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SAR EVALUATION REPORT

Applicant Name:
Samsung Electronics Co., Ltd.
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Gyeonggi-do, 16677, Korea

Date of Testing:
12/22/16 - 01/26/17
Test Site/Location:
PCTEST Lab, Columbia, MD, USA
Document Serial No.:
1M1701030004-01.A3L

FCC ID: **A3LSMG950U**

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

DUT Type: Portable Handset
Application Type: Certification
FCC Rule Part(s): CFR §2.1093
Model: SM-G950U
Additional Model(s): SM-G950U1, SM-G950W

Equipment Class	Band & Mode	Tx Frequency	SAR		
			1 gm Head (W/kg)	1 gm Body-Worn (W/kg)	1 gm Hotspot (W/kg)
PCE	CDMA/EVDO BC10 (§90S)	817.90 - 823.10 MHz	0.26	0.30	0.46
PCE	CDMA/EVDO BC0 (§22H)	824.70 - 848.31 MHz	0.26	0.26	0.51
PCE	PCS CDMA/EVDO	1851.25 - 1908.75 MHz	0.31	0.85	0.95
PCE	GSM/GPRS/EDGE 850	824.20 - 848.80 MHz	0.22	0.30	0.41
PCE	GSM/GPRS/EDGE 1900	1850.20 - 1909.80 MHz	0.16	0.33	0.72
PCE	UMTS 850	826.40 - 846.60 MHz	0.27	0.35	0.48
PCE	UMTS 1750	1712.4 - 1752.6 MHz	0.25	0.71	0.65
PCE	UMTS 1900	1852.4 - 1907.6 MHz	0.34	0.76	0.66
PCE	LTE Band 12	699.7 - 715.3 MHz	0.21	0.35	0.48
PCE	LTE Band 17	706.5 - 713.5 MHz	N/A	N/A	N/A
PCE	LTE Band 13	779.5 - 784.5 MHz	0.31	0.49	0.67
PCE	LTE Band 26 (Cell)	814.7 - 848.3 MHz	0.25	0.30	0.44
PCE	LTE Band 5 (Cell)	824.7 - 848.3 MHz	0.29	0.31	0.48
PCE	LTE Band 66 (AWS)	1710.7 - 1779.3 MHz	0.27	0.93	0.75
PCE	LTE Band 4 (AWS)	1710.7 - 1754.3 MHz	N/A	N/A	N/A
PCE	LTE Band 25 (PCS)	1850.7 - 1914.3 MHz	0.25	0.59	0.78
PCE	LTE Band 2 (PCS)	1850.7 - 1909.3 MHz	N/A	N/A	N/A
PCE	LTE Band 30	2307.5 - 2312.5 MHz	0.10	0.26	0.21
PCE	LTE Band 41	2498.5 - 2687.5 MHz	< 0.1	0.29	0.79
DTS	2.4 GHz WLAN	2412 - 2462 MHz	0.75	0.12	0.31
NII	U-NII-1	5180 - 5240 MHz	N/A	N/A	N/A
NII	U-NII-2A	5260 - 5320 MHz	0.10	0.12	N/A
NII	U-NII-2C	5500 - 5720 MHz	0.40	0.23	N/A
NII	U-NII-3	5745 - 5825 MHz	0.36	0.24	0.46
DSS/DTS	Bluetooth	2402 - 2480 MHz	0.10	< 0.1	<0.1
Simultaneous SAR per KDB 690783 D01v01r03:			1.25	1.39	1.52

This wireless portable device has been shown to be capable of compliance for localized specific absorption rate (SAR) for uncontrolled environment/general population exposure limits specified in ANSI/IEEE C95.1-1992 and has been tested in accordance with the measurement procedures specified in Section 1.8 of this report; for North American frequency bands only.

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them. Test results reported herein relate only to the item(s) tested.

Randy Ortanez
President

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1 DEVICE UNDER TEST

1.1 Device Overview

Band & Mode	Operating Modes	Tx Frequency
CDMA/EVDO BC10 (§90S)	Voice/Data	817.90 - 823.10 MHz
CDMA/EVDO BC0 (§22H)	Voice/Data	824.70 - 848.31 MHz
PCS CDMA/EVDO	Voice/Data	1851.25 - 1908.75 MHz
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
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 26 (Cell)	Voice/Data	814.7 - 848.3 MHz
LTE Band 5 (Cell)	Voice/Data	824.7 - 848.3 MHz
LTE Band 66 (AWS)	Voice/Data	1710.7 - 1779.3 MHz
LTE Band 4 (AWS)	Voice/Data	1710.7 - 1754.3 MHz
LTE Band 25 (PCS)	Voice/Data	1850.7 - 1914.3 MHz
LTE Band 2 (PCS)	Voice/Data	1850.7 - 1909.3 MHz
LTE Band 30	Voice/Data	2307.5 - 2312.5 MHz
LTE Band 41	Voice/Data	2498.5 - 2687.5 MHz
2.4 GHz WLAN	Voice/Data	2412 - 2462 MHz
U-NII-1	Voice/Data	5180 - 5240 MHz
U-NII-2A	Voice/Data	5260 - 5320 MHz
U-NII-2C	Voice/Data	5500 - 5720 MHz
U-NII-3	Voice/Data	5745 - 5825 MHz
Bluetooth	Data	2402 - 2480 MHz
NFC	Data	13.56 MHz
ANT+	Data	2402 - 2480 MHz
MST	Data	555 - 8.33 kHz

1.2 Power Reduction for SAR

This device utilizes a single step power reduction mechanism for SAR compliance under portable hotspot conditions for some wireless modes and bands. All hotspot SAR evaluations for this device were performed at the maximum allowed output power when hotspot is enabled. Detailed descriptions of the power reduction mechanism are included in the operational description.

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

1.3 Nominal and Maximum Output Power Specifications

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

1.3.1 Maximum PCE Power

Mode / Band		Modulated Average (dBm)
CDMA/EVDO BC10 (§90S)	Maximum	**25.5**
	Nominal	**25.0**
CDMA/EVDO BC0 (§22H)	Maximum	**25.0**
	Nominal	**24.5**
PCS CDMA/EVDO	Maximum	**24.0**
	Nominal	**23.5**

Mode / Band		Voice (dBm)	Burst Average GMSK (dBm)				Burst Average 8-PSK (dBm)			
		1 TX Slot	*1 TX Slots*	*2 TX Slots*	*3 TX Slots*	*4 TX Slots*	*1 TX Slots*	*2 TX Slots*	*3 TX Slots*	*4 TX Slots*
GSM/GPRS/EDGE 850	Maximum	**33.5**	**33.5**	**31.5**	**29.5**	**27.0**	**27.0**	**25.5**	**23.5**	**22.0**
	Nominal	**33.0**	**33.0**	**31.0**	**29.0**	**26.5**	**26.5**	**25.0**	**23.0**	**21.5**
GSM/GPRS/EDGE 1900	Maximum	**30.5**	**30.5**	**28.5**	**26.5**	**24.5**	**25.5**	**24.5**	**22.5**	**21.0**
	Nominal	**30.0**	**30.0**	**28.0**	**26.0**	**24.0**	**25.0**	**24.0**	**22.0**	**20.5**

Mode / Band		Modulated Average (dBm)			
		3GPP WCDMA	*3GPP HSDPA*	*3GPP HSUPA*	*3GPP DC-HSDPA*
UMTS Band 5 (850 MHz)	Maximum	**25.0**	**24.0**	**24.0**	**24.0**
	Nominal	**24.5**	**23.5**	**23.5**	**23.5**
UMTS Band 4 (1750 MHz)	Maximum	**24.0**	**23.0**	**23.0**	**23.0**
	Nominal	**23.5**	**22.5**	**22.5**	**22.5**
UMTS Band 2 (1900 MHz)	Maximum	**24.0**	**23.0**	**23.0**	**23.0**
	Nominal	**23.5**	**22.5**	**22.5**	**22.5**

Mode / Band		Modulated Average (dBm)
LTE Band 12	Maximum	**25.0**
	Nominal	**24.5**
LTE Band 17	Maximum	**25.0**
	Nominal	**24.5**
LTE Band 13	Maximum	**25.0**
	Nominal	**24.5**
LTE Band 26 (Cell)	Maximum	**25.0**
	Nominal	**24.5**
LTE Band 5 (Cell)	Maximum	**25.0**
	Nominal	**24.5**
LTE Band 66 (AWS)	Maximum	**25.0**
	Nominal	**24.5**
LTE Band 4 (AWS)	Maximum	**25.0**
	Nominal	**24.5**
LTE Band 25 (PCS)	Maximum	**24.0**
	Nominal	**23.5**
LTE Band 2 (PCS)	Maximum	**24.0**
	Nominal	**23.5**
LTE Band 30	Maximum	**25.0**
	Nominal	**24.5**
LTE Band 41 (PC3)	Maximum	**23.5**
	Nominal	**23.0**
LTE Band 41 (PC2)	Maximum	**27.0**
	Nominal	**26.5**

1.3.2 Reduced PCE Power – Hotspot Mode Activated

Mode / Band		Modulated Average (dBm)
PCS CDMA/EVDO	Maximum	**20.5**
	Nominal	**20.0**

Mode / Band		Voice (dBm)	Burst Average GMSK (dBm)				Burst Average 8-PSK (dBm)			
		1 TX Slot	*1 TX Slots*	*2 TX Slots*	*3 TX Slots*	*4 TX Slots*	*1 TX Slots*	*2 TX Slots*	*3 TX Slots*	*4 TX Slots*
GSM/GPRS/EDGE 1900	Maximum	**N/A**	**28.0**	**26.0**	**24.0**	**22.0**	**24.5**	**23.5**	**21.5**	**20.0**
	Nominal	**N/A**	**27.5**	**25.5**	**23.5**	**21.5**	**24.0**	**23.0**	**21.0**	**19.5**

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

Mode / Band		Modulated Average (dBm)
LTE Band 66 (AWS)	Maximum	**20.5**
	Nominal	**20.0**
LTE Band 4 (AWS)	Maximum	**20.5**
	Nominal	**20.0**
LTE Band 25 (PCS)	Maximum	**20.5**
	Nominal	**20.0**
LTE Band 2 (PCS)	Maximum	**20.5**
	Nominal	**20.0**
LTE Band 30	Maximum	**22.0**
	Nominal	**21.5**
LTE Band 41 (PC2 and PC3)	Maximum	**23.5**
	Nominal	**23.0**

1.3.3 Maximum WLAN/BT Power

Mode / Band		Modulated Average Single Tx Chain (Ant 1/Ant 2) (dBm)
IEEE 802.11b (2.4 GHz)	Maximum	**20.5**
	Nominal	**20.0**
IEEE 802.11g (2.4 GHz)	Maximum	**17.5**
	Nominal	**17.0**
IEEE 802.11n (2.4 GHz)	Maximum	**17.5**
	Nominal	**17.0**
Bluetooth (1 Mbps)	Maximum	**16.0**
	Nominal	**15.5**
Bluetooth EDR	Maximum	**10.5**
	Nominal	**10.0**
Bluetooth LE	Maximum	**9.5**
	Nominal	**9.0**

Mode / Band		Modulated Average - Single Tx Chain (Ant 1/Ant2) (dBm)				
		20 MHz Bandwidth	40 MHz Bandwidth		80 MHz Bandwidth	
IEEE 802.11a (5 GHz)	Maximum	**17.5**				
	Nominal	**17.0**				
IEEE 802.11n (5 GHz)	Maximum	**17.5**	**16.5**	**Ch 38: 14.5**		
	Nominal	**17.0**	**16.0**	**Ch 38: 14.0**		
IEEE 802.11ac (5 GHz)	Maximum	**17.5**	**16.5**	**Ch 38: 14.5**	**5.2-5.3 GHz: 14.5**	**5.5-5.8 GHz 15.5**
	Nominal	**17.0**	**16.0**	**Ch 38: 14.0**	**5.2-5.3 GHz: 14.0**	**5.5-5.8 GHz 15.0**

Mode / Band		Modulated Average - MIMO (dBm)		
		20 MHz Bandwidth	40 MHz Bandwidth	80 MHz Bandwidth
IEEE 802.11g/n (2.4 GHz)	Maximum	**18.5**		
	Nominal	**18.0**		
IEEE 802.11a (5 GHz)	Maximum	**18.5**		
	Nominal	**18.0**		
IEEE 802.11n (5 GHz)	Maximum	**18.5**	**17.5**	
	Nominal	**18.0**	**17.0**	
IEEE 802.11ac (5 GHz)	Maximum	**18.5**	**17.5**	**16.5**
	Nominal	**18.0**	**17.0**	**16.0**

1.3.4 Maximum Output Powers During Operations with Simultaneous 2.4 GHz and 5 GHz WLAN

	# Tx	5 GHz WIFI [dBm]		2.4 GHz WIFI [dBm]		802.11 Modes
		Ant1	Ant2	Ant1	Ant2	
2.4 GHz + 5 GHz	2	A	-	-	B	2.4 GHz: b,g,n 5 GHz: a,n,ac
	2	-	A	B	-	
	2	A	-	B	-	
	2	-	A	-	B	
2.4 GHz + 5 GHz	3	A	A	B	-	2.4 GHz: b, g, n 5 GHz: n, ac, a (CDD +STBC only)
	3	A	A	-	B	
	3	A	-	B	B	2.4 GHz: n, g (CDD +STBC only) 5 GHz: a, n, ac
	3	-	A	B	B	
2.4 GHz + 5 GHz	4	A	A	B	B	2.4 GHz: n, g (CDD +STBC only) 5 GHz: n, ac, a (CDD +STBC only)

A = 13.0 dBm, B=13.0 dBm
(Upper Tolerance: target+0.5 dB)

1.3.5 Reduced WLAN Power

Mode / Band		Modulated Average Single Tx Chain (Ant 1/Ant2) (dBm)
IEEE 802.11b (2.4 GHz)	Maximum	**17.5**
	Nominal	**17.0**
IEEE 802.11g (2.4 GHz)	Maximum	**15.5**
	Nominal	**15.0**
IEEE 802.11n (2.4 GHz)	Maximum	**15.5**
	Nominal	**15.0**

Mode / Band		Modulated Average - Single Tx Chain (Ant 1/Ant2) (dBm)		
		20 MHz Bandwidth	40 MHz Bandwidth	80 MHz Bandwidth
IEEE 802.11a (5 GHz)	Maximum	**15.5**		
	Nominal	**15.0**		
IEEE 802.11n (5 GHz)	Maximum	**15.5**	**14.5**	
	Nominal	**15.0**	**14.0**	
IEEE 802.11ac (5 GHz)	Maximum	**15.5**	**14.5**	**14.5**
	Nominal	**15.0**	**14.0**	**14.0**

Mode / Band		Modulated Average - MIMO (dBm)		
		20 MHz Bandwidth	40 MHz Bandwidth	80 MHz Bandwidth
IEEE 802.11g/n (2.4 GHz)	Maximum	**18.5**		
	Nominal	**18.0**		
IEEE 802.11a (5 GHz)	Maximum	**18.5**		
	Nominal	**18.0**		
IEEE 802.11n (5 GHz)	Maximum	**18.5**	**17.5**	
	Nominal	**18.0**	**17.0**	
IEEE 802.11ac (5 GHz)	Maximum	**18.5**	**17.5**	**16.5**
	Nominal	**18.0**	**17.0**	**16.0**

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.

Table 1-1
Device Edges/Sides for SAR Testing

Mode	Back	Front	Top	Bottom	Right	Left
EVDO BC10 (§90S)	Yes	Yes	No	Yes	Yes	Yes
EVDO BC0 (§22H)	Yes	Yes	No	Yes	Yes	Yes
PCS EVDO	Yes	Yes	No	Yes	Yes	Yes
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
LTE Band 12	Yes	Yes	No	Yes	Yes	Yes
LTE Band 13	Yes	Yes	No	Yes	Yes	Yes
LTE Band 26 (Cell)	Yes	Yes	No	Yes	Yes	Yes
LTE Band 5 (Cell)	Yes	Yes	No	Yes	Yes	Yes
LTE Band 66 (AWS)	Yes	Yes	No	Yes	Yes	Yes
LTE Band 25 (PCS)	Yes	Yes	No	Yes	Yes	Yes
LTE Band 30	Yes	Yes	No	Yes	No	Yes
LTE Band 41	Yes	Yes	No	Yes	No	Yes
2.4 GHz WLAN Ant 1	Yes	Yes	Yes	No	No	Yes
2.4 GHz WLAN Ant 2	Yes	Yes	Yes	No	No	Yes
5 GHz WLAN Ant 1	Yes	Yes	Yes	No	No	Yes
5 GHz WLAN Ant 2	Yes	Yes	Yes	No	No	Yes
Bluetooth	Yes	Yes	Yes	No	No	Yes

Note: Particular DUT edges were not required to be evaluated for wireless router SAR 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-A 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.

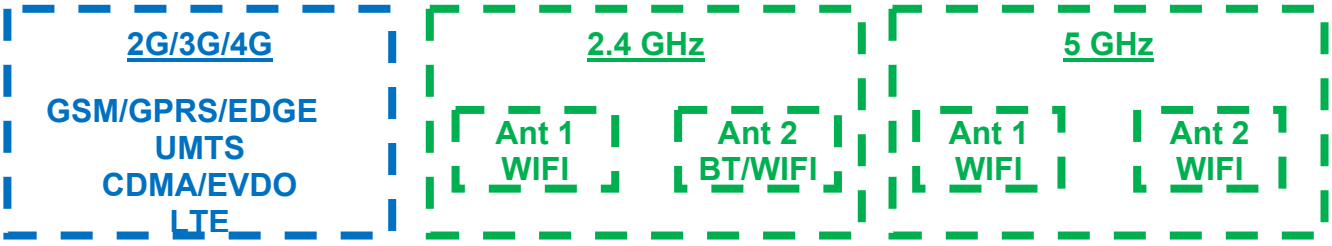

Figure 1-A
Simultaneous Transmission Paths

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 WI-FI + 5 GHz WI-FI	Yes	Yes	N/A	
4	1x CDMA voice + 2.4 GHz Bluetooth	Yes^	Yes	N/A	^ BT Tethering applications are considered.
5	1x CDMA voice + 2.4 GHz WI-FI MIMO	Yes	Yes	N/A	
6	1x CDMA voice + 5 GHz WI-FI MIMO	Yes	Yes	N/A	
7	1x CDMA voice + 2.4 GHz WI-FI MIMO + 5 GHz WI-FI MIMO	Yes	Yes	N/A	
8	GSM voice + 2.4 GHz WI-FI	Yes	Yes	N/A	
9	GSM voice + 5 GHz WI-FI	Yes	Yes	N/A	
10	GSM voice + 2.4 GHz WI-FI + 5 GHz WI-FI	Yes	Yes	N/A	
11	GSM voice + 2.4 GHz Bluetooth	Yes^	Yes	N/A	^ BT Tethering applications are considered.
12	GSM voice + 2.4 GHz WI-FI MIMO	Yes	Yes	N/A	
13	GSM voice + 5 GHz WI-FI MIMO	Yes	Yes	N/A	
14	GSM voice + 2.4 GHz WI-FI MIMO + 5 GHz WI-FI MIMO	Yes	Yes	N/A	
15	UMTS + 2.4 GHz WI-FI	Yes	Yes	Yes	
16	UMTS + 5 GHz WI-FI	Yes	Yes	Yes	
17	UMTS + 2.4 GHz WI-FI + 5 GHz WI-FI	Yes	Yes	Yes	
18	UMTS + 2.4 GHz Bluetooth	Yes^	Yes	Yes^	^ BT Tethering applications are considered.
19	UMTS + 2.4 GHz WI-FI MIMO	Yes	Yes	Yes	
20	UMTS + 5 GHz WI-FI MIMO	Yes	Yes	Yes	
21	UMTS + 2.4 GHz WI-FI MIMO + 5 GHz WI-FI MIMO	Yes	Yes	Yes	
22	LTE + 2.4 GHz WI-FI	Yes	Yes	Yes	
23	LTE + 5 GHz WI-FI	Yes	Yes	Yes	
24	LTE + 2.4 GHz WI-FI + 5 GHz WI-FI	Yes	Yes	Yes	
25	LTE + 2.4 GHz Bluetooth	Yes^	Yes	Yes^	^ BT Tethering applications are considered.
26	LTE + 2.4 GHz WI-FI MIMO	Yes	Yes	Yes	
27	LTE + 5 GHz WI-FI MIMO	Yes	Yes	Yes	
28	LTE + 2.4 GHz WI-FI MIMO + 5 GHz WI-FI MIMO	Yes	Yes	Yes	
29	CDMA/EVDO data + 2.4 GHz WI-FI	Yes*	Yes*	Yes	*-Pre-installed VOIP applications are considered.
30	CDMA/EVDO data + 5 GHz WI-FI	Yes*	Yes*	Yes	*-Pre-installed VOIP applications are considered.
31	CDMA/EVDO data + 2.4 GHz WI-FI + 5 GHz WI-FI	Yes*	Yes*	Yes	*-Pre-installed VOIP applications are considered.
32	CDMA/EVDO data + 2.4 GHz Bluetooth	Yes*^	Yes*	Yes^	*-Pre-installed VOIP applications are considered. ^ BT Tethering applications are considered.
33	CDMA/EVDO data + 2.4 GHz WI-FI MIMO	Yes*	Yes*	Yes	*-Pre-installed VOIP applications are considered.
34	CDMA/EVDO data + 5 GHz WI-FI MIMO	Yes*	Yes*	Yes	*-Pre-installed VOIP applications are considered.
35	CDMA/EVDO data + 2.4 GHz WI-FI MIMO + 5 GHz WI-FI MIMO	Yes*	Yes*	Yes	*-Pre-installed VOIP applications are considered.
36	GPRS/EDGE + 2.4 GHz WI-FI	N/A	N/A	Yes	
37	GPRS/EDGE + 5 GHz WI-FI	N/A	N/A	Yes	
38	GPRS/EDGE + 2.4 GHz WI-FI + 5 GHz WI-FI	N/A	N/A	Yes	
39	GPRS/EDGE + 2.4 GHz Bluetooth	N/A	N/A	Yes^	^ BT Tethering applications are considered.
40	GPRS/EDGE + 2.4 GHz WI-FI MIMO	N/A	N/A	Yes	
41	GPRS/EDGE + 5 GHz WI-FI MIMO	N/A	N/A	Yes	
42	GPRS/EDGE + 2.4 GHz WI-FI MIMO + 5 GHz WI-FI MIMO	N/A	N/A	Yes	

1. All licensed modes share the same antenna path and cannot transmit simultaneously.
2. 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.
3. Per the manufacturer, WIFI Direct is not expected to be used in conjunction with a held-to-ear or body-worn accessory voice call. Therefore, there are no simultaneous transmission scenarios involving WIFI direct beyond that listed in the above table.
4. 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.
5. This device supports 2x2 MIMO Tx for WLAN. 802.11a/g/n/ac supports CDD and STBC and 802.11n/ac additionally supports SDM.
6. This device supports Bluetooth tethering for EDR packet only.
7. This device supports VOLTE.
8. This device supports VoWIFI.

1.7 Miscellaneous SAR Test Considerations

(A) WIFI/BT

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

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

This device supports IEEE 802.11ac with the following features:
a) Up to 80 MHz Bandwidth only
b) No aggregate channel configurations
c) 2 Tx antennas
d) 256 QAM is supported
e) TDWR and Band gap channels are supported

(B) Licensed Transmitter(s)

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

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.

This device supports downlink 4x4 MIMO operations for LTE Bands 2, 25, 4 and 66 only. Per FCC Guidance, SAR for downlink 4x4 MIMO was not needed since the maximum average output power in 4x4 downlink MIMO mode was not > 0.25 dB higher than the maximum output power with downlink 4x4 MIMO inactive.

This device supports both LTE Band 12 and LTE Band 17. 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 both LTE Band 4 and LTE Band 66. Since the supported frequency span for LTE Band 4 falls completely within the supported frequency span for LTE Band 66, both LTE bands have the same target power, and both LTE bands share the same transmission path, SAR was only assessed for LTE Band 66.

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

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 64QAM on the uplink and 256QAM on the downlink for LTE Operations. Conducted powers for 64QAM uplink configurations were measured per Section 5.1 of FCC KDB Publication 941225 D05v02r05. SAR was not required for 64QAM since the highest maximum output power for 64 QAM is $\leq \frac{1}{2}$ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is $\leq$ 1.45 W/kg, per Section 5.2.4 of FCC KDB Publication 941225 D05v02r05.

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

This device supports LTE Carrier Aggregation (CA) in the uplink for LTE Band 41 with two component carriers in the uplink. SAR measurements and conducted powers were evaluated per FCC Guidance. All uplink communications are identical to Release 8 specifications. Per FCC KDB Publication 941225 D05A v01r02, SAR for LTE CA operations was not needed since the maximum average output power in LTE CA mode was not >0.25 dB higher than the maximum output power when downlink carrier aggregation was inactive.

1.8 Guidance Applied

- IEEE 1528-2013
- FCC KDB Publication 941225 D01v03r01, D05v02r04, D05Av01r02, D06v02r01 (2G/3G/4G and Hotspot)
- FCC KDB Publication 248227 D01v02r02 (SAR Considerations for 802.11 Devices)
- FCC KDB Publication 447498 D01v06 (General SAR Guidance)
- FCC KDB Publication 865664 D01v01r04, D02v01r02 (SAR Measurements up to 6 GHz)
- October 2013 TCB Workshop Notes (GPRS Testing Considerations)

1.9 Device Serial Numbers

Several samples with identical hardware were used to support SAR testing. The manufacturer has confirmed that the device(s) tested have the same physical, mechanical and thermal characteristics and are within operational tolerances expected for production units.

	Head Serial Number	Body-Worn Serial Number	Hotspot Serial Number
CDMA/EVDO BC10 (§90S)	1EED5	1EED5	1EED5
CDMA/EVDO BC0 (§22H)	1EED5	1EED5	1EED5
PCS CDMA/EVDO	1EED5	1EED5	077C3
GSM/GPRS/EDGE 850	1EEA3	1EEA3	1EEA3
GSM/GPRS/EDGE 1900	1EEA3	1EEA3	07A6E
UMTS 850	1EEA3	1EEA3	1EEA3
UMTS 1750	07803	07803	077C3
UMTS 1900	1EEA3	1EEA3	07A6E
LTE Band 12	1EE9E	1EE9E	1EE9E
LTE Band 13	1EE9E	1EE9E	1EE9E
LTE Band 26 (Cell)	1EE9E	1EE9E	1EE9E
LTE Band 5 (Cell)	1EE9E	1EE9E	1EE9E
LTE Band 66 (AWS)	07803	07803	077C3
LTE Band 25 (PCS)	1EECE	1EECE	1EEC6
LTE Band 30	1EED0	1EED0	1EED1
LTE Band 41	1EE9F	1EE9F	1EE9F
2.4 GHz WLAN	27217	27217	27217
5 GHz WLAN	27217	27217	27217
Bluetooth	F7863	21217	F7863

2 LTE INFORMATION

LTE Information					
FCC ID	**A3LSMG950U**				
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 26 (Cell) (814.7 - 848.3 MHz)				
	LTE Band 5 (Cell) (824.7 - 848.3 MHz)				
	LTE Band 66 (AWS) (1710.7 - 1779.3 MHz)				
	LTE Band 4 (AWS) (1710.7 - 1754.3 MHz)				
	LTE Band 25 (PCS) (1850.7 - 1914.3 MHz)				
	LTE Band 2 (PCS) (1850.7 - 1909.3 MHz)				
	LTE Band 30 (2307.5 - 2312.5 MHz)				
	LTE Band 41 (2498.5 - 2687.5 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 26 (Cell): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz				
	LTE Band 5 (Cell): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz				
	LTE Band 66 (AWS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 4 (AWS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 25 (PCS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 2 (PCS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 30: 5 MHz, 10 MHz				
	LTE Band 41: 5 MHz, 10 MHz, 15 MHz, 20 MHz				
Channel Numbers and Frequencies (MHz)	Low	Low-Mid	Mid	Mid-High	High
LTE Band 12: 1.4 MHz	699.7 (23017)		707.5 (23095)	715.3 (23173)	
LTE Band 12: 3 MHz	700.5 (23025)		707.5 (23095)	714.5 (23165)	
LTE Band 12: 5 MHz	701.5 (23035)		707.5 (23095)	713.5 (23155)	
LTE Band 12: 10 MHz	704 (23060)		707.5 (23095)	711 (23130)	
LTE Band 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 26 (Cell): 1.4 MHz	814.7 (26697)		831.5 (26865)	848.3 (27033)	
LTE Band 26 (Cell): 3 MHz	815.5 (26705)		831.5 (26865)	847.5 (27025)	
LTE Band 26 (Cell): 5 MHz	816.5 (26715)		831.5 (26865)	846.5 (27015)	
LTE Band 26 (Cell): 10 MHz	819 (26740)		831.5 (26865)	844 (26990)	
LTE Band 26 (Cell): 15 MHz	821.5 (26765)		831.5 (26865)	841.5 (26965)	
LTE Band 5 (Cell): 1.4 MHz	824.7 (20407)		836.5 (20525)	848.3 (20643)	
LTE Band 5 (Cell): 3 MHz	825.5 (20415)		836.5 (20525)	847.5 (20635)	
LTE Band 5 (Cell): 5 MHz	826.5 (20425)		836.5 (20525)	846.5 (20625)	
LTE Band 5 (Cell): 10 MHz	829 (20450)		836.5 (20525)	844 (20600)	
LTE Band 66 (AWS): 1.4 MHz	1710.7 (131979)		1745 (132322)	1779.3 (132665)	
LTE Band 66 (AWS): 3 MHz	1711.5 (131987)		1745 (132322)	1778.5 (132657)	
LTE Band 66 (AWS): 5 MHz	1712.5 (131997)		1745 (132322)	1777.5 (132647)	
LTE Band 66 (AWS): 10 MHz	1715 (132022)		1745 (132322)	1775 (132622)	
LTE Band 66 (AWS): 15 MHz	1717.5 (132047)		1745 (132322)	1772.5 (132597)	
LTE Band 66 (AWS): 20 MHz	1720 (132072)		1745 (132322)	1770 (132572)	
LTE Band 4 (AWS): 1.4 MHz	1710.7 (19957)		1732.5 (20175)	1754.3 (20393)	
LTE Band 4 (AWS): 3 MHz	1711.5 (19965)		1732.5 (20175)	1753.5 (20385)	
LTE Band 4 (AWS): 5 MHz	1712.5 (19975)		1732.5 (20175)	1752.5 (20375)	
LTE Band 4 (AWS): 10 MHz	1715 (20000)		1732.5 (20175)	1750 (20350)	
LTE Band 4 (AWS): 15 MHz	1717.5 (20025)		1732.5 (20175)	1747.5 (20325)	
LTE Band 4 (AWS): 20 MHz	1720 (20050)		1732.5 (20175)	1745 (20300)	
LTE Band 25 (PCS): 1.4 MHz	1850.7 (26047)		1882.5 (26365)	1914.3 (26683)	
LTE Band 25 (PCS): 3 MHz	1851.5 (26055)		1882.5 (26365)	1913.5 (26675)	
LTE Band 25 (PCS): 5 MHz	1852.5 (26065)		1882.5 (26365)	1912.5 (26665)	
LTE Band 25 (PCS): 10 MHz	1855 (26090)		1882.5 (26365)	1910 (26640)	
LTE Band 25 (PCS): 15 MHz	1857.5 (26115)		1882.5 (26365)	1907.5 (26615)	
LTE Band 25 (PCS): 20 MHz	1860 (26140)		1882.5 (26365)	1905 (26590)	
LTE Band 2 (PCS): 1.4 MHz	1850.7 (18607)		1880 (18900)	1909.3 (19193)	
LTE Band 2 (PCS): 3 MHz	1851.5 (18615)		1880 (18900)	1908.5 (19185)	
LTE Band 2 (PCS): 5 MHz	1852.5 (18625)		1880 (18900)	1907.5 (19175)	
LTE Band 2 (PCS): 10 MHz	1855 (18650)		1880 (18900)	1905 (19150)	
LTE Band 2 (PCS): 15 MHz	1857.5 (18675)		1880 (18900)	1902.5 (19125)	
LTE Band 2 (PCS): 20 MHz	1860 (18700)		1880 (18900)	1900 (19100)	
LTE Band 30: 5 MHz	2307.5 (27685)		2310 (27710)	2312.5 (27735)	
LTE Band 30: 10 MHz	N/A		2310 (27710)	N/A	
LTE Band 41: 5 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)
LTE Band 41: 10 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)
LTE Band 41: 15 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)
LTE Band 41: 20 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)
UE Category	6				
DL UE Category	16				
UL UE Category	5				
Modulations Supported in UL	QPSK, 16QAM, 64 QAM				
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 12 Additional Information	This device does not support full CA features on 3GPP Release 12. It supports carrier aggregation and downlink MIMO features as shown in Section 9, and Appendix G. All other uplink communications are identical to the Release 8 Specifications. Uplink communications are done on the PCC unless otherwise specified. The following LTE Release 12 Features are not supported: Relay, HetNet, Enhanced eICIC, WIFI Offloading, MDH, eMBMS, Cross-Carrier Scheduling, Enhanced SC-FDMA				

3 INTRODUCTION

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

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

3.1 SAR Definition

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

Equation 3-1
SAR Mathematical Equation

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

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

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

where:

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

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

4 DOSIMETRIC ASSESSMENT

4.1 Measurement Procedure

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

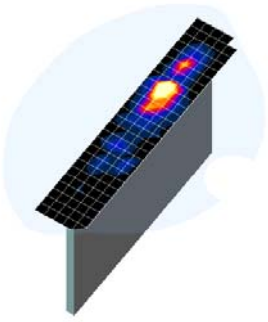

Figure 4-A
Sample SAR Area Scan

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-B 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-A. 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-A). 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].

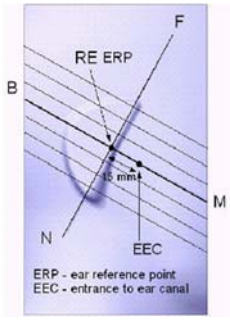

Figure 5-A
Close-Up Side view of ERP

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-C). 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.

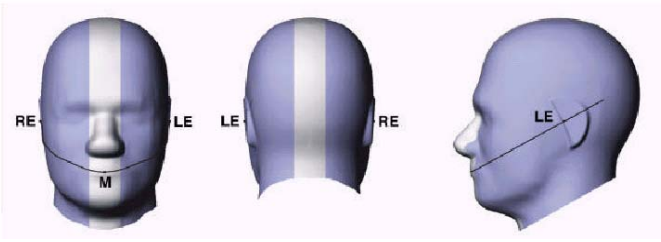

Figure 5-B
Front, back and side view of SAM Twin Phantom

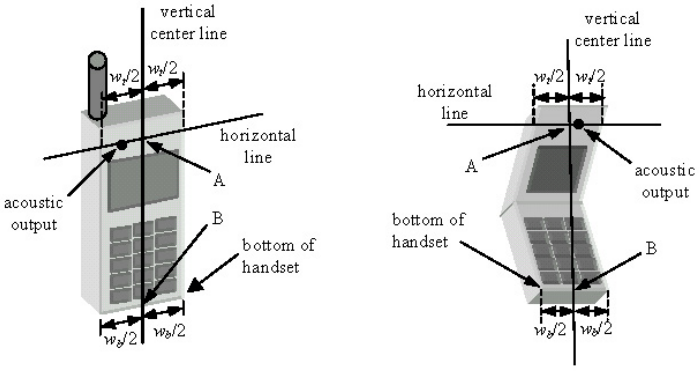

Figure 5-C
Handset Vertical Center & Horizontal Line Reference Points

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-A), 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.

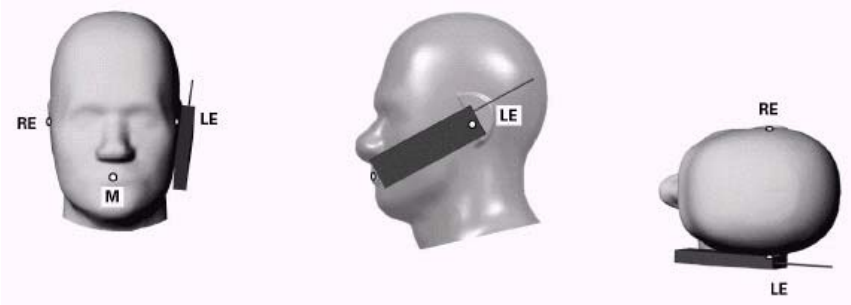

Figure 6-A Front, Side and Top View of Cheek Position

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-B).

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-B).

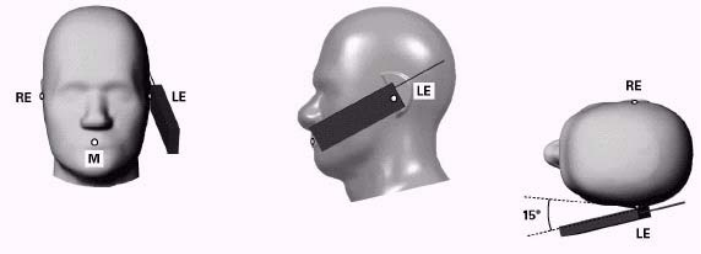

Figure 6-B Front, Side and Top View of Ear/15º Tilt Position

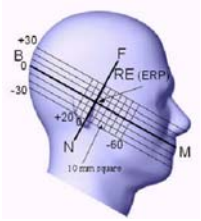

Figure 6-C
Side view w/ relevant markings

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

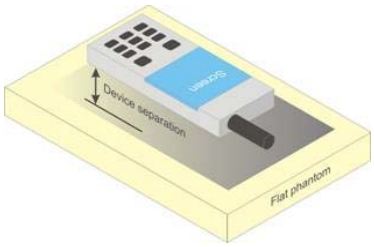

Figure 6-D
Sample Body-Worn Diagram

Accessories for Body-worn operation configurations are divided into two categories: those that do not contain metallic components and those that do contain metallic components. When multiple accessories that do not contain metallic components are supplied with the device, the device is tested with only the accessory that

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

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

6.6 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.

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.

8.5.6 SAR Measurement Conditions for DC-HSDPA

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

8.6 SAR Measurement Conditions for LTE

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

8.6.1 Spectrum Plots for RB Configurations

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

8.6.2 MPR

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

8.6.3 A-MPR

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

8.6.4 Required RB Size and RB Offsets for SAR Testing

According to FCC KDB 941225 D05v02r04:

a. Per Section 5.2.1, SAR is required for QPSK 1 RB Allocation for the largest bandwidth

i. The required channel and offset combination with the highest maximum output power is required for SAR.
ii. When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required. Otherwise, SAR is required for the remaining required test channels using the RB offset configuration with highest output power for that channel.
iii. When the reported SAR for a required test channel is > 1.45 W/kg, SAR is required for all RB offset configurations for that channel.

b. Per Section 5.2.2, SAR is required for 50% RB allocation using the largest bandwidth following the same procedures outlined in Section 5.2.1.
c. Per Section 5.2.3, QPSK SAR is not required for the 100% allocation when the highest maximum output power for the 100% allocation is less than the highest maximum output power of the 1 RB and 50% RB allocations and the reported SAR for the 1 RB and 50% RB allocations is < 0.8 W/kg.
d. Per Section 5.2.4 and 5.3, SAR tests for higher order modulations and lower bandwidths configurations are not required when the conducted power of the required test configurations determined by Sections 5.2.1 through 5.2.3 is less than or equal to ½ dB higher than the equivalent configuration using QPSK modulation and when the QPSK SAR for those configurations is <1.45 W/kg.

8.6.5 TDD

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

8.6.6 Downlink Only Carrier Aggregation

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

8.7 SAR Testing with 802.11 Transmitters

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

8.7.1 General Device Setup

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

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

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

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

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

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

8.7.4 Initial Test Position Procedure

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

8.7.5 2.4 GHz SAR Test Requirements

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

1) When the reported SAR of the highest measured maximum output power channel for the exposure configuration is ≤ 0.8 W/kg, no further SAR testing is required for 802.11b DSSS in that exposure configuration.

2) When the reported SAR is > 0.8 W/kg, SAR is required for that position using the next highest measured output power channel. When any reported SAR is > 1.2 W/kg, SAR is required for the third channel; i.e., all channels require testing.

2.4 GHz 802.11 g/n OFDM are additionally evaluated for SAR if the highest reported SAR for 802.11b, adjusted by the ratio of the OFDM to DSSS specified maximum output power, is › 1.2 W/kg. When SAR is required for OFDM modes in 2.4 GHz band, the Initial Test Configuration Procedures should be followed.

8.7.6 OFDM Transmission Mode and SAR Test Channel Selection

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, 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.

8.7.9 MIMO SAR considerations

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

9 RF CONDUCTED POWERS

9.1 CDMA Conducted Powers

Table 9-1
Maximum Conducted Powers

Band	Channel	Rule Part	Frequency	SO55 [dBm]	SO55 [dBm]	SO75 [dBm]	TDSO SO32 [dBm]	TDSO SO32 [dBm]	1x EvDO Rev. 0 [dBm]	1x EvDO Rev. A [dBm]
	F-RC		MHz	RC1	RC3	RC11	FCH+SCH	FCH	(RTAP)	(RETAP)
Cellular	564	90S	820.1	24.34	24.38	24.43	24.44	24.43	24.42	24.23
Cellular	1013	22H	824.7	24.45	24.53	24.55	24.54	24.52	24.56	24.32
	384	22H	836.52	24.43	24.48	24.49	24.47	24.47	24.45	24.28
	777	22H	848.31	24.49	24.47	24.47	24.49	24.49	24.46	24.29
PCS	25	24E	1851.25	23.25	23.23	23.34	23.23	23.30	23.43	23.23
	600	24E	1880	23.47	23.38	23.68	23.42	23.40	23.57	23.68
	1175	24E	1908.75	23.60	23.53	23.63	23.58	23.53	23.67	23.43

Table 9-2
Reduced Conducted Powers – Hotspot Mode Active

Band	Channel	Rule Part	Frequency	TDSO SO32 [dBm]	TDSO SO32 [dBm]	1x EvDO Rev. 0 [dBm]	1x EvDO Rev. A [dBm]
	F-RC		MHz	FCH+SCH	FCH	(RTAP)	(RETAP)
PCS	25	24E	1851.25	20.05	20.04	20.09	20.03
	600	24E	1880	20.09	20.07	20.11	20.11
	1175	24E	1908.75	20.38	20.40	20.43	20.44

Note:

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

Figure 9-A
Power Measurement Setup

9.2 GSM Conducted Powers

Table 9-3
Maximum Conducted Powers

Maximum Burst-Averaged Output Power										
		Voice	*GPRS/EDGE Data (GMSK)*				*EDGE Data (8-PSK)*			
Band	**Channel**	**GSM [dBm] CS (1 Slot)**	**GPRS [dBm] 1 Tx Slot**	**GPRS [dBm] 2 Tx Slot**	**GPRS [dBm] 3 Tx Slot**	**GPRS [dBm] 4 Tx Slot**	**EDGE [dBm] 1 Tx Slot**	**EDGE [dBm] 2 Tx Slot**	**EDGE [dBm] 3 Tx Slot**	**EDGE [dBm] 4 Tx Slot**
GSM 850	128	33.06	33.10	30.68	**28.71**	26.55	26.53	24.75	22.49	20.81
	190	33.00	33.04	30.72	**28.69**	26.52	26.51	24.98	22.75	20.78
	251	33.25	33.29	30.81	**28.97**	26.51	26.41	24.89	22.68	20.70
GSM 1900	512	30.19	30.18	28.30	26.00	24.49	25.31	24.23	22.02	20.49
	661	29.70	29.75	27.84	25.71	24.11	25.06	23.94	21.68	20.35
	810	29.64	29.65	27.67	25.53	23.91	24.84	23.87	21.55	20.11
Calculated Maximum Frame-Averaged Output Power										
		Voice	*GPRS/EDGE Data (GMSK)*				*EDGE Data (8-PSK)*			
Band	**Channel**	**GSM [dBm] CS (1 Slot)**	**GPRS [dBm] 1 Tx Slot**	**GPRS [dBm] 2 Tx Slot**	**GPRS [dBm] 3 Tx Slot**	**GPRS [dBm] 4 Tx Slot**	**EDGE [dBm] 1 Tx Slot**	**EDGE [dBm] 2 Tx Slot**	**EDGE [dBm] 3 Tx Slot**	**EDGE [dBm] 4 Tx Slot**
GSM 850	128	24.03	24.07	24.66	**24.45**	23.54	17.50	18.73	18.23	17.80
	190	23.97	24.01	24.70	**24.43**	23.51	17.48	18.96	18.49	17.77
	251	24.22	24.26	24.79	**24.71**	23.50	17.38	18.87	18.42	17.69
GSM 1900	512	21.16	21.15	22.28	21.74	21.48	16.28	18.21	17.76	17.48
	661	20.67	20.72	21.82	21.45	21.10	16.03	17.92	17.42	17.34
	810	20.61	20.62	21.65	21.27	20.90	15.81	17.85	17.29	17.10
GSM 850	**Frame Avg.Targets:**	23.97	23.97	24.98	**24.74**	23.49	17.47	18.98	18.74	18.49
GSM 1900		20.97	20.97	21.98	21.74	20.99	15.97	17.98	17.74	17.49

Table 9-4
Reduced Conducted Powers – Hotspot Mode Active

Maximum Burst-Averaged Output Power									
		GPRS/EDGE Data (GMSK)				*EDGE Data (8-PSK)*			
Band	**Channel**	**GPRS [dBm] 1 Tx Slot**	**GPRS [dBm] 2 Tx Slot**	**GPRS [dBm] 3 Tx Slot**	**GPRS [dBm] 4 Tx Slot**	**EDGE [dBm] 1 Tx Slot**	**EDGE [dBm] 2 Tx Slot**	**EDGE [dBm] 3 Tx Slot**	**EDGE [dBm] 4 Tx Slot**
GSM 1900	512	27.35	24.91	**22.56**	20.52	23.37	22.65	20.57	19.00
	661	27.98	25.32	**23.11**	21.03	23.80	23.15	20.86	19.34
	810	27.87	25.24	**23.05**	20.93	23.71	23.12	20.77	19.35
Calculated Maximum Frame-Averaged Output Power									
		GPRS/EDGE Data (GMSK)				*EDGE Data (8-PSK)*			
Band	**Channel**	**GPRS [dBm] 1 Tx Slot**	**GPRS [dBm] 2 Tx Slot**	**GPRS [dBm] 3 Tx Slot**	**GPRS [dBm] 4 Tx Slot**	**EDGE [dBm] 1 Tx Slot**	**EDGE [dBm] 2 Tx Slot**	**EDGE [dBm] 3 Tx Slot**	**EDGE [dBm] 4 Tx Slot**
GSM 1900	512	18.32	18.89	**18.30**	17.51	14.34	16.63	16.31	15.99
	661	18.95	19.30	**18.85**	18.02	14.77	17.13	16.60	16.33
	810	18.84	19.22	**18.79**	17.92	14.68	17.10	16.51	16.34
GSM 1900	**Frame Avg.Targets:**	18.47	19.48	**19.24**	18.49	14.97	16.98	16.74	16.49

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: 33 (Max 4 Tx Uplink Slots)
EDGE Multislot class: 33 (Max 4 Tx Uplink Slots)
DTM Multislot Class: N/A

Figure 9-B
Power Measurement Setup

9.3 UMTS Conducted Powers

Table 9-5
Maximum 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	24.85	24.90	24.73	23.56	23.44	23.50	23.16	23.12	23.15	-
99		12.2 kbps AMR	24.85	24.83	24.62	23.51	23.46	23.55	23.16	23.13	23.15	-
6	HSDPA	Subtest 1	23.80	23.70	23.66	22.18	22.22	22.84	22.52	22.40	22.09	0
6		Subtest 2	23.90	23.63	23.75	22.02	22.27	22.81	22.47	22.52	22.51	0
6		Subtest 3	23.39	23.30	23.37	21.65	21.62	22.36	21.96	22.06	21.64	0.5
6		Subtest 4	23.33	23.31	23.44	21.66	21.83	22.40	21.75	22.10	21.96	0.5
6	HSUPA	Subtest 1	23.77	23.77	23.65	22.06	21.99	22.45	22.19	22.17	22.26	0
6		Subtest 2	21.77	21.85	21.67	20.21	20.40	20.88	20.31	20.14	20.43	2
6		Subtest 3	22.73	22.76	22.75	21.17	21.00	21.48	21.27	21.26	21.05	1
6		Subtest 4	21.82	21.83	21.62	20.20	20.35	20.56	20.25	20.20	20.07	2
6		Subtest 5	23.85	23.80	23.80	22.26	22.15	22.84	22.46	22.54	22.50	0
8	DC-HSDPA	Subtest 1	23.73	23.82	23.73	22.23	22.38	22.85	22.29	22.61	22.27	0
8		Subtest 2	23.82	23.76	23.61	22.03	22.37	22.85	22.24	22.53	22.50	0
8		Subtest 3	23.33	23.25	23.23	21.59	21.49	22.24	21.97	21.91	21.58	0.5
8		Subtest 4	23.39	23.31	23.21	21.76	21.97	22.21	22.02	22.01	21.98	0.5

Table 9-6
Reduced Conducted Powers –Hotspot Mode Active

3GPP Release Version	Mode	3GPP 34.121 Subtest	AWS Band [dBm]			PCS Band [dBm]			3GPP MPR [dB]
			1312	1412	1513	9262	9400	9538	
99	WCDMA	12.2 kbps RMC	18.80	18.88	19.03	18.82	18.97	18.75	-
99		12.2 kbps AMR	18.78	18.87	19.03	18.80	18.88	18.61	-
6	HSDPA	Subtest 1	18.92	18.86	19.09	18.42	18.58	18.66	0
6		Subtest 2	18.94	18.87	19.01	18.77	18.73	18.30	0
6		Subtest 3	18.82	18.92	18.97	18.55	18.73	18.42	0.5
6		Subtest 4	18.95	18.87	19.00	18.35	18.82	18.42	0.5
6	HSUPA	Subtest 1	17.95	17.84	18.00	17.28	17.96	17.42	0
6		Subtest 2	18.15	18.00	18.97	17.50	17.59	17.66	2
6		Subtest 3	18.48	18.52	18.60	17.38	17.55	17.26	1
6		Subtest 4	17.81	17.84	18.88	17.00	17.48	17.19	2
6		Subtest 5	18.87	18.90	19.00	18.49	18.56	18.39	0
8	DC-HSDPA	Subtest 1	18.88	18.93	19.00	18.52	18.53	18.37	0
8		Subtest 2	18.90	18.87	19.02	18.51	18.51	18.34	0
8		Subtest 3	18.94	18.83	19.00	18.66	18.50	18.28	0.5
8		Subtest 4	18.86	18.91	19.00	18.64	18.75	18.35	0.5

DC-HSDPA considerations

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

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

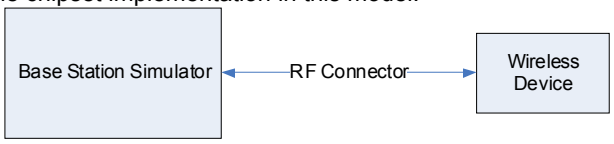

Figure 9-C
Power Measurement Setup

9.4 LTE Conducted Powers

9.4.1 LTE Band 12

Table 9-7
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	**24.60**	0	0
	1	25	24.48		0
	1	49	24.35		0
	25	0	**23.55**	0-1	1
	25	12	23.50		1
	25	25	23.40		1
	50	0	23.52		1
16QAM	1	0	23.98	0-1	1
	1	25	23.92		1
	1	49	23.77		1
	25	0	22.52	0-2	2
	25	12	22.50		2
	25	25	22.48		2
	50	0	22.53		2
64QAM	1	0	22.63	0-2	2
	1	25	22.49		2
	1	49	22.40		2
	25	0	21.51	0-3	3
	25	12	21.47		3
	25	25	21.40		3
	50	0	21.45		3

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 9-8
LTE Band 12 Conducted Powers - 5 MHz Bandwidth

LTE Band 12 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 23035 (701.5 MHz)	Mid Channel 23095 (707.5 MHz)	High Channel 23155 (713.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.18	24.30	24.40	0	0
	1	12	24.16	24.24	24.34		0
	1	24	24.11	24.17	24.29		0
	12	0	23.70	23.85	23.81	0-1	1
	12	6	23.67	23.86	23.76		1
	12	13	23.65	23.76	23.82		1
	25	0	23.61	23.84	23.80		1
16QAM	1	0	23.88	23.77	24.00	0-1	1
	1	12	23.82	23.72	23.89		1
	1	24	23.75	23.66	24.00		1
	12	0	22.77	22.81	22.86	0-2	2
	12	6	22.76	22.79	22.75		2
	12	13	22.72	22.75	22.73		2
	25	0	22.64	22.74	22.89		2
64QAM	1	0	22.70	22.57	22.62	0-2	2
	1	12	22.61	22.60	22.49		2
	1	24	22.43	22.59	22.69		2
	12	0	21.24	21.36	21.45	0-3	3
	12	6	21.26	21.32	21.38		3
	12	13	21.18	21.31	21.34		3
	25	0	21.14	21.22	21.36		3

Table 9-9
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	24.01	24.23	24.25	0	0
	1	7	24.10	24.39	24.40		0
	1	14	24.03	24.24	24.25		0
	8	0	23.56	23.77	23.82	0-1	1
	8	4	23.57	23.77	23.82		1
	8	7	23.52	23.76	23.82		1
	15	0	23.53	23.76	23.82		1
16QAM	1	0	23.85	23.99	23.85	0-1	1
	1	7	23.96	24.00	24.00		1
	1	14	23.90	23.99	23.99		1
	8	0	22.65	22.78	22.80	0-2	2
	8	4	22.71	22.80	22.98		2
	8	7	22.59	22.85	22.88		2
	15	0	22.55	22.76	22.86		2
64QAM	1	0	22.65	22.50	22.58	0-2	2
	1	7	22.61	22.48	22.53		2
	1	14	22.57	22.54	22.60		2
	8	0	21.25	21.35	21.47	0-3	3
	8	4	21.26	21.23	21.42		3
	8	7	21.29	21.25	21.31		3
	15	0	21.23	21.19	21.43		3

Table 9-10
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	24.04	24.18	24.20	0	0
	1	2	24.08	24.15	24.26		0
	1	5	24.07	24.10	24.17		0
	3	0	23.96	24.16	24.21		0
	3	2	24.04	24.17	24.27		0
	3	3	23.99	24.17	24.23		0
	6	0	23.52	23.72	23.74	0-1	1
16QAM	1	0	23.75	23.83	23.90	0-1	1
	1	2	23.68	24.00	24.00		1
	1	5	23.64	23.99	23.90		1
	3	0	23.50	23.80	23.95		1
	3	2	23.63	23.97	23.98		1
	3	3	23.72	23.85	23.85		1
	6	0	22.54	22.78	22.89	0-2	2
64QAM	1	0	22.40	22.80	22.75	0-2	2
	1	2	22.41	22.72	22.81		2
	1	5	22.37	22.76	22.76		2
	3	0	22.34	22.50	22.60		2
	3	2	22.41	22.59	22.65		2
	3	3	22.32	22.33	22.72		2
	6	0	21.16	21.38	21.76	0-3	3

9.4.2 LTE Band 13

Table 9-11
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	24.31	0	0
	1	25	**24.48**		0
	1	49	24.46		0
	25	0	**23.54**	0-1	1
	25	12	23.52		1
	25	25	23.43		1
	50	0	23.53		1
16QAM	1	0	23.42	0-1	1
	1	25	23.86		1
	1	49	23.87		1
	25	0	22.56	0-2	2
	25	12	22.57		2
	25	25	22.51		2
	50	0	22.61		2
64QAM	1	0	22.39	0-2	2
	1	25	22.51		2
	1	49	22.33		2
	25	0	21.48	0-3	3
	25	12	21.44		3
	25	25	21.35		3
	50	0	21.39		3

Table 9-12
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	24.13	0	0
	1	12	24.15		0
	1	24	24.12		0
	12	0	23.62	0-1	1
	12	6	23.62		1
	12	13	23.59		1
	25	0	23.60		1
16QAM	1	0	23.94	0-1	1
	1	12	24.00		1
	1	24	23.99		1
	12	0	22.64	0-2	2
	12	6	22.69		2
	12	13	22.61		2
	25	0	22.62		2
64QAM	1	0	22.54	0-2	2
	1	12	22.51		2
	1	24	22.42		2
	12	0	21.37	0-3	3
	12	6	21.31		3
	12	13	21.34		3
	25	0	21.30		3

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 26 (Cell)

Table 9-13
LTE Band 26 (Cell) Conducted Powers - 15 MHz Bandwidth

LTE Band 26 (Cell) 15 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 26865 (831.5 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	**24.78**	0	0
	1	36	24.63		0
	1	74	24.40		0
	36	0	**23.72**	0-1	1
	36	18	23.67		1
	36	37	23.52		1
	75	0	23.59		1
16QAM	1	0	23.98	0-1	1
	1	36	23.94		1
	1	74	23.87		1
	36	0	22.70	0-2	2
	36	18	22.67		2
	36	37	22.53		2
	75	0	22.67		2
64QAM	1	0	22.72	0-2	2
	1	36	22.57		2
	1	74	22.40		2
	36	0	21.60	0-3	3
	36	18	21.55		3
	36	37	21.42		3
	75	0	21.48		3

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

Table 9-14
LTE Band 26 (Cell) Conducted Powers - 10 MHz Bandwidth

LTE Band 26 (Cell) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26740 (819.0 MHz)	Mid Channel 26865 (831.5 MHz)	High Channel 26990 (844.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	24.05	24.31	24.53	0	0
	1	25	23.99	24.19	24.42		0
	1	49	23.94	24.24	24.30		0
	25	0	23.52	23.70	23.52	0-1	1
	25	12	23.53	23.70	23.46		1
	25	25	23.49	23.66	23.39		1
	50	0	23.50	23.67	23.44		1
16QAM	1	0	23.86	23.94	23.69	0-1	1
	1	25	23.77	23.99	23.64		1
	1	49	23.74	24.00	23.50		1
	25	0	22.57	22.78	22.46	0-2	2
	25	12	22.58	22.80	22.45		2
	25	25	22.50	22.77	22.39		2
	50	0	22.56	22.72	22.43		2
64QAM	1	0	22.72	22.77	22.74	0-2	2
	1	25	22.70	22.76	22.81		2
	1	49	22.59	22.70	22.76		2
	25	0	21.37	21.60	21.53	0-3	3
	25	12	21.33	21.54	21.50		3
	25	25	21.21	21.48	21.43		3
	50	0	21.27	21.51	21.41		3

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

LTE Band 26 (Cell) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26715 (816.5 MHz)	Mid Channel 26865 (831.5 MHz)	High Channel 27015 (846.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.40	24.49	24.39	0	0
	1	12	24.33	24.43	24.32		0
	1	24	24.27	24.41	24.35		0
	12	0	23.38	23.52	23.43	0-1	1
	12	6	23.40	23.56	23.24		1
	12	13	23.31	23.51	23.31		1
	25	0	23.36	23.49	23.37		1
16QAM	1	0	23.71	23.52	23.65	0-1	1
	1	12	23.65	23.46	23.61		1
	1	24	23.62	23.41	23.53		1
	12	0	22.40	22.57	22.43	0-2	2
	12	6	22.37	22.56	22.44		2
	12	13	22.33	22.51	22.39		2
	25	0	22.35	22.47	22.35		2
64QAM	1	0	22.51	22.63	22.58	0-2	2
	1	12	22.43	22.59	22.50		2
	1	24	22.49	22.64	22.53		2
	12	0	21.34	21.53	21.43	0-3	3
	12	6	21.37	21.51	21.51		3
	12	13	21.32	21.42	21.42		3
	25	0	21.28	21.55	21.38		3

Table 9-16
LTE Band 26 (Cell) Conducted Powers - 3 MHz Bandwidth

LTE Band 26 (Cell) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26705 (815.5 MHz)	Mid Channel 26865 (831.5 MHz)	High Channel 27025 (847.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.21	24.20	24.36	0	0
	1	7	24.23	24.21	24.41		0
	1	14	24.13	24.21	24.29		0
	8	0	23.42	23.69	23.39	0-1	1
	8	4	23.45	23.69	23.37		1
	8	7	23.41	23.65	23.10		1
	15	0	23.41	23.67	23.38		1
16QAM	1	0	23.69	24.00	23.35	0-1	1
	1	7	23.86	23.85	23.45		1
	1	14	23.89	23.98	23.27		1
	8	0	22.52	22.70	22.34	0-2	2
	8	4	22.45	22.80	22.42		2
	8	7	22.51	22.70	22.30		2
	15	0	22.49	22.73	22.44		2
64QAM	1	0	22.59	22.70	22.68	0-2	2
	1	7	22.73	22.68	22.69		2
	1	14	22.63	22.62	22.60		2
	8	0	21.28	21.57	21.42	0-3	3
	8	4	21.29	21.56	21.33		3
	8	7	21.26	21.51	21.34		3
	15	0	21.23	21.50	21.30		3

Table 9-17
LTE Band 26 (Cell) Conducted Powers -1.4 MHz Bandwidth

LTE Band 26 (Cell) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26697 (814.7 MHz)	Mid Channel 26865 (831.5 MHz)	High Channel 27033 (848.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.04	24.12	24.03	0	0
	1	2	24.06	24.13	24.03		0
	1	5	23.98	24.14	24.04		0
	3	0	23.98	24.09	24.02		0
	3	2	24.01	24.12	24.00		0
	3	3	23.96	24.08	24.01		0
	6	0	23.32	23.60	23.41	0-1	1
16QAM	1	0	23.55	23.66	23.59	0-1	1
	1	2	23.57	24.00	23.78		1
	1	5	23.56	23.97	23.50		1
	3	0	23.41	23.72	23.59		1
	3	2	23.66	23.89	23.59		1
	3	3	23.59	23.75	23.55		1
	6	0	22.54	22.70	22.54	0-2	2
64QAM	1	0	22.00	22.40	22.28	0-2	2
	1	2	21.87	22.44	22.39		2
	1	5	21.81	22.36	22.24		2
	3	0	22.07	22.34	22.18		2
	3	2	22.16	22.35	22.24		2
	3	3	22.04	22.19	22.19		2
	6	0	21.05	21.22	21.12	0-3	3

9.4.1 LTE Band 5 (Cell)

Table 9-18
LTE Band 5 (Cell) Conducted Powers - 10 MHz Bandwidth

LTE Band 5 (Cell) 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 20525 (836.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]		
QPSK	1	0	**24.31**	0	0
	1	25	24.22		0
	1	49	24.13		0
	25	0	23.29	0-1	1
	25	12	**23.30**		1
	25	25	23.21		1
	50	0	23.24		1
16QAM	1	0	23.50	0-1	1
	1	25	23.45		1
	1	49	23.38		1
	25	0	22.29	0-2	2
	25	12	22.29		2
	25	25	22.21		2
	50	0	22.24		2
64QAM	1	0	22.51	0-2	2
	1	25	22.37		2
	1	49	22.30		2
	25	0	21.32	0-3	3
	25	12	21.30		3
	25	25	21.32		3
	50	0	21.36		3

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 9-19
LTE Band 5 (Cell) Conducted Powers - 5 MHz Bandwidth

LTE Band 5 (Cell) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20425 (826.5 MHz)	Mid Channel 20525 (836.5 MHz)	High Channel 20625 (846.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.37	24.19	24.31	0	0
	1	12	24.31	24.14	24.25		0
	1	24	24.26	24.14	24.17		0
	12	0	23.77	23.74	23.77	0-1	1
	12	6	23.78	23.73	23.79		1
	12	13	23.71	23.68	23.74		1
	25	0	23.75	23.71	23.76		1
16QAM	1	0	24.00	24.00	24.00	0-1	1
	1	12	23.95	24.00	23.92		1
	1	24	23.92	23.95	23.90		1
	12	0	22.80	22.69	22.74	0-2	2
	12	6	22.82	22.80	22.81		2
	12	13	22.74	22.76	22.75		2
	25	0	22.81	22.74	22.81		2
64QAM	1	0	22.79	22.63	22.73	0-2	2
	1	12	22.70	22.66	22.70		2
	1	24	22.76	22.57	22.76		2
	12	0	21.60	21.47	21.54	0-3	3
	12	6	21.56	21.48	21.66		3
	12	13	21.53	21.46	21.62		3
	25	0	21.54	21.39	21.63		3

Table 9-20
LTE Band 5 (Cell) Conducted Powers - 3 MHz Bandwidth

LTE Band 5 (Cell) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20415 (825.5 MHz)	Mid Channel 20525 (836.5 MHz)	High Channel 20635 (847.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.55	24.40	24.50	0	0
	1	7	24.63	24.54	24.63		0
	1	14	24.50	24.38	24.11		0
	8	0	23.54	23.44	23.58	0-1	1
	8	4	23.57	23.47	23.61		1
	8	7	23.50	23.41	23.61		1
	15	0	23.57	23.45	23.53		1
16QAM	1	0	23.83	23.80	23.89	0-1	1
	1	7	23.88	23.87	23.96		1
	1	14	23.55	23.72	23.65		1
	8	0	22.60	22.56	22.75	0-2	2
	8	4	22.65	22.56	22.71		2
	8	7	22.57	22.52	22.65		2
	15	0	22.62	22.36	22.57		2
64QAM	1	0	22.66	22.79	22.78	0-2	2
	1	7	22.59	22.63	22.65		2
	1	14	22.67	22.67	22.47		2
	8	0	21.53	21.52	21.59	0-3	3
	8	4	21.61	21.54	21.68		3
	8	7	21.56	21.48	21.63		3
	15	0	21.49	21.46	21.57		3

Table 9-21
LTE Band 5 (Cell) Conducted Powers -1.4 MHz Bandwidth

LTE Band 5 (Cell) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 20407 (824.7 MHz)	Mid Channel 20525 (836.5 MHz)	High Channel 20643 (848.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.54	24.39	24.46	0	0
	1	2	24.64	24.45	24.41		0
	1	5	24.56	24.40	23.90		0
	3	0	24.54	24.37	24.34		0
	3	2	24.61	24.40	24.14		0
	3	3	24.57	24.36	23.95		0
	6	0	23.53	23.37	23.43	0-1	1
16QAM	1	0	23.76	23.38	23.77	0-1	1
	1	2	23.83	23.64	23.63		1
	1	5	23.77	23.61	22.80		1
	3	0	23.86	23.57	23.37		1
	3	2	23.64	23.56	23.24		1
	3	3	23.90	23.52	22.98		1
	6	0	22.68	22.51	22.44	0-2	2
64QAM	1	0	22.54	22.52	22.50	0-2	2
	1	2	22.63	22.54	22.48		2
	1	5	22.53	22.46	22.15		2
	3	0	22.42	22.40	22.40		2
	3	2	22.54	22.44	22.42		2
	3	3	22.49	22.36	22.09		2
	6	0	21.42	21.35	21.32	0-3	3

9.4.2 LTE Band 66 (AWS)

Table 9-22
LTE Band 66 (AWS) Conducted Powers - 20 MHz Bandwidth

LTE Band 66 (AWS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 132072 (1720.0 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132572 (1770.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.66	**24.97**	24.94	0	0
	1	50	24.83	24.69	24.68		0
	1	99	24.73	24.63	24.70		0
	50	0	**23.96**	23.85	23.56	0-1	1
	50	25	23.86	23.76	23.86		1
	50	50	23.78	23.65	23.66		1
	100	0	23.88	23.76	23.77		1
16QAM	1	0	23.96	23.98	24.00	0-1	1
	1	50	23.97	23.90	23.86		1
	1	99	23.98	23.90	23.80		1
	50	0	22.98	22.87	22.85	0-2	2
	50	25	22.87	22.79	22.78		2
	50	50	22.80	22.66	22.65		2
	100	0	22.88	22.78	22.79		2
64QAM	1	0	23.00	22.89	22.93	0-2	2
	1	50	22.89	22.73	22.92		2
	1	99	22.94	22.87	22.97		2
	50	0	22.00	21.89	22.00	0-3	3
	50	25	21.79	21.89	21.63		3
	50	50	21.81	21.60	21.54		3
	100	0	21.72	21.67	21.62		3

Table 9-23
LTE Band 66 (AWS) Conducted Powers - 15 MHz Bandwidth

LTE Band 66 (AWS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 132047 (1717.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132597 (1772.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.95	24.96	24.91	0	0
	1	36	24.93	24.95	24.92		0
	1	74	24.94	24.96	24.95		0
	36	0	23.93	23.99	24.00	0-1	1
	36	18	23.98	23.92	23.99		1
	36	37	23.94	23.93	23.94		1
	75	0	23.97	23.92	23.93		1
16QAM	1	0	23.92	23.99	23.99	0-1	1
	1	36	23.94	23.98	23.93		1
	1	74	23.95	23.94	23.95		1
	36	0	22.91	23.00	23.00	0-2	2
	36	18	22.96	22.98	22.99		2
	36	37	23.00	22.97	22.91		2
	75	0	22.96	22.94	22.98		2
64QAM	1	0	22.95	22.97	22.95	0-2	2
	1	36	23.00	22.93	22.99		2
	1	74	22.98	22.87	22.84		2
	36	0	21.95	22.00	21.99	0-3	3
	36	18	21.99	21.96	21.96		3
	36	37	21.93	21.91	21.95		3
	75	0	21.91	21.96	21.93		3

Table 9-24
LTE Band 66 (AWS) Conducted Powers - 10 MHz Bandwidth

LTE Band 66 (AWS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 132022 (1715.0 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132622 (1775.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.87	24.92	24.94	0	0
	1	25	24.95	24.93	24.95		0
	1	49	24.94	24.96	24.91		0
	25	0	23.98	23.95	23.92	0-1	1
	25	12	23.99	23.99	23.94		1
	25	25	23.92	23.94	23.92		1
	50	0	23.95	23.91	23.91		1
16QAM	1	0	23.83	23.95	23.98	0-1	1
	1	25	23.79	23.86	23.99		1
	1	49	23.76	23.84	23.91		1
	25	0	22.97	22.99	22.94	0-2	2
	25	12	22.93	22.98	22.98		2
	25	25	22.95	23.00	22.91		2
	50	0	22.95	22.98	22.99		2
64QAM	1	0	22.96	22.91	22.91	0-2	2
	1	25	22.94	23.00	22.94		2
	1	49	22.91	22.85	22.60		2
	25	0	21.98	21.91	21.95	0-3	3
	25	12	21.96	21.92	21.92		3
	25	25	21.92	21.96	21.91		3
	50	0	21.94	21.94	21.94		3

Table 9-25
LTE Band 66 (AWS) Conducted Powers - 5 MHz Bandwidth

LTE Band 66 (AWS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 131997 (1712.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132647 (1777.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.93	24.94	24.92	0	0
	1	12	24.94	24.96	24.95		0
	1	24	24.90	24.95	24.91		0
	12	0	23.97	23.94	23.96	0-1	1
	12	6	23.96	23.91	23.97		1
	12	13	23.92	23.96	23.91		1
	25	0	23.94	23.99	23.91		1
16QAM	1	0	23.91	23.98	23.95	0-1	1
	1	12	23.95	24.00	23.96		1
	1	24	23.92	23.98	23.93		1
	12	0	22.98	22.93	22.98	0-2	2
	12	6	22.97	22.96	23.00		2
	12	13	22.91	22.99	22.94		2
	25	0	22.94	22.92	23.00		2
64QAM	1	0	22.93	22.97	22.96	0-2	2
	1	12	22.90	22.91	23.00		2
	1	24	22.88	22.99	22.99		2
	12	0	21.95	22.00	21.98	0-3	3
	12	6	21.98	21.99	21.91		3
	12	13	21.91	21.91	21.97		3
	25	0	21.93	21.92	21.91		3

Table 9-26
LTE Band 66 (AWS) Conducted Powers - 3 MHz Bandwidth

LTE Band 66 (AWS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 131987 (1711.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132657 (1778.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.76	24.92	24.94	0	0
	1	7	24.82	24.96	24.95		0
	1	14	24.74	24.88	24.88		0
	8	0	23.80	23.82	23.84	0-1	1
	8	4	23.78	23.83	23.86		1
	8	7	23.73	23.76	23.83		1
	15	0	23.77	23.81	23.84		1
16QAM	1	0	23.81	23.95	24.00	0-1	1
	1	7	23.95	24.00	23.89		1
	1	14	23.80	23.84	23.99		1
	8	0	22.85	22.83	22.89	0-2	2
	8	4	22.79	22.81	22.90		2
	8	7	22.76	22.77	22.93		2
	15	0	22.79	22.80	22.85		2
64QAM	1	0	22.84	22.92	23.00	0-2	2
	1	7	22.98	23.00	22.93		2
	1	14	22.82	22.96	22.96		2
	8	0	21.86	21.85	21.89	0-3	3
	8	4	21.82	21.87	21.88		3
	8	7	21.80	21.86	21.84		3
	15	0	21.81	21.87	21.89		3

Table 9-27
LTE Band 66 (AWS) Conducted Powers -1.4 MHz Bandwidth

LTE Band 66 (AWS) 1.4 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel 131979 (1710.7 MHz)	Low-Mid Channel 132208 (1733.6 MHz)	Mid-High 132436 (1756.4 MHz)	High Channel 132665 (1779.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]					
QPSK	1	0	24.96	24.80	24.87	24.78	0	0
	1	2	24.86	24.67	24.73	24.62		0
	1	5	24.74	24.54	24.72	24.58		0
	3	0	24.67	24.46	24.62	24.45		0
	3	2	24.95	24.84	24.86	24.81		0
	3	3	24.85	24.55	24.71	24.57		0
	6	0	23.61	23.33	23.52	23.43	0-1	1
16QAM	1	0	23.74	23.51	23.68	23.48	0-1	1
	1	2	23.95	23.77	23.83	23.69		1
	1	5	23.84	23.58	23.61	23.51		1
	3	0	23.92	23.67	23.87	23.65		1
	3	2	23.69	23.42	23.48	23.38		1
	3	3	23.95	23.69	23.74	23.75		1
	6	0	22.84	22.56	22.62	22.59	0-2	2
64QAM	1	0	22.64	22.46	22.61	22.49	0-2	2
	1	2	23.00	22.81	22.89	22.78		2
	1	5	22.62	22.43	22.47	22.34		2
	3	0	22.91	22.61	22.77	22.60		2
	3	2	22.75	22.64	22.75	22.56		2
	3	3	23.00	22.80	22.82	22.75		2
	6	0	21.85	21.71	21.84	21.77	0-3	3

Per FCC KDB Publication 447498 D01v06 Section 4.1g), 4 channels are required for LTE Band 66 with 1.4 MHz Bandwidth.

