennial	6/18/2017	GB41450275
Agilent	E5515C	Wireless Communications Test Set	5/16/2015	Biennial	5/16/2017	GB43304447
Agilent	N4010A	Wireless Connectivity Test Set	N/A	N/A	N/A	GB44450273
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433971
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433972
COMTECH	AR85729-5/5759B	Solid State Amplifier	CBT	N/A	CBT	M3W1A00-1002
COMTech	AR85729-5	Solid State Amplifier	CBT	N/A	CBT	M1S5A00-009
Narda	4772-3	Attenuator (3dB)	CBT	N/A	CBT	9406
Narda	BW-S3W2	Attenuator (3dB)	CBT	N/A	CBT	120
MCL	BW-N6W5+	6dB Attenuator	CBT	N/A	CBT	1139
Mini-Circuits	BW-N20W5+	DC to 18 GHz Precision Fixed 20 dB Attenuator	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
Narda	4014C-6	4 - 8 GHz SMA 6 dB Directional Coupler	CBT	N/A	CBT	N/A
Keysight	772D	Dual Directional Coupler	CBT	N/A	CBT	MY52180215
Intelligent Weigh	PD-3000	Electronic Balance	CBT	N/A	CBT	11081534
MiniCircuits	SLP-2400+	Low Pass Filter	CBT	N/A	CBT	R8979500903
MiniCircuits	VLF-6000+	Low Pass Filter	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	NLP-2950+	Low Pass Filter DC to 2700 MHz	CBT	N/A	CBT	N/A

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.

15 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	

16 CONCLUSION

16.1 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]

17 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.

[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, Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices - Human models, instrumentation, and procedures - Part 1: Procedure to determine the specific absorption rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz), Feb. 2005.

[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.

APPENDIX A: SAR TEST DATA

PCTEST ENGINEERING LABORATORY, INC.

DUT: ACJFZN1B; Type: Portable Handset; Serial: 1416

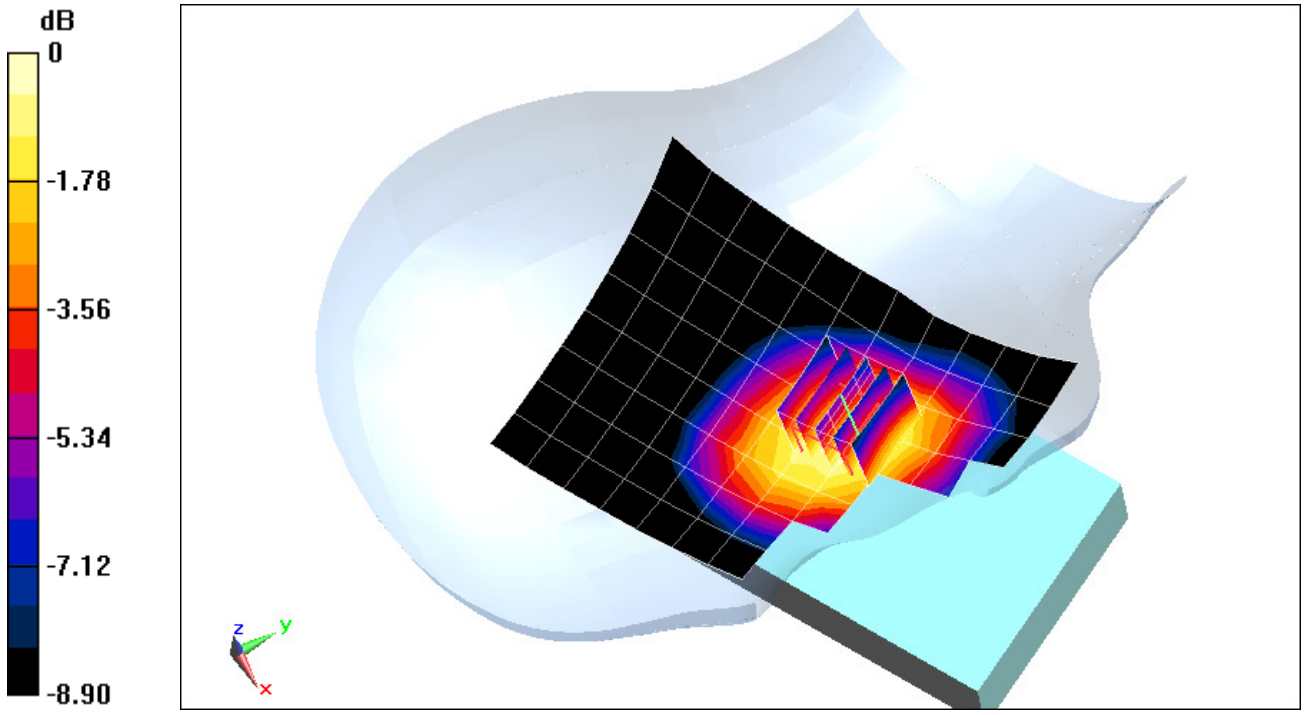
Communication System: UID 0, GSM GPRS; 4 Tx slots; Frequency: 836.6 MHz; Duty Cycle: 1:2.076
Medium: 835 Head Medium parameters used (interpolated):
$f = 836.6$ MHz; $\sigma = 0.911$ S/m; $\varepsilon_r = 40.585$; $\rho = 1000$ kg/m^3
Phantom section: Right Section

Test Date: 03-30-2016; Ambient Temp: 23.1°C; Tissue Temp: 22.1°C

Probe: ES3DV3 - SN3332; ConvF(6.23, 6.23, 6.23); Calibrated: 9/18/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1466; Calibrated: 1/15/2016
Phantom: SAM Main ; Type: QD000P40CC; Serial: TP 1114
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: GPRS 850, Right Head, Cheek, Mid.ch, 4 Tx slots, with Standard Battery

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.30 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 0.541 W/kg
SAR(1 g) = 0.431 W/kg



0 dB = 0.476 W/kg = -3.22 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: ACJFZN1B; Type: Portable Handset; Serial: 1416

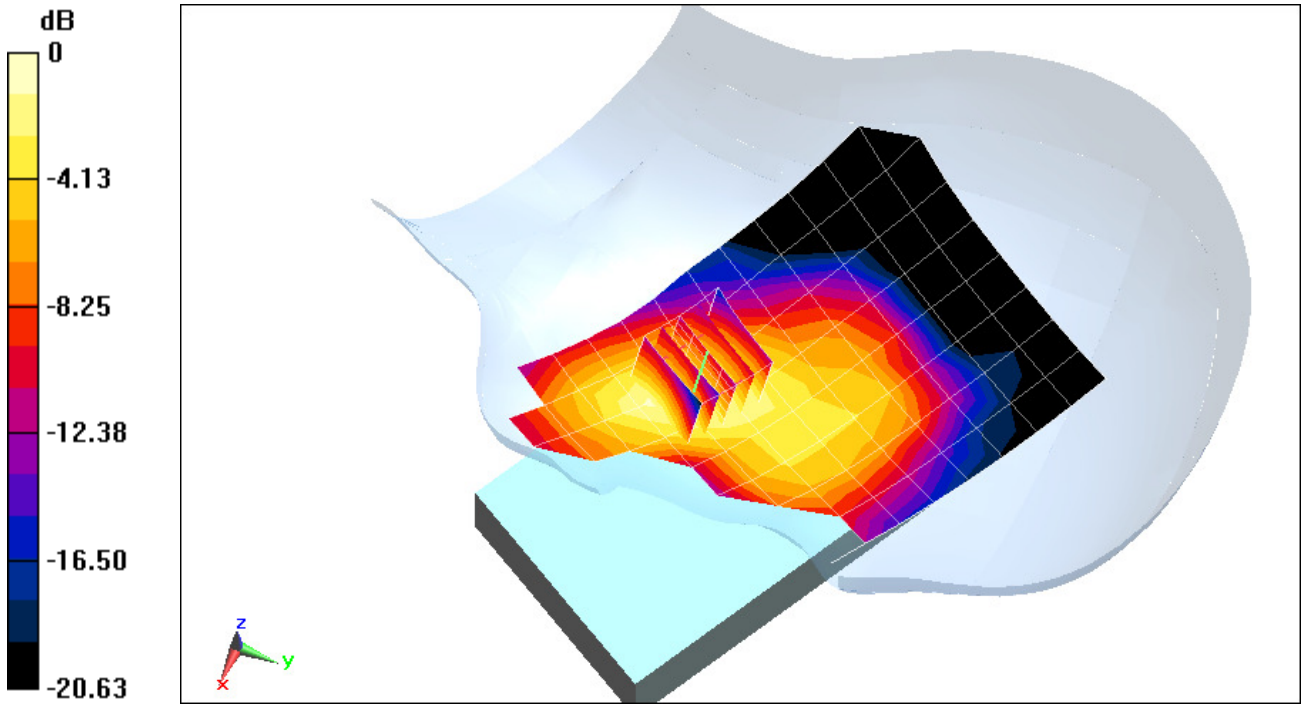
Communication System: UID 0, GSM GPRS; 4 Tx slots; Frequency: 1880 MHz; Duty Cycle: 1:2.076
Medium: 1900 Head Medium parameters used:
f = 1880 MHz; σ = 1.369 S/m; ε_r = 41.276; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 04-01-2016; Ambient Temp: 24.0°C; Tissue Temp: 23.2°C

Probe: ES3DV3 - SN3332; ConvF(5.06, 5.06, 5.06); Calibrated: 9/18/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1466; Calibrated: 1/15/2016
Phantom: SAM Main ; Type: QD000P40CC; Serial: TP 1114
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: GPRS 1900, Left Head, Cheek, Mid.ch, 4 Tx slots, with Standard Battery

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.82 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 0.329 W/kg
SAR(1 g) = 0.213 W/kg



0 dB = 0.256 W/kg = -5.92 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: ACJFZN1B; Type: Portable Handset; Serial: 1416

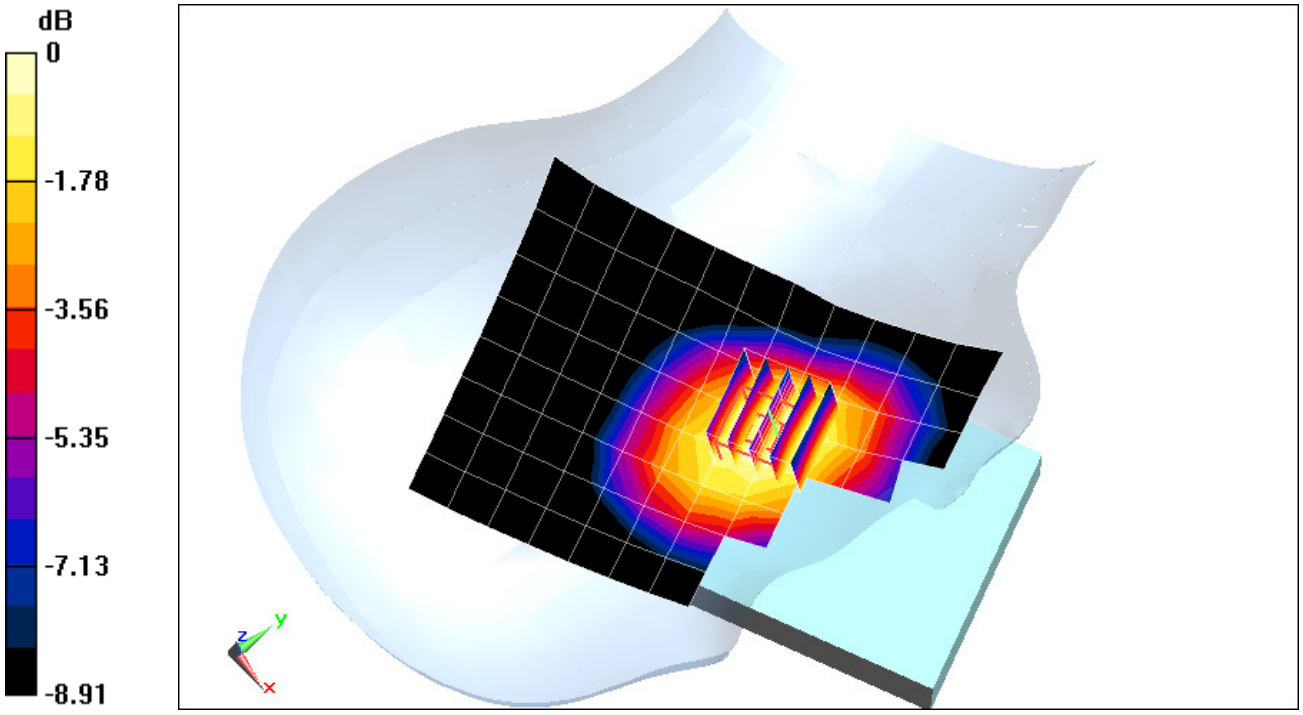
Communication System: UID 0, CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
f = 836.52 MHz; σ = 0.911 S/m; ε_r = 40.586; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 03-30-2016; Ambient Temp: 23.1°C; Tissue Temp: 22.1°C

Probe: ES3DV3 - SN3332; ConvF(6.23, 6.23, 6.23); Calibrated: 9/18/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1466; Calibrated: 1/15/2016
Phantom: SAM Main ; Type: QD000P40CC; Serial: TP 1114
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: Cell. CDMA, Right Head, Cheek, Mid.ch, with Standard Battery

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.29 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.586 W/kg
SAR(1 g) = 0.461 W/kg



0 dB = 0.502 W/kg = -2.99 dBW/kg

DUT: ACJFZN1B; Type: Portable Handset; Serial: 1416

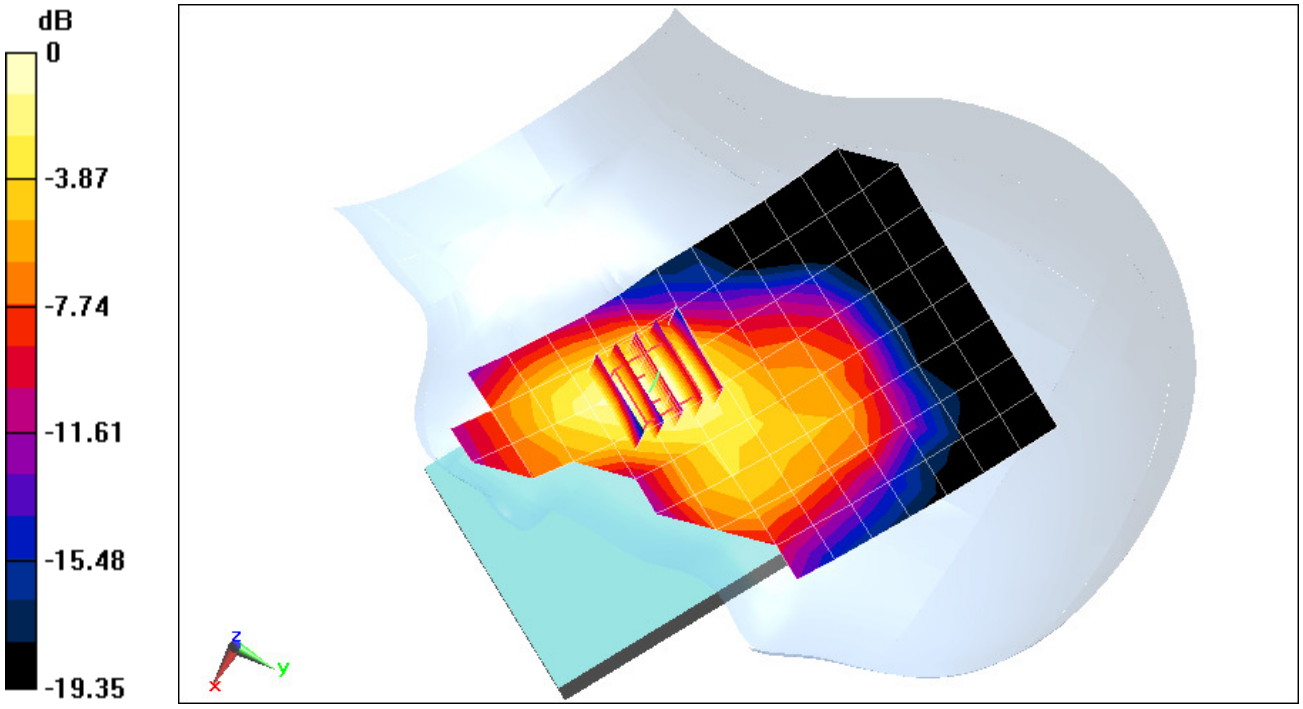
Communication System: UID 0, PCS CDMA; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Head Medium parameters used:
f = 1880 MHz; σ = 1.369 S/m; ε_r = 41.276; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 04-01-2016; Ambient Temp: 24.0°C; Tissue Temp: 23.2°C

Probe: ES3DV3 - SN3332; ConvF(5.06, 5.06, 5.06); Calibrated: 9/18/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1466; Calibrated: 1/15/2016
Phantom: SAM Main ; Type: QD000P40CC; Serial: TP 1114
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: PCS EVDO Rev A, Left Head, Cheek, Mid.ch, with Standard Battery

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.31 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 0.745 W/kg
SAR(1 g) = 0.485 W/kg



0 dB = 0.584 W/kg = -2.34 dBW/kg

DUT: ACJFZN1B; Type: Portable Handset; Serial: 1416

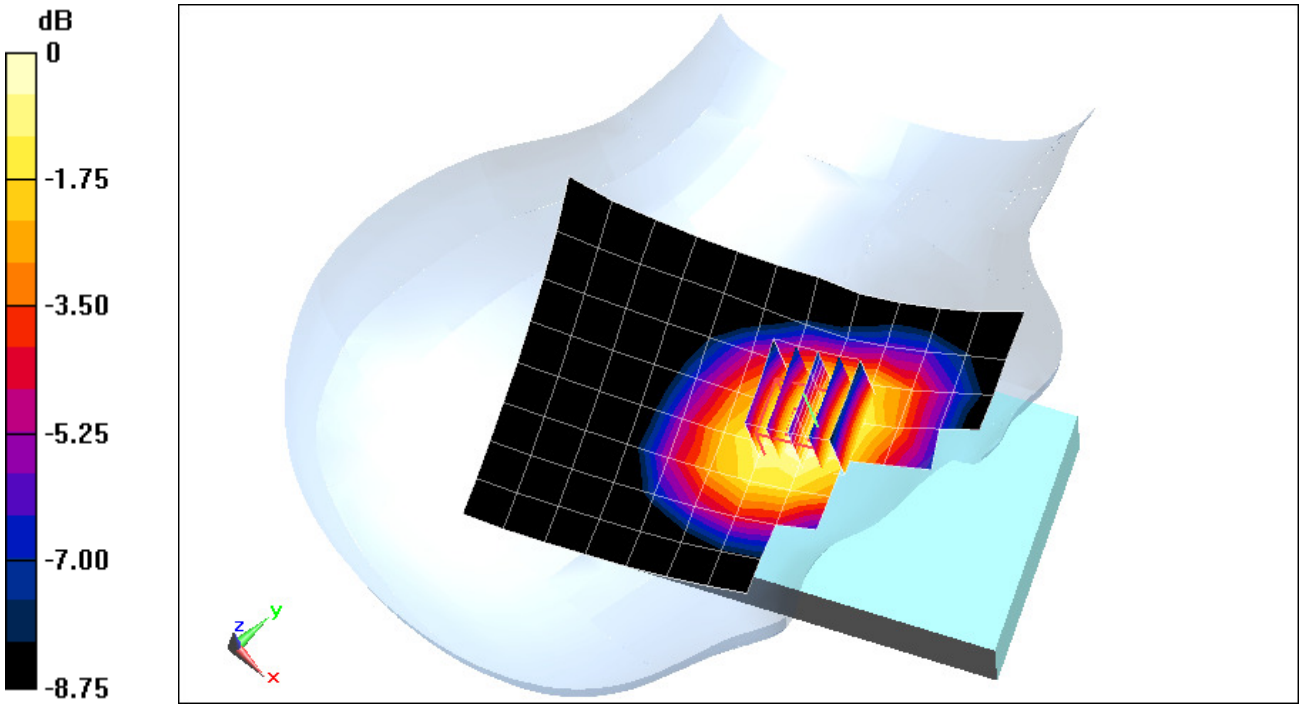
Communication System: UID 0, UMTS; Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.911 S/m; ε_r = 40.585; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 03-30-2016; Ambient Temp: 23.1°C; Tissue Temp: 22.1°C

Probe: ES3DV3 - SN3332; ConvF(6.23, 6.23, 6.23); Calibrated: 9/18/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1466; Calibrated: 1/15/2016
Phantom: SAM Main ; Type: QD000P40CC; Serial: TP 1114
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: UMTS 850, Right Head, Cheek, Mid.ch, with Standard Battery

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.40 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.399 W/kg
SAR(1 g) = 0.323 W/kg



0 dB = 0.351 W/kg = -4.55 dBW/kg

DUT: ACJFZN1B; Type: Portable Handset; Serial: 1416

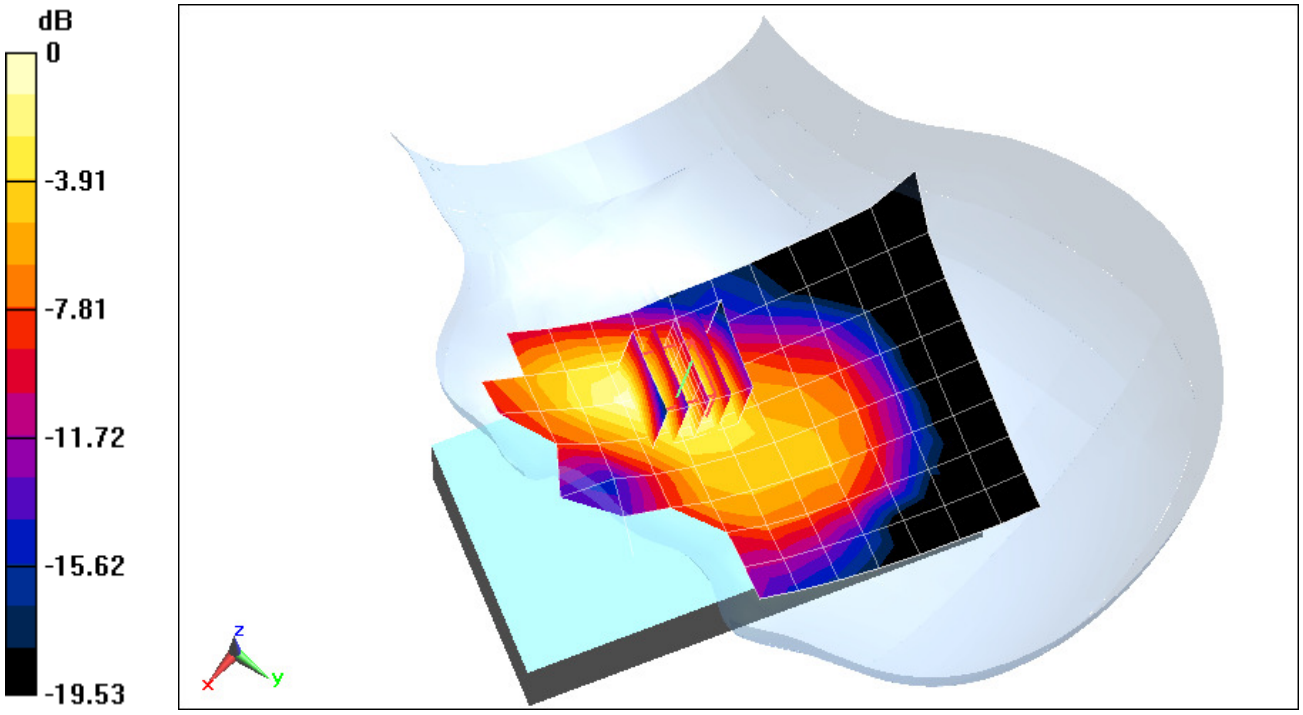
Communication System: UID 0, UMTS; Frequency: 1907.6 MHz; Duty Cycle: 1:1
Medium: 1900 Head Medium parameters used (interpolated):
f = 1907.6 MHz; σ = 1.457 S/m; ε_r = 40.091; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 03-28-2016; Ambient Temp: 23.8°C; Tissue Temp: 22.1°C

Probe: ES3DV3 - SN3334; ConvF(5.18, 5.18, 5.18); Calibrated: 11/17/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1415; Calibrated: 11/11/2015
Phantom: SAM Front; Type: SAM; Serial: 1686
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: UMTS 1900, Left Head, Cheek, High.ch, with Standard Battery

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.92 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.667 W/kg
SAR(1 g) = 0.418 W/kg



0 dB = 0.486 W/kg = -3.13 dBW/kg

DUT: ACJFZN1B; Type: Portable Handset; Serial: 1408

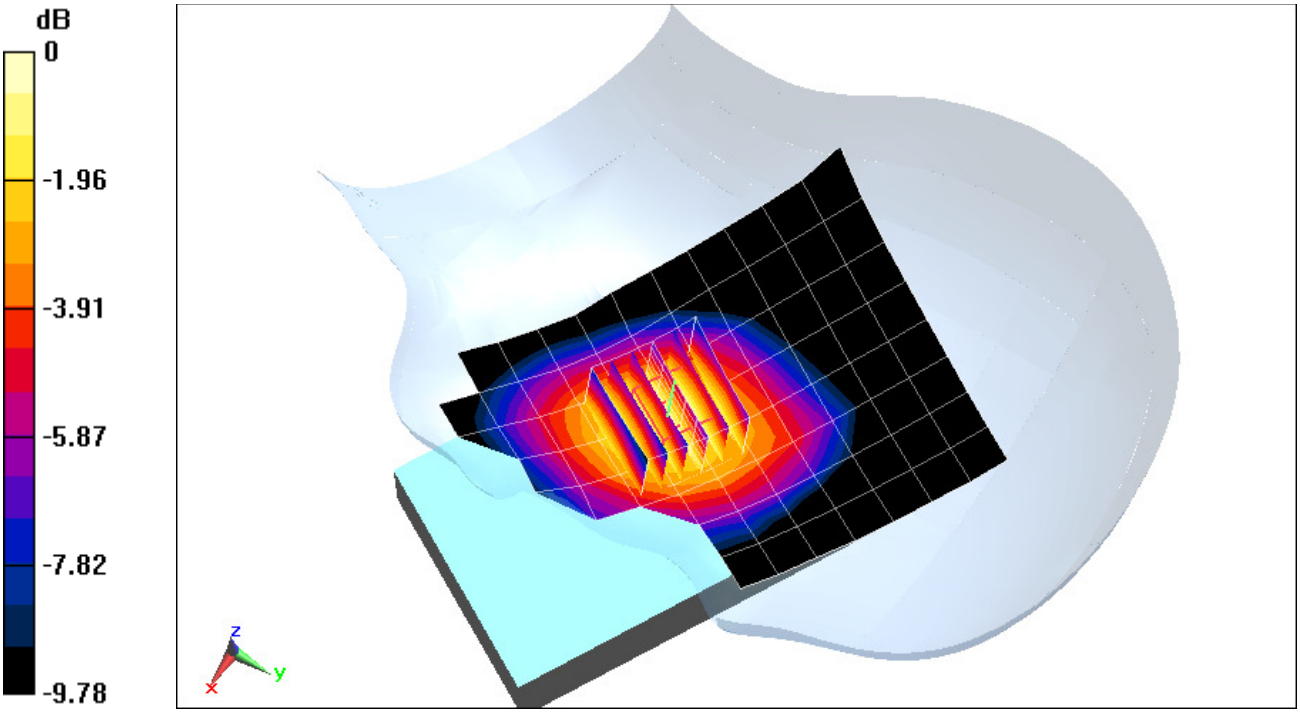
Communication System: UID 0, LTE Band 12; Frequency: 707.5 MHz; Duty Cycle: 1:1
Medium: 750 Head Medium parameters used (interpolated):
$f = 707.5$ MHz; $\sigma = 0.867$ S/m; $\varepsilon_r = 43.491$; $\rho = 1000$ kg/m^3
Phantom section: Left Section

Test Date: 03-31-2016; Ambient Temp: 22.6°C; Tissue Temp: 22.5°C

Probe: ES3DV2 - SN3022; ConvF(6.33, 6.33, 6.33); Calibrated: 8/26/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1323; Calibrated: 9/16/2015
Phantom: SAM Right; Type: QD000P40CD; Serial: TP:7535
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: LTE Band 12, Left Head, Cheek, Mid.ch, QPSK
10 MHz Bandwidth, 1 RB, 49 RB Offset, with Standard Battery

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.40 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.258 W/kg
SAR(1 g) = 0.209 W/kg



0 dB = 0.230 W/kg = -6.38 dBW/kg

DUT: ACJFZN1B; Type: Portable Handset; Serial: 1408

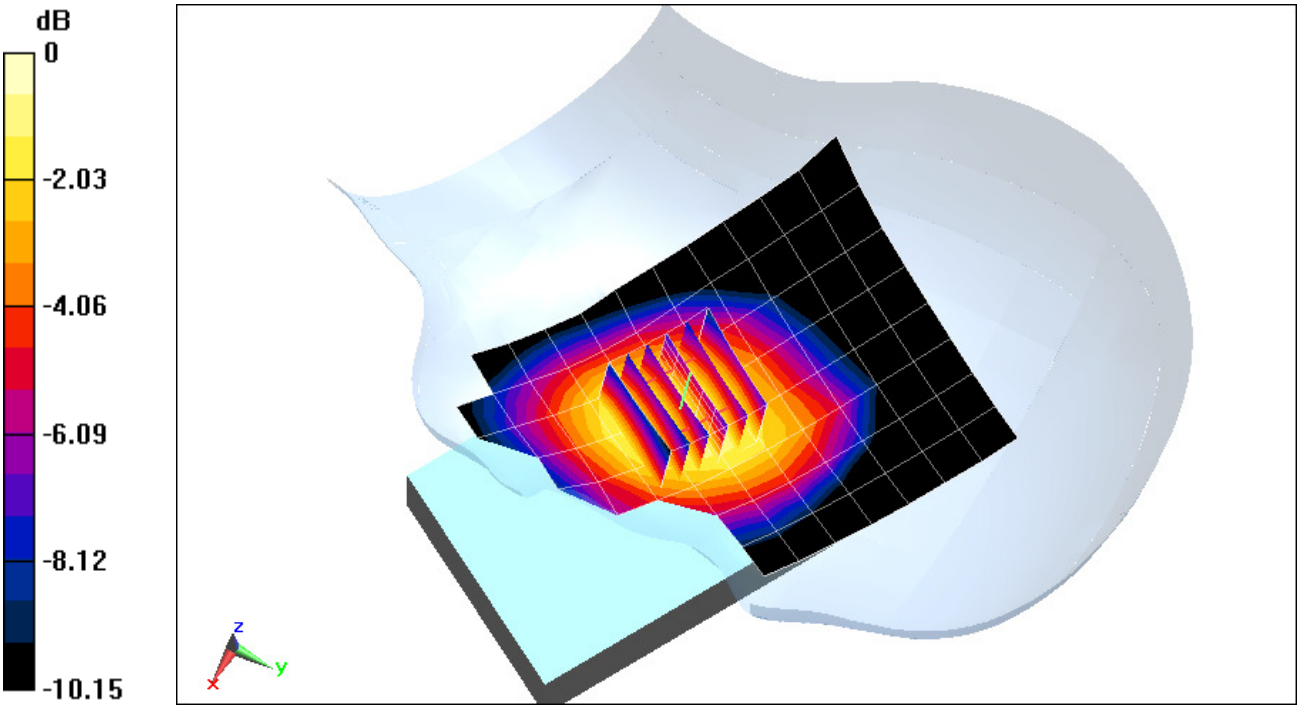
Communication System: UID 0, LTE Band 13; Frequency: 782 MHz; Duty Cycle: 1:1
Medium: 750 Head Medium parameters used (interpolated):
f = 782 MHz; σ = 0.938 S/m; ε_r = 42.375; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 03-31-2016; Ambient Temp: 22.6°C; Tissue Temp: 22.5°C

Probe: ES3DV2 - SN3022; ConvF(6.33, 6.33, 6.33); Calibrated: 8/26/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1323; Calibrated: 9/16/2015
Phantom: SAM Right; Type: QD000P40CD; Serial: TP:7535
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: LTE Band 13, Left Head, Cheek, Mid.ch, QPSK
10 MHz Bandwidth, 1 RB, 25 RB Offset, with Standard Battery

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.23 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 0.541 W/kg
SAR(1 g) = 0.434 W/kg



