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:
LG Electronics MobileComm U.S.A., Inc.
1000 Sylvan Avenue
Englewood Cliffs, NJ 07632
United States

Date of Testing:
01/28/16 - 03/03/16
Test Site/Location:
PCTEST Lab, Columbia, MD, USA
Document Serial No.:
0Y1601280181-R6.ZNF

FCC ID: **ZNFLS992**

APPLICANT: **LG ELECTRONICS MOBILECOMM U.S.A., INC.**

DUT Type: Portable Handset
Application Type: Certification
FCC Rule Part(s): CFR §2.1093
Model(s): LG-LS992, LGLS992, LS992, LG-AS992, LGAS992, AS992

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 Hotspot Mode 0mm (W/kg)
PCE	CDMA/EVDO BC10 (§90S)	817.90 - 823.10 MHz	0.36	0.53	0.52	1.02
PCE	CDMA/EVDO BC0 (§22H)	824.70 - 848.31 MHz	0.44	0.61	0.61	0.81
PCE	GSM/GPRS/EDGE 850	824.20 - 848.80 MHz	0.97	1.25	1.25	1.02
PCE	UMTS 850	826.40 - 846.60 MHz	0.39	0.67	0.67	0.52
PCE	UMTS 1750	1712.4 - 1752.6 MHz	0.39	0.75	0.75	1.77
PCE	PCS CDMA/EVDO	1851.25 - 1908.75 MHz	0.91	1.16	0.95	1.60
PCE	GSM/GPRS/EDGE 1900	1850.20 - 1909.80 MHz	0.55	0.84	0.84	0.37
PCE	UMTS 1900	1852.4 - 1907.6 MHz	0.74	1.12	1.12	0.95
PCE	LTE Band 12	699.7 - 715.3 MHz	0.20	0.44	0.44	0.60
PCE	LTE Band 26 (Cell)	814.7 - 848.3 MHz	0.11	0.18	0.18	0.25
PCE	LTE Band 5 (Cell)	824.7 - 848.3 MHz	N/A*			
PCE	LTE Band 4 (AWS)	1710.7 - 1754.3 MHz	0.33	0.80	0.80	1.83
PCE	LTE Band 25 (PCS)	1850.7 - 1914.3 MHz	0.72	1.11	1.11	1.12
PCE	LTE Band 2 (PCS)	1850.7 - 1909.3 MHz	N/A*			
PCE	LTE Band 7	2502.5 - 2567.5 MHz	0.33	0.75	0.75	0.52
PCE	LTE Band 41	2498.5 - 2687.5 MHz	0.15	0.29	0.29	0.84
DTS	2.4 GHz WLAN	2412 - 2462 MHz	0.79	0.11	< 0.1	N/A*
NII	U-NII-1	5180 - 5240 MHz	N/A*			
NII	U-NII-2A	5260 - 5320 MHz	0.87	< 0.1	N/A*	
NII	U-NII-2C	5500 - 5720 MHz	1.13	< 0.1	N/A*	
NII	U-NII-3	5745 - 5825 MHz	1.17	< 0.1	0.11	N/A*
DSS/DTS	Bluetooth	2402 - 2480 MHz	N/A*			
Simultaneous SAR per KDB 690783 D01v01r03:			1.56	1.42	1.36	N/A*

*Not all modes were required to be evaluated for SAR per FCC procedures. See Section 1.7 for details of SAR Test Exclusions.

Note: This revised Test Report (S/N: 0Y1601280181-R6.ZNF) supersedes and replaces the previously issued test report on the same subject device for the same type of testing as indicated. Please discard or destroy the previously issued test report(s) and dispose of it accordingly.

Note: The highest reported SAR values per equipment class and exposure condition are highlighted in the table above per KDB 865664 D02v01r02.

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 1.9 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.

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1 DEVICE UNDER TEST

1.1 Device Overview

Band & Mode	Operating Modes	Tx Frequency
CDMA/EVDO BC0 (§22H)	Voice/Data	824.70 - 848.31 MHz
CDMA/EVDO BC10 (§90S)	Voice/Data	817.90 - 823.10 MHz
GSM/GPRS/EDGE 850	Voice/Data	824.20 - 848.80 MHz
UMTS 850	Voice/Data	826.40 - 846.60 MHz
UMTS 1750	Voice/Data	1712.4 - 1752.6 MHz
PCS CDMA/EVDO	Voice/Data	1851.25 - 1908.75 MHz
GSM/GPRS/EDGE 1900	Voice/Data	1850.20 - 1909.80 MHz
UMTS 1900	Voice/Data	1852.4 - 1907.6 MHz
LTE Band 12	Voice/Data	699.7 - 715.3 MHz
LTE Band 26 (Cell)	Voice/Data	814.7 - 848.3 MHz
LTE Band 5 (Cell)	Voice/Data	824.7 - 848.3 MHz
LTE Band 4 (AWS)	Voice/Data	1710.7 - 1754.3 MHz
LTE Band 25 (PCS)	Voice/Data	1850.7 - 1914.3 MHz
LTE Band 2 (PCS)	Voice/Data	1850.7 - 1909.3 MHz
LTE Band 7	Voice/Data	2502.5 - 2567.5 MHz
LTE Band 41	Voice/Data	2498.5 - 2687.5 MHz
2.4 GHz WLAN	Voice/Data	2412 - 2462 MHz
U-NII-1	Voice/Data	5180 - 5240 MHz
U-NII-2A	Voice/Data	5260 - 5320 MHz
U-NII-2C	Voice/Data	5500 - 5720 MHz
U-NII-3	Voice/Data	5745 - 5825 MHz
Bluetooth	Data	2402 - 2480 MHz
NFC	Data	13.56 MHz

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 Slot*	*2 TX Slots*	*1 TX Slot*	*2 TX Slots*
GSM/GPRS/EDGE 850	Maximum	**33.2**	**33.2**	**31.7**	**27.7**	**27.7**
	Nominal	**32.7**	**32.7**	**31.2**	**27.2**	**27.2**
GSM/GPRS/EDGE 1900	Maximum	**30.2**	**30.2**	**28.7**	**26.7**	**26.7**
	Nominal	**29.7**	**29.7**	**28.2**	**26.2**	**26.2**

Mode / Band		Modulated Average (dBm)		
		3GPP WCDMA	*3GPP HSDPA*	*3GPP HSUPA*
UMTS Band 5 (850 MHz)	Maximum	**24.2**	**24.2**	**24.2**
	Nominal	**23.7**	**23.7**	**23.7**
UMTS Band 4 (1750 MHz)	Maximum	**23.9**	**23.9**	**23.9**
	Nominal	**23.4**	**23.4**	**23.4**
UMTS Band 2 (1900 MHz)	Maximum	**23.5**	**23.5**	**23.5**
	Nominal	**23.0**	**23.0**	**23.0**

Mode / Band		Modulated Average (dBm)
CDMA/EVDO BC10 (§90S)	Maximum	**24.9**
	Nominal	**24.4**
CDMA/EVDO BC0 (§22H)	Maximum	**24.9**
	Nominal	**24.4**
PCS CDMA/EVDO	Maximum	**24.4**
	Nominal	**23.9**

Mode / Band		Modulated Average (dBm)
LTE Band 12	Maximum	**24.2**
	Nominal	**23.7**
LTE Band 26 (Cell)	Maximum	**24.2**
	Nominal	**23.7**
LTE Band 5 (Cell)	Maximum	**24.2**
	Nominal	**23.7**
LTE Band 4 (AWS)	Maximum	**24.2**
	Nominal	**23.7**
LTE Band 25 (PCS)	Maximum	**23.9**
	Nominal	**23.4**
LTE Band 2 (PCS)	Maximum	**23.9**
	Nominal	**23.4**
LTE Band 7	Maximum	**22.0**
	Nominal	**21.5**
LTE Band 41	Maximum	**24.2**
	Nominal	**23.7**

Mode / Band		Modulated Average (dBm)		
		Ch. 1	Ch. 2-10	Ch. 11
IEEE 802.11b (2.4 GHz)	Maximum	**18.0**	**19.0**	**18.0**
	Nominal	**17.0**	**18.0**	**17.0**
IEEE 802.11g (2.4 GHz)	Maximum	**16.0**	**17.0**	**16.0**
	Nominal	**15.0**	**16.0**	**15.0**
IEEE 802.11n (2.4 GHz)	Maximum	**15.0**	**16.0**	**15.0**
	Nominal	**14.0**	**15.0**	**14.0**
IEEE 802.11ac (2.4 GHz)	Maximum	**15.0**	**16.0**	**15.0**
	Nominal	**14.0**	**15.0**	**14.0**
Bluetooth	Maximum	**9.0**		
	Nominal	**8.0**		
Bluetooth LE (Peak)	Maximum	**6.0**		

Mode / Band		Modulated Average (dBm)														
		20 MHz Bandwidth					40 MHz Bandwidth					80 MHz Bandwidth				
		Ch. 36-48	Ch. 52-64	Ch. 100-116	Ch. 132-144	Ch. 149-165	Ch. 38-46	Ch. 54-62	Ch. 102-110	Ch. 134-142	Ch. 151-159	Ch. 42	Ch. 58	Ch. 106	Ch. 138	Ch. 155
IEEE 802.11a (5 GHz)	Maximum	**13.5**	**13.5**	**13.0**	**12.5**	**13.25**	**N/A [1]**					**N/A [1]**				
	Nominal	**12.5**	**12.5**	**12.0**	**11.5**	**12.25**										
IEEE 802.11n (5 GHz)	Maximum	**13.5**	**13.5**	**13.0**	**12.5**	**13.25**	**12.5**	**12.5**	**12.0**	**12.0**	**12.5**	**N/A [1]**				
	Nominal	**12.5**	**12.5**	**12.0**	**11.5**	**12.25**	**11.5**	**11.5**	**11.0**	**11.0**	**11.5**					
IEEE 802.11ac (5 GHz)	Maximum	**13.5**	**13.5**	**13.0**	**12.5**	**13.25**	**12.5**	**12.5**	**12.0**	**12.0**	**12.5**	**11.5**	**12.5**	**12.0**	**12.0**	**12.5**
	Nominal	**12.5**	**12.5**	**12.0**	**11.5**	**12.25**	**11.5**	**11.5**	**11.0**	**11.0**	**11.5**	**10.5**	**11.5**	**11.0**	**11.0**	**11.5**

1) Configuration not supported for the indicated 802.11 mode and bandwidth.

1.4 DUT Antenna Locations

The overall dimensions of this device are > 9 x 5 cm. The overall diagonal dimension of the device is ≤160 mm and the diagonal display is ≤150 mm. A diagram showing the location of the device antennas can be found in Appendix F.

The device supports diversity antenna switching for CDMA BC1 and LTE B2/25/4 in body-worn and hotspot exposure conditions. Diversity antenna switching is disabled for held-to-ear condition.

Table 1-1
Device Edges/Sides for SAR Testing

Mode	Back	Front	Top	Bottom	Right	Left
EVDO BC0 (§22H)	Yes	Yes	No	Yes	Yes	Yes
EVDO BC10 (§90S)	Yes	Yes	No	Yes	Yes	Yes
GPRS 850	Yes	Yes	No	Yes	Yes	Yes
UMTS 850	Yes	Yes	No	Yes	Yes	Yes
UMTS 1750	Yes	Yes	No	Yes	Yes	No
PCS EVDO Ant 2	Yes	Yes	No	Yes	Yes	No
PCS EVDO Ant 3	Yes	Yes	Yes	No	Yes	Yes
GPRS 1900	Yes	Yes	No	Yes	Yes	No
UMTS 1900	Yes	Yes	No	Yes	Yes	No
LTE Band 12	Yes	Yes	No	Yes	Yes	Yes
LTE Band 26 (Cell)	Yes	Yes	No	Yes	Yes	Yes
LTE Band 4 (AWS) Ant 2	Yes	Yes	No	Yes	Yes	No
LTE Band 4 (AWS) Ant 3	Yes	Yes	Yes	No	Yes	Yes
LTE Band 25 (PCS) Ant 2	Yes	Yes	No	Yes	Yes	No
LTE Band 25 (PCS) Ant 3	Yes	Yes	Yes	No	Yes	Yes
LTE Band 7	Yes	Yes	No	Yes	Yes	Yes
LTE Band 41	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

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

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	Notes
1	1x CDMA voice + 2.4 GHz WI-FI	Yes	Yes	N/A	
2	1x CDMA voice + 5 GHz WI-FI	Yes	Yes	N/A	
3	1x CDMA voice + 2.4 GHz Bluetooth	N/A	Yes	N/A	
4	GSM voice + 2.4 GHz WI-FI	Yes	Yes	N/A	
5	GSM voice + 5 GHz WI-FI	Yes	Yes	N/A	
6	GSM voice + 2.4 GHz Bluetooth	N/A	Yes	N/A	
7	UMTS + 2.4 GHz WI-FI	Yes	Yes	Yes	
8	UMTS + 5 GHz WI-FI	Yes	Yes	Yes	
9	UMTS + 2.4 GHz Bluetooth	N/A	Yes	N/A	
10	LTE + 2.4 GHz WI-FI	Yes	Yes	Yes	
11	LTE + 5 GHz WI-FI	Yes	Yes	Yes	
12	LTE + 2.4 GHz Bluetooth	N/A	Yes	N/A	
13	CDMA/EVDO data + 2.4 GHz WI-FI	Yes*	Yes*	Yes	*-Pre-installed VOIP applications are considered.
14	CDMA/EVDO data + 5 GHz WI-FI	Yes*	Yes*	Yes	*-Pre-installed VOIP applications are considered.
15	CDMA/EVDO data + 2.4 GHz Bluetooth	N/A	Yes*	N/A	*-Pre-installed VOIP applications are considered.
16	GPRS/EDGE + 2.4 GHz WI-FI	Yes*	Yes*	Yes	*-Pre-installed VOIP applications are considered.
17	GPRS/EDGE + 5 GHz WI-FI	Yes*	Yes*	Yes	*-Pre-installed VOIP applications are considered.
18	GPRS/EDGE + 2.4 GHz Bluetooth	N/A	Yes*	N/A	*-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. Ant B and Ant C operate in a switched condition only and cannot transmit simultaneously.
4. 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.
5. Per the manufacturer, WIFI Direct is expected to be used in conjunction with a held-to-ear or body-worn accessory voice call. Simultaneous transmission scenarios involving WIFI direct are included in the table above.
6. 5 GHz Wireless Router is only supported for the U-NII-3 by S/W, therefore U-NII-1, U-NII2A, and U-NII2C were not evaluated for wireless router conditions.
7. This device supports VoLTE and VoWIFI.

1.7 Miscellaneous SAR Test Considerations

(A) WIFI/BT

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

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

Per FCC KDB 447498 D01v06, the 1g SAR exclusion threshold for distances <50mm is defined by the following equation:

$$\frac{Max\ Power\ of\ Channel\ (mW)}{Test\ Separation\ Dist\ (mm)} * \sqrt{Frequency(GHz)} \leq 3.0$$

Based on the maximum conducted power of Bluetooth (rounded to the nearest mW) and the antenna to user separation distance, body-worn Bluetooth SAR was not required; [(8/10)* √2.480] = 1.3< 3.0. Per KDB Publication 447498 D01v06, the maximum power of the channel was rounded to the nearest mW before calculation.

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) Band gap channels are supported

BT/WLAN SAR testing was not required for 10g Hotspot SAR at 0 mm per FCC Guidance. Therefore, no further analysis was required to determine that possible simultaneous scenarios for 10g Hotspot SAR would not exceed the SAR limit.

(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.

This device supports both LTE Band 5 (Cell) and LTE Band 26 (Cell). Since the supported frequency span for LTE Band 5 (Cell) falls completely within the supported frequency span for LTE Band 26 (Cell), both LTE bands have the same target power, and both LTE bands share the same transmission path, SAR was only assessed for LTE Band 26 (Cell).

This device supports both LTE Band 2 (PCS) and LTE Band 25 (PCS). Since the supported frequency span for LTE Band 2 (PCS) falls completely within the supported frequency span for LTE Band 25 (PCS), both LTE bands have the same target power, and both LTE bands share the same transmission path, SAR was only assessed for LTE Band 25 (PCS).

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

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

1.8 Project Specific Guidance

1.8.1 Camera Module (CM) Accessory

This device supports an optional camera module (CM) accessory (Model: CBG-700) that replaces the bottom part of the device below the screen. Only the standard battery can be used with either the standard device configuration or with the camera module accessory. SAR tests with the accessory were additionally performed for all exposure conditions for the antennas located at the bottom of the device. Per FCC guidance, the back side with the camera module accessory was additionally evaluated for 10g SAR for each band and mode at 0mm. With the camera module accessory attached, the diagonal dimension of the device is 161.8 mm. Based on guidance from the FCC, phablet testing procedures were not applied to this device. The operational description contains additional information.

1.8.2 Transmit Diversity Implementation

This device supports transmit diversity for LTE B2/4/25 and CDMA BC1 from Antenna 3 (a diagram showing the location of the device antennas can be found in Appendix F). When the device is held-to-ear, transmission from the diversity antenna is always permanently disabled via a proximity sensor mechanism. The transmission from Antenna 3 is disabled for all held-to-ear voice and VOIP data calls (including VOLTE). A summary of the sensor triggering data is included in Appendix G. Per FCC guidance, held-to-ear SAR for the diversity antenna was not required. Section 11 of the SAR Report contains full test data for body-worn and hotspot configurations.

1.9 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)
- October 2013 TCB Workshop Notes (GPRS Testing Considerations)
- FCC Guidance (SAR Testing for Camera Module Accessory)
- FCC Guidance (SAR Testing for Transmit Diversity Configurations)

1.10 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	10g Hotspot SAR at 0mm Serial Number
CDMA/EVDO BC10 (§90S)	07434	07434	07434	07434
CDMA/EVDO BC0 (§22H)	07434	07434	07434	07434
GSM/GPRS/EDGE 850	07442	07442	07442	07442
UMTS 850	07442	07442	07442	07442
UMTS 1750	07442	07442	07442	07442
PCS CDMA/EVDO Ant 1	07434	07434	07434	07434
PCS CDMA/EVDO Ant 3	-	07459	07459	-
GSM/GPRS/EDGE 1900	07442	07442	07442	07442
UMTS 1900	07442	07442	07442	07442
LTE Band 12	07418	07418	07418	07418
LTE Band 26 (Cell)	07418	07418	07418	07418
LTE Band 4 (AWS) Ant 1	07426	07426	07426	07426
LTE Band 4 (AWS) Ant 3	-	07459	07459	-
LTE Band 25 (PCS) Ant 1	07426	07426	07426	07426
LTE Band 25 (PCS) Ant 3	-	07459	07459	-
LTE Band 7	07418	07426	07426	07426
LTE Band 41	07418	07426	07426	07426
2.4 GHz WLAN	01864	07483	07483	-
5 GHz WLAN	01863	01864	01864	-

2 LTE INFORMATION

LTE Information					
FCC ID	**ZNFLS992**				
Form Factor	Portable Handset				
Frequency Range of each LTE transmission band	LTE Band 12 (699.7 - 715.3 MHz)				
	LTE Band 26 (Cell) (814.7 - 848.3 MHz)				
	LTE Band 5 (Cell) (824.7 - 848.3 MHz)				
	LTE Band 4 (AWS) (1710.7 - 1754.3 MHz)				
	LTE Band 25 (PCS) (1850.7 - 1914.3 MHz)				
	LTE Band 2 (PCS) (1850.7 - 1909.3 MHz)				
	LTE Band 7 (2502.5 - 2567.5 MHz)				
	LTE Band 41 (2498.5 - 2687.5 MHz)				
Channel Bandwidths	LTE Band 12: 1.4 MHz, 3 MHz, 5 MHz, 10 MHz				
	LTE Band 26 (Cell): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz				
	LTE Band 5 (Cell): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz				
	LTE Band 4 (AWS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 25 (PCS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 2 (PCS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 7: 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 41: 5 MHz, 10 MHz, 15 MHz, 20 MHz				
Channel Numbers and Frequencies (MHz)	Low	Low-Mid	Mid	Mid-High	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 26 (Cell): 1.4 MHz	814.7 (26697)		831.5 (26865)	848.3 (27033)	
LTE Band 26 (Cell): 3 MHz	815.5 (26705)		831.5 (26865)	847.5 (27025)	
LTE Band 26 (Cell): 5 MHz	816.5 (26715)		831.5 (26865)	846.5 (27015)	
LTE Band 26 (Cell): 10 MHz	819 (26740)		831.5 (26865)	844 (26990)	
LTE Band 26 (Cell): 15 MHz	831.5 (26865)		836.5 (26915)	841.5 (26965)	
LTE Band 5 (Cell): 1.4 MHz	824.7 (20407)		836.5 (20525)	848.3 (20643)	
LTE Band 5 (Cell): 3 MHz	825.5 (20415)		836.5 (20525)	847.5 (20635)	
LTE Band 5 (Cell): 5 MHz	826.5 (20425)		836.5 (20525)	846.5 (20625)	
LTE Band 5 (Cell): 10 MHz	829 (20450)		836.5 (20525)	844 (20600)	
LTE Band 4 (AWS): 1.4 MHz	1710.7 (19957)		1732.5 (20175)	1754.3 (20393)	
LTE Band 4 (AWS): 3 MHz	1711.5 (19965)		1732.5 (20175)	1753.5 (20385)	
LTE Band 4 (AWS): 5 MHz	1712.5 (19975)		1732.5 (20175)	1752.5 (20375)	
LTE Band 4 (AWS): 10 MHz	1715 (20000)		1732.5 (20175)	1750 (20350)	
LTE Band 4 (AWS): 15 MHz	1717.5 (20025)		1732.5 (20175)	1747.5 (20325)	
LTE Band 4 (AWS): 20 MHz	1720 (20050)		1732.5 (20175)	1745 (20300)	
LTE Band 25 (PCS): 1.4 MHz	1850.7 (26047)		1882.5 (26365)	1914.3 (26683)	
LTE Band 25 (PCS): 3 MHz	1851.5 (26055)		1882.5 (26365)	1913.5 (26675)	
LTE Band 25 (PCS): 5 MHz	1852.5 (26065)		1882.5 (26365)	1912.5 (26665)	
LTE Band 25 (PCS): 10 MHz	1855 (26090)		1882.5 (26365)	1910 (26640)	
LTE Band 25 (PCS): 15 MHz	1857.5 (26115)		1882.5 (26365)	1907.5 (26615)	
LTE Band 25 (PCS): 20 MHz	1860 (26140)		1882.5 (26365)	1905 (26590)	
LTE Band 2 (PCS): 1.4 MHz	1850.7 (18607)		1880 (18900)	1909.3 (19193)	
LTE Band 2 (PCS): 3 MHz	1851.5 (18615)		1880 (18900)	1908.5 (19185)	
LTE Band 2 (PCS): 5 MHz	1852.5 (18625)		1880 (18900)	1907.5 (19175)	
LTE Band 2 (PCS): 10 MHz	1855 (18650)		1880 (18900)	1905 (19150)	
LTE Band 2 (PCS): 15 MHz	1857.5 (18675)		1880 (18900)	1902.5 (19125)	
LTE Band 2 (PCS): 20 MHz	1860 (18700)		1880 (18900)	1900 (19100)	
LTE Band 7: 5 MHz	2502.5 (20775)		2535 (21100)	2567.5 (21425)	
LTE Band 7: 10 MHz	2505 (20800)		2535 (21100)	2565 (21400)	
LTE Band 7: 15 MHz	2507.5 (20825)		2535 (21100)	2562.5 (21375)	
LTE Band 7: 20 MHz	2510 (20850)		2535 (21100)	2560 (21350)	
LTE Band 41: 5 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)
LTE Band 41: 10 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)
LTE Band 41: 15 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)
LTE Band 41: 20 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)
UE Category	6				
Modulations Supported in UL	QPSK, 16QAM				
LTE MPR Permanently implemented per 3GPP TS 36.101 section 6.2.3~6.2.5? (manufacturer attestation to be provided)	YES				
A-MPR (Additional MPR) disabled for SAR Testing?	YES				
LTE Carrier Aggregation Possible Combinations	The technical description includes all the possible carrier aggregation combinations				
LTE Release 10 Additional Information	This device does not support full CA features on 3GPP Release 10. It supports a maximum of 2 carriers in the downlink. All uplink communications are identical to the Release 8 Specifications. Uplink communications are done on the PCC. Only the combinations listed are supported. The following LTE Release 10 Features are not supported: Relay, HetNet, Enhanced MIMO, eICI, WIFI Offloading, MDH, eMBMA, Cross-Carrier Scheduling, Enhanced SC-FDMA.				

3 INTRODUCTION

The FCC and Industry 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:

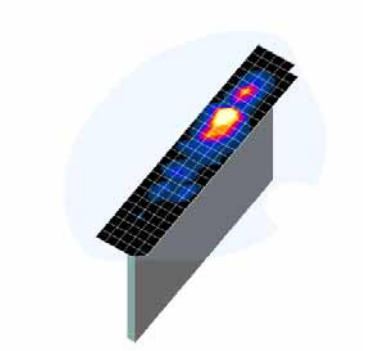


Figure 4-1
Sample SAR Area Scan

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*

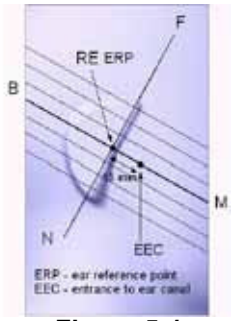
Frequency	Maximum Area Scan Resolution (mm) (Δx_{area}, Δy_{area})	Maximum Zoom Scan Resolution (mm) (Δx_{zoom}, Δy_{zoom})	Maximum Zoom Scan Spatial Resolution (mm)			Minimum Zoom Scan Volume (mm) (x,y,z)
			Uniform Grid	Graded Grid		
			$\Delta z_{zoom}(n)$	$\Delta z_{zoom}(1)$*	$\Delta z_{zoom}(n>1)$*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

*Also compliant to IEEE 1528-2013 Table 6

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



point
point
the
plane
line
the
N-F

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

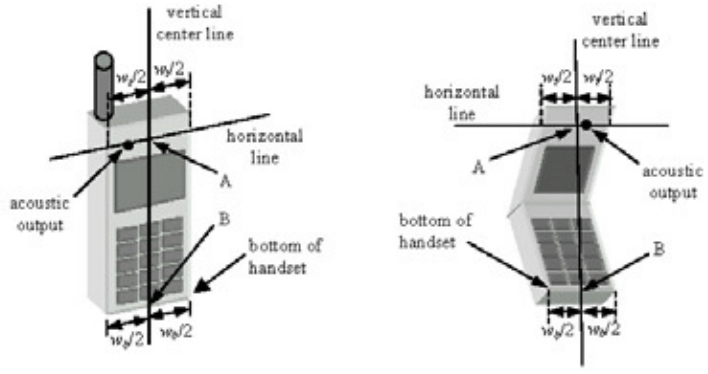


Figure 5-3
Handset Vertical Center & Horizontal Line Reference Points

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

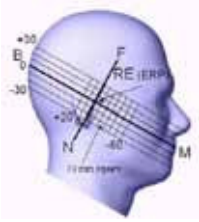


Figure 6-3
Side view w/ relevant markings

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

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

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

6.5 Body-Worn Accessory Configurations

Figure 6-4
Sample Body-Worn

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.

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.

6.6 Extremity Exposure Configurations

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

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

6.7 Wireless Router Configurations

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

6.8 Wireless Router with the Camera Module Accessory

For this device without the accessory, the back side SAR was evaluated in the standard configuration with 10 mm measured from the back of the device.

Per FCC Guidance, for the camera module, for the back side test, a test separation distance of 10 mm was measured from an imaginary plane, parallel to the flat phantom, connecting a point near the upper portion of the back side of the device and a point near the lower portion of the back side of the device. Due to the protrusion of the camera module from the rear surface of the back side, it was required to angle the device (see Figure 6-5). This data was used to address the applicable simultaneous transmission scenarios shown in Section 12.

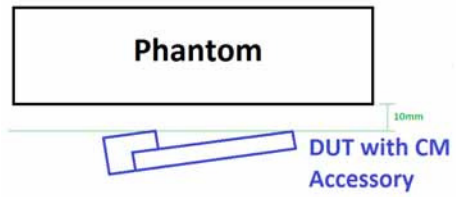


Figure 6-5
Test Setup Diagram for Back Side Hotspot SAR at 10 mm with Camera Module Accessory

The camera module SAR was additionally evaluated for 10-g hotspot SAR for the back side of the device using a test separation distance of 0 mm (touching), for each frequency band and wireless mode (see Figure 6-6). The device was not angled for this test and the protrusion was directly touching the phantom. The flat surface of the back side was parallel to the flat phantom.

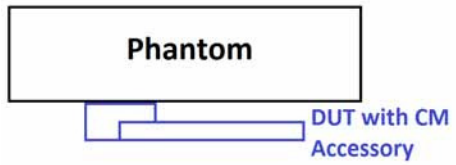


Figure 6-6
Test Setup Diagram for 10g Hotspot SAR at 0 mm with Camera Module Accessory

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

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.

8.4.6 CDMA2000 1x Advanced

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

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

8.5 SAR Measurement Conditions for UMTS

8.5.1 Output Power Verification

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

8.5.2 Head SAR Measurements

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

8.6.5 TDD

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

8.6.6 Downlink Only Carrier Aggregation

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

8.7 SAR Testing with 802.11 Transmitters

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

8.7.1 General Device Setup

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

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

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

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

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.

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.

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).

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	Rule Part	Frequency	SO55 [dBm]	SO55 [dBm]	SO75 [dBm]	TDSO SO32 [dBm]	TDSO SO32 [dBm]	1x EvDO Rev. 0 [dBm]	1x EvDO Rev. A [dBm]
	F-RC		MHz	RC1	RC3	RC11	FCH+SCH	FCH	(RTAP)	(RETAP)
Cellular	564	90S	820.1	24.63	24.70	24.75	24.85	24.68	24.78	24.73
Cellular	1013	22H	824.7	24.74	24.66	24.82	24.74	24.70	24.80	24.75
	384	22H	836.52	24.76	24.75	24.70	24.61	24.80	24.85	24.79
	777	22H	848.31	24.78	24.63	24.66	24.75	24.80	24.77	24.66
PCS	25	24E	1851.25	24.38	24.40	24.35	24.40	24.39	24.38	24.38
	600	24E	1880	24.37	24.35	24.35	24.39	24.40	24.40	24.39
	1175	24E	1908.75	24.33	24.38	24.40	24.34	24.31	24.40	24.40

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

Figure 9-1
Power Measurement Setup

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**	**EDGE [dBm] 1 Tx Slot**	**EDGE [dBm] 2 Tx Slot**
GSM 850	128	32.98	33.20	**31.63**	27.63	27.65
	190	32.92	33.20	**31.64**	27.63	27.55
	251	32.85	33.15	**31.61**	27.52	27.45
GSM 1900	512	30.20	30.20	**28.45**	26.70	26.50
	661	30.10	30.10	**28.66**	26.53	26.45
	810	30.06	30.09	**28.70**	26.62	26.55

		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**	**EDGE [dBm] 1 Tx Slot**	**EDGE [dBm] 2 Tx Slot**
GSM 850	128	23.95	24.17	**25.61**	18.60	21.63
	190	23.89	24.17	**25.62**	18.60	21.53
	251	23.82	24.12	**25.59**	18.49	21.43
GSM 1900	512	21.17	21.17	**22.43**	17.67	20.48
	661	21.07	21.07	**22.64**	17.50	20.43
	810	21.03	21.06	**22.68**	17.59	20.53
GSM 850	**Frame Avg.Targets:**	23.67	23.67	**25.18**	18.17	21.18
GSM 1900		20.67	20.67	**22.18**	17.17	20.18

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: 10 (Max 2 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]			AWS Band [dBm]			PCS Band [dBm]			3GPP MPR [dB]
			4132	4183	4233	1312	1412	1513	9262	9400	9538	
99	WCDMA	12.2 kbps RMC	23.98	23.97	23.95	23.83	23.90	23.73	23.50	23.41	23.45	-
99		12.2 kbps AMR	23.93	23.86	23.97	23.71	23.81	23.89	23.40	23.47	23.34	-
6	HSDPA	Subtest 1	23.86	23.97	23.95	23.90	23.85	23.78	23.28	23.49	23.42	0
6		Subtest 2	23.99	23.92	23.85	23.66	23.75	23.77	23.24	23.50	23.31	0
6		Subtest 3	23.47	23.35	23.46	23.40	23.25	23.38	22.84	22.92	22.99	0.5
6		Subtest 4	23.47	23.56	23.65	23.38	23.40	23.36	22.95	22.86	22.94	0.5
6	HSUPA	Subtest 1	23.84	23.98	24.02	23.65	23.68	23.80	23.36	23.35	23.29	0
6		Subtest 2	21.89	22.14	21.93	21.80	21.72	21.79	21.50	21.37	21.35	2
6		Subtest 3	22.96	23.04	22.86	22.90	22.74	22.70	22.46	22.50	22.45	1
6		Subtest 4	22.11	22.19	22.07	21.83	21.69	21.90	21.45	21.41	21.46	2
6		Subtest 5	24.00	24.13	24.14	23.90	23.77	23.86	23.47	23.36	23.42	0

This device does not support DC-HSDPA.

It is expected by the manufacturer that MPR for some HSPA subtests may be up to 1 dB more than specified by 3GPP, but also as low as 0 dB according to the chipset implementation in this model.

Figure 9-3
Power Measurement Setup

9.4 LTE Conducted Powers

Note: Some columns are marked in gray for the purpose of legibility.

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	23.80	0	0
	1	25	**24.20**		0
	1	49	24.00		0
	25	0	**23.08**	0-1	1
	25	12	22.99		1
	25	25	23.06		1
	50	0	23.01		1
16QAM	1	0	23.08	0-1	1
	1	25	23.11		1
	1	49	22.93		1
	25	0	21.93	0-2	2
	25	12	22.02		2
	25	25	22.00		2
	50	0	21.86		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)	Mid Channel 23095 (707.5 MHz)	High Channel 23155 (713.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]	Conducted Power [dBm]	Conducted Power [dBm]		
QPSK	1	0	23.82	23.90	23.88	0	0
	1	12	23.93	24.02	24.02		0
	1	24	23.91	24.09	24.06		0
	12	0	22.92	23.09	23.00	0-1	1
	12	6	23.06	22.96	22.95		1
	12	13	23.08	23.01	23.00		1
	25	0	23.00	23.11	22.97		1
16QAM	1	0	22.98	23.03	22.84	0-1	1
	1	12	22.80	23.03	22.82		1
	1	24	23.09	22.93	22.93		1
	12	0	21.86	22.10	21.84	0-2	2
	12	6	21.95	21.86	21.87		2
	12	13	21.94	21.92	21.86		2
	25	0	22.10	21.93	21.81		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	23.84	24.05	23.80	0	0
	1	7	23.89	23.78	23.96		0
	1	14	24.09	23.91	23.80		0
	8	0	23.07	23.02	22.89	0-1	1
	8	4	22.86	22.96	22.90		1
	8	7	23.05	22.84	23.09		1
	15	0	23.10	23.08	22.79		1
16QAM	1	0	22.81	22.93	22.81	0-1	1
	1	7	23.12	22.97	22.80		1
	1	14	23.06	22.80	22.85		1
	8	0	22.01	22.11	21.83	0-2	2
	8	4	21.81	21.82	22.07		2
	8	7	21.81	22.06	22.06		2
	15	0	22.00	21.78	21.95		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	24.11	24.04	23.89	0	0
	1	2	24.11	23.80	23.80		0
	1	5	23.93	23.96	23.82		0
	3	0	23.82	23.99	23.78		0
	3	2	23.84	24.02	23.95		0
	3	3	23.95	24.02	24.03		0
	6	0	22.79	23.07	23.05	0-1	1
16QAM	1	0	22.91	23.06	22.83	0-1	1
	1	2	22.97	23.11	23.04		1
	1	5	23.06	23.10	22.92		1
	3	0	22.84	22.93	22.83		1
	3	2	23.06	22.82	22.82		1
	3	3	22.99	22.99	22.90		1
	6	0	21.95	21.92	21.86	0-2	2

9.4.2 LTE Band 26 (Cell)

Table 9-5
LTE Band 26 (Cell) Conducted Powers - 15 MHz Bandwidth

LTE Band 26 (Cell) 15 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 26915 (836.5 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	23.95	0	0
	1	36	**24.20**		0
	1	74	24.00		0
	36	0	**23.20**	0-1	1
	36	18	22.86		1
	36	37	22.82		1
	75	0	22.95		1
16QAM	1	0	23.00		1
	1	36	22.84		1
	1	74	22.95		1
	36	0	21.87	0-2	2
	36	18	21.82		2
	36	37	21.86		2
	75	0	21.87		2

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

Table 9-6
LTE Band 26 (Cell) Conducted Powers - 10 MHz Bandwidth

LTE Band 26 (Cell) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26740 (819.0 MHz)	Mid Channel 26865 (831.5 MHz)	High Channel 26990 (844.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	24.11	23.98	23.84	0	0
	1	25	23.86	24.10	24.10		0
	1	49	24.09	23.79	23.83		0
	25	0	22.94	23.07	22.85	0-1	1
	25	12	22.90	22.88	23.04		1
	25	25	23.02	23.11	22.79		1
	50	0	22.78	22.89	22.79		1
16QAM	1	0	23.06	22.89	23.02		1
	1	25	23.11	23.03	23.07		1
	1	49	23.09	22.99	22.91		1
	25	0	21.94	21.91	22.09	0-2	2
	25	12	21.98	21.83	21.98		2
	25	25	22.02	21.95	21.99		2
	50	0	22.10	21.87	21.84		2

Table 9-7
LTE Band 26 (Cell) Conducted Powers - 5 MHz Bandwidth

LTE Band 26 (Cell) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26715 (816.5 MHz)	Mid Channel 26865 (831.5 MHz)	High Channel 27015 (846.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.81	24.03	23.91	0	0
	1	12	23.92	24.00	24.02		0
	1	24	24.11	23.91	23.86		0
	12	0	23.04	22.98	22.91	0-1	1
	12	6	22.99	23.07	22.80		1
	12	13	22.87	22.90	22.92		1
	25	0	23.03	23.04	22.80		1
16QAM	1	0	23.00	23.05	22.97		1
	1	12	22.86	22.84	23.08		1
	1	24	23.12	22.83	22.93		1
	12	0	22.10	22.05	21.90	0-2	2
	12	6	21.94	21.95	21.95		2
	12	13	22.07	22.11	21.93		2
	25	0	21.94	22.03	21.95		2

Table 9-8
LTE Band 26 (Cell) Conducted Powers - 3 MHz Bandwidth

LTE Band 26 (Cell) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26705 (815.5 MHz)	Mid Channel 26865 (831.5 MHz)	High Channel 27025 (847.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.90	24.01	23.98	0	0
	1	7	24.01	24.10	23.96		0
	1	14	23.85	23.83	23.90		0
	8	0	22.82	22.94	22.87	0-1	1
	8	4	22.81	22.98	22.79		1
	8	7	22.99	22.91	22.80		1
	15	0	22.78	23.10	23.10		1
16QAM	1	0	22.92	22.96	23.00		1
	1	7	23.03	22.94	22.94		1
	1	14	22.88	22.80	23.07		1
	8	0	21.80	21.93	21.98	0-2	2
	8	4	21.79	21.81	22.09		2
	8	7	21.80	22.03	22.06		2
	15	0	21.95	21.82	21.81		2

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

LTE Band 26 (Cell) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26697 (814.7 MHz)	Mid Channel 26865 (831.5 MHz)	High Channel 27033 (848.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.92	24.00	23.99	0	0
	1	2	23.96	23.82	23.95		0
	1	5	23.86	23.93	23.85		0
	3	0	23.94	24.10	24.12		0
	3	2	23.86	23.86	24.02		0
	3	3	23.90	24.09	23.95		0
	6	0	22.87	23.06	23.04	0-1	1
16QAM	1	0	22.92	22.82	22.97	0-1	1
	1	2	22.95	22.79	23.06		1
	1	5	22.85	22.90	22.82		1
	3	0	22.85	22.84	23.07		1
	3	2	22.88	22.97	23.08		1
	3	3	23.01	23.03	22.90		1
	6	0	21.85	21.91	22.00	0-2	2

9.4.3 LTE Band 4 (AWS)

Table 9-10
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)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]		
QPSK	1	0	**24.16**	0	0
	1	50	24.00		0
	1	99	23.90		0
	50	0	22.94	0-1	1
	50	25	23.00		1
	50	50	**23.04**		1
	100	0	22.91		1
16QAM	1	0	23.07		1
	1	50	23.00		1
	1	99	22.89		1
	50	0	21.85	0-2	2
	50	25	21.87		2
	50	50	21.94		2
	100	0	21.93		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 9-11
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)	Frequency [MHz] 20325 (1747.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.84	23.92	24.11	0	0
	1	36	23.95	24.07	23.89		0
	1	74	23.91	24.05	24.10		0
	36	0	22.94	22.96	23.04	0-1	1
	36	18	23.09	22.84	23.06		1
	36	37	23.02	22.84	22.87		1
	75	0	23.02	22.89	23.07		1
16QAM	1	0	22.90	23.12	22.81	0-1	1
	1	36	22.79	23.12	22.85		1
	1	74	22.92	22.85	23.00		1
	36	0	22.02	21.84	22.04	0-2	2
	36	18	22.08	21.94	21.93		2
	36	37	22.02	21.86	21.95		2
	75	0	21.97	22.11	21.91		2

Table 9-12
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	23.92	23.85	23.84	0	0
	1	25	23.79	24.00	23.93		0
	1	49	23.95	24.05	24.10		0
	25	0	22.83	23.10	22.81	0-1	1
	25	12	22.91	22.93	22.96		1
	25	25	23.06	22.90	22.84		1
	50	0	22.83	22.85	23.05		1
16QAM	1	0	22.94	22.84	23.00	0-1	1
	1	25	22.89	22.84	22.85		1
	1	49	22.85	23.04	22.87		1
	25	0	22.01	21.97	21.86	0-2	2
	25	12	21.94	21.85	22.04		2
	25	25	22.10	21.83	22.07		2
	50	0	22.05	21.91	22.10		2

Table 9-13
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	23.83	24.04	24.05	0	0
	1	12	24.02	23.85	23.98		0
	1	24	24.02	24.02	24.03		0
	12	0	23.05	22.97	22.95	0-1	1
	12	6	23.09	22.90	22.82		1
	12	13	22.92	22.95	22.89		1
	25	0	22.80	22.87	22.89		1
16QAM	1	0	23.04	22.97	22.93	0-1	1
	1	12	22.90	22.82	23.03		1
	1	24	23.11	22.97	22.93		1
	12	0	22.01	22.08	21.87	0-2	2
	12	6	21.81	21.93	21.98		2
	12	13	22.10	22.09	21.96		2
	25	0	21.87	22.01	21.79		2

Table 9-14
LTE Band 4 (AWS) Conducted Powers - 3 MHz Bandwidth

LTE Band 4 (AWS) 3 MHzBandwidth							
Modulation	RB Size	RB Offset	Frequency [MHz]	Frequency [MHz]	Frequency [MHz]	MPR Allowed per 3GPP [dB]	MPR [dB]
			19965 (1711.5 MHz)	20175 (1732.5 MHz)	20385 (1753.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	23.89	23.81	23.92	0	0
	1	7	24.08	24.04	23.86		0
	1	14	23.91	23.82	23.89		0
	8	0	23.08	22.83	23.01	0-1	1
	8	4	23.06	23.05	23.05		1
	8	7	22.94	23.08	23.09		1
	15	0	22.81	22.97	23.09		1
16QAM	1	0	23.08	22.94	22.98	0-1	1
	1	7	22.99	23.04	23.08		1
	1	14	22.84	23.07	22.90		1
	8	0	22.00	21.83	21.89	0-2	2
	8	4	22.09	22.04	22.06		2
	8	7	22.08	21.83	21.81		2
	15	0	22.07	21.81	22.00		2

Table 9-15
LTE Band 4 (AWS) Conducted Powers - 1.4 MHz Bandwidth

LTE Band 4 (AWS) 1.4 MHzBandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	Frequency [MHz]	MPR Allowed per 3GPP [dB]	MPR [dB]
			19957 (1710.7 MHz)	20175 (1732.5 MHz)	20393 (1754.3 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	23.87	23.82	24.10	0	0
	1	2	24.08	23.79	23.97		0
	1	5	24.03	24.08	23.86		0
	3	0	23.87	24.07	23.92		0
	3	2	24.00	23.87	24.03		0
	3	3	23.90	23.97	23.88		0
	6	0	22.97	22.82	23.06	0-1	1
16QAM	1	0	22.86	22.79	22.98	0-1	1
	1	2	22.98	22.80	22.82		1
	1	5	23.02	23.04	23.10		1
	3	0	23.00	23.00	22.85		1
	3	2	23.05	22.99	22.91		1
	3	3	22.88	22.96	22.84		1
	6	0	22.07	22.05	22.03	0-2	2

9.4.4 LTE Band 25 (PCS)

Table 9-16
LTE Band 25 (PCS) Conducted Powers - 20 MHz Bandwidth

LTE Band 25 (PCS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26140 (1860.0 MHz)	26365 (1882.5 MHz)	26590 (1905.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	23.78	23.70	23.72	0	0
	1	50	23.66	23.67	**23.90**		0
	1	99	23.67	23.58	23.75		0
	50	0	22.85	22.61	22.63	0-1	1
	50	25	22.72	22.57	22.56		1
	50	50	**22.86**	22.53	22.62		1
	100	0	22.55	22.66	22.75		1
16QAM	1	0	22.56	22.79	22.84		1
	1	50	22.68	22.64	22.81		1
	1	99	22.48	22.83	22.62		1
	50	0	21.53	21.77	21.74	0-2	2
	50	25	21.71	21.69	21.81		2
	50	50	21.77	21.61	21.82		2
	100	0	21.70	21.69	21.57		2

Table 9-17
LTE Band 25 (PCS) Conducted Powers - 15 MHz Bandwidth

LTE Band 25 (PCS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26115 (1857.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26615 (1907.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.68	23.78	23.83	0	0
	1	36	23.56	23.79	23.56		0
	1	74	23.84	23.59	23.59		0
	36	0	22.75	22.77	22.65	0-1	1
	36	18	22.58	22.66	22.85		1
	36	37	22.56	22.76	22.73		1
	75	0	22.77	22.72	22.53		1
16QAM	1	0	22.62	22.62	22.59		1
	1	36	22.79	22.61	22.52		1
	1	74	22.75	22.44	22.55		1
	36	0	21.77	21.61	21.59	0-2	2
	36	18	21.55	21.46	21.67		2
	36	37	21.76	21.68	21.58		2
	75	0	21.52	21.64	21.73		2

Table 9-18
LTE Band 25 (PCS) Conducted Powers - 10 MHz Bandwidth

LTE Band 25 (PCS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26090 (1855.0 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26640 (1910.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.62	23.77	23.49	0	0
	1	25	23.78	23.79	23.61		0
	1	49	23.58	23.52	23.76		0
	25	0	22.83	22.72	22.51	0-1	1
	25	12	22.51	22.66	22.75		1
	25	25	22.59	22.53	22.61		1
	50	0	22.53	22.59	22.60		1
16QAM	1	0	22.78	22.48	22.79		1
	1	25	22.67	22.66	22.75		1
	1	49	22.59	22.54	22.57		1
	25	0	21.67	21.60	21.55	0-2	2
	25	12	21.60	21.73	21.69		2
	25	25	21.64	21.58	21.66		2
	50	0	21.57	21.71	21.68		2

Table 9-19
LTE Band 25 (PCS) Conducted Powers - 5 MHz Bandwidth

LTE Band 25 (PCS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26065 (1852.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26665 (1912.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.76	23.70	23.62	0	0
	1	12	23.77	23.55	23.48		0
	1	24	23.74	23.58	23.82		0
	12	0	22.49	22.70	22.63	0-1	1
	12	6	22.70	22.64	22.72		1
	12	13	22.54	22.76	22.51		1
	25	0	22.64	22.47	22.54		1
16QAM	1	0	22.65	22.58	22.77		1
	1	12	22.61	22.79	22.67		1
	1	24	22.48	22.70	22.62		1
	12	0	21.57	21.76	21.58	0-2	2
	12	6	21.57	21.75	21.70		2
	12	13	21.52	21.58	21.70		2
	25	0	21.69	21.59	21.49		2

Table 9-20
LTE Band 25 (PCS) Conducted Powers - 3 MHz Bandwidth

LTE Band 25 (PCS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26055 (1851.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26675 (1913.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.59	23.76	23.72	0	0
	1	7	23.55	23.64	23.79		0
	1	14	23.78	23.76	23.49		0
	8	0	22.65	22.51	22.72	0-1	1
	8	4	22.80	22.45	22.58		1
	8	7	22.78	22.52	22.51		1
	15	0	22.75	22.79	22.61		1
16QAM	1	0	22.50	22.49	22.55		1
	1	7	22.49	22.57	22.47		1
	1	14	22.65	22.67	22.72		1
	8	0	21.50	21.62	21.50	0-2	2
	8	4	21.60	21.62	21.74		2
	8	7	21.64	21.84	21.80		2
	15	0	21.65	21.65	21.49		2

Table 9-21
LTE Band 25 (PCS) Conducted Powers - 1.4 MHz Bandwidth

LTE Band 25 (PCS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26047 (1850.7 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26683 (1914.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.80	23.62	23.69	0	0
	1	2	23.64	23.57	23.49		0
	1	5	23.68	23.56	23.73		0
	3	0	23.67	23.76	23.80		0
	3	2	23.67	23.78	23.51		0
	3	3	23.74	23.55	23.66		0
	6	0	22.51	22.69	22.75	0-1	1
16QAM	1	0	22.72	22.60	22.75	0-1	1
	1	2	22.81	22.68	22.61		1
	1	5	22.56	22.51	22.63		1
	3	0	22.66	22.61	22.62		1
	3	2	22.67	22.58	22.60		1
	3	3	22.75	22.77	22.70		1
	6	0	21.70	21.60	21.51	0-2	2

9.4.5 LTE Band 7

Table 9-22
LTE Band 7 Conducted Powers - 20 MHz Bandwidth

LTE Band 7 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20850 (2510.0 MHz)	Mid Channel 21100 (2535.0 MHz)	High Channel 21350 (2560.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	21.90	21.80	21.90	0	0
		50	21.96	21.90	**22.00**		0
		99	21.99	21.90	21.95		0
	50	0	20.95	20.88	**20.99**	0-1	1
		25	20.91	20.98	20.96		1
		50	20.88	20.94	20.86		1
	100	0	20.95	20.98	20.98		1
16QAM	1	0	20.82	20.83	20.86	0-1	1
		50	21.00	20.95	20.94		1
		99	20.82	20.80	20.94		1
	50	0	19.86	19.75	19.89	0-2	2
		25	19.81	19.95	19.87		2
		50	19.73	20.00	19.94		2
	100	0	19.76	19.95	19.97		2

Table 9-23
LTE Band 7 Conducted Powers - 15 MHz Bandwidth

LTE Band 7 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20825 (2507.5 MHz)	Mid Channel 21100 (2535.0 MHz)	High Channel 21375 (2562.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	21.93	21.83	21.71	0	0
		36	21.75	21.85	21.82		0
		74	21.91	21.92	21.89		0
	36	0	20.90	20.98	20.93	0-1	1
		18	20.95	20.77	20.86		1
		37	20.93	20.81	20.70		1
	75	0	20.70	20.95	21.00		1
16QAM	1	0	20.75	20.74	20.73	0-1	1
		36	20.81	20.87	20.88		1
		74	20.79	20.88	20.87		1
	36	0	19.74	19.93	19.74	0-2	2
		18	19.84	19.75	19.74		2
		37	19.87	19.70	19.73		2
	75	0	19.80	19.91	20.00		2

Table 9-24
LTE Band 7 Conducted Powers - 10 MHz Bandwidth

LTE Band 7 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20800 (2505.0 MHz)	Mid Channel 21100 (2535.0 MHz)	High Channel 21400 (2565.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	21.83	21.77	21.83	0	0
	1	25	22.00	21.91	21.83		0
	1	49	21.98	21.88	21.84		0
	25	0	20.83	20.71	20.99	0-1	1
	25	12	20.95	20.88	20.84		1
	25	25	20.76	20.73	20.78		1
	50	0	20.93	20.78	20.81		1
16QAM	1	0	20.85	20.86	20.85	0-1	1
	1	25	20.75	20.96	20.90		1
	1	49	20.83	20.92	20.83		1
	25	0	19.85	19.95	19.79	0-2	2
	25	12	19.73	19.83	19.73		2
	25	25	19.87	19.72	19.89		2
	50	0	19.91	19.74	19.76		2

Table 9-25
LTE Band 7 Conducted Powers - 5 MHz Bandwidth

LTE Band 7 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20775 (2502.5 MHz)	Mid Channel 21100 (2535.0 MHz)	High Channel 21425 (2567.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	21.71	21.73	21.78	0	0
	1	12	21.74	21.88	21.85		0
	1	24	21.97	21.83	21.82		0
	12	0	20.79	20.79	20.98	0-1	1
	12	6	20.76	20.72	20.99		1
	12	13	20.98	20.96	20.94		1
	25	0	20.99	20.99	20.85		1
16QAM	1	0	20.72	20.85	21.00	0-1	1
	1	12	20.79	20.82	20.74		1
	1	24	20.80	20.81	20.99		1
	12	0	19.80	19.81	19.94	0-2	2
	12	6	19.85	19.85	19.88		2
	12	13	19.84	19.94	19.81		2
	25	0	19.77	19.91	19.96		2

9.4.6 LTE Band 41

Table 9-26
LTE Band 41 Conducted Powers - 20 MHz Bandwidth

LTE Band 41 20 MHzBandwidth									
Modulation	RB Size	RB Offset	Low Channel 39750 (2506.0 MHz)	Low-Mid Channel 40185 (2549.5 MHz)	Mid Channel 40620 (2593.0 MHz)	Mid-High Channel 41055 (2636.5 MHz)	High Channel 41490 (2680.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]						
QPSK	1	0	**24.10**	24.03	23.90	24.06	24.00	0	0
	1	50	24.00	23.97	24.00	23.95	23.80		0
	1	99	24.09	24.08	24.00	24.09	23.80		0
	50	0	**23.11**	23.06	23.04	22.99	23.02	0-1	1
	50	25	22.93	22.95	23.05	22.89	22.78		1
	50	50	22.88	22.89	22.96	22.86	22.93		1
	100	0	22.95	22.97	23.10	22.96	22.85		1
16QAM	1	0	23.08	23.11	22.87	23.03	22.85	0-1	1
	1	50	23.05	22.99	22.90	23.08	23.02		1
	1	99	23.05	23.05	23.05	23.01	22.97		1
	50	0	22.06	22.07	22.07	22.07	21.85	0-2	2
	50	25	21.84	21.88	21.92	21.82	21.89		2
	50	50	22.04	22.02	22.00	22.05	21.93		2
	100	0	21.82	21.82	22.01	21.83	21.97		2

Table 9-27
LTE Band 41 Conducted Powers - 15 MHz Bandwidth

LTE Band 41 15 MHzBandwidth									
Modulation	RB Size	RB Offset	Low Channel 39750 (2506.0 MHz)	Low-Mid Channel 40185 (2549.5 MHz)	Mid Channel 40620 (2593.0 MHz)	Mid-High Channel 41055 (2636.5 MHz)	High Channel 41490 (2680.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]						
QPSK	1	0	23.87	23.87	23.84	23.84	23.98	0	0
	1	36	23.93	23.93	24.07	23.90	23.92		0
	1	74	24.11	24.14	24.10	24.15	24.09		0
	36	0	22.96	22.94	22.92	22.95	22.93	0-1	1
	36	18	22.83	22.80	22.85	22.83	22.81		1
	36	37	23.06	23.05	22.88	23.01	23.08		1
	75	0	23.03	23.02	22.82	23.01	23.03		1
16QAM	1	0	23.00	22.98	22.95	22.97	22.78	0-1	1
	1	36	22.90	22.90	23.00	22.89	23.01		1
	1	74	23.04	23.01	23.12	23.07	22.90		1
	36	0	22.04	21.99	21.79	22.03	22.09	0-2	2
	36	18	21.90	21.94	22.00	21.94	22.03		2
	36	37	22.00	22.04	21.85	22.01	21.97		2
	75	0	22.02	22.00	22.05	22.01	21.94		2

Table 9-28
LTE Band 41 Conducted Powers - 10 MHz Bandwidth

LTE Band 41 10 MHzBandwidth									
Modulation	RB Size	RB Offset	Low Channel 39750 (2506.0 MHz)	Low-Mid Channel 40185 (2549.5 MHz)	Mid Channel 40620 (2593.0 MHz)	Mid-High Channel 41055 (2636.5 MHz)	High Channel 41490 (2680.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]						
QPSK	1	0	24.03	23.90	24.01	23.91	24.07	0	0
	1	25	23.93	23.90	23.97	23.88	24.08		0
	1	49	24.08	24.07	23.78	24.13	23.98		0
	25	0	22.99	23.00	22.85	22.96	22.79	0-1	1
	25	12	22.88	22.87	22.95	22.85	23.00		1
	25	25	22.86	23.02	23.05	23.07	22.86		1
	50	0	23.11	23.04	23.05	22.99	22.97		1
16QAM	1	0	23.10	23.01	22.81	23.02	22.82	0-1	1
	1	25	22.83	22.91	23.09	22.90	22.79		1
	1	49	22.99	23.06	22.78	23.08	22.94		1
	25	0	22.02	22.06	21.89	22.05	21.84	0-2	2
	25	12	22.05	21.86	22.10	21.87	22.04		2
	25	25	21.97	22.00	22.00	22.03	21.92		2
	50	0	22.00	22.07	21.79	22.04	21.83		2

Table 9-29
LTE Band 41 Conducted Powers - 5 MHz Bandwidth

LTE Band 41 5 MHzBandwidth									
Modulation	RB Size	RB Offset	Low Channel 39750 (2506.0 MHz)	Low-Mid Channel 40185 (2549.5 MHz)	Mid Channel 40620 (2593.0 MHz)	Mid-High Channel 41055 (2636.5 MHz)	High Channel 41490 (2680.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]						
QPSK	1	0	23.80	23.90	23.82	23.89	23.85	0	0
	1	12	24.08	23.91	24.01	23.95	23.88		0
	1	24	24.05	24.15	23.87	24.12	23.94		0
	12	0	22.94	23.00	22.98	22.98	22.83	0-1	1
	12	6	23.08	22.78	22.93	22.84	22.92		1
	12	13	22.97	23.04	22.83	23.05	23.04		1
	25	0	23.05	23.03	22.99	23.07	22.92		1
16QAM	1	0	22.99	22.96	23.08	23.02	23.07	0-1	1
	1	12	22.78	22.93	22.97	22.92	23.03		1
	1	24	22.89	23.01	22.98	23.04	22.96		1
	12	0	21.94	22.04	21.85	22.08	21.80	0-2	2
	12	6	21.98	21.90	22.12	21.88	22.10		2
	12	13	21.94	22.03	21.80	21.99	21.83		2
	25	0	21.84	21.99	22.09	22.02	22.05		2

9.4.7 LTE Carrier Aggregation Conducted Powers

Table 9-30
LTE Carrier Aggregation Information per FCC KDB Publication 941225 D05Av01r02, C (3)

3	When Carrier Aggregation applies, explanations of Inter-band and intra-band aggregation Capabilities			
a)	Intra-band and inter-band carrier aggregation for both downlink and uplink, including Wi-Fi offloading using LTE-U, LAA or LWA protocols?	Only Intra-Band carrier aggregation is suppported for this device. Uplink Carrier Aggregation is not supported. Wi-Fi offloading using LTE-U, LAA and LWA is not supported.		
i)	Support of contiguous and non-contiguous component carriers for intra-band aggregation:	Intra-band down-link only carrier aggregation support contiguous carrier aggregation for LTE B41 and non-contiguous carrier aggregation for LTE B25.		
ii)	Frequency band combinations supported for intra-band and inter-band carrier aggregation:	LTE B25 (PCC) + LTE B25 (SCC)	LTE B41 (PCC) + LTE B41 (SCC)	
iii)	Number of component carriers, including all combinations, supported for intra-band and inter-band carrier aggregation in the uplink and downlink:	A maximum of 2 component carriers is supported on the DL. Carrier Aggregation is not supported on the uplink.		
iv)	The channel bandwidth configurations applicable to each carrier aggregation configuration and the applicable carrier aggregation (CA) Bandwidth Classes; A … F, etc.:	See Section 3)b)ii)		
v)	Restrictions on certain channel combinations:	None		
vi)	RB combinations supported by the carrier aggregation configurations:	All RB configurations supported.		
b)	Carrier Aggregation is supported for downlink only:			
i)	Frequency bands and channel bandwidths allowed for the uplink and downlink configuration combinations?	**LTE B25 (PCC) + LTE B25 (SCC) CA_25A-25A**	**LTE B41 (PCC) + LTE B41 (SCC) CA_41C**	
		LTE B25(PCC): 5, 10 MHz	B41 (PCC): 20 MHz	
		LTE B25(SCC): 5, 10 MHz	B41 (SCC): 20 MHz	
ii)	Uplink maximum output power measurement with downlink carrier aggregation active measured, using the highest output channel measured without downlink carrier aggregation and not more than 1/4 dB higher than the maximum output power measured when downlink carrier aggregation inactive??	Yes, Please see Tables 9-31 and 9-32		
iii)	SAR measurements required for downlink carrier aggregation per 3)b)ii)?	NO		
c)	If Carrier Aggregation is supported for uplink, maximum output power and tune-up tolerance specified for each component carrier in each carrier aggregation configuration are required to determine the SAR test configurations:	Uplink Carrier Aggregation not supported.		
i)	When power reduction applies, the maximum output power specifications and measured results with and without carrier aggregation in the reduced power configurations are included?	N/A		
ii)	Does the maximum output power specified for production units, including tune up tolerance, varies across channel bandwidth, modulationm RB allocation, channels etc.?	N/A		
d)	Description of Test Equipment and Setup for power and SAR measurements?	Yes, See Section 8.6.6		
e)	Other restrictions or limitations associated with the carrier aggregation implementation?	No		

Note: Down-link LTE Carrier Aggregation is supported for all combinations of the PCC and SCC bandwidths listed above. While some additional bandwidths may be supported in 3GPP 36.101, only the above bandwidth combinations will be implemented in this device.

