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SAR EVALUATION REPORT

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

Date of Testing:
11/04/19 - 12/10/19
Test Site/Location:
PCTEST Lab, Columbia, MD, USA
Document Serial No.:
1M1910280174-01-R1.ZNF

FCC ID:	**ZNFL455DL**
APPLICANT:	**LG ELECTRONICS U.S.A., INC.**

DUT Type:	Portable Handset
Application Type:	Certification
FCC Rule Part(s):	CFR §2.1093
Model:	LG L455DL
Additional Model(s):	LG-L455DL, LM-K400UM, LM-K400MM, LM-K400QM, LM-K400VPP, LM-K400QM5, LM-K400QM6. LGL455DL, LMK400UM, LMK400MM, LMK400QM, LMK400QM5, LMK400QM6, LMK400VPP, L455DL, K400UM, K400MM, K400QM, K400QM5, K400QM6, K400VPP

Equipment Class	Band & Mode	Tx Frequency	SAR			
			1g Head (W/kg)	1g Body-Worn (W/kg)	1g Hotspot (W/kg)	10g Phablet (W/kg)
PCE	GSM/GPRS/EDGE 850	824.20 - 848.80 MHz	0.39	0.68	0.68	N/A
PCE	GSM/GPRS/EDGE 1900	1850.20 - 1909.80 MHz	0.33	0.66	0.66	N/A
PCE	UMTS 850	826.40 - 846.60 MHz	0.35	0.47	0.47	N/A
PCE	UMTS 1750	1712.4 - 1752.6 MHz	0.29	0.85	0.85	3.14
PCE	UMTS 1900	1852.4 - 1907.6 MHz	0.38	0.92	0.92	3.16
PCE	CDMA/EVDO BC10 (SSS)	817.90 - 823.10 MHz	0.19	0.36	0.36	N/A
PCE	CDMA/EVDO BC0 (S22H)	824.70 - 848.31 MHz	0.26	0.35	0.36	N/A
PCE	PCS CDMA/EVDO	1851.25 - 1908.75 MHz	0.27	0.52	0.52	2.28
PCE	LTE Band 71	665.5 - 695.5 MHz	0.29	0.47	0.47	N/A
PCE	LTE Band 12	699.7 - 715.3 MHz	0.34	0.55	0.61	N/A
PCE	LTE Band 13	779.5 - 784.5 MHz	0.29	0.48	0.50	N/A
PCE	LTE Band 26 (Cell)	814.7 - 848.3 MHz	0.28	0.42	0.42	N/A
PCE	LTE Band 5 (Cell)	824.7 - 848.3 MHz	N/A	N/A	N/A	N/A
PCE	LTE Band 66 (AWS)	1710.7 - 1779.3 MHz	0.39	0.69	0.69	3.25
PCE	LTE Band 4 (AWS)	1710.7 - 1754.3 MHz	N/A	N/A	N/A	N/A
PCE	LTE Band 25 (PCS)	1850.7 - 1914.3 MHz	0.41	0.55	0.72	3.20
PCE	LTE Band 2 (PCS)	1850.7 - 1909.3 MHz	N/A	N/A	N/A	N/A
PCE	LTE Band 41	2498.5 - 2687.5 MHz	0.15	0.59	0.85	3.12
DTS	2.4 GHz WLAN	2412 - 2462 MHz	1.04	0.39	0.39	N/A
NII	U-NII-1	5180 - 5240 MHz	N/A	0.73	0.73	N/A
NII	U-NII-2A	5260 - 5320 MHz	0.49	1.30	N/A	1.81
NII	U-NII-2C	5500 - 5720 MHz	0.61	0.63	N/A	1.30
NII	U-NII-3	5745 - 5825 MHz	0.54	0.42	0.42	N/A
DSS/DTS	Bluetooth	2402 - 2480 MHz	0.11	<0.1	<0.1	N/A
Simultaneous SAR per KDB 690783 D01v01r03:			1.45	1.31	1.59	3.92

Note: This revised Test Report (S/N: 1M1910280174-01-R1.ZNF) supersedes and replaces the previously issued test report on the same subject device for the same type of testing as indicated. Please discard or destroy the previously issued test report(s) and dispose of it accordingly.
This wireless portable device has been shown to be capable of compliance for localized specific absorption rate (SAR) for uncontrolled environment/general population exposure limits specified in ANSI/IEEE C95.1-1992 and has been tested in accordance with the measurement procedures specified in Section 1.7 of this report; for North American frequency bands only.

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

Randy Ortanez
President

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

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1 DEVICE UNDER TEST

1.1 Device Overview

Band & Mode	Operating Modes	Tx Frequency
GSM/GPRS/EDGE 850	Voice/Data	824.20 - 848.80 MHz
GSM/GPRS/EDGE 1900	Voice/Data	1850.20 - 1909.80 MHz
UMTS 850	Voice/Data	826.40 - 846.60 MHz
UMTS 1750	Voice/Data	1712.4 - 1752.6 MHz
UMTS 1900	Voice/Data	1852.4 - 1907.6 MHz
CDMA/EVDO BC10 (§90S)	Voice/Data	817.90 - 823.10 MHz
CDMA/EVDO BC0 (§22H)	Voice/Data	824.70 - 848.31 MHz
PCS CDMA/EVDO	Voice/Data	1851.25 - 1908.75 MHz
LTE Band 71	Voice/Data	665.5 - 695.5 MHz
LTE Band 12	Voice/Data	699.7 - 715.3 MHz
LTE Band 13	Voice/Data	779.5 - 784.5 MHz
LTE Band 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 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

1.2 Power Reduction for SAR

This device uses a power reduction mechanism for SAR compliance. The power reduction mechanism is activated when the device is used in close proximity to the user's body. FCC KDB Publication 616217 D04v01r02 Section 6 was used as a guideline for selecting SAR test distances for this device. 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 Output Power

Mode / Band		Voice (dBm)	Burst Average GMSK (dBm)				Burst Average 8-PSK (dBm)			
		1 TX Slot	*1 TX Slots*	*2 TX Slots*	*3 TX Slots*	*4 TX Slots*	*1 TX Slots*	*2 TX Slots*	*3 TX Slots*	*4 TX Slots*
GSM/GPRS/EDGE 850	Maximum	**33.7**	**33.7**	**32.2**	**30.7**	**29.7**	**27.7**	**26.7**	**24.7**	**23.7**
	Nominal	**33.2**	**33.2**	**31.7**	**30.2**	**29.2**	**27.2**	**26.2**	**24.2**	**23.2**
GSM/GPRS/EDGE 1900	Maximum	**30.7**	**30.7**	**28.7**	**26.7**	**25.7**	**26.7**	**25.7**	**24.7**	**23.7**
	Nominal	**30.2**	**30.2**	**28.2**	**26.2**	**25.2**	**26.2**	**25.2**	**24.2**	**23.2**

Mode / Band		Modulated Average (dBm)									
		3GPP WCDMA (dBm)	*3GPP HSDPA (dBm)*				*3GPP HSUPA (dBm)*				
		RMC/AMR	*Subtest 1*	*Subtest 2*	*Subtest 3*	*Subtest 4*	*Subtest 1*	*Subtest 2*	*Subtest 3*	*Subtest 4*	*Subtest 5*
UMTS Band 5 (850 MHz)	Maximum	**24.7**	**23.7**	**23.7**	**23.2**	**23.2**	**21.7**	**21.7**	**22.7**	**21.2**	**22.7**
	Nominal	**24.2**	**23.2**	**23.2**	**22.7**	**22.7**	**21.2**	**21.2**	**22.2**	**20.7**	**22.2**
UMTS Band 4 (1750 MHz)	Maximum	**24.7**	**23.7**	**23.7**	**23.2**	**23.2**	**21.7**	**21.7**	**22.7**	**21.2**	**22.7**
	Nominal	**24.2**	**23.2**	**23.2**	**22.7**	**22.7**	**21.2**	**21.2**	**22.2**	**20.7**	**22.2**
UMTS Band 2 (1900 MHz)	Maximum	**24.7**	**23.7**	**23.7**	**23.2**	**23.2**	**21.7**	**21.7**	**22.7**	**21.2**	**22.7**
	Nominal	**24.2**	**23.2**	**23.2**	**22.7**	**22.7**	**21.2**	**21.2**	**22.2**	**20.7**	**22.2**

Mode / Band		Modulated Average (dBm)
CDMA/EVDO BC10 (§90S)	Maximum	**24.7**
	Nominal	**24.2**
CDMA/EVDO BC0 (§22H)	Maximum	**24.7**
	Nominal	**24.2**
PCS CDMA/EVDO	Maximum	**24.7**
	Nominal	**24.2**

Mode / Band		Modulated Average (dBm)
LTE Band 71	Maximum	**24.7**
	Nominal	**24.2**
LTE Band 12	Maximum	**25.2**
	Nominal	**24.7**
LTE Band 13	Maximum	**24.2**
	Nominal	**23.7**
LTE Band 26 (Cell)	Maximum	**25.2**
	Nominal	**24.7**
LTE Band 5 (Cell)	Maximum	**25.2**
	Nominal	**24.7**
LTE Band 66 (AWS)	Maximum	**24.7**
	Nominal	**24.2**
LTE Band 4 (AWS)	Maximum	**24.7**
	Nominal	**24.2**
LTE Band 25 (PCS)	Maximum	**24.7**
	Nominal	**24.2**
LTE Band 2 (PCS)	Maximum	**24.7**
	Nominal	**24.2**
LTE Band 41 (PC3)	Maximum	**24.7**
	Nominal	**24.2**
LTE Band 41 (PC2)	Maximum	**27.2**
	Nominal	**26.7**

Mode / Band		Modulated Average - Single Tx Chain (dBm)		
	Channel	1	2 - 10	11
IEEE 802.11b (2.4 GHz)	Maximum	**21.0**	**21.0**	**21.0**
	Nominal	**20.0**	**20.0**	**20.0**
IEEE 802.11g (2.4 GHz)	Maximum	**17.0**	**18.5**	**16.5**
	Nominal	**16.0**	**17.5**	**15.5**
IEEE 802.11n (2.4 GHz)	Maximum	**16.0**	**17.0**	**15.0**
	Nominal	**15.0**	**16.0**	**14.0**

Mode / Band		Modulated Average - Single Tx Chain (dBm)														
		20 MHz Bandwidth							40 MHz Bandwidth					80 MHz Bandwidth	
	Channel	36-40	44-56	60-112	116-144	149-153	157	161-165	38-54	62	102	110-142	151-159	42-138	155
IEEE 802.11a (5 GHz)	Maximum	**16.0**	**16.0**	**14.0**	**14.0**	**13.0**	**16.0**	**14.0**							
	Nominal	**15.0**	**15.0**	**13.0**	**13.0**	**12.0**	**15.0**	**13.0**							
IEEE 802.11n (5 GHz)	Maximum	**15.5**	**15.0**	**14.0**	**14.0**	**13.0**	**14.5**	**14.0**	**13.5**	**12.0**	**10.5**	**13.5**	**12.5**		
	Nominal	**14.5**	**14.0**	**13.0**	**13.0**	**12.0**	**13.5**	**13.0**	**12.5**	**11.0**	**9.5**	**12.5**	**11.5**		
IEEE 802.11ac (5 GHz)	Maximum	**15.5**	**15.0**	**14.0**	**14.0**	**13.0**	**14.5**	**14.0**	**13.5**	**12.0**	**10.5**	**13.5**	**12.5**	**11.5**	**11.0**
	Nominal	**14.5**	**14.0**	**13.0**	**13.0**	**12.0**	**13.5**	**13.0**	**12.5**	**11.0**	**9.5**	**12.5**	**11.5**	**10.5**	**10.0**

Mode / Band		Modulated Average (dBm)
Bluetooth	Maximum	**9.0**
	Nominal	**8.0**
Bluetooth LE	Maximum	**5.0**
	Nominal	**4.0**

1.3.2 Reduced Output Power

Mode / Band		Modulated Average (dBm)									
		3GPP WCDMA (dBm)	*3GPP HSDPA (dBm)*				*3GPP HSUPA (dBm)*				
		RMC/AMR	*Subtest 1*	*Subtest 2*	*Subtest 3*	*Subtest 4*	*Subtest 1*	*Subtest 2*	*Subtest 3*	*Subtest 4*	*Subtest 5*
UMTS Band 4 (1750 MHz)	Maximum	**23.0**	**23.0**	**23.0**	**22.5**	**22.5**	**21.7**	**21.7**	**22.7**	**21.2**	**22.7**
	Nominal	**22.5**	**22.5**	**22.5**	**22.0**	**22.0**	**21.2**	**21.2**	**22.2**	**20.7**	**22.2**
UMTS Band 2 (1900 MHz)	Maximum	**23.0**	**23.0**	**23.0**	**22.5**	**22.5**	**21.7**	**21.7**	**22.7**	**21.2**	**22.7**
	Nominal	**22.5**	**22.5**	**22.5**	**22.0**	**22.0**	**21.2**	**21.2**	**22.2**	**20.7**	**22.2**

Mode / Band		Modulated Average (dBm)
PCS CDMA/EVDO	Maximum	**23.0**
	Nominal	**22.5**

Mode / Band		Modulated Average (dBm)
LTE Band 66 (AWS)	Maximum	**23.0**
	Nominal	**22.5**
LTE Band 4 (AWS)	Maximum	**23.0**
	Nominal	**22.5**
LTE Band 25 (PCS)	Maximum	**23.0**
	Nominal	**22.5**
LTE Band 2 (PCS)	Maximum	**23.0**
	Nominal	**22.5**
LTE Band 41 (PC3)	Maximum	**23.0**
	Nominal	**22.5**
LTE Band 41 (PC2)	Maximum	**25.5**
	Nominal	**25.0**

Mode / Band		Modulated Average (dBm)		
	Channel	1	2 - 10	11
IEEE 802.11b (2.4 GHz)	Maximum	**17.0**	**17.0**	**17.0**
	Nominal	**16.0**	**16.0**	**16.0**
IEEE 802.11g (2.4 GHz)	Maximum	**17.0**	**17.0**	**16.5**
	Nominal	**16.0**	**16.0**	**15.5**
IEEE 802.11n (2.4 GHz)	Maximum	**16.0**	**17.0**	**15.0**
	Nominal	**15.0**	**16.0**	**14.0**

Mode / Band		Modulated Average - Single Tx Chain (dBm)														
		20 MHz Bandwidth							40 MHz Bandwidth					80 MHz Bandwidth	
	Channel	36-40	44-56	60-112	116-144	149-153	157	161-165	38-54	62	102	110-142	151-159	42-138	155
IEEE 802.11a (5 GHz)	Maximum	**14.0**	**14.0**	**14.0**	**14.0**	**12.5**	**13.0**	**13.0**							
	Nominal	**13.0**	**13.0**	**13.0**	**13.0**	**11.5**	**12.0**	**12.0**							
IEEE 802.11n (5 GHz)	Maximum	**14.0**	**14.0**	**13.5**	**14.0**	**12.5**	**13.0**	**13.0**	**13.5**	**12.0**	**10.5**	**13.5**	**12.5**		
	Nominal	**13.0**	**13.0**	**12.5**	**13.0**	**11.5**	**12.0**	**12.0**	**12.5**	**11.0**	**9.5**	**12.5**	**11.5**		
IEEE 802.11ac (5 GHz)	Maximum	**14.0**	**14.0**	**13.5**	**14.0**	**12.5**	**13.0**	**13.0**	**13.5**	**12.0**	**10.5**	**13.5**	**12.5**	**11.5**	**11.0**
	Nominal	**13.0**	**13.0**	**12.5**	**13.0**	**11.5**	**12.0**	**12.0**	**12.5**	**11.0**	**9.5**	**12.5**	**11.5**	**10.5**	**10.0**

1.4 DUT Antenna Locations

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

Table 1-1
Device Edges/Sides for SAR Testing

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

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

1.5 Simultaneous Transmission Capabilities

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

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

Table 1-2
Simultaneous Transmission Scenarios

No.	Capable Transmit Configuration	Head	Body-Worn Accessory	Wireless Router	Phablet	Notes
1	1x CDMA voice + 2.4 GHz WI-FI	Yes	Yes	N/A	Yes	
2	1x CDMA voice + 5 GHz WI-FI	Yes	Yes	N/A	Yes	
3	1x CDMA voice + 2.4 GHz Bluetooth	Yes^	Yes	N/A	Yes	^ Bluetooth Tethering is considered
4	1x CDMA voice + 2.4 GHz Bluetooth + 5 GHz WI-FI	Yes^	Yes	N/A	Yes	^ Bluetooth Tethering is considered
5	GSM voice + 2.4 GHz WI-FI	Yes	Yes	N/A	Yes	
6	GSM voice + 5 GHz WI-FI	Yes	Yes	N/A	Yes	
7	GSM voice + 2.4 GHz Bluetooth	Yes^	Yes	N/A	Yes	^ Bluetooth Tethering is considered
8	GSM voice + 2.4 GHz Bluetooth + 5 GHz WI-FI	Yes^	Yes	N/A	Yes	^ Bluetooth Tethering is considered
9	UMTS + 2.4 GHz WI-FI	Yes	Yes	Yes	Yes	
10	UMTS + 5 GHz WI-FI	Yes	Yes	Yes	Yes	
11	UMTS + 2.4 GHz Bluetooth	Yes^	Yes	Yes^	Yes	^ Bluetooth Tethering is considered
12	UMTS + 2.4 GHz Bluetooth + 5 GHz WI-FI	Yes^	Yes	Yes^	Yes	^ Bluetooth Tethering is considered
13	LTE + 2.4 GHz WI-FI	Yes	Yes	Yes	Yes	
14	LTE + 5 GHz WI-FI	Yes	Yes	Yes	Yes	
15	LTE + 2.4 GHz Bluetooth	Yes^	Yes	Yes^	Yes	^ Bluetooth Tethering is considered
16	LTE + 2.4 GHz Bluetooth + 5 GHz WI-FI	Yes^	Yes	Yes^	Yes	^ Bluetooth Tethering is considered
17	CDMA/EVDO data + 2.4 GHz WI-FI	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
18	CDMA/EVDO data + 5 GHz WI-FI	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
19	CDMA/EVDO data + 2.4 GHz Bluetooth	Yes*^	Yes*	Yes^	Yes	* Pre-installed VOIP applications are considered ^ Bluetooth Tethering is considered
20	CDMA/EVDO data + 2.4 GHz Bluetooth + 5 GHz WI-FI	Yes*^	Yes*	Yes^	Yes	* Pre-installed VOIP applications are considered ^ Bluetooth Tethering is considered
21	GPRS/EDGE + 2.4 GHz WI-FI	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
22	GPRS/EDGE + 5 GHz WI-FI	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
23	GPRS/EDGE + 2.4 GHz Bluetooth	Yes*^	Yes*	Yes^	Yes	* Pre-installed VOIP applications are considered ^ Bluetooth Tethering is considered
24	GPRS/EDGE + 2.4 GHz Bluetooth + 5 GHz WI-FI	Yes*^	Yes*	Yes^	Yes	* Pre-installed VOIP applications are considered ^ Bluetooth Tethering is considered

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

1.6 Miscellaneous SAR Test Considerations

(A) WIFI/BT

Since Wireless Router operations are not allowed by the chipset firmware using U-NII-2A & U-NII-2C WIFI, only 2.4 GHz, U-NII-1, 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) 1 Tx antenna output
d) 256 QAM is supported
e) TDWR and Band gap channels are supported

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

(B) Licensed Transmitter(s)

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

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

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

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

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

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

This device supports both Power Class 2 (PC2) and Power Class 3 (PC3) for LTE Band 41. Per May 2017 TCB Workshop Notes, SAR tests were performed with Power Class 3 (given the specific UL/DL limitations for Power Class 2). Additionally, SAR testing for the power class condition was evaluated for the highest configuration in Power Class 3 for each test configuration to confirm the results were scalable linearly (See Section 14.1).

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

1.7 Guidance Applied

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

1.8 Device Serial Numbers

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

2 LTE INFORMATION

LTE Information					
Form Factor	Portable Handset				
Frequency Range of each LTE transmission band	LTE Band 71 (665.5 - 695.5 MHz)				
	LTE Band 12 (699.7 - 715.3 MHz)				
	LTE Band 13 (779.5 - 784.5 MHz)				
	LTE Band 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 41 (2498.5 - 2687.5 MHz)				
Channel Bandwidths	LTE Band 71: 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 12: 1.4 MHz, 3 MHz, 5 MHz, 10 MHz				
	LTE Band 13: 5 MHz, 10 MHz				
	LTE Band 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 41: 5 MHz, 10 MHz, 15 MHz, 20 MHz				
Channel Numbers and Frequencies (MHz)	Low	Low-Mid	Mid	Mid-High	High
LTE Band 71: 5 MHz	665.5 (133147)		680.5 (133297)	695.5 (133447)	
LTE Band 71: 10 MHz	668 (133172)		680.5 (133297)	693 (133422)	
LTE Band 71: 15 MHz	670.5 (133197)		680.5 (133297)	690.5 (133397)	
LTE Band 71: 20 MHz	673 (133222)		680.5 (133297)	688 (133372)	
LTE Band 12: 1.4 MHz	699.7 (23017)		707.5 (23095)	715.3 (23173)	
LTE Band 12: 3 MHz	700.5 (23025)		707.5 (23095)	714.5 (23165)	
LTE Band 12: 5 MHz	701.5 (23035)		707.5 (23095)	713.5 (23155)	
LTE Band 12: 10 MHz	704 (23060)		707.5 (23095)	711 (23130)	
LTE Band 13: 5 MHz	779.5 (23205)		782 (23230)	784.5 (23255)	
LTE Band 13: 10 MHz	N/A		782 (23230)	N/A	
LTE Band 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 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	DL UE Cat 7, UL UE Cat 13				
Modulations Supported in UL	QPSK, 16QAM, 64QAM				
LTE MPR Permanently implemented per 3GPP TS 36.101 section 6.2.3~6.2.5? (manufacturer attestation to be provided)	YES				
A-MPR (Additional MPR) disabled for SAR Testing?	YES				
LTE Carrier Aggregation Possible Combinations	The technical description includes all the possible carrier aggregation combinations				
LTE Additional Information	This device does not support full CA features on 3GPP Release 11. All uplink communications are identical to the Release 8 Specifications. Uplink communications are done on the PCC. The following LTE Release 11 Features are not supported: Relay, HetNet, Enhanced MIMO, eICIC, 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:

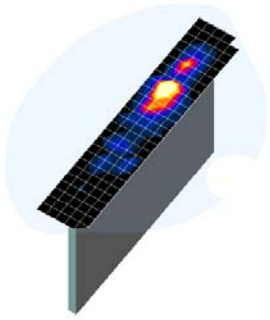


Figure 4-1
Sample SAR Area Scan

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

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

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

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

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

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

*Also compliant to IEEE 1528-2013 Table 6

5 DEFINITION OF REFERENCE POINTS

5.1 EAR REFERENCE POINT

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

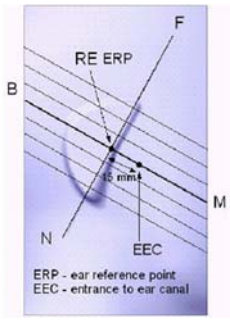


Figure 5-1
Close-Up Side view of ERP

5.2 HANDSET REFERENCE POINTS

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

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

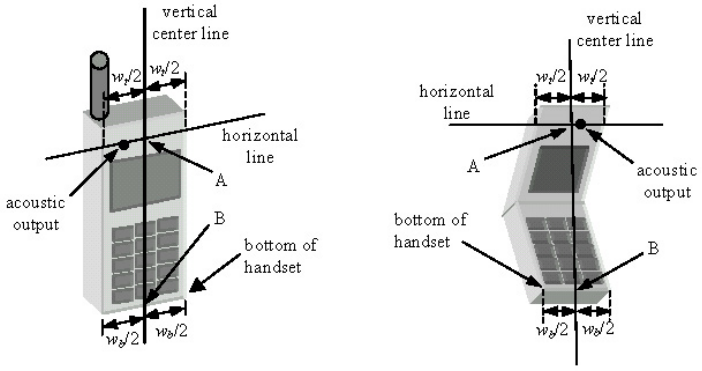


Figure 5-3
Handset Vertical Center & Horizontal Line Reference Points

6 TEST CONFIGURATION POSITIONS

6.1 Device Holder

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

6.2 Positioning for Cheek

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

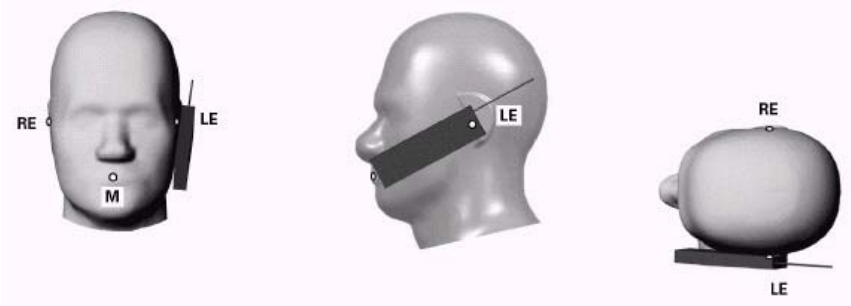


Figure 6-1 Front, Side and Top View of Cheek Position

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

6.3 Positioning for Ear / 15º Tilt

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

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

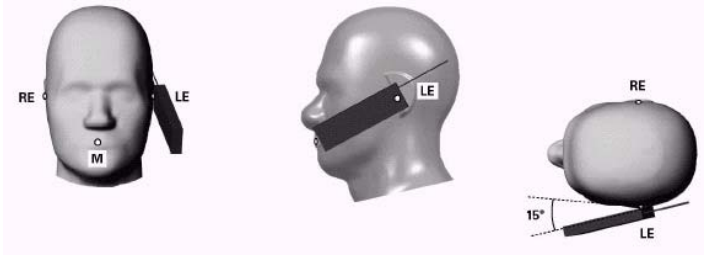


Figure 6-2 Front, Side and Top View of Ear/15º Tilt Position

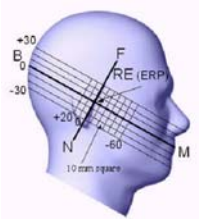


Figure 6-3
Side view w/ relevant markings

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

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

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

6.5 Body-Worn Accessory Configurations

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

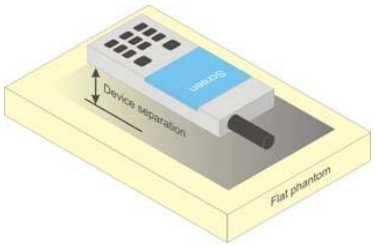


Figure 6-4
Sample Body-Worn Diagram

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

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

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

6.6 Extremity Exposure Configurations

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

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

6.7 Wireless Router Configurations

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

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

6.8 Phablet Configurations

For smart phones with a display diagonal dimension > 150 mm or an overall diagonal dimension > 160 mm that provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets that

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

6.9 SAR Testing for Tablet per KDB Publication 616217 D04v01r02

Per FCC KDB Publication 616217 D04v01r02, the back surface and edges of the tablet should be tested for SAR compliance with the tablet touching the phantom. The SAR Exclusion Threshold in KDB 447498 D01v06 can be applied to determine SAR test exclusion for adjacent edge configurations. The closest distance from the antenna to an adjacent tablet edge is used to determine if SAR testing is required for the adjacent edges, with the adjacent edge positioned against the phantom and the edge containing the antenna positioned perpendicular to the phantom.

6.10 Proximity Sensor Considerations

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

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

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

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

8.3 Procedures Used to Establish RF Signal for SAR

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

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

8.4 SAR Measurement Conditions for CDMA2000

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

8.4.1 Output Power Verification

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

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

Table 8-1
Parameters for Max. Power for RC1

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

Table 8-2
Parameters for Max. Power for RC3

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

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

8.4.2 Head SAR Measurements

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

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

8.4.3 Body-worn SAR Measurements

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

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

8.4.4 Body-worn SAR Measurements for EVDO Devices

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

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

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

8.4.5 Body SAR Measurements for EVDO Hotspot

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

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

8.5 SAR Measurement Conditions for UMTS

8.5.1 Output Power Verification

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

8.5.2 Head SAR Measurements

SAR for next to the ear head exposure is measured using a 12.2 kbps RMC with TPC bits configured to all "1's". The 3G SAR test reduction procedure is applied to AMR configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for 12.2 kbps AMR in 3.4 kbps SRB (signaling radio bearer) using the highest reported SAR configuration in 12.2 kbps RMC for head exposure.

8.5.3 Body SAR Measurements

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

8.5.4 SAR Measurements with Rel 5 HSDPA

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

8.5.5 SAR Measurements with Rel 6 HSUPA

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

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

8.6 SAR Measurement Conditions for LTE

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

8.6.1 Spectrum Plots for RB Configurations

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

8.6.2 MPR

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

8.6.3 A-MPR

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

8.6.4 Required RB Size and RB Offsets for SAR Testing

According to FCC KDB 941225 D05v02r04:

a. Per Section 5.2.1, SAR is required for QPSK 1 RB Allocation for the largest bandwidth
    i. The required channel and offset combination with the highest maximum output power is required for SAR.
    ii. When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required. Otherwise, SAR is required for the remaining required test channels using the RB offset configuration with highest output power for that channel.
    iii. When the reported SAR for a required test channel is > 1.45 W/kg, SAR is required for all RB offset configurations for that channel.
b. Per Section 5.2.2, SAR is required for 50% RB allocation using the largest bandwidth following the same procedures outlined in Section 5.2.1.
c. Per Section 5.2.3, QPSK SAR is not required for the 100% allocation when the highest maximum output power for the 100% allocation is less than the highest maximum output power of the 1 RB

and 50% RB allocations and the reported SAR for the 1 RB and 50% RB allocations is < 0.8 W/kg.

d. Per Section 5.2.4 and 5.3, SAR tests for higher order modulations and lower bandwidths configurations are not required when the conducted power of the required test configurations determined by Sections 5.2.1 through 5.2.3 is less than or equal to ½ dB higher than the equivalent configuration using QPSK modulation and when the QPSK SAR for those configurations is <1.45 W/kg.

8.6.5 TDD

LTE TDD testing is performed using the SAR test guidance provided in FCC KDB 941225 D05v02r04. TDD is tested at the highest duty factor using UL-DL configuration 0 with special subframe configuration 6 and applying the FDD LTE procedures in KDB 941225 D05v02r04. SAR testing 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. Additional conducted output powers are measured with the downlink carrier aggregation active for the configuration with highest measured maximum conducted power with downlink carrier aggregation inactive measured among the channel bandwidth, modulation, and RB combinations in each frequency band. Per FCC KDB Publication 941225 D05Av01r02, no SAR measurements are required for downlink only carrier aggregation configurations when the average output power with downlink only carrier aggregation active is not more than 0.25 dB higher than the average output power with downlink only carrier aggregation inactive.

8.7 SAR Testing with 802.11 Transmitters

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

8.7.1 General Device Setup

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

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

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

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

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

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

8.7.4 Initial Test Position Procedure

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

8.7.5 2.4 GHz SAR Test Requirements

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

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

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

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

8.7.6 OFDM Transmission Mode and SAR Test Channel Selection

When the same maximum output power was specified for multiple OFDM transmission mode configurations in a frequency band or aggregated band, SAR is measured using the configuration with the largest channel bandwidth, lowest order modulation and lowest data rate. When the maximum output power of a channel is the same for equivalent OFDM configurations; for example, 802.11a, 802.11n and 802.11ac or 802.11g and 802.11n with the same channel bandwidth, modulation and data rate etc., the lower order 802.11 mode i.e., 802.11a, then 802.11n and 802.11ac or 802.11g then 802.11n, is used for SAR measurement. Per April 2019 TCB Workshop guidance, 802.11ax was considered the highest order 802.11 mode. 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). When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

8.7.8 Subsequent Test Configuration Procedures

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

9 RF CONDUCTED POWERS

9.1 CDMA Conducted Powers

Table 9-1
Maximum Conducted Power

Band	Channel	Rule Part	Frequency	SO55 [dBm]	SO55 [dBm]	TDSO SO32 [dBm]	TDSO SO32 [dBm]	1x EvDO Rev. 0 [dBm]	1x EvDO Rev. A [dBm]
	F-RC		MHz	RC1	RC3	FCH+SCH	FCH	(RTAP)	(RETAP)
Cellular	564	90S	820.1	24.53	24.57	23.62	24.61	24.63	24.60
Cellular	1013	22H	824.7	24.50	24.55	23.53	24.53	24.49	24.51
	384	22H	836.52	24.53	24.56	23.54	24.53	24.50	24.54
	777	22H	848.31	24.45	24.50	23.53	24.49	24.50	24.51
PCS	25	24E	1851.25	24.37	24.42	23.28	24.44	24.43	24.45
	600	24E	1880	24.38	24.42	23.41	24.49	24.48	24.50
	1175	24E	1908.75	24.61	24.66	23.63	24.70	24.65	24.69

Table 9-2
Reduced Conducted Power

Band	Channel	Rule Part	Frequency	SO55 [dBm]	SO55 [dBm]	TDSO SO32 [dBm]	TDSO SO32 [dBm]	1x EvDO Rev. 0 [dBm]	1x EvDO Rev. A [dBm]
	F-RC		MHz	RC1	RC3	FCH+SCH	FCH	(RTAP)	(RETAP)
PCS	25	24E	1851.25	22.74	22.79	21.71	22.70	22.72	22.73
	600	24E	1880	22.75	22.80	21.76	22.74	22.75	22.78
	1175	24E	1908.75	23.00	23.00	21.94	22.92	22.89	22.90

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

Figure 9-1
Power Measurement Setup

9.2 GSM Conducted Powers

Table 9-3
Maximum Conducted Power

Maximum Burst-Averaged Output Power										
		Voice	*GPRS/EDGE Data (GMSK)*				*EDGE Data (8-PSK)*			
Band	**Channel**	**GSM [dBm] CS (1 Slot)**	**GPRS [dBm] 1 Tx Slot**	**GPRS [dBm] 2 Tx Slot**	**GPRS [dBm] 3 Tx Slot**	**GPRS [dBm] 4 Tx Slot**	**EDGE [dBm] 1 Tx Slot**	**EDGE [dBm] 2 Tx Slot**	**EDGE [dBm] 3 Tx Slot**	**EDGE [dBm] 4 Tx Slot**
GSM 850	128	33.69	33.70	31.74	30.64	**29.61**	27.69	26.70	24.70	23.70
	190	33.60	33.61	31.63	30.51	**29.54**	27.65	26.64	24.67	23.70
	251	33.66	33.67	31.70	30.60	**29.59**	27.67	26.65	24.64	23.65
GSM 1900	512	30.00	30.01	28.61	26.60	**25.44**	26.64	25.65	24.67	23.69
	661	30.12	30.12	28.66	26.58	**25.51**	26.59	25.60	24.58	23.58
	810	30.32	30.32	28.68	26.51	**25.43**	26.58	25.62	24.68	23.65

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	24.66	24.67	25.72	26.38	**26.60**	18.66	20.68	20.44	20.69
	190	24.57	24.58	25.61	26.25	**26.53**	18.62	20.62	20.41	20.69
	251	24.63	24.64	25.68	26.34	**26.58**	18.64	20.63	20.38	20.64
GSM 1900	512	20.97	20.98	22.59	22.34	**22.43**	17.61	19.63	20.41	20.68
	661	21.09	21.09	22.64	22.32	**22.50**	17.56	19.58	20.32	20.57
	810	21.29	21.29	22.66	22.25	**22.42**	17.55	19.60	20.42	20.64

GSM 850	**Frame Avg.Targets:**	24.17	24.17	25.68	25.94	**26.19**	18.17	20.18	19.94	20.19
GSM 1900		21.17	21.17	22.18	21.94	**22.19**	17.17	19.18	19.94	20.19

Note:

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

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

Figure 9-2
Power Measurement Setup

9.3 UMTS Conducted Powers

Table 9-4
Maximum Conducted Power

3GPP Release Version	Mode	3GPP 34.121 Subtest	Cellular Band [dBm]			AWS Band [dBm]			PCS Band [dBm]			MPR [dB]
			4132	4183	4233	1312	1412	1513	9262	9400	9538	
99	WCDMA	12.2 kbps RMC	24.67	24.58	24.66	24.64	24.70	24.69	24.48	24.45	24.53	-
99		12.2 kbps AMR	24.65	24.59	24.63	24.56	24.63	24.62	24.53	24.42	24.47	-
6	HSDPA	Subtest 1	23.59	23.67	23.69	23.68	23.68	23.70	23.56	23.70	23.62	0
6		Subtest 2	23.66	23.45	23.70	23.58	23.59	23.68	23.62	23.48	23.55	0
6		Subtest 3	23.20	23.19	23.17	23.08	23.12	23.10	23.04	23.10	23.20	0.5
6		Subtest 4	23.20	23.14	23.17	23.15	23.12	23.05	23.01	23.02	23.07	0.5
6	HSUPA	Subtest 1	21.69	21.68	21.70	21.68	21.70	21.68	21.59	21.68	21.70	1
6		Subtest 2	21.68	21.63	21.69	21.68	21.65	21.68	21.70	21.64	21.67	1
6		Subtest 3	22.68	22.67	22.59	22.68	22.59	22.70	22.68	22.54	22.69	0
6		Subtest 4	21.17	21.09	21.19	21.01	21.09	21.18	21.19	21.09	21.17	1.5
6		Subtest 5	22.59	22.67	22.57	22.70	22.59	22.49	22.59	22.69	22.70	0

Table 9-5
Reduced Conducted Power

3GPP Release Version	Mode	3GPP 34.121 Subtest	AWS Band [dBm]			PCS Band [dBm]			MPR [dB]
			1312	1412	1513	9262	9400	9538	
99	WCDMA	12.2 kbps RMC	22.92	22.97	22.96	22.84	22.88	22.91	-
99		12.2 kbps AMR	22.88	22.93	22.90	22.82	22.91	22.95	-
6	HSDPA	Subtest 1	22.75	22.75	22.80	22.81	22.85	22.75	0
6		Subtest 2	22.65	22.65	22.84	22.77	22.65	22.61	0
6		Subtest 3	22.19	22.26	22.29	22.25	22.15	22.08	0.5
6		Subtest 4	22.15	22.19	22.27	22.17	22.11	22.09	0.5
6	HSUPA	Subtest 1	20.79	20.76	20.75	20.65	20.65	20.67	1
6		Subtest 2	20.90	20.85	20.79	20.89	20.85	20.79	1
6		Subtest 3	22.10	22.06	22.15	21.89	21.90	21.87	0
6		Subtest 4	20.41	20.39	20.38	20.34	20.29	20.39	1.5
6		Subtest 5	22.05	22.08	22.07	21.91	21.88	21.79	0

This device does not support DC-HSDPA.

Figure 9-3
Power Measurement Setup

9.4 LTE Conducted Powers

9.4.1 LTE Band 71

Table 9-6
LTE Band 71 Conducted Powers - 20 MHz Bandwidth

LTE Band 71 20 MHz Bandwidth					
Modulation	**RB Size**	**RB Offset**	**Mid Channel 133297 (680.5 MHz) Conducted Power [dBm]**	**MPR Allowed per 3GPP [dB]**	**MPR [dB]**
QPSK	1	0	24.47	0	0
	1	50	**24.61**		0
	1	99	24.40		0
	50	0	23.60	0-1	1
	50	25	**23.62**		1
	50	50	23.54		1
	100	0	23.50		1
16QAM	1	0	23.66	0-1	1
	1	50	23.70		1
	1	99	23.59		1
	50	0	22.52	0-2	2
	50	25	22.68		2
	50	50	22.53		2
	100	0	22.53		2
64QAM	1	0	22.62	0-2	2
	1	50	22.69		2
	1	99	22.65		2
	50	0	21.56	0-3	3
	50	25	21.60		3
	50	50	21.52		3
	100	0	21.51		3

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

Table 9-7
LTE Band 71 Conducted Powers - 15 MHz Bandwidth

LTE Band 71 15 MHz Bandwidth					
Modulation	**RB Size**	**RB Offset**	**Mid Channel** **133297 (680.5 MHz)** **Conducted Power [dBm]**	**MPR Allowed per 3GPP [dB]**	**MPR [dB]**
QPSK	1	0	24.54	0	0
	1	36	24.54		0
	1	74	24.47		0
	36	0	23.66	0-1	1
	36	18	23.66		1
	36	37	23.60		1
	75	0	23.62		1
16QAM	1	0	23.66	0-1	1
	1	36	23.67		1
	1	74	23.64		1
	36	0	22.60	0-2	2
	36	18	22.63		2
	36	37	22.55		2
	75	0	22.59		2
64QAM	1	0	22.64	0-2	2
	1	36	22.67		2
	1	74	22.68		2
	36	0	21.61	0-3	3
	36	18	21.64		3
	36	37	21.58		3
	75	0	21.58		3

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

Table 9-8
LTE Band 71 Conducted Powers - 10 MHz Bandwidth

LTE Band 71 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 133172 (668.0 MHz)	Mid Channel 133297 (680.5 MHz)	High Channel 133422 (693.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.60	24.61	24.58	0	0
	1	25	24.60	24.63	24.52		0
	1	49	24.54	24.63	24.58		0
	25	0	23.58	23.62	23.68	0-1	1
	25	12	23.64	23.62	23.70		1
	25	25	23.60	23.56	23.70		1
	50	0	23.62	23.61	23.69		1
16QAM	1	0	23.65	23.70	23.60	0-1	1
	1	25	23.57	23.70	23.70		1
	1	49	23.68	23.63	23.55		1
	25	0	22.57	22.61	22.67	0-2	2
	25	12	22.61	22.64	22.65		2
	25	25	22.58	22.55	22.70		2
	50	0	22.58	22.59	22.68		2
64QAM	1	0	22.56	22.62	22.58	0-2	2
	1	25	22.70	22.61	22.68		2
	1	49	22.52	22.69	22.61		2
	25	0	21.58	21.62	21.70	0-3	3
	25	12	21.60	21.63	21.69		3
	25	25	21.58	21.55	21.51		3
	50	0	21.60	21.56	21.70		3

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

LTE Band 71 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 133147 (665.5 MHz)	Mid Channel 133297 (680.5 MHz)	High Channel 133447 (695.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.53	24.48	24.56	0	0
	1	12	24.69	24.52	24.57		0
	1	24	24.45	24.45	24.51		0
	12	0	23.59	23.57	23.60	0-1	1
	12	6	23.68	23.61	23.68		1
	12	13	23.68	23.60	23.65		1
	25	0	23.66	23.60	23.59		1
16QAM	1	0	23.55	23.53	23.60	0-1	1
	1	12	23.70	23.70	23.70		1
	1	24	23.60	23.62	23.70		1
	12	0	22.58	22.60	22.64	0-2	2
	12	6	22.67	22.66	22.66		2
	12	13	22.66	22.60	22.63		2
	25	0	22.65	22.55	22.60		2
64QAM	1	0	22.53	22.66	22.52	0-2	2
	1	12	22.70	22.60	22.70		2
	1	24	22.65	22.60	22.67		2
	12	0	21.58	21.60	21.62	0-3	3
	12	6	21.66	21.65	21.70		3
	12	13	21.67	21.60	21.66		3
	25	0	21.65	21.60	21.65		3

9.4.2 LTE Band 12

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

LTE Band 12 10 MHz Bandwidth					
Modulation	**RB Size**	**RB Offset**	**Mid Channel** **23095** **(707.5 MHz)** **Conducted Power [dBm]**	**MPR Allowed per 3GPP [dB]**	**MPR [dB]**
QPSK	1	0	25.00	0	0
	1	25	**25.07**		0
	1	49	24.44		0
	25	0	**24.17**	0-1	1
	25	12	24.14		1
	25	25	24.12		1
	50	0	24.15		1
16QAM	1	0	24.20	0-1	1
	1	25	24.15		1
	1	49	24.20		1
	25	0	23.16	0-2	2
	25	12	23.12		2
	25	25	23.11		2
	50	0	23.12		2
64QAM	1	0	23.17	0-2	2
	1	25	23.12		2
	1	49	23.08		2
	25	0	22.18	0-3	3
	25	12	22.16		3
	25	25	22.14		3
	50	0	22.14		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 9-11
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	24.91	24.91	24.86	0	0
	1	12	25.12	25.11	25.11		0
	1	24	24.87	24.86	24.85		0
	12	0	24.10	24.06	24.04	0-1	1
	12	6	24.12	24.09	24.06		1
	12	13	24.08	24.02	23.97		1
	25	0	24.11	24.06	24.05		1
16QAM	1	0	24.05	24.18	24.05	0-1	1
	1	12	24.10	24.18	24.10		1
	1	24	24.08	24.08	24.05		1
	12	0	23.07	23.06	23.06	0-2	2
	12	6	23.12	23.10	23.10		2
	12	13	23.10	23.03	23.02		2
	25	0	23.10	23.03	23.05		2
64QAM	1	0	23.05	23.17	23.13	0-2	2
	1	12	23.10	23.10	23.13		2
	1	24	23.06	23.05	23.12		2
	12	0	22.15	22.10	22.14	0-3	3
	12	6	22.14	22.15	22.15		3
	12	13	22.16	22.05	22.07		3
	25	0	22.15	22.07	22.11		3

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

LTE Band 12 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 23025 (700.5 MHz)	Mid Channel 23095 (707.5 MHz)	High Channel 23165 (714.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.15	25.20	25.19	0	0
	1	7	25.20	25.20	25.20		0
	1	14	25.15	25.18	25.20		0
	8	0	23.97	24.20	24.20	0-1	1
	8	4	24.02	24.12	24.20		1
	8	7	23.97	24.19	24.20		1
	15	0	24.02	24.17	24.16		1
16QAM	1	0	24.09	24.14	24.15	0-1	1
	1	7	24.19	24.15	24.05		1
	1	14	24.08	24.16	24.09		1
	8	0	23.01	23.02	23.09	0-2	2
	8	4	23.07	23.08	23.15		2
	8	7	23.05	23.20	23.05		2
	15	0	22.99	23.20	23.05		2
64QAM	1	0	22.99	23.10	23.20	0-2	2
	1	7	23.15	23.10	23.20		2
	1	14	22.99	23.18	23.17		2
	8	0	21.99	22.12	22.10	0-3	3
	8	4	22.06	22.12	22.02		3
	8	7	22.00	22.11	22.14		3
	15	0	21.92	22.14	22.16		3

Table 9-13
LTE Band 12 Conducted Powers -1.4 MHz Bandwidth

LTE Band 12 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 23017 (699.7 MHz)	Mid Channel 23095 (707.5 MHz)	High Channel 23173 (715.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	25.05	24.99	24.98	0	0
	1	2	25.20	25.14	25.17		0
	1	5	25.08	24.98	25.01		0
	3	0	25.07	25.03	24.97		0
	3	2	25.14	25.10	24.98		0
	3	3	25.07	25.00	25.16		0
	6	0	24.00	24.13	24.13	0-1	1
16QAM	1	0	24.15	24.15	23.96	0-1	1
	1	2	24.20	24.20	24.13		1
	1	5	24.20	24.01	23.97		1
	3	0	24.20	24.19	24.06		1
	3	2	24.04	24.04	24.20		1
	3	3	24.01	24.14	24.20		1
	6	0	23.13	23.10	23.20	0-2	2
64QAM	1	0	22.95	22.94	23.02	0-2	2
	1	2	23.03	23.07	23.20		2
	1	5	23.00	22.99	23.06		2
	3	0	23.10	23.12	23.00		2
	3	2	23.09	23.12	23.00		2
	3	3	23.14	23.09	22.96		2
	6	0	22.02	22.18	22.18	0-3	3

9.4.3 LTE Band 13

Table 9-14
LTE Band 13 Conducted Powers - 10 MHz Bandwidth

LTE Band 13 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel 23230 (782.0 MHz) Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
QPSK	1	0	24.08	0	0
	1	25	**24.19**		0
	1	49	23.98		0
	25	0	23.16	0-1	1
	25	12	**23.20**		1
	25	25	23.12		1
	50	0	23.18		1
16QAM	1	0	23.19	0-1	1
	1	25	23.12		1
	1	49	23.08		1
	25	0	22.10	0-2	2
	25	12	22.07		2
	25	25	22.20		2
	50	0	22.19		2
64QAM	1	0	22.14	0-2	2
	1	25	22.19		2
	1	49	21.98		2
	25	0	21.13	0-3	3
	25	12	21.19		3
	25	25	21.09		3
	50	0	21.17		3

Table 9-15
LTE Band 13 Conducted Powers - 5 MHz Bandwidth

LTE Band 13 5 MHz Bandwidth					
Modulation	**RB Size**	**RB Offset**	**Mid Channel** **23230** **(782.0 MHz)** **Conducted Power [dBm]**	**MPR Allowed per 3GPP [dB]**	**MPR [dB]**
QPSK	1	0	23.73	0	0
	1	12	23.93		0
	1	24	23.68		0
	12	0	22.65	0-1	1
	12	6	22.85		1
	12	13	22.64		1
	25	0	22.63		1
16QAM	1	0	22.53	0-1	1
	1	12	22.59		1
	1	24	22.46		1
	12	0	21.57	0-2	2
	12	6	21.61		2
	12	13	21.55		2
	25	0	21.57		2
64QAM	1	0	21.81	0-2	2
	1	12	21.84		2
	1	24	21.77		2
	12	0	20.64	0-3	3
	12	6	20.71		3
	12	13	20.64		3
	25	0	20.53		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.

9.4.4 LTE Band 26 (Cell)

Table 9-16
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	25.03	0	0
	1	36	**25.11**		0
	1	74	24.99		0
	36	0	**24.20**	0-1	1
	36	18	24.19		1
	36	37	24.16		1
	75	0	24.18		1
16QAM	1	0	24.11	0-1	1
	1	36	24.18		1
	1	74	24.00		1
	36	0	23.19	0-2	2
	36	18	23.15		2
	36	37	23.13		2
	75	0	23.19		2
64QAM	1	0	23.16	0-2	2
	1	36	23.20		2
	1	74	23.16		2
	36	0	22.20	0-3	3
	36	18	22.19		3
	36	37	22.15		3
	75	0	22.16		3

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

Table 9-17
LTE Band 26 (Cell) Conducted Powers - 10 MHz Bandwidth

LTE Band 26 (Cell) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26740 (819.0 MHz)	Mid Channel 26865 (831.5 MHz)	High Channel 26990 (844.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.84	25.02	24.93	0	0
	1	25	25.00	25.07	25.09		0
	1	49	24.93	24.96	24.96		0
	25	0	24.00	24.18	24.13	0-1	1
	25	12	24.00	24.06	24.13		1
	25	25	24.07	24.08	24.01		1
	50	0	24.03	24.14	24.08		1
16QAM	1	0	24.04	24.17	24.19	0-1	1
	1	25	24.10	24.16	24.15		1
	1	49	24.11	24.12	24.15		1
	25	0	22.95	23.15	23.15	0-2	2
	25	12	23.02	23.07	23.04		2
	25	25	23.00	23.05	23.03		2
	50	0	23.03	23.10	23.10		2
64QAM	1	0	23.00	23.13	23.18	0-2	2
	1	25	23.16	23.18	23.20		2
	1	49	23.10	23.12	23.19		2
	25	0	21.98	22.04	22.17	0-3	3
	25	12	22.03	22.09	22.15		3
	25	25	22.08	22.05	22.05		3
	50	0	22.05	22.10	22.13		3

Table 9-18
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	24.75	24.91	24.95	0	0
	1	12	25.00	25.14	25.16		0
	1	24	24.86	24.92	24.92		0
	12	0	23.93	24.07	24.19	0-1	1
	12	6	24.00	24.09	24.14		1
	12	13	24.00	24.00	24.03		1
	25	0	23.97	24.06	24.12		1
16QAM	1	0	23.88	24.00	24.09	0-1	1
	1	12	24.14	24.07	24.13		1
	1	24	23.98	24.05	24.04		1
	12	0	22.87	23.04	23.17	0-2	2
	12	6	22.94	23.06	23.20		2
	12	13	22.95	22.88	23.06		2
	25	0	22.98	23.03	23.12		2
64QAM	1	0	22.92	23.03	23.15	0-2	2
	1	12	23.14	23.16	23.15		2
	1	24	23.02	23.00	23.10		2
	12	0	21.88	22.05	22.18	0-3	3
	12	6	21.96	22.08	22.17		3
	12	13	21.94	22.00	22.08		3
	25	0	21.93	22.03	22.15		3

Table 9-19
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	25.00	24.68	24.72	0	0
	1	7	25.17	24.88	25.10		0
	1	14	24.82	24.69	25.01		0
	8	0	23.94	23.80	23.80	0-1	1
	8	4	23.91	23.73	23.94		1
	8	7	23.87	23.70	23.91		1
	15	0	23.83	23.65	23.79		1
16QAM	1	0	24.08	23.69	23.74	0-1	1
	1	7	24.05	23.93	24.05		1
	1	14	24.01	23.71	23.96		1
	8	0	22.78	22.62	22.83	0-2	2
	8	4	22.79	22.68	22.86		2
	8	7	22.76	22.61	22.86		2
	15	0	22.86	22.59	22.77		2
64QAM	1	0	23.04	22.49	22.87	0-2	2
	1	7	23.20	22.73	23.02		2
	1	14	23.04	22.51	23.02		2
	8	0	21.93	21.46	21.78	0-3	3
	8	4	21.94	21.49	21.86		3
	8	7	21.93	21.47	21.83		3
	15	0	21.68	21.52	21.86		3

Table 9-20
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	24.99	24.56	24.56	0	0
	1	2	25.04	24.72	24.76		0
	1	5	24.95	24.61	24.70		0
	3	0	24.94	24.55	24.74		0
	3	2	24.95	24.61	24.80		0
	3	3	24.88	24.64	24.79		0
	6	0	23.94	23.69	23.93	0-1	1
16QAM	1	0	23.93	23.60	23.75	0-1	1
	1	2	24.11	23.80	23.95		1
	1	5	23.89	23.63	23.83		1
	3	0	23.95	23.36	23.81		1
	3	2	23.94	23.44	23.79		1
	3	3	23.93	23.39	23.76		1
	6	0	22.88	22.62	22.83	0-2	2
64QAM	1	0	23.20	22.70	23.02	0-2	2
	1	2	23.17	22.84	23.20		2
	1	5	23.15	22.74	23.08		2
	3	0	22.91	22.37	22.79		2
	3	2	22.92	22.39	22.75		2
	3	3	22.93	22.39	22.73		2
	6	0	21.90	21.63	21.66	0-3	3

9.4.5 LTE Band 66 (AWS)

Table 9-21
LTE Band 66 (AWS) Maximum 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	24.15	24.10	24.13	0	0
	1	50	**24.43**	24.35	24.42		0
	1	99	24.17	24.13	24.17		0
	50	0	**23.56**	23.29	23.54	0-1	1
	50	25	23.51	23.45	23.51		1
	50	50	23.47	23.37	23.46		1
	100	0	23.50	23.34	23.49		1
16QAM	1	0	23.46	23.43	23.45	0-1	1
	1	50	23.62	23.63	23.63		1
	1	99	23.46	23.38	23.40		1
	50	0	22.57	22.28	22.56	0-2	2
	50	25	22.52	22.41	22.52		2
	50	50	22.49	22.33	22.48		2
	100	0	22.51	22.28	22.48		2
64QAM	1	0	22.41	22.35	22.38	0-2	2
	1	50	22.64	22.55	22.67		2
	1	99	22.45	22.31	22.44		2
	50	0	21.57	21.26	21.55	0-3	3
	50	25	21.54	21.39	21.51		3
	50	50	21.51	21.32	21.48		3
	100	0	21.52	21.29	21.51		3

Table 9-22
LTE Band 66 (AWS) Maximum 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	24.48	24.35	24.39	0	0
	1	36	24.41	24.28	24.43		0
	1	74	24.28	24.22	24.32		0
	36	0	23.62	23.56	23.51	0-1	1
	36	18	23.57	23.48	23.53		1
	36	37	23.58	23.51	23.52		1
	75	0	23.65	23.56	23.56		1
16QAM	1	0	23.46	23.57	23.54	0-1	1
	1	36	23.48	23.63	23.61		1
	1	74	23.41	23.61	23.47		1
	36	0	22.44	22.46	22.50	0-2	2
	36	18	22.43	22.49	22.53		2
	36	37	22.45	22.48	22.48		2
	75	0	22.58	22.53	22.48		2
64QAM	1	0	22.24	22.58	22.64	0-2	2
	1	36	22.39	22.63	22.66		2
	1	74	22.25	22.53	22.62		2
	36	0	21.53	21.50	21.48	0-3	3
	36	18	21.54	21.50	21.50		3
	36	37	21.55	21.53	21.44		3
	75	0	21.54	21.46	21.55		3

Table 9-23
LTE Band 66 (AWS) Maximum 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	24.60	24.26	24.24	0	0
	1	25	24.52	24.36	24.41		0
	1	49	24.32	24.20	24.26		0
	25	0	23.45	23.37	23.42	0-1	1
	25	12	23.43	23.36	23.46		1
	25	25	23.47	23.47	23.38		1
	50	0	23.49	23.46	23.41		1
16QAM	1	0	23.48	23.44	23.64	0-1	1
	1	25	23.57	23.55	23.70		1
	1	49	23.40	23.45	23.56		1
	25	0	22.48	22.44	22.48	0-2	2
	25	12	22.51	22.43	22.50		2
	25	25	22.53	22.49	22.43		2
	50	0	22.51	22.50	22.46		2
64QAM	1	0	22.21	22.43	22.26	0-2	2
	1	25	22.39	22.56	22.39		2
	1	49	22.20	22.46	22.20		2
	25	0	21.52	21.52	21.49	0-3	3
	25	12	21.54	21.53	21.52		3
	25	25	21.57	21.56	21.49		3
	50	0	21.50	21.47	21.45		3

Table 9-24
LTE Band 66 (AWS) Maximum 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	24.54	24.16	24.29	0	0
	1	12	24.55	24.27	24.45		0
	1	24	24.43	24.16	24.33		0
	12	0	23.40	23.30	23.43	0-1	1
	12	6	23.42	23.35	23.44		1
	12	13	23.39	23.35	23.33		1
	25	0	23.36	23.35	23.38		1
16QAM	1	0	23.67	23.63	23.62	0-1	1
	1	12	23.69	23.70	23.70		1
	1	24	23.68	23.66	23.55		1
	12	0	22.41	22.35	22.45	0-2	2
	12	6	22.42	22.47	22.47		2
	12	13	22.40	22.45	22.47		2
	25	0	22.40	22.42	22.50		2
64QAM	1	0	22.55	22.48	22.68	0-2	2
	1	12	22.61	22.60	22.70		2
	1	24	22.49	22.55	22.67		2
	12	0	21.40	21.36	21.49	0-3	3
	12	6	21.41	21.39	21.51		3
	12	13	21.38	21.40	21.44		3
	25	0	21.45	21.38	21.47		3

Table 9-25
LTE Band 66 (AWS) Maximum 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	24.44	24.26	24.31	0	0
	1	7	24.42	24.31	24.38		0
	1	14	24.36	24.26	24.29		0
	8	0	23.47	23.32	23.31	0-1	1
	8	4	23.50	23.34	23.35		1
	8	7	23.41	23.33	23.31		1
	15	0	23.39	23.35	23.33		1
16QAM	1	0	23.53	23.57	23.43	0-1	1
	1	7	23.55	23.64	23.48		1
	1	14	23.43	23.61	23.36		1
	8	0	22.44	22.25	22.23	0-2	2
	8	4	22.46	22.25	22.27		2
	8	7	22.40	22.28	22.20		2
	15	0	22.32	22.37	22.34		2
64QAM	1	0	22.55	22.55	22.22	0-2	2
	1	7	22.58	22.64	22.28		2
	1	14	22.40	22.58	22.26		2
	8	0	21.44	21.37	21.43	0-3	3
	8	4	21.40	21.39	21.46		3
	8	7	21.33	21.38	21.43		3
	15	0	21.41	21.36	21.40		3