0 dB = 0.475 W/kg = -3.23 dBW/kg

DUT: ACJFZN1B; Type: Portable Handset; Serial: 1416

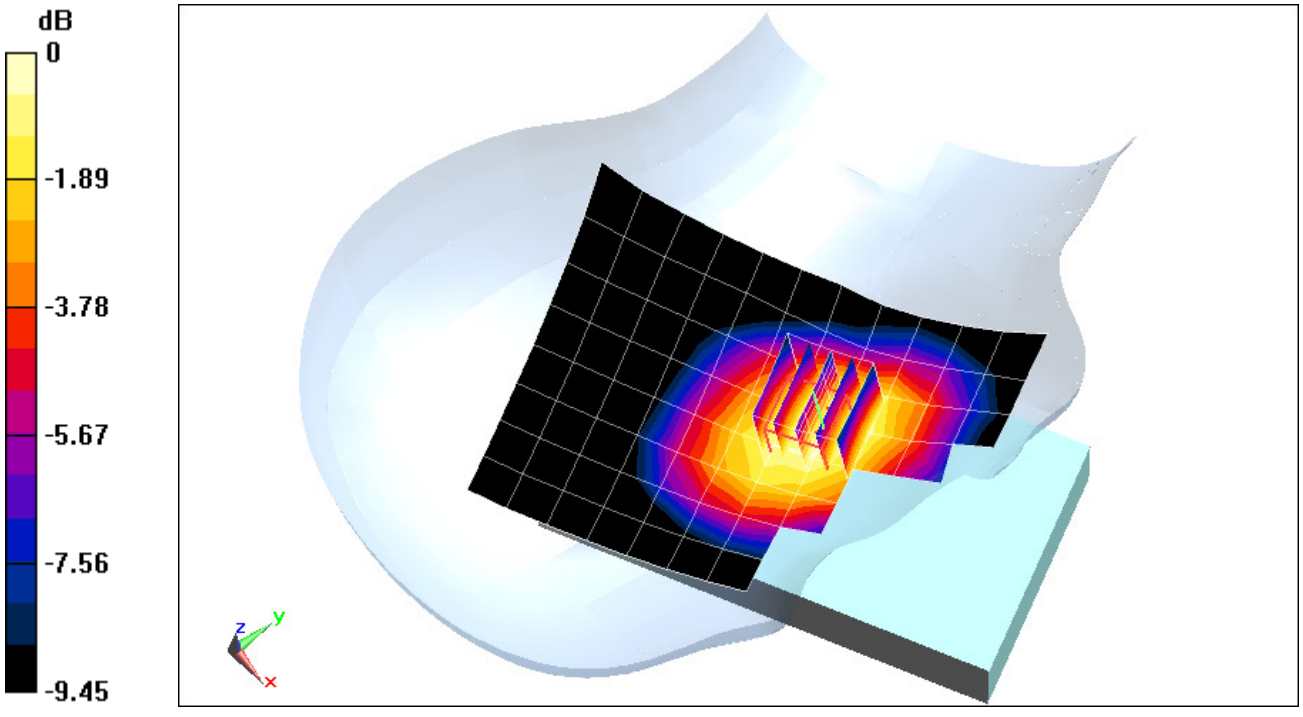
Communication System: UID 0, LTE Band 5 (Cell.); Frequency: 836.5 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
$f = 836.5$ MHz; $\sigma = 0.911$ S/m; $\varepsilon_r = 40.586$; $\rho = 1000$ kg/m^3
Phantom section: Right Section

Test Date: 03-30-2016; Ambient Temp: 23.1°C; Tissue Temp: 22.1°C

Probe: ES3DV3 - SN3332; ConvF(6.23, 6.23, 6.23); Calibrated: 9/18/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1466; Calibrated: 1/15/2016
Phantom: SAM Main ; Type: QD000P40CC; Serial: TP 1114
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: LTE Band 5 (Cell.), Right Head, Cheek, Mid.ch
10 MHz Bandwidth, QPSK, 1 RB, 49 RB Offset, with Standard Battery

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.64 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.514 W/kg
SAR(1 g) = 0.398 W/kg



0 dB = 0.440 W/kg = -3.57 dBW/kg

DUT: ACJFZN1B; Type: Portable Handset; Serial: 1408

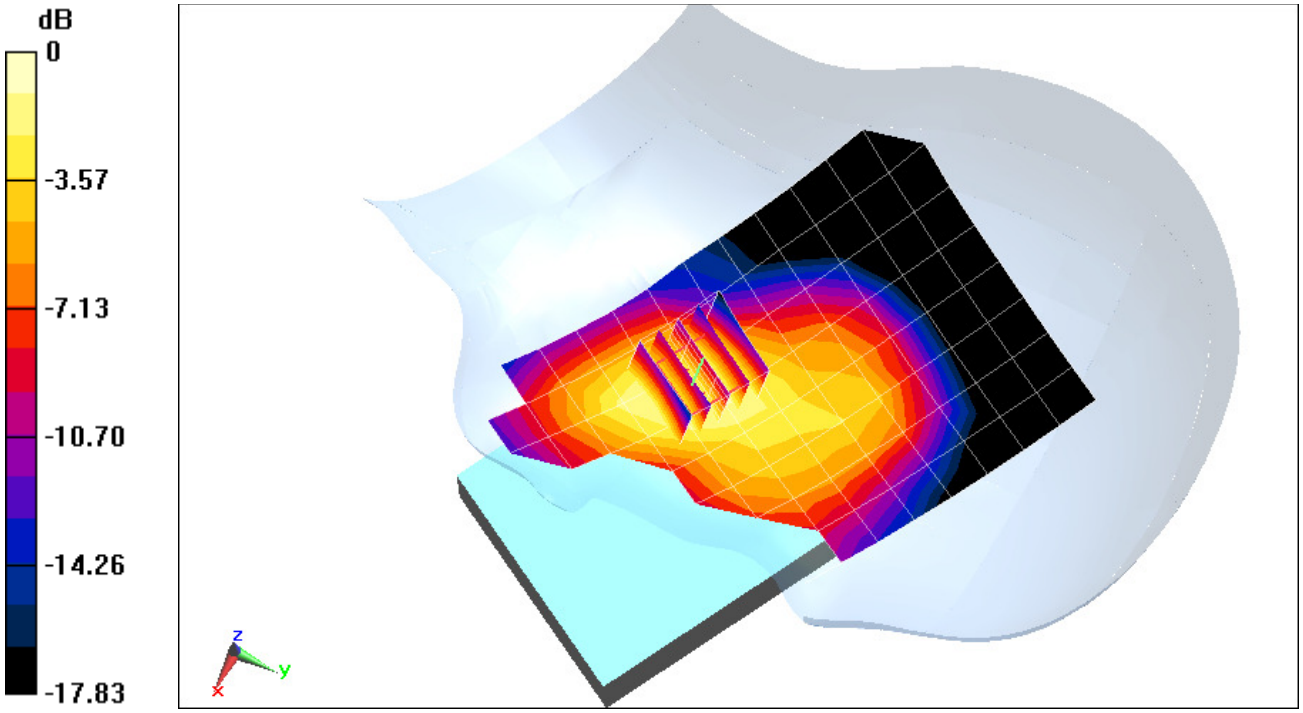
Communication System: UID 0, LTE Band 4 (AWS); Frequency: 1732.5 MHz; Duty Cycle: 1:1
Medium: 1750 Head Medium parameters used (interpolated):
$f = 1732.5$ MHz; $\sigma = 1.381$ S/m; $\varepsilon_r = 38.957$; $\rho = 1000$ kg/m^3
Phantom section: Left Section

Test Date: 03-28-2016; Ambient Temp: 19.5°C; Tissue Temp: 20.8°C

Probe: ES3DV3 - SN3318; ConvF(5.34, 5.34, 5.34); Calibrated: 2/19/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/19/2016
Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1800
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: LTE Band 4 (AWS), Left Head, Cheek, Mid.ch
20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset, with Standard Battery

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.68 V/m; Power Drift = -0.15 dB
Peak SAR (extrapolated) = 1.05 W/kg
SAR(1 g) = 0.710 W/kg



0 dB = 0.834 W/kg = -0.79 dBW/kg

DUT: ACJFZN1B; Type: Portable Handset; Serial: 1416

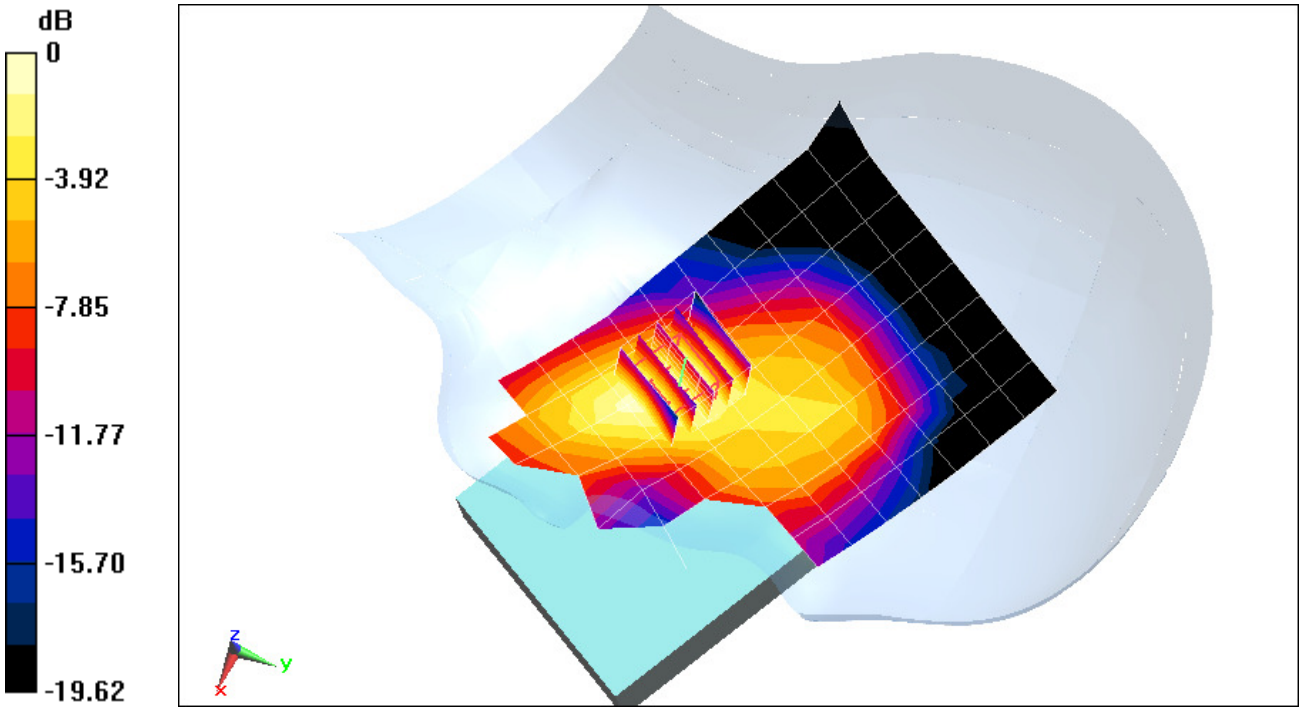
Communication System: UID 0, LTE Band 2 (PCS); Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: 1900 Head Medium parameters used (interpolated):
$f = 1900$ MHz; $\sigma = 1.45$ S/m; $\varepsilon_r = 40.109$; $\rho = 1000$ kg/m^3
Phantom section: Left Section

Test Date: 03-28-2016; Ambient Temp: 23.8°C; Tissue Temp: 22.1°C

Probe: ES3DV3 - SN3334; ConvF(5.18, 5.18, 5.18); Calibrated: 11/17/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1415; Calibrated: 11/11/2015
Phantom: SAM Front; Type: SAM; Serial: 1686
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: LTE Band 2 (PCS), Left Head, Cheek, High.ch
20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset, with Standard Battery

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.37 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 0.626 W/kg
SAR(1 g) = 0.393 W/kg



0 dB = 0.465 W/kg = -3.33 dBW/kg

DUT: ACJFZN1B; Type: Portable Handset; Serial: 1432

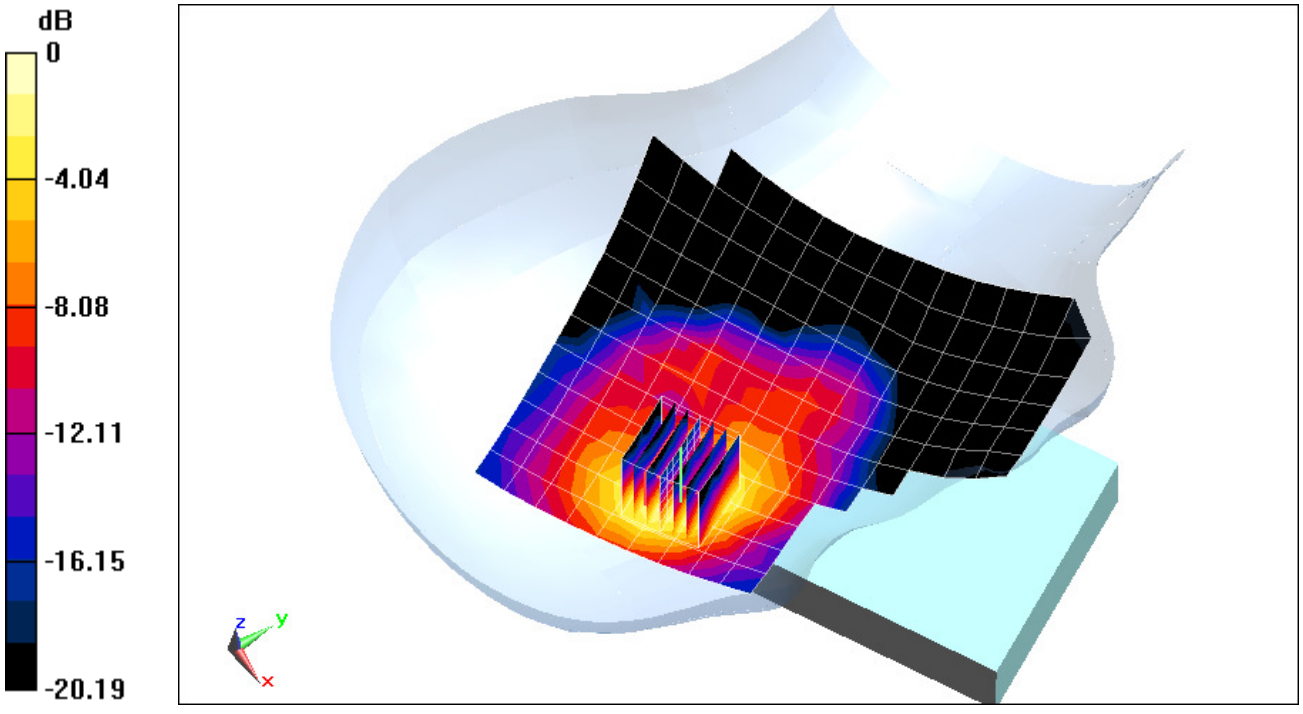
Communication System: UID 0, IEEE 802.11b; Frequency: 2412 MHz; Duty Cycle: 1:1
Medium: 2450 Head Medium parameters used (interpolated):
$f = 2412$ MHz; $\sigma = 1.825$ S/m; $\varepsilon_r = 38.79$; $\rho = 1000$ kg/m^3
Phantom section: Right Section

Test Date: 03-29-2016; Ambient Temp: 24.5°C; Tissue Temp: 23.5°C

Probe: ES3DV3 - SN3351; ConvF(4.46, 4.46, 4.46); Calibrated: 6/22/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 8/24/2015
Phantom: SAM 5.0 front; Type: QD000P40CD; Serial: TP:-1648
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: IEEE 802.11b, 22 MHz Bandwidth, Right Head, Cheek, Ch 01, 1 Mbps with Standard Battery

Area Scan (13x18x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.692 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 0.195 W/kg
SAR(1 g) = 0.090 W/kg



0 dB = 0.117 W/kg = -9.32 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: ACJFZN1B; Type: Portable Handset; Serial: 2206

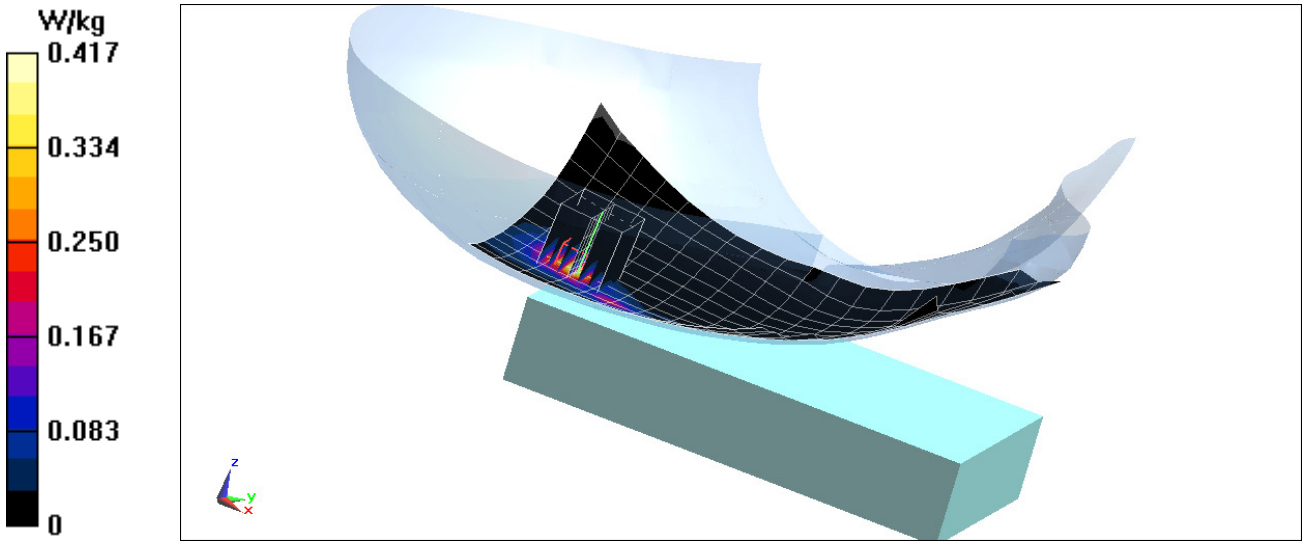
Communication System: UID 0, IEEE 802.11a; Frequency: 5600 MHz; Duty Cycle: 1:1
Medium: 5 GHz Head Medium parameters used:
f = 5600 MHz; σ = 4.879 S/m; ε_r = 34.483; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 12-21-2015; Ambient Temp: 23.9°C; Tissue Temp: 22.2°C

Probe: EX3DV4 - SN7308; ConvF(4.65, 4.65, 4.65); Calibrated: 7/21/2015;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 8/24/2015
Phantom: SAM 5.0 front; Type: QD000P40CD; Serial: TP:-1648
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: IEEE 802.11a, U-NII-2C, 20 MHz Bandwidth, Right Head, Cheek, Ch 120, 6 Mbps with Standard Battery

Area Scan (13x22x1): 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 = 6.305 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.669 W/kg
SAR(1 g) = 0.180 W/kg



DUT: ACJFZN1B; Type: Portable Handset; Serial: 1432

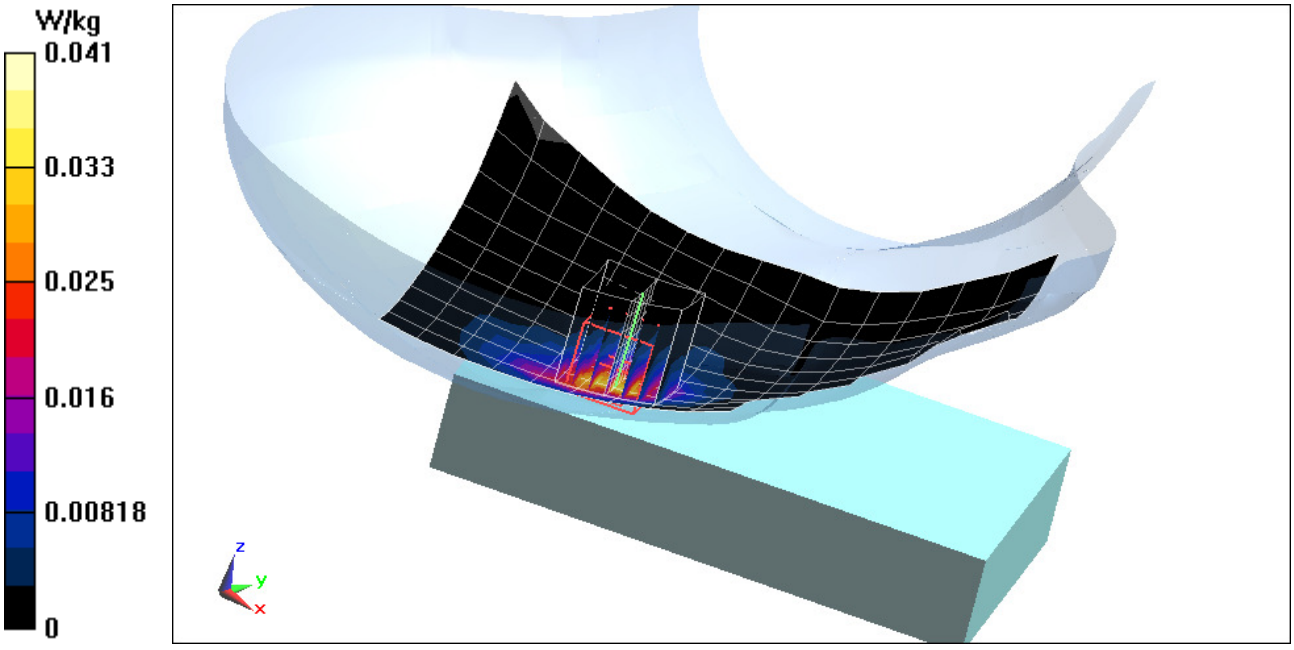
Communication System: UID 0, Bluetooth; Frequency: 2441 MHz; Duty Cycle: 1:1
Medium: 2450 Head Medium parameters used (interpolated):
f = 2441 MHz; σ = 1.866 S/m; ε_r = 38.562; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 04-25-2016; Ambient Temp: 24.3°C; Tissue Temp: 23.6°C

Probe: ES3DV3 - SN3319; ConvF(4.47, 4.47, 4.47); Calibrated: 3/18/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1368; Calibrated: 3/14/2016
Phantom: SAM with CRP v5.0 (Right); Type: QD000P40CD; Serial: TP:1759
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: Bluetooth, Right Head, Cheek, Ch 39, 1 Mbps
with Standard Battery

Area Scan (11x18x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.020 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 0.0750 W/kg
SAR(1 g) = 0.031 W/kg



DUT: ACJFZN1B; Type: Portable Handset; Serial: 1408

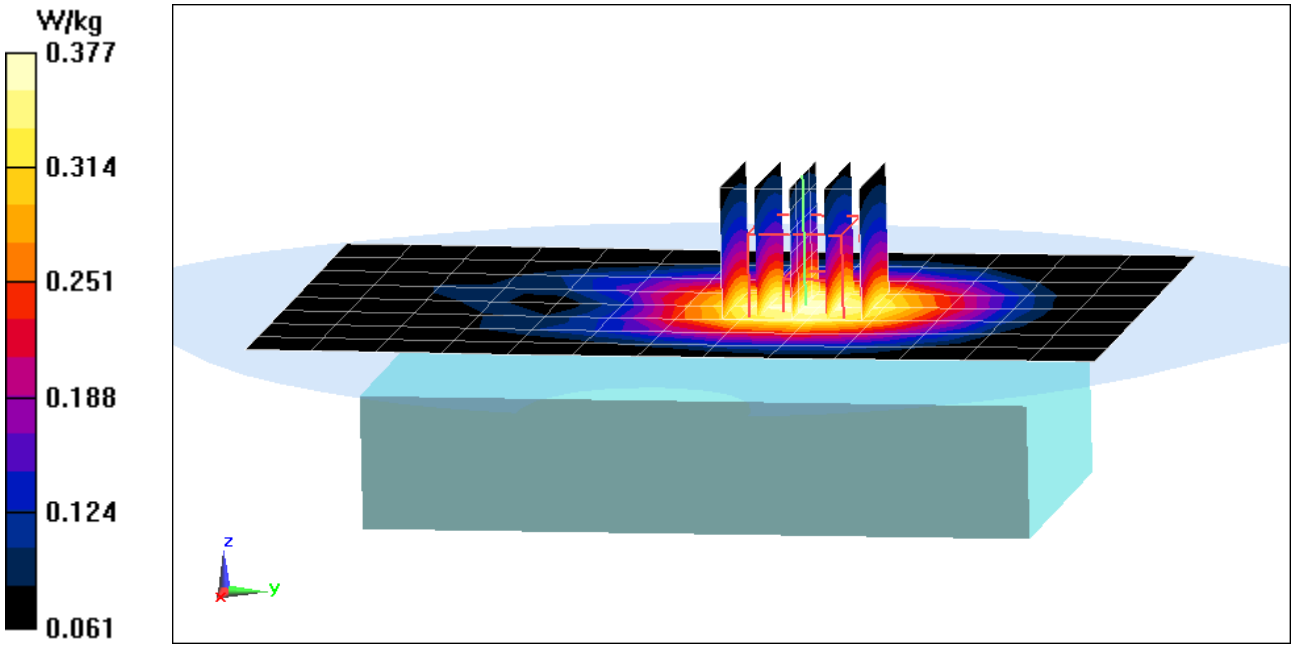
Communication System: UID 0, GSM; Frequency: 836.6 MHz; Duty Cycle: 1:8.3
Medium: 835 Body Medium parameters used (interpolated):
f = 836.6 MHz; σ = 1.008 S/m; ε_r = 54.293; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 03-31-2016; Ambient Temp: 23.5°C; Tissue Temp: 22.8°C

Probe: ES3DV3 - SN3333; ConvF(6.25, 6.25, 6.25); Calibrated: 10/29/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1333; Calibrated: 10/27/2015
Phantom: SAM Front; Type: QD000P40CD; Serial: TP:1758
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: GSM 850, Body SAR, Back side, Mid.ch
with Standard Battery and without Body Worn Accessory

Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.22 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.436 W/kg
SAR(1 g) = 0.344 W/kg



DUT: ACJFZN1B; Type: Portable Handset; Serial: 1408

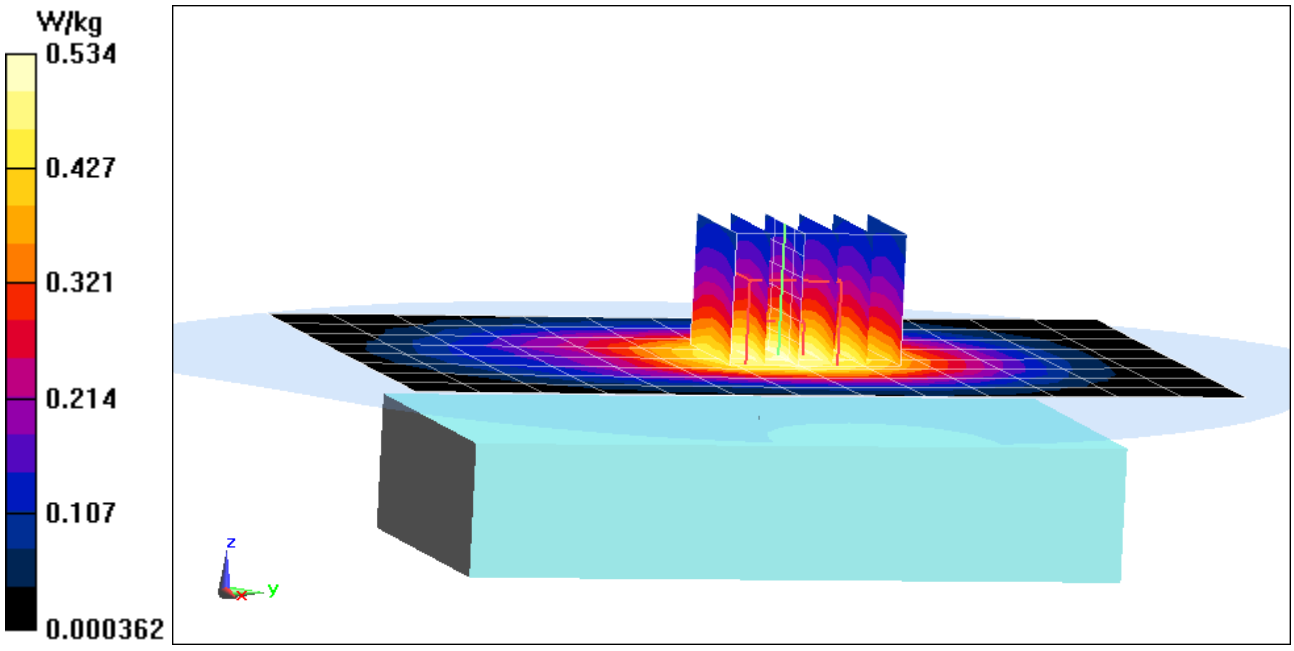
Communication System: UID 0, GSM GPRS; 4 Tx slots; Frequency: 836.6 MHz; Duty Cycle: 1:2.076
Medium: 835 Body Medium parameters used (interpolated):
$f = 836.6$ MHz; $\sigma = 1.008$ S/m; $\varepsilon_r = 54.293$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 03-31-2016; Ambient Temp: 23.5°C; Tissue Temp: 22.8°C

Probe: ES3DV3 - SN3333; ConvF(6.25, 6.25, 6.25); Calibrated: 10/29/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1333; Calibrated: 10/27/2015
Phantom: SAM Front; Type: QD000P40CD; Serial: TP:1758
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: GPRS 850, Body SAR, Front side, Mid.ch, 4 Tx Slots with Standard Battery

Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.48 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 1.05 W/kg
SAR(1 g) = 0.534 W/kg



DUT: ACJFZN1B; Type: Portable Handset; Serial: 1408

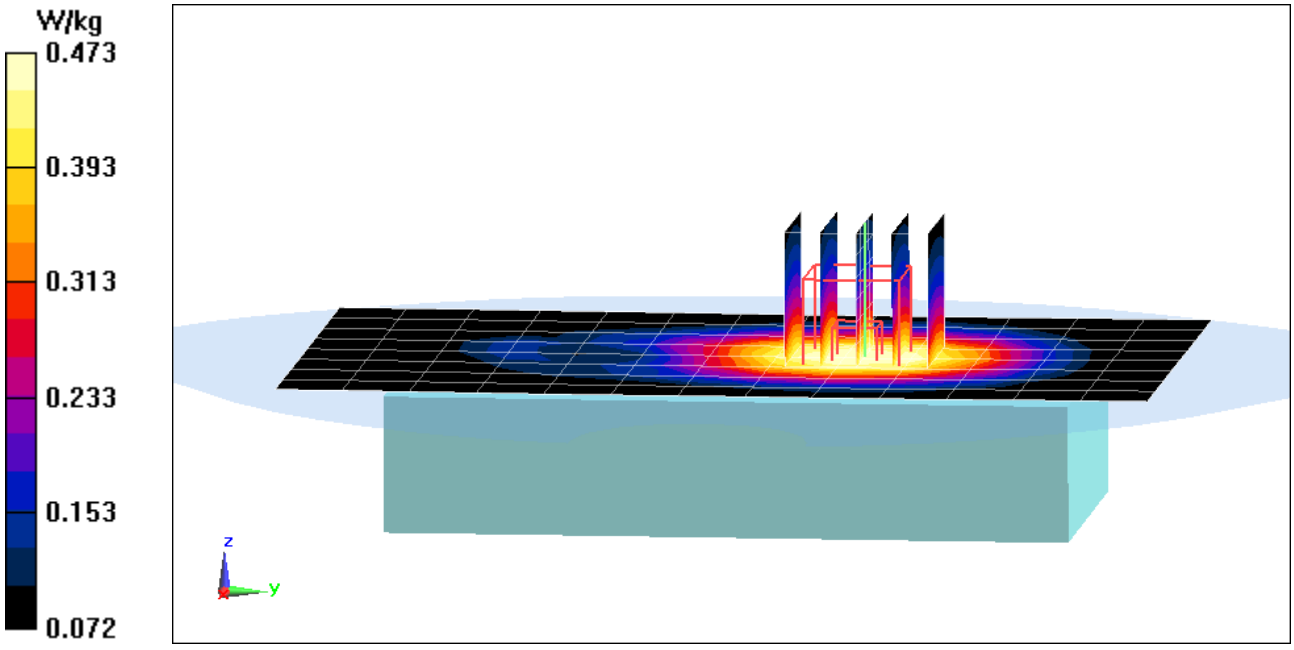
Communication System: UID 0, GSM GPRS; 4 Tx slots; Frequency: 836.6 MHz; Duty Cycle: 1:2.076
Medium: 835 Body Medium parameters used (interpolated):
f = 836.6 MHz; σ = 1.008 S/m; ε_r = 54.293; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 03-31-2016; Ambient Temp: 23.5°C; Tissue Temp: 22.8°C

Probe: ES3DV3 - SN3333; ConvF(6.25, 6.25, 6.25); Calibrated: 10/29/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1333; Calibrated: 10/27/2015
Phantom: SAM Front; Type: QD000P40CD; Serial: TP:1758
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: GPRS 850, Extremity SAR, Back side, Mid.ch, 4 Tx Slots with Standard Battery and Hand Strap Accessory

Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.50 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.543 W/kg
SAR(10 g) = 0.324 W/kg