Table 9-31
LTE FDD Carrier Aggregation Conducted Powers

PCC								SCC				Power	
PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Frequency [MHz]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	LTE Rel 10 Tx.Power (dBm)	LTE Rel. 8 Tx.Power (dBm)
LTE B25	5	26665	1912.5	1	24	8665	1992.5	LTE B25	5	8065	1932.5	23.89	23.82

Table 9-32
LTE TDD Carrier Aggregation Conducted Powers

PCC								SCC				Power	
PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Frequency [MHz]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	LTE Rel 10 Tx.Power (dBm)	LTE Rel. 8 Tx.Power (dBm)
LTE B41	20	39750	2506	1	0	39750	2506	LTE B41	20	39948	2525.8	24.16	24.10

Notes:

1. The device only supports downlink Carrier Aggregation. Uplink Carrier Aggregation is not supported. For every supported combination of downlink carrier aggregation, power measurements were performed with the downlink carrier aggregation active for the configuration with highest measured maximum conducted power with downlink carrier aggregation inactive measured among the channel bandwidth, modulation, and RB combinations in each frequency band.
2. All control and acknowledge data is sent on uplink channels that operate identical to specifications when downlink carrier aggregation is inactive.

9.5 WLAN Conducted Powers

Table 9-33
2.4 GHz WLAN Average RF Power

Freq [MHz]	Channel	2.4 GHz Conducted Power [dBm]	
		IEEE Transmission Mode	
		802.11b	802.11g
2412	1	16.03	14.19
2417	2	17.64	15.68
2437	6	17.06	15.44
2457	10	**18.10**	16.27
2462	11	16.86	15.29

Table 9-34
5 GHz WLAN Average RF Power

Freq [MHz]	Channel	5 GHz (20 MHz) Conducted Power [dBm]		
		IEEE Transmission Mode		
		802.11a	802.11n	802.11ac
5180	36	12.85	12.30	12.46
5200	40	12.86	12.45	12.41
5220	44	12.91	12.58	12.61
5240	48	13.00	12.43	12.57
5260	52	12.34	12.05	12.09
5280	56	**12.52**	12.06	12.01
5300	60	12.48	12.17	12.18
5320	64	12.12	11.81	11.81
5500	100	**11.78**	11.31	11.39
5580	116	11.30	11.00	11.09
5660	132	10.91	10.60	10.71
5720	144	10.96	10.52	10.58
5745	149	11.38	11.26	11.27
5785	157	11.49	11.28	11.28
5825	165	**11.54**	11.25	11.27

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.

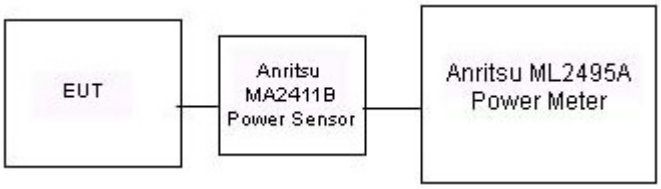


Figure 9-4
Power Measurement Setup

10 SYSTEM VERIFICATION

10.1 Tissue Verification

Table 10-1
Measured Head Tissue Properties

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
2/19/2016	750H	21.7	700	0.848	43.619	0.889	42.201	-4.61%	3.36%
			710	0.858	43.484	0.890	42.149	-3.60%	3.17%
			740	0.887	43.078	0.893	41.994	-0.67%	2.58%
			755	0.902	42.858	0.894	41.916	0.89%	2.25%
1/28/2016	835H	22.5	820	0.872	40.902	0.899	41.578	-3.00%	-1.63%
			835	0.885	40.687	0.900	41.500	-1.67%	-1.96%
			850	0.900	40.465	0.916	41.500	-1.75%	-2.49%
2/1/2016	835H	21.8	820	0.914	43.356	0.899	41.578	1.67%	4.28%
			835	0.926	43.006	0.900	41.500	2.89%	3.63%
			850	0.943	42.932	0.916	41.500	2.95%	3.45%
2/4/2016	1750H	22.5	1710	1.294	39.763	1.348	40.142	-4.01%	-0.94%
			1750	1.332	39.530	1.371	40.079	-2.84%	-1.37%
			1790	1.381	39.369	1.394	40.016	-0.93%	-1.62%
2/9/2016	1750H	22.1	1710	1.344	39.119	1.348	40.142	-0.30%	-2.55%
			1750	1.385	38.918	1.371	40.079	1.02%	-2.90%
			1790	1.426	38.728	1.394	40.016	2.30%	-3.22%
2/10/2016	1900H	22.8	1850	1.379	40.491	1.400	40.000	-1.50%	1.23%
			1880	1.411	40.351	1.400	40.000	0.79%	0.88%
			1910	1.443	40.197	1.400	40.000	3.07%	0.49%
2/3/2016	2400-2600H	23.1	2400	1.818	38.739	1.756	39.289	3.53%	-1.40%
			2450	1.876	38.538	1.800	39.200	4.22%	-1.69%
			2500	1.933	38.347	1.855	39.136	4.20%	-2.02%
			2550	1.991	38.115	1.909	39.073	4.30%	-2.45%
			2600	2.057	37.949	1.964	39.009	4.74%	-2.72%
2/8/2016	2400-2600H	24.1	2400	1.804	40.125	1.756	39.289	2.73%	2.13%
			2450	1.862	39.863	1.800	39.200	3.44%	1.69%
			2500	1.922	39.692	1.855	39.136	3.61%	1.42%
02/08/2016	5200H-5800H	20.1	5280	4.627	37.321	4.737	35.894	-2.32%	3.98%
			5300	4.639	37.295	4.758	35.871	-2.50%	3.97%
			5500	4.849	36.985	4.963	35.643	-2.30%	3.77%
			5580	4.943	36.895	5.045	35.551	-2.02%	3.78%
			5600	4.956	36.833	5.065	35.529	-2.15%	3.67%
			5785	5.184	36.596	5.255	35.317	-1.35%	3.62%
			5800	5.192	36.596	5.270	35.300	-1.48%	3.67%
			5825	5.219	36.543	5.296	35.271	-1.45%	3.61%

Table 10-2
Measured Body Tissue Properties

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
2/24/2016	750B	22.1	700	0.924	56.539	0.959	55.726	-3.65%	1.46%
			710	0.932	56.425	0.960	55.687	-2.92%	1.33%
			740	0.957	56.109	0.963	55.570	-0.62%	0.97%
			755	0.972	55.968	0.964	55.512	0.83%	0.82%
2/5/2016	835B	22.8	820	0.986	55.111	0.969	55.258	1.75%	-0.27%
			835	0.998	54.971	0.970	55.200	2.89%	-0.41%
			850	1.014	54.841	0.988	55.154	2.63%	-0.57%
2/9/2016	835B	22.0	820	1.001	53.770	0.969	55.258	3.30%	-2.69%
			835	1.016	53.611	0.970	55.200	4.74%	-2.88%
			850	1.030	53.443	0.988	55.154	4.25%	-3.10%
1/28/2016	1750B	22.5	1710	1.421	51.650	1.463	53.537	-2.87%	-3.52%
			1750	1.462	51.492	1.488	53.432	-1.75%	-3.63%
			1790	1.505	51.329	1.514	53.326	-0.59%	-3.74%
2/16/2016	1750B	20.9	1710	1.464	52.247	1.463	53.537	0.07%	-2.41%
			1750	1.510	52.082	1.488	53.432	1.48%	-2.53%
			1790	1.557	51.926	1.514	53.326	2.84%	-2.63%
2/3/2016	1900B	22.6	1850	1.524	51.472	1.520	53.300	0.26%	-3.43%
			1880	1.551	51.355	1.520	53.300	2.04%	-3.65%
			1910	1.586	51.255	1.520	53.300	4.34%	-3.84%
2/10/2016	1900B	23.1	1850	1.518	51.857	1.520	53.300	-0.13%	-2.71%
			1880	1.553	51.675	1.520	53.300	2.17%	-3.05%
			1910	1.591	51.607	1.520	53.300	4.67%	-3.18%
2/15/2016	1900B	21.8	1850	1.446	52.362	1.520	53.300	-4.87%	-1.76%
			1880	1.476	52.324	1.520	53.300	-2.89%	-1.83%
			1910	1.504	52.187	1.520	53.300	-1.05%	-2.09%
2/3/2016	2400-2600B	23.0	2400	1.916	51.963	1.902	52.767	0.74%	-1.52%
			2450	1.984	51.839	1.950	52.700	1.74%	-1.63%
			2500	2.049	51.617	2.021	52.636	1.39%	-1.94%
			2550	2.123	51.454	2.092	52.573	1.48%	-2.13%
			2600	2.189	51.283	2.163	52.509	1.20%	-2.33%
2/11/2016	2400-2600B	23.0	2400	1.964	52.215	1.902	52.767	3.26%	-1.05%
			2450	2.037	52.074	1.950	52.700	4.46%	-1.19%
			2500	2.102	51.828	2.021	52.636	4.01%	-1.54%
02/08/2016	5200B-5800B	24.0	5240	5.481	48.168	5.346	48.960	2.53%	-1.62%
			5260	5.505	48.144	5.369	48.933	2.53%	-1.61%
			5280	5.535	48.117	5.393	48.906	2.63%	-1.61%
			5500	5.833	47.678	5.650	48.607	3.24%	-1.91%
			5600	5.983	47.544	5.766	48.471	3.76%	-1.91%
			5745	6.193	47.219	5.936	48.275	4.33%	-2.19%
			5765	6.215	47.211	5.959	48.248	4.30%	-2.15%
			5825	6.306	47.114	6.029	48.166	4.59%	-2.18%

Table 10-3
Measured Body Tissue Properties Additional Hand Tests

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
2/27/2016	750B	20.8	700	0.913	55.608	0.959	55.726	-4.80%	-0.21%
			710	0.918	55.510	0.960	55.687	-4.37%	-0.32%
			740	0.946	55.219	0.963	55.570	-1.77%	-0.63%
			755	0.961	55.068	0.964	55.512	-0.31%	-0.80%
2/27/2016	835B	19.2	820	0.982	54.021	0.969	55.258	1.34%	-2.24%
			835	0.996	53.964	0.970	55.200	2.68%	-2.24%
			850	1.012	53.791	0.988	55.154	2.43%	-2.47%
2/29/2016	835B	21.4	820	1.012	56.755	0.969	55.258	4.44%	2.71%
			835	1.000	55.519	0.970	55.200	3.09%	0.58%
			850	1.019	55.418	0.988	55.154	3.14%	0.48%
3/3/2016	835B	20.5	820	0.972	55.116	0.969	55.258	0.31%	-0.26%
			835	0.988	54.967	0.970	55.200	1.86%	-0.42%
			850	0.997	54.850	0.988	55.154	0.91%	-0.55%
2/27/2016	1750B	20.5	1710	1.438	52.253	1.463	53.537	-1.71%	-2.40%
			1750	1.483	52.104	1.488	53.432	-0.34%	-2.49%
			1790	1.528	51.931	1.514	53.326	0.92%	-2.62%
2/25/2016	1900B	22.0	1850	1.514	51.249	1.520	53.300	-0.39%	-3.85%
			1880	1.552	51.185	1.520	53.300	2.11%	-3.97%
			1910	1.586	51.060	1.520	53.300	4.34%	-4.20%
3/3/2016	1900B	21.8	1850	1.508	53.061	1.520	53.300	-0.79%	-0.45%
			1880	1.540	53.005	1.520	53.300	1.32%	-0.55%
			1910	1.574	52.874	1.520	53.300	3.55%	-0.80%
2/26/2016	2400-2600B	24.1	2400	1.933	50.819	1.902	52.767	1.63%	-3.69%
			2450	1.989	50.648	1.950	52.700	2.00%	-3.89%
			2500	2.057	50.397	2.021	52.636	1.78%	-4.25%
			2550	2.125	50.249	2.092	52.573	1.58%	-4.42%
2/29/2016	2400-2600B	24.2	2500	2.011	52.553	2.021	52.636	-0.49%	-0.16%
			2550	2.080	52.354	2.092	52.573	-0.57%	-0.42%
			2600	2.132	52.115	2.163	52.509	-1.43%	-0.75%

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 10-4
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)	$Deviation_{1g}$ (%)
H	750	HEAD	02/19/2016	20.3	21.7	0.200	1054	3263	1.670	8.280	8.350	0.85%
J	835	HEAD	01/28/2016	21.6	22.5	0.200	4d133	3319	1.910	9.130	9.550	4.60%
J	835	HEAD	02/01/2016	21.0	21.8	0.200	4d133	3319	1.960	9.130	9.800	7.34%
K	1750	HEAD	02/04/2016	23.5	21.7	0.100	1051	3022	3.440	36.200	34.400	-4.97%
K	1750	HEAD	02/09/2016	24.2	22.4	0.100	1051	3022	3.770	36.200	37.700	4.14%
I	1900	HEAD	02/10/2016	23.5	22.9	0.100	5d149	3333	4.300	40.700	43.000	5.65%
H	2450	HEAD	02/03/2016	24.4	23.1	0.100	719	3263	5.580	54.200	55.800	2.95%
H	2450	HEAD	02/08/2016	19.8	22.2	0.100	719	3263	5.210	54.200	52.100	-3.87%
H	2600	HEAD	02/03/2016	24.4	23.1	0.100	1004	3263	5.980	55.800	59.800	7.17%
D	5300	HEAD	02/08/2016	21.7	20.1	0.050	1120	7357	3.730	81.100	74.600	-8.01%
D	5500	HEAD	02/08/2016	21.7	20.1	0.050	1120	7357	3.740	81.700	74.800	-8.45%
D	5600	HEAD	02/08/2016	21.8	20.1	0.050	1120	7357	3.920	79.900	78.400	-1.88%
D	5800	HEAD	02/08/2016	21.8	20.1	0.050	1120	7357	3.600	77.300	72.000	-6.86%
H	750	BODY	02/24/2016	23.9	22.1	0.200	1054	3263	1.820	8.530	9.100	6.68%
G	835	BODY	02/05/2016	24.3	22.1	0.200	4d133	3334	1.900	9.250	9.500	2.70%
E	835	BODY	02/09/2016	23.4	22.0	0.200	4d119	3351	1.780	9.200	8.900	-3.26%
K	1750	BODY	01/28/2016	23.8	22.5	0.100	1051	3022	3.820	37.100	38.200	2.96%
D	1750	BODY	02/16/2016	22.1	20.9	0.100	1051	3209	3.890	37.100	38.900	4.85%
I	1900	BODY	02/03/2016	24.5	22.6	0.100	5d149	3333	4.220	40.400	42.200	4.46%
G	1900	BODY	02/10/2016	24.3	23.4	0.100	5d149	3334	3.840	40.400	38.400	-4.95%
I	1900	BODY	02/15/2016	20.0	21.8	0.100	5d149	3333	4.320	40.400	43.200	6.93%
J	2450	BODY	02/03/2016	22.5	23.0	0.100	719	3319	5.260	51.900	52.600	1.35%
H	2450	BODY	02/11/2016	23.1	22.2	0.100	719	3263	5.170	51.900	51.700	-0.39%
J	2600	BODY	02/03/2016	22.5	23.0	0.100	1004	3319	5.910	56.200	59.100	5.16%
E	5250	BODY	02/08/2016	23.6	22.3	0.050	1191	7308	3.550	77.200	71.000	-8.03%
E	5600	BODY	02/08/2016	23.6	22.3	0.050	1191	7308	4.130	81.900	82.600	0.85%
E	5750	BODY	02/08/2016	23.6	22.3	0.050	1191	7308	3.600	77.100	72.000	-6.61%

Table 10-5
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)	$Deviation_{10g}$ (%)
I	750	BODY	02/27/2016	19.8	20.8	0.200	1054	3333	1.140	5.680	5.700	0.35%
J	835	BODY	02/27/2016	20.3	19.2	0.200	4d119	3319	1.210	6.060	6.050	-0.17%
J	835	BODY	02/29/2016	21.6	21.4	0.200	4d119	3319	1.280	6.060	6.400	5.61%
I	835	BODY	03/03/2016	20.3	20.5	0.200	4d133	3333	1.260	6.080	6.300	3.62%
K	1750	BODY	02/27/2016	20.8	20.5	0.100	1051	3022	1.950	20.000	19.500	-2.50%
G	1900	BODY	02/25/2016	24.3	22.5	0.100	5d149	3334	2.020	21.800	20.200	-7.34%
G	1900	BODY	03/03/2016	22.2	21.4	0.100	5d149	3334	1.990	21.800	19.900	-8.72%
H	2450	BODY	02/26/2016	21.5	22.5	0.100	719	3263	2.310	24.300	23.100	-4.94%
H	2600	BODY	02/29/2016	22.9	23.5	0.100	1004	3263	2.320	25.300	23.200	-8.30%

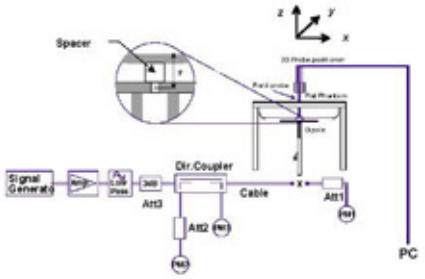
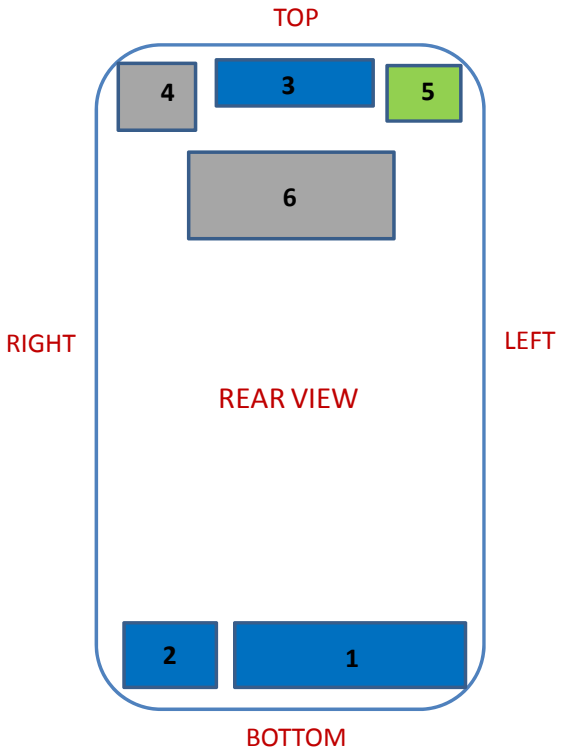


Figure 10-1
System Verification Setup Diagram

Figure 10-2
System Verification Setup Photo

11 SAR DATA SUMMARY

11.1 Antenna Locations



1. Antenna 1 (Tx/Rx)
   - GSM/GPRS/EDGE 850 MHz
   - CDMA/EVDO BC10, BC0
   - UMTS B5
   - LTE B12/26/5/41/7
2. Antenna 2 (Tx/Rx)
   - GSM/GPRS/EDGE 1900 MHz
   - CDMA/EVDO BC1
   - UMTS B2/4
   - LTE B25/2/4
3. Antenna 3
   - CDMA/EVDO BC10, BC0 (Rx Only)
   - LTE B12/26/5 (Rx Only)
   - CDMA/EVDO BC1 (Tx/Rx) (head SAR limited by proximity sensor)
   - LTE B25/2/4 (Tx/Rx) (head SAR limited by proximity sensor)
4. Antenna 4 (Rx only)
   - GPS
   - LTE B41
5. Antenna 5 (Tx/Rx)
   - 2.4/5 GHz WIFI
   - 2.4 GHz BT
6. Antenna 6 (Tx/Rx)
   - NFC

11.2 Standalone Head SAR Data

Table 11-1
CDMA BC10 (§90S) Head SAR – Ant. 1

MEASUREMENT RESULTS														
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	24.9	24.70	-0.16	Right	Cheek	07434	1:1	0.274	1.047	0.287	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	24.9	24.70	0.05	Right	Tilt	07434	1:1	0.151	1.047	0.158	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	24.9	24.70	0.12	Left	Cheek	07434	1:1	0.332	1.047	0.348	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	24.9	24.70	0.03	Left	Tilt	07434	1:1	0.139	1.047	0.146	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	24.9	24.73	-0.11	Right	Cheek	07434	1:1	0.286	1.040	0.297	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	24.9	24.73	-0.09	Right	Tilt	07434	1:1	0.163	1.040	0.170	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	24.9	24.73	-0.01	Left	Cheek	07434	1:1	0.341	1.040	0.355	A1
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	24.9	24.73	0.10	Left	Tilt	07434	1:1	0.127	1.040	0.132	
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
CDMA BC10 (§90S) Head SAR with CM Accessory – Ant.1

MEASUREMENT RESULTS															
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Accessory	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	24.9	24.70	0.08	Right	Cheek	Camera Module	07434	1:1	0.256	1.047	0.268	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	24.9	24.70	0.18	Right	Tilt	Camera Module	07434	1:1	0.128	1.047	0.134	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	24.9	24.70	0.12	Left	Cheek	Camera Module	07434	1:1	0.288	1.047	0.302	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	24.9	24.70	0.09	Left	Tilt	Camera Module	07434	1:1	0.151	1.047	0.158	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	24.9	24.73	0.13	Right	Cheek	Camera Module	07434	1:1	0.255	1.040	0.265	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	24.9	24.73	0.08	Right	Tilt	Camera Module	07434	1:1	0.127	1.040	0.132	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	24.9	24.73	0.07	Left	Cheek	Camera Module	07434	1:1	0.278	1.040	0.289	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	24.9	24.73	-0.06	Left	Tilt	Camera Module	07434	1:1	0.136	1.040	0.141	
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
CDMA BC0 (§22H) Head SAR – Ant. 1

MEASUREMENT RESULTS														
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	24.9	24.75	-0.10	Right	Cheek	07434	1:1	0.320	1.035	0.331	
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	24.9	24.75	0.04	Right	Tilt	07434	1:1	0.154	1.035	0.159	
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	24.9	24.75	0.05	Left	Cheek	07434	1:1	0.421	1.035	0.436	A2
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	24.9	24.75	-0.08	Left	Tilt	07434	1:1	0.159	1.035	0.165	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	24.9	24.79	0.11	Right	Cheek	07434	1:1	0.296	1.026	0.304	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	24.9	24.79	-0.10	Right	Tilt	07434	1:1	0.152	1.026	0.156	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	24.9	24.79	0.07	Left	Cheek	07434	1:1	0.405	1.026	0.416	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	24.9	24.79	0.09	Left	Tilt	07434	1:1	0.192	1.026	0.197	
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
CDMA BC0 (§22H) Head SAR with CM Accessory – Ant. 1

MEASUREMENT RESULTS															
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Accessory	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	24.9	24.75	-0.03	Right	Cheek	Camera Module	07434	1:1	0.314	1.035	0.325	
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	24.9	24.75	0.09	Right	Tilt	Camera Module	07434	1:1	0.160	1.035	0.166	
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	24.9	24.75	0.10	Left	Cheek	Camera Module	07434	1:1	0.324	1.035	0.335	
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	24.9	24.75	0.05	Left	Tilt	Camera Module	07434	1:1	0.160	1.035	0.166	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	24.9	24.79	0.12	Right	Cheek	Camera Module	07434	1:1	0.313	1.026	0.321	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	24.9	24.79	0.09	Right	Tilt	Camera Module	07434	1:1	0.148	1.026	0.152	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	24.9	24.79	0.09	Left	Cheek	Camera Module	07434	1:1	0.296	1.026	0.304	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	24.9	24.79	0.07	Left	Tilt	Camera Module	07434	1:1	0.146	1.026	0.150	
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
GSM 850 Head SAR – Ant. 1

MEASUREMENT RESULTS															
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	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	33.2	32.92	0.07	Right	Cheek	07442	1	1:8.3	0.361	1.067	0.385	
836.60	190	GSM 850	GSM	33.2	32.92	-0.02	Right	Tilt	07442	1	1:8.3	0.164	1.067	0.175	
836.60	190	GSM 850	GSM	33.2	32.92	0.14	Left	Cheek	07442	1	1:8.3	0.492	1.067	0.525	
836.60	190	GSM 850	GSM	33.2	32.92	0.11	Left	Tilt	07442	1	1:8.3	0.213	1.067	0.227	
836.60	190	GSM 850	GPRS	31.7	31.64	0.10	Right	Cheek	07442	2	1:4.15	0.568	1.014	0.576	
836.60	190	GSM 850	GPRS	31.7	31.64	0.04	Right	Tilt	07442	2	1:4.15	0.249	1.014	0.252	
824.20	128	GSM 850	GPRS	31.7	31.63	-0.10	Left	Cheek	07442	2	1:4.15	0.899	1.016	0.913	
836.60	190	GSM 850	GPRS	31.7	31.64	0.08	Left	Cheek	07442	2	1:4.15	0.875	1.014	0.887	
848.80	251	GSM 850	GPRS	31.7	31.61	0.12	Left	Cheek	07442	2	1:4.15	0.948	1.021	**0.968**	A3
836.60	190	GSM 850	GPRS	31.7	31.64	0.01	Left	Tilt	07442	2	1:4.15	0.355	1.014	0.360	

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

Note: SAR highlighted in orange above is the highest SAR per exposure condition and equipment class to be listed on the grants.

Table 11-6
GSM 850 Head SAR with CM Accessory – Ant. 1

MEASUREMENT RESULTS																
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Accessory	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	33.2	32.92	-0.06	Right	Cheek	Camera Module	07442	1	1:8.3	0.220	1.067	0.235	
836.60	190	GSM 850	GSM	33.2	32.92	0.10	Right	Tilt	Camera Module	07442	1	1:8.3	0.114	1.067	0.122	
836.60	190	GSM 850	GSM	33.2	32.92	0.10	Left	Cheek	Camera Module	07442	1	1:8.3	0.200	1.067	0.213	
836.60	190	GSM 850	GSM	33.2	32.92	0.16	Left	Tilt	Camera Module	07442	1	1:8.3	0.102	1.067	0.109	
836.60	190	GSM 850	GPRS	31.7	31.64	0.06	Right	Cheek	Camera Module	07442	2	1:4.15	0.332	1.014	0.337	
836.60	190	GSM 850	GPRS	31.7	31.64	0.04	Right	Tilt	Camera Module	07442	2	1:4.15	0.162	1.014	0.164	
836.60	190	GSM 850	GPRS	31.7	31.64	0.10	Left	Cheek	Camera Module	07442	2	1:4.15	0.297	1.014	0.301	
836.60	190	GSM 850	GPRS	31.7	31.64	-0.07	Left	Tilt	Camera Module	07442	2	1:4.15	0.156	1.014	0.158	

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
UMTS 850 Head SAR – Ant. 1

MEASUREMENT RESULTS														
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
836.60	4183	UMTS 850	RMC	24.2	23.97	0.04	Right	Cheek	07442	1:1	0.247	1.054	0.260	
836.60	4183	UMTS 850	RMC	24.2	23.97	0.07	Right	Tilt	07442	1:1	0.111	1.054	0.117	
836.60	4183	UMTS 850	RMC	24.2	23.97	0.08	Left	Cheek	07442	1:1	0.374	1.054	0.394	A4
836.60	4183	UMTS 850	RMC	24.2	23.97	0.05	Left	Tilt	07442	1:1	0.142	1.054	0.150	

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
UMTS 850 Head SAR with CM Accessory – Ant. 1

MEASUREMENT RESULTS															
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Accessory	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	24.2	23.97	0.07	Right	Cheek	Camera Module	07442	1:1	0.263	1.054	0.277	
836.60	4183	UMTS 850	RMC	24.2	23.97	0.14	Right	Tilt	Camera Module	07442	1:1	0.141	1.054	0.149	
836.60	4183	UMTS 850	RMC	24.2	23.97	0.05	Left	Cheek	Camera Module	07442	1:1	0.271	1.054	0.286	
836.60	4183	UMTS 850	RMC	24.2	23.97	0.15	Left	Tilt	Camera Module	07442	1:1	0.140	1.054	0.148	
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
UMTS 1750 Head SAR – Ant. 2

MEASUREMENT RESULTS														
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
1732.40	1412	UMTS 1750	RMC	23.9	23.90	0.03	Right	Cheek	07442	1:1	0.393	1.000	0.393	A5
1732.40	1412	UMTS 1750	RMC	23.9	23.90	0.02	Right	Tilt	07442	1:1	0.161	1.000	0.161	
1732.40	1412	UMTS 1750	RMC	23.9	23.90	0.08	Left	Cheek	07442	1:1	0.199	1.000	0.199	
1732.40	1412	UMTS 1750	RMC	23.9	23.90	0.07	Left	Tilt	07442	1:1	0.147	1.000	0.147	
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
UMTS 1750 Head SAR with CM Accessory – Ant. 2

MEASUREMENT RESULTS															
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Accessory	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
1732.40	1412	UMTS 1750	RMC	23.9	23.90	-0.03	Right	Cheek	Camera Module	07442	1:1	0.295	1.000	0.295	
1732.40	1412	UMTS 1750	RMC	23.9	23.90	0.03	Right	Tilt	Camera Module	07442	1:1	0.164	1.000	0.164	
1732.40	1412	UMTS 1750	RMC	23.9	23.90	0.01	Left	Cheek	Camera Module	07442	1:1	0.168	1.000	0.168	
1732.40	1412	UMTS 1750	RMC	23.9	23.90	0.01	Left	Tilt	Camera Module	07442	1:1	0.142	1.000	0.142	
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
PCS CDMA Head SAR – Ant. 2

MEASUREMENT RESULTS														
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
1851.25	25	PCS CDMA	RC3 / SO55	24.4	24.40	0.01	Right	Cheek	07434	1:1	0.826	1.000	0.826	
1880.00	600	PCS CDMA	RC3 / SO55	24.4	24.35	-0.05	Right	Cheek	07434	1:1	0.896	1.012	0.907	A6
1908.75	1175	PCS CDMA	RC3 / SO55	24.4	24.38	-0.03	Right	Cheek	07434	1:1	0.887	1.005	0.891	
1880.00	600	PCS CDMA	RC3 / SO55	24.4	24.35	0.05	Right	Tilt	07434	1:1	0.290	1.012	0.293	
1880.00	600	PCS CDMA	RC3 / SO55	24.4	24.35	-0.08	Left	Cheek	07434	1:1	0.439	1.012	0.444	
1880.00	600	PCS CDMA	RC3 / SO55	24.4	24.35	0.07	Left	Tilt	07434	1:1	0.296	1.012	0.300	
1851.25	25	PCS CDMA	EVDO Rev. A	24.4	24.38	0.02	Right	Cheek	07434	1:1	0.767	1.005	0.771	
1880.00	600	PCS CDMA	EVDO Rev. A	24.4	24.39	0.00	Right	Cheek	07434	1:1	0.805	1.002	0.807	
1908.75	1175	PCS CDMA	EVDO Rev. A	24.4	24.40	0.02	Right	Cheek	07434	1:1	0.848	1.000	0.848	
1880.00	600	PCS CDMA	EVDO Rev. A	24.4	24.39	0.03	Right	Tilt	07434	1:1	0.259	1.002	0.260	
1880.00	600	PCS CDMA	EVDO Rev. A	24.4	24.39	0.12	Left	Cheek	07434	1:1	0.432	1.002	0.433	
1880.00	600	PCS CDMA	EVDO Rev. A	24.4	24.39	0.03	Left	Tilt	07434	1:1	0.279	1.002	0.280	

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

Note: All voice/data transmission from diversity antenna 3 is always disabled for all held-to-ear conditions. Per FCC Guidance, held-to-ear SAR was not required for Antenna 3.

Table 11-12
PCS CDMA Head SAR with CM Accessory – Ant. 2

MEASUREMENT RESULTS															
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Accessory	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	24.4	24.35	-0.09	Right	Cheek	Camera Module	07434	1:1	0.256	1.012	0.259	
1880.00	600	PCS CDMA	RC3 / SO55	24.4	24.35	0.07	Right	Tilt	Camera Module	07434	1:1	0.133	1.012	0.135	
1880.00	600	PCS CDMA	RC3 / SO55	24.4	24.35	0.07	Left	Cheek	Camera Module	07434	1:1	0.170	1.012	0.172	
1880.00	600	PCS CDMA	RC3 / SO55	24.4	24.35	0.09	Left	Tilt	Camera Module	07434	1:1	0.106	1.012	0.107	
1880.00	600	PCS CDMA	EVDO Rev. A	24.4	24.39	-0.04	Right	Cheek	Camera Module	07434	1:1	0.271	1.002	0.272	
1880.00	600	PCS CDMA	EVDO Rev. A	24.4	24.39	-0.11	Right	Tilt	Camera Module	07434	1:1	0.155	1.002	0.155	
1880.00	600	PCS CDMA	EVDO Rev. A	24.4	24.39	0.11	Left	Cheek	Camera Module	07434	1:1	0.175	1.002	0.175	
1880.00	600	PCS CDMA	EVDO Rev. A	24.4	24.39	0.19	Left	Tilt	Camera Module	07434	1:1	0.104	1.002	0.104	

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

Note: All voice/data transmission from diversity antenna 3 is always disabled for all held-to-ear conditions. Per FCC Guidance, held-to-ear SAR was not required for Antenna 3.

Table 11-13
GSM 1900 Head SAR – Ant. 2

MEASUREMENT RESULTS															
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	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	30.2	30.10	-0.02	Right	Cheek	07442	1	1:8.3	0.383	1.023	0.392	
1880.00	661	GSM 1900	GSM	30.2	30.10	0.05	Right	Tilt	07442	1	1:8.3	0.143	1.023	0.146	
1880.00	661	GSM 1900	GSM	30.2	30.10	0.17	Left	Cheek	07442	1	1:8.3	0.169	1.023	0.173	
1880.00	661	GSM 1900	GSM	30.2	30.10	0.05	Left	Tilt	07442	1	1:8.3	0.118	1.023	0.121	
1880.00	661	GSM 1900	GPRS	28.7	28.66	0.10	Right	Cheek	07442	2	1:4.15	0.543	1.009	0.548	A7
1880.00	661	GSM 1900	GPRS	28.7	28.66	0.02	Right	Tilt	07442	2	1:4.15	0.186	1.009	0.188	
1880.00	661	GSM 1900	GPRS	28.7	28.66	0.00	Left	Cheek	07442	2	1:4.15	0.305	1.009	0.308	
1880.00	661	GSM 1900	GPRS	28.7	28.66	0.00	Left	Tilt	07442	2	1:4.15	0.191	1.009	0.193	

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
GSM 1900 Head SAR with CM Accessory – Ant. 2

MEASUREMENT RESULTS															
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Accessory	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	30.2	30.10	-0.14	Right	Cheek	Camera Module	07442	1	1:8.3	0.180	1.023	0.184	
1880.00	661	GSM 1900	GSM	30.2	30.10	0.09	Right	Tilt	Camera Module	07442	1	1:8.3	0.090	1.023	0.092	
1880.00	661	GSM 1900	GSM	30.2	30.10	0.06	Left	Cheek	Camera Module	07442	1	1:8.3	0.108	1.023	0.110	
1880.00	661	GSM 1900	GSM	30.2	30.10	0.03	Left	Tilt	Camera Module	07442	1	1:8.3	0.079	1.023	0.081	
1880.00	661	GSM 1900	GPRS	28.7	28.66	-0.08	Right	Cheek	Camera Module	07442	2	1:4.15	0.252	1.009	0.254	
1880.00	661	GSM 1900	GPRS	28.7	28.66	-0.06	Right	Tilt	Camera Module	07442	2	1:4.15	0.112	1.009	0.113	
1880.00	661	GSM 1900	GPRS	28.7	28.66	-0.03	Left	Cheek	Camera Module	07442	2	1:4.15	0.156	1.009	0.157	
1880.00	661	GSM 1900	GPRS	28.7	28.66	0.06	Left	Tilt	Camera Module	07442	2	1:4.15	0.102	1.009	0.103	

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 11-15
UMTS 1900 Head SAR – Ant. 2

MEASUREMENT RESULTS														
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
1880.00	9400	UMTS 1900	RMC	23.5	23.41	0.03	Right	Cheek	07442	1:1	0.727	1.021	0.742	A8
1880.00	9400	UMTS 1900	RMC	23.5	23.41	0.00	Right	Tilt	07442	1:1	0.252	1.021	0.257	
1880.00	9400	UMTS 1900	RMC	23.5	23.41	0.03	Left	Cheek	07442	1:1	0.388	1.021	0.396	
1880.00	9400	UMTS 1900	RMC	23.5	23.41	0.01	Left	Tilt	07442	1:1	0.245	1.021	0.250	

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

Table 11-16
UMTS 1900 Head SAR with CM Accessory – Ant .2

MEASUREMENT RESULTS															
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Accessory	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
1880.00	9400	UMTS 1900	RMC	23.5	23.41	-0.06	Right	Cheek	Camera Module	07442	1:1	0.246	1.021	0.251	
1880.00	9400	UMTS 1900	RMC	23.5	23.41	0.13	Right	Tilt	Camera Module	07442	1:1	0.125	1.021	0.128	
1880.00	9400	UMTS 1900	RMC	23.5	23.41	-0.12	Left	Cheek	Camera Module	07442	1:1	0.148	1.021	0.151	
1880.00	9400	UMTS 1900	RMC	23.5	23.41	0.13	Left	Tilt	Camera Module	07442	1:1	0.098	1.021	0.100	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram						

Table 11-17
LTE Band 12 Head SAR – Ant. 1

MEASUREMENT RESULTS																		
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
707.50	23095	Mid	LTE Band 12	10	24.2	24.20	0.15	0	Right	Cheek	QPSK	1	25	07418	1:1	0.092	1.000	0.092	
707.50	23095	Mid	LTE Band 12	10	23.2	23.08	0.15	1	Right	Cheek	QPSK	25	0	07418	1:1	0.068	1.028	0.070	
707.50	23095	Mid	LTE Band 12	10	24.2	24.20	0.19	0	Right	Tilt	QPSK	1	25	07418	1:1	0.059	1.000	0.059	
707.50	23095	Mid	LTE Band 12	10	23.2	23.08	0.17	1	Right	Tilt	QPSK	25	0	07418	1:1	0.046	1.028	0.047	
707.50	23095	Mid	LTE Band 12	10	24.2	24.20	0.12	0	Left	Cheek	QPSK	1	25	07418	1:1	0.106	1.000	0.106	
707.50	23095	Mid	LTE Band 12	10	23.2	23.08	0.08	1	Left	Cheek	QPSK	25	0	07418	1:1	0.087	1.028	0.089	
707.50	23095	Mid	LTE Band 12	10	24.2	24.20	0.13	0	Left	Tilt	QPSK	1	25	07418	1:1	0.055	1.000	0.055	
707.50	23095	Mid	LTE Band 12	10	23.2	23.08	0.08	1	Left	Tilt	QPSK	25	0	07418	1:1	0.044	1.028	0.045	
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 11-18
LTE Band 12 Head SAR with CM Accessory – Ant. 1

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Accessory	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	Camera Module	24.2	24.20	0.10	0	Right	Cheek	QPSK	1	25	07418	1:1	0.196	1.000	0.196	A9
707.50	23095	Mid	LTE Band 12	10	Camera Module	23.2	23.08	-0.01	1	Right	Cheek	QPSK	25	0	07418	1:1	0.132	1.028	0.136	
707.50	23095	Mid	LTE Band 12	10	Camera Module	24.2	24.20	0.01	0	Right	Tilt	QPSK	1	25	07418	1:1	0.107	1.000	0.107	
707.50	23095	Mid	LTE Band 12	10	Camera Module	23.2	23.08	0.06	1	Right	Tilt	QPSK	25	0	07418	1:1	0.074	1.028	0.076	
707.50	23095	Mid	LTE Band 12	10	Camera Module	24.2	24.20	0.01	0	Left	Cheek	QPSK	1	25	07418	1:1	0.176	1.000	0.176	
707.50	23095	Mid	LTE Band 12	10	Camera Module	23.2	23.08	0.08	1	Left	Cheek	QPSK	25	0	07418	1:1	0.130	1.028	0.134	
707.50	23095	Mid	LTE Band 12	10	Camera Module	24.2	24.20	0.00	0	Left	Tilt	QPSK	1	25	07418	1:1	0.101	1.000	0.101	
707.50	23095	Mid	LTE Band 12	10	Camera Module	23.2	23.08	0.08	1	Left	Tilt	QPSK	25	0	07418	1:1	0.075	1.028	0.077	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population												Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-19
LTE Band 26 (Cell) Head SAR – Ant. 1

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
836.50	26915	Mid	LTE Band 26 (Cell)	15	24.2	24.20	0.15	0	Right	Cheek	QPSK	1	36	07418	1:1	0.087	1.000	0.087	
836.50	26915	Mid	LTE Band 26 (Cell)	15	23.2	23.20	0.13	1	Right	Cheek	QPSK	36	0	07418	1:1	0.068	1.000	0.068	
836.50	26915	Mid	LTE Band 26 (Cell)	15	24.2	24.20	0.18	0	Right	Tilt	QPSK	1	36	07418	1:1	0.048	1.000	0.048	
836.50	26915	Mid	LTE Band 26 (Cell)	15	23.2	23.20	-0.01	1	Right	Tilt	QPSK	36	0	07418	1:1	0.038	1.000	0.038	
836.50	26915	Mid	LTE Band 26 (Cell)	15	24.2	24.20	0.16	0	Left	Cheek	QPSK	1	36	07418	1:1	0.114	1.000	0.114	A10
836.50	26915	Mid	LTE Band 26 (Cell)	15	23.2	23.20	0.14	1	Left	Cheek	QPSK	36	0	07418	1:1	0.101	1.000	0.101	
836.50	26915	Mid	LTE Band 26 (Cell)	15	24.2	24.20	0.06	0	Left	Tilt	QPSK	1	36	07418	1:1	0.042	1.000	0.042	
836.50	26915	Mid	LTE Band 26 (Cell)	15	23.2	23.20	-0.04	1	Left	Tilt	QPSK	36	0	07418	1:1	0.036	1.000	0.036	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																Head 1.6 W/kg (mW/g) averaged over 1 gram			

This device supports both LTE Band 5 (Cell) and LTE Band 26 (Cell). Since the supported frequency span for LTE Band 5 (Cell) falls completely within the supported frequency span for LTE Band 26 (Cell), both LTE bands have the same target power, and both LTE bands share the same transmission path, SAR was only assessed for LTE Band 26 (Cell).

Table 11-20
LTE Band 26 (Cell) Head SAR with CM Accessory – Ant. 1

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Accessory	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	26915	Mid	LTE Band 26 (Cell)	15	Camera Module	24.2	24.20	0.16	0	Right	Cheek	QPSK	1	36	07418	1:1	0.081	1.000	0.081	
836.50	26915	Mid	LTE Band 26 (Cell)	15	Camera Module	23.2	23.20	0.14	1	Right	Cheek	QPSK	36	0	07418	1:1	0.086	1.000	0.086	
836.50	26915	Mid	LTE Band 26 (Cell)	15	Camera Module	24.2	24.20	0.20	0	Right	Tilt	QPSK	1	36	07418	1:1	0.036	1.000	0.036	
836.50	26915	Mid	LTE Band 26 (Cell)	15	Camera Module	23.2	23.20	0.12	1	Right	Tilt	QPSK	36	0	07418	1:1	0.033	1.000	0.033	
836.50	26915	Mid	LTE Band 26 (Cell)	15	Camera Module	24.2	24.20	0.19	0	Left	Cheek	QPSK	1	36	07418	1:1	0.083	1.000	0.083	
836.50	26915	Mid	LTE Band 26 (Cell)	15	Camera Module	23.2	23.20	0.20	1	Left	Cheek	QPSK	36	0	07418	1:1	0.068	1.000	0.068	
836.50	26915	Mid	LTE Band 26 (Cell)	15	Camera Module	24.2	24.20	0.10	0	Left	Tilt	QPSK	1	36	07418	1:1	0.042	1.000	0.042	
836.50	26915	Mid	LTE Band 26 (Cell)	15	Camera Module	23.2	23.20	0.15	1	Left	Tilt	QPSK	36	0	07418	1:1	0.029	1.000	0.029	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																	Head 1.6 W/kg (mW/g) averaged over 1 gram			

This device supports both LTE Band 5 (Cell) and LTE Band 26 (Cell). Since the supported frequency span for LTE Band 5 (Cell) falls completely within the supported frequency span for LTE Band 26 (Cell), both LTE bands have the same target power, and both LTE bands share the same transmission path, SAR was only assessed for LTE Band 26 (Cell).

Table 11-21
LTE Band 4 (AWS) Head SAR – Ant. 2

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	24.2	24.16	-0.01	0	Right	Cheek	QPSK	1	0	07426	1:1	0.316	1.009	0.319	A11
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.2	23.04	-0.06	1	Right	Cheek	QPSK	50	50	07426	1:1	0.313	1.038	0.325	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	24.2	24.16	0.00	0	Right	Tilt	QPSK	1	0	07426	1:1	0.134	1.009	0.135	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.2	23.04	0.02	1	Right	Tilt	QPSK	50	50	07426	1:1	0.137	1.038	0.142	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	24.2	24.16	-0.02	0	Left	Cheek	QPSK	1	0	07426	1:1	0.158	1.009	0.159	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.2	23.04	0.05	1	Left	Cheek	QPSK	50	50	07426	1:1	0.156	1.038	0.162	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	24.2	24.16	-0.09	0	Left	Tilt	QPSK	1	0	07426	1:1	0.117	1.009	0.118	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.2	23.04	0.01	1	Left	Tilt	QPSK	50	50	07426	1:1	0.115	1.038	0.119	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																	Head 1.6 W/kg (mW/g) averaged over 1 gram			

Note: All voice/data transmission from diversity antenna 3 is always disabled for all held-to-ear conditions. Per FCC Guidance, held-to-ear SAR was not required for Antenna 3.

Table 11-22
LTE Band 4 (AWS) Head SAR with CM Accessory – Ant. 2

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Accessory	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	Camera Module	24.2	24.16	-0.03	0	Right	Cheek	QPSK	1	0	07426	1:1	0.271	1.009	0.273	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Camera Module	23.2	23.04	-0.04	1	Right	Cheek	QPSK	50	50	07426	1:1	0.217	1.038	0.225	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Camera Module	24.2	24.16	0.02	0	Right	Tilt	QPSK	1	0	07426	1:1	0.142	1.009	0.143	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Camera Module	23.2	23.04	0.05	1	Right	Tilt	QPSK	50	50	07426	1:1	0.122	1.038	0.127	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Camera Module	24.2	24.16	-0.04	0	Left	Cheek	QPSK	1	0	07426	1:1	0.145	1.009	0.146	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Camera Module	23.2	23.04	0.05	1	Left	Cheek	QPSK	50	50	07426	1:1	0.143	1.038	0.148	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Camera Module	24.2	24.16	0.10	0	Left	Tilt	QPSK	1	0	07426	1:1	0.120	1.009	0.121	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Camera Module	23.2	23.04	0.05	1	Left	Tilt	QPSK	50	50	07426	1:1	0.109	1.038	0.113	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population												Head 1.6 W/kg (mW/g) averaged over 1 gram								

Note: All voice/data transmission from diversity antenna 3 is always disabled for all held-to-ear conditions. Per FCC Guidance, held-to-ear SAR was not required for Antenna 3.

Table 11-23
LTE Band 25 (PCS) Head SAR – Ant. 2

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.9	23.90	0.01	0	Right	Cheek	QPSK	1	50	07426	1:1	0.715	1.000	0.715	A12
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.9	22.86	-0.01	1	Right	Cheek	QPSK	50	50	07426	1:1	0.577	1.009	0.582	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.9	23.90	0.00	0	Right	Tilt	QPSK	1	50	07426	1:1	0.246	1.000	0.246	
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.9	22.86	0.06	1	Right	Tilt	QPSK	50	50	07426	1:1	0.185	1.009	0.187	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.9	23.90	0.01	0	Left	Cheek	QPSK	1	50	07426	1:1	0.379	1.000	0.379	
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.9	22.86	0.06	1	Left	Cheek	QPSK	50	50	07426	1:1	0.304	1.009	0.307	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.9	23.90	-0.01	0	Left	Tilt	QPSK	1	50	07426	1:1	0.277	1.000	0.277	
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.9	22.86	0.02	1	Left	Tilt	QPSK	50	50	07426	1:1	0.204	1.009	0.206	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population												Head 1.6 W/kg (mW/g) averaged over 1 gram							

Note: All voice/data transmission from diversity antenna 3 is always disabled for all held-to-ear conditions. Per FCC Guidance, held-to-ear SAR was not required for Antenna 3.
Note: This device supports both LTE Band 2 (PCS) and LTE Band 25 (PCS). Since the supported frequency span for LTE Band 2 (PCS) falls completely within the supported frequency span for LTE Band 25 (PCS), both LTE bands have the same target power, and both LTE bands share the same transmission path, SAR was only assessed for LTE Band 25 (PCS).

Table 11-24
LTE Band 25 (PCS) Head SAR with CM Accessory – Ant. 2

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Accessory	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)	
1905.00	26590	High	LTE Band 25 (PCS)	20	Camera Module	23.9	23.90	0.07	0	Right	Cheek	QPSK	1	50	07426	1:1	0.286	1.000	0.286	
1860.00	26140	Low	LTE Band 25 (PCS)	20	Camera Module	22.9	22.86	0.11	1	Right	Cheek	QPSK	50	50	07426	1:1	0.261	1.009	0.263	
1905.00	26590	High	LTE Band 25 (PCS)	20	Camera Module	23.9	23.90	-0.04	0	Right	Tilt	QPSK	1	50	07426	1:1	0.164	1.000	0.164	
1860.00	26140	Low	LTE Band 25 (PCS)	20	Camera Module	22.9	22.86	0.02	1	Right	Tilt	QPSK	50	50	07426	1:1	0.148	1.009	0.149	
1905.00	26590	High	LTE Band 25 (PCS)	20	Camera Module	23.9	23.90	-0.04	0	Left	Cheek	QPSK	1	50	07426	1:1	0.174	1.000	0.174	
1860.00	26140	Low	LTE Band 25 (PCS)	20	Camera Module	22.9	22.86	0.05	1	Left	Cheek	QPSK	50	50	07426	1:1	0.178	1.009	0.180	
1905.00	26590	High	LTE Band 25 (PCS)	20	Camera Module	23.9	23.90	0.04	0	Left	Tilt	QPSK	1	50	07426	1:1	0.114	1.000	0.114	
1860.00	26140	Low	LTE Band 25 (PCS)	20	Camera Module	22.9	22.86	-0.01	1	Left	Tilt	QPSK	50	50	07426	1:1	0.111	1.009	0.112	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population												Head 1.6 W/kg (mW/g) averaged over 1 gram								

Note: All voice/data transmission from diversity antenna 3 is always disabled for all held-to-ear conditions. Per FCC Guidance, held-to-ear SAR was not required for Antenna 3.
Note: This device supports both LTE Band 2 (PCS) and LTE Band 25 (PCS). Since the supported frequency span for LTE Band 2 (PCS) falls completely within the supported frequency span for LTE Band 25 (PCS), both LTE bands have the same target power, and both LTE bands share the same transmission path, SAR was only assessed for LTE Band 25 (PCS).

Table 11-25
LTE Band 7 Head SAR – Ant. 1

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
2560.00	21350	High	LTE Band 7	20	22.0	22.00	0.08	0	Right	Cheek	QPSK	1	50	07418	1:1	0.138	1.000	0.138	
2560.00	21350	High	LTE Band 7	20	21.0	20.99	0.05	1	Right	Cheek	QPSK	50	0	07418	1:1	0.101	1.002	0.101	
2560.00	21350	High	LTE Band 7	20	22.0	22.00	0.11	0	Right	Tilt	QPSK	1	50	07418	1:1	0.123	1.000	0.123	
2560.00	21350	High	LTE Band 7	20	21.0	20.99	0.04	1	Right	Tilt	QPSK	50	0	07418	1:1	0.091	1.002	0.091	
2560.00	21350	High	LTE Band 7	20	22.0	22.00	-0.06	0	Left	Cheek	QPSK	1	50	07418	1:1	0.331	1.000	0.331	A13
2560.00	21350	High	LTE Band 7	20	21.0	20.99	-0.02	1	Left	Cheek	QPSK	50	0	07418	1:1	0.258	1.002	0.259	
2560.00	21350	High	LTE Band 7	20	22.0	22.00	0.07	0	Left	Tilt	QPSK	1	50	07418	1:1	0.077	1.000	0.077	
2560.00	21350	High	LTE Band 7	20	21.0	20.99	0.05	1	Left	Tilt	QPSK	50	0	07418	1:1	0.057	1.002	0.057	
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 11-26
LTE Band 7 Head SAR with CM Accessory – Ant. 1

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Accessory	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)	
2560.00	21350	High	LTE Band 7	20	Camera Module	22.0	22.00	0.01	0	Right	Cheek	QPSK	1	50	07418	1:1	0.072	1.000	0.072	
2560.00	21350	High	LTE Band 7	20	Camera Module	21.0	20.99	0.16	1	Right	Cheek	QPSK	50	0	07418	1:1	0.057	1.002	0.057	
2560.00	21350	High	LTE Band 7	20	Camera Module	22.0	22.00	0.11	0	Right	Tilt	QPSK	1	50	07418	1:1	0.031	1.000	0.031	
2560.00	21350	High	LTE Band 7	20	Camera Module	21.0	20.99	0.11	1	Right	Tilt	QPSK	50	0	07418	1:1	0.025	1.002	0.025	
2560.00	21350	High	LTE Band 7	20	Camera Module	22.0	22.00	0.20	0	Left	Cheek	QPSK	1	50	07418	1:1	0.060	1.000	0.060	
2560.00	21350	High	LTE Band 7	20	Camera Module	21.0	20.99	0.02	1	Left	Cheek	QPSK	50	0	07418	1:1	0.037	1.002	0.037	
2560.00	21350	High	LTE Band 7	20	Camera Module	22.0	22.00	0.02	0	Left	Tilt	QPSK	1	50	07418	1:1	0.051	1.000	0.051	
2560.00	21350	High	LTE Band 7	20	Camera Module	21.0	20.99	0.12	1	Left	Tilt	QPSK	50	0	07418	1:1	0.036	1.002	0.036	
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 11-27
LTE Band 41 Head SAR – Ant. 1

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor Powers	Scaling Factor CP Duty	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)			(W/kg)	
2506.00	39750	Low	LTE Band 41	20	24.2	24.10	0.12	0	Right	Cheek	QPSK	1	0	07418	1:1.59	0.063	1.023	1.010	0.065	
2506.00	39750	Low	LTE Band 41	20	23.2	23.11	-0.05	1	Right	Cheek	QPSK	50	0	07418	1:1.59	0.051	1.021	1.010	0.053	
2506.00	39750	Low	LTE Band 41	20	24.2	24.10	0.09	0	Right	Tilt	QPSK	1	0	07418	1:1.59	0.065	1.023	1.010	0.067	
2506.00	39750	Low	LTE Band 41	20	23.2	23.11	0.17	1	Right	Tilt	QPSK	50	0	07418	1:1.59	0.055	1.021	1.010	0.057	
2506.00	39750	Low	LTE Band 41	20	24.2	24.10	0.05	0	Left	Cheek	QPSK	1	0	07418	1:1.59	0.149	1.023	1.010	0.154	A14
2506.00	39750	Low	LTE Band 41	20	23.2	23.11	0.00	1	Left	Cheek	QPSK	50	0	07418	1:1.59	0.119	1.021	1.010	0.122	
2506.00	39750	Low	LTE Band 41	20	24.2	24.10	0.05	0	Left	Tilt	QPSK	1	0	07418	1:1.59	0.033	1.023	1.010	0.034	
2506.00	39750	Low	LTE Band 41	20	23.2	23.11	0.11	1	Left	Tilt	QPSK	50	0	07418	1:1.59	0.027	1.021	1.010	0.028	
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 11-28
LTE Band 41 Head SAR with CM Accessory – Ant. 1

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Accessory	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	Scaling Factor CP Duty	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)			(W/kg)	
2506.00	39750	Low	LTE Band 41	20	Camera Module	24.2	24.10	0.16	0	Right	Cheek	QPSK	1	0	07418	1:1.59	0.087	1.023	1.010	0.090	
2506.00	39750	Low	LTE Band 41	20	Camera Module	23.2	23.11	0.00	1	Right	Cheek	QPSK	50	0	07418	1:1.59	0.064	1.021	1.010	0.066	
2506.00	39750	Low	LTE Band 41	20	Camera Module	24.2	24.10	0.13	0	Right	Tilt	QPSK	1	0	07418	1:1.59	0.046	1.023	1.010	0.047	
2506.00	39750	Low	LTE Band 41	20	Camera Module	23.2	23.11	0.15	1	Right	Tilt	QPSK	50	0	07418	1:1.59	0.032	1.021	1.010	0.033	
2506.00	39750	Low	LTE Band 41	20	Camera Module	24.2	24.10	0.18	0	Left	Cheek	QPSK	1	0	07418	1:1.59	0.101	1.023	1.010	0.104	
2506.00	39750	Low	LTE Band 41	20	Camera Module	23.2	23.11	0.11	1	Left	Cheek	QPSK	50	0	07418	1:1.59	0.072	1.021	1.010	0.075	
2506.00	39750	Low	LTE Band 41	20	Camera Module	24.2	24.10	0.16	0	Left	Tilt	QPSK	1	0	07418	1:1.59	0.068	1.023	1.010	0.071	
2506.00	39750	Low	LTE Band 41	20	Camera Module	23.2	23.11	0.18	1	Left	Tilt	QPSK	50	0	07418	1:1.59	0.048	1.021	1.010	0.049	
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 11-29
DTS Head SAR

MEASUREMENT RESULTS																	
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	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)	
2457	10	802.11b	DSSS	22	19.0	18.10	0.03	Right	Cheek	01864	1	99.9	0.734	0.637	1.230	1.001	0.785	A15
2457	10	802.11b	DSSS	22	19.0	18.10	-0.01	Right	Tilt	01864	1	99.9	0.901	0.637	1.230	1.001	0.785	
2457	10	802.11b	DSSS	22	19.0	18.10	0.03	Left	Cheek	01864	1	99.9	0.229	0.191	1.230	1.001	0.235	
2457	10	802.11b	DSSS	22	19.0	18.10	0.10	Left	Tilt	01864	1	99.9	0.254	-	1.230	1.001	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram									

Note: SAR highlighted in orange above is the highest SAR per exposure condition and equipment class to be listed on the grants.
Note: "-" in the table above indicates that the position was not required to be measured per the initial test position procedures in FCC KDB Publication 248227 D01v02r02.