Table 9-26
LTE Band 66 (AWS) Maximum Conducted Powers -1.4 MHz Bandwidth

LTE Band 66 (AWS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 131979 (1710.7 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132665 (1779.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.40	24.36	24.25	0	0
	1	2	24.49	24.48	24.33		0
	1	5	24.40	24.37	24.28		0
	3	0	24.43	24.38	24.39		0
	3	2	24.51	24.40	24.42		0
	3	3	24.47	24.39	24.41		0
	6	0	23.59	23.35	23.36	0-1	1
16QAM	1	0	23.46	23.15	23.37	0-1	1
	1	2	23.51	23.24	23.40		1
	1	5	23.45	23.19	23.41		1
	3	0	23.27	23.33	23.55		1
	3	2	23.32	23.39	23.60		1
	3	3	23.29	23.32	23.58		1
	6	0	22.41	22.44	22.39	0-2	2
64QAM	1	0	22.46	22.52	22.22	0-2	2
	1	2	22.47	22.65	22.29		2
	1	5	22.47	22.48	22.18		2
	3	0	22.45	22.67	22.49		2
	3	2	22.49	22.66	22.52		2
	3	3	22.50	22.64	22.51		2
	6	0	21.64	21.36	21.70	0-3	3

Table 9-27
LTE Band 66 (AWS) Reduced 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	22.71	22.67	22.66	0	0
	1	50	**22.76**	22.71	22.70		0
	1	99	22.68	22.60	22.60		0
	50	0	22.66	22.78	22.78	0-1	0
	50	25	22.76	22.73	22.71		0
	50	50	22.76	**22.80**	22.70		0
	100	0	22.74	22.68	22.73		0
16QAM	1	0	22.90	22.81	22.90	0-1	0
	1	50	22.87	22.93	22.93		0
	1	99	22.84	22.87	22.89		0
	50	0	22.47	22.53	22.54	0-2	0.3
	50	25	22.51	22.51	22.49		0.3
	50	50	22.49	22.56	22.44		0.3
	100	0	22.47	22.54	22.45		0.3
64QAM	1	0	22.57	22.51	22.50	0-2	0.3
	1	50	22.66	22.60	22.65		0.3
	1	99	22.54	22.50	22.50		0.3
	50	0	21.47	21.49	21.53	0-3	1.3
	50	25	21.50	21.48	21.46		1.3
	50	50	21.48	21.54	21.41		1.3
	100	0	21.39	21.52	21.36		1.3

Table 9-28
LTE Band 66 (AWS) Reduced 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	22.70	22.66	22.66	0	0
	1	36	22.66	22.60	22.61		0
	1	74	22.62	22.59	22.60		0
	36	0	22.82	22.77	22.72	0-1	0
	36	18	22.84	22.75	22.72		0
	36	37	22.78	22.71	22.76		0
	75	0	22.80	22.80	22.79		0
16QAM	1	0	22.81	22.90	22.98	0-1	0
	1	36	22.87	22.60	22.98		0
	1	74	22.80	22.89	22.98		0
	36	0	22.54	22.57	22.50	0-2	0.3
	36	18	22.53	22.49	22.50		0.3
	36	37	22.54	22.48	22.51		0.3
	75	0	22.58	22.56	22.53		0.3
64QAM	1	0	22.70	22.57	22.48	0-2	0.3
	1	36	22.65	22.63	22.49		0.3
	1	74	22.54	22.56	22.48		0.3
	36	0	21.53	21.51	21.45	0-3	1.3
	36	18	21.51	21.43	21.39		1.3
	36	37	21.51	21.50	21.40		1.3
	75	0	21.55	21.51	21.53		1.3

Table 9-29
LTE Band 66 (AWS) Reduced 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	22.73	22.63	22.62	0	0
	1	25	22.82	22.68	22.72		0
	1	49	22.61	22.78	22.62		0
	25	0	22.60	22.51	22.76	0-1	0
	25	12	22.68	22.52	22.78		0
	25	25	22.55	22.54	22.74		0
	50	0	22.50	22.78	22.76		0
16QAM	1	0	22.51	22.90	22.91	0-1	0
	1	25	22.52	22.69	23.00		0
	1	49	22.53	22.72	22.87		0
	25	0	22.55	22.52	22.55	0-2	0.3
	25	12	22.55	22.51	22.58		0.3
	25	25	22.54	22.54	22.56		0.3
	50	0	22.51	22.50	22.52		0.3
64QAM	1	0	22.48	22.51	22.55	0-2	0.3
	1	25	22.59	22.60	22.67		0.3
	1	49	22.47	22.54	22.50		0.3
	25	0	21.56	21.56	21.60	0-3	1.3
	25	12	21.58	21.58	21.60		1.3
	25	25	21.61	21.60	21.54		1.3
	50	0	21.57	21.56	21.56		1.3

Table 9-30
LTE Band 66 (AWS) Reduced 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	22.70	22.53	22.69	0	0
	1	12	22.83	22.64	22.83		0
	1	24	22.69	22.55	22.68		0
	12	0	22.67	22.61	22.73	0-1	0
	12	6	22.72	22.68	22.77		0
	12	13	22.67	22.69	22.70		0
	25	0	22.65	22.63	22.73		0
16QAM	1	0	22.80	22.75	23.00	0-1	0
	1	12	22.91	22.85	22.94		0
	1	24	22.84	22.78	23.00		0
	12	0	22.41	22.38	22.46	0-2	0.3
	12	6	22.44	22.40	22.50		0.3
	12	13	22.43	22.43	22.44		0.3
	25	0	22.44	22.48	22.47		0.3
64QAM	1	0	22.36	22.33	22.53	0-2	0.3
	1	12	22.57	22.47	22.65		0.3
	1	24	22.49	22.43	22.47		0.3
	12	0	21.54	21.32	21.47	0-3	1.3
	12	6	21.55	21.38	21.51		1.3
	12	13	21.53	21.40	21.45		1.3
	25	0	21.47	21.45	21.52		1.3

Table 9-31
LTE Band 66 (AWS) Reduced 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	22.58	22.62	22.70	0	0
	1	7	22.75	22.70	22.78		0
	1	14	22.66	22.64	22.64		0
	8	0	22.75	22.60	22.62	0-1	0
	8	4	22.78	22.65	22.70		0
	8	7	22.69	22.62	22.66		0
	15	0	22.70	22.59	22.66		0
16QAM	1	0	22.88	23.00	22.81	0-1	0
	1	7	22.95	22.91	22.91		0
	1	14	22.81	22.92	22.76		0
	8	0	22.46	22.44	22.39	0-2	0.3
	8	4	22.48	22.49	22.43		0.3
	8	7	22.42	22.48	22.41		0.3
	15	0	22.37	22.43	22.46		0.3
64QAM	1	0	22.52	22.70	22.52	0-2	0.3
	1	7	22.55	22.64	22.60		0.3
	1	14	22.43	22.59	22.57		0.3
	8	0	21.43	21.49	21.44	0-3	1.3
	8	4	21.42	21.51	21.46		1.3
	8	7	21.38	21.52	21.46		1.3
	15	0	21.46	21.41	21.51		1.3

Table 9-32
LTE Band 66 (AWS) Reduced Conducted Powers -1.4 MHz Bandwidth

LTE Band 66 (AWS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 131979 (1710.7 MHz)	Mid Channel 132322 (1745.0 MHz)	High Channel 132665 (1779.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	22.66	22.60	22.61	0	0
	1	2	22.71	22.59	22.70		0
	1	5	22.69	22.59	22.68		0
	3	0	22.79	22.66	22.75		0
	3	2	22.87	22.73	22.79		0
	3	3	22.87	22.70	22.79		0
	6	0	22.84	22.67	22.71	0-1	0
16QAM	1	0	22.82	22.79	22.73	0-1	0
	1	2	22.89	22.89	22.83		0
	1	5	22.86	22.83	22.83		0
	3	0	22.63	22.60	23.00		0
	3	2	22.65	22.60	22.77		0
	3	3	22.80	22.60	22.78		0
	6	0	22.55	22.49	22.61	0-2	0.3
64QAM	1	0	22.43	22.43	22.52	0-2	0.3
	1	2	22.48	22.47	22.63		0.3
	1	5	22.46	22.47	22.53		0.3
	3	0	22.59	22.57	22.55		0.3
	3	2	22.63	22.60	22.56		0.3
	3	3	22.65	22.58	22.54		0.3
	6	0	21.45	21.42	21.58	0-3	1.3

9.4.6 LTE Band 25 (PCS)

Table 9-33
LTE Band 25 (PCS) Maximum Conducted Powers - 20 MHz Bandwidth

LTE Band 25 (PCS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26140 (1860.0 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26590 (1905.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.37	24.37	24.31	0	0
	1	50	24.58	**24.70**	24.69		0
	1	99	24.35	24.38	24.32		0
	50	0	23.47	23.66	**23.70**	0-1	1
	50	25	23.60	23.63	23.49		1
	50	50	23.58	23.69	23.50		1
	100	0	23.49	23.65	23.63		1
16QAM	1	0	23.62	23.60	23.58	0-1	1
	1	50	23.59	23.70	23.70		1
	1	99	23.66	23.61	23.39		1
	50	0	22.53	22.70	22.70	0-2	2
	50	25	22.64	22.67	22.63		2
	50	50	22.63	22.70	22.52		2
	100	0	22.53	22.67	22.66		2
64QAM	1	0	22.61	22.54	22.58	0-2	2
	1	50	22.70	22.70	22.70		2
	1	99	22.70	22.61	22.44		2
	50	0	21.52	21.68	21.70	0-3	3
	50	25	21.62	21.66	21.64		3
	50	50	21.60	21.70	21.55		3
	100	0	21.55	21.68	21.66		3

Table 9-34
LTE Band 25 (PCS) Maximum Conducted Powers - 15 MHz Bandwidth

LTE Band 25 (PCS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26115 (1857.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26615 (1907.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.50	24.50	24.53	0	0
	1	36	24.50	24.65	24.70		0
	1	74	24.49	24.60	24.70		0
	36	0	23.62	23.64	23.69	0-1	1
	36	18	23.67	23.70	23.70		1
	36	37	23.70	23.70	23.68		1
	75	0	23.66	23.64	23.68		1
16QAM	1	0	23.64	23.60	23.63	0-1	1
	1	36	23.70	23.65	23.68		1
	1	74	23.65	23.65	23.65		1
	36	0	22.63	22.70	22.70	0-2	2
	36	18	22.69	22.70	22.70		2
	36	37	22.70	22.70	22.70		2
	75	0	22.68	22.70	22.70		2
64QAM	1	0	22.70	22.70	22.55	0-2	2
	1	36	22.70	22.70	22.63		2
	1	74	22.68	22.70	22.61		2
	36	0	21.70	21.70	21.70	0-3	3
	36	18	21.70	21.65	21.70		3
	36	37	21.67	21.68	21.70		3
	75	0	21.68	21.68	21.70		3

Table 9-35
LTE Band 25 (PCS) Maximum Conducted Powers - 10 MHz Bandwidth

LTE Band 25 (PCS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26090 (1855.0 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26640 (1910.0 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.59	24.57	24.67	0	0
	1	25	24.70	24.70	24.70		0
	1	49	24.70	24.60	24.55		0
	25	0	23.63	23.60	23.65	0-1	1
	25	12	23.60	23.62	23.69		1
	25	25	23.65	23.66	23.61		1
	50	0	23.66	23.66	23.60		1
16QAM	1	0	23.64	23.62	23.70	0-1	1
	1	25	23.66	23.70	23.69		1
	1	49	23.60	23.63	23.69		1
	25	0	22.64	22.70	22.68	0-2	2
	25	12	22.67	22.70	22.68		2
	25	25	22.70	22.70	22.64		2
	50	0	22.68	22.70	22.67		2
64QAM	1	0	22.47	22.70	22.62	0-2	2
	1	25	22.52	22.70	22.66		2
	1	49	22.49	22.70	22.70		2
	25	0	21.62	21.68	21.70	0-3	3
	25	12	21.63	21.70	21.70		3
	25	25	21.70	21.70	21.70		3
	50	0	21.70	21.68	21.65		3

Table 9-36
LTE Band 25 (PCS) Maximum Conducted Powers - 5 MHz Bandwidth

LTE Band 25 (PCS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26065 (1852.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26665 (1912.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.61	24.64	24.66	0	0
	1	12	24.62	24.68	24.70		0
	1	24	24.52	24.68	24.30		0
	12	0	23.55	23.62	23.60	0-1	1
	12	6	23.63	23.60	23.66		1
	12	13	23.56	23.60	23.50		1
	25	0	23.56	23.63	23.56		1
16QAM	1	0	23.70	23.69	23.69	0-1	1
	1	12	23.68	23.63	23.70		1
	1	24	23.63	23.62	23.70		1
	12	0	22.56	22.70	22.70	0-2	2
	12	6	22.63	22.70	22.70		2
	12	13	22.62	22.69	22.60		2
	25	0	22.60	22.68	22.59		2
64QAM	1	0	22.68	22.67	22.67	0-2	2
	1	12	22.66	22.66	22.70		2
	1	24	22.66	22.70	22.70		2
	12	0	21.60	21.70	21.70	0-3	3
	12	6	21.60	21.70	21.65		3
	12	13	21.59	21.70	21.55		3
	25	0	21.54	21.66	21.70		3

Table 9-37
LTE Band 25 (PCS) Maximum Conducted Powers - 3 MHz Bandwidth

LTE Band 25 (PCS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26055 (1851.5 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26675 (1913.5 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.55	24.41	24.70	0	0
	1	7	24.56	24.57	24.70		0
	1	14	24.53	24.56	24.23		0
	8	0	23.63	23.63	23.65	0-1	1
	8	4	23.63	23.70	23.68		1
	8	7	23.57	23.59	23.70		1
	15	0	23.59	23.61	23.70		1
16QAM	1	0	23.62	23.63	23.69	0-1	1
	1	7	23.67	23.64	23.64		1
	1	14	23.56	23.60	23.70		1
	8	0	22.60	22.67	22.67	0-2	2
	8	4	22.65	22.70	22.70		2
	8	7	22.57	22.63	22.69		2
	15	0	22.57	22.63	22.69		2
64QAM	1	0	22.50	22.55	22.50	0-2	2
	1	7	22.65	22.62	22.69		2
	1	14	22.41	22.48	22.60		2
	8	0	21.57	21.62	21.63	0-3	3
	8	4	21.56	21.69	21.70		3
	8	7	21.54	21.60	21.64		3
	15	0	21.55	21.62	21.65		3

Table 9-38
LTE Band 25 (PCS) Maximum Conducted Powers -1.4 MHz Bandwidth

LTE Band 25 (PCS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel 26047 (1850.7 MHz)	Mid Channel 26365 (1882.5 MHz)	High Channel 26683 (1914.3 MHz)	MPR Allowed per 3GPP [dB]	MPR [dB]
			Conducted Power [dBm]				
QPSK	1	0	24.70	24.70	24.65	0	0
	1	2	24.44	24.65	24.66		0
	1	5	24.70	24.70	24.33		0
	3	0	24.62	24.70	24.56		0
	3	2	24.66	24.65	24.67		0
	3	3	24.62	24.70	24.54		0
	6	0	23.70	23.64	23.70	0-1	1
16QAM	1	0	23.61	23.45	23.58	0-1	1
	1	2	23.48	23.62	23.64		1
	1	5	23.62	23.45	23.61		1
	3	0	23.69	23.70	23.42		1
	3	2	23.68	23.70	23.43		1
	3	3	23.67	23.68	23.37		1
	6	0	22.66	22.65	22.69	0-2	2
64QAM	1	0	22.40	22.50	22.65	0-2	2
	1	2	22.50	22.60	22.68		2
	1	5	22.45	22.57	22.70		2
	3	0	22.66	22.66	22.65		2
	3	2	22.65	22.68	22.68		2
	3	3	22.47	22.70	22.70		2
	6	0	21.65	21.70	21.68	0-3	3

Table 9-39
LTE Band 25 (PCS) Reduced 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	22.74	22.76	22.65	0	0
	1	50	22.76	**22.99**	22.85		0
	1	99	22.82	22.71	22.59		0
	50	0	22.72	**23.00**	22.95	0-1	0
	50	25	22.74	22.97	22.70		0
	50	50	22.77	22.96	22.73		0
	100	0	22.77	22.97	22.67		0
16QAM	1	0	22.92	22.81	22.95	0-1	0
	1	50	22.99	22.97	22.99		0
	1	99	23.00	22.82	22.79		0
	50	0	22.50	22.64	22.69	0-2	0.3
	50	25	22.61	22.60	22.62		0.3
	50	50	22.49	22.64	22.45		0.3
	100	0	22.47	22.61	22.59		0.3
64QAM	1	0	22.57	22.53	22.57	0-2	0.3
	1	50	22.70	22.68	22.64		0.3
	1	99	22.54	22.61	22.35		0.3
	50	0	21.51	21.61	21.68	0-3	1.3
	50	25	21.61	21.58	21.65		1.3
	50	50	21.48	21.65	21.49		1.3
	100	0	21.47	21.61	21.63		1.3

Table 9-40
LTE Band 25 (PCS) Reduced 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	22.84	22.74	22.82	0	0
	1	36	22.94	22.85	22.86		0
	1	74	22.88	22.75	22.87		0
	36	0	22.83	22.93	23.00	0-1	0
	36	18	22.89	22.90	22.99		0
	36	37	22.91	22.93	22.98		0
	75	0	22.93	23.00	22.96		0
16QAM	1	0	22.70	22.98	23.00	0-1	0
	1	36	22.90	23.00	22.99		0
	1	74	22.74	22.94	22.90		0
	36	0	22.60	22.63	22.70	0-2	0.3
	36	18	22.64	22.65	22.67		0.3
	36	37	22.68	22.70	22.68		0.3
	75	0	22.65	22.69	22.67		0.3
64QAM	1	0	22.60	22.62	22.62	0-2	0.3
	1	36	22.67	22.70	22.68		0.3
	1	74	22.63	22.67	22.57		0.3
	36	0	21.55	21.67	21.70	0-3	1.3
	36	18	21.60	21.67	21.69		1.3
	36	37	21.61	21.69	21.70		1.3
	75	0	21.67	21.69	21.67		1.3

Table 9-41
LTE Band 25 (PCS) Reduced 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	22.85	22.85	22.85	0	0
	1	25	22.86	22.95	23.00		0
	1	49	22.81	22.80	22.88		0
	25	0	22.82	22.97	23.00	0-1	0
	25	12	22.89	23.00	22.98		0
	25	25	22.90	23.00	22.82		0
	50	0	22.94	23.00	22.93		0
16QAM	1	0	23.00	22.97	23.00	0-1	0
	1	25	22.94	22.94	22.98		0
	1	49	22.85	23.00	22.94		0
	25	0	22.65	22.70	22.69	0-2	0.3
	25	12	22.70	22.69	22.62		0.3
	25	25	22.65	22.66	22.60		0.3
	50	0	22.64	22.70	22.67		0.3
64QAM	1	0	22.65	22.70	22.63	0-2	0.3
	1	25	22.48	22.69	22.67		0.3
	1	49	22.54	22.68	22.58		0.3
	25	0	21.68	21.69	21.69	0-3	1.3
	25	12	21.64	21.65	21.63		1.3
	25	25	21.70	21.67	21.61		1.3
	50	0	21.66	21.70	21.70		1.3

Table 9-42
LTE Band 25 (PCS) Reduced 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	22.79	22.69	22.84	0	0
	1	12	23.00	22.91	22.99		0
	1	24	22.73	22.65	22.87		0
	12	0	22.80	22.87	23.00	0-1	0
	12	6	22.89	22.95	23.00		0
	12	13	22.85	22.89	22.83		0
	25	0	22.84	22.93	22.88		0
16QAM	1	0	22.95	22.97	22.96	0-1	0
	1	12	22.97	23.00	23.00		0
	1	24	23.00	23.00	22.91		0
	12	0	22.54	22.68	22.65	0-2	0.3
	12	6	22.61	22.61	22.66		0.3
	12	13	22.59	22.66	22.47		0.3
	25	0	22.63	22.69	22.58		0.3
64QAM	1	0	22.62	22.61	22.69	0-2	0.3
	1	12	22.70	22.47	22.70		0.3
	1	24	22.63	22.65	22.59		0.3
	12	0	21.68	21.65	21.64	0-3	1.3
	12	6	21.51	21.64	21.64		1.3
	12	13	21.46	21.68	21.55		1.3
	25	0	21.65	21.66	21.63		1.3

Table 9-43
LTE Band 25 (PCS) Reduced 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	22.84	22.75	22.93	0	0
	1	7	22.94	22.91	22.99		0
	1	14	22.80	22.79	22.95		0
	8	0	22.83	22.85	23.00	0-1	0
	8	4	22.85	22.91	22.85		0
	8	7	22.80	22.85	23.00		0
	15	0	22.85	22.90	22.96		0
16QAM	1	0	22.96	23.00	22.94	0-1	0
	1	7	23.00	22.99	22.91		0
	1	14	22.92	22.98	22.88		0
	8	0	22.43	22.53	22.55	0-2	0.3
	8	4	22.56	22.57	22.57		0.3
	8	7	22.57	22.66	22.52		0.3
	15	0	22.60	22.67	22.65		0.3
64QAM	1	0	22.66	22.69	22.52	0-2	0.3
	1	7	22.62	22.70	22.68		0.3
	1	14	22.70	22.66	22.48		0.3
	8	0	21.61	21.65	21.64	0-3	1.3
	8	4	21.62	21.68	21.66		1.3
	8	7	21.60	21.65	21.70		1.3
	15	0	21.69	21.66	21.70		1.3

Table 9-44
LTE Band 25 (PCS) Reduced 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	22.80	22.91	22.95	0	0
	1	2	22.94	23.00	23.00		0
	1	5	22.81	22.94	23.00		0
	3	0	22.97	23.00	22.90		0
	3	2	22.98	22.94	22.93		0
	3	3	22.95	22.99	22.94		0
	6	0	22.96	22.88	22.99	0-1	0
16QAM	1	0	23.00	22.83	22.96	0-1	0
	1	2	22.99	23.00	23.00		0
	1	5	22.92	22.86	23.00		0
	3	0	22.84	22.93	22.98		0
	3	2	22.92	22.99	22.95		0
	3	3	22.95	23.00	22.98		0
	6	0	22.53	22.64	22.65	0-2	0.3
64QAM	1	0	22.63	22.65	22.65	0-2	0.3
	1	2	22.67	22.66	22.70		0.3
	1	5	22.68	22.68	22.66		0.3
	3	0	22.62	22.67	22.70		0.3
	3	2	22.69	22.66	22.70		0.3
	3	3	22.67	22.68	22.69		0.3
	6	0	21.66	21.67	21.68	0-3	1.3

9.4.7 LTE Band 41

Table 9-45
LTE Band 41 Maximum Conducted Powers - 20 MHz Bandwidth

LTE Band 41 20 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	24.12	24.26	24.26	24.35	24.00	0	0
	1	50	24.10	**24.61**	24.29	24.55	24.08		0
	1	99	24.08	24.23	24.22	24.15	23.95		0
	50	0	23.13	23.56	23.38	23.40	23.16	0-1	1
	50	25	23.24	**23.57**	23.33	23.45	23.15		1
	50	50	23.24	23.48	23.19	23.33	23.10		1
	100	0	23.22	23.50	23.40	23.43	23.34		1
16QAM	1	0	23.21	23.57	23.32	23.39	23.23	0-1	1
	1	50	23.43	23.60	23.45	23.55	23.34		1
	1	99	23.25	23.52	23.18	23.29	23.21		1
	50	0	22.24	22.49	22.34	22.45	22.18	0-2	2
	50	25	22.34	22.51	22.26	22.52	22.20		2
	50	50	22.32	22.44	22.16	22.43	22.20		2
	100	0	22.33	22.43	22.35	22.40	22.34		2
64QAM	1	0	21.82	22.25	21.92	22.01	21.86	0-2	2
	1	50	22.05	22.49	22.11	22.17	22.01		2
	1	99	21.86	22.14	21.78	21.91	21.86		2
	50	0	21.21	21.46	21.34	21.48	21.21	0-3	3
	50	25	21.32	21.39	21.24	21.53	21.25		3
	50	50	21.31	21.25	21.21	21.44	21.19		3
	100	0	21.29	21.48	21.33	21.44	21.25		3

Table 9-46
LTE Band 41 Maximum Conducted Powers - 15 MHz Bandwidth

LTE Band 41 15 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	24.04	24.08	24.00	24.02	24.45	0	0
	1	36	24.23	24.37	24.03	24.04	24.46		0
	1	74	24.14	24.06	24.08	24.10	24.26		0
	36	0	23.19	23.36	23.14	23.12	23.52	0-1	1
	36	18	23.31	23.39	23.16	23.14	23.57		1
	36	37	23.28	23.35	23.11	23.05	23.50		1
	75	0	23.26	23.43	23.10	23.08	23.50		1
16QAM	1	0	22.73	23.13	23.02	23.00	23.54	0-1	1
	1	36	22.92	23.34	23.00	23.14	23.60		1
	1	74	22.73	23.08	22.97	23.10	23.40		1
	36	0	22.05	22.27	22.00	22.07	22.23	0-2	2
	36	18	22.14	22.32	22.00	22.19	22.25		2
	36	37	22.14	22.29	22.01	22.12	22.28		2
	75	0	22.15	22.31	22.07	22.09	22.16		2
64QAM	1	0	22.00	22.61	22.01	22.07	22.57	0-2	2
	1	36	22.01	22.63	22.09	22.13	22.59		2
	1	74	22.07	22.64	22.10	22.01	22.38		2
	36	0	20.98	21.38	20.99	21.04	21.08	0-3	3
	36	18	21.07	21.51	21.02	21.00	21.04		3
	36	37	21.07	21.42	20.88	21.04	21.00		3
	75	0	20.99	21.48	20.85	20.97	20.95		3

Table 9-47
LTE Band 41 Maximum Conducted Powers - 10 MHz Bandwidth

LTE Band 41 10 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	23.73	24.36	24.54	24.51	24.41	0	0
	1	25	23.99	24.51	24.70	24.64	24.62		0
	1	49	23.80	24.26	24.51	24.49	24.45		0
	25	0	22.82	23.29	23.59	23.57	23.55	0-1	1
	25	12	22.87	23.27	23.52	23.57	23.56		1
	25	25	22.87	23.25	23.56	23.53	23.54		1
	50	0	22.83	23.29	23.56	23.57	23.57		1
16QAM	1	0	22.65	23.08	23.44	23.52	23.35	0-1	1
	1	25	22.86	23.25	23.61	23.69	23.55		1
	1	49	22.67	22.99	23.59	23.53	23.39		1
	25	0	21.80	22.13	22.56	22.59	22.46	0-2	2
	25	12	21.86	22.59	22.53	22.58	22.48		2
	25	25	21.86	22.60	22.51	22.57	22.46		2
	50	0	21.85	22.57	22.53	22.57	22.49		2
64QAM	1	0	21.67	22.24	22.64	22.70	22.37	0-2	2
	1	25	21.88	22.45	22.58	22.70	22.54		2
	1	49	22.34	22.24	22.62	22.70	22.43		2
	25	0	21.41	21.26	21.70	21.67	21.44	0-3	3
	25	12	21.10	20.89	21.67	21.19	21.43		3
	25	25	21.41	20.87	21.65	20.75	21.44		3
	50	0	21.42	20.87	21.69	20.78	21.48		3

Table 9-48
LTE Band 41 Maximum Conducted Powers - 5 MHz Bandwidth

LTE Band 41 5 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	24.57	24.61	24.69	24.42	24.41	0	0
	1	12	24.59	24.65	24.53	24.41	24.47		0
	1	24	24.58	24.64	24.67	24.42	24.42		0
	12	0	23.66	23.61	23.56	23.66	23.45	0-1	1
	12	6	23.52	23.70	23.56	23.55	23.56		1
	12	13	23.64	23.59	23.54	23.65	23.47		1
	25	0	23.66	23.63	23.54	23.51	23.49		1
16QAM	1	0	23.55	23.60	23.65	23.35	23.35	0-1	1
	1	12	23.51	23.61	23.63	23.29	23.35		1
	1	24	23.56	23.62	23.62	23.30	23.34		1
	12	0	22.63	22.57	22.67	22.63	22.36	0-2	2
	12	6	22.51	22.67	22.55	22.51	22.49		2
	12	13	22.62	22.55	22.65	22.62	22.38		2
	25	0	22.65	22.64	22.67	22.57	22.39		2
64QAM	1	0	22.61	22.55	22.69	22.70	22.59	0-2	2
	1	12	22.61	22.56	22.66	22.69	22.62		2
	1	24	22.68	22.57	22.67	22.59	22.60		2
	12	0	21.51	21.59	21.54	21.59	21.44	0-3	3
	12	6	21.61	21.70	21.41	21.69	21.56		3
	12	13	21.70	21.56	21.51	21.60	21.45		3
	25	0	21.56	21.67	21.60	21.64	21.35		3

Table 9-49
LTE Band 41 Reduced Conducted Powers - 20 MHz Bandwidth

LTE Band 41 20 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	22.29	22.75	22.59	22.60	22.44	0	0
	1	50	22.57	**22.90**	22.60	22.71	22.56		0
	1	99	22.40	22.55	22.40	22.41	22.41		0
	50	0	22.31	**22.81**	22.58	22.64	22.40	0-1	0
	50	25	22.41	22.12	22.54	22.66	22.50		0
	50	50	22.41	22.72	22.39	22.58	22.37		0
	100	0	22.28	22.78	22.57	22.66	22.54		0
16QAM	1	0	22.49	22.85	22.55	22.70	22.46	0-1	0
	1	50	22.37	22.95	22.74	22.83	22.60		0
	1	99	22.57	22.68	22.41	22.53	22.40		0
	50	0	22.39	22.62	22.32	22.49	22.19	0-2	0.3
	50	25	22.37	22.65	22.28	22.47	22.27		0.3
	50	50	22.30	22.51	22.22	22.34	22.18		0.3
	100	0	22.29	22.57	22.33	22.44	22.29		0.3
64QAM	1	0	22.12	22.16	22.25	22.03	21.89	0-2	0.3
	1	50	22.09	22.33	22.07	22.13	21.94		0.3
	1	99	21.88	21.96	21.72	21.86	21.76		0.3
	50	0	21.41	21.63	21.28	21.49	21.17	0-3	1.3
	50	25	21.29	21.60	21.28	21.50	21.15		1.3
	50	50	21.17	21.54	21.19	21.35	21.16		1.3
	100	0	21.18	21.52	21.30	21.40	21.10		1.3

Table 9-50
LTE Band 41 Reduced Conducted Powers - 15 MHz Bandwidth

LTE Band 41 15 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	22.73	22.81	22.78	22.61	22.56	0	0
	1	36	22.89	22.82	22.94	22.78	22.71		0
	1	74	22.77	22.79	22.74	22.62	22.61		0
	36	0	22.80	22.96	22.91	22.86	22.72	0-1	0
	36	18	22.88	22.82	22.93	22.92	22.76		0
	36	37	22.83	22.97	22.87	22.81	22.80		0
	75	0	22.84	22.99	22.87	22.87	22.73		0
16QAM	1	0	22.56	22.65	22.59	22.75	22.37	0-1	0
	1	36	22.76	22.85	22.74	22.91	22.54		0
	1	74	22.57	22.65	22.55	22.77	22.42		0
	36	0	22.57	22.68	22.66	22.51	22.42	0-2	0.3
	36	18	22.66	22.55	22.66	22.54	22.48		0.3
	36	37	22.60	22.68	22.60	22.49	22.46		0.3
	75	0	22.56	22.69	22.60	22.56	22.42		0.3
64QAM	1	0	22.52	22.27	22.57	22.70	22.34	0-2	0.3
	1	36	22.70	22.48	22.51	22.70	22.49		0.3
	1	74	22.55	22.24	22.50	22.63	22.38		0.3
	36	0	21.54	21.51	21.60	21.53	21.40	0-3	1.3
	36	18	21.61	21.61	21.64	21.56	21.44		1.3
	36	37	21.57	21.54	21.57	21.50	21.42		1.3
	75	0	21.58	21.66	21.59	21.54	21.42		1.3

Table 9-51
LTE Band 41 Reduced Conducted Powers - 10 MHz Bandwidth

LTE Band 41 10 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	22.84	22.94	22.91	22.72	22.61	0	0
	1	25	22.83	22.96	22.89	22.91	22.81		0
	1	49	22.86	22.97	22.90	22.71	22.67		0
	25	0	22.93	22.87	22.94	22.93	22.67	0-1	0
	25	12	22.88	22.86	22.94	22.90	22.69		0
	25	25	22.93	22.84	22.92	22.89	22.69		0
	50	0	22.86	22.84	22.89	22.90	22.67		0
16QAM	1	0	22.69	22.79	22.74	22.89	22.46	0-1	0
	1	25	22.84	22.96	22.95	22.87	22.67		0
	1	49	22.67	22.78	22.71	22.89	22.52		0
	25	0	22.62	22.60	22.64	22.70	22.36	0-2	0.3
	25	12	22.61	22.58	22.63	22.67	22.39		0.3
	25	25	22.61	22.55	22.61	22.65	22.36		0.3
	50	0	22.61	22.54	22.63	22.64	22.39		0.3
64QAM	1	0	22.49	22.41	22.54	22.05	22.25	0-2	0.3
	1	25	22.65	22.59	22.55	22.23	22.41		0.3
	1	49	22.49	22.41	22.52	22.05	22.31		0.3
	25	0	21.55	21.62	21.60	21.54	21.34	0-3	1.3
	25	12	21.63	21.59	21.58	21.55	21.34		1.3
	25	25	21.53	21.57	21.55	21.53	21.31		1.3
	50	0	21.55	21.59	21.62	21.61	21.35		1.3

Table 9-52
LTE Band 41 Reduced Conducted Powers - 5 MHz Bandwidth

LTE Band 41 5 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	22.76	22.84	22.84	22.61	22.55	0	0
	1	12	22.83	22.84	22.87	22.58	22.61		0
	1	24	22.84	22.86	22.83	22.61	22.58		0
	12	0	22.79	22.99	22.89	22.78	22.58	0-1	0
	12	6	22.89	22.86	22.90	22.91	22.69		0
	12	13	22.78	22.97	22.86	22.78	22.59		0
	25	0	22.78	22.81	22.88	22.83	22.61		0
16QAM	1	0	22.72	22.81	22.76	22.44	22.47	0-1	0
	1	12	22.71	22.83	22.75	22.39	22.50		0
	1	24	22.73	22.83	22.74	22.43	22.48		0
	12	0	22.52	22.69	22.59	22.49	22.25	0-2	0.3
	12	6	22.59	22.60	22.64	22.61	22.36		0.3
	12	13	22.52	22.68	22.57	22.50	22.27		0.3
	25	0	22.54	22.56	22.56	22.66	22.28		0.3
64QAM	1	0	22.70	22.47	22.57	22.70	22.47	0-2	0.3
	1	12	22.70	22.47	22.57	22.44	22.46		0.3
	1	24	22.54	22.48	22.57	22.67	22.50		0.3
	12	0	21.63	21.70	21.63	21.46	21.32	0-3	1.3
	12	6	21.68	21.62	21.69	21.59	21.43		1.3
	12	13	21.65	21.70	21.60	21.47	21.34		1.3
	25	0	21.52	21.60	21.47	21.52	21.21		1.3

Table 9-53
LTE Band 41 PC2 Maximum Conducted Powers - 20 MHz Bandwidth

LTE Band 41 20 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	26.36	26.70	26.60	26.66	26.52	0	0
	1	50	26.61	**27.00**	26.74	26.77	26.60		0
	1	99	26.43	26.62	26.44	26.43	26.33		0
	50	0	25.48	25.96	25.73	25.79	25.89	0-1	1
	50	25	25.59	**25.97**	25.72	25.76	25.65		1
	50	50	25.56	25.87	25.61	25.66	25.69		1
	100	0	25.60	25.94	25.70	25.78	25.74		1
16QAM	1	0	25.72	25.79	25.88	25.73	25.76	0-1	1
	1	50	25.80	25.79	26.00	25.77	25.75		1
	1	99	25.79	25.73	25.75	25.75	25.72		1
	50	0	24.70	24.69	24.84	24.70	24.64	0-2	2
	50	25	24.78	24.80	24.81	24.74	24.77		2
	50	50	24.80	24.69	24.72	24.67	24.73		2
	100	0	24.79	24.79	24.76	24.77	24.76		2
64QAM	1	0	24.80	24.56	24.65	24.57	24.56	0-2	2
	1	50	24.70	24.70	24.81	24.75	24.67		2
	1	99	24.58	24.47	24.51	24.53	24.47		2
	50	0	23.62	23.72	23.80	23.77	23.71	0-3	3
	50	25	23.73	23.71	23.76	23.77	23.64		3
	50	50	23.75	23.66	23.69	23.71	23.73		3
	100	0	23.73	23.71	23.74	23.75	23.70		3

Table 9-54
LTE Band 41 PC2 Maximum Conducted Powers - 15 MHz Bandwidth

LTE Band 41 15 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	26.49	26.59	26.59	26.39	26.41	0	0
	1	36	26.65	26.83	26.76	26.57	26.54		0
	1	74	26.49	26.60	26.56	26.41	26.44		0
	36	0	25.65	25.85	25.78	25.76	25.60	0-1	1
	36	18	25.72	25.91	25.79	25.77	25.67		1
	36	37	25.68	25.84	25.73	25.69	25.65		1
	75	0	25.70	25.82	25.77	25.74	25.61		1
16QAM	1	0	25.86	25.94	25.94	26.10	25.74	0-1	1
	1	36	26.06	25.49	26.11	26.03	25.87		1
	1	74	25.91	25.58	25.91	26.12	25.78		1
	36	0	25.14	24.82	25.05	25.12	25.04	0-2	2
	36	18	25.02	24.85	25.06	25.15	25.11		2
	36	37	25.18	24.81	25.01	25.13	25.09		2
	75	0	25.16	24.56	25.18	25.20	25.03		2
64QAM	1	0	25.11	24.59	25.16	25.20	24.96	0-2	2
	1	36	25.11	24.31	25.09	25.19	25.10		2
	1	74	25.12	24.58	25.11	25.13	25.01		2
	36	0	23.59	23.58	23.71	23.63	23.51	0-3	3
	36	18	23.67	23.66	23.72	23.68	23.57		3
	36	37	23.63	23.60	23.67	23.61	23.54		3
	75	0	23.65	23.53	23.70	23.66	23.52		3

Table 9-55
LTE Band 41 PC2 Maximum Conducted Powers - 10 MHz Bandwidth

LTE Band 41 10 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	26.58	26.75	26.73	26.49	26.42	0	0
	1	25	26.74	26.99	26.94	26.70	26.67		0
	1	49	26.58	26.77	26.71	26.49	26.46		0
	25	0	25.69	25.89	25.83	25.75	25.56	0-1	1
	25	12	25.70	25.87	25.79	25.75	25.55		1
	25	25	25.69	25.87	25.79	25.73	25.54		1
	50	0	25.69	25.88	25.74	25.73	25.56		1
16QAM	1	0	25.48	25.59	25.63	25.72	25.32	0-1	1
	1	25	25.67	25.79	25.81	25.88	25.52		1
	1	49	25.50	25.61	25.60	25.70	25.39		1
	25	0	24.70	24.91	24.77	24.75	24.48	0-2	2
	25	12	24.67	24.88	24.72	24.79	24.48		2
	25	25	24.69	24.86	24.71	24.74	24.45		2
	50	0	24.68	24.86	24.73	24.80	24.49		2
64QAM	1	0	24.56	24.50	24.65	25.15	24.38	0-2	2
	1	25	24.72	24.71	24.78	25.13	24.53		2
	1	49	24.56	24.51	24.61	25.15	24.43		2
	25	0	23.60	23.92	23.73	23.66	23.44	0-3	3
	25	12	23.62	23.88	23.70	23.66	23.43		3
	25	25	23.60	23.87	23.65	23.64	23.44		3
	50	0	23.63	23.88	23.70	23.72	23.47		3

Table 9-56
LTE Band 41 PC2 Maximum Conducted Powers - 5 MHz Bandwidth

LTE Band 41 5 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	26.54	26.61	26.69	26.42	26.40	0	0
	1	12	26.56	26.64	26.72	26.41	26.47		0
	1	24	26.58	26.65	26.67	26.41	26.43		0
	12	0	25.62	25.81	25.75	25.66	25.47	0-1	1
	12	6	25.70	25.90	25.81	25.74	25.56		1
	12	13	25.63	25.79	25.73	25.66	25.47		1
	25	0	25.64	25.84	25.73	25.71	25.49		1
16QAM	1	0	25.52	25.60	25.65	25.34	25.35	0-1	1
	1	12	25.50	25.61	25.66	25.27	25.38		1
	1	24	25.53	25.61	25.61	25.30	25.36		1
	12	0	24.61	24.78	24.68	24.62	24.37	0-2	2
	12	6	24.67	24.86	24.74	24.71	24.50		2
	12	13	24.61	24.76	24.64	24.63	24.38		2
	25	0	24.62	24.87	24.67	24.76	24.38		2
64QAM	1	0	24.80	24.56	24.88	25.04	24.60	0-2	2
	1	12	24.77	24.55	24.87	24.98	24.60		2
	1	24	24.83	24.58	24.86	25.00	24.61		2
	12	0	23.66	23.79	23.74	23.59	23.45	0-3	3
	12	6	23.80	23.89	23.79	23.70	23.56		3
	12	13	23.65	23.79	23.70	23.60	23.45		3
	25	0	23.51	23.89	23.58	23.63	23.33		3

Table 9-57
LTE Band 41 PC2 Reduced Conducted Powers - 20 MHz Bandwidth

LTE Band 41 20 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	24.66	25.14	24.94	25.06	24.91	0	0
	1	50	24.96	**25.36**	25.11	25.12	24.99		0
	1	99	24.84	24.99	24.85	24.88	24.83		0
	50	0	24.90	25.18	24.86	25.05	24.85	0-1	0
	50	25	24.80	**25.19**	24.94	25.16	24.95		0
	50	50	24.94	25.15	24.85	24.88	24.77		0
	100	0	24.86	25.09	24.92	24.97	24.95		0
16QAM	1	0	24.91	25.33	25.16	25.22	25.05	0-1	0
	1	50	25.15	25.29	25.34	25.39	25.14		0
	1	99	25.07	25.21	25.03	25.10	25.03		0
	50	0	24.58	25.08	24.83	24.93	24.68	0-2	0.3
	50	25	24.66	25.10	24.80	24.96	24.76		0.3
	50	50	24.65	24.97	24.72	24.80	24.70		0.3
	100	0	24.66	25.00	24.71	24.90	24.70		0.3
64QAM	1	0	24.39	24.83	24.65	24.77	24.55	0-2	0.3
	1	50	24.64	25.00	24.80	24.87	24.67		0.3
	1	99	24.51	24.73	24.50	24.58	24.99		0.3
	50	0	23.54	24.05	23.77	23.78	23.63	0-3	1.3
	50	25	23.64	24.05	23.77	23.85	23.65		1.3
	50	50	23.65	23.95	23.77	23.73	23.64		1.3
	100	0	23.62	24.01	23.74	23.87	23.60		1.3

Table 9-58
LTE Band 41 PC2 Reduced Conducted Powers - 15 MHz Bandwidth

LTE Band 41 15 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	25.15	25.15	25.15	25.06	25.05	0	0
	1	36	25.18	25.22	25.16	25.13	25.10		0
	1	74	25.13	25.08	25.05	25.10	25.11		0
	36	0	25.25	25.30	25.12	25.20	25.20	0-1	0
	36	18	25.29	25.35	25.17	25.24	25.17		0
	36	37	25.29	25.34	25.15	25.23	25.22		0
	75	0	25.31	25.33	25.14	25.27	25.25		0
16QAM	1	0	25.41	25.21	25.12	25.36	25.03	0-1	0
	1	36	25.46	25.33	25.19	25.42	25.03		0
	1	74	25.39	25.16	25.22	25.33	25.05		0
	36	0	25.07	25.19	25.02	25.06	24.84	0-2	0.3
	36	18	25.07	25.19	24.98	25.08	24.88		0.3
	36	37	25.08	25.17	24.96	25.07	24.88		0.3
	75	0	25.09	25.13	24.95	25.09	24.91		0.3
64QAM	1	0	25.05	25.11	25.02	25.00	25.20	0-2	0.3
	1	36	25.13	25.20	25.09	25.10	25.08		0.3
	1	74	25.00	25.12	25.20	25.06	25.08		0.3
	36	0	23.98	23.98	23.78	23.99	23.80	0-3	1.3
	36	18	24.00	23.98	23.76	24.00	23.80		1.3
	36	37	24.00	23.96	23.75	23.90	23.81		1.3
	75	0	23.98	24.00	23.79	23.93	23.79		1.3

Table 9-59
LTE Band 41 PC2 Reduced Conducted Powers - 10 MHz Bandwidth

LTE Band 41 10 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	25.21	25.24	25.17	25.17	25.00	0	0
	1	25	25.50	25.33	25.42	25.46	25.26		0
	1	49	25.15	25.18	25.14	25.14	25.05		0
	25	0	25.34	25.40	25.30	25.32	25.13	0-1	0
	25	12	25.33	25.37	25.27	25.33	25.15		0
	25	25	25.30	25.35	25.25	25.29	25.12		0
	50	0	25.36	25.49	25.27	25.34	25.17		0
16QAM	1	0	25.46	25.30	25.42	25.23	25.17	0-1	0
	1	25	25.50	25.50	25.48	25.48	25.45		0
	1	49	25.41	25.26	25.37	25.24	25.22		0
	25	0	25.17	25.00	25.12	25.07	24.91	0-2	0.3
	25	12	25.18	25.11	25.10	25.07	24.93		0.3
	25	25	25.16	25.07	25.09	25.04	24.92		0.3
	50	0	25.13	25.07	25.04	25.04	24.83		0.3
64QAM	1	0	25.13	25.04	25.03	25.01	24.84	0-2	0.3
	1	25	25.16	25.20	25.11	25.06	25.11		0.3
	1	49	25.08	25.20	25.03	25.17	24.90		0.3
	25	0	24.00	24.00	23.92	23.94	23.68	0-3	1.3
	25	12	24.00	24.00	23.92	23.90	23.71		1.3
	25	25	23.98	24.00	23.90	23.86	23.69		1.3
	50	0	23.91	23.98	23.80	23.92	23.62		1.3

Table 9-60
LTE Band 41 PC2 Reduced Conducted Powers - 5 MHz Bandwidth

LTE Band 41 5 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	25.19	25.22	25.02	25.13	24.93	0	0
	1	12	25.44	25.47	25.24	25.33	25.18		0
	1	24	25.17	25.21	25.00	25.15	24.95		0
	12	0	25.26	25.31	25.18	25.23	25.07	0-1	0
	12	6	25.28	25.33	25.21	25.27	25.12		0
	12	13	25.23	25.30	25.18	25.22	25.08		0
	25	0	25.26	25.31	25.20	25.27	25.09		0
16QAM	1	0	25.50	25.40	25.22	25.48	25.04	0-1	0
	1	12	25.50	25.50	25.45	25.50	25.32		0
	1	24	25.32	25.35	25.21	25.32	25.07		0
	12	0	25.06	25.15	24.93	25.08	24.78	0-2	0.3
	12	6	25.08	25.19	24.96	25.12	24.81		0.3
	12	13	25.03	25.12	24.92	25.07	24.78		0.3
	25	0	25.05	25.16	24.99	25.09	24.87		0.3
64QAM	1	0	25.15	25.20	25.13	25.15	25.17	0-2	0.3
	1	12	25.14	25.20	25.20	25.15	25.20		0.3
	1	24	25.14	25.06	25.11	25.14	25.18		0.3
	12	0	23.93	23.94	23.77	23.92	23.57	0-3	1.3
	12	6	23.95	23.95	23.76	23.91	23.61		1.3
	12	13	23.91	23.90	23.71	23.70	23.57		1.3
	25	0	23.90	23.92	23.79	23.89	23.63		1.3

9.4.8 LTE Uplink Carrier Aggregation Conducted Powers

Table 9-61
LTE Uplink Carrier Aggregation Conducted Powers

	PCC							SCC							Power	
Combination	PCC Band	PCC Bandwidth [MHz]	PCC (UL/DL) Channel	PCC (UL/DL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL/DL) Channel	SCC (UL/DL) Frequency [MHz]	Modulation	SCC UL# RB	SCC UL RB Offset	LTE Tx.Power with UL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_41C	LTE B41	20	40185	2549.5	QPSK	1	0	LTE B41	20	39987	2529.7	QPSK	1	99	24.29	24.26
CA_41C	LTE B41	20	41490	2680.0	QPSK	1	0	LTE B41	20	41292	2660.2	QPSK	1	99	24.01	24.00

	PCC							SCC							Power	
Combination	PCC Band	PCC Bandwidth [MHz]	PCC (UL/DL) Channel	PCC (UL/DL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL/DL) Channel	SCC (UL/DL) Frequency [MHz]	Modulation	SCC UL# RB	SCC UL RB Offset	LTE Tx.Power with UL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_41C	LTE B41	20	39750	2506.0	QPSK	50	50	LTE B41	20	39948	2525.8	QPSK	50	0	22.27	22.41

	PCC							SCC							Power	
Combination	PCC Band	PCC Bandwidth [MHz]	PCC (UL/DL) Channel	PCC (UL/DL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL/DL) Channel	SCC (UL/DL) Frequency [MHz]	Modulation	SCC UL# RB	SCC UL RB Offset	LTE Tx.Power with UL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_41C	LTE B41 PC2	20	40185	2549.5	QPSK	1	0	LTE B41 PC2	20	39987	2529.7	QPSK	1	99	26.82	26.70
CA_41C	LTE B41 PC2	20	41490	2680.0	QPSK	1	0	LTE B41 PC2	20	41292	2660.2	QPSK	1	99	26.45	26.52

	PCC							SCC							Power	
Combination	PCC Band	PCC Bandwidth [MHz]	PCC (UL/DL) Channel	PCC (UL/DL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL/DL) Channel	SCC (UL/DL) Frequency [MHz]	Modulation	SCC UL# RB	SCC UL RB Offset	LTE Tx.Power with UL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_41C	LTE B41 PC2	20	39750	2506.0	QPSK	50	50	LTE B41 PC2	20	39948	2525.8	QPSK	50	0	24.99	24.94

Notes:

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

Figure 9-4
Power Measurement Setup

9.5 WLAN Conducted Powers

Table 9-62
2.4 GHz WLAN Maximum Average RF Power

2.4GHz Conducted Power [dBm]				
Freq [MHz]	Channel	IEEE Transmission Mode		
		802.11b	802.11g	802.11n
		Average	Average	Average
2412	1	**20.14**	16.08	15.03
2417	2		17.96	16.35
2437	6	20.04	18.01	16.33
2457	10		18.16	16.53
2462	11	20.03	16.09	14.46

Table 9-63
5 GHz WLAN Maximum Average RF Power

5GHz (20MHz) Conducted Power [dBm]				
Freq [MHz]	Channel	IEEE Transmission Mode		
		802.11a	802.11n	802.11ac
		Average	Average	Average
5180	36	**15.98**	15.15	15.06
5200	40	15.93	15.26	15.04
5220	44	15.91	14.97	14.81
5240	48	15.78	14.92	14.87
5260	52	**15.88**	14.95	14.90
5280	56	15.87	14.91	14.93
5300	60	13.99	13.86	13.98
5320	64	13.92	13.82	13.96
5500	100	13.28	13.16	13.39
5600	120	**13.42**	13.29	13.37
5620	124	13.29	13.33	13.32
5720	144	13.06	13.08	13.12
5745	149	12.91	12.72	12.63
5785	157	**15.84**	14.08	14.41
5825	165	13.87	13.88	13.83

Table 9-64
2.4 GHz WLAN Reduced Average RF Power

2.4GHz Conducted Power [dBm]				
Freq [MHz]	Channel	IEEE Transmission Mode		
		802.11b	802.11g	802.11n
		Average	Average	Average
2412	1	**16.23**	16.08	15.03
2417	2	N/A	N/A	16.35
2437	6	16.07	16.12	16.33
2457	10	N/A	16.33	16.53
2462	11	16.03	16.09	14.46

Table 9-65
5 GHz WLAN Reduced Average RF Power

5GHz (20MHz) Conducted Power [dBm]		
Freq [MHz]	Channel	IEEE Transmission Mode
		802.11a
		Average
5180	36	13.64
5200	40	13.57
5220	44	**13.61**
5240	48	13.54
5260	52	13.43
5280	56	13.47
5300	60	**13.99**
5320	64	13.92
5500	100	13.28
5600	120	**13.42**
5620	124	13.29
5720	144	13.06
5745	149	12.48
5785	157	12.48
5825	165	**12.59**

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

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

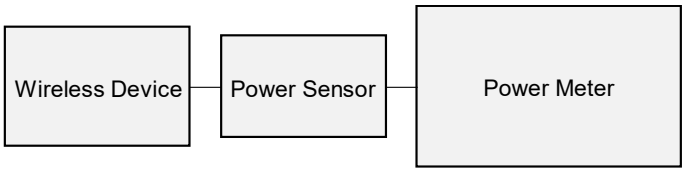


Figure 9-5
Power Measurement Setup

9.6 Bluetooth Conducted Powers

Table 9-66
Bluetooth Average RF Power

Frequency [MHz]	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
			[dBm]	[mW]
2402	1.0	0	8.15	6.533
2441	1.0	39	7.66	5.829
2480	1.0	78	**8.54**	7.144
2402	2.0	0	4.90	3.090
2441	2.0	39	4.30	2.693
2480	2.0	78	5.52	3.561
2402	3.0	0	4.98	3.151
2441	3.0	39	4.39	2.746
2480	3.0	78	5.59	3.624

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

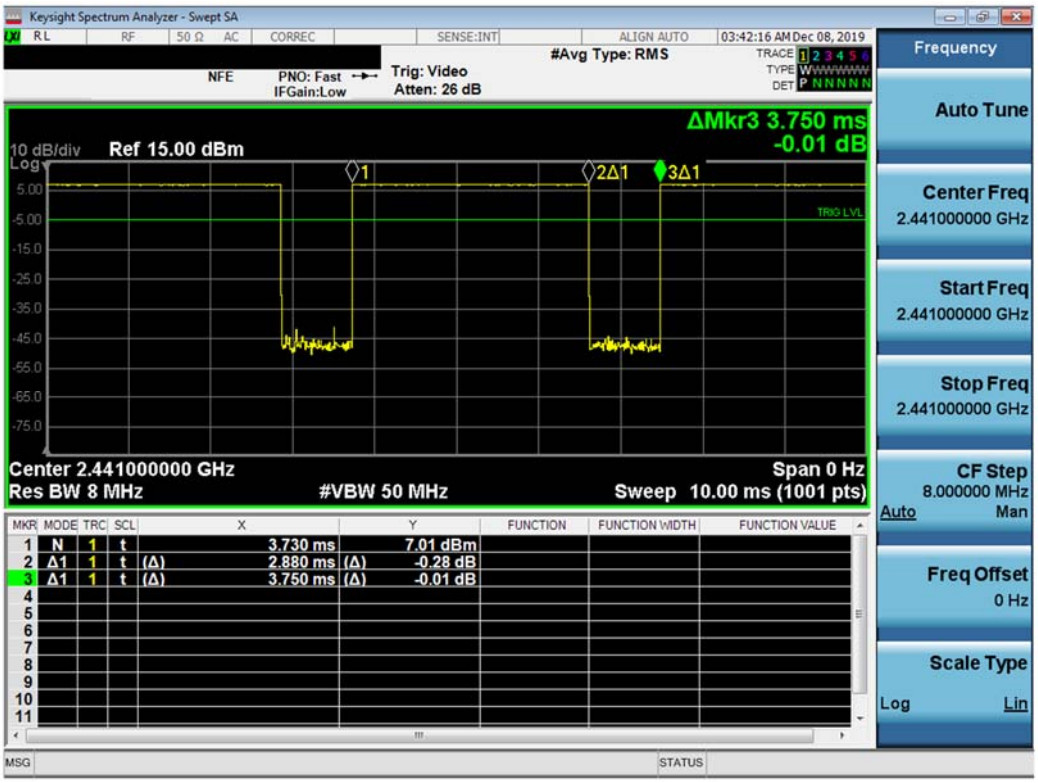


Figure 9-6
Bluetooth Transmission Plot

Equation 9-1
Bluetooth Duty Cycle Calculation

$$Duty\ Cycle = \frac{Pulse\ Width}{Period} * 100\% = \frac{2.88\ ms}{3.75\ ms} * 100\% = 76.8\%$$