DUT: ACJFZN1B; Type: Portable Handset; Serial: 1408

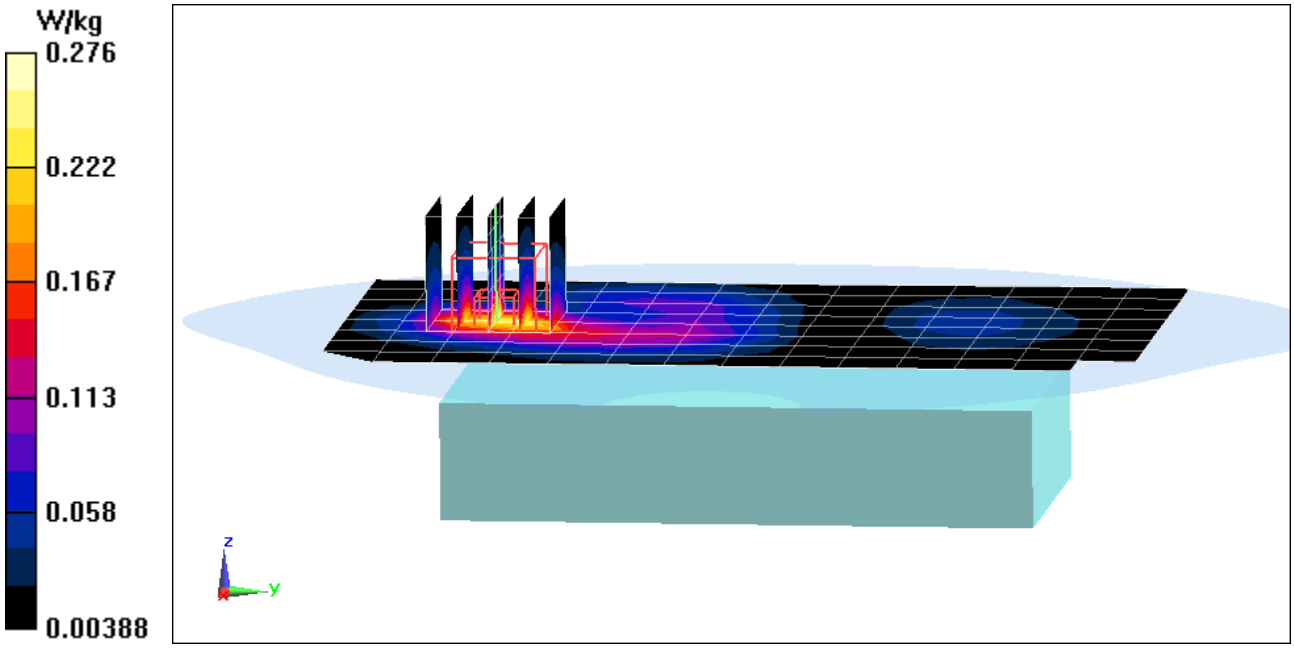
Communication System: UID 0, GSM GPRS; 4 Tx slots; Frequency: 1880 MHz; Duty Cycle: 1:2.076
Medium: 1900 Body Medium parameters used:
f = 1880 MHz; σ = 1.504 S/m; ε_r = 51.431; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-04-2016; Ambient Temp: 23.3°C; Tissue Temp: 22.2°C

Probe: ES3DV3 - SN3288; ConvF(4.81, 4.81, 4.81); Calibrated: 9/18/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1364; Calibrated: 9/18/2015
Phantom: Sub TWIN SAM; Type: QD000P40CC; Serial: TP-1357
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: GPRS 1900, Body SAR, Back side, Mid.ch, 4 Tx Slots with Standard Battery and without Body Worn Accessory

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.19 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.376 W/kg
SAR(1 g) = 0.229 W/kg



DUT: ACJFZN1B; Type: Portable Handset; Serial: 1408

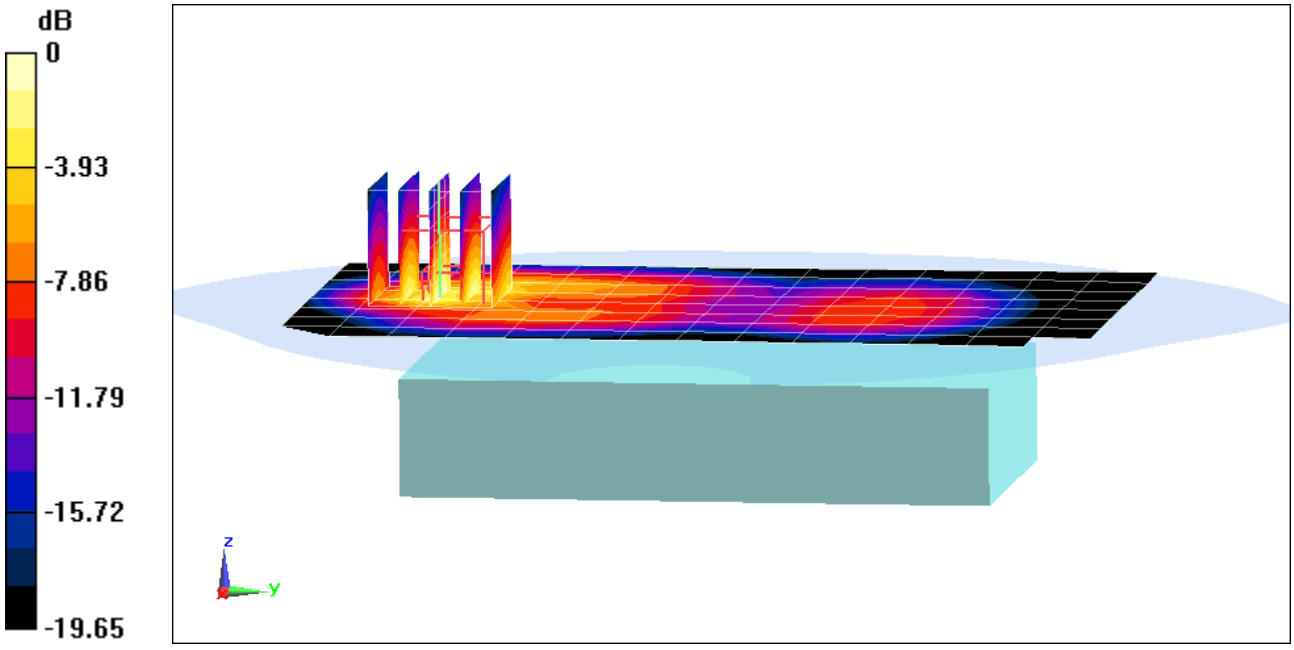
Communication System: UID 0, GSM GPRS; 4 Tx slots; Frequency: 1880 MHz; Duty Cycle: 1:2.076
Medium: 1900 Body Medium parameters used:
f = 1880 MHz; σ = 1.504 S/m; ε_r = 51.431; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-04-2016; Ambient Temp: 23.3°C; Tissue Temp: 22.2°C

Probe: ES3DV3 - SN3288; ConvF(4.81, 4.81, 4.81); Calibrated: 9/18/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1364; Calibrated: 9/18/2015
Phantom: Sub TWIN SAM; Type: QD000P40CC; Serial: TP-1357
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: GPRS 1900, Body SAR, Front side, Mid.ch, 4 Tx Slots with L-Battery

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.36 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 1.12 W/kg
SAR(1 g) = 0.607 W/kg



0 dB = 0.770 W/kg = -1.14 dBW/kg

DUT: ACJFZN1B; Type: Portable Handset; Serial: 1408

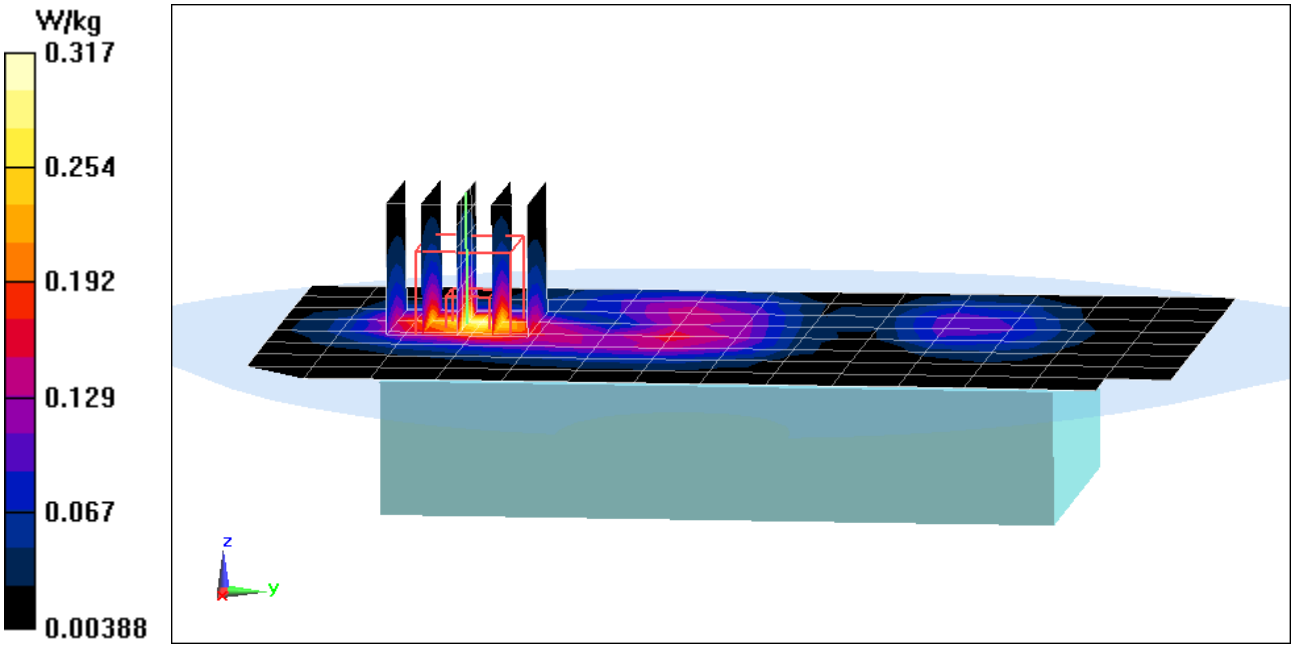
Communication System: UID 0, GSM GPRS; 4 Tx slots; Frequency: 1880 MHz; Duty Cycle: 1:2.076
Medium: 1900 Body Medium parameters used:
f = 1880 MHz; σ = 1.504 S/m; ε_r = 51.431; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 04-04-2016; Ambient Temp: 23.3°C; Tissue Temp: 22.2°C

Probe: ES3DV3 - SN3288; ConvF(4.81, 4.81, 4.81); Calibrated: 9/18/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1364; Calibrated: 9/18/2015
Phantom: Sub TWIN SAM; Type: QD000P40CC; Serial: TP-1357
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: GPRS 1900, Extremity SAR, Back side, Mid.ch, 4 Tx Slots with Standard Battery and Hand Strap Accessory

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.15 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.427 W/kg
SAR(10 g) = 0.147 W/kg



DUT: ACJFZN1B; Type: Portable Handset; Serial: 1416

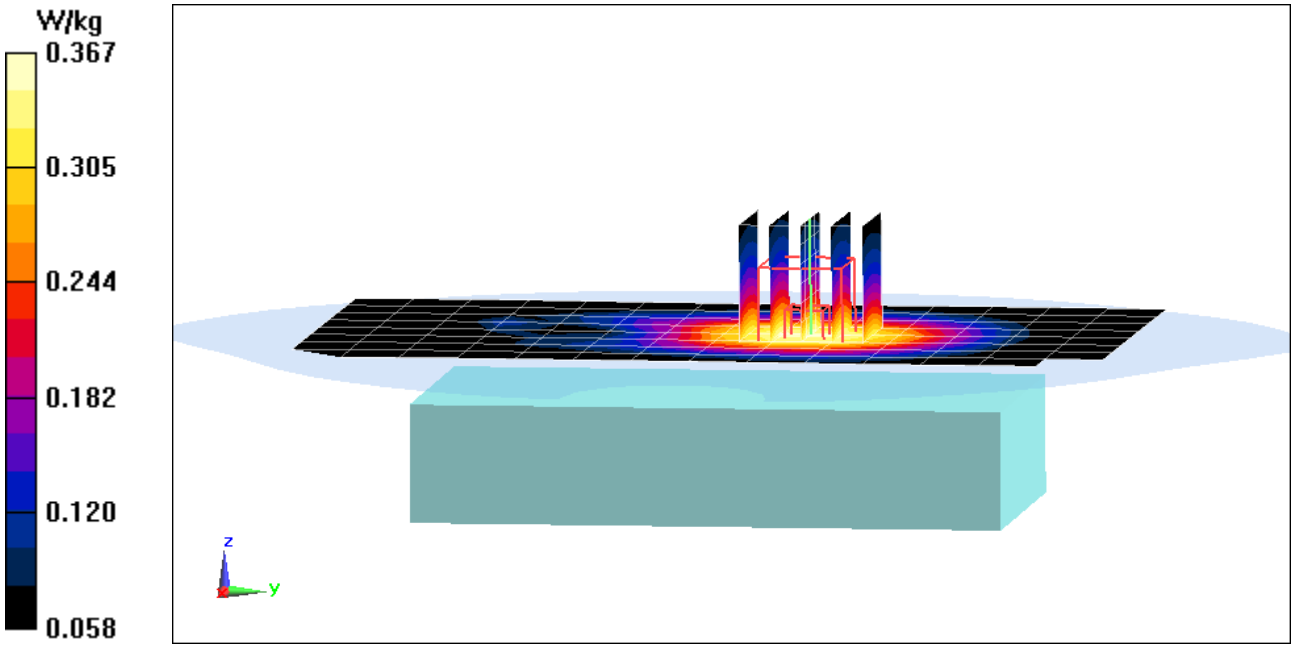
Communication System: UID 0, CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 836.52 MHz; σ = 1.006 S/m; ε_r = 53.997; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-04-2016; Ambient Temp: 22.0°C; Tissue Temp: 21.4°C

Probe: ES3DV3 - SN3318; ConvF(6.11, 6.11, 6.11); Calibrated: 2/19/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/19/2016
Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1800
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: Cell. CDMA, Body SAR, Back side, Mid.ch
with Standard Battery and without Body Worn Accessory

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.87 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.421 W/kg
SAR(1 g) = 0.332 W/kg



DUT: ACJFZN1B; Type: Portable Handset; Serial: 1416

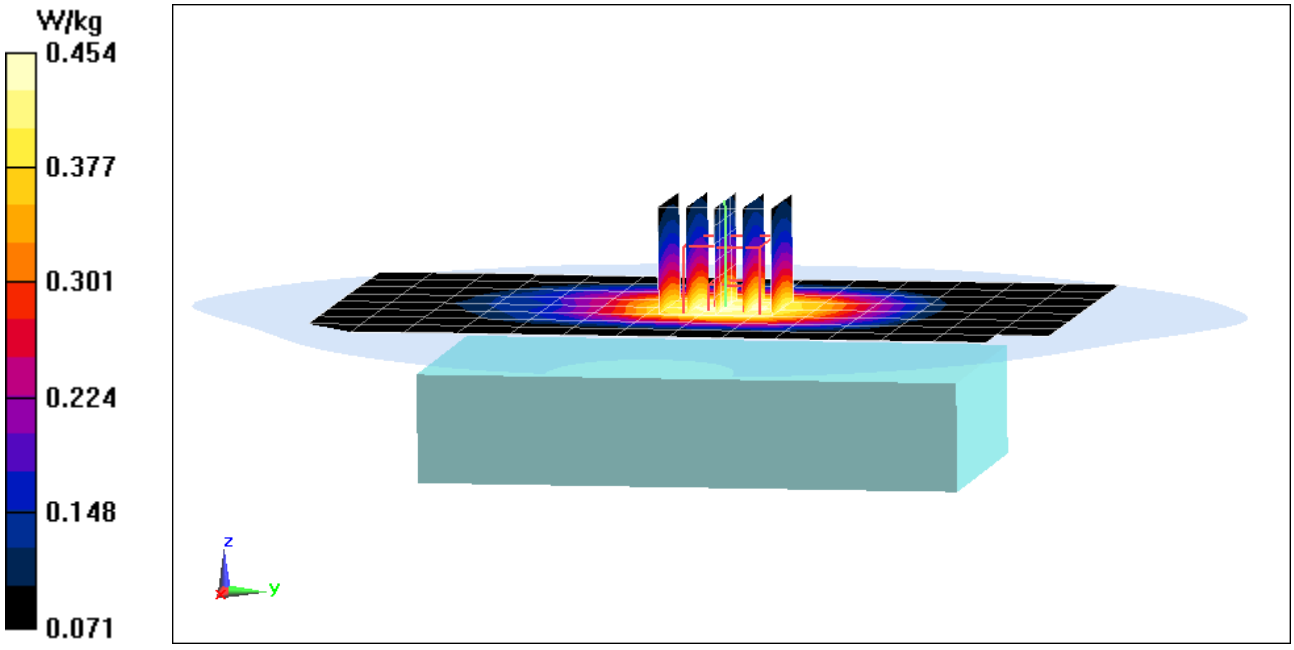
Communication System: UID 0, CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 836.52 MHz; σ = 1.006 S/m; ε_r = 53.997; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-04-2016; Ambient Temp: 22.0°C; Tissue Temp: 21.4°C

Probe: ES3DV3 - SN3318; ConvF(6.11, 6.11, 6.11); Calibrated: 2/19/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/19/2016
Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1800
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: Cell. EVDO, Body SAR, Front side, Mid.ch
with L-Battery

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.02 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.513 W/kg
SAR(1 g) = 0.416 W/kg



DUT: ACJFZN1B; Type: Portable Handset; Serial: 1416

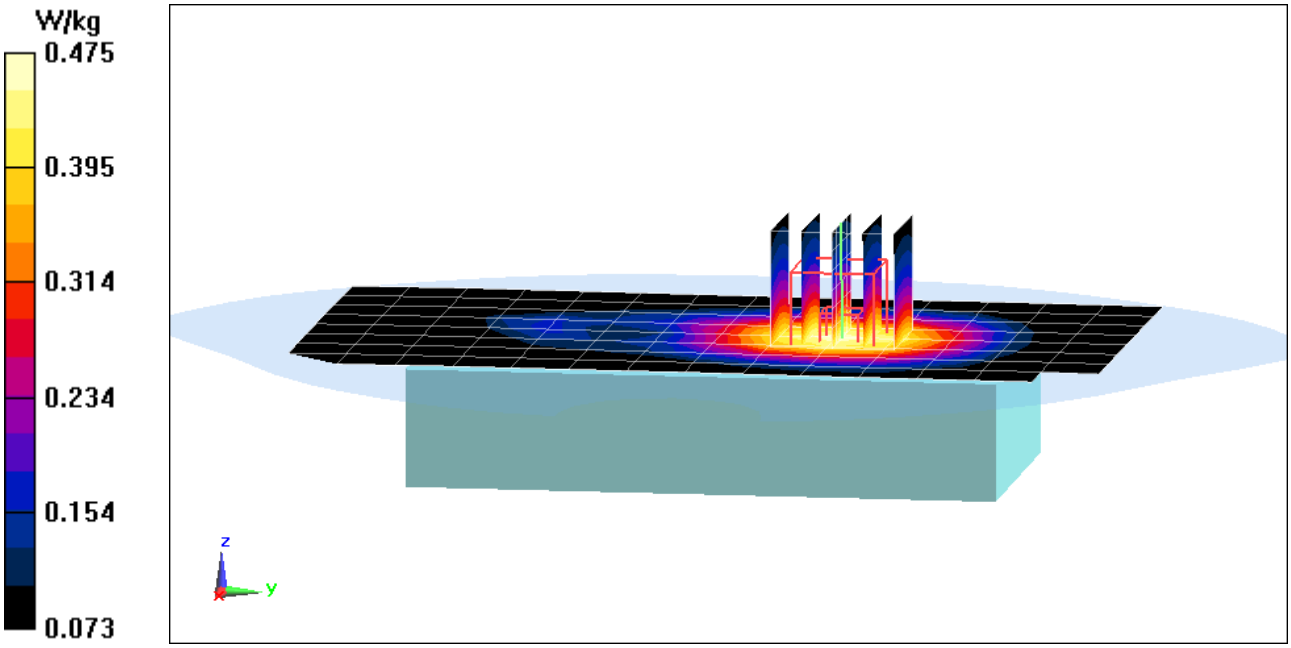
Communication System: UID 0, CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 836.52 MHz; σ = 1.006 S/m; ε_r = 53.997; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 04-04-2016; Ambient Temp: 22.0°C; Tissue Temp: 21.4°C

Probe: ES3DV3 - SN3318; ConvF(6.11, 6.11, 6.11); Calibrated: 2/19/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/19/2016
Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1800
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: Cell. EVDO, Extremity SAR, Back side, Mid.ch
with Standard Battery and Hand Strap Accessory

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.43 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.541 W/kg
SAR(10 g) = 0.322 W/kg



DUT: ACJFZN1B; Type: Portable Handset; Serial: 1408

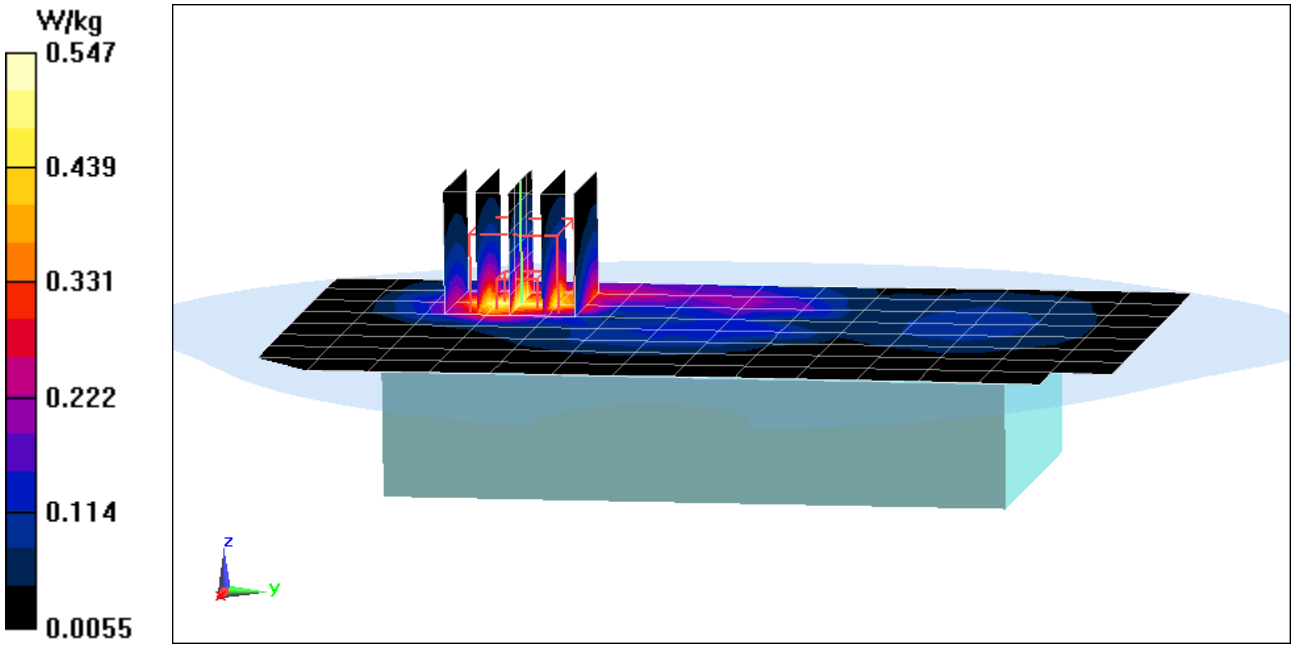
Communication System: UID 0, CDMA; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used:
f = 1880 MHz; σ = 1.504 S/m; ε_r = 51.431; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 04-04-2016; Ambient Temp: 23.3°C; Tissue Temp: 22.2°C

Probe: ES3DV3 - SN3288; ConvF(4.81, 4.81, 4.81); Calibrated: 9/18/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1364; Calibrated: 9/18/2015
Phantom: Sub TWIN SAM; Type: QD000P40CC; Serial: TP-1357
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: PCS CDMA, Body SAR, Front side, Mid.ch
with Standard Battery and Holster Body Worn Accessory

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.70 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.743 W/kg
SAR(1 g) = 0.452 W/kg



DUT: ACJFZN1B; Type: Portable Handset; Serial: 1408

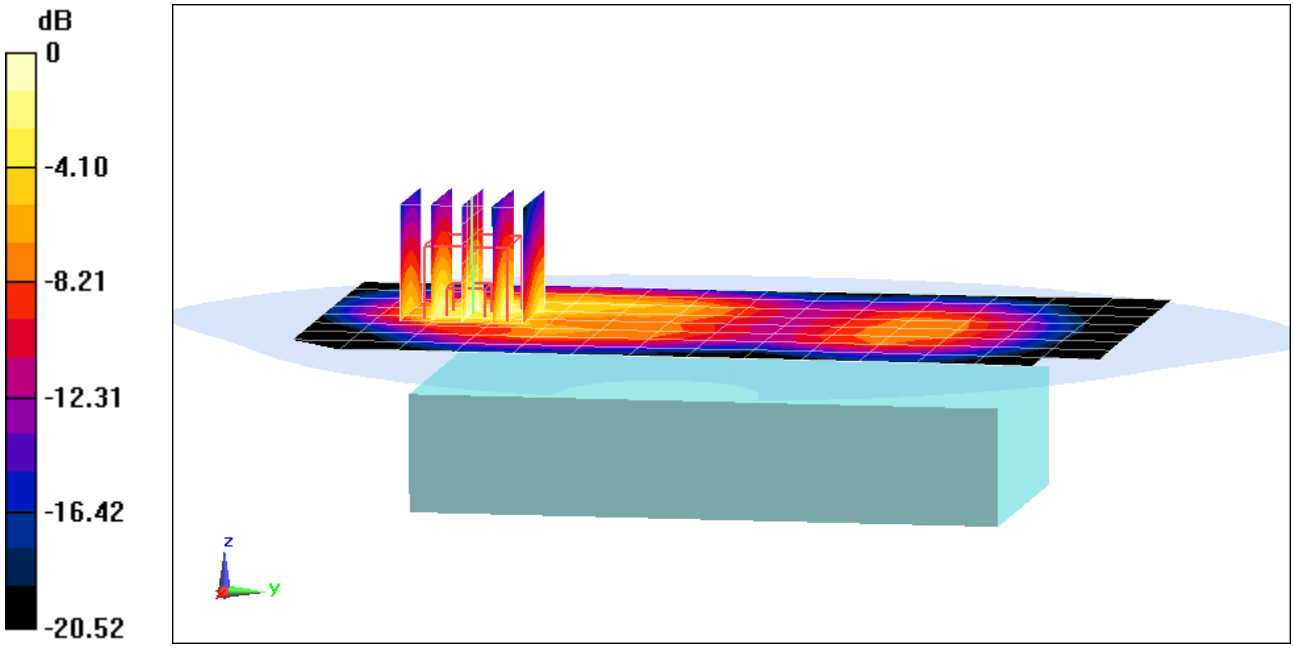
Communication System: UID 0, CDMA; Frequency: 1908.75 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
f = 1908.75 MHz; σ = 1.543 S/m; ε_r = 51.312; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-04-2016; Ambient Temp: 23.3°C; Tissue Temp: 22.2°C

Probe: ES3DV3 - SN3288; ConvF(4.81, 4.81, 4.81); Calibrated: 9/18/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1364; Calibrated: 9/18/2015
Phantom: Sub TWIN SAM; Type: QD000P40CC; Serial: TP-1357
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: PCS EVDO, Body SAR, Front side, High.ch
with Standard Battery

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
]**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 27.27 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 1.69 W/kg
SAR(1 g) = 0.978 W/kg



0 dB = 1.21 W/kg = 0.83 dBW/kg

DUT: ACJFZN1B; Type: Portable Handset; Serial: 1408

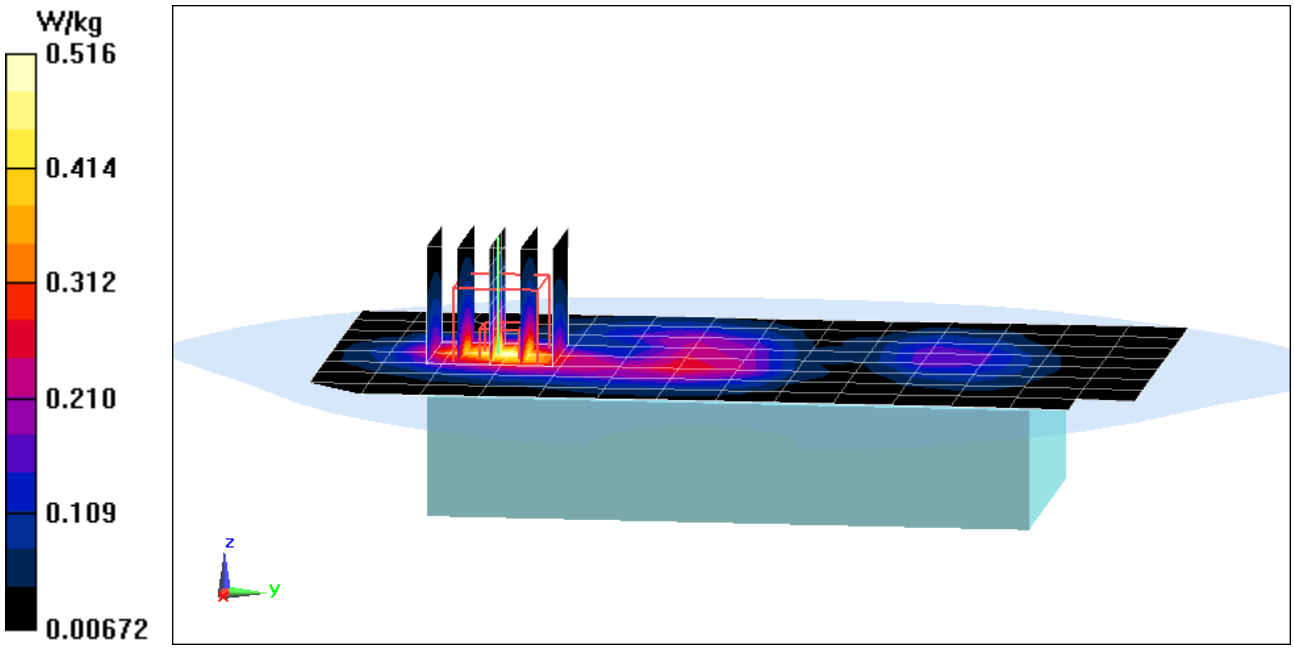
Communication System: UID 0, CDMA; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used:
f = 1880 MHz; σ = 1.504 S/m; ε_r = 51.431; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 04-04-2016; Ambient Temp: 23.3°C; Tissue Temp: 22.2°C

Probe: ES3DV3 - SN3288; ConvF(4.81, 4.81, 4.81); Calibrated: 9/18/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1364; Calibrated: 9/18/2015
Phantom: Sub TWIN SAM; Type: QD000P40CC; Serial: TP-1357
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: PCS EVDO, Extremity SAR, Back side, Mid.ch
with Standard Battery and Hand Strap Accessory

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.93 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 0.700 W/kg
SAR(10 g) = 0.241 W/kg



DUT: ACJFZN1B; Type: Portable Handset; Serial: 1408

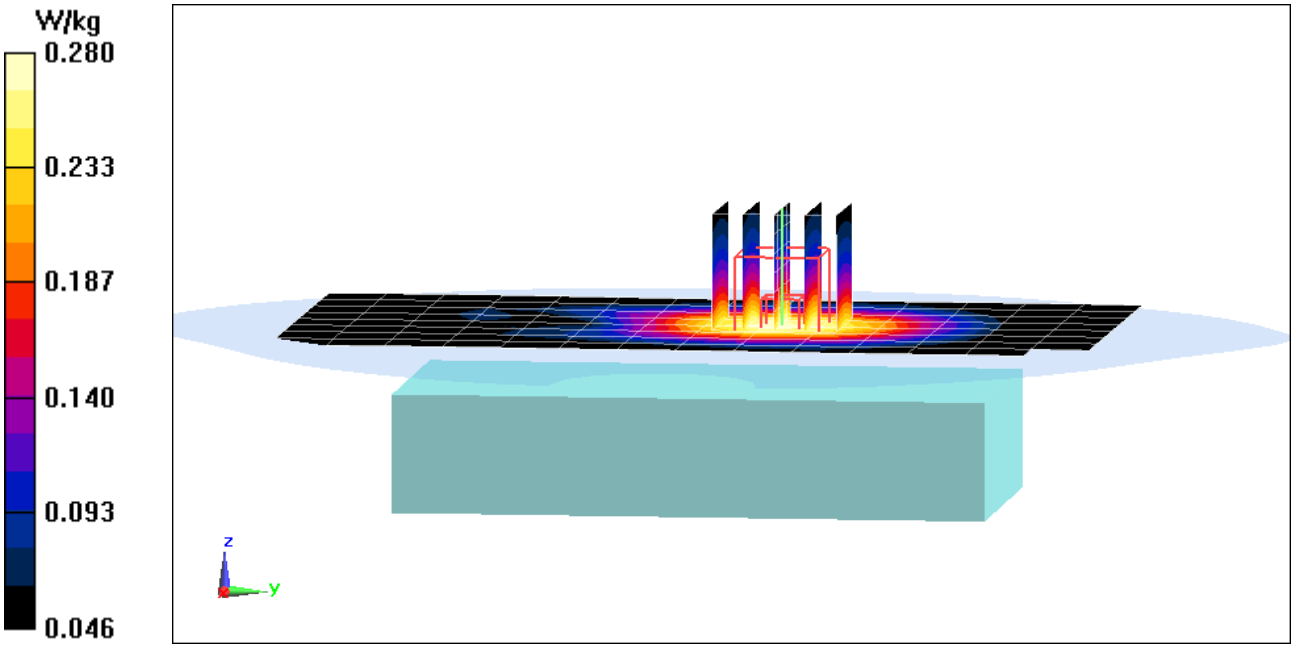
Communication System: UID 0, UMTS; Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.974 S/m; ε_r = 52.938; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-10-2016; Ambient Temp: 20.1°C; Tissue Temp: 20.5°C

Probe: ES3DV3 - SN3318; ConvF(6.11, 6.11, 6.11); Calibrated: 2/19/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/19/2016
Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1800
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: UMTS 850, Body SAR, Back side, Mid.ch
with Standard Battery and without Body Worn Accessory

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.73 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.320 W/kg
SAR(1 g) = 0.255 W/kg