Table 11-30
NII Head SAR

MEASUREMENT RESULTS																		
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	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	13.5	12.52	0.01	Right	Cheek	01863	6	99.5	1.289	0.672	1.253	1.005	0.846	
5300	60	802.11a	OFDM	20	13.5	12.48	0.20	Right	Cheek	01863	6	99.5	1.253	0.685	1.265	1.005	0.871	
5280	56	802.11a	OFDM	20	13.5	12.52	0.07	Right	Tilt	01863	6	99.5	1.147	0.667	1.253	1.005	0.840	
5300	60	802.11a	OFDM	20	13.5	12.48	0.04	Right	Tilt	01863	6	99.5	1.231	0.668	1.265	1.005	0.849	
5280	56	802.11a	OFDM	20	13.5	12.52	0.03	Left	Cheek	01863	6	99.5	0.710	-	1.253	1.005	-	
5280	56	802.11a	OFDM	20	13.5	12.52	0.17	Left	Tilt	01863	6	99.5	0.790	0.351	1.253	1.005	0.442	
5500	100	802.11a	OFDM	20	13.0	11.78	0.07	Right	Cheek	01863	6	99.5	1.193	0.635	1.324	1.005	0.845	
5580	116	802.11a	OFDM	20	13.0	11.30	0.04	Right	Cheek	01863	6	99.5	1.192	0.629	1.479	1.005	0.935	
5500	100	802.11a	OFDM	20	13.0	11.78	0.18	Right	Tilt	01863	6	99.5	0.994	0.683	1.324	1.005	0.909	
5580	116	802.11a	OFDM	20	13.0	11.30	0.10	Right	Tilt	01863	6	99.5	1.078	0.759	1.479	1.005	1.129	
5500	100	802.11a	OFDM	20	13.0	11.78	0.08	Left	Cheek	01863	6	99.5	0.634	-	1.324	1.005	-	
5500	100	802.11a	OFDM	20	13.0	11.78	0.17	Left	Tilt	01863	6	99.5	0.655	0.309	1.324	1.005	0.411	
5785	157	802.11a	OFDM	20	13.25	11.49	0.06	Right	Cheek	01863	6	99.5	1.341	0.690	1.500	1.005	1.040	
5825	165	802.11a	OFDM	20	13.25	11.54	0.03	Right	Cheek	01863	6	99.5	1.362	0.708	1.483	1.005	1.055	
5785	157	802.11a	OFDM	20	13.25	11.49	0.11	Right	Tilt	01863	6	99.5	1.157	0.757	1.500	1.005	1.142	
5825	165	802.11a	OFDM	20	13.25	11.54	0.11	Right	Tilt	01863	6	99.5	1.230	0.782	1.483	1.005	1.166	A16
5825	165	802.11a	OFDM	20	13.25	11.54	0.13	Left	Cheek	01863	6	99.5	0.601	0.342	1.483	1.005	0.510	
5825	165	802.11a	OFDM	20	13.25	11.54	-0.11	Left	Tilt	01863	6	99.5	0.761	0.384	1.483	1.005	0.572	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram									

Note: SAR highlighted in orange above is the highest SAR per exposure condition and equipment class to be listed on the grants.
Note: Since U-NII-1 and U-NII-2A bands have the same maximum output power and the highest reported SAR for U-NII-2A is less than 1.2 W/kg for 1g SAR, SAR is not required for U-NII-1 band according to FCC KDB 248227 D01v02r02.
Note: "-" in the table above indicates that the position was not required to be measured per the initial test position procedures in FCC KDB Publication 248227 D01v02r02.

11.3 Standalone Body-Worn SAR Data

Table 11-31
GSM/UMTS/CDMA Body-Worn SAR Data – Ant. 1/2/3

MEASUREMENT RESULTS																	
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Accessory	Device Serial Number	# of Time Slots	Duty Cycle	Side	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.													(W/kg)		(W/kg)	
820.10	564	CDMA BC10 (§90S)	TDSO / SO32	24.9	24.68	0.02	10 mm	Ant. 1	None	07434	N/A	1:1	back	0.503	1.052	0.529	A17
836.52	384	CDMA BC0 (§22H)	TDSO / SO32	24.9	24.80	0.04	10 mm	Ant. 1	None	07434	N/A	1:1	back	0.592	1.023	0.606	A19
836.60	190	GSM 850	GSM	33.2	32.92	-0.02	10 mm	Ant. 1	None	07442	1	1:8.3	back	0.644	1.067	0.687	
824.20	128	GSM 850	GPRS	31.7	31.63	-0.01	10 mm	Ant. 1	None	07442	2	1:4.15	back	1.090	1.016	1.107	
836.60	190	GSM 850	GPRS	31.7	31.64	-0.09	10 mm	Ant. 1	None	07442	2	1:4.15	back	1.200	1.014	1.217	
848.80	251	GSM 850	GPRS	31.7	31.61	-0.02	10 mm	Ant. 1	None	07442	2	1:4.15	back	1.070	1.021	1.092	
836.60	190	GSM 850	GPRS	31.7	31.64	-0.01	10 mm	Ant. 1	Headphones	07442	2	1:4.15	back	1.010	1.014	1.024	
836.60	190	GSM 850	GPRS	31.7	31.64	0.00	10 mm	Ant. 1	None	07442	2	1:4.15	back	1.230	1.014	1.247	A21
836.60	4183	UMTS 850	RMC	24.2	23.97	0.16	10 mm	Ant. 1	None	07442	N/A	1:1	back	0.635	1.054	0.669	A22
1732.40	1412	UMTS 1750	RMC	23.9	23.90	0.11	10 mm	Ant. 2	None	07442	N/A	1:1	back	0.751	1.000	0.751	A23
1851.25	25	PCS CDMA	TDSO / SO32	24.4	24.39	0.20	10 mm	Ant. 2	None	07434	N/A	1:1	back	0.917	1.002	0.919	
1880.00	600	PCS CDMA	TDSO / SO32	24.4	24.40	-0.04	10 mm	Ant. 2	None	07434	N/A	1:1	back	1.160	1.000	1.160	A24
1908.75	1175	PCS CDMA	TDSO / SO32	24.4	24.31	0.02	10 mm	Ant. 2	None	07434	N/A	1:1	back	1.030	1.021	1.052	
1880.00	600	PCS CDMA	TDSO / SO32	24.4	24.40	-0.11	10 mm	Ant. 3	None	07459	N/A	1:1	back	0.326	1.000	0.326	
1880.00	600	PCS CDMA	TDSO / SO32	24.4	24.40	0.02	10 mm	Ant. 2	None	07434	N/A	1:1	back	1.010	1.000	1.010	
1880.00	661	GSM 1900	GSM	30.2	30.10	0.00	10 mm	Ant. 2	None	07442	1	1:8.3	back	0.554	1.023	0.567	
1850.20	512	GSM 1900	GPRS	28.7	28.45	-0.11	10 mm	Ant. 2	None	07442	2	1:4.15	back	0.773	1.059	0.819	
1880.00	661	GSM 1900	GPRS	28.7	28.66	-0.17	10 mm	Ant. 2	None	07442	2	1:4.15	back	0.830	1.009	0.837	A26
1909.80	810	GSM 1900	GPRS	28.7	28.70	-0.11	10 mm	Ant. 2	None	07442	2	1:4.15	back	0.803	1.000	0.803	
1852.40	9262	UMTS 1900	RMC	23.5	23.50	0.04	10 mm	Ant. 2	None	07442	N/A	1:1	back	0.974	1.000	0.974	
1880.00	9400	UMTS 1900	RMC	23.5	23.41	0.02	10 mm	Ant. 2	None	07442	N/A	1:1	back	0.989	1.021	1.010	
1907.60	9538	UMTS 1900	RMC	23.5	23.45	0.07	10 mm	Ant. 2	None	07442	N/A	1:1	back	1.110	1.012	1.123	A27
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Body 1.6 W/kg (mW/g) averaged over 1 gram										

Note: SAR highlighted in orange above is the highest SAR per exposure condition and equipment class to be listed on the grants.
Note: Blue entries represent variability measurement

Table 11-32
GSM/UMTS/CDMA Body-Worn SAR Data with CM Accessory – Ant. 1/2

MEASUREMENT RESULTS																	
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Accessory	Device Serial Number	# of Time Slots	Duty Cycle	Side	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.													(W/kg)		(W/kg)	
820.10	564	CDMA BC10 (§90S)	TDSO / SO32	24.9	24.68	0.02	10 mm	Ant. 1	Camera Module	07434	N/A	1:1	back	0.378	1.052	0.398	
836.52	384	CDMA BC0 (§22H)	TDSO / SO32	24.9	24.80	0.03	10 mm	Ant. 1	Camera Module	07434	N/A	1:1	back	0.385	1.023	0.394	
836.60	190	GSM 850	GSM	33.2	32.92	-0.06	10 mm	Ant. 1	Camera Module	07442	1	1:8.3	back	0.419	1.067	0.447	
836.60	190	GSM 850	GPRS	31.7	31.64	0.05	10 mm	Ant. 1	Camera Module	07442	2	1:4.15	back	0.587	1.014	0.595	
836.60	4183	UMTS 850	RMC	24.2	23.97	0.01	10 mm	Ant. 1	Camera Module	07442	N/A	1:1	back	0.360	1.054	0.379	
1732.40	1412	UMTS 1750	RMC	23.9	23.90	0.03	10 mm	Ant. 2	Camera Module	07442	N/A	1:1	back	0.334	1.000	0.334	
1880.00	600	PCS CDMA	TDSO / SO32	24.4	24.40	0.13	10 mm	Ant. 2	Camera Module	07434	N/A	1:1	back	0.542	1.000	0.542	
1880.00	661	GSM 1900	GSM	30.2	30.10	-0.02	10 mm	Ant. 2	Camera Module	07442	1	1:8.3	back	0.185	1.023	0.189	
1880.00	661	GSM 1900	GPRS	28.7	28.66	-0.06	10 mm	Ant. 2	Camera Module	07442	2	1:4.15	back	0.233	1.009	0.235	
1880.00	9400	UMTS 1900	RMC	23.5	23.41	-0.01	10 mm	Ant. 2	Camera Module	07442	N/A	1:1	back	0.314	1.021	0.321	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Body 1.6 W/kg (mW/g) averaged over 1 gram										

Note: Please see Section 6.8 for details on device positioning for back side with the camera module accessory.
Note: The camera module accessory replaces the bottom of the device below the screen where Antennas 1 and 2 are located. Therefore, additional SAR tests were performed with the camera module accessory attached for these antennas. Due to the location at the top of the device, no additional SAR measurements were needed for Antenna 3 with the camera module accessory attached.

Table 11-33
LTE Body-Worn SAR – Ant. 1/2/3

MEASUREMENT RESULTS																							
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Antenna Config.	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g) (W/kg)	Scaling Factor	Scaling Factor CP Duty	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																				
707.50	23095	Mid	LTE Band 12	10	24.2	24.20	0.12	0	Ant. 1	07418	QPSK	1	25	10 mm	back	1:1	0.254	1.000	N/A	0.254	
707.50	23095	Mid	LTE Band 12	10	23.2	23.08	0.10	1	Ant. 1	07418	QPSK	25	0	10 mm	back	1:1	0.188	1.028	N/A	0.193	
836.50	26915	Mid	LTE Band 26 (Cell)	15	24.2	24.20	0.05	0	Ant. 1	07418	QPSK	1	36	10 mm	back	1:1	0.175	1.000	N/A	0.175	A29
836.50	26915	Mid	LTE Band 26 (Cell)	15	23.2	23.20	0.05	1	Ant. 1	07418	QPSK	36	0	10 mm	back	1:1	0.139	1.000	N/A	0.139	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	24.2	24.16	0.09	0	Ant. 2	07426	QPSK	1	0	10 mm	back	1:1	0.796	1.009	N/A	0.803	A30
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.2	23.04	0.11	1	Ant. 2	07426	QPSK	50	50	10 mm	back	1:1	0.677	1.038	N/A	0.703	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.2	22.91	0.07	1	Ant. 2	07426	QPSK	100	0	10 mm	back	1:1	0.663	1.069	N/A	0.709	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	24.2	24.16	-0.04	0	Ant. 3	07459	QPSK	1	0	10 mm	back	1:1	0.362	1.009	N/A	0.365	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.2	23.04	0.03	1	Ant. 3	07459	QPSK	50	50	10 mm	back	1:1	0.315	1.038	N/A	0.327	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.9	23.78	0.00	0	Ant. 2	07426	QPSK	1	0	10 mm	back	1:1	1.050	1.028	N/A	1.079	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.9	23.70	0.03	0	Ant. 2	07426	QPSK	1	0	10 mm	back	1:1	1.020	1.047	N/A	1.068	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.9	23.90	0.04	0	Ant. 2	07426	QPSK	1	50	10 mm	back	1:1	1.110	1.000	N/A	1.110	A31
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.9	22.86	-0.02	1	Ant. 2	07426	QPSK	50	50	10 mm	back	1:1	0.956	1.009	N/A	0.965	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	22.9	22.61	0.00	1	Ant. 2	07426	QPSK	50	0	10 mm	back	1:1	0.954	1.069	N/A	1.020	
1905.00	26590	High	LTE Band 25 (PCS)	20	22.9	22.63	0.00	1	Ant. 2	07426	QPSK	50	0	10 mm	back	1:1	0.997	1.064	N/A	1.061	
1905.00	26590	High	LTE Band 25 (PCS)	20	22.9	22.75	0.02	1	Ant. 2	07426	QPSK	100	0	10 mm	back	1:1	0.994	1.035	N/A	1.029	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.9	23.90	0.01	0	Ant. 3	07459	QPSK	1	50	10 mm	back	1:1	0.273	1.000	N/A	0.273	
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.9	22.86	-0.06	1	Ant. 3	07459	QPSK	50	50	10 mm	back	1:1	0.253	1.009	N/A	0.255	
2560.00	21350	High	LTE Band 7	20	22.0	22.00	-0.15	0	Ant. 1	07426	QPSK	1	50	10 mm	back	1:1	0.751	1.000	N/A	0.751	A32
2560.00	21350	High	LTE Band 7	20	21.0	20.99	0.06	1	Ant. 1	07426	QPSK	50	0	10 mm	back	1:1	0.694	1.002	N/A	0.695	
2506.00	39750	Low	LTE Band 41	20	24.2	24.10	0.05	0	Ant. 1	07426	QPSK	1	0	10 mm	back	1:1.59	0.284	1.023	1.010	0.294	A33
2506.00	39750	Low	LTE Band 41	20	23.2	23.11	-0.09	1	Ant. 1	07426	QPSK	50	0	10 mm	back	1:1.59	0.236	1.021	1.010	0.243	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																Body 1.6 W/kg (mW/g) averaged over 1 gram					

Note: This device supports both LTE Band 5 (Cell) and LTE Band 26 (Cell). Since the supported frequency span for LTE Band 5 (Cell) falls completely within the supported frequency span for LTE Band 26 (Cell), both LTE bands have the same target power, and both LTE bands share the same transmission path, SAR was only assessed for LTE Band 26 (Cell).
Note: This device supports both LTE Band 2 (PCS) and LTE Band 25 (PCS). Since the supported frequency span for LTE Band 2 (PCS) falls completely within the supported frequency span for LTE Band 25 (PCS), both LTE bands have the same target power, and both LTE bands share the same transmission path, SAR was only assessed for LTE Band 25 (PCS).

Table 11-34
LTE Body-Worn SAR with CM Accessory – Ant. 1/2

MEASUREMENT RESULTS																							
FREQUENCY			Mode	Bandwidth [MHz]	Accessory	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Antenna Config.	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g) (W/kg)	Scaling Factor	Scaling Factor CP Duty	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																					
707.50	23095	Mid	LTE Band 12	10	Camera Module	24.2	24.20	-0.10	0	Ant. 1	07418	QPSK	1	25	10 mm	back	1:1	0.441	1.000	N/A	0.441	A28
707.50	23095	Mid	LTE Band 12	10	Camera Module	23.2	23.08	0.02	1	Ant. 1	07418	QPSK	25	0	10 mm	back	1:1	0.336	1.028	N/A	0.345	
836.50	26915	Mid	LTE Band 26 (Cell)	15	Camera Module	24.2	24.20	0.13	0	Ant. 1	07418	QPSK	1	36	10 mm	back	1:1	0.099	1.000	N/A	0.099	
836.50	26915	Mid	LTE Band 26 (Cell)	15	Camera Module	23.2	23.20	0.12	1	Ant. 1	07418	QPSK	36	0	10 mm	back	1:1	0.074	1.000	N/A	0.074	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Camera Module	24.2	24.16	-0.02	0	Ant. 2	07426	QPSK	1	0	10 mm	back	1:1	0.245	1.009	N/A	0.247	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Camera Module	23.2	23.04	-0.02	1	Ant. 2	07426	QPSK	50	50	10 mm	back	1:1	0.211	1.038	N/A	0.219	
1905.00	26590	High	LTE Band 25 (PCS)	20	Camera Module	23.9	23.90	0.05	0	Ant. 2	07426	QPSK	1	50	10 mm	back	1:1	0.369	1.000	N/A	0.369	
1860.00	26140	Low	LTE Band 25 (PCS)	20	Camera Module	22.9	22.86	-0.02	1	Ant. 2	07426	QPSK	50	50	10 mm	back	1:1	0.293	1.009	N/A	0.296	
2560.00	21350	High	LTE Band 7	20	Camera Module	22.0	22.00	0.04	0	Ant. 1	07426	QPSK	1	50	10 mm	back	1:1	0.153	1.000	N/A	0.153	
2560.00	21350	High	LTE Band 7	20	Camera Module	21.0	20.99	0.06	1	Ant. 1	07426	QPSK	50	0	10 mm	back	1:1	0.122	1.002	N/A	0.122	
2506.00	39750	Low	LTE Band 41	20	Camera Module	24.2	24.10	-0.03	0	Ant. 1	07426	QPSK	1	0	10 mm	back	1:1.59	0.171	1.023	1.010	0.177	
2506.00	39750	Low	LTE Band 41	20	Camera Module	23.2	23.11	0.02	1	Ant. 1	07426	QPSK	50	0	10 mm	back	1:1.59	0.130	1.021	1.010	0.134	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																	Body 1.6 W/kg (mW/g) averaged over 1 gram					

Note: Please see Section 6.8 for details on device positioning for back side with the camera module accessory.
Note: The camera module accessory replaces the bottom of the device below the screen where Antennas 1 and 2 are located. Therefore, additional SAR tests were performed with the camera module accessory attached for these antennas. Due to the location at the top of the device, no additional SAR measurements were needed for Antenna 3 with the camera module accessory attached.
Note: This device supports both LTE Band 5 (Cell) and LTE Band 26 (Cell). Since the supported frequency span for LTE Band 5 (Cell) falls completely within the supported frequency span for LTE Band 26 (Cell), both LTE bands have the same target power, and both LTE bands share the same transmission path, SAR was only assessed for LTE Band 26 (Cell).
Note: This device supports both LTE Band 2 (PCS) and LTE Band 25 (PCS). Since the supported frequency span for LTE Band 2 (PCS) falls completely within the supported frequency span for LTE Band 25 (PCS), both LTE bands have the same target power, and both LTE bands share the same transmission path, SAR was only assessed for LTE Band 25 (PCS).

Table 11-35
DTS Body-Worn SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	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)	
2457	10	802.11b	DSSS	22	19.0	18.10	-0.19	10 mm	07483	1	back	99.9	0.097	0.092	1.230	1.001	0.113	A34
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram										

Note: SAR highlighted in orange above is the highest SAR per exposure condition and equipment class to be listed on the grants.

Table 11-36
NII Body-Worn SAR

MEASUREMENT RESULTS																		
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	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	13.5	12.52	0.14	10 mm	01864	6	back	99.5	0.084	0.037	1.253	1.005	0.046	A36
5500	100	802.11a	OFDM	20	13.0	11.78	0.11	10 mm	01864	6	back	99.5	0.090	0.036	1.324	1.005	0.048	
5825	165	802.11a	OFDM	20	13.25	11.54	0.17	10 mm	01864	6	back	99.5	0.085	0.033	1.483	1.005	0.049	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram										

Note: SAR highlighted in orange above is the highest SAR per exposure condition and equipment class to be listed on the grants.
Note: Since U-NII-1 and U-NII-2A bands have the same maximum output power and the highest reported SAR for U-NII-2A is less than 1.2 W/kg for 1g SAR, SAR is not required for U-NII-1 band according to FCC KDB 248227 D01v02r02.

11.4 Standalone Hotspot SAR Data

Table 11-37
GPRS/UMTS/CDMA Hotspot SAR Data – Ant. 1/2/3

MEASUREMENT RESULTS																	
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Accessory	Device Serial Number	# of GPRS Slots	Duty Cycle	Side	SAR (1g) (W/kg)	Scaling Factor	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	24.9	24.78	-0.07	10 mm	Ant. 1	None	07434	N/A	1:1	back	0.507	1.028	0.521	A18
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	24.9	24.78	0.00	10 mm	Ant. 1	None	07434	N/A	1:1	front	0.404	1.028	0.415	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	24.9	24.78	0.02	10 mm	Ant. 1	None	07434	N/A	1:1	bottom	0.113	1.028	0.116	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	24.9	24.78	0.05	10 mm	Ant. 1	None	07434	N/A	1:1	right	0.174	1.028	0.179	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	24.9	24.78	0.01	10 mm	Ant. 1	None	07434	N/A	1:1	left	0.439	1.028	0.451	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	24.9	24.85	-0.02	10 mm	Ant. 1	None	07434	N/A	1:1	back	0.599	1.012	0.606	A20
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	24.9	24.85	-0.01	10 mm	Ant. 1	None	07434	N/A	1:1	front	0.454	1.012	0.459	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	24.9	24.85	-0.02	10 mm	Ant. 1	None	07434	N/A	1:1	bottom	0.130	1.012	0.132	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	24.9	24.85	-0.01	10 mm	Ant. 1	None	07434	N/A	1:1	right	0.256	1.012	0.259	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	24.9	24.85	0.08	10 mm	Ant. 1	None	07434	N/A	1:1	left	0.456	1.012	0.461	
824.20	128	GSM 850	GPRS	31.7	31.63	-0.01	10 mm	Ant. 1	None	07442	2	1:4.15	back	1.090	1.016	1.107	
836.60	190	GSM 850	GPRS	31.7	31.64	-0.09	10 mm	Ant. 1	None	07442	2	1:4.15	back	1.200	1.014	1.217	
848.80	251	GSM 850	GPRS	31.7	31.61	-0.02	10 mm	Ant. 1	None	07442	2	1:4.15	back	1.070	1.021	1.092	
836.60	190	GSM 850	GPRS	31.7	31.64	-0.01	10 mm	Ant. 1	Headphones	07442	2	1:4.15	back	1.010	1.014	1.024	
824.20	128	GSM 850	GPRS	31.7	31.63	0.01	10 mm	Ant. 1	None	07442	2	1:4.15	front	0.869	1.016	0.883	
836.60	190	GSM 850	GPRS	31.7	31.64	-0.06	10 mm	Ant. 1	None	07442	2	1:4.15	front	0.982	1.014	0.996	
848.80	251	GSM 850	GPRS	31.7	31.61	0.04	10 mm	Ant. 1	None	07442	2	1:4.15	front	0.915	1.021	0.934	
836.60	190	GSM 850	GPRS	31.7	31.64	-0.05	10 mm	Ant. 1	None	07442	2	1:4.15	bottom	0.244	1.014	0.247	
836.60	190	GSM 850	GPRS	31.7	31.64	-0.03	10 mm	Ant. 1	None	07442	2	1:4.15	right	0.573	1.014	0.581	
824.20	128	GSM 850	GPRS	31.7	31.63	-0.01	10 mm	Ant. 1	None	07442	2	1:4.15	left	0.752	1.016	0.764	
836.60	190	GSM 850	GPRS	31.7	31.64	-0.09	10 mm	Ant. 1	None	07442	2	1:4.15	left	0.898	1.014	0.911	
848.80	251	GSM 850	GPRS	31.7	31.61	-0.05	10 mm	Ant. 1	None	07442	2	1:4.15	left	0.981	1.021	1.002	
836.60	190	GSM 850	GPRS	31.7	31.64	0.00	10 mm	Ant. 1	None	07442	2	1:4.15	back	1.230	1.014	**1.247**	A21
836.60	4183	UMTS 850	RMC	24.2	23.97	0.16	10 mm	Ant. 1	None	07442	N/A	1:1	back	0.635	1.054	0.669	A22
836.60	4183	UMTS 850	RMC	24.2	23.97	-0.02	10 mm	Ant. 1	None	07442	N/A	1:1	front	0.526	1.054	0.554	
836.60	4183	UMTS 850	RMC	24.2	23.97	-0.05	10 mm	Ant. 1	None	07442	N/A	1:1	bottom	0.093	1.054	0.098	
836.60	4183	UMTS 850	RMC	24.2	23.97	-0.04	10 mm	Ant. 1	None	07442	N/A	1:1	right	0.345	1.054	0.364	
836.60	4183	UMTS 850	RMC	24.2	23.97	0.00	10 mm	Ant. 1	None	07442	N/A	1:1	left	0.556	1.054	0.586	
1732.40	1412	UMTS 1750	RMC	23.9	23.90	0.11	10 mm	Ant. 2	None	07442	N/A	1:1	back	0.751	1.000	0.751	A23
1732.40	1412	UMTS 1750	RMC	23.9	23.90	-0.04	10 mm	Ant. 2	None	07442	N/A	1:1	front	0.410	1.000	0.410	
1732.40	1412	UMTS 1750	RMC	23.9	23.90	0.06	10 mm	Ant. 2	None	07442	N/A	1:1	bottom	0.694	1.000	0.694	
1732.40	1412	UMTS 1750	RMC	23.9	23.90	0.01	10 mm	Ant. 2	None	07442	N/A	1:1	right	0.524	1.000	0.524	
1851.25	25	PCS CDMA	EVDO Rev. 0	24.4	24.38	-0.18	10 mm	Ant. 2	None	07434	N/A	1:1	back	0.716	1.005	0.720	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.4	24.40	-0.05	10 mm	Ant. 2	None	07434	N/A	1:1	back	0.856	1.000	0.856	
1908.75	1175	PCS CDMA	EVDO Rev. 0	24.4	24.40	0.03	10 mm	Ant. 2	None	07434	N/A	1:1	back	0.866	1.000	0.866	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.4	24.40	-0.02	10 mm	Ant. 2	None	07434	N/A	1:1	front	0.412	1.000	0.412	
1851.25	25	PCS CDMA	EVDO Rev. 0	24.4	24.38	0.08	10 mm	Ant. 2	None	07434	N/A	1:1	bottom	0.854	1.005	0.858	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.4	24.40	-0.04	10 mm	Ant. 2	None	07434	N/A	1:1	bottom	0.947	1.000	0.947	A25
1908.75	1175	PCS CDMA	EVDO Rev. 0	24.4	24.40	-0.05	10 mm	Ant. 2	None	07434	N/A	1:1	bottom	0.814	1.000	0.814	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.4	24.40	-0.02	10 mm	Ant. 2	None	07434	N/A	1:1	right	0.726	1.000	0.726	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.4	24.40	0.10	10 mm	Ant. 3	None	07459	N/A	1:1	back	0.310	1.000	0.310	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.4	24.40	-0.03	10 mm	Ant. 3	None	07459	N/A	1:1	front	0.420	1.000	0.420	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.4	24.40	0.02	10 mm	Ant. 3	None	07459	N/A	1:1	top	0.722	1.000	0.722	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.4	24.40	0.11	10 mm	Ant. 3	None	07459	N/A	1:1	right	0.033	1.000	0.033	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.4	24.40	0.07	10 mm	Ant. 3	None	07459	N/A	1:1	left	0.043	1.000	0.043	
1850.20	512	GSM 1900	GPRS	28.7	28.45	-0.11	10 mm	Ant. 2	None	07442	2	1:4.15	back	0.773	1.059	0.819	
1880.00	661	GSM 1900	GPRS	28.7	28.66	-0.17	10 mm	Ant. 2	None	07442	2	1:4.15	back	0.830	1.009	0.837	A26
1909.80	810	GSM 1900	GPRS	28.7	28.70	-0.11	10 mm	Ant. 2	None	07442	2	1:4.15	back	0.803	1.000	0.803	
1880.00	661	GSM 1900	GPRS	28.7	28.66	0.04	10 mm	Ant. 2	None	07442	2	1:4.15	front	0.389	1.009	0.393	
1880.00	661	GSM 1900	GPRS	28.7	28.66	0.01	10 mm	Ant. 2	None	07442	2	1:4.15	bottom	0.677	1.009	0.683	
1880.00	661	GSM 1900	GPRS	28.7	28.66	0.03	10 mm	Ant. 2	None	07442	2	1:4.15	right	0.567	1.009	0.572	
1852.40	9262	UMTS 1900	RMC	23.5	23.50	0.04	10 mm	Ant. 2	None	07442	N/A	1:1	back	0.974	1.000	0.974	
1880.00	9400	UMTS 1900	RMC	23.5	23.41	0.02	10 mm	Ant. 2	None	07442	N/A	1:1	back	0.989	1.021	1.010	
1907.60	9538	UMTS 1900	RMC	23.5	23.45	0.07	10 mm	Ant. 2	None	07442	N/A	1:1	back	1.110	1.012	1.123	A27
1880.00	9400	UMTS 1900	RMC	23.5	23.41	0.00	10 mm	Ant. 2	None	07442	N/A	1:1	front	0.456	1.021	0.466	
1880.00	9400	UMTS 1900	RMC	23.5	23.41	-0.08	10 mm	Ant. 2	None	07442	N/A	1:1	bottom	0.738	1.021	0.753	
1880.00	9400	UMTS 1900	RMC	23.5	23.41	-0.03	10 mm	Ant. 2	None	07442	N/A	1:1	right	0.671	1.021	0.685	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population												Body 1.6 W/kg (mW/g) averaged over 1 gram					

Note: SAR highlighted in orange above is the highest SAR per exposure condition and equipment class to be listed on the grants.
Note: Blue entry represents variability measurement

Table 11-38
GPRS/UMTS/CDMA Hotspot SAR Data with CM Accessory – Ant. 1/2

MEASUREMENT RESULTS																		
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Accessory	Device Serial Number	# of GPRS Slots	Duty Cycle	Side	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.													(W/kg)		(W/kg)	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	24.9	24.78	0.16	10 mm	Ant. 1	Camera Module	07434	N/A	1:1	back	0.451	1.028	0.464	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	24.9	24.78	-0.05	10 mm	Ant. 1	Camera Module	07434	N/A	1:1	front	0.287	1.028	0.295	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	24.9	24.78	0.11	10 mm	Ant. 1	Camera Module	07434	N/A	1:1	bottom	0.081	1.028	0.083	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	24.9	24.78	0.00	10 mm	Ant. 1	Camera Module	07434	N/A	1:1	right	0.323	1.028	0.332	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	24.9	24.78	0.17	10 mm	Ant. 1	Camera Module	07434	N/A	1:1	left	0.390	1.028	0.401	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	24.9	24.85	-0.01	10 mm	Ant. 1	Camera Module	07434	N/A	1:1	back	0.455	1.012	0.460	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	24.9	24.85	0.01	10 mm	Ant. 1	Camera Module	07434	N/A	1:1	front	0.294	1.012	0.298	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	24.9	24.85	0.01	10 mm	Ant. 1	Camera Module	07434	N/A	1:1	bottom	0.102	1.012	0.103	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	24.9	24.85	0.00	10 mm	Ant. 1	Camera Module	07434	N/A	1:1	right	0.304	1.012	0.308	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	24.9	24.85	-0.10	10 mm	Ant. 1	Camera Module	07434	N/A	1:1	left	0.399	1.012	0.404	
836.60	190	GSM 850	GPRS	31.7	31.64	0.05	10 mm	Ant. 1	Camera Module	07442	2	1:4.15	back	0.587	1.014	0.595	
836.60	190	GSM 850	GPRS	31.7	31.64	0.07	10 mm	Ant. 1	Camera Module	07442	2	1:4.15	front	0.310	1.014	0.314	
836.60	190	GSM 850	GPRS	31.7	31.64	-0.09	10 mm	Ant. 1	Camera Module	07442	2	1:4.15	bottom	0.089	1.014	0.090	
836.60	190	GSM 850	GPRS	31.7	31.64	-0.09	10 mm	Ant. 1	Camera Module	07442	2	1:4.15	right	0.423	1.014	0.429	
836.60	190	GSM 850	GPRS	31.7	31.64	0.07	10 mm	Ant. 1	Camera Module	07442	2	1:4.15	left	0.434	1.014	0.440	
836.60	4183	UMTS 850	RMC	24.2	23.97	0.01	10 mm	Ant. 1	Camera Module	07442	N/A	1:1	back	0.360	1.054	0.379	
836.60	4183	UMTS 850	RMC	24.2	23.97	-0.01	10 mm	Ant. 1	Camera Module	07442	N/A	1:1	front	0.233	1.054	0.246	
836.60	4183	UMTS 850	RMC	24.2	23.97	0.01	10 mm	Ant. 1	Camera Module	07442	N/A	1:1	bottom	0.072	1.054	0.076	
836.60	4183	UMTS 850	RMC	24.2	23.97	0.02	10 mm	Ant. 1	Camera Module	07442	N/A	1:1	right	0.356	1.054	0.375	
836.60	4183	UMTS 850	RMC	24.2	23.97	0.02	10 mm	Ant. 1	Camera Module	07442	N/A	1:1	left	0.372	1.054	0.392	
1732.40	1412	UMTS 1750	RMC	23.9	23.90	0.03	10 mm	Ant. 2	Camera Module	07442	N/A	1:1	back	0.334	1.000	0.334	
1732.40	1412	UMTS 1750	RMC	23.9	23.90	0.00	10 mm	Ant. 2	Camera Module	07442	N/A	1:1	front	0.310	1.000	0.310	
1732.40	1412	UMTS 1750	RMC	23.9	23.90	0.14	10 mm	Ant. 2	Camera Module	07442	N/A	1:1	bottom	0.212	1.000	0.212	
1732.40	1412	UMTS 1750	RMC	23.9	23.90	0.03	10 mm	Ant. 2	Camera Module	07442	N/A	1:1	right	0.284	1.000	0.284	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.4	24.40	-0.05	10 mm	Ant. 2	Camera Module	07434	N/A	1:1	back	0.491	1.000	0.491	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.4	24.40	-0.05	10 mm	Ant. 2	Camera Module	07434	N/A	1:1	front	0.381	1.000	0.381	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.4	24.40	-0.12	10 mm	Ant. 2	Camera Module	07434	N/A	1:1	bottom	0.385	1.000	0.385	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.4	24.40	-0.11	10 mm	Ant. 2	Camera Module	07434	N/A	1:1	right	0.521	1.000	0.521	
1880.00	661	GSM 1900	GPRS	28.7	28.66	-0.06	10 mm	Ant. 2	Camera Module	07442	2	1:4.15	back	0.233	1.009	0.235	
1880.00	661	GSM 1900	GPRS	28.7	28.66	0.00	10 mm	Ant. 2	Camera Module	07442	2	1:4.15	front	0.169	1.009	0.171	
1880.00	661	GSM 1900	GPRS	28.7	28.66	0.08	10 mm	Ant. 2	Camera Module	07442	2	1:4.15	bottom	0.113	1.009	0.114	
1880.00	661	GSM 1900	GPRS	28.7	28.66	-0.06	10 mm	Ant. 2	Camera Module	07442	2	1:4.15	right	0.180	1.009	0.182	
1880.00	9400	UMTS 1900	RMC	23.5	23.41	-0.01	10 mm	Ant. 2	Camera Module	07442	N/A	1:1	back	0.314	1.021	0.321	
1880.00	9400	UMTS 1900	RMC	23.5	23.41	0.06	10 mm	Ant. 2	Camera Module	07442	N/A	1:1	front	0.250	1.021	0.255	
1880.00	9400	UMTS 1900	RMC	23.5	23.41	-0.08	10 mm	Ant. 2	Camera Module	07442	N/A	1:1	bottom	0.174	1.021	0.178	
1880.00	9400	UMTS 1900	RMC	23.5	23.41	0.06	10 mm	Ant. 2	Camera Module	07442	N/A	1:1	right	0.277	1.021	0.283	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Body 1.6 W/kg (mW/g) averaged over 1 gram										

Note: Please see Section 6.8 for details on device positioning for back side with the camera module accessory.
Note: The camera module accessory replaces the bottom of the device below the screen where Antennas 1 and 2 are located. Therefore, additional SAR tests were performed with the camera module accessory attached for these antennas. Due to the location at the top of the device, no additional SAR measurements were needed for Antenna 3 with the camera module accessory attached.

Table 11-39
LTE Band 12 Hotspot SAR – Ant. 1

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
707.50	23095	Mid	LTE Band 12	10	24.2	24.20	0.12	0	07418	QPSK	1	25	10 mm	back	1:1	0.254	1.000	0.254	
707.50	23095	Mid	LTE Band 12	10	23.2	23.08	0.10	1	07418	QPSK	25	0	10 mm	back	1:1	0.188	1.028	0.193	
707.50	23095	Mid	LTE Band 12	10	24.2	24.20	0.03	0	07418	QPSK	1	25	10 mm	front	1:1	0.200	1.000	0.200	
707.50	23095	Mid	LTE Band 12	10	23.2	23.08	0.03	1	07418	QPSK	25	0	10 mm	front	1:1	0.147	1.028	0.151	
707.50	23095	Mid	LTE Band 12	10	24.2	24.20	0.03	0	07418	QPSK	1	25	10 mm	bottom	1:1	0.047	1.000	0.047	
707.50	23095	Mid	LTE Band 12	10	23.2	23.08	-0.10	1	07418	QPSK	25	0	10 mm	bottom	1:1	0.033	1.028	0.034	
707.50	23095	Mid	LTE Band 12	10	24.2	24.20	-0.01	0	07418	QPSK	1	25	10 mm	right	1:1	0.096	1.000	0.096	
707.50	23095	Mid	LTE Band 12	10	23.2	23.08	-0.13	1	07418	QPSK	25	0	10 mm	right	1:1	0.067	1.028	0.069	
707.50	23095	Mid	LTE Band 12	10	24.2	24.20	0.03	0	07418	QPSK	1	25	10 mm	left	1:1	0.185	1.000	0.185	
707.50	23095	Mid	LTE Band 12	10	23.2	23.08	0.00	1	07418	QPSK	25	0	10 mm	left	1:1	0.150	1.028	0.154	
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 11-40
LTE Band 12 Hotspot SAR with CM Accessory – Ant. 1

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Accessory	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	Camera Module	24.2	24.20	-0.10	0	07418	QPSK	1	25	10 mm	back	1:1	0.441	1.000	0.441	A28
707.50	23095	Mid	LTE Band 12	10	Camera Module	23.2	23.08	0.02	1	07418	QPSK	25	0	10 mm	back	1:1	0.336	1.028	0.345	
707.50	23095	Mid	LTE Band 12	10	Camera Module	24.2	24.20	-0.11	0	07418	QPSK	1	25	10 mm	front	1:1	0.235	1.000	0.235	
707.50	23095	Mid	LTE Band 12	10	Camera Module	23.2	23.08	0.02	1	07418	QPSK	25	0	10 mm	front	1:1	0.174	1.028	0.179	
707.50	23095	Mid	LTE Band 12	10	Camera Module	24.2	24.20	-0.03	0	07418	QPSK	1	25	10 mm	bottom	1:1	0.034	1.000	0.034	
707.50	23095	Mid	LTE Band 12	10	Camera Module	23.2	23.08	0.00	1	07418	QPSK	25	0	10 mm	bottom	1:1	0.026	1.028	0.027	
707.50	23095	Mid	LTE Band 12	10	Camera Module	24.2	24.20	-0.02	0	07418	QPSK	1	25	10 mm	right	1:1	0.351	1.000	0.351	
707.50	23095	Mid	LTE Band 12	10	Camera Module	23.2	23.08	0.02	1	07418	QPSK	25	0	10 mm	right	1:1	0.277	1.028	0.285	
707.50	23095	Mid	LTE Band 12	10	Camera Module	24.2	24.20	-0.03	0	07418	QPSK	1	25	10 mm	left	1:1	0.374	1.000	0.374	
707.50	23095	Mid	LTE Band 12	10	Camera Module	23.2	23.08	0.02	1	07418	QPSK	25	0	10 mm	left	1:1	0.296	1.028	0.304	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Body 1.6 W/kg (mW/g) averaged over 1 gram										

Note: Please see Section 6.8 for details on device positioning for back side with the camera module accessory.

Table 11-41
LTE Band 26 (Cell) Hotspot SAR – Ant. 1

MEASUREMENT RESULTS																		
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
836.50	26915	Mid	LTE Band 26 (Cell)	15	24.2	24.20	0.05	0	07418	QPSK	1	36	10 mm	back	1:1	0.175	1.000	0.175	A29
836.50	26915	Mid	LTE Band 26 (Cell)	15	23.2	23.20	0.05	1	07418	QPSK	36	0	10 mm	back	1:1	0.139	1.000	0.139	
836.50	26915	Mid	LTE Band 26 (Cell)	15	24.2	24.20	0.01	0	07418	QPSK	1	36	10 mm	front	1:1	0.134	1.000	0.134	
836.50	26915	Mid	LTE Band 26 (Cell)	15	23.2	23.20	0.00	1	07418	QPSK	36	0	10 mm	front	1:1	0.120	1.000	0.120	
836.50	26915	Mid	LTE Band 26 (Cell)	15	24.2	24.20	0.10	0	07418	QPSK	1	36	10 mm	bottom	1:1	0.035	1.000	0.035	
836.50	26915	Mid	LTE Band 26 (Cell)	15	23.2	23.20	0.06	1	07418	QPSK	36	0	10 mm	bottom	1:1	0.034	1.000	0.034	
836.50	26915	Mid	LTE Band 26 (Cell)	15	24.2	24.20	0.08	0	07418	QPSK	1	36	10 mm	right	1:1	0.086	1.000	0.086	
836.50	26915	Mid	LTE Band 26 (Cell)	15	23.2	23.20	0.03	1	07418	QPSK	36	0	10 mm	right	1:1	0.077	1.000	0.077	
836.50	26915	Mid	LTE Band 26 (Cell)	15	24.2	24.20	-0.01	0	07418	QPSK	1	36	10 mm	left	1:1	0.147	1.000	0.147	
836.50	26915	Mid	LTE Band 26 (Cell)	15	23.2	23.20	0.07	1	07418	QPSK	36	0	10 mm	left	1:1	0.134	1.000	0.134	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Body 1.6 W/kg (mW/g) averaged over 1 gram										

This device supports both LTE Band 5 (Cell) and LTE Band 26 (Cell). Since the supported frequency span for LTE Band 5 (Cell) falls completely within the supported frequency span for LTE Band 26 (Cell), both LTE bands have the same target power, and both LTE bands share the same transmission path, SAR was only assessed for LTE Band 26 (Cell).

Table 11-42
LTE Band 26 (Cell) Hotspot SAR with CM Accessory – Ant. 1

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Accessory	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	26915	Mid	LTE Band 26 (Cell)	15	Camera Module	24.2	24.20	0.13	0	07418	QPSK	1	36	10 mm	back	1:1	0.099	1.000	0.099	
836.50	26915	Mid	LTE Band 26 (Cell)	15	Camera Module	23.2	23.20	0.12	1	07418	QPSK	36	0	10 mm	back	1:1	0.074	1.000	0.074	
836.50	26915	Mid	LTE Band 26 (Cell)	15	Camera Module	24.2	24.20	0.08	0	07418	QPSK	1	36	10 mm	front	1:1	0.043	1.000	0.043	
836.50	26915	Mid	LTE Band 26 (Cell)	15	Camera Module	23.2	23.20	0.04	1	07418	QPSK	36	0	10 mm	front	1:1	0.042	1.000	0.042	
836.50	26915	Mid	LTE Band 26 (Cell)	15	Camera Module	24.2	24.20	0.00	0	07418	QPSK	1	36	10 mm	bottom	1:1	0.016	1.000	0.016	
836.50	26915	Mid	LTE Band 26 (Cell)	15	Camera Module	23.2	23.20	0.03	1	07418	QPSK	36	0	10 mm	bottom	1:1	0.014	1.000	0.014	
836.50	26915	Mid	LTE Band 26 (Cell)	15	Camera Module	24.2	24.20	-0.02	0	07418	QPSK	1	36	10 mm	right	1:1	0.047	1.000	0.047	
836.50	26915	Mid	LTE Band 26 (Cell)	15	Camera Module	23.2	23.20	-0.05	1	07418	QPSK	36	0	10 mm	right	1:1	0.046	1.000	0.046	
836.50	26915	Mid	LTE Band 26 (Cell)	15	Camera Module	24.2	24.20	0.05	0	07418	QPSK	1	36	10 mm	left	1:1	0.063	1.000	0.063	
836.50	26915	Mid	LTE Band 26 (Cell)	15	Camera Module	23.2	23.20	-0.02	1	07418	QPSK	36	0	10 mm	left	1:1	0.060	1.000	0.060	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population														Body 1.6 W/kg (mW/g) averaged over 1 gram						

Note: Please see Section 6.8 for details on device positioning for back side with the camera module accessory.
Note: This device supports both LTE Band 5 (Cell) and LTE Band 26 (Cell). Since the supported frequency span for LTE Band 5 (Cell) falls completely within the supported frequency span for LTE Band 26 (Cell), both LTE bands have the same target power, and both LTE bands share the same transmission path, SAR was only assessed for LTE Band 26 (Cell).

Table 11-43
LTE Band 4 (AWS) Hotspot SAR – Ant. 2/3

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Antenna Config.	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	24.2	24.16	0.09	0	Ant. 2	07426	QPSK	1	0	10 mm	back	1:1	0.796	1.009	0.803	A30
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.2	23.04	0.11	1	Ant. 2	07426	QPSK	50	50	10 mm	back	1:1	0.677	1.038	0.703	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.2	22.91	0.07	1	Ant. 2	07426	QPSK	100	0	10 mm	back	1:1	0.663	1.069	0.709	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	24.2	24.16	0.00	0	Ant. 2	07426	QPSK	1	0	10 mm	front	1:1	0.332	1.009	0.335	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.2	23.04	0.01	1	Ant. 2	07426	QPSK	50	50	10 mm	front	1:1	0.284	1.038	0.295	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	24.2	24.16	0.03	0	Ant. 2	07426	QPSK	1	0	10 mm	bottom	1:1	0.465	1.009	0.469	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.2	23.04	0.00	1	Ant. 2	07426	QPSK	50	50	10 mm	bottom	1:1	0.438	1.038	0.455	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	24.2	24.16	0.01	0	Ant. 2	07426	QPSK	1	0	10 mm	right	1:1	0.344	1.009	0.347	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.2	23.04	-0.01	1	Ant. 2	07426	QPSK	50	50	10 mm	right	1:1	0.292	1.038	0.303	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	24.2	24.16	-0.04	0	Ant. 3	07459	QPSK	1	0	10 mm	back	1:1	0.362	1.009	0.365	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.2	23.04	0.03	1	Ant. 3	07459	QPSK	50	50	10 mm	back	1:1	0.315	1.038	0.327	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	24.2	24.16	-0.05	0	Ant. 3	07459	QPSK	1	0	10 mm	front	1:1	0.443	1.009	0.447	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.2	23.04	-0.06	1	Ant. 3	07459	QPSK	50	50	10 mm	front	1:1	0.385	1.038	0.400	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	24.2	24.16	0.07	0	Ant. 3	07459	QPSK	1	0	10 mm	top	1:1	0.694	1.009	0.700	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.2	23.04	0.06	1	Ant. 3	07459	QPSK	50	50	10 mm	top	1:1	0.578	1.038	0.600	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	24.2	24.16	0.04	0	Ant. 3	07459	QPSK	1	0	10 mm	right	1:1	0.036	1.009	0.036	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.2	23.04	0.01	1	Ant. 3	07459	QPSK	50	50	10 mm	right	1:1	0.033	1.038	0.034	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	24.2	24.16	0.03	0	Ant. 3	07459	QPSK	1	0	10 mm	left	1:1	0.040	1.009	0.040	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.2	23.04	0.19	1	Ant. 3	07459	QPSK	50	50	10 mm	left	1:1	0.032	1.038	0.033	
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 11-44
LTE Band 4 (AWS) Hotspot SAR with CM Accessory – Ant. 2

MEASUREMENT RESULTS																						
FREQUENCY			Mode	Bandwidth [MHz]	Accessory	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Antenna Config.	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g) (W/kg)	Scaling Factor	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																				
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Camera Module	24.2	24.16	-0.02	0	Ant. 2	07426	QPSK	1	0	10 mm	back	1:1	0.245	1.009	0.247	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Camera Module	23.2	23.04	-0.02	1	Ant. 2	07426	QPSK	50	50	10 mm	back	1:1	0.211	1.038	0.219	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Camera Module	24.2	24.16	0.02	0	Ant. 2	07426	QPSK	1	0	10 mm	front	1:1	0.219	1.009	0.221	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Camera Module	23.2	23.04	0.03	1	Ant. 2	07426	QPSK	50	50	10 mm	front	1:1	0.186	1.038	0.193	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Camera Module	24.2	24.16	0.00	0	Ant. 2	07426	QPSK	1	0	10 mm	bottom	1:1	0.126	1.009	0.127	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Camera Module	23.2	23.04	0.00	1	Ant. 2	07426	QPSK	50	50	10 mm	bottom	1:1	0.108	1.038	0.112	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Camera Module	24.2	24.16	0.07	0	Ant. 2	07426	QPSK	1	0	10 mm	right	1:1	0.196	1.009	0.198	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Camera Module	23.2	23.04	0.00	1	Ant. 2	07426	QPSK	50	50	10 mm	right	1:1	0.157	1.038	0.163	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population												Body 1.6 W/kg (mW/g) averaged over 1 gram									

Note: Please see Section 6.8 for details on device positioning for back side with the camera module accessory.
Note: The camera module accessory replaces the bottom of the device below the screen where Antennas 1 and 2 are located. Therefore, additional SAR tests were performed with the camera module accessory attached for these antennas. Due to the location at the top of the device, no additional SAR measurements were needed for Antenna 3 with the camera module accessory attached.

Table 11-45
LTE Band 25 (PCS) Hotspot SAR – Ant. 2/3

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Antenna Config.	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g) (W/kg)	Scaling Factor	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																			
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.9	23.78	0.00	0	Ant. 2	07426	QPSK	1	0	10 mm	back	1:1	1.050	1.028	1.079	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.9	23.70	0.03	0	Ant. 2	07426	QPSK	1	0	10 mm	back	1:1	1.020	1.047	1.068	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.9	23.90	0.04	0	Ant. 2	07426	QPSK	1	50	10 mm	back	1:1	1.110	1.000	1.110	A31
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.9	22.86	-0.02	1	Ant. 2	07426	QPSK	50	50	10 mm	back	1:1	0.956	1.009	0.965	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	22.9	22.61	0.00	1	Ant. 2	07426	QPSK	50	0	10 mm	back	1:1	0.954	1.069	1.020	
1905.00	26590	High	LTE Band 25 (PCS)	20	22.9	22.63	0.00	1	Ant. 2	07426	QPSK	50	0	10 mm	back	1:1	0.997	1.064	1.061	
1905.00	26590	High	LTE Band 25 (PCS)	20	22.9	22.75	0.02	1	Ant. 2	07426	QPSK	100	0	10 mm	back	1:1	0.994	1.035	1.029	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.9	23.90	0.01	0	Ant. 2	07426	QPSK	1	50	10 mm	front	1:1	0.585	1.000	0.585	
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.9	22.86	0.03	1	Ant. 2	07426	QPSK	50	50	10 mm	front	1:1	0.459	1.009	0.463	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.9	23.78	0.08	0	Ant. 2	07426	QPSK	1	0	10 mm	bottom	1:1	1.040	1.028	1.069	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.9	23.70	0.16	0	Ant. 2	07426	QPSK	1	0	10 mm	bottom	1:1	0.971	1.047	1.017	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.9	23.90	0.06	0	Ant. 2	07426	QPSK	1	50	10 mm	bottom	1:1	1.050	1.000	1.050	
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.9	22.86	0.04	1	Ant. 2	07426	QPSK	50	50	10 mm	bottom	1:1	0.804	1.009	0.811	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	22.9	22.61	0.07	1	Ant. 2	07426	QPSK	50	0	10 mm	bottom	1:1	0.790	1.069	0.845	
1905.00	26590	High	LTE Band 25 (PCS)	20	22.9	22.63	0.16	1	Ant. 2	07426	QPSK	50	0	10 mm	bottom	1:1	0.771	1.064	0.820	
1905.00	26590	High	LTE Band 25 (PCS)	20	22.9	22.75	0.17	1	Ant. 2	07426	QPSK	100	0	10 mm	bottom	1:1	0.770	1.035	0.797	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.9	23.78	0.01	0	Ant. 2	07426	QPSK	1	0	10 mm	right	1:1	0.750	1.028	0.771	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.9	23.70	0.05	0	Ant. 2	07426	QPSK	1	0	10 mm	right	1:1	0.826	1.047	0.865	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.9	23.90	0.02	0	Ant. 2	07426	QPSK	1	50	10 mm	right	1:1	0.846	1.000	0.846	
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.9	22.86	0.03	1	Ant. 2	07426	QPSK	50	50	10 mm	right	1:1	0.610	1.009	0.615	
1905.00	26590	High	LTE Band 25 (PCS)	20	22.9	22.75	0.05	1	Ant. 2	07426	QPSK	100	0	10 mm	right	1:1	0.709	1.035	0.734	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.9	23.90	0.01	0	Ant. 3	07459	QPSK	1	50	10 mm	back	1:1	0.273	1.000	0.273	
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.9	22.86	-0.06	1	Ant. 3	07459	QPSK	50	50	10 mm	back	1:1	0.253	1.009	0.255	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.9	23.90	-0.06	0	Ant. 3	07459	QPSK	1	50	10 mm	front	1:1	0.271	1.000	0.271	
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.9	22.86	0.04	1	Ant. 3	07459	QPSK	50	50	10 mm	front	1:1	0.200	1.009	0.202	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.9	23.90	-0.04	0	Ant. 3	07459	QPSK	1	50	10 mm	top	1:1	0.687	1.000	0.687	
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.9	22.86	0.04	1	Ant. 3	07459	QPSK	50	50	10 mm	top	1:1	0.530	1.009	0.535	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.9	23.90	-0.14	0	Ant. 3	07459	QPSK	1	50	10 mm	right	1:1	0.037	1.000	0.037	
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.9	22.86	0.02	1	Ant. 3	07459	QPSK	50	50	10 mm	right	1:1	0.026	1.009	0.026	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.9	23.90	-0.15	0	Ant. 3	07459	QPSK	1	50	10 mm	left	1:1	0.028	1.000	0.028	
1860.00	26140	Low	LTE Band 25 (PCS)	20	22.9	22.86	0.14	1	Ant. 3	07459	QPSK	50	50	10 mm	left	1:1	0.022	1.009	0.022	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population												Body 1.6 W/kg (mW/g) averaged over 1 gram									

Note: This device supports both LTE Band 2 (PCS) and LTE Band 25 (PCS). Since the supported frequency span for LTE Band 2 (PCS) falls completely within the supported frequency span for LTE Band 25 (PCS), both LTE bands have the same target power, and both LTE bands share the same transmission path, SAR was only assessed for LTE Band 25 (PCS).

Table 11-46
LTE Band 25 (PCS) Hotspot SAR with CM Accessory – Ant. 2

MEASUREMENT RESULTS																							
FREQUENCY			Mode	Bandwidth [MHz]	Accessory	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Antenna Config.	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g) (W/kg)	Scaling Factor	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																				
1905.00	26590	High	LTE Band 25 (PCS)	20	Camera Module	23.9	23.90	0.05	0	Ant. 2	07426	QPSK	1	50	10 mm	back	1:1	0.369	1.000	0.369	
1860.00	26140	Low	LTE Band 25 (PCS)	20	Camera Module	22.9	22.86	-0.02	1	Ant. 2	07426	QPSK	50	50	10 mm	back	1:1	0.293	1.009	0.296	
1905.00	26590	High	LTE Band 25 (PCS)	20	Camera Module	23.9	23.90	0.10	0	Ant. 2	07426	QPSK	1	50	10 mm	front	1:1	0.377	1.000	0.377	
1860.00	26140	Low	LTE Band 25 (PCS)	20	Camera Module	22.9	22.86	0.00	1	Ant. 2	07426	QPSK	50	50	10 mm	front	1:1	0.293	1.009	0.296	
1905.00	26590	High	LTE Band 25 (PCS)	20	Camera Module	23.9	23.90	-0.14	0	Ant. 2	07426	QPSK	1	50	10 mm	bottom	1:1	0.291	1.000	0.291	
1860.00	26140	Low	LTE Band 25 (PCS)	20	Camera Module	22.9	22.86	-0.02	1	Ant. 2	07426	QPSK	50	50	10 mm	bottom	1:1	0.202	1.009	0.204	
1905.00	26590	High	LTE Band 25 (PCS)	20	Camera Module	23.9	23.90	-0.13	0	Ant. 2	07426	QPSK	1	50	10 mm	right	1:1	0.407	1.000	0.407	
1860.00	26140	Low	LTE Band 25 (PCS)	20	Camera Module	22.9	22.86	-0.01	1	Ant. 2	07426	QPSK	50	50	10 mm	right	1:1	0.320	1.009	0.323	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population												Body 1.6 W/kg (mW/g) averaged over 1 gram									

Note: Please see Section 6.8 for details on device positioning for back side with the camera module accessory.
Note: The camera module accessory replaces the bottom of the device below the screen where Antennas 1 and 2 are located. Therefore, additional SAR tests were performed with the camera module accessory attached for these antennas. Due to the location at the top of the device, no additional SAR measurements were needed for Antenna 3 with the camera module accessory attached.
Note: This device supports both LTE Band 2 (PCS) and LTE Band 25 (PCS). Since the supported frequency span for LTE Band 2 (PCS) falls completely within the supported frequency span for LTE Band 25 (PCS), both LTE bands have the same target power, and both LTE bands share the same transmission path, SAR was only assessed for LTE Band 25 (PCS).

Table 11-47
LTE Band 7 Hotspot SAR – Ant. 1

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g) (W/kg)	Scaling Factor	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																		
2560.00	21350	High	LTE Band 7	20	22.0	22.00	-0.15	0	07426	QPSK	1	50	10 mm	back	1:1	0.751	1.000	0.751	A32
2560.00	21350	High	LTE Band 7	20	21.0	20.99	0.06	1	07426	QPSK	50	0	10 mm	back	1:1	0.694	1.002	0.695	
2560.00	21350	High	LTE Band 7	20	22.0	22.00	-0.05	0	07426	QPSK	1	50	10 mm	front	1:1	0.574	1.000	0.574	
2560.00	21350	High	LTE Band 7	20	21.0	20.99	-0.02	1	07426	QPSK	50	0	10 mm	front	1:1	0.416	1.002	0.417	
2560.00	21350	High	LTE Band 7	20	22.0	22.00	0.07	0	07426	QPSK	1	50	10 mm	bottom	1:1	0.276	1.000	0.276	
2560.00	21350	High	LTE Band 7	20	21.0	20.99	0.05	1	07426	QPSK	50	0	10 mm	bottom	1:1	0.213	1.002	0.213	
2560.00	21350	High	LTE Band 7	20	22.0	22.00	0.14	0	07426	QPSK	1	50	10 mm	right	1:1	0.033	1.000	0.033	
2560.00	21350	High	LTE Band 7	20	21.0	20.99	0.11	1	07426	QPSK	50	0	10 mm	right	1:1	0.025	1.002	0.025	
2560.00	21350	High	LTE Band 7	20	22.0	22.00	-0.05	0	07426	QPSK	1	50	10 mm	left	1:1	0.378	1.000	0.378	
2560.00	21350	High	LTE Band 7	20	21.0	20.99	0.02	1	07426	QPSK	50	0	10 mm	left	1:1	0.286	1.002	0.287	
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 11-48
LTE Band 7 Hotspot SAR with CM Accessory – Ant. 1

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Accessory	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g) (W/kg)	Scaling Factor	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																			
2560.00	21350	High	LTE Band 7	20	Camera Module	22.0	22.00	0.04	0	07426	QPSK	1	50	10 mm	back	1:1	0.153	1.000	0.153	
2560.00	21350	High	LTE Band 7	20	Camera Module	21.0	20.99	0.06	1	07426	QPSK	50	0	10 mm	back	1:1	0.122	1.002	0.122	
2560.00	21350	High	LTE Band 7	20	Camera Module	22.0	22.00	0.10	0	07426	QPSK	1	50	10 mm	front	1:1	0.067	1.000	0.067	
2560.00	21350	High	LTE Band 7	20	Camera Module	21.0	20.99	0.13	1	07426	QPSK	50	0	10 mm	front	1:1	0.056	1.002	0.056	
2560.00	21350	High	LTE Band 7	20	Camera Module	22.0	22.00	-0.03	0	07426	QPSK	1	50	10 mm	bottom	1:1	0.107	1.000	0.107	
2560.00	21350	High	LTE Band 7	20	Camera Module	21.0	20.99	-0.03	1	07426	QPSK	50	0	10 mm	bottom	1:1	0.079	1.002	0.079	
2560.00	21350	High	LTE Band 7	20	Camera Module	22.0	22.00	-0.01	0	07426	QPSK	1	50	10 mm	right	1:1	0.121	1.000	0.121	
2560.00	21350	High	LTE Band 7	20	Camera Module	21.0	20.99	0.02	1	07426	QPSK	50	0	10 mm	right	1:1	0.089	1.002	0.089	
2560.00	21350	High	LTE Band 7	20	Camera Module	22.0	22.00	0.00	0	07426	QPSK	1	50	10 mm	left	1:1	0.093	1.000	0.093	
2560.00	21350	High	LTE Band 7	20	Camera Module	21.0	20.99	0.02	1	07426	QPSK	50	0	10 mm	left	1:1	0.070	1.002	0.070	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population														Body 1.6 W/kg (mW/g) averaged over 1 gram						

Note: Please see Section 6.8 for details on device positioning for back side with the camera module accessory.