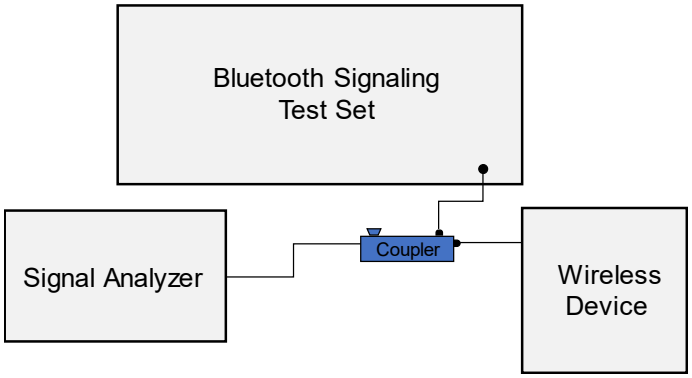


Figure 9-7
Power Measurement Setup

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
11/20/2019	750 Head	21.4	680	0.872	41.900	0.888	42.305	-1.80%	-0.96%
			695	0.877	41.849	0.889	42.227	-1.35%	-0.90%
			700	0.879	41.834	0.889	42.201	-1.12%	-0.87%
			710	0.882	41.807	0.890	42.149	-0.90%	-0.81%
			725	0.887	41.771	0.891	42.071	-0.45%	-0.71%
			740	0.892	41.733	0.893	41.994	-0.11%	-0.62%
			750	0.896	41.721	0.894	41.942	0.22%	-0.53%
			755	0.898	41.706	0.894	41.916	0.45%	-0.50%
			770	0.903	41.654	0.895	41.838	0.89%	-0.44%
			785	0.909	41.592	0.896	41.760	1.45%	-0.40%
			800	0.914	41.543	0.897	41.682	1.90%	-0.33%
11/11/2019	835 Head	20.0	820	0.894	40.475	0.899	41.578	-0.56%	-2.65%
			835	0.899	40.431	0.900	41.500	-0.11%	-2.58%
			850	0.905	40.385	0.916	41.500	-1.20%	-2.69%
11/14/2019	835 Head	20.3	820	0.912	41.413	0.899	41.578	1.45%	-0.40%
			835	0.918	41.382	0.900	41.500	2.00%	-0.28%
			850	0.924	41.348	0.916	41.500	0.87%	-0.37%
11/20/2019	835 Head	21.8	820	0.909	40.790	0.899	41.578	1.11%	-1.90%
			835	0.915	40.751	0.900	41.500	1.67%	-1.80%
			850	0.920	40.706	0.916	41.500	0.44%	-1.91%
11/4/2019	1750 Head	21.9	1710	1.355	41.650	1.348	40.142	0.52%	3.76%
			1720	1.367	41.615	1.354	40.126	0.96%	3.71%
			1745	1.396	41.499	1.368	40.087	2.05%	3.52%
			1750	1.401	41.488	1.371	40.079	2.19%	3.52%
			1770	1.420	41.390	1.383	40.047	2.68%	3.35%
			1790	1.441	41.297	1.394	40.016	3.37%	3.20%
11/20/2019	1750 Head	21.8	1710	1.317	39.070	1.348	40.142	-2.30%	-2.67%
			1720	1.323	39.050	1.354	40.126	-2.29%	-2.68%
			1745	1.338	38.997	1.368	40.087	-2.19%	-2.72%
			1750	1.341	38.987	1.371	40.079	-2.19%	-2.72%
			1770	1.352	38.953	1.383	40.047	-2.24%	-2.73%
			1790	1.363	38.925	1.394	40.016	-2.22%	-2.73%
11/13/2019	1900 Head	20.6	1850	1.410	40.374	1.400	40.000	0.71%	0.94%
			1860	1.416	40.353	1.400	40.000	1.14%	0.88%
			1880	1.428	40.323	1.400	40.000	2.00%	0.81%
			1900	1.441	40.308	1.400	40.000	2.93%	0.77%
			1905	1.444	40.305	1.400	40.000	3.14%	0.76%
11/18/2019	1900 Head	21.5	1850	1.418	39.757	1.400	40.000	1.29%	-0.61%
			1860	1.423	39.743	1.400	40.000	1.64%	-0.64%
			1880	1.435	39.726	1.400	40.000	2.50%	-0.69%
			1900	1.446	39.709	1.400	40.000	3.29%	-0.73%
			1905	1.448	39.706	1.400	40.000	3.43%	-0.73%
			1910	1.451	39.701	1.400	40.000	3.64%	-0.75%
11/11/2019	2450 Head	19.2	2400	1.824	39.072	1.756	39.289	3.87%	-0.55%
			2450	1.866	38.982	1.800	39.200	3.67%	-0.56%
			2500	1.905	38.887	1.855	39.136	2.70%	-0.64%
11/18/2019	2450 Head	21.2	2400	1.786	37.830	1.756	39.289	1.71%	-3.71%
			2450	1.824	37.768	1.800	39.200	1.33%	-3.65%
			2500	1.860	37.682	1.855	39.136	0.27%	-3.72%
			2510	1.868	37.669	1.866	39.123	0.11%	-3.72%
			2535	1.889	37.645	1.893	39.092	-0.21%	-3.70%
			2550	1.902	37.627	1.909	39.073	-0.37%	-3.70%
			2560	1.910	37.611	1.920	39.060	-0.52%	-3.71%
			2600	1.941	37.536	1.964	39.009	-1.17%	-3.78%
			2650	1.982	37.458	2.018	38.945	-1.78%	-3.82%
			2680	2.008	37.410	2.051	38.907	-2.10%	-3.85%
			2700	2.023	37.371	2.073	38.882	-2.41%	-3.89%
11/21/2019	2450 Head	23.7	2450	1.856	37.417	1.800	39.200	3.11%	-4.55%
			2500	1.894	37.346	1.855	39.136	2.10%	-4.57%
			2510	1.901	37.325	1.866	39.123	1.88%	-4.60%
			2535	1.920	37.272	1.893	39.092	1.43%	-4.66%
			2550	1.933	37.248	1.909	39.073	1.26%	-4.67%
			2560	1.942	37.236	1.920	39.060	1.15%	-4.67%
			2600	1.973	37.168	1.964	39.009	0.46%	-4.72%
			2650	2.010	37.065	2.018	38.945	-0.40%	-4.83%
			2680	2.032	37.015	2.051	38.907	-0.93%	-4.86%
			2700	2.046	36.987	2.073	38.882	-1.30%	-4.87%
12/05/2019	2450 Head	20.8	2400	1.813	39.095	1.756	39.289	3.25%	-0.49%
			2450	1.854	39.003	1.800	39.200	3.00%	-0.50%
			2500	1.893	38.919	1.855	39.136	2.05%	-0.55%
11/10/2019	5200-5800 Head	20.1	5240	4.713	35.920	4.696	35.940	0.36%	-0.06%
			5250	4.726	35.896	4.706	35.929	0.42%	-0.09%
			5260	4.740	35.873	4.717	35.917	0.49%	-0.12%
			5270	4.753	35.852	4.727	35.906	0.55%	-0.15%
			5280	4.764	35.845	4.737	35.894	0.57%	-0.14%
			5290	4.774	35.836	4.748	35.883	0.55%	-0.13%
			5300	4.787	35.817	4.758	35.871	0.61%	-0.15%
			5310	4.800	35.796	4.768	35.860	0.67%	-0.18%
			5320	4.809	35.774	4.778	35.849	0.65%	-0.21%
			5500	5.013	35.432	4.963	35.643	1.01%	-0.59%
			5510	5.028	35.417	4.973	35.632	1.11%	-0.60%
			5600	5.133	35.238	5.065	35.529	1.34%	-0.82%
			5610	5.145	35.215	5.076	35.518	1.36%	-0.85%
			5700	5.245	35.024	5.168	35.414	1.49%	-1.10%
			5710	5.260	35.014	5.178	35.403	1.58%	-1.10%
			5720	5.274	35.011	5.188	35.391	1.66%	-1.07%
			5745	5.304	34.972	5.214	35.363	1.73%	-1.11%
			5750	5.309	34.961	5.219	35.357	1.72%	-1.12%
			5800	5.366	34.868	5.270	35.300	1.82%	-1.22%
			5805	5.372	34.860	5.275	35.294	1.84%	-1.23%
			5825	5.394	34.831	5.296	35.271	1.85%	-1.25%

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
11/06/2019	750 Body	23.6	680	0.914	57.723	0.958	55.804	-4.59%	3.44%
			695	0.927	57.594	0.959	55.745	-3.34%	3.32%
			700	0.932	57.551	0.959	55.726	-2.82%	3.27%
			710	0.941	57.463	0.960	55.687	-1.98%	3.19%
			725	0.954	57.332	0.961	55.629	-0.73%	3.06%
			740	0.968	57.198	0.963	55.570	0.52%	2.93%
			750	0.977	57.111	0.964	55.531	1.35%	2.85%
			755	0.982	57.065	0.964	55.512	1.87%	2.80%
			770	0.996	56.932	0.965	55.453	3.21%	2.67%
			785	1.010	56.797	0.966	55.395	4.55%	2.53%
11/12/2019	750 Body	24.4	665	0.941	57.651	0.959	55.745	-1.88%	3.42%
			700	0.945	57.609	0.959	55.726	-1.46%	3.38%
			710	0.954	57.528	0.960	55.687	-0.63%	3.31%
			725	0.967	57.409	0.961	55.629	0.62%	3.20%
			740	0.980	57.282	0.963	55.570	1.77%	3.08%
			750	0.990	57.195	0.964	55.531	2.70%	3.00%
			755	0.995	57.152	0.964	55.512	3.22%	2.95%
			770	1.008	57.008	0.965	55.453	4.46%	2.80%
12/10/2019	750 Body	23.4	740	0.968	53.900	0.963	55.570	0.52%	-3.01%
			750	0.972	53.864	0.964	55.531	0.83%	-3.00%
			755	0.973	53.849	0.964	55.512	0.93%	-3.00%
			770	0.979	53.808	0.965	55.453	1.45%	-2.97%
			785	0.984	53.780	0.966	55.395	1.86%	-2.92%
			800	0.990	53.766	0.967	55.336	2.38%	-2.84%
11/11/2019	835 Body	20.4	820	0.982	55.630	0.969	55.258	-0.72%	0.67%
			835	0.978	55.480	0.970	55.200	0.82%	0.51%
			850	0.993	55.338	0.988	55.154	0.51%	0.33%
11/6/2019	1750 Body	21.8	1710	1.437	52.404	1.463	53.537	-1.78%	-2.12%
			1750	1.484	52.283	1.488	53.432	-0.27%	-2.15%
			1790	1.526	52.139	1.514	53.326	0.82%	-2.23%
11/11/2019	1750 Body	22.5	1710	1.460	51.564	1.463	53.537	-0.21%	-3.70%
			1720	1.471	51.516	1.469	53.511	0.14%	-3.73%
			1745	1.499	51.410	1.485	53.445	0.94%	-3.77%
			1750	1.505	51.413	1.488	53.432	1.14%	-3.78%
			1770	1.526	51.329	1.501	53.379	1.67%	-3.84%
			1790	1.547	51.245	1.514	53.326	2.18%	-3.90%
11/20/2019	1750 Body	20.0	1710	1.445	53.061	1.463	53.537	-1.23%	-0.89%
			1720	1.457	53.024	1.469	53.511	-0.82%	-0.91%
			1745	1.486	52.944	1.485	53.445	0.07%	-0.94%
			1750	1.492	52.924	1.488	53.432	0.27%	-0.95%
			1770	1.513	52.836	1.501	53.379	0.80%	-1.02%
			1790	1.533	52.744	1.514	53.326	1.25%	-1.09%
11/22/2019	1750 Body	20.1	1710	1.489	52.731	1.463	53.537	1.78%	-1.51%
			1720	1.501	52.689	1.469	53.511	2.18%	-1.54%
			1745	1.530	52.613	1.485	53.445	3.03%	-1.56%
			1750	1.536	52.596	1.488	53.432	3.23%	-1.56%
			1770	1.558	52.508	1.501	53.379	3.80%	-1.63%
			1790	1.580	52.407	1.514	53.326	4.36%	-1.72%
11/4/2019	1900 Body	24.1	1850	1.500	52.377	1.520	53.300	-1.32%	-1.73%
			1860	1.510	52.344	1.520	53.300	-0.66%	-1.79%
			1880	1.533	52.283	1.520	53.300	0.86%	-1.91%
			1900	1.556	52.221	1.520	53.300	2.37%	-2.02%
			1905	1.562	52.205	1.520	53.300	2.76%	-2.05%
11/13/2019	1900 Body	24.3	1910	1.567	52.189	1.520	53.300	3.09%	-2.08%
			1850	1.518	51.865	1.520	53.300	-0.13%	-2.69%
			1860	1.529	51.842	1.520	53.300	0.59%	-2.74%
			1880	1.552	51.795	1.520	53.300	2.11%	-2.82%
			1900	1.575	51.741	1.520	53.300	3.62%	-2.92%
			1905	1.580	51.725	1.520	53.300	3.95%	-2.95%
			1910	1.586	51.711	1.520	53.300	4.34%	-2.98%
11/13/2019	1900 Body	22.3	1850	1.518	51.846	1.520	53.300	-0.13%	-2.73%
			1860	1.530	51.809	1.520	53.300	0.66%	-2.80%
			1880	1.553	51.738	1.520	53.300	2.17%	-2.93%
			1900	1.576	51.663	1.520	53.300	3.68%	-3.07%
			1905	1.582	51.646	1.520	53.300	4.08%	-3.11%
			1910	1.587	51.627	1.520	53.300	4.43%	-3.14%
11/18/2019	1900 Body	22.9	1850	1.508	51.200	1.520	53.300	-0.79%	-3.94%
			1860	1.519	51.172	1.520	53.300	-0.07%	-3.99%
			1880	1.542	51.116	1.520	53.300	1.45%	-4.10%
			1900	1.564	51.052	1.520	53.300	2.89%	-4.22%
			1905	1.570	51.033	1.520	53.300	3.29%	-4.25%
			1910	1.575	51.014	1.520	53.300	3.62%	-4.29%
11/04/2019	2450 Body	23.7	2400	1.986	52.492	1.902	52.767	4.42%	-0.52%
			2450	2.047	52.353	1.950	52.700	4.97%	-0.66%
			2500	2.107	52.209	2.021	52.636	4.26%	-0.81%
11/14/2019	2450 Body	23.0	2400	1.960	52.161	1.902	52.767	4.10%	-1.15%
			2450	2.040	52.022	1.950	52.700	4.62%	-1.29%
			2500	2.097	51.862	2.021	52.636	3.78%	-1.47%
			2510	2.109	51.849	2.035	52.623	3.64%	-1.47%
			2535	2.142	51.768	2.071	52.592	3.43%	-1.57%
			2550	2.160	51.739	2.092	52.573	3.25%	-1.59%
			2560	2.175	51.711	2.106	52.560	3.28%	-1.62%
			2600	2.220	51.611	2.163	52.509	2.64%	-1.71%
			2650	2.282	51.492	2.234	52.445	2.15%	-1.90%
			2680	2.324	51.348	2.277	52.407	2.06%	-2.02%
			2700	2.349	51.270	2.305	52.382	1.91%	-2.12%
11/18/2019	2450 Body	22.0	2400	1.963	52.505	1.902	52.767	3.21%	-0.50%
			2450	2.006	52.405	1.950	52.700	2.87%	-0.56%
			2500	2.051	52.344	2.021	52.636	1.48%	-0.55%
11/18/2019	2450 Body	23.0	2300	1.873	52.678	1.809	52.900	3.54%	-0.42%
			2310	1.884	52.652	1.816	52.887	3.74%	-0.44%
			2320	1.896	52.630	1.826	52.873	3.83%	-0.46%
			2400	1.966	52.400	1.902	52.767	4.42%	-0.70%
			2450	2.046	52.262	1.950	52.700	4.92%	-0.83%
			2500	2.104	52.110	2.021	52.636	4.11%	-1.00%
			2510	2.115	52.079	2.035	52.623	3.93%	-1.03%
			2535	2.145	52.011	2.071	52.592	3.57%	-1.10%
			2550	2.165	51.970	2.092	52.573	3.49%	-1.15%
			2560	2.177	51.943	2.106	52.560	3.37%	-1.17%
			2600	2.225	51.830	2.163	52.509	2.87%	-1.29%
			2650	2.285	51.680	2.234	52.445	2.28%	-1.46%
			2680	2.325	51.580	2.277	52.407	2.11%	-1.58%
			2700	2.350	51.522	2.305	52.382	1.95%	-1.64%
12/03/2019	2450 Body	23.3	2400	1.971	51.465	1.902	52.767	3.63%	-2.47%
			2450	2.037	51.308	1.950	52.700	4.46%	-2.64%
			2500	2.100	51.094	2.021	52.636	3.93%	-2.93%
11/12/2019	5200-5800 Body	22.7	5180	5.184	48.069	5.276	49.041	-1.74%	-1.98%
			5190	5.203	48.063	5.288	49.028	-1.61%	-1.97%
			5200	5.220	48.070	5.299	49.014	-1.49%	-1.93%
			5240	5.280	48.054	5.346	48.960	-1.23%	-1.85%
			5250	5.281	48.029	5.358	48.947	-1.44%	-1.88%
			5260	5.281	48.005	5.369	48.933	-1.64%	-1.90%
			5550	5.656	47.578	5.708	48.539	-0.921%	-1.96%
			5560	5.681	47.569	5.720	48.526	-0.68%	-1.97%
			5580	5.721	47.546	5.743	48.499	-0.38%	-1.96%
			5600	5.741	47.578	5.766	48.471	-0.43%	-1.84%
			5610	5.752	47.572	5.778	48.458	-0.45%	-1.83%
			5745	5.920	47.334	5.936	48.275	-0.27%	-1.95%
			5750	5.923	47.313	5.942	48.268	-0.32%	-1.98%
			5755	5.926	47.292	5.947	48.261	-0.35%	-2.01%
			5765	5.933	47.249	5.959	48.248	-0.44%	-2.07%
			5775	5.944	47.215	5.971	48.234	-0.45%	-2.11%
			5785	5.962	47.191	5.982	48.220	-0.33%	-2.13%
			5795	5.987	47.175	5.994	48.207	-0.12%	-2.14%
11/26/2019	5200-5800 Body	22.6	5250	5.472	48.395	5.358	48.947	2.13%	-1.13%
			5260	5.483	48.371	5.369	48.933	2.12%	-1.15%
			5270	5.495	48.360	5.381	48.919	2.12%	-1.14%
			5280	5.510	48.352	5.393	48.906	2.17%	-1.13%
			5290	5.526	48.341	5.404	48.892	2.26%	-1.13%
			5300	5.539	48.325	5.416	48.879	2.27%	-1.13%
			5310	5.550	48.303	5.428	48.865	2.25%	-1.15%
			5320	5.559	48.276	5.439	48.851	2.21%	-1.18%
			5500	5.801	47.989	5.650	48.607	2.67%	-1.27%
			5580	5.899	47.851	5.743	48.499	2.72%	-1.34%
			5600	5.930	47.820	5.766	48.471	3.00%	-1.34%
			5610	5.953	47.798	5.778	48.458	3.03%	-1.36%
			5620	5.965	47.784	5.790	48.444	3.02%	-1.36%
			5745	6.146	47.594	5.936	48.275	3.54%	-1.43%
			5750	6.150	47.573	5.942	48.268	3.50%	-1.44%
			5755	6.154	47.563	5.947	48.261	3.48%	-1.45%
12/1/2019	5200-5800 Body	23.5	5180	5.372	47.954	5.276	49.041	1.78%	-3.44%
			5200	5.368	47.930	5.299	49.014	1.68%	-3.44%
			5220	5.418	47.272	5.323	48.987	1.78%	-3.50%
			5240	5.444	47.224	5.346	48.960	1.83%	-3.55%
			5260	5.474	47.191	5.369	48.933	1.96%	-3.56%
			5280	5.503	47.181	5.393	48.906	2.04%	-3.53%

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 D.

Table 10-3
System Verification Results – 1g

System Verification TARGET & MEASURED												
SAR System #	Tissue Frequency (MHz)	Tissue Type	Date	Amb. Temp (°C)	Liquid Temp (°C)	Input Power (W)	Source SN	Probe SN	Measured SAR_{1g} (W/kg)	1 W Target SAR_{1g} (W/kg)	1 W Normalized SAR_{1g} (W/kg)	$Deviation_{1g}$ (%)
G	750	HEAD	11/20/2019	21.8	21.5	0.200	1003	7409	1.640	8.280	8.200	-0.97%
P	835	HEAD	11/11/2019	20.5	20.5	0.200	4d047	7551	1.960	9.420	9.800	4.03%
E	835	HEAD	11/14/2019	22.1	21.3	0.200	4d132	7417	1.880	9.590	9.400	-1.98%
P	835	HEAD	11/20/2019	24.3	21.8	0.200	4d047	7551	2.000	9.420	10.000	6.16%
D	1750	HEAD	11/04/2019	22.0	21.3	0.100	1008	3914	3.900	36.200	39.000	7.73%
P	1750	HEAD	11/20/2019	24.3	21.8	0.100	1150	7551	3.670	36.500	36.700	0.55%
P	1900	HEAD	11/13/2019	22.0	20.6	0.100	5d148	7551	4.170	39.100	41.700	6.65%
P	1900	HEAD	11/18/2019	22.8	21.5	0.100	5d080	7551	4.250	39.800	42.500	6.78%
E	2450	HEAD	11/11/2019	21.3	19.2	0.100	981	7417	5.290	52.300	52.900	1.15%
E	2450	HEAD	11/18/2019	21.4	21.2	0.100	981	7417	5.300	52.300	53.000	1.34%
E	2450	HEAD	11/21/2019	21.6	23.7	0.100	981	7417	5.220	52.300	52.200	-0.19%
E	2450	HEAD	12/05/2019	22.7	20.8	0.100	981	7417	5.290	52.300	52.900	1.15%
E	2600	HEAD	11/18/2019	21.4	21.2	0.100	1064	7417	5.880	58.100	58.800	1.20%
E	2600	HEAD	11/21/2019	21.6	23.7	0.100	1064	7417	5.840	58.100	58.400	0.52%
H	5250	HEAD	11/10/2019	21.0	20.1	0.050	1237	7406	3.860	81.300	77.200	-5.04%
H	5600	HEAD	11/10/2019	21.0	20.1	0.050	1237	7406	4.020	85.700	80.400	-6.18%
H	5750	HEAD	11/10/2019	21.0	20.1	0.050	1237	7406	3.830	80.600	76.600	-4.96%
L	750	BODY	11/06/2019	22.2	23.5	0.200	1161	7410	1.770	8.430	8.850	4.98%
L	750	BODY	11/12/2019	22.6	24.4	0.200	1161	7410	1.820	8.430	9.100	7.95%
L	750	BODY	12/10/2019	24.6	21.9	0.200	1161	7410	1.770	8.430	8.850	4.98%
I	835	BODY	11/11/2019	21.2	20.4	0.200	4d132	7357	2.080	9.670	10.400	7.55%
G	1750	BODY	11/06/2019	22.3	20.8	0.100	1148	7409	4.020	37.700	40.200	6.63%
I	1750	BODY	11/20/2019	20.6	20.0	0.100	1148	7357	3.550	37.700	35.500	-5.84%
J	1900	BODY	11/04/2019	22.3	22.2	0.100	5d148	7488	4.190	39.100	41.900	7.16%
J	1900	BODY	11/13/2019	22.7	22.3	0.100	5d149	7488	4.100	39.400	41.000	4.06%
D	1900	BODY	11/13/2019	22.4	21.0	0.100	5d149	3914	4.230	39.400	42.300	7.36%
D	1900	BODY	11/18/2019	22.4	21.3	0.100	5d149	3914	4.240	39.400	42.400	7.61%
K	2450	BODY	11/04/2019	22.5	22.4	0.100	797	7547	5.150	51.100	51.500	0.78%
K	2450	BODY	11/14/2019	22.3	22.0	0.100	797	7547	5.160	51.100	51.600	0.98%
K	2450	BODY	11/18/2019	22.3	21.8	0.100	797	7547	5.110	51.100	51.100	0.00%
L	2450	BODY	11/18/2019	23.0	21.0	0.100	719	7410	5.410	50.800	54.100	6.50%
M	2450	BODY	12/03/2019	23.1	21.9	0.100	981	7308	5.430	50.900	54.300	6.68%
K	2600	BODY	11/14/2019	22.3	22.0	0.100	1004	7547	5.430	54.800	54.300	-0.91%
K	2600	BODY	11/18/2019	22.3	21.8	0.100	1004	7547	5.490	54.800	54.900	0.18%
G	5250	BODY	11/12/2019	22.7	21.9	0.500	1237	7409	3.520	75.600	70.400	-6.88%
G	5600	BODY	11/12/2019	22.7	21.9	0.500	1237	7409	3.680	78.500	73.600	-6.24%
G	5750	BODY	11/12/2019	22.7	21.9	0.500	1237	7409	3.560	75.900	71.200	-6.19%
G	5250	BODY	11/26/2019	23.5	21.6	0.050	1237	7409	3.510	75.600	70.200	-7.14%
G	5600	BODY	11/26/2019	23.5	21.6	0.050	1237	7409	3.780	78.500	75.600	-3.69%
G	5750	BODY	11/26/2019	23.5	21.6	0.050	1237	7409	3.570	75.900	71.400	-5.93%
G	5250	BODY	12/01/2019	22.9	22.0	0.500	1191	7409	3.840	77.000	76.800	-0.26%

Table 10-4
System Verification Results – 10g

System Verification TARGET & MEASURED												
SAR System #	Tissue Frequency (MHz)	Tissue Type	Date	Amb. Temp (°C)	Liquid Temp (°C)	Input Power (W)	Source SN	Probe SN	Measured SAR_{10g} (W/kg)	1 W Target SAR_{10g} (W/kg)	1 W Normalized SAR_{10g} (W/kg)	$Deviation_{10g}$ (%)
G	1750	BODY	11/11/2019	21.8	21.0	0.100	1148	7409	1.990	19.800	19.900	0.51%
I	1750	BODY	11/22/2019	21.8	20.1	0.100	1148	7357	2.130	19.800	21.300	7.58%
J	1900	BODY	11/13/2019	22.7	22.3	0.100	5d149	7488	2.080	20.700	20.800	0.48%
D	1900	BODY	11/18/2019	22.4	21.3	0.100	5d149	3914	2.180	20.700	21.800	5.31%
K	2450	BODY	11/18/2019	22.3	21.8	0.100	797	7547	2.340	24.200	23.400	-3.31%
K	2600	BODY	11/18/2019	22.3	21.8	0.100	1004	7547	2.420	24.700	24.200	-2.02%
G	5250	BODY	11/26/2019	23.5	21.6	0.050	1237	7409	0.979	21.200	19.580	-7.64%
G	5600	BODY	11/26/2019	23.5	21.6	0.050	1237	7409	1.050	22.000	21.000	-4.55%
G	5750	BODY	11/26/2019	23.5	21.6	0.050	1237	7409	0.992	21.200	19.840	-6.42%

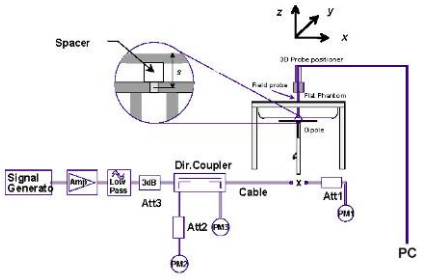


Figure 10-1
System Verification Setup Diagram

Figure 10-2
System Verification Setup Photo

11 SAR DATA SUMMARY

11.1 Standalone Head SAR Data

Table 11-1
GSM 850 Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	# of Time Slots	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
836.60	190	GSM 850	GSM	33.7	33.60	0.18	Right	Cheek	00251	1	1:8.3	0.288	1.023	0.295	
836.60	190	GSM 850	GSM	33.7	33.60	0.04	Right	Tilt	00251	1	1:8.3	0.132	1.023	0.135	
836.60	190	GSM 850	GSM	33.7	33.60	0.12	Left	Cheek	00251	1	1:8.3	0.233	1.023	0.238	
836.60	190	GSM 850	GSM	33.7	33.60	0.05	Left	Tilt	00251	1	1:8.3	0.123	1.023	0.126	
836.60	190	GSM 850	GPRS	29.7	29.54	0.00	Right	Cheek	00251	4	1:2.076	0.371	1.038	0.385	A1
836.60	190	GSM 850	GPRS	29.7	29.54	0.02	Right	Tilt	00251	4	1:2.076	0.224	1.038	0.233	
836.60	190	GSM 850	GPRS	29.7	29.54	-0.05	Left	Cheek	00251	4	1:2.076	0.345	1.038	0.358	
836.60	190	GSM 850	GPRS	29.7	29.54	-0.04	Left	Tilt	00251	4	1:2.076	0.181	1.038	0.188	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram								

Table 11-2
GSM 1900 Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	# of Time Slots	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
1880.00	661	GSM 1900	GSM	30.7	30.12	0.00	Right	Cheek	00269	1	1:8.3	0.139	1.143	0.159	
1880.00	661	GSM 1900	GSM	30.7	30.12	0.01	Right	Tilt	00269	1	1:8.3	0.155	1.143	0.177	
1880.00	661	GSM 1900	GSM	30.7	30.12	-0.01	Left	Cheek	00269	1	1:8.3	0.244	1.143	0.279	
1880.00	661	GSM 1900	GSM	30.7	30.12	-0.02	Left	Tilt	00269	1	1:8.3	0.118	1.143	0.135	
1880.00	661	GSM 1900	GPRS	25.7	25.51	0.09	Right	Cheek	00269	4	1:2.076	0.156	1.045	0.163	
1880.00	661	GSM 1900	GPRS	25.7	25.51	0.03	Right	Tilt	00269	4	1:2.076	0.173	1.045	0.181	
1880.00	661	GSM 1900	GPRS	25.7	25.51	0.11	Left	Cheek	00269	4	1:2.076	0.320	1.045	0.334	A2
1880.00	661	GSM 1900	GPRS	25.7	25.51	0.10	Left	Tilt	00269	4	1:2.076	0.140	1.045	0.146	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram								

Table 11-3
UMTS 850 Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
836.60	4183	UMTS 850	RMC	24.7	24.58	-0.04	Right	Cheek	00269	1:1	0.281	1.028	0.289	
836.60	4183	UMTS 850	RMC	24.7	24.58	-0.06	Right	Tilt	00269	1:1	0.153	1.028	0.157	
836.60	4183	UMTS 850	RMC	24.7	24.58	0.03	Left	Cheek	00269	1:1	0.337	1.028	0.346	A3
836.60	4183	UMTS 850	RMC	24.7	24.58	-0.05	Left	Tilt	00269	1:1	0.136	1.028	0.140	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-4
UMTS 1750 Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
1732.40	1412	UMTS 1750	RMC	24.7	24.70	0.00	Right	Cheek	00269	1:1	0.182	1.000	0.182	
1732.40	1412	UMTS 1750	RMC	24.7	24.70	0.00	Right	Tilt	00269	1:1	0.118	1.000	0.118	
1732.40	1412	UMTS 1750	RMC	24.7	24.70	0.03	Left	Cheek	00269	1:1	0.292	1.000	0.292	A4
1732.40	1412	UMTS 1750	RMC	24.7	24.70	0.13	Left	Tilt	00269	1:1	0.158	1.000	0.158	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-5
UMTS 1900 Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
1880.00	9400	UMTS 1900	RMC	24.7	24.45	0.00	Right	Cheek	00251	1:1	0.211	1.059	0.223	
1880.00	9400	UMTS 1900	RMC	24.7	24.45	0.03	Right	Tilt	00251	1:1	0.211	1.059	0.223	
1880.00	9400	UMTS 1900	RMC	24.7	24.45	-0.11	Left	Cheek	00251	1:1	0.363	1.059	0.384	A5
1880.00	9400	UMTS 1900	RMC	24.7	24.45	0.03	Left	Tilt	00251	1:1	0.165	1.059	0.175	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-6
CDMA BC10 (§90S) Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	24.7	24.57	0.07	Right	Cheek	00251	1:1	0.185	1.030	0.191	A6
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	24.7	24.57	0.03	Right	Tilt	00251	1:1	0.092	1.030	0.095	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	24.7	24.57	-0.02	Left	Cheek	00251	1:1	0.162	1.030	0.167	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	24.7	24.57	0.08	Left	Tilt	00251	1:1	0.082	1.030	0.084	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	24.7	24.60	0.00	Right	Cheek	00251	1:1	0.180	1.023	0.184	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	24.7	24.60	-0.04	Right	Tilt	00251	1:1	0.112	1.023	0.115	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	24.7	24.60	-0.04	Left	Cheek	00251	1:1	0.171	1.023	0.175	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	24.7	24.60	0.07	Left	Tilt	00251	1:1	0.113	1.023	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 11-7
CDMA BC0 (§22H) Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	24.7	24.56	-0.01	Right	Cheek	00251	1:1	0.247	1.033	0.255	A7
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	24.7	24.56	0.00	Right	Tilt	00251	1:1	0.116	1.033	0.120	
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	24.7	24.56	-0.04	Left	Cheek	00251	1:1	0.204	1.033	0.211	
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	24.7	24.56	0.09	Left	Tilt	00251	1:1	0.112	1.033	0.116	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	24.7	24.54	0.00	Right	Cheek	00251	1:1	0.243	1.038	0.252	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	24.7	24.54	0.07	Right	Tilt	00251	1:1	0.128	1.038	0.133	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	24.7	24.54	0.16	Left	Cheek	00251	1:1	0.212	1.038	0.220	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	24.7	24.54	-0.01	Left	Tilt	00251	1:1	0.137	1.038	0.142	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram							

Table 11-8
PCS CDMA Head SAR

MEASUREMENT RESULTS														
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
1880.00	600	PCS CDMA	RC3 / SO55	24.7	24.42	0.10	Right	Cheek	00251	1:1	0.141	1.067	0.150	
1880.00	600	PCS CDMA	RC3 / SO55	24.7	24.42	0.11	Right	Tilt	00251	1:1	0.156	1.067	0.166	
1880.00	600	PCS CDMA	RC3 / SO55	24.7	24.42	0.01	Left	Cheek	00251	1:1	0.248	1.067	0.265	A8
1880.00	600	PCS CDMA	RC3 / SO55	24.7	24.42	0.09	Left	Tilt	00251	1:1	0.123	1.067	0.131	
1880.00	600	PCS CDMA	EVDO Rev. A	24.7	24.50	-0.03	Right	Cheek	00251	1:1	0.147	1.047	0.154	
1880.00	600	PCS CDMA	EVDO Rev. A	24.7	24.50	0.00	Right	Tilt	00251	1:1	0.156	1.047	0.163	
1880.00	600	PCS CDMA	EVDO Rev. A	24.7	24.50	0.04	Left	Cheek	00251	1:1	0.232	1.047	0.243	
1880.00	600	PCS CDMA	EVDO Rev. A	24.7	24.50	-0.06	Left	Tilt	00251	1:1	0.117	1.047	0.122	
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 71 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)	
680.50	133297	Mid	LTE Band 71	20	24.7	24.61	0.10	0	Right	Cheek	QPSK	1	50	00277	1:1	0.280	1.021	0.286	A9
680.50	133297	Mid	LTE Band 71	20	23.7	23.62	-0.02	1	Right	Cheek	QPSK	50	25	00277	1:1	0.216	1.019	0.220	
680.50	133297	Mid	LTE Band 71	20	24.7	24.61	-0.14	0	Right	Tilt	QPSK	1	50	00277	1:1	0.124	1.021	0.127	
680.50	133297	Mid	LTE Band 71	20	23.7	23.62	0.14	1	Right	Tilt	QPSK	50	25	00277	1:1	0.107	1.019	0.109	
680.50	133297	Mid	LTE Band 71	20	24.7	24.61	-0.21	0	Left	Cheek	QPSK	1	50	00277	1:1	0.239	1.021	0.244	
680.50	133297	Mid	LTE Band 71	20	23.7	23.62	0.13	1	Left	Cheek	QPSK	50	25	00277	1:1	0.191	1.019	0.195	
680.50	133297	Mid	LTE Band 71	20	24.7	24.61	0.03	0	Left	Tilt	QPSK	1	50	00277	1:1	0.122	1.021	0.125	
680.50	133297	Mid	LTE Band 71	20	23.7	23.62	0.03	1	Left	Tilt	QPSK	50	25	00277	1:1	0.092	1.019	0.094	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Head 1.6 W/kg (mW/g) averaged over 1 gram											

Table 11-10
LTE Band 12 Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
707.50	23095	Mid	LTE Band 12	10	25.2	25.07	-0.03	0	Right	Cheek	QPSK	1	25	00277	1:1	0.320	1.030	0.330	
707.50	23095	Mid	LTE Band 12	10	24.2	24.17	0.02	1	Right	Cheek	QPSK	25	0	00277	1:1	0.263	1.007	0.265	
707.50	23095	Mid	LTE Band 12	10	25.2	25.07	-0.07	0	Right	Tilt	QPSK	1	25	00277	1:1	0.175	1.030	0.180	
707.50	23095	Mid	LTE Band 12	10	24.2	24.17	0.04	1	Right	Tilt	QPSK	25	0	00277	1:1	0.141	1.007	0.142	
707.50	23095	Mid	LTE Band 12	10	25.2	25.07	-0.03	0	Left	Cheek	QPSK	1	25	00277	1:1	0.327	1.030	0.337	A10
707.50	23095	Mid	LTE Band 12	10	24.2	24.17	0.17	1	Left	Cheek	QPSK	25	0	00277	1:1	0.258	1.007	0.260	
707.50	23095	Mid	LTE Band 12	10	25.2	25.07	-0.09	0	Left	Tilt	QPSK	1	25	00277	1:1	0.165	1.030	0.170	
707.50	23095	Mid	LTE Band 12	10	24.2	24.17	-0.01	1	Left	Tilt	QPSK	25	0	00277	1:1	0.131	1.007	0.132	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram										

Table 11-11
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	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
782.00	23230	Mid	LTE Band 13	10	24.2	24.19	-0.06	0	Right	Cheek	QPSK	1	25	00277	1:1	0.284	1.002	0.285	A11
782.00	23230	Mid	LTE Band 13	10	23.2	23.20	0.04	1	Right	Cheek	QPSK	25	12	00277	1:1	0.219	1.000	0.219	
782.00	23230	Mid	LTE Band 13	10	24.2	24.19	0.02	0	Right	Tilt	QPSK	1	25	00277	1:1	0.192	1.002	0.192	
782.00	23230	Mid	LTE Band 13	10	23.2	23.20	-0.02	1	Right	Tilt	QPSK	25	12	00277	1:1	0.144	1.000	0.144	
782.00	23230	Mid	LTE Band 13	10	24.2	24.19	0.02	0	Left	Cheek	QPSK	1	25	00277	1:1	0.250	1.002	0.251	
782.00	23230	Mid	LTE Band 13	10	23.2	23.20	0.09	1	Left	Cheek	QPSK	25	12	00277	1:1	0.203	1.000	0.203	
782.00	23230	Mid	LTE Band 13	10	24.2	24.19	-0.18	0	Left	Tilt	QPSK	1	25	00277	1:1	0.156	1.002	0.156	
782.00	23230	Mid	LTE Band 13	10	23.2	23.20	0.03	1	Left	Tilt	QPSK	25	12	00277	1:1	0.129	1.000	0.129	
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 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	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	25.2	25.11	-0.03	0	Right	Cheek	QPSK	1	36	00285	1:1	0.275	1.021	0.281	A12
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.2	24.20	0.13	1	Right	Cheek	QPSK	36	0	00285	1:1	0.211	1.000	0.211	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.2	25.11	-0.16	0	Right	Tilt	QPSK	1	36	00285	1:1	0.130	1.021	0.133	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.2	24.20	0.14	1	Right	Tilt	QPSK	36	0	00285	1:1	0.115	1.000	0.115	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.2	25.11	-0.05	0	Left	Cheek	QPSK	1	36	00285	1:1	0.262	1.021	0.268	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.2	24.20	-0.04	1	Left	Cheek	QPSK	36	0	00285	1:1	0.197	1.000	0.197	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.2	25.11	-0.05	0	Left	Tilt	QPSK	1	36	00285	1:1	0.145	1.021	0.148	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.2	24.20	0.03	1	Left	Tilt	QPSK	36	0	00285	1:1	0.113	1.000	0.113	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram										

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	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.7	24.43	0.02	0	Right	Cheek	QPSK	1	50	00285	1:1	0.185	1.064	0.197	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.7	23.56	0.00	1	Right	Cheek	QPSK	50	0	00285	1:1	0.128	1.033	0.132	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.7	24.43	0.10	0	Right	Tilt	QPSK	1	50	00285	1:1	0.086	1.064	0.092	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.7	23.56	-0.01	1	Right	Tilt	QPSK	50	0	00285	1:1	0.072	1.033	0.074	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.7	24.43	-0.01	0	Left	Cheek	QPSK	1	50	00285	1:1	0.285	1.064	0.303	A13
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.7	23.56	0.04	1	Left	Cheek	QPSK	50	0	00285	1:1	0.217	1.033	0.224	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.7	24.43	-0.02	0	Left	Tilt	QPSK	1	50	00285	1:1	0.105	1.064	0.112	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.7	23.56	0.16	1	Left	Tilt	QPSK	50	0	00285	1:1	0.089	1.033	0.092	
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	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.7	24.70	0.02	0	Right	Cheek	QPSK	1	50	00285	1:1	0.242	1.000	0.242	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.7	23.70	0.05	1	Right	Cheek	QPSK	50	0	00285	1:1	0.197	1.000	0.197	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.7	24.70	0.13	0	Right	Tilt	QPSK	1	50	00285	1:1	0.226	1.000	0.226	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.7	23.70	0.09	1	Right	Tilt	QPSK	50	0	00285	1:1	0.184	1.000	0.184	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.7	24.70	0.08	0	Left	Cheek	QPSK	1	50	00285	1:1	0.406	1.000	**0.406**	A14
1905.00	26590	High	LTE Band 25 (PCS)	20	23.7	23.70	-0.02	1	Left	Cheek	QPSK	50	0	00285	1:1	0.317	1.000	0.317	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.7	24.70	0.19	0	Left	Tilt	QPSK	1	50	00285	1:1	0.202	1.000	0.202	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.7	23.70	0.10	1	Left	Tilt	QPSK	50	0	00285	1:1	0.151	1.000	0.151	
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 41 Head SAR

MEASUREMENT RESULTS																					
1 CC Uplink | 2 CC Uplink, Power Class	Component Carrier	FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
		MHz	Ch.															(W/kg)		(W/kg)	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	24.7	24.61	-0.04	0	Right	Cheek	QPSK	1	50	00285	1:1.58	0.060	1.021	0.061	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	23.7	23.57	0.14	1	Right	Cheek	QPSK	50	25	00285	1:1.58	0.050	1.030	0.052	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	24.7	24.61	0.13	0	Right	Tilt	QPSK	1	50	00285	1:1.58	0.062	1.021	0.063	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	23.7	23.57	0.03	1	Right	Tilt	QPSK	50	25	00285	1:1.58	0.052	1.030	0.054	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	24.7	24.26	0.02	0	Left	Cheek	QPSK	1	0	00285	1:1.58	0.107	1.107	0.118	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	24.7	24.61	0.07	0	Left	Cheek	QPSK	1	50	00285	1:1.58	0.075	1.021	0.077	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	23.7	23.57	0.05	1	Left	Cheek	QPSK	50	25	00285	1:1.58	0.065	1.030	0.067	
1 CC Uplink - Power Class 2	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	27.2	27.00	-0.02	0	Left	Cheek	QPSK	1	50	00285	1:2.31	0.097	1.047	0.102	
1 CC Uplink - Power Class 2	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	27.2	26.70	0.06	0	Left	Cheek	QPSK	1	0	00285	1:2.31	0.132	1.122	0.148	
2 CC Uplink - Power Class 3	PCC	2549.50	40185	Low-Mid	LTE Band 41	20	24.7	24.29	0.02	0	Left	Cheek	QPSK	1	0	00285	1:1.58	0.113	1.099	0.124	
	SCC	2529.70	39987												99						
2 CC Uplink - Power Class 2	PCC	2549.50	40185	Low-Mid	LTE Band 41	20	27.2	26.82	0.04	0	Left	Cheek	QPSK	1	0	00285	1:2.31	0.139	1.091	0.152	A15
	SCC	2529.70	39987												99						
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	24.7	24.61	-0.03	0	Left	Tilt	QPSK	1	50	00285	1:1.58	0.070	1.021	0.071	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	23.7	23.57	0.03	1	Left	Tilt	QPSK	50	25	00285	1:1.58	0.058	1.030	0.060	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Head 1.6 W/kg (mW/g) averaged over 1 gram								

Table 11-16
DTS Head SAR

MEASUREMENT RESULTS																	
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.												W/kg	(W/kg)			(W/kg)	
2412	1	802.11b	DSSS	22	17.0	16.23	0.02	Right	Cheek	00293	1	99.1	1.030	0.636	1.194	1.009	0.766	
2437	6	802.11b	DSSS	22	17.0	16.07	0.13	Right	Cheek	00293	1	99.1	1.325	0.832	1.239	1.009	**1.040**	A16
2462	11	802.11b	DSSS	22	17.0	16.03	0.16	Right	Cheek	00293	1	99.1	1.210	0.767	1.250	1.009	0.967	
2412	1	802.11b	DSSS	22	17.0	16.23	0.02	Right	Tilt	00293	1	99.1	0.656	0.483	1.194	1.009	0.582	
2412	1	802.11b	DSSS	22	17.0	16.23	-0.05	Left	Cheek	00293	1	99.1	0.331	-	1.194	1.009	-	
2412	1	802.11b	DSSS	22	17.0	16.23	0.08	Left	Tilt	00293	1	99.1	0.289	-	1.194	1.009	-	
2437	6	802.11b	DSSS	22	17.0	16.07	0.03	Right	Cheek	00293	1	99.1	1.052	0.818	1.239	1.009	1.023	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population													Head 1.6 W/kg (mW/g) averaged over 1 gram					

Note: Blue entry represents variability measurement.

Table 11-17
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)	
5300	60	802.11a	OFDM	20	14.0	13.99	0.14	Right	Cheek	1	00293	6	97.0	1.028	0.477	1.002	1.031	0.493	
5300	60	802.11a	OFDM	20	14.0	13.99	0.04	Right	Tilt	1	00293	6	97.0	1.030	0.463	1.002	1.031	0.478	
5300	60	802.11a	OFDM	20	14.0	13.99	0.08	Left	Cheek	1	00293	6	97.0	0.630	-	1.002	1.031	-	
5300	60	802.11a	OFDM	20	14.0	13.99	0.05	Left	Tilt	1	00293	6	97.0	0.622	-	1.002	1.031	-	
5600	120	802.11a	OFDM	20	14.0	13.42	0.15	Right	Cheek	1	00293	6	97.0	1.169	0.517	1.143	1.031	**0.609**	
5500	100	802.11a	OFDM	20	14.0	13.28	0.10	Right	Tilt	1	00293	6	97.0	1.152	0.495	1.180	1.031	0.602	
5600	120	802.11a	OFDM	20	14.0	13.42	0.17	Right	Tilt	1	00293	6	97.0	1.137	0.521	1.143	1.031	**0.614**	A17
5720	144	802.11a	OFDM	20	14.0	13.06	0.13	Right	Tilt	1	00293	6	97.0	1.130	0.447	1.242	1.031	0.572	
5600	120	802.11a	OFDM	20	14.0	13.42	-0.04	Left	Cheek	1	00293	6	97.0	0.854	-	1.143	1.031	-	
5600	120	802.11a	OFDM	20	14.0	13.42	-0.09	Left	Tilt	1	00293	6	97.0	0.929	-	1.143	1.031	-	
5825	165	802.11a	OFDM	20	13.0	12.59	0.09	Right	Cheek	1	00293	6	97.0	0.969	0.476	1.099	1.031	0.539	
5825	165	802.11a	OFDM	20	13.0	12.59	0.10	Right	Tilt	1	00293	6	97.0	1.060	0.444	1.099	1.031	0.503	
5825	165	802.11a	OFDM	20	13.0	12.59	0.16	Left	Cheek	1	00293	6	97.0	0.766	-	1.099	1.031	-	
5825	165	802.11a	OFDM	20	13.0	12.59	0.08	Left	Tilt	1	00293	6	97.0	0.873	-	1.099	1.031	-	
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 11-18
DSS Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	SAR (1g)	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)			(W/kg)	
2480.00	78	Bluetooth	FHSS	9.0	8.54	0.07	Right	Cheek	00293	1	76.8	0.073	1.112	1.302	0.106	
2480.00	78	Bluetooth	FHSS	9.0	8.54	0.01	Right	Tilt	00293	1	76.8	0.076	1.112	1.302	**0.110**	A18
2480.00	78	Bluetooth	FHSS	9.0	8.54	0.03	Left	Cheek	00293	1	76.8	0.041	1.112	1.302	0.059	
2480.00	78	Bluetooth	FHSS	9.0	8.54	0.04	Left	Tilt	00293	1	76.8	0.035	1.112	1.302	0.051	
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 11-19
GSM/UMTS/CDMA Body-Worn SAR Data

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	# of Time Slots	Duty Cycle	Side	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
836.60	190	GSM 850	GSM	33.7	33.60	0.01	10 mm	00269	1	1:8.3	back	0.438	1.023	0.448	
824.20	128	GSM 850	GPRS	29.7	29.61	0.00	10 mm	00269	4	1:2.076	back	0.654	1.021	0.668	
836.60	190	GSM 850	GPRS	29.7	29.54	0.00	10 mm	00269	4	1:2.076	back	0.655	1.038	0.680	A19
848.80	251	GSM 850	GPRS	29.7	29.59	0.05	10 mm	00269	4	1:2.076	back	0.651	1.026	0.668	
1880.00	661	GSM 1900	GSM	30.7	30.12	-0.02	10 mm	00251	1	1:8.3	back	0.536	1.143	0.613	
1850.20	512	GSM 1900	GPRS	25.7	25.44	0.12	10 mm	00251	4	1:2.076	back	0.522	1.062	0.554	
1880.00	661	GSM 1900	GPRS	25.7	25.51	0.00	10 mm	00251	4	1:2.076	back	0.601	1.045	0.628	
1909.80	810	GSM 1900	GPRS	25.7	25.43	0.01	10 mm	00251	4	1:2.076	back	0.616	1.064	0.655	A20
836.60	4183	UMTS 850	RMC	24.7	24.58	0.01	10 mm	00269	N/A	1:1	back	0.461	1.028	0.474	A21
1712.40	1312	UMTS 1750	RMC	24.7	24.64	-0.02	10 mm	00251	N/A	1:1	back	0.728	1.014	0.738	
1732.40	1412	UMTS 1750	RMC	24.7	24.70	-0.14	10 mm	00251	N/A	1:1	back	0.847	1.000	0.847	A22
1752.60	1513	UMTS 1750	RMC	24.7	24.69	0.09	10 mm	00251	N/A	1:1	back	0.834	1.002	0.836	
1732.40	1412	UMTS 1750	RMC	24.7	24.70	0.08	10 mm	00251	N/A	1:1	back	0.808	1.000	0.808	
1852.40	9262	UMTS 1900	RMC	24.7	24.48	0.01	10 mm	00251	N/A	1:1	back	0.724	1.052	0.762	
1880.00	9400	UMTS 1900	RMC	24.7	24.45	-0.01	10 mm	00251	N/A	1:1	back	0.803	1.059	0.850	
1907.60	9538	UMTS 1900	RMC	24.7	24.53	0.01	10 mm	00251	N/A	1:1	back	0.886	1.040	**0.921**	A23
1907.60	9538	UMTS 1900	RMC	24.7	24.53	-0.05	10 mm	00251	N/A	1:1	back	0.783	1.040	0.814	
820.10	564	CDMA BC10 (§90S)	TDSO / SO32	24.7	24.61	0.02	10 mm	00251	N/A	1:1	back	0.357	1.021	0.364	A24
836.52	384	CDMA BC0 (§22H)	TDSO / SO32	24.7	24.53	0.01	10 mm	00251	N/A	1:1	back	0.340	1.040	0.354	A26
1880.00	600	PCS CDMA	TDSO / SO32	24.7	24.49	0.18	10 mm	00251	N/A	1:1	back	0.495	1.050	0.520	A28
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**							**Body** **1.6 W/kg (mW/g)** averaged over 1 gram								

Note: Blue entry represents variability measurement.

Table 11-20
LTE Body-Worn 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	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.														(W/kg)		(W/kg)	
680.50	133297	Mid	LTE Band 71	20	24.7	24.61	0.02	0	00277	QPSK	1	50	10 mm	back	0.455	1.021	0.465	A30
680.50	133297	Mid	LTE Band 71	20	23.7	23.62	-0.03	1	00277	QPSK	50	25	10 mm	back	0.365	1.019	0.372	
707.50	23095	Mid	LTE Band 12	10	25.2	25.07	-0.04	0	00277	QPSK	1	25	10 mm	back	0.538	1.030	0.554	A31
707.50	23095	Mid	LTE Band 12	10	24.2	24.17	0.02	1	00277	QPSK	25	0	10 mm	back	0.438	1.007	0.441	
782.00	23230	Mid	LTE Band 13	10	24.2	24.19	-0.01	0	00277	QPSK	1	25	10 mm	back	0.476	1.002	0.477	A33
782.00	23230	Mid	LTE Band 13	10	23.2	23.20	0.00	1	00277	QPSK	25	12	10 mm	back	0.407	1.000	0.407	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.2	25.11	-0.01	0	00285	QPSK	1	36	10 mm	back	0.410	1.021	0.419	A35
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.2	24.20	0.00	1	00285	QPSK	36	0	10 mm	back	0.326	1.000	0.326	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.7	24.43	-0.03	0	00285	QPSK	1	50	10 mm	back	0.712	1.064	0.758	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.7	24.35	0.03	0	00285	QPSK	1	50	10 mm	back	0.790	1.084	0.856	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.7	24.42	-0.02	0	00285	QPSK	1	50	10 mm	back	0.829	1.067	0.885	A36
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.7	23.56	-0.01	1	00285	QPSK	50	0	10 mm	back	0.520	1.033	0.537	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.7	23.50	-0.01	1	00285	QPSK	100	0	10 mm	back	0.551	1.047	0.577	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.7	24.70	0.08	0	00285	QPSK	1	50	10 mm	back	0.546	1.000	0.546	A37
1905.00	26590	High	LTE Band 25 (PCS)	20	23.7	23.70	0.02	1	00285	QPSK	50	0	10 mm	back	0.473	1.000	0.473	

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

Table 11-21
LTE 41 Body-Worn SAR

MEASUREMENT RESULTS																						
1 CC Uplink | 2 CC Uplink, Power Class	Component Carrier	FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
		MHz	Ch.															(W/kg)		(W/kg)	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	24.7	24.26	-0.18	0	00277	QPSK	1	0	10 mm	back	1:1.58	0.413	1.107	0.457	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	24.7	24.61	0.13	0	00277	QPSK	1	50	10 mm	back	1:1.58	0.375	1.021	0.383	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	23.7	23.57	0.05	1	00277	QPSK	50	25	10 mm	back	1:1.58	0.300	1.030	0.309	
1 CC Uplink - Power Class 2	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	27.2	27.00	-0.03	0	00277	QPSK	1	50	10 mm	back	1:2.31	0.415	1.047	0.435	
1 CC Uplink - Power Class 2	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	27.2	26.70	-0.11	0	00277	QPSK	1	0	10 mm	back	1:2.31	0.502	1.122	0.563	
2 CC Uplink - Power Class 3	PCC	2549.50	40185	Low-Mid	LTE Band 41	20	24.7	24.29	0.01	0	00277	QPSK	1	0	10 mm	back	1:1.58	0.410	1.099	0.451	
	SCC	2529.70	39987											99							
2 CC Uplink - Power Class 2	PCC	2549.50	40185	Low-Mid	LTE Band 41	20	27.2	26.82	0.01	0	00277	QPSK	1	0	10 mm	back	1:2.31	0.536	1.091	0.585	A39
	SCC	2529.70	39987											99							

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

Table 11-22
DTS Body-Worn SAR

MEASUREMENT RESULTS																	
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.												W/kg	(W/kg)			(W/kg)	
2412	1	802.11b	DSSS	22	21.0	20.14	-0.08	10 mm	00293	1	back	99.1	0.521	0.318	1.219	1.009	**0.391**	A41

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

Table 11-23
NII Body-Worn SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Accessory	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)	
5180	36	802.11a	OFDM	20	16.0	15.98	0.06	10 mm	-	00293	6	back	97.0	1.713	0.708	1.005	1.031	0.734	
5200	40	802.11a	OFDM	20	16.0	15.93	0.13	10 mm	-	00293	6	back	97.0	1.632	0.695	1.016	1.031	0.728	
5240	48	802.11a	OFDM	20	16.0	15.78	-0.18	10 mm	-	00293	6	back	97.0	1.822	0.627	1.052	1.031	0.680	
5260	52	802.11a	OFDM	20	16.0	15.88	-0.14	10 mm	-	00293	6	back	97.0	2.720	1.140	1.028	1.031	1.208	
5280	56	802.11a	OFDM	20	16.0	15.87	-0.16	10 mm	-	00293	6	back	97.0	2.437	1.220	1.030	1.031	**1.296**	A42
5280	56	802.11a	OFDM	20	16.0	15.87	-0.05	10 mm	Headphones	00293	6	back	97.0	2.249	0.979	1.030	1.031	1.040	
5300	60	802.11a	OFDM	20	14.0	13.99	-0.11	10 mm	-	00293	6	back	97.0	1.898	0.786	1.002	1.031	0.812	
5320	64	802.11a	OFDM	20	14.0	13.92	-0.05	10 mm	-	00293	6	back	97.0	1.816	0.759	1.019	1.031	0.797	
5600	120	802.11a	OFDM	20	14.0	13.42	0.02	10 mm	-	00293	6	back	97.0	1.231	0.538	1.143	1.031	0.634	
5785	157	802.11a	OFDM	20	16.0	15.84	0.04	10 mm	-	00293	6	back	97.0	0.883	0.393	1.038	1.031	0.421	
5280	56	802.11a	OFDM	20	16.0	15.87	-0.16	10 mm	-	00293	6	back	97.0	2.437	1.210	1.030	1.031	1.285	

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

Note: Blue entry represents variability measurement.

Table 11-24
DSS Body-Worn SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	SAR (1g)	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)			(W/kg)	
2480	78	Bluetooth	FHSS	9.0	8.54	0.03	10 mm	00293	1	back	76.8	0.029	1.112	1.302	**0.042**	A44

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

11.3 Standalone Hotspot SAR Data

Table 11-25
GPRS/UMTS/CDMA Hotspot SAR Data

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	# of Time Slots	Duty Cycle	Side	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
824.20	128	GSM 850	GPRS	29.7	29.61	0.00	10 mm	00269	4	1:2.076	back	0.654	1.021	0.668	
836.60	190	GSM 850	GPRS	29.7	29.54	0.00	10 mm	00269	4	1:2.076	back	0.655	1.038	0.680	A19
848.80	251	GSM 850	GPRS	29.7	29.59	0.05	10 mm	00269	4	1:2.076	back	0.651	1.026	0.668	
836.60	190	GSM 850	GPRS	29.7	29.54	0.00	10 mm	00269	4	1:2.076	front	0.450	1.038	0.467	
836.60	190	GSM 850	GPRS	29.7	29.54	0.17	10 mm	00269	4	1:2.076	bottom	0.260	1.038	0.270	
836.60	190	GSM 850	GPRS	29.7	29.54	0.01	10 mm	00269	4	1:2.076	right	0.611	1.038	0.634	
836.60	190	GSM 850	GPRS	29.7	29.54	-0.04	10 mm	00269	4	1:2.076	left	0.372	1.038	0.386	
1850.20	512	GSM 1900	GPRS	25.7	25.44	0.12	10 mm	00251	4	1:2.076	back	0.522	1.062	0.554	
1880.00	661	GSM 1900	GPRS	25.7	25.51	0.00	10 mm	00251	4	1:2.076	back	0.601	1.045	0.628	
1909.80	810	GSM 1900	GPRS	25.7	25.43	0.01	10 mm	00251	4	1:2.076	back	0.616	1.064	0.655	A20
1880.00	661	GSM 1900	GPRS	25.7	25.51	0.04	10 mm	00251	4	1:2.076	front	0.433	1.045	0.452	
1880.00	661	GSM 1900	GPRS	25.7	25.51	-0.01	10 mm	00251	4	1:2.076	bottom	0.389	1.045	0.407	
1880.00	661	GSM 1900	GPRS	25.7	25.51	0.01	10 mm	00251	4	1:2.076	left	0.471	1.045	0.402	
836.60	4183	UMTS 850	RMC	24.7	24.58	0.01	10 mm	00269	N/A	1:1	back	0.461	1.028	0.474	A21
836.60	4183	UMTS 850	RMC	24.7	24.58	-0.01	10 mm	00269	N/A	1:1	front	0.360	1.028	0.370	
836.60	4183	UMTS 850	RMC	24.7	24.58	0.08	10 mm	00269	N/A	1:1	bottom	0.204	1.028	0.210	
836.60	4183	UMTS 850	RMC	24.7	24.58	-0.01	10 mm	00269	N/A	1:1	right	0.440	1.028	0.452	
836.60	4183	UMTS 850	RMC	24.7	24.58	0.02	10 mm	00269	N/A	1:1	left	0.304	1.028	0.313	
1712.40	1312	UMTS 1750	RMC	24.7	24.64	-0.02	10 mm	00251	N/A	1:1	back	0.728	1.014	0.738	
1732.40	1412	UMTS 1750	RMC	24.7	24.70	-0.14	10 mm	00251	N/A	1:1	back	0.847	1.000	0.847	A22
1752.60	1513	UMTS 1750	RMC	24.7	24.69	0.09	10 mm	00251	N/A	1:1	back	0.834	1.002	0.836	
1732.40	1412	UMTS 1750	RMC	24.7	24.70	-0.04	10 mm	00251	N/A	1:1	front	0.531	1.000	0.531	
1732.40	1412	UMTS 1750	RMC	24.7	24.70	0.06	10 mm	00251	N/A	1:1	bottom	0.411	1.000	0.411	
1732.40	1412	UMTS 1750	RMC	24.7	24.70	-0.12	10 mm	00251	N/A	1:1	left	0.653	1.000	0.653	
1732.40	1412	UMTS 1750	RMC	24.7	24.70	0.08	10 mm	00251	N/A	1:1	back	0.808	1.000	0.808	
1852.40	9262	UMTS 1900	RMC	24.7	24.48	0.01	10 mm	00251	N/A	1:1	back	0.724	1.052	0.762	
1880.00	9400	UMTS 1900	RMC	24.7	24.45	-0.01	10 mm	00251	N/A	1:1	back	0.803	1.059	0.850	
1907.60	9538	UMTS 1900	RMC	24.7	24.53	0.01	10 mm	00251	N/A	1:1	back	0.886	1.040	**0.921**	A23
1880.00	9400	UMTS 1900	RMC	24.7	24.45	-0.16	10 mm	00251	N/A	1:1	front	0.494	1.059	0.523	
1880.00	9400	UMTS 1900	RMC	24.7	24.45	-0.02	10 mm	00251	N/A	1:1	bottom	0.473	1.059	0.501	
1880.00	9400	UMTS 1900	RMC	24.7	24.45	-0.08	10 mm	00251	N/A	1:1	left	0.624	1.059	0.661	
1907.60	9538	UMTS 1900	RMC	24.7	24.53	-0.05	10 mm	00251	N/A	1:1	back	0.783	1.040	0.814	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	24.7	24.63	0.01	10 mm	00251	N/A	1:1	back	0.355	1.016	0.361	A25
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	24.7	24.63	0.03	10 mm	00251	N/A	1:1	front	0.231	1.016	0.235	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	24.7	24.63	-0.02	10 mm	00251	N/A	1:1	bottom	0.120	1.016	0.122	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	24.7	24.63	0.04	10 mm	00251	N/A	1:1	right	0.298	1.016	0.303	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. 0	24.7	24.63	0.08	10 mm	00251	N/A	1:1	left	0.209	1.016	0.212	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	24.7	24.50	0.01	10 mm	00251	N/A	1:1	back	0.344	1.047	0.360	A27
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	24.7	24.50	0.03	10 mm	00251	N/A	1:1	front	0.270	1.047	0.283	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	24.7	24.50	0.04	10 mm	00251	N/A	1:1	bottom	0.169	1.047	0.177	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	24.7	24.50	0.00	10 mm	00251	N/A	1:1	right	0.336	1.047	0.352	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. 0	24.7	24.50	0.06	10 mm	00251	N/A	1:1	left	0.242	1.047	0.253	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.7	24.48	-0.04	10 mm	00251	N/A	1:1	back	0.490	1.052	0.515	A29
1880.00	600	PCS CDMA	EVDO Rev. 0	24.7	24.48	0.03	10 mm	00251	N/A	1:1	front	0.303	1.052	0.319	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.7	24.48	-0.05	10 mm	00251	N/A	1:1	bottom	0.329	1.052	0.346	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.7	24.48	0.02	10 mm	00251	N/A	1:1	left	0.434	1.052	0.457	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population											Body 1.6 W/kg (mW/g) averaged over 1 gram				

Note: Blue entry represents variability measurement.