DUT: ACJFZN1B; Type: Portable Handset; Serial: 1408

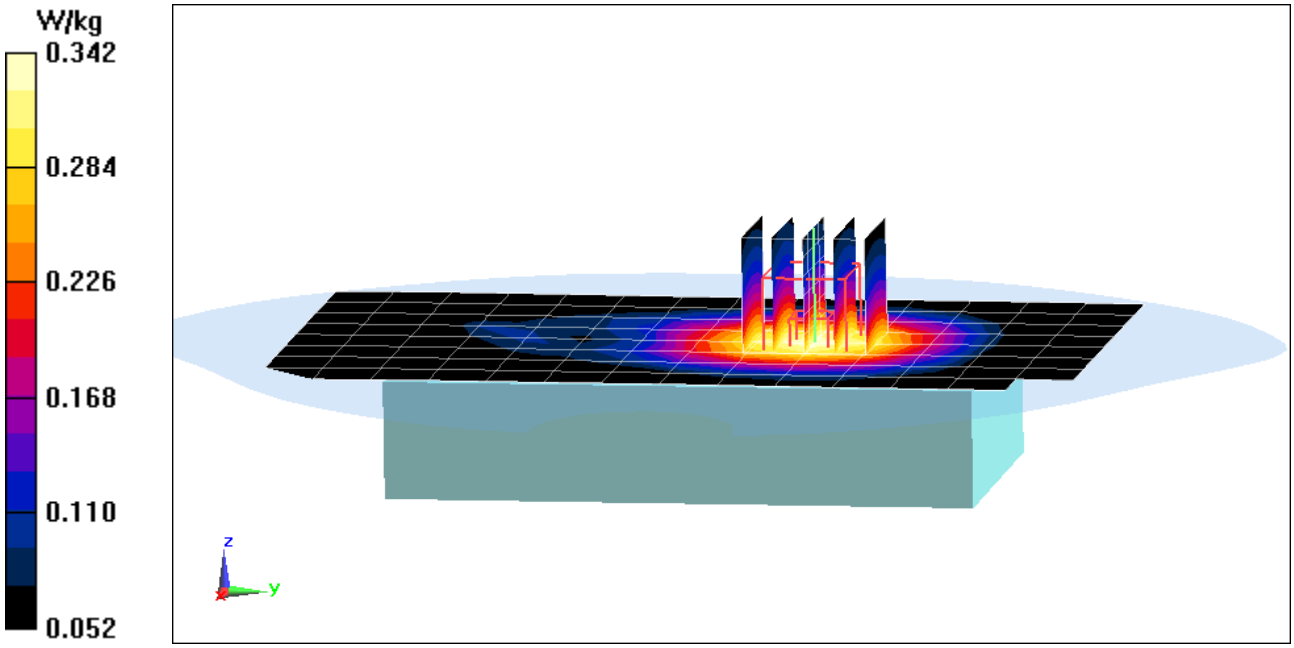
Communication System: UID 0, UMTS; Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 836.6 MHz; σ = 1.006 S/m; ε_r = 53.997; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 04-04-2016; Ambient Temp: 22.0°C; Tissue Temp: 21.4°C

Probe: ES3DV3 - SN3318; ConvF(6.11, 6.11, 6.11); Calibrated: 2/19/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/19/2016
Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1800
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: UMTS 850, Extremity SAR, Back side, Mid.ch
with Standard Battery and Hand Strap Accessory

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.26 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.392 W/kg
SAR(10 g) = 0.234 W/kg



DUT: ACJFZN1B; Type: Portable Handset; Serial: 1408

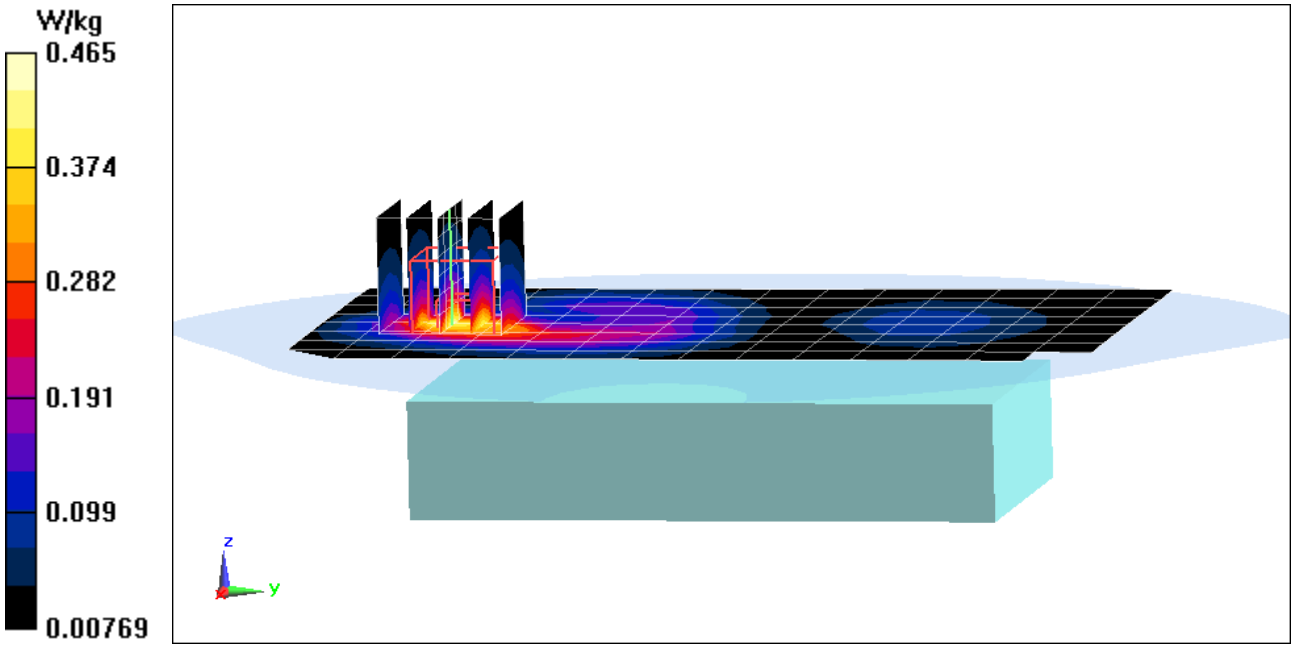
Communication System: UID 0, UMTS; Frequency: 1907.6 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
f = 1907.6 MHz; σ = 1.511 S/m; ε_r = 51.858; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 03-29-2016; Ambient Temp: 24.2°C; Tissue Temp: 23.2°C

Probe: ES3DV3 - SN3288; ConvF(4.81, 4.81, 4.81); Calibrated: 9/18/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1364; Calibrated: 9/18/2015
Phantom: Sub TWIN SAM; Type: QD000P40CC; Serial: TP-1357
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: UMTS 1900, Body SAR, Back side, High.ch
with Standard Battery and without Body Worn Accessory

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.20 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.628 W/kg
SAR(1 g) = 0.387 W/kg



DUT: ACJFZN1B; Type: Portable Handset; Serial: 1408

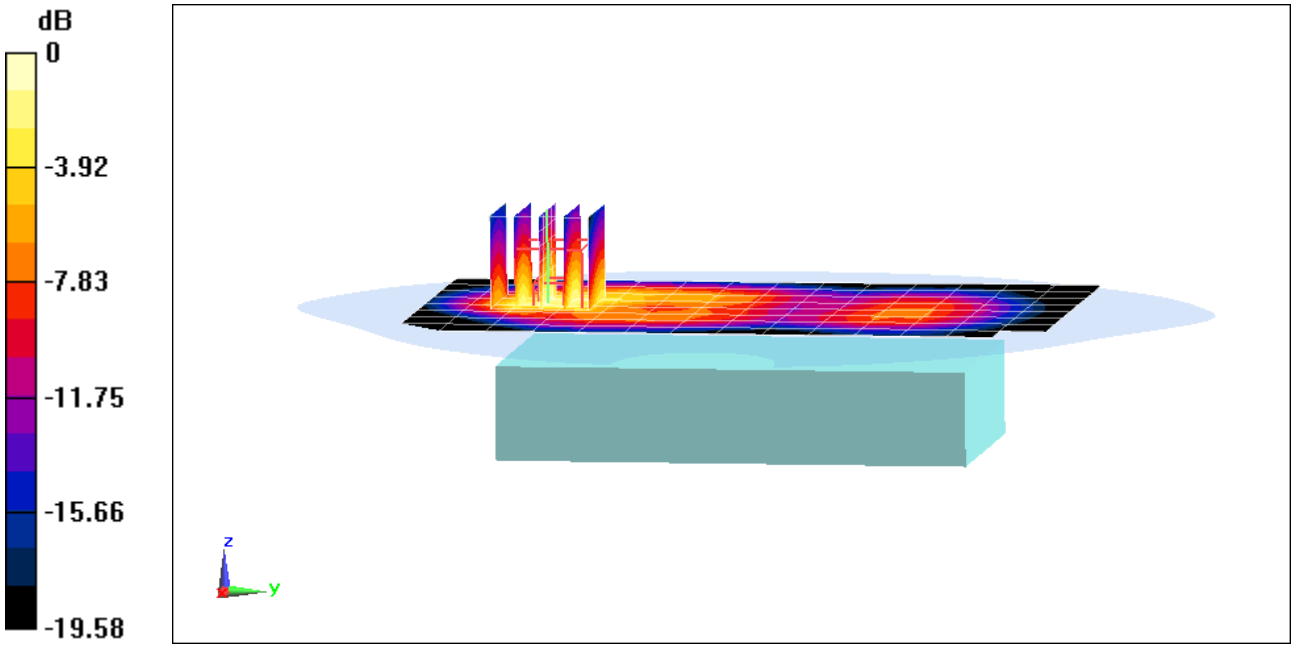
Communication System: UID 0, UMTS; Frequency: 1907.6 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
f = 1907.6 MHz; σ = 1.511 S/m; ε_r = 51.858; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 03-29-2016; Ambient Temp: 24.2°C; Tissue Temp: 23.2°C

Probe: ES3DV3 - SN3288; ConvF(4.81, 4.81, 4.81); Calibrated: 9/18/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1364; Calibrated: 9/18/2015
Phantom: Sub TWIN SAM; Type: QD000P40CC; Serial: TP-1357
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: UMTS 1900, Body SAR, Front side, High.ch with L-Battery

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.21 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.26 W/kg
SAR(1 g) = 0.723 W/kg



0 dB = 0.900 W/kg = -0.46 dBW/kg

DUT: ACJFZN1B; Type: Portable Handset; Serial: 1408

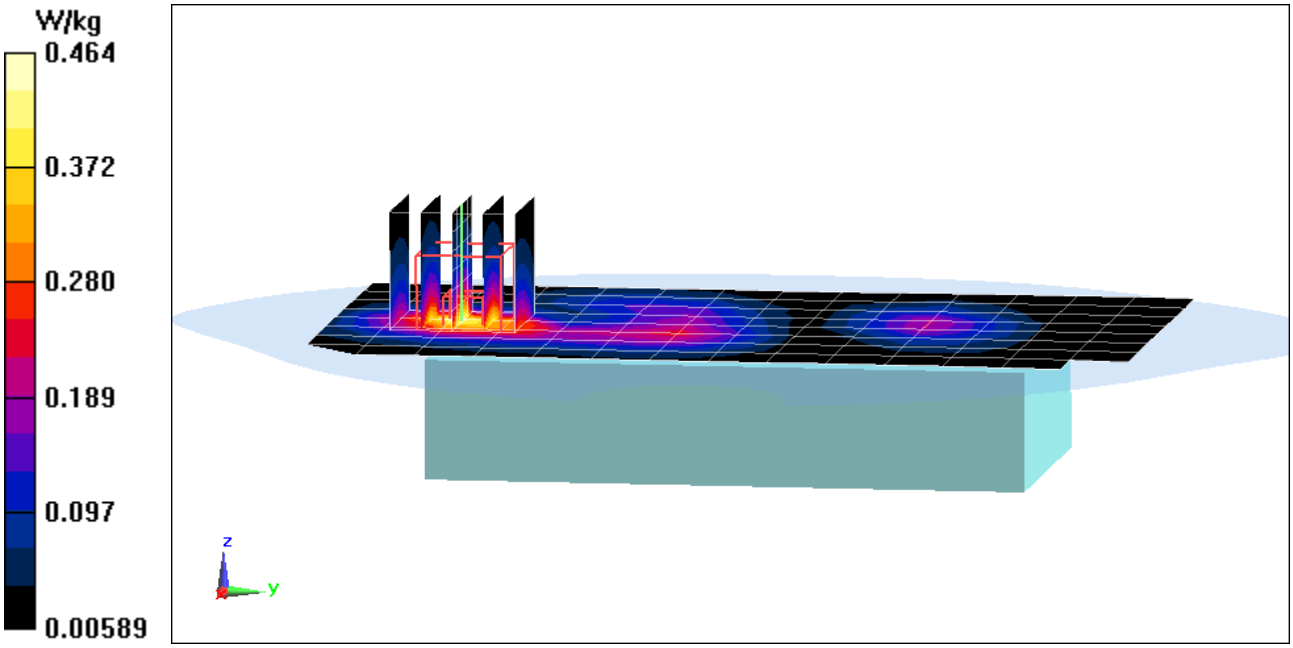
Communication System: UID 0, UMTS; Frequency: 1907.6 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
$f = 1907.6$ MHz; $\sigma = 1.511$ S/m; $\varepsilon_r = 51.858$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 03-29-2016; Ambient Temp: 24.2°C; Tissue Temp: 23.2°C

Probe: ES3DV3 - SN3288; ConvF(4.81, 4.81, 4.81); Calibrated: 9/18/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1364; Calibrated: 9/18/2015
Phantom: Sub TWIN SAM; Type: QD000P40CC; Serial: TP-1357
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: UMTS 1900, Extremity SAR, Back side, High.ch
with Standard Battery and Hand Strap Accessory

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.60 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 0.618 W/kg
SAR(10 g) = 0.225 W/kg



DUT: ACJFZN1B; Type: Portable Handset; Serial: 1416

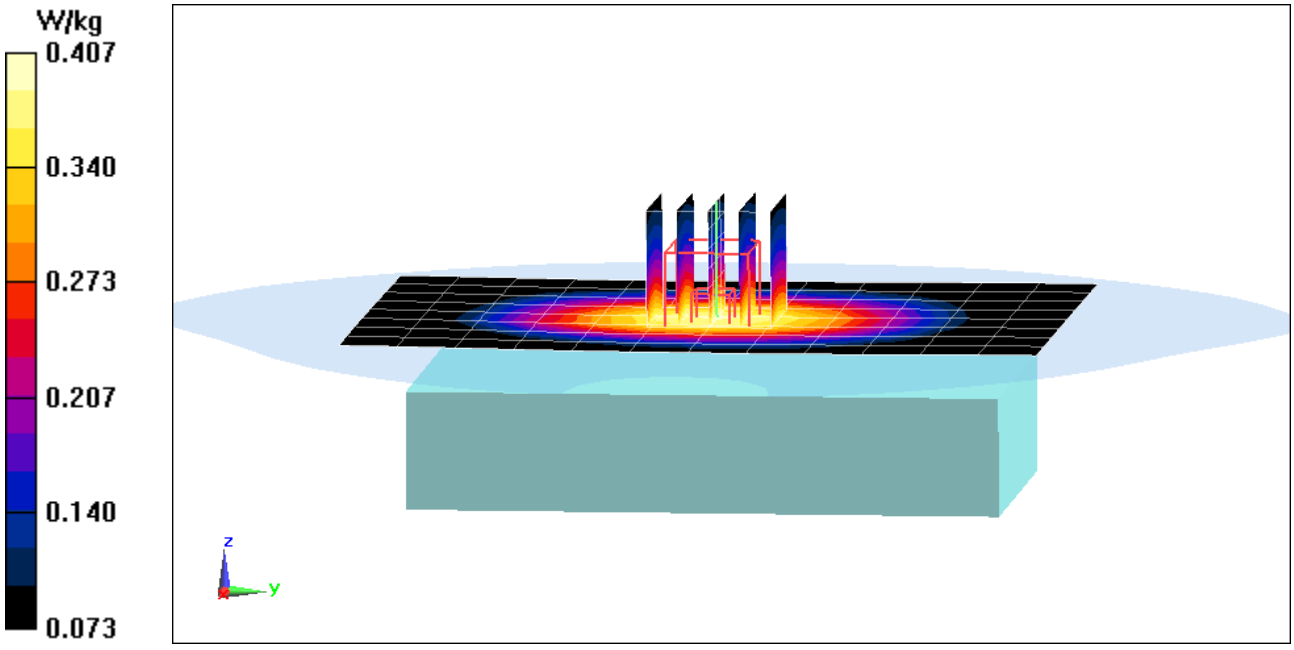
Communication System: UID 0, LTE Band 12; Frequency: 707.5 MHz; Duty Cycle: 1:1
Medium: 750 Body Medium parameters used (interpolated):
f = 707.5 MHz; σ = 0.925 S/m; ε_r = 54.185; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-06-2016; Ambient Temp: 23.3°C; Tissue Temp: 23.3°C

Probe: ES3DV3 - SN3332; ConvF(6.36, 6.36, 6.36); Calibrated: 9/18/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1466; Calibrated: 1/15/2016
Phantom: SAM Main ; Type: QD000P40CC; Serial: TP 1114
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: LTE Band 12, Body SAR, Back side, Mid.ch, 10 MHz Bandwidth
QPSK, 1 RB, 49 RB Offset with Standard Battery and without Body Worn Accessory

Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.73 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 0.466 W/kg
SAR(1 g) = 0.371 W/kg



DUT: ACJFZN1B; Type: Portable Handset; Serial: 1416

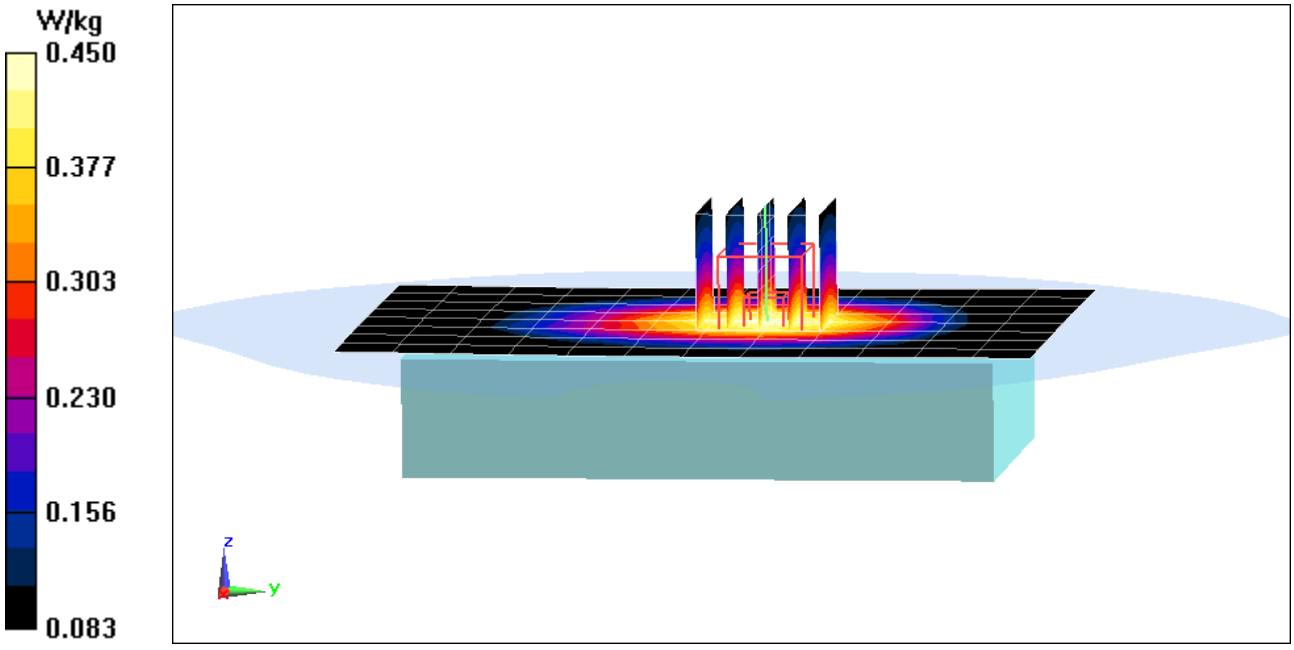
Communication System: UID 0, LTE Band 12; Frequency: 707.5 MHz; Duty Cycle: 1:1
Medium: 750 Body Medium parameters used (interpolated):
f = 707.5 MHz; σ = 0.925 S/m; ε_r = 54.185; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 04-06-2016; Ambient Temp: 23.3°C; Tissue Temp: 23.3°C

Probe: ES3DV3 - SN3332; ConvF(6.36, 6.36, 6.36); Calibrated: 9/18/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1466; Calibrated: 1/15/2016
Phantom: SAM Main ; Type: QD000P40CC; Serial: TP 1114
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: LTE Band 12, Extremity SAR, Back side, Mid.ch, 10 MHz Bandwidth QPSK, 1 RB, 49 RB Offset with Standard Battery and Hand Strap Accessory

Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.87 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.509 W/kg
SAR(10 g) = 0.315 W/kg



DUT: ACJFZN1B; Type: Portable Handset; Serial: 1416

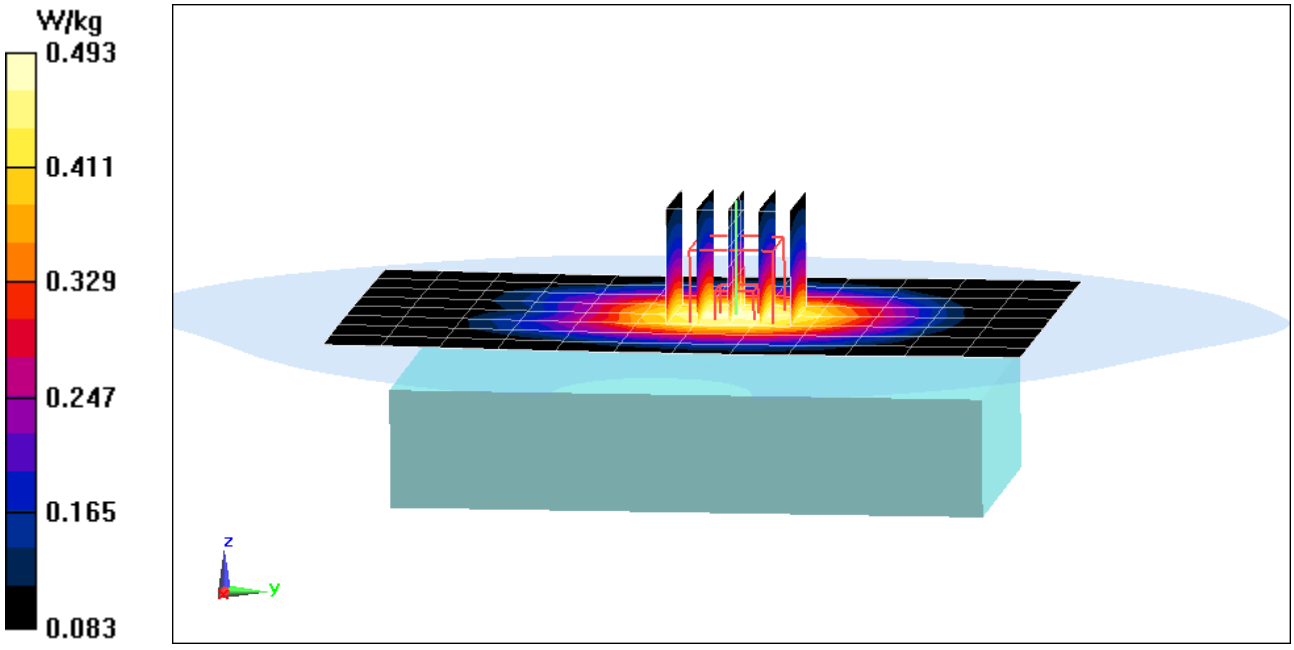
Communication System: UID 0, LTE Band 13; Frequency: 782 MHz; Duty Cycle: 1:1
Medium: 750 Body Medium parameters used (interpolated):
f = 782 MHz; σ = 0.991 S/m; ε_r = 53.461; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-06-2016; Ambient Temp: 23.3°C; Tissue Temp: 23.3°C

Probe: ES3DV3 - SN3332; ConvF(6.36, 6.36, 6.36); Calibrated: 9/18/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1466; Calibrated: 1/15/2016
Phantom: SAM Main ; Type: QD000P40CC; Serial: TP 1114
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: LTE Band 13, Body SAR, Back side, Mid.ch, 10 MHz Bandwidth, QPSK, 1 RB, 25 RB Offset with Standard Battery and without Body Worn Accessory

Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.82 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.569 W/kg
SAR(1 g) = 0.447 W/kg



DUT: ACJFZN1B; Type: Portable Handset; Serial: 1416

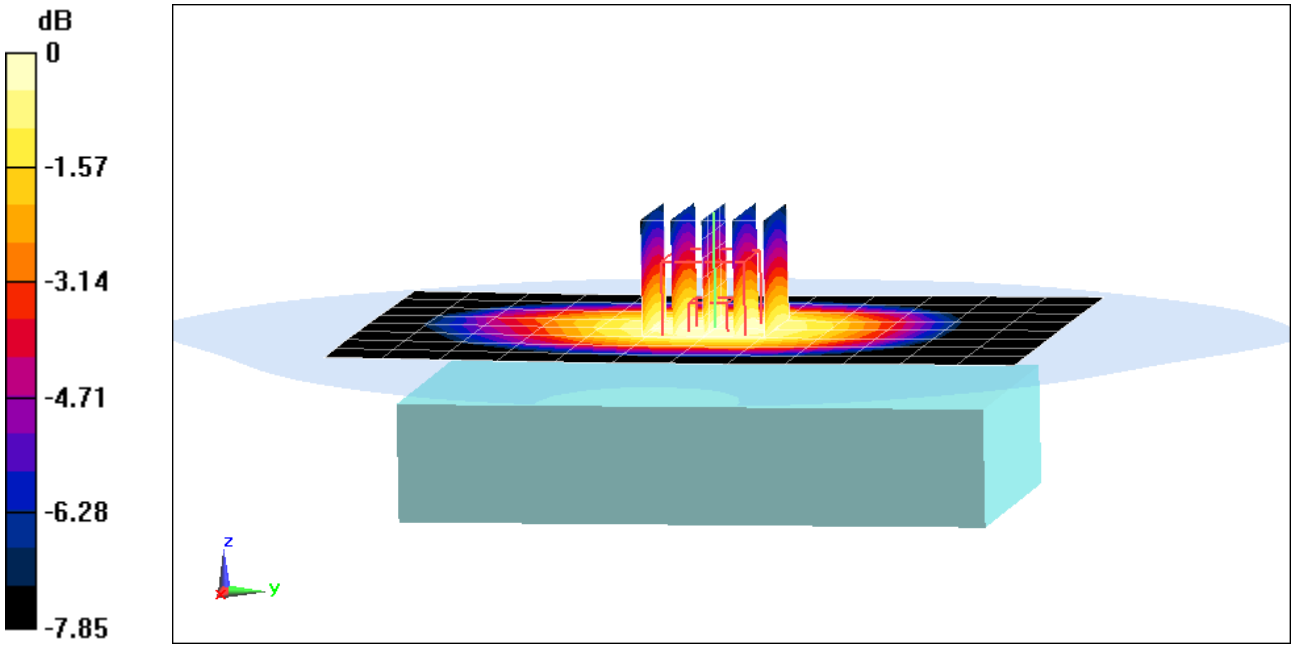
Communication System: UID 0, LTE Band 13; Frequency: 782 MHz; Duty Cycle: 1:1
Medium: 750 Body Medium parameters used (interpolated):
f = 782 MHz; σ = 0.991 S/m; ε_r = 53.461; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-06-2016; Ambient Temp: 23.3°C; Tissue Temp: 23.3°C

Probe: ES3DV3 - SN3332; ConvF(6.36, 6.36, 6.36); Calibrated: 9/18/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1466; Calibrated: 1/15/2016
Phantom: SAM Main ; Type: QD000P40CC; Serial: TP 1114
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: LTE Band 13, Body SAR, Front side, Mid.ch, 10 MHz Bandwidth QPSK, 1 RB, 25 RB Offset with Standard Battery

Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.45 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.696 W/kg
SAR(1 g) = 0.557 W/kg



0 dB = 0.609 W/kg = -2.15 dBW/kg

DUT: ACJFZN1B; Type: Portable Handset; Serial: 1416

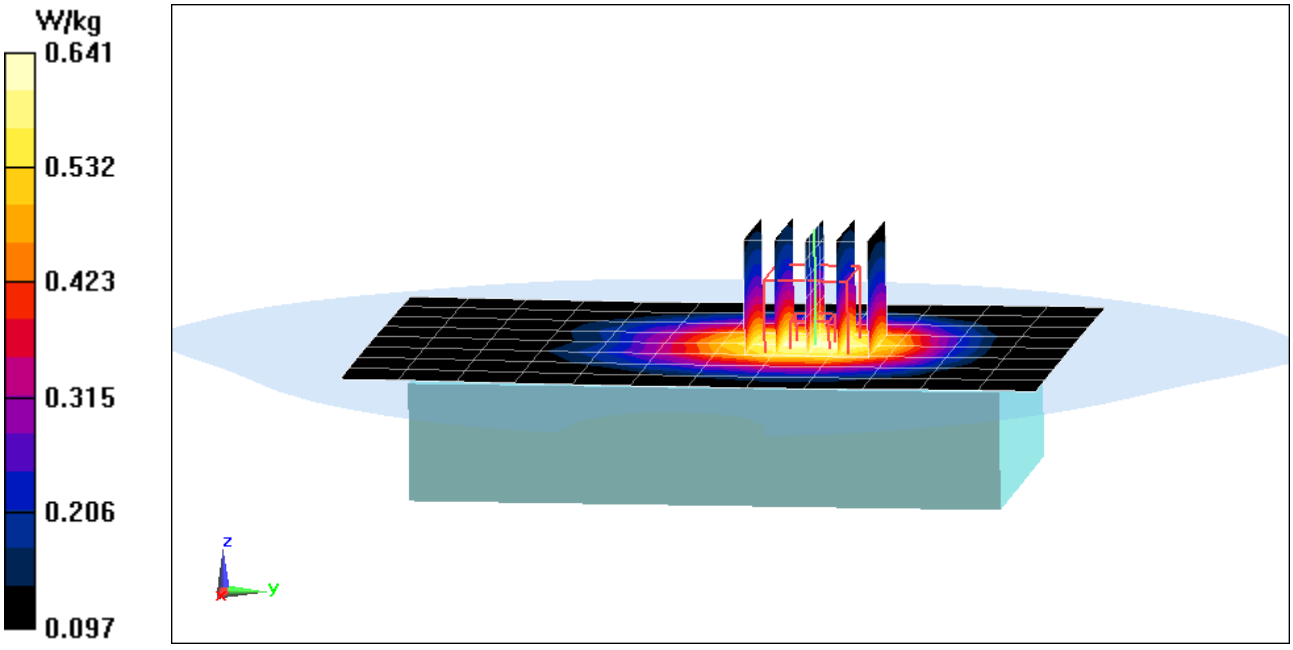
Communication System: UID 0, LTE Band 13; Frequency: 782 MHz; Duty Cycle: 1:1
Medium: 750 Body Medium parameters used (interpolated):
f = 782 MHz; σ = 0.991 S/m; ε_r = 53.461; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 04-06-2016; Ambient Temp: 23.3°C; Tissue Temp: 23.3°C

Probe: ES3DV3 - SN3332; ConvF(6.36, 6.36, 6.36); Calibrated: 9/18/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1466; Calibrated: 1/15/2016
Phantom: SAM Main ; Type: QD000P40CC; Serial: TP 1114
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: LTE Band 13, Extremity SAR, Back side, Mid.ch, 10 MHz Bandwidth QPSK, 1 RB, 25 RB Offset with Standard Battery and Hand Strap Accessory

Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.79 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.743 W/kg
SAR(10 g) = 0.435 W/kg



DUT: ACJFZN1B; Type: Portable Handset; Serial: 1408

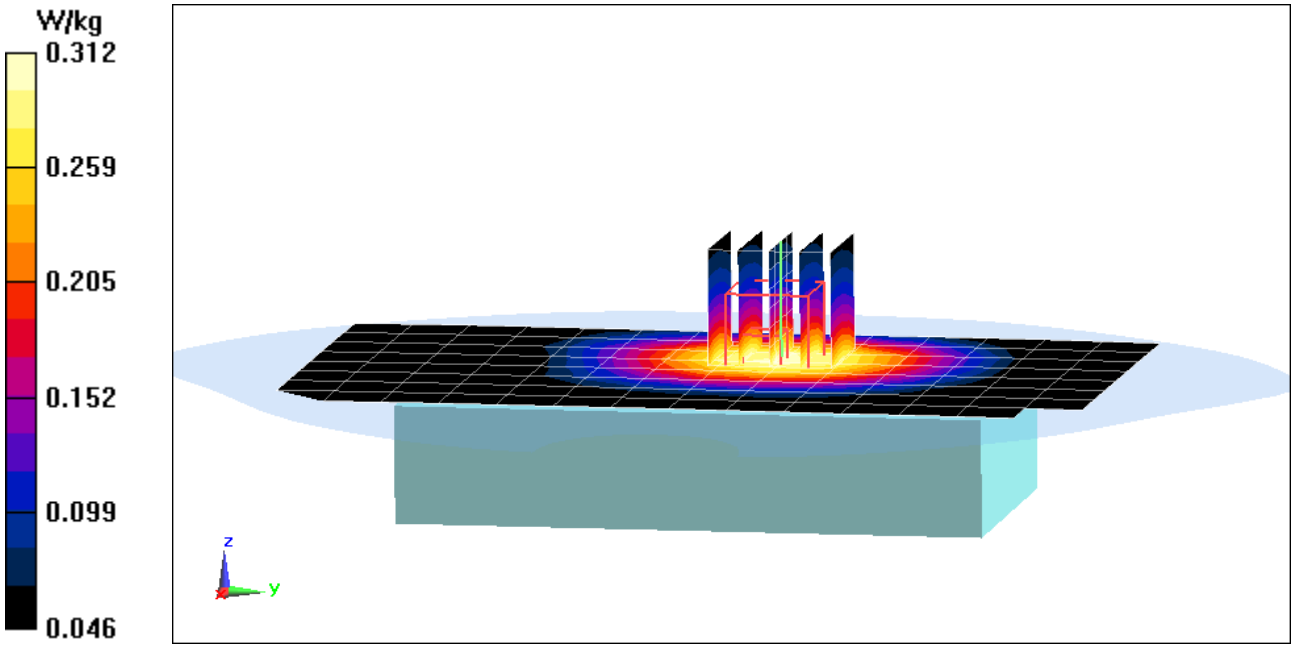
Communication System: UID 0, LTE Band 5 (Cell.); Frequency: 836.5 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
$f = 836.5$ MHz; $\sigma = 1.006$ S/m; $\varepsilon_r = 53.998$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 04-04-2016; Ambient Temp: 22.0°C; Tissue Temp: 21.4°C