Table 11-49
LTE Band 41 Hotspot SAR – Ant. 1

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Scaling Factor CP Duty	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)			(W/kg)	
2506.00	39750	Low	LTE Band 41	20	24.2	24.10	0.05	0	07426	QPSK	1	0	10 mm	back	1:1.59	0.284	1.023	1.010	0.294	A33
2506.00	39750	Low	LTE Band 41	20	23.2	23.11	-0.09	1	07426	QPSK	50	0	10 mm	back	1:1.59	0.236	1.021	1.010	0.243	
2506.00	39750	Low	LTE Band 41	20	24.2	24.10	-0.10	0	07426	QPSK	1	0	10 mm	front	1:1.59	0.198	1.023	1.010	0.205	
2506.00	39750	Low	LTE Band 41	20	23.2	23.11	-0.09	1	07426	QPSK	50	0	10 mm	front	1:1.59	0.163	1.021	1.010	0.168	
2506.00	39750	Low	LTE Band 41	20	24.2	24.10	-0.05	0	07426	QPSK	1	0	10 mm	bottom	1:1.59	0.104	1.023	1.010	0.107	
2506.00	39750	Low	LTE Band 41	20	23.2	23.11	-0.07	1	07426	QPSK	50	0	10 mm	bottom	1:1.59	0.086	1.021	1.010	0.089	
2506.00	39750	Low	LTE Band 41	20	24.2	24.10	0.08	0	07426	QPSK	1	0	10 mm	right	1:1.59	0.012	1.023	1.010	0.012	
2506.00	39750	Low	LTE Band 41	20	23.2	23.11	0.12	1	07426	QPSK	50	0	10 mm	right	1:1.59	0.009	1.021	1.010	0.009	
2506.00	39750	Low	LTE Band 41	20	24.2	24.10	-0.02	0	07426	QPSK	1	0	10 mm	left	1:1.59	0.143	1.023	1.010	0.147	
2506.00	39750	Low	LTE Band 41	20	23.2	23.11	0.03	1	07426	QPSK	50	0	10 mm	left	1:1.59	0.120	1.021	1.010	0.124	
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 11-50
LTE Band 41 Hotspot SAR with CM Accessory – Ant. 1

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Accessory	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	Scaling Factor CP Duty	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)			(W/kg)	
2506.00	39750	Low	LTE Band 41	20	Camera Module	24.2	24.10	-0.03	0	07426	QPSK	1	0	10 mm	back	1:1.59	0.171	1.023	1.010	0.177	
2506.00	39750	Low	LTE Band 41	20	Camera Module	23.2	23.11	0.02	1	07426	QPSK	50	0	10 mm	back	1:1.59	0.130	1.021	1.010	0.134	
2506.00	39750	Low	LTE Band 41	20	Camera Module	24.2	24.10	-0.14	0	07426	QPSK	1	0	10 mm	front	1:1.59	0.088	1.023	1.010	0.091	
2506.00	39750	Low	LTE Band 41	20	Camera Module	23.2	23.11	-0.01	1	07426	QPSK	50	0	10 mm	front	1:1.59	0.063	1.021	1.010	0.065	
2506.00	39750	Low	LTE Band 41	20	Camera Module	24.2	24.10	-0.08	0	07426	QPSK	1	0	10 mm	bottom	1:1.59	0.118	1.023	1.010	0.122	
2506.00	39750	Low	LTE Band 41	20	Camera Module	23.2	23.11	-0.06	1	07426	QPSK	50	0	10 mm	bottom	1:1.59	0.089	1.021	1.010	0.092	
2506.00	39750	Low	LTE Band 41	20	Camera Module	24.2	24.10	-0.09	0	07426	QPSK	1	0	10 mm	right	1:1.59	0.144	1.023	1.010	0.148	
2506.00	39750	Low	LTE Band 41	20	Camera Module	23.2	23.11	-0.11	1	07426	QPSK	50	0	10 mm	right	1:1.59	0.110	1.021	1.010	0.113	
2506.00	39750	Low	LTE Band 41	20	Camera Module	24.2	24.10	0.07	0	07426	QPSK	1	0	10 mm	left	1:1.59	0.058	1.023	1.010	0.060	
2506.00	39750	Low	LTE Band 41	20	Camera Module	23.2	23.11	-0.05	1	07426	QPSK	50	0	10 mm	left	1:1.59	0.044	1.021	1.010	0.045	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population											Body 1.6 W/kg (mW/g) averaged over 1 gram										

Note: Please see Section 6.8 for details on device positioning for back side with the camera module accessory.

Table 11-51
WLAN Hotspot SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	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)	
2457	10	802.11b	DSSS	22	19.0	18.10	-0.03	10 mm	07483	1	back	99.9	0.097	-	1.230	1.001	-	
2457	10	802.11b	DSSS	22	19.0	18.10	0.10	10 mm	07483	1	front	99.9	0.095	-	1.230	1.001	-	
2457	10	802.11b	DSSS	22	19.0	18.10	-0.04	10 mm	07483	1	top	99.9	0.110	0.074	1.230	1.001	0.091	A35
2457	10	802.11b	DSSS	22	19.0	18.10	0.11	10 mm	07483	1	left	99.9	0.078	-	1.230	1.001	-	
5825	165	802.11a	OFDM	20	13.25	11.54	0.06	10 mm	01864	6	back	99.5	0.085	-	1.483	1.005	-	
5825	165	802.11a	OFDM	20	13.25	11.54	0.19	10 mm	01864	6	front	99.5	0.187	0.076	1.483	1.005	0.114	A37
5825	165	802.11a	OFDM	20	13.25	11.54	-0.08	10 mm	01864	6	top	99.5	0.104	-	1.483	1.005	-	
5825	165	802.11a	OFDM	20	13.25	11.54	0.09	10 mm	01864	6	left	99.5	0.034	-	1.483	1.005	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population											Body 1.6 W/kg (mW/g) averaged over 1 gram							

Note: SAR highlighted in orange above is the highest SAR per exposure condition and equipment class to be listed on the grants.
Note: "-" in the table above indicates that the position was not required to be measured per the initial test position procedures in FCC KDB Publication 248227 D01v02r02.

11.5 Standalone 10g Hotspot Mode 0mm SAR Data

Table 11-52
GPRS/UMTS/CDMA 10g Hotspot Mode 0mm SAR Data with CM Accessory – Ant. 1/2

MEASUREMENT RESULTS																	
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Accessory	Device Serial Number	# of GPRS Slots	Duty Cycle	Side	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.													(W/kg)		(W/kg)	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	24.9	24.78	-0.01	0 mm	Ant. 1	Camera Module	07434	N/A	1:1	back	0.989	1.028	1.017	A38
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	24.9	24.85	-0.06	0 mm	Ant. 1	Camera Module	07434	N/A	1:1	back	0.796	1.012	0.806	A39
836.60	190	GSM 850	GPRS	31.7	31.64	-0.03	0 mm	Ant. 1	Camera Module	07442	2	1:4.15	back	1.010	1.014	1.024	A40
836.60	4183	UMTS 850	RMC	24.2	23.97	-0.14	0 mm	Ant. 1	Camera Module	07442	N/A	1:1	back	0.494	1.054	0.521	A41
1732.40	1412	UMTS 1750	RMC	23.9	23.90	0.02	0 mm	Ant. 2	Camera Module	07442	N/A	1:1	back	1.770	1.000	1.770	A42
1880.00	600	PCS CDMA	EVDO Rev. 0	24.4	24.40	0.12	0 mm	Ant. 2	Camera Module	07434	N/A	1:1	back	1.600	1.000	1.600	A43
1880.00	661	GSM 1900	GPRS	28.7	28.66	-0.04	0 mm	Ant. 2	Camera Module	07442	2	1:4.15	back	0.364	1.009	0.367	A44
1880.00	9400	UMTS 1900	RMC	23.5	23.41	-0.04	0 mm	Ant. 2	Camera Module	07442	N/A	1:1	back	0.934	1.021	0.954	A45
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population														10g Hotspot Mode 0mm 4.0 W/kg (mW/g) averaged over 10 grams			

Note: Please see Section 6.8 for details on device positioning for back side with the camera module accessory.

Table 11-53
LTE 10g Hotspot Mode 0mm SAR Data with CM Accessory – Ant. 1/2

MEASUREMENT RESULTS																						
FREQUENCY			Mode	Bandwidth [MHz]	Cover Type	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Antenna Config.	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (10g)	Scaling Factor	Scaling Factor CP Duty	Reported SAR (10g)	Plot #
MHz	Ch.																	(W/kg)			(W/kg)	
707.50	23095	Mid	LTE Band 12	10	Camera Module	24.2	24.20	-0.04	0	Ant. 1	07418	QPSK	1	25	0 mm	back	1:1	0.601	1.000	N/A	0.601	A46
836.50	26915	Mid	LTE Band 26 (Cell)	15	Camera Module	24.2	24.20	-0.07	0	Ant. 1	07418	QPSK	1	36	0 mm	back	1:1	0.254	1.000	N/A	0.254	A47
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Camera Module	24.2	24.16	0.05	0	Ant. 2	07426	QPSK	1	0	0 mm	back	1:1	1.810	1.009	N/A	1.826	A48
1905.00	26590	High	LTE Band 25 (PCS)	20	Camera Module	23.9	23.90	0.09	0	Ant. 2	07426	QPSK	1	50	0 mm	back	1:1	1.120	1.000	N/A	1.120	A49
2560.00	21350	High	LTE Band 7	20	Camera Module	22.0	22.00	-0.02	0	Ant. 1	07426	QPSK	1	50	0 mm	back	1:1	0.520	1.000	N/A	0.520	A50
2506.00	39750	Low	LTE Band 41	20	Camera Module	24.2	24.10	-0.04	0	Ant. 1	07426	QPSK	1	0	0 mm	back	1:1.59	0.816	1.023	1.010	0.843	A51
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																	10g Hotspot Mode 0mm 4.0 W/kg (mW/g) averaged over 10 grams					

Note: SAR highlighted in orange above is the highest SAR per exposure condition and equipment class to be listed on the grants.
Note: Please see Section 6.8 for details on device positioning for back side with the camera module accessory.
Note: This device supports both LTE Band 5 (Cell) and LTE Band 26 (Cell). Since the supported frequency span for LTE Band 5 (Cell) falls completely within the supported frequency span for LTE Band 26 (Cell), both LTE bands have the same target power, and both LTE bands share the same transmission path, SAR was only assessed for LTE Band 26 (Cell).
Note: This device supports both LTE Band 2 (PCS) and LTE Band 25 (PCS). Since the supported frequency span for LTE Band 2 (PCS) falls completely within the supported frequency span for LTE Band 25 (PCS), both LTE bands have the same target power, and both LTE bands share the same transmission path, SAR was only assessed for LTE Band 25 (PCS).

11.6 SAR Test Notes

General Notes:

1. The test data reported are the worst-case SAR values according to test procedures specified in IEEE 1528-2013, and FCC KDB Publication 447498 D01v06.
2. Batteries are fully charged at the beginning of the SAR measurements.
3. Liquid tissue depth was at least 15.0 cm for all frequencies.
4. The manufacturer has confirmed that the device(s) tested have the same physical, mechanical and thermal characteristics and are within operational tolerances expected for production units.
5. SAR results were scaled to the maximum allowed power to demonstrate compliance per FCC KDB Publication 447498 D01v06.
6. Device was tested using a fixed spacing for body-worn accessory testing. A separation distance of 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.

7. Per FCC KDB Publication 648474 D04v01r03, body-worn SAR for the overall worst case scenario was evaluated with a headset connected to the device. Since the standalone reported body-worn SAR was > 1.2 W/kg, additional body-worn SAR evaluation using a headset cable was required.
8. Per FCC KDB 865664 D01v01r04, variability SAR tests were performed when the measured SAR results for a frequency band were greater than or equal to 0.8 W/kg. 10g measurement analysis applies a factor of 2.5 to the procedures outlined above. Repeated SAR measurements are highlighted in the tables above for clarity. Please see Section 13 for variability analysis.
9. During SAR Testing for the Wireless Router conditions per FCC KDB Publication 941225 D06v02r01, the actual Portable Hotspot operation (with actual simultaneous transmission of a transmitter with WIFI) was not activated (See Section 6.7 for more details).
10. Due to the location of the camera module accessory, SAR was additionally evaluated for the antennas located at the bottom of the device for all exposure conditions.
11. Per FCC guidance, the back side with the camera module accessory was additionally evaluated for 10g SAR for each band and mode at 0mm.

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. 10g measurement analysis applies a factor of 2.5 to the procedures outlined above.
4. GPRS was additionally evaluated for head and body-worn exposure conditions 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. 10g measurement analysis applies a factor of 2.5 to the procedures outlined above.

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

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).
4. Per FCC KDB Publication 447498 D01v06, when the reported (scaled) for LTE Band 41 SAR measured at the highest output power channel in a given a test configuration was > 0.6 W/kg, testing at the other channels was required for such test configurations.
5. TDD LTE was tested using UL-DL configuration 0 with 6 UL subframes and 2 S subframes using normal cyclic prefix only and special subframe configuration 6. Due to equipment setup issues with extended cyclic prefix as a result of test samples configured for normal cyclic prefix, SAR tests were performed at maximum output power and worst-case transmission duty factor in normal cyclic prefix. Results were then scaled to the duty factor required for extended cyclic prefix listed in 3GPP TS 36.211 Section 4. The cyclic prefix scaling factor for LTE Band 41 was calculated by dividing the extended cyclic prefix duty factor by the normal cyclic prefix duty factor. Per 3GPP 36.211 Section 4, the duty factor for special subframe configuration 6 using normal cyclic prefix is 0.629. The duty factor for special subframe configuration 6 using extended cyclic prefix is 0.633.
6. Per KDB Publication 941225 D05Av01r02, SAR for LTE CA operations was not needed since the maximum average output power in LTE CA mode was not >0.25 dB higher than the maximum output power when downlink carrier aggregation was inactive.

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 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 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.

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.

BT/WLAN SAR testing was not required for 10g Hotspot Mode 0mm SAR exposure conditions per FCC Guidance. Therefore, no further analysis was required to determine that possible simultaneous scenarios would not exceed the SAR limit.

When standalone SAR is not required to be measured, per FCC KDB 447498 D01v06 4.3.2 b), the following equation must be used to estimate the standalone 1g SAR for simultaneous transmission assessment involving that transmitter.

$$\text{Estimated SAR} = \frac{\sqrt{f(GHz)}}{7.5} * \frac{(\text{Max Power of channel, mW})}{\text{Min. Separation Distance, mm}}$$

Table 12-1
Estimated SAR

Mode	Frequency	Maximum Allowed Power	Separation Distance (Body)	Estimated SAR (Body)
	[MHz]	[dBm]	[mm]	[W/kg]
Bluetooth	2480	9.00	10	0.168

Note: Held-to ear configurations are not applicable to Bluetooth operations and therefore were not considered for simultaneous transmission. Per KDB Publication 447498 D01v06, the maximum power of the channel was rounded to the nearest mW before calculation.

12.3 Head SAR Simultaneous Transmission Analysis

Table 12-2
Simultaneous Transmission Scenario with 2.4 GHz WLAN (Held to Ear)

Note: When possible, the highest reported SAR for each transmission modes for all test positions antennas and with and without the accessory were considered collectively to evaluate the worst case simultaneous transmission exclusion scenarios. Additional simultaneous transmission exclusion analysis at specific test positions was performed for some bands, see Table 12-3.

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

(*) For test positions that were not required to be evaluated for WLAN SAR per FCC KDB Publication 248227, the worst case WLAN head SAR results was used for simultaneous transmission analysis.

Table 12-4
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	CDMA/EVDO BC10 (§90S)	0.355	1.166	1.521
	CDMA/EVDO BC0 (§22H)	0.436	1.166	See Table 12-5
	GSM/GPRS 850	0.968	1.166	See Table 12-5
	UMTS 850	0.394	1.166	**1.560**
	UMTS 1750	0.393	1.166	1.559
	PCS CDMA/EVDO	0.907	1.166	See Table 12-5
	GSM/GPRS 1900	0.548	1.166	See Table 12-5
	UMTS 1900	0.742	1.166	See Table 12-5
	LTE Band 12	0.196	1.166	1.362
	LTE Band 26 (Cell)	0.114	1.166	1.280
	LTE Band 4 (AWS)	0.325	1.166	1.491
	LTE Band 25 (PCS)	0.715	1.166	See Table 12-5
	LTE Band 7	0.331	1.166	1.497
	LTE Band 41	0.154	1.166	1.320

Note: When possible, the highest reported SAR for each transmission modes for all test positions antennas and with and without the accessory were considered collectively to evaluate the worst case simultaneous transmission exclusion scenarios. Additional simultaneous transmission exclusion analysis at specific test positions was performed for some bands, see Table 12-5.
Note: SAR highlighted in orange above is the highest simultaneous transmission SAR to be listed on the grants.

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

Simult Tx	Configuration	CDMA BC0 (§22H) SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.331	1.055	**1.386**
	Right Tilt	0.166	1.166	1.332
	Left Cheek	0.436	0.510	0.946
	Left Tilt	0.166	0.572	0.738

Simult Tx	Configuration	EVDO BC0 (§22H) SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.321	1.055	**1.376**
	Right Tilt	0.156	1.166	1.322
	Left Cheek	0.416	0.510	0.926
	Left Tilt	0.197	0.572	0.769

Simult Tx	Configuration	GSM 850 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.385	1.055	**1.440**
	Right Tilt	0.175	1.166	1.341
	Left Cheek	0.525	0.510	1.035
	Left Tilt	0.227	0.572	0.799

Simult Tx	Configuration	GPRS 850 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR
Head SAR	Right Cheek	0.576	1.055	See Note 1	0.03
	Right Tilt	0.252	1.166	1.418	N/A
	Left Cheek	0.968	0.510	**1.478**	N/A
	Left Tilt	0.360	0.572	0.932	N/A

Simult Tx	Configuration	PCS CDMA SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR
Head SAR	Right Cheek	0.907	1.055	See Note 1	0.03
	Right Tilt	0.293	1.166	**1.459**	N/A
	Left Cheek	0.444	0.510	0.954	N/A
	Left Tilt	0.300	0.572	0.872	N/A

Simult Tx	Configuration	PCS EVDO SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR
Head SAR	Right Cheek	0.848	1.055	See Note 1	0.03
	Right Tilt	0.260	1.166	**1.426**	N/A
	Left Cheek	0.433	0.510	0.943	N/A
	Left Tilt	0.280	0.572	0.852	N/A

Simult Tx	Configuration	GSM 1900 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.392	1.055	**1.447**
	Right Tilt	0.146	1.166	1.312
	Left Cheek	0.173	0.510	0.683
	Left Tilt	0.121	0.572	0.693

Table 12-7
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	CDMA BC10 (§90S)	0.529	0.049	0.578
	CDMA BC0 (§22H)	0.606	0.049	0.655
	GSM/GPRS 850	1.247	0.049	**1.296**
	UMTS 850	0.669	0.049	0.718
	UMTS 1750	0.751	0.049	0.800
	PCS CDMA	1.160	0.049	1.209
	GSM/GPRS 1900	0.837	0.049	0.886
	UMTS 1900	1.123	0.049	1.172
	LTE Band 12	0.441	0.049	0.490
	LTE Band 26 (Cell)	0.175	0.049	0.224
	LTE Band 4 (AWS)	0.803	0.049	0.852
	LTE Band 25 (PCS)	1.110	0.049	1.159
	LTE Band 7	0.751	0.049	0.800
	LTE Band 41	0.294	0.049	0.343

Note: The highest reported SAR for each transmission modes for all test positions, antennas and with and without the accessory were considered collectively to evaluate the worst case simultaneous transmission exclusion scenarios.

Table 12-8
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	CDMA BC10 (§90S)	0.529	0.168	0.697
	CDMA BC0 (§22H)	0.606	0.168	0.774
	GSM/GPRS 850	1.247	0.168	**1.415**
	UMTS 850	0.669	0.168	0.837
	UMTS 1750	0.751	0.168	0.919
	PCS CDMA	1.160	0.168	1.328
	GSM/GPRS 1900	0.837	0.168	1.005
	UMTS 1900	1.123	0.168	1.291
	LTE Band 12	0.441	0.168	0.609
	LTE Band 26 (Cell)	0.175	0.168	0.343
	LTE Band 4 (AWS)	0.803	0.168	0.971
	LTE Band 25 (PCS)	1.110	0.168	1.278
	LTE Band 7	0.751	0.168	0.919
	LTE Band 41	0.294	0.168	0.462

Note: The highest reported SAR for each transmission modes for all test positions, antennas and with and without the accessory were considered collectively to evaluate the worst case simultaneous transmission exclusion scenarios.
Note: Bluetooth SAR was not required to be measured per FCC KDB 447498. Estimated SAR results were used in the above table to determine simultaneous transmission SAR test exclusion.

12.5 Hotspot SAR Simultaneous Transmission Analysis

Table 12-9
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	EVDO BC10 (§90S)	0.521	0.091	0.612
	EVDO BC0 (§22H)	0.606	0.091	0.697
	GPRS 850	1.247	0.091	**1.338**
	UMTS 850	0.669	0.091	0.760
	UMTS 1750	0.751	0.091	0.842
	PCS EVDO	0.947	0.091	1.038
	GPRS 1900	0.837	0.091	0.928
	UMTS 1900	1.123	0.091	1.214
	LTE Band 12	0.441	0.091	0.532
	LTE Band 26 (Cell)	0.175	0.091	0.266
	LTE Band 4 (AWS)	0.803	0.091	0.894
	LTE Band 25 (PCS)	1.110	0.091	1.201
	LTE Band 7	0.751	0.091	0.842
	LTE Band 41	0.294	0.091	0.385

Note: The highest reported SAR for each transmission modes for all test positions, antennas and with and without the accessory were considered collectively to evaluate the worst case simultaneous transmission exclusion scenarios.

Table 12-10
Simultaneous Transmission Scenario with 5 GHz WLAN (Hotspot at 1.0 cm)

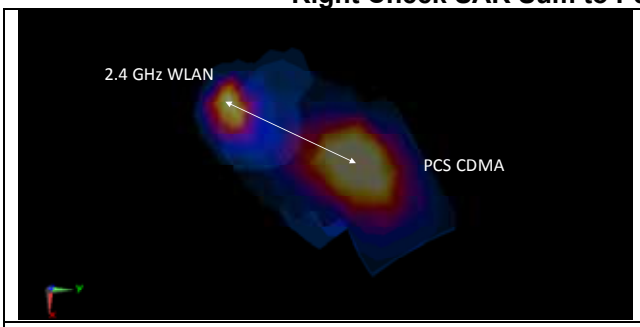
Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Hotspot SAR	EVDO BC10 (§90S)	0.521	0.114	0.635
	EVDO BC0 (§22H)	0.606	0.114	0.720
	GPRS 850	1.247	0.114	**1.361**
	UMTS 850	0.669	0.114	0.783
	UMTS 1750	0.751	0.114	0.865
	PCS EVDO	0.947	0.114	1.061
	GPRS 1900	0.837	0.114	0.951
	UMTS 1900	1.123	0.114	1.237
	LTE Band 12	0.441	0.114	0.555
	LTE Band 26 (Cell)	0.175	0.114	0.289
	LTE Band 4 (AWS)	0.803	0.114	0.917
	LTE Band 25 (PCS)	1.110	0.114	1.224
	LTE Band 7	0.751	0.114	0.865
	LTE Band 41	0.294	0.114	0.408

Note: The highest reported SAR for each transmission modes for all test positions, antennas and with and without the accessory were considered collectively to evaluate the worst case simultaneous transmission exclusion scenarios.

12.6 SPLSR Evaluation and Analysis

Per FCC KDB Publication 447498 D01v06, when the sum of the standalone transmitters is more than 1.6 W/kg for 1g, the SAR sum to peak locations can be analyzed to determine SAR distribution overlaps. When the SAR peak to location ratio (shown below) for each pair of antennas is

Table 12-13
Right Cheek SAR Sum to Peak Location Separation Ratio Plots



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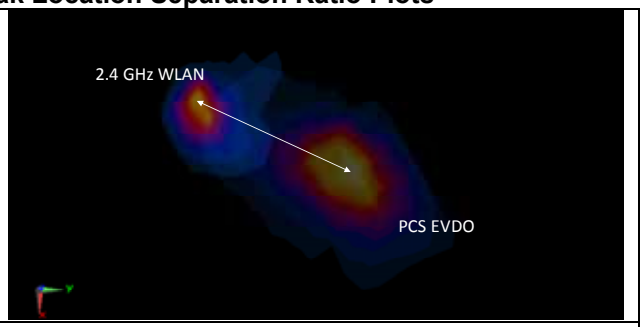

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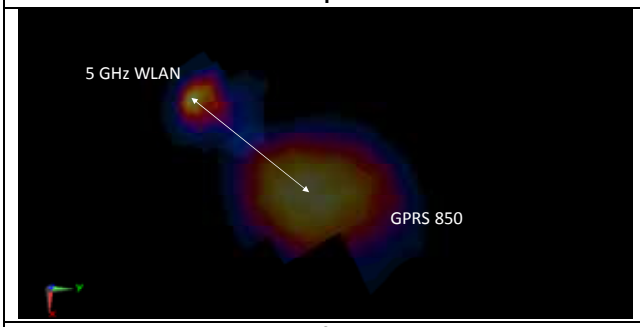

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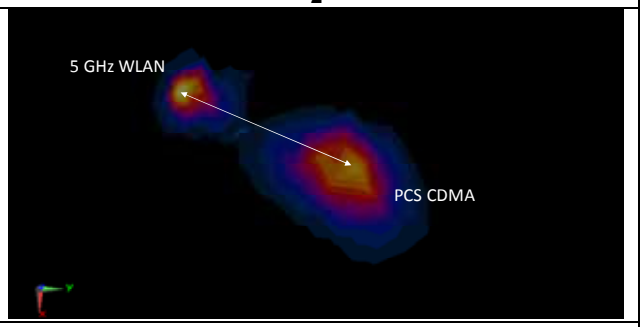
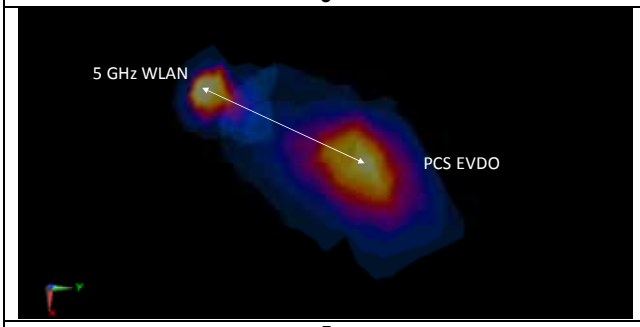


4



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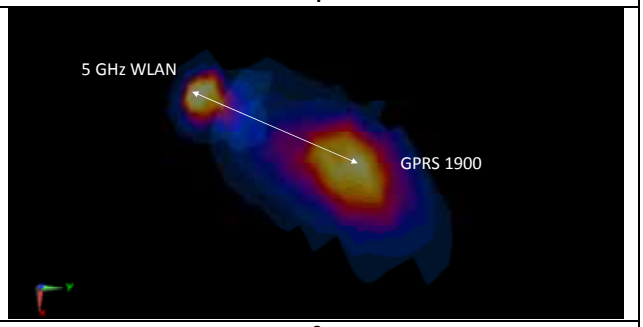

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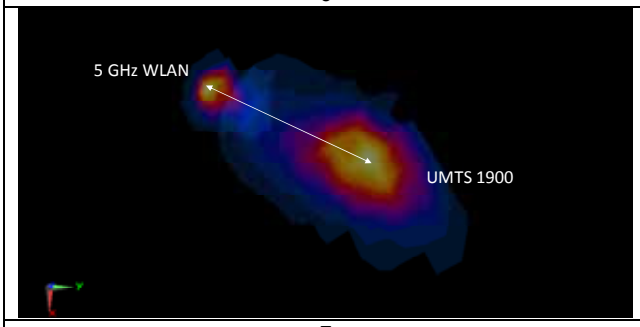
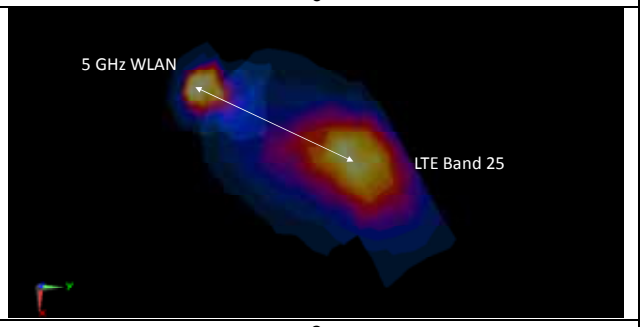


7



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12.7 Simultaneous Transmission Conclusion

The above numerical summed SAR results and SPLSR analysis are sufficient to determine that simultaneous transmission cases will not exceed the SAR limit and therefore no measured volumetric simultaneous SAR summation is required per FCC KDB Publication 447498 D01v06 and IEEE 1528-2013 Section 6.3.4.1.2.

13 SAR MEASUREMENT VARIABILITY

13.1 Measurement Variability

Per FCC KDB Publication 865664 D01v01r04, SAR measurement variability was assessed for each frequency band, which was determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media were required for SAR measurements in a frequency band, the variability measurement procedures were applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium. These additional measurements were repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device was returned to ambient conditions (normal room temperature) with the battery fully charged before it was re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

SAR Measurement Variability was assessed using the following procedures for each frequency band:

1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.
2) A second repeated measurement was performed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 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	# of Time Slots	Antenna Config.	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)	
835	836.60	190	GSM 850	GPRS	2	Ant. 1	back	10 mm	1.200	1.230	1.03	N/A	N/A	N/A	N/A
1900	1880.00	600	PCS CDMA	TDSO / SO32	N/A	Ant. 2	back	10 mm	1.160	1.010	1.15	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

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	8594A	(9kHz-2.9GHz) Spectrum Analyzer	N/A	N/A	N/A	3051A00187
Agilent	8648D	(9kHz-4GHz) Signal Generator	3/15/2015	Annual	3/15/2016	3629U00687
SPEAG	D750V3	750 MHz Dipole	3/11/2015	Annual	3/11/2016	1054
SPEAG	D835V2	835 MHz SAR Dipole	7/23/2015	Annual	7/23/2016	4d133
SPEAG	D835V2	835 MHz SAR Dipole	4/13/2015	Annual	4/13/2016	4d119
SPEAG	D1750V2	1750 MHz SAR Dipole	4/15/2015	Annual	4/15/2016	1051
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	D2600V2	2600 MHz SAR Dipole	4/14/2015	Annual	4/14/2016	1004
SPEAG	D5GHzV2	5 GHz SAR Dipole	9/16/2015	Annual	9/16/2016	1191
SPEAG	D5GHzV2	5 GHz SAR Dipole	2/17/2015	Annual	2/17/2016	1120
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	3/19/2015	Annual	3/19/2016	3319
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	EX3DV4	SAR Probe	7/21/2015	Annual	7/21/2016	7308
SPEAG	EX3DV4	SAR Probe	4/23/2015	Annual	4/23/2016	7357
SPEAG	ES3DV3	SAR Probe	6/22/2015	Annual	6/22/2016	3351
SPEAG	ES3DV3	SAR Probe	3/19/2015	Annual	3/19/2016	3209
SPEAG	DAE4	Dasy Data Acquisition Electronics	2/18/2015	Annual	2/18/2016	665
SPEAG	DAE4	Dasy Data Acquisition Electronics	6/17/2015	Annual	6/17/2016	859
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	9/16/2015	Annual	9/16/2016	1323
SPEAG	DAE4	Dasy Data Acquisition Electronics	3/13/2015	Annual	3/13/2016	1368
SPEAG	DAE4	Dasy Data Acquisition Electronics	11/11/2015	Annual	11/11/2016	1415
SPEAG	DAE4	Dasy Data Acquisition Electronics	4/20/2015	Annual	4/20/2016	1407
Rohde & Schwarz	CMU200	Base Station Simulator	3/23/2015	Annual	3/23/2016	836371/0079
SPEAG	DAK-3.5	Dielectric Assessment Kit	5/12/2015	Annual	5/12/2016	1070
Mitutoyo	CD-6"CSX	Digital Caliper	5/8/2014	Biennial	5/8/2016	13264162
Control Company	4040	Digital Thermometer	3/15/2015	Biennial	3/15/2017	150194929
Agilent	E4438C	ESG Vector Signal Generator	3/13/2015	Annual	3/13/2016	MY42082385
Agilent	E4438C	ESG Vector Signal Generator	4/1/2014	Biennial	4/1/2016	MY47270002
Control Company	4353	Long Stem Thermometer	1/22/2015	Biennial	1/22/2017	150053081
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	N5182A	MXG Vector Signal Generator	3/16/2015	Annual	3/16/2016	MY47420651
Agilent	8753ES	Network Analyzer	3/20/2015	Annual	3/20/2016	MY40001472
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
Agilent	8753ES	S-Parameter Network Analyzer	3/12/2015	Annual	3/12/2016	MY40000670
Seekonk	NC-100	Torque Wrench	11/6/2015	Biennial	11/6/2017	N/A
Seekonk	NC-100	Torque Wrench 5/16", 8" lbs	3/18/2014	Biennial	3/18/2016	N/A
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
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433971
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433972
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433974
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433975
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
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

Notes:

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 Industry 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] Industry 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-D06

[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: ZNFLS992; Type: Portable Handset; Serial: 07434

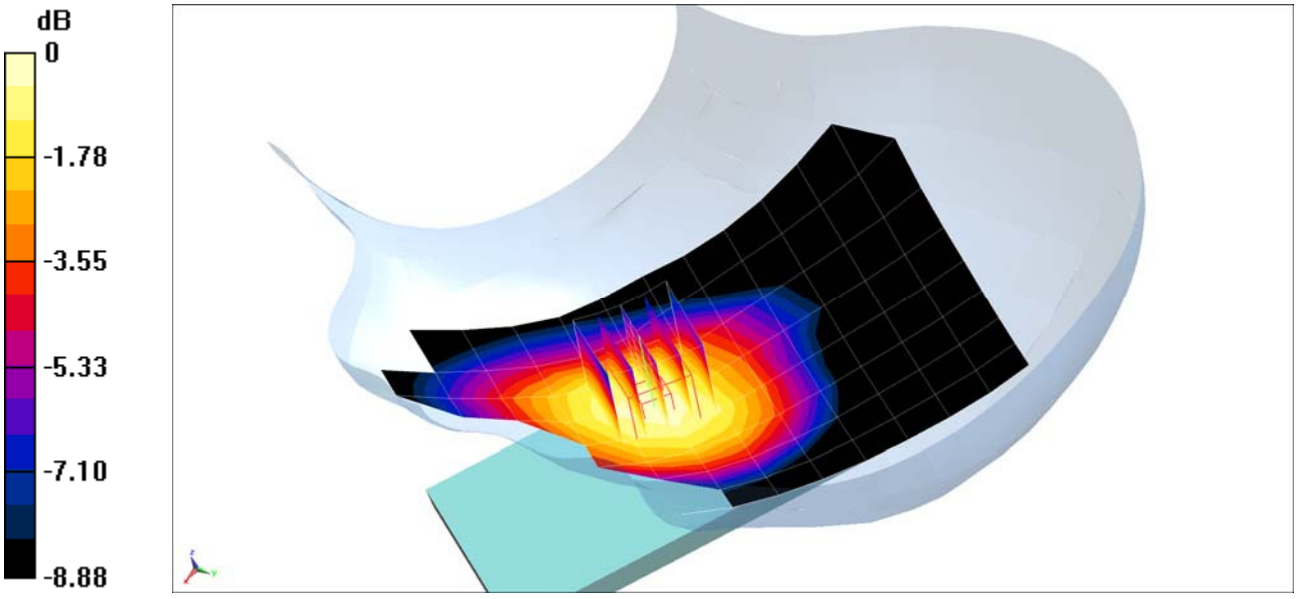
Communication System: UID 0, Cellular CDMA; Frequency: 820.1 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
f = 820.1 MHz; σ = 0.914 S/m; ε_r = 43.354; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 02-01-2016; Ambient Temp: 21.0°C; Tissue Temp: 21.8°C

Probe: ES3DV3 - SN3319; ConvF(6.41, 6.41, 6.41); Calibrated: 3/19/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1368; Calibrated: 3/13/2015
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 Rev. A, Rule Part 90S, Left Head, Cheek, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.274 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.421 W/kg
SAR(1 g) = 0.341 W/kg



0 dB = 0.372 W/kg = -4.29 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 07434

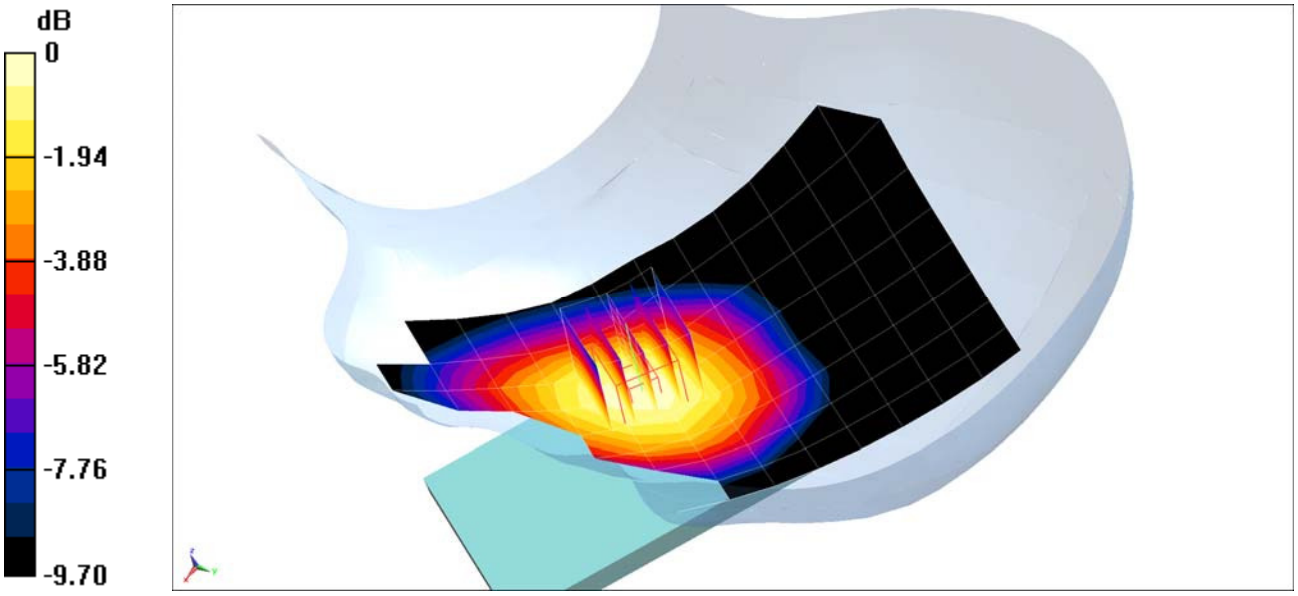
Communication System: UID 0, Cellular CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
$f = 836.52$ MHz; $\sigma = 0.887$ S/m; $\varepsilon_r = 40.665$; $\rho = 1000$ kg/m^3
Phantom section: Left Section

Test Date: 01-28-2016; Ambient Temp: 21.6°C; Tissue Temp: 22.5°C

Probe: ES3DV3 - SN3319; ConvF(6.41, 6.41, 6.41); Calibrated: 3/19/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1368; Calibrated: 3/13/2015
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, Rule Part 22H, Left Head, Cheek, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.410 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.536 W/kg
SAR(1 g) = 0.421 W/kg



0 dB = 0.462 W/kg = -3.35 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: ZNFLS992; Type: Portable Handset; Serial: 07442

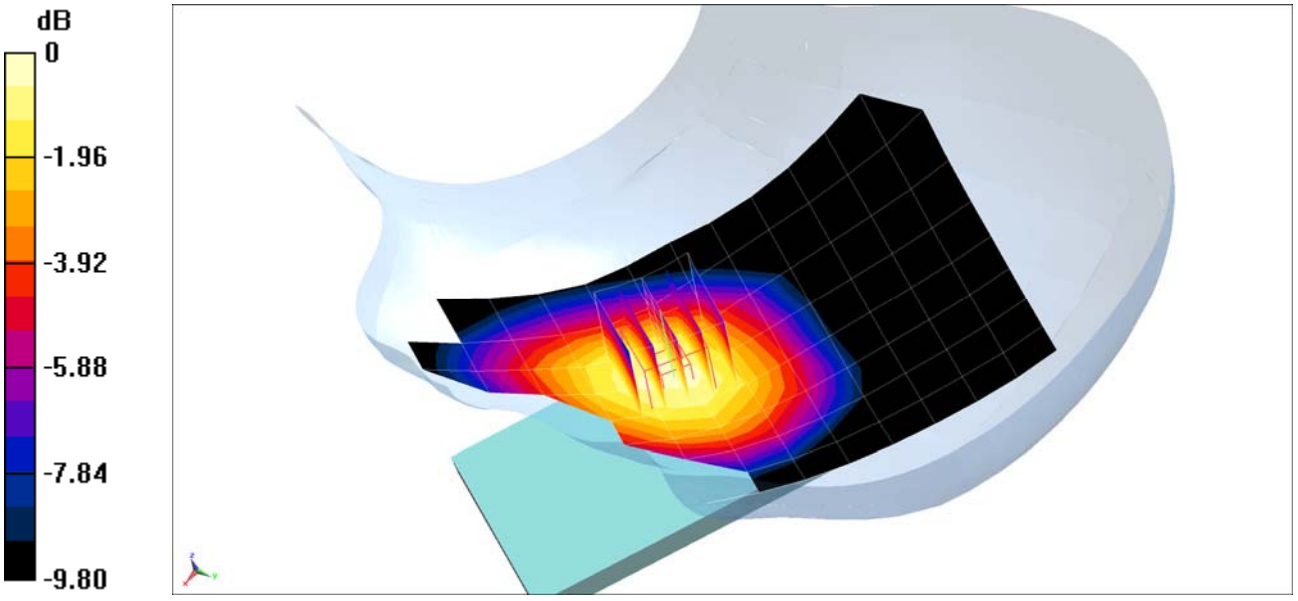
Communication System: UID 0, GSM GPRS; 2 Tx slots; Frequency: 848.8 MHz; Duty Cycle: 1:4.15
Medium: 835 Head Medium parameters used (interpolated):
$f = 848.8$ MHz; $\sigma = 0.899$ S/m; $\varepsilon_r = 40.483$; $\rho = 1000$ kg/m^3
Phantom section: Left Section

Test Date: 01-28-2016; Ambient Temp: 21.6°C; Tissue Temp: 22.5°C

Probe: ES3DV3 - SN3319; ConvF(6.41, 6.41, 6.41); Calibrated: 3/19/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1368; Calibrated: 3/13/2015
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: GPRS 850, Left Head, Cheek, High.ch, 2 Tx slots

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 33.495 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 1.21 W/kg
SAR(1 g) = 0.948 W/kg



0 dB = 0.965 W/kg = -0.15 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 07442

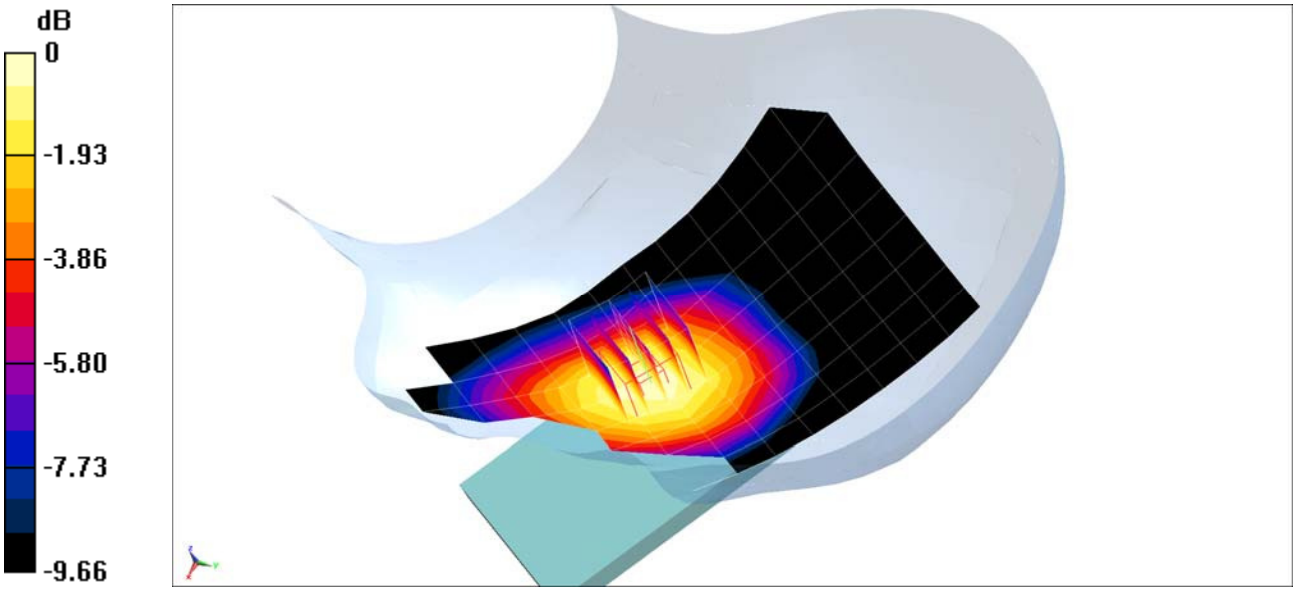
Communication System: UID 0, UMTS; Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.887 S/m; ε_r = 40.663; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 01-28-2016; Ambient Temp: 21.6°C; Tissue Temp: 22.5°C

Probe: ES3DV3 - SN3319; ConvF(6.41, 6.41, 6.41); Calibrated: 3/19/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1368; Calibrated: 3/13/2015
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, Left Head, Cheek, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.249 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 0.477 W/kg
SAR(1 g) = 0.374 W/kg



0 dB = 0.412 W/kg = -3.85 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 07442

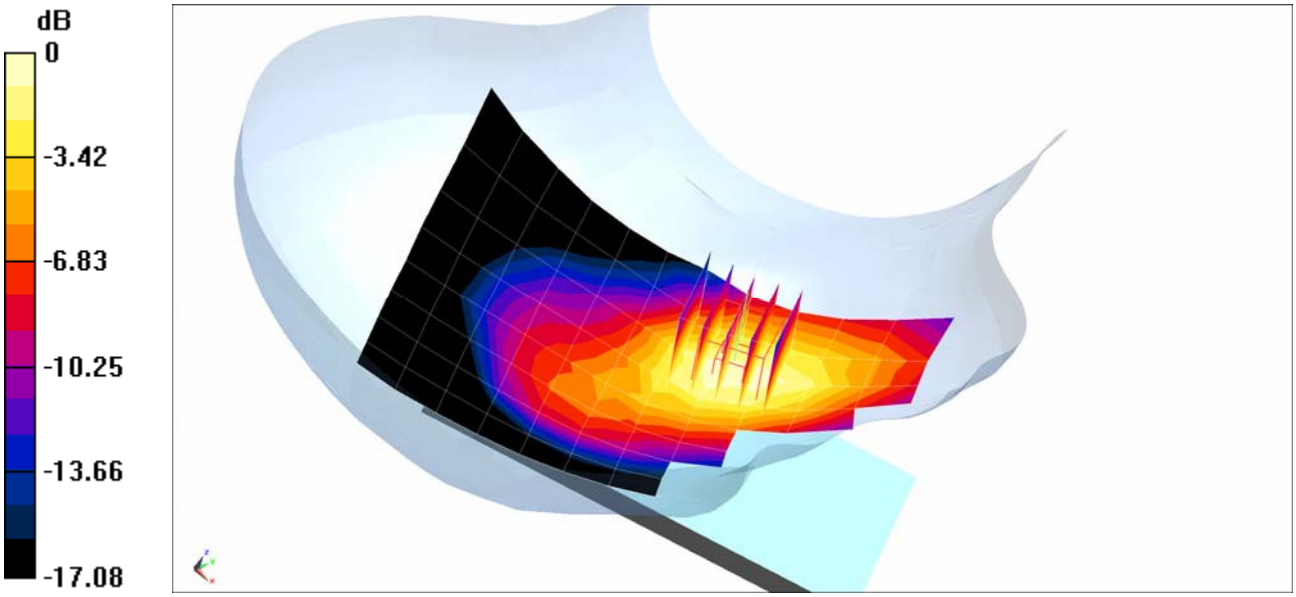
Communication System: UID 0, UMTS; Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium: 1750 Head Medium parameters used (interpolated):
f = 1732.4 MHz; σ = 1.367 S/m; ε_r = 39.006; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 02-09-2016; Ambient Temp: 24.2°C; Tissue Temp: 22.4°C

Probe: ES3DV2 - SN3022; ConvF(5.08, 5.08, 5.08); Calibrated: 8/26/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1323; Calibrated: 9/16/2015
Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1797
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: AWS UMTS, Right Head, Cheek, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.626 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.566 W/kg
SAR(1 g) = 0.393 W/kg



0 dB = 0.444 W/kg = -3.53 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 07434

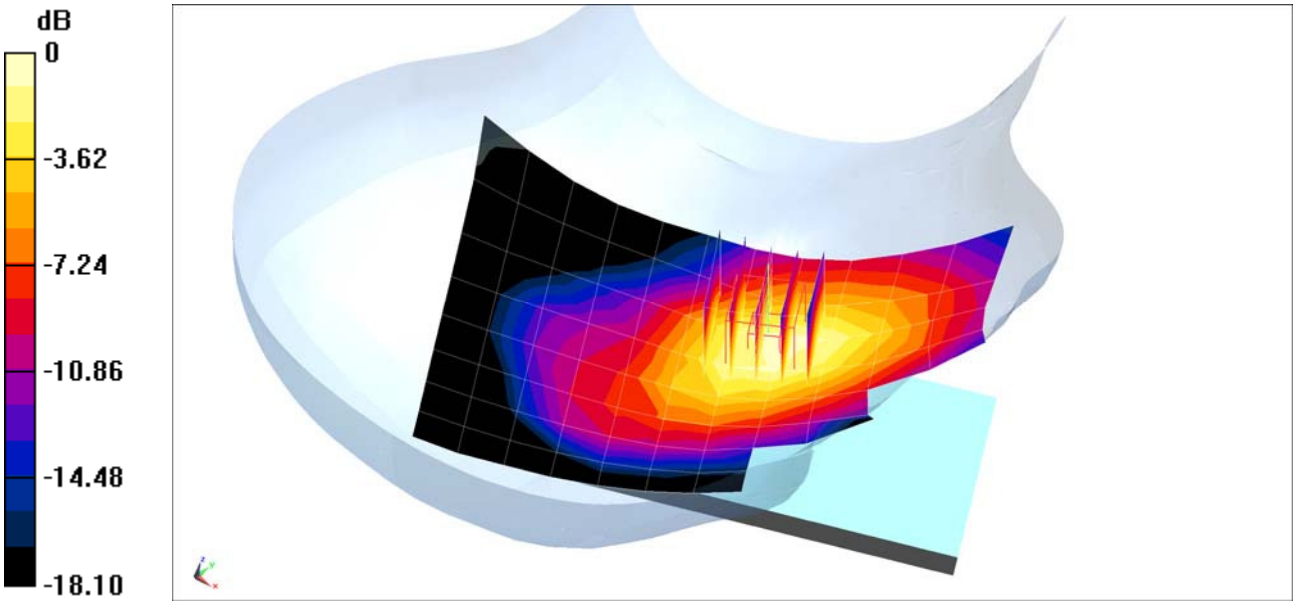
Communication System: UID 0, CDMA; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Head Medium parameters used:
f = 1880 MHz; σ = 1.411 S/m; ε_r = 40.351; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 02-10-2016; Ambient Temp: 23.5°C; Tissue Temp: 22.9°C

Probe: ES3DV3 - SN3333; ConvF(5.03, 5.03, 5.03); 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: PCS CDMA, Right Head, Cheek, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.427 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 1.38 W/kg
SAR(1 g) = 0.896 W/kg



0 dB = 1.03 W/kg = 0.13 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 07442

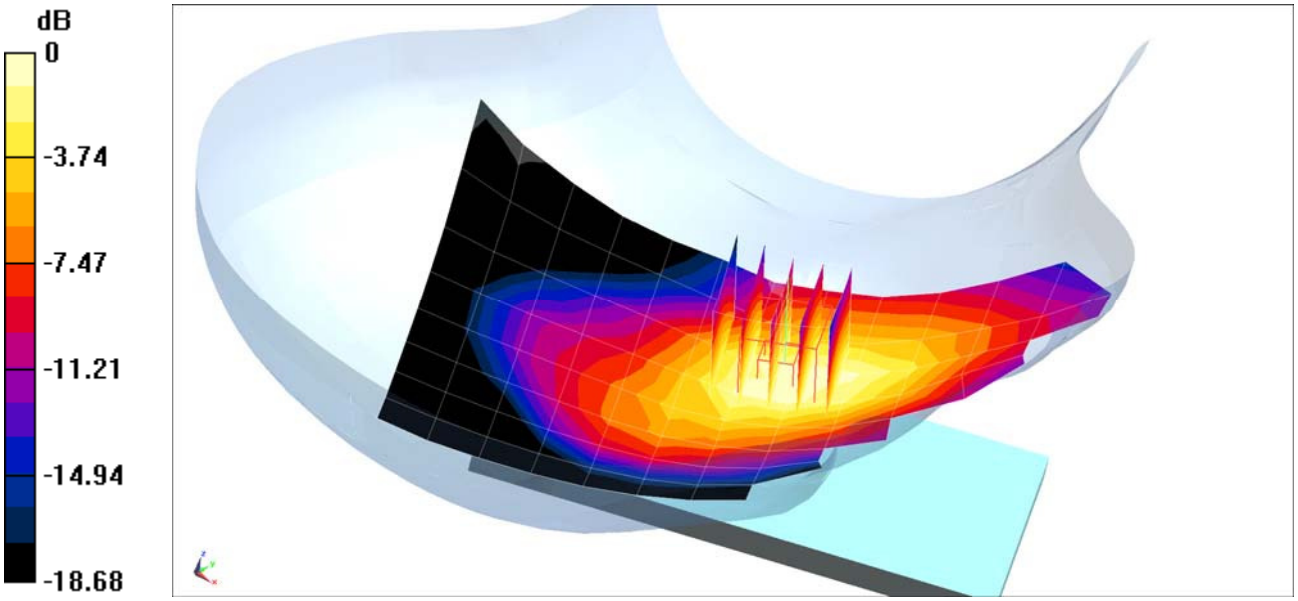
Communication System: UID 0, GSM GPRS; 2 Tx slots; Frequency: 1880 MHz; Duty Cycle: 1:4.15
Medium: 1900 Head Medium parameters used:
f = 1880 MHz; σ = 1.411 S/m; ε_r = 40.351; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 02-10-2016; Ambient Temp: 23.5°C; Tissue Temp: 22.9°C

Probe: ES3DV3 - SN3333; ConvF(5.03, 5.03, 5.03); 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 1900, Right Head, Cheek, Mid.ch, 2 Tx slots

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.398 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 0.802 W/kg
SAR(1 g) = 0.543 W/kg



0 dB = 0.607 W/kg = -2.17 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 07442

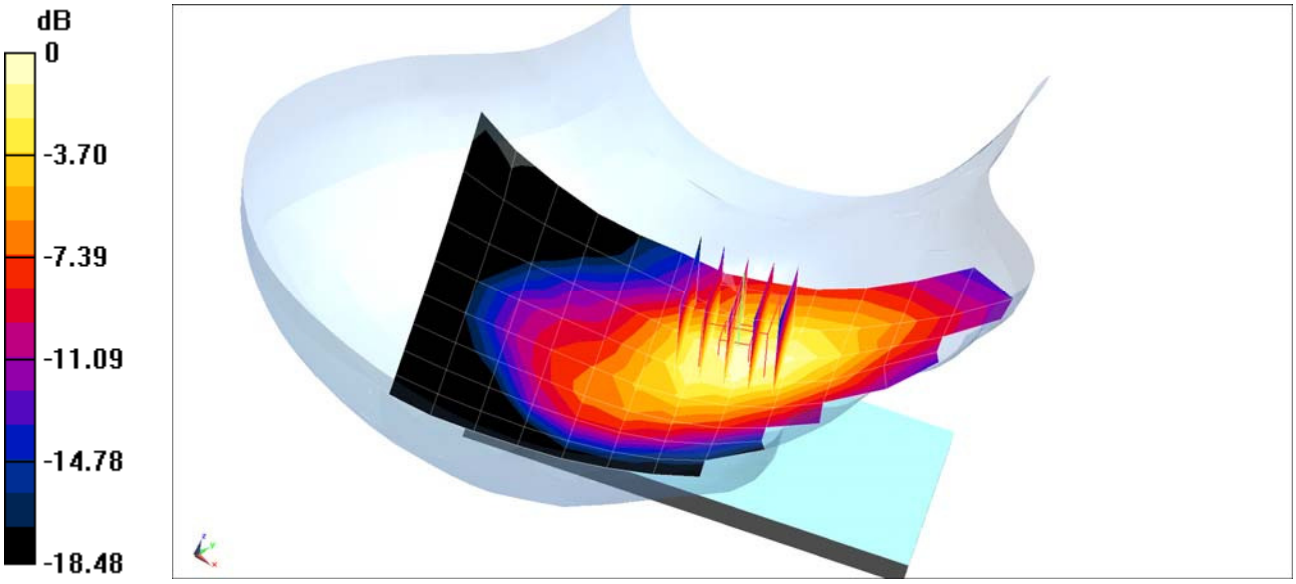
Communication System: UID 0, UMTS; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Head Medium parameters used:
f = 1880 MHz; σ = 1.411 S/m; ε_r = 40.351; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 02-10-2016; Ambient Temp: 23.5°C; Tissue Temp: 22.9°C

Probe: ES3DV3 - SN3333; ConvF(5.03, 5.03, 5.03); 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: UMTS 1900, Right Head, Cheek, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.850 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.10 W/kg
SAR(1 g) = 0.727 W/kg



0 dB = 0.847 W/kg = -0.72 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 07418