Table 11-26
LTE Band 71 Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
680.50	133297	Mid	LTE Band 71	20	24.7	24.61	0.02	0	00277	QPSK	1	50	10 mm	back	1:1	0.455	1.021	0.465	A30
680.50	133297	Mid	LTE Band 71	20	23.7	23.62	-0.03	1	00277	QPSK	50	25	10 mm	back	1:1	0.365	1.019	0.372	
680.50	133297	Mid	LTE Band 71	20	24.7	24.61	0.04	0	00277	QPSK	1	50	10 mm	front	1:1	0.289	1.021	0.295	
680.50	133297	Mid	LTE Band 71	20	23.7	23.62	0.02	1	00277	QPSK	50	25	10 mm	front	1:1	0.232	1.019	0.236	
680.50	133297	Mid	LTE Band 71	20	24.7	24.61	-0.10	0	00277	QPSK	1	50	10 mm	bottom	1:1	0.130	1.021	0.133	
680.50	133297	Mid	LTE Band 71	20	23.7	23.62	-0.06	1	00277	QPSK	50	25	10 mm	bottom	1:1	0.107	1.019	0.109	
680.50	133297	Mid	LTE Band 71	20	24.7	24.61	0.02	0	00277	QPSK	1	50	10 mm	right	1:1	0.428	1.021	0.437	
680.50	133297	Mid	LTE Band 71	20	23.7	23.62	-0.01	1	00277	QPSK	50	25	10 mm	right	1:1	0.354	1.019	0.361	
680.50	133297	Mid	LTE Band 71	20	24.7	24.61	0.06	0	00277	QPSK	1	50	10 mm	left	1:1	0.251	1.021	0.256	
680.50	133297	Mid	LTE Band 71	20	23.7	23.62	0.00	1	00277	QPSK	50	25	10 mm	left	1:1	0.185	1.019	0.189	
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
LTE Band 12 Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
707.50	23095	Mid	LTE Band 12	10	25.2	25.07	-0.04	0	00277	QPSK	1	25	10 mm	back	1:1	0.538	1.030	0.554	
707.50	23095	Mid	LTE Band 12	10	24.2	24.17	0.02	1	00277	QPSK	25	0	10 mm	back	1:1	0.438	1.007	0.441	
707.50	23095	Mid	LTE Band 12	10	25.2	25.07	-0.04	0	00277	QPSK	1	25	10 mm	front	1:1	0.377	1.030	0.388	
707.50	23095	Mid	LTE Band 12	10	24.2	24.17	-0.01	1	00277	QPSK	25	0	10 mm	front	1:1	0.299	1.007	0.301	
707.50	23095	Mid	LTE Band 12	10	25.2	25.07	0.01	0	00277	QPSK	1	25	10 mm	bottom	1:1	0.153	1.030	0.158	
707.50	23095	Mid	LTE Band 12	10	24.2	24.17	0.05	1	00277	QPSK	25	0	10 mm	bottom	1:1	0.123	1.007	0.124	
707.50	23095	Mid	LTE Band 12	10	25.2	25.07	-0.02	0	00277	QPSK	1	25	10 mm	right	1:1	0.596	1.030	0.614	A32
707.50	23095	Mid	LTE Band 12	10	24.2	24.17	0.00	1	00277	QPSK	25	0	10 mm	right	1:1	0.475	1.007	0.478	
707.50	23095	Mid	LTE Band 12	10	25.2	25.07	-0.05	0	00277	QPSK	1	25	10 mm	left	1:1	0.356	1.030	0.367	
707.50	23095	Mid	LTE Band 12	10	24.2	24.17	-0.12	1	00277	QPSK	25	0	10 mm	left	1:1	0.289	1.007	0.291	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																Body 1.6 W/kg (mW/g) averaged over 1 gram			

Table 11-28
LTE Band 13 Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
782.00	23230	Mid	LTE Band 13	10	24.2	24.19	-0.01	0	00277	QPSK	1	25	10 mm	back	1:1	0.476	1.002	0.477	
782.00	23230	Mid	LTE Band 13	10	23.2	23.20	0.00	1	00277	QPSK	25	12	10 mm	back	1:1	0.407	1.000	0.407	
782.00	23230	Mid	LTE Band 13	10	24.2	24.19	0.01	0	00277	QPSK	1	25	10 mm	front	1:1	0.342	1.002	0.343	
782.00	23230	Mid	LTE Band 13	10	23.2	23.20	0.02	1	00277	QPSK	25	12	10 mm	front	1:1	0.280	1.000	0.280	
782.00	23230	Mid	LTE Band 13	10	24.2	24.19	0.08	0	00277	QPSK	1	25	10 mm	bottom	1:1	0.185	1.002	0.185	
782.00	23230	Mid	LTE Band 13	10	23.2	23.20	0.03	1	00277	QPSK	25	12	10 mm	bottom	1:1	0.148	1.000	0.148	
782.00	23230	Mid	LTE Band 13	10	24.2	24.19	-0.06	0	00277	QPSK	1	25	10 mm	right	1:1	0.500	1.002	0.501	A34
782.00	23230	Mid	LTE Band 13	10	23.2	23.20	-0.07	1	00277	QPSK	25	12	10 mm	right	1:1	0.439	1.000	0.439	
782.00	23230	Mid	LTE Band 13	10	24.2	24.19	0.01	0	00277	QPSK	1	25	10 mm	left	1:1	0.392	1.002	0.393	
782.00	23230	Mid	LTE Band 13	10	23.2	23.20	0.01	1	00277	QPSK	25	12	10 mm	left	1:1	0.319	1.000	0.319	
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
LTE Band 26 (Cell) Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.2	25.11	-0.01	0	00285	QPSK	1	36	10 mm	back	1:1	0.410	1.021	0.419	A35
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.2	24.20	0.00	1	00285	QPSK	36	0	10 mm	back	1:1	0.326	1.000	0.326	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.2	25.11	0.06	0	00285	QPSK	1	36	10 mm	front	1:1	0.299	1.021	0.305	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.2	24.20	0.02	1	00285	QPSK	36	0	10 mm	front	1:1	0.240	1.000	0.240	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.2	25.11	0.13	0	00285	QPSK	1	36	10 mm	bottom	1:1	0.167	1.021	0.171	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.2	24.20	0.02	1	00285	QPSK	36	0	10 mm	bottom	1:1	0.128	1.000	0.128	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.2	25.11	0.00	0	00285	QPSK	1	36	10 mm	right	1:1	0.387	1.021	0.395	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.2	24.20	0.01	1	00285	QPSK	36	0	10 mm	right	1:1	0.314	1.000	0.314	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.2	25.11	0.09	0	00285	QPSK	1	36	10 mm	left	1:1	0.279	1.021	0.285	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.2	24.20	0.02	1	00285	QPSK	36	0	10 mm	left	1:1	0.222	1.000	0.222	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Body 1.6 W/kg (mW/g) averaged over 1 gram										

Table 11-30
LTE Band 66 (AWS) Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.7	24.43	-0.03	0	00285	QPSK	1	50	10 mm	back	1:1	0.712	1.064	0.758	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.7	24.35	0.03	0	00285	QPSK	1	50	10 mm	back	1:1	0.790	1.084	0.856	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.7	24.42	-0.02	0	00285	QPSK	1	50	10 mm	back	1:1	0.829	1.067	0.885	A36
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.7	23.56	-0.01	1	00285	QPSK	50	0	10 mm	back	1:1	0.520	1.033	0.537	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.7	23.50	-0.01	1	00285	QPSK	100	0	10 mm	back	1:1	0.551	1.047	0.577	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.7	24.43	0.07	0	00285	QPSK	1	50	10 mm	front	1:1	0.520	1.064	0.553	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.7	23.56	0.05	1	00285	QPSK	50	0	10 mm	front	1:1	0.350	1.033	0.362	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.7	24.43	0.02	0	00285	QPSK	1	50	10 mm	bottom	1:1	0.316	1.064	0.336	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.7	23.56	0.08	1	00285	QPSK	50	0	10 mm	bottom	1:1	0.229	1.033	0.237	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.7	24.43	-0.01	0	00285	QPSK	1	50	10 mm	left	1:1	0.677	1.064	0.720	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.7	23.56	0.01	1	00285	QPSK	50	0	10 mm	left	1:1	0.508	1.033	0.525	
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 11-31
LTE Band 25 (PCS) Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.7	24.70	0.08	0	00285	QPSK	1	50	10 mm	back	1:1	0.546	1.000	0.546	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.7	23.70	0.02	1	00285	QPSK	50	0	10 mm	back	1:1	0.473	1.000	0.473	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.7	24.70	0.05	0	00285	QPSK	1	50	10 mm	front	1:1	0.509	1.000	0.509	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.7	23.70	0.06	1	00285	QPSK	50	0	10 mm	front	1:1	0.458	1.000	0.458	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.7	24.70	0.04	0	00285	QPSK	1	50	10 mm	bottom	1:1	0.409	1.000	0.409	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.7	23.70	0.12	1	00285	QPSK	50	0	10 mm	bottom	1:1	0.367	1.000	0.367	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.7	24.58	-0.01	0	00285	QPSK	1	50	10 mm	left	1:1	0.698	1.028	0.718	A38
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.7	24.70	0.02	0	00285	QPSK	1	50	10 mm	left	1:1	0.691	1.000	0.691	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.7	24.69	0.01	0	00285	QPSK	1	50	10 mm	left	1:1	0.637	1.002	0.638	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.7	23.70	-0.03	1	00285	QPSK	50	0	10 mm	left	1:1	0.589	1.000	0.589	
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 11-32
LTE Band 41 Hotspot SAR

MEASUREMENT RESULTS																					
1 CC Uplink | 2 CC Uplink, Power Class	Component Carrier	FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
		MHz	Ch.														(W/kg)		(W/kg)	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	24.7	24.26	-0.18	0	00277	QPSK	1	0	10 mm	back	1:1.58	0.413	1.107	0.457	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	24.7	24.61	0.13	0	00277	QPSK	1	50	10 mm	back	1:1.58	0.375	1.021	0.383	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	23.7	23.57	0.05	1	00277	QPSK	50	25	10 mm	back	1:1.58	0.300	1.030	0.309	
1 CC Uplink - Power Class 2	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	27.2	27.00	-0.03	0	00277	QPSK	1	50	10 mm	back	1:2.31	0.415	1.047	0.435	
1 CC Uplink - Power Class 2	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	27.2	26.70	-0.11	0	00277	QPSK	1	0	10 mm	back	1:2.31	0.502	1.122	0.563	
2 CC Uplink - Power Class 3	PCC	2549.50	40185	Low-Mid	LTE Band 41	20	24.7	24.29	0.01	0	00277	QPSK	1	0	10 mm	back	1:1.58	0.410	1.099	0.451	
	SCC	2529.70	39987											99							
2 CC Uplink - Power Class 2	PCC	2549.50	40185	Low-Mid	LTE Band 41	20	27.2	26.82	0.01	0	00277	QPSK	1	0	10 mm	back	1:2.31	0.536	1.091	0.585	
	SCC	2529.70	39987											99							
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	24.7	24.61	0.18	0	00277	QPSK	1	50	10 mm	front	1:1.58	0.286	1.021	0.292	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	23.7	23.57	0.08	1	00277	QPSK	50	25	10 mm	front	1:1.58	0.215	1.030	0.221	
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	24.7	24.12	-0.17	0	00277	QPSK	1	0	10 mm	bottom	1:1.58	0.647	1.143	0.740	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	24.7	24.61	-0.01	0	00277	QPSK	1	50	10 mm	bottom	1:1.58	0.638	1.021	0.651	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	24.7	24.29	-0.02	0	00277	QPSK	1	50	10 mm	bottom	1:1.58	0.643	1.099	0.707	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	24.7	24.55	-0.19	0	00277	QPSK	1	50	10 mm	bottom	1:1.58	0.719	1.035	0.744	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	24.7	24.00	0.03	0	00277	QPSK	1	0	10 mm	bottom	1:1.58	0.603	1.175	0.709	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	24.7	24.08	-0.02	0	00277	QPSK	1	50	10 mm	bottom	1:1.58	0.652	1.153	0.752	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	23.7	23.57	0.03	1	00277	QPSK	50	25	10 mm	bottom	1:1.58	0.520	1.030	0.536	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	23.7	23.50	-0.03	1	00277	QPSK	100	0	10 mm	bottom	1:1.58	0.513	1.047	0.537	
1 CC Uplink - Power Class 2	N/A	2680.00	41490	High	LTE Band 41	20	27.2	26.60	-0.04	0	00277	QPSK	1	50	10 mm	bottom	1:2.31	0.744	1.148	0.854	A40
1 CC Uplink - Power Class 2	N/A	2680.00	41490	High	LTE Band 41	20	27.2	26.52	0.02	0	00277	QPSK	1	0	10 mm	bottom	1:2.31	0.671	1.169	0.784	
2 CC Uplink - Power Class 3	PCC	2680.00	41490	High	LTE Band 41	20	24.7	24.01	-0.02	0	00277	QPSK	1	0	10 mm	bottom	1:1.58	0.632	1.172	0.741	
	SCC	2660.20	41292											99							
2 CC Uplink - Power Class 2	PCC	2680.00	41490	High	LTE Band 41	20	27.2	26.45	0.06	0	00277	QPSK	1	0	10 mm	bottom	1:2.31	0.691	1.189	0.822	
	SCC	2660.20	41292											99							
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	24.7	24.61	0.02	0	00277	QPSK	1	50	10 mm	right	1:1.58	0.102	1.021	0.104	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	23.7	23.57	0.04	1	00277	QPSK	50	25	10 mm	right	1:1.58	0.090	1.030	0.093	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	24.7	24.61	0.03	0	00277	QPSK	1	50	10 mm	left	1:1.58	0.095	1.021	0.097	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	23.7	23.57	0.06	1	00277	QPSK	50	25	10 mm	left	1:1.58	0.065	1.030	0.067	
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
WLAN Hotspot SAR

MEASUREMENT RESULTS																		
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.												W/kg	(W/kg)			(W/kg)	
2412	1	802.11b	DSSS	22	21.0	20.14	-0.08	10 mm	00293	1	back	99.1	0.521	0.318	1.219	1.009	**0.391**	A41
2412	1	802.11b	DSSS	22	21.0	20.14	0.06	10 mm	00293	1	front	99.1	0.357	-	1.219	1.009	-	
2412	1	802.11b	DSSS	22	21.0	20.14	0.02	10 mm	00293	1	top	99.1	0.401	-	1.219	1.009	-	
2412	1	802.11b	DSSS	22	21.0	20.14	0.19	10 mm	00293	1	left	99.1	0.365	-	1.219	1.009	-	
5180	36	802.11a	OFDM	20	16.0	15.98	0.06	10 mm	00293	6	back	97.0	1.713	0.708	1.005	1.031	**0.734**	A43
5200	40	802.11a	OFDM	20	16.0	15.93	0.13	10 mm	00293	6	back	97.0	1.632	0.695	1.016	1.031	0.728	
5240	48	802.11a	OFDM	20	16.0	15.78	-0.18	10 mm	00293	6	back	97.0	1.822	0.627	1.052	1.031	0.680	
5180	36	802.11a	OFDM	20	16.0	15.98	0.13	10 mm	00293	6	front	97.0	0.284	-	1.005	1.031	-	
5180	36	802.11a	OFDM	20	16.0	15.98	-0.07	10 mm	00293	6	top	97.0	0.600	-	1.005	1.031	-	
5180	36	802.11a	OFDM	20	16.0	15.98	0.05	10 mm	00293	6	left	97.0	0.987	0.407	1.005	1.031	0.422	
5785	157	802.11a	OFDM	20	16.0	15.84	0.04	10 mm	00293	6	back	97.0	0.883	0.393	1.038	1.031	0.421	
5785	157	802.11a	OFDM	20	16.0	15.84	0.08	10 mm	00293	6	front	97.0	0.224	-	1.038	1.031	-	
5785	157	802.11a	OFDM	20	16.0	15.84	0.09	10 mm	00293	6	top	97.0	0.464	0.208	1.038	1.031	0.223	
5785	157	802.11a	OFDM	20	16.0	15.84	-0.03	10 mm	00293	6	left	97.0	0.308	-	1.038	1.031	-	

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

Table 11-34
DSS Hotspot SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	SAR (1g)	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)			(W/kg)	
2480	78	Bluetooth	FHSS	9.0	8.54	0.03	10 mm	00293	1	back	76.8	0.029	1.112	1.302	**0.042**	A44
2480	78	Bluetooth	FHSS	9.0	8.54	0.03	10 mm	00293	1	front	76.8	0.018	1.112	1.302	0.026	
2480	78	Bluetooth	FHSS	9.0	8.54	-0.21	10 mm	00293	1	top	76.8	0.000	1.112	1.302	0.000	
2480	78	Bluetooth	FHSS	9.0	8.54	-0.02	10 mm	00293	1	left	76.8	0.015	1.112	1.302	0.022	

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

11.4 Standalone Phablet SAR Data

Table 11-35
GPRS/UMTS/CDMA Phablet SAR Data

MEASUREMENT RESULTS														
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Duty Cycle	Side	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.										(W/kg)		(W/kg)	
1712.40	1312	UMTS 1750	RMC	24.7	24.64	-0.07	2 mm	00269	1:1	back	2.660	1.014	2.697	
1732.40	1412	UMTS 1750	RMC	24.7	24.70	-0.13	2 mm	00269	1:1	back	2.710	1.000	2.710	
1752.60	1513	UMTS 1750	RMC	24.7	24.69	-0.04	2 mm	00269	1:1	back	2.610	1.002	2.615	
1712.40	1312	UMTS 1750	RMC	24.7	24.64	0.03	0 mm	00269	1:1	front	2.080	1.014	2.109	
1732.40	1412	UMTS 1750	RMC	24.7	24.70	0.03	0 mm	00269	1:1	front	2.240	1.000	2.240	
1752.60	1513	UMTS 1750	RMC	24.7	24.69	0.03	0 mm	00269	1:1	front	2.300	1.002	2.305	
1732.40	1412	UMTS 1750	RMC	24.7	24.70	-0.16	0 mm	00269	1:1	bottom	1.480	1.000	1.480	
1712.40	1312	UMTS 1750	RMC	24.7	24.64	0.01	0 mm	00269	1:1	left	2.740	1.014	2.778	
1732.40	1412	UMTS 1750	RMC	24.7	24.70	-0.11	0 mm	00269	1:1	left	2.840	1.000	2.840	
1752.60	1513	UMTS 1750	RMC	24.7	24.69	-0.12	0 mm	00269	1:1	left	2.840	1.002	2.846	
1712.40	1312	UMTS 1750	RMC	23.0	22.92	-0.03	0 mm	00251	1:1	back	2.870	1.019	2.925	
1732.40	1412	UMTS 1750	RMC	23.0	22.97	-0.03	0 mm	00251	1:1	back	3.120	1.007	3.142	A45
1752.60	1513	UMTS 1750	RMC	23.0	22.96	-0.12	0 mm	00251	1:1	back	2.890	1.009	2.916	
1732.40	1412	UMTS 1750	RMC	23.0	22.97	-0.03	0 mm	00251	1:1	back	3.120	1.007	3.142	
1852.40	9262	UMTS 1900	RMC	24.7	24.48	0.01	2 mm	00251	1:1	back	2.280	1.052	2.399	
1880.00	9400	UMTS 1900	RMC	24.7	24.45	-0.12	2 mm	00251	1:1	back	2.440	1.059	2.584	
1907.60	9538	UMTS 1900	RMC	24.7	24.53	-0.01	2 mm	00251	1:1	back	2.470	1.040	2.569	
1852.40	9262	UMTS 1900	RMC	24.7	24.48	0.04	0 mm	00251	1:1	front	2.390	1.052	2.514	
1880.00	9400	UMTS 1900	RMC	24.7	24.45	0.04	0 mm	00251	1:1	front	2.450	1.059	2.595	
1907.60	9538	UMTS 1900	RMC	24.7	24.53	0.05	0 mm	00251	1:1	front	2.500	1.040	2.600	
1880.00	9400	UMTS 1900	RMC	24.7	24.45	-0.03	0 mm	00251	1:1	bottom	1.300	1.059	1.377	
1852.40	9262	UMTS 1900	RMC	24.7	24.48	-0.03	0 mm	00251	1:1	left	2.880	1.052	3.030	
1880.00	9400	UMTS 1900	RMC	24.7	24.45	-0.02	0 mm	00251	1:1	left	2.980	1.059	3.156	A46
1907.60	9538	UMTS 1900	RMC	24.7	24.53	-0.03	0 mm	00251	1:1	left	2.900	1.040	3.016	
1852.40	9262	UMTS 1900	RMC	23.0	22.84	0.01	0 mm	00251	1:1	back	2.760	1.038	2.865	
1880.00	9400	UMTS 1900	RMC	23.0	22.88	0.00	0 mm	00251	1:1	back	2.820	1.028	2.899	
1907.60	9538	UMTS 1900	RMC	23.0	22.91	0.01	0 mm	00251	1:1	back	2.910	1.021	2.971	
1851.25	25	PCS CDMA	EVDO Rev. 0	24.7	24.43	0.01	2 mm	00251	1:1	back	2.030	1.064	2.160	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.7	24.48	0.04	2 mm	00251	1:1	back	2.050	1.052	2.157	
1908.75	1175	PCS CDMA	EVDO Rev. 0	24.7	24.65	0.03	2 mm	00251	1:1	back	2.250	1.012	2.277	A47
1880.00	600	PCS CDMA	EVDO Rev. 0	24.7	24.48	0.19	0 mm	00251	1:1	front	1.560	1.052	1.641	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.7	24.48	-0.03	0 mm	00251	1:1	bottom	0.859	1.052	0.904	
1851.25	25	PCS CDMA	EVDO Rev. 0	24.7	24.43	-0.02	0 mm	00251	1:1	left	2.120	1.064	2.256	
1880.00	600	PCS CDMA	EVDO Rev. 0	24.7	24.48	-0.09	0 mm	00251	1:1	left	2.070	1.052	2.178	
1908.75	1175	PCS CDMA	EVDO Rev. 0	24.7	24.65	-0.04	0 mm	00251	1:1	left	2.130	1.012	2.156	
1851.25	25	PCS CDMA	EVDO Rev. 0	23.0	22.72	0.00	0 mm	00251	1:1	back	2.020	1.067	2.155	
1880.00	600	PCS CDMA	EVDO Rev. 0	23.0	22.75	-0.01	0 mm	00251	1:1	back	2.070	1.059	2.192	
1908.75	1175	PCS CDMA	EVDO Rev. 0	23.0	22.89	0.01	0 mm	00251	1:1	back	2.170	1.026	2.226	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population											Phablet 4.0 W/kg (mW/g) averaged over 10 grams			

Note: Blue entry represents variability measurement.

Table 11-36
LTE Phablet SAR

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.7	24.43	-0.05	0	00285	QPSK	1	50	2 mm	back	1:1	2.030	1.064	2.160	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.7	24.35	-0.04	0	00285	QPSK	1	50	2 mm	back	1:1	2.030	1.084	2.201	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.7	24.42	-0.02	0	00285	QPSK	1	50	2 mm	back	1:1	2.050	1.067	2.187	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.7	23.56	-0.01	1	00285	QPSK	50	0	2 mm	back	1:1	1.540	1.033	1.591	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.7	23.50	-0.03	1	00285	QPSK	100	0	2 mm	back	1:1	1.530	1.047	1.602	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.7	24.43	-0.02	0	00285	QPSK	1	50	0 mm	front	1:1	1.700	1.064	1.809	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.7	23.56	0.01	1	00285	QPSK	50	0	0 mm	front	1:1	1.340	1.033	1.384	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.7	24.43	-0.07	0	00285	QPSK	1	50	0 mm	bottom	1:1	1.140	1.064	1.213	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.7	23.56	0.04	1	00285	QPSK	50	0	0 mm	bottom	1:1	0.916	1.033	0.946	
1720.00	132072	Low	LTE Band 66 (AWS)	20	24.7	24.43	-0.01	0	00285	QPSK	1	50	0 mm	left	1:1	2.800	1.064	2.979	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.7	24.35	0.02	0	00285	QPSK	1	50	0 mm	left	1:1	2.930	1.084	3.176	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.7	24.42	-0.09	0	00285	QPSK	1	50	0 mm	left	1:1	3.050	1.067	**3.254**	A48
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.7	23.56	0.04	1	00285	QPSK	50	0	0 mm	left	1:1	2.190	1.033	2.262	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.7	23.45	0.00	1	00285	QPSK	50	25	0 mm	left	1:1	2.360	1.059	2.499	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.7	23.54	0.04	1	00285	QPSK	50	0	0 mm	left	1:1	2.460	1.038	2.553	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.7	23.50	-0.01	1	00285	QPSK	100	0	0 mm	left	1:1	2.160	1.047	2.262	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.0	22.76	-0.05	0	00285	QPSK	1	50	0 mm	back	1:1	2.730	1.057	2.886	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.0	22.71	-0.06	0	00285	QPSK	1	50	0 mm	back	1:1	2.760	1.069	2.950	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.0	22.70	-0.06	0	00285	QPSK	1	50	0 mm	back	1:1	2.790	1.072	2.991	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.0	22.76	-0.07	0	00285	QPSK	50	25	0 mm	back	1:1	2.690	1.057	2.843	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.0	22.80	-0.03	0	00285	QPSK	50	50	0 mm	back	1:1	2.670	1.047	2.795	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.0	22.78	-0.07	0	00285	QPSK	50	0	0 mm	back	1:1	2.730	1.052	2.872	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.0	22.74	-0.05	0	00285	QPSK	100	0	0 mm	back	1:1	2.710	1.062	2.878	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.7	24.58	0.03	0	00285	QPSK	1	50	2 mm	back	1:1	2.510	1.028	2.580	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.7	24.70	0.04	0	00285	QPSK	1	50	2 mm	back	1:1	2.500	1.000	2.500	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.7	24.69	-0.03	0	00285	QPSK	1	50	2 mm	back	1:1	2.650	1.002	2.655	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.7	23.60	0.01	1	00285	QPSK	50	25	2 mm	back	1:1	2.120	1.023	2.169	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.7	23.69	0.03	1	00285	QPSK	50	50	2 mm	back	1:1	2.150	1.002	2.154	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.7	23.70	0.01	1	00285	QPSK	50	0	2 mm	back	1:1	2.340	1.000	2.340	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.7	23.65	0.01	1	00285	QPSK	100	0	2 mm	back	1:1	2.180	1.012	2.206	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.7	24.58	0.18	0	00285	QPSK	1	50	0 mm	front	1:1	2.370	1.028	2.436	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.7	24.70	0.20	0	00285	QPSK	1	50	0 mm	front	1:1	2.480	1.000	2.480	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.7	24.69	0.02	0	00285	QPSK	1	50	0 mm	front	1:1	2.460	1.002	2.465	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.7	23.60	0.02	1	00285	QPSK	50	25	0 mm	front	1:1	1.940	1.023	1.985	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.7	23.69	0.02	1	00285	QPSK	50	50	0 mm	front	1:1	1.960	1.002	1.964	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.7	23.70	0.06	1	00285	QPSK	50	0	0 mm	front	1:1	2.140	1.000	2.140	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.7	23.65	0.03	1	00285	QPSK	100	0	0 mm	front	1:1	2.040	1.012	2.064	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.7	24.70	0.03	0	00285	QPSK	1	50	0 mm	bottom	1:1	1.260	1.000	1.260	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.7	23.70	-0.08	1	00285	QPSK	50	0	0 mm	bottom	1:1	1.130	1.000	1.130	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.7	24.58	-0.02	0	00285	QPSK	1	50	0 mm	left	1:1	3.100	1.028	3.187	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	24.7	24.70	-0.01	0	00285	QPSK	1	50	0 mm	left	1:1	3.190	1.000	3.190	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.7	24.69	0.09	0	00285	QPSK	1	50	0 mm	left	1:1	3.190	1.002	3.196	A49
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.7	23.60	0.00	1	00285	QPSK	50	25	0 mm	left	1:1	2.610	1.023	2.670	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.7	23.69	-0.01	1	00285	QPSK	50	50	0 mm	left	1:1	2.690	1.002	2.695	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.7	23.70	0.09	1	00285	QPSK	50	0	0 mm	left	1:1	2.920	1.000	2.920	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.7	23.65	-0.01	1	00285	QPSK	100	0	0 mm	left	1:1	2.700	1.012	2.732	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.0	22.82	-0.03	0	00285	QPSK	1	99	0 mm	back	1:1	2.550	1.042	2.657	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.0	22.99	0.00	0	00285	QPSK	1	50	0 mm	back	1:1	2.550	1.002	2.555	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.0	22.85	-0.03	0	00285	QPSK	1	50	0 mm	back	1:1	2.650	1.035	2.743	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.0	22.77	0.01	0	00285	QPSK	50	50	0 mm	back	1:1	2.620	1.054	2.761	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.0	23.00	-0.03	0	00285	QPSK	50	0	0 mm	back	1:1	2.800	1.000	2.800	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.0	22.95	-0.01	0	00285	QPSK	50	0	0 mm	back	1:1	2.930	1.012	2.965	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.0	22.97	-0.01	0	00285	QPSK	100	0	0 mm	back	1:1	2.720	1.007	2.739	
1905.00	26590	High	LTE Band 25 (PCS)	20	24.7	24.69	-0.06	0	00285	QPSK	1	50	0 mm	left	1:1	3.110	1.002	3.116	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																Phablet 4.0 W/kg (mW/g) averaged over 10 grams			

Note: Blue entry represents variability measurement.

Table 11-37
LTE 41 Phablet SAR

MEASUREMENT RESULTS																						
1 CC Uplink | 2 CC Uplink, Power Class	Component Carrier	FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
		MHz	Ch.															(W/kg)		(W/kg)	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	24.7	24.61	-0.04	0	00277	QPSK	1	50	2 mm	back	1:1.58	1.150	1.021	1.174	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	23.7	23.57	-0.02	1	00277	QPSK	50	25	2 mm	back	1:1.58	0.921	1.030	0.949	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	24.7	24.61	-0.01	0	00277	QPSK	1	50	0 mm	front	1:1.58	1.420	1.021	1.450	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	23.7	23.57	-0.04	1	00277	QPSK	50	25	0 mm	front	1:1.58	1.160	1.030	1.195	
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	24.7	24.12	-0.04	0	00277	QPSK	1	0	0 mm	bottom	1:1.58	1.610	1.143	1.840	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	24.7	24.61	-0.11	0	00277	QPSK	1	50	0 mm	bottom	1:1.58	1.730	1.021	1.766	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	24.7	24.29	-0.16	0	00277	QPSK	1	50	0 mm	bottom	1:1.58	1.700	1.099	1.868	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	24.7	24.55	-0.09	0	00277	QPSK	1	50	0 mm	bottom	1:1.58	1.850	1.035	1.915	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	24.7	24.08	-0.12	0	00277	QPSK	1	50	0 mm	bottom	1:1.58	1.870	1.153	2.156	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	23.7	23.57	-0.09	1	00277	QPSK	50	25	0 mm	bottom	1:1.58	1.380	1.030	1.421	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	23.7	23.50	-0.11	1	00277	QPSK	100	0	0 mm	bottom	1:1.58	1.380	1.047	1.445	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	24.7	24.61	0.14	0	00277	QPSK	1	50	0 mm	right	1:1.58	0.348	1.021	0.355	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	23.7	23.57	0.05	1	00277	QPSK	50	25	0 mm	right	1:1.58	0.275	1.030	0.283	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	24.7	24.61	0.03	0	00277	QPSK	1	50	0 mm	left	1:1.58	0.236	1.021	0.241	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	23.7	23.57	-0.21	1	00277	QPSK	50	25	0 mm	left	1:1.58	0.183	1.030	0.188	
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	23.0	22.57	0.02	0	00277	QPSK	1	50	0 mm	back	1:1.58	2.080	1.104	2.296	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	23.0	22.90	0.11	0	00277	QPSK	1	50	0 mm	back	1:1.58	2.020	1.023	2.066	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	23.0	22.60	0.01	0	00277	QPSK	1	50	0 mm	back	1:1.58	1.960	1.096	2.148	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	23.0	22.71	-0.04	0	00277	QPSK	1	50	0 mm	back	1:1.58	2.020	1.069	2.159	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	23.0	22.56	-0.08	0	00277	QPSK	1	50	0 mm	back	1:1.58	2.000	1.107	2.214	
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	23.0	22.41	-0.10	0	00277	QPSK	50	50	0 mm	back	1:1.58	2.030	1.146	2.326	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	23.0	22.81	0.07	0	00277	QPSK	50	0	0 mm	back	1:1.58	2.030	1.045	2.121	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	23.0	22.58	0.01	0	00277	QPSK	50	0	0 mm	back	1:1.58	1.990	1.102	2.193	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	23.0	22.66	-0.07	0	00277	QPSK	50	25	0 mm	back	1:1.58	2.040	1.081	2.205	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	23.0	22.50	-0.07	0	00277	QPSK	50	25	0 mm	back	1:1.58	2.030	1.122	2.278	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	23.0	22.78	0.09	0	00277	QPSK	100	0	0 mm	back	1:1.58	2.030	1.052	2.136	
1 CC Uplink - Power Class 2	N/A	2506.00	39750	Low	LTE Band 41	20	25.5	24.94	-0.04	0	00277	QPSK	50	50	0 mm	back	1:2.31	2.730	1.138	3.107	
2 CC Uplink - Power Class 3	PCC	2506.00	39750	Low	LTE Band 41	20	23.0	22.27	-0.02	0	00277	QPSK	50	50	0 mm	back	1:1.58	2.060	1.183	2.437	
	SCC	2525.80	39948											0							
2 CC Uplink - Power Class 2	PCC	2506.00	39750	Low	LTE Band 41	20	25.5	24.99	-0.04	0	00277	QPSK	50	50	0 mm	back	1:2.31	2.760	1.125	3.105	A50
	SCC	2525.80	39948											0							
2 CC Uplink - Power Class 2	PCC	2506.00	39750	Low	LTE Band 41	20	25.5	24.99	-0.03	0	00277	QPSK	50	50	0 mm	back	1:2.31	2.550	1.125	2.869	
	SCC	2525.80	39948											0							
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	23.0	22.66	-0.05	0	00277	QPSK	50	25	0 mm	back	1:1.58	2.110	1.081	2.281	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population																		Phablet 4.0 W/kg (mW/g) averaged over 10 grams			

Note: Blue entry represents variability measurement.

Table 11-38
WLAN Phablet SAR

MEASUREMENT RESULTS																		
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (10g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (10g)	Plot #
MHz	Ch.												W/kg	(W/kg)			(W/kg)	
5260	52	802.11a	OFDM	20	16.0	15.88	0.06	0 mm	00293	6	back	97.0	15.830	1.710	1.028	1.031	**1.812**	A51
5280	56	802.11a	OFDM	20	16.0	15.87	0.03	0 mm	00293	6	back	97.0	14.122	1.620	1.030	1.031	1.720	
5320	64	802.11a	OFDM	20	14.0	13.92	0.01	0 mm	00293	6	back	97.0	11.351	1.110	1.019	1.031	1.166	
5260	52	802.11a	OFDM	20	16.0	15.88	-0.06	0 mm	00293	6	front	97.0	1.846	0.243	1.028	1.031	0.258	
5260	52	802.11a	OFDM	20	16.0	15.88	-0.09	0 mm	00293	6	top	97.0	2.987	-	1.028	1.031	-	
5260	52	802.11a	OFDM	20	16.0	15.88	0.01	0 mm	00293	6	left	97.0	7.232	1.010	1.028	1.031	1.070	
5600	120	802.11a	OFDM	20	14.0	13.42	0.04	0 mm	00293	6	back	97.0	13.501	1.100	1.143	1.031	1.296	
5600	120	802.11a	OFDM	20	14.0	13.42	-0.06	0 mm	00293	6	front	97.0	2.059	0.217	1.143	1.031	0.256	
5600	120	802.11a	OFDM	20	14.0	13.42	0.20	0 mm	00293	6	top	97.0	2.469	-	1.143	1.031	-	
5600	120	802.11a	OFDM	20	14.0	13.42	0.01	0 mm	00293	6	left	97.0	9.152	0.636	1.143	1.031	0.749	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**													**Phablet** **4.0 W/kg (mW/g)** averaged over 10 grams					

11.5 SAR Test Notes

General Notes:

1. The test data reported are the worst-case SAR values according to test procedures specified in IEEE 1528-2013, and FCC KDB Publication 447498 D01v06.
2. Batteries are fully charged at the beginning of the SAR measurements.
3. Liquid tissue depth was at least 15.0 cm for all frequencies.
4. The manufacturer has confirmed that the device(s) tested have the same physical, mechanical and thermal characteristics and are within operational tolerances expected for production units.
5. SAR results were scaled to the maximum allowed power to demonstrate compliance per FCC KDB Publication 447498 D01v06.
6. Device was tested using a fixed spacing for body-worn accessory testing. A separation distance of 10 mm was considered because the manufacturer has determined that there will be body-worn accessories available in the marketplace for users to support this separation distance.
7. Per FCC KDB Publication 648474 D04v01r03, body-worn SAR was evaluated without a headset connected to the device. When the standalone reported body-worn SAR was > 1.2 W/kg, additional body-worn SAR evaluations using a headset cable were required.
8. Per FCC KDB 865664 D01v01r04, variability SAR tests were performed when the measured SAR results for a frequency band were greater than or equal to 0.8 W/kg. Repeated SAR measurements are highlighted in the tables above for clarity. Please see Section 13 for variability analysis.
9. During SAR Testing for the Wireless Router conditions per FCC KDB Publication 941225 D06v02r01, the actual Portable Hotspot operation (with actual simultaneous transmission of a transmitter with WIFI) was not activated (See Section 6.7 for more details).
10. Per FCC KDB Publication 648474 D04v01r03, this device is considered a "phablet" since the diagonal dimension is > 160 mm and < 200 mm. Therefore, phablet SAR tests are required when wireless router mode does not apply or if wireless router 1g SAR > 1.2 W/kg.
11. This device utilizes power reduction for some wireless modes and technologies, as outlined in Section 1.3. The maximum output power allowed for each transmitter and exposure condition was evaluated for SAR compliance based on expected use conditions and simultaneous transmission scenarios.
12. Unless otherwise noted, when 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds below.

GSM Test Notes:

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

CDMA Notes:

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

UMTS Notes:

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

LTE Notes:

1. LTE test configurations are determined according to SAR Evaluation Considerations for LTE Devices in FCC KDB Publication 941225 D05v02r04. The general test procedures used for testing can be found in Section 8.6.4.
2. MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to 3GPP TS36.101 Section 6.2.3 – 6.2.5 under Table 6.2.3-1.
3. A-MPR was disabled for all SAR tests by setting NS=01 and MCC=001 on the base station simulator. SAR tests were performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI).

4. Per FCC KDB Publication 447498 D01v06, when the reported LTE Band 41 SAR measured at the highest output power channel in a given a test configuration was > 0.6 W/kg for 1g evaluations, testing at the other channels was required for such test configurations.
5. TDD LTE was tested per the guidance provided in FCC KDB Publication 941225 D05v02r04. Testing was performed using UL-DL configuration 0 with 6 UL subframes and 2 S subframes using extended cyclic prefix only and special subframe configuration 6. SAR tests were performed at maximum output power and worst-case transmission duty factor in extended cyclic prefix. Per 3GPP 36.211 Section 4, the duty factor for special subframe configuration 6 using extended cyclic prefix is 0.633.
6. Per KDB Publication 941225 D05Av01r02, SAR for downlink only LTE CA operations was not needed since the maximum average output power in LTE CA mode was not >0.25 dB higher than the maximum output power when downlink carrier aggregation was inactive.
7. This device supports Power Class 2 and Power Class 3 operations for LTE Band 41. The highest available duty cycle for Power Class 2 operations is 43.3 % using UL-DL configuration 1. Per FCC Guidance, all SAR tests were performed using Power Class 3. SAR with power class 2 at the available duty factor was additionally performed for the power class 3 configuration with the highest SAR configuration for each exposure conditions. Please see Section 14 for linearity results.
8. For LTE Band 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, and phablet operations, the initial test position procedures were applied. The test position with the highest extrapolated peak SAR will be used as the initial test position. When reported SAR for the initial test position is ≤ 0.4 W/kg for 1g evaluations, no additional testing for the remaining test positions was required. Otherwise, SAR is evaluated at the subsequent highest peak SAR positions until the reported SAR result is ≤ 0.8 W/kg or all test positions are measured.
2. Justification for test configurations for WLAN per KDB Publication 248227 D01v02r02 for 2.4 GHz WIFI single transmission chain operations, the highest measured maximum output power channel for DSSS was selected for SAR measurement. SAR for OFDM modes (2.4 GHz 802.11g/n/ax) was not required due to the maximum allowed powers and the highest reported DSSS SAR. See Section 8.7.5 for more information.
3. Justification for test configurations for WLAN per KDB Publication 248227 D01v02r02 for 5 GHz WIFI single transmission chain operations, the initial test configuration was selected according to the transmission mode with the highest maximum allowed powers. Other transmission modes were not investigated since the highest reported SAR for initial test configuration adjusted by the ratio of maximum output powers is less than 1.2 W/kg for 1g evaluations. See Section 8.7.6 for more information.
4. When the maximum reported 1g averaged SAR is ≤0.8 W/kg, SAR testing on additional channels was not required. Otherwise, SAR for the next highest output power channel was required until the reported SAR result was ≤ 1.20 W/kg for 1g evaluations or all test channels were measured.
5. The device was configured to transmit continuously at the required data rate, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools. The reported SAR was scaled to the 100% transmission duty factor to determine compliance. Procedures used to measure the duty factor are identical to that in the associated EMC test reports.

Bluetooth Notes

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

12 FCC MULTI-TX AND ANTENNA SAR CONSIDERATIONS

12.1 Introduction

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

12.2 Simultaneous Transmission Procedures

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

12.3 Head SAR Simultaneous Transmission Analysis

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Head SAR	GSM/GPRS 850	0.385	1.040	1.425
	GSM/GPRS 1900	0.334	1.040	1.374
	UMTS 850	0.346	1.040	1.386
	UMTS 1750	0.292	1.040	1.332
	UMTS 1900	0.384	1.040	1.424
	CDMA/EVDO BC10 (§90S)	0.191	1.040	1.231
	CDMA/EVDO BC0 (§22H)	0.255	1.040	1.295
	PCS CDMA/EVDO	0.265	1.040	1.305
	LTE Band 71	0.286	1.040	1.326
	LTE Band 12	0.337	1.040	1.377
	LTE Band 13	0.285	1.040	1.325
	LTE Band 26 (Cell)	0.281	1.040	1.321
	LTE Band 66 (AWS)	0.303	1.040	1.343
	LTE Band 25 (PCS)	0.406	1.040	**1.446**
	LTE Band 41	0.152	1.040	1.192

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Head SAR	GSM/GPRS 850	0.385	0.614	0.999
	GSM/GPRS 1900	0.334	0.614	0.948
	UMTS 850	0.346	0.614	0.960
	UMTS 1750	0.292	0.614	0.906
	UMTS 1900	0.384	0.614	0.998
	CDMA/EVDO BC10 (§90S)	0.191	0.614	0.805
	CDMA/EVDO BC0 (§22H)	0.255	0.614	0.869
	PCS CDMA/EVDO	0.265	0.614	0.879
	LTE Band 71	0.286	0.614	0.900
	LTE Band 12	0.337	0.614	0.951
	LTE Band 13	0.285	0.614	0.899
	LTE Band 26 (Cell)	0.281	0.614	0.895
	LTE Band 66 (AWS)	0.303	0.614	0.917
	LTE Band 25 (PCS)	0.406	0.614	**1.020**
	LTE Band 41	0.152	0.614	0.766

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

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Head SAR	GSM/GPRS 850	0.385	0.110	0.495
	GSM/GPRS 1900	0.334	0.110	0.444
	UMTS 850	0.346	0.110	0.456
	UMTS 1750	0.292	0.110	0.402
	UMTS 1900	0.384	0.110	0.494
	CDMA/EVDO BC10 (§90S)	0.191	0.110	0.301
	CDMA/EVDO BC0 (§22H)	0.255	0.110	0.365
	PCS CDMA/EVDO	0.265	0.110	0.375
	LTE Band 71	0.286	0.110	0.396
	LTE Band 12	0.337	0.110	0.447
	LTE Band 13	0.285	0.110	0.395
	LTE Band 26 (Cell)	0.281	0.110	0.391
	LTE Band 66 (AWS)	0.303	0.110	0.413
	LTE Band 25 (PCS)	0.406	0.110	**0.516**
	LTE Band 41	0.152	0.110	0.262

Table 12-4
Simultaneous Transmission Scenario with 5GHz WLAN and Bluetooth (Held to Ear)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Head SAR	GSM/GPRS 850	0.385	0.614	0.110	1.109
	GSM/GPRS 1900	0.334	0.614	0.110	1.058
	UMTS 850	0.346	0.614	0.110	1.070
	UMTS 1750	0.292	0.614	0.110	1.016
	UMTS 1900	0.384	0.614	0.110	1.108
	CDMA/EVDO BC10 (§90S)	0.191	0.614	0.110	0.915
	CDMA/EVDO BC0 (§22H)	0.255	0.614	0.110	0.979
	PCS CDMA/EVDO	0.265	0.614	0.110	0.989
	LTE Band 71	0.286	0.614	0.110	1.010
	LTE Band 12	0.337	0.614	0.110	1.061
	LTE Band 13	0.285	0.614	0.110	1.009
	LTE Band 26 (Cell)	0.281	0.614	0.110	1.005
	LTE Band 66 (AWS)	0.303	0.614	0.110	1.027
	LTE Band 25 (PCS)	0.406	0.614	0.110	**1.130**
	LTE Band 41	0.152	0.614	0.110	0.876

12.4 Body-Worn Simultaneous Transmission Analysis

Table 12-5
Simultaneous Transmission Scenario with 2.4 GHz WLAN (Body-Worn at 1.0 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Body-Worn	GSM/GPRS 850	0.680	0.391	1.071
	GSM/GPRS 1900	0.655	0.391	1.046
	UMTS 850	0.474	0.391	0.865
	UMTS 1750	0.847	0.391	1.238
	UMTS 1900	0.921	0.391	**1.312**
	CDMA BC10 (§90S)	0.364	0.391	0.755
	CDMA BC0 (§22H)	0.354	0.391	0.745
	PCS CDMA	0.520	0.391	0.911
	LTE Band 71	0.465	0.391	0.856
	LTE Band 12	0.554	0.391	0.945
	LTE Band 13	0.477	0.391	0.868
	LTE Band 26 (Cell)	0.419	0.391	0.810
	LTE Band 66 (AWS)	0.885	0.391	1.276
	LTE Band 25 (PCS)	0.546	0.391	0.937
	LTE Band 41	0.585	0.391	0.976

Table 12-6
Simultaneous Transmission Scenario with 5 GHz WLAN (Body-Worn at 1.0 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Body-Worn	GSM/GPRS 850	0.680	1.296	See Note 1	0.04
	GSM/GPRS 1900	0.655	1.296	See Note 1	0.02
	UMTS 850	0.474	1.296	See Note 1	0.02
	UMTS 1750	0.847	1.296	See Note 1	0.02
	UMTS 1900	0.921	1.296	See Note 1	0.03
	CDMA BC10 (§90S)	0.364	1.296	See Note 1	0.03
	CDMA BC0 (§22H)	0.354	1.296	See Note 1	0.01
	PCS CDMA	0.520	1.296	See Note 1	0.02
	LTE Band 71	0.465	1.296	See Note 1	0.02
	LTE Band 12	0.554	1.296	See Note 1	0.02
	LTE Band 13	0.477	1.296	See Note 1	0.03
	LTE Band 26 (Cell)	0.419	1.296	See Note 1	0.02
	LTE Band 66 (AWS)	0.885	1.296	See Note 1	0.03
	LTE Band 25 (PCS)	0.546	1.296	See Note 1	0.02
	LTE Band 41	0.585	1.296	See Note 1	0.02

Note1: No evaluation was performed to determine the aggregate 1g SAR for these configurations as the SPLS ratio between the antenna pairs was not greater than 0.04 per FCC KDB 447498 D01v06. See Section 12.7 for detailed SPLS ratio analysis.

Table 12-7
Simultaneous Transmission Scenario with Bluetooth (Body-Worn at 1.0 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Body-Worn	GSM/GPRS 850	0.680	0.042	0.722
	GSM/GPRS 1900	0.655	0.042	0.697
	UMTS 850	0.474	0.042	0.516
	UMTS 1750	0.847	0.042	0.889
	UMTS 1900	0.921	0.042	**0.963**
	CDMA BC10 (§90S)	0.364	0.042	0.406
	CDMA BC0 (§22H)	0.354	0.042	0.396
	PCS CDMA	0.520	0.042	0.562
	LTE Band 71	0.465	0.042	0.507
	LTE Band 12	0.554	0.042	0.596
	LTE Band 13	0.477	0.042	0.519
	LTE Band 26 (Cell)	0.419	0.042	0.461
	LTE Band 66 (AWS)	0.885	0.042	0.927
	LTE Band 25 (PCS)	0.546	0.042	0.588
	LTE Band 41	0.585	0.042	0.627

Table 12-8
Simultaneous Transmission Scenario 5GHz WLAN and Bluetooth (Body-Worn at 1.0 cm)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body-Worn	GSM/GPRS 850	0.680	1.296	0.042	See Note 2
	GSM/GPRS 1900	0.655	1.296	0.042	See Note 2
	UMTS 850	0.474	1.296	0.042	See Note 2
	UMTS 1750	0.847	1.296	0.042	See Note 2
	UMTS 1900	0.921	1.296	0.042	See Note 2
	CDMA BC10 (§90S)	0.364	1.296	0.042	See Note 2
	CDMA BC0 (§22H)	0.354	1.296	0.042	See Note 2
	PCS CDMA	0.520	1.296	0.042	See Note 2
	LTE Band 71	0.465	1.296	0.042	See Note 2
	LTE Band 12	0.554	1.296	0.042	See Note 2
	LTE Band 13	0.477	1.296	0.042	See Note 2
	LTE Band 26 (Cell)	0.419	1.296	0.042	See Note 2
	LTE Band 66 (AWS)	0.885	1.296	0.042	See Note 2
	LTE Band 25 (PCS)	0.546	1.296	0.042	See Note 2
	LTE Band 41	0.585	1.296	0.042	See Note 2

Note 2: Please see section 12.8 for detailed simultaneous transmission analysis.

12.5 Hotspot SAR Simultaneous Transmission Analysis

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

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

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

	Mode	2G/3G/4G SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	GPRS 850	0.680	0.391	1.071
	GPRS 1900	0.655	0.391	1.046
	UMTS 850	0.474	0.391	0.865
	UMTS 1750	0.847	0.391	1.238
	UMTS 1900	0.921	0.391	**1.312**
	EVDO BC10 (§90S)	0.361	0.391	0.752
	EVDO BC0 (§22H)	0.360	0.391	0.751
	PCS EVDO	0.515	0.391	0.906
	LTE Band 71	0.465	0.391	0.856
	LTE Band 12	0.614	0.391	1.005
	LTE Band 13	0.501	0.391	0.892
	LTE Band 26 (Cell)	0.419	0.391	0.810
	LTE Band 66 (AWS)	0.885	0.391	1.276
	LTE Band 25 (PCS)	0.718	0.391	1.109
	LTE Band 41	0.854	0.391	1.245

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

	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	GPRS 850	0.680	0.734	1.414
	GPRS 1900	0.655	0.734	1.389
	UMTS 850	0.474	0.734	1.208
	UMTS 1750	0.847	0.734	1.581
	UMTS 1900	0.921	0.734	See Table Below
	EVDO BC10 (§90S)	0.361	0.734	1.095
	EVDO BC0 (§22H)	0.360	0.734	1.094
	PCS EVDO	0.515	0.734	1.249
	LTE Band 71	0.465	0.734	1.199
	LTE Band 12	0.614	0.734	1.348
	LTE Band 13	0.501	0.734	1.235
	LTE Band 26 (Cell)	0.419	0.734	1.153
	LTE Band 66 (AWS)	0.885	0.734	See Table Below
	LTE Band 25 (PCS)	0.718	0.734	1.452
	LTE Band 41	0.854	0.734	**1.588**

Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Hotspot SAR	Back	0.921	0.734	See Note 1	0.02
	Front	0.523	0.734*	**1.257**	N/A
	Top	-	0.223	0.223	N/A
	Bottom	0.501	-	0.501	N/A
	Right	-	-	0.000	N/A
	Left	0.661	0.422	1.083	N/A

Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Hotspot SAR	Back	0.885	0.734	See Note 1	0.02
	Front	0.553	0.734*	**1.287**	N/A
	Top	-	0.223	0.223	N/A
	Bottom	0.336	-	0.336	N/A
	Right	-	-	0.000	N/A
	Left	0.720	0.422	1.142	N/A

Note1: No evaluation was performed to determine the aggregate 1g SAR for these configurations as the SPLS ratio between the antenna pairs was not greater than 0.04 per FCC KDB 447498 D01v06. See Section 12.7 for detailed SPLS ratio analysis.

Table 12-11
Simultaneous Transmission Scenario with Bluetooth (Hotspot at 1.0 cm)

	Mode	2G/3G/4G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	GPRS 850	0.680	0.042	0.722
	GPRS 1900	0.655	0.042	0.697
	UMTS 850	0.474	0.042	0.516
	UMTS 1750	0.847	0.042	0.889
	UMTS 1900	0.921	0.042	**0.963**
	EVDO BC10 (§90S)	0.361	0.042	0.403
	EVDO BC0 (§22H)	0.360	0.042	0.402
	PCS EVDO	0.515	0.042	0.557
	LTE Band 71	0.465	0.042	0.507
	LTE Band 12	0.614	0.042	0.656
	LTE Band 13	0.501	0.042	0.543
	LTE Band 26 (Cell)	0.419	0.042	0.461
	LTE Band 66 (AWS)	0.885	0.042	0.927
	LTE Band 25 (PCS)	0.718	0.042	0.760
	LTE Band 41	0.854	0.042	0.896

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

	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	GPRS 850	0.680	0.734	0.042	1.456
	GPRS 1900	0.655	0.734	0.042	1.431
	UMTS 850	0.474	0.734	0.042	1.250
	UMTS 1750	0.847	0.734	0.042	See Table Below
	UMTS 1900	0.921	0.734	0.042	See Table Below
	EVDO BC10 (§90S)	0.361	0.734	0.042	1.137
	EVDO BC0 (§22H)	0.360	0.734	0.042	1.136
	PCS EVDO	0.515	0.734	0.042	1.291
	LTE Band 71	0.465	0.734	0.042	1.241
	LTE Band 12	0.614	0.734	0.042	1.390
	LTE Band 13	0.501	0.734	0.042	1.277
	LTE Band 26 (Cell)	0.419	0.734	0.042	1.195
	LTE Band 66 (AWS)	0.885	0.734	0.042	See Table Below
	LTE Band 25 (PCS)	0.718	0.734	0.042	**1.494**
	LTE Band 41	0.854	0.734	0.042	See Table Below

Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.847	0.734	0.042	See Note 2
	Front	0.531	0.734*	0.026	**1.291**
	Top	-	0.223	0.000	0.223
	Bottom	0.411	-	-	0.411
	Right	-	-	-	0.000
	Left	0.653	0.422	0.022	1.097

Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.921	0.734	0.042	See Note 2
	Front	0.523	0.734*	0.026	**1.283**
	Top	-	0.223	0.000	0.223
	Bottom	0.501	-	-	0.501
	Right	-	-	-	0.000
	Left	0.661	0.422	0.022	1.105

Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.885	0.734	0.042	See Note 2
	Front	0.553	0.734*	0.026	**1.313**
	Top	-	0.223	0.000	0.223
	Bottom	0.336	-	-	0.336
	Right	-	-	-	0.000
	Left	0.720	0.422	0.022	1.164

Simult Tx	Configuration	LTE Band 41 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.585	0.734	0.042	**1.361**
	Front	0.292	0.734*	0.026	1.052
	Top	-	0.223	0.000	0.223
	Bottom	0.854	-	-	0.854
	Right	0.104	-	-	0.104
	Left	0.097	0.422	0.022	0.541

Note 2: Please see section 12.8 for detailed simultaneous transmission analysis.

12.6 Phablet Simultaneous Transmission Analysis

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

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

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

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

Table 12-13
Simultaneous Transmission Scenario with 5 GHz WLAN (Phablet)

Exposure Condition	Mode	2G/3G/4G SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Phablet SAR	UMTS 1750	3.142	1.812	See Table Below
	UMTS 1900	3.156	1.812	See Table Below
	PCS EVDO	2.277	1.812	See Table Below
	LTE Band 66 (AWS)	3.254	1.812	See Table Below
	LTE Band 25 (PCS)	3.196	1.812	See Table Below
	LTE Band 41	3.120	1.812	See Table Below

Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	3.142	1.812	See Note 1	0.08
	Front	2.305	0.258	2.563	N/A
	Top	-	1.812*	1.812	N/A
	Bottom	1.480	-	1.480	N/A
	Right	-	-	0.000	N/A
	Left	2.846	1.070	**3.916**	N/A

Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	2.971	1.812	See Note 1	0.08
	Front	2.600	0.258	**2.858**	N/A
	Top	-	1.812*	1.812	N/A
	Bottom	1.377	-	1.377	N/A
	Right	-	-	0.000	N/A
	Left	3.156	1.070	See Note 1	0.07

Simult Tx	Configuration	PCS EVDO SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	2.277	1.812	See Note 1	0.07
	Front	1.641	0.258	1.899	N/A
	Top	-	1.812*	1.812	N/A
	Bottom	0.904	-	0.904	N/A
	Right	-	-	0.000	N/A
	Left	2.256	1.070	**3.326**	N/A

Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	2.991	1.812	See Note 1	0.08
	Front	1.809	0.258	**2.067**	N/A
	Top	-	1.812*	1.812	N/A
	Bottom	1.213	-	1.213	N/A
	Right	-	-	0.000	N/A
	Left	3.254	1.070	See Note 1	0.07

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	2.965	1.812	See Note 1	0.08
	Front	2.480	0.258	**2.738**	N/A
	Top	-	1.812*	1.812	N/A
	Bottom	1.260	-	1.260	N/A
	Right	-	-	0.000	N/A
	Left	3.196	1.070	See Note 1	0.07

Simult Tx	Configuration	LTE Band 41 SAR (W/kg)	5 GHz WLAN SAR (W/kg)	Σ SAR (W/kg)	SPLSR
		1	2	1+2	1+2
Phablet SAR	Back	3.120	1.812	See Note 1	0.08
	Front	1.450	0.258	1.708	N/A
	Top	-	1.812*	1.812	N/A
	Bottom	2.156	-	**2.156**	N/A
	Right	0.355	-	0.355	N/A
	Left	0.241	1.070	1.311	N/A

Note: No evaluation was performed to determine the aggregate 10g SAR for these configurations as the SPLS ratio between the antenna pairs was not greater than 0.10 per FCC KDB 447498 D01v06. See Section 12.7 for detailed SPLS ratio analysis.