Probe: ES3DV3 - SN3318; ConvF(6.11, 6.11, 6.11); Calibrated: 2/19/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/19/2016
Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1800
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: LTE Band 5 (Cell.), Body SAR, Front side, Mid.ch, 10 MHz Bandwidth QPSK, 1 RB, 49 RB Offset with Standard Battery and Holster Body Worn Accessory

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.17 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.375 W/kg
SAR(1 g) = 0.284 W/kg



DUT: ACJFZN1B; Type: Portable Handset; Serial: 1408

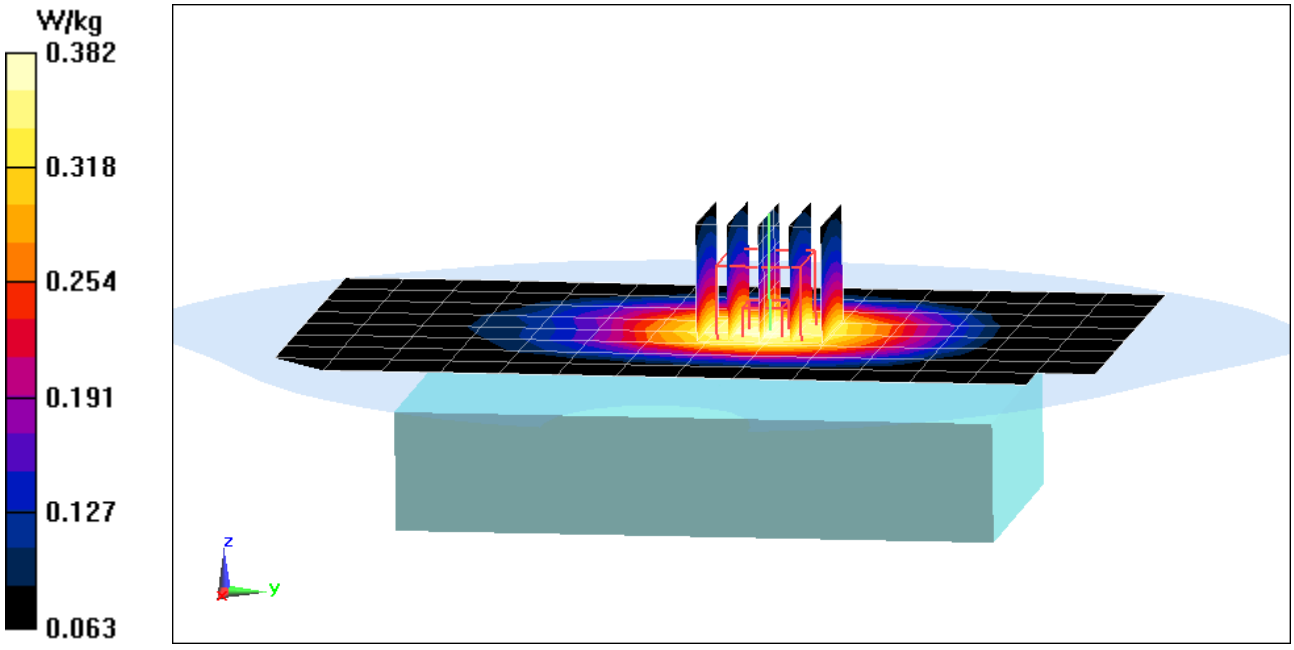
Communication System: UID 0, LTE Band 5 (Cell.); Frequency: 836.5 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
$f = 836.5$ MHz; $\sigma = 1.006$ S/m; $\varepsilon_r = 53.998$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-04-2016; Ambient Temp: 22.0°C; Tissue Temp: 21.4°C

Probe: ES3DV3 - SN3318; ConvF(6.11, 6.11, 6.11); Calibrated: 2/19/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/19/2016
Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1800
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: LTE Band 5 (Cell.), Body SAR, Front side, Mid.ch, 10 MHz Bandwidth QPSK, 1 RB, 49 RB Offset with Standard Battery

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.28 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.430 W/kg
SAR(1 g) = 0.349 W/kg



DUT: ACJFZN1B; Type: Portable Handset; Serial: 1408

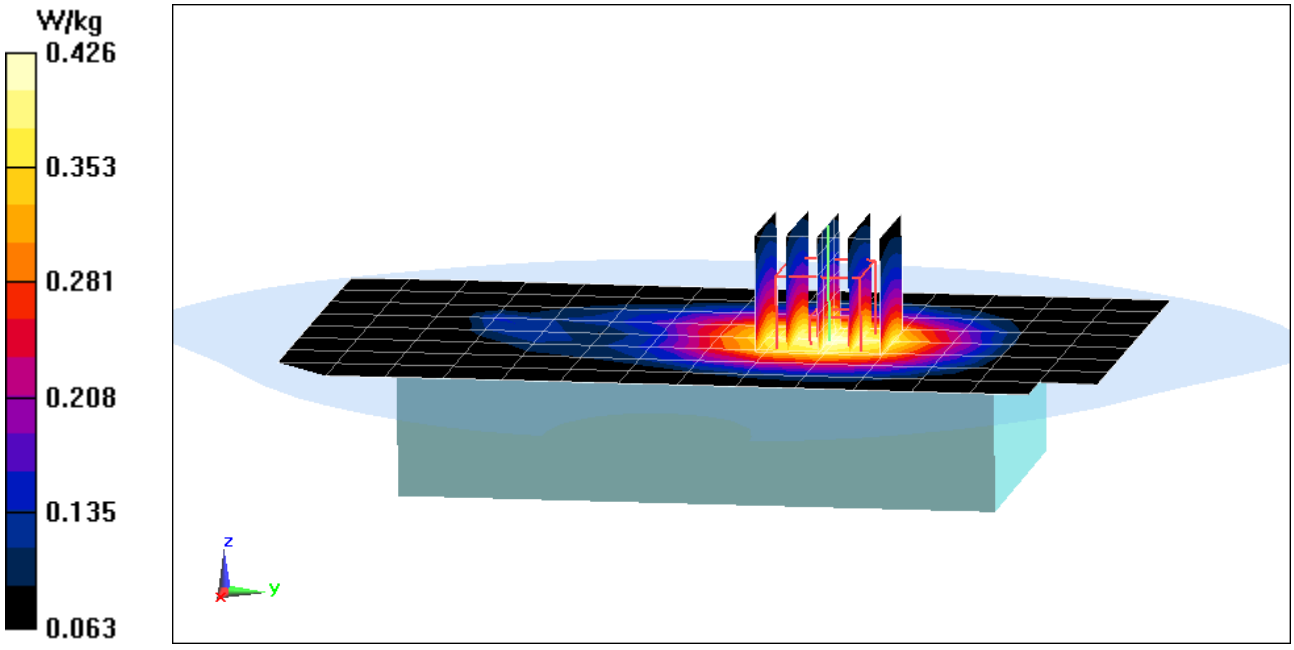
Communication System: UID 0, LTE Band 5; Frequency: 836.5 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 836.5 MHz; σ = 1.006 S/m; ε_r = 53.998; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 04-04-2016; Ambient Temp: 22.0°C; Tissue Temp: 21.4°C

Probe: ES3DV3 - SN3318; ConvF(6.11, 6.11, 6.11); Calibrated: 2/19/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/19/2016
Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1800
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: LTE Band 5 (Cell.), Extremity SAR, Back side, Mid.ch, 10 MHz Bandwidth QPSK, 1 RB, 49 RB Offset with Standard Battery and Hand Strap Accessory

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.36 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.489 W/kg
SAR(10 g) = 0.289 W/kg



DUT: ACJFZN1B; Type: Portable Handset; Serial: 1408

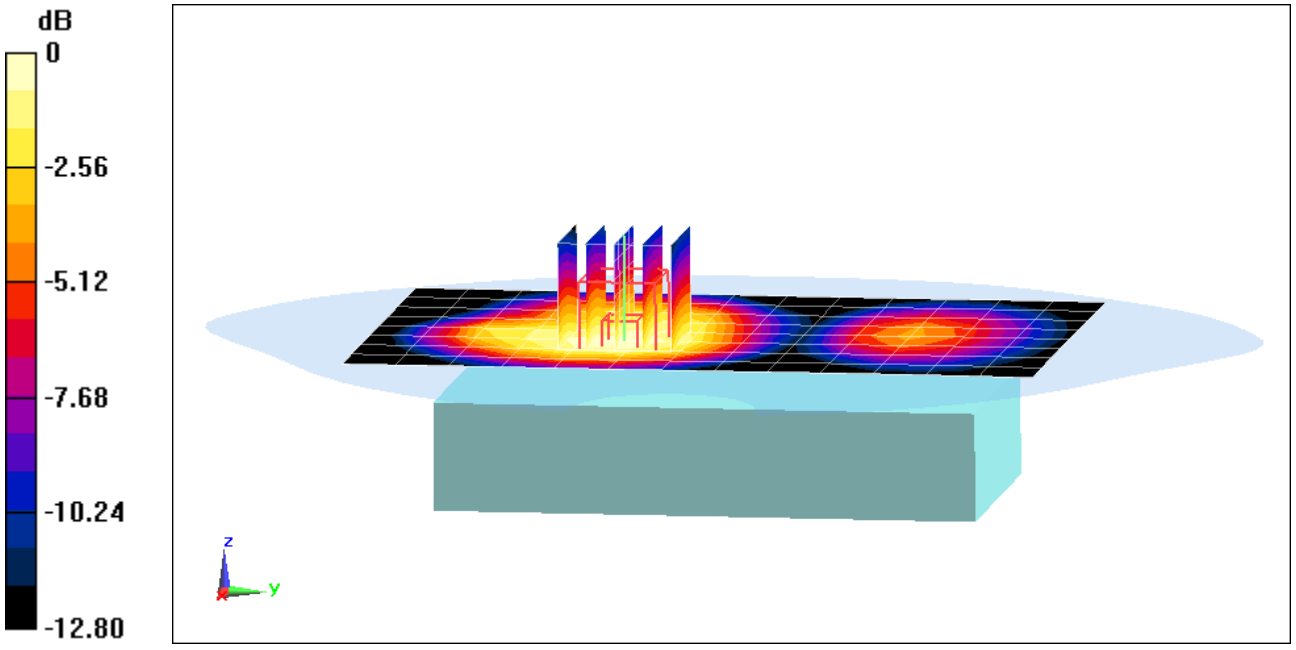
Communication System: UID 0, LTE Band 4 (AWS); Frequency: 1732.5 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used (interpolated):
$f = 1732.5$ MHz; $\sigma = 1.463$ S/m; $\varepsilon_r = 51.021$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 03-29-2016; Ambient Temp: 23.4°C; Tissue Temp: 22.3°C

Probe: ES3DV3 - SN3263; ConvF(4.88, 4.88, 4.88); Calibrated: 5/20/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 6/17/2015
Phantom: SAM with CRP (Left); Type: SAM; Serial: 1715
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: LTE Band 4 (AWS), Body SAR, Back side, Mid.ch, 20 MHz Bandwidth QPSK, 1 RB, 0 RB Offset with Standard Battery and without Body Worn Accessory

Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.59 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.724 W/kg
SAR(1 g) = 0.500 W/kg



0 dB = 0.576 W/kg = -2.40 dBW/kg

DUT: ACJFZN1B; Type: Portable Handset; Serial: 1408

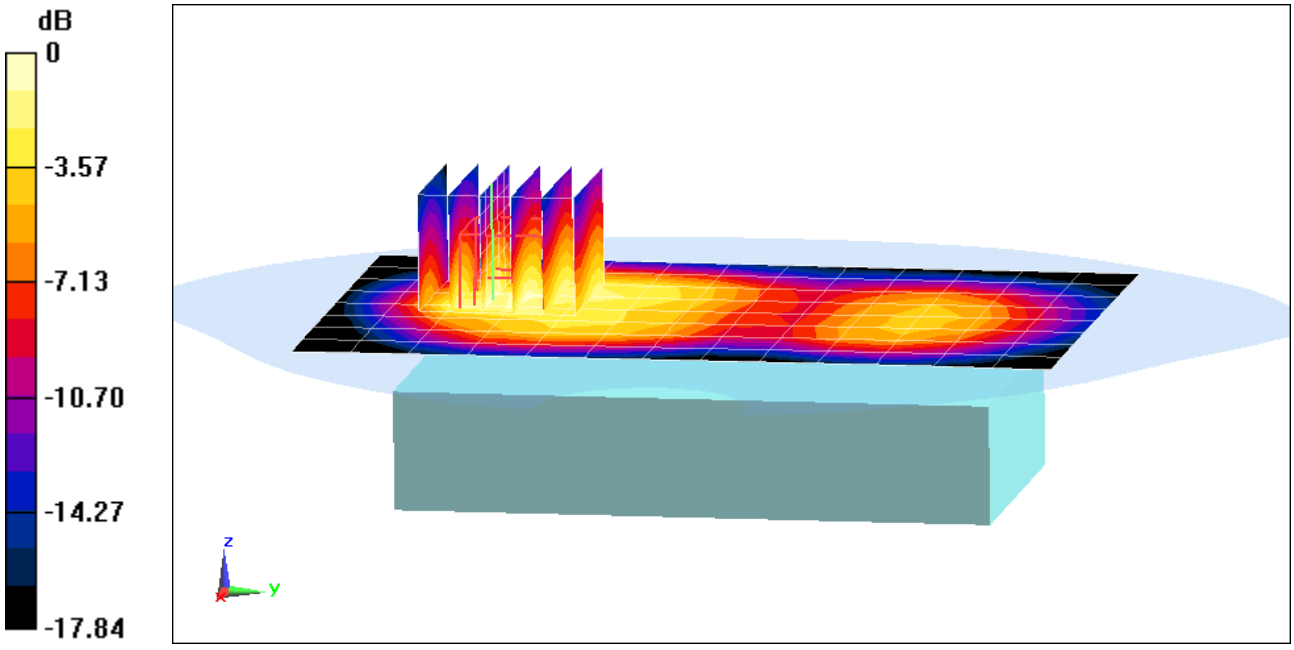
Communication System: UID 0, LTE Band 4 (AWS); Frequency: 1732.5 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used (interpolated):
$f = 1732.5$ MHz; $\sigma = 1.463$ S/m; $\varepsilon_r = 51.021$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 03-29-2016; Ambient Temp: 23.4°C; Tissue Temp: 22.3°C

Probe: ES3DV3 - SN3263; ConvF(4.88, 4.88, 4.88); Calibrated: 5/20/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 6/17/2015
Phantom: SAM with CRP (Left); Type: SAM; Serial: 1715
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: LTE Band 4 (AWS), Body SAR, Front side, Mid.ch, 20 MHz Bandwidth QPSK, 1 RB, 0 RB Offset with L-Battery

Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.94 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 1.56 W/kg
SAR(1 g) = 0.924 W/kg



0 dB = 1.13 W/kg = 0.53 dBW/kg

DUT: ACJFZN1B; Type: Portable Handset; Serial: 1408

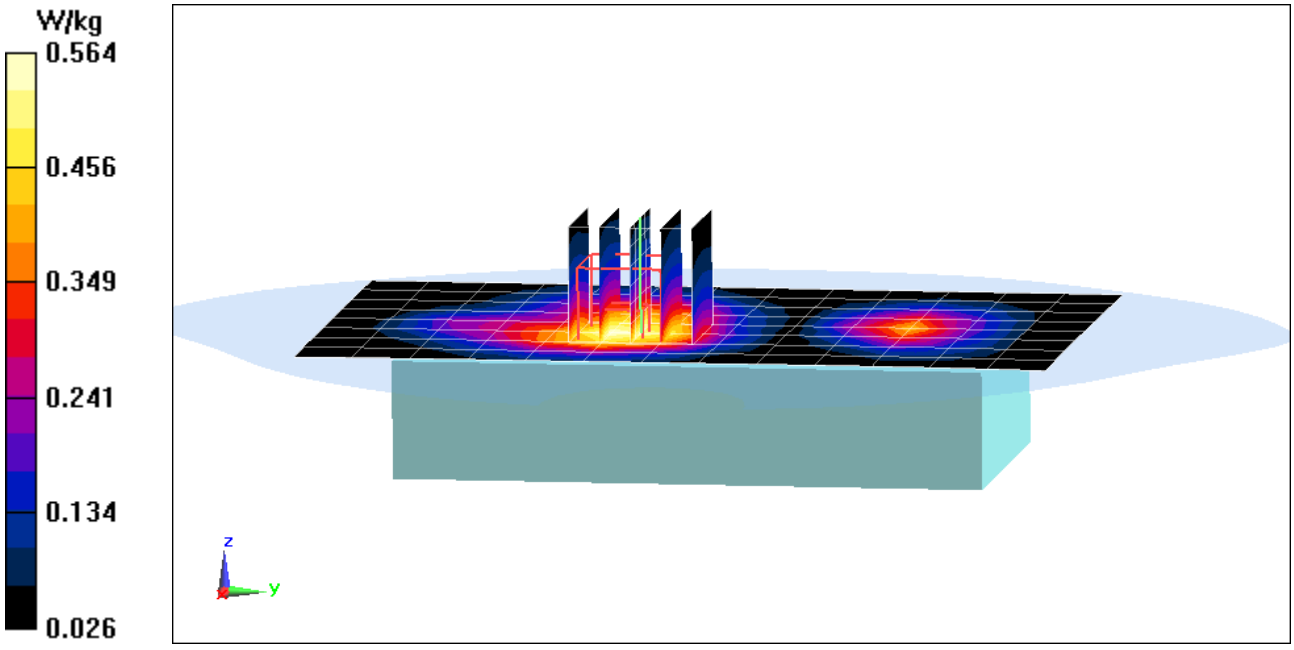
Communication System: UID 0, LTE Band 4 (AWS); Frequency: 1732.5 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used (interpolated):
$f = 1732.5$ MHz; $\sigma = 1.463$ S/m; $\varepsilon_r = 51.021$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 03-29-2016; Ambient Temp: 23.4°C; Tissue Temp: 22.3°C

Probe: ES3DV3 - SN3263; ConvF(4.88, 4.88, 4.88); Calibrated: 5/20/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 6/17/2015
Phantom: SAM with CRP (Left); Type: SAM; Serial: 1715
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: LTE Band 4 (AWS), Extremity SAR, Back side Mid.ch, 20 MHz Bandwidth QPSK, 1 RB, 0 RB Offset with Standard Battery and Hand Strap Accessory

Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.35 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.716 W/kg
SAR(10 g) = 0.328 W/kg



DUT: ACJFZN1B; Type: Portable Handset; Serial: 1416

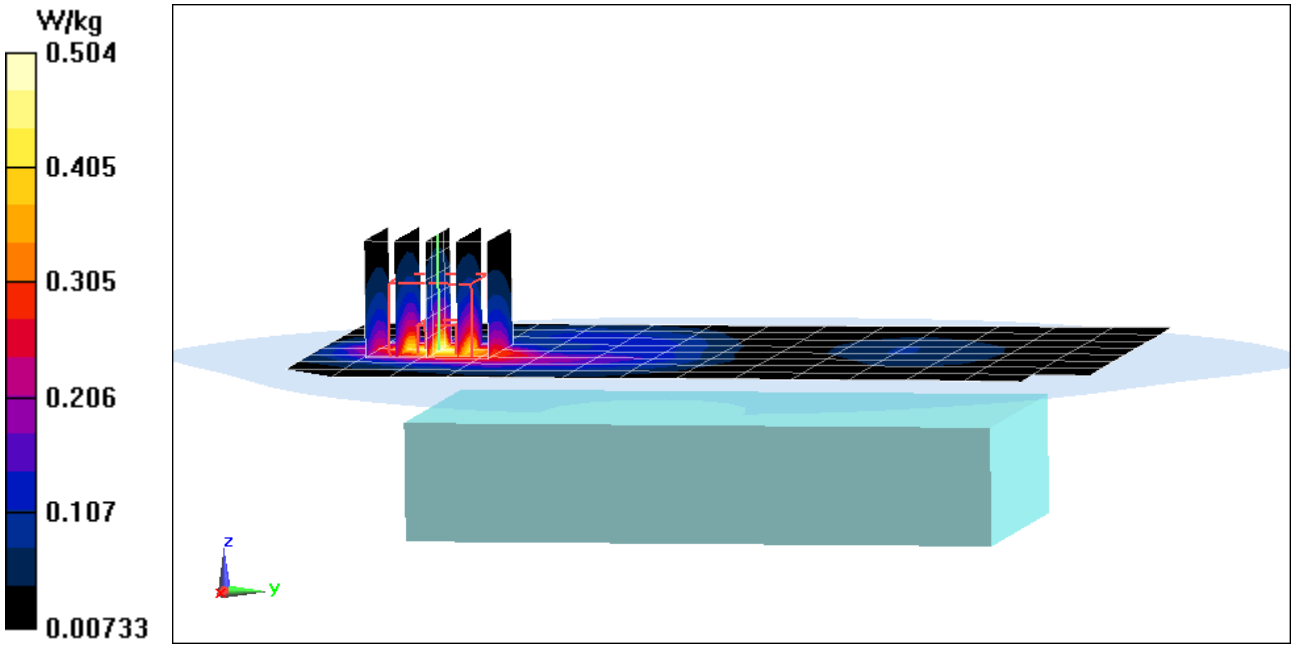
Communication System: UID 0, LTE Band 2 (PCS); Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
$f = 1900$ MHz; $\sigma = 1.503$ S/m; $\varepsilon_r = 51.873$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 03-29-2016; Ambient Temp: 24.2°C; Tissue Temp: 23.2°C

Probe: ES3DV3 - SN3288; ConvF(4.81, 4.81, 4.81); Calibrated: 9/18/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1364; Calibrated: 9/18/2015
Phantom: Sub TWIN SAM; Type: QD000P40CC; Serial: TP-1357
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: LTE Band 2 (PCS), Body SAR, Back side, High.ch, 20 MHz Bandwidth QPSK, 1 RB, 50 RB Offset with Standard Battery and without Body Worn Accessory

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.67 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.695 W/kg
SAR(1 g) = 0.420 W/kg



DUT: ACJFZN1B; Type: Portable Handset; Serial: 1416

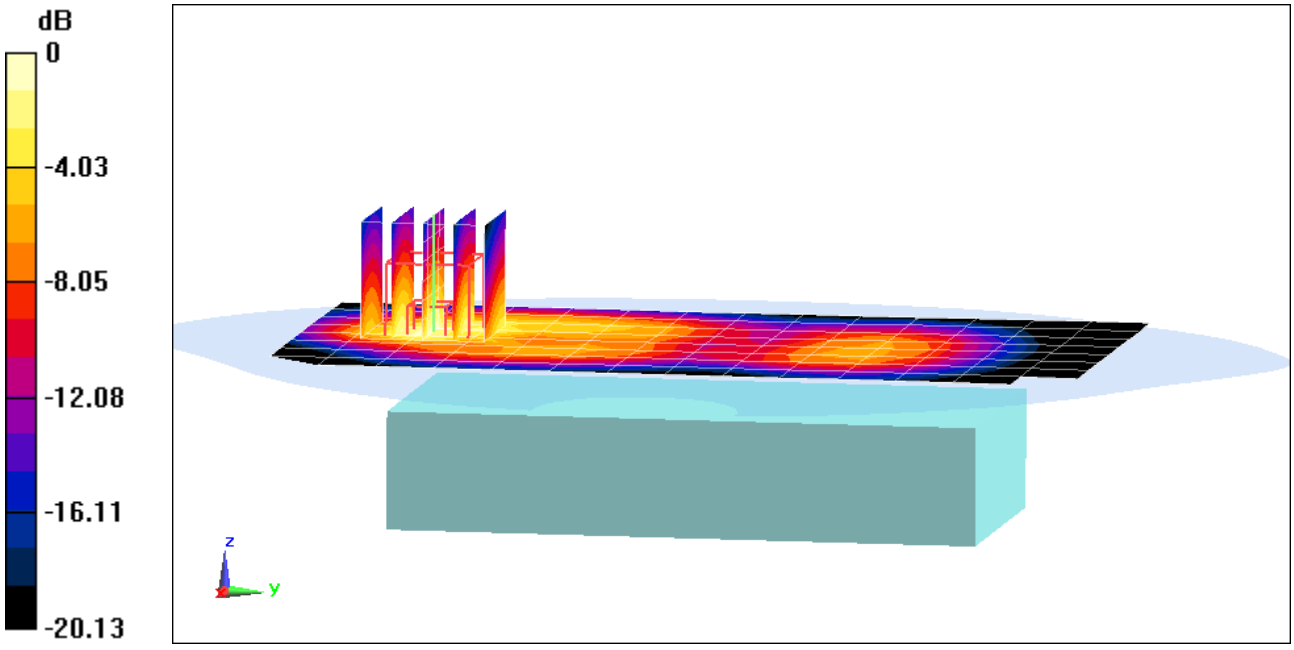
Communication System: UID 0, LTE Band 2 (PCS); Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
$f = 1900$ MHz; $\sigma = 1.503$ S/m; $\varepsilon_r = 51.873$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 03-29-2016; Ambient Temp: 24.2°C; Tissue Temp: 23.2°C

Probe: ES3DV3 - SN3288; ConvF(4.81, 4.81, 4.81); Calibrated: 9/18/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1364; Calibrated: 9/18/2015
Phantom: Sub TWIN SAM; Type: QD000P40CC; Serial: TP-1357
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: LTE Band 2 (PCS), Body SAR, Front side, High.ch, 20 MHz Bandwidth QPSK, 1 RB, 50 RB Offset with Standard Battery

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.22 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.37 W/kg
SAR(1 g) = 0.785 W/kg



0 dB = 0.978 W/kg = -0.10 dBW/kg

DUT: ACJFZN1B; Type: Portable Handset; Serial: 1416

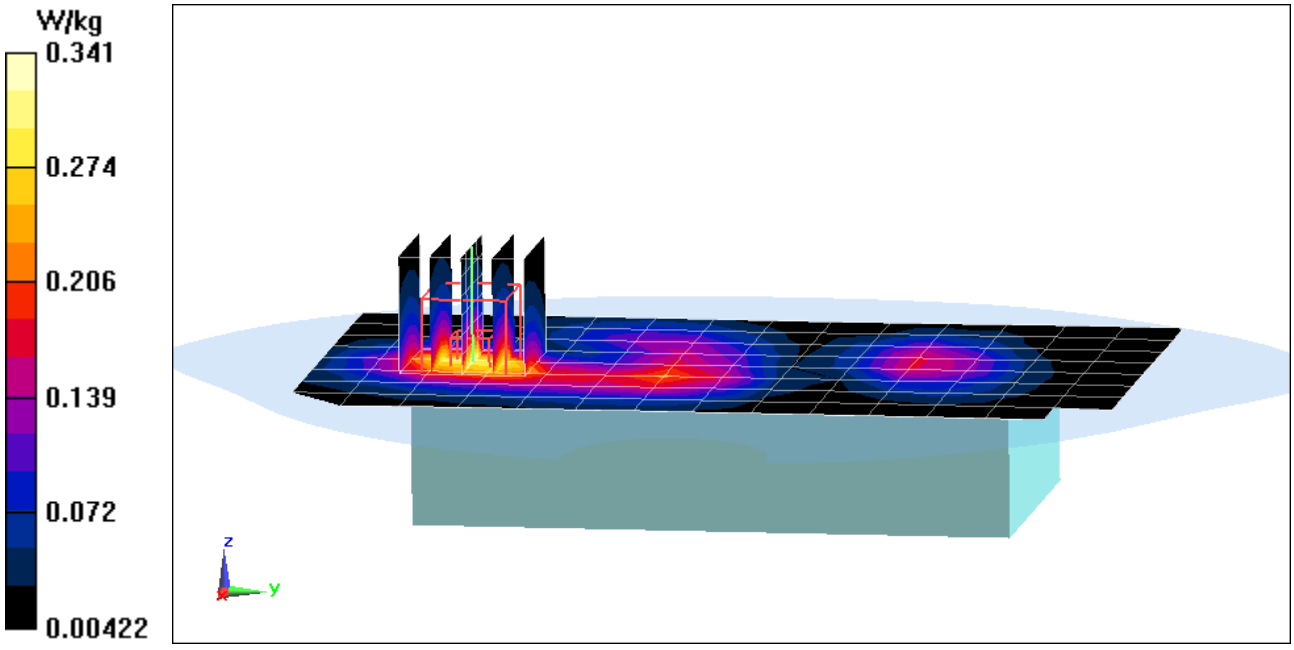
Communication System: UID 0, LTE Band 2 (PCS); Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
$f = 1900$ MHz; $\sigma = 1.503$ S/m; $\varepsilon_r = 51.873$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 03-29-2016; Ambient Temp: 24.2°C; Tissue Temp: 23.2°C

Probe: ES3DV3 - SN3288; ConvF(4.81, 4.81, 4.81); Calibrated: 9/18/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1364; Calibrated: 9/18/2015
Phantom: Sub TWIN SAM; Type: QD000P40CC; Serial: TP-1357
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: LTE Band 2 (PCS), Extremity SAR, Back side, High.ch, 20 MHz Bandwidth QPSK, 1 RB, 50 RB Offset with Standard Battery and Hand Strap Accessory

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.02 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.455 W/kg
SAR(10 g) = 0.170 W/kg



DUT: ACJFZN1B; Type: Portable Handset; Serial: 1432

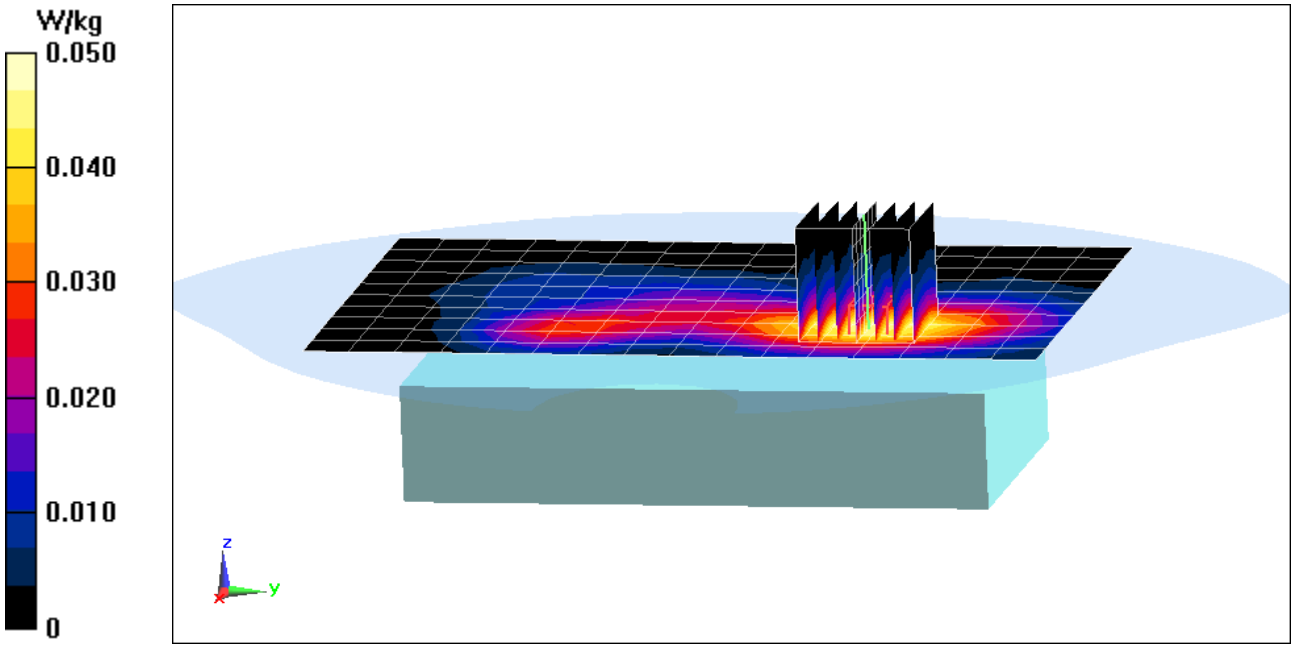
Communication System: UID 0, IEEE 802.11b; Frequency: 2412 MHz; Duty Cycle: 1:1
Medium: 2450 Body Medium parameters used (interpolated):
$f = 2412$ MHz; $\sigma = 1.988$ S/m; $\varepsilon_r = 53.232$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 03-30-2016; Ambient Temp: 20.7°C; Tissue Temp: 21.4°C

Probe: ES3DV3 - SN3334; ConvF(4.45, 4.45, 4.45); Calibrated: 11/17/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1415; Calibrated: 11/11/2015
Phantom: SAM Front; Type: SAM; Serial: 1686
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: IEEE 802.11b, 22 MHz Bandwidth, Body SAR SAR, Ch 01, 1 Mbps, Back Side with Standard Battery and without Body Worn Accessory

Area Scan (11x17x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.749 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 0.0760 W/kg
SAR(1 g) = 0.040 W/kg