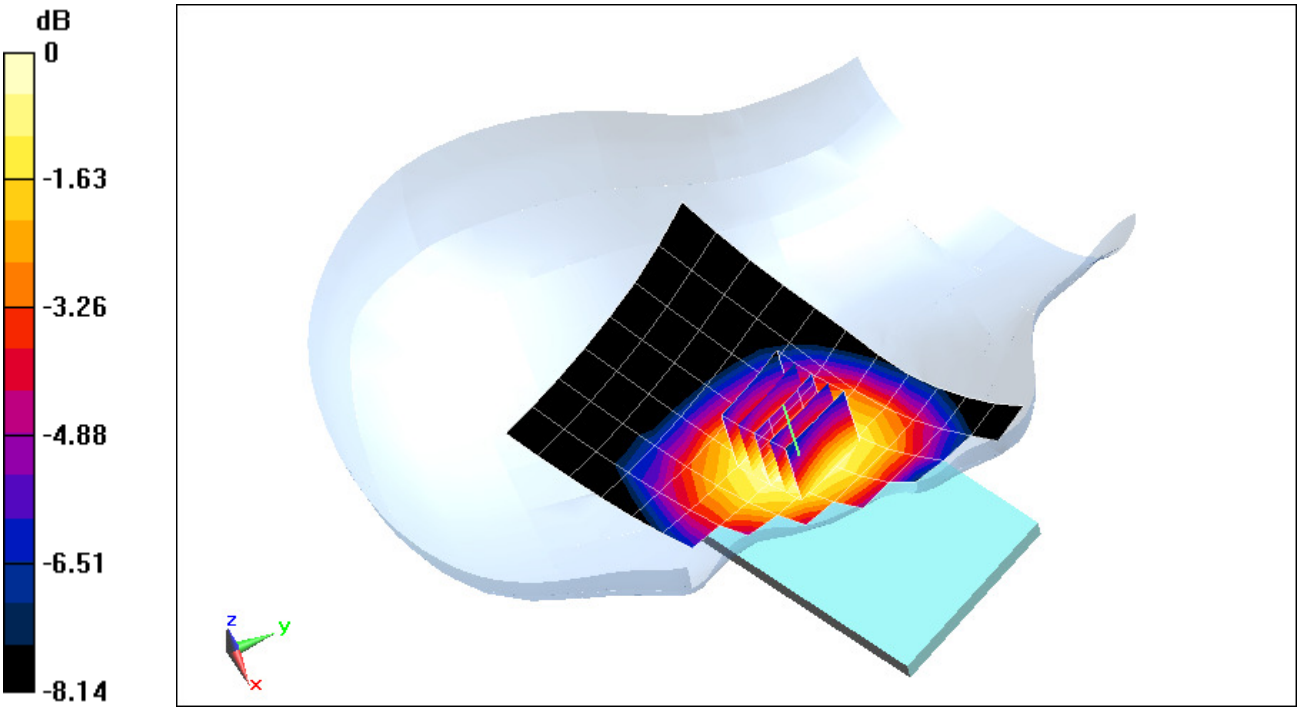
Communication System: UID 0, LTE Band 12; Frequency: 707.5 MHz;Duty Cycle: 1:1
Medium: 750 Head Medium parameters used (interpolated):
f = 707.5 MHz; σ = 0.855 S/m; ε_r = 43.518; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 02-19-2016; Ambient Temp: 20.3°C; Tissue Temp: 21.7°C

Probe: ES3DV3 - SN3263; ConvF(6.27, 6.27, 6.27); 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 12, with Camera Accessory Right Head, Cheek, Mid.ch
10 MHz Bandwidth, QPSK, 1 RB, 25 RB Offset

Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.21 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 0.236 W/kg
SAR(1 g) = 0.196 W/kg



0 dB = 0.214 W/kg = -6.70 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 07418

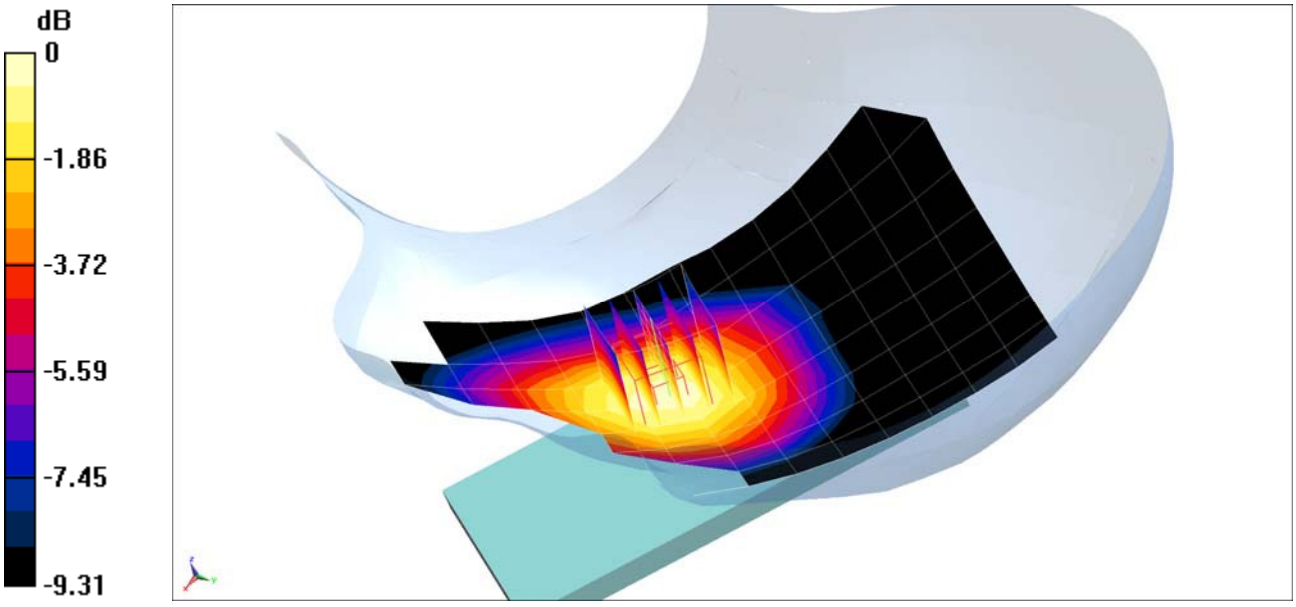
Communication System: UID 0, LTE Band 26; Frequency: 836.5 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
f = 836.5 MHz; σ = 0.886 S/m; ε_r = 40.665; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 01-28-2016; Ambient Temp: 21.6°C; Tissue Temp: 22.5°C

Probe: ES3DV3 - SN3319; ConvF(6.41, 6.41, 6.41); Calibrated: 3/19/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1368; Calibrated: 3/13/2015
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 26 (Cell.), Left Head, Cheek, Mid.ch
15 MHz Bandwidth, QPSK, 1 RB, 36 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.092 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 0.148 W/kg
SAR(1 g) = 0.114 W/kg



0 dB = 0.124 W/kg = -9.07 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 07426

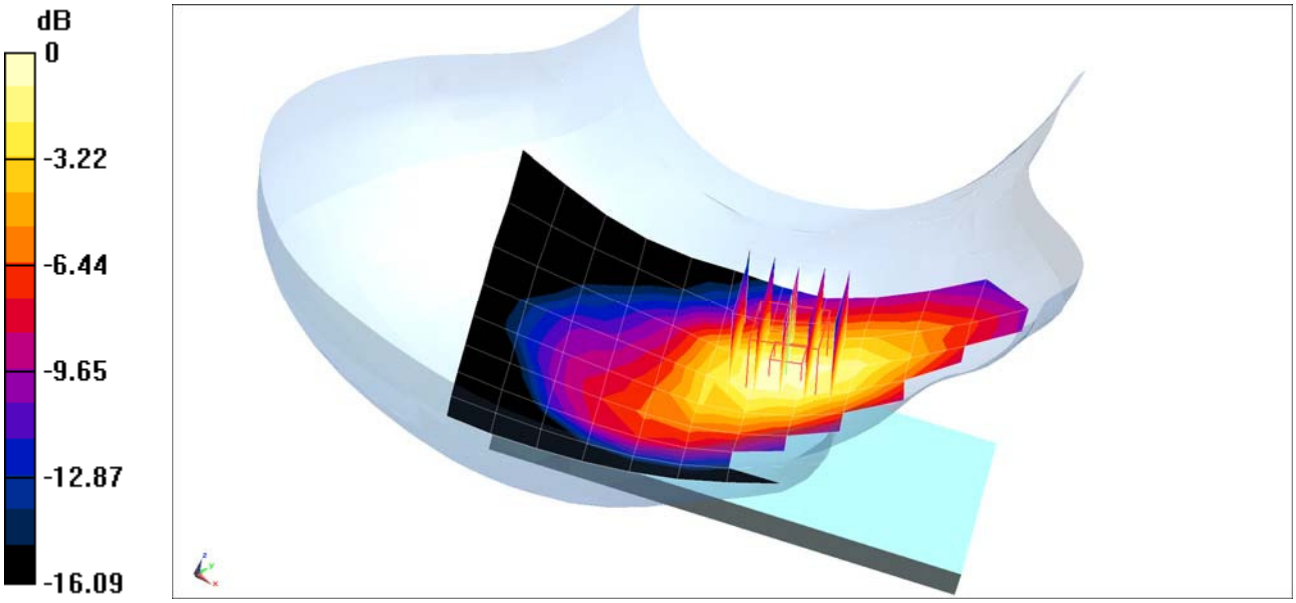
Communication System: UID 0, LTE Band 4 (AWS); Frequency: 1732.5 MHz; Duty Cycle: 1:1
Medium: 1750 Head Medium parameters used (interpolated):
$f = 1732.5$ MHz; $\sigma = 1.315$ S/m; $\varepsilon_r = 39.632$; $\rho = 1000$ kg/m^3
Phantom section: Right Section

Test Date: 02-04-2016; Ambient Temp: 23.5°C; Tissue Temp: 21.7°C

Probe: ES3DV2 - SN3022; ConvF(5.08, 5.08, 5.08); Calibrated: 8/26/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/18/2015
Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1797
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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

Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.977 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.467 W/kg
SAR(1 g) = 0.316 W/kg



0 dB = 0.366 W/kg = -4.37 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 07426

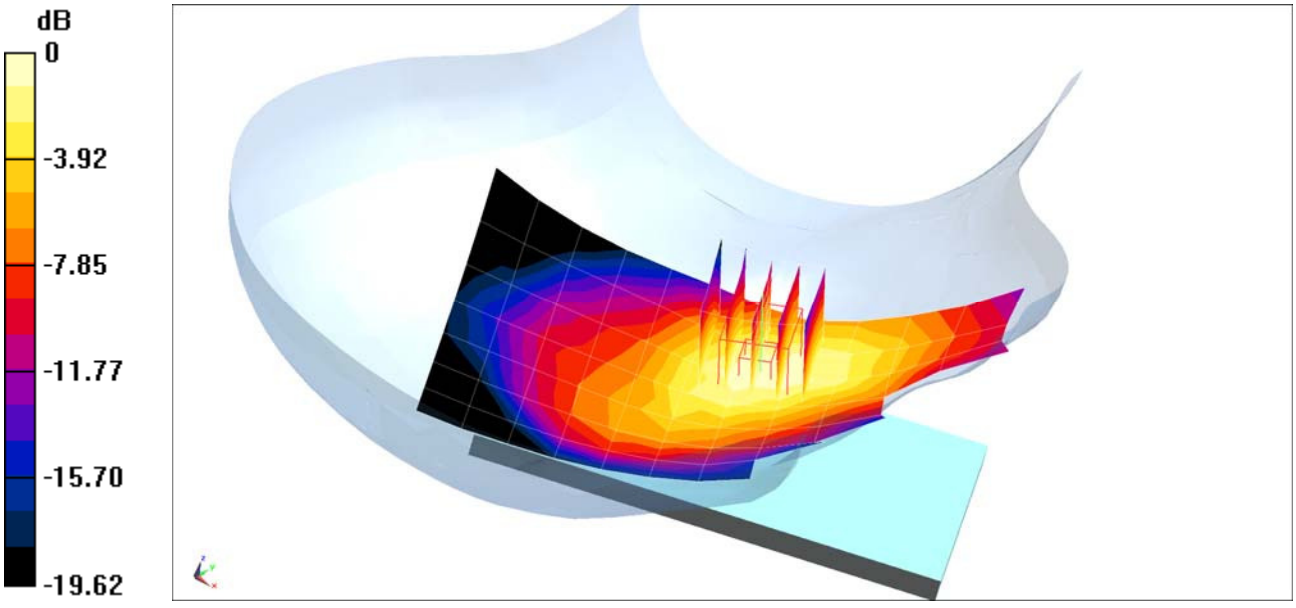
Communication System: UID 0, LTE Band 25 (PCS); Frequency: 1905 MHz; Duty Cycle: 1:1
Medium: 1900 Head Medium parameters used (interpolated):
$f = 1905$ MHz; $\sigma = 1.438$ S/m; $\varepsilon_r = 40.223$; $\rho = 1000$ kg/m^3
Phantom section: Right Section

Test Date: 02-10-2016; Ambient Temp: 23.5°C; Tissue Temp: 22.9°C

Probe: ES3DV3 - SN3333; ConvF(5.03, 5.03, 5.03); 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: LTE Band 25 (PCS), Right Head, Cheek, High.ch
20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset

Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.965 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 1.06 W/kg
SAR(1 g) = 0.715 W/kg



0 dB = 0.827 W/kg = -0.82 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 07418

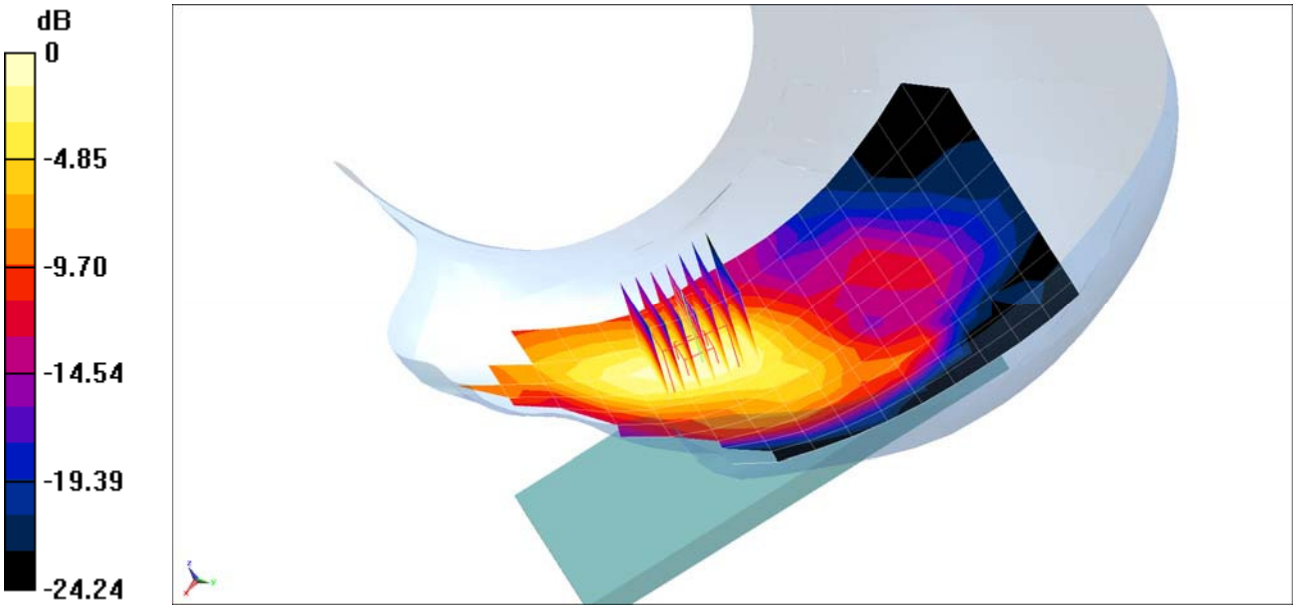
Communication System: UID 0, LTE Band 7; Frequency: 2560 MHz; Duty Cycle: 1:1
Medium: 2400 - 2600 Head Medium parameters used (interpolated):
$f = 2560$ MHz; $\sigma = 2.004$ S/m; $\varepsilon_r = 38.082$; $\rho = 1000$ kg/m^3
Phantom section: Left Section

Test Date: 02-03-2016; Ambient Temp: 24.4°C; Tissue Temp: 23.1°C

Probe: ES3DV3 - SN3263; ConvF(4.25, 4.25, 4.25); 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 7, Left Head, Cheek, High.ch, QPSK
20 MHz Bandwidth, 1 RB, 50 RB Offset

Area Scan (11x18x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.325 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 0.626 W/kg
SAR(1 g) = 0.331 W/kg



0 dB = 0.418 W/kg = -3.79 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 07418

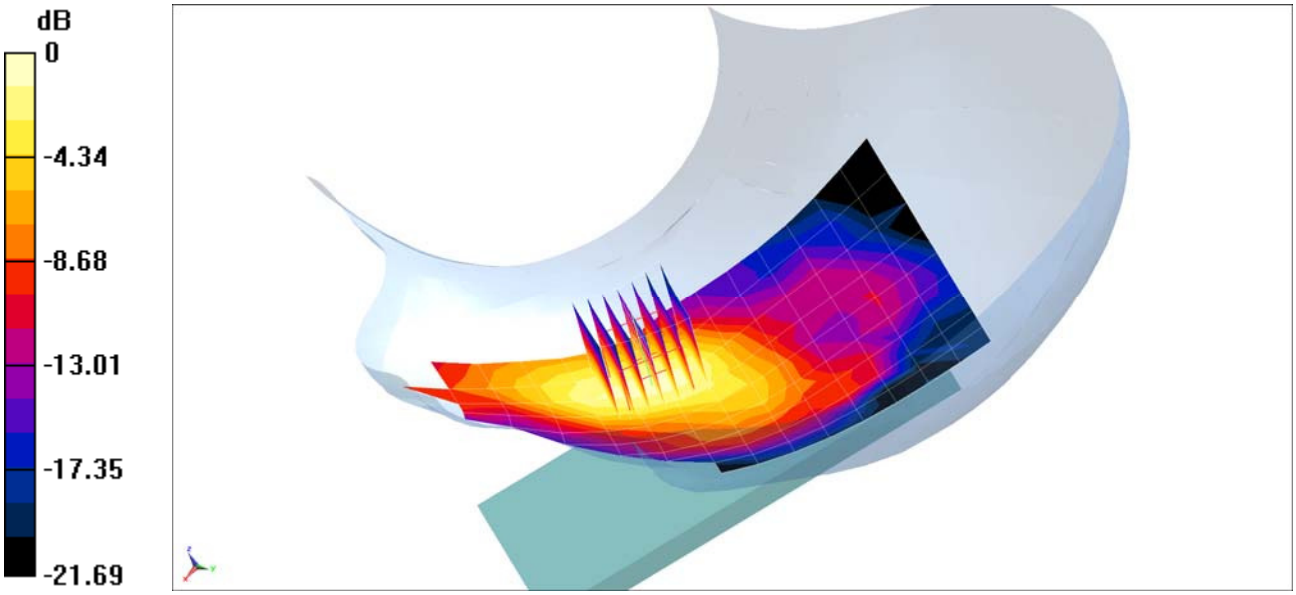
Communication System: UID 0, LTE Band 41; Frequency: 2506 MHz; Duty Cycle: 1:1.59
Medium: 2450 -2600 Head Medium parameters used (interpolated):
$f = 2506$ MHz; $\sigma = 1.94$ S/m; $\varepsilon_r = 38.319$; $\rho = 1000$ kg/m^3
Phantom section: Left Section

Test Date: 02-03-2016; Ambient Temp: 24.4°C; Tissue Temp: 23.1°C

Probe: ES3DV3 - SN3263; ConvF(4.4, 4.4, 4.4); 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 41, Left Head, Cheek, Low.ch
20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

Area Scan (10x17x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.158 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.279 W/kg
SAR(1 g) = 0.149 W/kg



0 dB = 0.186 W/kg = -7.30 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 01864

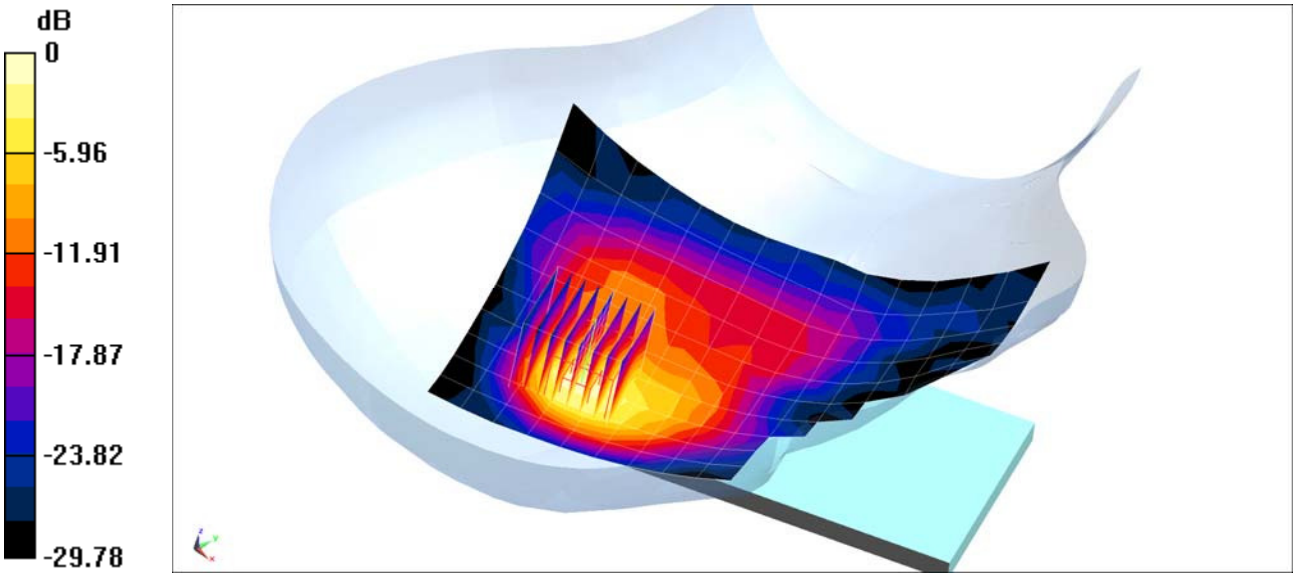
Communication System: UID 0, IEEE 802.11b; Frequency: 2457 MHz; Duty Cycle: 1:1
Medium: 2450 – 2600 Head Medium parameters used (interpolated):
f = 2457 MHz; σ = 1.87 S/m; ε_r = 39.839; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 02-08-2016; Ambient Temp: 19.8°C; Tissue Temp: 22.2°C

Probe: ES3DV3 - SN3263; ConvF(4.4, 4.4, 4.4); 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: IEEE 802.11b, 22 MHz Bandwidth, Right Head, Cheek, Ch 10, 1 Mbps

Area Scan (11x18x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x8x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 18.879 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.61 W/kg
SAR(1 g) = 0.637 W/kg



0 dB = 0.850 W/kg = -0.71 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 01863

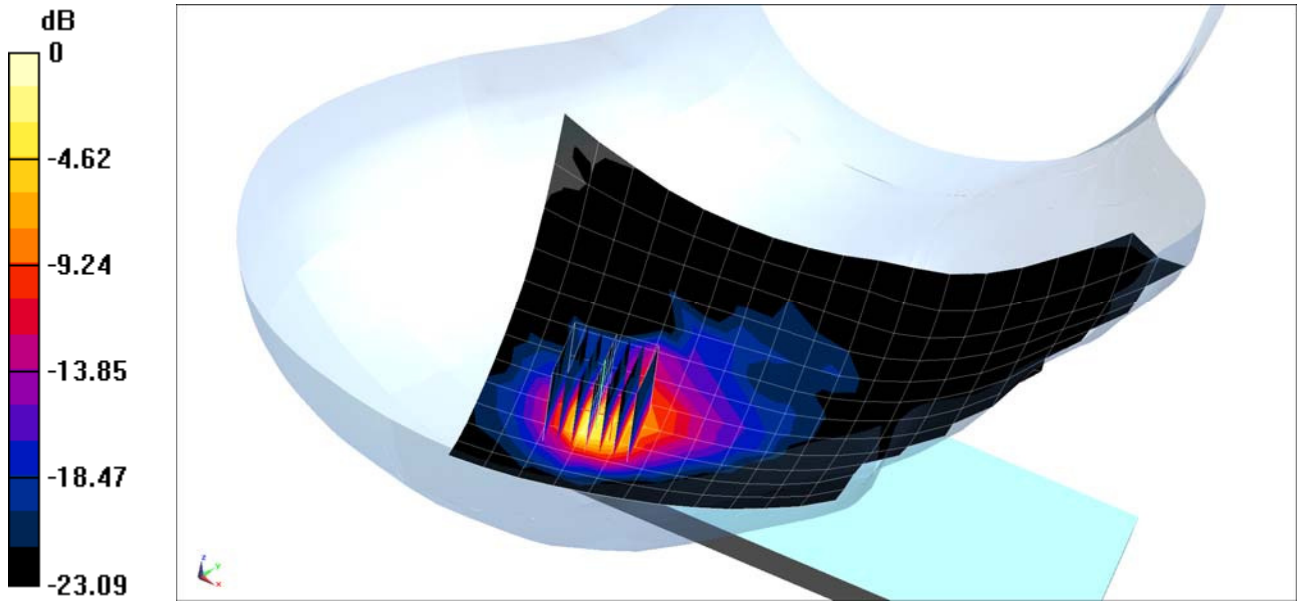
Communication System: UID 0, IEEE 802.11a; Frequency: 5825 MHz; Duty Cycle: 1:1
Medium: 5 GHz Head Medium parameters used:
f = 5825 MHz; σ = 5.219 S/m; ε_r = 36.543; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 02-08-2016; Ambient Temp: 21.8°C; Tissue Temp: 20.1°C

Probe: EX3DV4 - SN7357; ConvF(4.41, 4.41, 4.41); Calibrated: 4/23/2015;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/20/2015
Phantom: SAM v5.0 front; Type: QD000P40CD; Serial: TP-1646
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: IEEE 802.11a, U-NII-3, 20 MHz Bandwidth, Right Head, Tilt, Ch 165, 6 Mbps

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 = 13.782 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 4.12 W/kg
SAR(1 g) = 0.782 W/kg



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

DUT: ZNFLS992; Type: Portable Handset; Serial: 07434

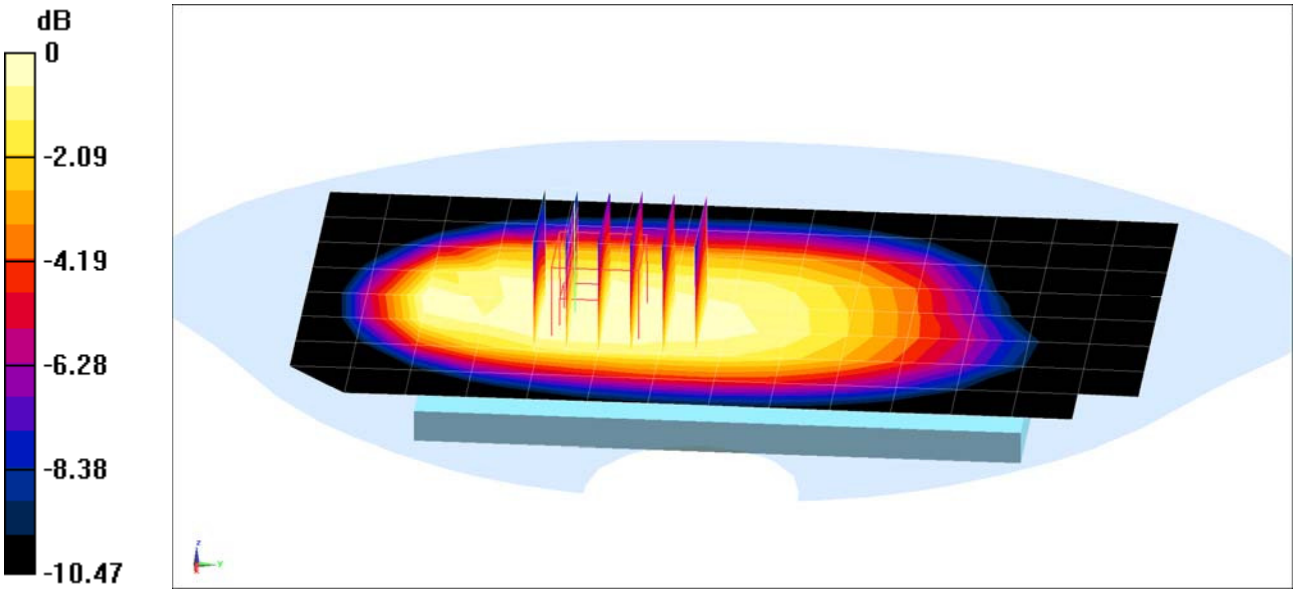
Communication System: UID 0, CDMA; Frequency: 820.1 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 820.1 MHz; σ = 1.001 S/m; ε_r = 53.769; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-09-2016; Ambient Temp: 23.4°C; Tissue Temp: 22.0°C

Probe: ES3DV3 - SN3351; ConvF(6.11, 6.11, 6.11); Calibrated: 6/22/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 8/24/2015
Phantom: SAM V5.0 Right; Type: QD000P40CD; Serial: 1647
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: Cell. CDMA, Rule Part 90S, Body SAR, Back side, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.596 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.646 W/kg
SAR(1 g) = 0.503 W/kg



0 dB = 0.556 W/kg = -2.55 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 07434

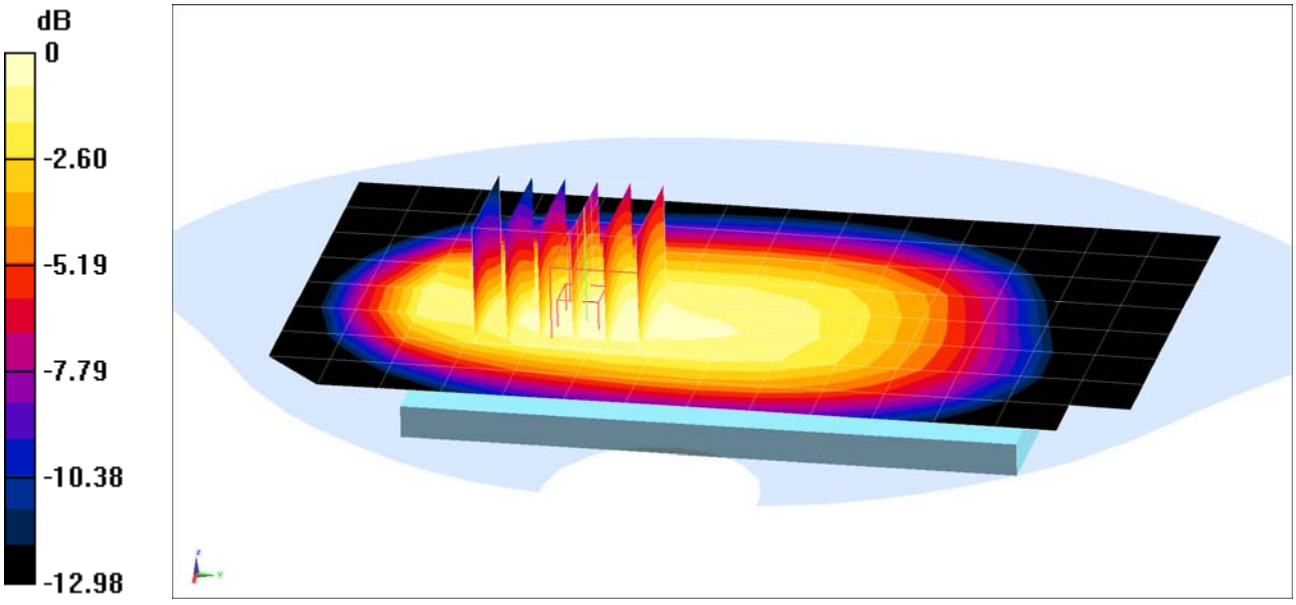
Communication System: UID 0, CDMA; Frequency: 820.1 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
$f = 820.1$ MHz; $\sigma = 1.001$ S/m; $\varepsilon_r = 53.769$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-09-2016; Ambient Temp: 23.4°C; Tissue Temp: 22.0°C

Probe: ES3DV3 - SN3351; ConvF(6.11, 6.11, 6.11); Calibrated: 6/22/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 8/24/2015
Phantom: SAM V5.0 Right; Type: QD000P40CD; Serial: 1647
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: Cell. EVDO Rev.0, Rule Part 90S, Body SAR, Back side, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.588 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 0.649 W/kg
SAR(1 g) = 0.507 W/kg



0 dB = 0.557 W/kg = -2.54 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 07434

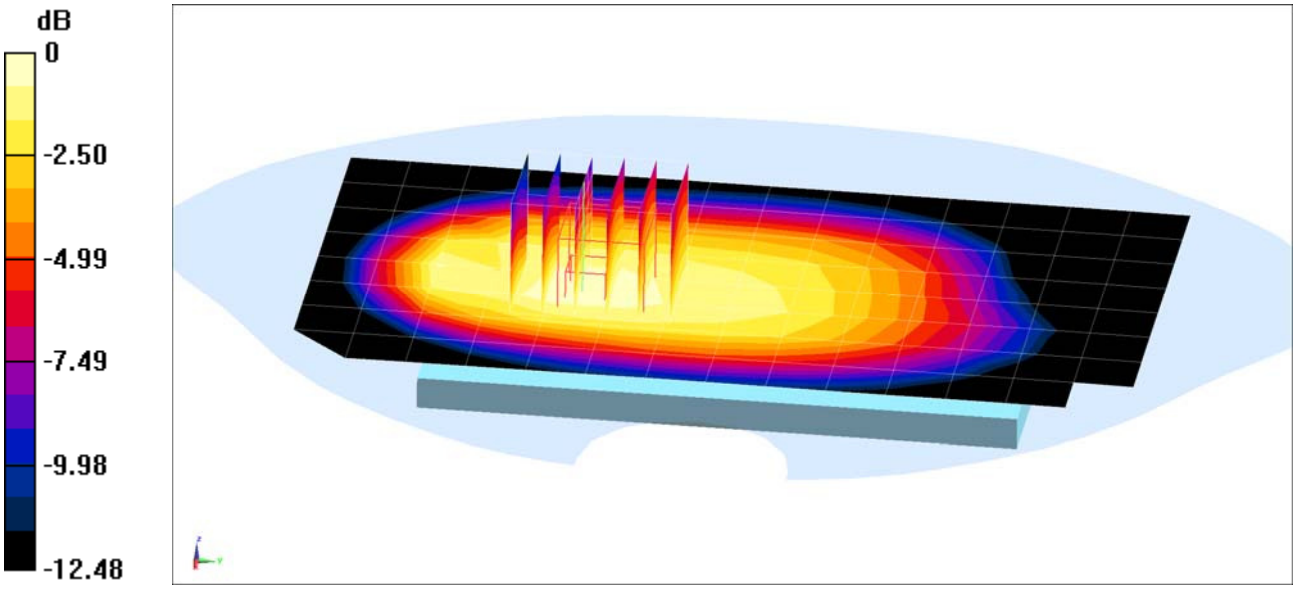
Communication System: UID 0, CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 836.52 MHz; σ = 1.017 S/m; ε_r = 53.594; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-09-2016; Ambient Temp: 23.4°C; Tissue Temp: 22.0°C

Probe: ES3DV3 - SN3351; ConvF(6.11, 6.11, 6.11); Calibrated: 6/22/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 8/24/2015
Phantom: SAM V5.0 Right; Type: QD000P40CD; Serial: 1647
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: Cell. CDMA, Rule Part 22H, Body SAR, Back side, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.204 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.773 W/kg
SAR(1 g) = 0.592 W/kg



0 dB = 0.659 W/kg = -1.81 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 07434

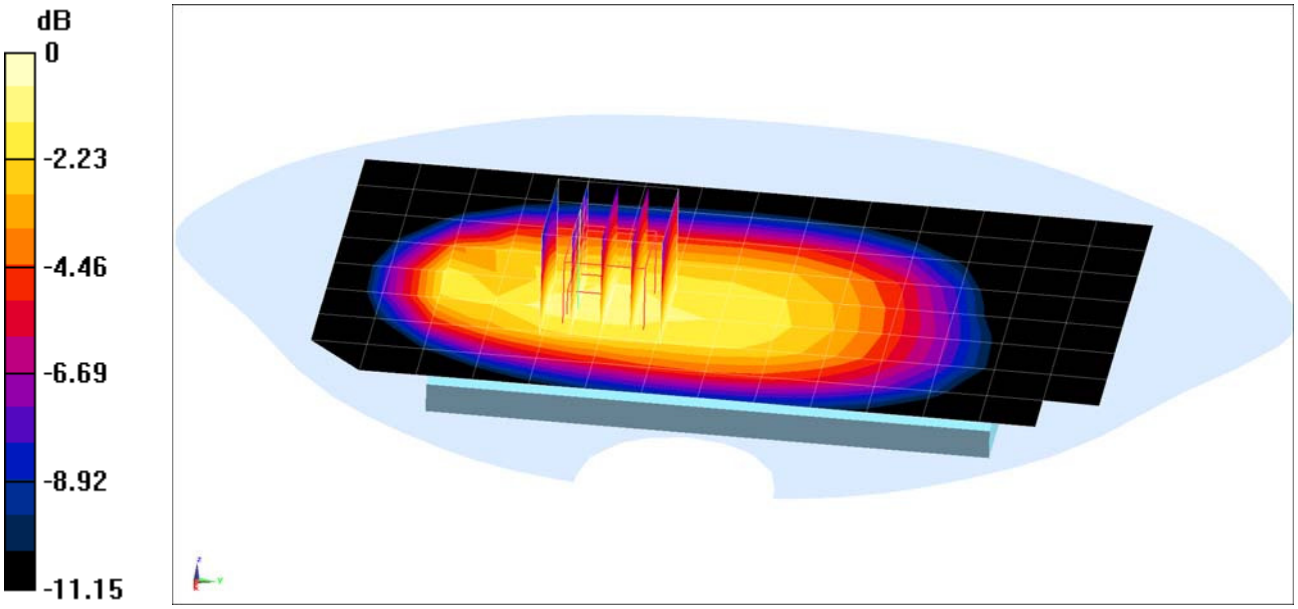
Communication System: UID 0, CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 836.52 MHz; σ = 1.017 S/m; ε_r = 53.594; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-09-2016; Ambient Temp: 23.4°C; Tissue Temp: 22.0°C

Probe: ES3DV3 - SN3351; ConvF(6.11, 6.11, 6.11); Calibrated: 6/22/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 8/24/2015
Phantom: SAM V5.0 Right; Type: QD000P40CD; Serial: 1647
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: Cell. EVDO Rev.0, Rule Part 22H, Body SAR, Back side, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.938 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.768 W/kg
SAR(1 g) = 0.599 W/kg



0 dB = 0.664 W/kg = -1.78 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 07442

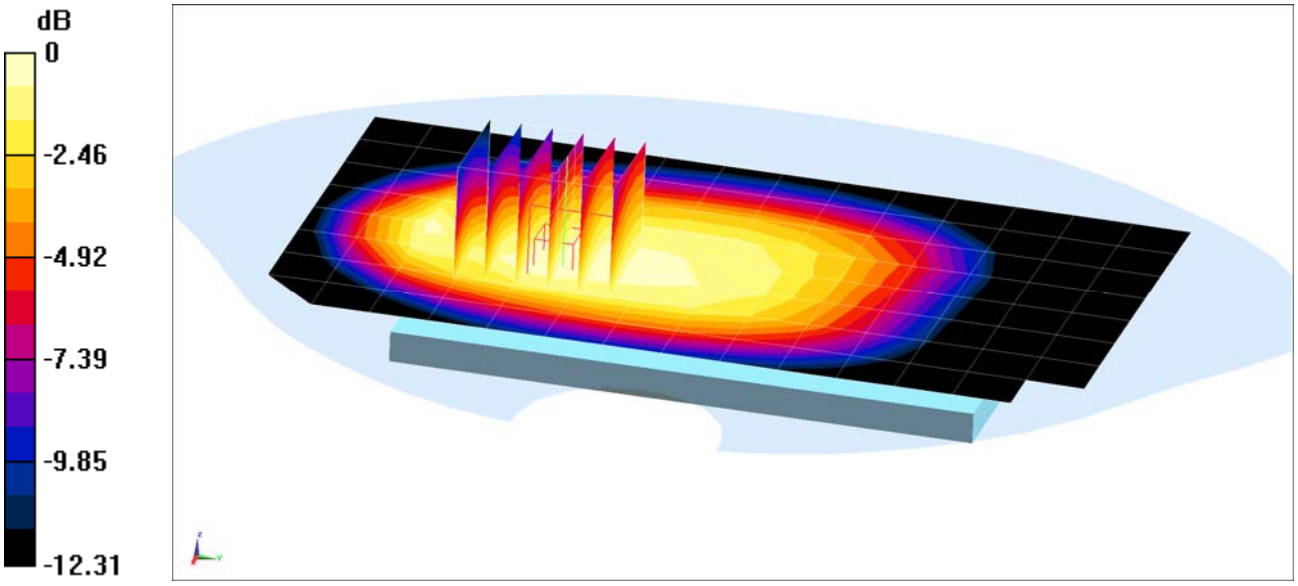
Communication System: UID 0, GSM GPRS; 2 Tx slots; Frequency: 836.6 MHz; Duty Cycle: 1:4.15
Medium: 835 Body Medium parameters used (interpolated):
$f = 836.6$ MHz; $\sigma = 1.017$ S/m; $\varepsilon_r = 53.593$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-09-2016; Ambient Temp: 23.4°C; Tissue Temp: 22.0°C

Probe: ES3DV3 - SN3351; ConvF(6.11, 6.11, 6.11); Calibrated: 6/22/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 8/24/2015
Phantom: SAM V5.0 Right; Type: QD000P40CD; Serial: 1647
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: GPRS 850, Body SAR, Back side, Mid.ch, 2 Tx Slots

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 35.833 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 1.56 W/kg
SAR(1 g) = 1.23 W/kg



0 dB = 1.34 W/kg = 1.27 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 07442

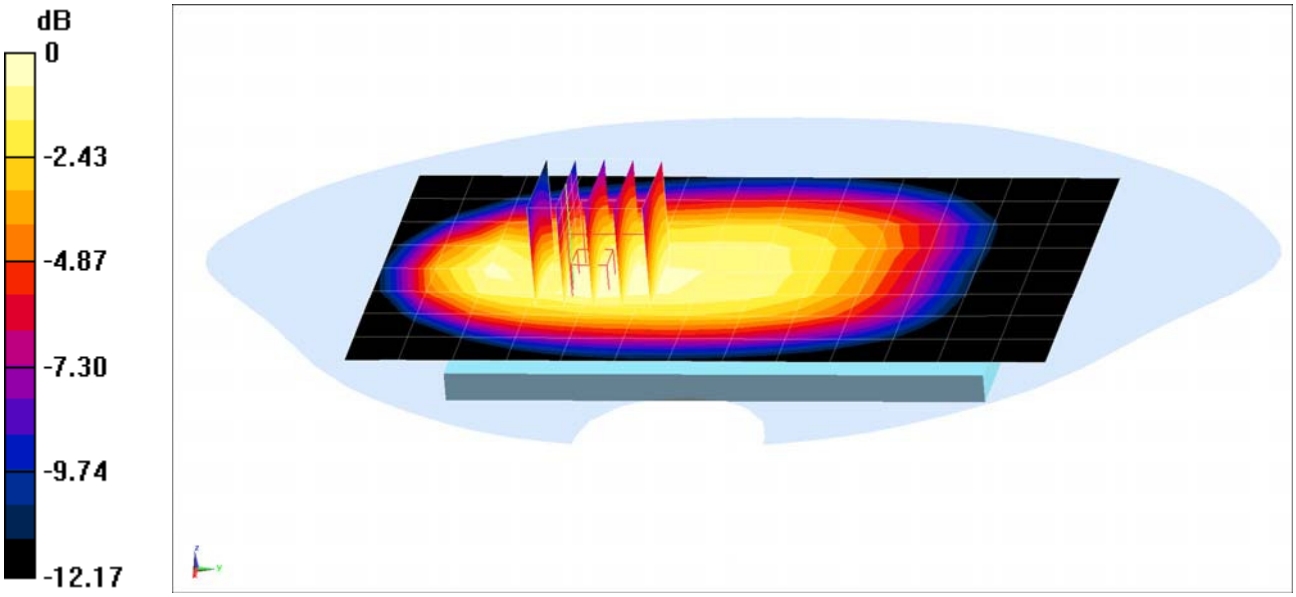
Communication System: UID 0, UMTS; Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 836.6 MHz; σ = 1 S/m; ε_r = 54.957; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-05-2016; Ambient Temp: 24.3°C; Tissue Temp: 22.1°C

Probe: ES3DV3 - SN3334; ConvF(6.24, 6.24, 6.24); 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 850, Body SAR, Back side, Mid.ch

Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.591 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 0.820 W/kg
SAR(1 g) = 0.635 W/kg



0 dB = 0.697 W/kg = -1.57 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 07442

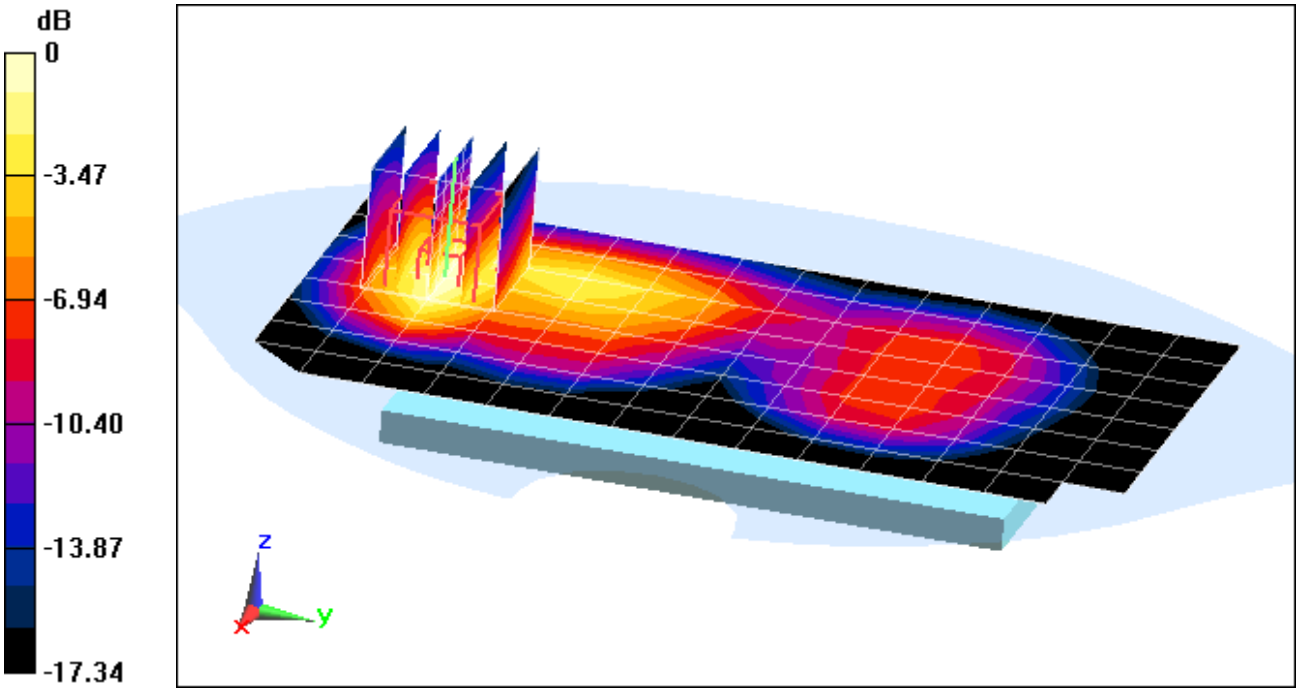
Communication System: UID 0, UMTS; Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium: 1750 Body, Medium parameters used (interpolated):
f = 1732.4 MHz; σ = 1.49 S/m; ε_r = 52.155; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-16-2016; Ambient Temp: 22.1°C; Tissue Temp: 20.9°C

Probe: ES3DV3 - SN3209; ConvF(4.86, 4.86, 4.86); Calibrated: 3/19/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/20/2015
Phantom: SAM v5.0 front; Type: QD000P40CD; Serial: TP-1646
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: AWS UMTS, Body SAR, Back side, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.37 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 1.32 W/kg
SAR(1 g) = 0.751 W/kg



0 dB = 0.958 W/kg = -0.19 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 07434

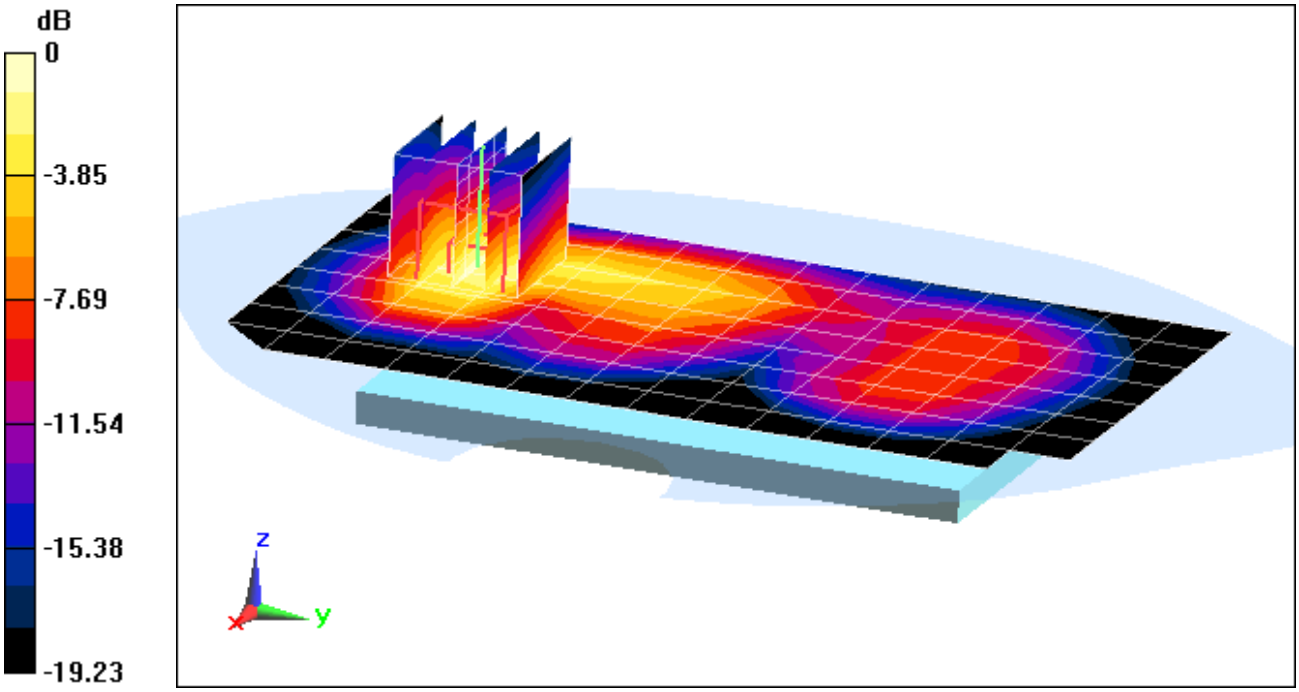
Communication System: UID 0, CDMA; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Body, Medium parameters used:
f = 1880 MHz; σ = 1.553 S/m; ε_r = 51.675; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-10-2016; Ambient Temp: 24.3°C; Tissue Temp: 23.4°C

Probe: ES3DV3 - SN3334; ConvF(4.84, 4.84, 4.84); 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: PCS CDMA, Body SAR, Back side, Mid.ch, Ant 2

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.24 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 2.15 W/kg
SAR(1 g) = 1.16 W/kg



0 dB = 1.51 W/kg = 1.79 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 07434

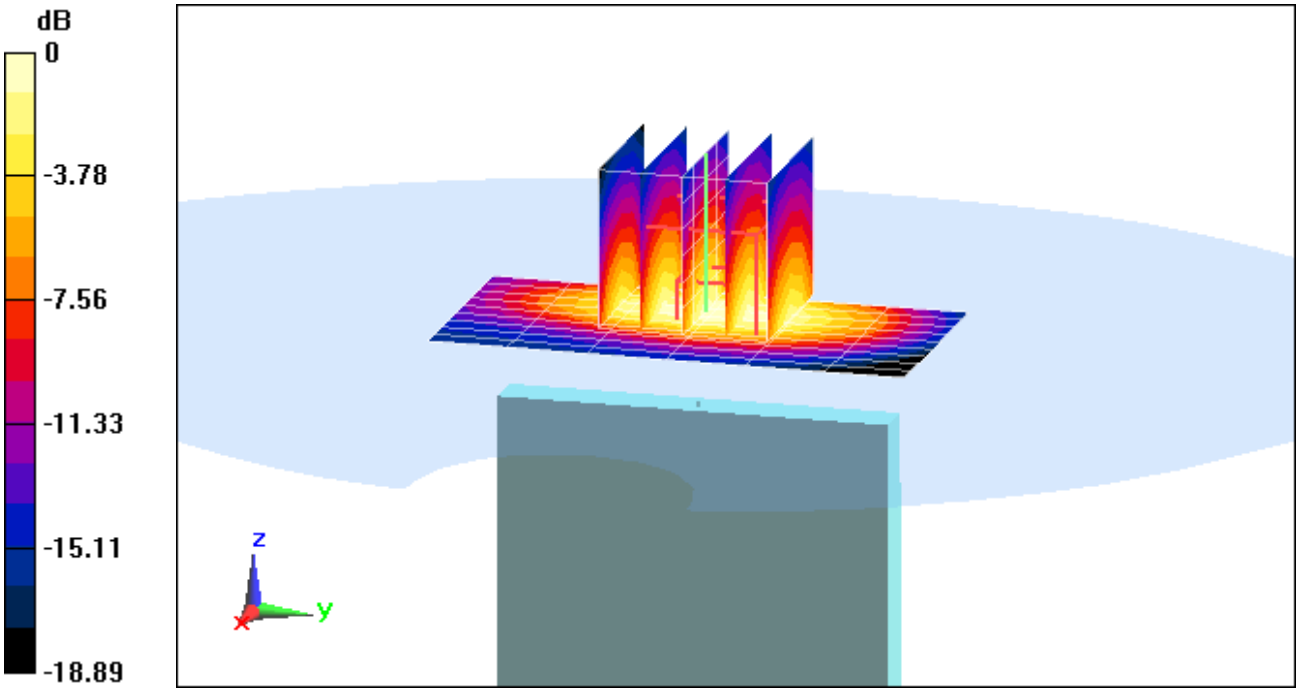
Communication System: UID 0, CDMA; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Body, Medium parameters used:
f = 1880 MHz; σ = 1.553 S/m; ε_r = 51.675; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-10-2016; Ambient Temp: 24.3°C; Tissue Temp: 23.4°C

Probe: ES3DV3 - SN3334; ConvF(4.84, 4.84, 4.84); 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: PCS EVDO Rev.0, Body SAR, Bottom Edge, Mid.ch, Ant 2

Area Scan (10x7x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.44 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 1.65 W/kg
SAR(1 g) = 0.947 W/kg



0 dB = 1.18 W/kg = 0.72 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 07442

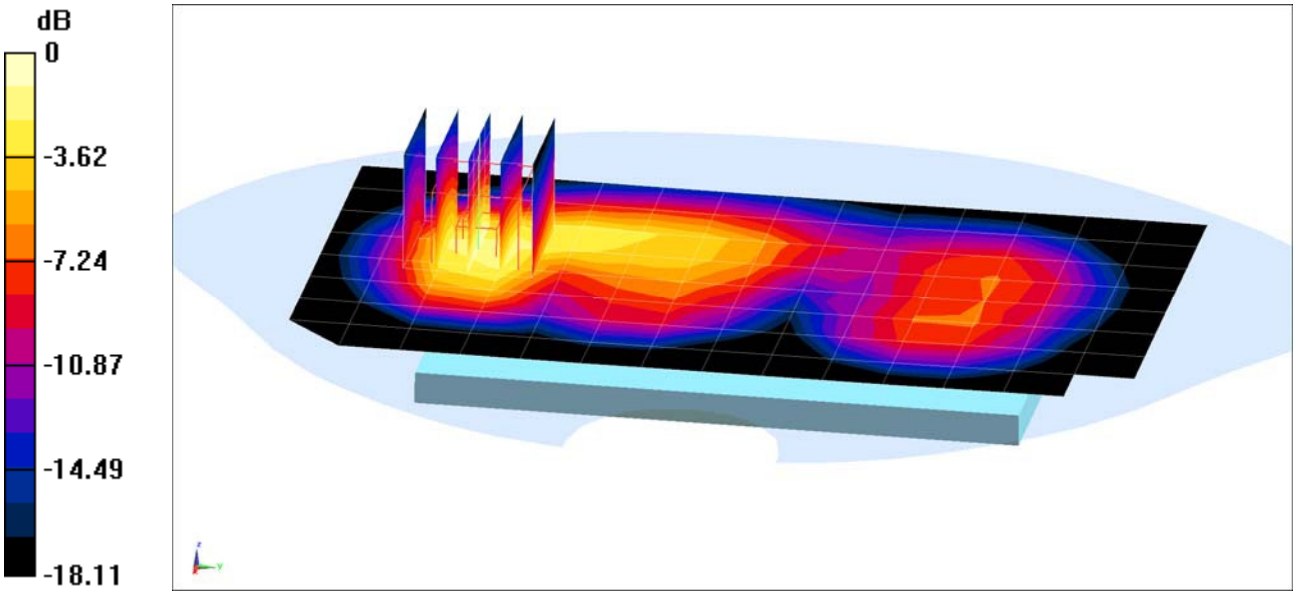
Communication System: UID 0, GSM GPRS; 2 Tx slots; Frequency: 1880 MHz; Duty Cycle: 1:4.15
Medium: 1900 Body Medium parameters used:
f = 1880 MHz; σ = 1.551 S/m; ε_r = 51.355; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-03-2016; Ambient Temp: 24.5°C; Tissue Temp: 22.6°C

Probe: ES3DV3 - SN3333; ConvF(4.7, 4.7, 4.7); 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 1900, Body SAR, Back side, Mid.ch, 2 Tx Slots

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.117 V/m; Power Drift = -0.17 dB
Peak SAR (extrapolated) = 1.51 W/kg
SAR(1 g) = 0.830 W/kg



0 dB = 1.06 W/kg = 0.25 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 07442

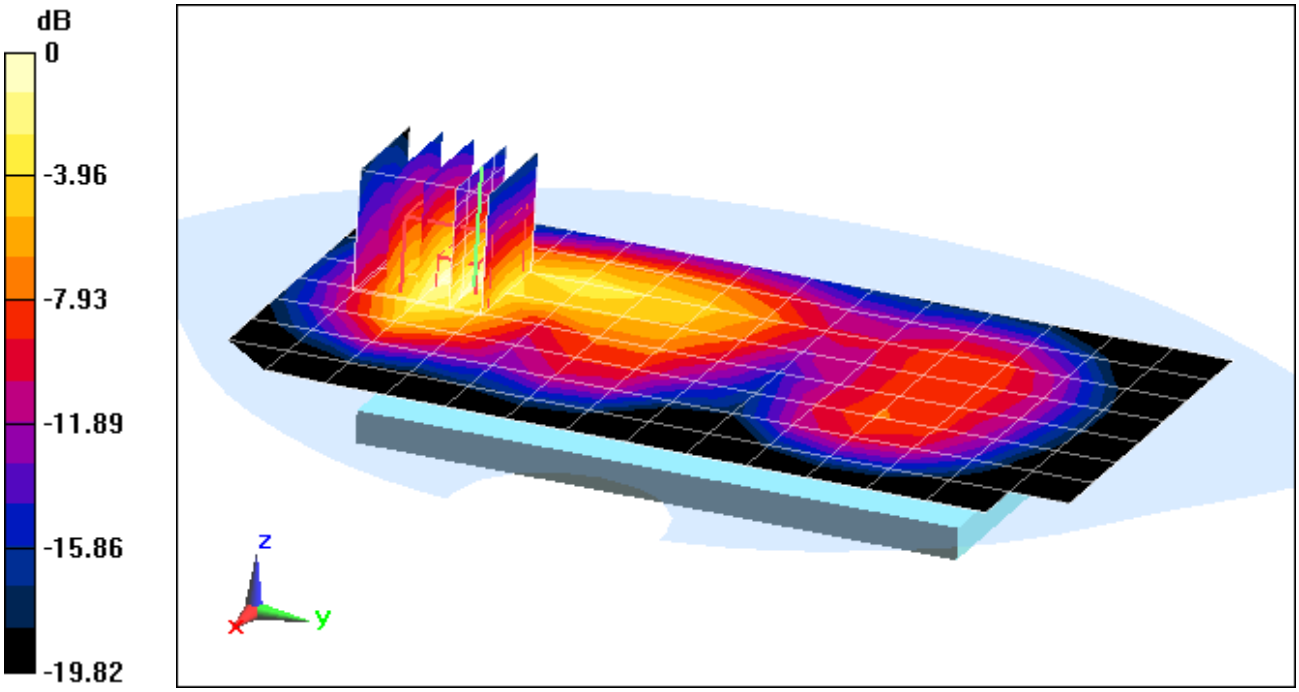
Communication System: UID 0, UMTS; Frequency: 1907.6 MHz; Duty Cycle: 1:1
Medium: 1900 Body, Medium parameters used (interpolated):
f = 1907.6 MHz; σ = 1.588 S/m; ε_r = 51.612; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-10-2016; Ambient Temp: 24.3°C; Tissue Temp: 23.4°C

