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SAR EVALUATION REPORT

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

Date of Testing:
01/20/16 - 03/03/16
Test Site/Location:
PCTEST Lab, Columbia, MD, USA
Document Serial No.:
0Y1601180116-R5.ZNF

FCC ID: **ZNFVS987**

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-VS987, LGVS987, VS987, LG-US992, LGUS992, US992, LG-RS988, LGRS988, RS988, LG-RS988L, LGRS988L, RS988L, LG-VS987T, LG-VS987G, LG-VS987P

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 at 0mm (W/kg)
PCE	GSM/GPRS/EDGE 850	824.20 - 848.80 MHz	0.91	1.05	1.06	0.94
PCE	GSM/GPRS/EDGE 1900	1850.20 - 1909.80 MHz	0.34	0.42	0.46	0.85
PCE	UMTS 850	826.40 - 846.60 MHz	0.52	0.70	0.70	0.94
PCE	UMTS 1750	1712.4 - 1752.6 MHz	0.48	0.73	0.73	2.29
PCE	UMTS 1900	1852.4 - 1907.6 MHz	0.60	0.74	0.74	1.19
PCE	Cell. CDMA/EVDO	824.70 - 848.31 MHz	0.55	0.79	0.78	1.06
PCE	PCS CDMA/EVDO	1851.25 - 1908.75 MHz	0.74	0.88	0.99	1.82
PCE	LTE Band 12	699.7 - 715.3 MHz	0.22	0.44	0.59	0.77
PCE	LTE Band 17	706.5 - 713.5 MHz	N/A*	N/A*	N/A*	N/A*
PCE	LTE Band 13	779.5 - 784.5 MHz	0.36	0.63	0.63	0.77
PCE	LTE Band 5 (Cell)	824.7 - 848.3 MHz	0.55	0.75	0.75	1.16
PCE	LTE Band 4 (AWS)	1710.7 - 1754.3 MHz	0.62	0.93	0.93	2.54
PCE	LTE Band 2 (PCS)	1850.7 - 1909.3 MHz	0.64	0.73	0.76	1.80
PCE	LTE Band 25 (PCS)	1850.7 - 1914.3 MHz	0.77	0.90	0.90	1.84
PCE	LTE Band 7	2502.5 - 2567.5 MHz	0.22	0.34	0.34	0.90
DTS	2.4 GHz WLAN	2412 - 2462 MHz	1.06	0.12	0.14	N/A*
NII	U-NII-1	5180 - 5240 MHz	N/A*	N/A*	N/A*	N/A*
NII	U-NII-2A	5260 - 5320 MHz	0.65	0.12	N/A*	N/A*
NII	U-NII-2C	5500 - 5720 MHz	1.10	< 0.1	N/A*	N/A*
NII	U-NII-3	5745 - 5825 MHz	0.66	< 0.1	0.13	N/A*
DSS/DTS	Bluetooth	2402 - 2480 MHz	N/A*			
Simultaneous SAR per KDB 690783 D01v01r03:			1.59	1.26	1.19	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: 0Y1601180116-R5.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.
This wireless portable device has been shown to be capable of compliance for localized specific absorption rate (SAR) for uncontrolled environment/general population exposure limits specified in ANSI/IEEE C95.1-1992 and has been tested in accordance with the measurement procedures specified in Section 1.8 of this report; for North American frequency bands only.

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

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
GSM/GPRS/EDGE 850	Voice/Data	824.20 - 848.80 MHz
GSM/GPRS/EDGE 1900	Voice/Data	1850.20 - 1909.80 MHz
UMTS 850	Voice/Data	826.40 - 846.60 MHz
UMTS 1750	Voice/Data	1712.4 - 1752.6 MHz
UMTS 1900	Voice/Data	1852.4 - 1907.6 MHz
Cell. CDMA/EVDO	Voice/Data	824.70 - 848.31 MHz
PCS CDMA/EVDO	Voice/Data	1851.25 - 1908.75 MHz
LTE Band 12	Voice/Data	699.7 - 715.3 MHz
LTE Band 17	Voice/Data	706.5 - 713.5 MHz
LTE Band 13	Voice/Data	779.5 - 784.5 MHz
LTE Band 5 (Cell)	Voice/Data	824.7 - 848.3 MHz
LTE Band 4 (AWS)	Voice/Data	1710.7 - 1754.3 MHz
LTE Band 2 (PCS)	Voice/Data	1850.7 - 1909.3 MHz
LTE Band 25 (PCS)	Voice/Data	1850.7 - 1914.3 MHz
LTE Band 7	Voice/Data	2502.5 - 2567.5 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 Slots*	*2 TX Slots*	*1 TX Slots*	*2 TX Slots*
GSM/GPRS/EDGE 850	Maximum	**33.2**	**33.2**	**30.7**	**27.7**	**27.7**
	Nominal	**32.7**	**32.7**	**30.2**	**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	**24.2**	**24.2**	**24.2**
	Nominal	**23.7**	**23.7**	**23.7**
UMTS Band 2 (1900 MHz)	Maximum	**24.2**	**24.2**	**24.2**
	Nominal	**23.7**	**23.7**	**23.7**

Mode / Band		Modulated Average (dBm)
Cell. CDMA/EVDO	Maximum	**24.7**
	Nominal	**24.2**
PCS CDMA/EVDO	Maximum	**25.0**
	Nominal	**24.5**

Mode / Band		Modulated Average (dBm)
LTE Band 12	Maximum	**24.7**
	Nominal	**24.2**
LTE Band 17	Maximum	**24.7**
	Nominal	**24.2**
LTE Band 13	Maximum	**24.2**
	Nominal	**23.7**
LTE Band 5 (Cell)	Maximum	**24.2**
	Nominal	**23.7**
LTE Band 4 (AWS)	Maximum	**24.7**
	Nominal	**24.2**
LTE Band 2 (PCS)	Maximum	**24.7**
	Nominal	**24.2**
LTE Band 25 (PCS)	Maximum	**24.2**
	Nominal	**23.7**
LTE Band 7	Maximum	**23.7**
	Nominal	**23.2**

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**

Mode / Band		Modulated Average (dBm)
Bluetooth (1 Mbps)	Maximum	**10.0**
	Nominal	**9.0**
Bluetooth (2 Mbps)	Maximum	**6.5**
	Nominal	**5.5**
Bluetooth (3 Mbps)	Maximum	**6.5**
	Nominal	**5.5**
Bluetooth LE (Peak)	Maximum	**7.0**

Mode / Band		Modulated Average (dBm)										
		20 MHz Bandwidth				40 MHz Bandwidth			80 MHz Bandwidth			
		Ch. 36-64	Ch. 100-116	Ch. 132-144	Ch. 149-165	Ch. 38-62	Ch. 102-142	Ch. 151-159	Ch. 42	Ch. 58	Ch. 106-138	Ch. 155
IEEE 802.11a (5 GHz)	Maximum	**13.5**	**13.0**	**12.5**	**13.25**	N/A[1]			N/A[1]			
	Nominal	**12.5**	**12.0**	**11.5**	**12.25**							
IEEE 802.11n (5 GHz)	Maximum	**13.5**	**13.0**	**12.5**	**13.25**	**12.5**	**12.0**	**12.5**	N/A[1]			
	Nominal	**12.5**	**12.0**	**11.5**	**12.25**	**11.5**	**11.0**	**11.5**				
IEEE 802.11ac (5 GHz)	Maximum	**13.5**	**13.0**	**12.5**	**13.25**	**12.5**	**12.0**	**12.5**	**11.5**	**12.5**	**12.0**	**12.5**
	Nominal	**12.5**	**12.0**	**11.5**	**12.25**	**11.5**	**11.0**	**11.5**	**10.5**	**11.5**	**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 transmission for CDMA/EVDO BC1 and LTE B2/4 in body-worn and hotspot exposure conditions. CDMA/EVDO BC1 and LTE B2/4 transmission from the diversity antenna is disabled for all held-to-ear conditions.

Table 1-1
Device Edges/Sides for SAR Testing

Mode	Back	Front	Top	Bottom	Right	Left
GPRS 850	Yes	Yes	No	Yes	Yes	Yes
GPRS 1900	Yes	Yes	No	Yes	Yes	Yes
UMTS 850	Yes	Yes	No	Yes	Yes	Yes
UMTS 1750	Yes	Yes	No	Yes	Yes	Yes
UMTS 1900	Yes	Yes	No	Yes	Yes	Yes
Cell. EVDO	Yes	Yes	No	Yes	Yes	Yes
PCS EVDO Ant 2	Yes	Yes	No	Yes	Yes	Yes
LTE Band 12	Yes	Yes	No	Yes	Yes	Yes
LTE Band 13	Yes	Yes	No	Yes	Yes	Yes
LTE Band 5 (Cell)	Yes	Yes	No	Yes	Yes	Yes
LTE Band 4 (AWS) Ant 2	Yes	Yes	No	Yes	Yes	Yes
LTE Band 2 (PCS) Ant 2	Yes	Yes	No	Yes	Yes	Yes
LTE Band 25 (PCS)	Yes	Yes	No	Yes	Yes	Yes
LTE Band 7	Yes	Yes	No	Yes	Yes	Yes
PCS EVDO Ant 3	Yes	Yes	Yes	No	Yes	Yes
LTE Band 4 (AWS) Ant 3	Yes	Yes	Yes	No	Yes	Yes
LTE Band 2 (PCS) Ant 3	Yes	Yes	Yes	No	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. Ant B and Ant C operate in a switched condition only and cannot transmit simultaneously.
3. All licensed modes share the same antenna path 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.
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.
8. This device supports 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 D01v02r01.

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; [(10/10)* √2.480] = 1.6< 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, TDWR channels are not 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 17 and LTE Band 12. Since the supported frequency span for LTE Band 17 falls completely within the supported frequency span for LTE Band 12, both LTE bands have the same target power, and both LTE bands share the same transmission path, SAR was only assessed for LTE Band 12.

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.

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 D01.

1.8 Guidance Applied

- IEEE 1528-2013
- FCC KDB Publication 941225 D01v03r01, D05v02r04, D05Av01r02, D06v02r01 (2G/3G/4G, Hotspot and CDMA 2000 1x Advanced)
- 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)

1.9 Project Specific Guidance

1.9.1 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.

1.9.2 Transmit Diversity Implementation

This device supports transmit diversity for LTE B2/4 and CDMA/EVDO 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.

1.10 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 Mode at 0mm Serial Number
GSM/GPRS/EDGE 850	03654	03662	03662	03662
GSM/GPRS/EDGE 1900	03654	03654	03654	03654
UMTS 850	03654	03654	03654	03654
UMTS 1750	03654	03654	03654	03654
UMTS 1900	03654	03654	03654	03654
Cell. CDMA/EVDO	03662	03654	03654	03654
PCS CDMA/EVDO	03654	03654/04611	03654/04611	03654
LTE Band 12	03688	03688	03688	03688
LTE Band 13	03688	03688	03688	03688
LTE Band 5 (Cell)	03670	03670	03670	03670
LTE Band 4 (AWS)	03688	03670/04611	03670/04611	03670
LTE Band 2 (PCS)	03670	03670/04611	03670/04611	03670
LTE Band 25 (PCS)	03670	03688	03688	03688
LTE Band 7	03704	03670	03670	03670
2.4 GHz WLAN	03704	03704	03704	-
5 GHz WLAN	03704	03704	03704	-

2 LTE INFORMATION

LTE Information			
FCC ID	**ZNFVS987**		
Form Factor	Portable Handset		
Frequency Range of each LTE transmission band	LTE Band 12 (699.7 - 715.3 MHz)		
	LTE Band 17 (706.5 - 713.5 MHz)		
	LTE Band 13 (779.5 - 784.5 MHz)		
	LTE Band 5 (Cell) (824.7 - 848.3 MHz)		
	LTE Band 4 (AWS) (1710.7 - 1754.3 MHz)		
	LTE Band 2 (PCS) (1850.7 - 1909.3 MHz)		
	LTE Band 25 (PCS) (1850.7 - 1914.3 MHz)		
	LTE Band 7 (2502.5 - 2567.5 MHz)		
Channel Bandwidths	LTE Band 12: 1.4 MHz, 3 MHz, 5 MHz, 10 MHz		
	LTE Band 17: 5 MHz, 10 MHz		
	LTE Band 13: 5 MHz, 10 MHz		
	LTE Band 5 (Cell): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz		
	LTE Band 4 (AWS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz		
	LTE Band 2 (PCS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz		
	LTE Band 25 (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		
Channel Numbers and Frequencies (MHz)	Low	Mid	High
LTE Band 12: 1.4 MHz	699.7 (23017)	707.5 (23095)	715.3 (23173)
LTE Band 12: 3 MHz	700.5 (23025)	707.5 (23095)	714.5 (23165)
LTE Band 12: 5 MHz	701.5 (23035)	707.5 (23095)	713.5 (23155)
LTE Band 12: 10 MHz	704 (23060)	707.5 (23095)	711 (23130)
LTE Band 17: 5 MHz	706.5 (23755)	710 (23790)	713.5 (23825)
LTE Band 17: 10 MHz	709 (23780)	710 (23790)	711 (23800)
LTE Band 13: 5 MHz	779.5 (23205)	782 (23230)	784.5 (23255)
LTE Band 13: 10 MHz	N/A	782 (23230)	N/A
LTE Band 5 (Cell): 1.4 MHz	824.7 (20407)	836.5 (20525)	848.3 (20643)
LTE Band 5 (Cell): 3 MHz	825.5 (20415)	836.5 (20525)	847.5 (20635)
LTE Band 5 (Cell): 5 MHz	826.5 (20425)	836.5 (20525)	846.5 (20625)
LTE Band 5 (Cell): 10 MHz	829 (20450)	836.5 (20525)	844 (20600)
LTE Band 4 (AWS): 1.4 MHz	1710.7 (19957)	1732.5 (20175)	1754.3 (20393)
LTE Band 4 (AWS): 3 MHz	1711.5 (19965)	1732.5 (20175)	1753.5 (20385)
LTE Band 4 (AWS): 5 MHz	1712.5 (19975)	1732.5 (20175)	1752.5 (20375)
LTE Band 4 (AWS): 10 MHz	1715 (20000)	1732.5 (20175)	1750 (20350)
LTE Band 4 (AWS): 15 MHz	1717.5 (20025)	1732.5 (20175)	1747.5 (20325)
LTE Band 4 (AWS): 20 MHz	1720 (20050)	1732.5 (20175)	1745 (20300)
LTE Band 2 (PCS): 1.4 MHz	1850.7 (18607)	1880 (18900)	1909.3 (19193)
LTE Band 2 (PCS): 3 MHz	1851.5 (18615)	1880 (18900)	1908.5 (19185)
LTE Band 2 (PCS): 5 MHz	1852.5 (18625)	1880 (18900)	1907.5 (19175)
LTE Band 2 (PCS): 10 MHz	1855 (18650)	1880 (18900)	1905 (19150)
LTE Band 2 (PCS): 15 MHz	1857.5 (18675)	1880 (18900)	1902.5 (19125)
LTE Band 2 (PCS): 20 MHz	1860 (18700)	1880 (18900)	1900 (19100)
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 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)
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. Due to carrier capability, only the combinations listed in the technical documents 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:

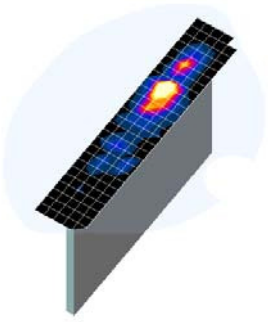


Figure 4-1
Sample SAR Area Scan

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

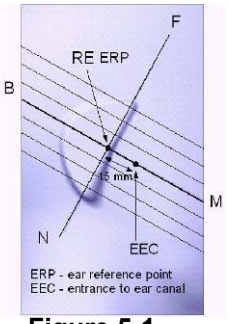


Figure 5-1
Close-Up Side view of ERP

5.2 HANDSET REFERENCE POINTS

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

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

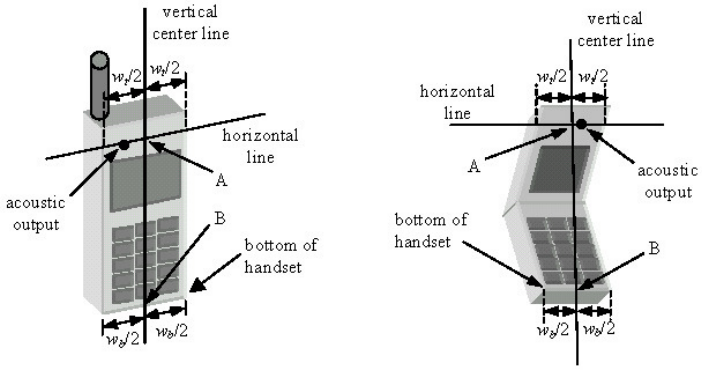


Figure 5-3
Handset Vertical Center & Horizontal Line Reference Points

6 TEST CONFIGURATION POSITIONS

6.1 Device Holder

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

6.2 Positioning for Cheek

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

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

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

6.3 Positioning for Ear / 15º Tilt

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

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

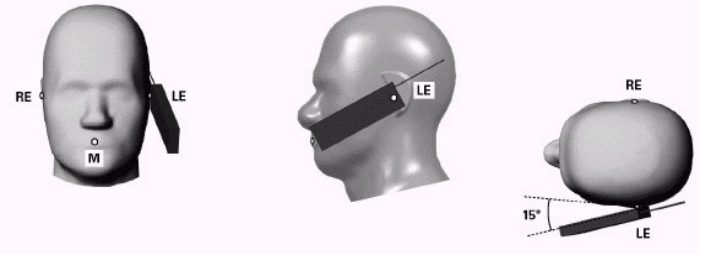


Figure 6-2 Front, Side and Top View of Ear/15º Tilt Position

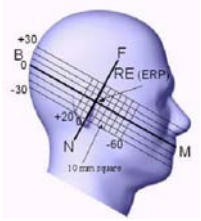


Figure 6-3
Side view w/ relevant markings

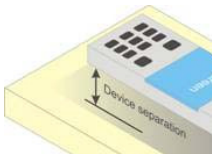
6.4 SAR Evaluations near the Mouth/Jaw Regions of the SAM Phantom

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

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

6.5 Body-Worn Accessory Configurations

Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration (see Figure 6-4). Per FCC KDB Publication 648474 D04v01r03, Body-worn accessory handsets are carried in exposure is typically related to voice mode operations when FCC KDB Publication body-worn accessories. The body-worn accessory procedures in SAR compliance, 447498 D01v06 should be used to test for body-worn accessory 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.

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

6.8 Wireless Router Configuration 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.

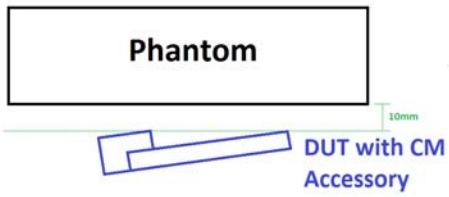


Figure 6-5
Test Setup Diagram for Back Side Hotspot SAR at 10 mm with Camera Module Accessory

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.

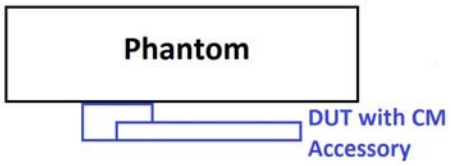


Figure 6-6
Test Setup Diagram for 10g Hotspot SAR at 0 mm with Camera Module Accessory

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 $\leq$ 0.25 dB higher than the primary mode or when the highest reported SAR of the primary mode, scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode, is $\leq$ 1.2 W/kg, SAR measurements are not required for the secondary mode. These criteria are referred to as the 3G SAR test reduction procedure. When the 3G SAR test reduction procedure is not satisfied, SAR measurements are additionally required for the secondary mode.

8.3 Procedures Used to Establish RF Signal for SAR

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

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

8.4 SAR Measurement Conditions for CDMA2000

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

8.4.1 Output Power Verification

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

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

Table 8-1
Parameters for Max. Power for RC1

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

Table 8-2
Parameters for Max. Power for RC3

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

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

8.4.2 Head SAR Measurements

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

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

8.4.3 Body-worn SAR Measurements

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

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

8.4.4 Body-worn SAR Measurements for EVDO Devices

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

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

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

8.4.5 Body SAR Measurements for EVDO Hotspot

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

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

8.4.6 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 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	1013	22H	824.7	24.60	24.48	24.70	24.61	24.57	24.60	24.70
	384	22H	836.52	24.70	24.53	24.60	24.42	24.60	24.58	24.57
	777	22H	848.31	24.67	24.47	24.54	24.60	24.62	24.53	24.66
PCS	25	24E	1851.25	24.75	24.68	24.86	24.75	24.73	24.82	24.61
	600	24E	1880	24.67	24.65	24.70	24.80	24.75	24.70	24.74
	1175	24E	1908.75	24.83	24.71	24.65	24.76	24.76	24.72	24.77

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

Figure 9-1
Power Measurement Setup

9.2 GSM Conducted Powers

Maximum Burst-Averaged Output Power						
		Voice	*GPRS/EDGE Data (GMSK)*		*EDGE Data (8-PSK)*	
Band	**Channel**	**GSM [dBm] CS (1 Slot)**	**GPRS [dBm] 1 Tx Slot**	**GPRS [dBm] 2 Tx Slot**	**EDGE [dBm] 1 Tx Slot**	**EDGE [dBm] 2 Tx Slot**
GSM 850	128	32.91	32.96	**30.66**	27.41	27.63
	190	33.13	33.16	**30.69**	27.53	27.56
	251	32.93	32.88	**30.64**	27.49	27.41
GSM 1900	512	30.10	30.02	**28.62**	26.61	26.39
	661	29.91	29.94	**28.51**	26.42	26.44
	810	29.85	29.86	**28.38**	26.40	26.30
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	23.88	23.93	**24.64**	18.38	21.61
	190	24.10	24.13	**24.67**	18.50	21.54
	251	23.90	23.85	**24.62**	18.46	21.39
GSM 1900	512	21.07	20.99	**22.60**	17.58	20.37
	661	20.88	20.91	**22.49**	17.39	20.42
	810	20.82	20.83	**22.36**	17.37	20.28
GSM 850	**Frame Avg.Targets:**	23.67	23.67	**24.18**	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	23.96	24.13	23.89	24.00	23.90	24.05	23.92	23.95	23.81	-
99		12.2 kbps AMR	23.90	24.09	23.98	23.97	23.87	23.87	23.95	24.04	23.92	-
6	HSDPA	Subtest 1	23.86	23.96	23.91	23.99	24.12	24.13	23.82	23.97	23.81	0
6		Subtest 2	23.90	24.08	23.82	23.84	23.95	24.12	23.93	24.03	24.16	0
6		Subtest 3	23.44	23.39	23.47	23.53	23.49	23.70	23.59	23.51	23.70	0.5
6		Subtest 4	23.56	23.52	23.67	23.70	23.49	23.63	23.70	23.58	23.63	0.5
6	HSUPA	Subtest 1	23.90	24.00	23.98	24.00	24.05	24.07	23.94	24.02	24.15	0
6		Subtest 2	21.94	22.11	21.94	22.10	22.13	22.15	22.11	22.08	22.07	2
6		Subtest 3	22.90	22.99	22.94	23.16	23.00	22.96	22.98	23.03	23.13	1
6		Subtest 4	22.14	22.19	22.11	22.11	21.94	21.99	22.18	22.03	22.17	2
6		Subtest 5	23.98	24.18	24.11	24.11	24.10	24.01	24.14	24.05	24.06	0

This device does not support DC-HSDPA.

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	**24.70**	0	0
	1	25	24.60		0
	1	49	24.69		0
	25	0	**23.40**	0-1	1
	25	12	23.30		1
	25	25	23.29		1
	50	0	23.12		1
16QAM	1	0	23.15	0-1	1
	1	25	22.99		1
	1	49	23.38		1
	25	0	22.22	0-2	2
	25	12	22.21		2
	25	25	22.29		2
	50	0	22.04		2

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

Table 9-2
LTE Band 12 Conducted Powers - 5 MHz Bandwidth

LTE Band 12 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 23035 (701.5 MHz) Conducted Power [dBm]	Mid Channel 23095 (707.5 MHz) Conducted Power [dBm]	High Channel 23155 (713.5 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	24.70	24.70	24.67	0	0
	1	12	24.70	24.70	24.70		0
	1	24	24.70	24.69	24.66		0
	12	0	23.24	23.11	23.04	0-1	1
	12	6	23.25	23.16	23.37		1
	12	13	22.88	23.28	23.48		1
	25	0	23.18	23.22	23.40		1
16QAM	1	0	23.61	23.33	23.37	0-1	1
	1	12	23.60	23.17	23.52		1
	1	24	23.46	23.22	23.46		1
	12	0	22.28	22.16	22.08	0-2	2
	12	6	22.32	22.13	22.41		2
	12	13	21.90	22.43	22.51		2
	25	0	22.18	22.31	22.31		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	24.70	24.63	24.70	0	0
	1	7	24.67	24.63	24.66		0
	1	14	24.69	24.70	24.69		0
	8	0	23.01	23.10	23.36	0-1	1
	8	4	22.90	23.18	23.23		1
	8	7	22.90	23.00	23.26		1
	15	0	23.13	23.12	23.37		1
16QAM	1	0	23.62	23.20	23.20	0-1	1
	1	7	23.32	22.75	23.41		1
	1	14	23.58	23.42	23.33		1
	8	0	22.08	22.11	22.34	0-2	2
	8	4	22.16	22.00	22.32		2
	8	7	22.20	22.00	22.16		2
	15	0	22.26	22.05	22.16		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	24.70	24.66	24.60	0	0
	1	2	24.68	24.70	24.64		0
	1	5	24.70	24.70	24.70		0
	3	0	24.40	24.43	24.49		0
	3	2	24.43	24.49	24.44		0
	3	3	24.29	24.18	24.42		0
	6	0	23.02	22.96	23.19	0-1	1
16QAM	1	0	23.09	22.70	23.13	0-1	1
	1	2	23.09	23.10	23.33		1
	1	5	23.15	22.70	23.05		1
	3	0	22.96	22.95	23.14		1
	3	2	23.05	22.99	23.00		1
	3	3	23.00	22.77	23.16		1
	6	0	22.01	21.98	22.17	0-2	2

9.4.2 LTE Band 13

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

LTE Band 13 10 MHzBandwidth					
Modulation	RB Size	RB Offset	Mid Channel 23230 (782.0 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	24.16	0	0
	1	25	**24.20**		0
	1	49	24.16		0
	25	0	**23.00**	0-1	1
	25	12	22.89		1
	25	25	22.95		1
	50	0	22.85		1
16QAM	1	0	22.93	0-1	1
	1	25	22.51		1
	1	49	22.78		1
	25	0	21.71	0-2	2
	25	12	21.69		2
	25	25	21.86		2
	50	0	21.67		2

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

LTE Band 13 5 MHzBandwidth					
Modulation	RB Size	RB Offset	Mid Channel 23230 (782.0 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	24.18	0	0
	1	12	24.17		0
	1	24	24.20		0
	12	0	22.85	0-1	1
	12	6	22.83		1
	12	13	22.85		1
	25	0	22.78		1
16QAM	1	0	22.73	0-1	1
	1	12	23.00		1
	1	24	22.82		1
	12	0	21.60	0-2	2
	12	6	21.70		2
	12	13	21.55		2
	25	0	21.62		2

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

9.4.3 LTE Band 5

Table 9-7
LTE Band 5 Conducted Powers - 10 MHz Bandwidth

LTE Band 5 (Cell) 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 20525 (836.5 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	**24.20**	0	0
	1	25	24.15		0
	1	49	24.17		0
	25	0	22.66	0-1	1
	25	12	**22.70**		1
	25	25	22.65		1
	50	0	22.68		1
16QAM	1	0	22.88	0-1	1
	1	25	22.62		1
	1	49	22.98		1
	25	0	21.63	0-2	2
	25	12	21.72		2
	25	25	21.69		2
	50	0	21.61		2

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

Table 9-8
LTE Band 5 Conducted Powers - 5 MHz Bandwidth

LTE Band 5 (Cell) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20425 (826.5 MHz)	Mid Channel 20525 (836.5 MHz)	High Channel 20625 (846.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.19	24.20	24.12	0	0
	1	12	24.20	24.20	24.19		0
	1	24	24.15	24.16	24.20		0
	12	0	22.81	22.46	22.56	0-1	1
	12	6	22.74	22.70	22.56		1
	12	13	22.54	22.56	22.70		1
	25	0	22.73	22.52	22.60		1
16QAM	1	0	22.81	22.84	22.84	0-1	1
	1	12	22.90	22.67	22.78		1
	1	24	22.76	22.53	22.85		1
	12	0	21.99	21.43	21.59	0-2	2
	12	6	21.92	21.69	21.61		2
	12	13	21.71	21.56	21.68		2
	25	0	21.85	21.61	21.63		2

Table 9-9
LTE Band 5 Conducted Powers - 3 MHz Bandwidth

LTE Band 5 (Cell) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20415 (825.5 MHz)	Mid Channel 20525 (836.5 MHz)	High Channel 20635 (847.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.12	24.18	24.00	0	0
	1	7	24.20	24.14	24.20		0
	1	14	24.20	24.20	24.16		0
	8	0	22.96	22.65	22.77	0-1	1
	8	4	22.85	22.66	23.07		1
	8	7	22.77	22.88	22.95		1
	15	0	22.84	22.76	22.95		1
16QAM	1	0	22.53	22.63	22.62	0-1	1
	1	7	22.47	22.26	22.91		1
	1	14	22.59	22.71	22.79		1
	8	0	22.20	21.70	21.73	0-2	2
	8	4	22.08	21.80	21.67		2
	8	7	22.01	21.87	21.93		2
	15	0	22.13	21.67	21.86		2

Table 9-10
LTE Band 5 Conducted Powers -1.4 MHz Bandwidth

LTE Band 5 (Cell) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20407 (824.7 MHz)	Mid Channel 20525 (836.5 MHz)	High Channel 20643 (848.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.19	24.11	24.20	0	0
	1	2	24.17	24.19	24.15		0
	1	5	24.20	24.20	24.20		0
	3	0	24.02	23.91	23.95		0
	3	2	24.13	23.96	23.88		0
	3	3	24.05	24.03	23.94		0
	6	0	22.71	22.70	22.62	0-1	1
16QAM	1	0	22.30	22.29	22.66	0-1	1
	1	2	22.83	22.74	22.63		1
	1	5	22.30	22.36	22.48		1
	3	0	22.54	22.40	22.57		1
	3	2	22.40	22.41	22.40		1
	3	3	22.44	22.51	22.58		1
	6	0	21.77	21.78	21.78	0-2	2

9.4.4 LTE Band 4 (AWS)

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

LTE Band 4 (AWS) 20 MHzBandwidth					
Modulation	RB Size	RB Offset	Mid Channel 20175 (1732.5 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	**24.70**	0	0
	1	50	24.69		0
	1	99	24.66		0
	50	0	23.40	0-1	1
	50	25	23.39		1
	50	50	**23.42**		1
	100	0	23.36		1
16QAM	1	0	23.18		1
	1	50	23.22		1
	1	99	23.11		1
	50	0	22.39	0-2	2
	50	25	22.24		2
	50	50	22.35		2
	100	0	22.33		2

Note: LTE Band 4 (AWS) at 20 MHz bandwidth does not support three non-overlapping channels. Per KDB Publication 941225 D05v02, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

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

LTE Band 4 (AWS) 15 MHzBandwidth							
Modulation	RB Size	RB Offset	Low Channel 20025 (1717.5 MHz)	Mid Channel 20175 (1732.5 MHz)	Frequency [MHz] 20325 (1747.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.69	24.63	24.69	0	0
	1	36	24.70	24.66	24.67		0
	1	74	24.70	24.70	24.70		0
	36	0	23.32	23.36	23.30	0-1	1
	36	18	23.26	23.34	23.28		1
	36	37	23.46	23.22	23.29		1
	75	0	23.26	23.26	23.26		1
16QAM	1	0	23.37	22.79	23.21	0-1	1
	1	36	23.23	22.96	23.09		1
	1	74	23.33	22.92	23.15		1
	36	0	22.36	22.36	22.30	0-2	2
	36	18	22.32	22.35	22.31		2
	36	37	22.44	22.24	22.38		2
	75	0	22.30	22.32	22.33		2

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

LTE Band 4 (AWS) 10 MHzBandwidth							
Modulation	RB Size	RB Offset	Low Channel 20000 (1715.0 MHz)	Mid Channel 20175 (1732.5 MHz)	High Channel 20350 (1750.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.70	24.70	24.62	0	0
	1	25	24.68	24.66	24.66		0
	1	49	24.70	24.62	24.69		0
	25	0	23.15	22.99	23.22	0-1	1
	25	12	23.21	23.04	23.23		1
	25	25	23.26	23.00	23.09		1
	50	0	23.23	23.00	23.15		1
16QAM	1	0	23.06	23.30	23.67	0-1	1
	1	25	23.07	22.90	23.21		1
	1	49	23.22	23.43	23.49		1
	25	0	22.14	22.07	22.18	0-2	2
	25	12	22.23	22.14	22.25		2
	25	25	22.24	22.10	22.16		2
	50	0	22.18	22.07	22.09		2

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

LTE Band 4 (AWS) 5 MHzBandwidth							
Modulation	RB Size	RB Offset	Low Channel 19975 (1712.5 MHz)	Mid Channel 20175 (1732.5 MHz)	High Channel 20375 (1752.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.66	24.70	24.65	0	0
	1	12	24.69	24.66	24.70		0
	1	24	24.65	24.69	24.68		0
	12	0	23.17	23.17	23.14	0-1	1
	12	6	23.16	23.08	23.14		1
	12	13	23.24	23.07	22.91		1
	25	0	23.13	23.05	23.09		1
16QAM	1	0	23.30	23.35	23.52	0-1	1
	1	12	23.35	23.15	23.35		1
	1	24	23.42	23.49	23.27		1
	12	0	22.18	22.19	22.19	0-2	2
	12	6	22.22	22.07	22.19		2
	12	13	22.22	22.02	21.98		2
	25	0	22.14	22.14	22.18		2

Table 9-15
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	24.70	24.66	24.70	0	0
	1	7	24.61	24.70	24.68		0
	1	14	24.66	24.63	24.69		0
	8	0	22.93	23.10	22.98	0-1	1
	8	4	22.87	23.16	23.19		1
	8	7	22.87	23.12	22.97		1
	15	0	22.84	23.05	22.95		1
16QAM	1	0	23.00	23.38	23.47	0-1	1
	1	7	22.96	22.89	23.30		1
	1	14	23.11	23.34	23.25		1
	8	0	22.25	22.13	21.96	0-2	2
	8	4	22.24	22.27	22.10		2
	8	7	22.24	22.06	21.91		2
	15	0	22.28	21.94	21.99		2

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

LTE Band 4 (AWS) 1.4 MHzBandwidth							
Modulation	RB Size	RB Offset	Low Channel	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	24.66	24.65	24.69	0	0
	1	2	24.70	24.70	24.68		0
	1	5	24.66	24.65	24.70		0
	3	0	24.40	24.49	24.30		0
	3	2	24.12	24.49	24.31		0
	3	3	24.48	24.34	24.28		0
	6	0	23.03	22.97	22.84	0-1	1
16QAM	1	0	23.05	23.00	22.71	0-1	1
	1	2	23.38	23.46	23.17		1
	1	5	23.14	22.99	22.74		1
	3	0	22.95	22.97	22.88		1
	3	2	22.95	23.05	22.85		1
	3	3	22.99	22.87	22.80		1
	6	0	22.06	22.03	21.93	0-2	2

9.4.5 LTE Band 2 (PCS)

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

LTE Band 2 (PCS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 18700 (1860.0 MHz)	Mid Channel 18900 (1880.0 MHz)	High Channel 19100 (1900.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.68	**24.70**	24.67	0	0
	1	50	24.69	24.65	24.66		0
	1	99	24.65	24.67	24.60		0
	50	0	23.42	23.45	**23.64**	0-1	1
	50	25	23.43	23.51	23.48		1
	50	50	23.36	23.44	23.53		1
	100	0	23.48	23.52	23.62		1
16QAM	1	0	23.31	23.49	23.61	0-1	1
	1	50	23.37	23.58	23.44		1
	1	99	23.24	23.60	23.50		1
	50	0	22.43	22.46	22.55	0-2	2
	50	25	22.38	22.48	22.43		2
	50	50	22.32	22.28	22.33		2
	100	0	22.45	22.37	22.50		2

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

LTE Band 2 (PCS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 18675 (1857.5 MHz)	Mid Channel 18900 (1880.0 MHz)	Frequency [MHz] 19125 (1902.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.66	24.70	24.67	0	0
	1	36	24.65	24.67	24.70		0
	1	74	24.70	24.66	24.61		0
	36	0	23.40	23.35	23.49	0-1	1
	36	18	23.46	23.46	23.47		1
	36	37	23.47	23.44	23.37		1
	75	0	23.37	23.46	23.34		1
16QAM	1	0	23.61	23.08	23.32	0-1	1
	1	36	23.49	23.24	23.17		1
	1	74	23.51	23.01	23.28		1
	36	0	22.41	22.25	22.47	0-2	2
	36	18	22.47	22.33	22.45		2
	36	37	22.45	22.27	22.36		2
	75	0	22.37	22.32	22.35		2

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

LTE Band 2 (PCS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 18650 (1855.0 MHz)	Frequency [MHz] 18900 (1880.0 MHz)	Frequency [MHz] 19150 (1905.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.66	24.70	24.62	0	0
	1	25	24.69	24.70	24.70		0
	1	49	24.65	24.67	24.70		0
	25	0	23.25	23.22	23.16	0-1	1
	25	12	23.39	23.22	23.11		1
	25	25	23.39	23.24	23.16		1
	50	0	23.34	23.18	23.10		1
16QAM	1	0	23.66	23.07	23.26	0-1	1
	1	25	23.36	23.10	22.90		1
	1	49	23.67	23.24	23.39		1
	25	0	22.19	22.13	22.20	0-2	2
	25	12	22.34	22.17	22.19		2
	25	25	22.39	22.16	22.23		2
	50	0	22.21	22.18	22.09		2

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

LTE Band 2 (PCS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 18625 (1852.5 MHz)	Mid Channel 18900 (1880.0 MHz)	Frequency [MHz] 19175 (1907.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.67	24.63	24.70	0	0
	1	12	24.65	24.70	24.68		0
	1	24	24.70	24.66	24.61		0
	12	0	23.30	23.26	23.29	0-1	1
	12	6	23.35	23.29	23.24		1
	12	13	23.37	23.13	23.17		1
	25	0	23.41	23.30	23.24		1
16QAM	1	0	23.44	23.24	23.62	0-1	1
	1	12	23.45	23.52	23.52		1
	1	24	23.59	23.25	23.48		1
	12	0	22.44	22.19	22.28	0-2	2
	12	6	22.52	22.25	22.28		2
	12	13	22.54	22.07	22.10		2
	25	0	22.53	22.33	22.25		2

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

LTE Band 2 (PCS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 18615 (1851.5 MHz)	Mid Channel 18900 (1880.0 MHz)	High Channel 19185 (1908.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.70	24.70	24.70	0	0
	1	7	24.67	24.61	24.70		0
	1	14	24.66	24.63	24.68		0
	8	0	22.90	23.33	23.22	0-1	1
	8	4	23.01	23.25	22.96		1
	8	7	23.04	23.21	23.19		1
	15	0	22.99	23.29	23.19		1
16QAM	1	0	23.17	23.50	23.48	0-1	1
	1	7	23.18	23.43	23.37		1
	1	14	23.04	23.52	23.42		1
	8	0	21.89	22.26	22.14	0-2	2
	8	4	21.99	22.28	21.84		2
	8	7	22.04	22.19	22.18		2
	15	0	22.05	22.17	22.32		2

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

LTE Band 2 (PCS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 18607 (1850.7 MHz)	Mid Channel 18900 (1880.0 MHz)	High Channel 19193 (1909.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.68	24.67	24.70	0	0
	1	2	24.70	24.70	24.66		0
	1	5	24.60	24.69	24.69		0
	3	0	24.44	24.62	24.62		0
	3	2	24.45	24.70	24.41		0
	3	3	24.43	24.53	24.55		0
	6	0	23.09	23.22	23.11	0-1	1
16QAM	1	0	23.12	22.85	23.00	0-1	1
	1	2	23.47	23.41	23.25		1
	1	5	23.09	22.82	22.91		1
	3	0	22.99	23.14	22.98		1
	3	2	22.97	23.14	23.10		1
	3	3	22.96	23.16	23.04		1
	6	0	22.10	22.21	22.14	0-2	2

9.4.6 LTE Band 25 (PCS)

Table 9-23
LTE Band 25 (PCS) Conducted Powers - 20 MHz Bandwidth

LTE Band 25 (PCS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26140 (1860.0 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26590 (1905.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.16	24.11	**24.20**	0	0
	1	50	24.15	24.15	24.18		0
	1	99	24.19	24.13	24.16		0
	50	0	23.01	22.92	22.81	0-1	1
	50	25	**23.10**	22.97	22.81		1
	50	50	23.01	22.90	22.79		1
	100	0	22.94	23.03	22.90		1
16QAM	1	0	22.92	23.06	22.93		1
	1	50	22.82	23.16	22.71		1
	1	99	22.91	23.20	23.00		1
	50	0	21.86	21.79	21.64	0-2	2
	50	25	21.89	21.85	21.63		2
	50	50	21.86	21.80	21.62		2
	100	0	21.84	21.82	21.74		2

Table 9-24
LTE Band 25 (PCS) Conducted Powers - 15 MHz Bandwidth

LTE Band 25 (PCS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26115 (1857.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26615 (1907.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.20	24.20	24.16	0	0
	1	36	24.20	24.20	24.20		0
	1	74	24.18	24.20	24.20		0
	36	0	23.03	22.89	22.74	0-1	1
	36	18	22.97	22.96	22.72		1
	36	37	22.91	22.98	22.83		1
	75	0	22.87	22.89	22.75		1
16QAM	1	0	23.14	22.64	22.73		1
	1	36	22.99	22.71	22.66		1
	1	74	23.00	22.84	22.79		1
	36	0	21.88	21.71	21.57	0-2	2
	36	18	21.86	21.80	21.59		2
	36	37	21.80	21.74	21.73		2
	75	0	21.77	21.80	21.73		2

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

LTE Band 25 (PCS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26090 (1855.0 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26640 (1910.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.20	24.20	24.11	0	0
	1	25	24.18	24.20	24.20		0
	1	49	24.17	24.20	24.18		0
	25	0	22.63	22.45	22.63	0-1	1
	25	12	22.62	22.44	22.53		1
	25	25	22.71	22.66	22.62		1
	50	0	22.70	22.57	22.62		1
16QAM	1	0	23.01	22.57	22.94		1
	1	25	22.45	22.30	22.30		1
	1	49	23.14	22.65	22.76		1
	25	0	21.41	21.25	21.60	0-2	2
	25	12	21.50	21.27	21.52		2
	25	25	21.61	21.48	21.59		2
	50	0	21.50	21.42	21.50		2

Table 9-26
LTE Band 25 (PCS) Conducted Powers - 5 MHz Bandwidth

LTE Band 25 (PCS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26065 (1852.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26665 (1912.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.20	24.20	24.12	0	0
	1	12	24.18	24.19	24.20		0
	1	24	24.19	24.18	24.20		0
	12	0	22.71	22.42	22.48	0-1	1
	12	6	22.60	22.40	22.51		1
	12	13	22.59	22.46	22.48		1
	25	0	22.56	22.43	22.46		1
16QAM	1	0	23.14	22.50	22.92		1
	1	12	23.15	22.55	22.82		1
	1	24	23.08	22.68	22.87		1
	12	0	21.53	21.25	21.40	0-2	2
	12	6	21.47	21.27	21.44		2
	12	13	21.46	21.31	21.42		2
	25	0	21.46	21.40	21.41		2

Table 9-27
LTE Band 25 (PCS) Conducted Powers - 3 MHz Bandwidth

LTE Band 25 (PCS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26055 (1851.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26675 (1913.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.20	24.13	24.13	0	0
	1	7	24.11	24.19	24.20		0
	1	14	24.17	24.20	24.20		0
	8	0	22.53	22.47	22.63	0-1	1
	8	4	22.63	22.55	22.59		1
	8	7	22.52	22.55	22.62		1
	15	0	22.55	22.57	22.62		1
16QAM	1	0	22.84	22.53	22.86		1
	1	7	22.69	22.80	22.85		1
	1	14	22.42	22.69	22.74		1
	8	0	21.43	21.37	21.49	0-2	2
	8	4	21.60	21.38	21.46		2
	8	7	21.41	21.43	21.52		2
	15	0	21.52	21.32	21.51		2

Table 9-28
LTE Band 25 (PCS) Conducted Powers -1.4 MHz Bandwidth

LTE Band 25 (PCS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26047 (1850.7 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26683 (1914.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.20	24.20	24.20	0	0
	1	2	24.15	24.18	24.20		0
	1	5	24.18	24.20	24.18		0
	3	0	23.81	23.81	23.90		0
	3	2	23.87	23.69	23.84		0
	3	3	23.79	23.79	23.79		0
	6	0	22.56	22.40	22.51	0-1	1
16QAM	1	0	22.49	22.43	22.26	0-1	1
	1	2	22.91	22.85	22.71		1
	1	5	22.48	22.54	22.29		1
	3	0	22.35	22.30	22.48		1
	3	2	22.30	22.29	22.51		1
	3	3	22.29	22.32	22.33		1
	6	0	21.41	21.32	21.48	0-2	2

9.4.7 LTE Band 7

Table 9-29
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	23.68	**23.70**	23.67	0	0
		50	23.65	23.66	23.59		0
		99	23.69	23.65	23.68		0
	50	0	22.50	22.16	22.24	0-1	1
		25	22.52	22.34	22.34		1
		50	**22.53**	22.43	22.35		1
	100	0	22.47	22.35	22.30		1
16QAM	1	0	22.08	22.53	22.19	0-1	1
		50	22.19	22.22	22.08		1
		99	21.97	22.37	22.09		1
	50	0	21.39	21.18	21.19	0-2	2
		25	21.43	20.91	21.27		2
		50	21.50	21.42	21.26		2
	100	0	21.43	21.34	21.30		2

Table 9-30
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	23.67	23.66	23.70	0	0
		36	23.70	23.70	23.68		0
		74	23.67	23.70	23.69		0
	36	0	22.30	22.09	22.33	0-1	1
		18	22.44	22.26	22.20		1
		37	22.50	22.44	22.28		1
	75	0	22.42	22.25	22.29		1
16QAM	1	0	22.49	21.84	22.08	0-1	1
		36	22.30	21.95	21.94		1
		74	22.68	22.01	21.97		1
	36	0	21.32	21.07	21.34	0-2	2
		18	21.45	21.25	21.29		2
		37	21.50	21.44	21.25		2
	75	0	21.41	21.29	21.31		2

Table 9-31
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	23.70	23.70	23.64	0	0
	1	25	23.68	23.66	23.70		0
	1	49	23.69	23.70	23.70		0
	25	0	22.34	22.16	22.16	0-1	1
	25	12	22.34	22.26	22.27		1
	25	25	22.27	22.18	22.28		1
	50	0	22.36	22.29	22.23		1
16QAM	1	0	22.42	21.90	22.04	0-1	1
	1	25	22.02	21.82	21.76		1
	1	49	22.45	22.03	22.29		1
	25	0	21.28	21.14	21.22	0-2	2
	25	12	21.36	21.29	21.36		2
	25	25	21.26	21.19	21.39		2
	50	0	21.25	21.27	21.04		2

Table 9-32
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	23.70	23.68	23.70	0	0
	1	12	23.67	23.67	23.69		0
	1	24	23.66	23.70	23.70		0
	12	0	22.15	22.06	22.17	0-1	1
	12	6	22.13	22.15	22.06		1
	12	13	22.15	22.04	22.06		1
	25	0	22.05	22.11	22.09		1
16QAM	1	0	22.42	22.22	22.44	0-1	1
	1	12	22.64	22.15	22.25		1
	1	24	22.66	22.17	22.55		1
	12	0	21.19	21.06	21.22	0-2	2
	12	6	21.12	21.17	21.10		2
	12	13	21.11	21.03	21.05		2
	25	0	20.99	21.19	21.09		2

9.4.8 LTE Carrier Aggregation Conducted Powers

Table 9-33
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?	Intra-Band & Inter-band downlink carrier aggregation is suppported. 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 only non-contiguous carrier aggregation for LTE B2 and LTE B4			
ii)	Frequency band combinations supported for intra-band and inter-band carrier aggregation:	LTE B13 (PCC) + LTE B4 (SCC)	LTE B12 (PCC) + LTE B4 (SCC)	LTE B4 (PCC) + LTE B2 (SCC)	LTE B2 (PCC) + LTE B5 (SCC)
		LTE B4 (PCC) + LTE B13 (SCC)	LTE B4 (PCC) + LTE B12 (SCC)	LTE B2 (PCC) + LTE B4 (SCC)	LTE B4 (PCC) + LTE B5 (SCC)
		LTE B13 (PCC) + LTE B2 (SCC)	LTE B12 (PCC) + LTE B2 (SCC)	LTE B4 (PCC) + LTE B4 (SCC)	LTE B5 (PCC) + LTE B4 (SCC)
		LTE B2 (PCC) + LTE B13 (SCC)	LTE B2 (PCC) + LTE B12 (SCC)	LTE B5 (PCC) + LTE B2 (SCC)	LTE B2 (PCC) + LTE B2 (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 B13 + LTE B4 CA_4A_13A**	**LTE B12 + LTE B4 CA_4A_12A**	**LTE B4 + LTE B2 CA_2A_4A**	**LTE B2 + LTE B5 CA_2A_5A**
		LTE B13 (PCC): 10 MHz	LTE B12 (PCC): 3, 5, 10 MHz	LTE B4 (PCC): 5, 10, 15, 20 MHz	LTE B2 (PCC): 5, 10, 15, 20 MHz
		LTE B4 (SCC): 5, 10, 15, 20 MHz	LTE B4 (SCC): 1.4, 3, 5, 10, 15, 20 MHz	LTE B2 (SCC): 1.4, 3, 5, 10, 15, 20 MHz	LTE B5 (SCC): 5, 10 MHz
		LTE B4 + LTE B13 CA_4A_13A	**LTE B4 + LTE B12 CA_4A_12A**	**LTE B2 + LTE B4 CA_2A_4A**	**LTE B4 + LTE B5 CA_4A_5A**
		LTE B4 (PCC): 5, 10, 15, 20 MHz	LTE B4 (PCC): 1.4, 3, 5, 10, 15, 20	LTE B2 (PCC): 1.4, 3, 5, 10, 15, 20	LTE B4 (PCC): 5, 10, 15, 20 MHz
		LTE B13 (SCC): 10 MHz	LTE B12 (SCC): 3, 5, 10 MHz	LTE B4 (SCC): 5, 10, 15, 20 MHz	LTE B5 (SCC): 5, 10 MHz
		LTE B13 + LTE B2 CA_2A_13A	**LTE B12 + LTE B2 CA_2A_12A**	**LTE B4 + LTE B4 CA_4A_4A**	**LTE B5 + LTE B4 CA_4A_5A**
		LTE B13 (PCC): 10 MHz	LTE B12 (PCC): 3, 5, 10 MHz	LTE B4 (PCC): 5, 10, 15, 20 MHz	LTE B5 (PCC): 5, 10 MHz
		LTE B2 (SCC): 5, 10, 15, 20 MHz	LTE B2 (SCC): 5, 10, 15, 20 MHz	LTE B4 (SCC): 5, 10, 15, 20 MHz	LTE B4 (SCC): 5, 10, 15, 20 MHz
		LTE B2 + LTE B13 CA_2A_13A	**LTE B2 + LTE B12 CA_2A_12A**	**LTE B5 + LTE B2 CA_2A_5A**	**LTE B2 + LTE B2 CA_2A_2A**
		LTE B2 (PCC): 5, 10, 15, 20 MHz	LTE B2 (PCC): 5, 10, 15, 20 MHz	LTE B5 (PCC): 5, 10 MHz	LTE B2 (PCC): 5, 10, 15, 20 MHz
		LTE B13 (SCC): 10 MHz	LTE B12 (SCC): 3, 5, 10 MHz	LTE B2 (SCC): 5, 10, 15, 20 MHz	LTE B2 (SCC): 5, 10, 15, 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 9-34			
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 8.6.5			
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 9-34
LTE 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 B13	10	23230	782	1	25	5230	751	LTE B4	20	2175	2132.5	24.18	24.20
LTE B4	20	20175	1732.5	1	0	2175	2132.5	LTE B13	10	5230	751	24.60	24.70
LTE B13	10	23230	782	1	25	5230	751	LTE B2	20	900	1960	24.20	24.20
LTE B2	20	18900	1880	1	0	900	1960	LTE B13	10	5230	751	24.69	24.70
LTE B4	20	20175	1732.5	1	0	2175	2132.5	LTE B2	20	900	1960	24.66	24.70
LTEB2	20	18900	1880	1	0	900	1960	LTE B4	20	2175	2132.5	24.70	24.70
LTE B4	20	20175	1732.5	1	0	2175	2132.5	LTE B4	5	1980	2113	24.70	24.70
LTE B5	10	20525	836.5	1	0	2525	881.5	LTE B2	20	900	1960	24.06	24.20
LTE B2	20	18900	1880	1	0	900	1960	LTE B5	10	2525	881.5	24.59	24.70
LTE B4	20	20175	1732.5	1	0	2175	2132.5	LTE B5	10	2525	881.5	24.64	24.70
LTE B5	10	20525	836.5	1	0	2525	881.5	LTE B4	20	2175	2132.5	24.20	24.20
LTE B2	20	18900	1880	1	0	900	1960	LTE B2	5	627	1932.7	24.62	24.70
LTE B12	10	23095	707.5	1	0	5095	737.5	LTE B4	20	2175	2132.5	24.70	24.70
LTE B4	20	20175	1732.5	1	0	2175	2132.5	LTE B12	10	5095	737.5	24.55	24.70
LTE B12	10	23095	707.5	1	0	5095	737.5	LTE B2	20	900	1960	24.59	24.70
LTE B2	20	18900	1880	1	0	900	1960	LTE B12	10	5095	737.5	24.70	24.70

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 9-35
2.4 GHz WLAN Maximum Average RF Power

Freq [MHz]	Channel	2.4GHz Conducted Power [dBm]	
		IEEE Transmission Mode	
		802.11b	802.11g
2412	1	16.86	14.91
2417	2	18.25	16.34
2437	6	18.12	16.52
2457	10	**18.62**	16.84
2462	11	17.14	15.58

Table 9-36
5 GHz WLAN Maximum Average RF Power 20 MHz Bandwidth

Freq [MHz]	Channel	5GHz (20MHz) Conducted Power [dBm]		
		IEEE Transmission Mode		
		802.11a	802.11n	802.11ac
5180	36	13.24	13.15	13.26
5200	40	13.32	13.26	13.37
5220	44	13.39	13.29	13.45
5240	48	13.41	13.50	13.34
5260	52	13.05	13.19	13.05
5280	56	13.15	13.19	13.14
5300	60	**13.34**	13.20	13.22
5320	64	12.99	12.95	12.98
5500	100	**12.93**	12.79	12.91
5580	116	12.57	12.56	12.58
5660	132	12.22	12.33	12.43
5720	144	12.34	12.32	12.32
5745	149	13.01	13.04	13.10
5785	157	13.13	12.95	13.03
5825	165	**13.16**	13.12	13.03

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.