DUT: ACJFZN1B; Type: Portable Handset; Serial: 1432

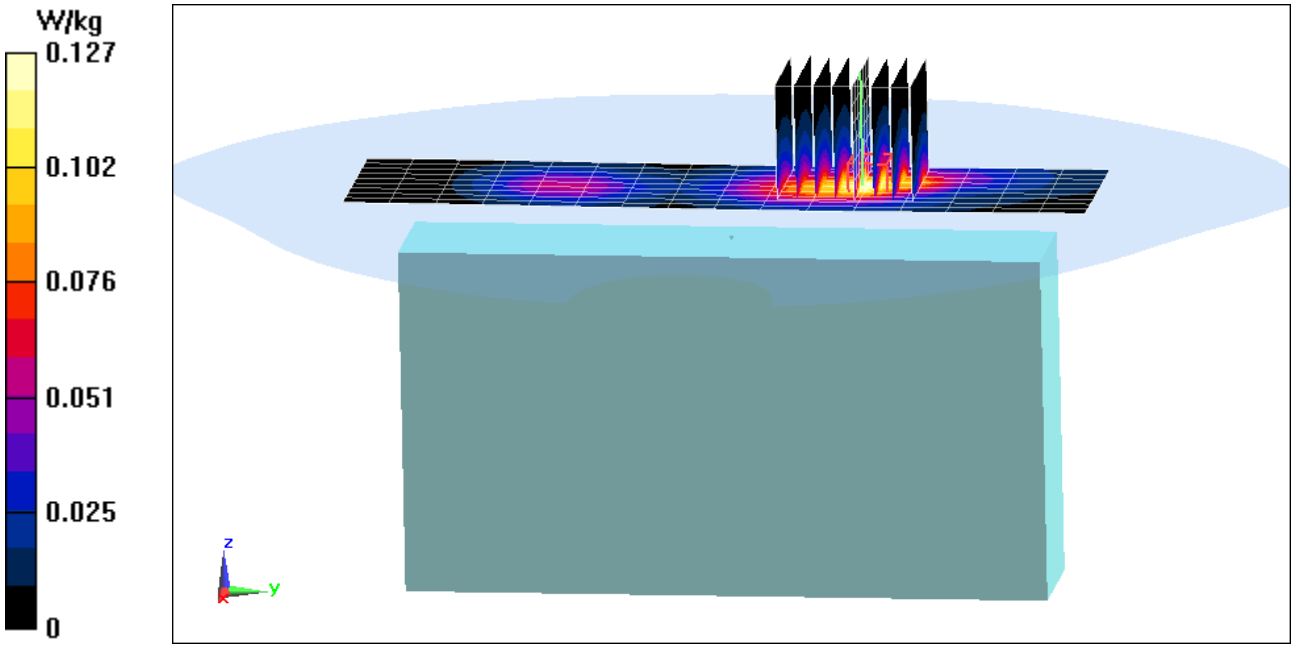
Communication System: UID 0, IEEE 802.11b; Frequency: 2412 MHz; Duty Cycle: 1:1
Medium: 2450 Body Medium parameters used (interpolated):
$f = 2412$ MHz; $\sigma = 1.988$ S/m; $\varepsilon_r = 53.232$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 03-30-2016; Ambient Temp: 20.7°C; Tissue Temp: 21.4°C

Probe: ES3DV3 - SN3334; ConvF(4.45, 4.45, 4.45); Calibrated: 11/17/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1415; Calibrated: 11/11/2015
Phantom: SAM Front; Type: SAM; Serial: 1686
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: IEEE 802.11b, 22 MHz Bandwidth, Body SAR, Ch 01, 1 Mbps, Left Edge with Standard Battery

Area Scan (10x17x1): Measurement grid: dx=5mm, dy=12mm
Zoom Scan (7x8x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.023 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 0.202 W/kg
SAR(1 g) = 0.100 W/kg



DUT: ACJFZN1B; Type: Portable Handset; Serial: 1432

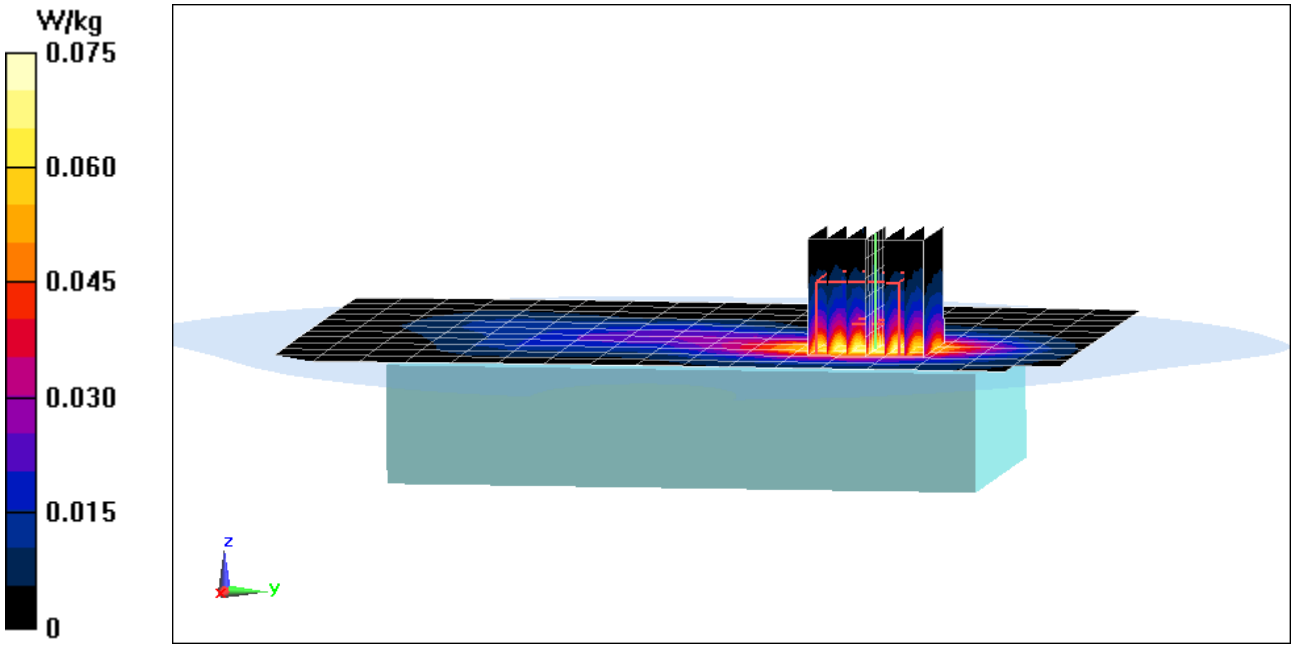
Communication System: UID 0, IEEE 802.11b; Frequency: 2412 MHz; Duty Cycle: 1:1
Medium: 2450 Body Medium parameters used (interpolated):
$f = 2412$ MHz; $\sigma = 1.933$ S/m; $\varepsilon_r = 51.875$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 04-04-2016; Ambient Temp: 22.2°C; Tissue Temp: 21.9°C

Probe: ES3DV3 - SN3334; ConvF(4.45, 4.45, 4.45); Calibrated: 11/17/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1415; Calibrated: 11/11/2015
Phantom: SAM Front; Type: SAM; Serial: 1686
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: IEEE 802.11b, 22 MHz Bandwidth, Extremity SAR, Ch 01, 1 Mbps, Back Side with Standard Battery and Hand Strap Accessory

Area Scan (12x18x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.884 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 0.115 W/kg
SAR(10 g) = 0.034 W/kg



DUT: ACJFZN1B; Type: Portable Handset; Serial: 2206

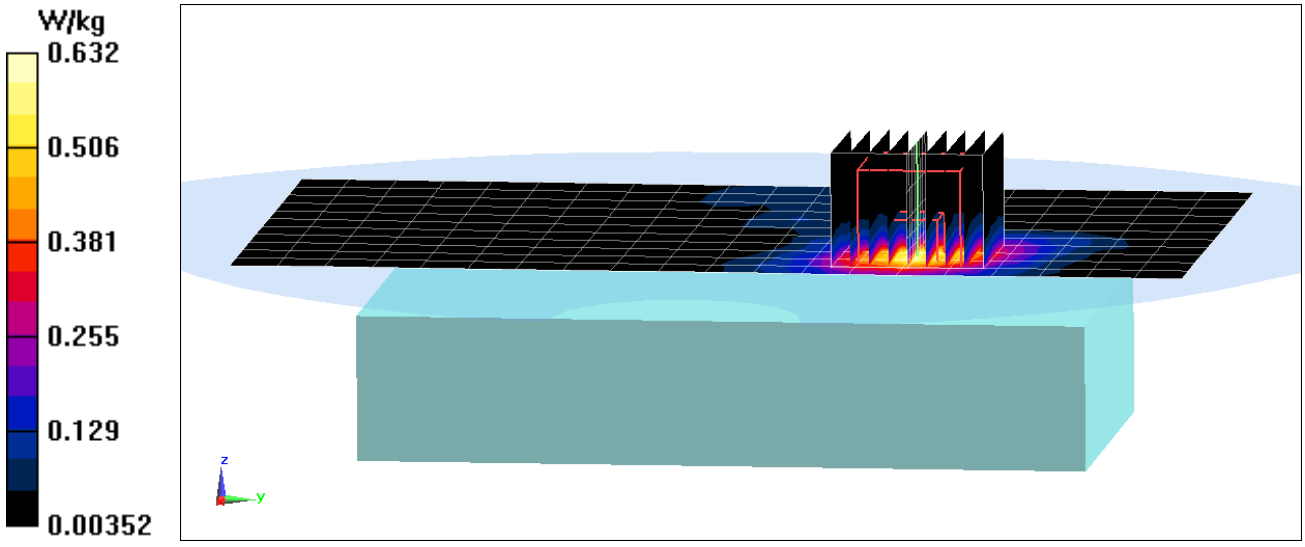
Communication System: UID 0, IEEE 802.11a; Frequency: 5745 MHz; Duty Cycle: 1:1
Medium: 5 GHz Body Medium parameters used:
f = 5745 MHz; σ = 6.047 S/m; ε_r = 46.769; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-28-2015; Ambient Temp: 22.4°C; Tissue Temp: 22.6°C

Probe: EX3DV4 - SN7357; ConvF(3.82, 3.82, 3.82); Calibrated: 4/23/2015;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/20/2015
Phantom: SAM v5.0 Left; Type: QD000P40CD; Serial: TP: 1687
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: IEEE 802.11a, U-NII-3, 20 MHz Bandwidth, Body SAR, Ch 149, 6 Mbps, Back Side with L-battery and without Body Worn Accessory

Area Scan (12x21x1): 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 = 6.843 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 1.00 W/kg
SAR(1 g) = 0.292 W/kg



DUT: ACJFZN1B; Type: Portable Handset; Serial: 2206

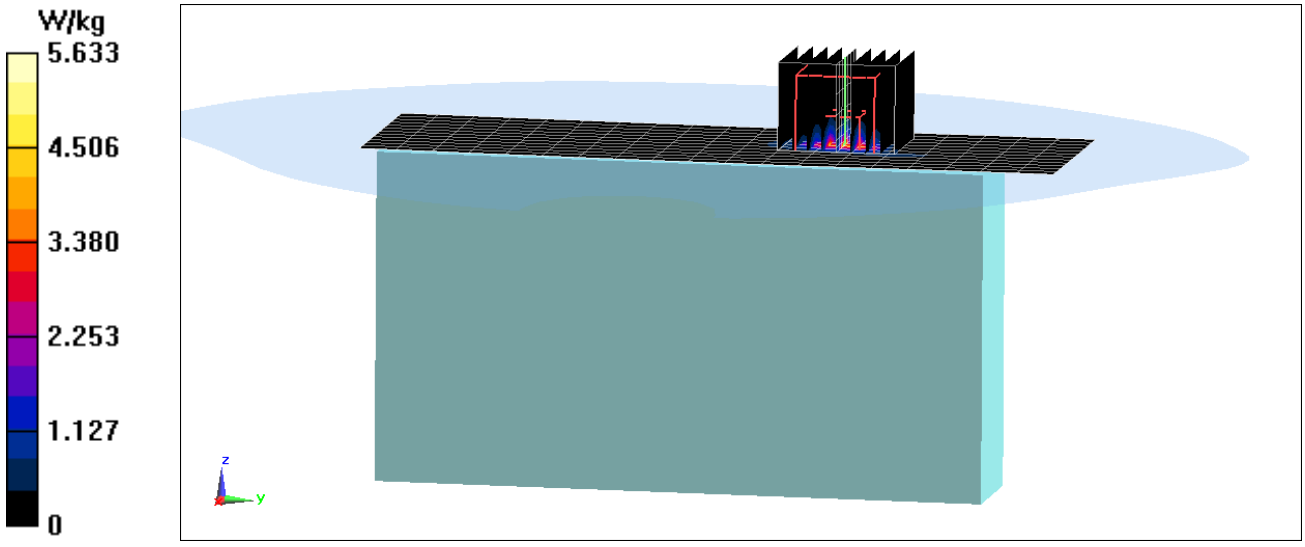
Communication System: UID 0, IEEE 802.11a; Frequency: 5600 MHz; Duty Cycle: 1:1
Medium: 5 GHz Body Medium parameters used:
f = 5600 MHz; σ = 5.839 S/m; ε_r = 47.011; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 12-28-2015; Ambient Temp: 22.4°C; Tissue Temp: 22.6°C

Probe: EX3DV4 - SN7357; ConvF(3.72, 3.72, 3.72); Calibrated: 4/23/2015;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/20/2015
Phantom: SAM v5.0 Left; Type: QD000P40CD; Serial: TP: 1687
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: IEEE 802.11a, U-NII-2C, 20 MHz Bandwidth, Phablet SAR
Ch 120, 6 Mbps, Left Edge with L-Battery

Area Scan (13x20x1): Measurement grid: dx=5mm, dy=10mm
Zoom Scan (8x9x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 17.44 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 10.1 W/kg
SAR(10 g) = 0.435 W/kg



DUT: ACJFZN1B; Type: Portable Handset; Serial: 2206

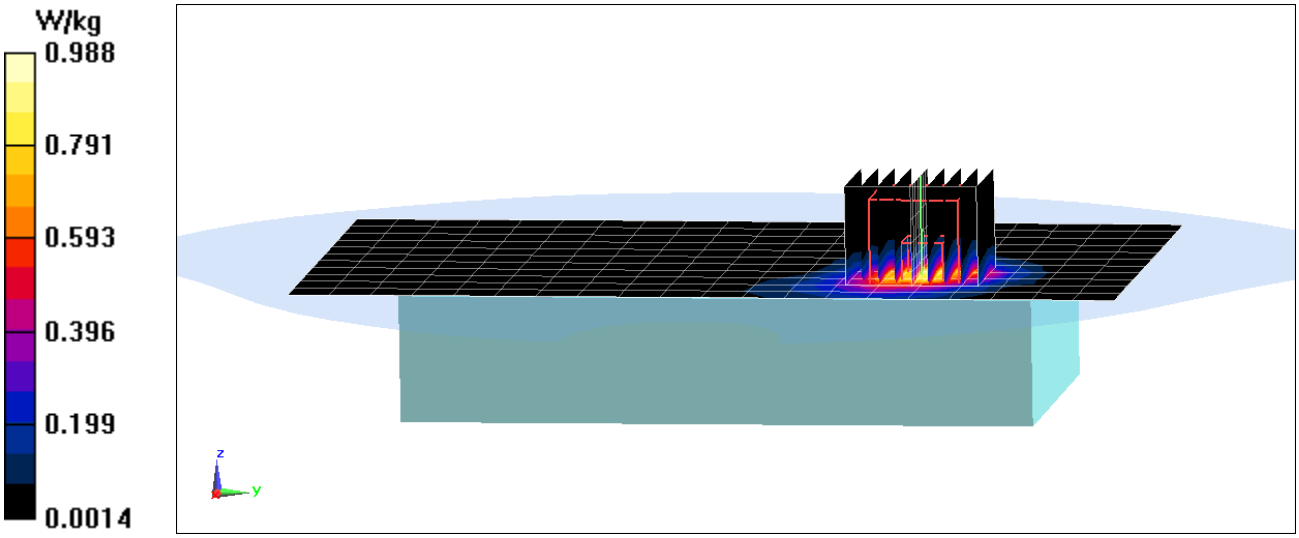
Communication System: UID 0, 802.11a; Frequency: 5745 MHz; Duty Cycle: 1:1
Medium: 5 GHz Body Medium parameters used:
f = 5745 MHz; σ = 6.022 S/m; ε_r = 46.409; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 12-21-2015; Ambient Temp: 23.4°C; Tissue Temp: 22.1°C

Probe: EX3DV4 - SN7357; ConvF(3.82, 3.82, 3.82); Calibrated: 4/23/2015;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/20/2015
Phantom: SAM v5.0 Left; Type: QD000P40CD; Serial: TP: 1687
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: IEEE 802.11a, U-NII-3, 20 MHz Bandwidth, Extremity SAR
Ch 149, 6 Mbps, Back Side with Standard Battery and Hand Strap Accessory

Area Scan (12x21x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x9x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 8.546 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 1.62 W/kg
SAR(10 g) = 0.181 W/kg



DUT: ACJFZN1B; Type: Portable Handset; Serial: 1481

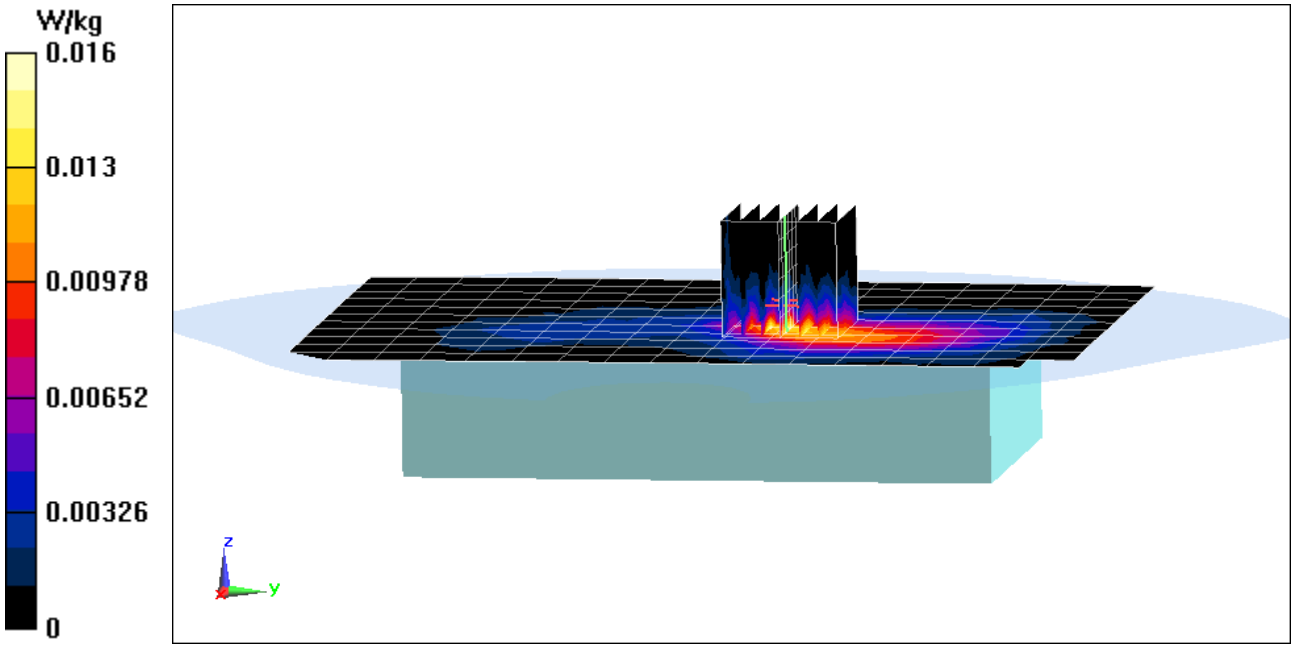
Communication System: UID 0, Bluetooth; Frequency: 2441 MHz; Duty Cycle: 1:1
Medium: 2450 Body Medium parameters used (interpolated):
f = 2441 MHz; σ = 1.973 S/m; ε_r = 51.838; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 04-04-2016; Ambient Temp: 22.2°C; Tissue Temp: 21.9°C

Probe: ES3DV3 - SN3334; ConvF(4.45, 4.45, 4.45); Calibrated: 11/17/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1415; Calibrated: 11/11/2015
Phantom: SAM Front; Type: SAM; Serial: 1686
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: Bluetooth, Body SAR, Ch 39, 1 Mbps, Back Side
with Standard Battery and Holster Body Worn Accessory

Area Scan (12x18x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.621 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 0.0290 W/kg
SAR(1 g) = 0.012 W/kg



DUT: ACJFZN1B; Type: Portable Handset; Serial: 1481

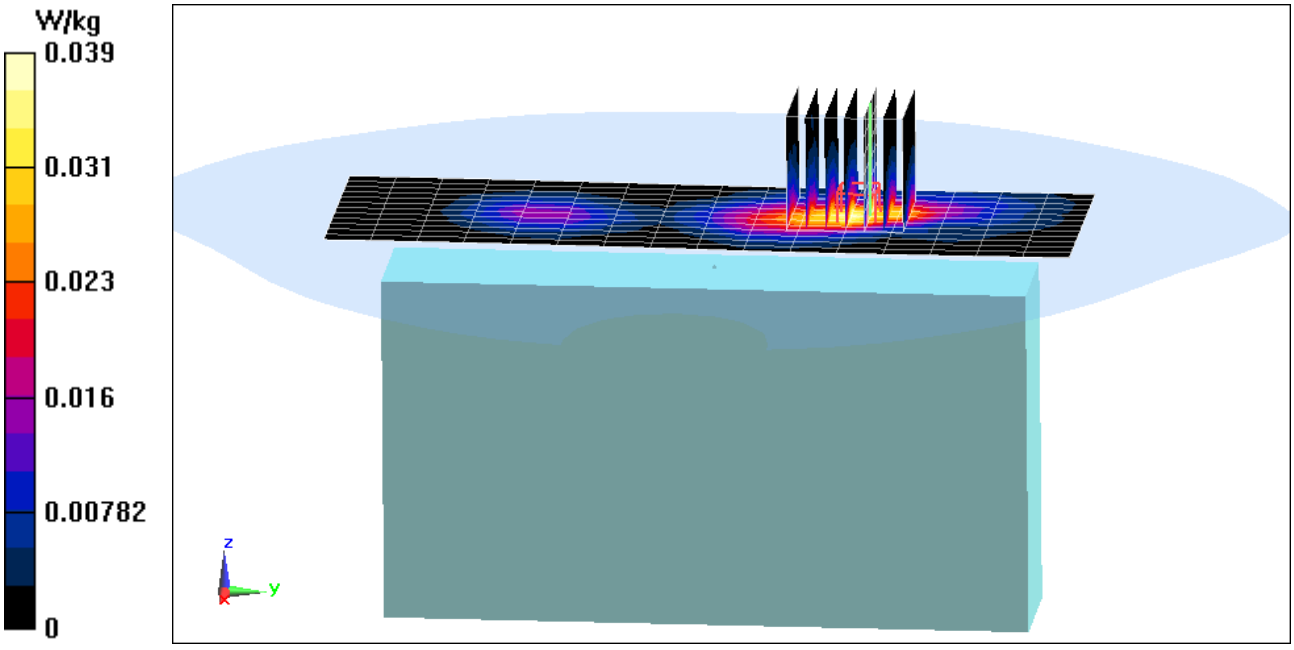
Communication System: UID 0, Bluetooth; Frequency: 2441 MHz; Duty Cycle: 1:1
Medium: 2450 Body Medium parameters used (interpolated):
$f = 2441$ MHz; $\sigma = 2.019$ S/m; $\varepsilon_r = 51.357$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-27-2016; Ambient Temp: 23.4°C; Tissue Temp: 21.8°C

Probe: ES3DV2 - SN3022; ConvF(4.08, 4.08, 4.08); Calibrated: 8/26/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1323; Calibrated: 9/16/2015
Phantom: SAM Right; Type: QD000P40CD; Serial: TP:7535
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: Bluetooth, Body SAR, Ch 39, 1 Mbps, Left Edge with Standard Battery

Area Scan (13x17x1): Measurement grid: dx=5mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.128 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.0580 W/kg
SAR(1 g) = 0.030 W/kg



DUT: ACJFZN1B; Type: Portable Handset; Serial: 1481

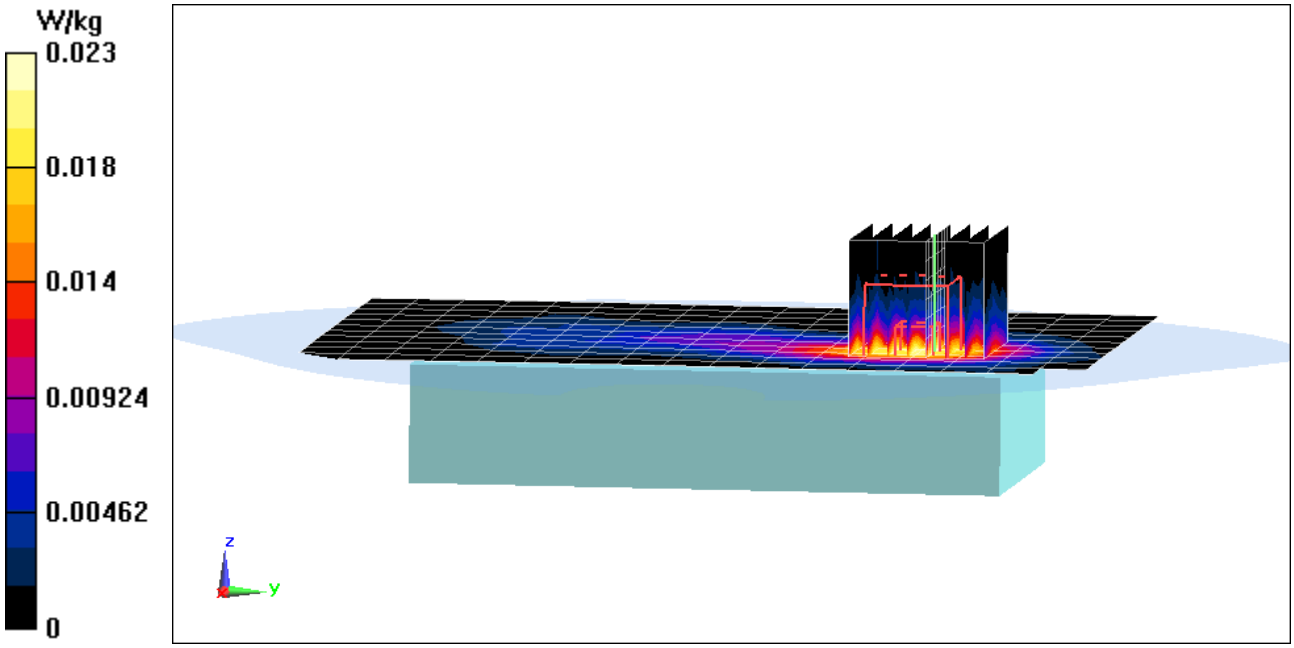
Communication System: UID 0, Bluetooth; Frequency: 2441 MHz; Duty Cycle: 1:1
Medium: 2450 Body Medium parameters used (interpolated):
f = 2441 MHz; σ = 1.973 S/m; ε_r = 51.838; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 04-04-2016; Ambient Temp: 22.2°C; Tissue Temp: 21.9°C

Probe: ES3DV3 - SN3334; ConvF(4.45, 4.45, 4.45); Calibrated: 11/17/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1415; Calibrated: 11/11/2015
Phantom: SAM Front; Type: SAM; Serial: 1686
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: Bluetooth, Extremity SAR, Ch 39, 1 Mbps, Back Side with Standard Battery and Hand Strap Accessory

Area Scan (12x18x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (9x8x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.260 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.0410 W/kg
SAR(10 g) = 0.00827 W/kg



APPENDIX B: SYSTEM VERIFICATION

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 750 MHz; Type: D750V3; Serial: 1054

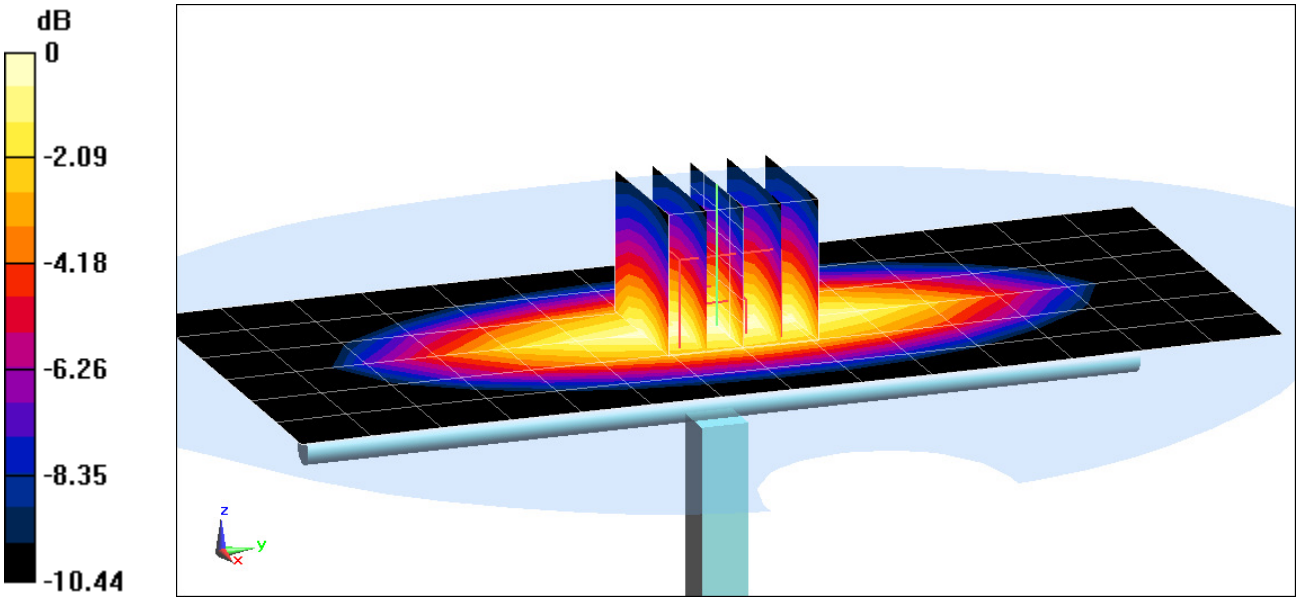
Communication System: UID 0, CW; Frequency: 750 MHz; Duty Cycle: 1:1
Medium: 750 Head Medium parameters used (interpolated):
f = 750 MHz; σ = 0.909 S/m; ε_r = 42.85; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 03-31-2016; Ambient Temp: 22.6°C; Tissue Temp: 22.5°C

Probe: ES3DV2 - SN3022; ConvF(6.33, 6.33, 6.33); Calibrated: 8/26/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1323; Calibrated: 9/16/2015
Phantom: SAM Right; Type: QD000P40CD; Serial: TP:7535
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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) = 2.49 W/kg
SAR(1 g) = 1.68 W/kg
Deviation(1 g) = 2.19 %



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

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d132

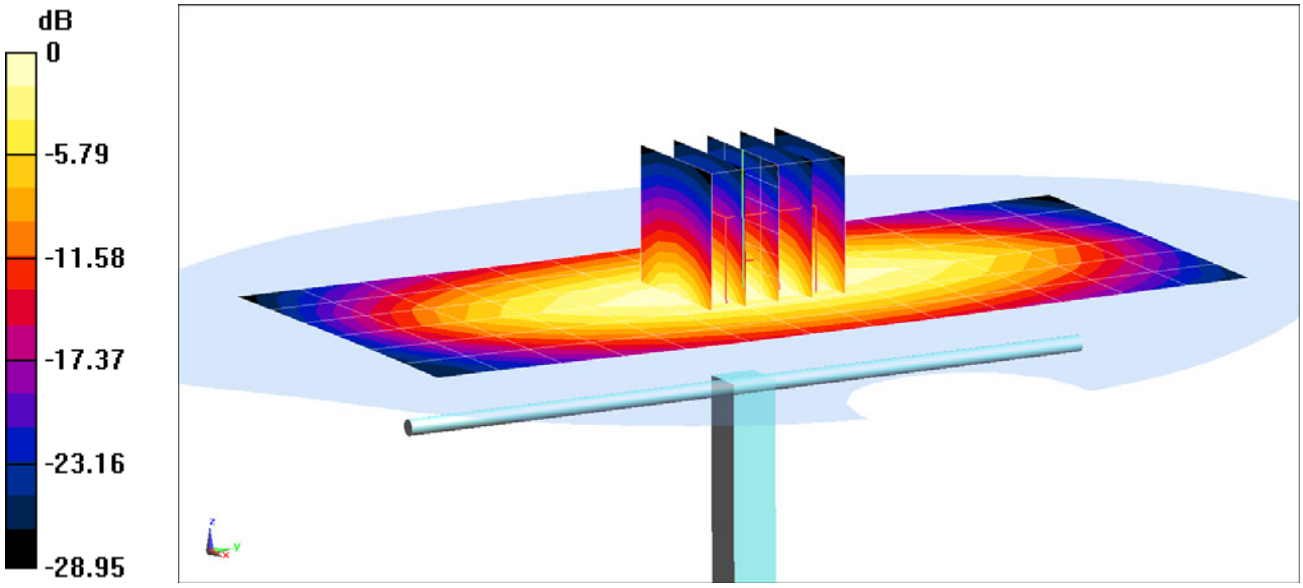
Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used:
f = 835 MHz; σ = 0.91 S/m; ε_r = 40.607; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 03-30-2016; Ambient Temp: 23.1°C; Tissue Temp: 22.1°C