Probe: ES3DV3 - SN3334; ConvF(4.84, 4.84, 4.84); 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, Body SAR, Back side, High.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.39 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 2.08 W/kg
SAR(1 g) = 1.11 W/kg



0 dB = 1.31 W/kg = 1.17 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 07418

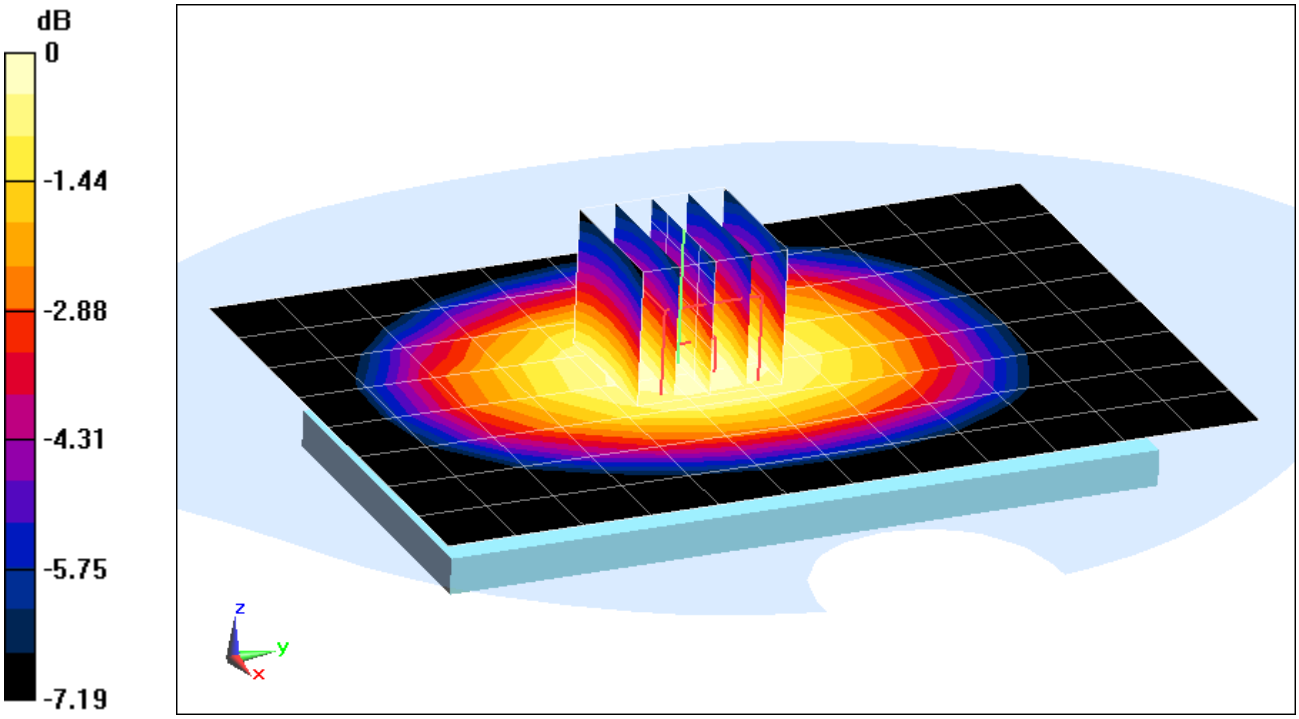
Communication System: UID 0, LTE Band 12; Frequency: 707.5 MHz;Duty Cycle: 1:1
Medium: 750 Body Medium parameters used (interpolated):
f = 707.5 MHz; σ = 0.93 S/m; ε_r = 56.453; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-24-2016; Ambient Temp: 23.9°C; Tissue Temp: 22.1°C

Probe: ES3DV3 - SN3263; ConvF(6.07, 6.07, 6.07); 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 12, with Camera Accessory Body SAR, Back side, Mid.ch
10 MHz Bandwidth, QPSK, 1 RB, 25 RB Offset

Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.56 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 0.539 W/kg
SAR(1 g) = 0.441 W/kg



0 dB = 0.481 W/kg = -3.18 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 07418

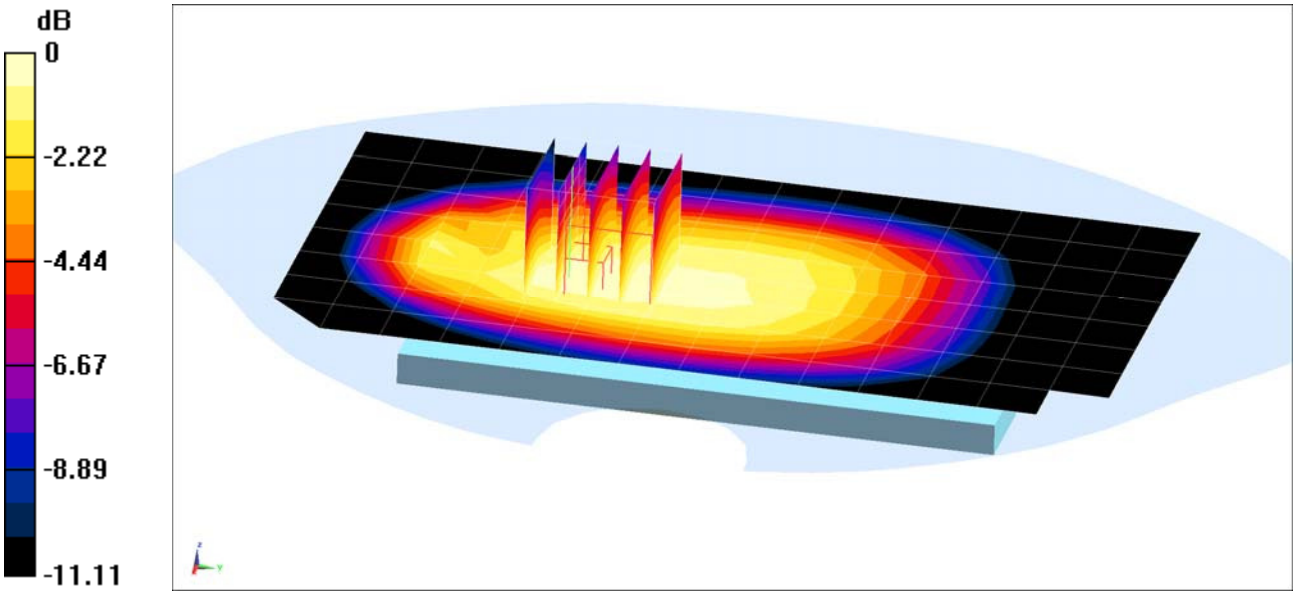
Communication System: UID 0, LTE Band 26; Frequency: 836.5 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 836.5 MHz; σ = 1.017 S/m; ε_r = 53.594; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-09-2016; Ambient Temp: 23.4°C; Tissue Temp: 22.0°C

Probe: ES3DV3 - SN3351; ConvF(6.11, 6.11, 6.11); Calibrated: 6/22/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 8/24/2015
Phantom: SAM V5.0 Right; Type: QD000P40CD; Serial: 1647
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: LTE Band 26 (Cell.), Body SAR, Back side, Mid.ch
15 MHz Bandwidth, QPSK, 1 RB, 36 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.444 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.220 W/kg
SAR(1 g) = 0.175 W/kg



0 dB = 0.192 W/kg = -7.17 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 07426

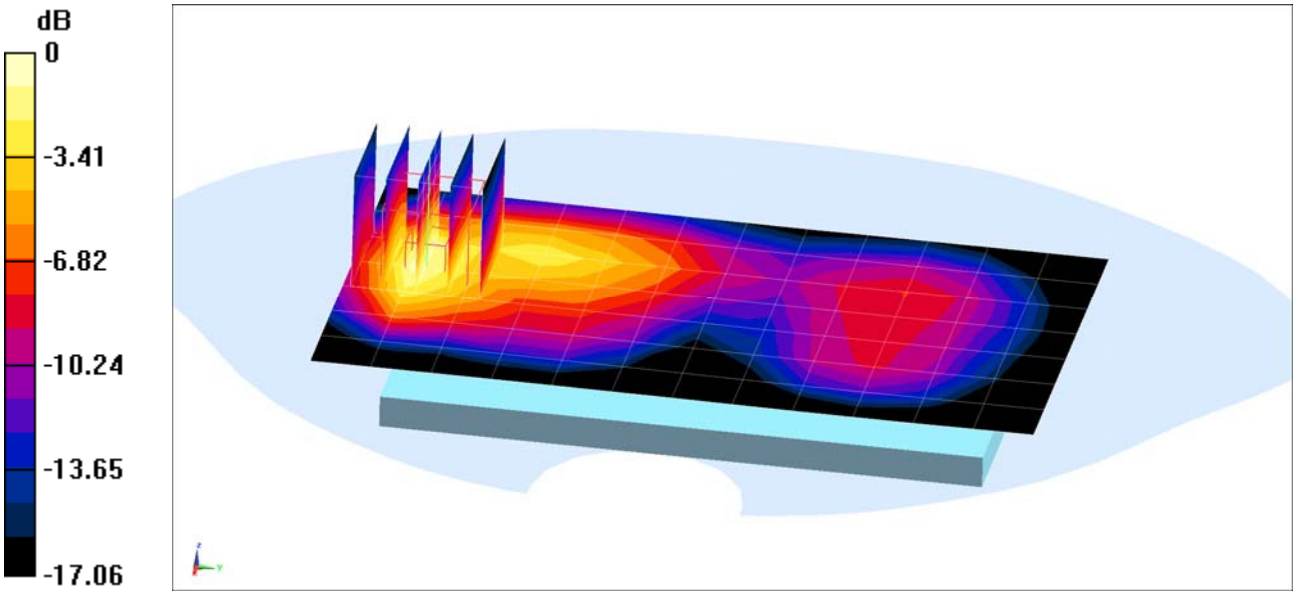
Communication System: UID 0, LTE Band 4 (AWS); Frequency: 1732.5 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used (interpolated):
$f = 1732.5$ MHz; $\sigma = 1.444$ S/m; $\varepsilon_r = 51.561$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-28-2016; Ambient Temp: 23.8°C; Tissue Temp: 22.5°C

Probe: ES3DV2 - SN3022; ConvF(4.79, 4.79, 4.79); Calibrated: 8/26/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/18/2015
Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1797
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, Ant 2

Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.068 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 1.45 W/kg
SAR(1 g) = 0.796 W/kg



0 dB = 1.01 W/kg = 0.04 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 07426

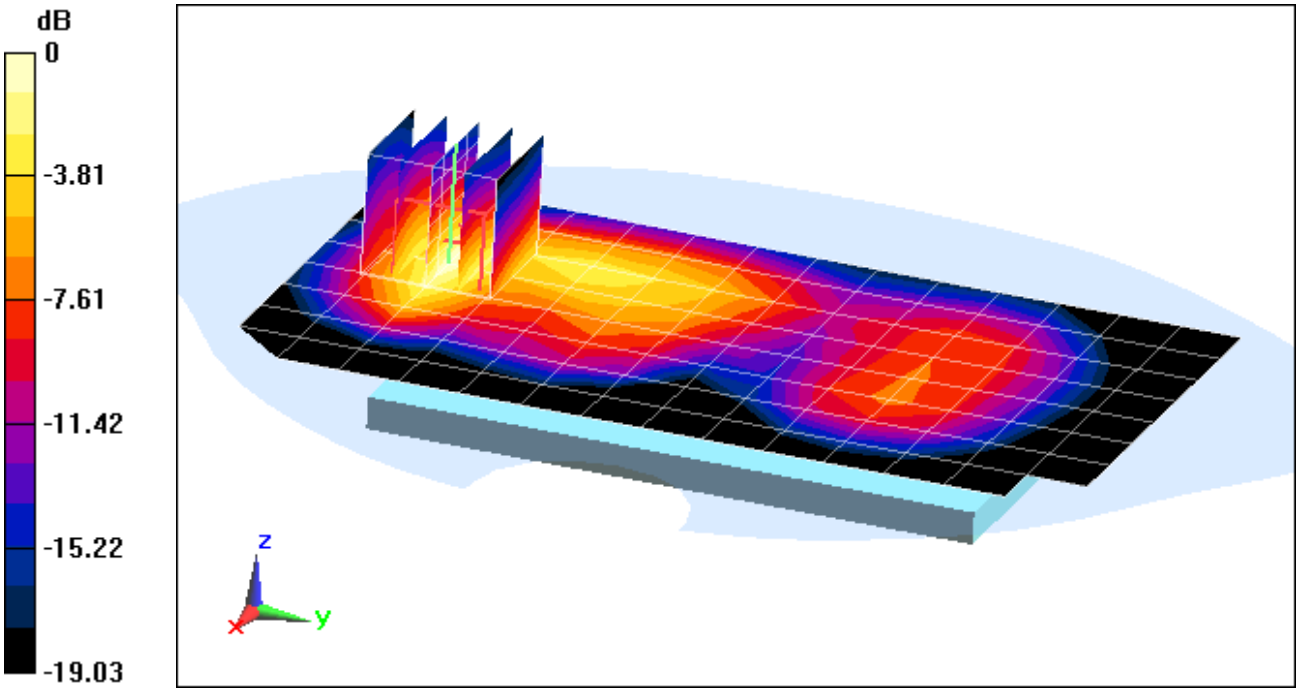
Communication System: UID 0, LTE Band 25 (PCS); Frequency: 1905 MHz; Duty Cycle: 1:1
Medium: 1900 Body, Medium parameters used (interpolated):
f = 1905 MHz; σ = 1.499 S/m; ε_r = 52.21; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-15-2016; Ambient Temp: 20.0°C; Tissue Temp: 21.8°C

Probe: ES3DV3 - SN3333; ConvF(4.7, 4.7, 4.7); 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: LTE Band 25 (PCS), Body SAR, Back side, High.ch,
20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset, Ant 2

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 29.75 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 2.09 W/kg
SAR(1 g) = 1.11 W/kg



0 dB = 1.42 W/kg = 1.52 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 07426

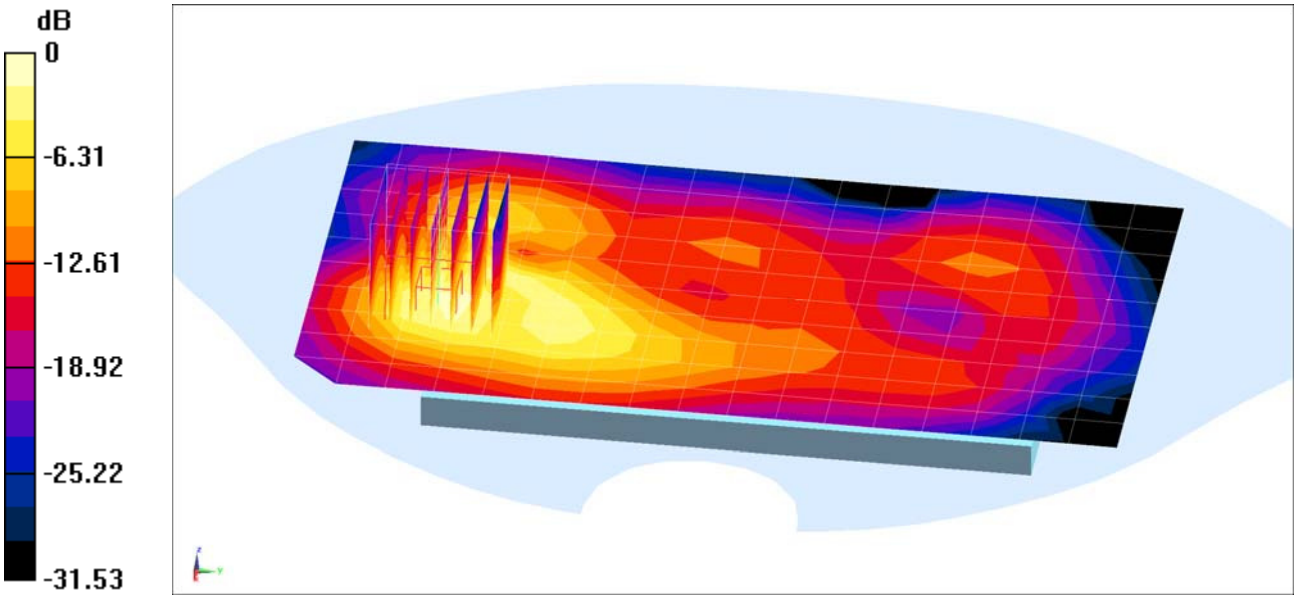
Communication System: UID 0, LTE Band 7; Frequency: 2560 MHz; Duty Cycle: 1:1
Medium: 2450 – 2600 Body Medium parameters used (interpolated):
f = 2560 MHz; σ = 2.136 S/m; ε_r = 51.42; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-03-2016; Ambient Temp: 22.5°C; Tissue Temp: 23.0°C

Probe: ES3DV3 - SN3319; ConvF(3.9, 3.9, 3.9); Calibrated: 3/19/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1368; Calibrated: 3/13/2015
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 7, Body SAR, Back side, High.ch
20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset

Area Scan (11x18x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 18.192 V/m; Power Drift = -0.15 dB
Peak SAR (extrapolated) = 1.79 W/kg
SAR(1 g) = 0.751 W/kg



0 dB = 1.02 W/kg = 0.09 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 07426

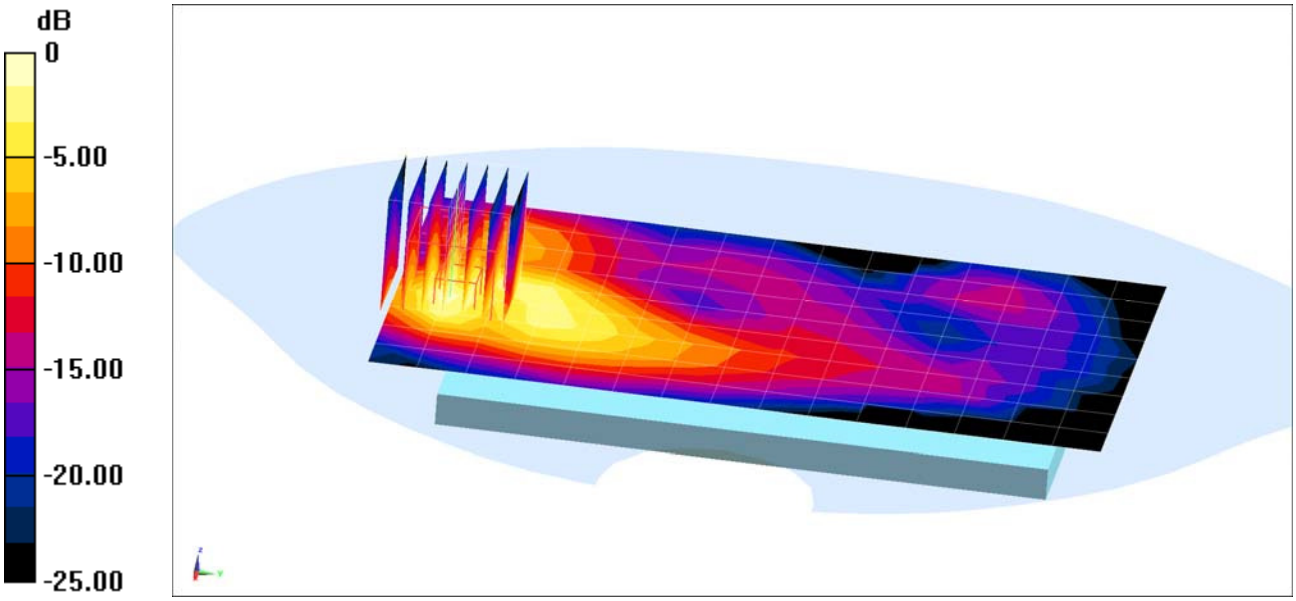
Communication System: UID 0, LTE Band 41; Frequency: 2506 MHz; Duty Cycle: 1:1.59
Medium: 2450 – 2600 Body Medium parameters used (interpolated):
$f = 2506$ MHz; $\sigma = 2.058$ S/m; $\varepsilon_r = 51.597$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-03-2016; Ambient Temp: 22.5°C; Tissue Temp: 23.0°C

Probe: ES3DV3 - SN3319; ConvF(4.11, 4.11, 4.11); Calibrated: 3/19/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1368; Calibrated: 3/13/2015
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 41, Body SAR, Back side, Low.ch
20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

Area Scan (10x16x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.588 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.658 W/kg
SAR(1 g) = 0.284 W/kg



0 dB = 0.370 W/kg = -4.32 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 07483

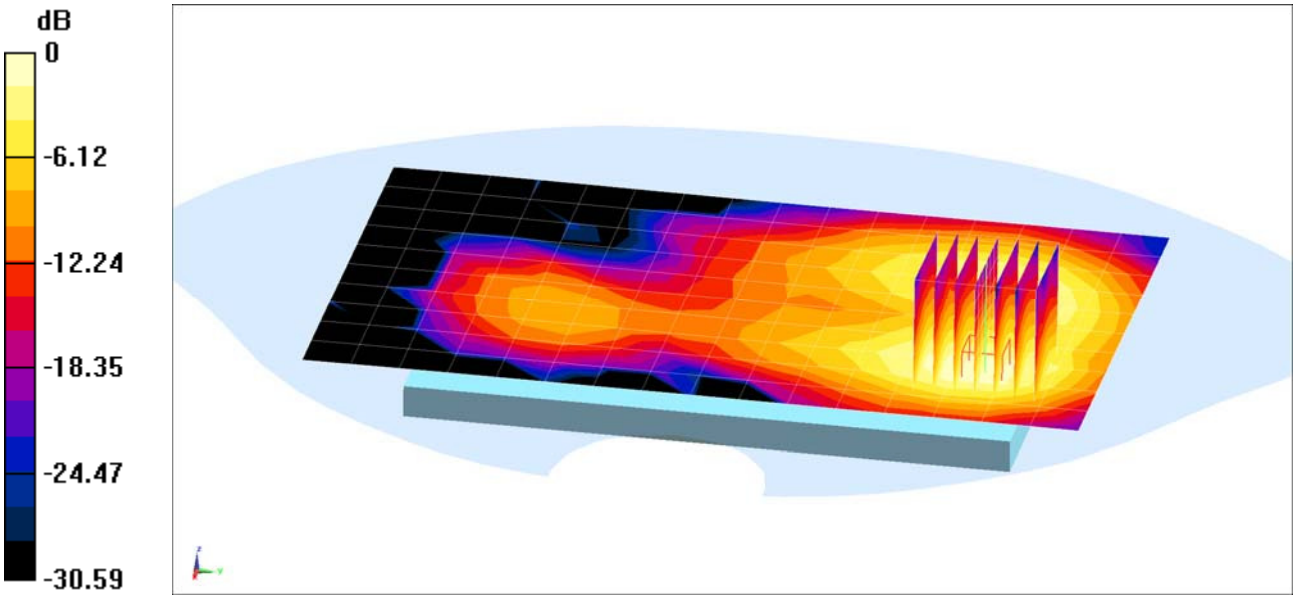
Communication System: UID 0, IEEE 802.11b; Frequency: 2457 MHz; Duty Cycle: 1:1
Medium: 2450 – 2600 Body Medium parameters used (interpolated):
f = 2457 MHz; σ = 1.993 S/m; ε_r = 51.808; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-03-2016; Ambient Temp: 22.5°C; Tissue Temp: 23.0°C

Probe: ES3DV3 - SN3319; ConvF(4.11, 4.11, 4.11); Calibrated: 3/19/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1368; Calibrated: 3/13/2015
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: IEEE 802.11b, 22 MHz Bandwidth, Body SAR, Ch 10, 1 Mbps, Back Side

Area Scan (11x17x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.624 V/m; Power Drift = -0.19 dB
Peak SAR (extrapolated) = 0.199 W/kg
SAR(1 g) = 0.092 W/k



0 dB = 0.118 W/kg = -9.28 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 07483

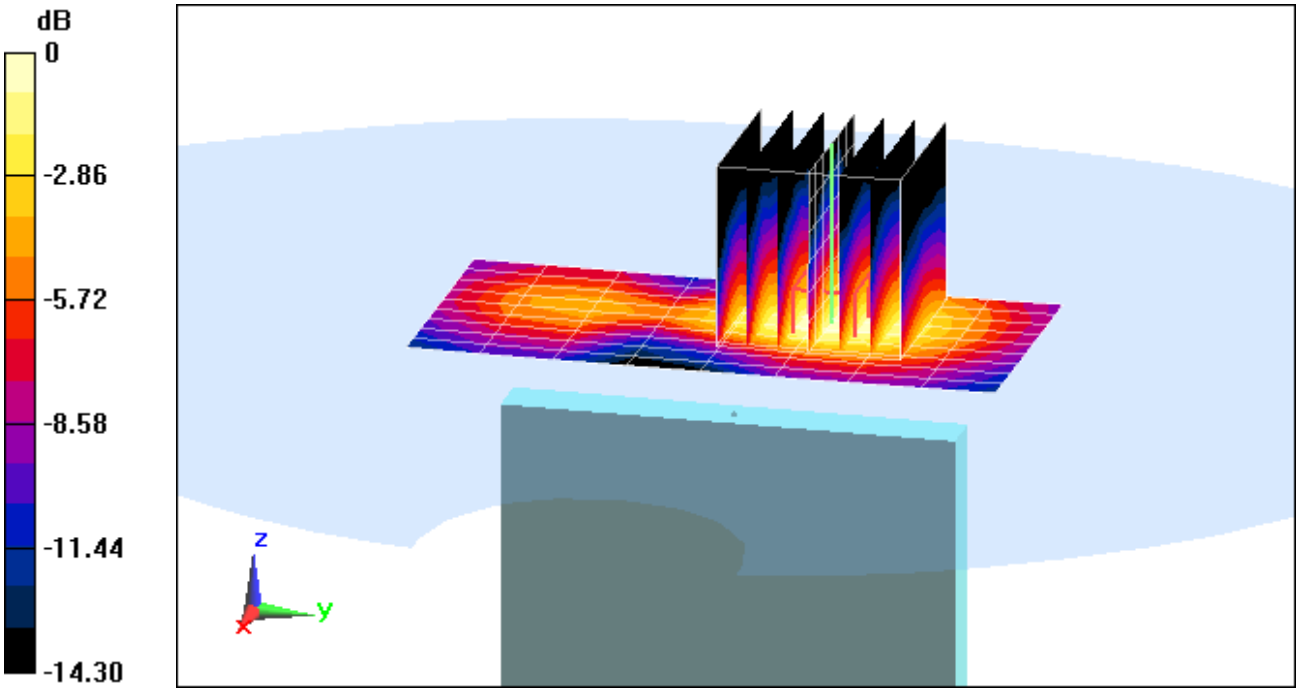
Communication System: UID 0, IEEE 802.11b; Frequency: 2457 MHz; Duty Cycle: 1:1
Medium: 2450 – 2600 Body, Medium parameters used (interpolated):
f = 2457 MHz; σ = 2.046 S/m; ε_r = 52.04; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-11-2016; Ambient Temp: 23.1°C; Tissue Temp: 22.2°C

Probe: ES3DV3 - SN3263; ConvF(4.28, 4.28, 4.28); Calibrated: 5/20/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 6/17/2015
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: IEEE 802.11b, 22 MHz Bandwidth, Body SAR, Ch 10, 1 Mbps, Top Edge

Area Scan (10x9x1): Measurement grid: dx=5mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.322 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.143 W/kg
SAR(1 g) = 0.074 W/kg



0 dB = 0.110 W/kg = -9.59 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 01864

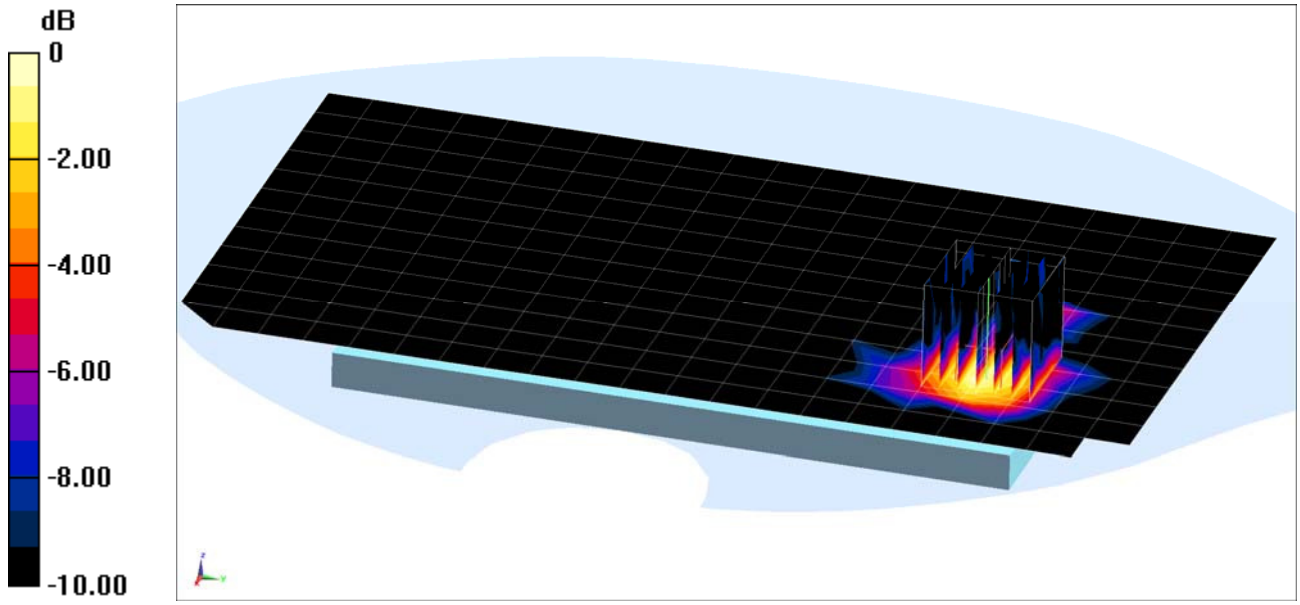
Communication System: UID 0, IEEE 802.11a; Frequency: 5280 MHz; Duty Cycle: 1:1
Medium: 5 GHz Head Medium parameters used:
f = 5280 MHz; σ = 5.535 S/m; ε_r = 48.117; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-08-2016; Ambient Temp: 23.6°C; Tissue Temp: 22.3°C

Probe: EX3DV4 - SN7308; ConvF(4.63, 4.63, 4.63); 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-2A, 20 MHz Bandwidth, Body SAR, Ch 56, 6 Mbps, Back Side

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 = 2.499 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 0.178 W/kg
SAR(1 g) = 0.037 W/kg



0 dB = 0.0886 W/kg = -10.53 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 01864

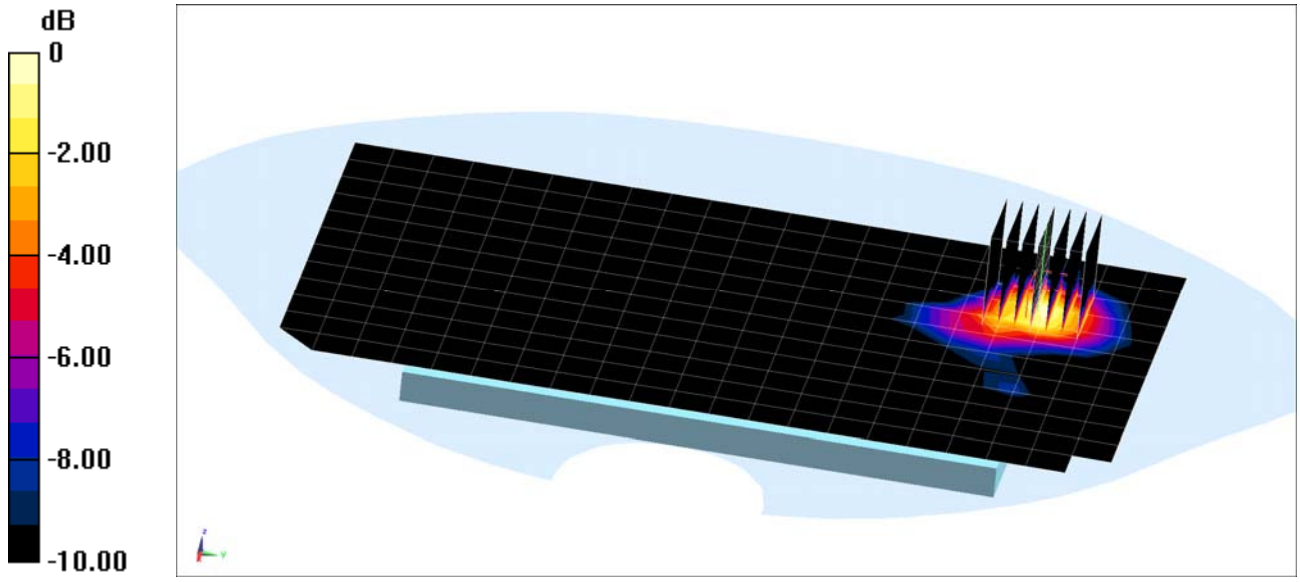
Communication System: UID 0, IEEE 802.11a; Frequency: 5825 MHz; Duty Cycle: 1:1
Medium: 5 GHz Head Medium parameters used:
f = 5825 MHz; σ = 6.306 S/m; ε_r = 47.114; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-08-2016; Ambient Temp: 23.6°C; Tissue Temp: 22.3°C

Probe: EX3DV4 - SN7308; ConvF(4.24, 4.24, 4.24); 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-3, 20 MHz Bandwidth, Body SAR, Ch 165, 6 Mbps, Front Side

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 = 3.492 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 0.328 W/kg
SAR(1 g) = 0.076 W/kg



0 dB = 0.187 W/kg = -7.28 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 07434

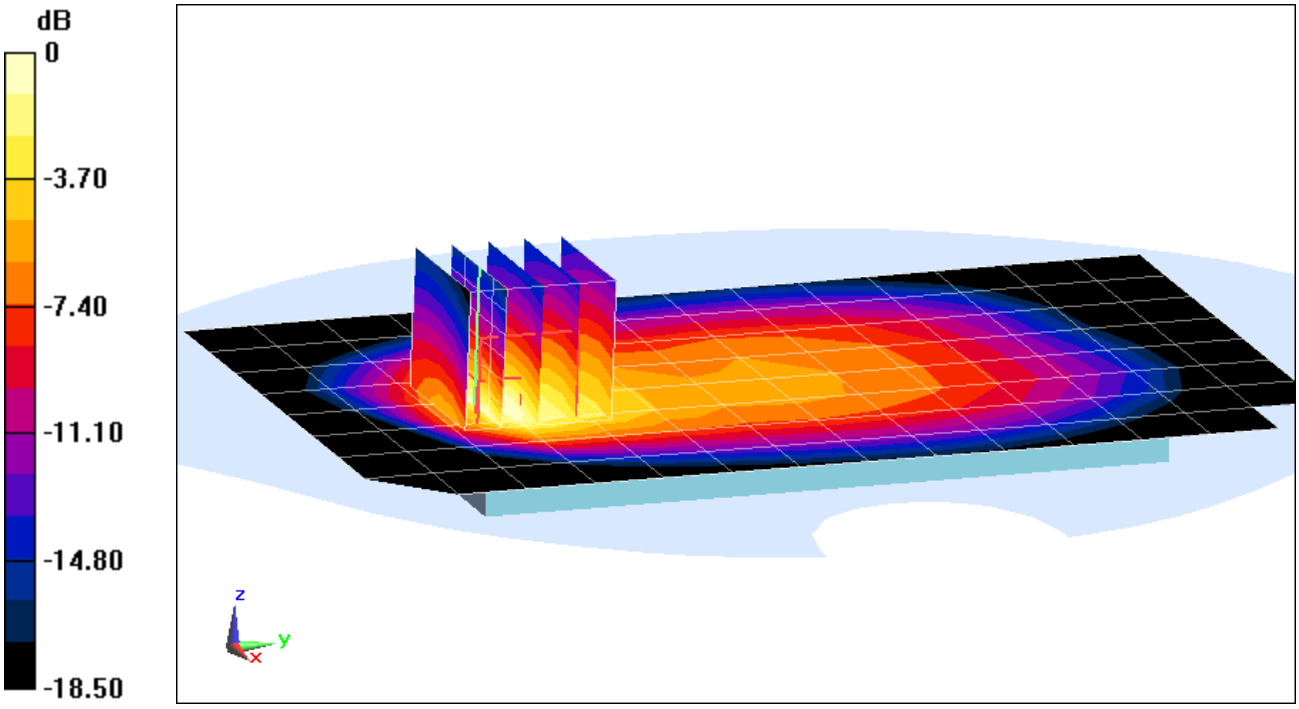
Communication System: UID 0, CDMA; Frequency: 820.1 MHz;Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 820.1 MHz; σ = 0.982 S/m; ε_r = 54.021; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 02-27-2016; Ambient Temp: 20.3°C; Tissue Temp: 19.2°C

Probe: ES3DV3 - SN3319; ConvF(6.07, 6.07, 6.07); Calibrated: 3/19/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1368; Calibrated: 3/13/2015
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 Rev. 0, Rule Part 90S, with Camera Accessory, 10g Hotspot SAR at 0mm, Back side, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 47.59 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 4.84 W/kg
SAR(10 g) = 0.989 W/kg



0 dB = 2.48 W/kg = 3.94 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 07434

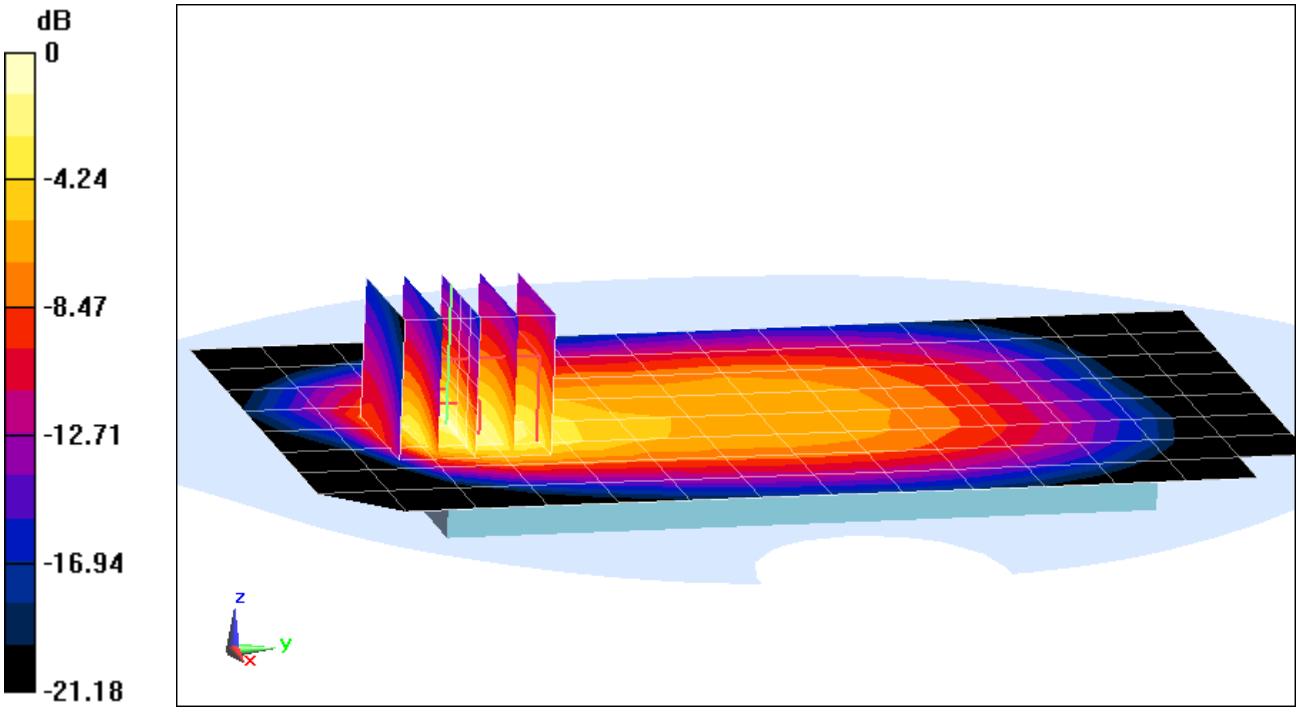
Communication System: UID 0, CDMA; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 836.52 MHz; σ = 1.002 S/m; ε_r = 55.509; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 02-29-2016; Ambient Temp: 21.6°C; Tissue Temp: 21.4°C

Probe: ES3DV3 - SN3319; ConvF(6.07, 6.07, 6.07); Calibrated: 3/19/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1368; Calibrated: 3/13/2015
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 Rev. 0, Rule Part 22H, With Camera Accessory
10g Hotspot SAR at 0mm, Back side, Mid.ch,

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 37.55 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 3.55 W/kg
SAR(10 g) = 0.796 W/kg



0 dB = 2.12 W/kg = 3.26 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 07442

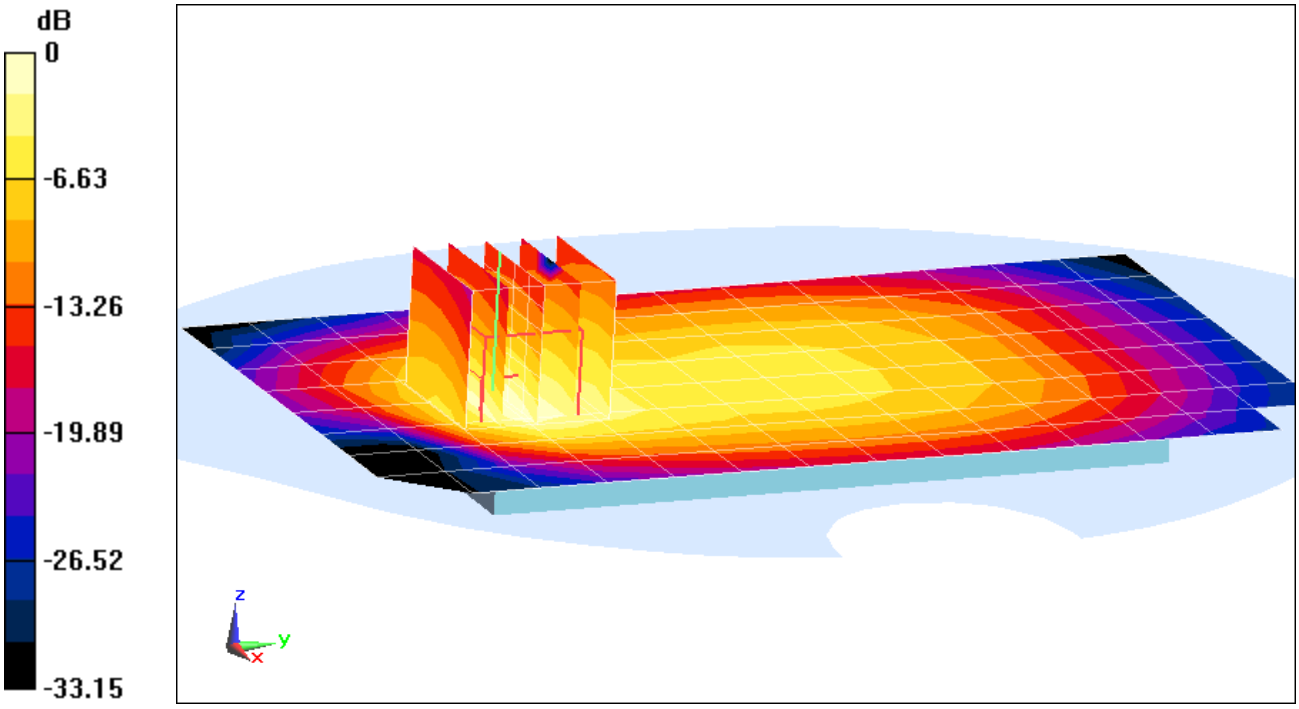
Communication System: UID 0, GSM GPRS; 2 Tx slots; Frequency: 836.6 MHz;Duty Cycle: 1:4.15
Medium: 835 Body Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.998 S/m; ε_r = 53.946; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 02-27-2016; Ambient Temp: 20.3°C; Tissue Temp: 19.2°C

Probe: ES3DV3 - SN3319; ConvF(6.07, 6.07, 6.07); Calibrated: 3/19/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1368; Calibrated: 3/13/2015
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: GPRS 850, with Camera Accessory, 10g Hotspot SAR at 0mm Back side, Mid.ch, 2 Tx Slots

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 48.54 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 4.99 W/kg
SAR(10 g) = 1.01 W/kg



0 dB = 2.51 W/kg = 4.00 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 07422

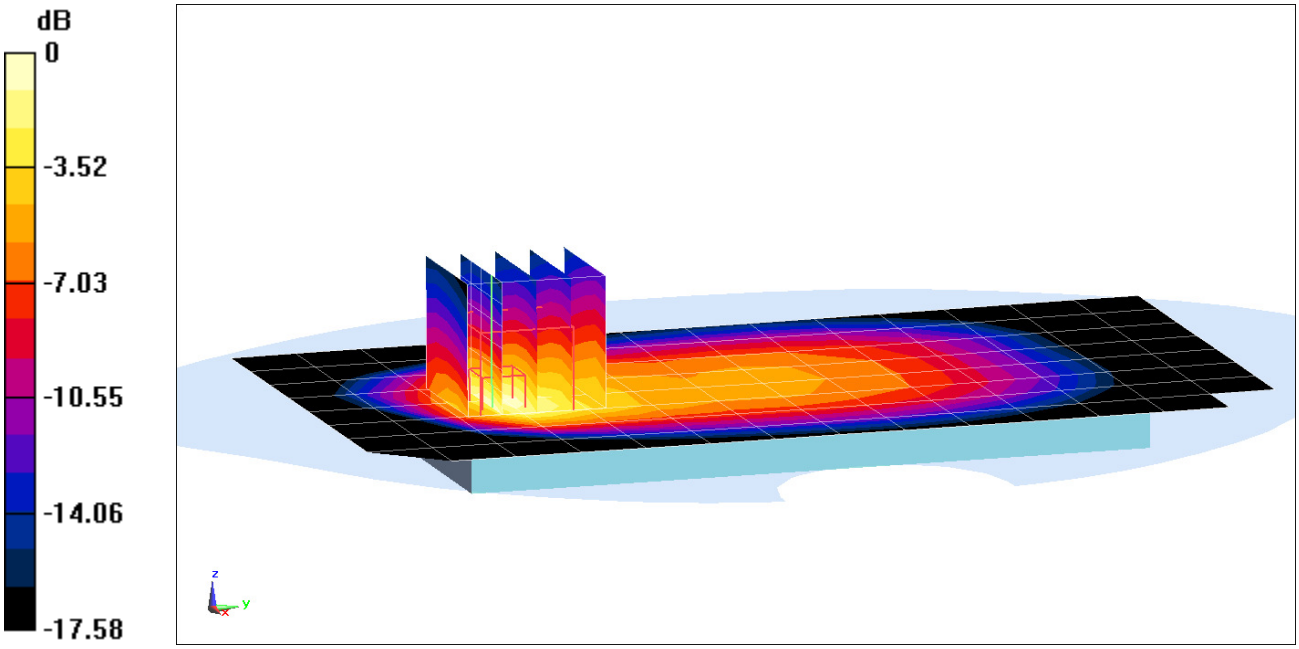
Communication System: UID 0, UMTS; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.989 S/m; ε_r = 54.955; ρ = 1000 kg/m^3
Phantom section: Flat Section; space: 0.0 cm

Test Date: 03-03-2016; Ambient Temp: 20.3°C; Tissue Temp: 20.5°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: UMTS 850, with Camera Accessory, 10g Hotspot SAR at 0mm, Back side, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 33.23 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 2.37 W/kg
SAR(10 g) = 0.494 W/kg



0 dB = 1.26 W/kg = 1.00 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 07442

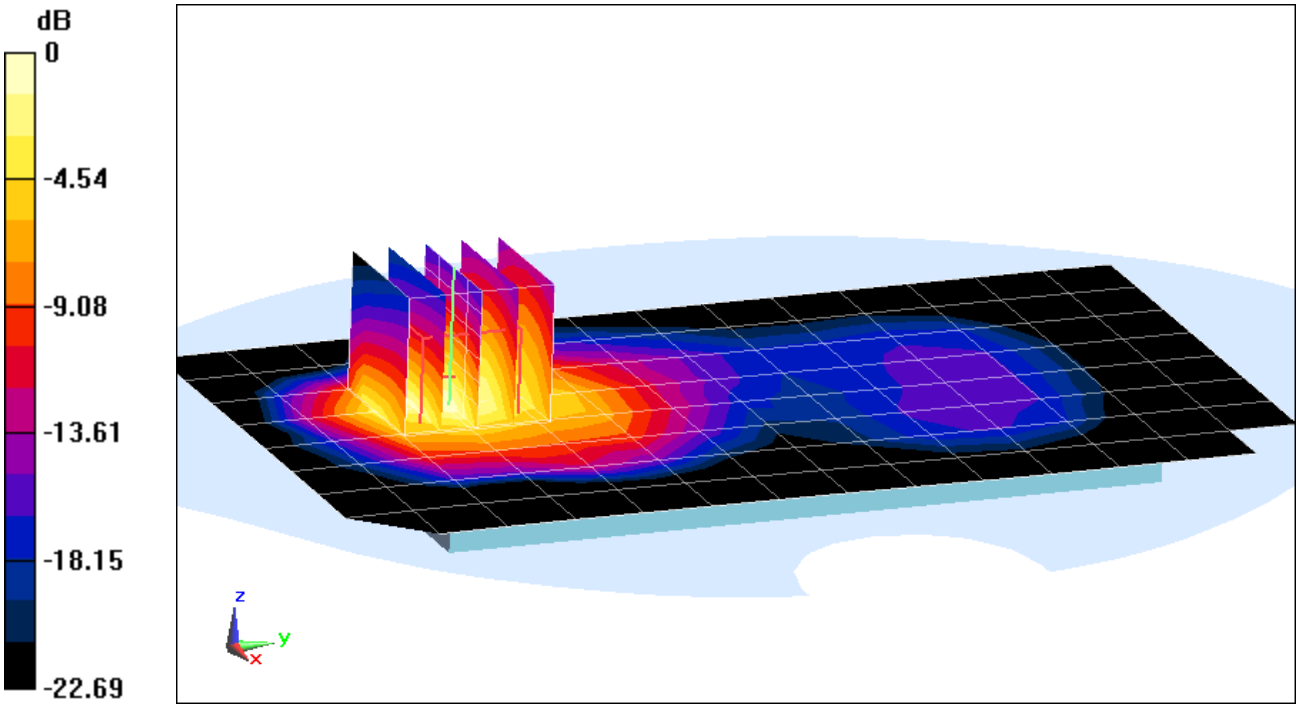
Communication System: UID 0, UMTS (0); Frequency: 1732.4 MHz;Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used (interpolated):
f = 1732.4 MHz; σ = 1.463 S/m; ε_r = 52.17; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 02-27-2016; Ambient Temp: 20.8°C; Tissue Temp: 20.5°C

Probe: ES3DV2 - SN3022; ConvF(4.79, 4.79, 4.79); Calibrated: 8/26/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1323; Calibrated: 9/16/2015
Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1797
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: UMTS 1750, with Camera Accessory, 10g Hotspot SAR at 0mm, Back side, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 52.72 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 7.85 W/kg
SAR(10 g) = 1.77 W/kg



0 dB = 4.37 W/kg = 6.40 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 07434

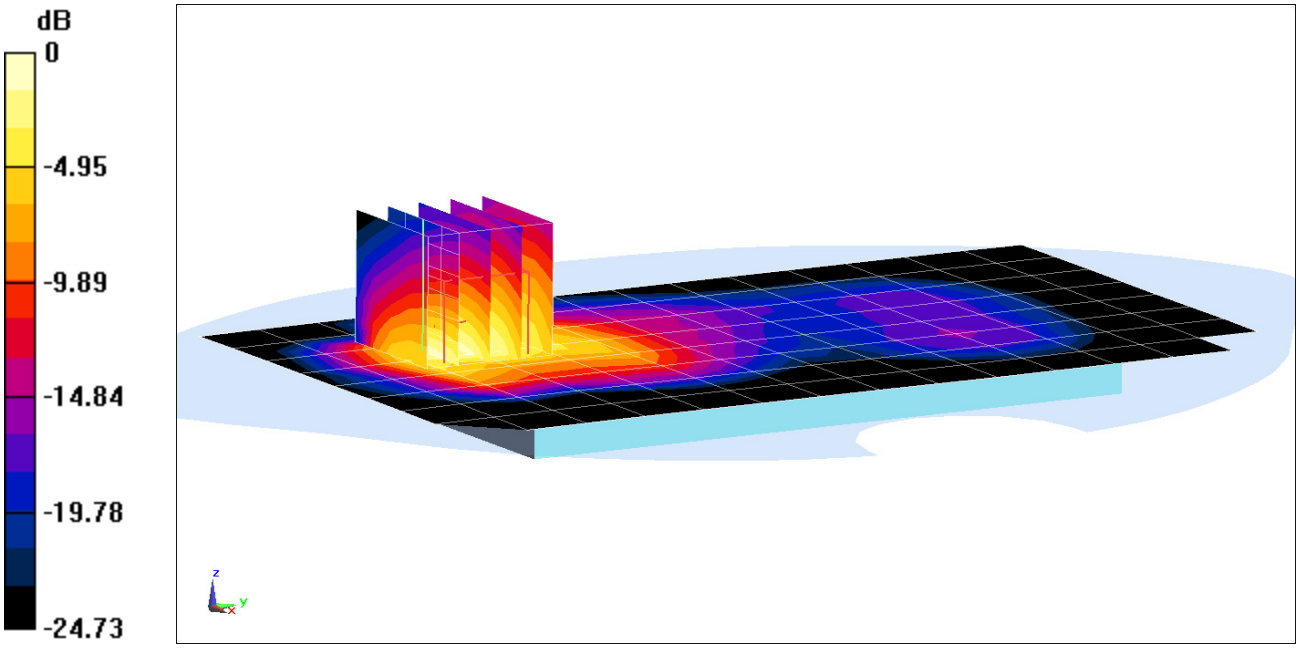
Communication System: UID 0, CDMA; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used:
f = 1880 MHz; σ = 1.54 S/m; ε_r = 53.005; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 03-03-2016; Ambient Temp: 22.2°C; Tissue Temp: 21.4°C

Probe: ES3DV3 - SN3334; ConvF(4.84, 4.84, 4.84); 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: PCS EVDO Rev. 0, with Camera Accessory, Ant 2
10g Hotspot SAR at 0mm, Back side, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 43.00 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 8.80 W/kg
SAR(10 g) = 1.6 W/kg



0 dB = 4.06 W/kg = 6.09 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 07442

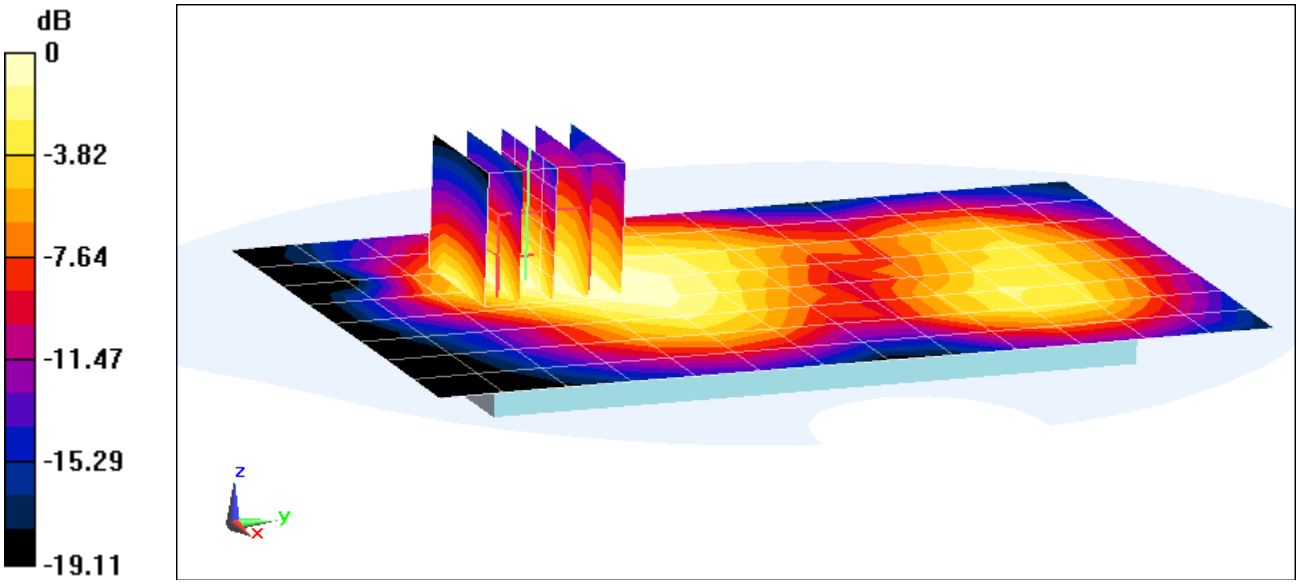
Communication System: UID 0, GSM GPRS; 2 Tx slots; Frequency: 1880 MHz;Duty Cycle: 1:4.15
Medium: 1900 Body Medium parameters used:
f = 1880 MHz; σ = 1.552 S/m; ε_r = 51.185; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 02-25-2016; Ambient Temp: 24.3°C; Tissue Temp: 22.5°C

Probe: ES3DV3 - SN3334; ConvF(4.84, 4.84, 4.84); 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: GPRS 1900, with Camera Accessory, 10g Hotspot SAR at 0mm Back side, Mid.ch, 2 Tx Slots

Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.82 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 1.13 W/kg
SAR(10 g) = 0.364 W/kg



0 dB = 0.264 W/kg = -5.78 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 07442

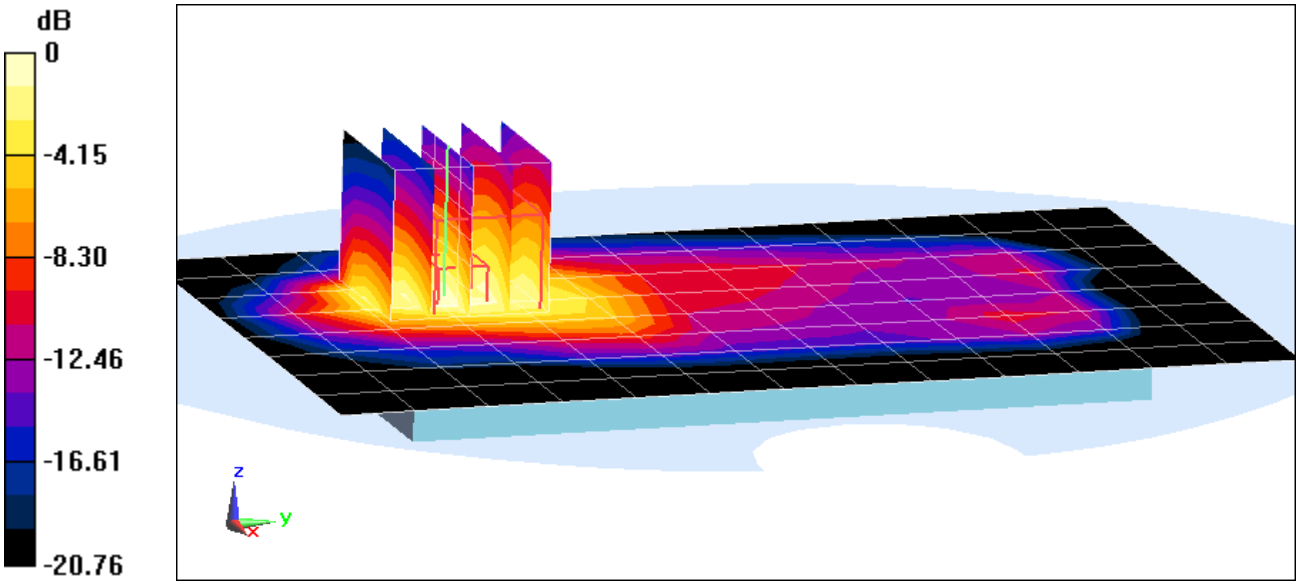
Communication System: UID 0, UMTS; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used:
f = 1880 MHz; σ = 1.552 S/m; ε_r = 51.185; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 02-25-2016; Ambient Temp: 24.3°C; Tissue Temp: 22.5°C