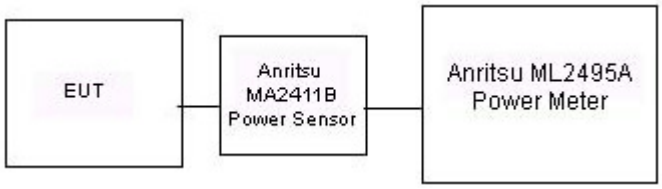


Figure 9-4
Power Measurement Setup for Bandwidths < 50 MHz

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
1/21/2016	750H	22.4	700	0.857	43.427	0.889	42.201	-3.60%	2.91%
			710	0.866	43.280	0.890	42.149	-2.70%	2.68%
			740	0.894	42.866	0.893	41.994	0.11%	2.08%
			755	0.908	42.656	0.894	41.916	1.57%	1.77%
			770	0.922	42.451	0.895	41.838	3.02%	1.47%
			785	0.938	42.253	0.896	41.760	4.69%	1.18%
1/20/2016	835H	21.5	820	0.882	40.261	0.899	41.578	-1.89%	-3.17%
			835	0.896	40.076	0.900	41.500	-0.44%	-3.43%
			850	0.910	39.889	0.916	41.500	-0.66%	-3.88%
1/27/2016	1750H	22.4	1710	1.312	38.639	1.348	40.142	-2.67%	-3.74%
			1750	1.353	38.344	1.371	40.079	-1.31%	-4.33%
			1790	1.388	38.122	1.394	40.016	-0.43%	-4.73%
1/25/2016	1900H	20.7	1850	1.400	38.985	1.400	40.000	0.00%	-2.54%
			1880	1.429	38.851	1.400	40.000	2.07%	-2.87%
			1910	1.458	38.673	1.400	40.000	4.14%	-3.32%
1/26/2016	2450H	24.1	2400	1.780	38.989	1.756	39.289	1.37%	-0.76%
			2450	1.836	38.748	1.800	39.200	2.00%	-1.15%
			2500	1.896	38.575	1.855	39.136	2.21%	-1.43%
2/1/2016	2450H-2600H	24.2	2450	1.808	40.413	1.800	39.200	0.44%	3.09%
			2500	1.871	40.235	1.855	39.136	0.86%	2.81%
			2550	1.931	40.038	1.909	39.073	1.15%	2.47%
			2600	1.992	39.834	1.964	39.009	1.43%	2.11%
02/02/2016	5200H-5800H	21.6	5240	4.528	35.839	4.696	35.940	-3.58%	-0.28%
			5260	4.547	35.819	4.717	35.917	-3.60%	-0.27%
			5300	4.590	35.762	4.758	35.871	-3.53%	-0.30%
			5500	4.769	35.524	4.963	35.643	-3.91%	-0.33%
			5580	4.869	35.409	5.045	35.551	-3.49%	-0.40%
			5600	4.868	35.413	5.065	35.529	-3.89%	-0.33%
			5745	5.041	35.161	5.214	35.363	-3.32%	-0.57%
			5765	5.065	35.127	5.234	35.340	-3.23%	-0.60%
			5825	5.116	35.079	5.296	35.271	-3.40%	-0.54%

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.

Table 10-2
Measured Body Tissue Properties (1g SAR)

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
1/25/2016	750B	21.1	700	0.918	57.139	0.959	55.726	-4.28%	2.54%
			710	0.923	57.029	0.960	55.687	-3.85%	2.41%
			740	0.954	56.793	0.963	55.570	-0.93%	2.20%
			755	0.969	56.575	0.964	55.512	0.52%	1.91%
			770	0.985	56.457	0.965	55.453	2.07%	1.81%
			785	1.000	56.336	0.966	55.395	3.52%	1.70%
2/2/2016	750B	22.7	700	0.914	54.377	0.959	55.726	-4.69%	-2.42%
			710	0.923	54.276	0.960	55.687	-3.85%	-2.53%
			740	0.952	53.980	0.963	55.570	-1.14%	-2.86%
			755	0.966	53.813	0.964	55.512	0.21%	-3.06%
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%
1/20/2016	835B	21.5	820	0.994	53.669	0.969	55.258	2.58%	-2.88%
			835	1.009	53.523	0.970	55.200	4.02%	-3.04%
			850	1.024	53.367	0.988	55.154	3.64%	-3.24%
1/25/2016	835B	21.3	820	0.989	53.615	0.969	55.258	2.06%	-2.97%
			835	1.004	53.454	0.970	55.200	3.51%	-3.16%
			850	1.020	53.300	0.988	55.154	3.24%	-3.36%
1/25/2016	1750B	19.5	1710	1.495	51.548	1.463	53.537	2.19%	-3.72%
			1750	1.540	51.374	1.488	53.432	3.49%	-3.85%
			1790	1.586	51.210	1.514	53.326	4.76%	-3.97%
2/1/2016	1750B	22.5	1710	1.467	51.695	1.463	53.537	0.27%	-3.44%
			1750	1.512	51.539	1.488	53.432	1.61%	-3.54%
			1790	1.557	51.370	1.514	53.326	2.84%	-3.67%
1/27/2016	1900B	24.1	1850	1.488	53.374	1.520	53.300	-2.11%	0.14%
			1880	1.516	53.154	1.520	53.300	-0.26%	-0.27%
			1910	1.564	53.117	1.520	53.300	2.89%	-0.34%
2/1/2016	1900B	23.0	1850	1.504	52.402	1.520	53.300	-1.05%	-1.68%
			1880	1.535	52.313	1.520	53.300	0.99%	-1.85%
			1910	1.565	52.231	1.520	53.300	2.96%	-2.01%
1/25/2016	2450B-2600B	24.0	2400	1.858	52.171	1.902	52.767	-2.31%	-1.13%
			2450	1.926	51.967	1.950	52.700	-1.23%	-1.39%
			2500	1.995	51.799	2.021	52.636	-1.29%	-1.59%
			2550	2.064	51.585	2.092	52.573	-1.34%	-1.88%
			2600	2.133	51.400	2.163	52.509	-1.39%	-2.11%
01/21/2016	5200B-5800B	22.7	5300	5.526	47.311	5.416	48.879	2.03%	-3.21%
			5320	5.560	47.267	5.439	48.851	2.22%	-3.24%
			5500	5.789	46.932	5.650	48.607	2.46%	-3.45%
			5800	6.197	46.449	6.000	48.200	3.28%	-3.63%
			5825	6.236	46.388	6.029	48.166	3.43%	-3.69%

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.

Table 10-3
Measured Body Tissue Properties (10g SAR)

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%
			770	0.975	54.923	0.965	55.453	1.04%	-0.96%
			785	0.990	54.775	0.966	55.395	2.48%	-1.12%
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%
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%
2/28/2016	1900B	22.5	1850	1.477	54.419	1.520	53.300	-2.83%	2.10%
			1880	1.514	54.271	1.520	53.300	-0.39%	1.82%
			1910	1.544	54.255	1.520	53.300	1.58%	1.79%
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%
2/29/2016	2450B-2600B	24.2	2450	1.941	52.765	1.950	52.700	-0.46%	0.12%
			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 (1g)

System Verification TARGET & MEASURED												
SAR System #	Tissue Frequency (MHz)	Tissue Type	Date:	Amb. Temp (°C)	Liquid Temp (°C)	Input Power (W)	Dipole SN	Probe SN	Measured SAR_{1g} (W/kg)	1 W Target SAR_{1g} (W/kg)	1 W Normalized SAR_{1g} (W/kg)	$Deviation_{1g}$ (%)
K	750	HEAD	01/21/2016	24.2	22.7	0.200	1054	3022	1.720	8.280	8.600	3.86%
G	835	HEAD	01/20/2016	24.0	21.5	0.200	4d119	3334	1.770	9.380	8.850	-5.65%
G	1750	HEAD	01/27/2016	24.4	22.6	0.100	1051	3334	3.820	36.200	38.200	5.52%
G	1900	HEAD	01/25/2016	20.8	20.4	0.100	5d149	3334	4.320	40.700	43.200	6.14%
H	2450	HEAD	01/26/2016	24.3	23.1	0.100	719	3263	5.600	54.200	56.000	3.32%
H	2450	HEAD	02/01/2016	22.3	22.5	0.100	719	3263	5.480	54.200	54.800	1.11%
H	2600	HEAD	02/01/2016	22.3	22.5	0.100	1004	3263	5.700	55.800	57.000	2.15%
E	5250	HEAD	02/02/2016	23.8	22.0	0.050	1191	7308	3.960	82.500	79.200	-4.00%
E	5600	HEAD	02/02/2016	23.8	22.0	0.050	1191	7308	4.120	84.500	82.400	-2.49%
E	5750	HEAD	02/02/2016	23.8	22.0	0.050	1191	7308	3.810	80.000	76.200	-4.75%
K	750	BODY	01/25/2016	23.0	21.4	0.200	1054	3022	1.760	8.530	8.800	3.17%
H	750	BODY	02/02/2016	24.1	22.7	0.200	1054	3263	1.750	8.530	8.750	2.58%
H	750	BODY	02/24/2016	23.9	22.1	0.200	1054	3263	1.820	8.530	9.100	6.68%
E	835	BODY	01/20/2016	23.5	21.5	0.200	4d119	3351	1.950	9.200	9.750	5.98%
E	835	BODY	01/25/2016	21.9	21.0	0.200	4d119	3351	1.910	9.200	9.550	3.80%
H	1750	BODY	01/25/2016	19.0	19.5	0.100	1051	3263	3.860	37.100	38.600	4.04%
K	1750	BODY	02/01/2016	23.2	22.5	0.100	1051	3022	4.030	37.100	40.300	8.63%
I	1900	BODY	01/27/2016	23.5	24.1	0.100	5d149	3333	4.240	40.400	42.400	4.95%
I	1900	BODY	02/01/2016	22.0	23.0	0.100	5d141	3333	4.090	40.000	40.900	2.25%
J	2450	BODY	01/25/2016	22.1	22.2	0.100	719	3319	5.170	51.900	51.700	-0.39%
J	2600	BODY	01/25/2016	22.1	22.2	0.100	1004	3319	5.870	56.200	58.700	4.45%
D	5300	BODY	01/21/2016	23.0	22.7	0.050	1120	7357	3.870	75.200	77.400	2.93%
D	5500	BODY	01/21/2016	23.0	22.7	0.050	1120	7357	3.880	79.500	77.600	-2.39%
D	5800	BODY	01/21/2016	23.0	22.7	0.050	1120	7357	3.870	76.300	77.400	1.44%

Table 10-5
System Verification Results (10g)

System Verification TARGET & MEASURED												
SAR System #	Tissue Frequency (MHz)	Tissue Type	Date:	Amb. Temp (°C)	Liquid Temp (°C)	Input Power (W)	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%
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	02/28/2016	22.8	21.9	0.100	5d149	3334	2.100	21.800	21.000	-3.67%
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	02/29/2016	23.1	22.9	0.100	719	3263	2.280	24.300	22.800	-6.17%
H	2600	BODY	02/29/2016	22.9	23.5	0.100	1004	3263	2.320	25.300	23.200	-8.30%

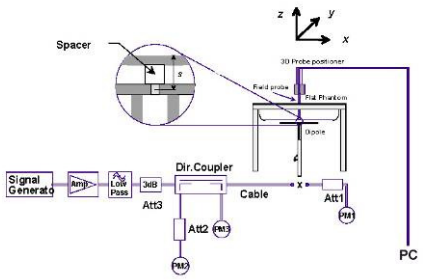
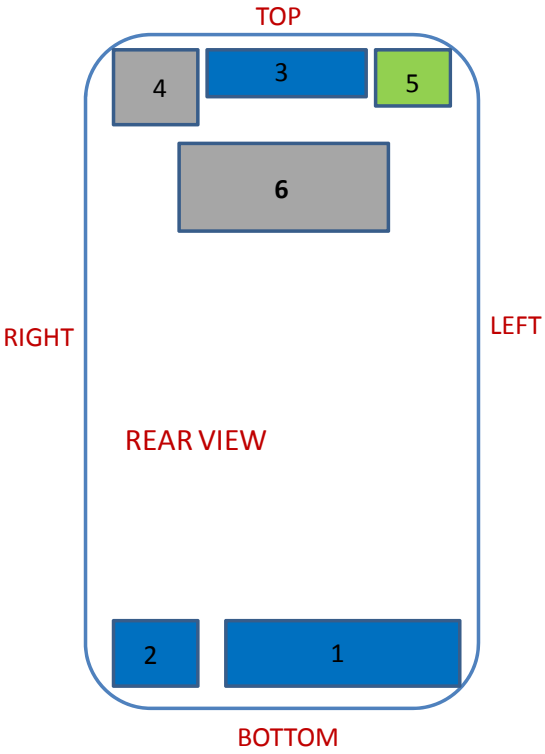


Figure 10-1
System Verification Setup Diagram

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 BC0
   - UMTS B5
   - LTE B12/17/13/5/7
2. Antenna 2 (Tx/Rx)
   - GSM/GPRS/EDGE 1900 MHz
   - CDMA/EVDO BC1
   - UMTS B2/4
   - LTE B2/4/25
3. Antenna 3
   - CDMA/EVDO BC0 (Rx Only)
   - LTE B12/17/13/5 (Rx Only)
   - CDMA/EVDO BC1 (Tx/Rx) (head SAR limited by proximity sensor)
   - LTE B2/4 (Tx/Rx) (head SAR limited by proximity sensor)
4. Antenna 4 (Rx only)
   - GPS
   - LTE B7
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
GSM 850 Head SAR Antenna 1

MEASUREMENT RESULTS																
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	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	33.13	-0.03	Right	Cheek	Ant 1	03654	1	1:8.3	0.392	1.016	0.398	
836.60	190	GSM 850	GSM	33.2	33.13	0.04	Right	Tilt	Ant 1	03654	1	1:8.3	0.258	1.016	0.262	
836.60	190	GSM 850	GSM	33.2	33.13	-0.02	Left	Cheek	Ant 1	03654	1	1:8.3	0.521	1.016	0.529	
836.60	190	GSM 850	GSM	33.2	33.13	-0.04	Left	Tilt	Ant 1	03654	1	1:8.3	0.249	1.016	0.253	
836.60	190	GSM 850	GPRS	30.7	30.69	0.01	Right	Cheek	Ant 1	03654	2	1:4.15	0.665	1.002	0.666	
836.60	190	GSM 850	GPRS	30.7	30.69	0.15	Right	Tilt	Ant 1	03654	2	1:4.15	0.381	1.002	0.382	
824.20	128	GSM 850	GPRS	30.7	30.66	0.02	Left	Cheek	Ant 1	03654	2	1:4.15	0.882	1.009	0.890	
836.60	190	GSM 850	GPRS	30.7	30.69	-0.01	Left	Cheek	Ant 1	03654	2	1:4.15	0.813	1.002	0.815	
848.80	251	GSM 850	GPRS	30.7	30.64	0.02	Left	Cheek	Ant 1	03654	2	1:4.15	0.900	1.014	**0.913**	A1
836.60	190	GSM 850	GPRS	30.7	30.69	-0.01	Left	Tilt	Ant 1	03654	2	1:4.15	0.428	1.002	0.429	
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 11-2
GSM 850 Head SAR with CM Accessory

MEASUREMENT RESULTS																	
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	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	33.13	-0.07	Right	Cheek	Ant 1	Camera Module	03654	1	1:8.3	0.241	1.016	0.245	
836.60	190	GSM 850	GSM	33.2	33.13	0.20	Right	Tilt	Ant 1	Camera Module	03654	1	1:8.3	0.119	1.016	0.121	
836.60	190	GSM 850	GSM	33.2	33.13	0.15	Left	Cheek	Ant 1	Camera Module	03654	1	1:8.3	0.241	1.016	0.245	
836.60	190	GSM 850	GSM	33.2	33.13	0.03	Left	Tilt	Ant 1	Camera Module	03654	1	1:8.3	0.141	1.016	0.143	
836.60	190	GSM 850	GPRS	30.7	30.69	-0.03	Right	Cheek	Ant 1	Camera Module	03654	2	1:4.15	0.288	1.002	0.289	
836.60	190	GSM 850	GPRS	30.7	30.69	-0.04	Right	Tilt	Ant 1	Camera Module	03654	2	1:4.15	0.142	1.002	0.142	
836.60	190	GSM 850	GPRS	30.7	30.69	0.03	Left	Cheek	Ant 1	Camera Module	03654	2	1:4.15	0.288	1.002	0.289	
836.60	190	GSM 850	GPRS	30.7	30.69	-0.07	Left	Tilt	Ant 1	Camera Module	03654	2	1:4.15	0.185	1.002	0.185	
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
GSM 1900 Head SAR Antenna 2

MEASUREMENT RESULTS																
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	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	29.91	0.00	Right	Cheek	Ant 2	03654	1	1:8.3	0.271	1.069	0.290	
1880.00	661	GSM 1900	GSM	30.2	29.91	0.05	Right	Tilt	Ant 2	03654	1	1:8.3	0.072	1.069	0.077	
1880.00	661	GSM 1900	GSM	30.2	29.91	0.12	Left	Cheek	Ant 2	03654	1	1:8.3	0.138	1.069	0.148	
1880.00	661	GSM 1900	GSM	30.2	29.91	0.01	Left	Tilt	Ant 2	03654	1	1:8.3	0.073	1.069	0.078	
1880.00	661	GSM 1900	GPRS	28.7	28.51	0.07	Right	Cheek	Ant 2	03654	2	1:4.15	0.329	1.045	0.344	A2
1880.00	661	GSM 1900	GPRS	28.7	28.51	-0.02	Right	Tilt	Ant 2	03654	2	1:4.15	0.100	1.045	0.105	
1880.00	661	GSM 1900	GPRS	28.7	28.51	-0.03	Left	Cheek	Ant 2	03654	2	1:4.15	0.191	1.045	0.200	
1880.00	661	GSM 1900	GPRS	28.7	28.51	0.12	Left	Tilt	Ant 2	03654	2	1:4.15	0.089	1.045	0.093	

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

Table 11-4
GSM 1900 Head SAR with CM Accessory Antenna 2

MEASUREMENT RESULTS																	
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	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	29.91	0.06	Right	Cheek	Ant 2	Camera Module	03654	1	1:8.3	0.212	1.069	0.227	
1880.00	661	GSM 1900	GSM	30.2	29.91	0.02	Right	Tilt	Ant 2	Camera Module	03654	1	1:8.3	0.094	1.069	0.100	
1880.00	661	GSM 1900	GSM	30.2	29.91	-0.09	Left	Cheek	Ant 2	Camera Module	03654	1	1:8.3	0.114	1.069	0.122	
1880.00	661	GSM 1900	GSM	30.2	29.91	-0.08	Left	Tilt	Ant 2	Camera Module	03654	1	1:8.3	0.065	1.069	0.069	
1880.00	661	GSM 1900	GPRS	28.7	28.51	0.00	Right	Cheek	Ant 2	Camera Module	03654	2	1:4.15	0.311	1.045	0.325	
1880.00	661	GSM 1900	GPRS	28.7	28.51	0.01	Right	Tilt	Ant 2	Camera Module	03654	2	1:4.15	0.150	1.045	0.157	
1880.00	661	GSM 1900	GPRS	28.7	28.51	0.10	Left	Cheek	Ant 2	Camera Module	03654	2	1:4.15	0.165	1.045	0.172	
1880.00	661	GSM 1900	GPRS	28.7	28.51	0.13	Left	Tilt	Ant 2	Camera Module	03654	2	1:4.15	0.099	1.045	0.103	

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

Table 11-5
UMTS 850 Head SAR Antenna 1

MEASUREMENT RESULTS															
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	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	24.13	0.09	Right	Cheek	Ant 1	03654	1:1	0.353	1.016	0.359	
836.60	4183	UMTS 850	RMC	24.2	24.13	-0.05	Right	Tilt	Ant 1	03654	1:1	0.268	1.016	0.272	
836.60	4183	UMTS 850	RMC	24.2	24.13	0.01	Left	Cheek	Ant 1	03654	1:1	0.507	1.016	0.515	A3
836.60	4183	UMTS 850	RMC	24.2	24.13	0.07	Left	Tilt	Ant 1	03654	1:1	0.208	1.016	0.211	

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

Table 11-6
UMTS 850 Head SAR with CM Accessory Antenna 1

MEASUREMENT RESULTS																
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	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	24.13	0.05	Right	Cheek	Ant 1	Camera Module	03654	1:1	0.207	1.016	0.210	
836.60	4183	UMTS 850	RMC	24.2	24.13	0.10	Right	Tilt	Ant 1	Camera Module	03654	1:1	0.122	1.016	0.124	
836.60	4183	UMTS 850	RMC	24.2	24.13	0.01	Left	Cheek	Ant 1	Camera Module	03654	1:1	0.205	1.016	0.208	
836.60	4183	UMTS 850	RMC	24.2	24.13	0.12	Left	Tilt	Ant 1	Camera Module	03654	1:1	0.100	1.016	0.102	
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 1750 Head SAR Antenna 2

MEASUREMENT RESULTS															
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	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	24.2	23.90	-0.10	Right	Cheek	Ant 2	03654	1:1	0.443	1.072	0.475	A4
1732.40	1412	UMTS 1750	RMC	24.2	23.90	0.00	Right	Tilt	Ant 2	03654	1:1	0.154	1.072	0.165	
1732.40	1412	UMTS 1750	RMC	24.2	23.90	0.19	Left	Cheek	Ant 2	03654	1:1	0.251	1.072	0.269	
1732.40	1412	UMTS 1750	RMC	24.2	23.90	-0.16	Left	Tilt	Ant 2	03654	1:1	0.186	1.072	0.199	
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 1750 Head SAR with CM Accessory Antenna 2

MEASUREMENT RESULTS																
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	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	24.2	23.90	-0.06	Right	Cheek	Ant 2	Camera Module	03654	1:1	0.330	1.072	0.354	
1732.40	1412	UMTS 1750	RMC	24.2	23.90	0.07	Right	Tilt	Ant 2	Camera Module	03654	1:1	0.169	1.072	0.181	
1732.40	1412	UMTS 1750	RMC	24.2	23.90	0.07	Left	Cheek	Ant 2	Camera Module	03654	1:1	0.165	1.072	0.177	
1732.40	1412	UMTS 1750	RMC	24.2	23.90	0.08	Left	Tilt	Ant 2	Camera Module	03654	1:1	0.133	1.072	0.143	
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 1900 Head SAR Antenna 2

MEASUREMENT RESULTS															
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	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	24.2	23.95	0.04	Right	Cheek	Ant 2	03654	1:1	0.570	1.059	0.604	A5
1880.00	9400	UMTS 1900	RMC	24.2	23.95	0.15	Right	Tilt	Ant 2	03654	1:1	0.167	1.059	0.177	
1880.00	9400	UMTS 1900	RMC	24.2	23.95	-0.11	Left	Cheek	Ant 2	03654	1:1	0.317	1.059	0.336	
1880.00	9400	UMTS 1900	RMC	24.2	23.95	0.11	Left	Tilt	Ant 2	03654	1:1	0.168	1.059	0.178	
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 1900 Head SAR with CM Accessory Antenna 2

MEASUREMENT RESULTS															
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	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	24.2	23.95	-0.01	Right	Cheek	Ant 2	Camera Module	03654	1:1	0.388	1.059	0.411	
1880.00	9400	UMTS 1900	RMC	24.2	23.95	0.02	Right	Tilt	Ant 2	Camera Module	03654	1:1	0.191	1.059	0.202	
1880.00	9400	UMTS 1900	RMC	24.2	23.95	0.06	Left	Cheek	Ant 2	Camera Module	03654	1:1	0.236	1.059	0.250	
1880.00	9400	UMTS 1900	RMC	24.2	23.95	-0.04	Left	Tilt	Ant 2	Camera Module	03654	1:1	0.119	1.059	0.126	
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
Cell CDMA Head SAR Antenna 1

MEASUREMENT RESULTS															
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
836.52	384	Cell. CDMA	RC3 / SO55	24.7	24.53	0.02	Right	Cheek	Ant 1	03662	1:1	0.399	1.040	0.415	
836.52	384	Cell. CDMA	RC3 / SO55	24.7	24.53	0.02	Right	Tilt	Ant 1	03662	1:1	0.220	1.040	0.229	
836.52	384	Cell. CDMA	RC3 / SO55	24.7	24.53	0.02	Left	Cheek	Ant 1	03662	1:1	0.527	1.040	0.548	A6
836.52	384	Cell. CDMA	RC3 / SO55	24.7	24.53	0.03	Left	Tilt	Ant 1	03662	1:1	0.219	1.040	0.228	
836.52	384	Cell. CDMA	EVDO Rev. A	24.7	24.57	-0.15	Right	Cheek	Ant 1	03662	1:1	0.363	1.030	0.374	
836.52	384	Cell. CDMA	EVDO Rev. A	24.7	24.57	0.02	Right	Tilt	Ant 1	03662	1:1	0.181	1.030	0.186	
836.52	384	Cell. CDMA	EVDO Rev. A	24.7	24.57	-0.04	Left	Cheek	Ant 1	03662	1:1	0.484	1.030	0.499	
836.52	384	Cell. CDMA	EVDO Rev. A	24.7	24.57	0.03	Left	Tilt	Ant 1	03662	1:1	0.200	1.030	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								

Table 11-12
Cell CDMA Head SAR with CM Accessory Antenna 1

MEASUREMENT RESULTS																
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	Accessory	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.												(W/kg)		(W/kg)	
836.52	384	Cell. CDMA	RC3 / SO55	24.7	24.53	0.00	Right	Cheek	Ant 1	Camera Module	03662	1:1	0.269	1.040	0.280	
836.52	384	Cell. CDMA	RC3 / SO55	24.7	24.53	-0.04	Right	Tilt	Ant 1	Camera Module	03662	1:1	0.135	1.040	0.140	
836.52	384	Cell. CDMA	RC3 / SO55	24.7	24.53	0.05	Left	Cheek	Ant 1	Camera Module	03662	1:1	0.261	1.040	0.271	
836.52	384	Cell. CDMA	RC3 / SO55	24.7	24.53	-0.11	Left	Tilt	Ant 1	Camera Module	03662	1:1	0.146	1.040	0.152	
836.52	384	Cell. CDMA	EVDO Rev. A	24.7	24.57	-0.04	Right	Cheek	Ant 1	Camera Module	03662	1:1	0.271	1.030	0.279	
836.52	384	Cell. CDMA	EVDO Rev. A	24.7	24.57	0.06	Right	Tilt	Ant 1	Camera Module	03662	1:1	0.105	1.030	0.108	
836.52	384	Cell. CDMA	EVDO Rev. A	24.7	24.57	0.07	Left	Cheek	Ant 1	Camera Module	03662	1:1	0.278	1.030	0.286	
836.52	384	Cell. CDMA	EVDO Rev. A	24.7	24.57	-0.05	Left	Tilt	Ant 1	Camera Module	03662	1:1	0.133	1.030	0.137	

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

Table 11-13
PCS CDMA Head SAR Antenna 2

MEASUREMENT RESULTS															
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
1880.00	600	PCS CDMA	RC3 / SO55	25.0	24.65	-0.06	Right	Cheek	Ant 2	03654	1:1	0.678	1.084	0.735	A7
1880.00	600	PCS CDMA	RC3 / SO55	25.0	24.65	-0.20	Right	Tilt	Ant 2	03654	1:1	0.200	1.084	0.217	
1880.00	600	PCS CDMA	RC3 / SO55	25.0	24.65	-0.03	Left	Cheek	Ant 2	03654	1:1	0.345	1.084	0.374	
1880.00	600	PCS CDMA	RC3 / SO55	25.0	24.65	-0.19	Left	Tilt	Ant 2	03654	1:1	0.167	1.084	0.181	
1880.00	600	PCS CDMA	EVDO Rev. A	25.0	24.74	-0.12	Right	Cheek	Ant 2	03654	1:1	0.655	1.062	0.696	
1880.00	600	PCS CDMA	EVDO Rev. A	25.0	24.74	-0.08	Right	Tilt	Ant 2	03654	1:1	0.169	1.062	0.179	
1880.00	600	PCS CDMA	EVDO Rev. A	25.0	24.74	0.02	Left	Cheek	Ant 2	03654	1:1	0.359	1.062	0.381	
1880.00	600	PCS CDMA	EVDO Rev. A	25.0	24.74	0.04	Left	Tilt	Ant 2	03654	1:1	0.172	1.062	0.183	

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 11-14
PCS CDMA Head SAR with CM Accessory Antenna 2

MEASUREMENT RESULTS																
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	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	25.0	24.65	-0.04	Right	Cheek	Ant 2	Camera Module	03654	1:1	0.342	1.084	0.371	
1880.00	600	PCS CDMA	RC3 / SO55	25.0	24.65	-0.03	Right	Tilt	Ant 2	Camera Module	03654	1:1	0.160	1.084	0.173	
1880.00	600	PCS CDMA	RC3 / SO55	25.0	24.65	-0.01	Left	Cheek	Ant 2	Camera Module	03654	1:1	0.235	1.084	0.255	
1880.00	600	PCS CDMA	RC3 / SO55	25.0	24.65	-0.01	Left	Tilt	Ant 2	Camera Module	03654	1:1	0.108	1.084	0.117	
1880.00	600	PCS CDMA	EVDO Rev. A	25.0	24.74	-0.16	Right	Cheek	Ant 2	Camera Module	03654	1:1	0.321	1.062	0.341	
1880.00	600	PCS CDMA	EVDO Rev. A	25.0	24.74	0.09	Right	Tilt	Ant 2	Camera Module	03654	1:1	0.167	1.062	0.177	
1880.00	600	PCS CDMA	EVDO Rev. A	25.0	24.74	0.08	Left	Cheek	Ant 2	Camera Module	03654	1:1	0.225	1.062	0.239	
1880.00	600	PCS CDMA	EVDO Rev. A	25.0	24.74	0.10	Left	Tilt	Ant 2	Camera Module	03654	1:1	0.108	1.062	0.115	
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 11-15
LTE Band 12 Head SAR Antenna 1

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Antenna Config.	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	24.7	24.70	-0.02	0	Right	Cheek	Ant 1	QPSK	1	0	03688	1:1	0.165	1.000	0.165	
707.50	23095	Mid	LTE Band 12	10	23.7	23.40	-0.04	1	Right	Cheek	Ant 1	QPSK	25	0	03688	1:1	0.113	1.072	0.121	
707.50	23095	Mid	LTE Band 12	10	24.7	24.70	0.15	0	Right	Tilt	Ant 1	QPSK	1	0	03688	1:1	0.181	1.000	0.181	
707.50	23095	Mid	LTE Band 12	10	23.7	23.40	0.02	1	Right	Tilt	Ant 1	QPSK	25	0	03688	1:1	0.129	1.072	0.138	
707.50	23095	Mid	LTE Band 12	10	24.7	24.70	0.06	0	Left	Cheek	Ant 1	QPSK	1	0	03688	1:1	0.218	1.000	0.218	A8
707.50	23095	Mid	LTE Band 12	10	23.7	23.40	0.13	1	Left	Cheek	Ant 1	QPSK	25	0	03688	1:1	0.162	1.072	0.174	
707.50	23095	Mid	LTE Band 12	10	24.7	24.70	0.15	0	Left	Tilt	Ant 1	QPSK	1	0	03688	1:1	0.125	1.000	0.125	
707.50	23095	Mid	LTE Band 12	10	23.7	23.40	0.03	1	Left	Tilt	Ant 1	QPSK	25	0	03688	1:1	0.095	1.072	0.102	
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: This device supports both LTE Band 17 and LTE Band 12. Since the supported frequency span for LTE Band 17 falls completely within the supported frequency span for LTE Band 12, both LTE bands have the same target power, and both LTE bands share the same transmission path, SAR was only assessed for LTE Band 12.

Table 11-16
LTE Band 12 Head SAR with CM Accessory Antenna 1

MEASUREMENT RESULTS																						
FREQUENCY			Mode	Bandwidth [MHz]	Accessory	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Antenna Config.	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	24.7	24.70	0.03	0	Right	Cheek	Ant 1	QPSK	1	0	03688	1:1	0.205	1.000	0.205	
707.50	23095	Mid	LTE Band 12	10	Camera Module	23.7	23.40	0.05	1	Right	Cheek	Ant 1	QPSK	25	0	03688	1:1	0.133	1.072	0.143	
707.50	23095	Mid	LTE Band 12	10	Camera Module	24.7	24.70	0.06	0	Right	Tilt	Ant 1	QPSK	1	0	03688	1:1	0.128	1.000	0.128	
707.50	23095	Mid	LTE Band 12	10	Camera Module	23.7	23.40	0.05	1	Right	Tilt	Ant 1	QPSK	25	0	03688	1:1	0.086	1.072	0.092	
707.50	23095	Mid	LTE Band 12	10	Camera Module	24.7	24.70	-0.10	0	Left	Cheek	Ant 1	QPSK	1	0	03688	1:1	0.192	1.000	0.192	
707.50	23095	Mid	LTE Band 12	10	Camera Module	23.7	23.40	0.15	1	Left	Cheek	Ant 1	QPSK	25	0	03688	1:1	0.135	1.072	0.145	
707.50	23095	Mid	LTE Band 12	10	Camera Module	24.7	24.70	0.14	0	Left	Tilt	Ant 1	QPSK	1	0	03688	1:1	0.100	1.000	0.100	
707.50	23095	Mid	LTE Band 12	10	Camera Module	23.7	23.40	0.06	1	Left	Tilt	Ant 1	QPSK	25	0	03688	1:1	0.064	1.072	0.069	
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: This device supports both LTE Band 17 and LTE Band 12. Since the supported frequency span for LTE Band 17 falls completely within the supported frequency span for LTE Band 12, both LTE bands have the same target power, and both LTE bands share the same transmission path, SAR was only assessed for LTE Band 12.

Table 11-17
LTE Band 13 Head SAR Antenna 1

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Antenna Config.	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
782.00	23230	Mid	LTE Band 13	10	24.2	24.20	-0.10	0	Right	Cheek	Ant 1	QPSK	1	25	03688	1:1	0.293	1.000	0.293	
782.00	23230	Mid	LTE Band 13	10	23.2	23.00	0.00	1	Right	Cheek	Ant 1	QPSK	25	0	03688	1:1	0.193	1.047	0.202	
782.00	23230	Mid	LTE Band 13	10	24.2	24.20	0.04	0	Right	Tilt	Ant 1	QPSK	1	25	03688	1:1	0.163	1.000	0.163	
782.00	23230	Mid	LTE Band 13	10	23.2	23.00	0.17	1	Right	Tilt	Ant 1	QPSK	25	0	03688	1:1	0.088	1.047	0.092	
782.00	23230	Mid	LTE Band 13	10	24.2	24.20	-0.03	0	Left	Cheek	Ant 1	QPSK	1	25	03688	1:1	0.364	1.000	0.364	A9
782.00	23230	Mid	LTE Band 13	10	23.2	23.00	0.04	1	Left	Cheek	Ant 1	QPSK	25	0	03688	1:1	0.269	1.047	0.282	
782.00	23230	Mid	LTE Band 13	10	24.2	24.20	0.00	0	Left	Tilt	Ant 1	QPSK	1	25	03688	1:1	0.184	1.000	0.184	
782.00	23230	Mid	LTE Band 13	10	23.2	23.00	0.07	1	Left	Tilt	Ant 1	QPSK	25	0	03688	1:1	0.129	1.047	0.135	
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 13 Head SAR with CM Accessory Antenna 1

MEASUREMENT RESULTS																						
FREQUENCY			Mode	Bandwidth [MHz]	Accessory	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Antenna Config.	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
782.00	23230	Mid	LTE Band 13	10	Camera Module	24.2	24.20	-0.02	0	Right	Cheek	Ant 1	QPSK	1	25	03688	1:1	0.255	1.000	0.255	
782.00	23230	Mid	LTE Band 13	10	Camera Module	23.2	23.00	-0.06	1	Right	Cheek	Ant 1	QPSK	25	0	03688	1:1	0.190	1.047	0.199	
782.00	23230	Mid	LTE Band 13	10	Camera Module	24.2	24.20	0.04	0	Right	Tilt	Ant 1	QPSK	1	25	03688	1:1	0.145	1.000	0.145	
782.00	23230	Mid	LTE Band 13	10	Camera Module	23.2	23.00	-0.05	1	Right	Tilt	Ant 1	QPSK	25	0	03688	1:1	0.113	1.047	0.118	
782.00	23230	Mid	LTE Band 13	10	Camera Module	24.2	24.20	0.00	0	Left	Cheek	Ant 1	QPSK	1	25	03688	1:1	0.291	1.000	0.291	
782.00	23230	Mid	LTE Band 13	10	Camera Module	23.2	23.00	0.10	1	Left	Cheek	Ant 1	QPSK	25	0	03688	1:1	0.214	1.047	0.224	
782.00	23230	Mid	LTE Band 13	10	Camera Module	24.2	24.20	0.02	0	Left	Tilt	Ant 1	QPSK	1	25	03688	1:1	0.171	1.000	0.171	
782.00	23230	Mid	LTE Band 13	10	Camera Module	23.2	23.00	0.06	1	Left	Tilt	Ant 1	QPSK	25	0	03688	1:1	0.131	1.047	0.137	
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 5 Head SAR Antenna 1

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Antenna Config.	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.2	24.20	0.03	0	Right	Cheek	Ant 1	QPSK	1	0	03670	1:1	0.352	1.000	0.352	
836.50	20525	Mid	LTE Band 5 (Cell)	10	23.2	22.70	-0.07	1	Right	Cheek	Ant 1	QPSK	25	12	03670	1:1	0.302	1.122	0.339	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.2	24.20	0.16	0	Right	Tilt	Ant 1	QPSK	1	0	03670	1:1	0.191	1.000	0.191	
836.50	20525	Mid	LTE Band 5 (Cell)	10	23.2	22.70	0.11	1	Right	Tilt	Ant 1	QPSK	25	12	03670	1:1	0.171	1.122	0.192	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.2	24.20	-0.17	0	Left	Cheek	Ant 1	QPSK	1	0	03670	1:1	0.552	1.000	0.552	A10
836.50	20525	Mid	LTE Band 5 (Cell)	10	23.2	22.70	0.05	1	Left	Cheek	Ant 1	QPSK	25	12	03670	1:1	0.448	1.122	0.503	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.2	24.20	0.15	0	Left	Tilt	Ant 1	QPSK	1	0	03670	1:1	0.217	1.000	0.217	
836.50	20525	Mid	LTE Band 5 (Cell)	10	23.2	22.70	0.03	1	Left	Tilt	Ant 1	QPSK	25	12	03670	1:1	0.189	1.122	0.212	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram											

Table 11-20
LTE Band 5 Head SAR with CM Accessory Antenna 1

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Accessory	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Antenna Config.	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Camera Module	24.2	24.20	0.19	0	Right	Cheek	Ant 1	QPSK	1	0	03670	1:1	0.248	1.000	0.248	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Camera Module	23.2	22.70	-0.05	1	Right	Cheek	Ant 1	QPSK	25	12	03670	1:1	0.188	1.122	0.211	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Camera Module	24.2	24.20	0.03	0	Right	Tilt	Ant 1	QPSK	1	0	03670	1:1	0.108	1.000	0.108	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Camera Module	23.2	22.70	0.00	1	Right	Tilt	Ant 1	QPSK	25	12	03670	1:1	0.073	1.122	0.082	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Camera Module	24.2	24.20	-0.07	0	Left	Cheek	Ant 1	QPSK	1	0	03670	1:1	0.262	1.000	0.262	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Camera Module	23.2	22.70	-0.09	1	Left	Cheek	Ant 1	QPSK	25	12	03670	1:1	0.186	1.122	0.209	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Camera Module	24.2	24.20	-0.04	0	Left	Tilt	Ant 1	QPSK	1	0	03670	1:1	0.098	1.000	0.098	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Camera Module	23.2	22.70	0.13	1	Left	Tilt	Ant 1	QPSK	25	12	03670	1:1	0.068	1.122	0.076	
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 11-21
LTE Band 4 (AWS) Head SAR Antenna 2

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Antenna Config.	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	24.7	24.70	0.01	0	Right	Cheek	Ant 2	QPSK	1	0	03688	1:1	0.618	1.000	0.618	A11
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.7	23.42	-0.02	1	Right	Cheek	Ant 2	QPSK	50	50	03688	1:1	0.464	1.067	0.495	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	24.7	24.70	-0.15	0	Right	Tilt	Ant 2	QPSK	1	0	03688	1:1	0.223	1.000	0.223	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.7	23.42	0.00	1	Right	Tilt	Ant 2	QPSK	50	50	03688	1:1	0.182	1.067	0.194	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	24.7	24.70	-0.03	0	Left	Cheek	Ant 2	QPSK	1	0	03688	1:1	0.301	1.000	0.301	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.7	23.42	-0.07	1	Left	Cheek	Ant 2	QPSK	50	50	03688	1:1	0.226	1.067	0.241	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	24.7	24.70	0.05	0	Left	Tilt	Ant 2	QPSK	1	0	03688	1:1	0.251	1.000	0.251	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.7	23.42	-0.09	1	Left	Tilt	Ant 2	QPSK	50	50	03688	1:1	0.181	1.067	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										

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 Antenna 2

MEASUREMENT RESULTS																						
FREQUENCY			Mode	Bandwidth [MHz]	Accessory	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Antenna Config.	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	24.7	24.70	0.03	0	Right	Cheek	Ant 2	QPSK	1	0	03688	1:1	0.365	1.000	0.365	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Camera Module	23.7	23.42	0.01	1	Right	Cheek	Ant 2	QPSK	50	50	03688	1:1	0.278	1.067	0.297	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Camera Module	24.7	24.70	0.10	0	Right	Tilt	Ant 2	QPSK	1	0	03688	1:1	0.178	1.000	0.178	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Camera Module	23.7	23.42	-0.04	1	Right	Tilt	Ant 2	QPSK	50	50	03688	1:1	0.146	1.067	0.156	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Camera Module	24.7	24.70	0.04	0	Left	Cheek	Ant 2	QPSK	1	0	03688	1:1	0.187	1.000	0.187	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Camera Module	23.7	23.42	0.06	1	Left	Cheek	Ant 2	QPSK	50	50	03688	1:1	0.162	1.067	0.173	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Camera Module	24.7	24.70	-0.07	0	Left	Tilt	Ant 2	QPSK	1	0	03688	1:1	0.145	1.000	0.145	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Camera Module	23.7	23.42	0.04	1	Left	Tilt	Ant 2	QPSK	50	50	03688	1:1	0.121	1.067	0.129	

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 11-23
LTE Band 2 (PCS) Head SAR Antenna 2

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Antenna Config.	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.7	24.70	0.06	0	Right	Cheek	Ant 2	QPSK	1	0	03670	1:1	0.644	1.000	0.644	A12
1900.00	19100	High	LTE Band 2 (PCS)	20	23.7	23.64	0.03	1	Right	Cheek	Ant 2	QPSK	50	0	03670	1:1	0.483	1.014	0.490	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.7	24.70	-0.07	0	Right	Tilt	Ant 2	QPSK	1	0	03670	1:1	0.200	1.000	0.200	
1900.00	19100	High	LTE Band 2 (PCS)	20	23.7	23.64	0.03	1	Right	Tilt	Ant 2	QPSK	50	0	03670	1:1	0.152	1.014	0.154	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.7	24.70	0.07	0	Left	Cheek	Ant 2	QPSK	1	0	03670	1:1	0.348	1.000	0.348	
1900.00	19100	High	LTE Band 2 (PCS)	20	23.7	23.64	0.02	1	Left	Cheek	Ant 2	QPSK	50	0	03670	1:1	0.269	1.014	0.273	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.7	24.70	0.04	0	Left	Tilt	Ant 2	QPSK	1	0	03670	1:1	0.195	1.000	0.195	
1900.00	19100	High	LTE Band 2 (PCS)	20	23.7	23.64	0.02	1	Left	Tilt	Ant 2	QPSK	50	0	03670	1:1	0.150	1.014	0.152	

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 11-24
LTE Band 2 (PCS) Head SAR with CM Accessory Antenna 2

MEASUREMENT RESULTS																						
FREQUENCY			Mode	Bandwidth [MHz]	Accessory	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Antenna Config.	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	Camera Module	24.7	24.70	-0.04	0	Right	Cheek	Ant 2	QPSK	1	0	03670	1:1	0.386	1.000	0.386	
1900.00	19100	High	LTE Band 2 (PCS)	20	Camera Module	23.7	23.64	0.06	1	Right	Cheek	Ant 2	QPSK	50	0	03670	1:1	0.285	1.014	0.289	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	Camera Module	24.7	24.70	0.03	0	Right	Tilt	Ant 2	QPSK	1	0	03670	1:1	0.201	1.000	0.201	
1900.00	19100	High	LTE Band 2 (PCS)	20	Camera Module	23.7	23.64	0.07	1	Right	Tilt	Ant 2	QPSK	50	0	03670	1:1	0.152	1.014	0.154	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	Camera Module	24.7	24.70	-0.03	0	Left	Cheek	Ant 2	QPSK	1	0	03670	1:1	0.210	1.000	0.210	
1900.00	19100	High	LTE Band 2 (PCS)	20	Camera Module	23.7	23.64	0.06	1	Left	Cheek	Ant 2	QPSK	50	0	03670	1:1	0.165	1.014	0.167	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	Camera Module	24.7	24.70	-0.01	0	Left	Tilt	Ant 2	QPSK	1	0	03670	1:1	0.140	1.000	0.140	
1900.00	19100	High	LTE Band 2 (PCS)	20	Camera Module	23.7	23.64	0.11	1	Left	Tilt	Ant 2	QPSK	50	0	03670	1:1	0.105	1.014	0.106	

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 11-25
LTE Band 25 (PCS) Head SAR Antenna 2

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Antenna Config.	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	24.2	24.20	0.13	0	Right	Cheek	Ant 2	QPSK	1	0	03670	1:1	0.766	1.000	0.766	A13
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.2	23.10	-0.12	1	Right	Cheek	Ant 2	QPSK	50	25	03670	1:1	0.533	1.023	0.545	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.2	24.20	0.03	0	Right	Tilt	Ant 2	QPSK	1	0	03670	1:1	0.221	1.000	0.221	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.2	23.10	0.03	1	Right	Tilt	Ant 2	QPSK	50	25	03670	1:1	0.156	1.023	0.160	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.2	24.20	0.01	0	Left	Cheek	Ant 2	QPSK	1	0	03670	1:1	0.380	1.000	0.380	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.2	23.10	-0.05	1	Left	Cheek	Ant 2	QPSK	50	25	03670	1:1	0.242	1.023	0.248	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.2	24.20	-0.03	0	Left	Tilt	Ant 2	QPSK	1	0	03670	1:1	0.234	1.000	0.234	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.2	23.10	0.08	1	Left	Tilt	Ant 2	QPSK	50	25	03670	1:1	0.165	1.023	0.169	
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 25 (PCS) Head SAR with CM Accessory Antenna 2

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Accessory	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Antenna Config.	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	24.2	24.20	-0.08	0	Right	Cheek	Ant 2	QPSK	1	0	03670	1:1	0.350	1.000	0.350	
1860.00	26140	Low	LTE Band 25 (PCS)	20	Camera Module	23.2	23.10	0.02	1	Right	Cheek	Ant 2	QPSK	50	25	03670	1:1	0.296	1.023	0.303	
1905.00	26590	High	LTE Band 25 (PCS)	20	Camera Module	24.2	24.20	-0.04	0	Right	Tilt	Ant 2	QPSK	1	0	03670	1:1	0.188	1.000	0.188	
1860.00	26140	Low	LTE Band 25 (PCS)	20	Camera Module	23.2	23.10	0.01	1	Right	Tilt	Ant 2	QPSK	50	25	03670	1:1	0.170	1.023	0.174	
1905.00	26590	High	LTE Band 25 (PCS)	20	Camera Module	24.2	24.20	-0.11	0	Left	Cheek	Ant 2	QPSK	1	0	03670	1:1	0.206	1.000	0.206	
1860.00	26140	Low	LTE Band 25 (PCS)	20	Camera Module	23.2	23.10	-0.04	1	Left	Cheek	Ant 2	QPSK	50	25	03670	1:1	0.185	1.023	0.189	
1905.00	26590	High	LTE Band 25 (PCS)	20	Camera Module	24.2	24.20	0.11	0	Left	Tilt	Ant 2	QPSK	1	0	03670	1:1	0.141	1.000	0.141	
1860.00	26140	Low	LTE Band 25 (PCS)	20	Camera Module	23.2	23.10	0.11	1	Left	Tilt	Ant 2	QPSK	50	25	03670	1:1	0.118	1.023	0.121	
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 7 Head SAR Antenna 1

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Antenna Config.	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
2535.00	21100	Mid	LTE Band 7	20	23.7	23.70	0.19	0	Right	Cheek	Ant 1	QPSK	1	0	03704	1:1	0.105	1.000	0.105	
2510.00	20850	Low	LTE Band 7	20	22.7	22.53	0.19	1	Right	Cheek	Ant 1	QPSK	50	50	03704	1:1	0.052	1.040	0.054	
2535.00	21100	Mid	LTE Band 7	20	23.7	23.70	0.04	0	Right	Tilt	Ant 1	QPSK	1	0	03704	1:1	0.139	1.000	0.139	
2510.00	20850	Low	LTE Band 7	20	22.7	22.53	0.07	1	Right	Tilt	Ant 1	QPSK	50	50	03704	1:1	0.060	1.040	0.062	
2535.00	21100	Mid	LTE Band 7	20	23.7	23.70	0.04	0	Left	Cheek	Ant 1	QPSK	1	0	03704	1:1	0.220	1.000	0.220	A14
2510.00	20850	Low	LTE Band 7	20	22.7	22.53	0.03	1	Left	Cheek	Ant 1	QPSK	50	50	03704	1:1	0.134	1.040	0.139	
2535.00	21100	Mid	LTE Band 7	20	23.7	23.70	0.03	0	Left	Tilt	Ant 1	QPSK	1	0	03704	1:1	0.052	1.000	0.052	
2510.00	20850	Low	LTE Band 7	20	22.7	22.53	0.08	1	Left	Tilt	Ant 1	QPSK	50	50	03704	1:1	0.041	1.040	0.043	
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 7 Head SAR with CM Accessory Antenna 1

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Accessory	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Antenna Config.	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
2535.00	21100	Mid	LTE Band 7	20	Camera Module	23.7	23.70	0.12	0	Right	Cheek	Ant 1	QPSK	1	0	03704	1:1	0.112	1.000	0.112	
2510.00	20850	Low	LTE Band 7	20	Camera Module	22.7	22.53	0.07	1	Right	Cheek	Ant 1	QPSK	50	50	03704	1:1	0.081	1.040	0.084	
2535.00	21100	Mid	LTE Band 7	20	Camera Module	23.7	23.70	0.02	0	Right	Tilt	Ant 1	QPSK	1	0	03704	1:1	0.048	1.000	0.048	
2510.00	20850	Low	LTE Band 7	20	Camera Module	22.7	22.53	0.14	1	Right	Tilt	Ant 1	QPSK	50	50	03704	1:1	0.033	1.040	0.034	
2535.00	21100	Mid	LTE Band 7	20	Camera Module	23.7	23.70	-0.05	0	Left	Cheek	Ant 1	QPSK	1	0	03704	1:1	0.086	1.000	0.086	
2510.00	20850	Low	LTE Band 7	20	Camera Module	22.7	22.53	-0.01	1	Left	Cheek	Ant 1	QPSK	50	50	03704	1:1	0.075	1.040	0.078	
2535.00	21100	Mid	LTE Band 7	20	Camera Module	23.7	23.70	0.00	0	Left	Tilt	Ant 1	QPSK	1	0	03704	1:1	0.085	1.000	0.085	
2510.00	20850	Low	LTE Band 7	20	Camera Module	22.7	22.53	0.02	1	Left	Tilt	Ant 1	QPSK	50	50	03704	1:1	0.071	1.040	0.074	
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)	
2417	2	802.11b	DSSS	22	19.0	18.25	0.06	Right	Cheek	03704	1	99.8	0.960	0.764	1.189	1.002	0.910	
2457	10	802.11b	DSSS	22	19.0	18.62	0.06	Right	Cheek	03704	1	99.8	0.955	0.913	1.091	1.002	0.998	
2417	2	802.11b	DSSS	22	19.0	18.25	0.06	Right	Tilt	03704	1	99.8	0.994	0.712	1.189	1.002	0.849	
2457	10	802.11b	DSSS	22	19.0	18.62	-0.03	Right	Tilt	03704	1	99.8	1.351	0.969	1.091	1.002	**1.059**	A15
2457	10	802.11b	DSSS	22	19.0	18.62	-0.11	Left	Cheek	03704	1	99.8	0.498	0.467	1.091	1.002	0.510	
2457	10	802.11b	DSSS	22	19.0	18.62	0.02	Left	Tilt	03704	1	99.8	0.604	0.452	1.091	1.002	0.494	
2457	10	802.11b	DSSS	22	19.0	18.62	0.03	Right	Tilt	03704	1	99.8	1.348	0.933	1.091	1.002	1.020	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram									

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

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)	
5300	60	802.11a	OFDM	20	13.5	13.34	0.05	Right	Cheek	03704	6	99.3	1.198	0.606	1.038	1.007	0.633	
5300	60	802.11a	OFDM	20	13.5	13.34	0.04	Right	Tilt	03704	6	99.3	1.229	0.620	1.038	1.007	0.649	
5300	60	802.11a	OFDM	20	13.5	13.34	0.00	Left	Cheek	03704	6	99.3	0.402	-	1.038	1.007	-	
5300	60	802.11a	OFDM	20	13.5	13.34	-0.06	Left	Tilt	03704	6	99.3	0.329	-	1.038	1.007	-	
5500	100	802.11a	OFDM	20	13.0	12.93	0.08	Right	Cheek	03704	6	99.3	1.748	0.711	1.016	1.007	0.727	
5580	116	802.11a	OFDM	20	13.0	12.57	0.16	Right	Cheek	03704	6	99.3	1.654	0.831	1.104	1.007	0.923	
5500	100	802.11a	OFDM	20	13.0	12.93	0.05	Right	Tilt	03704	6	99.3	1.620	0.894	1.016	1.007	0.914	
5580	116	802.11a	OFDM	20	13.0	12.57	0.03	Right	Tilt	03704	6	99.3	1.869	0.913	1.104	1.007	1.015	
5500	100	802.11a	OFDM	20	13.0	12.93	-0.02	Left	Cheek	03704	6	99.3	0.685	0.224	1.016	1.007	0.230	
5500	100	802.11a	OFDM	20	13.0	12.93	0.20	Left	Tilt	03704	6	99.3	0.577	-	1.016	1.007	-	
5580	116	802.11a	OFDM	20	13.0	12.57	0.04	Right	Tilt	03704	6	99.3	1.868	0.993	1.104	1.007	**1.104**	A16
5825	165	802.11a	OFDM	20	13.25	13.16	0.10	Right	Cheek	03704	6	99.3	0.788	0.621	1.021	1.007	0.638	
5825	165	802.11a	OFDM	20	13.25	13.16	-0.09	Right	Tilt	03704	6	99.3	0.927	0.641	1.021	1.007	0.659	
5825	165	802.11a	OFDM	20	13.25	13.16	0.06	Left	Cheek	03704	6	99.3	0.552	-	1.021	1.007	-	
5825	165	802.11a	OFDM	20	13.25	13.16	-0.09	Left	Tilt	03704	6	99.3	0.636	-	1.021	1.007	-	
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: Blue Entry represents variability measurement
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 D01v02r01.
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 Antenna 1,2,3

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	# of Time Slots	Duty Cycle	Side	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.												(W/kg)		(W/kg)	
824.20	128	GSM 850	GSM	33.2	32.91	-0.04	10 mm	Ant 1	03662	1	1:8.3	back	0.802	1.069	0.857	
836.60	190	GSM 850	GSM	33.2	33.13	-0.07	10 mm	Ant 1	03662	1	1:8.3	back	0.887	1.016	0.901	
848.80	251	GSM 850	GSM	33.2	32.93	-0.07	10 mm	Ant 1	03662	1	1:8.3	back	0.795	1.064	0.846	
824.20	128	GSM 850	GPRS	30.7	30.66	0.01	10 mm	Ant 1	03662	2	1:4.15	back	1.010	1.009	1.019	
836.60	190	GSM 850	GPRS	30.7	30.69	0.08	10 mm	Ant 1	03662	2	1:4.15	back	1.050	1.002	**1.052**	A17
848.80	251	GSM 850	GPRS	30.7	30.64	-0.05	10 mm	Ant 1	03662	2	1:4.15	back	0.997	1.014	1.011	
836.60	190	GSM 850	GPRS	30.7	30.69	-0.09	10 mm	Ant 1	03662	2	1:4.15	back	1.040	1.002	1.042	
1880.00	661	GSM 1900	GSM	30.2	29.91	0.00	10 mm	Ant 2	03654	1	1:8.3	back	0.298	1.069	0.319	
1880.00	661	GSM 1900	GPRS	28.7	28.51	0.03	10 mm	Ant 2	03654	2	1:4.15	back	0.406	1.045	0.424	A18
836.60	4183	UMTS 850	RMC	24.2	24.13	0.00	10 mm	Ant 1	03654	N/A	1:1	back	0.687	1.016	0.698	A20
1732.40	1412	UMTS 1750	RMC	24.2	23.90	-0.01	10 mm	Ant 2	03654	N/A	1:1	back	0.681	1.072	0.730	A21
1880.00	9400	UMTS 1900	RMC	24.2	23.95	0.02	10 mm	Ant 2	03654	N/A	1:1	back	0.697	1.059	0.738	A22
836.52	384	Cell. CDMA	TDSO / SO32	24.7	24.60	0.02	10 mm	Ant 1	03654	N/A	1:1	back	0.769	1.023	0.787	A23
1851.25	25	PCS CDMA	TDSO / SO32	25.0	24.73	-0.07	10 mm	Ant 2	03654	N/A	1:1	back	0.633	1.064	0.674	
1880.00	600	PCS CDMA	TDSO / SO32	25.0	24.75	-0.02	10 mm	Ant 2	03654	N/A	1:1	back	0.826	1.059	0.875	A25
1908.75	1175	PCS CDMA	TDSO / SO32	25.0	24.76	-0.02	10 mm	Ant 2	03654	N/A	1:1	back	0.644	1.057	0.681	
1880.00	600	PCS CDMA	TDSO / SO32	25.0	24.75	-0.08	10 mm	Ant 3	04611	N/A	1:1	back	0.366	1.059	0.388	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Body 1.6 W/kg (mW/g) averaged over 1 gram							

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

Table 11-32
GSM/UMTS/CDMA Body-Worn SAR Data with CM Accessory Antenna 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)	
836.60	190	GSM 850	GSM	33.2	33.13	-0.01	10 mm	Ant 1	Camera Module	03662	1	1:8.3	back	0.438	1.016	0.445	
836.60	190	GSM 850	GPRS	30.7	30.69	0.05	10 mm	Ant 1	Camera Module	03662	2	1:4.15	back	0.531	1.002	0.532	
1880.00	661	GSM 1900	GSM	30.2	29.91	0.03	10 mm	Ant 2	Camera Module	03654	1	1:8.3	back	0.220	1.069	0.235	
1880.00	661	GSM 1900	GPRS	28.7	28.51	-0.12	10 mm	Ant 2	Camera Module	03654	2	1:4.15	back	0.277	1.045	0.289	
836.60	4183	UMTS 850	RMC	24.2	24.13	-0.01	10 mm	Ant 1	Camera Module	03654	N/A	1:1	back	0.320	1.016	0.325	
1732.40	1412	UMTS 1750	RMC	24.2	23.90	0.11	10 mm	Ant 2	Camera Module	03654	N/A	1:1	back	0.288	1.072	0.309	
1880.00	9400	UMTS 1900	RMC	24.2	23.95	0.04	10 mm	Ant 2	Camera Module	03654	N/A	1:1	back	0.463	1.059	0.490	
836.52	384	Cell. CDMA	TDSO / SO32	24.7	24.60	0.01	10 mm	Ant 1	Camera Module	03654	N/A	1:1	back	0.521	1.023	0.533	
1880.00	600	PCS CDMA	TDSO / SO32	25.0	24.75	-0.04	10 mm	Ant 2	Camera Module	03654	N/A	1:1	back	0.328	1.059	0.347	
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 Data Antenna 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	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																			
707.50	23095	Mid	LTE Band 12	10	24.7	24.70	-0.10	0	Ant 1	03688	QPSK	1	0	10 mm	back	1:1	0.385	1.000	0.385	
707.50	23095	Mid	LTE Band 12	10	23.7	23.40	-0.05	1	Ant 1	03688	QPSK	25	0	10 mm	back	1:1	0.266	1.072	0.285	
782.00	23230	Mid	LTE Band 13	10	24.2	24.20	-0.03	0	Ant 1	03688	QPSK	1	25	10 mm	back	1:1	0.628	1.000	0.628	A29
782.00	23230	Mid	LTE Band 13	10	23.2	23.00	0.17	1	Ant 1	03688	QPSK	25	0	10 mm	back	1:1	0.447	1.047	0.468	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.2	24.20	0.01	0	Ant 1	03670	QPSK	1	0	10 mm	back	1:1	0.745	1.000	0.745	A30
836.50	20525	Mid	LTE Band 5 (Cell)	10	23.2	22.70	0.03	1	Ant 1	03670	QPSK	25	12	10 mm	back	1:1	0.513	1.122	0.576	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	24.7	24.70	-0.02	0	Ant 2	03670	QPSK	1	0	10 mm	back	1:1	0.911	1.000	0.911	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.7	23.42	0.06	1	Ant 2	03670	QPSK	50	50	10 mm	back	1:1	0.568	1.067	0.606	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.7	23.36	-0.01	1	Ant 2	03670	QPSK	100	0	10 mm	back	1:1	0.583	1.081	0.630	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	24.7	24.70	-0.03	0	Ant 3	04611	QPSK	1	0	10 mm	back	1:1	0.256	1.000	0.256	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.7	23.42	-0.13	1	Ant 3	04611	QPSK	50	50	10 mm	back	1:1	0.181	1.067	0.193	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	24.7	24.70	-0.07	0	Ant 2	03670	QPSK	1	0	10 mm	back	1:1	0.931	1.000	0.931	A31
1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.7	24.70	-0.07	0	Ant 2	03670	QPSK	1	0	10 mm	back	1:1	0.725	1.000	0.725	A32
1900.00	19100	High	LTE Band 2 (PCS)	20	23.7	23.64	-0.05	1	Ant 2	03670	QPSK	50	0	10 mm	back	1:1	0.570	1.014	0.578	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.7	24.70	0.07	0	Ant 3	04611	QPSK	1	0	10 mm	back	1:1	0.319	1.000	0.319	
1900.00	19100	High	LTE Band 2 (PCS)	20	23.7	23.64	0.09	1	Ant 3	04611	QPSK	50	0	10 mm	back	1:1	0.220	1.014	0.223	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.2	24.19	-0.02	0	Ant 2	03688	QPSK	1	99	10 mm	back	1:1	0.859	1.002	0.861	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.2	24.15	-0.05	0	Ant 2	03688	QPSK	1	50	10 mm	back	1:1	0.884	1.012	0.895	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.2	24.20	-0.08	0	Ant 2	03688	QPSK	1	0	10 mm	back	1:1	0.901	1.000	0.901	A34
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.2	23.10	-0.04	1	Ant 2	03688	QPSK	50	25	10 mm	back	1:1	0.631	1.023	0.646	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.2	23.03	-0.04	1	Ant 2	03688	QPSK	100	0	10 mm	back	1:1	0.685	1.040	0.712	
2535.00	21100	Mid	LTE Band 7	20	23.7	23.70	0.19	0	Ant 1	03670	QPSK	1	0	10 mm	back	1:1	0.335	1.000	0.335	A35
2510.00	20850	Low	LTE Band 7	20	22.7	22.53	0.01	1	Ant 1	03670	QPSK	50	50	10 mm	back	1:1	0.268	1.040	0.279	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																	Body 1.6 W/kg (mW/g) averaged over 1 gram			

Note: Blue Entry represents variability measurement.
Note: This device supports both LTE Band 17 and LTE Band 12. Since the supported frequency span for LTE Band 17 falls completely within the supported frequency span for LTE Band 12, both LTE bands have the same target power, and both LTE bands share the same transmission path, SAR was only assessed for LTE Band 12.