Probe: ES3DV3 - SN3332; ConvF(6.23, 6.23, 6.23); Calibrated: 9/18/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1466; Calibrated: 1/15/2016
Phantom: SAM Main; Type: QD000P40CC; Serial: TP 1114
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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) = 2.89 W/kg
SAR(1 g) = 1.95 W/kg
Deviation(1 g) = 2.96 %



0 dB = 2.27 W/kg = 3.56 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: 1051

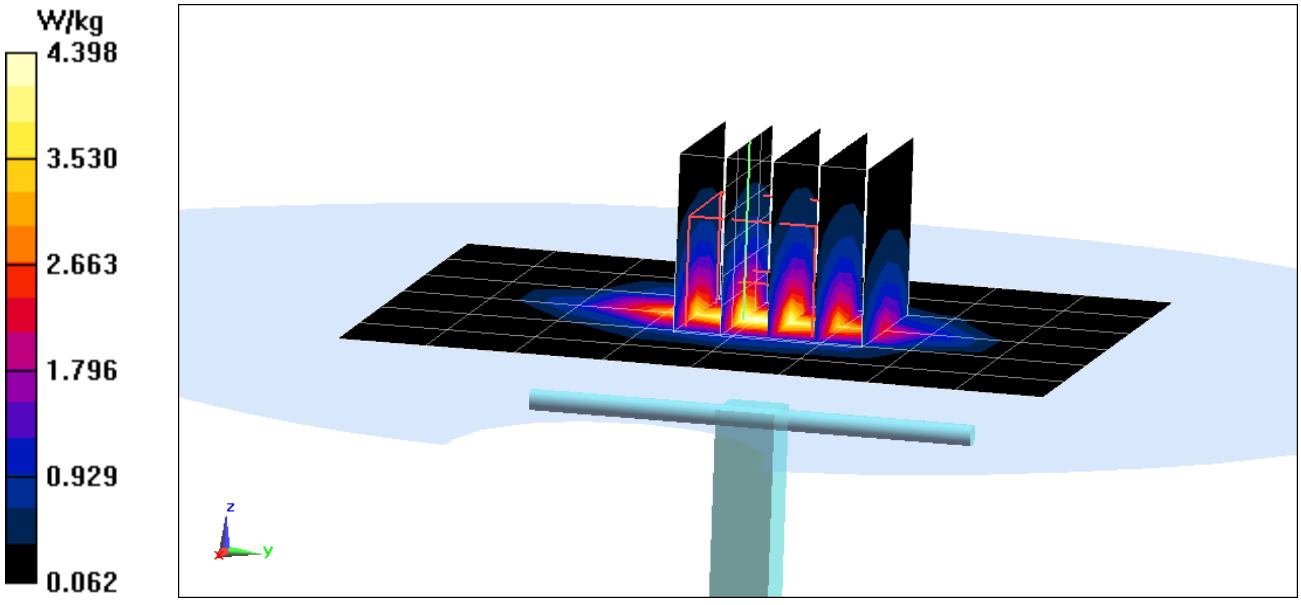
Communication System: UID 0, CW; Frequency: 1750 MHz; Duty Cycle: 1:1
Medium: 1750 Head Medium parameters used:
f = 1750 MHz; σ = 1.398 S/m; ε_r = 38.871; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 03-28-2016; Ambient Temp: 19.5°C; Tissue Temp: 20.8°C

Probe: ES3DV3 - SN3318; ConvF(5.34, 5.34, 5.34); Calibrated: 2/19/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/19/2016
Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1800
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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) = 6.32 W/kg
SAR(1 g) = 3.52 W/kg
Deviation(1 g) = -2.76 %



PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 5d149

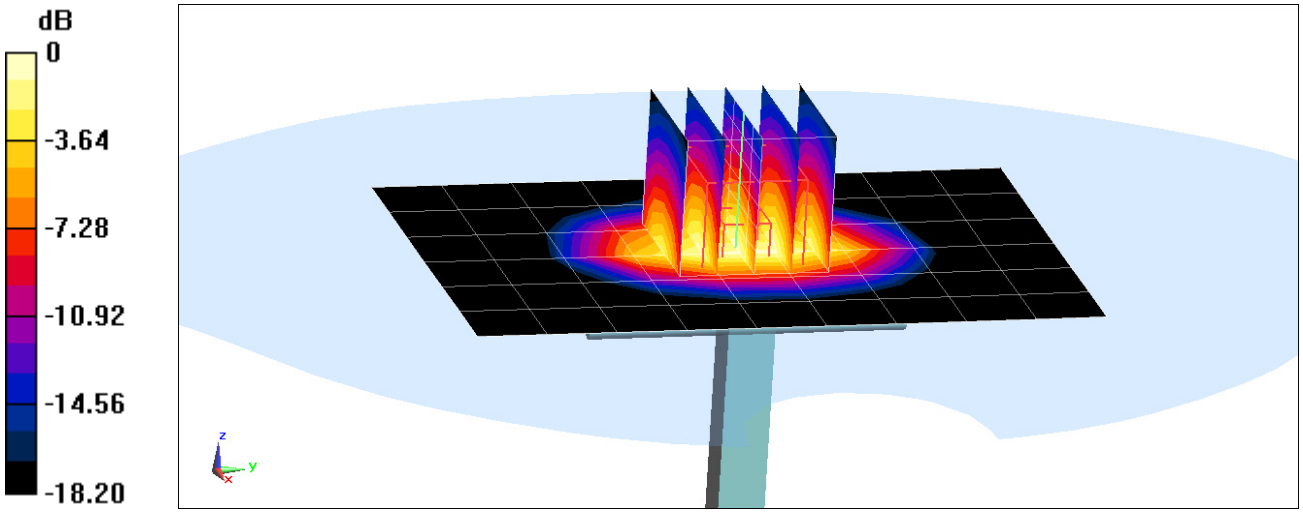
Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: 1900 Head Medium parameters used (interpolated):
f = 1900 MHz; σ = 1.45 S/m; ε_r = 40.109; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 03-28-2016; Ambient Temp: 23.8°C; Tissue Temp: 22.1°C

Probe: ES3DV3 - SN3334; ConvF(5.18, 5.18, 5.18); Calibrated: 11/17/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1415; Calibrated: 11/11/2015
Phantom: SAM Front; Type: SAM; Serial: 1686
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

1900 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (7x10x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 7.33 W/kg
SAR(1 g) = 3.99 W/kg
Deviation(1 g) = -1.97 %



0 dB = 5.09 W/kg = 7.07 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 5d141

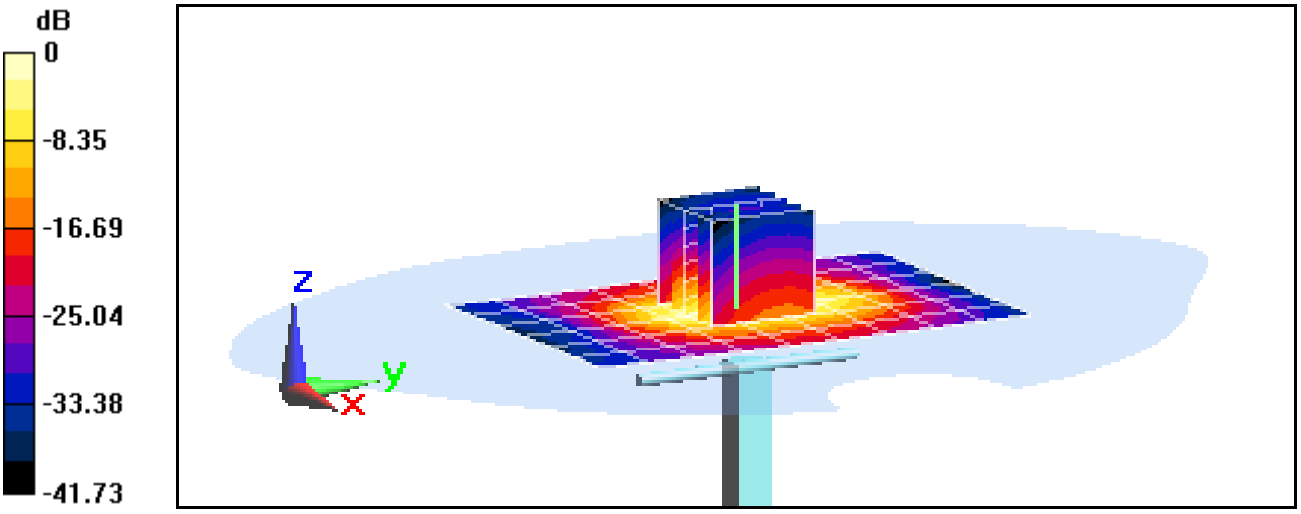
Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: 1900 Head Medium parameters used (interpolated):
f = 1900 MHz; σ = 1.388 S/m; ε_r = 41.204; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-01-2016; Ambient Temp: 24.0°C; Tissue Temp: 23.2°C

Probe: ES3DV3 - SN3332; ConvF(5.06, 5.06, 5.06); Calibrated: 9/18/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1466; Calibrated: 1/15/2016
Phantom: SAM Main ; Type: QD000P40CC; Serial: TP 1114
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

1900 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (7x10x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 6.98 W/kg
SAR(1 g) = 3.83 W/kg
Deviation(1 g) = -4.01 %



0 dB = 4.68 W/kg = 6.70 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 719

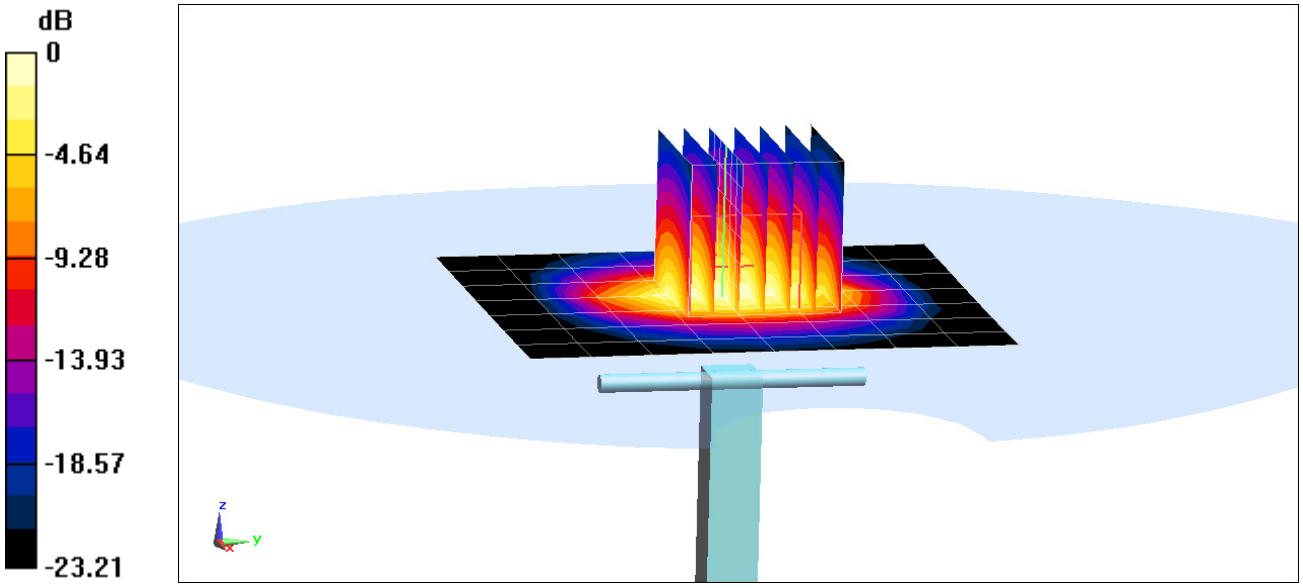
Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: 2450 Head Medium parameters used:
f = 2450 MHz; σ = 1.866 S/m; ε_r = 38.662; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 03-29-2016; Ambient Temp: 24.5°C; Tissue Temp: 23.5°C

Probe: ES3DV3 - SN3351; ConvF(4.46, 4.46, 4.46); Calibrated: 6/22/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 8/24/2015
Phantom: SAM 5.0 front; Type: QD000P40CD; Serial: TP:-1648
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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) = 11.7 W/kg
SAR(1 g) = 5.62 W/kg
Deviation(1 g) = 3.69 %



0 dB = 7.34 W/kg = 8.66 dBW/kg

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 882

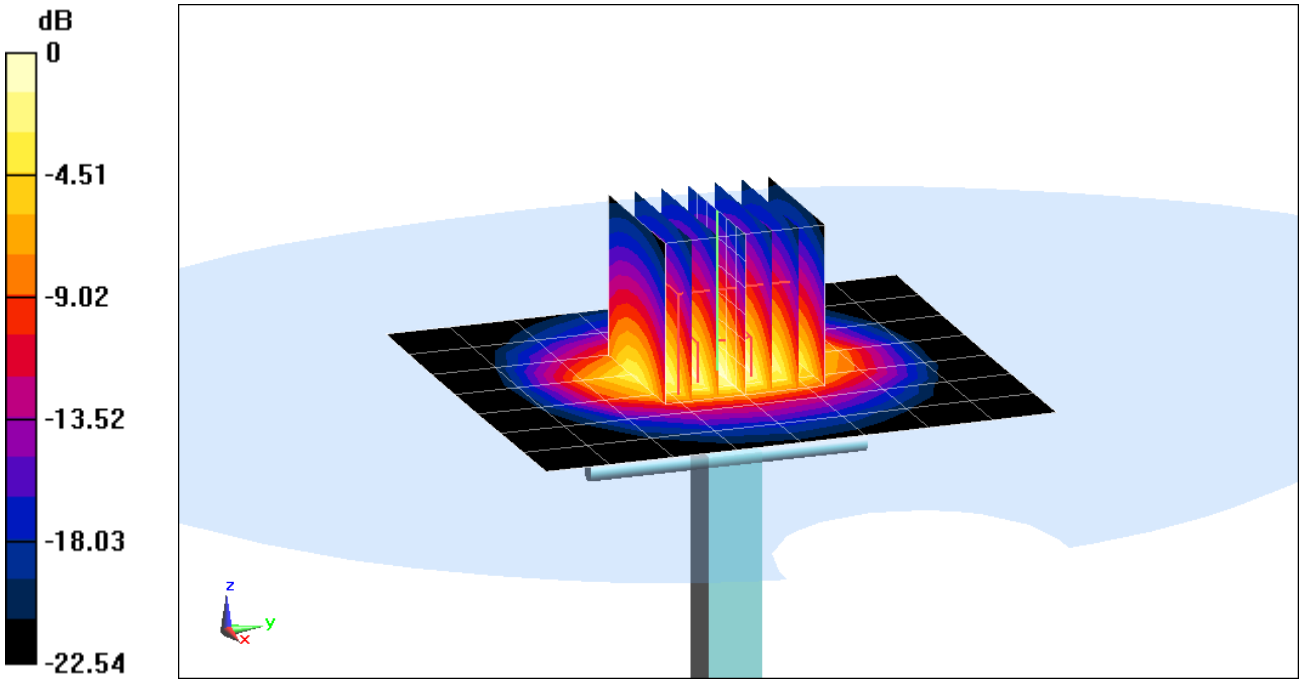
Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: 2450 Head; Medium parameters used:
f = 2450 MHz; σ = 1.873 S/m; ε_r = 38.534; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-25-2016; Ambient Temp: 24.3°C; Tissue Temp: 23.6°C

Probe: ES3DV3 - SN3319; ConvF(4.47, 4.47, 4.47); Calibrated: 3/18/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1368; Calibrated: 3/14/2016
Phantom: SAM with CRP v5.0 (Right); Type: QD000P40CD; Serial: TP:1759
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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) = 5.37 W/kg
Deviation(1 g) = 6.34 %



0 dB = 7.10 W/kg = 8.51 dBW/kg

DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1191

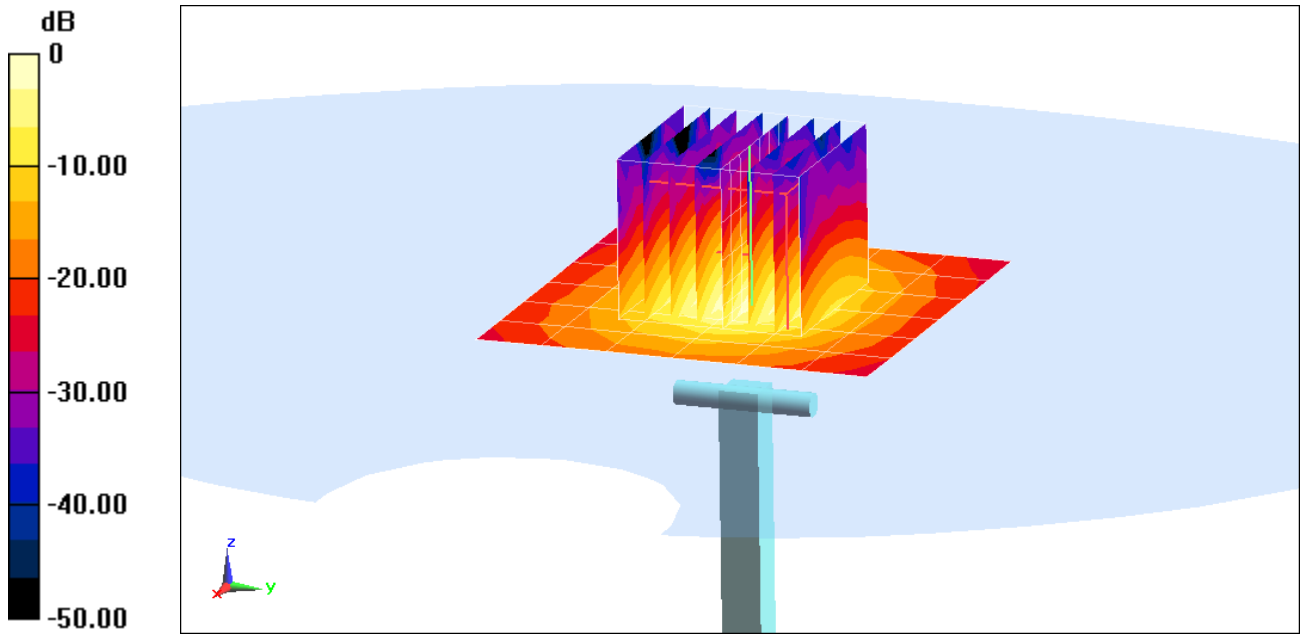
Communication System: UID 0, CW; Frequency: 5250 MHz; Duty Cycle: 1:1
Medium: 5 GHz Head Medium parameters used (interpolated):
$f = 5250$ MHz; $\sigma = 4.523$ S/m; $\varepsilon_r = 34.974$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-21-2015; Ambient Temp: 23.9°C; Tissue Temp: 22.2°C

Probe: EX3DV4 - SN7308; ConvF(5.2, 5.2, 5.2); Calibrated: 7/21/2015;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 8/24/2015
Phantom: SAM 5.0 front; Type: QD000P40CD; Serial: TP:-1648
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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) = 15.9 W/kg
SAR(1 g) = 3.97 W/kg
Deviation(1 g) = -3.76 %



0 dB = 9.31 W/kg = 9.69 dBW/kg

DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1191

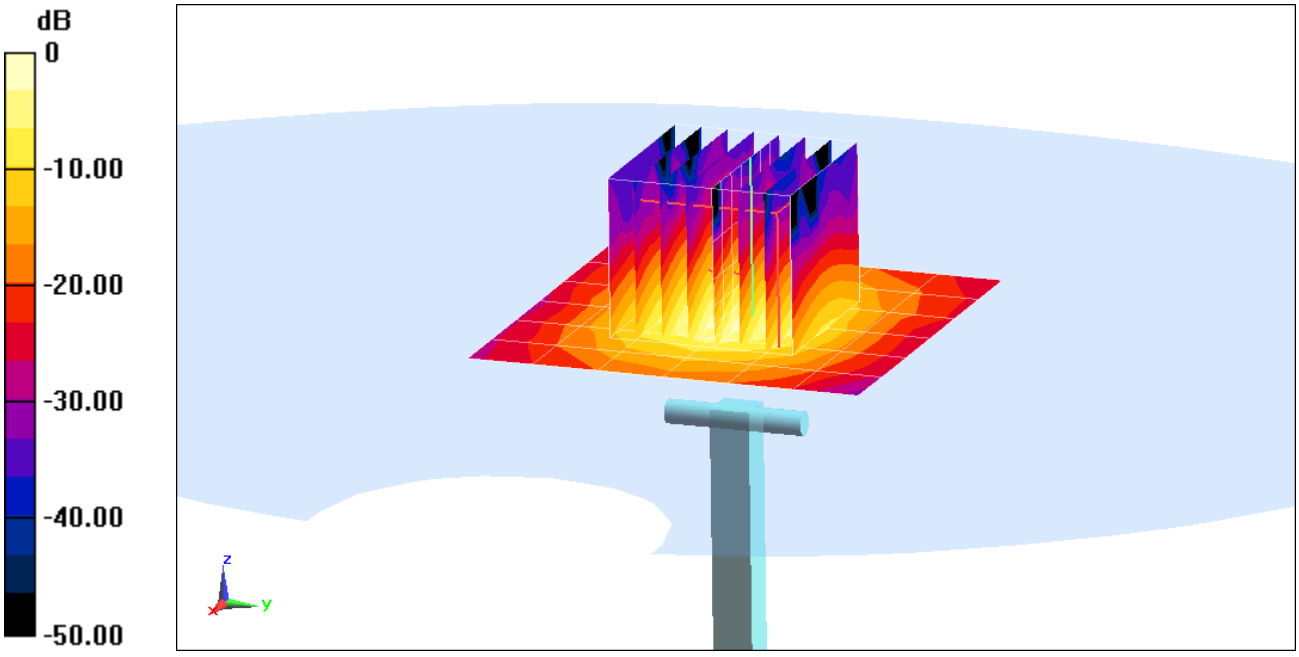
Communication System: UID 0, CW; Frequency: 5600 MHz; Duty Cycle: 1:1
Medium: 5 GHz Head Medium parameters used:
f = 5600 MHz; σ = 4.879 S/m; ε_r = 34.483; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-21-2015; Ambient Temp: 23.9°C; Tissue Temp: 22.2°C

Probe: EX3DV4 - SN7308; ConvF(4.65, 4.65, 4.65); Calibrated: 7/21/2015;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 8/24/2015
Phantom: SAM 5.0 front; Type: QD000P40CD; Serial: TP:-1648
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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) = 18.6 W/kg
SAR(1 g) = 4.39 W/kg
Deviation(1 g) = 3.91 %



0 dB = 10.5 W/kg = 10.21 dBW/kg

DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1191

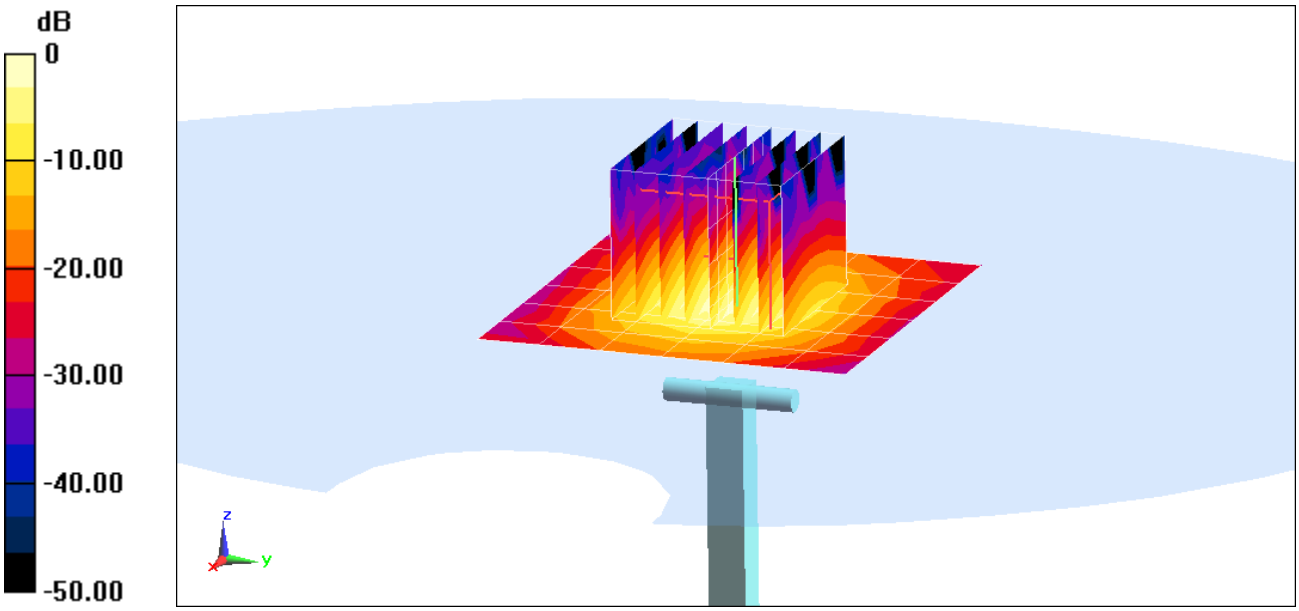
Communication System: UID 0, CW; Frequency: 5750 MHz; Duty Cycle: 1:1
Medium: 5 GHz Head Medium parameters used (interpolated):
$f = 5750$ MHz; $\sigma = 5.032$ S/m; $\varepsilon_r = 34.252$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-21-2015; Ambient Temp: 23.9°C; Tissue Temp: 22.2°C

Probe: EX3DV4 - SN7308; ConvF(4.86, 4.86, 4.86); Calibrated: 7/21/2015;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 8/24/2015
Phantom: SAM 5.0 front; Type: QD000P40CD; Serial: TP:-1648
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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) = 17.3 W/kg
SAR(1 g) = 3.99 W/kg
Deviation(1 g) = -0.25 %



0 dB = 9.64 W/kg = 9.84 dBW/kg

DUT: Dipole 750 MHz; Type: D750V3; Serial: 1003

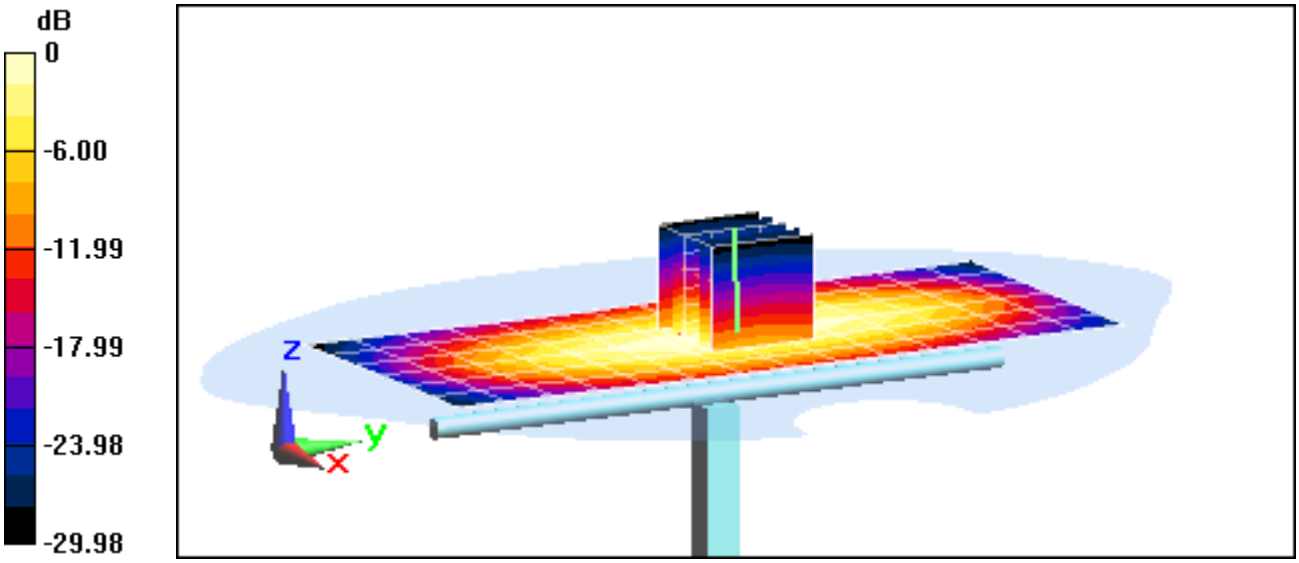
Communication System: UID 0, CW; Frequency: 750 MHz; Duty Cycle: 1:1
Medium: 750 Body Medium parameters used (interpolated):
f = 750 MHz; σ = 0.961 S/m; ε_r = 53.81; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 04-06-2016; Ambient Temp: 23.3°C; Tissue Temp: 23.3°C

Probe: ES3DV3 - SN3332; ConvF(6.36, 6.36, 6.36); Calibrated: 9/18/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1466; Calibrated: 1/15/2016
Phantom: SAM Main ; Type: QD000P40CC; Serial: TP 1114
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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) = 2.57 W/kg
SAR(1 g) = 1.77 W/kg; SAR(10 g) = 1.17 W/kg
Deviation(1 g) = 2.19 %; Deviation(10 g) = 2.09 %



0 dB = 2.00 W/kg = 3.01 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d133

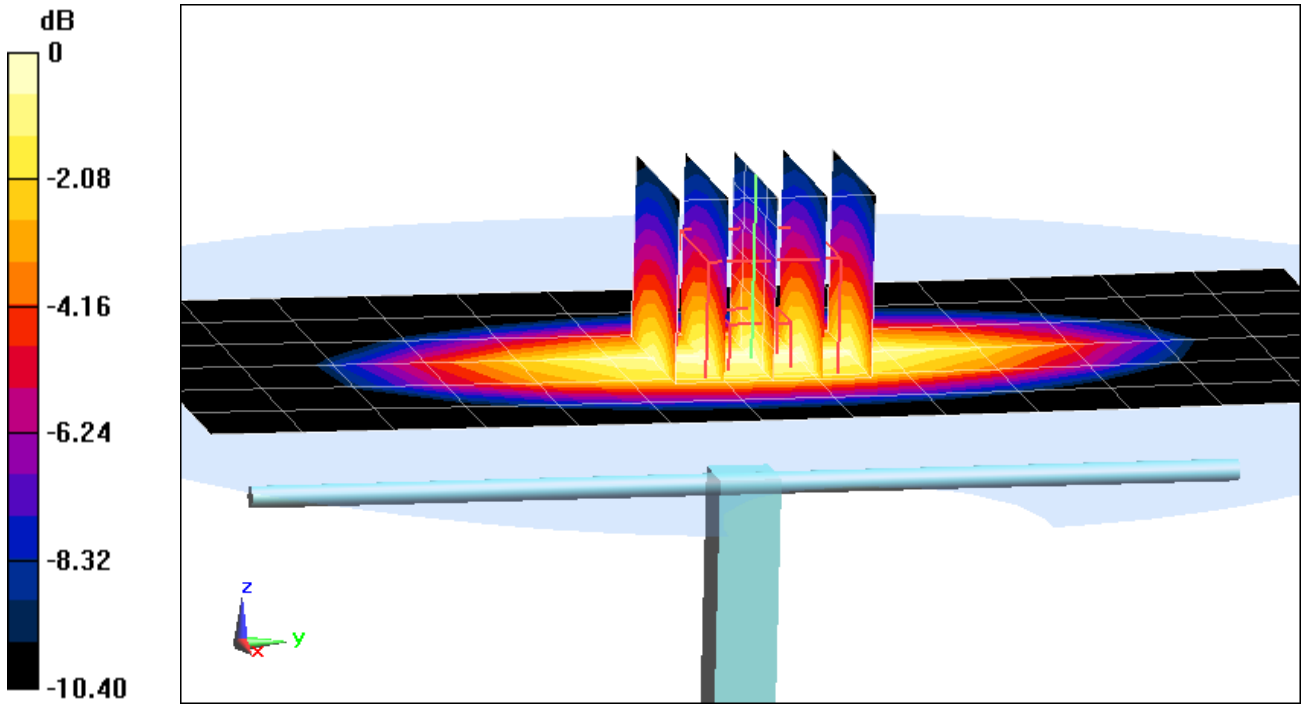
Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used:
f = 835 MHz; σ = 1.006 S/m; ε_r = 54.308; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 03-31-2016; Ambient Temp: 23.5°C; Tissue Temp: 22.8°C

Probe: ES3DV3 - SN3333; ConvF(6.25, 6.25, 6.25); Calibrated: 10/29/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1333; Calibrated: 10/27/2015
Phantom: SAM Front; Type: QD000P40CD; Serial: TP:1758
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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) = 2.91 W/kg
SAR(1 g) = 1.99 W/kg; SAR(10 g) = 1.31 W/kg
Deviation(1 g) = 7.57 %; Deviation(10 g) = 7.73 %