Probe: ES3DV3 - SN3334; ConvF(4.84, 4.84, 4.84); 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, with Camera Accessory, 10g Hotspot SAR at 0mm, Back side, Mid.ch

Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 35.37 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 2.84 W/kg
SAR(10 g) = 0.934 W/kg



0 dB = 2.06 W/kg = 3.14 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 07418

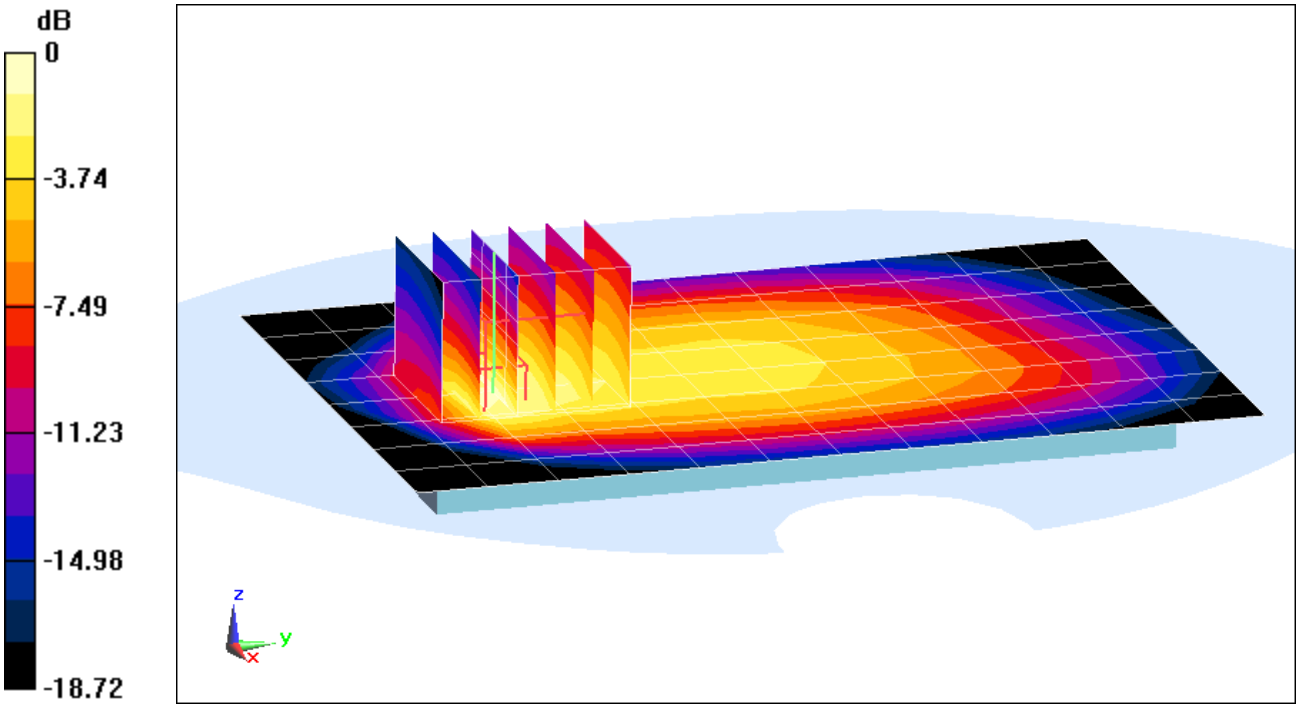
Communication System: UID 0, LTE Band 12; Frequency: 707.5 MHz;Duty Cycle: 1:1
Medium: 750 Body Medium parameters used (interpolated):
f = 707.5 MHz; σ = 0.917 S/m; ε_r = 55.535; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 02-27-2016; Ambient Temp: 19.8°C; Tissue Temp: 20.8°C

Probe: ES3DV3 - SN3333; ConvF(6.31, 6.31, 6.31); 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: LTE Band 12, with Camera Accessory, 10g Hotspot SAR at 0mm, Back side, Mid.ch 10 MHz Bandwidth, QPSK, 1 RB, 25 RB Offset

Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 33.55 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 2.38 W/kg
SAR(10 g) = 0.601 W/kg



0 dB = 1.37 W/kg = 1.37 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 07418

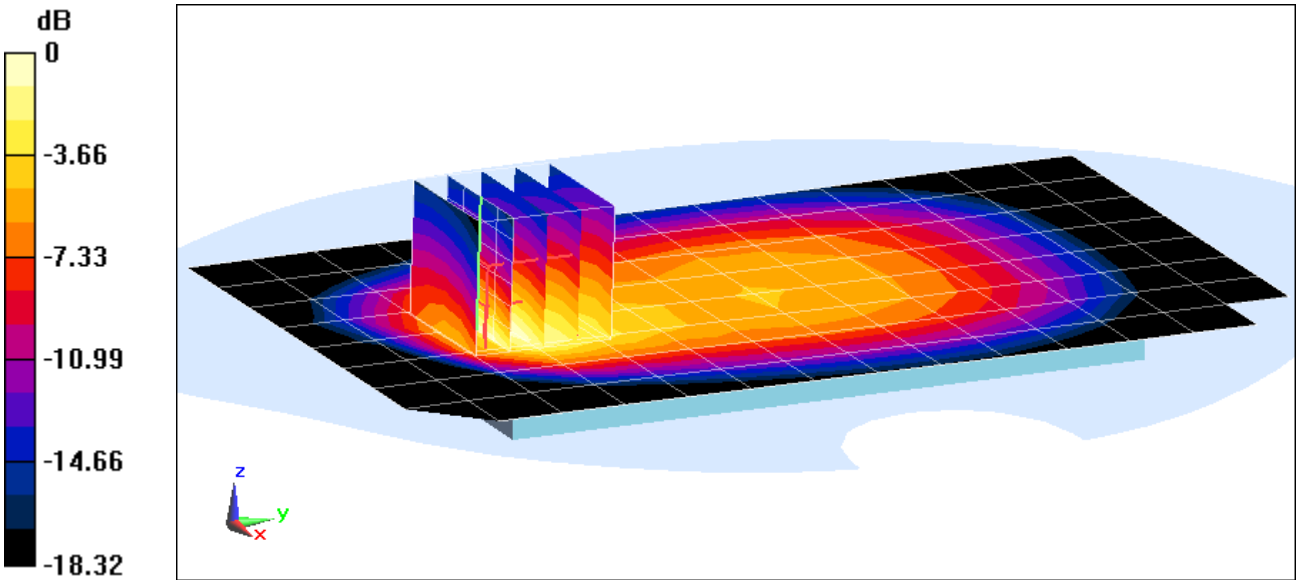
Communication System: UID 0, LTE Band 26 (0); Frequency: 836.5 MHz;Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 836.5 MHz; σ = 0.998 S/m; ε_r = 53.947; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 02-27-2016; Ambient Temp: 20.3°C; Tissue Temp: 19.2°C

Probe: ES3DV3 - SN3319; ConvF(6.07, 6.07, 6.07); Calibrated: 3/19/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1368; Calibrated: 3/13/2015
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 26 (Cell.), with Camera Accessory, 10g Hotspot SAR at 0mm, Back side, Mid.ch, 15 MHz Bandwidth, QPSK, 1 RB, 36 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.80 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 1.22 W/kg
SAR(10 g) = 0.254 W/kg



0 dB = 0.625 W/kg = -2.04 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 07426

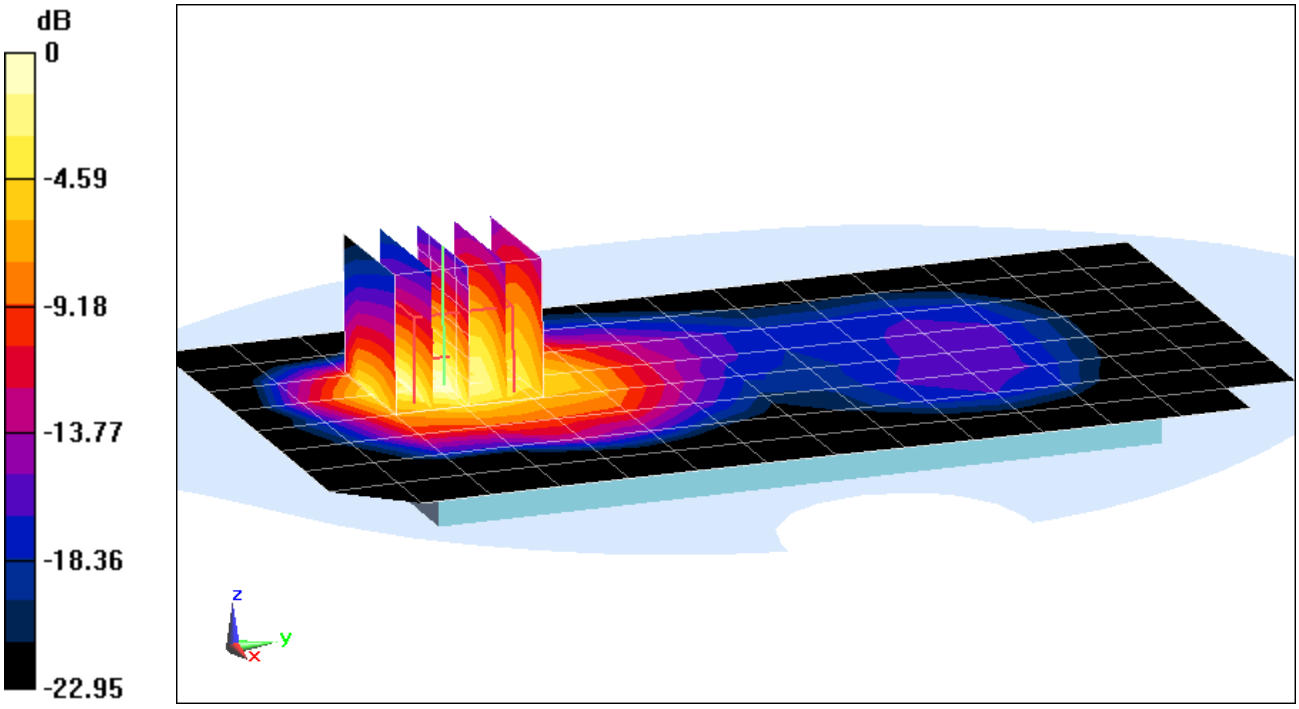
Communication System: UID 0, LTE Band 4 (AWS); Frequency: 1732.5 MHz;Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used (interpolated):
$f = 1732.5$ MHz; $\sigma = 1.463$ S/m; $\varepsilon_r = 52.169$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 02-27-2016; Ambient Temp: 20.8°C; Tissue Temp: 20.5°C

Probe: ES3DV2 - SN3022; ConvF(4.79, 4.79, 4.79); Calibrated: 8/26/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1323; Calibrated: 9/16/2015
Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1797
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: LTE Band 4 (AWS), with Camera Accessory, Ant 2, 10g Hotspot SAR at 0mm, Back side, Mid.ch, 20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 53.03 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 8.07 W/kg
SAR(10 g) = 1.81 W/kg



0 dB = 4.52 W/kg = 6.55 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 07426

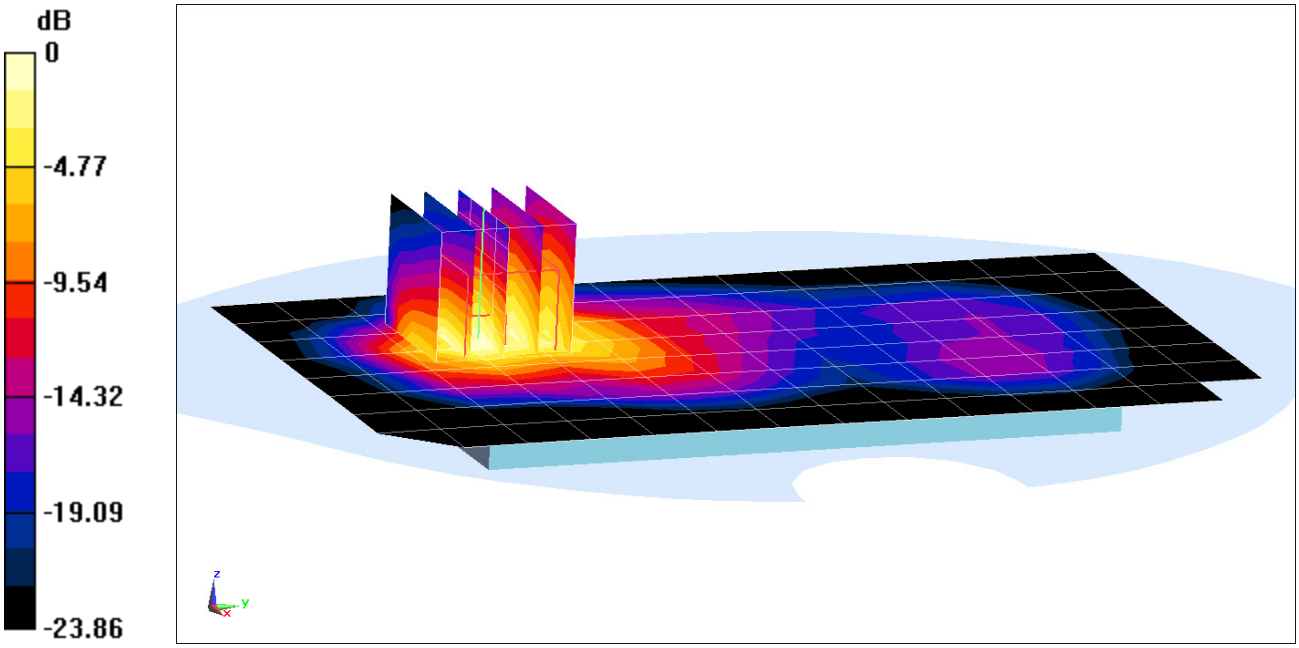
Communication System: UID 0, LTE Band 25 (PCS); Frequency: 1905 MHz;Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
f = 1905 MHz; σ = 1.568 S/m; ε_r = 52.896; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 03-03-2016; Ambient Temp: 22.2°C; Tissue Temp: 21.4°C

Probe: ES3DV3 - SN3334; ConvF(4.84, 4.84, 4.84); 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 25 (PCS), with Camera Accessory, Ant2, 10g Hotspot SAR at 0mm Back side, High.ch, 20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 36.58 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 5.55 W/kg
SAR(10 g) = 1.12 W/kg



0 dB = 2.83 W/kg = 4.52 dBW/kg

DUT: ZNFLS992; Type: Portable Handset; Serial: 07426

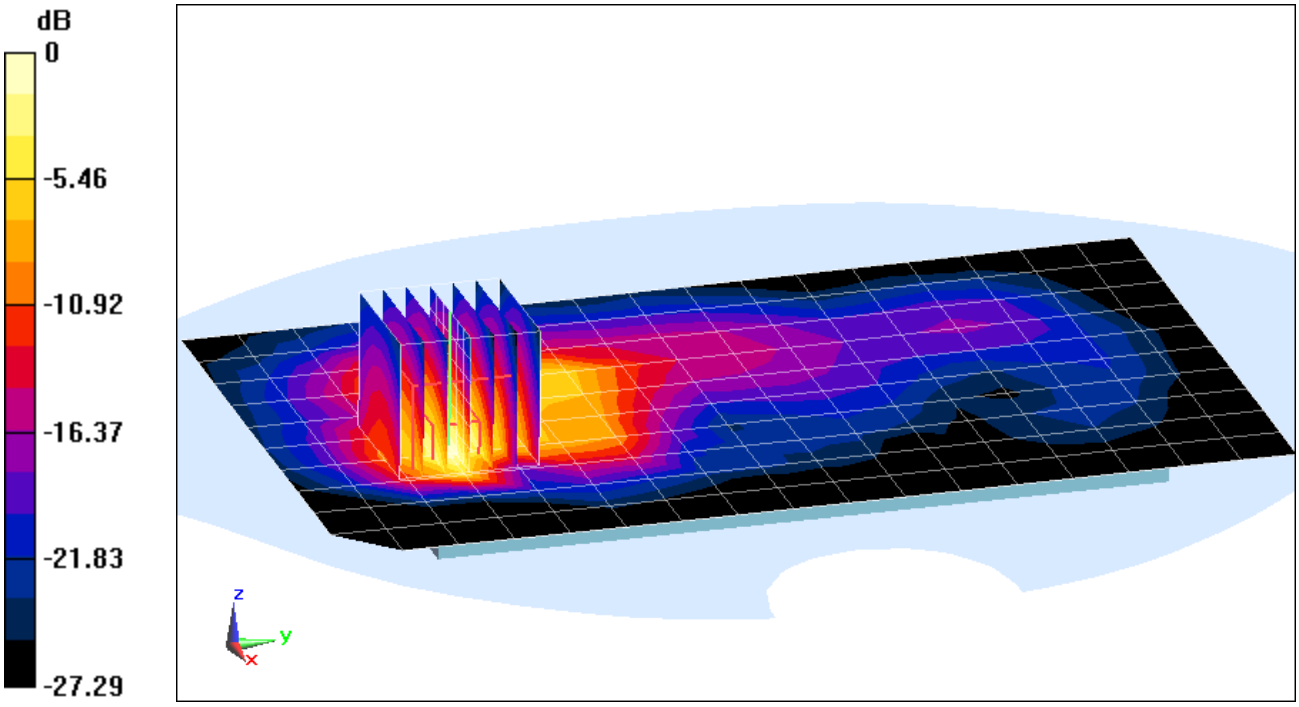
Communication System: UID 0, LTE Band 7; Frequency: 2560 MHz;Duty Cycle: 1:1
Medium: 2450 – 2600 Body Medium parameters used (interpolated):
f = 2560 MHz; σ = 2.09 S/m; ε_r = 52.306; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 02-29-2016; Ambient Temp: 22.9°C; Tissue Temp: 23.5°C

Probe: ES3DV3 - SN3263; ConvF(4.11, 4.11, 4.11); Calibrated: 5/20/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 6/17/2015
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: LTE Band 7, with Camera Accessory, 10g Hotspot SAR at 0mm, Back side, High.ch 20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset

Area Scan (11x18x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 28.76 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 3.36 W/kg
SAR(10 g) = 0.520 W/kg



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

DUT: ZNFLS992; Type: Portable Handset; Serial: 07426

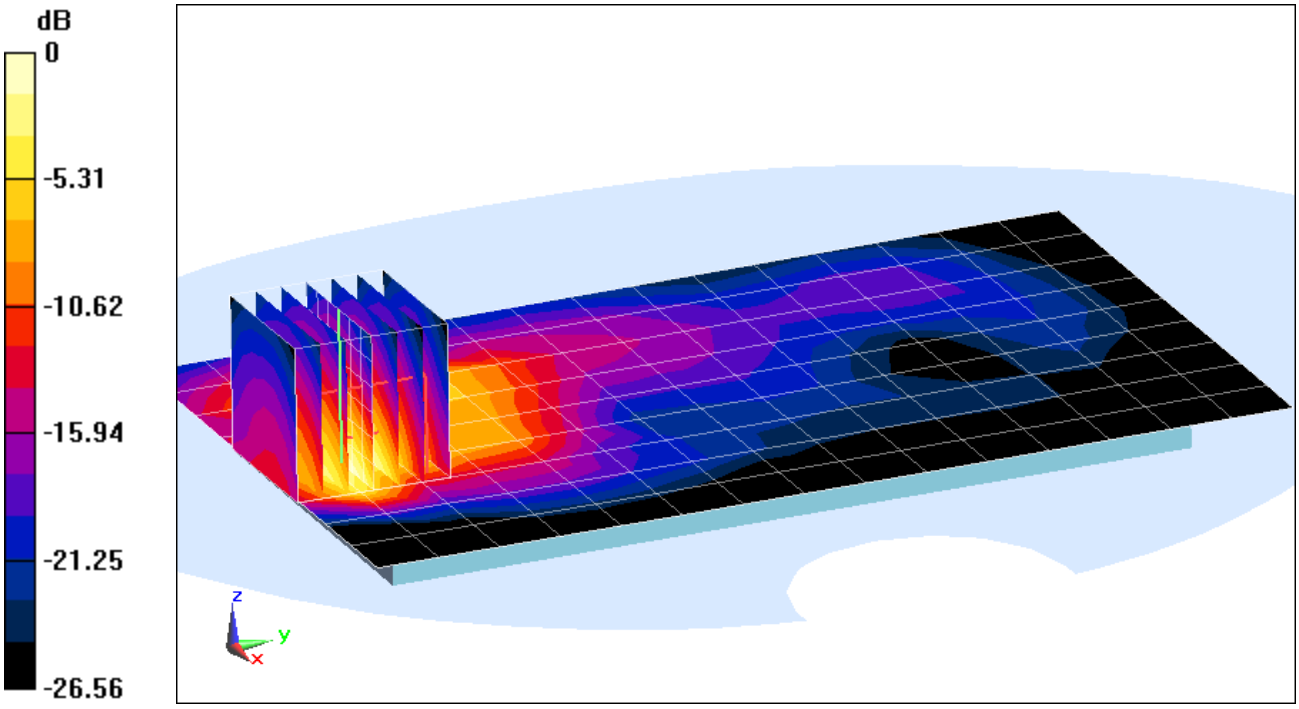
Communication System: UID 0, LTE Band 41 (0); Frequency: 2506 MHz;Duty Cycle: 1:1.59
Medium: 2450 - 2600 Body Medium parameters used (interpolated):
$f = 2506$ MHz; $\sigma = 2.065$ S/m; $\varepsilon_r = 50.379$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 02-26-2016; Ambient Temp: 21.5°C; Tissue Temp: 22.5°C

Probe: ES3DV3 - SN3263; ConvF(4.28, 4.28, 4.28); Calibrated: 5/20/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 6/17/2015
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: LTE Band 41, with Camera Accessory, 10g Hotspot SAR at 0mm, Back side, Low.ch 20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

Area Scan (10x16x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 35.91 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 5.48 W/kg
SAR(10 g) = 0.816 W/kg



0 dB = 2.99 W/kg = 4.76 dBW/kg

APPENDIX B: SYSTEM VERIFICATION

PCTEST ENGINEERING LABORATORY, INC.

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

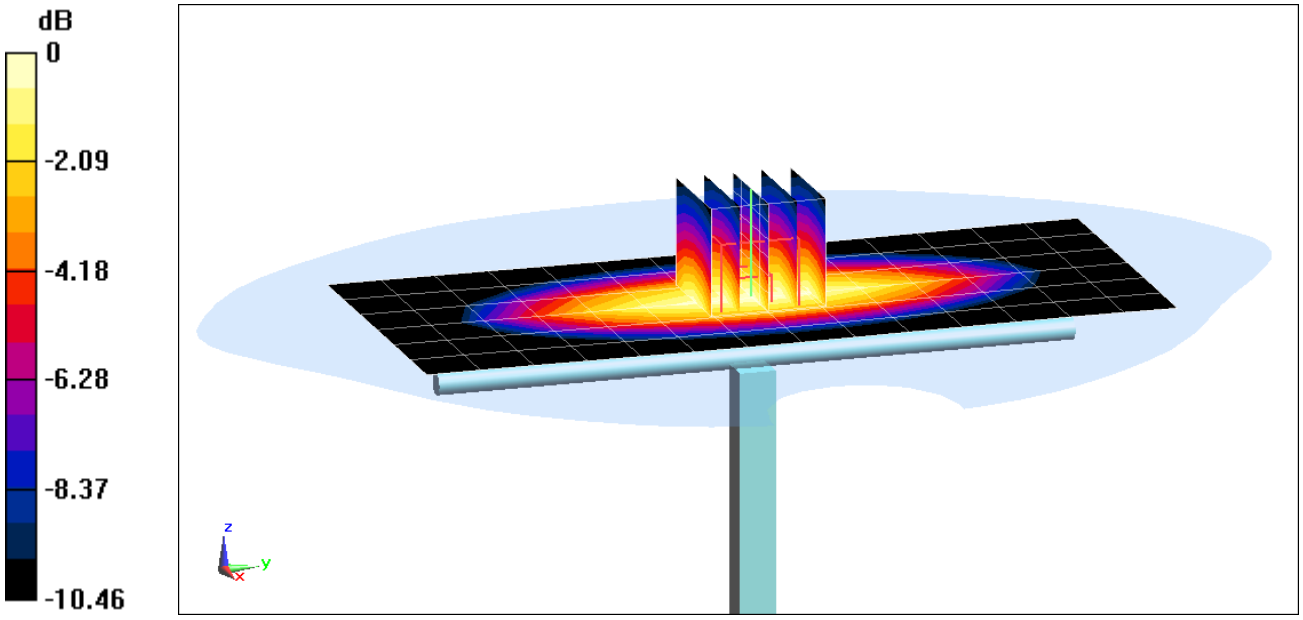
Communication System: UID 0, CW; Frequency: 750 MHz; Duty Cycle: 1:1
Medium: 750 Head Medium parameters used (interpolated):
f = 750 MHz; σ = 0.897 S/m; ε_r = 42.931; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 02-19-2016; Ambient Temp: 20.3°C; Tissue Temp: 21.7°C

Probe: ES3DV3 - SN3263; ConvF(6.27, 6.27, 6.27); 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)

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) = 2.50 W/kg
SAR(1 g) = 1.67 W/kg
Deviation(1 g) = 0.85%



0 dB = 1.95 W/kg = 2.90 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

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

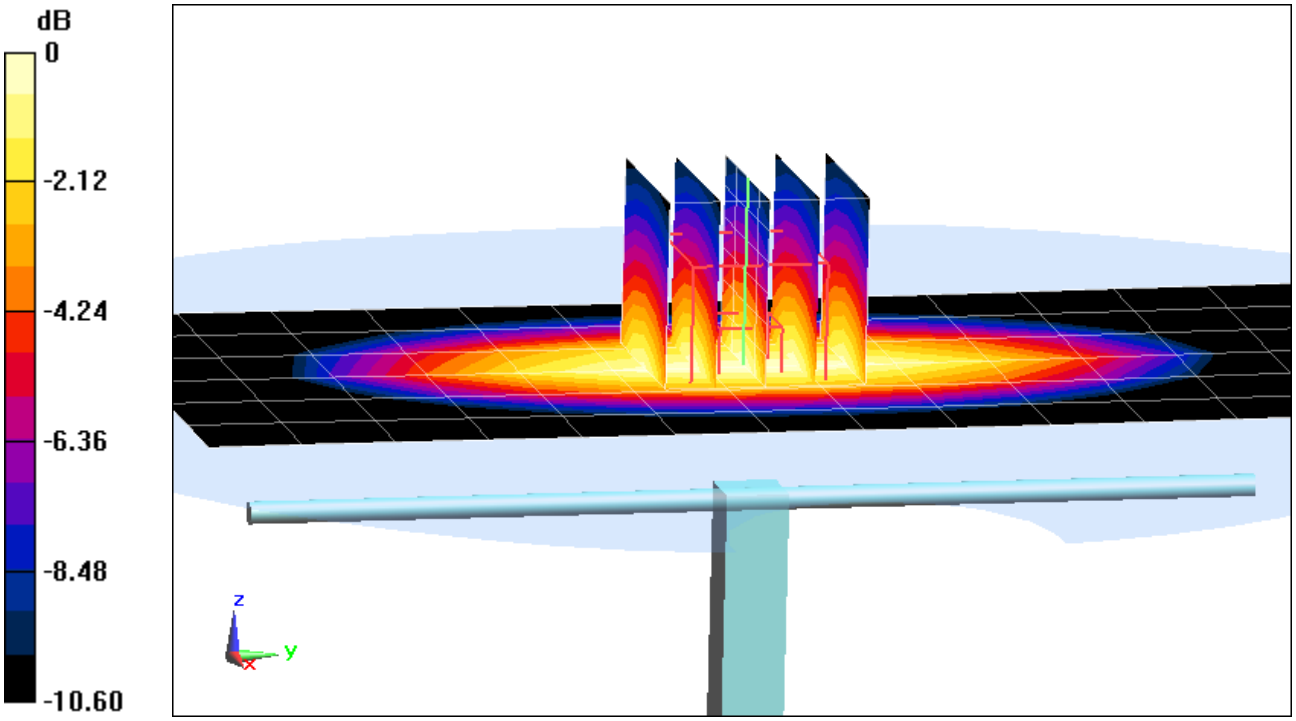
Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used:
f = 835 MHz; σ = 0.926 S/m; ε_r = 43.006; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 02-01-2016; Ambient Temp: 21.0°C; Tissue Temp: 21.8°C

Probe: ES3DV3 - SN3319; ConvF(6.41, 6.41, 6.41); Calibrated: 3/19/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1368; Calibrated: 3/13/2015
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) = 2.88 W/kg
SAR(1 g) = 1.96 W/kg
Deviation(1 g) = 7.34%



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

PCTEST ENGINEERING LABORATORY, INC.

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

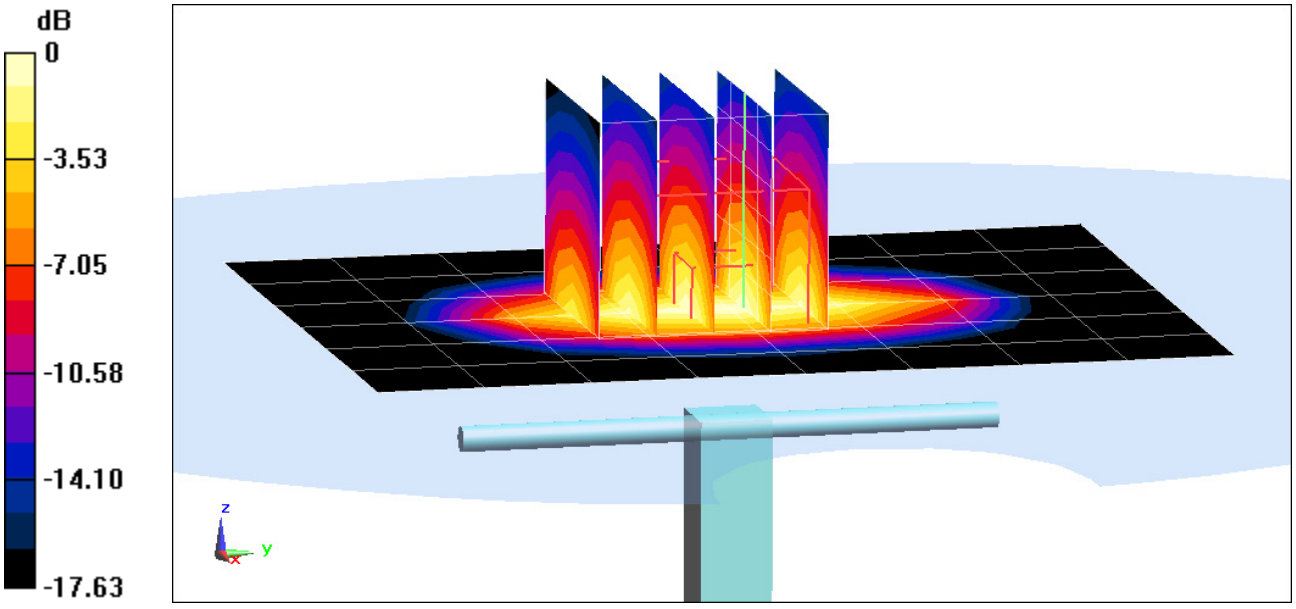
Communication System: UID 0, CW; Frequency: 1750 MHz; Duty Cycle: 1:1
Medium: 1750 Head Medium parameters used:
f = 1750 MHz; σ = 1.332 S/m; ε_r = 39.53; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-04-2016; Ambient Temp: 23.5°C; Tissue Temp: 21.7°C

Probe: ES3DV2 - SN3022; ConvF(5.08, 5.08, 5.08); Calibrated: 8/26/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/18/2015
Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1797
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) = 6.13 W/kg
SAR(1 g) = 3.44 W/kg
Deviation(1 g) = -4.97%



0 dB = 4.26 W/kg = 6.29 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

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

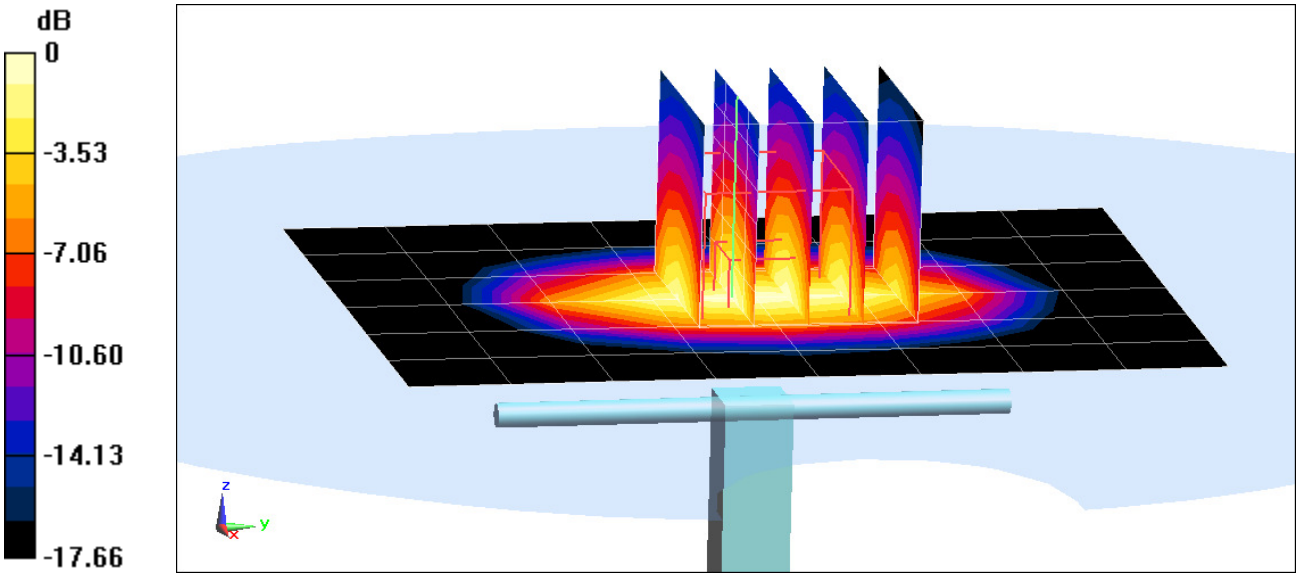
Communication System: UID 0, CW; Frequency: 1750 MHz; Duty Cycle: 1:1
Medium: 1750 Head Medium parameters used:
f = 1750 MHz; σ = 1.385 S/m; ε_r = 38.918; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-09-2016; Ambient Temp: 24.2°C; Tissue Temp: 22.4°C

Probe: ES3DV2 - SN3022; ConvF(5.08, 5.08, 5.08); Calibrated: 8/26/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1323; Calibrated: 9/16/2015
Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1797
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) = 6.75 W/kg
SAR(1 g) = 3.77 W/kg
Deviation(1 g) = 4.14%



0 dB = 4.70 W/kg = 6.72 dBW/kg

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

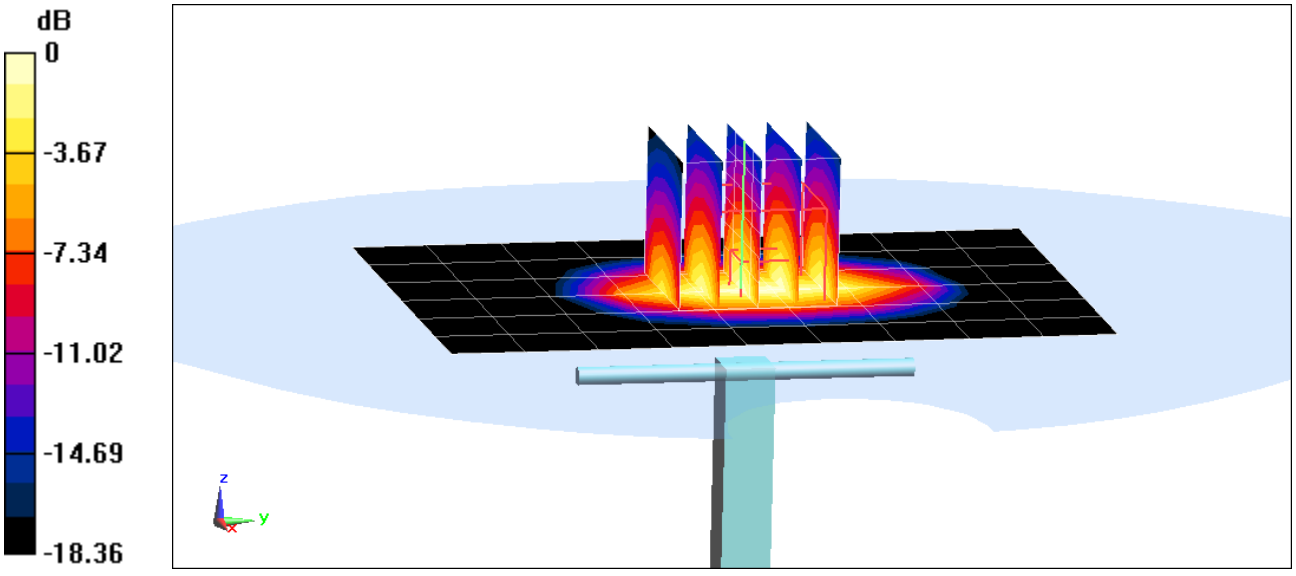
Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: 1900 Head Medium parameters used (interpolated):
f = 1900 MHz; σ = 1.432 S/m; ε_r = 40.248; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-10-2016; Ambient Temp: 23.5°C; Tissue Temp: 22.9°C

Probe: ES3DV3 - SN3333; ConvF(5.03, 5.03, 5.03); 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)

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) = 7.78 W/kg
SAR(1 g) = 4.30 W/kg
Deviation(1 g) = 5.65%



0 dB = 5.35 W/kg = 7.28 dBW/kg

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

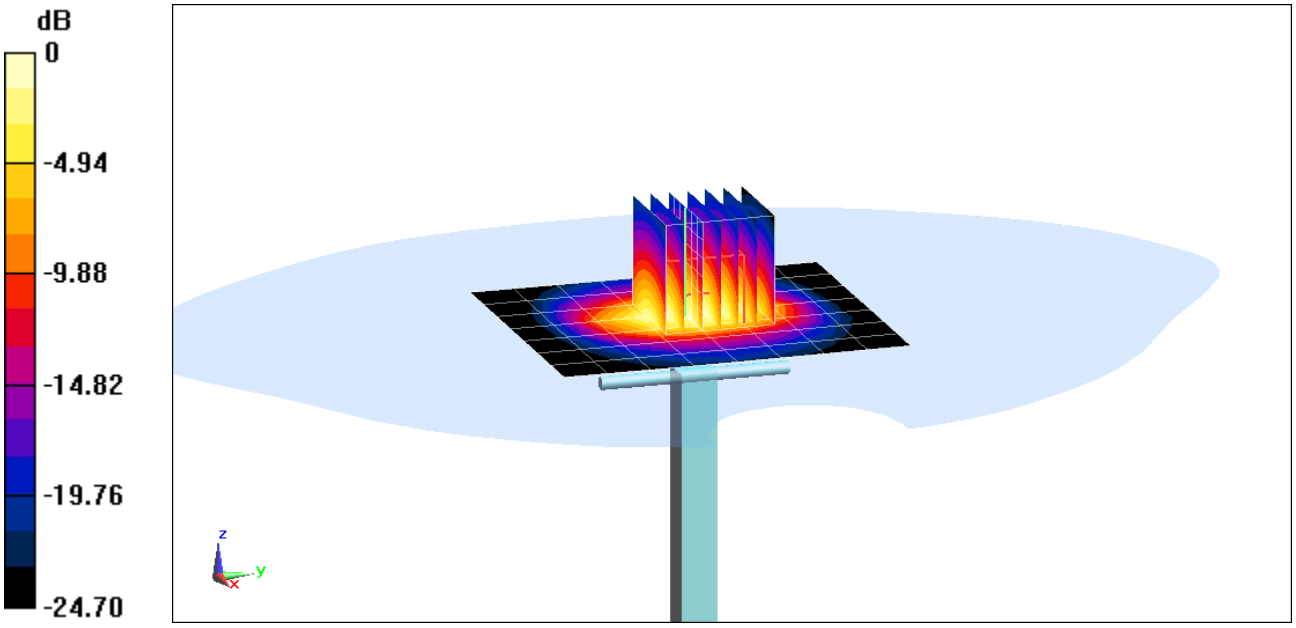
Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: 2400 – 2600 Head Medium parameters used:
f = 2450 MHz; σ = 1.862 S/m; ε_r = 39.863; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-08-2016; Ambient Temp: 19.8°C; Tissue Temp: 22.2°C

Probe: ES3DV3 - SN3263; ConvF(4.4, 4.4, 4.4); 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)

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) = 5.21 W/kg
Deviation(1 g) = -3.87%



0 dB = 6.92 W/kg = 8.40 dBW/kg

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: 1004

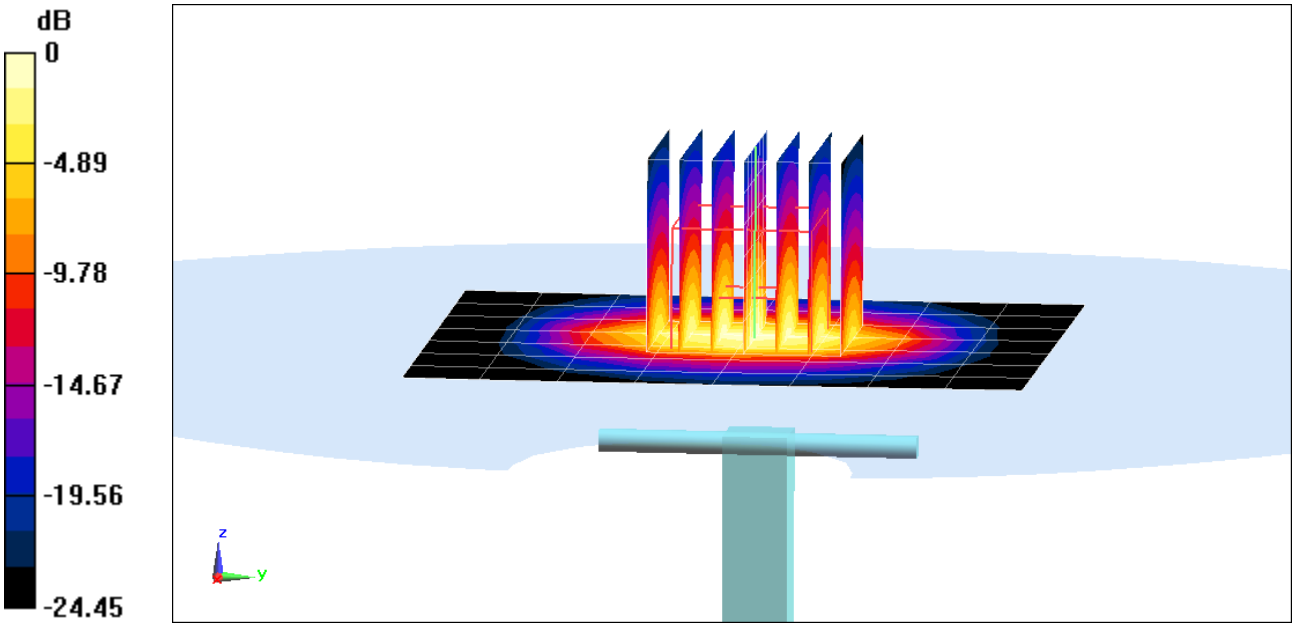
Communication System: UID 0, CW; Frequency: 2600 MHz; Duty Cycle: 1:1
Medium: 2400 – 2600 Head Medium parameters used:
f = 2600 MHz; σ = 2.057 S/m; ε_r = 37.949; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-03-2016; Ambient Temp: 24.4°C; Tissue Temp: 23.1°C

Probe: ES3DV3 - SN3263; ConvF(4.25, 4.25, 4.25); 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)

2600 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 13.3 W/kg
SAR(1 g) = 5.98 W/kg
Deviation(1 g) = 7.17 %



0 dB = 7.97 W/kg = 9.01 dBW/kg

DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1120

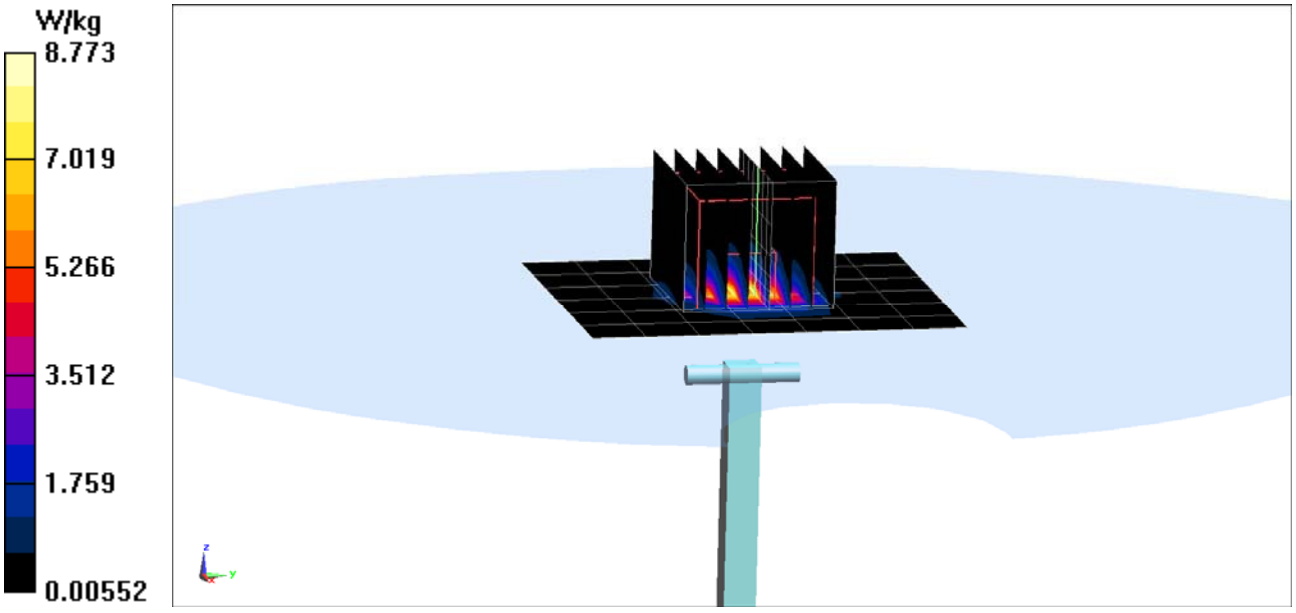
Communication System: UID 0, CW; Frequency: 5300 MHz; Duty Cycle: 1:1
Medium: 5 GHz Head Medium parameters used:
f = 5300 MHz; σ = 4.639 S/m; ε_r = 37.295; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-08-2016; Ambient Temp: 21.7°C; Tissue Temp: 20.1°C

Probe: EX3DV4 - SN7357; ConvF(4.93, 4.93, 4.93); Calibrated: 4/23/2015;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/20/2015
Phantom: SAM v5.0 front; Type: QD000P40CD; Serial: TP-1646
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) = 15.2 W/kg
SAR(1 g) = 3.73 W/kg
Deviation(1 g) = -8.01%



DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1120

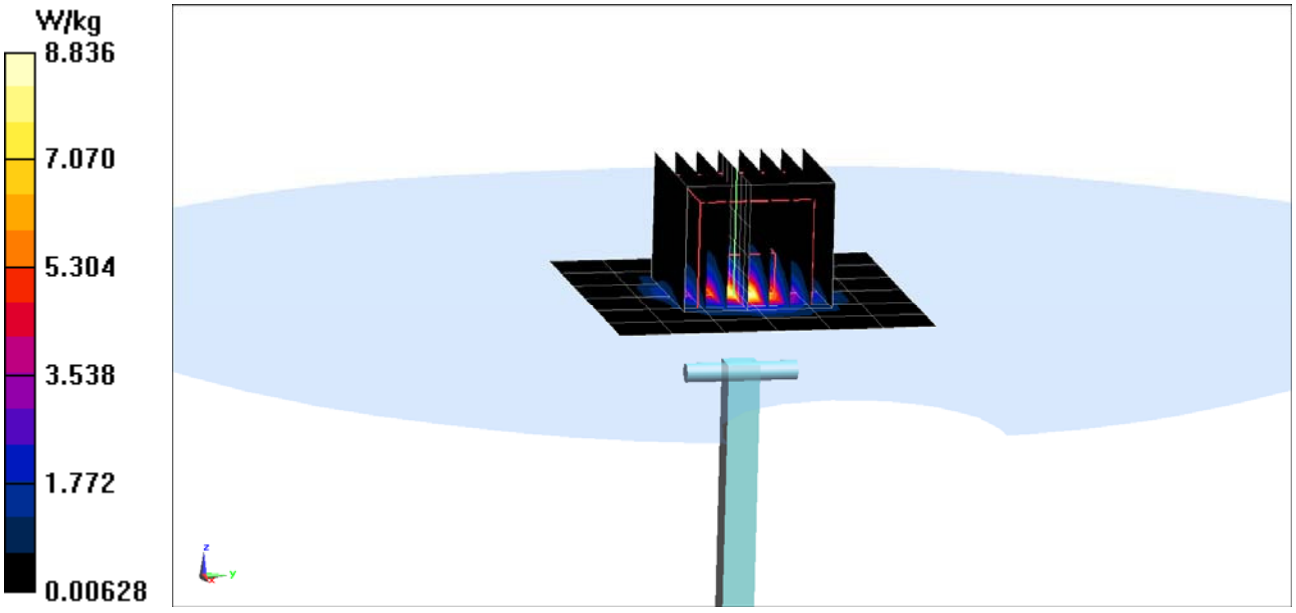
Communication System: UID 0, CW; Frequency: 5500 MHz; Duty Cycle: 1:1
Medium: 5 GHz Head Medium parameters used:
f = 5500 MHz; σ = 4.849 S/m; ε_r = 36.985; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-08-2016; Ambient Temp: 21.7°C; Tissue Temp: 20.1°C

Probe: EX3DV4 - SN7357; ConvF(4.7, 4.7, 4.7); Calibrated: 4/23/2015;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/20/2015
Phantom: SAM v5.0 front; Type: QD000P40CD; Serial: TP-1646
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) = 16.0 W/kg
SAR(1 g) = 3.74 W/kg
Deviation(1 g) = -8.45%



DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1120

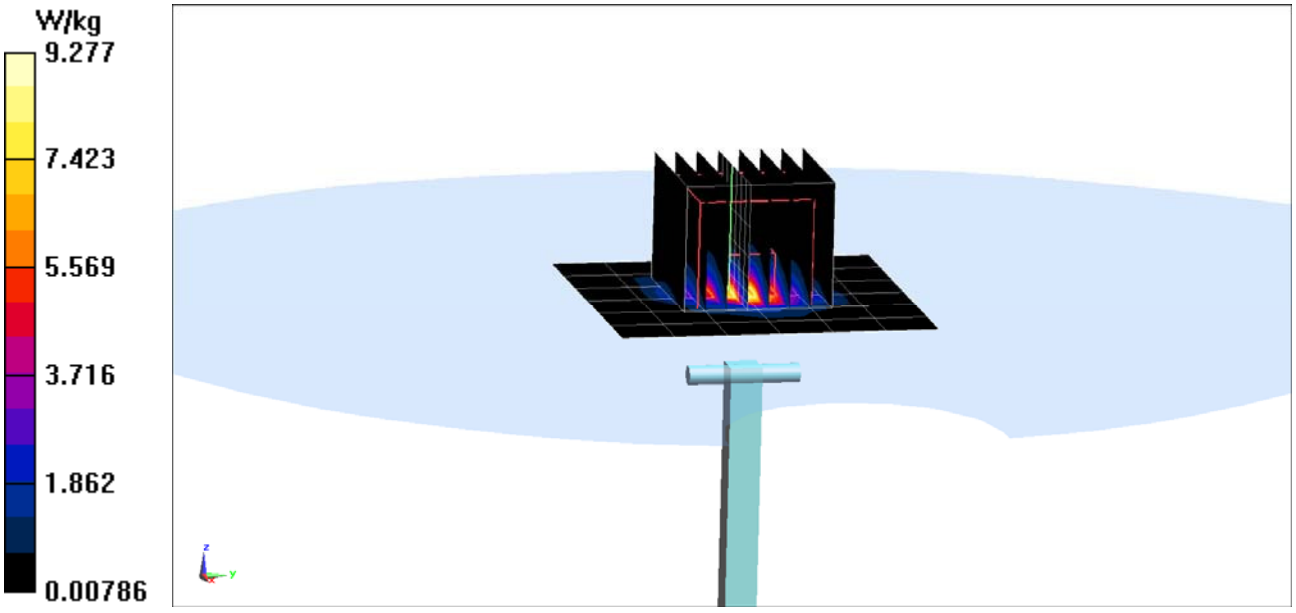
Communication System: UID 0, CW; Frequency: 5600 MHz; Duty Cycle: 1:1
Medium: 5 GHz Head Medium parameters used:
f = 5600 MHz; σ = 4.956 S/m; ε_r = 36.833; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-08-2016; Ambient Temp: 21.8°C; Tissue Temp: 20.1°C

Probe: EX3DV4 - SN7357; ConvF(4.38, 4.38, 4.38); Calibrated: 4/23/2015;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/20/2015
Phantom: SAM v5.0 front; Type: QD000P40CD; Serial: TP-1646
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) = 16.5 W/kg
SAR(1 g) = 3.92 W/kg
Deviation(1 g) = -1.88%



DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1120

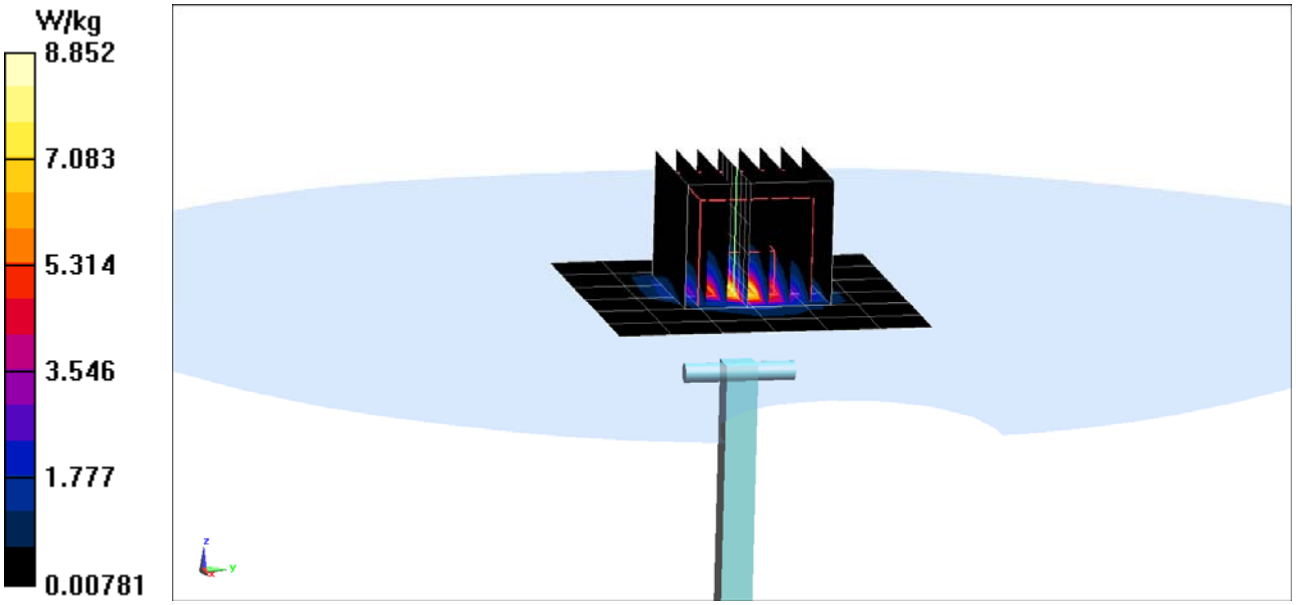
Communication System: UID 0, CW; Frequency: 5800 MHz; Duty Cycle: 1:1
Medium: 5 GHz Head Medium parameters used:
f = 5800 MHz; σ = 5.192 S/m; ε_r = 36.596; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-08-2016; Ambient Temp: 21.8°C; Tissue Temp: 20.1°C

Probe: EX3DV4 - SN7357; ConvF(4.41, 4.41, 4.41); Calibrated: 4/23/2015;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/20/2015
Phantom: SAM v5.0 front; Type: QD000P40CD; Serial: TP-1646
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) = 16.0 W/kg
SAR(1 g) = 3.60 W/kg
Deviation(1 g) = -6.86%



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

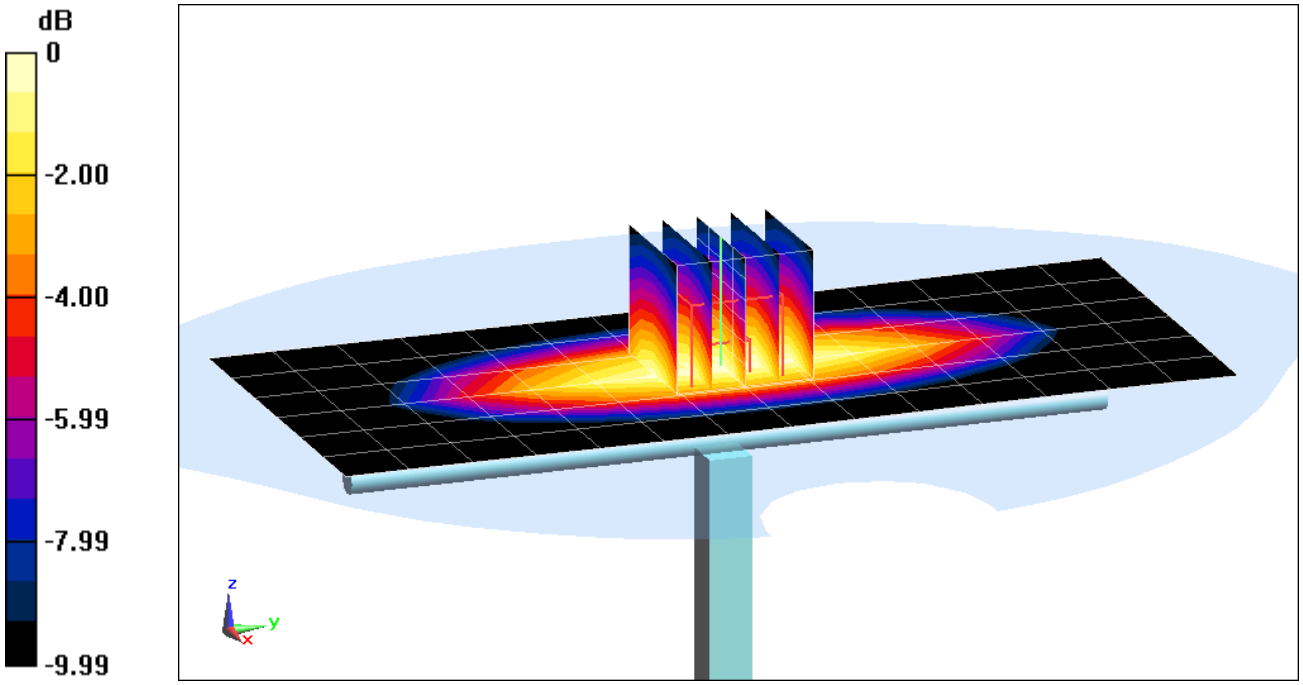
Communication System: UID 0, CW; Frequency: 750 MHz; Duty Cycle: 1:1
Medium: 750 Body Medium parameters used (interpolated):
f = 750 MHz; σ = 0.967 S/m; ε_r = 56.015; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 02-24-2016; Ambient Temp: 23.9°C; Tissue Temp: 22.1°C