Table 11-34
LTE Body-Worn SAR Data with CM Accessory Antenna 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	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																				
707.50	23095	Mid	LTE Band 12	10	Camera Module	24.7	24.70	0.03	0	Ant 1	03688	QPSK	1	0	10 mm	back	1:1	0.442	1.000	0.442	A27
707.50	23095	Mid	LTE Band 12	10	Camera Module	23.7	23.40	0.05	1	Ant 1	03688	QPSK	25	0	10 mm	back	1:1	0.307	1.072	0.329	
782.00	23230	Mid	LTE Band 13	10	Camera Module	24.2	24.20	0.05	0	Ant 1	03688	QPSK	1	25	10 mm	back	1:1	0.519	1.000	0.519	
782.00	23230	Mid	LTE Band 13	10	Camera Module	23.2	23.00	0.02	1	Ant 1	03688	QPSK	25	0	10 mm	back	1:1	0.381	1.047	0.399	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Camera Module	24.2	24.20	0.01	0	Ant 1	03670	QPSK	1	0	10 mm	back	1:1	0.403	1.000	0.403	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Camera Module	23.2	22.70	0.01	1	Ant 1	03670	QPSK	25	12	10 mm	back	1:1	0.282	1.122	0.316	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Camera Module	24.7	24.70	-0.02	0	Ant 2	03670	QPSK	1	0	10 mm	back	1:1	0.367	1.000	0.367	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Camera Module	23.7	23.42	-0.01	1	Ant 2	03670	QPSK	50	50	10 mm	back	1:1	0.295	1.067	0.315	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	Camera Module	24.7	24.70	0.00	0	Ant 2	03670	QPSK	1	0	10 mm	back	1:1	0.443	1.000	0.443	
1900.00	19100	High	LTE Band 2 (PCS)	20	Camera Module	23.7	23.64	-0.05	1	Ant 2	03670	QPSK	50	0	10 mm	back	1:1	0.319	1.014	0.323	
1905.00	26590	High	LTE Band 25 (PCS)	20	Camera Module	24.2	24.20	-0.04	0	Ant 2	03688	QPSK	1	0	10 mm	back	1:1	0.302	1.000	0.302	
1860.00	26140	Low	LTE Band 25 (PCS)	20	Camera Module	23.2	23.10	0.15	1	Ant 2	03688	QPSK	50	25	10 mm	back	1:1	0.209	1.023	0.214	
2535.00	21100	Mid	LTE Band 7	20	Camera Module	23.7	23.70	0.14	0	Ant 1	03670	QPSK	1	0	10 mm	back	1:1	0.305	1.000	0.305	
2510.00	20850	Low	LTE Band 7	20	Camera Module	22.7	22.53	-0.06	1	Ant 1	03670	QPSK	50	50	10 mm	back	1:1	0.239	1.040	0.249	
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 17 and LTE Band 12. Since the supported frequency span for LTE Band 17 falls completely within the supported frequency span for LTE Band 12, both LTE bands have the same target power, and both LTE bands share the same transmission path, SAR was only assessed for LTE Band 12.
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 11-35
DTS Body-Worn SAR Data

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	18.62	0.06	10 mm	03704	1	back	99.8	0.131	0.113	1.091	1.002	**0.123**	A36
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 Data

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)	
5300	60	802.11a	OFDM	20	13.5	13.34	0.04	10 mm	03704	6	back	99.3	0.214	0.115	1.038	1.007	**0.120**	A38
5500	100	802.11a	OFDM	20	13.0	12.93	0.04	10 mm	03704	6	back	99.3	0.129	0.068	1.016	1.007	0.069	
5825	165	802.11a	OFDM	20	13.25	13.16	0.11	10 mm	03704	6	back	99.3	0.145	0.069	1.021	1.007	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: 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 D01v02r01.

11.4 Standalone Hotspot SAR Data

Table 11-37
GPRS/UMTS Hotspot SAR Data Antenna 1,2

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	# of GPRS Slots	Duty Cycle	Side	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.												(W/kg)		(W/kg)	
824.20	128	GSM 850	GPRS	30.7	30.66	0.01	10 mm	Ant 1	03662	2	1:4.15	back	1.010	1.009	1.019	
836.60	190	GSM 850	GPRS	30.7	30.69	0.08	10 mm	Ant 1	03662	2	1:4.15	back	1.050	1.002	1.052	A17
848.80	251	GSM 850	GPRS	30.7	30.64	-0.05	10 mm	Ant 1	03662	2	1:4.15	back	0.997	1.014	1.011	
824.20	128	GSM 850	GPRS	30.7	30.66	-0.03	10 mm	Ant 1	03662	2	1:4.15	front	0.828	1.009	0.835	
836.60	190	GSM 850	GPRS	30.7	30.69	-0.06	10 mm	Ant 1	03662	2	1:4.15	front	0.818	1.002	0.820	
848.80	251	GSM 850	GPRS	30.7	30.64	0.04	10 mm	Ant 1	03662	2	1:4.15	front	0.812	1.014	0.823	
836.60	190	GSM 850	GPRS	30.7	30.69	0.04	10 mm	Ant 1	03662	2	1:4.15	bottom	0.220	1.002	0.220	
836.60	190	GSM 850	GPRS	30.7	30.69	0.02	10 mm	Ant 1	03662	2	1:4.15	right	0.712	1.002	0.713	
824.20	128	GSM 850	GPRS	30.7	30.66	-0.14	10 mm	Ant 1	03662	2	1:4.15	left	0.903	1.009	0.911	
836.60	190	GSM 850	GPRS	30.7	30.69	0.06	10 mm	Ant 1	03662	2	1:4.15	left	0.951	1.002	0.953	
848.80	251	GSM 850	GPRS	30.7	30.64	-0.07	10 mm	Ant 1	03662	2	1:4.15	left	1.040	1.014	**1.055**	
836.60	190	GSM 850	GPRS	30.7	30.69	-0.09	10 mm	Ant 1	03662	2	1:4.15	back	1.040	1.002	1.042	
1880.00	661	GSM 1900	GPRS	28.7	28.51	0.03	10 mm	Ant 2	03654	2	1:4.15	back	0.406	1.045	0.424	
1880.00	661	GSM 1900	GPRS	28.7	28.51	0.05	10 mm	Ant 2	03654	2	1:4.15	front	0.337	1.045	0.352	
1880.00	661	GSM 1900	GPRS	28.7	28.51	-0.01	10 mm	Ant 2	03654	2	1:4.15	bottom	0.285	1.045	0.298	
1880.00	661	GSM 1900	GPRS	28.7	28.51	0.17	10 mm	Ant 2	03654	2	1:4.15	right	0.442	1.045	0.462	A19
1880.00	661	GSM 1900	GPRS	28.7	28.51	0.17	10 mm	Ant 2	03654	2	1:4.15	left	0.031	1.045	0.032	
836.60	4183	UMTS 850	RMC	24.2	24.13	0.00	10 mm	Ant 1	03654	N/A	1:1	back	0.687	1.016	0.698	A20
836.60	4183	UMTS 850	RMC	24.2	24.13	0.01	10 mm	Ant 1	03654	N/A	1:1	front	0.548	1.016	0.557	
836.60	4183	UMTS 850	RMC	24.2	24.13	-0.02	10 mm	Ant 1	03654	N/A	1:1	bottom	0.181	1.016	0.184	
836.60	4183	UMTS 850	RMC	24.2	24.13	-0.05	10 mm	Ant 1	03654	N/A	1:1	right	0.308	1.016	0.313	
836.60	4183	UMTS 850	RMC	24.2	24.13	-0.04	10 mm	Ant 1	03654	N/A	1:1	left	0.683	1.016	0.694	
1732.40	1412	UMTS 1750	RMC	24.2	23.90	-0.01	10 mm	Ant 2	03654	N/A	1:1	back	0.681	1.072	0.730	A21
1732.40	1412	UMTS 1750	RMC	24.2	23.90	0.00	10 mm	Ant 2	03654	N/A	1:1	front	0.560	1.072	0.600	
1732.40	1412	UMTS 1750	RMC	24.2	23.90	0.00	10 mm	Ant 2	03654	N/A	1:1	bottom	0.490	1.072	0.525	
1732.40	1412	UMTS 1750	RMC	24.2	23.90	0.00	10 mm	Ant 2	03654	N/A	1:1	right	0.528	1.072	0.566	
1732.40	1412	UMTS 1750	RMC	24.2	23.90	-0.01	10 mm	Ant 2	03654	N/A	1:1	left	0.075	1.072	0.080	
1880.00	9400	UMTS 1900	RMC	24.2	23.95	0.02	10 mm	Ant 2	03654	N/A	1:1	back	0.697	1.059	0.738	A22
1880.00	9400	UMTS 1900	RMC	24.2	23.95	-0.02	10 mm	Ant 2	03654	N/A	1:1	front	0.513	1.059	0.543	
1880.00	9400	UMTS 1900	RMC	24.2	23.95	-0.06	10 mm	Ant 2	03654	N/A	1:1	bottom	0.513	1.059	0.543	
1880.00	9400	UMTS 1900	RMC	24.2	23.95	0.00	10 mm	Ant 2	03654	N/A	1:1	right	0.697	1.059	0.738	
1880.00	9400	UMTS 1900	RMC	24.2	23.95	0.09	10 mm	Ant 2	03654	N/A	1:1	left	0.065	1.059	0.069	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**													**Body** **1.6 W/kg (mW/g)** averaged over 1 gram			

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

Table 11-38
GPRS/UMTS Hotspot SAR Data with CM Accessory Antenna 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)	
836.60	190	GSM 850	GPRS	30.7	30.69	0.05	10 mm	Ant 1	Camera Module	03662	2	1:4.15	back	0.531	1.002	0.532	
836.60	190	GSM 850	GPRS	30.7	30.69	-0.07	10 mm	Ant 1	Camera Module	03662	2	1:4.15	front	0.305	1.002	0.306	
836.60	190	GSM 850	GPRS	30.7	30.69	-0.06	10 mm	Ant 1	Camera Module	03662	2	1:4.15	bottom	0.107	1.002	0.107	
836.60	190	GSM 850	GPRS	30.7	30.69	0.01	10 mm	Ant 1	Camera Module	03662	2	1:4.15	right	0.429	1.002	0.430	
836.60	190	GSM 850	GPRS	30.7	30.69	-0.14	10 mm	Ant 1	Camera Module	03662	2	1:4.15	left	0.436	1.002	0.437	
1880.00	661	GSM 1900	GPRS	28.7	28.51	-0.12	10 mm	Ant 2	Camera Module	03654	2	1:4.15	back	0.277	1.045	0.289	
1880.00	661	GSM 1900	GPRS	28.7	28.51	-0.16	10 mm	Ant 2	Camera Module	03654	2	1:4.15	front	0.150	1.045	0.157	
1880.00	661	GSM 1900	GPRS	28.7	28.51	-0.03	10 mm	Ant 2	Camera Module	03654	2	1:4.15	bottom	0.070	1.045	0.073	
1880.00	661	GSM 1900	GPRS	28.7	28.51	-0.16	10 mm	Ant 2	Camera Module	03654	2	1:4.15	right	0.160	1.045	0.167	
1880.00	661	GSM 1900	GPRS	28.7	28.51	-0.10	10 mm	Ant 2	Camera Module	03654	2	1:4.15	left	0.085	1.045	0.089	
836.60	4183	UMTS 850	RMC	24.2	24.13	-0.01	10 mm	Ant 1	Camera Module	03654	N/A	1:1	back	0.320	1.016	0.325	
836.60	4183	UMTS 850	RMC	24.2	24.13	-0.01	10 mm	Ant 1	Camera Module	03654	N/A	1:1	front	0.247	1.016	0.251	
836.60	4183	UMTS 850	RMC	24.2	24.13	-0.03	10 mm	Ant 1	Camera Module	03654	N/A	1:1	bottom	0.102	1.016	0.104	
836.60	4183	UMTS 850	RMC	24.2	24.13	0.00	10 mm	Ant 1	Camera Module	03654	N/A	1:1	right	0.236	1.016	0.240	
836.60	4183	UMTS 850	RMC	24.2	24.13	0.02	10 mm	Ant 1	Camera Module	03654	N/A	1:1	left	0.379	1.016	0.385	
1732.40	1412	UMTS 1750	RMC	24.2	23.90	0.11	10 mm	Ant 2	Camera Module	03654	N/A	1:1	back	0.288	1.072	0.309	
1732.40	1412	UMTS 1750	RMC	24.2	23.90	0.00	10 mm	Ant 2	Camera Module	03654	N/A	1:1	front	0.278	1.072	0.298	
1732.40	1412	UMTS 1750	RMC	24.2	23.90	-0.02	10 mm	Ant 2	Camera Module	03654	N/A	1:1	bottom	0.140	1.072	0.150	
1732.40	1412	UMTS 1750	RMC	24.2	23.90	0.07	10 mm	Ant 2	Camera Module	03654	N/A	1:1	right	0.167	1.072	0.179	
1732.40	1412	UMTS 1750	RMC	24.2	23.90	-0.06	10 mm	Ant 2	Camera Module	03654	N/A	1:1	left	0.079	1.072	0.085	
1880.00	9400	UMTS 1900	RMC	24.2	23.95	0.04	10 mm	Ant 2	Camera Module	03654	N/A	1:1	back	0.463	1.059	0.490	
1880.00	9400	UMTS 1900	RMC	24.2	23.95	-0.09	10 mm	Ant 2	Camera Module	03654	N/A	1:1	front	0.473	1.059	0.501	
1880.00	9400	UMTS 1900	RMC	24.2	23.95	0.01	10 mm	Ant 2	Camera Module	03654	N/A	1:1	bottom	0.410	1.059	0.434	
1880.00	9400	UMTS 1900	RMC	24.2	23.95	-0.06	10 mm	Ant 2	Camera Module	03654	N/A	1:1	right	0.539	1.059	0.571	
1880.00	9400	UMTS 1900	RMC	24.2	23.95	0.11	10 mm	Ant 2	Camera Module	03654	N/A	1:1	left	0.173	1.059	0.183	

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 11-39
CDMA Hotspot SAR Data Antenna 1,2,3

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Duty Cycle	Side	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
836.52	384	Cell. CDMA	EVDO Rev. 0	24.7	24.58	0.01	10 mm	Ant 1	03654	1:1	back	0.754	1.028	0.775	A24
836.52	384	Cell. CDMA	EVDO Rev. 0	24.7	24.58	0.03	10 mm	Ant 1	03654	1:1	front	0.545	1.028	0.560	
836.52	384	Cell. CDMA	EVDO Rev. 0	24.7	24.58	-0.04	10 mm	Ant 1	03654	1:1	bottom	0.172	1.028	0.177	
836.52	384	Cell. CDMA	EVDO Rev. 0	24.7	24.58	-0.03	10 mm	Ant 1	03654	1:1	right	0.330	1.028	0.339	
836.52	384	Cell. CDMA	EVDO Rev. 0	24.7	24.58	0.04	10 mm	Ant 1	03654	1:1	left	0.647	1.028	0.665	
1851.25	25	PCS CDMA	EVDO Rev. 0	25.0	24.82	-0.10	10 mm	Ant 2	03654	1:1	back	0.818	1.042	0.852	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.0	24.70	-0.04	10 mm	Ant 2	03654	1:1	back	0.859	1.072	0.921	
1908.75	1175	PCS CDMA	EVDO Rev. 0	25.0	24.72	-0.10	10 mm	Ant 2	03654	1:1	back	0.853	1.067	0.910	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.0	24.70	0.01	10 mm	Ant 2	03654	1:1	front	0.556	1.072	0.596	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.0	24.70	0.06	10 mm	Ant 2	03654	1:1	bottom	0.690	1.072	0.740	
1851.25	25	PCS CDMA	EVDO Rev. 0	25.0	24.82	0.02	10 mm	Ant 2	03654	1:1	right	0.809	1.042	0.843	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.0	24.70	-0.07	10 mm	Ant 2	03654	1:1	right	0.838	1.072	0.898	
1908.75	1175	PCS CDMA	EVDO Rev. 0	25.0	24.72	-0.03	10 mm	Ant 2	03654	1:1	right	0.926	1.067	0.988	A26
1880.00	600	PCS CDMA	EVDO Rev. 0	25.0	24.70	0.04	10 mm	Ant 2	03654	1:1	left	0.063	1.072	0.068	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.0	24.70	0.05	10 mm	Ant 3	04611	1:1	back	0.369	1.072	0.396	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.0	24.70	0.00	10 mm	Ant 3	04611	1:1	front	0.469	1.072	0.503	
1851.25	25	PCS CDMA	EVDO Rev. 0	25.0	24.82	0.00	10 mm	Ant 3	04611	1:1	top	0.789	1.042	0.822	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.0	24.70	0.02	10 mm	Ant 3	04611	1:1	top	0.818	1.072	0.877	
1908.75	1175	PCS CDMA	EVDO Rev. 0	25.0	24.72	0.02	10 mm	Ant 3	04611	1:1	top	0.748	1.067	0.798	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.0	24.70	0.17	10 mm	Ant 3	04611	1:1	right	0.033	1.072	0.035	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.0	24.70	0.10	10 mm	Ant 3	04611	1:1	left	0.048	1.072	0.051	
1908.75	1175	PCS CDMA	EVDO Rev. 0	25.0	24.72	0.06	10 mm	Ant 2	03654	1:1	right	0.835	1.067	0.891	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram							

Note: Blue Entry represents variability measurement

Table 11-40
CDMA Hotspot SAR Data with CM Accessory Antenna 1,2

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Accessory	Device Serial Number	Duty Cycle	Side	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.												(W/kg)		(W/kg)	
836.52	384	Cell. CDMA	EVDO Rev. 0	24.7	24.58	-0.01	10 mm	Ant 1	Camera Module	03654	1:1	back	0.335	1.028	0.344	
836.52	384	Cell. CDMA	EVDO Rev. 0	24.7	24.58	-0.08	10 mm	Ant 1	Camera Module	03654	1:1	front	0.255	1.028	0.262	
836.52	384	Cell. CDMA	EVDO Rev. 0	24.7	24.58	-0.05	10 mm	Ant 1	Camera Module	03654	1:1	bottom	0.108	1.028	0.111	
836.52	384	Cell. CDMA	EVDO Rev. 0	24.7	24.58	-0.04	10 mm	Ant 1	Camera Module	03654	1:1	right	0.250	1.028	0.257	
836.52	384	Cell. CDMA	EVDO Rev. 0	24.7	24.58	-0.06	10 mm	Ant 1	Camera Module	03654	1:1	left	0.358	1.028	0.368	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.0	24.70	-0.01	10 mm	Ant 2	Camera Module	03654	1:1	back	0.336	1.072	0.360	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.0	24.70	-0.14	10 mm	Ant 2	Camera Module	03654	1:1	front	0.241	1.072	0.258	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.0	24.70	-0.03	10 mm	Ant 2	Camera Module	03654	1:1	bottom	0.077	1.072	0.083	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.0	24.70	-0.05	10 mm	Ant 2	Camera Module	03654	1:1	right	0.271	1.072	0.291	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.0	24.70	-0.04	10 mm	Ant 2	Camera Module	03654	1:1	left	0.171	1.072	0.183	
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 11-41
LTE Band 12 Hotspot SAR Data Antenna 1

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)	
707.50	23095	Mid	LTE Band 12	10	24.7	24.70	-0.10	0	Ant 1	03688	QPSK	1	0	10 mm	back	1:1	0.385	1.000	0.385	
707.50	23095	Mid	LTE Band 12	10	23.7	23.40	-0.05	1	Ant 1	03688	QPSK	25	0	10 mm	back	1:1	0.266	1.072	0.285	
707.50	23095	Mid	LTE Band 12	10	24.7	24.70	0.01	0	Ant 1	03688	QPSK	1	0	10 mm	front	1:1	0.352	1.000	0.352	
707.50	23095	Mid	LTE Band 12	10	23.7	23.40	-0.18	1	Ant 1	03688	QPSK	25	0	10 mm	front	1:1	0.269	1.072	0.288	
707.50	23095	Mid	LTE Band 12	10	24.7	24.70	-0.18	0	Ant 1	03688	QPSK	1	0	10 mm	bottom	1:1	0.094	1.000	0.094	
707.50	23095	Mid	LTE Band 12	10	23.7	23.40	-0.05	1	Ant 1	03688	QPSK	25	0	10 mm	bottom	1:1	0.071	1.072	0.076	
707.50	23095	Mid	LTE Band 12	10	24.7	24.70	-0.03	0	Ant 1	03688	QPSK	1	0	10 mm	right	1:1	0.190	1.000	0.190	
707.50	23095	Mid	LTE Band 12	10	23.7	23.40	0.00	1	Ant 1	03688	QPSK	25	0	10 mm	right	1:1	0.144	1.072	0.154	
707.50	23095	Mid	LTE Band 12	10	24.7	24.70	-0.02	0	Ant 1	03688	QPSK	1	0	10 mm	left	1:1	0.585	1.000	0.585	A28
707.50	23095	Mid	LTE Band 12	10	23.7	23.40	0.03	1	Ant 1	03688	QPSK	25	0	10 mm	left	1:1	0.368	1.072	0.394	
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 17 and LTE Band 12. Since the supported frequency span for LTE Band 17 falls completely within the supported frequency span for LTE Band 12, both LTE bands have the same target power, and both LTE bands share the same transmission path, SAR was only assessed for LTE Band 12.

Table 11-42
LTE Band 12 Hotspot SAR Data with CM Accessory Antenna 1

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)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
707.50	23095	Mid	LTE Band 12	10	Camera Module	24.7	24.70	0.03	0	Ant 1	03688	QPSK	1	0	10 mm	back	1:1	0.442	1.000	0.442	
707.50	23095	Mid	LTE Band 12	10	Camera Module	23.7	23.40	0.05	1	Ant 1	03688	QPSK	25	0	10 mm	back	1:1	0.307	1.072	0.329	
707.50	23095	Mid	LTE Band 12	10	Camera Module	24.7	24.70	-0.02	0	Ant 1	03688	QPSK	1	0	10 mm	front	1:1	0.274	1.000	0.274	
707.50	23095	Mid	LTE Band 12	10	Camera Module	23.7	23.40	0.03	1	Ant 1	03688	QPSK	25	0	10 mm	front	1:1	0.155	1.072	0.166	
707.50	23095	Mid	LTE Band 12	10	Camera Module	24.7	24.70	-0.03	0	Ant 1	03688	QPSK	1	0	10 mm	bottom	1:1	0.034	1.000	0.034	
707.50	23095	Mid	LTE Band 12	10	Camera Module	23.7	23.40	-0.03	1	Ant 1	03688	QPSK	25	0	10 mm	bottom	1:1	0.024	1.072	0.026	
707.50	23095	Mid	LTE Band 12	10	Camera Module	24.7	24.70	0.01	0	Ant 1	03688	QPSK	1	0	10 mm	right	1:1	0.340	1.000	0.340	
707.50	23095	Mid	LTE Band 12	10	Camera Module	23.7	23.40	-0.05	1	Ant 1	03688	QPSK	25	0	10 mm	right	1:1	0.241	1.072	0.258	
707.50	23095	Mid	LTE Band 12	10	Camera Module	24.7	24.70	-0.05	0	Ant 1	03688	QPSK	1	0	10 mm	left	1:1	0.372	1.000	0.372	
707.50	23095	Mid	LTE Band 12	10	Camera Module	23.7	23.40	-0.13	1	Ant 1	03688	QPSK	25	0	10 mm	left	1:1	0.251	1.072	0.269	
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 17 and LTE Band 12. Since the supported frequency span for LTE Band 17 falls completely within the supported frequency span for LTE Band 12, both LTE bands have the same target power, and both LTE bands share the same transmission path, SAR was only assessed for LTE Band 12.

Table 11-43
LTE Band 13 Hotspot SAR Data Antenna 1

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)	
782.00	23230	Mid	LTE Band 13	10	24.2	24.20	-0.03	0	Ant 1	03688	QPSK	1	25	10 mm	back	1:1	0.628	1.000	0.628	A29
782.00	23230	Mid	LTE Band 13	10	23.2	23.00	0.17	1	Ant 1	03688	QPSK	25	0	10 mm	back	1:1	0.447	1.047	0.468	
782.00	23230	Mid	LTE Band 13	10	24.2	24.20	0.03	0	Ant 1	03688	QPSK	1	25	10 mm	front	1:1	0.525	1.000	0.525	
782.00	23230	Mid	LTE Band 13	10	23.2	23.00	0.02	1	Ant 1	03688	QPSK	25	0	10 mm	front	1:1	0.378	1.047	0.396	
782.00	23230	Mid	LTE Band 13	10	24.2	24.20	0.03	0	Ant 1	03688	QPSK	1	25	10 mm	bottom	1:1	0.126	1.000	0.126	
782.00	23230	Mid	LTE Band 13	10	23.2	23.00	0.03	1	Ant 1	03688	QPSK	25	0	10 mm	bottom	1:1	0.089	1.047	0.093	
782.00	23230	Mid	LTE Band 13	10	24.2	24.20	-0.04	0	Ant 1	03688	QPSK	1	25	10 mm	right	1:1	0.393	1.000	0.393	
782.00	23230	Mid	LTE Band 13	10	23.2	23.00	0.13	1	Ant 1	03688	QPSK	25	0	10 mm	right	1:1	0.278	1.047	0.291	
782.00	23230	Mid	LTE Band 13	10	24.2	24.20	0.00	0	Ant 1	03688	QPSK	1	25	10 mm	left	1:1	0.536	1.000	0.536	
782.00	23230	Mid	LTE Band 13	10	23.2	23.00	-0.17	1	Ant 1	03688	QPSK	25	0	10 mm	left	1:1	0.387	1.047	0.405	

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

Table 11-44
LTE Band 13 Hotspot SAR Data with CM Accessory Antenna 1

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)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
782.00	23230	Mid	LTE Band 13	10	Camera Module	24.2	24.20	0.05	0	Ant 1	03688	QPSK	1	25	10 mm	back	1:1	0.519	1.000	0.519	
782.00	23230	Mid	LTE Band 13	10	Camera Module	23.2	23.00	0.02	1	Ant 1	03688	QPSK	25	0	10 mm	back	1:1	0.381	1.047	0.399	
782.00	23230	Mid	LTE Band 13	10	Camera Module	24.2	24.20	0.10	0	Ant 1	03688	QPSK	1	25	10 mm	front	1:1	0.331	1.000	0.331	
782.00	23230	Mid	LTE Band 13	10	Camera Module	23.2	23.00	0.01	1	Ant 1	03688	QPSK	25	0	10 mm	front	1:1	0.236	1.047	0.247	
782.00	23230	Mid	LTE Band 13	10	Camera Module	24.2	24.20	-0.02	0	Ant 1	03688	QPSK	1	25	10 mm	bottom	1:1	0.076	1.000	0.076	
782.00	23230	Mid	LTE Band 13	10	Camera Module	23.2	23.00	0.09	1	Ant 1	03688	QPSK	25	0	10 mm	bottom	1:1	0.058	1.047	0.061	
782.00	23230	Mid	LTE Band 13	10	Camera Module	24.2	24.20	0.05	0	Ant 1	03688	QPSK	1	25	10 mm	right	1:1	0.403	1.000	0.403	
782.00	23230	Mid	LTE Band 13	10	Camera Module	23.2	23.00	0.02	1	Ant 1	03688	QPSK	25	0	10 mm	right	1:1	0.290	1.047	0.304	
782.00	23230	Mid	LTE Band 13	10	Camera Module	24.2	24.20	-0.02	0	Ant 1	03688	QPSK	1	25	10 mm	left	1:1	0.089	1.000	0.089	
782.00	23230	Mid	LTE Band 13	10	Camera Module	23.2	23.00	0.09	1	Ant 1	03688	QPSK	25	0	10 mm	left	1:1	0.063	1.047	0.066	

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

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

Table 11-45
LTE Band 5 (Cell) Hotspot SAR Data Antenna 1

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)	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.2	24.20	0.01	0	Ant 1	03670	QPSK	1	0	10 mm	back	1:1	0.745	1.000	0.745	A30
836.50	20525	Mid	LTE Band 5 (Cell)	10	23.2	22.70	0.03	1	Ant 1	03670	QPSK	25	12	10 mm	back	1:1	0.513	1.122	0.576	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.2	24.20	-0.02	0	Ant 1	03670	QPSK	1	0	10 mm	front	1:1	0.542	1.000	0.542	
836.50	20525	Mid	LTE Band 5 (Cell)	10	23.2	22.70	-0.03	1	Ant 1	03670	QPSK	25	12	10 mm	front	1:1	0.401	1.122	0.450	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.2	24.20	-0.05	0	Ant 1	03670	QPSK	1	0	10 mm	bottom	1:1	0.184	1.000	0.184	
836.50	20525	Mid	LTE Band 5 (Cell)	10	23.2	22.70	0.10	1	Ant 1	03670	QPSK	25	12	10 mm	bottom	1:1	0.126	1.122	0.141	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.2	24.20	0.01	0	Ant 1	03670	QPSK	1	0	10 mm	right	1:1	0.282	1.000	0.282	
836.50	20525	Mid	LTE Band 5 (Cell)	10	23.2	22.70	0.07	1	Ant 1	03670	QPSK	25	12	10 mm	right	1:1	0.213	1.122	0.239	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.2	24.20	0.05	0	Ant 1	03670	QPSK	1	0	10 mm	left	1:1	0.612	1.000	0.612	
836.50	20525	Mid	LTE Band 5 (Cell)	10	23.2	22.70	0.04	1	Ant 1	03670	QPSK	25	12	10 mm	left	1:1	0.455	1.122	0.511	

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

Table 11-46
LTE Band 5 (Cell) Hotspot SAR Data with CM Accessory Antenna 1

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.																				
836.50	20525	Mid	LTE Band 5 (Cell)	10	Camera Module	24.2	24.20	0.01	0	Ant 1	03670	QPSK	1	0	10 mm	back	1:1	0.403	1.000	0.403	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Camera Module	23.2	22.70	0.01	1	Ant 1	03670	QPSK	25	12	10 mm	back	1:1	0.282	1.122	0.316	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Camera Module	24.2	24.20	-0.02	0	Ant 1	03670	QPSK	1	0	10 mm	front	1:1	0.281	1.000	0.281	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Camera Module	23.2	22.70	0.06	1	Ant 1	03670	QPSK	25	12	10 mm	front	1:1	0.193	1.122	0.217	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Camera Module	24.2	24.20	-0.11	0	Ant 1	03670	QPSK	1	0	10 mm	bottom	1:1	0.112	1.000	0.112	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Camera Module	23.2	22.70	0.05	1	Ant 1	03670	QPSK	25	12	10 mm	bottom	1:1	0.079	1.122	0.089	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Camera Module	24.2	24.20	0.01	0	Ant 1	03670	QPSK	1	0	10 mm	right	1:1	0.249	1.000	0.249	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Camera Module	23.2	22.70	0.05	1	Ant 1	03670	QPSK	25	12	10 mm	right	1:1	0.174	1.122	0.195	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Camera Module	24.2	24.20	0.11	0	Ant 1	03670	QPSK	1	0	10 mm	left	1:1	0.350	1.000	0.350	
836.50	20525	Mid	LTE Band 5 (Cell)	10	Camera Module	23.2	22.70	0.01	1	Ant 1	03670	QPSK	25	12	10 mm	left	1:1	0.237	1.122	0.266	
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 11-47
LTE Band 4 (AWS) Hotspot SAR Data Antenna 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.																				
1732.50	20175	Mid	LTE Band 4 (AWS)	20	24.7	24.70	-0.02	0	Ant 2	03670	QPSK	1	0	10 mm	back	1:1	0.911	1.000	0.911	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.7	23.42	0.06	1	Ant 2	03670	QPSK	50	50	10 mm	back	1:1	0.568	1.067	0.606	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.7	23.36	-0.01	1	Ant 2	03670	QPSK	100	0	10 mm	back	1:1	0.583	1.081	0.630	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	24.7	24.70	-0.04	0	Ant 2	03670	QPSK	1	0	10 mm	front	1:1	0.634	1.000	0.634	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.7	23.42	-0.02	1	Ant 2	03670	QPSK	50	50	10 mm	front	1:1	0.460	1.067	0.491	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	24.7	24.70	-0.06	0	Ant 2	03670	QPSK	1	0	10 mm	bottom	1:1	0.514	1.000	0.514	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.7	23.42	-0.10	1	Ant 2	03670	QPSK	50	50	10 mm	bottom	1:1	0.359	1.067	0.383	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	24.7	24.70	0.00	0	Ant 2	03670	QPSK	1	0	10 mm	right	1:1	0.598	1.000	0.598	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.7	23.42	0.02	1	Ant 2	03670	QPSK	50	50	10 mm	right	1:1	0.480	1.067	0.512	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	24.7	24.70	0.02	0	Ant 2	03670	QPSK	1	0	10 mm	left	1:1	0.083	1.000	0.083	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.7	23.42	0.01	1	Ant 2	03670	QPSK	50	50	10 mm	left	1:1	0.061	1.067	0.065	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	24.7	24.70	-0.03	0	Ant 3	04611	QPSK	1	0	10 mm	back	1:1	0.256	1.000	0.256	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.7	23.42	-0.13	1	Ant 3	04611	QPSK	50	50	10 mm	back	1:1	0.181	1.067	0.193	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	24.7	24.70	0.04	0	Ant 3	04611	QPSK	1	0	10 mm	front	1:1	0.318	1.000	0.318	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.7	23.42	-0.05	1	Ant 3	04611	QPSK	50	50	10 mm	front	1:1	0.267	1.067	0.285	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	24.7	24.70	0.15	0	Ant 3	04611	QPSK	1	0	10 mm	top	1:1	0.447	1.000	0.447	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.7	23.42	0.03	1	Ant 3	04611	QPSK	50	50	10 mm	top	1:1	0.397	1.067	0.424	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	24.7	24.70	-0.02	0	Ant 3	04611	QPSK	1	0	10 mm	right	1:1	0.040	1.000	0.040	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.7	23.42	0.08	1	Ant 3	04611	QPSK	50	50	10 mm	right	1:1	0.036	1.067	0.038	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	24.7	24.70	-0.05	0	Ant 3	04611	QPSK	1	0	10 mm	left	1:1	0.023	1.000	0.023	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	23.7	23.42	0.01	1	Ant 3	04611	QPSK	50	50	10 mm	left	1:1	0.021	1.067	0.022	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	24.7	24.70	-0.07	0	Ant 2	03670	QPSK	1	0	10 mm	back	1:1	0.931	1.000	0.931	A31
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																Body 1.6 W/kg (mW/g) averaged over 1 gram						

Note: Blue Entry represents variability measurement

Table 11-48
LTE Band 4 (AWS) Hotspot SAR Data with CM Accessory Antenna 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)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Camera Module	24.7	24.70	-0.02	0	Ant 2	03670	QPSK	1	0	10 mm	back	1:1	0.367	1.000	0.367	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Camera Module	23.7	23.42	-0.01	1	Ant 2	03670	QPSK	50	50	10 mm	back	1:1	0.295	1.067	0.315	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Camera Module	24.7	24.70	-0.07	0	Ant 2	03670	QPSK	1	0	10 mm	front	1:1	0.358	1.000	0.358	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Camera Module	23.7	23.42	0.03	1	Ant 2	03670	QPSK	50	50	10 mm	front	1:1	0.276	1.067	0.294	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Camera Module	24.7	24.70	0.08	0	Ant 2	03670	QPSK	1	0	10 mm	bottom	1:1	0.152	1.000	0.152	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Camera Module	23.7	23.42	0.11	1	Ant 2	03670	QPSK	50	50	10 mm	bottom	1:1	0.111	1.067	0.118	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Camera Module	24.7	24.70	0.00	0	Ant 2	03670	QPSK	1	0	10 mm	right	1:1	0.246	1.000	0.246	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Camera Module	23.7	23.42	0.02	1	Ant 2	03670	QPSK	50	50	10 mm	right	1:1	0.174	1.067	0.186	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Camera Module	24.7	24.70	-0.10	0	Ant 2	03670	QPSK	1	0	10 mm	left	1:1	0.105	1.000	0.105	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Camera Module	23.7	23.42	-0.05	1	Ant 2	03670	QPSK	50	50	10 mm	left	1:1	0.087	1.067	0.093	
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 11-49
LTE Band 2 (PCS) Hotspot SAR Data Antenna 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)	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.7	24.70	-0.07	0	Ant 2	03670	QPSK	1	0	10 mm	back	1:1	0.725	1.000	0.725	
1900.00	19100	High	LTE Band 2 (PCS)	20	23.7	23.64	-0.05	1	Ant 2	03670	QPSK	50	0	10 mm	back	1:1	0.570	1.014	0.578	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.7	24.70	0.09	0	Ant 2	03670	QPSK	1	0	10 mm	front	1:1	0.573	1.000	0.573	
1900.00	19100	High	LTE Band 2 (PCS)	20	23.7	23.64	0.04	1	Ant 2	03670	QPSK	50	0	10 mm	front	1:1	0.420	1.014	0.426	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.7	24.70	0.02	0	Ant 2	03670	QPSK	1	0	10 mm	bottom	1:1	0.509	1.000	0.509	
1900.00	19100	High	LTE Band 2 (PCS)	20	23.7	23.64	0.05	1	Ant 2	03670	QPSK	50	0	10 mm	bottom	1:1	0.375	1.014	0.380	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.7	24.70	0.02	0	Ant 2	03670	QPSK	1	0	10 mm	right	1:1	0.756	1.000	0.756	
1900.00	19100	High	LTE Band 2 (PCS)	20	23.7	23.64	0.03	1	Ant 2	03670	QPSK	50	0	10 mm	right	1:1	0.607	1.014	0.615	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.7	24.70	0.20	0	Ant 2	03670	QPSK	1	0	10 mm	left	1:1	0.085	1.000	0.085	
1900.00	19100	High	LTE Band 2 (PCS)	20	23.7	23.64	0.09	1	Ant 2	03670	QPSK	50	0	10 mm	left	1:1	0.061	1.014	0.062	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.7	24.70	0.07	0	Ant 3	04611	QPSK	1	0	10 mm	back	1:1	0.319	1.000	0.319	
1900.00	19100	High	LTE Band 2 (PCS)	20	23.7	23.64	0.09	1	Ant 3	04611	QPSK	50	0	10 mm	back	1:1	0.220	1.014	0.223	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.7	24.70	-0.01	0	Ant 3	04611	QPSK	1	0	10 mm	front	1:1	0.422	1.000	0.422	
1900.00	19100	High	LTE Band 2 (PCS)	20	23.7	23.64	0.03	1	Ant 3	04611	QPSK	50	0	10 mm	front	1:1	0.316	1.014	0.320	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.7	24.70	0.06	0	Ant 3	04611	QPSK	1	0	10 mm	top	1:1	0.758	1.000	0.758	A33
1900.00	19100	High	LTE Band 2 (PCS)	20	23.7	23.64	0.09	1	Ant 3	04611	QPSK	50	0	10 mm	top	1:1	0.625	1.014	0.634	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.7	24.70	0.03	0	Ant 3	04611	QPSK	1	0	10 mm	right	1:1	0.031	1.000	0.031	
1900.00	19100	High	LTE Band 2 (PCS)	20	23.7	23.64	0.12	1	Ant 3	04611	QPSK	50	0	10 mm	right	1:1	0.026	1.014	0.026	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	24.7	24.70	0.16	0	Ant 3	04611	QPSK	1	0	10 mm	left	1:1	0.043	1.000	0.043	
1900.00	19100	High	LTE Band 2 (PCS)	20	23.7	23.64	0.02	1	Ant 3	04611	QPSK	50	0	10 mm	left	1:1	0.029	1.014	0.029	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population												Body 1.6 W/kg (mW/g) averaged over 1 gram									

Table 11-50
LTE Band 2 (PCS) Hotspot SAR Data with CM Accessory Antenna 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.																				
1880.00	18900	Mid	LTE Band 2 (PCS)	20	Camera Module	24.7	24.70	0.00	0	Ant 2	03670	QPSK	1	0	10 mm	back	1:1	0.443	1.000	0.443	
1900.00	19100	High	LTE Band 2 (PCS)	20	Camera Module	23.7	23.64	-0.05	1	Ant 2	03670	QPSK	50	0	10 mm	back	1:1	0.319	1.014	0.323	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	Camera Module	24.7	24.70	-0.05	0	Ant 2	03670	QPSK	1	0	10 mm	front	1:1	0.241	1.000	0.241	
1900.00	19100	High	LTE Band 2 (PCS)	20	Camera Module	23.7	23.64	-0.06	1	Ant 2	03670	QPSK	50	0	10 mm	front	1:1	0.168	1.014	0.170	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	Camera Module	24.7	24.70	-0.01	0	Ant 2	03670	QPSK	1	0	10 mm	bottom	1:1	0.136	1.000	0.136	
1900.00	19100	High	LTE Band 2 (PCS)	20	Camera Module	23.7	23.64	0.08	1	Ant 2	03670	QPSK	50	0	10 mm	bottom	1:1	0.092	1.014	0.093	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	Camera Module	24.7	24.70	-0.01	0	Ant 2	03670	QPSK	1	0	10 mm	right	1:1	0.297	1.000	0.297	
1900.00	19100	High	LTE Band 2 (PCS)	20	Camera Module	23.7	23.64	0.06	1	Ant 2	03670	QPSK	50	0	10 mm	right	1:1	0.233	1.014	0.236	
1880.00	18900	Mid	LTE Band 2 (PCS)	20	Camera Module	24.7	24.70	-0.06	0	Ant 2	03670	QPSK	1	0	10 mm	left	1:1	0.160	1.000	0.160	
1900.00	19100	High	LTE Band 2 (PCS)	20	Camera Module	23.7	23.64	0.04	1	Ant 2	03670	QPSK	50	0	10 mm	left	1:1	0.107	1.014	0.108	
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 11-51
LTE Band 25 (PCS) Hotspot SAR Data Antenna 2

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	24.2	24.19	-0.02	0	Ant 2	03688	QPSK	1	99	10 mm	back	1:1	0.859	1.002	0.861	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.2	24.15	-0.05	0	Ant 2	03688	QPSK	1	50	10 mm	back	1:1	0.884	1.012	0.895	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.2	24.20	-0.08	0	Ant 2	03688	QPSK	1	0	10 mm	back	1:1	0.901	1.000	0.901	A34
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.2	23.10	-0.04	1	Ant 2	03688	QPSK	50	25	10 mm	back	1:1	0.631	1.023	0.646	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.2	23.03	-0.04	1	Ant 2	03688	QPSK	100	0	10 mm	back	1:1	0.685	1.040	0.712	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.2	24.20	-0.01	0	Ant 2	03688	QPSK	1	0	10 mm	front	1:1	0.612	1.000	0.612	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.2	23.10	0.04	1	Ant 2	03688	QPSK	50	25	10 mm	front	1:1	0.455	1.023	0.465	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.2	24.20	-0.07	0	Ant 2	03688	QPSK	1	0	10 mm	bottom	1:1	0.498	1.000	0.498	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.2	23.10	-0.09	1	Ant 2	03688	QPSK	50	25	10 mm	bottom	1:1	0.362	1.023	0.370	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.2	24.20	0.02	0	Ant 2	03688	QPSK	1	0	10 mm	right	1:1	0.580	1.000	0.580	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.2	23.10	-0.04	1	Ant 2	03688	QPSK	50	25	10 mm	right	1:1	0.565	1.023	0.578	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.2	24.20	0.10	0	Ant 2	03688	QPSK	1	0	10 mm	left	1:1	0.027	1.000	0.027	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.2	23.10	0.03	1	Ant 2	03688	QPSK	50	25	10 mm	left	1:1	0.028	1.023	0.029	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population												Body 1.6 W/kg (mW/g) averaged over 1 gram									

Table 11-52
LTE Band 25 (PCS) Hotspot SAR Data with CM Accessory Antenna 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	24.2	24.20	-0.04	0	Ant 2	03688	QPSK	1	0	10 mm	back	1:1	0.302	1.000	0.302	
1860.00	26140	Low	LTE Band 25 (PCS)	20	Camera Module	23.2	23.10	0.15	1	Ant 2	03688	QPSK	50	25	10 mm	back	1:1	0.209	1.023	0.214	
1905.00	26590	High	LTE Band 25 (PCS)	20	Camera Module	24.2	24.20	-0.06	0	Ant 2	03688	QPSK	1	0	10 mm	front	1:1	0.199	1.000	0.199	
1860.00	26140	Low	LTE Band 25 (PCS)	20	Camera Module	23.2	23.10	0.05	1	Ant 2	03688	QPSK	50	25	10 mm	front	1:1	0.145	1.023	0.148	
1905.00	26590	High	LTE Band 25 (PCS)	20	Camera Module	24.2	24.20	-0.04	0	Ant 2	03688	QPSK	1	0	10 mm	bottom	1:1	0.067	1.000	0.067	
1860.00	26140	Low	LTE Band 25 (PCS)	20	Camera Module	23.2	23.10	-0.04	1	Ant 2	03688	QPSK	50	25	10 mm	bottom	1:1	0.042	1.023	0.043	
1905.00	26590	High	LTE Band 25 (PCS)	20	Camera Module	24.2	24.20	0.01	0	Ant 2	03688	QPSK	1	0	10 mm	right	1:1	0.268	1.000	0.268	
1860.00	26140	Low	LTE Band 25 (PCS)	20	Camera Module	23.2	23.10	0.00	1	Ant 2	03688	QPSK	50	25	10 mm	right	1:1	0.209	1.023	0.214	
1905.00	26590	High	LTE Band 25 (PCS)	20	Camera Module	24.2	24.20	-0.08	0	Ant 2	03688	QPSK	1	0	10 mm	left	1:1	0.140	1.000	0.140	
1860.00	26140	Low	LTE Band 25 (PCS)	20	Camera Module	23.2	23.10	0.01	1	Ant 2	03688	QPSK	50	25	10 mm	left	1:1	0.094	1.023	0.096	
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 11-53
LTE Band 7 Hotspot SAR Data Antenna 1

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)	
2535.00	21100	Mid	LTE Band 7	20	23.7	23.70	0.19	0	Ant 1	03670	QPSK	1	0	10 mm	back	1:1	0.335	1.000	0.335	A35
2510.00	20850	Low	LTE Band 7	20	22.7	22.53	0.01	1	Ant 1	03670	QPSK	50	50	10 mm	back	1:1	0.268	1.040	0.279	
2535.00	21100	Mid	LTE Band 7	20	23.7	23.70	0.03	0	Ant 1	03670	QPSK	1	0	10 mm	front	1:1	0.213	1.000	0.213	
2510.00	20850	Low	LTE Band 7	20	22.7	22.53	-0.07	1	Ant 1	03670	QPSK	50	50	10 mm	front	1:1	0.153	1.040	0.159	
2535.00	21100	Mid	LTE Band 7	20	23.7	23.70	0.09	0	Ant 1	03670	QPSK	1	0	10 mm	bottom	1:1	0.121	1.000	0.121	
2510.00	20850	Low	LTE Band 7	20	22.7	22.53	0.10	1	Ant 1	03670	QPSK	50	50	10 mm	bottom	1:1	0.083	1.040	0.086	
2535.00	21100	Mid	LTE Band 7	20	23.7	23.70	0.20	0	Ant 1	03670	QPSK	1	0	10 mm	right	1:1	0.020	1.000	0.020	
2510.00	20850	Low	LTE Band 7	20	22.7	22.53	0.00	1	Ant 1	03670	QPSK	50	50	10 mm	right	1:1	0.016	1.040	0.017	
2535.00	21100	Mid	LTE Band 7	20	23.7	23.70	-0.05	0	Ant 1	03670	QPSK	1	0	10 mm	left	1:1	0.136	1.000	0.136	
2510.00	20850	Low	LTE Band 7	20	22.7	22.53	0.13	1	Ant 1	03670	QPSK	50	50	10 mm	left	1:1	0.100	1.040	0.104	
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 11-54
LTE Band 7 Hotspot SAR Data with CM Accessory Antenna 1

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)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
2535.00	21100	Mid	LTE Band 7	20	Camera Module	23.7	23.70	0.14	0	Ant 1	03670	QPSK	1	0	10 mm	back	1:1	0.305	1.000	0.305	
2510.00	20850	Low	LTE Band 7	20	Camera Module	22.7	22.53	-0.06	1	Ant 1	03670	QPSK	50	50	10 mm	back	1:1	0.239	1.040	0.249	
2535.00	21100	Mid	LTE Band 7	20	Camera Module	23.7	23.70	0.06	0	Ant 1	03670	QPSK	1	0	10 mm	front	1:1	0.216	1.000	0.216	
2510.00	20850	Low	LTE Band 7	20	Camera Module	22.7	22.53	0.09	1	Ant 1	03670	QPSK	50	50	10 mm	front	1:1	0.181	1.040	0.188	
2535.00	21100	Mid	LTE Band 7	20	Camera Module	23.7	23.70	0.01	0	Ant 1	03670	QPSK	1	0	10 mm	bottom	1:1	0.283	1.000	0.283	
2510.00	20850	Low	LTE Band 7	20	Camera Module	22.7	22.53	0.07	1	Ant 1	03670	QPSK	50	50	10 mm	bottom	1:1	0.221	1.040	0.230	
2535.00	21100	Mid	LTE Band 7	20	Camera Module	23.7	23.70	-0.02	0	Ant 1	03670	QPSK	1	0	10 mm	right	1:1	0.181	1.000	0.181	
2510.00	20850	Low	LTE Band 7	20	Camera Module	22.7	22.53	0.08	1	Ant 1	03670	QPSK	50	50	10 mm	right	1:1	0.123	1.040	0.128	
2535.00	21100	Mid	LTE Band 7	20	Camera Module	23.7	23.70	-0.06	0	Ant 1	03670	QPSK	1	0	10 mm	left	1:1	0.179	1.000	0.179	
2510.00	20850	Low	LTE Band 7	20	Camera Module	22.7	22.53	0.17	1	Ant 1	03670	QPSK	50	50	10 mm	left	1:1	0.122	1.040	0.127	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population															Body 1.6 W/kg (mW/g) averaged over 1 gram						

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

Table 11-55
WLAN Hotspot SAR Data

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	18.62	0.10	10 mm	03704	1	back	99.8	0.131	-	1.091	1.002	-	
2457	10	802.11b	DSSS	22	19.0	18.62	-0.18	10 mm	03704	1	front	99.8	0.153	0.127	1.091	1.002	**0.139**	A37
2457	10	802.11b	DSSS	22	19.0	18.62	0.00	10 mm	03704	1	top	99.8	0.105	-	1.091	1.002	-	
2457	10	802.11b	DSSS	22	19.0	18.62	0.03	10 mm	03704	1	left	99.8	0.103	-	1.091	1.002	-	
5825	165	802.11a	OFDM	20	13.25	13.16	0.09	10 mm	03704	6	back	99.3	0.145	-	1.021	1.007	-	
5825	165	802.11a	OFDM	20	13.25	13.16	0.04	10 mm	03704	6	front	99.3	0.260	0.129	1.021	1.007	**0.133**	A39
5825	165	802.11a	OFDM	20	13.25	13.16	-0.08	10 mm	03704	6	top	99.3	0.175	-	1.021	1.007	-	
5825	165	802.11a	OFDM	20	13.25	13.16	0.11	10 mm	03704	6	left	99.3	0.048	-	1.021	1.007	-	
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 SAR Data

Table 11-56
GPRS/UMTS/CDMA 10g Hotspot Mode 0mm SAR Data with CM Accessory Antenna 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)	
836.60	190	GSM 850	GPRS	30.7	30.69	-0.01	0 mm	Ant 1	Camera Module	03662	2	1:4.15	back	0.934	1.002	0.936	A40
1880.00	661	GSM 1900	GPRS	28.7	28.51	0.04	0 mm	Ant 2	Camera Module	03654	2	1:4.15	back	0.810	1.045	0.846	A41
836.60	4183	UMTS 850	RMC	24.2	24.13	0.01	0 mm	Ant 1	Camera Module	03654	N/A	1:1	back	0.928	1.016	0.943	A42
1712.40	1312	UMTS 1750	RMC	24.2	24.00	0.15	0 mm	Ant 2	Camera Module	03654	N/A	1:1	back	2.110	1.047	2.209	
1732.40	1412	UMTS 1750	RMC	24.2	23.90	0.15	0 mm	Ant 2	Camera Module	03654	N/A	1:1	back	2.120	1.072	2.273	
1752.60	1513	UMTS 1750	RMC	24.2	24.05	0.17	0 mm	Ant 2	Camera Module	03654	N/A	1:1	back	2.210	1.035	2.287	A43
1880.00	9400	UMTS 1900	RMC	24.2	23.95	0.09	0 mm	Ant 2	Camera Module	03654	N/A	1:1	back	1.120	1.059	1.186	A44
836.52	384	Cell. CDMA	EVDO Rev. 0	24.7	24.58	-0.02	0 mm	Ant 1	Camera Module	03654	N/A	1:1	back	1.030	1.028	1.059	A45
1880.00	600	PCS CDMA	EVDO Rev. 0	25.0	24.70	0.13	0 mm	Ant 2	Camera Module	03654	N/A	1:1	back	1.700	1.072	1.822	A46
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 11-57
LTE 10g Hotspot Mode 0mm SAR Data with CM Accessory Antenna 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 (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.																	(W/kg)		(W/kg)	
707.50	23095	Mid	LTE Band 12	10	Camera Module	24.7	24.70	0.03	0	Ant 1	03688	QPSK	1	0	0 mm	back	1:1	0.766	1.000	0.766	A47
782.00	23230	Mid	LTE Band 13	10	Camera Module	24.2	24.20	0.04	0	Ant 1	03688	QPSK	1	25	0 mm	back	1:1	0.768	1.000	0.768	A48
836.50	20525	Mid	LTE Band 5 (Cell)	10	Camera Module	24.2	24.20	-0.06	0	Ant 1	03670	QPSK	1	0	0 mm	back	1:1	1.160	1.000	1.160	A49
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Camera Module	24.7	24.70	0.18	0	Ant 2	03670	QPSK	1	0	0 mm	back	1:1	2.490	1.000	2.490	
1732.50	20175	Mid	LTE Band 4 (AWS)	20	Camera Module	24.7	24.70	0.02	0	Ant 2	03670	QPSK	1	0	0 mm	back	1:1	2.540	1.000	**2.540**	A50
1880.00	18900	Mid	LTE Band 2 (PCS)	20	Camera Module	24.7	24.70	0.17	0	Ant 2	03670	QPSK	1	0	0 mm	back	1:1	1.800	1.000	1.800	A51
1905.00	26590	High	LTE Band 25 (PCS)	20	Camera Module	24.2	24.20	0.11	0	Ant 2	03688	QPSK	1	0	0 mm	back	1:1	1.840	1.000	1.840	A52
2535.00	21100	Mid	LTE Band 7	20	Camera Module	23.7	23.70	0.01	0	Ant 1	03670	QPSK	1	0	0 mm	back	1:1	0.903	1.000	0.903	A53
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 17 and LTE Band 12. Since the supported frequency span for LTE Band 17 falls completely within the supported frequency span for LTE Band 12, both LTE bands have the same target power, and both LTE bands share the same transmission path, SAR was only assessed for LTE Band 12.