Table 9-28
Reduced LTE Band 66 (AWS) Conducted Powers - 20 MHz Bandwidth – Hotspot Mode Active

LTE Band 66 (AWS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 132072 (1720.0 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132572 (1770.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	20.34	**20.39**	20.19	0	0
	1	50	20.01	20.03	19.95		0
	1	99	19.97	20.14	20.21		0
	50	0	20.14	**20.27**	20.21	0-1	0
	50	25	20.14	20.14	20.09		0
	50	50	20.07	20.13	20.06		0
	100	0	20.14	20.24	20.24		0
16QAM	1	0	20.35	20.06	20.13	0-1	0
	1	50	20.16	20.43	20.46		0
	1	99	19.98	20.31	20.26		0
	50	0	20.16	20.25	20.08	0-2	0
	50	25	20.17	20.17	20.15		0
	50	50	19.99	20.13	19.98		0
	100	0	20.15	20.21	20.20		0
64QAM	1	0	20.29	20.48	20.45	0-2	0
	1	50	20.34	20.17	20.00		0
	1	99	20.14	20.46	20.30		0
	50	0	20.23	20.27	20.33	0-3	0
	50	25	20.15	20.17	20.10		0
	50	50	20.14	20.08	19.94		0
	100	0	20.15	20.22	20.04		0

Table 9-29
Reduced LTE Band 66 (AWS) Conducted Powers - 15 MHz Bandwidth – Hotspot Mode Active

LTE Band 66 (AWS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 132047 (1717.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132597 (1772.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	20.24	20.11	20.06	0	0
	1	36	20.01	19.87	19.84		0
	1	74	19.84	19.80	19.80		0
	36	0	20.13	20.01	19.95	0-1	0
	36	18	20.07	19.94	19.92		0
	36	37	19.99	19.84	19.85		0
	75	0	20.04	19.97	19.89		0
16QAM	1	0	20.37	20.30	19.85	0-1	0
	1	36	20.19	19.88	19.61		0
	1	74	19.97	19.77	19.62		0
	36	0	20.06	19.99	19.95	0-2	0
	36	18	20.01	19.93	19.88		0
	36	37	19.95	19.82	19.83		0
	75	0	20.08	19.92	19.91		0
64QAM	1	0	20.48	20.38	20.39	0-2	0
	1	36	20.23	20.14	20.17		0
	1	74	19.93	20.07	20.03		0
	36	0	20.11	20.01	20.00	0-3	0
	36	18	20.04	19.95	19.94		0
	36	37	19.97	19.88	19.88		0
	75	0	20.02	19.97	19.90		0

Table 9-30
Reduced LTE Band 66 (AWS) Conducted Powers - 10 MHz Bandwidth – Hotspot Mode Active

LTE Band 66 (AWS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 132022 (1715.0 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132622 (1775.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	19.87	20.05	19.96	0	0
	1	25	19.90	19.92	19.84		0
	1	49	19.84	19.87	19.77		0
	25	0	20.03	20.02	19.97	0-1	0
	25	12	19.95	19.96	19.91		0
	25	25	19.91	19.92	19.90		0
	50	0	19.98	19.97	19.94		0
16QAM	1	0	20.07	19.95	20.34	0-1	0
	1	25	19.84	19.85	20.20		0
	1	49	19.82	20.22	20.19		0
	25	0	20.05	20.06	20.01	0-2	0
	25	12	20.03	20.03	19.98		0
	25	25	19.93	19.94	19.93		0
	50	0	19.96	19.94	19.94		0
64QAM	1	0	20.20	20.14	20.10	0-2	0
	1	25	20.06	20.01	20.12		0
	1	49	20.01	19.92	20.04		0
	25	0	20.08	20.08	19.97	0-3	0
	25	12	20.05	19.97	19.98		0
	25	25	19.95	19.96	19.90		0
	50	0	20.02	20.03	20.01		0

Table 9-31
Reduced LTE Band 66 (AWS) Conducted Powers - 5 MHz Bandwidth – Hotspot Mode Active

LTE Band 66 (AWS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 131997 (1712.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132647 (1777.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	19.98	19.92	19.96	0	0
	1	12	19.81	19.86	19.89		0
	1	24	19.79	19.89	19.86		0
	12	0	19.98	19.95	19.96	0-1	0
	12	6	19.99	19.97	19.91		0
	12	13	19.96	19.94	19.88		0
	25	0	19.97	19.92	19.90		0
16QAM	1	0	19.97	19.79	20.48	0-1	0
	1	12	19.90	20.05	20.46		0
	1	24	19.86	20.01	20.43		0
	12	0	19.98	20.02	19.97	0-2	0
	12	6	20.00	20.03	19.98		0
	12	13	19.97	19.98	19.92		0
	25	0	20.00	19.99	19.87		0
64QAM	1	0	20.17	20.17	20.14	0-2	0
	1	12	20.09	20.03	20.13		0
	1	24	20.04	20.07	20.08		0
	12	0	20.03	19.98	19.96	0-3	0
	12	6	19.97	19.99	19.98		0
	12	13	19.91	20.03	20.02		0
	25	0	19.98	19.95	19.94		0

Table 9-32
Reduced LTE Band 66 (AWS) Conducted Powers - 3 MHz Bandwidth – Hotspot Mode Active

LTE Band 66 (AWS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 131987 (1711.5 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132657 (1778.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	19.85	19.92	19.85	0	0
	1	7	20.04	19.98	19.97		0
	1	14	19.89	19.84	19.81		0
	8	0	19.94	19.91	19.87	0-1	0
	8	4	19.97	19.95	19.89		0
	8	7	19.96	19.91	19.86		0
	15	0	19.97	19.93	19.88		0
16QAM	1	0	19.93	20.21	20.17	0-1	0
	1	7	19.98	20.24	20.28		0
	1	14	19.93	20.13	20.15		0
	8	0	19.97	19.98	19.99	0-2	0
	8	4	19.98	19.96	20.04		0
	8	7	19.94	19.88	19.99		0
	15	0	19.98	20.01	19.79		0
64QAM	1	0	19.96	20.36	19.70	0-2	0
	1	7	20.28	20.34	19.82		0
	1	14	20.14	20.15	19.76		0
	8	0	20.06	19.91	20.09	0-3	0
	8	4	20.06	19.92	20.10		0
	8	7	19.98	19.87	20.07		0
	15	0	20.01	19.94	19.93		0

Table 9-33
Reduced LTE Band 66 (AWS) Conducted Powers -1.4 MHz Bandwidth – Hotspot Mode Active

LTE Band 66 (AWS) 1.4 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel 131979 (1710.7 MHz)	Low-Mid Channel 132208 (1733.6 MHz)	Mid-High 132436 (1756.4 MHz)	High Channel 132665 (1779.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]					
QPSK	1	0	19.75	19.87	19.72	19.83	0	0
	1	2	19.83	19.92	19.78	19.89		0
	1	5	19.76	19.87	19.74	19.79		0
	3	0	19.78	19.88	19.75	19.81		0
	3	2	19.81	19.91	19.81	19.86		0
	3	3	19.75	19.87	19.76	19.80		0
	6	0	19.79	19.86	19.78	19.83	0-1	0
16QAM	1	0	19.93	19.78	19.80	19.99	0-1	0
	1	2	19.95	19.87	19.90	20.12		0
	1	5	19.85	19.79	19.79	20.37		0
	3	0	19.81	20.07	19.89	19.82		0
	3	2	19.89	20.12	20.09	19.87		0
	3	3	19.85	20.08	20.13	19.82		0
	6	0	19.86	19.80	19.94	19.91	0-2	0
64QAM	1	0	19.94	19.96	19.92	19.95	0-2	0
	1	2	19.97	20.00	20.08	20.01		0
	1	5	19.87	20.15	20.02	19.94		0
	3	0	19.86	19.85	19.89	19.86		0
	3	2	19.92	19.89	19.93	19.79		0
	3	3	19.84	19.84	19.91	19.74		0
	6	0	19.76	19.89	19.72	19.88	0-3	0

Per FCC KDB Publication 447498 D01v06 Section 4.1g), 4 channels are required for LTE Band 66 with 1.4 MHz Bandwidth.

9.4.3 LTE Band 25 (PCS)

Table 9-34
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	**23.93**	23.64	23.51	0	0
	1	50	23.46	23.36	23.26		0
	1	99	23.42	23.33	23.30		0
	50	0	**22.64**	22.56	22.45	0-1	1
	50	25	22.56	22.51	22.42		1
	50	50	22.51	22.43	22.36		1
	100	0	22.57	22.48	22.39		1
16QAM	1	0	22.97	22.90	22.78	0-1	1
	1	50	22.74	22.65	22.54		1
	1	99	22.70	22.63	22.56		1
	50	0	21.66	21.57	21.47	0-2	2
	50	25	21.56	21.50	21.41		2
	50	50	21.48	21.45	21.38		2
	100	0	21.58	21.48	21.42		2
64QAM	1	0	21.73	21.63	21.54	0-2	2
	1	50	21.62	21.42	21.30		2
	1	99	21.44	21.38	21.32		2
	50	0	20.46	20.51	20.34	0-3	3
	50	25	20.40	20.34	20.29		3
	50	50	20.40	20.30	20.20		3
	100	0	20.43	20.31	20.30		3

Table 9-35
LTE Band 25 (PCS) Conducted Powers - 15 MHz Bandwidth

LTE Band 25 (PCS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26115 (1857.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26615 (1907.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.85	23.50	23.55	0	0
	1	36	23.40	23.29	23.20		0
	1	74	23.56	23.24	23.32		0
	36	0	22.71	22.41	22.48	0-1	1
	36	18	22.53	22.32	22.22		1
	36	37	22.61	22.27	22.32		1
	75	0	22.40	22.33	22.42		1
16QAM	1	0	22.61	22.44	22.36	0-1	1
	1	36	22.80	22.25	22.25		1
	1	74	22.75	22.29	22.31		1
	36	0	21.59	21.38	21.31	0-2	2
	36	18	21.49	21.36	21.28		2
	36	37	21.58	21.32	21.42		2
	75	0	21.64	21.31	21.33		2
64QAM	1	0	21.73	21.70	21.63	0-2	2
	1	36	21.46	21.52	21.47		2
	1	74	21.33	21.48	21.43		2
	36	0	20.49	20.44	20.38	0-3	3
	36	18	20.35	20.45	20.55		3
	36	37	20.59	20.38	20.32		3
	75	0	20.41	20.27	20.21		3

Table 9-36
LTE Band 25 (PCS) Conducted Powers - 10 MHz Bandwidth

LTE Band 25 (PCS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26090 (1855.0 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26640 (1910.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.69	23.55	23.74	0	0
	1	25	23.51	23.27	23.27		0
	1	49	23.50	23.13	23.36		0
	25	0	22.90	22.34	22.51	0-1	1
	25	12	22.53	22.14	22.26		1
	25	25	22.55	22.15	22.50		1
	50	0	22.27	22.33	22.30		1
16QAM	1	0	22.74	22.33	22.45	0-1	1
	1	25	22.76	22.19	22.21		1
	1	49	22.69	22.20	22.34		1
	25	0	21.40	21.19	21.22	0-2	2
	25	12	21.55	21.53	21.20		2
	25	25	21.58	21.35	21.61		2
	50	0	21.64	21.51	21.46		2
64QAM	1	0	21.90	21.88	21.54	0-2	2
	1	25	21.31	21.41	21.67		2
	1	49	21.41	21.59	21.47		2
	25	0	20.33	20.44	20.58	0-3	3
	25	12	20.22	20.25	20.42		3
	25	25	20.54	20.50	20.51		3
	50	0	20.24	20.41	20.04		3

Table 9-37
LTE Band 25 (PCS) Conducted Powers - 5 MHz Bandwidth

LTE Band 25 (PCS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26065 (1852.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26665 (1912.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.80	23.54	23.87	0	0
	1	12	23.43	23.30	23.45		0
	1	24	23.30	23.22	23.38		0
	12	0	22.75	22.28	22.62	0-1	1
	12	6	22.54	22.08	22.08		1
	12	13	22.72	22.29	22.36		1
	25	0	22.16	22.45	22.30		1
16QAM	1	0	22.81	22.46	22.54	0-1	1
	1	12	22.88	22.09	22.29		1
	1	24	22.88	22.00	22.39		1
	12	0	21.20	21.20	21.06	0-2	2
	12	6	21.44	21.53	21.15		2
	12	13	21.66	21.31	21.69		2
	25	0	21.67	21.31	21.46		2
64QAM	1	0	21.91	21.88	21.73	0-2	2
	1	12	21.18	21.41	21.75		2
	1	24	21.24	21.46	21.39		2
	12	0	20.47	20.53	20.49	0-3	3
	12	6	20.27	20.14	20.57		3
	12	13	20.57	20.68	20.33		3
	25	0	20.15	20.34	20.07		3

Table 9-38
LTE Band 25 (PCS) Conducted Powers - 3 MHz Bandwidth

LTE Band 25 (PCS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26055 (1851.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26675 (1913.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.81	23.35	23.79	0	0
	1	7	23.49	23.20	23.63		0
	1	14	23.36	23.25	23.40		0
	8	0	22.90	22.41	22.62	0-1	1
	8	4	22.34	22.07	21.99		1
	8	7	22.62	22.15	22.22		1
	15	0	22.14	22.56	22.21		1
16QAM	1	0	22.92	22.55	22.41	0-1	1
	1	7	22.99	22.22	22.38		1
	1	14	22.76	22.19	22.47		1
	8	0	21.22	21.22	21.09	0-2	2
	8	4	21.41	21.37	21.35		2
	8	7	21.81	21.30	21.72		2
	15	0	21.56	21.42	21.53		2
64QAM	1	0	21.95	21.82	21.69	0-2	2
	1	7	21.34	21.45	21.56		2
	1	14	21.17	21.31	21.29		2
	8	0	20.37	20.33	20.54	0-3	3
	8	4	20.29	20.21	20.41		3
	8	7	20.69	20.88	20.47		3
	15	0	20.30	20.53	20.06		3

Table 9-39
LTE Band 25 (PCS) Conducted Powers -1.4 MHz Bandwidth

LTE Band 25 (PCS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26047 (1850.7 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26683 (1914.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	23.92	23.46	23.80	0	0
	1	2	23.68	23.13	23.60		0
	1	5	23.38	23.16	23.21		0
	3	0	23.77	23.39	23.50		0
	3	2	23.24	23.11	23.15		0
	3	3	23.69	23.31	23.05		0
	6	0	22.05	22.65	22.15	0-1	1
16QAM	1	0	22.93	22.39	22.51	0-1	1
	1	2	22.97	22.06	22.33		1
	1	5	22.62	22.13	22.56		1
	3	0	22.19	22.16	22.13		1
	3	2	22.50	22.30	22.37		1
	3	3	22.84	22.30	22.58		1
	6	0	21.66	21.31	21.36	0-2	2
64QAM	1	0	21.92	22.00	21.51	0-2	2
	1	2	21.24	21.38	21.38		2
	1	5	21.13	21.19	21.22		2
	3	0	21.49	21.46	21.72		2
	3	2	21.21	21.19	21.46		2
	3	3	21.84	21.84	21.48		2
	6	0	20.21	20.35	20.26	0-3	3

Table 9-40
Reduced LTE Band 25 (PCS) Conducted Powers - 20 MHz Bandwidth – Hotspot Mode Active

LTE Band 25 (PCS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26140 (1860.0 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26590 (1905.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	20.12	**20.16**	19.82	0	0
	1	50	19.98	19.85	19.54		0
	1	99	19.84	19.80	19.53		0
	50	0	**20.03**	19.98	19.97	0-1	0
	50	25	19.95	19.92	19.83		0
	50	50	19.85	19.84	19.75		0
	100	0	19.97	19.93	19.85		0
16QAM	1	0	20.08	20.11	20.12	0-1	0
	1	50	19.85	19.94	19.85		0
	1	99	19.79	19.86	19.80		0
	50	0	20.00	20.10	19.81	0-2	0
	50	25	19.93	20.01	19.88		0
	50	50	19.84	19.88	19.82		0
	100	0	19.96	19.93	19.88		0
64QAM	1	0	19.93	19.94	19.87	0-2	0
	1	50	19.80	19.70	19.59		0
	1	99	19.64	19.71	19.62		0
	50	0	19.72	19.70	19.66	0-3	0
	50	25	19.64	19.66	19.55		0
	50	50	19.60	19.57	19.53		0
	100	0	19.69	19.66	19.59		0

Table 9-41
Reduced LTE Band 25 (PCS) Conducted Powers - 15 MHz Bandwidth – Hotspot Mode Active

LTE Band 25 (PCS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26115 (1857.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26615 (1907.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	19.98	19.89	19.80	0	0
	1	36	19.79	19.74	19.63		0
	1	74	19.76	19.65	19.59		0
	36	0	19.91	19.85	19.73	0-1	0
	36	18	19.83	19.78	19.70		0
	36	37	19.76	19.70	19.64		0
	75	0	19.83	19.79	19.70		0
16QAM	1	0	19.81	20.03	19.96	0-1	0
	1	36	19.61	20.07	19.91		0
	1	74	19.85	19.99	19.81		0
	36	0	19.87	19.82	19.75	0-2	0
	36	18	19.80	19.74	19.70		0
	36	37	19.73	19.69	19.71		0
	75	0	19.79	19.78	19.69		0
64QAM	1	0	20.01	19.88	19.79	0-2	0
	1	36	19.77	19.70	19.68		0
	1	74	19.55	19.65	19.64		0
	36	0	19.71	19.69	19.76	0-3	0
	36	18	19.65	19.73	19.52		0
	36	37	19.52	19.57	19.61		0
	75	0	19.68	19.72	19.64		0

Table 9-42
Reduced LTE Band 25 (PCS) Conducted Powers - 10 MHz Bandwidth – Hotspot Mode Active

LTE Band 25 (PCS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26090 (1855.0 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26640 (1910.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	19.83	19.80	19.67	0	0
	1	25	19.75	19.69	19.62		0
	1	49	19.65	19.59	19.63		0
	25	0	19.85	19.79	19.70	0-1	0
	25	12	19.86	19.74	19.69		0
	25	25	19.76	19.70	19.60		0
	50	0	19.81	19.76	19.68		0
16QAM	1	0	19.82	20.05	20.02	0-1	0
	1	25	19.80	19.90	19.95		0
	1	49	19.94	19.62	19.92		0
	25	0	19.83	19.79	19.73	0-2	0
	25	12	19.79	19.76	19.72		0
	25	25	19.73	19.69	19.65		0
	50	0	19.82	19.72	19.68		0
64QAM	1	0	19.95	19.84	19.83	0-2	0
	1	25	19.70	19.71	19.74		0
	1	49	19.60	19.70	19.56		0
	25	0	19.61	19.70	19.81	0-3	0
	25	12	19.69	19.75	19.42		0
	25	25	19.53	19.67	19.64		0
	50	0	19.65	19.78	19.54		0

Table 9-43
Reduced LTE Band 25 (PCS) Conducted Powers - 5 MHz Bandwidth – Hotspot Mode Active

LTE Band 25 (PCS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26065 (1852.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26665 (1912.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	19.71	19.76	19.63	0	0
	1	12	19.65	19.68	19.58		0
	1	24	19.60	19.64	19.54		0
	12	0	19.70	19.75	19.64	0-1	0
	12	6	19.69	19.72	19.68		0
	12	13	19.64	19.73	19.60		0
	25	0	19.70	19.76	19.64		0
16QAM	1	0	19.95	20.09	19.84	0-1	0
	1	12	19.94	20.05	19.76		0
	1	24	19.85	20.02	19.72		0
	12	0	19.77	19.76	19.69	0-2	0
	12	6	19.75	19.80	19.70		0
	12	13	19.73	19.78	19.62		0
	25	0	19.71	19.80	19.67		0
64QAM	1	0	19.98	19.84	19.89	0-2	0
	1	12	19.77	19.78	19.79		0
	1	24	19.66	19.71	19.54		0
	12	0	19.52	19.71	19.84	0-3	0
	12	6	19.65	19.77	19.46		0
	12	13	19.45	19.72	19.67		0
	25	0	19.75	19.72	19.54		0

Table 9-44
Reduced LTE Band 25 (PCS) Conducted Powers - 3 MHz Bandwidth – Hotspot Mode Active

LTE Band 25 (PCS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26055 (1851.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26675 (1913.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	19.66	19.72	19.64	0	0
	1	7	19.76	19.82	19.70		0
	1	14	19.68	19.65	19.59		0
	8	0	19.72	19.75	19.66	0-1	0
	8	4	19.71	19.74	19.65		0
	8	7	19.67	19.73	19.63		0
	15	0	19.72	19.71	19.61		0
16QAM	1	0	19.87	19.95	20.15	0-1	0
	1	7	19.93	20.04	20.08		0
	1	14	19.61	19.94	19.91		0
	8	0	19.70	19.76	19.83	0-2	0
	8	4	19.73	19.75	19.86		0
	8	7	19.69	19.74	19.79		0
	15	0	19.74	19.78	19.53		0
64QAM	1	0	19.83	19.81	19.99	0-2	0
	1	7	19.65	19.84	19.65		0
	1	14	19.55	19.77	19.64		0
	8	0	19.53	19.78	19.79	0-3	0
	8	4	19.59	19.60	19.44		0
	8	7	19.31	19.91	19.82		0
	15	0	19.56	19.52	19.57		0

Table 9-45
Reduced LTE Band 25 (PCS) Conducted Powers -1.4 MHz Bandwidth – Hotspot Mode Active

LTE Band 25 (PCS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26047 (1850.7 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26683 (1914.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	19.56	19.58	19.53	0	0
	1	2	19.65	19.64	19.58		0
	1	5	19.57	19.63	19.51		0
	3	0	19.59	19.66	19.56		0
	3	2	19.61	19.65	19.60		0
	3	3	19.56	19.62	19.53		0
	6	0	19.58	19.64	19.54	0-1	0
16QAM	1	0	19.89	19.93	19.91	0-1	0
	1	2	19.99	20.02	19.82		0
	1	5	19.89	19.88	19.73		0
	3	0	19.72	19.71	19.67		0
	3	2	19.74	19.79	19.74		0
	3	3	19.68	19.67	19.65		0
	6	0	19.59	19.73	19.64	0-2	0
64QAM	1	0	19.97	19.85	19.81	0-2	0
	1	2	19.72	19.87	19.68		0
	1	5	19.76	19.68	19.55		0
	3	0	19.56	19.79	19.81		0
	3	2	19.71	19.79	19.31		0
	3	3	19.45	19.80	19.72		0
	6	0	19.62	19.61	19.51	0-3	0

9.4.4 LTE Band 30

Table 9-46
LTE Band 30 Conducted Powers - 10 MHz Bandwidth

LTE Band 30 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 27710 (2310.0 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	**24.81**	0	0
	1	25	24.73		0
	1	49	24.69		0
	25	0	**23.83**	0-1	1
	25	12	23.82		1
	25	25	23.73		1
	50	0	23.76		1
16QAM	1	0	24.00	0-1	1
	1	25	23.97		1
	1	49	23.94		1
	25	0	22.84	0-2	2
	25	12	22.83		2
	25	25	22.78		2
	50	0	22.81		2
64QAM	1	0	23.00	0-2	2
	1	25	22.95		2
	1	49	22.91		2
	25	0	21.82	0-3	3
	25	12	21.81		3
	25	25	21.77		3
	50	0	21.83		3

Table 9-47
LTE Band 30 Conducted Powers - 5 MHz Bandwidth

LTE Band 30 5 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 27710 (2310.0 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	24.65	0	0
	1	12	24.59		0
	1	24	24.62		0
	12	0	23.71	0-1	1
	12	6	23.73		1
	12	13	23.62		1
	25	0	23.65		1
16QAM	1	0	23.82	0-1	1
	1	12	23.77		1
	1	24	23.57		1
	12	0	22.71	0-2	2
	12	6	22.73		2
	12	13	22.69		2
	25	0	22.72		2
64QAM	1	0	22.86	0-2	2
	1	12	22.88		2
	1	24	22.81		2
	12	0	21.80	0-3	3
	12	6	21.78		3
	12	13	21.71		3
	25	0	21.64		3

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

Table 9-48
Reduced LTE Band 30 Conducted Powers - 10 MHz Bandwidth– Hotspot Mode Active

LTE Band 30 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 27710 (2310.0 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	**21.36**	0	0
	1	25	21.26		0
	1	49	21.27		0
	25	0	**21.40**	0-1	0
	25	12	21.39		0
	25	25	21.34		0
	50	0	21.35		0
16QAM	1	0	21.60	0-1	0
	1	25	21.50		0
	1	49	21.47		0
	25	0	21.37	0-2	0
	25	12	21.42		0
	25	25	21.32		0
	50	0	21.38		0
64QAM	1	0	21.61	0-2	0
	1	25	21.58		0
	1	49	21.42		0
	25	0	21.28	0-3	0
	25	12	21.45		0
	25	25	21.25		0
	50	0	21.29		0

Table 9-49
Reduced LTE Band 30 Conducted Powers - 5 MHz Bandwidth– Hotspot Mode Active

LTE Band 30 5 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 27710 (2310.0 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	21.43	0	0
	1	12	21.53		0
	1	24	21.34		0
	12	0	21.37	0-1	0
	12	6	21.40		0
	12	13	21.23		0
	25	0	21.21		0
16QAM	1	0	21.59	0-1	0
	1	12	21.56		0
	1	24	21.45		0
	12	0	21.34	0-2	0
	12	6	21.25		0
	12	13	21.29		0
	25	0	21.26		0
64QAM	1	0	21.61	0-2	0
	1	12	21.53		0
	1	24	21.51		0
	12	0	21.33	0-3	0
	12	6	21.35		0
	12	13	21.39		0
	25	0	21.38		0

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

9.4.5 LTE Band 41

Table 9-50
LTE Band 41 Power Class 3 Conducted Powers - 20 MHz Bandwidth

LTE Band 41 20 MHzBandwidth									
Modulation	RB Size	RB Offset	Low Channel 39750 (2506.0 MHz)	Low-Mid Channel 40185 (2549.5 MHz)	Mid Channel 40620 (2593.0 MHz)	Mid-High Channel 41055 (2636.5 MHz)	High Channel 41490 (2680.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]						
QPSK	1	0	23.08	23.07	23.10	**23.17**	23.14	0	0
	1	50	22.91	22.89	22.85	22.95	22.90		0
	1	99	22.83	22.83	22.79	22.84	22.79		0
	50	0	22.04	22.02	22.06	**22.11**	22.07	0-1	1
	50	25	21.99	22.00	21.94	22.00	22.00		1
	50	50	21.92	21.94	21.87	21.91	21.90		1
	100	0	21.98	22.00	21.95	22.01	21.96		1
16QAM	1	0	22.18	22.19	22.18	22.26	22.24	0-1	1
	1	50	22.00	21.96	21.93	22.01	21.99		1
	1	99	21.93	21.95	21.88	21.94	21.90		1
	50	0	21.05	21.06	21.03	21.11	21.09	0-2	2
	50	25	21.01	20.97	20.99	21.03	21.03		2
	50	50	21.04	20.96	20.90	20.96	20.92		2
	100	0	21.06	21.02	21.03	21.08	21.04		2
64QAM	1	0	20.67	20.72	21.49	21.42	21.22	0-2	2
	1	50	20.53	20.57	21.35	21.18	21.07		2
	1	99	20.57	20.53	21.35	21.18	20.96		2
	50	0	19.71	19.62	19.83	19.78	19.68	0-3	3
	50	25	19.74	19.73	19.79	19.78	19.66		3
	50	50	19.70	19.38	19.73	19.66	19.56		3
	100	0	19.73	19.71	19.77	19.69	19.61		3

Table 9-51
LTE Band 41 Power Class 3 Conducted Powers - 15 MHz Bandwidth

LTE Band 41 15 MHzBandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	22.89	22.77	22.86	22.83	22.76	0	0
	1	36	22.81	22.65	22.75	22.67	22.60		0
	1	74	22.74	22.63	22.67	22.62	22.54		0
	36	0	21.85	21.79	21.81	21.81	21.81	0-1	1
	36	18	21.84	21.80	21.87	21.77	21.72		1
	36	37	21.76	21.77	21.81	21.71	21.70		1
	75	0	21.76	21.76	21.83	21.74	21.70		1
16QAM	1	0	22.03	21.82	22.00	22.08	21.83	0-1	1
	1	36	21.90	21.72	21.85	21.88	21.71		1
	1	74	21.89	21.63	21.83	21.81	21.56		1
	36	0	20.76	20.87	21.04	20.77	20.83	0-2	2
	36	18	20.74	20.87	20.98	20.74	20.79		2
	36	37	20.67	20.83	20.88	20.67	20.73		2
	75	0	20.70	20.76	20.82	20.71	20.73		2
64QAM	1	0	20.63	20.69	20.72	20.64	20.67	0-2	2
	1	36	20.53	20.59	20.62	20.54	20.58		2
	1	74	20.50	20.55	20.60	20.50	20.45		2
	36	0	19.69	19.78	19.74	19.69	19.67	0-3	3
	36	18	19.66	19.74	19.69	19.63	19.70		3
	36	37	19.62	19.69	19.67	19.59	19.53		3
	75	0	19.72	19.77	19.76	19.66	19.65		3

Table 9-52
LTE Band 41 Power Class 3 Conducted Powers - 10 MHz Bandwidth

LTE Band 41 10 MHzBandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	22.89	22.87	22.92	22.83	22.80	0	0
	1	25	22.80	22.80	22.80	22.70	22.74		0
	1	49	22.83	22.79	22.82	22.71	22.68		0
	25	0	21.87	21.86	21.88	21.79	21.76	0-1	1
	25	12	21.89	21.84	21.85	21.78	21.72		1
	25	25	21.81	21.81	21.80	21.71	21.67		1
	50	0	21.86	21.85	21.85	21.76	21.69		1
16QAM	1	0	21.90	21.79	21.82	21.68	21.63	0-1	1
	1	25	21.74	21.68	21.70	21.54	21.53		1
	1	49	21.75	21.73	21.65	21.51	21.49		1
	25	0	20.89	20.89	20.89	20.84	20.77	0-2	2
	25	12	20.87	20.84	20.91	20.80	20.75		2
	25	25	20.85	20.86	20.86	20.75	20.75		2
	50	0	20.87	20.88	20.88	20.83	20.76		2
64QAM	1	0	20.60	20.67	20.64	20.59	20.56	0-2	2
	1	25	20.56	20.62	20.53	20.56	20.52		2
	1	49	20.51	20.55	20.51	20.46	20.46		2
	25	0	19.75	19.76	19.73	19.74	19.75	0-3	3
	25	12	19.73	19.75	19.80	19.72	19.69		3
	25	25	19.71	19.64	19.72	19.76	19.64		3
	50	0	19.69	19.77	19.75	19.65	19.67		3

Table 9-53
LTE Band 41 Power Class 3 Conducted Powers - 5 MHz Bandwidth

LTE Band 41 5 MHzBandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	22.83	22.83	22.84	22.78	22.78	0	0
	1	12	22.81	22.86	22.81	22.74	22.68		0
	1	24	22.82	22.76	22.82	22.72	22.66		0
	12	0	21.83	21.82	21.81	21.77	21.71	0-1	1
	12	6	21.83	21.80	21.82	21.75	21.73		1
	12	13	21.83	21.75	21.77	21.68	21.69		1
	25	0	21.80	21.82	21.81	21.77	21.68		1
16QAM	1	0	21.86	21.82	21.80	21.74	21.70	0-1	1
	1	12	21.81	21.76	21.77	21.75	21.68		1
	1	24	21.77	21.77	21.74	21.70	21.66		1
	12	0	21.03	20.92	20.92	20.86	20.84	0-2	2
	12	6	21.01	20.97	20.97	20.84	20.86		2
	12	13	20.99	20.95	20.94	20.81	20.79		2
	25	0	20.84	20.80	20.81	20.76	20.70		2
64QAM	1	0	20.56	20.57	20.65	20.54	20.56	0-2	2
	1	12	20.54	20.59	20.64	20.58	20.52		2
	1	24	20.48	20.55	20.60	20.53	20.49		2
	12	0	19.53	19.68	19.60	19.61	19.59	0-3	3
	12	6	19.58	19.58	19.62	19.56	19.55		3
	12	13	19.54	19.66	19.54	19.57	19.52		3
	25	0	19.70	19.71	19.66	19.69	19.66		3

Table 9-54
LTE Band 41 Power Class 2 Conducted Powers - 20 MHz Bandwidth

LTE Band 41 20 MHzBandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	26.28	**26.48**	26.47	26.38	26.39	0	0
	1	50	26.17	26.28	26.32	26.15	26.11		0
	1	99	26.13	26.25	26.27	26.10	26.02		0
	50	0	25.35	**25.36**	25.32	25.35	25.29	0-1	1
	50	25	25.31	25.26	25.20	25.28	25.24		1
	50	50	25.24	25.21	25.15	25.18	25.21		1
	100	0	25.30	25.24	25.26	25.25	25.22		1
16QAM	1	0	25.66	25.95	25.98	25.56	25.97	0-1	1
	1	50	25.38	25.74	25.79	25.18	25.49		1
	1	99	25.42	25.62	25.77	25.14	25.54		1
	50	0	24.38	24.37	24.38	24.36	24.39	0-2	2
	50	25	24.26	24.35	24.30	24.30	24.26		2
	50	50	24.21	24.26	24.22	24.26	24.08		2
	100	0	24.35	24.21	24.25	24.29	24.27		2
64QAM	1	0	24.90	24.70	24.80	24.96	24.99	0-2	2
	1	50	24.70	24.60	24.67	24.80	24.77		2
	1	99	24.68	24.58	24.65	24.74	24.80		2
	50	0	23.31	23.22	23.33	23.37	23.20	0-3	3
	50	25	23.24	23.22	23.29	23.34	23.19		3
	50	50	23.24	23.20	23.25	23.24	23.22		3
	100	0	23.21	23.25	23.25	23.27	23.20		3

Table 9-55
LTE Band 41 Power Class 2 Conducted Powers - 15 MHz Bandwidth

LTE Band 41 15 MHzBandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	26.37	26.57	26.64	26.43	26.31	0	0
	1	36	26.15	26.19	26.47	26.11	26.08		0
	1	74	26.08	26.19	26.46	26.01	25.93		0
	36	0	25.25	25.36	25.55	25.27	25.24	0-1	1
	36	18	25.26	25.34	25.51	25.27	25.22		1
	36	37	25.15	25.30	25.41	25.20	25.24		1
	75	0	25.31	25.34	25.49	25.23	25.15		1
16QAM	1	0	25.76	25.94	25.97	25.49	25.87	0-1	1
	1	36	25.47	25.79	25.82	25.15	25.42		1
	1	74	25.42	25.65	25.99	25.22	25.62		1
	36	0	24.34	24.40	24.52	24.37	24.40	0-2	2
	36	18	24.34	24.44	24.50	24.20	24.24		2
	36	37	24.28	24.35	24.46	24.25	24.17		2
	75	0	24.35	24.21	24.46	24.19	24.37		2
64QAM	1	0	24.53	24.66	24.50	24.46	24.39	0-2	2
	1	36	24.21	24.40	24.37	24.33	24.32		2
	1	74	24.14	24.32	24.37	24.33	24.25		2
	36	0	23.19	23.25	23.15	23.25	23.25	0-3	3
	36	18	23.55	23.35	23.18	23.28	23.38		3
	36	37	23.21	23.23	23.11	23.20	23.10		3
	75	0	23.26	23.31	23.20	23.11	23.07		3

Table 9-56
LTE Band 41 Power Class 2 Conducted Powers - 10 MHz Bandwidth

LTE Band 41 10 MHzBandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	26.31	26.60	26.32	26.35	26.42	0	0
	1	25	26.20	26.08	26.23	26.05	26.05		0
	1	49	25.95	26.18	26.30	26.15	25.99		0
	25	0	25.21	25.16	25.52	25.40	25.44	0-1	1
	25	12	25.32	25.23	25.19	25.43	25.38		1
	25	25	25.14	25.06	25.31	24.98	25.26		1
	50	0	25.38	25.33	25.40	25.11	25.20		1
16QAM	1	0	25.64	25.91	25.90	25.42	25.86	0-1	1
	1	25	25.38	25.56	25.69	25.12	25.37		1
	1	49	25.59	25.58	25.59	25.27	25.40		1
	25	0	24.26	24.24	24.35	24.25	24.47	0-2	2
	25	12	24.21	24.16	24.21	24.21	24.40		2
	25	25	24.28	24.16	24.11	24.09	23.88		2
	50	0	24.23	24.17	24.26	24.22	24.43		2
64QAM	1	0	24.47	24.62	24.40	24.53	24.47	0-2	2
	1	25	24.27	24.33	24.45	24.39	24.39		2
	1	49	24.09	24.22	24.42	24.41	24.15		2
	25	0	23.20	23.32	23.15	23.21	23.25	0-3	3
	25	12	23.56	23.38	23.19	23.31	23.31		3
	25	25	23.26	23.20	23.16	23.22	23.11		3
	50	0	23.17	23.30	23.26	23.17	23.00		3

Table 9-57
LTE Band 41 Power Class 2 Conducted Powers - 5 MHz Bandwidth

LTE Band 41 5 MHzBandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	26.47	26.57	26.39	26.18	26.36	0	0
	1	12	26.32	26.08	26.38	26.24	25.95		0
	1	24	26.11	26.11	26.40	26.23	26.03		0
	12	0	25.37	25.23	25.39	25.20	25.19	0-1	1
	12	6	25.22	25.13	25.23	25.36	25.04		1
	12	13	25.37	25.21	25.00	25.21	25.13		1
	25	0	25.21	25.32	25.34	25.33	25.16		1
16QAM	1	0	25.81	25.93	25.85	25.59	25.88	0-1	1
	1	12	25.19	25.78	25.92	25.07	25.31		1
	1	24	25.56	25.69	25.59	24.99	25.41		1
	12	0	24.32	24.56	24.50	24.18	24.27	0-2	2
	12	6	24.24	24.39	24.27	24.50	24.26		2
	12	13	24.19	24.28	24.30	24.39	24.11		2
	25	0	24.15	24.09	24.39	24.32	24.07		2
64QAM	1	0	24.46	24.62	24.55	24.37	24.48	0-2	2
	1	12	24.22	24.46	24.29	24.39	24.42		2
	1	24	24.07	24.33	24.34	24.35	24.17		2
	12	0	23.26	23.21	23.22	23.29	23.25	0-3	3
	12	6	23.54	23.33	23.17	23.36	23.44		3
	12	13	23.27	23.19	23.02	23.28	23.02		3
	25	0	23.24	23.32	23.22	23.16	23.09		3

Table 9-58
Reduced LTE Band 41 Power Class 2 Conducted Powers - 20 MHz Bandwidth– Hotspot Mode Active

LTE Band 41 20 MHzBandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	23.32	23.34	23.21	23.35	**23.40**	0	0
	1	50	23.12	23.22	23.02	23.14	23.18		0
	1	99	23.10	23.18	23.00	23.08	23.12		0
	50	0	23.26	23.30	23.30	**23.42**	23.28	0-1	0
	50	25	23.23	23.26	23.25	23.37	23.25		0
	50	50	23.14	23.20	23.17	23.30	23.20		0
	100	0	23.22	23.24	23.21	23.34	23.24		0
16QAM	1	0	23.39	23.47	23.32	23.45	23.49	0-1	0
	1	50	23.20	23.30	23.14	23.24	23.36		0
	1	99	23.16	23.26	23.09	23.16	23.25		0
	50	0	23.30	23.33	23.32	23.38	23.37	0-2	0
	50	25	23.23	23.27	23.27	23.34	23.28		0
	50	50	23.21	23.25	23.20	23.29	23.25		0
	100	0	23.26	23.28	23.28	23.42	23.27		0
64QAM	1	0	23.20	23.25	23.34	23.32	23.30	0-2	0
	1	50	23.01	23.10	23.13	23.10	23.09		0
	1	99	23.04	22.99	23.04	23.09	23.00		0
	50	0	23.24	23.29	23.25	23.35	23.38	0-3	0
	50	25	23.23	23.26	23.17	23.25	23.29		0
	50	50	23.17	23.19	23.20	23.28	23.16		0
	100	0	23.16	23.23	23.23	23.32	23.17		0

Table 9-59
Reduced LTE Band 41 Power Class 2 Conducted Powers - 15 MHz Bandwidth– Hotspot Mode Active

LTE Band 41 15 MHzBandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	23.13	23.24	23.09	23.17	23.10	0	0
	1	36	22.84	22.99	22.84	22.98	23.03		0
	1	74	22.87	22.95	22.88	22.94	23.01		0
	36	0	23.15	23.19	23.06	23.21	23.05	0-1	0
	36	18	22.93	22.97	23.07	23.11	23.01		0
	36	37	22.97	22.90	22.94	23.15	23.02		0
	75	0	23.00	23.13	23.07	23.22	23.05		0
16QAM	1	0	23.23	23.24	23.11	23.20	23.21	0-1	0
	1	36	22.90	23.15	23.00	23.05	23.08		0
	1	74	22.96	23.09	22.84	23.00	23.08		0
	36	0	23.15	23.20	23.02	23.12	23.13	0-2	0
	36	18	23.06	23.04	23.16	23.06	23.08		0
	36	37	23.10	23.09	22.92	23.05	22.98		0
	75	0	23.02	23.13	23.13	23.23	23.04		0
64QAM	1	0	22.94	23.10	23.23	23.16	23.15	0-2	0
	1	36	22.90	22.96	22.85	22.90	22.79		0
	1	74	22.78	22.88	22.88	22.99	22.78		0
	36	0	23.13	23.10	22.95	23.25	23.14	0-3	0
	36	18	23.07	23.16	22.96	23.06	23.07		0
	36	37	22.97	23.04	23.10	23.07	22.97		0
	75	0	22.96	23.11	23.06	23.09	22.99		0

Table 9-60
Reduced LTE Band 41 Power Class 2 Conducted Powers - 10 MHz Bandwidth– Hotspot Mode Active

LTE Band 41 10 MHzBandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	23.17	23.28	23.08	23.23	23.08	0	0
	1	25	22.93	23.00	22.87	22.92	23.12		0
	1	49	22.84	22.88	22.94	22.93	23.11		0
	25	0	23.08	23.09	23.07	23.27	23.05	0-1	0
	25	12	23.00	23.05	23.00	23.01	22.91		0
	25	25	23.04	22.95	22.88	23.12	23.05		0
	50	0	23.10	23.21	23.02	23.15	23.08		0
16QAM	1	0	23.29	23.18	23.14	23.28	23.28	0-1	0
	1	25	22.95	23.06	23.07	23.15	23.10		0
	1	49	22.87	23.02	22.90	22.93	23.03		0
	25	0	23.11	23.22	23.05	23.07	23.04	0-2	0
	25	12	22.97	23.11	23.21	23.00	23.06		0
	25	25	23.04	23.07	22.84	23.10	23.01		0
	50	0	23.01	23.21	23.12	23.19	23.06		0
64QAM	1	0	22.99	23.17	23.15	23.22	23.09	0-2	0
	1	25	22.84	23.02	22.94	22.91	22.80		0
	1	49	22.70	22.79	22.81	23.08	22.82		0
	25	0	23.21	23.08	23.04	23.19	23.23	0-3	0
	25	12	23.10	23.24	22.87	22.98	23.07		0
	25	25	22.90	22.96	23.18	23.01	22.91		0
	50	0	22.93	23.03	22.97	23.19	23.09		0

Table 9-61
Reduced LTE Band 41 Power Class 2 Conducted Powers - 5 MHz Bandwidth– Hotspot Mode Active

LTE Band 41 5 MHzBandwidth									
Modulation	RB Size	RB Offset	Low Channel 39750 (2506.0 MHz)	Low-Mid Channel 40185 (2549.5 MHz)	Mid Channel 40620 (2593.0 MHz)	Mid-High Channel 41055 (2636.5 MHz)	High Channel 41490 (2680.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]						
QPSK	1	0	23.18	23.36	23.04	23.23	23.13	0	0
	1	12	22.93	23.09	22.86	22.84	23.19		0
	1	24	22.83	22.80	22.85	22.89	23.05		0
	12	0	23.01	23.02	23.10	23.25	23.13	0-1	0
	12	6	22.99	22.97	22.94	23.06	22.83		0
	12	13	23.03	22.96	22.97	23.22	23.02		0
	25	0	23.20	23.20	23.10	23.06	23.12		0
16QAM	1	0	23.20	23.24	23.07	23.32	23.36	0-1	0
	1	12	22.95	23.01	23.11	23.13	23.19		0
	1	24	22.92	23.11	22.82	22.91	22.94		0
	12	0	23.03	23.24	23.01	23.01	23.00	0-2	0
	12	6	22.87	23.16	23.24	22.94	23.11		0
	12	13	23.14	23.08	22.80	23.09	23.06		0
	25	0	23.05	23.28	23.06	23.19	23.01		0
64QAM	1	0	22.97	23.13	23.15	23.20	23.10	0-2	0
	1	12	22.79	22.95	23.04	22.81	22.75		0
	1	24	22.71	22.78	22.84	23.08	22.91		0
	12	0	23.11	23.15	23.10	23.19	23.24	0-3	0
	12	6	23.10	23.18	22.86	23.03	23.12		0
	12	13	22.82	22.94	23.10	23.09	22.87		0
	25	0	22.99	23.01	22.99	23.16	23.14		0

9.4.6 LTE Carrier Aggregation Conducted Powers

Table 9-62
Two Component Carrier Maximum Conducted Powers

PCC									SCC				Power	
PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	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 Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B2	20	898	1959.8	23.73	23.93
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B2	5	1175	1987.5	23.63	23.93
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B4	20	2175	2132.5	23.65	23.93
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B5	10	2525	881.5	23.64	23.93
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B12	10	5095	737.5	23.62	23.93
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B13	10	5230	751	23.63	23.93
LTE B2	5	19175	1907.5	QPSK	1	0	1175	1987.5	LTE B17	10	5790	740	23.64	23.87
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B29	10	9715	722.5	23.66	23.93
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B30	10	9820	2355	23.66	23.93
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B66	20	66786	2145	23.62	23.93
LTE B4	20	20300	1745	QPSK	1	0	2300	2145	LTE B2	20	900	1960	24.83	24.97
LTE B4	20	20300	1745	QPSK	1	0	2300	2145	LTE B4	5	1975	2112.5	24.81	24.97
LTE B4	20	20300	1745	QPSK	1	0	2300	2145	LTE B5	10	2525	881.5	24.84	24.97
LTE B4	20	20300	1745	QPSK	1	0	2300	2145	LTE B12	10	5095	737.5	24.80	24.97
LTE B4	20	20300	1745	QPSK	1	0	2300	2145	LTE B13	10	5230	751	24.81	24.97
LTE B4	10	20300	1745	QPSK	1	49	2300	2145	LTE B17	10	5790	740	24.79	24.96
LTE B4	20	20300	1745	QPSK	1	0	2300	2145	LTE B29	10	9715	722.5	24.72	24.97
LTE B4	20	20300	1745	QPSK	1	0	2300	2145	LTE B30	10	9820	2355	24.71	24.97
LTE B5	5	20425	826.5	QPSK	1	0	2425	871.5	LTE B2	20	900	1960	24.36	24.37
LTE B5	5	20425	826.5	QPSK	1	0	2425	871.5	LTE B4	20	2175	2132.5	24.38	24.37
LTE B5	5	20425	826.5	QPSK	1	0	2425	871.5	LTE B5	10	2501	879.1	24.38	24.37
LTE B5	5	20425	826.5	QPSK	1	0	2425	871.5	LTE B30	10	9820	2355	24.37	24.37
LTE B5	5	20425	826.5	QPSK	1	0	2425	871.5	LTE B66	20	66786	2145	24.38	24.37
LTE B12	10	23095	707.5	QPSK	1	0	5095	737.5	LTE B2	20	900	1960	24.54	24.60
LTE B12	10	23095	707.5	QPSK	1	0	5095	737.5	LTE B4	20	2175	2132.5	24.57	24.60
LTE B12	5	23155	713.5	QPSK	1	0	5155	743.5	LTE B12	5	5107	738.7	24.41	24.40
LTE B12	10	23095	707.5	QPSK	1	0	5095	737.5	LTE B30	10	9820	2355	24.50	24.60
LTE B12	10	23095	707.5	QPSK	1	0	5095	737.5	LTE B66	20	66786	2145	24.56	24.60
LTE B13	10	23230	782	QPSK	1	25	5230	751	LTE B2	20	900	1960	24.05	24.48
LTE B13	10	23230	782	QPSK	1	25	5230	751	LTE B4	20	2175	2132.5	24.06	24.48
LTE B13	10	23230	782	QPSK	1	25	5230	751	LTE B66	20	66786	2145	24.05	24.48
LTE B17	10	23765	707.5	QPSK	1	0	5765	737.5	LTE B2	10	900	1960	24.23	24.60
LTE B17	10	23765	707.5	QPSK	1	0	5765	737.5	LTE B4	10	2175	2132.5	24.25	24.60
LTE B25	20	26140	1860	QPSK	1	0	8140	1940	LTE B25	5	8665	1992.5	24.00	23.93
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B2	20	900	1960	24.59	24.81
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B4	20	2175	2132.5	24.58	24.81
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B5	10	2525	881.5	24.60	24.81
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B12	10	5095	737.5	24.61	24.81
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B29	10	9715	722.5	24.59	24.81
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B66	20	66786	2145	25.00	24.81
LTE B41	20	41055	2636.5	QPSK	1	0	41055	2636.5	LTE B41	20	40857	2616.7	23.41	23.17
LTE B41	20	41055	2636.5	QPSK	1	0	41055	2636.5	LTE B41	5	39675	2498.5	23.40	23.17
LTE B41 PC2	15	40620	2593	QPSK	1	0	40620	2593	LTE B41	20	40794	2610.4	26.68	26.64
LTE B41 PC2	15	40620	2593	QPSK	1	0	40620	2593	LTE B41	5	39675	2498.5	26.70	26.64
LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B2	20	900	1960	24.87	24.97
LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B5	10	2525	881.5	24.80	24.97
LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B12	10	5095	737.5	24.81	24.97
LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B13	10	5230	751	24.80	24.97
LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B29	10	9715	722.5	24.84	24.97
LTE B66	15	132322	1745	QPSK	1	0	66786	2145	LTE B66	5	66604	2126.8	24.78	24.96
LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B66	20	66588	2125.2	24.77	24.97
LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B66	5	66461	2112.5	24.78	24.97
LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B30	10	9820	2355	24.83	24.97

Table 9-63
Three Component Carrier Maximum Conducted Powers

PCC									SCC 1				SCC 2				Power	
PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	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]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B2	5	1175	1987.5	LTE B4	20	2175	2132.5	23.65	23.93
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B2	20	898	1959.8	LTE B5	10	2525	881.5	23.68	23.93
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B2	5	1175	1987.5	LTE B5	10	2525	881.5	23.58	23.93
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B2	5	1175	1987.5	LTE B12	10	5095	737.5	23.60	23.93
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B2	5	1175	1987.5	LTE B13	10	5230	751	23.57	23.93
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B2	5	1175	1987.5	LTE B30	10	9820	2355	23.65	23.93
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B4	20	2175	2132.5	LTE B4	5	2375	2152.5	23.74	23.93
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B4	20	2175	2132.5	LTE B5	10	2525	881.5	23.55	23.93
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B4	20	2175	2132.5	LTE B12	10	5095	737.5	23.57	23.93
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B4	20	2175	2132.5	LTE B13	10	5230	751	23.59	23.93
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B4	20	2175	2132.5	LTE B29	10	9715	722.5	23.59	23.93
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B4	20	2175	2132.5	LTE B30	10	9820	2355	23.60	23.93
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B5	10	2525	881.5	LTE B30	10	9820	2355	23.59	23.93
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B5	10	2525	881.5	LTE B66	20	66786	2145	23.62	23.93
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B12	10	5095	737.5	LTE B30	10	9820	2355	23.64	23.93
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B12	10	5095	737.5	LTE B66	20	66786	2145	23.65	23.93
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B13	10	5230	751	LTE B66	20	66786	2145	23.63	23.93
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B29	10	9715	722.5	LTE B30	10	9820	2355	23.63	23.93
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B66	20	66786	2145	LTE B66	20	66588	2125.2	23.62	23.93
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B66	20	66786	2145	LTE B66	5	67111	2177.5	23.64	23.93
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B66	20	66786	2145	LTE B30	10	9820	2355	23.65	23.93
LTE B4	20	20300	1745	QPSK	1	0	2300	2145	LTE B2	20	900	1960	LTE B2	5	1175	1987.5	24.80	24.97
LTE B4	20	20300	1745	QPSK	1	0	2300	2145	LTE B2	20	900	1960	LTE B5	10	2525	881.5	24.77	24.97
LTE B4	20	20300	1745	QPSK	1	0	2300	2145	LTE B2	20	900	1960	LTE B12	10	5095	737.5	24.67	24.97
LTE B4	20	20300	1745	QPSK	1	0	2300	2145	LTE B2	20	900	1960	LTE B13	10	5230	751	24.69	24.97
LTE B4	20	20300	1745	QPSK	1	0	2300	2145	LTE B2	20	900	1960	LTE B29	10	9715	722.5	24.68	24.97
LTE B4	20	20300	1745	QPSK	1	0	2300	2145	LTE B2	20	900	1960	LTE B30	10	9820	2355	24.77	24.97
LTE B4	20	20300	1745	QPSK	1	0	2300	2145	LTE B4	5	1975	2112.5	LTE B2	20	900	1960	24.72	24.97
LTE B4	20	20300	1745	QPSK	1	0	2300	2145	LTE B4	5	1975	2112.5	LTE B5	10	2525	881.5	24.71	24.97
LTE B4	20	20300	1745	QPSK	1	0	2300	2145	LTE B4	5	1975	2112.5	LTE B12	10	5095	737.5	24.70	24.97
LTE B4	20	20300	1745	QPSK	1	0	2300	2145	LTE B4	5	1975	2112.5	LTE B13	10	5230	751	24.74	24.97
LTE B4	20	20300	1745	QPSK	1	0	2300	2145	LTE B4	5	1975	2112.5	LTE B30	10	9820	2355	24.61	24.97
LTE B4	20	20300	1745	QPSK	1	0	2300	2145	LTE B5	10	2525	881.5	LTE B30	10	9820	2355	24.70	24.97
LTE B4	20	20300	1745	QPSK	1	0	2300	2145	LTE B12	10	5095	737.5	LTE B30	10	9820	2355	24.61	24.97
LTE B4	20	20300	1745	QPSK	1	0	2300	2145	LTE B29	10	9715	722.5	LTE B30	10	9820	2355	24.62	24.97
LTE B5	5	20425	826.5	QPSK	1	0	2425	871.5	LTE B2	20	900	1960	LTE B2	20	702	1940.2	24.52	24.37
LTE B5	5	20425	826.5	QPSK	1	0	2425	871.5	LTE B2	20	900	1960	LTE B2	5	1175	1987.5	24.54	24.37
LTE B5	5	20425	826.5	QPSK	1	0	2425	871.5	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	24.51	24.37
LTE B5	5	20425	826.5	QPSK	1	0	2425	871.5	LTE B2	20	900	1960	LTE B30	10	9820	2355	24.51	24.37
LTE B5	5	20425	826.5	QPSK	1	0	2425	871.5	LTE B2	20	900	1960	LTE B66	20	66786	2145	24.52	24.37
LTE B5	5	20425	826.5	QPSK	1	0	2425	871.5	LTE B4	20	2175	2132.5	LTE B4	5	1975	2112.5	24.57	24.37
LTE B5	5	20425	826.5	QPSK	1	0	2425	871.5	LTE B4	20	2175	2132.5	LTE B30	10	9820	2355	24.55	24.37
LTE B5	5	20425	826.5	QPSK	1	0	2425	871.5	LTE B30	10	9820	2355	LTE B66	20	66786	2145	24.54	24.37
LTE B5	5	20425	826.5	QPSK	1	0	2425	871.5	LTE B66	20	66786	2145	LTE B66	20	66588	2125.2	24.57	24.37
LTE B5	5	20425	826.5	QPSK	1	0	2425	871.5	LTE B66	20	66786	2145	LTE B66	5	67111	2177.5	24.57	24.37
LTE B12	10	23095	707.5	QPSK	1	0	5095	737.5	LTE B2	20	900	1960	LTE B2	5	1175	1987.5	24.47	24.60
LTE B12	10	23095	707.5	QPSK	1	0	5095	737.5	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	24.46	24.60
LTE B12	10	23095	707.5	QPSK	1	0	5095	737.5	LTE B2	20	900	1960	LTE B30	10	9820	2355	24.49	24.60
LTE B12	10	23095	707.5	QPSK	1	0	5095	737.5	LTE B2	20	900	1960	LTE B66	20	66786	2145	24.47	24.60
LTE B12	10	23095	707.5	QPSK	1	0	5095	737.5	LTE B4	20	2175	2132.5	LTE B4	5	1975	2112.5	24.50	24.60
LTE B12	10	23095	707.5	QPSK	1	0	5095	737.5	LTE B66	20	66786	2145	LTE B66	20	66588	2125.2	24.45	24.60
LTE B12	10	23095	707.5	QPSK	1	0	5095	737.5	LTE B66	20	66786	2145	LTE B66	5	67111	2177.5	24.46	24.60
LTE B13	10	23230	782	QPSK	1	25	5230	751	LTE B2	20	900	1960	LTE B2	5	1175	1987.5	24.51	24.48
LTE B13	10	23230	782	QPSK	1	25	5230	751	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	24.55	24.48
LTE B13	10	23230	782	QPSK	1	25	5230	751	LTE B2	20	900	1960	LTE B66	20	66786	2145	24.54	24.48
LTE B13	10	23230	782	QPSK	1	25	5230	751	LTE B4	20	2175	2132.5	LTE B4	5	1975	2112.5	24.45	24.48
LTE B13	10	23230	782	QPSK	1	25	5230	751	LTE B66	20	66786	2145	LTE B66	20	66588	2125.2	24.52	24.48
LTE B13	10	23230	782	QPSK	1	25	5230	751	LTE B66	20	66786	2145	LTE B66	5	67111	2177.5	24.49	24.48
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B2	20	900	1960	LTE B2	5	1175	1987.5	24.85	24.81
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	24.87	24.81
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B2	20	900	1960	LTE B5	10	2525	881.5	24.86	24.81
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B2	20	900	1960	LTE B12	10	5095	737.5	24.87	24.81
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B2	20	900	1960	LTE B29	10	9715	722.5	24.89	24.81
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B4	20	2175	2132.5	LTE B4	5	1975	2112.5	24.75	24.81
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B4	20	2175	2132.5	LTE B5	10	2525	881.5	24.74	24.81
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B4	20	2175	2132.5	LTE B12	10	5095	737.5	24.73	24.81
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B4	20	2175	2132.5	LTE B29	10	9715	722.5	24.77	24.81
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B5	10	2525	881.5	LTE B66	20	66786	2145	24.66	24.81
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B12	10	5095	737.5	LTE B66	20	66786	2145	24.68	24.81
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B66	20	66786	2145	LTE B66	5	66461	2112.5	24.30	24.81
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B2	20	900	1960	LTE B66	20	66786	2145	24.65	24.81
LTE B41	20	41055	2636.5	QPSK	1	0	41055	2636.5	LTE B41	20	40857	2616.7	LTE B41	20	40659	2596.9	23.40	23.17
LTE B41 PC2	15	40620	2593	QPSK	1	0	40620	2593	LTE B41	20	40791	2610.1	LTE B41	20	40449	2575.9	26.64	26.64
LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B2	20	900	1960	LTE B5	10	2525	881.5	24.89	24.97
LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B2	20	900	1960	LTE B12	10	5095	737.5	24.85	24.97
LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B2	20	900	1960	LTE B13	10	5230	751	24.86	24.97
LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B5	10	2525	881.5	LTE B30	10	9820	2355	24.86	24.97
LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B12	10	5095	737.5	LTE B30	10	9820	2355	24.84	24.97
LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B66	20	66588	2125.2	LTE B2	20	900	1960	24.87	24.97
LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B66	5	66461	2112.5	LTE B2	20	900	1960	24.83	24.97
LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B66	20	66588	2125.2	LTE B5	10	2525	881.5	24.89	24.97
LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B66	5	66461	2112.5	LTE B5	10	2525	881.5	24.85	24.97
LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B66	20	66588	2125.2	LTE B12	10	5095	737.5	24.86	24.97
LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B66	5	66461	2112.5	LTE B12	10	5095	737.5	24.87	24.97
LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B66	20	66588	2125.2	LTE B13	10	5230	751	24.91	24.97
LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B66	5	66461	2112.5	LTE B13	10	5230	751	24.87	24.97
LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B66	20	66588	2125.2	LTE B66	5	67111	2177.5	24.89	24.97
LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B66	5	67063	2172.7	LTE B66	5	67111	2177.5	24.85	24.97
LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B66	5	66461	2112.5	LTE B30	10	9820	2355	24.86	24.97
LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B2	20	900	1960	LTE B30	10	9820	2355	24.82	24.97

Table 9-64
Four Component Carrier Maximum Conducted Powers

PCC									SCC 1				SCC 2				SCC 3				Power	
PCC Band	PCC BW [MHz]	PCC (UL) Channel	PCC (UL) Freq. [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B2	5	1175	1987.5	LTE B5	10	2525	881.5	LTE B30	10	9820	2355	23.99	23.93
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B2	5	1175	1987.5	LTE B12	10	5095	737.5	LTE B30	10	9820	2355	23.96	23.93
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B2	5	1175	1987.5	LTE B29	10	9715	722.5	LTE B30	10	9820	2355	23.98	23.93
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B5	10	2525	881.5	LTE B30	10	9820	2355	LTE B66	20	66786	2145	24.00	23.93
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B12	10	5095	737.5	LTE B30	10	9820	2355	LTE B66	20	66786	2145	23.99	23.93
LTE B2	20	18700	1860	QPSK	1	0	700	1940	LTE B12	10	5095	737.5	LTE B66	20	66786	2145	LTE B66	5	66461	2112.5	23.94	23.93
LTE B5	5	20425	826.5	QPSK	1	0	2425	871.5	LTE B2	20	900	1960	LTE B2	5	625	1932.5	LTE B30	10	9820	2355	24.43	24.37
LTE B5	5	20425	826.5	QPSK	1	0	2425	871.5	LTE B2	20	900	1960	LTE B30	10	9820	2355	LTE B66	20	66786	2145	24.39	24.37
LTE B12	10	23095	707.5	QPSK	1	0	5095	737.5	LTE B2	20	900	1960	LTE B2	5	625	1932.5	LTE B30	10	9820	2355	24.70	24.60
LTE B12	10	23095	707.5	QPSK	1	0	5095	737.5	LTE B2	20	900	1960	LTE B30	10	9820	2355	LTE B66	20	66786	2145	24.75	24.60
LTE B12	10	23095	707.5	QPSK	1	0	5095	737.5	LTE B2	20	900	1960	LTE B66	20	66786	2145	LTE B66	5	66461	2112.5	24.57	24.60
LTE B12	10	23095	707.5	QPSK	1	0	5095	737.5	LTE B30	10	9820	2355	LTE B66	20	66786	2145	LTE B66	5	66461	2112.5	24.70	24.60
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B2	20	900	1960	LTE B2	5	625	1932.5	LTE B5	10	2525	881.5	24.55	24.81
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B2	20	900	1960	LTE B2	5	625	1932.5	LTE B12	10	5095	737.5	24.58	24.81
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B2	20	900	1960	LTE B2	5	625	1932.5	LTE B29	10	9715	722.5	24.42	24.81
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B2	20	900	1960	LTE B5	10	2525	881.5	LTE B66	20	66786	2145	24.56	24.81
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B2	20	900	1960	LTE B12	10	5095	737.5	LTE B66	20	66786	2145	24.32	24.81
LTE B30	10	27710	2310	QPSK	1	0	9820	2355	LTE B12	10	5095	737.5	LTE B66	20	66786	2145	LTE B66	5	66461	2112.5	24.52	24.81
LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B2	20	900	1960	LTE B5	10	2525	881.5	LTE B30	10	9820	2355	24.65	24.97
LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B2	20	900	1960	LTE B12	10	5095	737.5	LTE B30	10	9820	2355	24.72	24.97
LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B66	5	66461	2112.5	LTE B2	20	900	1960	LTE B12	10	5095	737.5	24.52	24.97
LTE B66	20	132322	1745	QPSK	1	0	66786	2145	LTE B66	5	66461	2112.5	LTE B12	10	5095	737.5	LTE B30	10	9820	2355	24.76	24.97

Table 9-65
Two Component Carrier Reduced Conducted Powers – Hotspot Mode Active

PCC									SCC				Power	
PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	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 Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
LTE B2	20	18925	1882.5	QPSK	1	0	925	1962.5	LTE B2	20	727	1942.7	20.29	20.16
LTE B2	20	18925	1882.5	QPSK	1	0	925	1962.5	LTE B2	5	625	1932.5	20.30	20.16
LTE B2	20	18925	1882.5	QPSK	1	0	925	1962.5	LTE B4	20	2175	2132.5	20.31	20.16
LTE B2	20	18925	1882.5	QPSK	1	0	925	1962.5	LTE B5	10	2525	881.5	20.29	20.16
LTE B2	20	18925	1882.5	QPSK	1	0	925	1962.5	LTE B12	10	5095	737.5	20.30	20.16
LTE B2	20	18925	1882.5	QPSK	1	0	925	1962.5	LTE B13	10	5230	751	20.31	20.16
LTE B2	5	18925	1882.5	16QAM	1	0	925	1962.5	LTE B17	10	5790	740	20.15	20.09
LTE B2	20	18925	1882.5	QPSK	1	0	925	1962.5	LTE B29	10	9715	722.5	20.30	20.16
LTE B2	20	18925	1882.5	QPSK	1	0	925	1962.5	LTE B30	10	9820	2355	20.31	20.16
LTE B2	20	18925	1882.5	QPSK	1	0	925	1962.5	LTE B66	20	66786	2145	20.29	20.16
LTE B4	20	20300	1745	64QAM	1	0	2300	2145	LTE B2	20	900	1960	20.30	20.48
LTE B4	20	20300	1745	64QAM	1	0	2300	2145	LTE B4	5	1975	2112.5	20.29	20.48
LTE B4	20	20300	1745	64QAM	1	0	2300	2145	LTE B5	10	2525	881.5	20.19	20.48
LTE B4	20	20300	1745	64QAM	1	0	2300	2145	LTE B12	10	5095	737.5	20.12	20.48
LTE B4	20	20300	1745	64QAM	1	0	2300	2145	LTE B13	10	5230	751	20.26	20.48
LTE B4	5	20375	1752.5	16QAM	1	0	2375	2152.5	LTE B17	10	5790	740	20.20	20.48
LTE B4	20	20300	1745	64QAM	1	0	2300	2145	LTE B29	10	9715	722.5	20.20	20.48
LTE B4	20	20300	1745	64QAM	1	0	2300	2145	LTE B30	10	9820	2355	20.26	20.48
LTE B25	20	26365	1882.5	QPSK	1	0	8365	1962.5	LTE B25	5	8665	1992.5	20.15	20.16
LTE B30	10	27710	2310	64QAM	1	0	9820	2355	LTE B2	20	900	1960	21.43	21.61
LTE B30	10	27710	2310	64QAM	1	0	9820	2355	LTE B4	20	2175	2132.5	21.45	21.61
LTE B30	10	27710	2310	64QAM	1	0	9820	2355	LTE B5	10	2525	881.5	21.54	21.61
LTE B30	10	27710	2310	64QAM	1	0	9820	2355	LTE B12	10	5095	737.5	21.59	21.61
LTE B30	10	27710	2310	64QAM	1	0	9820	2355	LTE B29	10	9715	722.5	21.62	21.61
LTE B30	10	27710	2310	64QAM	1	0	9820	2355	LTE B66	20	66786	2145	21.36	21.61
LTE B41 PC2	20	41490	2680	16QAM	1	0	41490	2680	LTE B41	20	41292	2660.2	23.50	23.49
LTE B41 PC2	20	41490	2680	16QAM	1	0	41490	2680	LTE B41	5	39675	2498.5	23.50	23.49
LTE B66	20	132322	1745	64QAM	1	0	66786	2145	LTE B2	20	900	1960	20.33	20.48
LTE B66	20	132322	1745	64QAM	1	0	66786	2145	LTE B5	10	2525	881.5	20.38	20.48
LTE B66	20	132322	1745	64QAM	1	0	66786	2145	LTE B12	10	5095	737.5	20.40	20.48
LTE B66	20	132322	1745	64QAM	1	0	66786	2145	LTE B13	10	5230	751	20.36	20.48
LTE B66	20	132322	1745	64QAM	1	0	66786	2145	LTE B29	10	9715	722.5	20.35	20.48
LTE B66	15	132047	1717.5	64QAM	1	0	66511	2117.5	LTE B66	5	66604	2126.8	20.50	20.48
LTE B66	20	132322	1745	64QAM	1	0	66786	2145	LTE B66	20	66588	2125.2	20.49	20.48
LTE B66	20	132322	1745	64QAM	1	0	66786	2145	LTE B66	5	66461	2112.5	20.40	20.48
LTE B66	20	132322	1745	64QAM	1	0	66786	2145	LTE B30	10	9820	2355	20.32	20.48