Probe: ES3DV3 - SN3263; ConvF(6.07, 6.07, 6.07); 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)

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) = 2.65 W/kg
SAR(1 g) = 1.82 W/kg
Deviation(1 g) = 6.68%



0 dB = 2.12 W/kg = 3.26 dBW/kg

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

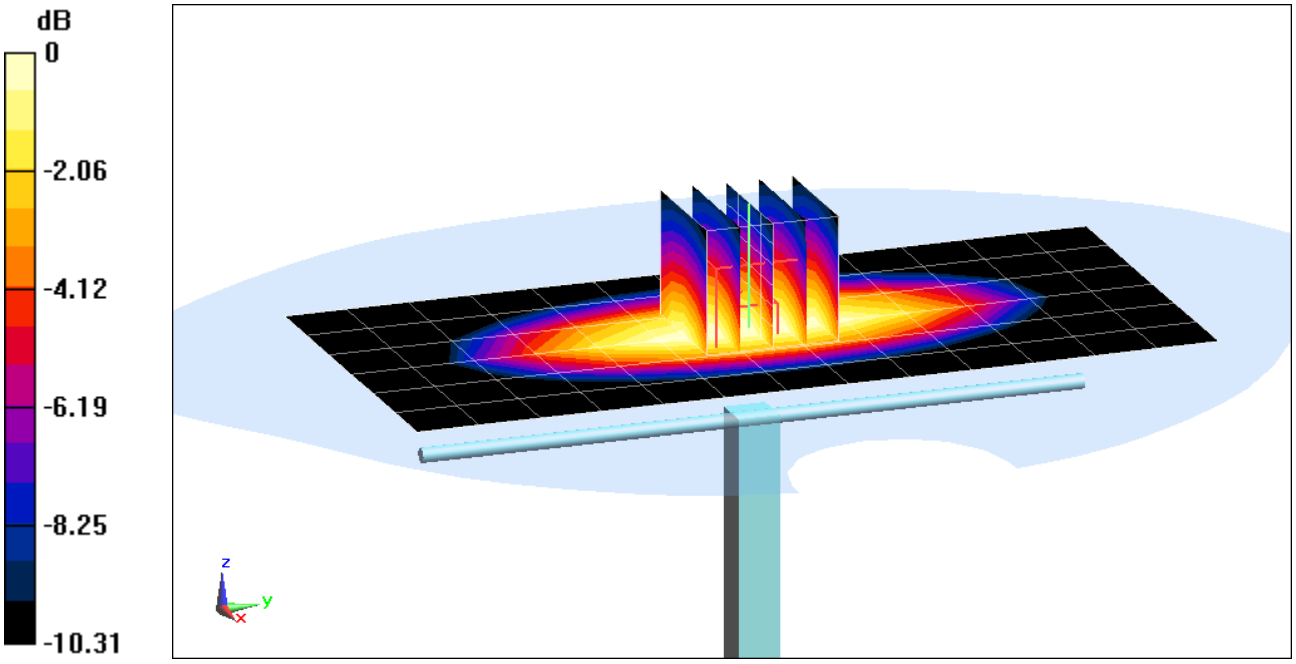
Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used:
f = 835 MHz; σ = 0.998 S/m; ε_r = 54.971; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 02-05-2016; Ambient Temp: 24.3°C; Tissue Temp: 22.1°C

Probe: ES3DV3 - SN3334; ConvF(6.24, 6.24, 6.24); 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)

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) = 2.77 W/kg
SAR(1 g) = 1.90 W/kg
Deviation(1 g) = 2.70%



0 dB = 2.22 W/kg = 3.46 dBW/kg

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d119

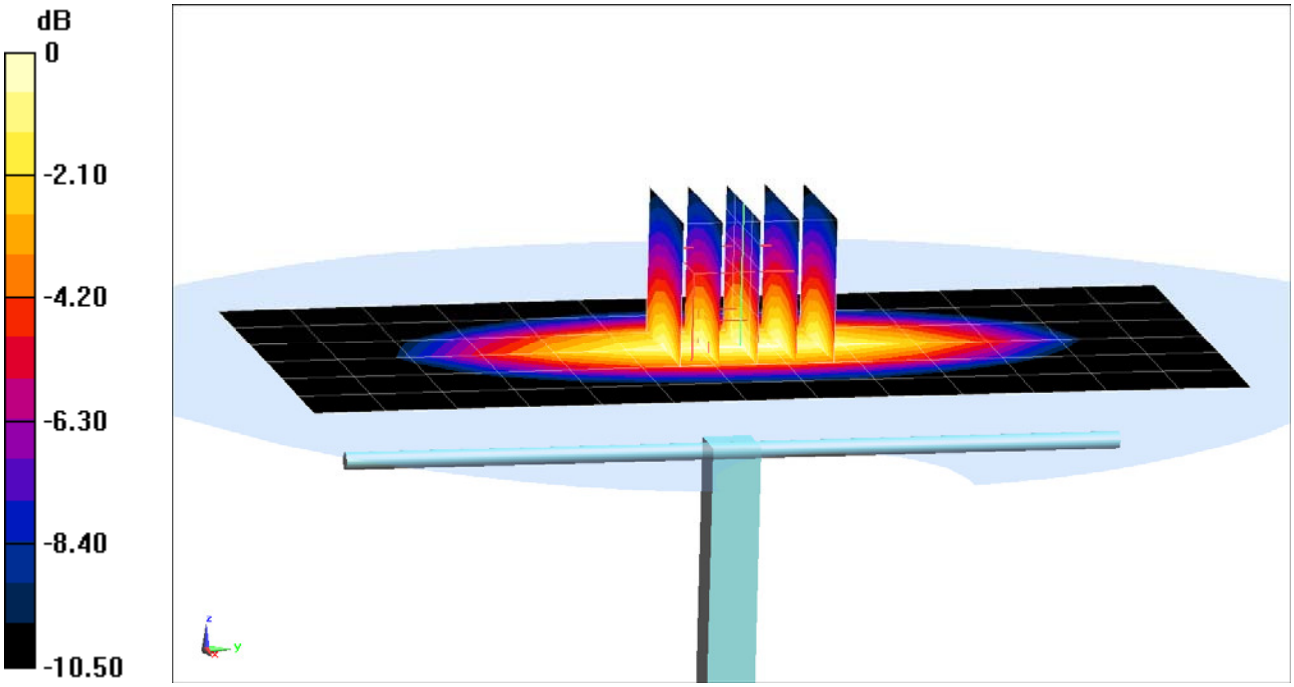
Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used:
f = 835 MHz; σ = 1.016 S/m; ε_r = 53.611; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 02-09-2016; Ambient Temp: 23.4°C; Tissue Temp: 22.0°C

Probe: ES3DV3 - SN3351; ConvF(6.11, 6.11, 6.11); Calibrated: 6/22/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 8/24/2015
Phantom: SAM V5.0 Right; Type: QD000P40CD; Serial: 1647
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) = 2.61 W/kg
SAR(1 g) = 1.78 W/kg
Deviation(1 g) = -3.26%



0 dB = 2.08 W/kg = 3.18 dBW/kg

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

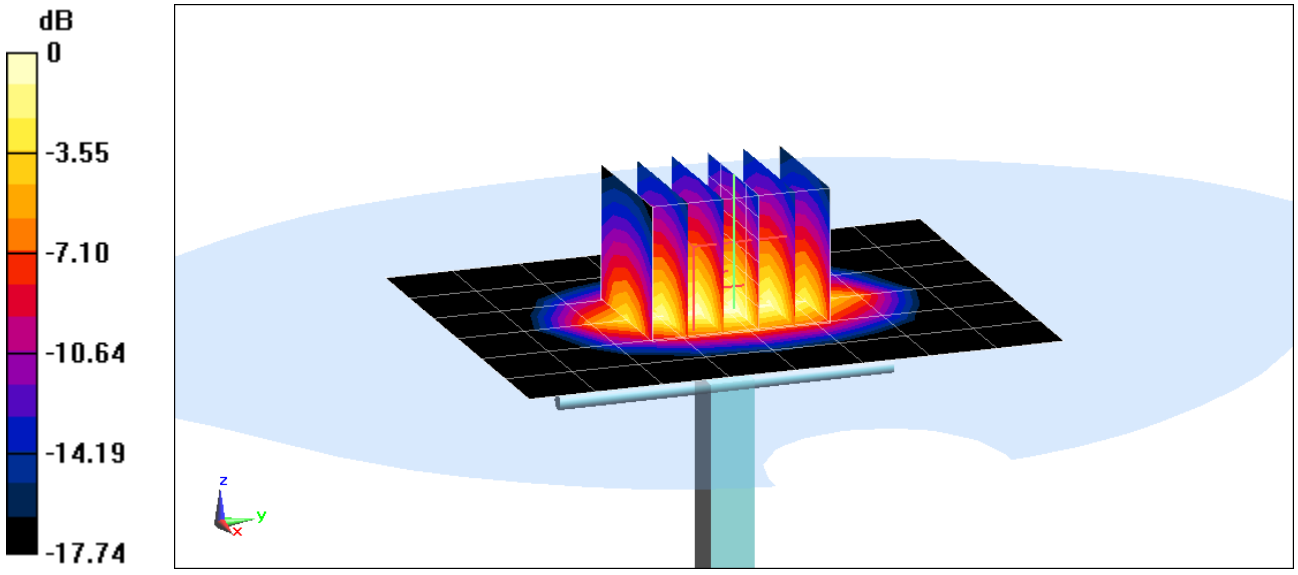
Communication System: UID 0, CW; Frequency: 1750 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used:
f = 1750 MHz; σ = 1.462 S/m; ε_r = 51.492; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-28-2016; Ambient Temp: 23.8°C; Tissue Temp: 22.5°C

Probe: ES3DV2 - SN3022; ConvF(4.79, 4.79, 4.79); Calibrated: 8/26/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/18/2015
Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1797
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 (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 6.82 W/kg
SAR(1 g) = 3.82 W/kg
Deviation(1 g) = 2.96%



0 dB = 4.80 W/kg = 6.81 dBW/kg

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

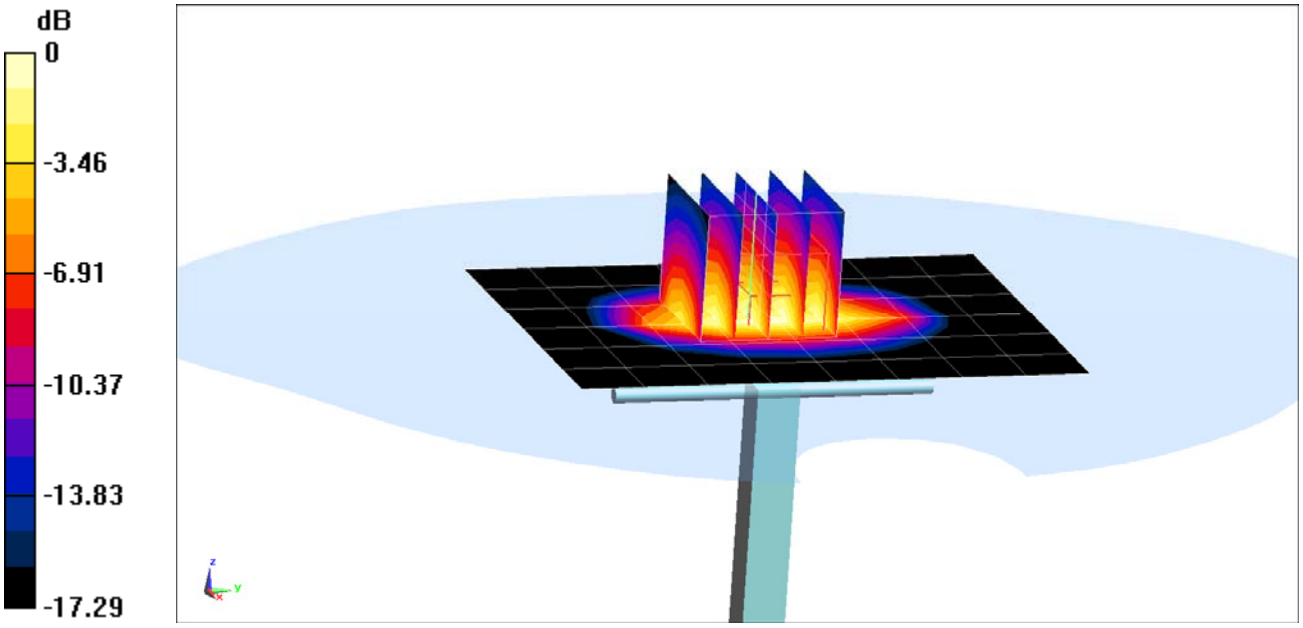
Communication System: UID 0, CW; Frequency: 1750 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used:
f = 1750 MHz; σ = 1.51 S/m; ε_r = 52.082; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-16-2016; Ambient Temp: 22.1°C; Tissue Temp: 20.9°C

Probe: ES3DV3 - SN3209; ConvF(4.86, 4.86, 4.86); Calibrated: 3/19/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/20/2015
Phantom: SAM v5.0 front; Type: QD000P40CD; Serial: TP-1646
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) = 6.70 W/kg
SAR(1 g) = 3.89 W/kg
Deviation(1 g) = 4.85%



0 dB = 4.82 W/kg = 6.83 dBW/kg

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

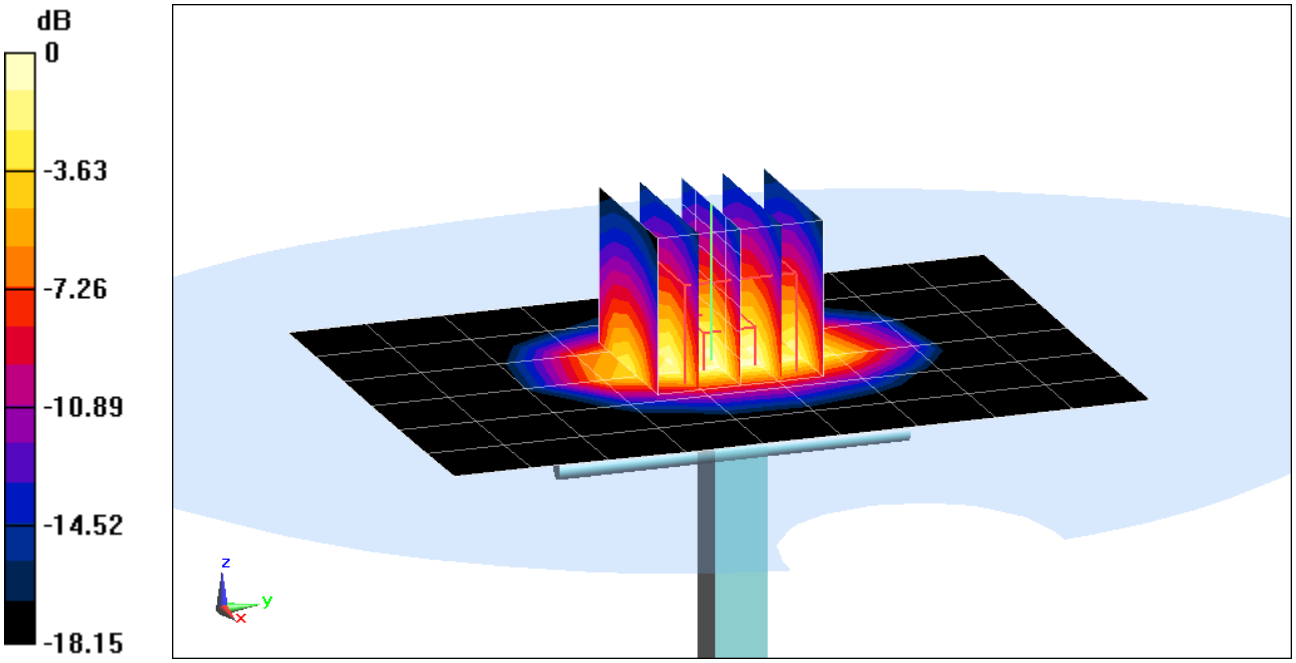
Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
f = 1900 MHz; σ = 1.578 S/m; ε_r = 51.63; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-10-2016; Ambient Temp: 24.3°C; Tissue Temp: 23.4°C

Probe: ES3DV3 - SN3334; ConvF(4.84, 4.84, 4.84); 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) = 6.85 W/kg
SAR(1 g) = 3.84 W/kg
Deviation(1 g) = -4.95%



0 dB = 4.87 W/kg = 6.88 dBW/kg

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

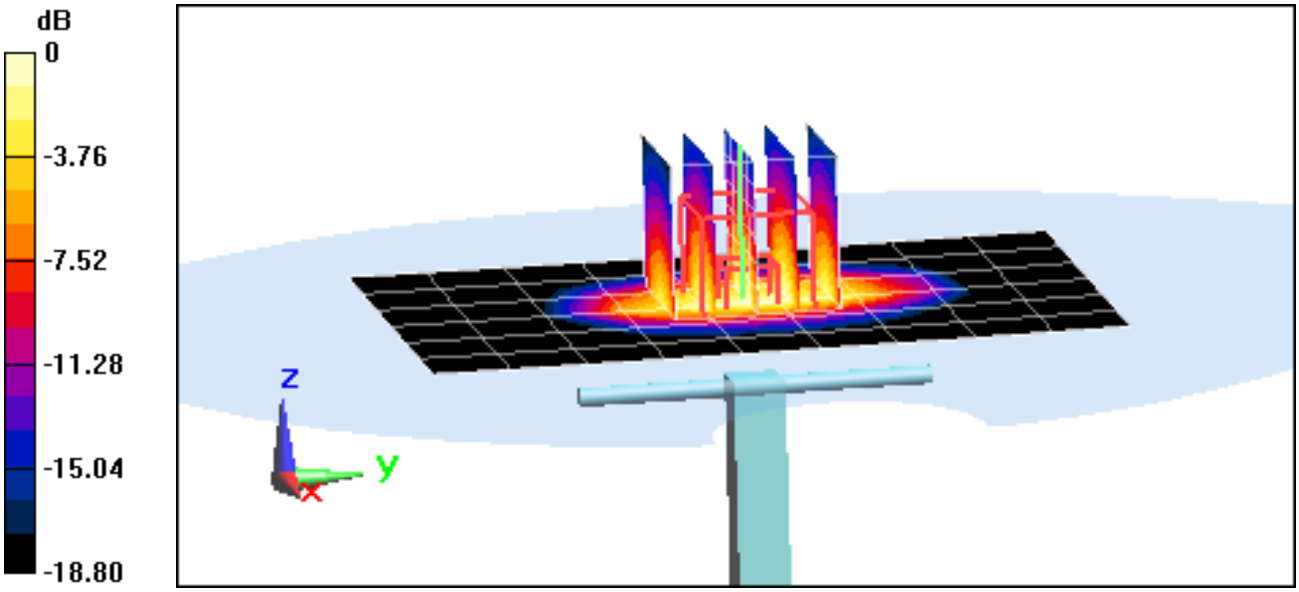
Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
f = 1900 MHz; σ = 1.495 S/m; ε_r = 52.233; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-15-2016; Ambient Temp: 20.0°C; Tissue Temp: 21.8°C

Probe: ES3DV3 - SN3333; ConvF(4.7, 4.7, 4.7); 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)

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) = 7.87 W/kg
SAR(1 g) = 4.32 W/kg
Deviation(1 g) = 6.93%



0 dB = 5.50 W/kg = 7.40 dBW/kg

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

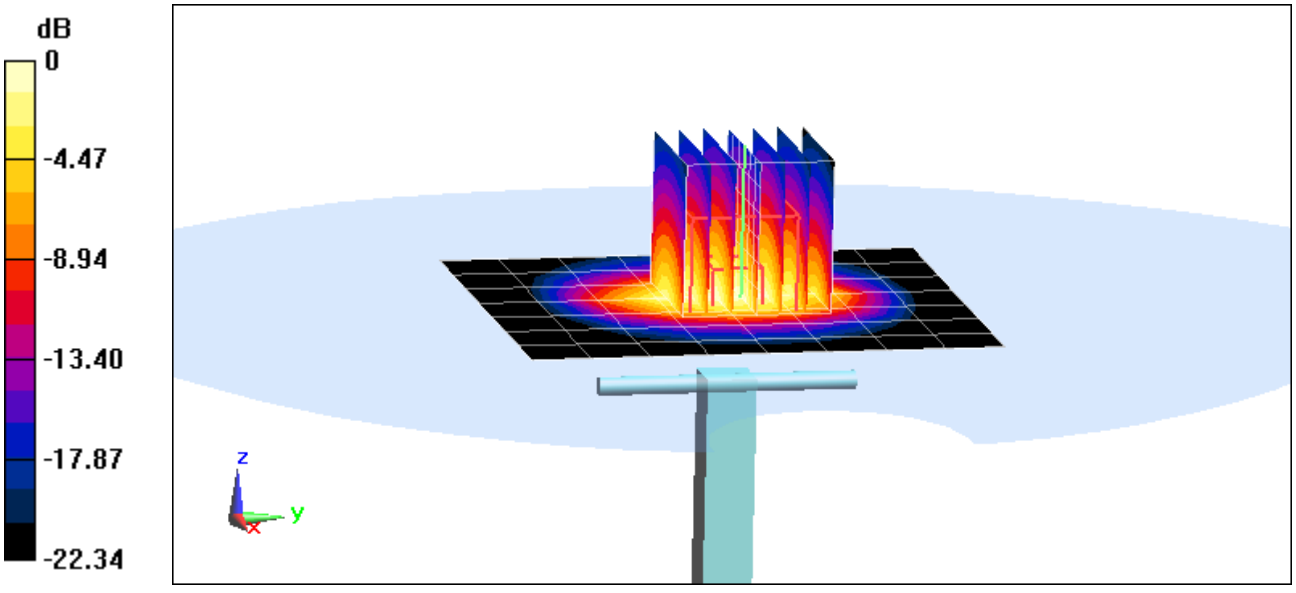
Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: 2400 – 2600 Body Medium parameters used:
f = 2450 MHz; σ = 1.984 S/m; ε_r = 51.839; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-03-2016; Ambient Temp: 22.5°C; Tissue Temp: 23.0°C

Probe: ES3DV3 - SN3319; ConvF(4.11, 4.11, 4.11); Calibrated: 3/19/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1368; Calibrated: 3/13/2015
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)

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) = 11.1 W/kg
SAR(1 g) = 5.26 W/kg
Deviation(1 g) = 1.35%



0 dB = 6.76 W/kg = 8.30 dBW/kg

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

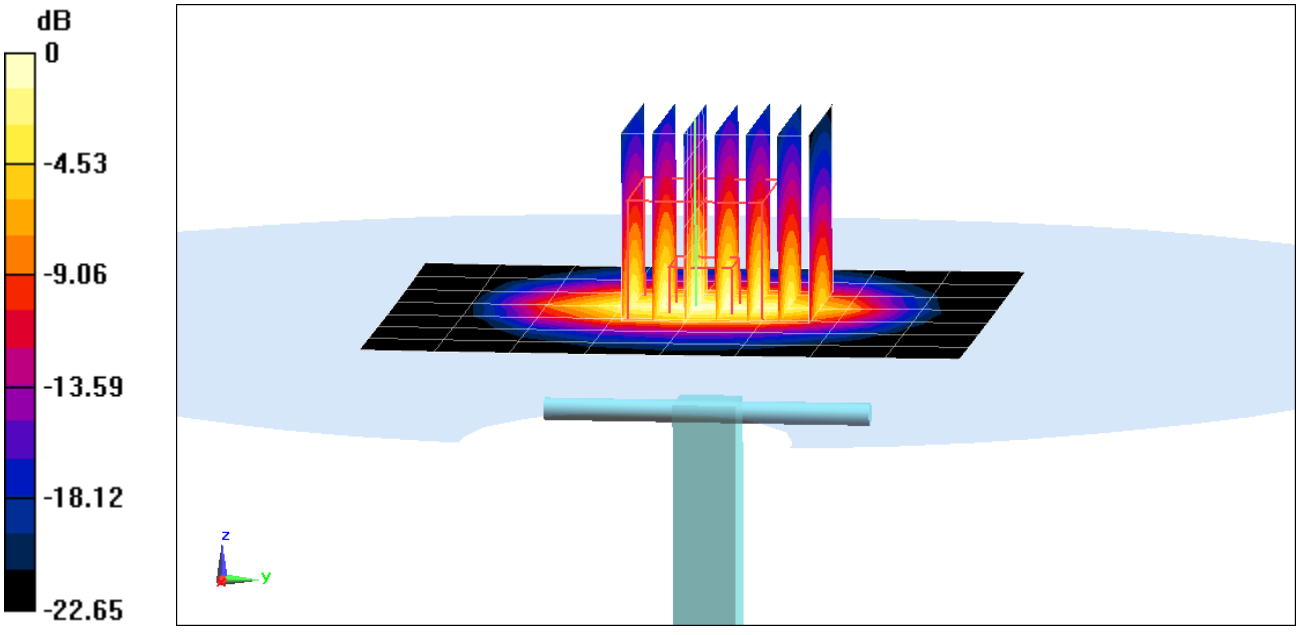
Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: 2400 – 2600 Body Medium parameters used:
f = 2450 MHz; σ = 2.037 S/m; ε_r = 52.074; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-11-2016; Ambient Temp: 23.1°C; Tissue Temp: 22.2°C

Probe: ES3DV3 - SN3263; ConvF(4.28, 4.28, 4.28); Calibrated: 5/20/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 6/17/2015
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) = 11.1 W/kg
SAR(1 g) = 5.17 W/kg
Deviation(1 g) = -0.39 %



0 dB = 6.86 W/kg = 8.36 dBW/kg

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: 1004

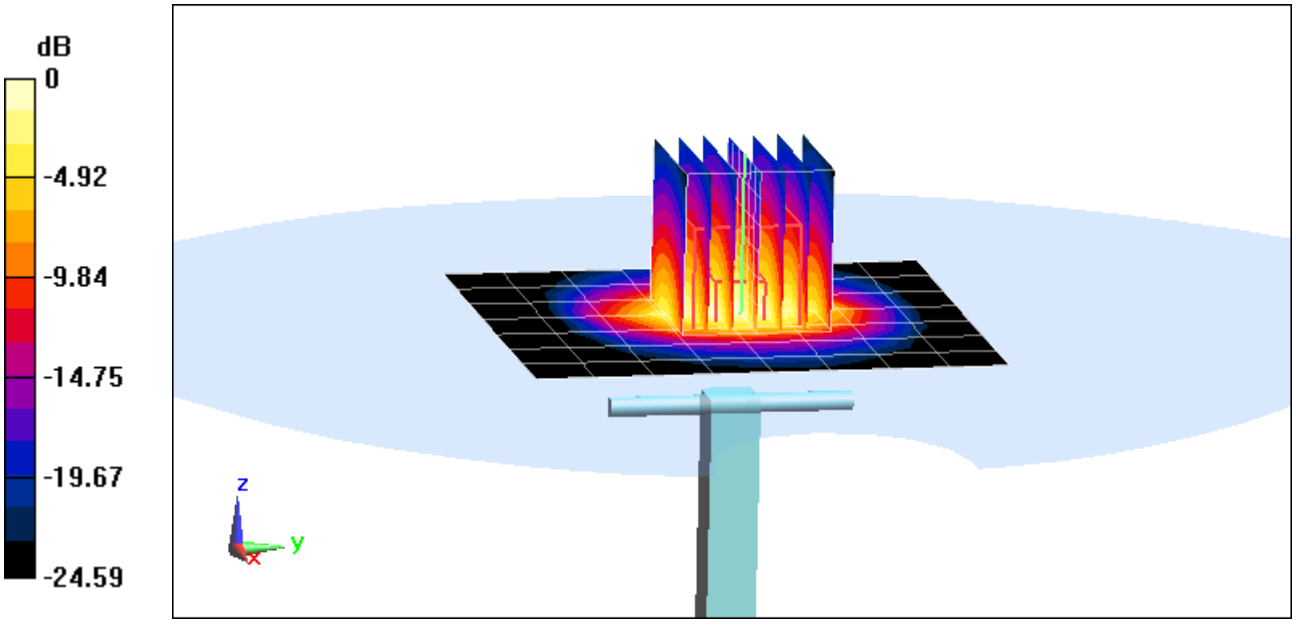
Communication System: UID 0, CW; Frequency: 2600 MHz; Duty Cycle: 1:1
Medium: 2400 – 2600 Body Medium parameters used:
f = 2600 MHz; σ = 2.189 S/m; ε_r = 51.283; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-03-2016; Ambient Temp: 22.5°C; Tissue Temp: 23.0°C

Probe: ES3DV3 - SN3319; ConvF(3.9, 3.9, 3.9); Calibrated: 3/19/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1368; Calibrated: 3/13/2015
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)

2600 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 13.4 W/kg
SAR(1 g) = 5.91 W/kg
Deviation(1 g) = 5.16%



0 dB = 7.97 W/kg = 9.01 dBW/kg

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

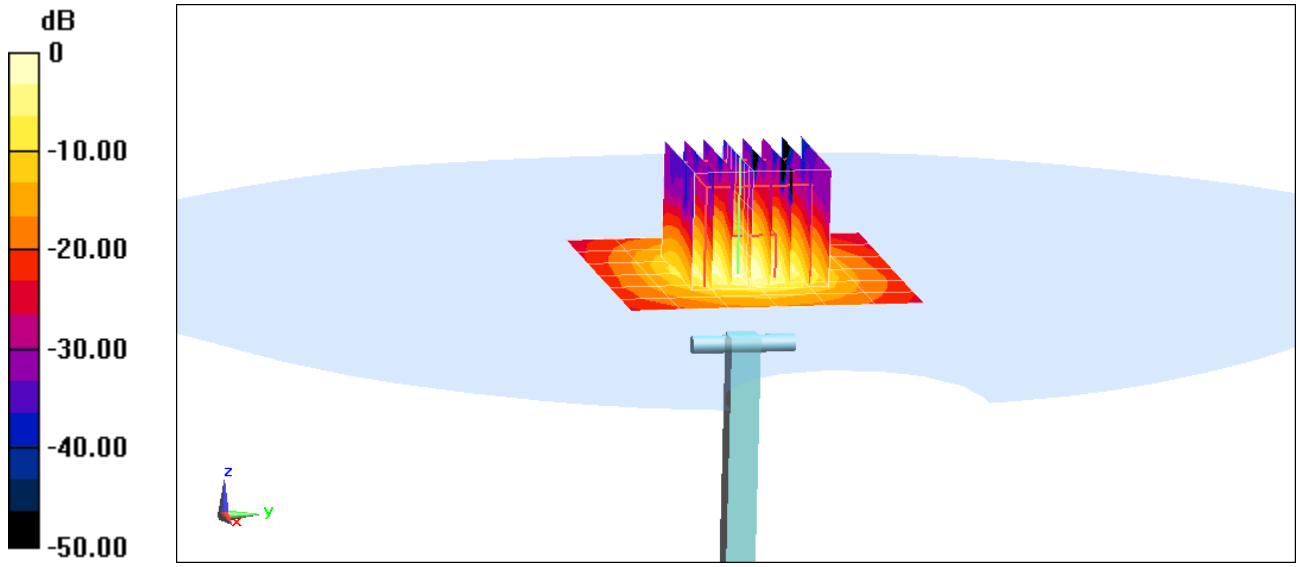
Communication System: UID 0, CW; Frequency: 5250 MHz; Duty Cycle: 1:1
Medium: 5 GHz Head Medium parameters used (interpolated):
f = 5250 MHz; σ = 5.493 S/m; ε_r = 48.156; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-08-2016; Ambient Temp: 23.6°C; Tissue Temp: 22.3°C

Probe: EX3DV4 - SN7308; ConvF(4.63, 4.63, 4.63); 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) = 14.8 W/kg
SAR(1 g) = 3.55 W/kg
Deviation(1 g) = -8.03%



0 dB = 8.39 W/kg = 9.24 dBW/kg

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

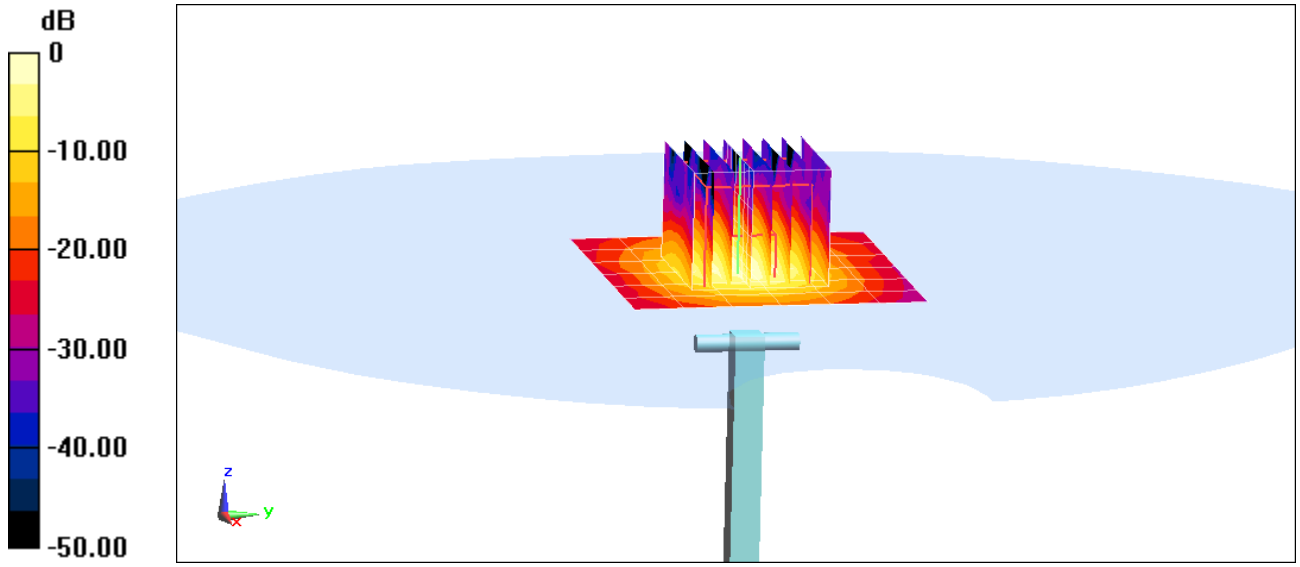
Communication System: UID 0, CW; Frequency: 5600 MHz; Duty Cycle: 1:1
Medium: 5 GHz Head Medium parameters used:
f = 5600 MHz; σ = 5.983 S/m; ε_r = 47.544; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-08-2016; Ambient Temp: 23.6°C; Tissue Temp: 22.3°C

Probe: EX3DV4 - SN7308; ConvF(3.92, 3.92, 3.92); 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) = 17.5 W/kg
SAR(1 g) = 4.13 W/kg
Deviation(1 g) = 0.85%



0 dB = 9.90 W/kg = 9.96 dBW/kg

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

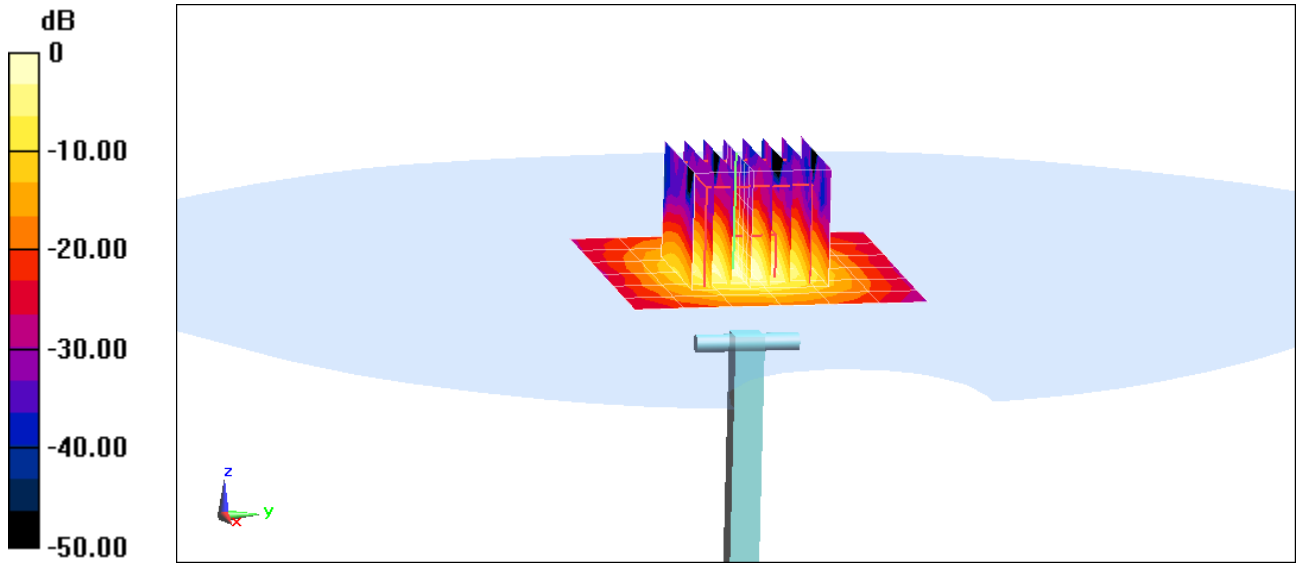
Communication System: UID 0, CW; Frequency: 5750 MHz; Duty Cycle: 1:1
Medium: 5 GHz Head Medium parameters used (interpolated):
$f = 5750$ MHz; $\sigma = 6.199$ S/m; $\varepsilon_r = 47.217$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-08-2016; Ambient Temp: 23.6°C; Tissue Temp: 22.3°C

Probe: EX3DV4 - SN7308; ConvF(4.24, 4.24, 4.24); 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) = 15.7 W/kg
SAR(1 g) = 3.60 W/kg
Deviation(1 g) = -6.61%



0 dB = 8.73 W/kg = 9.41 dBW/kg

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

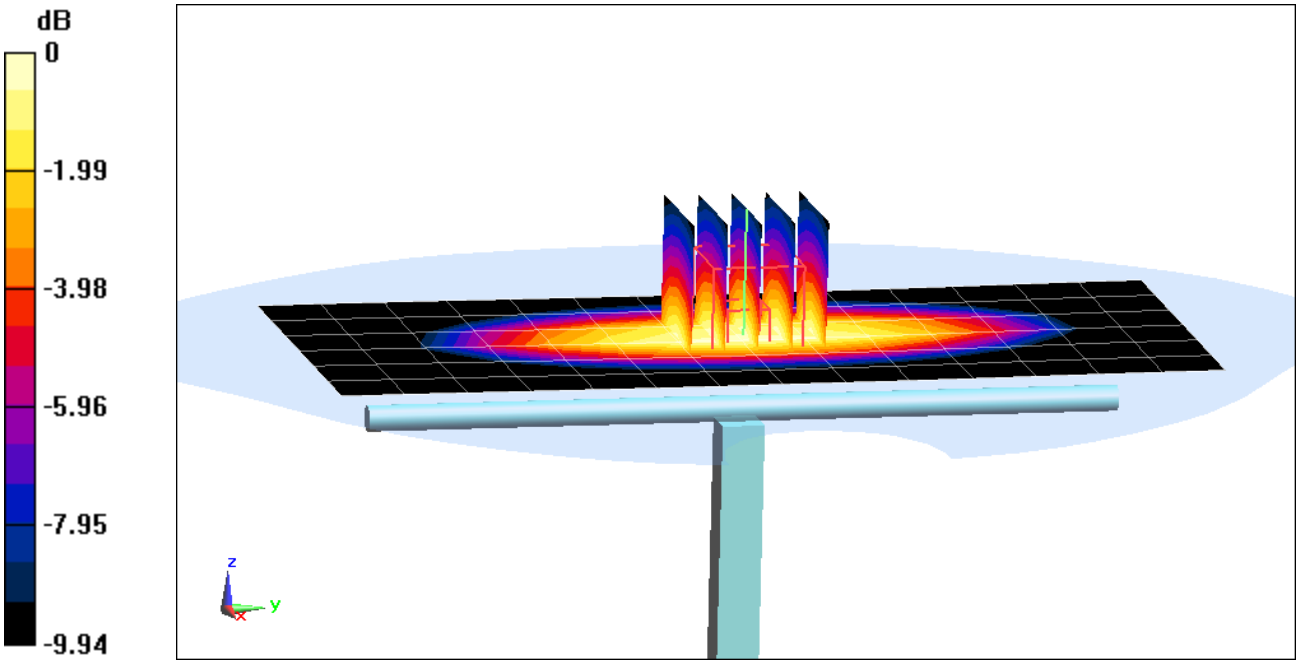
Communication System: UID 0, CW; Frequency: 750 MHz; Duty Cycle: 1:1
Medium: 750 Body Medium parameters used (interpolated):
f = 750 MHz; σ = 0.956 S/m; ε_r = 55.118; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 02-27-2016; Ambient Temp: 19.8°C; Tissue Temp: 20.8°C

Probe: ES3DV3 - SN3333; ConvF(6.31, 6.31, 6.31); 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)

750 MHz System Verification at 23.0 dBm (200 mW)

Area Scan (7x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 2.48 W/kg
SAR(10 g) = 1.14 W/kg
Deviation(10 g) = 0.35 %



0 dB = 1.99 W/kg = 2.99 dBW/kg

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d119

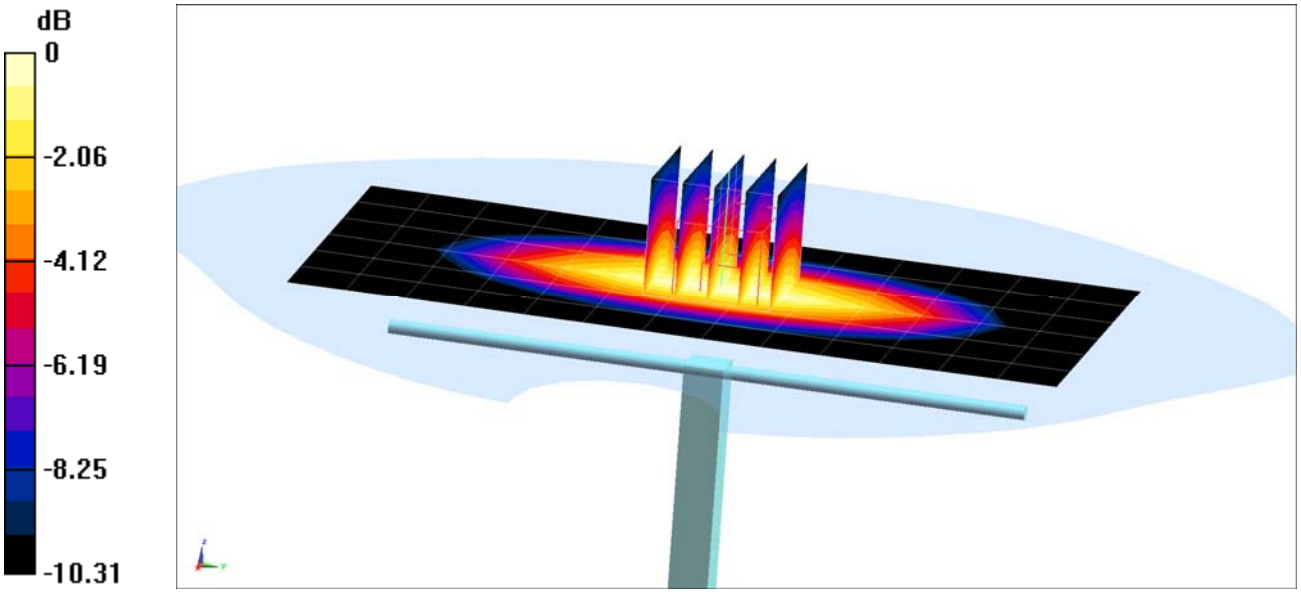
Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used:
f = 835 MHz; σ = 1 S/m; ε_r = 55.519; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 02-29-2016; Ambient Temp: 21.6°C; Tissue Temp: 21.4°C

Probe: ES3DV3 - SN3319; ConvF(6.07, 6.07, 6.07); Calibrated: 3/19/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1368; Calibrated: 3/13/2015
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) = 2.83 W/kg
SAR(10 g) = 1.28 W/kg
Deviation(10 g) = 5.61%



0 dB = 2.14 W/kg = 3.30 dBW/kg

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

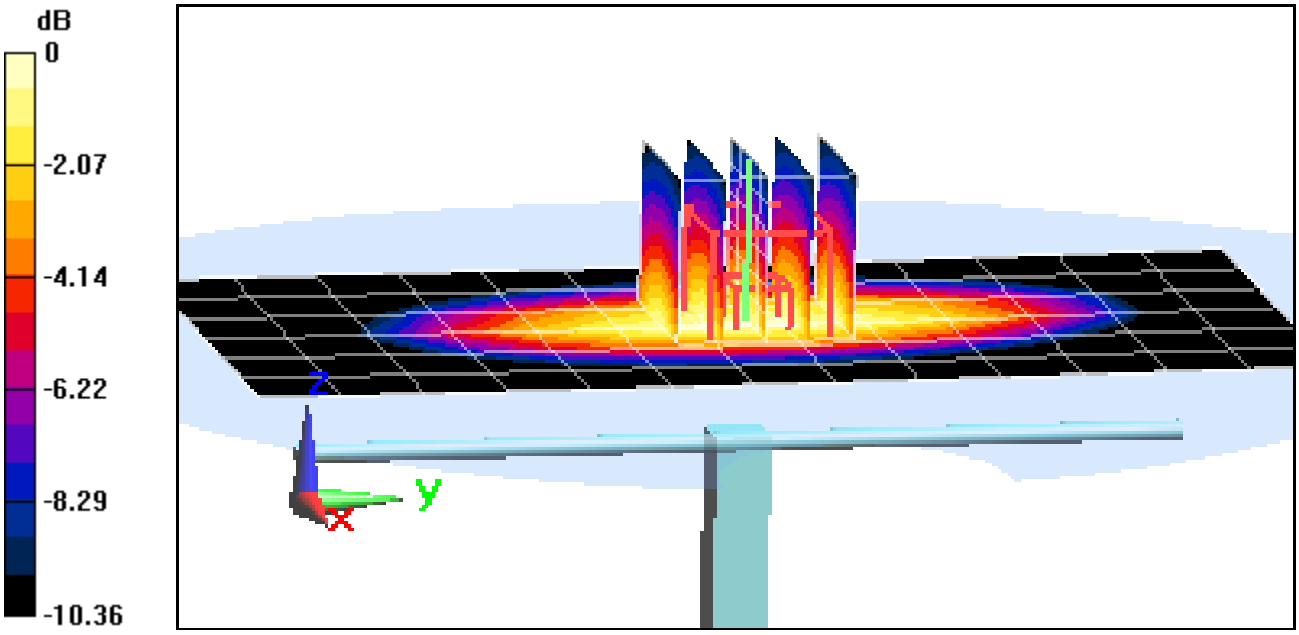
Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used:
f = 835 MHz; σ = 0.988 S/m; ε_r = 54.967; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Space: 1.5 cm

Test Date: 03-03-2016; Ambient Temp: 20.3°C; Tissue Temp: 20.5°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) = 2.80 W/kg
SAR(10 g) = 1.26 W/kg
Deviation(10 g) = 3.62%



0 dB = 2.24 W/kg = 3.50 dBW/kg

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

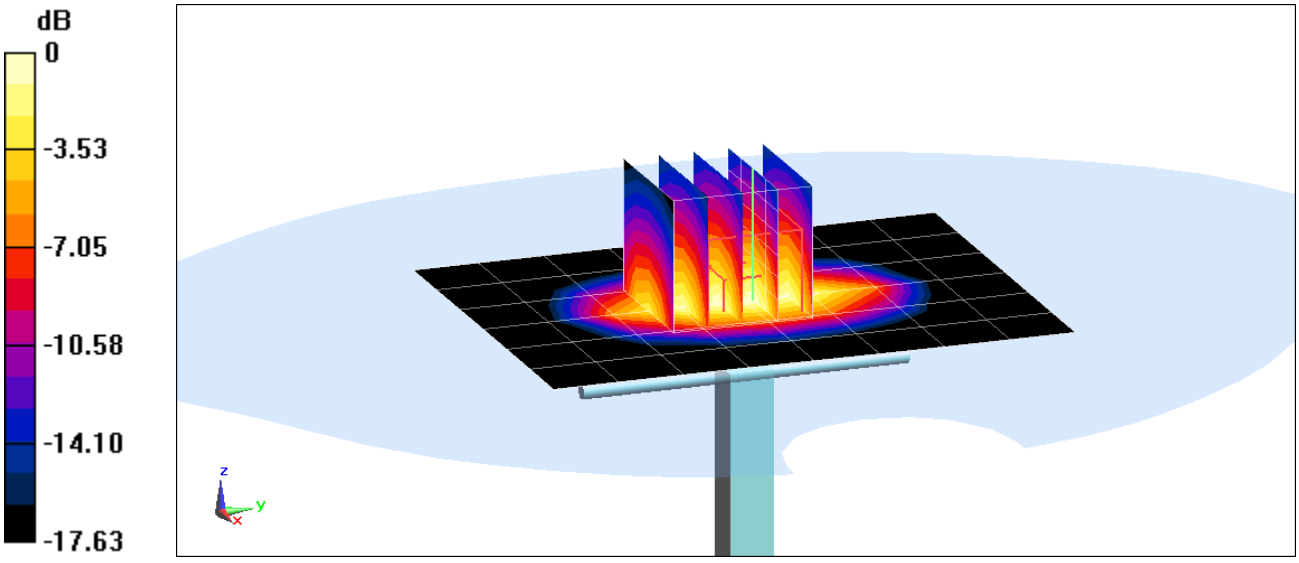
Communication System: UID 0, CW; Frequency: 1750 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used:
f = 1750 MHz; σ = 1.483 S/m; ε_r = 52.104; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-27-2016; Ambient Temp: 20.8°C; Tissue Temp: 20.5°C

Probe: ES3DV2 - SN3022; ConvF(4.79, 4.79, 4.79); Calibrated: 8/26/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1323; Calibrated: 9/16/2015
Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1797
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) = 6.45 W/kg
SAR(10 g) = 1.95 W/kg
Deviation(10 g) = -2.50%



0 dB = 4.55 W/kg = 6.58 dBW/kg

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

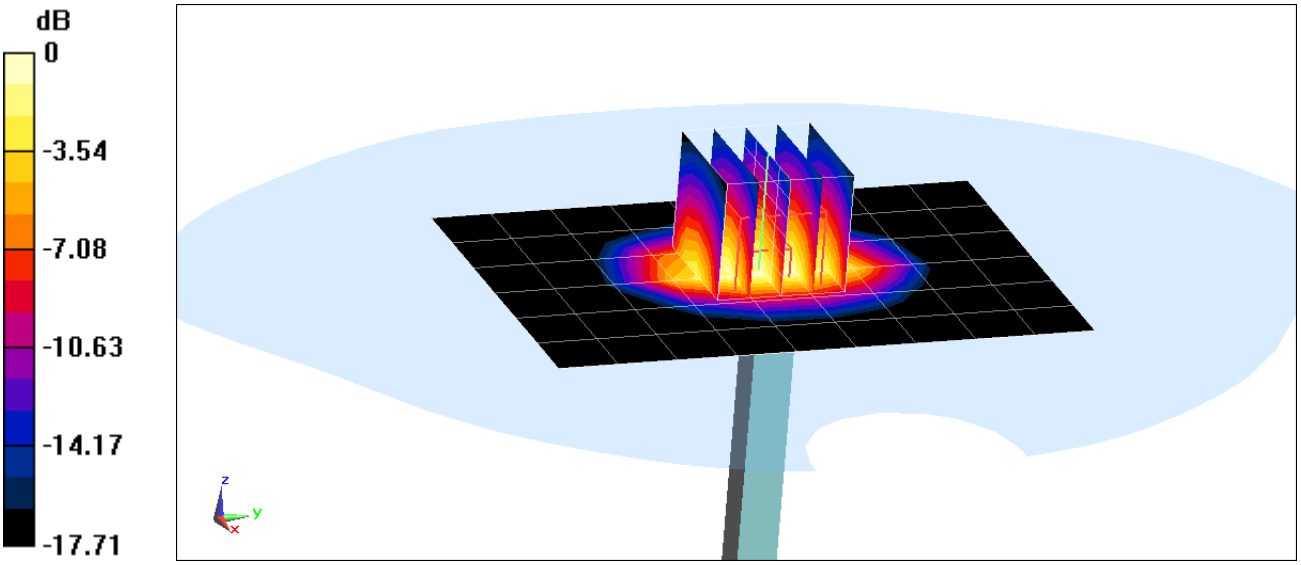
Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
f = 1900 MHz; σ = 1.563 S/m; ε_r = 52.918; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 03-03-2016; Ambient Temp: 22.2°C; Tissue Temp: 21.4°C

Probe: ES3DV3 - SN3334; ConvF(4.84, 4.84, 4.84); 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) = 6.82 W/kg
SAR(10 g) = 1.99 W/kg
Deviation(10 g) = -8.72%



0 dB = 4.86 W/kg = 6.87 dBW/kg

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

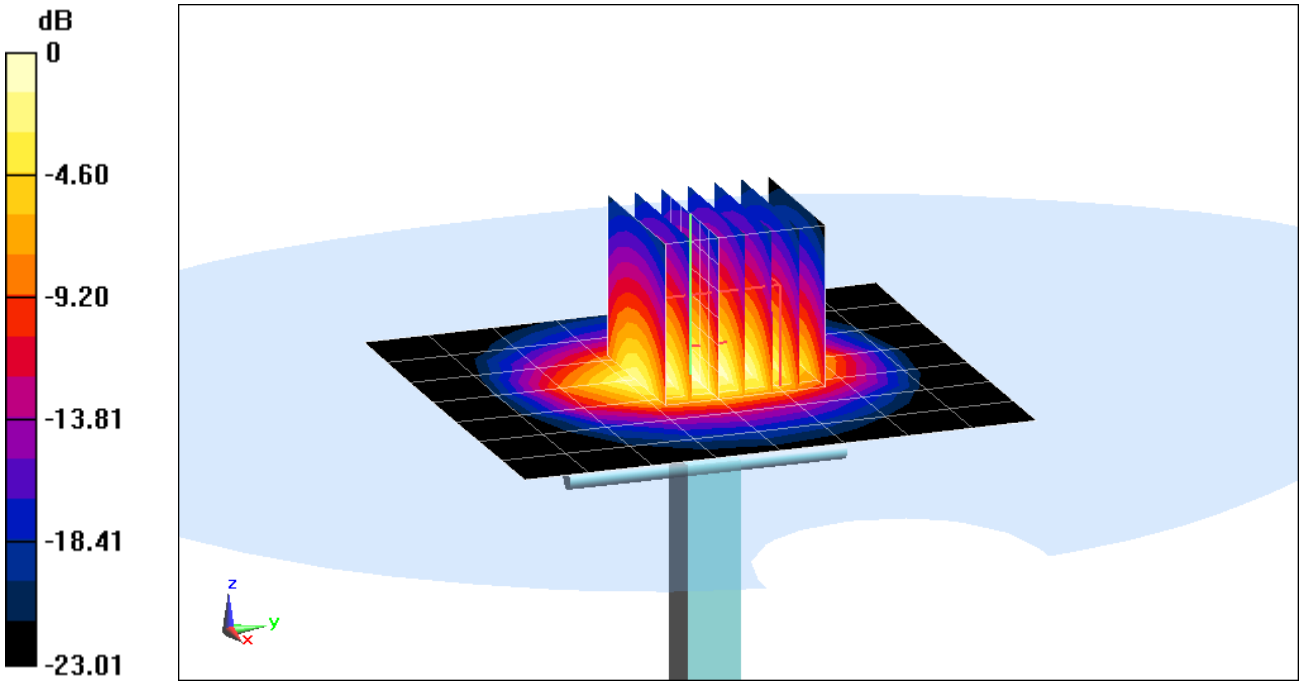
Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: 2400 – 2600 Body Medium parameters used:
f = 2450 MHz; σ = 1.989 S/m; ε_r = 50.648; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-26-2016; Ambient Temp: 21.5°C; Tissue Temp: 22.5°C

Probe: ES3DV3 - SN3263; ConvF(4.28, 4.28, 4.28); Calibrated: 5/20/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 6/17/2015
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) = 10.8 W/kg
SAR(10 g) = 2.31 W/kg
Deviation(10 g) = -4.94%



0 dB = 6.61 W/kg = 8.20 dBW/kg

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: 1004

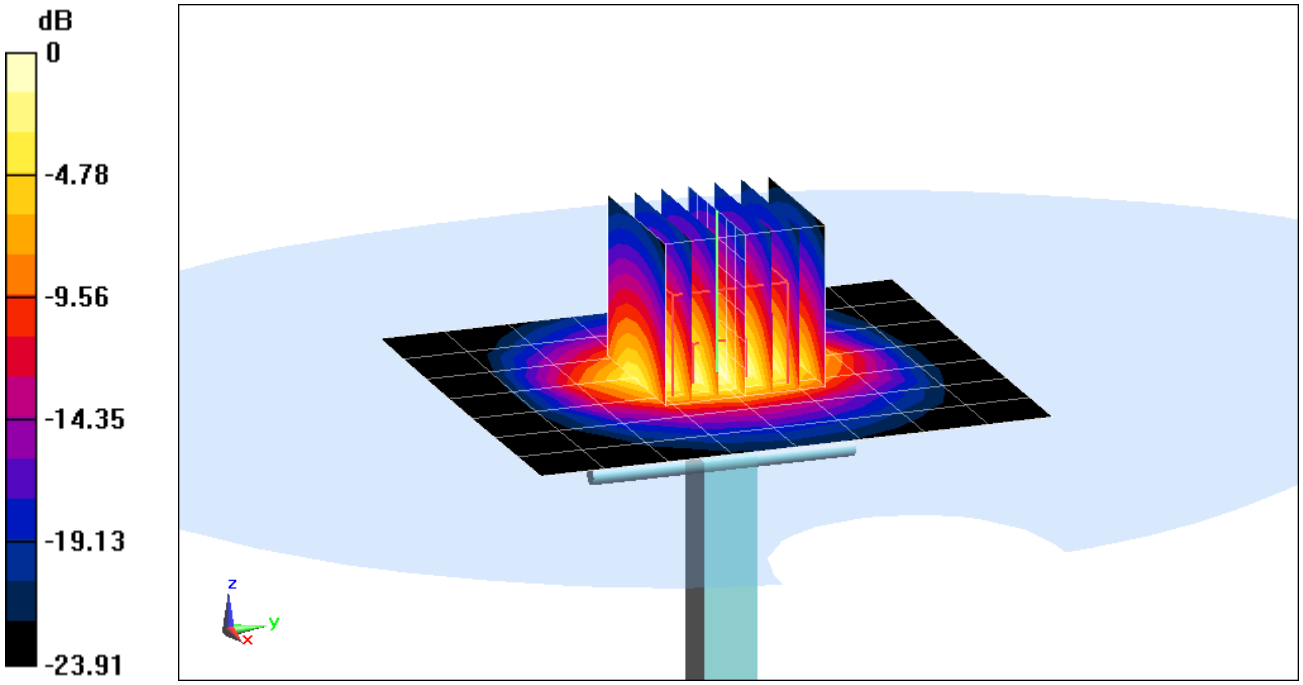
Communication System: UID 0, CW; Frequency: 2600 MHz; Duty Cycle: 1:1
Medium: 2400 – 2600 Body Medium parameters used:
f = 2600 MHz; σ = 2.132 S/m; ε_r = 52.115; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-29-2016; Ambient Temp: 22.9°C; Tissue Temp: 23.5°C

Probe: ES3DV3 - SN3263; ConvF(4.11, 4.11, 4.11); Calibrated: 5/20/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 6/17/2015
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)

2600 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 11.9 W/kg
SAR(10 g) = 2.32 W/kg
Deviation(10 g) = -8.30%



0 dB = 7.09 W/kg = 8.51 dBW/kg