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 was evaluated without a headset connected to the device. Since the standalone reported body-worn SAR was ≤ 1.2 W/kg, no additional body-worn SAR evaluations using a headset cable were required.
8. Per FCC KDB 865664 D01v01r04, variability SAR tests were performed when the measured SAR results for a frequency band were greater than or equal to 0.8 W/kg. 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. Per FCC guidance, the back side with the camera module accessory were additionally evaluated for 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.
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.

UMTS Notes:

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

the required test channels is > ½ dB, instead of the middle channel, the highest output power channel was used.

LTE Notes:

1. LTE Considerations: LTE test configurations are determined according to SAR Evaluation Considerations for LTE Devices in FCC KDB Publication 941225 D05v02r04. The general test procedures used for testing can be found in Section 8.6.4.
2. MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to 3GPP TS36.101 Section 6.2.3 – 6.2.5 under Table 6.2.3-1.
3. A-MPR was disabled for all SAR tests by setting NS=01 on the base station simulator. SAR tests were performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI).
4. 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 SAR.

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	10.00	10	0.210

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.

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

12.3 Head SAR Simultaneous Transmission Analysis

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

Simult Tx	Configuration	GSM 850 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR	Simult Tx	Configuration	GPRS 850 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR
Head SAR	Right Cheek	0.398	0.998	1.396	N/A	Head SAR	Right Cheek	0.666	0.998	**See Note 1**	0.04
	Right Tilt	0.262	1.059	1.321	N/A		Right Tilt	0.382	1.059	1.441	N/A
	Left Cheek	0.529	0.510	1.039	N/A		Left Cheek	0.913	0.510	1.423	N/A
	Left Tilt	0.253	0.494	0.747	N/A		Left Tilt	0.429	0.494	0.923	N/A
Simult Tx	Configuration	GSM 1900 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR	Simult Tx	Configuration	GPRS 1900 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR
Head SAR	Right Cheek	0.290	0.998	1.288	N/A	Head SAR	Right Cheek	0.344	0.998	1.342	N/A
	Right Tilt	0.100	1.059	1.159	N/A		Right Tilt	0.157	1.059	1.216	N/A
	Left Cheek	0.148	0.510	0.658	N/A		Left Cheek	0.200	0.510	0.710	N/A
	Left Tilt	0.078	0.494	0.572	N/A		Left Tilt	0.103	0.494	0.597	N/A
Simult Tx	Configuration	UMTS 850 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR	Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR
Head SAR	Right Cheek	0.359	0.998	1.357	N/A	Head SAR	Right Cheek	0.475	0.998	1.473	N/A
	Right Tilt	0.272	1.059	1.331	N/A		Right Tilt	0.181	1.059	1.240	N/A
	Left Cheek	0.515	0.510	1.025	N/A		Left Cheek	0.269	0.510	0.779	N/A
	Left Tilt	0.211	0.494	0.705	N/A		Left Tilt	0.199	0.494	0.693	N/A
Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR	Simult Tx	Configuration	Cell. CDMA SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR
Head SAR	Right Cheek	0.604	0.998	**See Note 1**	0.02	Head SAR	Right Cheek	0.415	0.998	1.413	N/A
	Right Tilt	0.202	1.059	1.261	N/A		Right Tilt	0.229	1.059	1.288	N/A
	Left Cheek	0.336	0.510	0.846	N/A		Left Cheek	0.548	0.510	1.058	N/A
	Left Tilt	0.178	0.494	0.672	N/A		Left Tilt	0.228	0.494	0.722	N/A
Simult Tx	Configuration	Cell. EVDO SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR	Simult Tx	Configuration	PCS CDMA SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR
Head SAR	Right Cheek	0.374	0.998	1.372	N/A	Head SAR	Right Cheek	0.735	0.998	**See Note 1**	0.03
	Right Tilt	0.186	1.059	1.245	N/A		Right Tilt	0.217	1.059	1.276	N/A
	Left Cheek	0.499	0.510	1.009	N/A		Left Cheek	0.374	0.510	0.884	N/A
	Left Tilt	0.206	0.494	0.700	N/A		Left Tilt	0.181	0.494	0.675	N/A
Simult Tx	Configuration	PCS EVDO SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR	Simult Tx	Configuration	LTE Band 12 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR
Head SAR	Right Cheek	0.696	0.998	**See Note 1**	0.03	Head SAR	Right Cheek	0.205	0.998	1.203	N/A
	Right Tilt	0.179	1.059	1.238	N/A		Right Tilt	0.181	1.059	1.240	N/A
	Left Cheek	0.381	0.510	0.891	N/A		Left Cheek	0.218	0.510	0.728	N/A
	Left Tilt	0.183	0.494	0.677	N/A		Left Tilt	0.125	0.494	0.619	N/A
Simult Tx	Configuration	LTE Band 13 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR	Simult Tx	Configuration	LTE Band 5 (Cell) SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR
Head SAR	Right Cheek	0.293	0.998	1.291	N/A	Head SAR	Right Cheek	0.352	0.998	1.350	N/A
	Right Tilt	0.163	1.059	1.222	N/A		Right Tilt	0.192	1.059	1.251	N/A
	Left Cheek	0.364	0.510	0.874	N/A		Left Cheek	0.552	0.510	1.062	N/A
	Left Tilt	0.184	0.494	0.678	N/A		Left Tilt	0.217	0.494	0.711	N/A
Simult Tx	Configuration	LTE Band 4 (AWS) SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR	Simult Tx	Configuration	LTE Band 2 (PCS) SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR
Head SAR	Right Cheek	0.618	0.998	**See Note 1**	0.03	Head SAR	Right Cheek	0.644	0.998	**See Note 1**	0.03
	Right Tilt	0.223	1.059	1.282	N/A		Right Tilt	0.201	1.059	1.260	N/A
	Left Cheek	0.301	0.510	0.811	N/A		Left Cheek	0.348	0.510	0.858	N/A
	Left Tilt	0.251	0.494	0.745	N/A		Left Tilt	0.195	0.494	0.689	N/A
Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR	Simult Tx	Configuration	LTE Band 7 SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR
Head SAR	Right Cheek	0.766	0.998	**See Note 1**	0.03	Head SAR	Right Cheek	0.112	0.998	1.110	N/A
	Right Tilt	0.221	1.059	1.280	N/A		Right Tilt	0.139	1.059	1.198	N/A
	Left Cheek	0.380	0.510	0.890	N/A		Left Cheek	0.220	0.510	0.730	N/A
	Left Tilt	0.234	0.494	0.728	N/A		Left Tilt	0.085	0.494	0.579	N/A

Note 1: No evaluation was performed to determine the aggregate 1g SAR for these configurations as the SPLS ratio between the antenna pairs was not greater than 0.04 per FCC KDB 447498 D01v05. See Section 12.6 for detailed SPLS ratio analysis.

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

Simult Tx	Configuration	GSM 850 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR
Head SAR	Right Cheek	0.398	0.923	1.321	N/A
	Right Tilt	0.262	1.104	1.366	N/A
	Left Cheek	0.529	0.230	0.759	N/A
	Left Tilt	0.253	1.104*	1.357	N/A

Simult Tx	Configuration	GPRS 850 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR
Head SAR	Right Cheek	0.666	0.923	**1.589**	N/A
	Right Tilt	0.382	1.104	1.486	N/A
	Left Cheek	0.913	0.230	1.143	N/A
	Left Tilt	0.429	1.104*	1.533	N/A

Simult Tx	Configuration	GSM 1900 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR
Head SAR	Right Cheek	0.290	0.923	1.213	N/A
	Right Tilt	0.100	1.104	1.204	N/A
	Left Cheek	0.148	0.230	0.378	N/A
	Left Tilt	0.078	1.104*	1.182	N/A

Simult Tx	Configuration	GPRS 1900 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR
Head SAR	Right Cheek	0.344	0.923	1.267	N/A
	Right Tilt	0.157	1.104	1.261	N/A
	Left Cheek	0.200	0.230	0.430	N/A
	Left Tilt	0.103	1.104*	1.207	N/A

Simult Tx	Configuration	UMTS 850 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR
Head SAR	Right Cheek	0.359	0.923	1.282	N/A
	Right Tilt	0.272	1.104	1.376	N/A
	Left Cheek	0.515	0.230	0.745	N/A
	Left Tilt	0.211	1.104*	1.315	N/A

Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR
Head SAR	Right Cheek	0.475	0.923	1.398	N/A
	Right Tilt	0.181	1.104	1.285	N/A
	Left Cheek	0.269	0.230	0.499	N/A
	Left Tilt	0.199	1.104*	1.303	N/A

Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR
Head SAR	Right Cheek	0.604	0.923	1.527	N/A
	Right Tilt	0.202	1.104	1.306	N/A
	Left Cheek	0.336	0.230	0.566	N/A
	Left Tilt	0.178	1.104*	1.282	N/A

Simult Tx	Configuration	Cell. CDMA SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR
Head SAR	Right Cheek	0.415	0.923	1.338	N/A
	Right Tilt	0.229	1.104	1.333	N/A
	Left Cheek	0.548	0.230	0.778	N/A
	Left Tilt	0.228	1.104*	1.332	N/A

Simult Tx	Configuration	Cell. EVDO SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR
Head SAR	Right Cheek	0.374	0.923	1.297	N/A
	Right Tilt	0.186	1.104	1.290	N/A
	Left Cheek	0.499	0.230	0.729	N/A
	Left Tilt	0.206	1.104*	1.310	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	0.735	0.923	**See Note 1**	0.03
	Right Tilt	0.217	1.104	1.321	N/A
	Left Cheek	0.374	0.230	0.604	N/A
	Left Tilt	0.181	1.104*	1.285	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	0.696	0.923	**See Note 1**	0.02
	Right Tilt	0.179	1.104	1.283	N/A
	Left Cheek	0.381	0.230	0.611	N/A
	Left Tilt	0.183	1.104*	1.287	N/A

Simult Tx	Configuration	LTE Band 12 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR
Head SAR	Right Cheek	0.205	0.923	1.128	N/A
	Right Tilt	0.181	1.104	1.285	N/A
	Left Cheek	0.218	0.230	0.448	N/A
	Left Tilt	0.125	1.104*	1.229	N/A

Simult Tx	Configuration	LTE Band 13 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR
Head SAR	Right Cheek	0.293	0.923	1.216	N/A
	Right Tilt	0.163	1.104	1.267	N/A
	Left Cheek	0.364	0.230	0.594	N/A
	Left Tilt	0.184	1.104*	1.288	N/A

Simult Tx	Configuration	LTE Band 5 (Cell) SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR
Head SAR	Right Cheek	0.352	0.923	1.275	N/A
	Right Tilt	0.192	1.104	1.296	N/A
	Left Cheek	0.552	0.230	0.782	N/A
	Left Tilt	0.217	1.104*	1.321	N/A

Simult Tx	Configuration	LTE Band 4 (AWS) SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR
Head SAR	Right Cheek	0.618	0.923	1.541	N/A
	Right Tilt	0.223	1.104	1.327	N/A
	Left Cheek	0.301	0.230	0.531	N/A
	Left Tilt	0.251	1.104*	1.355	N/A

Simult Tx	Configuration	LTE Band 2 (PCS) SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR
Head SAR	Right Cheek	0.644	0.923	1.567	N/A
	Right Tilt	0.201	1.104	1.305	N/A
	Left Cheek	0.348	0.230	0.578	N/A
	Left Tilt	0.195	1.104*	1.299	N/A

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR
Head SAR	Right Cheek	0.766	0.923	**See Note 1**	0.03
	Right Tilt	0.221	1.104	1.325	N/A
	Left Cheek	0.380	0.230	0.610	N/A
	Left Tilt	0.234	1.104*	1.338	N/A

Simult Tx	Configuration	LTE Band 7 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR
Head SAR	Right Cheek	0.112	0.923	1.035	N/A
	Right Tilt	0.139	1.104	1.243	N/A
	Left Cheek	0.220	0.230	0.450	N/A
	Left Tilt	0.085	1.104*	1.189	N/A

Note 1: No evaluation was performed to determine the aggregate 1g SAR for these configurations as the SPLS ratio between the antenna pairs was not greater than 0.04 per FCC KDB 447498 D01v05. See Section 12.6 for detailed SPLS ratio analysis.
Note 2: (*) For test positions that were not required to be evaluated for WLAN SAR per FCC KDB Publication 248227, the worst case WLAN head SAR result was used for simultaneous transmission analysis.
Note 3: SAR highlighted in orange above is the highest simultaneous transmission SAR to be listed on the grants.

12.4 Body-Worn Simultaneous Transmission Analysis

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body-Worn	GSM/GPRS 850	1.052	0.123	1.175
	GSM/GPRS 1900	0.424	0.123	0.547
	UMTS 850	0.698	0.123	0.821
	UMTS 1750	0.730	0.123	0.853
	UMTS 1900	0.738	0.123	0.861
	Cell. CDMA	0.787	0.123	0.910
	PCS CDMA	0.875	0.123	0.998
	LTE Band 12	0.442	0.123	0.565
	LTE Band 13	0.628	0.123	0.751
	LTE Band 5 (Cell)	0.745	0.123	0.868
	LTE Band 4 (AWS)	0.931	0.123	1.054
	LTE Band 2 (PCS)	0.725	0.123	0.848
	LTE Band 25 (PCS)	0.901	0.123	1.024
	LTE Band 7	0.335	0.123	0.458

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Body-Worn	GSM/GPRS 850	1.052	0.120	1.172
	GSM/GPRS 1900	0.424	0.120	0.544
	UMTS 850	0.698	0.120	0.818
	UMTS 1750	0.730	0.120	0.850
	UMTS 1900	0.738	0.120	0.858
	Cell. CDMA	0.787	0.120	0.907
	PCS CDMA	0.875	0.120	0.995
	LTE Band 12	0.442	0.120	0.562
	LTE Band 13	0.628	0.120	0.748
	LTE Band 5 (Cell)	0.745	0.120	0.865
	LTE Band 4 (AWS)	0.931	0.120	1.051
	LTE Band 2 (PCS)	0.725	0.120	0.845
	LTE Band 25 (PCS)	0.901	0.120	1.021
	LTE Band 7	0.335	0.120	0.455

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
Body-Worn	GSM/GPRS 850	1.052	0.210	1.262
	GSM/GPRS 1900	0.424	0.210	0.634
	UMTS 850	0.698	0.210	0.908
	UMTS 1750	0.730	0.210	0.940
	UMTS 1900	0.738	0.210	0.948
	Cell. CDMA	0.787	0.210	0.997
	PCS CDMA	0.875	0.210	1.085
	LTE Band 12	0.442	0.210	0.652
	LTE Band 13	0.628	0.210	0.838
	LTE Band 5 (Cell)	0.745	0.210	0.955
	LTE Band 4 (AWS)	0.931	0.210	1.141
	LTE Band 2 (PCS)	0.725	0.210	0.935
	LTE Band 25 (PCS)	0.901	0.210	1.111
	LTE Band 7	0.335	0.210	0.545

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.
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.

12.5 Hotspot SAR Simultaneous Transmission Analysis

Table 12-7
Simultaneous Transmission Scenario (2.4 GHz Hotspot at 1.0 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
Hotspot SAR	GPRS 850	1.055	0.139	1.194
	GPRS 1900	0.462	0.139	0.601
	UMTS 850	0.698	0.139	0.837
	UMTS 1750	0.730	0.139	0.869
	UMTS 1900	0.738	0.139	0.877
	Cell. EVDO	0.775	0.139	0.914
	PCS EVDO	0.988	0.139	1.127
	LTE Band 12	0.585	0.139	0.724
	LTE Band 13	0.628	0.139	0.767
	LTE Band 5 (Cell)	0.745	0.139	0.884
	LTE Band 4 (AWS)	0.931	0.139	1.070
	LTE Band 2 (PCS)	0.758	0.139	0.897
	LTE Band 25 (PCS)	0.901	0.139	1.040
	LTE Band 7	0.335	0.139	0.474

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 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	GPRS 850	1.055	0.133	1.188
	GPRS 1900	0.462	0.133	0.595
	UMTS 850	0.698	0.133	0.831
	UMTS 1750	0.730	0.133	0.863
	UMTS 1900	0.738	0.133	0.871
	Cell. EVDO	0.775	0.133	0.908
	PCS EVDO	0.988	0.133	1.121
	LTE Band 12	0.585	0.133	0.718
	LTE Band 13	0.628	0.133	0.761
	LTE Band 5 (Cell)	0.745	0.133	0.878
	LTE Band 4 (AWS)	0.931	0.133	1.064
	LTE Band 2 (PCS)	0.758	0.133	0.891
	LTE Band 25 (PCS)	0.901	0.133	1.034
	LTE Band 7	0.335	0.133	0.468

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 D01v05r02, when the sum of the standalone transmitters is more than 1.6 W/kg for 1g and 4 W/kg for 10g, the SAR sum to peak locations can be analyzed to determine SAR distribution overlaps. When the SAR peak to location ratio (shown below) for each pair of antennas is ≤ 0.04 for 1g and ≤0.10 for 10g, simultaneous SAR evaluation is not required. The distance between the transmitters was calculated using the following formula.

$$\text{Distance}_{Tx1-Tx2} = R_i = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2 + (z_1 - z_2)^2}$$

$$\text{SPLS Ratio} = \frac{(SAR_1 + SAR_2)^{1.5}}{R_i}$$

12.6.1 Right Cheek SPLSR Evaluation and Analysis

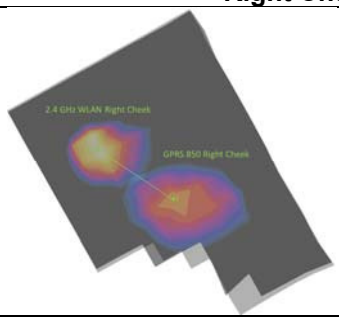
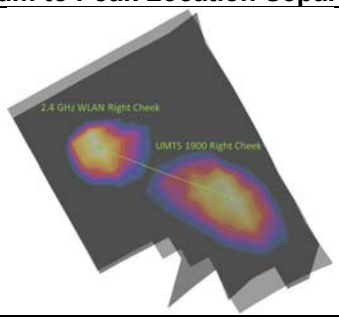
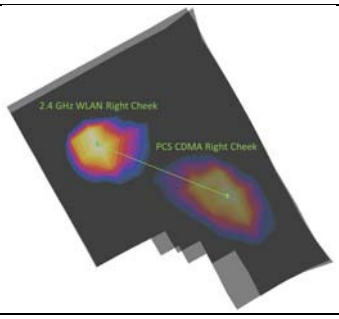
Table 12-9
Peak SAR Locations for Right Cheek

Mode/Band	x (mm)	y (mm)	z (mm)	Reported SAR (W/kg)
2.4 GHz WLAN Right Cheek	20.25	-323.92	-172.46	0.998
5 GHz WLAN Right Cheek	16.90	-332.66	-173.45	0.923
GPRS 850 Right Cheek	45.69	-282.29	-173.98	0.666
UMTS 1900 Right Cheek	48.57	-246.87	-169.96	0.604
PCS CDMA Right Cheek	42.64	-255.07	-171.74	0.735
PCS EVDO Right Cheek	46.83	-247.84	-170.42	0.696
LTE Band 4 (AWS) Right Cheek	44.35	-249.16	-170.84	0.618
LTE Band 2 (PCS) Right Cheek	48.51	-246.94	-169.57	0.644
LTE Band 25 (PCS) Right Cheek	41.83	-258.58	-171.73	0.766

Table 12-10
Right Cheek SAR Sum to Peak Location Separation Ratio Calculations

Antenna Pair		Standalone 1g SAR (W/kg)		Standalone SAR Sum (W/kg)	Peak SAR Separation Distance (mm)	SPLS Ratio	Plot Number
Ant "a"	Ant "b"	a	b	a+b	D_{a-b}	$(a+b)^{1.5}/D_{a-b}$	
2.4 GHz WLAN Right Cheek	GPRS 850 Right Cheek	0.998	0.666	1.664	48.81	0.04	1
2.4 GHz WLAN Right Cheek	UMTS 1900 Right Cheek	0.998	0.604	1.602	82.13	0.02	2
2.4 GHz WLAN Right Cheek	PCS CDMA Right Cheek	0.998	0.735	1.733	72.40	0.03	3
2.4 GHz WLAN Right Cheek	PCS EVDO Right Cheek	0.998	0.696	1.694	80.62	0.03	4
2.4 GHz WLAN Right Cheek	LTE Band 4 (AWS) Right Cheek	0.998	0.618	1.616	78.57	0.03	5
2.4 GHz WLAN Right Cheek	LTE Band 2 (PCS) Right Cheek	0.998	0.644	1.642	82.05	0.03	6
2.4 GHz WLAN Right Cheek	LTE Band 25 (PCS) Right Cheek	0.998	0.766	1.764	68.82	0.03	7
5 GHz WLAN Right Cheek	PCS CDMA Right Cheek	0.923	0.735	1.658	81.77	0.03	8
5 GHz WLAN Right Cheek	PCS EVDO Right Cheek	0.923	0.696	1.619	90.00	0.02	9
5 GHz WLAN Right Cheek	LTE Band 25 (PCS) Right Cheek	0.923	0.766	1.689	78.18	0.03	10

Table 12-11
Right Cheek SAR Sum to Peak Location Separation Ratio Plots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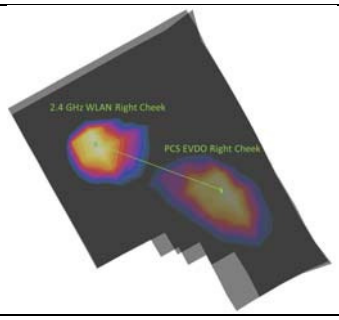	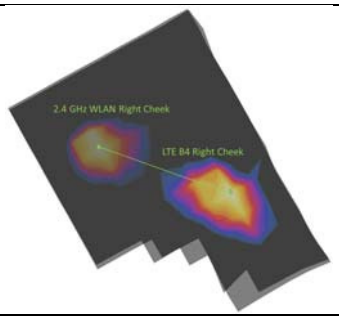	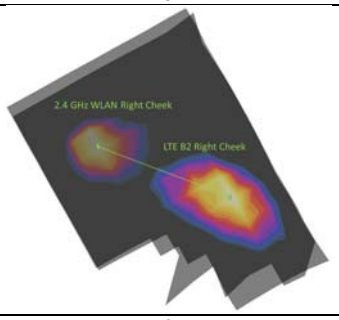
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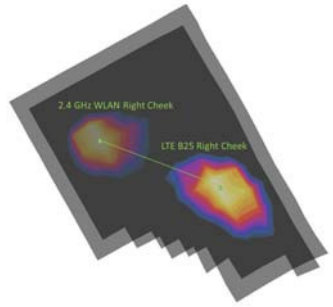	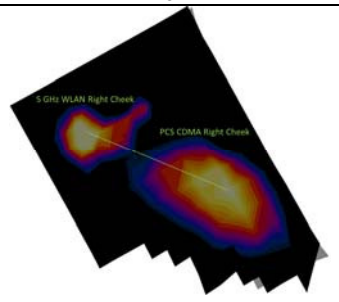	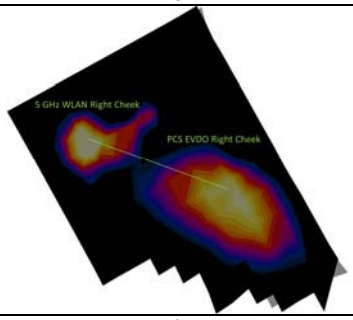
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	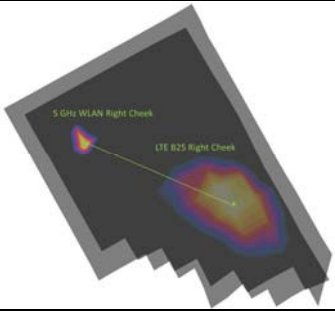	
	10	

12.7 Simultaneous Transmission Conclusion

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

13 SAR MEASUREMENT VARIABILITY

13.1 Measurement Variability

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

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

1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.
2) A second repeated measurement was 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
5) 10g Extremity SAR measurement variability analysis applies a factor of 2.5 to the procedures outlined above

Table 13-1
Head SAR Measurement Variability Results

HEAD VARIABILITY RESULTS														
Band	FREQUENCY		Mode/Band	Service	Side	Test Position	Data Rate (Mbps)	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)	
2450	2457.00	10	802.11b, 22 MHz Bandwidth	DSSS	Right	Tilt	1	0.969	0.933	1.04	N/A	N/A	N/A	N/A
5600	5580.00	116	802.11a, 20 MHz Bandwidth	OFDM	Right	Tilt	6	0.913	0.993	1.09	N/A	N/A	N/A	N/A
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 13-2
Body SAR Measurement Variability Results

BODY VARIABILITY RESULTS															
Band	FREQUENCY		Mode	Service	# of Time Slots	Side	Antenna Config.	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	back	Ant A	10 mm	1.050	1.040	1.01	N/A	N/A	N/A	N/A
1900	1908.75	1175	PCS CDMA	EVDO Rev. 0	N/A	right	Ant B	10 mm	0.926	0.835	1.11	N/A	N/A	N/A	N/A
1750	1732.50	20175	LTE Band 4 (AWS), 20 MHz Bandwidth	QPSK, 1 RB, 0 RB Offset	N/A	back	Ant B	10 mm	0.911	0.931	1.02	N/A	N/A	N/A	N/A
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram							

Table 13-3
10g Hotspot Mode at 0mm SAR Measurement Variability Results

10g HOTSPOT MODE AT 0mm VARIABILITY RESULTS														
Band	FREQUENCY		Mode	Service	Side	Antenna Config.	Spacing	Measured SAR (10g)	1st Repeated SAR (10g)	Ratio	2nd Repeated SAR (10g)	Ratio	3rd Repeated SAR (10g)	Ratio
	MHz	Ch.						(W/kg)	(W/kg)		(W/kg)		(W/kg)	
1750	1732.50	20175	LTE Band 4 (AWS), 20 MHz Bandwidth	QPSK, 1 RB, 0 RB Offset	back	Ant 2	0 mm	2.490	2.540	1.02	N/A	N/A	N/A	N/A
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							10g Hotspot Mode at 0mm SAR 4.0 W/kg (mW/g) averaged over 10 grams							

13.2 Measurement Uncertainty

The measured SAR was <1.5 W/kg for 1g SAR and was <3.75 W/kg for 10g SAR 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
SPEAG	D1750V2	1750 MHz SAR Dipole	4/15/2015	Annual	4/15/2016	1051
SPEAG	D1900V2	1900 MHz SAR Dipole	4/14/2015	Annual	4/14/2016	5d141
SPEAG	D1900V2	1900 MHz SAR Dipole	7/14/2015	Annual	7/14/2016	5d149
SPEAG	D2450V2	2450 MHz SAR Dipole	8/20/2015	Annual	8/20/2016	719
SPEAG	D2600V2	2600 MHz SAR Dipole	4/14/2015	Annual	4/14/2016	1004
SPEAG	D5GHzV2	5 GHz SAR Dipole	2/17/2015	Annual	2/17/2016	1120
SPEAG	D5GHzV2	5 GHz SAR Dipole	9/16/2015	Annual	9/16/2016	1191
SPEAG	D750V3	750 MHz SAR Dipole	3/11/2015	Annual	3/11/2016	1054
SPEAG	D835V2	835 MHz SAR Dipole	4/13/2015	Annual	4/13/2016	4d119
SPEAG	D835V2	835 MHz SAR Dipole	7/23/2015	Annual	7/23/2016	4d133
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	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	10/27/2015	Annual	10/27/2016	1333
SPEAG	DAE4	Dasy Data Acquisition Electronics	3/13/2015	Annual	3/13/2016	1368
SPEAG	DAE4	Dasy Data Acquisition Electronics	4/20/2015	Annual	4/20/2016	1407
SPEAG	DAE4	Dasy Data Acquisition Electronics	11/11/2015	Annual	11/11/2016	1415
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	ES3DV3	SAR Probe	6/22/2015	Annual	6/22/2016	3351
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	DAK-3.5	Dielectric Assessment Kit	10/20/2015	Annual	10/20/2016	1091
Seekonk	NC-100	Torque Wrench	3/18/2014	Biennial	3/18/2016	22313
Rohde & Schwarz	CMW500	Radio Communication tester	5/5/2015	Annual	5/5/2016	140144
Rohde & Schwarz	CMW500	Radio Communication Tester	4/8/2015	Annual	4/8/2016	140148
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
Narda	4772-3	Attenuator (3dB)	CBT	N/A	CBT	9406
Narda	BW-S3W2	Attenuator (3dB)	CBT	N/A	CBT	120
Mitutoyo	CD-6"CSX	Digital Caliper	5/8/2014	Biennial	5/8/2016	13264165
Mini-Circuits	BW-N20W5+	DC to 18 GHz Precision Fixed 20 dB Attenuator	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
Mini-Circuits	BW-N20W5	Power Attenuator	CBT	N/A	CBT	1226
MiniCircuits	SLP-2400+	Low Pass Filter	CBT	N/A	CBT	R8979500903
MiniCircuits	VLF-6000+	Low Pass Filter	CBT	N/A	CBT	N/A
MCL	BW-N6W5+	6dB Attenuator	CBT	N/A	CBT	1139
Control Company	4040	Digital Thermometer	3/18/2015	Biennial	3/18/2017	150194895
Control Company	4040	Digital Thermometer	3/18/2015	Biennial	3/18/2017	150194896
Control Company	4353	Long Stem Thermometer	1/22/2015	Biennial	1/22/2017	150053029
Control Company	4353	Long Stem Thermometer	1/22/2015	Biennial	1/22/2017	150053036
COMTech	AR85729-5	Solid State Amplifier	CBT	N/A	CBT	M1S5A00-009
COMTECH	AR85729-5/5759B	Solid State Amplifier	CBT	N/A	CBT	M3W1A00-1002
Anritsu	ML2438A	Power Meter	3/13/2015	Annual	3/13/2016	1070030
Anritsu	ML2495A	Power Meter	10/16/2015	Biennial	10/16/2016	1328004
Anritsu	ML2496A	Power Meter	3/13/2015	Annual	3/13/2016	1351001
Anritsu	MA2481A	Power Sensor	3/10/2015	Annual	3/10/2016	2400
Anritsu	MA2481A	Power Sensor	3/10/2015	Annual	3/10/2016	5821
Anritsu	MA2411B	Pulse Power Sensor	8/3/2015	Annual	8/3/2016	1126066
Anritsu	MA2411B	Pulse Power Sensor	3/13/2015	Annual	3/13/2016	1207470
Anritsu	MT8820C	Radio Communication Analyzer	6/12/2015	Annual	6/12/2016	6201240328
Anritsu	MT8820C	Radio Communication Analyzer	12/4/2015	Annual	12/4/2016	6201300731
Anritsu	MA24106A	USB Power Sensor	5/29/2015	Annual	5/29/2016	1231535
Anritsu	MA24106A	USB Power Sensor	5/29/2015	Annual	5/29/2016	1231538
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433977
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433978
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
Agilent	E4438C	ESG Vector Signal Generator	3/13/2015	Annual	3/13/2016	MY42082385
Agilent	E4432B	ESG-D Series Signal Generator	3/16/2015	Annual	3/16/2016	US40053896
Agilent	N9020A	MXA Signal Analyzer	11/5/2015	Annual	11/5/2016	US46470561
Agilent	N5182A	MXG Vector Signal Generator	3/16/2015	Annual	3/16/2016	MY47420800
Agilent	8753ES	Network Analyzer	3/20/2015	Annual	3/20/2016	MY40001472
Agilent	8753ES	S-Parameter Network Analyzer	3/12/2015	Annual	3/12/2016	MY40000670
Agilent	E5515C	Wireless Communications Test Set	6/18/2015	Biennial	6/18/2017	GB41450275

Note: 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.

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]

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APPENDIX A: SAR TEST DATA

PCTEST ENGINEERING LABORATORY, INC.

DUT: ZNFVS987; Type: Portable Handset; Serial: 03654

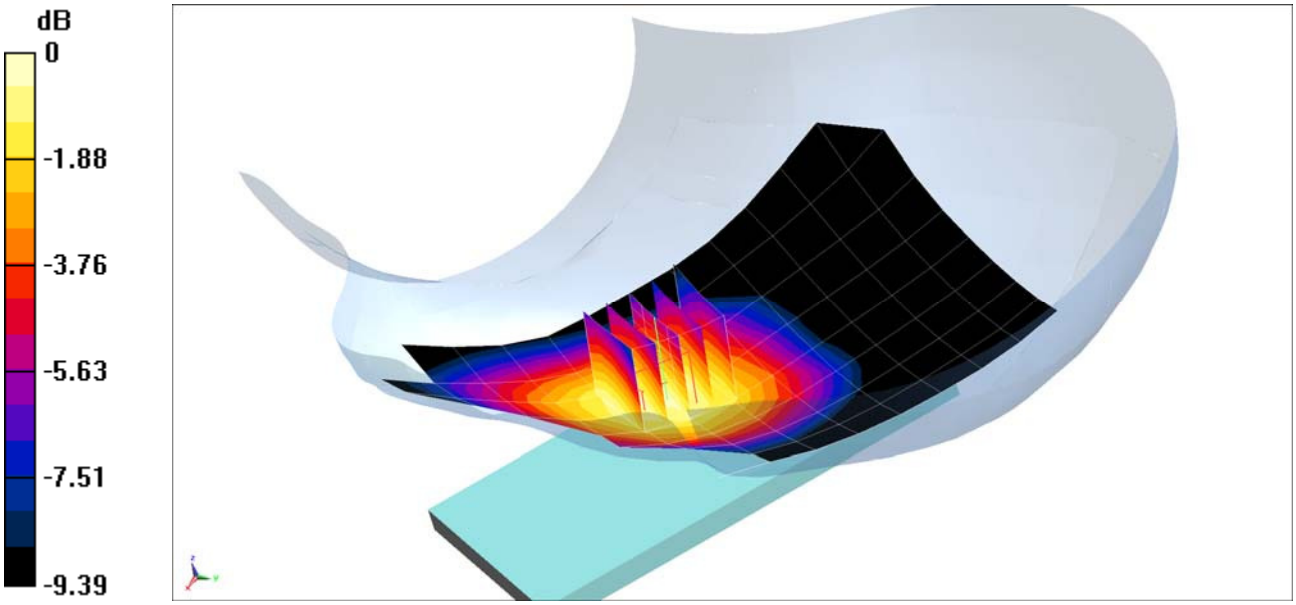
Communication System: UID 0, GSM GPRS; 2 Tx slots; Frequency: 848.8 MHz; Duty Cycle: 1:4.15
Medium: 835 Head Medium parameters used (interpolated):
f = 848.8 MHz; σ = 0.909 S/m; ε_r = 39.904; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 01-20-2016; Ambient Temp: 24.0°C; Tissue Temp: 21.5°C

Probe: ES3DV3 - SN3334; ConvF(6.37, 6.37, 6.37); 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 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 = 31.974 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 1.14 W/kg
SAR(1 g) = 0.900 W/kg



0 dB = 0.972 W/kg = -0.12 dBW/kg

DUT: ZNFVS987; Type: Portable Handset; Serial: 03654

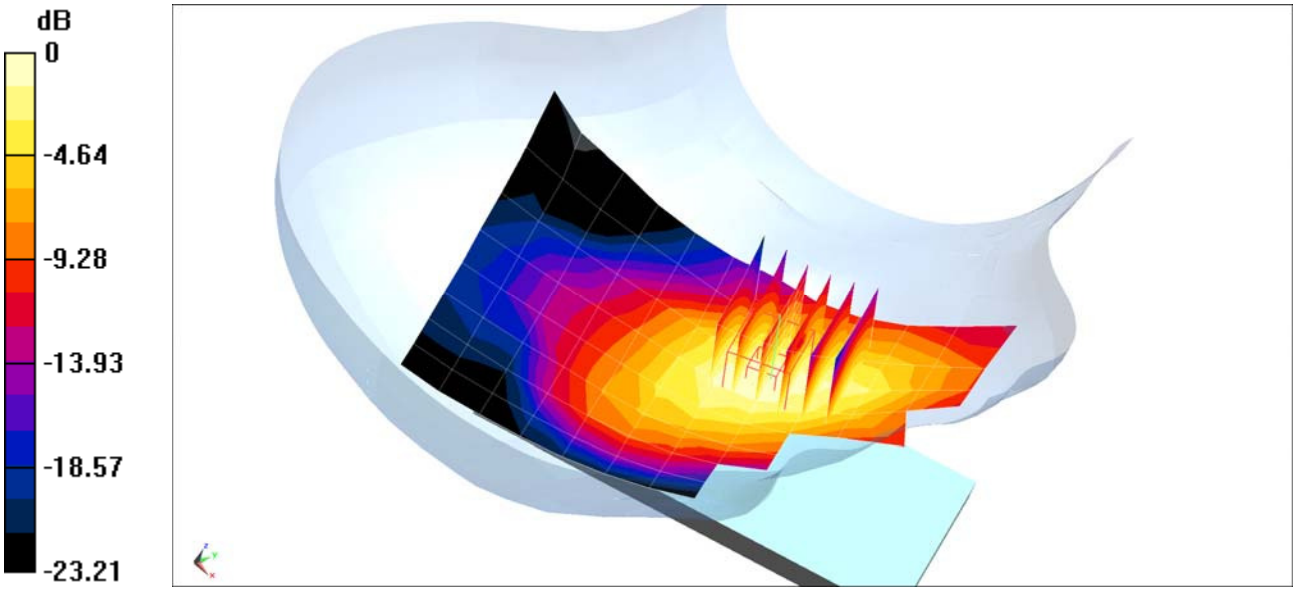
Communication System: UID 0, GSM GPRS; 2 Tx slots; Frequency: 1880 MHz; Duty Cycle: 1:4.15
Medium: 1900 Head Medium parameters used:
f = 1880 MHz; σ = 1.429 S/m; ε_r = 38.851; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 01-25-2016; Ambient Temp: 20.8°C; Tissue Temp: 20.4°C

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

Mode: GPRS 1900, Right Head, Cheek, Mid.ch, 2 Tx slots

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.611 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.501 W/kg
SAR(1 g) = 0.329 W/kg



0 dB = 0.381 W/kg = -4.19 dBW/kg

DUT: ZNFVS987; Type: Portable Handset; Serial: 03654

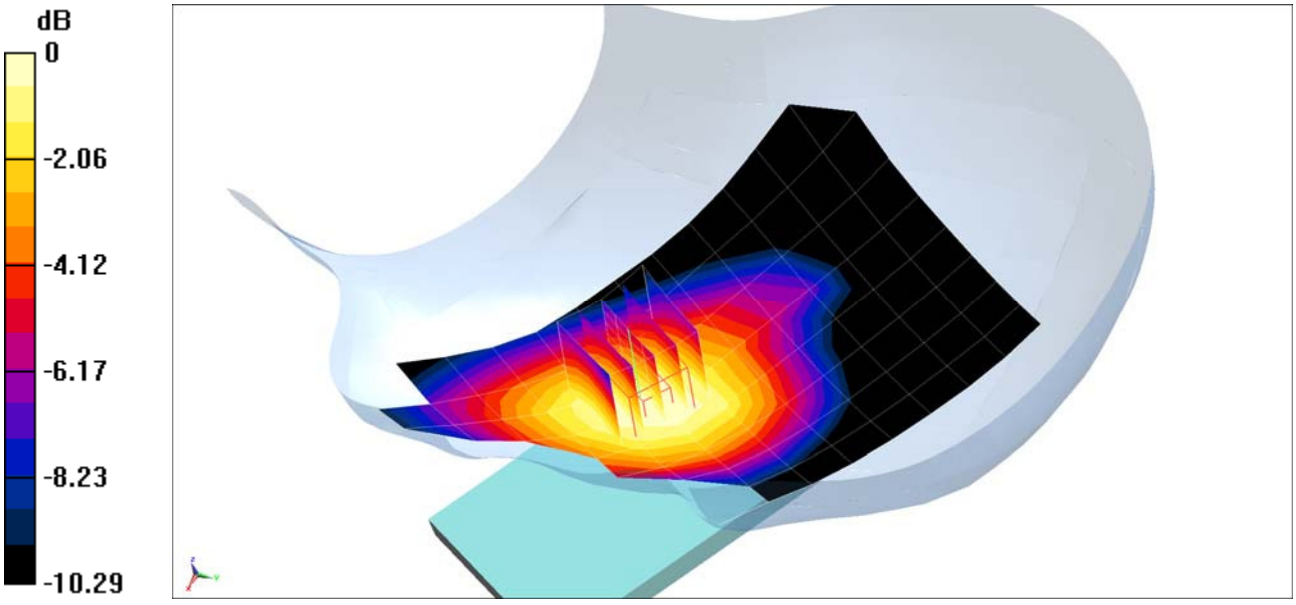
Communication System: UID 0, UMTS; Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.897 S/m; ε_r = 40.056; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 01-20-2016; Ambient Temp: 24.0°C; Tissue Temp: 21.5°C

Probe: ES3DV3 - SN3334; ConvF(6.37, 6.37, 6.37); 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, 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 = 24.645 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.646 W/kg
SAR(1 g) = 0.507 W/kg



0 dB = 0.551 W/kg = -2.59 dBW/kg

DUT: ZNFVS987; Type: Portable Handset; Serial: 03654

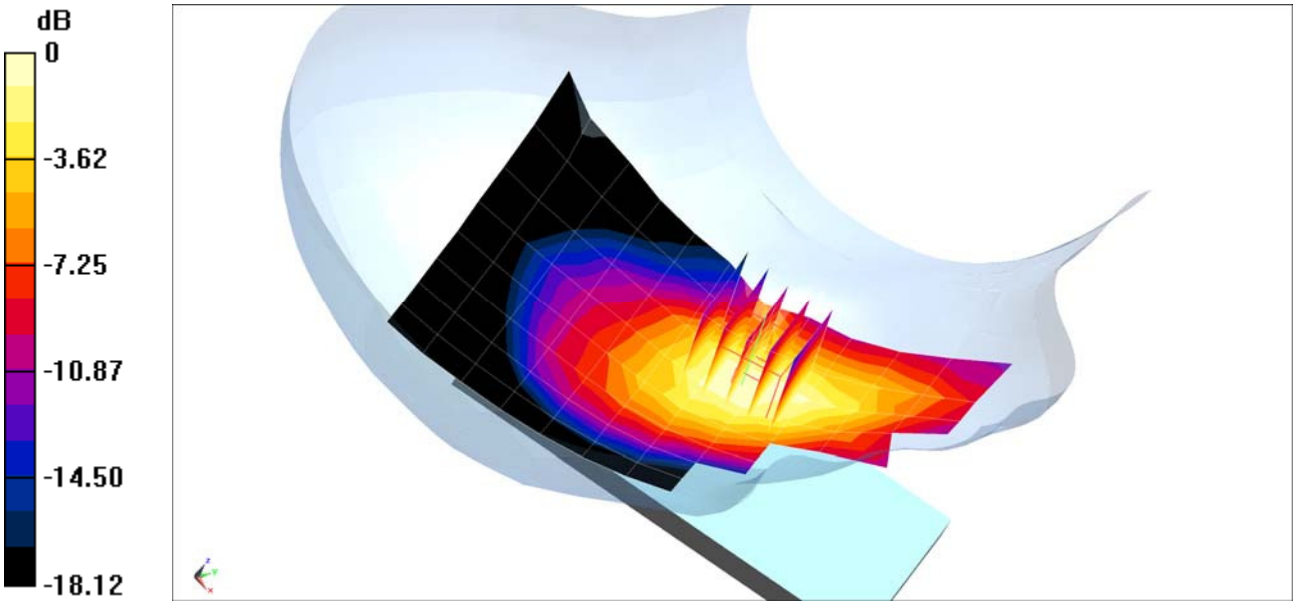
Communication System: UID 0, UMTS; Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium: 1750 Head Medium parameters used (interpolated):
f = 1732.4 MHz; σ = 1.335 S/m; ε_r = 38.474; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 01-27-2016; Ambient Temp: 24.4°C; Tissue Temp: 22.6°C

Probe: ES3DV3 - SN3334; ConvF(5.39, 5.39, 5.39); 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: 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 = 19.084 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 0.654 W/kg
SAR(1 g) = 0.443 W/kg



0 dB = 0.500 W/kg = -3.01 dBW/kg

DUT: ZNFVS987; Type: Portable Handset; Serial: 03654

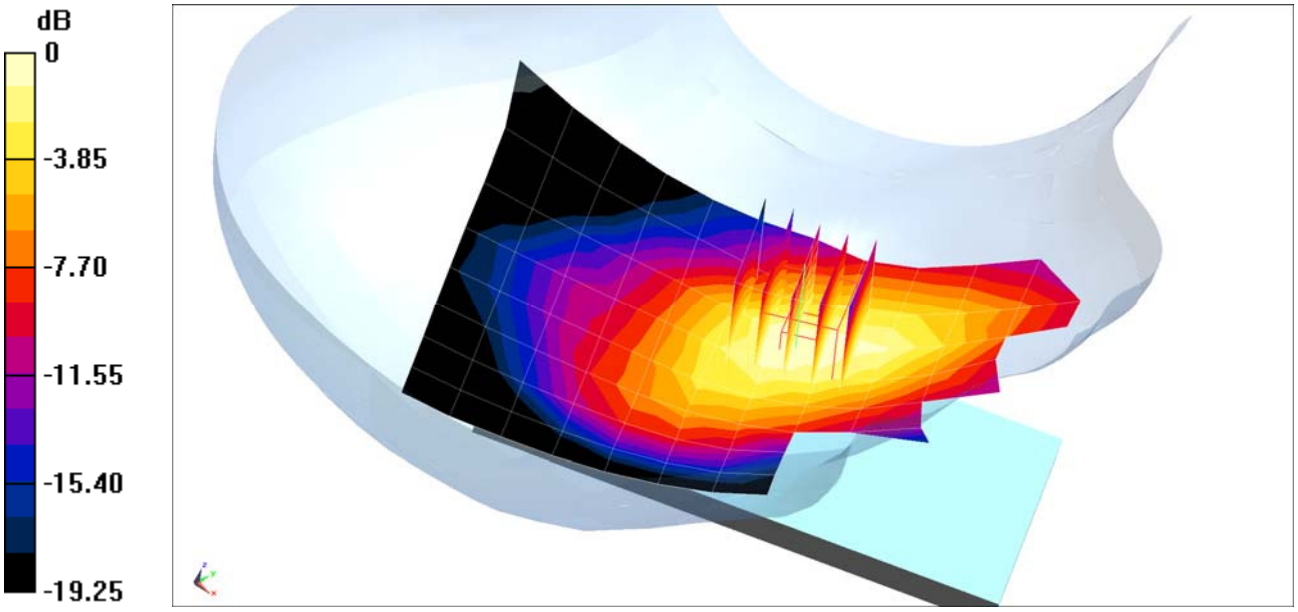
Communication System: UID 0, UMTS; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Head Medium parameters used:
f = 1880 MHz; σ = 1.429 S/m; ε_r = 38.851; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 01-25-2016; Ambient Temp: 20.8°C; Tissue Temp: 20.4°C

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

Mode: UMTS 1900, Right Head, Cheek, 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 = 20.949 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.852 W/kg
SAR(1 g) = 0.570 W/kg



0 dB = 0.651 W/kg = -1.86 dBW/kg

DUT: ZNFVS987; Type: Portable Handset; Serial: 03662

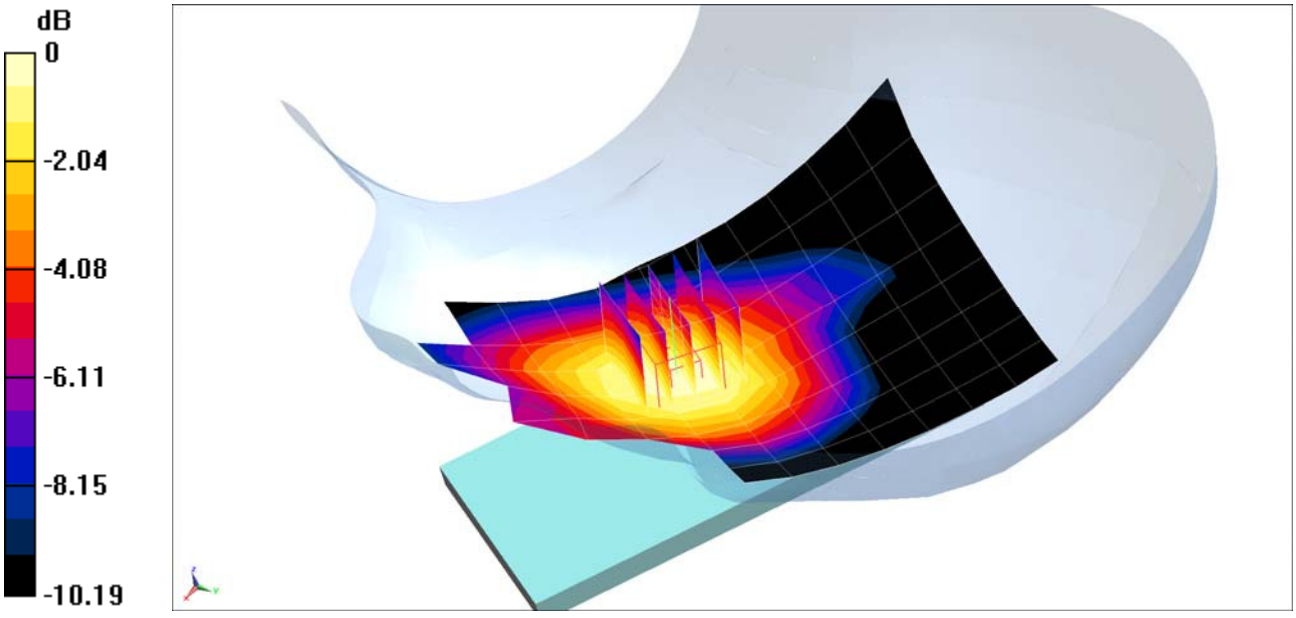
Communication System: UID 0, Cellular CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
f = 836.52 MHz; σ = 0.897 S/m; ε_r = 40.057; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 01-20-2016; Ambient Temp: 24.0°C; Tissue Temp: 21.5°C