Table 9-66
Three Component Carrier Reduced Conducted Powers – Hotspot Mode Active

PCC									SCC 1				SCC 2				Power	
PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	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]	SCC Band	SCC Bandwidth [MHz]	SCC (DL) Channel	SCC (DL) Frequency [MHz]	LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
LTE B2	20	18925	1882.5	QPSK	1	0	925	1962.5	LTE B2	5	625	1932.5	LTE B4	20	2175	2132.5	20.24	20.16
LTE B2	20	18925	1882.5	QPSK	1	0	925	1962.5	LTE B2	20	727	1942.7	LTE B5	10	2525	881.5	20.28	20.16
LTE B2	20	18925	1882.5	QPSK	1	0	925	1962.5	LTE B2	5	625	1932.5	LTE B5	10	2525	881.5	20.31	20.16
LTE B2	20	18925	1882.5	QPSK	1	0	925	1962.5	LTE B2	5	625	1932.5	LTE B12	10	5095	737.5	20.29	20.16
LTE B2	20	18925	1882.5	QPSK	1	0	925	1962.5	LTE B2	5	625	1932.5	LTE B13	10	5230	751	20.30	20.16
LTE B2	20	18925	1882.5	QPSK	1	0	925	1962.5	LTE B2	5	625	1932.5	LTE B30	10	9820	2355	20.28	20.16
LTE B2	20	18925	1882.5	QPSK	1	0	925	1962.5	LTE B4	20	2175	2132.5	LTE B4	5	2375	2152.5	20.19	20.16
LTE B2	20	18925	1882.5	QPSK	1	0	925	1962.5	LTE B4	20	2175	2132.5	LTE B5	10	2525	881.5	20.22	20.16
LTE B2	20	18925	1882.5	QPSK	1	0	925	1962.5	LTE B4	20	2175	2132.5	LTE B12	10	5095	737.5	20.14	20.16
LTE B2	20	18925	1882.5	QPSK	1	0	925	1962.5	LTE B4	20	2175	2132.5	LTE B13	10	5230	751	20.12	20.16
LTE B2	20	18925	1882.5	QPSK	1	0	925	1962.5	LTE B4	20	2175	2132.5	LTE B29	10	9715	722.5	20.13	20.16
LTE B2	20	18925	1882.5	QPSK	1	0	925	1962.5	LTE B4	20	2175	2132.5	LTE B30	10	9820	2355	20.09	20.16
LTE B2	20	18925	1882.5	QPSK	1	0	925	1962.5	LTE B5	10	2525	881.5	LTE B30	10	9820	2355	20.10	20.16
LTE B2	20	18925	1882.5	QPSK	1	0	925	1962.5	LTE B5	10	2525	881.5	LTE B66	20	66786	2145	20.13	20.16
LTE B2	20	18925	1882.5	QPSK	1	0	925	1962.5	LTE B12	10	5095	737.5	LTE B30	10	9820	2355	20.15	20.16
LTE B2	20	18925	1882.5	QPSK	1	0	925	1962.5	LTE B12	10	5095	737.5	LTE B66	20	66786	2145	20.13	20.16
LTE B2	20	18925	1882.5	QPSK	1	0	925	1962.5	LTE B13	10	5230	751	LTE B66	20	66786	2145	20.10	20.16
LTE B2	20	18925	1882.5	QPSK	1	0	925	1962.5	LTE B29	10	9715	722.5	LTE B30	10	9820	2355	20.15	20.16
LTE B2	20	18925	1882.5	QPSK	1	0	925	1962.5	LTE B66	20	66786	2145	LTE B66	20	66588	2125.2	20.22	20.16
LTE B2	20	18925	1882.5	QPSK	1	0	925	1962.5	LTE B66	20	66786	2145	LTE B66	5	66461	2112.5	20.21	20.16
LTE B2	20	18925	1882.5	QPSK	1	0	925	1962.5	LTE B66	20	66786	2145	LTE B30	10	9820	2355	20.18	20.16
LTE B4	20	20300	1745	64QAM	1	0	2300	2145	LTE B2	20	900	1960	LTE B2	5	625	1932.5	20.18	20.48
LTE B4	20	20300	1745	64QAM	1	0	2300	2145	LTE B2	20	900	1960	LTE B5	10	2525	881.5	20.20	20.48
LTE B4	20	20300	1745	64QAM	1	0	2300	2145	LTE B2	20	900	1960	LTE B12	10	5095	737.5	20.26	20.48
LTE B4	20	20300	1745	64QAM	1	0	2300	2145	LTE B2	20	900	1960	LTE B13	10	5230	751	20.11	20.48
LTE B4	20	20300	1745	64QAM	1	0	2300	2145	LTE B2	20	900	1960	LTE B29	10	9715	722.5	20.18	20.48
LTE B4	20	20300	1745	64QAM	1	0	2300	2145	LTE B2	20	900	1960	LTE B30	10	9820	2355	20.10	20.48
LTE B4	20	20300	1745	64QAM	1	0	2300	2145	LTE B4	5	1975	2112.5	LTE B2	20	900	1960	20.05	20.48
LTE B4	20	20300	1745	64QAM	1	0	2300	2145	LTE B4	5	1975	2112.5	LTE B5	10	2525	881.5	20.10	20.48
LTE B4	20	20300	1745	64QAM	1	0	2300	2145	LTE B4	5	1975	2112.5	LTE B12	10	5095	737.5	20.06	20.48
LTE B4	20	20300	1745	64QAM	1	0	2300	2145	LTE B4	5	1975	2112.5	LTE B13	10	5230	751	20.15	20.48
LTE B4	20	20300	1745	64QAM	1	0	2300	2145	LTE B4	5	1975	2112.5	LTE B30	10	9820	2355	20.12	20.48
LTE B4	20	20300	1745	64QAM	1	0	2300	2145	LTE B5	10	2525	881.5	LTE B30	10	9820	2355	20.13	20.48
LTE B4	20	20300	1745	64QAM	1	0	2300	2145	LTE B12	10	5095	737.5	LTE B30	10	9820	2355	20.11	20.48
LTE B4	20	20300	1745	64QAM	1	0	2300	2145	LTE B29	10	9715	722.5	LTE B30	10	9820	2355	20.23	20.48
LTE B30	10	27710	2310	64QAM	1	0	9820	2355	LTE B2	20	900	1960	LTE B2	5	1175	1987.5	21.25	21.61
LTE B30	10	27710	2310	64QAM	1	0	9820	2355	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	21.21	21.61
LTE B30	10	27710	2310	64QAM	1	0	9820	2355	LTE B2	20	900	1960	LTE B5	10	2525	881.5	21.15	21.61
LTE B30	10	27710	2310	64QAM	1	0	9820	2355	LTE B2	20	900	1960	LTE B12	10	5095	737.5	21.16	21.61
LTE B30	10	27710	2310	64QAM	1	0	9820	2355	LTE B2	20	900	1960	LTE B29	10	9715	722.5	21.13	21.61
LTE B30	10	27710	2310	64QAM	1	0	9820	2355	LTE B4	20	2175	2132.5	LTE B4	5	1975	2112.5	21.29	21.61
LTE B30	10	27710	2310	64QAM	1	0	9820	2355	LTE B4	20	2175	2132.5	LTE B5	10	2525	881.5	21.21	21.61
LTE B30	10	27710	2310	64QAM	1	0	9820	2355	LTE B4	20	2175	2132.5	LTE B12	10	5095	737.5	21.25	21.61
LTE B30	10	27710	2310	64QAM	1	0	9820	2355	LTE B4	20	2175	2132.5	LTE B29	10	9715	722.5	21.17	21.61
LTE B30	10	27710	2310	64QAM	1	0	9820	2355	LTE B5	10	2525	881.5	LTE B66	20	66786	2145	21.14	21.61
LTE B30	10	27710	2310	64QAM	1	0	9820	2355	LTE B12	10	5095	737.5	LTE B66	20	66786	2145	21.21	21.61
LTE B30	10	27710	2310	64QAM	1	0	9820	2355	LTE B66	20	66786	2145	LTE B66	5	66461	2112.5	21.20	21.61
LTE B30	10	27710	2310	64QAM	1	0	9820	2355	LTE B2	20	900	1960	LTE B66	20	66786	2145	21.18	21.61
LTE B41 PC2	20	41490	2680	16QAM	1	0	41490	2680	LTE B41	20	41292	2660.2	LTE B41	20	41094	2640.4	23.35	23.49
LTE B66	20	132322	1745	64QAM	1	0	66786	2145	LTE B2	20	900	1960	LTE B5	10	2525	881.5	20.27	20.48
LTE B66	20	132322	1745	64QAM	1	0	66786	2145	LTE B2	20	900	1960	LTE B12	10	5095	737.5	20.15	20.48
LTE B66	20	132322	1745	64QAM	1	0	66786	2145	LTE B2	20	900	1960	LTE B13	10	5230	751	20.14	20.48
LTE B66	20	132322	1745	64QAM	1	0	66786	2145	LTE B5	10	2525	881.5	LTE B30	10	9820	2355	20.15	20.48
LTE B66	20	132322	1745	64QAM	1	0	66786	2145	LTE B12	10	5095	737.5	LTE B30	10	9820	2355	20.18	20.48
LTE B66	20	132322	1745	64QAM	1	0	66786	2145	LTE B66	20	66588	2125.2	LTE B2	20	900	1960	20.22	20.48
LTE B66	20	132322	1745	64QAM	1	0	66786	2145	LTE B66	5	66461	2112.5	LTE B2	20	900	1960	20.19	20.48
LTE B66	20	132322	1745	64QAM	1	0	66786	2145	LTE B66	20	66588	2125.2	LTE B5	10	2525	881.5	20.20	20.48
LTE B66	20	132322	1745	64QAM	1	0	66786	2145	LTE B66	5	66461	2112.5	LTE B5	10	2525	881.5	20.21	20.48
LTE B66	20	132322	1745	64QAM	1	0	66786	2145	LTE B66	20	66588	2125.2	LTE B12	10	5095	737.5	20.10	20.48
LTE B66	20	132322	1745	64QAM	1	0	66786	2145	LTE B66	5	66461	2112.5	LTE B12	10	5095	737.5	20.13	20.48
LTE B66	20	132322	1745	64QAM	1	0	66786	2145	LTE B66	20	66588	2125.2	LTE B13	10	5230	751	20.08	20.48
LTE B66	20	132322	1745	64QAM	1	0	66786	2145	LTE B66	5	66461	2112.5	LTE B13	10	5230	751	20.09	20.48
LTE B66	20	132322	1745	64QAM	1	0	66786	2145	LTE B66	20	66588	2125.2	LTE B66	5	67111	2177.5	20.12	20.48
LTE B66	20	132322	1745	64QAM	1	0	66786	2145	LTE B66	5	67063	2172.7	LTE B66	5	67111	2177.5	20.16	20.48
LTE B66	20	132322	1745	64QAM	1	0	66786	2145	LTE B66	5	66461	2112.5	LTE B30	10	9820	2355	20.17	20.48
LTE B66	20	132322	1745	64QAM	1	0	66786	2145	LTE B2	20	900	1960	LTE B30	10	9820	2355	20.19	20.48

Table 9-67
Four Component Carrier Reduced Conducted Powers – Hotspot Mode Active

PCC									SCC 1				SCC 2				SCC 3				Power	
PCC Band	PCC BW [MHz]	PCC (UL) Channel	PCC (UL) Freq. [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
LTE B2	20	18925	1882.5	QPSK	1	0	925	1962.5	LTE B2	5	625	1932.5	LTE B5	10	2525	881.5	LTE B30	10	9820	2355	20.12	20.16
LTE B2	20	18925	1882.5	QPSK	1	0	925	1962.5	LTE B2	5	625	1932.5	LTE B12	10	5095	737.5	LTE B30	10	9820	2355	20.18	20.16
LTE B2	20	18925	1882.5	QPSK	1	0	925	1962.5	LTE B2	5	625	1932.5	LTE B29	10	9715	722.5	LTE B30	10	9820	2355	20.21	20.16
LTE B2	20	18925	1882.5	QPSK	1	0	925	1962.5	LTE B5	10	2525	881.5	LTE B30	10	9820	2355	LTE B66	20	66786	2145	20.22	20.16
LTE B2	20	18925	1882.5	QPSK	1	0	925	1962.5	LTE B12	10	5095	737.5	LTE B30	10	9820	2355	LTE B66	20	66786	2145	20.20	20.16
LTE B2	20	18925	1882.5	QPSK	1	0	925	1962.5	LTE B12	10	5095	737.5	LTE B66	20	66786	2145	LTE B66	5	66461	2112.5	20.25	20.16
LTE B30	10	27710	2310	64QAM	1	0	9820	2355	LTE B2	20	900	1960	LTE B2	5	625	1932.5	LTE B5	10	2525	881.5	21.39	21.61
LTE B30	10	27710	2310	64QAM	1	0	9820	2355	LTE B2	20	900	1960	LTE B2	5	625	1932.5	LTE B12	10	5095	737.5	21.40	21.61
LTE B30	10	27710	2310	64QAM	1	0	9820	2355	LTE B2	20	900	1960	LTE B2	5	625	1932.5	LTE B29	10	9715	722.5	21.37	21.61
LTE B30	10	27710	2310	64QAM	1	0	9820	2355	LTE B2	20	900	1960	LTE B5	10	2525	881.5	LTE B66	20	66786	2145	21.41	21.61
LTE B30	10	27710	2310	64QAM	1	0	9820	2355	LTE B2	20	900	1960	LTE B12	10	5095	737.5	LTE B66	20	66786	2145	21.24	21.61
LTE B30	10	27710	2310	64QAM	1	0	9820	2355	LTE B12	10	5095	737.5	LTE B66	20	66786	2145	LTE B66	5	66461	2112.5	21.25	21.61
LTE B66	20	132322	1745	64QAM	1	0	66786	2145	LTE B2	20	900	1960	LTE B5	10	2525	881.5	LTE B30	10	9820	2355	20.13	20.48
LTE B66	20	132322	1745	64QAM	1	0	66786	2145	LTE B2	20	900	1960	LTE B12	10	5095	737.5	LTE B30	10	9820	2355	20.12	20.48
LTE B66	20	132322	1745	64QAM	1	0	66786	2145	LTE B66	5	66461	2112.5	LTE B2	20	900	1960	LTE B12	10	5095	737.5	20.05	20.48
LTE B66	20	132322	1745	64QAM	1	0	66786	2145	LTE B66	5	66461	2112.5	LTE B12	10	5095	737.5	LTE B30	10	9820	2355	20.00	20.48

Notes:

1. The device supports downlink Carrier Aggregation. 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.
3. For downlink carrier aggregation combinations, PCC uplink channel was selected based on section C)3)b)ii) of KBD 941225 D05 V01r02. The downlink PCC channel was paired with the selected PCC uplink channel according to normal configurations without carrier aggregation. For inter-band CA, the SCC downlink channels were selected near the middle of their transmission bands. For contiguous intra-band CA, the downlink channel spacing between the component carriers was set to multiple of 300 kHz less than the nominal channel spacing defined in section 5.4.1A of 3GPP TS 36.521. For non-contiguous intra-band CA, the downlink channel spacing between the component carriers was set to be larger than the nominal channel spacing and provided maximum separation between the component carriers. All selected downlink channels remained fully within the downlink transmission band of the respective component carrier.
4. Per FCC guidance LTE Band 12 standalone powers were used to select measurement configurations for LTE Band 17, LTE Band 66 standalone powers were used to select measurement configurations for LTE Band 4, and LTE B25 standalone SISO powers were used to select measurement configurations for LTE Band 2.

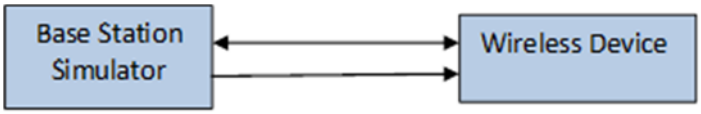

Figure 9-D
Power Measurement Setup

9.4.7 LTE Uplink Carrier Aggregation Conducted Powers

Table 9-68
LTE Uplink Carrier Aggregation Conducted Powers

PCC							SCC							Power	
PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL) Channel	SCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	ULCA Tx.Power (dBm)	LTE Rel. 8 PCC Tx.Power (dBm)
LTE B41	20	41055	2636.5	QPSK	1	0	LTE B41	20	40857	2616.7	QPSK	1	99	22.96	23.17

Notes:

1. This device supports uplink carrier aggregation for LTE CA_41C with a maximum of two 20 MHz component carriers.
2. For intraband contiguous carrier aggregation scenarios, 3GPP 36.101 Table 6.2.2A-1 specifies that the aggregate maximum allowed output power should be equivalent to the single carrier scenario. 3GPP 36.101 6.2.3A allows for several dB of MPR to be applied when non-contiguous RB allocation is implemented. The conducted powers and MPR settings in this device are permanently implemented per the above 3GPP requirements.
3. Per FCC Guidance, the output power with uplink CA active was measured for the configuration with the highest reported SAR under single carrier scenario for each exposure condition. The power was measured with wideband signal integration over both component carriers (40 MHz Bandwidth).
4. Uplink carrier aggregation is only supported when the device is operating with Power Class 3 for LTE Band 41.

Figure 9-E
Power Measurement Setup

9.5 WLAN Conducted Powers

Table 9-69
2.4 GHz WLAN Maximum Average RF Power – Antenna 1

Freq [MHz]	Channel	2.4GHz Conducted Power [dBm]		
		IEEE Transmission Mode		
		802.11b	802.11g	802.11n
2412	1	19.93	17.35	17.39
2437	6	19.71	17.36	17.23
2462	11	20.00	17.38	17.26

Table 9-70
2.4 GHz WLAN Maximum Average RF Power – Antenna 2

Freq [MHz]	Channel	2.4GHz Conducted Power [dBm]		
		IEEE Transmission Mode		
		802.11b	802.11g	802.11n
2412	1	19.30	16.72	16.53
2437	6	19.90	17.04	17.10
2462	11	19.43	16.77	16.45

Table 9-71
5 GHz WLAN Maximum Average RF Power – Antenna 1

Freq [MHz]	Channel	5GHz (20MHz) Conducted Power [dBm]		
		IEEE Transmission Mode		
		802.11a	802.11n	802.11ac
5180	36	17.11	17.20	17.23
5200	40	17.22	17.22	17.22
5220	44	17.17	17.26	17.28
5240	48	17.35	17.22	17.32
5260	52	16.92	16.94	17.02
5280	56	17.01	16.94	17.02
5300	60	16.93	17.03	17.10
5320	64	17.02	17.08	17.01
5500	100	16.36	16.50	16.40
5600	120	16.26	16.17	16.20
5620	124	16.33	16.19	16.12
5720	144	16.16	16.19	17.24
5745	149	16.71	16.62	16.55
5785	157	16.69	16.74	16.57
5825	165	16.50	16.50	16.36

Table 9-72
5 GHz WLAN Maximum Average RF Power – Antenna 2

Freq [MHz]	Channel	5GHz (20MHz) Conducted Power [dBm]		
		IEEE Transmission Mode		
		802.11a	802.11n	802.11ac
5180	36	17.20	17.38	16.87
5200	40	16.89	16.88	16.46
5220	44	16.63	16.56	16.08
5240	48	16.23	16.10	17.40
5260	52	16.32	16.11	17.38
5280	56	17.45	17.41	17.20
5300	60	17.29	17.07	17.06
5320	64	17.35	16.99	16.88
5500	100	16.44	16.42	16.73
5600	120	16.36	16.71	16.77
5620	124	16.84	16.95	17.05
5720	144	17.09	17.44	16.80
5745	149	17.16	16.87	16.96
5785	157	17.27	16.78	16.75
5825	165	16.58	17.00	16.96

Table 9-73
Maximum Output Powers During Operations with Simultaneous MIMO 2.4 GHz WLAN 802.11n and 5 GHz WLAN 802.11ac

Freq [MHz]	Channel	2.4GHz Conducted Power [dBm]	
		ANT1	ANT2
2412	1	13.33	13.00
2437	6	12.88	13.00
2462	11	12.84	12.93
Freq [MHz]	**Channel**	**5GHz (80MHz) Conducted Power [dBm]**	
		ANT1	**ANT2**
5210	42	13.32	13.38
5290	58	12.88	13.48
5530	106	13.30	12.56
5610	122	13.21	13.47
5690	138	13.15	12.43
5775	155	13.14	13.15

Table 9-74
2.4 GHz WLAN Reduced Average RF Power – Antenna 1

Freq [MHz]	Channel	2.4GHz Conducted Power [dBm]		
		IEEE Transmission Mode		
		802.11b	802.11g	802.11n
2412	1	16.79	15.00	15.24
2437	6	16.80	14.82	15.33
2462	11	16.75	14.85	15.36

Table 9-75
2.4 GHz WLAN Reduced Average RF Power – Antenna 2

Freq [MHz]	Channel	2.4GHz Conducted Power [dBm]		
		IEEE Transmission Mode		
		802.11b	802.11g	802.11n
2412	1	16.79	14.84	14.45
2437	6	17.25	14.90	14.89
2462	11	16.64	14.60	15.34

Table 9-76
2.4 GHz WLAN 802.11n Reduced Average RF Power – MIMO

Freq [MHz]	Channel	2.4GHz Conducted Power [dBm]	
		ANT1	ANT2
2412	1	15.24	14.77
2437	6	15.33	14.89
2462	11	15.36	15.34

Table 9-77
5 GHz WLAN Reduced Average RF Power – Antenna 1

Freq [MHz]	Channel	5GHz (20MHz) Conducted Power [dBm]		
		IEEE Transmission Mode		
		802.11a	802.11n	802.11ac
5180	36	15.35	14.45	14.61
5200	40	15.24	14.58	14.63
5220	44	15.32	14.52	14.41
5240	48	15.26	14.41	14.56
5260	52	14.63	14.75	14.71
5280	56	14.62	14.79	14.68
5300	60	14.66	14.73	14.63
5320	64	14.78	14.76	14.76
5500	100	15.31	14.90	14.86
5600	120	15.19	14.77	14.66
5620	124	15.21	14.77	14.77
5720	144	15.10	14.70	14.73
5745	149	15.47	14.52	14.51
5785	157	15.49	14.49	14.57
5825	165	15.45	14.61	14.41

Table 9-78
5 GHz WLAN Reduced Average RF Power – Antenna 2

Freq [MHz]	Channel	5GHz (20MHz) Conducted Power [dBm]		
		IEEE Transmission Mode		
		802.11a	802.11n	802.11ac
5180	36	15.03	14.50	14.64
5200	40	14.92	14.87	14.79
5220	44	14.87	14.91	14.75
5240	48	14.95	14.76	14.83
5260	52	15.25	14.77	14.78
5280	56	15.32	14.73	14.82
5300	60	15.20	14.87	14.81
5320	64	15.26	14.91	14.82
5500	100	14.84	14.77	14.75
5600	120	14.67	14.67	14.70
5620	124	14.71	14.81	14.64
5720	144	15.44	14.44	14.35
5745	149	14.83	14.02	13.98
5785	157	14.70	13.95	13.65
5825	165	14.85	13.94	14.57

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

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

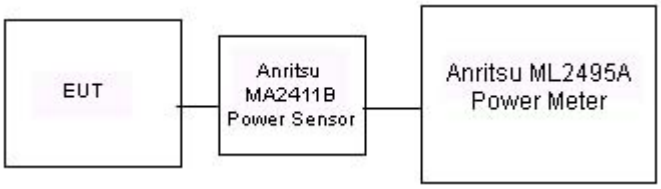

Figure 9-F
Power Measurement Setup

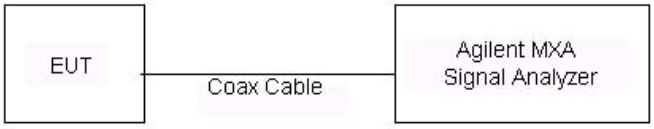

Figure 9-G
Power Measurement Setup for Bandwidths > 50 MHz

9.6 Bluetooth Conducted Powers

Table 9-79
Bluetooth Average RF Power

Frequency [MHz]	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
			[dBm]	[mW]
2402	1.0	0	13.97	24.968
2441	1.0	39	14.58	28.687
2480	1.0	78	**15.50**	35.500
2402	2.0	0	7.89	6.151
2441	2.0	39	8.57	7.194
2480	2.0	78	9.87	9.702
2402	3.0	0	8.05	6.386
2441	3.0	39	8.71	7.432
2480	3.0	78	9.93	9.838

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

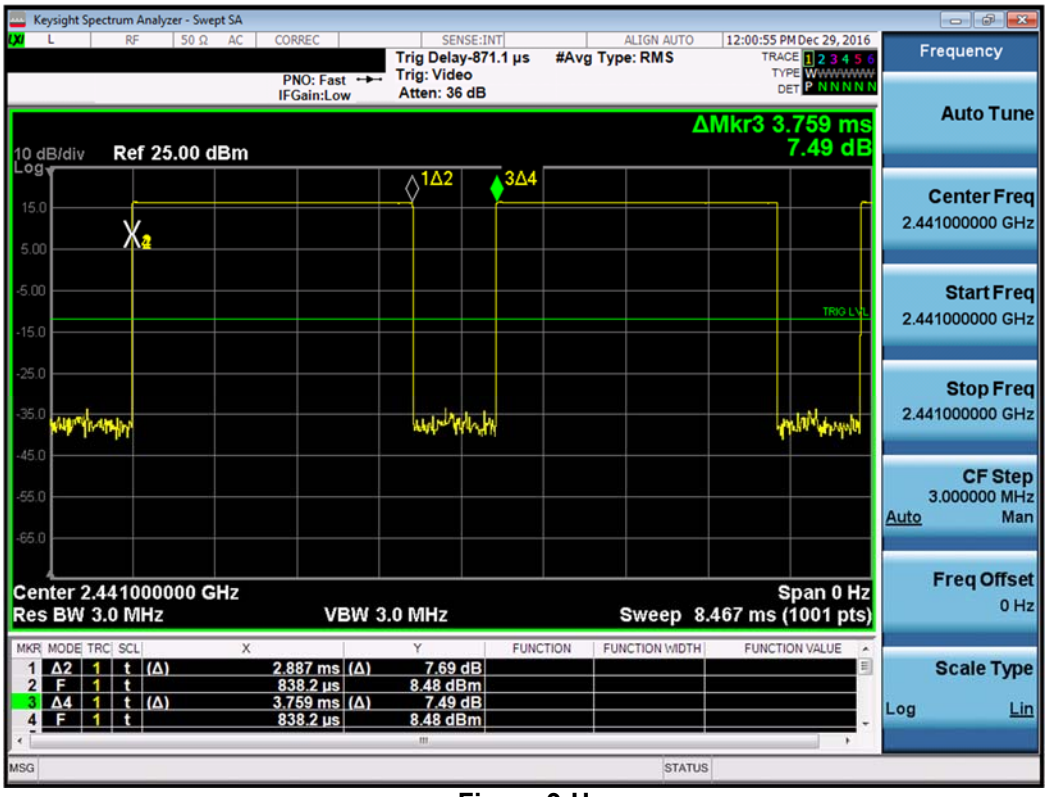

Figure 9-H
Bluetooth Transmission Plot

Equation 2
Bluetooth Duty Cycle Calculation

$$Duty\ Cycle = Pulse\frac{Width}{Period} * 100\% = \frac{2.887ms}{3.759ms} * 100\% = 76.8\%$$

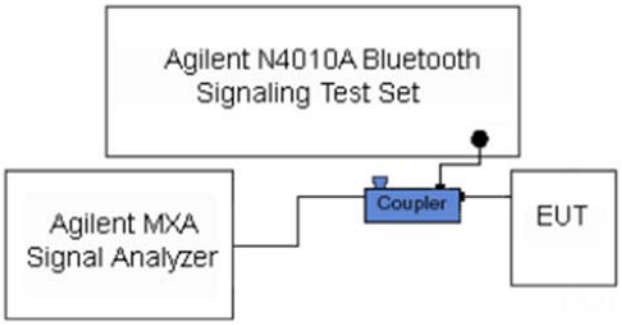

Figure 9-I
Power Measurement Setup

10 SYSTEM VERIFICATION

10.1 Tissue Verification

Table 10-1
Measured Head Tissue Properties

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (°C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ε	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ε	% dev σ	% dev ε
1/3/2017	750H	21.3	700	0.856	42.933	0.889	42.201	-3.71%	1.73%
			710	0.866	42.703	0.890	42.149	-2.70%	1.31%
			740	0.895	42.393	0.893	41.994	0.22%	0.95%
			755	0.909	42.223	0.894	41.916	1.68%	0.73%
			770	0.924	42.042	0.895	41.838	3.24%	0.49%
			785	0.937	41.732	0.896	41.760	4.58%	-0.07%
12/22/2016	835H	21.5	820	0.889	41.557	0.899	41.578	-1.11%	-0.05%
			835	0.904	41.364	0.900	41.500	0.44%	-0.33%
			850	0.919	41.174	0.916	41.500	0.33%	-0.79%
1/4/2017	835H	22.1	820	0.882	40.553	0.899	41.578	-1.89%	-2.47%
			835	0.896	40.382	0.900	41.500	-0.44%	-2.69%
			850	0.910	40.207	0.916	41.500	-0.66%	-3.12%
12/30/2016	1750H	21.0	1710	1.340	39.216	1.348	40.142	-0.59%	-2.31%
			1750	1.379	39.004	1.371	40.079	0.58%	-2.68%
			1790	1.419	38.815	1.394	40.016	1.79%	-3.00%
12/26/2016	1900H	21.4	1850	1.391	39.235	1.400	40.000	-0.64%	-1.91%
			1880	1.422	39.108	1.400	40.000	1.57%	-2.23%
			1910	1.455	39.004	1.400	40.000	3.93%	-2.49%
12/28/2016	1900H	21.9	1850	1.385	39.634	1.400	40.000	-1.07%	-0.91%
			1880	1.415	39.496	1.400	40.000	1.07%	-1.26%
			1910	1.448	39.373	1.400	40.000	3.43%	-1.57%
1/24/2017	1900H	22.5	1850	1.405	40.326	1.400	40.000	0.36%	0.82%
			1880	1.437	40.181	1.400	40.000	2.64%	0.45%
			1910	1.467	40.046	1.400	40.000	4.79%	0.11%
1/4/2017	2450H	23.7	2300	1.687	40.125	1.670	39.500	1.02%	1.58%
			2310	1.700	40.093	1.679	39.480	1.25%	1.55%
			2500	1.921	39.293	1.855	39.136	3.56%	0.40%
			2550	1.976	39.117	1.909	39.073	3.51%	0.11%
			2600	2.038	38.885	1.964	39.009	3.77%	-0.32%
			2650	2.096	38.714	2.018	38.945	3.87%	-0.59%
1/10/2017	2450H	23.5	2400	1.812	39.376	1.756	39.289	3.19%	0.22%
			2450	1.867	39.124	1.800	39.200	3.72%	-0.19%
			2500	1.933	38.944	1.855	39.136	4.20%	-0.49%
1/22/2017	2450H	24.0	2400	1.814	38.386	1.756	39.289	3.30%	-2.30%
			2450	1.869	38.155	1.800	39.200	3.83%	-2.67%
			2500	1.931	37.926	1.855	39.136	4.10%	-3.09%
1/26/2017	2450H	24.1	2400	1.799	38.605	1.756	39.289	2.45%	-1.74%
			2450	1.855	38.412	1.800	39.200	3.06%	-2.01%
			2500	1.916	38.194	1.855	39.136	3.29%	-2.41%
12/28/2016	5200H-5800H	19.7	5240	4.673	34.672	4.696	35.940	-0.49%	-3.53%
			5260	4.694	34.657	4.717	35.917	-0.49%	-3.51%
			5280	4.714	34.614	4.737	35.894	-0.49%	-3.57%
			5320	4.746	34.590	4.778	35.849	-0.67%	-3.51%
			5500	4.921	34.346	4.963	35.643	-0.85%	-3.64%
			5600	5.031	34.091	5.065	35.529	-0.67%	-4.05%
			5700	5.125	33.991	5.168	35.414	-0.83%	-4.02%
			5745	5.199	33.942	5.214	35.363	-0.29%	-4.02%
			5765	5.202	33.899	5.234	35.340	-0.61%	-4.08%
			5785	5.219	33.897	5.255	35.317	-0.69%	-4.02%
			5825	5.290	33.811	5.296	35.271	-0.11%	-4.14%

Table 10-2
Measured Body Tissue Properties

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (°C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ε	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ε	% dev σ	% dev ε
12/27/2016	750B	20.3	700	0.912	57.717	0.959	55.726	-4.90%	3.57%
			710	0.923	57.633	0.960	55.687	-3.85%	3.49%
			720	0.933	57.576	0.961	55.648	-2.91%	3.46%
			725	0.938	57.548	0.961	55.629	-2.39%	3.45%
			740	0.955	57.453	0.963	55.570	-0.83%	3.39%
			755	0.972	57.369	0.964	55.512	0.83%	3.35%
			770	0.988	57.251	0.965	55.453	2.38%	3.24%
			785	1.001	57.088	0.966	55.395	3.62%	3.06%
12/26/2016	835B	20.7	820	0.984	55.508	0.969	55.258	1.55%	0.45%
			835	0.998	55.432	0.970	55.200	2.89%	0.42%
			850	1.014	55.303	0.988	55.154	2.63%	0.27%
1/1/2017	835B	20.8	820	0.974	53.690	0.969	55.258	0.52%	-2.84%
			835	0.996	53.527	0.970	55.200	2.68%	-3.03%
			850	1.004	53.379	0.988	55.154	1.62%	-3.22%
1/1/2017	1750B	20.7	1710	1.498	52.390	1.463	53.537	2.39%	-2.14%
			1750	1.538	52.253	1.488	53.432	3.36%	-2.21%
			1790	1.582	52.046	1.514	53.326	4.49%	-2.40%
12/28/2016	1900B	21.9	1850	1.523	53.264	1.520	53.300	0.20%	-0.07%
			1880	1.558	53.176	1.520	53.300	2.50%	-0.23%
			1910	1.592	53.107	1.520	53.300	4.74%	-0.36%
12/30/2016	1900B	22.2	1850	1.498	53.393	1.520	53.300	-1.45%	0.17%
			1880	1.537	53.314	1.520	53.300	1.12%	0.03%
			1910	1.576	53.233	1.520	53.300	3.68%	-0.13%
1/1/2017	1900B	22.5	1850	1.520	52.730	1.520	53.300	0.00%	-1.07%
			1880	1.553	52.647	1.520	53.300	2.17%	-1.23%
			1910	1.593	52.505	1.520	53.300	4.80%	-1.49%
1/25/2017	1900B	22.9	1850	1.504	52.304	1.520	53.300	-1.05%	-1.87%
			1880	1.536	52.210	1.520	53.300	1.05%	-2.05%
			1910	1.570	52.121	1.520	53.300	3.29%	-2.21%
1/4/2017	2450B	22.6	2450	2.006	50.885	1.950	52.700	2.87%	-3.44%
			2500	2.073	50.681	2.021	52.636	2.57%	-3.71%
			2550	2.137	50.492	2.092	52.573	2.15%	-3.96%
			2600	2.207	50.249	2.163	52.509	2.03%	-4.30%
			2650	2.277	50.127	2.234	52.445	1.92%	-4.42%
			2700	2.345	49.879	2.305	52.382	1.74%	-4.78%
1/9/2017	2450B	22.6	2300	1.842	51.507	1.809	52.900	1.82%	-2.63%
			2310	1.854	51.453	1.816	52.887	2.09%	-2.71%
			2400	1.967	51.168	1.902	52.767	3.42%	-3.03%
			2450	2.031	50.992	1.950	52.700	4.15%	-3.24%
			2500	2.107	50.834	2.021	52.636	4.26%	-3.42%
			2600	2.246	50.412	2.163	52.509	3.84%	-3.99%
			2650	2.319	50.225	2.234	52.445	3.80%	-4.23%
1/24/2017	2450B	23.0	2300	1.771	51.919	1.809	52.900	-2.10%	-1.85%
			2310	1.783	51.891	1.816	52.887	-1.82%	-1.88%
			2320	1.796	51.858	1.826	52.873	-1.64%	-1.92%
1/24/2017	2450B	23.7	2400	1.951	52.052	1.902	52.767	2.58%	-1.36%
			2450	2.014	51.856	1.950	52.700	3.28%	-1.60%
			2500	2.086	51.676	2.021	52.636	3.22%	-1.82%
01/02/2017	5200B-5800B	22.0	5240	5.465	48.704	5.346	48.960	2.23%	-0.52%
			5260	5.482	48.680	5.369	48.933	2.10%	-0.52%
			5280	5.502	48.624	5.393	48.906	2.02%	-0.58%
			5320	5.549	48.547	5.439	48.851	2.02%	-0.62%
			5500	5.791	48.278	5.650	48.607	2.50%	-0.68%
			5600	5.917	48.062	5.766	48.471	2.62%	-0.84%
			5700	6.035	47.934	5.883	48.336	2.58%	-0.83%
			5745	6.127	47.855	5.936	48.275	3.22%	-0.87%
			5765	6.159	47.823	5.959	48.248	3.36%	-0.88%
			5785	6.163	47.808	5.982	48.220	3.03%	-0.85%

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

10.2 Test System Verification

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

Table 10-3
System Verification Results

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$_{1g}$ (%)
J	750	HEAD	01/03/2017	21.1	21.3	0.200	1161	3318	1.630	8.170	8.150	-0.24%
E	835	HEAD	12/22/2016	22.7	21.5	0.200	4d047	7406	1.860	9.130	9.300	1.86%
I	835	HEAD	01/04/2017	23.0	22.1	0.200	4d047	3209	1.870	9.130	9.350	2.41%
D	1750	HEAD	12/30/2016	22.8	21.4	0.100	1148	3213	3.600	36.200	36.000	-0.55%
G	1900	HEAD	12/26/2016	23.3	22.0	0.100	5d149	3287	3.860	40.100	38.600	-3.74%
G	1900	HEAD	12/28/2016	22.1	21.9	0.100	5d080	3287	4.050	39.300	40.500	3.05%
F	1900	HEAD	01/24/2017	22.7	22.5	0.100	5d149	3332	3.900	40.100	39.000	-2.74%
G	2300	HEAD	01/04/2017	23.5	22.7	0.100	1064	3287	4.940	48.400	49.400	2.07%
G	2450	HEAD	01/10/2017	23.6	23.0	0.100	797	3287	5.450	52.100	54.500	4.61%
G	2450	HEAD	01/22/2017	23.2	22.5	0.100	981	3287	5.640	52.800	56.400	6.82%
G	2450	HEAD	01/26/2017	23.2	22.6	0.100	797	3287	5.550	52.100	55.500	6.53%
G	2600	HEAD	01/04/2017	23.5	22.7	0.100	1126	3287	5.840	56.300	58.400	3.73%
J	5250	HEAD	12/28/2016	21.5	19.7	0.050	1237	7357	3.840	79.200	76.800	-3.03%
J	5600	HEAD	12/28/2016	21.5	19.7	0.050	1237	7357	4.000	83.300	80.000	-3.96%
J	5750	HEAD	12/28/2016	21.5	19.7	0.050	1237	7357	3.710	81.500	74.200	-8.96%
J	750	BODY	12/27/2016	20.5	20.3	0.200	1161	3318	1.740	8.430	8.700	3.20%
H	835	BODY	12/26/2016	23.3	21.5	0.200	4d047	3319	2.020	9.570	10.100	5.54%
H	835	BODY	01/01/2017	21.4	20.8	0.200	4d047	3319	2.050	9.570	10.250	7.11%
I	1750	BODY	01/01/2017	22.7	21.1	0.100	1008	3209	3.950	37.300	39.500	5.90%
K	1900	BODY	12/28/2016	23.2	21.9	0.100	5d149	7409	4.030	39.900	40.300	1.00%
K	1900	BODY	12/30/2016	23.5	22.2	0.100	5d149	7409	4.050	39.900	40.500	1.50%
K	1900	BODY	01/01/2017	22.7	22.1	0.100	5d149	7409	4.050	39.900	40.500	1.50%
K	1900	BODY	01/25/2017	24.0	21.5	0.100	5d080	7409	3.980	39.100	39.800	1.79%
E	2300	BODY	01/09/2017	22.5	21.6	0.100	1064	7406	4.570	47.000	45.700	-2.77%
E	2300	BODY	01/24/2017	24.0	23.0	0.100	1064	7406	4.920	47.000	49.200	4.68%
E	2450	BODY	01/09/2017	22.5	21.6	0.100	981	7406	4.810	50.800	48.100	-5.31%
H	2450	BODY	01/24/2017	22.4	22.7	0.100	797	3319	5.210	50.700	52.100	2.76%
E	2600	BODY	01/04/2017	24.3	22.6	0.100	1071	7406	5.670	54.200	56.700	4.61%
E	2600	BODY	01/09/2017	22.5	21.6	0.100	1071	7406	5.700	54.200	57.000	5.17%
D	5250	BODY	01/02/2017	21.6	21.1	0.050	1237	3914	3.430	74.800	68.600	-8.29%
D	5600	BODY	01/02/2017	21.6	21.1	0.050	1237	3914	3.760	77.000	75.200	-2.34%
D	5750	BODY	01/02/2017	21.6	21.1	0.050	1237	3914	3.450	75.400	69.000	-8.49%

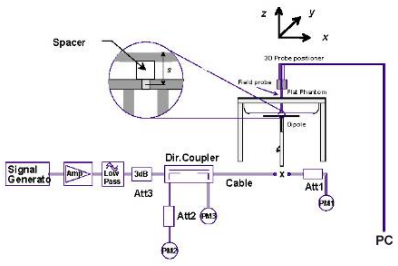

Figure 10-A
System Verification Setup Diagram

Figure 10-B
System Verification Setup Photo

11 SAR DATA SUMMARY

11.1 Standalone Head SAR Data

Table 11-1
CDMA BC10 (§90S) Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Ant State	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	25.5	24.38	-0.14	Right	Cheek	15	1EED5	1:1	0.171	1.294	0.221	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	25.5	24.38	0.20	Right	Tilt	15	1EED5	1:1	0.081	1.294	0.105	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	25.5	24.38	0.16	Left	Cheek	15	1EED5	1:1	0.202	1.294	0.261	A1
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	25.5	24.38	0.12	Left	Tilt	15	1EED5	1:1	0.108	1.294	0.140	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	25.5	24.23	-0.13	Right	Cheek	15	1EED5	1:1	0.174	1.340	0.233	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	25.5	24.23	0.18	Right	Tilt	15	1EED5	1:1	0.085	1.340	0.114	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	25.5	24.23	0.15	Left	Cheek	15	1EED5	1:1	0.153	1.340	0.205	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	25.5	24.23	0.18	Left	Tilt	15	1EED5	1:1	0.088	1.340	0.118	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram								

Table 11-2
CDMA BC0 (§22H) Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Ant State	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	25.0	24.48	-0.05	Right	Cheek	15	1EED5	1:1	0.231	1.127	0.260	A2
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	25.0	24.48	0.13	Right	Tilt	15	1EED5	1:1	0.117	1.127	0.132	
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	25.0	24.48	0.09	Left	Cheek	15	1EED5	1:1	0.189	1.127	0.213	
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	25.0	24.48	-0.07	Left	Tilt	15	1EED5	1:1	0.105	1.127	0.118	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	25.0	24.28	0.11	Right	Cheek	15	1EED5	1:1	0.223	1.180	0.263	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	25.0	24.28	-0.02	Right	Tilt	15	1EED5	1:1	0.114	1.180	0.135	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	25.0	24.28	0.11	Left	Cheek	15	1EED5	1:1	0.181	1.180	0.214	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	25.0	24.28	-0.12	Left	Tilt	15	1EED5	1:1	0.102	1.180	0.120	
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
PCS CDMA Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Ant State	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
1880.00	600	PCS CDMA	RC3 / SO55	24.0	23.38	0.16	Right	Cheek	15	1EED5	1:1	0.199	1.153	0.229	
1880.00	600	PCS CDMA	RC3 / SO55	24.0	23.38	0.19	Right	Tilt	15	1EED5	1:1	0.098	1.153	0.113	
1880.00	600	PCS CDMA	RC3 / SO55	24.0	23.38	0.05	Left	Cheek	15	1EED5	1:1	0.272	1.153	0.314	
1880.00	600	PCS CDMA	RC3 / SO55	24.0	23.38	0.16	Left	Tilt	15	1EED5	1:1	0.076	1.153	0.088	
1880.00	600	PCS CDMA	EVDO Rev. A	24.0	23.68	0.08	Right	Cheek	15	1EED5	1:1	0.196	1.076	0.211	
1880.00	600	PCS CDMA	EVDO Rev. A	24.0	23.68	0.04	Right	Tilt	15	1EED5	1:1	0.110	1.076	0.118	
1880.00	600	PCS CDMA	EVDO Rev. A	24.0	23.68	0.03	Left	Cheek	15	1EED5	1:1	0.274	1.076	0.295	A3
1880.00	600	PCS CDMA	EVDO Rev. A	24.0	23.68	-0.07	Left	Tilt	15	1EED5	1:1	0.098	1.076	0.105	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram								

Table 11-4
GSM 850 Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
836.60	190	GSM 850	GSM	33.5	33.00	0.12	Right	Cheek	1EEA3	1:8.3	0.200	1.122	0.224	A4
836.60	190	GSM 850	GSM	33.5	33.00	0.11	Right	Tilt	1EEA3	1:8.3	0.100	1.122	0.112	
836.60	190	GSM 850	GSM	33.5	33.00	0.10	Left	Cheek	1EEA3	1:8.3	0.187	1.122	0.210	
836.60	190	GSM 850	GSM	33.5	33.00	-0.01	Left	Tilt	1EEA3	1:8.3	0.103	1.122	0.116	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-5
GSM 1900 Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
1850.20	512	GSM 1900	GSM	30.5	30.19	-0.11	Right	Cheek	1EEA3	1:8.3	0.100	1.074	0.107	
1850.20	512	GSM 1900	GSM	30.5	30.19	0.16	Right	Tilt	1EEA3	1:8.3	0.069	1.074	0.074	
1850.20	512	GSM 1900	GSM	30.5	30.19	-0.06	Left	Cheek	1EEA3	1:8.3	0.149	1.074	0.160	A5
1850.20	512	GSM 1900	GSM	30.5	30.19	-0.12	Left	Tilt	1EEA3	1:8.3	0.065	1.074	0.070	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-6
UMTS 850 Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Ant State	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
836.60	4183	UMTS 850	RMC	25.0	24.90	0.09	Right	Cheek	15	1EEA3	1:1	0.268	1.023	0.274	A6
836.60	4183	UMTS 850	RMC	25.0	24.90	0.09	Right	Tilt	15	1EEA3	1:1	0.140	1.023	0.143	
836.60	4183	UMTS 850	RMC	25.0	24.90	0.03	Left	Cheek	15	1EEA3	1:1	0.212	1.023	0.217	
836.60	4183	UMTS 850	RMC	25.0	24.90	0.07	Left	Tilt	15	1EEA3	1:1	0.132	1.023	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 11-7
UMTS 1750 Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Ant State	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	24.0	23.44	-0.02	Right	Cheek	11	07803	1:1	0.180	1.138	0.205	
1732.40	1412	UMTS 1750	RMC	24.0	23.44	0.01	Right	Tilt	11	07803	1:1	0.094	1.138	0.107	
1732.40	1412	UMTS 1750	RMC	24.0	23.44	-0.01	Left	Cheek	11	07803	1:1	0.218	1.138	0.248	A7
1732.40	1412	UMTS 1750	RMC	24.0	23.44	0.04	Left	Tilt	11	07803	1:1	0.109	1.138	0.124	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram								

Table 11-8
UMTS 1900 Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode/Band	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Ant State	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	24.0	23.12	0.05	Right	Cheek	15	1EEA3	1:1	0.123	1.225	0.151	
1880.00	9400	UMTS 1900	RMC	24.0	23.12	0.11	Right	Tilt	15	1EEA3	1:1	0.063	1.225	0.077	
1880.00	9400	UMTS 1900	RMC	24.0	23.12	0.02	Left	Cheek	15	1EEA3	1:1	0.278	1.225	**0.341**	A8
1880.00	9400	UMTS 1900	RMC	24.0	23.12	0.06	Left	Tilt	15	1EEA3	1:1	0.053	1.225	0.065	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram								

Table 11-9
LTE Band 12 Head SAR

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Ant State	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
707.50	23095	Mid	LTE Band 12	10	25.0	24.60	0.03	0	Right	Cheek	15	QPSK	1	0	1EE9E	1:1	0.187	1.096	0.205	A9
707.50	23095	Mid	LTE Band 12	10	24.0	23.55	0.18	1	Right	Cheek	15	QPSK	25	0	1EE9E	1:1	0.161	1.109	0.179	
707.50	23095	Mid	LTE Band 12	10	25.0	24.60	-0.06	0	Right	Tilt	15	QPSK	1	0	1EE9E	1:1	0.094	1.096	0.103	
707.50	23095	Mid	LTE Band 12	10	24.0	23.55	0.16	1	Right	Tilt	15	QPSK	25	0	1EE9E	1:1	0.078	1.109	0.087	
707.50	23095	Mid	LTE Band 12	10	25.0	24.60	-0.03	0	Left	Cheek	15	QPSK	1	0	1EE9E	1:1	0.176	1.096	0.193	
707.50	23095	Mid	LTE Band 12	10	24.0	23.55	0.04	1	Left	Cheek	15	QPSK	25	0	1EE9E	1:1	0.139	1.109	0.154	
707.50	23095	Mid	LTE Band 12	10	25.0	24.60	0.18	0	Left	Tilt	15	QPSK	1	0	1EE9E	1:1	0.137	1.096	0.150	
707.50	23095	Mid	LTE Band 12	10	24.0	23.55	0.21	1	Left	Tilt	15	QPSK	25	0	1EE9E	1:1	0.108	1.109	0.120	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																			Head 1.6 W/kg (mW/g) averaged over 1 gram		

Table 11-10
LTE Band 13 Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Ant State	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
782.00	23230	Mid	LTE Band 13	10	25.0	24.48	0.01	0	Right	Cheek	15	QPSK	1	25	1EE9E	1:1	0.272	1.127	0.307	A10
782.00	23230	Mid	LTE Band 13	10	24.0	23.54	0.01	1	Right	Cheek	15	QPSK	25	0	1EE9E	1:1	0.207	1.112	0.230	
782.00	23230	Mid	LTE Band 13	10	25.0	24.48	0.16	0	Right	Tilt	15	QPSK	1	25	1EE9E	1:1	0.123	1.127	0.139	
782.00	23230	Mid	LTE Band 13	10	24.0	23.54	0.08	1	Right	Tilt	15	QPSK	25	0	1EE9E	1:1	0.096	1.112	0.107	
782.00	23230	Mid	LTE Band 13	10	25.0	24.48	0.03	0	Left	Cheek	15	QPSK	1	25	1EE9E	1:1	0.210	1.127	0.237	
782.00	23230	Mid	LTE Band 13	10	24.0	23.54	0.05	1	Left	Cheek	15	QPSK	25	0	1EE9E	1:1	0.174	1.112	0.193	
782.00	23230	Mid	LTE Band 13	10	25.0	24.48	0.12	0	Left	Tilt	15	QPSK	1	25	1EE9E	1:1	0.112	1.127	0.126	
782.00	23230	Mid	LTE Band 13	10	24.0	23.54	0.17	1	Left	Tilt	15	QPSK	25	0	1EE9E	1:1	0.089	1.112	0.099	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																			Head 1.6 W/kg (mW/g) averaged over 1 gram	

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

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Ant State	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.0	24.78	0.08	0	Right	Cheek	15	QPSK	1	0	1EE9E	1:1	0.235	1.052	0.247	A11
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.0	23.72	0.11	1	Right	Cheek	15	QPSK	36	0	1EE9E	1:1	0.230	1.067	0.245	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.0	24.78	0.04	0	Right	Tilt	15	QPSK	1	0	1EE9E	1:1	0.130	1.052	0.137	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.0	23.72	-0.12	1	Right	Tilt	15	QPSK	36	0	1EE9E	1:1	0.116	1.067	0.124	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.0	24.78	0.04	0	Left	Cheek	15	QPSK	1	0	1EE9E	1:1	0.188	1.052	0.198	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.0	23.72	0.11	1	Left	Cheek	15	QPSK	36	0	1EE9E	1:1	0.176	1.067	0.188	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.0	24.78	0.10	0	Left	Tilt	15	QPSK	1	0	1EE9E	1:1	0.139	1.052	0.146	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.0	23.72	0.07	1	Left	Tilt	15	QPSK	36	0	1EE9E	1:1	0.129	1.067	0.138	
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
LTE Band 5 (Cell) Head SAR

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Ant State	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	25.0	24.31	0.03	0	Right	Cheek	15	QPSK	1	0	1EE9E	1:1	0.250	1.172	0.293	A12
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.0	23.30	0.02	1	Right	Cheek	15	QPSK	25	12	1EE9E	1:1	0.229	1.175	0.269	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.0	24.31	0.18	0	Right	Tilt	15	QPSK	1	0	1EE9E	1:1	0.127	1.172	0.149	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.0	23.30	0.09	1	Right	Tilt	15	QPSK	25	12	1EE9E	1:1	0.118	1.175	0.139	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.0	24.31	0.09	0	Left	Cheek	15	QPSK	1	0	1EE9E	1:1	0.216	1.172	0.253	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.0	23.30	0.09	1	Left	Cheek	15	QPSK	25	12	1EE9E	1:1	0.179	1.175	0.210	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.0	24.31	-0.01	0	Left	Tilt	15	QPSK	1	0	1EE9E	1:1	0.163	1.172	0.191	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.0	23.30	0.04	1	Left	Tilt	15	QPSK	25	12	1EE9E	1:1	0.135	1.175	0.159	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																	Head 1.6 W/kg (mW/g) averaged over 1 gram			

Table 11-13
LTE Band 66 (AWS) Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Ant State	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.0	24.97	-0.01	0	Right	Cheek	0	QPSK	1	0	07803	1:1	0.266	1.007	0.268	A13
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.0	23.96	0.04	1	Right	Cheek	0	QPSK	50	0	07803	1:1	0.191	1.009	0.193	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.0	24.97	0.00	0	Right	Tilt	0	QPSK	1	0	07803	1:1	0.146	1.007	0.147	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.0	23.96	0.11	1	Right	Tilt	0	QPSK	50	0	07803	1:1	0.122	1.009	0.123	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.0	24.97	-0.20	0	Left	Cheek	0	QPSK	1	0	07803	1:1	0.265	1.007	0.267	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.0	23.96	0.03	1	Left	Cheek	0	QPSK	50	0	07803	1:1	0.228	1.009	0.230	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.0	24.97	0.01	0	Left	Tilt	0	QPSK	1	0	07803	1:1	0.171	1.007	0.172	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.0	23.96	0.06	1	Left	Tilt	0	QPSK	50	0	07803	1:1	0.133	1.009	0.134	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																	Head 1.6 W/kg (mW/g) averaged over 1 gram			

Table 11-14
LTE Band 25 (PCS) Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Ant State	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.0	23.93	-0.01	0	Right	Cheek	31	QPSK	1	0	1EECE	1:1	0.195	1.016	0.198	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.0	22.64	-0.07	1	Right	Cheek	31	QPSK	50	0	1EECE	1:1	0.144	1.086	0.156	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.0	23.93	0.04	0	Right	Tilt	31	QPSK	1	0	1EECE	1:1	0.091	1.016	0.092	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.0	22.64	-0.17	1	Right	Tilt	31	QPSK	50	0	1EECE	1:1	0.068	1.086	0.074	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.0	23.93	-0.10	0	Left	Cheek	31	QPSK	1	0	1EECE	1:1	0.247	1.016	0.251	A14
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.0	22.64	-0.14	1	Left	Cheek	31	QPSK	50	0	1EECE	1:1	0.209	1.086	0.227	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.0	23.93	0.00	0	Left	Tilt	31	QPSK	1	0	1EECE	1:1	0.074	1.016	0.075	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.0	22.64	-0.15	1	Left	Tilt	31	QPSK	50	0	1EECE	1:1	0.049	1.086	0.053	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																	Head 1.6 W/kg (mW/g) averaged over 1 gram			

Table 11-15
LTE Band 30 Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
2310.00	27710	Mid	LTE Band 30	10	25.0	24.81	0.12	0	Right	Cheek	QPSK	1	0	1EED0	1:1	0.063	1.045	0.066	
2310.00	27710	Mid	LTE Band 30	10	24.0	23.83	-0.21	1	Right	Cheek	QPSK	25	0	1EED0	1:1	0.047	1.040	0.049	
2310.00	27710	Mid	LTE Band 30	10	25.0	24.81	-0.02	0	Right	Tilt	QPSK	1	0	1EED0	1:1	0.052	1.045	0.054	
2310.00	27710	Mid	LTE Band 30	10	24.0	23.83	0.00	1	Right	Tilt	QPSK	25	0	1EED0	1:1	0.041	1.040	0.043	
2310.00	27710	Mid	LTE Band 30	10	25.0	24.81	-0.08	0	Left	Cheek	QPSK	1	0	1EED0	1:1	0.097	1.045	0.101	A15
2310.00	27710	Mid	LTE Band 30	10	24.0	23.83	0.00	1	Left	Cheek	QPSK	25	0	1EED0	1:1	0.073	1.040	0.076	
2310.00	27710	Mid	LTE Band 30	10	25.0	24.81	0.15	0	Left	Tilt	QPSK	1	0	1EED0	1:1	0.037	1.045	0.039	
2310.00	27710	Mid	LTE Band 30	10	24.0	23.83	-0.02	1	Left	Tilt	QPSK	25	0	1EED0	1:1	0.030	1.040	0.031	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																Head 1.6 W/kg (mW/g) averaged over 1 gram			

Table 11-16
LTE Band 41 Head SAR

MEASUREMENT RESULTS																					
1 CC Uplink | 2CC Uplink	Component Carrier	FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
		MHz	Ch.															(W/kg)		(W/kg)	
1 CC Uplink, Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	23.5	23.17	-0.15	0	Right	Cheek	QPSK	1	0	1EE9F	1:1.58	0.049	1.079	0.053	
1 CC Uplink, Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	22.5	22.11	0.14	1	Right	Cheek	QPSK	50	0	1EE9F	1:1.58	0.039	1.094	0.043	
1 CC Uplink, Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	23.5	23.17	0.04	0	Right	Tilt	QPSK	1	0	1EE9F	1:1.58	0.059	1.079	0.064	
1 CC Uplink, Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	22.5	22.11	-0.16	1	Right	Tilt	QPSK	50	0	1EE9F	1:1.58	0.043	1.094	0.047	
1 CC Uplink, Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	23.5	23.17	0.14	0	Left	Cheek	QPSK	1	0	1EE9F	1:1.58	0.079	1.079	0.085	A16
2CC Uplink, Power Class 3	PCC	2636.50	41055	Mid-High	LTE Band 41	20	23.5	22.96	-0.08	0	Left	Cheek	QPSK	1	0	1EE9F	1:1.58	0.072	1.132	0.082	
	SCC	2616.70	40857	Mid-High	LTE Band 41	20							QPSK	1	99		1:1.58				
1 CC Uplink, Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	22.5	22.11	0.13	1	Left	Cheek	QPSK	50	0	1EE9F	1:1.58	0.062	1.094	0.068	
1 CC Uplink, Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	23.5	23.17	-0.01	0	Left	Tilt	QPSK	1	0	1EE9F	1:1.58	0.038	1.079	0.041	
1 CC Uplink, Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	22.5	22.11	-0.19	1	Left	Tilt	QPSK	50	0	1EE9F	1:1.58	0.027	1.094	0.030	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																	Head 1.6 W/kg (mW/g) averaged over 1 gram				

Table 11-17
DTS SISO Head SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													W/kg	(W/kg)			(W/kg)	
2437	6	802.11b	DSSS	22	17.5	16.80	0.01	Right	Cheek	1	27217	1	99.1	0.453	0.407	1.175	1.009	0.483	
2437	6	802.11b	DSSS	22	17.5	16.80	0.03	Right	Tilt	1	27217	1	99.1	0.419	0.317	1.175	1.009	0.376	
2437	6	802.11b	DSSS	22	17.5	16.80	-0.20	Left	Cheek	1	27217	1	99.1	0.185	-	1.175	1.009	-	
2437	6	802.11b	DSSS	22	17.5	16.80	0.01	Left	Tilt	1	27217	1	99.1	0.228	-	1.175	1.009	-	
2437	6	802.11b	DSSS	22	17.5	17.25	0.01	Right	Cheek	2	27217	1	98.9	0.769	0.697	1.059	1.011	**0.746**	
2437	6	802.11b	DSSS	22	17.5	17.25	-0.12	Right	Tilt	2	27217	1	98.9	0.572	0.452	1.059	1.011	0.484	
2437	6	802.11b	DSSS	22	17.5	17.25	0.01	Left	Cheek	2	27217	1	98.9	0.342	-	1.059	1.011	-	
2437	6	802.11b	DSSS	22	17.5	17.25	-0.12	Left	Tilt	2	27217	1	98.9	0.264	-	1.059	1.011	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Head 1.6 W/kg (mW/g) averaged over 1 gram											

Table 11-18
DTS MIMO Head SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power Per Antenna [dBm]	Ant 1 Conducted Power [dBm]	Ant 2 Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.														W/kg	(W/kg)			(W/kg)	
2437	6	802.11n	OFDM	20	15.5	15.33	14.89	0.08	Right	Cheek	MIMO	27217	13	97.3	0.732	0.712	1.151	1.028	0.842	
2462	11	802.11n	OFDM	20	15.5	15.36	15.34	-0.21	Right	Cheek	MIMO	27217	13	97.3	0.887	0.848	1.038	1.028	0.905	A17
2462	11	802.11n	OFDM	20	15.5	15.36	15.34	-0.21	Right	Tilt	MIMO	27217	13	97.3	0.717	0.648	1.038	1.028	0.691	
2462	11	802.11n	OFDM	20	15.5	15.36	15.34	-0.13	Left	Cheek	MIMO	27217	13	97.3	0.429	-	1.038	1.028	-	
2462	11	802.11n	OFDM	20	15.5	15.36	15.34	-0.02	Left	Tilt	MIMO	27217	13	97.3	0.342	-	1.038	1.028	-	
2462	11	802.11n	OFDM	20	15.5	15.36	15.34	-0.01	Right	Cheek	MIMO	27217	13	97.3	0.931	0.834	1.038	1.028	0.886	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram											

- To achieve the 18.5 dBm maximum allowed MIMO power shown in the documentation, each antenna transmits at a maximum allowed power of 15.5 dBm.
- Blue entry represents variability data.

Table 11-19
DTS MIMO Operations with Simultaneous 2.4 GHz and 5 GHz WLAN Head SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power Per Antenna [dBm]	Ant 1 Conducted Power [dBm]	Ant 2 Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.														W/kg	(W/kg)			(W/kg)	
2412	1	802.11n	OFDM	20	13.5	13.33	13.00	-0.02	Right	Cheek	MIMO	27217	13	97.3	0.696	0.498	1.122	1.028	0.574	
2412	1	802.11n	OFDM	20	13.5	13.33	13.00	0.03	Right	Tilt	MIMO	27217	13	97.3	0.509	0.367	1.122	1.028	0.463	
2412	1	802.11n	OFDM	20	13.5	13.33	13.00	0.03	Left	Cheek	MIMO	27217	13	97.3	0.339	-	1.122	1.028	-	
2412	1	802.11n	OFDM	20	13.5	13.33	13.00	0.20	Left	Tilt	MIMO	27217	13	97.3	0.275	-	1.122	1.028	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Head 1.6 W/kg (mW/g) averaged over 1 gram											

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

Table 11-20
NII Head SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													W/kg	(W/kg)			(W/kg)	
5320	64	802.11a	OFDM	20	15.5	14.78	0.13	Right	Cheek	1	27217	6	98.8	0.164	-	1.180	1.012	-	
5320	64	802.11a	OFDM	20	15.5	14.78	0.10	Right	Tilt	1	27217	6	98.8	0.195	0.083	1.180	1.012	0.099	
5320	64	802.11a	OFDM	20	15.5	14.78	0.11	Left	Cheek	1	27217	6	98.8	0.140	-	1.180	1.012	-	
5320	64	802.11a	OFDM	20	15.5	14.78	0.15	Left	Tilt	1	27217	6	98.8	0.099	-	1.180	1.012	-	
5280	56	802.11a	OFDM	20	15.5	15.32	0.10	Right	Cheek	2	27217	6	93.5	0.290	0.088	1.042	1.070	0.098	
5280	56	802.11a	OFDM	20	15.5	15.32	0.16	Right	Tilt	2	27217	6	93.5	0.243	-	1.042	1.070	-	
5280	56	802.11a	OFDM	20	15.5	15.32	0.18	Left	Cheek	2	27217	6	93.5	0.179	-	1.042	1.070	-	
5280	56	802.11a	OFDM	20	15.5	15.32	0.19	Left	Tilt	2	27217	6	93.5	0.182	-	1.042	1.070	-	
5500	100	802.11a	OFDM	20	15.5	15.31	0.15	Right	Cheek	1	27217	6	98.8	0.163	-	1.045	1.012	-	
5500	100	802.11a	OFDM	20	15.5	15.31	0.16	Right	Tilt	1	27217	6	98.8	0.167	0.078	1.045	1.012	0.082	
5500	100	802.11a	OFDM	20	15.5	15.31	0.14	Left	Cheek	1	27217	6	98.8	0.118	-	1.045	1.012	-	
5500	100	802.11a	OFDM	20	15.5	15.31	0.10	Left	Tilt	1	27217	6	98.8	0.096	-	1.045	1.012	-	
5720	144	802.11a	OFDM	20	15.5	15.44	0.10	Right	Cheek	2	27217	6	93.5	0.824	0.367	1.014	1.070	**0.398**	A18
5720	144	802.11a	OFDM	20	15.5	15.44	0.15	Right	Tilt	2	27217	6	93.5	0.706	-	1.014	1.070	-	
5720	144	802.11a	OFDM	20	15.5	15.44	0.13	Left	Cheek	2	27217	6	93.5	0.654	-	1.014	1.070	-	
5720	144	802.11a	OFDM	20	15.5	15.44	0.12	Left	Tilt	2	27217	6	93.5	0.690	-	1.014	1.070	-	
5785	157	802.11a	OFDM	20	15.5	15.49	0.13	Right	Cheek	1	27217	6	98.8	0.179	-	1.002	1.012	-	
5785	157	802.11a	OFDM	20	15.5	15.49	0.19	Right	Tilt	1	27217	6	98.8	0.133	-	1.002	1.012	-	
5785	157	802.11a	OFDM	20	15.5	15.49	0.15	Left	Cheek	1	27217	6	98.8	0.181	0.057	1.002	1.012	0.058	
5785	157	802.11a	OFDM	20	15.5	15.49	0.18	Left	Tilt	1	27217	6	98.8	0.163	-	1.002	1.012	-	
5825	165	802.11a	OFDM	20	15.5	14.85	0.16	Right	Cheek	2	27217	6	93.5	0.731	0.293	1.161	1.070	0.364	
5825	165	802.11a	OFDM	20	15.5	14.85	0.10	Right	Tilt	2	27217	6	93.5	0.571	-	1.161	1.070	-	
5825	165	802.11a	OFDM	20	15.5	14.85	0.14	Left	Cheek	2	27217	6	93.5	0.337	-	1.161	1.070	-	
5825	165	802.11a	OFDM	20	15.5	14.85	0.14	Left	Tilt	2	27217	6	93.5	0.313	-	1.161	1.070	-	
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
NII MIMO Operations with Simultaneous 2.4 GHz and 5 GHz WLAN Head SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power Per Antenna [dBm]	Ant 1 Conducted Power [dBm]	Ant 2 Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.														W/kg	(W/kg)			(W/kg)	
5290	58	802.11ac	OFDM	80	13.5	12.88	13.48	0.17	Right	Cheek	MIMO	27217	58.5	90.8	0.365	0.214	1.153	1.101	0.272	
5290	58	802.11ac	OFDM	80	13.5	12.88	13.48	0.20	Right	Tilt	MIMO	27217	58.5	90.8	0.318	-	1.153	1.101	-	
5290	58	802.11ac	OFDM	80	13.5	12.88	13.48	-0.14	Left	Cheek	MIMO	27217	58.5	90.8	0.181	-	1.153	1.101	-	
5290	58	802.11ac	OFDM	80	13.5	12.88	13.48	0.16	Left	Tilt	MIMO	27217	58.5	90.8	0.177	-	1.153	1.101	-	
5610	122	802.11ac	OFDM	80	13.5	13.21	13.47	0.20	Right	Cheek	MIMO	27217	58.5	90.8	0.605	0.219	1.069	1.101	0.258	
5610	122	802.11ac	OFDM	80	13.5	13.21	13.47	-0.15	Right	Tilt	MIMO	27217	58.5	90.8	0.386	-	1.069	1.101	-	
5610	122	802.11ac	OFDM	80	13.5	13.21	13.47	-0.14	Left	Cheek	MIMO	27217	58.5	90.8	0.406	-	1.069	1.101	-	
5610	122	802.11ac	OFDM	80	13.5	13.21	13.47	-0.15	Left	Tilt	MIMO	27217	58.5	90.8	0.417	-	1.069	1.101	-	
5775	155	802.11ac	OFDM	80	13.5	13.14	13.15	0.20	Right	Cheek	MIMO	27217	58.5	90.8	0.601	0.279	1.086	1.101	0.334	
5775	155	802.11ac	OFDM	80	13.5	13.14	13.15	0.15	Right	Tilt	MIMO	27217	58.5	90.8	0.485	-	1.086	1.101	-	
5775	155	802.11ac	OFDM	80	13.5	13.14	13.15	-0.19	Left	Cheek	MIMO	27217	58.5	90.8	0.287	-	1.086	1.101	-	
5775	155	802.11ac	OFDM	80	13.5	13.14	13.15	-0.19	Left	Tilt	MIMO	27217	58.5	90.8	0.331	-	1.086	1.101	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population															Head 1.6 W/kg (mW/g) averaged over 1 gram					

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

Table 11-22
Bluetooth Head SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle (%)	Data Rate (Mbps)	SAR (1g)	Scaling Factor (Cond. Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)			(W/kg)	
2480	78	Bluetooth	FHSS	10.5	9.87	0.11	Right	Cheek	F7863	76.8	2	0.064	1.156	1.302	0.096	A19
2480	78	Bluetooth	FHSS	10.5	9.87	0.17	Right	Tilt	F7863	76.8	2	0.039	1.156	1.302	0.059	
2480	78	Bluetooth	FHSS	10.5	9.87	0.13	Left	Cheek	F7863	76.8	2	0.017	1.156	1.302	0.026	
2480	78	Bluetooth	FHSS	10.5	9.87	0.17	Left	Tilt	F7863	76.8	2	0.009	1.156	1.302	0.014	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram									

11.2 Standalone Body-Worn SAR Data

Table 11-23
GSM/UMTS/CDMA Body-Worn SAR Data

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Ant State	Device Serial Number	# of Time Slots	Duty Cycle	Side	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.												(W/kg)		(W/kg)	
820.10	564	CDMA BC10 (§90S)	TDSO / SO32	25.5	24.43	0.00	15 mm	15	1EED5	N/A	1:1	back	0.237	1.279	0.303	A20
836.52	384	CDMA BC0 (§22H)	TDSO / SO32	25.0	24.47	0.01	15 mm	15	1EED5	N/A	1:1	back	0.232	1.130	0.262	A22
1851.25	25	PCS CDMA	TDSO / SO32	24.0	23.30	0.11	15 mm	15	1EED5	N/A	1:1	back	0.660	1.175	0.776	
1880.00	600	PCS CDMA	TDSO / SO32	24.0	23.40	0.01	15 mm	15	1EED5	N/A	1:1	back	0.724	1.148	0.831	
1908.75	1175	PCS CDMA	TDSO / SO32	24.0	23.53	0.09	15 mm	15	1EED5	N/A	1:1	back	0.767	1.114	0.854	A24
836.60	190	GSM 850	GSM	33.5	33.00	0.03	15 mm	N/A	1EEA3	1	1:8.3	back	0.264	1.122	0.296	A26
1850.20	512	GSM 1900	GSM	30.5	30.19	-0.02	15 mm	N/A	1EEA3	1	1:8.3	back	0.306	1.074	0.329	A28
836.60	4183	UMTS 850	RMC	25.0	24.90	-0.01	15 mm	15	1EEA3	N/A	1:1	back	0.343	1.023	0.351	A30
1732.40	1412	UMTS 1750	RMC	24.0	23.44	0.04	15 mm	16	07803	N/A	1:1	back	0.627	1.138	0.714	A32
1880.00	9400	UMTS 1900	RMC	24.0	23.12	-0.01	15 mm	31	1EEA3	N/A	1:1	back	0.616	1.225	0.755	A34
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Body 1.6 W/kg (mW/g) averaged over 1 gram									

Table 11-24
LTE FDD Body-Worn SAR

MEASUREMENT RESULTS																						
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Ant State	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
707.50	23095	Mid	LTE Band 12	10	25.0	24.60	0.00	0	14	1EE9E	QPSK	1	0	15 mm	back	1:1	0.319	1.096	0.350	A36
707.50	23095	Mid	LTE Band 12	10	24.0	23.55	-0.05	1	14	1EE9E	QPSK	25	0	15 mm	back	1:1	0.240	1.109	0.266	
782.00	23230	Mid	LTE Band 13	10	25.0	24.48	0.04	0	15	1EE9E	QPSK	1	25	15 mm	back	1:1	0.430	1.127	0.485	A38
782.00	23230	Mid	LTE Band 13	10	24.0	23.54	0.00	1	15	1EE9E	QPSK	25	0	15 mm	back	1:1	0.336	1.112	0.374	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.0	24.78	0.00	0	15	1EE9E	QPSK	1	0	15 mm	back	1:1	0.287	1.052	0.302	A40
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.0	23.72	-0.04	1	15	1EE9E	QPSK	36	0	15 mm	back	1:1	0.239	1.067	0.255	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.0	24.31	-0.01	0	15	1EE9E	QPSK	1	0	15 mm	back	1:1	0.260	1.172	0.305	A42
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.0	23.30	-0.16	1	15	1EE9E	QPSK	25	12	15 mm	back	1:1	0.236	1.175	0.277	
1720.00	132072	Low	LTE Band 66 (AWS)	20	25.0	24.83	0.03	0	31	07803	QPSK	1	50	15 mm	back	1:1	0.895	1.040	**0.931**	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.0	24.97	0.04	0	31	07803	QPSK	1	0	15 mm	back	1:1	0.904	1.007	0.910	A44
1770.00	132572	High	LTE Band 66 (AWS)	20	25.0	24.94	0.06	0	31	07803	QPSK	1	0	15 mm	back	1:1	0.719	1.014	0.729	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.0	23.96	0.02	1	31	07803	QPSK	50	0	15 mm	back	1:1	0.694	1.009	0.700	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.0	23.88	-0.03	1	31	07803	QPSK	100	0	15 mm	back	1:1	0.674	1.028	0.693	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.0	24.97	-0.03	0	31	07803	QPSK	1	0	15 mm	back	1:1	0.872	1.007	0.878	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.0	23.93	0.03	0	15	1EECE	QPSK	1	0	15 mm	back	1:1	0.577	1.016	0.586	A46
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.0	22.64	0.01	1	15	1EECE	QPSK	50	0	15 mm	back	1:1	0.468	1.086	0.508	
2310.00	27710	Mid	LTE Band 30	10	25.0	24.81	0.16	0	N/A	1EED0	QPSK	1	0	15 mm	back	1:1	0.248	1.045	0.259	A48
2310.00	27710	Mid	LTE Band 30	10	24.0	23.83	0.08	1	N/A	1EED0	QPSK	25	0	15 mm	back	1:1	0.229	1.040	0.238	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**															**Body** **1.6 W/kg (mW/g)** averaged over 1 gram							

Blue entry represents variability data.