0 dB = 2.33 W/kg = 3.67 dBW/kg

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d133

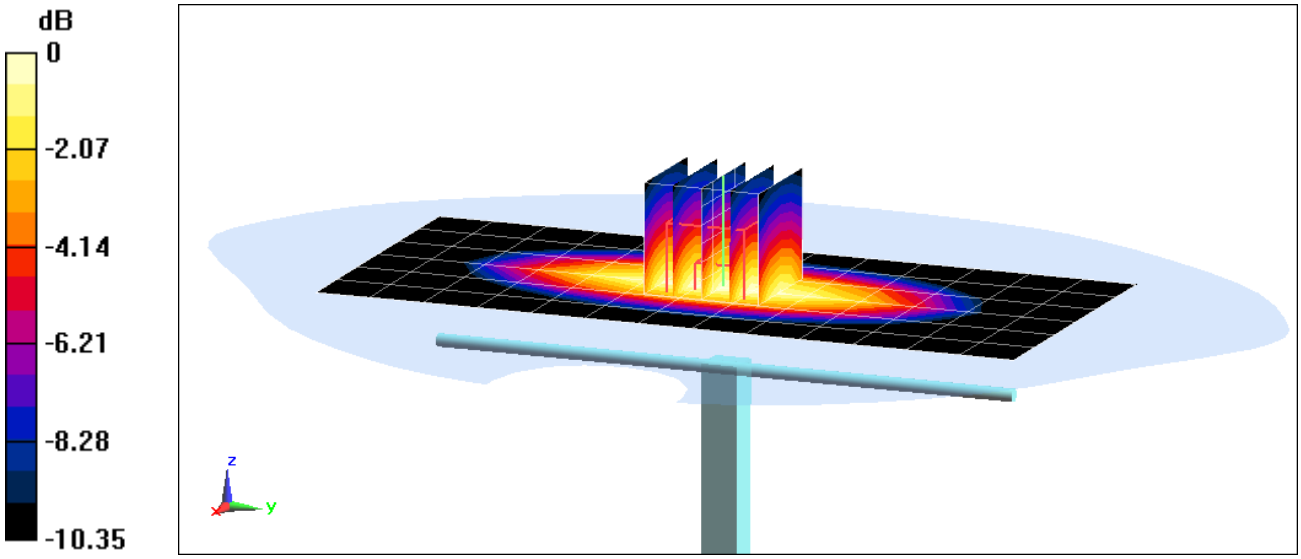
Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used:
f = 835 MHz; σ = 1.005 S/m; ε_r = 54.01; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 04-04-2016; Ambient Temp: 22.0°C; Tissue Temp: 21.4°C

Probe: ES3DV3 - SN3318; ConvF(6.11, 6.11, 6.11); Calibrated: 2/19/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/19/2016
Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1800
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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) = 2.89 W/kg
SAR(1 g) = 1.99 W/kg; SAR(10 g) = 1.31 W/kg
Deviation(1 g) = 7.57 %; Deviation(10 g) = 7.73 %



0 dB = 2.32 W/kg = 3.65 dBW/kg

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d133

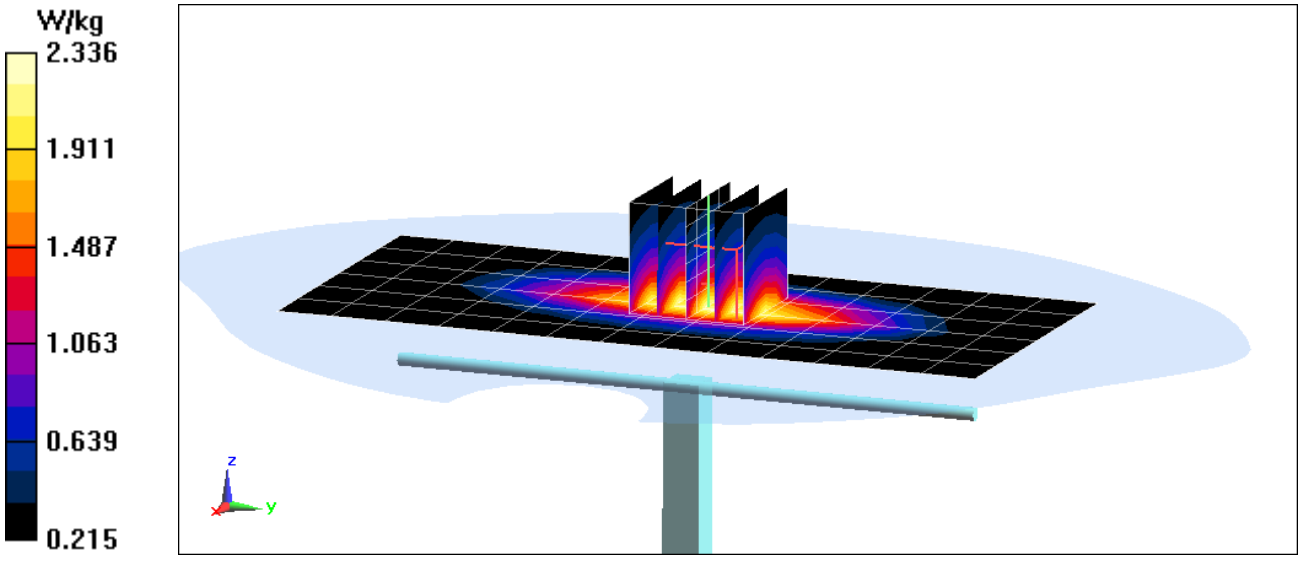
Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used:
f = 835 MHz; σ = 0.973 S/m; ε_r = 52.954; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 04-10-2016; Ambient Temp: 20.1°C; Tissue Temp: 20.5°C

Probe: ES3DV3 - SN3318; ConvF(6.11, 6.11, 6.11); Calibrated: 2/19/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/19/2016
Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1800
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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) = 2.89 W/kg
SAR(1 g) = 2.00 W/kg
Deviation(1 g) = 8.11 %



PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: 1051

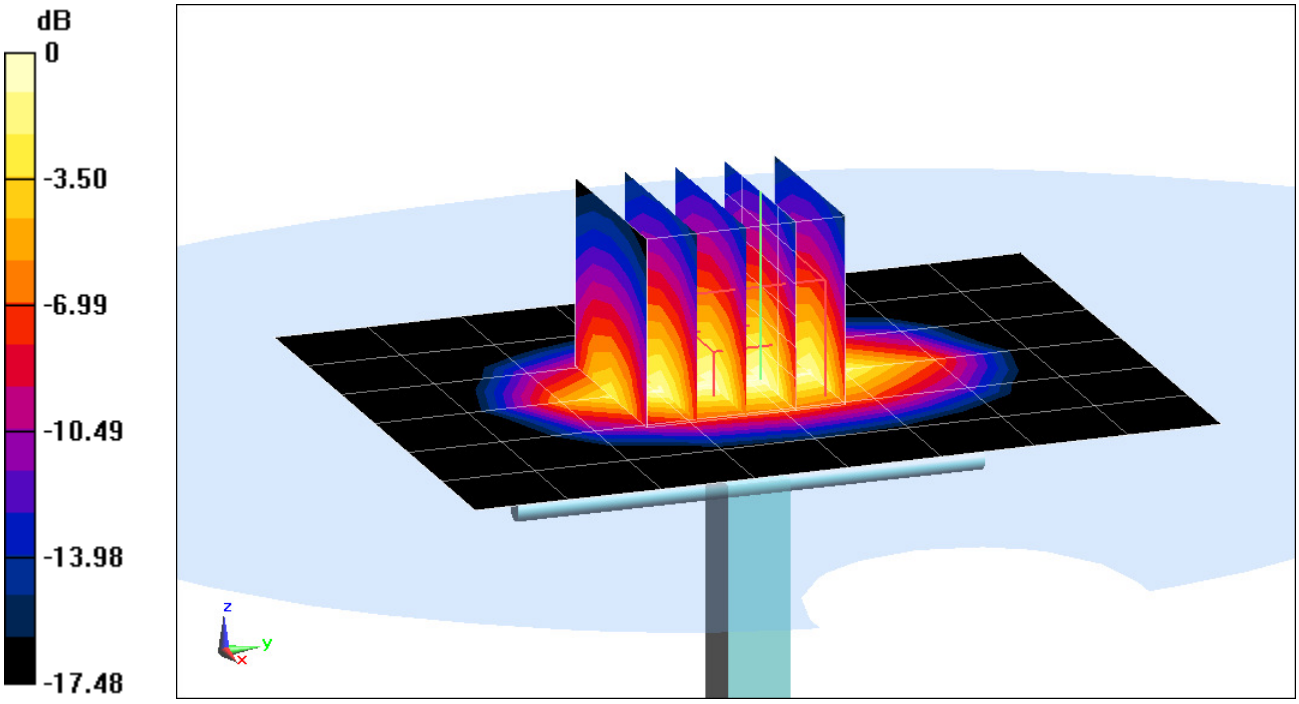
Communication System: UID 0, CW; Frequency: 1750 MHz; Duty Cycle: 1:1
Medium: 1750 Body; Medium parameters used:
f = 1750 MHz; σ = 1.483 S/m; ε_r = 50.957; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 03-29-2016; Ambient Temp: 23.4°C; Tissue Temp: 22.3°C

Probe: ES3DV3 - SN3263; ConvF(4.88, 4.88, 4.88); Calibrated: 5/20/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 6/17/2015
Phantom: SAM with CRP (Left); Type: SAM; Serial: 1715
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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) = 6.68 W/kg
SAR(1 g) = 3.83 W/kg; SAR(10 g) = 2.04 W/kg
Deviation(1 g) = 3.23 %; Deviation(10 g) = 2.00 %



0 dB = 4.74 W/kg = 6.76 dBW/kg

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 5d141

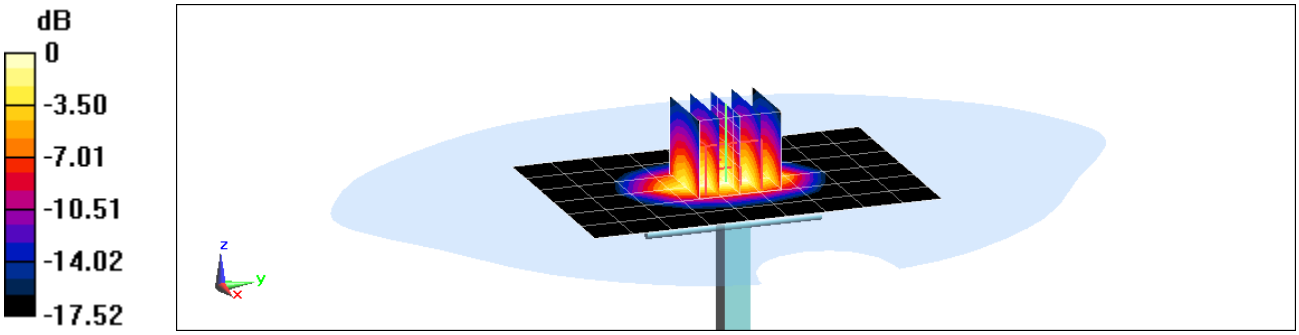
Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
f = 1900 MHz; σ = 1.503 S/m; ε_r = 51.873; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 03-29-2016; Ambient Temp: 24.2°C; Tissue Temp: 23.2°C

Probe: ES3DV3 - SN3288; ConvF(4.81, 4.81, 4.81); Calibrated: 9/18/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1364; Calibrated: 9/18/2015
Phantom: Sub TWIN SAM; Type: QD000P40CC; Serial: TP-1357
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

1900 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (7x10x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 7.06 W/kg
SAR(1 g) = 4.01 W/kg; SAR(10 g) = 2.10 W/kg
Deviation(1 g) = 0.25 %; Deviation(10 g) = -0.94 %



0 dB = 5.12 W/kg = 7.09 dBW/kg

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 5d141

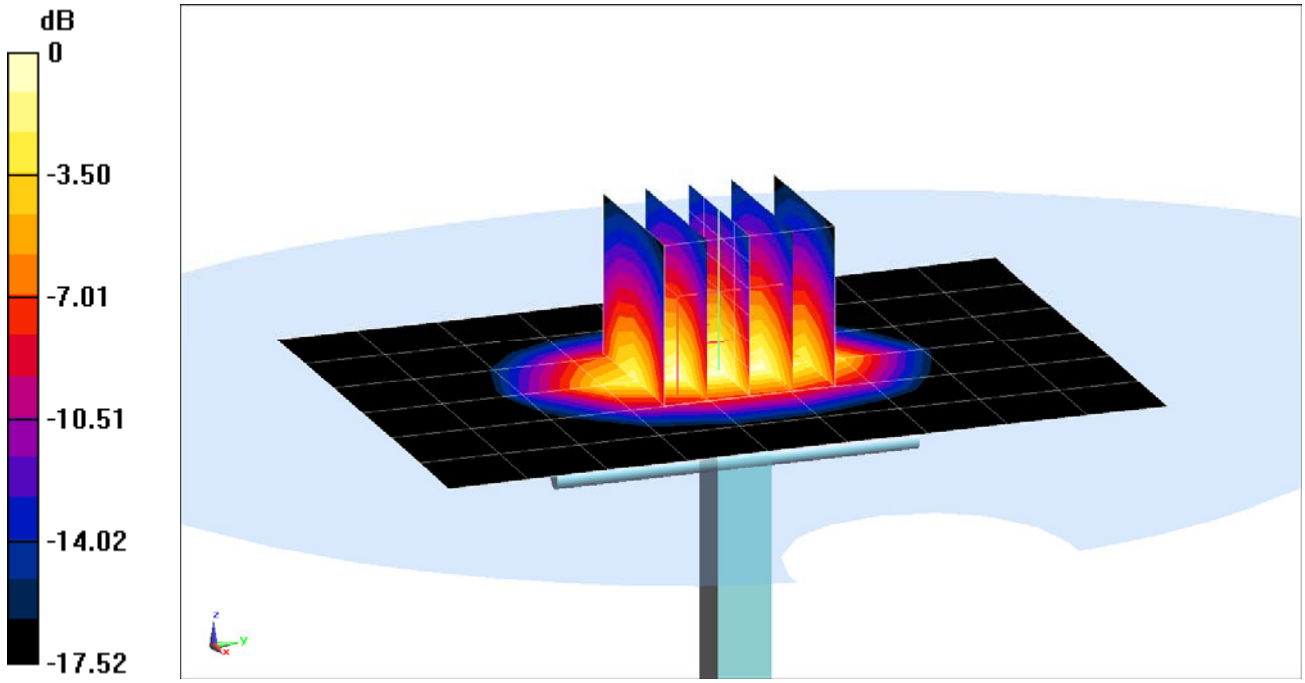
Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
f = 1900 MHz; σ = 1.531 S/m; ε_r = 51.348; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-04-2016; Ambient Temp: 23.3°C; Tissue Temp: 22.2°C

Probe: ES3DV3 - SN3288; ConvF(4.81, 4.81, 4.81); Calibrated: 9/18/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1364; Calibrated: 9/18/2015
Phantom: Sub TWIN SAM; Type: QD000P40CC; Serial: TP-1357
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

1900 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (7x10x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 7.22 W/kg
SAR(1 g) = 4.06 W/kg; SAR(10 g) = 2.12 W/kg
Deviation(1 g) = 1.50 %; Deviation(10 g) = 0.00 %



0 dB = 5.14 W/kg = 7.11 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 719

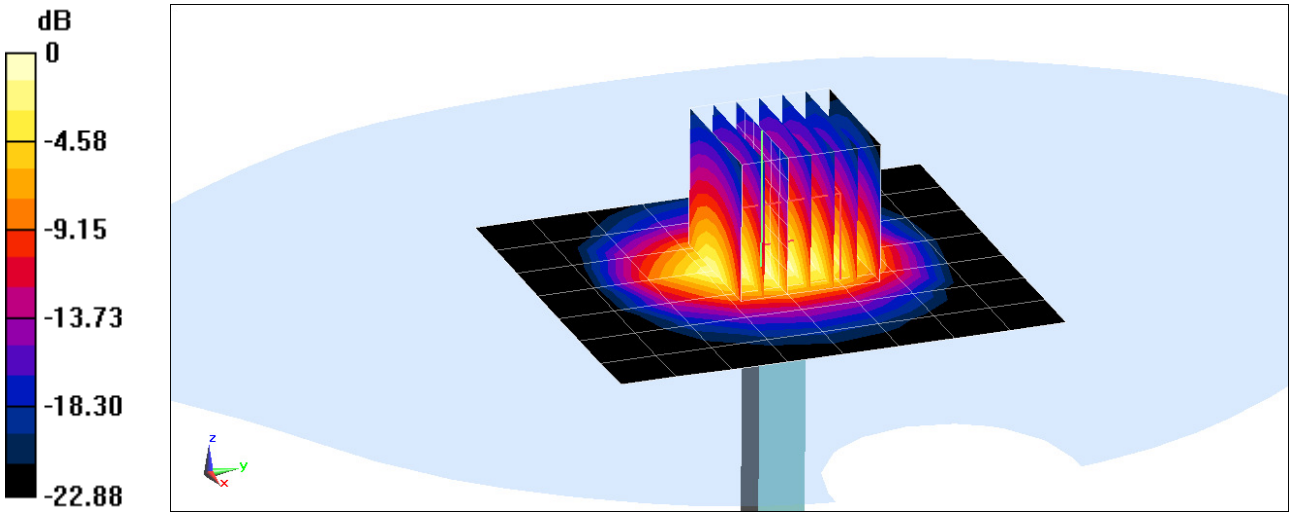
Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: 2450 Body Medium parameters used:
f = 2450 MHz; σ = 2.031 S/m; ε_r = 53.12; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 03-30-2016; Ambient Temp: 20.7°C; Tissue Temp: 21.4°C

Probe: ES3DV3 - SN3334; ConvF(4.45, 4.45, 4.45); Calibrated: 11/17/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1415; Calibrated: 11/11/2015
Phantom: SAM Front; Type: SAM; Serial: 1686
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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) = 11.3 W/kg
SAR(1 g) = 5.35 W/kg
Deviation(1 g) = 3.08 %



0 dB = 7.03 W/kg = 8.47 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 719

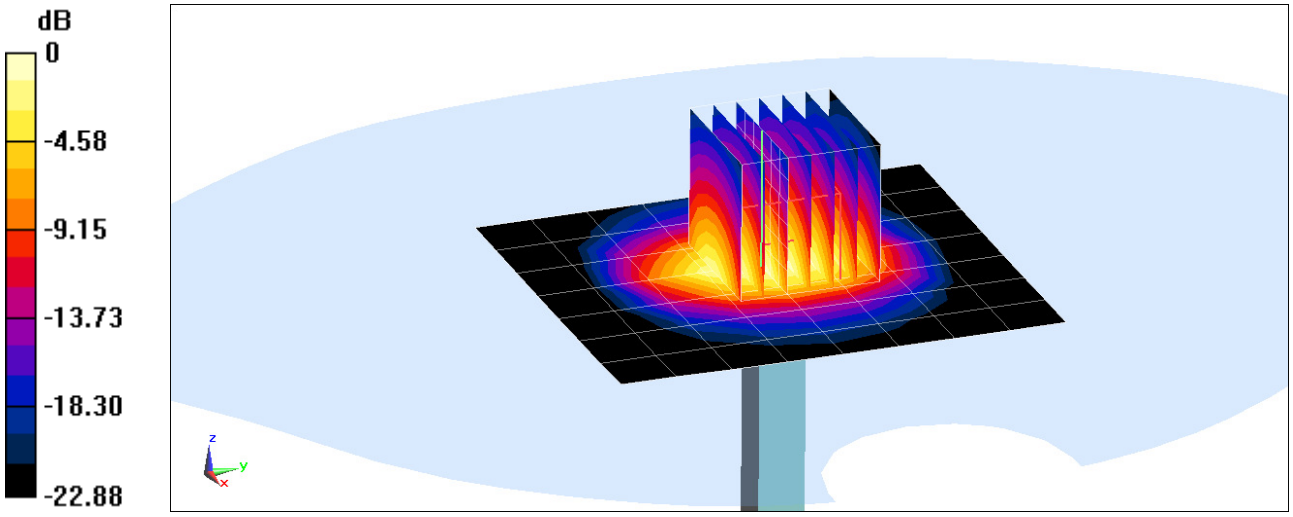
Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: 2450 Body Medium parameters used:
f = 2450 MHz; σ = 1.986 S/m; ε_r = 51.827; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-04-2016; Ambient Temp: 22.2°C; Tissue Temp: 21.9°C

Probe: ES3DV3 - SN3334; ConvF(4.45, 4.45, 4.45); Calibrated: 11/17/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1415; Calibrated: 11/11/2015
Phantom: SAM Front; Type: SAM; Serial: 1686
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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) = 11.0 W/kg
SAR(1 g) = 5.23 W/kg; SAR(10 g) = 2.40 W/kg
Deviation(1 g) = 0.77 %; Deviation(10 g) = -1.23 %



0 dB = 7.03 W/kg = 8.47 dBW/kg

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 719

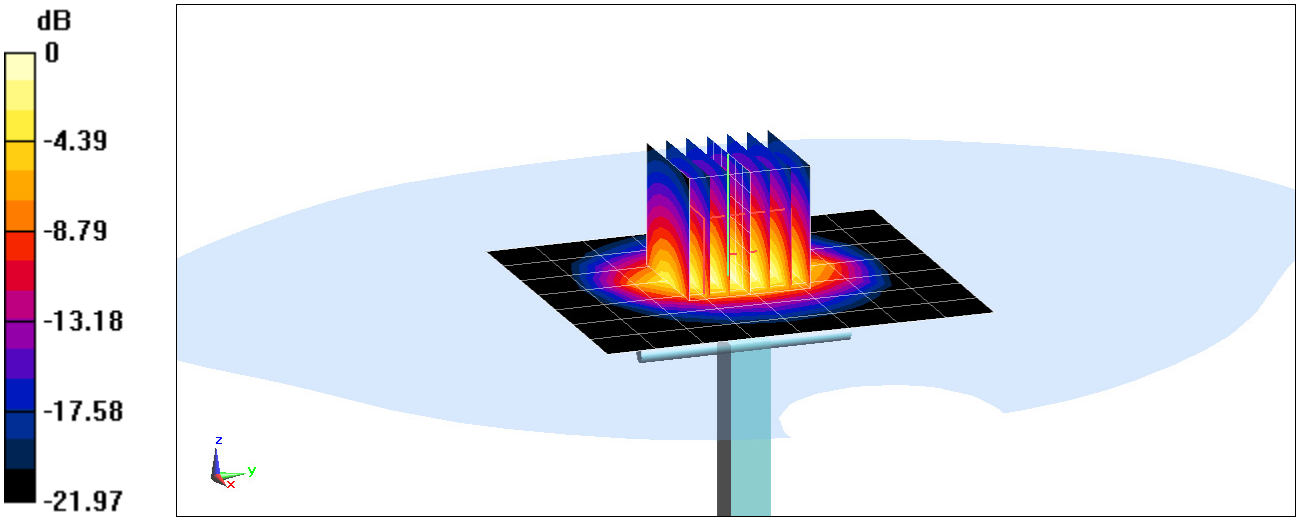
Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: 2450 Body Medium parameters used:
f = 2450 MHz; σ = 2.031 S/m; ε_r = 51.329; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-27-2016; Ambient Temp: 23.4°C; Tissue Temp: 21.8°C

Probe: ES3DV2 - SN3022; ConvF(4.08, 4.08, 4.08); Calibrated: 8/26/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1323; Calibrated: 9/16/2015
Phantom: SAM Right; Type: QD000P40CD; Serial: TP:7535
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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) = 5.47 W/kg
Deviation(1 g) = 5.39 %



0 dB = 7.22 W/kg = 8.59 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1057

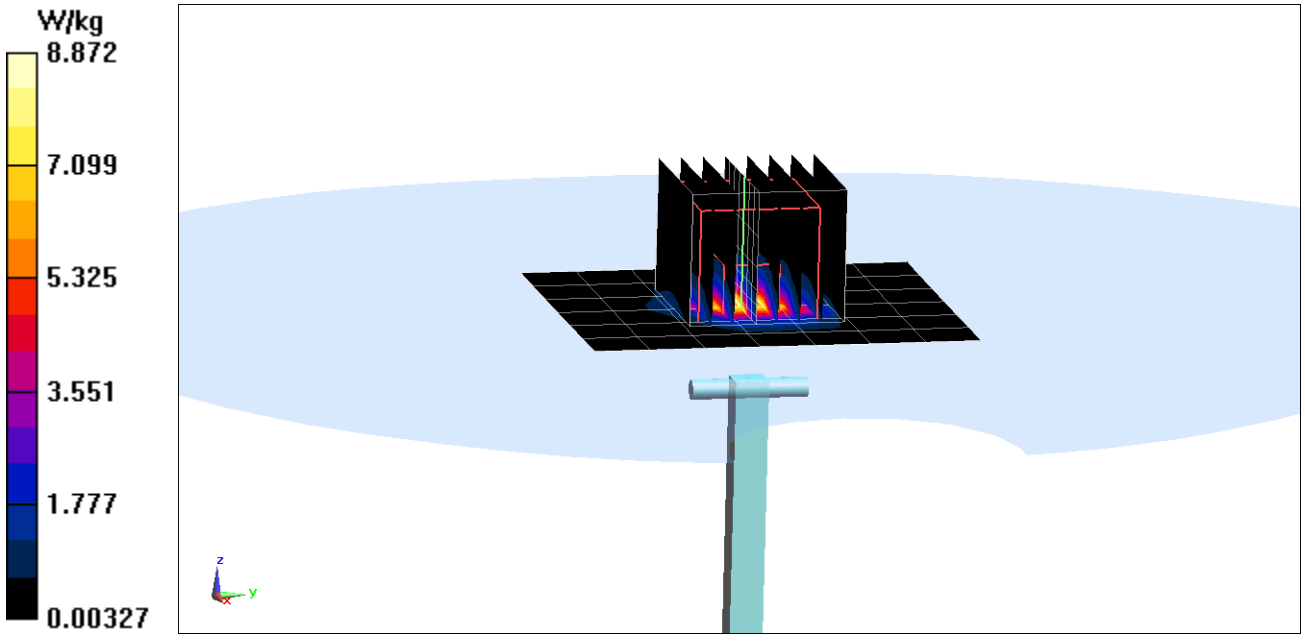
Communication System: UID 0, CW; Frequency: 5300 MHz; Duty Cycle: 1:1
Medium: 5 GHz Body Medium parameters used:
f = 5300 MHz; σ = 5.435 S/m; ε_r = 47.514; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-28-2015; Ambient Temp: 22.3°C; Tissue Temp: 22.6°C

Probe: EX3DV4 - SN7357; ConvF(4.11, 4.11, 4.11); Calibrated: 4/23/2015;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/20/2015
Phantom: SAM v5.0 Left; Type: QD000P40CD; Serial: TP: 1687
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

5300 MHz System Verification at 17.0 dBm (50 mW)

Area Scan (7x8x1): 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) = 15.0 W/kg
SAR(1 g) = 3.78 W/kg; SAR(10 g) = 1.06 W/kg
Deviation(1 g) = 1.89 %; Deviation(10 g) = 1.44 %



PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1057

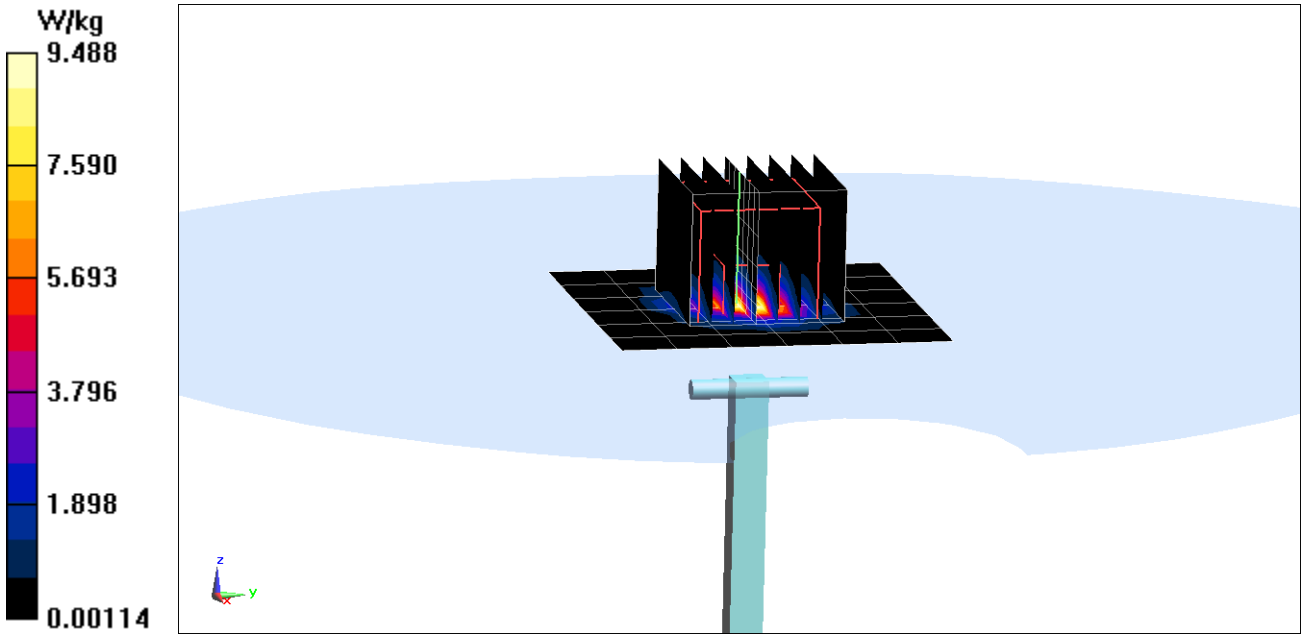
Communication System: UID 0, CW; Frequency: 5500 MHz; Duty Cycle: 1:1
Medium: 5 GHz Body Medium parameters used:
f = 5500 MHz; σ = 5.704 S/m; ε_r = 47.196; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-28-2015; Ambient Temp: 22.3°C; Tissue Temp: 22.6°C

Probe: EX3DV4 - SN7357; ConvF(3.83, 3.83, 3.83); Calibrated: 4/23/2015;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/20/2015
Phantom: SAM v5.0 Left; Type: QD000P40CD; Serial: TP: 1687
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

5500 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) = 16.5 W/kg
SAR(10 g) = 1.09 W/kg
Deviation(10 g) = -0.91 %



PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1057

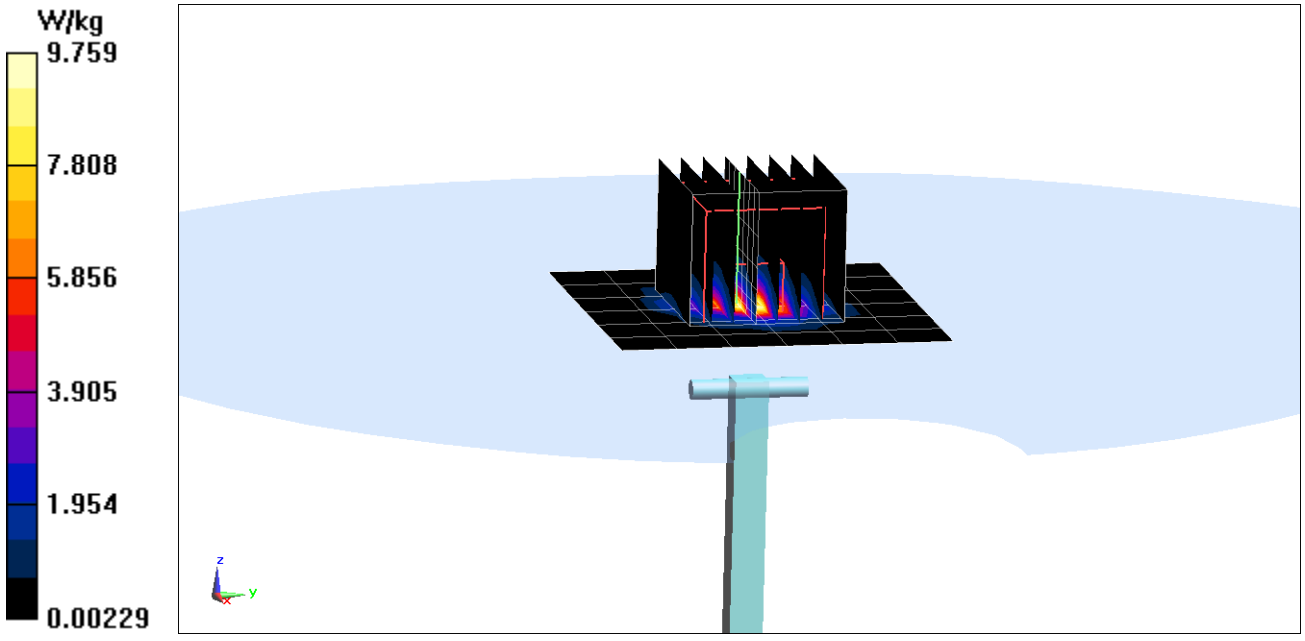
Communication System: UID 0, CW; Frequency: 5600 MHz; Duty Cycle: 1:1
Medium: 5 GHz Body Medium parameters used:
f = 5600 MHz; σ = 5.839 S/m; ε_r = 47.011; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-28-2015; Ambient Temp: 22.4°C; Tissue Temp: 22.6°C

Probe: EX3DV4 - SN7357; ConvF(3.72, 3.72, 3.72); Calibrated: 4/23/2015;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/20/2015
Phantom: SAM v5.0 Left; Type: QD000P40CD; Serial: TP: 1687
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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) = 16.8 W/kg
SAR(1 g) = 4.00 W/kg; SAR(10 g) = 1.12 W/kg
Deviation(1 g) = 2.96 %; Deviation(10 g) = 4.19 %



DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1057

Communication System: UID 0, CW; Frequency: 5800 MHz; Duty Cycle: 1:1
Medium: 5 GHz Body Medium parameters used:
f = 5800 MHz; σ = 6.117 S/m; ε_r = 46.686; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-28-2015; Ambient Temp: 22.4°C; Tissue Temp: 22.6°C

Probe: EX3DV4 - SN7357; ConvF(3.82, 3.82, 3.82); Calibrated: 4/23/2015;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/20/2015
Phantom: SAM v5.0 Left; Type: QD000P40CD; Serial: TP: 1687
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

5800 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) = 16.2 W/kg
SAR(1 g) = 3.69 W/kg; SAR(10 g) = 1.04 W/kg
Deviation(1 g) = -1.73 %; Deviation(10 g) = 0.97 %