Probe: ES3DV3 - SN3334; ConvF(6.37, 6.37, 6.37); 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: Cell. CDMA, Rule Part 22H, Left Head, Cheek, 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 = 25.202 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.679 W/kg
SAR(1 g) = 0.527 W/kg



0 dB = 0.579 W/kg = -2.37 dBW/kg

DUT: ZNFVS987; Type: Portable Handset; Serial: 03654

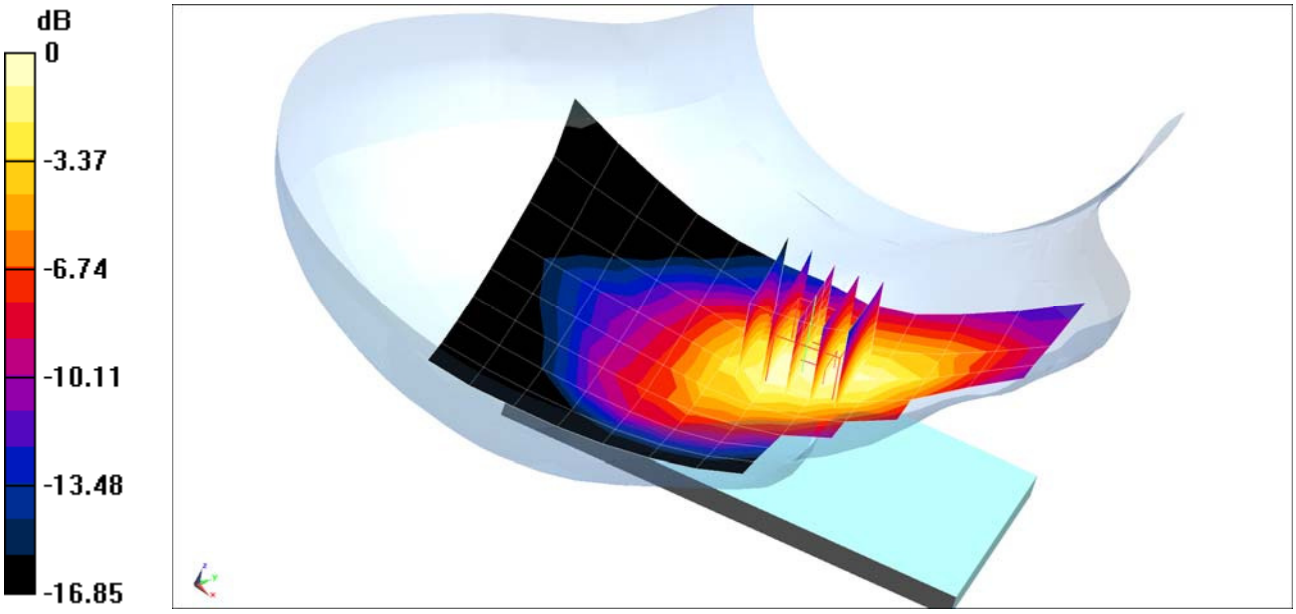
Communication System: UID 0, CDMA; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Head Medium parameters used:
f = 1880 MHz; σ = 1.429 S/m; ε_r = 38.851; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 01-25-2016; Ambient Temp: 20.8°C; Tissue Temp: 20.4°C

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

Mode: 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 = 22.686 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 1.02 W/kg
SAR(1 g) = 0.678 W/kg



0 dB = 0.777 W/kg = -1.10 dBW/kg

DUT: ZNFVS987; Type: Portable Handset; Serial: 03688

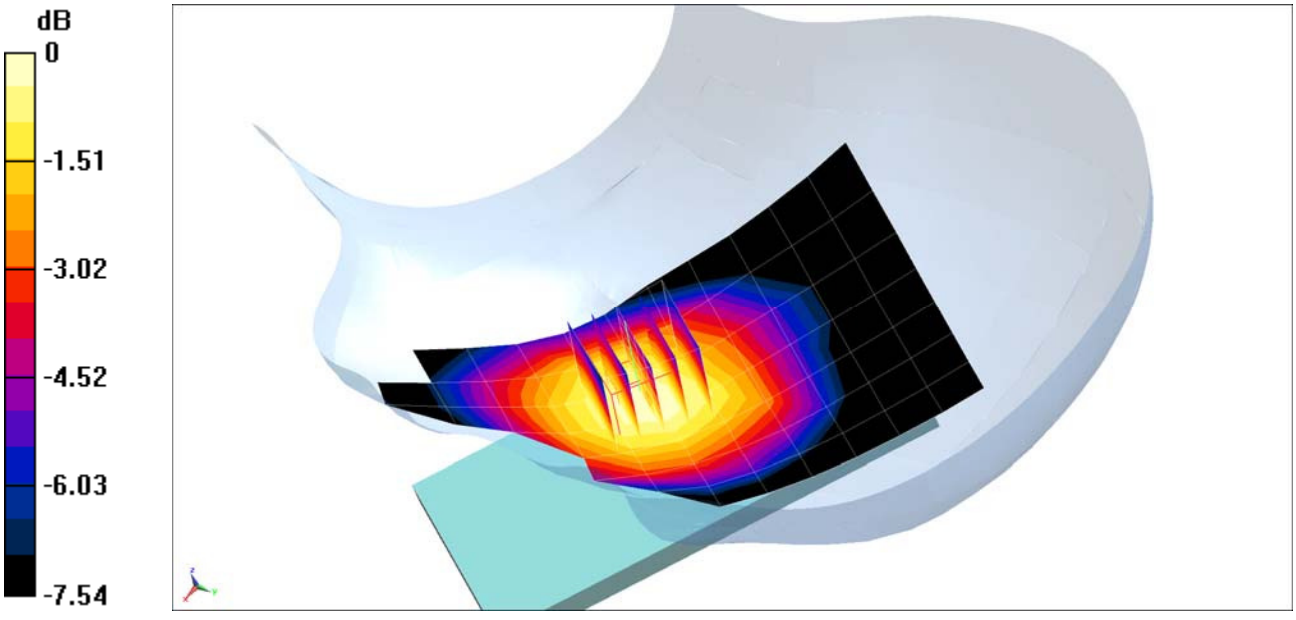
Communication System: UID 0, LTE Band 12; Frequency: 707.5 MHz; Duty Cycle: 1:1
Medium: 750 Head Medium parameters used (interpolated):
f = 707.5 MHz; σ = 0.864 S/m; ε_r = 43.317; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 01-21-2016; Ambient Temp: 24.2°C; Tissue Temp: 22.7°C

Probe: ES3DV2 - SN3022; ConvF(6.33, 6.33, 6.33); 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 12, Left Head, Cheek, Mid.ch
QPSK, 10 MHz Bandwidth, 1 RB, 0 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 = 14.527 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.275 W/kg
SAR(1 g) = 0.218 W/kg



0 dB = 0.243 W/kg = -6.14 dBW/kg

DUT: ZNFVS987; Type: Portable Handset; Serial: 03688

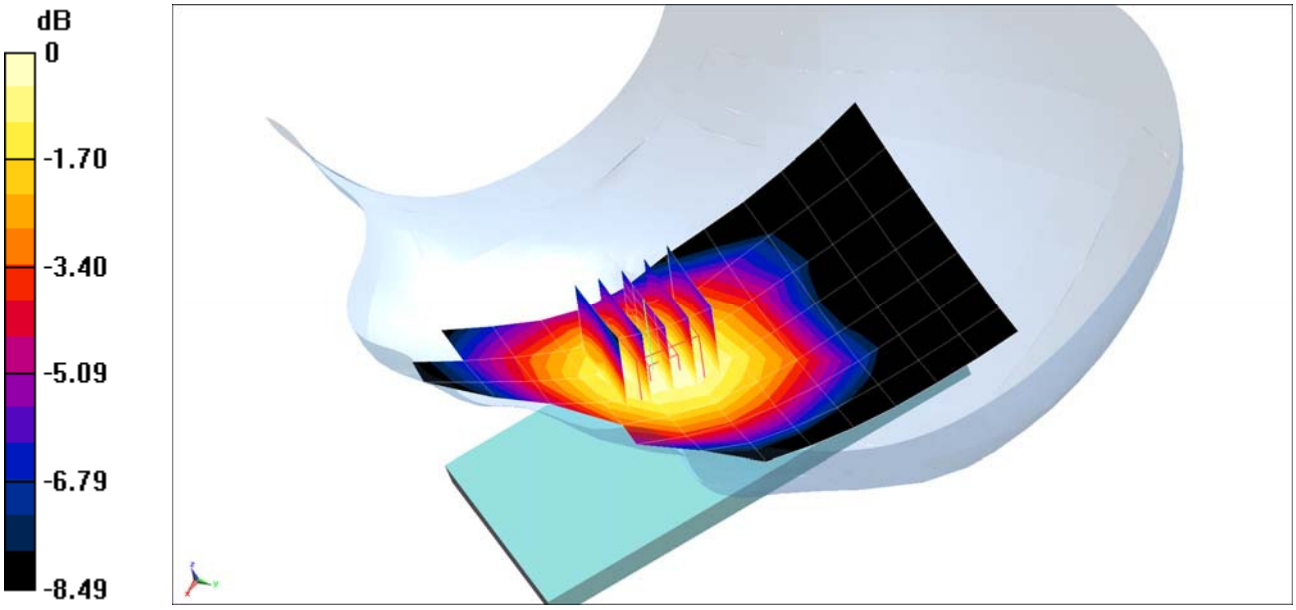
Communication System: UID 0, LTE Band 13; Frequency: 782 MHz; Duty Cycle: 1:1
Medium: 750 Head Medium parameters used (interpolated):
f = 782 MHz; σ = 0.935 S/m; ε_r = 42.293; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 01-21-2016; Ambient Temp: 24.2°C; Tissue Temp: 22.7°C

Probe: ES3DV2 - SN3022; ConvF(6.33, 6.33, 6.33); 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 13, Left Head, Cheek, Mid.ch
QPSK, 10 MHz Bandwidth, 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 = 20.487 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.442 W/kg
SAR(1 g) = 0.364 W/kg



0 dB = 0.395 W/kg = -4.03 dBW/kg

DUT: ZNFVS987; Type: Portable Handset; Serial: 03670

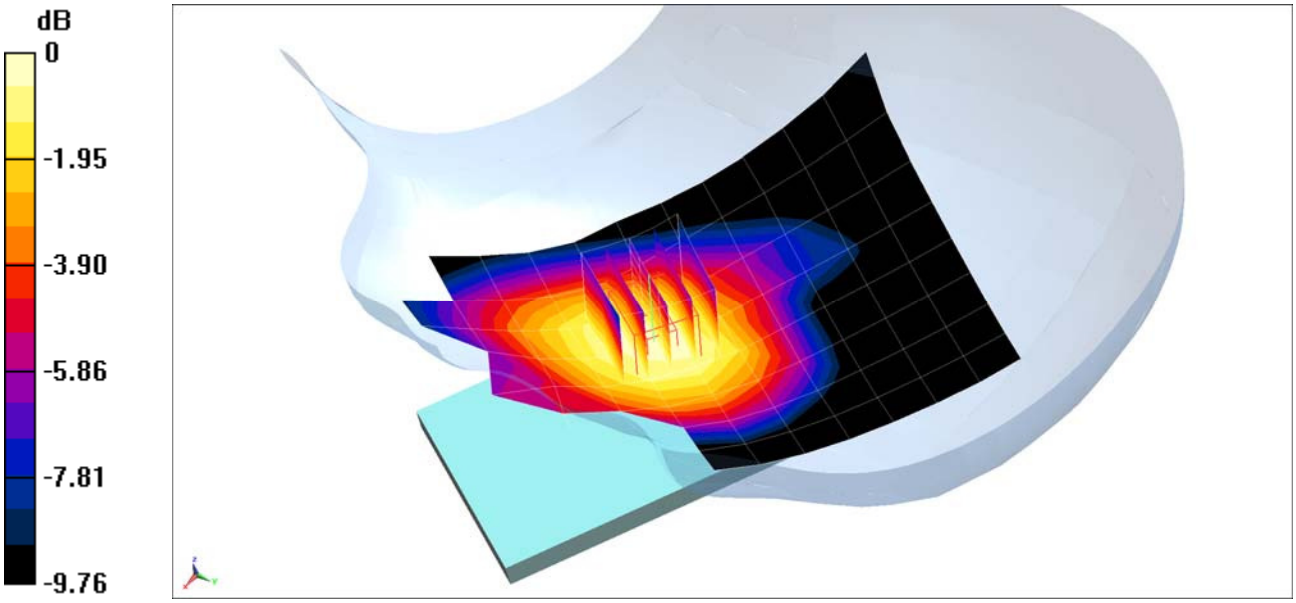
Communication System: UID 0, LTE Band 5 (Cell.); Frequency: 836.5 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
f = 836.5 MHz; σ = 0.897 S/m; ε_r = 40.057; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 01-20-2016; Ambient Temp: 24.0°C; Tissue Temp: 21.5°C

Probe: ES3DV3 - SN3334; ConvF(6.37, 6.37, 6.37); 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 5 (Cell.), Left Head, Cheek, Mid.ch
QPSK, 10 MHz Bandwidth, 1 RB, 0 RB Offset

Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.731 V/m; Power Drift = -0.17 dB
Peak SAR (extrapolated) = 0.701 W/kg
SAR(1 g) = 0.552 W/kg



0 dB = 0.605 W/kg = -2.18 dBW/kg

DUT: ZNFVS987; Type: Portable Handset; Serial: 03688

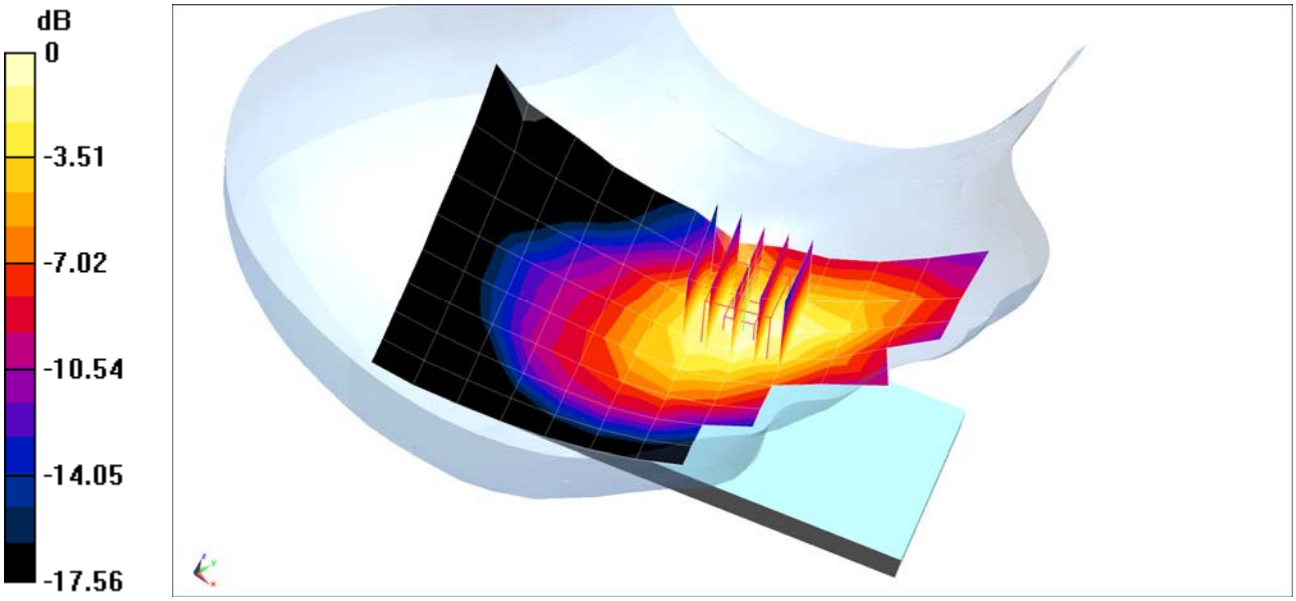
Communication System: UID 0, LTE Band 4 (AWS); Frequency: 1732.5 MHz; Duty Cycle: 1:1
Medium: 1750 Head Medium parameters used (interpolated):
f = 1732.5 MHz; σ = 1.335 S/m; ε_r = 38.473; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 01-27-2016; Ambient Temp: 24.4°C; Tissue Temp: 22.6°C

Probe: ES3DV3 - SN3334; ConvF(5.39, 5.39, 5.39); 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 4 (AWS), Right Head, Cheek, Mid.ch
QPSK, 20 MHz Bandwidth, 1 RB, 0 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.950 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.921 W/kg
SAR(1 g) = 0.618 W/kg



0 dB = 0.705 W/kg = -1.52 dBW/kg

DUT: ZNFVS987; Type: Portable Handset; Serial: 03670

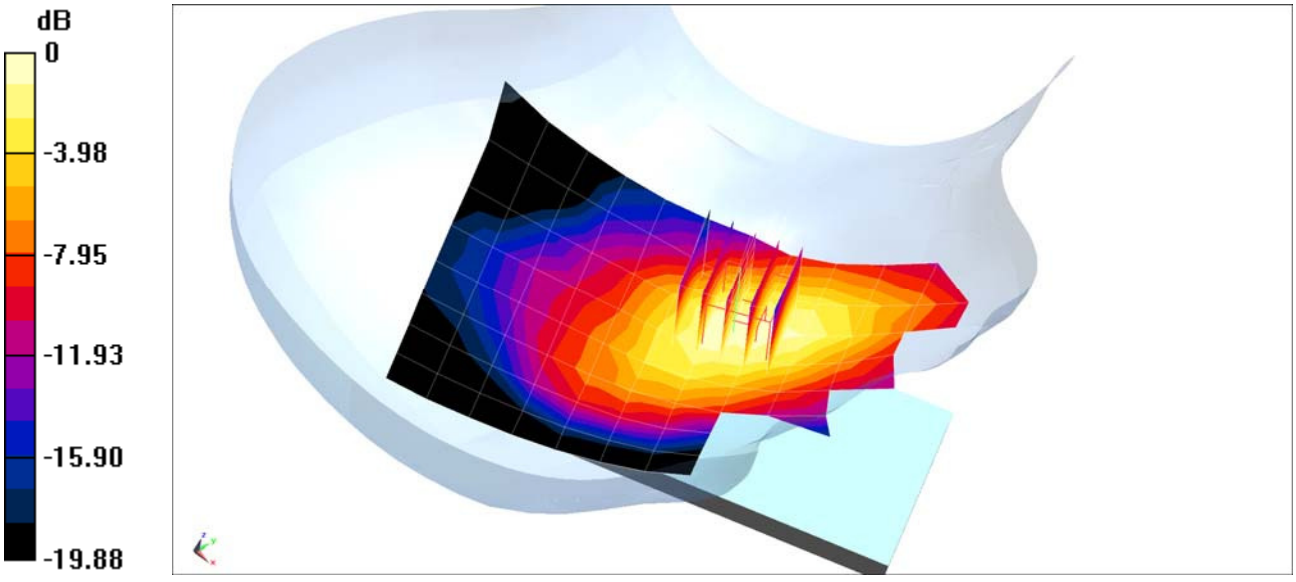
Communication System: UID 0, LTE Band 2 (PCS); Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Head Medium parameters used:
f = 1880 MHz; σ = 1.429 S/m; ε_r = 38.851; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 01-25-2016; Ambient Temp: 20.8°C; Tissue Temp: 20.4°C

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

Mode: LTE Band 2 (PCS), Right Head, Cheek, Mid.ch
QPSK, 20 MHz Bandwidth, 1 RB, 0 RB Offset

Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.374 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.984 W/kg
SAR(1 g) = 0.644 W/kg



0 dB = 0.734 W/kg = -1.34 dBW/kg

DUT: ZNFVS987; Type: Portable Handset; Serial: 03670

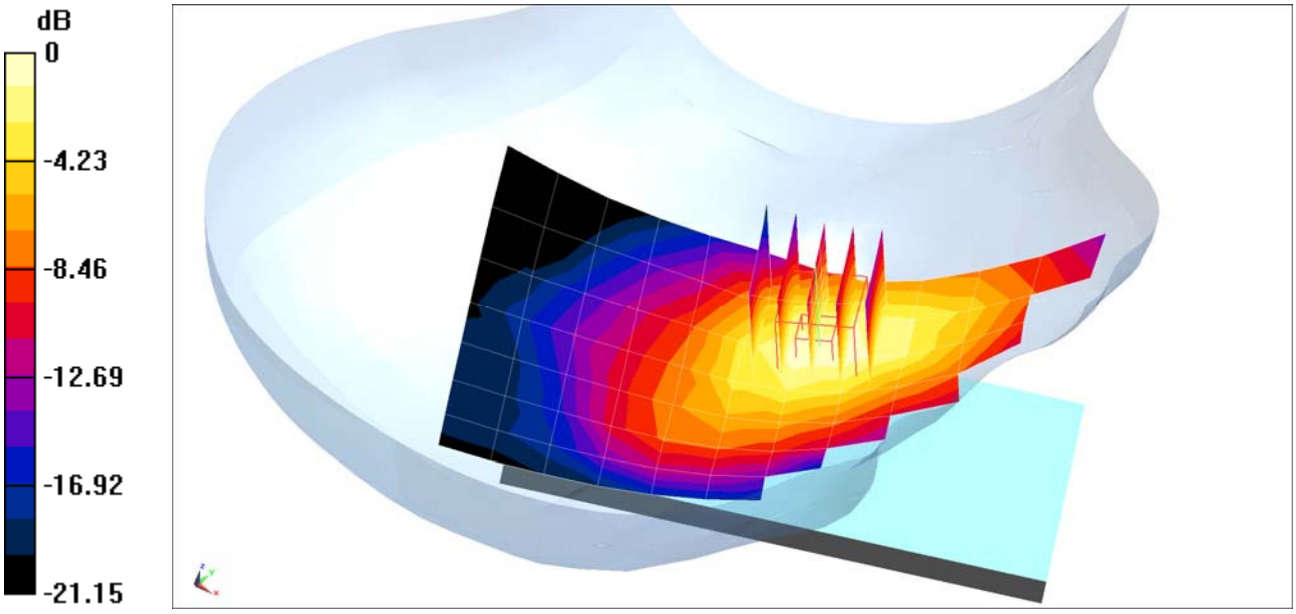
Communication System: UID 0, LTE Band 25 (PCS); Frequency: 1905 MHz; Duty Cycle: 1:1
Medium: 1900 Head Medium parameters used (interpolated):
$f = 1905$ MHz; $\sigma = 1.453$ S/m; $\varepsilon_r = 38.703$; $\rho = 1000$ kg/m^3
Phantom section: Right Section

Test Date: 01-25-2016; Ambient Temp: 20.8°C; Tissue Temp: 20.4°C

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

Mode: LTE Band 25 (PCS), Right Head, Cheek, High.ch
QPSK, 20 MHz Bandwidth, 1 RB, 0 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 = 24.532 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 1.19 W/kg
SAR(1 g) = 0.766 W/kg



0 dB = 0.899 W/kg = -0.46 dBW/kg

DUT: ZNFVS987; Type: Portable Handset; Serial: 03704

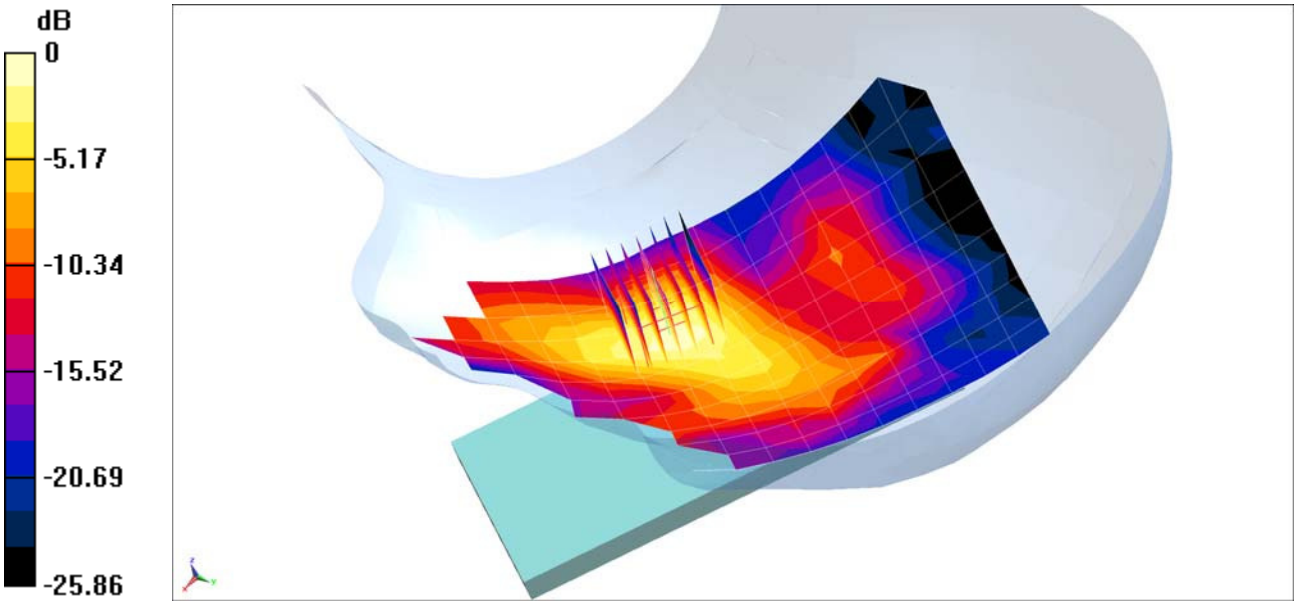
Communication System: UID 0, LTE Band 7; Frequency: 2535 MHz; Duty Cycle: 1:1
Medium: 2600 Head Medium parameters used (interpolated):
$f = 2535$ MHz; $\sigma = 1.913$ S/m; $\varepsilon_r = 40.097$; $\rho = 1000$ kg/m^3
Phantom section: Left Section

Test Date: 02-01-2016; Ambient Temp: 22.3°C; Tissue Temp: 22.5°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, Mid.ch, QPSK
20 MHz Bandwidth, 1 RB, 0 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 = 11.022 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.410 W/kg
SAR(1 g) = 0.220 W/kg



0 dB = 0.280 W/kg = -5.53 dBW/kg

DUT: ZNFVS987; Type: Portable Handset; Serial: 03704

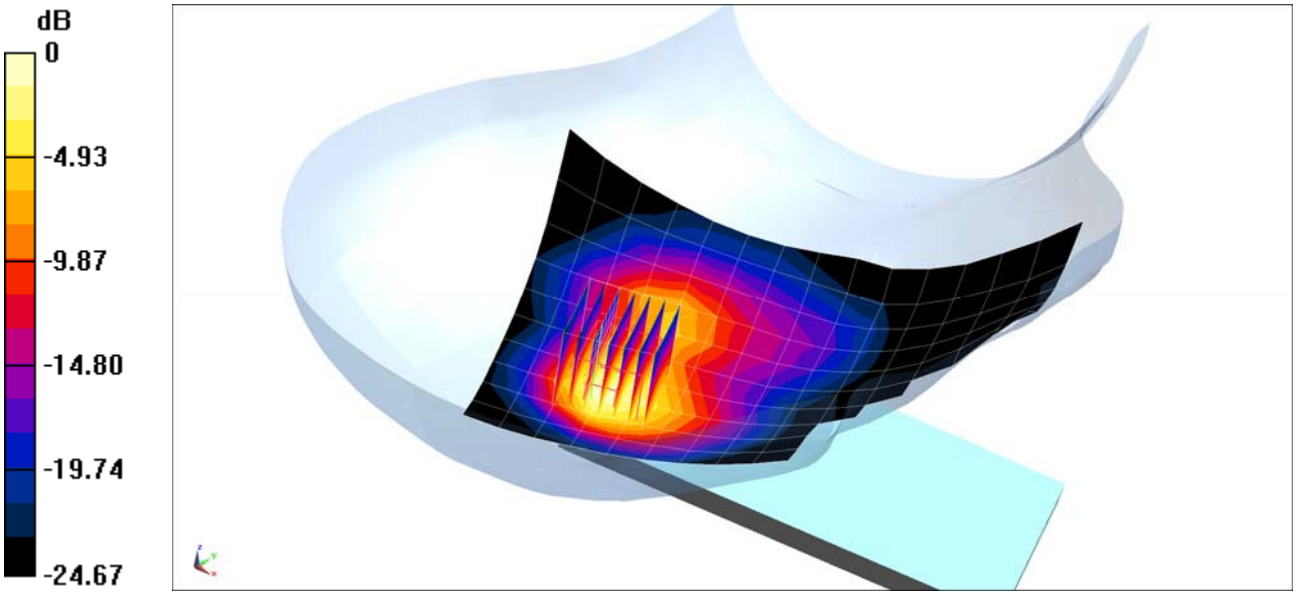
Communication System: UID 0, IEEE 802.11b; Frequency: 2457 MHz; Duty Cycle: 1:1
Medium: 2450 Head Medium parameters used (interpolated):
$f = 2457$ MHz; $\sigma = 1.844$ S/m; $\varepsilon_r = 38.724$; $\rho = 1000$ kg/m^3
Phantom section: Right Section

Test Date: 01-26-2016; Ambient Temp: 24.3°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: IEEE 802.11b, 22 MHz Bandwidth, Right Head, Tilt, Ch 10, 1 Mbps

Area Scan (11x18x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 24.447 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 2.39 W/kg
SAR(1 g) = 0.969 W/kg



0 dB = 1.24 W/kg = 0.93 dBW/kg

DUT: ZNFVS987; Type: Portable Handset; Serial: 03704

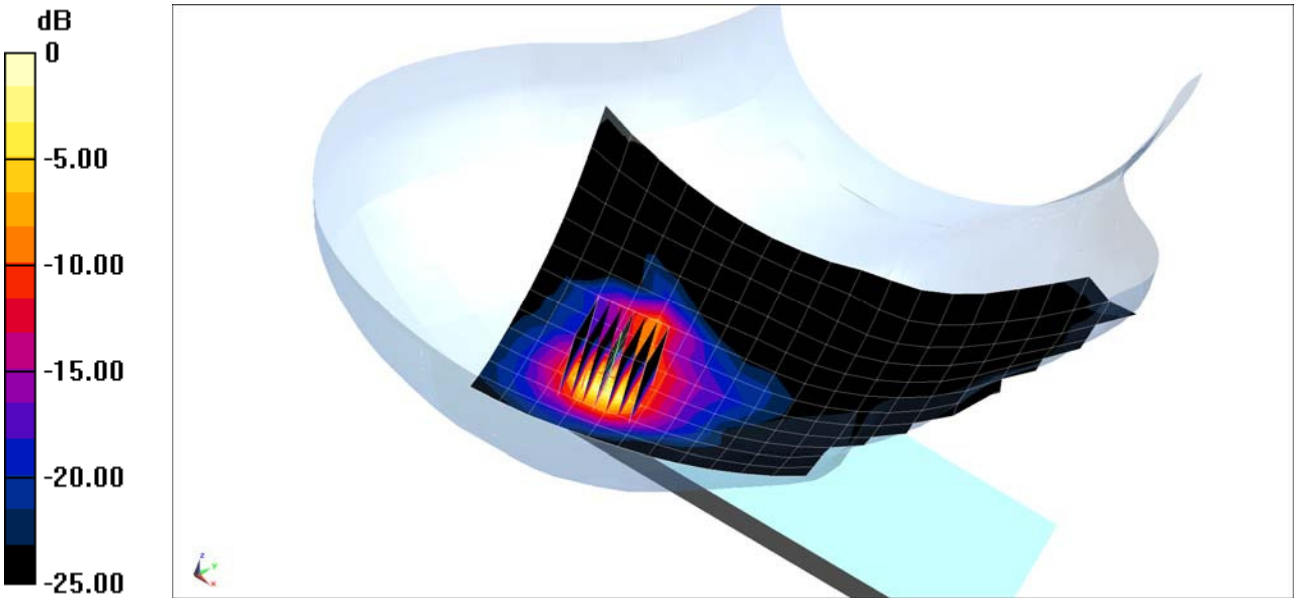
Communication System: UID 0, IEEE 802.11a; Frequency: 5580 MHz; Duty Cycle: 1:1
Medium: 5 GHz Head Medium parameters used:
f = 5580 MHz; σ = 4.869 S/m; ε_r = 35.409; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 02-02-2016; Ambient Temp: 23.8°C; Tissue Temp: 22.0°C

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

Mode: IEEE 802.11a, U-NII-2C, 20 MHz Bandwidth, Right Head, Tilt, Ch 116, 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 = 12.335 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 5.02 W/kg
SAR(1 g) = 0.993 W/kg



0 dB = 2.59 W/kg = 4.13 dBW/kg

DUT: ZNFVS987; Type: Portable Handset; Serial: 03662

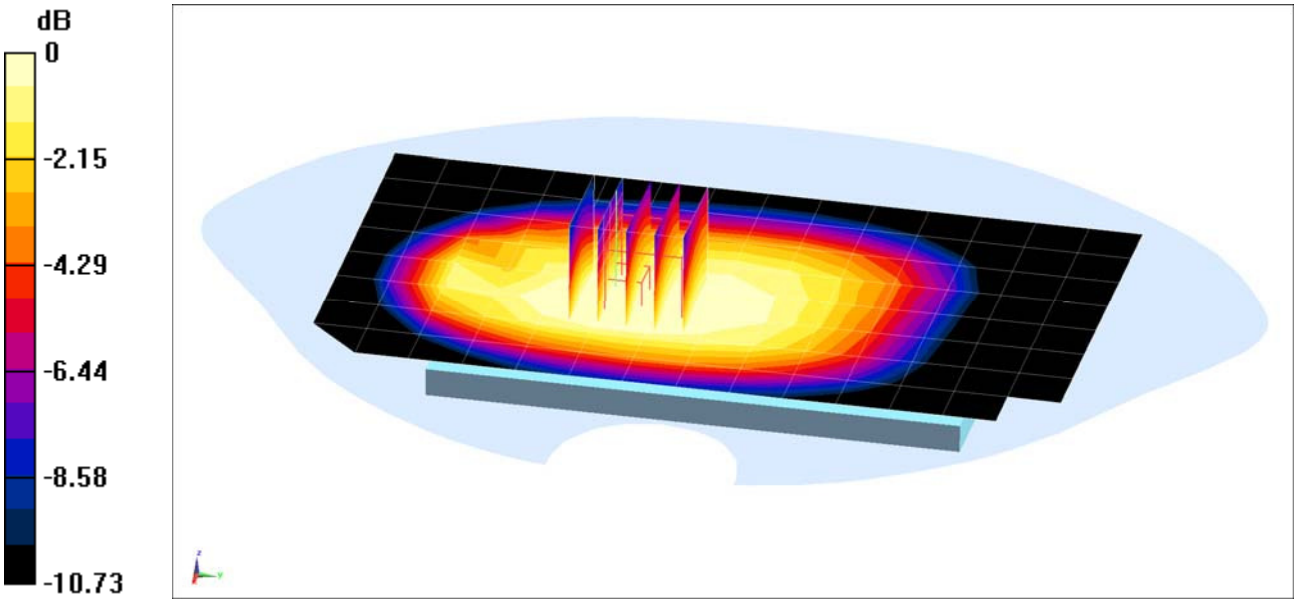
Communication System: UID 0, GSM GPRS; 2 Tx slots; Frequency: 836.6 MHz; Duty Cycle: 1:4.15
Medium: 835 Body Medium parameters used (interpolated):
$f = 836.6$ MHz; $\sigma = 1.006$ S/m; $\varepsilon_r = 53.438$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-25-2016; Ambient Temp: 21.9°C; Tissue Temp: 21.0°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 5.0 front; Type: QD000P40CD; Serial: TP:-1648
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 (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 32.781 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 1.41 W/kg
SAR(1 g) = 1.05 W/kg



0 dB = 1.00 W/kg = 0.00 dBW/kg

DUT: ZNFVS987; Type: Portable Handset; Serial: 03654

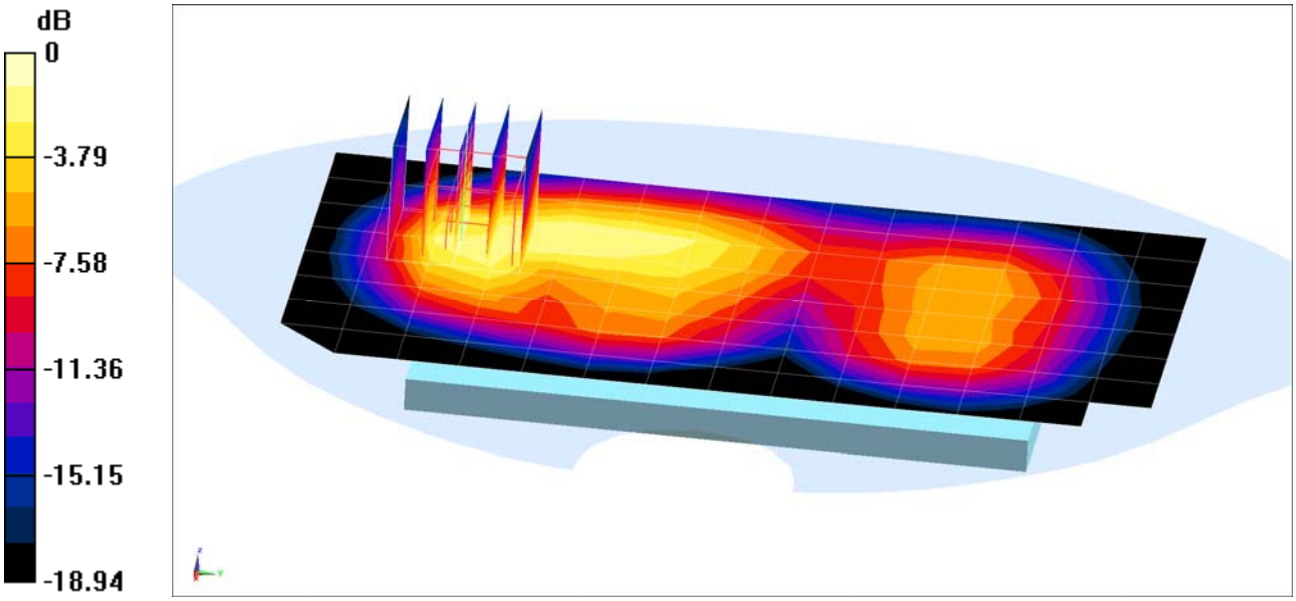
Communication System: UID 0, GSM GPRS; 2 Tx slots; Frequency: 1880 MHz; Duty Cycle: 1:4.15
Medium: 1900 Body Medium parameters used:
f = 1880 MHz; σ = 1.535 S/m; ε_r = 52.313; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-01-2016; Ambient Temp: 22.0°C; Tissue Temp: 23.0°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 = 15.528 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.744 W/kg
SAR(1 g) = 0.406 W/kg



0 dB = 0.513 W/kg = -2.90 dBW/kg

DUT: ZNFVS987; Type: Portable Handset; Serial: 03654

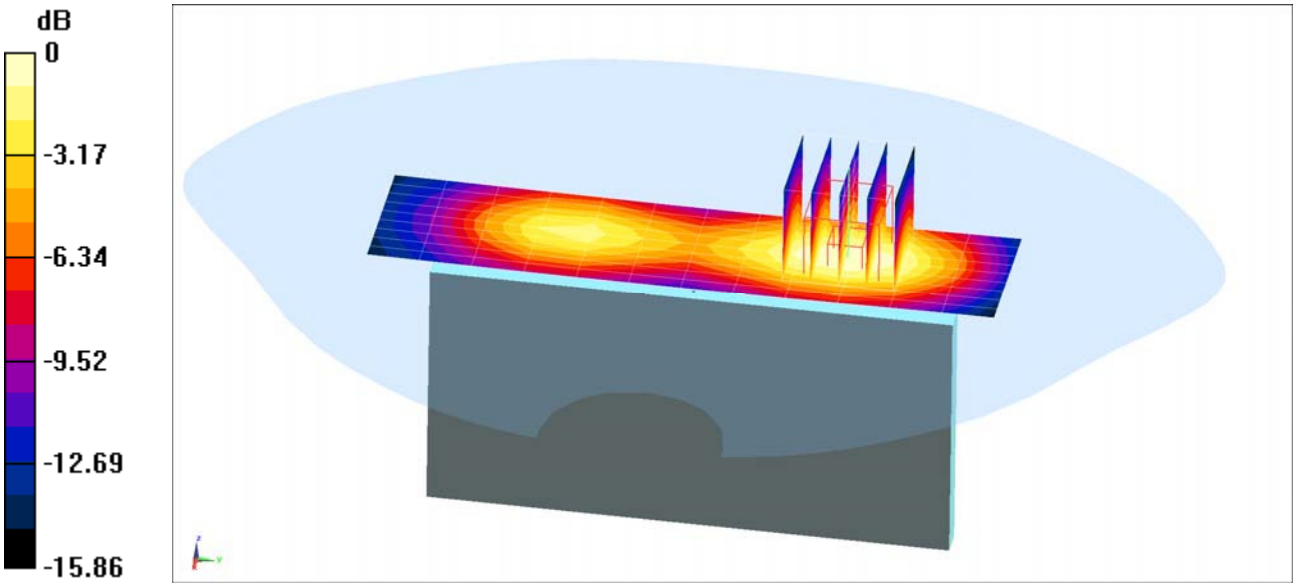
Communication System: UID 0, GSM GPRS; 2 Tx slots; Frequency: 1880 MHz; Duty Cycle: 1:4.15
Medium: 1900 Body Medium parameters used:
f = 1880 MHz; σ = 1.535 S/m; ε_r = 52.313; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-01-2016; Ambient Temp: 22.0°C; Tissue Temp: 23.0°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, Right Edge, Mid.ch, 2 Tx Slots

Area Scan (10x13x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.776 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 0.711 W/kg
SAR(1 g) = 0.442 W/kg



0 dB = 0.532 W/kg = -2.74 dBW/kg

DUT: ZNFVS987; Type: Portable Handset; Serial: 03654

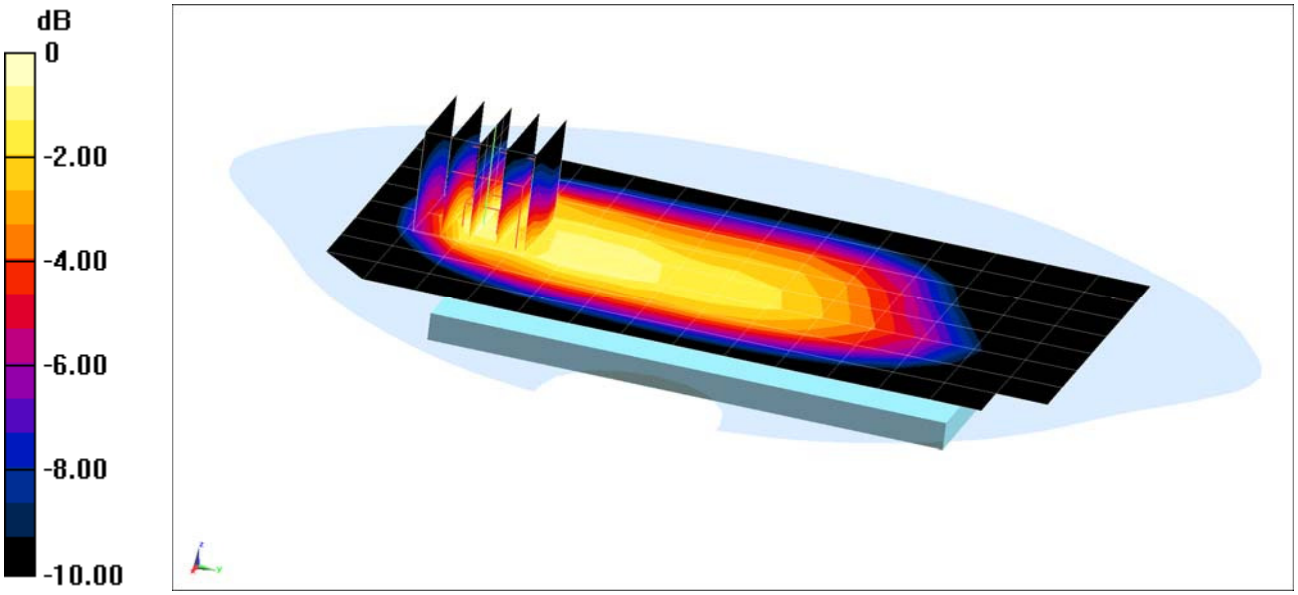
Communication System: UID 0, UMTS; Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 836.6 MHz; σ = 1.011 S/m; ε_r = 53.506; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-20-2016; Ambient Temp: 23.5°C; Tissue Temp: 21.5°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 5.0 front; Type: QD000P40CD; Serial: TP:-1648
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 (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 27.091 V/m; Power Drift =0.00 dB
Peak SAR (extrapolated) = 1.15 W/kg
SAR(1 g) = 0.687 W/kg



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

DUT: ZNFVS987; Type: Portable Handset; Serial: 03654

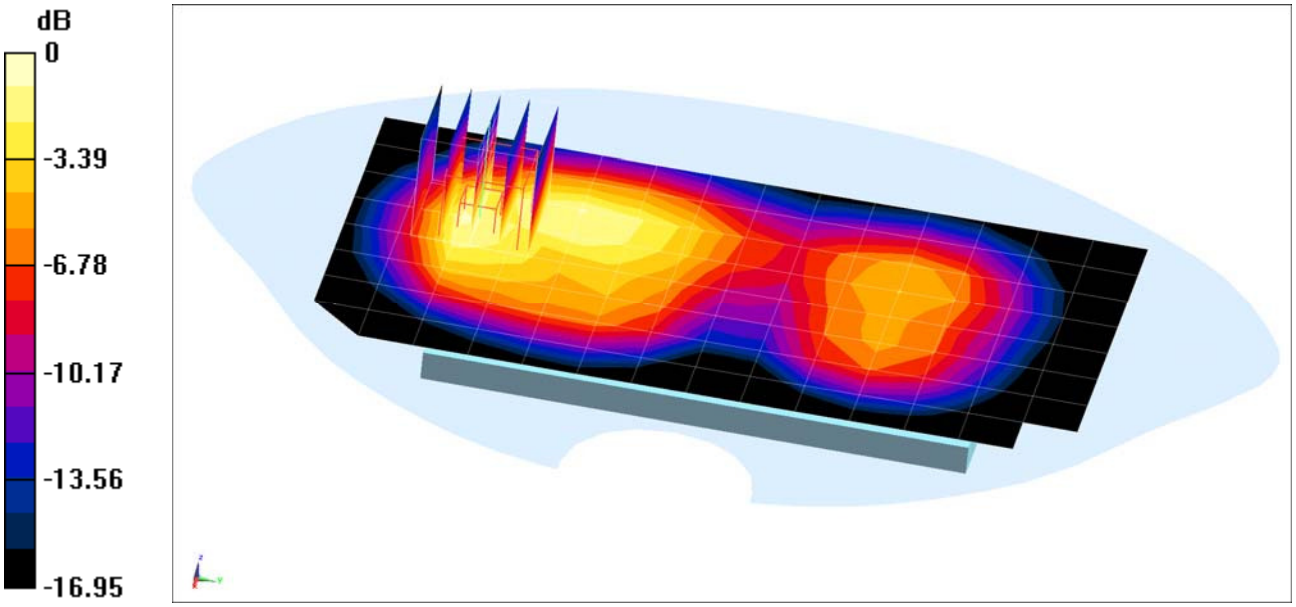
Communication System: UID 0, UMTS; Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used (interpolated):
f = 1732.4 MHz; σ = 1.52 S/m; ε_r = 51.451; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-25-2016; Ambient Temp: 19.0°C; Tissue Temp: 19.5°C

Probe: ES3DV3 - SN3263; ConvF(4.88, 4.88, 4.88); Calibrated: 5/20/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 6/17/2015
Phantom: SAM with CRP v5.0 (Right); Type: QD000P40CD; Serial: TP:1759
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 = 21.329 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.21 W/kg
SAR(1 g) = 0.681 W/kg



0 dB = 0.875 W/kg = -0.58 dBW/kg

DUT: ZNFVS987; Type: Portable Handset; Serial: 03654

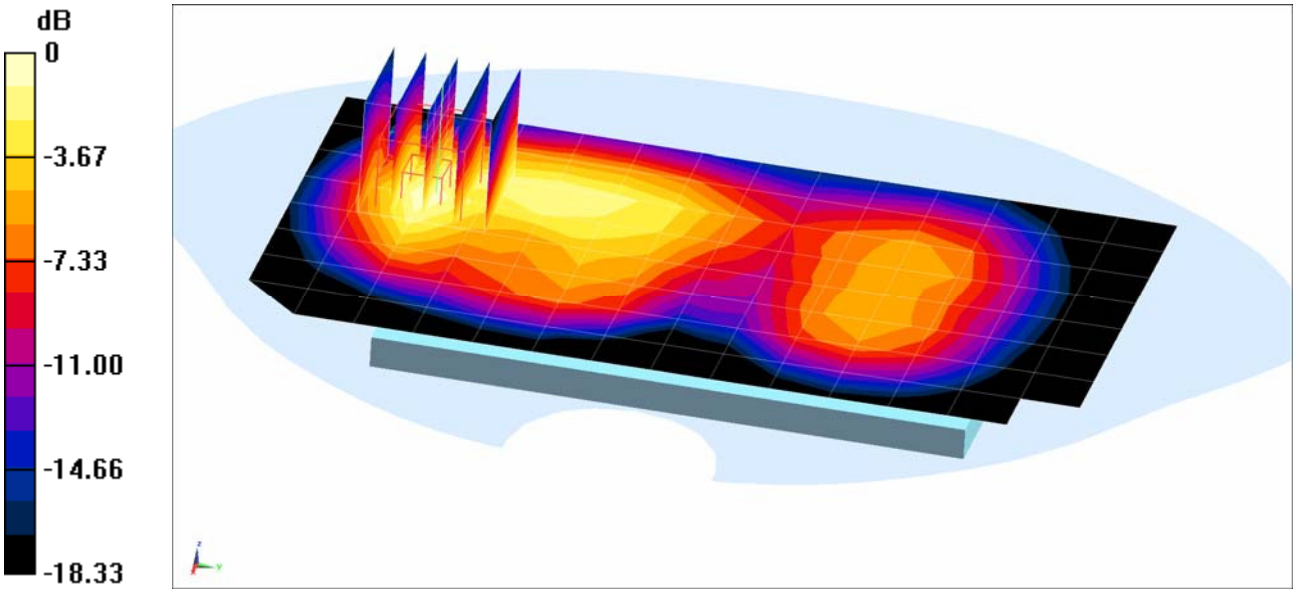
Communication System: UID 0, UMTS; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used:
f = 1880 MHz; σ = 1.535 S/m; ε_r = 52.313; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-01-2016; Ambient Temp: 22.0°C; Tissue Temp: 23.0°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: UMTS 1900, Body SAR, Back side, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.357 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 1.28 W/kg
SAR(1 g) = 0.697 W/kg



0 dB = 0.862 W/kg = -0.64 dBW/kg

DUT: ZNFVS987; Type: Portable Handset; Serial: 03654

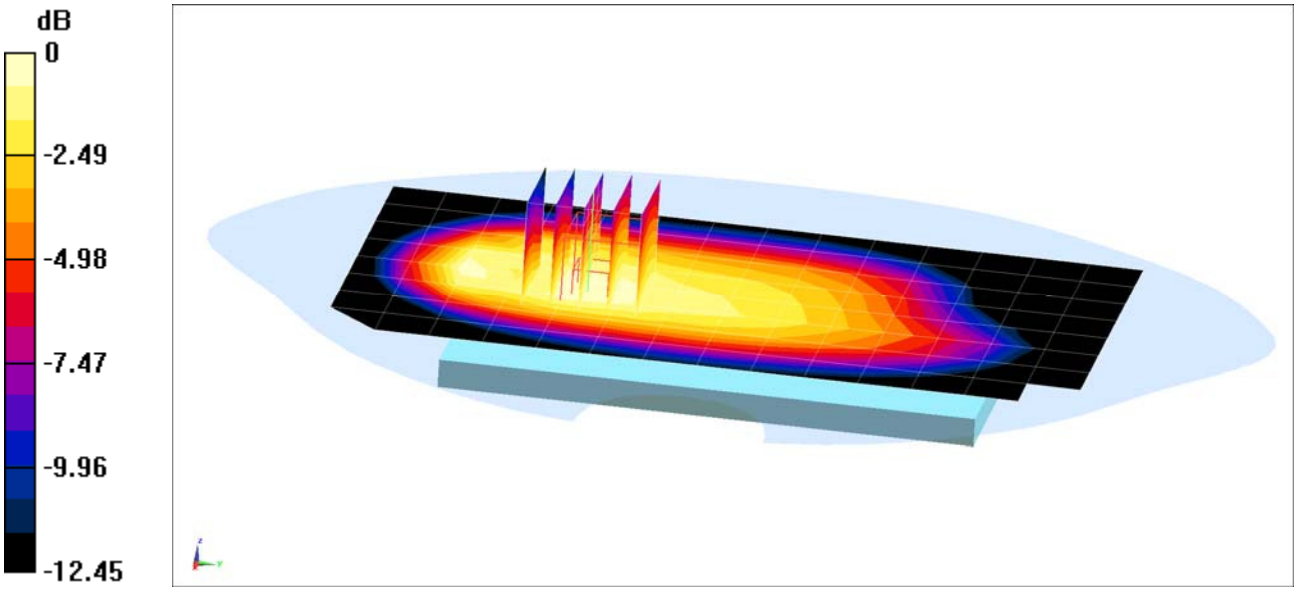
Communication System: UID 0, CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 836.52 MHz; σ = 1.006 S/m; ε_r = 53.438; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-25-2016; Ambient Temp: 21.9°C; Tissue Temp: 21.0°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 5.0 front; Type: QD000P40CD; Serial: TP:-1648
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: Cell. CDMA, Body SAR, Back side, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 27.929 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 1.01 W/kg
SAR(1 g) = 0.769 W/kg



0 dB = 0.854 W/kg = -0.69 dBW/kg

DUT: ZNFVS987; Type: Portable Handset; Serial: 03654

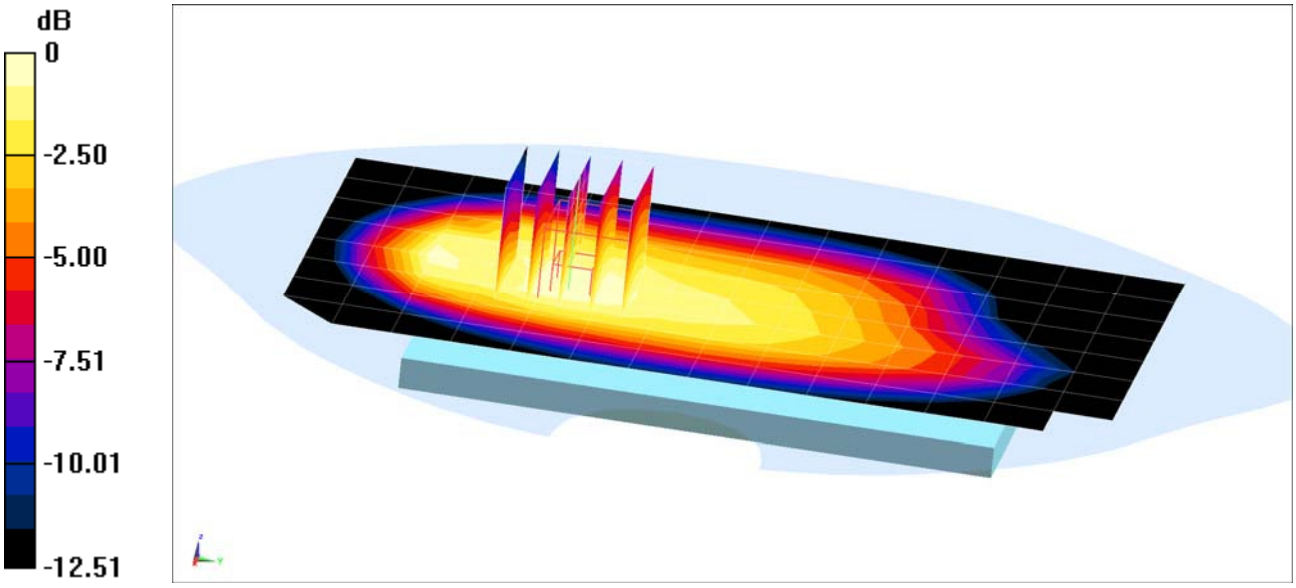
Communication System: UID 0, CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 836.52 MHz; σ = 1.006 S/m; ε_r = 53.438; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-25-2016; Ambient Temp: 21.9°C; Tissue Temp: 21.0°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 5.0 front; Type: QD000P40CD; Serial: TP:-1648
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: Cell. EVDO Rev.0, Body SAR, Back side, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 27.464 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.987 W/kg
SAR(1 g) = 0.754 W/kg