Table 11-25
LTE TDD Body-Worn SAR

MEASUREMENT RESULTS																				
1 CC Uplink | 2CC Uplink	Component Carrier	FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
		MHz	Ch.															(W/kg)		(W/kg)	
1 CC Uplink, Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	23.5	23.17	0.02	0	1EE9F	QPSK	1	0	15 mm	back	1:1.58	0.168	1.079	0.181	
2CC Uplink, Power Class 3	PCC	2636.50	41055	Mid-High	LTE Band 41	20	23.5	22.96	0.02	0	1EE9F	QPSK	1	0	15 mm	back	1:1.58	0.167	1.132	0.189	
	SCC	2616.70	40857	Mid-High	LTE Band 41	20						QPSK	1	99			1:1.58				
1 CC Uplink, Power Class 2	N/A	2636.50	41055	Mid-High	LTE Band 41	20	27.0	26.38	0.04	0	1EE9F	QPSK	1	0	15 mm	back	1:2.31	0.253	1.153	0.292	A50
1 CC Uplink, Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	22.5	22.11	-0.02	1	1EE9F	QPSK	50	0	15 mm	back	1:1.58	0.128	1.094	0.140	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**																**Body** **1.6 W/kg (mW/g)** averaged over 1 gram						

Table 11-26
DTS Body-Worn SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													W/kg	(W/kg)			(W/kg)	
2462	11	802.11b	DSSS	22	20.5	20.00	-0.10	15 mm	1	27217	1	back	99.1	0.158	0.107	1.122	1.009	**0.121**	A52
2437	6	802.11b	DSSS	22	20.5	19.90	0.09	15 mm	2	27217	1	back	98.9	0.117	0.088	1.148	1.011	0.102	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**														**Body** **1.6 W/kg (mW/g)** averaged over 1 gram					

Table 11-27
DTS MIMO Operations with Simultaneous 2.4 GHz and 5 GHz WLAN Body-Worn SAR

MEASUREMENT RESULTS																						
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power Per Antenna [dBm]	Ant 1 Conducted Power [dBm]	Ant 2 Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.														W/kg	(W/kg)			(W/kg)	
2412	1	802.11n	OFDM	20	13.5	13.33	13.00	0.16	15 mm	MIMO	27217	13	back	97.3	0.046	0.032	1.122	1.028	0.037	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Body 1.6 W/kg (mW/g) averaged over 1 gram											

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

Table 11-28
NII Body-Worn SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													W/kg	(W/kg)			(W/kg)	
5320	64	802.11a	OFDM	20	17.5	17.02	-0.20	15 mm	1	27217	6	back	98.8	0.133	0.057	1.117	1.012	0.064	
5280	56	802.11a	OFDM	20	17.5	17.45	0.13	15 mm	2	27217	6	back	93.5	0.225	0.113	1.012	1.070	0.122	
5500	100	802.11a	OFDM	20	17.5	16.36	0.15	15 mm	1	27217	6	back	98.8	0.190	0.089	1.300	1.012	0.117	
5720	144	802.11a	OFDM	20	17.5	17.09	-0.16	15 mm	2	27217	6	back	93.5	0.417	0.199	1.099	1.070	0.234	
5745	149	802.11a	OFDM	20	17.5	16.71	0.10	15 mm	1	27217	6	back	98.8	0.387	0.179	1.199	1.012	0.217	
5785	157	802.11a	OFDM	20	17.5	17.27	-0.03	15 mm	2	27217	6	back	93.5	0.525	0.211	1.054	1.070	**0.238**	A54
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram											

Table 11-29
NII MIMO Operations with Simultaneous 2.4 GHz and 5 GHz WLAN Body-Worn SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power Per Antenna [dBm]	Ant 1 Conducted Power [dBm]	Ant 2 Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.														W/kg	(W/kg)			(W/kg)	
5290	58	802.11ac	OFDM	80	13.5	12.88	13.48	-0.12	15 mm	MIMO	27217	58.5	back	90.8	0.063	0.022	1.153	1.101	0.028	
5610	122	802.11ac	OFDM	80	13.5	13.21	13.47	0.20	15 mm	MIMO	27217	58.5	back	90.8	0.189	0.080	1.069	1.101	0.094	
5775	155	802.11ac	OFDM	80	13.5	13.14	13.15	-0.15	15 mm	MIMO	27217	58.5	back	90.8	0.199	0.086	1.086	1.101	0.103	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram												

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

Table 11-30
Bluetooth Body-Worn SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle %	SAR (1g)	Scaling Factor (Cond. Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)			(W/kg)	
2480	78	Bluetooth	FHSS	16.0	15.50	0.03	15 mm	21217	1	back	76.8%	0.034	1.122	1.302	**0.050**	A56
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Body 1.6 W/kg (mW/g) averaged over 1 gram									

11.3 Standalone Hotspot SAR Data

Table 11-31
GPRS/UMTS/CDMA Hotspot SAR Data

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Ant State	Device Serial Number	# of GPRS Slots	Duty Cycle	Side	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.												(W/kg)		(W/kg)	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	25.5	24.42	0.00	10 mm	15	1EED5	N/A	1:1	back	0.355	1.282	0.455	A21
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	25.5	24.42	0.04	10 mm	15	1EED5	N/A	1:1	front	0.275	1.282	0.353	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	25.5	24.42	0.08	10 mm	15	1EED5	N/A	1:1	bottom	0.144	1.282	0.185	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	25.5	24.42	-0.03	10 mm	15	1EED5	N/A	1:1	right	0.254	1.282	0.326	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	25.5	24.42	0.06	10 mm	15	1EED5	N/A	1:1	left	0.197	1.282	0.253	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	25.0	24.45	-0.04	10 mm	15	1EED5	N/A	1:1	back	0.451	1.135	0.512	A23
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	25.0	24.45	-0.03	10 mm	15	1EED5	N/A	1:1	front	0.358	1.135	0.406	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	25.0	24.45	-0.02	10 mm	15	1EED5	N/A	1:1	bottom	0.200	1.135	0.227	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	25.0	24.45	-0.01	10 mm	15	1EED5	N/A	1:1	right	0.391	1.135	0.444	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	25.0	24.45	-0.03	10 mm	15	1EED5	N/A	1:1	left	0.271	1.135	0.308	
1880.00	600	PCS CDMA	EVDO Rev. 0	20.5	20.11	0.04	10 mm	15	077C3	N/A	1:1	back	0.511	1.094	0.559	
1880.00	600	PCS CDMA	EVDO Rev. 0	20.5	20.11	0.05	10 mm	15	077C3	N/A	1:1	front	0.460	1.094	0.503	
1851.25	25	PCS CDMA	EVDO Rev. 0	20.5	20.09	-0.01	10 mm	15	077C3	N/A	1:1	bottom	0.640	1.099	0.703	
1880.00	600	PCS CDMA	EVDO Rev. 0	20.5	20.11	0.02	10 mm	15	077C3	N/A	1:1	bottom	0.742	1.094	0.812	
1908.75	1175	PCS CDMA	EVDO Rev. 0	20.5	20.43	-0.02	10 mm	15	077C3	N/A	1:1	bottom	0.908	1.016	0.923	
1880.00	600	PCS CDMA	EVDO Rev. 0	20.5	20.11	0.07	10 mm	15	077C3	N/A	1:1	right	0.107	1.094	0.117	
1880.00	600	PCS CDMA	EVDO Rev. 0	20.5	20.11	-0.02	10 mm	15	077C3	N/A	1:1	left	0.127	1.094	0.139	
1908.75	1175	PCS CDMA	EVDO Rev. 0	20.5	20.43	-0.04	10 mm	15	077C3	N/A	1:1	bottom	0.931	1.016	**0.946**	A25
836.60	190	GSM 850	GPRS	29.5	28.69	-0.06	10 mm	N/A	1EEA3	3	1:2.76	back	0.312	1.205	0.376	
836.60	190	GSM 850	GPRS	29.5	28.69	-0.07	10 mm	N/A	1EEA3	3	1:2.76	front	0.300	1.205	0.362	
836.60	190	GSM 850	GPRS	29.5	28.69	0.00	10 mm	N/A	1EEA3	3	1:2.76	bottom	0.153	1.205	0.184	
836.60	190	GSM 850	GPRS	29.5	28.69	-0.01	10 mm	N/A	1EEA3	3	1:2.76	right	0.342	1.205	0.412	A27
836.60	190	GSM 850	GPRS	29.5	28.69	-0.05	10 mm	N/A	1EEA3	3	1:2.76	left	0.222	1.205	0.268	
1880.00	661	GSM 1900	GPRS	24.0	23.11	-0.04	10 mm	N/A	07A6E	3	1:2.76	back	0.403	1.227	0.494	
1880.00	661	GSM 1900	GPRS	24.0	23.11	0.11	10 mm	N/A	07A6E	3	1:2.76	front	0.311	1.227	0.382	
1880.00	661	GSM 1900	GPRS	24.0	23.11	0.02	10 mm	N/A	07A6E	3	1:2.76	bottom	0.586	1.227	0.719	A29
1880.00	661	GSM 1900	GPRS	24.0	23.11	-0.05	10 mm	N/A	07A6E	3	1:2.76	right	0.070	1.227	0.086	
1880.00	661	GSM 1900	GPRS	24.0	23.11	0.07	10 mm	N/A	07A6E	3	1:2.76	left	0.085	1.227	0.104	
836.60	4183	UMTS 850	RMC	25.0	24.90	0.00	10 mm	15	1EEA3	N/A	1:1	back	0.422	1.023	0.432	
836.60	4183	UMTS 850	RMC	25.0	24.90	-0.01	10 mm	15	1EEA3	N/A	1:1	front	0.385	1.023	0.394	
836.60	4183	UMTS 850	RMC	25.0	24.90	0.00	10 mm	15	1EEA3	N/A	1:1	bottom	0.235	1.023	0.240	
836.60	4183	UMTS 850	RMC	25.0	24.90	0.04	10 mm	15	1EEA3	N/A	1:1	right	0.473	1.023	0.484	A31
836.60	4183	UMTS 850	RMC	25.0	24.90	-0.01	10 mm	15	1EEA3	N/A	1:1	left	0.287	1.023	0.294	
1732.40	1412	UMTS 1750	RMC	19.5	18.88	0.04	10 mm	16	077C3	N/A	1:1	back	0.380	1.153	0.438	
1732.40	1412	UMTS 1750	RMC	19.5	18.88	-0.04	10 mm	16	077C3	N/A	1:1	front	0.339	1.153	0.391	
1732.40	1412	UMTS 1750	RMC	19.5	18.88	0.01	10 mm	16	077C3	N/A	1:1	bottom	0.564	1.153	0.650	A33
1732.40	1412	UMTS 1750	RMC	19.5	18.88	-0.01	10 mm	16	077C3	N/A	1:1	right	0.119	1.153	0.137	
1732.40	1412	UMTS 1750	RMC	19.5	18.88	0.05	10 mm	16	077C3	N/A	1:1	left	0.043	1.153	0.050	
1880.00	9400	UMTS 1900	RMC	19.5	18.97	-0.02	10 mm	31	07A6E	N/A	1:1	back	0.381	1.130	0.431	
1880.00	9400	UMTS 1900	RMC	19.5	18.97	-0.01	10 mm	31	07A6E	N/A	1:1	front	0.349	1.130	0.394	
1880.00	9400	UMTS 1900	RMC	19.5	18.97	0.03	10 mm	31	07A6E	N/A	1:1	bottom	0.582	1.130	0.658	A35
1880.00	9400	UMTS 1900	RMC	19.5	18.97	-0.10	10 mm	31	07A6E	N/A	1:1	right	0.072	1.130	0.081	
1880.00	9400	UMTS 1900	RMC	19.5	18.97	-0.14	10 mm	31	07A6E	N/A	1:1	left	0.100	1.130	0.113	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Body 1.6 W/kg (mW/g) averaged over 1 gram									

Blue Entry represents variability data.

Table 11-32
LTE Band 12 Hotspot SAR

MEASUREMENT RESULTS																						
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Ant State	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	25.0	24.60	0.01	0	14	1EE9E	QPSK	1	0	10 mm	back	1:1	0.441	1.096	0.483	A37
707.50	23095	Mid	LTE Band 12	10	24.0	23.55	-0.05	1	14	1EE9E	QPSK	25	0	10 mm	back	1:1	0.361	1.109	0.400	
707.50	23095	Mid	LTE Band 12	10	25.0	24.60	-0.01	0	14	1EE9E	QPSK	1	0	10 mm	front	1:1	0.378	1.096	0.414	
707.50	23095	Mid	LTE Band 12	10	24.0	23.55	0.02	1	14	1EE9E	QPSK	25	0	10 mm	front	1:1	0.310	1.109	0.344	
707.50	23095	Mid	LTE Band 12	10	25.0	24.60	0.06	0	14	1EE9E	QPSK	1	0	10 mm	bottom	1:1	0.202	1.096	0.221	
707.50	23095	Mid	LTE Band 12	10	24.0	23.55	-0.13	1	14	1EE9E	QPSK	25	0	10 mm	bottom	1:1	0.163	1.109	0.181	
707.50	23095	Mid	LTE Band 12	10	25.0	24.60	0.08	0	14	1EE9E	QPSK	1	0	10 mm	right	1:1	0.238	1.096	0.261	
707.50	23095	Mid	LTE Band 12	10	24.0	23.55	-0.03	1	14	1EE9E	QPSK	25	0	10 mm	right	1:1	0.190	1.109	0.211	
707.50	23095	Mid	LTE Band 12	10	25.0	24.60	0.00	0	14	1EE9E	QPSK	1	0	10 mm	left	1:1	0.139	1.096	0.152	
707.50	23095	Mid	LTE Band 12	10	24.0	23.55	0.01	1	14	1EE9E	QPSK	25	0	10 mm	left	1:1	0.117	1.109	0.130	
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 11-33
LTE Band 13 Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Ant State	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.																			
782.00	23230	Mid	LTE Band 13	10	25.0	24.48	-0.17	0	15	1EE9E	QPSK	1	25	10 mm	back	1:1	0.590	1.127	0.665	A39
782.00	23230	Mid	LTE Band 13	10	24.0	23.54	-0.06	1	15	1EE9E	QPSK	25	0	10 mm	back	1:1	0.477	1.112	0.530	
782.00	23230	Mid	LTE Band 13	10	25.0	24.48	0.02	0	15	1EE9E	QPSK	1	25	10 mm	front	1:1	0.508	1.127	0.573	
782.00	23230	Mid	LTE Band 13	10	24.0	23.54	-0.04	1	15	1EE9E	QPSK	25	0	10 mm	front	1:1	0.404	1.112	0.449	
782.00	23230	Mid	LTE Band 13	10	25.0	24.48	-0.02	0	15	1EE9E	QPSK	1	25	10 mm	bottom	1:1	0.231	1.127	0.260	
782.00	23230	Mid	LTE Band 13	10	24.0	23.54	-0.01	1	15	1EE9E	QPSK	25	0	10 mm	bottom	1:1	0.192	1.112	0.214	
782.00	23230	Mid	LTE Band 13	10	25.0	24.48	-0.14	0	15	1EE9E	QPSK	1	25	10 mm	right	1:1	0.364	1.127	0.410	
782.00	23230	Mid	LTE Band 13	10	24.0	23.54	-0.04	1	15	1EE9E	QPSK	25	0	10 mm	right	1:1	0.281	1.112	0.312	
782.00	23230	Mid	LTE Band 13	10	25.0	24.48	0.00	0	15	1EE9E	QPSK	1	25	10 mm	left	1:1	0.267	1.127	0.301	
782.00	23230	Mid	LTE Band 13	10	24.0	23.54	-0.06	1	15	1EE9E	QPSK	25	0	10 mm	left	1:1	0.186	1.112	0.207	
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 11-34
LTE Band 26 (Cell) Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Ant State	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.																			
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.0	24.78	0.02	0	15	1EE9E	QPSK	1	0	10 mm	back	1:1	0.416	1.052	0.438	A41
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.0	23.72	-0.03	1	15	1EE9E	QPSK	36	0	10 mm	back	1:1	0.346	1.067	0.369	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.0	24.78	0.07	0	15	1EE9E	QPSK	1	0	10 mm	front	1:1	0.356	1.052	0.375	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.0	23.72	0.04	1	15	1EE9E	QPSK	36	0	10 mm	front	1:1	0.299	1.067	0.319	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.0	24.78	-0.04	0	15	1EE9E	QPSK	1	0	10 mm	bottom	1:1	0.254	1.052	0.267	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.0	23.72	-0.04	1	15	1EE9E	QPSK	36	0	10 mm	bottom	1:1	0.211	1.067	0.225	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.0	24.78	-0.01	0	15	1EE9E	QPSK	1	0	10 mm	right	1:1	0.404	1.052	0.425	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.0	23.72	-0.01	1	15	1EE9E	QPSK	36	0	10 mm	right	1:1	0.341	1.067	0.364	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.0	24.78	-0.02	0	15	1EE9E	QPSK	1	0	10 mm	left	1:1	0.192	1.052	0.202	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.0	23.72	0.01	1	15	1EE9E	QPSK	36	0	10 mm	left	1:1	0.154	1.067	0.164	
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 11-35
LTE Band 5 (Cell) Hotspot SAR

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Ant State	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	25.0	24.31	-0.04	0	15	1EE9E	QPSK	1	0	10 mm	back	1:1	0.408	1.172	0.478	A43
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.0	23.30	-0.03	1	15	1EE9E	QPSK	25	12	10 mm	back	1:1	0.387	1.175	0.455	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.0	24.31	-0.01	0	15	1EE9E	QPSK	1	0	10 mm	front	1:1	0.374	1.172	0.438	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.0	23.30	-0.01	1	15	1EE9E	QPSK	25	12	10 mm	front	1:1	0.354	1.175	0.416	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.0	24.31	-0.08	0	15	1EE9E	QPSK	1	0	10 mm	bottom	1:1	0.242	1.172	0.284	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.0	23.30	-0.04	1	15	1EE9E	QPSK	25	12	10 mm	bottom	1:1	0.218	1.175	0.256	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.0	24.31	-0.05	0	15	1EE9E	QPSK	1	0	10 mm	right	1:1	0.393	1.172	0.461	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.0	23.30	-0.01	1	15	1EE9E	QPSK	25	12	10 mm	right	1:1	0.389	1.175	0.457	
836.50	20525	Mid	LTE Band 5 (Cell)	10	25.0	24.31	-0.02	0	15	1EE9E	QPSK	1	0	10 mm	left	1:1	0.158	1.172	0.185	
836.50	20525	Mid	LTE Band 5 (Cell)	10	24.0	23.30	-0.01	1	15	1EE9E	QPSK	25	12	10 mm	left	1:1	0.154	1.175	0.181	
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 11-36
LTE Band 66 (AWS) Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Ant State	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.																			
1745.00	132322	Mid	LTE Band 66 (AWS)	20	20.5	20.39	0.03	0	31	077C3	QPSK	1	0	10 mm	back	1:1	0.481	1.026	0.494	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	20.5	20.27	0.06	0	31	077C3	QPSK	50	0	10 mm	back	1:1	0.474	1.054	0.500	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	20.5	20.39	-0.01	0	31	077C3	QPSK	1	0	10 mm	front	1:1	0.421	1.026	0.432	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	20.5	20.27	-0.02	0	31	077C3	QPSK	50	0	10 mm	front	1:1	0.416	1.054	0.438	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	20.5	20.39	0.01	0	31	077C3	QPSK	1	0	10 mm	bottom	1:1	0.705	1.026	0.723	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	20.5	20.27	-0.01	0	31	077C3	QPSK	50	0	10 mm	bottom	1:1	0.707	1.054	0.745	A45
1745.00	132322	Mid	LTE Band 66 (AWS)	20	20.5	20.39	0.01	0	31	077C3	QPSK	1	0	10 mm	right	1:1	0.155	1.026	0.159	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	20.5	20.27	0.04	0	31	077C3	QPSK	50	0	10 mm	right	1:1	0.153	1.054	0.161	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	20.5	20.39	0.03	0	31	077C3	QPSK	1	0	10 mm	left	1:1	0.060	1.026	0.062	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	20.5	20.27	0.04	0	31	077C3	QPSK	50	0	10 mm	left	1:1	0.047	1.054	0.050	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population														Body 1.6 W/kg (mW/g) averaged over 1 gram						

Table 11-37
LTE Band 25 (PCS) Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Ant State	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g) (W/kg)	Scaling Factor	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																			
1882.50	26365	Mid	LTE Band 25 (PCS)	20	20.5	20.16	0.03	0	15	1EEC6	QPSK	1	0	10 mm	back	1:1	0.588	1.081	0.636	
1860.00	26140	Low	LTE Band 25 (PCS)	20	20.5	20.03	-0.01	0	15	1EEC6	QPSK	50	0	10 mm	back	1:1	0.553	1.114	0.616	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	20.5	20.16	0.01	0	15	1EEC6	QPSK	1	0	10 mm	front	1:1	0.442	1.081	0.478	
1860.00	26140	Low	LTE Band 25 (PCS)	20	20.5	20.03	-0.11	0	15	1EEC6	QPSK	50	0	10 mm	front	1:1	0.417	1.114	0.465	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	20.5	20.16	-0.11	0	15	1EEC6	QPSK	1	0	10 mm	bottom	1:1	0.709	1.081	0.766	A47
1860.00	26140	Low	LTE Band 25 (PCS)	20	20.5	20.03	-0.05	0	15	1EEC6	QPSK	50	0	10 mm	bottom	1:1	0.700	1.114	0.780	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	20.5	20.16	-0.09	0	15	1EEC6	QPSK	1	0	10 mm	right	1:1	0.096	1.081	0.104	
1860.00	26140	Low	LTE Band 25 (PCS)	20	20.5	20.03	-0.04	0	15	1EEC6	QPSK	50	0	10 mm	right	1:1	0.080	1.114	0.089	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	20.5	20.16	-0.13	0	15	1EEC6	QPSK	1	0	10 mm	left	1:1	0.124	1.081	0.134	
1860.00	26140	Low	LTE Band 25 (PCS)	20	20.5	20.03	0.00	0	15	1EEC6	QPSK	50	0	10 mm	left	1:1	0.113	1.114	0.126	
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 11-38
LTE Band 30 Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g) (W/kg)	Scaling Factor	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																		
2310.00	27710	Mid	LTE Band 30	10	22.0	21.36	0.06	0	1EED1	QPSK	1	0	10 mm	back	1:1	0.135	1.159	0.156	
2310.00	27710	Mid	LTE Band 30	10	22.0	21.40	0.02	0	1EED1	QPSK	25	0	10 mm	back	1:1	0.139	1.148	0.160	
2310.00	27710	Mid	LTE Band 30	10	22.0	21.36	0.04	0	1EED1	QPSK	1	0	10 mm	front	1:1	0.100	1.159	0.116	
2310.00	27710	Mid	LTE Band 30	10	22.0	21.40	0.09	0	1EED1	QPSK	25	0	10 mm	front	1:1	0.105	1.148	0.121	
2310.00	27710	Mid	LTE Band 30	10	22.0	21.36	0.00	0	1EED1	QPSK	1	0	10 mm	bottom	1:1	0.167	1.159	0.194	
2310.00	27710	Mid	LTE Band 30	10	22.0	21.40	0.02	0	1EED1	QPSK	25	0	10 mm	bottom	1:1	0.179	1.148	0.205	A49
2310.00	27710	Mid	LTE Band 30	10	22.0	21.36	0.01	0	1EED1	QPSK	1	0	10 mm	left	1:1	0.100	1.159	0.116	
2310.00	27710	Mid	LTE Band 30	10	22.0	21.40	-0.01	0	1EED1	QPSK	25	0	10 mm	left	1:1	0.105	1.148	0.121	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Body 1.6 W/kg (mW/g) averaged over 1 gram									

Table 11-39
LTE Band 41 Hotspot SAR

MEASUREMENT RESULTS																					
1 CC Uplink | 2CC Uplink	Component Carrier	FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g) (W/kg)	Scaling Factor	Reported SAR (1g) (W/kg)	Plot #
		MHz	Ch.																		
1 CC Uplink, Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	23.5	23.17	-0.02	0	1EE9F	QPSK	1	0	10 mm	back	1:1.58	0.312	1.079	0.337	
1 CC Uplink, Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	22.5	22.11	0.03	1	1EE9F	QPSK	50	0	10 mm	back	1:1.58	0.236	1.094	0.258	
1 CC Uplink, Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	23.5	23.17	0.05	0	1EE9F	QPSK	1	0	10 mm	front	1:1.58	0.401	1.079	0.433	
1 CC Uplink, Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	22.5	22.11	0.00	1	1EE9F	QPSK	50	0	10 mm	front	1:1.58	0.308	1.094	0.337	
1 CC Uplink, Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	23.5	23.08	-0.04	0	1EE9F	QPSK	1	0	10 mm	bottom	1:1.58	0.518	1.102	0.571	
1 CC Uplink, Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	23.5	23.07	0.03	0	1EE9F	QPSK	1	0	10 mm	bottom	1:1.58	0.560	1.104	0.618	
1 CC Uplink, Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	23.5	23.10	-0.05	0	1EE9F	QPSK	1	0	10 mm	bottom	1:1.58	0.637	1.096	0.698	
1 CC Uplink, Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	23.5	23.17	0.18	0	1EE9F	QPSK	1	0	10 mm	bottom	1:1.58	0.728	1.079	0.786	A51
2CC Uplink, Power Class 3	PCC	2636.50	41055	Mid-High	LTE Band 41	20	23.5	22.96	0.18	0	1EE9F	QPSK	1	0	10 mm	bottom	1:1.58	0.672	1.132	0.761	
	SCC	2616.70	40857	Mid-High	LTE Band 41	20						QPSK	1	99			1:1.58				
1 CC Uplink, Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	23.5	23.14	-0.09	0	1EE9F	QPSK	1	0	10 mm	bottom	1:1.58	0.658	1.086	0.715	
1 CC Uplink, Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	22.5	22.04	0.03	1	1EE9F	QPSK	50	0	10 mm	bottom	1:1.58	0.418	1.112	0.465	
1 CC Uplink, Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	22.5	22.02	0.02	1	1EE9F	QPSK	50	0	10 mm	bottom	1:1.58	0.435	1.117	0.486	
1 CC Uplink, Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	22.5	22.06	-0.01	1	1EE9F	QPSK	50	0	10 mm	bottom	1:1.58	0.484	1.107	0.536	
1 CC Uplink, Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	22.5	22.11	-0.01	1	1EE9F	QPSK	50	0	10 mm	bottom	1:1.58	0.555	1.094	0.607	
1 CC Uplink, Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	22.5	22.07	0.05	1	1EE9F	QPSK	50	0	10 mm	bottom	1:1.58	0.504	1.104	0.556	
1 CC Uplink, Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	22.5	22.01	-0.01	1	1EE9F	QPSK	100	0	10 mm	bottom	1:1.58	0.512	1.119	0.573	
1 CC Uplink, Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	23.5	23.17	0.10	0	1EE9F	QPSK	1	0	10 mm	left	1:1.58	0.224	1.079	0.242	
1 CC Uplink, Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	22.5	22.11	0.10	1	1EE9F	QPSK	50	0	10 mm	left	1:1.58	0.169	1.094	0.185	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Body 1.6 W/kg (mW/g) averaged over 1 gram											

Table 11-40
WLAN Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													W/kg	(W/kg)			(W/kg)	
2462	11	802.11b	DSSS	22	20.5	20.00	0.06	10 mm	1	27217	1	back	99.1	0.318	-	1.122	1.009	-	
2462	11	802.11b	DSSS	22	20.5	20.00	0.12	10 mm	1	27217	1	front	99.1	0.196	-	1.122	1.009	-	
2462	11	802.11b	DSSS	22	20.5	20.00	0.04	10 mm	1	27217	1	top	99.1	0.417	0.272	1.122	1.009	**0.308**	A53
2462	11	802.11b	DSSS	22	20.5	20.00	0.16	10 mm	1	27217	1	left	99.1	0.093	-	1.122	1.009	-	
2437	6	802.11b	DSSS	22	20.5	19.90	0.00	10 mm	2	27217	1	back	98.9	0.290	0.231	1.148	1.011	0.268	
2437	6	802.11b	DSSS	22	20.5	19.90	0.18	10 mm	2	27217	1	front	98.9	0.185	-	1.148	1.011	-	
2437	6	802.11b	DSSS	22	20.5	19.90	0.03	10 mm	2	27217	1	top	98.9	0.220	-	1.148	1.011	-	
2437	6	802.11b	DSSS	22	20.5	19.90	0.09	10 mm	2	27217	1	left	98.9	0.092	-	1.148	1.011	-	
5745	149	802.11a	OFDM	20	17.5	16.71	0.03	10 mm	1	27217	6	back	98.8	1.045	0.376	1.199	1.012	**0.456**	A55
5745	149	802.11a	OFDM	20	17.5	16.71	0.11	10 mm	1	27217	6	front	98.8	0.034	-	1.199	1.012	-	
5745	149	802.11a	OFDM	20	17.5	16.71	0.18	10 mm	1	27217	6	top	98.8	0.144	0.068	1.199	1.012	0.083	
5745	149	802.11a	OFDM	20	17.5	16.71	0.14	10 mm	1	27217	6	left	98.8	0.063	-	1.199	1.012	-	
5785	157	802.11a	OFDM	20	17.5	17.27	0.18	10 mm	2	27217	6	back	93.5	0.422	0.250	1.054	1.070	0.282	
5785	157	802.11a	OFDM	20	17.5	17.27	0.15	10 mm	2	27217	6	front	93.5	0.183	-	1.054	1.070	-	
5785	157	802.11a	OFDM	20	17.5	17.27	0.13	10 mm	2	27217	6	top	93.5	0.212	-	1.054	1.070	-	
5785	157	802.11a	OFDM	20	17.5	17.27	-0.02	10 mm	2	27217	6	left	93.5	0.103	-	1.054	1.070	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram											

Table 11-41
WLAN MIMO Operations with Simultaneous 2.4 GHz and 5 GHz WLAN Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power Per Antenna [dBm]	Ant 1 Conducted Power [dBm]	Ant 2 Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.														W/kg	(W/kg)			(W/kg)	
2412	1	802.11n	OFDM	20	13.5	13.33	13.00	0.16	10 mm	MIMO	27217	13	back	97.3	0.115	-	1.122	1.028	-	
2412	1	802.11n	OFDM	20	13.5	13.33	13.00	0.17	10 mm	MIMO	27217	13	front	97.3	0.063	-	1.122	1.028	-	
2412	1	802.11n	OFDM	20	13.5	13.33	13.00	0.11	10 mm	MIMO	27217	13	top	97.3	0.132	0.083	1.122	1.028	0.096	
2412	1	802.11n	OFDM	20	13.5	13.33	13.00	0.19	10 mm	MIMO	27217	13	left	97.3	0.043	-	1.122	1.028	-	
5775	155	802.11ac	OFDM	80	13.5	13.14	13.15	-0.15	10 mm	MIMO	27217	58.5	back	90.8	0.297	0.135	1.086	1.101	0.171	
5775	155	802.11ac	OFDM	80	13.5	13.14	13.15	0.11	10 mm	MIMO	27217	58.5	front	90.8	0.052	-	1.086	1.101	-	
5775	155	802.11ac	OFDM	80	13.5	13.14	13.15	-0.20	10 mm	MIMO	27217	58.5	top	90.8	0.077	-	1.086	1.101	-	
5775	155	802.11ac	OFDM	80	13.5	13.14	13.15	0.12	10 mm	MIMO	27217	58.5	left	90.8	0.046	-	1.086	1.101	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Body 1.6 W/kg (mW/g) averaged over 1 gram										

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

Table 11-42
Bluetooth Hotspot SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle %	SAR (1g)	Scaling Factor (Cond. Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)			(W/kg)	
2480	78	Bluetooth	FHSS	10.5	9.87	0.11	10 mm	F7863	2	back	76.8	0.009	1.156	1.302	0.014	A57
2480	78	Bluetooth	FHSS	10.5	9.87	-0.13	10 mm	F7863	2	front	76.8	0.009	1.156	1.302	0.014	
2480	78	Bluetooth	FHSS	10.5	9.87	-0.19	10 mm	F7863	2	top	76.8	0.003	1.156	1.302	0.005	
2480	78	Bluetooth	FHSS	10.5	9.87	-0.10	10 mm	F7863	2	left	76.8	0.001	1.156	1.302	0.002	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram								

11.4 SAR Test Notes

General Notes:

1. The test data reported are the worst-case SAR values according to test procedures specified in IEEE 1528-2013, and FCC KDB Publication 447498 D01v06.
2. Batteries are fully charged at the beginning of the SAR measurements.
3. Liquid tissue depth was at least 15.0 cm for all frequencies.
4. The manufacturer has confirmed that the device(s) tested have the same physical, mechanical and thermal characteristics and are within operational tolerances expected for production units.
5. SAR results were scaled to the maximum allowed power to demonstrate compliance per FCC KDB Publication 447498 D01v06.
6. Device was tested using a fixed spacing for body-worn accessory testing. A separation distance of 15 mm was considered because the manufacturer has determined that there will be body-worn accessories available in the marketplace for users to support this separation distance.
7. Per FCC KDB Publication 648474 D04v01r03, body-worn SAR was evaluated without a headset connected to the device. Since the standalone reported body-worn SAR was ≤ 1.2 W/kg, no additional body-worn SAR evaluations using a headset cable were required.
8. Per FCC KDB 865664 D01v01r04, variability SAR tests were performed when the measured SAR results for a frequency band were greater than or equal to 0.8 W/kg. 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).

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.

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 and MCC=001 on the base station simulator. SAR tests were performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI).
4. Per FCC KDB Publication 447498 D01v06, when the reported (scaled) for LTE Band 41 SAR measured at the highest output power channel in a given a test configuration was > 0.6 W/kg, testing at the other channels was required for such test configurations.
5. TDD LTE was tested per the guidance provided in FCC KDB Publication 941225 D05v02r04. Testing was performed using UL-DL configuration 0 with 6 UL subframes and 2 S subframes using extended cyclic prefix only and special subframe configuration 6. SAR tests were performed at maximum output power and worst-case transmission duty factor in extended cyclic prefix. Per 3GPP 36.211 Section 4, the duty factor for special subframe configuration 6 using extended cyclic prefix is 0.633.
6. This device supports Power Class 2 and Power Class 3 operations for LTE Band 41. The highest available duty cycle for Power Class 2 operations is 43.3 % using UL-DL configuration 1. Per FCC Guidance, all SAR tests were performed using Power Class 3. SAR with Power Class 2 at the highest available duty factor was additionally performed for the Power Class 3 configuration with the highest SAR among all exposure condition. Please see Section 14 for linearity results.
7. Per KDB Publication 941225 D05Av01r02, SAR for LTE CA downlink 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.
8. For LTE Band 41, per FCC guidance, SAR was first measured with only a single carrier active in the uplink (carrier aggregation not active). For each exposure condition, the uplink CA scenario with two component carriers was additionally tested for the configuration with the highest SAR when carrier aggregation was not active. The SCC was configured with the closest available contiguous channel. The two component carriers were configured so the resource blocks are physically allocated side by side to achieve the maximum output power.

WLAN Notes:

1. For held-to-ear and hotspot operations, the initial test position procedures were applied. The test position with the highest extrapolated peak SAR will be used as the initial test position. When reported SAR for the initial test position is ≤ 0.4 W/kg, no additional testing for the remaining test positions was required. Otherwise, SAR is evaluated at the subsequent highest peak SAR positions until the reported SAR result is ≤ 0.8 W/kg or all test positions are measured.

2. Justification for test configurations for WLAN per KDB Publication 248227 D01v02r02 for 2.4 GHz WIFI single transmission chain operations, the highest measured maximum output power channel for DSSS was selected for SAR measurement. SAR for OFDM modes (2.4 GHz 802.11g/n) was not required due to the maximum allowed powers and the highest reported DSSS SAR. See Section 8.7.5 for more information.
3. Justification for test configurations for WLAN per KDB Publication 248227 D01v02r02 for 5 GHz WIFI single transmission chain operations, the initial test configuration was selected according to the transmission mode with the highest maximum allowed powers. Other transmission modes were not investigated since the highest reported SAR for initial test configuration adjusted by the ratio of maximum output powers is less than 1.2 W/kg. See Section 8.7.6 for more information.
4. Per KDB Publication 248227 D01v02r02, SAR for MIMO was evaluated by following the simultaneous SAR provisions from KDB Publication 447498 D01v06 by either evaluating the sum of the 1g SAR values of each antenna transmitting independently or making a SAR measurement with both antennas transmitting simultaneously. Please see Section 12 for complete analysis.
5. When the maximum reported 1g averaged SAR is ≤0.8 W/kg, SAR testing on additional channels was not required. Otherwise, SAR for the next highest output power channel was required until the reported SAR result was ≤ 1.20 W/kg or all test channels were measured.
6. The device was configured to transmit continuously at the required data rate, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools. The reported SAR was scaled to the 100% transmission duty factor to determine compliance. Procedures used to measure the duty factor are identical to that in the associated EMC test reports.

Bluetooth Notes:

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

12 FCC MULTI-TX AND ANTENNA SAR CONSIDERATIONS

12.1 Introduction

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

12.2 Simultaneous Transmission Procedures

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

12.3 Head SAR Simultaneous Transmission Analysis

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	Σ SAR (W/kg)
Head SAR	CDMA/EVDO BC10 (§90S)	0.261	0.483	0.744
	CDMA/EVDO BC0 (§22H)	0.263	0.483	0.746
	PCS CDMA/EVDO	0.314	0.483	0.797
	GSM 850	0.224	0.483	0.707
	GSM 1900	0.160	0.483	0.643
	UMTS 850	0.274	0.483	0.757
	UMTS 1750	0.248	0.483	0.731
	UMTS 1900	0.341	0.483	**0.824**
	LTE Band 12	0.205	0.483	0.688
	LTE Band 13	0.307	0.483	0.790
	LTE Band 26 (Cell)	0.247	0.483	0.730
	LTE Band 5 (Cell)	0.293	0.483	0.776
	LTE Band 66 (AWS)	0.268	0.483	0.751
	LTE Band 25 (PCS)	0.251	0.483	0.734
	LTE Band 30	0.101	0.483	0.584
	LTE Band 41	0.085	0.483	0.568

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
Head SAR	CDMA/EVDO BC10 (§90S)	0.261	0.746	1.007
	CDMA/EVDO BC0 (§22H)	0.263	0.746	1.009
	PCS CDMA/EVDO	0.314	0.746	1.060
	GSM 850	0.224	0.746	0.970
	GSM 1900	0.160	0.746	0.906
	UMTS 850	0.274	0.746	1.020
	UMTS 1750	0.248	0.746	0.994
	UMTS 1900	0.341	0.746	**1.087**
	LTE Band 12	0.205	0.746	0.951
	LTE Band 13	0.307	0.746	1.053
	LTE Band 26 (Cell)	0.247	0.746	0.993
	LTE Band 5 (Cell)	0.293	0.746	1.039
	LTE Band 66 (AWS)	0.268	0.746	1.014
	LTE Band 25 (PCS)	0.251	0.746	0.997
	LTE Band 30	0.101	0.746	0.847
	LTE Band 41	0.085	0.746	0.831

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN MIMO at 15 dBm SAR (W/kg)	Σ SAR (W/kg)
Head SAR	CDMA/EVDO BC10 (§90S)	0.261	0.905	1.166
	CDMA/EVDO BC0 (§22H)	0.263	0.905	1.168
	PCS CDMA/EVDO	0.314	0.905	1.219
	GSM 850	0.224	0.905	1.129
	GSM 1900	0.160	0.905	1.065
	UMTS 850	0.274	0.905	1.179
	UMTS 1750	0.248	0.905	1.153
	UMTS 1900	0.341	0.905	**1.246**
	LTE Band 12	0.205	0.905	1.110
	LTE Band 13	0.307	0.905	1.212
	LTE Band 26 (Cell)	0.247	0.905	1.152
	LTE Band 5 (Cell)	0.293	0.905	1.198
	LTE Band 66 (AWS)	0.268	0.905	1.173
	LTE Band 25 (PCS)	0.251	0.905	1.156
	LTE Band 30	0.101	0.905	1.006
	LTE Band 41	0.085	0.905	0.990

Each antenna in the above 2.4 GHz MIMO condition was transmitting with a maximum allowed output power of 15.5 dBm to achieve the summed 18.5 dBm target shown in the documentation.

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Head SAR	CDMA/EVDO BC10 (§90S)	0.261	0.099	0.398	0.360	0.659	0.758
	CDMA/EVDO BC0 (§22H)	0.263	0.099	0.398	0.362	0.661	0.760
	PCS CDMA/EVDO	0.314	0.099	0.398	0.413	0.712	0.811
	GSM 850	0.224	0.099	0.398	0.323	0.622	0.721
	GSM 1900	0.160	0.099	0.398	0.259	0.558	0.657
	UMTS 850	0.274	0.099	0.398	0.373	0.672	0.771
	UMTS 1750	0.248	0.099	0.398	0.347	0.646	0.745
	UMTS 1900	0.341	0.099	0.398	0.440	0.739	**0.838**
	LTE Band 12	0.205	0.099	0.398	0.304	0.603	0.702
	LTE Band 13	0.307	0.099	0.398	0.406	0.705	0.804
	LTE Band 26 (Cell)	0.247	0.099	0.398	0.346	0.645	0.744
	LTE Band 5 (Cell)	0.293	0.099	0.398	0.392	0.691	0.790
	LTE Band 66 (AWS)	0.268	0.099	0.398	0.367	0.666	0.765
	LTE Band 25 (PCS)	0.251	0.099	0.398	0.350	0.649	0.748
	LTE Band 30	0.101	0.099	0.398	0.200	0.499	0.598
	LTE Band 41	0.085	0.099	0.398	0.184	0.483	0.582

Table 12-3
Simultaneous Transmission Scenario 2.4 GHz and 5 GHz WLAN 4 Tx (Held to Ear)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN MIMO at 13 dBm SAR (W/kg)	5 GHz WLAN MIMO at 13 dBm SAR (W/kg)	Σ SAR (W/kg)
Head SAR	CDMA/EVDO BC10 (§90S)	0.261	0.574	0.334	1.169
	CDMA/EVDO BC0 (§22H)	0.263	0.574	0.334	1.171
	PCS CDMA/EVDO	0.314	0.574	0.334	1.222
	GSM 850	0.224	0.574	0.334	1.132
	GSM 1900	0.160	0.574	0.334	1.068
	UMTS 850	0.274	0.574	0.334	1.182
	UMTS 1750	0.248	0.574	0.334	1.156
	UMTS 1900	0.341	0.574	0.334	**1.249**
	LTE Band 12	0.205	0.574	0.334	1.113
	LTE Band 13	0.307	0.574	0.334	1.215
	LTE Band 26 (Cell)	0.247	0.574	0.334	1.155
	LTE Band 5 (Cell)	0.293	0.574	0.334	1.201
	LTE Band 66 (AWS)	0.268	0.574	0.334	1.176
	LTE Band 25 (PCS)	0.251	0.574	0.334	1.159
	LTE Band 30	0.101	0.574	0.334	1.009
	LTE Band 41	0.085	0.574	0.334	0.993

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
Head SAR	CDMA/EVDO BC10 (§90S)	0.261	0.096	0.357
	CDMA/EVDO BC0 (§22H)	0.263	0.096	0.359
	PCS CDMA/EVDO	0.314	0.096	0.410
	GSM 850	0.224	0.096	0.320
	GSM 1900	0.160	0.096	0.256
	UMTS 850	0.274	0.096	0.370
	UMTS 1750	0.248	0.096	0.344
	UMTS 1900	0.341	0.096	**0.437**
	LTE Band 12	0.205	0.096	0.301
	LTE Band 13	0.307	0.096	0.403
	LTE Band 26 (Cell)	0.247	0.096	0.343
	LTE Band 5 (Cell)	0.293	0.096	0.389
	LTE Band 66 (AWS)	0.268	0.096	0.364
	LTE Band 25 (PCS)	0.251	0.096	0.347
	LTE Band 30	0.101	0.096	0.197
	LTE Band 41	0.085	0.096	0.181

12.4 Body-Worn Simultaneous Transmission Analysis

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Body-Worn	CDMA BC10 (§90S)	0.303	0.121	0.102	0.424	0.405	0.526
	CDMA BC0 (§22H)	0.262	0.121	0.102	0.383	0.364	0.485
	PCS CDMA	0.854	0.121	0.102	0.975	0.956	1.077
	GSM 850	0.296	0.121	0.102	0.417	0.398	0.519
	GSM 1900	0.329	0.121	0.102	0.450	0.431	0.552
	UMTS 850	0.351	0.121	0.102	0.472	0.453	0.574
	UMTS 1750	0.714	0.121	0.102	0.835	0.816	0.937
	UMTS 1900	0.755	0.121	0.102	0.876	0.857	0.978
	LTE Band 12	0.350	0.121	0.102	0.471	0.452	0.573
	LTE Band 13	0.485	0.121	0.102	0.606	0.587	0.708
	LTE Band 26 (Cell)	0.302	0.121	0.102	0.423	0.404	0.525
	LTE Band 5 (Cell)	0.305	0.121	0.102	0.426	0.407	0.528
	LTE Band 66 (AWS)	0.931	0.121	0.102	1.052	1.033	**1.154**
	LTE Band 25 (PCS)	0.586	0.121	0.102	0.707	0.688	0.809
	LTE Band 30	0.259	0.121	0.102	0.380	0.361	0.482
	LTE Band 41	0.292	0.121	0.102	0.413	0.394	0.515

Table 12-6
Simultaneous Transmission Scenario with 5 GHz WLAN (Body-Worn at 1.5 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Body-Worn	CDMA BC10 (§90S)	0.303	0.217	0.238	0.520	0.541	0.758
	CDMA BC0 (§22H)	0.262	0.217	0.238	0.479	0.500	0.717
	PCS CDMA	0.854	0.217	0.238	1.071	1.092	1.309
	GSM 850	0.296	0.217	0.238	0.513	0.534	0.751
	GSM 1900	0.329	0.217	0.238	0.546	0.567	0.784
	UMTS 850	0.351	0.217	0.238	0.568	0.589	0.806
	UMTS 1750	0.714	0.217	0.238	0.931	0.952	1.169
	UMTS 1900	0.755	0.217	0.238	0.972	0.993	1.210
	LTE Band 12	0.350	0.217	0.238	0.567	0.588	0.805
	LTE Band 13	0.485	0.217	0.238	0.702	0.723	0.940
	LTE Band 26 (Cell)	0.302	0.217	0.238	0.519	0.540	0.757
	LTE Band 5 (Cell)	0.305	0.217	0.238	0.522	0.543	0.760
	LTE Band 66 (AWS)	0.931	0.217	0.238	1.148	1.169	**1.386**
	LTE Band 25 (PCS)	0.586	0.217	0.238	0.803	0.824	1.041
	LTE Band 30	0.259	0.217	0.238	0.476	0.497	0.714
	LTE Band 41	0.292	0.217	0.238	0.509	0.530	0.747

Table 12-7
Simultaneous Transmission Scenario 2.4 GHz and 5 GHz WLAN 4 Tx (Body-Worn at 1.5 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN MIMO at 13 dBm SAR (W/kg)	5 GHz WLAN MIMO at 13 dBm SAR (W/kg)	Σ SAR (W/kg)
Body-Worn	CDMA BC10 (§90S)	0.303	0.037	0.103	0.443
	CDMA BC0 (§22H)	0.262	0.037	0.103	0.402
	PCS CDMA	0.854	0.037	0.103	0.994
	GSM 850	0.296	0.037	0.103	0.436
	GSM 1900	0.329	0.037	0.103	0.469
	UMTS 850	0.351	0.037	0.103	0.491
	UMTS 1750	0.714	0.037	0.103	0.854
	UMTS 1900	0.755	0.037	0.103	0.895
	LTE Band 12	0.350	0.037	0.103	0.490
	LTE Band 13	0.485	0.037	0.103	0.625
	LTE Band 26 (Cell)	0.302	0.037	0.103	0.442
	LTE Band 5 (Cell)	0.305	0.037	0.103	0.445
	LTE Band 66 (AWS)	0.931	0.037	0.103	**1.071**
	LTE Band 25 (PCS)	0.586	0.037	0.103	0.726
	LTE Band 30	0.259	0.037	0.103	0.399
	LTE Band 41	0.292	0.037	0.103	0.432

Table 12-8
Simultaneous Transmission Scenario with Bluetooth (Body-Worn at 1.5 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
Body-Worn	CDMA BC10 (§90S)	0.303	0.050	0.353
	CDMA BC0 (§22H)	0.262	0.050	0.312
	PCS CDMA	0.854	0.050	0.904
	GSM 850	0.296	0.050	0.346
	GSM 1900	0.329	0.050	0.379
	UMTS 850	0.351	0.050	0.401
	UMTS 1750	0.714	0.050	0.764
	UMTS 1900	0.755	0.050	0.805
	LTE Band 12	0.350	0.050	0.400
	LTE Band 13	0.485	0.050	0.535
	LTE Band 26 (Cell)	0.302	0.050	0.352
	LTE Band 5 (Cell)	0.305	0.050	0.355
	LTE Band 66 (AWS)	0.931	0.050	**0.981**
	LTE Band 25 (PCS)	0.586	0.050	0.636
	LTE Band 30	0.259	0.050	0.309
	LTE Band 41	0.292	0.050	0.342

12.5 Hotspot SAR Simultaneous Transmission Analysis

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

Table 12-9
Simultaneous Transmission Scenario (2.4 GHz Hotspot at 1.0 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Hotspot SAR	EVDO BC10 (§90S)	0.455	0.308	0.268	0.763	0.723	1.031
	EVDO BC0 (§22H)	0.512	0.308	0.268	0.820	0.780	1.088
	PCS EVDO	0.946	0.308	0.268	1.254	1.214	**1.522**
	GPRS 850	0.412	0.308	0.268	0.720	0.680	0.988
	GPRS 1900	0.719	0.308	0.268	1.027	0.987	1.295
	UMTS 850	0.484	0.308	0.268	0.792	0.752	1.060
	UMTS 1750	0.650	0.308	0.268	0.958	0.918	1.226
	UMTS 1900	0.658	0.308	0.268	0.966	0.926	1.234
	LTE Band 12	0.483	0.308	0.268	0.791	0.751	1.059
	LTE Band 13	0.665	0.308	0.268	0.973	0.933	1.241
	LTE Band 26 (Cell)	0.438	0.308	0.268	0.746	0.706	1.014
	LTE Band 5 (Cell)	0.478	0.308	0.268	0.786	0.746	1.054
	LTE Band 66 (AWS)	0.745	0.308	0.268	1.053	1.013	1.321
	LTE Band 25 (PCS)	0.780	0.308	0.268	1.088	1.048	1.356
	LTE Band 30	0.205	0.308	0.268	0.513	0.473	0.781
	LTE Band 41	0.786	0.308	0.268	1.094	1.054	1.362

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
Hotspot SAR	EVDO BC10 (§90S)	0.455	0.456	0.282	0.911	0.737	1.193
	EVDO BC0 (§22H)	0.512	0.456	0.282	0.968	0.794	1.250
	PCS EVDO	0.946	0.456	0.282	1.402	1.228	See Table Below
	GPRS 850	0.412	0.456	0.282	0.868	0.694	1.150
	GPRS 1900	0.719	0.456	0.282	1.175	1.001	1.457
	UMTS 850	0.484	0.456	0.282	0.940	0.766	1.222
	UMTS 1750	0.650	0.456	0.282	1.106	0.932	1.388
	UMTS 1900	0.658	0.456	0.282	1.114	0.940	1.396
	LTE Band 12	0.483	0.456	0.282	0.939	0.765	1.221
	LTE Band 13	0.665	0.456	0.282	1.121	0.947	1.403
	LTE Band 26 (Cell)	0.438	0.456	0.282	0.894	0.720	1.176
	LTE Band 5 (Cell)	0.478	0.456	0.282	0.934	0.760	1.216
	LTE Band 66 (AWS)	0.745	0.456	0.282	1.201	1.027	1.483
	LTE Band 25 (PCS)	0.780	0.456	0.282	1.236	1.062	1.518
	LTE Band 30	0.205	0.456	0.282	0.661	0.487	0.943
	LTE Band 41	0.786	0.456	0.282	1.242	1.068	**1.524**

Simult Tx	Configuration	PCS EVDO SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Hotspot SAR	Back	0.559	0.456	0.282	1.015	0.841	**1.297**
	Front	0.503	0.456*	0.282*	0.959	0.785	1.241
	Top	-	0.083	0.282*	0.083	0.282	0.365
	Bottom	0.946	-	-	0.946	0.946	0.946
	Right	0.117	-	-	0.117	0.117	0.117
	Left	0.139	0.456*	0.282*	0.595	0.421	0.877

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

Table 12-11
Simultaneous Transmission Scenario 2.4 GHz and 5 GHz WLAN 4 Tx (Hotspot at 1.0 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN MIMO at 13 dBm SAR (W/kg)	5 GHz WLAN MIMO at 13 dBm SAR (W/kg)	Σ SAR (W/kg)
Hotspot SAR	EVDO BC10 (§90S)	0.455	0.096	0.171	0.722
	EVDO BC0 (§22H)	0.512	0.096	0.171	0.779
	PCS EVDO	0.946	0.096	0.171	**1.213**
	GPRS 850	0.412	0.096	0.171	0.679
	GPRS 1900	0.719	0.096	0.171	0.986
	UMTS 850	0.484	0.096	0.171	0.751
	UMTS 1750	0.650	0.096	0.171	0.917
	UMTS 1900	0.658	0.096	0.171	0.925
	LTE Band 12	0.483	0.096	0.171	0.750
	LTE Band 13	0.665	0.096	0.171	0.932
	LTE Band 26 (Cell)	0.438	0.096	0.171	0.705
	LTE Band 5 (Cell)	0.478	0.096	0.171	0.745
	LTE Band 66 (AWS)	0.745	0.096	0.171	1.012
	LTE Band 25 (PCS)	0.780	0.096	0.171	1.047
	LTE Band 30	0.205	0.096	0.171	0.472
	LTE Band 41	0.786	0.096	0.171	1.053

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
Hotspot SAR	EVDO BC10 (§90S)	0.455	0.014	0.469
	EVDO BC0 (§22H)	0.512	0.014	0.526
	PCS EVDO	0.946	0.014	**0.960**
	GPRS 850	0.412	0.014	0.426
	GPRS 1900	0.719	0.014	0.733
	UMTS 850	0.484	0.014	0.498
	UMTS 1750	0.650	0.014	0.664
	UMTS 1900	0.658	0.014	0.672
	LTE Band 12	0.483	0.014	0.497
	LTE Band 13	0.665	0.014	0.679
	LTE Band 26 (Cell)	0.438	0.014	0.452
	LTE Band 5 (Cell)	0.478	0.014	0.492
	LTE Band 66 (AWS)	0.745	0.014	0.759
	LTE Band 25 (PCS)	0.780	0.014	0.794
	LTE Band 30	0.205	0.014	0.219
	LTE Band 41	0.786	0.014	0.800

12.6 Simultaneous Transmission Conclusion

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

13 SAR MEASUREMENT VARIABILITY

13.1 Measurement Variability

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

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

1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.
2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).
3) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.
4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg

Table 13-1
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	2462.00	11	802.11n, 20 MHz Bandwidth	OFDM, MIMO	Right	Cheek	13	0.848	0.834	1.02	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	Side	Spacing	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	Ratio	3rd Repeated SAR (1g)	Ratio
	MHz	Ch.					(W/kg)	(W/kg)		(W/kg)		(W/kg)	
1750	1745.00	132322	LTE Band 66 (AWS), 20 MHz Bandwidth	QPSK, 1 RB, 0 RB Offset	back	15 mm	0.904	0.872	1.04	N/A	N/A	N/A	N/A
1900	1908.75	1175	PCS CDMA	EVDO Rev. 0	bottom	10 mm	0.908	0.931	1.03	N/A	N/A	N/A	N/A
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population					Body 1.6 W/kg (mW/g) averaged over 1 gram								

13.2 Measurement Uncertainty

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

14 ADDITIONAL TESTING PER FCC GUIDANCE

14.1 Tuner Testing

The following test procedures were followed to demonstrate that the SAR results in Section 11 represented the appropriate SAR test conditions. For bands with dynamic tuning implemented, SAR was measured according to the required FCC SAR test procedures with the dynamic tuner active to allow the device to automatically tune to the antenna state for the respective RF exposure test configurations. Additional single point SAR time-sweep measurements were evaluated for other tuner states to determine that the other tuner configurations would result in equivalent or lower SAR values. The additional tuner hardware has no influence to the antenna characteristics, other than impedance matching.

To evaluate all of the tuner states, the 80 tuner states were divided among the aggregate band, mode and exposure combinations so that each combination was evaluated for at least 20 tuner states and also so that at least 3 single point SAR measurements were made for every available tuner state. Single point time-sweep measurements were performed at the peak SAR location determined by the zoom scan of the configuration with the highest reported SAR for each combination. The tuner state was able to be established remotely so that the device was not moved for the entire series of single point SAR for the tuner states in each combination. The SAR probe remained stationary at the same position throughout the entire series of single point measurements for each combination. When the single point SAR or 1g SAR was > 1.2 W/kg for a particular band/mode/exposure condition, point SAR measurements were made for all 80 states.

Per FCC Guidance, several bands/modes were combined to be treated as a single aggregate band. For CDMA BC0 and BC10, the highest reported SAR configuration per exposure condition was considered for point SAR measurements. For the LTE Band 5 and 26 pair, the highest reported SAR configuration per exposure condition was evaluated. Additionally, LTE bands 12/17 and 13 was considered as an aggregated band to select single point measurement configurations. The wireless configuration and exposure condition combinations were divided evenly among the three bands (i.e., the number of required single point measurements (at least 20) apply to the aggregated band). All other bands were treated independently.

The operational description contains more information about the design and implementation of the dynamic antenna tuning.

Table 14-1
Supplemental Head SAR Data

Supplemental Head SAR Data									
UMTS 850		UMTS 1750		UMTS 1900		CDMA BC0		CDMA BC1	
RMC		RMC		RMC		EVDO Rev. A		EVDO Rev. A	
Test Position	Right Cheek	Test Position	Left Cheek	Test Position	Left Cheek	Test Position	Right Cheek	Test Position	Left Cheek
Frequency (MHz)	836.6	Frequency (MHz)	1732.4	Frequency (MHz)	1880	Frequency (MHz)	836.52	Frequency (MHz)	1880
Channel	4183	Channel	1412	Channel	9400	Channel	384	Channel	600
Measured 1g SAR (W/kg)	0.268	Measured 1g SAR (W/kg)	0.218	Measured 1g SAR (W/kg)	0.278	Measured 1g SAR (W/kg)	0.223	Measured 1g SAR (W/kg)	0.274
Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)	
Auto-tune (State 15)	0.305	Auto-tune (State 11)	0.275	Auto-tune (State 15)	0.336	Auto-tune (State 15)	0.267	Auto-tune (State 15)	0.328
Default (State 15)	0.300	Default (State 15)	0.272	Default (State 15)	0.334	Default (State 15)	0.261	Default (State 15)	0.321
State 1	0.085	State 4	0.187	State 4	0.184	State 3	0.127	State 0	0.303
State 5	0.198	State 7	0.252	State 6	0.253	State 6	0.201	State 2	0.117
State 11	0.275	State 10	0.266	State 9	0.288	State 10	0.235	State 5	0.211
State 12	0.276	State 11	0.272	State 14	0.328	State 13	0.244	State 15	0.321
State 15	0.300	State 13	0.274	State 15	0.334	State 15	0.261	State 17	0.109
State 18	0.078	State 18	0.272	State 24	0.310	State 19	0.092	State 21	0.244
State 25	0.186	State 24	0.272	State 26	0.316	State 23	0.173	State 22	0.263
State 31	0.187	State 27	0.274	State 29	0.322	State 26	0.193	State 25	0.293
State 32	0.210	State 30	0.254	State 33	0.060	State 30	0.200	State 28	0.299
State 36	0.082	State 36	0.105	State 42	0.227	State 37	0.095	State 33	0.058
State 43	0.195	State 42	0.196	State 44	0.245	State 38	0.113	State 35	0.101
State 49	0.023	State 45	0.209	State 47	0.279	State 41	0.159	State 40	0.215
State 50	0.035	State 48	0.232	State 52	0.157	State 44	0.174	State 43	0.229
State 53	0.086	State 52	0.117	State 54	0.216	State 51	0.046	State 48	0.314
State 59	0.197	State 55	0.205	State 57	0.248	State 54	0.098	State 53	0.249
State 60	0.202	State 58	0.221	State 61	0.266	State 58	0.156	State 63	0.310
State 64	0.296	State 64	0.229	State 66	0.206	State 65	0.196	State 68	0.315
State 71	0.253	State 70	0.221	State 70	0.271	State 69	0.191	State 71	0.269
State 77	0.189	State 73	0.239	State 72	0.299	State 72	0.261	State 74	0.245
State 78	0.257	State 76	0.272	State 75	0.287	State 79	0.236	State 76	0.323

Table 14-2
Supplemental Head SAR Data (Cont.)

Supplemental Head SAR Data									
LTE Band 12		LTE Band 13		LTE Band 5		LTE Band 66		LTE Band 25	
QPSK, 10MHz Bandwidth, 1 RB, 0 RB Offsets		QPSK, 10MHz Bandwidth, 1 RB, 25 RB Offsets		QPSK, 10MHz Bandwidth, 1 RB, 0 RB Offsets		QPSK, 20MHz Bandwidth, 1 RB, 0 RB Offsets		QPSK, 20MHz Bandwidth, 1 RB, 0 RB Offsets	
Test Position	Right Cheek	Test Position	Right Cheek	Test Position	Right Cheek	Test Position	Right Cheek	Test Position	Left Cheek
Frequency (MHz)	707.5	Frequency (MHz)	782	Frequency (MHz)	836.5	Frequency (MHz)	1745	Frequency (MHz)	1860
Channel	23095	Channel	23230	Channel	20525	Channel	132322	Channel	26140
Measured 1g SAR (W/kg)	0.187	Measured 1g SAR (W/kg)	0.272	Measured 1g SAR (W/kg)	0.250	Measured 1g SAR (W/kg)	0.266	Measured 1g SAR (W/kg)	0.247
Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)	
Auto-tune (State 15)	0.195	Auto-tune (State 15)	0.310	Auto-tune (State 15)	0.285	Auto-tune (State 0)	0.334	Auto-tune (State 31)	0.299
Default (State 15)	0.196	Default (State 15)	0.298	Default (State 15)	0.281	Default (State 15)	0.334	Default (State 15)	0.299
State 2	0.036	State 1	0.030	State 2	0.071	State 0	0.336	State 3	0.123
State 14	0.200	State 8	0.195	State 6	0.163	State 1	0.117	State 8	0.249
State 15	0.196	State 15	0.298	State 9	0.218	State 5	0.265	State 10	0.251
State 22	0.064	State 16	0.272	State 12	0.242	State 11	0.331	State 14	0.295
State 34	0.021	State 24	0.216	State 15	0.281	State 19	0.204	State 20	0.171
State 40	0.090	State 32	0.208	State 17	0.038	State 20	0.237	State 23	0.251
State 54	0.043	State 40	0.156	State 22	0.153	State 21	0.279	State 28	0.282
State 62	0.185	State 48	0.256	State 29	0.231	State 25	0.321	State 31	0.293
State 68	0.197	State 55	0.140	State 32	0.196	State 31	0.323	State 34	0.067
State 79	0.183	State 67	0.257	State 35	0.054	State 37	0.147	State 38	0.153
				State 40	0.152	State 39	0.184	State 41	0.186
				State 47	0.244	State 43	0.215	State 46	0.247
				State 50	0.035	State 49	0.050	State 51	0.109
				State 57	0.175	State 53	0.159	State 56	0.202
				State 60	0.219	State 56	0.235	State 62	0.241
				State 62	0.267	State 59	0.244	State 64	0.223
				State 63	0.269	State 65	0.265	State 66	0.179
				State 68	0.277	State 67	0.210	State 69	0.285
				State 75	0.263	State 71	0.258	State 74	0.222
				State 78	0.247	State 77	0.32	State 79	0.246

Table 14-3
Supplemental Body SAR Data

Supplemental Body SAR Data									
UMTS 850		UMTS 1750		UMTS 1900		CDMA BC0		CDMA BC1	
RMC		RMC		RMC		EVDO Rev. 0		EVDO Rev. 0	
Test Position	Right Edge	Test Position	Back Side	Test Position	Back Side	Test Position	Back Side	Test Position	Bottom Edge
Spacing	10 mm	Spacing	15 mm	Spacing	15 mm	Spacing	10 mm	Spacing	10 mm
Frequency (MHz)	836.6	Frequency (MHz)	1732.4	Frequency (MHz)	1880	Frequency (MHz)	836.52	Frequency (MHz)	1908.75
Channel	4183	Channel	1412	Channel	9400	Channel	384	Channel	1175
Measured 1g SAR (W/kg)	0.473	Measured 1g SAR (W/kg)	0.627	Measured 1g SAR (W/kg)	0.616	Measured 1g SAR (W/kg)	0.451	Measured 1g SAR (W/kg)	0.931
Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)	
Auto-tune (State 15)	0.529	Auto-tune (State 16)	0.760	Auto-tune (State 31)	0.790	Auto-tune (State 15)	0.553	Auto-tune (State 15)	1.189
Default (State 15)	0.531	Default (State 15)	0.724	Default (State 15)	0.793	Default (State 15)	0.551	Default (State 15)	1.188
State 0	0.520	State 3	0.438	State 1	0.190	State 1	0.177	State 4	0.661
State 3	0.306	State 7	0.637	State 5	0.486	State 8	0.508	State 7	0.966
State 12	0.516	State 9	0.668	State 10	0.678	State 9	0.514	State 11	1.101
State 15	0.531	State 16	0.723	State 18	0.328	State 12	0.534	State 14	1.140
State 17	0.124	State 17	0.321	State 21	0.527	State 15	0.551	State 15	1.186
State 20	0.248	State 23	0.681	State 25	0.716	State 18	0.186	State 16	1.104
State 23	0.324	State 27	0.720	State 30	0.770	State 20	0.272	State 24	1.050
State 27	0.331	State 29	0.720	State 31	0.793	State 29	0.409	State 27	1.086
State 32	0.393	State 35	0.217	State 36	0.265	State 32	0.411	State 31	1.136
State 35	0.141	State 41	0.423	State 38	0.395	State 36	0.165	State 34	0.507
State 38	0.249	State 43	0.460	State 39	0.435	State 46	0.498	State 42	0.676
State 41	0.330	State 45	0.470	State 42	0.495	State 47	0.498	State 45	0.738
State 50	0.074	State 51	0.256	State 48	0.606	State 50	0.086	State 49	0.217
State 51	0.099	State 52	0.304	State 53	0.408	State 56	0.319	State 52	0.463
State 60	0.347	State 55	0.462	State 58	0.557	State 57	0.328	State 55	0.699
State 63	0.426	State 57	0.497	State 60	0.586	State 60	0.377	State 59	0.800
State 66	0.467	State 63	0.574	State 64	0.598	State 64	0.549	State 62	0.861
State 69	0.301	State 69	0.710	State 67	0.465	State 67	0.466	State 70	0.825
State 72	0.528	State 73	0.672	State 71	0.619	State 75	0.471	State 73	1.015
State 78	0.466	State 75	0.569	State 76	0.791	State 78	0.495	State 77	1.144

Table 14-4
Supplemental Body SAR Data (Cont.)