12.7 SPLSR Evaluation and Analysis

Per FCC KDB Publication 447498 D01v06, when the sum of the standalone transmitters is more than 1.6 W/kg for 1g and 4 W/kg for 10g, the SAR sum to peak locations can be analyzed to determine SAR distribution overlaps. When the SAR peak to location ratio (shown below) for each pair of antennas is ≤ 0.04 for 1g and ≤ 0.10 for 10g, simultaneous SAR evaluation is not required. The distance between the transmitters was calculated using the following formula.

$$\text{Distance}_{Tx1-Tx2} = R_i = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2} \text{ (Body-Worn, Hotspot, Phablet)}$$

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

12.7.1 Back Side SPLSR Evaluation and Analysis

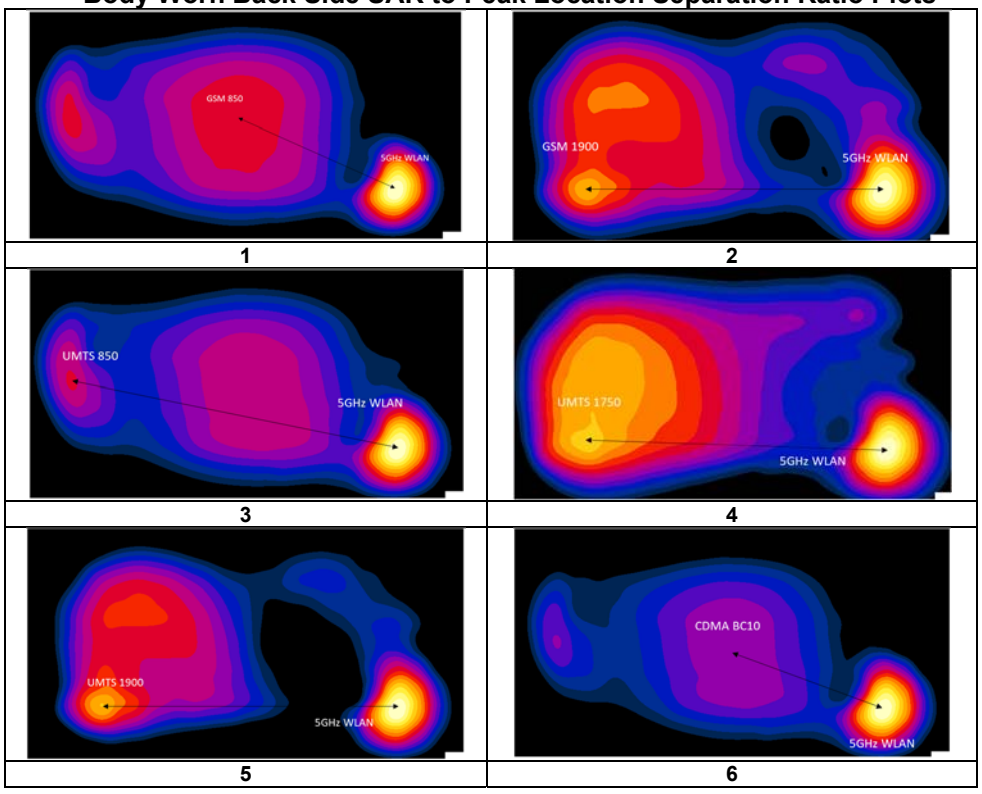
Table 12-14
Peak SAR Locations for Body- Worn Back Side

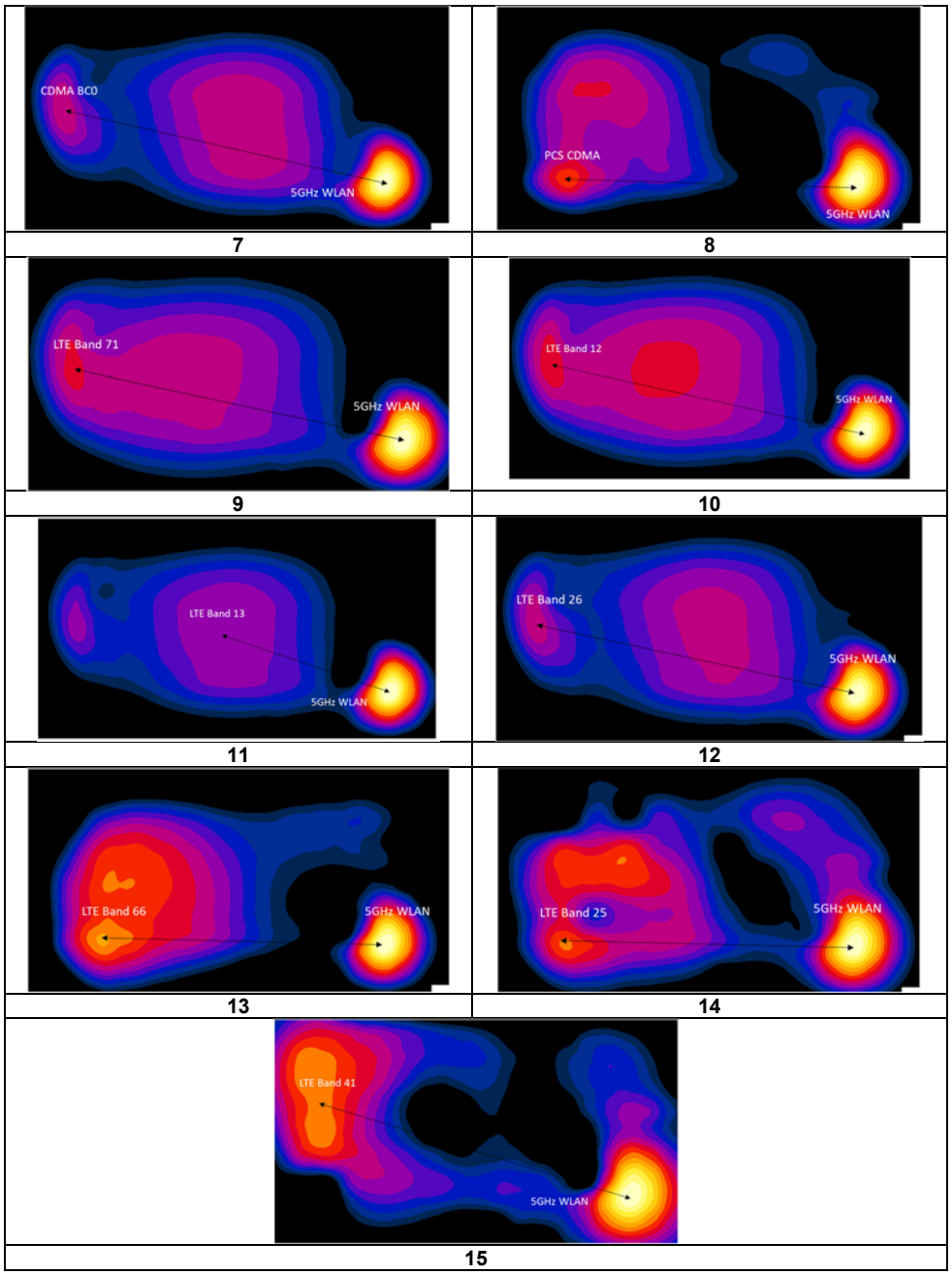
Mode/Band	x (mm)	y (mm)	Reported SAR (W/kg)
5 GHz WLAN	1.00	68.00	1.296
GSM 1900	2.00	-57.00	0.655
GSM 850	-34.00	1.50	0.680
UMTS 1900	2.00	-57.00	0.921
UMTS 850	-26.50	-72.00	0.474
UMTS 1750	0.50	-58.50	0.847
CDMA BC10 (§90S)	-32.50	4.50	0.364
CDMA BC0 (§22H)	-26.50	-72.00	0.354
PCS CDMA	2.00	-58.50	0.520
LTE Band 71	-26.50	-70.50	0.465
LTE Band 12	-26.50	-70.50	0.554
LTE Band 13	-25.00	0.00	0.477
LTE Band 26 (Cell)	-28.00	-72.00	0.419
LTE Band 66 (AWS)	2.00	-57.00	0.885
LTE Band 25 (PCS)	3.50	-57.00	0.546
LTE Band 41	-17.40	-64.60	0.585

Table 12-15
Body Worn Back Side SAR to Peak Location Separation Ratio Calculations

Antenna Pair		Standalone SAR (W/kg)		Standalone SAR Sum (W/kg)	Peak SAR Separation Distance (mm)	SPLS Ratio	Plot Number
Ant "a"	Ant "b"	a	b	a+b	D_{a-b}	$(a+b)^{1.5}/D_{a-b}$	
5 GHz WLAN	GSM 850	1.296	0.680	1.976	75.15	0.04	1
5 GHz WLAN	GSM 1900	1.296	0.655	1.951	125.00	0.02	2
5 GHz WLAN	UMTS 850	1.296	0.474	1.77	142.68	0.02	3
5 GHz WLAN	UMTS 1750	1.296	0.847	2.143	126.50	0.02	4
5 GHz WLAN	UMTS 1900	1.296	0.921	2.217	125.00	0.03	5
5 GHz WLAN	CDMA BC10 (§90S)	1.296	0.364	1.66	71.79	0.03	6
5 GHz WLAN	CDMA BC0 (§22H)	1.296	0.354	1.65	142.68	0.01	7
5 GHz WLAN	PCS CDMA	1.296	0.520	1.816	126.50	0.02	8
5 GHz WLAN	LTE Band 71	1.296	0.465	1.761	141.20	0.02	9
5 GHz WLAN	LTE Band 12	1.296	0.554	1.85	141.20	0.02	10
5 GHz WLAN	LTE Band 13	1.296	0.477	1.773	72.80	0.03	11
5 GHz WLAN	LTE Band 26 (Cell)	1.296	0.419	1.715	142.97	0.02	12
5 GHz WLAN	LTE Band 66 (AWS)	1.296	0.885	2.181	125.00	0.03	13
5 GHz WLAN	LTE Band 25 (PCS)	1.296	0.546	1.842	125.02	0.02	14
5 GHz WLAN	LTE Band 41	1.296	0.585	1.881	133.87	0.02	15

Table 12-16
Body Worn Back Side SAR to Peak Location Separation Ratio Plots





12.7.2 Hotspot SPLSR Evaluation and Analysis

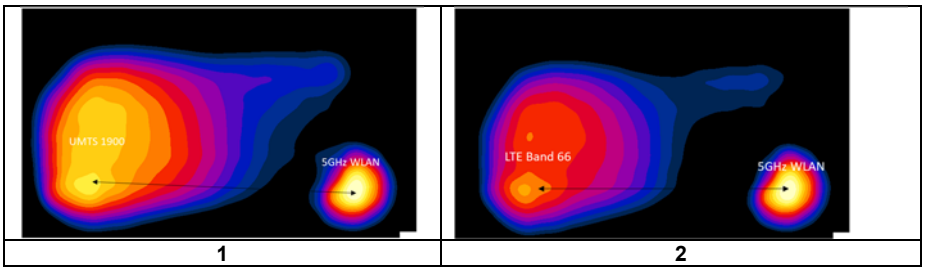
Table 12-17
Peak SAR Locations for Hotspot

Mode/Band	x (mm)	y (mm)	Reported SAR (W/kg)
5 GHz WLAN	5.00	71.00	0.734
UMTS 1900	2.00	-57.00	0.921
LTE Band 66 (AWS)	2.00	-57.00	0.885

Table 12-18
Hotspot SAR to Peak Location Separation Ratio Calculations

Antenna Pair		Standalone SAR (W/kg)		Standalone SAR Sum (W/kg)	Peak SAR Separation Distance (mm)	SPLS Ratio	Plot Number
Ant "a"	Ant "b"	a	b	a+b	D_{a-b}	$(a+b)^{1.5}/D_{a-b}$	
5 GHz WLAN	UMTS 1900	0.734	0.921	1.655	128.04	0.02	1
5 GHz WLAN	LTE Band 66 (AWS)	0.734	0.885	1.619	128.04	0.02	2

Table 12-19
Hotspot SAR to Peak Location Separation Ratio Plots



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12.7.3 Phablet SPLSR Evaluation and Analysis

Table 12-20
Peak SAR Locations for Phablet Back Side

Mode/Band	x (mm)	y (mm)	Reported SAR (W/kg)
5 GHz WLAN Phablet	3.80	67.10	1.812
UMTS 1750	2.20	-68.10	3.142
UMTS 1900	0.50	-58.50	2.971
LTE Band 66 (AWS)	2.00	-64.50	2.991
LTE Band 25 (PCS)	0.50	-64.50	2.965
LTE Band 41	-15.20	-68.40	3.120
PCS EVDO	0.50	-57.00	2.277

Table 12-21
Phablet Back side SAR to Peak Location Separation Ratio Calculations

Antenna Pair		Standalone SAR (W/kg)		Standalone SAR Sum (W/kg)	Peak SAR Separation Distance (mm)	SPLS Ratio	Plot Number
Ant "a"	Ant "b"	a	b	a+b	D_{a-b}	$(a+b)^{1.5}/D_{a-b}$	
5 GHz WLAN Phablet	UMTS 1750	1.812	3.142	4.954	135.21	0.08	1
5 GHz WLAN Phablet	UMTS 1900	1.812	2.971	4.783	125.64	0.08	2
5 GHz WLAN Phablet	PCS EVDO	1.812	2.277	4.089	124.14	0.07	3
5 GHz WLAN Phablet	LTE Band 66 (AWS)	1.812	2.991	4.803	131.61	0.08	4
5 GHz WLAN Phablet	LTE Band 25 (PCS)	1.812	2.965	4.777	131.64	0.08	5
5 GHz WLAN Phablet	LTE Band 41	1.812	3.120	4.932	136.83	0.08	6

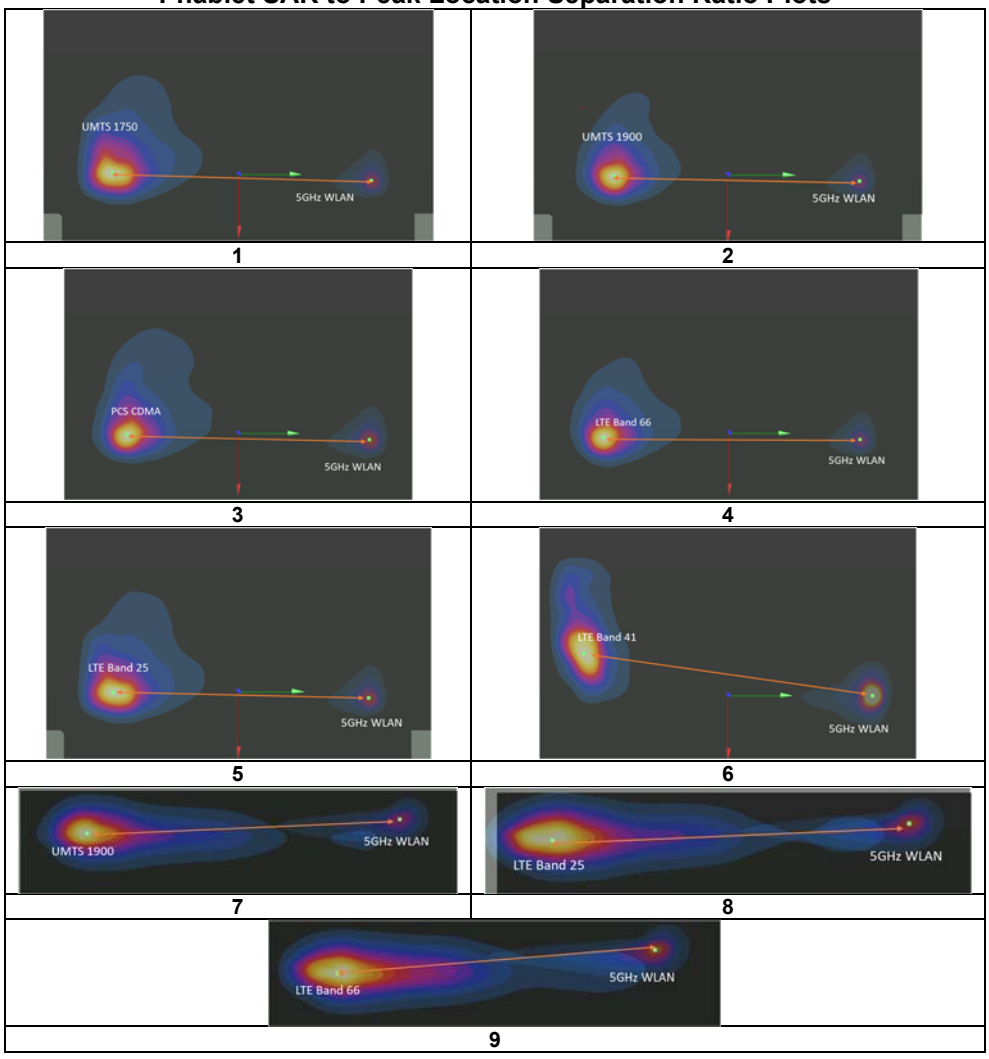
Table 12-22
Peak SAR Locations for Phablet Left Edge

Mode/Band	x (mm)	y (mm)	Reported SAR (W/kg)
5 GHz WLAN Phablet	-34.00	64.00	1.070
UMTS 1900	-28.70	-59.20	3.156
LTE Band 66 (AWS)	-26.90	-63.00	3.254
LTE Band 25 (PCS)	-28.00	-65.60	3.196

Table 12-23
Phablet Left Edge SAR to Peak Location Separation Ratio Calculations

Antenna Pair		Standalone SAR (W/kg)		Standalone SAR Sum (W/kg)	Peak SAR Separation Distance (mm)	SPLS Ratio	Plot Number
Ant "a"	Ant "b"	a	b	a+b	D_{a-b}	$(a+b)^{1.5}/D_{a-b}$	
5 GHz WLAN Phablet	UMTS 1900	1.070	3.156	4.226	123.31	0.07	7
5 GHz WLAN Phablet	LTE Band 66 (AWS)	1.070	3.254	4.324	127.20	0.07	8
5 GHz WLAN Phablet	LTE Band 25 (PCS)	1.070	3.196	4.266	129.74	0.07	9

Table 12-24
Phablet SAR to Peak Location Separation Ratio Plots



12.8 Additional Simultaneous SAR Evaluation and Analysis for Main Band, Bluetooth and 5 GHz WLAN Operations

Per KDB Publication 865664, when the sum of the transmitters potentially operating simultaneously is greater than the 1.6 W/kg or 4.0 W/kg and the sum to peak SAR location separation ratio between any pair of transmitters is more than 0.04 for 1g or 0.1 for 10g, SAR tests are required for simultaneous transmission to determine the aggregate 1g or 10g SAR. When required, each transmitter is tested for simultaneous transmission in the configuration, channel and operating mode that resulted in the highest SAR during the stand-alone evaluation.

The Bluetooth and 5GHz WLAN transmitters are co-located antenna pair and spatially separated from 2G/3G/4G antenna. Per November 2019 TCB Workshop Notes, enlarged volumetric scans on co-located antenna pair were performed for the Bluetooth and 5GHz WLAN. The SPLSR procedure for the spatially separated 2G/3G/4G antenna and aggregated SAR distribution of the co-located Bluetooth/5GHz WLAN antenna pair was applied according to KDB Publication 447498.

12.8.1 Body-worn Back Side Volumetric SAR Evaluation and Analysis for Bluetooth, and 5GHz WLAN Simultaneous Transmission

Table 12-25
Simultaneous Transmission SAR Analysis

Band/ Mode	Configuration	Frequency [MHz]	Measured Standalone 1g SAR [W/kg]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Duty Cycle (%)	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	Volumetric 1g SAR [W/kg]	Scaled Volumetric 1g SAR [W/kg]	Volumetric SAR Plot Number
Bluetooth	Back side, Ch. 78, 1 Mbps, 10 mm	2480	0.029	9	8.54	76.8	1.112	1.302	0.032	0.046	A52
5GHz WLAN Body Worn	Back side, 802.11a, 20 MHz, Ch. 56, 6 Mbps, 10 mm	5280	1.220	16	15.87	97.0	1.030	1.031	1.1	1.168	A53

Simultaneous Transmission Bands/Modes		Scaled Multi-Band SAR (W/kg)	Simultaneous SAR Plot
Bluetooth	5GHz WLAN Body Worn	1.190	A55

Note:
1. All volumetric zoom scans were performed with DASY52 SAR system version 52.10. Post processor SEMCAD X Versions 14.6.12 (7470) multiband combiner requires enlarged zoom scans to overlap but does not require measurement point resolutions within the volumes to be identical for interpolation and superposition.
2. Each antenna was evaluated independently using the channel/configuration that produced the highest measured SAR when the standalone SAR was tested.
3. SAR results were scaled to the maximum allowed power to demonstrate compliance per FCC KDB Publication 447498 D01v05. The simultaneous transmission SAR results of the individual transmitters were scaled using SEMCAD X during processing.

12.8.2 Body-worn SPLSR Evaluation and Analysis for Main Band, Bluetooth and 5GHz WLAN simultaneous Transmission

Table 12-26
Peak SAR Locations for Body-worn Back Side

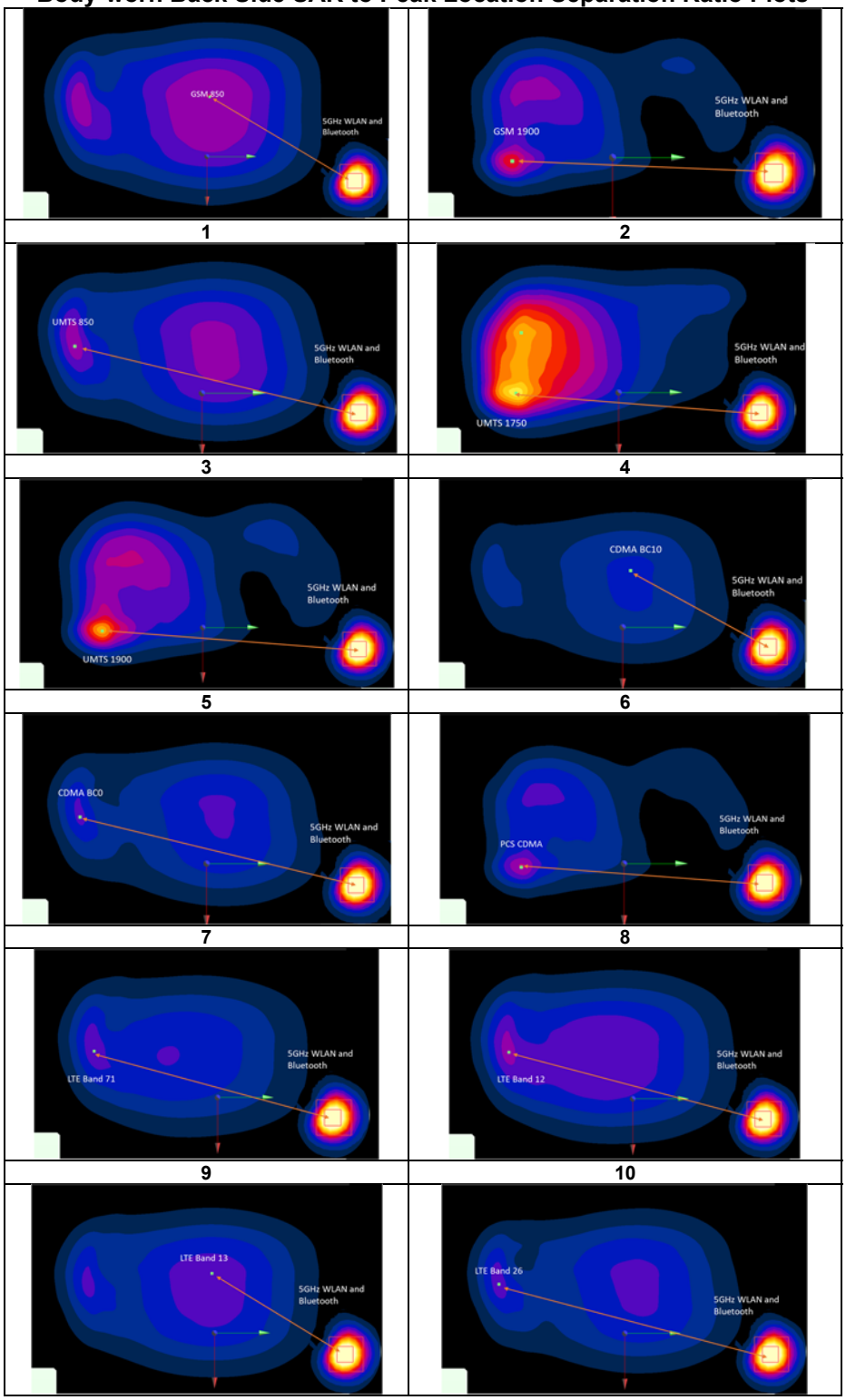
Mode/Band	x (mm)	y (mm)	Reported SAR (W/kg)
5GHz WLAN and Bluetooth	3.00	68.00	1.190
GSM 1900	2.00	-57.00	0.655
GSM 850	-34.00	1.50	0.680
UMTS 1900	2.00	-57.00	0.921
UMTS 850	-26.50	-72.00	0.474
UMTS 1750	0.50	-58.50	0.847
CDMA BC10 (§90S)	-32.50	4.50	0.364
CDMA BC0 (§22H)	-26.50	-72.00	0.354
PCS CDMA	2.00	-58.50	0.520
LTE Band 71	-26.50	-70.50	0.465
LTE Band 12	-26.50	-70.50	0.554
LTE Band 13	-25.00	0.00	0.477
LTE Band 26 (Cell)	-28.00	-72.00	0.419
LTE Band 66 (AWS)	2.00	-57.00	0.885
LTE Band 25 (PCS)	3.50	-57.00	0.546
LTE Band 41	-17.40	-64.60	0.585

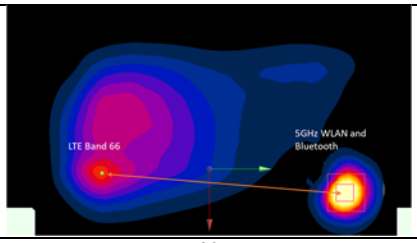
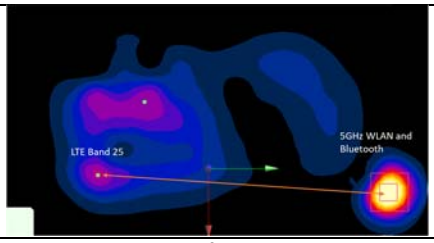
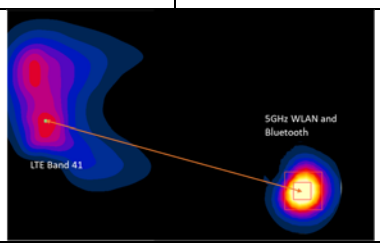
The Bluetooth and 5 GHz WIFI SAR values above represent the aggregate distributions from the simultaneous transmission (volumetric) SAR evaluation.

Table 12-27
Body-worn Back Side SAR to Peak Location Separation Ratio Plots

Antenna Pair		Standalone SAR (W/kg)		Standalone SAR Sum (W/kg)	Peak SAR Separation Distance (mm)	SPLS Ratio	Plot Number
Ant "a"	Ant "b"	a	b	a+b	D_{a-b}	$(a+b)^{1.5}/D_{a-b}$	
5GHz WLAN and Bluetooth	GSM 850	1.190	0.680	1.87	76.10	0.03	1
5GHz WLAN and Bluetooth	GSM 1900	1.190	0.655	1.845	125.00	0.02	2
5GHz WLAN and Bluetooth	UMTS 850	1.190	0.474	1.664	143.07	0.02	3
5GHz WLAN and Bluetooth	UMTS 1750	1.190	0.847	2.037	126.52	0.02	4
5GHz WLAN and Bluetooth	UMTS 1900	1.190	0.921	2.111	125.00	0.02	5
5GHz WLAN and Bluetooth	CDMA BC10 (§90S)	1.190	0.364	1.554	72.75	0.03	6
5GHz WLAN and Bluetooth	CDMA BC0 (§22H)	1.190	0.354	1.544	143.07	0.01	7
5GHz WLAN and Bluetooth	PCS CDMA	1.190	0.520	1.71	126.50	0.02	8
5GHz WLAN and Bluetooth	LTE Band 71	1.190	0.465	1.655	141.61	0.02	9
5GHz WLAN and Bluetooth	LTE Band 12	1.190	0.554	1.744	141.61	0.02	10
5GHz WLAN and Bluetooth	LTE Band 13	1.190	0.477	1.667	73.54	0.03	11
5GHz WLAN and Bluetooth	LTE Band 26 (Cell)	1.190	0.419	1.609	143.39	0.01	12
5GHz WLAN and Bluetooth	LTE Band 66 (AWS)	1.190	0.885	2.075	125.00	0.02	13
5GHz WLAN and Bluetooth	LTE Band 25 (PCS)	1.190	0.546	1.736	125.00	0.02	14
5GHz WLAN and Bluetooth	LTE Band 41	1.190	0.585	1.775	134.16	0.02	15

Table 12-28
Body-worn Back Side SAR to Peak Location Separation Ratio Plots



11	12
	
13	**14**
	
15	

12.8.3 Hotspot Back Side Volumetric SAR Evaluation and Analysis for Bluetooth, and 5GHz WLAN Simultaneous Transmission

Table 12-29
Simultaneous Transmission SAR Analysis

Band/ Mode	Configuration	Frequency [MHz]	Measured Standalone 1g SAR [W/kg]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Duty Cycle (%)	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	Volumetric 1g SAR [W/kg]	Scaled Volumetric 1g SAR [W/kg]	Volumetric SAR Plot Number
Bluetooth	Back side, Ch. 78, 1 Mbps, 10 mm	2480	0.029	9	8.54	76.8	1.112	1.302	0.032	0.046	A52
5GHz WLAN Hotspot	Back side, 802.11a, 20 MHz, Ch. 36, 6 Mbps, 10 mm	5180	0.708	16	15.98	97.0	1.005	1.031	0.681	0.706	A54

Simultaneous Transmission Bands/Modes		Scaled Multi-Band SAR (W/kg)	Simultaneous SAR Plot
Bluetooth	5GHz WLAN Hotspot	0.737	A56

Note:
1. All volumetric zoom scans were performed with DASY52 SAR system version 52.10.2.1504 Post processor SEMCAD X Versions 14.6.12 (7470) multiband combiner requires enlarged zoom scans to overlap but does not require measurement point resolutions within the volumes to be identical for interpolation and superposition.
2. Each antenna was evaluated independently using the channel/configuration that produced the highest measured SAR when the standalone SAR was tested.
3. SAR results were scaled to the maximum allowed power to demonstrate compliance per FCC KDB Publication 447498 D01v05. The simultaneous transmission SAR results of the individual transmitters were scaled using SEMCAD X during processing.

12.8.4 Hotspot SPLSR Evaluation and Analysis for Main Band, Bluetooth and 5GHz WLAN simultaneous Transmission

Table 12-30
Peak SAR Locations for Hotspot Back Side

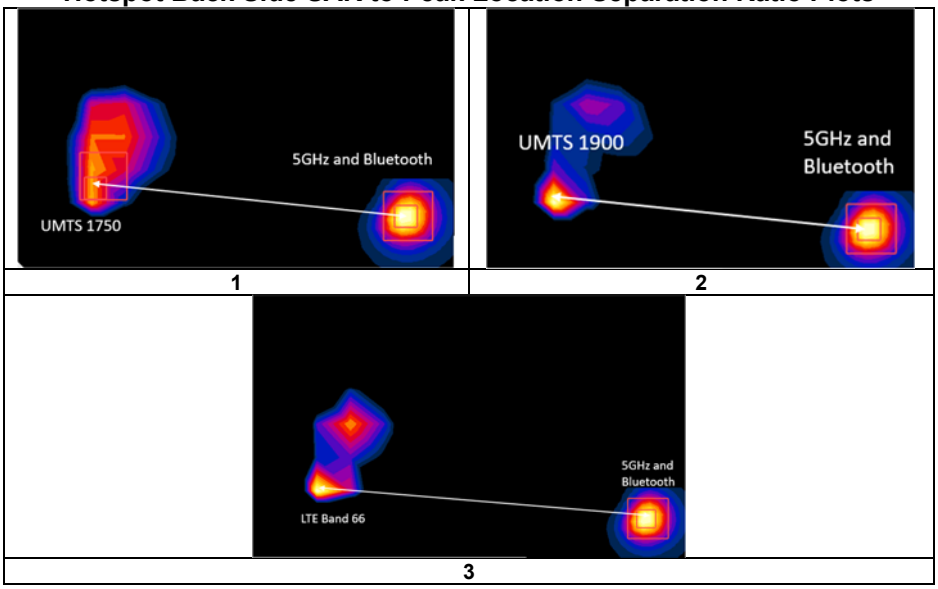
Mode/Band	x (mm)	y (mm)	Reported SAR (W/kg)
5GHz WLAN and Bluetooth	3.00	68.00	0.737
UMTS 1750	0.50	-58.50	0.847
UMTS 1900	2.00	-57.00	0.921
LTE Band 66 (AWS)	2.00	-57.00	0.885

The Bluetooth and 5 GHz WIFI SAR values above represent the aggregate distributions from the simultaneous transmission (volumetric) SAR evaluation.

Table 12-31
Hotspot Back Side SAR to Peak Location Separation Ratio Plots

Antenna Pair		Standalone SAR (W/kg)		Standalone SAR Sum (W/kg)	Peak SAR Separation Distance (mm)	SPLS Ratio	Plot Number
Ant "a"	Ant "b"	a	b	a+b	D_{a-b}	$(a+b)^{1.5}/D_{a-b}$	
5GHz WLAN and Bluetooth	UMTS 1750	0.737	0.847	1.584	126.52	0.02	1
5GHz WLAN and Bluetooth	UMTS 1900	0.737	0.921	1.658	125.00	0.02	2
5GHz WLAN and Bluetooth	LTE Band 66 (AWS)	0.737	0.885	1.622	125.00	0.02	3

Table 12-32
Hotspot Back Side SAR to Peak Location Separation Ratio Plots



12.9 Simultaneous Transmission Conclusion

The above analysis 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 per FCC KDB Publication 447498 D01v06 and IEEE 1528-2013 Section 6.3.4.1.2.

13 SAR MEASUREMENT VARIABILITY

13.1 Measurement Variability

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

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

1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.
2) A second repeated measurement was performed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1g SAR limit).
3) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.
4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg
5) When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

Table 13-1
Head SAR Measurement Variability Results

HEAD VARIABILITY RESULTS														
Band	FREQUENCY		Mode	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	2437.00	6	802.11b, 22 MHz Bandwidth	DSSS	Right	Cheek	1	0.832	0.818	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	Data Rate (Mbps)	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	1732.40	1412	UMTS 1750	RMC	N/A	back	10 mm	0.847	0.808	1.05	N/A	N/A	N/A	N/A
1900	1907.60	9538	UMTS 1900	RMC	N/A	back	10 mm	0.886	0.783	1.13	N/A	N/A	N/A	N/A
5250	5280.00	56	802.11a, 20 MHz Bandwidth	OFDM	6	back	10 mm	1.220	1.210	1.01	N/A	N/A	N/A	N/A
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population					Body 1.6 W/kg (mW/g) averaged over 1 gram									

Table 13-3
Phablet SAR Measurement Variability Results

PHABLET VARIABILITY RESULTS														
Band	Component Carrier	FREQUENCY		Mode	Service	Side	Spacing	Measured SAR (10g)	1st Repeated SAR (10g)	Ratio	2nd Repeated SAR (10g)	Ratio	3rd Repeated SAR (10g)	Ratio
		MHz	Ch.					(W/kg)	(W/kg)		(W/kg)		(W/kg)	
1750	N/A	1732.40	1412	UMTS 1750	RMC	back	0 mm	3.120	3.120	1.00	N/A	N/A	N/A	N/A
1900	N/A	1882.50	26365	LTE Band 25 (PCS), 20 MHz Bandwidth	QPSK, 1 RB, 50 RB Offset	left	0 mm	3.190	3.110	1.03	N/A	N/A	N/A	N/A
2450	PCC	2506.00	39750	LTE Band 41 PC2 ULCA, 20 MHz Bandwidth	QPSK, 50 RB, 50 RB Offset	back	0 mm	2.760	2.550	1.08	N/A	N/A	N/A	N/A
	SCC	2525.80	39948		QPSK, 50 RB, 0 RB Offset									
2600	N/A	2636.50	41055	LTE Band 41, 20 MHz Bandwidth	QPSK, 50 RB, 25 RB Offset	back	0 mm	2.040	2.210	1.08	N/A	N/A	N/A	N/A
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**								**Phablet** **4.0 W/kg (mW/g)** averaged over 10 grams						

13.2 Measurement Uncertainty

The measured SAR was <1.5 W/kg for 1g and <3.75 W/kg for 10g for all frequency bands. Therefore, per KDB Publication 865664 D01v01r04, the extended measurement uncertainty analysis per IEEE 1528-2013 was not required.

14 ADDITIONAL TESTING PER FCC GUIDANCE

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

This device supports Power Class 2 and Power Class 3 operations for LTE Band 41. The highest available duty cycle for Power Class 2 operations is 43.3 % using UL-DL configuration 1. Per May 2017 TCB Workshop Notes based on the device behavior, all SAR tests were performed using Power Class 3. SAR with Power Class 2 at the highest power and available duty factor was additionally performed for the Power Class 3 configuration with the highest SAR for each exposure condition. The linearity between the Power Class 2 and Power Class 3 SAR results and the respective frame averaged powers was calculated to determine that the results were linear. When ULCA is active, the linearity between the Power Class 2 with ULCA active and Power Class 3 with ULCA active SAR results and the respective frame averaged powers was calculated to determine that the results were linear. Per May 2017 TCB Workshop, no additional SAR measurements were required since the linearity between power classes was < 10% and all reported SAR values were < 1.4 W/kg for 1g and < 3.5 W/kg for 10g.
LTE Band 41 SAR testing with power class 2 at the highest power and available duty factor was additionally performed for the power class 3 configuration with the highest SAR for each exposure condition.

Table 14-1
LTE Band 41 Head Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	24.7	27.2
Measured Output Power (dBm)	24.61	27
Measured SAR (W/kg)	0.0745	0.0966
Measured Power (mW)	289.07	501.19
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	182.98	217.01
% deviation from expected linearity		9.33%

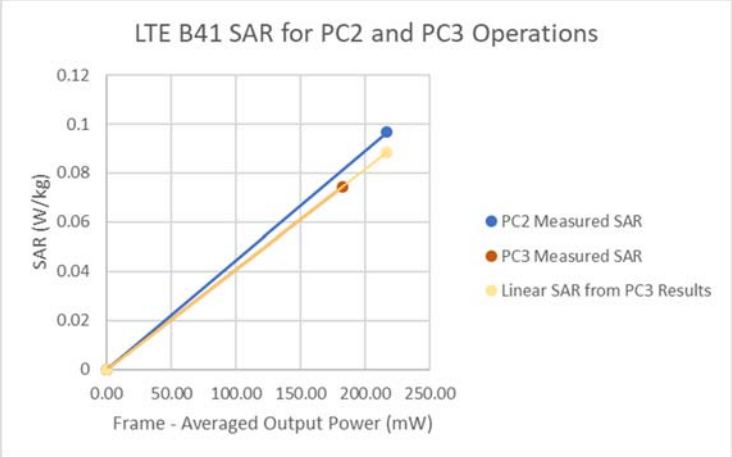


Figure 14-1
LTE Band 41 Head Linearity

Table 14-2
LTE Band 41 Extra Configuration Head Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	24.7	27.2
Measured Output Power (dBm)	24.26	26.7
Measured SAR (W/kg)	0.107	0.132
Measured Power (mW)	266.69	467.74
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	168.81	202.53
% deviation from expected linearity		2.83%

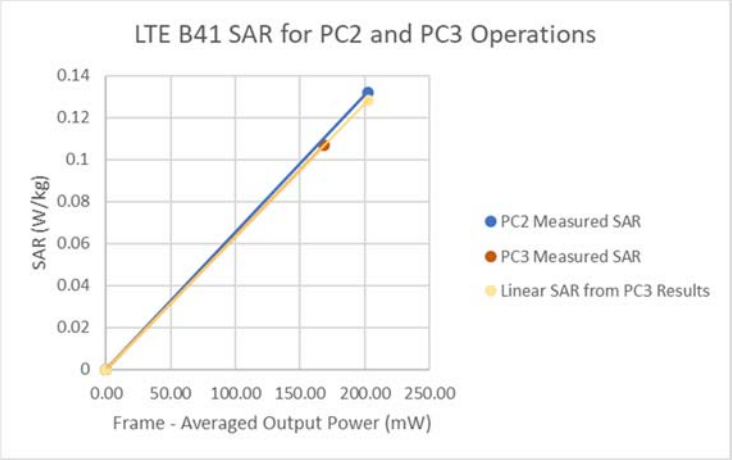


Figure 14-2
LTE Band 41 Extra Configuration Head Linearity

Table 14-3
LTE Band 41 ULCA Head Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	24.7	27.2
Measured Output Power (dBm)	24.29	26.82
Measured SAR (W/kg)	0.113	0.139
Measured Power (mW)	268.53	480.84
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	169.98	208.20
% deviation from expected linearity		0.43%

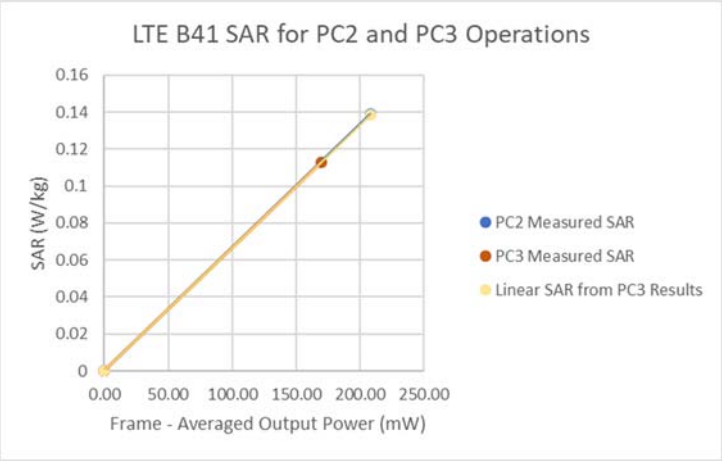


Figure 14-3
LTE Band 41 ULCA Head Linearity

Table 14-4
LTE Band 41 Body-Worn Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	24.7	27.2
Measured Output Power (dBm)	24.61	27
Measured SAR (W/kg)	0.375	0.415
Measured Power (mW)	289.07	501.19
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	182.98	217.01
% deviation from expected linearity		-6.69%

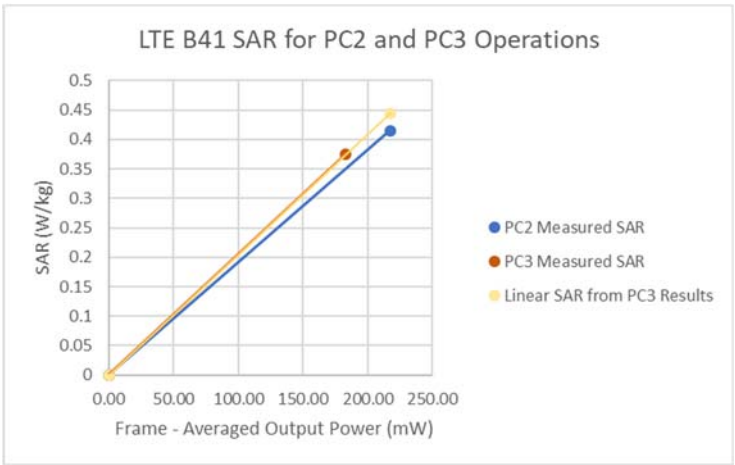


Figure 14-4
LTE Band 41 Body-Worn Linearity

Table 14-5
LTE Band 41 Extra Configuration Body-Worn Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	24.7	27.2
Measured Output Power (dBm)	24.26	26.7
Measured SAR (W/kg)	0.413	0.502
Measured Power (mW)	266.69	467.74
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	168.81	202.53
% deviation from expected linearity		1.31%

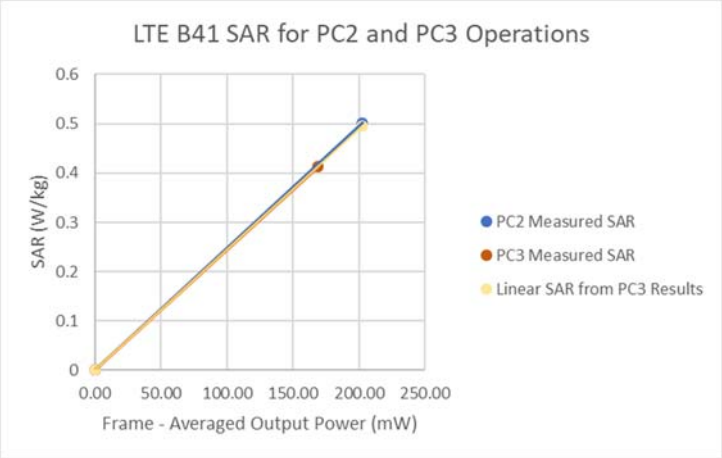


Figure 14-5
LTE Band 41 Extra Configuration Body-Worn Linearity

Table 14-6
LTE Band 41 ULCA Body-Worn Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	24.7	27.2
Measured Output Power (dBm)	24.29	26.82
Measured SAR (W/kg)	0.41	0.536
Measured Power (mW)	268.53	480.84
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	169.98	208.20
% deviation from expected linearity		6.73%

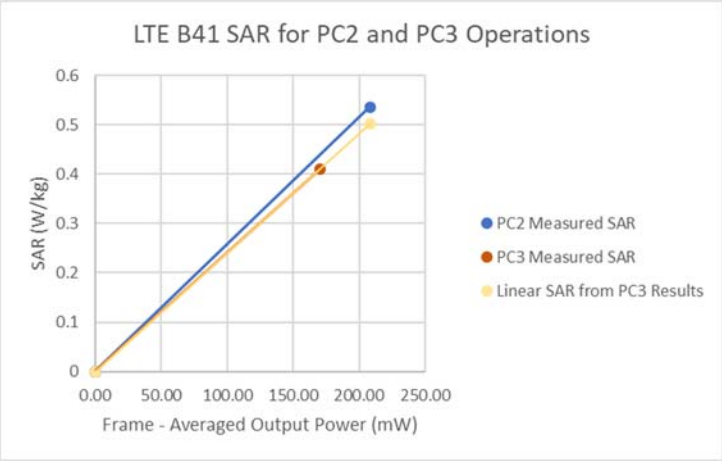


Figure 14-6
LTE Band 41 ULCA Body-Worn Linearity

Table 14-7
LTE Band 41 Hotspot Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	24.7	27.2
Measured Output Power (dBm)	24.08	26.6
Measured SAR (W/kg)	0.652	0.744
Measured Power (mW)	255.86	457.09
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	161.96	197.92
% deviation from expected linearity		-6.62%

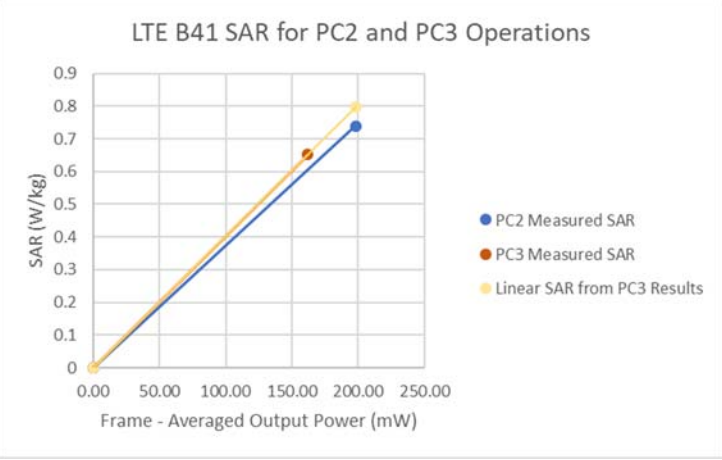


Figure 14-7
LTE Band 41 Hotspot Linearity

Table 14-8
LTE Band 41 ULCA Hotspot Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	24.7	27.2
Measured Output Power (dBm)	24.01	26.45
Measured SAR (W/kg)	0.632	0.691
Measured Power (mW)	251.77	441.57
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	159.37	191.20
% deviation from expected linearity		-8.87%

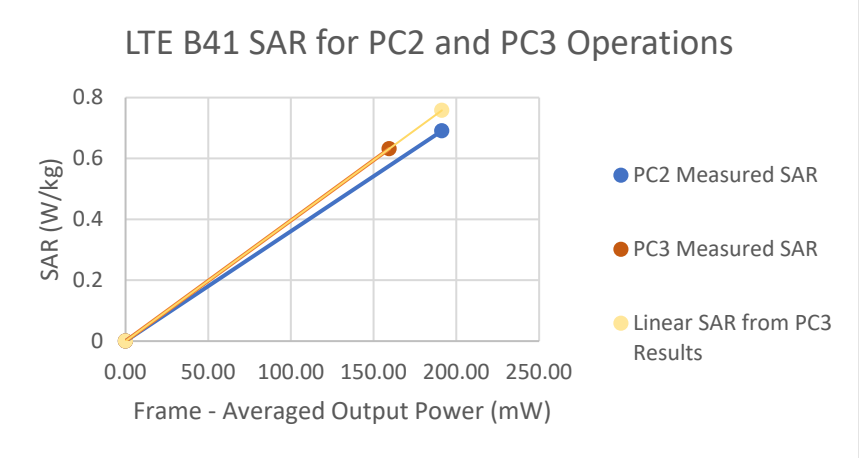


Figure 14-8
LTE Band 41 ULCA Hotspot Linearity

Table 14-9
LTE Band 41 Phablet Reduced Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	23	25.5
Measured Output Power (dBm)	22.41	24.94
Measured SAR (W/kg)	2.03	2.73
Measured Power (mW)	174.18	311.89
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	110.26	135.05
% deviation from expected linearity		9.79%

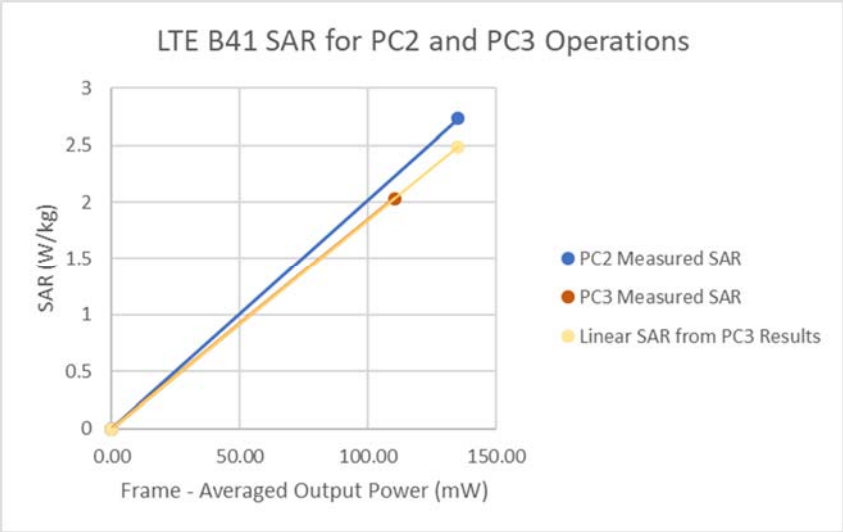


Figure 14-9
LTE Band 41 Phablet Linearity

Table 14-10
LTE Band 41 ULCA Phablet Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	23	25.5
Measured Output Power (dBm)	22.27	24.99
Measured SAR (W/kg)	2.06	2.76
Measured Power (mW)	168.66	315.50
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	106.76	136.61
% deviation from expected linearity		4.70%

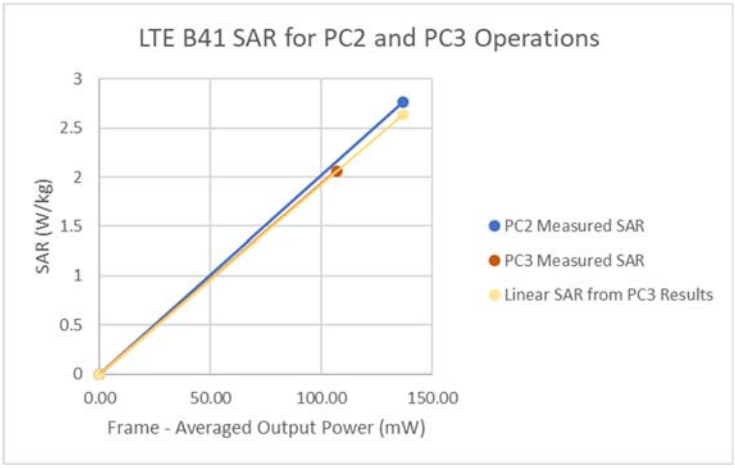


Figure 14-10
LTE Band 41 ULCA Phablet Linearity

15 EQUIPMENT LIST

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Agilent	8753ES	S-Parameter Network Analyzer	3/11/2019	Annual	3/11/2020	US39170122
Agilent	8753ES	S-Parameter Network Analyzer	8/26/2019	Annual	8/26/2020	MY40000670
Agilent	8753ES	S-Parameter Vector Network Analyzer	9/19/2019	Annual	9/19/2020	MY40003841
Agilent	E4438C	ESG Vector Signal Generator	5/22/2019	Annual	5/22/2020	MY45091346
Agilent	E4438C	ESG Vector Signal Generator	5/23/2019	Annual	5/23/2020	MY47270002
Agilent	E4438C	ESG Vector Signal Generator	3/8/2019	Biennial	3/8/2021	MY42082385
Agilent	E4438C	ESG Vector Signal Generator	3/11/2019	Biennial	3/11/2021	MY45090700
Agilent	E5515C	8960 Series 10 Wireless Communications Test Set	12/18/2018	Annual	12/18/2019	GB42230325
Agilent	E5515C	Wireless Communications Test Set	6/26/2019	Annual	6/26/2020	MY50267125
Agilent	E5515C	Wireless Communications Test Set	9/25/2019	Annual	9/25/2020	GB43304278
Agilent	E5515C	Wireless Communications Test Set	2/7/2018	Triennial	2/7/2021	GB43304447
Agilent	N5182A	MXG Vector Signal Generator	7/10/2019	Annual	7/10/2020	MY47420800
Agilent	N9020A	MXA Signal Analyzer	4/20/2019	Annual	4/20/2020	US46470561
Agilent	N9030A	PXA Signal Analyzer (44GHz)	6/12/2019	Annual	6/12/2020	MY52350166
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433972
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433974
Amplifier Research	15S1G6	Amplifier	CBT	N/A	CBT	433976
Anritsu	MA24106A	USB Power Sensor	1/31/2019	Annual	1/31/2020	1244524
Anritsu	MA24106A	USB Power Sensor	3/5/2019	Annual	3/5/2020	1344555
Anritsu	MA24106A	USB Power Sensor	4/17/2019	Annual	4/17/2020	1344556
Anritsu	MA24106A	USB Power Sensor	7/15/2019	Annual	7/15/2020	1349513
Anritsu	MA2411B	Pulse Power Sensor	3/6/2019	Annual	3/6/2020	1339018
Anritsu	MA2411B	Pulse Power Sensor	6/11/2019	Annual	6/11/2020	1207364
Anritsu	MA2411B	Pulse Power Sensor	8/8/2019	Annual	8/8/2020	1339008
Anritsu	MT8820C	Radio Communication Analyzer	3/29/2019	Annual	3/29/2020	6201300731
Anritsu	MT8821C	Radio Communication Analyzer	1/25/2019	Annual	1/25/2020	6261895213
Anritsu	MT8821C	Radio Communication Analyzer	3/6/2019	Annual	3/6/2020	6201381794
Anritsu	MT8821C	Radio Communication Analyzer	5/13/2019	Annual	5/13/2020	6201524637
Anritsu	MT8862A	Wireless Connectivity Test Set	8/8/2019	Annual	8/8/2020	6261782395
Anritsu	ML2496A	Power Meter	11/6/2019	Annual	11/6/2020	1405003
Control Company	4040	Therm./Clock/Humidity Monitor	6/29/2019	Biennial	6/29/2021	192291470
Control Company	4040	Therm./Clock/Humidity Monitor	6/29/2019	Biennial	6/29/2021	192291455
Control Company	4040	Therm./Clock/Humidity Monitor	6/29/2019	Biennial	6/29/2021	192291460
Control Company	4040	Therm./Clock/Humidity Monitor	6/29/2019	Biennial	6/29/2021	192291463
Control Company	4352	Long Stem Thermometer	6/26/2019	Biennial	6/26/2021	192282744
Control Company	4352	Long Stem Thermometer	6/26/2019	Biennial	6/26/2021	192282753
Control Company	4352	Ultra Long Stem Thermometer	11/29/2018	Biennial	11/29/2020	181766801
Control Company	4352	Ultra Long Stem Thermometer	11/29/2018	Biennial	11/29/2020	181766777
Keysight	772D	Dual Directional Coupler	CBT	N/A	CBT	MY52180215
Keysight Technologies	85033E	Standard Mechanical Calibration Kit (DC to 9GHz, 3.5mm)	7/2/2019	Annual	7/2/2020	MY53401181
Keysight Technologies	N6705B	DC Power Analyzer	4/27/2019	Biennial	4/27/2021	MY53004059
MCL	BW-N6W5+	6dB Attenuator	CBT	N/A	CBT	1139
Mini Circuits	PWR-SEN-4GHS	USB Power Sensor	4/19/2019	Annual	4/19/2020	11401010036
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	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
Pasternack	NC-100	Torque Wrench	5/23/2018	Biennial	5/23/2020	N/A
Pasternack	PE2209-10	Bidirectional Coupler	CBT	N/A	CBT	N/A
Pasternack	PE2208-6	Bidirectional Coupler	CBT	N/A	CBT	N/A
Rohde & Schwarz	CMW500	Radio Communication Tester	8/26/2019	Annual	8/26/2020	100976
Rohde & Schwarz	CMW500	Radio Communication Tester	8/27/2019	Annual	8/27/2020	116743
Rohde & Schwarz	CMW500	Radio Communication Tester	10/4/2019	Annual	10/4/2020	166462
Rohde & Schwarz	ZNLE6	Vector Network Analyzer	10/11/2019	Annual	10/11/2020	101307
Rohde& Schwarz	CMW500	Wideband Radio Communication Tester	7/12/2019	Annual	7/12/2020	145645
Rohde& Schwarz	CMW500	Wideband Radio Communication Tester	7/24/2019	Annual	7/24/2020	151849
SPEAG	D750V3	750 MHz SAR Dipole	10/19/2018	Biennial	10/19/2020	1161
SPEAG	D750V3	750 MHz SAR Dipole	1/15/2018	Biennial	1/15/2020	1003
SPEAG	D835V2	835 MHz SAR Dipole	3/13/2019	Annual	3/13/2020	4d047
SPEAG	D835V2	835 MHz SAR Dipole	1/22/2019	Annual	1/22/2020	4d132
SPEAG	D1765V2	1765 MHz SAR Dipole	5/23/2018	Biennial	5/23/2020	1008
SPEAG	D1750V2	1750 MHz SAR Dipole	5/15/2019	Annual	5/15/2020	1148
SPEAG	D1750V2	1750 MHz SAR Dipole	10/22/2018	Biennial	10/22/2020	1150
SPEAG	D1900V2	1900 MHz SAR Dipole	2/21/2019	Annual	2/21/2020	5d148
SPEAG	D1900V2	1900 MHz SAR Dipole	10/23/2018	Biennial	10/23/2020	5d149
SPEAG	D1900V2	1900 MHz SAR Dipole	10/23/2018	Biennial	10/23/2020	5d080
SPEAG	D2450V2	2450 MHz SAR Dipole	9/11/2017	Triennial	9/11/2020	797
SPEAG	D2600V2	2600 MHz SAR Dipole	4/11/2018	Biennial	4/11/2020	1004
SPEAG	D2600V2	2600 MHz SAR Dipole	6/14/2019	Annual	6/14/2020	1064
SPEAG	D2450V2	2450 MHz SAR Dipole	8/14/2019	Annual	8/14/2020	719
SPEAG	D5GHzV2	5 GHz SAR Dipole	8/10/2018	Biennial	8/10/2020	1237
SPEAG	D5GHzV2	5 GHz SAR Dipole	9/17/2019	Annual	9/17/2020	1191
SPEAG	DAK-3.5	Dielectric Assessment Kit	5/7/2019	Annual	5/7/2020	1070
SPEAG	DAK-3.5	Dielectric Assessment Kit	10/22/2019	Annual	10/22/2020	1091
SPEAG	DAE4	Dasy Data Acquisition Electronics	6/20/2019	Annual	6/20/2020	1334
SPEAG	DAE4	Dasy Data Acquisition Electronics	9/17/2019	Annual	9/17/2020	1333
SPEAG	DAE4	Dasy Data Acquisition Electronics	2/13/2019	Annual	2/13/2020	665
SPEAG	DAE4	Dasy Data Acquisition Electronics	2/14/2019	Annual	2/14/2020	1272
SPEAG	DAE4	Dasy Data Acquisition Electronics	5/8/2019	Annual	5/8/2020	859
SPEAG	DAE4	Dasy Data Acquisition Electronics	7/11/2019	Annual	7/11/2020	1322
SPEAG	DAE4	Dasy Data Acquisition Electronics	4/18/2019	Annual	4/18/2020	1407
SPEAG	DAE4	Dasy Data Acquisition Electronics	1/15/2019	Annual	1/15/2020	1530
SPEAG	DAE4	Dasy Data Acquisition Electronics	7/11/2019	Annual	7/11/2020	1323
SPEAG	EX3DV4	SAR Probe	6/19/2019	Annual	6/19/2020	7409
SPEAG	EX3DV4	SAR Probe	9/19/2019	Annual	9/19/2020	7551
SPEAG	EX3DV4	SAR Probe	2/19/2019	Annual	2/19/2020	7417
SPEAG	EX3DV4	SAR Probe	2/19/2019	Annual	2/19/2020	3914
SPEAG	EX3DV4	SAR Probe	5/16/2019	Annual	5/16/2020	7406
SPEAG	EX3DV4	SAR Probe	7/16/2019	Annual	7/16/2020	7410
SPEAG	EX3DV4	SAR Probe	4/24/2019	Annual	4/24/2020	7357
SPEAG	EX3DV4	SAR Probe	1/24/2019	Annual	1/24/2020	7488
SPEAG	EX3DV4	SAR Probe	7/15/2019	Annual	7/15/2020	7547
SPEAG	EX3DV4	SAR Probe	8/16/2019	Annual	8/16/2020	7308

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]

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APPENDIX A: SAR TEST PLOTS

PCTEST ENGINEERING LABORATORY, INC.