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

DUT: ZNFVS987; Type: Portable Handset; Serial: 03654

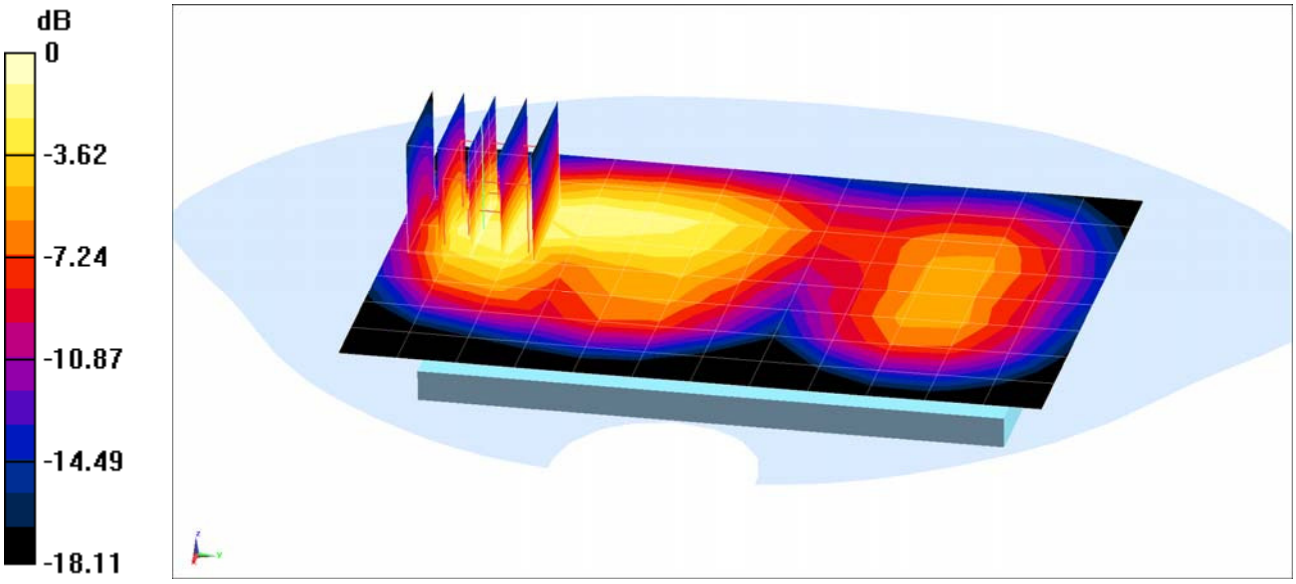
Communication System: UID 0, CDMA; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used:
f = 1880 MHz; σ = 1.535 S/m; ε_r = 52.313; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-01-2016; Ambient Temp: 22.0°C; Tissue Temp: 23.0°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: PCS CDMA, Body SAR, Back side, Mid.ch, Antenna 2

Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.317 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 1.53 W/kg
SAR(1 g) = 0.826 W/kg



0 dB = 1.05 W/kg = 0.21 dBW/kg

DUT: ZNFVS987; Type: Portable Handset; Serial: 03654

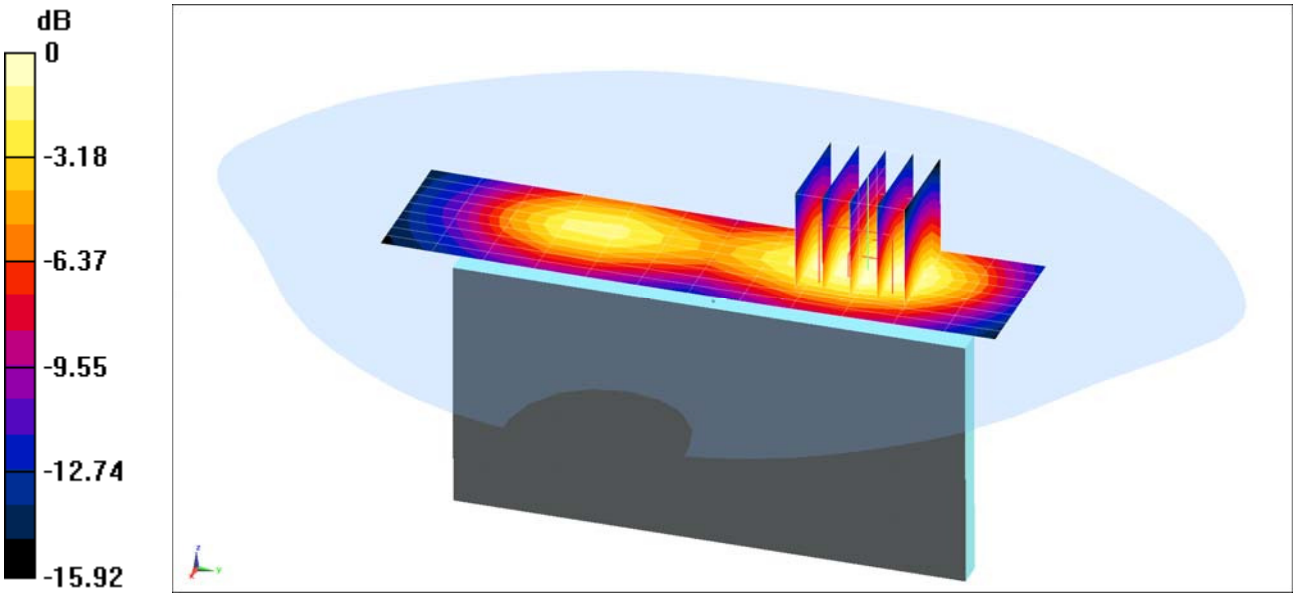
Communication System: UID 0, CDMA; Frequency: 1908.75 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
f = 1908.75 MHz; σ = 1.564 S/m; ε_r = 52.234; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-01-2016; Ambient Temp: 22.0°C; Tissue Temp: 23.0°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: PCS EVDO Rev.0, Body SAR, Right Edge, High.ch, Antenna 2

Area Scan (10x13x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.850 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 1.49 W/kg
SAR(1 g) = 0.926 W/kg



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

DUT: ZNFVS987; Type: Portable Handset; Serial: 03688

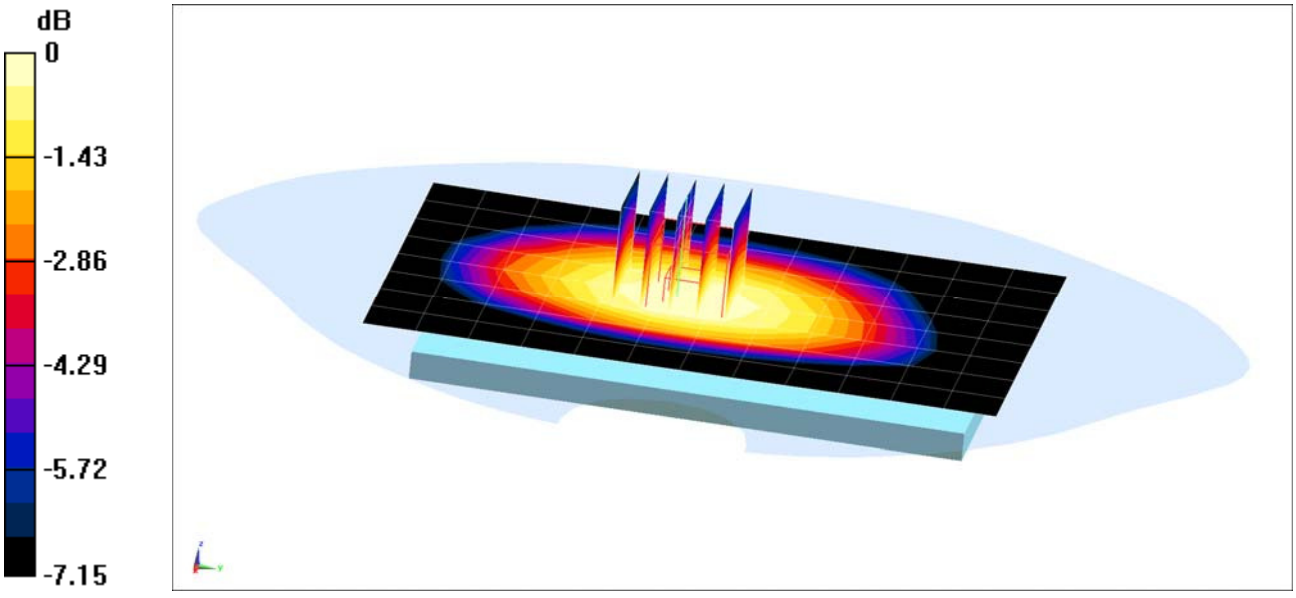
Communication System: UID 0, LTE Band 12; Frequency: 707.5 MHz; Duty Cycle: 1:1
Medium: 750 Body Medium parameters used (interpolated):
f = 707.5 MHz; σ = 0.93 S/m; ε_r = 56.453; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

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, Body SAR, Back side, Mid.ch, Camera Module Accessory
10 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 = 22.576 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.539 W/kg
SAR(1 g) = 0.442 W/kg



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

DUT: ZNFVS987; Type: Portable Handset; Serial: 03688

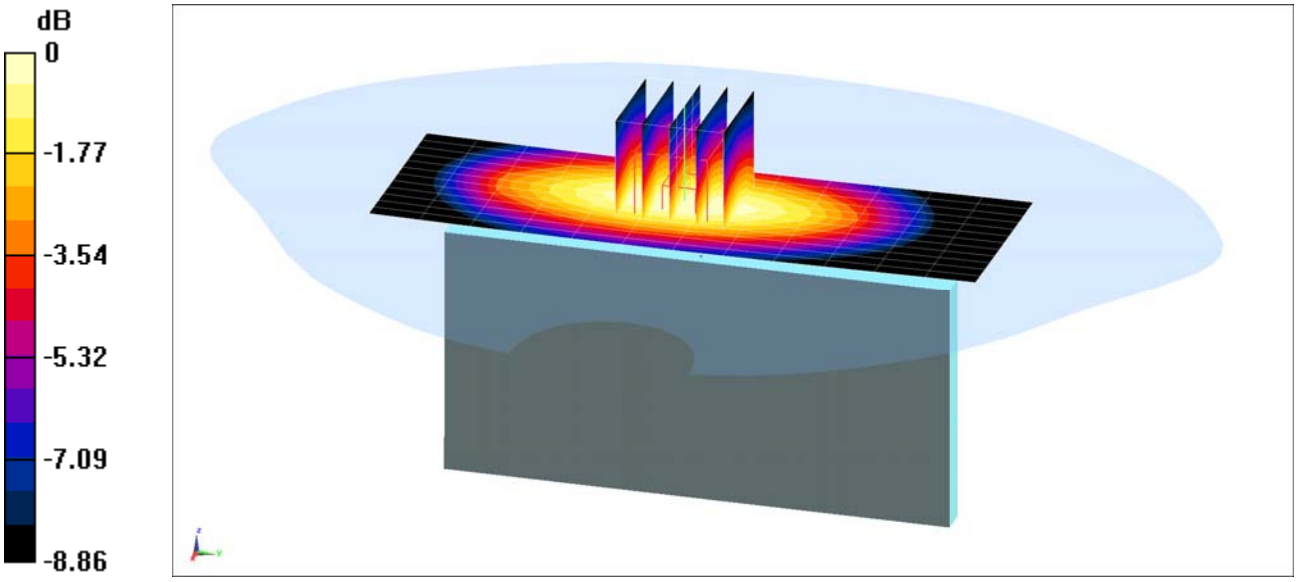
Communication System: UID 0, LTE Band 12; Frequency: 707.5 MHz; Duty Cycle: 1:1
Medium: 750 Body Medium parameters used (interpolated):
f = 707.5 MHz; σ = 0.921 S/m; ε_r = 54.301; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-02-2016; Ambient Temp: 24.1°C; Tissue Temp: 22.7°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 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 12, Body SAR, Left Edge, Mid.ch
10 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

Area Scan (13x13x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.204 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.820 W/kg
SAR(1 g) = 0.585 W/kg



0 dB = 0.673 W/kg = -1.72 dBW/kg

DUT: ZNFVS987; Type: Portable Handset; Serial: 03688

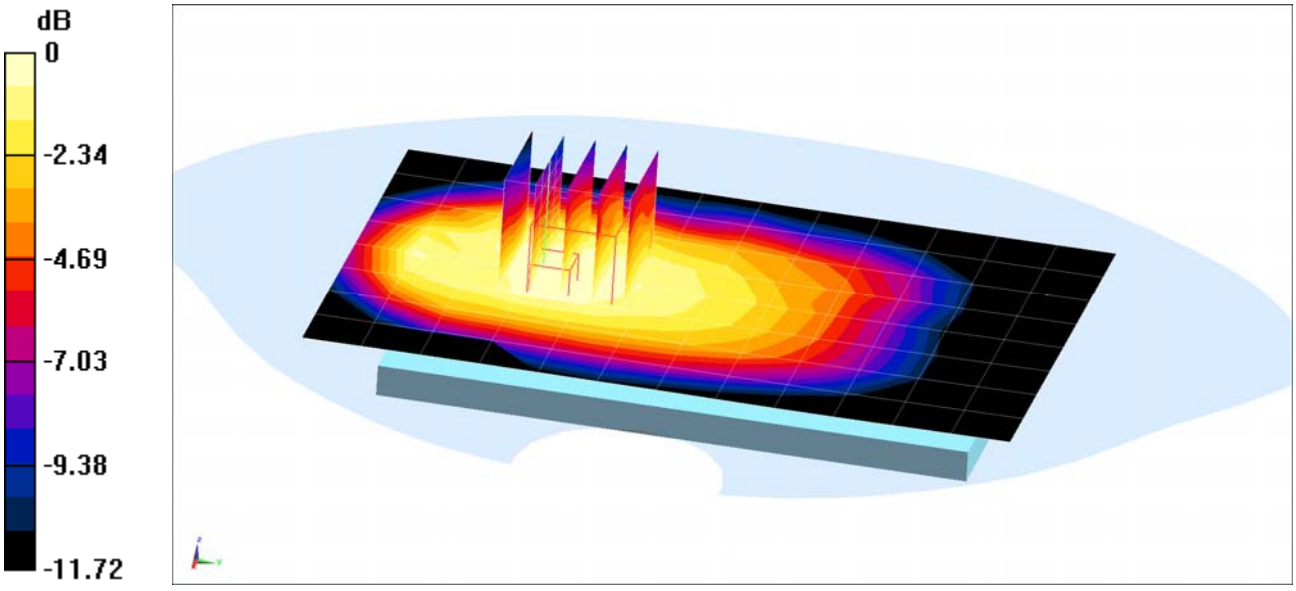
Communication System: UID 0, LTE Band 13; Frequency: 782 MHz; Duty Cycle: 1:1
Medium: 750 Body Medium parameters used (interpolated):
f = 782 MHz; σ = 0.997 S/m; ε_r = 56.36; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-25-2016; Ambient Temp: 23.0°C; Tissue Temp: 21.4°C

Probe: ES3DV2 - SN3022; ConvF(6.16, 6.16, 6.16); 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 13, Body SAR, Back side, Mid.ch
10 MHz Bandwidth, QPSK, 1 RB, 25 RB Offset

Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.604 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.885 W/kg
SAR(1 g) = 0.628 W/kg



0 dB = 0.711 W/kg = -1.48 dBW/kg

DUT: ZNFVS987; Type: Portable Handset; Serial: 03670

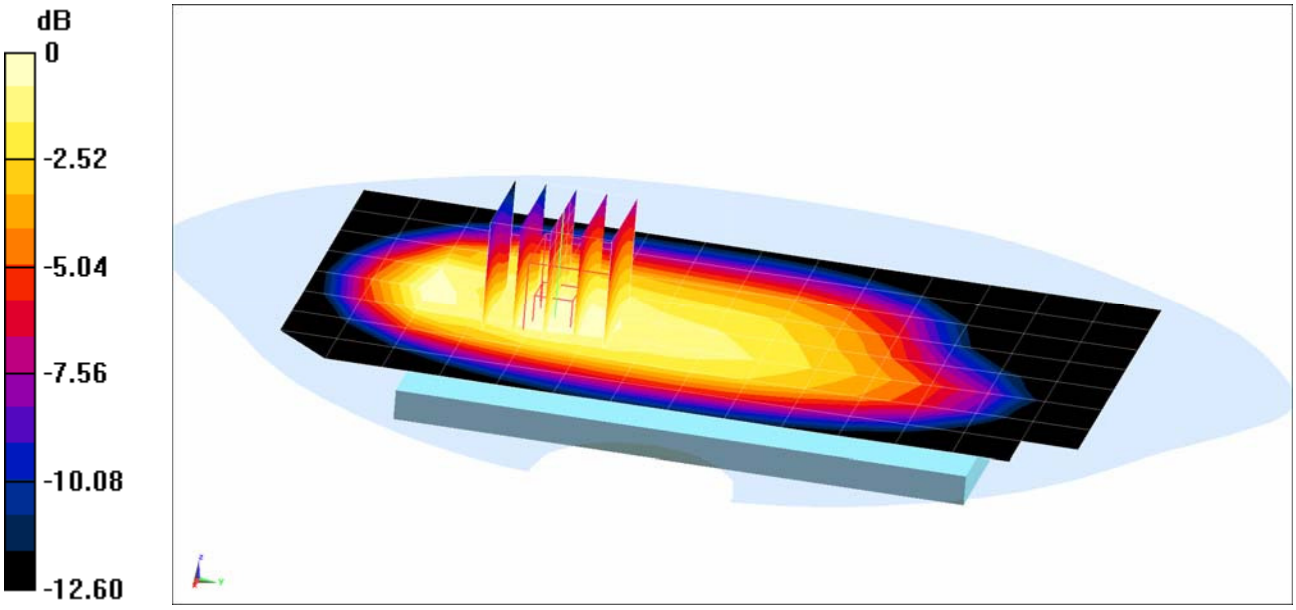
Communication System: UID 0, LTE Band 5; Frequency: 836.5 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 836.5 MHz; σ = 1.011 S/m; ε_r = 53.507; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-20-2016; Ambient Temp: 23.5°C; Tissue Temp: 21.5°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 5.0 front; Type: QD000P40CD; Serial: TP:-1648
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: LTE Band 5 (Cell.), Body SAR, Back side, Mid.ch
10 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 28.031 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.973 W/kg
SAR(1 g) = 0.745 W/kg



0 dB = 0.830 W/kg = -0.81 dBW/kg

DUT: ZNFVS987; Type: Portable Handset; Serial: 03670

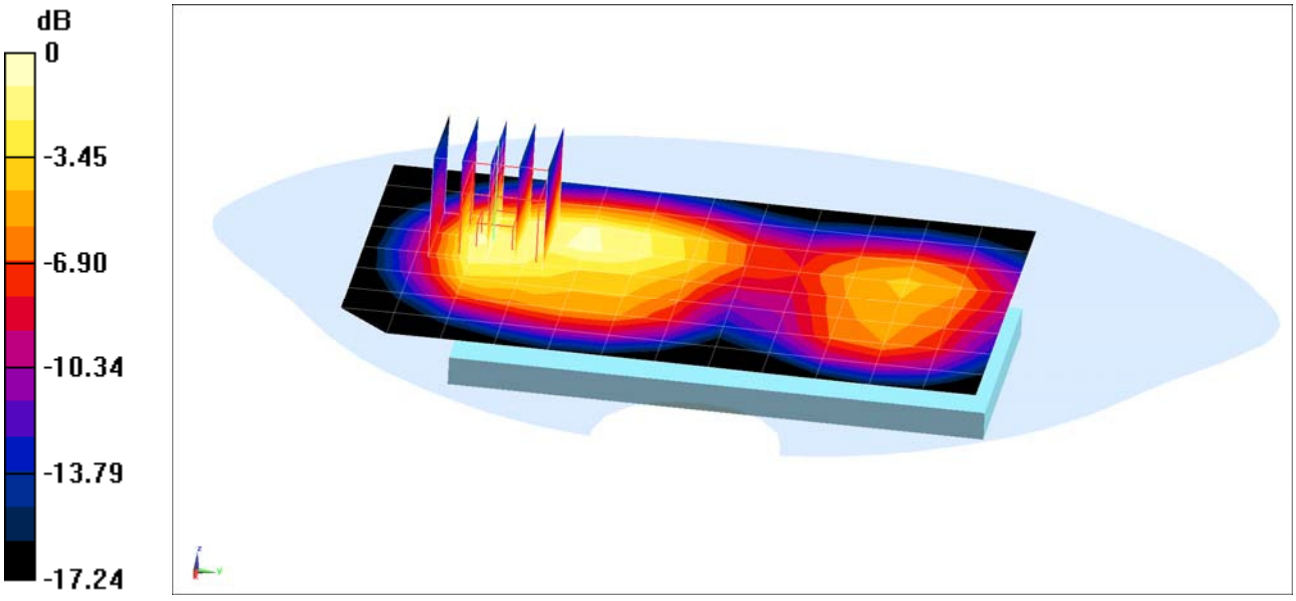
Communication System: UID 0, LTE Band 4 (AWS); Frequency: 1732.5 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used (interpolated):
$f = 1732.5$ MHz; $\sigma = 1.492$ S/m; $\varepsilon_r = 51.607$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-01-2016; Ambient Temp: 23.2°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, Antenna 2
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 = 24.984 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 1.68 W/kg
SAR(1 g) = 0.931 W/kg



0 dB = 1.19 W/kg = 0.76 dBW/kg

DUT: ZNFVS987; Type: Portable Handset; Serial: 03670

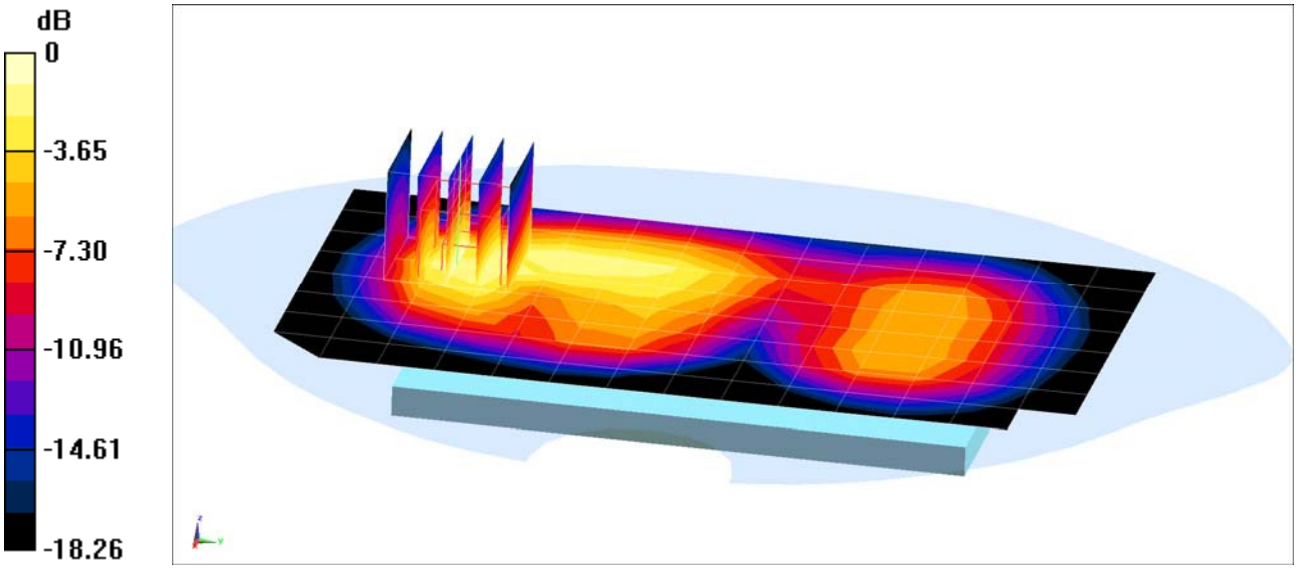
Communication System: UID 0, LTE Band 2 (PCS); Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used:
f = 1880 MHz; σ = 1.516 S/m; ε_r = 53.154; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-27-2016; Ambient Temp: 23.5°C; Tissue Temp: 24.1°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 2 (PCS), Body SAR, Back side, Mid.ch, Antenna 2
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 = 20.304 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 1.32 W/kg
SAR(1 g) = 0.725 W/kg



0 dB = 0.910 W/kg = -0.41 dBW/kg

DUT: ZNFVS987; Type: Portable Handset; Serial: 04611

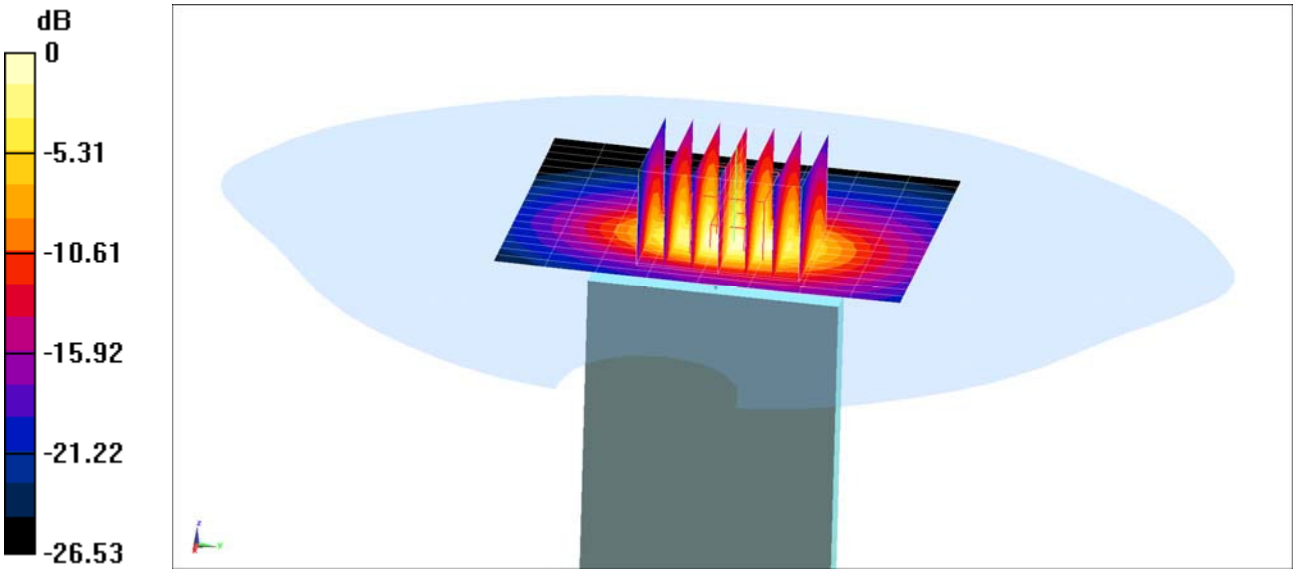
Communication System: UID 0, LTE Band 2 (PCS); Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used:
f = 1880 MHz; σ = 1.535 S/m; ε_r = 52.313; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-01-2016; Ambient Temp: 22.0°C; Tissue Temp: 23.0°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 2 (PCS), Body SAR, Top Edge, Mid.ch, Antenna 3
20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

Area Scan (19x9x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (6x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.467 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 1.33 W/kg
SAR(1 g) = 0.758 W/kg



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

DUT: ZNFVS987; Type: Portable Handset; Serial: 03688

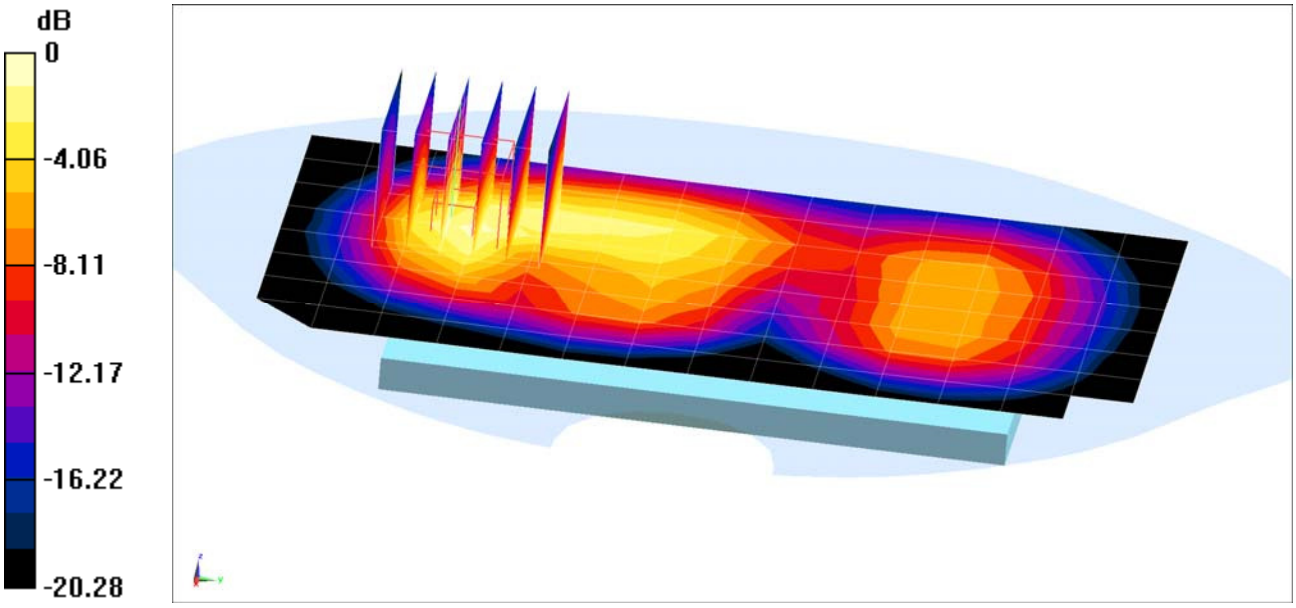
Communication System: UID 0, LTE Band 25 (PCS); Frequency: 1905 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
f = 1905 MHz; σ = 1.56 S/m; ε_r = 52.245; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-01-2016; Ambient Temp: 22.0°C; Tissue Temp: 23.0°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, 0 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.198 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 1.70 W/kg
SAR(1 g) = 0.901 W/kg



0 dB = 1.14 W/kg = 0.57 dBW/kg

DUT: ZNFVS987; Type: Portable Handset; Serial: 03670

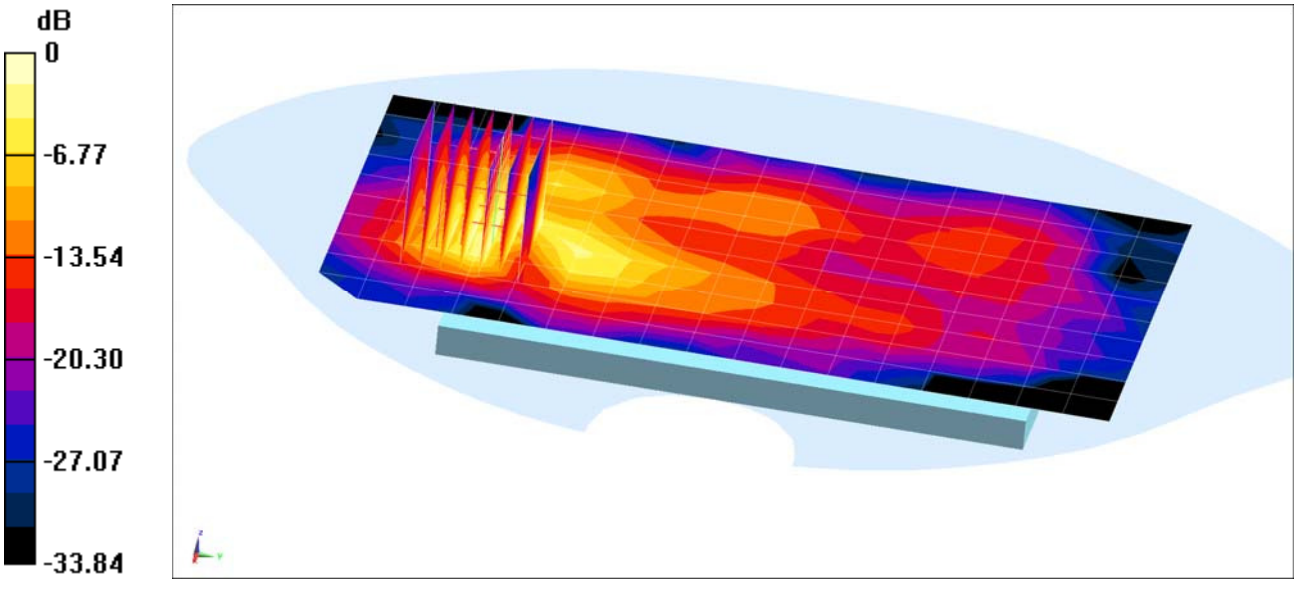
Communication System: UID 0, LTE Band 7; Frequency: 2535 MHz; Duty Cycle: 1:1
Medium: 2450 Body Medium parameters used (interpolated):
$f = 2535$ MHz; $\sigma = 2.043$ S/m; $\varepsilon_r = 51.649$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-25-2016; Ambient Temp: 22.1°C; Tissue Temp: 22.2°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, Mid.ch
20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

Area Scan (11x18x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (8x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.313 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 0.774 W/kg
SAR(1 g) = 0.335 W/kg



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

DUT: ZNFVS987; Type: Portable Handset; Serial: 03704

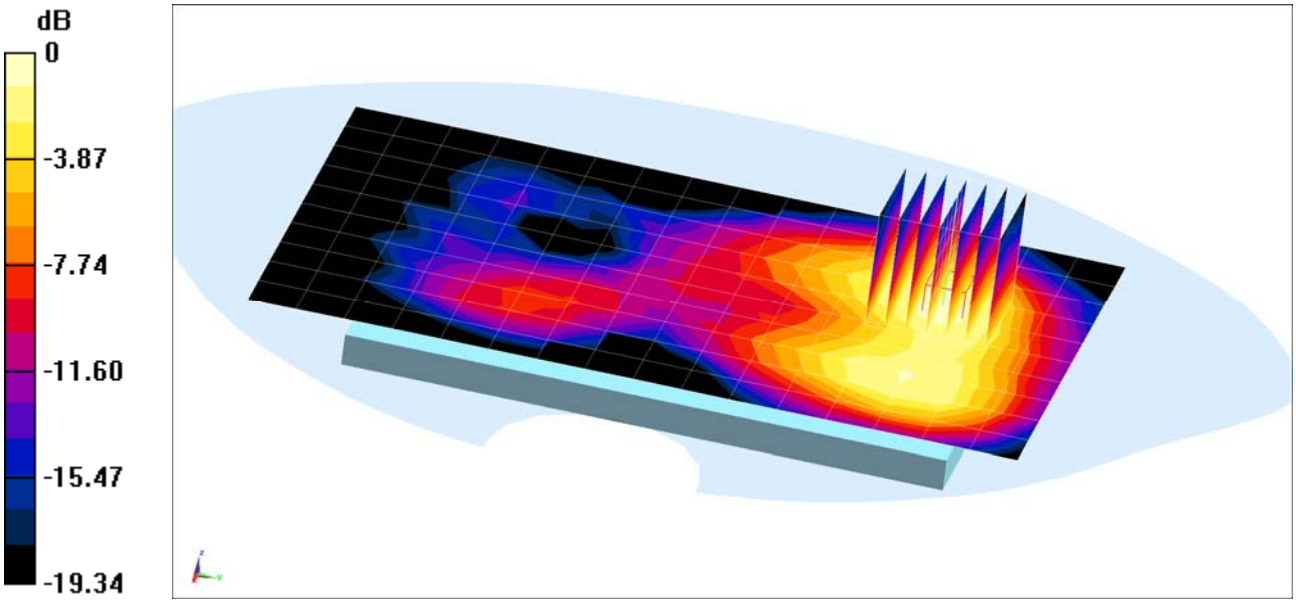
Communication System: UID 0, IEEE 802.11b; Frequency: 2457 MHz; Duty Cycle: 1:1
Medium: 2450 Body Medium parameters used (interpolated):
f = 2457 MHz; σ = 1.936 S/m; ε_r = 51.943; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-25-2016; Ambient Temp: 22.1°C; Tissue Temp: 22.2°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 = 7.835 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.215 W/kg
SAR(1 g) = 0.113 W/kg



0 dB = 0.142 W/kg = -8.48 dBW/kg

DUT: ZNFVS987; Type: Portable Handset; Serial: 03704

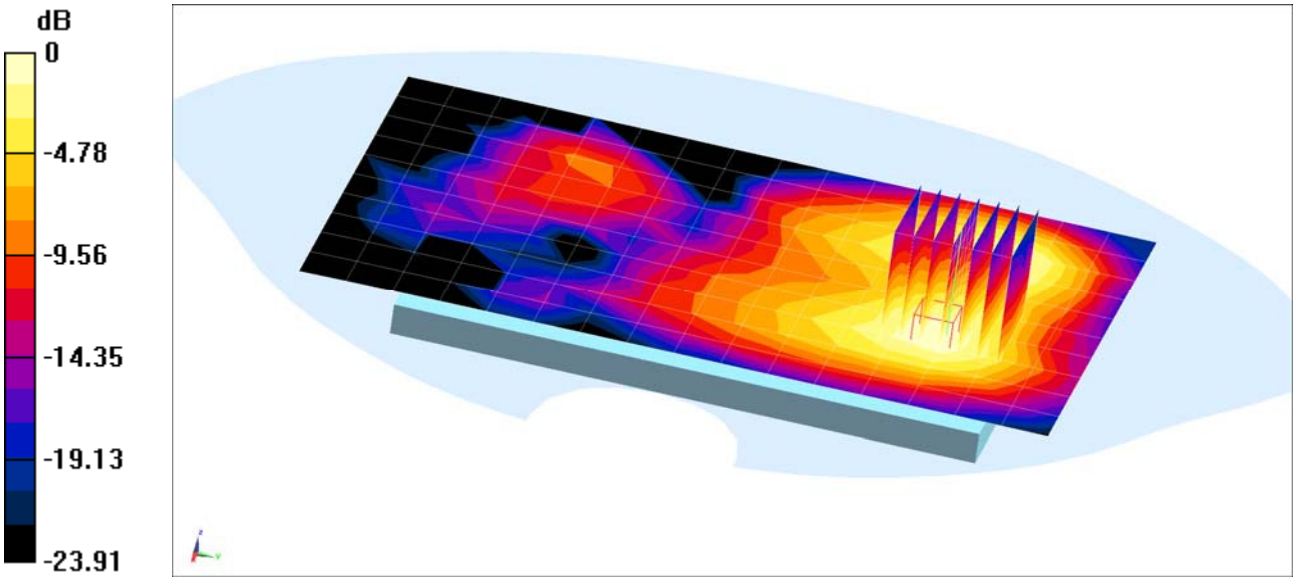
Communication System: UID 0, IEEE 802.11b; Frequency: 2457 MHz; Duty Cycle: 1:1
Medium: 2450 Body Medium parameters used (interpolated):
f = 2457 MHz; σ = 1.936 S/m; ε_r = 51.943; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-25-2016; Ambient Temp: 22.1°C; Tissue Temp: 22.2°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, Front 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 = 8.273 V/m; Power Drift = -0.18 dB
Peak SAR (extrapolated) = 0.243 W/kg
SAR(1 g) = 0.127 W/kg



0 dB = 0.155 W/kg = -8.10 dBW/kg

DUT: ZNFVS987; Type: Portable Handset; Serial: 03704

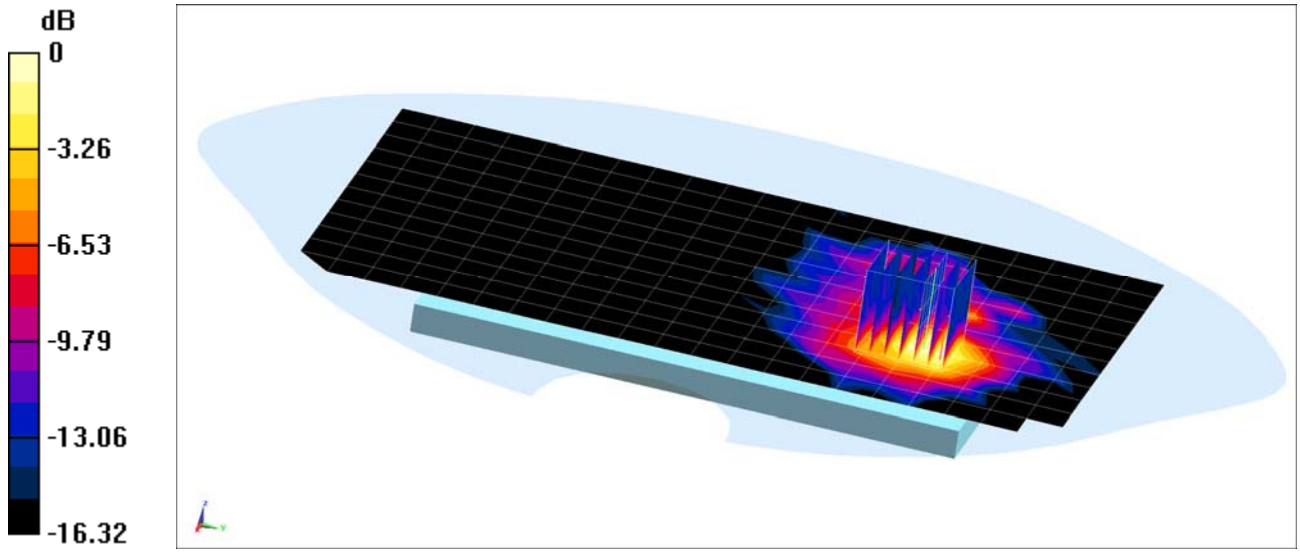
Communication System: UID 0, IEEE 802.11a; Frequency: 5300 MHz; Duty Cycle: 1:1
Medium: 5 GHz Body Medium parameters used:
f = 5300 MHz; σ = 5.526 S/m; ε_r = 47.311; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-21-2016; Ambient Temp: 23.0°C; Tissue Temp: 22.7°C

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

Mode: IEEE 802.11a, U-NII-2A, 20 MHz Bandwidth, Body SAR, Ch 60, 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 = 4.407 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.413 W/kg
SAR(1 g) = 0.115 W/kg



0 dB = 0.254 W/kg = -5.95 dBW/kg

DUT: ZNFVS987; Type: Portable Handset; Serial: 03704

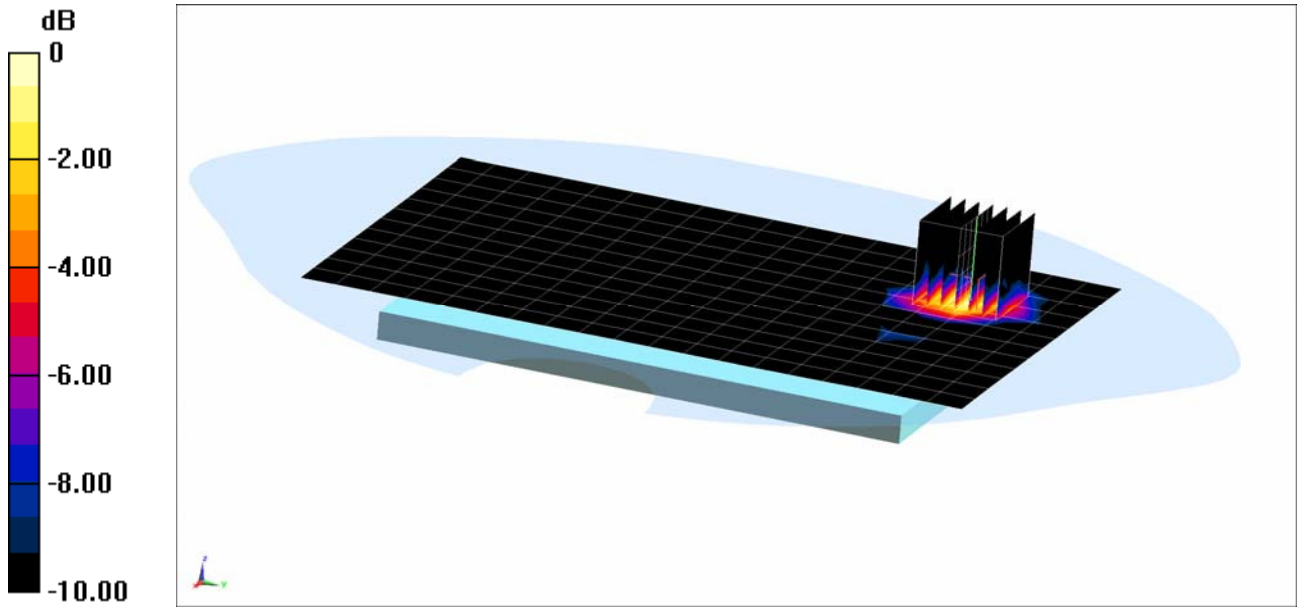
Communication System: UID 0, IEEE 802.11a; Frequency: 5825 MHz; Duty Cycle: 1:1
Medium: 5 GHz Body Medium parameters used:
f = 5825 MHz; σ = 6.236 S/m; ε_r = 46.388; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-21-2016; Ambient Temp: 23.0°C; Tissue Temp: 22.7°C

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

Mode: IEEE 802.11a, U-NII-3, 20 MHz Bandwidth, Body SAR, Ch 165, 6 Mbps, Front Side

Area Scan (13x20x1): 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 = 4.609 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.513 W/kg
SAR(1 g) = 0.129 W/kg



0 dB = 0.299 W/kg = -5.24 dBW/kg

DUT: ZNFVS987; Type: Portable Handset; Serial: 03662

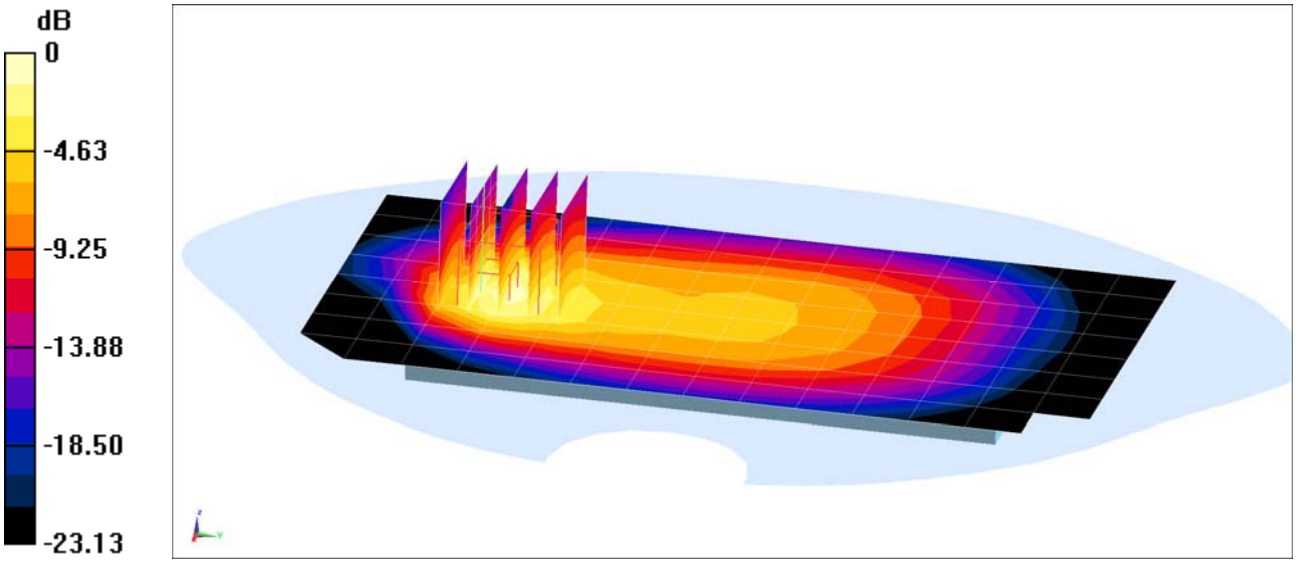
Communication System: UID 0, GSM GPRS; 2 Tx slots; Frequency: 836.6 MHz; Duty Cycle: 1:4.15
Medium: 835 Body Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.998 S/m; ε_r = 53.946; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

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, 10g Hotspot Mode at 0mm SAR, Back side, Mid.ch, 2 Tx Slots, Camera Module Accessory

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 44.33 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 4.37 W/kg
SAR(10 g) = 0.934 W/kg



0 dB = 2.42 W/kg = 3.84 dBW/kg

DUT: ZNFVS987; Type: Portable Handset; Serial: 03654

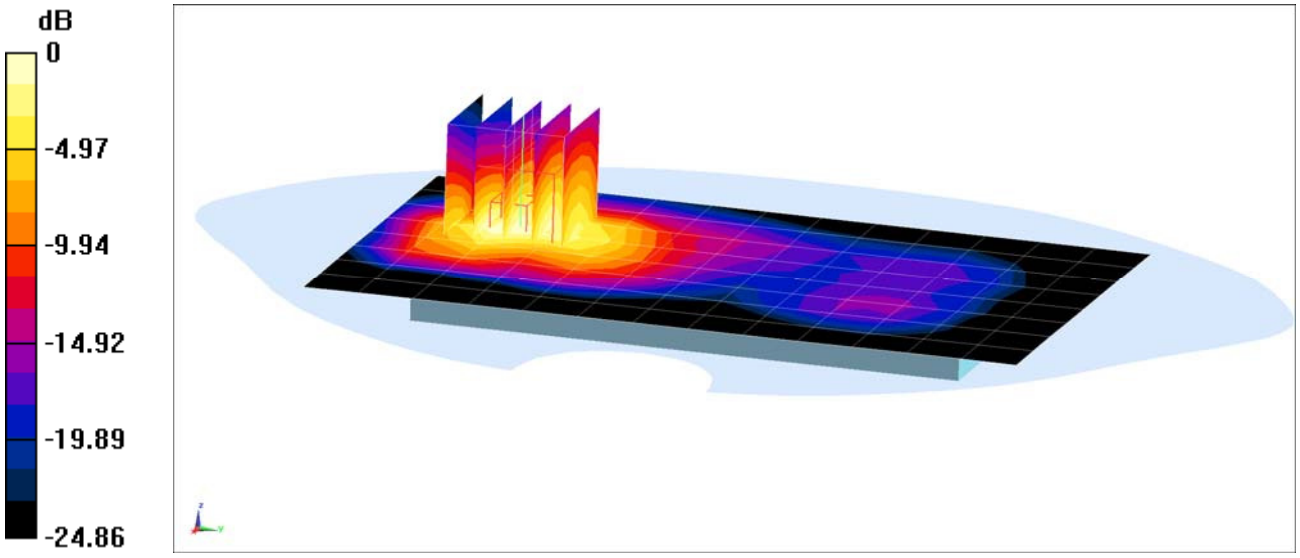
Communication System: UID 0, GSM GPRS; 2 Tx slots; Frequency: 1880 MHz; Duty Cycle: 1:4.15
Medium: 1900 Body Medium parameters used:
f = 1880 MHz; σ = 1.552 S/m; ε_r = 51.185; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

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, 10g Hotspot Mode at 0mm SAR, Back side, Mid.ch, 2 Tx Slots, Camera Module Accessory

Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 34.09 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 3.99 W/kg
SAR(10 g) = 0.810 W/kg



0 dB = 1.96 W/kg = 2.92 dBW/kg

DUT: ZNFVS987; Type: Portable Handset; Serial: 03654

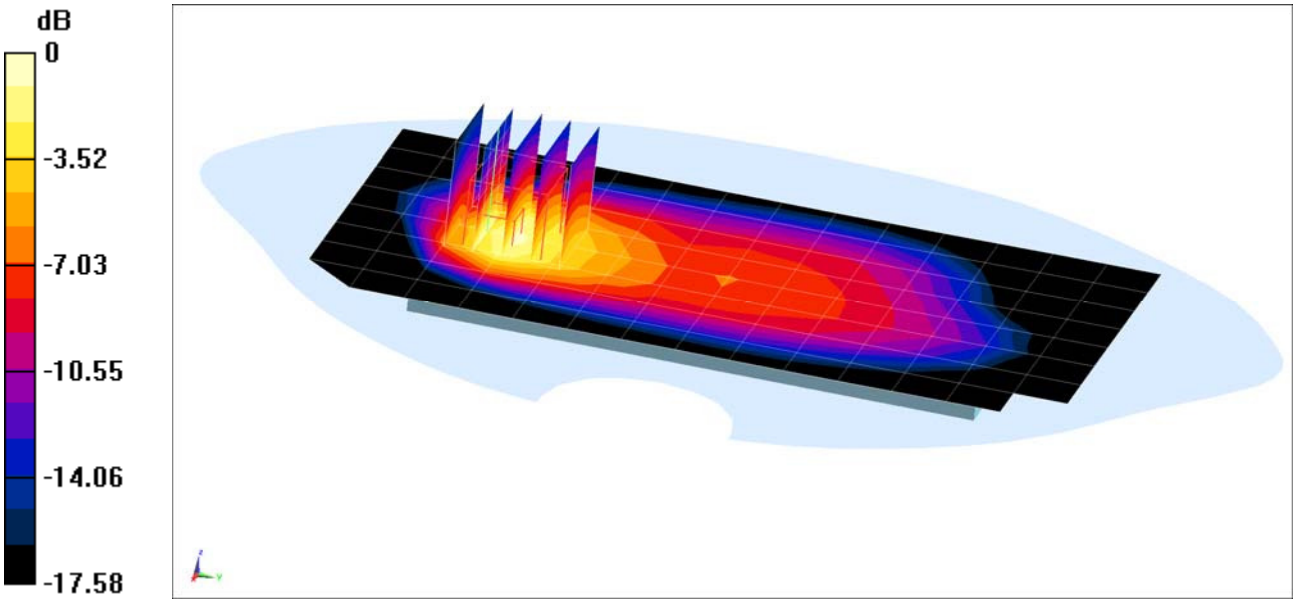
Communication System: UID 0, UMTS; Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.989 S/m; ε_r = 54.955; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

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, 10g Hotspot Mode at 0mm SAR, Back side, Mid.ch, Camera Module Accessory

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 44.822 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 4.31 W/kg
SAR(10 g) = 0.928 W/kg