Supplemental Body SAR Data							
LTE Band 12		LTE Band 13		LTE Band 5		LTE Band 66	
QPSK, 10MHz Bandwidth, 1 RB, 0 RB Offsets		QPSK, 10MHz Bandwidth, 1 RB, 25 RB Offsets		QPSK, 10MHz Bandwidth, 1 RB, 0 RB Offsets		QPSK, 20MHz Bandwidth, 1 RB, 50 RB Offsets	
Test Position	Back Side	Test Position	Back Side	Test Position	Back Side	Test Position	Back Side
Spacing	10 mm	Spacing	10 mm	Spacing	10 mm	Spacing	15 mm
Frequency (MHz)	707.5	Frequency (MHz)	782	Frequency (MHz)	836.5	Frequency (MHz)	1720
Channel	23095	Channel	23230	Channel	20525	Channel	132072
Measured 1g SAR (W/kg)	0.441	Measured 1g SAR (W/kg)	0.590	Measured 1g SAR (W/kg)	0.408	Measured 1g SAR (W/kg)	0.895
Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)	
Auto-tune (State 14)	0.574	Auto-tune (State 15)	0.719	Auto-tune (State 15)	0.589	Auto-tune (State 31)	1.117
Default (State 15)	0.570	Default (State 15)	0.716	Default (State 15)	0.590	Default (State 15)	1.134
State 0	0.477	State 6	0.378	State 4	0.286	State 0	1.090
State 7	0.338	State 13	0.616	State 8	0.490	State 2	0.456
State 14	0.566	State 15	0.716	State 13	0.541	State 8	1.009
State 23	0.222	State 19	0.119	State 15	0.590	State 16	1.096
State 31	0.400	State 21	0.252	State 16	0.471	State 19	0.578
State 39	0.233	State 26	0.577	State 21	0.314	State 20	0.676
State 47	0.497	State 33	0.067	State 28	0.467	State 22	0.898
State 54	0.119	State 44	0.495	State 33	0.072	State 28	1.080
State 59	0.321	State 61	0.580	State 34	0.102	State 31	1.111
State 66	0.493	State 72	0.713	State 39	0.293	State 37	0.417
				State 45	0.412	State 38	0.506
				State 46	0.518	State 40	0.651
				State 56	0.351	State 46	0.800
				State 61	0.434	State 56	0.337
				State 62	0.53	State 65	0.908
				State 67	0.525	State 66	0.661
				State 70	0.516	State 68	1.111
				State 73	0.463	State 71	0.862
				State 74	0.517	State 74	0.796
				State 76	0.589	State 79	0.899

Table 14-5
Supplemental Body SAR Data (Cont.)

Supplemental Body SAR Data							
LTE Band 25							
QPSK, 20MHz Bandwidth, 50 RB, 0 RB Offset							
Test Position			Bottom Edge				
Spacing			10 mm				
Frequency (MHz)			1860				
Channel			26140				
Measured 1g SAR (W/kg)			0.709				
Average Value of Time Sweep (W/kg)							
Auto-tune (State 15)			1.177				
Default (State 15)			1.193				
State 0	1.042	State 20	0.597	State 40	0.559	State 60	0.703
State 1	0.259	State 21	0.730	State 41	0.541	State 61	0.719
State 2	0.900	State 22	0.893	State 42	0.562	State 62	0.791
State 3	0.448	State 23	0.811	State 43	0.612	State 63	0.802
State 4	0.891	State 24	0.889	State 44	0.618	State 64	0.838
State 5	0.661	State 25	0.967	State 45	0.630	State 65	0.886
State 6	0.780	State 26	0.952	State 46	0.770	State 66	0.565
State 7	0.860	State 27	0.975	State 47	0.766	State 67	0.586
State 8	0.943	State 28	1.015	State 48	0.736	State 68	1.078
State 9	0.928	State 29	1.044	State 49	0.166	State 69	1.127
State 10	0.965	State 30	1.117	State 50	0.237	State 70	0.761
State 11	1.015	State 31	1.132	State 51	0.302	State 71	0.781
State 12	1.022	State 32	0.652	State 52	0.364	State 72	1.015
State 13	1.031	State 33	0.127	State 53	0.459	State 73	1.051
State 14	1.199	State 34	0.181	State 54	0.534	State 74	0.698
State 15	1.202	State 35	0.236	State 55	0.585	State 75	0.701
State 16	1.050	State 36	0.286	State 56	0.651	State 76	1.100
State 17	0.299	State 37	0.367	State 57	0.651	State 77	1.229
State 18	0.415	State 38	0.437	State 58	0.656	State 78	0.774
State 19	0.508	State 39	0.487	State 59	0.698	State 79	0.794

14.2 LTE Band 41 Power Class 2 and Power Class 3 Linearity

This device supports Power Class 2 and Power Class 3 operations for LTE Band 41. The highest available duty cycle for Power Class 2 operations is 43.3 % using UL-DL configuration 1. Per FCC Guidance based on the device behavior, all SAR tests were performed using Power Class 3. SAR with Power Class 2 at the highest power and available duty factor was additionally performed for the Power Class 3 configuration with the highest SAR among all exposure conditions. Since power reduction is supported for this model for PC2 Hotspot conditions, the worst case of head and body-worn SAR was considered. The linearity between the Power Class 2 and Power Class 3 SAR results and the respective frame averaged powers was calculated to determine that the results were linear. Per FCC Guidance, no additional SAR measurements were required.

Table 14-6
LTE Band 41 Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	23.5	27.0
Measured Output Power (dBm)	23.17	26.38
Measured SAR (W/kg)	0.168	0.253
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	131.34	188.14
% deviation from expected linarity		**5.13%**

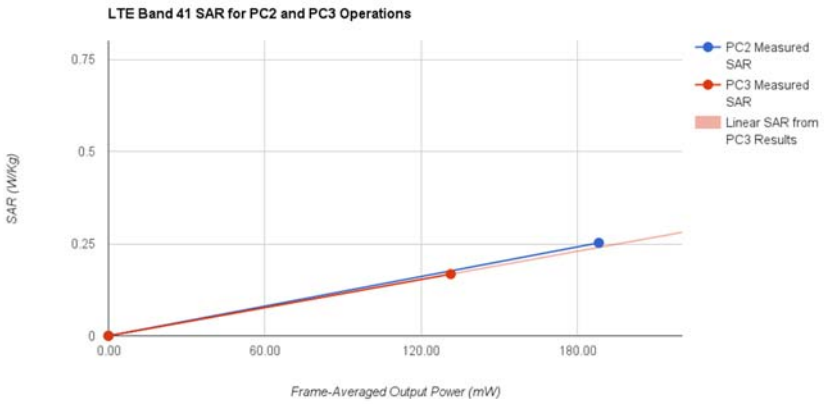

Figure 14-A
LTE Band 41 Linearity

15 EQUIPMENT LIST

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Agilent	8594A	(9kHz-2.9GHz) Spectrum Analyzer	N/A	N/A	N/A	3051A00187
Agilent	8753E	(30kHz-6GHz) Network Analyzer	3/2/2016	Annual	3/2/2017	JP38020182
Agilent	E4438C	ESG Vector Signal Generator	3/2/2016	Annual	3/2/2017	MY47270002
Agilent	E5515C	Wireless Communications Test Set	12/12/2016	Annual	12/12/2017	GB44400860
Agilent	E8257D	(250kHz-20GHz) Signal Generator	3/2/2016	Annual	3/2/2017	MY45470194
Agilent	N4010A	Wireless Connectivity Test Set	N/A	N/A	N/A	GB44450273
Agilent	N5182A	MXG Vector Signal Generator	10/27/2016	Annual	10/27/2017	MY47420603
Agilent	N9020A	MXA Signal Analyzer	10/28/2016	Annual	10/28/2017	US46470561
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433971
Anritsu	MA24106A	USB Power Sensor	6/2/2016	Annual	6/2/2017	1231535
Anritsu	MA24106A	USB Power Sensor	6/2/2016	Annual	6/2/2017	1231538
Anritsu	MA2411B	Pulse Power Sensor	8/18/2016	Annual	8/18/2017	1126066
Anritsu	MA2411B	Pulse Power Sensor	8/18/2016	Annual	8/18/2017	1207470
Anritsu	ML2495A	Power Meter	10/16/2015	Biennial	10/16/2017	941001
Anritsu	ML2496A	Power Meter	3/5/2016	Annual	3/5/2017	1351001
Anritsu	MT8820C	Radio Communication Analyzer	9/15/2016	Annual	9/15/2017	6200901190
COMTech	AR85729-5	Solid State Amplifier	CBT	N/A	CBT	M1S5A00-009
Control Company	4040	Digital Thermometer	3/18/2015	Biennial	3/18/2017	150194895
Control Company	4352	Ultra Long Stem Thermometer	3/8/2016	Biennial	3/8/2018	160261694
Control Company	4353	Long Stem Thermometer	3/5/2015	Biennial	3/5/2017	150149565
Keysight	772D	Dual Directional Coupler	CBT	N/A	CBT	MY52180215
MCL	BW-N6W5+	6dB Attenuator	CBT	N/A	CBT	1139
MiniCircuits	SLP-2400+	Low Pass Filter	CBT	N/A	CBT	R8979500903
MiniCircuits	VLF-6000+	Low Pass Filter	CBT	N/A	CBT	N/A
Mini-Circuits	BW-N20W5	Power Attenuator	CBT	N/A	CBT	1226
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
Mitutoyo	CD-6"CSX	Digital Caliper	3/2/2016	Biennial	3/2/2018	13264162
Mitutoyo	CD-6"CSX	Digital Caliper	3/2/2016	Biennial	3/2/2018	13264165
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
Pasternack	NC-100	Torque Wrench	11/6/2015	Biennial	11/6/2017	N/A
Pasternack	PE2208-6	Bidirectional Coupler	CBT	N/A	CBT	N/A
Pasternack	PE2209-10	Bidirectional Coupler	CBT	N/A	CBT	N/A
Rohde & Schwarz	CMW500	Radio Communication Tester	10/20/2016	Annual	10/20/2017	100976
Rohde & Schwarz	CMW500	Radio Communication Tester	4/27/2016	Annual	4/27/2017	101699
Rohde & Schwarz	CMW500	Radio Communication Tester	10/13/2016	Annual	10/13/2017	102060
Seekonk	NC-100	Torque Wrench (8" lb)	9/1/2016	Biennial	9/1/2018	21053
Seekonk	NC-100	Torque Wrench	11/6/2015	Biennial	11/6/2017	22313
SPEAG	D1750V2	1750 MHz SAR Dipole	5/9/2016	Annual	5/9/2017	1148
SPEAG	D1765V2	1765 MHz SAR Dipole	5/11/2016	Annual	5/11/2017	1008
SPEAG	D1900V2	1900 MHz SAR Dipole	7/8/2016	Annual	7/8/2017	5d080
SPEAG	D1900V2	1900 MHz SAR Dipole	7/15/2016	Annual	7/15/2017	5d149
SPEAG	D2300V2	2300 MHz SAR Dipole	11/15/2016	Annual	11/15/2017	1064
SPEAG	D2450V2	2450 MHz SAR Dipole	9/13/2016	Annual	9/13/2017	797
SPEAG	D2450V2	2450 MHz SAR Dipole	7/25/2016	Annual	7/25/2017	981
SPEAG	D2600V2	2600 MHz SAR Dipole	9/13/2016	Annual	9/13/2017	1071
SPEAG	D2600V2	2600 MHz SAR Dipole	7/25/2016	Annual	7/25/2017	1126
SPEAG	D5GHzV2	5 GHz SAR Dipole	8/2/2016	Annual	8/2/2017	1237
SPEAG	D750V3	750 MHz SAR Dipole	7/13/2016	Annual	7/13/2017	1161
SPEAG	D835V2	835 MHz SAR Dipole	7/13/2016	Annual	7/13/2017	4d047
SPEAG	DAE4	Dasy Data Acquisition Electronics	2/19/2016	Annual	2/19/2017	665
SPEAG	DAE4	Dasy Data Acquisition Electronics	5/11/2016	Annual	5/11/2017	859
SPEAG	DAE4	Dasy Data Acquisition Electronics	2/18/2016	Annual	2/18/2017	1272
SPEAG	DAE4	Dasy Data Acquisition Electronics	9/15/2016	Annual	9/15/2017	1333
SPEAG	DAE4	Dasy Data Acquisition Electronics	8/22/2016	Annual	8/22/2017	1364
SPEAG	DAE4	Dasy Data Acquisition Electronics	3/14/2016	Annual	3/14/2017	1368
SPEAG	DAE4	Dasy Data Acquisition Electronics	4/14/2016	Annual	4/14/2017	1407
SPEAG	DAE4	Dasy Data Acquisition Electronics	9/14/2016	Annual	9/14/2017	1408
SPEAG	DAK-3.5	Dielectric Assessment Kit	5/10/2016	Annual	5/10/2017	1070
SPEAG	DAKS-3.5	Portable Dielectric Assessment Kit	7/19/2016	Annual	7/19/2017	1039
SPEAG	ES3DV3	SAR Probe	3/18/2016	Annual	3/18/2017	3209
SPEAG	ES3DV3	SAR Probe	2/19/2016	Annual	2/19/2017	3213
SPEAG	ES3DV3	SAR Probe	9/19/2016	Annual	9/19/2017	3287
SPEAG	ES3DV3	SAR Probe	2/19/2016	Annual	2/19/2017	3318
SPEAG	ES3DV3	SAR Probe	3/18/2016	Annual	3/18/2017	3319
SPEAG	ES3DV3	SAR Probe	8/25/2016	Annual	8/25/2017	3332
SPEAG	EX3DV4	SAR Probe	2/22/2016	Annual	2/22/2017	3914
SPEAG	EX3DV4	SAR Probe	4/19/2016	Annual	4/19/2017	7357
SPEAG	EX3DV4	SAR Probe	4/19/2016	Annual	4/19/2017	7406
SPEAG	EX3DV4	SAR Probe	5/17/2016	Annual	5/17/2017	7409

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.

16 MEASUREMENT UNCERTAINTIES

a	c	d	e= f(d,k)	f	g	h = c x f/e	i = c x g/e	k
Uncertainty Component	**Tol. (± %)**	**Prob. Dist.**	**Div.**	**c_i 1gm**	**c_i 10 gms**	**1gm u_i (± %)**	**10gms u_i (± %)**	**v_i**
Measurement System								
Probe Calibration	6.55	N	1	1.0	1.0	6.6	6.6	∞
Axial Isotropy	0.25	N	1	0.7	0.7	0.2	0.2	∞
Hemishperical Isotropy	1.3	N	1	0.7	0.7	0.9	0.9	∞
Boundary Effect	2.0	R	1.73	1.0	1.0	1.2	1.2	∞
Linearity	0.3	N	1	1.0	1.0	0.3	0.3	∞
System Detection Limits	0.25	R	1.73	1.0	1.0	0.1	0.1	∞
Readout Electronics	0.3	N	1	1.0	1.0	0.3	0.3	∞
Response Time	0.8	R	1.73	1.0	1.0	0.5	0.5	∞
Integration Time	2.6	R	1.73	1.0	1.0	1.5	1.5	∞
RF Ambient Conditions - Noise	3.0	R	1.73	1.0	1.0	1.7	1.7	∞
RF Ambient Conditions - Reflections	3.0	R	1.73	1.0	1.0	1.7	1.7	∞
Probe Positioner Mechanical Tolerance	0.4	R	1.73	1.0	1.0	0.2	0.2	∞
Probe Positioning w/ respect to Phantom	6.7	R	1.73	1.0	1.0	3.9	3.9	∞
Extrapolation, Interpolation & Integration algorithms for Max. SAR Evaluation	4.0	R	1.73	1.0	1.0	2.3	2.3	∞
Test Sample Related								
Test Sample Positioning	2.7	N	1	1.0	1.0	2.7	2.7	35
Device Holder Uncertainty	1.67	N	1	1.0	1.0	1.7	1.7	5
Output Power Variation - SAR drift measurement	5.0	R	1.73	1.0	1.0	2.9	2.9	∞
SAR Scaling	0.0	R	1.73	1.0	1.0	0.0	0.0	∞
Phantom & Tissue Parameters								
Phantom Uncertainty (Shape & Thickness tolerances)	7.6	R	1.73	1.0	1.0	4.4	4.4	∞
Liquid Conductivity - measurement uncertainty	4.2	N	1	0.78	0.71	3.3	3.0	10
Liquid Permittivity - measurement uncertainty	4.1	N	1	0.23	0.26	1.0	1.1	10
Liquid Conductivity - Temperature Uncertainty	3.4	R	1.73	0.78	0.71	1.5	1.4	∞
Liquid Permittivity - Temperature Unceritainty	0.6	R	1.73	0.23	0.26	0.1	0.1	∞
Liquid Conductivity - deviation from target values	5.0	R	1.73	0.64	0.43	1.8	1.2	∞
Liquid Permittivity - deviation from target values	5.0	R	1.73	0.60	0.49	1.7	1.4	∞
Combined Standard Uncertainty (k=1)		RSS				11.5	11.3	60
Expanded Uncertainty (95% CONFIDENCE LEVEL)		k=2				23.0	22.6	

17 CONCLUSION

17.1 Measurement Conclusion

The SAR evaluation indicates that the EUT complies with the RF radiation exposure limits of the FCC and Innovation, Science, and Economic Development Canada, with respect to all parameters subject to this test. These measurements were taken to simulate the RF effects of RF exposure under worst-case conditions. Precise laboratory measures were taken to assure repeatability of the tests. The results and statements relate only to the item(s) tested.

Please note that the absorption and distribution of electromagnetic energy in the body are very complex phenomena that depend on the mass, shape, and size of the body, the orientation of the body with respect to the field vectors, and the electrical properties of both the body and the environment. Other variables that may play a substantial role in possible biological effects are those that characterize the environment (e.g. ambient temperature, air velocity, relative humidity, and body insulation) and those that characterize the individual (e.g. age, gender, activity level, debilitation, or disease). Because various factors may interact with one another to vary the specific biological outcome of an exposure to electromagnetic fields, any protection guide should consider maximal amplification of biological effects as a result of field-body interactions, environmental conditions, and physiological variables. [3]

18 REFERENCES

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APPENDIX A: SAR TEST DATA

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG950U; Type: Portable Handset; Serial: 1EED5

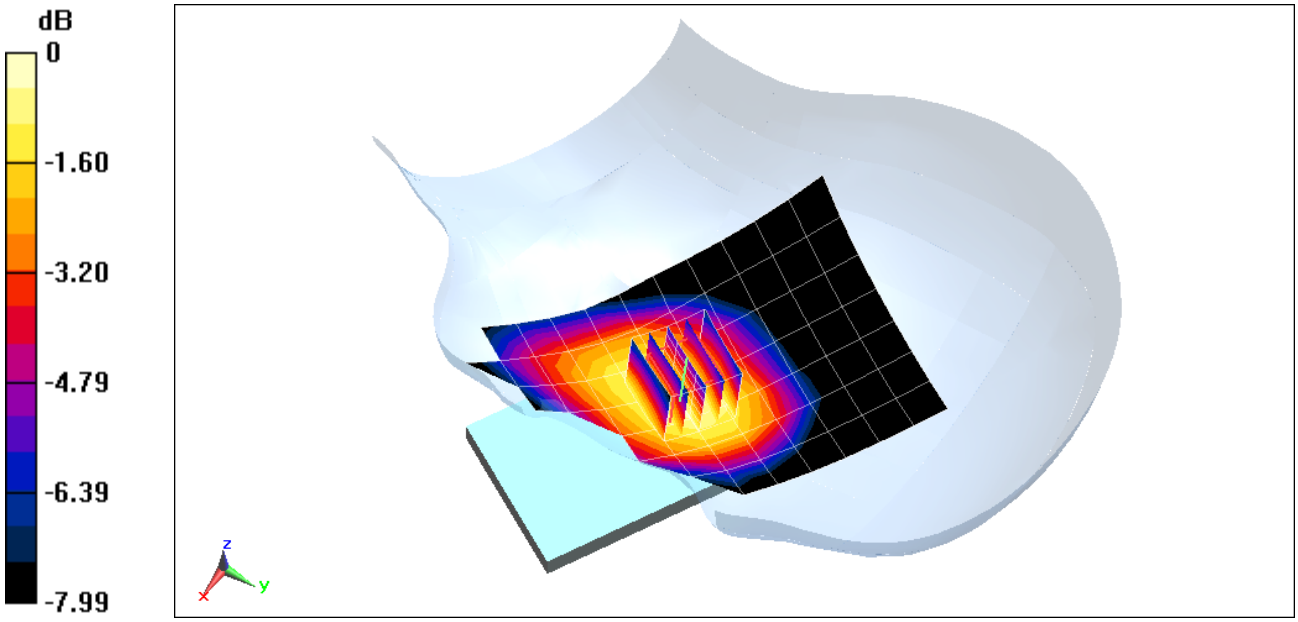
Communication System: UID 0, CDMA; Frequency: 820.1 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
f = 820.1 MHz; σ = 0.889 S/m; ε_r = 41.556; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 12-22-2016; Ambient Temp: 22.7°C; Tissue Temp: 21.5°C

Probe: EX3DV4 - SN7406; ConvF(9.83, 9.83, 9.83); Calibrated: 4/19/2016;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/14/2016
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, Rule Part 90S, Left Head, Cheek, Mid.ch

Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.21 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 0.250 W/kg
SAR(1 g) = 0.202 W/kg



0 dB = 0.233 W/kg = -6.33 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 1EED5

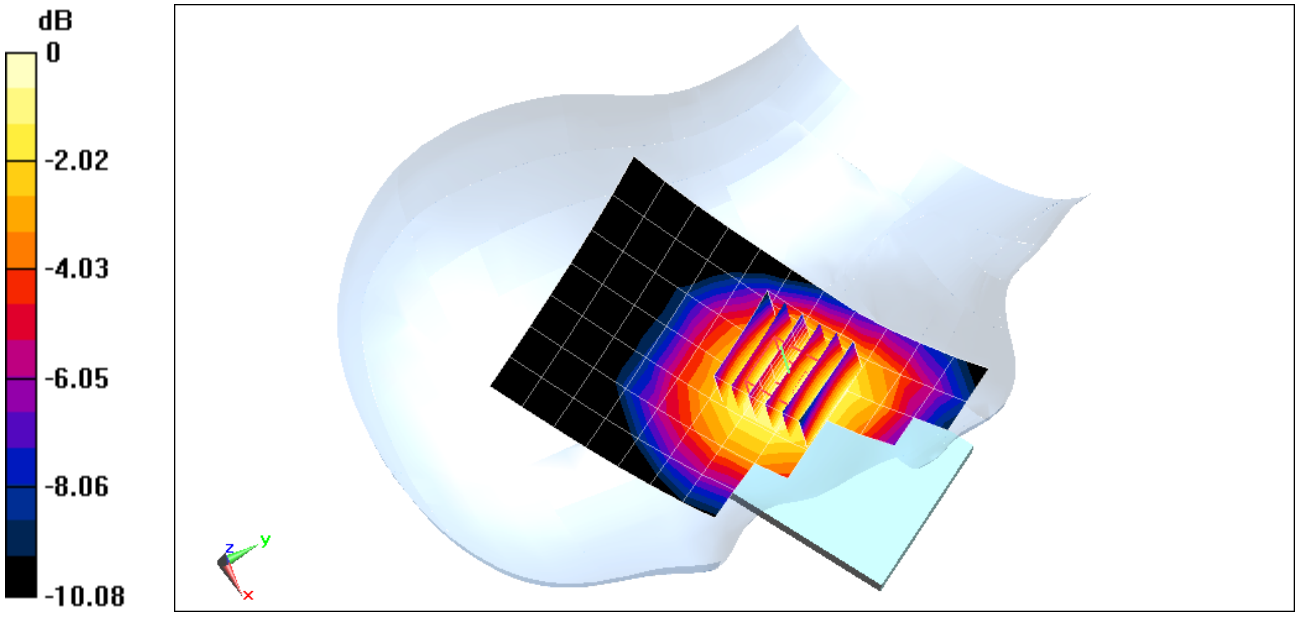
Communication System: UID 0, CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
$f = 836.52$ MHz; $\sigma = 0.906$ S/m; $\varepsilon_r = 41.345$; $\rho = 1000$ kg/m^3
Phantom section: Right Section

Test Date: 12-22-2016; Ambient Temp: 22.7°C; Tissue Temp: 21.5°C

Probe: EX3DV4 - SN7406; ConvF(9.83, 9.83, 9.83); Calibrated: 4/19/2016;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/14/2016
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, Rule Part 22H, Right Head, Cheek, Mid.ch

Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.38 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 0.291 W/kg
SAR(1 g) = 0.231 W/kg



0 dB = 0.270 W/kg = -5.69 dBW/kg

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSMG950U; Type: Portable Handset; Serial: 1EED5

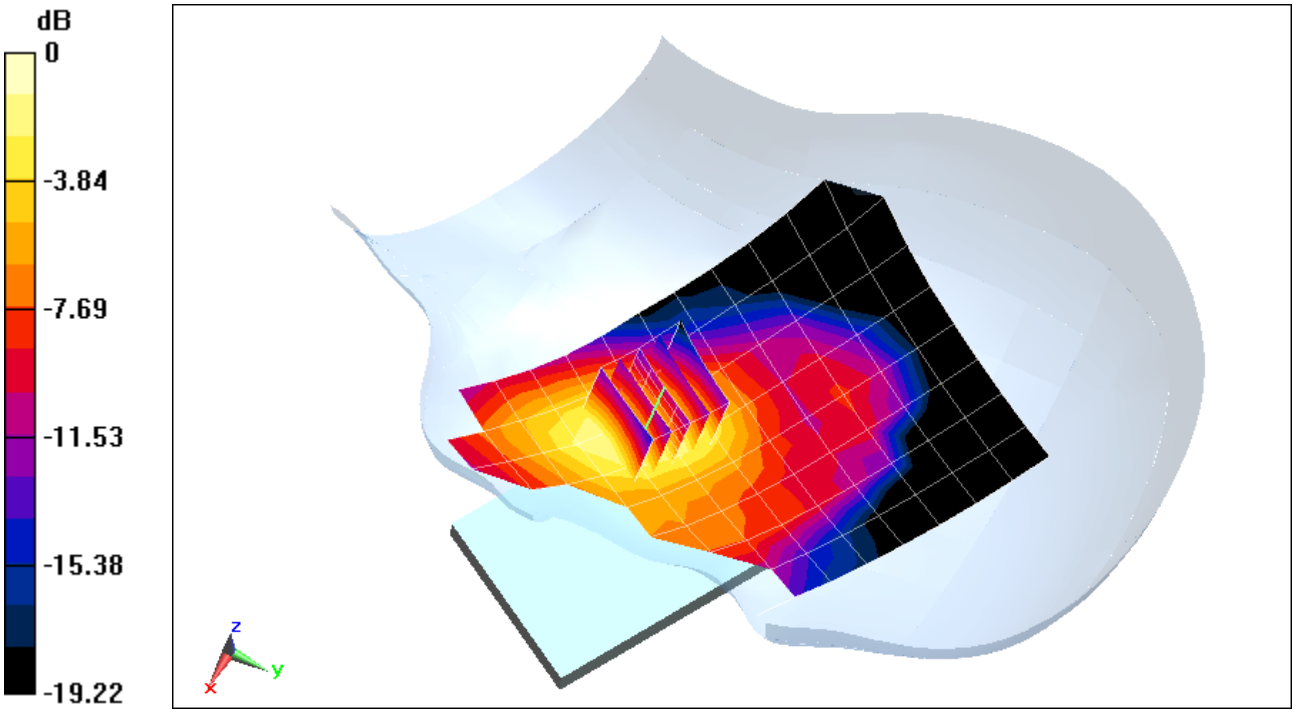
Communication System: UID 0, PCS CDMA; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Head Medium parameters used:
f = 1880 MHz; σ = 1.437 S/m; ε_r = 40.181; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 01-24-2017; Ambient Temp: 22.7°C; Tissue Temp: 22.5°C

Probe: ES3DV3 - SN3332; ConvF(5.45, 5.45, 5.45); Calibrated: 8/25/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1333; Calibrated: 9/15/2016
Phantom: SAM Left; Type: SAM; Serial: 1688
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: PCS EVDO Rev A, 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 = 14.69 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.435 W/kg
SAR(1 g) = 0.274 W/kg



0 dB = 0.330 W/kg = -4.81 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 1EEA3

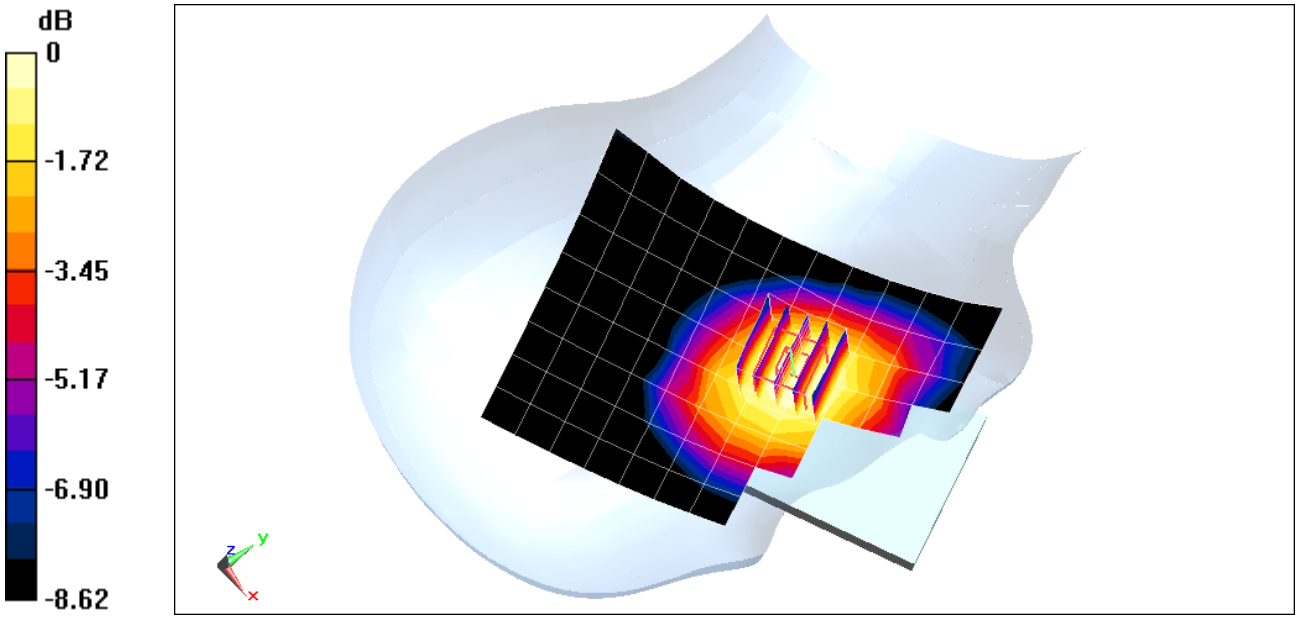
Communication System: UID 0, GSM; Frequency: 836.6 MHz; Duty Cycle: 1:8.3
Medium: 835 Head Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.897 S/m; ε_r = 40.363; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 01-04-2017; Ambient Temp: 23.0°C; Tissue Temp: 22.1°C

Probe: ES3DV3 - SN3209; ConvF(6.2, 6.2, 6.2); Calibrated: 3/18/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1364; Calibrated: 8/22/2016
Phantom: SAM Right; Type: SAM; Serial: 1757
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: GSM 850, Right Head, Cheek, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.42 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 0.254 W/kg
SAR(1 g) = 0.200 W/kg



0 dB = 0.216 W/kg = -6.66 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 1EEA3

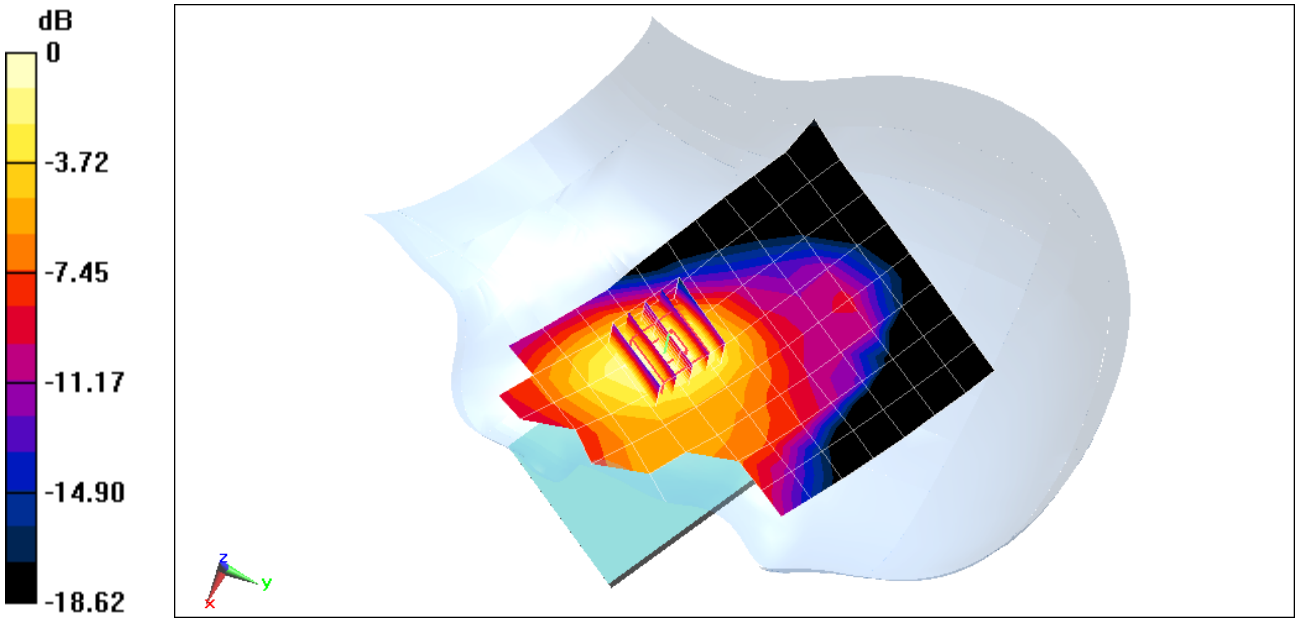
Communication System: UID 0, GSM; Frequency: 1850.2 MHz; Duty Cycle: 1:8.3
Medium: 1900 Head Medium parameters used (interpolated):
f = 1850.2 MHz; σ = 1.385 S/m; ε_r = 39.633; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 12-28-2016; Ambient Temp: 22.1°C; Tissue Temp: 21.9°C

Probe: ES3DV3 - SN3287; ConvF(5.27, 5.27, 5.27); Calibrated: 9/19/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1408; Calibrated: 9/14/2016
Phantom: SAM Front; Type: SAM; Serial: 1686
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: GSM 1900, Left Head, Cheek, Low.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.12 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 0.233 W/kg
SAR(1 g) = 0.149 W/kg



0 dB = 0.178 W/kg = -7.50 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 1EEA3

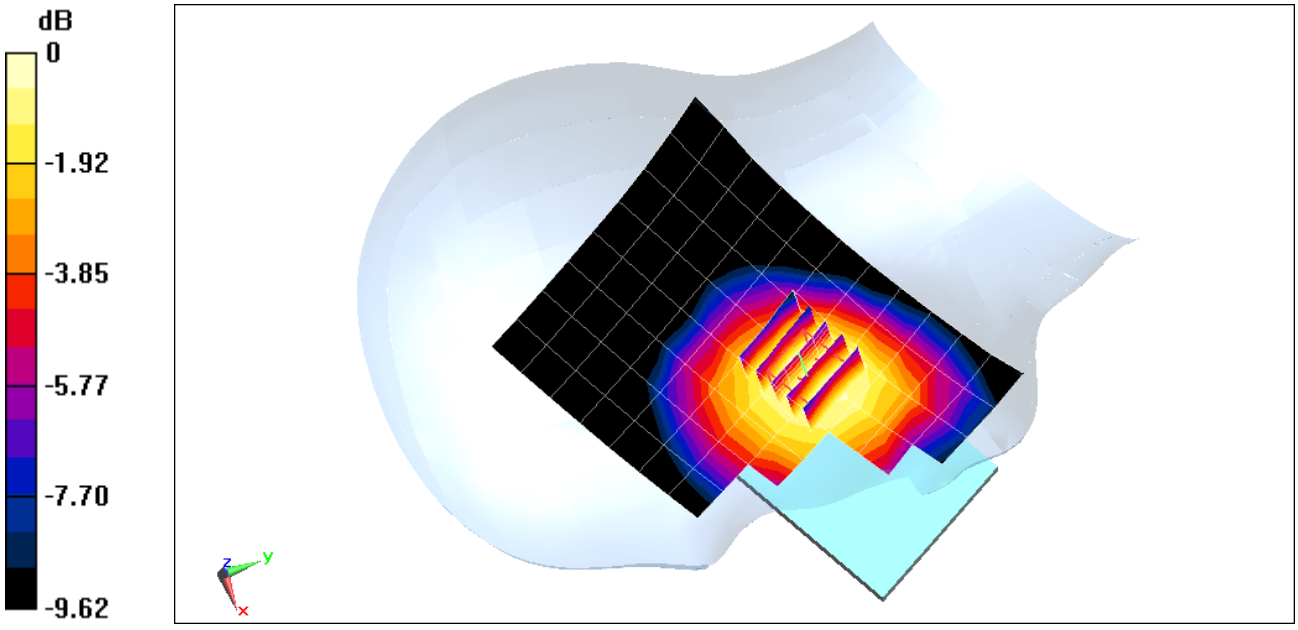
Communication System: UID 0, UMTS; Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.897 S/m; ε_r = 40.363; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 01-04-2017; Ambient Temp: 23.0°C; Tissue Temp: 22.1°C

Probe: ES3DV3 - SN3209; ConvF(6.2, 6.2, 6.2); Calibrated: 3/18/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1364; Calibrated: 8/22/2016
Phantom: SAM Right; Type: SAM; Serial: 1757
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: UMTS 850, Right Head, Cheek, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.93 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.336 W/kg
SAR(1 g) = 0.268 W/kg



0 dB = 0.292 W/kg = -5.35 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 07803

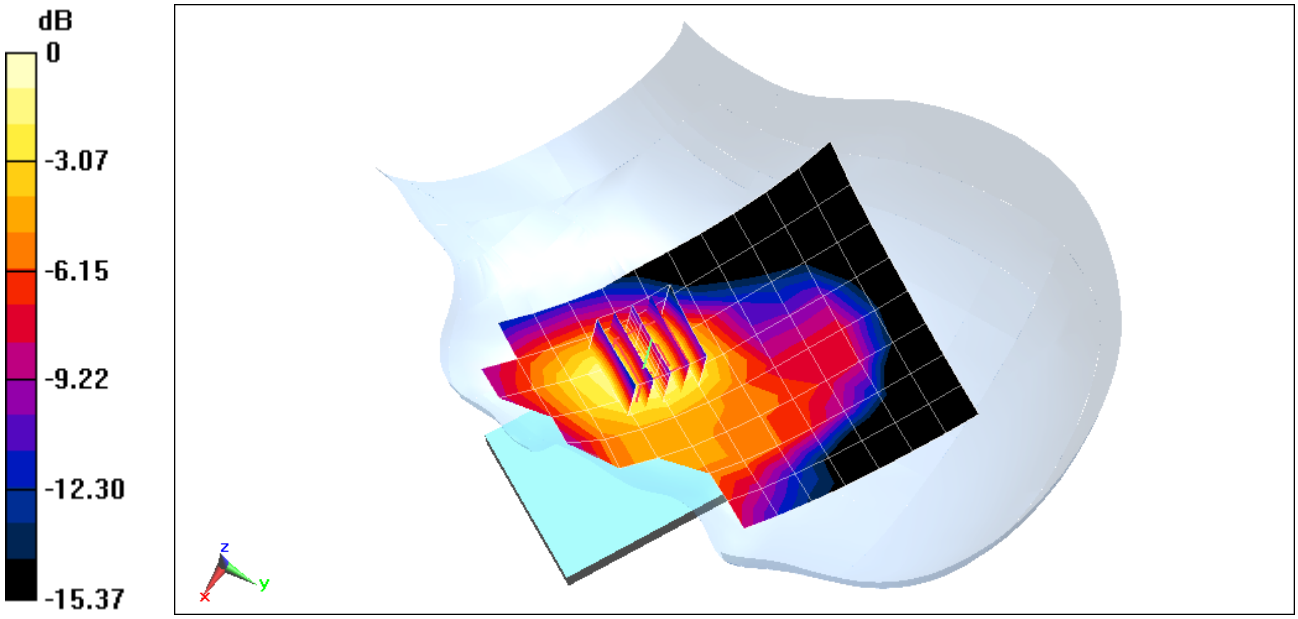
Communication System: UID 0, UMTS; Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium: 1750 Head Medium parameters used (interpolated):
f = 1732.4 MHz; σ = 1.362 S/m; ε_r = 39.097; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 12-30-2016; Ambient Temp: 22.8°C; Tissue Temp: 21.4°C

Probe: ES3DV3 - SN3213; ConvF(5.23, 5.23, 5.23); Calibrated: 2/19/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/18/2016
Phantom: SAM with CRP v5.0 Left; Type: QD000P40CD; Serial: 1687
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: UMTS 1750, Left Head, Cheek, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.27 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.331 W/kg
SAR(1 g) = 0.218 W/kg



0 dB = 0.252 W/kg = -5.99 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 1EEA3

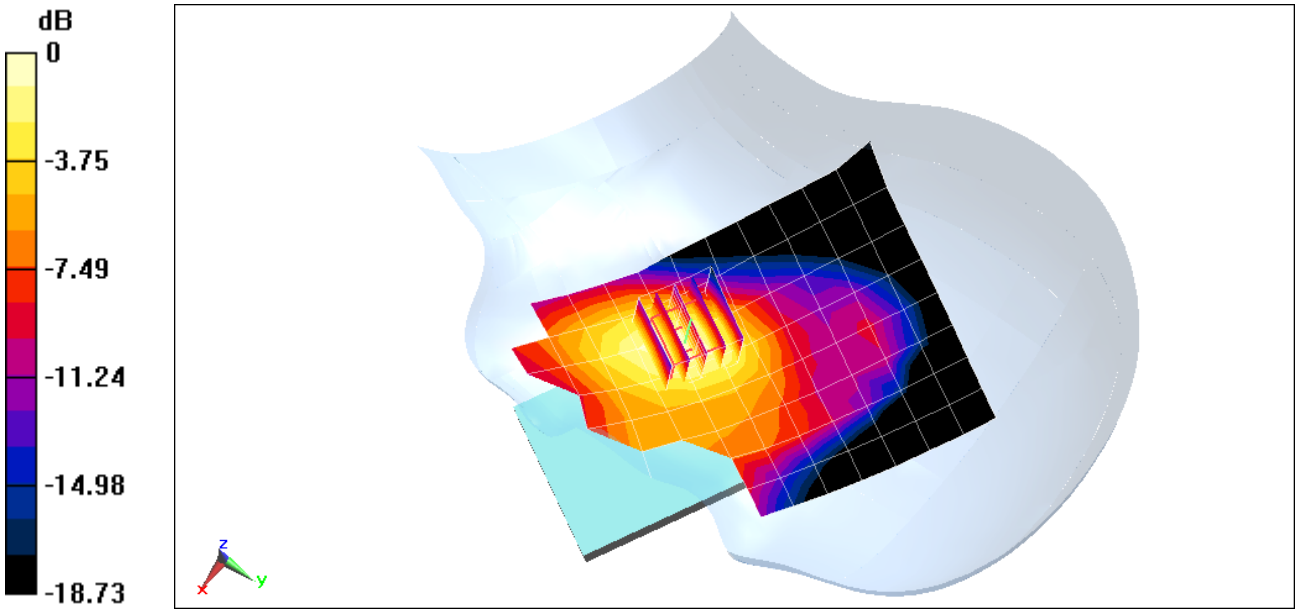
Communication System: UID 0, UMTS; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Head Medium parameters used:
f = 1880 MHz; σ = 1.415 S/m; ε_r = 39.496; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 12-28-2016; Ambient Temp: 22.1°C; Tissue Temp: 21.9°C

Probe: ES3DV3 - SN3287; ConvF(5.27, 5.27, 5.27); Calibrated: 9/19/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1408; Calibrated: 9/14/2016
Phantom: SAM Front; Type: SAM; Serial: 1686
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: UMTS 1900, Left Head, Cheek, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.87 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.431 W/kg
SAR(1 g) = 0.278 W/kg



0 dB = 0.331 W/kg = -4.80 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 1EE9E

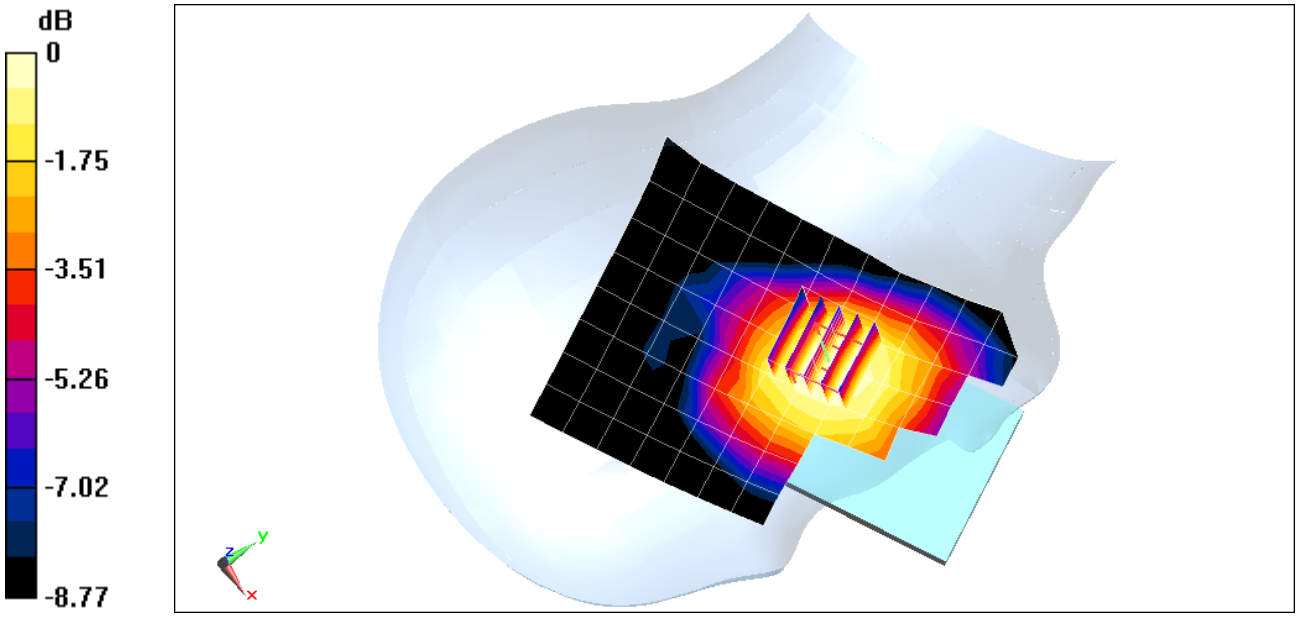
Communication System: UID 0, LTE Band 12; Frequency: 707.5 MHz; Duty Cycle: 1:1
Medium: 750 Head Medium parameters used (interpolated):
f = 707.5 MHz; σ = 0.863 S/m; ε_r = 42.761; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 01-03-2017; Ambient Temp: 21.1°C; Tissue Temp: 21.3°C

Probe: ES3DV3 - SN3318; ConvF(6.48, 6.48, 6.48); Calibrated: 2/19/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/19/2016
Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1800
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: LTE Band 12, Right Head, Cheek, Mid.ch
10 MHz Bandwidth, QPSK, 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 = 15.91 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.233 W/kg
SAR(1 g) = 0.187 W/kg



0 dB = 0.204 W/kg = -6.90 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 1EE9E

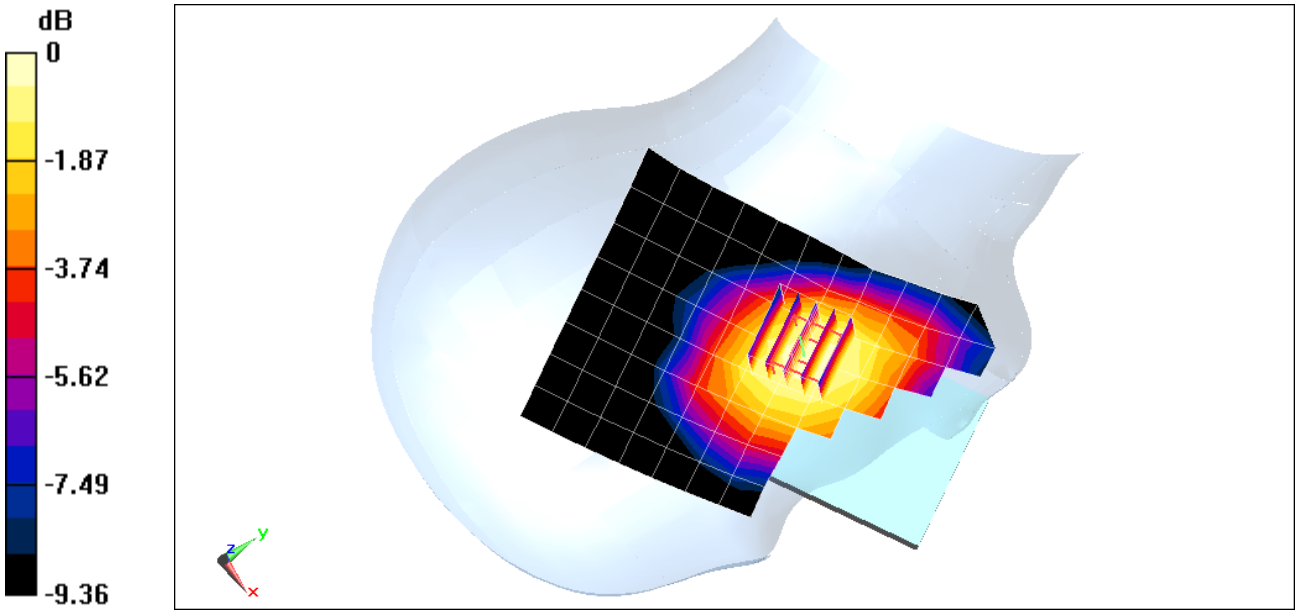
Communication System: UID 0, LTE Band 13; Frequency: 782 MHz; Duty Cycle: 1:1
Medium: 750 Head Medium parameters used (interpolated):
f = 782 MHz; σ = 0.934 S/m; ε_r = 41.794; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 01-03-2017; Ambient Temp: 21.1°C; Tissue Temp: 21.3°C

Probe: ES3DV3 - SN3318; ConvF(6.48, 6.48, 6.48); Calibrated: 2/19/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/19/2016
Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1800
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: LTE Band 13, Right Head, Cheek, Mid.ch
10 MHz Bandwidth, QPSK, 1 RB, 25 RB Offset

Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.43 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.343 W/kg
SAR(1 g) = 0.272 W/kg



0 dB = 0.297 W/kg = -5.27 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 1EE9E

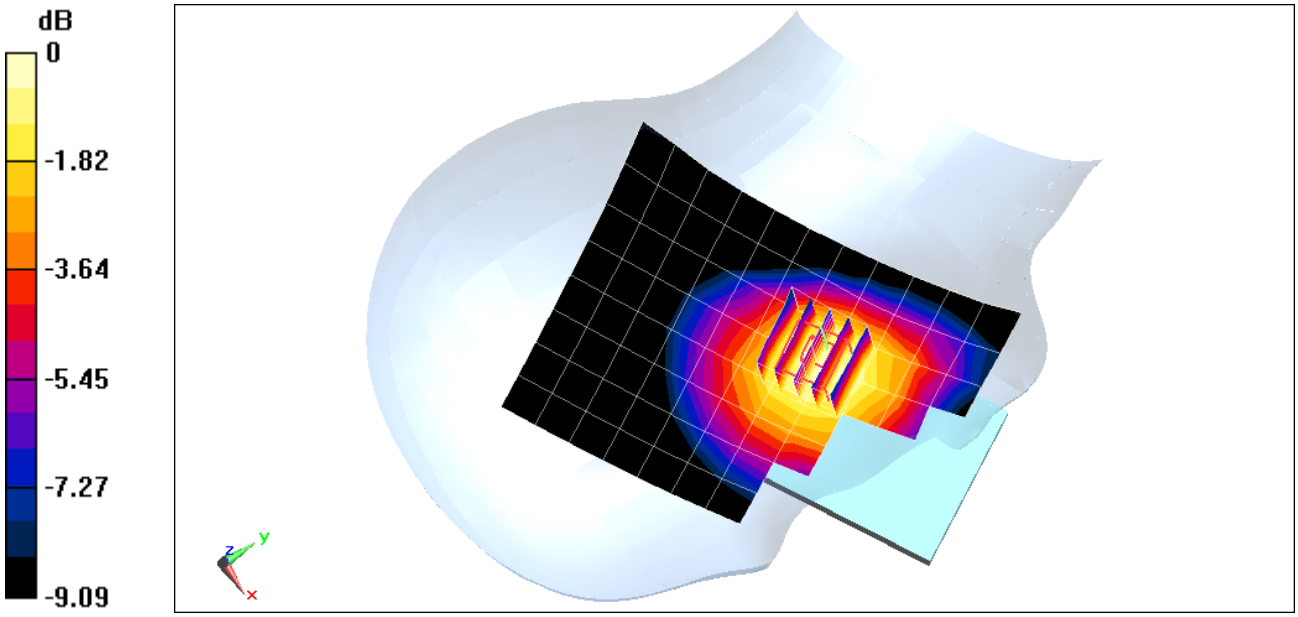
Communication System: UID 0, LTE Band 26; Frequency: 831.5 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
f = 831.5 MHz; σ = 0.893 S/m; ε_r = 40.422; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 01-04-2017; Ambient Temp: 23.0°C; Tissue Temp: 22.1°C

Probe: ES3DV3 - SN3209; ConvF(6.2, 6.2, 6.2); Calibrated: 3/18/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1364; Calibrated: 8/22/2016
Phantom: SAM Right; Type: SAM; Serial: 1757
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: LTE Band 26 (Cell.), Right Head, Cheek, Mid.ch
15 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.51 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 0.318 W/kg
SAR(1 g) = 0.235 W/kg



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

DUT: A3LSMG950U; Type: Portable Handset; Serial: 1EE9E

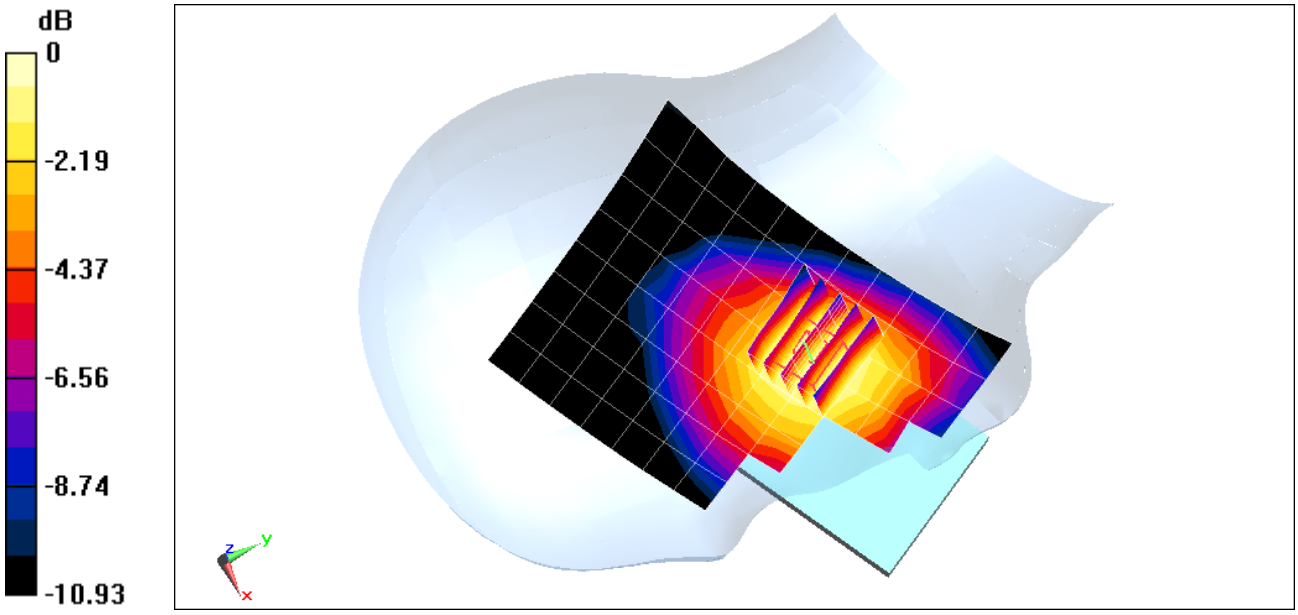
Communication System: UID 0, LTE Band 5 (Cell.); Frequency: 836.5 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
$f = 836.5$ MHz; $\sigma = 0.897$ S/m; $\varepsilon_r = 40.365$; $\rho = 1000$ kg/m^3
Phantom section: Right Section

Test Date: 01-04-2017; Ambient Temp: 23.0°C; Tissue Temp: 22.1°C

Probe: ES3DV3 - SN3209; ConvF(6.2, 6.2, 6.2); Calibrated: 3/18/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1364; Calibrated: 8/22/2016
Phantom: SAM Right; Type: SAM; Serial: 1757
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: LTE Band 5 (Cell.), Right Head, Cheek, Mid.ch
10 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.98 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.340 W/kg
SAR(1 g) = 0.250 W/kg



0 dB = 0.270 W/kg = -5.69 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 07803

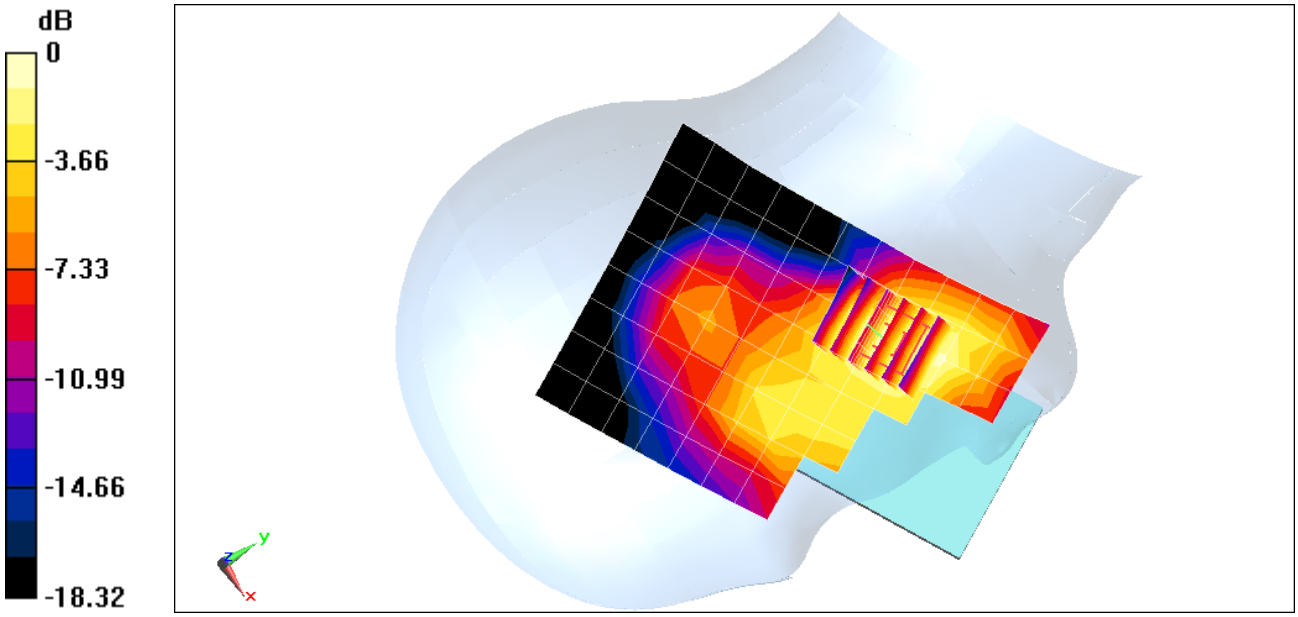
Communication System: UID 0, LTE Band 66 (AWS); Frequency: 1745 MHz; Duty Cycle: 1:1
Medium: 1750 Head Medium parameters used (interpolated):
$f = 1745$ MHz; $\sigma = 1.374$ S/m; $\varepsilon_r = 39.03$; $\rho = 1000$ kg/m^3
Phantom section: Right Section

Test Date: 12-30-2016; Ambient Temp: 22.8°C; Tissue Temp: 21.4°C

Probe: ES3DV3 - SN3213; ConvF(5.23, 5.23, 5.23); Calibrated: 2/19/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/18/2016
Phantom: SAM with CRP v5.0 Left; Type: QD000P40CD; Serial: 1687
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: LTE Band 66 (AWS), Right Head, Cheek, Mid.ch
20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.52 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.408 W/kg
SAR(1 g) = 0.266 W/kg



0 dB = 0.313 W/kg = -5.04 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 1EECE

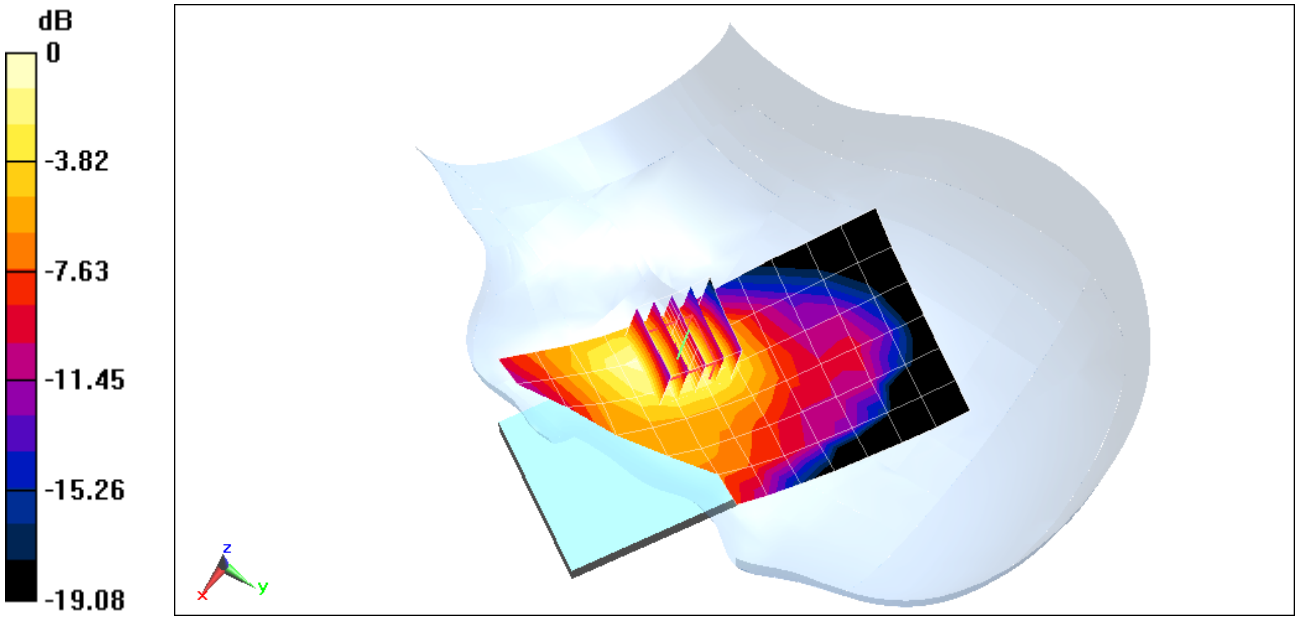
Communication System: UID 0, LTE Band 25 (PCS); Frequency: 1860 MHz; Duty Cycle: 1:1
Medium: 1900 Head Medium parameters used (interpolated):
f = 1860 MHz; σ = 1.401 S/m; ε_r = 39.193; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 12-26-2016; Ambient Temp: 23.3°C; Tissue Temp: 22.0°C

Probe: ES3DV3 - SN3287; ConvF(5.27, 5.27, 5.27); Calibrated: 9/19/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1408; Calibrated: 9/14/2016
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), Left Head, Cheek, Low.ch
20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.73 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 0.387 W/kg
SAR(1 g) = 0.247 W/kg



0 dB = 0.292 W/kg = -5.35 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 1EED0

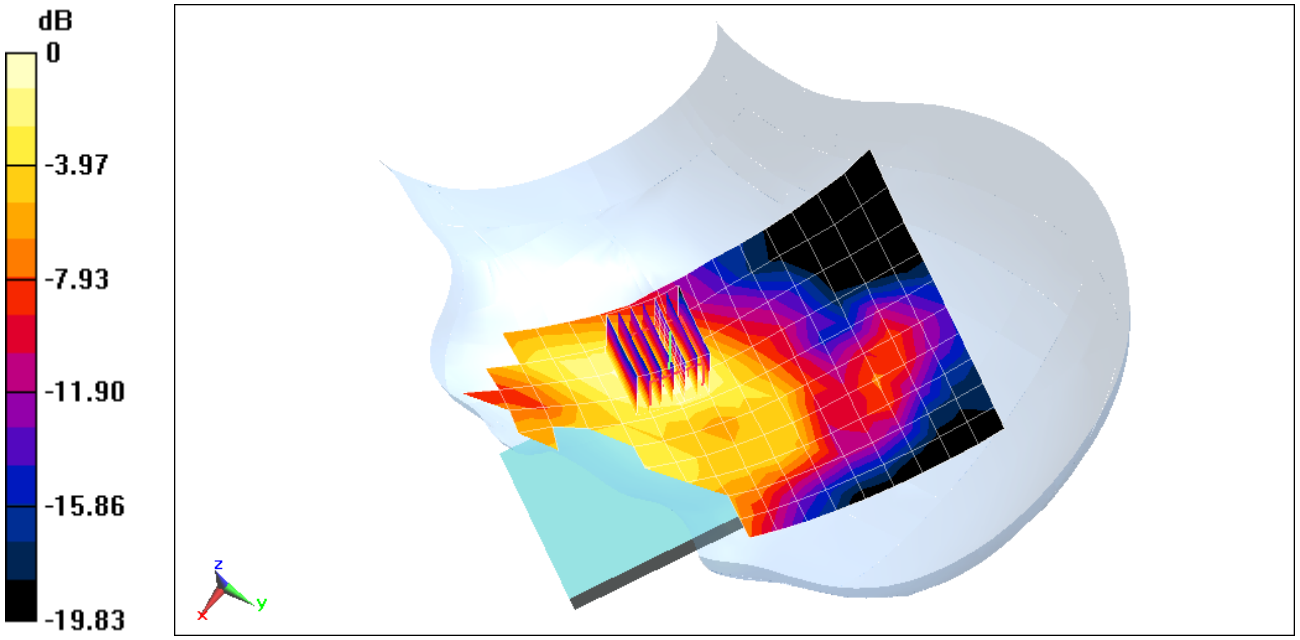
Communication System: UID 0, LTE Band 30; Frequency: 2310 MHz; Duty Cycle: 1:1
Medium: 2450 Head Medium parameters used:
f = 2310 MHz; σ = 1.7 S/m; ε_r = 40.093; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 01-04-2017; Ambient Temp:23.5°C; Tissue Temp: 22.7°C

Probe: ES3DV3 - SN3287; ConvF(4.86, 4.86, 4.86); Calibrated: 9/19/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1408; Calibrated: 9/14/2016
Phantom: SAM Front; Type: SAM; Serial: 1686
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: LTE Band 30, Left Head, Cheek, Mid.ch
10 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 = 8.516 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 0.175 W/kg
SAR(1 g) = 0.097 W/kg



0 dB = 0.121 W/kg = -9.17 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 1EE9F

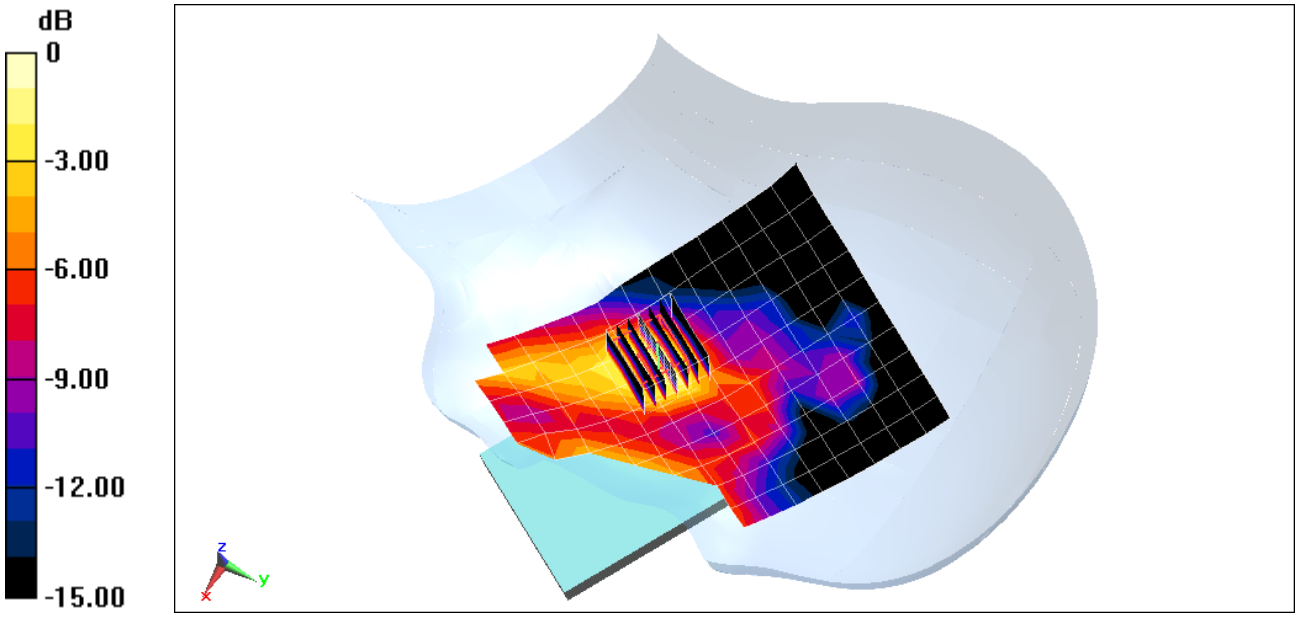
Communication System: UID 0, LTE Band 41; Frequency: 2636.5 MHz; Duty Cycle: 1:1.58
Medium: 2450 Head Medium parameters used (interpolated):
$f = 2636.5$ MHz; $\sigma = 2.08$ S/m; $\varepsilon_r = 38.76$; $\rho = 1000$ kg/m^3
Phantom section: Left Section