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00251

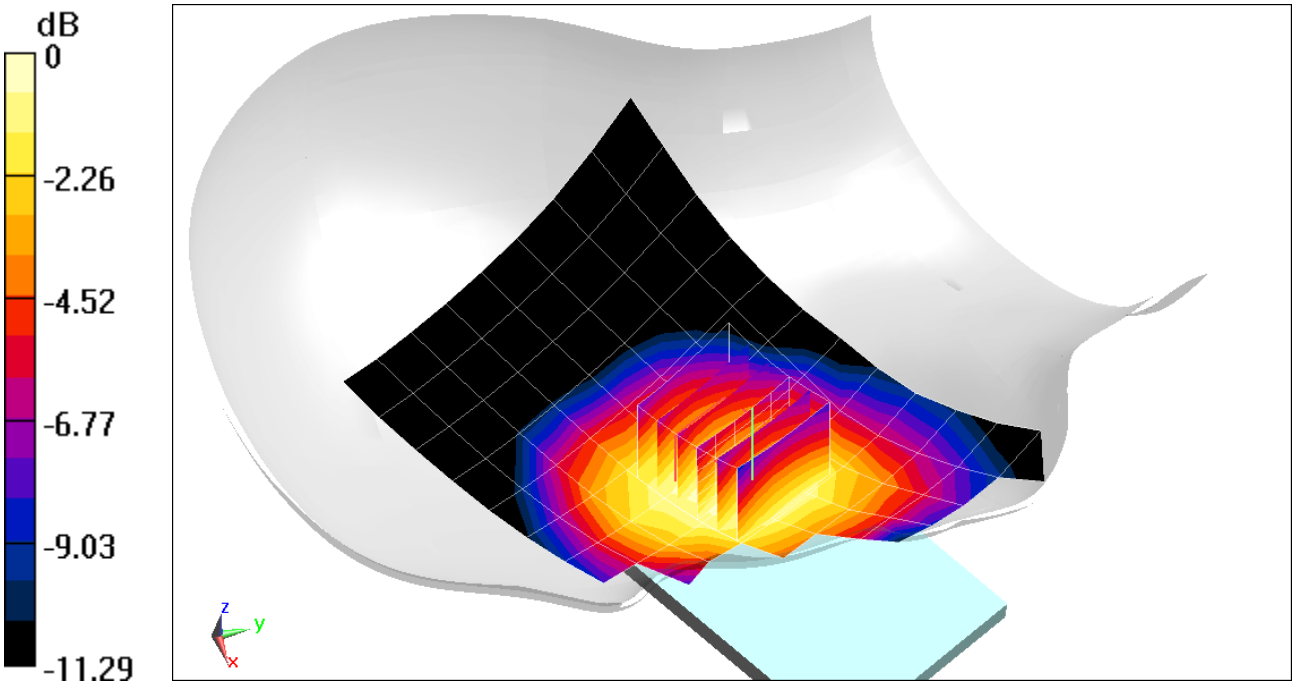
Communication System: UID 0, GSM GPRS; 4 Tx slots; Frequency: 836.6 MHz; Duty Cycle: 1:2.076
Medium: 835 Head; Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.9 S/m; ε_r = 40.426; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 11-11-2019; Ambient Temp: 20.5°C; Tissue Temp: 20.5°C

Probe: EX3DV4 - SN7551; ConvF(9.88, 9.88, 9.88) @ 836.6 MHz; Calibrated: 9/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1333; Calibrated: 9/17/2019
Phantom: Twin-SAM V5.0 (30deg probe tilt); Type: QD 000 P40 CD; Serial: 1792
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

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

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.63 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.478 W/kg
SAR(1 g) = 0.371 W/kg



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

PCTEST ENGINEERING LABORATORY, INC.

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00269

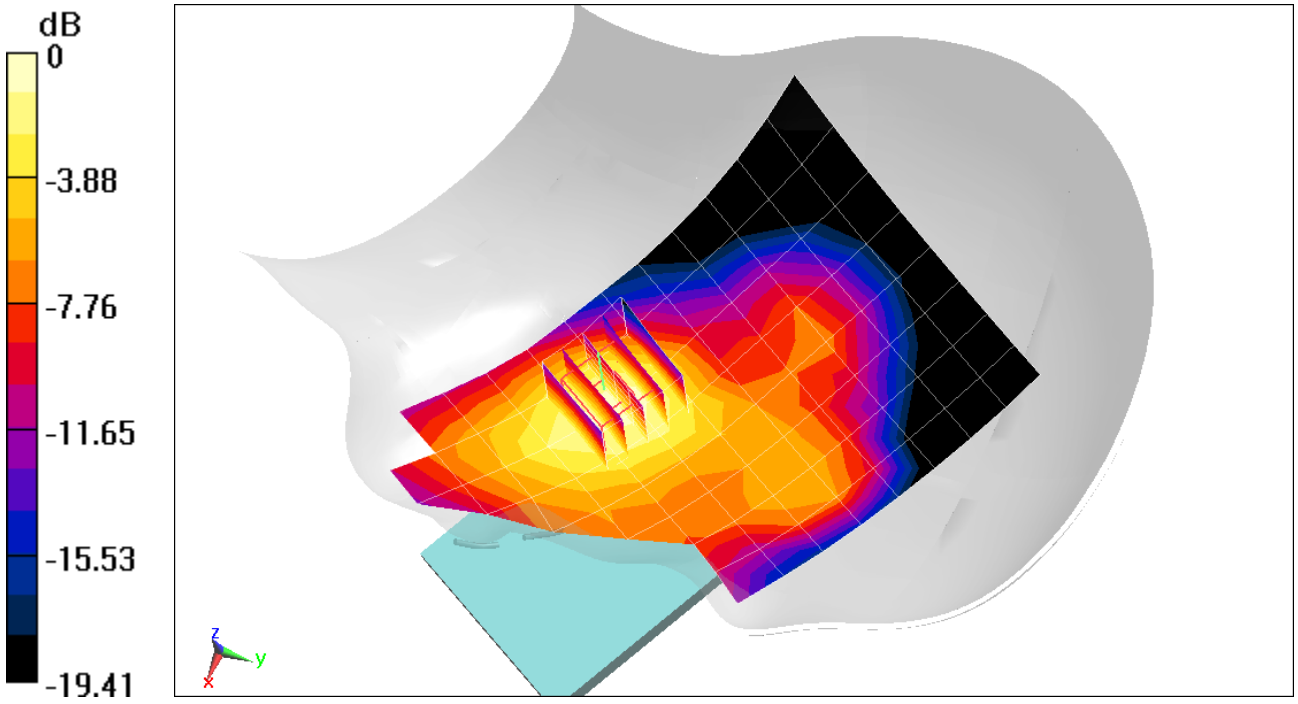
Communication System: UID 0, GSM GPRS; 4 Tx slots; Frequency: 1880 MHz; Duty Cycle: 1:2.076
Medium: 1900 Head; Medium parameters used:
f = 1880 MHz; σ = 1.428 S/m; ε_r = 40.323; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 11-13-2019; Ambient Temp: 22.0°C; Tissue Temp: 20.6°C

Probe: EX3DV4 - SN7551; ConvF(8.05, 8.05, 8.05) @ 1880 MHz; Calibrated: 9/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1333; Calibrated: 9/17/2019
Phantom: Twin-SAM V5.0 (30deg probe tilt); Type: QD 000 P40 CD; Serial: 1792
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

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

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.38 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 0.535 W/kg
SAR(1 g) = 0.320 W/kg



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

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00269

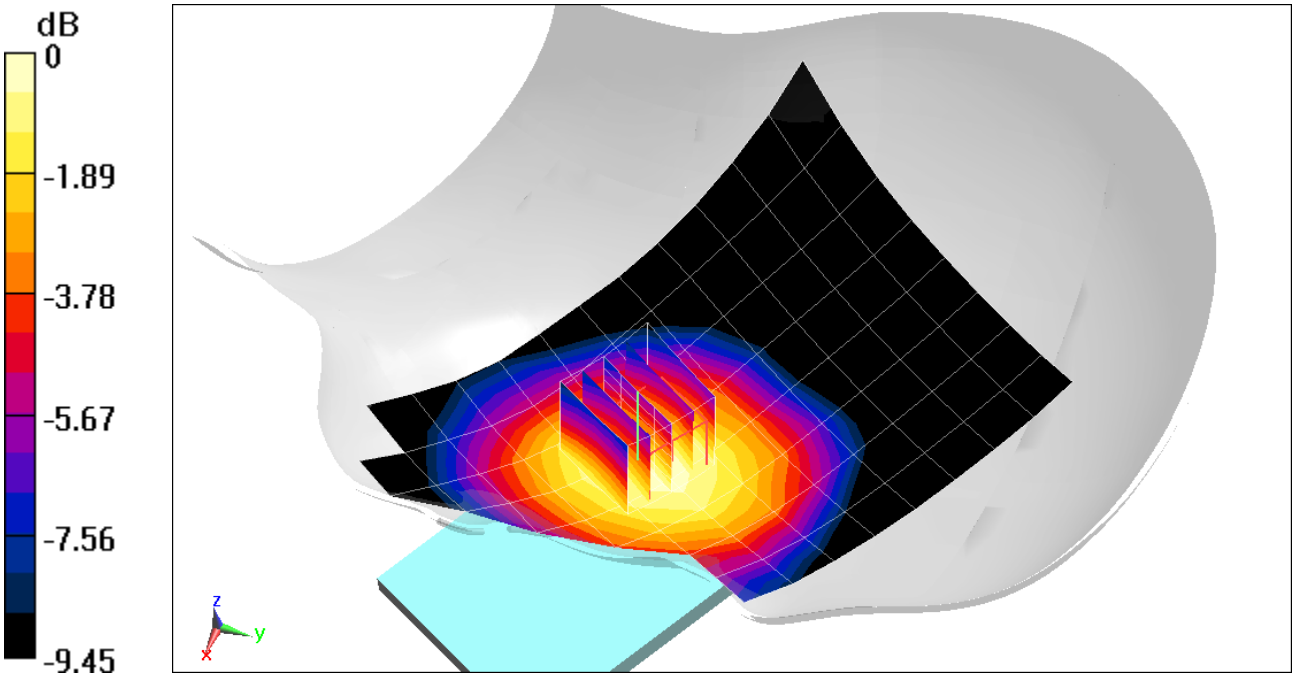
Communication System: UID 0, UMTS; Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium: 750-2450 Head; Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.919 S/m; ε_r = 41.379; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 11-14-2019; Ambient Temp: 22.1°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN7417; ConvF(10.07, 10.07, 10.07) @ 836.6 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/13/2019
Phantom: Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1647
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

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

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.54 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.435 W/kg
SAR(1 g) = 0.337 W/kg



0 dB = 0.399 W/kg = -3.99 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00269

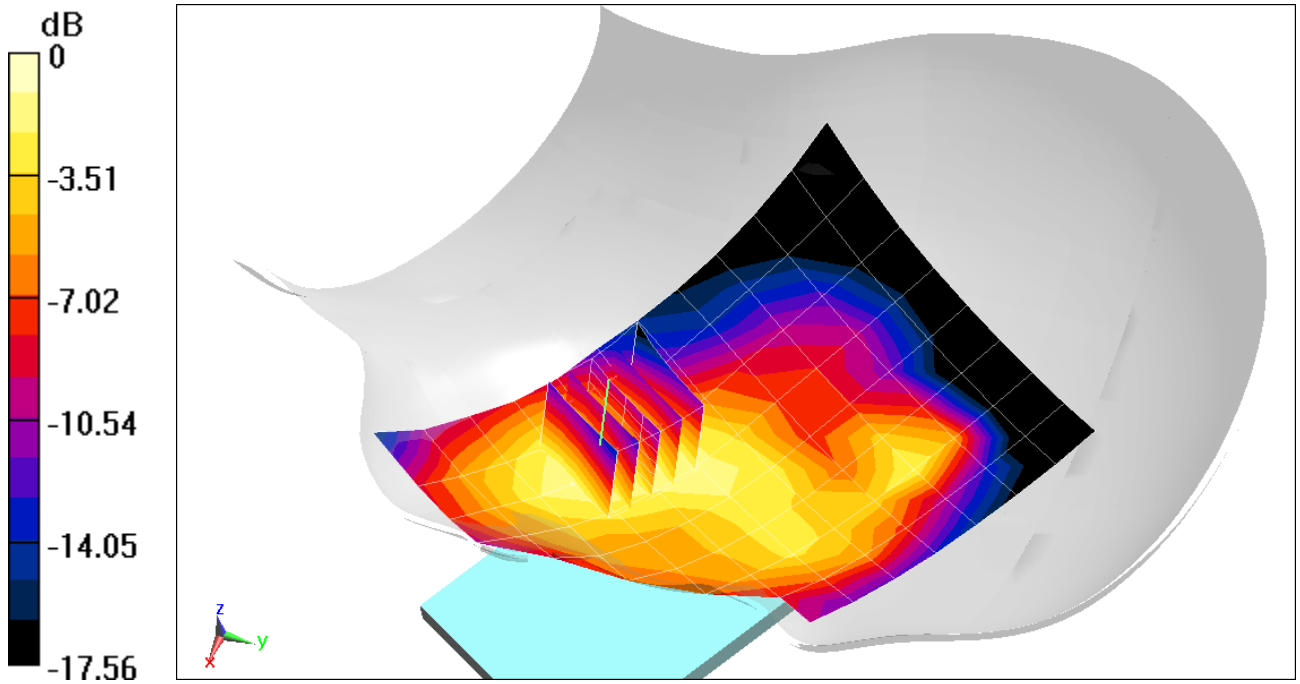
Communication System: UID 0, UMTS; Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium: 1750 Head; Medium parameters used (interpolated):
f = 1732.4 MHz; σ = 1.381 S/m; ε_r = 41.558; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 11-04-2019; Ambient Temp: 22.0°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN3914; ConvF(8.16, 8.16, 8.16) @ 1732.4 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/14/2019
Phantom: Twin-SAM V5.0 Front 30; Type: QD 000 P40 CD; Serial: 1646
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

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 = 14.31 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.477 W/kg
SAR(1 g) = 0.292 W/kg



0 dB = 0.397 W/kg = -4.01 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00251

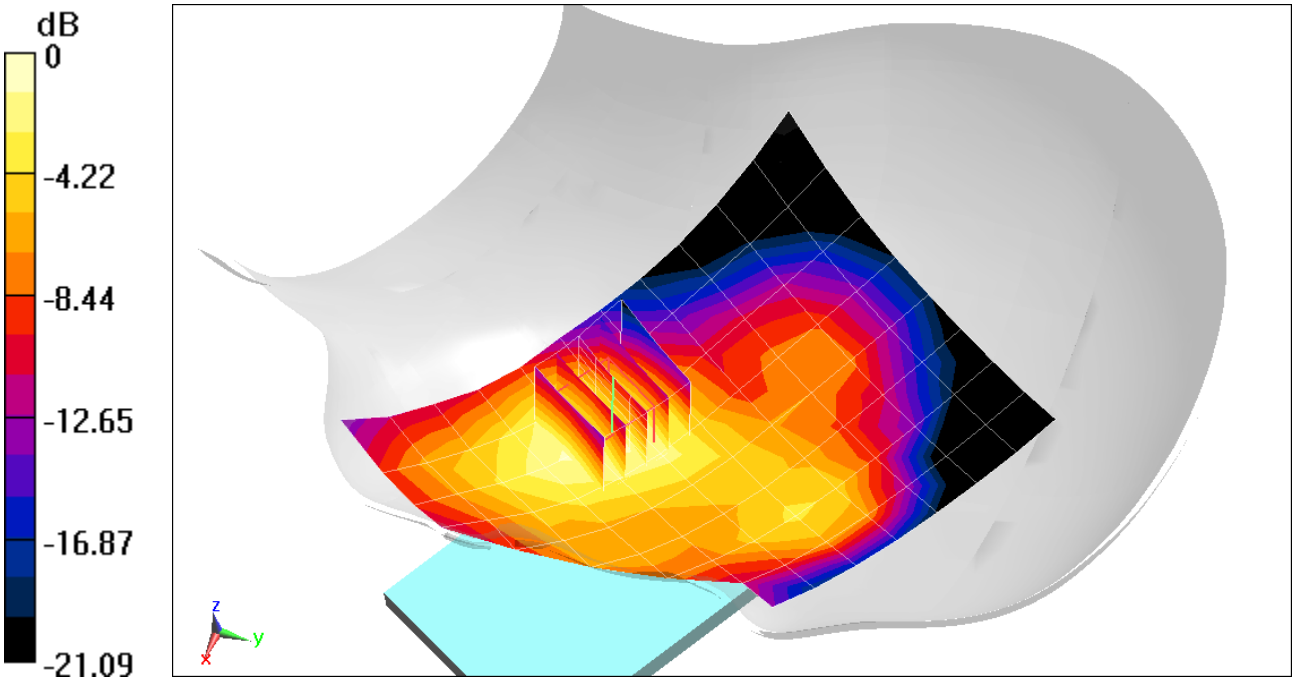
Communication System: UID 0, UMTS; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Head; Medium parameters used:
f = 1880 MHz; σ = 1.435 S/m; ε_r = 39.726; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 11-18-2019; Ambient Temp: 22.8°C; Tissue Temp: 21.5°C

Probe: EX3DV4 - SN7551; ConvF(8.05, 8.05, 8.05) @ 1880 MHz; Calibrated: 9/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1333; Calibrated: 9/17/2019
Phantom: Twin-SAM V5.0 (30deg probe tilt); Type: QD 000 P40 CD; Serial: 1792
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

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 = 16.34 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 0.596 W/kg
SAR(1 g) = 0.363 W/kg



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

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00251

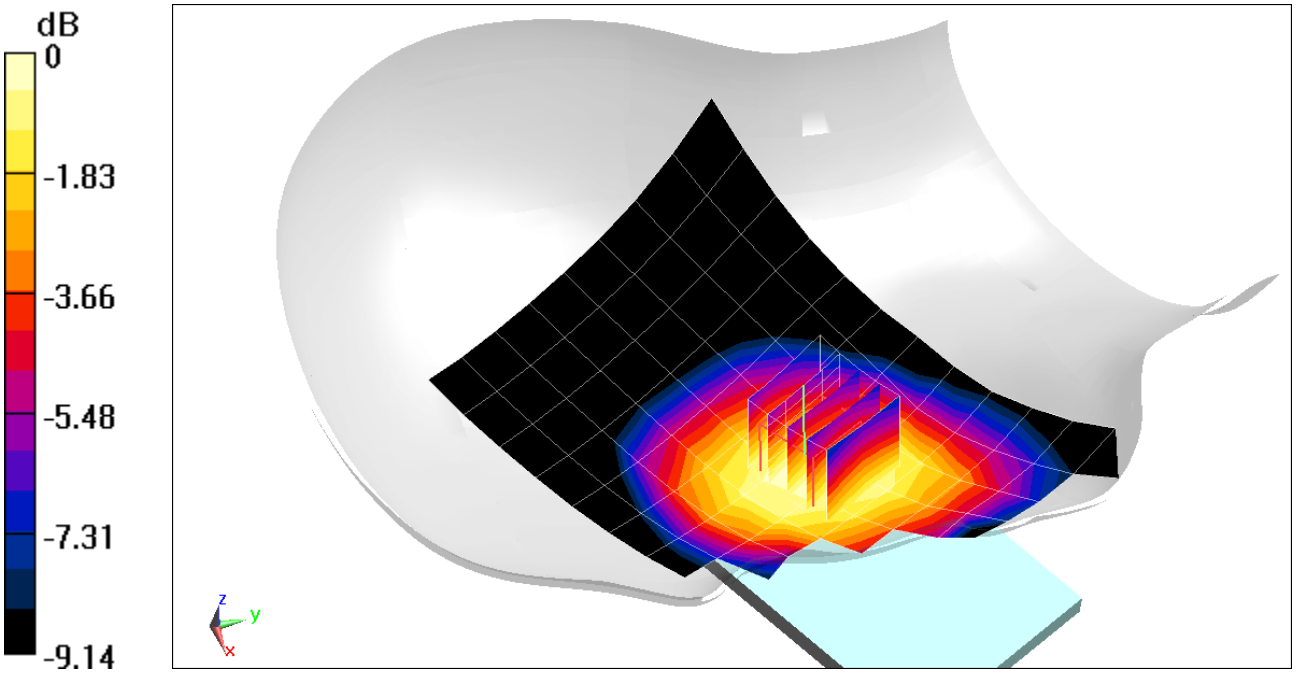
Communication System: UID 0, Cellular CDMA; Frequency: 820.1 MHz; Duty Cycle: 1:1
Medium: 835 Head; Medium parameters used (interpolated):
f = 820.1 MHz; σ = 0.909 S/m; ε_r = 40.789; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 11-20-2019; Ambient Temp: 24.3°C; Tissue Temp: 21.8°C

Probe: EX3DV4 - SN7551; ConvF(9.88, 9.88, 9.88) @ 820.1 MHz; Calibrated: 9/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1333; Calibrated: 9/17/2019
Phantom: Twin-SAM V5.0 (30deg probe tilt); Type: QD 000 P40 CD; Serial: 1792
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: Cell. CDMA, BC 10, Right Head, Cheek, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.42 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.236 W/kg
SAR(1 g) = 0.185 W/kg



0 dB = 0.217 W/kg = -6.64 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00251

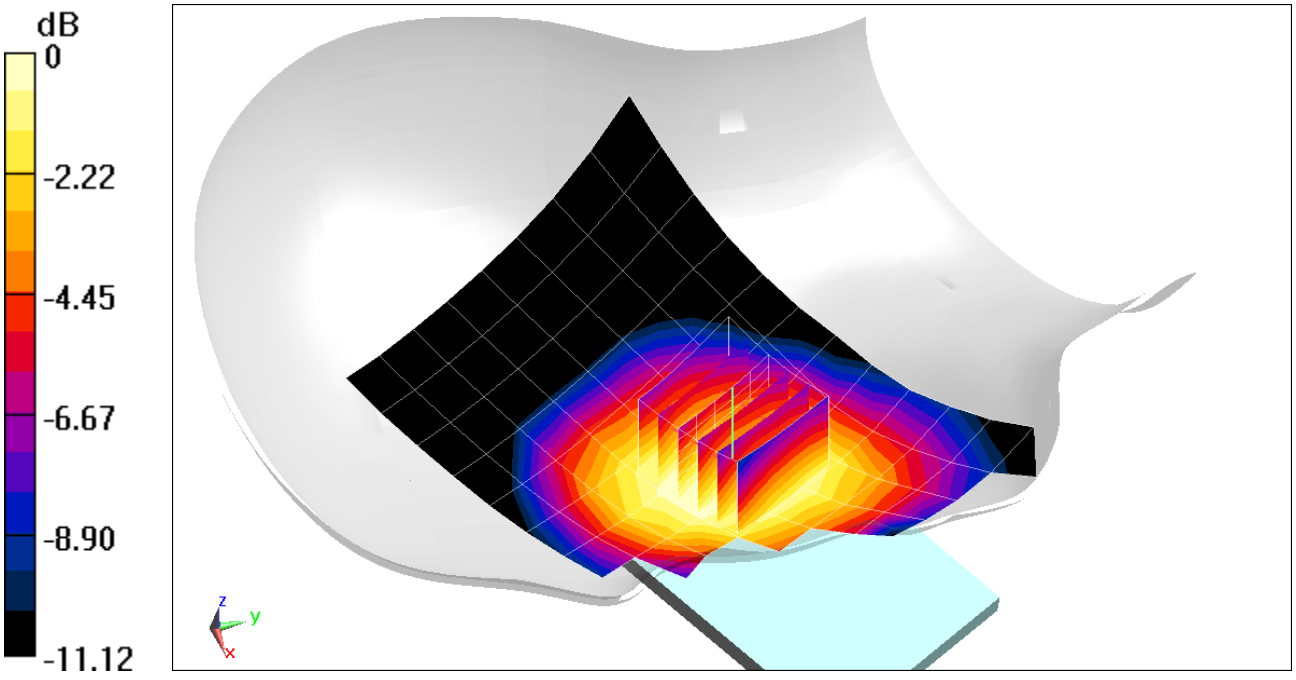
Communication System: UID 0, CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 Head; Medium parameters used (interpolated):
f = 836.52 MHz; σ = 0.915 S/m; ε_r = 40.746; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 11-20-2019; Ambient Temp: 24.3°C; Tissue Temp: 21.8°C

Probe: EX3DV4 - SN7551; ConvF(9.88, 9.88, 9.88) @ 836.52 MHz; Calibrated: 9/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1333; Calibrated: 9/17/2019
Phantom: Twin-SAM V5.0 (30deg probe tilt); Type: QD 000 P40 CD; Serial: 1792
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: Cell. CDMA, BC 0, Right Head, Cheek, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.65 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.317 W/kg
SAR(1 g) = 0.247 W/kg



0 dB = 0.291 W/kg = -5.36 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00251

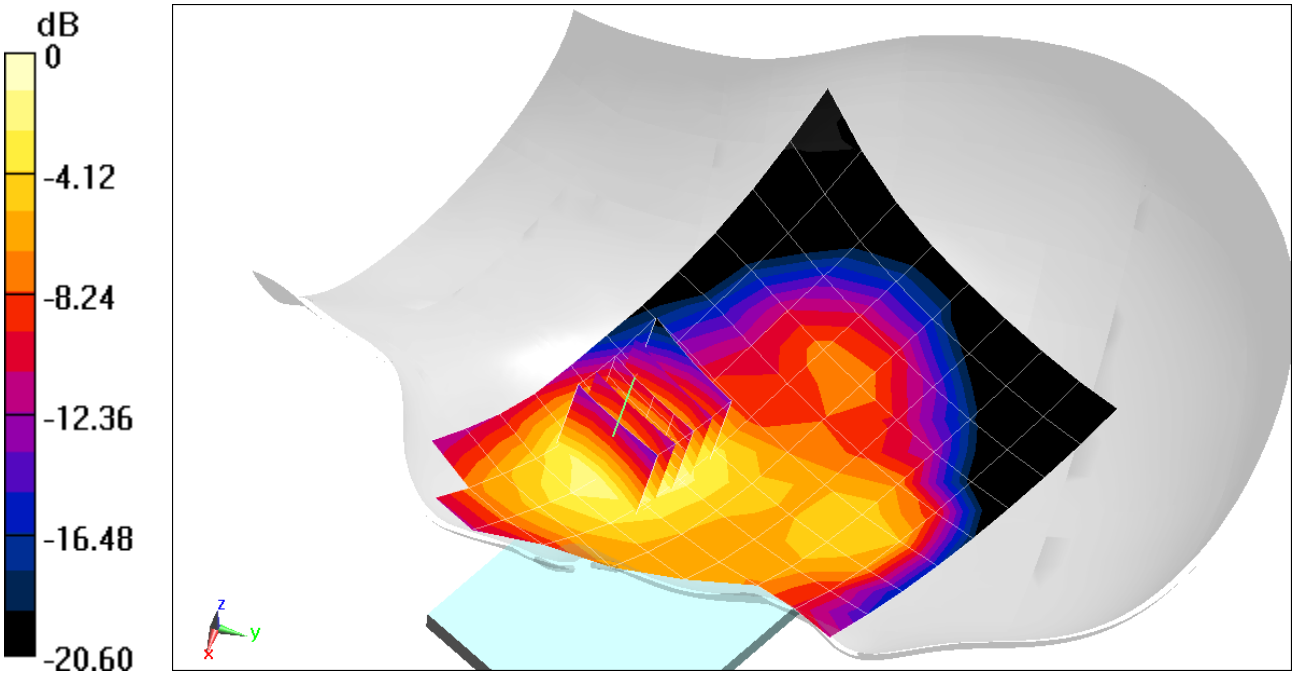
Communication System: UID 0, PCS CDMA; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Head; Medium parameters used:
f = 1880 MHz; σ = 1.435 S/m; ε_r = 39.726; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 11-18-2019; Ambient Temp: 22.8°C; Tissue Temp: 21.5°C

Probe: EX3DV4 - SN7551; ConvF(8.05, 8.05, 8.05) @ 1880 MHz; Calibrated: 9/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1333; Calibrated: 9/17/2019
Phantom: Twin-SAM V5.0 (30deg probe tilt); Type: QD 000 P40 CD; Serial: 1792
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: PCS CDMA, 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 = 13.48 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.416 W/kg
SAR(1 g) = 0.248 W/kg



0 dB = 0.342 W/kg = -4.66 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00277

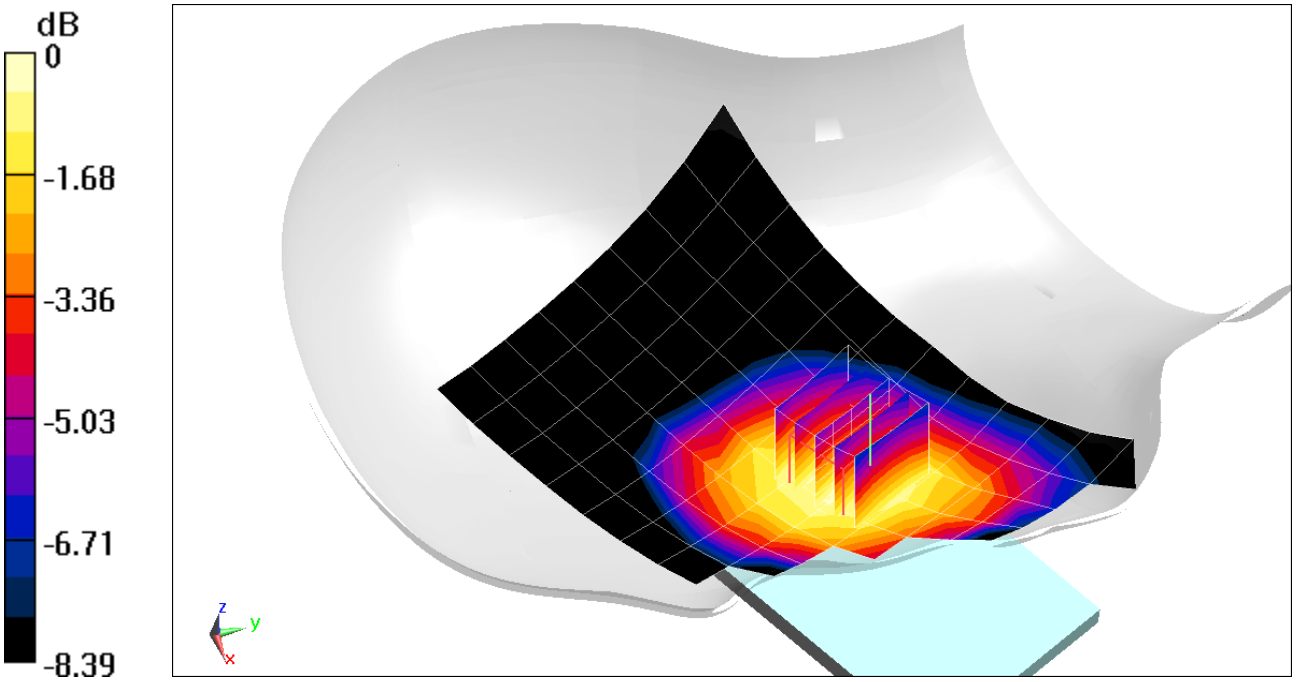
Communication System: UID 0, LTE Band 71; Frequency: 680.5 MHz; Duty Cycle: 1:1
Medium: 750 Head; Medium parameters used (interpolated):
f = 680.5 MHz; σ = 0.872 S/m; ε_r = 41.898; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 11-20-2019; Ambient Temp: 21.8°C; Tissue Temp: 21.5°C

Probe: EX3DV4 - SN7409; ConvF(9.96, 9.96, 9.96) @ 680.5 MHz; Calibrated: 6/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1334; Calibrated: 6/20/2019
Phantom: Front; Type: QD 000 P40 CD; Serial: 1686
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: LTE Band 71, Right Head, Cheek, Mid.ch, 20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.59 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 0.357 W/kg
SAR(1 g) = 0.280 W/kg



0 dB = 0.328 W/kg = -4.84 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00277

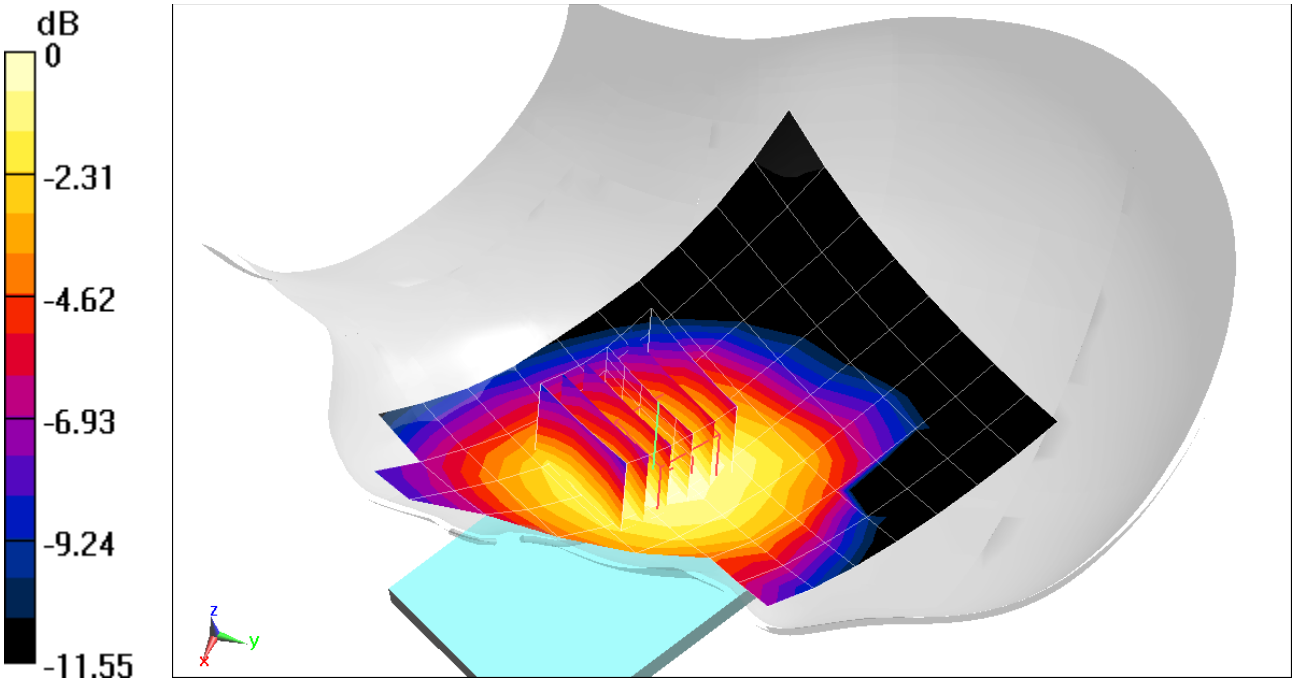
Communication System: UID 0, LTE Band 12; Frequency: 707.5 MHz; Duty Cycle: 1:1
Medium: 750 Head; Medium parameters used (interpolated):
f = 707.5 MHz; σ = 0.881 S/m; ε_r = 41.814; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 11-20-2019; Ambient Temp: 21.8°C; Tissue Temp: 21.5°C

Probe: EX3DV4 - SN7409; ConvF(9.96, 9.96, 9.96) @ 707.5 MHz; Calibrated: 6/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1334; Calibrated: 6/20/2019
Phantom: Front; Type: QD 000 P40 CD; Serial: 1686
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: LTE Band 12, Left Head, Cheek, Mid.ch, QPSK, 10 MHz Bandwidth, 1 RB, 25 RB Offset

Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.03 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.410 W/kg
SAR(1 g) = 0.327 W/kg;



0 dB = 0.383 W/kg = -4.17 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00277

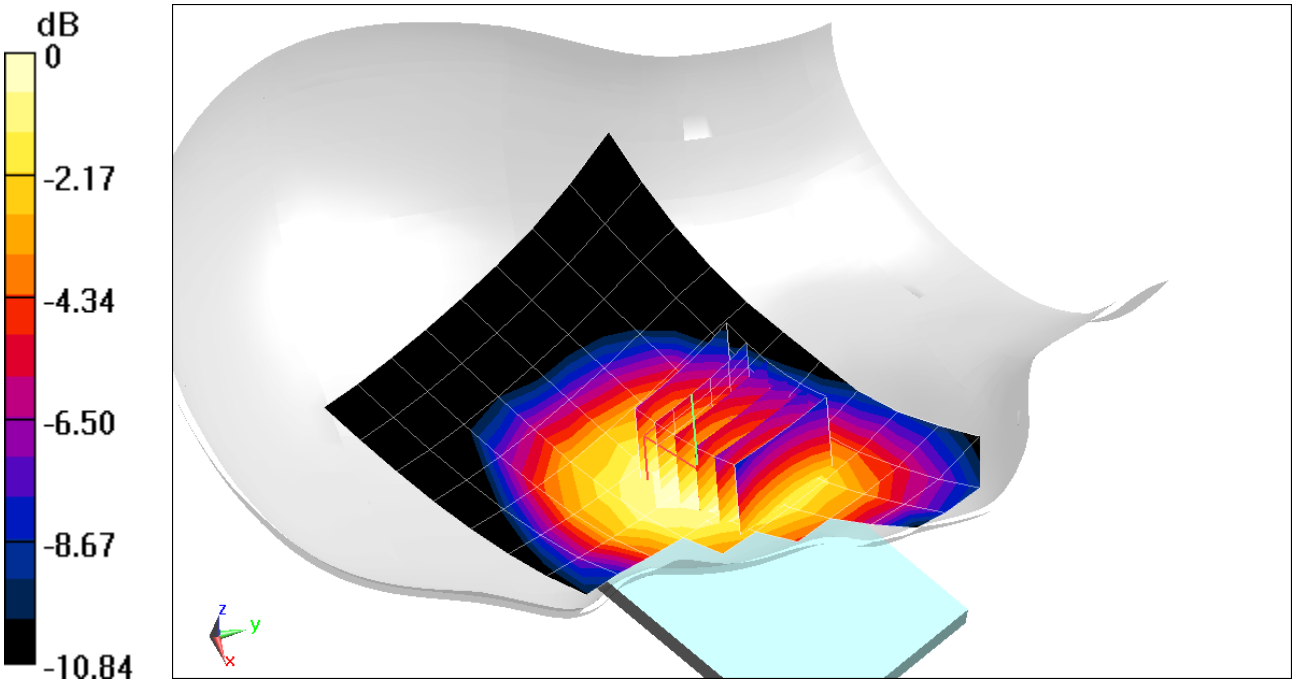
Communication System: UID 0, LTE Band 13; Frequency: 782 MHz; Duty Cycle: 1:1
Medium: 750 Head; Medium parameters used (interpolated):
f = 782 MHz; σ = 0.908 S/m; ε_r = 41.604; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 11-20-2019; Ambient Temp: 21.8°C; Tissue Temp: 21.5°C

Probe: EX3DV4 - SN7409; ConvF(9.96, 9.96, 9.96) @ 782 MHz; Calibrated: 6/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1334; Calibrated: 6/20/2019
Phantom: Front; Type: QD 000 P40 CD; Serial: 1686
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

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 (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.68 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 0.365 W/kg
SAR(1 g) = 0.284 W/kg



0 dB = 0.335 W/kg = -4.75 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00285

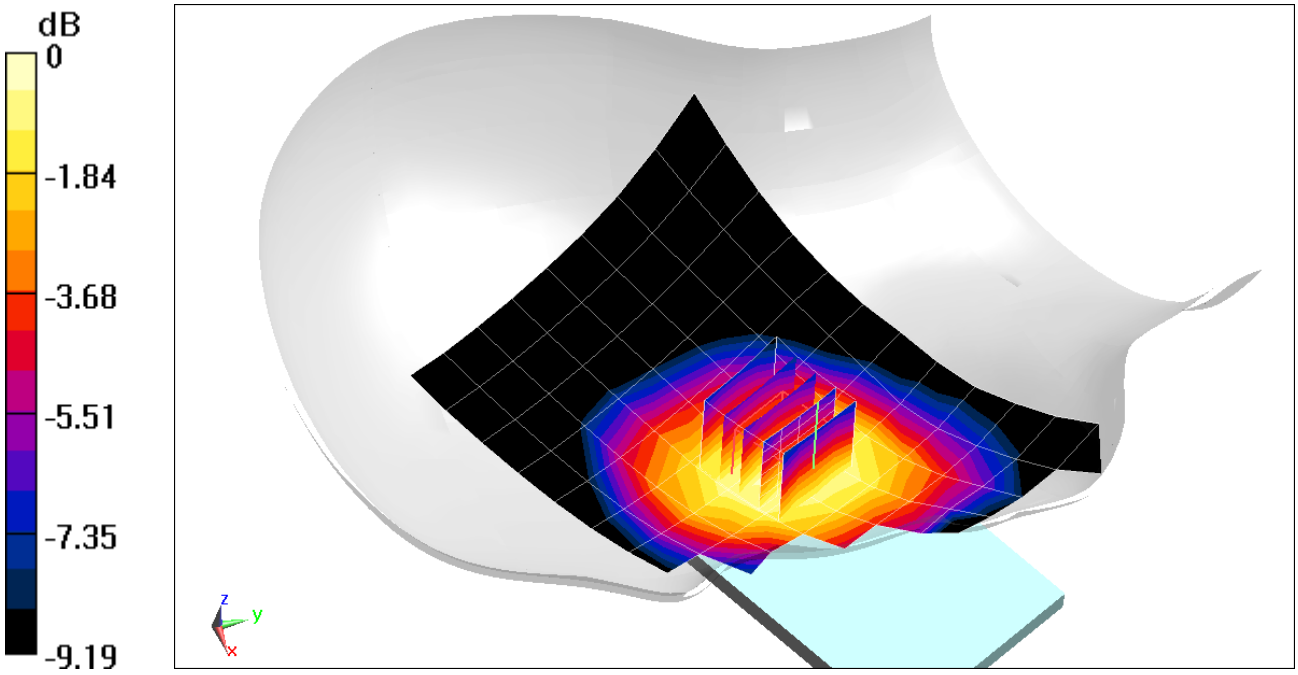
Communication System: UID 0, LTE Band 26; Frequency: 831.5 MHz; Duty Cycle: 1:1
Medium: 835 Head; Medium parameters used (interpolated):
$f = 831.5$ MHz; $\sigma = 0.913$ S/m; $\varepsilon_r = 40.76$; $\rho = 1000$ kg/m^3
Phantom section: Right Section

Test Date: 11-20-2019; Ambient Temp: 24.3°C; Tissue Temp: 21.8°C

Probe: EX3DV4 - SN7551; ConvF(9.88, 9.88, 9.88) @ 831.5 MHz; Calibrated: 9/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1333; Calibrated: 9/17/2019
Phantom: Twin-SAM V5.0 (30deg probe tilt); Type: QD 000 P40 CD; Serial: 1792
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: LTE Band 26 (Cell.), Right Head, Cheek, Mid.ch, 15 MHz Bandwidth, QPSK, 1 RB, 36 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.54 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.369 W/kg
SAR(1 g) = 0.275 W/kg



0 dB = 0.342 W/kg = -4.66 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00285

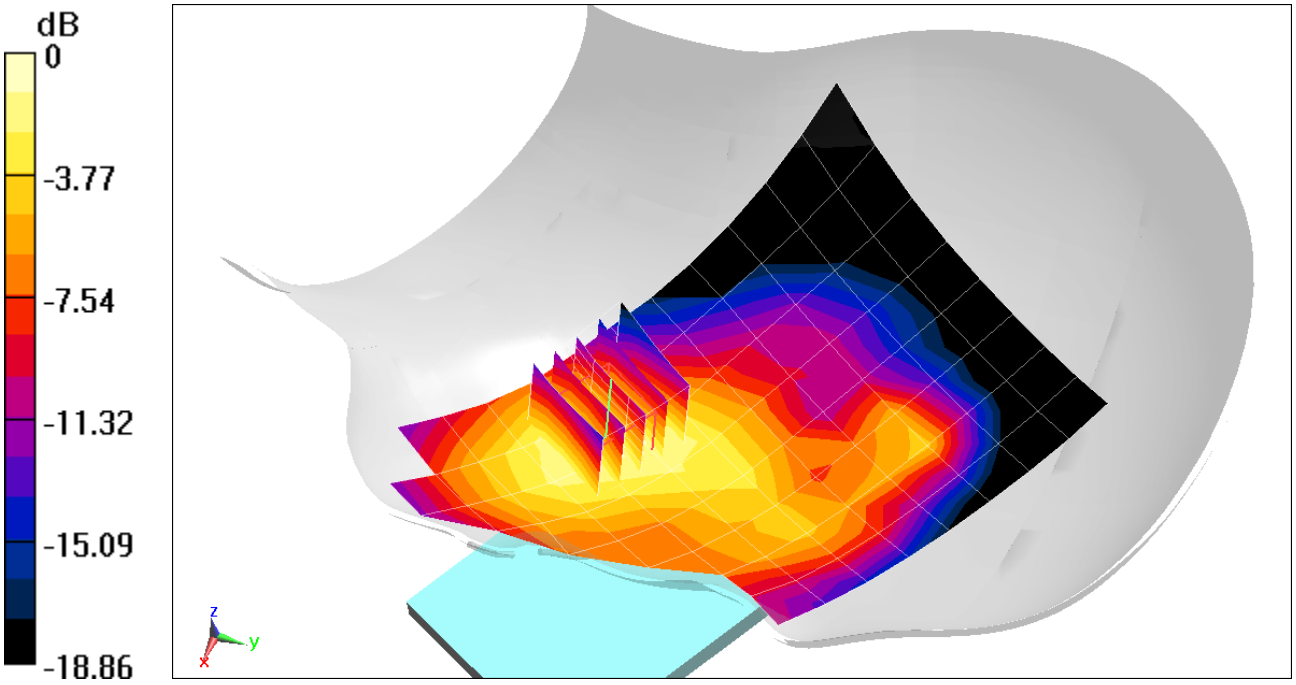
Communication System: UID 0, LTE Band 66 (AWS); Frequency: 1720 MHz; Duty Cycle: 1:1
Medium: 1750 Head; Medium parameters used:
f = 1720 MHz; σ = 1.323 S/m; ε_r = 39.05; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 11-20-2019; Ambient Temp: 24.3°C; Tissue Temp: 21.8°C

Probe: EX3DV4 - SN7551; ConvF(8.34, 8.34, 8.34) @ 1720 MHz; Calibrated: 9/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1333; Calibrated: 9/17/2019
Phantom: Twin-SAM V5.0 (30deg probe tilt); Type: QD 000 P40 CD; Serial: 1792
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: LTE Band 66 (AWS), Left Head, Cheek, Low.ch, 20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.97 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.465 W/kg
SAR(1 g) = 0.285 W/kg



0 dB = 0.404 W/kg = -3.94 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00285

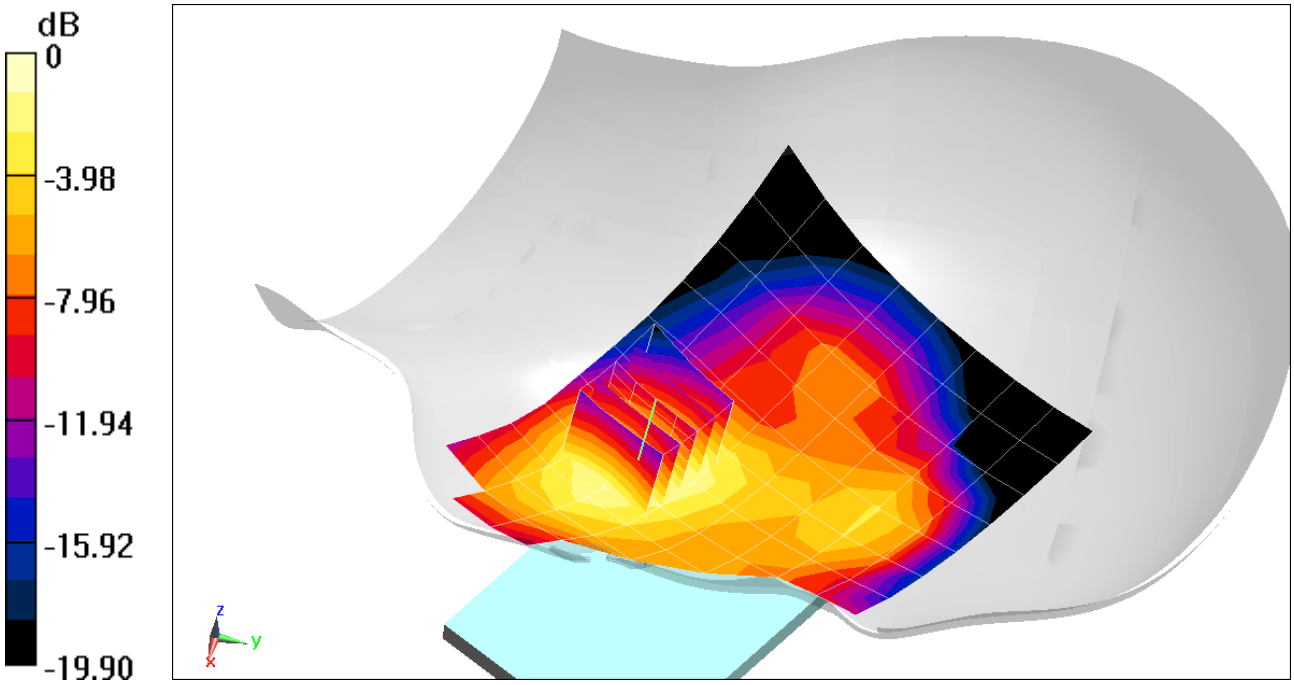
Communication System: UID 0, LTE Band 25 (PCS); Frequency: 1882.5 MHz; Duty Cycle: 1:1
Medium: 1900 Head; Medium parameters used (interpolated):
f = 1882.5 MHz; σ = 1.436 S/m; ε_r = 39.724; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 11-18-2019; Ambient Temp: 22.8°C; Tissue Temp: 21.5°C

Probe: EX3DV4 - SN7551; ConvF(8.05, 8.05, 8.05) @ 1882.5 MHz; Calibrated: 9/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1333; Calibrated: 9/17/2019
Phantom: Twin-SAM V5.0 (30deg probe tilt); Type: QD 000 P40 CD; Serial: 1792
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: LTE Band 25 (PCS), Left Head, Cheek, Mid.ch, 20 MHz Bandwidth, QPSK, 1 RB, 50 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 = 18.13 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 0.638 W/kg
SAR(1 g) = 0.406 W/kg



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

PCTEST ENGINEERING LABORATORY, INC.