0 dB = 2.26 W/kg = 3.54 dBW/kg

DUT: ZNFVS987; Type: Portable Handset; Serial: 03654

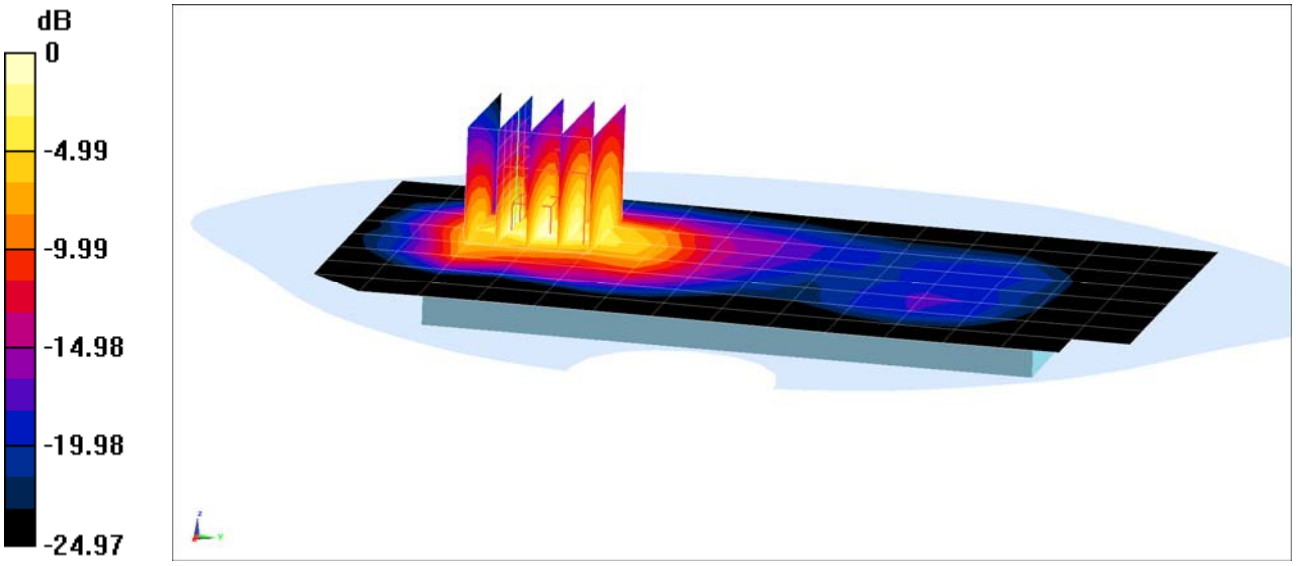
Communication System: UID 0, UMTS; Frequency: 1752.6 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used (interpolated):
f = 1752.6 MHz; σ = 1.486 S/m; ε_r = 52.093; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

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, 10g Hotspot Mode at 0mm SAR, Back side, High.ch, Camera Module Accessory

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 53.65 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 12.5 W/kg
SAR(10 g) = 2.21 W/kg



0 dB = 5.36 W/kg = 7.29 dBW/kg

DUT: ZNFVS987; Type: Portable Handset; Serial: 03654

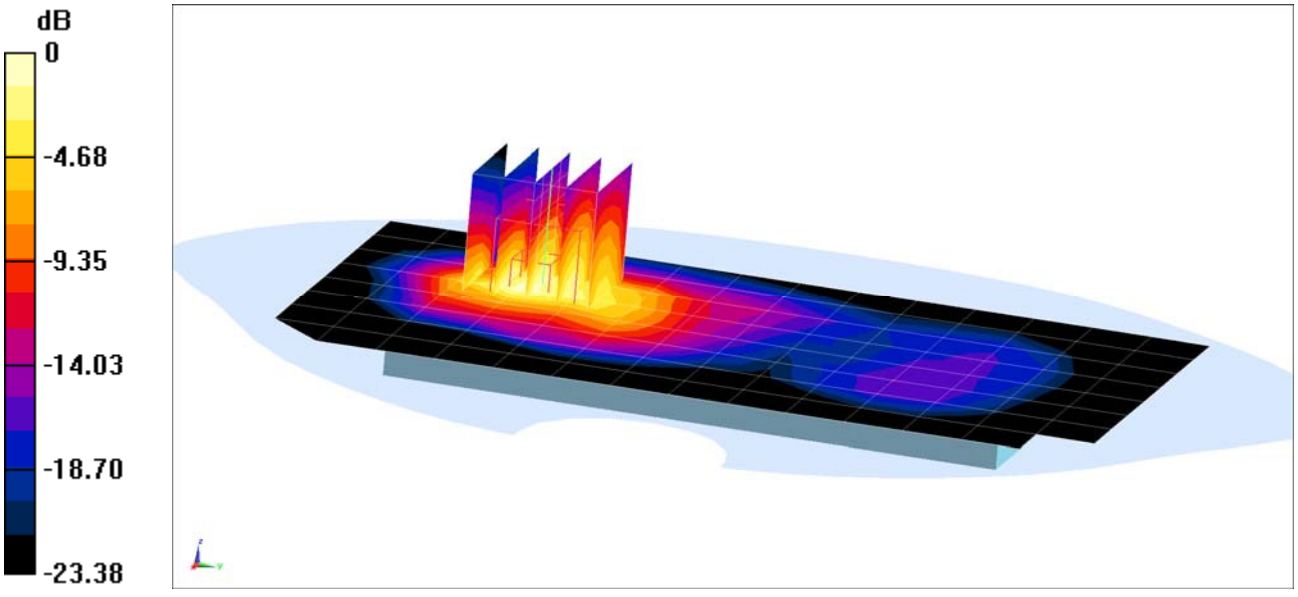
Communication System: UID 0, UMTS; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used:
f = 1880 MHz; σ = 1.54 S/m; ε_r = 53.005; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

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: UMTS 1900, 10g Hotspot Mode at 0mm SAR, Back side, Mid.ch, Camera Module Accessory

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 37.689 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 5.25 W/kg
SAR(10 g) = 1.12 W/kg



0 dB = 2.78 W/kg = 4.44 dBW/kg

DUT: ZNFVS987; Type: Portable Handset; Serial: 03654

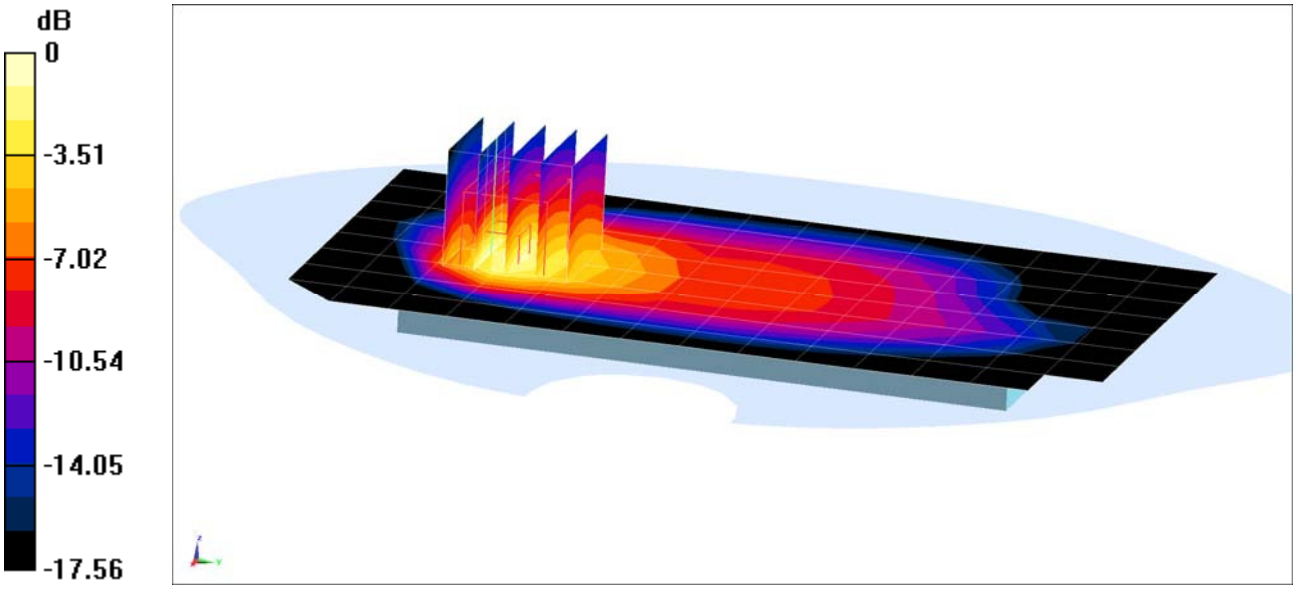
Communication System: UID 0, CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 836.52 MHz; σ = 0.989 S/m; ε_r = 54.955; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

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: Cell. EVDO Rev.0, 10g Hotspot Mode at 0mm SAR, Back side, Mid.ch, Camera Module Accessory

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 47.995 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 4.72 W/kg
SAR(10 g) = 1.03 W/kg



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

DUT: ZNFVS987; Type: Portable Handset; Serial: 03654

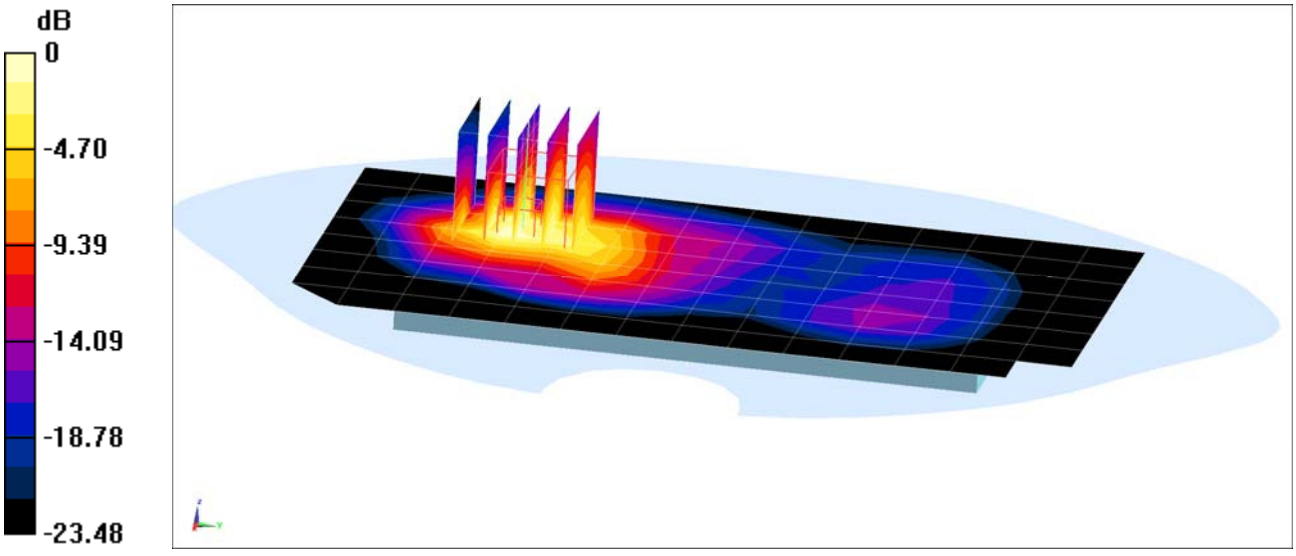
Communication System: UID 0, CDMA; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used:
f = 1880 MHz; σ = 1.514 S/m; ε_r = 54.271; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 02-28-2016; Ambient Temp: 22.8°C; Tissue Temp: 21.9°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, 10g Hotspot Mode at 0mm SAR, Back side, Mid.ch, Camera Module Accessory

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 45.83 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 7.97 W/kg
SAR(10 g) = 1.7 W/kg



0 dB = 4.35 W/kg = 6.38 dBW/kg

DUT: ZNFVS987; Type: Portable Handset; Serial: 03688

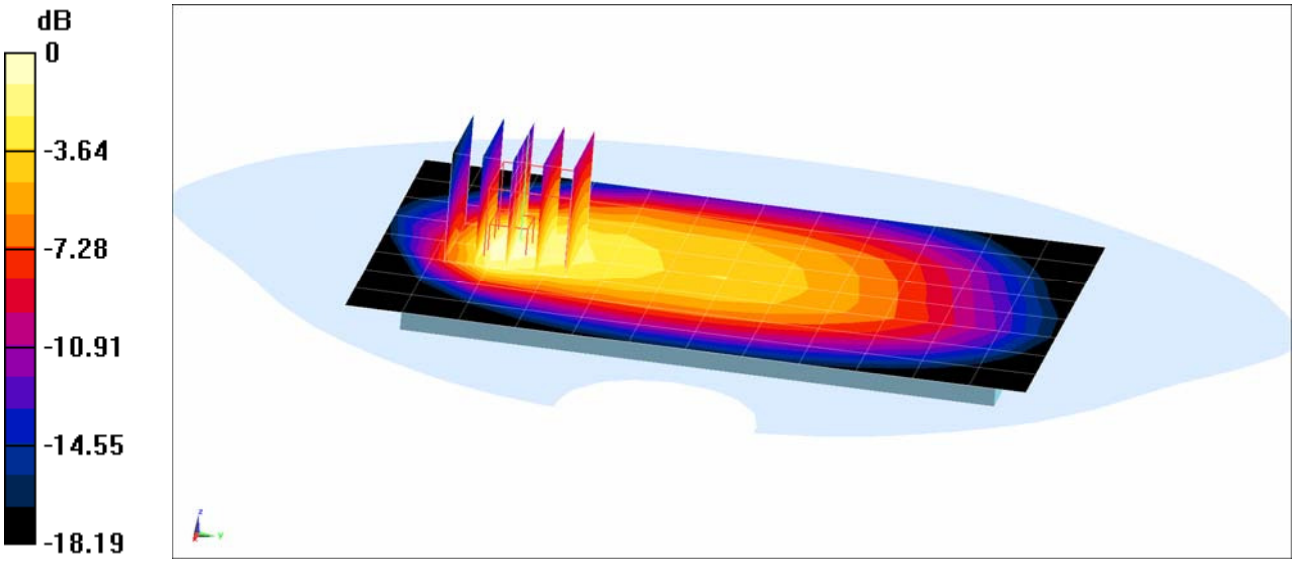
Communication System: UID 0, LTE Band 12; Frequency: 707.5 MHz; Duty Cycle: 1:1
Medium: 750 Body Medium parameters used (interpolated):
f = 707.5 MHz; σ = 0.917 S/m; ε_r = 55.535; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

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, 10g Hotspot Mode at 0mm SAR, Back side, Mid.ch, Camera Module Accessory, 10 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 = 39.76 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 3.11 W/kg
SAR(10 g) = 0.766 W/kg



0 dB = 1.65 W/kg = 2.17 dBW/kg

DUT: ZNFVS987; Type: Portable Handset; Serial: 03688

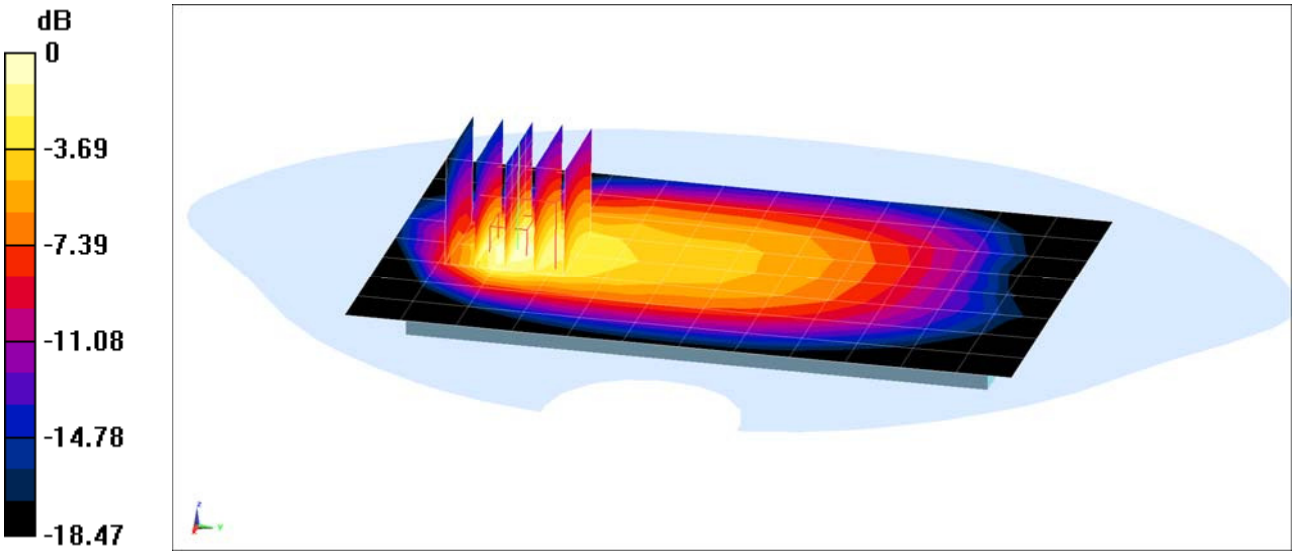
Communication System: UID 0, LTE Band 13; Frequency: 782 MHz; Duty Cycle: 1:1
Medium: 750 Body Medium parameters used (interpolated):
f = 782 MHz; σ = 0.987 S/m; ε_r = 54.805; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

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 13, 10g Hotspot Mode at 0mm SAR, Back side, Mid.ch, Camera Module Accessory, 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 = 40.67 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 3.47 W/kg
SAR(10 g) = 0.768 W/kg



0 dB = 1.79 W/kg = 2.53 dBW/kg

DUT: ZNFVS987; Type: Portable Handset; Serial: 03670

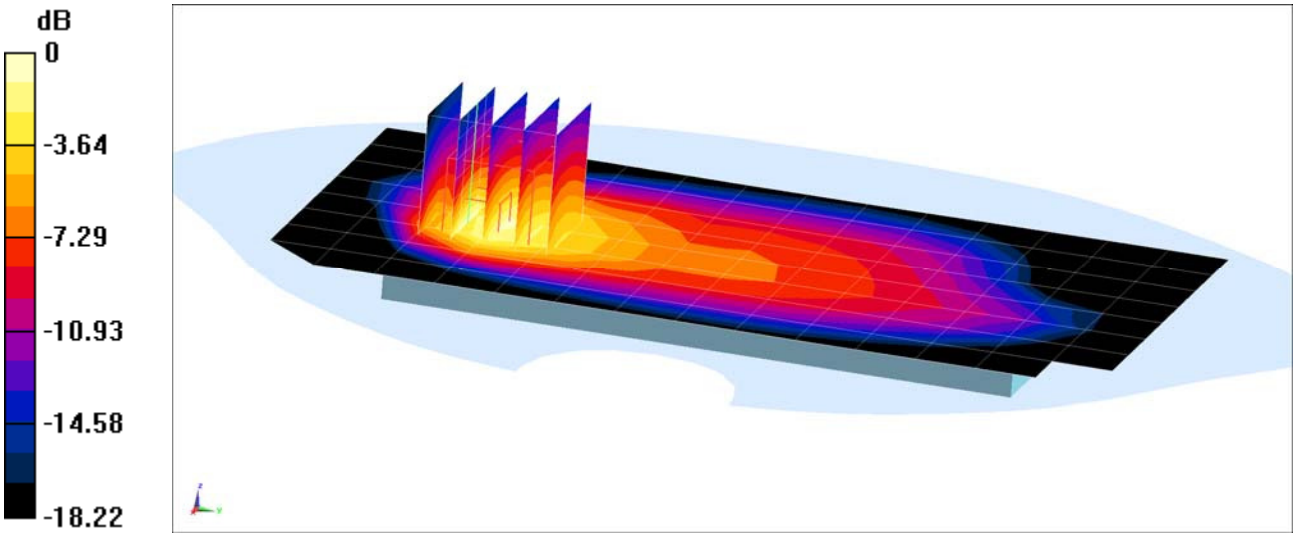
Communication System: UID 0, LTE Band 5; Frequency: 836.5 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 836.5 MHz; σ = 0.998 S/m; ε_r = 53.947; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

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 5 (Cell.), 10g Hotspot Mode at 0mm SAR, Back side, Mid.ch, Camera Module Accessory, 10 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 48.44 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 5.19 W/kg
SAR(10 g) = 1.16 W/kg



0 dB = 2.86 W/kg = 4.56 dBW/kg

DUT: ZNFVS987; Type: Portable Handset; Serial: 03670

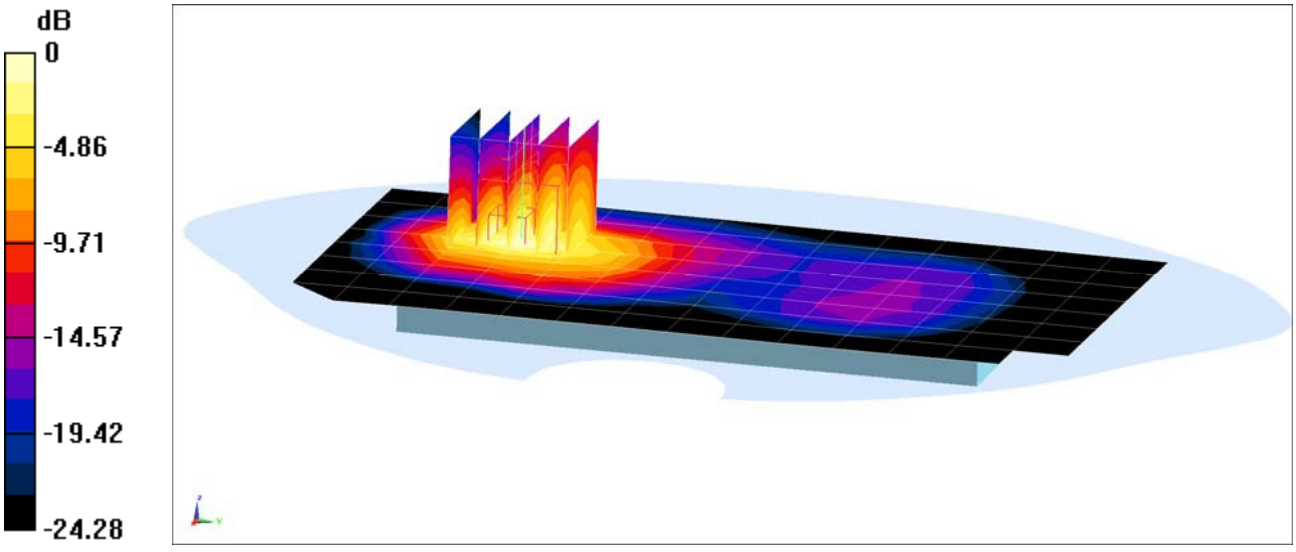
Communication System: UID 0, LTE Band 4 (AWS); Frequency: 1732.5 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used (interpolated):
$f = 1732.5$ MHz; $\sigma = 1.463$ S/m; $\varepsilon_r = 52.169$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

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), 10g Hotspot Mode at 0mm SAR, Back side, Mid.ch, Camera Module Accessory, 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 = 59.14 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 12.5 W/kg
SAR(10 g) = 2.54 W/kg



0 dB = 6.07 W/kg = 7.83 dBW/kg

DUT: ZNFVS987; Type: Portable Handset; Serial: 03670

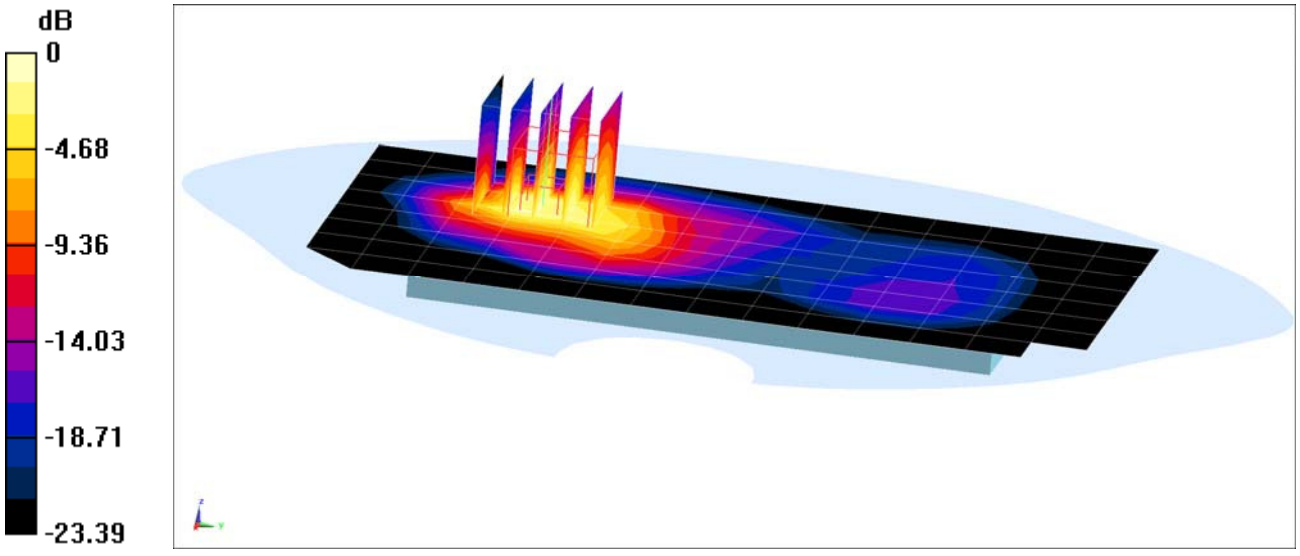
Communication System: UID 0, LTE Band 2 (PCS); Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used:
f = 1880 MHz; σ = 1.514 S/m; ε_r = 54.271; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 02-28-2016; Ambient Temp: 22.8°C; Tissue Temp: 21.9°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 2 (PCS), 10g Hotspot Mode at 0mm SAR, Back side, Mid.ch, Camera Module Accessory, 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 = 43.69 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 8.00 W/kg
SAR(10 g) = 1.8 W/kg



0 dB = 4.59 W/kg = 6.62 dBW/kg

DUT: ZNFVS987; Type: Portable Handset; Serial: 03688

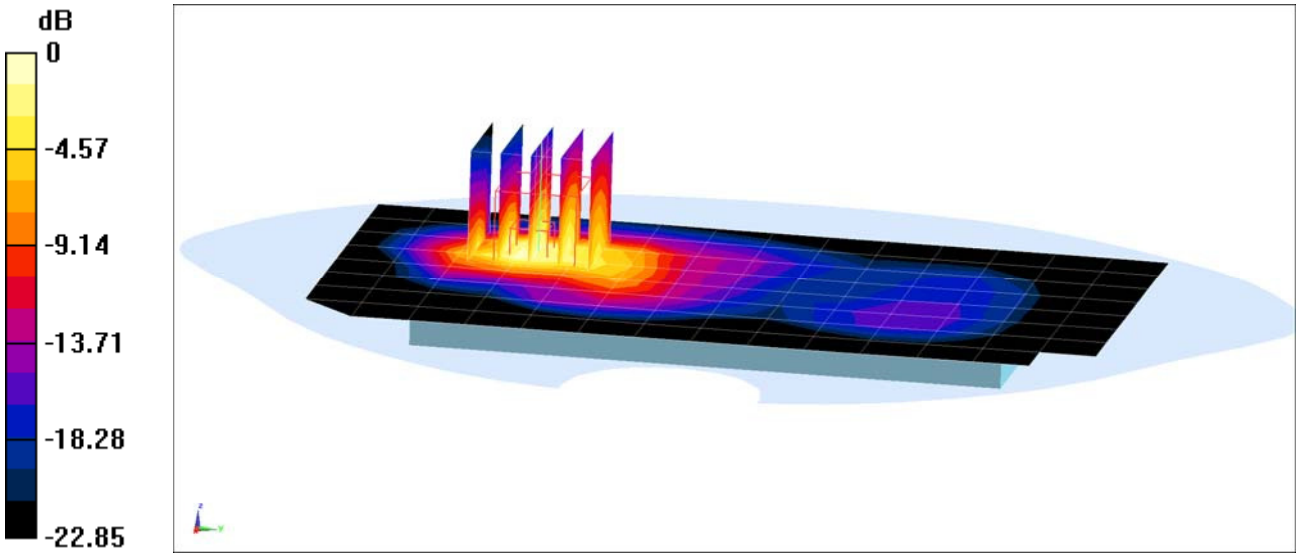
Communication System: UID 0, LTE Band 25 (PCS); Frequency: 1905 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
f = 1905 MHz; σ = 1.539 S/m; ε_r = 54.258; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 02-28-2016; Ambient Temp: 22.8°C; Tissue Temp: 21.9°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), 10g Hotspot Mode at 0mm SAR, High.ch, Camera Module Accessory, 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 = 46.77 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 8.67 W/kg
SAR(10 g) = 1.84 W/kg



0 dB = 4.79 W/kg = 6.80 dBW/kg

DUT: ZNFVS987; Type: Portable Handset; Serial: 03670

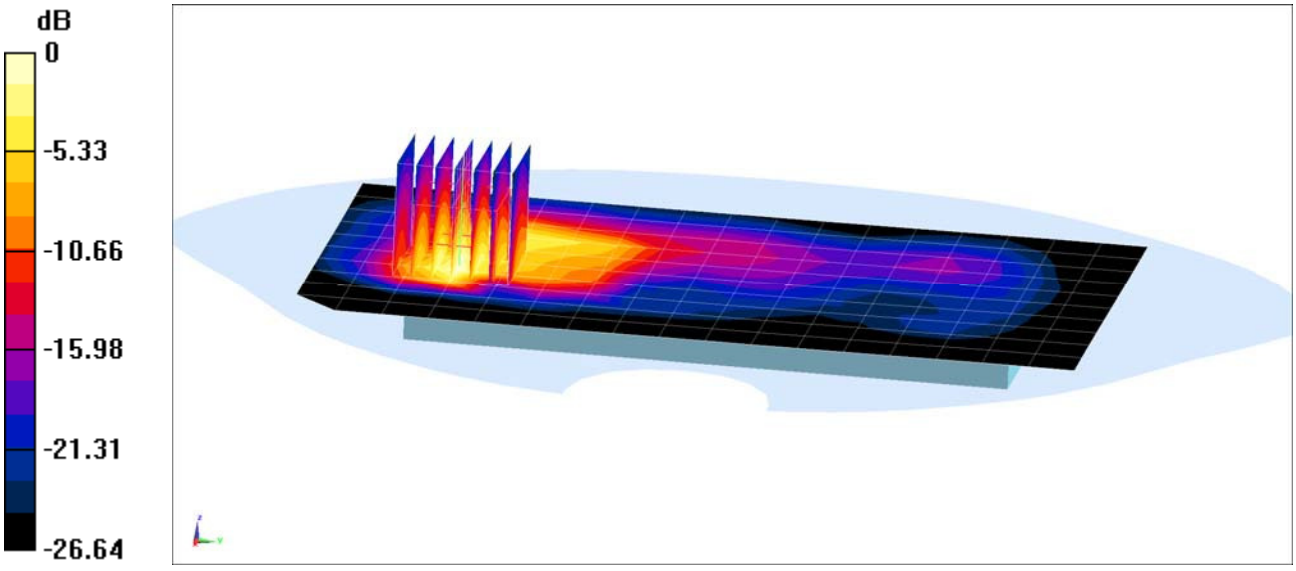
Communication System: UID 0, LTE Band 7; Frequency: 2535 MHz; Duty Cycle: 1:1
Medium: 2600 Body Medium parameters used (interpolated):
$f = 2535$ MHz; $\sigma = 2.059$ S/m; $\varepsilon_r = 52.414$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

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, 10g Hotspot Mode at 0mm SAR, Back side, Mid.ch, Camera Module Accessory, 20 MHz Bandwidth, QPSK, 1 RB, 0 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 = 37.06 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 5.65 W/kg
SAR(10 g) = 0.903 W/kg



0 dB = 3.33 W/kg = 5.22 dBW/kg

APPENDIX B: SYSTEM VERIFICATION

PCTEST ENGINEERING LABORATORY, INC.

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

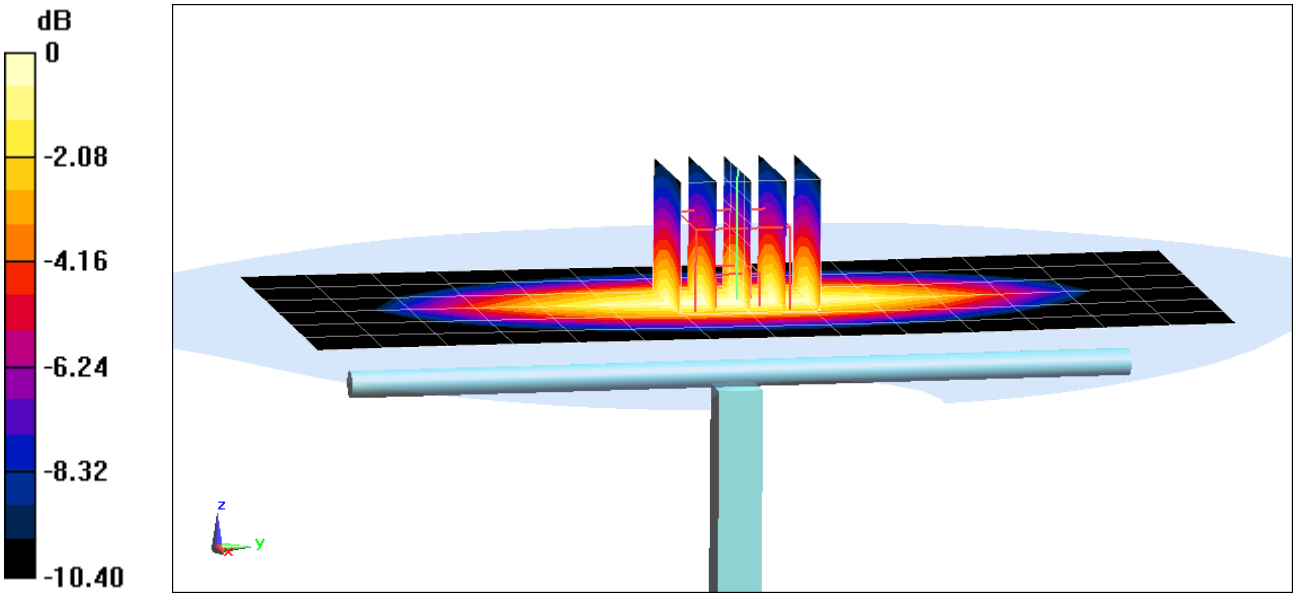
Communication System: UID 0, CW; Frequency: 750 MHz; Duty Cycle: 1:1
Medium: 750 Head Medium parameters used (interpolated):
f = 750 MHz; σ = 0.903 S/m; ε_r = 42.726; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 01-21-2016; Ambient Temp: 24.2°C; Tissue Temp: 22.7°C

Probe: ES3DV2 - SN3022; ConvF(6.33, 6.33, 6.33); 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)

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) = 2.56 W/kg
SAR(1 g) = 1.72 W/kg
Deviation(1 g) = 3.86%



0 dB = 2.01 W/kg = 3.03 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

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

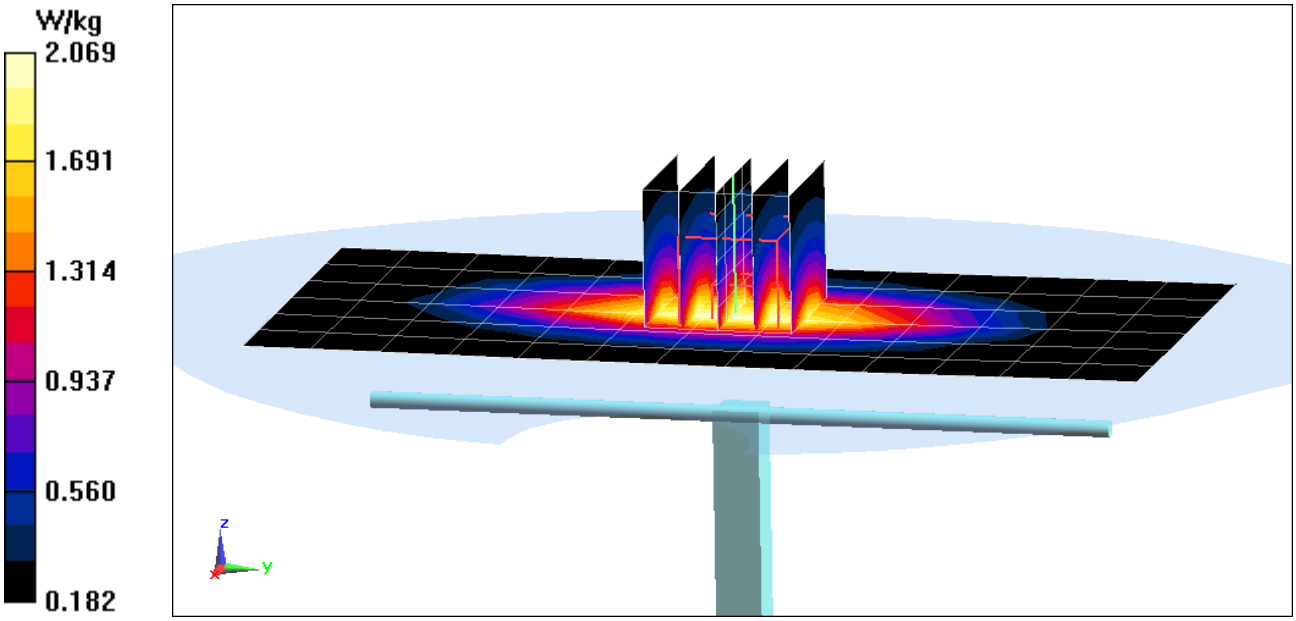
Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used:
f = 835 MHz; σ = 0.896 S/m; ε_r = 40.076; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 01-20-2016; Ambient Temp: 24.0°C; Tissue Temp: 21.5°C

Probe: ES3DV3 - SN3334; ConvF(6.37, 6.37, 6.37); 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) = 2.62 W/kg
SAR(1 g) = 1.77 W/kg
Deviation(1 g) = -5.65%



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

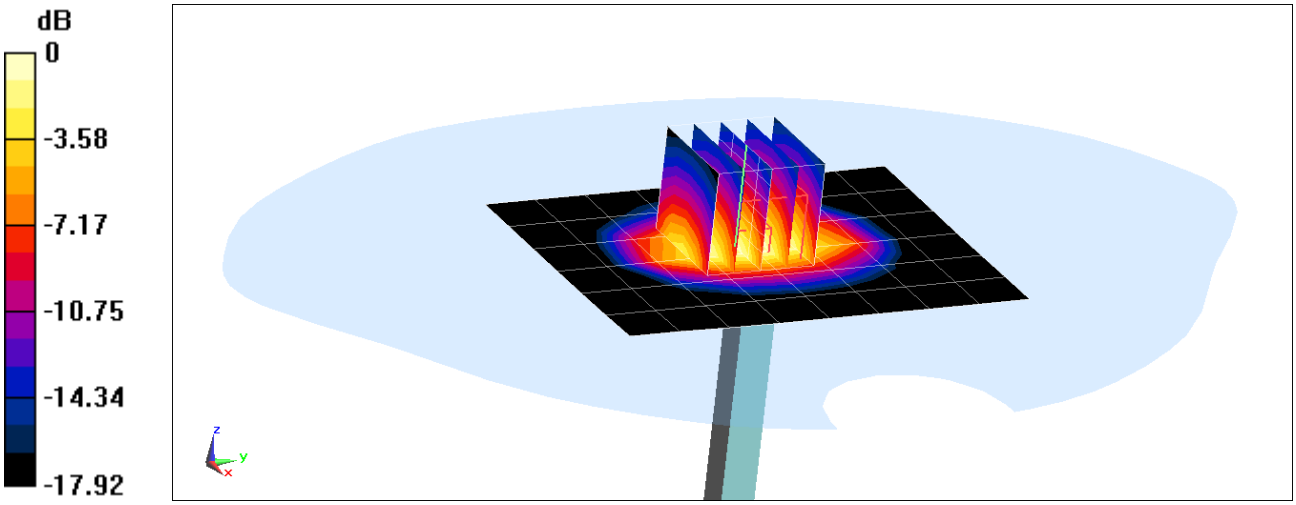
Communication System: UID 0, CW; Frequency: 1750 MHz; Duty Cycle: 1:1
Medium: 1750 Head Medium parameters used:
f = 1750 MHz; σ = 1.353 S/m; ε_r = 38.344; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-27-2016; Ambient Temp: 24.4°C; Tissue Temp: 22.6°C

Probe: ES3DV3 - SN3334; ConvF(5.39, 5.39, 5.39); 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)

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) = 6.89 W/kg
SAR(1 g) = 3.82 W/kg
Deviation(1 g) = 5.52%



0 dB = 4.79 W/kg = 6.80 dBW/kg

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

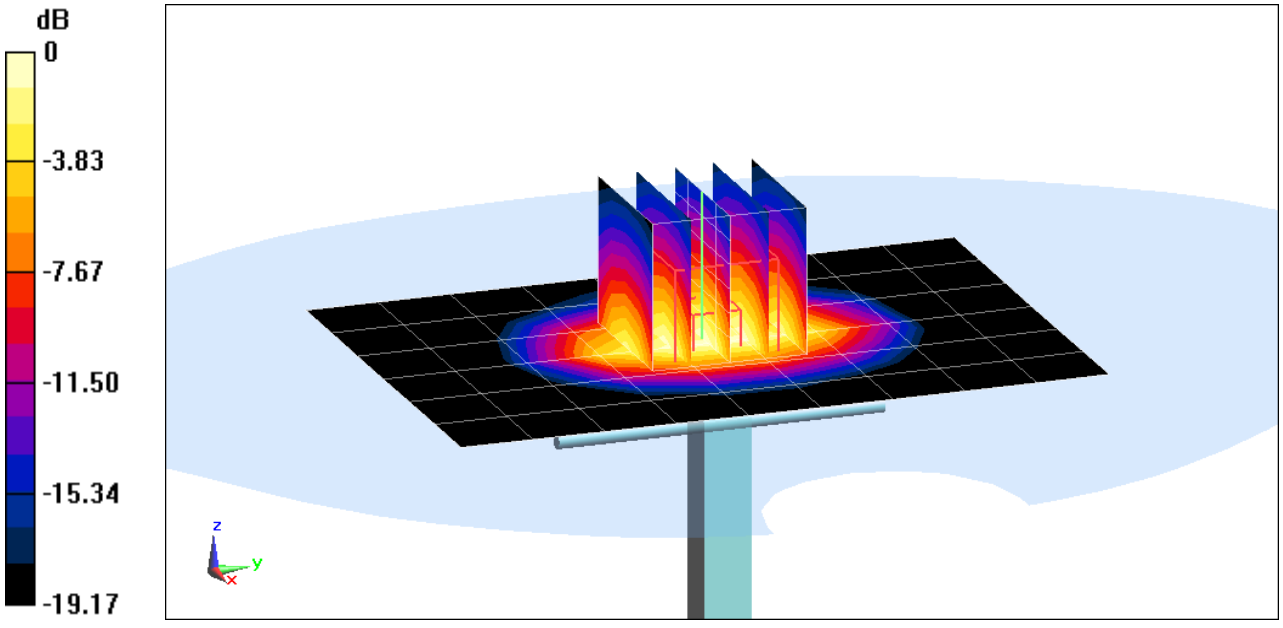
Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: 1900 Head Medium parameters used (interpolated):
f = 1900 MHz; σ = 1.448 S/m; ε_r = 38.732; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-25-2016; Ambient Temp: 20.8°C; Tissue Temp: 20.4°C

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

1900 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (7x10x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 8.10 W/kg
SAR(1 g) = 4.32 W/kg
Deviation(1 g) = 6.14%



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

PCTEST ENGINEERING LABORATORY, INC.

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

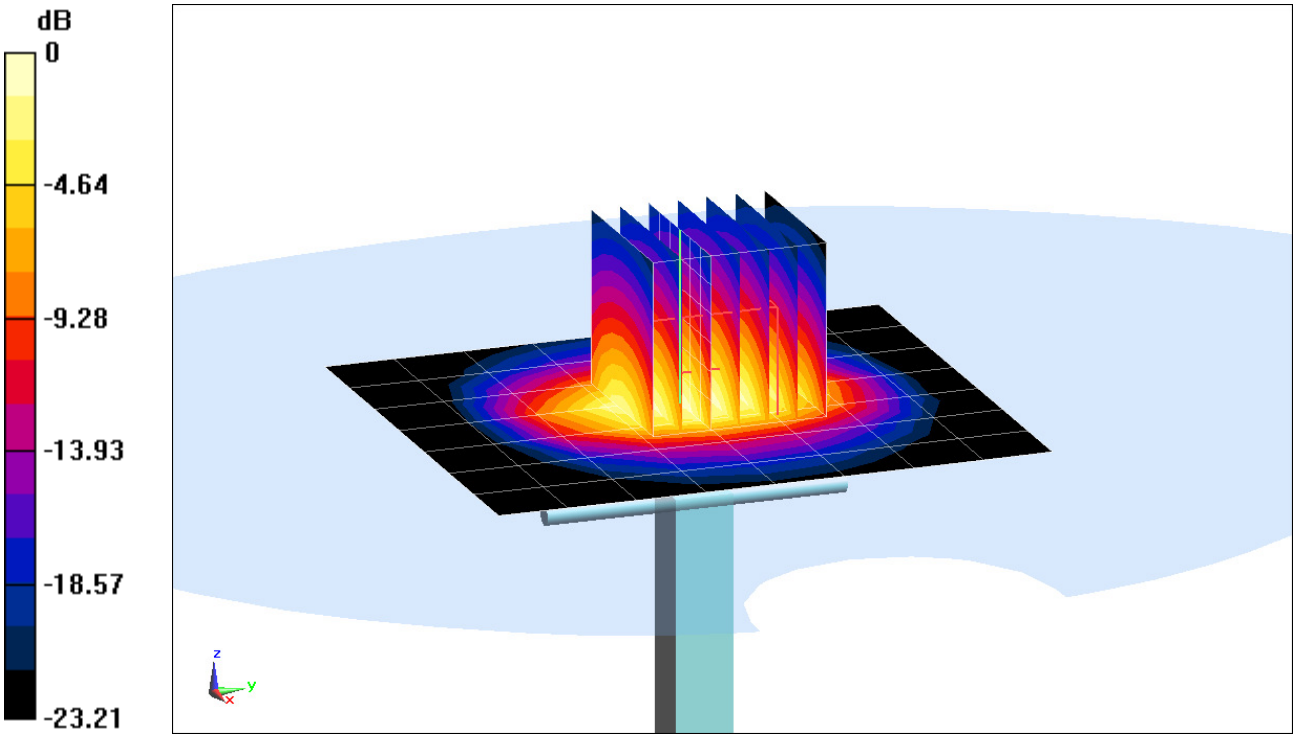
Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: 2450 Head Medium parameters used:
f = 2450 MHz; σ = 1.836 S/m; ε_r = 38.748; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-26-2016; Ambient Temp: 24.3°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)

2450 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 11.6 W/kg
SAR(1 g) = 5.60 W/kg
Deviation(1 g) = 3.32%



0 dB = 7.35 W/kg = 8.66 dBW/kg

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

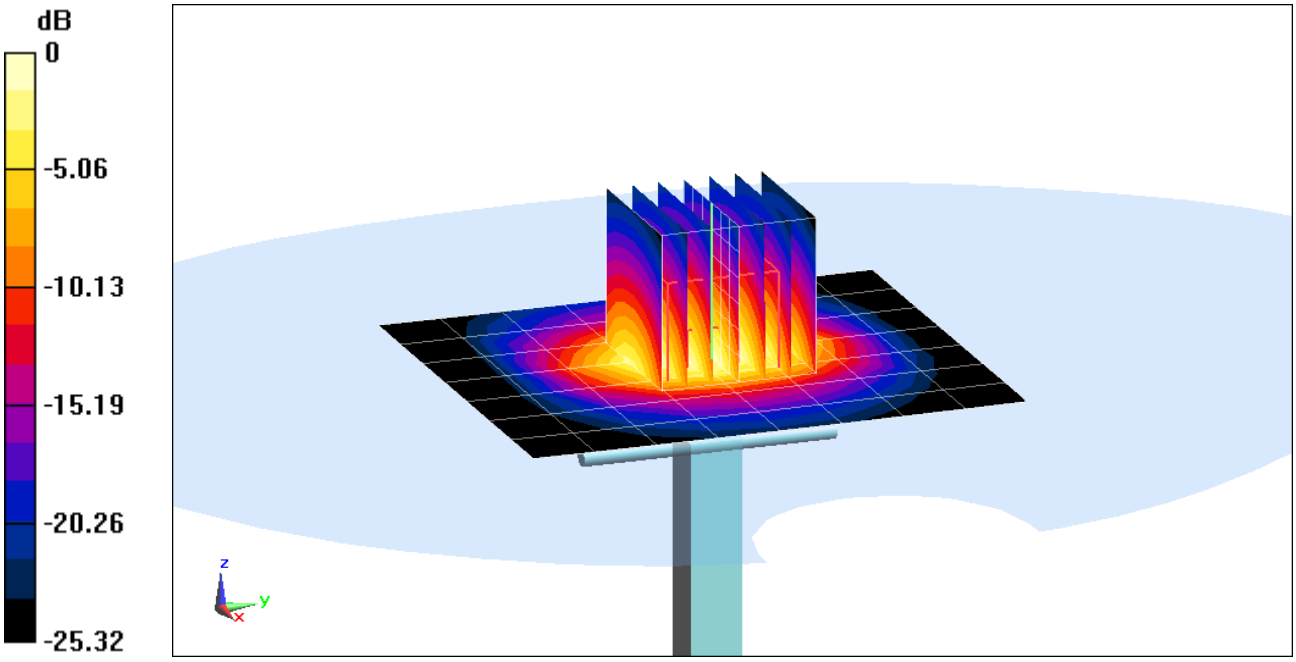
Communication System: UID 0, CW; Frequency: 2600 MHz; Duty Cycle: 1:1
Medium: 2600 Head; Medium parameters used:
f = 2600 MHz; σ = 1.992 S/m; ε_r = 39.834; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-01-2016; Ambient Temp: 22.3°C; Tissue Temp: 22.5°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) = 12.8 W/kg
SAR(1 g) = 5.70 W/kg
Deviation(1 g) = 2.15%



0 dB = 7.48 W/kg = 8.74 dBW/kg

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

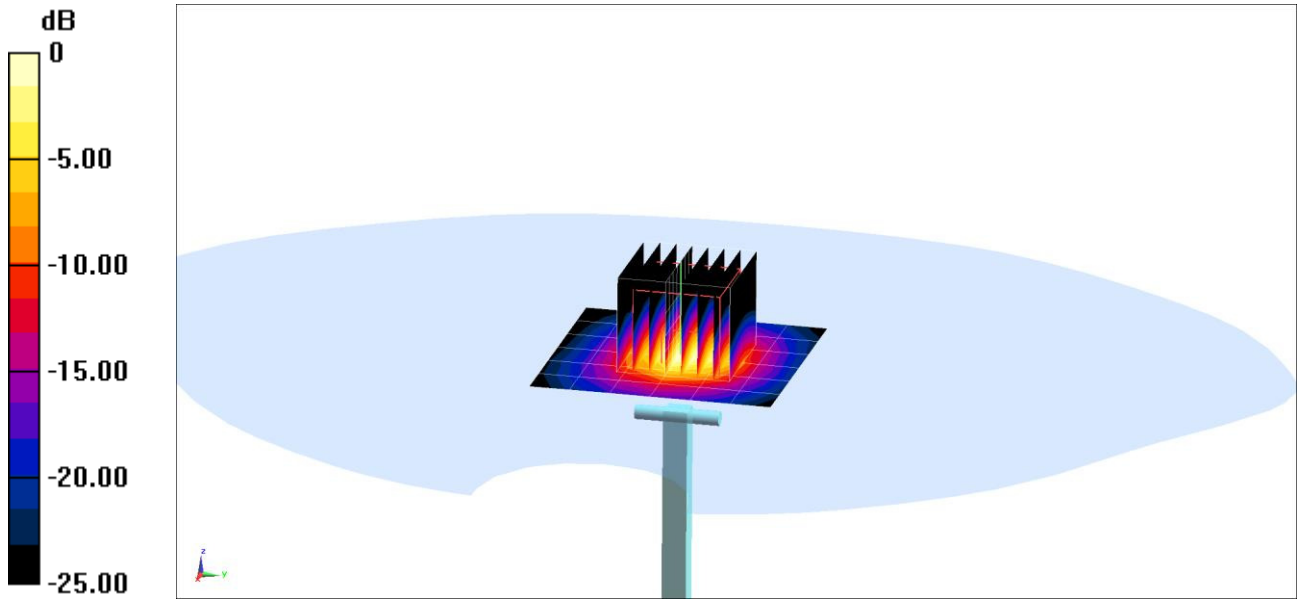
Communication System: UID 0, CW; Frequency: 5250 MHz; Duty Cycle: 1:1
Medium: 5 GHz Head Medium parameters used (interpolated):
$f = 5250$ MHz; $\sigma = 4.537$ S/m; $\varepsilon_r = 35.829$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-02-2016; Ambient Temp: 23.8°C; Tissue Temp: 22.0°C

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

5250 MHz System Verification at 17.0 dBm (50 mW)

Area Scan (7x7x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio = 1.4
Peak SAR (extrapolated) = 16.0 W/kg
SAR(1 g) = 3.96 W/kg
Deviation(1 g) = -4.00%



0 dB = 9.21 W/kg = 9.64 dBW/kg

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

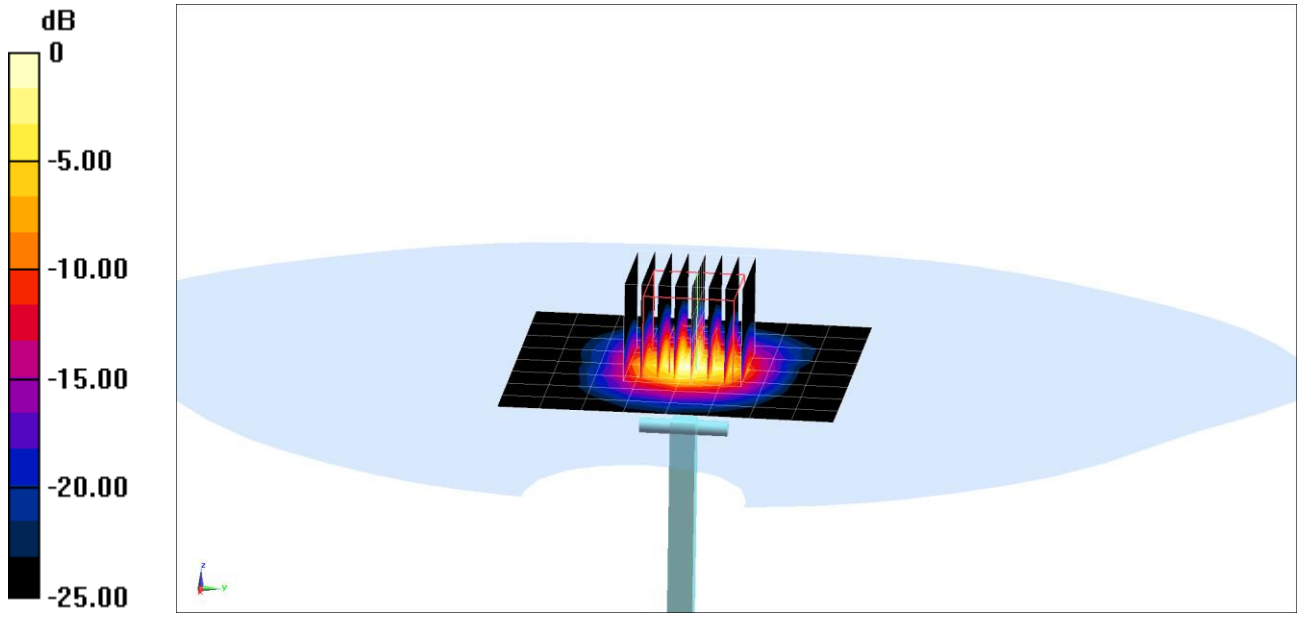
Communication System: UID 0, CW; Frequency: 5600 MHz; Duty Cycle: 1:1
Medium: 5 GHz Head Medium parameters used:
f = 5600 MHz; σ = 4.868 S/m; ε_r = 35.413; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-02-2016; Ambient Temp: 23.8°C; Tissue Temp: 22.0°C

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

5600 MHz System Verification at 17.0 dBm (50 mW)

Area Scan (9x9x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio = 1.4
Peak SAR (extrapolated) = 17.4 W/kg
SAR(1 g) = 4.12 W/kg
Deviation(1 g) = -2.49%