Test Date: 01-04-2017; Ambient Temp:23.5°C; Tissue Temp: 22.7°C

Probe: ES3DV3 - SN3287; ConvF(4.41, 4.41, 4.41); Calibrated: 9/19/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1408; Calibrated: 9/14/2016
Phantom: SAM Front; Type: SAM; Serial: 1686
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: LTE Band 41, Power Class 3, Left Head, Cheek, Mid-High.ch, QPSK
20 MHz Bandwidth, 1 RB, 0 RB Offset

Area Scan (11x17x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.854 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 0.150 W/kg
SAR(1 g) = 0.079 W/kg



0 dB = 0.0981 W/kg = -10.08 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 27217

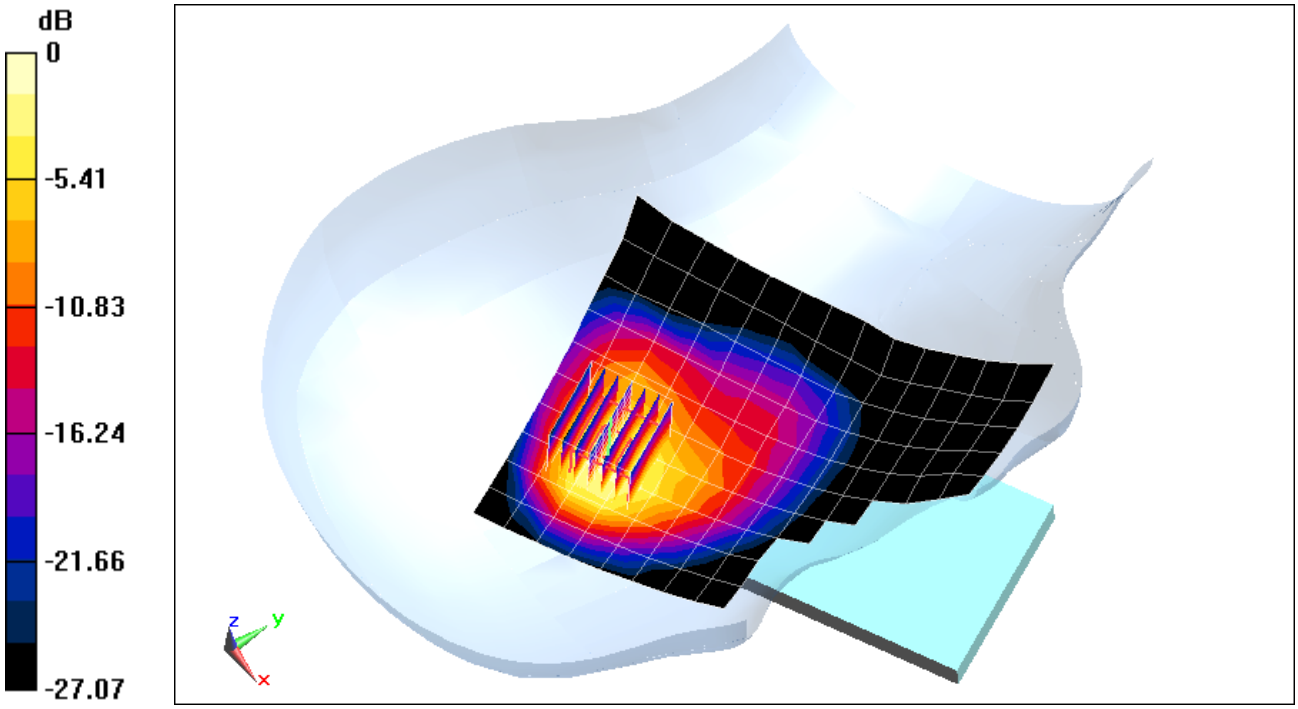
Communication System: UID 0, IEEE 802.11n; Frequency: 2462 MHz; Duty Cycle: 1:1
Medium: 2450 Head Medium parameters used (interpolated):
f = 2462 MHz; σ = 1.883 S/m; ε_r = 39.081; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 01-10-2017; Ambient Temp: 23.6°C; Tissue Temp: 23.0°C

Probe: ES3DV3 - SN3287; ConvF(4.54, 4.54, 4.54); Calibrated: 9/19/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1408; Calibrated: 9/14/2016
Phantom: SAM Front; Type: SAM; Serial: 1686
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: SAR IEEE 802.11n, 20 MHz Bandwidth, Right Head MIMO, Cheek, Ch 11, 13 Mbps

Area Scan (11x17x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.57 V/m; Power Drift = -0.21 dB
Peak SAR (extrapolated) = 1.97 W/kg
SAR(1 g) = 0.848 W/kg



0 dB = 1.15 W/kg = 0.61 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 96203

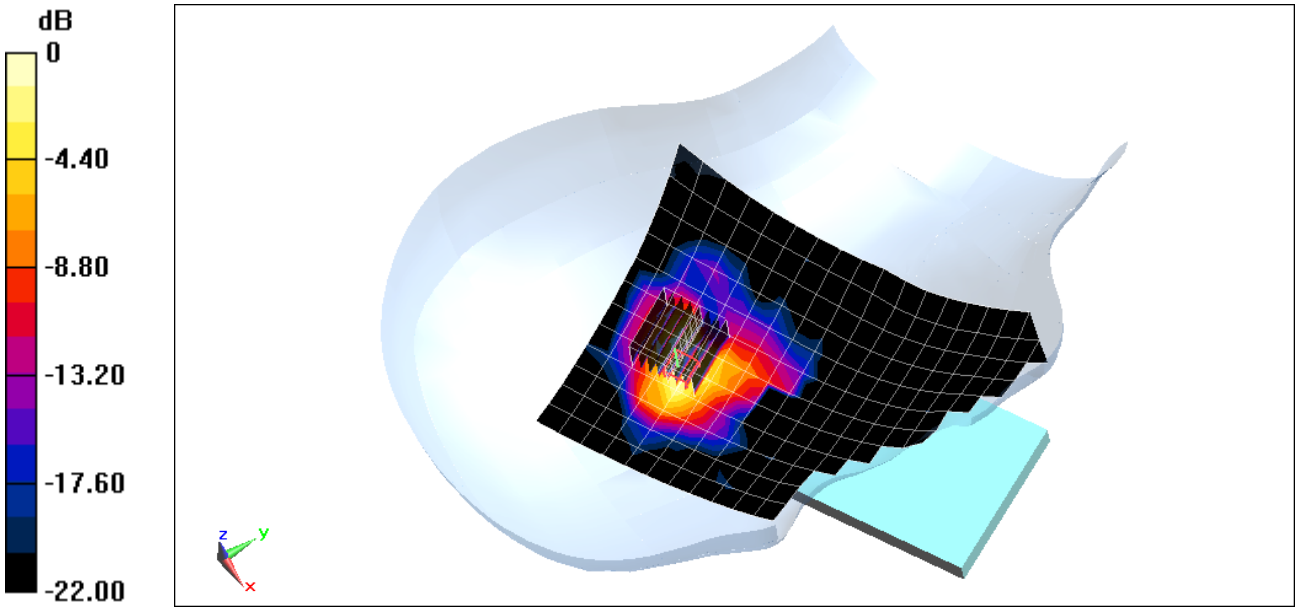
Communication System: UID 0, 802.11a 5.2-5.8 GHz Band; Frequency: 5720 MHz; Duty Cycle: 1:1
Medium: 5GHz Head Medium parameters used (interpolated):
f = 5720 MHz; σ = 5.158 S/m; ε_r = 33.969; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 12-28-2016; Ambient Temp: 21.5°C; Tissue Temp: 19.7°C

Probe: EX3DV4 - SN7357; ConvF(4.65, 4.65, 4.65); Calibrated: 4/19/2016;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/19/2016
Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1800
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: IEEE 802.11a, U-NII-2C, 20 MHz Bandwidth, Ant 2
Right Head, Cheek, Ch 144, 6 Mbps

Area Scan (13x22x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 6.684 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 2.69 W/kg
SAR(1 g) = 0.367 W/kg



0 dB = 0.982 W/kg = -0.08 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: F7863

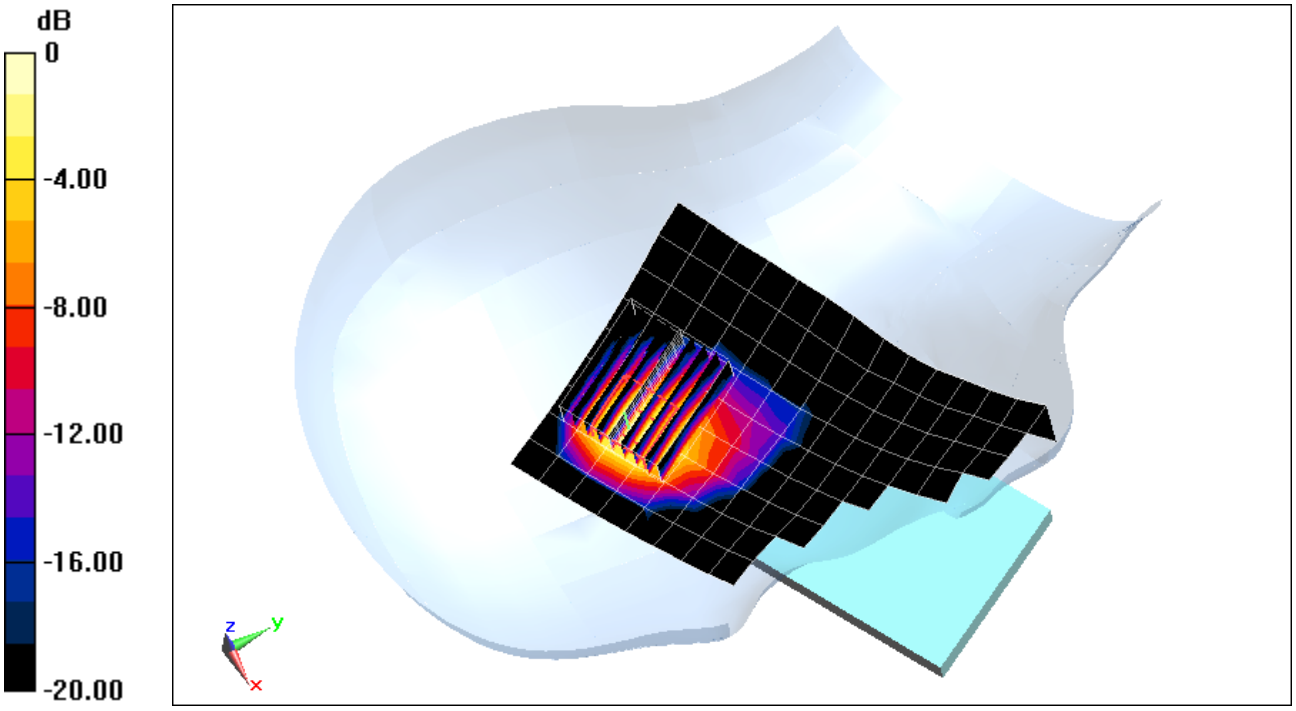
Communication System: UID 0, Bluetooth; Frequency: 2480 MHz; Duty Cycle: 1:1.302
Medium: 2450 Head Medium parameters used (interpolated):
f = 2480 MHz; σ = 1.906 S/m; ε_r = 38.018; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 01-22-2017; Ambient Temp: 23.2°C; Tissue Temp: 22.5°C

Probe: ES3DV3 - SN3287; ConvF(4.54, 4.54, 4.54); Calibrated: 9/19/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1408; Calibrated: 9/14/2016
Phantom: SAM Front; Type: SAM; Serial: 1686
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: Bluetooth, Body SAR, Ch 78, 2Mbps, Right Cheek

Area Scan (10x16x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (10x9x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.715 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 0.156 W/kg
SAR(1 g) = 0.064 W/kg



0 dB = 0.0844 W/kg = -10.74 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 1EED5

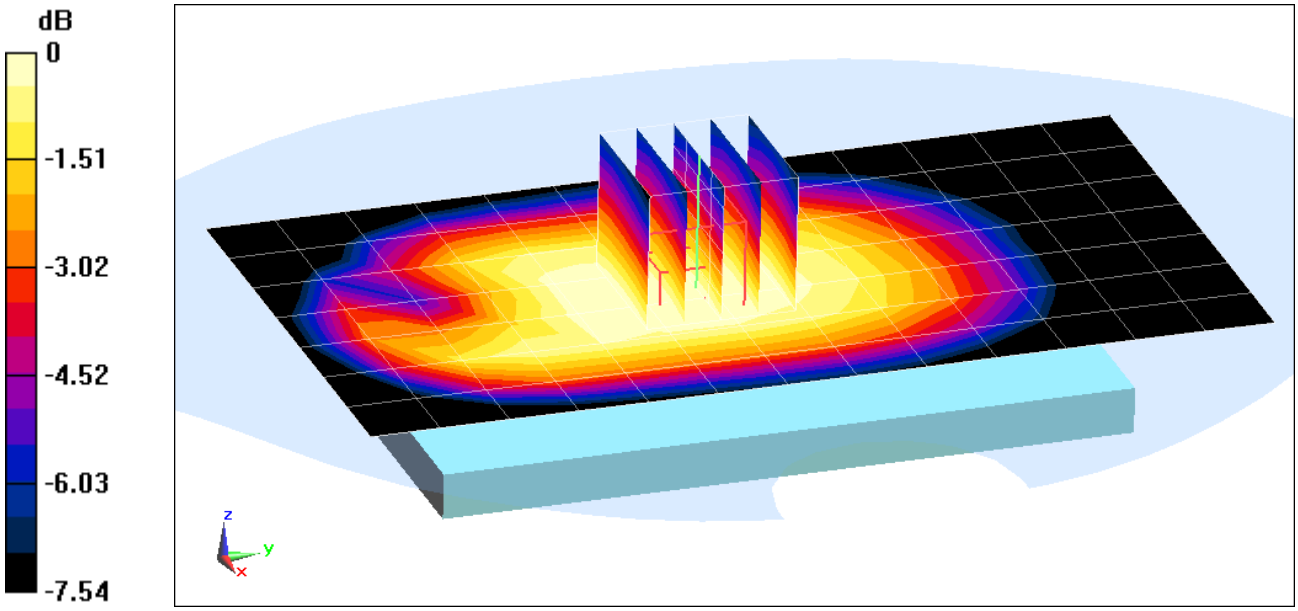
Communication System: UID 0, CDMA; Frequency: 820.1 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 820.1 MHz; σ = 0.984 S/m; ε_r = 55.507; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 12-26-2016; Ambient Temp: 23.3°C; Tissue Temp: 21.5°C

Probe: ES3DV3 - SN3319; ConvF(6.04, 6.04, 6.04); Calibrated: 3/18/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1368; Calibrated: 3/14/2016
Phantom: SAM with CRP (Left); Type: SAM; Serial: 1715
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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

Area Scan (8x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.88 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.295 W/kg
SAR(1 g) = 0.237 W/kg



0 dB = 0.258 W/kg = -5.88 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 1EED5

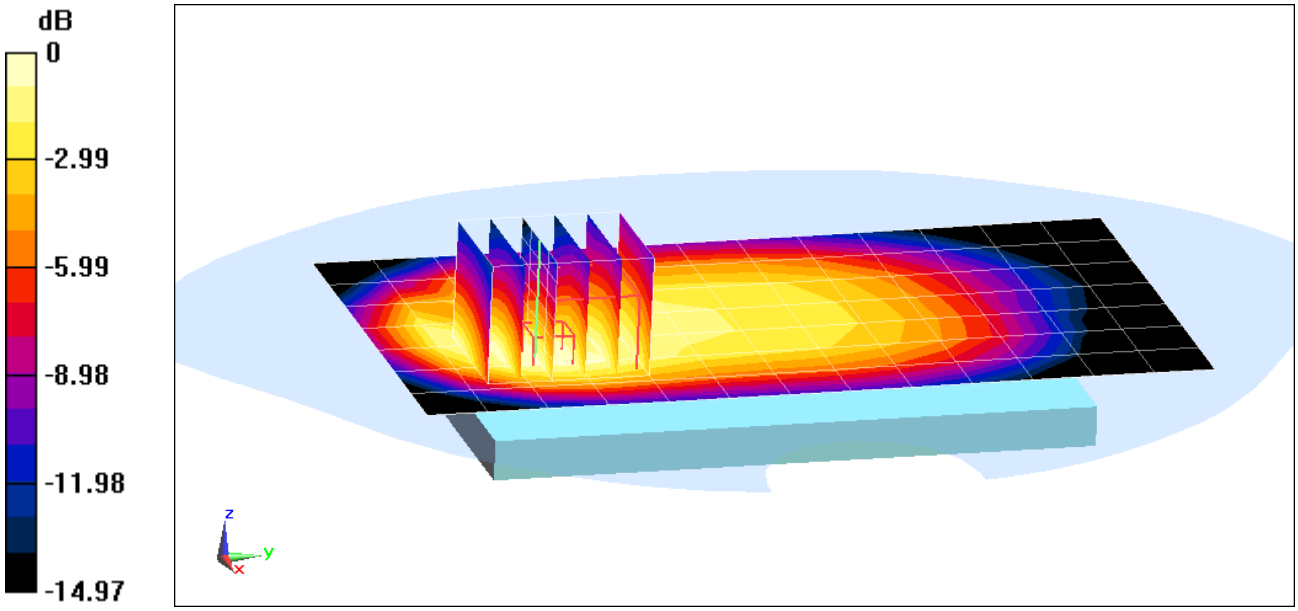
Communication System: UID 0, CDMA; Frequency: 820.1 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 820.1 MHz; σ = 0.984 S/m; ε_r = 55.507; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-26-2016; Ambient Temp: 23.3°C; Tissue Temp: 21.5°C

Probe: ES3DV3 - SN3319; ConvF(6.04, 6.04, 6.04); Calibrated: 3/18/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1368; Calibrated: 3/14/2016
Phantom: SAM with CRP (Left); Type: SAM; Serial: 1715
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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

Area Scan (8x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.34 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.593 W/kg
SAR(1 g) = 0.355 W/kg



0 dB = 0.422 W/kg = -3.75 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 1EED5

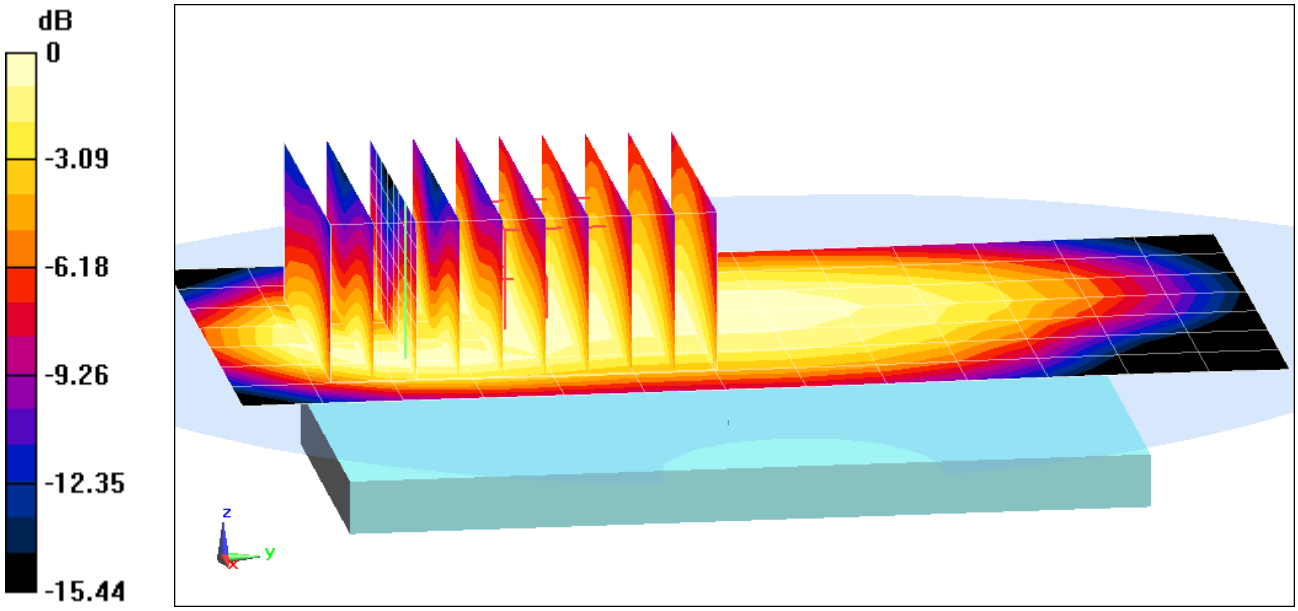
Communication System: UID 0, CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
$f = 836.52$ MHz; $\sigma = 1$ S/m; $\varepsilon_r = 55.419$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 12-26-2016; Ambient Temp: 23.3°C; Tissue Temp: 21.5°C

Probe: ES3DV3 - SN3319; ConvF(6.04, 6.04, 6.04); Calibrated: 3/18/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1368; Calibrated: 3/14/2016
Phantom: SAM with CRP (Left); Type: SAM; Serial: 1715
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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

Area Scan (8x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (9x10x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.63 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.352 W/kg
SAR(1 g) = 0.232 W/kg



0 dB = 0.262 W/kg = -5.82 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 1EED5

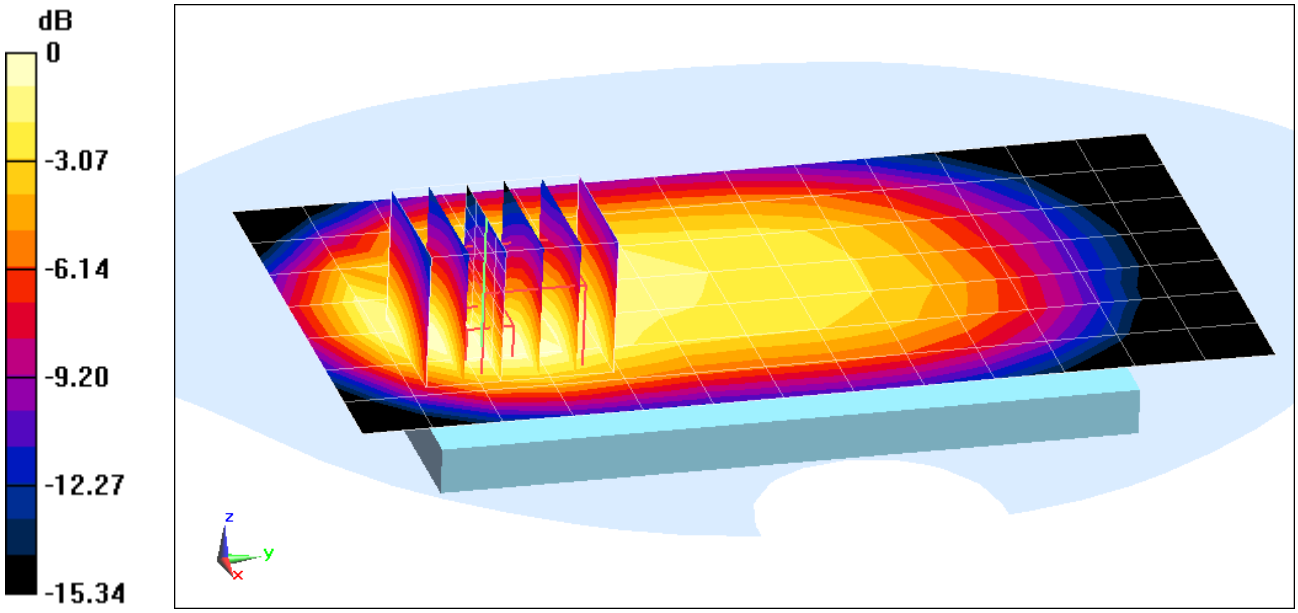
Communication System: UID 0, CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 836.52 MHz; σ = 1 S/m; ε_r = 55.419; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-26-2016; Ambient Temp: 23.3°C; Tissue Temp: 21.5°C

Probe: ES3DV3 - SN3319; ConvF(6.04, 6.04, 6.04); Calibrated: 3/18/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1368; Calibrated: 3/14/2016
Phantom: SAM with CRP (Left); Type: SAM; Serial: 1715
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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

Area Scan (8x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.44 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.767 W/kg
SAR(1 g) = 0.451 W/kg



0 dB = 0.541 W/kg = -2.67 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 1EED5

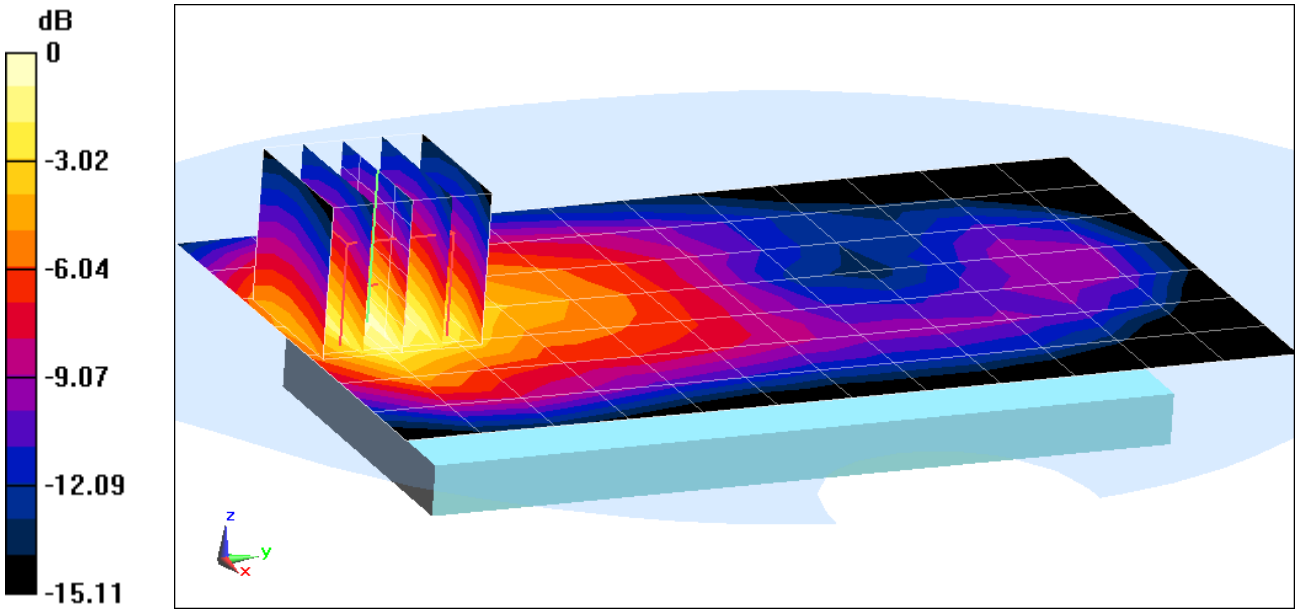
Communication System: UID 0, CDMA; Frequency: 1908.75 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
$f = 1908.75$ MHz; $\sigma = 1.574$ S/m; $\varepsilon_r = 53.236$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 12-30-2016; Ambient Temp:23.5°C; Tissue Temp: 22.2°C

Probe: EX3DV4 - SN7409; ConvF(7.47, 7.47, 7.47); Calibrated: 5/17/2016;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/11/2016
Phantom: SAM Left; Type: QD000P40CC; Serial: TP: 1375
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: PCS CDMA, Body SAR, Back side, High.ch

Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.01 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 1.26 W/kg
SAR(1 g) = 0.767 W/kg



0 dB = 1.08 W/kg = 0.33 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 077C3

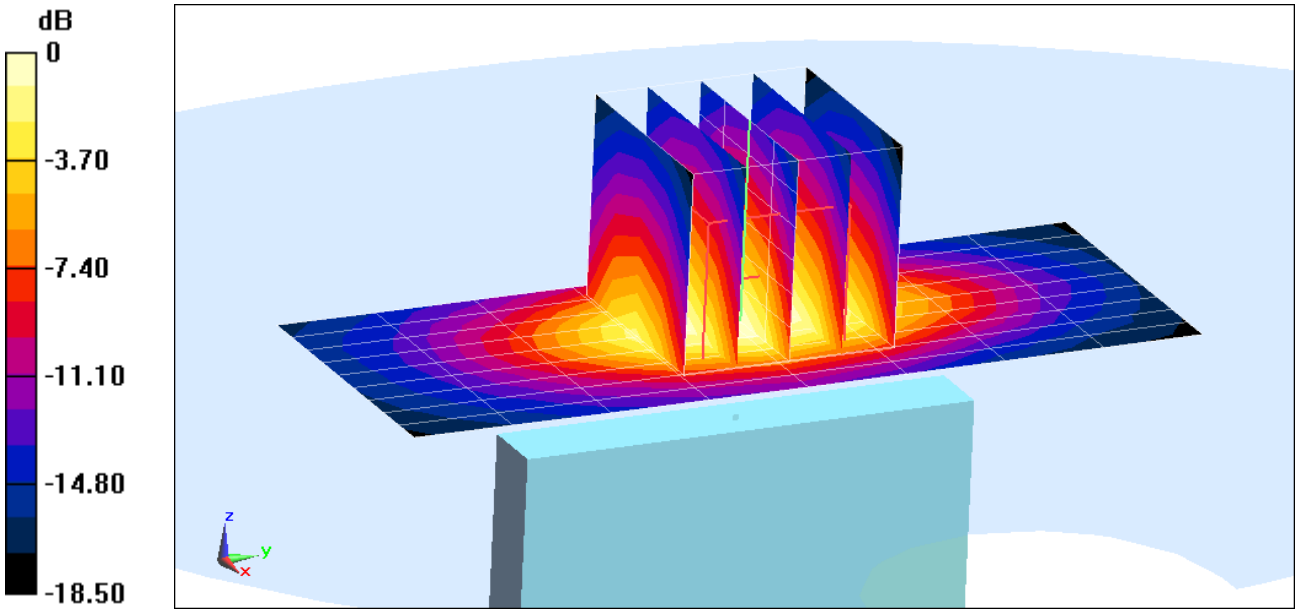
Communication System: UID 0, CDMA; Frequency: 1908.75 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
f = 1908.75 MHz; σ = 1.591 S/m; ε_r = 52.511; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-01-2017; Ambient Temp: 22.7°C; Tissue Temp: 22.1°C

Probe: EX3DV4 - SN7409; ConvF(7.47, 7.47, 7.47); Calibrated: 5/17/2016;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/11/2016
Phantom: SAM Left; Type: QD000P40CC; Serial: TP: 1375
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: PCS EVDO, Body SAR, Bottom Edge, High.ch

Area Scan (10x9x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.64 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 1.68 W/kg
SAR(1 g) = 0.931 W/kg



0 dB = 1.41 W/kg = 1.49 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 1EEA3

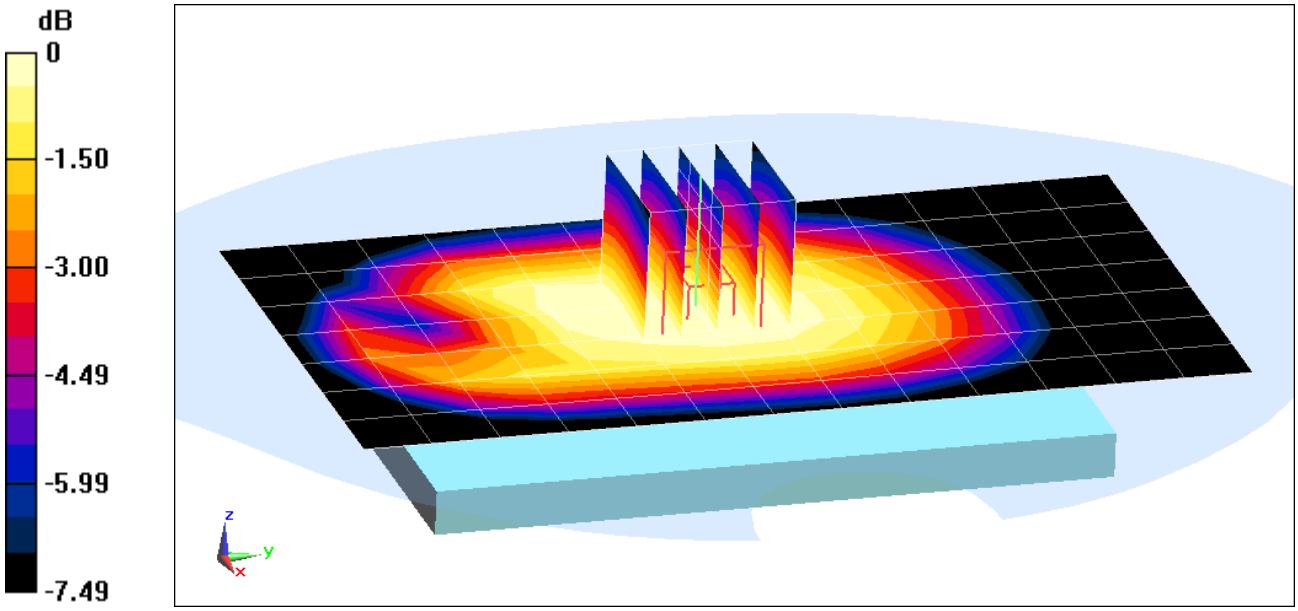
Communication System: UID 0, GSM; Frequency: 836.6 MHz; Duty Cycle: 1:8.3
Medium: 835 Body Medium parameters used (interpolated):
$f = 836.6$ MHz; $\sigma = 1$ S/m; $\varepsilon_r = 55.418$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 12-26-2016; Ambient Temp: 23.3°C; Tissue Temp: 21.5°C

Probe: ES3DV3 - SN3319; ConvF(6.04, 6.04, 6.04); Calibrated: 3/18/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1368; Calibrated: 3/14/2016
Phantom: SAM with CRP (Left); Type: SAM; Serial: 1715
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: GSM 850, Body SAR, Back side, Mid.ch

Area Scan (8x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.70 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.334 W/kg
SAR(1 g) = 0.264 W/kg



0 dB = 0.289 W/kg = -5.39 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 1EEA3

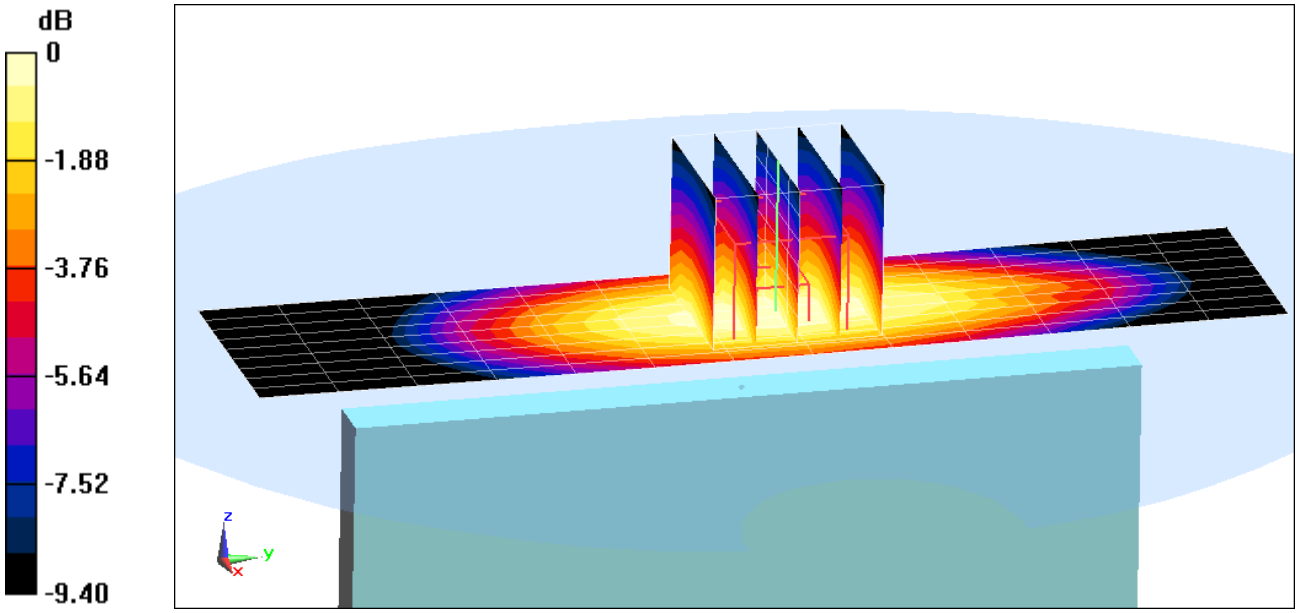
Communication System: UID 0, GSM GPRS; 3 Tx slots; Frequency: 836.6 MHz; Duty Cycle: 1:2.76
Medium: 835 Body Medium parameters used (interpolated):
$f = 836.6$ MHz; $\sigma = 1$ S/m; $\varepsilon_r = 55.418$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-26-2016; Ambient Temp: 23.3°C; Tissue Temp: 21.5°C

Probe: ES3DV3 - SN3319; ConvF(6.04, 6.04, 6.04); Calibrated: 3/18/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1368; Calibrated: 3/14/2016
Phantom: SAM with CRP (Left); Type: SAM; Serial: 1715
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: GPRS 850, Body SAR, Right Edge, Mid.ch, 3 Tx Slots

Area Scan (10x14x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.41 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.487 W/kg
SAR(1 g) = 0.342 W/kg



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

DUT: A3LSMG950U; Type: Portable Handset; Serial: 1EEA3

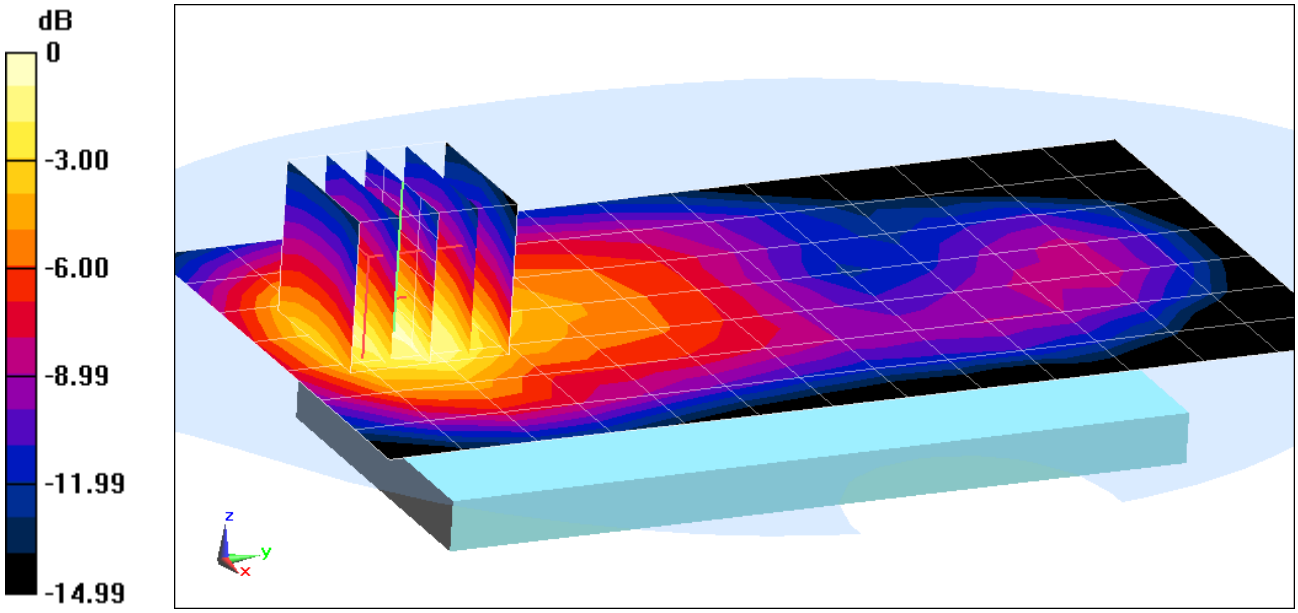
Communication System: UID 0, GSM; Frequency: 1850.2 MHz; Duty Cycle: 1:8.3
Medium: 1900 Body Medium parameters used (interpolated):
f = 1850.2 MHz; σ = 1.523 S/m; ε_r = 53.263; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 12-28-2016; Ambient Temp:23.2°C; Tissue Temp: 21.9°C

Probe: EX3DV4 - SN7409; ConvF(7.47, 7.47, 7.47); Calibrated: 5/17/2016;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/11/2016
Phantom: SAM Left; Type: QD000P40CC; Serial: TP: 1375
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: GSM 1900, Body SAR, Back side, Low.ch

Area Scan (8x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.77 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.492 W/kg
SAR(1 g) = 0.306 W/kg



0 dB = 0.427 W/kg = -3.70 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 07A6E

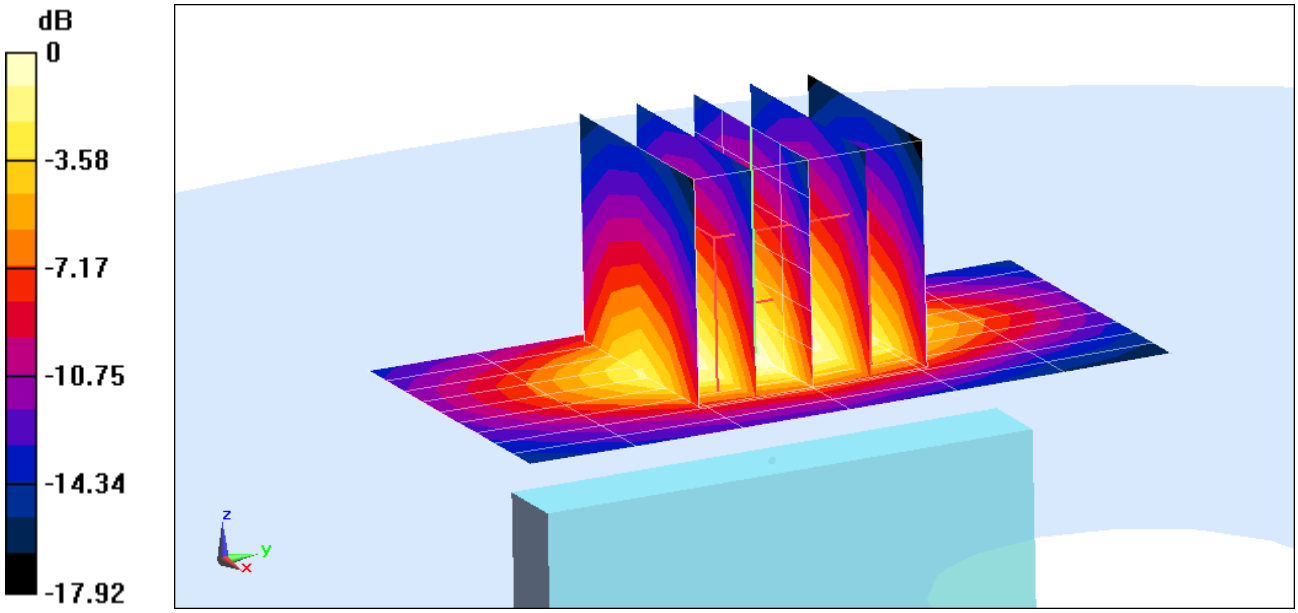
Communication System: UID 0, GSM GPRS; 3 Tx slots; Frequency: 1880 MHz; Duty Cycle: 1:2.76
Medium: 1900 Body Medium parameters used:
f = 1880 MHz; σ = 1.558 S/m; ε_r = 53.176; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-28-2016; Ambient Temp:23.2°C; Tissue Temp: 21.9°C

Probe: EX3DV4 - SN7409; ConvF(7.47, 7.47, 7.47); Calibrated: 5/17/2016;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/11/2016
Phantom: SAM Left; Type: QD000P40CC; Serial: TP: 1375
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: GPRS 1900, Body SAR, Bottom Edge, Mid.ch, 3 Tx Slots

Area Scan (10x7x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.40 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 1.05 W/kg
SAR(1 g) = 0.586 W/kg



0 dB = 0.887 W/kg = -0.52 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 1EEA3

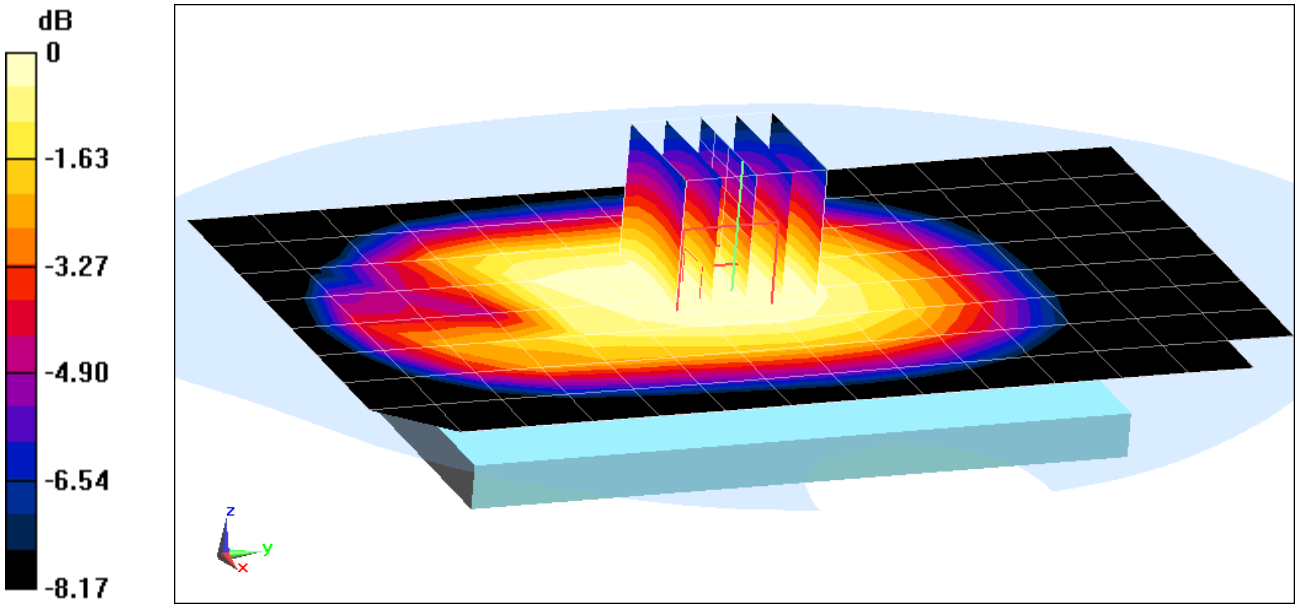
Communication System: UID 0, UMTS; Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.997 S/m; ε_r = 53.511; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 01-01-2017; Ambient Temp: 21.4°C; Tissue Temp: 20.8°C

Probe: ES3DV3 - SN3319; ConvF(6.04, 6.04, 6.04); Calibrated: 3/18/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1368; Calibrated: 3/14/2016
Phantom: SAM with CRP (Left); Type: SAM; Serial: 1715
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 = 19.07 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.431 W/kg
SAR(1 g) = 0.343 W/kg



0 dB = 0.374 W/kg = -4.27 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 1EEA3

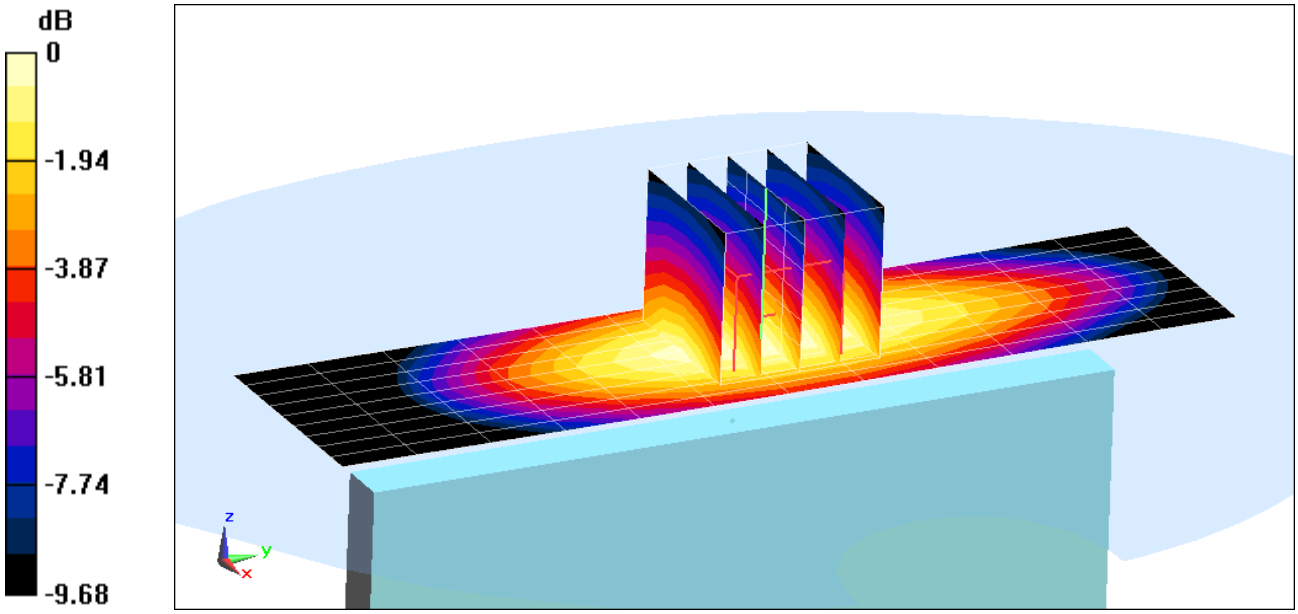
Communication System: UID 0, UMTS; Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.997 S/m; ε_r = 53.511; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-01-2017; Ambient Temp: 21.4°C; Tissue Temp: 20.8°C

Probe: ES3DV3 - SN3319; ConvF(6.04, 6.04, 6.04); Calibrated: 3/18/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1368; Calibrated: 3/14/2016
Phantom: SAM with CRP (Left); Type: SAM; Serial: 1715
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: UMTS 850, Body SAR, Right Edge, Mid.ch

Area Scan (10x13x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.72 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.681 W/kg
SAR(1 g) = 0.473 W/kg



0 dB = 0.548 W/kg = -2.61 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 07803

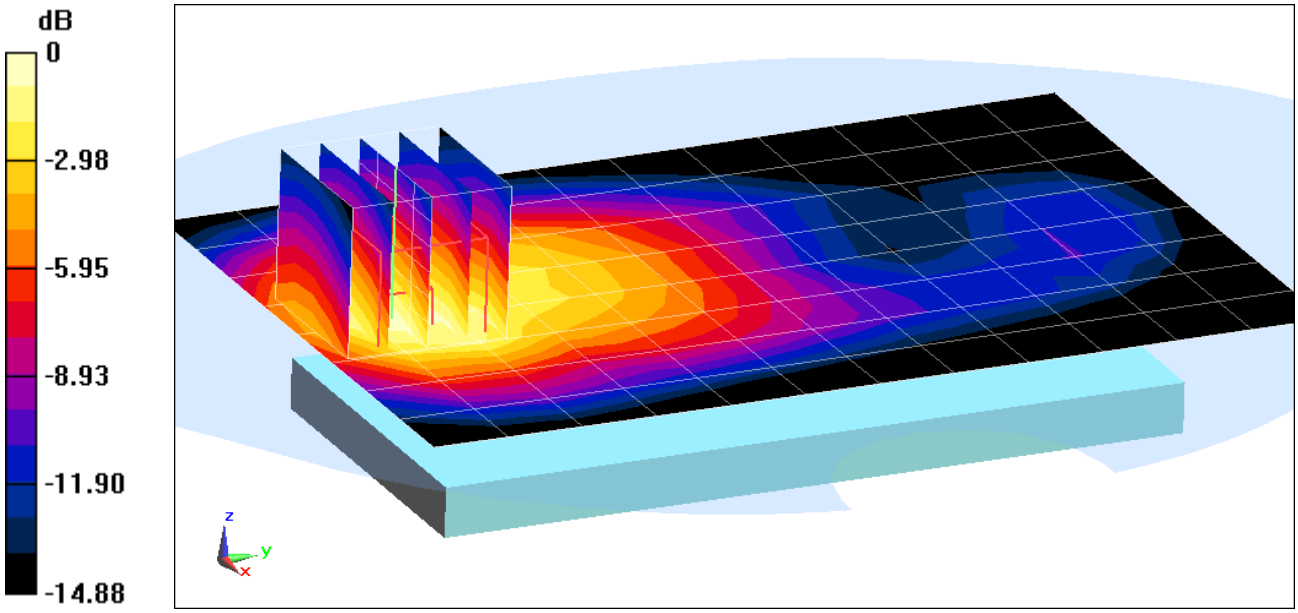
Communication System: UID 0, UMTS; Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used (interpolated):
f = 1732.4 MHz; σ = 1.52 S/m; ε_r = 52.313; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 01-01-2017; Ambient Temp: 22.7°C; Tissue Temp: 21.1°C

Probe: ES3DV3 - SN3209; ConvF(4.99, 4.99, 4.99); Calibrated: 3/18/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1364; Calibrated: 8/22/2016
Phantom: SAM Front; Type: QD000P40CD; Serial: TP:1758
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: UMTS 1750, Body SAR, Back side, Mid.ch

Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.72 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.955 W/kg
SAR(1 g) = 0.627 W/kg



0 dB = 0.751 W/kg = -1.24 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 077C3

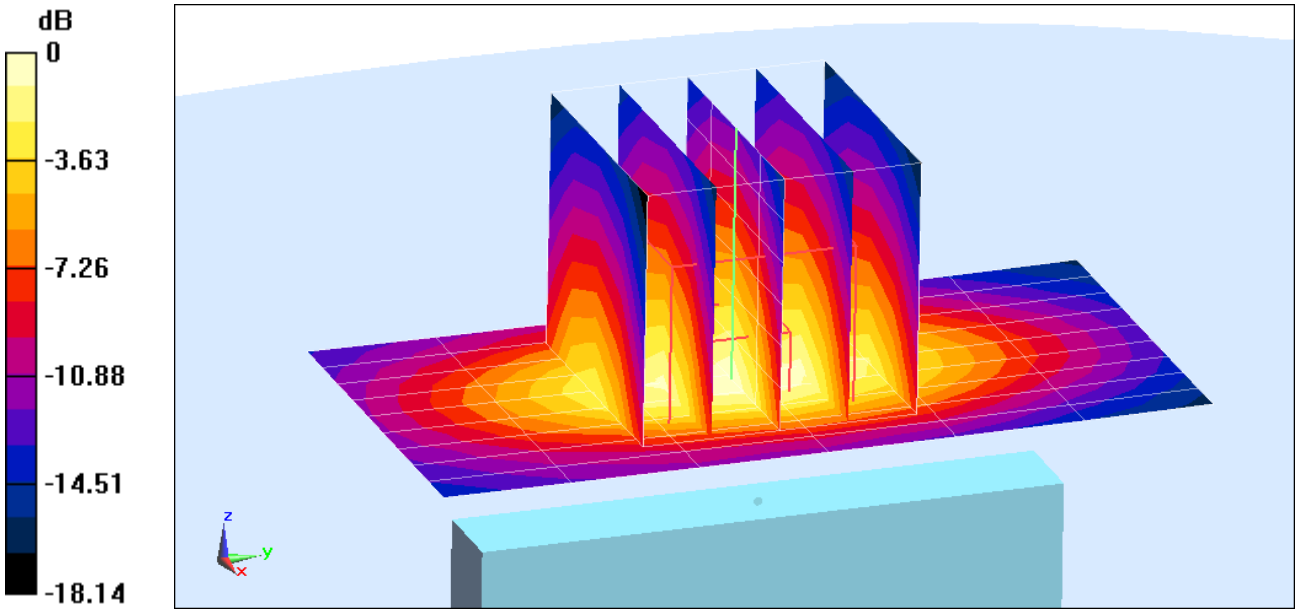
Communication System: UID 0, UMTS; Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used (interpolated):
$f = 1732.4$ MHz; $\sigma = 1.52$ S/m; $\varepsilon_r = 52.313$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-01-2017; Ambient Temp: 22.7°C; Tissue Temp: 21.1°C

Probe: ES3DV3 - SN3209; ConvF(4.99, 4.99, 4.99); Calibrated: 3/18/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1364; Calibrated: 8/22/2016
Phantom: SAM Front; Type: QD000P40CD; Serial: TP:1758
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: UMTS 1750, Body SAR, Bottom Edge, Mid.ch

Area Scan (10x7x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.94 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.942 W/kg
SAR(1 g) = 0.564 W/kg



0 dB = 0.712 W/kg = -1.48 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 1EEA3

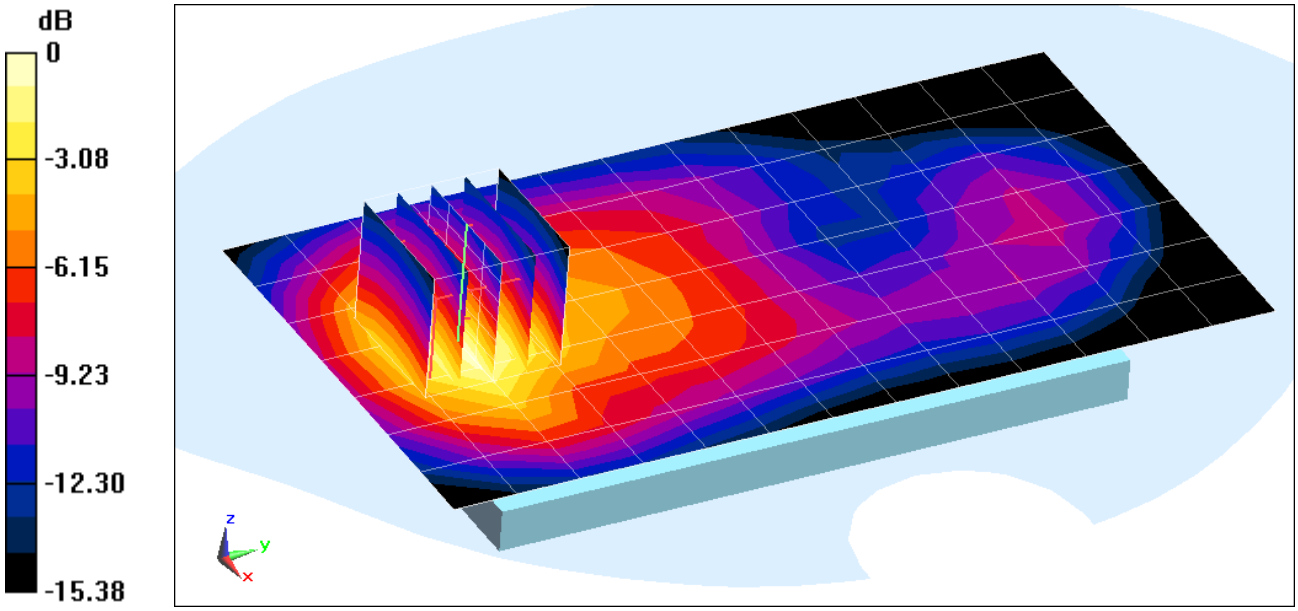
Communication System: UID 0, UMTS; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used:
f = 1880 MHz; σ = 1.553 S/m; ε_r = 52.647; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 01-01-2017; Ambient Temp: 22.7°C; Tissue Temp: 22.1°C

Probe: EX3DV4 - SN7409; ConvF(7.47, 7.47, 7.47); Calibrated: 5/17/2016;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/11/2016
Phantom: SAM Left; Type: QD000P40CC; Serial: TP: 1375
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 (8x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.75 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.01 W/kg
SAR(1 g) = 0.616 W/kg



0 dB = 0.874 W/kg = -0.58 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 07A6E

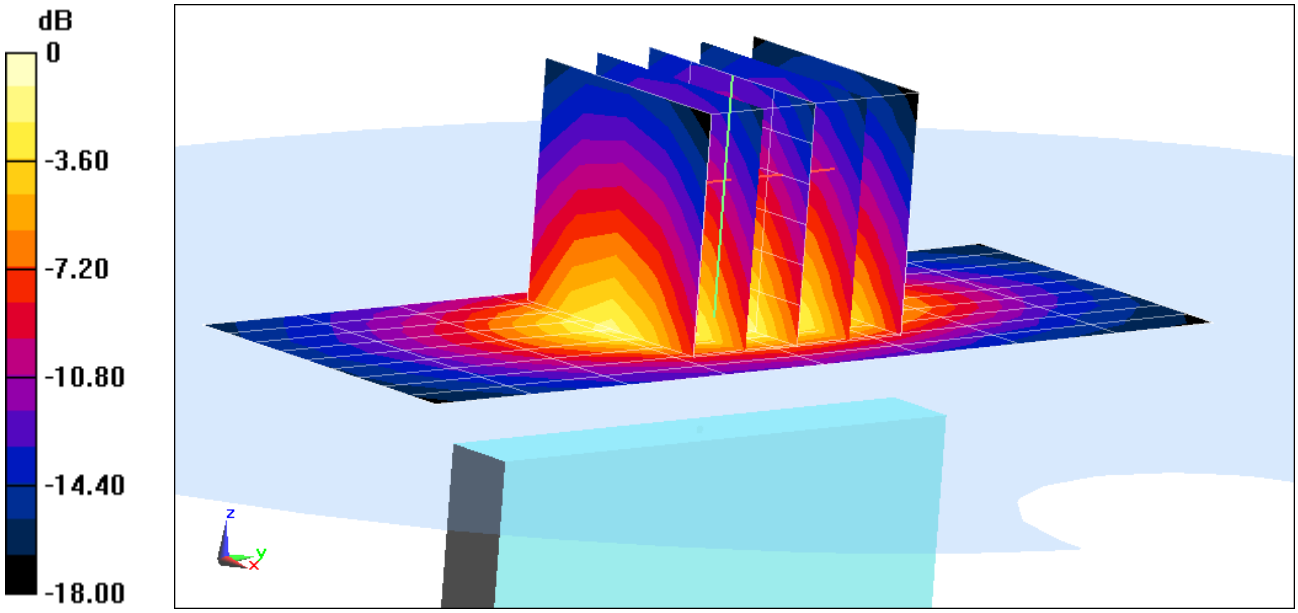
Communication System: UID 0, UMTS; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used:
f = 1880 MHz; σ = 1.553 S/m; ε_r = 52.647; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-01-2017; Ambient Temp: 22.7°C; Tissue Temp: 22.1°C

Probe: EX3DV4 - SN7409; ConvF(7.47, 7.47, 7.47); Calibrated: 5/17/2016;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/11/2016
Phantom: SAM Left; Type: QD000P40CC; Serial: TP: 1375
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: UMTS 1900, Body SAR, Bottom Edge, Mid.ch

Area Scan (10x9x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.41 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.05 W/kg
SAR(1 g) = 0.582 W/kg



0 dB = 0.886 W/kg = -0.53 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 1EE9E

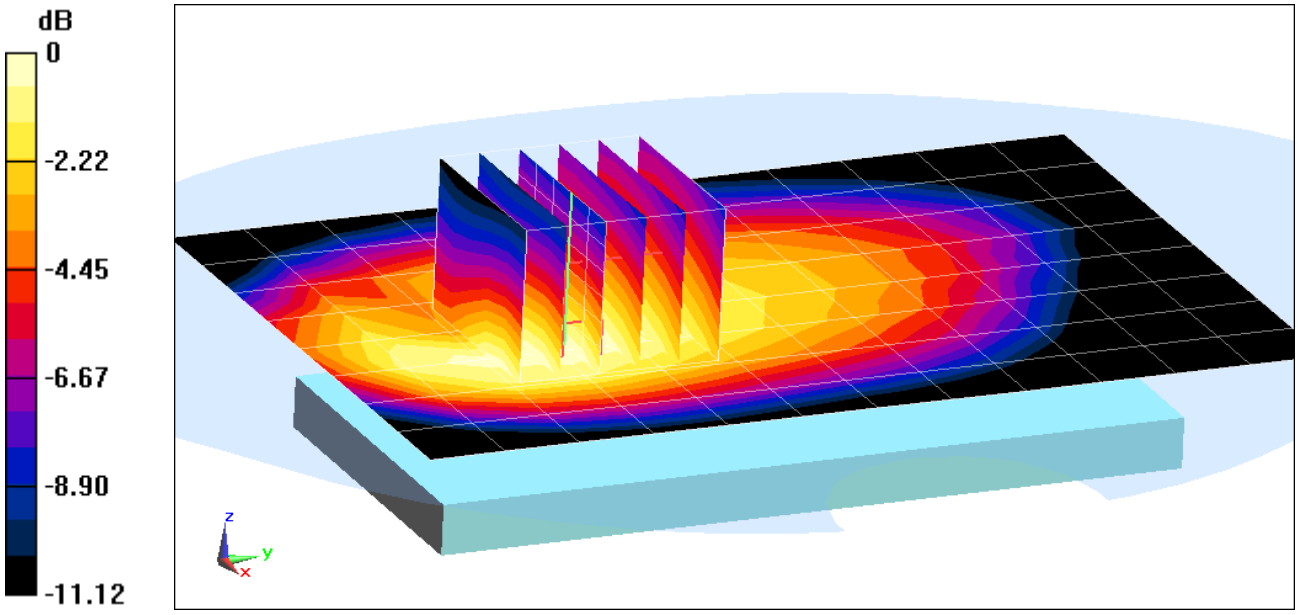
Communication System: UID 0, LTE Band 12; Frequency: 707.5 MHz; Duty Cycle: 1:1
Medium: 750 Body Medium parameters used (interpolated):
f = 707.5 MHz; σ = 0.92 S/m; ε_r = 57.654; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 12-27-2016; Ambient Temp: 20.5°C; Tissue Temp: 20.3°C

Probe: ES3DV3 - SN3318; ConvF(6.19, 6.19, 6.19); Calibrated: 2/19/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/19/2016
Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1800
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: LTE Band 12, Body SAR, Back side, Mid.ch
10 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.46 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.458 W/kg
SAR(1 g) = 0.319 W/kg



0 dB = 0.361 W/kg = -4.42 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 1EE9E

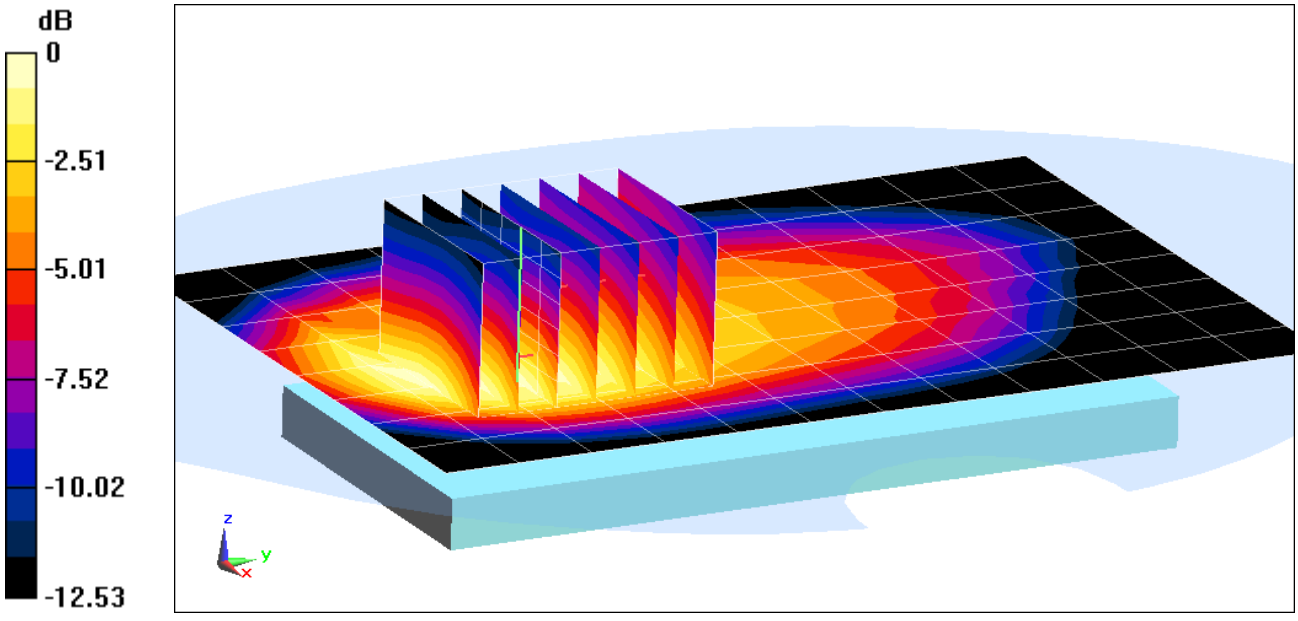
Communication System: UID 0, LTE Band 12; Frequency: 707.5 MHz; Duty Cycle: 1:1
Medium: 750 Body Medium parameters used (interpolated):
f = 707.5 MHz; σ = 0.92 S/m; ε_r = 57.654; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-27-2016; Ambient Temp: 20.5°C; Tissue Temp: 20.3°C

Probe: ES3DV3 - SN3318; ConvF(6.19, 6.19, 6.19); Calibrated: 2/19/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/19/2016
Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1800
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: LTE Band 12, Body SAR, Back side, Mid.ch
10 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.12 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.708 W/kg
SAR(1 g) = 0.441 W/kg



0 dB = 0.522 W/kg = -2.82 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 1EE9E

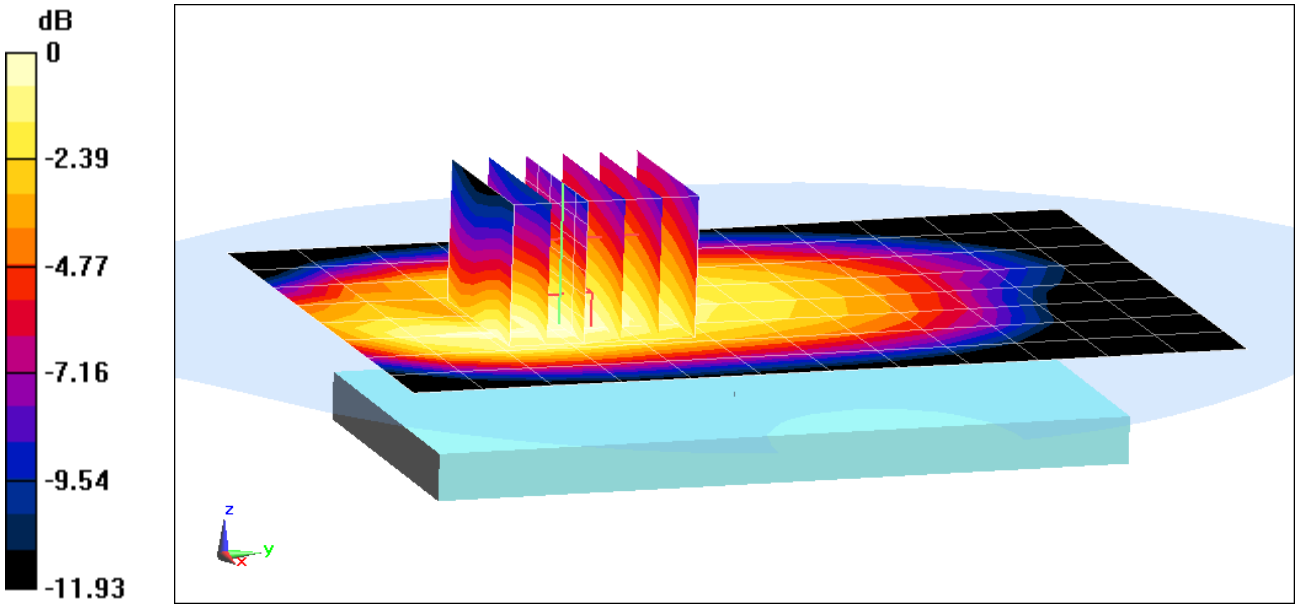
Communication System: UID 0, LTE Band 13; Frequency: 782 MHz; Duty Cycle: 1:1
Medium: 750 Body Medium parameters used (interpolated):
f = 782 MHz; σ = 0.998 S/m; ε_r = 57.121; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 12-27-2016; Ambient Temp: 20.5°C; Tissue Temp: 20.3°C