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00285

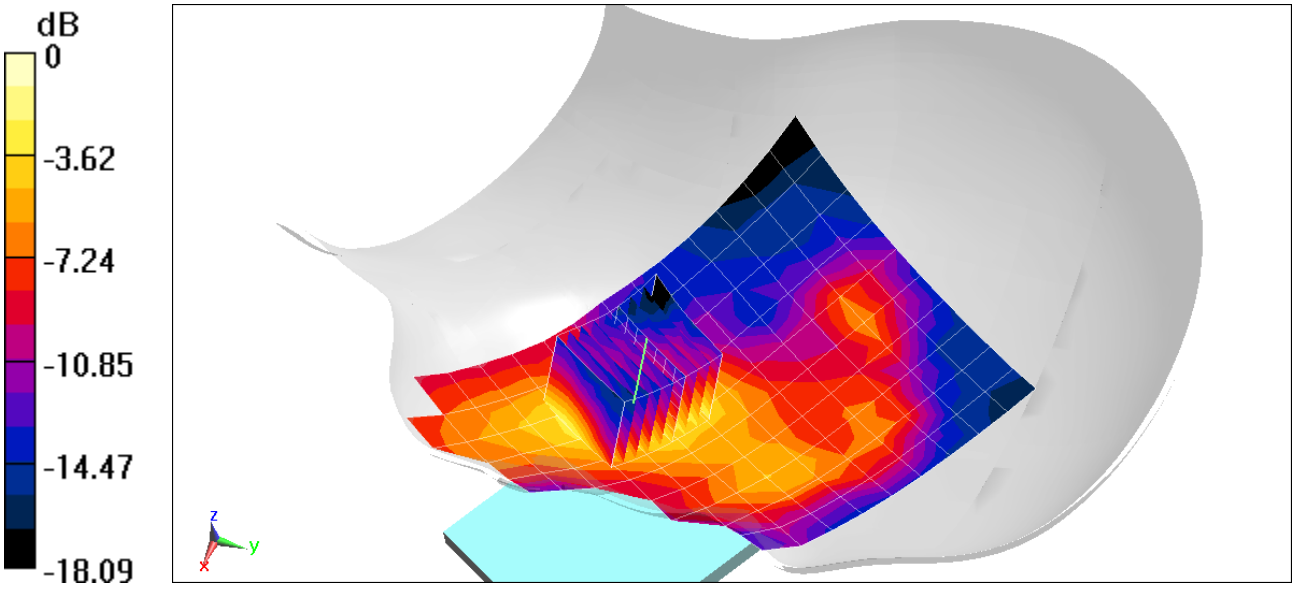
Communication System: UID 0, LTE Band 41 (Class 2); Frequency: 2549.5 MHz; Duty Cycle: 1:2.31
Medium: 2450 Head; Medium parameters used:
f = 2550 MHz; σ = 1.933 S/m; ε_r = 37.248; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 11-21-2019; Ambient Temp: 21.6°C; Tissue Temp: 23.7°C

Probe: EX3DV4 - SN7417; ConvF(7.17, 7.17, 7.17) @ 2549.5 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/13/2019
Phantom: Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1647
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: LTE Band 41 PC2 ULCA, Left Head, Cheek
PCC: Ch. 40185, 20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset
SCC: Ch. 39987, 20 MHz Bandwidth, QPSK, 1 RB, 99 RB Offset

Area Scan (11x17x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (8x9x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.167 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.250 W/kg
SAR(1 g) = 0.139 W/kg



0 dB = 0.208 W/kg = -6.82 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00293

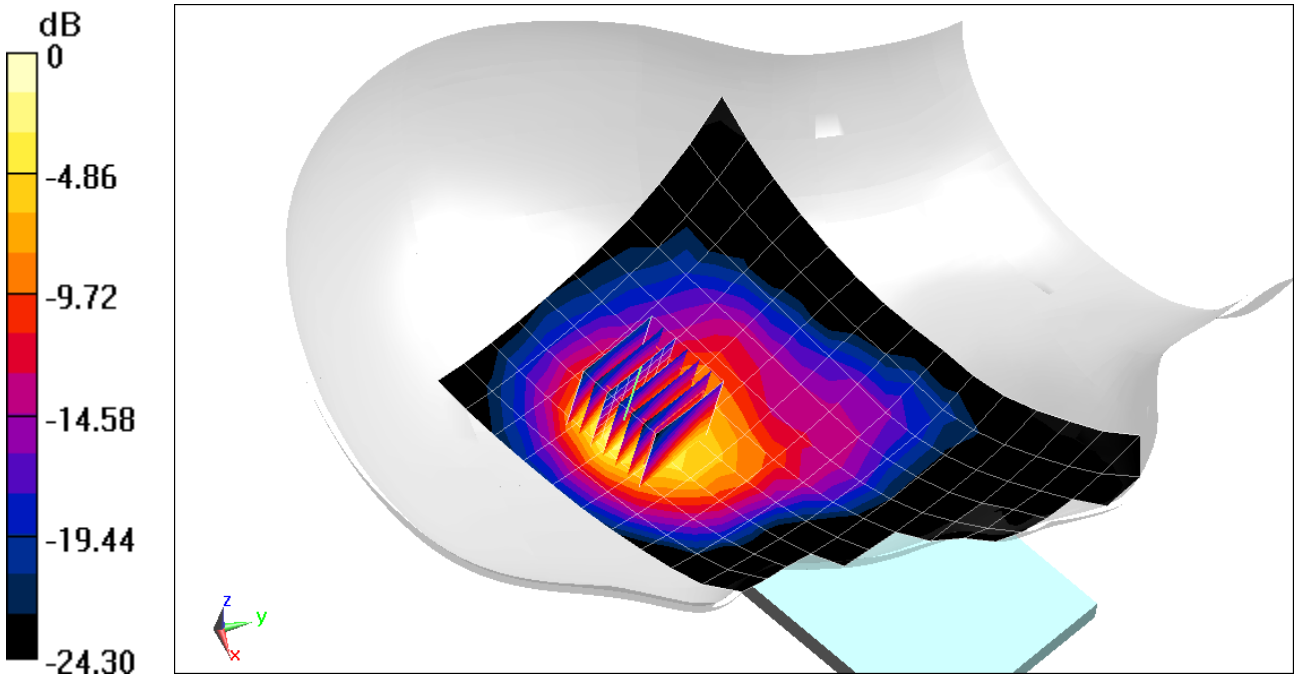
Communication System: UID 0, _IEEE 802.11b; Frequency: 2437 MHz; Duty Cycle: 1:1
Medium: 2450 Head; Medium parameters used (interpolated):
f = 2437 MHz; σ = 1.855 S/m; ε_r = 39.005; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 11-11-2019; Ambient Temp: 21.3°C; Tissue Temp: 19.2°C

Probe: EX3DV4 - SN7417; ConvF(7.46, 7.46, 7.46) @ 2437 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/13/2019
Phantom: Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1647
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: IEEE 802.11b, 22 MHz Bandwidth, Right Head, Cheek, Ch 6, 1 Mbps

Area Scan (11x18x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.872 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 1.80 W/kg
SAR(1 g) = 0.832 W/kg



0 dB = 1.43 W/kg = 1.55 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00293

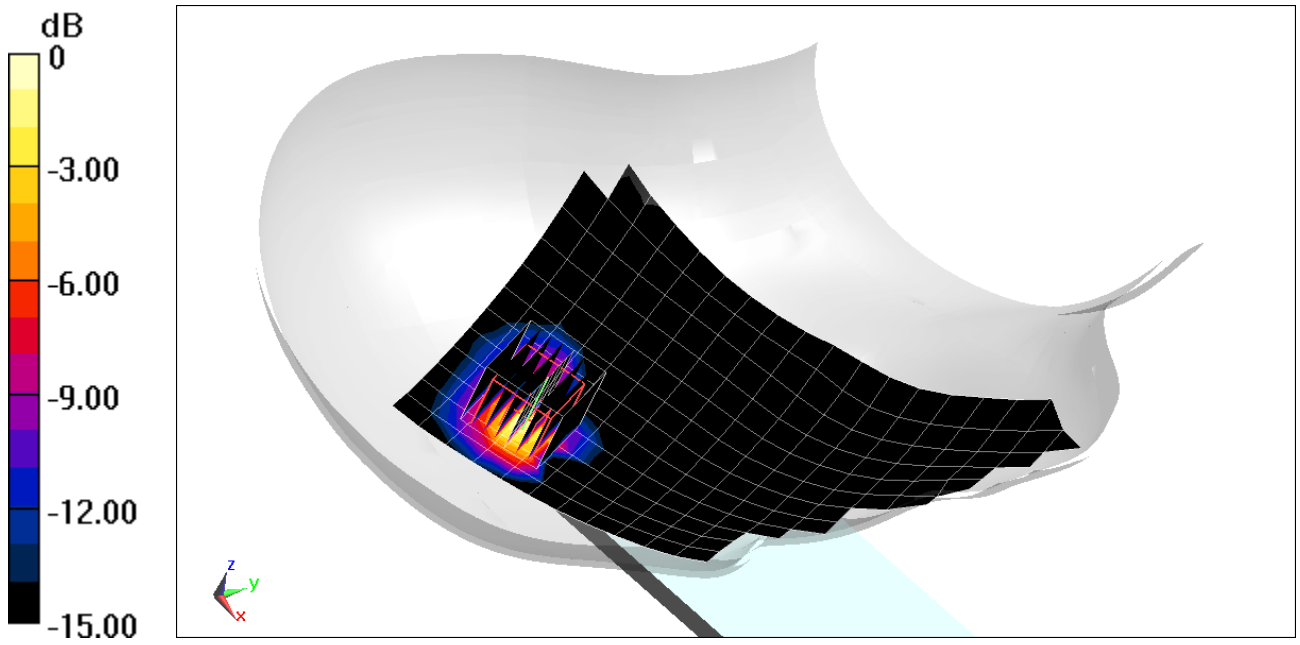
Communication System: UID 0, IEEE 802.11a; Frequency: 5600 MHz; Duty Cycle: 1:1
Medium: 5200-5800 Head; Medium parameters used:
f = 5600 MHz; σ = 5.133 S/m; ε_r = 35.238; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 11-10-2019; Ambient Temp: 21.0°C; Tissue Temp: 20.1°C

Probe: EX3DV4 - SN7406; ConvF(4.94, 4.94, 4.94) @ 5600 MHz; Calibrated: 5/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn859; Calibrated: 5/8/2019
Phantom: Twin-SAM V5.0 Right 20; Type: QD 000 P40 CD; Serial: 1759
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

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

Area Scan (13x21x1): 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 = 2.646 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 2.19 W/kg
SAR(1 g) = 0.521 W/kg



0 dB = 1.32 W/kg = 1.21 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00293

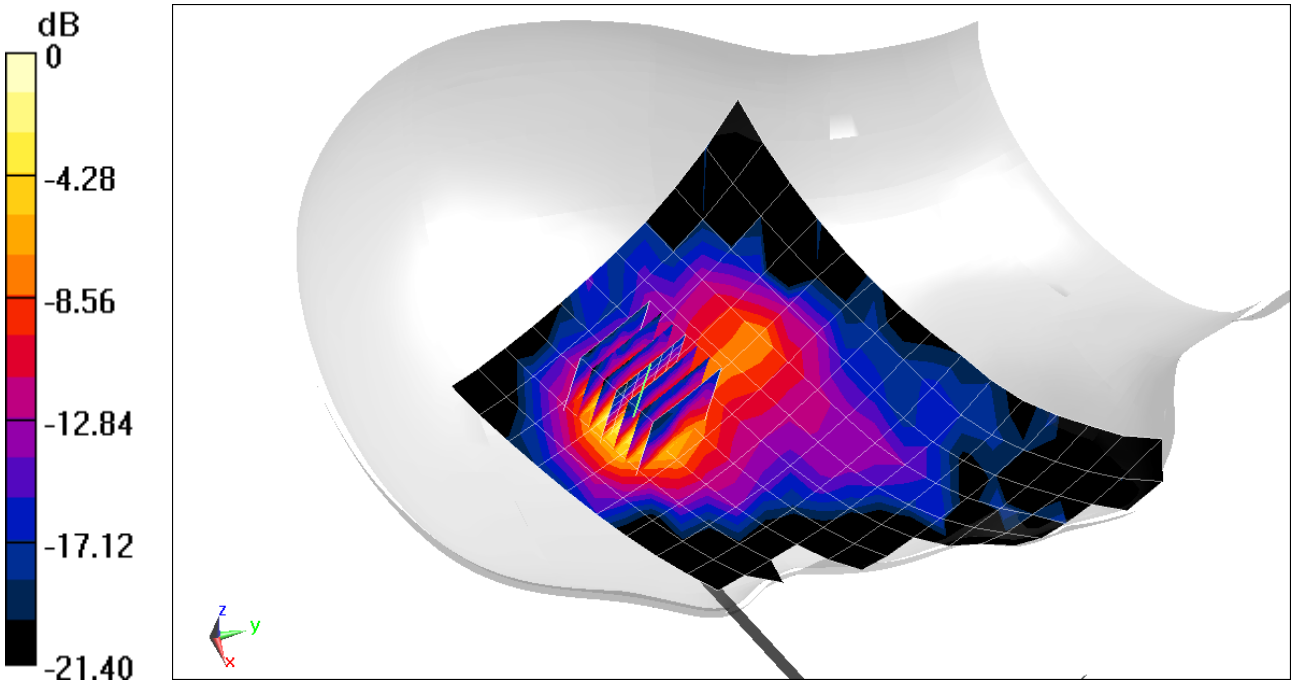
Communication System: UID 0, Bluetooth; Frequency: 2480 MHz; Duty Cycle: 1:1.302
Medium: 2450 Head; Medium parameters used (interpolated):
f = 2480 MHz; σ = 1.846 S/m; ε_r = 37.716; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 11-18-2019; Ambient Temp: 21.4°C; Tissue Temp: 21.2°C

Probe: EX3DV4 - SN7417; ConvF(7.46, 7.46, 7.46) @ 2480 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 2/13/2019
Phantom: Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1647
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: Bluetooth, Right Head, Tilt, Ch 78, 1 Mbps

Area Scan (11x19x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.077 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.159 W/kg
SAR(1 g) = 0.076 W/kg



0 dB = 0.122 W/kg = -9.14 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00269

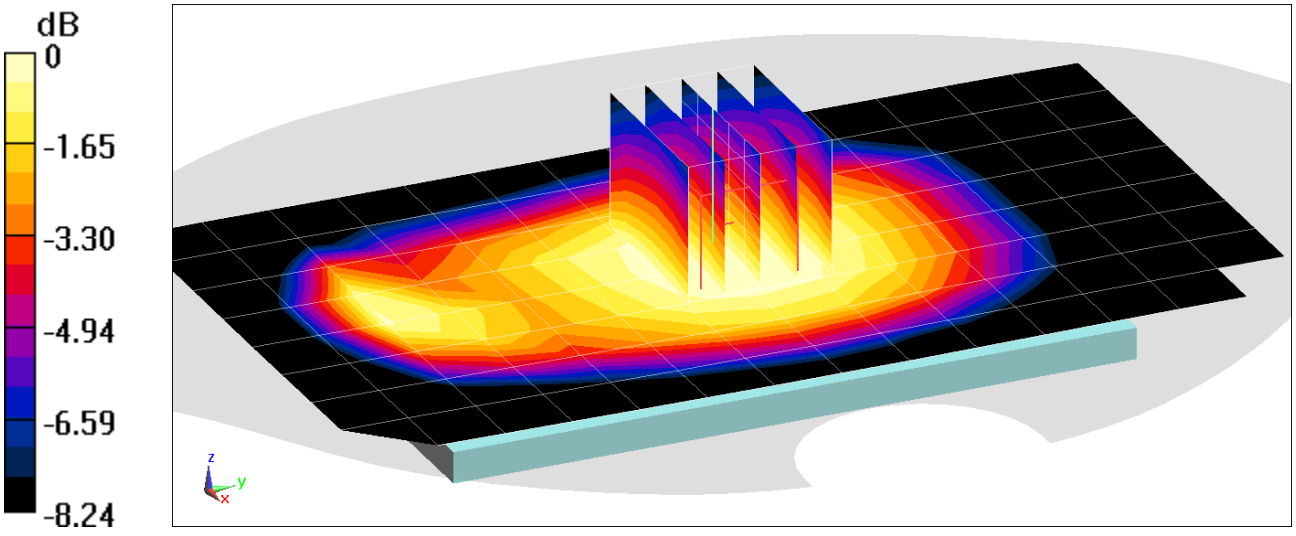
Communication System: UID 0, _GSM GPRS; 4 Tx slots; Frequency: 836.6 MHz; Duty Cycle: 1:2.076
Medium: 835 Body; Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.979 S/m; ε_r = 55.464; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 11-11-2019; Ambient Temp: 21.2°C; Tissue Temp: 20.4°C

Probe: EX3DV4 - SN7357; ConvF(9.95, 9.95, 9.95) @ 836.6 MHz; Calibrated: 4/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/18/2019
Phantom: Twin-SAM V4.0 (30); Type: QD 000 P40 CC; Serial: 1167
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: GPRS 850, Body SAR, Back side, Mid.ch, 4 Tx Slots

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.17 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.864 W/kg
SAR(1 g) = 0.655 W/kg



0 dB = 0.789 W/kg = -1.03 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00251

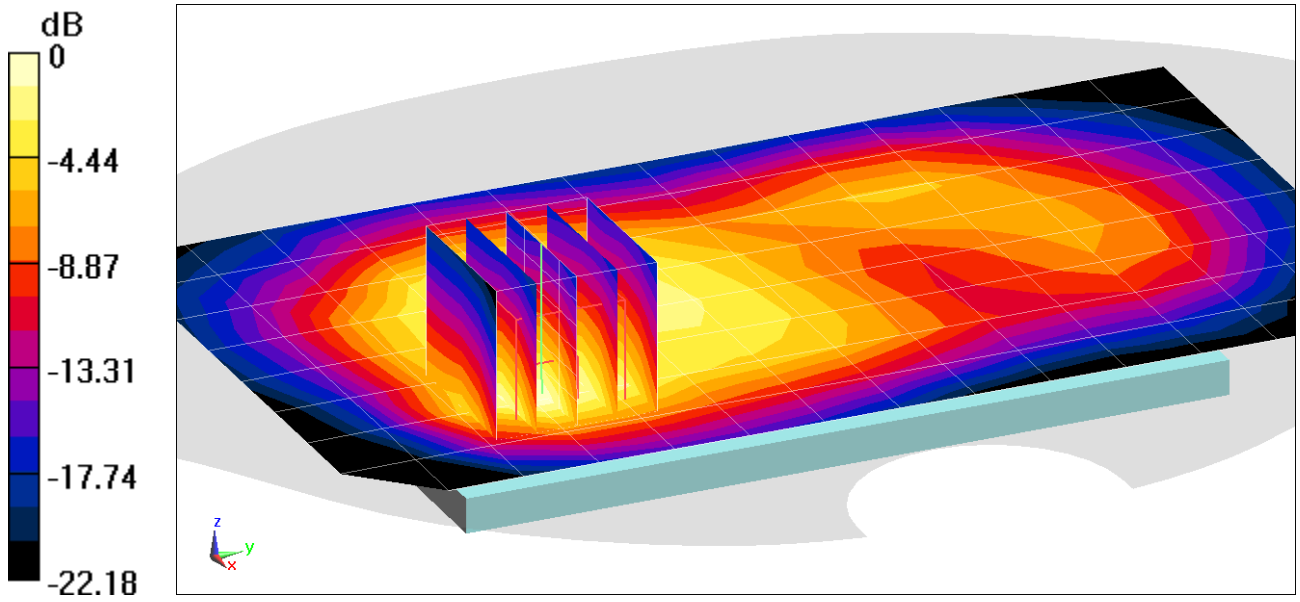
Communication System: UID 0, GSM GPRS; 4 Tx slots; Frequency: 1909.8 MHz; Duty Cycle: 1:2.076
Medium: 1900 Body; Medium parameters used:
f = 1910 MHz; σ = 1.586 S/m; ε_r = 51.711; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 11-13-2019; Ambient Temp: 22.7°C; Tissue Temp: 22.3°C

Probe: EX3DV4 - SN7488; ConvF(8.37, 8.37, 8.37) @ 1909.8 MHz; Calibrated: 1/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1530; Calibrated: 1/15/2019
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: GPRS 1900, Body SAR, Back side, High.ch, 4 Tx Slots

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.98 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 1.21 W/kg
SAR(1 g) = 0.616 W/kg



0 dB = 0.995 W/kg = -0.02 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00269

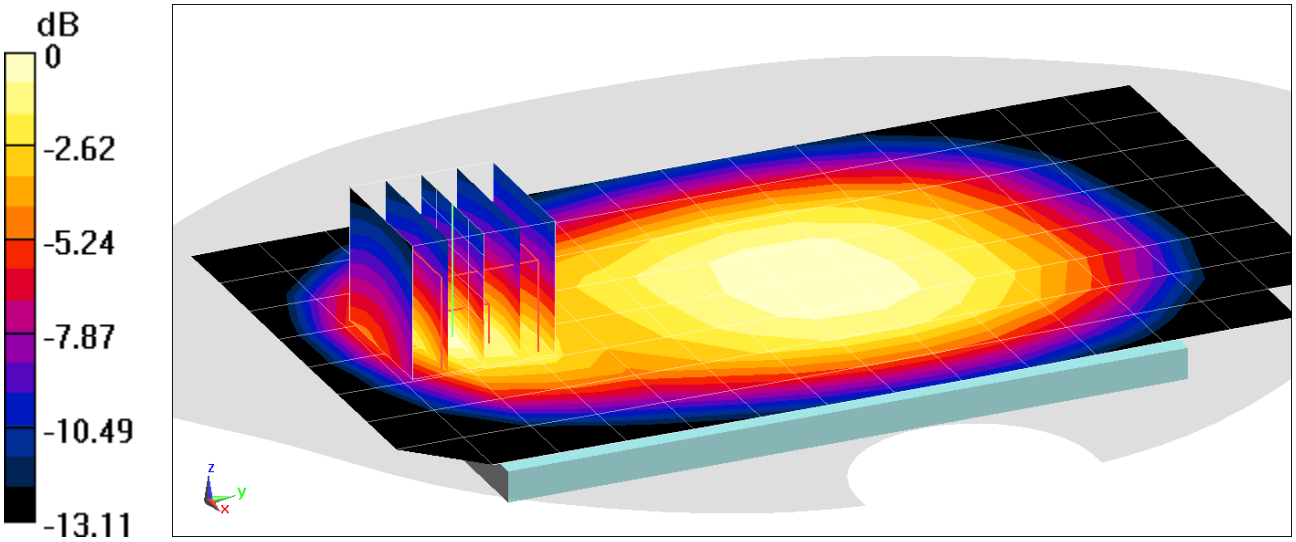
Communication System: UID 0, UMTS; Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium: 835 Body; Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.979 S/m; ε_r = 55.464; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 11-11-2019; Ambient Temp: 21.2°C; Tissue Temp: 20.4°C

Probe: EX3DV4 - SN7357; ConvF(9.95, 9.95, 9.95) @ 836.6 MHz; Calibrated: 4/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/18/2019
Phantom: Twin-SAM V4.0 (30); Type: QD 000 P40 CC; Serial: 1167
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

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

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.61 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.826 W/kg
SAR(1 g) = 0.461 W/kg



0 dB = 0.687 W/kg = -1.63 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00251

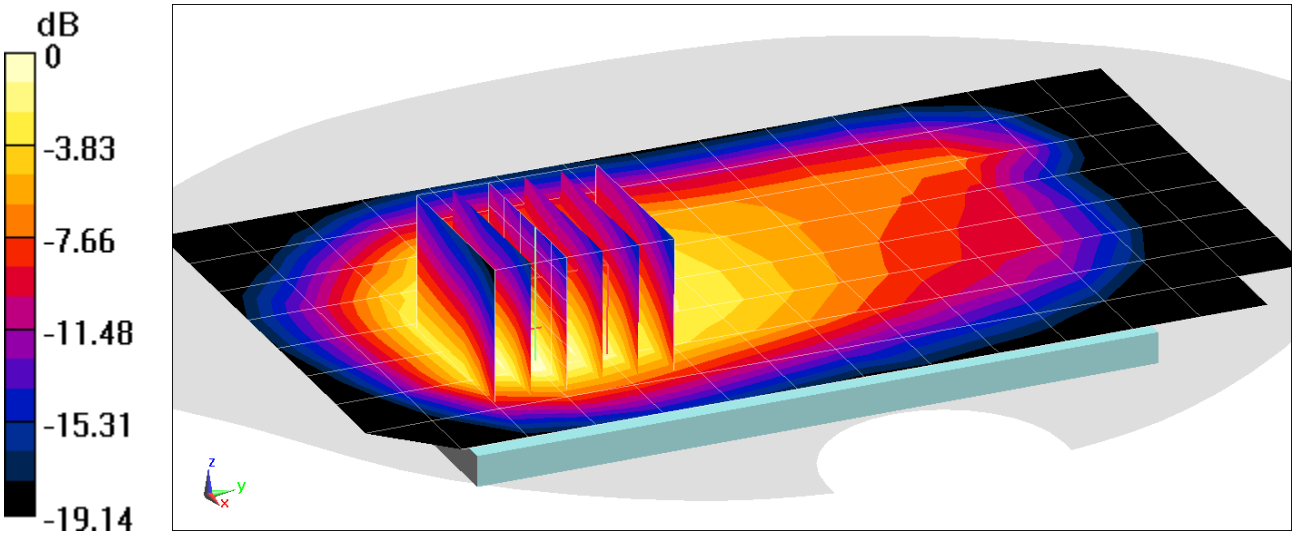
Communication System: UID 0, UMTS; Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium: 1750 Body; Medium parameters used (interpolated):
f = 1732.4 MHz; σ = 1.463 S/m; ε_r = 52.336; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 11-06-2019; Ambient Temp: 22.3°C; Tissue Temp: 20.8°C

Probe: EX3DV4 - SN7409; ConvF(7.85, 7.85, 7.85) @ 1732.4 MHz; Calibrated: 6/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1334; Calibrated: 6/20/2019
Phantom: Front; Type: QD 000 P40 CD; Serial: 1686
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

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

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.12 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 1.55 W/kg
SAR(1 g) = 0.847 W/kg



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

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00251

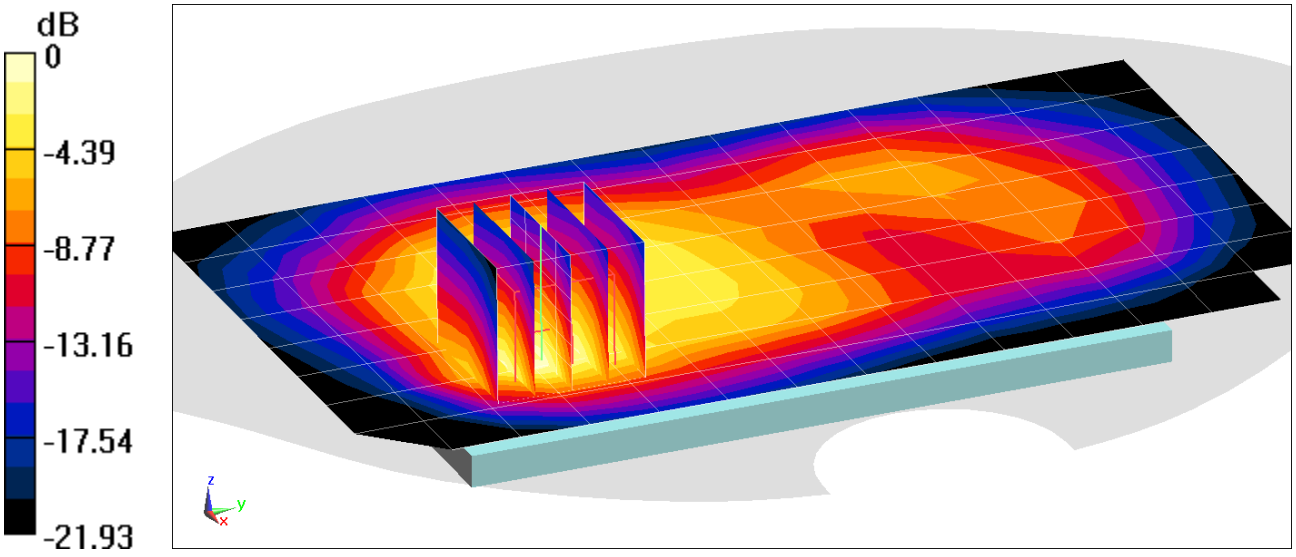
Communication System: UID 0, UMTS; Frequency: 1907.6 MHz; Duty Cycle: 1:1
Medium: 1900 Body; Medium parameters used (interpolated):
f = 1907.6 MHz; σ = 1.565 S/m; ε_r = 52.197; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 11-04-2019; Ambient Temp: 22.3°C; Tissue Temp: 22.2°C

Probe: EX3DV4 - SN7488; ConvF(8.37, 8.37, 8.37) @ 1907.6 MHz; Calibrated: 1/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1530; Calibrated: 1/15/2019
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: UMTS 1900, Body SAR, Back side, High.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.23 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 1.74 W/kg
SAR(1 g) = 0.886 W/kg



0 dB = 1.40 W/kg = 1.46 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00251

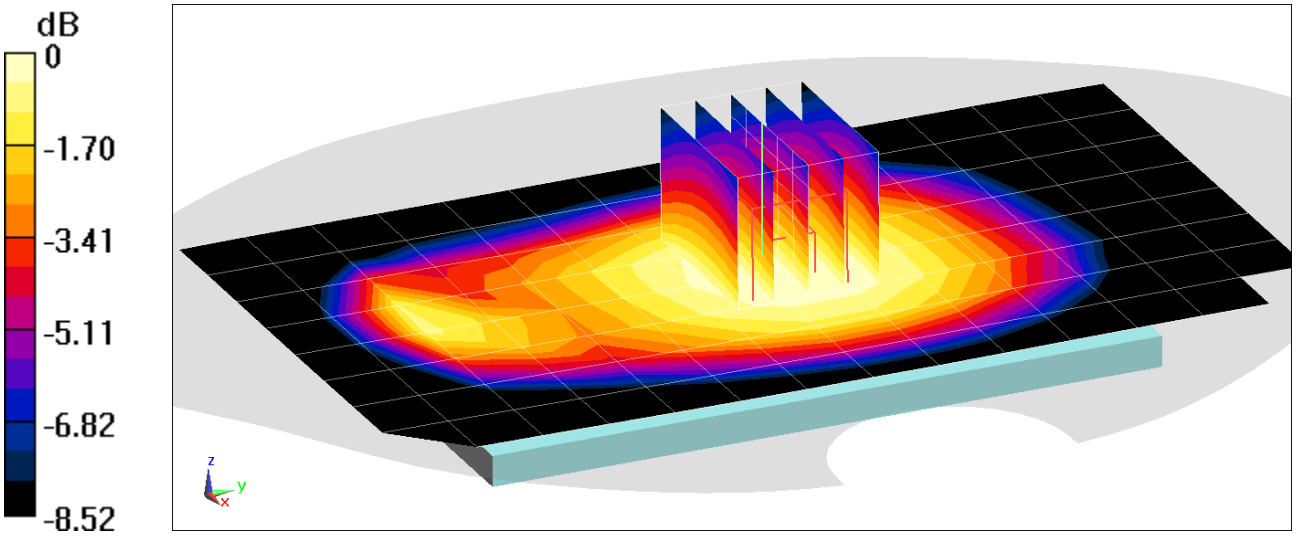
Communication System: UID 0, CDMA; Frequency: 820.1 MHz; Duty Cycle: 1:1
Medium: 835 Body; Medium parameters used (interpolated):
f = 820.1 MHz; σ = 0.962 S/m; ε_r = 55.629; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 11-11-2019; Ambient Temp: 21.2°C; Tissue Temp: 20.4°C

Probe: EX3DV4 - SN7357; ConvF(9.95, 9.95, 9.95) @ 820.1 MHz; Calibrated: 4/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/18/2019
Phantom: Twin-SAM V4.0 (30); Type: QD 000 P40 CC; Serial: 1167
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: Cell. CDMA BC10, Body SAR, Back side, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.42 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.473 W/kg
SAR(1 g) = 0.357 W/kg



0 dB = 0.431 W/kg = -3.66 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00251

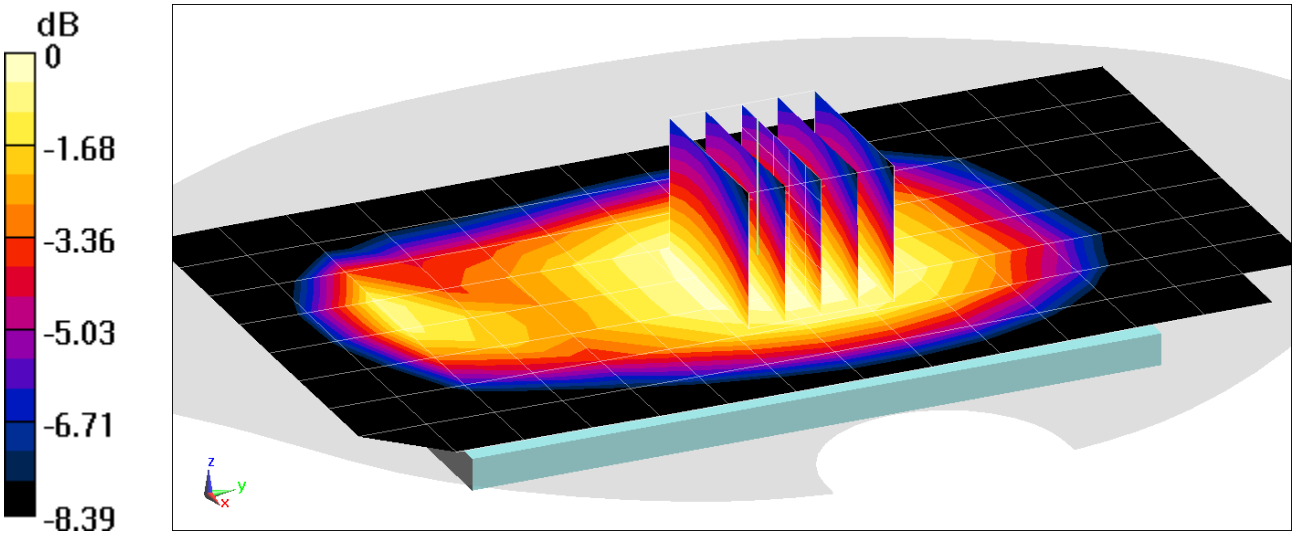
Communication System: UID 0, CDMA; Frequency: 820.1 MHz; Duty Cycle: 1:1
Medium: 835 Body; Medium parameters used (interpolated):
f = 820.1 MHz; σ = 0.962 S/m; ε_r = 55.629; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 11-11-2019; Ambient Temp: 21.2°C; Tissue Temp: 20.4°C

Probe: EX3DV4 - SN7357; ConvF(9.95, 9.95, 9.95) @ 820.1 MHz; Calibrated: 4/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/18/2019
Phantom: Twin-SAM V4.0 (30); Type: QD 000 P40 CC; Serial: 1167
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: Cell. EVDO BC10, Body SAR, Back side, Mid.ch

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.14 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.466 W/kg
SAR(1 g) = 0.355 W/kg



0 dB = 0.425 W/kg = -3.72 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00251

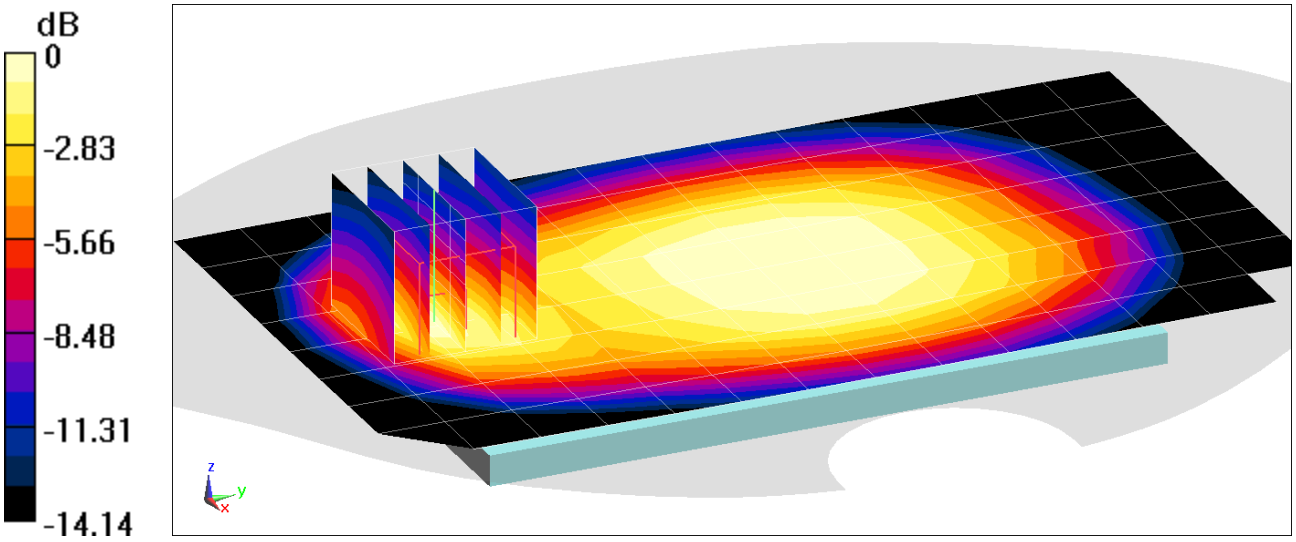
Communication System: UID 0, CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 Body; Medium parameters used (interpolated):
f = 836.52 MHz; σ = 0.979 S/m; ε_r = 55.465; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 11-11-2019; Ambient Temp: 21.2°C; Tissue Temp: 20.4°C

Probe: EX3DV4 - SN7357; ConvF(9.95, 9.95, 9.95) @ 836.52 MHz; Calibrated: 4/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/18/2019
Phantom: Twin-SAM V4.0 (30); Type: QD 000 P40 CC; Serial: 1167
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: Cell. CDMA, BC 0, 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 = 19.44 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.620 W/kg
SAR(1 g) = 0.340 W/kg



0 dB = 0.514 W/kg = -2.89 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00251

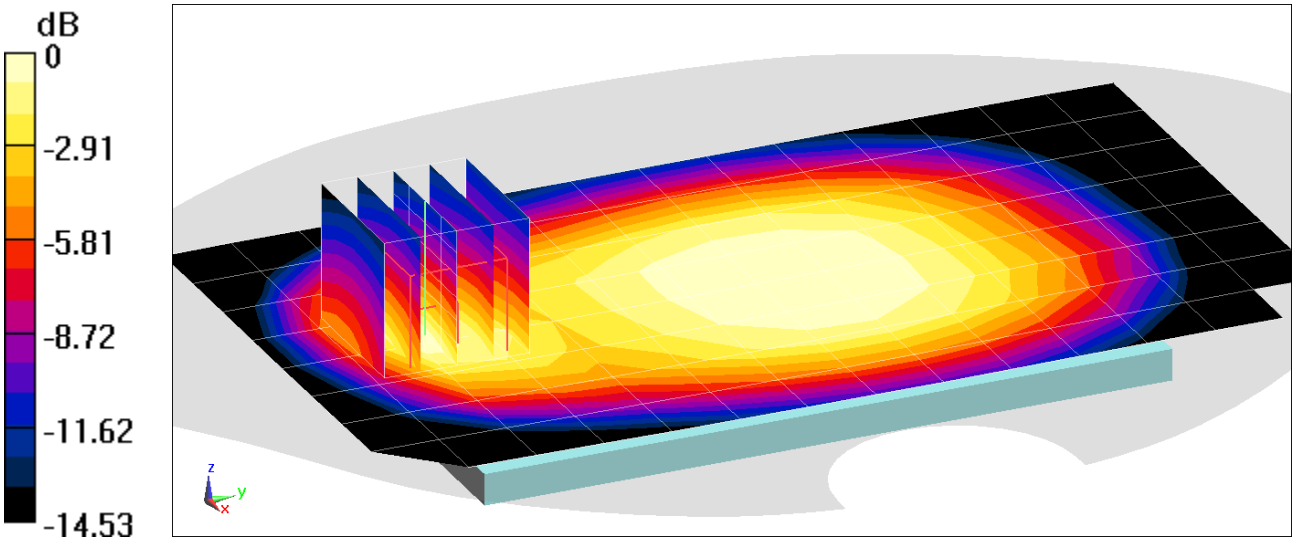
Communication System: UID 0, CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 Body; Medium parameters used (interpolated):
f = 836.52 MHz; σ = 0.979 S/m; ε_r = 55.465; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 11-11-2019; Ambient Temp: 21.2°C; Tissue Temp: 20.4°C

Probe: EX3DV4 - SN7357; ConvF(9.95, 9.95, 9.95) @ 836.52 MHz; Calibrated: 4/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/18/2019
Phantom: Twin-SAM V4.0 (30); Type: QD 000 P40 CC; Serial: 1167
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: Cell. EVDO, BC 0, 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 = 19.59 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.624 W/kg
SAR(1 g) = 0.344 W/kg



0 dB = 0.519 W/kg = -2.85 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00251

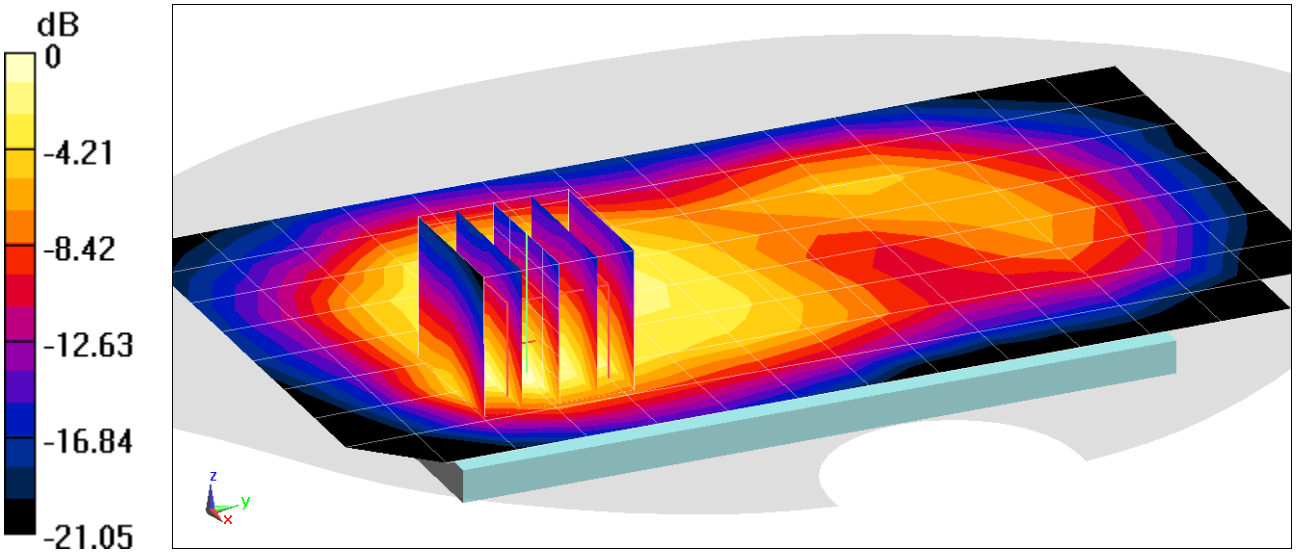
Communication System: UID 0, CDMA; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Body; Medium parameters used:
f = 1880 MHz; σ = 1.552 S/m; ε_r = 51.795; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 11-13-2019; Ambient Temp: 22.7°C; Tissue Temp: 22.3°C

Probe: EX3DV4 - SN7488; ConvF(8.37, 8.37, 8.37) @ 1880 MHz; Calibrated: 1/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1530; Calibrated: 1/15/2019
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: PCS CDMA, 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 = 18.89 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 0.951 W/kg
SAR(1 g) = 0.495 W/kg



0 dB = 0.781 W/kg = -1.07 dBW/kg

b

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00251

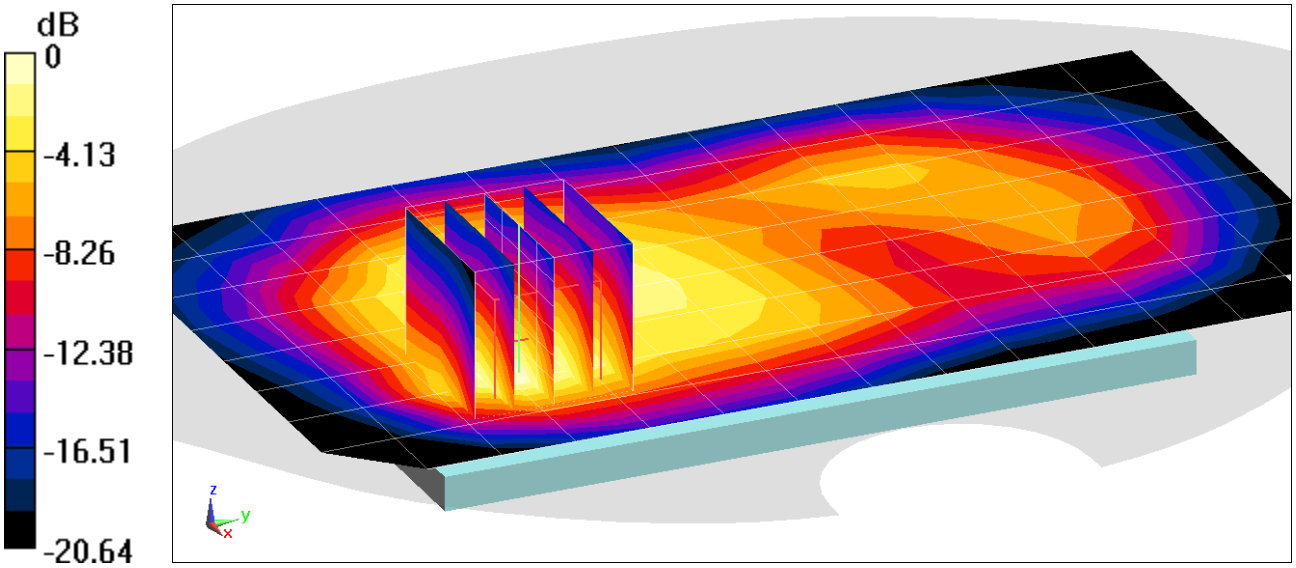
Communication System: UID 0, CDMA; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Body; Medium parameters used:
f = 1880 MHz; σ = 1.552 S/m; ε_r = 51.795; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 11-13-2019; Ambient Temp: 22.7°C; Tissue Temp: 22.3°C

Probe: EX3DV4 - SN7488; ConvF(8.37, 8.37, 8.37) @ 1880 MHz; Calibrated: 1/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1530; Calibrated: 1/15/2019
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: PCS EVDO, 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 = 19.01 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.937 W/kg
SAR(1 g) = 0.490 W/kg



0 dB = 0.764 W/kg = -1.17 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00277

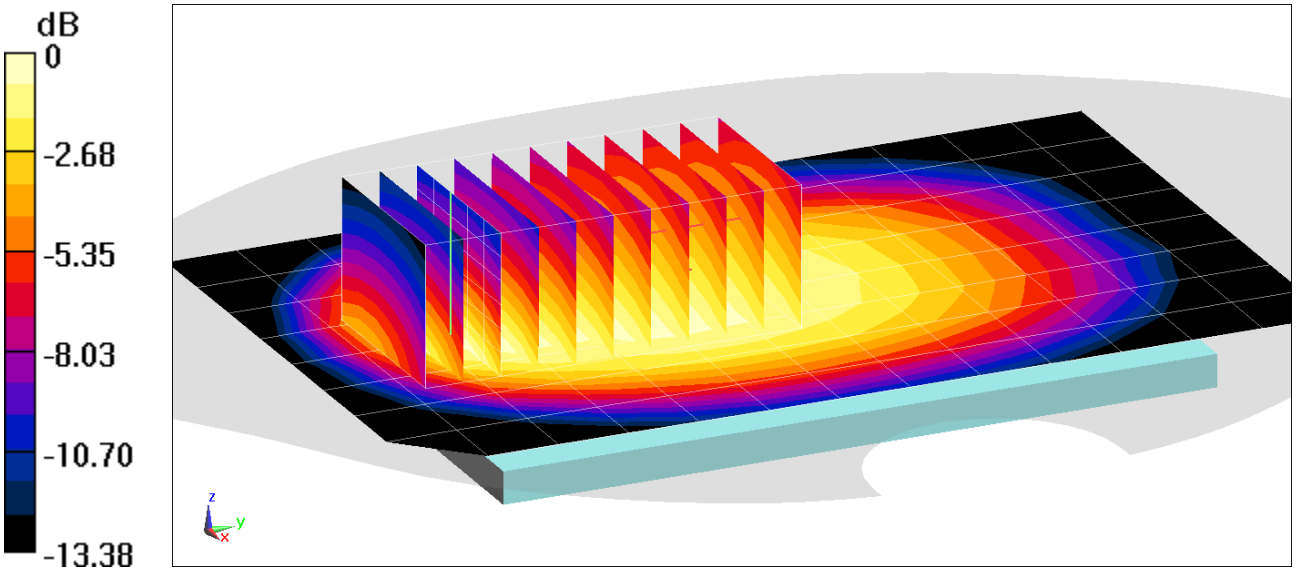
Communication System: UID 0, LTE Band 71; Frequency: 680.5 MHz; Duty Cycle: 1:1
Medium: 700 Body; Medium parameters used (interpolated):
f = 680.5 MHz; σ = 0.915 S/m; ε_r = 57.719; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 11-06-2019; Ambient Temp: 22.2°C; Tissue Temp: 23.5°C

Probe: EX3DV4 - SN7410; ConvF(10.01, 10.01, 10.01) @ 680.5 MHz; Calibrated: 7/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/11/2019
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: LTE Band 71, Body SAR, Back side, Mid.ch, 20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset

Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x11x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.82 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.690 W/kg
SAR(1 g) = 0.455 W/kg



0 dB = 0.600 W/kg = -2.22 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00277

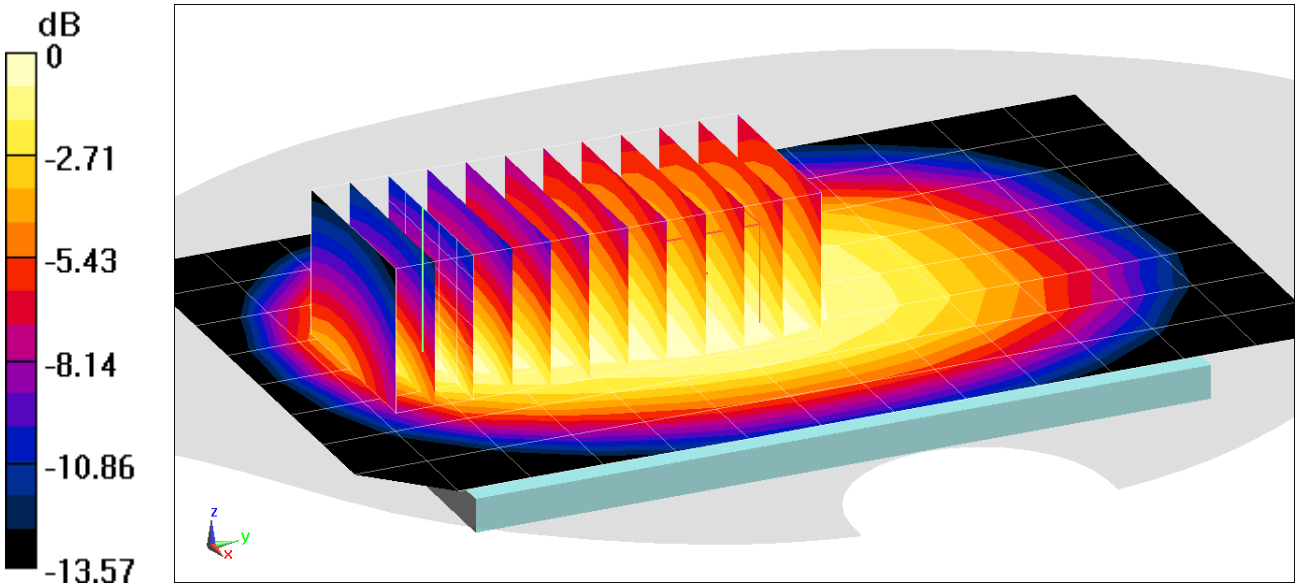
Communication System: UID 0, LTE Band 12; Frequency: 707.5 MHz; Duty Cycle: 1:1
Medium: 700 Body; Medium parameters used (interpolated):
f = 707.5 MHz; σ = 0.938 S/m; ε_r = 57.485; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 11-06-2019; Ambient Temp: 22.2°C; Tissue Temp: 23.5°C

Probe: EX3DV4 - SN7410; ConvF(10.01, 10.01, 10.01) @ 707.5 MHz; Calibrated: 7/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/11/2019
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: LTE Band 12, Body SAR, Back side, Mid.ch, 10 MHz Bandwidth, QPSK, 1 RB, 25 RB Offset

Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x12x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.41 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.789 W/kg
SAR(1 g) = 0.538 W/kg



0 dB = 0.689 W/kg = -1.62 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00277

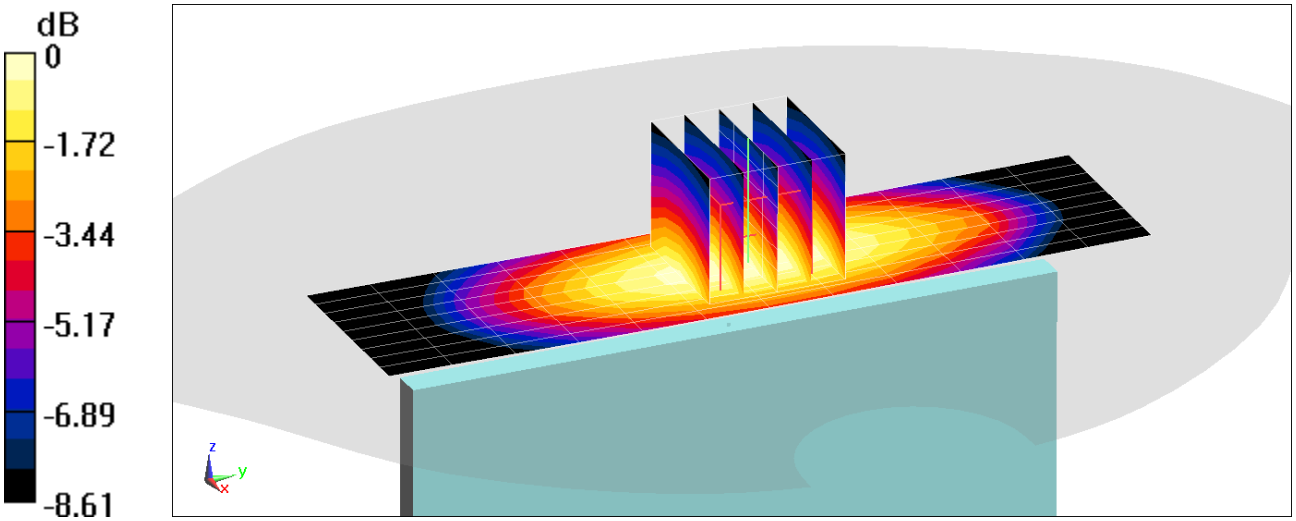
Communication System: UID 0, LTE Band 12; Frequency: 707.5 MHz; Duty Cycle: 1:1
Medium: 700 Body; Medium parameters used (interpolated):
f = 707.5 MHz; σ = 0.952 S/m; ε_r = 57.548; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 11-12-2019; Ambient Temp: 22.6°C; Tissue Temp: 24.4°C

Probe: EX3DV4 - SN7410; ConvF(10.01, 10.01, 10.01) @ 707.5 MHz; Calibrated: 7/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/11/2019
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: LTE Band 12, Body SAR, Right Edge, Mid.ch, 10 MHz Bandwidth, QPSK, 1 RB, 25 RB Offset

Area Scan (10x13x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.87 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.824 W/kg
SAR(1 g) = 0.596 W/kg



0 dB = 0.750 W/kg = -1.25 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00277

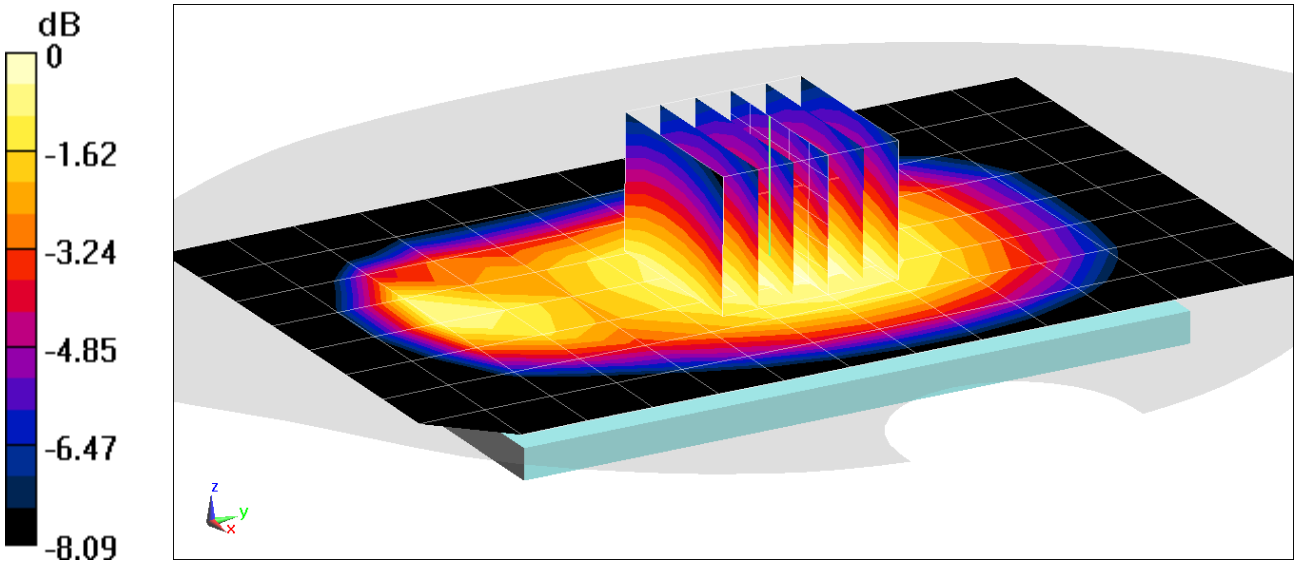
Communication System: UID 0, LTE Band 13; Frequency: 782 MHz; Duty Cycle: 1:1
Medium: 700 Body; Medium parameters used (interpolated):
f = 782 MHz; σ = 0.983 S/m; ε_r = 53.785; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-10-2019; Ambient Temp:24.6°C; Tissue Temp: 21.9°C

Probe: EX3DV4 - SN7410; ConvF(10.01, 10.01, 10.01) @ 782 MHz; Calibrated: 7/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/11/2019
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

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

Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.93 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.603 W/kg
SAR(1 g) = 0.476 W/kg



0 dB = 0.561 W/kg = -2.51 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00277

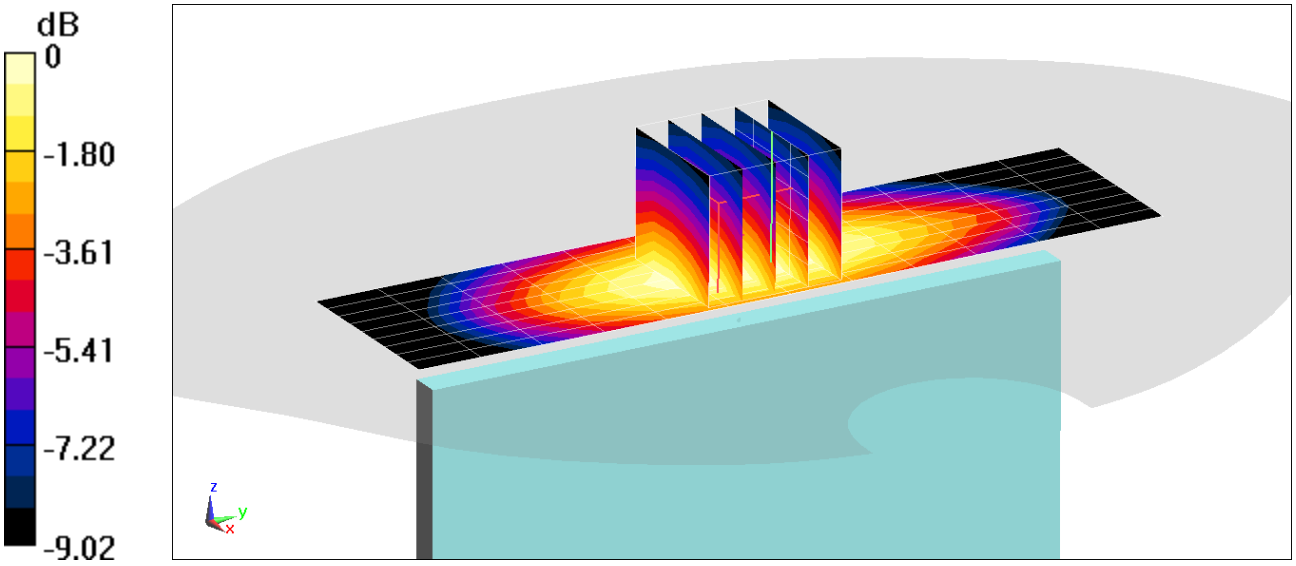
Communication System: UID 0, LTE Band 13; Frequency: 782 MHz; Duty Cycle: 1:1
Medium: 700 Body; Medium parameters used (interpolated):
f = 782 MHz; σ = 0.983 S/m; ε_r = 53.785; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12/10/2019; Ambient Temp:24.6°C; Tissue Temp: 21.9°C

Probe: EX3DV4 - SN7410; ConvF(10.01, 10.01, 10.01) @ 782 MHz; Calibrated: 7/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/11/2019
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: LTE Band 13, Body SAR, Right Edge, Mid.ch, 10 MHz Bandwidth, QPSK, 1 RB, 25 RB Offset

Area Scan (10x13x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.25 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 0.706 W/kg
SAR(1 g) = 0.500 W/kg



0 dB = 0.628 W/kg = -2.02 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00285

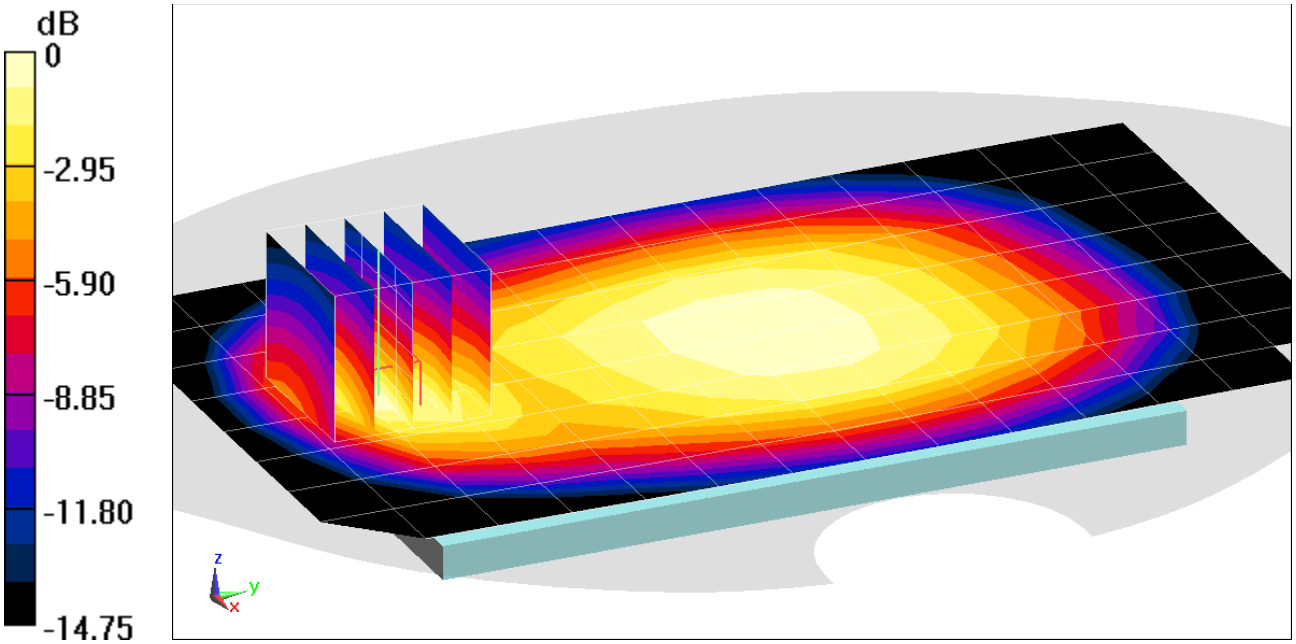
Communication System: UID 0, LTE Band 26; Frequency: 831.5 MHz; Duty Cycle: 1:1
Medium: 835 Body; Medium parameters used (interpolated):
f = 831.5 MHz; σ = 0.974 S/m; ε_r = 55.515; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 11-11-2019; Ambient Temp: 21.2°C; Tissue Temp: 20.4°C

Probe: EX3DV4 - SN7357; ConvF(9.95, 9.95, 9.95) @ 831.5 MHz; Calibrated: 4/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/18/2019
Phantom: Twin-SAM V4.0 (30); Type: QD 000 P40 CC; Serial: 1167
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

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

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.32 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.750 W/kg
SAR(1 g) = 0.410 W/kg



0 dB = 0.623 W/kg = -2.06 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00285