0 dB = 9.93 W/kg = 9.97 dBW/kg

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

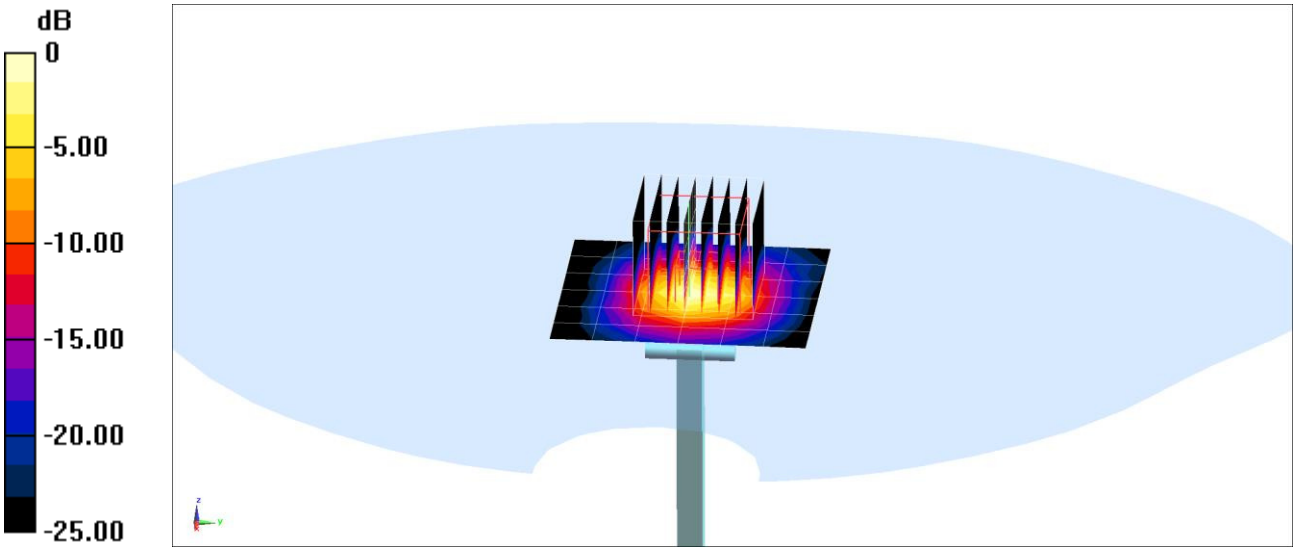
Communication System: UID 0, CW; Frequency: 5750 MHz; Duty Cycle: 1:1
Medium: 5 GHz Head Medium parameters used (interpolated):
f = 5750 MHz; σ = 5.047 S/m; ε_r = 35.152; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-02-2016; Ambient Temp: 23.8°C; Tissue Temp: 22.0°C

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

5750 MHz System Verification at 17.0 dBm (50 mW)

Area Scan (7x7x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio = 1.4
Peak SAR (extrapolated) = 16.7 W/kg
SAR(1 g) = 3.81 W/kg
Deviation(1 g) = -4.75%



0 dB = 9.28 W/kg = 9.68 dBW/kg

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

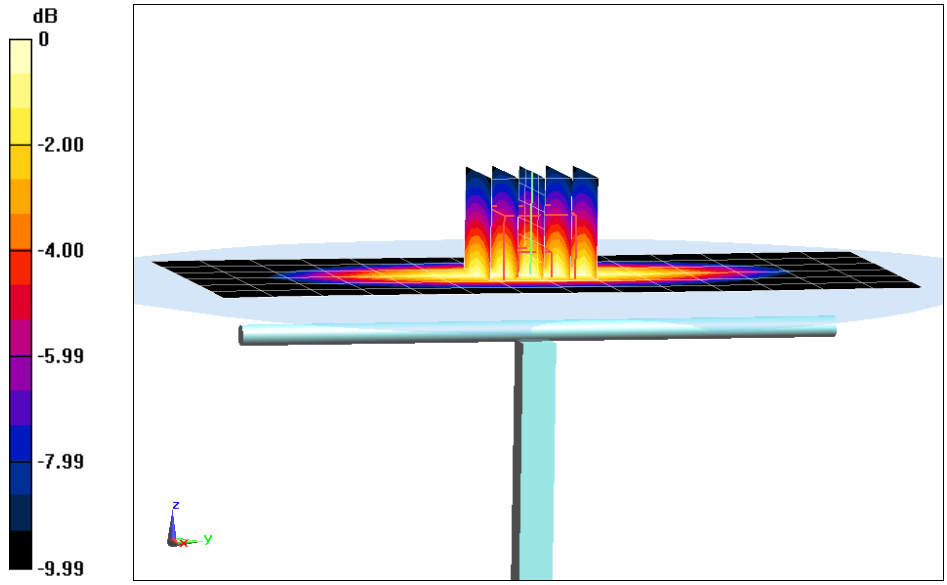
Communication System: UID 0, CW; Frequency: 750 MHz; Duty Cycle: 1:1
Medium: 750 Body Medium parameters used (interpolated):
f = 750 MHz; σ = 0.964 S/m; ε_r = 56.648; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 01-25-2016; Ambient Temp: 23.0°C; Tissue Temp: 21.4°C

Probe: ES3DV2 - SN3022; ConvF(6.16, 6.16, 6.16); 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)

750 MHz System Verification at 23.0 dBm (200 mW)

Area Scan (7x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 2.59 W/kg
SAR(1 g) = 1.76 W/kg
Deviation(1 g) = 3.17%



0 dB = 2.05 W/kg = 3.12 dBW/kg

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

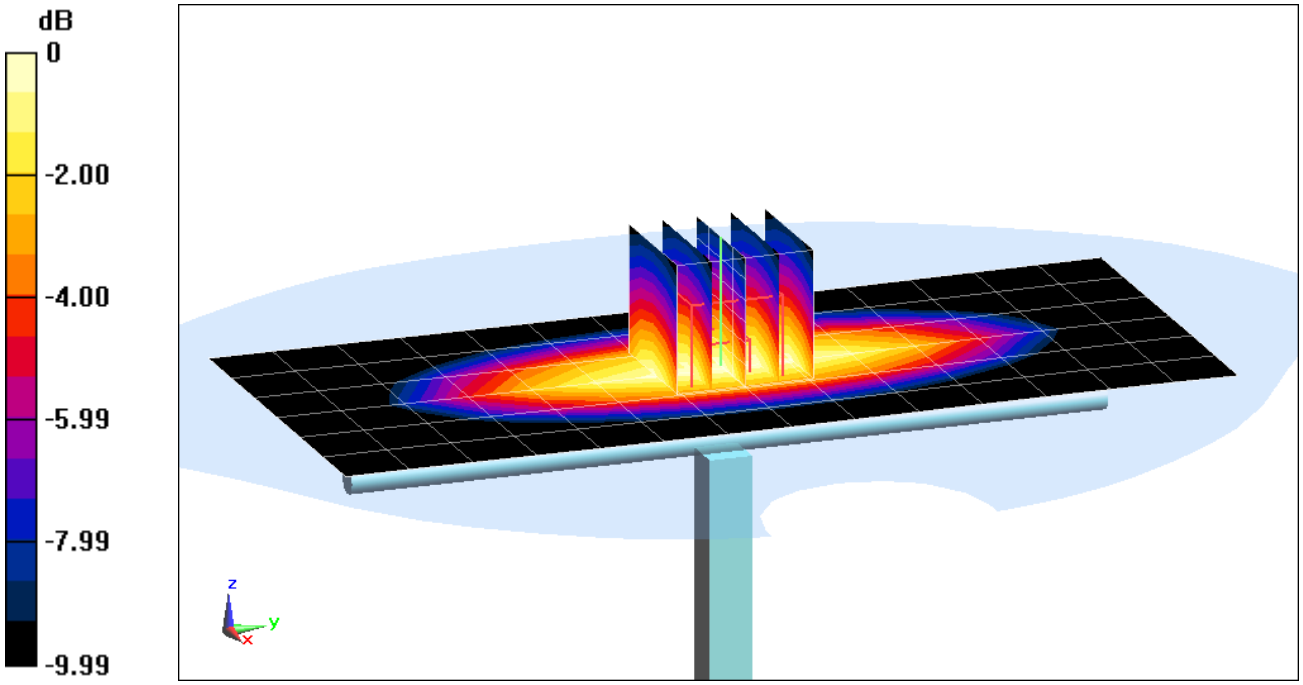
Communication System: UID 0, CW; Frequency: 750 MHz; Duty Cycle: 1:1
Medium: 750 Body Medium parameters used (interpolated):
f = 750 MHz; σ = 0.967 S/m; ε_r = 56.015; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

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: 4d119

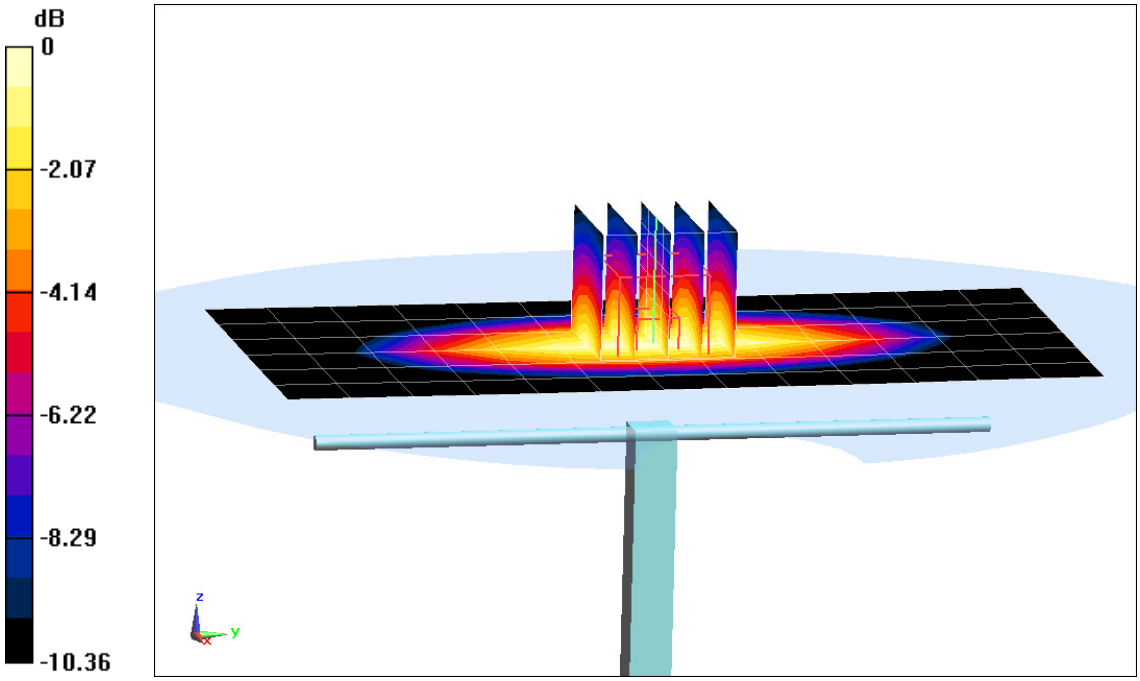
Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used:
f = 835 MHz; σ = 1.009 S/m; ε_r = 53.523; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 01-20-2016; Ambient Temp: 23.5°C; Tissue Temp: 21.5°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 5.0 front; Type: QD000P40CD; Serial: TP:-1648
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(1 g) = 1.95 W/kg
Deviation = 5.98%



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

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

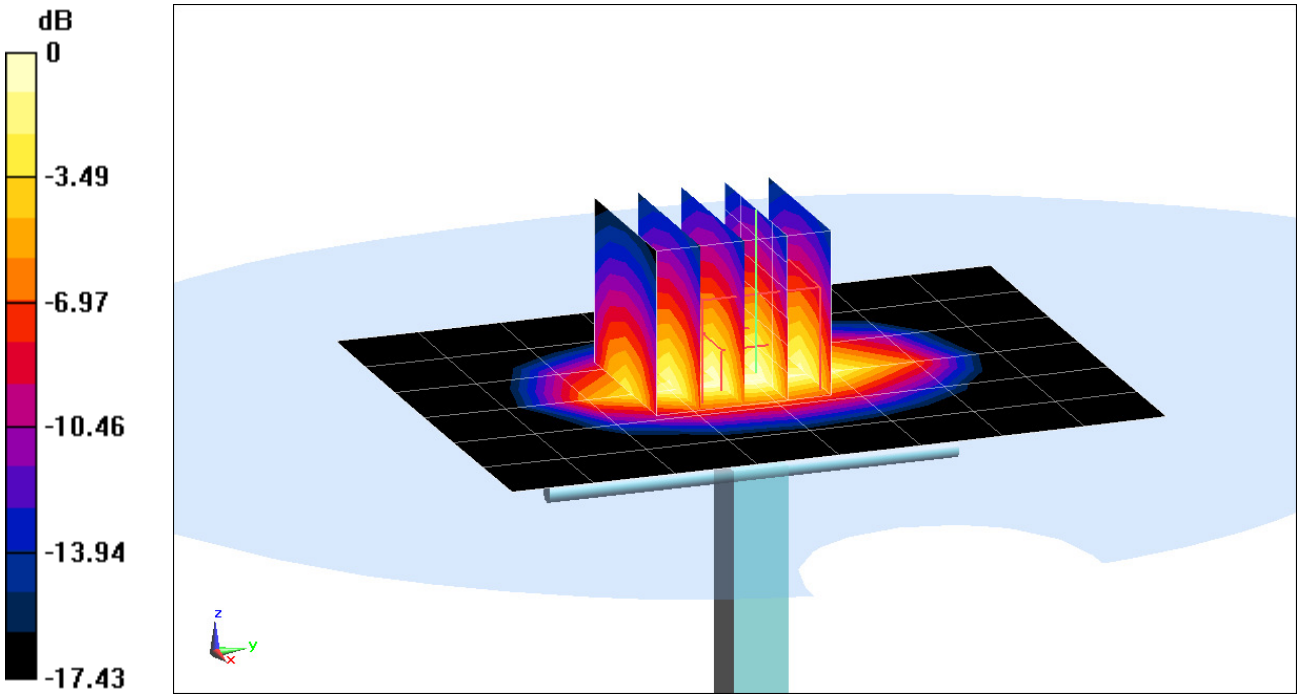
Communication System: UID 0, CW; Frequency: 1750 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used:
f = 1750 MHz; σ = 1.54 S/m; ε_r = 51.374; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-25-2016; Ambient Temp: 19.0°C; Tissue Temp: 19.5°C

Probe: ES3DV3 - SN3263; ConvF(4.88, 4.88, 4.88); Calibrated: 5/20/2015;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 6/17/2015
Phantom: SAM with CRP v5.0 (Right); Type: QD000P40CD; Serial: TP:1759
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) = 6.66 W/kg
SAR(1 g) = 3.86 W/kg
Deviation = 4.04%



0 dB = 4.75 W/kg = 6.77 dBW/kg

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

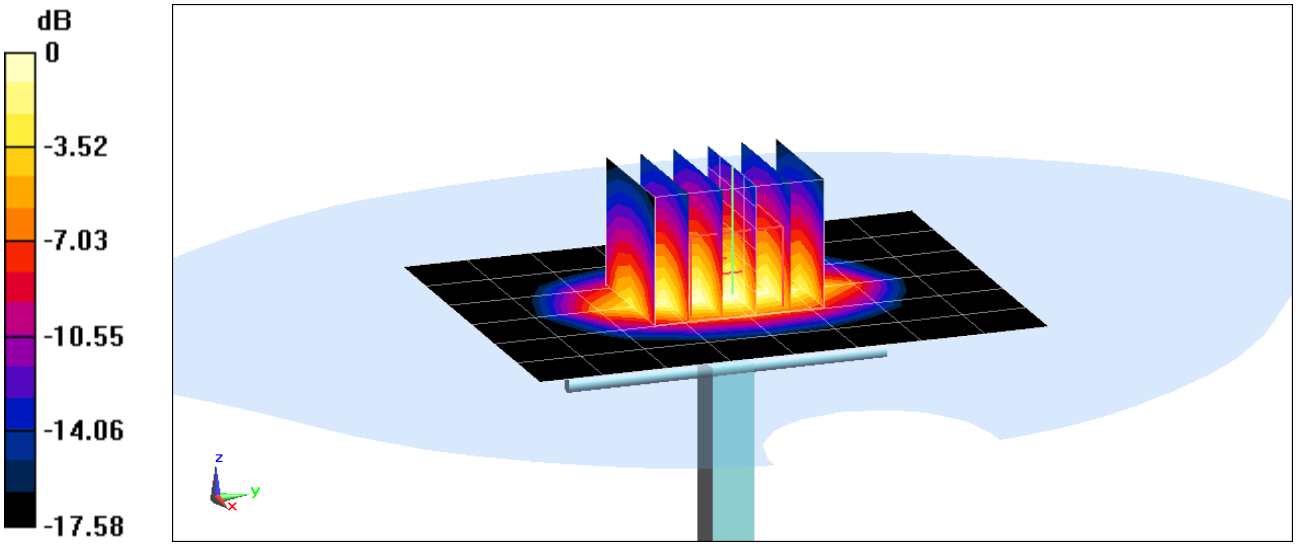
Communication System: UID 0, CW; Frequency: 1750 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used:
f = 1750 MHz; σ = 1.512 S/m; ε_r = 51.539; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-01-2016; Ambient Temp: 23.2°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) = 7.01 W/kg
SAR(1 g) = 4.03 W/kg
Deviation(1 g) = 8.63%



0 dB = 5.00 W/kg = 6.99 dBW/kg

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

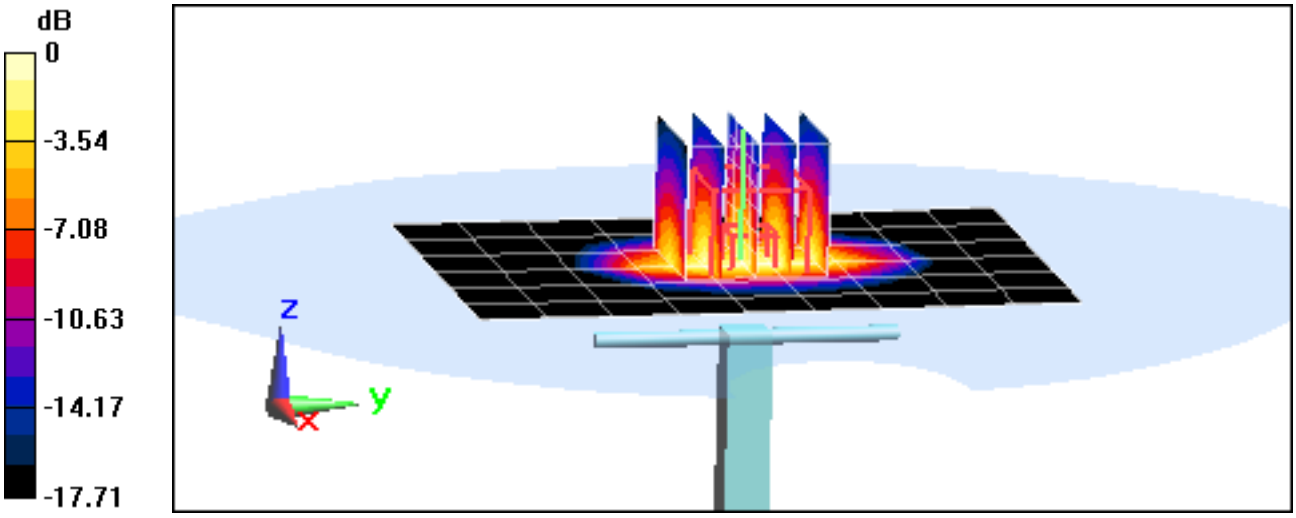
Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
f = 1900 MHz; σ = 1.548 S/m; ε_r = 53.129; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-27-2016; Ambient Temp: 23.5°C; Tissue Temp: 24.1°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) = 7.55 W/kg
SAR(1 g) = 4.24 W/kg
Deviation(1 g) = 4.95%



0 dB = 5.36 W/kg = 7.29 dBW/kg

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

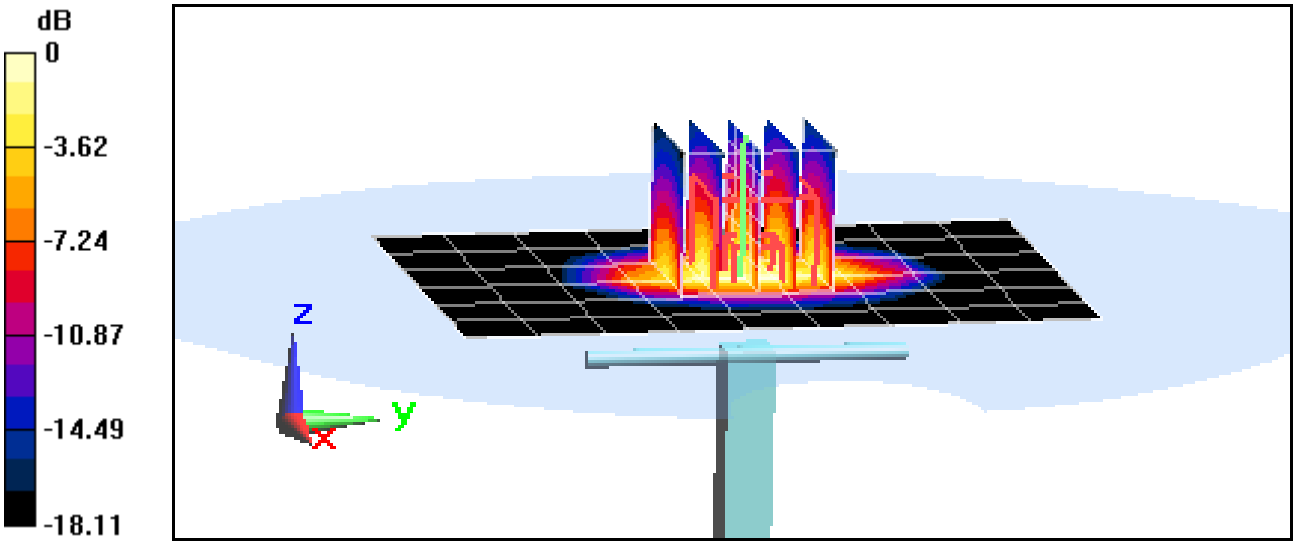
Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
f = 1900 MHz; σ = 1.555 S/m; ε_r = 52.258; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-01-2016; Ambient Temp: 22.0°C; Tissue Temp: 23.0°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) = 7.35 W/kg
SAR(1 g) = 4.09 W/kg
Deviation(1 g) = 2.25%



0 dB = 5.16 W/kg = 7.13 dBW/kg

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

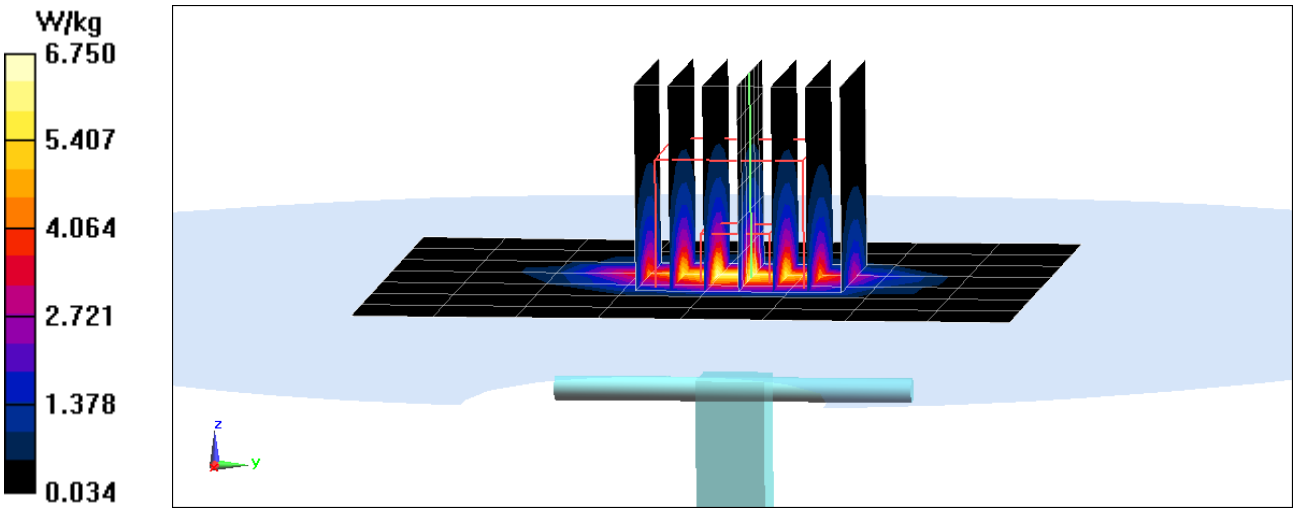
Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: 2450 Body Medium parameters used:
f = 2450 MHz; σ = 1.926 S/m; ε_r = 51.967; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-25-2016; Ambient Temp: 22.1°C; Tissue Temp: 22.2°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) = 5.17 W/kg
Deviation (1 g) = -0.39 %



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

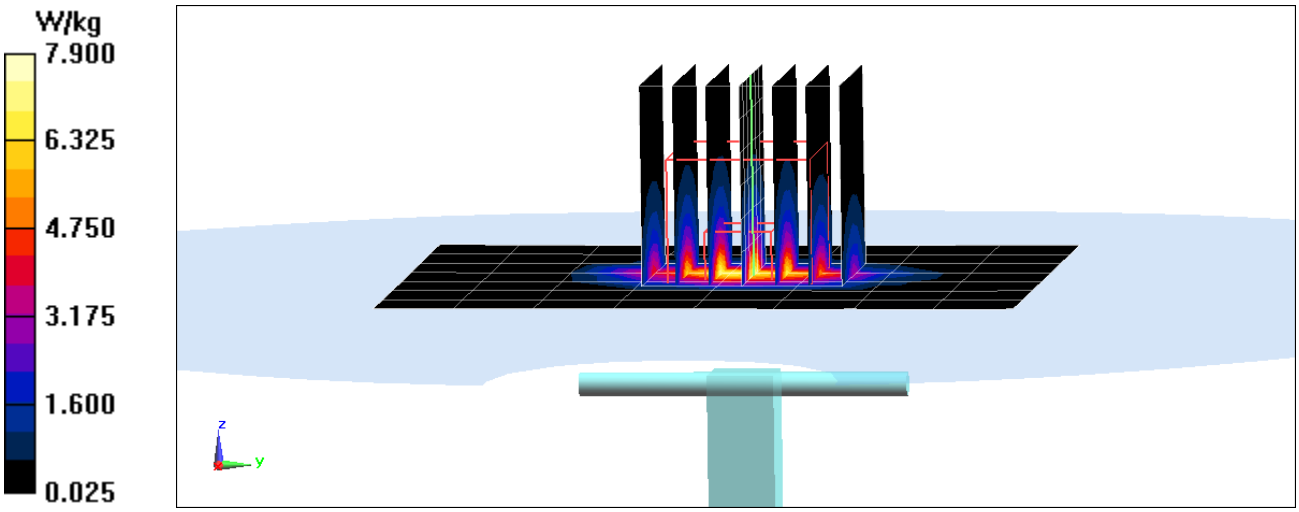
Communication System: UID 0, CW; Frequency: 2600 MHz; Duty Cycle: 1:1
Medium: 2600 Body Medium parameters used:
f = 2600 MHz; σ = 2.133 S/m; ε_r = 51.4; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-25-2016; Ambient Temp: 22.1°C; Tissue Temp: 22.2°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) = 5.87 W/kg
Deviation (1 g) = 4.45 %



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

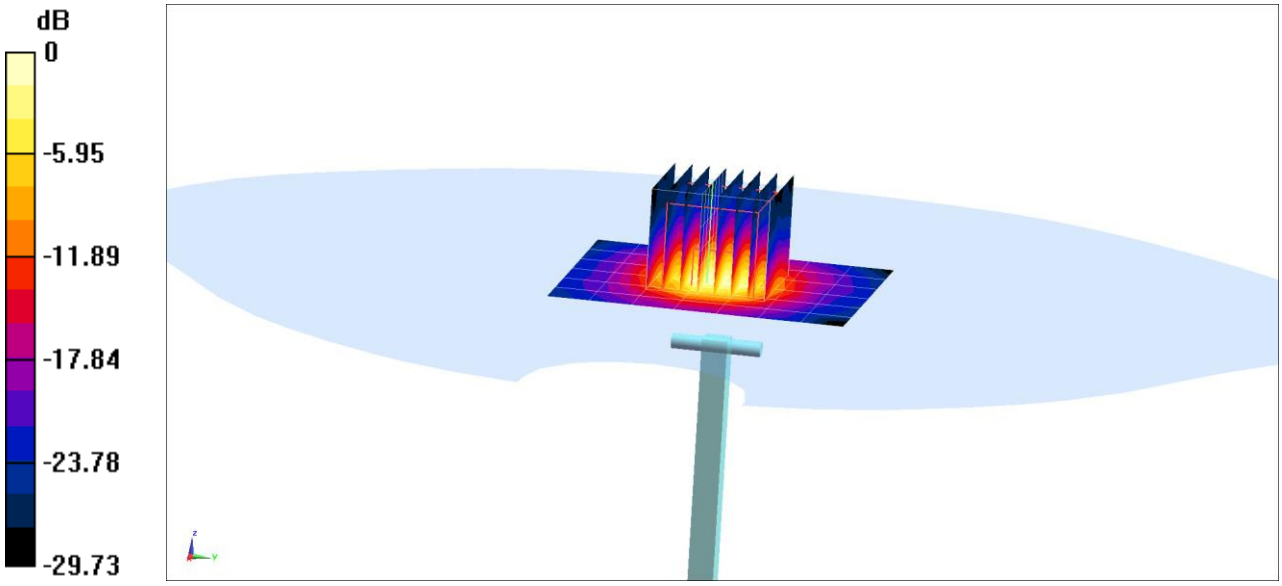
Communication System: UID 0, CW; Frequency: 5300 MHz; Duty Cycle: 1:1
Medium: 5 GHz Body Medium parameters used:
f = 5300 MHz; σ = 5.526 S/m; ε_r = 47.311; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-21-2016; Ambient Temp: 23.0°C; Tissue Temp: 22.7°C

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

5300 MHz System Verification at 17.0 dBm (50 mW)

Area Scan (7x8x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio = 1.4
Peak SAR (extrapolated) = 15.3 W/kg
SAR(1 g) = 3.87 W/kg
Deviation(1 g) = 2.93%



0 dB = 8.87 W/kg = 9.48 dBW/kg

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

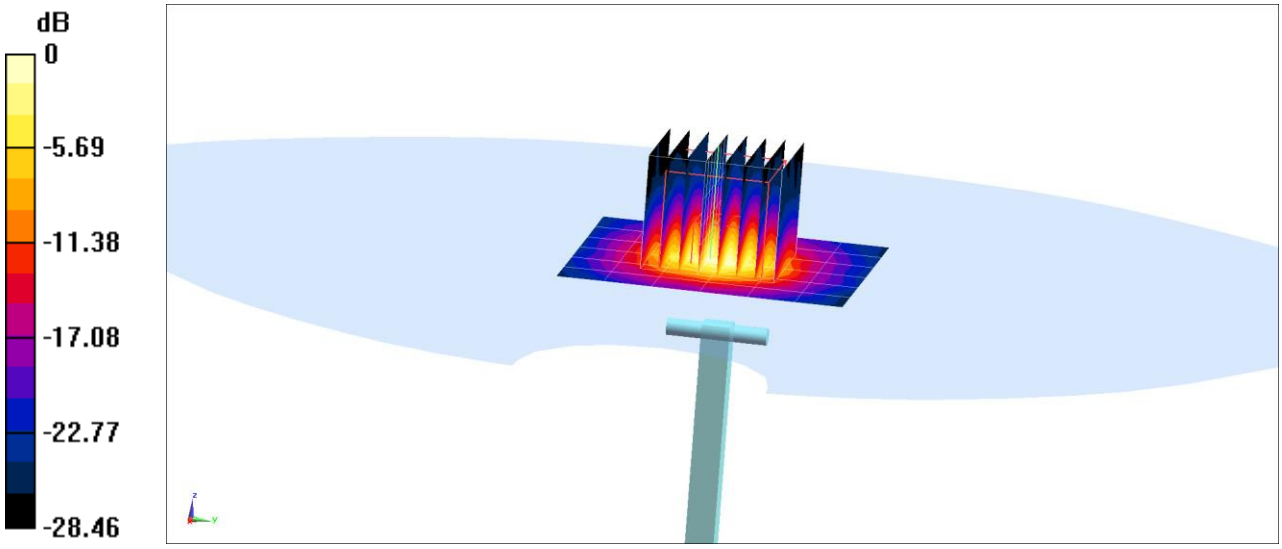
Communication System: UID 0, CW; Frequency: 5500 MHz; Duty Cycle: 1:1
Medium: 5 GHz Body Medium parameters used:
f = 5500 MHz; σ = 5.789 S/m; ε_r = 46.932; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-21-2016; Ambient Temp: 23.0°C; Tissue Temp: 22.7°C

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

5500 MHz System Verification at 17.0 dBm (50 mW)

Area Scan (7x7x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio = 1.4
Peak SAR (extrapolated) = 16.3 W/kg
SAR(1 g) = 3.88 W/kg
Deviation(1 g) = -2.39%



0 dB = 9.42 W/kg = 9.74 dBW/kg

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

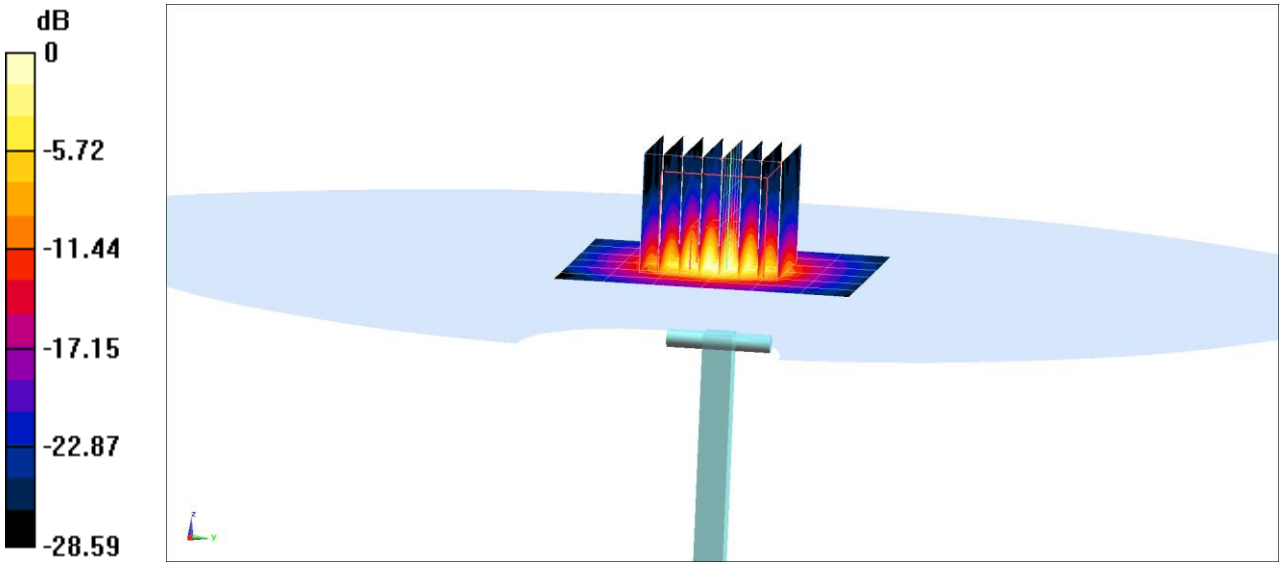
Communication System: UID 0, CW; Frequency: 5800 MHz; Duty Cycle: 1:1
Medium: 5 GHz Body Medium parameters used:
f = 5800 MHz; σ = 6.197 S/m; ε_r = 46.449; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-21-2016; Ambient Temp: 23.0°C; Tissue Temp: 22.7°C

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

5800 MHz System Verification at 17.0 dBm (50 mW)

Area Scan (7x7x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio = 1.4
Peak SAR (extrapolated) = 16.8 W/kg
SAR(1 g) = 3.87 W/kg
Deviation(1 g) = 1.44%



0 dB = 9.32 W/kg = 9.69 dBW/kg

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

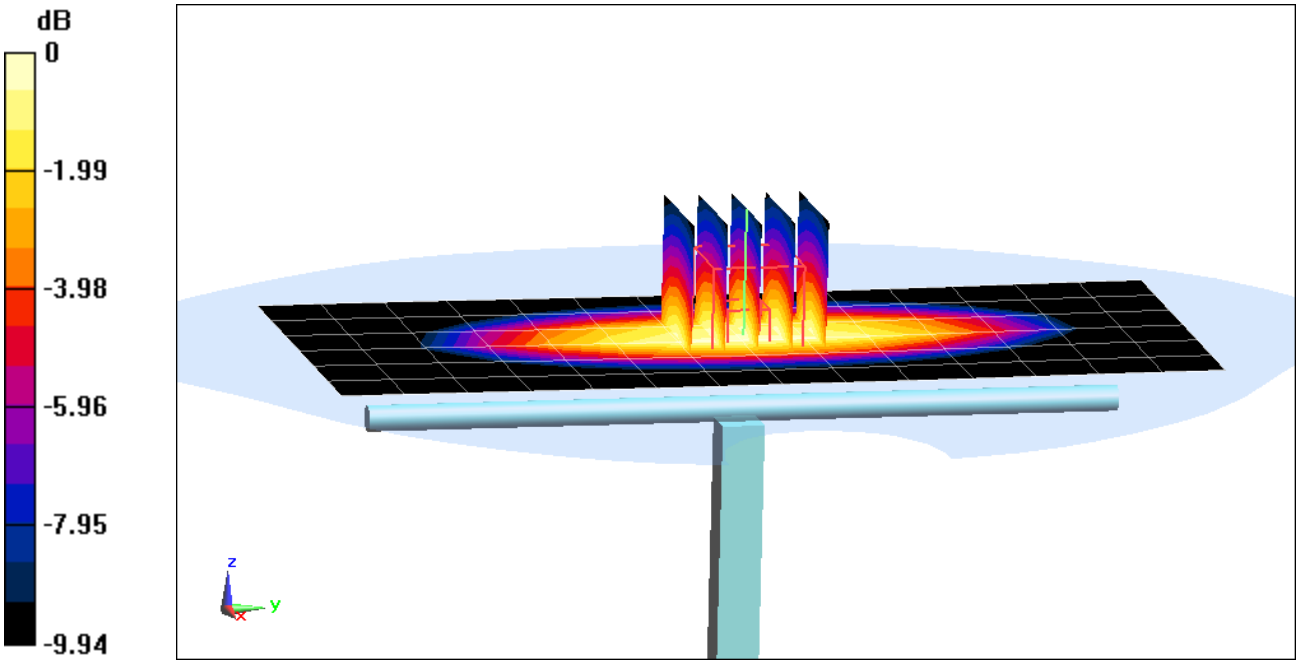
Communication System: UID 0, CW; Frequency: 750 MHz; Duty Cycle: 1:1
Medium: 750 Body Medium parameters used (interpolated):
f = 750 MHz; σ = 0.956 S/m; ε_r = 55.118; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

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

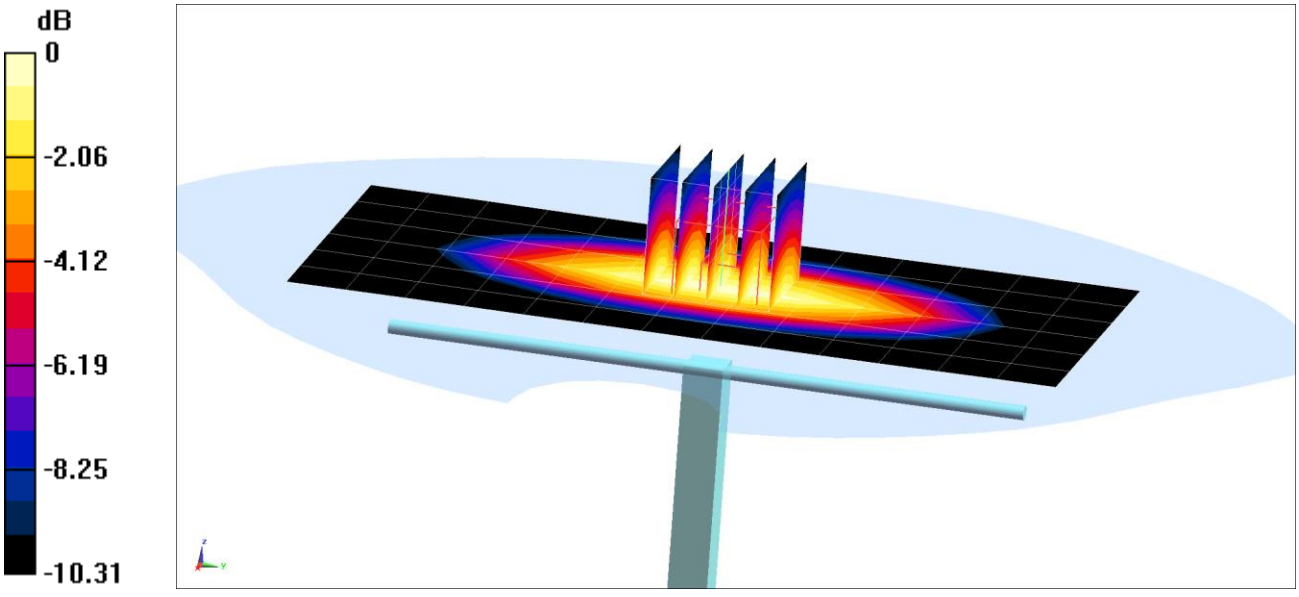
Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used:
f = 835 MHz; σ = 0.996 S/m; ε_r = 53.964; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

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)

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) = 2.67 W/kg
SAR(10 g) = 1.21 W/kg
Deviation(10 g) = -0.17%



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

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

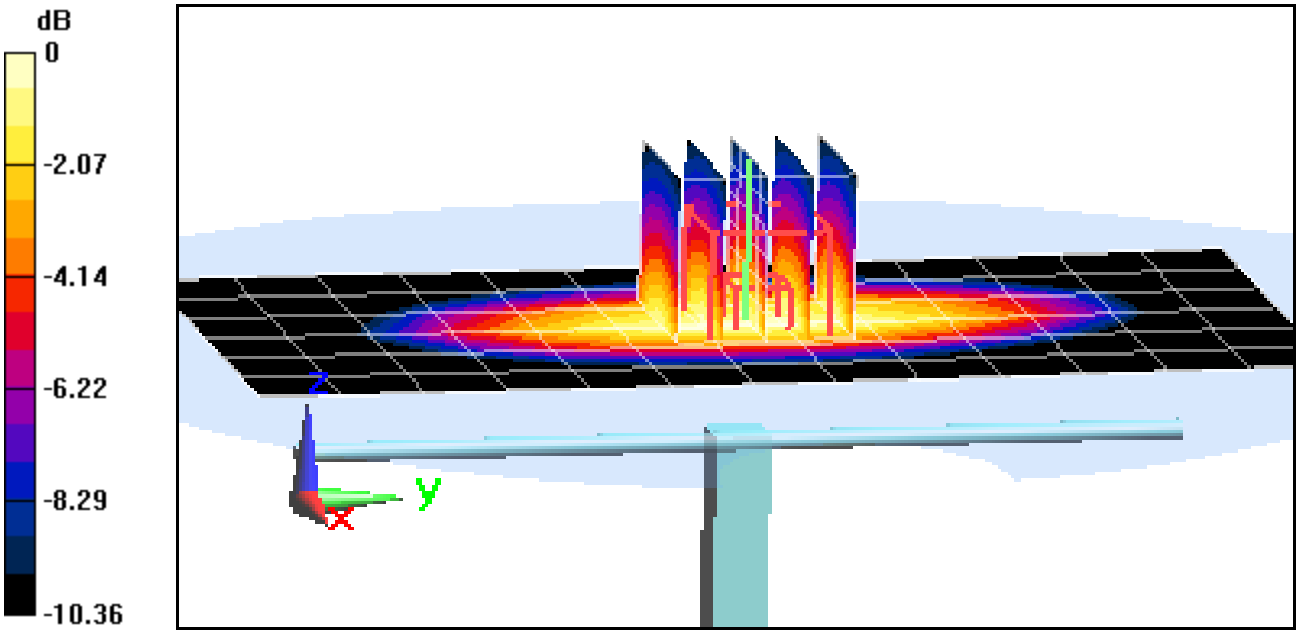
Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used:
f = 835 MHz; σ = 0.988 S/m; ε_r = 54.967; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

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

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

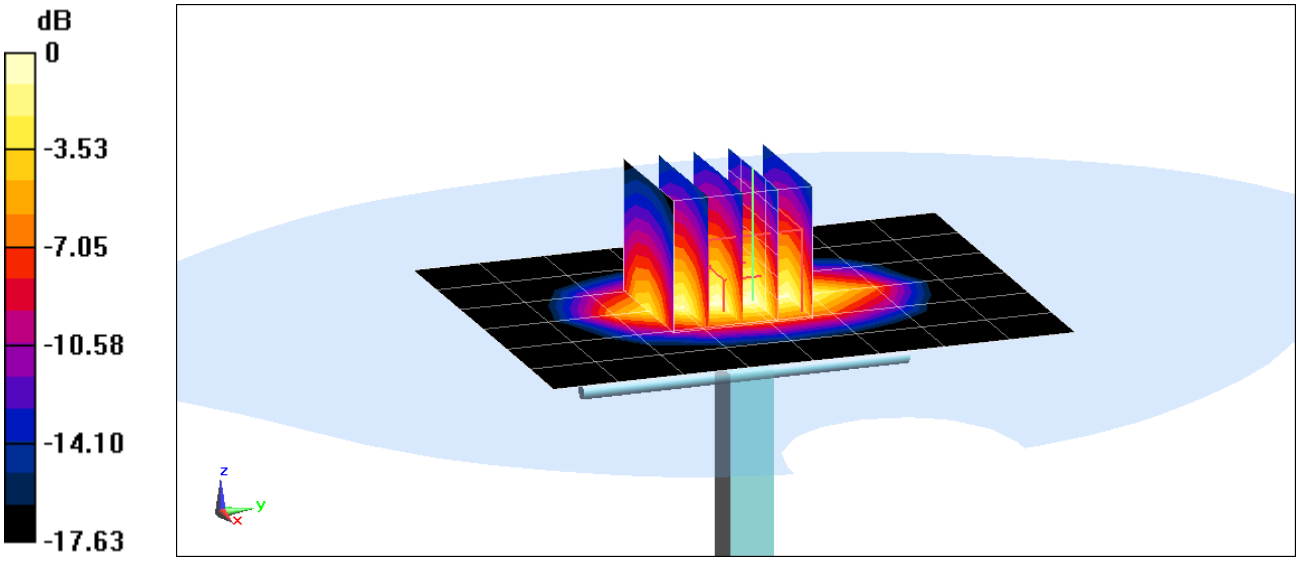
Communication System: UID 0, CW; Frequency: 1750 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used:
f = 1750 MHz; σ = 1.483 S/m; ε_r = 52.104; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

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

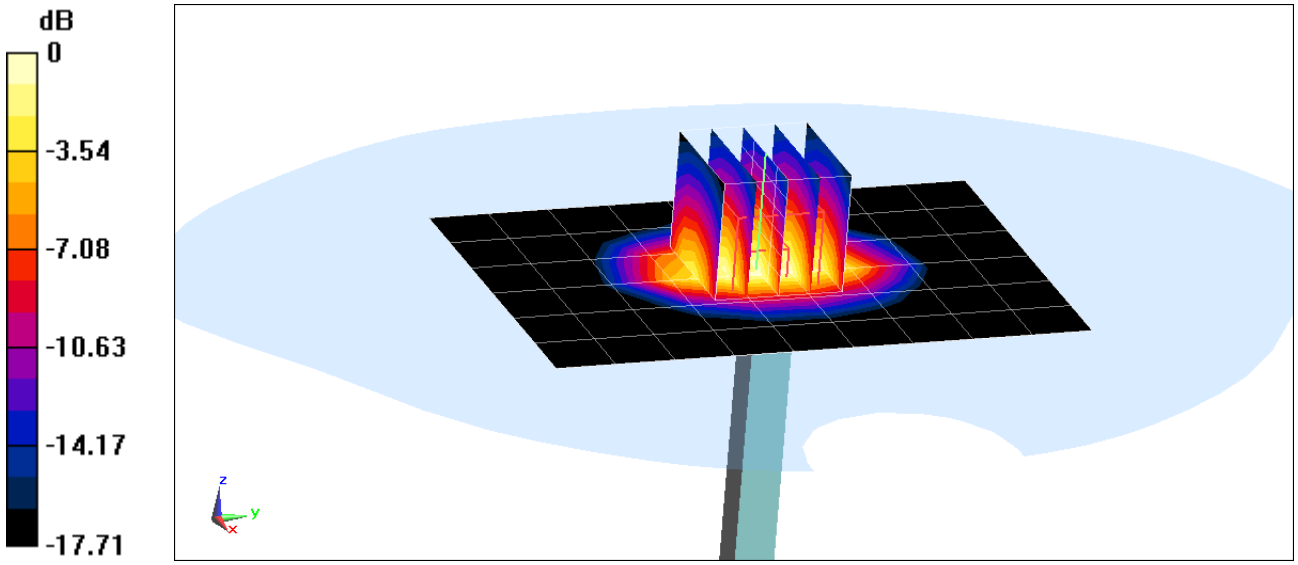
Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
f = 1900 MHz; σ = 1.563 S/m; ε_r = 52.918; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

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

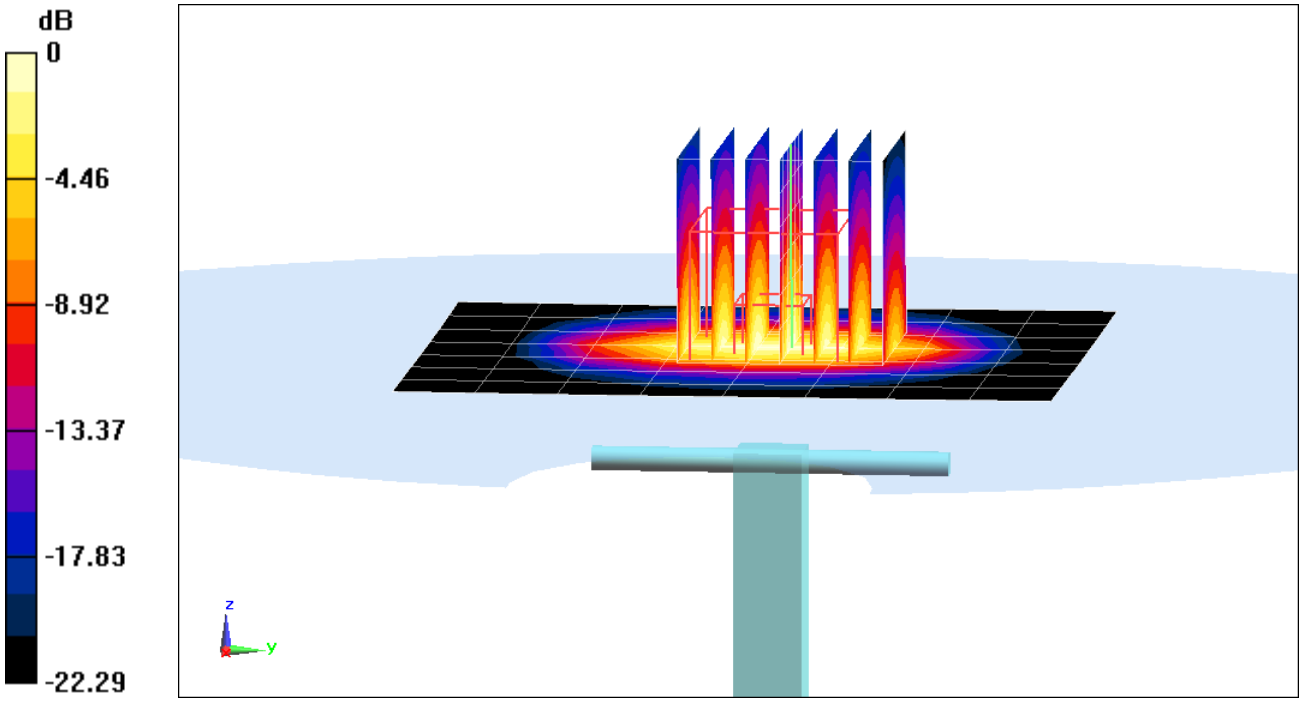
Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: 2450 Body Medium parameters used:
f = 2450 MHz; σ = 1.941 S/m; ε_r = 52.765; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 02-29-2016; Ambient Temp: 23.1°C; Tissue Temp: 22.9°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) = 10.4 W/kg
SAR(10 g) = 2.28 W/kg
Deviation(10 g) = -6.17%



0 dB = 6.44 W/kg = 8.09 dBW/kg

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

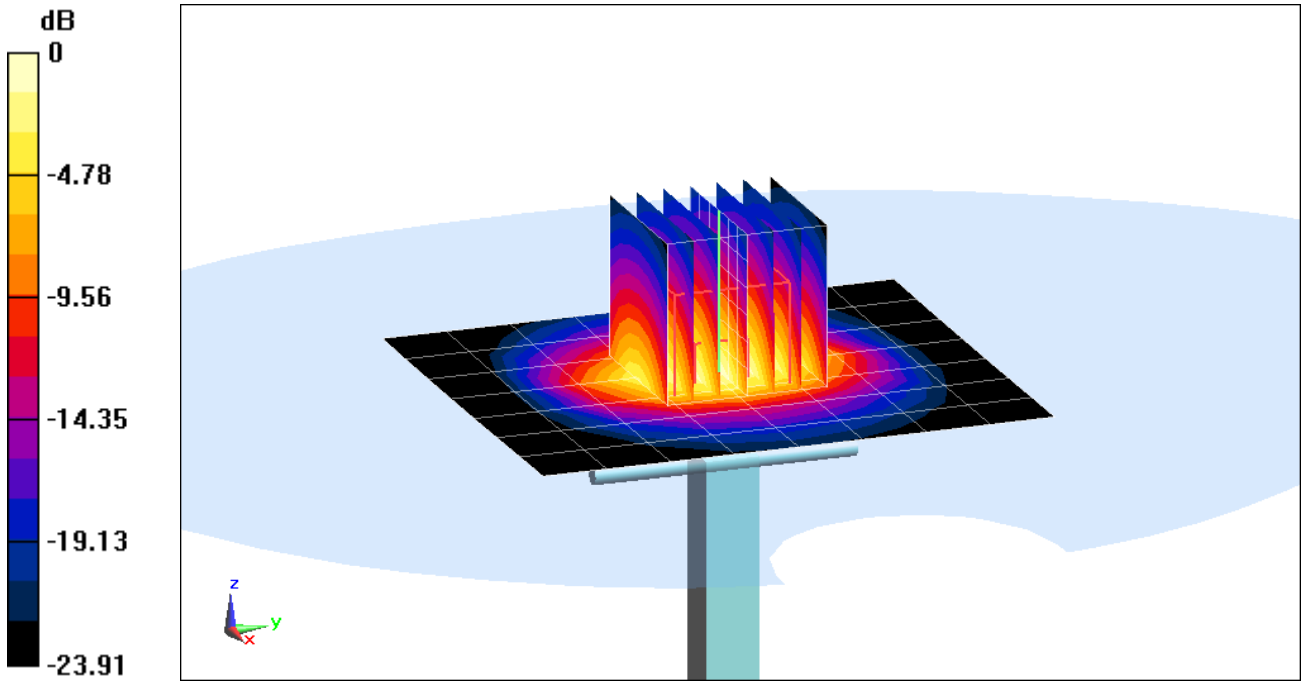
Communication System: UID 0, CW; Frequency: 2600 MHz; Duty Cycle: 1:1
Medium: 2600 Body Medium parameters used:
f = 2600 MHz; σ = 2.132 S/m; ε_r = 52.115; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

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