Probe: ES3DV3 - SN3318; ConvF(6.19, 6.19, 6.19); Calibrated: 2/19/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/19/2016
Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1800
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: LTE Band 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 (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.60 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.611 W/kg
SAR(1 g) = 0.430 W/kg



0 dB = 0.485 W/kg = -3.14 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 1EE9E

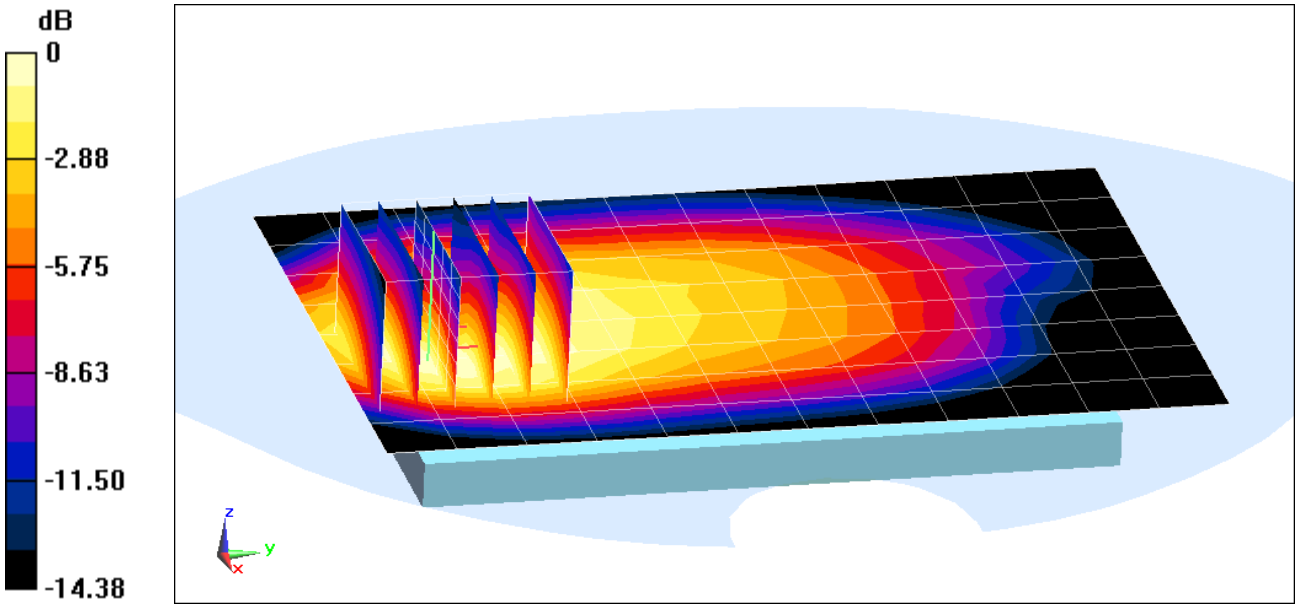
Communication System: UID 0, LTE Band 13; Frequency: 782 MHz; Duty Cycle: 1:1
Medium: 750 Body Medium parameters used (interpolated):
f = 782 MHz; σ = 0.998 S/m; ε_r = 57.121; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-27-2016; Ambient Temp: 20.5°C; Tissue Temp: 20.3°C

Probe: ES3DV3 - SN3318; ConvF(6.19, 6.19, 6.19); Calibrated: 2/19/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/19/2016
Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1800
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: LTE Band 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 (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.71 V/m; Power Drift = -0.17 dB
Peak SAR (extrapolated) = 0.986 W/kg
SAR(1 g) = 0.590 W/kg



0 dB = 0.695 W/kg = -1.58 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 1EE9E

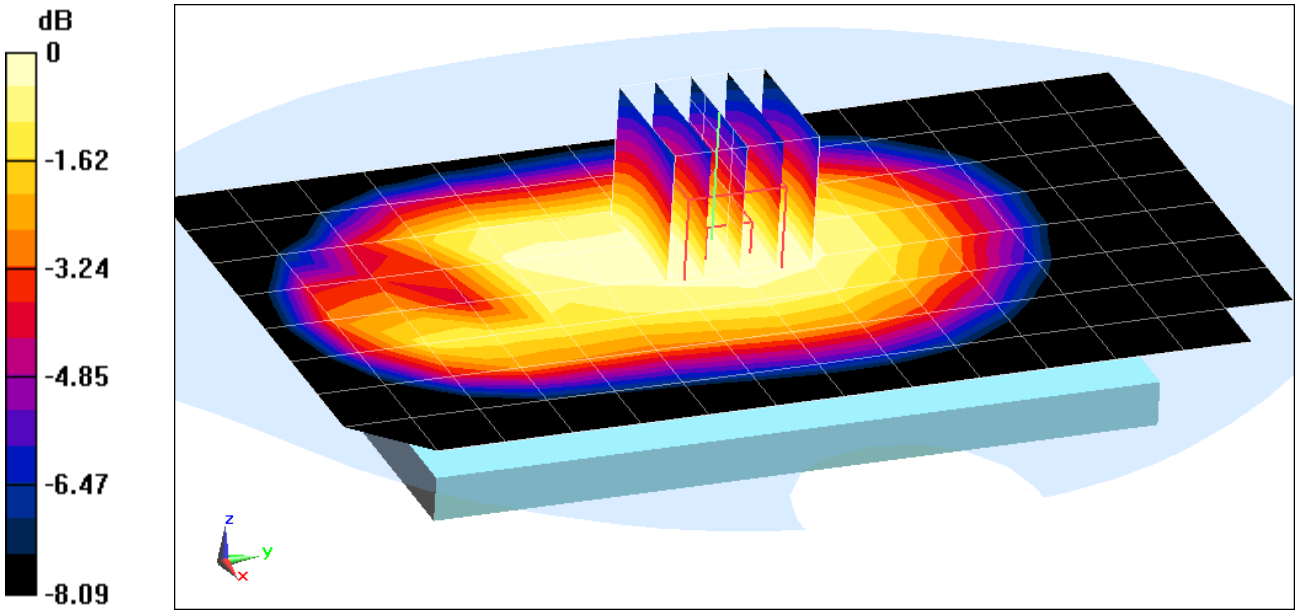
Communication System: UID 0, LTE Band 26; Frequency: 831.5 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 831.5 MHz; σ = 0.995 S/m; ε_r = 55.45; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 12-26-2016; Ambient Temp: 23.3°C; Tissue Temp: 21.5°C

Probe: ES3DV3 - SN3319; ConvF(6.04, 6.04, 6.04); Calibrated: 3/18/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1368; Calibrated: 3/14/2016
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 26 (Cell.), Body SAR, Back side, Mid.ch
15 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.52 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.365 W/kg
SAR(1 g) = 0.287 W/kg



0 dB = 0.315 W/kg = -5.02 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 1EE9E

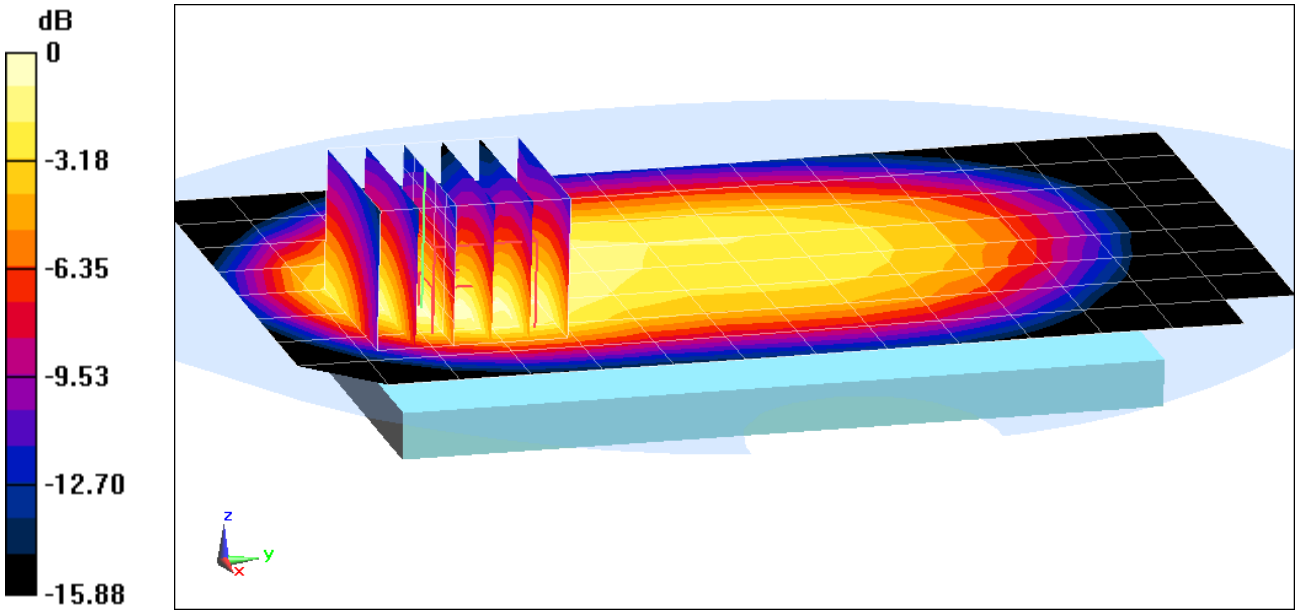
Communication System: UID 0, LTE Band 26; Frequency: 831.5 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 831.5 MHz; σ = 0.995 S/m; ε_r = 55.45; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-26-2016; Ambient Temp: 23.3°C; Tissue Temp: 21.5°C

Probe: ES3DV3 - SN3319; ConvF(6.04, 6.04, 6.04); Calibrated: 3/18/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1368; Calibrated: 3/14/2016
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 26 (Cell.), Body SAR, Back side, Mid.ch
15 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.55 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.707 W/kg
SAR(1 g) = 0.416 W/kg



0 dB = 0.504 W/kg = -2.98 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 1EE9E

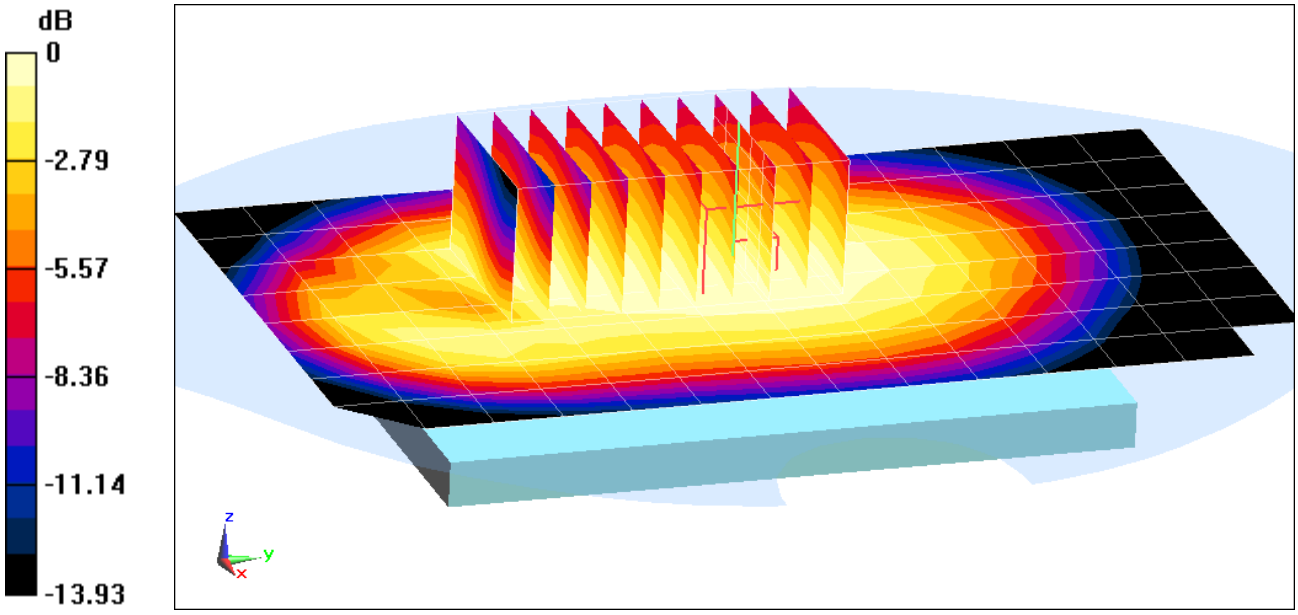
Communication System: UID 0, LTE Band 5; Frequency: 836.5 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 836.5 MHz; σ = 0.997 S/m; ε_r = 53.512; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 01-01-2017; Ambient Temp: 21.4°C; Tissue Temp: 20.8°C

Probe: ES3DV3 - SN3319; ConvF(6.04, 6.04, 6.04); Calibrated: 3/18/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1368; Calibrated: 3/14/2016
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 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 (6x10x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.55 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.336 W/kg
SAR(1 g) = 0.260 W/kg



0 dB = 0.285 W/kg = -5.45 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 1EE9E

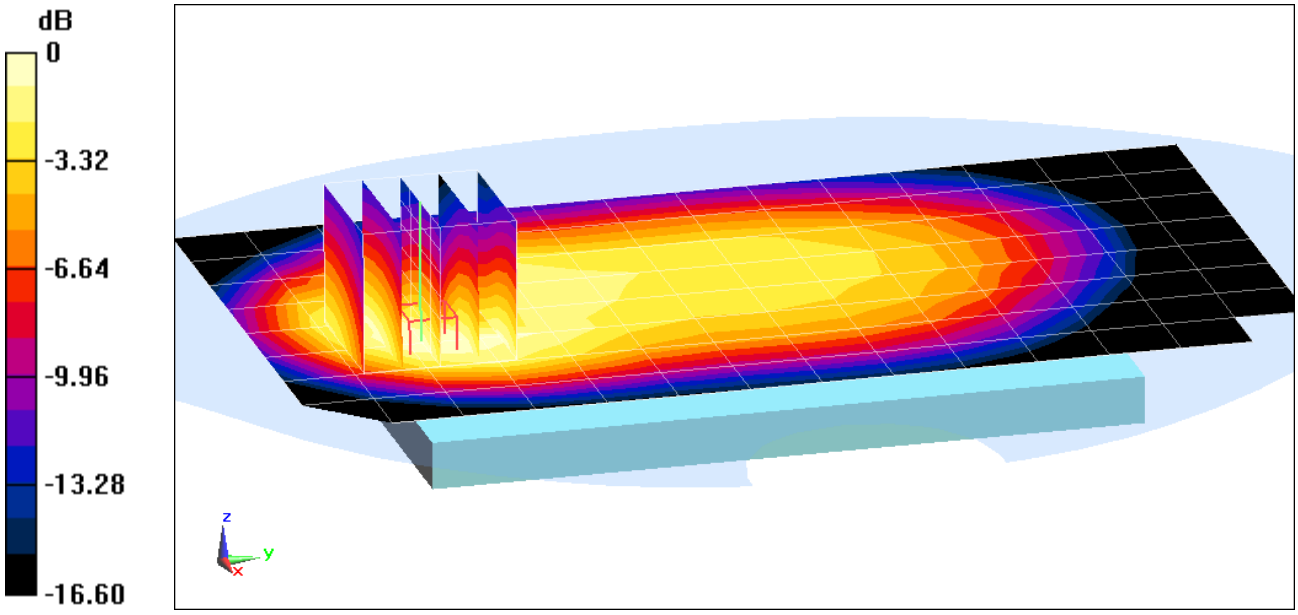
Communication System: UID 0, LTE Band 5; Frequency: 836.5 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 836.5 MHz; σ = 0.997 S/m; ε_r = 53.512; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-01-2017; Ambient Temp: 21.4°C; Tissue Temp: 20.8°C

Probe: ES3DV3 - SN3319; ConvF(6.04, 6.04, 6.04); Calibrated: 3/18/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1368; Calibrated: 3/14/2016
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 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 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.39 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.699 W/kg
SAR(1 g) = 0.408 W/kg



0 dB = 0.496 W/kg = -3.05 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 07803

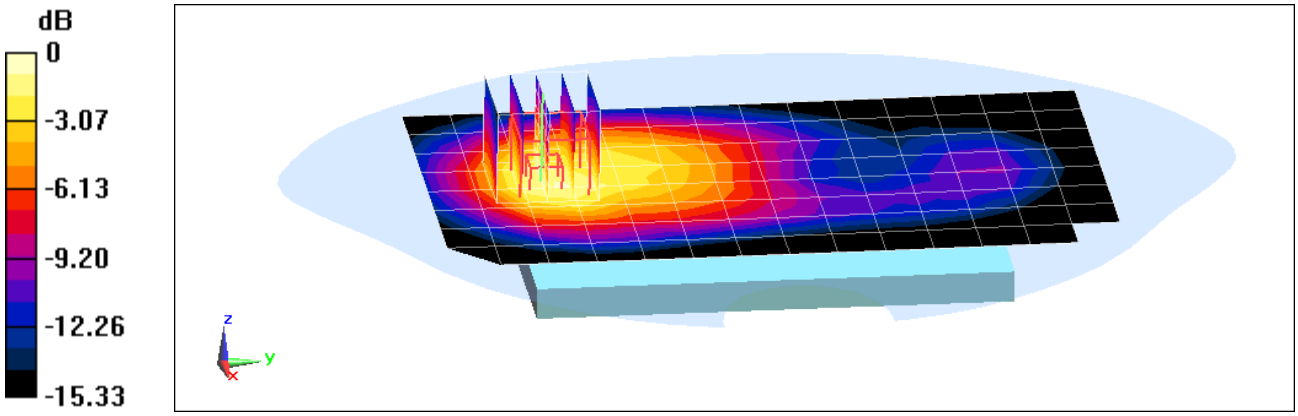
Communication System: UID 0, LTE Band 66 (AWS); Frequency: 1745 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used (interpolated):
f = 1745 MHz; σ = 1.533 S/m; ε_r = 52.27; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 01-01-2017; Ambient Temp: 22.7°C; Tissue Temp: 21.1°C

Probe: ES3DV3 - SN3209; ConvF(4.99, 4.99, 4.99); Calibrated: 3/18/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1364; Calibrated: 8/22/2016
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 66 (AWS), Body SAR, Back side, Mid.ch
20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.04 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 1.37 W/kg
SAR(1 g) = 0.904 W/kg



0 dB = 1.08 W/kg = 0.33 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 077C3

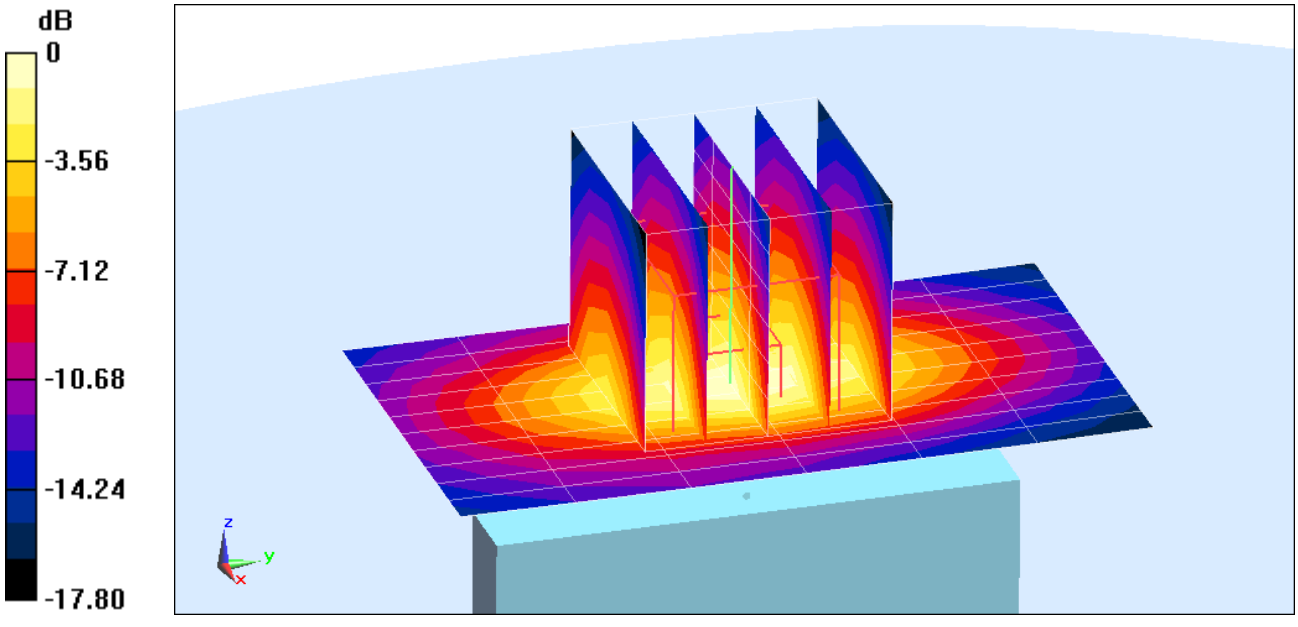
Communication System: UID 0, LTE Band 66 (AWS); Frequency: 1745 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used (interpolated):
f = 1745 MHz; σ = 1.533 S/m; ε_r = 52.27; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-01-2017; Ambient Temp: 22.7°C; Tissue Temp: 21.1°C

Probe: ES3DV3 - SN3209; ConvF(4.99, 4.99, 4.99); Calibrated: 3/18/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1364; Calibrated: 8/22/2016
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 66 (AWS), Body SAR, Bottom Edge, Mid.ch
20 MHz Bandwidth, QPSK, 50 RB, 0 RB Offset

Area Scan (11x7x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.43 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.17 W/kg
SAR(1 g) = 0.707 W/kg



0 dB = 0.887 W/kg = -0.52 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 1EECE

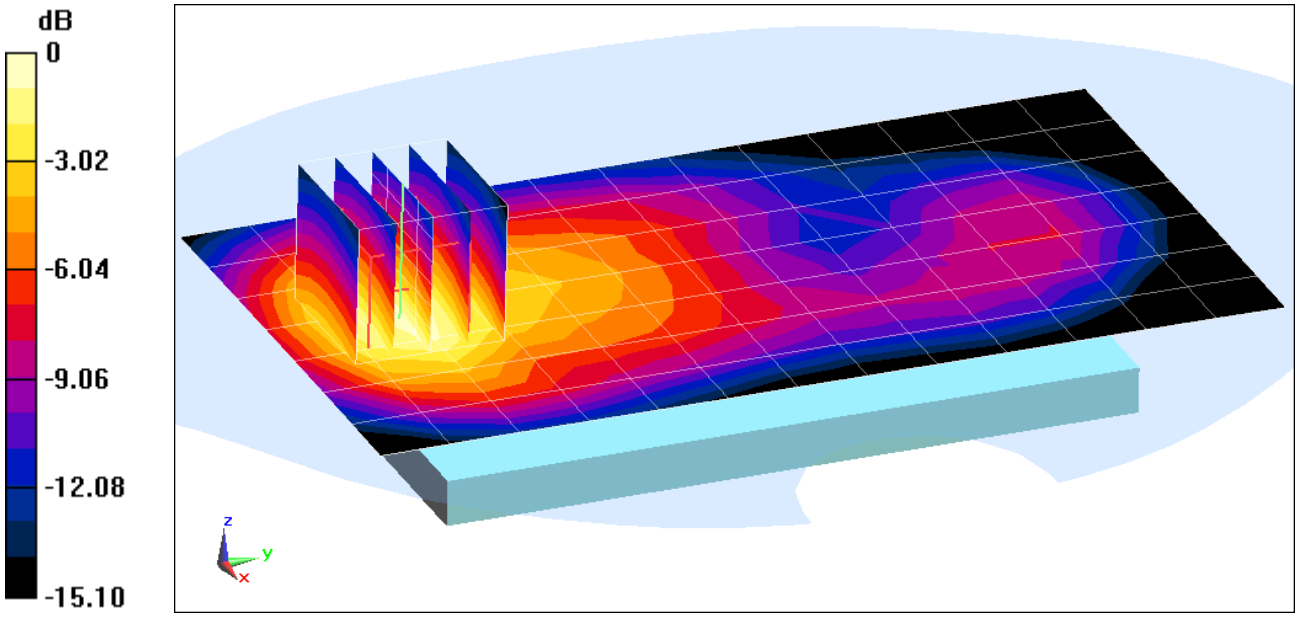
Communication System: UID 0, LTE Band 25 (PCS); Frequency: 1860 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
f = 1860 MHz; σ = 1.531 S/m; ε_r = 52.702; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 01-01-2017; Ambient Temp: 22.7°C; Tissue Temp: 22.1°C

Probe: EX3DV4 - SN7409; ConvF(7.47, 7.47, 7.47); Calibrated: 5/17/2016;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/11/2016
Phantom: SAM Left; Type: QD000P40CC; Serial: TP: 1375
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: LTE Band 25 (PCS), Body SAR, Back side, Low.ch
20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

Area Scan (8x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.17 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.925 W/kg
SAR(1 g) = 0.577 W/kg



0 dB = 0.801 W/kg = -0.96 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 1EEC6

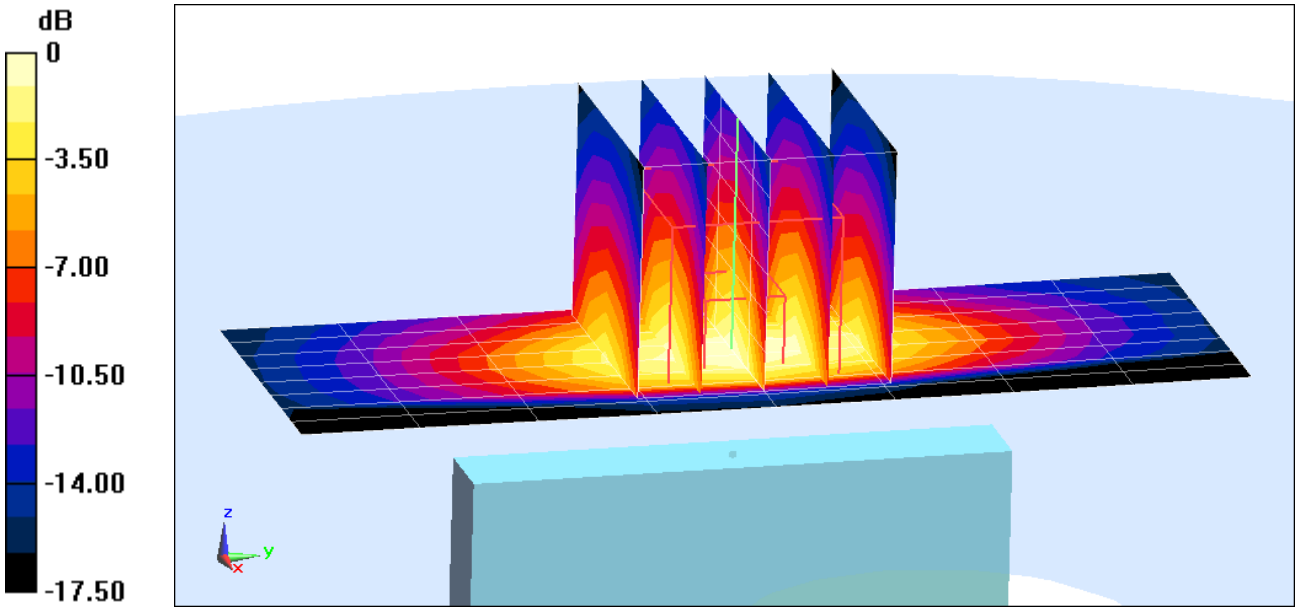
Communication System: UID 0, LTE Band 25 (PCS); Frequency: 1882.5 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
f = 1882.5 MHz; σ = 1.556 S/m; ε_r = 52.635; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-01-2017; Ambient Temp: 22.7°C; Tissue Temp: 22.1°C

Probe: EX3DV4 - SN7409; ConvF(7.47, 7.47, 7.47); Calibrated: 5/17/2016;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/11/2016
Phantom: SAM Left; Type: QD000P40CC; Serial: TP: 1375
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: LTE Band 25 (PCS), Body SAR, Bottom Edge, Mid.ch
20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

Area Scan (9x9x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.61 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 1.26 W/kg
SAR(1 g) = 0.709 W/kg



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

DUT: A3LSMG950U; Type: Portable Handset; Serial: 1EED0

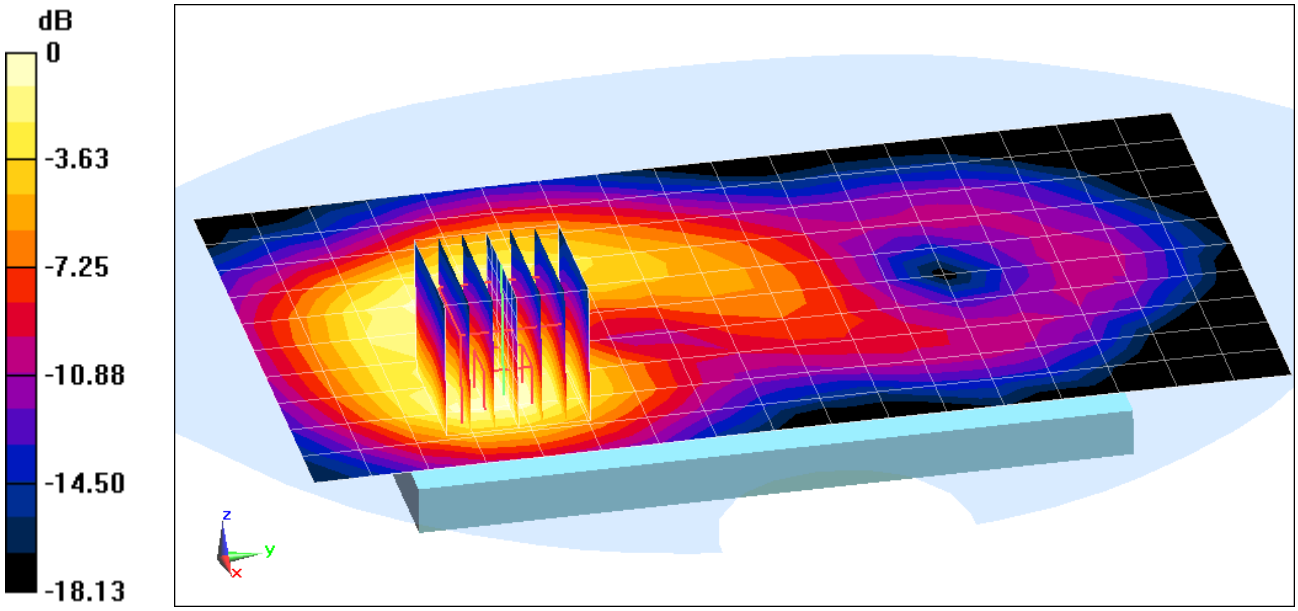
Communication System: UID 0, LTE Band 30; Frequency: 2310 MHz; Duty Cycle: 1:1
Medium: 2450 Body Medium parameters used:
f = 2310 MHz; σ = 1.854 S/m; ε_r = 51.453; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 01-09-2017; Ambient Temp: 22.5°C; Tissue Temp: 21.6°C

Probe: EX3DV4 - SN7406; ConvF(7.37, 7.37, 7.37); Calibrated: 4/19/2016;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/14/2016
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 30, Body SAR, Back side, Mid.ch
10 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 = 12.15 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 0.474 W/kg
SAR(1 g) = 0.248 W/kg



0 dB = 0.388 W/kg = -4.11 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 1EED1

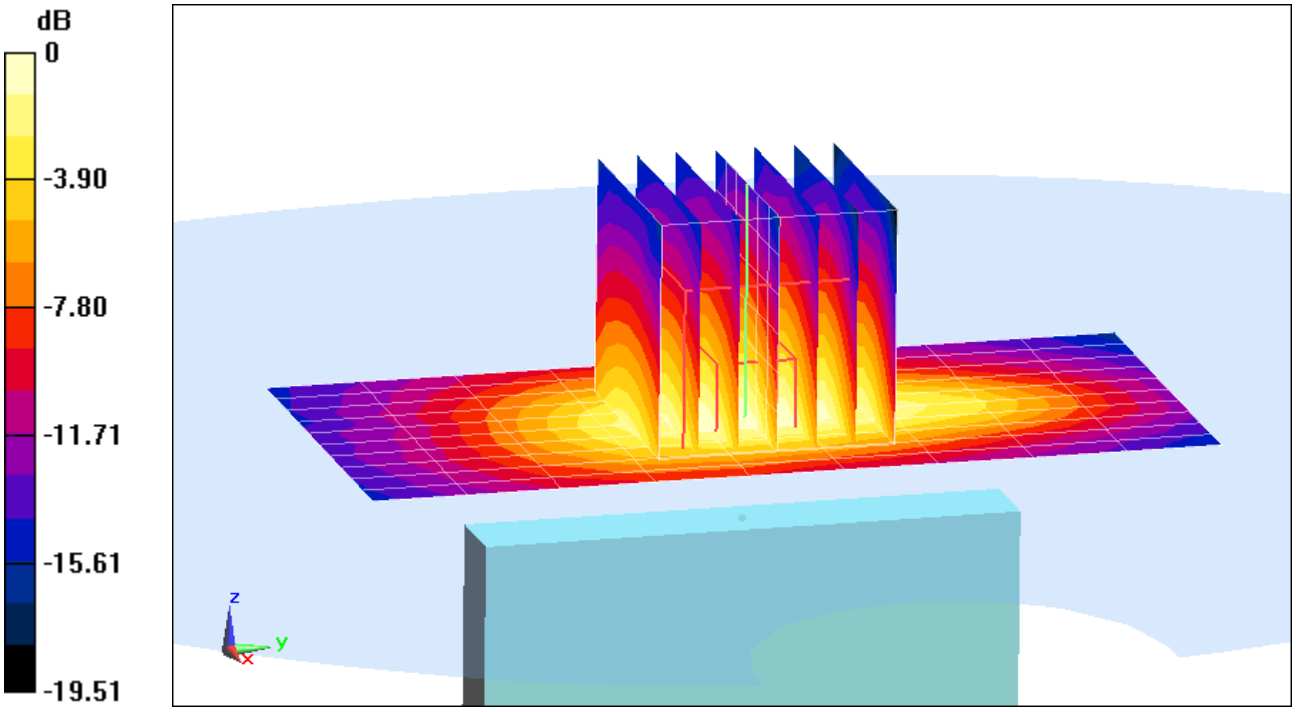
Communication System: UID 0, LTE Band 30; Frequency: 2310 MHz; Duty Cycle: 1:1
Medium: 2450 Body Medium parameters used:
f = 2310 MHz; σ = 1.783 S/m; ε_r = 51.891; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-24-2017; Ambient Temp: 24.0°C; Tissue Temp: 23.0°C

Probe: EX3DV4 - SN7406; ConvF(7.37, 7.37, 7.37); Calibrated: 4/19/2016;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/14/2016
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 30, Body SAR, Bottom Edge, Mid.ch
10 MHz Bandwidth, QPSK, 25 RB, 0 RB Offset

Area Scan (11x10x1): Measurement grid: dx=5mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.65 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.328 W/kg
SAR(1 g) = 0.179 W/kg



0 dB = 0.273 W/kg = -5.64 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 1EE9F

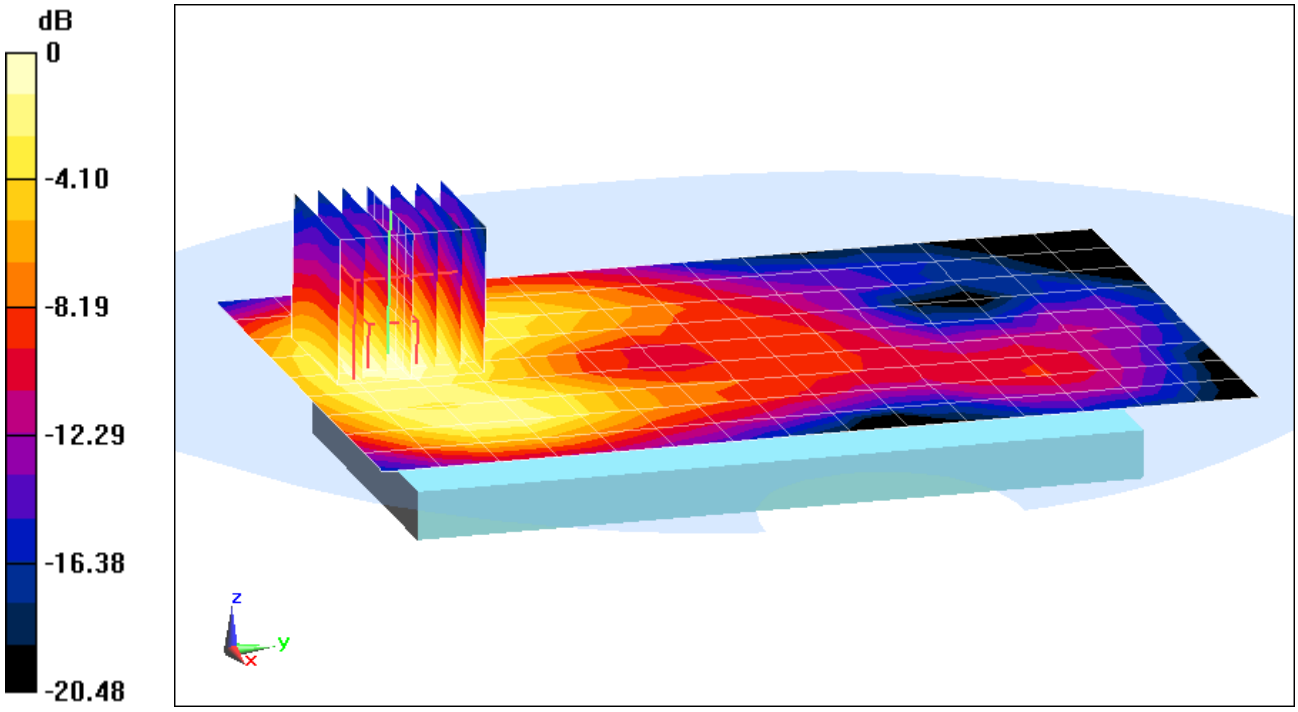
Communication System: UID 0, LTE Band 41 (Class 2); Frequency: 2636.5 MHz; Duty Cycle: 1:2.31
Medium: 2450 Body Medium parameters used (interpolated):
$f = 2636.5$ MHz; $\sigma = 2.299$ S/m; $\varepsilon_r = 50.275$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 01-09-2017; Ambient Temp: 22.5°C; Tissue Temp: 21.6°C

Probe: EX3DV4 - SN7406; ConvF(6.94, 6.94, 6.94); Calibrated: 4/19/2016;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/14/2016
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 41, Power Class 2, Body SAR, Back side, Mid-High.ch
20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

Area Scan (10x16x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.87 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.476 W/kg
SAR(1 g) = 0.253 W/kg



0 dB = 0.388 W/kg = -4.11 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 1EE9F

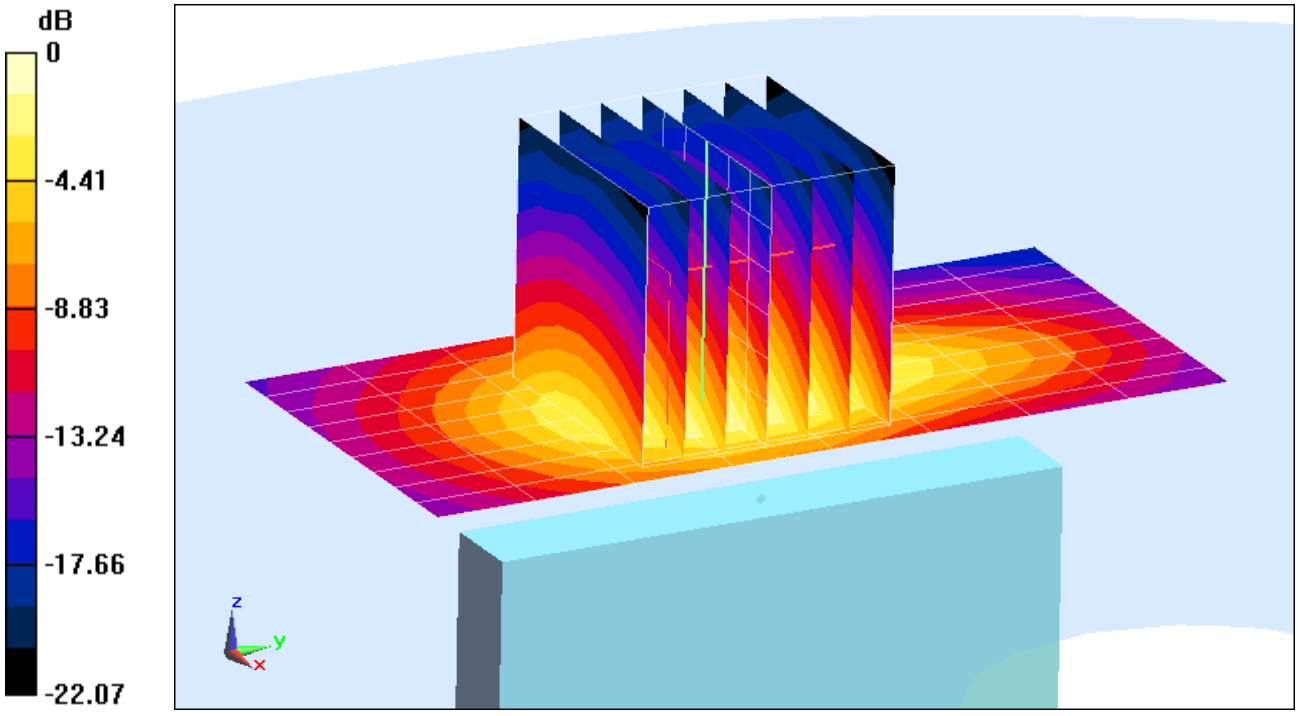
Communication System: UID 0, LTE Band 41 (Class 3); Frequency: 2636.5 MHz; Duty Cycle: 1:1.58
Medium: 2450 Body Medium parameters used (interpolated):
$f = 2636.5$ MHz; $\sigma = 2.258$ S/m; $\varepsilon_r = 50.16$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-04-2017; Ambient Temp: 24.3°C; Tissue Temp: 22.6°C

Probe: EX3DV4 - SN7406; ConvF(6.94, 6.94, 6.94); Calibrated: 4/19/2016;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/14/2016
Phantom: SAM V5.0 Right; Type: QD000P40CD; Serial: 1647
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: LTE Band 41, Power Class 3, Body SAR, Bottom Edge, Mid-High.ch
20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset

Area Scan (10x9x1): Measurement grid: dx=5mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 18.08 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 1.53 W/kg
SAR(1 g) = 0.728 W/kg



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

DUT: A3LSMG950U; Type: Portable Handset; Serial: 27217

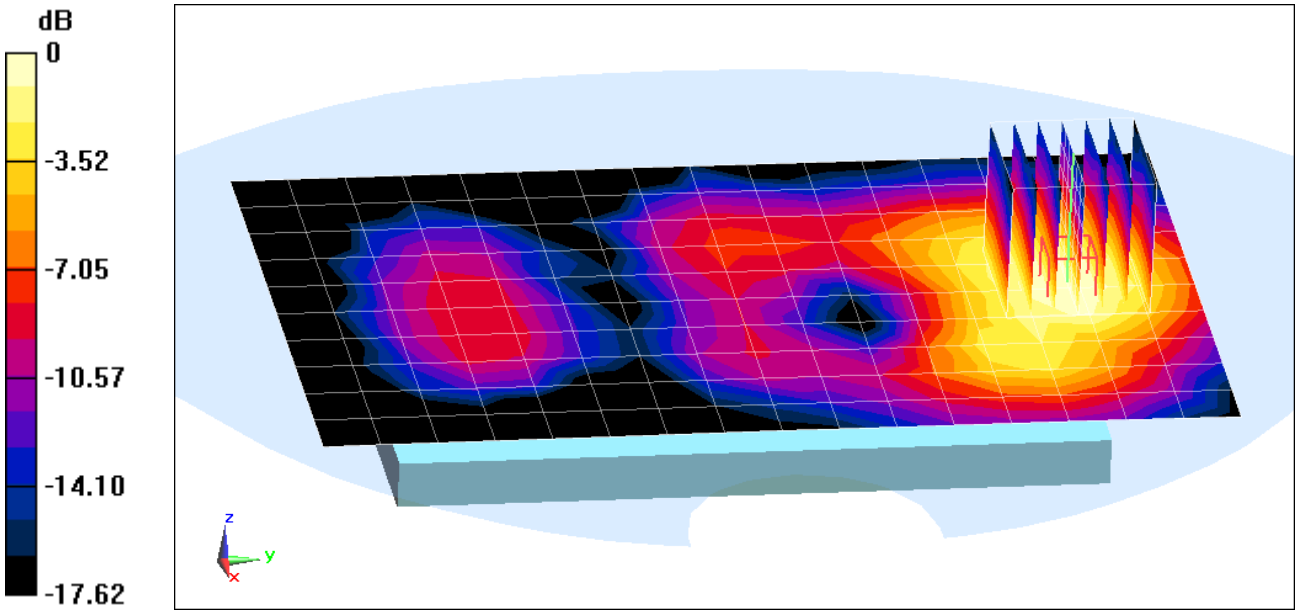
Communication System: UID 0, IEEE 802.11b; Frequency: 2462 MHz; Duty Cycle: 1:1
Medium: 2450 Body Medium parameters used (interpolated):
f = 2462 MHz; σ = 2.049 S/m; ε_r = 50.954; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 01-09-2017; Ambient Temp: 22.5°C; Tissue Temp: 21.6°C

Probe: EX3DV4 - SN7406; ConvF(7.24, 7.24, 7.24); Calibrated: 4/19/2016;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/14/2016
Phantom: SAM 5.0 front; Type: QD000P40CD; Serial: TP:-1648
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: IEEE 802.11b, 22 MHz Bandwidth, Body SAR,
Antenna 1, Ch 11, 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 = 2.927 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 0.193 W/kg
SAR(1 g) = 0.107 W/kg



0 dB = 0.158 W/kg = -8.01 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 27217

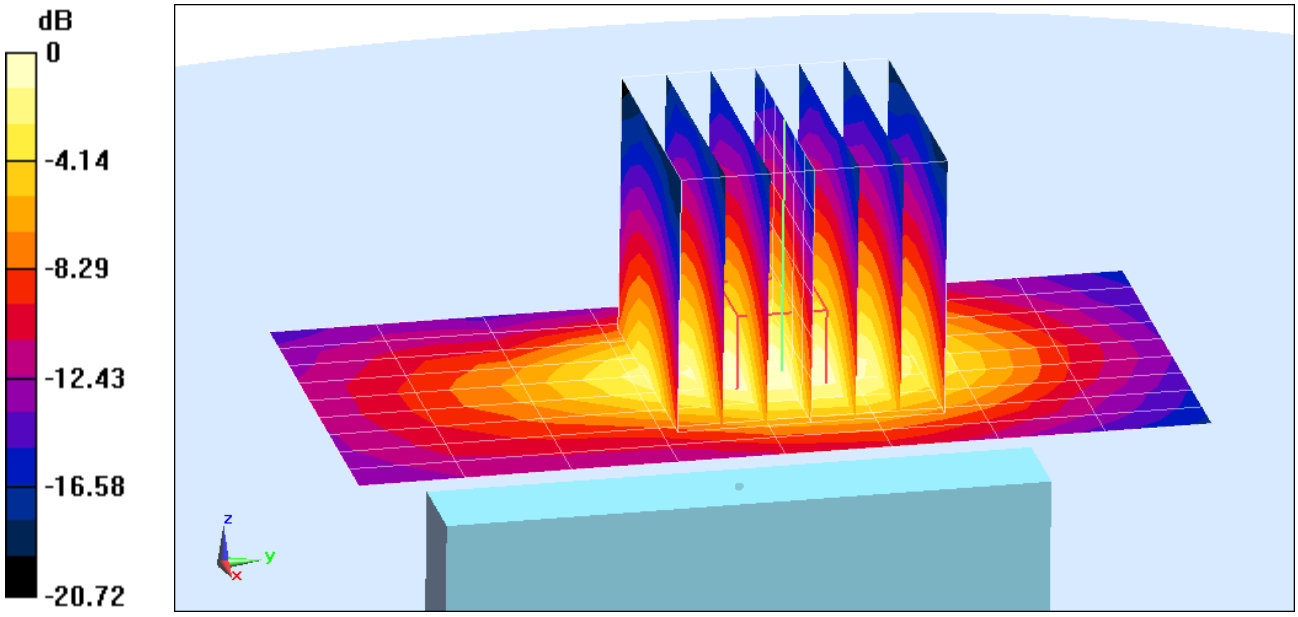
Communication System: UID 0, IEEE 802.11b; Frequency: 2462 MHz; Duty Cycle: 1:1
Medium: 2450 Body Medium parameters used (interpolated):
f = 2462 MHz; σ = 2.049 S/m; ε_r = 50.954; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-09-2017; Ambient Temp: 22.5°C; Tissue Temp: 21.6°C

Probe: EX3DV4 - SN7406; ConvF(7.24, 7.24, 7.24); Calibrated: 4/19/2016;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/14/2016
Phantom: SAM 5.0 front; Type: QD000P40CD; Serial: TP:-1648
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: IEEE 802.11b, 22 MHz Bandwidth, Body SAR,
Antenna 1, Ch 11, 1 Mbps, Top Edge

Area Scan (10x9x1): Measurement grid: dx=5mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.96 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.534 W/kg
SAR(1 g) = 0.272 W/kg



0 dB = 0.436 W/kg = -3.61 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 27217

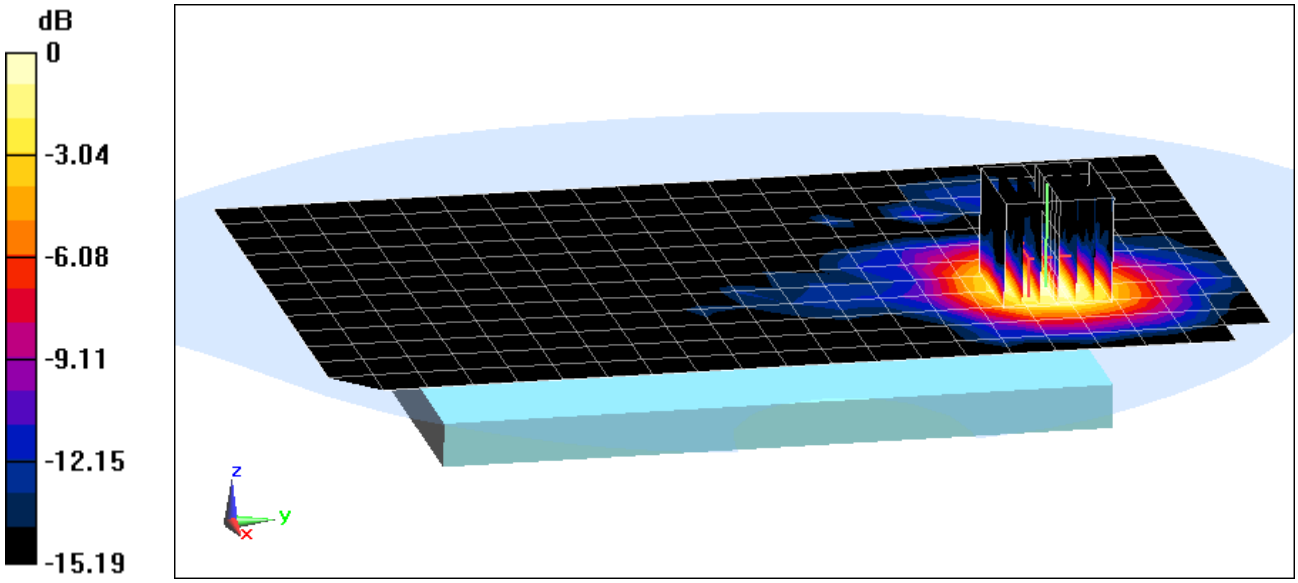
Communication System: UID 0, 802.11a 5.2-5.8 GHz Band; Frequency: 5785 MHz; Duty Cycle: 1:1
Medium: 5 GHz Body Medium parameters used:
f = 5785 MHz; σ = 6.163 S/m; ε_r = 47.808; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 01-02-2017; Ambient Temp: 21.6°C; Tissue Temp: 21.1°C

Probe: EX3DV4 - SN3914; ConvF(3.86, 3.86, 3.86); Calibrated: 2/22/2016;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/18/2016
Phantom: SAM with CRP v5.0 Front; Type: QD000P40CD; Serial: 1646
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: IEEE 802.11a, UNII-3, 20 MHz Bandwidth, Antenna 2,
Body SAR, Ch 157, 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 = 6.342 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.697 W/kg
SAR(1 g) = 0.211 W/kg



0 dB = 0.467 W/kg = -3.31 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 27217

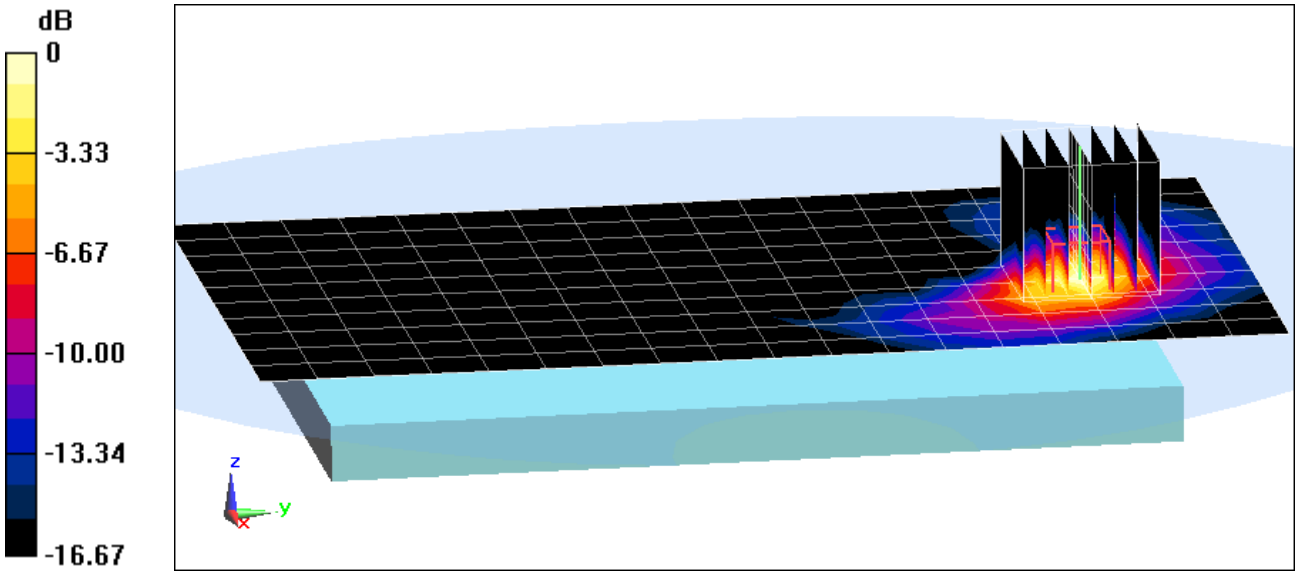
Communication System: UID 0, 802.11a 5.2-5.8 GHz Band; Frequency: 5745 MHz; Duty Cycle: 1:1
Medium: 5 GHz Body Medium parameters used:
f = 5745 MHz; σ = 6.127 S/m; ε_r = 47.855; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-02-2017; Ambient Temp: 21.6°C; Tissue Temp: 21.1°C

Probe: EX3DV4 - SN3914; ConvF(3.86, 3.86, 3.86); Calibrated: 2/22/2016;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/18/2016
Phantom: SAM with CRP v5.0 Front; Type: QD000P40CD; Serial: 1646
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: IEEE 802.11a, UNII-3, 20 MHz Bandwidth, Antenna 1, Body SAR, Ch 149, 6 Mbps, Back Side

Area Scan (11x19x1): 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 = 9.196 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.46 W/kg
SAR(1 g) = 0.376 W/kg



0 dB = 0.933 W/kg = -0.30 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: 27217

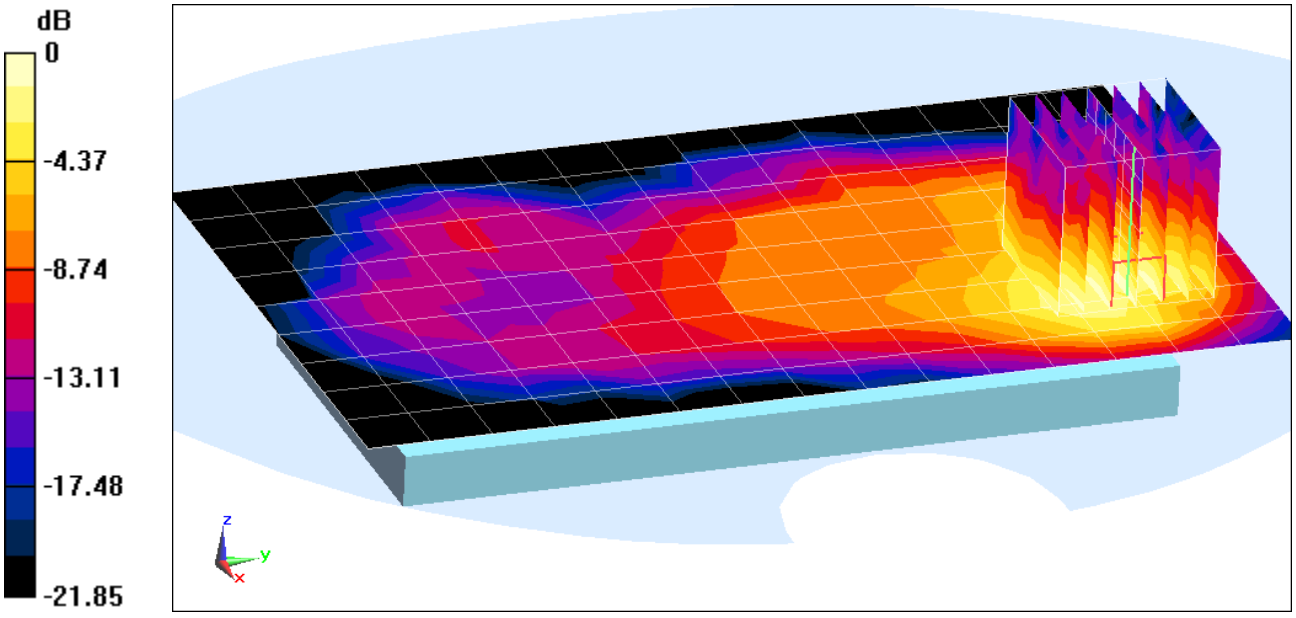
Communication System: UID 0, Bluetooth; Frequency: 2480 MHz; Duty Cycle: 1:1.302
Medium: 2450 Body Medium parameters used (interpolated):
$f = 2480$ MHz; $\sigma = 2.077$ S/m; $\varepsilon_r = 50.897$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 01-09-2017; Ambient Temp: 22.5°C; Tissue Temp: 21.6°C

Probe: EX3DV4 - SN7406; ConvF(7.24, 7.24, 7.24); Calibrated: 4/19/2016;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/14/2016
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: Bluetooth, Body SAR, Ch 78, 1 Mbps, Back Side

Area Scan (10x16x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.541 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.0670 W/kg
SAR(1 g) = 0.034 W/kg



0 dB = 0.160 W/kg = -7.96 dBW/kg

DUT: A3LSMG950U; Type: Portable Handset; Serial: F7863

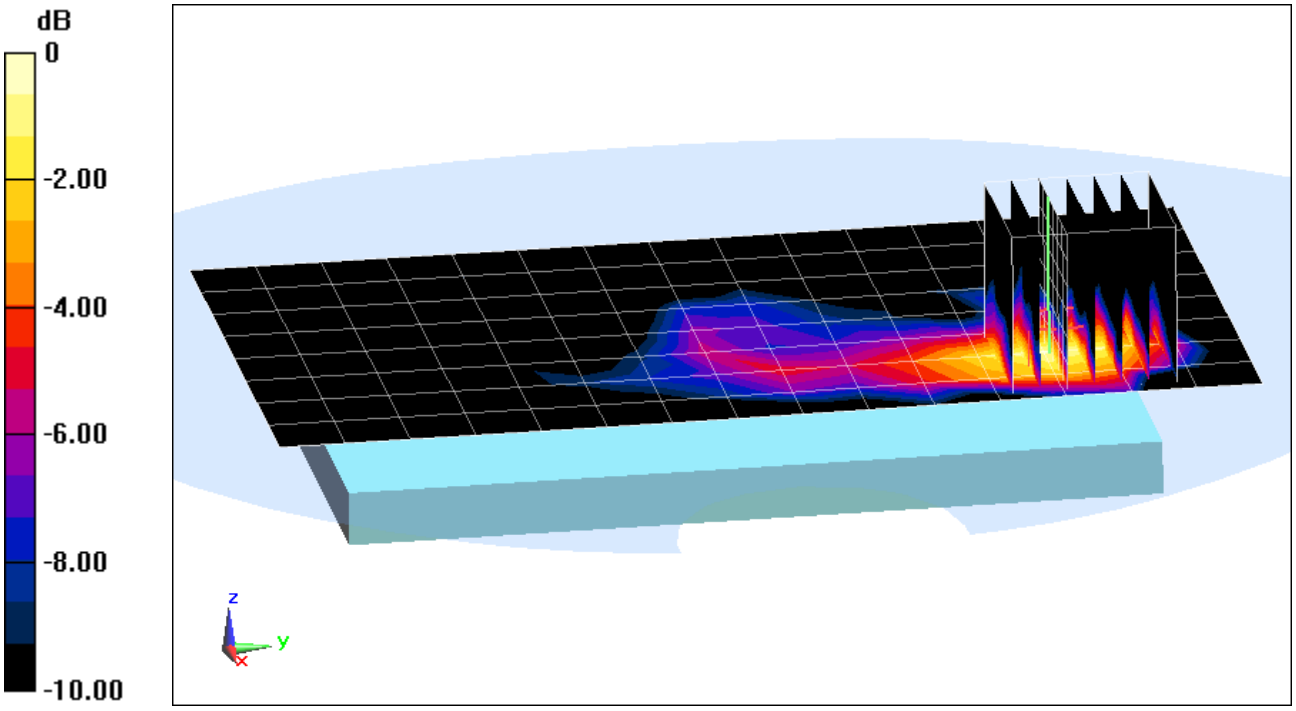
Communication System: UID 0, Bluetooth; Frequency: 2480 MHz; Duty Cycle: 1:1.302
Medium: 2450 Body Medium parameters used (interpolated):
f = 2480 MHz; σ = 2.057 S/m; ε_r = 51.748; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-24-2017; Ambient Temp: 22.4°C; Tissue Temp: 22.7°C

Probe: ES3DV3 - SN3319; ConvF(4.2, 4.2, 4.2); Calibrated: 3/18/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1368; Calibrated: 3/14/2016
Phantom: SAM with CRP (Left); Type: SAM; Serial: 1715
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Mode: Bluetooth, Body SAR, Ch 78, 2 Mbps, Back Side

Area Scan (9x16x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.163 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 0.0210 W/kg
SAR(1 g) = 0.00886 W/kg



0 dB = 0.0129 W/kg = -18.89 dBW/kg

APPENDIX B: SYSTEM VERIFICATION

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 750 MHz; Type: D750V3; Serial: 1161

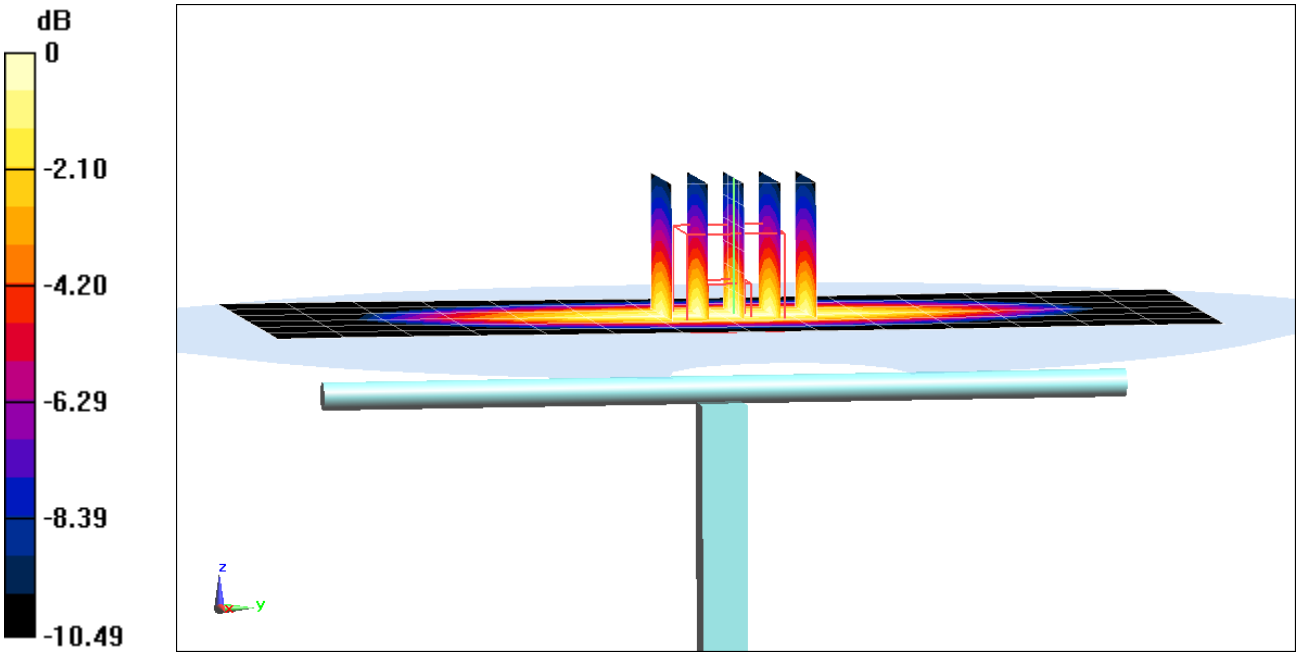
Communication System: UID 0, CW; Frequency: 750 MHz; Duty Cycle: 1:1
Medium: 750 Head, Medium parameters used (interpolated):
f = 750 MHz; σ = 0.904 S/m; ε_r = 42.28; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 01-03-2017; Ambient Temp: 21.1°C; Tissue Temp: 21.3°C

Probe: ES3DV3 - SN3318; ConvF(6.48, 6.48, 6.48); Calibrated: 2/19/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/19/2016
Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1800
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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) = 2.43 W/kg
SAR(1 g) = 1.63 W/kg
Deviation(1 g) = -0.24%



0 dB = 1.90 W/kg = 2.79 dBW/kg

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d047

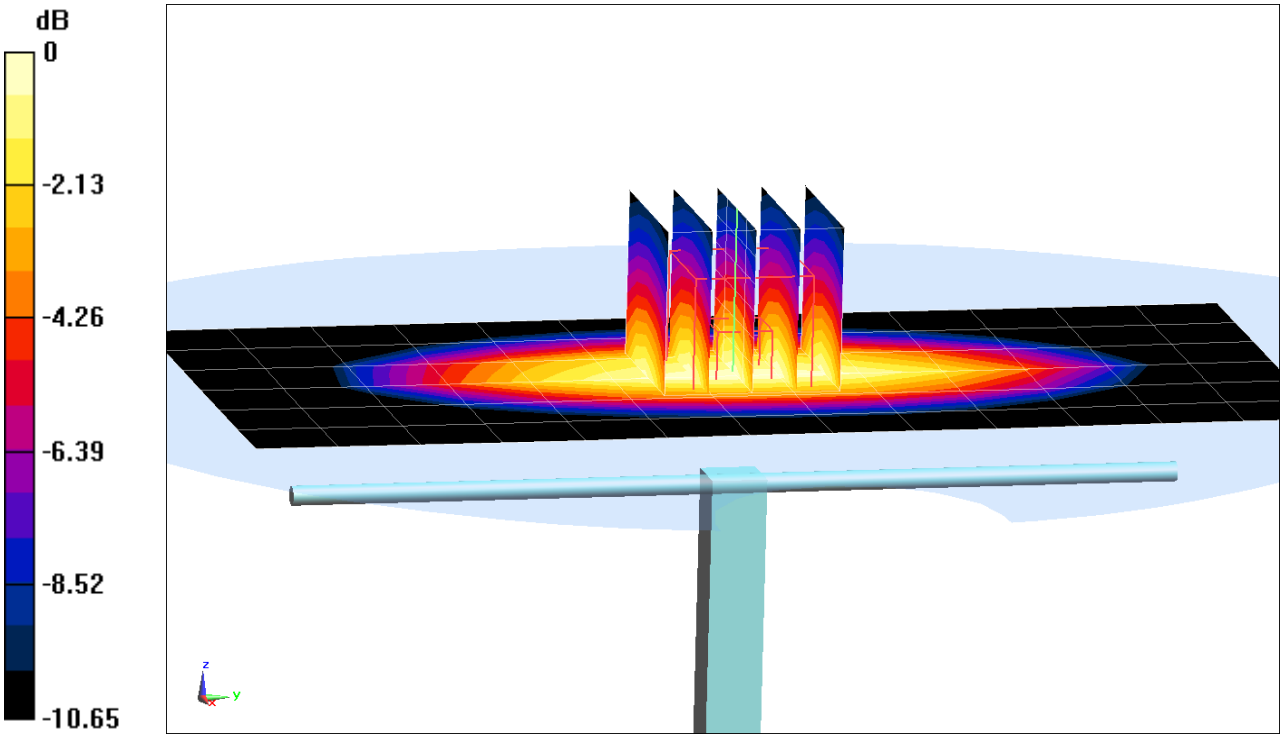
Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used:
f = 835 MHz; σ = 0.904 S/m; ε_r = 41.364; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 12-22-2016; Ambient Temp: 22.7°C; Tissue Temp: 21.5°C

Probe: EX3DV4 - SN7406; ConvF(9.83, 9.83, 9.83); Calibrated: 4/19/2016;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/14/2016
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) = 2.74 W/kg
SAR(1 g) = 1.86 W/kg
Deviation(1 g) = 1.86%