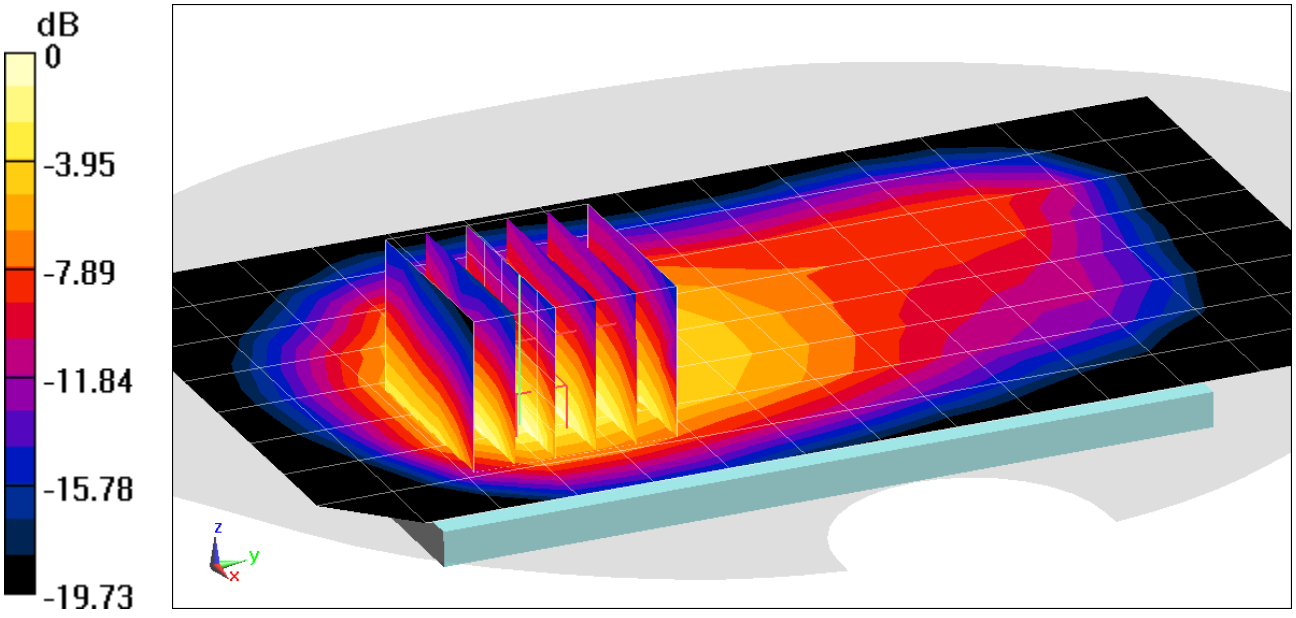
Communication System: UID 0, LTE Band 66 (AWS); 1770 MHz; Duty Cycle: 1:1
Medium: 1750 Body; Medium parameters used:
f = 1770 MHz; σ = 1.513 S/m; ε_r = 52.836; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 11-20-2019; Ambient Temp: 20.6°C; Tissue Temp: 20.0°C

Probe: EX3DV4 - SN7357; ConvF(8.26, 8.26, 8.26) @ 1770 MHz; Calibrated: 4/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/18/2019
Phantom: Right Back Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1692
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: LTE Band 66 (AWS), Body SAR, Back side, High.ch, 20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.41 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 1.49 W/kg
SAR(1 g) = 0.829 W/kg



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

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00285

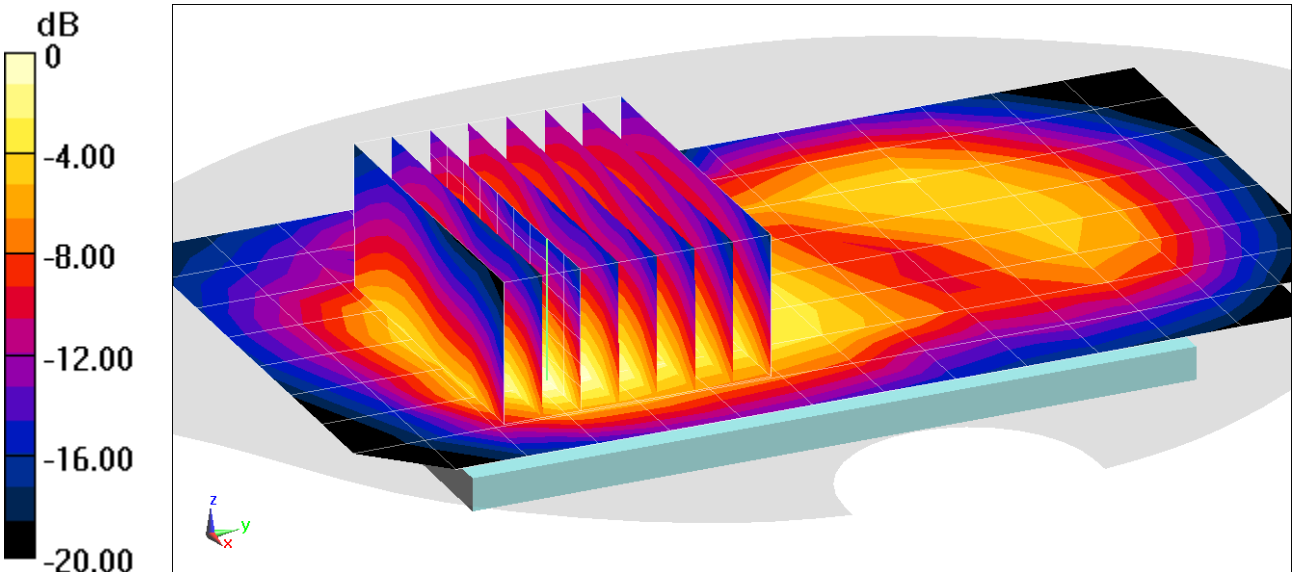
Communication System: UID 0, LTE Band 25 (PCS); Frequency: 1882.5 MHz; Duty Cycle: 1:1
Medium: 1900 Body; Medium parameters used (interpolated):
f = 1882.5 MHz; σ = 1.556 S/m; ε_r = 51.729; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 11-13-2019; Ambient Temp: 22.4°C; Tissue Temp: 21.0°C

Probe: EX3DV4 - SN3914; ConvF(7.6, 7.6, 7.6) @ 1882.5 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/14/2019
Phantom: Twin-SAM V5.0 Left 30; Type: QD 000 P40 CD; Serial: 1687
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: LTE Band 25 (PCS), Body SAR, Back side, Mid.ch, 20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (10x8x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.10 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 0.992 W/kg
SAR(1 g) = 0.546 W/kg



0 dB = 0.797 W/kg = -0.99 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00285

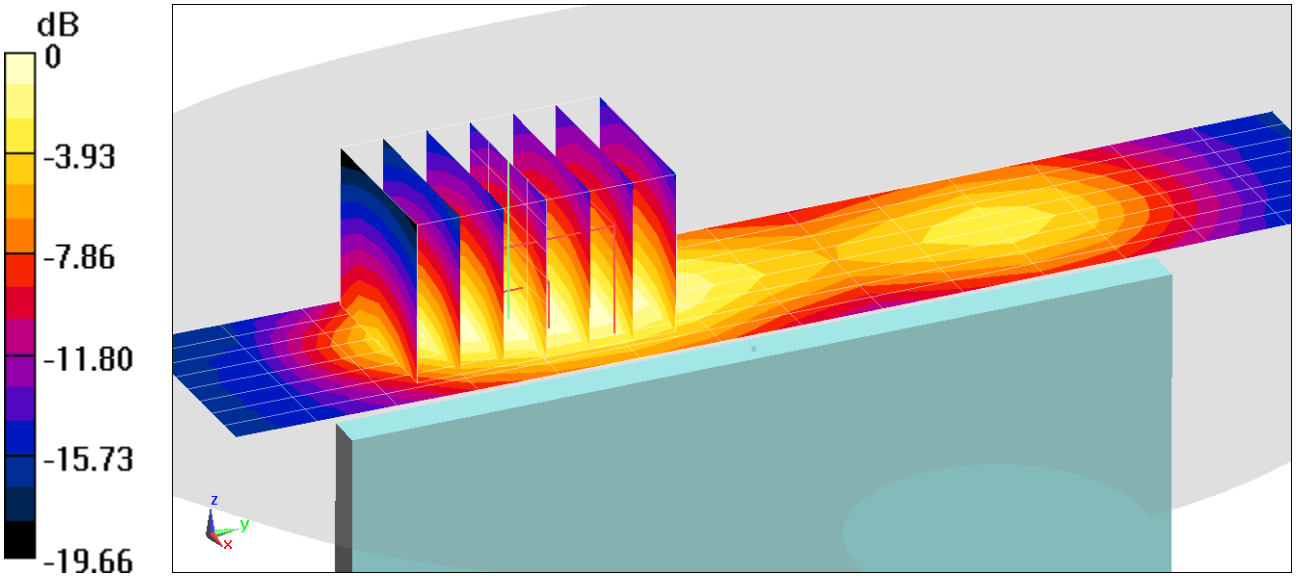
Communication System: UID 0, LTE Band 25 (PCS); Frequency: 1860 MHz; Duty Cycle: 1:1
Medium: 1900 Body; Medium parameters used:
f = 1860 MHz; σ = 1.53 S/m; ε_r = 51.809; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 11-13-2019; Ambient Temp: 22.4°C; Tissue Temp: 21.0°C

Probe: EX3DV4 - SN3914; ConvF(7.6, 7.6, 7.6) @ 1860 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/14/2019
Phantom: Twin-SAM V5.0 Left 30; Type: QD 000 P40 CD; Serial: 1687
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: LTE Band 25 (PCS), Body SAR, Left Edge, Low.ch, 20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset

Area Scan (9x15x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (5x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.79 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.23 W/kg
SAR(1 g) = 0.698 W/kg



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

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00277

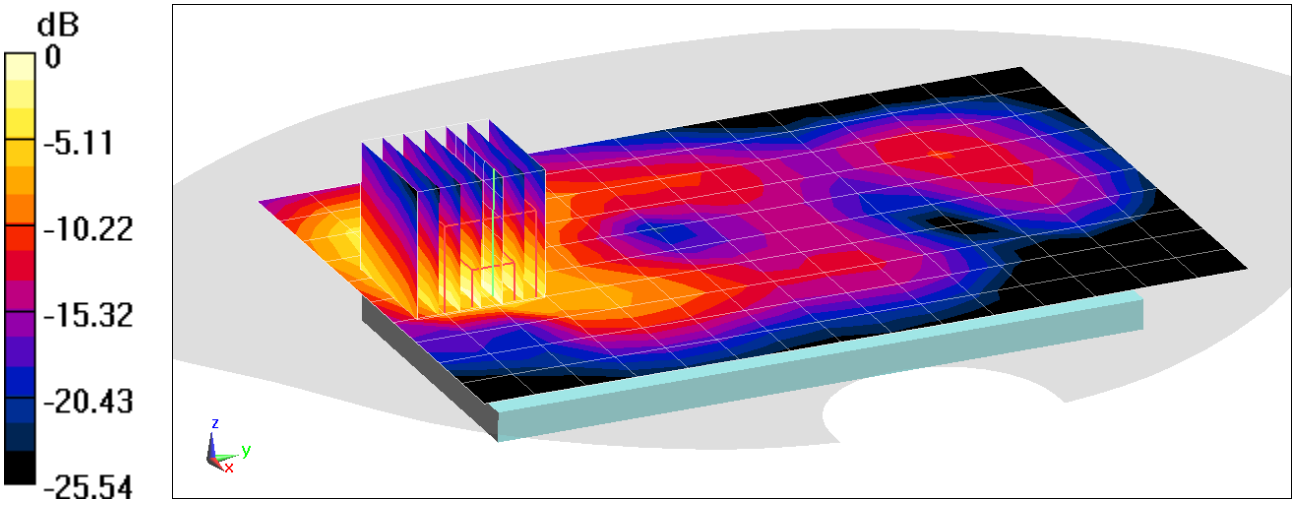
Communication System: UID 0, LTE Band 41 (Class 2); Frequency: 2549.5 MHz; Duty Cycle: 1:2.31
Medium: 2400 Body; Medium parameters used:
f = 2550 MHz; σ = 2.165 S/m; ε_r = 51.97; ρ = 1000 kg/m^3
Phantom section: Flat Section ; Space: 1.0 cm

Test Date: 11-18-2019; Ambient Temp: 22.3°C; Tissue Temp: 21.8°C

Probe: EX3DV4 - SN7547; ConvF(7.18, 7.18, 7.18) @ 2549.5 MHz; Calibrated: 7/15/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1323; Calibrated: 7/11/2019
Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP1375
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: LTE Band 41 PC2 ULCA, Body SAR, Back side
PCC: Ch. 40185, 20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset
SCC: Ch. 39987, 20 MHz Bandwidth, QPSK, 1 RB, 99 RB Offset

Area Scan (11x16x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.12 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 1.26 W/kg
SAR(1 g) = 0.536 W/kg



0 dB = 0.948 W/kg = -0.23 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00277

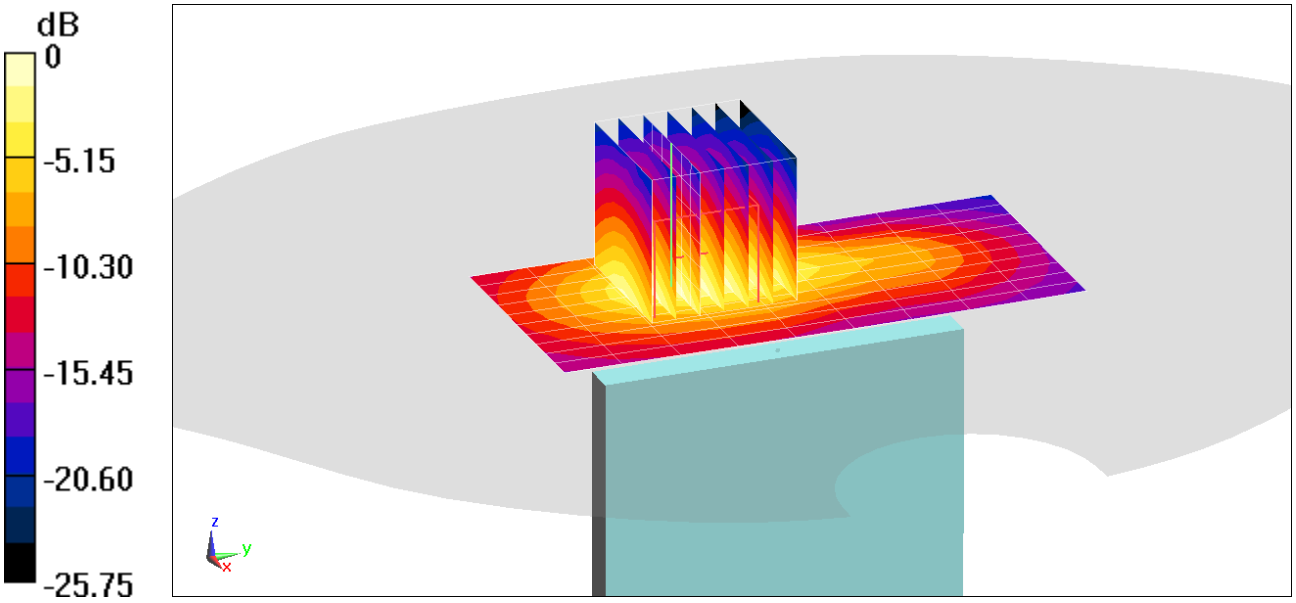
Communication System: UID 0, LTE Band 41 (Class 2) Frequency: 2680 MHz; Duty Cycle: 1:2.31
Medium: 2450 Body; Medium parameters used:
f = 2680 MHz; σ = 2.324 S/m; ε_r = 51.348; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 11-14-2019; Ambient Temp: 22.3°C; Tissue Temp: 22.0°C

Probe: EX3DV4 - SN7547; ConvF(7.18, 7.18, 7.18) @ 2680 MHz; Calibrated: 7/15/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1323; Calibrated: 7/11/2019
Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP1375
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: LTE Band 41 PC2, Body SAR, Bottom Edge, High.ch, 20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset

Area Scan (11x10x1): Measurement grid: dx=5mm, dy=12mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 18.26 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 1.57 W/kg
SAR(1 g) = 0.744 W/kg



0 dB = 1.23 W/kg = 0.90 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00293

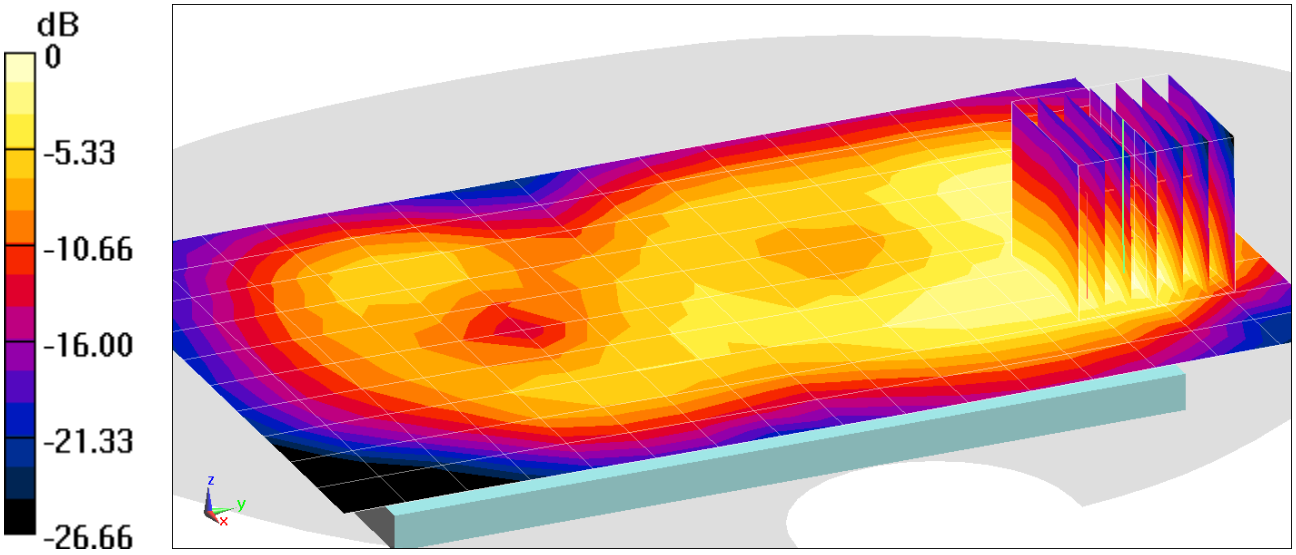
Communication System: UID 0, IEEE 802.11b; Frequency: 2412 MHz; Duty Cycle: 1:1
Medium: 2450 Body; Medium parameters used (interpolated):
f = 2412 MHz; σ = 2.001 S/m; ε_r = 52.459; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 11-04-2019; Ambient Temp: 22.5°C; Tissue Temp: 22.4°C

Probe: EX3DV4 - SN7547; ConvF(7.3, 7.3, 7.3) @ 2412 MHz; Calibrated: 7/15/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1323; Calibrated: 7/11/2019
Phantom: Left Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP1375
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: IEEE 802.11b, 22 MHz Bandwidth, Body SAR, Ch 1, 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 = 13.37 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 0.686 W/kg
SAR(1 g) = 0.318 W/kg



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

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00293

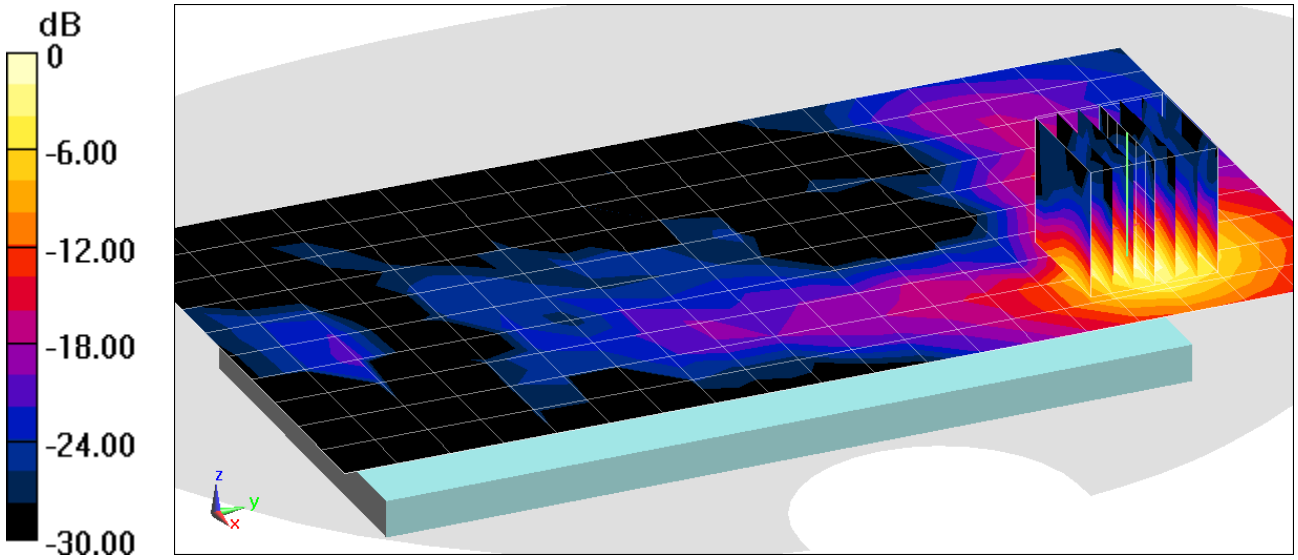
Communication System: UID 0, 802.11a 5.2-5.8 GHz Band; Frequency: 5280 MHz; Duty Cycle: 1:1
Medium: 5200-5800 Body; Medium parameters used:
f = 5280 MHz; σ = 5.51 S/m; ε_r = 48.352; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 11-26-2019; Ambient Temp: 23.5°C; Tissue Temp: 21.6°C

Probe: EX3DV4 - SN7409; ConvF(4.7, 4.7, 4.7) @ 5280 MHz; Calibrated: 6/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1334; Calibrated: 6/20/2019
Phantom: Front; Type: QD 000 P40 CD; Serial: 1686
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: IEEE 802.11a, UNII-2A, 20 MHz Bandwidth, Body SAR, Ch 56, 6 Mbps, Back Side

Area Scan (11x20x1): 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 = 16.27 V/m; Power Drift = -0.16 dB
Peak SAR (extrapolated) = 4.60 W/kg
SAR(1 g) = 1.22 W/kg



0 dB = 2.90 W/kg = 4.62 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00293

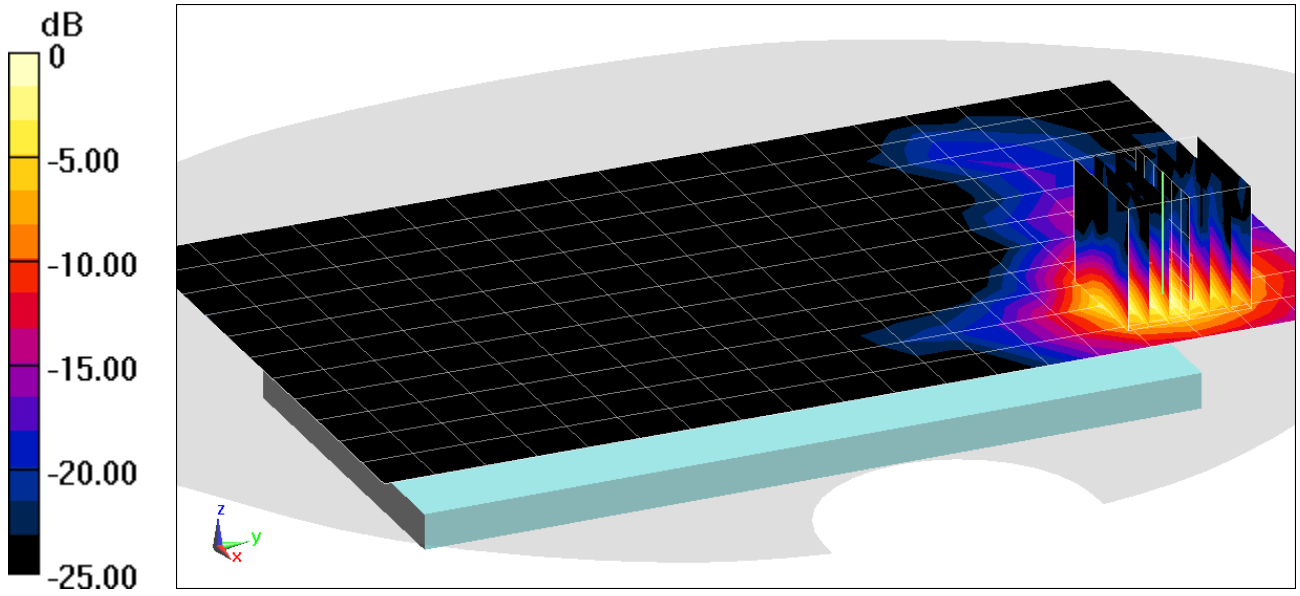
Communication System: UID 0, 802.11a 5.2-5.8 GHz Band; Frequency: 5180 MHz; Duty Cycle: 1:1
Medium: 5200-5800 Body; Medium parameters used:
f = 5180 MHz; σ = 5.184 S/m; ε_r = 48.069; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 11-12-2019; Ambient Temp: 22.7°C; Tissue Temp: 21.9°C

Probe: EX3DV4 - SN7409; ConvF(4.7, 4.7, 4.7) @ 5180 MHz; Calibrated: 6/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1334; Calibrated: 6/20/2019
Phantom: Front; Type: QD 000 P40 CD; Serial: 1686
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: IEEE 802.11a, UNII-1, 20 MHz Bandwidth, Body SAR, Ch 36, 6 Mbps, Back Side

Area Scan (12x20x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 12.65 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 2.61 W/kg
SAR(1 g) = 0.708 W/kg



0 dB = 1.60 W/kg = 2.04 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00293

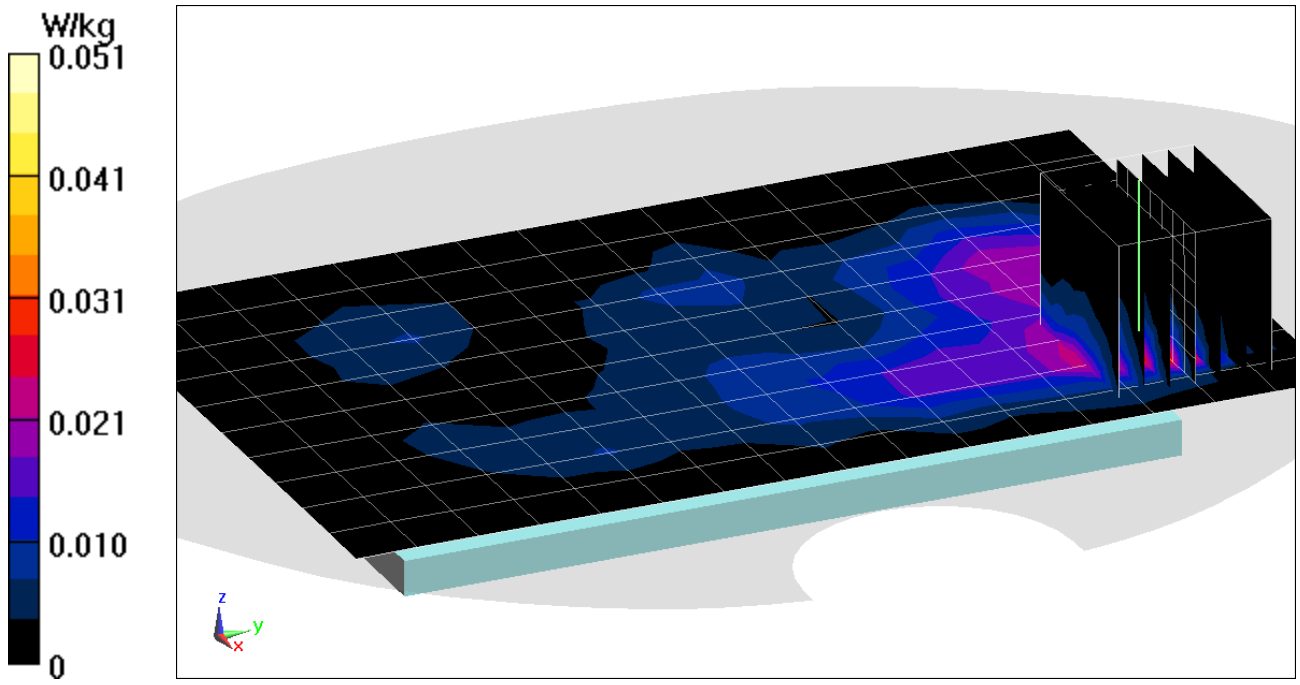
Communication System: UID 0, Bluetooth; Frequency: 2480 MHz; Duty Cycle: 1:1.302
Medium: 2450 Body; Medium parameters used (interpolated):
f = 2480 MHz; σ = 2.033 S/m; ε_r = 52.368; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 11-18-2019; Ambient Temp: 23.0°C; Tissue Temp: 21.0°C

Probe: EX3DV4 - SN7410; ConvF(7.44, 7.44, 7.44) @ 2480 MHz; Calibrated: 7/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1322; Calibrated: 7/11/2019
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: Bluetooth, Body SAR, Ch 78, 1 Mbps, Back Side

Area Scan (11x17x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (8x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.455 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.0640 W/kg
SAR(1 g) = 0.029 W/kg



0 dB = 0.0515 W/kg = -12.88 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00251

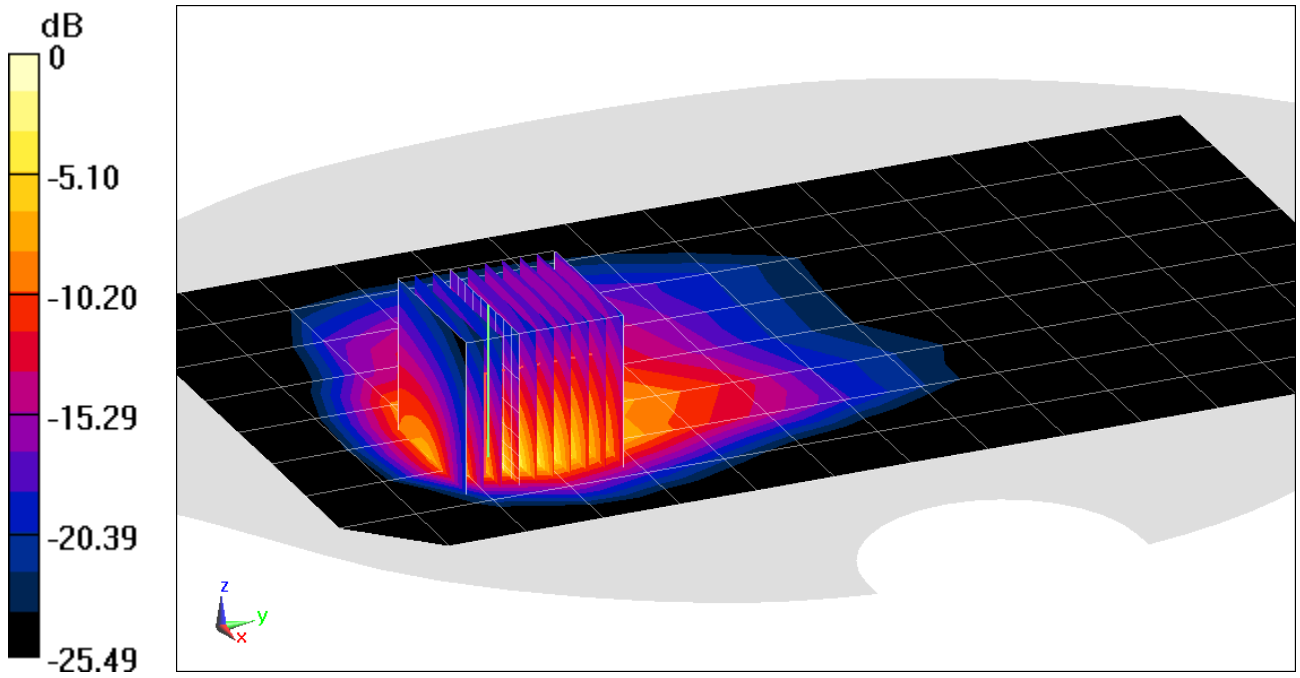
Communication System: UID 0, UMTS; Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium: 1750 Body; Medium parameters used (interpolated):
f = 1732.4 MHz; σ = 1.485 S/m; ε_r = 51.473; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 11-11-2019; Ambient Temp: 21.8°C; Tissue Temp: 21.0°C

Probe: EX3DV4 - SN7409; ConvF(7.85, 7.85, 7.85) @ 1732.4 MHz; Calibrated: 6/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1334; Calibrated: 6/20/2019
Phantom: Front; Type: QD 000 P40 CD; Serial: 1686
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

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

Area Scan (9x15x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (10x10x8)/Cube 0: Measurement grid: dx=3.4mm, dy=3.4mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 73.58 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 21.8 W/kg
SAR(10 g) = 3.12 W/kg



0 dB = 13.3 W/kg = 11.24 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00251

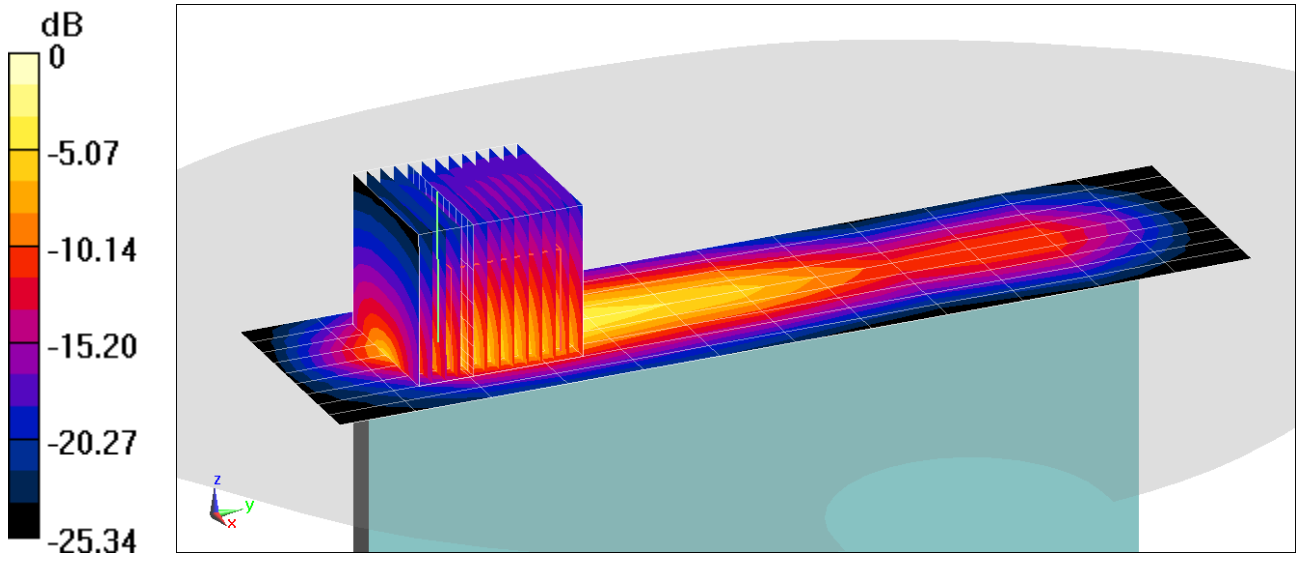
Communication System: UID 0, UMTS; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Body; Medium parameters used:
f = 1880 MHz; σ = 1.552 S/m; ε_r = 51.795; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 11-13-2019; Ambient Temp: 22.7°C; Tissue Temp: 22.3°C

Probe: EX3DV4 - SN7488; ConvF(8.37, 8.37, 8.37) @ 1880 MHz; Calibrated: 1/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1530; Calibrated: 1/15/2019
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: UMTS 1900, Phablet SAR, Left Edge, Mid.ch

Area Scan (10x13x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (12x13x8)/Cube 0: Measurement grid: dx=2.7mm, dy=2.7mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 72.47 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 21.4 W/kg
SAR(10 g) = 2.98 W/kg



0 dB = 12.9 W/kg = 11.11 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00251

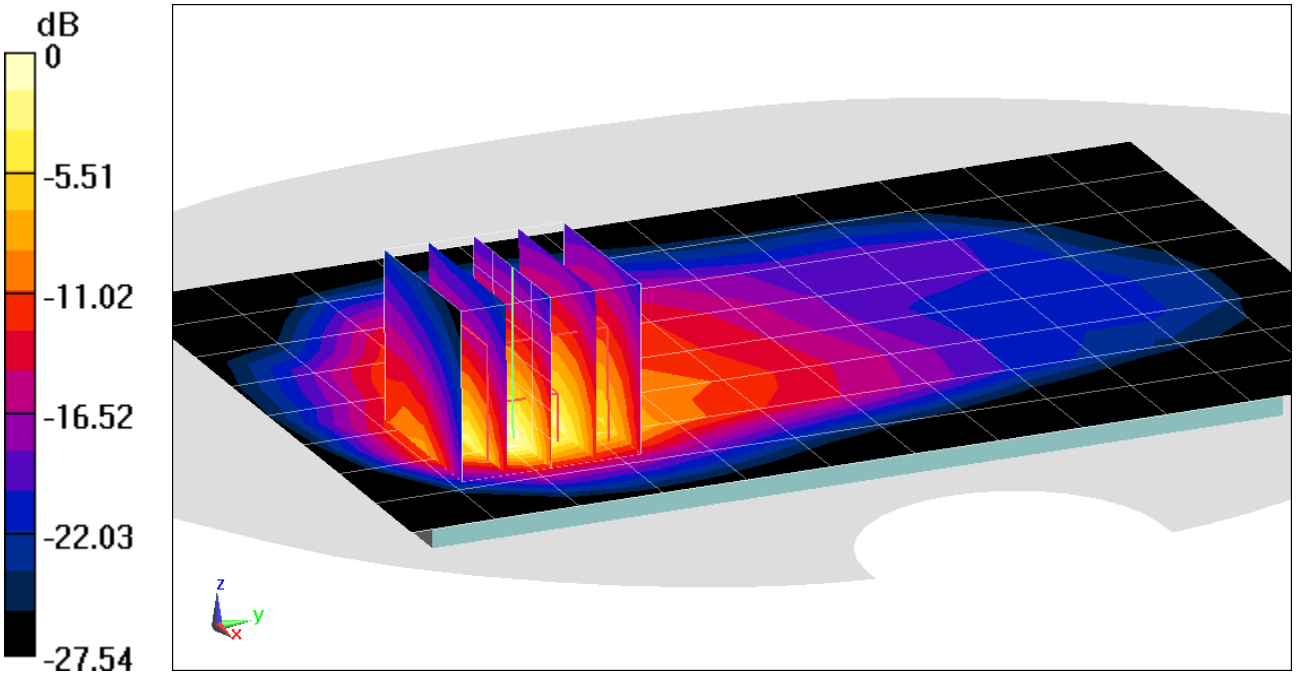
Communication System: UID 0, CDMA; Frequency: 1908.75 MHz; Duty Cycle: 1:1
Medium: 1900 Body; Medium parameters used (interpolated):
f = 1908.75 MHz; σ = 1.585 S/m; ε_r = 51.715; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.2 cm

Test Date: 11-13-2019; Ambient Temp: 22.7°C; Tissue Temp: 22.3°C

Probe: EX3DV4 - SN7488;ConvF(8.37, 8.37, 8.37) @ 1908.75 MHz; Calibrated: 1/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1530; Calibrated: 1/15/2019
Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: PCS EVDO, Phablet SAR, Back side, High.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 = 62.60 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 12.8 W/kg
SAR(10 g) = 2.25 W/kg



0 dB = 10.0 W/kg = 10.00 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00285

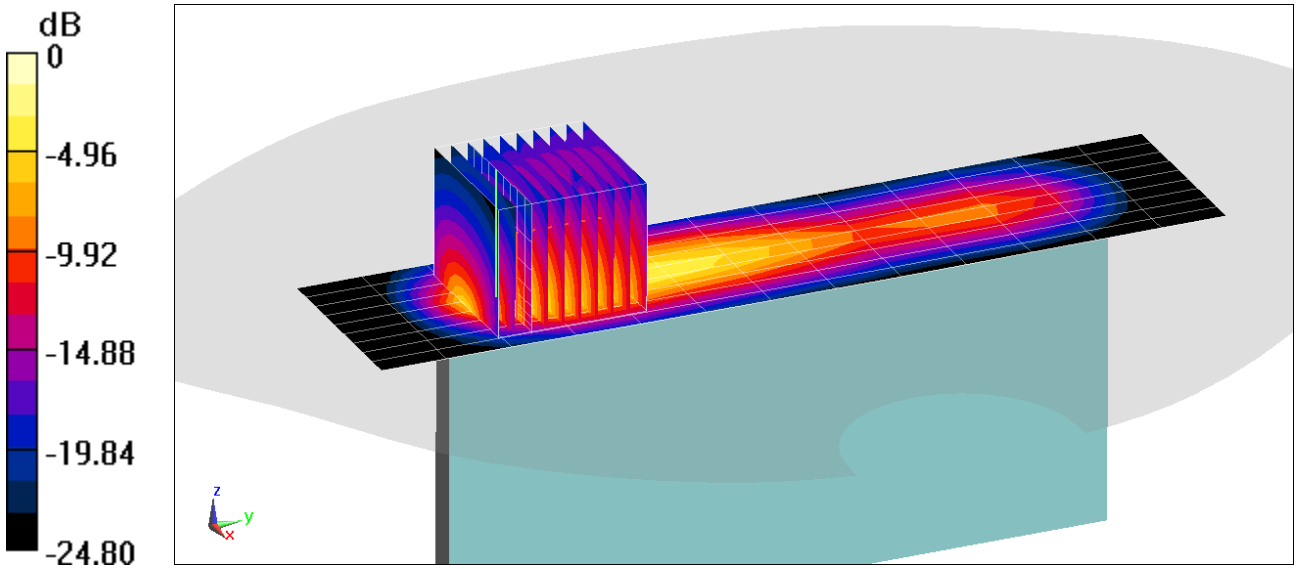
Communication System: UID 0, LTE Band 66 (AWS); Frequency: 1720 MHz,:1
Medium: 1750 Body; Medium parameters used:
f = 1770 MHz; σ = 1.558 S/m; ε_r = 52.508; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 11-22-2019; Ambient Temp: 21.8°C; Tissue Temp: 20.1°C

Probe: EX3DV4 - SN7357, ConvF(8.26, 8.26, 8.26) @ 1770 MHz; Calibrated: 4/24/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1407; Calibrated: 4/18/2019
Phantom: Right Back Twin-SAM V5.0 (30); Type: QD 000 P40 CD; Serial: 1692
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: LTE Band 66 (AWS), Phablet SAR, Left Edge, High.ch, 20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset

Area Scan (10x14x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (10x10x8)/Cube 0: Measurement grid: dx=3.8mm, dy=3.8mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 71.88 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 23.0 W/kg
SAR(10 g) = 3.05 W/kg



0 dB = 12.8 W/kg = 11.07 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00285

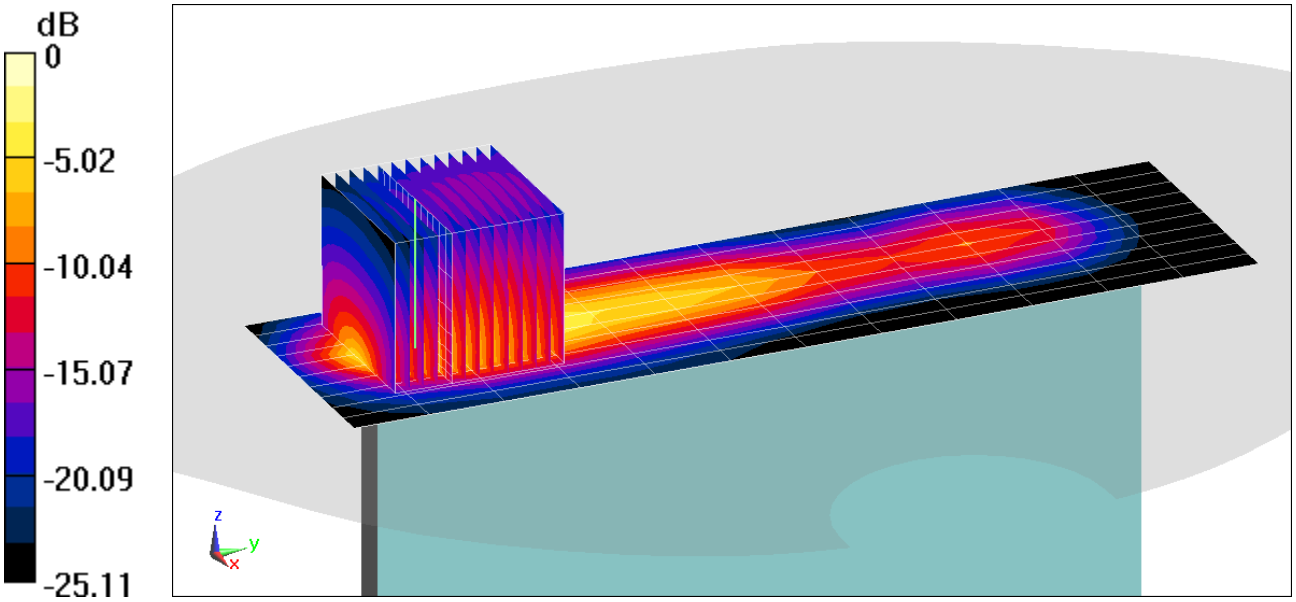
Communication System: UID 0, LTE Band 25 (PCS); Frequency: 1905 MHz; Duty Cycle: 1:1
Medium: 1900 Body; Medium parameters used:
f = 1905 MHz; σ = 1.57 S/m; ε_r = 51.033; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 11-18-2019; Ambient Temp: 22.4°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN3914; ConvF(7.6, 7.6, 7.6) @ 1905 MHz; Calibrated: 2/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1272; Calibrated: 2/14/2019
Phantom: Twin-SAM V5.0 Front 30; Type: QD 000 P40 CD; Serial: 1646
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: LTE Band 25 (PCS), Phablet SAR, Left Edge, High.ch, 20 MHz Bandwidth, QPSK, 1 RB, 50 RB Offset

Area Scan (11x13x1): Measurement grid: dx=5mm, dy=15mm
Zoom Scan (13x13x8)/Cube 0: Measurement grid: dx=2.8mm, dy=2.8mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 73.24 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 27.0 W/kg
SAR(10 g) = 3.19 W/kg



0 dB = 13.2 W/kg = 11.21 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00277

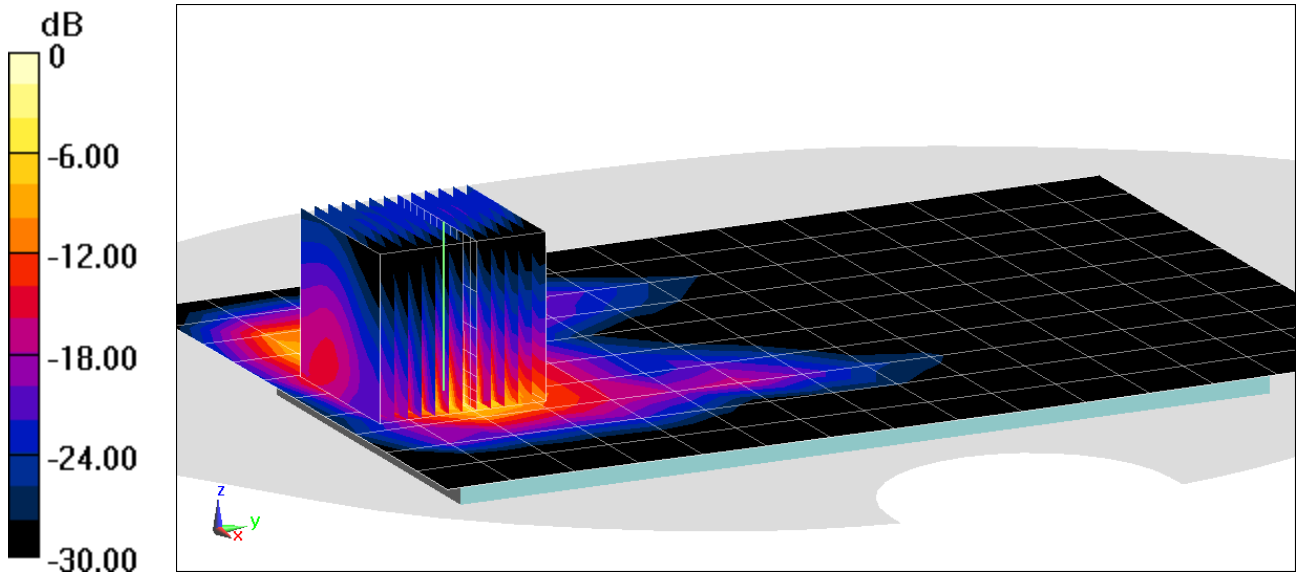
Communication System: UID 0, _LTE Band 41 (Class 2); Frequency: 2506 MHz; Duty Cycle: 1:2.31
Medium: 2450 Body; Medium parameters used (interpolated):
f = 2506 MHz; σ = 2.11 S/m; ε_r = 52.091; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 11-18-2019; Ambient Temp: 22.3°C; Tissue Temp: 21.8°C

Probe: EX3DV4 - SN7547; ConvF(7.3, 7.3, 7.3) @ 2506 MHz; Calibrated: 7/15/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1323; Calibrated: 7/11/2019
Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP1375
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: LTE Band 41 PC2 ULCA, Phablet SAR, Back side, Low.ch,
PCC: Ch. 39750, 20 MHz Bandwidth, QPSK, 50 RB, 50 RB Offset
SCC: Ch. 39948, 20 MHz Bandwidth, QPSK, 50 RB, 0 RB Offset

Area Scan (11x16x1): Measurement grid: dx=12mm, dy=12mm
Zoom Scan (13x13x8)/Cube 0: Measurement grid: dx=2.6mm, dy=2.6mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 62.31 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 27.5 W/kg
SAR(10 g) = 2.76 W/kg



0 dB = 17.6 W/kg = 12.46 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00293

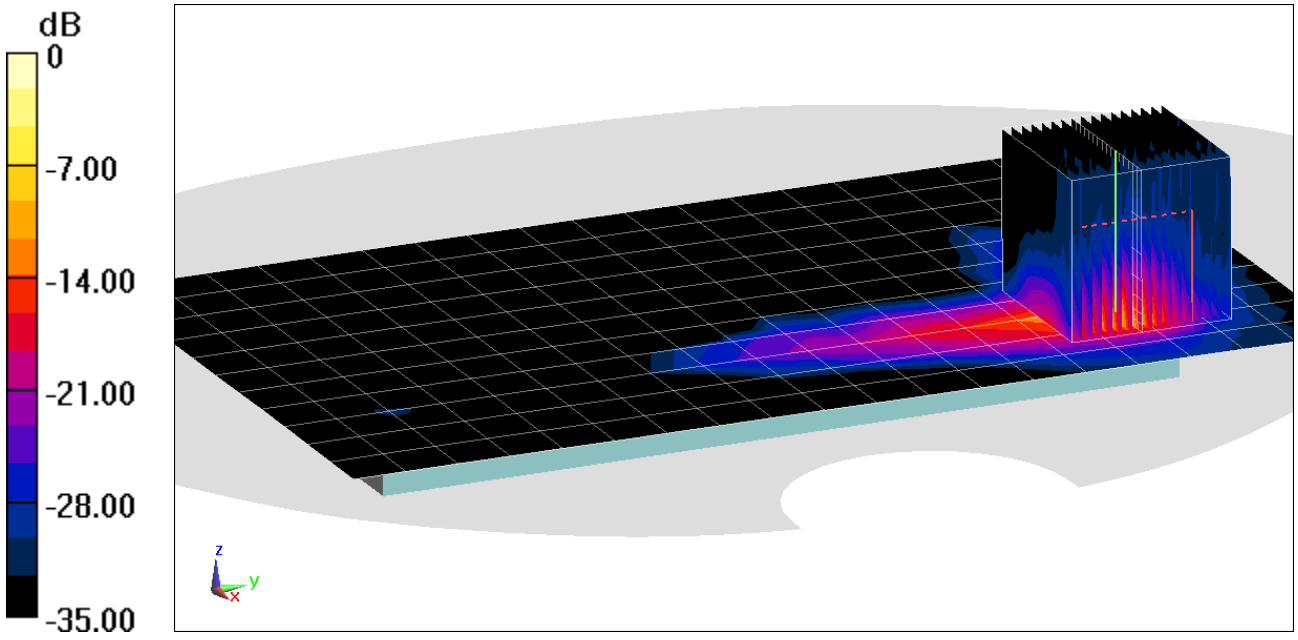
Communication System: UID 0, 802.11a 5.2-5.8 GHz Band; Frequency: 5260 MHz; Duty Cycle: 1:1
Medium: 5200-5800 Body; Medium parameters used:
f = 5260 MHz; σ = 5.483 S/m; ε_r = 48.371; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 11-26-2019; Ambient Temp: 23.5°C; Tissue Temp: 21.6°C

Probe: EX3DV4 - SN7409; ConvF(4.7, 4.7, 4.7) @ 5260 MHz; Calibrated: 6/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1334; Calibrated: 6/20/2019
Phantom: Front; Type: QD 000 P40 CD; Serial: 1686
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: IEEE 802.11a, U-NII-2A, 20 MHz Bandwidth, Phablet SAR, Ch 52, 6 Mbps, Back Side

Area Scan (12x20x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (17x17x8)/Cube 0: Measurement grid: dx=1.9mm, dy=1.9mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 0.8530 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 66.9 W/kg
SAR(10 g) = 1.71 W/kg



0 dB = 37.3 W/kg = 15.72 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00293

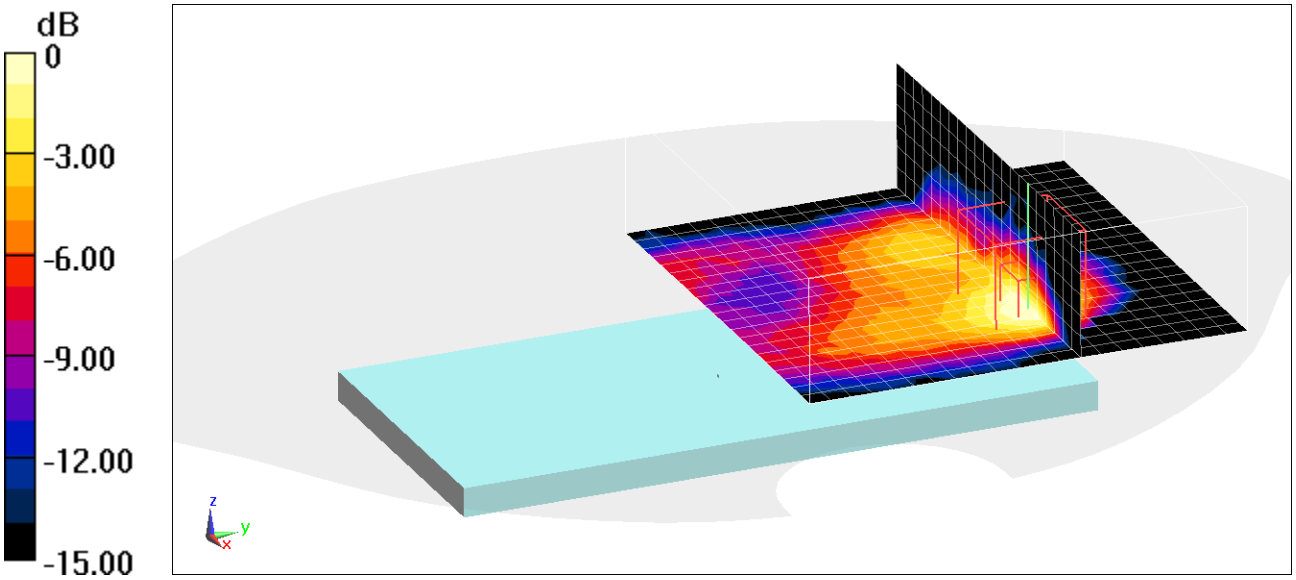
Communication System: UID 0, Bluetooth; Frequency: 2480 MHz; Duty Cycle: 1:1.302
Medium: 2450 Body; Medium parameters used (interpolated):
f = 2480 MHz; σ = 2.08 S/m; ε_r = 51.18; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-03-2019; Ambient Temp: 23.1°C; Tissue Temp: 21.9°C

Probe: EX3DV4 - SN7308; ConvF(7.46, 7.46, 7.46) @ 2480 MHz; Calibrated: 8/16/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1450; Calibrated: 8/14/2019
Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 1964
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: Bluetooth, Body SAR, Ch 78, 1 Mbps, Back Side

Zoom Scan (22x22x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.560 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 0.0700 W/kg
SAR(1 g) = 0.032 W/kg



0 dB = 0.0536 W/kg = -12.71 dBW/kg

DUT: ZNFL455DL; Type: Portable Handset; Serial: 00293

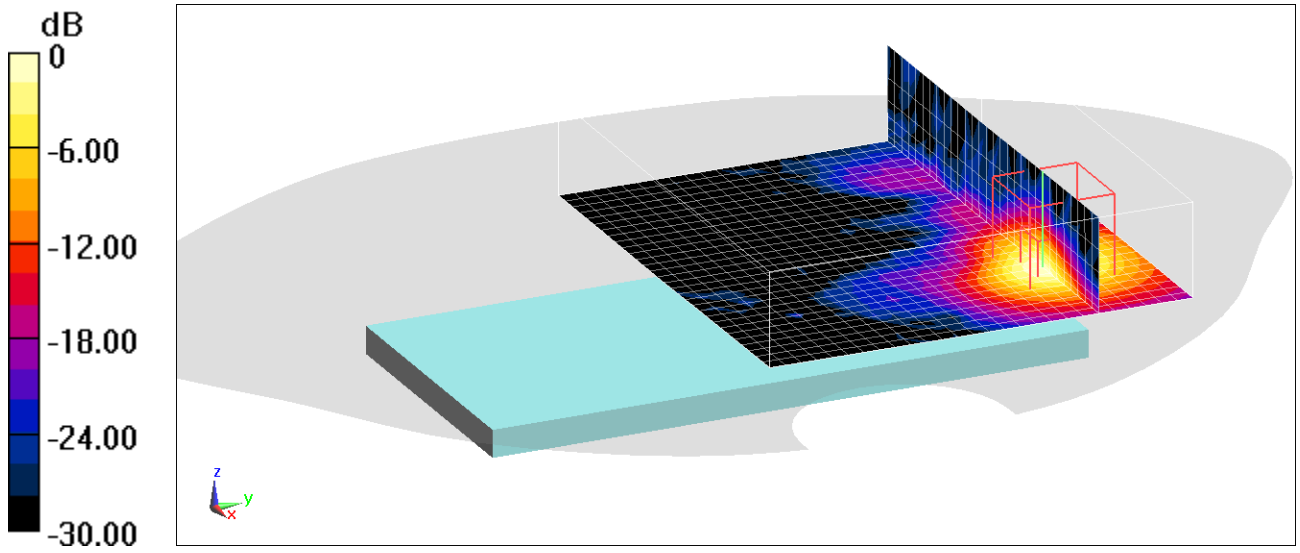
Communication System: UID 0, 802.11a 5.2-5.8 GHz Band; Frequency: 5280 MHz; Duty Cycle: 1:1
Medium: 5200-5800 Body; Medium parameters used:
f = 5280 MHz; σ = 5.503 S/m; ε_r = 47.181; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-01-2019; Ambient Temp: 22.9°C; Tissue Temp: 22.0°C

Probe: EX3DV4 - SN7409; ConvF(4.7, 4.7, 4.7) @ 5280 MHz; Calibrated: 6/19/2019
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1334; Calibrated: 6/20/2019
Phantom: Front; Type: QD 000 P40 CD; Serial: 1686
Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7470)

Mode: IEEE 802.11a, UNII-2A, 20 MHz Bandwidth, Body SAR, Ch 56, 6 Mbps, Back Side

Zoom Scan (31x28x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4
Reference Value = 0.6600 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 4.25 W/kg
SAR(1 g) = 1.1 W/kg



0 dB = 2.60 W/kg = 4.15 dBW/kg