0 dB = 2.46 W/kg = 3.91 dBW/kg

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d047

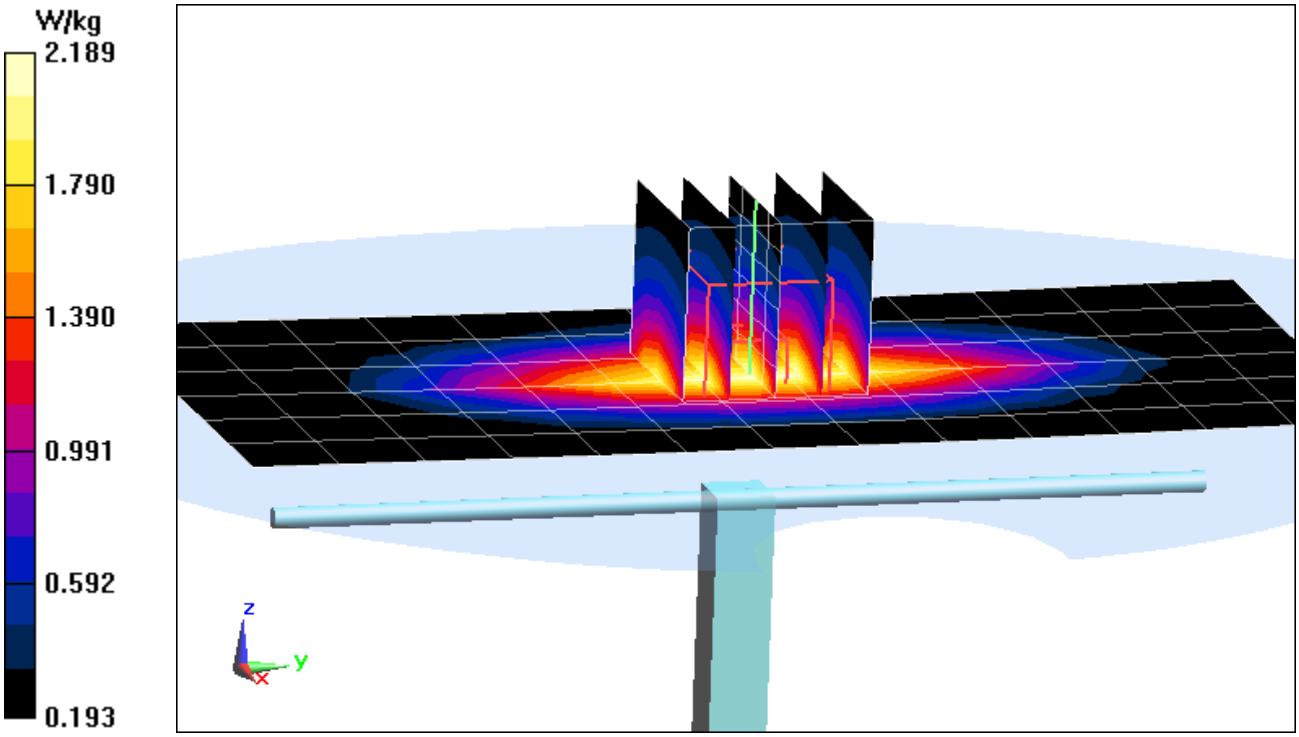
Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: 835 Head Medium parameters used:
f = 835 MHz; σ = 0.896 S/m; ε_r = 40.382; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 01-04-2017; Ambient Temp: 23.0°C; Tissue Temp: 22.1°C

Probe: ES3DV3 - SN3209; ConvF(6.2, 6.2, 6.2); Calibrated: 3/18/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1364; Calibrated: 8/22/2016
Phantom: SAM Right; Type: SAM; Serial: 1757
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) = 2.75 W/kg
SAR(1 g) = 1.87 W/kg
Deviation(1 g) = 2.41%



DUT: Dipole 1750 MHz; Type: D1750V2; Serial: 1148

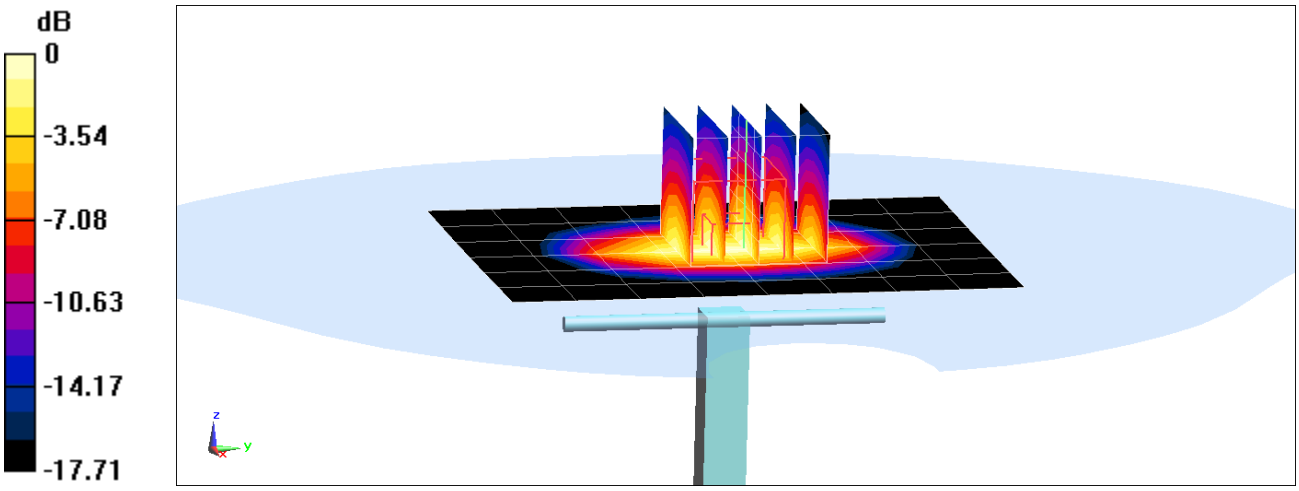
Communication System: UID 0, CW; Frequency: 1750 MHz; Duty Cycle: 1:1
Medium: 1750 Head Medium parameters used:
f = 1750 MHz; σ = 1.379 S/m; ε_r = 39.004; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-30-2016; Ambient Temp: 22.8°C; Tissue Temp: 21.4°C

Probe: ES3DV3 - SN3213; ConvF(5.23, 5.23, 5.23); Calibrated: 2/19/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/18/2016
Phantom: SAM with CRP v5.0 Left; Type: QD000P40CD; Serial: 1687
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) = 6.56 W/kg
SAR(1 g) = 3.6 W/kg
Deviation(1 g) = -0.55%



0 dB = 4.48 W/kg = 6.51 dBW/kg

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

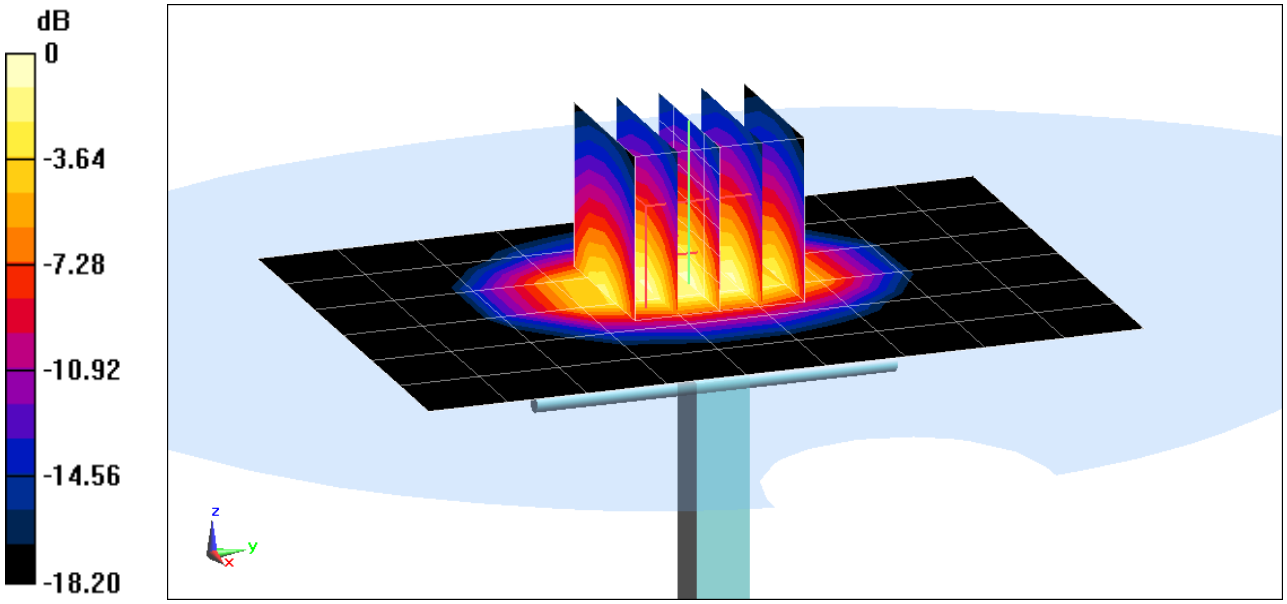
Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: 1900 Head Medium parameters used (interpolated):
f = 1900 MHz; σ = 1.444 S/m; ε_r = 39.039; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-26-2016; Ambient Temp: 23.3°C; Tissue Temp: 22.0°C

Probe: ES3DV3 - SN3287; ConvF(5.27, 5.27, 5.27); Calibrated: 9/19/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1408; Calibrated: 9/14/2016
Phantom: SAM Front; Type: SAM; Serial: 1686
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

1900 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (7x10x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 7.09 W/kg
SAR(1 g) = 3.86 W/kg
Deviation(1 g) = -3.74%



0 dB = 4.91 W/kg = 6.91 dBW/kg

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 5d080

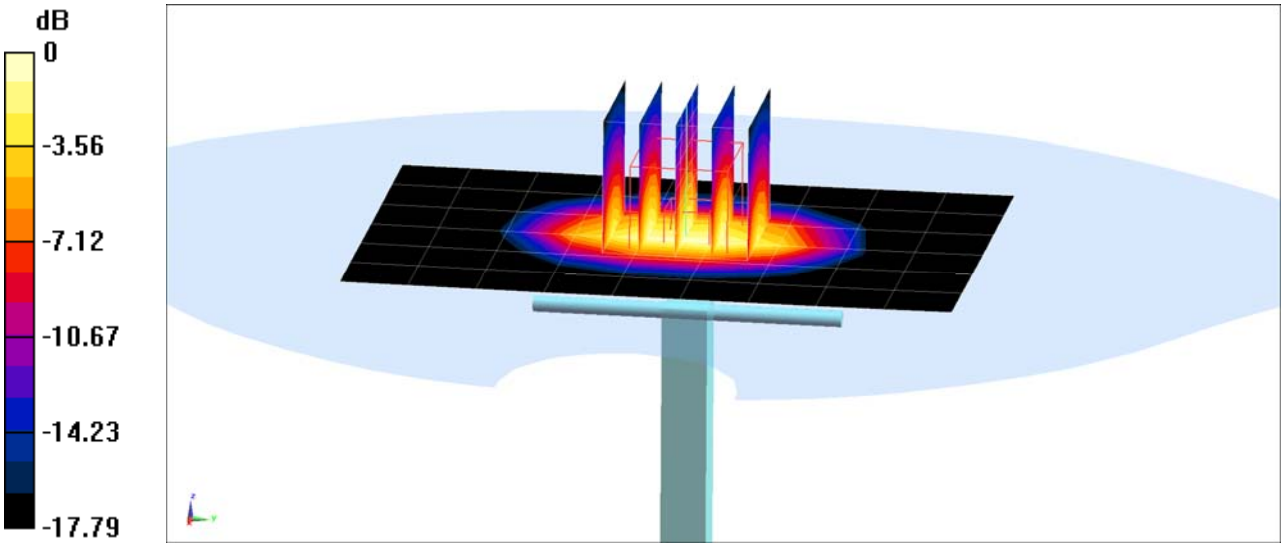
Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: 1900 Head Medium parameters used (interpolated):
f = 1900 MHz; σ = 1.437 S/m; ε_r = 39.414; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-28-2016; Ambient Temp: 22.1°C; Tissue Temp: 21.9°C

Probe: ES3DV3 - SN3287; ConvF(5.27, 5.27, 5.27); Calibrated: 9/19/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1408; Calibrated: 9/14/2016
Phantom: SAM Front; Type: SAM; Serial: 1686
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

1900 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (7x10x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 7.42 W/kg
SAR(1 g) = 4.05 W/kg
Deviation(1 g) = 3.05%



0 dB = 5.15 W/kg = 7.12 dBW/kg

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

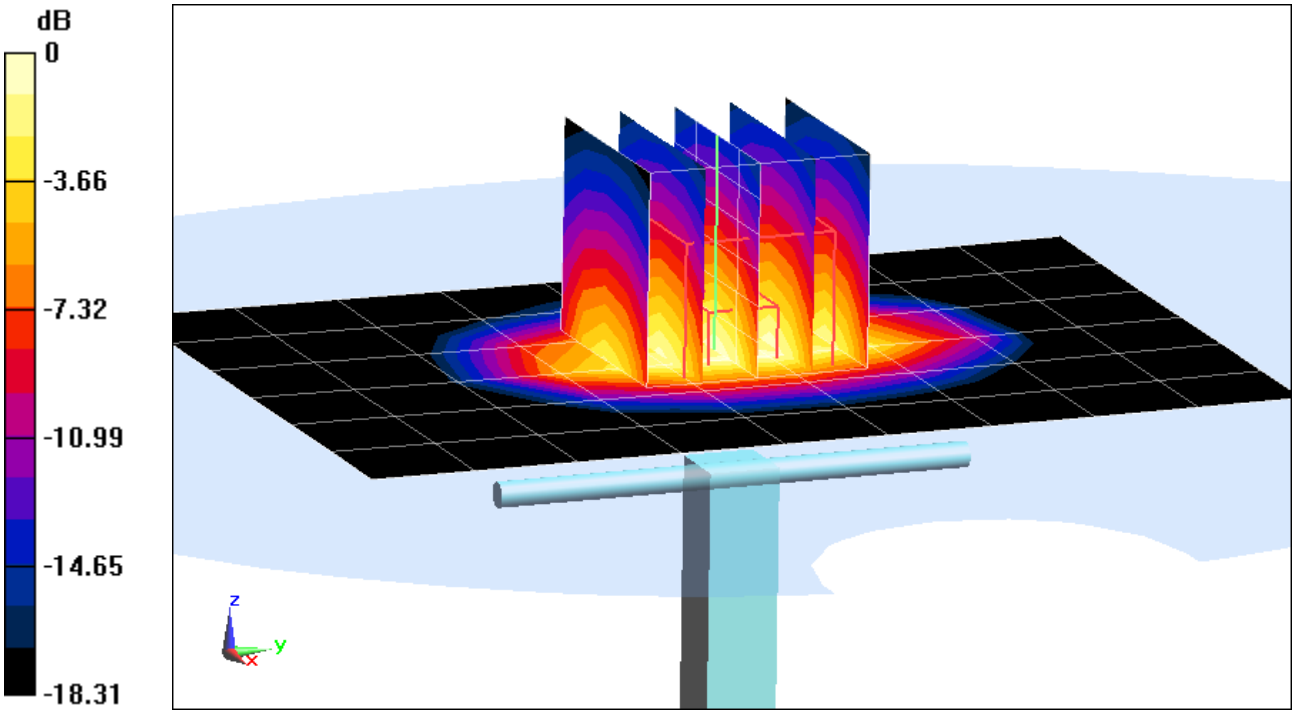
Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: 1900 Head Medium parameters used (interpolated):
f = 1900 MHz; σ = 1.457 S/m; ε_r = 40.091; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-24-2017; Ambient Temp: 22.7°C; Tissue Temp: 22.5°C

Probe: ES3DV3 - SN3332; ConvF(5.45, 5.45, 5.45); Calibrated: 8/25/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1333; Calibrated: 9/15/2016
Phantom: SAM Left; Type: SAM; Serial: 1688
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) = 7.13 W/kg
SAR(1 g) = 3.9 W/kg
Deviation(1 g) = -2.74%



0 dB = 4.94 W/kg = 6.94 dBW/kg

DUT: Dipole 2300 MHz; Type: D2300V2; Serial: 1064

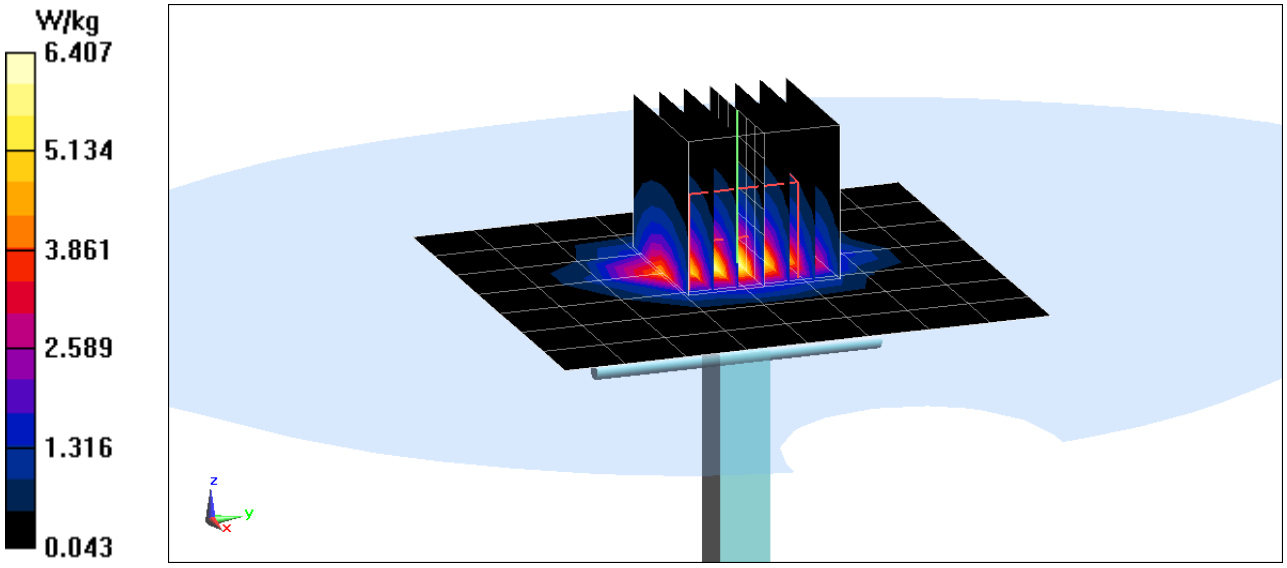
Communication System: UID 0, CW; Frequency: 2300 MHz; Duty Cycle: 1:1
Medium: 2450 Head Medium parameters used:
f = 2300 MHz; σ = 1.687 S/m; ε_r = 40.125; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-04-2017; Ambient Temp:23.5°C; Tissue Temp: 22.7°C

Probe: ES3DV3 - SN3287; ConvF(4.86, 4.86, 4.86); Calibrated: 9/19/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1408; Calibrated: 9/14/2016
Phantom: SAM Front; Type: SAM; Serial: 1686
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

2300 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 9.98 W/kg
SAR(1 g) = 4.94 W/kg
Deviation(1 g) = 2.07%



DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 981

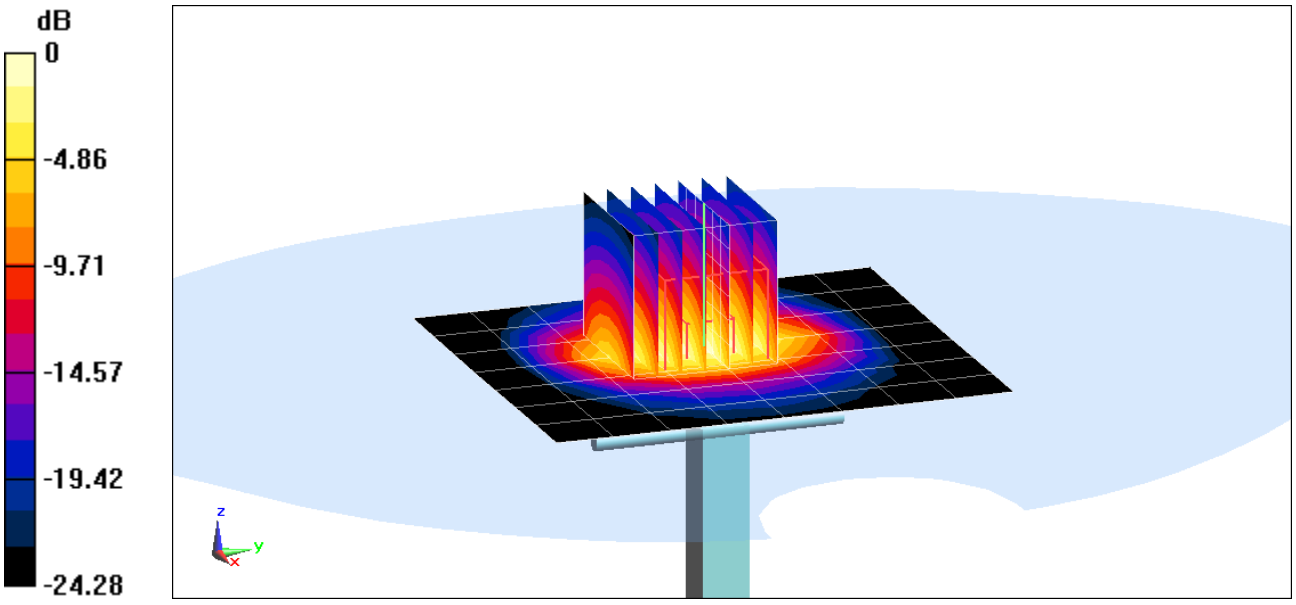
Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: 2450 Head Medium parameters used:
f = 2450 MHz; σ = 1.869 S/m; ε_r = 38.155; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-22-2017; Ambient Temp: 23.2°C; Tissue Temp: 22.5°C

Probe: ES3DV3 - SN3287; ConvF(4.54, 4.54, 4.54); Calibrated: 9/19/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1408; Calibrated: 9/14/2016
Phantom: SAM Front; Type: SAM; Serial: 1686
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

2450 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 11.9 W/kg
SAR(1 g) = 5.64 W/kg
Deviation(1 g) = 6.82%



0 dB = 7.52 W/kg = 8.76 dBW/kg

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 797

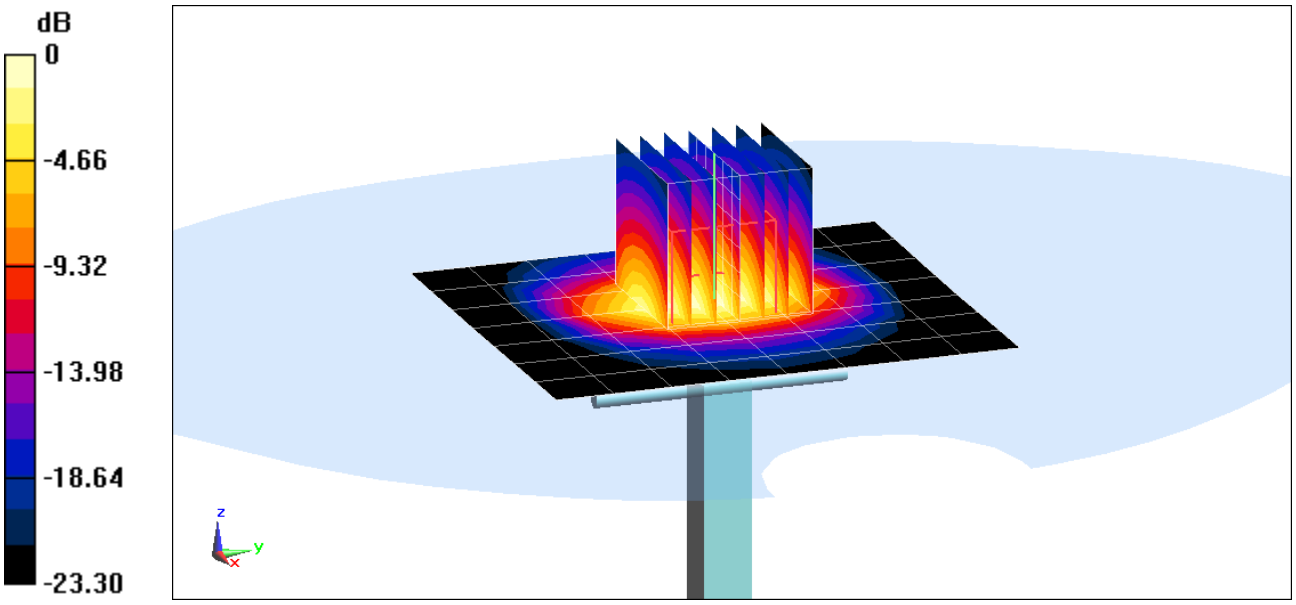
Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: 2450 Head Medium parameters used:
f = 2450 MHz; σ = 1.855 S/m; ε_r = 38.412; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 1-26-2017; Ambient Temp: 23.2°C; Tissue Temp: 22.6°C

Probe: ES3DV3 - SN3287; ConvF(4.54, 4.54, 4.54); Calibrated: 9/19/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1408; Calibrated: 9/14/2016
Phantom: SAM Front; Type: SAM; Serial: 1686
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

2450 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 11.7 W/kg
SAR(1 g) = 5.55 W/kg
Deviation(1 g) = 6.53%



0 dB = 7.28 W/kg = 8.62 dBW/kg

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: 1126

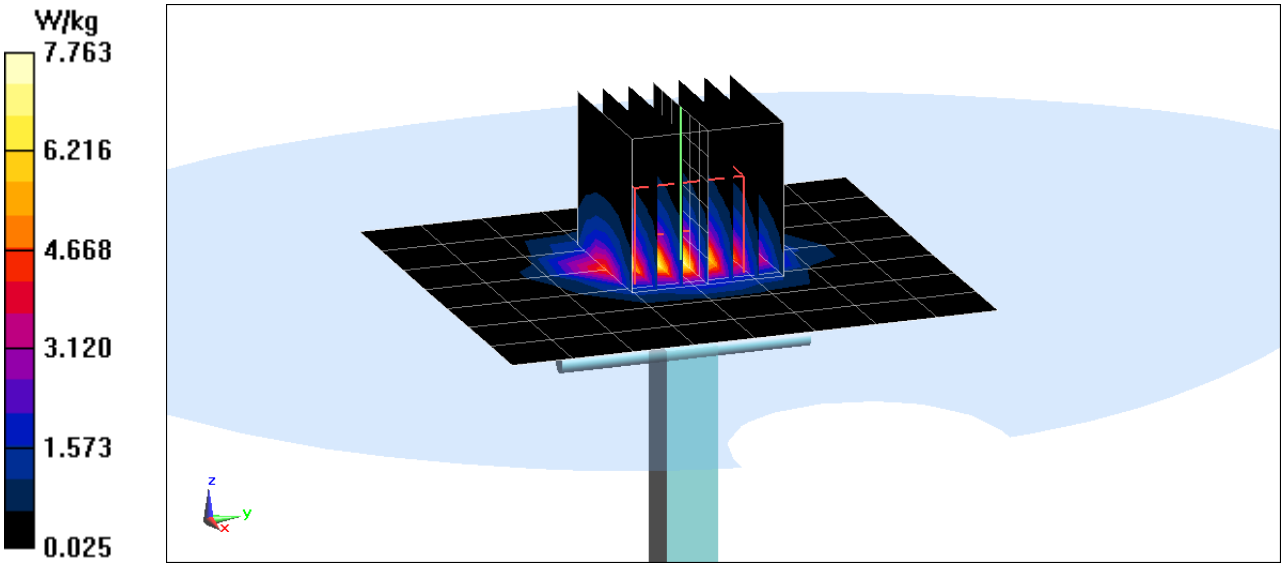
Communication System: UID 0, CW; Frequency: 2600 MHz; Duty Cycle: 1:1
Medium: 2450 Head Medium parameters used:
f = 2600 MHz; σ = 2.038 S/m; ε_r = 38.885; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-04-2017; Ambient Temp:23.5°C; Tissue Temp: 22.7°C

Probe: ES3DV3 - SN3287; ConvF(4.41, 4.41, 4.41); Calibrated: 9/19/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1408; Calibrated: 9/14/2016
Phantom: SAM Front; Type: SAM; Serial: 1686
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) = 13.1 W/kg
SAR(1 g) = 5.84 W/kg
Deviation(1 g) = 3.73%



DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1237

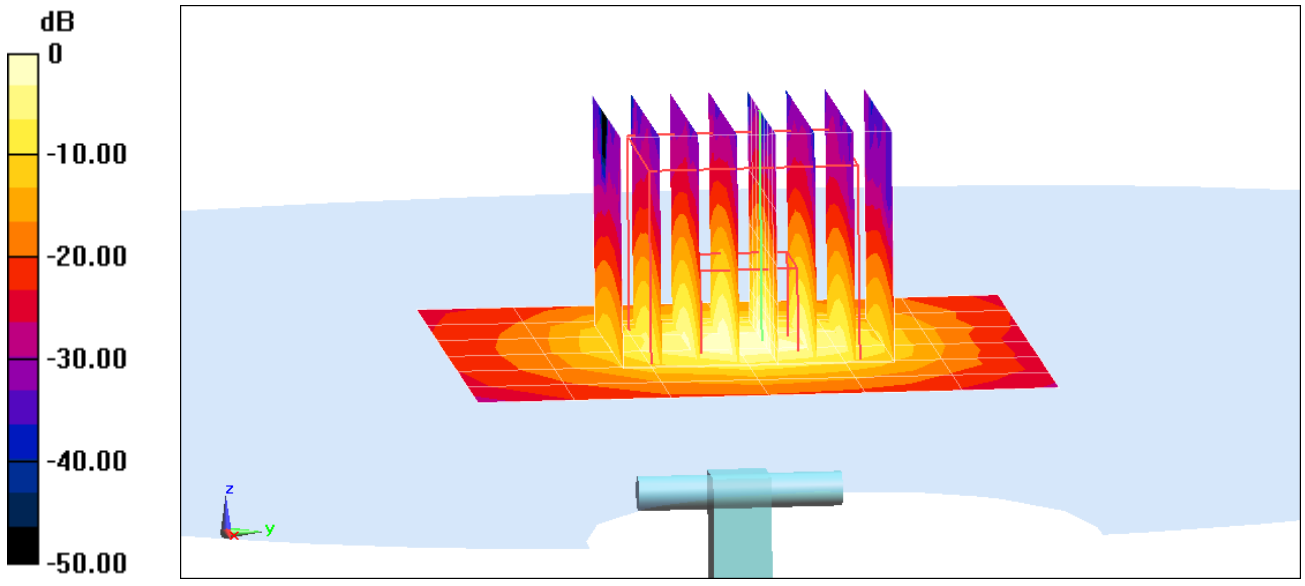
Communication System: UID 0, CW; Frequency: 5250 MHz; Duty Cycle: 1:1
Medium: 5GHz Head Medium parameters used (interpolated):
$f = 5250$ MHz; $\sigma = 4.684$ S/m; $\varepsilon_r = 34.664$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-28-2016; Ambient Temp: 21.5°C; Tissue Temp: 19.7°C

Probe: EX3DV4 - SN7357; ConvF(5.1, 5.1, 5.1); Calibrated: 4/19/2016;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/19/2016
Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1800
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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) = 16.1 W/kg
SAR(1 g) = 3.84 W/kg
Deviation(1 g) = -3.03%



0 dB = 9.07 W/kg = 9.58 dBW/kg

DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1237

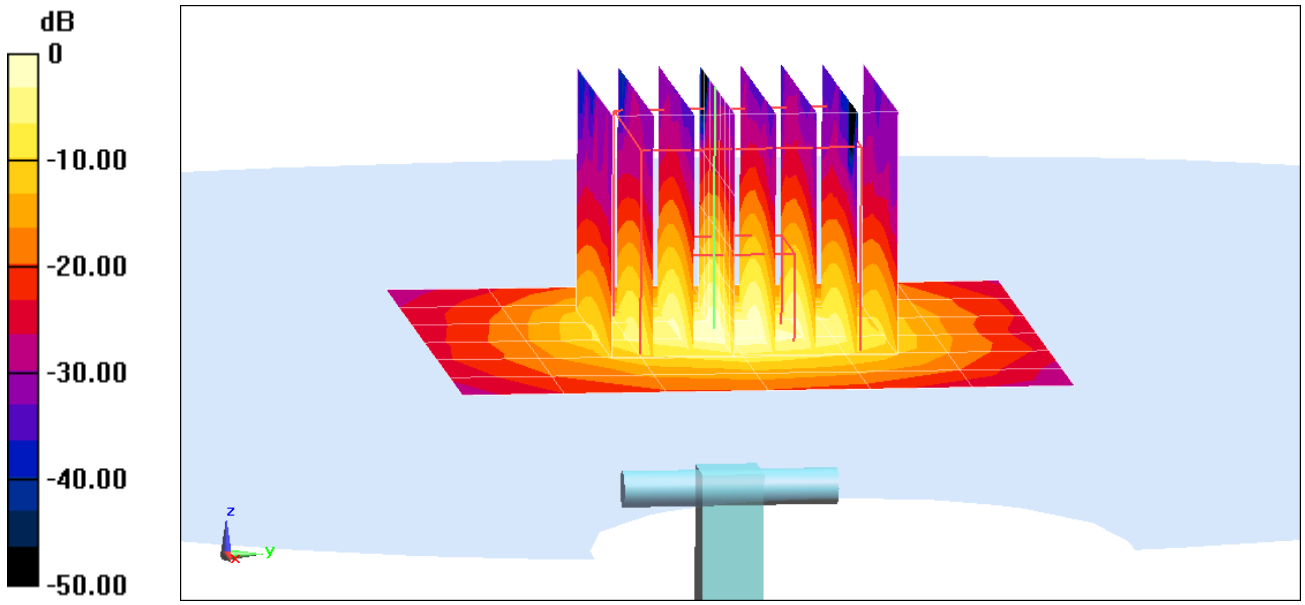
Communication System: UID 0, CW; Frequency: 5600 MHz; Duty Cycle: 1:1
Medium: 5GHz Head Medium parameters used:
f = 5600 MHz; σ = 5.031 S/m; ε_r = 34.091; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-28-2016; Ambient Temp: 21.5°C; Tissue Temp: 19.7°C

Probe: EX3DV4 - SN7357; ConvF(4.41, 4.41, 4.41); Calibrated: 4/19/2016;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/19/2016
Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1800
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

5600 MHz System Verification at 17.0 dBm (50 mW)

Area Scan (7x7x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Peak SAR (extrapolated) = 16.8 W/kg
SAR(1 g) = 4.00 W/kg
Deviation(1 g) = -3.96%



0 dB = 9.58 W/kg = 9.81 dBW/kg

DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1237

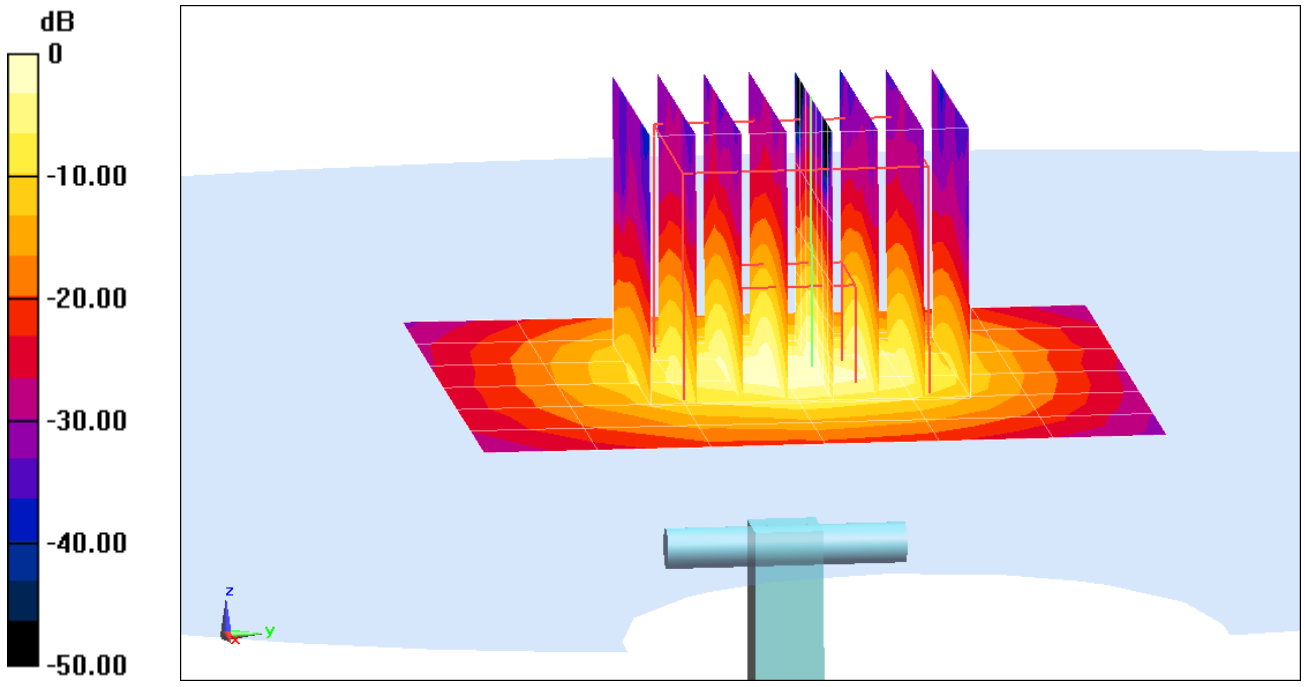
Communication System: UID 0, CW; Frequency: 5750 MHz; Duty Cycle: 1:1
Medium: 5GHz Head Medium parameters used (interpolated):
$f = 5750$ MHz; $\sigma = 5.2$ S/m; $\varepsilon_r = 33.931$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-28-2016; Ambient Temp: 21.5°C; Tissue Temp: 19.7°C

Probe: EX3DV4 - SN7357; ConvF(4.65, 4.65, 4.65); Calibrated: 4/19/2016;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/19/2016
Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1800
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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) = 16.0 W/kg
SAR(1 g) = 3.71 W/kg
Deviation(1 g) = -8.96%



0 dB = 8.93 W/kg = 9.51 dBW/kg

DUT: Dipole 750 MHz; Type: D750V3; Serial: 1161

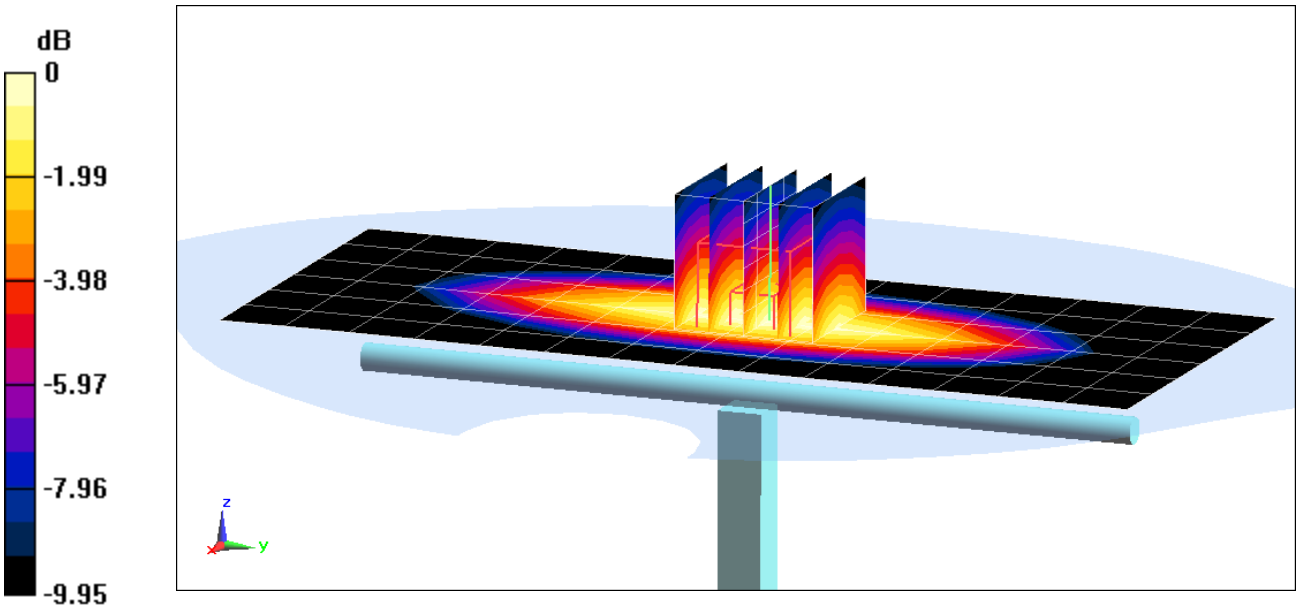
Communication System: UID 0, CW; Frequency: 750 MHz; Duty Cycle: 1:1
Medium: 750 Body Medium parameters used (interpolated):
f = 750 MHz; σ = 0.966 S/m; ε_r = 57.397; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 12-27-2016; Ambient Temp: 20.5°C; Tissue Temp: 20.3°C

Probe: ES3DV3 - SN3318; ConvF(6.19, 6.19, 6.19); Calibrated: 2/19/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/19/2016
Phantom: SAM with CRP v4.0; Type: QD000P40CD; Serial: TP:1800
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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) = 2.52 W/kg
SAR(1 g) = 1.74 W/kg
Deviation(1 g) = 3.20%



0 dB = 2.02 W/kg = 3.05 dBW/kg

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d047

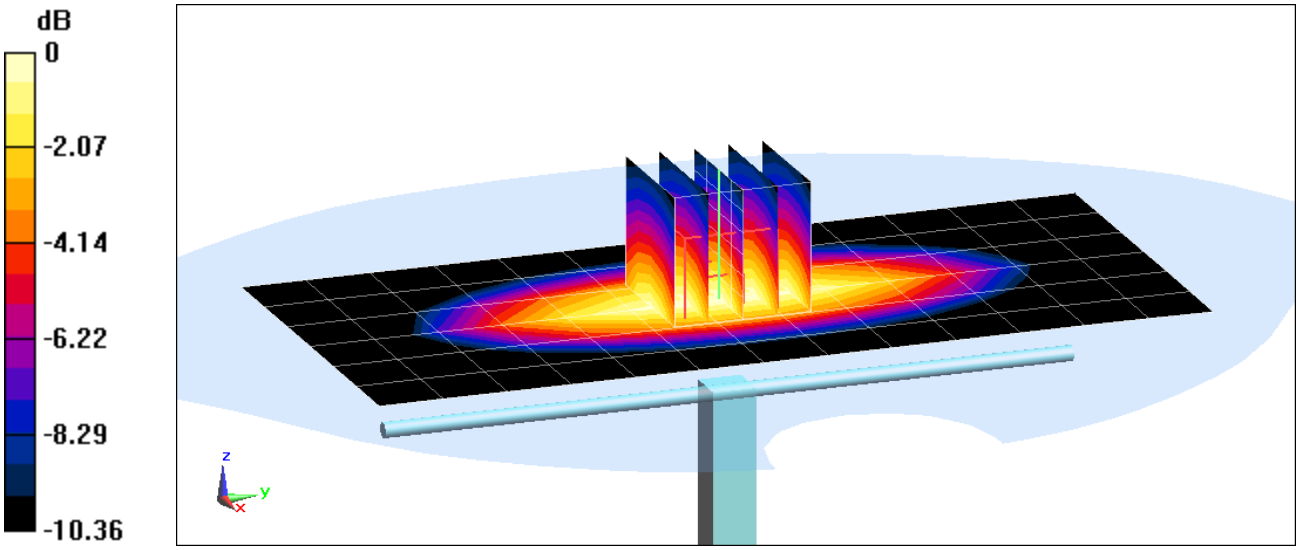
Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: 835 Body Medium parameters used:
f = 835 MHz; σ = 0.996 S/m; ε_r = 53.527; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 01-01-2017; Ambient Temp: 21.4°C; Tissue Temp: 20.8°C

Probe: ES3DV3 - SN3319; ConvF(6.04, 6.04, 6.04); Calibrated: 3/18/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1368; Calibrated: 3/14/2016
Phantom: SAM with CRP (Left); Type: SAM; Serial: 1715
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) = 3.03 W/kg
SAR(1 g) = 2.05 W/kg
Deviation(1 g) = 7.11%



0 dB = 2.40 W/kg = 3.80 dBW/kg

DUT: Dipole 1750 MHz; Type: D1765V2; Serial: 1008

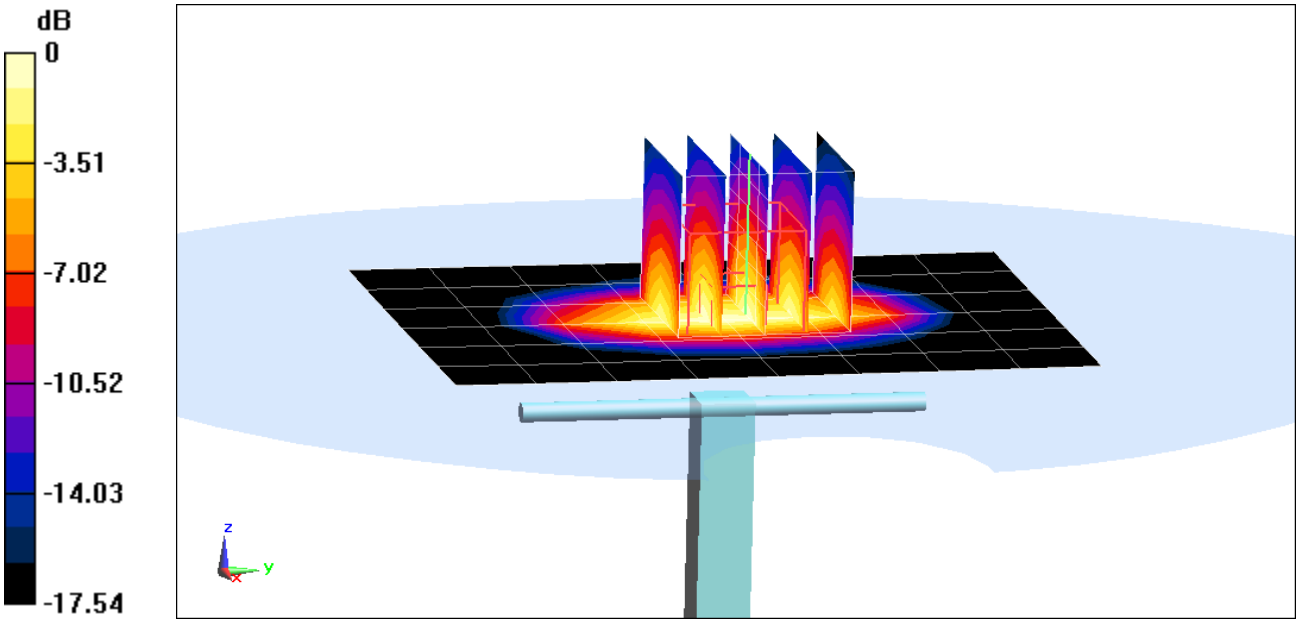
Communication System: UID 0, CW; Frequency: 1750 MHz; Duty Cycle: 1:1
Medium: 1750 Body Medium parameters used:
f = 1750 MHz; σ = 1.538 S/m; ε_r = 52.253; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-01-2017; Ambient Temp: 22.7°C; Tissue Temp: 21.1°C

Probe: ES3DV3 - SN3209; ConvF(4.99, 4.99, 4.99); Calibrated: 3/18/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1364; Calibrated: 8/22/2016
Phantom: SAM Front; Type: QD000P40CD; Serial: TP:1758
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) = 6.97 W/kg
SAR(1 g) = 3.95 W/kg
Deviation(1 g) = 5.90%



0 dB = 4.83 W/kg = 6.84 dBW/kg

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 5d080

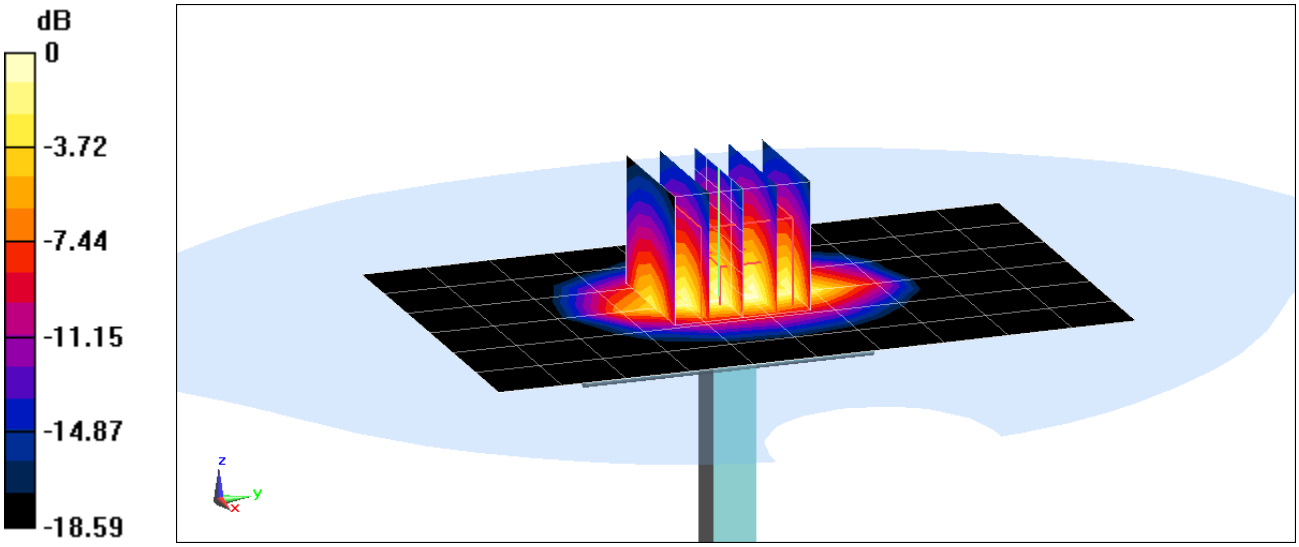
Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
f = 1900 MHz; σ = 1.559 S/m; ε_r = 52.151; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 1-25-2017; Ambient Temp: 24.0°C; Tissue Temp: 21.5°C

Probe: EX3DV4 - SN7409; ConvF(7.47, 7.47, 7.47); Calibrated: 5/17/2016;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/11/2016
Phantom: SAM Left; Type: QD000P40CC; Serial: TP: 1375
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 (7x11x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Peak SAR (extrapolated) = 7.37 W/kg
SAR(1 g) = 3.98 W/kg
Deviation(1 g) = 1.79%



0 dB = 6.13 W/kg = 7.87 dBW/kg

DUT: Dipole 2300 MHz; Type: D2300V2; Serial: 1064

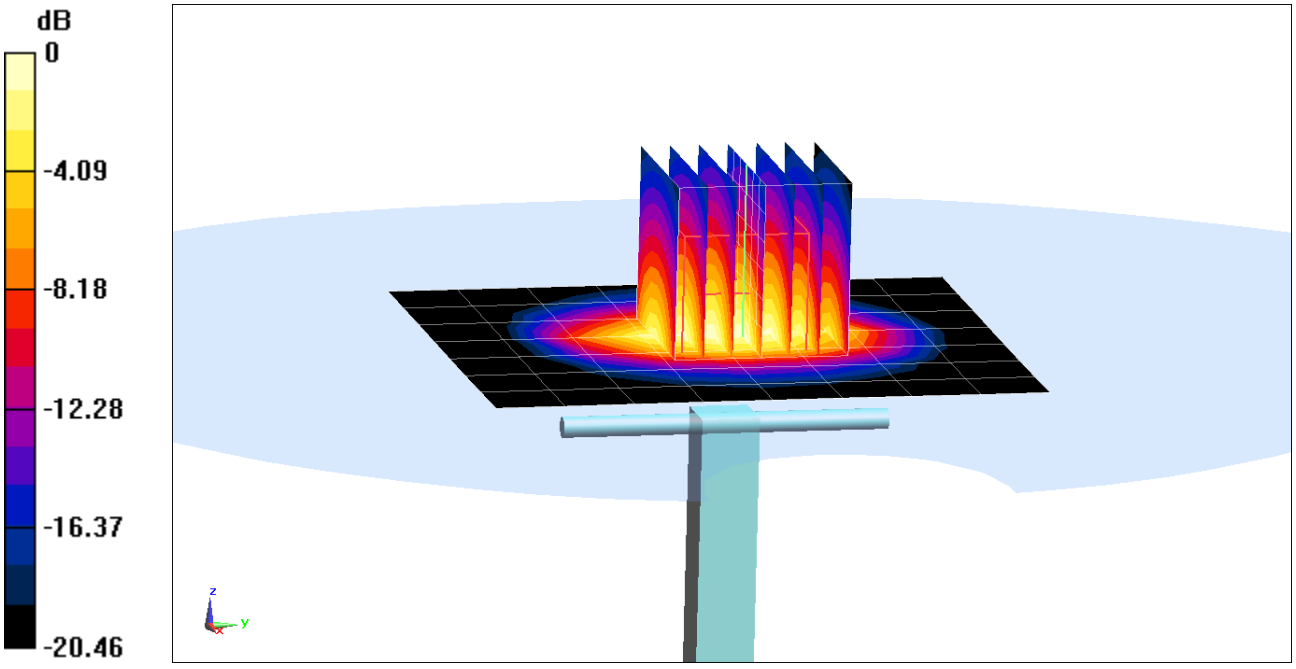
Communication System: UID 0, CW; Frequency: 2300 MHz; Duty Cycle: 1:1
Medium: 2450 Body Medium parameters used:
f = 2300 MHz; σ = 1.771 S/m; ε_r = 51.919; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-24-2017; Ambient Temp: 24.0°C; Tissue Temp: 23.0°C

Probe: EX3DV4 - SN7406; ConvF(7.37, 7.37, 7.37); Calibrated: 4/19/2016;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/14/2016
Phantom: SAM 5.0 front; Type: QD000P40CD; Serial: TP:-1648
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

2300 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 9.79 W/kg
SAR(1 g) = 4.92 W/kg
Deviation(1 g) = 4.68%



0 dB = 7.93 W/kg = 8.99 dBW/kg

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 981

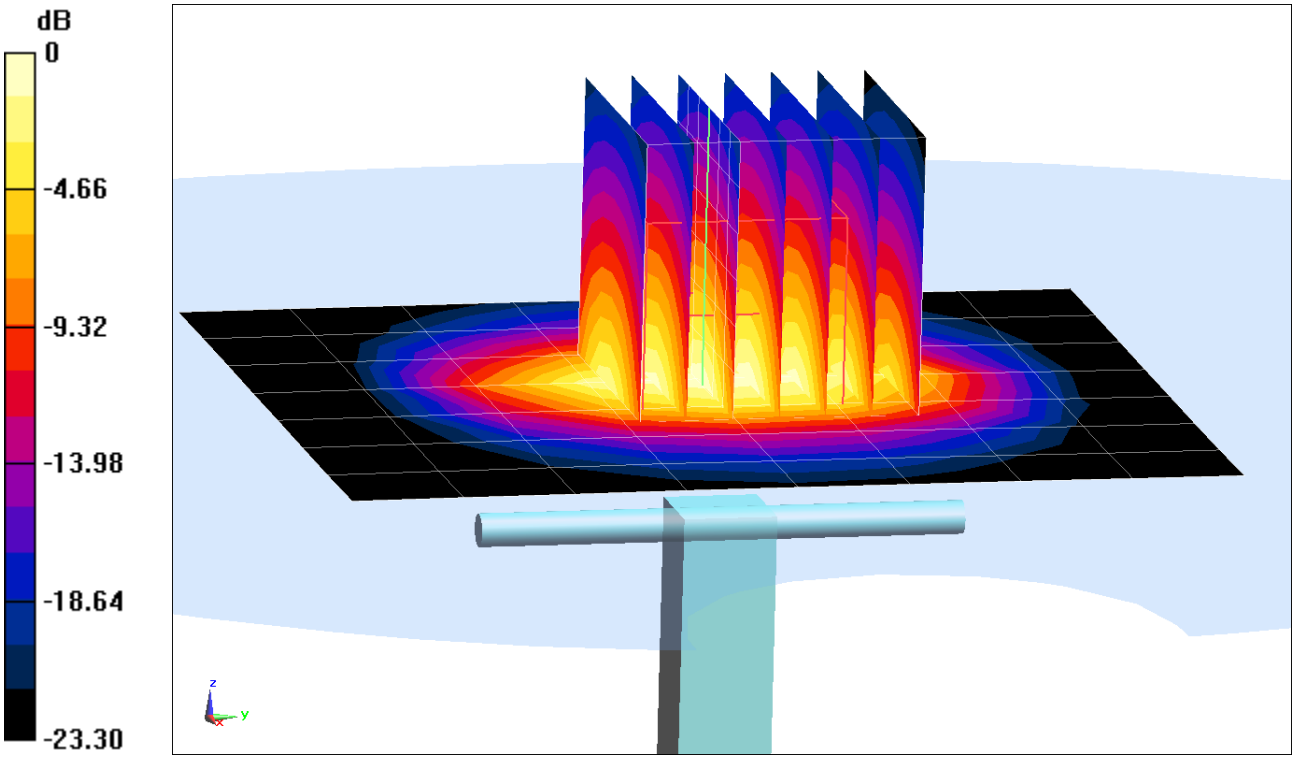
Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: 2450 Body Medium parameters used:
f = 2450 MHz; σ = 2.031 S/m; ε_r = 50.992; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-09-2017; Ambient Temp: 22.5°C; Tissue Temp: 21.6°C

Probe: EX3DV4 - SN7406; ConvF(7.24, 7.24, 7.24); Calibrated: 4/19/2016;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/14/2016
Phantom: SAM 5.0 front; Type: QD000P40CD; Serial: TP:-1648
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

2450 MHz System Verification at 20.0 dBm (100 mW)

Area Scan (8x9x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 10.2 W/kg
SAR(1 g) = 4.81 W/kg
Deviation(1 g) = -5.31%



0 dB = 8.07 W/kg = 9.07 dBW/kg

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 797

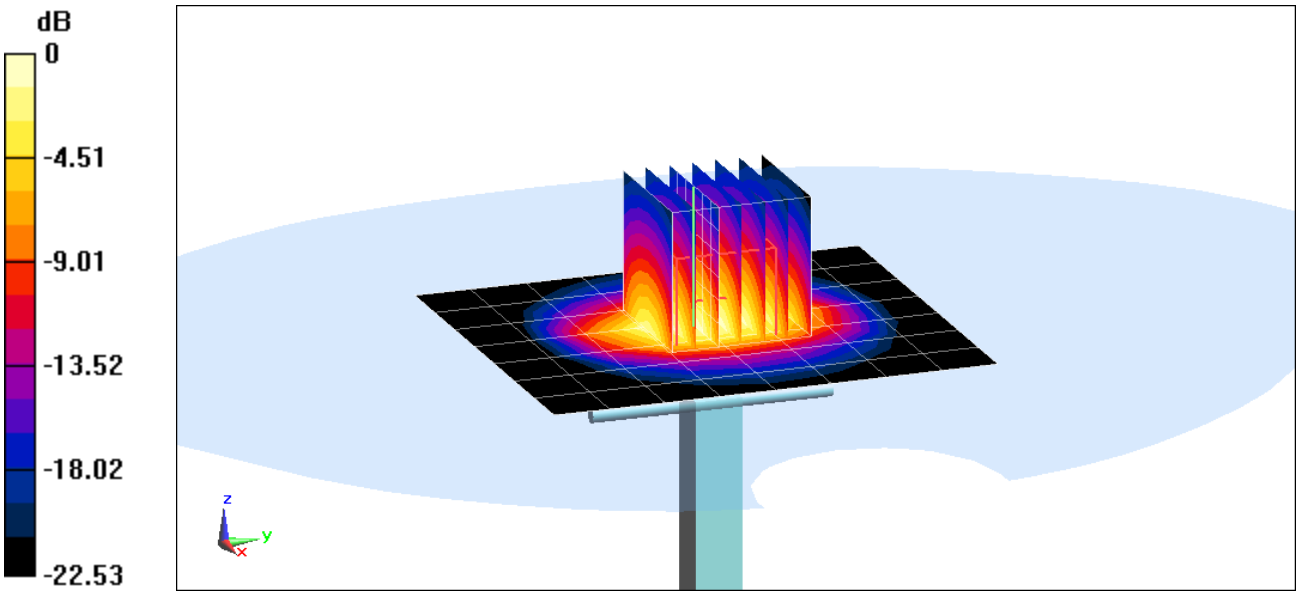
Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: 2450 Body Medium parameters used:
f = 2450 MHz; σ = 2.014 S/m; ε_r = 51.856; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-24-2017; Ambient Temp: 22.4°C; Tissue Temp: 22.7°C

Probe: ES3DV3 - SN3319; ConvF(4.2, 4.2, 4.2); Calibrated: 3/18/2016;
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1368; Calibrated: 3/14/2016
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) = 10.9 W/kg
SAR(1 g) = 5.21 W/kg
Deviation(1 g) = 2.76%



0 dB = 6.85 W/kg = 8.36 dBW/kg

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: 1071

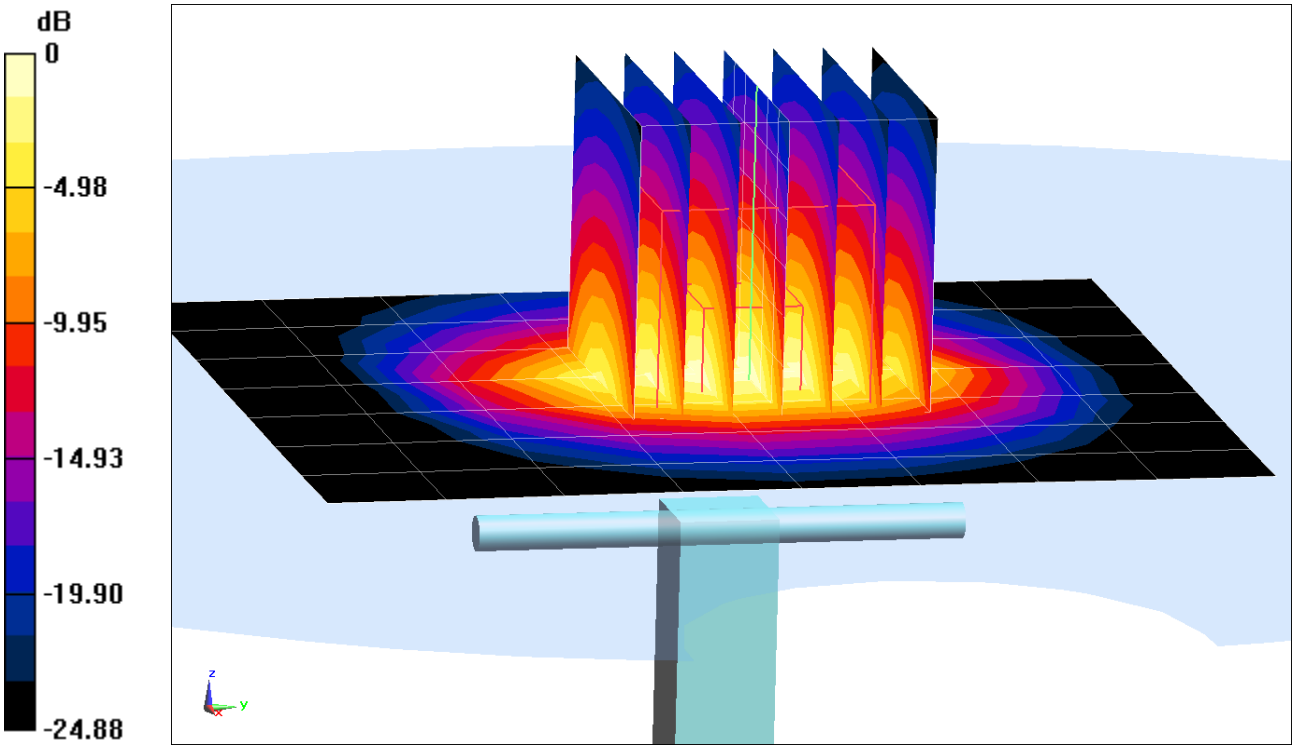
Communication System: UID 0, CW; Frequency: 2600 MHz; Duty Cycle: 1:1
Medium: 2450 Body Medium parameters used:
f = 2600 MHz; σ = 2.246 S/m; ε_r = 50.412; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-09-2017; Ambient Temp: 22.5°C; Tissue Temp: 21.6°C

Probe: EX3DV4 - SN7406; ConvF(6.94, 6.94, 6.94); Calibrated: 4/19/2016;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/14/2016
Phantom: SAM 5.0 front; Type: QD000P40CD; Serial: TP:-1648
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) = 5.7 W/kg
Deviation(1 g) = 5.17%



0 dB = 10.0 W/kg = 10.00 dBW/kg

DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1237

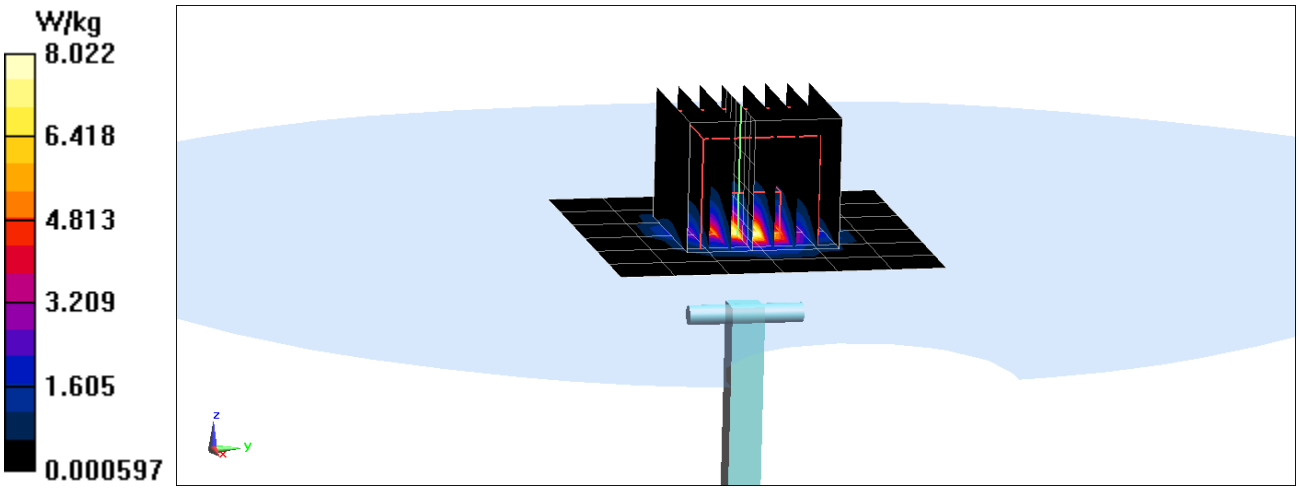
Communication System: UID 0, CW; Frequency: 5250 MHz; Duty Cycle: 1:1
Medium: 5 GHz Body Medium parameters used (interpolated):
$f = 5250$ MHz; $\sigma = 5.473$ S/m; $\varepsilon_r = 48.692$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-02-2017; Ambient Temp: 21.6°C; Tissue Temp: 21.1°C

Probe: EX3DV4 - SN3914; ConvF(4.32, 4.32, 4.32); Calibrated: 2/22/2016;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/18/2016
Phantom: SAM with CRP v5.0 Front; Type: QD000P40CD; Serial: 1646
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

5250 MHz System Verification at 17.0 dBm (50 mW)

Area Scan (7x7x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Peak SAR (extrapolated) = 14.1 W/kg
SAR(1 g) = 3.43 W/kg
Deviation(1 g) = -8.29%



DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1237

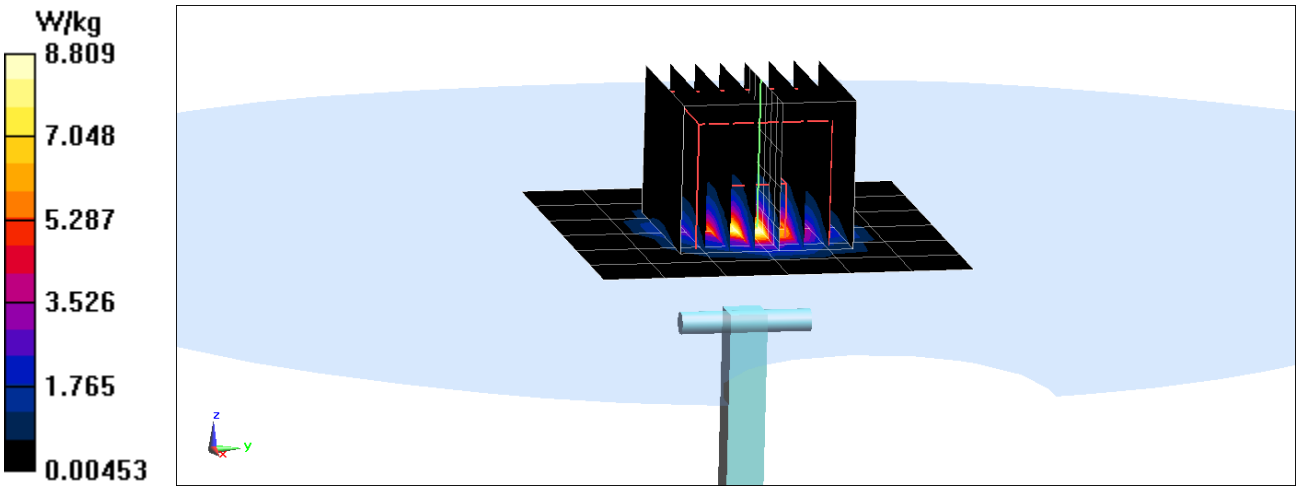
Communication System: UID 0, CW; Frequency: 5600 MHz; Duty Cycle: 1:1
Medium: 5 GHz Body Medium parameters used:
f = 5600 MHz; σ = 5.917 S/m; ε_r = 48.062; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-02-2017; Ambient Temp: 21.6°C; Tissue Temp: 21.1°C

Probe: EX3DV4 - SN3914; ConvF(3.63, 3.63, 3.63); Calibrated: 2/22/2016;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/18/2016
Phantom: SAM with CRP v5.0 Front; Type: QD000P40CD; Serial: 1646
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

5600 MHz System Verification at 17.0 dBm (50 mW)

Area Scan (7x7x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Peak SAR (extrapolated) = 15.6 W/kg
SAR(1 g) = 3.76 W/kg
Deviation(1 g) = -2.34%



DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1237

Communication System: UID 0, CW; Frequency: 5750 MHz; Duty Cycle: 1:1
Medium: 5 GHz Body Medium parameters used (interpolated):
f = 5750 MHz; σ = 6.135 S/m; ε_r = 47.847; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-02-2017; Ambient Temp: 21.6°C; Tissue Temp: 21.1°C

Probe: EX3DV4 - SN3914; ConvF(3.86, 3.86, 3.86); Calibrated: 2/22/2016;
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/18/2016
Phantom: SAM with CRP v5.0 Front; Type: QD000P40CD; Serial: 1646
Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

5750 MHz System Verification at 17.0 dBm (50 mW)

Area Scan (7x7x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Peak SAR (extrapolated) = 15.0 W/kg
SAR(1 g) = 3.45 W/kg
Deviation(1 g) = -8.49%